

Sukunka Coal Mine Project

SUKUNKA

EXPLORATION PROGRAMME

1979

VOLUME 2

666



BP Exploration Canada Limited

COAL DIVISION



PR - SUKUNKA 79(3)A.

~~CONFIDENTIAL~~

GOLD COMMISSIONER
RECEIVED and RECORDED
NOV 21 1979
M.R. #
VICTORIA, B.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

00 666



BP-E-1
BP - Sukunka 79 (3)A

BOREHOLE BP-E-1
CLIENT BP Exploration, Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 4/6/79
DEPTH SCALE 1:200
LOG SCALE 1 OF 4 LOGS

COAL
LITHOLOGY
LOG

SONDE TYPE
COAL COMBINATION
SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY
CALIPER

| BOREHOLE DATA | |
|---------------------|-------------------|
| PERMANENT DATUM | Ground level |
| ELEVATION OF P.O. | BPB |
| MEASUREMENTS FROM | G.L. |
| DEPTH REACHED | 105.6m |
| CASING SHOE | 2m |
| BIT SIZES | 1 3.75 TO 1D 2 TO |
| | 3 TO 4 TO 2m |
| CASING SIZES | 1 4" TO 2m 2 TO |
| | FLUID DATA |
| NATURE | Water |
| SG | |
| LEVEL | |
| VISCOSITY | |
| Run at press. temp. | |
| BHT | |
| OPERATION DATA | |
| FIRST READING | 105m |
| LAST READING | 0 |
| INTERVAL LOGGED | 105m |
| UNIT-TRUCK No. | YZ6/34 |
| ENGINEER | R. J. SHOP |
| WITNESS | L. Rindero |

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EQUIPMENT AND RECORDING DATA

| EQUIPMENT AND RECORDING DATA | | | | | | | | | | | | | |
|---|-------------------|-------------------|------------------|------------------------------|--------------|------------------|-------|-----------|-----------|--------|----|--------------|---|
| COAL COMBINATION SONDE | | | | | | | | | | | | | |
| LOG | EQUIPMENT | | | TAPING | | | PANEL | | CAL COEFF | DEPTHS | | SEAM LOG RUN | |
| | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT or REPLAY | SPEED | T.C. SECS | NORM | FROM | TO | INTERVAL | |
| GAMMA RAY | 153A | | 367 | Y | 9 | D | 9 | 1 | 1.57 | 104 | 0 | 104 | Y |
| L.S. DENSITY | | | 0336 | Y | 9 | D | 9 | 1/3 | 6.74 | 105 | 1 | 104 | Y |
| CALIPER | SIDEWALL POSITION | | | Y | 9 | D | 9 | 1/3 | | 105 | 1 | 104 | Y |
| COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log) | | | | | | | | | | | | | |
| FROM | 104 | 33 | | | | | | | | | | | |
| TO | 101 | 26 | | | | | | | | | | | |
| INTERVAL | 3 | 7 | | | | | | | | | | | |
| ADDITIONAL SONDES RUN | | | | | | | | | | | | | |
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | | | | | | | | | | |
| 19 | N-N | 1:200 | | | | | | | | | | | |
| 107 | Vert. | - | | | | | | | | | | | |
| | | | | REFER TO ADDITIONAL HEADINGS | | | | | | | | | |
| REMARKS | | | | | | | | | | | | | |
| VERTICALITY INFORMATION | | | | | | | | | | | | | |
| Depth | | Inclination | | Azimuth | | | | | | | | | |
| 50m | | 1.7° | | N 39° E | | | | | | | | | |
| 75m | | 1.5° | | N 28° E | | | | | | | | | |
| 104m | | 2.6° | | N 31° E | | | | | | | | | |

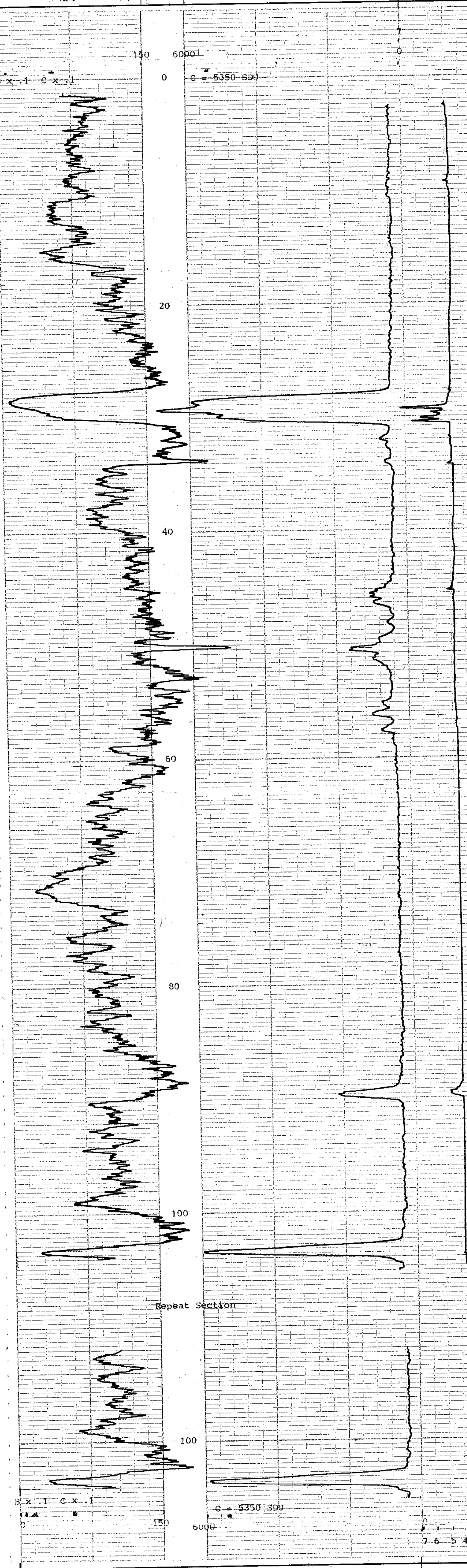
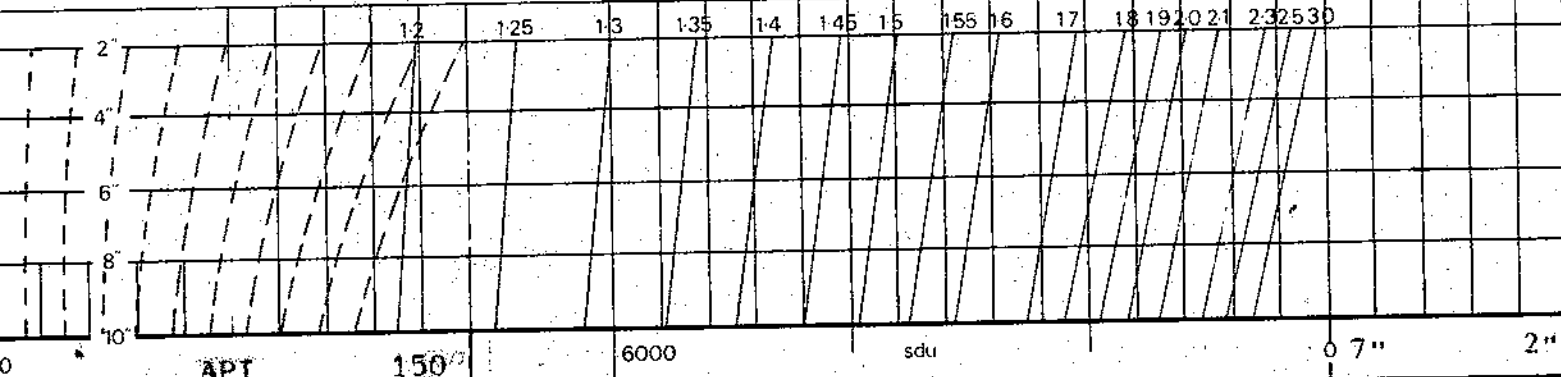
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

| | | | | | |
|------------------------------------|---------------------|----------------------|----------------------|-------------------|----------------|
| JIG No. 367 | VALUE 510 @ 2" DIAM | JIG CAL DATE 28/5/79 | JIG VALUE 5350 SDU @ | g/cm ³ | 7 ins. 910 cps |
| JIG MARK SHOWN AT ABOVE VALUE x0.1 | | JIG No. 0336 | SPAN 6000 | NORM SDU = 6.74 | 2 ins. 485 cps |

| GAMMA RAY | DEPTH | BULK DENSITY g/cm ³ | CALIPER INCHES |
|-----------|-------|--------------------------------|----------------|
|-----------|-------|--------------------------------|----------------|

HOLE SIZE CORRECTION DATA



| GAMMA RAY | DEPTH | BULK DENSITY g/cm ³ | CALIPER INCHES |
|-----------|-------|--------------------------------|----------------|
|-----------|-------|--------------------------------|----------------|



BOREHOLE BP-E-1 AREA Sukunka
CLIENT BP Exploration, Coal Division COUNTRY Canada

COAL LITHOLOGY LOG



01 - SUKUNKA 79 (B) - BE-1

COAL QUALITY LOG

SONDE TYPE:
COAL COMBINATION SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

BOREHOLE BP-E-1
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 4/8/79

DEPTH SCALE
1.20

2 of 4 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG

| LOG | TAPING | RECORDING | SPEED | T.C. | PANEL | COEFF. |
|--------------|--------|-----------|-------|------|-------|--------|
| GAMMA | Y | Y | 2 | R | 2 | 1.57 |
| L.S. DENSITY | Y | Y | 2 | R | 2 | 6.74 |

SOURCE, SONDE AND CALIBRATION:
REFER TO LITHOLOGY LOG

| COAL QUALITY | LOG INTERVALS |
|--------------|---------------|
| FROM | 104 |
| TO | 101 |
| INTERVAL | 3 |
| FROM | 7 |
| TO | 3 |
| INTERVAL | 4 |
| TOTAL | 10M |

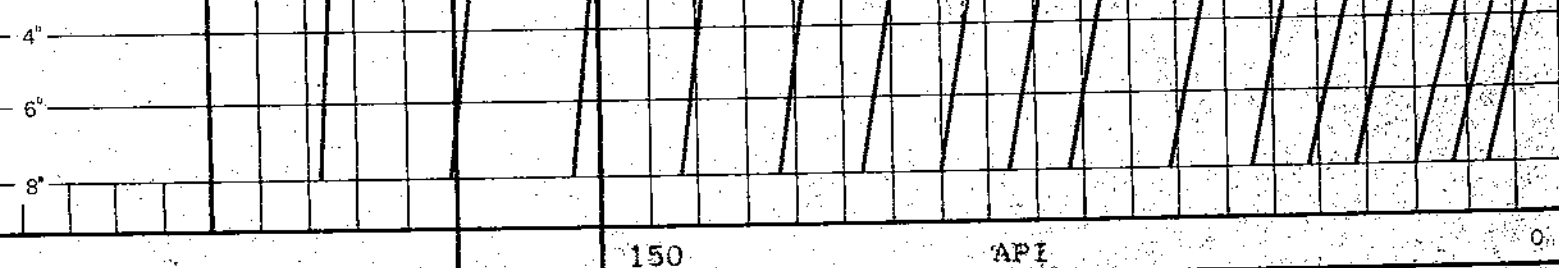
REMARKS

6666

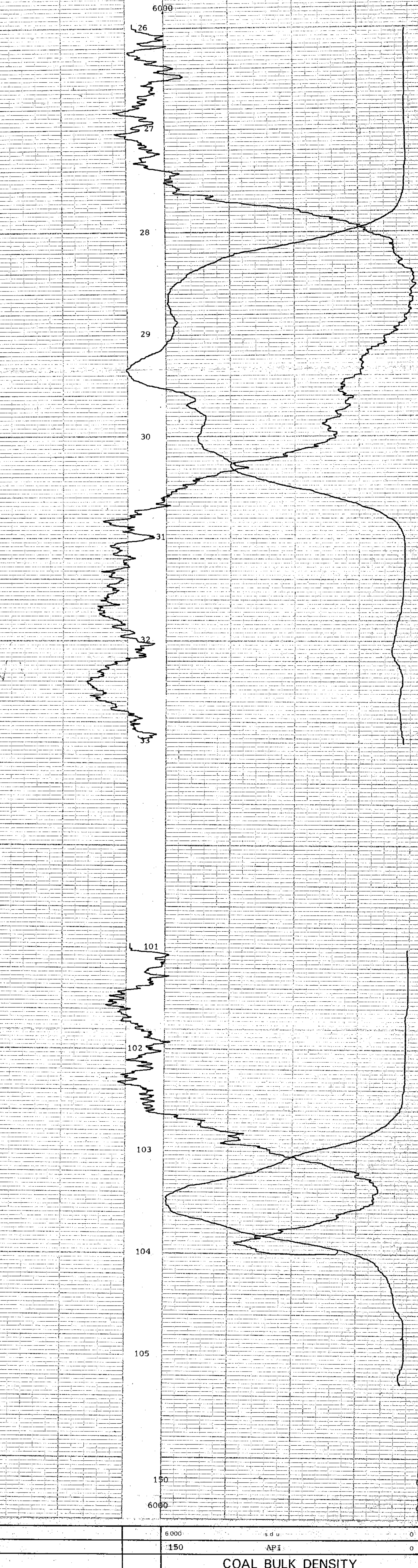
B P B COAL QUALITY LOG

| DEPTH | GAMMA RAY | COAL BULK DENSITY |
|-------|-----------|-------------------|
|-------|-----------|-------------------|

HOLE SIZE CORRECTION DATA



| | | |
|-------|--------|---|
| 150 | API | 0 |
| 6.000 | s.d.u. | 0 |



| | | |
|-------|--------|---|
| 6.000 | s.d.u. | 0 |
| 150 | API | 0 |

| DEPTH | GAMMA RAY | COAL BULK DENSITY |
|-------|-----------|-------------------|
|-------|-----------|-------------------|



BOREHOLE BP-E-1 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL QUALITY LOG

MT 8802 R

BP-SUKUNKA 99(B)A
00-E-2



COAL LITHOLOGY LOG

COAL

LITHOLOGY LOG

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY
CALIPER

BOREHOLE DATA
PREPARATION DATE: Ground Level
ELEVATION OF P.D.: 888
MEASUREMENT FROM: GROUND LEVEL
DEPTH REACHED: 163.3
CASING SHOE: 1.2
BIT SIZE: 3 TO 1.2m
CASING SIZES: 1 TO 1.2m

BOREHOLE DATA
AREA: Sukunka
COUNTRY: Canada
DATE LOGGED: 7/6/79
DEPTH SCALE: 1:200
1 OF 4 LOGS

CLIENT
BP Exp., Coal Division

OPERATION DATA
FIRST READING: 162 m
LAST READING: 0
INTERVAL LOGGED: 162 m
UNIT-TRUCK No: V26/34
ENGINEER: R. BISHOP
WITNESS: C. BICKFORD

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EQUIPMENT AND RECORDING DATA

| LOG | EQUIPMENT | TAPING | PANEL | CAL COEFF | DEPTHS | SEAM LOG RUN | | | | | |
|-----------|-------------------|-----------|--------------|---------------|--------|--------------|------|------|-----|----------|-----|
| SONDE | SOURCE | LOG TAPED | RECORD SPEED | DIRECT REPLAY | SPEED | T.C. SECS | NORM | FROM | TO | INTERVAL | |
| GAMMA RAY | 153A | 367 | Y | 9 | D | 9 | 1 | 1.57 | 161 | 0 | 161 |
| DENSITY | SIDEWALL POSITION | 0336 | Y | 9 | D | 9 | 1/3 | 6.66 | 162 | 0 | 162 |
| CALIPER | | | Y | 9 | D | 9 | 1/3 | | 162 | 0 | 162 |

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

| FROM | TO | INTERVAL | TOTAL |
|------|-----|----------|-------|
| 147 | 134 | 99 | |
| 141 | 128 | 90 | |
| 6 | 6 | 9 | |

ADDITIONAL SONDES RUN

| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | REFER TO ADDITIONAL HEADINGS |
|-------|-------|-------------------|------------------|------------------------------|
| 19 | N-N | 1:200 | | |
| 107 | Vert. | | | |

REMARKS

Verticality Information

| Depth | Inclination | Azimuth |
|-------|-------------|---------|
| 50m | 0.6° | N9°E |
| 100m | 0.9° | N24°E |
| 125m | 1.3° | N27°E |
| 160m | 1.3° | N47°E |

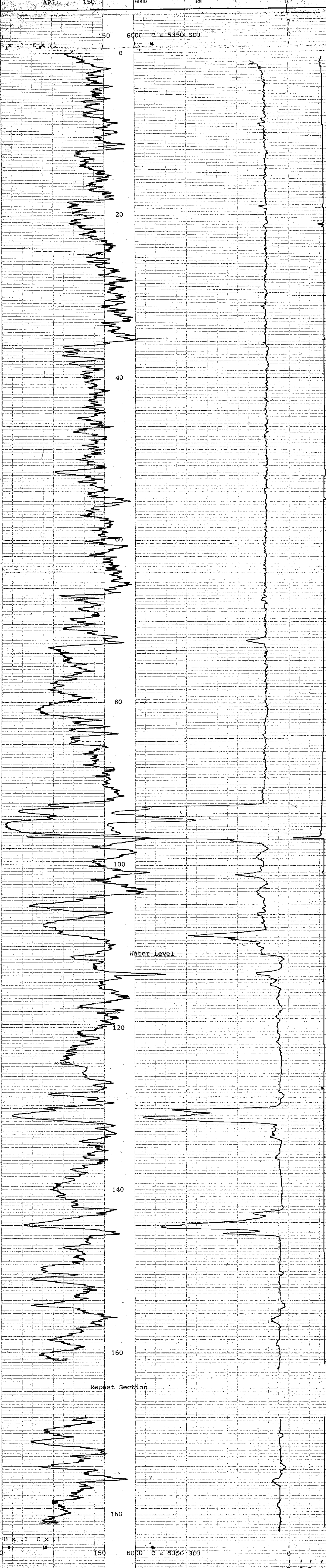
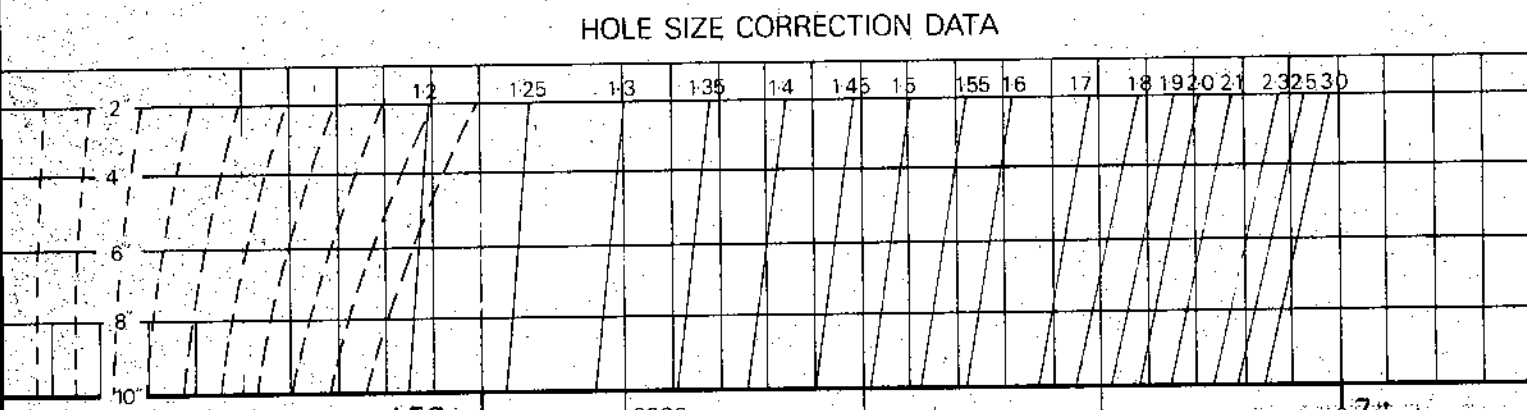
Water level at 111m - Gamma Ray recorded separately above this point with no source on CCS.

