

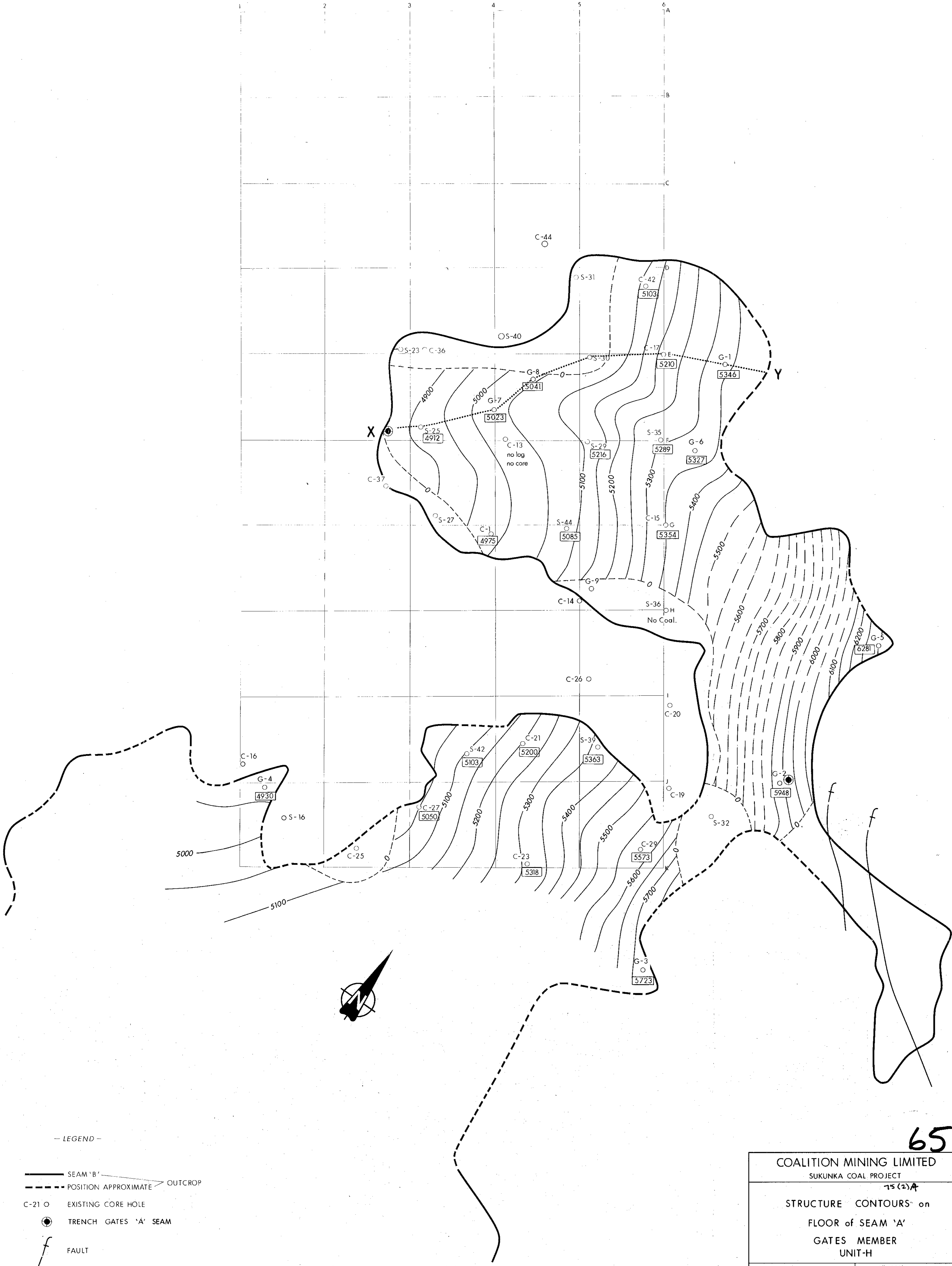
~~PR-SUKUNKA-75(2)A~~

PR-SUKUNKA-75(2)A  
SUKUNKA -2

GATES MEMBER :  
REPORT :

VOLUME 2

OCT-Nov 1975

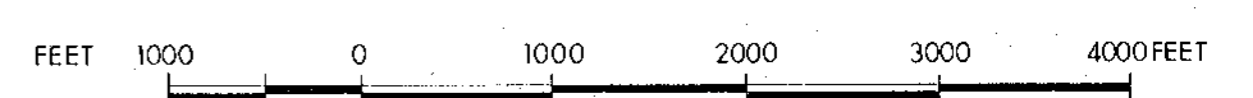


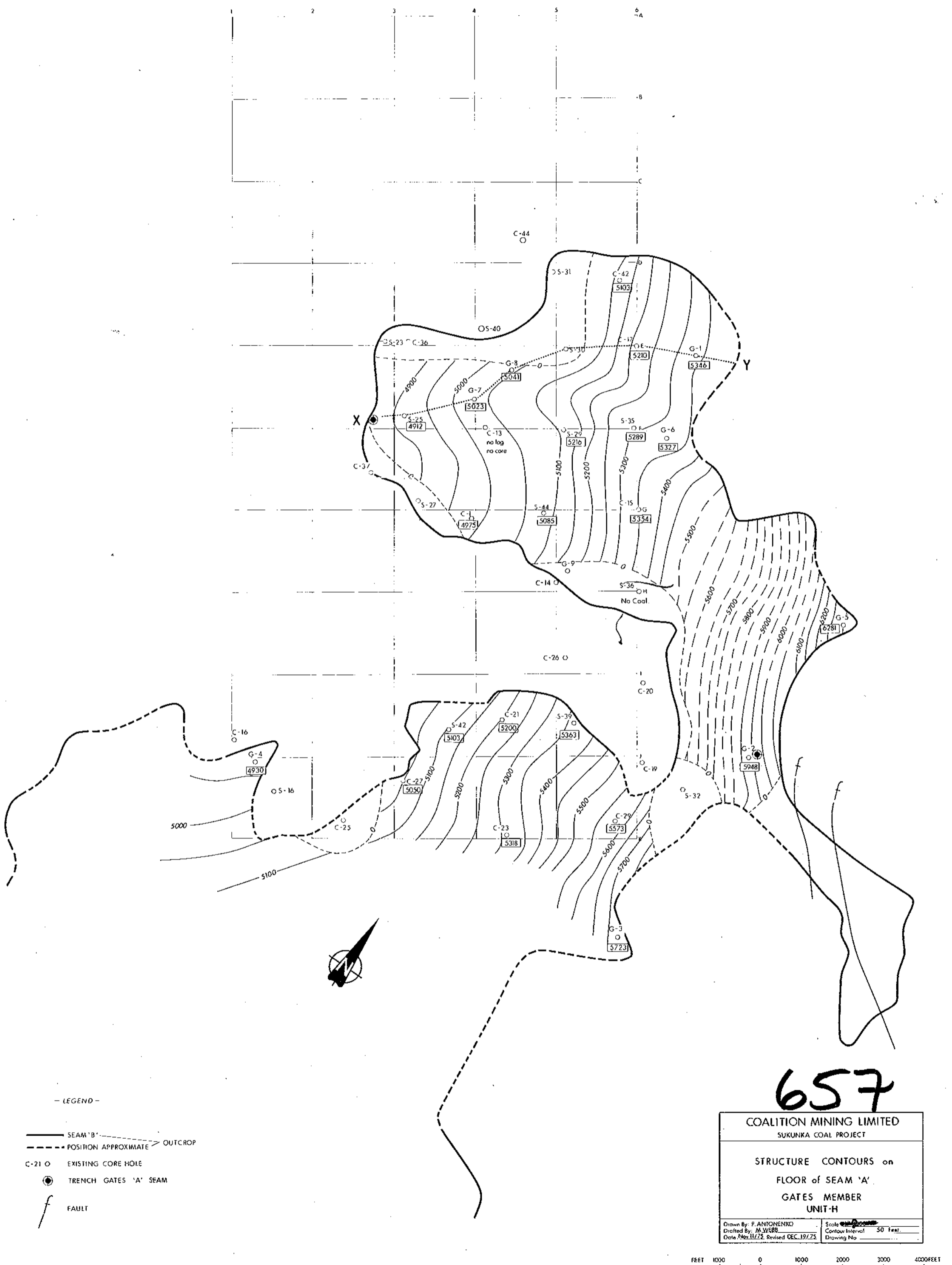
657

— LEGEND —

- SEAM 'B'
- POSITION APPROXIMATE --- OUTCROP
- C-21 ○ EXISTING CORE HOLE
- TRENCH GATES 'A' SEAM
- f FAULT

<b>COALITION MINING LIMITED</b> SUKUNKA COAL PROJECT 75 (2)A	
<b>STRUCTURE CONTOURS on</b> <b>FLOOR of SEAM 'A'</b> <b>GATES MEMBER</b> <b>UNIT-H</b>	
Drawn By: P. ANTONENKO Drafted By: M. WEBB Date: Nov 11/75. Revised: DEC 19/75.	Scale: 1"=1000' Contour Interval: 50 Feet. Drawing No.



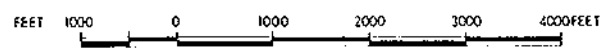


— LEGEND —

- SEAM 'B'
- - - - - POSITION APPROXIMATE
- OUTCROP
- C-21 ○ EXISTING CORE HOLE
- TRENCH GATES 'A' SEAM
- f FAULT

**657**

<b>COALITION MINING LIMITED</b>	
SUKUNKA COAL PROJECT	
<b>STRUCTURE CONTOURS on</b>	
<b>FLOOR of SEAM 'A'</b>	
<b>GATES MEMBER</b>	
<b>UNIT-H</b>	
Drawn By: P. ANTONENKO	Scale: <del>1:2000</del>
Drafted By: M. W. G. B.	Contour Interval: 50 Feet
Date: Mar. 11/72, Revised DEC. 19/72	Drawing No. ....





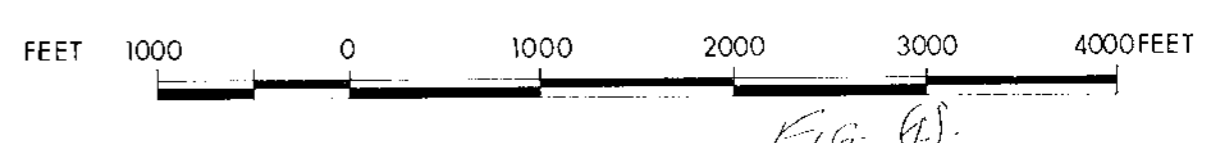
- LEGEND —
- TRENCH OF 'B' SEAM
  - SEAM 'B'
  - - - POSITION APPROXIMATE
  - C-21 EXISTING CORE HOLE
  - f FAULT

**COALITION MINING LIMITED**  
SUKUNKA COAL PROJECT

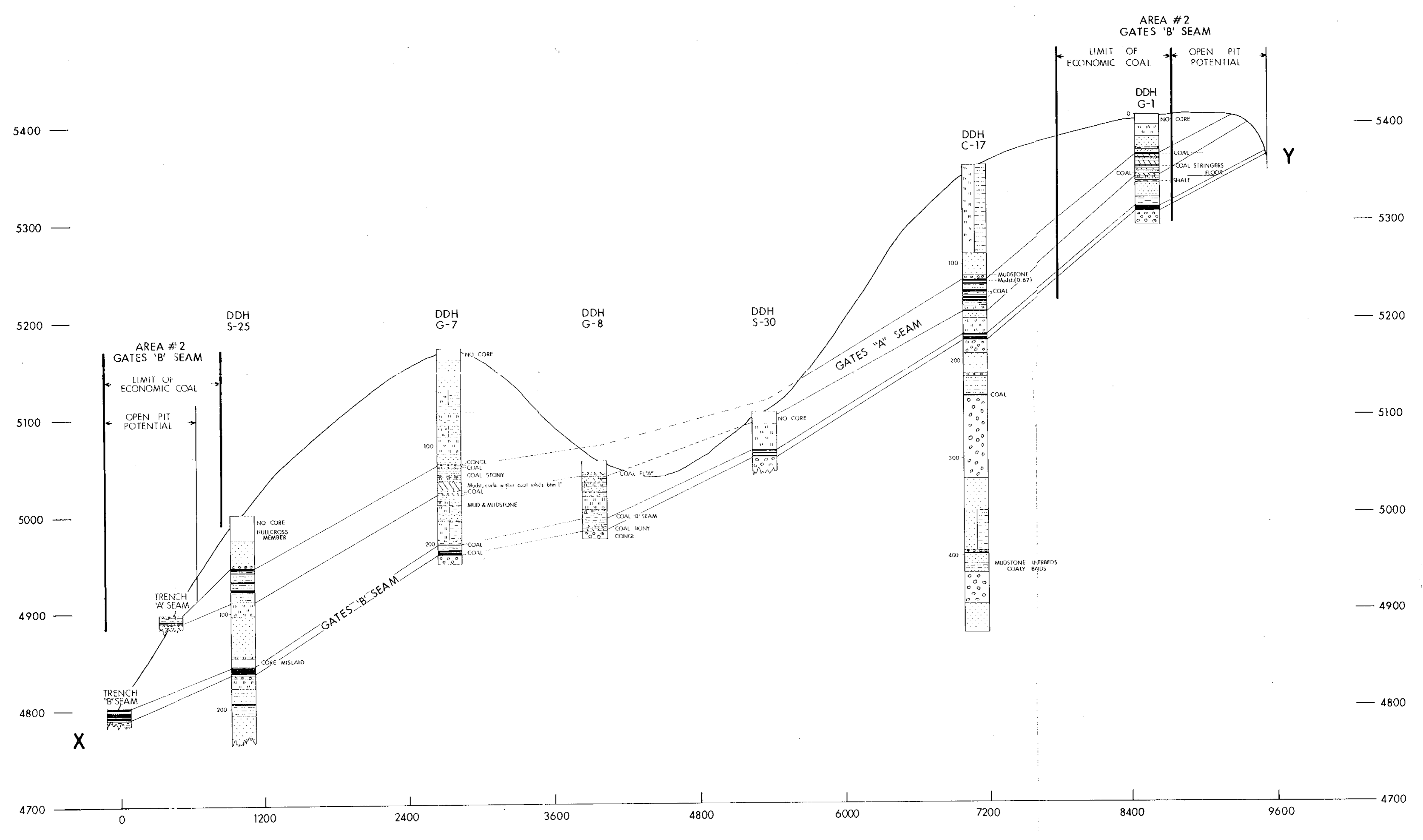
STRUCTURE CONTOURS on  
FLOOR of SEAM 'B'  
GATES MEMBER.

657

Drawn By: P. ANTONENKO	Scale: 1" = 1000'
Drafted By: M. WEBB	Contour Interval: 30 feet
Date: Nov. 17, 72	Drawing No. MAE 38 - Revised



PREPARED BY: PET-KO Geological Services Ltd.



**COALITION MINING LTD.**  
SUKUNKA COAL PROJECT  
GEOLOGICAL  
CROSS SECTION X-Y

DATE: FEB 11, 1976

HORIZONTAL SCALE 1" = 540'  
VERTICAL SCALE 1" = 67'

PREPARED BY: PET-KO Geological Services Ltd.



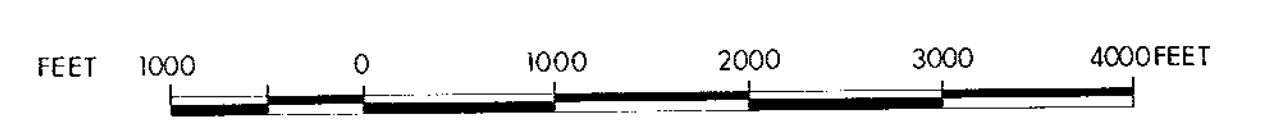
— LEGEND —

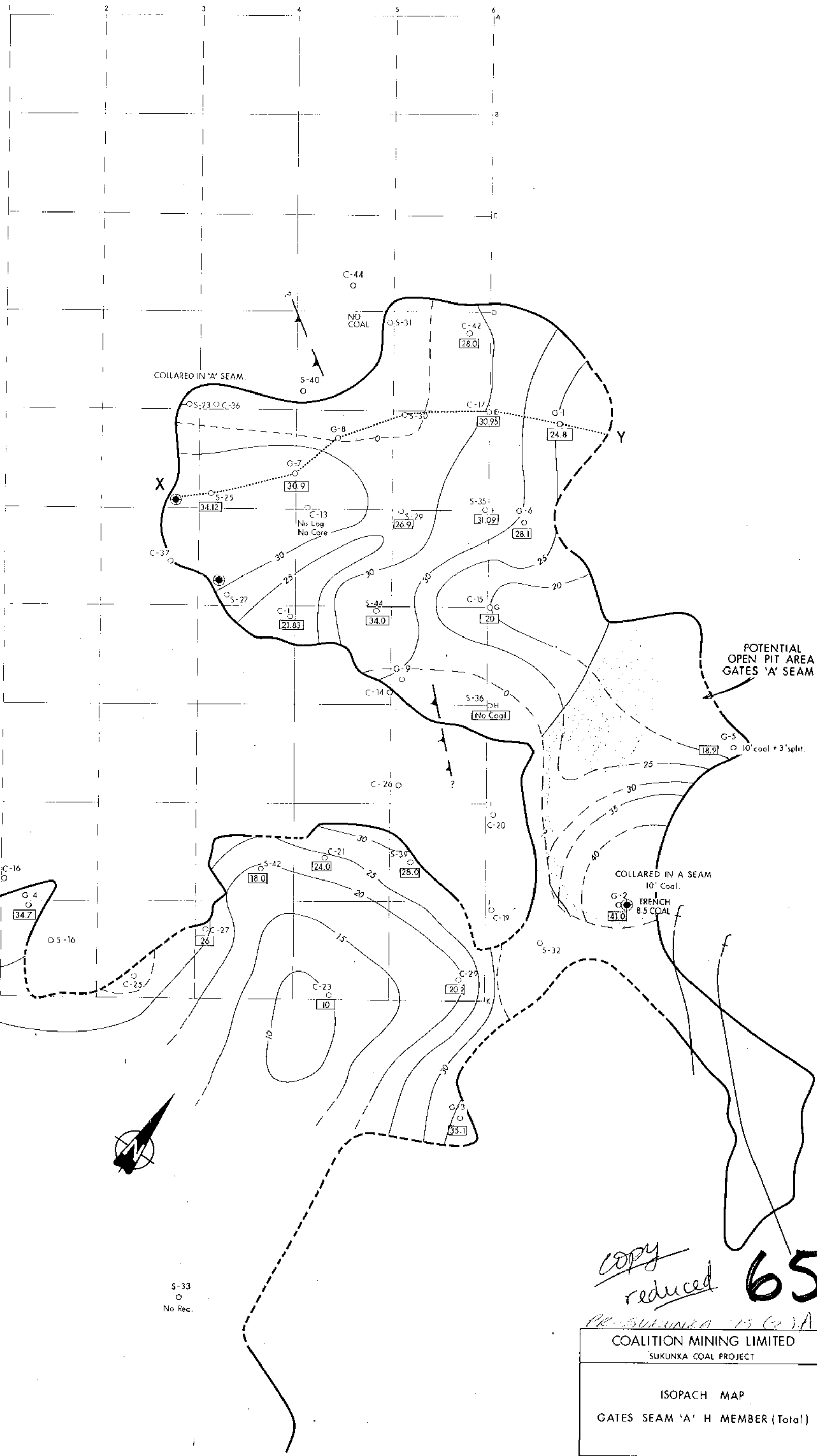
- SEAM 'B' OUTCROP
- POSITION APPROXIMATE
- EXISTING CORE HOLE
- GATES 'A' SEAM TRENCH
- FAULT
- POSSIBLE ECONOMIC LIMITS of 'A' SEAM.

S-33  
○  
No Rec.

657

<b>COALITION MINING LIMITED</b>	
SUKUNKA COAL PROJECT	
<b>ISOPACH MAP</b>	
<b>GATES SEAM 'A' H MEMBER (Total)</b>	
Drawn By: P. ANTONENKO	Scale: 1"=1000'
Drafted By: M. WEBB	Contour Interval: 5 feet.
Date: Nov. 11/75. Revised: Dec. 12, 75	Drawing No. _____





- LEGEND -

- SEAM 'B'
- POSITION APPROXIMATE
- OUTCROP
- C-21 ○ EXISTING CORE HOLE
- GATES 'A' SEAM TRENCH
- FAULT
- POSSIBLE ECONOMIC LIMITS of 'A' SEAM.

S-33  
○  
No Rec.

*copy reduced* **657**

PR-SUKUNKA '15 (2) A

<b>COALITION MINING LIMITED</b> SUKUNKA COAL PROJECT	
<b>ISOPACH MAP</b> <b>GATES SEAM 'A' H MEMBER (Total)</b>	
Drawn By: E. ANTONENKO Drafted By: M. WEBB Date: Nov. 11/75, Revised: Dec. 19/75	Scale: 1"=1000' Contour Interval: 5 Feet Drawing No.

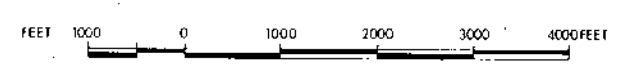
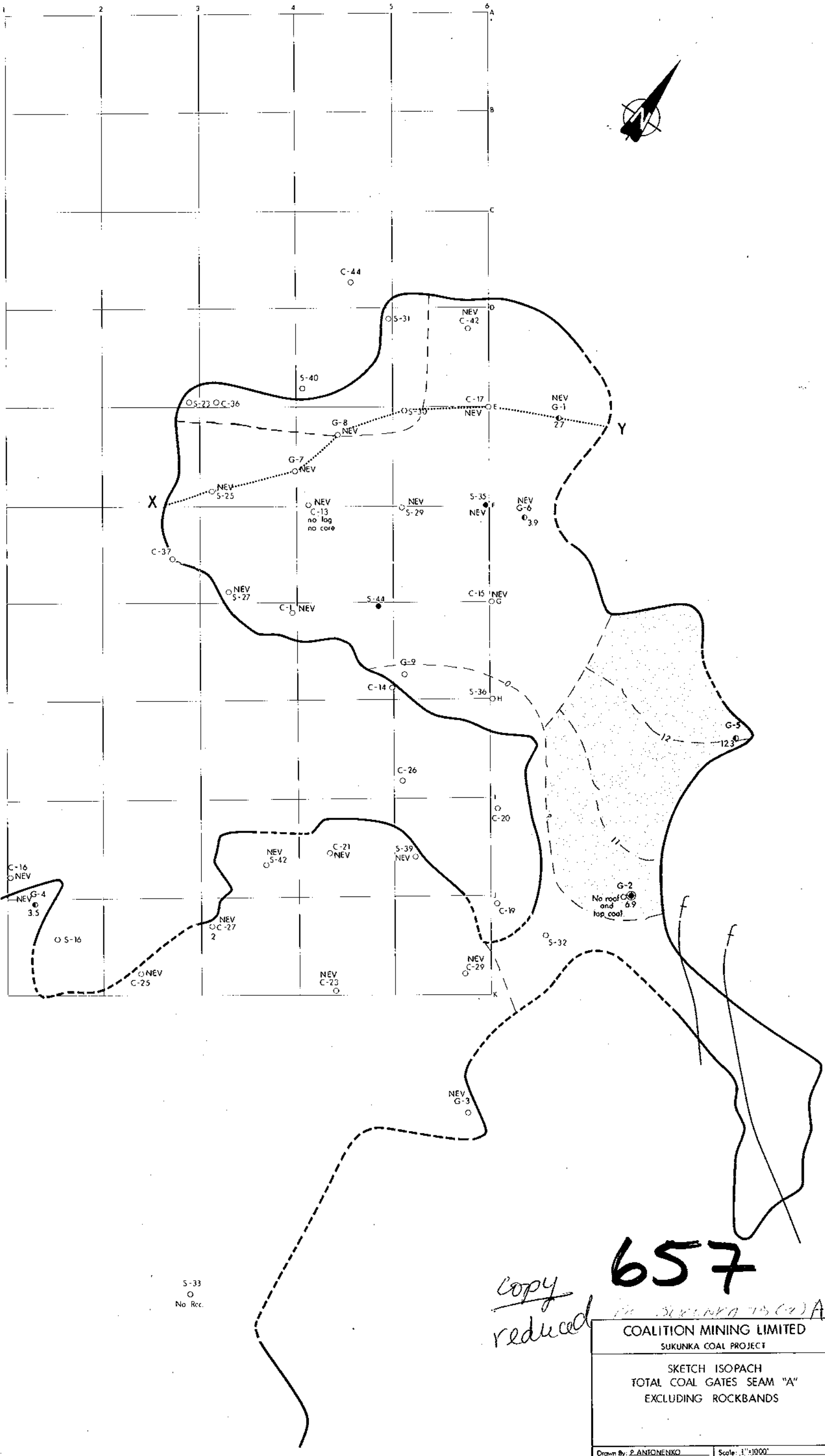
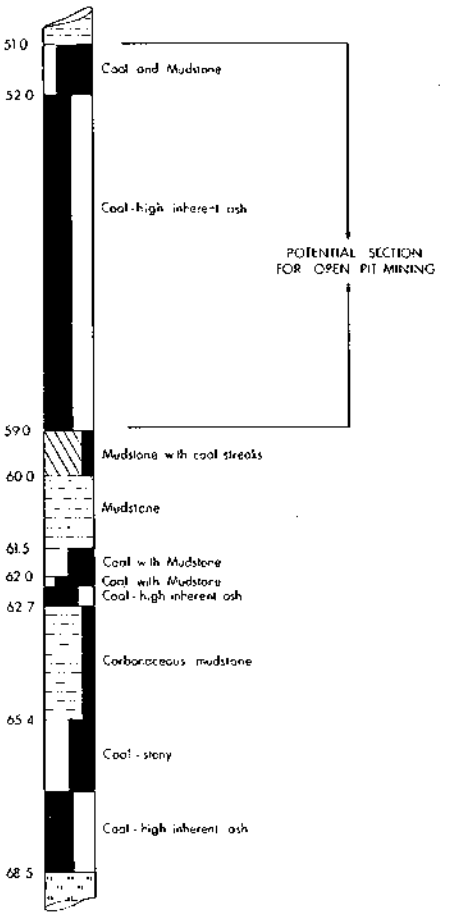


FIGURE 5

DDH G-5  
GATES "A" SEAM  
FULL SEAM SECTION  
SCALE 1" = 2'



LEGEND

- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "A"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- POSITION APPROXIMATE
- > OUTCROP
- C-21 ○ EXISTING BORE HOLE - NO ANALYSIS

f FAULT

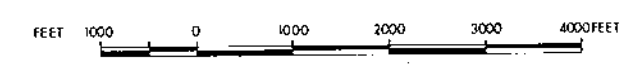
657

copy reduced

COALITION MINING LIMITED  
SUKUNKA COAL PROJECT

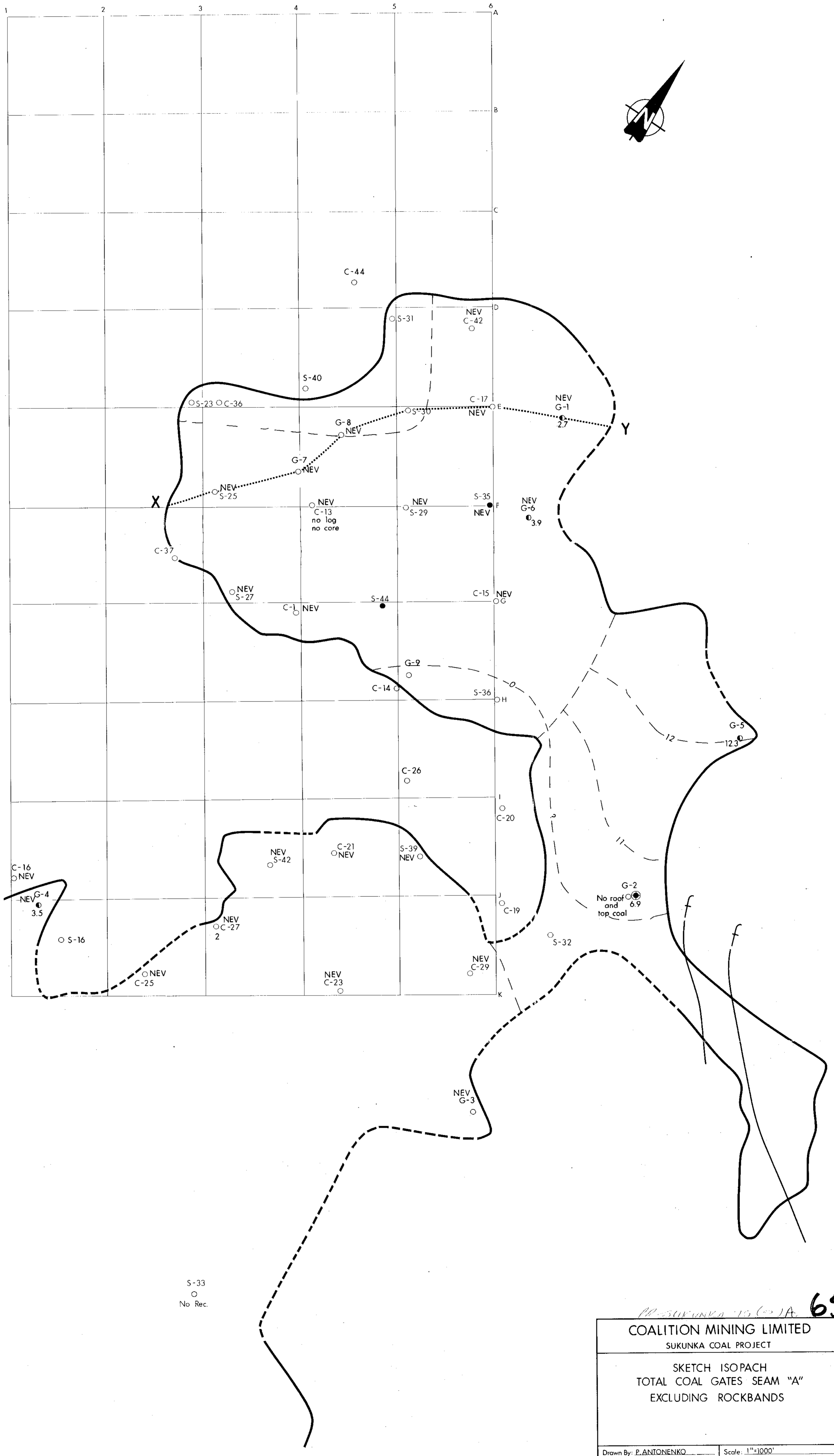
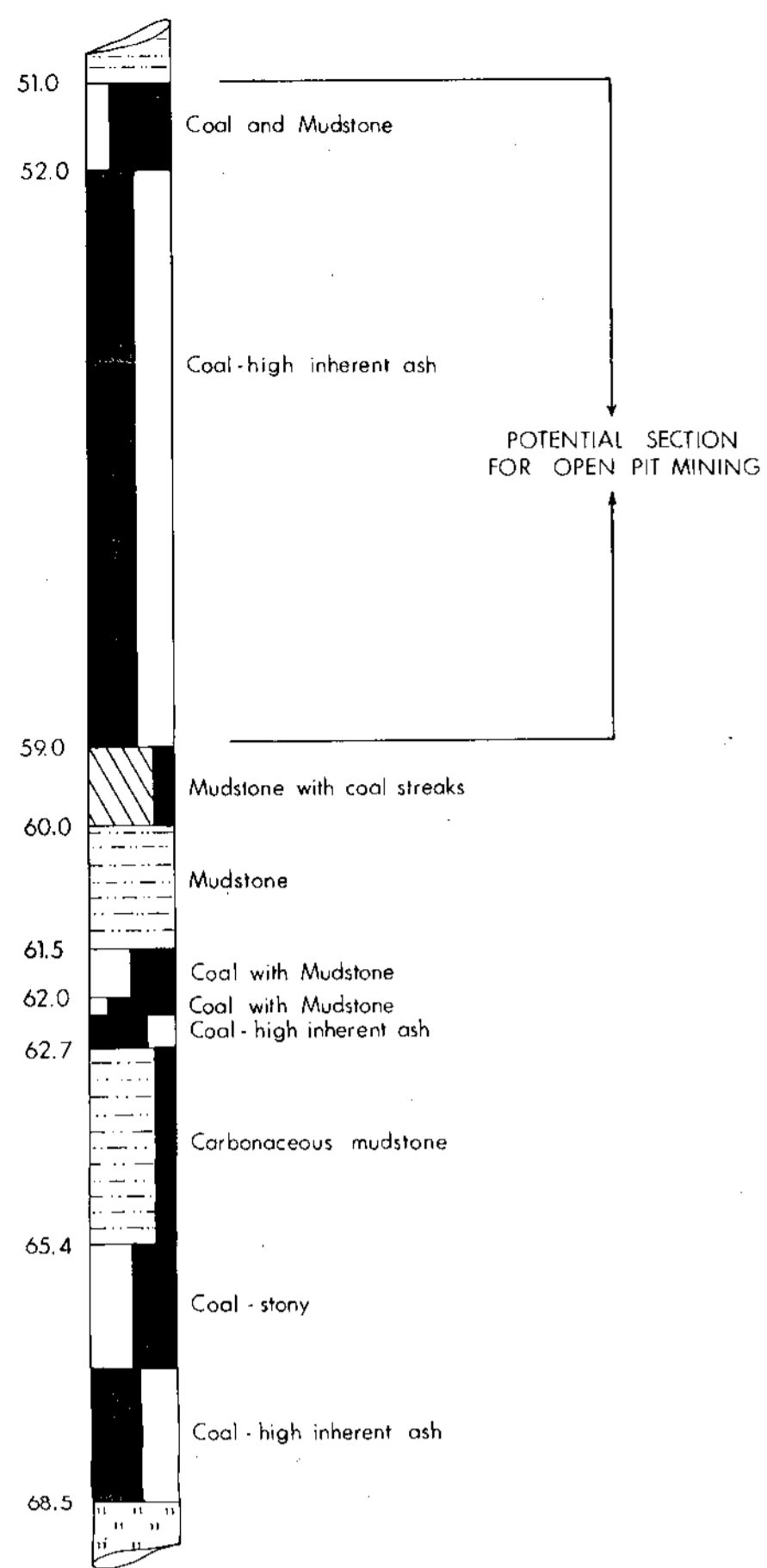
SKETCH ISOPACH  
TOTAL COAL GATES SEAM "A"  
EXCLUDING ROCKBANDS

Drawn By: P. ANTONENKO	Scale: 1" = 1000'
Drafted By: M. J. W.	Contour Interval: _____
Date FEB. 13/20. Revised: _____	Drawing No. _____



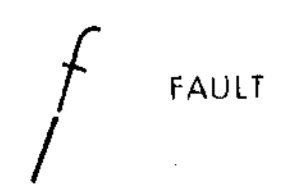
DDH G-5  
GATES "A" SEAM  
FULL SEAM SECTION

SCALE 1" = 2'



— LEGEND —

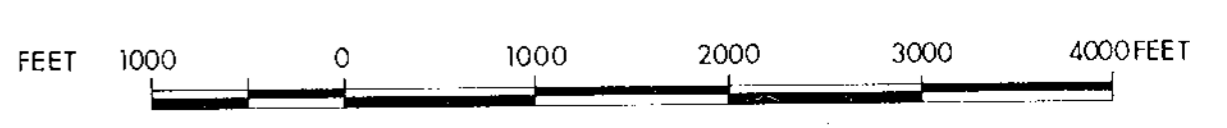
- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "A"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- SEAM "B"
- - - - - POSITION APPROXIMATE
- OUTCROP
- C-21 ○ EXISTING BORE HOLE - NO ANALYSIS



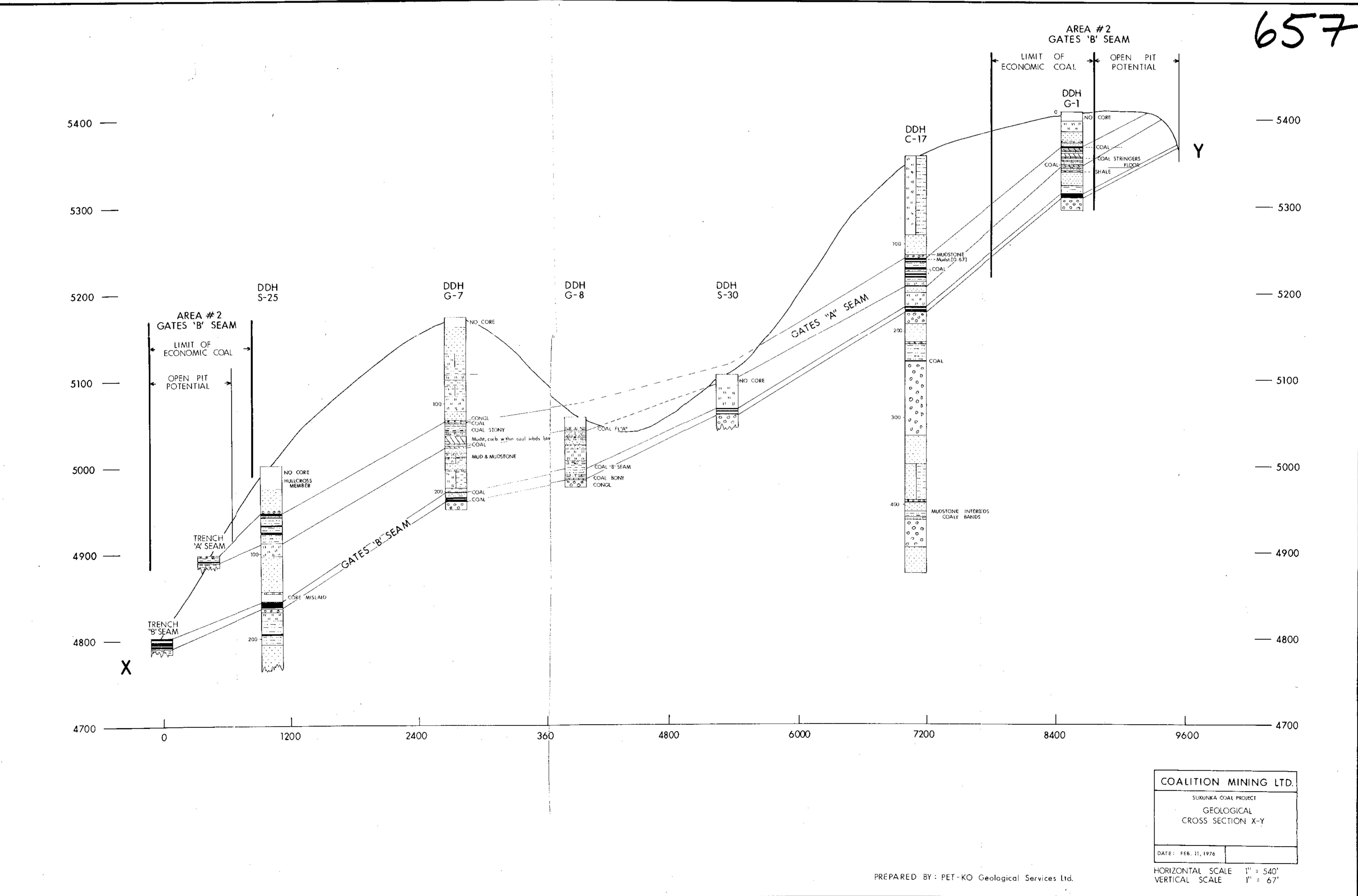
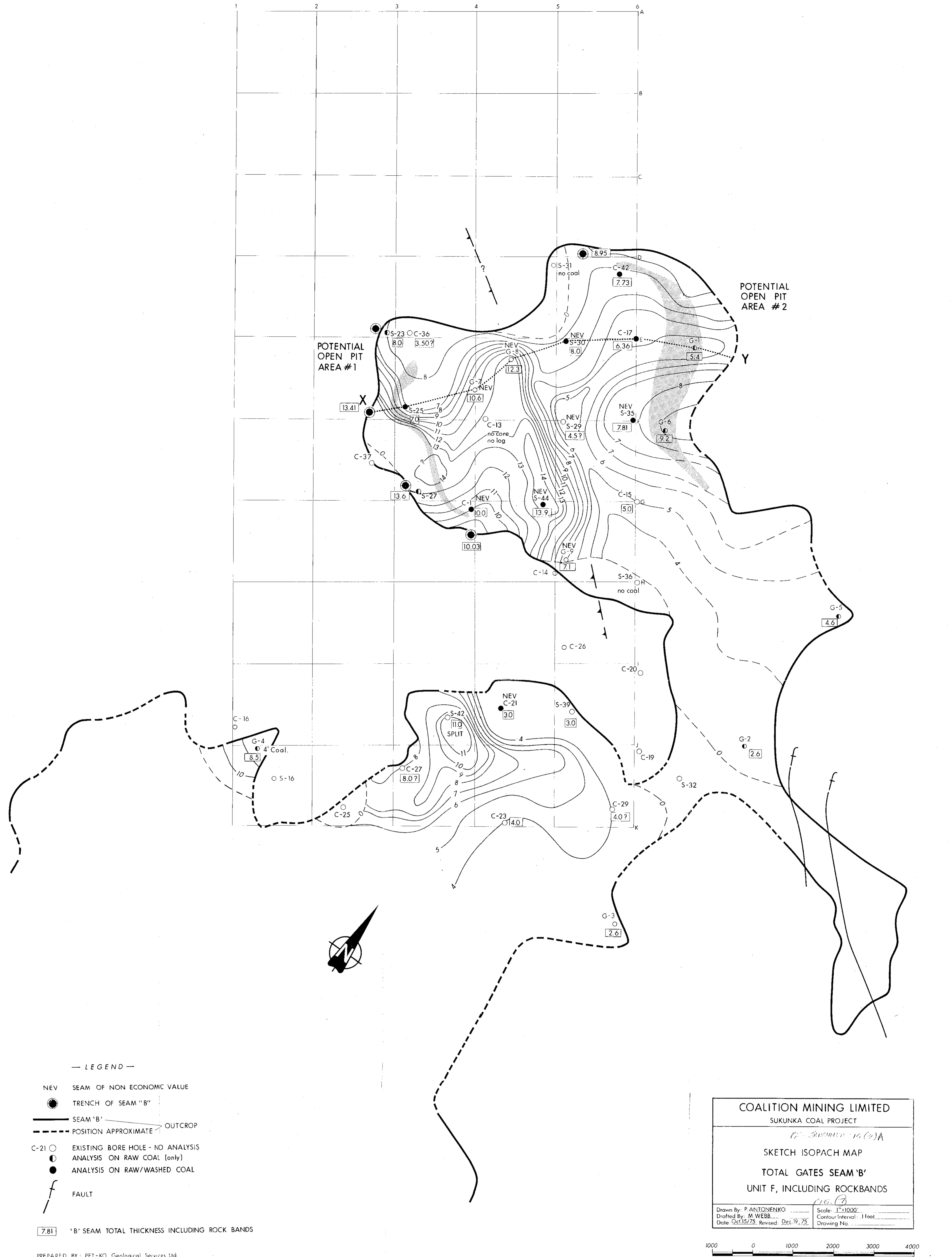
PREPARED BY: PET-KO Geological Services Ltd

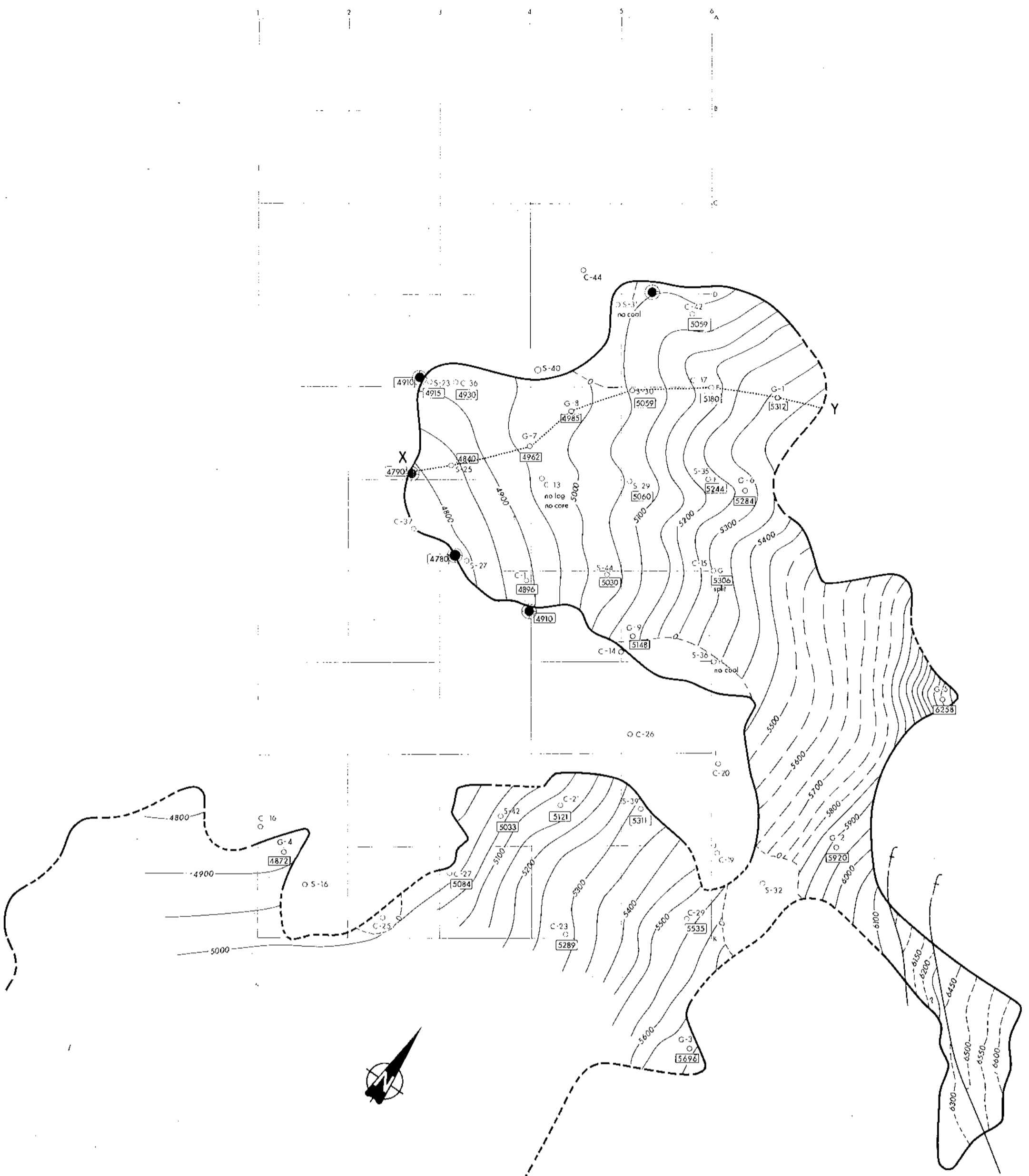
657

<b>COALITION MINING LIMITED</b>	
SUKUNKA COAL PROJECT	
SKETCH ISOPACH TOTAL COAL GATES SEAM "A" EXCLUDING ROCKBANDS	
Drawn By: P. ANTONENKO	Scale: 1"=1000'
Drafted By: M. J. W.	Contour Interval: _____
Date FEB.13/76. Revised: _____	Drawing No. _____







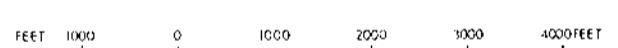


- LEGEND
- TRENCH OF 'B' SEAM
  - SEAM 'B'
  - POSITION APPROXIMATE OUTCROP
  - EXISTING CORE HOLE
  - FAULT

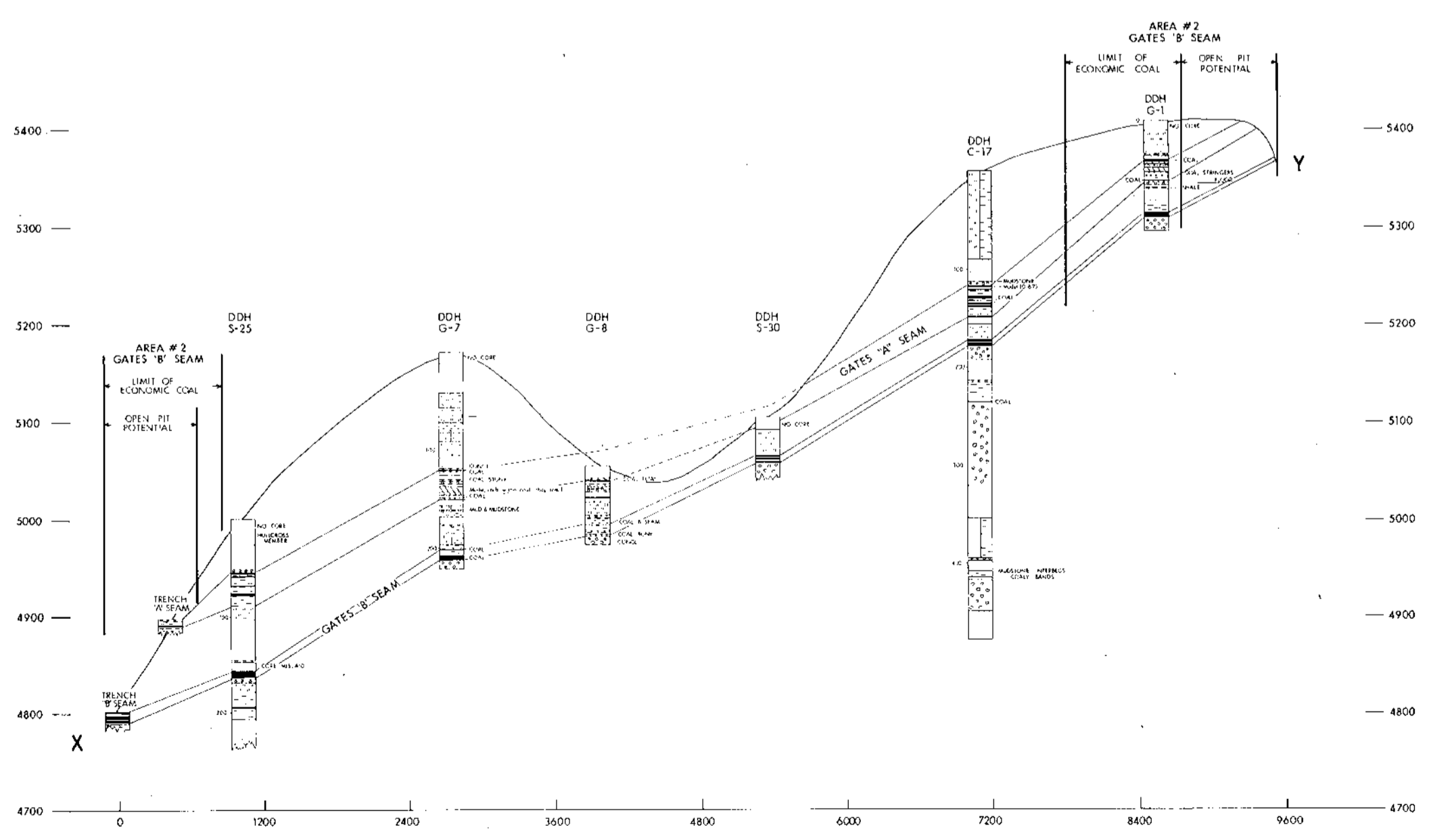
PREPARED BY: PET-KO Geological Services Ltd

*copy reduced*  
**657**

<b>COALITION MINING LIMITED</b> SUKUNKA COAL PROJECT	
<b>STRUCTURE CONTOURS on</b> <b>FLOOR of SEAM 'B'</b> <b>GATES MEMBER.</b>	
Drawn By: P. ANTONENKO Drafted By: M. WEBER Date: Nov. 1975, Revised Date: 12.75	Scale: 1" = 100' Contour Interval: 50 feet Drawing No.: MAP 30 - Revised



PR-SUKUNKA-13(2)A

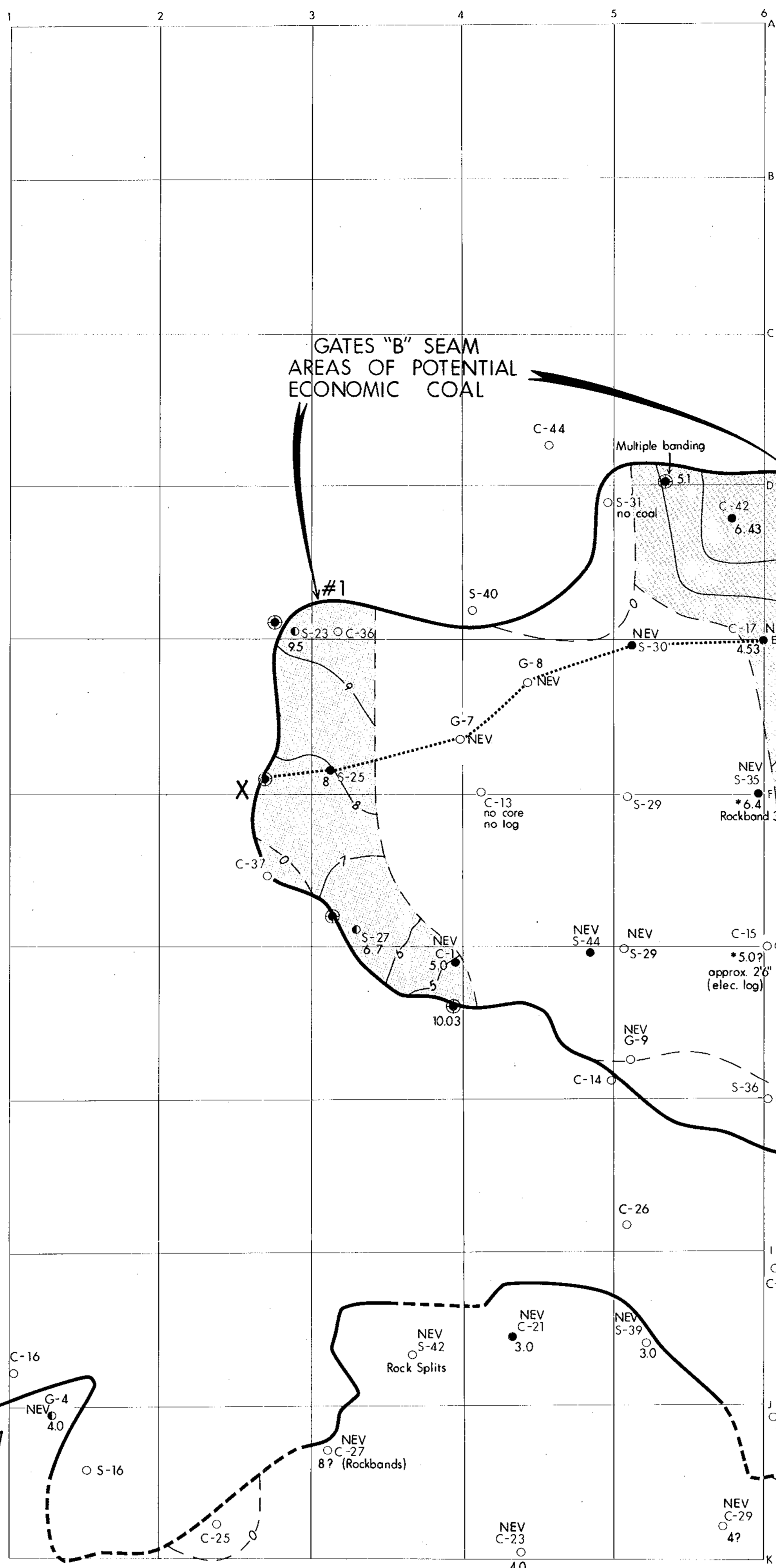


<b>COALITION MINING LTD.</b> SUKUNKA COAL PROJECT GEOLOGICAL CROSS SECTION X-Y	
DATE: FEB 11 1976	
HORIZONTAL SCALE: 1" = 50'	VERTICAL SCALE: 1" = 67'

PREPARED BY: PET-KO Geological Services Ltd

FIGURE 4





FUTURE EXPLORATION

— LEGEND —

- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "B"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- SEAM "B"
- - - POSITION APPROXIMATE
- C-21 ○ EXISTING BORE HOLE - NO ANALYSIS
- f FAULT

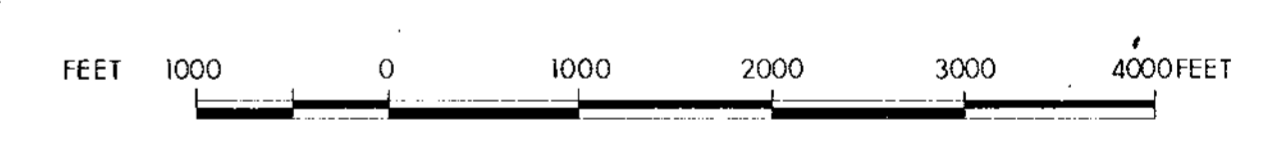
**COALITION MINING LIMITED**  
SUKUNKA COAL PROJECT

SKETCH ISOPACH  
TOTAL COAL GATES SEAM "B"  
EXCLUDING ROCKBANDS

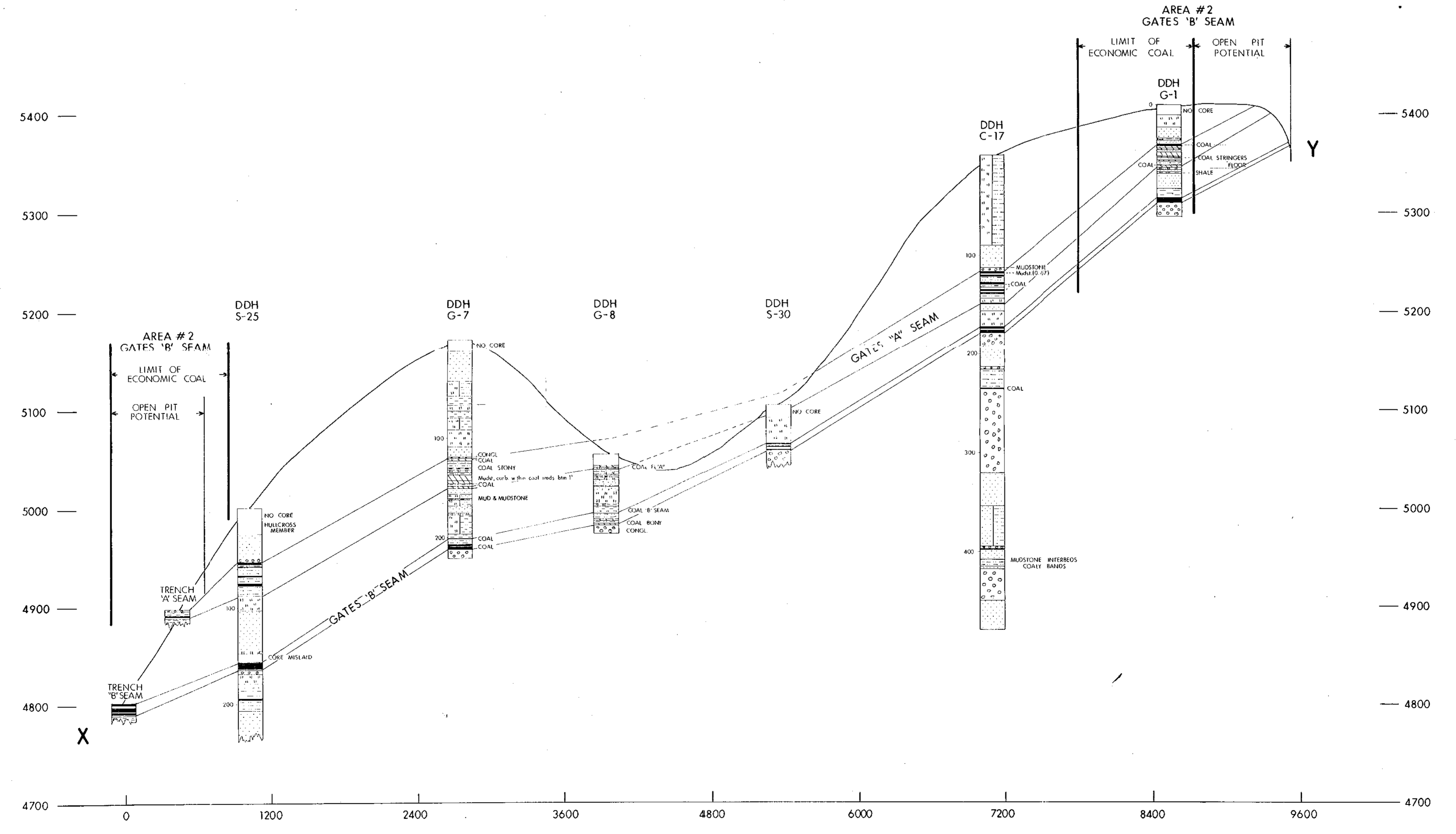
657

Drawn By: P. ANTONENKO	Scale: 1"=1000'
Drafted By: M. J.W.	Contour Interval: 1 FOOT
Date: FEB 18/79	Revised: _____
	Drawing No. _____

Fig. 8



PREPARED BY: PET-KO Geological Services Ltd.



**COALITION MINING LTD.**  
SUKUNKA COAL PROJECT

GEOLOGICAL  
CROSS SECTION X-Y

DATE: FEB. 11, 1979

HORIZONTAL SCALE 1" = 500'  
VERTICAL SCALE 1" = 67'

PREPARED BY: PET-KO Geological Services Ltd.





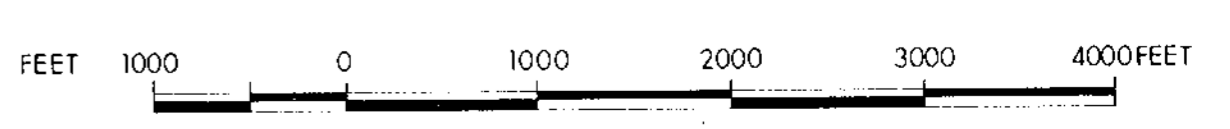
— LEGEND —

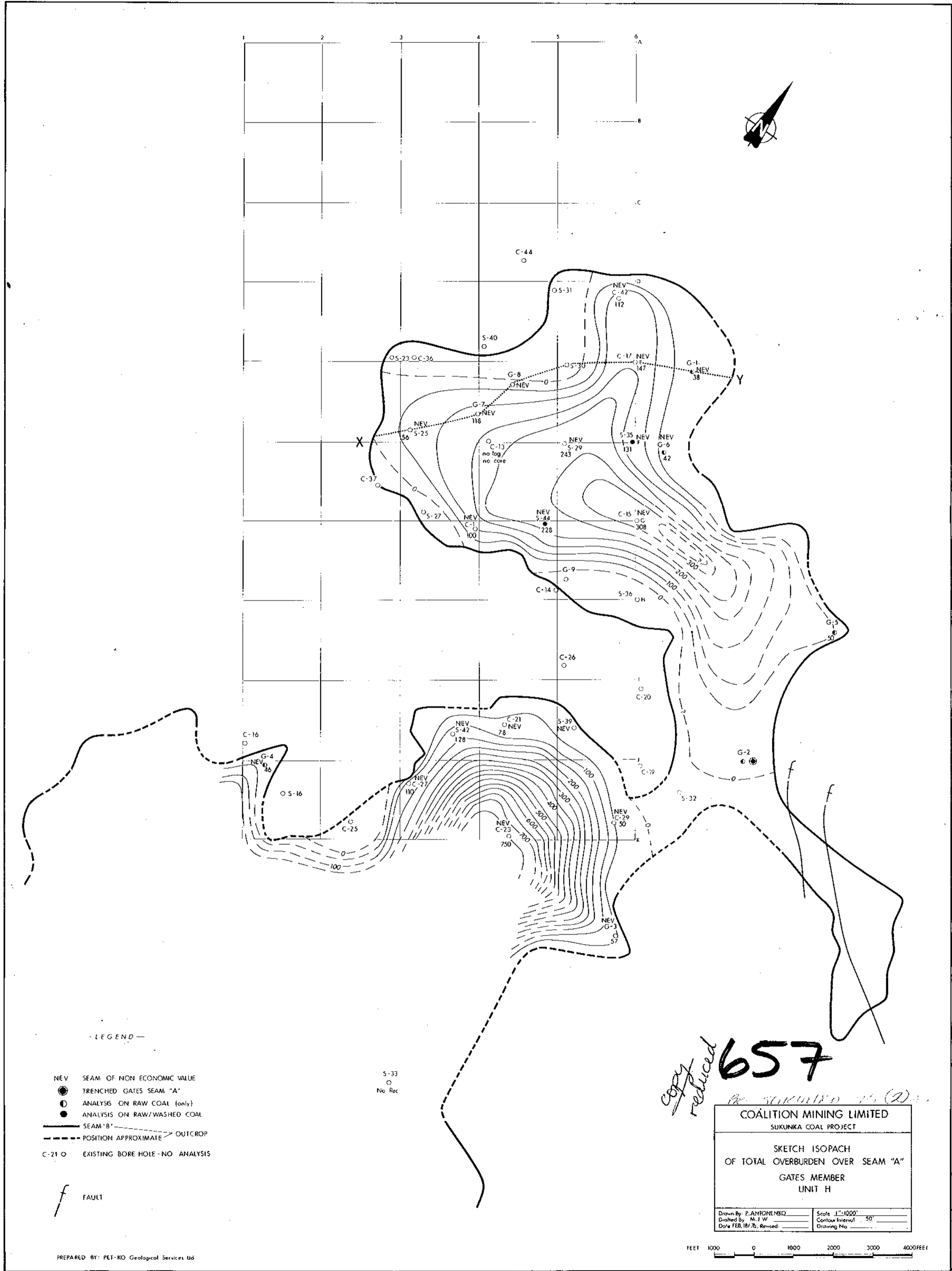
- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "A"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- SEAM "B"
- - - POSITION APPROXIMATE —> OUTCROP
- C-21 ○ EXISTING BORE HOLE - NO ANALYSIS
- f FAULT

S-33  
○  
No Rec.

657

<b>COALITION MINING LIMITED</b>	
SUKUNKA COAL PROJECT	
SKETCH ISOPACH OF TOTAL OVERBURDEN OVER SEAM "A"	
GATES MEMBER UNIT H	
Drawn By: P. ANTONENKO	Scale: 1"=1000'
Drafted By: M. J. W.	Contour Interval: 50'
Date: FEB. 18/76. Revised:	Drawing No.





