COAL LITHOLOGY LOG

BPB

BOREHOLE: PP84D-01
CLIENT: CROWS NEST RESOURCES

AREA: PINE PASS
COUNTRY: CANADA
DATE LOGGED: 84 08 21

DEPTH SCALE: 1:100
1 OF 4 LOGS

SONDE TYPE:
COAL
COMBINATION
SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY
CALIPER

BOREHOLE DATA

PERMANENT DATUM	GROUND LEVEL			
ELEVATION OF P.D.				
	BPB		DRILLER	
MEASUREMENTS FROM	G.L.		G.L.	
DEPTH REACHED	83.3m		84m	
CASING SHOE				
BIT SIZES 1	HQ TO TD	2	TO	
3	TO	4	TO	
CASING SIZES 1	TO	2	TO	

FLUID DATA

NATURE	WATER/GS 550
S.G.	
LEVEL	
VISCOSITY	
Rm at meas temp	
B.H.T.	

OPERATION DATA

FIRST READING	81m
LAST READING	00m
INTERVAL LOGGED	81m
UNIT-TRUCK No	46/V214
ENGINEER	A. LEBRETON
WITNESS	

592

PR 030
PR - PINE PASS 84(1*)A *3

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	EQUIPMENT: CALIBRATOR	TAPING: LOG TAPED	TAPING: RECORD SPEED	TAPING: DIRECT or REPLAY	PANEL: SPEED	PANEL: T.C. SECS	PANEL: NORM	CAL COEFF	DEPTHS: FROM	DEPTHS: TO	DEPTHS: INTERVAL	SEAM LOG RUN
GAMMA RAY	113B		315	Y	9	D	9	1		1.48	81	00	81	
L.S. DENSITY		5852	0336	Y	9	D	9	.3	6.89		81	00	81	
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3			81	00	81	

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

					INTERVAL TOTAL
FROM	69m	43m	31m	14m	
TO	65m	36m	21m	8m	
INTERVAL	4m	7m	10m	6m	= 27m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
236	VERT		
501	DSN		

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No. 315 VALUE 44 @ 5" DIAM	JIG CAL DATE 84 08 17 JIG VALUE 5225 SDU @ g/cm³ — ins cps
JIG MARK SHOWN AT ABOVE VALUE -	JIG No 0336 SPAN NORM SDU/CPS = 6.89 — ins cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

HOLE SIZE CORRECTION DATA

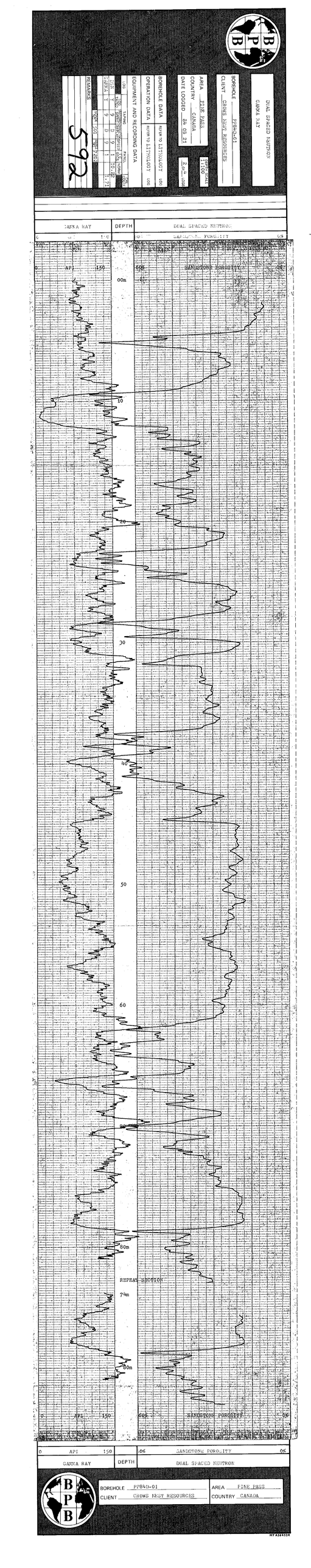
0 API 150		6000 sdu 0	8" 3"
GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

BPB

BOREHOLE: PP84D-01 AREA: PINE PASS
CLIENT: CROWS NEST RESOURCES COUNTRY: CANADA

COAL LITHOLOGY LOG

MY (1)137483 R


DUAL SPACED NEUTRON
GAMMA RAY
BOREHOLE PPB40-01
CLIENT CROWS NEST RESOURCES
AREA FINE PASS
COUNTRY CANADA
DATE LOGGED 84 05 21
SUPERSEDES
2nd 1200
BOREHOLE DATA
RELATIVE TO LITHOLOGY 000
OPERATION DATA
RELATIVE TO LITHOLOGY 000
EQUIPMENT AND RECORDING DATA
TOOL TYPE
SERIAL NO
DIA
MAX TEMP
MAX REC TEMP
RUN NO
TIME SINCE CIRC
TIME ON BOTTOM
UNIT NO
LOGGER ON BOTTOM
MAX REC TEMP
EQUIP LOCATION
RECORDED BY
WITNESSED BY
REMARKS
592
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
0 API 150
SANDSTONE POROSITY
60% 0%
00m
10
20
30
40
50
60
70
80m
REPEAT SECTION
74m
80m
0 API 150
60% SANDSTONE POROSITY 0%
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
BOREHOLE PPB40-01
CLIENT CROWS NEST RESOURCES
AREA FINE PASS
COUNTRY CANADA

COAL QUALITY LOG

BOREHOLE TYPE: COAL EXPLORATION HOLE

DRILLING METHOD: ROTARY

DRILLING FLUID: WATER

DRILLING CONTRACTOR: CANADIAN DRILLING

DRILLING STARTED: 25-05-81

DRILLING FINISHED: 25-05-81

LOGGING COMPANY: CANADA

LOGGING STARTED: 25-05-81

LOGGING FINISHED: 25-05-81

BOREHOLE STATUS: CLOSED - BORE SUSPENDED

BOREHOLE DATA: BOREHOLE NO. 592

LOCATION: GRID REFERENCE

EASTING: 2 + 34.5mE

NORTHING: 2 + 34.5mN

ELEVATION: 1150m

DATUM: MEAN SEA LEVEL

DRILLING DATA: DRILLED DEPTH 1150m

LOGGED DEPTH 1150m

CASING DEPTH 1150m

CASING DIAMETER 1150m

EQUIPMENT AND RECORDING DATA: LOGGING UNIT NO. 1

LOGGING ENGINEER

OPERATOR

RECORDED BY

WITNESSED BY

TOTAL COUNTS / 1000 SECONDS: 1150m

DENSITY CALIBRATION: 2.3 g/cc

HOLE SIZE CORRECTION DATA

592

BPB COAL QUALITY LOG

DEPTH

CAMPA BAY

COAL BULK DENSITY

SCALE

HOLE SIZE CORRECTION DATA

0 AU 150 | 4000 Cps 0

0 AU 150 | 4000 Cps 0

0m

10

12

14

21

22

24

26

28

30

31

36

38

40

42

43

65

66

68

69m

0 AU 150 | 4000 Cps 0

CAMPA BAY

COAL BULK DENSITY

SCALE

DEPTH

BPB

BOREHOLE: SPEND-03

AREA: PEEL PLU

CLIENT: CRAW NEST RESOURCES

COUNTRY: CANADA

COAL QUALITY LOG

BOREHOLE PP84D-01
CLIENT CROWS NEST RESOURCES

AREA PINE PASS
COUNTRY CANADA
DATE LOGGED 84 08 21

DEPTH SCALE 1:20

4 OF 4 LOGS

SEAM THICKNESS LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

BOREHOLE DATA: REFER TO LITHOLOGY LOG

OPERATION DATA: REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	TAPING SPEED	PANEL T.C. SECS	NORM	CAL COEFF
CALIPER	Y	2	R	2	.3		
B.R. DENSITY	Y	2	R	2	.3	7.36	

SOURCE, SONDE AND CALIBRATION: REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM						
TO						
INTERVAL						
FROM	69m	43m	31m	14m		
TO	65m	36m	21m	8m		TOTAL
INTERVAL	4m	7m	10m	6m		27m

REMARKS

592

B P B SEAM THICKNESS LOG

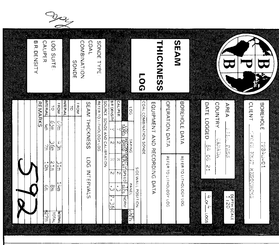
CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY
8" dia 3"		26,000 SBRDU 16,000

8" dia 3"		26,000 SBRDU 16,000
CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY

BOREHOLE PP84D-01
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA

SEAM THICKNESS LOG

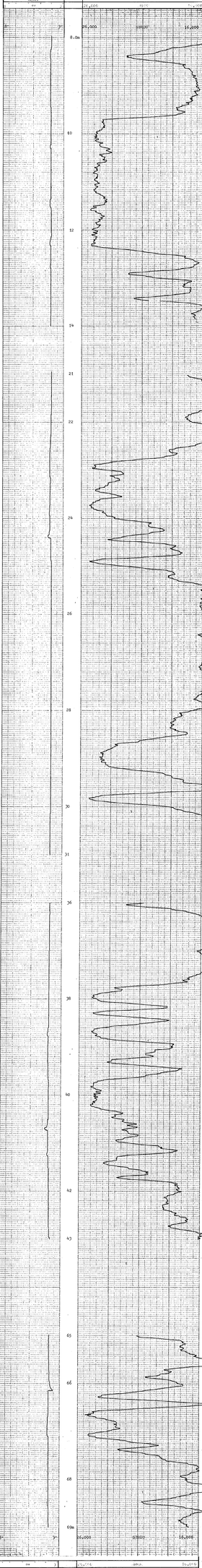
MY 88002 R



B P B SEAM THICKNESS LOG

CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY

24,000 | DEPTH | 16,000

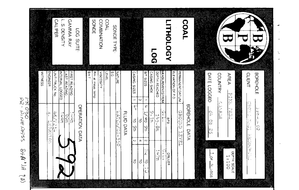


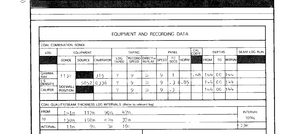
CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY

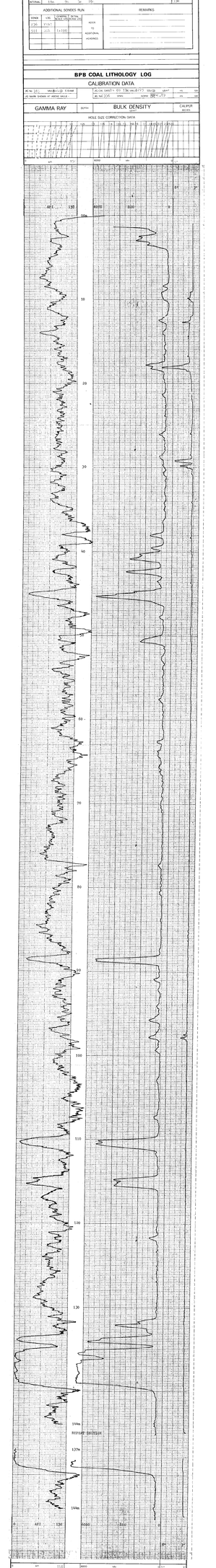
BOREHOLE | AREA

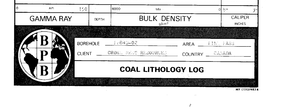
CLIENT | COUNTRY

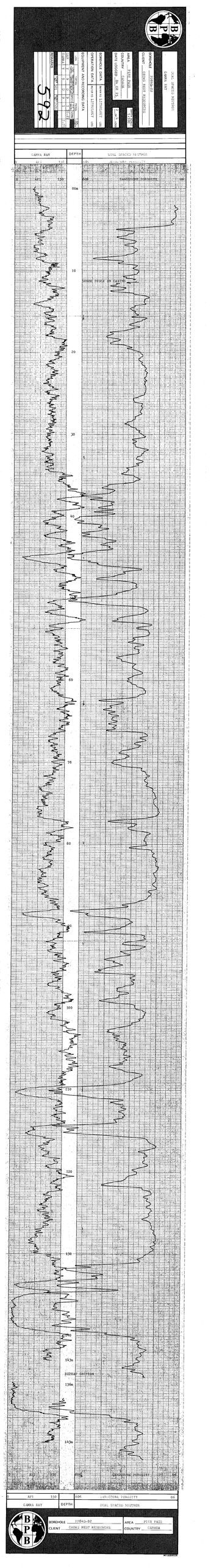
SEAM THICKNESS LOG

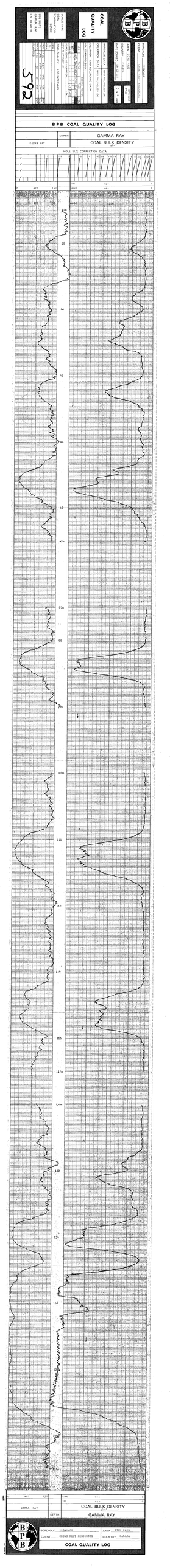

COAL LITHOLOGY LOG
BPB


EQUIPMENT AND RECORDING DATA
COAL CALIBRATION TONES
CALIBRATION DATA
BULK DENSITY
GAMMA RAY
HOLE SIZE CORRECTION DATA


BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
BULK DENSITY
HOLE SIZE CORRECTION DATA
API
G/CC
50m
60m
70m
80m
90m
100m
110m
120m
130m
137m
154m
REPEAT SECTION


GAMMA RAY
BULK DENSITY
BPB
COAL LITHOLOGY LOG


B P B
592
RUN NO. 1
PASS NO. 1
DEPTH DRILLER 1784.0
DEPTH LOGGER 1784.0
BTM LOG INTERVAL 1784.0
TOP LOG INTERVAL 1000.0
CASING DRILLER 244.5@ 1000.0
CASING LOGGER 1000.0
BIT SIZE 222.2
TYPE FLUID WATER BASED MUD
DENSITY 1.10
VISCOSITY 50.0
PH 10.0
FLUID LOSS 6.0
SOURCE OF SAMPLE FLOWLINE
RM @ MEAS TEMP 0.200 @ 20.0
RMF @ MEAS TEMP 0.150 @ 20.0
RMC @ MEAS TEMP 0.300 @ 20.0
SOURCE OF RMF & RMC MEASURED
RM @ BHT 0.100 @ 60.0
TIME CIRC. STOPPED 0600
TIME LOGGER ON BOTTOM 1000
MAX. REC. TEMP. 60.0
EQUIP. NO. & LOCATION 1302 1302
RECORDED BY D. GRAY
WITNESSED BY
RUN NO. PASS NO. MERGED BASE
TOP LOG INTERVAL 1000.0
BOTTOM LOG INTERVAL 1784.0
LOGGING SPEED 20.0
MAX. REC. TEMP. 60.0
EQUIPMENT NO. & LOCATION 1302 1302
RECORDED BY D. GRAY
WITNESSED BY
CLIENT CANADA WESTERN NATURAL GAS, OIL & LAND CORP. LTD.
WELL 10-34-85-23W5M
FIELD PEACE RIVER
COUNTY PEACE RIVER
PROVINCE ALBERTA
COUNTRY CANADA
JOB NUMBER 92001
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
0 API 150
600 SANDSTONE POROSITY -60
00a
10
20
30
40
50
60
70
80
90
100
10
120
130
135b
136a
137a
143a
143b
BOREHOLE 10-34-85-23W5M
CLIENT CANADA WESTERN NATURAL GAS, OIL & LAND CORP. LTD.
AREA PEACE RIVER
COUNTRY CANADA
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON


COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY
HOLE SIZE CORRECTION DATA
GAMMA RAY
DEPTH
COAL BULK DENSITY
GAMMA RAY
BOREHOLE : VERNO-02
CLIENT : GEOMO RADE ECONOMICS
AREA : FORT PAGE
COUNTRY : CANADA
COAL QUALITY LOG

SEAM THICKNESS LOG

BOREHOLE: PP84D-02
CLIENT: CROWS NEST RESOURCES
AREA: PINE PASS
COUNTRY: CANADA
DATE LOGGED: 84 08 25

DEPTH SCALE 1:20
4 OF 4 LOGS

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

BOREHOLE DATA: REFER TO LITHOLOGY LOG

OPERATION DATA: REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	TAPING: LOG TAPED	TAPING: RECORD SPEED	PANEL: DIRECT or REPLAY	PANEL: SPEED	PANEL: TC SECS	PANEL: NORM	CAL COEFF
CALIPER	Y	2	R	2	.3		
B.R. DENSITY	Y	2	R	2	.3	P.36	

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM					
TO					
INTERVAL					
FROM	141m	117m	90m	47m	INTERVAL TOTAL
TO	130m	108m	87m	37m	
INTERVAL	11m	9m	3m	10m	33m

REMARKS

592

B P B SEAM THICKNESS LOG

CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY
8" dia 3"		26,000 SBRDU 16,000

8" dia 3"		26,000 SBRDU 16,000
CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY

BOREHOLE PP84D-02
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA

SEAM THICKNESS LOG

BOREHOLE PP84D-03
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
DATE LOGGED 84 08 30

DEPTH SCALE 1:100

1 OF 4 LOGS

COAL LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

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

BOREHOLE DATA

PERMANENT DATUM	GROUND LEVEL	
ELEVATION OF P.D.		
MEASUREMENTS FROM	BPB: G.L.	DRILLER: G.L.
DEPTH REACHED	104.8m	105.2m
CASING SHOE	7.6m	7.6m
BIT SIZES	1: 4 1/4 TO 7.6	2: HQ TO TD
	3: TO	4: TO
CASING SIZES	1: 4 TO 7.6m	2: TO

FLUID DATA

NATURE	WATER/GS 550
S.G.	
LEVEL	
VISCOSITY	
Rm at meas temp	
BHT	

OPERATION DATA

FIRST READING	103m
LAST READING	00m
INTERVAL LOGGED	103m
UNIT-TRUCK No	46/V214
ENGINEER	A. LEBRETON
WITNESS	

592

PR 030
PR-PINE PASS 84(1*)A #(3)

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT: SONDE	SOURCE	CALIBRATOR	TAPING: LOG TAPED	RECORD SPEED	DIRECT or REPLAY	PANEL: SPEED	TC SECS	NORM	CAL COEFF	DEPTHS: FROM	TO	INTERVAL	SEAM LOG RUN
GAMMA RAY	113B		315	Y	9	D	9	1		1.48	103	00	103	
L.S. DENSITY		5852	0336	Y	9	D	9	.3	6.89		103	00	103	
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3			103	00	103	

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

						INTERVAL TOTAL
FROM	75m	52m	44m	39m	29m	
TO	69m	46m	41m	35m	23m	
INTERVAL	6m	6m	3m	4m	6m	± 25m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
236	VERT		
501	DSN	1:100	

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No. 315 VALUE 944 @ 5" DIAM
JIG MARK SHOWN AT ABOVE VALUE –

JIG CAL DATE 84 08 17 JIG VALUE 5225 SDU @ g/cm³
JIG No 0336 SPAN NORM $\frac{SDU}{CPS}$ = 6.89

ins. cps
ins cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

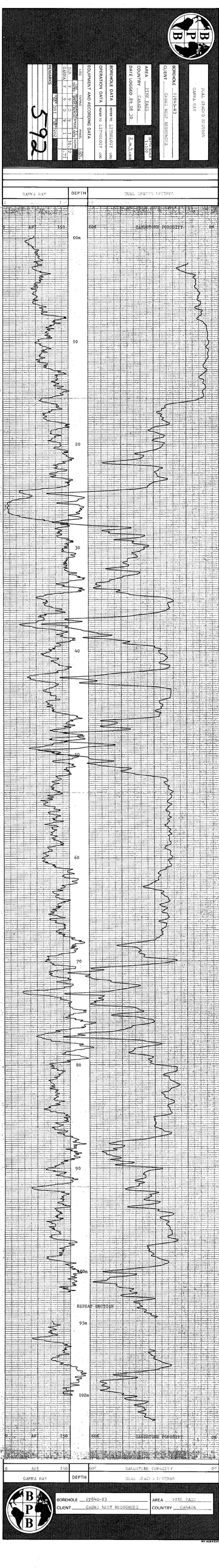
HOLE SIZE CORRECTION DATA

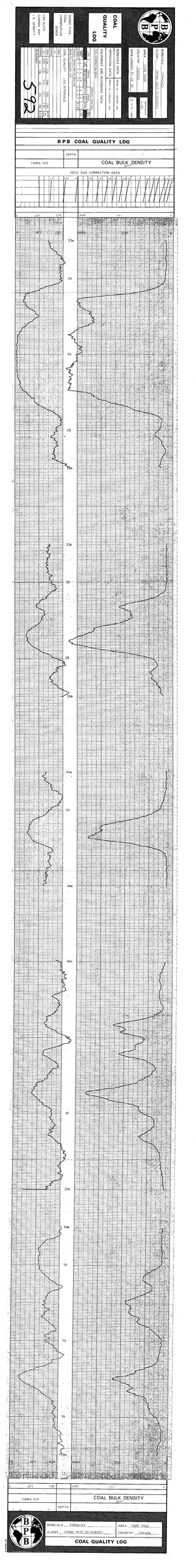
0 API 150		6000 sdu 0	8" 3"
GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

BOREHOLE PP84D-03 AREA PINE PASS
CLIENT CROWS NEST RESOURCES COUNTRY CANADA

COAL LITHOLOGY LOG

MY (1)137483 R


BPB
GAMMA RAY
NEUTRON POROSITY
DUAL SPACED NEUTRON
BOREHOLE P1840-03
CLIENT CANWEST PETROLEUM RESOURCES
AREA FIRE PAINT
COUNTRY CANADA
DATE LOGGED 88 08 30
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
REMARKS
S-92
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
0 API 150
60K SANDSTONE POROSITY 0%
00m
10
20
30
40
50
60
70
80
90
100m
REPEAT SECTION
95m
102m
0 API 150
60K SANDSTONE POROSITY 0%
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
BPB
BOREHOLE P1840-03
CLIENT CANWEST PETROLEUM RESOURCES
AREA FIRE PAINT
COUNTRY CANADA


BPB
COAL QUALITY LOG
BOREHOLE FP06D-03
CLIENT CROW NEST RESOURCES
AREA FIRE PASS
COUNTRY CANADA
DATE LOGGED 31-JUL-2006
BOREHOLE TYPE COAL EVALUATION BOREHOLE
LOG SUITE GAMMA RAY DENSITY
COAL QUALITY LOG INTERVALS
LOG CORRECTION DATA
OPERATOR DATA
DEPTH
GAMMA RAY
COAL BULK DENSITY
HOLE SIZE CORRECTION DATA
API
kg/m³
COAL QUALITY LOG
BOREHOLE FP06D-03
CLIENT CROW NEST RESOURCES
AREA FIRE PASS
COUNTRY CANADA

BOREHOLE PP84D-03

CLIENT CROWS NEST RESOURCES

AREA PINE PASS

COUNTRY CANADA

DATE LOGGED 84 08 30

DEPTH SCALE 1:20

4 OF 4 LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	SPEED	T.C. SECS	NORM	
CALIPER	Y	2	R	2	.3		
B R DENSITY	Y	2	R	2	.3	7.36	

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM						
TO						
INTERVAL						
FROM	75m	52m	44m	39m	29m	INTERVAL TOTAL
TO	69m	46m	41m	35m	23	
INTERVAL	6m	6m	3m	4m	6	25m