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

| | | | | | | |
|-----------------------------------|---------------------|----------------------|----------------|-------|-------------------|---------------|
| JIG No. 367 | VALUE 510 @ 2" DIAM | JIG CAL DATE 28/5/79 | JIG VALUE 5350 | SDU @ | g/cm ³ | 7 ins 920 cps |
| JIG MARK SHOWN AT ABOVE VALUE 0.1 | | JIG No 0336 | SPAN 6000 | NORM | 6.66 | 2 ins 490 cps |

| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |



| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

COAL LITHOLOGY LOG

BOREHOLE BP-B-2 **AREA** Sukunka

CLIENT BP Exp., Coal Division **COUNTRY** Canada





Mr. Sukunka - 7/6/79 BP-E-2

LOG SUITE
GAMMA RAY
LS DENSITY

SONDE TYPE:
COAL
COMBINATION
SONDE

COAL
QUALITY
LOG

BOREHOLE BP-E-2
 CLIENT BP Exp., Coal Division
 AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 7/6/79
 DEPTH SCALE 1:20
 2 OF 4 LOGS

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

LOG TAPING SIDEWALL POSITION
 LOG NO. 1
 LOG DATE 7/6/79
 LOG TIME 10:00
 LOG OPERATOR J. R. 1
 LOG SUPERVISOR J. R. 1
 LOG CHECKER J. R. 1
 LOG APPROVER J. R. 1
 LOG REVISIONS

COAL QUALITY LOG INTERVALS
 FROM 147 134 99
 TO 141 128 90
 INTERVAL 6 6 9
 FROM 147 134 99
 TO 141 128 90
 INTERVAL 6 6 9

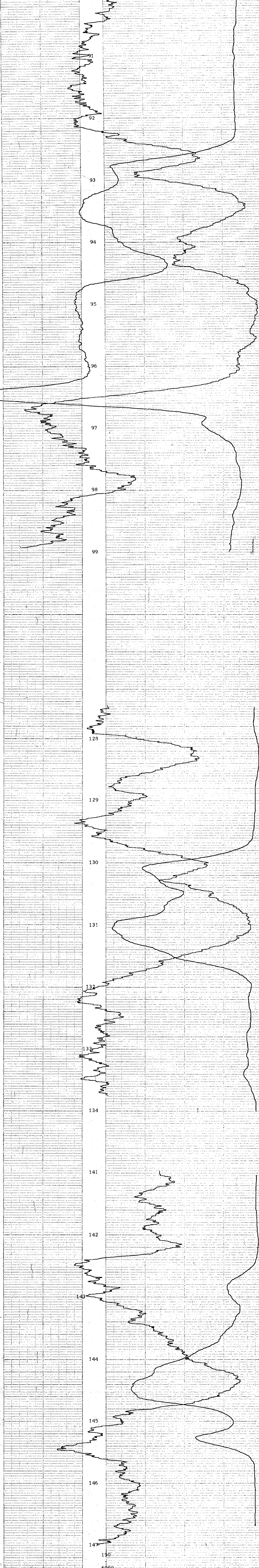
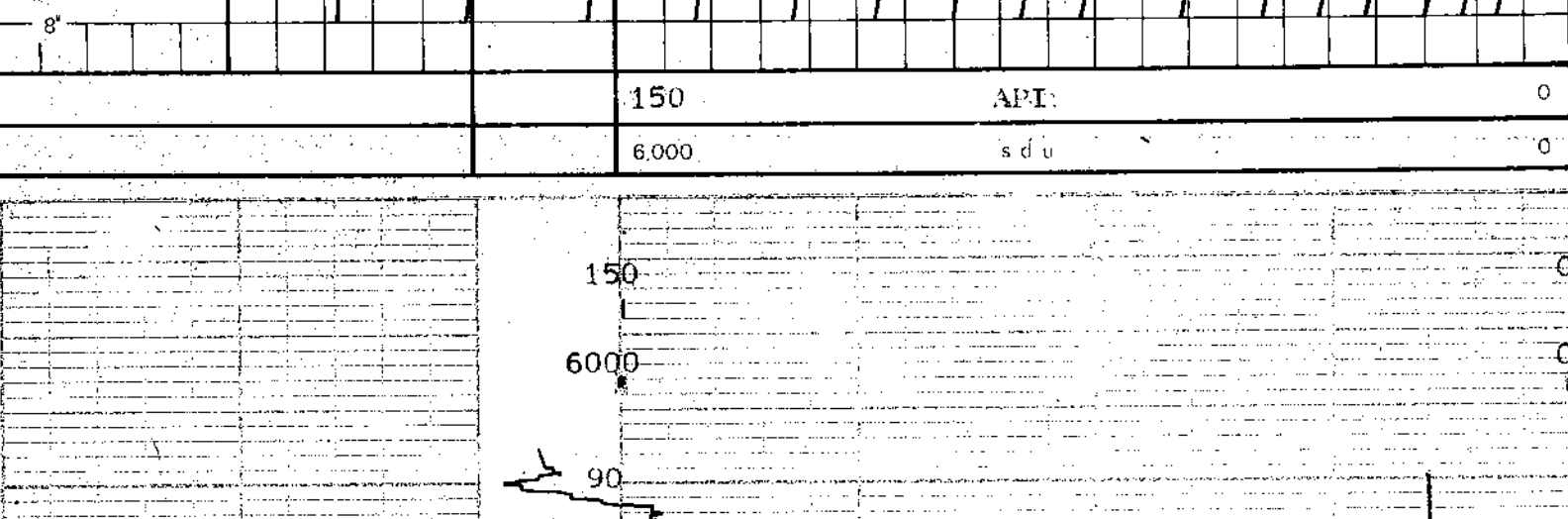
REMARKS
 Detail from 99m-90m recorded in
 air - readings do not show true
 rock densities.

B P B COAL QUALITY LOG

GAMMA RAY
COAL BULK DENSITY

DEPTH

HOLE SIZE CORRECTION DATA



6000 s.d.u. 0
150 API 0

COAL BULK DENSITY

GAMMA RAY

DEPTH



BOREHOLE BP-E-2
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada

COAL QUALITY LOG

BP-Sukunka 79(3)A. BP-E-2.



BOREHOLE BP-E-2
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 7/6/79

DEPTH SCALE
1.20

3 of 4 LOGS

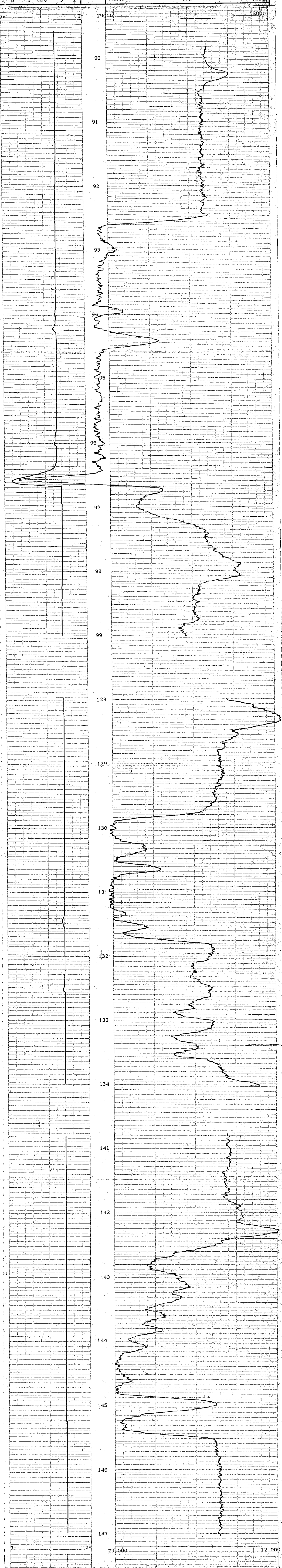
SEAM THICKNESS LOG

SEAM THICKNESS LOG INTERVALS

| | | | |
|----------|-----|-----|----|
| FROM | 147 | 134 | 99 |
| TO | 141 | 128 | 90 |
| INTERVAL | 6 | 6 | 9 |
| FROM | | | |
| TO | | | |
| INTERVAL | | | |
| TOTAL | | | |
| REMARKS | | | |

SONDE TYPE:
 COAL COMBINATION SONDE
 LOG SUITE:
 CALIPER
 BR. DENSITY

B PB SEAM THICKNESS LOG



| | | |
|-----------------|-------|----------------------------|
| CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY cps |
| 7 6 5 dia 4 3 2 | 29000 | 12000 |



BOREHOLE BP-E-2 AREA Sukunka
 CLIENT BP Exp., Coal Division COUNTRY Canada

SEAM THICKNESS LOG



2- SUKUNKA 79 (3) 4 BP-E-2

NEUTRON-NEUTRON LOG

BOREHOLE BP-E-2

CLIENT BP Exp., Coal Division

AREA Sukunka

COUNTRY Canada

DATE LOGGED 7/6/79

4 of 4 LOGS

DEPT SCALE 1:200

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

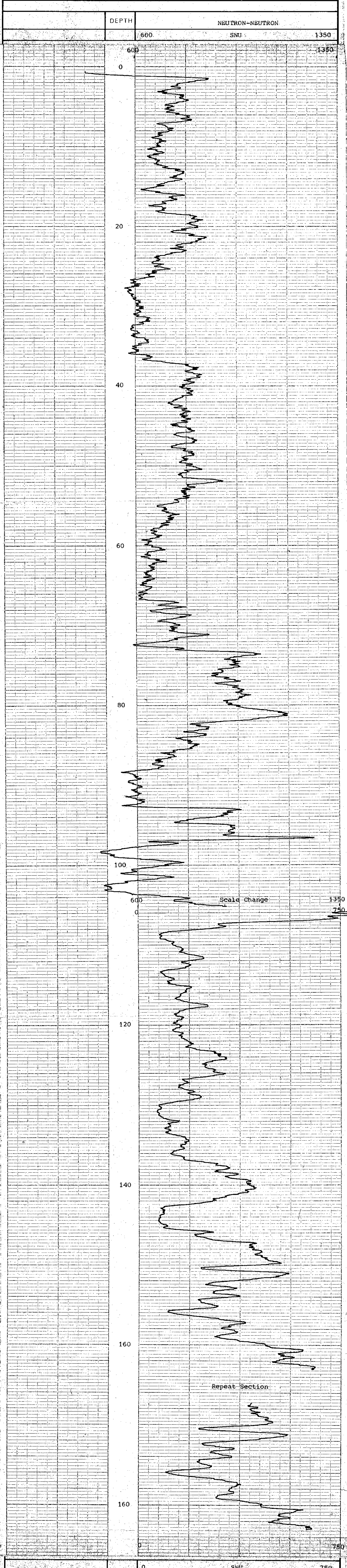
EQUIPMENT AND RECORDING DATA

| LOG | TAPPING | PANEL | DATE |
|-----|---------|---------|------------|
| N-N | Y | 9 | D 9 1 .902 |
| | | SPD# 19 | SPD# 247 |

REMARKS

Scale Change at 105m (Water level)

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| | | | |
|-----------------|------------------------|---------|---------|
| DEPTH | 0 | SNU | 750 |
| NEUTRON-NEUTRON | | | |
| BOREHOLE | BP-E-2 | AREA | Sukunka |
| CLIENT | BP Exp., Coal Division | COUNTRY | Canada |





HP - SUKUNKA 79(3)A602

SONDE TYPE
COAL
COMBINATION
SONDE

COAL
LITHOLOGY
LOG

BOREHOLE BP-R
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 9/6/79
DEPTH SCALE 1:200
LOG SCALE 1 of 4 LOGS

PERMANENT DATUM Ground Level
ELEVATION OF P.D. BPB
MEASUREMENTS FROM 3.1. G.L.
DEPTH REACHED 66.7m
CASING SHOE 12m
BIT SIZES 1 HJ TO TD 2 TO TO
3 TO TO 4 TO TO
CASING SIZES 1 4" TO 12m 2 HJ TO TD

FLUID DATA
NATURE Water
SG
LEVEL
VISCOSITY
From at meas temp
BHT

OPERATION DATA
FIRST READING 66m
LAST READING 0
INTERVAL LOGGED 66m
UNIT-TRUCK No. Y26/34
ENGINEER R. Bishop/D. Reed
WITNESS D. Mitchell

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EQUIPMENT AND RECORDING DATA

| LOG | EQUIPMENT | | | TAPING | | | PANEL | | | CAL COEFF | DEPTHS | | | SEAM LOG RUN |
|--------------|-------------------|--------|------------|-----------|--------------|------------------|-------|-----------|------|-----------|--------|----|----------|--------------|
| | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT or REPLAY | SPEED | T.C. SECS | NORM | | FROM | TO | INTERVAL | |
| GAMMA RAY | 153A | | 367 | Y | 9 | D | 9 | 1 | 1.57 | | 65 | 0 | 65 | Y |
| L.S. DENSITY | | | 0336 | Y | 9 | D | 9 | 1 | 6.70 | | 66 | 1 | 65 | Y |
| CALIPER | SIDEWALL POSITION | | | | | | | | | | | | | |

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

| | | |
|----------|----------|----------------|
| FROM | 35 | INTERVAL TOTAL |
| TO | 28 | |
| INTERVAL | 7 metres | |

| ADDITIONAL SONDES RUN | | | | REFER TO ADDITIONAL HEADINGS | REMARKS | |
|-----------------------|-------|-------------------|------------------|------------------------------|-------------------------|-------------|
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | | VERTICALITY INFORMATION | |
| 19 | N-N | 1:200 | | | Depth | Inclination |
| 107 | Vert. | Spot | | | 25m | 3.6° |
| | | | | | 50m | 4.4° |
| | | | | | 65m | 5.6° |

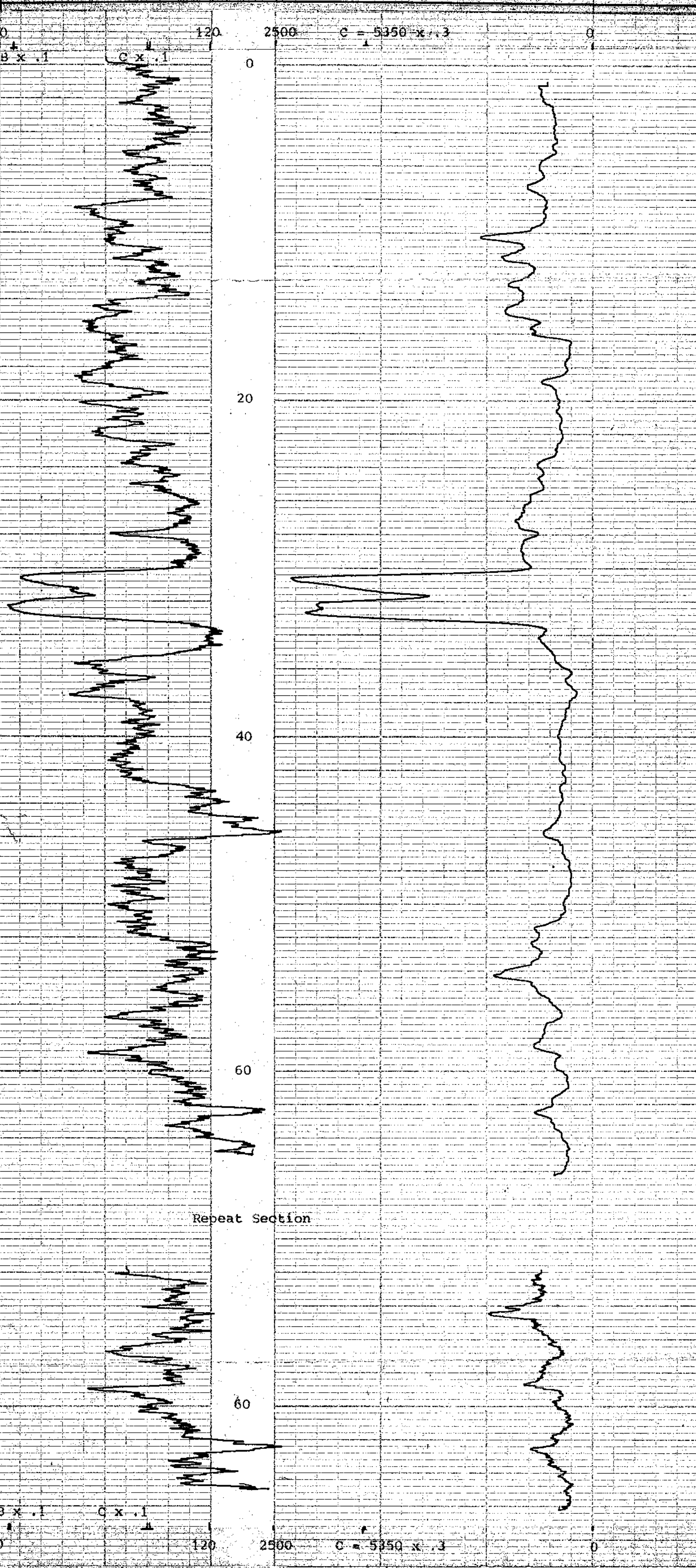
(Azimuth unavailable due to rods in hole)

Hole logged through HJ drill rods.

BPB COAL LITHOLOGY LOG
CALIBRATION DATA

| | | | |
|---|--|-----|-----|
| JIG No. <u>367</u> VALUE <u>510</u> @ 2" DIAM | JIG CAL DAT <u>28/5/79</u> JIG VALUE <u>5350</u> SDU @ <u>g/cm³</u> | ins | cps |
| JIG MARK SHOWN AT ABOVE VALUE <u>x0.1</u> | JIG No. <u>0336</u> SPAN <u>2500</u> NORM <u>SDU = 6.70</u> | ins | cps |

| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER INCHES |
|-----------|-------|--------------|----------------|
|-----------|-------|--------------|----------------|



| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER INCHES |
|-----------|-------|--------------|----------------|
|-----------|-------|--------------|----------------|

BOREHOLE BP-R AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG





10-5UKINCA-79(13)A BP-R

BOREHOLE BP-R
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 9/6/79

DEPTH SCALE
1 - 20
2 OF 4 LOGS

COAL QUALITY LOG

SONDE TYPE
 COAL COMBINATION
 SONDE

LOG SUITE
 GAMMA RAY
 L.S. DENSITY

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

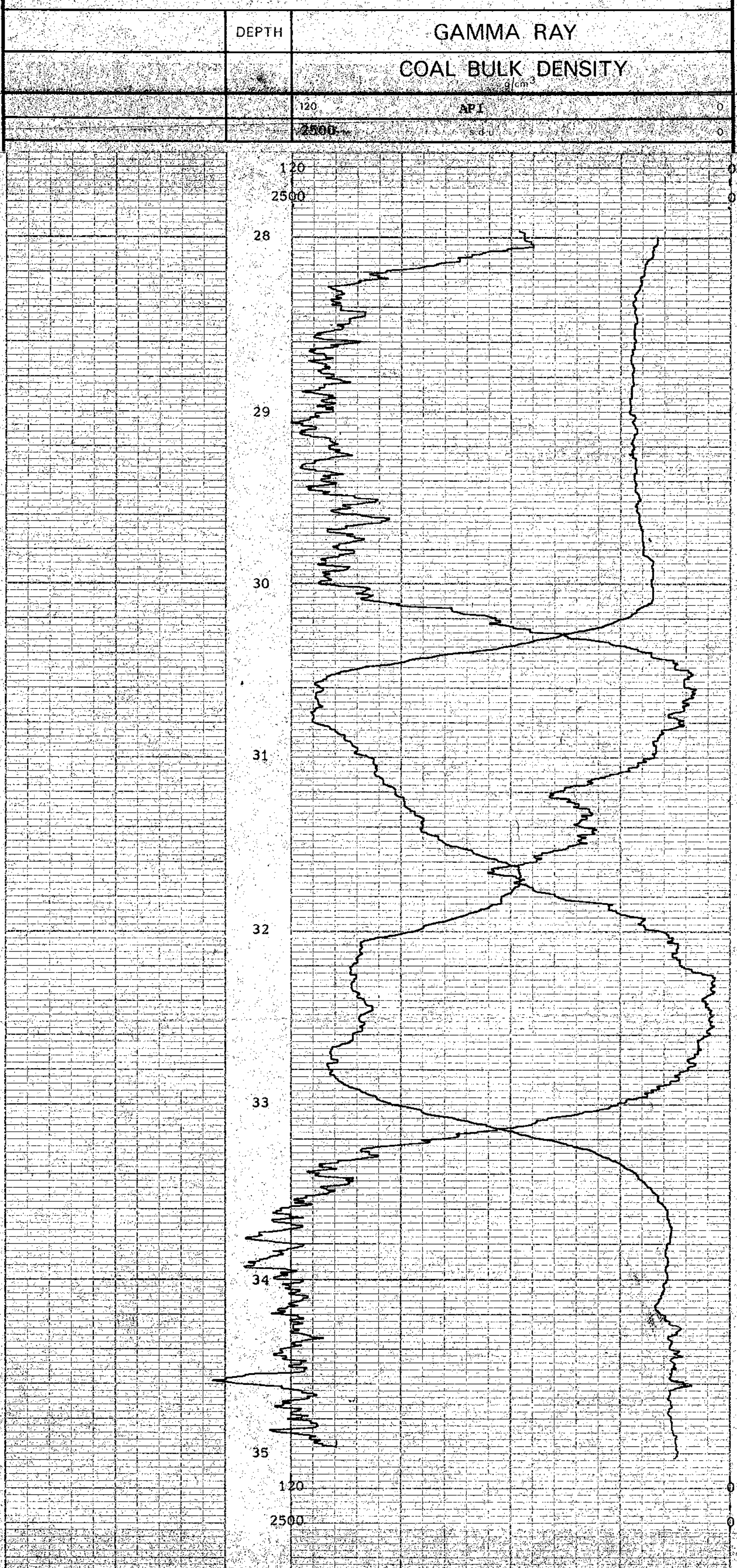
| LOG | TAPPING | LOG RECORD HEAD | DIRECT SPEED SECS | PANEL | SIDEWALL POSITION | COAL |
|--------------|---------|-----------------|-------------------|-------|-------------------|------|
| GAMMA RAY | X | 2 | R | 2 | 2 | 1.57 |
| L.S. DENSITY | X | 2 | R | 2 | 1 | 6.70 |

COAL QUALITY LOG INTERVALS
 FROM 35
 TO 28
 INTERVAL 7metres

REMARKS
666

BPB COAL QUALITY LOG

**GAMMA RAY
 COAL BULK DENSITY**



**COAL BULK DENSITY
 GAMMA RAY**

| | | | |
|-------|------|-------------------|---|
| DEPTH | 120 | API | 0 |
| | 2500 | g/cm ³ | 0 |



BOREHOLE BP-R AREA Sukunka
 CLIENT BP Exp., Coal Division COUNTRY Canada

COAL QUALITY LOG



K-SUKUNKA 79(3)A. BP-R.