— LEGEND —

- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "A"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- SEAM "B"
- - - POSITION APPROXIMATE
- OUTCROP
- C-21 ○ EXISTING BORE HOLE - NO ANALYSIS
- f FAULT

**COALITION MINING LIMITED**  
 SUKUNKA COAL PROJECT  
  
 SKETCH ISOPACH  
 OF TOTAL OVERBURDEN OVER SEAM "A"  
 GATES MEMBER  
 UNIT H  
  
 Drawn By: P. ANTONENKO      Scale: 1"=1000'  
 Drafted By: M. J. W.      Contour Interval: 50'  
 Date: FEB. 18/76, Revised:      Drawing No:

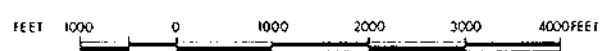


FIGURE 9

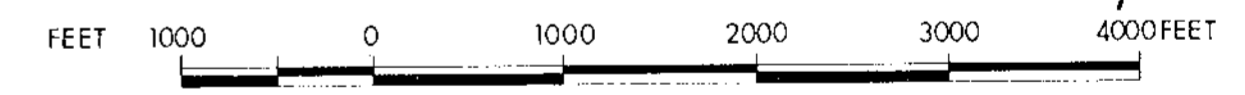


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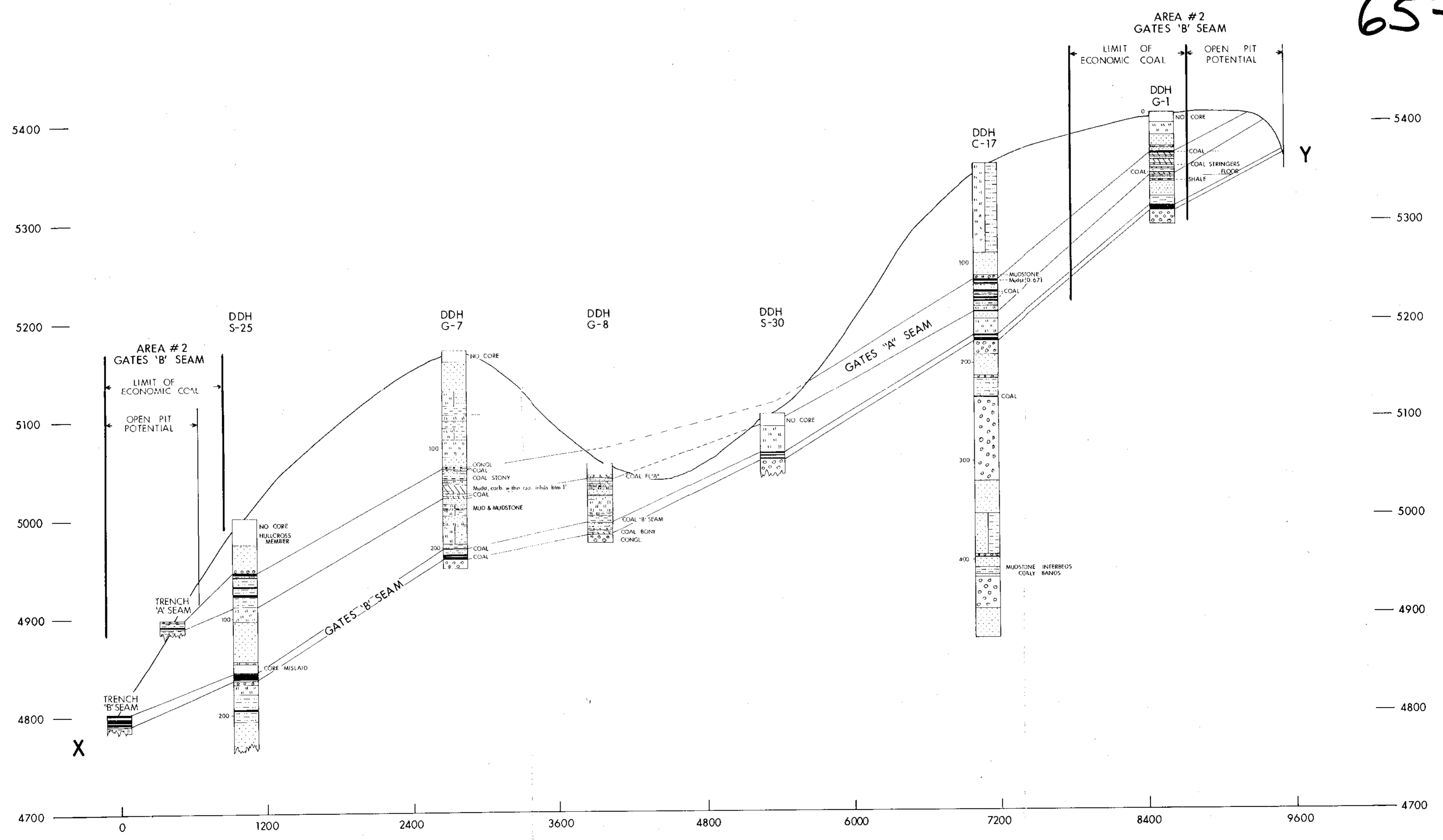
- NEV SEAM OF NON ECONOMIC VALUE
- TRENCHED GATES SEAM "B"
- ANALYSIS ON RAW COAL (only)
- ANALYSIS ON RAW/WASHED COAL
- SEAM "B"
- - - POSITION APPROXIMATE
- OUTCROP
- C-21 EXISTING BORE HOLE - NO ANALYSIS
- f FAULT

**COALITION MINING LIMITED**  
 SUKUNKA COAL PROJECT  
*PR. SUKUNKA 1:5,000*  
**SKETCH ISOPACH**  
**OF TOTAL OVERBURDEN OVER SEAM "B"**  
**GATES MEMBER**  
**UNIT F**  
*F 10 (14)*

Drawn By: P. ANTONENKO      Scale: 1"=1000'  
 Drafted By: M. J. W.      Contour Interval: 50'  
 Date: FEB. 18/76      Revised:      Drawing No.:



PREPARED BY: PET-KO Geological Services Ltd.



**COALITION MINING LTD.**  
 SUKUNKA COAL PROJECT  
**GEOLOGICAL**  
**CROSS SECTION X-Y**

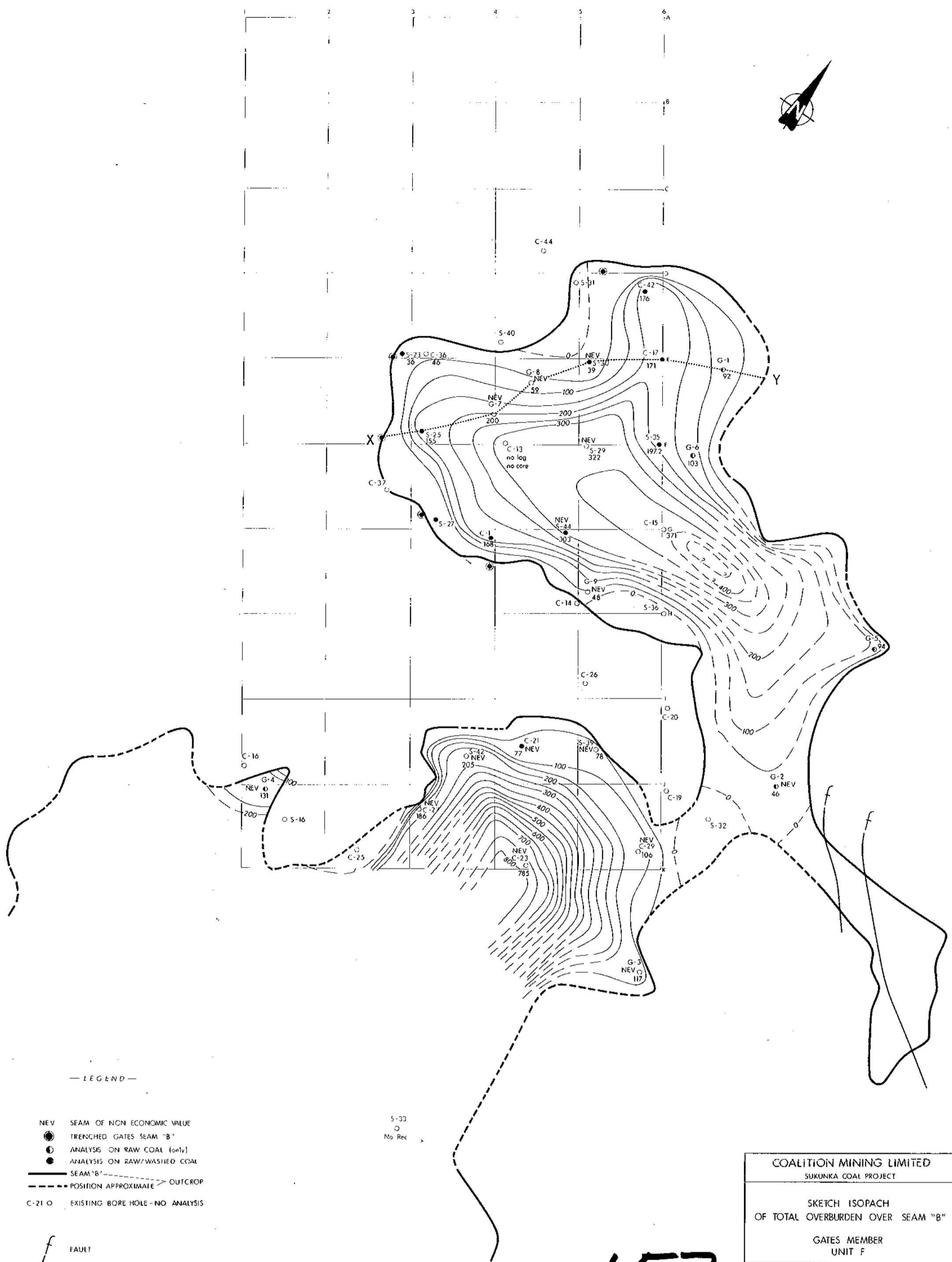
DATE: FEB. 11, 1976

HORIZONTAL SCALE 1" = 500'  
 VERTICAL SCALE 1" = 67'

PREPARED BY: PET-KO Geological Services Ltd.

657





- LEGEND —
- NEV SEAM OF NON ECONOMIC VALUE
  - TRENCHED GATES SEAM "B"
  - ANALYSIS ON RAW COAL (only)
  - ANALYSIS ON RAW/WASHED COAL
  - SEAM "B" —
  - - - POSITION APPROXIMATE
  - C-21 ○ EXISTING BORE HOLE - NO ANALYSIS
  - f FAULT

**COALITION MINING LIMITED**  
SUKUNKA COAL PROJECT

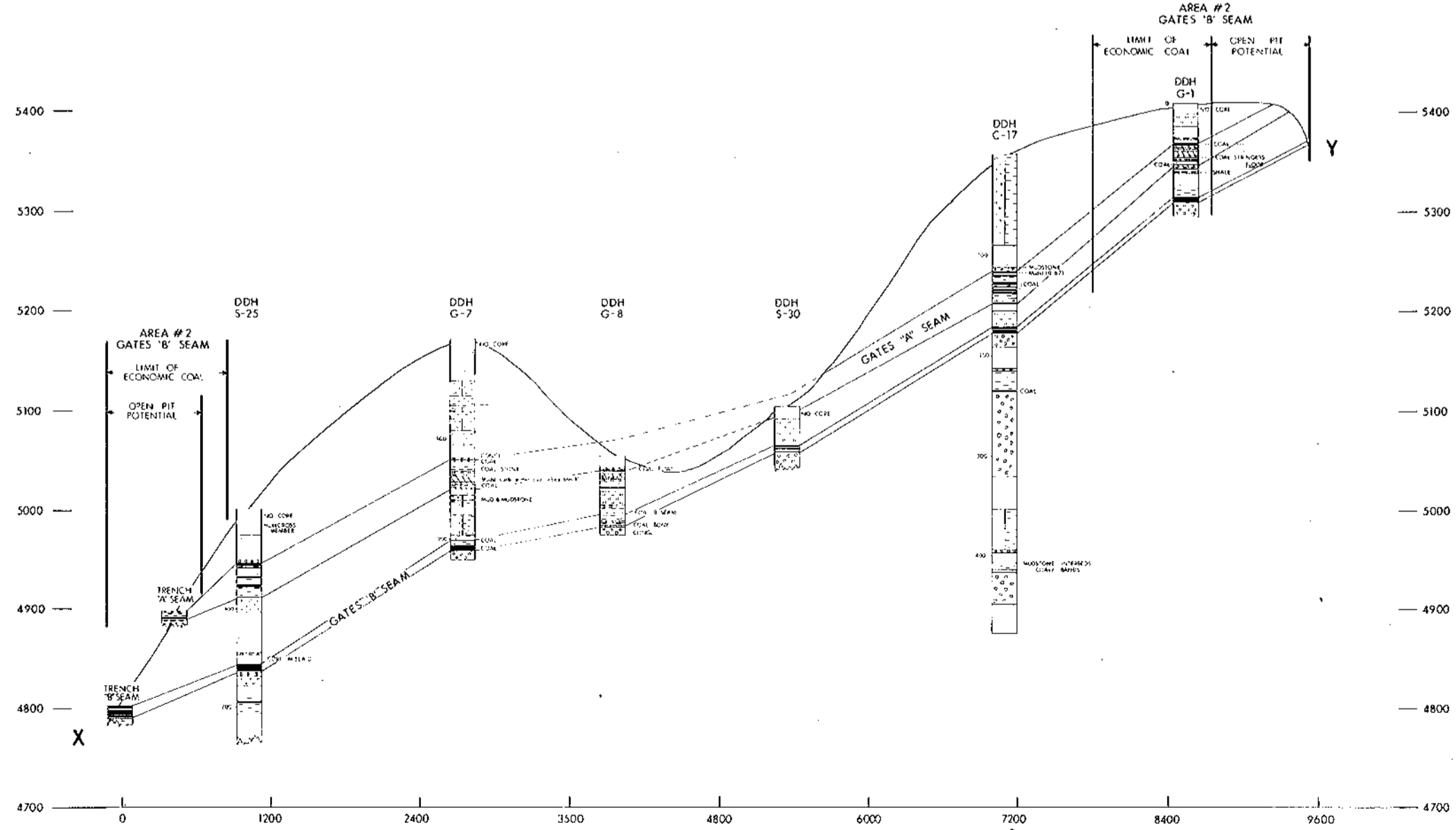
**SKETCH ISOPACH  
OF TOTAL OVERBURDEN OVER SEAM "B"**

**GATES MEMBER  
UNIT F**

Drawn By: E. ANTONENKO	Scale: 1"=1000'
Drafted By: M. J. W.	Contour Interval: 50'
Date: FEB. 8/76 Revised	Drawing No.

PREPARED BY: PET-KO Geological Services Ltd

*PR. SUKUNKA 13(2)A*



**COALITION MINING LTD.**  
SUKUNKA COAL PROJECT

**GEOLOGICAL  
CROSS SECTION X-Y**

DATE: FEB 11 1976	HORIZONTAL SCALE: 1" = 540'
	VERTICAL SCALE: 1" = 67'

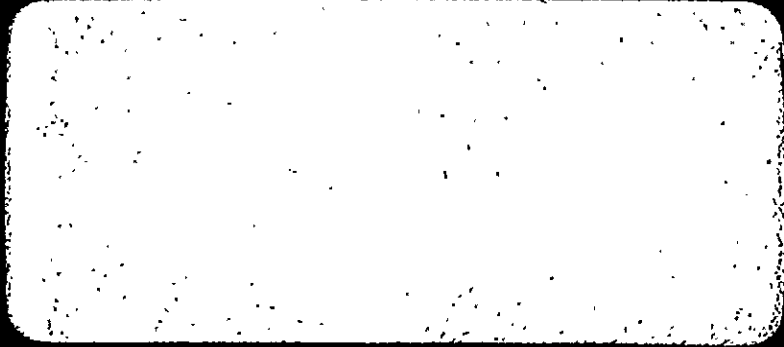
PREPARED BY: PET-KO Geological Services Ltd

FIGURE 10



93P-40-17

= PR-SUKUNKA 75(3)A-1 =



657

SUKUNKA COAL PROJECT  
PLATE 1 AREA

VOLUME 3

DRILL HOLE DATA  
DIAMOND DRILL HOLES  
P1-1 TO P1-3, P1-5  
P1-13 TO P1-20

ROTARY DRILL HOLES  
P1-4, P1-6 TO P1-12

**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**  
Reference for Graphical  
Sections of Drill Hole Data

See Over

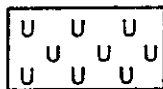
Prepared by CLIFFORD McLELLAN & ASSOCIATES PTY. LIMITED  
Report No. 1/4/20

March 1975

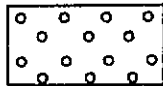
00 657

DETAIL OF GETHING FORMATION

STRIP LOGS Scale: 1" = 10'



SOIL, WEATHERED and UNCONSOLIDATED MATERIAL



CONGLOMERATE pebble to granule



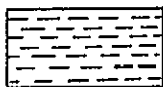
BRECCIA



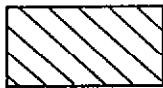
SANDSTONE



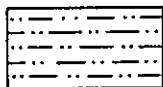
SILTSTONE



CLAYSTONE



STONE COALY or CLAYSTONE CARBONACEOUS



MUDSTONE



COAL



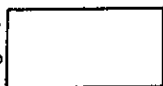
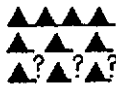
INTERBEDDED



LAMINITE



45° INCLINED STRATA



FAULT established probable possible

COAL SEAMS

Scale: 1" = 2'



COAL BRIGHT or UNDIFFERENTIATED  
 COAL MAINLY BRIGHT with MINOR DULL BANDS  
 COAL DULL and BRIGHT  
 COAL MAINLY DULL with MINOR BRIGHT BANDS  
 COAL DULL  
 COAL INTERLAYED with NON-COAL  
 NON-COAL INTERLAYED with COAL  
 COAL STONY  
 STONE COALY  
 COAL WEATHERED

REFERENCE FOR GRAPHIC SECTIONS

of

DRILL HOLE DATA

PREPARED BY CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

COALITION MINING LTD.

SUKUNKA COAL PROJECT  
 PLATE 1 AREA

MARCH 1975

Grid Reference: 47989N 77254E

Date Commenced: Nov. 12/74 Date Completed: Nov. 13/74

Collar R.L.: 4093 ft. Standard Datum.

Total Depth: 82 ft.

Drilled by: Sedco Drilling Co.

For: Coalition Mining Ltd.

Using: 3½" Dia. Christensen Core barrel with Mayhew 1500 rig

Radiation Logs: Gamma Ray, Neutron & Density

By: Roke Oil Enterprises Ltd.

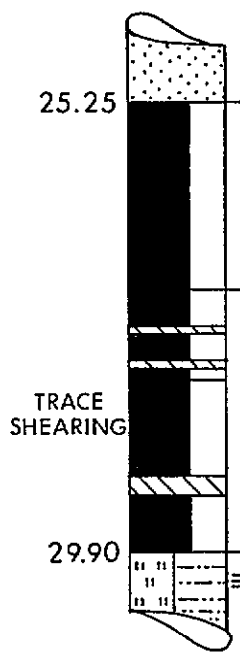
Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4063.1	4.65	100%	
Chamberlain	4026.8	6.30	92.2%	Depth and thickness determined from density log.

Note: Core not in total agreement with radiation logs; reason appears to be depths measured by driller from casing top and not ground level, also possible malfunction in neutron tool.

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM.				WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
25.25								
	1.95	44.6	4.9	8				
TRACE SHEARING	2.70	55.6	33.4	4.5				
29.90								



Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

SEAM SECTIONS  
 DDH P1-1

DRW BY G. WALLIS

DATE FEB. 19, 1975

SCALE: 1" = 2'

PAGE 1 of 1

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
	1.96	31.6	32.7	2.5				
	4.34	68.4	2.4	2.5				

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-1



Analytical Results

D.D.H. P1-1

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
507	Skeeter	25.25 - 27.20
508	Skeeter	27.20 - 29.90
509	Chamberlain	59.90 - 61.86
510	Chamberlain	61.86 - 66.20

COALITION MINING

January 22, 1975

<u>Client Tag</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>GM Wt.</u>	<u>Calc. Factors</u>
<u>SKR 507</u> <u>1765</u>	-	.6 .6	4.9 4.9 4.9	24.6 24.6 24.7	69.9 69.9 70.4	.61 .61 .61	.02	14,765 14,765 14,855	8 8	1.31	4,550	Air Dried As Received Dry Basis
<u>SKR 508</u> <u>1766</u>	-	.7 .7	33.4 33.4 33.6	15.6 15.6 15.7	50.3 50.3 50.7	.39 .39 .39	.02	10,025 10,025 10,095	4 1/2	1.58	5,650	Air Dried As Received Dry Basis
<u>SKR 509</u> <u>1767</u>	-	1.9 1.9	2.4 2.4 2.4	23.6 23.6 24.1	72.1 72.1 73.5	.53 .53 .54	.02	14,940 14,940 15,230	2 1/2 2 1/2	1.33	10,000	Air Dried As Received Dry Basis
<u>SKR 510</u> <u>1768</u>	-	.9 .9	32.7 32.7 33.0	17.8 17.8 18.0	48.6 48.6 49.0	.61 .61 .61	.03	10,075 10,075 10,165	2 2	1.55	4,630	Air Dried As Received Dry Basis

P1-1

- 1 -

SUKUNKA D.D.H. P1-1

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	4.00	4.00	---	No core - tricone drilling
SANDSTONE, fine to medium grained, light grey, bedding wavy and cross bedded; mudstone and carbonaceous partings on bedding planes; carbonaceous in lower 0.50'.	16.20	20.20	10.40	
<u>COAL</u> , bright	0.25	20.45	0.25	
MUDSTONE, dark grey to carbonaceous, containing silty phases.	3.10	23.55	3.10	
SANDSTONE, as above	1.70	25.25	1.70	Roof of seam
<u>COAL</u> , dull and bright.	1.95	27.20	1.95	)
dull and bright, contains stone coaly bands, core broken.	0.90	28.10	0.90	) SKEETER SEAM
dull and bright; trace shearing	1.00	29.10	1.00	)

SUKUNKA D.D.H. Pl-1

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
STONE, coaly.	0.20	29.30	0.20	SKEETER SEAM
<u>COAL</u> , bright and dull.	0.60	29.90	0.60	
MUDSTONE AND SILTSTONE, LAMINITE, contains occasional sandy lense ranging between 0.02 to 0.20'.	22.10	52.00	15.20	Floor of seam
MUDSTONE, light to mid grey.	7.90	59.90	7.10	Seam roof
<u>COAL</u> , sheared.	0.73	60.63	0.72 )	CHAMBERLAIN SEAM
dull and bright, minor shearing.	0.63	61.26	0.63 )	
sheared.	0.60	61.86	0.60 )	
dull and bright; minor shearing throughout in planes at 35° and 45° to core axis. Cleat vertical, spaced 0.01' apart and well developed.	4.34	66.20	4.30 )	
SANDSTONE, light to mid grey, carbonaceous minor vertical jointing, ironstained; medium grained, quartz-lithic, occasional quartz grains, pyrite and quartz joint fillings.	15.80	82.00	7.50	Seam Floor Core ends 72.00'. Cuttings from 72' - 82' T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
CALIPER  
DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	P-1-1	#1
LOCATION	SUKUNKA	
FIELD	BRITISH COLUMBIA	
PROVINCE	BRITISH COLUMBIA	
Permament Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Other Services:	NIL	
Run. No.	ONE	
Date	23 NOVEMBER 1974	
First Reading	79	
Last Reading	00	
Footage Logged	79	
Depth Reached	80	
Depth Driller	81	
Casing Roke		
Casing Driller		
Fluid Type	ATR/WATER	
Liquid Level	44	
Min. Diam.	6-1/4	
Rm @ OF		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
HOIST TRUCK NO.	35		
INSTRUMENT TRUCK NO.			
TOOL SERIAL NO.	65		

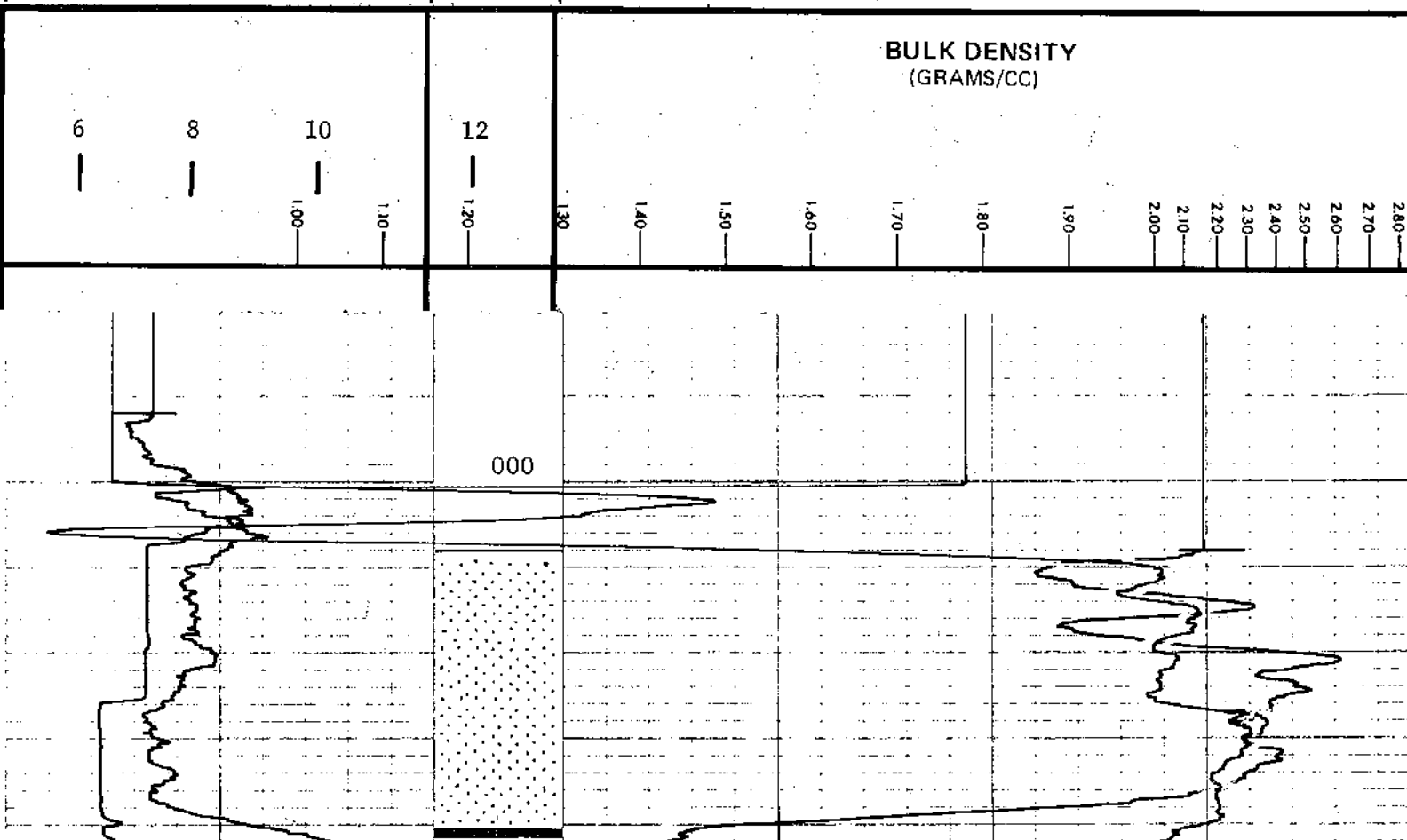
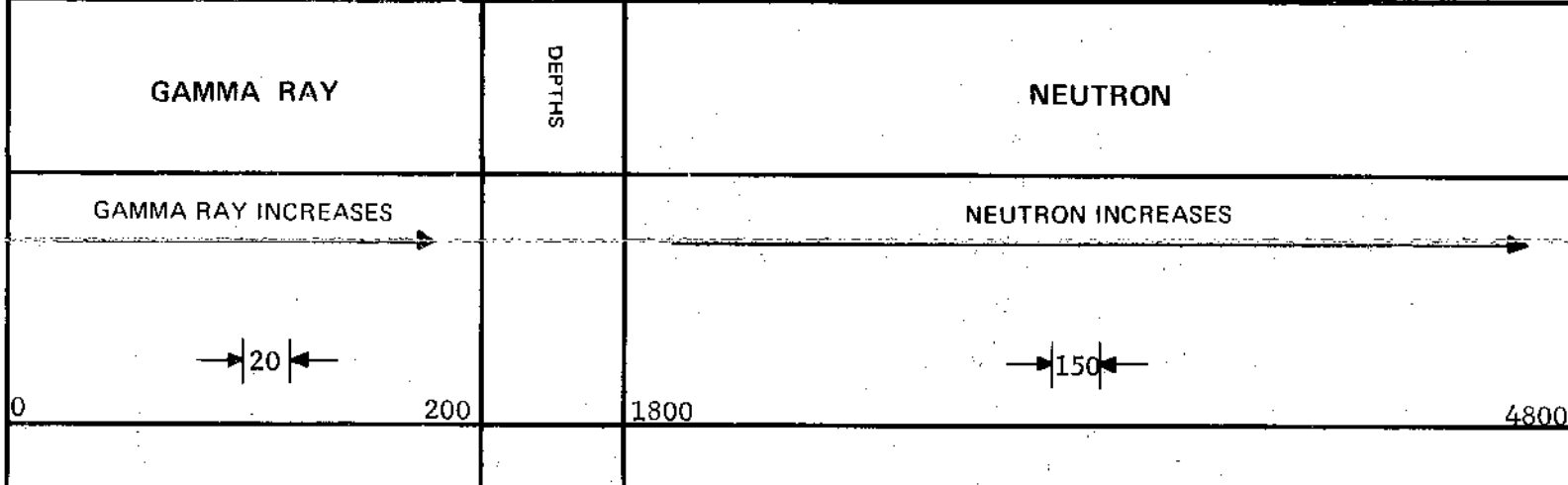
### LOGGING DATA

GENERAL			GAMMA RAY				SIDEWALL DENSITY				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
I.	000	79	12	5	100	OL	20	3	1000	2.6R	44.23
	00	42		3	1000	12L	150	NEUTRON			
	42	79		3	1000	OL	150				

### REMARKS

CALIPER TOOL SERIAL NO 780

DENSITY TOOL SERIAL NO A-128



Grid Reference: 47690N 76870E

Date Commenced: Nov. 14/74 Date Completed: Nov. 15/74

Collar R.L.: 4027 ft. Standard Datum.

Total Depth: 81 ft.

Drilled by: Sedco Drilling Ltd.

For: Coalition Mining Ltd.

Using: Christensen Core Barrel, 3½" Diamond core.


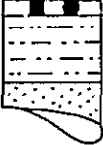
Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	3995.71	5.94	46.3%	
Chamberlain	3963.60	6.00	97.5%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
25.35		1.87	83.1	4.2	7.5			
		0.49						
		3.54	16.9	19.1	4			
31.29								

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-2

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM.				WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
57.40	INTENSE SHEARING	1.00		4.4	2.5	3.9		
	SHEARED	5.00		3.5	7.5	3.5		
63.40								

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-2



Analytical Results

D.D.H. P1-2

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
511	Skeeter	25.35 - 27.22
512	Skeeter	27.75 - 31.29
513	Chamberlain	57.40 - 58.40
514	Chamberlain	58.40 - 63.40

COALITION MINING

January 22, 1975

<u>Client Tag</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>GM Wt.</u>	<u>Calc. Factors</u>
<u>SKR 511</u> <u>1769</u>	2.0	1.0 3.0	4.2 4.1 4.2	24.2 23.7 24.4	70.6 69.2 71.4	.51 .50 .52	.02	14,705 14,410 14,855	7 1/2	1.31	4,150	Air Dried As Received Dry Basis
<u>SKR 512</u> <u>1770</u>	-	.6 .6	19.1 19.1 19.2	20.0 20.0 20.1	60.3 60.3 60.7	.46 .46 .46	.01	12,475 12,475 12,550	4 4	1.43	847.8	Air Dried As Received Dry Basis

P1-2

- 1 -

COALITION MINING

February 27, 1975

Sample: SKR 513 and 514

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 513	2.9	0.8	4.4	22.7	72.1	0.59	14,800	1.32	2 1/2	Air Dry Basis
2115	Raw	3.7	4.3	22.0	70.0	0.57	14,370			As Rec'd
			4.4	22.9	72.7	0.59	14,920			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	71.0	4.1	71.0	4.1	3 1/2
- 28 M	29.0	4.8	100.0	4.3	1 1/2

SINK-FLOAT ANALYSES + 28 M

-1.30	36.5	1.8	36.5	1.8	6
1.30-1.40	55.4	2.9	91.9	2.5	1 1/2
1.40-1.60	4.8	13.9	96.7	3.2	1 1/2
+1.60	3.3	36.0	100.0	4.1	1 1/2

FROTH FLOTATION ANALYSES - 28 M

Stage I	50.4	2.9	50.4	2.9	1 1/2
Stage II	5.9	5.1	56.3	3.1	1 1/2
Tails	43.7	7.0	100.0	4.8	1 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	Second minute froth

COALITION MINING

February 27, 1975

Sample: SKR 513 and 514

<u>Client #</u>										
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 514	2.1	0.3	3.5	25.3	70.9	0.42	15,030	1.30	7 1/2	Air Dry Basis
2116	Raw	2.4	3.4	24.8	69.4	0.41	14,720			As Rec'd
			3.5	25.4	71.1	0.42	15,080			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	74.2	3.9	74.2	3.9	7 1/2
- 28 M	25.8	3.1	100.0	3.7	7 1/2

SINK-FLOAT ANALYSES

	<u>+28 M</u>				
-1.30	61.3	1.3	61.3	1.3	8
1.30-1.40	34.2	3.2	95.5	2.0	1 1/2
1.40-1.60	1.8	10.4	97.3	2.1	1/2
+1.60	2.7	68.2	100.0	3.9	N.A.

FROTH FLOTATION ANALYSES -28 M

Stage I	81.8	2.2	81.3	2.2	8
Stage II	9.7	3.2	91.5	2.3	6 1/2
Tails	8.5	11.1	100.0	3.1	2 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

P1-2

3

COALITION MINING

February 27, 1975

Sample: SKR 513 and 514

	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
2178-	0.6	3.9	24.5	71.0	.42	14,820	5 1/2	1.31	Air Dry Basis
Comp. of SKR 513 and 514		3.9	24.6	71.5	.42	14,910			Dry Basis
2232	0.7	2.4	24.3	72.6	.46	14,950	4 1/2		Air Dry Basis
Comp. 2115 (-1.60) and 2116 (-1.60)		2.4	24.5	73.1	.46	15,060			Dry Basis

P1-2

- 4 -

## SUKUNKA D.D.H. P1-2

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN, Weathered rock and soil	4.00	4.00		No core to 13'
SILTSTONE	7.00	11.00		(Identified by Radiation Log)
SANDSTONE, medium grained, light to mid grey, salt and pepper, cross bedded, carbonaceous partings and mudstone laminae on bedding planes.	9.50	20.50	7.50	
MUDSTONE, dark grey, slightly carbonaceous	4.85	25.35	4.85	Seam roof
<u>COAL</u> , dull and bright	0.84	26.19	0.84 )	
MUDSTONE	0.01	26.20	0.01 )	
<u>COAL</u> , dull and bright	0.30	26.50	0.30 )	SKEETER SEAM
MUDSTONE	0.01	26.51	0.01 )	
<u>COAL</u> , dull and bright	0.71	27.22	0.71 )	
MUDSTONE, carbonaceous	0.49	27.71	0.49 )	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<p>COAL, dull and bright stone, coaly</p>	3.40	31.15	0.21 )	SKEETER SEAM
	0.14	31.29	0.14 )	(Radiation Log - correction core loss 3.19)
MUDSTONE, dark grey	0.71	32.00	0.71	Seam floor
SANDSTONE, fine grained, light to mid grey; graded bedded units to siltstone and occasionally mudstone present; occasional calcite filled tension joint.	2.55	34.55	2.55	
SILTSTONE AND MUDSTONE, laminated in upper 0.70' grading downwards into slump structures and swirls, sand blebs.	1.40	35.95	1.23	
COAL AND CLAYSTONE, interbedded. Units to 0.05' maximum.	0.30	36.25	0.30	
MUDSTONE AND SILTSTONE, laminated, as above with exception of sedimentary structures.	1.80	38.05	1.80	

## SUKUNKA D.D.H. P1-2

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , stoney, quartz filled bedding plane at top of unit; contains occassional partings of bright coal to 0.03'.	0.90	38.95	0.90	
<u>COAL</u> , bright with minor dull bands	0.30	39.25	0.30	
MUDSTONE, mid to light grey carbonaceous partings present; silty laminae and swirls throughout unit.	8.05	47.30	8.00	
SILTSTONE, light grey, containing mudstone laminae throughout.	2.70	50.00	2.40	
LAMINITE, mudstone with siltstone partings on bedding plane, generally fissile; zones of subvertical iron-stained joints.	7.40	57.40	7.40	Seam roof
<u>COAL</u> , sheared intense.	1.00	58.40	1.00 )	CHAMBERLAIN SEAM
dull and bright, sheared throughout on plane at 35° to 45° to core axis. Shearing decreases in intensity toward base of seam; occassional joint ironstained subparallel to core axis.	5.00	63.40	4.85 )	



## SUKUNKA D.D.H. P1-2

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, medium grained quartz-lithic, carbonaceous at top and containing coaly wisps, calcareous in part.	5.35	68.75	---	Seam floor Core ends 71.00' Rotary Drill cuttings 71 - 81
MUDSTONE, mid to dark grey, silty, micromicaceous, occassional coaly particles very rare pyrites.	4.25	73.00		
SANDSTONE, as above	8.00	81.00		T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
CALIPER  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-2 #2
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W		
Other Services:	NIL	
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	23 NOVEMBER 1974	
First Reading	76	
Last Reading	00	
Footage Logged	76	
Depth Reached	77	
Depth Driller	82	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	38	
Min. Diam.	6-1/4	
Rm @ 9F		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

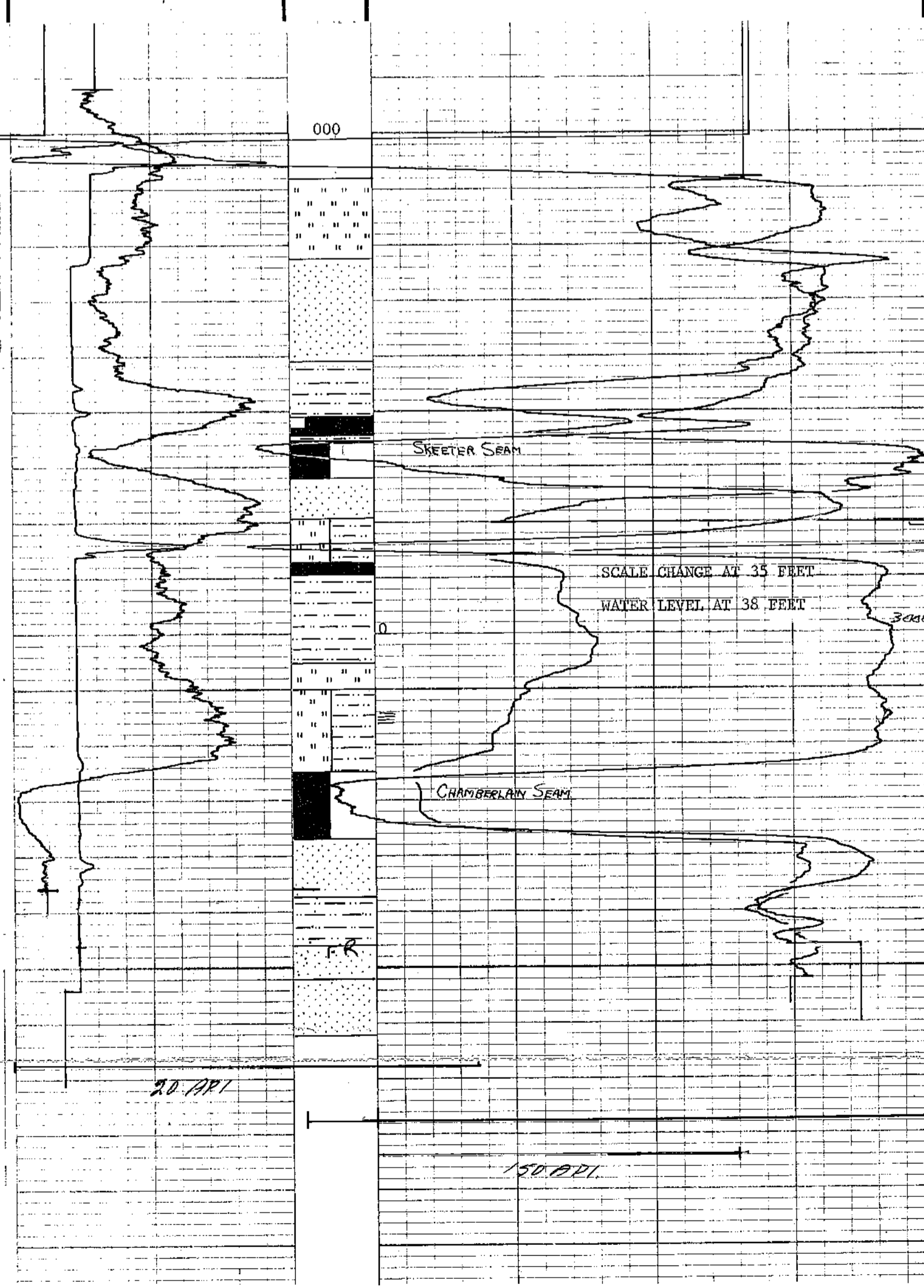
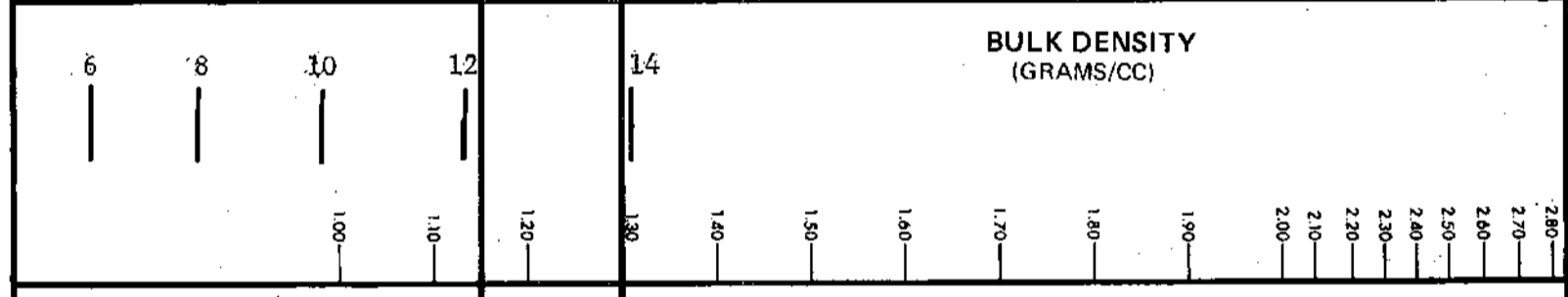
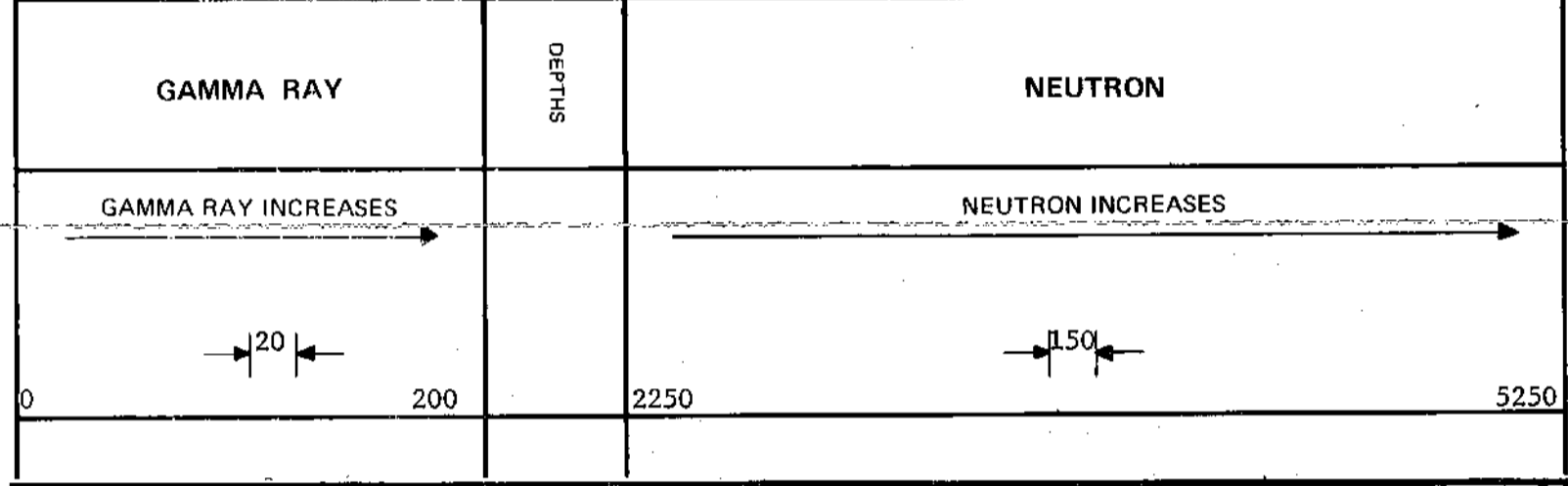
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	65	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				SIDEWALL DENSITY				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	76	12	5	100	OL	20	3	1000	2.6R	44.23
	00	35		3	1000	15L	150 NEUTRON				
	35	76		3	1000	OL	150				

REMARKS: CALIPER TOOL SERIAL NO 780 DENSITY TOOL SERIAL NO A-128



Grid Reference: 47625 N 77984 E

Date Commenced: Nov. 16/74                      Date Completed: Nov. 18/74

Collar R.L.: 4115 ft.                      Standard Datum.

Total Depth: 191 ft.

Drilled by: Sedco Drilling

For: Coalition Mining Ltd.

Using: Mayhew 1500 Rotary Mud Rig

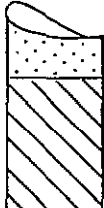

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis


COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Skeeter	3983	6.50	No Core	
Chamberlain	3942.5	6.3	No Core	

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S. NO	INCL. BANDS	EXCL. BANDS
125.5							
126.9		6.5	44.9	2			
132.0							

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-4, 4A

			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S. NO	INCL. BANDS	EXCL. BANDS
166.20	6.3						
172.50			NOT ANALYSED				

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**RDH P1-4, 4A**

COALITION MINING

February 27, 1975

Sample: SKR 530 to 534

<u>Client #</u>									
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 530									
2124	Raw 22.1		44.9				8,200	2	Air Dry Basis

SIZE ANALYSES.

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	92.5	43.2	92.5	43.2	8,490	-	Air Dry Basis
- 100 M	7.5	52.5	100.0	43.9	6,920	1/2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	48.2	5.4	48.2	5.4	14,810	4	Air Dry Basis
+ 1.60	51.8	78.3	100.0	43.2	-	1/2	Air Dry Basis

Analytical Results - R.D.H. P1-4

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
530	Skeeter	125.5 - 132.0

## SUKUNKA D.D.H. P1-3

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	2.5	2.5		Rotary cuttings to 20'.
SANDSTONE, very fine to fine grained, lithic, mid grey, calcareous, weathered.	12.50	15.00		
MUDSTONE, mid grey, very silty, calcareous, micaceous.	8.00	23.00	1.60	Seam roof
<u>COAL</u> , dull and bright	5.00	28.00	4.70	CHAMBERLAIN SEAM
<u>SANDSTONE</u> , light to mid grey, carbonaceous, coaly partings on bedding planes in upper 20' of unit, carbonaceous zone between 53.5 and 55.5', vertical ironstained joints between 67 and 72'.	58.00	86.00	58.00	Seam floor T.D.

# ROKE

DENSLOG

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	W	P-1-3
LOCATION	FIELD	SUKUNKA
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	25 NOVEMBER 1974	
First Reading	85	
Last Reading	00	
Footage Logged	85	
Depth Reached	86	
Depth Driller	86	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	32	
Min. Diam.	4	
Rm @ 0F		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

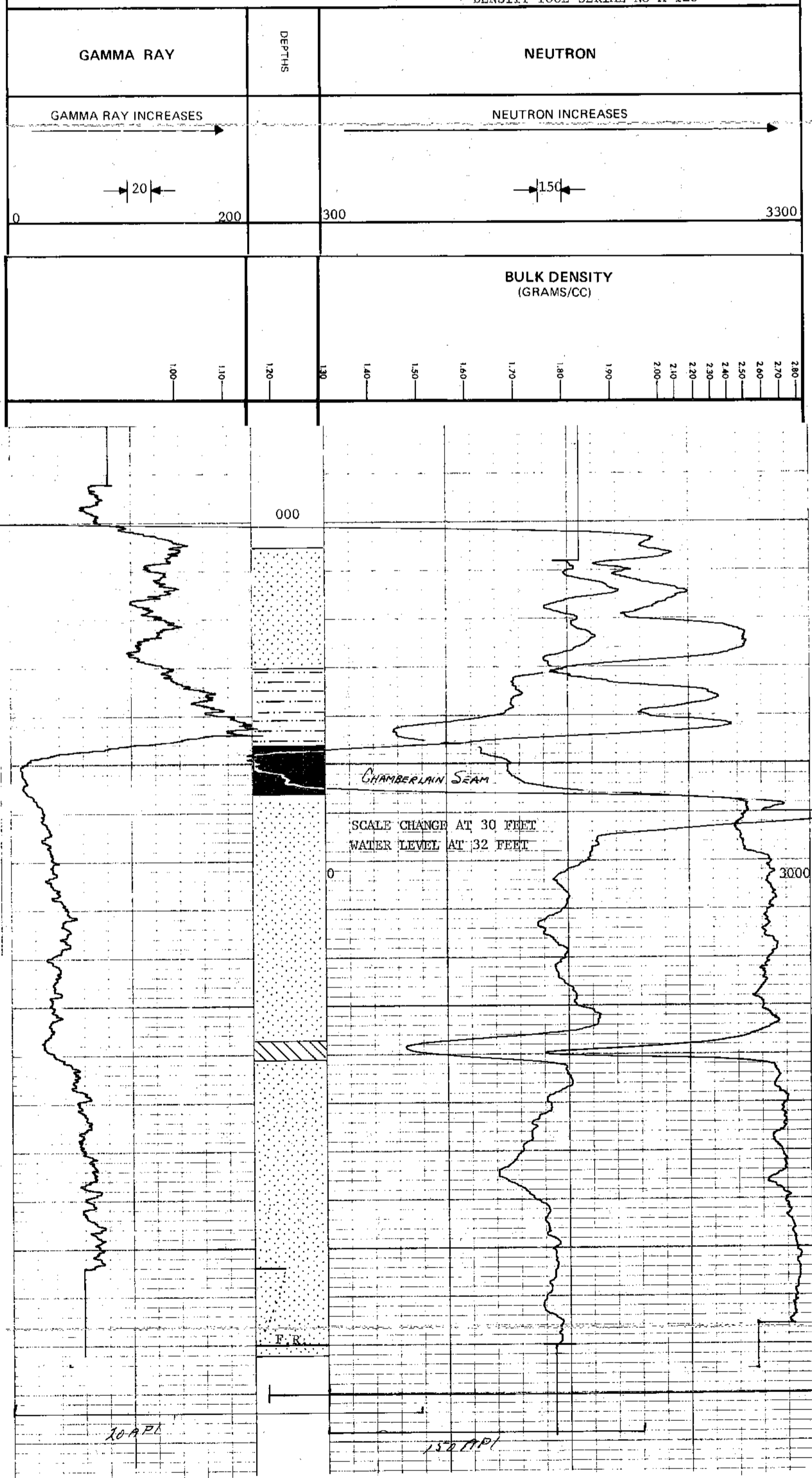
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

GENERAL			GAMMA RAY				SIDEWALL DENSITY				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	1	000									
	00	30		3	1000	2L	150				
	30	85		3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128





Grid Reference: 48784 N 77150 E.

Date Commenced: Nov. 15/74 Date Completed: Nov. 16/74

Collar R.L.: 4113.0 ft. Standard Datum.

Total Depth: 86 ft.

Drilled by: Sedco Drilling Ltd.

For: Coalition Mining Ltd.

Using: 2" Diam. Christensen Core Barrel with Mayhew 1500 Drilling Rig.

Radiation Logs: Gamma Ray, Neutron & Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Chamberlain	4085	5.00	94.0%	

			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S. NO	INCL. BANDS	EXCL. BANDS
23.00	5.00	3.8	1½				
28.00							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-3

RAW ANALYSES

<u>A.D.M.</u>	<u>Ash %</u>
1.2	3.8

SINK-FLOAT ANALYSES

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
- 1.60	97.8	2.9	97.8	2.9	1 1/2
+ 1.60	2.2	64.5	100.0	4.3	

Analytical Results - D.D.H. P1-3

<u>Seam</u>	<u>Interval (feet)</u>
Chamberlain	23.00 - 28.00

# ROKE

GAMMA RAY NEUTRON LOG  
CALIPER  
DENSLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	P-1-4A
TWP	LOCATION	
RGE	FIELD	SUKUNKA
W. M.	PROVINCE	BRITISH COLUMBIA
Other Services:	NIL	
Permanent Datum	GROUND LEVEL	Ele. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	29 NOVEMBER 1974	
First Reading	189	
Last Reading	000	
Footage Logged	189	
Depth Reached	190	
Depth Driller	190	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	116	
Min. Diam.	4-1/2	
Rm @ 0'		
Operating Time	3 HOURS	
Truck No.	35	

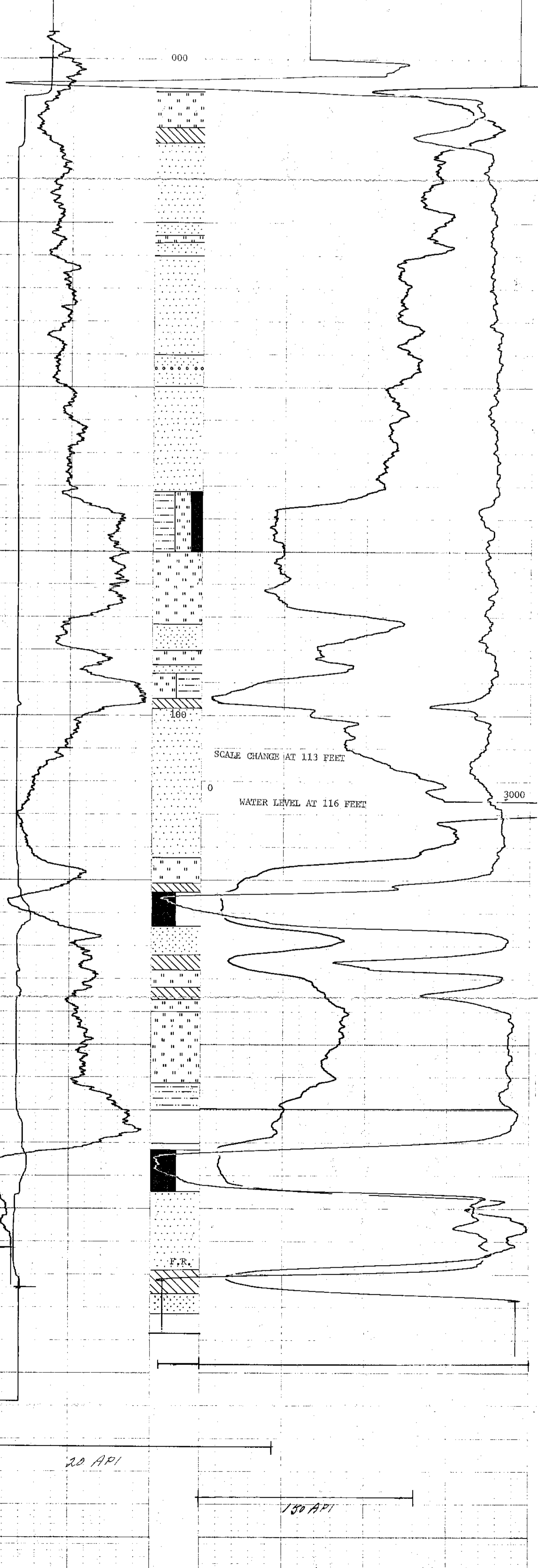
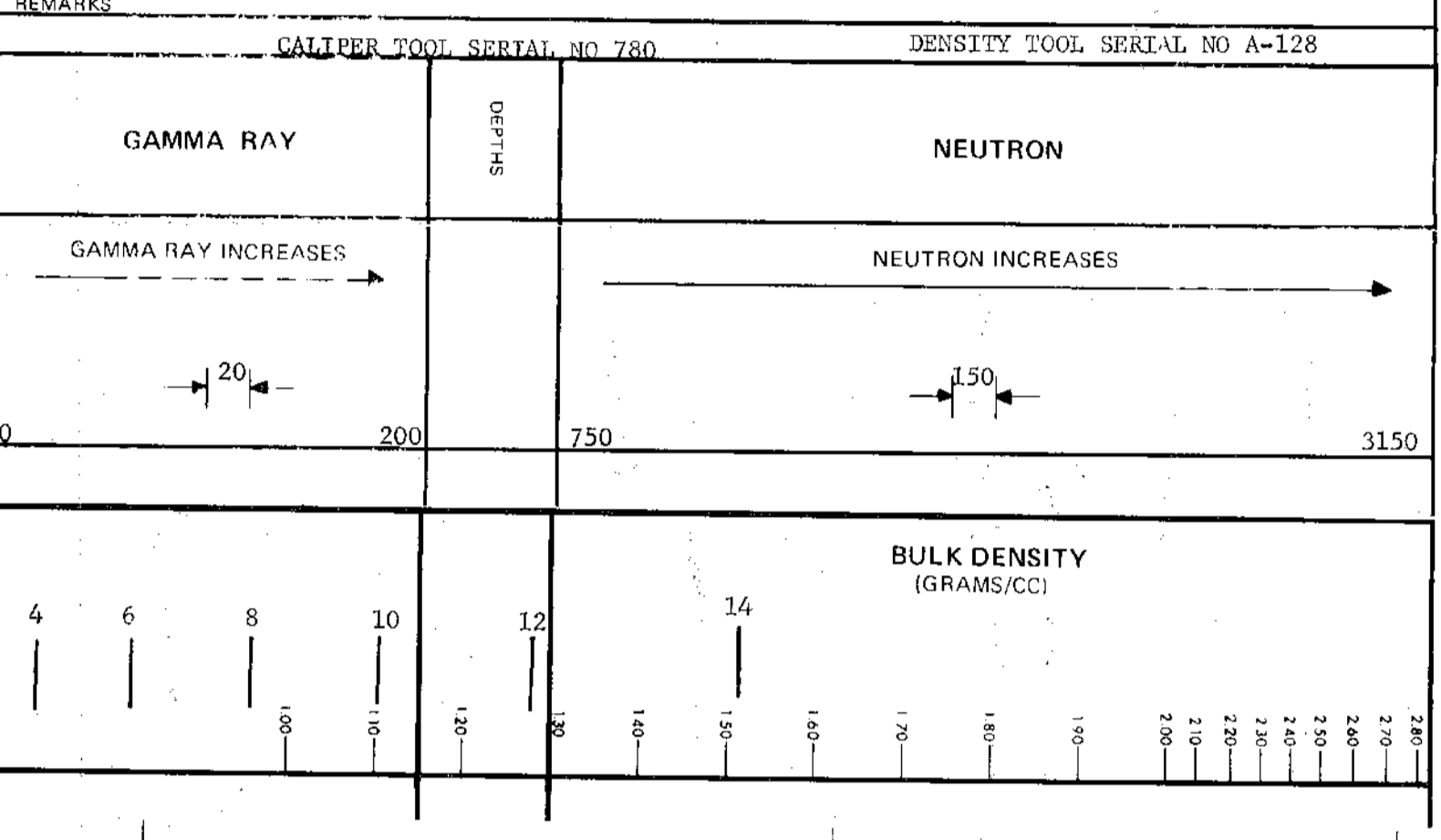
657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

GENERAL			GAMMA RAY				SIDEWALL DENSITY			
RUN NO.	DEPTHS	SPF/D	F.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV
1	000 189	12	5	100	OL	20	3	1000	2.6R	44.23
	00 113		3	1000	5L	150 NEUTRON				
	113 189		3	1000	OL	150				





Grid Reference: 47395.0 N 77659.0 E

Date Commenced: Nov. 18/74 Date Completed: Nov. 19/74

Collar R.L.: 4090 ft. Standard Datum.

Total Depth: 160 ft.

Drilled by: Sedco Drilling Ltd.

For: Coalition Mining Ltd.

Using: 2" Diam. Christensen Core Barrel with a Mayhew  
1500 Drilling rig.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

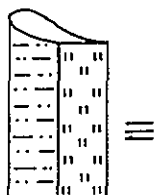

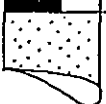
COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	3990.50	5.40	18.48%	Type of barrel used.
Chamberlain	3945.00	6.20	48.39%	Type of barrel used.

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
	5.40	NOT ANALYSED					

Prepared by:  
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 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-5

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
138.80								
	MINOR SHEARING, OXIDISED IN PART.	6.20		3.5	7.5			
145.00								
								



COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 518 2195	1.2	3.5	14,940	7 1/2

Analytical Results - D.D.H. P1-5

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
518	Chamberlain	138.80 - 145.00

## SUKUNKA D.D.H. P1-5

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.0	3.0	---	Tricone drilling to 21.0'
SANDSTONE, light grey, fine grained, calcareous, occasional subvertical ironstained joints.	36.65	39.65	18.45	
SILTSTONE AND MUDSTONE INTERBEDS, mudstone dominant in lower part of unit; unit average 0.10'; vertical joints throughout.	6.35	46.00	6.35	
SANDSTONE, as above.	4.20	50.20	4.20	
SILTSTONE AND MUDSTONE INTERBEDS, units varying between 0.05 to 0.10'. Both lithologies dark grey and calcareous.	8.70	58.90	8.70	
SILTSTONE, light grey, calcareous, minor mudstone lenses in lower 0.50'.	1.50	60.40	1.50	
SILTSTONE AND MUDSTONE INTERBRDS, as above.	2.20	62.60	2.20	

SUKUNKA D.D.H. P1-5

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
SILTSTONE, light grey, slightly calcareous, containing occassional mudstone partings	3.90	66.50	3.90	
MUDSTONE, grading to siltstone in lower section of unit; weakly laminated; silty fractions calcareous.	4.50	71.00	4.70	
SILTSTONE,	4.80	75.80	---	} Seam roof } Interpretation from radiation log. Core misplaced in core box and markers incorrectly marked.
MUDSTONE,	3.50	79.30	---	
SANDSTONE, fine grained, light to mid grey, carbonaceous flecks and partings in lower part of unit.	10.70	90.00	16.35	
MUDSTONE, possibly carbonaceous in part.	4.10	94.10	---	
<u>COAL AND CLAYSTONE</u> , carbonaceous.	0.90	95.00	---	
SILTSTONE, dark grey.	1.00	96.00	---	} SKEETER SEAM
<u>COAL</u> , weathered.	3.50	99.50	---	} (Thickness interpreted from radiation log)

## SUKUNKA D.D.H. P1-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, dary grey grading to mudstone, carbonaceous in part in lower 3.0' of unit. Shelly fossils present.	8.70	108.20	4.10	Seam floor
SANDSTONE, fine to medium grained, light-mid grey, coaly partings throughout.	5.00	113.20	5.00	
SILTSTONE AND VERY FINE SILTSTONE, light grey interbedded with mudstone, light to mid grey.	14.80	128.00	10.70	
MUDSTONE AND CLAYSTONE, carbonaceous.	2.00	130.00	0.40	
SILTSTONE AND MUDSTONE, laminite. Mid to dark grey, occassional phases of siltstone; lower 2.0' silty mudstone.	8.80	138.80	8.80	Seam roof
<u>COAL</u> , dull and bright, with numerous bright bands; minor shearing and evidence of oxidation.	6.20	145.00	3.00	CHAMBERLAIN SEAM (Seam thickness interpreted from radiation log.)

## SUKUNKA D.D.H. P1-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, medium grained, mid grey, carbonaceous in upper part of unit.	15.00	160.00	1.90	Seam floor (Hole drilled with tri-cone bit from 148' to 160') T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-5
SEC	LOCATION	
TWP	FIELD	SUDONRA
RGE	PROVINCE	BRITISH COLUMBIA
W	Other Services:	NTL
	Permanet Datum	GROUND LEVEL
	Log Measured from	GROUND LEVEL
	Well Depth Measured from	GROUND LEVEL
	Elev.	
	Fl. Above Perm. Datum	
	G.S.G.	
	G.L.	
Run. No.	ONE	
Date	23 NOVEMBER 1974	
First Reading	152	
Last Reading	000	
Footage Logged	152	
Depth Reached	153	
Depth Driller	160	
Casing Rake		
Casing Driller		
Liquid Type	AIR/WATER	
Liquid Level	12	
Min. Diam.	4	
Rm @ cc		
Operating Time	3 HOURS	
Truck No.	35	

657

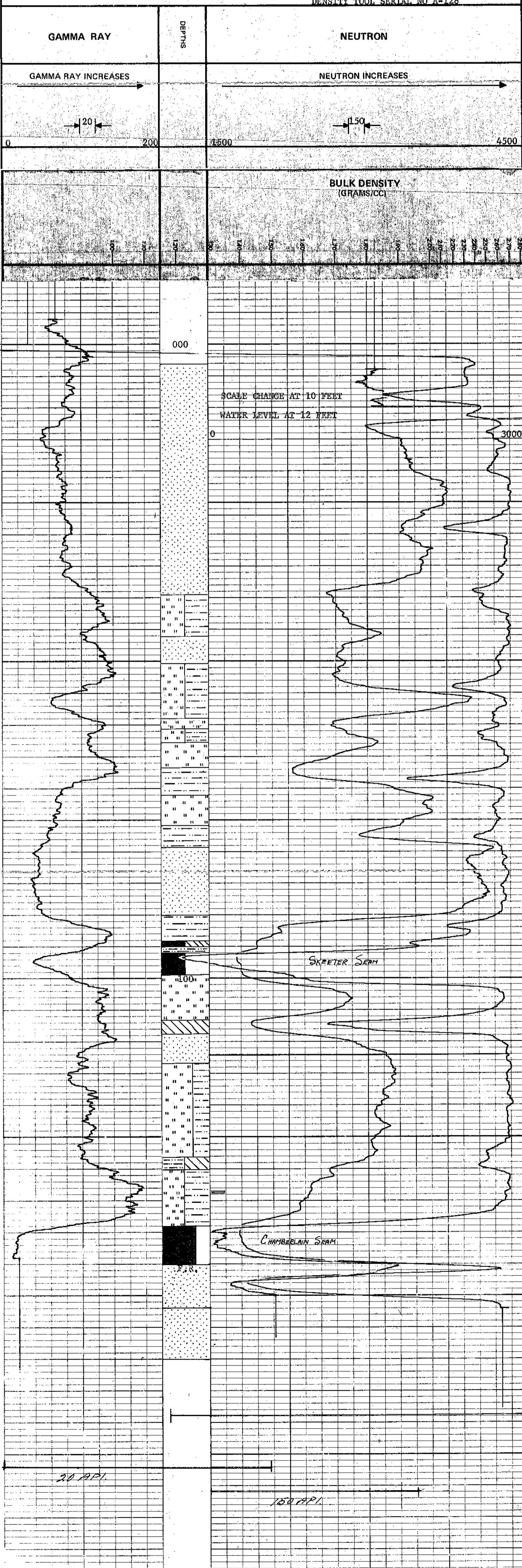
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				SIDEWALL DENSITY				
	FROM	TO	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
			FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	152	12	5	100	OL	20	3	1000	2.6R	44.23
	00	10	12	3	1000	10L	150	NEUTRON			
	10	152	12	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128



Grid Reference: 47090 N 77302 E

Date Commenced: Nov. 20/74      Date Completed: Nov. 21/74

Collar R.L.: 3997 ft.      Standard Datum.  
Total Depth: 77 ft.