REMARKS

592

SONDE TYPE: COAL COMBINATION SONDE

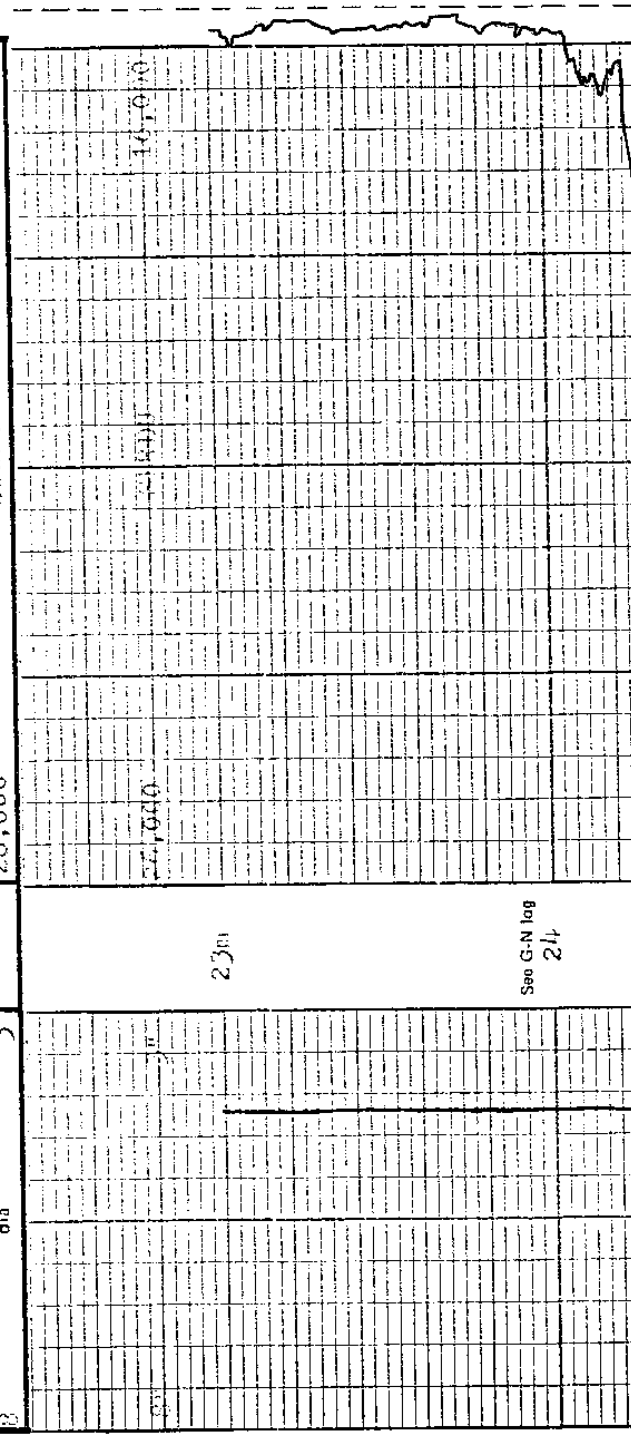
LOG SUITE: CALIPER B.R. DENSITY

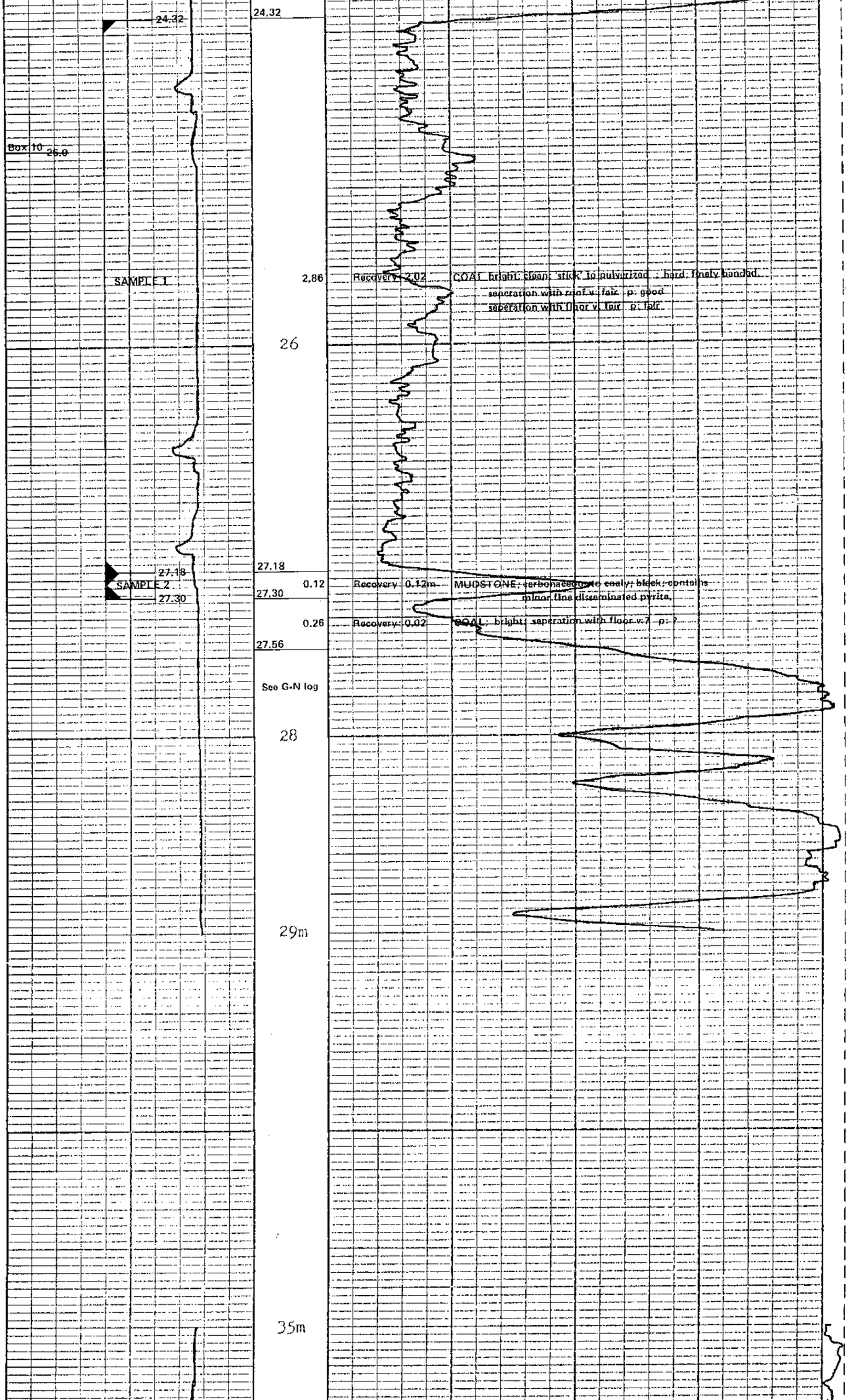
B P B SEAM THICKNESS LOG

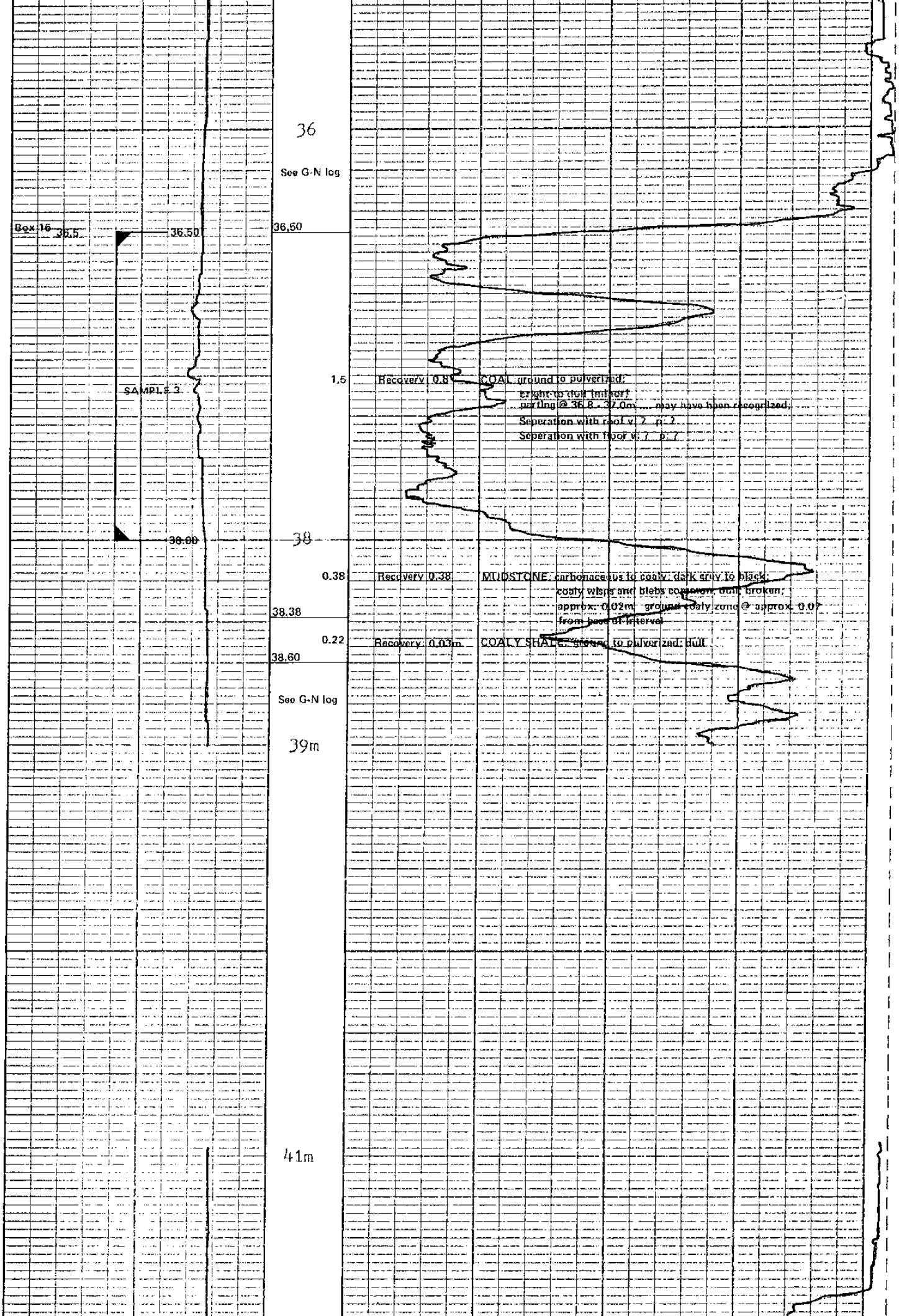
BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES




24.32
24.32
Box 10 25.0
SAMPLE 1
2.86
Recovery 2.02
COAL bright; clean; stick to pulverized ; hard, finely banded.
seperation with roof v. fair p. good
seperation with floor v. fair p. fair
26
27.18
27.18
SAMPLE 2
27.30
0.12
Recovery 0.12m
MUDSTONE; carbonaceous to coaly; black; contains
minor fine disseminated pyrite.
27.30
0.26
Recovery 0.02
COAL; bright; seperation with floor v.? p.?
27.56
See G-N log
28
29m
35m


36
See G-N log
Box 16
36.5
36.50
36.50
1.5
Recovery 0.8
COAL, ground to pulverized;
bright to dull lustre?
parting @ 36.8 - 37.0m ... may have been recognized.
Seperation with roof v: ? p: ?
Seperation with floor v: ? p: ?
SAMPLE 3
38.00
38
0.38
Recovery 0.38
MUDSTONE, carbonaceous to coaly; dark grey to black;
coaly wisps and blebs common; dull; broken;
approx. 0.02m ground coaly zone @ approx. 0.07
from base of interval
38.38
0.22
Recovery 0.03m
COALY SHALE, strong to pulverized; dull
38.60
See G-N log
39m
41m

See G-N log

42

42.22

0.80 Recovery 0.56 COAL : hard: dull: clear graphite - like in lustre.; pulverized in upper 0.08m.... balance is broken.
seperation with roof v. poor p. poor
seperation with floor v. fair p. good

SAMPLE 4

43.02

See G-N log

44m

46m

See G-N log

46.45

1.03 SHALE : black: carbonaceous to coaly: slightly silty to base of interval

* TONSTEIN SAMPLES TAKEN FOR KILBY [MEMPR]

47.48

0.14 Recovery 0.06 COAL : bright: hard: broken: seperation with roof v. poor p. fair

47.62

* TONSTEIN SAMPLE 1

47.66 0.04 TONSTEIN: medium grey: soft: flaky: consists of 0.015m tonstein 0.01m coal, 0.015m tonstein; coaly wisps in Tonstein

0.28 Recovery 0.17 COAL: bright: hard: broken: higher ash to base.

Box 20 47.90

47.94

* TONSTEIN SAMPLE 2

47.98 48 0.04 TONSTEIN: medium grey: soft: flaky: contains coal wisps and blebs

SAMPLE 5

* TONSTEIN SAMPLE 3 upper portion

48.10 0.12 Recovery 0.06 COAL: hard: bright to dull: 'slick'

0.20 Recovery 0.13 TONSTEIN: medium grey: soft: flaky: contains coal blebs 0.02m coal interbed @ mid-interval

* TONSTEIN SAMPLE 4 lower portion

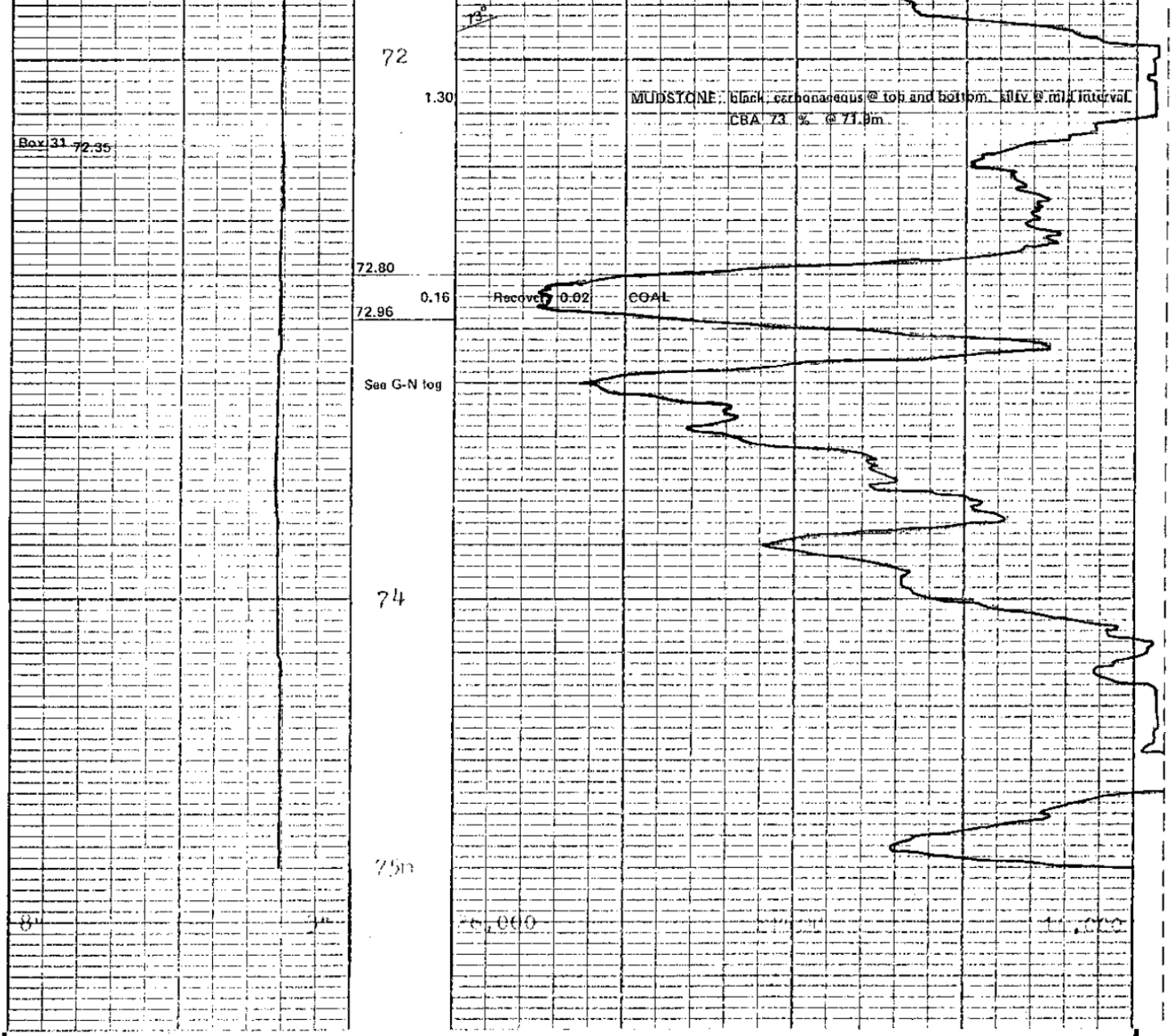
48.30

0.30 Recovery 0.00 COAL : LOST CORE !

48.60

	0.66	Recovery 0.50	SHALE: black; carbonaceous to coaly; broken
49.26			
	0.66	Recovery 0.44	COAL: bright; 'stick' (@top) to pulverized (@base) dirty with mudstone partings in lower 0.15m of recovered interval
49.92			
	0.10	Recovery 0.1	TONSTEIN: soft; medium - dark grey; flaky ; contains 0.02m mudstone interval @ mid interval
50.06			
	0.14	Recovery 0.00	[COALY SHALE?] LOST CORE
50.16			
52m			
69m See G-N log			
69.34	0.02		TONSTEIN : soft; flaky; medium grey; minor coaly debris
69.36			
	0.86		SILTSTONE: dark grey; massive; 'stick' ; slightly carbonaceous, bottom 0.05m very carbonaceous to coaly.
70			
70.22			
	0.16	Recovery 0.15	COAL : broken; bright; seperation with roof v. poor - p. poor
70.38			
	0.54	Recovery 0.44	SHALE: carbonaceous (@top) to coaly (@base) ; abundant coaly blebs. 1cm Tonstein band @ 0.31m approx. from top of interval recovered
70.92			
	0.28	Recovery 0.03	COAL (?): bright; pulverized
71.20			
	0.15	Recovery 0.15	COALY SHALE: black; broken; dull
71.35			
	0.15	Recovery 0.15	COAL : bright; to pulverized to broken; seperation with floor v. poor - p. poor
71.50			

* TONSTEIN SAMPLE 5 upper portion
* TONSTEIN SAMPLE 6 lower portion
SAMPLE 6
* TONSTEIN SAMPLE TAKEN FOR KILBY (MEMPR)
* TONSTEIN SAMPLE 7
Box 30 70.05
* TONSTEIN SAMPLE 8
SAMPLE 7



BPB

BOREHOLE PP84D-03

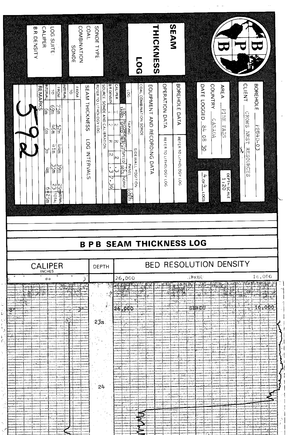
CLIENT CROWS NEST RESOURCES

AREA PINE PASS

COUNTRY CANADA

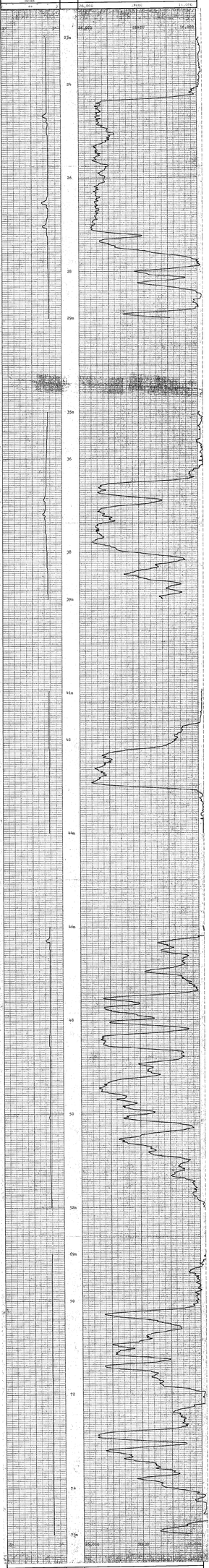
SEAM THICKNESS LOG

MY 88002 R



B P B SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY
6in 16in		Resist. 0.2ohm 2000ohm 16,000ohm



CALIPER	DEPTH	BED RESOLUTION DENSITY
6in 16in		Resist. 0.2ohm 2000ohm 16,000ohm

BOREHOLE TYPHOON-52 AREA PINE PASS
CLIENT TYPHOON OFFSHORE INC. COUNTRY CANADA

SEAM THICKNESS LOG

BOREHOLE PP84D-02

CLIENT CROWS NEST RESOURCES

AREA PINE PASS

COUNTRY CANADA

DATE LOGGED 84 08 25

DEPTH SCALE 1:20

4 OF 4 LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	
CALIPER	Y	2	R	2	.3		
B R DENSITY	Y	2	R	2	.3	7.36	

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM					
TO					
INTERVAL					
FROM	141m	117m	90m	47m	INTERVAL TOTAL
TO	130m	108m	87m	37m	
INTERVAL	11m	9m	3m	10m	33m

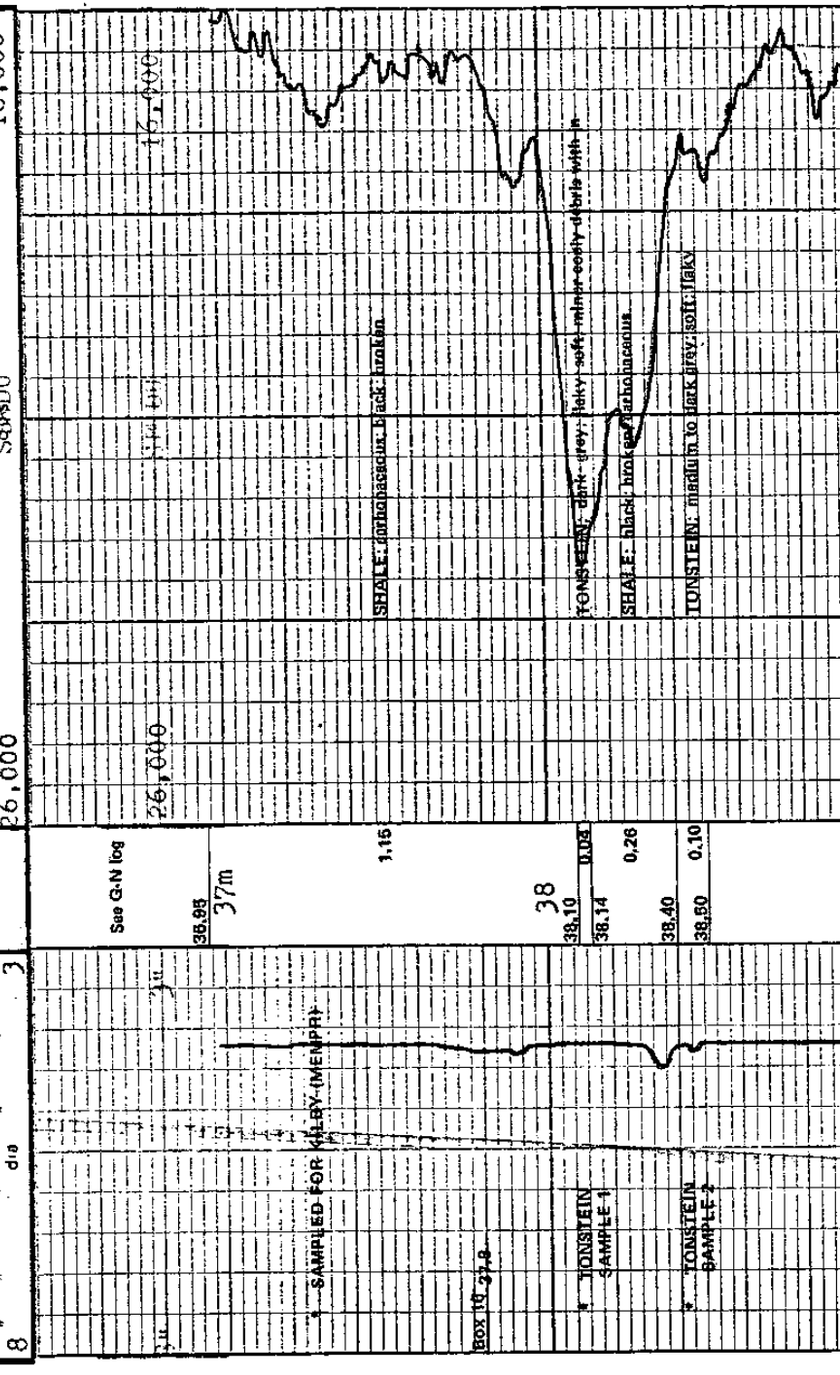
REMARKS

592

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

B P B SEAM THICKNESS LOG



Box 17 39.6

TONSTEIN SAMPLE 1

40.16

SAMPLE 1

41.68

Box 18 42.7

78°

1.20

SHALE: black; broken; carbonaceous
CBA 78 % @ 39.0m

39.70

0.13

39.83

TONSTEIN: medium grey; soft; flaky; abrupt contacts

40

0.33

MUDSTONE: very carbonaceous to coaly; black; broken

40.16

1.52

Recovery: 0.5m

COAL: broken to crushed; bright to dull; dirty
separation with roof v: ? p: ?
separation with floor v: ? p: ?