BOREHOLE BP-R
 CLIENT BP Exp., Coal Division

DEPTH SCALE
1:20

AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 9/6/79

3 of 4 LOGS

SEAM THICKNESS LOG

SONDE TYPE:
 COAL
 COMBINATION
 SONDE

LOG SUITE:
 CALIPER
 BR DENSITY

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

| | | | |
|------------|-------------------|-------|------|
| LOG | TAPING | PANEL | CODE |
| | LOG RECORD DIRECT | SPEED | SECS |
| | JABED | SPEED | NORM |
| CALIPER | Y | 2 | R |
| BR DENSITY | Y | 2 | 1 |
| | | | |

SOURCE SONDE AND CALIBRATION
 REFER TO LITHOLOGY LOG

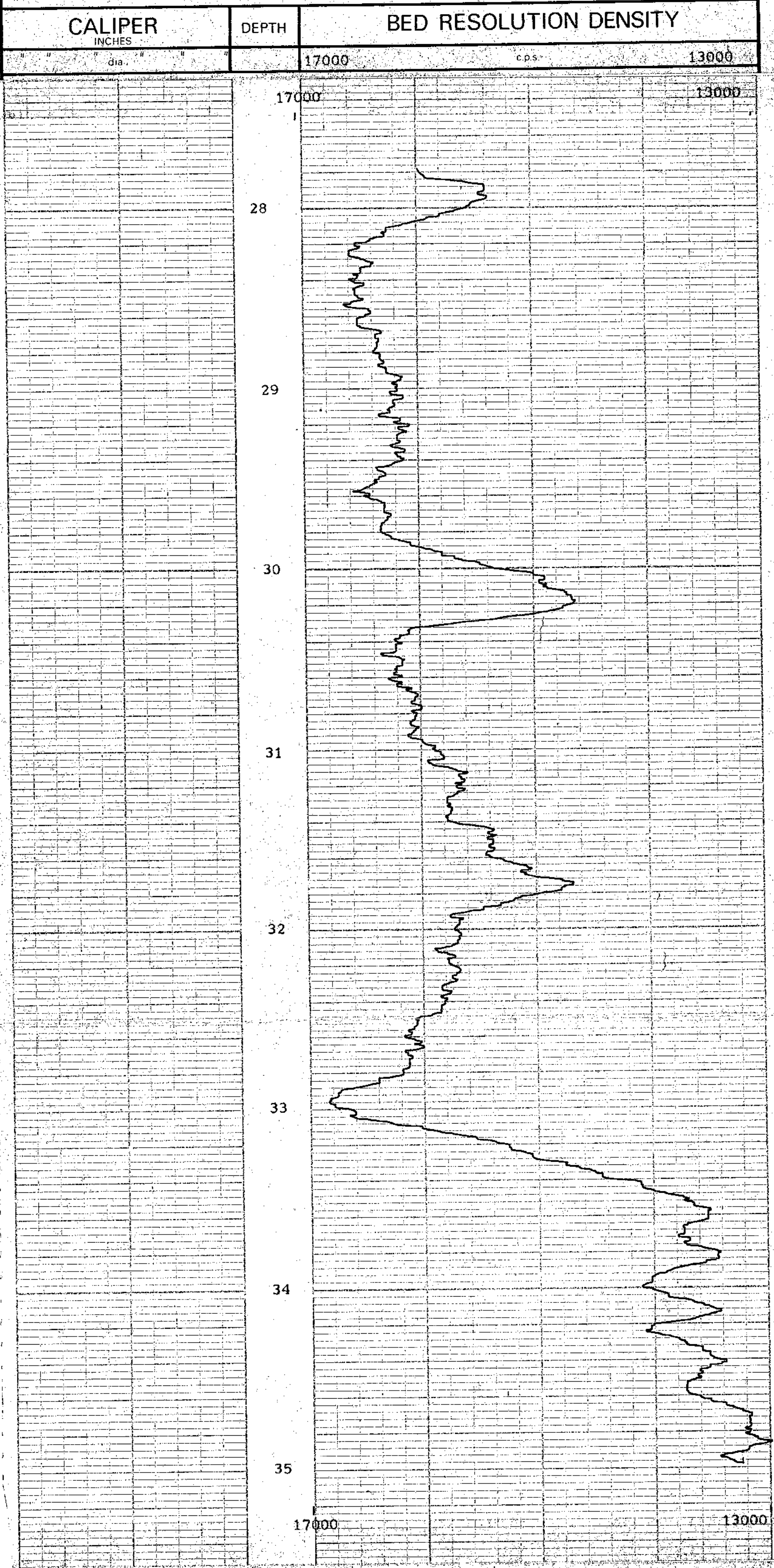
SEAM THICKNESS LOG INTERVALS

| | |
|----------|----------|
| FROM | 35 |
| TO | 28 |
| INTERNAL | 7 metres |
| FROM | |
| TO | |
| INTERNAL | |
| TOTAL | |

REMARKS

666

B P B SEAM THICKNESS LOG



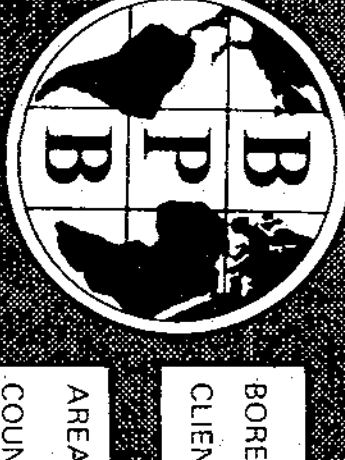
| | | |
|----------------|-------|------------------------|
| CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY |
| 17000 | 17000 | 13000 |



BOREHOLE BP-R
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada

SEAM THICKNESS LOG



BP Sukuunka 71(3) BP-69A

BOREHOLE BP-69A
CLIENT BP Exp., Coal Division

AREA Sukuunka
COUNTRY Canada
DATE LOGGED 8/7/79

DEPTH SCALE
1:20
2 OF 4 PGS

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

COAL QUALITY LOG

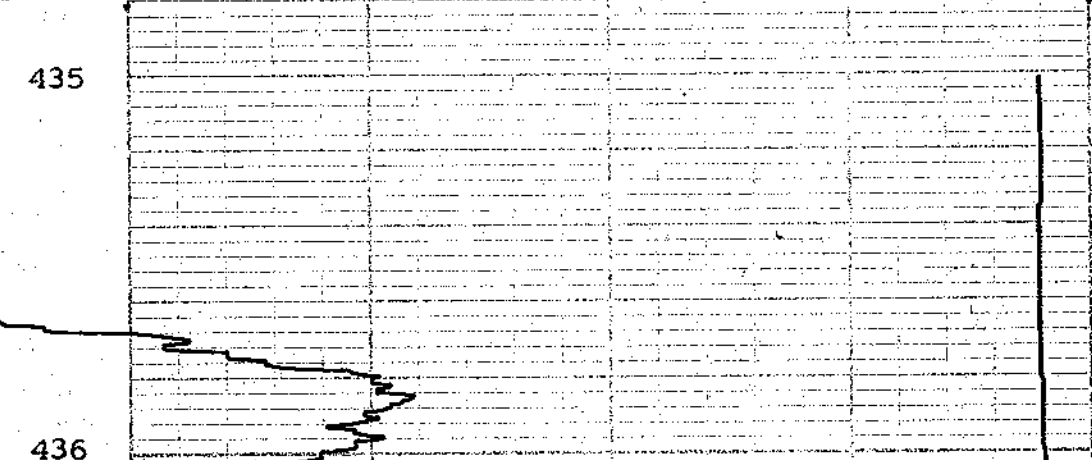
SONDE TYPE:
COAL COMBINATION SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

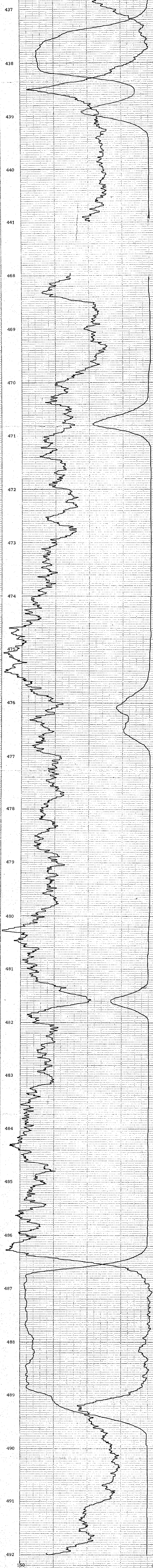
BPB COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA



150 API 0
6.000 s.d.u. 0



6.000 s.d.u. 0
150 API 0

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

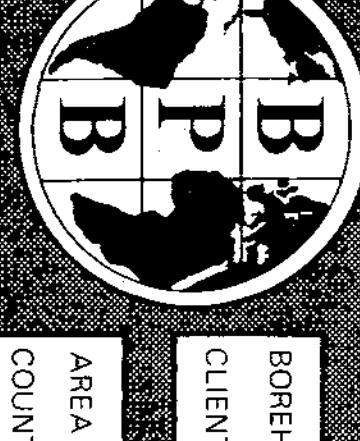
BOREHOLE BP-69A
CLIENT BP Exp., Coal Division
AREA Sukuunka
COUNTRY Canada

COAL QUALITY LOG

666



AW 88022 R



B-Sukunka 73(5)A B-69A

BOREHOLE BP-69A
CLIENT BP Exp., Coal Div. SGM

AREA Sukunka
COUNTRY Canada
DATE LOGGED 8/7/79

DEPTH SCALE 1:20
30'-4.008

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

SEAM THICKNESS LOG

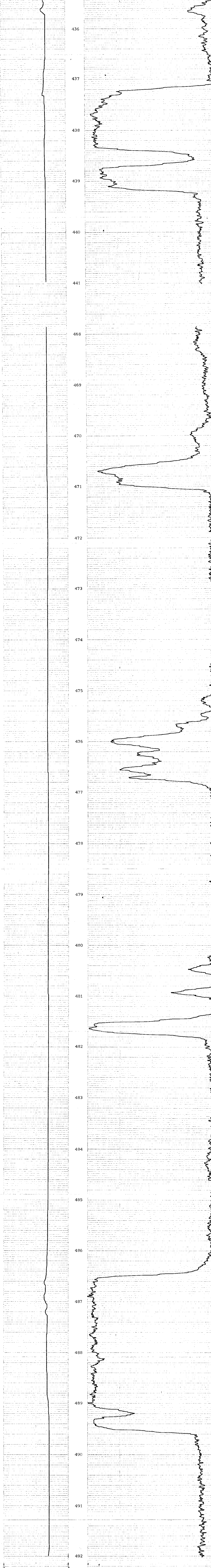
COAL COMBINATION SONDE
SONDE TYPE:
SEAM THICKNESS LOG INTERVALS
FROM 492 TO 435
492 435
468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492

LOG SUITE
CALIPER
BR DENSITY

LOG TYPING: LOG RECORDING SPEED: 1000 RPM
CALIPER: Y 2 Z 2 R 2 1 1/3
SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

B P B SEAM THICKNESS LOG

| CALIPER INCHES | | DEPTH | BED RESOLUTION DENSITY | | | | | |
|----------------|----|-------|------------------------|----|----|-------|-----|-------|
| 7" | 6" | 5" | 4" | 3" | 2" | 29000 | cps | 16000 |



| CALIPER INCHES | | DEPTH | BED RESOLUTION DENSITY | | | | | |
|----------------|----|-------|------------------------|----|----|-------|-----|-------|
| 7" | 6" | 5" | 4" | 3" | 2" | 29000 | cps | 16000 |

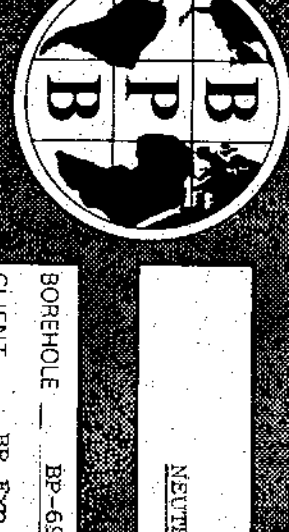


BOREHOLE BP-69A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

SEAM THICKNESS LOG

78-3-9-698



NEUTRON-NEUTRON LOG

BOREHOLE HP-69A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

DATE LOGGED 8/7/79
4.0 x 4.000

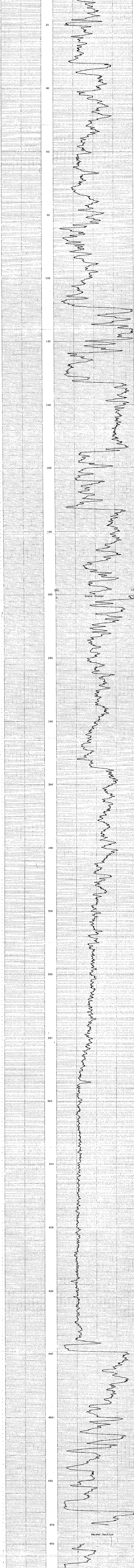
BOREHOLE DATA
OPERATION DATA

EQUIPMENT AND RECORDING DATA

LOG

REMARKS
Scale Change at Water Level (20m).

666



NEUTRON-NEUTRON LOG

BOREHOLE HP-69A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

DATE LOGGED 8/7/79
4.0 x 4.000

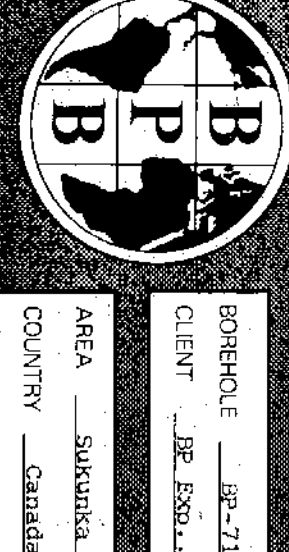
BOREHOLE DATA
OPERATION DATA

EQUIPMENT AND RECORDING DATA

LOG

REMARKS





BOREHOLE HP-71
 CLIENT BP Exp., Coal Division
 AREA Sukunka
 COUNTRY Canada

DATE LOGGED 8/27/79
 LOG NO. 666
 SCALE 1:200

COAL LITHOLOGY LOG

LOG NO. 666
 COAL COMBINATION SOURCE
 LOG SUITE GAMMA RAY
 L.S. DENSITY CALIPER

BOREHOLE DATA
 ELEMENTARY DATA
 DEPTH (m) 213m
 DEPTH (ft) 700ft
 DIAMETER (mm) 44.1
 DIAMETER (in) 1.73
 LOG NO. 666
 LOG SUITE GAMMA RAY
 L.S. DENSITY CALIPER

| EQUIPMENT AND RECORDING DATA | | | | | | | | | | |
|------------------------------|-------|--------|------------|-----------|--------------|--------------|-------|-------------|---------|------------|
| COAL COMBINATION SONDE | | | EQUIPMENT | | TAPPING | | PANEL | | CALIPER | |
| LOG | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT REPLY | TYPE | NO. OF SECS | NORM | DEPTH FROM |
| GAMMA RAY | 153A | | 367 | Y | 9 | D | 9 | 1 | 1.52 | 439 |
| L.S. DENSITY | | | 0336 | Y | 9 | D | 9 | 1/3 | 7.00 | 440 |
| CALIPER | | | | Y | 9 | D | 9 | 1/3 | | 440 |

| COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log) | | | |
|---|-----|----------|-------|
| FROM | TO | INTERVAL | TOTAL |
| 430 | 381 | | |
| 412 | 374 | | |
| 18m | 7m | | 25m |

| ADDITIONAL SONDES RUN | | | | REMARKS | |
|-----------------------|-------|-------------------|------------------|----------|---------------------|
| SONDE | LOC | GENERAL SCALE LOG | DETAIL SCALE LOG | REFER TO | ADDITIONAL HEALINGS |
| 19 | N-N | 1:200 | | | |
| 107 | Vert. | | | | |
| 104 | Dip | | | | |

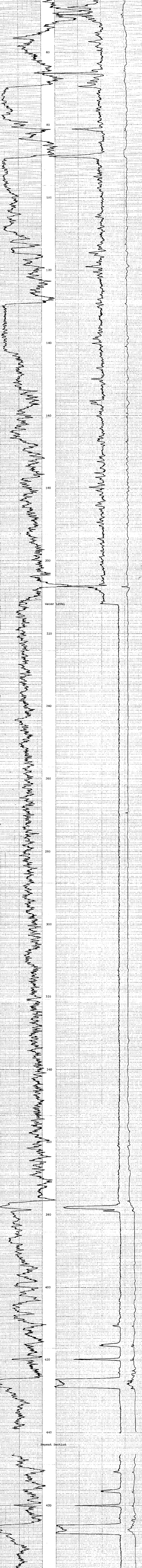
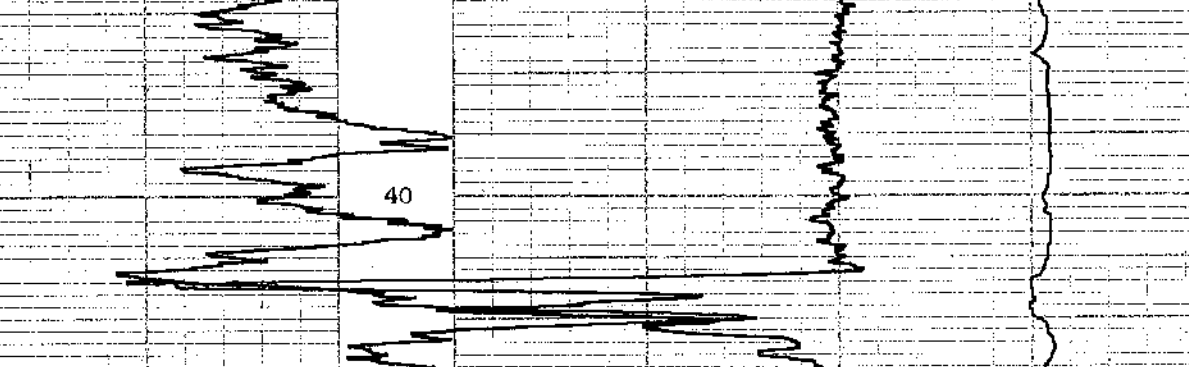
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