Drilled by: Sedco Drilling  
For: Coalition Mining Ltd.  
Using: Mayhew 1500 Rotary Mud Rig

Radiation Logs: Gamma Ray, Neutron and Density  
By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

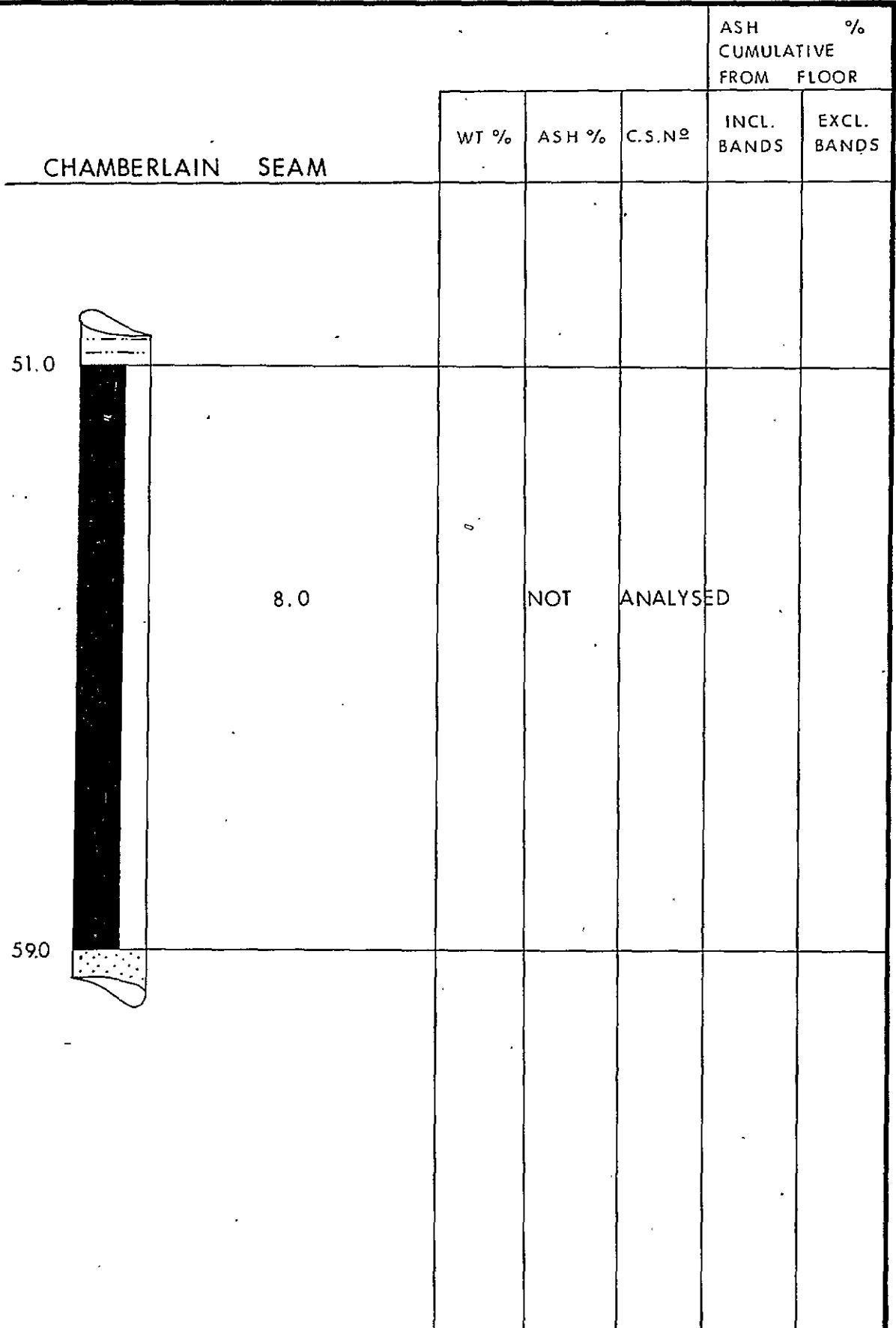
<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Skeeter	3987.0	4.0	No Core	
Chamberlain	3938	8.0	No Core	

			ASH CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
6.0	U U U						
		4.0 +		NOT	ANALYSED		
10.0	" " "						

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-6





Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
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SEAM SECTIONS  
 RDH P1-6

# ROKE

GAMMA RAY NEUTRON LOG  
CALIPER  
DENSISLOG

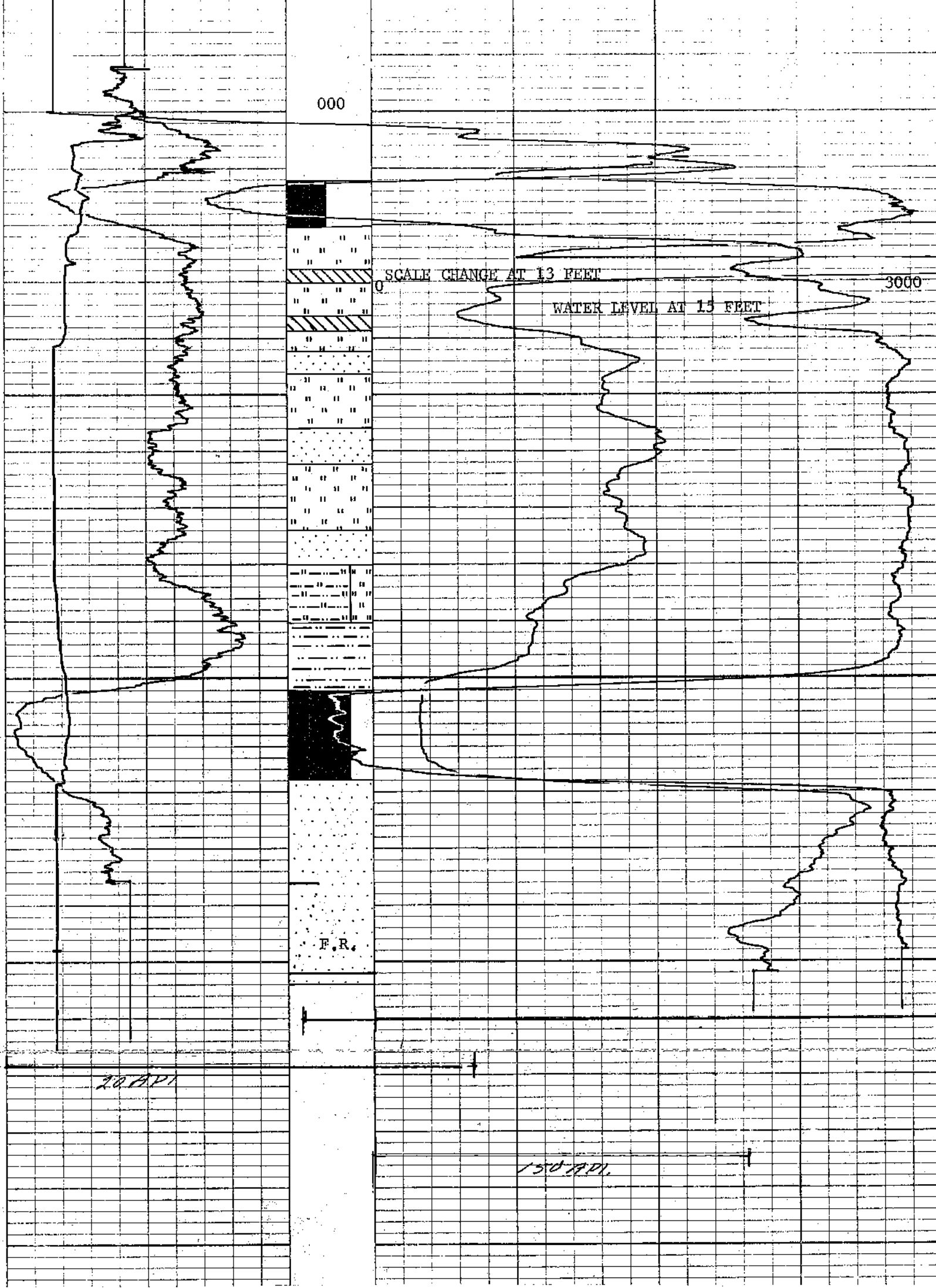
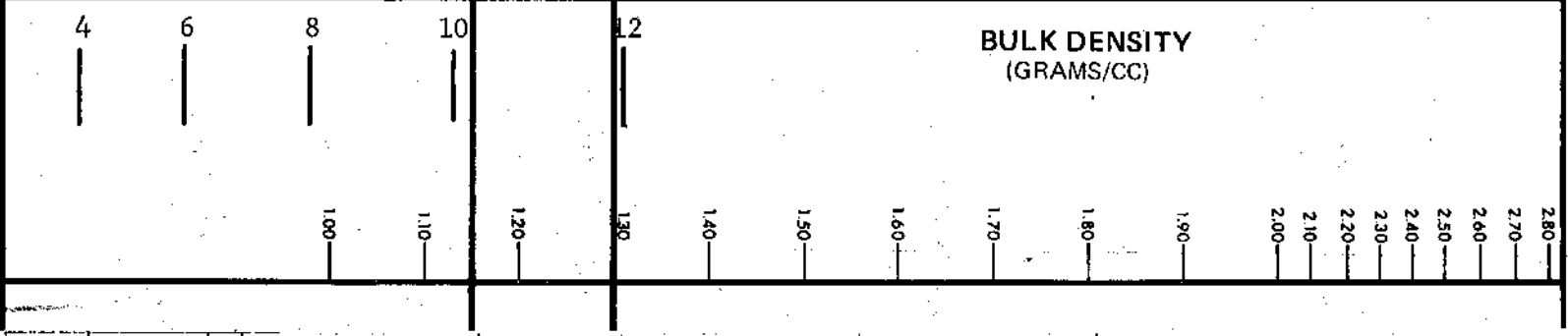
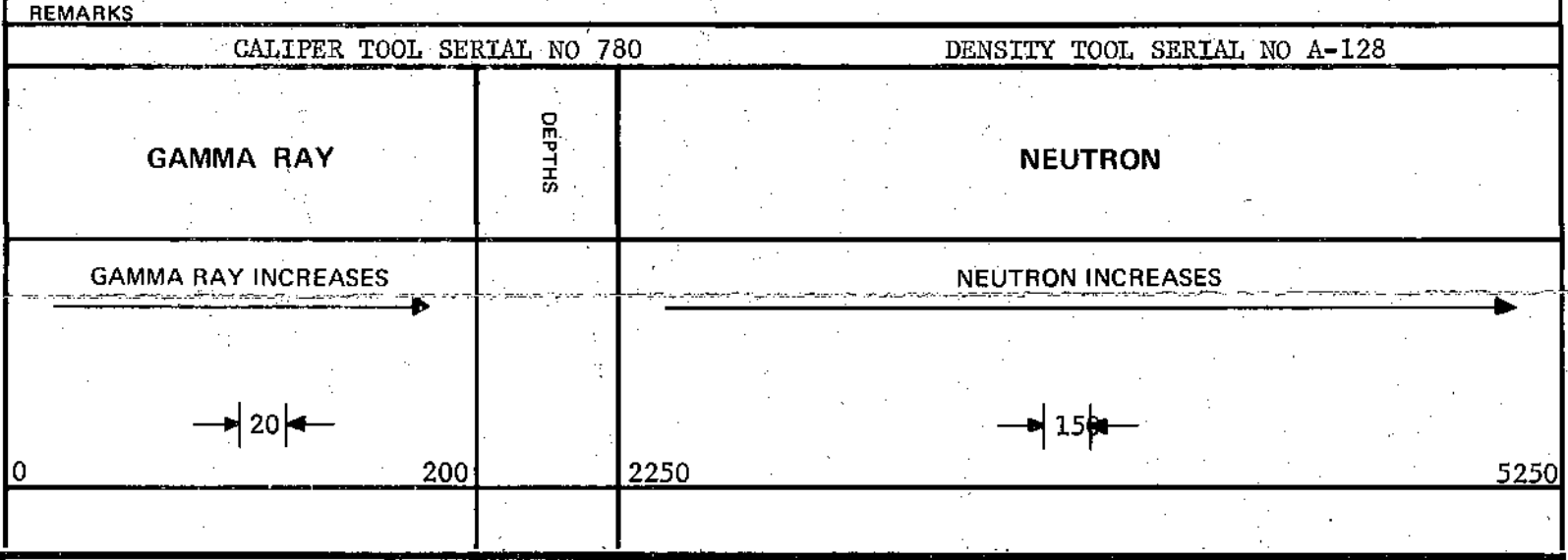
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-6
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W		
M		
Other Services:	NIL	
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	23 NOVEMBER 1974	
First Reading	76	
Last Reading	00	
Footage Logged	76	
Depth Reached	77	
Depth Driller	77	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level		
Min. Diam.	4	
Rm @ of		
Operating Time	3 HOURS	
Truck No.	35	

657

EQUIPMENT DATA	
GAMMA RAY	NEUTRON
RUN NO. ONE	RUN NO. ONE
TOOL MODEL NO.	LOG TYPE NEUTRON/NEUTRON
DIAMETER 1 11/16	TOOL MODEL NO.
DETECTOR MODEL NO.	DIAMETER 1 11/16
TYPE GEIGER	DETECTOR MODEL NO.
LENGTH 18 INCH	TYPE PROPORTIONAL
DISTANCE TO N. SOURCE 8.55 FT.	LENGTH 6 INCH
	SOURCE MODEL NO. MRC-N-SS-W
GENERAL	SERIAL NO. 598
HOIST TRUCK NO. 35	SPACING 17 INCH
INSTRUMENT TRUCK NO.	TYPE AmBe
TOOL SERIAL NO. 65	STRENGTH 3 CURTIS

LOGGING DATA		
GENERAL	GAMMA RAY	SIDEWALL DENSITY
RUN NO. 1	T.C. 5	T.C. 3
DEPTHS FROM 000 TO 76	SENS SETTINGS 100	SENS SETTINGS 1000
SPEED 12 FT/MIN	ZERO DIV. L OR R 15L	ZERO DIV. L OR R 2.6R
	API G. R. UNITS PER LOG DIV. 20	API N. UNITS PER LOG DIV. 44.23
		NEUTRON





Grid Reference: 48090 N 77510 E

Date Commenced: Nov. 24/74      Date Completed: Nov. 26/74

Collar R.L.: 4121 ft.      Standard Datum.

Total Depth: 130 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary Air Rig

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Skeeter	4042.5	4.50	No Core	
Chamberlain	4008.8	6.20	No Core	

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
71.9							
74.0							
	6.6			NOT	ANALYSED		
76.8 77.1							
78.5							



			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
106.0							
	6.2		32.0	4.5			
112.20							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-7

COALITION MINING

February 27, 1975

Sample: SKR 530 to 534

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 531 2125	Raw	12.7	32.0				10,350	4 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Analyses</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	87.6	29.3	87.6	29.3	10,800	-	Air Dry Basis
- 100 M	12.4	44.8	100.0	31.2	8,210	1/2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	65.4	4.0	65.4	4.0	15,010	7 1/2	Air Dry Basis
+ 1.60	34.6	77.0	100.0	29.3	-	N.A.	Air Dry Basis

Analytical Results - R.D.H. P1-7

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
531	Chamberlain	106.0 - 112.2

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P1-7
SEC	TWP	
RGE	LOCATION	
W	FIELD	SUKUNKA
	PROVINCE	BRITISH COLUMBIA
	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	26 NOVEMBER 1974	
First Reading	129	
Last Reading	000	
Footage Logged	129	
Depth Reached	130	
Depth Driller	130	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	73	
Min. Diam.	4-3/4	
Rm @ 9f		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

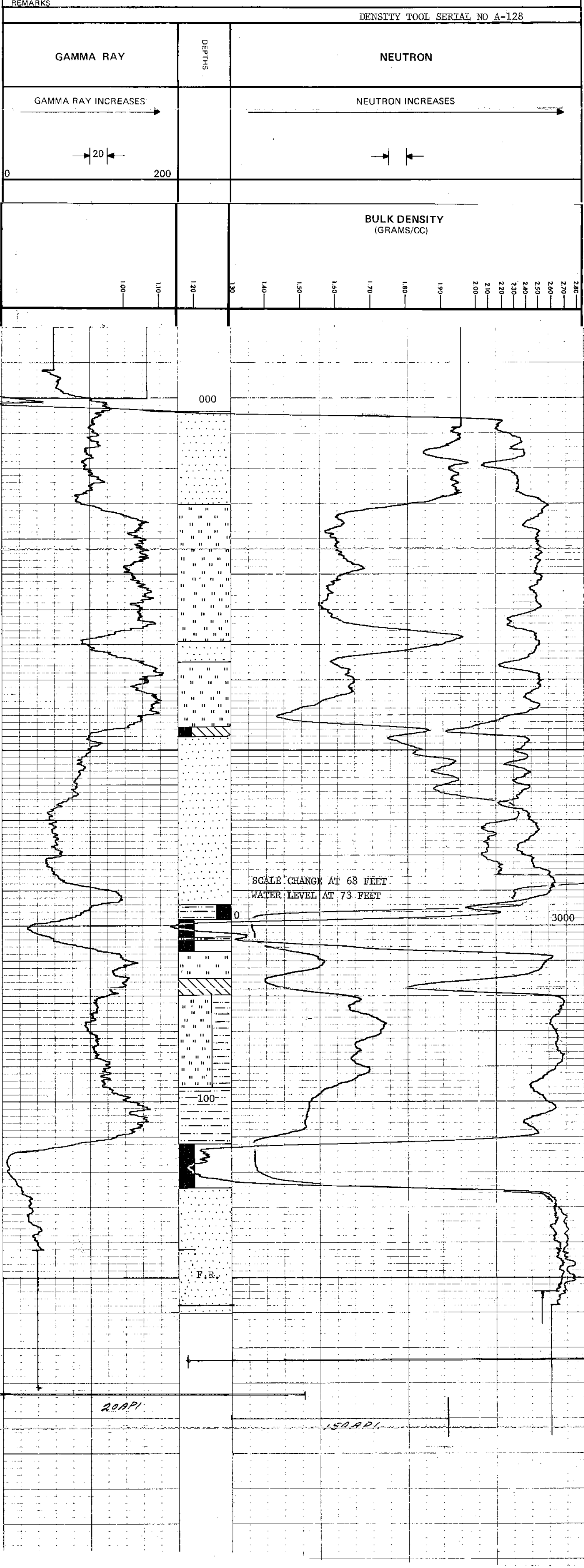
657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	598
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	65	STRENGTH	3 CURTES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				SIDEWALL DENSITY			
	FROM	TO	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	129	5	100	OL	20	3	1000	2.6R	44.23
	00	68	3	1000	5L	150				
	68	129	3	1000	OL	150				



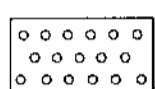


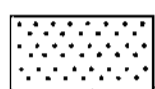


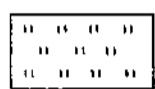
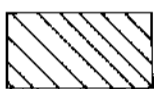
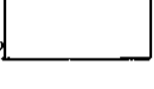



# ROTARY DRILL HOLE STRIP LOG

657

COMPANY: COALITION MINING LTD.  
 PROPERTY: SUKUNKA COAL PROJECT  
 HOLE NUMBER: P1-7  
 LOCATION: 48090 N 77510 E  
 DATE COMMENCED: NOVEMBER 24, 1974  
 DATE COMPLETED: NOVEMBER 26, 1974  
 DEPTH: 130 FEET  
 GROUND ELEVATION: 4121 FEET A.S.L.  
 LOGGED BY: G.R. WALLIS  
 REMARKS: Small amount of water made above SKEETER SEAM.  
 Drilled by CENTURY GEOPHYSICAL CORPORATION  
 using rotary air drilling.

## LEGEND

 CONGLOMERATE	 MUDSTONE	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
 SANDSTONE	 COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED	 GLAUCONITIC
 SILTSTONE	 STONE COALY OR CLAYSTONE CARBONACEOUS	 FAULT ESTABLISHED PROBABLE POSSIBLE
SCALE: 1 in. = 10 ft		
		 V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

DRILLING RATE MIN/FT	GAMMA RAY API	LITHOLOGY	DESCRIPTION
			OVERBURDEN
			SANDSTONE: weathered and fresh, fine grained, S+P, calcareous, quartz-lithic, micaceous.
			SILTSTONE: mid to dark grey, micromicaceous, argillaceous, slightly calcareous.
			SANDSTONE: as above
			SILTSTONE: as above, containing minor pyrites as veinlets and disseminations.
			COAL AND CLAYSTONE: carbonaceous.
			SANDSTONE: fine grained, light grey, S+P, quartz-lithic, calcareous joint fillings. occasional silty phases toward base of unit. Coaly partings and flecks throughout most of unit.
			MUDSTONE: dark grey to carbonaceous with coaly flecks.
			SKEETER SEAM COAL: dull with minor bright bands (85/15%); Mudstone: dark grey, lense toward base.
			SILTSTONE: mid grey, micromicaceous.
			CLAYSTONE: carbonaceous with coaly partings.
			SILTSTONE: mid grey, slightly argillaceous, calcareous containing minor amounts of Mudstone: mid grey.
			MUDSTONE: mid grey, micromicaceous.
			CHAMBERLAIN SEAM: Coal: dull with minor bright bands. V.P.S.
			SANDSTONE: fine to medium grained, quartz-lithic, carbonaceous.
			TOTAL DEPTH 130 feet

Grid Reference: 46986 N 77085 E

Date Commenced: Nov. 27/74 Date Completed: Nov. 27/74

Collar R.L.: 3938 ft. Standard Datum.

Total Depth: 20 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary air rig

Not logged

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
-------------	-----------------------------	----------------------------------	-----------------	----------------

Hole drilled to 20 feet in sandstone floor of Chamberlain Seam. Stopped due to hole collared below Chamberlain Seam.

Grid Reference: 47528 N 76701 E

Date Commenced: Nov. 29/74      Date Completed: Nov. 29/74

Collar R.L.: 3965 ft.      Standard Datum.

Total Depth: 60 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary Air Rig

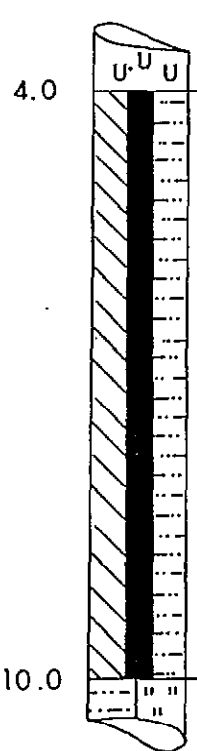
Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Chamberlain	3929.0	6.60	No Core	

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
							
		6.0 +		NOT	ANALYSED		

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-9

				ASH % CUMULATIVE FROM FLOOR		
CHAMBERLAIN SEAM		WT %	ASH %	C.S.No	INCL. BANDS	EXCL. BANDS
29.4						
	6.6		13.3	1.5		
36.0						



COALITION MINING

February 27, 1975

Sample: SKR 530 to 534

<u>Client #</u>									
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 532									
2126	Raw	3.2	13.3				13,430	1 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	86.0	13.0	86.0	13.0	13,500	-	Air Dry Basis
- 100 M	14.0	9.9	100.0	12.6	14,000	1 1/2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	79.6	3.3	79.6	3.3	15,100	1 1/2	Air Dry Basis
+ 1.60	20.4	50.7	100.0	13.0	7,230	N.A.	Air Dry Basis

Analytical Results - R.D.H. P1-9

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
532	Chamberlain	29.4 - 36.0

# ROKE

GAMMA RAY NEUTRON LOG  
CALIPER  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

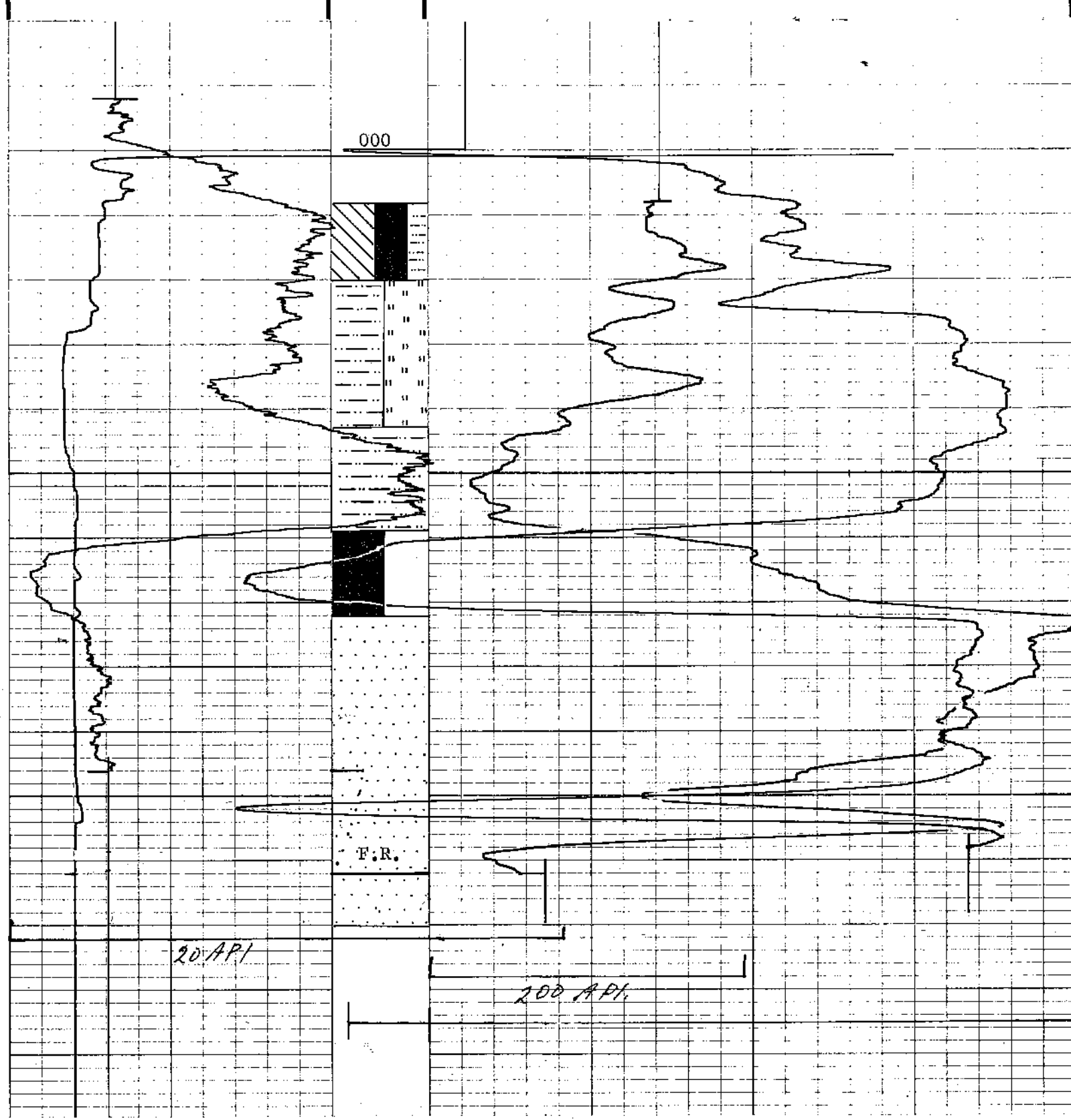
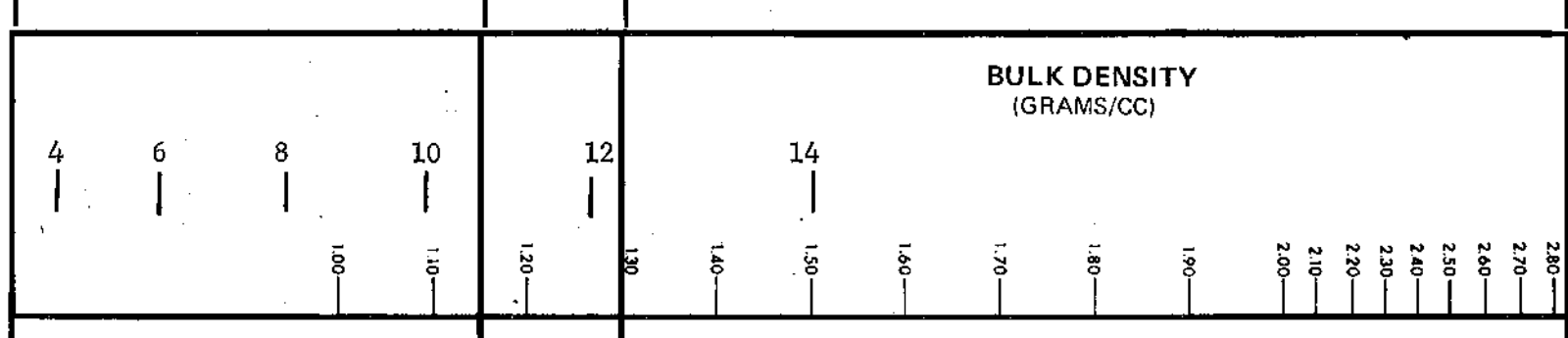
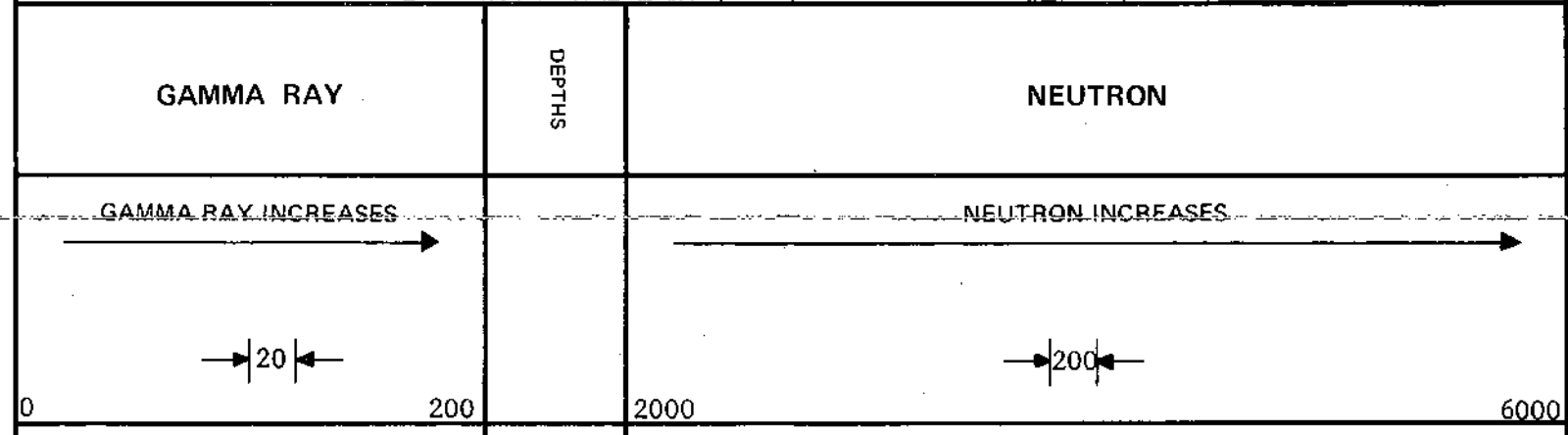
FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-9
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	PERMANENT DATUM	GROUND LEVEL
	LOG MEASURED FROM	GROUND LEVEL
	WELL DEPTHS MEASURED FROM	GROUND LEVEL
	Elev.	
	Ft. Above Perm. Datum	
	Other Services:	NTL
	K.B.	
	CSG	
	G.L.	
Run. No.	ONE	
Date	29 NOVEMBER 1974	
First Reading	56	
Last Reading	00	
Footage Logged	56	
Depth Reached	57	
Depth Driller		
Casing Roke		
Casing Driller		
Fluid Type	*ATR*	
Liquid Level		
Min. Diam.	4-1/2	
Rm @ of		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

EQUIPMENT DATA		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL		SERIAL NO.	
HOIST TRUCK NO.	35		
INSTRUMENT TRUCK NO.			
TOOL SERIAL NO.	65		

LOGGING DATA											
GENERAL			GAMMA RAY				SIDEWALL DENSITY				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
1	00	56	12	5	100	0L	20	3	1000	2.6R	44.23
	NEUTRON			3	1000	10L	200				

REMARKS \* NOTE - NO GROUND WATER IN HOLE  
CALIPER TOOL SERIAL NO 780 DENSITY TOOL SERIAL NO A-128

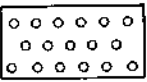
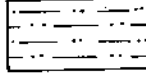
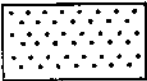

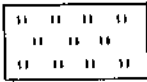
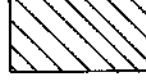
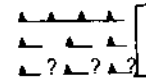
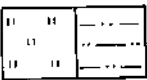
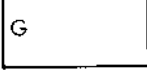
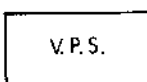


# ROTARY DRILL HOLE STRIP LOG

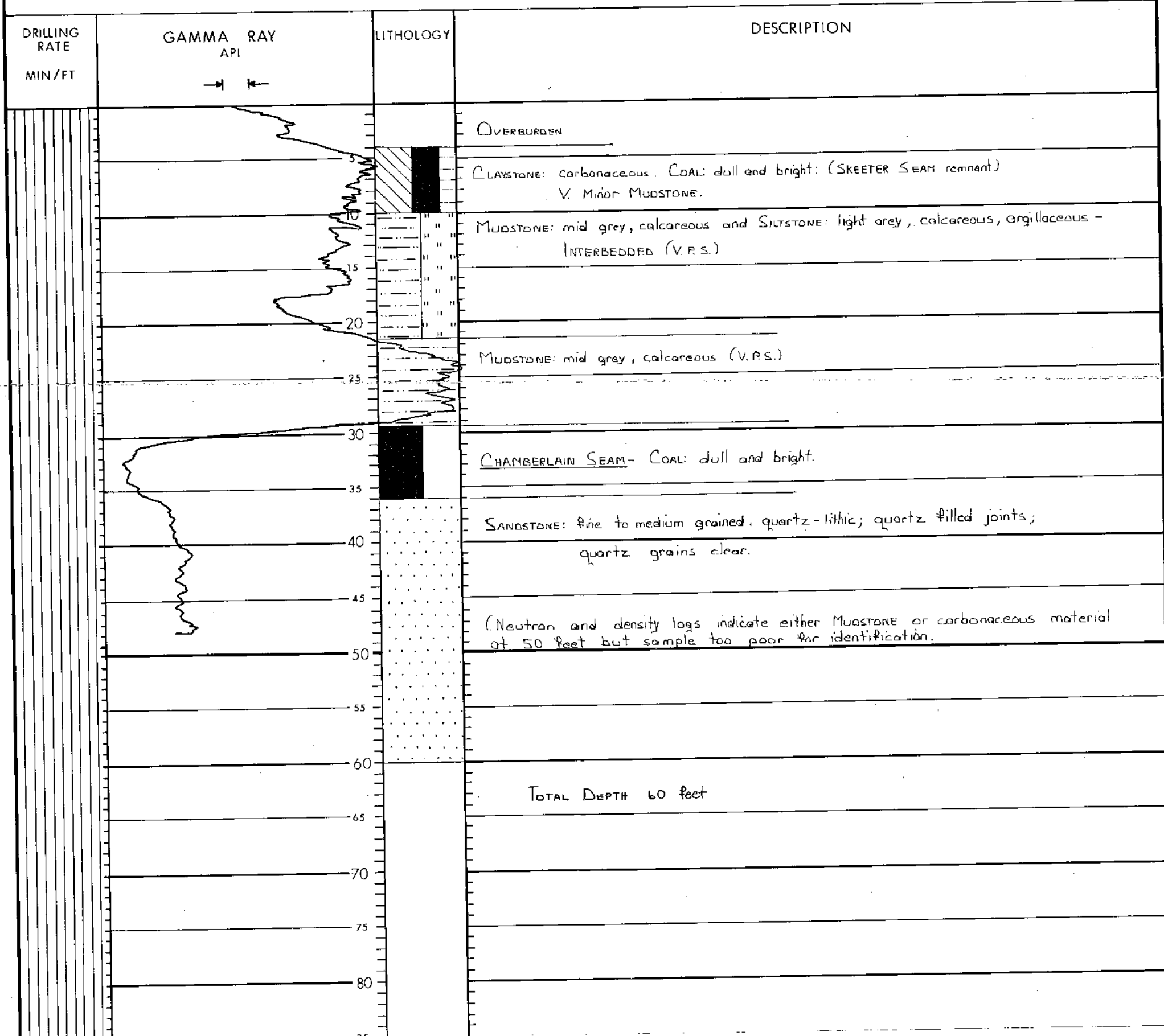
# 657

**COMPANY:** COALITION MINING LTD.  
**PROPERTY:** SUKUNKA COAL PROJECT  
**HOLE NUMBER:** P1-9  
**LOCATION:** 47528 N 76701 E  
**DATE COMMENCED:** NOVEMBER 29, 1974  
**DATE COMPLETED:** NOVEMBER 29, 1974  
**DEPTH:** 60 FEET  
**GROUND ELEVATION:** 3965 FEET A.S.L.  
**LOGGED BY:** G.R. WALLIS  
**REMARKS:** Drilled by CENTURY GEOPHYSICAL CORPORATION using rotary air drilling.

## LEGEND

	CONGLOMERATE		MUDSTONE
	SANDSTONE		COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED
	SILTSTONE		STONE COALY OR CLAYSTONE CARBONACEOUS
			FAULT ESTABLISHED PROBABLE POSSIBLE
			INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
			GLAUCONITIC
			VERY POOR SAMPLES (ABUNDANT CAVINGS)

SCALE: 1 in. = 10 ft.





BORE NUMBER R.D.H. P1-10

Grid Reference: 47748 N 77116 E

Date Commenced: Nov. 30/74 Date Completed: Nov. 30/74

Collar R.L.: 4064 ft. Standard Datum.

Total Depth: 95 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary Air Rig

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

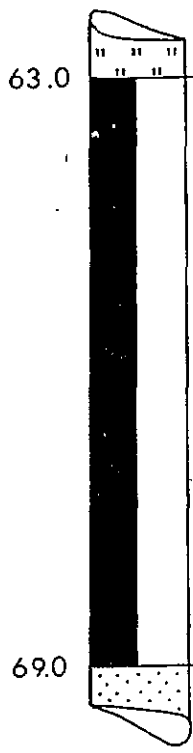
COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor R.L.</u>	<u>Thickness (ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Skeeter	4032.8	3.20	No Core	
Chamberlain	3995	6.00	No Core	

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
28.0							
	3.0			NOT ANALYSED			
31.0							



			ASH % CUMULATIVE FROM FLOOR			
CHAMBERLAIN SEAM		WT %	ASH %	C.S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
63.0	6.0	22.3	2.5			
69.0						



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-10

COALITION MINING

February 27, 1975

Sample: SKR 530 to 534

<u>Client #</u>		<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 533										
2127	Raw	3.6		22.3				11,950	2 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	90.8	23.1	90.8	23.1	11,800	-	Air Dry Basis
- 100 M	9.2	14.3	100.0	22.3	13,300	1 1/2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	3.7	3.6	3.7	3.6	14,990	1 1/2	Air Dry Basis
+ 1.60	96.3	24.9	100.0	24.1	11,500	1/2	Air Dry Basis

Analytical Results - R.D.H. P1-10

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
533	Chamberlain	63.0 - 69.0

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. \_\_\_\_\_ COMPANY COALITION MINING LIMITED  
 LSD SEC TWP \_\_\_\_\_ WELL P-1-10  
 RANGE \_\_\_\_\_ LOCATION \_\_\_\_\_  
 W \_\_\_\_\_ M \_\_\_\_\_ FIELD SUKUNKA  
 PROVINCE BRITISH COLUMBIA Other Services: NIL

Permanent Datum \_\_\_\_\_ ELEV. \_\_\_\_\_ K.B. \_\_\_\_\_  
 Log Measured from \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_ CSG \_\_\_\_\_  
 Ft. Above Perm. Datum \_\_\_\_\_ F.L. \_\_\_\_\_ G.L. \_\_\_\_\_  
 Well Depths Measured from \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_

Run. No. ONE  
 Date 30 NOVEMBER 1974  
 First Reading 84  
 Last Reading 00  
 Footage Logged 84  
 Depth Reached 85  
 Depth Driller 85  
 Casing Driller \_\_\_\_\_  
 Fluid Type ATR  
 Liquid Level \_\_\_\_\_  
 Min. Diam. 4-1/2  
 Rim @ OF \_\_\_\_\_  
 Operating Time 3 HOURS  
 Truck No. 35

Recorded By PETERSON Witnessed By SHIELDS

**657**

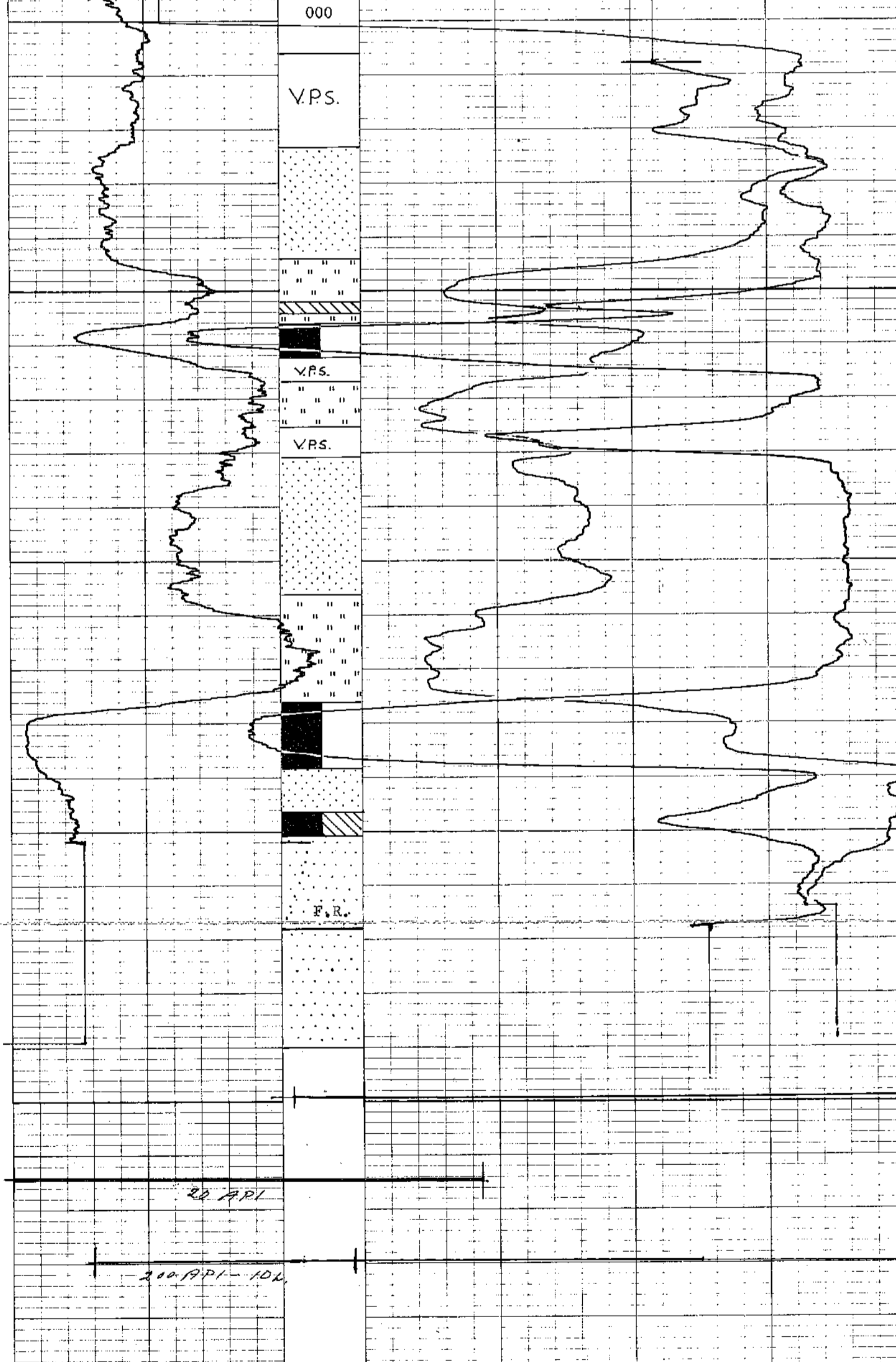
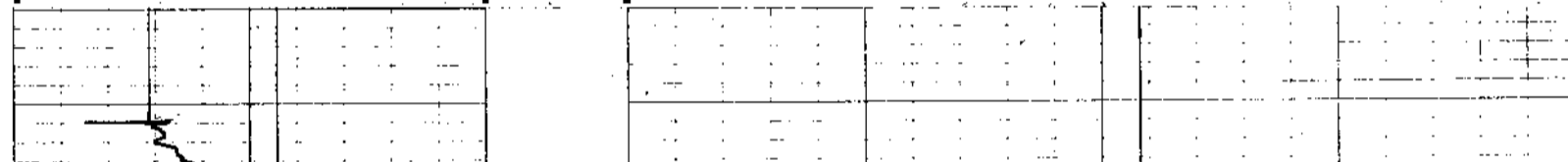
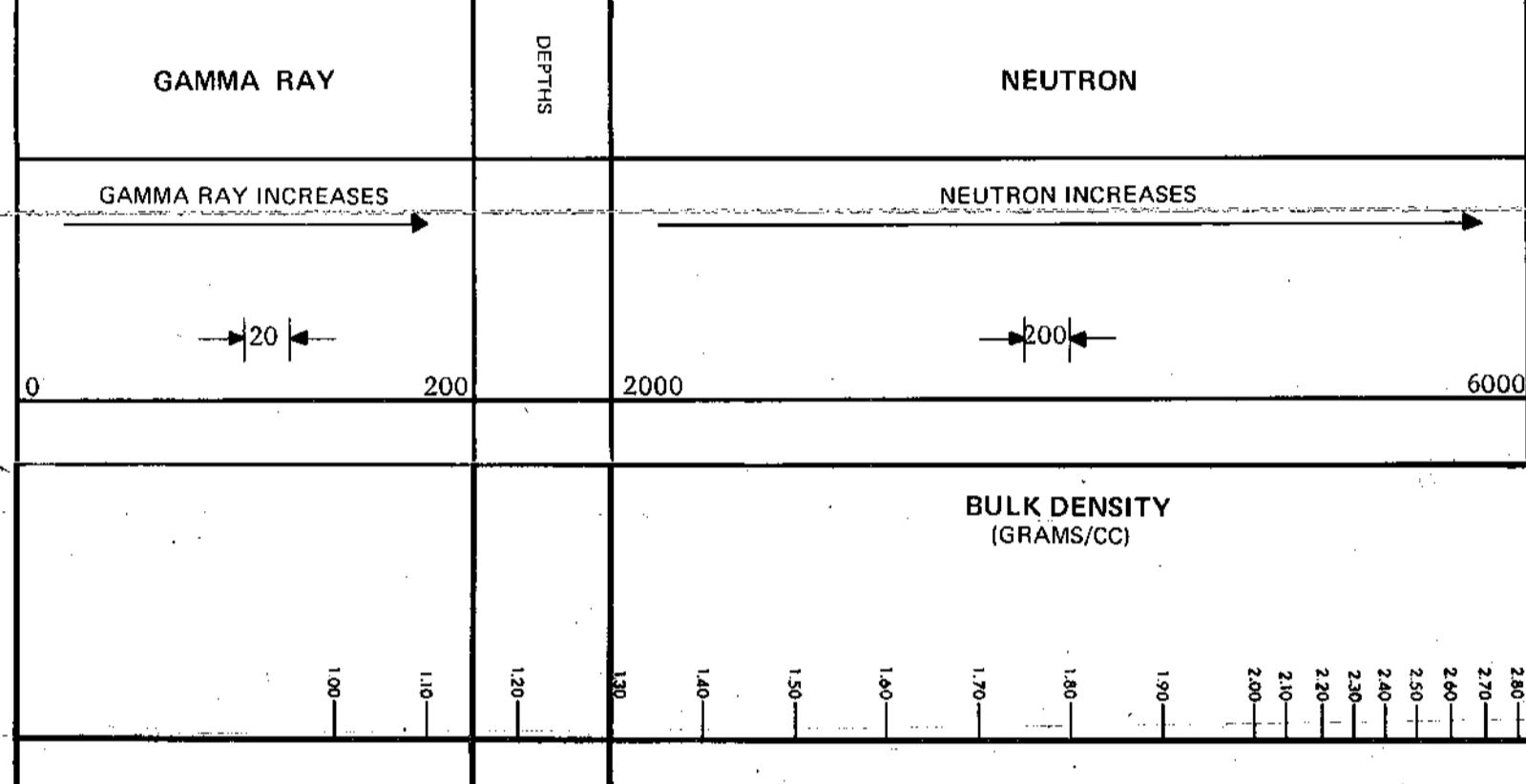
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
HOIST TRUCK NO.	35		
INSTRUMENT TRUCK NO.			
TOOL SERIAL NO.	65		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				SIDEWALL DENSITY				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
I	00	84	12	5	100	OL	20	3	1000	2.6R	44.23

REMARKS \* NOTE - NO GROUND WATER IN HOLE  
 DENSITY TOOL SERIAL NO A-128



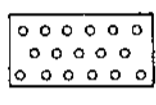
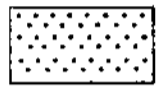
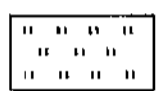
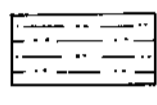

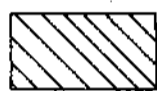
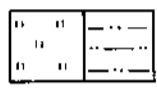
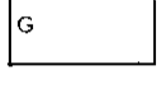

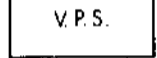
20 API  
 210 API - 102

# ROTARY DRILL HOLE STRIP LOG

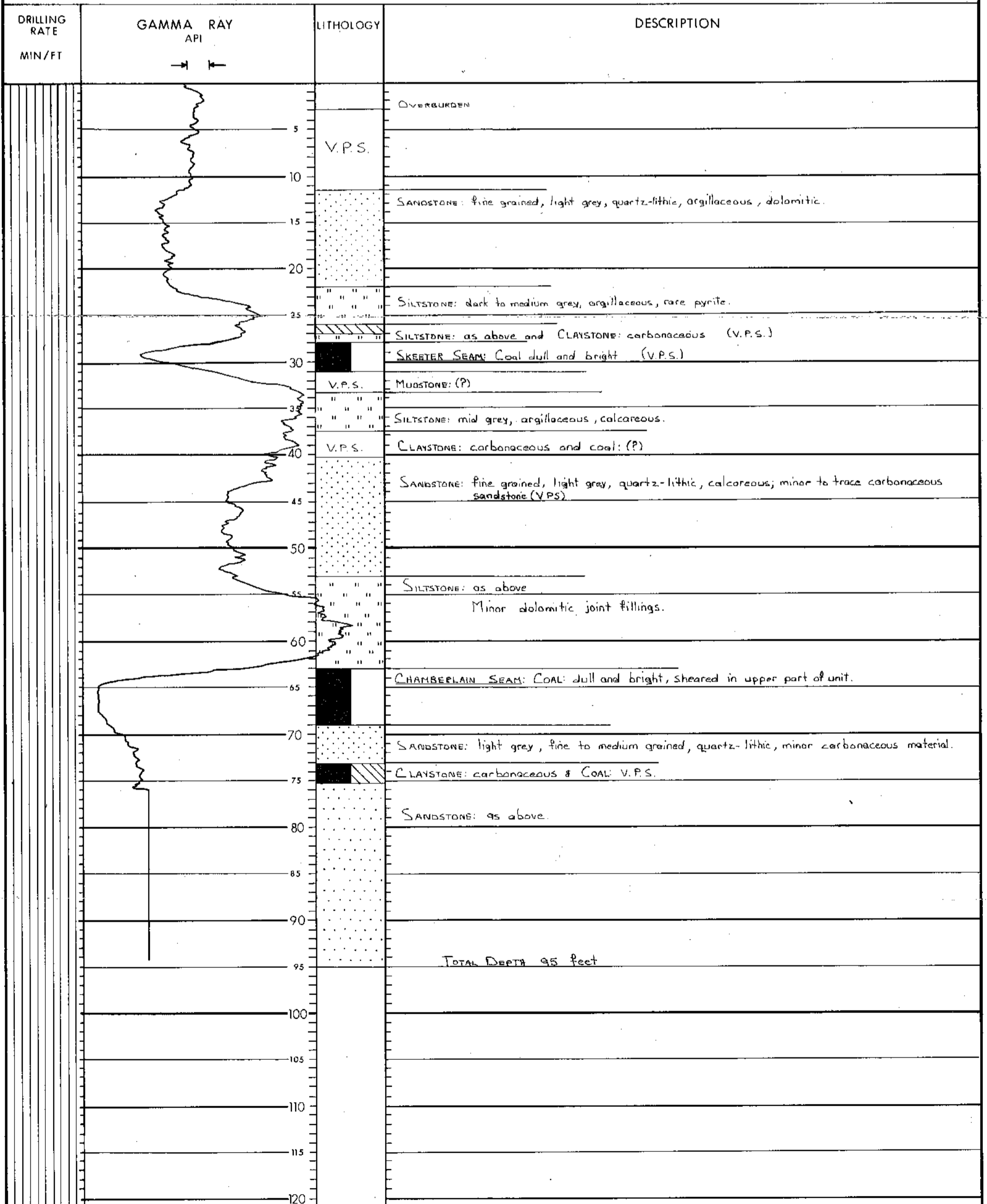
# 657

**COMPANY:** COALITION MINING LIMITED  
**PROPERTY:** SUKUNKA COAL PROJECT  
**HOLE NUMBER:** P1-10  
**LOCATION:** 47748 N 77116 E  
**DATE COMMENCED:** NOVEMBER 30, 1974  
**DATE COMPLETED:** NOVEMBER 30, 1974  
**DEPTH:** 95 FEET  
**GROUND ELEVATION:** 4064 FEET A.S.L.  
**LOGGED BY:** G.R. WALLIS  
**REMARKS:** Drilled by CENTURY GEOPHYSICAL CORPORATION using rotary air drill. Samples generally very poor throughout no recovery of Skeeter Seam.

## LEGEND

 CONGLOMERATE   SANDSTONE   SILTSTONE	 MUDSTONE   COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED   STONE COALY OR CLAYSTONE CARBONACEOUS	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)   GLAUCONITIC   FAULT ESTABLISHED PROBABLE POSSIBLE   V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

SCALE: 1 in. = 10 ft.



Grid Reference: 48493 N 76834 E

Date Commenced: Dec. 1/74                      Date Completed: Dec. 1/74

Collar R.L.: 4099 ft.                      Standard Datum.

Total Depth: 46 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary Air Rig

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
Chamberlain	4069.2	6.00	No Core	

			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
23.8							
	6.00			27.9	1.5		
29.8							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 RDH P1-11



COALITION MINING

February 27, 1975

Sample: SKR 530 to 534

<u>Client #</u>									
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 534									
2128	Raw	3.8	27.9				11,010	1 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	85.8	26.1	85.8	26.1	11,300	-	Air Dry Basis
- 100 M	14.2	22.2	100.0	25.5	11,920	1 1/2	Air Dry Basis

FROTH FLOTATION +100 M

- 1.60	71.3	3.6	71.3	3.6	15,080	2	Air Dry Basis
+ 1.60	28.7	81.9	100.0	26.1		1/2	Air Dry Basis

Analytical Results - R.D.H. P1-11

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
534	Chamberlain	24.7 - 29.8

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-11
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run. No.	ONE	
Date	1 DECEMBER 1974	
First Reading	45	
Last Reading	00	
Footage Logged	45	
Depth Reached	46	
Depth Driller	46	
Casing Roke		
Casing Driller		
Fluid Type	ATR	
Liquid Level		
Min. Diam.	4-1/2	
Rm @ 9F		
Operating Time	2-1/2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

### EQUIPMENT DATA

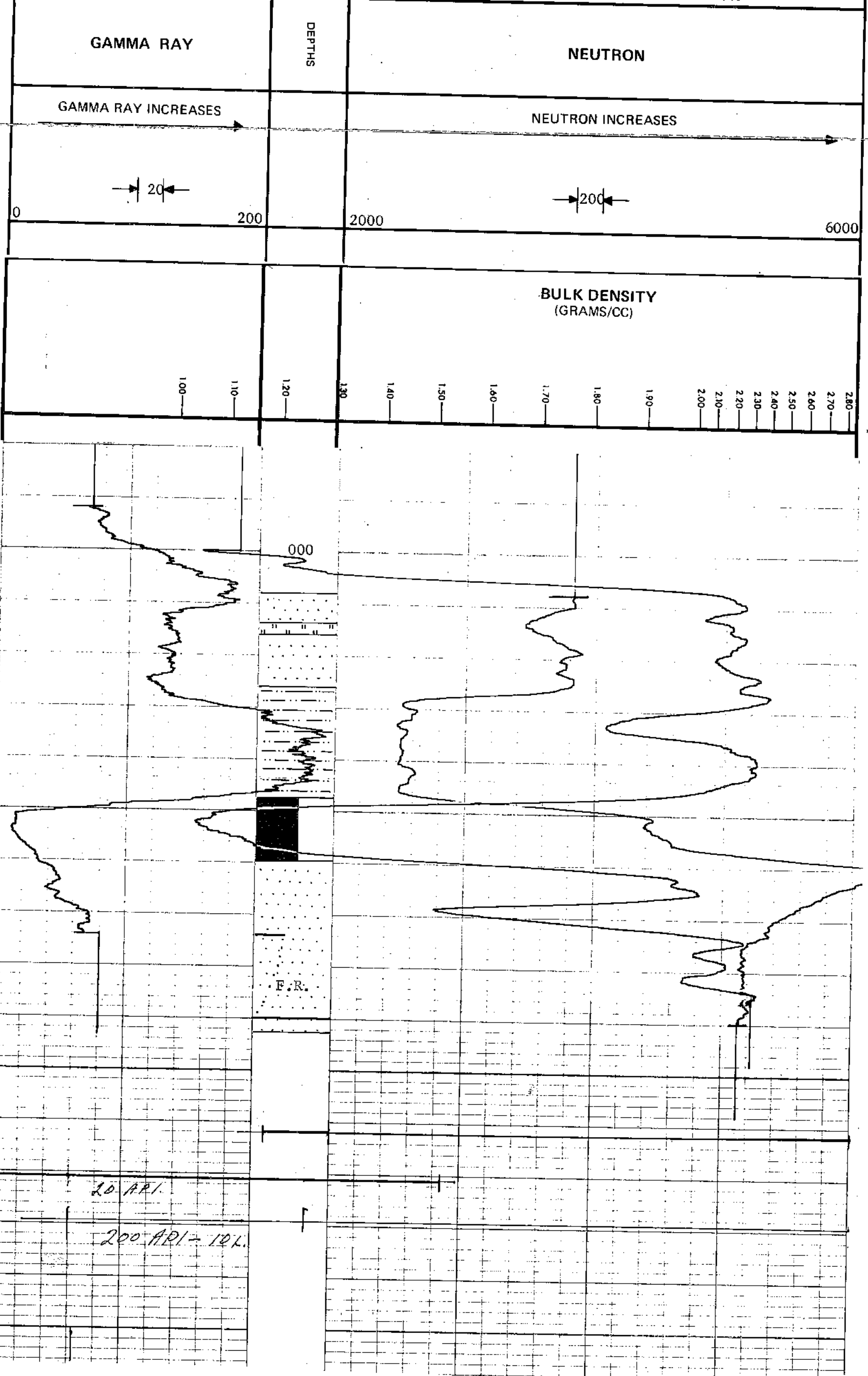
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	598
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	65	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				SIDEWALL DENSITY			
	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	00	45	5	100	OL	20	3	1000	2.6R	44.23
	NEUTRON		3	1000	10L					

REMARKS \* NOTE - NO GROUND WATER IN HOLE

DENSITY TOOL SERIAL NO A-128





Grid Reference: 48395 N 76566 E

Date Commenced: Dec. 1/74                      Date Completed: Dec. 1/74

Collar R.L.: 4046 ft.                      Standard Datum.

Total Depth: 28 ft.

Drilled by: Century Geophysical Corporation

For: Coalition Mining Ltd.

Using: Rotary Air Rig

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

<u>Seam</u>	<u>Floor</u> <u>R.L.</u>	<u>Thickness</u> <u>(ft.)</u>	<u>Recovery</u>	<u>Remarks</u>
-------------	-----------------------------	----------------------------------	-----------------	----------------

Driller stopped drilling with no check with geologist after penetrating carbonaceous claystone, interpreted as seam.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	P-1-12	
LOCATION	SUKUNKA	
FIELD	BRITISH COLUMBIA	
PROVINCE		
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	K.B. _____ CSG _____ G.L. _____
Run. No.	ONE	Other Services: NIL
Date	1 DECEMBER 1974	
First Reading	27	
Last Reading	00	
Footage Logged	27	
Depth Reached	28	
Depth Driller	28	
Casing Roke		
Casing Driller		
Fluid Type	ATR	
Liquid Level		
Min. Diam.	4-1/2	
Rm @ 0'		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

657

### EQUIPMENT DATA

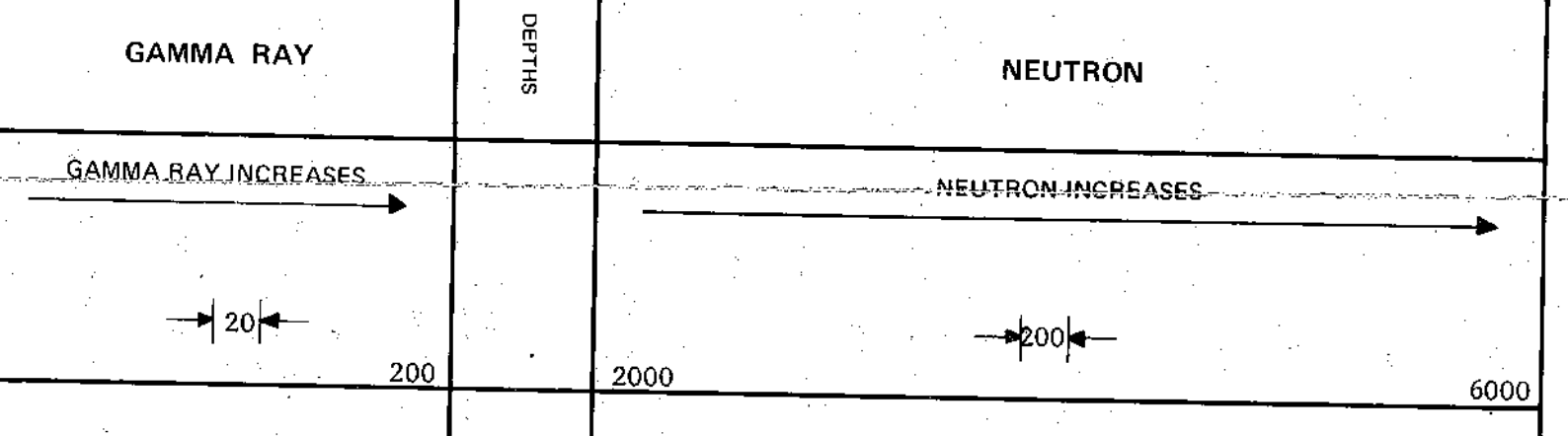
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

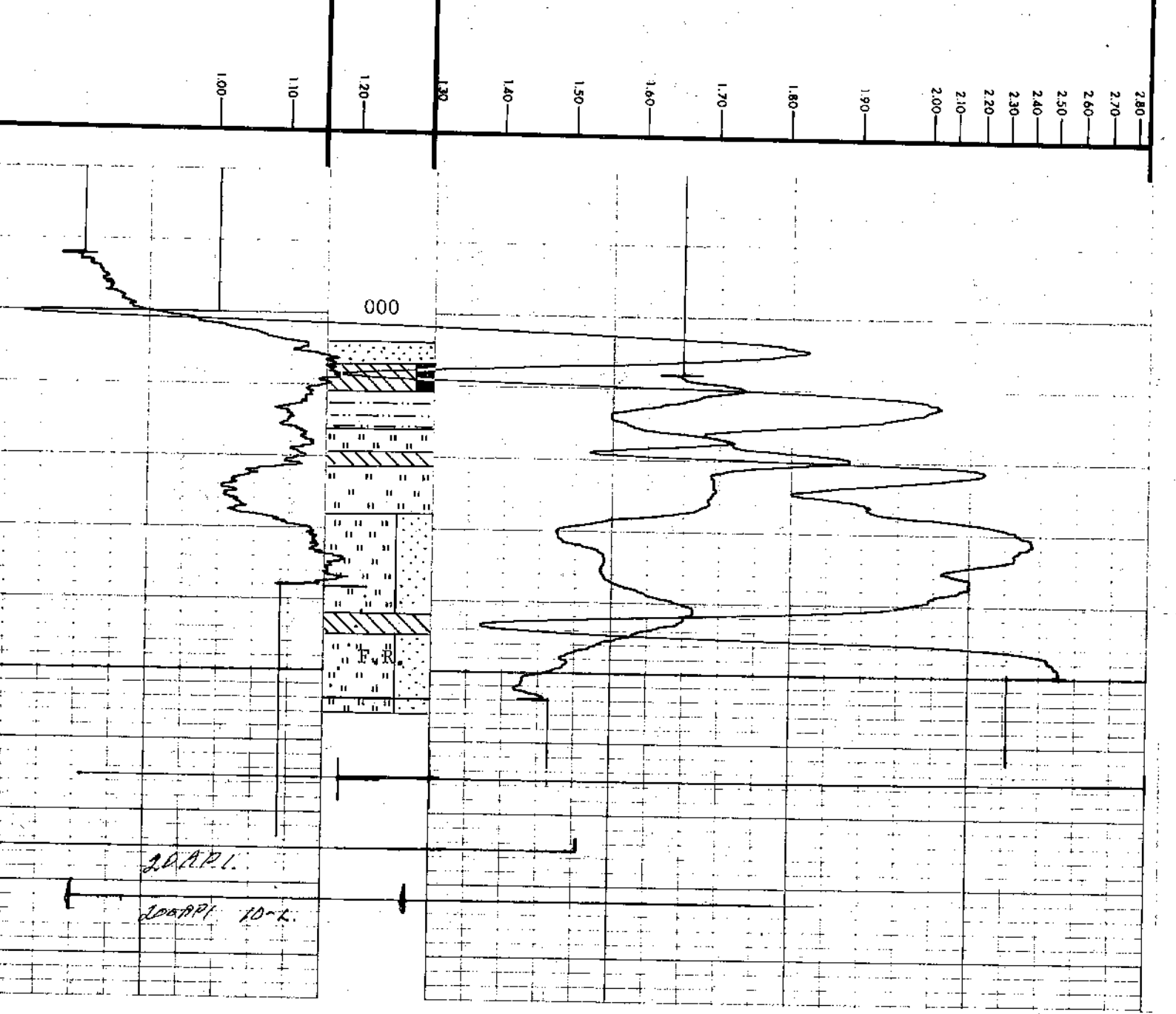
GENERAL			GAMMA RAY				SIDEWALL DENSITY				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
1	00	27	12	5	100	OL	20	3	1000	2.6R	44.23
	NEUTRON			3	1000	10L	200				

REMARKS \* NOTE - NO GROUND WATER IN HOLE

DENSITY TOOL SERIAL NO A-128



### BULK DENSITY (GRAMS/CC)



200 API  
200 API 10-L



Grid Reference: 48390 N 77890 E

Date Commenced: Jan. 9/75 Date Completed: Jan. 13/75

Collar R.L.: 4117 ft. Standard Datum.

Total Depth: 261.0 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Limited

Using: Longyear Model 38 Unitsed Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
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## SUKUNKA D.D.H. PL-13

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN AND WEATHERED ROCK	2.00	2.00	2.00	
SANDSTONE, light-mid grey, fine grained calcareous; upper five feet fine to medium grained. One foot zone at 13.5' containing mudstone blebs to 0.02'. Calcite filled joint at 41'. Bedding dipping 5°.	52.00	54.00	52.00	Tri-cone to 10'
SILTSTONE, grading to silty mudstone in part; mid grey, calcareous. Phases of very fine to fine sandstone throughout either as 0.10' units of graded bedding or as inter-bedded units, rare phases of small shelly fossils (interbeds).	17.35	71.35	17.35	
SANDSTONE, fine grained, light grey, calcareous, even grained, massive. Between 75.5 and 76.5', carbonaceous claystone and weathered coal(?) Calcite filled joints between 72 and 74' at 30° to core axis, slickensided joint face after deposition.	6.82	78.17	6.45	



## SUKUNKA D.D.H. P1-13

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, calcareous; silty in upper 2'. From 80.5 to 85.0' core broken, bedding and joint faces slickensided calcite joint fillings.	7.33	85.50	7.33	Established fault
SANDSTONE, fine grained, light to mid grey, calcareous in upper part. Carbonaceous partings on some bedding planes, in conjunction with calcite filling - slip features; joints calcite filled, joints unevenly distributed and exhibiting tension features in upper 15', core generally broken. Dip of bedding 30° at 90', 50° at 101', 30° at 114'. Deformation generally decreasing in intensity from 110' to 120'.	53.45	138.95	52.45	
MUDSTONE, mid to dark grey, carbonaceous in part, containing occasional silty blebs and phases to 0.10'. Slickensided joint and bedding planes throughout, containing rare calcite filling.	9.05	148.00	8.45	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone, mid grey in units to 0.50', mudstone dark grey to carbonaceous in 0.25 units; carbonaceous partings	14.50	162.50	13.30	Fault zone between 145' and 168' - established.

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<p>SILTSTONE AND MUDSTONE INTERBEDS, (Cont'd.) common throughout unit 0.30' coal at 155'. Mudstone: siltstone = 70:30; rare fine quartz and calcite filled joints; slickensided joints throughout unit.</p>				
<p>SANDSTONE, fine grained, light grey, calcareous throughout, though only weakly so in upper 30' of unit. Carbonaceous and coaly zone 2' thick at 166'. Medium grained phases containing clayblebs at 192 and 194'. Calcite filled subvertical tension joints common throughout unit; though is common in between 200' and 215' - possible fault. Bedding flat.</p>	53.00	215.50	53.00	Possible fault 200 - 215'
<p>SANDSTONE, fine grained, mid grey carbonaceous flecks and occasional partings calcite filled joints throughout; slickensided.</p>	5.05	220.50	5.05	Possible fault
<p>SANDSTONE, light grey, fine grained, mudstone partings present in upper 20' of unit, and one 0.15' coaly lense at 246'. Calcite filled joints, usually less than 0.005' between 228 and 246'; zone of fracturing and disturbed bedding between 241 and 246', calcite filled joints and fracture planes, possible fault.</p>	40.45	261.00	40.05	Possible fault 241 to 246'. T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSITOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-13
SEC	TWP	R-1-13
RGE	LOCATION	
M	FIELD	SIKUNKA
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	K.B.
Log Measured from	RIG FLOOR	Elev. 1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.L.
Run No.	ONE	
Date	21 JANUARY 1975	
First Reading	259	
Last Reading	000	
Footage Logged	259	
Depth Reached	260	
Depth Driller	261	
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	53	
Min. Diam.	H.Q.	
Rm @ 9 F.		
Operating Time	2 HOURS	
Truck No.	35	

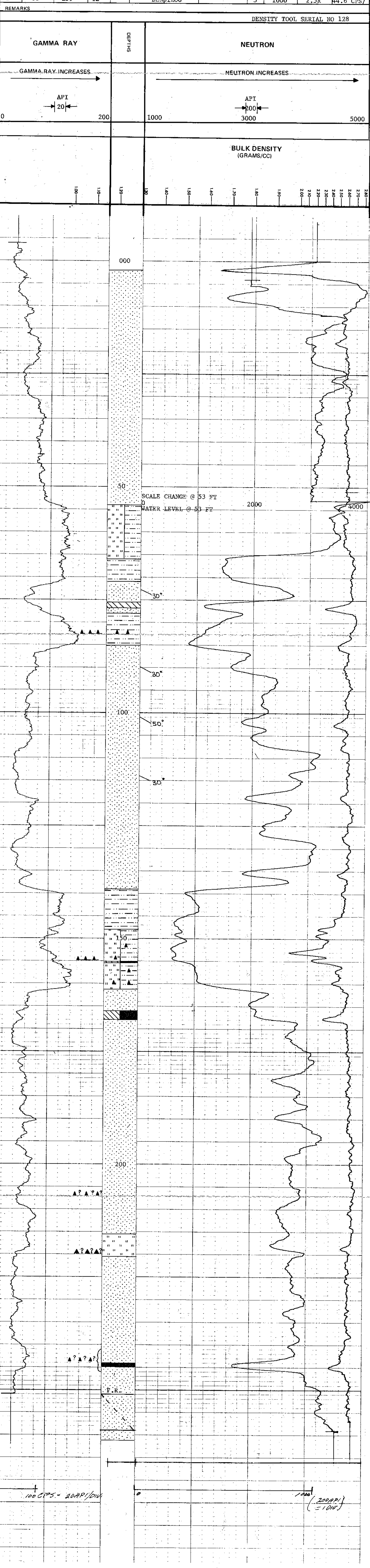
657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	00	53	12	3	500	OL	20	3	1000	5L	200
	53	259	12	3	500	OL	20	3	1000	1L	200
1	00	259	12			DENSITOG		3	1000	2.5R	44.6 CPS/



100 CPS = 20 API/DIV

1000 CPS = 200 API/DIV

Grid Reference: 48469 N 77404 E

Date Commenced: Jan. 14/75 Date Completed: Jan. 15/75

Collar R.L.: 4115 ft. Standard Datum:

Total Depth: 104 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig NQ.T.T.