41.68

42

73°

MUDSTONE: dark grey to black; carbonaceous to coaly; frequent coaly wisps; mostly broken; interval 42.2m - 42.8m suspect to be part of lost core, not recognizable in recovered core
CBA 73 % @ 42.16m
61 % @ 43.8m
68 % @ 44.5m

2.96

Recovery: 2.1

67°

44

63°

44.64

0.12

44.76

Recovery: 0.1

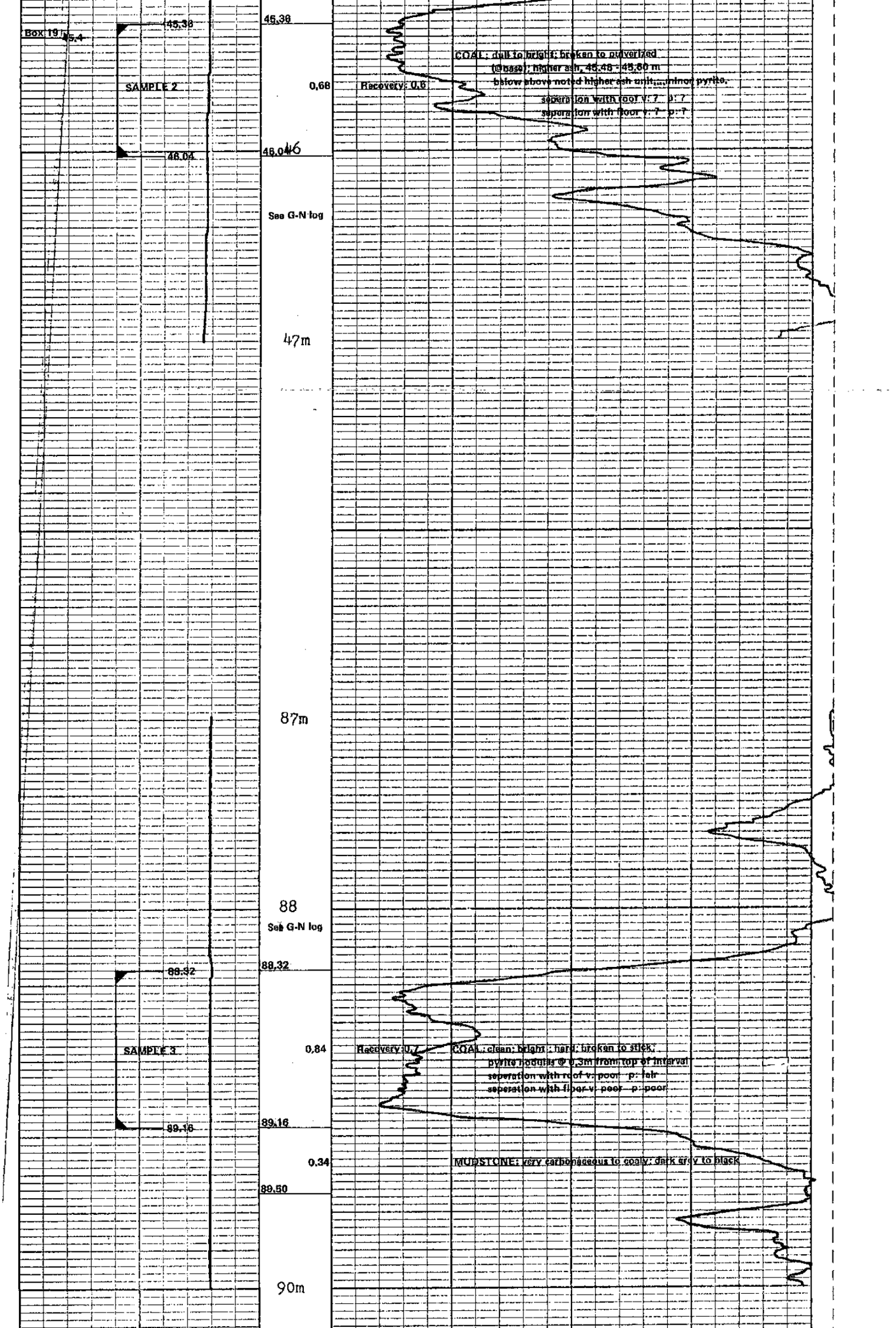
COALY COAL

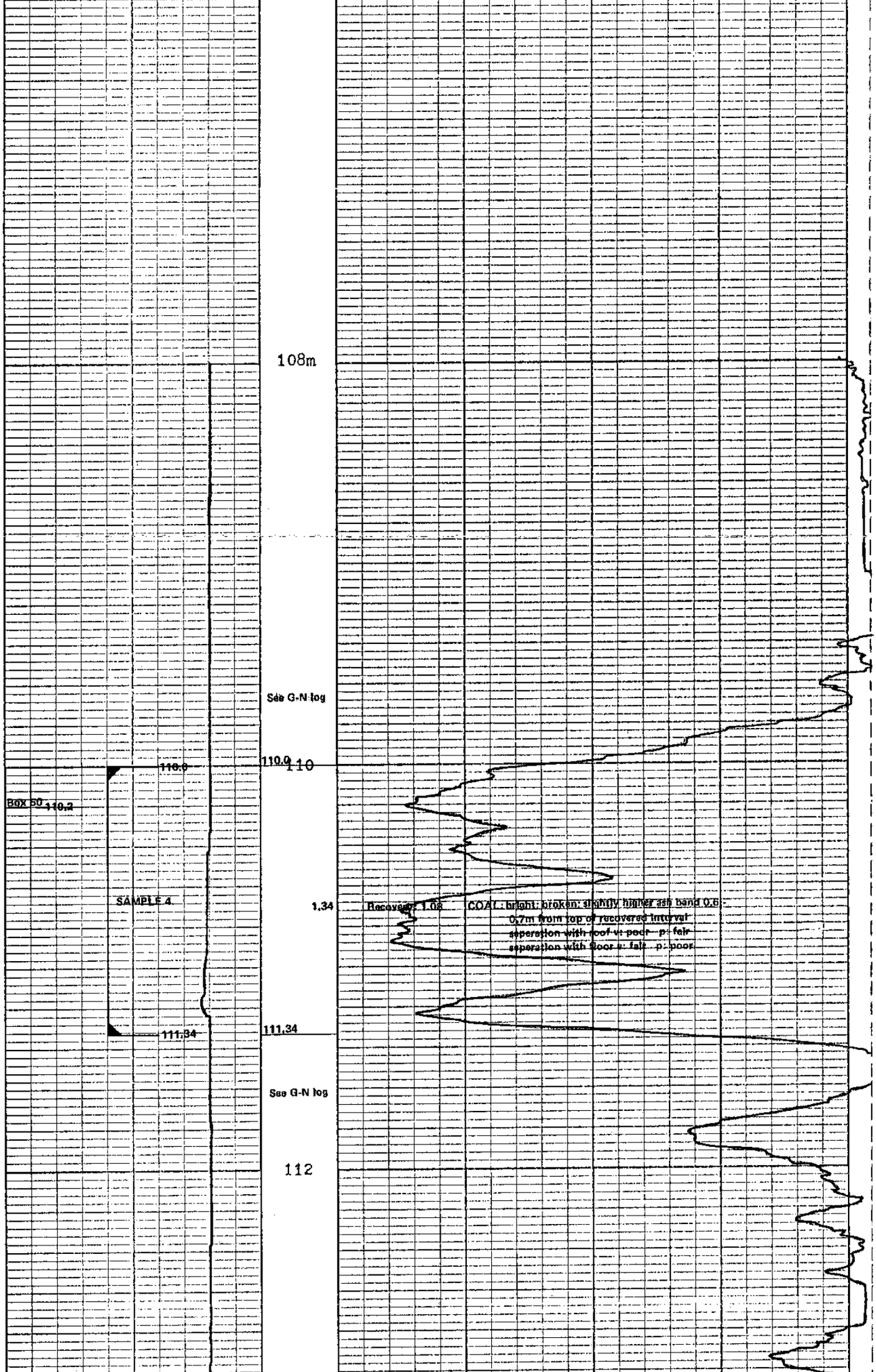
0.60

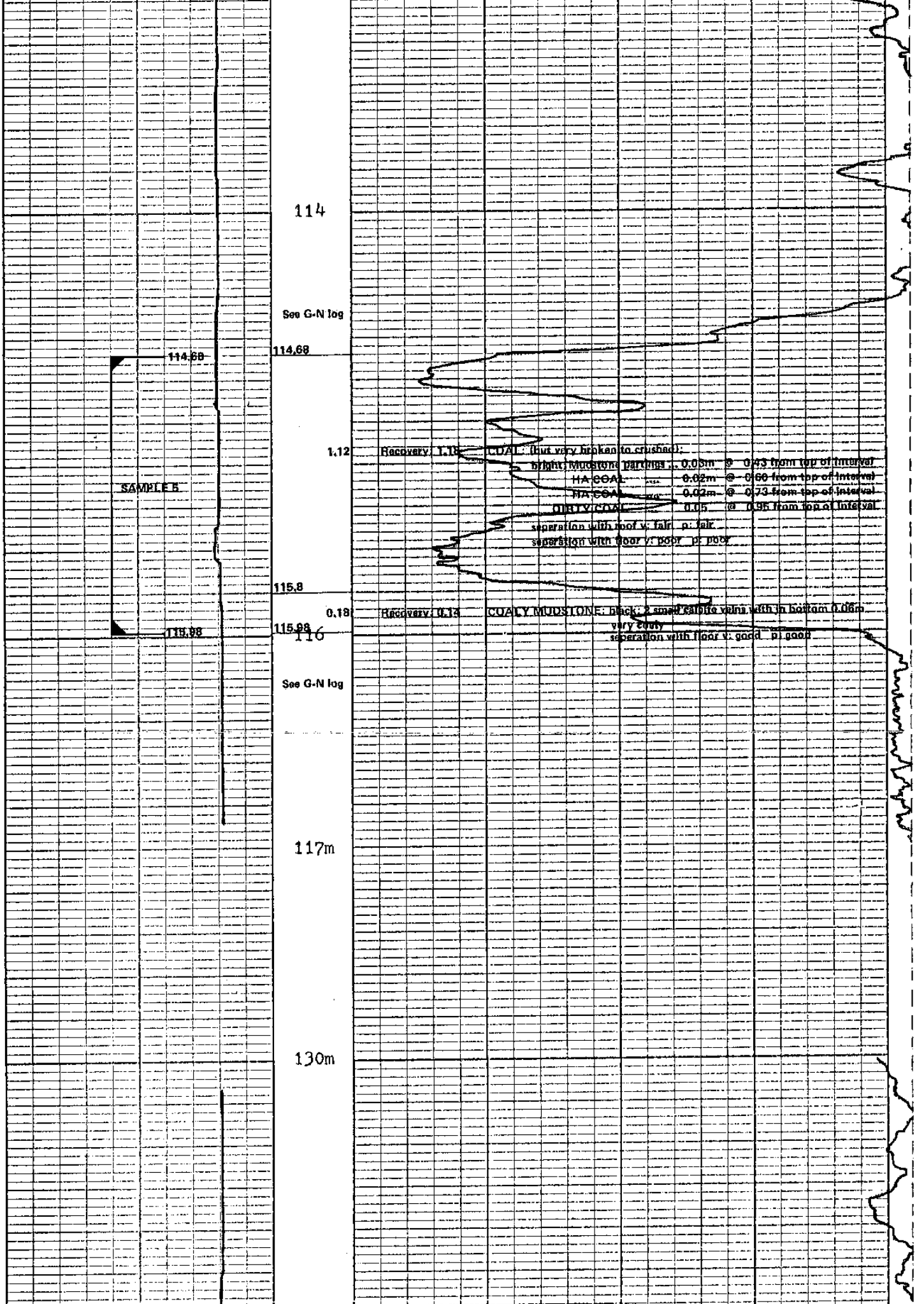
Recovery: 0.55

SHALE: coaly to carbonaceous; dark grey to black; broken;
CBA 72 % @ 45.2m

72°


Box 19
45.38
SAMPLE 2
46.04
45.38
0.66
Recovery: 0.6
COAL: dull to bright; broken to pulverized
(@base); higher ash, 46.48 - 46.60 m
below above noted higher ash unit.... minor pyrite.
seperation with roof v: ? p: ?
seperation with floor v: ? p: ?
46.046
See G-N log
47m
87m
88
See G-N log
88.32
SAMPLE 3
89.16
88.32
0.84
Recovery: 0.7
COAL: clean; bright ; hard; broken to stick;
pyrite nodules @ 0.3m from top of interval
seperation with roof v: poor p: fair
seperation with floor v: poor p: poor
89.16
0.34
MUDSTONE: very carbonaceous to coaly; dark grey to black
89.50
90m


108m
See G-N log
110.0
110
110.0
Box 50
110.2
SAMPLE 4
1.34
Recovery 1.08
COAL: bright; broken; slightly higher ash band 0.6 - 0.7m from top of recovered interval
seperation with roof v: poor p: fair
seperation with floor v: fair p: poor
111.34
111.34
See G-N log
112


114
See G-N log
114.68
114.68
1.12
Recovery: 1.12
COAL: (but very broken to crushed):
bright; Mudstone partings .. 0.03m @ 0.43 from top of interval
HA COAL 0.02m @ 0.60 from top of interval
HA COAL 0.02m @ 0.73 from top of interval
DIRTY COAL 0.05 @ 0.95 from top of interval
separation with roof v: fair p: fair
separation with floor v: poor p: poor
SAMPLE 5
115.8
0.18
Recovery: 0.14
COALY MUDSTONE: black; 2 small calcite veins with in bottom 0.06m
very coaly
separation with floor v: good p: good
115.98
116
See G-N log
117m
130m

See G-N log

131.60

131.60

0.14

131.74

COAL: bright; broken; seperation with roof v: good p: good

0.24

Recovery: 0.17

COALY / CARBONACEOUS MUDSTONE: black; dull

131.98

132

SAMPLE 6

0.40

Recovery: 0.36

COAL: bright; crushed to pulverized;
seperation with floor v: poor p: fair

132.38

132.38

1.18

Recovery: 1.04

MUDSTONE: coaly; black; coaly bands / white concretion; 0.03m coal
@ 0.12 from top of interval
CBA 74 % @ 133.2m

74°

133.56

133.56

Box 61 133.65

134

SAMPLE 7

0.94

Recovery: 0.94

COAL: bright to dull; banded; 'stick' to broken;
relatively hard;
seperation with roof v: poor p: fair
seperation with floor v: poor p: fair

134.50

134.50

0.42

73°

Recovery: 0.42

SILTSTONE / SANDSTONE: dark gray; very carbonaceous in upper 0.08m;
CBA 73 % @ 134.7m

SAMPLE 8

134.92

134.92

1.15

Recovery: 0.45

COAL: bright; broken to pulverized;
seperation with roof v: good p: good

SAMPLE 9

136

136.07

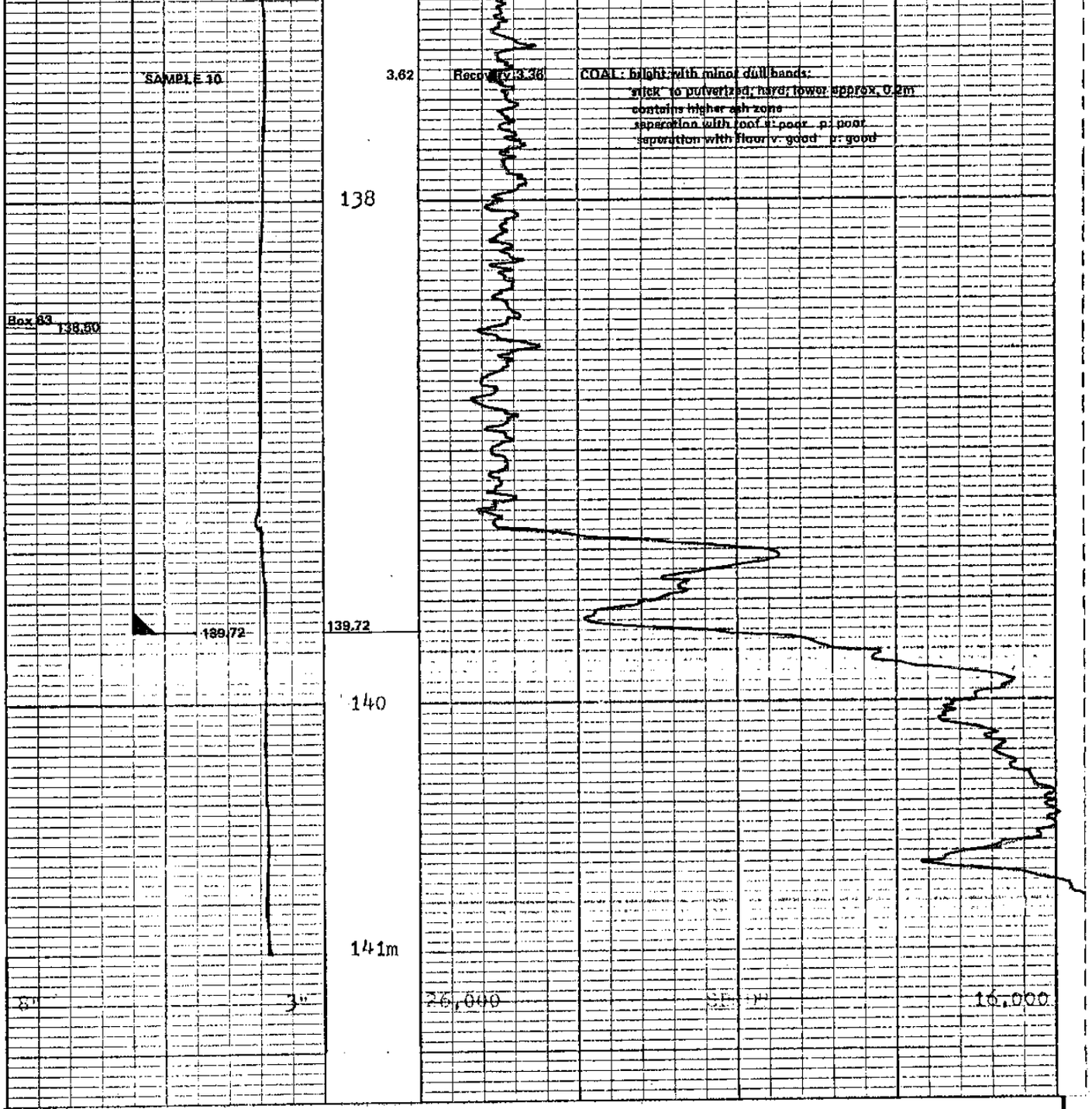
0.03

SHALY COAL: dull; black; brown streak

136.10

136.10

Box 62 136.15



8" " " dia " " 3"		26,000 SDRDU 16,000	
CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY	

BOREHOLE PP84D-02

CLIENT CROWS NEST RESOURCES

AREA PINE PASS

COUNTRY CANADA

SEAM THICKNESS LOG

MY 88003 R

COAL LITHOLOGY LOG

BOREHOLE: PP84D-04
CLIENT: CROWS NEST RESOURCES
AREA: PINE PASS
COUNTRY: CANADA
DATE LOGGED: 84 09 02

DEPTH SCALE: 1:100

1 OF 4 LOGS

SONDE TYPE: COAL COMBINATION SONDE

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

PR030
PR PINE PASS 84(1*)A*(3)

BOREHOLE DATA

	BPB	DRILLER
PERMANENT DATUM	GROUND LEVEL	
ELEVATION OF P.D.		
MEASUREMENTS FROM	G.L.	G.L.
DEPTH REACHED	98.8m	99.1m
CASING SHOE	8.8m	8.8m
BIT SIZES	1: 4 1/4 TO 8.8	2: HQ TO TD
	3: TO	4: TO
CASING SIZES	1: 4 TO 8.8	2: TO

FLUID DATA

NATURE	WATER/GS 550
S.G.	
LEVEL	
VISCOSITY	
Rm at meas. temp	
B.H.T.	

OPERATION DATA

FIRST READING	97m
LAST READING	00m
INTERVAL LOGGED	97m
UNIT-TRUCK No	46/V214
ENGINEER	A. LEBRETON
WITNESS	

592

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	T.C. SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	118B		315	Y	9	D	9	1		1.60	97	00	97	
L.S. DENSITY		5852	0336	Y	9	D	9	.3	6.45		97	00	97	
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3			97	00	97	

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

				INTERVAL TOTAL
FROM	90m	50m	36m	
TO	86m	47m	29m	
INTERVAL	4m	3m	7m	= 14m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
236	VERT		
501	DSN	1:100	

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 315 VALUE 344 @ 5" DIAM
JIG MARK SHOWN AT ABOVE VALUE ÷

JIG CAL DATE 84 08 17 JIG VALUE 4914 SDU @ g/cm³ ins. cps
JIG No 0336 SPAN NORM SDU/CPS = 6.45 ins cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

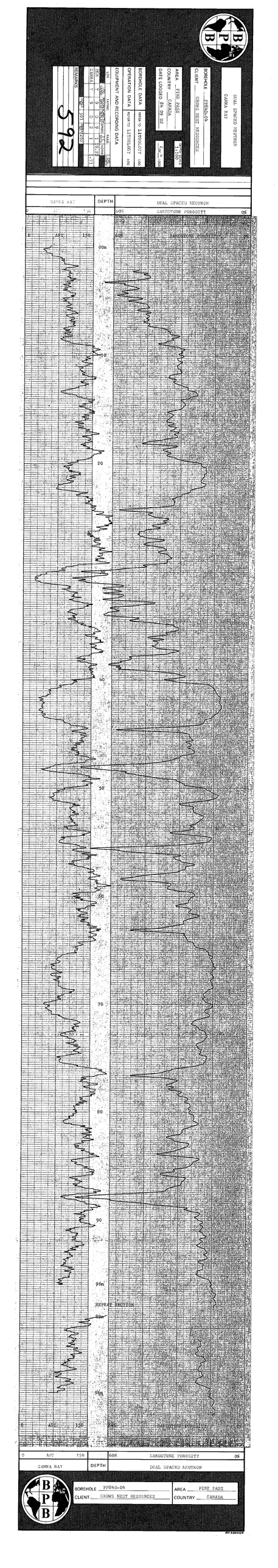
HOLE SIZE CORRECTION DATA

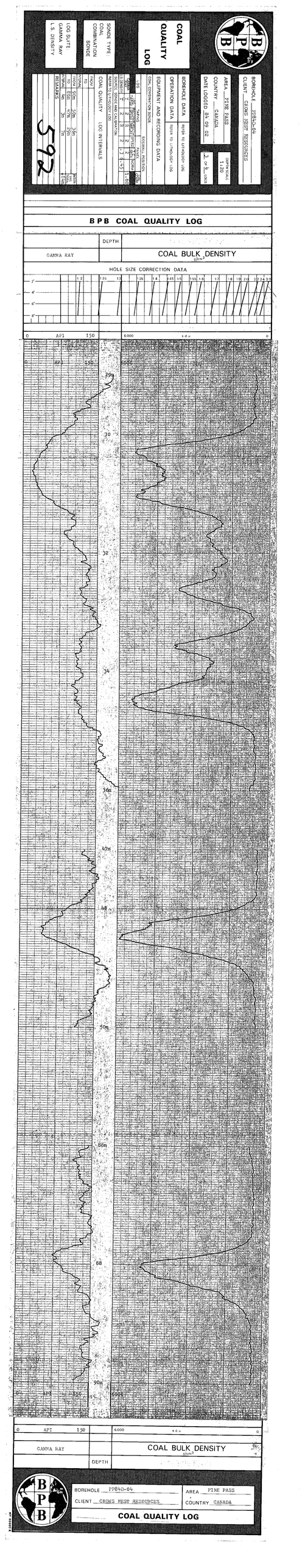
0 API 150		6000 sdu 0	7" 2"
GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

BOREHOLE: PP84D-04 AREA: PINE PASS
CLIENT: CROWS NEST RESOURCES COUNTRY: CANADA

COAL LITHOLOGY LOG

MY (1)137483 R


DUAL SPACED NEUTRON
GAMMA RAY
BOREHOLE PP840-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
DATE LOGGED 24-09-92
SCALE 1:1200
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
REMARKS
592
GAMMA RAY
DEPTH
DUAL SPACED NEUTRON
SANDSTONE POROSITY
0 API 150
60% SANDSTONE POROSITY 0%
REPEAT SECTION
DUAL SPACED NEUTRON
BOREHOLE PP840-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA


BPB
BOREHOLE PPB4D-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
DEPTH SCALE 1:240
DATE LOGGED 84 09 02
RUN No. 1
LOG
COAL QUALITY LOG
SONDE TYPE: COAL COMBINATION SONDE
LOG SUITE GAMMA RAY L.S. DENSITY
REMARKS
592
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
COAL QUALITY LOG INTERVALS
HOLE SIZE CORRECTION DATA
GAMMA RAY
DEPTH
COAL BULK DENSITY
API
g/cm³
s d u
0
150
6000
2m
30
32
34
36m
47m
48
50m
86m
88
90m
BOREHOLE PPB4D-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
COAL QUALITY LOG

BOREHOLE PP84D-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
DATE LOGGED 84 09 02
DEPTH SCALE 1:20
4 OF 4 LOGS

SEAM THICKNESS LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

BOREHOLE DATA: REFER TO LITHOLOGY LOG

OPERATION DATA: REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	TAPING: LOG TAPED	RECORD SPEED	DIRECT or REPLAY	PANEL: SPEED	TC SECS	NORM	CAL COEFF
CALIPER	Y	2	R	2	.3		
B.R. DENSITY	Y	2	R	2	.3	6.38	

SOURCE, SONDE AND CALIBRATION: REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	90m	50m	36m		
TO	86m	47m	29m		
INTERVAL	4m	3m	7m	TOTAL	14m

REMARKS: 592

B P B SEAM THICKNESS LOG

CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY

7 dia 2 | | 26,000 SBRDU 16,000

BOREHOLE PP84D-04 AREA PINE PASS
CLIENT CROWS NEST RESOURCES COUNTRY CANADA

SEAM THICKNESS LOG

MY 68005 B

B P B

SEAM THICKNESS LOG

LOG SUITE
CALIPER
BR DENSITY

SONDE TYPE
COAL COMBINATION SONDE

BOREHOLE PP84D-04
CLIENT CROWS NEST RESOURCES

AREA PINE PASS
COUNTRY CANADA
DATE LOGGED 24 SEP 92

SCALE 1:20

DEPTH REFERENCE

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

	LOG	TAPE NO.	PANEL
DEPTH			
DRILLER			
LOGGER			
BTM LOG INT			
TOP LOG INT			
CASING			
BIT			

SOURCE SONDE AND CALIBRATION — REFER TO LITHOLOGY LOG
COAL COMBINATION SONDE
SPECIMEN POSITION

SEAM THICKNESS LOG INTERVALS

SEAM NO.	FROM	TO	THICKNESS
1	29m	30m	1m
2	32m	34m	2m
3	36m	47m	11m
4	48m	50m	2m
5	86m	88m	2m