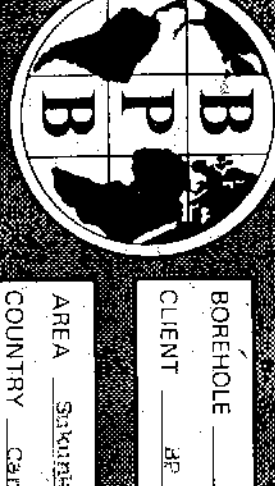
| | | | | | | | | |
|-----------------------------------|-----------|--------|----------------------|----------------|--------------|-----------|-----------|-----------|
| LOG NO. 367 | VALU 5100 | 2 DRAM | LOG CA. DATE 25/6/79 | LOG VALUE 5650 | LOG NO. 0336 | SPAN 6000 | NORM 7.00 | 7ms 935ms |
| LOG MARK SHOWN AT ABOVE VALUE 0.1 | | | | | | | | |

| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

HOLE SIZE CORRECTION DATA



| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |



6820

BOREHOLE BP-70
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 10/7/79

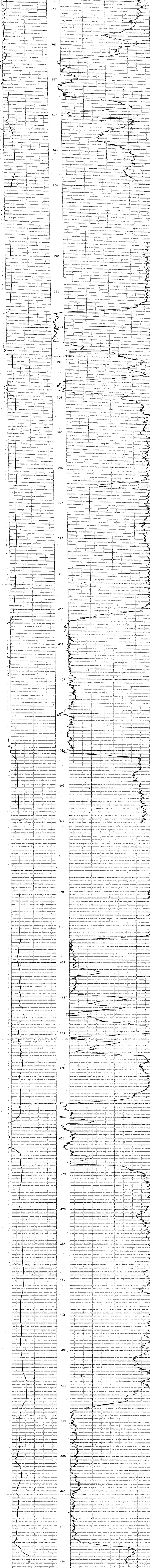
SEAM THICKNESS LOG

SEAM THICKNESS LOG INTERVALS
FROM 453 406 350
TO 463 390 344
INTERVAL 210 15 6

LOG SUITE
CALIPER
BR. DENSITY

666

B P B SEAM THICKNESS LOG

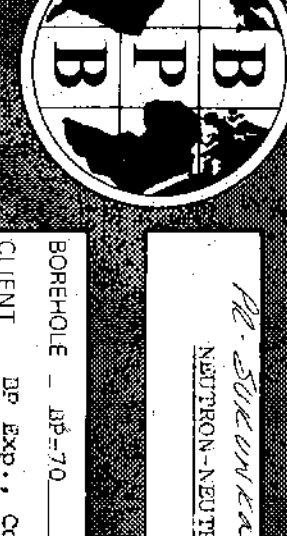


| CALIPER | DEPTH | BED RESOLUTION DENSITY |
|---------|-------|------------------------|
| 7 | 29000 | 29000 |
| 6 | | |
| 5 | | |
| 4 | | |
| 3 | | |
| 2 | | |
| | 16000 | 16000 |



BOREHOLE BP-70 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

SEAM THICKNESS LOG



NEUTRON-NEUTRON LOG

BOREHOLE - BP-70
CLIENT - BP Exp., Coal Division

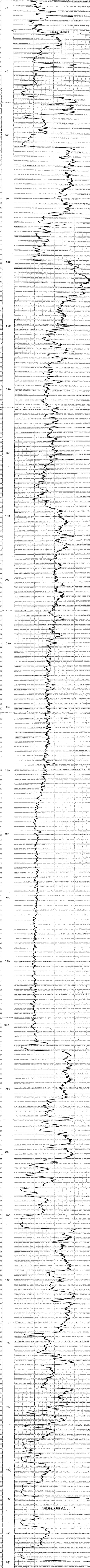
AREA - SUKUNKA
COUNTRY - CANADA
DATE LOGGED - 10/27/79

BOREHOLE DATA - REF. # 10 LITHOLOGY LOG
OPERATION DATA - REF. # 10 LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

REMARKS
Scale Change at 25m (Water Level)
666

NEUTRON-NEUTRON
SNU 700 1700

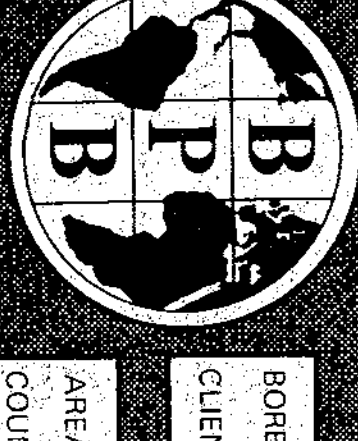


NEUTRON-NEUTRON
SNU 0 600



BOREHOLE - BP-70
CLIENT - BP Exp., Coal Division
AREA - Sukunka
COUNTRY - Canada

BP-71



SEAM THICKNESS LOG

SONDE TYPE: _____
 COAL COMBINATION: _____
 SONDE: _____

LOG SUITE: _____
 CALIPER: _____
 B.R. DENSITY: _____

BOREHOLE: BP-71
 CLIENT: BP Exp., Coal Division

AREA: Sukunka
 COUNTRY: Canada
 DEPTH SCALE: 1:20

DATE LOGGED: 8/7/79
 3 of 4 LOGS

BOREHOLE DATA: REFER TO LITHOLOGY LOG
 OPERATION DATA: REFER TO LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA: _____

COAL COMBINATION SONDE: _____
 LOG: _____
 TAPPING: _____
 LOG: _____

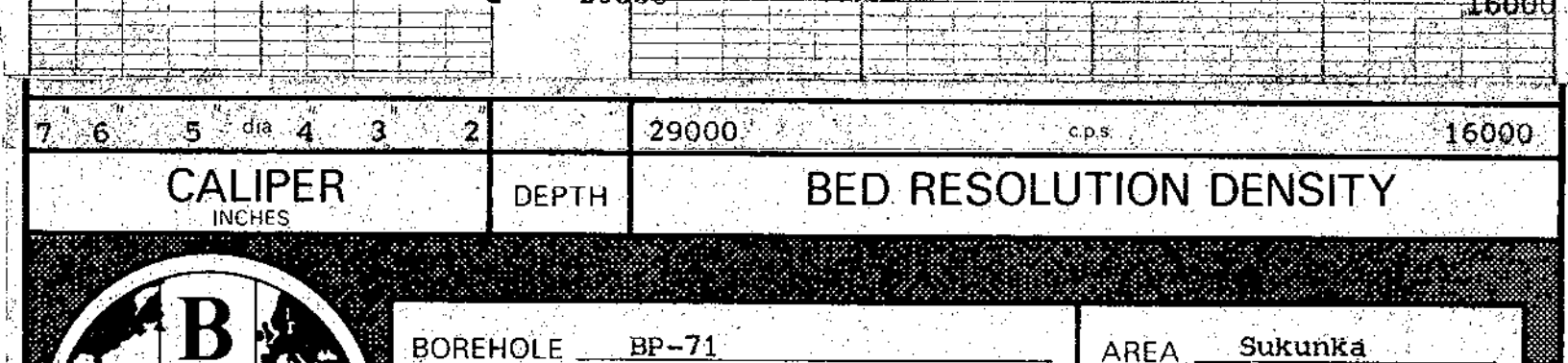
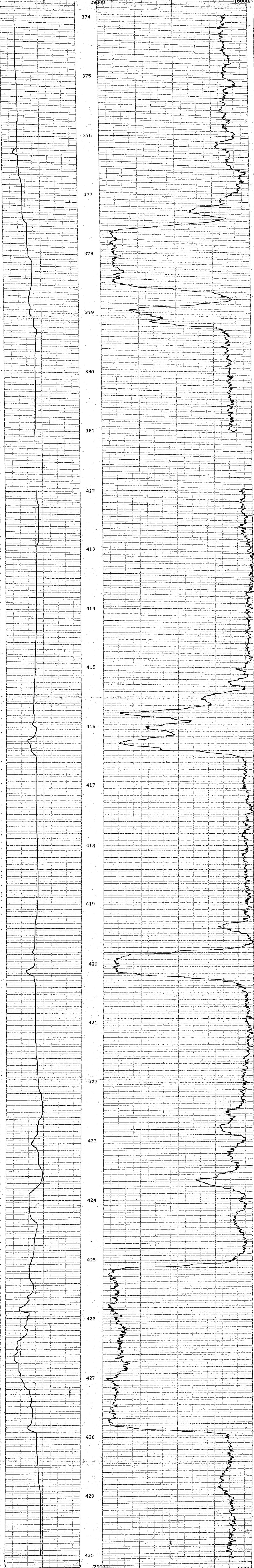
CALIPER: Y 2 R 2 I 1
 B.R. DENSITY: Y 2 R 2 I 1/3

SEAM THICKNESS LOG INTERVALS
 FROM: 430 TO: 381
 INTERVAL: 1.8m TO: 7m

REMARKS: _____

6666

B P B SEAM THICKNESS LOG



BOREHOLE: BP-71
 CLIENT: BP Exp., Coal Division

AREA: Sukunka
 COUNTRY: Canada

SEAM THICKNESS LOG



NEUTRON-NEUTRON LOG

BOREHOLE BP-71

CLIENT BP Exp., Coal Division

AREA Sukunka

COUNTRY Canada

DATE LOGGED 8/2/79

PIPS SCALE 1:200

OPERATION DATA

BOREHOLE DATA

EQUIPMENT AND RECORDING DATA

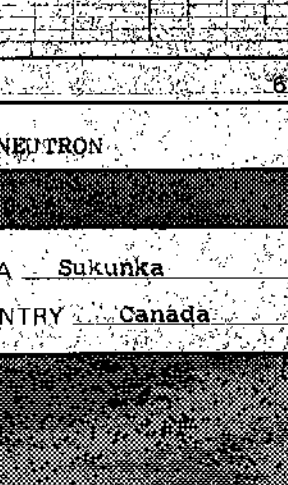
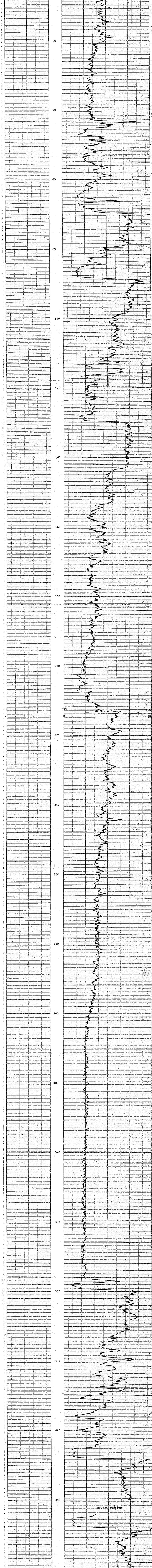
DC

TAPE

REMARKS

SCALE CHANGE at Meter Level (213m)

666



NEUTRON-NEUTRON LOG

BOREHOLE BP-71

CLIENT BP Exp., Coal Division

AREA Sukunka

COUNTRY Canada

DATE LOGGED 8/2/79

PIPS SCALE 1:200

OPERATION DATA

BOREHOLE DATA

EQUIPMENT AND RECORDING DATA

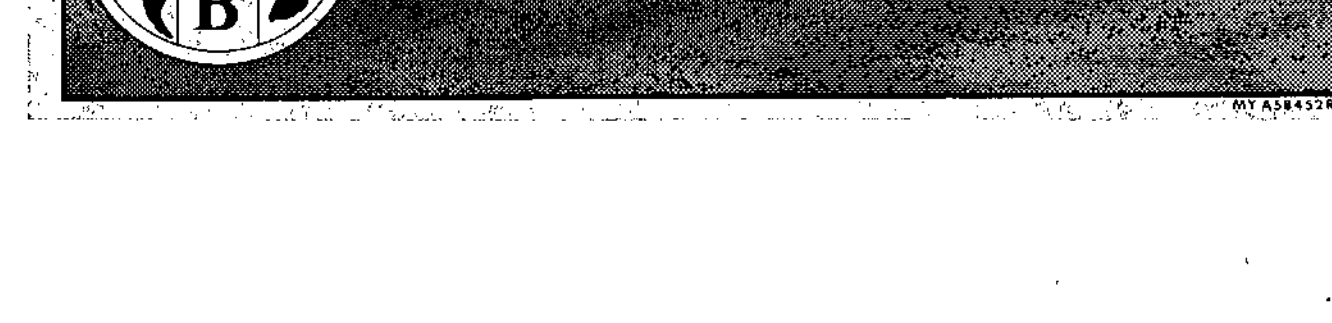
DC

TAPE

REMARKS

SCALE CHANGE at Meter Level (213m)

666





2- SUKUNKA 791319 BP-72

SONDE TYPE
COAL COMBINATION
SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

COAL
LITHOLOGY
LOG

BOREHOLE BP-72
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 19 & 22/7/79
DEPTH SCALE 1:200
1 OF 4 LOGS

BOREHOLE DATA
PERMANENT DATUM Ground Level
ELEVATION OF P.D. 896
DRILLER G.L.
MEASUREMENT FROM G.L. 109.7m
DEPTH REACHED 109.7m
CASING SHOE 74ft.
BIT SIZES 1 5/8" TO 7/4" 2 3/4" TO 1 1/2"
CASING SIZES 1 4" TO 7/4" 2 H₂O TO 1 1/2"
FLUID DATA
NATURE Quik-Oel
S.G.
LEVEL
VISCOSITY
Firm at meas. temp.
B.H.T.
OPERATION DATA
FIRST READINGS 109m
LAST READINGS 0
INTERVAL LOGGED 109m
UNIT-TRUCK No. V26/34
ENGINEER R. J. Shop
WITNESSES L. Rindero

6666

EQUIPMENT AND RECORDING DATA

| COAL COMBINATION SONDE | | | | | | | | | | | | | | |
|------------------------|-------------------|--------|------------|-----------|--------------|-----------------|-------|-----------|------|-----------|--------|----|--------------|---|
| LOG | EQUIPMENT | | | TAPING | | | PANEL | | | CAL COEFF | DEPTHS | | SEAM LOG RUN | |
| | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECTOR REPLAY | SPEED | T.C. SECS | NORM | | FROM | TO | INTERVAL | |
| GAMMA RAY | 153A | | 367 | Y | 9 | R | 9 | 1 | 1.52 | | 108 | 0 | 108m | Y |
| L.S. DENSITY | | | 0336 | Y | 9 | R | 9 | 1 | 7.08 | | 109 | 1 | 108m | Y |
| | SIDEWALL POSITION | | | | | | | | | | | | | |

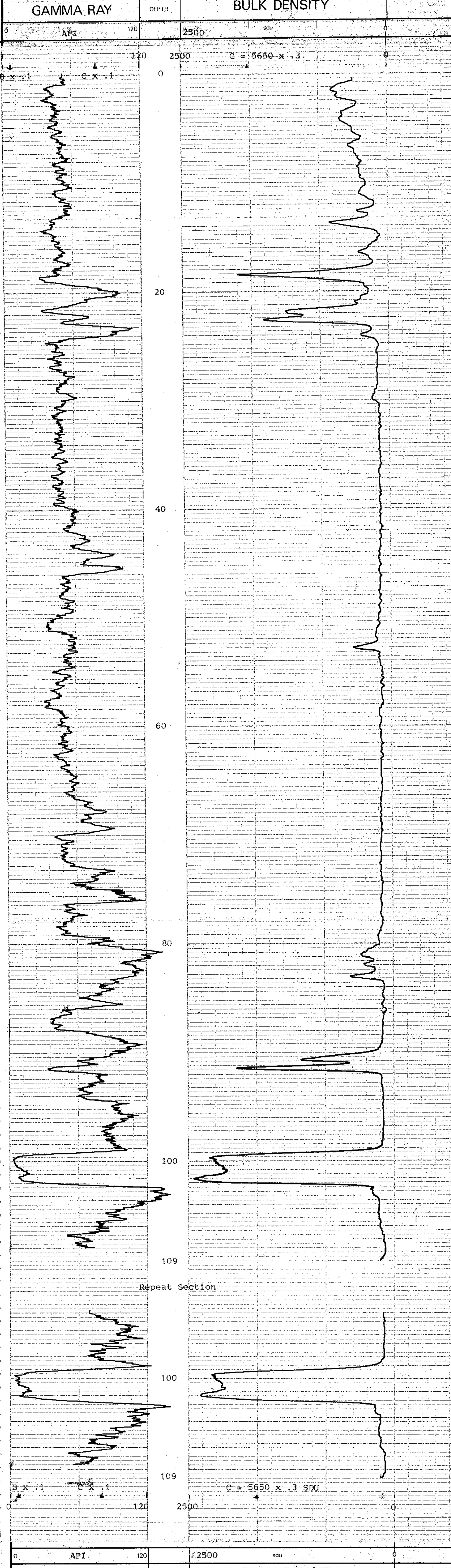
| COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log) | | | | |
|---|-----|----|----|----------------|
| FROM | 104 | 94 | 25 | INTERVAL TOTAL |
| TO | 97 | 88 | 18 | |
| INTERVAL | 7m | 6m | 7m | 20m |

| ADDITIONAL SONDES RUN | | | | REFER TO ADDITIONAL HEADINGS | REMARKS |
|-----------------------|-------|-------------------|------------------|------------------------------|--|
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | | |
| 19 | N-N | 1:200 | | | Information recorded on tape during both runs. All tapes replayed to produce continuous logs. Logs recorded through H ₂ O drill-rod, hence LSD is not calibrated in gm/cm ³ |
| 107 | Vert. | Spot | | | |

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No. 367 VALU 510 @ 2" DIAM JIG CAL DATE 25/6/79 JIG VALUE 5650 SDU @ g/cm³
JIG MARK SHOWN AT ABOVE VALUE x0.1 JIG No. 0336 SPAN 2500 NORM SDU = 7.08



BOREHOLE BP-72 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG



2-502122-79(13)A BP-72

NEUTRON-NEUTRON LOG

BOREHOLE BP-72

CLIENT BP Exp., Coal Division

AREA Sukunka

COUNTRY Canada

DATE LOGGED 19. 8. 22/7/77

4 OF 4 LOGS

DEPTH SCALE 1.200

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

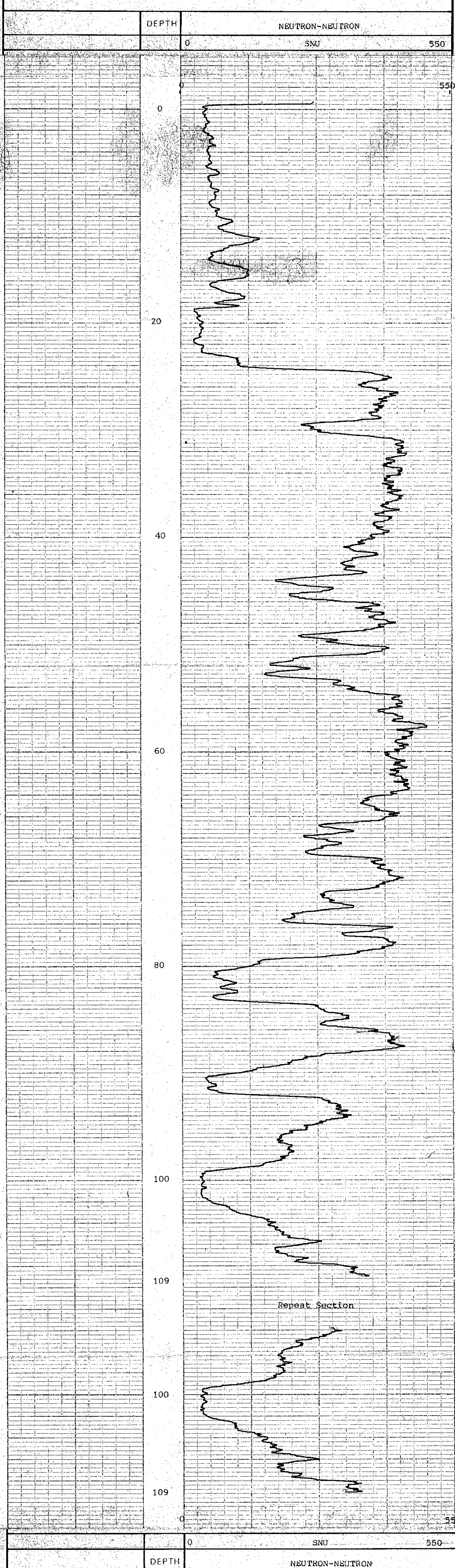
EQUIPMENT AND RECORDING DATA

| LOG | TAPING | RECORD | PANEL | CA | | |
|-----|--------|--------|--------|------|------|------|
| LOG | TABO | SPEED | REPLAY | SECS | NORM | OFF |
| N-N | Y | 9 | R | 9 | 1 | 0.87 |
| | | SCN | NO | NO | NO | NO |
| | | 19 | | | | 1479 |

REMARKS

Hole logged through HQ drill-rod.