Radiation Logs: Gamma Ray, Neutron & Sidewall Density.

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS



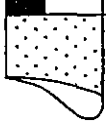
Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4063.40	4.40	33.4%	Seam weathered
Chamberlain	4025.75	6.75	73.0%	

			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S.No	INCL. BANDS	EXCL. BANDS
47.20							
	4.40			10.6	8		
51.60							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-14

			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
82.50		0.10					
		6.65	4.6	8			
89.25							

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-14

COALITION MINING

February 27, 1975

Sample: SKR 520 to 525

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 520 2136	0.9		10.6			.79	14,240	8	Air Dry Basis
SKR 521 2137	1.5		4.6			.48	14,980	8	Air Dry Basis

Analytical Results - D.D.H. P1-14

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
520	Skeeter	47.20 - 51.60
521	Chamberlain	82.60 - 89.25

## SUKUNKA D.D.H. P1-14

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN	11.00	11.00	---	No core to 15'
MUDSTONE, mid grey, occasional silty phases and one carbonaceous phase. Weathered on bedding planes.	8.00	19.00	4.60	
SANDSTONE, fine grained, light grey, silty in upper 13'; calcareous in upper 10'. Carbonaceous wisps and partings throughout, with more concentrated zone at 33.5'. Small scale current bedding phases present. One foot zone mudstone/sandstone interbeds 0.70' above base of unit.	23.90	42.90	23.50	
MUDSTONE AND SILTSTONE INTERBEDS, grading to siltstone at base of unit; mudstone dark grey, siltstone light grey. Slickensided bedding plane at top of unit.	4.30	47.20	3.10	
<u>COAL,</u>	2.10	49.30	)	
MUDSTONE,	1.00	50.30	)	SKEETER SEAM, (Core loss 2.93' -
<u>COAL,</u>	1.30	51.60	)	correction by radiation log)



## SUKUNKA D.D.H. P1-14

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, grading to siltstone	5.00	56.60		Seam floor
SILTSTONE AND MUDSTONE INTERBEDS, grading to mudstone in lower 0.5'; 2 phases within unit - base of upper phase carbonaceous, siltstone in lower phase calcareous.	4.68	61.28	4.68	
SILTSTONE, light grey, very calcareous, mudstone partings common throughout.	5.22	66.50	3.90	
MUDSTONE, dark grey.	3.20	69.70	3.20	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone light grey calcareous, 0.03' to 0.15' thick. Mudstone mid grey, generally 0.05' to 0.08' thick with occasional 0.25' thick phases.	3.30	73.00	3.30	
MUDSTONE AND SILTSTONE LAMINATED,	9.50	82.50	7.20	Seam roof
STONE, coaly, slickensided.	0.10	82.60	0.10 )	
COAL, dull and bright	4.05	86.65	2.77 )	CHAMBERLAIN SEAM

## SUKUNKA D.D.H. P1-14

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , stony	0.10	86.75	0.10 )	
bright with minor dull bands	1.25	88.00	0.86 )	CHAMBERLAIN SEAM
bright	0.35	88.35	0.20 )	
dull with minor bright bands	0.90	89.25	0.90 )	
SANDSTONE, fine grained, light grey, carbonaceous in upper 10'.	14.75	104.00	11.78	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	P-1-14
LOCATION	FIELD	SURUKKA
PROVINCE	BRITISH COLUMBIA	NTL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.L. _____
Run No.	ONE	Date
Date	21 JANUARY 1975	First Reading
First Reading	86	Last Reading
Last Reading	00	Footage Logged
Footage Logged	86	Depth Reached
Depth Reached	87	Depth Driller
Depth Driller	104	Casing Roke
Casing Roke	14	Casing Driller
Casing Driller		Fluid Type
Fluid Type	AIR/WATER	Liquid Level
Liquid Level	40	Min. Diam.
Min. Diam.	N.Q.	Rin @ of
Rin @ of		Operating Time
Operating Time	3 HOURS	Truck No.
Truck No.	35	Recorded By
Recorded By	PETERSON	Witnessed By
Witnessed By	WALLIS	

657

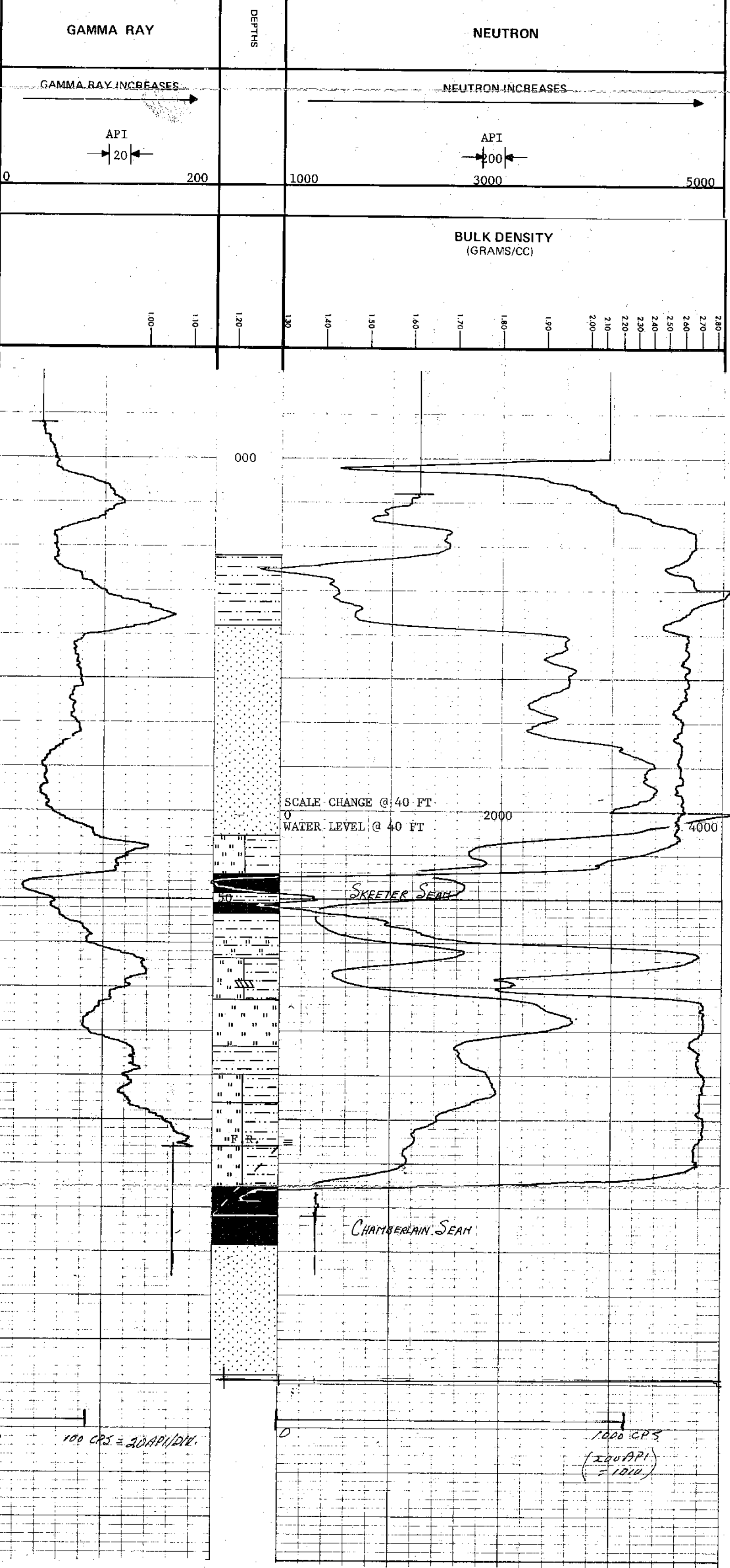
### EQUIPMENT DATA

GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.			
DETECTOR MODEL NO.				DIAMETER	1 11/16		
TYPE	SCINTILLATION			DETECTOR MODEL NO.			
LENGTH	4 INCH			TYPE	PROPORTIONAL		
DISTANCE TO N. SOURCE	8.55 FT.			LENGTH	6 INCH		
				SOURCE MODEL NO.	MRC-N-SS-W		
				SERIAL NO.	# 50		
GENERAL				SPACING	17 INCH		
HOIST TRUCK NO.	35			TYPE	AmBe		
INSTRUMENT TRUCK NO.				STRENGTH	3 CURIES		
TOOL SERIAL NO.	177						

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	40	12	3	500	0L	20	3	1000	5L	200
	40	86	12	3	500	0L	20	3	1000	0L	200
1	00	86	12			DENSILOG		3	1000	2.52R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



100 CRS IN 20 API/DIV.

1000 CPS (200 API = 10 DIV.)

Grid Reference: 48085 N 76906 E

Date Commenced: Jan. 15/75 Date Completed: Jan. 16/75

Collar R.L.: 4083 ft. Standard Datum.

Total Depth: 83.0 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.T.T.

Radiation Logs: Gamma Ray, Neutron and Sidewall Density.

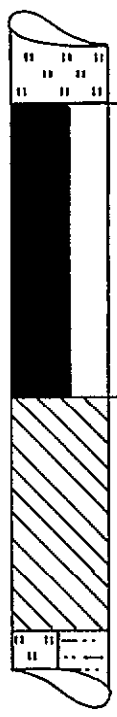
By: Roke Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4059.2	3.00	66.6%	
Chamberlain	4017.2	6.50	99.2%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
20.80								
	3.00			3.0	2			
23.80								
26.20								



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-15

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S. No.	INCL. BANDS	EXCL. BANDS
	0.107							
	0.30	4.6	2	3.5				
	5.05	2.6	1.5					
	1.05	8.8	1					

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1- 15

Analytical Results

D.D.H. P1-15

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
522	Skeeter	20.80 - 23.80
523	Chamberlain	59.40 - 59.70
524	Chamberlain	59.70 - 64.75
525	Chamberlain	64.75 - 65.80

Note: Samples 523, 524, 525 composited according to a.d.wt. (Linear recovery 99.2%).

COALITION MINING

February 27, 1975

Sample: SKR 520 to 525

Client #  
Lab No.

A.D.L.

R.M.

Ash %

Vol.

F.C.

S.

B.T.U.

F.S.I.

Calc. Factors

SKR 522

2138 Raw 4.1

3.0

14,287

2

Air Dry Basis

SIZE ANALYSES

Size Fraction

Wt %

Ash %

Cum Wt %

Cum Ash %

B.T.U.

F.S.I.

+ 100 M

92.5

3.4

92.5

3.4

- 100 M

7.5

4.1

100.0

3.5

1 1/2

SINK-FLOAT ANALYSES

+100 M

- 1.60

97.6

2.7

97.6

2.7

2

+ 1.60

2.4

33.0

100.0

3.4

1/2

2138 Washed @ 1.60 S.G. to determine any change in F.S.I. (oxidation test)

P1-15 - 1 -



COALITION MINING

February 27, 1975

Sample: SKR 520 to 525

<u>Client #</u>									
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 523									
2139	Raw	11.8	4.6					2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	94.0	5.5	94.0	5.5		-	Air Dry Basis
- 100 M	6.0	4.4	100.0	5.4		2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	94.3	2.5	94.3	2.5		2	Air Dry Basis
+ 1.60	5.7	54.4	100.0	5.5		N.A.	Air Dry Basis

P1-15 - 2 -

COALITION MINING

February 27, 1975

Sample: SKR 520 to 525

<u>Client #</u>									
<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 524									
2140	Raw	4.0	2.6					1 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	93.4	2.7	93.4	2.7		-	Air Dry Basis
- 100 M	6.6	3.7	100.0	2.8		1 1/2	Air Dry Basis

SINK-FLOAT ANALYSES +100 M

- 1.60	99.3	2.5	99.3	2.5		1 1/2	Air Dry Basis
+ 1.60	0.7	27.6	100.0	2.7		1/2	Air Dry Basis

P1-15

- 3 -

COALITION MINING

February 27, 1975

Sample: SKR 520 to 525

<u>Client #</u>	<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 525	2141	Raw	13.6	8.8					1	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
+ 100 M	90.5	8.8	90.5	8.8			Air Dry Basis
- 100 M	9.5	5.8	100.0	8.5		1 1/2	Air Dry Basis

SINK-FLOAT ANALYSES

+100 M

- 1.60	96.3	7.3	96.3	7.3		1 1/2	Air Dry Basis
+ 1.60	3.7	48.8	100.0	8.8		1/2	Air Dry Basis

Client #

<u>Lab No.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
2142 **	1.2	3.5	.55	14,540	1 1/2	Air Dry Basis
Comp. of SKR 523, 524 & 525		3.5	.57	14,720		Dry Basis

\*\* Compositated according to a.d. wt.

## SUKUNKA D.D.H. P1-15

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	4.0	4.0	4.0	No core to 6'
SANDSTONE, light grey, fine grained containing minor phases of very fine grain and mudstone, containing blebs and partings throughout; calcite deposition on occasional bedding planes, mudstone lenses weathered, rest slightly weathered.	9.50	13.50	8.45	
MUDSTONE, dark grey, intensely weathered.	4.90	18.40	4.90	
SILTSTONE	2.40	20.80	---	Seam roof
<u>COAL</u> , dull and bright, slightly sheared throughout subparallel to bedding planes.	3.00	23.80	2.00	SKEETER SEAM (correction from radiation log.)
MUDSTONE, carbonaceous with coaly partings.	2.40	26.20	1.55	Seam floor
SILTSTONE AND MUDSTONE INTERBEDS, tending toward laminite, light-mid grey; mudstone more dominant at base of unit; occasional lenses of siltstone to 0.25'. Siltstone	6.15	32.35	6.15	

SUKUNKA D.D.H. Pl-15

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<p>SILTSTONE &amp; MUDSTONE INTERBEDS, (Cont'd.) calcareous in units to 0.02'; mudstone to 0.01' or less. Bedding ironstained, occasional calcite filled joints. Dips 22° at 33', 30° at 27'.</p>				
<p>MUDSTONE, intensely weathered, to clay in part, iron-staining and oxidation on planes.</p>	2.65	35.00	0.95	
<p>SILTSTONE AND MUDSTONE INTERBEDS, siltstone, light grey, calcareous, dominant lithology and becoming predominant toward base of unit and grading into underlying unit. Carbonaceous flecks and plant remains on bedding planes. Fault breccia 0.20' at 39.5', calcite filled joints.</p>	10.00	45.00	9.20	Fault established
<p>SILTSTONE, light grey, calcareous with mudstone micaceous and carbonaceous partings throughout.</p>	7.00	52.00	6.40	
<p>SILTSTONE AND MUDSTONE LAMINITE, weathered in part.</p>	7.30	59.30	6.57	Seam roof
<p>STONE, coaly</p>	0.10	59.40	0.10	CHAMBERLAIN SEAM

## SUKUNKA D.D.H. P1-15

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL AND STONE</u> , sheared.	0.30	59.70	0.30 )	
			)	
<u>COAL</u> , dull and bright - containing bright bands to 0.03', breaking on planes of weakness though no slickensides present.	3.10	62.80	3.10 )	
			)	
			)	
bright	0.10	62.90	0.10 )	
			)	
dull and bright	0.60	63.50	0.60 )	
			)	
bright	0.25	63.75	0.25 )	
			)	
dull and bright	1.00	64.75	1.00 )	
			)	
weathered	1.05	65.80	1.00 )	
			)	
SILTSTONE, light grey, fine grained, carbonaceous in upper 3', heavily jointed, ironstained in upper 10', decreasing toward T.D.	17.20	83.00	17.20	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-15
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	RIG FLOOR	1.5 ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.S.G. _____
		G.L. _____
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	82	
Last Reading	00	
Footage Logged	82	
Depth Reached	83	
Depth Driller	83	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	51	
Min. Diam.	H.Q.	
Rm @ 0'		
Operating Time	2 HOURS	
Truck No.	35	

657

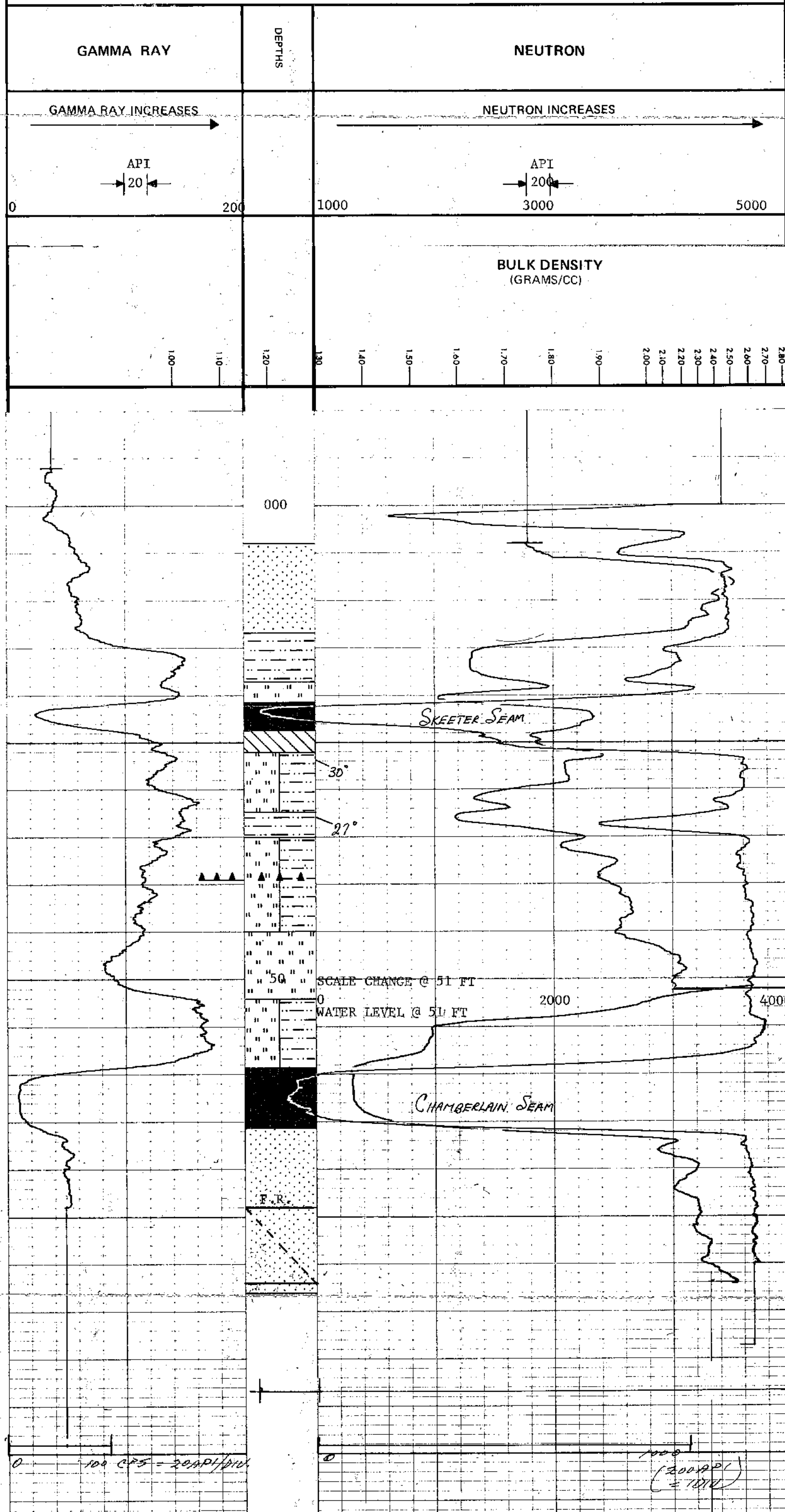
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	51	12	3	500	OL	20	3	1000	5L	200
	51	82	12	3	500	OL	20	3	1000	0L	200
1	00	82	12			DENSILOG		3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



Grid Reference: 47969 N 76660 E

Date Commenced: Jan. 16/75 Date Completed: Jan. 16/75

Collar R.L.: 4043 ft. Standard Datum.

Total Depth: 82.50 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.TT

Radiation Logs: Gamma Ray, Neutron & Sidewall Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4014.00	5.17	37.1%	Seam weathered
Chamberlain	3976.25	5.05	100.0%	



			ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM			WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
23.83							
	1.90			5.2	8		
25.73							
	3.27						
29.00							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-16

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
				0.30	69.6		6.9	
				0.70	4.7	3.5		
				4.05	2.6	7		

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-16

*Analytical Results*

*D.D.H. P1-16*

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
526	<i>Skeeter</i>	24.00 - 25.90
527	<i>Chamberlain</i>	61.70 - 62.00
528	<i>Chamberlain</i>	62.00 - 62.70
529	<i>Chamberlain</i>	62.70 - 66.75

COALITION MINING

February 27, 1975

Sample: SKR 526 to 529

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 526 2120	1.7		5.2			1.05	14,770	8	Air Dry Basis
SKR 527 2121	9.9 Raw		67.6					N.A.	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	78.7	66.8	78.7	66.8	N.A.
- 100 M	21.3	63.4	100.0	66.1	1/2

SINK-FLOAT ANALYSES +100 M

- 1.60	10.1	4.4	10.1	4.4	5 1/2
+ 1.60	89.9	73.8	100.0	66.8	1/2

P1-16 - 1 -

COALITION MINING

February 27, 1975

Sample: SKR 526 to 529

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 528									
2122	3.0		4.7					3 1/2	Air Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	83.0	5.5	83.0	5.5	3 1/2
- 100 M	17.0	5.6	100.0	5.5	3

SINK-FLOAT ANALYSES +100 M

- 1.60	96.4	4.1	96.4	4.1	3 1/2
+ 1.60	3.6	41.9	100.0	5.5	1/2

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 529									
2123	1.8		2.6				15,050	7	Air Dry Basis
2181									
Comp. of SKR 527, 528, 529			6.9				14,400	6	Air Dry Basis

SUKUNKA D.D.H. P1-16

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.50	3.50		Tri-cone to 6'
SANDSTONE, fine grained, light grey, carbonaceous partings and blebs throughout; calcareous in upper 2.5'. Weathered, minor zones extreme.	15.50	19.00	14.75	
MUDSTONE, dark grey, possibly carbonaceous in part; extremely weathered throughout.	3.00	22.00	3.00	
SILTSTONE, mid grey, with mudstone partings and plant fragments. Weathered.	1.03	23.03	1.03	
MUDSTONE, heavily weathered, plant fragments common on bedding planes.	0.80	23.83	0.35	Seam roof
CLAYSTONE, carbonaceous.	0.17	24.00	0.17 )	) SKEETER SEAM
<u>COAL</u> , dull and bright, slightly weathered.	1.90	25.90	0.75 )	) (corrections using Radiation
CLAYSTONE, carbonaceous and coal	1.10	27.00	1.00 )	) Log)
<u>COAL</u> ,	1.00	28.00	0.00 )	)

## SUKUNKA D.D.H. Pl-16

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
CLAYSTONE, carbonaceous.	1.00	29.00	0.00 )	SKEETER SEAM
SILTSTONE AND MUDSTONE INTERBEDS: light grey with occasional dark grey zones; calcareous throughout. Siltstone dominant though decreasing in proportion to base of unit. Siltstone phases average 0.03', maximum 0.10'; mudstone generally thinner; graded bedding present in siltstone; bedding planes weathered.	7.10	36.10	6.15	Seam floor
SILTSTONE AND MUDSTONE LAMINITE, calcareous, mid grey.	2.40	38.50	2.40	
MUDSTONE, dark grey and carbonaceous; plant remains common, highly weathered; coaly bands present bedding disturbed.	3.32	41.82	1.38	Possible fault
SILTSTONE AND MUDSTONE INTERBEDS, as above, but essentially fresh.	11.33	53.15	11.33	
SILTSTONE AND MUDSTONE LAMINITE, as above, essentially fresh, with occasional weathered zones.	8.55	61.70	7.95	Seam roof

SUKUNKA D.D.H. P1-16

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL AND STONE</u> , intensely sheared.	0.30	62.00	0.30 )	CHAMBERLAIN SEAM
<u>COAL</u> , dull and bright, sheared in part.	0.70	62.70	0.70 )	
dull with minor bright bands	0.80	63.50	0.80 )	
bright	0.10	63.60	0.10 )	
dull and bright with bright bands, 0.03 to 0.10', throughout.	3.15	66.75	3.15 )	
SANDSTONE, fine to medium grained, carbonaceous in upper 7'; mudstone partings present; cross bedded; ironstaining on bedding planes.	15.75	82.50	15.25	Seam floor T.D.



# ROKE

GAMMA RAY NEUTRON LOG  
DENSLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	P-1-16
W	LOCATION	
	FIELD	SUKUNKA
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.L. _____
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	81	
Last Reading	00	
Footage Logged	81	
Depth Reached	82	
Depth Driller	83	
Casing Rock		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	18	
Min. Diam.	H.Q.	
Rm @ 0'		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By WALLIS

657

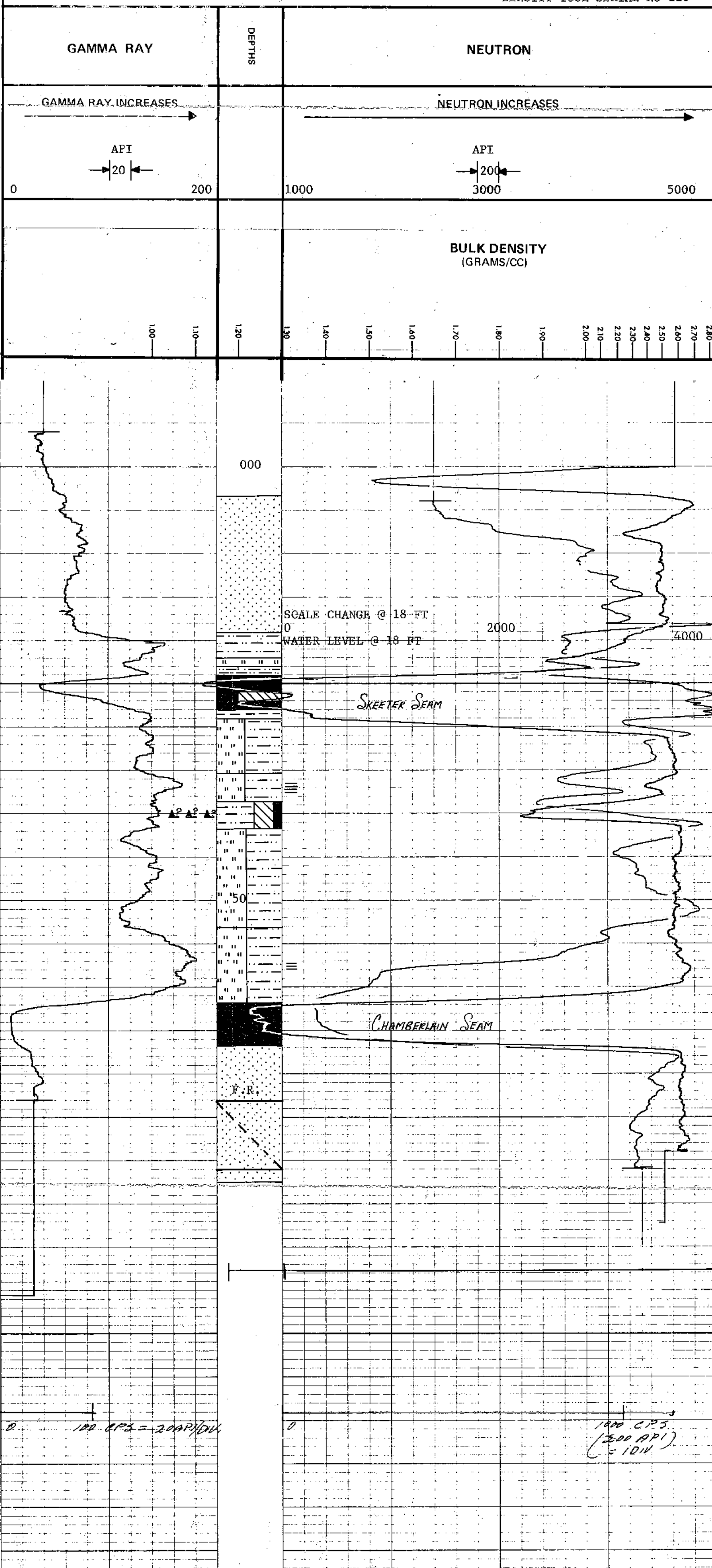
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	#50
GENERAL	35	SPACING	17 INCH
HOIST TRUCK NO.		TYPE	AmBe
INSTRUMENT TRUCK NO.		STRENGTH	3 CURIES
TOOL SERIAL NO.	177		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	33	12	3	500	0L	20	3	1000	5L	200
	33	83	12	3	500	0L	20	3	1000	0L	200
1	00	83				DENSLOG		3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



Grid Reference: 48350 N 76842 E

Date Commenced: Jan. 17/75 Date Completed: Jan. 17/75

Collar R.L.: 4094 ft. Standard Datum.

Total Depth: 59.50 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.TT

Radiation Logs: Gamma Ray, Neutron & Sidewall Density.

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4087.90	Not determinable	- roof eroded.	
Chamberlain	4049.50	6.50	70.8%	Seam weathered

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
38.00	s		0.90		25.8	1	8.1	
IDENTIFICATION OF PLIES NOT POSSIBLE				5.60	5.2	6.5		
44.50								

COALITION MINING

February 27, 1975

Sample: SKR 535 to 540

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 535 2129	2.5		25.8				11,230	1
SKR 536 2130	1.4		5.2				14,730	6 1/2
2179		0.4	8.1				14,180	4 1/2
Comp. of SKR 535 & 536			8.1				14,240	

} D.D.H. P1-17

Analytical Results - D.D.H. P1-17

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
535	Chamberlain	38.00 - 38.90
536	Chamberlain	38.90 - 44.50

## SUKUNKA D.D.H. Pl-17

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.00	3.00		No core to 5'
<u>COAL</u> , extremely weathered and sooty.	3.10	6.10	1.10	SKEETER SEAM
MUDSTONE, mid grey to carbonaceous.	2.00	8.10	0.91	Seam floor
SILTSTONE AND MUDSTONE INTERBEDS, light to mid grey, weathered throughout to various degrees, calcareous throughout unit, siltstone more so. Maximum thickness of phases - siltstone 0.10', mudstone 0.20'; graded phases common.	7.65	15.75	7.65	
CLAYSTONE, carbonaceous	2.00	17.75	0.50	
SILTSTONE AND MUDSTONE INTERBEDS, as above; with plant remains on bedding planes.	5.55	23.30	5.55	
SILTSTONE, light grey, calcareous, mudstone partings and phases on bedding plane, and occasionally as sections of graded bedding units; upper 3.0' cross bedded. Lower foot of unit contains calcite filled joints, possibly due to tectonic activity.	8.90	32.20	8.90	

## SUKUNKA D.D.H. P1-17

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
SILTSTONE AND MUDSTONE LAMINITE, grading to predominantly mudstone in lower 2' of unit. Fault breccia between 34 and 35'; mudstone sheared and slickensided at 37.5'; disturbed zones calcite cemented.	5.80	38.00	4.40	Established fault Seam roof
<u>COAL</u> , intensely sheared.  dull and bright, but broken; identification not possible. Iron oxide staining on weathered surfaces (cleats).	0.90	38.90	0.90 ) )	CHAMBERLAIN SEAM
	5.60	44.50	3.70 )	
SANDSTONE, fine grained, quartz-lithic, carbonaceous in upper 4'; iron oxide staining on both bedding planes and sub-vertical joints.	15.00	59.50	14.50	Seam floor T.D.

Grid Reference: 48270 N 76454 E

Date Commenced: Jan. 18/75 Date Completed: Jan. 18/75

Collar R.L.: 4029 ft Standard Datum.

Total Depth: 56.0 ft

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.TT

Radiation Logs: Gamma Ray, Neutron and Sidewall Density.

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Chamberlain	3988.0	5.25	77.1%	Seam weathered

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
				0.25				
				5.00	4.0	7		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-19**



COALITION MINING

February 27, 1975

Sample: SKR 535 to 540

Client #

Lab No.

A.D.L.

R.M.

Ash %

Vol.

F.C.

S.

B.T.U.

F.S.I.

SKR 539  
2133

4.1

4.0

.50

14,760

7

D.D.H. P1-19

Analytical Results - D.D.H. P1-19

Sample No.

Seam

Interval (feet)

539

Chamberlain

36.00 - 41.00

**Birtley Engineering**

Subsidiary of Great West Steel Industries

## SUKUNKA D.D.H. P1-19

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	13.00	13.00		No core to 16'
SILTSTONE AND MUDSTONE INTERBEDS, light to mid grey, calcareous, occasional units of graded bedding; siltstone and mudstone phases varying from 0.01' to 0.10', commonly 0.20'. Weathered.	6.00	19.00	2.80	
MUDSTONE, mid grey, calcareous, contains occasional silty phases. Weathered.	3.15	22.15	3.15	
SILTSTONE AND MUDSTONE INTERBEDS, as above, but more sharply defined units; contains 0.15' unit of fine siltstone. Occasional sedimentary slump and penetration structures. Weathered.	4.85	27.00	7.53	
MUDSTONE AND SILTSTONE LAMINITE, mid grey; mudstone dominant. One calcite filled fracture (tension) joint at 32'. Weathered and containing a number of clay units.	8.75	35.75	7.05	Seam roof

SUKUNKA D.D.H. P1-19

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL AND STONE</u> , weathered.	0.25	36.00	0.25 )	CHAMBERLAIN SEAM
<u>COAL</u> , dull and bright, with bands of bright coal to 0.10'. Weathered.	5.00	41.00	3.80 )	
SANDSTONE, light to mid grey, carbonaceous in upper 2'. Occasional cross bedded units and rare mudstone phases.	15.00	56.00	15.00	Seam floor T.D.

## SUKUNKA D.D.H. P1-18

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN AND CLAY	4.00	4.00	0.95	No core to 6.0'
SILTSTONE	3.00	7.00	0.50	
CLAY AND MUDSTONE, extremely weathered, 0.30' of coaly material.	3.00	10.00	3.00	
MUDSTONE WITH SILTSTONE INTERCALATIONS, heavily weathered and clayey.	3.20	13.20	3.20	
COAL AND WEATHERED MUDSTONE	1.80	15.00	1.15	
MUDSTONE, silty, weathered, mid to dark grey, calcareous becoming more silty toward base of unit and grading towards interbeds in lower 1.5'.	8.90	23.90	8.05	
SILTSTONE, light grey, calcareous, containing mudstone lenses and partings on bedding planes, occasional carbonaceous plants remains, iron staining on joint planes.	3.20	27.10	3.20	

## SUKUNKA D.D.H. P1-18

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE AND MUDSTONE LAMINITE, mid to dark grey, weathered.	8.70	35.80	8.70	Seam roof
COAL AND STONE, sheared.	0.50	36.30	0.50 )	CHAMBERLAIN SEAM
COAL, dull with numerous bright bands to 0.10'. Minor weathering.	6.10	42.40	4.25 )	
SANDSTONE, light grey, carbonaceous in upper 6'. Iron staining on sub-vertical joints.	15.60	58.00	15.60	

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	P-1-18
TWP	LOCATION	
RGE	FIELD	SUKUNKA
W	PROVINCE	BRITISH COLUMBIA
	Permanent Datum	GROUND LEVEL
	Log Measured from	RIG FLOOR
	Well Depths Measured from	RIG FLOOR
	Elev.	
	Other Services:	NIL
	K.B.	
	CSG	
	G.L.	
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	57	
Last Reading	00	
Footage Logged	57	
Depth Reached	58	
Depth Driller	58	
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level		
Min. Diam.	H.Q.	
Rm @ of		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		MALLIS

657

### EQUIPMENT DATA

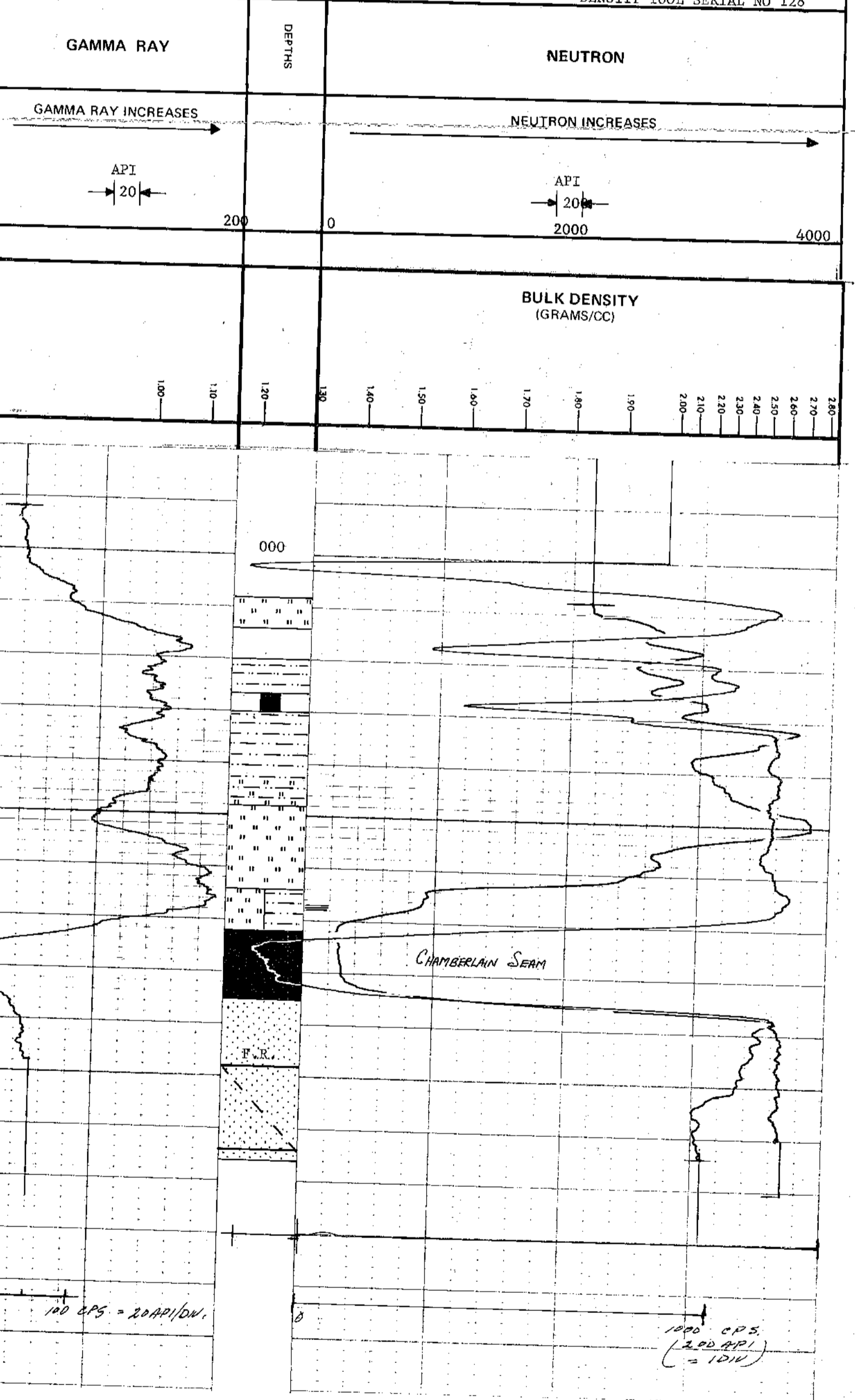
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	57	12	3	500	OL	20	3	1000	OL	200
1	00	57	12			DENSILOG		3	1000	2.5R	44.6

REMARKS

DENSITY TOOL SERIAL NO 128



Grid Reference: 48157 N 76581 E .

Date Commenced: Jan. 17/75 Date Completed: Jan. 18/75

Collar R.L.: 4029 ft. Standard Datum.

Total Depth: 58.0 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.TT

Radiation Logs: Gamma Ray, Neutron and Sidewall Density.

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Chamberlain	3986.6	6.60	72.0%	Seam weathered

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
35.80	s		0.50		51.6	.5	7.4	
			6.10		3.8	7.5		
42.40								

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-18



COALITION MINING

February 27, 1975

Sample: SKR 535 to 540

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	
SKR 537 2131	3.8		51.6			.70	7,070	1/2	} D.D.H. P1-18
SKR 538 2132	4.8		3.8			.45	15,010	7 1/2	
2180 Comp. of SKR 537 & 538		0.4	7.4				14,380	6 1/2	
			7.4				14,440		

Analytical Results - D.D.H. PJ-18

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
537	Chamberlain	35.80 - 36.30
538	Chamberlain	36.30 - 42.40

P1-18  
- 1 -

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	P-1-19
TWP	LOCATION	
RGE	FIELD	SUKUNKA
W	PROVINCE	BRITISH COLUMBIA
	GROUND LEVEL	Elev. _____
	Log Measured from	RIG FLOOR 1.5 Ft. Above Perm. Datum
	Well Depth Measured from	RIG FLOOR
	Other Services:	NTL K.B. CSG G.L.
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	55	
Last Reading	00	
Footage Logged	55	
Depth Reached	56	
Depth Driller	56	
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level		
Min. Diam.	H.Q.	
Rin @ 9'		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

657

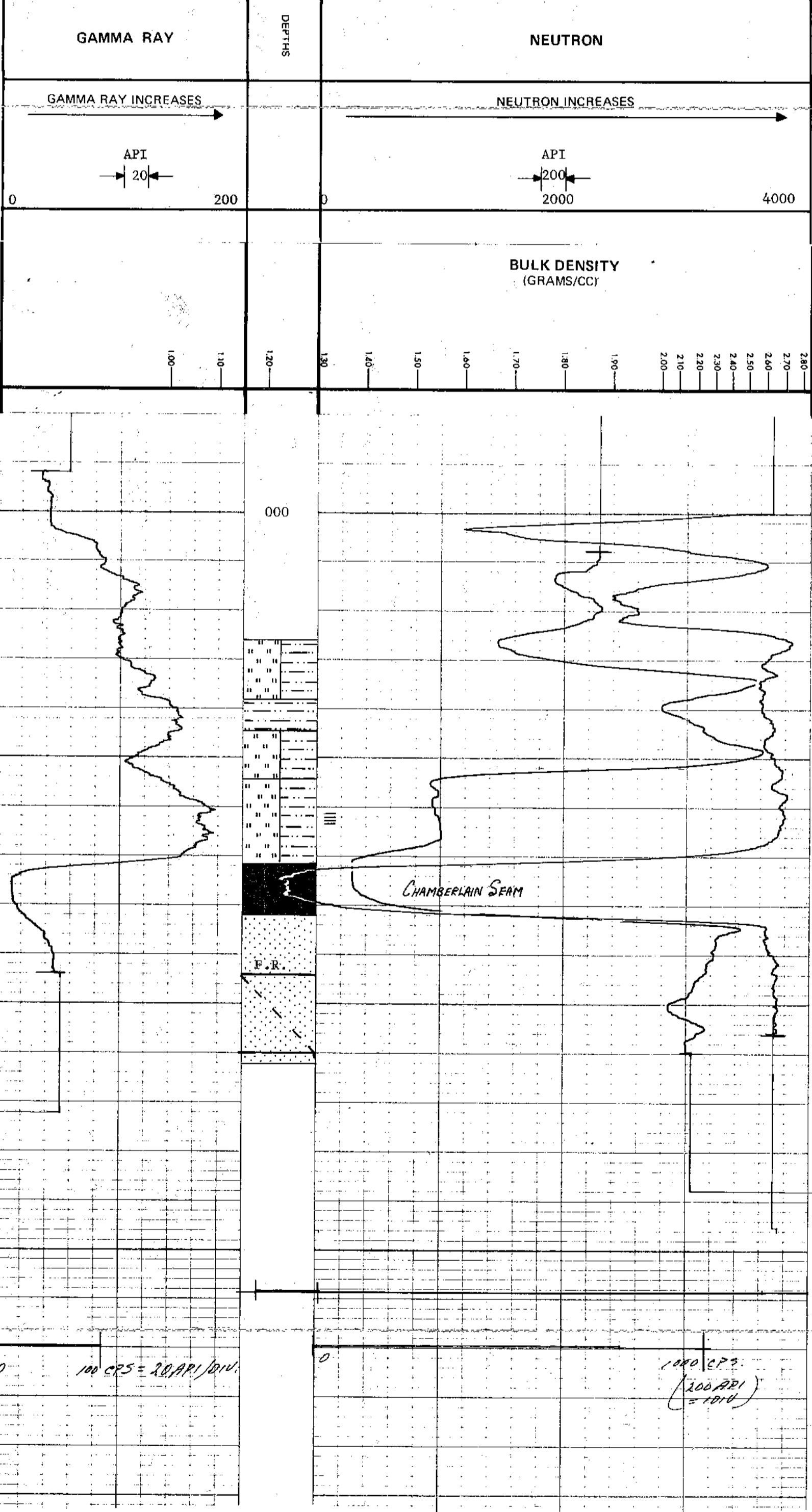
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS.	ZERO	API G. R. UNITS	T. C.	SENS.	ZERO	API N. UNITS	
	FROM	TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	00	56	12	3	500	0L	20	3	1000	0L	200
1	00	56	12			DENSILOG		3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

DENSILOG

GAMMA RAY NEUTRON LOG

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	P-1-17
TWP	LOCATION	
RGE	FIELD	SUKUNKA
W	PROVINCE	BRITISH COLUMBIA
	Permanent Datum	GROUND LEVEL
	Log Measured from	RIG FLOOR 1.5 Ft. Above Perm. Datum
	Well Depths Measured from	RIG FLOOR
	Other Services:	NIL
		K.B. _____
		CSG _____
		G.L. _____
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	58	
Last Reading	00	
Footage Logged	58	
Depth Reached	59	
Depth Driller	60	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	27	
Min. Diam.	H.Q.	
Rm @ 9F		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

657

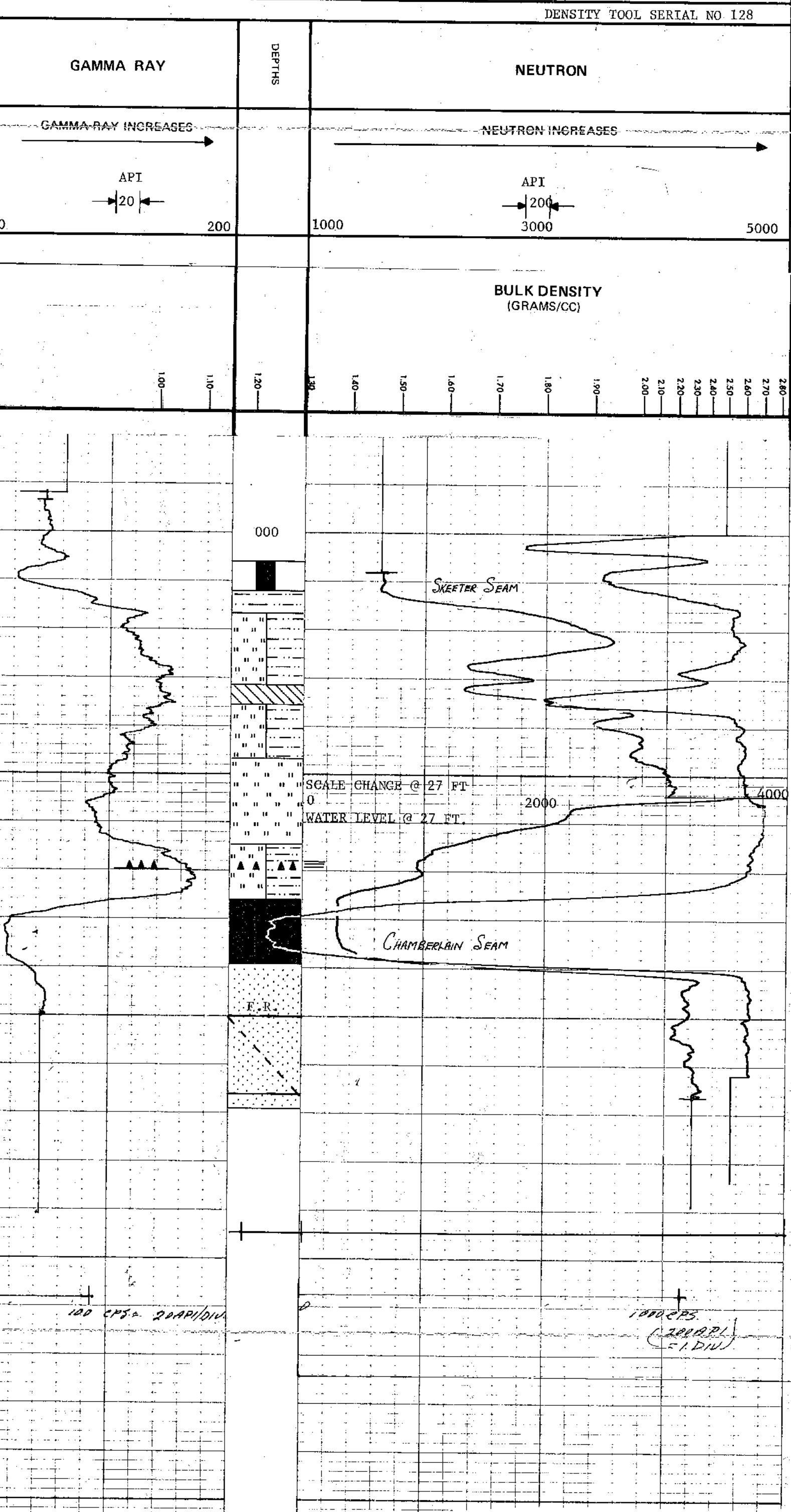
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	27	12	3	500	OL	20	3	1000	5L	200
	27	58	12	3	500	OL	20	3	1000	OL	200
1	00	58	12			DENSILOG		3	1000	2.52R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



Grid Reference: 48411 N 76696 E .

Date Commenced: Jan. 18/75 Date Completed: Jan. 19/75

Collar R.L.: 4071 ft. Standard Datum.

Total Depth: 50.0 ft.

Drilled by: Canadian Longyear Ltd.

For: Coalition Mining Limited

Using: Longyear Model 38 Unitised Drilling Rig - HQ.TT

Radiation Logs: Gamma Ray, Neutron & Sidewall Density.

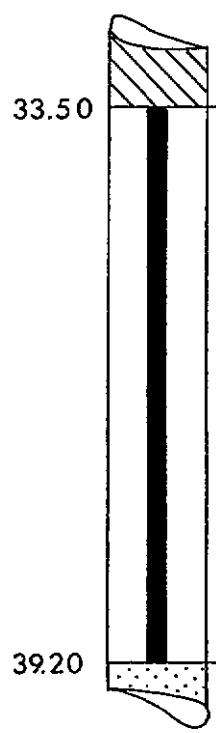
By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
CHAMBERLAIN	4031.80	5.70	35.1%	Seam weathered

CHAMBERLAIN SEAM.



CHAMBERLAIN SEAM.	WT %	ASH %	C.S.No	ASH % CUMULATIVE FROM FLOOR	
				INCL. BANDS	EXCL. BANDS
5.70		4.6	1.5		

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-20

COALITION MINING

February 27, 1975

Sample: SKR 535 to 540

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	
SKR 540 2134	9.1		4.6			.39	14,560	1 1/2	D.D.H. P1-20

Analytical Results - D.D.H. P1-20

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
540	Chamberlain	33.50 - 39.20

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN, coal reported by driller between 7 and 10' (Skeeter Seam).	12.00	12.00		No core to 12'
SILTSTONE AND MUDSTONE INTERBEDS, calcareous, mid grey in general. Interbeds generally small scale, 0.01' to 0.05', with occasional units to 0.15'. One sub-vertical calcite filled joint at 19'. Unit weathered throughout.	10.60	21.60	9.50	
SILTSTONE, light grey, calcareous, containing mudstone intercalations and partings. Weathered and calcite filled joint containing breccia filling at 22.5'.	2.20	23.80	2.20	Possible fault
SILTSTONE AND MUDSTONE LAMINITE, mid grey, very weakly calcareous. Calcite filled joint at 26.5'. Lower 4' of unit extremely weathered.	7.10	30.90	7.10	
CLAYSTONE, carbonaceous, weathered.	2.60	33.50	1.20	Seam roof
<u>COAL</u> , bright and dull, weathered.	5.70	39.20	2.00	CHAMBERLAIN SEAM

## SUKUNKA D.D.H. P1-20

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, medium grained, light grey, carbonaceous in upper 7'.	15.80	55.00	15.30	Seam floor T.D.



# ROKE

GAMMA RAY NEUTRON LOG  
DENSLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	P-1-20
W	LOCATION	
M	FIELD	SUKKUNKA
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depth Measured from	RIG FLOOR	GL _____
Other Services:	NTI _____	K.B. _____
	CSG _____	GL _____
Run No.	ONE	
Date	22 JANUARY 1975	
First Reading	54	
Last Reading	00	
Footage Logged	54	
Depth Reached	55	
Depth Driller	55	
Casing Driller		
Fluid Type	WATER	
Liquid Level		
Min. Diam.	H.Q.	
Rm @ 9F		
Operating Time	2 HOURS	
Truck No.	35	

657

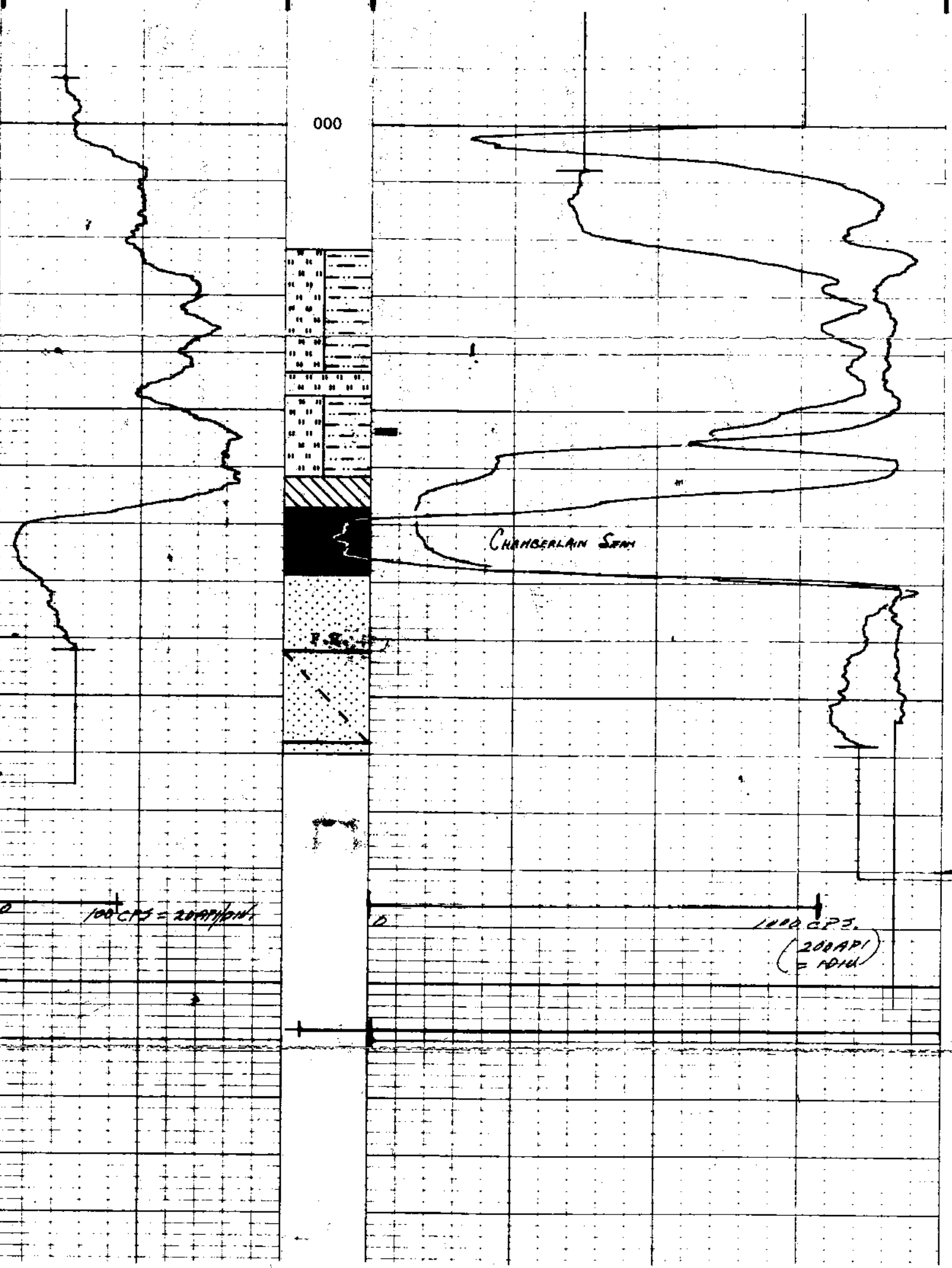
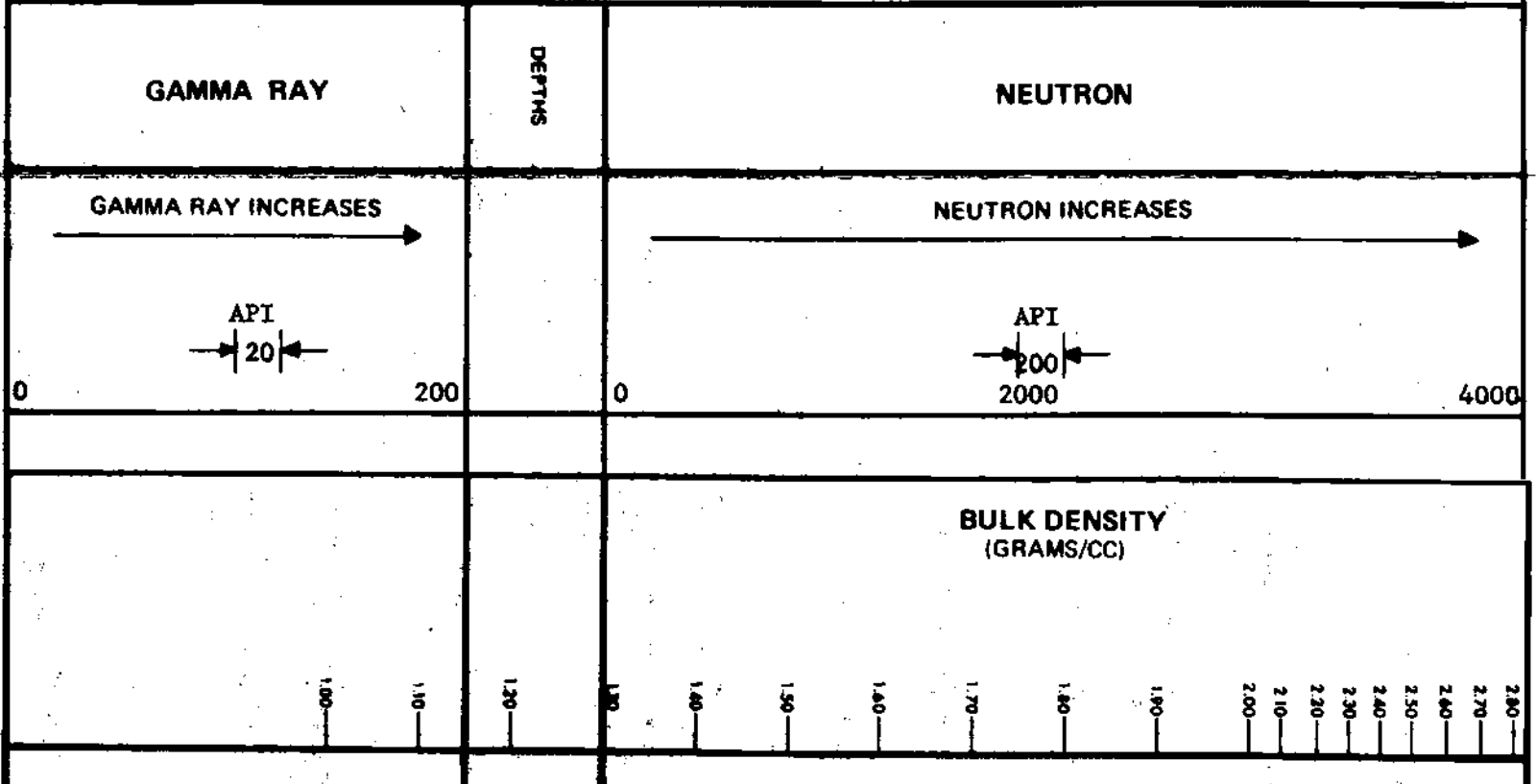
### EQUIPMENT DATA

GAMMA RAY				NEUTRON			
RUN NO.	ONE	RUN NO.	ONE				
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON				
DIAMETER	1 1/4	TOOL MODEL NO.					
DETECTOR MODEL NO.		DIAMETER	1 1/4				
TYPE	SCINTILLATION	DETECTOR MODEL NO.					
LENGTH	4 INCH	TYPE	PROPORTIONAL				
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH				
		SOURCE MODEL NO.	MRC-N-SS-W				
		SERIAL NO.	# 50				
		SPACING	17 INCH				
		TYPE	AmBe				
		STRENGTH	3 CURIES				

### LOGGING DATA

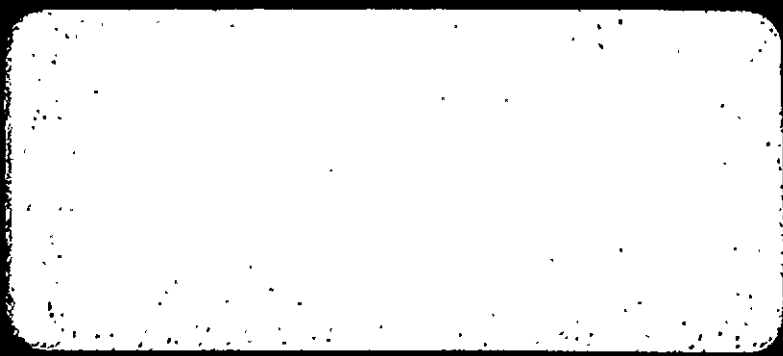
GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS. SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS. SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
1	00	54	12	3	500	0L	20	3	1000	0L	200
1	00	54	12		DENSLOG			3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



9872 No 121  
P1-OK-286

= PR- SUKUNKA 75(3)A-2 =



657

SUKUNKA COAL PROJECT  
PLATE 1 AREA

VOLUME 4

DRILL HOLE DATA  
DIAMOND DRILL HOLES

P1-21 TO P1-30

C-30, C-31

S-14, S-49

Reference for Graphic  
Section of Drill Hole Data  
**COAL BRANCH  
ASSESSMENT REPORT**

See Over

Prepared by CLIFFORD McELROY & ASSOCIATES PTY. LIMITED  
Report No. 1/1/20 March, 1975

00 657

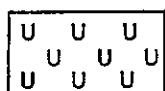
DETAIL OF GETHING FORMATION

STRIP LOGS

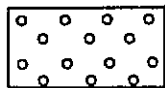
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COAL SEAMS

Scale: 1" = 2'



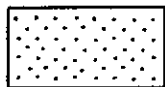
SOIL, WEATHERED and UNCONSOLIDATED MATERIAL



CONGLOMERATE pebble to granule



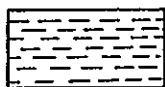
BRECCIA



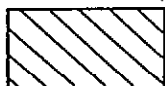
SANDSTONE



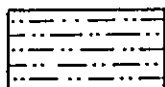
SILTSTONE



CLAYSTONE



STONE COALY or CLAYSTONE CARBONACEOUS



MUDSTONE



COAL



INTERBEDDED



LAMINITE



45° INCLINED STRATA



FAULT established probable possible



COAL BRIGHT or UNDIFFERENTIATED

COAL MAINLY BRIGHT with MINOR DULL BANDS

COAL DULL and BRIGHT

COAL MAINLY DULL with MINOR BRIGHT BANDS

COAL DULL

COAL INTERLAYED with NON-COAL

NON-COAL INTERLAYED with COAL

COAL STONY

STONE COALY

COAL WEATHERED

REFERENCE FOR GRAPHIC SECTIONS

of

DRILL HOLE DATA

PREPARED BY CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

COALITION MINING LTD.

SUKUNKA COAL PROJECT  
PLATE 1 AREA

MARCH 1975

Grid Reference: 47867 N 77779 E

Date Commenced: Jan. 19/75

**OPEN FILE**  
 Date Completed: Jan 24/75

Collar R.L.: 4131 ft. Standard Datum.