REMARKS

592

B P B SEAM THICKNESS LOG

CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2		26,000 SBRDU 16,000

29m
30
32
34
36m
47m
48
50m
86m
88
90m

CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2		26,000 SBRDU 16,000

BOREHOLE PP84D-04
CLIENT CROWS NEST RESOURCES
AREA PINE PASS
COUNTRY CANADA
SEAM THICKNESS LOG

MY88003R

COAL LITHOLOGY LOG

BOREHOLE: PP84D-05
CLIENT: CROWS NEST RESOURCES
AREA: PINE PASS
COUNTRY: CANADA
DATE LOGGED: 84 09 04

DEPTH SCALE: 1:100
1 OF 4 LOGS

SONDE TYPE: COAL COMBINATION SONDE

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

BOREHOLE DATA

PERMANENT DATUM	GROUND LEVEL			
ELEVATION OF P D				
MEASUREMENTS FROM	BPB: G.L.		DRILLER: G.L.	
DEPTH REACHED	116.9m		117.4m	
CASING SHOE				
BIT SIZES	1: 4 1/4 TO 4.6	3: TO	2: HQ TO TD	4: TO
CASING SIZES	1: 4 TO 4.6		2: TO	

FLUID DATA

NATURE	WATER/GS 550
S.G	
LEVEL	
VISCOSITY	
Rm at meas temp	
BHT	

OPERATION DATA

FIRST READING	115m
LAST READING	00m
INTERVAL LOGGED	115m
UNIT-TRUCK No.	46/V214
ENGINEER	A. LEBRETON
WITNESS	

592

PR030
PR - Pine Pass 84(1)A *(3)

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	T.C. SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	118B		315	Y	9	D	9	1		1.60	115	00	115	
L.S. DENSITY	SIDEWALL POSITION	5852	0336	Y	9	D	9	.3	6.45		115	00	115	
CALIPER				Y	9	D	9	.3			115	00	115	

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

									INTERVAL TOTAL
FROM	115m	94m	77m	69m	54m	46m	36m	14m	
TO	111m	87m	71m	59m	50m	42m	32m	10m	
INTERVAL	4m	7m	6m	10m	4m	4m	4m	4m	= 43m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
501	DSN	1:100	
236	VERT		

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 315 VALUE 344 @ 5" DIAM
JIG MARK SHOWN AT ABOVE VALUE ÷
JIG CAL DATE 84 08 17 JIG VALUE 4914 SDU @ g/cm³ ins. cps
JIG No 0336 SPAN NORM SDU/CPS = 6.45 ins. cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

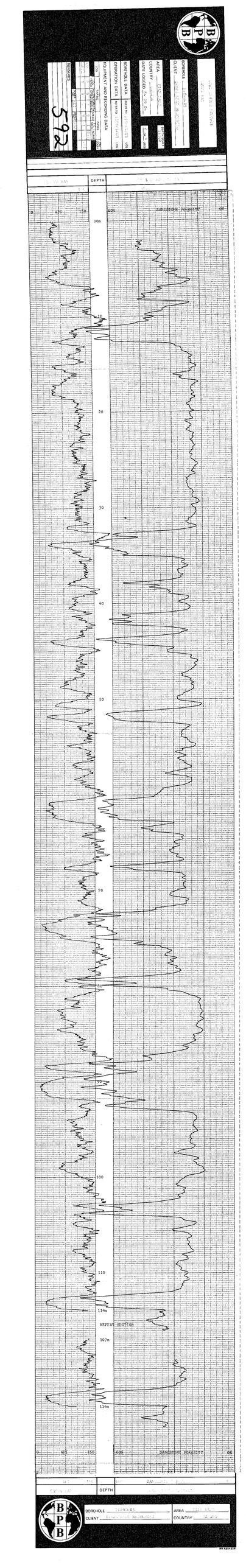
HOLE SIZE CORRECTION DATA

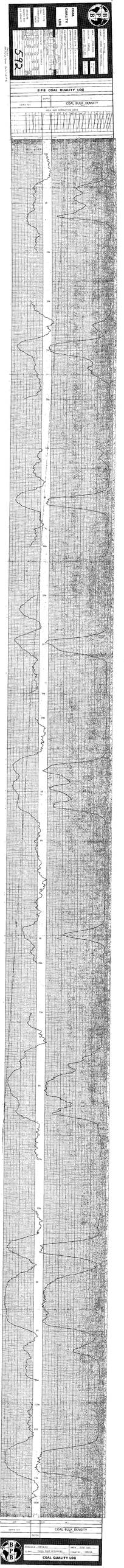
0 API 150		6000 sdu 0	7" 2"
GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

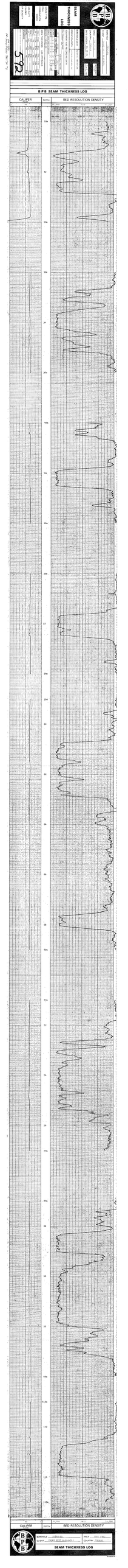
BOREHOLE: PP84D-05 AREA: PINE PASS
CLIENT: CROWS NEST RESOURCES COUNTRY: CANADA

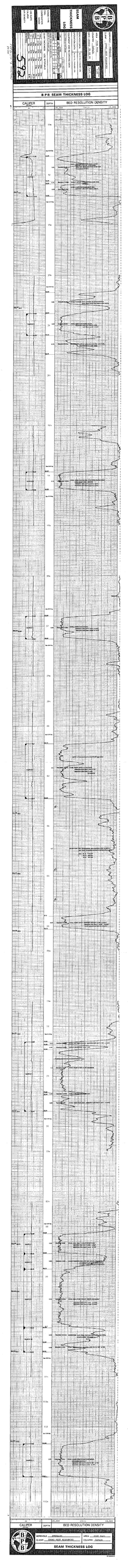
COAL LITHOLOGY LOG

MY (1)137483 R


BPB
BOREHOLE
CLIENT
AREA
COUNTRY
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
REMARKS
5782
DEPTH
GAMMA RAY API
SANDSTONE POROSITY
0
150
60%
0%
00m
10
20
30
40
50
60
70
80
90
100
110
114m
REPEAT SECTION
107m
114m


COAL QUALITY LOG
COAL BULK DENSITY
RPS COAL QUALITY LOG
COAL BULK DENSITY
COAL QUALITY LOG


BPB SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY
SEAM THICKNESS LOG


BPB
SEAM THICKNESS LOG
BOREHOLE
DATE
SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY
SEAM THICKNESS LOG

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report Sept 15/84

Company CROWS NEST RESOURCES LTD Land District PEACE RIVER

Coal Map Number 93 O/9 Licence Number CL 6262

1. Number of Drillhole PP84D-01 Bags of Cement 40

2. Surface elevation 746.7m

3. Type (Vertical, diamond, rotary, size etc. DIAMOND, HQ, -67° at 251° Az

4. Drilled by: Name of Contractor: FRANK KERKOFF (DRILLER/FOREMAN)

Name of Exploration Company TONTO DRILLING COMPANY

5. Date of Completion: August 18/84

6. Date of Sealing: September 5/84

7. Sealed by: Name of Contractor: B. Berkley

Name of Exploration Company DANA CONTRACTING LTD.

8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?

(b) If so, give details and location: NO

9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES

(b) If no, give reasons and details of variation:

10. (a) Was the sealing effective? Yes

(b) Details of any tests carried out:

11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature: B. C. Berkley

Designation: FOREMAN / DANA CONTRACTING LTD

Date: Sept 5/84

Countersignature: Alan White

Designation: Sept. 15/84

Date: Geologist

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report Sept. 15/84

Company CROWS NEST RESOURCES LTD Land District PEACE RIVER

Coal Map Number 930/9 Licence Number CL 6262

1. Number of Drillhole PPBHD-02 Bags of Cement 12
2. Surface elevation 750.5m
3. Type (Vertical, diamond, rotary, size etc. DIAMOND, HQ, -49° at
4. Drilled by: Name of Contractor: FRANK KERKOFF (DRILLER / FOREMAN)
   Name of Exploration Company TEXTO DRILLING COMPANY
5. Date of Completion: August 25, 1984
6. Date of Sealing: September 5, 1984
7. Sealed by: Name of Contractor: B. Berkley
   Name of Exploration Company DANA CONTRACTING LTD.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location: 1.5m H.W.C. CASING AND CASING SHOE from 10.3m to 11.8m from collar

9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES
   (b) If no, give reasons and details of variation: HOLE HAD CAVED IN AT 15 FT. SEALED FROM THAT POINT TO SURFACE.

10. (a) Was the sealing effective? YES
    (b) Details of any tests carried out:

11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature: B. C. Berkley

Designation: FOREMAN / DANA CONTRACTING

Date: Sept 5/84

Countersignature: Alan White

Designation: Geologist

Date: September 15/84

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report Sept. 15/84

Company CROWS NEST RESOURCES LTD Land District PEACE RIVER

Coal Map Number 930/9 Licence Number C.L. 6262

1. Number of Drillhole PP84D-03 Bags of Cement 12
2. Surface elevation 807.3m
3. Type (Vertical, diamond, rotary, size etc: DIAMOND, HQ, -63° at 267° Az
4. Drilled by: Name of Contractor: FRANK KERKOFF (DRILLER/FOREMAN)

   Name of Exploration Company TONTO DRILLING COMPANY
5. Date of Completion: August 30, 1984
6. Date of Sealing: September 6, 1984
7. Sealed by: Name of Contractor: Brian Berkley

   Name of Exploration Company DANA CONTRACTING LTD.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?

   (b) If so, give details and location: NO
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions?

   (b) If no, give reasons and details of variation: HOLE CAVED IN AT 12 FT. SEALED FROM THIS POINT TO SURFACE.
10. (a) Was the sealing effective? YES.

    (b) Details of any tests carried out:
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

    Signature: B. C. Berkley

    Designation: FOREMAN / DANA CONTRACTING

    Date: Sept. 6/84

    Countersignature: Alan White

    Designation: Geologist

    Date: Sept. 15/84

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report Sept. 15/84

Company CROWS NEST RESOURCES LTD. Land District PEACE RIVER

Coal Map Number 930/9 Licence Number CL 626R

1. Number of Drillhole PPGH-D-04 Bags of Cement 18
2. Surface elevation 922.0 m
3. Type (Vertical, diamond, rotary, size etc. DIAMOND, HQ, -52° at 245° Az
4. Drilled by: Name of Contractor: FRANK KERKOFF (DRILLER/FOREMAN)
   Name of Exploration Company TONTO DRILLING COMPANY
5. Date of Completion: Sept. 2, 1984
6. Date of Sealing: Sept. 6, 1984
7. Sealed by: Name of Contractor: B. Berkley
   Name of Exploration Company DANA CONTRACTING LTD.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location: NO
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES
   (b) If no, give reasons and details of variation: CAVED IN AT 18 FT. SEALED FROM THIS POINT TO SURFACE.
10. (a) Was the sealing effective? YES
    (b) Details of any tests carried out:
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature: B. C. Berkley

Designation: FOREMAN/DANA CONTRACTING

Date: Sept 6/84

Countersignature: Alan White

Designation: Geologist

Date: Sept. 15/84

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report Sept. 15/84

Company CROWS NEST RESOURCES LTD Land District PEACE RIVER

Coal Map Number 93 O/9 Licence Number CL 6263

1. Number of Drillhole PPR4D-05 Bags of Cement 40
2. Surface elevation 1042m
3. Type (Vertical, diamond, rotary, size etc. DIAMOND, HQ, -45° at 240° Az
4. Drilled by: Name of Contractor: FRANK KERKOFF (DRILLER/FOREMAN)
   Name of Exploration Company TONTO DRILLING COMPANY
5. Date of Completion: September 4, 1984
6. Date of Sealing: September 7, 1984
7. Sealed by: Name of Contractor: Brian Berkley
   Name of Exploration Company DANA CONTRACTING LTD.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location: NO
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES
   (b) If no, give reasons and details of variation:
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out:
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature: R. C. Berkley

Designation: FOREMAN/DANA CONTRACTING

Date: Sept 7/84

Countersignature: Alan White

Designation: Geologist

Date: Sept. 15/84

HOLE DEVIATION DATA

PINE PASS

HOLE ID	DEPTH	AZIMUTH	INCLINATION
PP84D-01	5.00	325.00	66.61
	10.00	287.00	66.44
	20.00	251.00	66.28
	30.00	252.00	66.39
	40.00	250.00	66.82
	50.00	250.00	67.18
	60.00	249.00	66.91
	70.00	251.00	66.64
	80.00	251.00	67.07
PP84D-02	5.00	24.00	49.38
	10.00	295.00	48.04
	20.00	244.00	47.43
	30.00	282.00	47.70
	40.00	285.00	47.05
	50.00	285.00	47.41
	60.00	282.00	47.84
	70.00	281.00	48.19
	80.00	278.00	48.70
	90.00	278.00	48.73
	100.00	279.00	48.75
	110.00	280.00	48.77
	120.00	281.00	48.77
	130.00	282.00	48.81
	140.00	280.00	48.83
PP84D-03	5.00	270.00	62.65
	10.00	269.00	62.78
	20.00	267.00	62.60
	30.00	266.00	62.44
	40.00	265.00	62.64
	50.00	265.00	62.81
	60.00	264.00	62.61
	70.00	264.00	62.63
	80.00	263.00	63.00
	90.00	264.00	63.21
	100.00	264.00	63.42
PP84D-04	5.00	275.00	50.81
	10.00	270.00	50.87
	20.00	267.00	50.95
	30.00	246.00	51.00
	40.00	245.00	51.16
	50.00	242.00	51.16
	60.00	243.00	51.36
	70.00	245.00	51.35
	80.00	245.00	51.13

HOLE DEVIATION DATA

PINE PASS

HOLE ID	DEPTH	AZIMUTH	INCLINATION
PP84D-04	90.00	246.00	51.48
PP84D-05	5.00	200.00	49.41
	10.00	215.00	49.38
	20.00	242.00	49.11
	30.00	241.00	49.30
	40.00	241.00	49.73
	50.00	242.00	49.75
	60.00	244.00	49.78
	70.00	243.00	49.96
	80.00	243.00	50.18
	90.00	242.00	50.38
	100.00	240.00	50.54
	110.00	241.00	50.36

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD
ATTENTION	B. RYAN
PROJECT	PINE PASS PROJECT
FILE NO.	26879
DATE	October 17/84
PAGE	1 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-01													
1 9.68-12.52	Raw Coal			As Received	6.85	-		10.66		.36			
				Air Dried	-	2.65		11.14		.38			
				Dry Basis	-	-		11.44		.39			
2 22.80-24.20	Raw Coal			As Received	4.27	-		25.09		.69			
				Air Dried	-	.94		25.96		.71			
				Dry Basis	-	-		26.21		.72			
3 24.20-25.32	Raw Coal			As Received	4.85	-		66.57		.30			
				Air Dried	-	1.21		69.12		.31			
				Dry Basis	-	-		69.97		.31			
4 29.70-30.00	Raw Coal			As Received	4.00	-		9.29		1.01			
				Air Dried	-	1.40		9.54		1.04			
				Dry Basis	-	-		9.68		1.05			
5 37.64-39.68	Raw Coal			As Received	3.22	-		50.01		.35			
				Air Dried	-	.97		51.17		.36			
				Dry Basis	-	-		51.67		.36			
6 39.68-40.34	Raw Coal			As Received	9.12	-		18.76		.42			
				Air Dried	-	.81		20.48		.46			
				Dry Basis	-	-		20.65		.46			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST: _____

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	2 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-01													
7 40.34-41.76	Raw Coal			As Received	4.65	-		60.72		.32			
				Air Dried	-	1.09		62.99		.33			
				Dry Basis	-	-		63.68		.33			
8 66.04-66.35	Raw Coal			As Received	1.93	-		16.49		.55			
				Air Dried	-	.59		16.72		.56			
				Dry Basis	-	-		16.82		.56			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	3 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-02													
1 40.16-41.68	Raw Coal			As Received	2.98	-		16.73		.50			
				Air Dried	-	.65		17.15		.51			
				Dry Basis	-	-		17.24		.51			
2 45.36-46.04	Raw Coal			As Received	7.36	-		59.16		.26			
				Air Dried	-	1.22		63.08		.28			
				Dry Basis	-	-		63.86		.28			
3 88.32-89.16	Raw Coal			As Received	4.54	-		11.77		.94			
				Air Dried	-	.65		12.25		.98			
				Dry Basis	-	-		12.33		.99			
4 110.0-111.34	Raw Coal			As Received	2.19	-		10.91		.67			
				Air Dried	-	.55		11.09		.68			
				Dry Basis	-	-		11.15		.68			
5 114.68-115.98	Raw Coal			As Received	2.55	-		36.72		.53			
				Air Dried	-	.61		37.45		.54			
				Dry Basis	-	-		37.68		.54			
6 131.60-132.88	Raw Coal			As Received	6.71	-		45.28		.45			
				Air Dried	-	.97		48.07		.48			
				Dry Basis	-	-		48.54		.48			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	4 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-02													
7 133.56-134.50	Raw Coal			As Received	4.86	-		9.31		.38			
				Air Dried	-	.55		9.73		.40			
				Dry Basis	-	-		9.78		.40			
8 134.50-134.92	Raw Coal			As Received	1.23	-		88.72		.07			
				Air Dried	-	.66		89.23		.07			
				Dry Basis	-	-		89.82		.07			
9 134.92-136.10	Raw Coal			As Received	6.41	-		13.06		.32			
				Air Dried	-	.81		13.84		.34			
				Dry Basis	-	-		13.95		.34			
10 136.10-139.72	Raw Coal			As Received	5.46	-		7.13		.31			
				Air Dried	-	.96		7.47		.32			
				Dry Basis	-	-		7.54		.32			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY: CROWSNEST RESOURCES LTD
ATTENTION: B. RYAN
PROJECT: PINE PASS PROJECT

FILE NO. 26879
DATE October 17/84

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-03													
1 24.32-27.18	Raw Coal			As Received	7.61	-		4.50		.40			
				Air Dried	-	1.15		4.81		.43			
				Dry Basis	-	-		4.87		.44			
2 27.18-27.20	Raw Coal			As Received	3.10	-		68.97		.18			
				Air Dried	-	1.11		70.39		.18			
				Dry Basis	-	-		71.18		.18			
3 36.50-38.00	Raw Coal			As Received	15.72	-		26.18		.59			
				Air Dried	-	1.79		30.51		.69			
				Dry Basis	-	-		31.07		.70			
4 42.22-43.02	Raw Coal			As Received	5.53	-		19.41		.52			
				Air Dried	-	.83		20.38		.55			
				Dry Basis	-	-		20.55		.55			
5 47.68-48.60	Raw Coal			As Received	3.65	-		31.91		.40			
				Air Dried	-	.94		32.81		.41			
				Dry Basis	-	-		33.12		.41			
6 49.26-49.92	Raw Coal			As Received	8.02	-		31.01		.37			
				Air Dried	-	1.10		33.34		.40			
				Dry Basis	-	-		33.71		.40			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	6 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-03													
7	Raw Coal			As Received	14.60	-		18.92		.47			
71.35-71.50				Air Dried	-	1.08		21.92		.54			
				Dry Basis	-	-		22.16		.55			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	7 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-04													
1 32.8-34.30	Raw Coal			As Received	5.76	-		4.65		.62			
				Air Dried	-	1.19		4.88		.65			
				Dry Basis	-	-		4.94		.66			
2 44.7-44.8	Raw Coal			As Received	2.17	-		4.89		1.17			
				Air Dried	-	.81		4.96		1.19			
				Dry Basis	-	-		5.00		1.20			
3 87.78-88.22	Raw Coal			As Received	2.27	-		25.52		.62			
				Air Dried	-	.81		25.90		.63			
				Dry Basis	-	-		26.11		.64			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST:

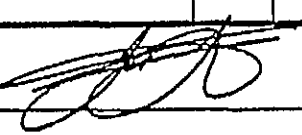
LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	26879
ATTENTION	B. RYAN	DATE	October 17/84
PROJECT	PINE PASS PROJECT	PAGE	8 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-05													
1	Raw Coal			As Received	8.47	-		32.11		.67			
11.26-12.84				Air Dried	-	.98		34.74		.73			
				Dry Basis	-	-		35.08		.74			
2	Raw Coal			As Received	2.95	-		12.48		1.13			
33.54-34.40				Air Dried	-	.94		12.74		1.15			
				Dry Basis	-	-		12.86		1.16			
3	Raw Coal			As Received	3.81	-		5.33		.81			
43.84-44.50				Air Dried	-	.84		5.49		.83			
				Dry Basis	-	-		5.54		.84			
4	Raw Coal			As Received	6.28	-		4.98		.78			
51.60-52.52				Air Dried	-	.90		5.27		.83			
				Dry Basis	-	-		5.32		.84			
5	Raw Coal			As Received	9.16	-		9.92		.60			
60.7-62.9				Air Dried	-	.88		10.82		.65			
				Dry Basis	-	-		10.92		.66			
6	Raw Coal			As Received	8.30	-		25.13		.52			
72.62-75.40				Air Dried	-	1.16		27.09		.56			
				Dry Basis	-	-		27.41		.57			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST: 

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY: CROWSNEST RESOURCES LTD
ATTENTION: B. RYAN
PROJECT: PINE PASS PROJECT

FILE NO. 26879
DATE October 17/84
PAGE 9 of 9

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
Hole PP-84D-05													
7	Raw Coal			As Received	4.49	-		3.14		.61			
88.28-89.08				Air Dried	-	1.08		3.26		.63			
				Dry Basis	-	-		3.30		.64			
8	Raw Coal			As Received	3.39	-		73.97		.19			
89.08-89.70				Air Dried	-	1.54		75.39		.19			
				Dry Basis	-	-		76.57		.19			
9	Raw Coal			As Received	5.73	-		8.04		.57			
89.70-92.04				Air Dried	-	1.05		8.44		.60			
				Dry Basis	-	-		8.53		.61			
10	Raw Coal			As Received	2.80	-		64.88		.67			
92.04-93.02				Air Dried	-	1.47		65.77		.68			
				Dry Basis	-	-		66.75		.69			
11	Raw Coal			As Received	15.80	-		8.07		.59			
112.68-114.0				Air Dried	-	1.28		9.46		.69			
				Dry Basis	-	-		9.58		.70			

PURCHASE ORDER NUMBER: # CN 24013

ANALYST: _____

CROWS NEST RESOURCES LIMITED

NOMAN CREEK PROJECT

Co-ordinate List of 1984 Survey Stations & Drill Holes

Survey Control established by Donald E. Watson B.C.L.S. from January 1980 to October 1981

Horizontal Datum is the U.T.M. Zone 10 grid and derived from Geodetic Control Stations "BICKFORD EAST" and "WOLF"

Vertical Datum is based on Geodetic bench marks 498E = 647.24^{m} and 67-C-060= 665.79^{m} and are derived by reciprical trigonometric levelling

This 12th day of Sept. 84

D. E. Watson

Donald E. Watson B.C.L.S.