666



Repeat Section



| | |
|-------------------------------|----------------|
| BOREHOLE BP-72 | AREA Sukunka |
| CLIENT BP Exp., Coal Division | COUNTRY Canada |



1- SUKUNKA 73(3)B BR-72

BOREHOLE BP-72
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

DATE LOGGED 19 & 22/7/79
2 OF 4 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

COAL QUALITY LOG

SONDE TYPE:
COAL COMBINATION SONDE

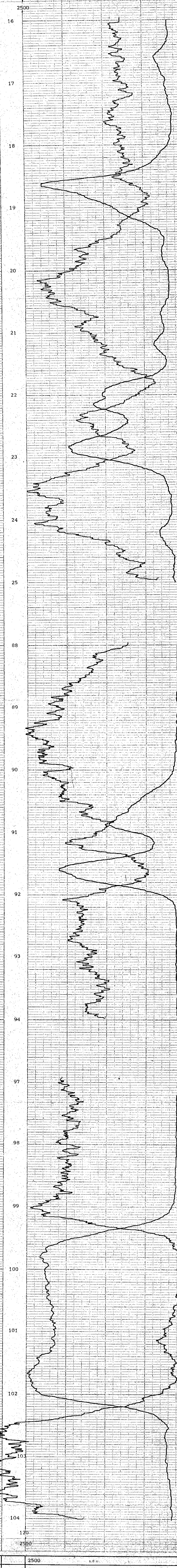
LOG SUITE:
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG INTERVALS
FROM 104 94 25
TO 97 88 18
INTERVAL FROM 7m 5m
INTERVAL TOTAL 10m

REMARKS Logs recorded through 92
d111-10ds
666

B P B COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY



DEPTH GAMMA RAY
COAL BULK DENSITY



BOREHOLE BP-72
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada

COAL QUALITY LOG

NY 8800 R

HP-5060228 79 (3) B. BP-72



BOREHOLE BP-72
 CLIENT BP Exp., Coal Division

AREA Sukunika
 COUNTRY Canada

DATE LOGGED 19. 8. 22/77

3 of 4 LOGS

SEAM

BOREHOLE DATA Refer to LITHOLOGY LOG
 OPERATION DATA Refer to LITHOLOGY LOG

THICKNESS

EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE

LOG

| | | |
|----------|--------|-------------------|
| LOG | TAPING | SIDEWALL POSITION |
| LOG | RECORD | PANEL |
| LOG | SPEED | SCALE |
| LOG | RECAL | NORM. |
| LOG | COEFF | |
| BRUSHING | Y | Z |
| BRUSHING | R | Z |
| BRUSHING | 1 | 1 |
| BRUSHING | - | - |

SONDE TYPE
 COAL COMBINATION
 SONDE

SEAM THICKNESS LOG INTERVALS

| | | | |
|----------|-----|----|-------|
| FROM | 104 | 94 | 25 |
| TO | 97 | 88 | 18 |
| INTERVAL | 7m | 6m | 7m |
| FROM | | | |
| TO | | | |
| INTERVAL | | | |
| TOTAL | | | 12.0m |

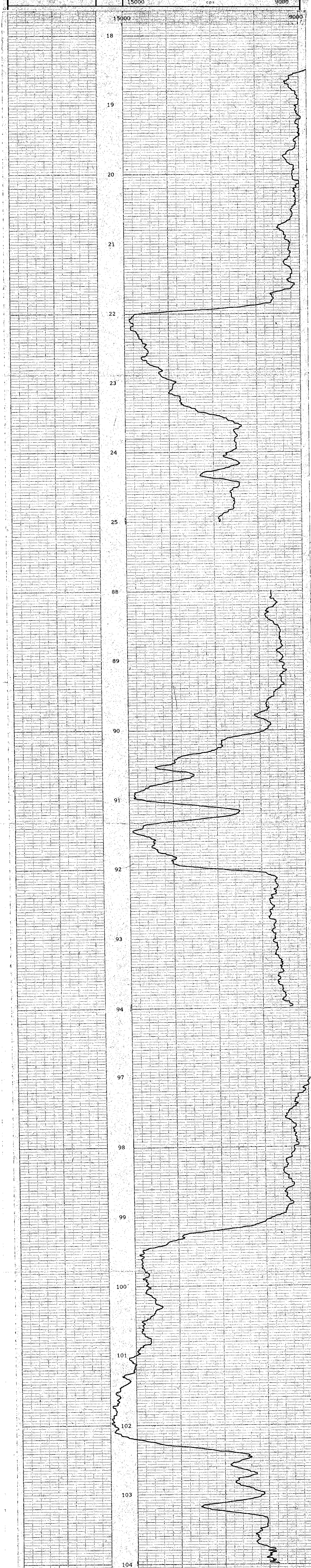
LOG SUITE
 BR DENSITY

REMARKS
 Hole logged through HQ drill rod.

666

B P B SEAM THICKNESS LOG

| | | | |
|-------|-------|-------|------|
| DEPTH | 15000 | c.p.s | 9000 |
|-------|-------|-------|------|



| | | | |
|-------|-------|-------|------|
| DEPTH | 15000 | c.p.s | 9000 |
|-------|-------|-------|------|

BED RESOLUTION DENSITY

| | | | |
|----------|------------------------|---------|----------|
| BOREHOLE | BP-72 | AREA | Sukunika |
| CLIENT | BP Exp., Coal Division | COUNTRY | Canada |

SEAM THICKNESS LOG





Mr. Sukunka 75(3)A BP-73A

BOREHOLE BP-73A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 29/7/79

DEPTH SCALE 1:200
LOGS 1-4

COAL LITHOLOGY LOG
PERMANENT DATUM Ground Level
ELEVATION OF P.D. BPB
MEASUREMENT FROM G.L. G.L.
DEPTH REACHED 105m 104.7m
CASING SHOE 13m
BIT SIZES 5 1/4" TO TD 2" TO
3" TO 4" TO
CASING SIZES 7" TO 13m 2" TO

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

OPERATION DATA
FIRST READING 10.4m
LAST READING 0
INTERVAL LOGGED 104m
UNIT TRACK NO. V26/34
ENGINEER R. Bishop
WITNESS A. Bowler

EQUIPMENT AND RECORDING DATA

| LOG | EQUIPMENT | | | TAPING | | PANEL | | CAL COEFF | DEPTHS | | SEAM LOG RUN | | |
|--------------|-------------------|--------|------------|-----------|--------------|------------------|-------|-----------|-----------|------|--------------|-----|----------|
| | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT or REPLAY | SPEED | | T.C. SECS | FROM | | TO | INTERVAL |
| GAMMA RAY | 153A | | 367 | Y | 9 | D | 9 | 1 | 1.60 | 103 | 0 | 103 | Y |
| L.S. DENSITY | | | 0336 | Y | 9 | D | 9 | 1/3 | 6.95 | 104 | 1 | 103 | Y |
| CALIPER | SIDEWALL POSITION | | | Y | 9 | D | 9 | 1/3 | | 104 | 1 | 103 | Y |

| COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log) | | | | | INTERVAL TOTAL |
|---|----|----------|----|----|----------------|
| FROM | TO | INTERVAL | 5m | 3m | |
| 103 | 95 | 89 | 45 | | 20m |
| 98 | 92 | 85 | 37 | | |

| ADDITIONAL SONDES RUN | | | | REFER TO ADDITIONAL HEADINGS | REMARKS |
|-----------------------|------|-------------------|------------------|------------------------------|---|
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | | |
| 19 | N-N | 1:200 | | | Gamma ray recorded separately above 58m with no source on sonde (i.e. above water level). |
| 107 | Vert | | | | |
| 104 | Dip | | | | |

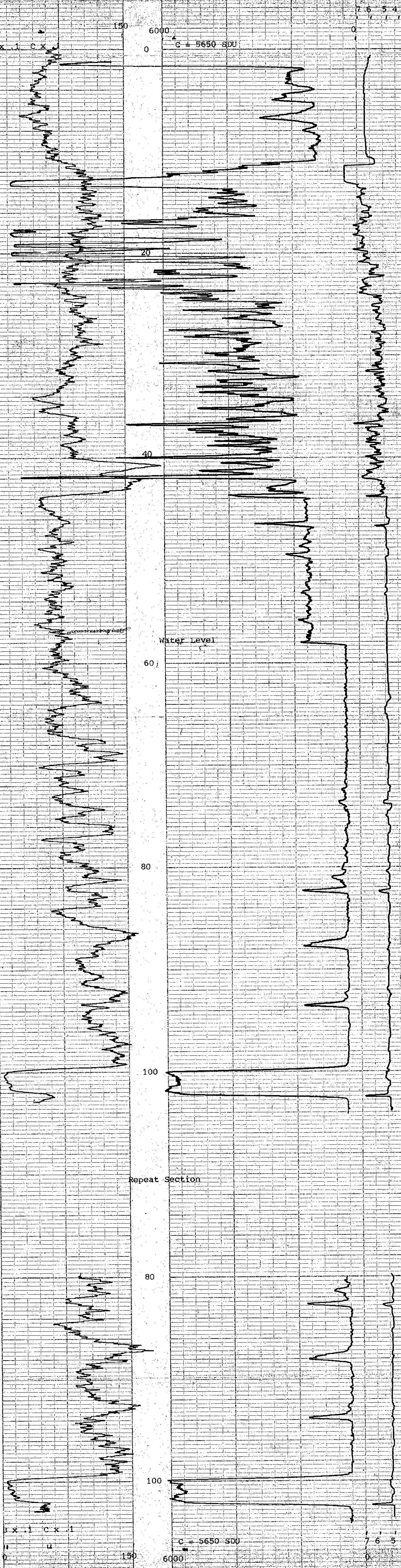
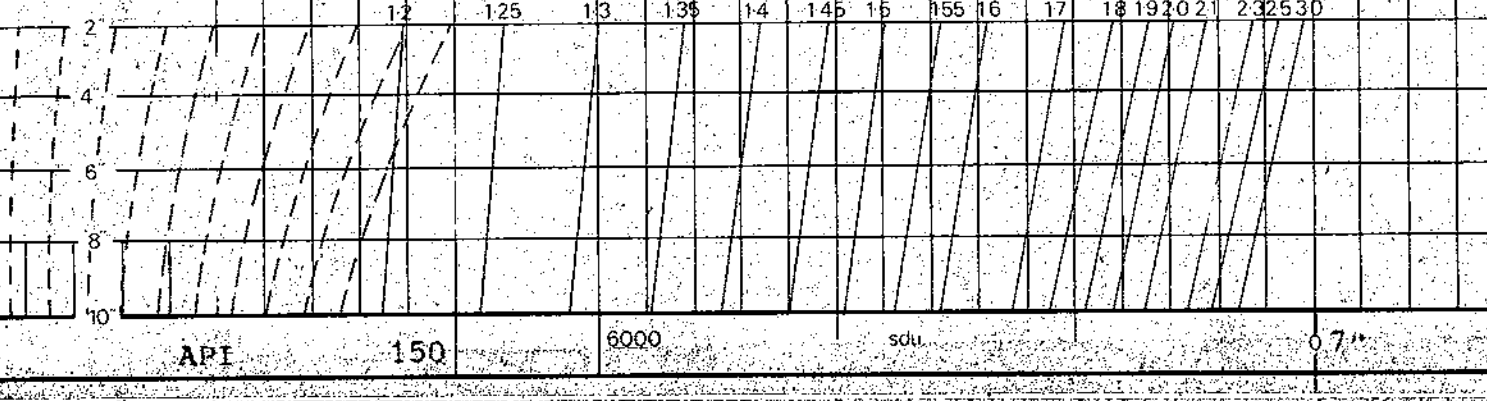
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

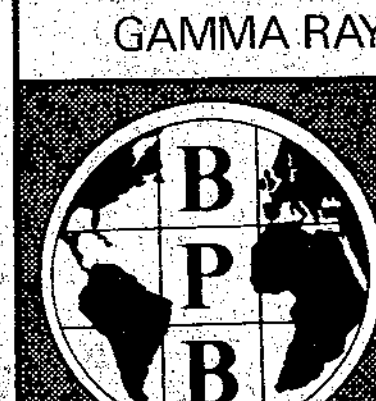
| | | | | | | | |
|-------------------------------------|---------------------|----------------------|----------------|-----------|-------------------|-------|---------|
| JIG No 367 | VALUES 10 @ 2" DIAM | JIG CAL DATE 25/6/79 | JIG VALUE 5650 | SDU @ | g/cm ³ | 7 ins | 940 cps |
| JIG MARK SHOWN AT ABOVE VALUE x 0.1 | | JIG No 0336 | SPAN 6000 | NORM. SDU | 6.95 | 2 ins | 515 cps |

| GAMMA RAY | DEPTH | BULK DENSITY g/cm ³ | CALIPER INCHES |
|-----------|-------|--------------------------------|----------------|
|-----------|-------|--------------------------------|----------------|

HOLE SIZE CORRECTION DATA



| GAMMA RAY | DEPTH | BULK DENSITY g/cm ³ | CALIPER INCHES |
|-----------|-------|--------------------------------|----------------|
|-----------|-------|--------------------------------|----------------|



BOREHOLE BP-73A AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG

BP-73A



COAL QUALITY LOG

SONDE TYPE
COAL COMBINATION
SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

BOREHOLE BP-73A
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 29/1/79

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

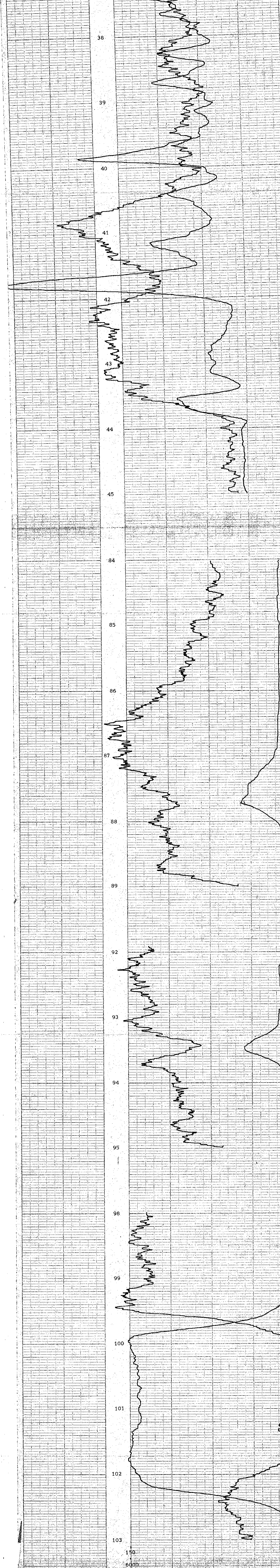
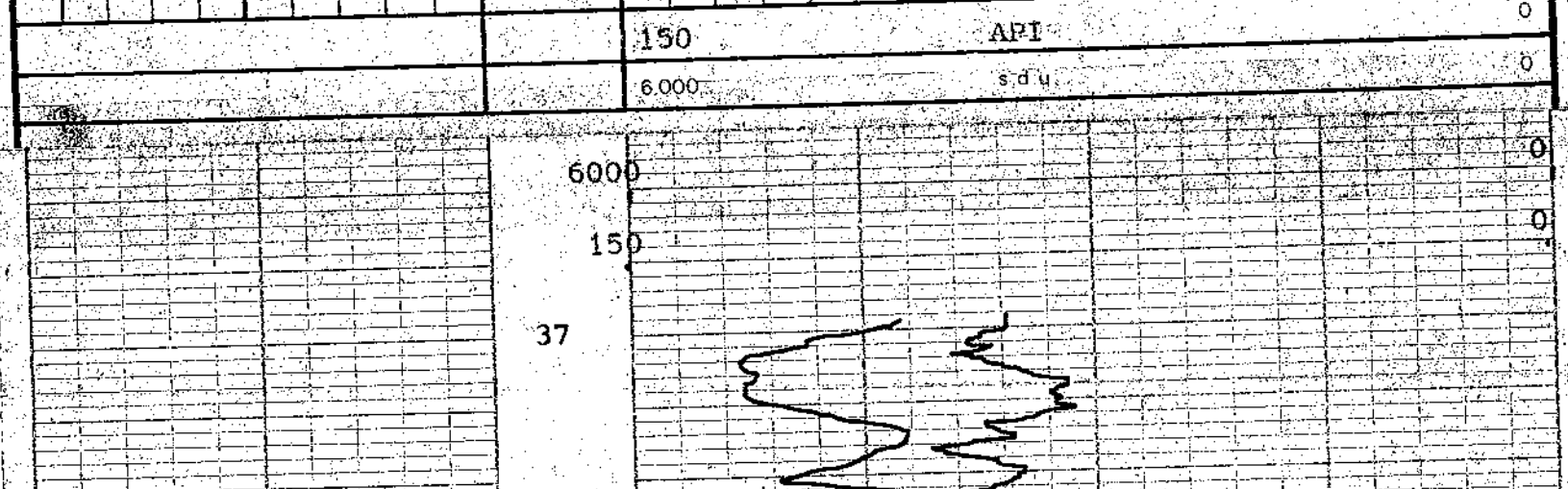
COAL QUALITY LOG INTERVALS
FROM 1.03 95 89 45
TO 98 92 85 37
INTERVAL 5m 3m 4m 3m

REMARKS
666
Top detail section recorded in air. Therefore LSD calculations irrelevant.

B PB COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY g/cm^3

HOLE SIZE CORRECTION DATA



COAL BULK DENSITY g/cm^3

DEPTH GAMMA RAY



BOREHOLE BP-73A
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada

COAL QUALITY LOG

AW 88002 R



BP-73A

BOREHOLE BP-73A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 29/7/79

DEPTH SCALE
1:20

SEAM THICKNESS LOG

SEAM THICKNESS LOG

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

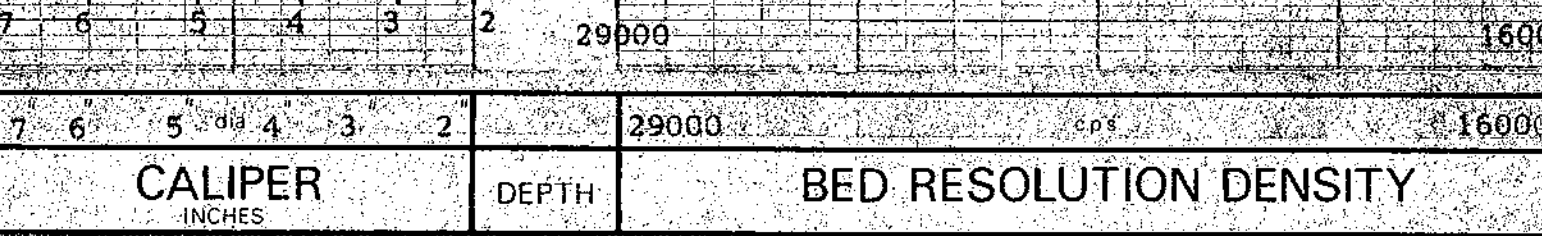
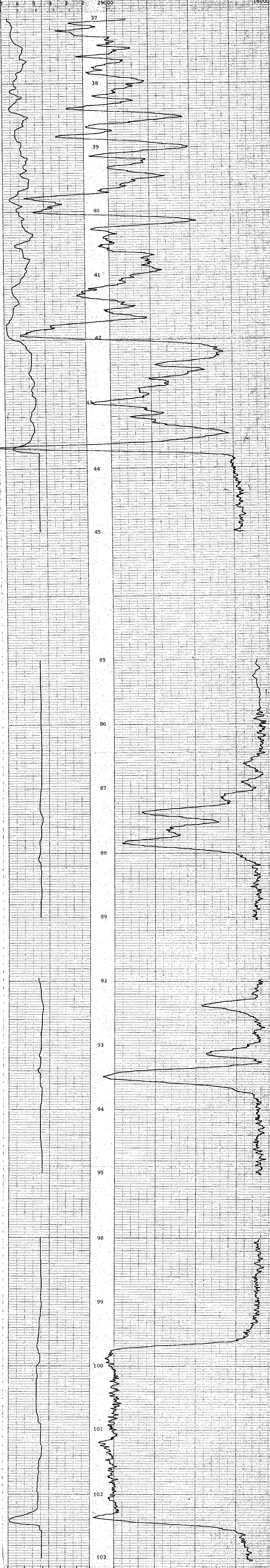
COAL COMBINATION SONDE
LOG TAPPING SIDEWALL POSITION
LOG RECORDING SPEED PANEL COEFF
TAPED SPEED REPEAT SLS INCHM
CALIPER X 2 R 2 1
BR DENSITY Y 2 R 2 1/3