Total Depth: 171.0 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4009.60	3.50	60.0%	
Chamberlain	3974.4	5.40	66.7%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
				2.79	10.7	8	17.6	
				0.71	30.7	3.5		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-21**

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-21**

D.D.H. P1-21

<u>Client #</u> <u>Lab No.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 541 2163	10.7	13,860	8	Air Dried Basis
SKR 542 2164	30.7	10,600	3 1/2	Air Dried Basis
SKR 543 2165	3.8	15,100	7 1/2	Air Dried Basis
2188 Composites of SKR 541 and 542	17.6	12,800	6	Air Dried Basis

Analytical Results - D.D.H. P1-21

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
541	Skeeter	117.90 - 120.69
542	Skeeter	120.69 - 121.40
543	Chamberlain	150.20 - 155.60

P1-21

- 1 -



## SUKUNKA D.D.H. P1-21

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	1.00	1.00		No core to 5.0'
SANDSTONE, fine to medium grained, mid grey, calcareous, cross-bedded, calcareous and carbonaceous partings throughout, with mudstone layering also; weathered claystone lense at 21'.	22.70	23.70	16.70	
SANDSTONE, fine grained, light grey, calcareous, massive, occassional cross-bedded zone;	36.80	60.50	36.80	
SILTSTONE AND MUDSTONE INTERBEDS, mid to dark grey, calcareous; siltstone phases lighter in colour, varying in thickness from 0.03' to 0.20', average 0.05'; mudstone, dark grey, 0.05' to 0.20', average 0.10', generally becoming more dominant in lower 5.0' of unit. Sub-vertical joints iron stained.	17.50	78.00	14.33	
SANDSTONE, very fine grained with occassional siltstone phases, light grey, calcareous.	4.33	82.33	4.33	

## SUKUNKA D.D.H. P1-21

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, dark grey, calcareous.	0.67	83.00	0.40	
SILTSTONE, light grey, mudstone phases in upper 2', calcareous.	3.45	86.40	3.45	
MUDSTONE, dark grey, calcareous, containing occasional siltstone gradations, carbonaceous in lower 0.4'.	3.60	90.05	3.60	
SANDSTONE, light grey, fine grained, calcareous in upper part of unit and becoming less so toward base; carbonaceous wisps and lenses throughout. Siltstone and mudstone interbed zone between 106.5 and 108'.	23.95	114.00	22.10	
MUDSTONE, dark grey to carbonaceous, becoming silty toward base of unit.	3.90	117.90	3.70	Seam roof
COAL, dull and bright, sheared coal present, but location not identifiable.	2.79	120.69	1.60 )	SKEETER SEAM
CLAYSTONE, carbonaceous.	0.15	120.84	0.15 )	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull and bright.	0.47	121.31	0.27 )	SKEETER SEAM
CLAYSTONE, carbonaceous.	0.09	121.40	0.09 )	
MUDSTONE, mid grey, calcareous for the most part; weakly developed siltstone interbedded units, carbonaceous toward base of unit.	6.60	128.00	5.20	Seam floor
<u>COAL</u> , dull.	1.50	129.50	0.30	
CLAYSTONE, carbonaceous.	0.20	129.70	0.20	
MUDSTONE, dark grey, rare contained coaly blebs, becoming silty toward base of unit.	2.23	131.93	2.23	
SILTSTONE, light grey, calcareous, contains mudstone partings throughout.	3.00	134.93	3.0	
MUDSTONE, with fine partings of siltstone throughout, occasionally as lenses to 0.10'. Interbedded sequence not fully developed. Basal 8' of unit				

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<p>MUDSTONE, (Cont'd.) grading toward laminite development. Basal 1.0' carbonaceous, slickensided, calcite filled joints present.</p>	15.27	150.20	14.60	Seam roof
<p><u>COAL</u>, dull and bright with bright bands to 0.07'.</p>	5.40	155.60	3.60	CHAMBERLAIN SEAM
<p>SANDSTONE, fine to medium grained, carbonaceous in upper 15' of unit, ironstained, sub-vertical joints throughout.</p>	15.40	171.00	15.05	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSISLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-21
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	GROUND LEVEL	Elev. _____
	Log Measured from	RIG FLOOR 1.5 Ft. Above Perm. Datum
	Well Depths Measured from	RIG FLOOR
	Other Services:	N.T.L. _____ K.B. _____ CSG _____ G.L. _____
Run No.	ONE	
Date	23 JANUARY 1975	
First Reading	170	
Last Reading	000	
Footage Logged	170	
Depth Reached	171	
Depth Driller	171	
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	50	
Min. Diam.	H. Q.	
Rm @ 9F		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

657

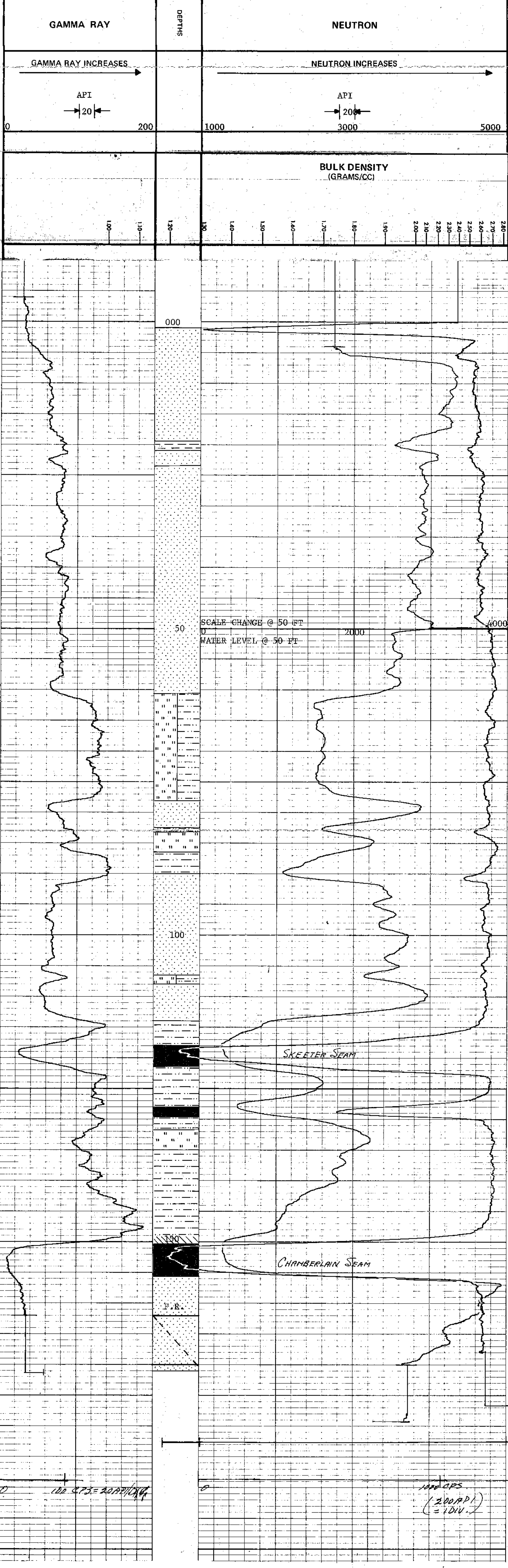
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
1	00	50	12	3	500	0L	20	3	1000	5L	200
	50	170	12	3	500	0L	20	3	1000	0L	200
1	00	170	12			DENSISLOG		3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



# ROKE

GAMMA RAY NEUTRON LOG  
DENSISLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	WELL	LOCATION	FIELD	PROVINCE
LSD	GOALITION MINING LIMITED	P-1-22		SUKUNKA	BRITISH COLUMBIA
SEC					
TWP					
RGE					
W					
M					
Permanent Datum	GROUND LEVEL	Elev	Other Services:		
Log Measured from	RIG FLOOR	1.5	K.B. _____		
Well Depths Measured from	RIG FLOOR		CSG _____		
			G.L. _____		
Run No.	ONE	Date	22 JANUARY 1975		
First Reading	116				
Last Reading	00				
Footage Logged	116				
Depth Reached	117				
Depth Driller	117				
Casing Driller					
Casing Roke					
Fluid Type	AIR/WATER				
Liquid Level	69				
Min. Diam.	H. Q.				
Rm @ OF					
Operating Time	2 HOURS				
Truck No.	35				
Recorded By	PETERSON	Witnessed By	WALLIS		

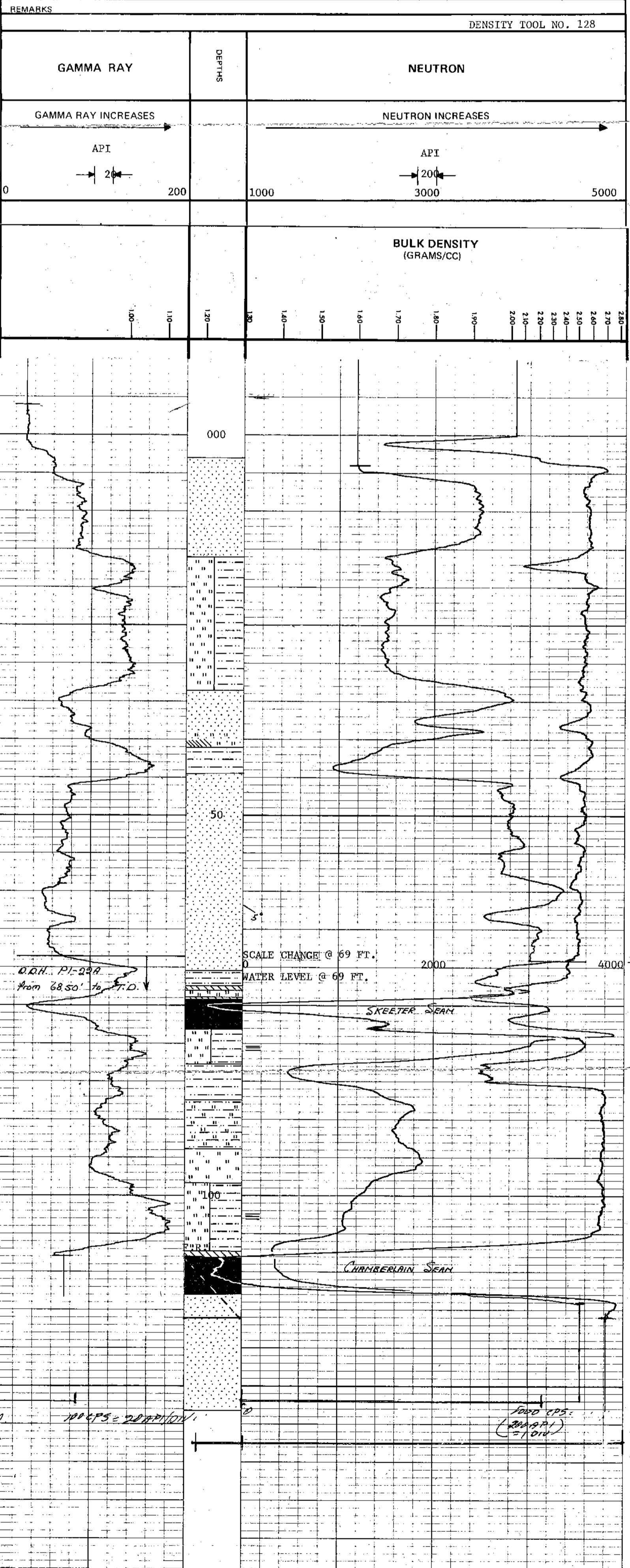
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### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
GENERAL		SPACING	17 INCH
HOIST TRUCK NO.	35	TYPE	AmBe
INSTRUMENT TRUCK NO.		STRENGTH	3 CURIES
TOOL SERIAL NO.	177		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.	
1	00	69	12	3	500	OL	20	3	1000	5L	200
	69	116	12	3	500	OL	20	3	1000	OL	200
1	00	116	12			DENSISLOG		3	1000	2.5R	44.6 CPS/



Grid Reference: 47640 N 77534 E

Date Commenced: P1-22 - Jan. 20/75      Date Completed: P1-22 - Jan. 21/75  
"            "            P1-22A - Jan. 21/75      "            "            P1-22A - Jan. 22/75

Collar R.L.: 4097 ft.                      Standard Datum.  
Total Depth: 128 ft.

Drilled by: Canadian Longyear Limited  
For: Coalition Mining Ltd.  
Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, neutron and density  
By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4018.55	4.25	43.0% )	P1-22
Chamberlain	3984.40	5.60	47.7% )	
Skeeter	4019.00	4.00	65.0% )	Redrill
Chamberlain	3984.25	5.75	61.7% )	P1-22A

NOTE: D.D.H. P1-22A, skidded 4' from D.D.H. P1-22, was drilled with tri-cone to 68.50'. Stratigraphic column shows lithology of P1-22 to 68.50' only; basal section from P1-22A.

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.No	INCL. BANDS	EXCL. BANDS
74.20		2.00						
76.20		1.30	NOT ANALYSED					
77.50		0.95						
78.45								



Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1- 22**



				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM.				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
5.60					NOT	ANALYSED		


Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-22**

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
				1.00	3.4	6.5	30.3	
				3.00	39.6	1.5	39.6	

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-22 A

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
107.00		2.00	23.9	4.5	10.8			
108.00		2.50	3.9	7				
109.00		1.25	6.2	4				
111.50								
112.75								

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1- 22A**

Analytical Results

D.D.H. P1-22A

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
544	Skeeter	74.00 - 75.00
545	Skeeter	75.00 - 78.00
546	Chamberlain	107.00 - 109.00
547	Chamberlain	109.00 - 111.50
548	Chamberlain	111.50 - 112.75

COALITION MINING

February 21, 1975

D.D.H. P1-22A

<u>Client #</u> <u>Lab No.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
<u>SKR 544</u> 2166	3.4	15,110	6 1/2	Air Dried Basis
<u>SKR 545</u> 2167	39.6	9,160	1 1/2	Air Dried Basis
2189 Comp. of SKR 544 and 545	30.3	10,800	4	Air Dried Basis
<u>SKR 546</u> 2168	23.9	11,650	4 1/2	Air Dried Basis
<u>SKR 547</u> 2169	3.9	14,930	7	Air Dried Basis
<u>SKR 548</u> 2170	6.2	14,390	4	Air Dried Basis
2190 Comp. of SKR 546, 547 & 548	10.8	13,710	7	Air Dried Basis

P1-22A

- 1 -

## SUKUNKA D.D.H. P1-22

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.0	3.0		No core to 7'
SANDSTONE, fine grained, light grey, ironstained throughout, calcareous.	13.00	16.00	10.00	
MUDSTONE AND SILTSTONE INTERBEDDED, mid grey, calcareous; mudstone, dominant lithology, maximum unit size 0.30'; siltstone units maximum 0.20', average 0.07'; graded bedding common.	17.55	33.55	17.05	
SANDSTONE, fine to very fine grained, grading to a siltstone, carbonaceous at base of unit; calcareous.	7.45	41.00	7.30	
MUDSTONE, mid grey, calcareous, contains laminae of siltstone throughout, and grading to a silty mudstone toward base of unit.	3.50	44.50	3.50	
SANDSTONE, fine grained, light to mid grey, contains carbonaceous partings and flecks throughout; generally even bedded, mudstone on bedding planes with occasional zone of cross-bedding,				

## SUKUNKA D.D.H. P1-22

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
SANDSTONE, (Cont'd.) 3' massive sandstone at 55'. Dip of bedding 5°.	25.50	70.00	23.90	See redrill - D.D.H. P1-22A for description from 68.5' to T.D.
SILTSTONE WITH MUDSTONE INTERCALATIONS, carbonaceous in upper part, slightly calcareous.	4.20	74.20	3.75	Seam roof
<u>COAL</u> , dull and bright, cleat well developed.	2.00	76.20	1.23 )	
<u>COAL AND CLAYSTONE</u> , intermixed, proportions indeterminate.	1.30	77.50	0.60 )	SKEETER SEAM
<u>COAL</u>	0.95	78.45	--- )	(See D.D.H. P1-22A)
SILTSTONE AND MUDSTONE LAMINITE, grading toward interbeds; mid to dark grey, slightly calcareous.	4.05	82.50	4.05	Seam floor
MUDSTONE, dark grey, carbonaceous in part, occasional coaly parting, minor zones of both interbedded and laminated lithologies; all				

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, (Cont'd.) phases gradational, silty in part.	12.70	95.20	10.91	
SILTSTONE, light grey, containing minor mudstone partings and phases. Calcareous.	1.65	96.85	1.75	
MUDSTONE AND SILTSTONE LAMINITE, mid grey, upper 2' interbedded with units of each lithology to 0.04' thickness. Calcareous.	2.50	99.35	2.50	
MUDSTONE WITH MINOR PARTINGS OF SILTSTONE, tending toward laminations. Quartz filled tension joint at base of unit.	7.65	107.00	6.35	Seam roof
<u>COAL</u> , dull and bright with bright bands to 0.03', cleat well developed; coal sheared in upper 0.50' recovered. Recovered coal unweathered.	5.60	112.60	2.68	CHAMBERLAIN SEAM (See D.D.H. P1-22A)
SANDSTONE, fine to medium grained, carbonaceous in upper 10', dip of bedding 20° at 121'; sub-vertical joints and tension joints heavily ironstained.	15.40	128.00	16.20	Fault possible at base of seam. Seam floor T.D.



## SUKUNKA D.D.H. P1-22A

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
No core	68.50	68.50	---	Tri-cone drilling to 68.50'
SANDSTONE, light grey, carbonaceous, weakly calcareous, weak development of cross bedding.	1.75	70.25	1.75	
MUDSTONE, grading to siltstone at base of unit	1.93	72.18	1.93	
CLAYSTONE, carbonaceous.	0.65	72.83	0.65	
SILTSTONE, dark grey, carbonaceous	1.00	73.83	1.00	
CLAYSTONE, carbonaceous	0.17	74.00	0.17	Seam roof
<u>COAL</u> , dull with minor bright bands	1.00	75.00	1.00	) ) ) ) ) SKEETER SEAM
CLAYSTONE	0.10	75.10	0.10	
<u>COAL</u> , sheared intensely, possibly weathered.	2.10	77.20	1.30	
dull with minor bright bands	0.80	78.00	0.20	

## SUKUNKA D.D.H. P1-22A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE AND SILTSTONE LAMINITE, light to mid grey, siltstone content increasing toward base of unit and calcareous.	4.50	82.50	3.75	Seam floor
MUDSTONE, dark grey, carbonaceous, coaly wisps and partings; sub-vertical joints ironstained.	4.60	87.10	4.10	
SILTSTONE WITH MUDSTONE INTERCALATIONS, light to mid grey, becoming sandy toward base of unit, calcareous.	6.45	93.55	6.45	
SILTSTONE WITH SANDSTONE INTERCALATIONS AND OCCASSIONAL MUDSTONE LENSES, sandstone content increasing toward base of unit; calcareous, vertical and sub-vertical joints ironstained.	4.50	98.05	4.50	
MUDSTONE AND SILTSTONE LAMINITE, mid grey, carbonaceous in part and toward base of unit, calcite filled joints.	8.95	107.00	8.20	Seam roof

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
CLAYSTONE, carbonaceous.	1.00	108.00	0.40 )	
			)	
<u>COAL</u> , sheared.	1.00	109.00	0.20 )	
			)	
dull and bright, sheared in part; possibly weathered at unit base(?)	2.50	111.50	2.00 )	CHAMBERLAIN SEAM
sheared.	1.00	112.50	0.70 )	
			)	
dull and bright.	0.25	112.75	0.25 )	
			)	
SANDSTONE, light to mid grey, carbonaceous; core broken, serrated joint planes, possible fault.	5.25	118.00	5.00	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	P-1-23
W	LOCATION	
M	FIELD	SUKUNKA
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev.
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.L.
Run No.	ONE	
Date	23 JANUARY 1975	
First Reading	85	
Last Reading	00	
Footage Logged	85	
Depth Reached	86	
Depth Driller	86	
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	73	
Min. Diam.	H.Q.	
Rm @ 0c		
Operating Time	2 HOURS	
Truck No.	35	

657

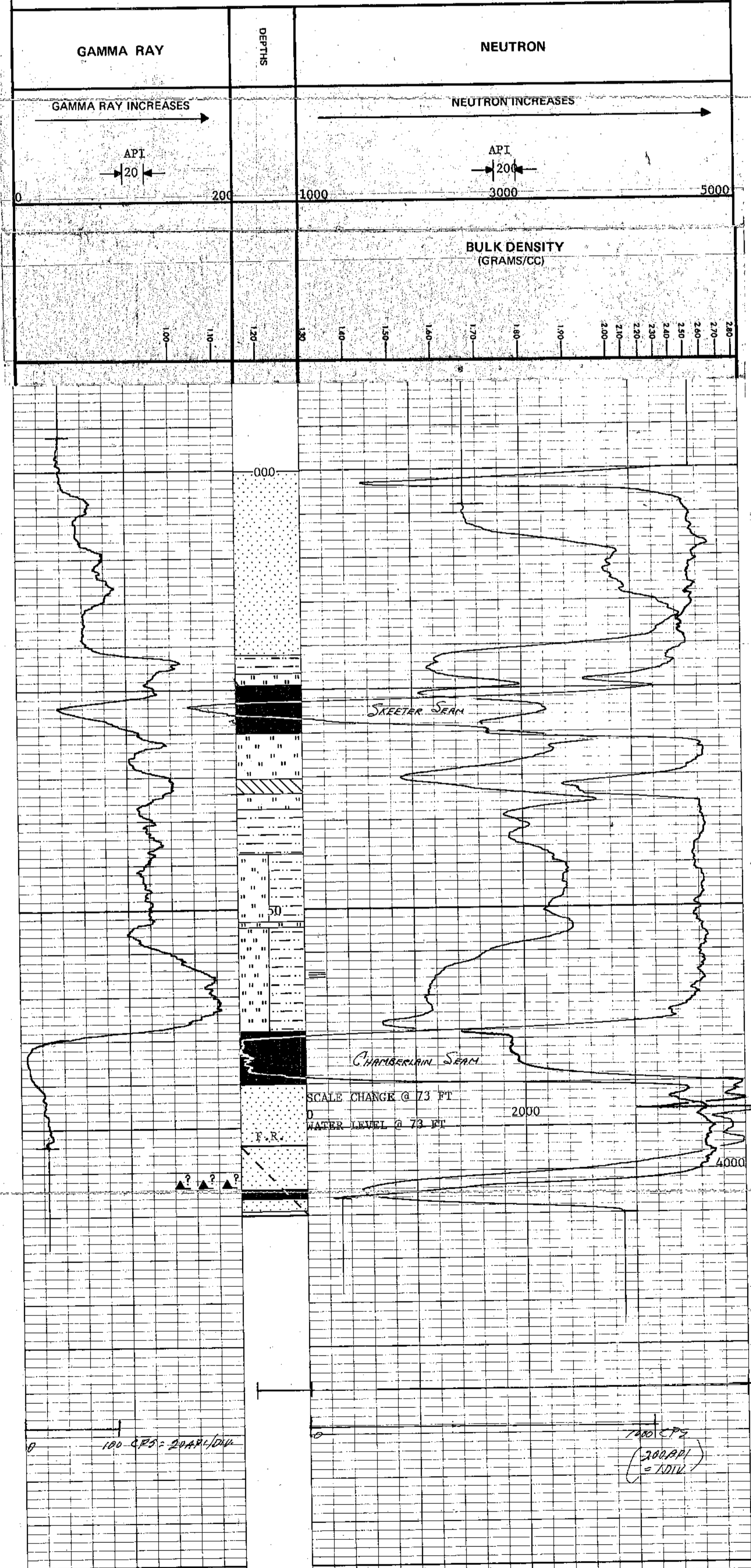
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	1 11/16
DETECTOR MODEL NO.		DIAMETER	
TYPE	SCINTILLATION	DETECTOR MODEL NO.	PROPORTIONAL
LENGTH	4 INCH	TYPE	6 INCH
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	MRC-N-SS-W
		SOURCE MODEL NO.	# 50
		SERIAL NO.	17 INCH
HOIST TRUCK NO.	35	SPACING	AmBe
INSTRUMENT TRUCK NO.		TYPE	3 CURIES
TOOL SERIAL NO.	177	STRENGTH	

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	73	12	3	500	OL	20	3	1000	5L	200
	73	85	12	3	500	OL	20	3	1000	0L	200
1	00	73	12		DENSILOG			3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



Grid Reference: 47416 N 77092 E

Date Commenced: Jan. 22/75      Date Completed: Jan. 23/75

Collar R.L.:      4011 ft.      Standard Datum.

Total Depth:      83.35 ft.

Drilled by:      Canadian Longyear Limited

For:      Coalition Mining Ltd.

Using:      Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By:      Roke Oil Enterprises Ltd.

Logged by:      G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	3981.00	5.45	79.5%	
Chamberlain	3941.00	6.00	100%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S. No.	INCL. BANDS	EXCL. BANDS
24.55								
	2.45			9.8	8	27.7		
27.00	0.15			58.8	1			
	2.85			42.1	4.5			
30.00								



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
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SEAM SECTIONS  
 DDH P1-23

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
64.00	s	0.75	24.5	3.5	6.4			
64.75		2.11	2.6	7				
66.86	s	3.14	5.1	8				
70.00								



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-23

*Analytical Results*

*D.D.H. P1-23*

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
549	<i>Skeeter</i>	24.55 - 27.00
550	<i>Skeeter</i>	27.00 - 27.15
551	<i>Skeeter</i>	27.15 - 30.00
552	<i>Chamberlain</i>	64.00 - 64.75
553	<i>Chamberlain</i>	64.75 - 66.86
554	<i>Chamberlain</i>	66.86 - 70.00



<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, fine grained.		215.0
	LAMINITE, siltstone and mudstone, mudstone and coal partings at base.		220.0
	SILTSTONE, mudstone phases.		228.0
	SANDSTONE, fine grained.		231.0
	LAMINITE, siltstone and mudstone,		246.0
	<u>COAL.</u>	CHAMB. SM.	257.0
	SANDSTONE, coarse at top, becoming fine, 263' mottled (worm casts).		278.0

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	6.00	6.00	---	No core to 7'
SANDSTONE, fine grained, grading to fine to medium grained in lower 5' of unit; light grey, calcareous in upper part of unit; sporadic phases of cross bedding and occasional carbonaceous wisps, mudstone partings common.	15.20	21.20	13.30	
MUDSTONE, mid grey, weathered.	1.90	23.10	1.80	
SILTSTONE, light grey.	1.45	24.55	1.45	Seam roof
<u>COAL</u> , weathered.	2.45	27.00	2.45 )	
MUDSTONE, mid grey.	0.15	27.15	0.15 )	SKEETER SEAM
<u>COAL</u> , weathered.	2.85	30.00	1.73 )	
SILTSTONE, with occasional fine sandstone phases; light grey, calcareous; mudstone laminae sporadically developed. Bedding dipping at 15°.	5.00	35.00	4.65	Seam floor

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
CLAYSTONE, carbonaceous with coaly lenses to 0.01'.	1.80	36.80	1.80	
SILTSTONE, as above.	1.70	38.50	1.70	
MUDSTONE, dark grey, carbonaceous plant remains on bedding planes throughout; calcareous. Sub-vertical joints ironstained.	5.15	43.65	5.15	
SILTSTONE AND MUDSTONE INTERBEDS, light to mid grey, calcareous, junction between phases both wavy and distinct, as well as graded.	7.55	51.20	7.55	
SILTSTONE, as above.	0.77	51.97	0.77	
SILTSTONE AND MUDSTONE LAMINITE, mid grey; lower 2.5' broken and sheared, slickensided faces, calcite filled joints.	12.03	64.00	10.90	Seam roof
<u>COAL</u> , sheared and mudstone.	0.75	64.75	0.75	)
dull, minor shearing	0.82	65.57	0.82	) CHAMBERLAIN SEAM

## SUKUNKA D.D.H. P1-23

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , dull and bright, partly sheared.	1.29	66.86	1.29 )	CHAMBERLAIN SEAM
sheared.	3.14	70.00	3.14 )	
SANDSTONE, light grey, fine grained, carbonaceous in upper 2.5'. Core fractured and broken, calcite filled joints with probable brecciation noted; possible fault at base of unit. Joint planes in lower 7' ironstained.	12.00	82.00	11.25	Seam floor
<u>COAL</u> , dull with numerous bright bands.	0.60	82.60	0.60	
sheared.	0.35	82.95	0.35	
SANDSTONE, fine grained, light grey, carbonaceous.	2.40	83.35	2.40	T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	W	P-1-24
LOCATION	M	SURUKKA
PROVINCE	BRITISH COLUMBIA	
Log Measured from	RIG FLOOR	GROUND LEVEL
Well Depths Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Other Services:	NIL	
Run No.	ONE	DATE
31 JANUARY 1975	183	00
First Reading	183	184
Footage Logged	184	184
Depth Reached	184	
Depth Driller		
Casing Driller	AIR/WATER	
Fluid Type	14	
Liquid Level	H.Q.	
Min. Diam.		
Run @ of		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		MALITS

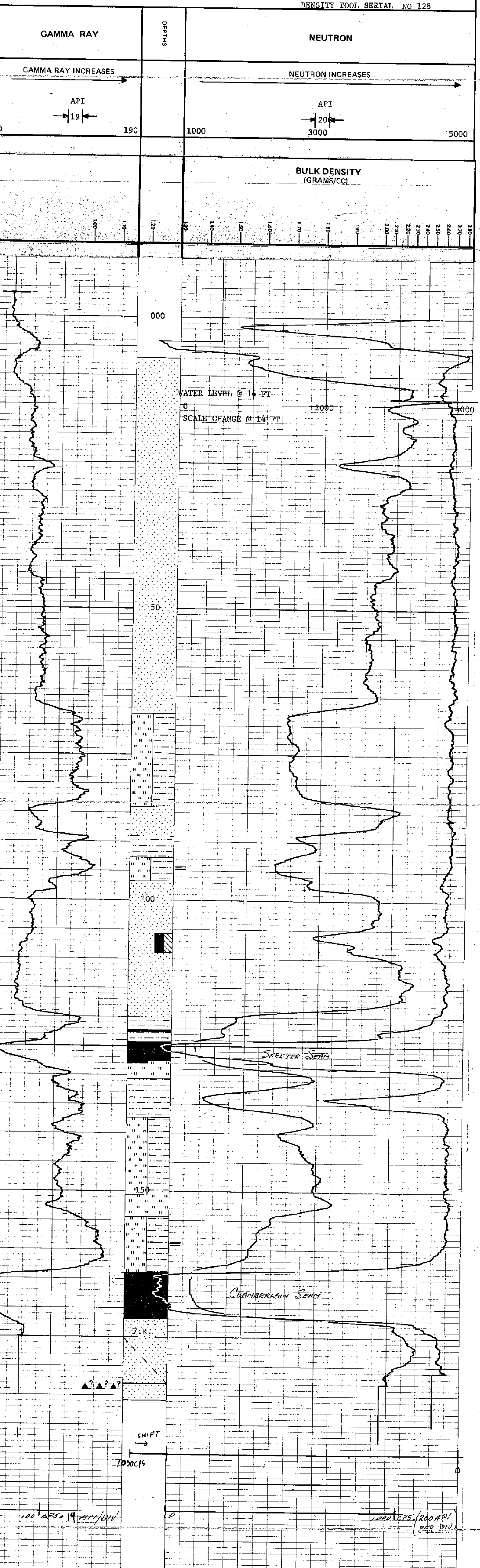
657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	14	12	3	500	0L	20	3	1000	5L	200
1	14	183	12	3	500	0L	20	3	1000	0L	200
1	0	183				DENSILOG		3	1000	2.5R	44.6 CPS/



Grid Reference: 47199 N 77932 E

Date Commenced: Jan. 23/75      Date Completed: Jan. 24/75

Collar R.L.:      4094 ft.      Standard Datum.

Total Depth:      185.85 ft.

Drilled by:      Canadian Longyear Limited

For:      Coalition Mining Ltd.

Using:      Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By:      Roke Oil Enterprises Ltd.

Logged by:      G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	3966.1	3.80	84.7%	
Chamberlain	3922.4	6.85	61.2%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
				2.32	5.2	8	9.9	
				0.47	9.7	8.5		
				1.01	19.1	5		

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-24

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
164.75								
			3.73	5.2	6	6.8		
168.48								
			3.12	7.8	7.5	7.8		
171.60								





Analytical Results

D.D.H. P1-24

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
555	Skeeter	124.10 - 126.42
556	Skeeter	126.42 - 126.89
557	Skeeter	126.89 - 127.90
558	Chamberlain	164.75 - 168.48
559	Chamberlain	168.48 - 171.60

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
<u>SKR 555</u> 2196	5.0	5.2		8
<u>SKR 556</u> 2197	16.3	9.7		8 1/2
<u>SKR 557</u> 2198	10.8	19.1		5
2235 Comp. of SKR 555, 556, 557		9.9	14,060	8

P1-24

- 1 -

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
<u>SKR 558</u> 2199	7.1	5.2		6
<u>SKR 559</u> 2200	3.4	7.8		7 1/2
2236 Comp. of Skr 558 & 559		6.8	14,580	7

P1-24

- 2 -

## SUKUNKA D.D.H. Pl-24

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN	7.00	7.00		No core to 10'
SANDSTONE, medium grained, massive, mid grey with grey-white speckled appearance. Occasional calcite filled joint parallel to bedding planes.	8.00	15.00	4.00	
SANDSTONE, fine to medium grained, mid grey, evenly bedded to massive, slightly calcareous. Mud blebs and wisps 10' from top of unit. Becoming finer toward base of unit, grading toward siltstone. Rare calcite filled joint.	53.00	68.00	50.83	
MUDSTONE AND SILTSTONE INTERBEDS, mid to dark grey, siltstone phases varying from 0.01' to 0.20'; average 0.08', mudstone phases averaging 0.08' and even. Occasional sub-vertical joint.	16.00	84.00	16.00	
SANDSTONE, fine grained with fine to medium grained phase in upper 1' of unit, containing mud blebs and wisps, light grey, massive.	4.95	88.95	4.95	

SUKUNKA D.D.H. P1-24

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, dark grey, grading to very fine sandstone at base of unit. Siltstone partings in mudstone phases in upper 2' of unit, mud swirls present, one curved sub-vertical joint in unit.	3.55	92.50	3.55	
MUDSTONE AND SILTSTONE LAMINITE, dark grey.	3.85	96.35	3.85	
SANDSTONE, fine grained, light grey, massive in upper 8', evenly bedded in lower part of unit. Zone of coaly and carbonaceous wisps and lenses between 105' and 109', and coaly partings on bedding planes throughout lower section of unit.	23.49	119.84	23.49	
MUDSTONE, mid to dark grey, becoming partly carbonaceous at base. Large shelly fossils at 121', 0.30' coal at 122'.	4.26	124.10	4.26	Seam roof
<u>COAL</u> , stony.  dull with minor bright bands.	0.06	124.16	0.05 )	SKEETER SEAM
	0.89	125.05	0.75 )	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , stony.	0.12	125.17	0.10 )	
dull and bright.	0.42	125.59	0.36 )	
dull with minor bright bands.	0.42	126.01	0.36 )	
bright with minor dull bands.	0.41	126.42	0.35 )	SKEETER SEAM
weathered.	0.47	126.89	0.40 )	
bright with minor dull bands.	0.54	127.43	0.45 )	
MUDSTONE AND COAL MIXED.	0.47	127.90	0.40 )	
SILTSTONE, mid grey, with occasional mudstone lenses.	2.70	130.50	2.70	Seam floor
MUDSTONE, light grey, occasional slickensided joints; carbonaceous zone at 133'. Rare silty phases at base of unit.	6.60	137.20	5.15	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE AND SILTSTONE INTERBEDS, containing silty units to 0.50', grading toward laminite in part. Mudstone phases maximum 0.40', siltstone phases 0.70', commonly closely bedded and averaging 0.02' thick for both lithologies. Graded bedding common, occasional slump feature and distorted bedding, grades into unit below.	13.20	150.40	13.00	
SILTSTONE, grading from above unit, light grey. Sharp contact with underlying unit.	3.87	154.27	1.60	
MUDSTONE AND SILTSTONE LAMINITE, dark grey. Two joint fractures, planar at 35° to core axis.	10.48	164.75	10.48	Seam roof
<u>COAL</u> , dull and bright.	2.46	167.21	1.50	)
dull with minor bright bands.	1.27	168.48	0.78	)
dull.	0.59	169.07	0.36	)
dull with minor bright bands.	0.21	169.28	0.13	) CHAMBERLAIN SEAM

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , bright.	0.08	169.36	0.05 )	CHAMBERLAIN SEAM
dull and bright.	0.16	169.52	0.10 )	
bright.	0.20	169.72	0.12 )	
dull and bright	0.54	170.26	0.33 )	
bright.	0.60	170.86	0.37 )	
dull and bright	0.74	171.60	0.45 )	
SANDSTONE, light grey, fine to medium grained, carbonaceous in upper 2.5'. Between 175' and 178' white flecked appearance. Becoming finer grained toward base of unit. Occassional joint iron-stained. Basal 4.0' core broken, calcite joint filling, possible fault at 184'.	14.25	185.85	14.25	Seam floor (Possible fault)  T.D.



# ROKE

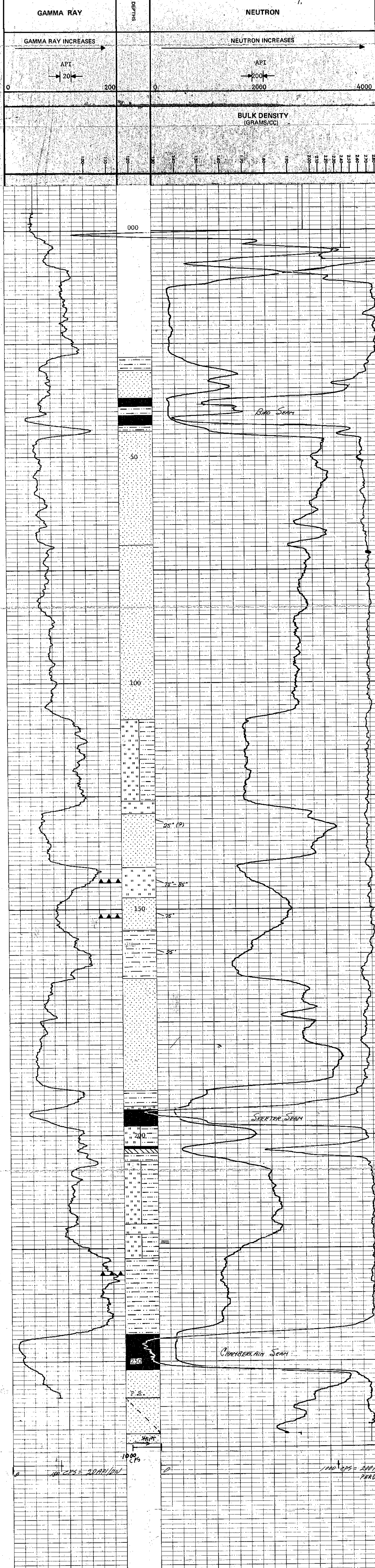
GAMMA RAY NEUTRON LOG  
DENSITOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	W	P-1-25
LOCATION	M	SUKINKA
FIELD	PROVINCE	BRITISH COLUMBIA
Other Services:	GROUND LEVEL	
Permanent Datum	RIG FLOOR	1 Ft. Above Perm. Datum
Log Measured from	RIG FLOOR	
Well Depths Measured from	RIG FLOOR	
Run No.	ONE	
Date	31 JANUARY 1975	
First Reading	00	
Last Reading	266	
Footage Logged	267	
Depth Reached	268	
Depth Driller		
Casing Driller		
Casing Roke		
Fluid Type	ATR/WATER	
Liquid Level	6.5	
Min. Diam.	H. Q.	
Rm. @ 9f		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		MALLIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
NO.	FROM	TO	FT/MIN	SEC.	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	00	266	12	3	500	0L	20	3	1000	0L	200
1	00	266	12		DENSITOG			3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



657

Grid Reference: 47244 N 78238 E

Date Commenced: Jan. 24/75 Date Completed: Jan. 26/75

Collar R.L.: 4121 ft. Standard Datum.

Total Depth: 268 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Bird	4078.00	6.00	35.8%	Weathered
Skeeter	3923.00	3.80	28.9%	Sheared
Chamberlain	3869.20	8.00	73.1%	

BIRD SEAM	ASH %		C.S.Nº.	ASH % CUMULATIVE FROM FLOOR	
	WT %	ASH %		INCL. BANDS	EXCL. BANDS
	6.00	29.0	5.5		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-25**

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
194.20								
198.00	3.80	33.7	4					



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-25

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
243.80								
244.21		0.41						
s		5.47	9.7	6	7.7			
249.68								
s		2.12	6.4	8.5				
251.80								



Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

SEAM SECTIONS  
**DDH P1-25**

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 581 2223	8.1	33.7		10,152	4
SKR 582 2224	6.7	9.7			6
SKR 583 2225	18.3	6.4			8 1/2
2242 Comp. of SKR 582 & 583		7.7		14,370	7 1/2
SKR 584 2226	14.4	29.0	6.0	10,873	5 1/2

Analytical Results - D.D.H. P1-25

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
581	Skeeter	194.20 - 198.00
582	Chamberlain	244.21 - 249.68
583	Chamberlain	249.68 - 251.80
584	Bird	37.00 - 43.00

P1-25

- 1 -

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN and weathered rock.	28.00	28.00	9.30	No core to 10'
MUDSTONE, extremely weathered.	2.70	30.70	2.70	
SANDSTONE, medium grained, grey-greenish, carbonaceous flecks throughout, glauconitic.	6.30	37.00		Base of Moosebar Formation. Seam roof.
<u>COAL</u> , weathered.	1.80	38.80	1.60 )	
MUDSTONE, weathered.	2.00	40.80	0.75 )	BIRD SEAM
<u>COAL</u> , weathered.	2.20	43.00	0.80 )	
MUDSTONE, dark grey, occasional siltstone partings.	1.60	44.60	1.60	Seam floor
SANDSTONE, fine to medium grained, grey-white, quartz-lithic, cross bedding common, otherwise even bedded. Rare mudstone lense to 0.10'. 3' of white flecked sandstone below upper 5' of unit. Quartz and calcite filled fracture zones at 56', 58' and 63'; minor calcite filled joints throughout.	24.85	69.45	24.85	

## SUKUNKA D.D.H. P1-25

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, fine grained, grey white, massive to weakly bedded, calcareous. Fracture zones at 81.5', 83', 89', 92' and 97'; other minor fractures/joints present. Generally less disturbed unit.	38.55	108.00	38.00	
SILTSTONE AND MUDSTONE INTERBEDDED, light to mid grey, both phases varying between 0.05' to 0.10'. Fractures of minor nature throughout - tension, severe zone at 109'; bedding horizontal.	18.00	126.00	16.80	
SILTSTONE, mid grey, minor mudstone.	2.80	128.80	2.80	
SANDSTONE, fine grained, becoming finer grained toward base of unit; light grey, dolomitic cement, massive. Fracture zones represented by calcite filled tension joints at irregular angles to core axis. Dip at top of unit 25°(?)	11.70	140.50	11.70	
SILTSTONE, mid to dark grey, bedding disturbed - dipping at 75° to 85°; slickensided planes 45° to 85° to core axis.	6.75	147.25	5.55	Fault established



## SUKUNKA D.D.H. Pl-25

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<p>SANDSTONE, very fine to fine grained, massive. Occasional mudstone lense and slickensided plane. Core fractured to minor degree. Bedding dipping at 75° with mudstone of underlying unit.</p>	7.45	154.70	7.45	Fault established
<p>MUDSTONE, dark grey, becoming silty in lower 2.5', basal 0.50' carbonaceous. Dipping 25°. Calcite filled joints and slickensided planes.</p>	10.40	165.10	7.70	
<p>SANDSTONE, fine grained, light grey. Coaly partings and wisps 174' and sporadically throughout rest of unit. Calcite filled joints present but not common. Bedding generally undisturbed; evenly bedded, occasional cross bedding and massive phases.</p>	24.90	190.00	23.35	
<p>MUDSTONE, with minor silty interbeds, dark grey, carbonaceous plant remains on bedding.</p>	3.30	193.30	3.30	
<p>SILTSTONE, mid grey, rare carbonaceous flecks.</p>	0.90	194.20	0.90	Seam roof

## SUKUNKA D.D.H. P1-25

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , broken throughout, sheared.	3.80	198.00	1.10	SKEETER SEAM
SILTSTONE AND MUDSTONE LAMINITE, mid grey.	4.58	202.58	4.58	Seam floor
<u>COAL</u> , dull.	0.35	202.93	0.35	
CLAYSTONE, carbonaceous to dark grey.	1.00	203.93	1.00	
MUDSTONE, mid grey, grading to silt in basal part of unit.	1.70	205.63	1.70	
SILTSTONE AND MUDSTONE INTERBEDS, mid to light grey, carbonaceous remains on bedding planes but not universal. Bedding fluted and cusped in centre of unit, even elsewhere. Phases commonly less than 0.05' thick.	14.02	219.65	11.95	
SILTSTONE, light grey, minor mudstone intercalations.	2.17	221.82	2.17	
MUDSTONE AND SILTSTONE LAMINITE, mudstone dominant.	5.28	227.10	5.28	

SUKUNKA D.D.H. Pl-25

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, mid to dark grey; fracturing evident, calcite filled joints. Carbonaceous zone at 236'.	16.70	243.80	14.20	Probable fault
<u>COAL</u> AND SHEARED ROCK, coal dominant.	0.41	244.21	0.30 )	
<u>COAL</u> , dull and bright with bright bands, to 0.15' sheared for most part.	5.47	249.68	4.40 )	CHAMBERLAIN SEAM
sheared, possibly oxidised.	2.12	251.80	1.55 )	
SANDSTONE, fine to medium grained, carbonaceous, mid grey.	16.20	268.00	16.20	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. \_\_\_\_\_ COMPANY \_\_\_\_\_ COALITION MINING LIMITED  
 LSD SEC \_\_\_\_\_ WELL \_\_\_\_\_ P-1-26  
 TWP \_\_\_\_\_ RANGE \_\_\_\_\_ LOCATION \_\_\_\_\_  
 RGE \_\_\_\_\_ FIELD \_\_\_\_\_ SUKINKA  
 W \_\_\_\_\_ M \_\_\_\_\_  
 PROVINCE \_\_\_\_\_ BRITISH COLUMBIA  
 Permanent Datum \_\_\_\_\_ GROUND LEVEL \_\_\_\_\_ Elev. \_\_\_\_\_  
 Log Measured from \_\_\_\_\_ RIG FLOOR \_\_\_\_\_ 1.5 Ft. Above Perm. Datum  
 Well Depths Measured from \_\_\_\_\_ RIG FLOOR \_\_\_\_\_ G.L. \_\_\_\_\_  
 Other Services: \_\_\_\_\_  
 K.B. \_\_\_\_\_  
 C.S.G. \_\_\_\_\_  
 G.L. \_\_\_\_\_

Run. No. \_\_\_\_\_ ONE  
 Date \_\_\_\_\_ 31 JANUARY 1975  
 First Reading \_\_\_\_\_ 151  
 Last Reading \_\_\_\_\_ 00  
 Footage Logged \_\_\_\_\_ 151  
 Depth Reached \_\_\_\_\_ 152  
 Depth Driller \_\_\_\_\_ 152  
 Casing Roke \_\_\_\_\_  
 Casing Driller \_\_\_\_\_  
 Fluid Type \_\_\_\_\_ AIR/WATER  
 Liquid Level \_\_\_\_\_ 28  
 Min. Diam. \_\_\_\_\_ H.Q.  
 Am @ 9F \_\_\_\_\_  
 Operating Time \_\_\_\_\_ 2 HOURS  
 Truck No. \_\_\_\_\_ 35  
 Recorded By \_\_\_\_\_ PETERSON  
 Witnessed By \_\_\_\_\_ WALLIS

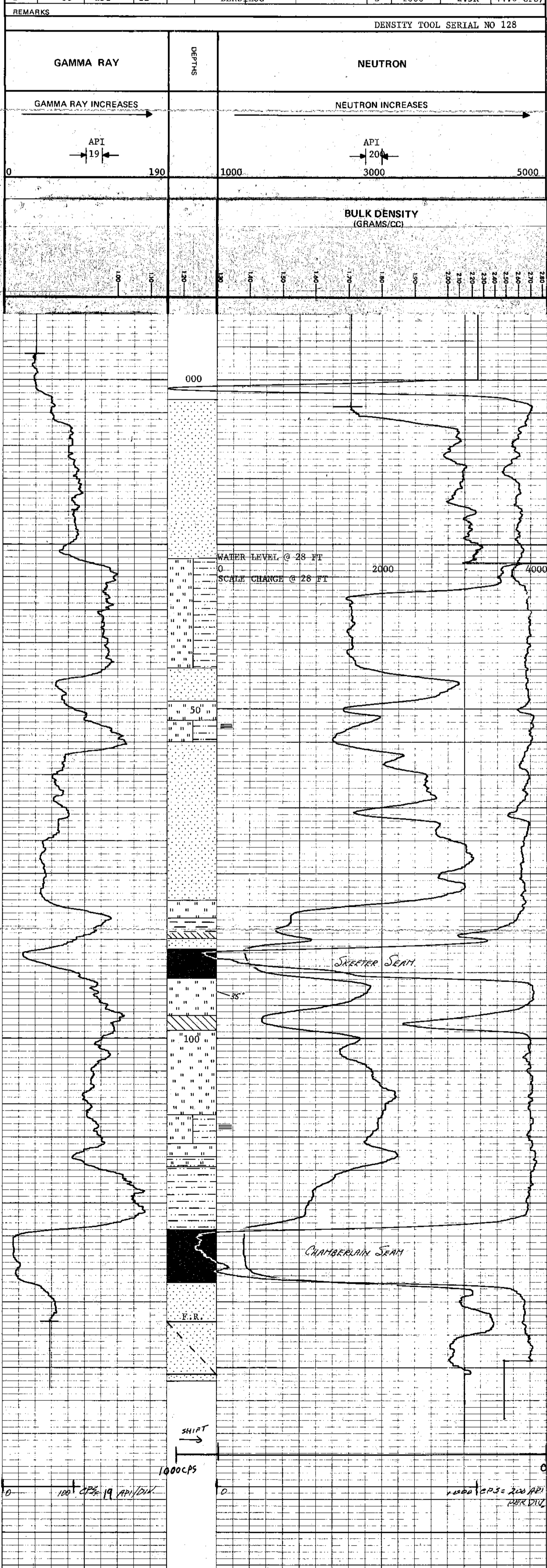
657

### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
GENERAL		SPACING	17 INCH
HOIST TRUCK NO.	35	TYPE	AmBe
INSTRUMENT TRUCK NO.		STRENGTH	3 CURIES
TOOL SERIAL NO.	177		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	T.C. SEC.	SENS. SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS. SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.	
1	00	28	12	3	500	0L	20	3	1000	5L	200
	28	151	12	3	500	0L	20	3	1000	0L	200
1	00	151	12			DENSILOG		3	1000	2.5R	44.6 CPS/



Grid Reference: 47100 N 77712 E

Date Commenced: Jan. 26/75 Date Completed: Jan. 27/75

Collar R.L.: 4070 ft. Standard Datum.

Total Depth: 152 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	3979.05	4.55	92.3%	
Chamberlain	3933.00	8.00	87.1%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
86.40	86.67	0.27		24.0	1	15.3		
		3.36		8.4	7.5			
90.03	90.46	0.43		53.8	1			
90.46	90.95	0.49		19.5	3			



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1- 26

				ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM				WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
129.00								
	8.00				5.0	4		
137.00								



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-26

Analytical Results

D.D.H. P1-26

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
585	Skeeter	86.40 - 86.67
586	Skeeter	86.67 - 90.03
587	Skeeter	90.03 - 90.46
588	Skeeter	90.46 - 90.95
589	Chamberlain	129.00 - 137.00



## COALITION MINING

February 27, 1975

## SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
<u>SKR 585</u> 2227	3.3	24.0			1
<u>SKR 586</u> 2228	3.8	8.4			7 1/2
<u>SKR 587</u> 2229	10.8	53.8			1
<u>SKR 588</u> 2230	2.8	19.5			3
2243 Comp. of SKR 585, 586, 587 & 588		15.3		13,150	7 1/2
<u>SKR 589</u> 2231	20.8	5.0		14,622	4

P1-26

- 1 -

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.00	3.00		No core to 6'
SANDSTONE, light grey, fine grained, weakly bedded with massive units to 3'. Calcareous, occasional weathered sub-vertical joint in upper 10'.	24.00	27.00	21.00	
MUDSTONE AND SILTSTONE INTERBEDDED, bedding generally planar with zones of fluted and cusped bedding. Siltstone phase 0.05' to 0.15', average 0.10'; mudstone phases commonly thinner. Calcareous.	16.85	43.85	16.85	
SANDSTONE, as above.	5.00	48.85	5.00	
SILTSTONE, with mudstone interbeds, but latter lithology minor.	2.80	51.65	2.80	
MUDSTONE AND SILTSTONE, laminated, dark grey.	3.30	54.95	3.30	
SANDSTONE, fine grained, light grey, carbonaceous wisps throughout, with occasional coaly lenses to 0.03'. Very rare, calcite filled joint.	24.00	78.95	24.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, grading to mudstone; slightly carbonaceous.	2.55	81.50	2.55	
CLAYSTONE, carbonaceous to dark grey; occasional slickensided joint.	3.30	84.80	0.90	
SANDSTONE, fine to medium grained, dark grey to carbonaceous.	1.60	86.40	1.30	Seam roof
<u>COAL AND ROCK</u> , sheared.	0.27	86.67	0.25 )	
<u>COAL</u> , bright with minor dull bands.	1.96	88.63	1.80 )	
dull.	0.40	89.03	0.37 )	
dull and bright.	0.25	89.28	0.23 )	
sheared.	0.43	89.71	0.40 )	SKEETER SEAM
dull with minor bright bands.	0.32	90.03	0.30 )	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , dull and rock intermixed (mainly coal).	0.43	90.46	0.40 )	SKEETER SEAM
dull and bright.	0.49	90.95	0.45 )	
SILTSTONE, mid grey, plant fragments throughout; mudstone lenses to 0.01' throughout. Dipping 35°.	5.19	96.14	5.19	Seam floor
<u>COAL</u> , dull and bright.	0.13	96.27	0.13	
CLAYSTONE, carbonaceous to dark grey.	1.93	98.20	0.83	
CLAYSTONE, carbonaceous and coal lenses to 0.10'.	0.55	98.75	0.55	
SILTSTONE, mid grey, grading to silty mudstone in part. Carbonaceous plant remains on bedding planes. One sub-vertical joint. Calcareous.	12.95	111.70	12.35	
SILTSTONE AND MUDSTONE LAMINITE, calcareous, mid grey.	4.30	116.00	4.30	
SILTSTONE, light grey, calcareous.	1.80	117.80	1.80	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, silty	1.70	119.50	1.70	
MUDSTONE, dark grey, contains plant remains in bedding planes.	9.50	129.00	8.70	Seam roof
<u>COAL</u> , dull and bright with bright bands to 0.05' throughout.	8.00	137.00	6.97	CHAMBERLAIN SEAM
SANDSTONE, light to mid grey, fine to medium grained, carbonaceous, massive.	15.00	152.00	15.00	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. \_\_\_\_\_  
COMPANY COALITION MINING LIMITED  
WELL P-1-27  
LOCATION SUKINKA  
FIELD SUKINKA  
PROVINCE BRITISH COLUMBIA  
Other Services: \_\_\_\_\_

Permanent Datum \_\_\_\_\_  
GROUND LEVEL \_\_\_\_\_ Elev. \_\_\_\_\_  
Log Measured from RIG FLOOR \_\_\_\_\_ 1.5 Ft. Above Perm. Datum  
Well Depths Measured from RIG FLOOR \_\_\_\_\_  
K.B. \_\_\_\_\_  
CSG \_\_\_\_\_  
G.L. \_\_\_\_\_

Run No. ONE  
Date 1 FEBRUARY 1975  
First Reading 99  
Last Reading 00  
Footage Logged 99  
Depth Reached 100  
Depth Driller 100  
Casing Roke \_\_\_\_\_  
Casing Driller \_\_\_\_\_  
Fluid Type AIR/WATER  
Liquid Level 41  
Min. Diam. H.Q.  
Rin @ 0f \_\_\_\_\_  
Operating Time 2 HOURS  
Truck No. 35  
Recorded By PETERSON  
Witnessed By WALLIS

657

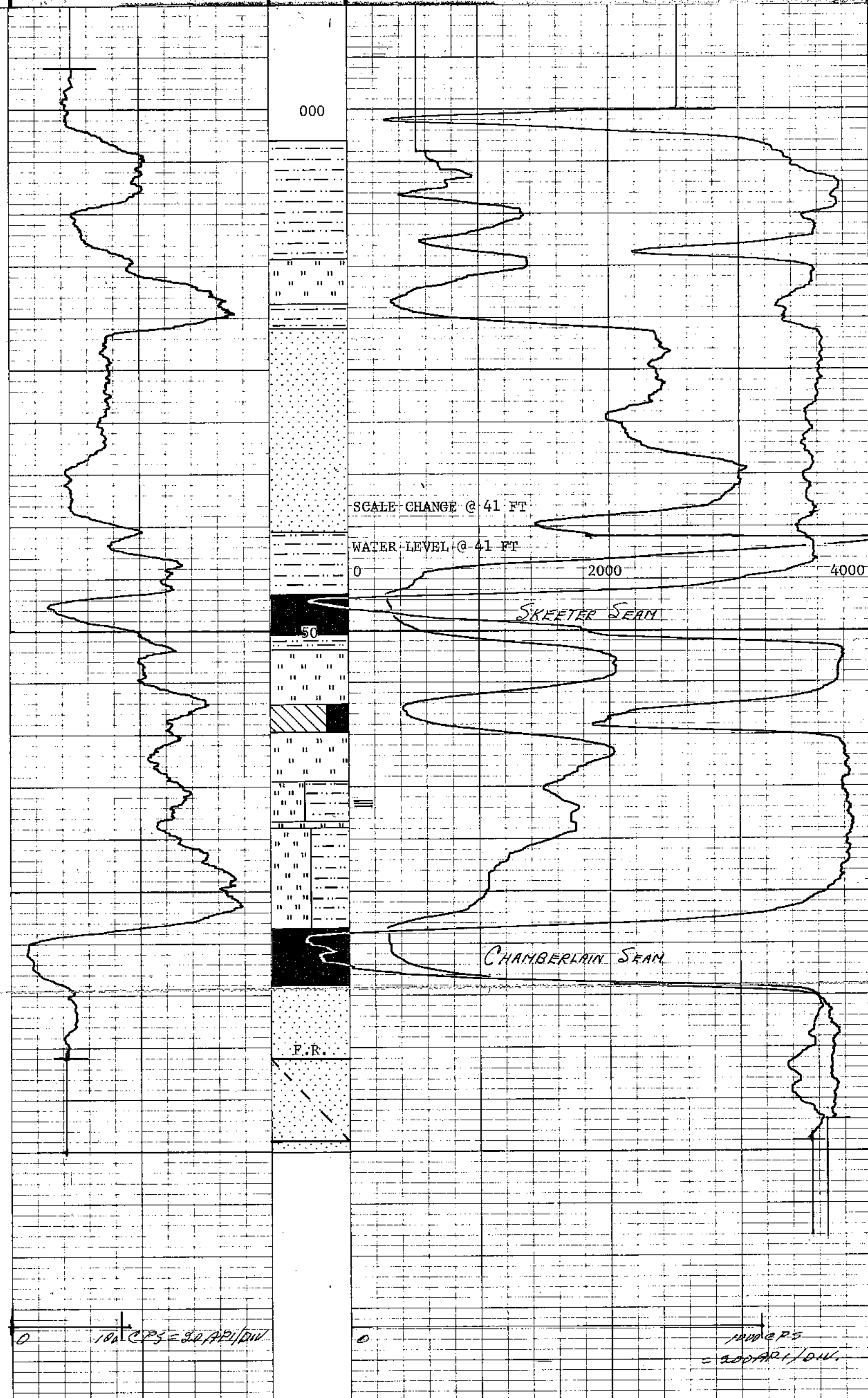
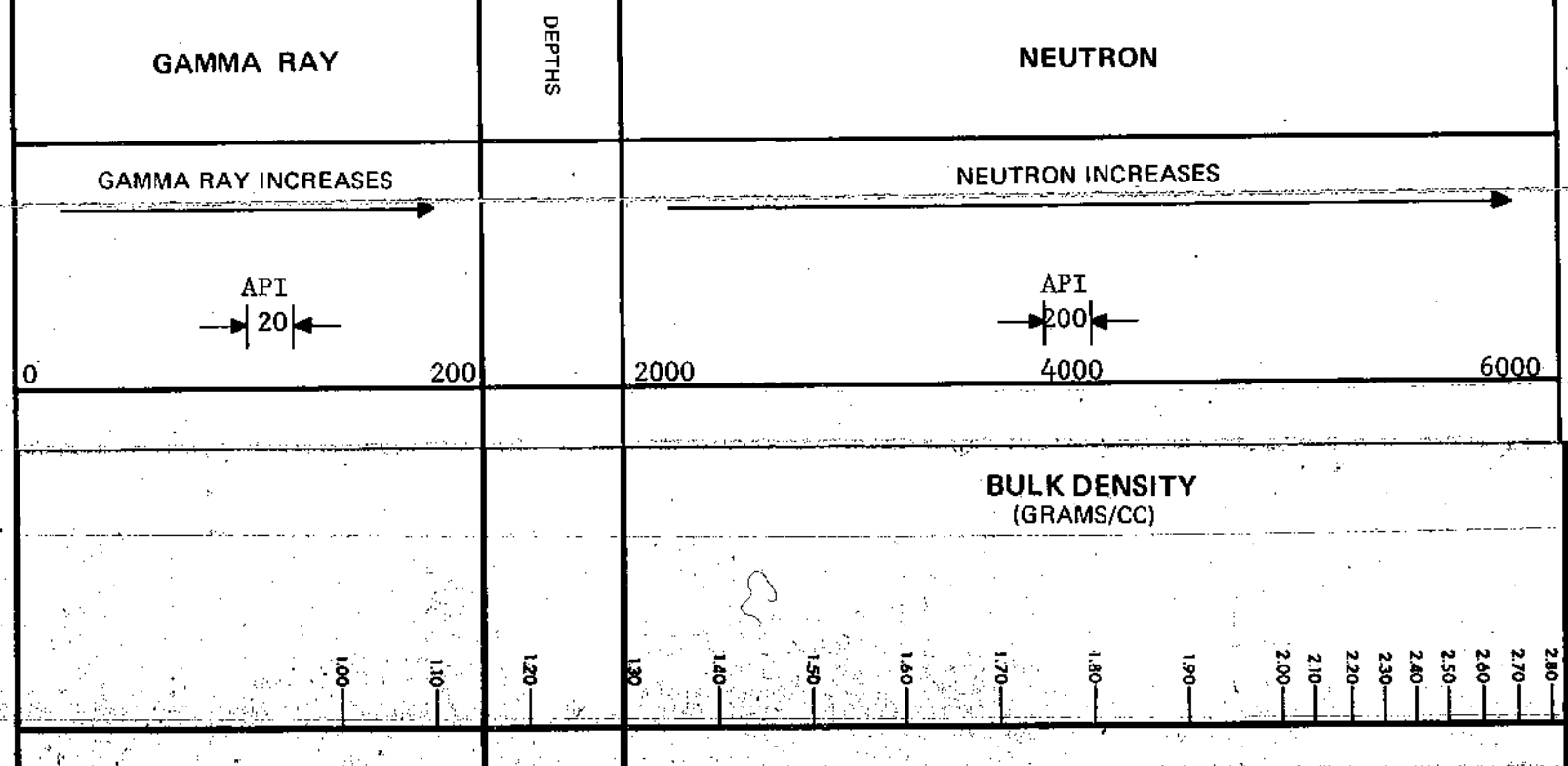
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	41	12	3	500	0L	20	3	1000	10L	200
	41	99	12	3	500	0L	20	3	1000	0L	200
1	00	99	12			DENSILOG		3	1000	2.5	44.6 CPS/

REMARKS DENSITY TOOL SERIAL-NO 128



SCALE CHANGE @ 41 FT  
WATER LEVEL @ 41 FT  
SKEETER SEAM  
CHAMBERLAIN SEAM  
P.R.  
54 FT  
1000 CPS

Grid Reference: 48549 N 77520 E ..

Date Commenced: Jan. 27/75 . Date Completed: Jan. 28/75

Collar R.L.: 4108 ft. Standard Datum.

Total Depth: 100.00 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4057.85	3.65	100%	
Chamberlain	4024.1	5.50	92.5%	

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
				1.00	2.9	8.5	9.2	
				0.95	3.7	8		
				1.20	31.9	1		
				0.50	4.3	8		

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-27



			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
78.40							
78.89	0.49						
82.71	5.01	19.6	4.5				
83.90							



Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-27

Analytical Results

D.D.H. P1-27

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
562	Skeeter	46.50 - 47.50
563	Skeeter	47.50 - 48.45
564	Skeeter	48.45 - 49.65
565	Skeeter	49.65 - 50.15
566	Chamberlain	78.89 - 83.90

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 562 2203	22.5	2.9		8 1/2
SKR 563 2204	59.3	3.7		8
SKR 564 2205	22.0	31.9		1
SKR 565 2206	6.6	4.3		8
2238 Comp. SKR 562, 563, 564, and 565	Raw	9.2	14,180	7 1/2

SIZE ANALYSES

LAB NO. 2238

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	92.1	7.5	92.1	7.5	
- 100 M	7.9	16.3	100.0	8.2	7 1/2

SINK-FLOAT ANALYSES

+ 100 M

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.40	89.1	2.5	89.1	2.5	8
1.40-1.50	1.6	18.9	90.7	2.8	1 1/2
1.50-1.60	1.5	30.8	92.2	3.2	1
+1.60	7.8	57.2	100.0	7.5	1/2

P1-27

- 1 -

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 566 2207	12.7	19.6	12,227	4 1/2

## SUKUNKA D.D.H. P1-27

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.00	3.00		No core to 10'
MUDSTONE, weathered.	11.20	14.20	1.15	
SILTSTONE, light grey, partly weathered.	4.55	18.75	3.30	
MUDSTONE, mid grey, carbonaceous phase 0.50' thick at base.	2.25	21.00	2.25	
SANDSTONE, light grey, fine grained, evenly bedded to massive, cross bedding phases present. Carbonaceous wisps and partings throughout, especially between 29' and 31'. Broken zone at 39', mudstone/siltstone lense - no evidence of faulting.	19.05	40.05	19.05	
MUDSTONE, dark grey, with lenses of siltstone ranging from 0.05' to 0.20', associated small scale slump structures common: Small shelly fossils to base of unit	6.45	46.50	3.45	Seam roof
<u>COAL</u> , weathered (?)	1.00	47.50	1.00 )	SKEETER SEAM

## SUKUNKA D.D.H. Pl-27

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , dull.	0.70	48.20	0.70 )	
STONE, coaly.	0.10	48.30	0.10 )	
<u>COAL</u> , dull and bright	0.15	48.45	0.15 )	SKEETER SEAM
broken and sheared, possibly weathered.	1.20	49.65	1.20 )	
stony.	0.50	50.15	0.50 )	
MUDSTONE, with siltstone intercalations.	1.45	51.60	1.45	Seam floor
SILTSTONE, light grey; mudstone partings on bedding planes, tending toward laminated; basal 1.50' laminated but dominantly siltstone. Rare calcite filled joint.	5.40	57.00	5.25	
MUDSTONE, carbonaceous and coal.	2.80	59.80	1.60	
SILTSTONE, light grey with minor mudstone laminations.	4.50	64.30	4.50	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
SILTSTONE AND MUDSTONE, laminated but laminations weakly developed.	3.93	68.23	3.93	
SILTSTONE, light grey.	0.60	68.83	0.60	
SILTSTONE AND MUDSTONE INTERBEDDED.	9.57	78.40	7.98	Seam roof
CLAYSTONE, carbonaceous.	0.49	78.89	0.45 )	
<u>COAL</u> , dull and bright	3.82	82.71	3.54 )	CHAMBERLAIN SEAM
dull and bright, minor shearing.	1.19	83.90	1.10 )	
SANDSTONE, fine to medium grained, light grey, carbonaceous partings throughout, massive in upper 10', evenly bedded remainder of unit.	16.10	100.00	16.10	Seam floor T.D.

# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

DENSILOG

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	W	P-1-28
LOCATION	FIELD	SUKUNKA
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	Elev.
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	
Run No.	ONE	Date
First Reading	44	1 FEBRUARY 1975
Last Reading	00	
Footage Logged	44	
Depth Reached	45	
Depth Driller		
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level		
Min. Diam.	H.Q.	
Rm @ 0f		
Operating Time	1 HOUR	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

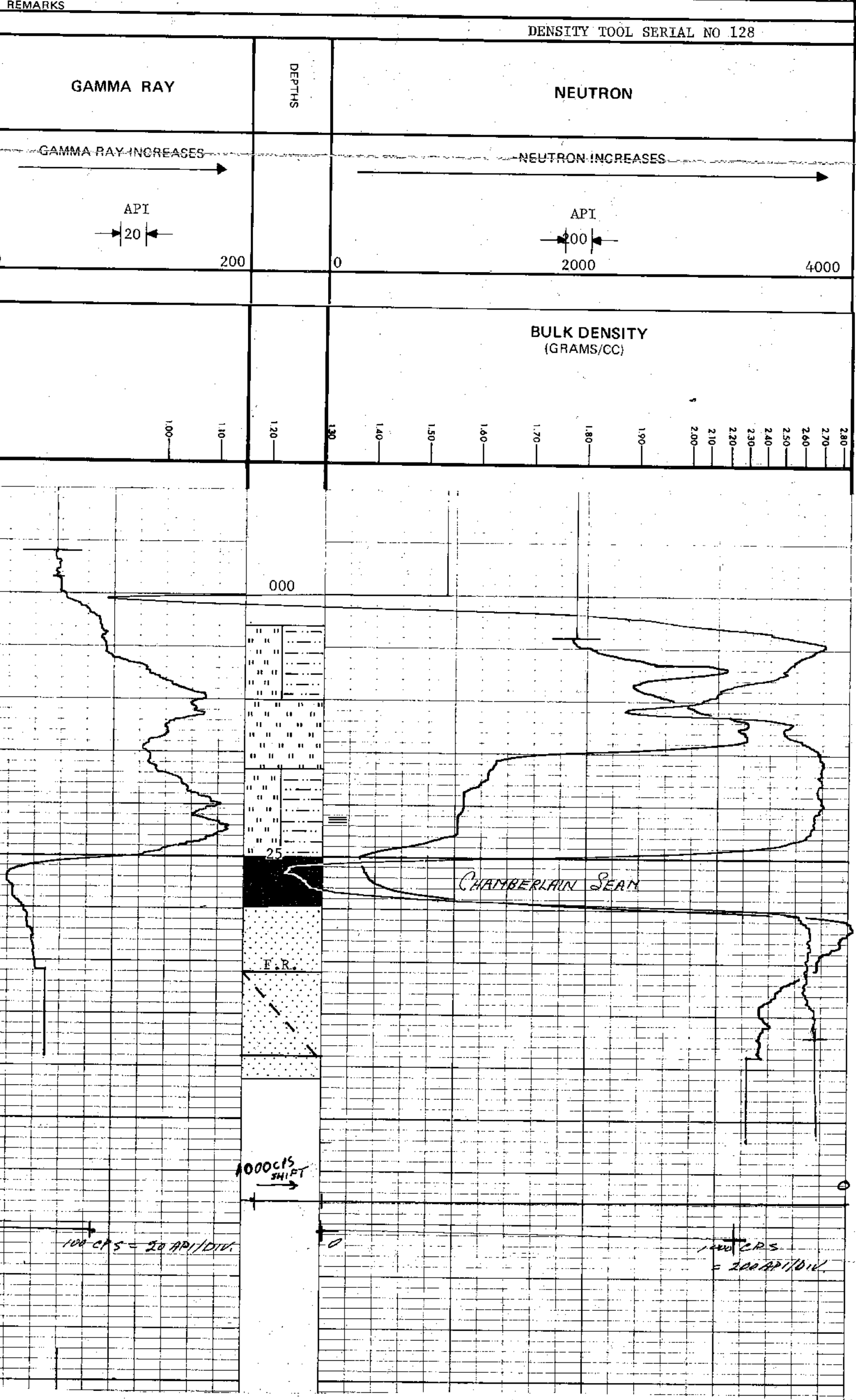
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### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	# 50
GENERAL		SPACING	17 INCH
HOIST TRUCK NO.	35	TYPE	AmBe
INSTRUMENT TRUCK NO.		STRENGTH	3 CURIES
TOOL SERIAL NO.	177		

### LOGGING DATA

RUN NO.	GENERAL			GAMMA RAY				NEUTRON			
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	44	12	3	500	0L	20	3	1000	0L	200
1	00	42	12		DENSILOG			3	1000	2.5R	44.6 CPS/





Grid Reference: 48846 N 77344 E .