Watson Survey Limited
1524 - 56th Street
Delta, B.C.
V4L 2A8

File #4306

NOMAN CREEK

"1984 LIST OF SURVEY STATIONS"

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3683	75cm Iron Pin	6,162,505.83	540,544.12	1036.53	1036.8
3684	Nail in 0.30 Ø Stump	6,162,503.30	540,551.07	1036.53	1036.1
3685	Nail in 0.30 Ø Stump	6,162,512.16	540,547.63	1036.45	1036.0
3686	(PP84D-05) Nail in Hub	6,162,568.97	540,493.56	1042.13	1042.2
3687	Nail in 0.20 Ø Stump	6,162,559.86	540,484.12	1044.89	1044.0
3688	Nail in 0.30 Ø Stump	6,162,561,71	540,511.46	1041.41	1040.7
3689	(PP84D-04) 75cm Iron Pin	6,161,833.58	541,054.96	922.04	922.0
3690	20cm Spike	6,161,822.87	541,058.25	922.76	922.9
3691	Nail in 0.30 Ø Pine	6,161,844.47	541,071.15	921.66	921.
3692	20cm Spike	6,161,946.72	541,743.26	807.06	807.
3693	(PP84D-03) 75cm Iron Pin	6,161,946.82	541,738.53	807.34	807.
3694	Nail in 0.40 Ø Poplar	6,161,962.85	541,740.76	810.94	809.
3695	20cm Spike	6,161,792.09	541,857.75	746.63	746.
3696	(PP84D-01) 75cm Iron Pin	6,161,817.40	541,872.56	746.71	746.
3697	Nail in 0.30 Ø Pine	6,161,813.62	541,879.89	747.39	746.2
3698	(PP84D-02) 75cm Iron Pin	6,161,780.53	541,803.30	750.50	750.5
3700	Nail in 0.40 Ø Pine	6,161,788.08	541,816.30	751.98	750.7
3701	Nail & Tag in 0.30 Ø Spruce	6,161,774.93	541,803.83	751.84	750.5

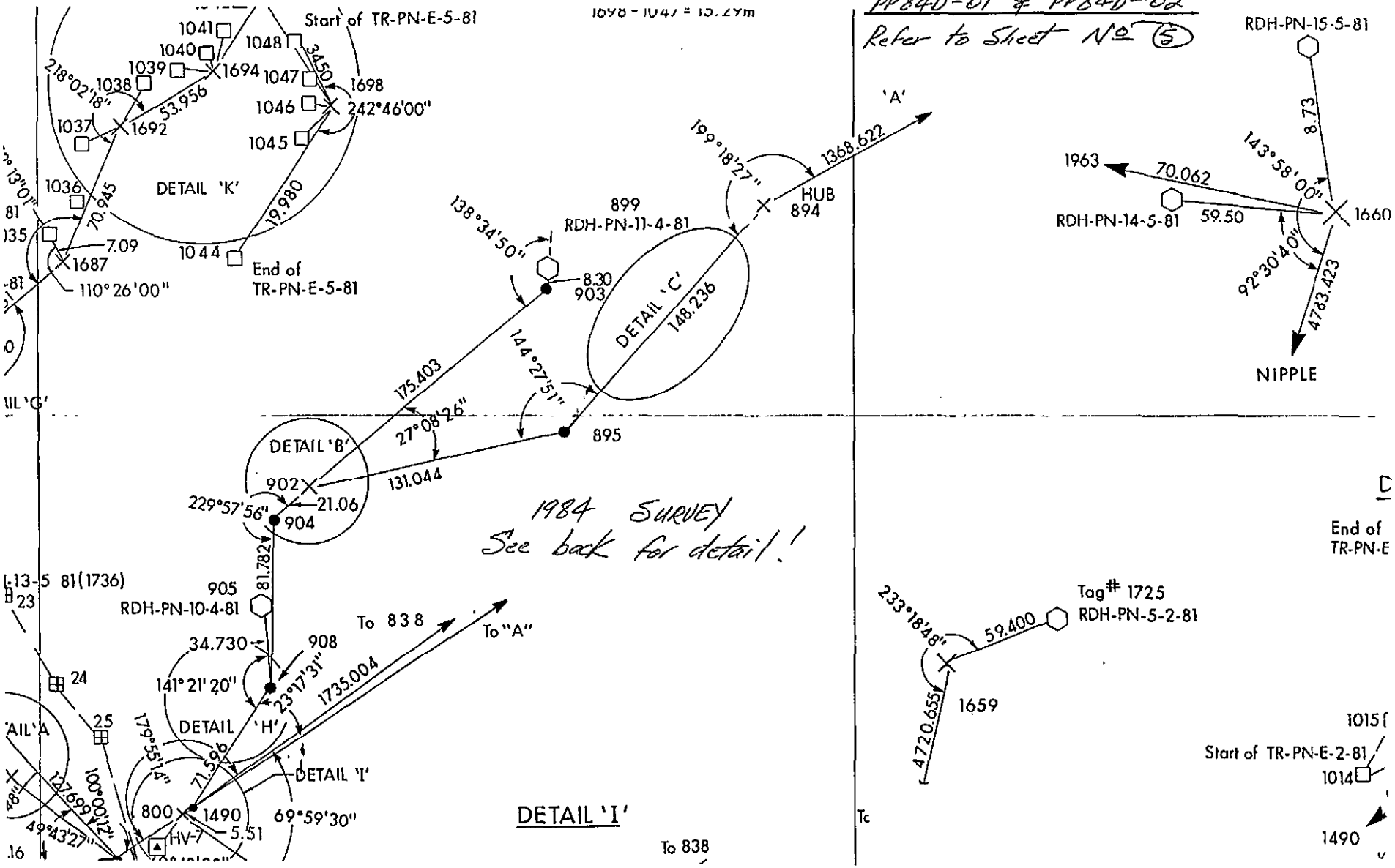
NOMAN CREEK

"1984 LIST OF DRILL HOLES"

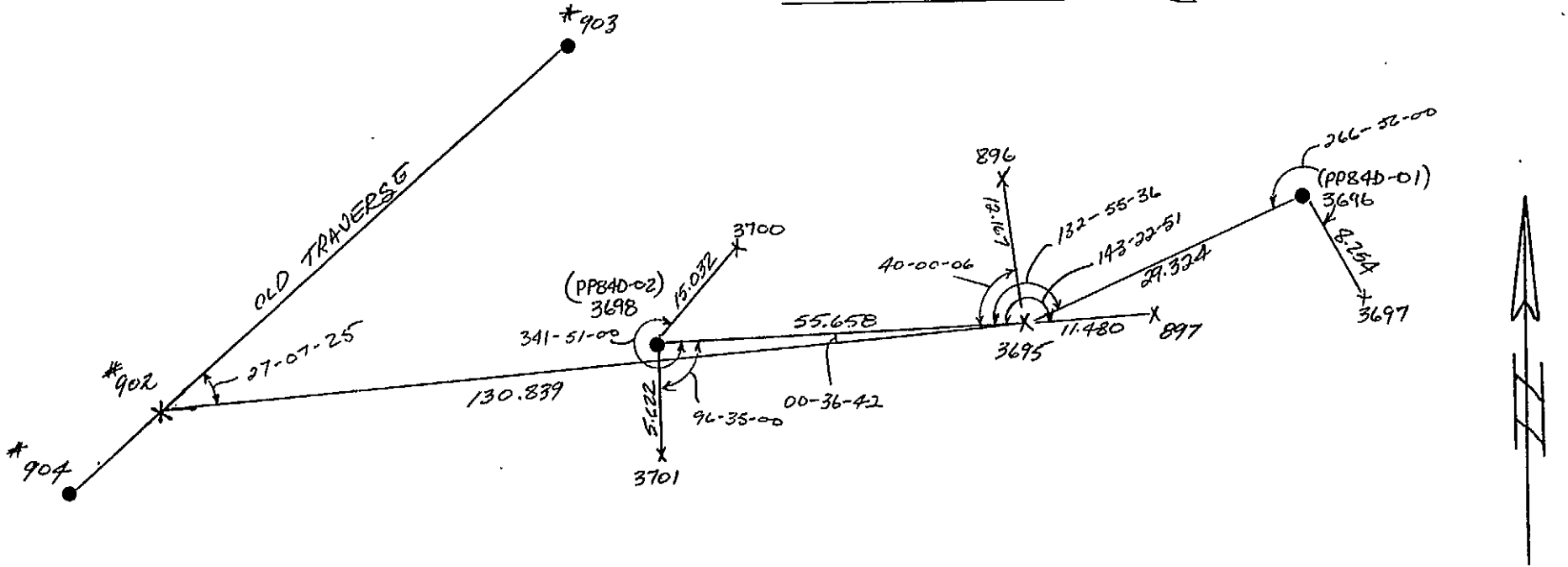
DRILL HOLE #	DESCRIPTION	NORTHINGS	EASTINGS	TAG ELV.	GROUND ELV.
PP84D-01	Tag 3696 75cm Iron Pin	6,161,817.40	541,872.56	746.71	746.7
PP84D-02	Tag 3698 75cm Iron Pin	6,161,780.53	541,803.30	750.50	750.5
PP84D-03	Tag 3693 75cm Iron Pin	6,161,946.82	541,738.53	807.34	807.3
PP84D-04	Tag 3689 75cm Iron Pin	6,161,833.58	541,054.96	922.04	922.0
PP84D-05	Tag 3686 Nail in Hub	6,162,568.97	540,493.56	1042.13	1042.2

REFERENCE - STATIONS

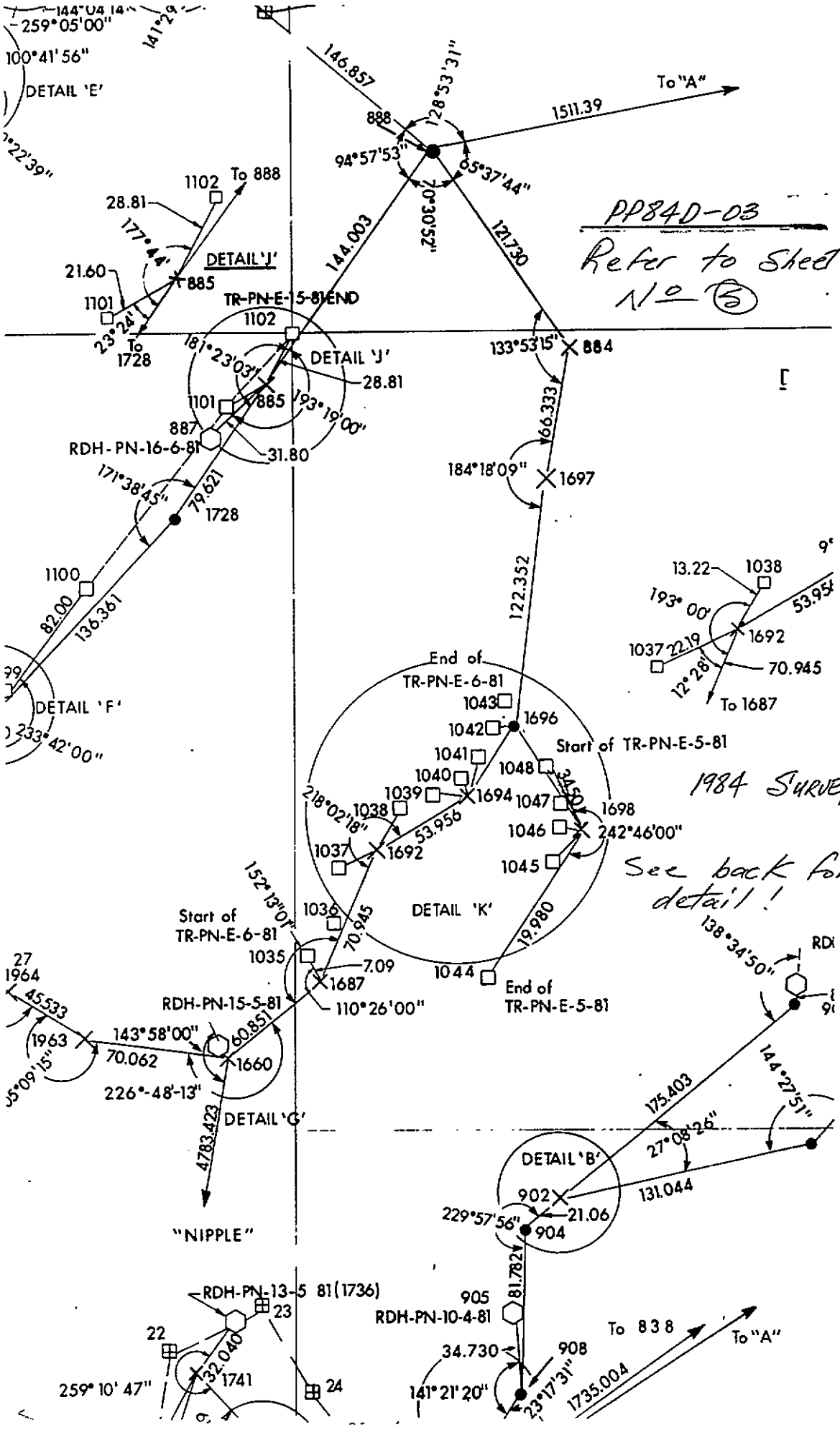
STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3683	75cm Iron Pin			1036.53	1036.8	6,162,505.83	540,544.12	
	Tag #3685 in 0.30 Ø Stump	29-01-57	7.234	1036.45	1036.0	6,162,512.16	540,547.63	
	Tag #3684 in 0.30 Ø Stump	110-02-58	7.398	1036.53	1036.1	6,162,503.30	540,551.07	
3686	(PP84D-05) Nail in Hub			1042.13	1042.2	6,162,568.97	540,493.56	
	Tag #3687 in 0.20 Ø Stump	226-00-15	13.107	1044.89	1044.0	6,162,559.86	540,484.12	
	Tag #3688 in 0.30 Ø Stump	112-03-45	19.318	1041.41	1040.7	6,162,561,71	540,511.46	
3690	20cm Spike			922.76	922.9	6,161,822.87	541,058.25	
	Tag #3689 (PP84D-04) 75cm Iron Pin	342-56-44	11.206	922.04	922.0	6,161,833.58	541,054.96	
	Tag #3691 in 0.30 Ø Pine	30-51-39	25.161	921.66	921.3	6,161,844.47	541,071.15	
3692	20cm Spike			807.06	807.2	6,161,946.72	541,743.26	
	Tag #3693 (PP84D-03) 75cm Iron Pin	271-15-25	4.738	807.34	807.3	6,161,946.82	541,738.53	
	Tag #3694 in 0.40 Ø Poplar	351-10-07	16.331	810.94	809.5	6,161,962.85	541,740.76	
3695	20cm Spike			746.63	746.8	6,161,792.09	541,857.75	
	Tag 896 in 0.25 Ø Pine	297-24-12	12.167	750.01	749.0	6,161,797.78	541,846.94	
	Tag 897 in 0.40 Ø Spruce	40-46-57	11.480	748.00	747.6	6,161,800.90	541,865.29	
3696	(PP84D-01) 75cm Iron Pin			746.71	746.7	6,161,817.40	541,872.56	
	Tag 3697 in 0.30 Ø Pine	117-15-42	8.254	747.39	746.2	6,161,813.62	541,879.89	
3698	(PP84D-02) 75cm Iron Pin			750.50	750.5	6,161,780.53	541,803.30	
	Tag 3700 in 0.40 Ø Pine	59-51-48	15.032	751.98	750.7	6,161,788.08	541,816.30	
	Tag 3701 in 0.30 Ø Spruce	174-35-48	5.622	751.84	750.5	6,161,774.93	541,803.83	


PP840-01 & PP840-02
Refer to Sheet No. 6
Start of TR-PN-E-5-81
1041
1040
1039
1038
1037
1036
1035
1048
1047
1046
1045
1044
1694
1692
1687
1698
218°02'18"
53.956
242°46'00"
34.501
DETAIL 'K'
70.945
19.980
7.09
110°26'00"
End of
TR-PN-E-5-81
138°34'50"
899
RDH-PN-11-4-81
8.30
903
199°18'27"
1368.622
HUB
894
'A'
DETAIL 'C'
148.236
144°27'51"
175.403
27°08'26"
895
DETAIL 'B'
902
21.06
229°57'56"
904
131.044
81.782
905
RDH-PN-10-4-81
34.730
908
141°21'20"
23°17'31"
1735.004
To 838
To "A"
DETAIL 'H'
DETAIL 'I'
179°55'14"
71.596
100°00'12"
127.699
49°43'27"
800
1490
HV-7
5.51
69°59'30"
DETAIL 'I'
To 838
1984 SURVEY
See back for detail!
RDH-PN-15-5-81
8.73
143°58'00"
1963
70.062
RDH-PN-14-5-81
59.50
1660
92°30'40"
4783.423
NIPPLE
End of
TR-PN-E
Tag# 1725
RDH-PN-5-2-81
233°18'48"
59.400
1659
4720.655
Start of TR-PN-E-2-81
1014
1490
1015
24
25
23
13-5 81(1736)
'AIL 'A
.16

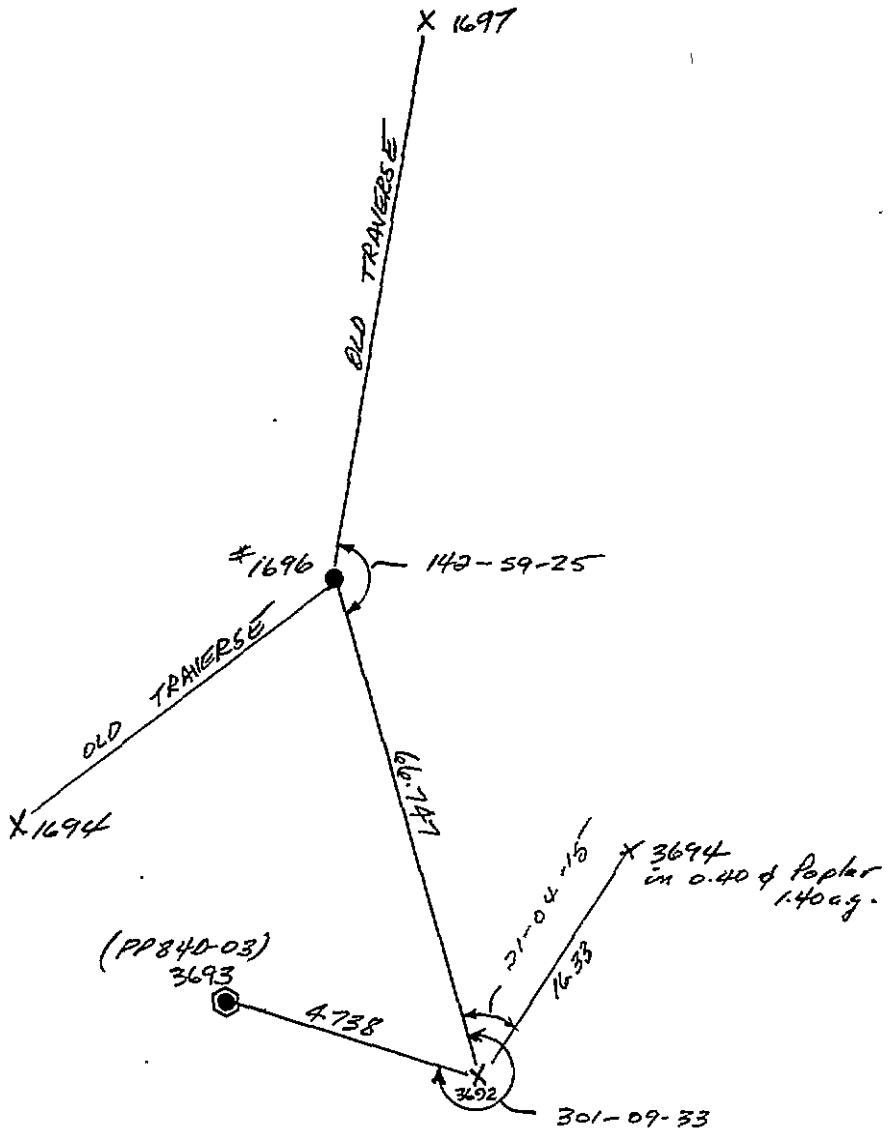
PP84D-02 & PP84D-01



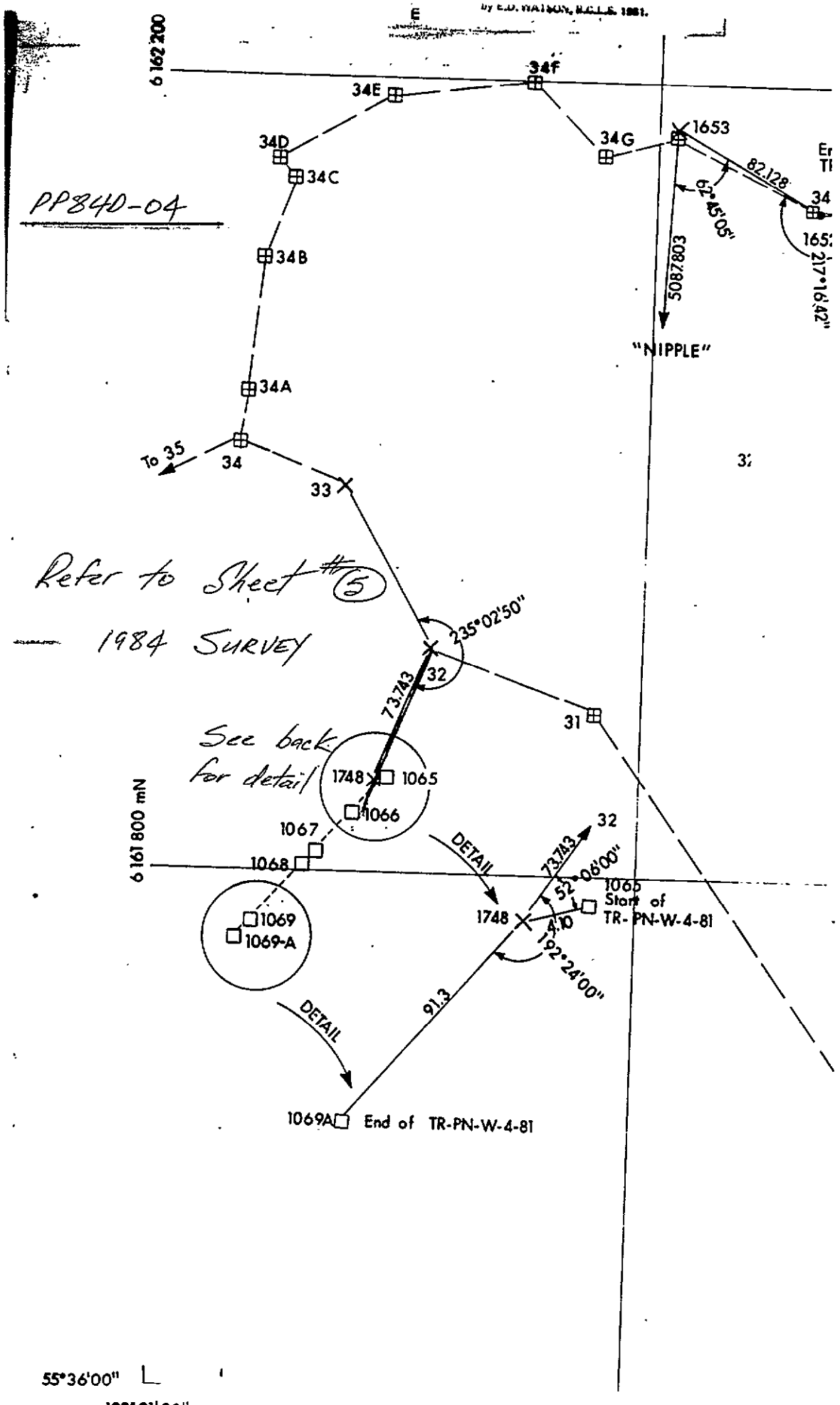
STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
902	Old 20cm Spike			760.47	760.5	6,161,763.55	541,730.06	
		77-24-06	130.839					
3695	20cm Spike			746.63	746.8	6,161,792.09	541,857.75	
		297-24-12	12.167					
	Tag 896 in 0.25 Ø Pine			750.01	749.0	6,161,797.78	541,846.94	
		40-46-57	11.480					
	Tag 897 in 0.40 Ø Spruce			748.00	747.6	6,161,800.90	541,865.29	
3695	20cm Spike			746.63	746.8	6,161,792.09	541,857.75	
		258-00-48	55.658					
3698	(PP84D-02) 75cm Iron Pin			750.50	750.5	6,161,780.53	541,803.30	
		59-51-48	15.032					
	Tag 3700 in 0.40 Ø Pine			751.98	750.7	6,161,788.08	541,816.30	
		174-35-48	5.622					
	Tag 3701 in 0.30 Ø Spruce			751.84	750.5	6,161,774.93	541,803.83	
3695	20cm Spike			746.63	746.8	6,161,792.09	541,857.75	
		30-19-42	29.324					
3696	(PP84D-01) 75cm Iron Pin			746.71	746.7	6,161,817.40	541,872.56	
		117-15-42	8.254					
	Tag 3697 in 0.30 Ø Pine			747.39	746.2	6,161,813.62	541,879.89	


PP84D-03
Refer to Sheet No 5
1984 Survey
See back for detail!
DETAIL 'E'
DETAIL 'J'
DETAIL 'F'
DETAIL 'K'
DETAIL 'G'
DETAIL 'B'
TR-PN-E-15-81 END
RDH-PN-16-6-81
RDH-PN-15-5-81
RDH-PN-13-5 81(1736)
RDH-PN-10-4-81
Start of TR-PN-E-6-81
End of TR-PN-E-6-81
Start of TR-PN-E-5-81
End of TR-PN-E-5-81
"NIPPLE"
To "A"
To 888
To 1728
To 1687
To 838
To "A"
1511.39
146.857
144.003
121.730
66.333
122.352
79.621
136.361
82.00
53.956
70.945
19.980
7.09
60.851
70.062
45.533
4783.423
175.403
131.044
81.782
34.730
32.040
1735.004
28.81
31.80
21.60
22.19
53.95
13.22
21.06
94°57'53"
128°53'31"
65°37'44"
70°30'52"
133°53'15"
184°18'09"
193°19'00"
181°23'03"
177°44'
171°38'45"
193°00'
218°02'18"
242°46'00"
152°13'01"
110°26'00"
143°58'00"
226°-48'-13"
138°34'50"
144°27'51"
27°08'26"
229°57'56"
141°21'20"
259°10'47"
259°05'00"
100°41'56"
233°42'00"
12°28'
1100
1101
1102
1692
1694
1696
1697
1698
1687
1660
1741
1728
885
884
887
888
902
904
905
908
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
22
23
24

PP840-03

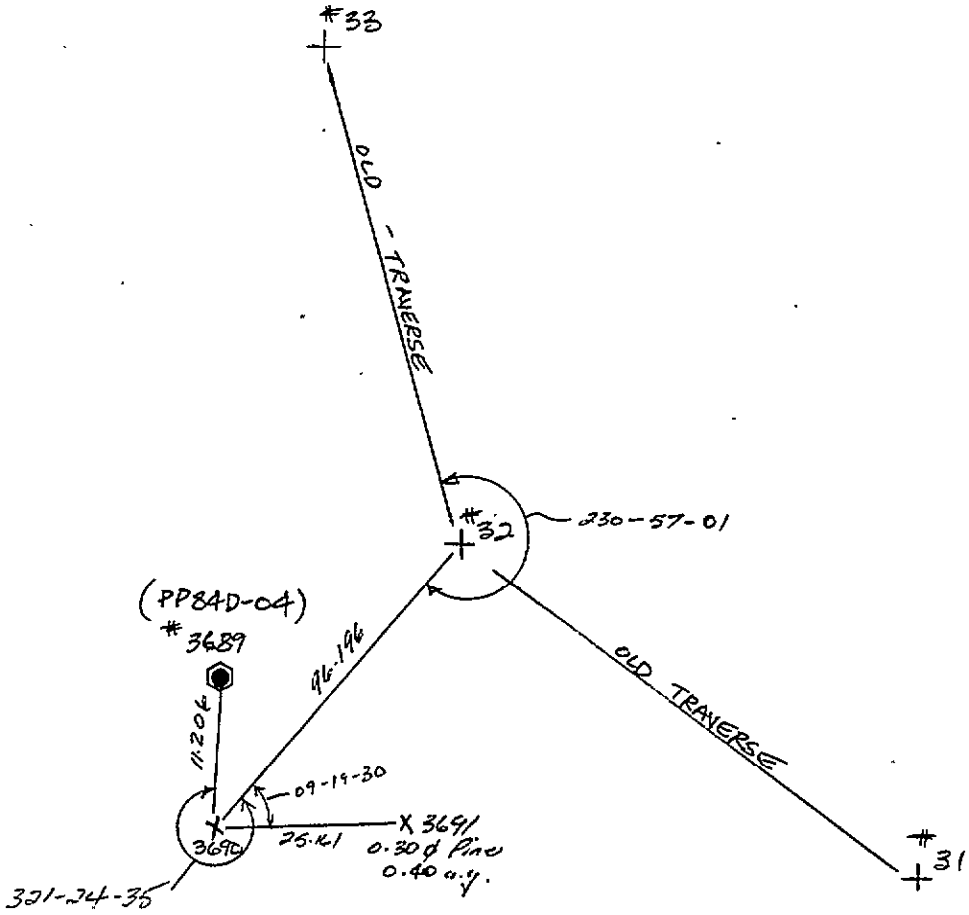

X 1697
OLD TRAVERSE
#1696
140-59-25
OLD TRAVERSE
X 1694
1474.99
X 3694
in 0.40 ø Poplar
1.40 c.g.
21-04-15
1633
(PP840-03)
3693
4738
3692
301-09-33