SONDE TYPE:
COAL COMBINATION SONDE
LOG SUITE:
CALIPER
BR DENSITY

SEAM THICKNESS LOG INTERVALS
FROM 103 95 89 45
TO 98 92 85 37
INTERVAL 5m 3m 4m 8m
INTERVAL TOTAL 21m
REMARKS

666

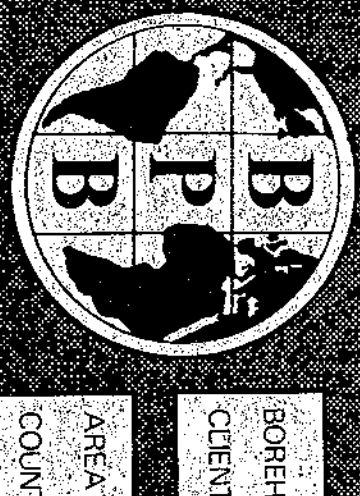
B PB SEAM THICKNESS LOG



BOREHOLE BP-73A
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

SEAM THICKNESS LOG



BP-74

LOG SUITE
GAMMA RAY
L.S. DENSITY
CALIPER

SONDE TYPE
COAL COMBINATION
SONDE

COAL
LITHOLOGY
LOG

BOREHOLE BP-74
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 20 July '79
DEPTH SCALE 1:200
LOG 4.00S

BOREHOLE DATA
PERMANENT TAPING Ground Level
ELEVATION OF P.O. 888
MAG. REMANENTISM G.I.L. G.I.L.
DEPTH REACHED 165.5m 165m
CASING SIZE 1 TO 2 TO
BIT SIZES 3 TO 4 TO
CASING SIZES 1 TO 2 TO
FLUID DATA
NATURE Water
LEVEL 25m
VISCOSITY
CHLORIDE (ppm)
BHT
OPERATION DATA
FIRST READINGS 165m
LAST READINGS 0
INTERVAL LOGGED 165m
UNIT-TRUCK No. YZ6/34
ENGINEER P. Stedman
WITNESS T. Riederer

666

EQUIPMENT AND RECORDING DATA

| COAL COMBINATION SONDE | | EQUIPMENT | | TAPING | | PANEL | | CAL COEFF | | DEPTHS | | SEAM LOG RUN | |
|------------------------|-------|-----------|------------|-----------|--------------|---------------|-------|-----------|------|--------|----|--------------|---|
| LOG | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT/REPLAY | SPEED | T.C SECS | NORM | FROM | TO | INTERVAL | |
| GAMMA RAY | 153A | | 367 | Y | 9 | D | 9 | 1 | 1.52 | 164 | 0 | 164m | Y |
| DENSITY | | | 0336 | Y | 9 | D | 9 | 1/3 | 7.1 | 165 | 1 | 164m | Y |
| CALIPER | | | | Y | 9 | D | 9 | 1/3 | | 165 | 1 | 164m | Y |

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

| FROM | TO | INTERVAL | INTERVAL TOTAL |
|------|-----|----------|----------------|
| 136 | 126 | 84 | |
| 129 | 113 | 79 | |
| 7m | 13m | 5m | 25m |

| ADDITIONAL SONDES RUN | | | | REMARKS | |
|-----------------------|-----|-------------------|------------------|----------|---------------------|
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | REFER TO | ADDITIONAL HEADINGS |
| 19 | N-N | 1:200 | | | |

Hole blocked off at 47m at end of operation, so dipmeter could not be run.

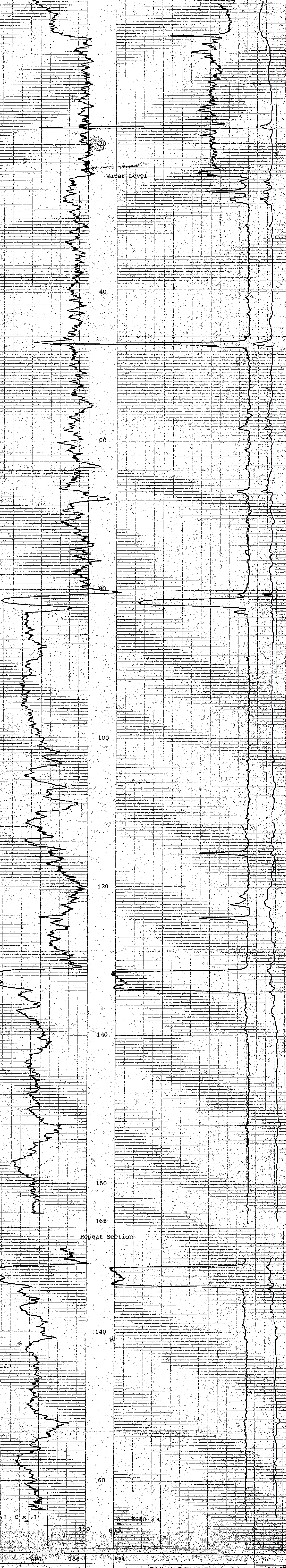
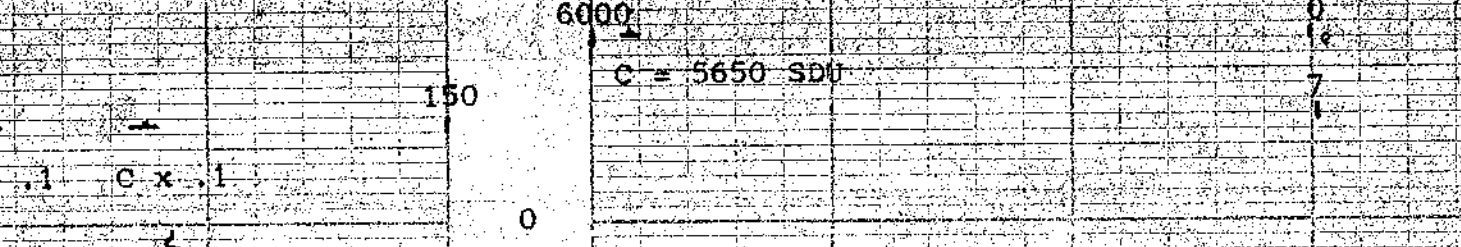
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

| | | | | | | | | |
|-------------------------------------|-----------|--------|----------------------|----------------|-------|-------------------|------|--------------|
| JIG No. 367 | VALUE 510 | 2 DIAM | JIG CAL DATE 25/6/79 | JIG VALUE 5650 | SDU @ | g/cm ³ | 7 ms | 925 cps |
| JIG MARK SHOWN AT ABOVE VALUE x 0.1 | | | JIG No. 0336 | SPAN 6000 | NORM | SDU CPS | 7.10 | 2 ms 500 cps |

| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

HOLE SIZE CORRECTION DATA



| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

BOREHOLE BP-74 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG





12 - SUKUNKA - 79(3)B - BP-74

BOREHOLE BP-74
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

DATE LOGGED 20/7/79

3.0F-4.0GS

DEPTH SCALE
1:20

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

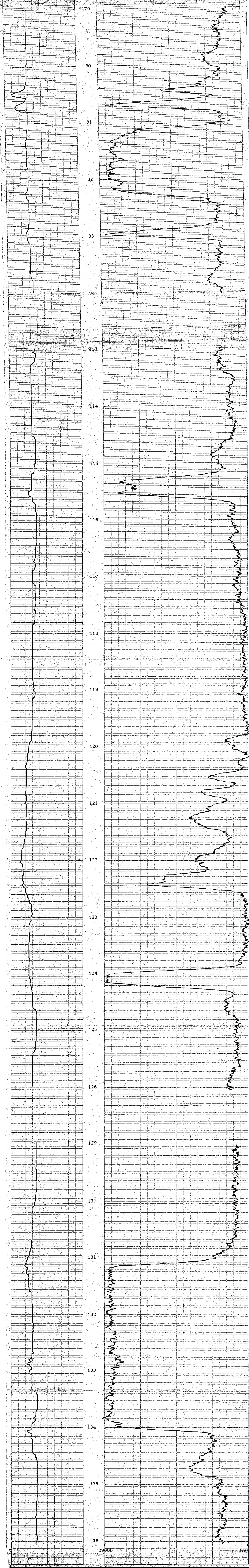
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE

LOG
CALIPER X Y Z R
PRESSURE X 2 R 2 1/3
SOURCE SONDE AND CALIBRATION

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
BR DENSITY

B P B SEAM THICKNESS LOG



666

CALIPER INCHES

DEPTH

BED RESOLUTION DENSITY

7 6 5 4 3 2

29000

16000

79

80

16000

81

82

83

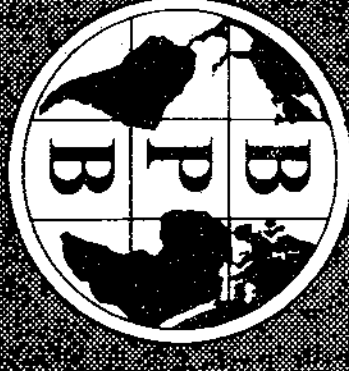
84



BOREHOLE BP-74
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada

SEAM THICKNESS LOG



BP-516 UNCL 79 (3) 19 - BP-75

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY CALIPER

COAL LITHOLOGY LOG

BOREHOLE: BP-75
CLIENT: BP Exp., Coal Division
AREA: Sukunka
COUNTRY: Canada
DATE LOGGED: 22/7/79

PERMANENT DATE: GROUND LEVEL
ELEVATION OF P.D.
MAGNETIC CORRECTION: G.L.
DEPTH REACHED: 141.3m
CASING SHOE: 140m

FLUID DATA: WATER
LEVEL: 39m

OPERATION DATA: FIRST READING: 140m
LAST READING: 0
INTERVAL LOGGED: 140m
LIFT-TRUCK No: V26/34
ENGINEER: R. BISHOP
WITNESS: A. BOVIER

Table with columns: LOG, EQUIPMENT, TAPING, PANEL, CAL COEFF, DEPTHS, SEAM LOG RUN. Includes rows for Gamma Ray, L.S. Density, and Caliper.

Table with columns: FROM, TO, INTERVAL, TOTAL. Shows intervals of 8m, 8m, 60m, and 19m.

Table with columns: SONDE, LOG, GENERAL SCALE LOG, DETAIL SCALE LOG, REFER TO ADDITIONAL HEADINGS.

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 367 VALU@ 2" DIAM JIG CAL DATE 25/6/79 JIG VALUE 5650 SDU @ g/cm³ 7ins 935 cps

JIG MARK SHOWN AT ABOVE VALUE x0.1 JIG No 0336 SPAN 6000 NORM SDU @ 7.00 2ins 510 cps

GAMMA RAY DEPTH BULK DENSITY g/cm³ CALIPER INCHES

Table with columns: GAMMA RAY, DEPTH, BULK DENSITY, CALIPER. Includes a header for HOLE SIZE CORRECTION DATA.

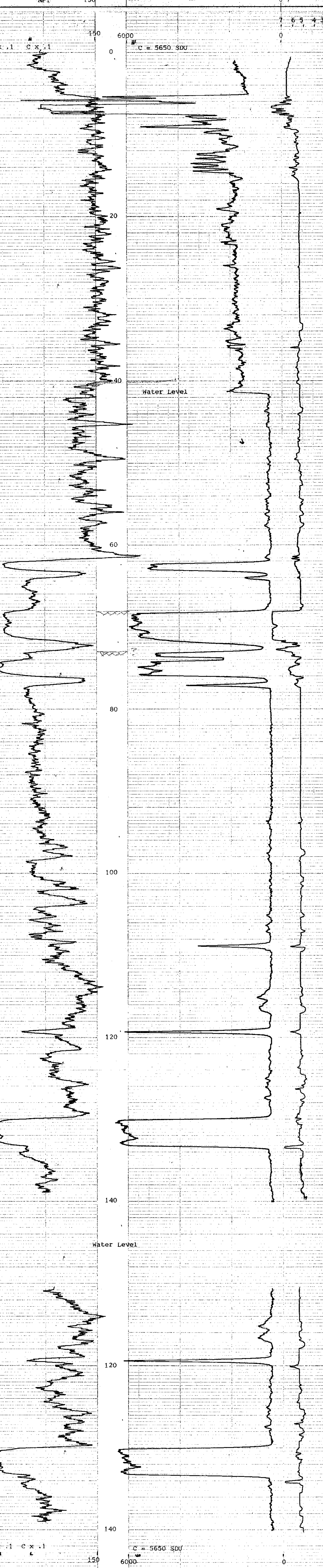
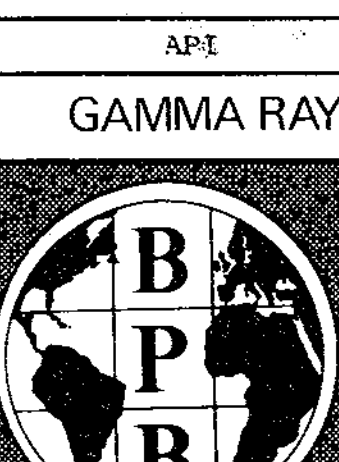


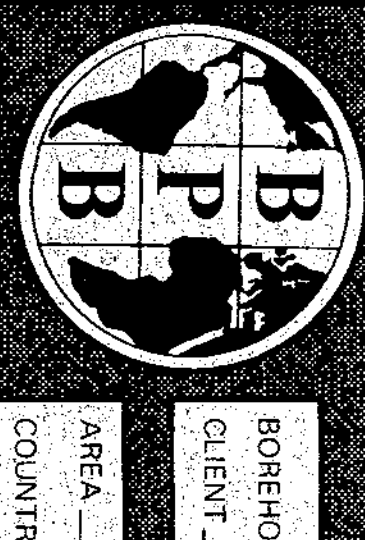
Table with columns: GAMMA RAY, DEPTH, BULK DENSITY, CALIPER. Includes a header for HOLE SIZE CORRECTION DATA.



BOREHOLE: BP-75 AREA: Sukunka
CLIENT: BP Exp., Coal Division COUNTRY: Canada

COAL LITHOLOGY LOG

11-51100000-79 (3) A BP-75



BOREHOLE BP-75
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 22/7/79

DEPTH SCALE 1:20
2.0' = 4.00m

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

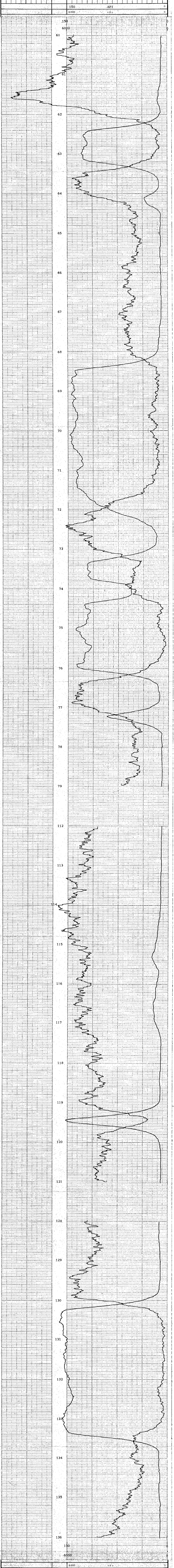
COAL QUALITY LOG
COAL COMBINATION SOURCE
LOG TAPPING POINTS
SIGNAL POSITION

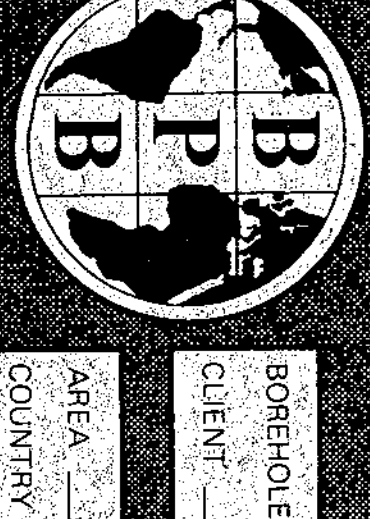
SONDE TYPE
COAL COMBINATION
SONDE
LOG SUITE
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG INTERVALS
FROM 136 TO 128
TO 113 FROM 8m 8m 19m

REMARKS
666

B PB COAL QUALITY LOG





R. SLEWICK 19(3)H BR-73

SEAM THICKNESS LOG

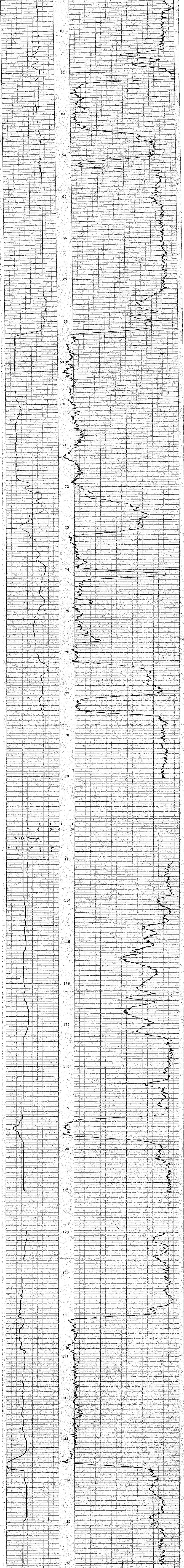
BOREHOLE BP-75
 CLIENT BP EXP., COAL DIVISION
 AREA Sukunika
 COUNTRY Canada
 DATE LOGGED 2/27/79 3-01-4 LOSS

BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE
 LOG NO. 120
 LOG NAME SEAM THICKNESS PANEL WOM
 CALIPER X Y Z R S Z 1 Z 2
 SENSITIVITY X Z R S Z 1 Z 2
 SOURCE SONDE AND CALIBRATION
 REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS
 FROM 136 TO 121 79
 FROM 128 TO 113 60
 FROM 84 TO 60 24
 FROM 36 TO 15 21

LOG SITE 666
 CALIPER 1.5M
 BR DENSTY

B P B SEAM THICKNESS LOG



| | | |
|------------------|-------|------------------------|
| CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY |
| 7 6 5 4 3 2 | 29000 | 16000 |



BOREHOLE BP-75 AREA Sukunika
 CLIENT BP EXP., Coal Division COUNTRY Canada
SEAM THICKNESS LOG



12-502022-71(3)A BP-76

COAL LITHOLOGY LOG

SONDE TYPE
 COAL COMBINATION SONDE

LOG SUITE
 GAMMA RAY
 LS DENSITY
 CALIPER

BOREHOLE BP-76
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada

DATE LOGGED 28/7/79

BOREHOLE DATA

PERMANENT DATUM Ground level

ELEVATION OF P.D. 893

MEASUREMENTS FROM G.L. 177.7m

DEPTH REACHED 177.7m

CASING SHOE 16m

BIT SIZES 1 5 1/4" TO TD 2 TO TO 4 TO TO 7" TO 16m

CASING SIZES 1 7" TO 16m 2 TO TO

FLUID DATA

NATURE Water

LEVEL 74m

VELOCITY 74m

But at next temp

OPERATION DATA

FIRST READING 177m

LAST READING 0

INTERNAL LOGGED 177m

UNIT TRACK No V26/34

ENGINEER R. Bl shop

WITNESS L. Rindero

666

EQUIPMENT AND RECORDING DATA

| LOG | EQUIPMENT | | | TAPING | | PANEL | | CAL COEFF | DEPTHS | | SEAM LOG RUN | | |
|------------|-------------------|--------|-----------|-----------|--------------|---------------|-------|-----------|--------|------|--------------|------|----|
| | SONDE | SOURCE | CAUBRATOR | LOG TAPED | RECORD SPEED | DIRECT REPLAY | SPEED | | % SECS | NORM | | FROM | TO |
| GAMMA RAY | 153A | | 367 | Y | 9 | R | 9 | 1 | 1.60 | 177 | 0 | 177 | Y |
| LS DENSITY | & 78 | | 0336 | Y | 9 | R | 9 | 1/3 | 6.85 | 177 | 1 | 176 | Y |
| CALIPER | SIDEWALL POSITION | | | Y | 9 | R | 9 | 1/3 | | 131 | 1 | 130 | Y |

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

| FROM | 177 | 81 | INTERVAL TOTAL | |
|----------|-----|----|----------------|-----|
| TO | 164 | 76 | | 18m |
| INTERVAL | 13m | 5m | | |

ADDITIONAL SONDES RUN

| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | REFER TO ADDITIONAL HEADINGS |
|-------|-----|-------------------|------------------|------------------------------|
| 19 | N-N | 1:200 | | |

REMARKS

Run 1, CCS recorded from 130m - 0.

Run 2, gamma & LSD recorded through rods from 177m - 130m. Hence section from 177-130m uncalibrated. Gamma ray run through rods from 74m-0 (i.e. above water level). Scale changes as shown.