Date Commenced: Jan. 28/75 Date Completed: Jan. 28/75

Collar R.L.: 4096 ft. Standard Datum.

Total Depth: 46.0 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Chamberlain	4066.20	4.80	100%	

			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
25.00		0.30	49.1	.5	6.8		
25.30		4.50	3.8	7.5			
29.80							

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1- 28

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 560 2201	3.9	49.1		1/2
SKR 561 2202	26.8	3.8		7 1/2

2237

Comp. of SKR 560 & 561

RAW ANALYSES Lab No. 2237

<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
.8	6.8	24.6	67.8	.62	14,260	7	1.36	Air Dry Basis
	6.9	24.8	68.3	.63	14,380			Dry Basis

Analytical Results - D.D.H. P1-28

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
560	Chamberlain	25.00 - 25.30
561	Chamberlain	25.30 - 29.80

P1-28

- 1 -

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	3.00	3.00		No core to 6'
MUDSTONE AND SILTSTONE INTERBEDS, light grey, mudstone phases deeply weathered; siltstone phases to 0.40', averaging 0.05'.	7.00	10.00	4.00	
SILTSTONE, mid grey; calcite filled joint at 15.00'.	6.50	16.50	6.50	
MUDSTONE AND SILTSTONE LAMINITE, mid grey, weathered in part. Basal 0.30' broken and slickensided.	8.50	25.00	7.30	Seam roof
<u>COAL</u> , sheared, containing minor rock.  dull and bright, minor weathering.	0.30	25.30	0.30 )	CHAMBERLAIN SEAM
	4.50	29.80	4.50 )	
SANDSTONE, fine to medium grained, light grey, carbonaceous in upper 5'. Mudstone with carbonaceous partings and wisps in lower part of unit.	16.20	46.00	16.20	Seam floor T.D.

# ROKE

GAMMA RAY NEUTRON LOG

DENSILOG

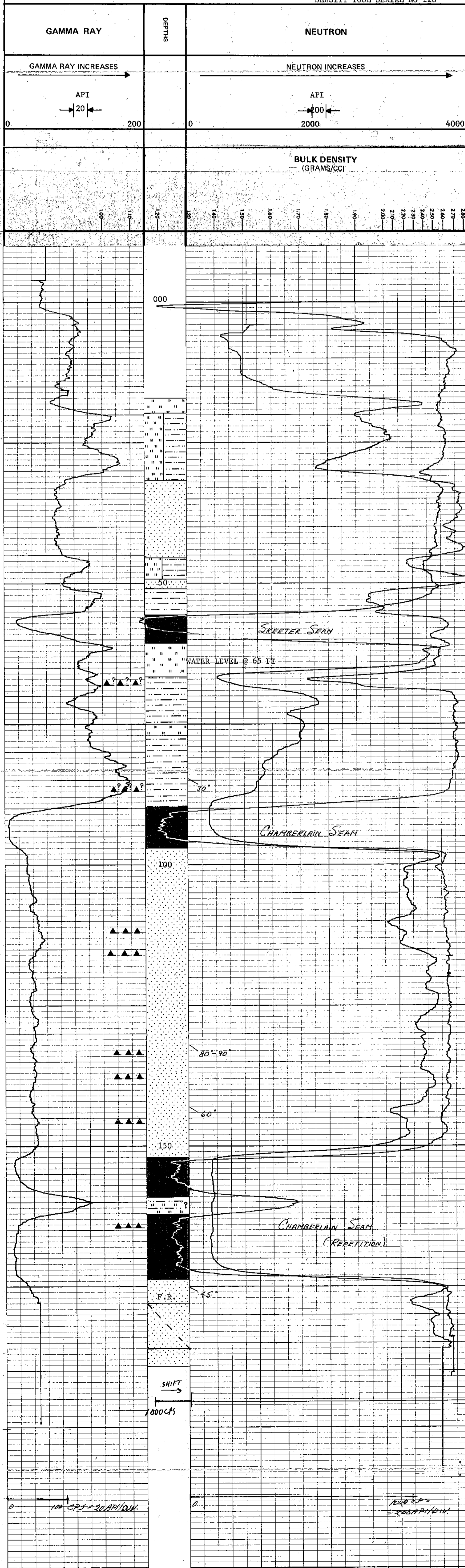
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	P-1-29
SEC	TWP	
RGE	LOC	
W	FIELD	SEKUNKA
M	PROVINCE	BRITISH COLUMBIA
	PERMANENT DATUM	GROUND LEVEL
	LOG MEASURED FROM	RIG FLOOR
	WELL DEPTH MEASURED FROM	RIG FLOOR
		1.5 Ft. Above Perm. Datum
		K.B.
		CSG
		GL
		Other Services
		NIL
Run No.	ONE	
Date	1 FEBRUARY 1975	
First Reading	186	
Last Reading	00	
Footage Logged	186	
Depth Reached	187	
Depth Driller	187	
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	65	
Min. Diam.	H.Q.	
Rm @ 9F		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		MALLIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	# 50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
NO.	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	00	186	12	3	500	0L	20	3	1000	0L	200
1	00	186	12		DENSILOG			3	1000	2.5R	44.6 CPS/

REMARKS: DENSITY TOOL SERIAL NO 128



657

Grid Reference: 48602 N 77632 E

Date Commenced: Jan. 28/75 Date Completed: Jan. 30/75

Collar R.L.: 4100 ft. Standard Datum.

Total Depth: 189 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.

Radiation Logs: Gamma Ray, Neutron and Density

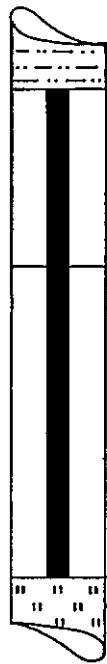
By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4039.50	5.00	100%	
Chamberlain	4003.00	7.25	100%	
Chamberlain (Repetition)	3926.50	21.50	5.5%	Faulted

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.N <sup>o</sup> .	INCL. BANDS	EXCL. BANDS
55.50	s	1.80		9.9	8	26.0		
57.30	s	3.20		35.1	2.5			
60.50								

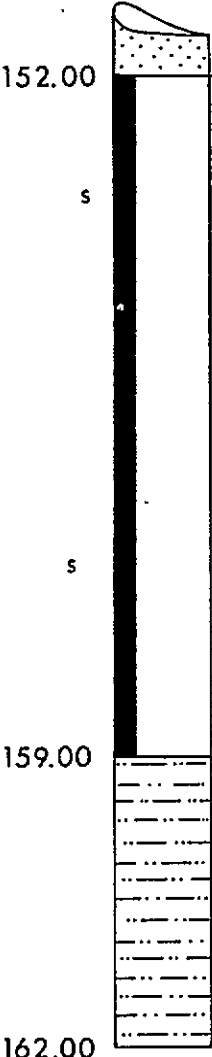


Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1- 29

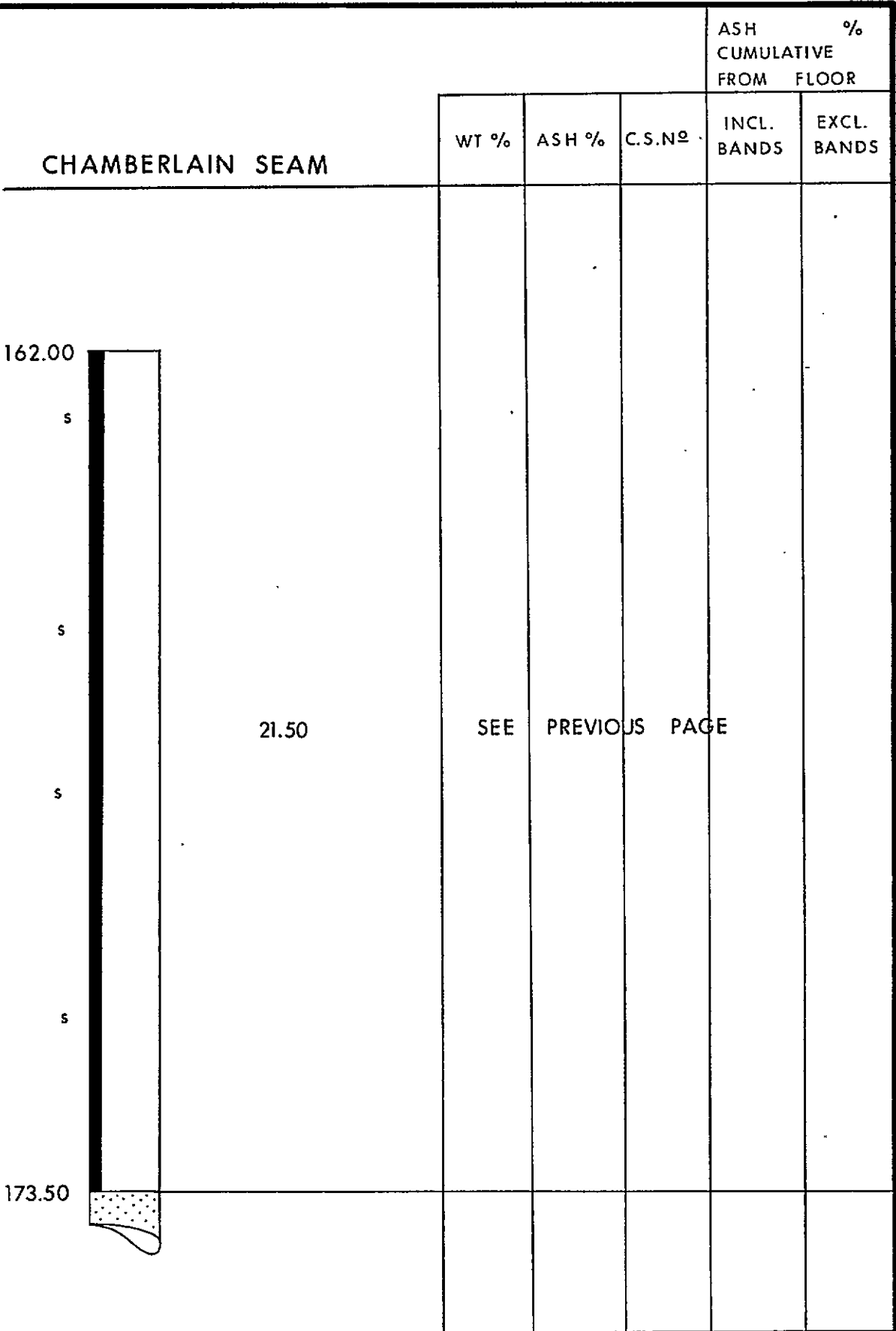




			ASH % CUMULATIVE FROM FLOOR				
CHAMBERLAIN SEAM			WT %	ASH %	C.S.No	INCL. BANDS	EXCL. BANDS
152.00							
159.00		21.5	20.5	3.5			
162.00	CONTINUED						

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH P1-29



ASH %  
CUMULATIVE  
FROM FLOOR

Prepared by:  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
for  
COALITION MINING LIMITED

SEAM SECTIONS  
DDH P1-29

Analytical Results

D.D.H. P1-29

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
567A	Skeeter	55.50 - 57.30
567B	Skeeter	57.30 - 60.50
568	Chamberlain	89.75 - 90.50
569	Chamberlain	90.50 - 90.95
570	Chamberlain	90.95 - 92.75
571	Chamberlain	92.75 - 94.51
572	Chamberlain	94.51 - 97.00
573	Chamberlain*	152.00 - 173.50

\*) Seam repetition due to faulting.

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 567A 2208	40.9	9.9		8
SKR 567B 2209	12.6	35.1		2 1/2
2239 Comp. of SKR 567A & 567B		26.0	11,510	5 1/2

SIZE ANALYSES LAB NO. 2239

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	80.2	23.9	80.2	23.9	
- 100 M	19.8	29.3	100.0	25.0	4 1/2

SINK-FLOAT ANALYSES +100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.40	56.1	4.3	56.1	4.3	8
1.40-1.50	5.6	23.8	61.7	6.1	1 1/2
1.50-1.60	6.4	33.1	68.1	8.6	1
+1.60	31.9	56.7	100.0	23.9	1/2

P1-29

- 1 -

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 568 2210	14.3	25.8		3
SKR 569 2211	3.6	2.5		6
SKR 570 2212	6.0	3.8		6 1/2
SKR 571 2213	10.3	2.7		8 1/2
SKR 572 2214	16.9	6.7		8
2240 Comp. of SKR 568, 569, 570, 571 & 572		7.1	14,630	7 1/2

SIZE ANALYSES

LAB NO. 2240

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	92.7	6.4	92.7	6.4	
- 100 M	7.3	6.7	100.0	6.4	8 1/2

SINK-FLOAT ANALYSES

+ 100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.40	92.5	2.9	92.5	2.9	8
1.40-1.50	1.1	19.6	93.6	3.1	1 1/2
1.50-1.60	0.4	29.4	94.0	3.2	1
+1.60	6.0	58.6	100.0	6.4	1/2

COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
SKR 573 2215	16.7	20.5	12,122	3 1/2

P1-29

- 3 -

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
OVERBURDEN	16.00	16.00		No core to 17'
WEATHERED ROCK	1.00	17.00	1.00	
SILTSTONE, light grey.	2.75	19.75	2.00	
SILTSTONE AND MUDSTONE INTERBEDS, grading to laminite in lower part of unit. Bedding uneven, swirls and slump features present. Phases generally thin, less than 0.15'. Core broken, commonly by sub-vertical jointing in lower 8'.	11.90	31.65	11.90	
SANDSTONE, fine grained, light grey, bedding generally even, occasional massive phases, dip at 42' to 7°. Carbonaceous partings common particularly in lower 5.0', occasional mudstone lenses.	13.70	45.35	13.70	
MUDSTONE AND SILTSTONE INTERBEDS, as above.	3.75	49.10	3.75	
SANDSTONE, as above.	1.80	50.90	1.80	

SUKUNKA D.D.H. Pl-29

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, dark grey; 0.50' slickensided joints at 55.0' - possible fault.	4.60	55.50	3.75	Seam roof
<u>COAL</u> , weathered, sheared coal present.	5.00	60.50	5.00	SKEETER SEAM
SILTSTONE, light grey, calcite filled joints at 80° to core axis; fine mudstone laminae throughout.	6.00	66.50	4.50	Seam floor
MUDSTONE, mid grey, calcite filled joints, possible faults at 68' and 86'; bed dips at 30° - 82' to 88', siltstone between 75' and 77'.	23.25	89.75	21.10	Seam roof Possible fault
<u>COAL</u> , sheared.	0.75	90.50	0.75 )	
stony.	0.45	90.95	0.45 )	
dull.	1.10	92.05	1.10 )	CHAMBERLAIN SEAM
dull with minor bright bands.	0.70	92.75	0.70 )	
dull and bright, sheared.	0.83	93.58	0.83 )	



Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE	0.03	93.61	0.03 )	
			)	
<u>COAL</u> , sheared.	0.60	94.21	0.60 )	
			)	CHAMBERLAIN SEAM
dull and bright.	0.30	94.51	0.30 )	
			)	
sheared.	2.49	97.00	2.49 )	
SANDSTONE, fine to medium grained, light grey. Carbonaceous, core broken for most part to varying degrees; intense fracturing and jointing between 110' to 112', 115' to 116', 133' to 134' at 137', 146' and 151'. Bedding 80° to 90° at 132', 60° at 143'. Joint planes irregular throughout, generally slickensided, occasional calcite filled ones; both tension and shear planes present.	55.00	152.00	55.00	Seam floor  Fault established

SUKUNKA D.D.H. P1-29

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , intensely sheared throughout.	7.00	159.00	2.50 )	CHAMBERLAIN SEAM
MUDSTONE OR SILTSTONE, sheared.	3.00	162.00	--- )	Repetition (cor-
<u>COAL</u> , intensely sheared throughout.	11.50	173.50	1.44 )	rected from radia- tion log) Fault probable.
SANDSTONE, fine to medium grained, light grey, carbonaceous. Fractured and broken, slickensided at 172' to 173' and 177' to 178'. Some joints recemented with calcite. Possible dip of bedding immediately below seam at 45°.	15.50	189.00	15.00	T.D.

# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	P-1-30
TWP	LOCATION	SUKUNYA
RGE	FIELD	SUKUNYA
W	PROVINCE	BRITISH COLUMBIA
	GROUND LEVEL	Elev. _____
	RIG FLOOR	1.5 Ft. Above Perm. Datum
	Well Depths Measured from	RIG FLOOR
Permanent Datum		
Log Measured from		
Well Depths Measured from		
Run No.	ONE	
Date	31 JANUARY 1975	
First Reading	200	
Last Reading	00	
Footage Logged	200	
Depth Reached	201	
Depth Driller	201	
Casing Driller		
Fluid Type	ATR/WATER	
Liquid Level	19	
Min. Diam.	H. Q.	
Rm @ of		
Operating Time	2 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

657

### EQUIPMENT DATA

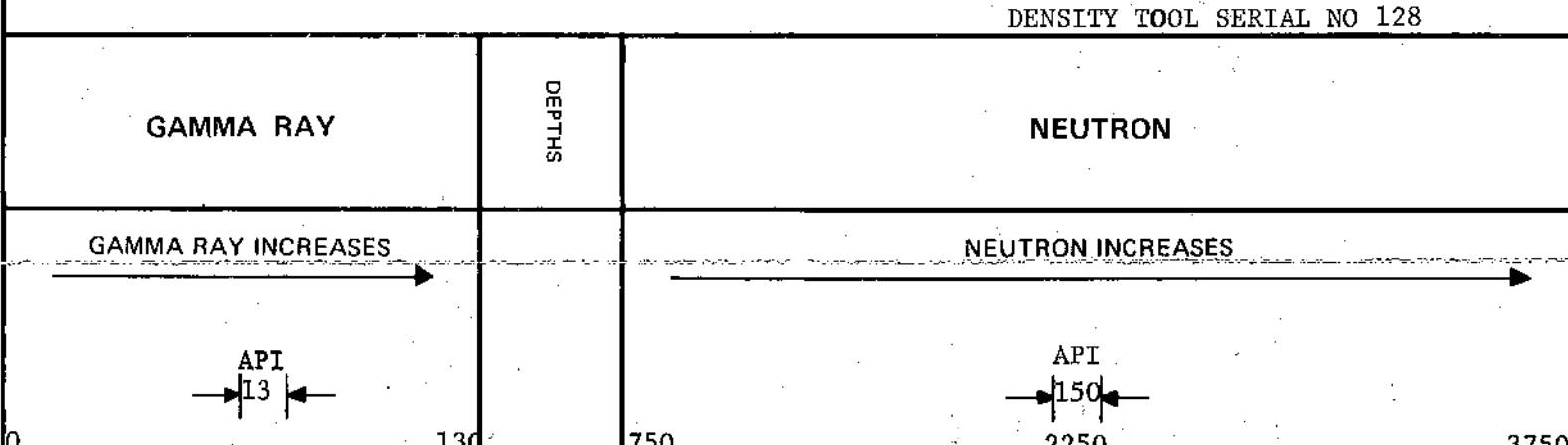
GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.	1 11/16		
DETECTOR MODEL NO.				DIAMETER			
TYPE	SCINTILLATION			DETECTOR MODEL NO.			
LENGTH	4 INCH			TYPE	PROPORTIONAL		
DISTANCE TO N. SOURCE	8.55 FT.			LENGTH	6 INCH		
				SOURCE MODEL NO.	MRC-N-SS-W		
				SERIAL NO.	# 50		
HOIST TRUCK NO.	35			SPACING	17 INCH		
INSTRUMENT TRUCK NO.				TYPE	AmBe		
TOOL SERIAL NO.	177			STRENGTH	3 CURIES		

### LOGGING DATA

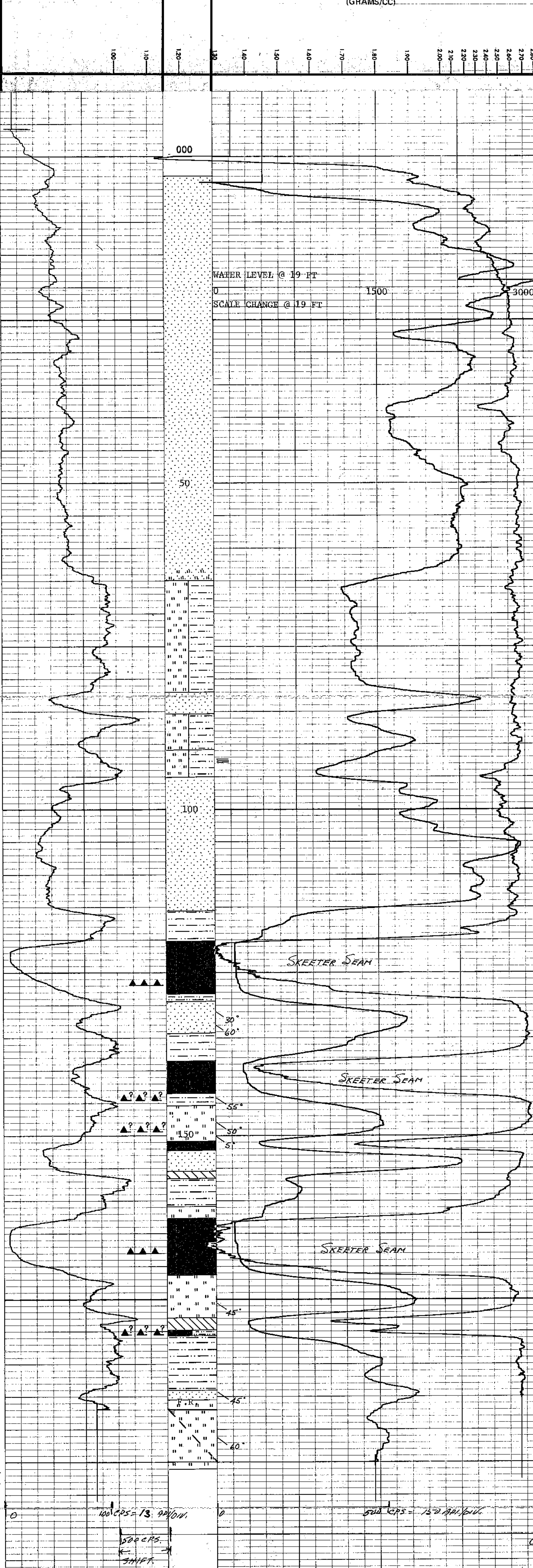
RUN NO.	GENERAL			GAMMA RAY				NEUTRON			
	DEPTHS FROM	DEPTHS TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	00	19	12	3	500	0L	15	3	1000	5L	150
	19	200	12	3	500	0L	15	3	1000	0L	150
1	00	200	12	DENSILOG				3	1000	3 R	19.3 CPS/

REMARKS LOGGED THROUGH DRILL STEM - NO DENSITY SCALE

DENSITY TOOL SERIAL NO 128



### BULK DENSITY (GRAMS/CC)



100 CPS = 13 API UNITS  
500 CPS = 150 API UNITS

Grid Reference: 47991 N 77911 E .

Date Commenced: Jan. 30/75 Date Completed: Jan. 31/75

Collar R.L.: 4131 ft. Standard Datum.

Total Depth: 201 ft.

Drilled by: Canadian Longyear Limited

For: Coalition Mining Ltd.

Using: Longyear Model 38 Unitised Rig - HQ T.T.


Radiation Logs: Gamma Ray, Neutron and Density

By: Roke Oil Enterprises Ltd.

Logged by: G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Remarks
Skeeter	4003.00	8.00	6.7%	Faulted
Skeeter	3987.70	4.90	100% )	Fault Repetitions
			)	
Skeeter	3959.70	8.80	91.5% )	

				ASH % CUMULATIVE FROM FLOOR		
SKEETER SEAM		WT %	ASH %	C.S.No.	INCL. BANDS	EXCL. BANDS
120.00	 <p>8.00 (5.66 TRUE)</p>					
128.00			9.8	7		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-30**

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S.№	INCL. BANDS	EXCL. BANDS
					14.0	3.5		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-30**

				ASH % CUMULATIVE FROM FLOOR				
SKEETER SEAM				WT %	ASH %	C.S. NO.	INCL. BANDS	EXCL. BANDS
162.50								
s		2.46			13.0	6.5	10.5	
164.96								
s		3.61			2.8	8		
168.57								
s		1.37			9.6	7.5		
169.94								
170.43		0.49			45.4	1		
171.30		0.87			13.4	7		

Prepared by:  
**CLIFFORD McELROY & ASSOCIATES PTY. LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH P1-30**

Analytical Results

D.D.H. P1-30

<u>Sample No.</u>	<u>Seam</u>	<u>Interval (feet)</u>
<u>574</u>	Skeeter	120.00 - 128.00
<u>575</u>	Skeeter*	138.40 - 143.30
576	Skeeter	162.50 - 164.96
577	Skeeter	164.96 - 168.57
578	Skeeter	168.57 - 169.94
579	Skeeter	169.94 - 170.43
580	Skeeter	170.43 - 171.30

\*1) Seam repetition due to faulting.



COALITION MINING

February 27, 1975

SKR Cores (HQ TT)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Ash %</u>	<u>B.T.U.</u>	<u>F.S.I.</u>
<u>SKR 574</u> 2216	10.0	9.8	13,978	7
<u>SKR 575</u> 2217	4.8	14.0		3 1/2
<u>SKR 576</u> 2218	12.8	13.0		6 1/2
<u>SKR 577</u> 2219	11.6	2.8		8
<u>SKR 578</u> 2220	10.8	9.6		7 1/2
<u>SKR 579</u> 2221	7.6	45.4		1
<u>SKR 580</u> 2222	6.4	13.4		7
2241 Comp. of SKR 576, 577, 578, 579 & 580		10.5	13,930	8

P1-30 - 1 -

## SUKUNKA D.D.H. P1-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
OVERBURDEN	3.00	3.00		No core to 6'
SANDSTONE, very fine to fine grained, top 15' fine to medium grained and lower 2' grading to siltstone; light grey colour. Occassional phases of cross-bedding, otherwise bedding even to massive in part. Occassional sub-vertical to vertical joint; upper 10' slightly weathered.	61.85	64.85	58.85	
SILTSTONE AND MUDSTONE INTERBEDS, mid grey, graded bedding common within phases; phase thickness of each lithology ranging from 0.02' to 0.15', with minor zones of laminite.	17.15	82.00	17.01	
SANDSTONE, fine grained, light grey, massive.	3.35	85.35	3.35	
SILTSTONE AND MUDSTONE INTERBEDS, as above.	5.40	90.75	5.40	
SILTSTONE AND MUDSTONE, laminated.	4.25	95.00	4.25	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
SANDSTONE, fine grained, light grey, coaly wisps throughout as discrete lenses or on bedding planes. Cross bedded and evenly bedded.	20.30	115.30	19.95	
MUDSTONE, dark grey, slightly weathered. 0.15' coal at 119 ft.	4.70	120.00	4.40	Seam roof
<u>COAL</u> , dull and bright.	8.00	128.00	1.20	SKEETER SEAM Fault established
MUDSTONE, dark grey, rare carbonaceous wisps.	1.20	129.20	1.20	Seam floor
SANDSTONE, very fine to fine grained, light grey, calcite filled joints present. Dipping 30° at 131', and 60° at 133'. Tension planes, folded(?)	4.90	134.10	4.20	
MUDSTONE, silty, mid to dark grey. Calcite filled, slickensided joint/fractured surfaces.	4.30	138.40	3.30	Seam roof
<u>COAL</u> , dull with minor bright bands. Fractured and broken throughout.	4.90	143.30	4.90	SKEETER SEAM

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, mid grey. Core broken throughout; slickensided surfaces, dip of bedding 55°.	1.90	145.20	1.90	Seam floor Fault possible
SILTSTONE, light grey, fractured; slickensided surfaces and tension fractures; bedding dipping 50° at 148'. Joints calcite filled. Zone of intense deformation ends at 149', beds dip 5° at 150'.	5.25	150.45	5.25	Fault possible
<u>COAL</u> , sheared.	1.55	152.00	0.25	
SANDSTONE, fine grained, light grey, coaly wisps.	3.40	155.40	3.40	
CLAYSTONE, dark grey to carbonaceous sheared.	1.00	156.40	1.00	
MUDSTONE, dark grey to carbonaceous.	4.35	160.75	4.35	
SILTSTONE, dark grey, coaly wisps.	1.75	162.50	0.95	Seam roof

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
<u>COAL</u> , intensely sheared, plies unidentifiable.	2.46	164.96	2.25 )	
dull with minor bright bands, moderately sheared.	3.61	168.57	3.30 )	
extremely sheared.	1.37	169.94	1.25 )	SKEETER SEAM
stonny, containing band of bright coal 0.08'.	0.49	170.43	0.45 )	Positive fault
dull and bright.	0.87	171.30	0.80 )	
SILTSTONE, light grey, grading from mudstone in upper 1'. Slickensided fracture planes present but not common. Bedding dipping at 45°.	6.30	177.60	6.10	Seam Floor
CLAYSTONE, dark grey to carbonaceous, rock fractured throughout.	2.30	179.90	2.30	Possible fault
<u>COAL</u> , with minor rock bands, broken.	0.60	180.50	0.60	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Footage Recovered (ft)	Remarks
MUDSTONE, mid grey, slickensided slip planes throughout. Becoming silty toward base of unit.	8.00	188.50	8.00	
SANDSTONE, light grey, very fine grained; calcareous. Dipping 45°.	1.80	190.30	1.80	
SILTSTONE, mid to light grey, calcite filled joints throughout, some slickensided. Occassional sandy phase. Generally dipping 60° where observable.	10.70	201.00	9.85	T.D.

Grid Reference 48657.0 N 77698.0 E  
Exploration Grid Reference A + 450'N / I + 375'E

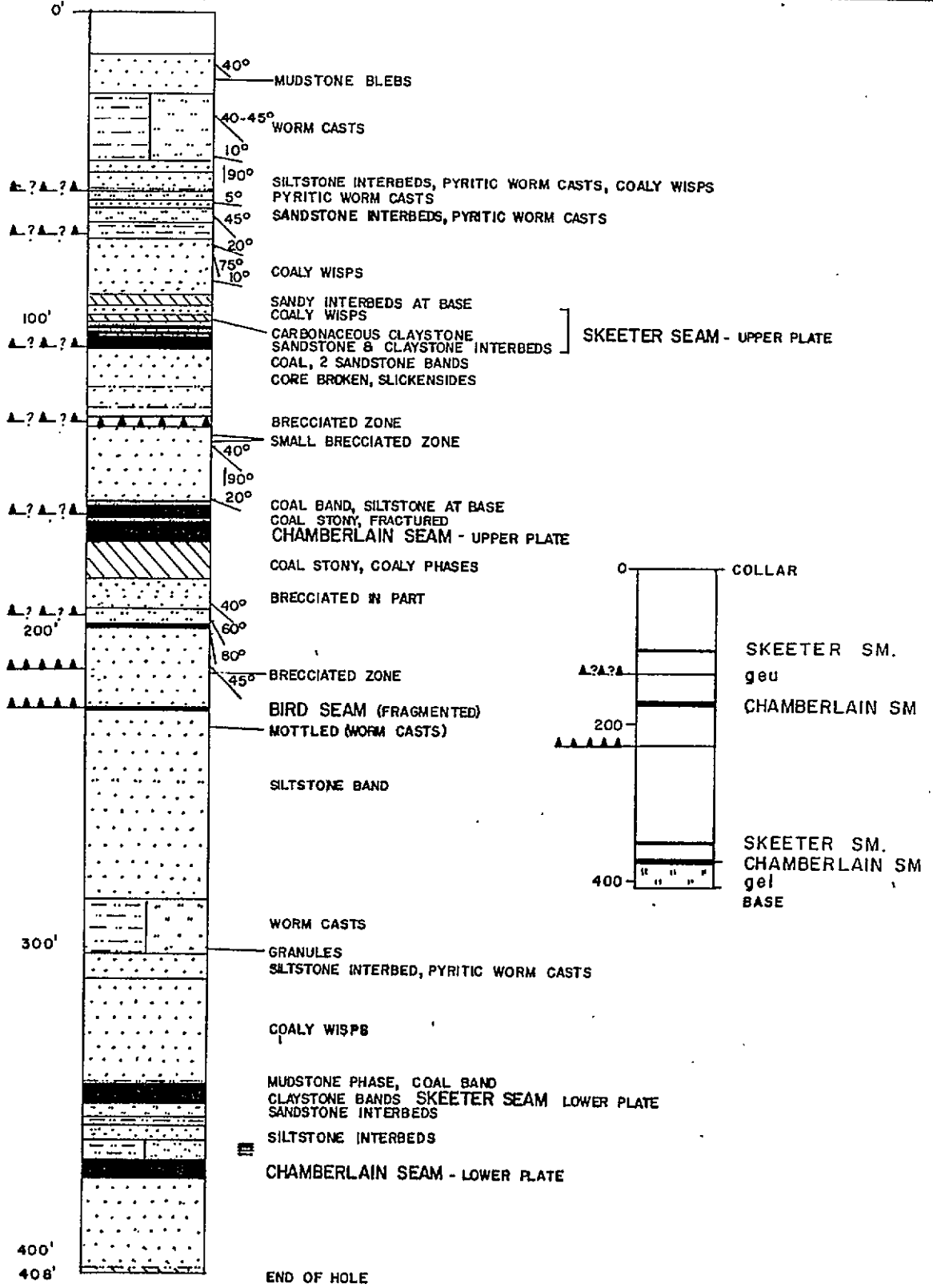
Date Commenced 2nd Oct., 1971 Completed 5th Oct., 1971

Collar R.L. 4094.6 ft. Standard Datum  
Total Depth 408.0 ft. Electrically Logged Yes/~~No~~

Drilled by Connors Drilling Ltd.  
For Coalition Mining Limited  
Logged by F.H.S. Tebbutt

COAL SEAM INTERSECTIONS


Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain - upper plate	3910.7 ft.	26.60		Not calculated - faulted
Skeeter - lower plate	3742.4 ft.	7.15	78%	
Chamberlain - lower plate	3718.2 ft.	5.99	80%	





SKEETER SEAM  
UPPER PLATE

ASH %  
CUMULATIVE  
FROM FLOOR

	WT%	ASH%	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
101.07					
	2.43	NOT		ANALYSED	
	4.81	not		analysed	
108.31					

Prepared by:  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
for

SEAM SECTIONS  
DDH C-30

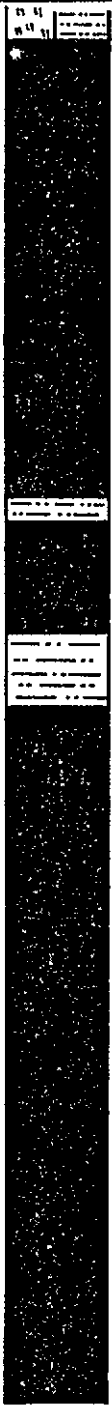
COALITION MINING LIMITED

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DATE Jan '72

SCALE: 1' to 2'

PAGE 1 of 1

			ASH % CUMULATIVE FROM FLOOR			
CHAMBERLAIN SEAM UPPER PLATE		WT %	ASH %	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
157.30						
		15.72	NOT	ANALYSED		

Continued

			ASH % CUMULATIVE FROM FLOOR		
CHAMBERLAIN SEAM UPPER PLATE	WT %	ASH %	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
Continuation					
173.02 - 					
	10.88	NOT	ANALYSED		
183.90 - 					

Prepared by:  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED  
 DRAWN BY pm DATE Jan '72

SEAM SECTIONS  
 DDH C-30

SCALE: 1" to 2'

PAGE 2 of 2

STRATIGRAPHIC LOG  
SUKUNKA D.D.II. C-30

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 14.0 ft.	GETHING FM.	
	SANDSTONE, grey, fine grained, quartz lithic, dip angle 40 <sup>o</sup> , mud blebs at 23'.		26.0
	SILTSTONE AND MUDSTONE INTERBEDS, core broken in part, no slickensides, worm casts. Dip 40-45 <sup>o</sup> lessening to base.		48.0
	SANDSTONE, grey, fine grained, quartz-lithic, dip 10 <sup>o</sup> .		52.0
Fault, possible	SANDSTONE, fine, silty interbeds, 0.15' fractured mudstone band at 50', pyritic worm casts, coaly wisps and irregular masses.		58.0
Fault, possible	SILTSTONE, grey, sandy interbeds, pyritic worm casts, from 58' to 61'. Beds dip from 10 <sup>o</sup> to vertical with slickensides. Beds below dip 5 <sup>o</sup> . A few calcite veins.		61.0
	SANDSTONE, medium grained.		63.0
	SILTSTONE, grey, sandy interbeds, pyritic worm casts. Dip steepening to 45 <sup>o</sup> at base.		68.0
Fault, possible	MUDSTONE, dark grey, fractures with		

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, possible	slickensides 20° to core axis, core broken, carbonaceous at base (1').	SKEETER SM.	73.0
	SANDSTONE, medium grained, dip starting at 40° steepening to 75° at 83' and abruptly back to 10° at 87' with no brecciation. A little calcite, coaly wisps and partings.		92.0
	CLAYSTONE, carbonaceous, some displacement within the bed itself. Sandy interbeds at base.		95.0
	SANDSTONE, coaly wisps.		98.0
	CLAYSTONE, carbonaceous.		99.0
	SILTSTONE, sandstone and claystone interbeds.		101.0
	COAL, 2 sandstone splits, top one .5', second 1.5', coal at base, shattered and with listric surfaces.		108.5
	SANDSTONE, grey, fine grained, silty interbeds, core broken from 110'-121', calcite fillings, variable dips and slickensides. Mudstone bands at 122' and 128' core broken and brecciated from 132'-134' with other minor zones at 137' and 138.5'. At 142' dip 40°. At 150' beds above met abruptly (at 90°) by beds apparently overfolded with steep dips flexing one way and then the other. Calcite veins and fillings.		

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	Slickensides. At 158' terminates abruptly in coal band (0.1') and siltstone dipping at 20°.		158.0
Fault, possible	<u>COAL</u> , stony, listric surfaces, core fractured.		164.0
	SILTSTONE, grey.		165.0
	<u>COAL</u> , fractured.		171.0
	<u>COAL</u> , stony, coaly phases, fragmented at base.		183.0
	SANDSTONE, grey, variable dips brecciated in parts, calcite fillings and veins throughout.		193.0
	SILTSTONE, grey, dip 40°, core fragmented in part, and brecciated at 193'.		198.0
	<u>COAL</u> , broken.		198.5
	SANDSTONE, medium grained, coaly wisps and partings, carbonaceous claystone bands at 200' and 201'. Dips steepen from 60° at 200' to 80° at 205' and back to 45° at 212'. 1.5' breccia zone at 214' calcite veins below to base.		225.0
Fault, possible	<u>COAL</u> , broken into small pieces.		225.0
	SANDSTONE, grey, medium grained becoming finer. Silty bands at 248'. Mottled (worm casts at 230').		286.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, granules at base.		302.0
	SANDSTONE, grey.		304.0
	SANDSTONE, silty interbeds, pyritic worm casts.		312.0
	SANDSTONE, medium grained, coaly wisps, mudstone at base and coal band within it.		346.0
	<u>COAL</u> .	SKEETER SM.	352.0
	SILTSTONE, sandy interbeds.		357.0
	MUDSTONE, dark grey.		359.5
	SANDSTONE, silty interbeds, fine bedding towards base.		364.0
	LAMINITE, siltstone and mudstone.		370.5
	<u>COAL</u> .	CHAMB. SM.	376.0
	SANDSTONE, grey, medium grained, coal band at 406'.		408.0
			<u>Base of Hole</u>

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No core, tri-cone roller bit.		14.84		
SANDSTONE, grey, fine grained, quartz-lithic, brown stained phases (weathering), band (0.07') mud blebs 8.2' from top. Bedding angle 58° to core axis.	11.61	26.45	11.12	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Some sandy interbeds. Worm casts and mud blebs. From 0.2' to 0.5' core broken, a little calcite at centre where dips of top and bottom half seem discordant. Bedding angle 55° to core axis.	6.44	32.89	6.07	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, a few sandy interbeds. Worm casts and mud blebs. Bedding angle increases to 70° at base. 6.5' from top, two calcite veins along fractures (one along bedding, one at 35° to core axis). Slickensides. Fractures 0.4' apart.	15.63	48.52	14.72	
SANDSTONE, grey, medium grained, quartz-lithic, one fracture with some slickensides at 17° to core axis and 2 fine calcite veins at similar altitude.	4.17	52.69	3.92	



## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, as above.	0.81	53.50	0.76	
MUDSTONE, dark grey, broken in top 0.20' with slickensides.	0.61	54.11	0.57	
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds, pyritic worm casts. 0.09' zone crushed at base.	2.75	56.86	2.59	
SANDSTONE, grey, medium grained, quartz-lithic, coaly wisps towards base.	0.94	57.80	0.89	
MUDSTONE, dark grey.	0.18	57.98	0.17	
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds and phases. Bedding angle at top 57° to core axis, steepening till parallel to core axis and overfolding slightly (slickensides). Abrupt junction (along calcite vein with some slickensides) with beds below dipping at 80° to core axis. Pyritic worm casts. 0.45' zone of broken core 7.1' from top with calcite and slickensides.	7.81	65.79	7.36	

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, some silty interbeds. At 2.6' slickensides along vertical planes, at 3.5' 34° to core axis, at 5' from top, 58° to core axis.	4.89	70.68	4.61	
MUDSTONE, dark grey, some silty interbeds.	0.96	71.64	0.90	
CLAYSTONE, carbonaceous.	0.83	72.47	0.78	
SANDSTONE, grey, medium grained, quartz-lithic, coaly wisps and irregular coaly masses. Calcite veins along bedding, and across bedding at angles within 10° of 90° to bedding. Bedding angles measured from top - at 1.2' - 58°, at 4.2' - 50°, at 6.6' - 34°, at 8.8' - 24°, at 11.9' bedding indistinct but possibly vertical at 13.1' - 24°, at 14.2' - 85° to 90°. Core broken at 9.8' with slickensides on surfaces for 1' either side. Core broken with no slickensides at 14.15'.	17.33	89.80	16.33	
SANDSTONE, grey, medium grained, quartz-lithic, coaly wisps.	1.91	91.71	1.80	

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CLAYSTONE, dark greyish brown, fine sandy interbeds. In top 0.75' bedding severely distorted and possibly displaced. At 1.55' from top bedding angle 82° from core axis.	3.08	94.79	2.90	
SANDSTONE, grey, medium grained, quartz-lithic, coaly wisps and fine carbonaceous phases.	3.04	97.83	2.86	
CLAYSTONE, dark brown, carbonaceous, sandy interbeds and phases towards base. Bedding angle 85-90°, core broken in 0.15' zone with listric surfaces 1.25' from top.	3.24	101.07	3.05	
<u>COAL</u> , mainly dull with minor bright bands.	0.17	101.24	0.17	)
				)
SANDSTONE, grey, medium grained, quartz-lithic, tending carbonaceous.	0.46	101.70	0.46	)
				)
<u>COAL</u> , dull, broken.	0.53	102.23	0.26	)
				)
SANDSTONE, grey, medium grained, quartz-lithic, carbonaceous.	1.27	103.50	1.27	)
				)
<u>COAL</u> , core badly broken, sheared, highly listric surfaces.	4.81	108.31	0.85	)

SKEETER  
SEAM  
upper plat

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds, current bedding. Bedding angle $47^{\circ}$ 1.05' from top, minor? displacement and brecciation at 0.3', 1.1' and 1.9' from top, calcitic fillings throughout, but brecciation with heavy calcitic infillings concentrated at base (0.30'). Bedding angle at base $70^{\circ}$ to core axis. Slickensides throughout.	4.61	112.92	3.27	
MUDSTONE, dark grey, numerous silty interbeds. Bedding angle $85^{\circ}$ - $90^{\circ}$ 0.4' from top increasing to $53^{\circ}$ to core axis with slickensides at 1' from top. Below this core is fragmented.	2.33	115.25	2.16	
SANDSTONE, grey, medium to fine grained, quartz-lithic.	0.46	115.71	0.43	
MUDSTONE, dark grey, core badly broken, listric surfaces at various angles - mostly small in relation to core axis.	3.33	119.04	3.09	
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds, brecciated in top 0.33', heavy vertical calcite vein from 0.75'-0.95' from top and				

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey.	3.21	142.70	2.98	
SILTSTONE, grey, mudstone interbeds and fine sandy interbeds. Some irregular sandy masses towards base. Bedding angle $43^{\circ}$ to core axis.	6.08	148.78	5.68	
MUDSTONE, dark grey, heavy calcite vein at top.	0.54	149.32	0.54	
SILTSTONE AND MUDSTONE INTERBEDDED, siltstone grey and mudstone dark grey interbedded, some sandy interbeds. Bedding angle at top $50^{\circ}$ to core axis. Beds below this in recumbent folds with local displacements and brecciation, numerous calcite veins and heavy infillings, calcite crystals in large cavity (width of core x 0.2') at 1.2' from base.	7.98	157.30	7.98	
<u>COAL</u> , highly sheared with listric surfaces between $45^{\circ}$ and $0^{\circ}$ to core axis.	4.74	162.04	1.90	)
MUDSTONE, dark grey.	0.29	162.33	0.29	)
<u>COAL</u> , highly sheared, listric surfaces, badly broken.	1.10	163.43	0.44	)
				) CHAMBERI SEAM upper pl

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remark</i>
MUDSTONE, dark grey.	0.78	164.21	0.78 )	
			)	
<u>COAL</u> , highly sheared, listric surfaces core badly broken in most of length, bedding angle 50 <sup>o</sup> to core axis. 0.6' from top and 65 <sup>o</sup> 3.3' from top.	8.81	173.02	3.53 )	
			)	
<u>COAL</u> , highly sheared and badly broken. Shear angle at 1.15' from top 35 <sup>o</sup> to core axis.	4.00	177.02	1.60 )	
			)	
<u>COAL</u> , sheared at 50 <sup>o</sup> to core axis, cleat destroyed.	4.40	181.42	1.76 )	
			)	CHAMBERLA
SANDSTONE, grey, fine grained, quartz-lithic, coaly wisps and irregular calcitic veining.	0.45	181.87	0.45 )	SEAM upper pla
			)	
<u>COAL</u> , sheared and very friable, cleat destroyed.	0.72	182.59	0.29 )	
			)	
CLAYSTONE, carbonaceous.	0.56	183.15	0.56 )	
			)	
<u>COAL</u> , powdered.	0.75	183.90	0.30 )	
			)	
			)	

## SUKUNKA D.D.H. C-30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine to medium grained, quartz-lithic, coaly wisps and irregular masses, calcite veins numerous. 1' breccia zone 4.6' from top, core broken in part with slickensided mudstone bands at 0.2', 1.35', and 3.0' from base. Bedding angle 45 <sup>0</sup> to core axis 3.7' from base.	8.42	192.32	8.42	
MUDSTONE, dark grey, brecciated in top 0.5', vertical calcite vein. Slickensided along oblique shears below this.	1.02	193.34	1.02	
MUDSTONE, dark grey, sheared obliquely, slickensides, broken into small fragments at base.	0.27	193.61	0.27	
SANDSTONE, grey, fine grained, quartz-lithic, brecciated and broken in top 1', with calcite infillings. Bedding angle below 58 <sup>0</sup> to core axis. Junction with mudstone below oblique (35 <sup>0</sup> to core axis) and slickensided.	2.27	195.88	2.14	
MUDSTONE, dark grey.	0.23	196.11	0.22	
<u>COAL</u> , core broken and slickensided.	2.30	198.41	0.19	

## SUKUNKA D.D.H. 30

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
others parallel to bedding below this with perpendicular offshoots.	2.60	121.44	2.41	
MUDSTONE, dark grey.	0.84	122.48	0.78	
SANDSTONE, grey, fine grained, quartz-lithic, silty phase at top and silty interbeds below. A few oblique calcite veins.	3.00	125.48	2.78	
MUDSTONE, dark grey.	2.65	128.13	2.46	
SILTSTONE, grey, sandy interbeds, some irregular mudstone masses, bedding angle 40 <sup>o</sup> to core axis.	2.33	130.46	2.16	
MUDSTONE, dark grey, top 1.5' fragmented and containing pieces of brecciated mudstone with calcite infillings, core broken in bottom 1.7'.	5.72	136.18	5.30	
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds, subvertical calcite veins and infillings throughout, brecciated zone from 1.3' to 2.1' from top.	3.31	139.49	3.07	



Grid Reference 48321.8 N 77152.5 E  
Exploration Grid Reference A + 450'N / 1 - 1700'E

Date Commenced 7th Oct., 1971 Completed 9th Oct., 1971

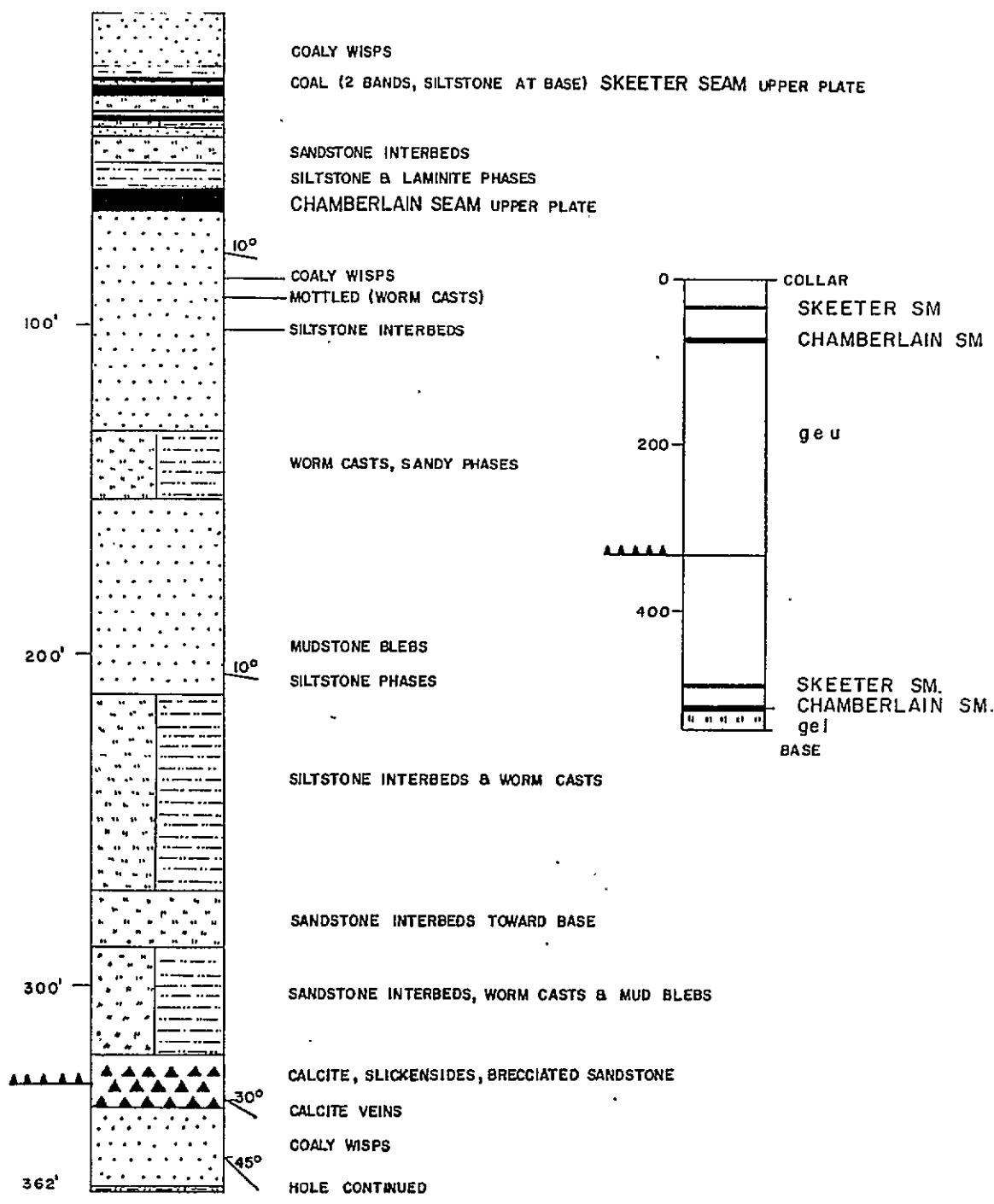
Collar R.L. 4119.3 ft. Standard Datum  
Total Depth 541.0 ft. Electrically Logged Yes/~~No~~

Drilled by Connors Drilling Ltd.  
For Coalition Mining Limited

Logged by F.H.S. Tebbutt

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter - upper plate	4087.2 ft.	4.89	44%	) ) ) ) Close to Chamberlain Fault
Chamberlain - upper plate	4053.5 ft.	6.80	75%	
Skeeter - lower plate	3624.6 ft.	6.85	59%	
Chamberlain - lower plate	3600.1 ft.	5.32	49%	

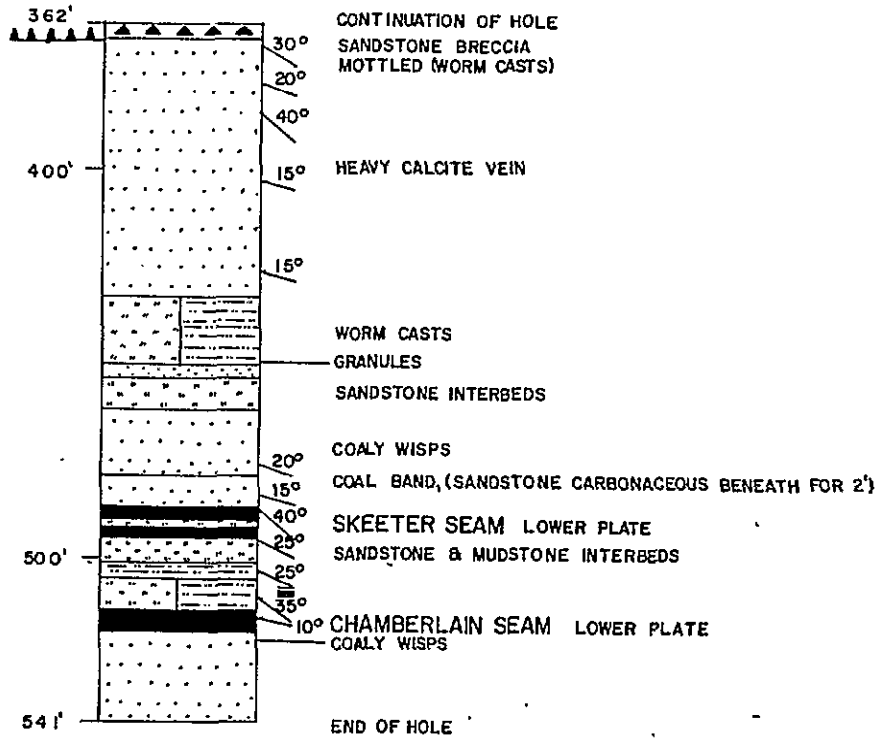


DETAIL OF GETHING FORMATION  
 SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH C-31



DETAIL OF GETHING  
FORMATION  
SCALE: 1" to 50'

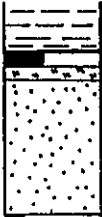

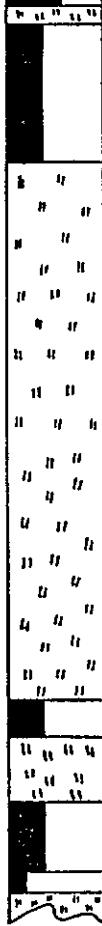
SCALE: 1" to 200'

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STRATIGRAPHIC LOGS  
DDH C-31

SKEETER SEAM  
UPPER PLATE

ASH %  
CUMULATIVE  
FROM FLOOR

		WT%	ASH%	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
27.21					15.4	
		4.89	15.4	5½		
32.10						

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for  
COALITION MINING LIMITED  
DRAWN BY pm DATE Jan '72

SEAM SECTIONS  
DDH C-31

SCALE: 1" to 2'

PAGE 1 of 1

ASh %  
CUMULATIVE  
FROM FLOOR

CHAMBERLAIN SEAM  
UPPER PLATE

		WT%	ASH%	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
59.04		-	11.0	1½	11.0	
65.84						

Prepared by:  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

SEAM SECTIONS

for

DDH C-31

COALITION MINING LIMITED

DRAWN BY pm

DATE Jan '72

SCALE: 1" to 2'

PAGE 1 of 1

SKEETER SEAM  
LOWER PLATE

ASH %  
CUMULATIVE  
FROM FLOOR

	WT%	ASH%	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
487.84	2.17	-	6.7	8	
	4.68	-	87.4	0	
494.69					

Prepared by:

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

DRAWN BY pm

DATE Jan '72

SEAM SECTIONS

DDH C-31

SCALE: 1" to 2'

PAGE 1 of 1

CHAMBERLAIN SEAM  
LOWER PLATE

ASH %  
CUMULATIVE  
FROM FLOOR

	WT %	ASH %	C. S. N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
513.86				5.3	
5.32	-	5.3	7		
519.18					



Prepared by:  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

SEAM SECTIONS

for

DDH C-31

COALITION MINING LIMITED

DRAWN BY pm

DATE Jan '72

SCALE: 1' to 2'

PAGE 1 of 1

Telegrams and Cables:  
"Visor", Sydney

# CARGO SUPERINTENDENTS

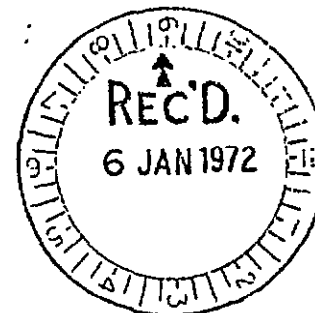
Scottish House,  
19 BRIDGE ST.,  
SYDNEY, 2000

Telephone: 241 1105

CO. (A/SIA.) PTY. LTD.

## Certification

This is to Certify



APPLICANT: COALITION MINING

REPORT ON: SUKUNKA SAMPLE NO. 176-178  
CORE NO. C31  
SKEETER UPPER SEAM (UPPER PLATE)

REPORT NO. K71-1856

RECEIVED: 17. 11. 1971

REPORTED: 31. 12. 1971



This Laboratory is Registered by the  
National Association of Testing Authorities  
Australia. The tests reported herein have  
been performed in accordance with the  
terms of registration.

For  
CARGO SUPERINTENDENTS CO. (A/SIA.) PTY. LTD.

*A. R. A. C. I.*  
A. R. A. C. I. Chief Chemist.



INTRODUCTION:

One (1) Coal Sample designated CORE NO. C31 SKEETER UPPER SEAM was received on 17. 11. 1971 from Clifford McElroy & Associates.

METHOD:

The Coal Sample No. 176-178 was hand crushed to ¾", sized at 30 mesh BSS and the +30 mesh BSS fraction washed in organic liquids at 1.30 to 1.60 specific gravity in 0.05 steps.

The float and sink fractions, raw -30 mesh coal fraction were weighed, prepared and analysed for Ash and Crucible Swelling Number and the composite raw coal sample reconstituted and the true specific gravity of the sample determined.

A cumulative Floats 1.60 SG fraction was prepared for Sample No. 176-178 and the analysis are given in this report.

NOTE:

The sample weight has not been adjusted to compensate for core loss.

RESULTS:

TABLE 1 : gives the sizing, washability and analytical data for the sample after hand crushing to ¾" top size.

TABLE 1

WASHABILITY DATA FOR SAMPLE NO. 176-178 (after hand crushing to ¾")

<u>FRACTION</u>	<u>INDIVIDUAL</u>				<u>CUMULATIVE</u>		
	<u>WEIGHT</u>	<u>WT.%</u>	<u>ASH%</u>	<u>C.S.NO.</u>	<u>WT. %</u>	<u>ASH%</u>	<u>C.S.NO.</u>
F1.30 SG	701	52.6	1.9	8	52.6	1.9	8
S1.30 - F1.35 SG	190	14.3	5.0	7½	66.9	2.6	8
S1.35 - F1.40 SG	95	7.1	9.0	1	74.0	3.2	7
S1.40 - F1.45 SG	89	6.7	14.8	1	80.7	4.1	7
S1.45 - F1.50 SG	41	3.1	19.3	1	83.8	4.7	6½
S1.50 - F1.55 SG	37	2.8	22.8	1	86.6	5.3	6½
S1.55 - F1.60 SG	8	0.6	28.5	1	87.2	5.5	6
S1.60 SG	172	12.8	84.3	0	100.0	15.5	5½
-30 Mesh RC	92	6.5	13.2	8			

Total Weight of Sample = 1425 grams  
True Specific Gravity = 1.376  
Thickness = 4.89'

ANALYSIS OF F1.60 SG FRACTION OF SAMPLE NO. 176-178

Yield %	87.2
Air Dried Moisture %	1.0
Ash %	5.3
Volatile Matter %	23.6
Fixed Carbon %	70.1
Total Sulphur %	0.60
C.S.NO.	6½
Calorific Value	14470 BTU/LB
Phosphorus %	0.007

SYDNEY  
31st December 1971

Telegrams and Cables:  
"Visor", Sydney

Telephone: 241 1105

# C A R G O SUPERINTENDENTS

CO. (A/SIA.) PTY. LTD.

Scottish House,  
19 BRIDGE ST.,  
SYDNEY, 2000

## Certification

This is to Certify



APPLICANT: COALITION MINING

REPORT ON: SUKUNKA SAMPLE NO. 179-180  
CORE NO. C31  
CHAMBERLAIN UPPER SEAM (UPPER PLATE)

REPORT NO. K71-1857

RECEIVED: 17. 11. 1971

REPORTED: 31. 12. 1971



This Laboratory is Registered by the  
National Association of Testing Authorities  
Australia. The tests reported herein have  
been performed in accordance with the  
terms of registration.

*A. Bradley*  
A.R.A.C.I. Chief Chemist.

For  
CARGO SUPERINTENDENTS CO. (A/SIA.) PTY. LTD.

*L. K. S. S. S.*

INTRODUCTION:

One (1) Coal Sample designated CORE NO. C31 CHAMBERLAIN UPPER SEAM was received on 17. 11. 1971 from Clifford McElroy & Associates.

METHOD:

The Coal Sample No. 179-180 was hand crushed to  $\frac{3}{4}$ " , sized at 30 mesh BSS and the +30 mesh BSS fraction washed in organic liquids at 1.30 to 1.60 specific gravity in 0.05 steps.

The float and sink fractions, raw -30 mesh coal fraction were weighed, prepared and analysed for Ash and Crucible Swelling Number and the composite raw coal sample reconstituted and the true specific gravity of the sample determined.

A cumulative Floats 1.60 SG fraction was prepared for Sample No. 179-180 and the analysis are given in this report.

NOTE:

The sample weight has not been adjusted to compensate for core loss.

RESULTS:

TABLE 1 : gives the sizing, washability and analytical data for the sample after hand crushing to  $\frac{3}{4}$ " top size.