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1696	Old 75cm Iron Pin			821.80	821.8	6,162,004.58	541,709.99	
		150-05-52	66.747					
3692	20cm Spike			807.06	807.2	6,161,946.72	541,743.26	
		271-15-25	4.738					
	Tag #3693 (PP84D-03) 75cm Iron Pin			807.34	807.3	6,161,946.82	541,738.53	
		351-10-07	16.331					
	Tag #3694 in 0.40 ø Poplar			810.94	809.5	6,161,962.85	541,740.76	

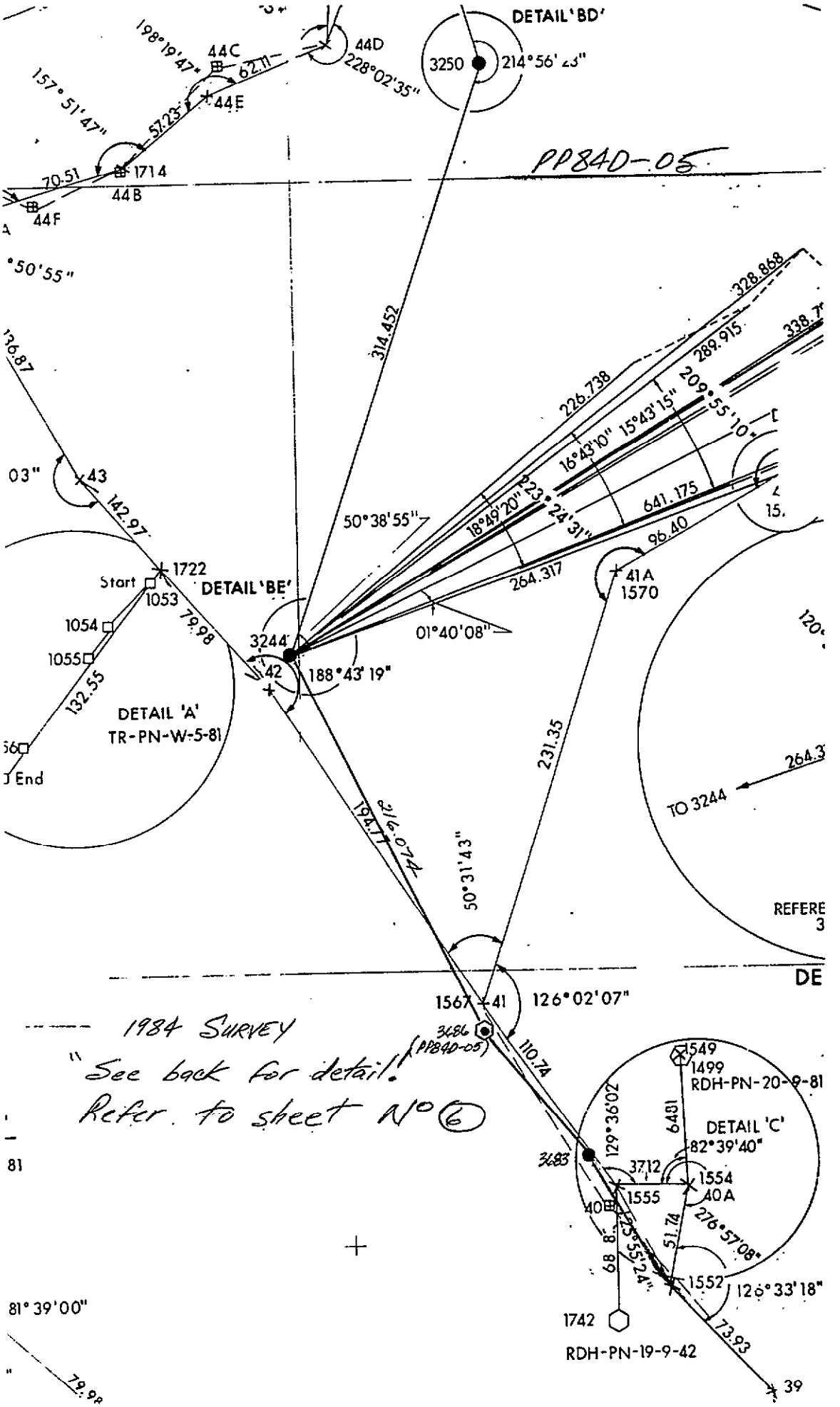

E
6 162 200
34F
34E
34D
34C
34G
1653
82.128
92°45'05"
34
165
217°16'42"
5087803
"NIPPLE"
PP840-04
34B
34A
To 35
34
33
3
Refer to Sheet #5
1984 SURVEY
235°02'50"
32
73.743
31
See back for detail
1748
1065
1066
1067
1068
6 161 800 mN
DETAIL
32
73.743
06'00"
52
1066
Start of
TR-PN-W-4-81
1748
4.10
192°24'00"
1069
1069-A
DETAIL
91.3
1069A
End of TR-PN-W-4-81
55°36'00"
122°21'00"

01-1/4"

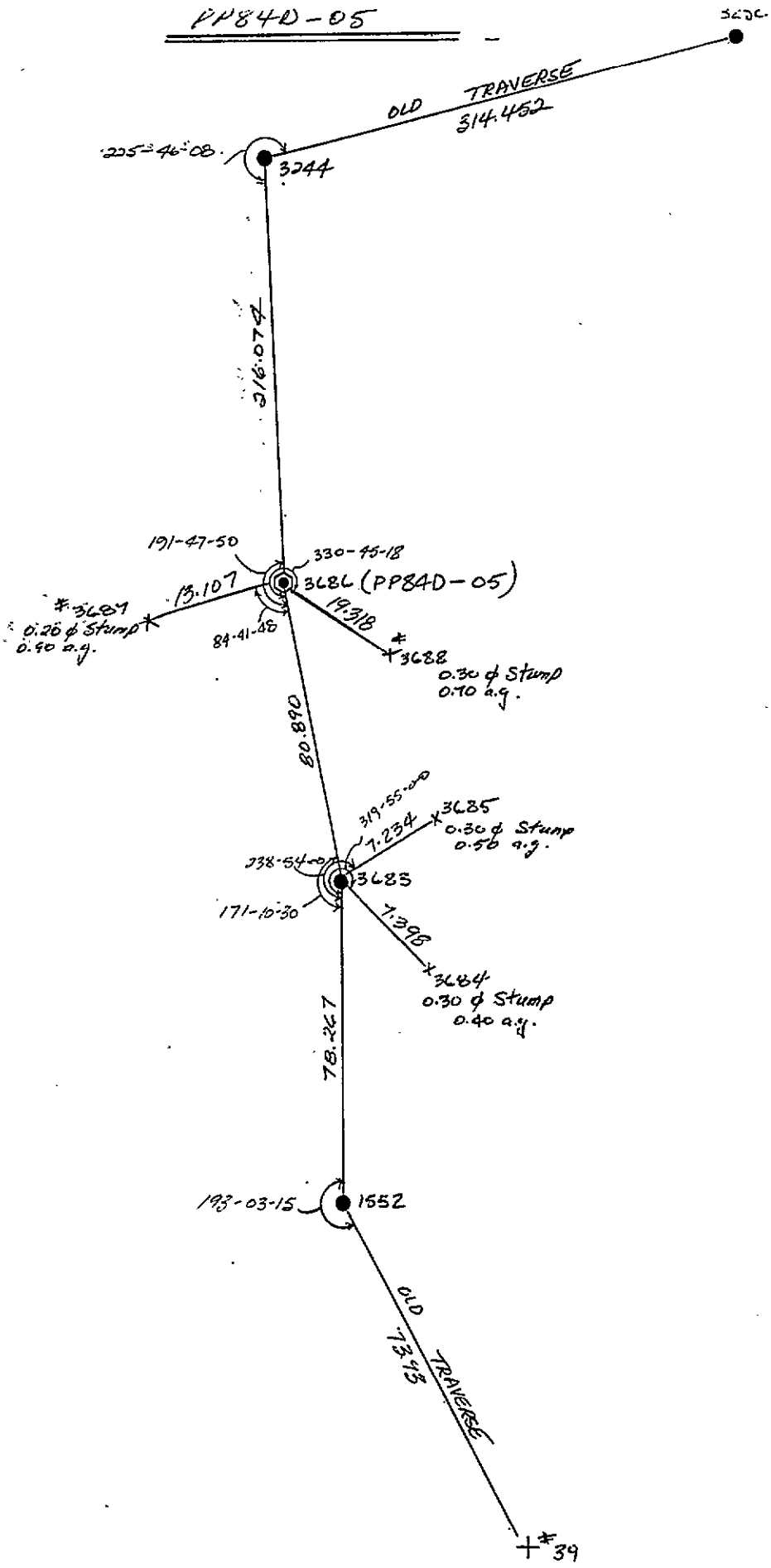
PP84D-04



STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
#32	Old Tronnes Spike			909.40	909.4	6,161,912.35	541,093.56	
		201-32-08	96.196					
3690	20cm Spike			922.76	922.9	6,161,822.87	541,058.25	
		342-56-44	11.206					
	Tag #3689 (PP84D-04) 75cm Iron Pin			922.04	922.0	6,161,833.58	541,054.96	
		30-51-39	25.161					
	Tag #3691 in 0.30 Ø Pine			921.66	921.3	6,161,844.47	541,071.15	


DETAIL 'BD'
3250
214°56' 45"
44D
228°02'35"
44C
198°19'47"
62.11
44E
157°51'47"
57.23
70.51
1714
44B
44F
PP840-05
°50'55"
136.87
03"
43
142.97
Start
1722
1053
DETAIL 'BE'
1054
1055
79.98
132.55
DETAIL 'A'
TR-PN-W-5-81
End
314.452
50°38'55"
3244
188°43'19"
42
01°40'08"
328.868
289.915
226.738
209°55'10"
16°43'10"
15°43'15"
18°49'20"
24'31"
641.175
96.40
264.317
41A
1570
231.35
194.77
50°31'43"
264.3
TO 3244
REFERE
3
DE
1567
41
126°02'07"
3686
(PP840-05)
110.74
1984 SURVEY
"See back for detail!
Refer to sheet N° 6
1549
1499
RDH-PN-20-9-81
DETAIL 'C'
82°39'40"
129°36'02"
6481
3683
3712
1554
40A
1555
40
276°57'08"
51.74
68 8
1552
126°33'18"
1742
RDH-PN-19-9-42
73.93
39
81°39'00"
79.9

PP84D-05


3230
OLD TRAVERSE
314.452
225-46-08
3244
316.074
191-47-50
330-45-18
3686 (PP84D-05)
13.107
#3687
0.26 ϕ Stump
0.90 a.g.
84-41-46
19.318
#3688
0.30 ϕ Stump
0.90 a.g.
80.890
319-55-00
7.234
3685
0.30 ϕ Stump
0.50 a.g.
238-54-00
3683
171-10-30
7.396
3684
0.30 ϕ Stump
0.40 a.g.
78.247
193-03-15
1552
OLD TRAVERSE
73.93
#39

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1552	Old 75cm Iron Pin			1026.54	1026.5	6,162,437.96	540,583.10	
		330-07-57	78.267					
3683	75cm Iron Pin			1036.53	1036.8	6,162,505.83	540,544.12	
		321-18-27	80.890					
3686	(PP84D-05) Nail in Hub			1042.13	1042.2	6,162,568.97	540,493.56	
		333-06-18	216.074					
3244	75cm Iron Pin			1059.80	1059.8	6,162,761.92	540,395.95	
3683	75cm Iron Pin			1036.53	1036.8	6,162,505.83	540,544.12	
		29-01-57	7.234					
	Tag #3685 in 0.30 Ø stump			1036.45	1036.0	6,162,512.16	540,547.63	
		110-02-58	7.398					
	Tag #3684 in 0/30 Ø stump			1036.53	1036.1	6,162,503.30	540,551.07	
3686	(PP84D-05) Nail in Hub			1042.13	1042.2	6,162,568.97	540,493.56	
		226-00-15	13.107					
	Tag #3687 in 0.20 Ø stump			1044.89	1044.0	6,162,559.86	540,484.12	
		112-03-45	19.318					
	Tag #3688 in 0.30 Ø stump			1041.41	1040.7	6,162,561.71	540,511.46	

122° 21' 00"

55° 37' 00"

Kgt Kmb Kmb

SECTION 32+00

SECTION 30+00

SECTION 28+00

BASE LINE 20+00

SECTION 22+00

Kmb

PP 83-2
El. 977.5 m
T.D. 277.7m

SECTION 30+00

SECTION 26+00

TR-PN-E-7-81

Kmb

Kgt

TR-PN-E-8-81

PR-16
T.D. 262.4 m

18-81
El. 890.9 m
T.D. 122.6 m

TR-PN-E-10-81

SECTION 18+00

PR-15
T.D. 158.8m

TR-PN-E-11-81

PR-11
T.D. 80.2 m

PR-12
T.D. 165.8 m

PR-13
T.D. 240.2 m

16-81
El. 870.1m
T.D. 100.0 m

TR-PN-E-15-81

B10
T.D. 182.0m

B21 (-60°)
T.D. 228.0 m

B8
T.D. 142.0m
B6,8,10

B23 (-45°)
T.D. 150.9m

B21

B23

SECTION 22+00

TR-W-5-80

TR-E-15-81

TR-E- 8 -80

PR-20
T.D. 77.7m

TR-PN-E-13-81

TR-PN-E-6-81

TR-PN-E-5-81

Kmb

Kgt

Kmb

Kgt

PP-84-03
El. 807.3m
T.D. 105.2m

PR-17
T.D. 210.9

TR-PN-E-14-81

PP-84-04
El. 922.0m
T.D. 99.1m

TR-PN-W-4-81

14-81
El. 822.6 m
T.D.130.0 m

TR-E-5-80

15-81
El. 833.0m
T.D. 73.0 m

11-81
El. 762.8 m
T.D. 191.0 m

12-81
El. 743.22 m
T.D. 198.0 m

TR-E-1-81

PP-84-01
El. 746.7m
T.D. 84.1m

PR-21
T.D. 182.0

TR-E-3-80

TR-E-4-80

TR-PN-E-3-81

TR-PN-E-4-81

B4
T.D. 221.3m

PR-21.22

13-81
El. 779.8 m
T.D. 69.2 m

10-81
El. 756.1m
T.D. 54.0 m

PP-84-02
El. 750.9m
T.D. 146.9m

5-81
El. 652.0m
T.D. 34.14m

TR-E-2-80

?TR-E-1-80

TR-PN-E-2-81

PR-22
T.D. 195.7m

TR-W-6-80
(part of)

9-81
El. 762.9m
T.D. 93.0m

TR-W-21-80
(part of)

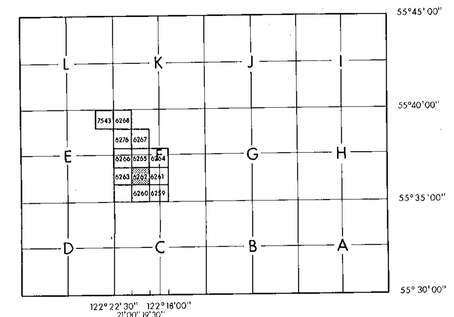
SECTION 16+00

55° 35' 00"

122° 19' 30"

MAP INDEX

93 O/9



REFERENCE

ROADS, HARD SURFACE

LOOSE SURFACE

RAILWAY

STREAM

RIVER

LAKE

MARSH

SAND

TREE LINE

CONTOURS 660 650

T.N.

0° 43'

GRID NORTH

40 20 0 40 80 120 METRES

SCALE 1 : 2 000

CONTOUR INTERVAL: 2 METRES
DATE OF PHOTOGRAPHY: 17 SEPT. 1981
COMPILED BY: AERO GEOMETRICS LTD.
608 BLACKFORD ST.
NEW WESTMINSTER B.C.

LEGEND

- DIAMOND DRILL HOLE
- ROTARY DRILL HOLE
- SURVEY REFERENCE POINT
- BACKHOE TRENCH
- THRUST FAULT (Indicates upthrown side)
- SYNCLINE
- ANTICLINE
- ANTICLINE, Overturned
- BEDDING ATTITUDE
- COAL SEAM WITH DESIGNATION
- SHALE OUTCROP
- SANDSTONE OUTCROP
- GEOLOGIC CONTACT

LOWER CRETACEOUS
FORT ST. JOHN GROUP

Kmb MOOSEBAR FORMATION

BLUESKY CONGLOMERATE

BULLHEAD GROUP

Kgt GETHING FORMATION

Kcd CADOMIN FORMATION

Crows Nest Resources Limited

EXPLORATION

PR030
PR Pine Pass 84(1)A(2)

PINE PASS
NOMAN CREEK AREA
N.E. BRITISH COLUMBIA

GEOLOGIC MAP

UTM ZONE 10	CL.6262	NTS 93O/9
AUTHOR: McKINSTRY	SCALE: 1:2000	ENCLOSURE No :
DATE: 84-03	REVISED: 85-01	DRAWING No: PP1U16
To Accompany 1984 GEOLOGY REPORT		

592

122°22'30"
55°37'00"

B-13
T.D. 213.4m

23-81
El. 1084.21m
T.D. 153.0m

TR-W-16-80

TR-83-12

TR-W-15-80

SECTION 38+00

TR-W-17-80

BASE LINE 0+00

TR-W-18-80

TR-83-6

TR-83-6A

SECTION 34+00

TR-W-5-81

SECTION 32+00

SECTION 30+00

TR-W-20-80

SECTION 28+00

SECTION 26+00

Ref. # 2

22-81
El. 1010.2m
T.D. 99.7m

TR-83-5

TR-83-10

TR-W-19-80

B15
T.D. 229.5m

TR-83-9

TR-83-8

B14
B12
T.D. 220.7m

Ref. # 4

TR-W-13-80

TR-83-7

B12
T.D. 193.9m

Ref. # 5

TR-83-11

Kmb

Kgt

Kmb

Kgt

TR-83-4
(partial re-log of
TR-PN-W-8-81)

Ref. # 3

21-81
El. 976.97m
T.D. 176.8 m

B20
T.D. 291.7m

TR-W-14-80

PP-84-05
El. 1042.2m
T.D. 117.4m

20-81
El. 1019.7m
T.D. 122.5m

B11
T.D. 220.4m

B18
T.D. 249.3m

B 16,18,20

TR-W-7-81

B16
T.D. 249.3m

B9,7,11

B9
T.D. 221.6m

19-81
El. 1024.5m
T.D. 143.0m

B7
T.D. 178.9m

PR-14
T.D. 255.4m

TR-W-11-80

TR-W-10-80

TR-W-9-80

TR-W-8-80

17-81
El. 959.3
T.D. 134.0m

B6
T.D. 213.7m

TR-W-7-80

CARB SLST→COALY SH
FISSILE, DULL LUSTRE

COAL EXPOSURE-UNKNOWN THICKNESS

MASS, F→M GR'D SS

SS F→MED GR'D

~ 30CM COAL

MAJOR CRSE GR'D SS LT GREY
HARD, MASSIVE ON EAST SIDE
BECOMING MED BEDDED TO
WEST - CADOMIN?

SS MED→CRSE GR'D, BRN, DIRTY

SLST

SLST→F G SS

SLST & SS

~ 0.5M COAL

SH & SLST FISSILE

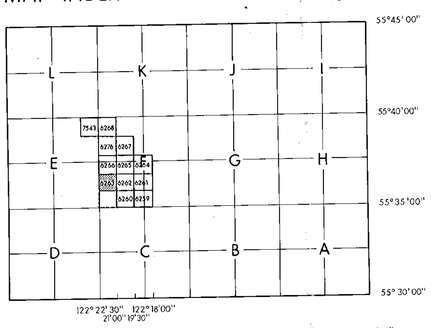
Kgt

Kcd

CADOMIN FM CONTACT

MAP INDEX

93 O/9



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Kmb MOOSEBAR FORMATION
BLUESKY CONGLOMERATE

BULLHEAD GROUP

Kgt GETHING FORMATION
Kcd CADOMIN FORMATION

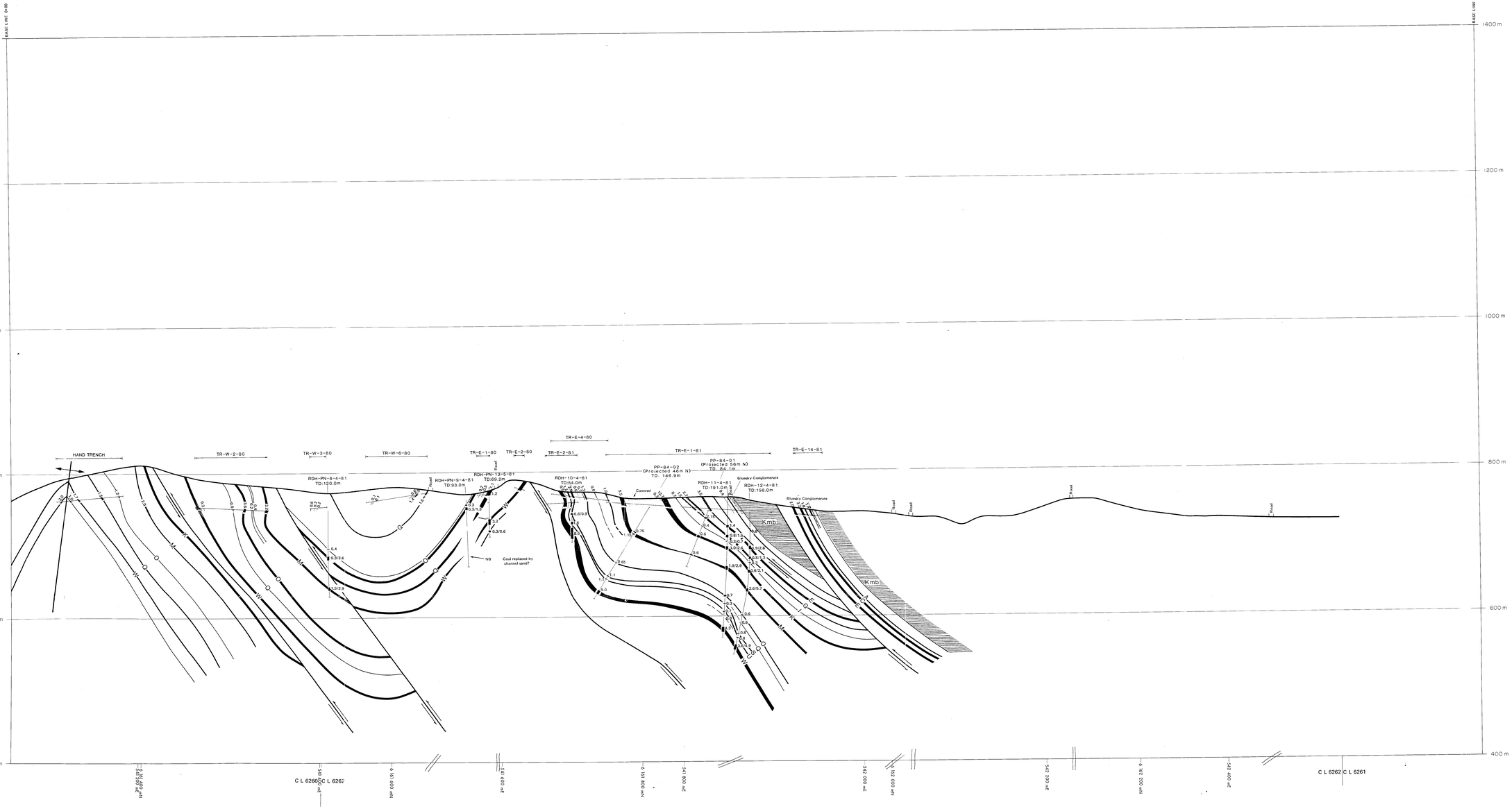
Crows Nest Resources Limited
EXPLORATION

PINE PASS PR030 PR-PINE PASS 84(1)A (82)
NOMAN CREEK AREA
N.E. BRITISH COLUMBIA

GEOLOGIC MAP

UTM ZONE 10	CL.6263	NTS 93O/9
AUTHOR: McKINSTRY	SCALE: 1:2000	ENCLOSURE No :
DATE: 84-03	REVISED: 85-01	DRAWING No: PP1U19
To Accompany 1984 GEOLOGY REPORT		

592



LEGEND

- THRUST FAULT
- ANTICLINE, SYNCLINE
- Q — COAL SEAM DESIGNATION
- O/B — OVERBURDEN
- 4.5 — GROSS COAL ZONE (true th. in metres)
- 3.6/4.5 — NET/GROSS COAL ZONE (true th. in metres)
- (11.7) — CARB/COALY SHALE ONLY – EQUIVALENT TO SEAM DESIGNATION (true th. in metres)

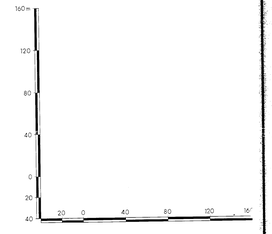
LOWER CRETACEOUS

FORT ST. JOHN GROUP

- Kmb — MOOSEBAR FORMATION
- BLUESKY CONGLOMERATE

BULLHEAD GROUP

- Kgt — GETHING FORMATION
- Kcd — CADOMIN FORMATION



PP1X26

Crows Nest Resources Limited

PINE PASS
N.E. B.C.