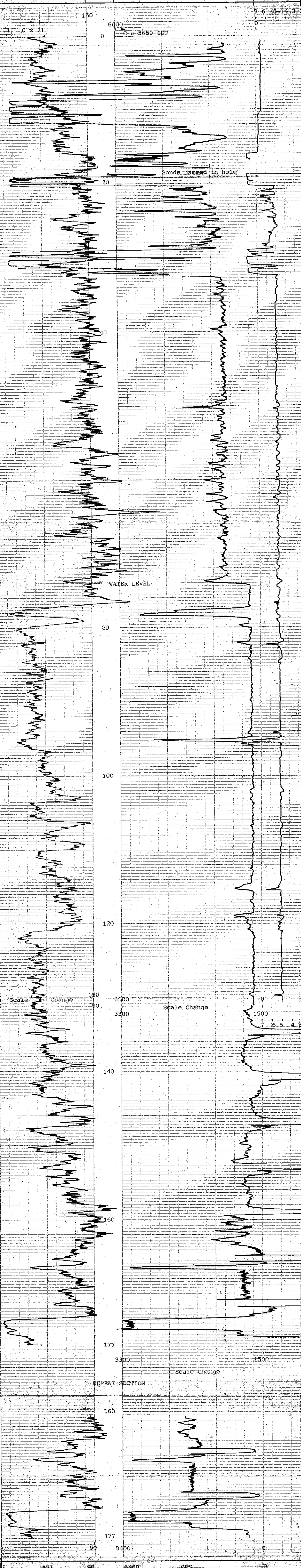
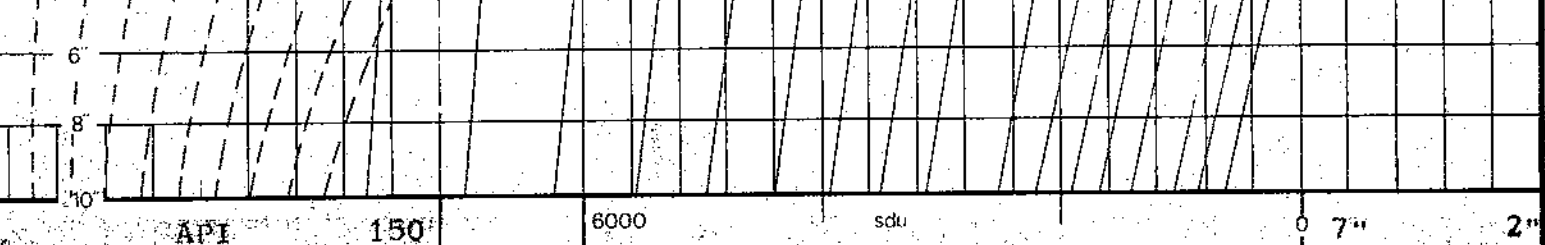
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

| | | | | | |
|-------------------------------|--------------------|----------------------|----------------|-------------------------|---------------|
| JIG No 367 | VALUES 10 @ 2 DIAM | JIG CAL DATE 25/6/79 | JIG VALUE 5650 | SDU @ g/cm ³ | 7 ins 935 cps |
| JIG MARK SHOWN AT ABOVE VALUE | 0.1 | JIG No 0336 | SPAN 6000 | NORM SDU = 6.85 | 2 ins 510 cps |

| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

HOLE SIZE CORRECTION DATA



| GAMMA RAY | DEPTH | BULK DENSITY | CALIPER |
|-----------|-------|-------------------|---------|
| | | g/cm ³ | INCHES |

BOREHOLE BP-76 AREA Sukunka
 CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG

2- SIKUNKA 79(13)A BP-76



SONDE TYPE:
COAL COMBINATION
SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG

BOREHOLE BP-76
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 27 & 28/7/79

DEPTH SCALE
1.20

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

COAL COMBINATION SONDE
LOG TAPING PANEL COEFF
LOG RECORDING SPEED SECS
GAMMA RAY 2 R 2 2 1.60
L.S. DENSITY 2 R 2 1 6.85
SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS
FROM 177 81
TO 164 76
SYMBOL 13m 5m

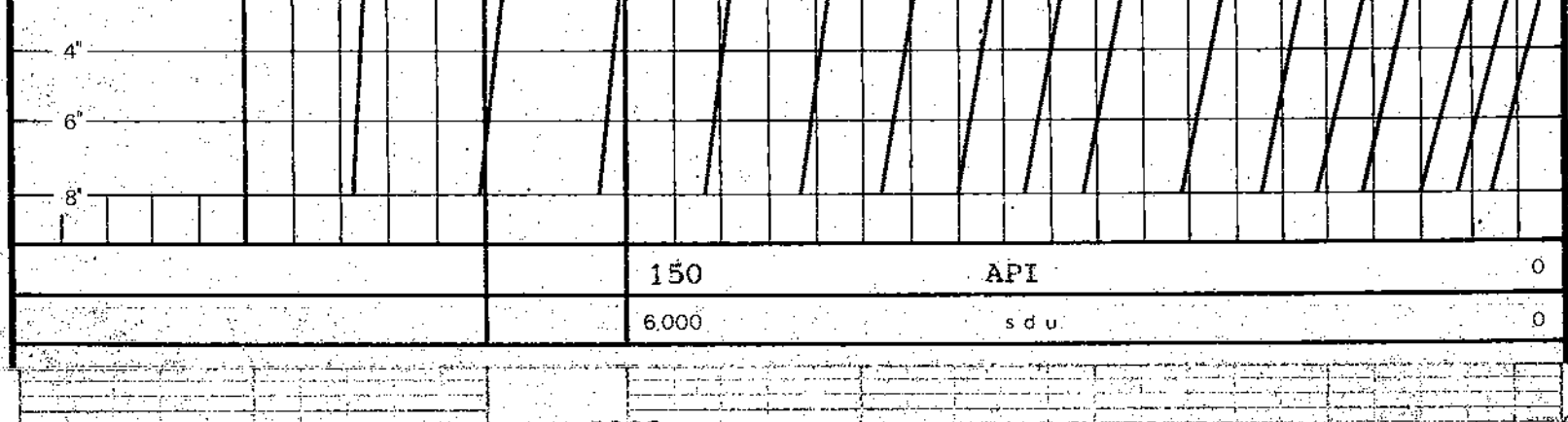
REMARKS
Lower detail section recorded through drill-rod - calibrations invalid for this section.

666

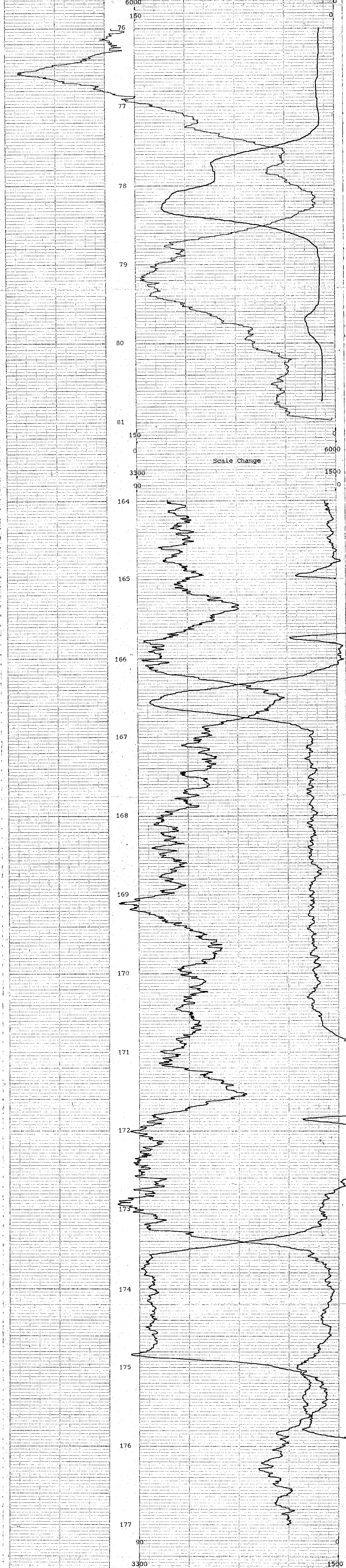
BPB COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



150 API 0
6000 s d u 0



3300 CPS 1500
90 API 0
COAL BULK DENSITY g/cm³
DEPTH GAMMA RAY



BOREHOLE BP-76 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL QUALITY LOG

BP-506 UNCL 29(3)A BP-76



SEAM THICKNESS LOG

SONDE TYPE: COAL COMBINATION SONDE
 LOG SUITE: CALIPER BR. DENSITY

BOREHOLE BP-76
 CLIENT BP Exp., Coal Division

AREA Sukunka DEPTH SCALE 1:20
 COUNTRY Canada
 DATE LOGGED 27 & 28/7/79 3 OF 6 LOGS

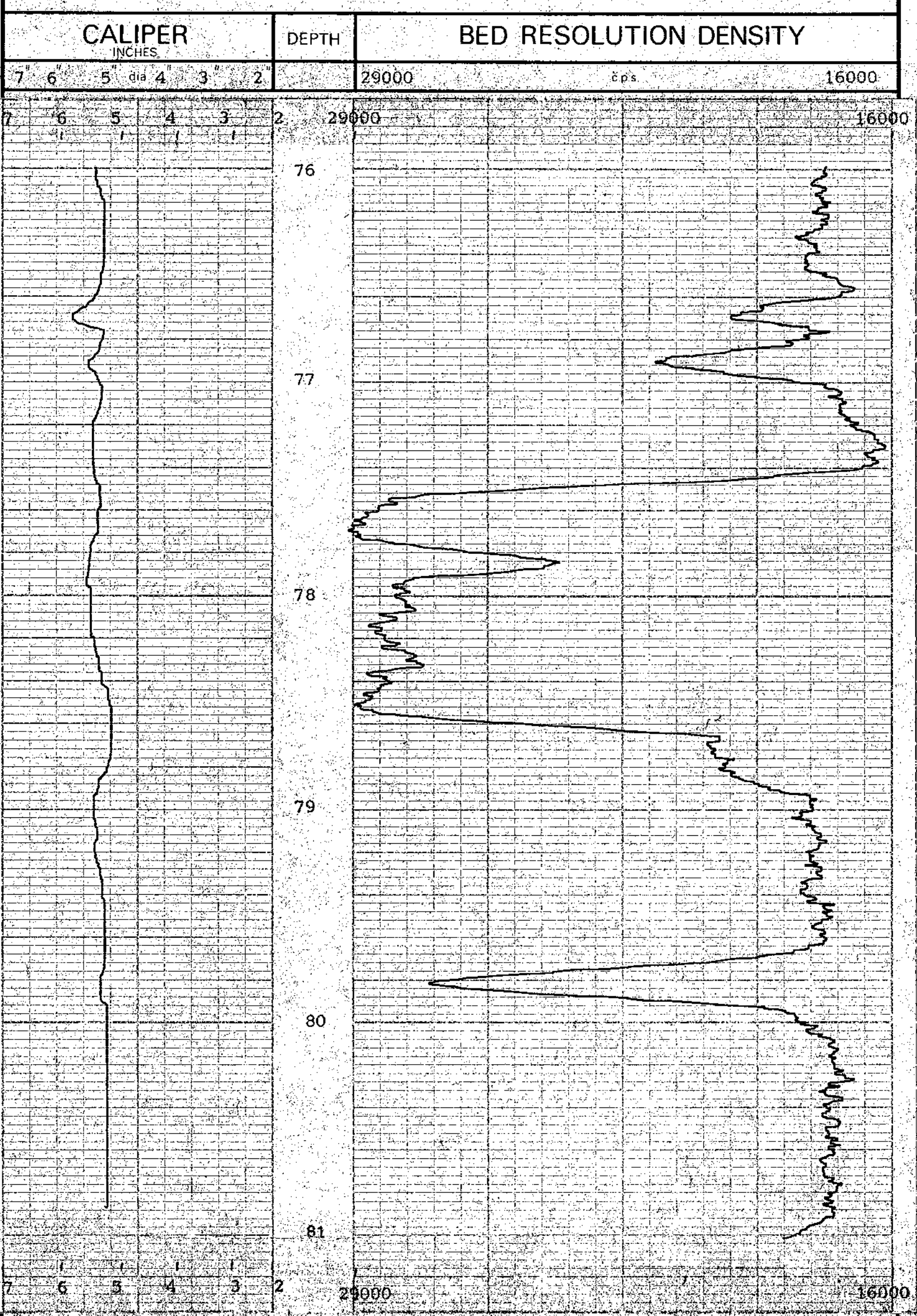
BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE

| LOG | TAPING | RECORD | PROJECT | PANEL | COAL |
|-------------|--------|--------|---------|-------|------|
| | TAPED | SPEED | REPEAT | SPEED | NORM |
| CALIPER | Y | 2 | R | 2 | 1 |
| BR. DENSITY | Y | 2 | R | 2 | 1/3 |

| | |
|----------------|---------------|
| SEAM THICKNESS | LOG INTERVALS |
| FROM | 81 |
| TO | 76 |
| INTERVAL | 5m |
| FROM | |
| TO | |
| INTERVAL | |
| REMARKS | |

666

B P B SEAM THICKNESS LOG



| CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY |
|-----------------|-------|------------------------|
| 7 6 5 dia 4 3 2 | | 29000 cps 16000 |

BOREHOLE BP-76 AREA Sukunka
 CLIENT BP Exp., Coal Division COUNTRY Canada



SEAM THICKNESS LOG



Re-SUKUNKA 79(3)A BP-76

NEUTRON-NEUTRON & L.S. DENSITY LOG
(Re-run with rods raised 2m)

BOREHOLE BP-76
CLIENT BP Exp., Coal Division

6666

AREA Sukunka
COUNTRY Canada
DATE LOGGED 27 & 28/7/77

DEPTH SCALE
1:200

BOREHOLE DATA REFER TO LITHOLOGY LOG

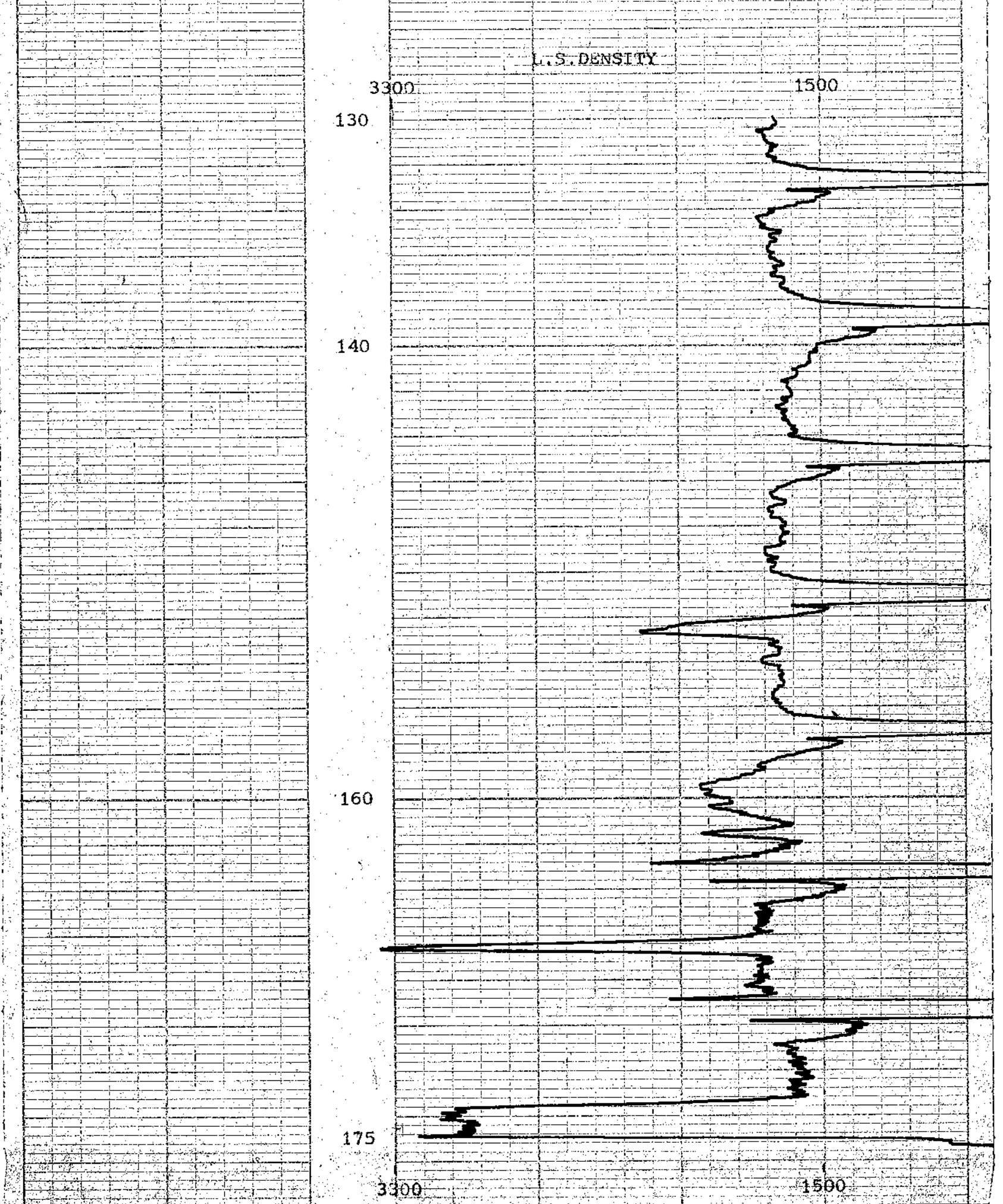
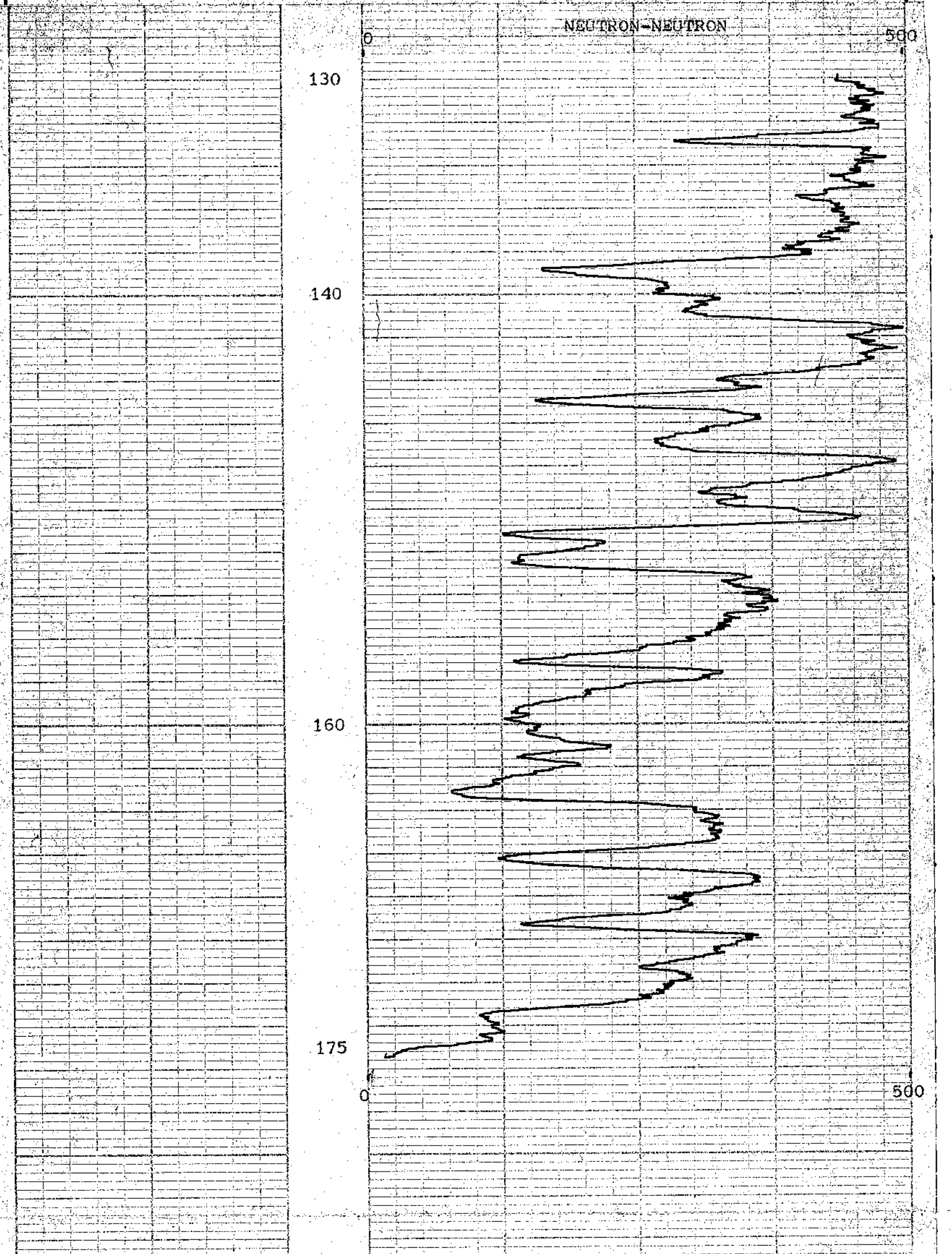
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

| LOG | TAPING | RECORDING | DIRECT | T.C. | PANEL | COEF. |
|-----|--------|-----------|--------|-------|-------|-------|
| | | SPEED | REPLAN | SPEED | SECS | NORM |
| 1SD | Y | 9 | D | 9 | I | - |
| N-N | Y | 9 | D | 9 | 1 | 0.87 |