TABLE 1

WASHABILITY DATA FOR SAMPLE NO. 179-180 (after hand crushing to  $\frac{3}{4}$ " )

FRACTION	INDIVIDUAL				CUMULATIVE		
	WEIGHT	WT.%	ASH%	C.S.NO.	WT. %	ASH%	C.S.NO.
F1.30 SG	616	20.2	1.5	4½	20.2	1.5	4½
S1.30 - F1.35 SG	1560	51.0	2.3	1	71.2	2.1	2
S1.35 - F1.40 SG	218	7.1	6.4	0	78.3	2.5	2
S1.40 - F1.45 SG	50	1.6	10.5	0	79.9	2.6	2
S1.45 - F1.50 SG	29	0.9	14.0	0	80.8	2.8	2
S1.50 - F1.55 SG	9	0.3	17.9	0	81.1	2.8	2
S1.55 - F1.60 SG	7	0.2	25.5	0	81.3	2.9	2
S1.60 SG	567	18.7	47.5	0	100.0	11.2	1½
-30 Mesh RC	234	7.1	7.4	2			

Total Weight of Sample = 3290 grams  
True Specific Gravity = 1.332  
Thickness = 6.80'

ANALYSIS OF F1.60 SG FRACTION OF SAMPLE NO. 179-180

Yield %	81.3
Air Dried Moisture %	1.0
Ash %	2.9
Volatile Matter %	22.6
Fixed Carbon %	73.5
Total Sulphur %	0.43
C.S.NO.	2½
Calorific Value	14850 BTU/LB
Phosphorus %	0.012

SYDNEY  
31st December 1971

STRATIGRAPHIC LOG  
SUKUNKA D.D.H. C-31

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Dips 0°-10°	No core to 7.0 ft.		
	SANDSTONE, grey, medium grained quartz-lithic, coaly wisps.	GETHING FM.	23.0
	MUDSTONE, dark grey, 0.3' coal at base.		25.6
	SILTSTONE, grey, coal band (0.16')? 0.2' from top.		27.0
	<u>COAL.</u>	SKEETER SM.	31.3
	SILTSTONE, grey, sandstone at top, mudstone towards base. Coal band (0.3')? 0.5' from base.		38.0
	<u>COAL.</u>		39.0
	SILTSTONE AND MUDSTONE INTERBEDS.		40.0
	SANDSTONE, fine, brown, current bedded.		43.0
	SILTSTONE, grey, sandstone interbeds.		51.0
MUDSTONE, dark grey, fine siltstone interbeds, laminite phases, mudstone at base.		60.0	
<u>COAL.</u>	CHAMB. SM.	66.0	

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, grey, medium becoming fine grained, quartz-lithic, coaly wisps at 87', mottled (worm casts) at 92', 2 narrow siltstone interbeds at 102'.		133.0
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, sandstone phases.		153.0
	SANDSTONE, grey, fine grained, quartz-lithic. Mudstone blebs at 197', 202', 203', 204', 207'. Siltstone phases from 209' to base.		212.0
	SILTSTONE AND MUDSTONE INTERBEDS, sandstone interbeds, worm casts.		271.0
	SILTSTONE, grey, sandstone interbeds towards base.		288.0
	SILTSTONE AND MUDSTONE INTERBEDS, sandstone interbeds and phases, some mudstone blebs and worm casts.		321.0
Fault, possible	SANDSTONE, breccia, highly disturbed, much calcite veining and infilling, slickensides.		336.0
	SANDSTONE, grey, medium grained, coaly wisps, numerous calcite veins, irregular and at various angles, listric surfaces. Dip 30° at top, 45° to base.		361.0
	MUDSTONE, dark 'grey, highly disturbed, listric surfaces.		362.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SANDSTONE, breccia, core broken, calcite veining.		366.0
	SANDSTONE, grey, medium becoming finer, mottled (worm casts) at 370', current bedding, dip 30° at top, 20° at 380', 40° at 388', heavy calcite vein at 400'. Dip 15° at 403' and to base. Towards base some calcite filled fractures at 55° dip.		433.0
	SILTSTONE AND MUDSTONE INTERBEDS, sandstone interbeds, worm casts, granules at base.		450.0
	SANDSTONE, fine, grey.		453.0
	SILTSTONE, grey, sandstone interbeds and phases.		461.0
	SANDSTONE, coaly wisps, coaly band at 478', carbonaceous for 2' beneath, coal band at 486', Dip 20°.		487.5
	<u>COAL.</u> )	SKEETER SM.	490.0
	) SILTSTONE, mudstone interbeds, dip 15° at top, 40° at base, calcite filled tension cracks, listric surfaces. )		492.5
	) <u>COAL</u> , broken. )		494.5
	SILTSTONE, sandstone and mudstone interbeds, dip 25°.		502.0
	MUDSTONE, dark grey and soft mud.		505.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	LAMINITE, siltstone and mudstone, dips 25° at top, 35° at middle, 10° at base.		514.3
	<u>COAL.</u>	CHAMB. SM.	519.3
	SANDSTONE, coaly wisps at top.		541.0
			<u>Base of Hole</u>

## SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No core; tri-cone roller bit		7.00		
SANDSTONE, grey fine grained becoming medium grained towards base, quartz-lithic, some current bedding, core broken into lengths averaging about 0.2' in top 5', no calcite or slickensides, coaly wisps, irregular masses.	15.92	22.92	15.92	
CLAYSTONE, dark brown, carbonaceous, fine silty interbeds, two pennybands coal in bottom 0.05'. Bedding angle 80° to core axis.	2.55	25.47	2.55	
<u>COAL</u> , mainly dull with minor bright bands.	0.19	25.66	0.19	)
SILTSTONE, grey, brown and carbonaceous at top with a few coaly wisps.	0.14	25.80	0.14	) SKEETER SEAM
SANDSTONE, grey, fine grained, quartz-lithic, silty at top and base, coaly wisps and irregular coaly masses.	1.41	27.21	1.41	) upper plate
				)



SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<p><u>COAL</u>, dull, top 0.04' appears weathered, from 0.2' to 0.35' there are joint planes at 20° to core axis (no slickensides).</p>	0.32	27.53	0.32	
<p>mainly dull with minor bright bands, joint at base at 25° to core axis, core broken in top 0.32'.</p>	0.50	28.03	0.50	
<p><u>COAL</u>, dull and bright, core broken at top and bottom.</p>	2.47	30.50	1.23	SKEETER SEAM
<p>SILTSTONE, grey, becoming carbonaceous.</p>	0.21	30.71	0.21	upper plat
<p><u>COAL</u>, mainly dull with minor bright bands, core badly broken, slickensided fractures 0.25' and 0.65' from top at 55° to core axis.</p>	1.39	32.10	0.69	
<p>SILTSTONE, grey, sandy interbeds and phases in top 3.8' mainly, mudstone interbeds below this, some slump structures, listric surface 0.7' from top at 45° to core axis.</p>	5.56	37.66	5.57	

## SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , mainly dull with minor bright bands, core broken.	0.40	38.06	0.20	)
				)
SILTSTONE, grey, yellow veinlets parallel to bedding at base.	0.68	38.74	0.68	)
				)
<u>COAL</u> , mainly dull with minor bright bands, joint plane at 15° to core axis in top 0.22'. Bedding angle 70° to core axis 0.33' from top.	0.78	39.52	0.39	)
				)
stony with bright bands.	0.20	39.72	0.10	)
				)
SILTSTONE, grey, coaly wisps at top where core broken in top 0.37', sandy interbeds and phases increasing towards base, current bedded calcite vein at 15° to core axis at base.	3.32	43.04	3.40	)
				)
MUDSTONE, grey, silty towards base.	1.35	44.39	1.38	)
				)
MUDSTONE, grey, silty.	0.72	45.11	0.74	)
				)
SILTSTONE, grey, sandy interbeds towards base.	3.75	48.86	3.84	)

SKEETER SEAM  
upper pla

## SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine grained, quartz-lithic, silty interbeds and coaly wisps.	2.79	51.65	2.86	
MUDSTONE, dark grey, silty interbeds and phases. Bedding angle 83° to core axis..	5.98	57.63	6.11	
LAMINITE, siltstone grey and mudstone dark grey, interbedded..	1.10	58.73	1.11	
MUDSTONE, dark grey.	0.31	59.04	0.31	
<u>COAL</u> , stony, sheared, listric surfaces, shattered into small flaky pieces, angle of shearing 70° to core axis.	1.08	60.12	0.98	)
coal type indeterminable, coal sheared with listric surfaces at 90° to core axis, no vertical cleat.	0.19	60.31	0.17	)
mainly dull with minor bright bands. At top a joint plane at 70° and at 0.25' from top a joint plane at 60° to core axis.	0.59	60.90	0.53	) CHAMBERLAIN SEAM upper plat
				)

SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull and bright, joint plane at 45° to core axis.	0.22	61.12	0.20 )	
dull, joint plane at 45° to core axis.	0.17	61.29	) )	
mainly dull with minor bright bands, through this section there are joint planes at 70° to core axis in two opposing directions.	0.82	62.11	) ) )	
dull and bright, joint plane at 40° to core axis.	0.37	62.48	) )	
dull, shear planes (slickensides) at 60° in one direction and 75° to core axis in opposing direction.	0.19	62.67	) ) )	CHAMBERLA SEAM
dull and bright.	0.37	63.04	) )	upper pla
mainly dull with minor bright bands.	0.33	63.37	) ) )	
dull and bright, joint plane at 25° to core axis 0.20' from top.	0.45	63.82	) ) )	

SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , mainly dull with minor bright bands.	0.34	64.16	0.31	)
dull and bright, joints at 60° to core axis, vertical cleat absent.	0.19	64.35	0.17	)
mainly dull with minor bright bands, joint plane parallel to bedding at 83° to core axis.	0.30	64.65	0.27	)
dull and bright, joint plane at 80° to core axis at base.	0.11	64.76	0.10	) CHAMBERLAIN SEAM
dull	0.12	64.88	0.11	) upper plate
bright and dull.	0.28	65.16	0.25	)
mainly dull with minor bright bands, sheared at 85°-90° to core axis, vertical cleat absent.	0.26	65.42	0.23	)
dull and bright, joint plane at 75° to core axis.	0.23	65.65	0.21	)
mainly dull with minor bright bands, sandy.	0.19	65.84	0.17	)

## SUKUNKA D.D.H. C-31

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, medium grained; quartz-lithic, and few coaly wisps. Bedding angle $85^{\circ}$ to core axis. Some current bedding, from 0.35' to 2.4' from top core broken at various angles in different directions, some angles curved and very oblique to core axis.	15.81	81.65	15.56	
SANDSTONE, grey, medium grained, quartz-lithic, coaly wisps and partings, mottled (worm casts) from 10.4' to 12.5' from top. Bedding angle $83^{\circ}$ to core axis. Current bedded.	18.37	100.02	18.08	
SANDSTONE, grey, fine grained, quartz-lithic, current bedded, and few silty interbeds, in top 2' core fractured along planes at $15^{\circ}$ - $20^{\circ}$ to core axis, fracture surfaces iron stained. Bedding angle $82^{\circ}$ to core axis.	18.83	118.85	18.53	
SANDSTONE, grey, fine grained, quartz-lithic. Bedding angle $83^{\circ}$ to core axis.	14.76	133.61	14.53	

Grid Reference 46417.8N 78719.5E

Exploration Grid Reference B/1

Date Commenced 12th March, 1970 Completed 15th March, 1970

Collar R.L. 4169.8 Standard Datum

Total Depth 498 Electrically Logged Yes/No

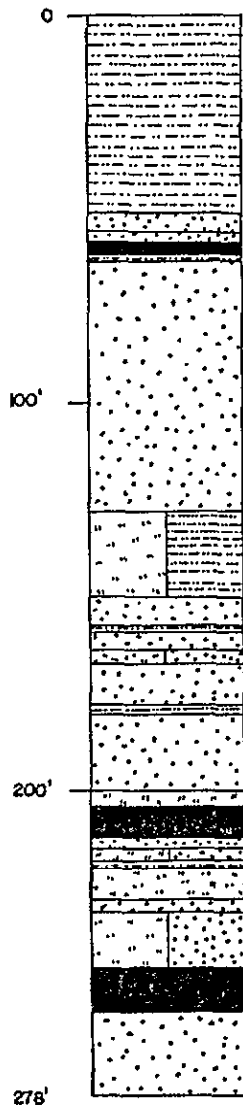
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3958.9	11.6	12%	
Chamberlain Upper Plate	3912.9	9.6	54.5%	
Chamberlain Lower Plate	3792.7	11.7	72%	



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)  
PEBBLES  
BIRD SEAM  
MOTTLED (WORM CASTS)  
PEBBLES

WORM CASTS

GRANULES

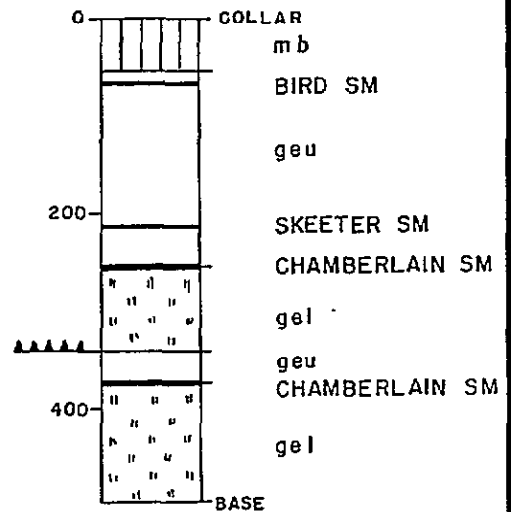
COALY WISPS

SILTSTONE, MUDSTONE BANDS & PHASES  
SKEETER SEAM  
COALY BANDS

CHAMBERLAIN SEAM

MOTTLED (WORM CASTS)

HOLE CONTINUED



DETAIL OF GETHING  
FORMATION  
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
for  
COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
DDH S-14



# COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971



P. O. Box 8596  
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:  
BRAMEDA RESOURCES LIMITED  
7th Floor, Board of Trade Bldg.  
1177 West Hastings Street  
Vancouver 1, B. C.

Sample identification:  
Sample No. SK-14-1

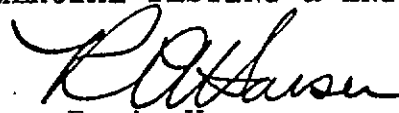
Report No. 67-0571  
67-0572

SPECIFIC GRAVITY	AIR DRY BASIS								
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	83.5	0.97	5.69	25.02	68.32	14447	0.52	7½
1.60		<u>16.5</u>	<u>0.94</u>	<u>28.19</u>				<u>0.42</u>	
		100.0	0.97	9.40				0.50	

% ADM = % Moisture in air dried sample

Weight of as received sample = 1.177 lbs.

Respectfully submitted,  
COMMERCIAL TESTING & ENGINEERING CO.

  
R. A. Houser,  
District Manager

RAH/rh



125 East 4th Ave., Vancouver 10, B. C. Phone 876-4111 — Telex 04-50353

REPORT OF Chemical Analysis FILE NO. 465 - 11037  
 AT Vancouver Laboratory DATE March 20, 1970  
 PROJECT Coal Sample REPORT NO.  
 REPORTED TO Brameda Resources Ltd., ORDER NO.  
 7th Floor - 1177 West Hastings Street  
 Vancouver, B.C.

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN	SEAM		
	444.5 - 453.0	369.5 - 381.0	246.0 - 257.0	227.0 - 237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams

SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG  
SUKUNKA D.D.H. S-14

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 26.0 ft.		26.0
	MUDSTONE, ash bands, pebbles at base.	MOOSEBAR	52.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING	56.0
	SANDSTONE.		59.0
	<u>COAL.</u>	BIRD SEAM	61.0.
	MUDSTONE.		63.0
	SANDSTONE, mottled (wormcasts), 69'. Pebbles 85'.		128.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		150.0
	SANDSTONE, mudstone band 15'.		163.0
	LAMINITE, siltstone and mudstone, mudstone base.		167.0
	SANDSTONE, coaly wisps, mudstone band 179'.		200.0
	SILTSTONE WITH MUDSTONE PHASES, mudstone bands at 203' and 201'.		204.0
	<u>COAL.</u>	SKEETER SM	211.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, fine grained.		215.0
	LAMINITE, siltstone and mudstone, mudstone and coal partings at base.		220.0
	SILTSTONE, mudstone phases.		228.0
	SANDSTONE, fine grained.		231.0
	LAMINITE, siltstone and mudstone,		246.0
	<u>COAL.</u>	CHAMB. SM.	257.0
	SANDSTONE, coarse at top, becoming fine, 263' mottled (worm casts).		278.0

BORE NUMBER S-49

Grid Reference        48179.6N    77716.0E

Exploration Grid Reference    A/1+200'

Date Commenced    18th November, 1970    Completed    20th November, 1970

Collar R.L.        4117.3'                    Standard Datum

Total Depth        519'                      Electrically Logged    Y~~es~~/No

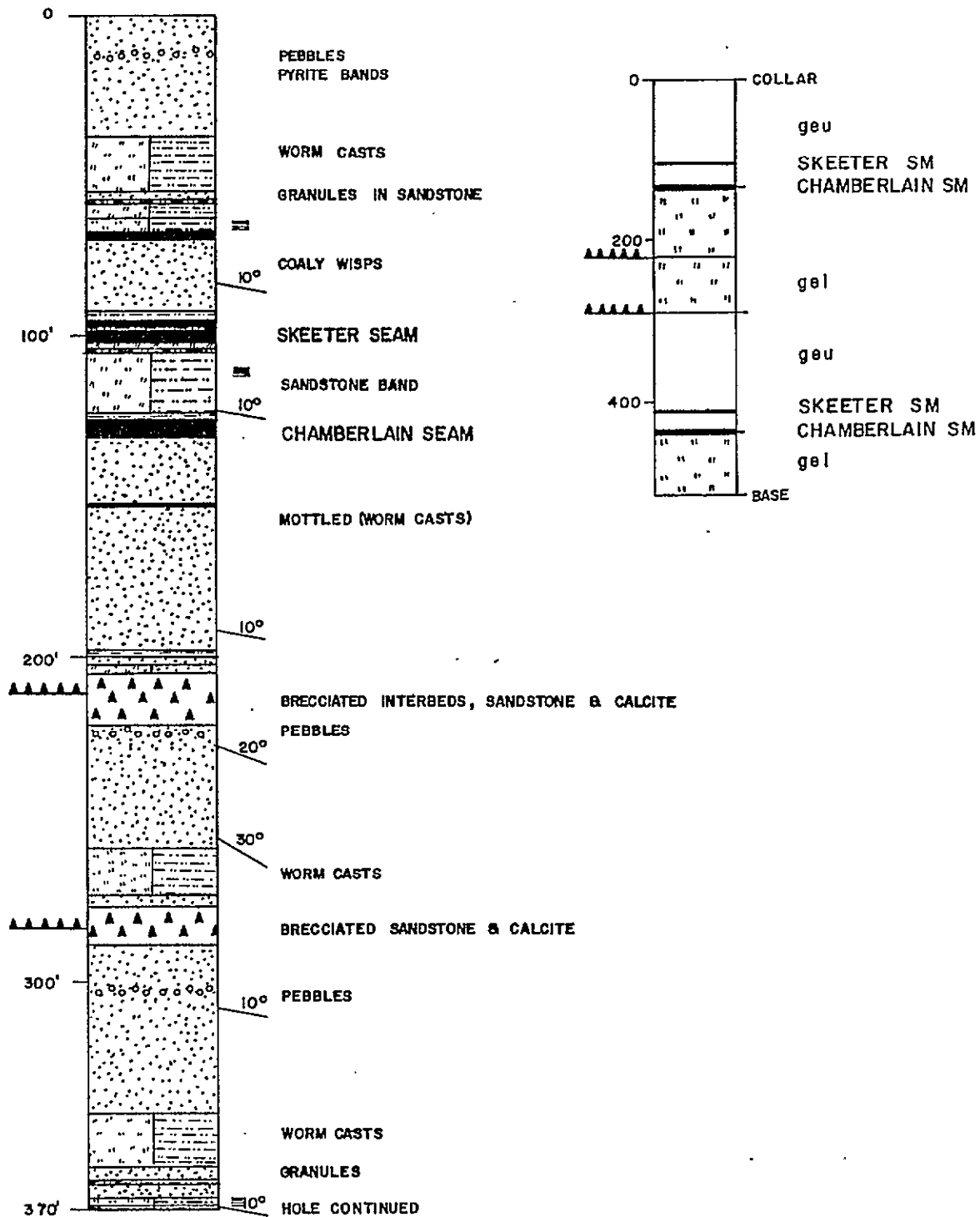
Drilled by        Connors Drilling Ltd.

For                Brameda Resources Limited

Logged by        F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	4009.5	13.0	83.8%	
Chamberlain Upper Plate	3986.6	4.3	100%	
Skeeter Lower Plate	3704.9	9.9	88.8%	
Chamberlain Lower Plate	3682.5	6.3	100%	

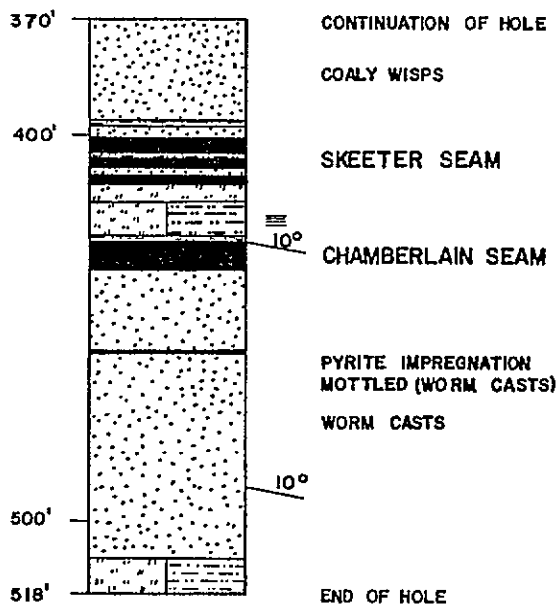


DETAIL OF GETHING  
FORMATION  
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :  
CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
for  
COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
DDH S-49



DETAIL OF GETHING  
 FORMATION  
 SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :  
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH S-49

**COMMERCIAL TESTING & ENGINEERING CO.**

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 25, 1971

P. O. Box 8596  
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:  
BRAMEDA RESOURCES LIMITED  
7th Floor, Board of Trade Bldg.  
1177 West Hastings Street  
Vancouver 1, B. C.

Sample identification:  
Sample No. SK-49-1

Report No. 67-0569  
67-0570

SPECIFIC GRAVITY	AIR DRY BASIS								
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	78.1	0.98	7.93	23.69	67.40	14195	0.62	8½	
1.60	<u>21.9</u>	<u>0.82</u>	<u>51.25</u>				<u>0.46</u>		
	100.0	0.94	17.42				0.58		

ADM = % Moisture in air dried sample

Weight of as received sample = 3.891 lbs.

Respectfully submitted,  
COMMERCIAL TESTING & ENGINEERING CO.

*R. A. Houser*  
R. A. Houser,  
District Manager

RAH/rh





**COMMERCIAL TESTING & ENGINEERING CO.**

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596  
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:  
BRAMEDA RESOURCES LIMITED  
7th Floor, Board of Trade Bldg.  
1177 West Hastings Street  
Vancouver 1, B. C.

Sample identification:  
Sample No. SK-49-2

Report No. 67-0563  
67-0564

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI	
	1.60	96.4	1.38	4.13	25.06	69.43	14635	0.49	9
1.60	<u>3.6</u>	<u>1.00</u>	<u>47.81</u>					<u>0.63</u>	
	100.0	1.37	5.70					0.50	

% ADM = % Moisture in air dried sample

Weight of as received sample = 5.977 lbs.

Respectfully submitted,  
COMMERCIAL TESTING & ENGINEERING CO.

*R. A. Houser*  
R. A. Houser,  
District Manager



RAH/rh

# COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 -- AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596  
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:  
BRAMEDA RESOURCES LIMITED  
7th Floor, Board of Trade Bldg.  
1177 West Hastings Street  
Vancouver 1, B. C.

Sample identification:  
Sample No. CH-49

Report No. 67-0543  
67-0544

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	92.3	0.77	2.57	24.78	71.88	15084	0.44	8½
1.60	<u>7.7</u>	<u>0.77</u>	<u>56.12</u>				<u>1.10</u>	
	100.0	0.77	<u>6.69</u>				0.49	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.876 lbs.

Respectfully submitted,  
COMMERCIAL TESTING & ENGINEERING CO.

*R. A. Houser*  
R. A. Houser,  
District Manager



RAH/rh

# COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 25, 1971



P. O. Box 8596  
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:  
BRAMEDA RESOURCES LIMITED  
7th Floor, Board of Trade Bldg.  
1177 West Hastings Street  
Vancouver 1, B. C.

Sample identification:  
Sample No. CH-49-2

Report No. 67-0576  
67-0575

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	97.0	0.84	3.09	23.23	72.84	14937	0.43	8½
1.60	<u>3.0</u>	<u>0.60</u>	<u>50.90</u>				<u>0.56</u>	
	100.0	0.83	4.52				0.43	

% ADM = % Moisture in air dried sample

Weight of as received sample = 7.981 lbs.

Respectfully submitted,  
COMMERCIAL TESTING & ENGINEERING CO.

*R. A. Houser*  
R. A. Houser,  
District Manager



RAH/rh

STRATIGRAPHIC LOG  
SUKUNKA D.D.H. S-49

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 6.0 ft.		
	SANDSTONE, medium grained, pebbles at 13'.	GETHING FM.	38.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		55.0
	SANDSTONE, mudstone layer at base.		59.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		64.0
	LAMINITE, mudstone layer at base.		69.0
	SANDSTONE, coaly wisps.		92.0
	MUDSTONE.		95.0
	<u>COAL</u> , mudstone band at top.	SKEETER SM.	101.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone layer at top.		104.0
	LAMINITE, siltstone and mudstone, sandy layer at 116', mudstone at base.		126.0
	<u>COAL</u> .	CHAMB. SM.	131.0
	SANDSTONE, coarse grained.		152.0
	<u>COAL</u> , band, 0.5'.		152.5
	SANDSTONE, coarser at top to fine,		

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	mottled (worm casts) 157', mudstone band at 199'.		201.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		204.0
Fault, established	SANDSTONE, brecciated.		220.0
	SANDSTONE, pebbles 222'.		258.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		274.0
	SANDSTONE, medium grained.		277.0
Fault, established	SANDSTONE, brecciated.		288.0
	SANDSTONE, pebble band 303', coarse becoming fine.		340.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granule conglomerate at base.		357.0
	SANDSTONE, mudstone band at 362'.		366.0
	LAMINITE, siltstone and mudstone, mudstone base.		370.0
	SANDSTONE, coaly wisps, mudstone layer 399'.		402.0
	COAL, mudstone band at top, sandstone band at 410', mudstone base.	SKEETER SM.	413.0
	SILTSTONE, sandy phases.		418.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	LAMINITE, siltstone and mudstone, mudst one base.		429.0
	<u>COAL</u> .	CHAMB. SM.	435.0
	SANDSTONE, coarse grained.		457.0
	<u>COAL</u> , band, 1.0'.		458.0
	SANDSTONE, mottled (worm casts) 463', pyrite 459', worm casts at 475'.		510.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		518.0
			<u>Base of Hole</u>

PR SUKUNKA 75(3) 7-2

**CONFIDENTIAL**

APPENDIX B  
DRILL HOLE DATA  
75 G-1 to 75 G-9

657

**OPEN FILE**  
CONFIDENTIAL

APPENDIX B

DRILL HOLE DATA

BRANCH  
DEPARTMENT

00 657



GATES MEMBER

BORE NUMBER G-1

Grid Reference 47,944.0 N 91,605.4 E

Exploration Grid Reference

Date Commenced Nov. 14, 1975 Completed Nov. 19, 1975

Collar R.L. 5,408.9' Standard Datum

Total Depth 111' Electrically Logged Yes/~~NA~~

Drilled by TONTO DRILLING Ltd.

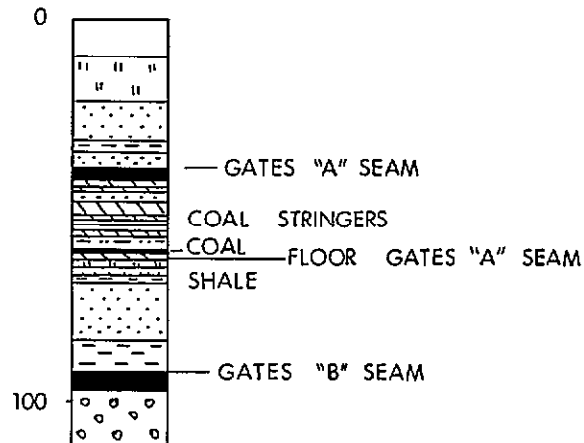
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft) Total Seam	Recovery	Comment
"A"	5,346.1	24.8	100 %	Max. thickness of coal 2.7 ft
"B"	5,311.9	5.4	100%	Total coal 5 ft

# DETAIL OF GATES MEMBER



Prepared by:  
PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
DDH G-1

GATES "A" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

		WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.						
38.3	630					
41.0	2.7'					



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH G-1

GATES "B" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.							
91.6	631	2.7'					
94.3		0.4'		NOT	ANALYSED		
94.7	632	2.3'					
97.0							



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH G-1

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No core	10.0	10.0		
SILTSTONE, grey-brown, argillaceous, broken & fractured, weathered, parts carbonaceous.	11.0	21.0	11.0	
SANDSTONE, grey-brown, fine-grained, quartzose, salt & pepper, argillaceous, silty and shaly streaks.	10.5	31.5	10.5	0° from horizontal
SHALE, dark grey, parts carbonaceous with carbonaceous plant remains.	3.5	35.0	3.5	
SILTSTONE, grey-brown, argillaceous.	0.8	35.8	0.8	
SANDSTONE, grey-brown, fine to medium grained, quartzose, sub-angular, salt & pepper with carbonaceous partings.	2.2	38	2.2	
SHALE & MUDSTONE, dark grey, carbonaceous.	0.3	38.3	0.3	Top Gates "A" Seam
<u>COAL</u>	2.7	41.0	2.7	SKR 630
SANDSTONE, grey, quartzose, fine-grained	0.2	41.2	0.2	
SHALE and mudstone, dark grey, carbonaceous, with thin coal wisps	1.8	43.0	1.8	

## SUKUNKA D.D.H. G-1

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE and mudstone, dark grey, carbonaceous, with thin coal bands	0.4	43.4	0.4	
SHALE, dark grey, carbonaceous with abundant coaly plant remains	1.3	44.7	1.3	
SANDSTONE, grey, fine-grained, quartzose, argillaceous with interbedded siltstone & shale, some carbonaceous partings	3.0	47.7	3.0	
SHALE, dark grey, carbonaceous, with dark band of coaly plant remains	2.6	50.3	2.6	
SANDSTONE, grey, fine-grained, quartzose, carbonaceous, argillaceous with carbonaceous plant remains	0.7	51.0	0.7	
SHALE, dark grey, carbonaceous, with coaly plant remains	0.7	51.7	0.7	
<u>COAL</u>	0.1	51.8	0.1	
MUDSTONE, dark grey, <u>coaly</u> , with carbonaceous plant remains	0.8	52.6	0.8	
<u>COAL</u> , stony	0.4	53.0	0.4	
MUDSTONE, dark grey, carbonaceous, <u>coaly</u>	0.3	53.3	0.3	

## SUKUNKA D.D.H. G-1

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u>	0.1	53.4	0.1	
MUDSTONE, dark grey, carbonaceous and coaly	0.3	53.7	0.3	
<u>COAL</u> , parts stony	0.4	54.1	0.4	
MUDSTONE, dark grey	0.3	54.4	0.3	
<u>COAL</u>	0.5	54.9	0.5	
MUDSTONE and shale, dark grey, carbonaceous with coaly plant remains	1.1	56.0	1.1	
MUDSTONE, dark grey, slightly carbonaceous with some carbonaceous plant remains and vertical fracturing	4.0	60.0	4.0	
<u>COAL</u>	1.0	61.0	1.0	
MUDSTONE, dark grey, carbonaceous with thin coaly bands	1.8	62.8	1.8	Base Gates "A" Seam
SILTSTONE, grey, argillaceous, with carbonaceous plant remains, shaly at base	2.2	65.0		

## SUKUNKA D.D.H. G-1

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE; grey-brown, fine to medium grained, quartzose, sub-angular, salt & pepper, slightly argillaceous, siliceous, small cross-bedding	2.2	67.2	2.2	
SHALE, dark grey, silty, with carbonaceous plant remains	1.5	68.7	1.5	
SANDSTONE, grey, fine to medium grained, quartzose, sub-angular, trace of carbonaceous material	5.3	74.0	5.3	
SANDSTONE, grey, medium to coarse grained to fine conglomerate, quartzose, small grey chert pebbles up to 1/16". Shear zone with slickenside at 71 ft, 15° from horizontal	1.7	75.7	1.7	
SANDSTONE, grey, fine, medium, coarse grained, quartzose, sub-angular, slightly calcareous, salt & pepper, medium sorting, occasional trace of carbonaceous matter	8.3	84.0	8.3	
SHALE, dark grey, silty, with slightly carbonaceous plant remains	7.6	91.6	7.6	Top Gates "B" Seam
<u>COAL</u>	2.7	94.3	2.7	SKR 631
MUDSTONE, coaly	0.4	94.7	0.4	



<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u>	2.3	97.0	2.3	Floor Gates "B" Seam; SKR 632
CONGLOMERATE, grey with green, grey and black quartz and chert pebbles, from 1/8" to 1/2", in sandstone matrix	14.0	111.0	14.0	

BORE HOLE No. D.D.H. G-1

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'A'	2.7	5988 SKR 630	4.5	0.8	12.5	24.7	62.0	0.50	13,790	8	adb*
				5.3	11.9	23.6	59.2	0.48	13,170		arb*
					12.6	24.9	62.5	0.50	13,900		db *
Gates 'B'	2.7	5989 SKR 631	1.1	0.9	6.3	21.7	65.7	0.39	14,370	8½	adb
				2.0	6.2	26.8	65.0	0.39	14,210		arb
					6.4	27.3	66.3	0.39	14,500		db
Gates 'B'	2.3	5990 SKR 632	0.8	0.9	12.4	25.3	61.4	0.37	13,510	7	adb
				1.7	12.3	25.1	60.9	0.37	13,400		arb
					12.5	25.5	62.0	0.37	13,635		db

\* adb = air dried basis  
 arb = as received basis  
 db = dried basis

GATES MEMBER

BORE NUMBER G-2

Grid Reference 40,441.6 N 98,449.7 E

Exploration Grid Reference

Date Commenced Oct. 10, 1975 Completed Oct. 12, 1975

Collar R.L. 5,968.4 ft Standard Datum

Total Depth 65.8 ft Electrically Logged Yes/~~No~~

Drilled by Tonto Drilling Ltd.

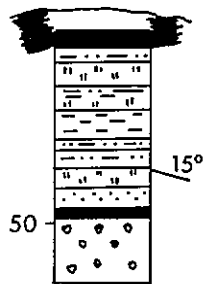
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	5,931.9	41	100%	No roof. Max. thickness of coal 10 ft (see Trench adjacent to G-2)
"B"	5,919.9	2.6	100%	Max. thickness of coal 2.6 ft

# DETAIL OF GATES MEMBER



COAL  
 MUDSTONE CARB STREAKS  
 SILTSTONE  
 SHALE & SILTSTONE THIN COAL WISPS  
 COAL  
 SHALE OR CLAYSTONE, SOME MUDSTONE, CARB.  
 COAL WITH MUDSTONE  
 MUDSTONE  
 SILTSTONE  
 SANDSTONE WITH MUDSTONE AT BASE  
 COAL  
 CONGLOMERATE FROM 1/8" PEBBLES AT TOP  
 TO 1/2" & 1" PEBBLES AT BOTTOM

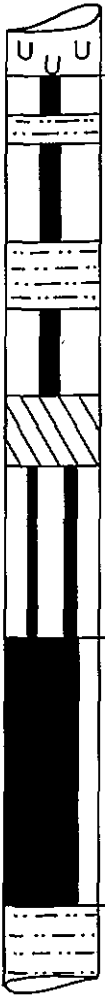
NOTE: G-2 Collared in centre of "A" SEAM

Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-2

GATES "A" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

		WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.						
	639	5.8'				
	640	2.8'				

Prepared by:

PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

SEAM SECTIONS  
DDH G-2

GATES "B" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

			WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.							
46.0	615	2.6'		12.0 12.0 12.6	N/A	12 %	
48.6							



Prepared by:  
PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

SEAM SECTIONS  
DDH G-2

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
Spudded. <u>COAL</u> , 4 ft Gates "A" Seam outcrop above hole				
<u>COAL</u> , Gates "A" Seam, dull to bright, sooty, wet, weathered	5.0	5.0		
MUDSTONE, grey, carbonaceous streaks	3.6	8.6	3.6	
SILTSTONE, grey, argillaceous with carbonaceous streaks and plant remains, grading to shale	1.4	10.0	1.4	
SILTSTONE, grey to dark grey, argillaceous with some carbonaceous plant remains, grading to dark grey, silty, blocky shale	1.0	11.0	1.0	
SILTSTONE, grey, argillaceous, slightly carbonaceous	4.0	15.0		
SHALE, dark grey, carbonaceous	1.2	16.2		
SANDSTONE, grey-brown, medium-grained, salt & pepper, quartzose, sub-rounded	0.9	17.1		
SHALE, dark grey, blocky, with occasional thin coal wisps	1.2	18.3		
SILTSTONE, grey to dark grey, very argillaceous, carbonaceous	3.2	21.5		

## SUKUNKA D.D.H. G-2

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , interlaminated with dark grey carbonaceous mudstone	0.6	22.1		
MUDSTONE, dark grey, rubbly, carbonaceous	1.5	23.6		
SHALE or Claystone, dark grey to black, blocky, with some carbonaceous plant remains	4.4	28.0		
MUDSTONE, dark grey, with carbonaceous plant remains	0.7	28.7		
<u>COAL</u> , bright and dull	0.9	29.6		
MUDSTONE, dark grey	2.0	31.6		
<u>COAL</u> , with mudstone bands	0.3	31.9		
MUDSTONE, grey-brown	4.1	36.0	4.1	
MUDSTONE, grey-brown, grading to shale	0.6	36.6		
SILTSTONE, grey, argillaceous, part carbonaceous, grading to fine-grained sandstone at base	4.2	40.8		



## SUKUNKA D.D.H. G-2

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, brown, fine to medium grained, quartzose, dolomitic, sub-angular, with some carbonaceous plant remains; hard, well-cemented slightly ferruginous staining	4.5	45.3	4.5	
MUDSTONE, dark grey, carbonaceous, with carbonaceous plant remains	0.7	46.0		
<u>COAL</u> , Gates "B" Seam, bright to dull, hard, appears clean	2.6	48.6	2.6	SKR 619
CONGLOMERATE with quartz and chert pebbles from 1/8" to 1/2", and 1" at base	17.2	65.8	17.2	

GATES 'A' SEAM TRENCH - 10 ft EAST OF D.D.H. G-2

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'A'	5.8	5997 SKR 639	9.2	3.3	61.1	14.9	20.7	0.09	3,675	N/A	adb*
				12.2	55.5	13.5	18.8	0.08	3,335		arb*
					63.2	15.4	21.4	0.09	3,800		db *
Gates 'A'	2.8	5998 SKR 640	14.4	3.7	26.1	24.2	46.0	0.17	9,500	N/A	adb
				17.6	22.3	20.7	39.4	0.15	8,130		arb
					27.1	25.1	47.8	0.18	9,865		db

\* adb = air dry basis  
 arb = as received basis  
 db = dried basis

BORE HOLE No. D.D.H. G-2

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'B'	2.6	4729 SKR 615	0.2	4.7	12.0	22.8	60.5	0.44	11,495	N/A	adb*
				4.9	12.0	22.8	60.3	0.44	11,470		arb*
					12.6	23.9	63.5	0.46	12,060		db *

\* adb = air dried basis  
 arb = as received basis  
 db = dried basis

GATES MEMBER

BORE NUMBER G-3

Grid Reference      Unsurveyed

Exploration Grid Reference      2500 ft SE of K/6

Date Commenced      Nov. 21, 1975      Completed      Nov. 24, 1975

Collar R.L.      5,805' (Est.)      Unsur-  
veyed      Standard Datum

Total Depth      134'      Electrically Logged      Yes/~~No~~

Drilled by      Tonto Drilling Ltd.

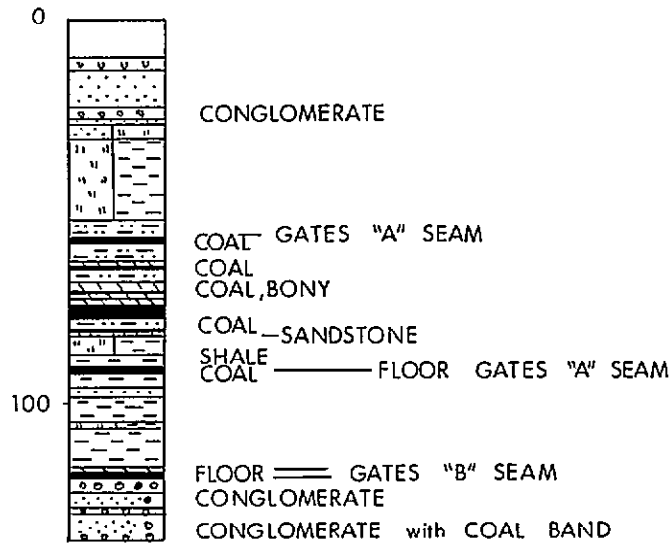
For      Coalition Mining Limited

Logged by      P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	5,723	35.1	100%	Max. thickness of coal 3.9 ft
"B"	5,696	2.6	100%	Max. thickness of coal 1.6 ft

# DETAIL OF GATES MEMBER



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-3

## SUKUNKA D.D.H. G-3

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No core	10.0	10.0		
UNCONSOLIDATED MATERIAL - clay and gravel	3.0	13.0	3.0	
SANDSTONE, grey, fine to medium grained, quartzose, sub-angular, salt & pepper, badly broken & fractured	10.0	23.0	7.0	
CONGLOMERATE, grey-brown, weathered pebbles up to 1/4", badly broken	3.0	26.0	2.0	
SANDSTONE, grey, fine-grained, quartzose, argillaceous, banded, weathered and broken	2.0	28.0	2.0	
SANDSTONE, grey, fine-grained, interlaminated with siltstone	3.0	31.0	3.0	
SILTSTONE, grey, argillaceous, interlaminated with shale, broken	21.0	52.0	17.0	
MUDSTONE, dark grey, soft, with interbedded silty, dark grey shale, some carbonaceous plant remains	4.6	56.6	4.6	Gates "A" Seam
SHALE, dark grey, with carbonaceous plant remains, coaly	0.4	57.0	0.4	

## SUKUNKA D.D.H. G-3

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u>	1.2	58.2	1.2	
MUDSTONE, dark grey, coaly, broken badly	0.8	59.0	0.8	
MUDSTONE, dark brown, carbonaceous	4.0	63.0	4.0	
<u>COAL</u> , stony	0.7	63.7	0.3	
MUDSTONE, dark brown, carbonaceous	1.1	64.8	1.1	
<u>COAL</u> , bony	0.2	65.0	0.2	
MUDSTONE, dark brown, soft	3.0	68.0	3.0	
MUDSTONE, dark brown to dark grey, carbonaceous with $\frac{1}{4}$ " coal band at 68.3	2.0	70.0	2.0	
<u>COAL</u> , bony	0.4	70.4	0.4	
MUDSTONE, dark grey, carbonaceous, coaly	2.2	72.6	2.2	
<u>COAL</u>	0.1	72.7	0.1	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, carbonaceous, coaly	1.4	74.1	1.4	
<u>COAL</u> , dull, hard, slightly bony	1.8	75.9	1.8	
<u>COAL</u> , bright and dull	2.1	77.0	2.1	
SHALE, dark grey, carbonaceous, coaly	0.3	77.3	0.3	
MUDSTONE, brown, waxy, broken, with plant fossils	2.9	80.2		
<u>COAL</u>	0.2	80.4	0.2	
SANDSTONE, grey, fine to medium grained, quartzose, salt & pepper, sub-angular, medium sorting	1.2	81.6	1.2	
SILTSTONE, dark brown, argillaceous, with occasional carbonaceous plant fossil, laminated with silty shale	5.9	87.5	5.9	
SHALE, dark grey with some carbonaceous plant fossils	3.0	90.5	3.0	
<u>COAL</u>	1.2	91.7	1.2	Base "A" Seam



<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE, dark grey, with carbonaceous plant remains	4.3	96.0	4.3	
SANDSTONE, grey, fine to medium grained, quartzose, sub-angular, medium sorting, siliceous, grading to siltstone at base	2.0	98.0	2.0	
SHALE, dark grey, badly broken, with carbonaceous plant remains	6.8	104.8	6.8	
SILTSTONE, brown, argillaceous, grading to argillaceous, very fine-grained sandstone	0.3	105.1	0.3	
SHALE, dark grey, carbonaceous, with thin coaly bands	0.1	105.2	0.1	
SHALE, dark grey with abundant carbonaceous plant remains	11.3	116.5	11.3	"B" Seam
SHALE, dark grey, carbonaceous with thin coaly bands	1.0	117.5	1.0	
<u>COAL</u> - mud band of 1" at 118.1 ft	1.6	119.1	1.6	
CONGLOMERATE, grey-brown, with grey-green and black quartz and chert pebbles from 1/8" to 1/2", in sandstone matrix	4.4	123.6	4.4	
SANDSTONE, brown, medium to coarse-grained, quartzose, salt & pepper, sub-rounded to sub-angular, poor sorting, occasional conglom. pebble	3.0	126.6	3.0	

## SUKUNKA D.D.H. G-3

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CONGLOMERATE	0.9	127.5	0.9	7° from horizontal
SANDSTONE, grey-brown, medium to coarse-grained with conglomerate lenses	3.5	131.0	3.5	
SANDSTONE, grey, fine - medium - coarse-grained, sub-rounded to sub-angular, salt & pepper, siliceous, medium to poor sorting, slightly carbonaceous with conglomerate lenses at base	2.7	133.7	2.7	
CONGLOMERATE, with thin coal bands	0.3	134.0	0.3	

GATES MEMBER

BORE NUMBER G-4

Grid Reference 33,634.2 N 88,591.7 E

Exploration Grid Reference J/1

Date Commenced Nov. 28, 1975 Completed Nov. 30, 1975

Collar R.L. 5,011.0 ft Standard Datum

Total Depth 187.0 ft Electrically Logged Yes/~~NO~~

Drilled by Tonto Drilling Ltd.

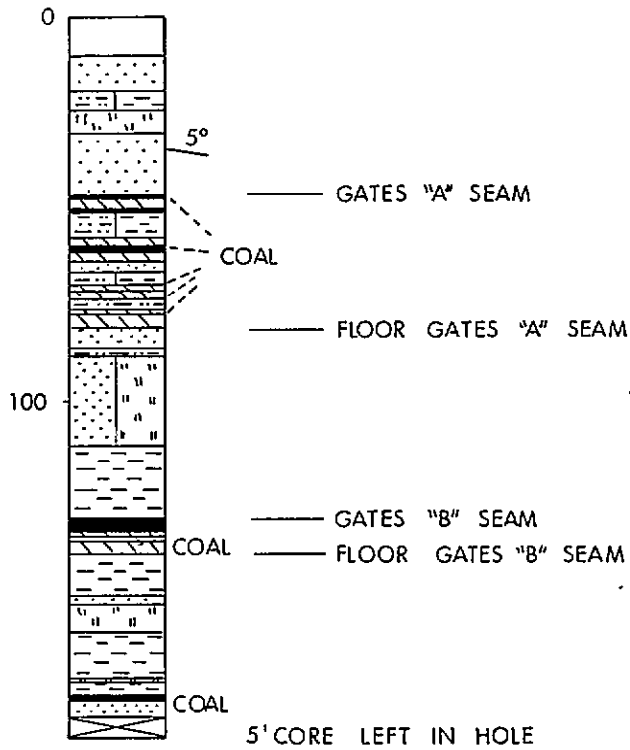
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	4,930.0	34.7	90%	Max. thickness of coal 2.0 ft; Total 3.5 ft.
"B"	4,872.0	8.5	51%	Max. thickness of coal 4.3 ft.

# DETAIL OF GATES MEMBER



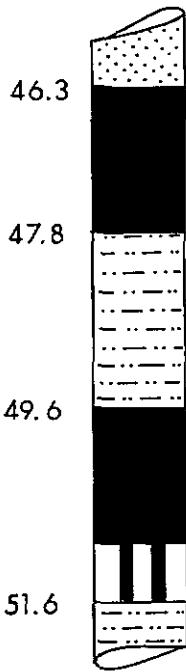
Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-4

GATES "A" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

			WT %	ASH %	C.S N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.							
46.3	636	1.5'					
47.8							
49.6	637	2.0'					
51.6							



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SEAM SECTIONS  
 DDH G-4

GATES "B" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

SKR. NO.	WT %	ASH %	C.S. NO.	INCL. BANDS	EXCL. BANDS
130.7					
135.0					
638					
4.3'					



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 for  
 COALITION MINING LIMITED

SEAM SECTIONS  
 DDH G-4

## SUKUNKA D.D.H. G-4

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No Core	10.0	10.0		
SANDSTONE, grey, fine-grained, quartzose, argillaceous, laminated with siltstone and shale, some carbonaceous partings; crumbled and weathered	9.0	19.0	9.0	
MUDSTONE, dark grey with laminated shale, dark grey	5.0	24.0	5.0	
SILTSTONE, grey to dark grey, very argillaceous, broken, some carbonaceous plant remains	6.0	30.0	6.0	
SANDSTONE, grey, fine grained, quartzose, salt & pepper, argillaceous, silty, occasional carbonaceous streak, minor cross bedding	16.3	46.3	16.3	5° from horizontal
<u>COAL</u>	1.5	47.8	1.5	Gates "A" Seam SKR 636
MUDSTONE, dark grey, carbonaceous	1.8	49.6	1.8	
<u>COAL</u>	1.4	51.0	0.7	SKR 637
<u>COAL</u> , crushed, bony	0.6	51.6	0.6	(last 51.6)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, laminated with dark grey shale	5.9	57.5	5.9	
MUDSTONE, dark grey, carbonaceous, coaly	2.0	59.5	2.0	
<u>COAL</u> , bony	1.5	61.0	1.5	
MUDSTONE AND SHALE, dark grey, carbonaceous	1.8	62.8	1.8	
SANDSTONE, grey, fine-grained, quartzose, argillaceous, silty, interbedded with grey, argillaceous siltstone	3.2	66.0	3.2	
SHALE AND MUDSTONE, dark grey, carbonaceous	3.1	69.1	3.1	
<u>COAL</u>	0.3	69.4	0.3	
MUDSTONE, dark grey, carbonaceous, with thin coal bands	1.1	70.5	1.1	
<u>COAL</u>	0.2	70.7	0.2	
MUDSTONE, dark grey, carbonaceous, coaly	0.4	71.1	0.4	
MUDSTONE, dark brown, some carbonaceous plant remains	2.1	73.2	2.1	



<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, coaly, carbonaceous	0.2	73.4	0.2	
<u>COAL</u>	0.5	74.9	0.5	
MUDSTONE, dark grey	2.1	76.0	2.1	
MUDSTONE, dark grey, carbonaceous, coaly	1.0	77.0	1.0	
<u>COAL</u>	0.2	77.2	0.2	
MUDSTONE AND SHALE, dark grey, carbonaceous, with abundant carbonaceous plant remains	3.8	81.0	3.8	
SANDSTONE, grey, fine grained quartzose, argillaceous, silty, some carbonaceous wisps	6.0	87.0	6.0	
MUDSTONE, dark grey, soft	1.5	88.5	1.5	
SANDSTONE, grey, fine grained, quartzose, argillaceous, interbedded with argillaceous siltstone	23.5	112.0	23.5	
SHALE, dark grey, parts silty, with abundant carbonaceous plant remains	18.5	130.5	18.5	Gates "B" Seam

## SUKUNKA D.D.H. G-4

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE, dark grey, carbonaceous, coaly	0.2	130.7		
<u>COAL</u> , bright and dull	2.3	133.0	1.2	SKR 638
<u>COAL</u> , bright and dull	2.0	135.0	1.0	
MUDSTONE, dark grey, carbonaceous	1.0	136.0	1.0	
SHALE, dark grey, carbonaceous, with carbonaceous plant fossils	0.8	136.8	0.8	
<u>COAL</u>	0.1	136.9	0.1	
SHALE, dark grey, carbonaceous, coaly, broken, crushed	2.1	139.0	0.6	Base Gates "B" Seam
SHALE, dark grey, with abundant carbonaceous plant remains	11.0	150.0	11.0	
SANDSTONE, brown, fine grained, quartzose, carbonaceous, silty	3.0	153.0	3.0	
SILTSTONE, dark brown, argillaceous, carbonaceous	7.0	160.0	7.0	
SHALE, dark grey, fissile, occasional carbonaceous plant remains	12.2	172.2	12.2	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, brown, carbonaceous, argillaceous	0.8	173.0	0.8	
SHALE, dark grey, fissile, some carbonaceous plant remains	3.0	176.0	3.0	
SHALE, dark grey, carbonaceous, coaly	0.2	176.2	0.2	
<u>COAL</u> , with thin mud band	1.0	177.2	1.0	
SANDSTONE, grey, medium grained, quartzose, sub-angular, medium sorting, salt & pepper, carbonaceous at top	9.8	187.0	4.8	
<p>* Note: 5 ft core lost in hole.</p>				

BORE HOLE No. D.D.H. G-4

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'A'	1.5	5994 SKR 636	2.2	0.7	14.9	25.5	58.9	3.55	12,935	4	adb*
				2.9	14.6	24.9	57.6	3.47	12,650		arb*
					15.0	25.7	59.3	3.58	13,025		db *
Gates 'A'	2.0	5995 SKR 637	3.6	0.9	25.0	25.1	49.0	0.51	11,140	6½	adb
				4.5	24.1	24.2	47.2	0.49	10,740		arb
					25.2	25.3	49.5	0.51	11,240		db
Gates 'B'	4.3	5996 SKR 638	2.2	0.9	19.9	24.8	54.4	0.24	12,020	4½	adb
				3.1	19.5	24.3	53.1	0.23	11,755		arb
					20.1	25.0	54.9	0.24	12,130		db

\* adb = air dried basis  
 arb = as received basis  
 db = dried basis

GATES MEMBER

BORE NUMBER G-5

Grid Reference 44,606.7 N 98,207.3 E

Exploration Grid Reference

Date Commenced Oct. 12, 1975 Completed Oct. 25, 1975

Collar R.L. 6,357.0 ft Standard Datum

Total Depth 115.0 ft Electrically Logged Yes/~~XX~~

Drilled by Tonto Drilling Ltd.

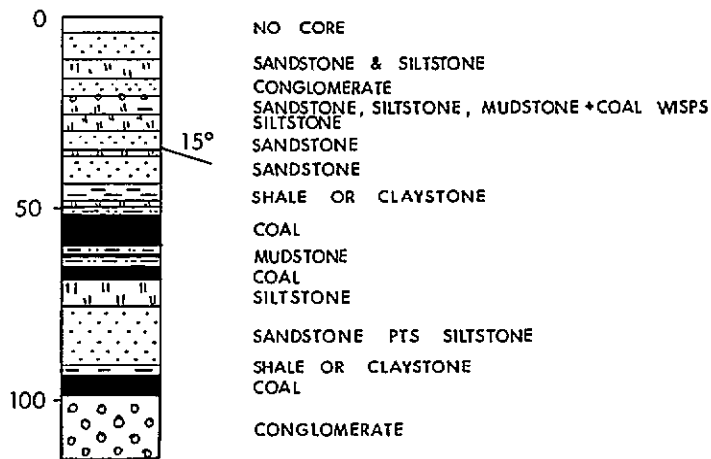
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	6,288.5'	18.9'	100%	Max. thickness of coal 12.3 ft
"B"	6,258.3'	4.6'	100%	Max. thickness of coal 4.6 ft

# DETAIL OF GATES MEMBER



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-5

# GATES "A" SEAM

				ASH % CUMULATIVE FROM FLOOR				
				WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.								
51.0'								
	611	1.0		32.9				
52.0								
	611	7.0		32.8	1/2		32.8	
				33.9				
59.0								
			1.0					
60.0								
61.5								
	612	0.5		28.9				
62.0	612	0.2		28.7	1/2		29	
	612	0.5		29.6				
62.7								
			2.7					
65.4								
	613	3.1		27.2				
				26.9	1		27.3	
				27.7				
68.5	" " "							

Prepared by:  
**PET-KO GEOLOGICAL SERVICES LTD.**  
 for  
**COALITION MINING LIMITED**

**SEAM SECTIONS**  
**DDH G-5**

GATES "B" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

		WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.						
<p>94.1</p> <p>98.7</p> <p>614      4.6'</p>		7.9	2			
			7.9		7.9	
			8.2			

Prepared by:

PET-KO GEOLOGICAL SERVICES LTD.

for

COALITION MINING LIMITED

SEAM SECTIONS

DDH G-5



<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No Core	4.9	4.9		
SANDSTONE, brown, fine grained, quartzose, silty, salt & pepper, slightly weathered, rubbly	4.1	9.0	4.1	
SANDSTONE, grey brown, very fine to fine grained, quartzose, salt & pepper and siltstone, grey, argillaceous	12.0	21.1		15 <sup>o</sup>
CONGLOMERATE, brown, with rounded quartz pebble, ¼" to ½"	0.6	21.7		
SANDSTONE, brown, medium grained, quartzose, subrounded, porous, ferruginous color	1.0	22.7		
SANDSTONE, light grey, quartzose, angular, salt & pepper, medium grained, calcareous, hard	1.2	23.9		
SILTSTONE, grey, argillaceous with traces of carbonaceous plant remains	0.7	24.6		
MUDSTONE, with coal streaks, weathered	0.2	24.8		
SILTSTONE, parts very fine grained sandstone, grey brown argillaceous with 45 <sup>o</sup> fracture planes; coaly streaks	3.0	27.8		

## SUKUNKA D.D.H. G-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, very fine grained, quartzose, interbedded with silty shale	4.2	32.0		
SILTSTONE, grey, argillaceous, with carbonaceous plant remains, 45° fracture on shear planes	2.0	35.0		
SANDSTONE, fine grained, and siltstone, laminated with carbonaceous streaks, argillaceous	3.0	38.0		
SANDSTONE, grey, quartzose, fine to medium grained, sub-angular, salt & pepper, calcareous, with calcite veins in sealed fractures	6.0	44.0		
SHALE or claystone, dark grey, fractured, with silty and sandy bands	3.6	47.6		
SANDSTONE, brown, fine grained, quartzose, salt & pepper, carbonaceous	2.0	49.6		
MUDSTONE with carbonaceous plant remains	1.4	51.0		Gates "A" Seam
<u>COAL</u> and mudstone, crushed	1.0	52.0	1.0	} SKR 611
<u>COAL</u> , bright and dull	7.0	59.0	7.0	

## SUKUNKA D.D.H. G-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE with coaly streaks	1.0	60.0		
MUDSTONE, dark grey	1.5	61.5		
<u>COAL</u> , 50% mudstone, black	0.5	62.0	0.5	
<u>COAL</u> , 25% mudstone	0.2			15° SKR 612
<u>COAL</u>	0.5	62.7	0.5	
MUDSTONE, carbonaceous, coaly	2.7	65.4		
<u>COAL</u> , some stony material top half	3.1	68.5	3.1	SKR 613
SILTSTONE, dark grey to grey, carbonaceous, argillaceous	6.5	75.0		
SANDSTONE, grey to dark grey, fine to very fine grained to siltstone, argillaceous, hard	11.0	86.0		
<u>SECOND RUN:</u> SEE NEXT PAGE.				

## SUKUNKA D.D.H. G-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>SECOND RUN:</u>				
SANDSTONE, grey, fine to very fine grained to siltstone, argillaceous, with carbonaceous streaks	5.0	91.0		
SHALE or claystone, dark grey	3.1	94.1		Gates "B" Seam
<u>COAL</u> , bright and dull	4.6	98.7	4.6	SKR 614
CONGLOMERATE with green, brown, and black quartz and chert pebbles, 1/8" to 1/2", cemented in sandstone and siltstone	16.3	115.0	16.3	

BORE HOLE No. D.D.H. G-5

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'A'	8.0	4725 SKR 611	0.4	2.9	32.9	19.2	45.0	0.24	9,225	½	adb*
				3.3	32.8	19.1	44.8	0.24	9,190		arb*
					33.9	19.8	46.3	0.25	10,530		db *
Gates 'A'	1.2	4726 SKR 612	0.7	2.5	28.9	21.3	47.3	0.27	9,450	½	adb
				3.2	28.7	21.2	46.9	0.27	9,385		arb
					29.6	21.8	48.6	0.28	9,695		db
Gates 'A'	3.1	4727 SKR 613	1.1	1.7	27.2	20.8	50.3	0.26	10,590	1	adb
				2.8	26.9	20.6	49.7	0.26	10,475		arb
					27.7	21.2	51.1	0.26	10,775		db
Gates 'B'	4.6	4728 SKR 614	0.6	3.2	7.9	24.4	64.5	0.38	13,135	2	adb
				3.8	7.9	24.3	64.0	0.38	13,055		arb
					8.2	25.2	66.6	0.39	13,570		db

\* adb = air dried basis  
 arb = as received basis  
 db = dried basis

GATES MEMBER

BORE NUMBER G-6

Grid Reference 45,744.9 N 92,084.0 E

Exploration Grid Reference

Date Commenced Nov. 19, 1975 Completed Nov. 20, 1975

Collar R.L. 5,397.0 ft Standard Datum

Total Depth 123.0 ft Electrically Logged Yes/~~No~~

Drilled by Tonto Drilling Ltd.

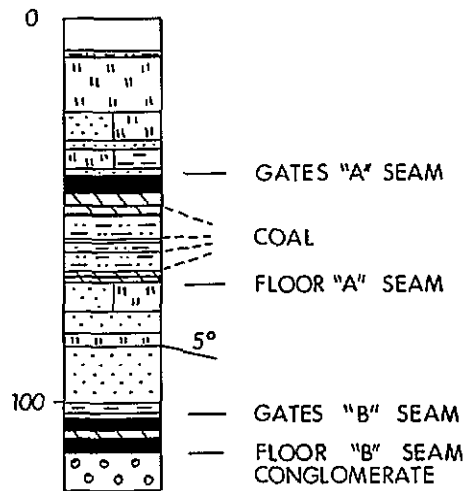
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	5,327.4'	28.1'	87%	Max. thickness of coal 3.9 ft
"B"	5,284.4'	9.2'	92.4%	Max. thickness of coal 6.3 ft

# DETAIL OF GATES MEMBER



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-6

GATES "A" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

		WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.						
42.1	633		3.9 <sup>1</sup>			
46.0						



Prepared by:  
PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

SEAM SECTIONS  
DDH G-6



GATES "B" SEAM

ASH %  
CUMULATIVE  
FROM FLOOR

		WT %	ASH %	C.S.N <sup>o</sup>	INCL. BANDS	EXCL. BANDS
SKR. NO.						
103.4						
104.1						
107.7						
109.7						
111.4						
112.6						

Prepared by:  
PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

SEAM SECTIONS  
DDH G-6

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No Core	10.0	10.0		
MUDSTONE, dark grey, soft	1.4	11.4	1.4	
SILTSTONE, dark grey to grey-brown, argillaceous, slightly carbonaceous	13.6	25.0	13.6	
SANDSTONE, grey, fine grained, salt & pepper, interlaminated with siltstone and shale, grey to dark grey	7.6	32.6	7.6	
SANDSTONE, grey, fine grained, quartzose, argillaceous	2.2	34.8	2.2	
SILTSTONE, brown to dark grey, argillaceous, with shaly interbeds	4.7	39.5	4.7	
SANDSTONE, grey-brown, quartzose, fine to medium grained, carbonaceous, argillaceous	2.0	41.5	2.0	Gates "A" Seam
SHALE, carbonaceous, dark grey, parts silty	0.6	42.1	0.6	
<u>COAL</u> , bright and dull	3.9	46.0	3.4	SKR 633
MUDSTONE, dark grey, carbonaceous, coaly	3.0	49.0	0.8	

## SUKUNKA D.D.H. G-6

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , parts stony	0.4	49.4	0.4	
MUDSTONE, coaly	2.2	51.6	2.2	
<u>COAL</u>	0.2	51.8	0.2	
MUDSTONE, coaly	0.2	52.0	0.2	
MUDSTONE, dark grey, carbonaceous	6.0	58.0	6.0	
<u>COAL</u>	0.1	58.1	0.1	
MUDSTONE, carbonaceous, dark grey	0.7	58.8	0.7	
<u>COAL</u>	0.2	59.0	0.2	
MUDSTONE, dark grey, carbonaceous	2.0	61.0	1.2	
<u>COAL</u> , slightly stony	0.3	61.3	0.3	
MUDSTONE, dark grey, carbonaceous	4.2	65.6	3.8	
<u>COAL</u> , part stony	0.4	66.0	0.4	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, coaly	1.2	67.2	1.2	
<u>COAL</u>	0.8	68.0	0.8	
MUDSTONE, dark grey, coaly	0.6	68.6	0.6	
SHALE, dark grey, with carbonaceous plant remains	1.0	69.6	1.0	Base Gates "B" Seam
SANDSTONE, grey, fine grained, quartzose, argillaceous, interlaminated with argillaceous siltstone	6.9	76.5	6.9	
SANDSTONE, grey, fine to medium grained, quartzose, salt & pepper, sub-angular	7.0	83.5	7.0	
SILTSTONE, dark brown, slightly carbonaceous with some carbonaceous plant fossils	2.5	86.0	2.5	5° from horizontal
SANDSTONE, grey-brown, fine to medium grained, quartzose, salt & pepper, sub-angular, slightly carbonaceous, with occasional silty bands, minor cross bedding, minor brecciated zone with slickenside at 95 ft	14.5	100.5	14.5	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE, dark grey, silty	2.9	103.4	2.9	Gates "B" Seam
MUDSTONE, carbonaceous with coaly bands	0.7	104.1	0.7	
<u>COAL</u> , crushed	3.6	107.7	2.9	SKR 634
MUDSTONE, dark grey, coaly, crushed	2.0	107.7	2.0	
<u>COAL</u> , bright and dull	1.7	111.4	1.7	
MUDSTONE with coaly streaks	0.2	111.6	0.2	SKR 635
<u>COAL</u>	1.0	112.6	1.0	Base Gates "B" Seam
CONGLOMERATE, grey, green, and black quartz and chert pebbles, 1/8" to 1/2", in sandstone matrix	10.4	123.0	10.4	

BORE HOLE No. D.D.H. G-6

SEAM	THICK. ANAL. (ft)	LAB. NO.	A.D.M.	MOISTURE	ASH %	VOL %	F.C.%	S %	B.T.U.	F.S.I.	CALC. FACTORS
Gates 'A'	3.9	5991 SKR 633	2.7	1.8	13.2	24.0	61.0	0.43	13,100	6	adb*
				4.5	12.8	23.3	59.4	0.42	12,745		arb*
					13.4	24.4	62.2	0.44	13,340		db *
Gates 'B'	3.6	5992 SKR 634	5.9	0.6	7.0	27.9	64.5	0.54	14,320	8	adb
				6.5	6.6	26.3	60.6	0.51	13,475		arb
					7.0	28.1	64.9	0.54	14,405		db
Gates 'B'	2.9	5993 SKR 635	0.9	0.8	16.6	25.5	57.1	0.35	12,650	6	adb
				1.7	16.5	25.3	56.5	0.35	12,535		
					16.7	25.7	57.6	0.35	12,750		db

\* adb = air dry basis  
 arb = as received basis  
 db = dried basis

GATES MEMBER

BORE NUMBER G-7

Grid Reference 43,854.1 N 87,836.7 E

Exploration Grid Reference F/4

Date Commenced Nov. 9, 1975 Completed Nov. 13, 1975

Collar R.L. 5,172.5 ft Standard Datum

Total Depth 221.0 ft Electrically Logged Yes/~~XX~~

Drilled by Tonto Drilling Ltd.

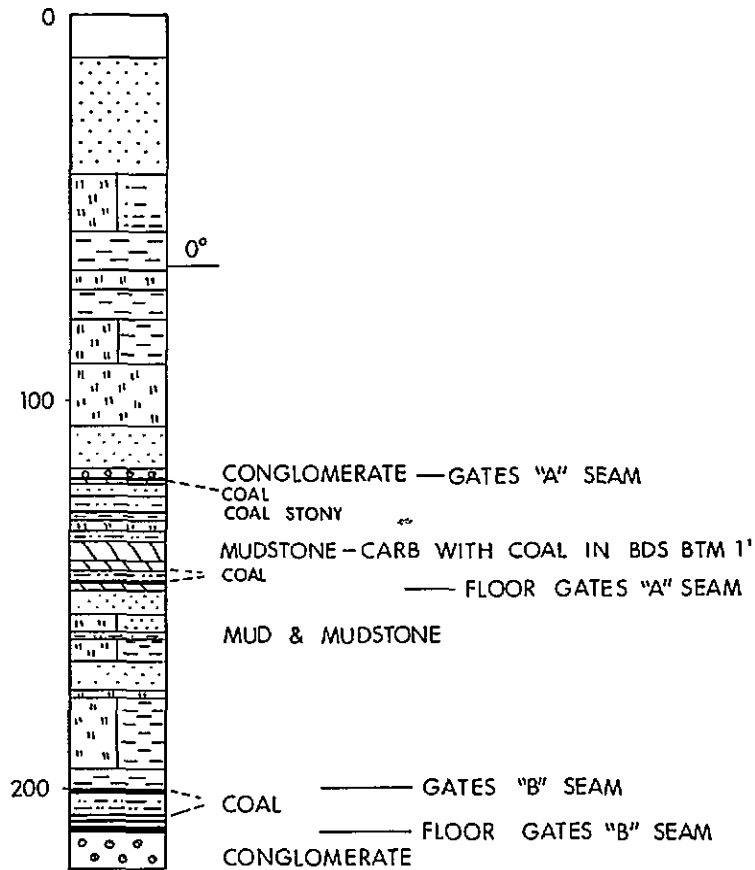
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	5,024'	30.9'	100%	Max. coal thick- ness 0.5 ft
"B"	4,961.9'	10.6'	100%	Max. thickness of coal 1.2 ft; Seam is 80% rock.

# DETAIL OF GATES MEMBER



Prepared by:  
 PET-KO GEOLOGICAL SERVICES LTD.  
 for  
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
 DDH G-7



<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No Core	11.0	11.0		
SANDSTONE, brown to grey, fine to medium grained, quartzose, sub-angular, salt & pepper, calcareous, occasional minor shale partings	30.0	41.0	30.0	5°
SILTSTONE, grey, argillaceous, laminated with very fine grained sandstone and dark grey to grey shale	15.0	56.0	15.0	
SHALE, dark grey, blocky, silty	10.0	66.0	10.0	
SILTSTONE, grey to dark grey, argillaceous	5.0	71.0	5.0	
SHALE, grey to dark grey, silty	7.6	78.6	7.6	
SILTSTONE, grey to dark grey, argillaceous, with laminae of dark grey shale	11.4	90.0	11.4	
SILTSTONE, dark grey, argillaceous	16.0	106.0	16.0	
SANDSTONE, grey, fine grained, quartzose, argillaceous, silty, 2" calcitic shale at 108 ft	11.2	117.2	11.2	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE, dark grey, silty	0.4	117.6	0.4	
CONGLOMERATE, brown, quartz and chert pebbles up to ¼", sandstone and siltstone matrix	0.8	118.4	0.8	
SILTSTONE, dark grey, laminated with shale	0.3	118.7	0.3	Gates "A" Seam
<u>COAL</u>	0.4	119.1	0.4	
SANDSTONE and siltstone, grey, interbedded, very carbonaceous and coaly	1.4	120.5	1.4	
SANDSTONE, grey, fine grained, salt & pepper, quartzose	3.9	124.4	3.9	
SHALE, carbonaceous, silty, with thin coal interbeds	0.8	125.2		
MUD and MUDSTONE, brown	2.8	128.0	1.6	
<u>COAL</u> , stony	0.2	128.2	0.2	
SHALE and mudstone, dark grey, carbonaceous, with coaly plant remains	2.8	131.0	2.8	

## SUKUNKA D.D.H. G-7

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, dark grey, argillaceous, carbonaceous	2.6	133.6	2.6	
MUDSTONE, carbonaceous and coaly	2.4	136	2.6	
SANDSTONE, grey, fine grained, quartzose, salt & pepper, argillaceous silty, laminated with siltstone and shale	1.8	137.8		
MUDSTONE, carbonaceous, with thin coal interbeds bottom 1"	3.2	141.0	3.2	
MUDSTONE, carbonaceous with coaly plant remains	2.7	143.7		
<u>COAL</u>	0.5	144.2	0.5	
MUDSTONE, brown to dark grey, with carbonaceous plant remains	2.5	146.7	2.5	
<u>COAL</u>	0.5	147.2	0.5	
MUDSTONE, brown, carbonaceous, coaly at base	2.1	149.3	2.1	Base Gates "A" Seam
SANDSTONE, brown, fine grained, salt & pepper, quartzose, silty, interlaminated with siltstone and shale	5.7	155.0	5.7	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, brown, interlaminated with sandstone and shale, parts carbonaceous	5.0	160.0	5.0	
MUD and MUDSTONE, slightly carbonaceous	0.5	160.5	0.5	0° dip from horizontal
SILTSTONE, grey, argillaceous, parts carbonaceous, interlaminated with dark grey shale	5.4	165.9	5.4	
SANDSTONE, grey, fine to medium grained, quartzose, argillaceous, salt & pepper, sub-angular, carbonaceous, with coaly plant remains, calcareous, trace of cross-bedding	8.5	174.4	8.5	
SILTSTONE, brown, carbonaceous, with interbedded dark grey silty shale	2.0	176.4	2.0	
SILTSTONE, dark brown, very argillaceous, calcareous with some laminated dark grey shale	18.6	195.0	18.6	
SHALE, dark brown, silty - non-silty at base	5.0	200.0	5.0	Top Gates "B" Seam
<u>COAL</u>	1.2	201.2	1.2	

## SUKUNKA D.D.H. G-7

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE and shale, parts carbonaceous, dark grey	5.6	206.8	5.6	
<u>COAL</u>	0.2	207.0	0.2	
MUDSTONE, dark grey, carbonaceous	0.2	207.2	0.2	
<u>COAL</u>	0.3	207.5	0.3	
MUDSTONE, dark grey, carbonaceous, coaly	1.2	208.7	1.2	
<u>COAL</u>	0.4	209.1	0.4	
MUDSTONE and shale, dark grey	0.5	209.6	0.5	
<u>COAL</u>	1.0	210.6	1.0	Base Gates "B" Seam
CONGLOMERATE, grey-brown, green and black quartz and chert pebbles, 1/8" to 1/2", at base, in sandstone matrix; 1/2" coal at 119.8 ft	10.4	221.0	10.4	

GATES MEMBER

BORE NUMBER G-8

Grid Reference 44,953.8 N 88,114.5 E

Exploration Grid Reference E/5

Date Commenced Nov. 26, 1975 Completed Nov. 27, 1975

Collar R.L. 5,056.5' Standard Datum

Total Depth 81.0' Electrically Logged Yes/~~NO~~

Drilled by Tonto Drilling Ltd.