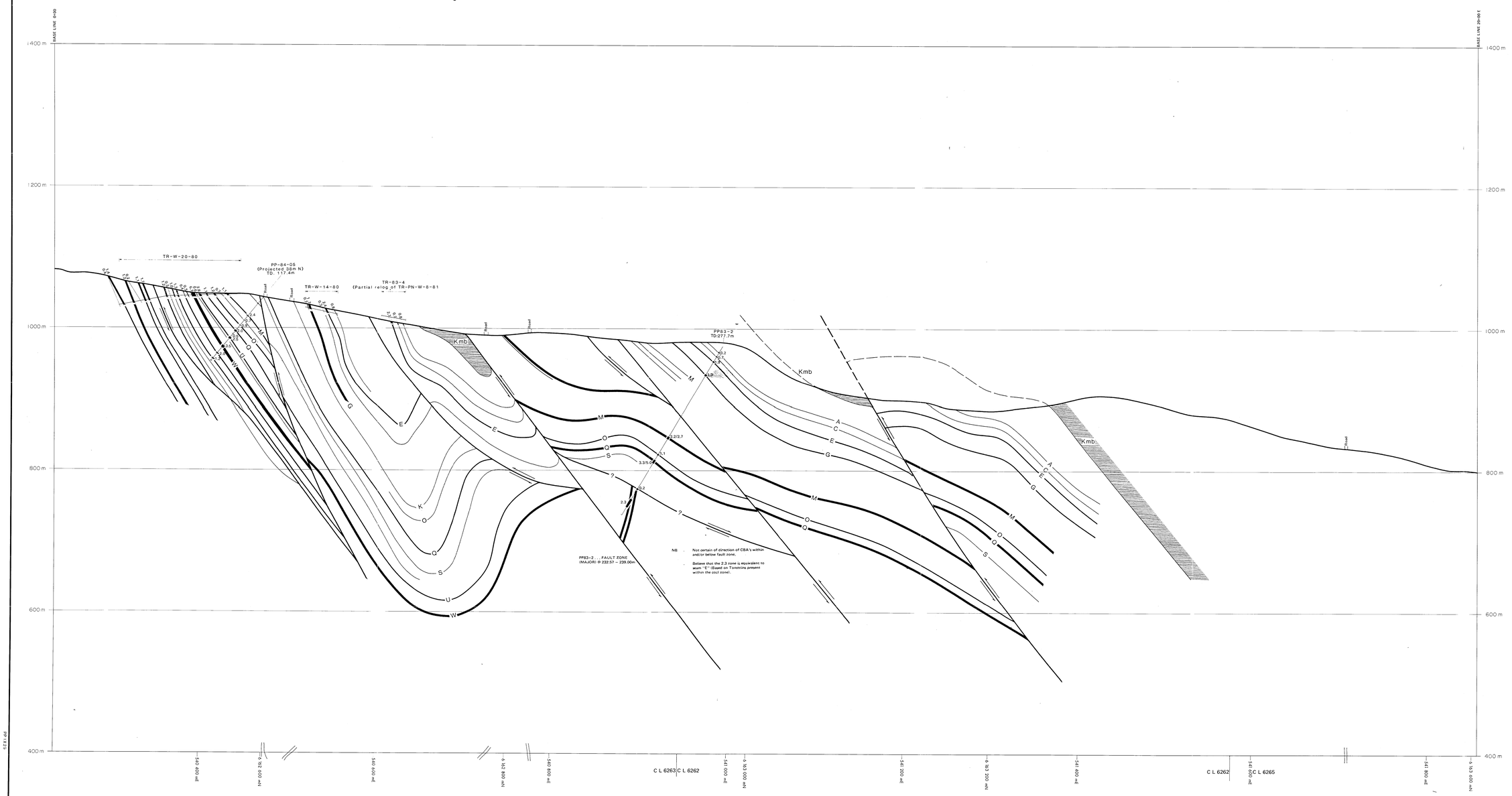
SECTION 16+00

NTS - 93O/9 — UTM ZONE 10

AUTHOR M.c KINSTRY	SCALE 1:2 000	DRAWN BY	
DATE 83-12	REVISED 85-01	DRAWING No.	PP1X26
To Accompany 1984 GEOLOGICAL REPORT			

592

APPENDIX 6



LEGEND

- THRUST FAULT
- ANTICLINE, SYNCLINE
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LOWER CRETACEOUS

FORT ST. JOHN GROUP

- Kmb — MOOSEBAR FORMATION
- BLUESKY CONGLOMERATE

BULLHEAD GROUP

- Kgt — GETHING FORMATION
- Kcd — CADOMIN FORMATION

160m 120 80 40 0 20 40 — 20 0 40 80 120 160

592

Crows Nest Resources Limited

PINE PASS
N.E. B.C.

SECTION 30+00

NTS - 93O/9 — UTM ZONE 10

AUTHOR M.KINSTRY	SCALE 1:2 000	DRAWN BY
DATE 83-12-	REVISED 85-01	DRAWING No PP1X29
To Accompany 1984 GEOLOGICAL REPORT		

PP1X26

APPENDIX 6

122°21'00"
55°37'00"
541 200 mE
122°20'30"
541 600 mE
122°20'00"
542 000 mE
122°19'30"
542 400 mE
6 163 400 mN
6 163 000 mN
6 162 600 mN
6 162 200 mN
6 161 800 mN
55°36'30"
55°36'00"

REFERENCE POINTS (1983)

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING
3278	Nail in 40cm Stump			917.97	917.6	6 163 380.24	541 306.20
	Tag 3277 (DDH PP 83-1)	333 47 59	43.69	910.40	910.3	6 163 419.44	541 286.91
	Tag 3279 in 35cm Poplar	300 57 24	69.25	911.74	910.0	6 163 411.23	541 254.54

REFERENCE POINTS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING
800	Old Spike (HV-7)			766.04		6,161,606.01	541,668.84
	Tag 1495 Iron Pin	237-15-21	39.14	765.84		6,161,584.84	541,635.92
	Tag 1490 Nail	57-14-00	5.51	765.80		6,161,608.99	541,673.47
	Tag 801 NE corner of Tower HV7	226-13-00	18.910	767.59	766.4	6,161,591.57	541,656.63
	Tag 802 10cm Poplar			769.98	769.13	6,161,592.56	541,681.31
876	Hub			894.03		6,162,223.54	541,386.67
	Nail in tree (Tag 876)	15-58-36	2.51	894.34	892.9	6,162,225.95	541,387.36
877	Spike			896.51		6,162,316.41	541,435.85
	Nail in 25cm ø Pine (Tag 877)	03-52-09	2.07	897.91	896.6	6,162,318.48	541,435.99
878	Hub			902.76	902.0	6,162,357.84	541,418.71
	Nail in 25cm ø Pine (Tag 878)	208-12-04	1.44	903.23	902.1	6,162,356.57	541,418.09
879	Spike			897.35		6,162,390.45	541,468.59
	Nail in 20cm ø Spruce (Tag 879)	163-05-03	2.03	899.12	898.2	6,162,388.51	541,469.18
883	IP			887.06		6,162,386.91	541,557.93
	Nail in 40cm ø Pine (Tag 883)	305-25-38	6.03	889.31	888.1	6,162,390.41	541,553.01
	(RDH-PN-18-7-81)	269-02-51	41.52	890.89		6,162,380.22	541,516.42
	881 Nail in tree			893.93	892.7	6,162,382.44	541,505.27
	882 Nail in tree			892.32	891.4	6,162,380.20	541,519.75
885	Spike			867.79		6,162,174.33	541,584.87
	Tag 885 Nail in 25cm ø Spruce	86-54-21	1.11	868.61	867.1	6,162,174.39	541,585.98
	Tag 886 in 35cm ø Pine	234-30-36	32.06	872.58	871.6	6,162,155.72	541,558.77
	Tag 887 Casing RDH-PN-16-6-81	229-07-54	31.90	870.10		6,162,153.46	541,560.75
888	IP			855.40		6,162,291.06	541,669.08
	Tag 889 in 30cm ø Pine	246-46-48	10.57	857.01		6,162,286.89	541,659.36
	Tag 890 in 25cm ø Pine	130-21-28	4.65	854.97		6,162,288.85	541,672.62
893	RDH-PN-12-4-81			743.22	743.1	6,161,841.48	541,908.40
	Tag 891 in 40cm ø Pine	162 27 56	9.66	744.20	743.4	6,161,832.22	541,911.31
	Tag 892 in 35cm ø Pine	73-21-04	11.97	744.49	742.7	6,161,844.91	541,919.87
894	Hub			741.14		6,161,902.46	541,956.78
	Tag 894 in 40cm ø Pine	174-41-49	8.63	739.24	738.4	6,161,893.87	541,957.62
895	IP			747.21		6,161,792.12	541,857.89
	Tag 896 Nail in tree			850.11	749.00	6,161,797.78	541,846.94
	Tag 897 in 25cm ø Spruce	40-07-30	11.49	748.00	747.60	6,161,800.90	541,865.29
903	IP			762.75		6,161,862.14	541,848.72
	Tag 898 in 40cm Pine	359-02-20	17.28	764.52	763.8	6,161,879.42	541,848.43
899	Tag 900 in 25cm Pine	288-16-17	8.86	765.35	764.5	6,161,864.92	541,840.30
	(RDH-PN-11-4-81) 899 tag	08-48-14	8.29	762.76	762.5	6,161,870.34	541,849.99
904	IP			760.91		6,161,750.09	541,713.88
	Tag 901 in 30cm ø Pine	122-47-46	12.97	760.40	759.1	6,161,743.06	541,724.79
	Tag 902 Spike	50-14-36	21.05	760.47		6,161,763.55	541,730.06
908	IP			754.86		6,161,668.35	541,713.44
	Tag 905 Casing RDH-PN-10-4-81	355-18-32	34.73	756.07		6,161,702.96	541,710.60
	Tag 906 Nail in tree	06-36-47	33.00	756.30	755.3	6,161,701.73	541,717.31
	Tag 907 Nail in tree			758.34	757.1	6,161,713.55	541,712.93
1494	Hub			764.25	763.8	6,161,624.96	541,578.79
	Tag 1492 in 6cm ø Poplar	345-33-04	12.46	765.92	765.0	6,161,637.03	541,575.68
1491	Tag 1493 in 30cm ø Pine	198-18-35	5.79	762.48	760.3	6,161,619.46	541,576.97
	(RDH-PN-9-4-81)	42-02-08	7.11	762.89		6,161,630.24	541,583.55
1557	IP (Old Spike 41-G)			962.78		6,162,535.41	541,296.59
	Tag 1558 in 25cm ø Pine	359-35-05	6.90	928.23	926.8	6,162,542.31	541,296.54
	Tag 1559 in 20cm ø Pine	277-32-36	14.78	929.97	928.7	6,162,537.35	541,281.94
1590	Old Spike (41-F)			960.26		6,162,682.72	541,135.19
	Tag 1561 in 15cm ø Spruce	322-55-14	1.64	951.52	950.5	6,162,684.03	541,134.20
	Tag 1562 35cm ø Spruce	201-30-57	1.12	951.50	950.3	6,162,681.68	541,134.78

SURVEY TRAVERSE POINTS

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
1560 (41-F)	Old Spike	6,162,682.72	541,135.19	960.26	
1557 (41-G)	Old Spike	6,162,535.41	541,296.51	926.78	
1053	Spike	6,162,177.96	541,269.59	889.16	
1652	Nail	6,162,135.85	541,280.06	886.88	
32	Old Spike	6,161,912.35	541,093.56	909.40	
1748	Spike	6,161,846.29	541,061.27	821.85	
1965 (28)	Spike	6,161,881.20	541,395.49	830.76	
1735	IP	6,161,838.61	541,408.16	833.20	
1732	Spike	6,162,012.70	541,294.92	844.26	
1730	IP	6,162,008.77	541,447.27	869.92	
1729	IP	6,162,108.80	541,530.83	874.33	
885	Spike	6,162,174.33	541,584.87	867.79	
888	IP	6,162,291.06	541,669.08	855.40	
883	IP	6,162,386.91	541,577.93	887.05	
880	RDH-PN-18-7-81	6,162,386.22	541,516.42	890.89	890.88
879	Spike	6,162,390.45	541,468.59	897.35	
878	Spike	6,162,357.84	541,418.71	902.76	902.00
877	Spike	6,162,316.41	541,435.85	896.51	
876	HUB	6,162,223.54	541,386.67	894.03	
884	Spike	6,162,190.81	541,238.24	824.83	
1697	Spike	6,162,125.92	541,725.12	821.24	
1696	IP	6,162,004.58	541,709.99	821.80	
1698	Spike	6,161,951.16	541,741.95	808.10	
1694	Spike	6,161,966.11	541,688.37	832.21	
1982	Spike	6,161,940.09	541,636.14	834.18	
1687	Spike	6,161,874.88	541,611.30	836.71	
1963	Spike	6,161,845.89	541,494.86	822.46	
1660	Spike	6,161,836.52	541,564.10	832.62	
1964 (27)	Spike	6,161,870.58	541,456.63	819.08	
894	HUB	6,161,902.46	541,956.78	741.14	
895	IP	6,161,792.12	541,857.89	747.21	
902	Spike	6,161,763.56	541,730.06	760.47	
903	IP	6,161,862.14	541,848.72	762.75	
904	IP	6,161,750.09	541,713.88	760.91	
908	IP	6,161,668.35	541,713.44	754.86	
1490	Nail	6,161,608.99	541,673.47	765.80	
800	Old Spike	6,161,606.01	541,668.84	766.04	
1495	IP	6,161,584.84	541,635.92	765.84	
D	OIP (Target)	6,161,573.84	541,650.50	763.97	
1740	Spike	6,161,579.67	541,515.96	762.88	
1494	HUB	6,161,624.96	541,578.79	764.25	763.8
1741	Spike	6,161,678.56	541,549.25	777.43	
1659	Spike	6,161,678.10	542,044.61	853.33	
1659	IP	6,161,147.17	541,380.58	888.34	
1582	Old Spike	6,162,688.63	540,995.15	971.53	
1725	ROH-PN-5-2-81	6,161,700.83	542,099.45	651.99	651.70

TRAVERSE STATIONS (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3278	Nail in 40cm Stump	6 163 380.24	541 306.20	917.97	917.6

SURVEY STATIONS (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
1514	25cm Iron Pin ("C")	6 164 440.44	540 485.89	973.98	973.9
3274	25cm Iron Pin	6 163 572.43	541 084.51	858.88	858.5
3280	30cm Spike	6 163 006.64	541 400.05	977.36	977.4
1513	25cm Iron Pin ("B")	6 162 372.40	539 658.11	1256.75	1256.7
3277	(DDH PP 83-1)	6 163 419.44	541 286.91	910.40	910.3

SURVEY STATIONS

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
1586	IP	6,162,713.76	540,925.63	978.15	
A	OIP	6,162,962.10	543,155.23	852.78	
7/pple	Spike	6,157,103.46	540,889.08	1462.06	
838	Nail in Stump	6,162,594.97	543,093.32	850.39	850.14
806	Spike	6,160,574.87	543,129.49	649.90	
841	Spike	6,161,063.91	540,885.66	756.65	

TRENCHES

TRENCH	STATION	NORTHING	EASTING	GROUND ELEVATION
PN-W-1-81	1005	6,161,150.4	541,311.8	676.7
	1018	6,161,734.7	541,691.3	764.3
	1019	6,161,700.1	541,747.2	759.4
	1020	6,161,781.7	541,759.1	757.9
	1021	6,161,791.2	541,844.6	746.9
PN-E-1-81	1022	6,161,784.3	541,835.5	747.4
	1027	6,161,815.2	541,867.3	747.6
	1028	6,161,834.6	541,886.1	745.0
	1029	6,161,879.0	541,934.5	741.4
	1006	6,161,241.4	541,336.8	717.7
PN-W-2-81	1006A	6,161,232.5	541,316.9	714.9
	1007	6,161,296.2	541,344.2	729.3
	1007A	6,161,313.7	541,341.7	731.9
	1014	6,161,655.3	541,702.2	756.5
PN-E-2-81	1015	6,161,671.1	541,708.4	755.4
	1016	6,161,686.6	541,708.6	754.9
	1017	6,161,724.7	541,703.8	759.8
PN-W-3-81	1092	6,162,484.8	540,542.4	1027.3
	1093	6,162,452.9	540,557.4	1024.0
	1023	6,161,771.8	541,809.7	747.6
PN-E-3-81	1024	6,161,760.8	541,783.1	746.1
	1065	6,161,847.1	541,065.1	920.7
	1066	6,161,831.4	541,065.3	922.4
PN-W-4-81	1067	6,161,810.9	541,037.3	927.6
	1068	6,161,805.4	541,030.8	928.5
	1069	6,161,775.6	541,004.8	933.9
	1069A	6,161,768.2	540,998.2	933.9
	1025	6,161,740.8	541,760.3	747.1
PN-E-4-81	1026	6,161,724.1	541,736.4	750.5
	1044	6,161,876.9	541,695.8	791.7
	1045	6,161,935.0	541,730.2	805.6
PN-E-5-81	1046	6,161,952.3	541,735.5	808.2
	1047	6,161,963.7	541,733.2	810.3
	1048	6,161,981.4	541,725.2	814.2
	1025*	6,161,881.6	541,609.0	837.1
	1035	6,161,904.1	541,619.8	835.4
	1037	6,161,922.1	541,626.2	835.2
	1038	6,161,950.8	541,646.9	832.1
PN-E-6-81	1039	6,161,960.8	541,670.9	833.0
	1040	6,161,970.6	541,681.9	832.4
	1041	6,161,981.0	541,691.4	829.7
	1042	6,161,991.7	541,701.1	825.3
	1043	6,162,016.2	551,705.7	819.4
	1049	6,162,681.3	541,132.3	950.4
	1050	6,162,687.8	541,118.3	952.5
	1051	6,162,690.2	541,088.3	947.6
	1052	6,162,684.3	541,061.1	962.4
	1563	6,162,667.9	540,984.3	972.6
PN-E-7-81	1564	6,162,681.8	541,023.4	967.7
	1565	6,162,689.9	541,083.2	958.2
	1111	6,162,685.7	541,068.1	960.9
	1112	6,162,688.3	541,092.5	956.8
	1113	6,162,684.4	541,122.4	952.1
	1114	6,162,673.8	541,141.7	949.2
	1125	6,162,417.1	541,464.5	898.9
	1126	6,162,466.1	541,458.7	898.7
	1127	6,162,356.9	541,422.1	900.1
PN-E-8-81	1128	6,162,347.1	541,421.3	899.2
	1129	6,162,320.1	541,429.7	896.7
	1130	6,162,309.1	541,429.8	895.9
	1008	6,161,638.0	541,565.6	764.4
	1009	6,161,626.5	541,583.9	763.4
PN-E-9-81	1010	6,161,632.3	541,596.2	765.1
	1011	6,161,618.9	541,582.4	762.5
	1012	6,161,611.3	541,589.7	762.3
	1013	6,161,621.1	541,601.5	764.7
	1031	6,162,176.1	541,388.4	888.6
	1032	6,162,161.9	541,394.7	888.0
PN-E-10-81	1033	6,162,146.6	541,364.8	887.4
	1034	6,162,145.8	541,339.5	888.2
	1035	6,162,207.7	541,380.0	892.0
	1094	6,161,979.0	541,440.1	864.5
PN-E-13-81	1095	6,161,986.7	541,482.0	865.6
	1096	6,162,010.8	541,482.2	869.6
	1097	6,162,016.3	541,392.1	859.1
	1098	6,162,010.9	541,424.4	865.1
PN-E-15-81	1099	6,162,022.2	541,456.1	868.3
	1100	6,162,073.6	541,497.5	870.8
	1101	6,162,162.7	541,566.7	870.0
	1102	6,162,198.7	541,600.2	867.7

DRILL HOLES (1984)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEV.	GROUND ELEV.
3686	25cm Iron Pin (PP84D-01)	6 161 817.60	541 972.56	746.71	746.7
3689	25cm Iron Pin (PP84D-03)	6 161 760.53	541 803.30	750.56	750.5
3693	25cm Iron Pin (PP84D-03)	6 161 816.82	541 738.53	807.34	807.3
3689	25cm Iron Pin (PP84D-04)	6 161 833.58	541 054.96	922.04	922.0

DETAIL 'BH'

STA.	HOR. ∠	DIST.
1008	189° 35' 15"	18.60
1009	308° 19' 30"	05.38
1010	301° 53' 40"	18.89
1011	023° 45' 40"	07.03
1012	016° 20' 25"	17.06
1013	334° 28' 10"	23.00
1491	276° 56' 15"	07.11

DETAIL 'A'

DETAIL 'B'

DETAIL 'C'

DETAIL 'D'

DETAIL 'E'

DETAIL 'CB'

DETAIL 'CD'

DETAIL 'F'

DETAIL 'G'

DETAIL 'H'

DETAIL 'I'

DETAIL 'J'

DETAIL 'K'

DETAIL 'CC'

STA.	HOR. ∠	DIST.
TR-PN-E-3-81 Start 1023	349° 45' 25"	52.30
TR-PN-E-3-81 End 1024	343° 39' 50"	85.50
TR-PN-E-4-81 Start 1025	344° 52' 00"	11.02
TR-PN-E-4-81 End 1026	343° 20' 20"	139.30

TRONNES SURVEY STATIONS

STATION	NORTHINGS	EASTINGS	ELEVATION
20	6,161,551.44	541,515.64	763.58
21	6,161,642.03	541,530.38	776.13
22	6,161,689.03	541,537.20	783.14
23	6,161,708.85	541,585.39	782.07
24	6,161,669.31	541,608.79	781.58
25	6,161,643.76	541,630.43	779.39
27 (1964)	6,161,870.58	541,456.63	819.08
28 (1965)	6,161,881.20	541,395.48	830.76
29	6,161,728.53	541,390.53	839.33
30	6,161,695.26	541,310.74	841.11
31	6,161,884.71	541,176.69	890.33
32	6,161,912.35	541,093.56	909.40
33	6,161,995.80	541,046.51	933.38
34	6,162,015.73	540,993.22	948.19
34A	6,162,039.65	540,998.07	
34B	6,162,106.94	541,003.21	
34C	6,162,147.57	541,017.82	
34D	6,162,156.33	541,049.91	
34E	6,162,188.09	541,066.97	
34F	6,162,198.58	541,136.86	
34G	6,162,162.39	541,173.80	
34H	6,162,172.15	541,209.15	
34I	6,162,138.09	541,279.30	
34J	6,162,136.55	541,317.52	
34K	6,162,144.05	541,344.51	
34L	6,162,144.74	541,380.35	
34M	6,162,213.49	541,381.54	
34N	6,162,290.11	541,422.33	
34O	6,162,315.75	541,433.35	
34P	6,162,353.87	541,423.82	
34Q	6,162,389.18	541,463.55	
34R	6,162,392.52	541,487.28	
34S	6,162,381.55	541,529.93	
34T	6,162,385.31	541,562.59	
34U	6,162,360.95	541,587.94	
41E (1582)	6,162,688.63	540,995.15	
41F (1560)	6,162,682.72	541,135.19	
41G (1557)	6,162,535.41	541,286.59	

NOTE: TRAVERSE STATIONS and TRENCHES surveyed by TRONNES SURVEYS 1976 LTD. were tied-in (as indicated) and adjusted by E.D. WATSON, B.C.L.S. 1981.

"DRILL HOLES 1981"
SURVEYED BY D. WATSON PEng

DRILL HOLES	TAG	NORTHINGS	EASTINGS	ELEVATIONS	GROUND ELEVATIONS
RDH-PN-5-2-81	1725	6,161,700.83	542,099.45	651.99	651.7
RDH-PN-9-4-81	1491	6,161,630.24	541,583.55	762.89	
RDH-PN-10-4-81	905	6,161,702.96	541,710.60	756.07	
RDH-PN-11-4-81	899	6,161,870.34	541,849.99	762.76	762.5
RDH-PN-12-4-81	893	6,161,841.48	541,908.40	743.22	743.1
RDH-PN-13-5-81	1736	6,161,704.26	541,568.21	779.77	779.6
RDH-PN-14-5-81	Target	6,161,847.49	541,505.65	822.55	
RDH-PN-15-5-81	Target	6,161,844.24	541,560.01	833.03	
RDH-PN-16-6-81	887	6,162,153.46	541,560.75	870.10	
RDH-PN-18-7-81	880	6,162,386.22	541,516.42	890.89	890.8

PHOTO CONTROL POINTS

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
801 (HV-7)	N.E. Corner of Tower	6,161,5911.57	541,656.63	767.59	766.40

TRONNES TRENCHES

TRENCH	NORTHINGS	EASTINGS	ELEVATION
10	6,161,633.19	541,521.38	776.06
11	6,161,653.84	541,587.24	778.92
12	6,161,648.45	541,612.80	775.10
13	6,161,685.91	541,641.49	778.99
14	6,161,671.86	541,634.72	776.00
15	6,161,779.52	541,535.67	800.99
16	6,161,881.62	541,166.06	892.60
17	6,161,886.77	541,156.45	894.62
18	6,161,862.91	541,059.47	924.48
19	6,161,973.83	541,053.74	927.19
20	6,162,049.96	540,984.54	946.05
21	6,162,005.19	540,868.53	961.93
48	6,161,637.16	541,257.56	840.79
49	6,161,514.33	541,226.71	843.29
50	6,162,022.76	541,247.90	848.57
51	6,162,012.66	541,513.20	862.86
52	6,161,484.97	541,685.87	744.98
53	6,161,597.89	541,723.90	731.59
54	6,161,539.97	541,753.87	721.93
55	6,161,842.15	541,504.04	822.95
56	6,161,952.42	541,667.57	833.17
57	6,161,864.29	541,690.74	790.95
58	6,161,904.32	541,712.94	788.37
59	6,161,788.68	541,638.79	783.66
60	6,161,789.53	541,626.81	783.44

NOTE: TRAVERSE STATIONS and TRENCHES surveyed by TRONNES SURVEYS 1976 LTD. were tied-in (as indicated) and adjusted by E.D. WATSON, B.C.L.S. 1981.

LEGEND :

- NAIL
- 12" SPIKE
- TRENCH
- DRILL HOLE
- CONTROL POINT OF NETWORK (GOV.)
- IRON POST
- 1981 PHOTO TARGET OR PHOTO I.D. POINT MARKED WITH IRON POST.
- TRONNES SURVEY STATIONS

DETAILS ARE NOT TO SCALE

Bearings: Are derived from Provincial Government Control Stations "WOLF" and "BICKFORD" and referred to the 123rd meridian.

Coordinates: Are on UTM Projection Zone 10 and are derived from Provincial Government Control Stations.

Elevations: Are metric, obtained by reciprocal trigonometric levelling on geodetic datum and are derived from Department of Highways Benchmarks and Provincial Government Control Stations.

0 10 20 30 40 50 100 150 200 Metres
SCALE 1:2000

MAP INDEX

93 O/9

592

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.
1980 — 1981

NOMAN CREEK PROSPECT
TRAVERSE SURVEY MAP

C.L. 6262 PR-PinePass 84(1*)A(*2)
N.T.S. 93O/9 PR030

SHEET No. 5
U.T.M. ZONE 10

AUTHOR: D.E. WATSON, B.C.L.S.	SCALE: 1:2000	ENCLOSURE No:
DATE: 82-03	REVISED: 84-10	DRAWING No: PP1V05
To Accompany		

APPENDIX 7

122° 22'30"
55°37'00"
539 600 mE

TRENCHES

TRENCH	STATION	NORTHING	EASTING	GROUND ELEVATION
PN-W-5-81	1053	6,162,798.3	540,327.4	1060.8
	1054	6,162,776.7	540,305.7	1063.2
	1055	6,162,761.0	540,295.5	1065.2
	1056	6,162,716.6	540,262.4	1075.1
	1057	6,162,700.2	540,251.3	1078.1
PN-W-7-81	1060	6,162,548.4	540,587.1	1020.0
	1061	6,162,530.0	540,587.9	1021.1
	1062	6,162,494.5	540,583.7	1025.9
	1063	6,162,463.0	540,575.3	1028.0
	1064	6,162,481.5	540,578.9	1026.4

DRILL HOLES 1981.

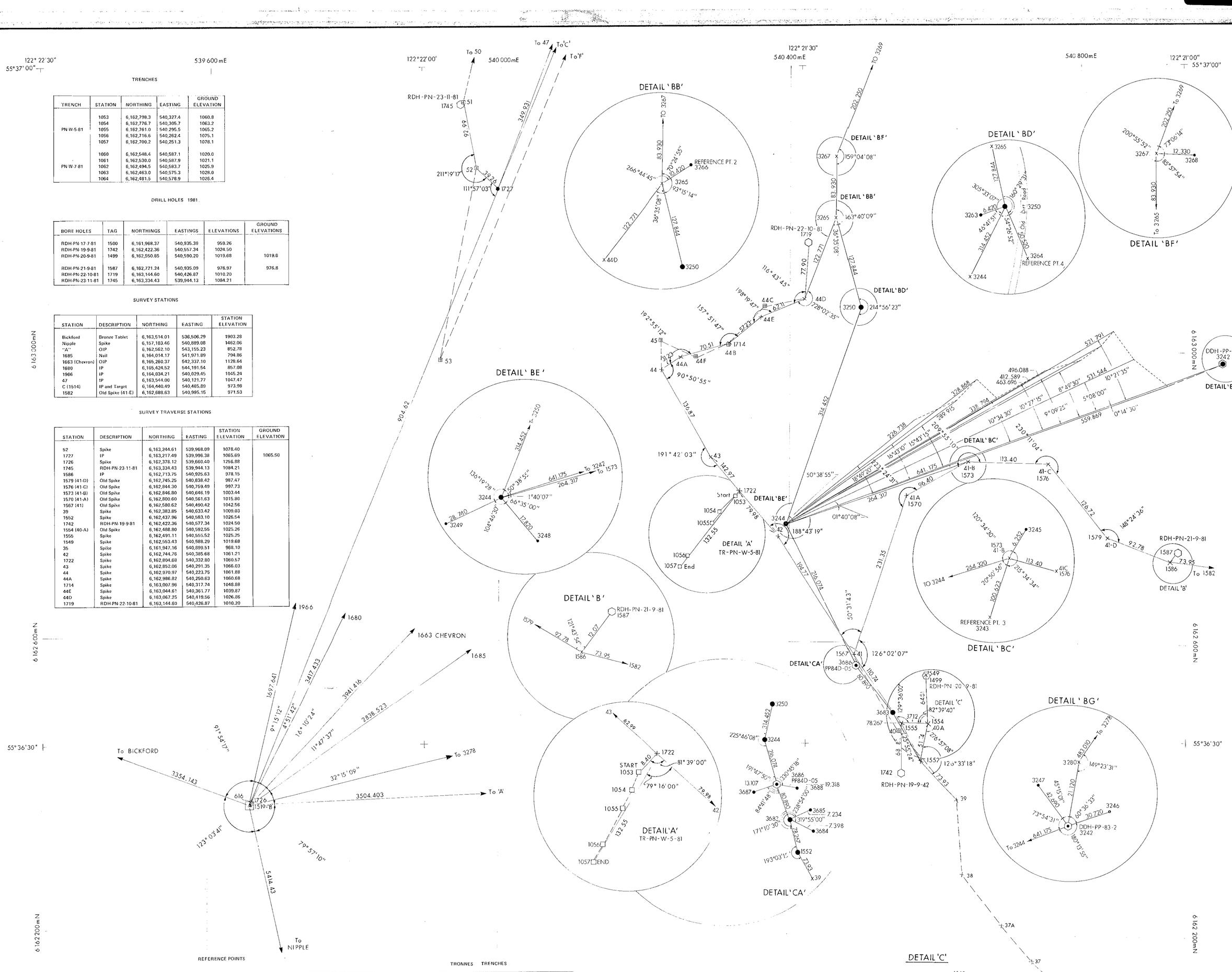
BORE HOLES	TAG	NORTHINGS	EASTINGS	ELEVATIONS	GROUND ELEVATIONS
RDH-PN-17-7-81	1500	6,161,968.37	540,935.39	959.26	
RDH-PN-19-9-81	1742	6,162,422.36	540,557.34	1024.50	
RDH-PN-20-9-81	1499	6,162,550.85	540,590.20	1019.68	1019.6
RDH-PN-21-9-81	1587	6,162,721.24	540,935.09	976.97	976.8
RDH-PN-22-10-81	1719	6,163,144.60	540,426.87	1010.20	
RDH-PN-23-11-81	1745	6,163,334.43	539,944.13	1084.21	

SURVEY STATIONS

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION
Bickford	Bronze Tablet	6,163,514.01	536,506.29	1903.28
Nipple	Spike	6,157,103.46	540,889.08	1462.06
"A"	OIP	6,162,562.10	543,155.23	852.78
1685	Nail	6,164,014.17	541,971.89	794.86
1663 (Chevron)	OIP	6,165,260.37	542,337.10	1128.64
1680	IP	6,165,424.52	544,191.54	857.08
1966	IP	6,164,034.21	540,029.45	1045.24
47	IP	6,163,544.00	540,121.77	1047.47
C (1514)	IP and Target	6,164,440.49	540,485.89	973.98
1582	Old Spike (41-E)	6,162,688.63	540,995.15	971.53

SURVEY TRAVERSE STATIONS

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
52	Spike	6,163,244.61	539,968.09	1078.40	
1727	IP	6,163,217.49	539,996.38	1065.69	1065.50
1726	Spike	6,162,378.12	539,660.40	1256.88	
1745	RDH-PN-23-11-81	6,163,334.43	539,944.13	1084.21	
1586	IP	6,162,713.75	540,925.63	978.15	
1579 (41-D)	Old Spike	6,162,745.25	540,838.42	987.47	
1576 (41-C)	Old Spike	6,162,844.30	540,759.49	997.73	
1573 (41-B)	Old Spike	6,162,846.80	540,646.19	1003.44	
1570 (41-A)	Old Spike	6,162,800.60	540,561.63	1015.80	
1567 (41)	Old Spike	6,162,580.62	540,490.42	1042.56	
39	Spike	6,162,383.85	540,633.42	1009.03	
1552	Spike	6,162,437.96	540,583.10	1026.54	
1742	RDH-PN-19-9-81	6,162,422.36	540,577.34	1024.50	
1554 (40-A)	Old Spike	6,162,488.80	540,592.55	1025.26	
1555	Spike	6,162,491.11	540,555.52	1025.25	
1549	Spike	6,162,553.43	540,588.29	1019.68	
35	Spike	6,161,947.16	540,899.51	968.10	
42	Spike	6,162,744.76	540,385.68	1061.21	
1722	Spike	6,162,804.68	540,332.80	1060.57	
43	Spike	6,162,852.06	540,291.35	1066.03	
44	Spike	6,162,970.97	540,223.75	1061.88	
44A	Spike	6,162,986.82	540,250.63	1060.68	
1714	Spike	6,163,007.96	540,317.74	1048.88	
44E	Spike	6,163,044.61	540,361.77	1039.87	
44D	Spike	6,163,067.25	540,419.56	1026.86	
1719	RDH-PN-22-10-81	6,163,144.60	540,426.87	1010.20	



REFERENCE POINTS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING
1555	Spike			1025.25		6,162,491.11	540,555.52
	Tag 1554 (old 40-A Spike)	93-34-10	37.10	1025.26		6,162,488.80	540,592.55
	Tag 1556 in 37cm ø Spruce	111-45-09	2.19	1026.38		6,162,490.30	540,557.55
1567	Old Spike (41)			1042.56		6,162,580.62	540,490.42
	Tag 1568 in 38cm ø Pine	210-27-23	6.39	1044.60	1044.0	6,162,575.11	540,487.18
	Tag 1569 in 30cm ø Pine	96-37-06	8.42	1042.98	1042.1	6,162,579.65	540,498.78
1570	Old Spike (41-A)			1015.80		6,162,800.60	540,561.63
	Tag 1571 in 15cm Pine	340-53-37	1.62	1017.03	1015.9	6,162,802.13	540,561.10
	Tag 1572 in 30cm Spruce	80-39-54	1.48	1016.65	1015.8	6,162,800.84	540,563.09
1573	Old Spike (41-B)			1003.44		6,162,846.80	540,646.19
	Tag 1574 in 25cm ø Pine	293-35-04	2.92	1005.05	1003.9	6,162,847.97	540,643.51
	Tag 1575 in 40cm Pine	182-53-55	0.79	1004.71	1003.4	6,162,846.01	540,646.15
1576	Old Spike (41-C)			997.73		6,162,844.30	540,759.49
	Tag 1577 in 40cm ø Pine	84-20-07	4.96	999.22	998.0	6,162,844.79	540,764.43
	Tag 1578 in 38cm ø Pine	349-11-44	1.33	999.50	998.1	6,162,845.61	540,759.24
1579	Old Spike (41-D)			987.47		6,162,745.25	540,838.42
	Tag 1580 in 30cm ø Spruce	258-20-00	11.03	990.32	998.0	6,162,743.02	540,827.62
	Tag 1581 in 30cm ø Pine	06-09-55	12.66	990.32	989.0	6,162,757.84	540,839.78
1586	IP			978.15		6,162,713.75	540,925.63
	Tag 1566 in 20cm ø Pine	127-54-23	17.58	978.21	977.0	6,162,702.55	540,939.50
	Tag 1585 in 40cm ø Pine	07-54-47	13.44	979.82	978.7	6,162,727.06	540,927.48
	Tag 1587 (RDH-PN-21-9-81)	51-37-45	12.07	976.97	976.8	6,162,721.24	540,935.09
1714	Spike			1048.88		6,163,007.96	540,317.74
	Tag 1716 in 20cm Pine	185-30-32	3.96	1051.20	1050.0	6,163,004.02	540,317.36
1719	RDH-PN-22-10-81			1010.20		6,163,144.60	540,426.87
	Tag 1720 in 22cm ø Spruce	115-13-32	5.54	1011.54	1010.0	6,163,142.24	540,431.88
	Tag 1721 in 35cm ø Spruce	230-42-38	15.49	1012.39	1011.6	6,163,134.79	540,414.88
1742	RDH-PN-19-9-81			1024.50		6,162,422.36	540,557.34
	Tag 1743 in 35cm Spruce	46-02-30	14.39	1023.57	1022.2	6,162,432.35	540,567.70
	Tag 1744 in 30cm Pine	144-09-30	12.26	1023.68	1021.9	6,162,412.42	540,564.52
1745	RDH-PN-23-11-81			1084.21		6,163,334.43	539,944.13
	Tag 1746 in 25cm Pine	324-32-52	6.22	1086.82	1086.1	6,163,339.50	539,940.52
	Tag 1747 in 25cm Spruce	84-03-23	6.86	1084.94	1083.8	6,163,335.14	539,950.95
35T				968.10		6,161,947.16	540,899.51
	Tag 1503 in 25cm ø Spruce	112-05-46	5.05	968.99	967.7	6,161,945.26	540,904.19
	Tag 1502 in 40cm ø Spruce	65-08-56	42.76	959.69	958.8	6,161,965.13	540,938.31
	Tag 1500 RDH-PN-17-7-81	59-24-40	41.68	959.26		6,161,968.37	540,935.39
	Tag 1501			962.95	961.7	6,161,954.78	540,924.17
39T				1009.03		6,162,383.85	540,633.42
	Tag 1548 in 25cm ø Pine	153-26-05	3.29	1010.37	1008.9	6,162,380.91	540,634.89
44-A T				1060.58		6,162,986.82	540,250.63
	Tag 1715 in 15cm Pine	102-34-20	1.42	1061.33	1060.4	6,162,986.51	540,252.02
44-D				1026.86		6,163,067.25	540,419.56
	Tag 1718 in 18cm Pine	145-33-40	3.40	1028.34	1027.0	6,163,064.45	540,421.48
44-E				1039.87		6,163,044.61	540,361.77
	Tag 1717 in 25cm Pine	140-17-35	4.01	1040.91	1039.9	6,163,041.52	540,364.36
1549	Spike			1019.68		6,162,553.43	540,588.29
	Tag 1550 in 35cm ø Pine	121-48-16	10.28	1024.44	1018.5	6,162,548.01	540,597.03
	Tag 1551 in 30cm ø Pine	07-45-55	10.44	1021.40	1020.2	6,162,563.77	540,589.70
1552	Spike			1026.54		6,162,437.96	540,583.10
	Tag 1553 in 40cm ø Pine	146-26-57	1.14	1027.80	1026.6	6,162,437.01	540,583.73

55°36'00"
122°22'30"
539 600mE

TRONNES TRENCHES

TRENCH	NORTHINGS	EASTINGS	ELEVATION
22	6,161,934.09	540,870.47	975.07
23	6,161,952.81	540,890.81	970.65
24	6,162,120.10	540,777.75	1004.22
25	6,162,120.94	540,765.61	1006.85
26	6,162,176.95	540,817.53	988.01
27	6,162,212.06	540,673.95	1005.55
28	6,162,893.54	540,209.64	1059.92
29	6,162,999.14	540,230.35	1060.17
30	6,163,039.47	539,836.75 *	1106.62
31	6,163,244.61	539,956.25 *	1079.88
32	6,163,306.33	539,952.64 *	1082.24
35	6,162,835.73	540,503.39 *	1036.69
36	6,162,682.92	540,517.64 *	1030.37
37	6,162,879.73	540,098.87	1086.40
38	6,162,946.09	540,162.62	1066.27
39	6,162,600.75	540,549.22	1027.98
40	6,162,630.25	540,582.32	1019.52
41	6,162,534.77	540,479.88	1045.76
42	6,162,347.71	540,405.04	1032.24
43	6,163,011.99	540,323.24 *	1047.52
44	6,163,089.68	540,436.25 *	1018.64
45	6,163,115.08	540,429.87 *	1016.30
46	6,162,232.81	540,712.76	996.89
47	6,162,269.88	540,741.84	985.62

* unadjusted elevation

"TRONNES" TRAVERSE STATIONS

STATION	NORTHINGS	EASTINGS	STATION ELEVATION
35	6,161,947.16	540,899.51	968.10
36	6,162,129.35	540,778.97	1003.01
37	6,162,164.26	540,738.09	1007.35
37A	6,162,213.99	540,697.33	1001.78
38	6,162,280.49	540,642.69	994.58
39	6,162,383.85	540,633.42	1009.03
40	6,162,478.24	540,553.68	1034.67
40A (1554)	6,162,488.80	540,592.55	1025.26
41 (1567)	6,162,580.62	540,490.42	1042.56
41A (1570)	6,162,800.60	540,561.63	1015.80
41B (1573)	6,162,846.80	540,646.19	1003.44
41C (1576)	6,162,844.30	540,759.49	997.23
41D (1579)	6,162,745.25	540,838.42	987.43
42	6,162,744.76	540,385.68	1061.21
43	6,162,852.06	540,291.35	1066.03
44	6,162,970.97	540,223.75	1061.88
44A	6,162,986.82	540,250.63	1060.58
44B	6,163,007.50	540,317.47	
44C	6,163,057.11	540,366.08	
44D	6,163,067.25	540,419.56	1026.86
44E	6,163,044.61	540,361.77	1039.87
44F	6,162,989.14	540,272.38	
45	6,163,009.56	540,222.91	1060.35
51	6,163,337.04	539,947.73	1078.40
52	6,163,244.61	539,968.09	
53	6,162,983.04	539,918.70	

NOTE: TRAVERSE STATIONS and TRENCHES surveyed by TRONNES SURVEYS 1976 LTD. were tied-in (as indicated) and adjusted by E.D. WATSON, B.C.L.S. 1981.

REFERENCE POINTS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING
1519 (B)	OIP			1256.75		6,162,372.40	539,658.11
	Bolt on N.E. Corner of Tower	59-29-31	4.09	1256.86	1256.5	6,162,374.48	539,661.64
	Bolt on N.W. Corner of Tower	185-37-32	8.06	1255.63	1255.3	6,162,364.38	539,657.32
	OIP Centre of Tower	318-48-27	8.30	1255.95		6,162,378.65	539,652.64

122°22'00"
540 000mE

REFERENCE POINTS (1983)

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING
3267	30cm Spike			996.99	996.9	6 163 266.19	540 463.06
	Tag 3268 in 20cm Spruce	94-20-37	12.33	1001.67	1000.3	6 163 265.26	540 475.37
3265	30cm Spike			1002.84	1002.8	6 163 182.26	540 462.61
	Tag 3266 (Nail in top of pulwer) (Reference Post 2)	70-43-26	10.42	1002.63	1002.0	6 163 185.70	540 472.45
3250	25cm Iron Pin			1021.64	1021.4	6 163 059.39	540 497.90
	Tag 3263 in 30cm Spruce	245-36-54	6.42	1023.15	1021.9	6 163 056.74	540 492.66
	Tag 3264 (Reference Point 4)	144-28-11	50.52	1019.51	1019.5	6 163 018.27	540 527.26
3244	25cm Iron Pin			1059.60	1059.7	6 162 761.92	540 395.95
	Tag 3249 in 15cm Fir	242-35-35	28.74	1066.75	1064.5	6 162 748.69	540 370.43
	Tag 3248 in 10cm Fir	137-49-05	17.82	1059.46	1056.6	6 162 748.21	540 407.92
3242	Nail (DDH PP 83-2)			977.44	977.5	6 162 585.77	540 936.78
	Tag 3246 in 15cm Pine	59-20-03	30.72	978.05	976.7	6 162 996.61	541 625.63
	Tag 3247 in 15cm Spruce	323-28-28	42.69	981.18	979.7	6 163 020.08	540 971.37
1573	Old Spike			1003.50	1003.5	6 162 846.55	540 646.22
	Nail 3245 in 20cm Spruce	11-48-35	6.25	1005.73	1004.5	6 162 853.07	540 642.50
	Spike 3243 in stump + Reference Point 3	227-23-09	100.523	1017.85	1016.5	6 162 778.83	540 532.17

PHOTO CONTROL POINT

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
B (1519)	OIP & Target	6,162,372.40	539,658.11	1256.75	1256.60

540 400mE
122°21'30"

TRAVERSE STATIONS (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3267	30cm Spike	6 163 266.19	540 463.06	996.99	996.9
3265	30cm Spike	6 163 182.26	540 462.61	1002.84	1002.8
3250	25cm Iron Pin	6 163 059.39	540 497.90	1021.64	1021.4
3244	25cm Iron Pin	6 162 761.92	540 395.95	1059.60	1059.7
3242	Nail (DDH PP 83-2)	6 162 585.77	540 936.78	977.44	977.5
3280	30cm Spike	6 162 996.61	541 625.63	977.36	977.4

GEOLOGICAL REFERENCE POINTS (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3269	Tag (Nail on top of pulwer) (Reference Point No. 2	6 163 185.70	540 472.45	1002.63	1002.9
3264	Tag (Reference Point No. 4)	6 163 018.27	540 527.26	1019.51	1019.5
3243	Spike in stump + Reference Point No. 3	6 162 778.83	540 532.17	1017.85	1016.5

DRILL HOLES (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3242	Nail (DDH PP 83-2)	6 162 585.77	540 936.78	977.54	977.5

SURVEY STATIONS (1983)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEVATION	GROUND ELEVATION
3269	25cm Iron Pin	6 163 454.71	540 536.33	970.26	976.2
3278	Nail on 40cm Stump	6 163 380.24	541 306.20	917.97	917.6

DRILL HOLES (1984)

STATION	DESCRIPTION	NORTHING	EASTING	STATION ELEV.	GROUND ELEV.
3685	Nail in Hub (PP84D-05)	6 162 568.91	540 403.56	1042.13	1042.2

REFERENCE POINTS (1984)

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEV.	GROUND ELEV.	NORTHING	EASTING
3683	25cm Iron Pin			1036.53	1036.8	6 162 595.83	540 544.12
	Tag 3685 on 0.30m Stump	29-01-57	7.234	1038.45	1036.9	6 162 592.16	540 547.63
3686	Tag 3684 on 0.30cm Stump	110-02-58	7.398	1036.53	1036.1	6 162 593.30	540 551.87
	Nail in Hub (PP84D-05)			1042.13	1042.2	6 162 568.91	540 403.56
	Tag 3681 on 0.20cm Stump	226-00-15	13.107	1041.80	1044.0	6 162 593.86	540 484.12
	Tag 3688 on 0.20cm Stump	312-03-05	19.318	1041.44	1040.7	6 162 561.76	540 511.46

55°36'00"
122°21'00"
540 800mE

LEGEND :

- • NAIL
- × 12" SPIKE
- □ TRENCH
- ◠ DRILL HOLE
- ◭ CONTROL POINT OF NETWORK (GOV.)
- ● IRON POST
- ▲ 1981 PHOTO TARGET OR PHOTO I.D. POINT MARKED WITH IRON POST.
- ⊞ TRONNES SURVEY STATIONS

DETAILS ARE NOT TO SCALE

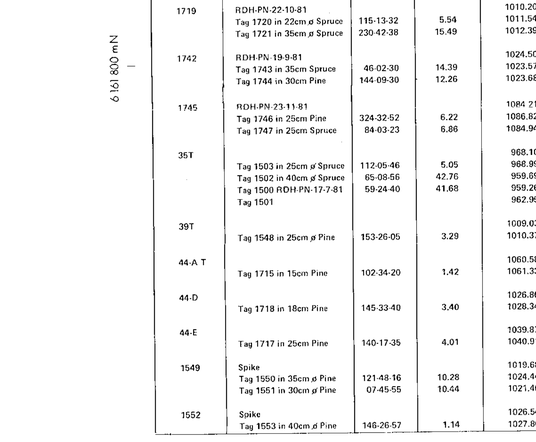
Bearings: Are derived from Provincial Government Control Stations "WOLF" and "BICKFORD" and referred to the 123rd meridian.

Coordinates: Are on UTM Projection Zone 10 and are derived from Provincial Government Control Stations.

Elevations: Are metric, obtained by reciprocal trigonometric levelling on geodetic datum and are derived from Department of Highways Benchmarks and Provincial Government Control Stations.

0 10 20 30 40 50 100 150 200 Metres
SCALE 1:2000

MAP INDEX



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Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.
1980 — 1981

NOMAN CREEK PROSPECT
TRAVERSE SURVEY MAP

C.L. 6263
N.T.S. 93O/9

SHEET No. 6
U.T.M. ZONE 10

AUTHOR: D. E. WATSON, B.C.L.S.	SCALE: 1:2000	ENCLOSURE No:
DATE: 82-03-11	REVISED: 84-10	DRAWING No: PP1V06
To Accompany		

PR-PinePASS 84(1734 #2)
PR030

APPENDIX 7