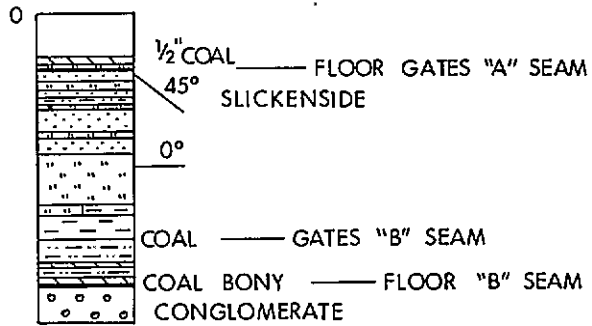
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	5,040.5'	-	-	Collared in "A" Seam, no coal.
"B"	4,985.0'	12.3	100%	Max. thickness of coal 1.1 ft Seam is 87% rock.

# DETAIL OF GATES MEMBER



Prepared by:  
PET-KO GEOLOGICAL SERVICES LTD.  
for  
COALITION MINING LIMITED

STRATIGRAPHIC LOGS  
DDH G-8

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No core	12.5	12.5		
MUDSTONE, dark grey with coaly bands, crushed at top	1.6	14.1	1.6	
SILTSTONE, dark brown, argillaceous, with carbonaceous plant remains	1.2	15.3	1.2	
MUDSTONE, dark grey, carbonaceous with ½" coal band on slickensided 45° surface	0.7	16.0	0.7	
SANDSTONE, grey, fine-grained, argillaceous, quartzose, some silty bands	2.7	18.7	2.7	
SILTSTONE, dark grey-brown, argillaceous, with carbonaceous plant fossils and some coaly wisps.	2.3	21.0	2.3	
SANDSTONE, grey to dark grey, argillaceous, fine-grained, quartzose, silty	1.7	22.7	1.7	
MUDSTONE, dark brown, with occasional carbonaceous plant fossil	1.6	24.3	1.6	
SILTSTONE, dark brown, argillaceous	1.7	26.0	1.7	



## SUKUNKA D.D.H. G-8

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine to medium grained, quartzose, argillaceous, salt & pepper, sub-angular, some cross-bedding	5.2	31.2	5.2	
SILTSTONE, dark brown, argillaceous, with interlaminated sandstone as above	1.6	32.8	1.6	
SANDSTONE, grey, fine - medium - coarse-grained, quartzose, salt & pepper, sub-angular, medium sorting, with some carbonaceous streaks, minor cross bedding	5.2	38.0		
SILTSTONE, dark brown, argillaceous, slightly calcareous.	12.0	50.0	12.0	
SILTSTONE, dark brown, interlaminated with dark grey shale	3.3	53.3	3.3	
SHALE, dark grey, occasional carbonaceous plant remains, fissile	5.9	59.2	5.9	
<u>COAL</u>	0.2	59.4	0.2	
MUDSTONE, dark grey, carbonaceous, coally	0.6	60.0	0.6	
MUDSTONE, dark brown, with some carbonaceous plant remains	5.5	65.5	5.5	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, dark grey, with thin coal bands	0.4	65.9	0.4	
MUDSTONE, dark brown with some carbonaceous plant remains	2.1	68.0	2.1	
SHALE, dark grey, carbonaceous, with thin coal bands	1.9	69.9	1.9	
<u>COAL</u> , bony	1.1	71.0	1.1	
SHALE, dark grey, carbonaceous, coaly	0.15	71.15	0.15	
<u>COAL</u>	0.35	71.5	0.35	Base Gates "B" Seam
CONGLOMERATE, grey, with grey, green, black quartz and chert pebbles from ¼" to ½", in sandstone and mudstone matrix; 0.5 ft siltstone and sandstone band at 78 ft, dipping 30°	9.5	81.0	9.5	

GATES MEMBER

BORE NUMBER G-9

Grid Reference 41,937.1 N 95,442.6 E

Exploration Grid Reference H/5

Date Commenced Nov. 24, 1975 Completed Nov. 25, 1975

Collar R.L. 5,202.2 ft Standard Datum

Total Depth 65.0 ft Electrically Logged Yes/~~XX~~

Drilled by Tonto Drilling Ltd.

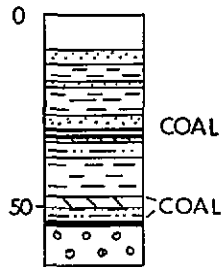
For Coalition Mining Limited

Logged by P. Antonenko

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
"A"	-	-	-	-
"B"	5,147.6'	7.1'	100%	Max. coal thick- ness 1.0 ft 80.2% of seam is rock.

DETAIL OF GATES MEMBER



Prepared by:

PET-KO GEOLOGICAL SERVICES LTD.

for

COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH G-9

## SUKUNKA D.D.H. G-9

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
No Core	8.0	8.0		
SANDSTONE, grey, fine - medium - coarse grained, quartzose, sub-angular, salt & pepper, medium to poor sorting, some cross-bedding	5.0	13.0	5.0	
SHALE, dark grey, with some carbonaceous plant fossils	4.0	17.0	4.0	Shattered: possible fault
SANDSTONE, grey, fine to medium grained, quartzose, sub-angular, salt & pepper, with interlaminated argillaceous siltstone	2.0	19.0	2.0	
SHALE, dark grey, with carbonaceous plant fossils	7.3	26.3	7.3	
SANDSTONE, grey, fine to medium grained, quartzose, salt & pepper, slightly calcareous with silty bands, argillaceous, carbonaceous streaks	2.7	29.0	2.7	
SHALE, dark grey, carbonaceous	0.2	29.2	0.2	
<u>COAL</u> and mudstone, bony	1.0	30.2	1.0	
MUDSTONE, dark grey, carbonaceous, with thin coal bands	1.0	31.2	1.0	

## SUKUNKA D.D.H. G-9

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SHALE, dark grey, with mudstone, some carbonaceous plant remains	5.8	37.0	5.8	
SHALE, dark grey, with some fossil carbonaceous plant remains	10.5	47.5	10.5	Gates "B" Seam
MUDSTONE, dark brown, carbonaceous, with thin coal bands	2.3	49.8	2.3	
<u>COAL</u> , bony	0.2	50.0	0.2	
MUDSTONE, dark brown, with some carbonaceous plant remains	1.2	51.2	1.2	
MUDSTONE, dark grey, carbonaceous, with abundant carbonaceous plant remains	1.8	53.0	1.8	
<u>COAL</u>	0.2	53.2	0.2	
MUDSTONE, dark grey, coaly	0.4	53.6	0.4	
<u>COAL</u> , bright and dull, slightly bony	1.0	54.6	1.0	Base Gates "B" Seam
CONGLOMERATE, grey, with quartz and chert pebbles, grey, green, and black, from 1/8" to 1/2", tightly packed in sandstone matrix	10.4	65.0	10.4	

# ROKE

GAMMA RAY NEUTRON LOG  
DENSISLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED.
LSD SEC TWP RGE	WELL	DDH. G-1.
W	LOCATION	BULLMOOSE MTN. Co. 47944.0 De. 91605.4
M	FIELD	SUKUNKA.
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev. 5408.9
Log Measured from	RIG. FLOOR	1.3 Ft. Above Perm. Datum
Well Depths Measured from	RIG. FLOOR	
Run. No.	ONE	
Date	NOV. 19, 1975.	
First Reading	111	
Last Reading	001	
Footage Logged	110	
Depth Reached	112	
Depth Driller	111	
Casing Roke		
Casing Driller		
Fluid Type	AIR / WATER	
Liquid Level	70 FT.	
Min. Diam.	HQ	
Rm @ 9F		
Operating Time	1.5 HRS.	
Truck No.	104	
Recorded By	HEDIN	Witnessed By ANTONENKO

657

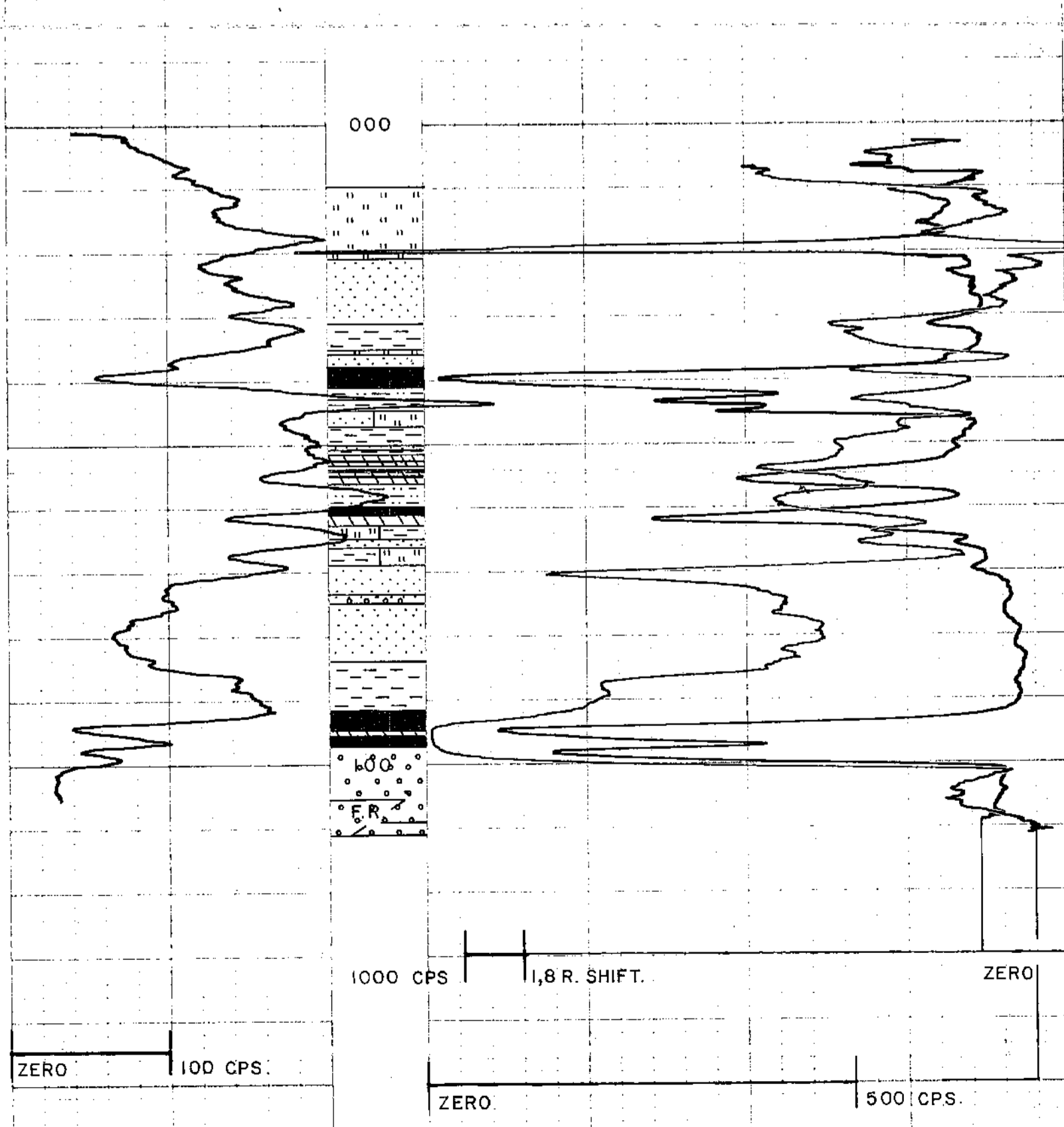
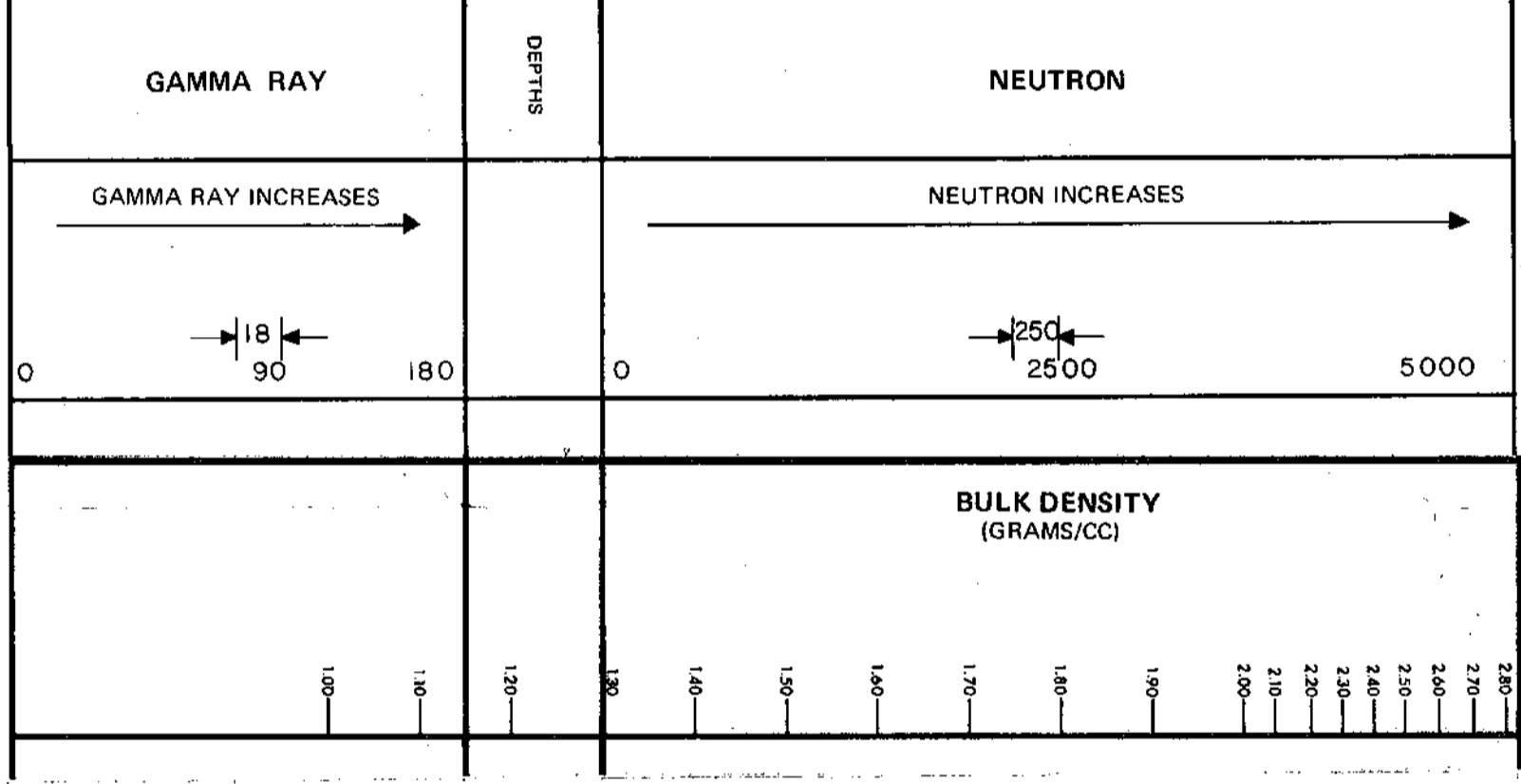
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	171
		SPACING	17 IN.
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
HOIST TRUCK NO.	104		
INSTRUMENT TRUCK NO.	104		
TOOL SERIAL NO.	340		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	001	111	12	5	100	OL	18	3	500	OL	250
ONE	003	109	12	3	1000	1.8 RT.	53.08 CPS / DIV.		DENSITY		

REMARKS: DENSITY TOOL SER, 553.



1000 CPS | 1.8 R. SHIFT. | ZERO  
ZERO | 100 CPS. | ZERO | 500 CPS.





# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

DENSILOG

GAMMA RAY NEUTRON LOG

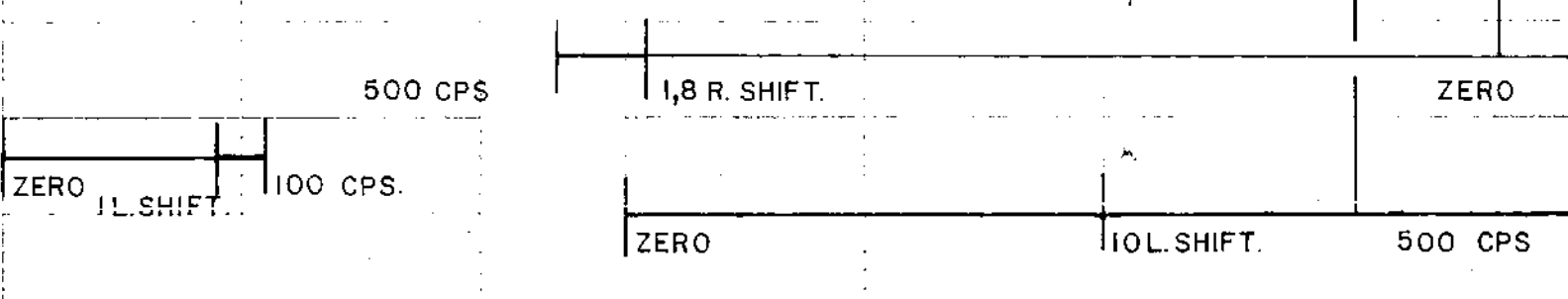
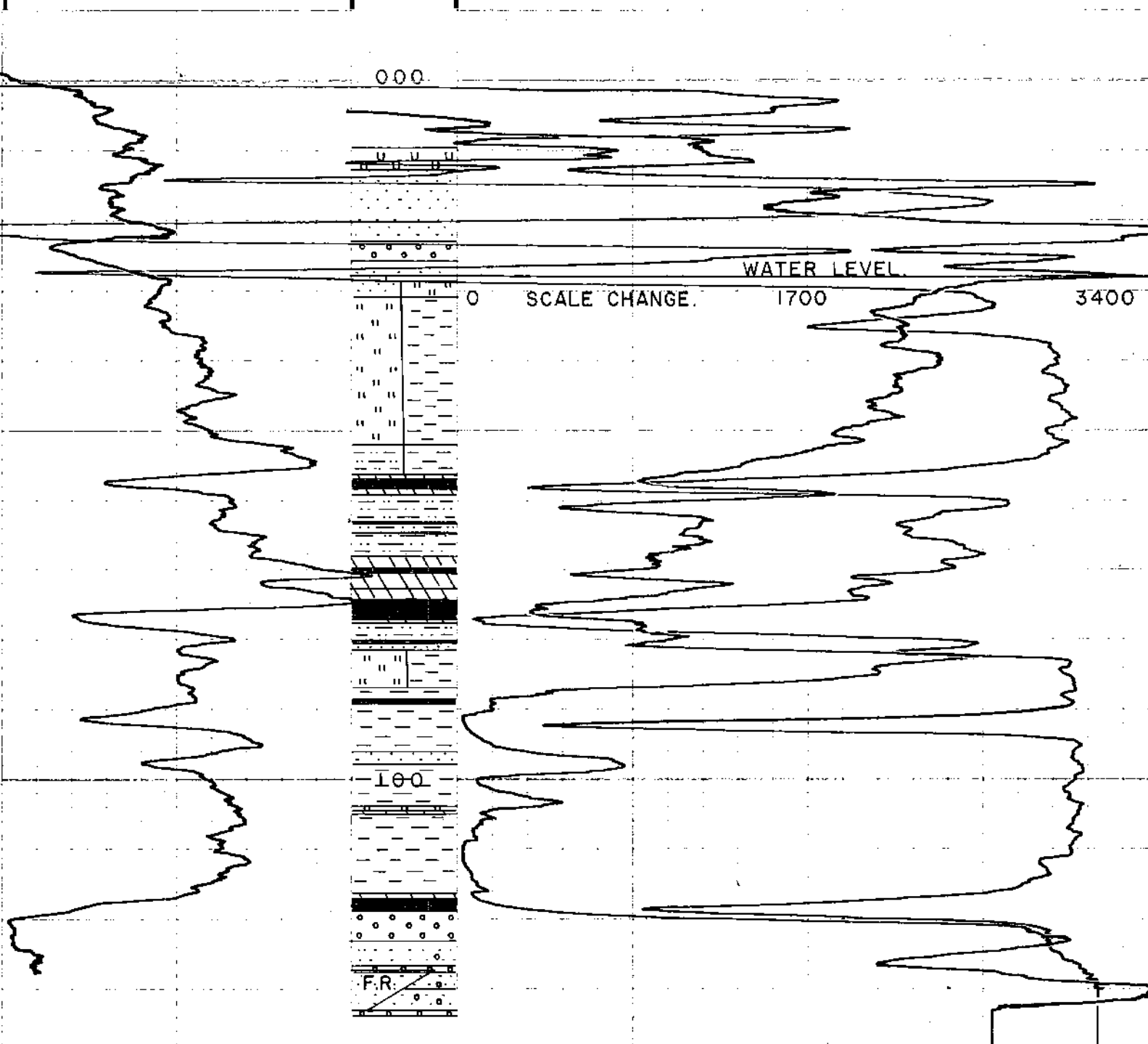
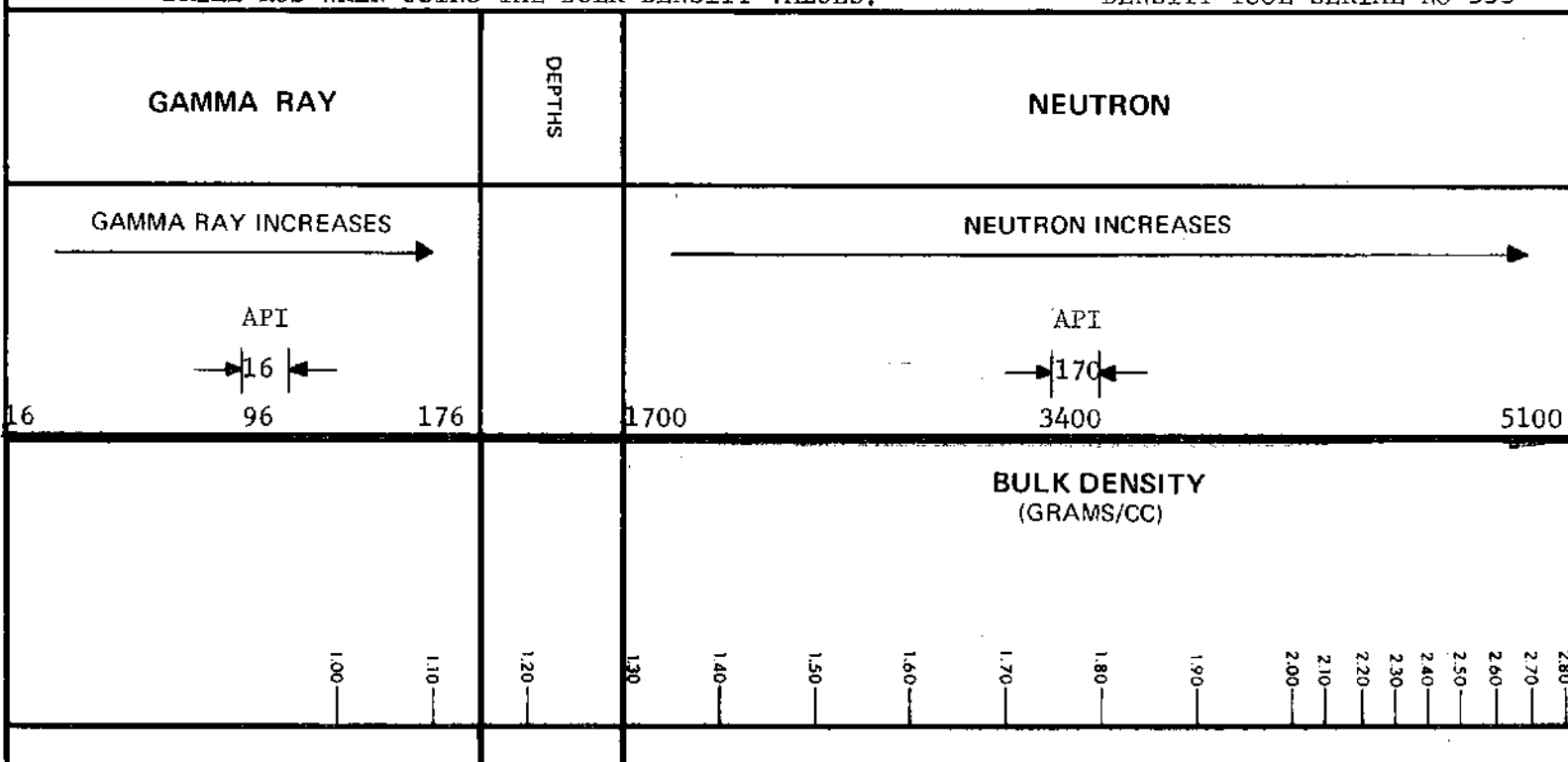
FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	DDH G-3	
LOCATION CON MOO	NOT TIED	ADEQUATELY
FIELD	SUKUNKA	
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	RIG FLOOR	1.0 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	
Other Services:	NTI	
Run. No.	ONE	
Date	24 NOVEMBER 1975	
First Reading	133	
Last Reading	000	
Footage Logged	133	
Depth Reached	134	
Depth Driller	134	
Casing Roke	11 FT	
Casing Driller	11 FT	
Fluid Type	ATR/WATER	
Liquid Level	28 FT	
Min. Diam.	HO	
Rm @ of		
Operating Time	4 HOURS	
Truck No.	104	
Recorded By	HEDIN	Witnessed By
		ANTONENKO

657

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	171
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
HOIST TRUCK NO.	104		
INSTRUMENT TRUCK NO.	104		
TOOL SERIAL NO.	340		

LOGGING DATA											
GENERAL			GAMMA RAY					NEUTRON			
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
1	000	028	12	5	100	1L	16 API	3	500	10L	170 API
1	028	133	12	5	100	1L	16 API	3	500	0L	170 API
1	000	130	12	3	500	1.8RT	23.35 CPS/DIV				DENSITY

REMARKS LOGGED THROUGH DRILL ROD. CONSIDERATION MUST BE GIVEN TO THE POSITION OF THE DRILL ROD WHEN USING THE BULK DENSITY VALUES. DENSITY TOOL SERIAL NO 553



# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	DDH G-4
TWP	LOCATION	CHAMBERLAIN CREEK Ia. 33.6342 De. 88.5917
RGE	FIELD	SUKUNKA
PROV	PROVINCE	BRITISH COLUMBIA
PERM. DATUM	GROUND LEVEL	Elev. 5011.0
LOG MEAS. FROM	RIG FLOOR	1.5 Ft. Above Perm. Datum
WELL DEPTHS MEAS. FROM	RIG FLOOR	G.L.
Run. No.	ONE	
Date	NOV. 30/1975.	
First Reading	181	
Last Reading	000	
Footage Logged	181	
Depth Reached	182	
Depth Driller	187	
Casing Roke	11 FT.	
Casing Driller	11 FT.	
Fluid Type	AIR/WATER	
Liquid Level	29 FT.	
Min. Diam.	HQ.	
Rm @ 0'		
Operating Time	1.5 HRS.	
Truck No.	104	

657

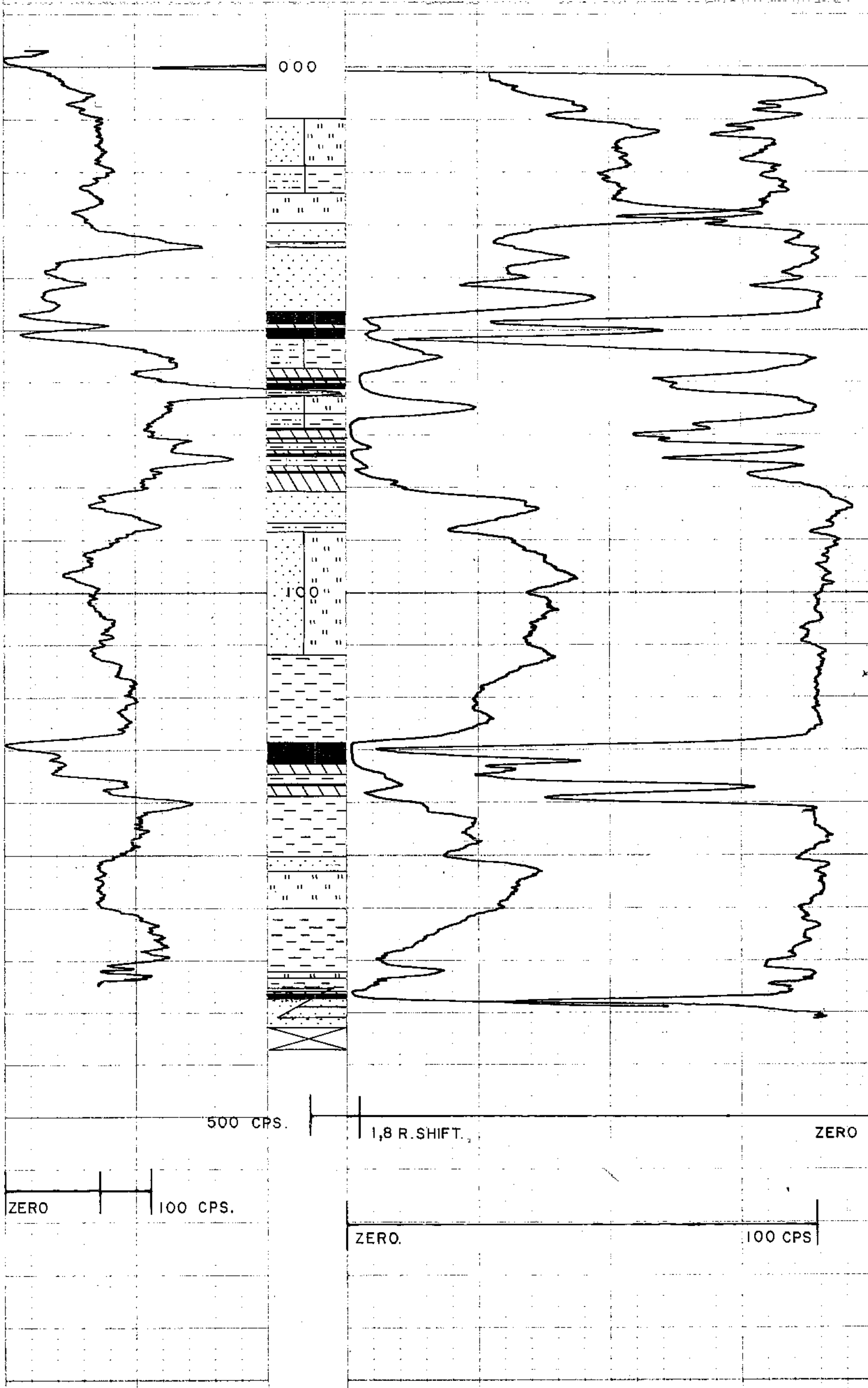
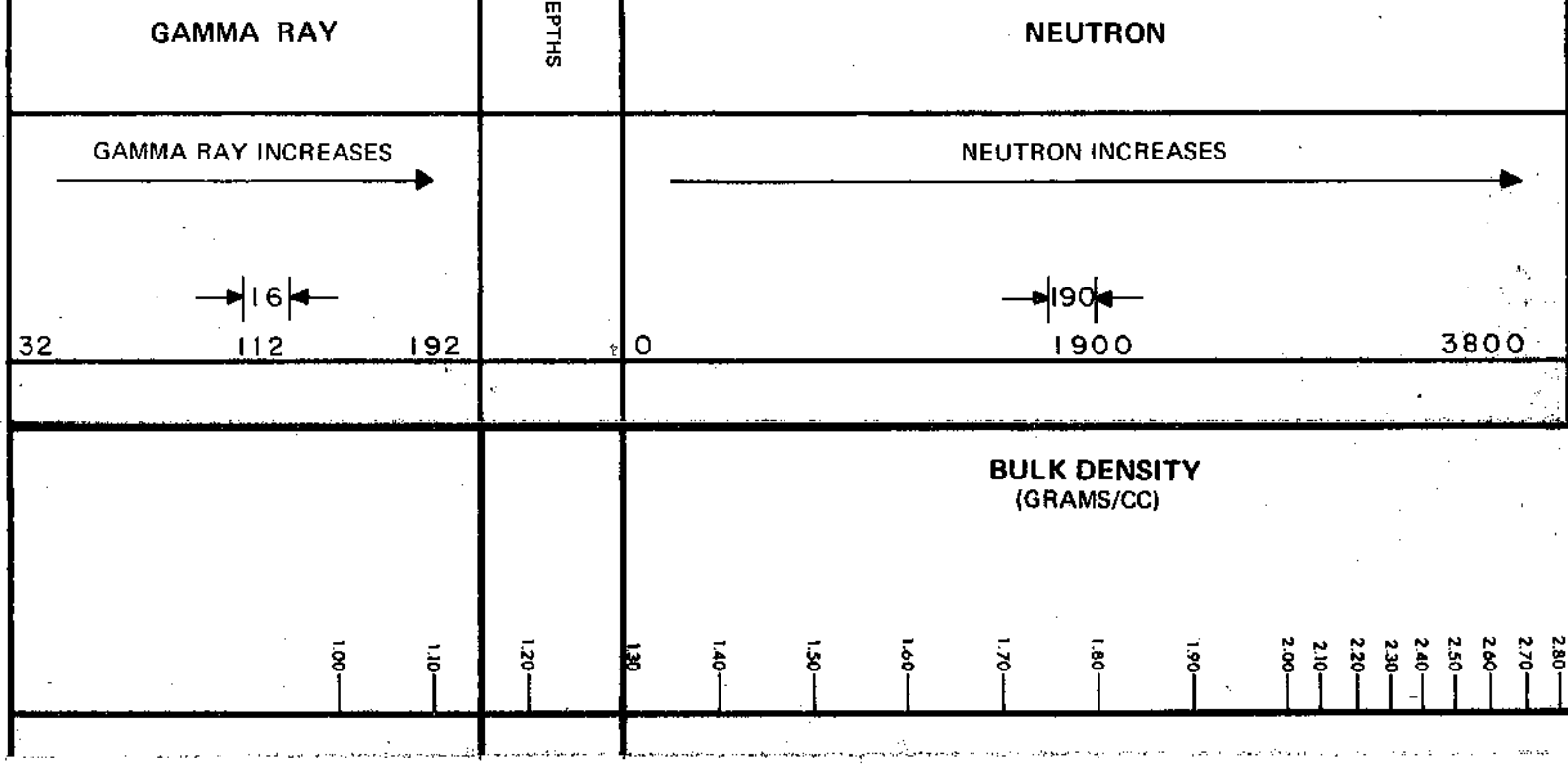
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	171
		SPACING	17 IN.
		TYPE	AmBe
		STRENGTH	3 CURIES

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	000	181	12	5	100	2 L.	16	3	500	OL.	190
ONE	000	178	12	3	500	1.8 RT.	23.35 CPS/DIV. - DENSITY.				

REMARKS LOGGED THROUGH DRILL ROD. CONSIDERATION MUST BE GIVEN TO THE POSITION OF THE DRILL ROD WHEN USING THE BULK DENSITY VALUES. DENSITY TOOL SER. 553



# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

DENSILOG

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	DDH G-5	
LOCATION	BULLMOOSE MTR	Co. 44 606 7 De. 98.2073
FIELD	SUKUNKA	
PROVINCE	BRITISH COLUMBIA	Other Services: NIT
Permanent Datum	GROUND LEVEL	Elev. 63570
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum
Well Depths Measured from	GROUND LEVEL	G.L.
Run. No.	ONE	
Date	25 OCTOBER 1975	
First Reading	115	
Last Reading	000	
Footage Logged	115	
Depth Reached	116	
Depth Driller	115	
Casing Roke	17 FT	
Casing Driller	17 FT	
Fluid Type	CAC <sub>2</sub> - QUICK GEL	
Liquid Level	4 FT	
Min. Diam.	HQ	
Rm @ 9F		
Operating Time	2 HOURS	
Truck No.	104	

657

### EQUIPMENT DATA

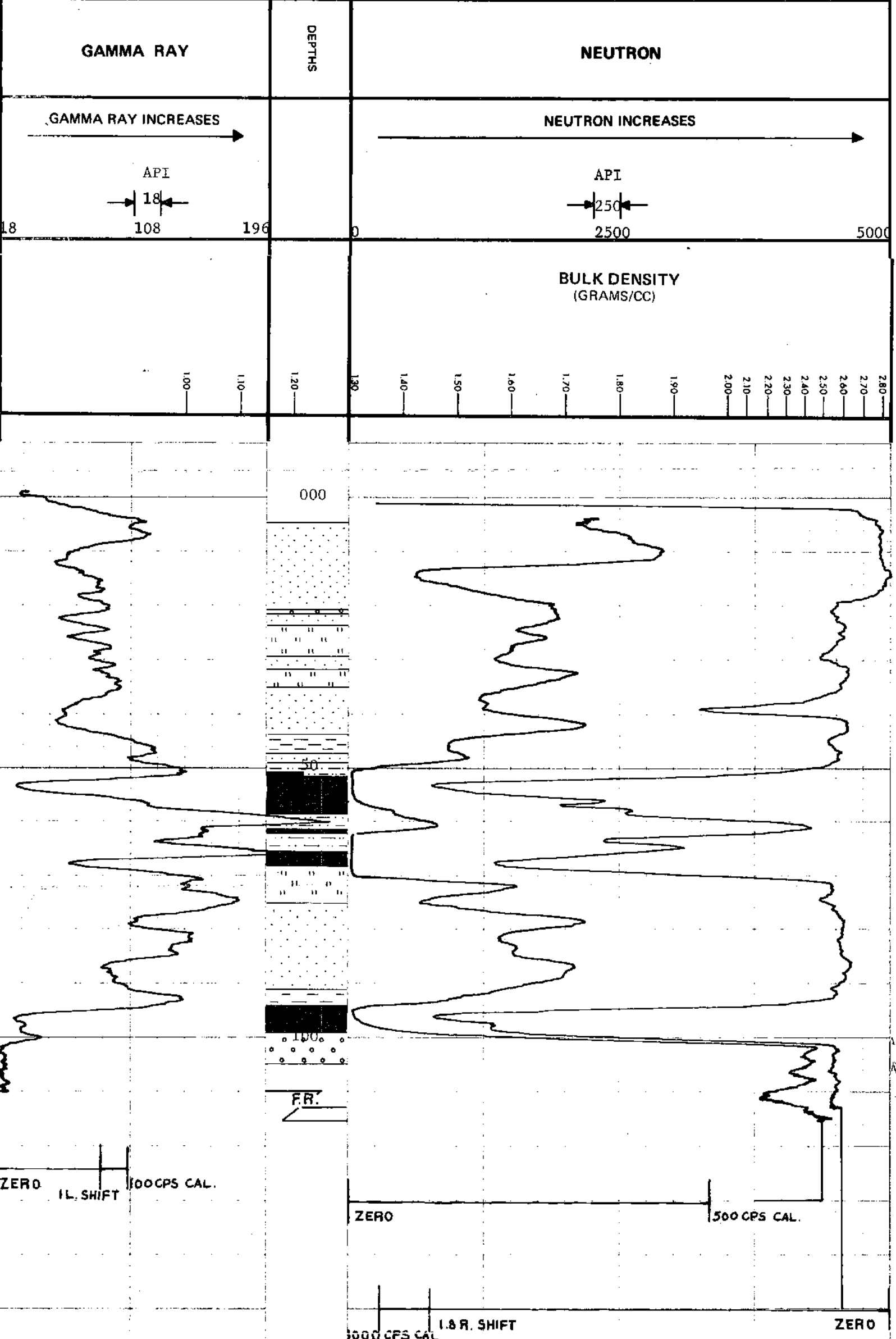
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	171
HOIST TRUCK NO.	104	SPACING	17 INCH
INSTRUMENT TRUCK NO.	104	TYPE	AmBa
TOOL SERIAL NO.	340	STRENGTH	3 CURIES

### LOGGING DATA

GENERAL			GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000 115	12	5	100	1L	18 API	3	500	-	250 API
1	000 113	12	3	1000	1.8R	53.08 CPS/DIV	-	DENSITY		

### REMARKS

DENSITY TOOL SERIAL NO 553



ZERO 1L. SHIFT 100CPS CAL.

ZERO 500CPS CAL.

1000CPS CAL 1.8R. SHIFT

ZERO

# ROKE

GAMMA RAY NEUTRON LOG  
DENSITLOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	DDH G-6
SEC	LOCATION	BULLMOOSE MTN. La. 45,744.9 De. 92,084.0
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	TEMP.	
Permanent Datum	GROUND LEVEL	Elev. 5397.0
Log Measured from	GROUND LEVEL	Fl. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	G.L.
Run. No.	ONE	
Date	NOV. 20, 1975	
First Reading	120	
Last Reading	000	
Footage Logged	120	
Depth Reached	121	
Depth Driller	123	
Casing Roke	9 FT.	
Casing Driller	10 FT.	
Fluid Type	AIR / WATER	
Liquid Level	23 FT.	
Mfn. Diam.	HQ	
Rm @ 0'		
Operating Time	1 HR.	
Truck No.	104	

657

### EQUIPMENT DATA

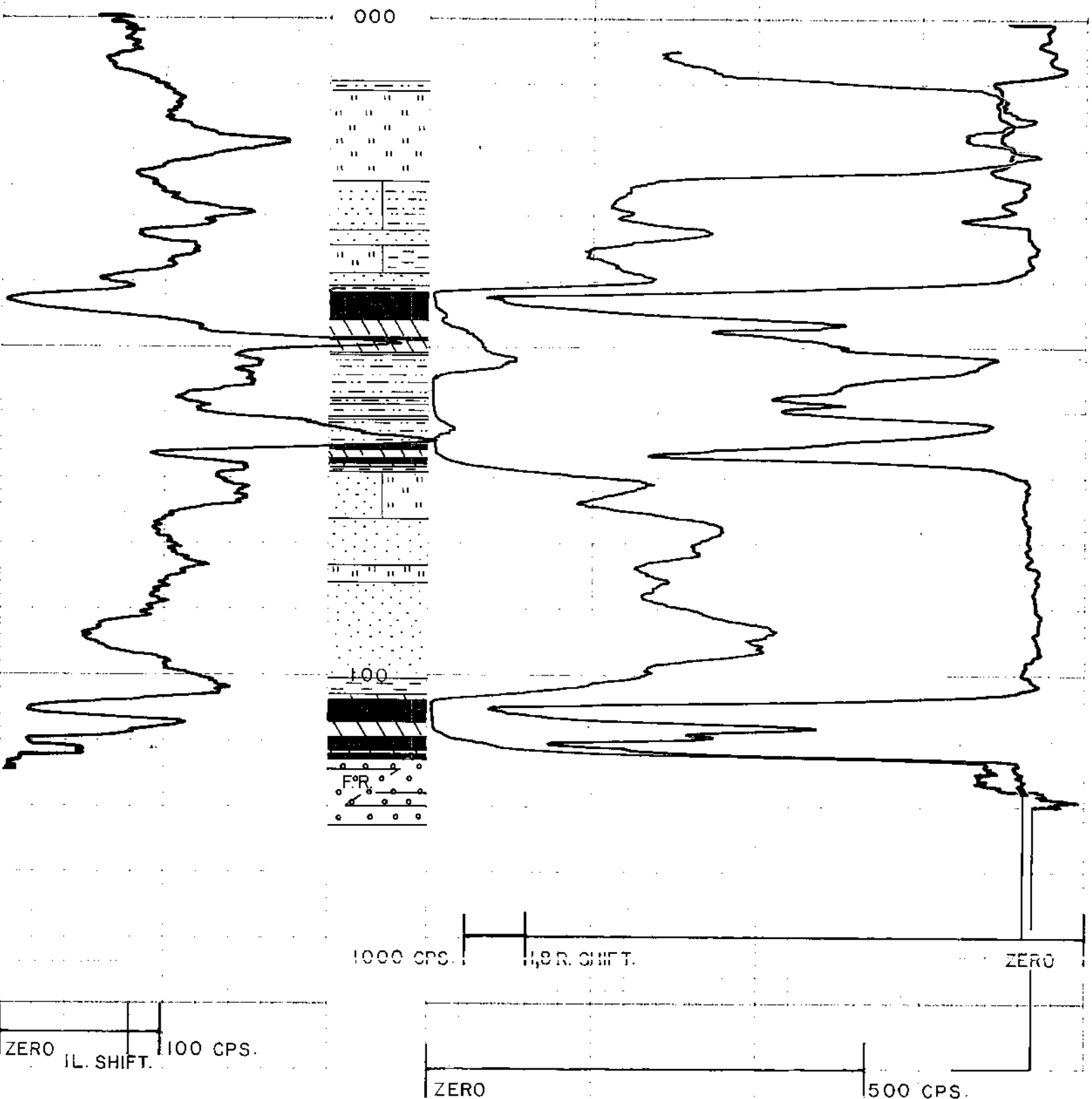
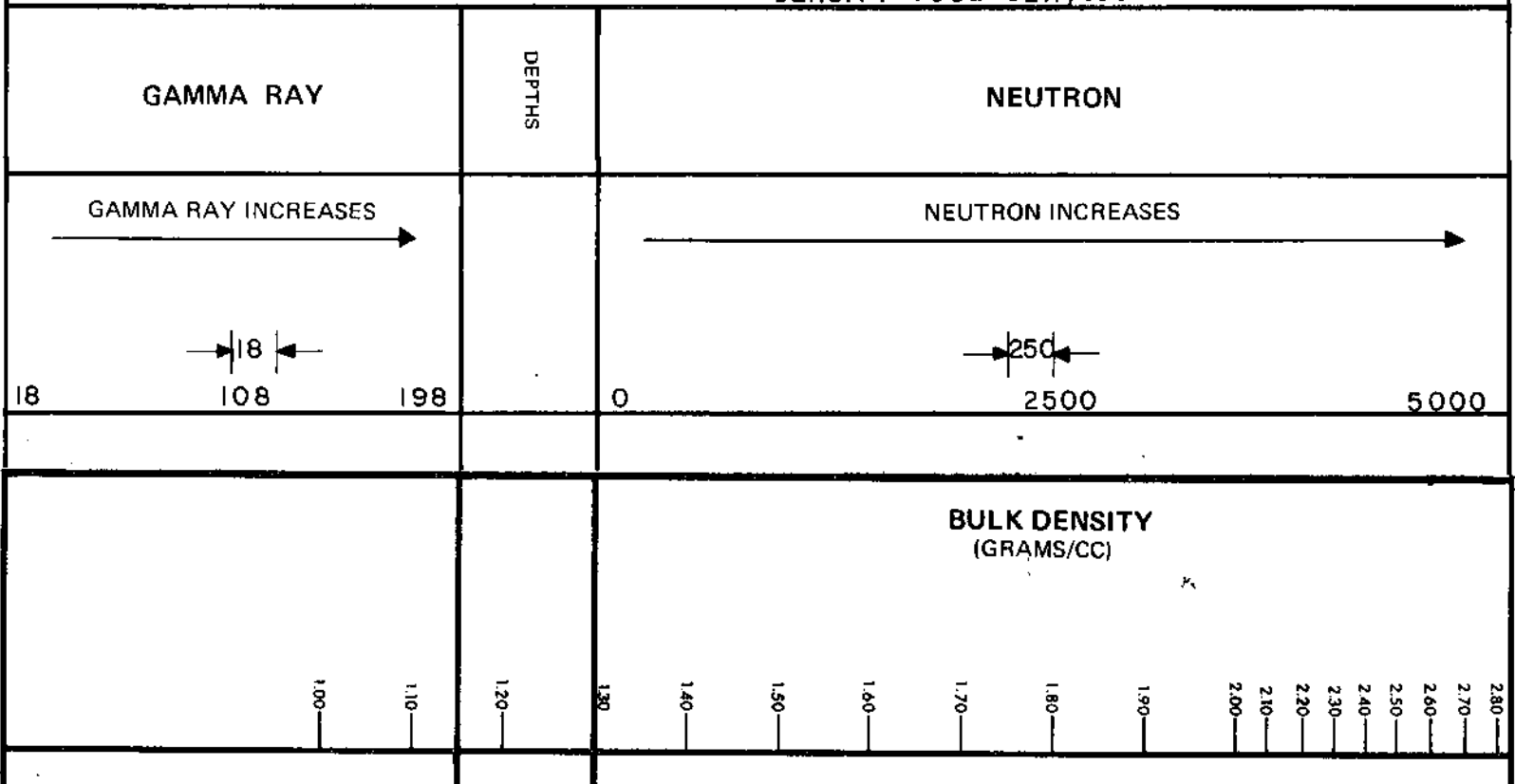
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	171
HOIST TRUCK NO.	104	SPACING	17 IN.
INSTRUMENT TRUCK NO.	104	TYPE	AmBe
TOOL SERIAL NO.	340	STRENGTH	3 CURIES

### LOGGING DATA

GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
ONE	000	120	12	5	100	1L.	18	3	500	0L.	250
ONE	001	118	12	3	1000	1,8 RT.	53,08 CPS/DIV. DENSITY				

REMARKS

DENSITY TOOL SER. 553



# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	DDH-G-7
LOCATION	BULLMOOSE MTN	Co. 43,854   De. 83,836.7
FIELD	SUKUNKA	
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	Elev. 5172.5
Log Measured from	RIG FLOOR	1.5 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	
Run No.	ONE	
Date	NOV. 13, 1975	
First Reading	221	
Last Reading	002	
Footage Logged	219	
Depth Reached	222	
Depth Driller	221.5	
Casing Roke	12 FT.	
Casing Driller	12 FT.	
Fluid Type	AIR / WATER	
Liquid Level		
Min. Diam.	HQ	
Rm @ 9F		
Operating Time	2 HRS.	
Truck No.	104	

657

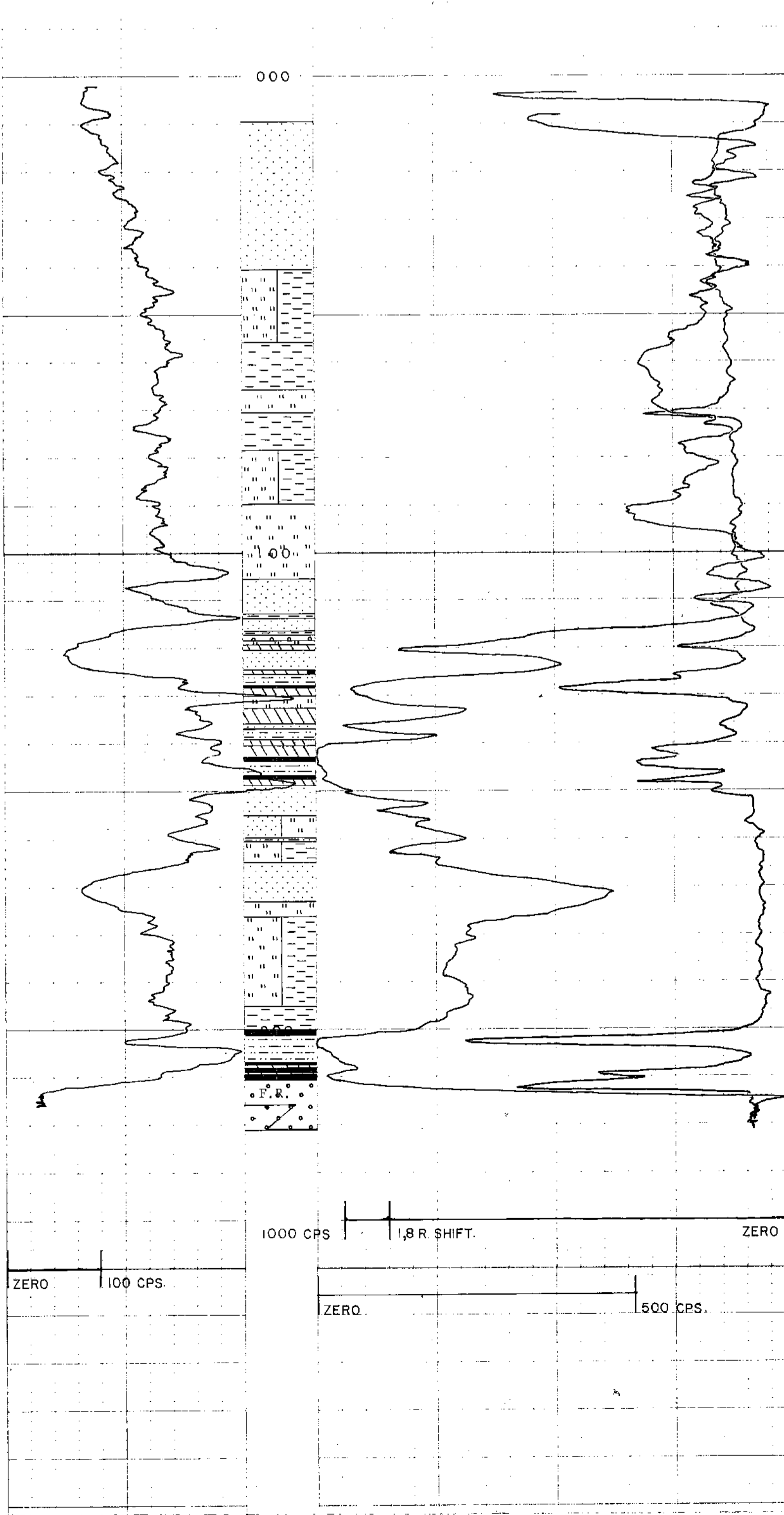
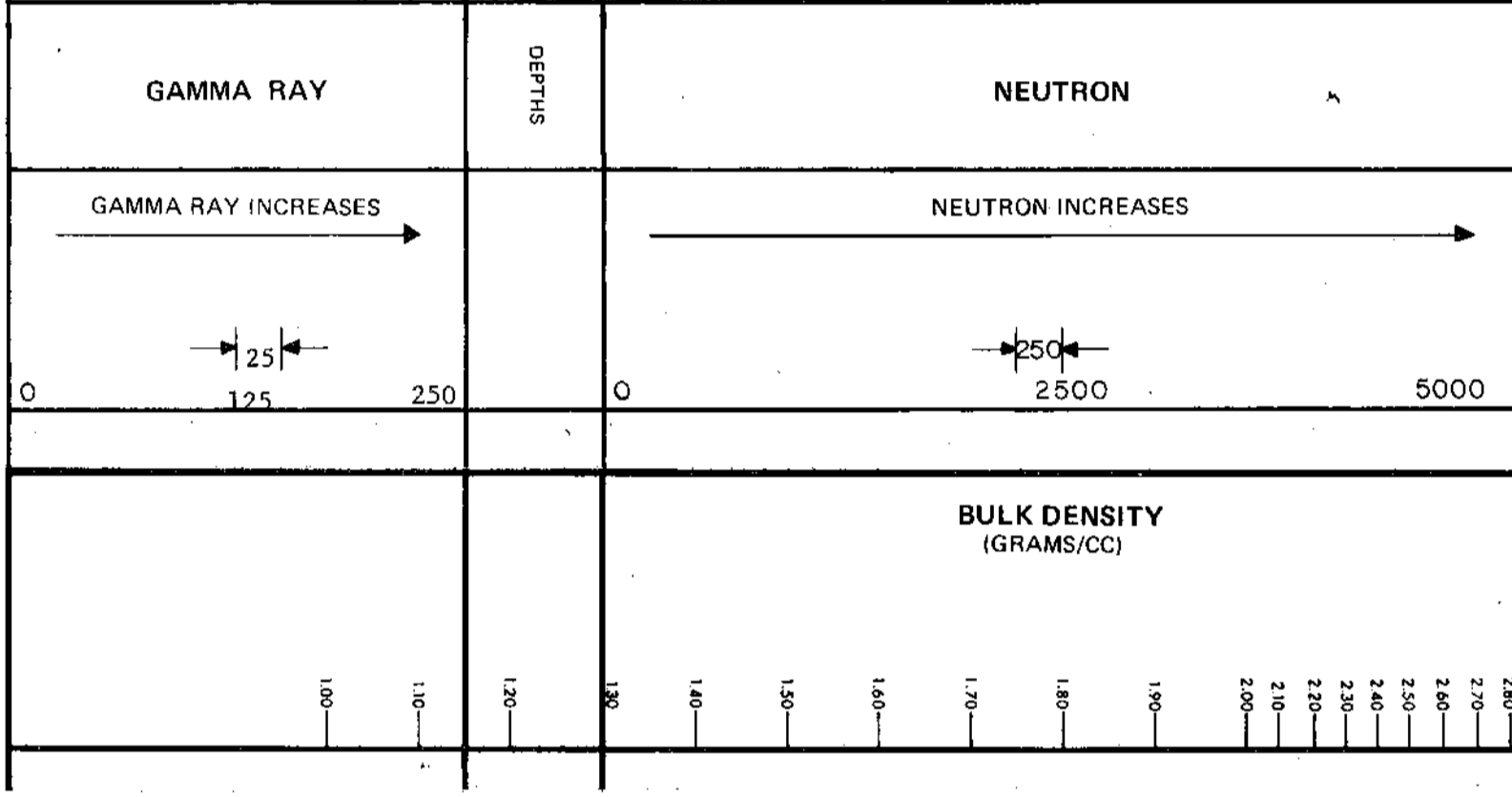
### EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	171
GENERAL		SPACING	17 IN
HOIST TRUCK NO.	104	TYPE	AmBe
INSTRUMENT TRUCK NO.	104	STRENGTH	3 CURIES
TOOL SERIAL NO.	340		

### LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	002	221	12	5	100	OL.	18	3	500	OL.	250
ONE	004	219	12	3	1000	1,8 RT.	53,08 CPS / DIV.	DENSITY			

REMARKS WATER TABLE NOT DETERMINED. GRAPHITE GREASE ADDED AS ROD LUBRICANT. DENSITY TOOL SERIAL NO 553



# ROKE

GAMMA RAY NEUTRON LOG  
DENSILOG  
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	DDH G-8
SEC	LOCATION	BULLMOOSE MTN. Lo. 44,933.8 De. 88,114.5
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	GROUND LEVEL	Elev. 5,056.5
	RIG FLOOR	1.4 Ft. Above Perm. Datum
	Well Depths Measured from	RIG FLOOR
		K.B. _____
		CSG _____
		G.L. _____
Run No.	ONE	
Date	NOV. 27, 1975	
First Reading	080	
Last Reading	000	
Footage Logged	080	
Depth Reached	081	
Depth Driller	081	
Casing Roke	12.5 FT.	
Casing Driller	12.5 FT.	
Fluid Type	AIR / WATER	
Liquid Level	12 FT.	
Min. Diam.	HQ	
Rm @ 9F		
Operating Time	1 HR.	
Truck No.	104	

657

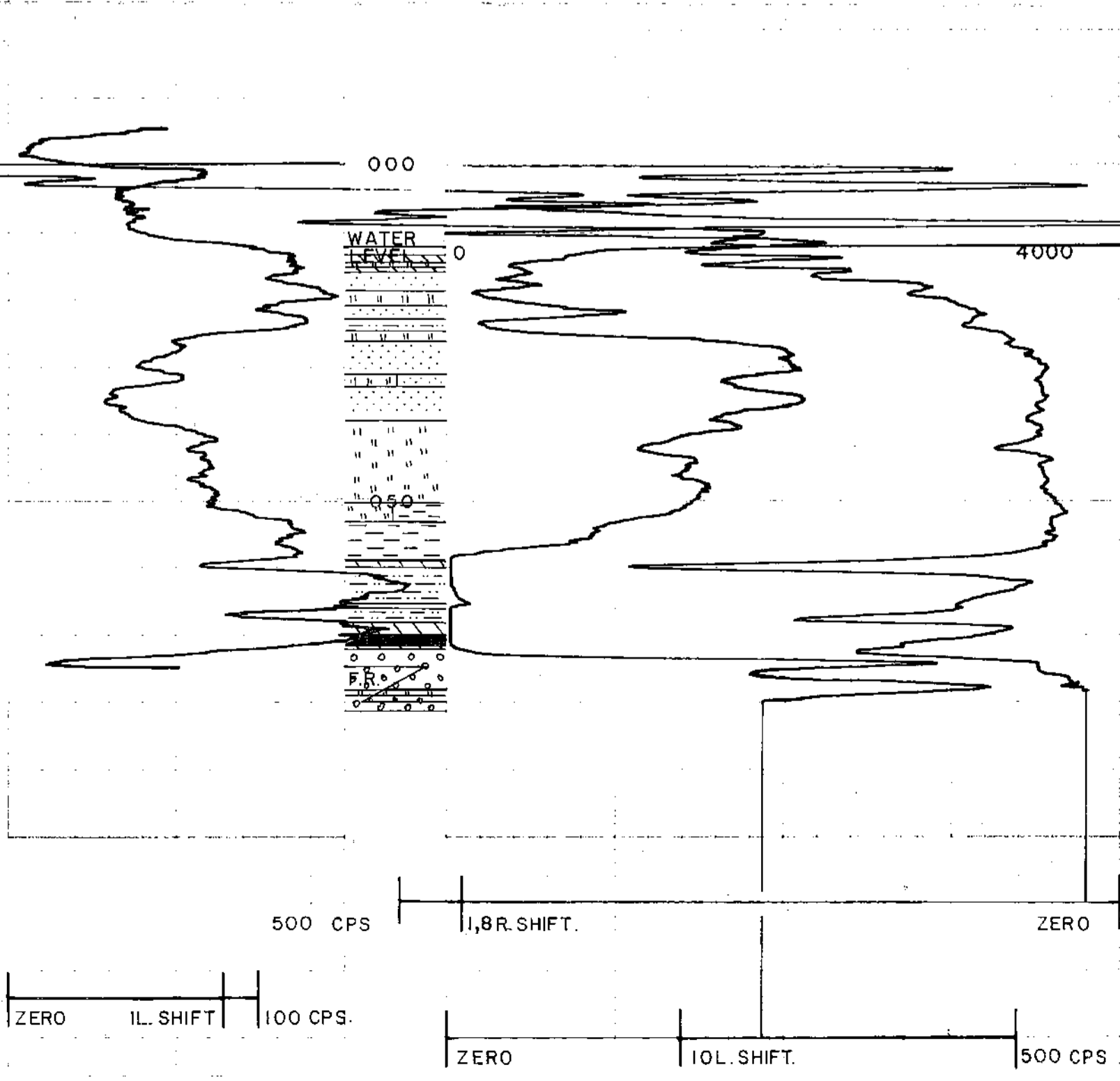
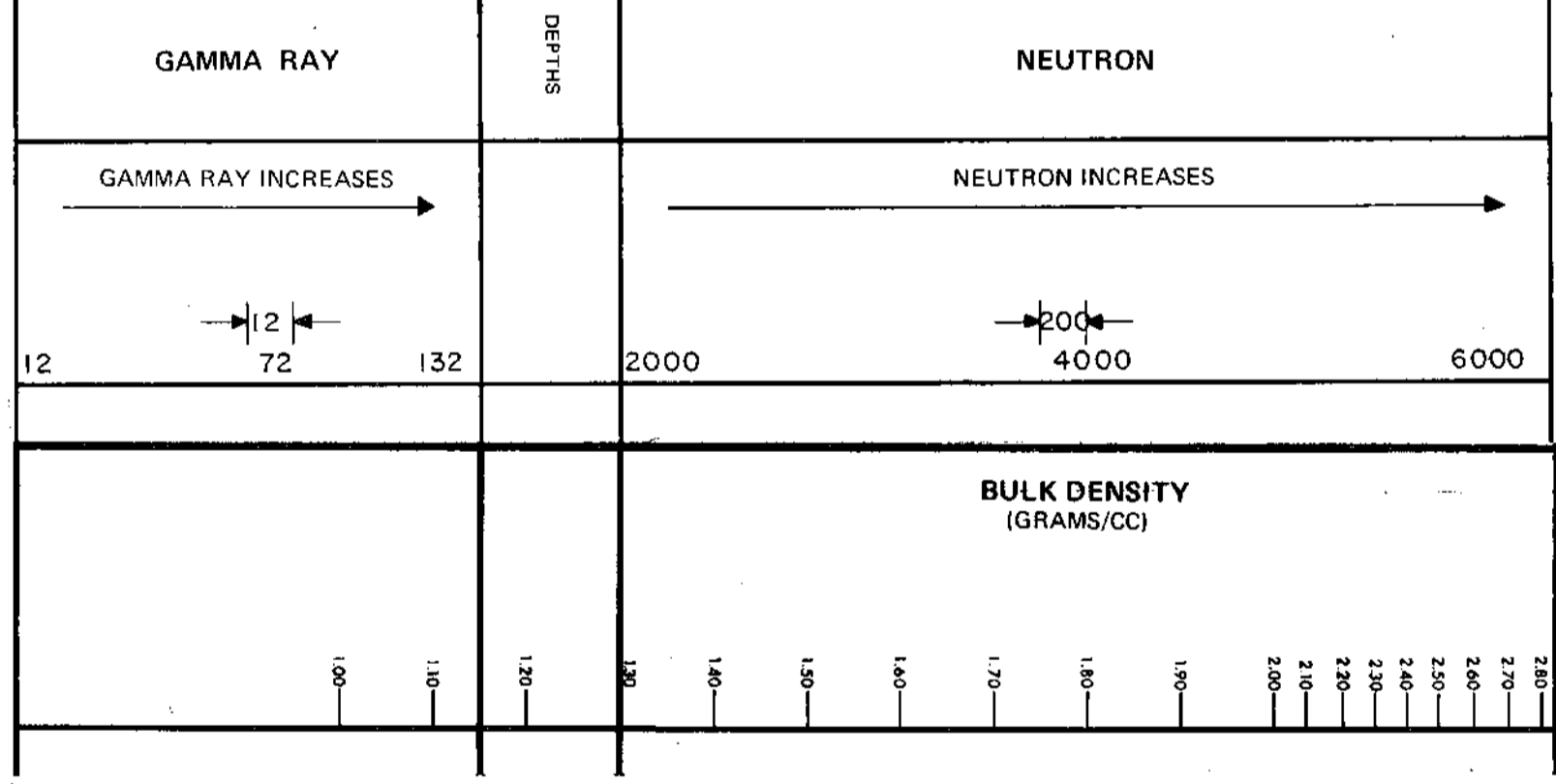
## EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	171
HOIST TRUCK NO.	104	SPACING	17 IN.
INSTRUMENT TRUCK NO.	104	TYPE	AmBe
TOOL SERIAL NO.	340	STRENGTH	3 CURIES

## LOGGING DATA

GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
ONE	000	012	12	5	100	IL.	12	3	500	10L	200
ONE	012	080	12	5	100	IL.	12	3	500	0L.	200
ONE	000	078	12	3	500	1.8RT.	23.35 CPS / DIV. - DENSITY.				

REMARKS LOGGED THROUGH DRILL ROD. CONSIDERATION MUST BE GIVEN TO THE POSITION OF THE DRILL ROD WHEN USING THE BULK DENSITY VALUES. DENSITY TOOL SER. 553.



# ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

DENSILOG

GAMMA RAY NEUTRON LOG

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	DDH G-9	
LOCATION	BULLMOOSE MTN	La. 41,937.1 De. 92,170.6
FIELD	SUKUNKA	
PROVINCE	BRITISH COLUMBIA	NTL
Permanent Datum	GROUND LEVEL	Elev. 5202.2
Log Measured from	RIG FLOOR	1.0 Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR	
Run No.	ONE	
Date	25 NOVEMBER 1975	
First Reading	065	
Last Reading	000	
Footage Logged	065	
Depth Reached	066	
Depth Driller	065	
Casing Roke	10 FT	
Casing Driller	9 FT	
Fluid Type	AIR/WATER	
Liquid Level	2 FT	
Min. Diam.	HQ	
Rm @ 9F		
Operating Time	1-3/4 HOURS	
Truck No.	104	
Recorded By	HELDIN	Witnessed By ANTONENKO

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	340	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	340
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	4 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	5.5 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	171
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
MOIST. TRUCK NO.	104		
INSTRUMENT TRUCK NO.	104		
TOOL SERIAL NO.	340		

LOGGING DATA											
GENERAL			GAMMA RAY					NEUTRON			
RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
	FROM	TO									
1	000	065	12	5	100	0L	16 API	3	500	0L	200 API
1	000	063	12	3	500	1.8RT	23.35 CPS/DIV		DENSITY		

REMARKS LOGGED THROUGH DRILL ROD, CONSIDERATION MUST BE GIVEN TO THE POSITION OF THE DRILL ROD WHEN USING THE BULK DENSITY VALUES. DENSITY TOOL SERIAL NO 553