REMARKS
Rods raised 2m after first run & logs re-run to eliminate effect of drill-joints.

| DEPTH | NEUTRON-NEUTRON |
|-------|-----------------|
| 0 | SNU 500 |



| DEPTH | L.S. DENSITY |
|-------|--------------|
| 3300 | CPS 1500 |



BOREHOLE BP-76
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada



BP-5UKUNKA 79 (3) A BP-76

L.S. DENSITY & GAMMA RAY DETAIL
(Re-run with rods raised 2m)

BOREHOLE BP-76
CLIENT BP Exp., Coal Division

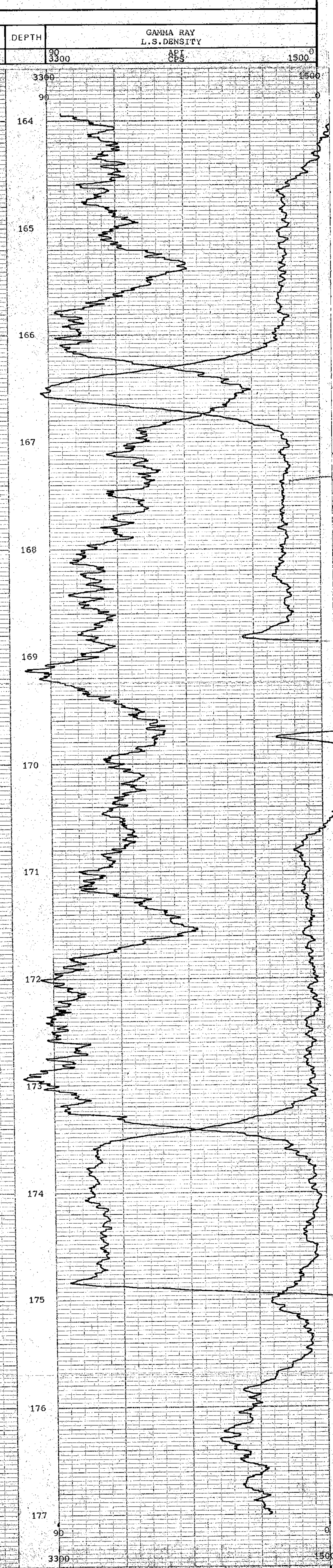
AREA Sukunka
COUNTRY Canada
DATE LOGGED 28/7/77

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

EQUIPMENT AND RECORDING DATA

| | | | |
|-------|--------|--------|--------|
| LOG | TAPING | PANEL | CAL |
| LOG | RECORD | DIRECT | SPEED |
| TAPED | SPEED | REFLAY | SECS |
| ISD | Y | 2 | R |
| Gamma | X | 2 | R |
| | | | 2.1.52 |

REMARKS
Detail section recorded with drill-
rods raised 2m to eliminate effect
of rod-joints.



| | | | | | |
|-------|----|------|--------------|---|------|
| DEPTH | 90 | 3300 | APT | 0 | 1500 |
| | | | GAMMA RAY | | |
| | | | L.S. DENSITY | | |

| | | | |
|----------|------------------------|---------|---------|
| BOREHOLE | BP-76 | AREA | Sukunka |
| CLIENT | BP Exp., Coal Division | COUNTRY | Canada |





N.S. 222222 71(3)H BR-77

LOG SUITE
GAMMA RAY
L.S. DENSITY
CALIPER

SONDE TYPE
COAL
COMBINATION
SONDE

COAL
LITHOLOGY
LOG

BOREHOLE BP-77
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada
DATE LOGGED 2/8/79

DEPTH SCALE
1:200
1.0" = 5.0065

| BOREHOLE DATA | |
|-------------------|---------------------------------------|
| PERMANENT DATUM | Ground Level |
| ELEVATION OF P.D. | |
| MEASUREMENT FROM | G.L. |
| DEPTH REACHED | 132.6m |
| CASING SHOE | 36.6m |
| BIT SIZES | 1 7/8" TO 2" TO 4" TO 5 1/2" TO 36.6m |
| CASING SIZES | 1 5/8" TO 36.6m |
| FLUID DATA | |
| NATURE | Water |
| SS LEVEL | |
| VISCOSITY | |
| PH | |
| BRIT. INCL. TEMP. | |
| BRIT. TEMP. | |

OPERATION DATA
132m
132m
132m
Y26/34
R. Bishop
D. Mitchell

666

EQUIPMENT AND RECORDING DATA

| COAL COMBINATION SONDE | | EQUIPMENT | | TAPING | | PANEL | | CAL. COEFF. | | DEPTH | | SEAM LOG RUN | |
|------------------------|-------|-------------------|------------|-----------|--------------|---------------|-------|-------------|------|-------|----|--------------|---|
| LOG | SONDE | SOURCE | CALIBRATOR | LOG TAPED | RECORD SPEED | DIRECT REPLAY | SPEED | IC SECS | NORM | FROM | TO | INTERVAL | |
| GAMMA RAY | 78 | | 367 | Y | 9 | D | 9 | 1 | 1.6 | 132 | 0 | 132m | Y |
| L.S. DENSITY | | | | Y | 9 | D | 9 | 1 | - | 132 | 0 | 132m | Y |
| CALIPER | | SIDEWALL POSITION | | | | | | | | | | | |

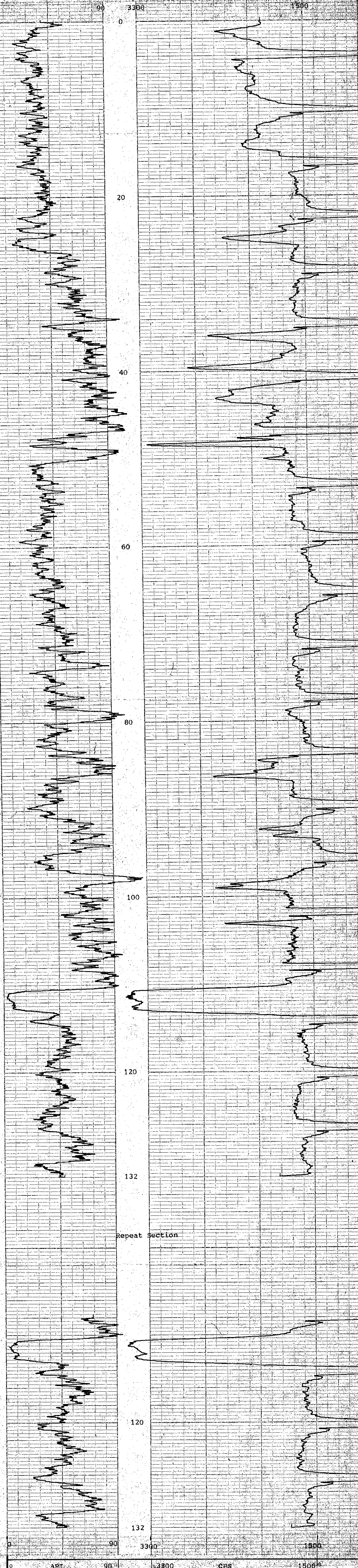
| COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log) | | | | INTERVAL TOTAL |
|---|-----|-----|----|----------------|
| FROM | 116 | 105 | 50 | |
| TO | 109 | 97 | 46 | |
| INTERVAL | 7m | 8m | 4m | 19m |

| ADDITIONAL SONDES RUN | | | | REMARKS |
|-----------------------|-------|-------------------|------------------|---|
| SONDE | LOG | GENERAL SCALE LOG | DETAIL SCALE LOG | |
| 19 | N-N | 1:200 | | Hole logged with single function sondes through drill-rods. |
| 107 | Vert. | Spot | | |

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

| JIG No. | VALUE @ 2" DIAM | JIG CAL. DATE | JIG VALUE | SDU @ | g/cm ³ | ins | cps |
|---------------------------------|-----------------|---------------|-----------|-------|-------------------|-----|-----|
| JIG MARK SHOWN AT ABOVE VALUE - | | | SPAN | NORM | SDU CPS | ins | cps |



BOREHOLE BP-77 AREA Sukunka
CLIENT BP Exp., Coal Division COUNTRY Canada

COAL LITHOLOGY LOG



W. SUKUNKA 75(8)A BR-77

L.S. DENSITY & GAMMA RAY
DETAIL LOG

BOREHOLE BP-77
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 2/8/79

DEPTH SCALE
1:20
2 OF 5 LOGS

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

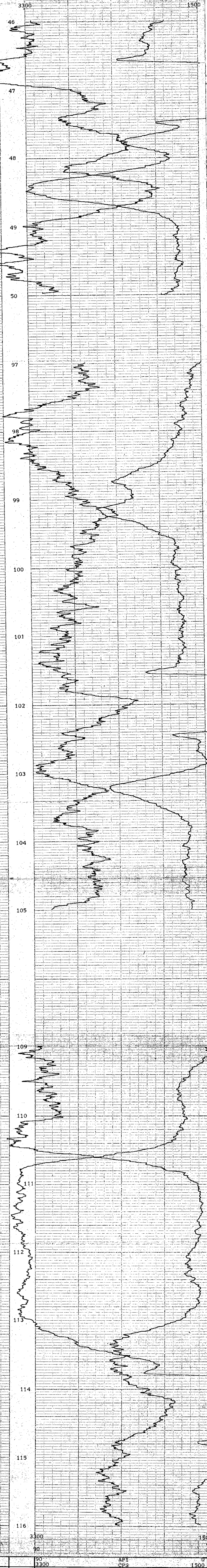
EQUIPMENT AND RECORDING DATA

| | | | |
|-------|-----------------|----------|---------|
| LOG | TAPING | PANEL | CASE |
| LOG | RECORDING SPEED | SC. NOM. | COEF. |
| GAMMA | Y | R | 2 2 1.6 |
| LSD | X | R | 2 1 1 |
| | SCOPE | 78 | |

REMARKS
Hole logged through drill-rods.

666

GAMMA RAY
L. S. DENSITY
API CPS
0 1500



DEPTH 90 3300 API CPS 0 1500
GAMMA RAY
L. S. DENSITY



| | | | |
|----------|------------------------|---------|---------|
| BOREHOLE | BP-77 | AREA | Sukunka |
| CLIENT | BP Exp., Coal Division | COUNTRY | Canada |

BP-Sukunka 79(3)9 BR-77



NEUTRON-NEUTRON LOG

BOREHOLE BP-77
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 2/8/79

DEPTH SCALE
 1:200

3 of 5 LOGS

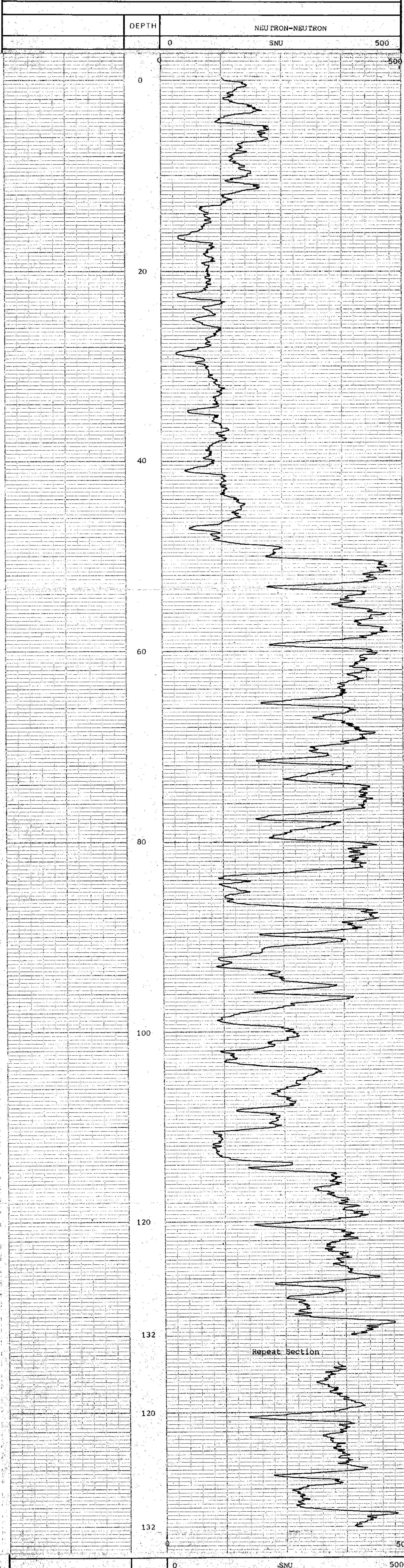
BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

| LOG | TAPING | PANEL | CAL |
|-----|-------------------------|------------|--------|
| | LOG RECORD/DIRECT SPEED | T.C. NORM | COEFF |
| N-N | Y 9 | D 9 | 1 0.87 |
| | LOG SPEED REPLAY SECS. | | |
| | SONDE - 19 | SONDE 2478 | |

REMARKS
 Hole logged through drill-rod.

666



BOREHOLE BP-77
 CLIENT BP Exp., Coal Division
 AREA Sukunka
 COUNTRY Canada



2-502024-7(3)A BA-77



L.S. DENSITY & NEUTRON GENERAL LOG
 Fe-run with drill-rods raised 3.7m

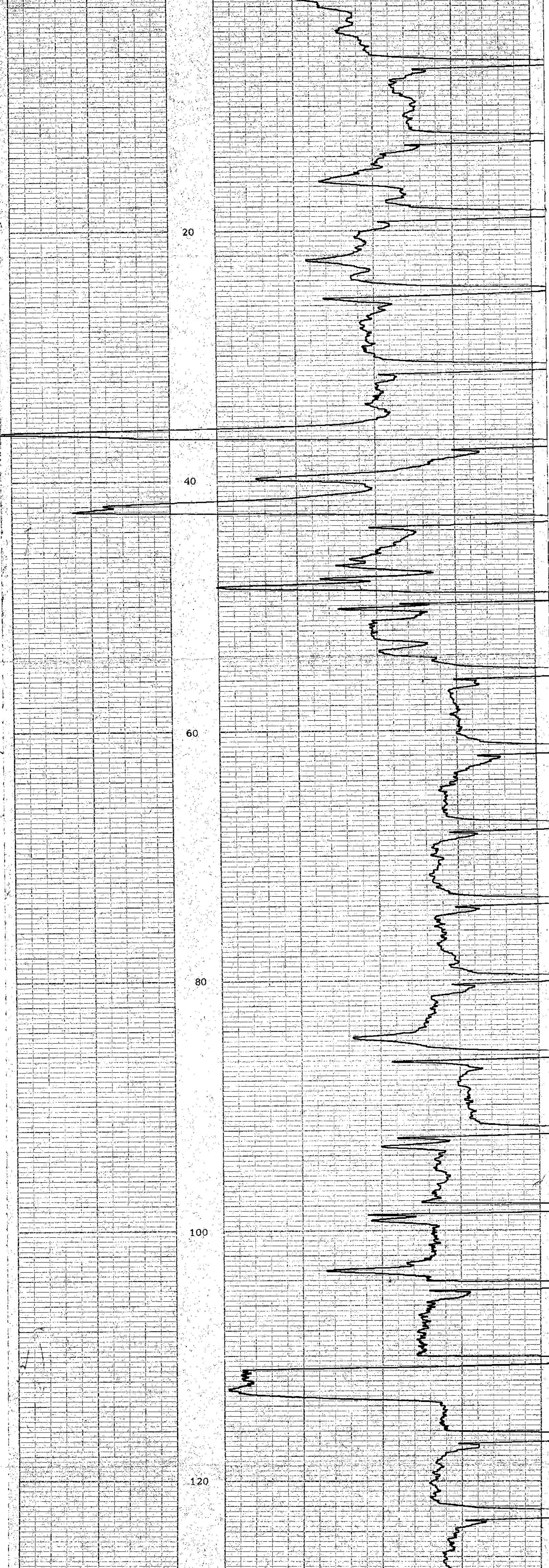
BOREHOLE BP-77
 CLIENT BP Exp., Coal Division

AREA Sukunka
 COUNTRY Canada
 DATE LOGGED 2/8/79

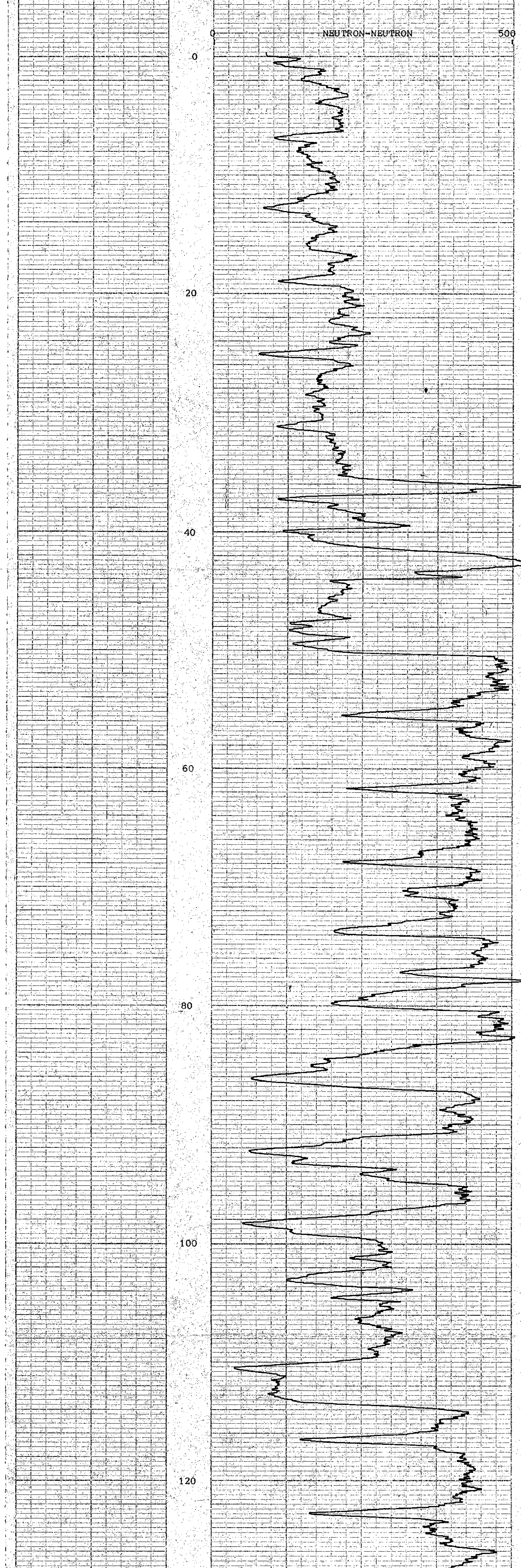
BOREHOLE DATA REFER TO: LITHOLOGY LOG
 OPERATION DATA REFER TO: LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA

| | | | |
|---|---------|------------|------|
| LOGS | TAPPING | COIL PANEL | COIL |
| LSD | Y | 9 | D |
| N-N | Y | 9 | D |
| REMARKS | | | |
| Log re-run with drill-rods raised 3.7m to eliminate effect of drill-joints. | | | |
| 666 | | | |

| | | | |
|-------|------|--------------|------|
| DEPTH | 3300 | L.S. DENSITY | 1500 |
| | | CPS | |



| | | | |
|-------|---|-----------------|-----|
| DEPTH | 0 | NEUTRON-NEUTRON | 500 |
| | | SNU | |



| | | | |
|-------|---|-----------------|-----|
| DEPTH | 0 | NEUTRON-NEUTRON | 500 |
| | | SNU | |



BOREHOLE BP-77
 CLIENT BP Exp., Coal Division
 AREA Sukunka
 COUNTRY Canada



W. SWANER 79(B)A BP-77

L.S. DENSITY & GAMMA RAY DETAIL LOG
re-run with rods raised 3.7m

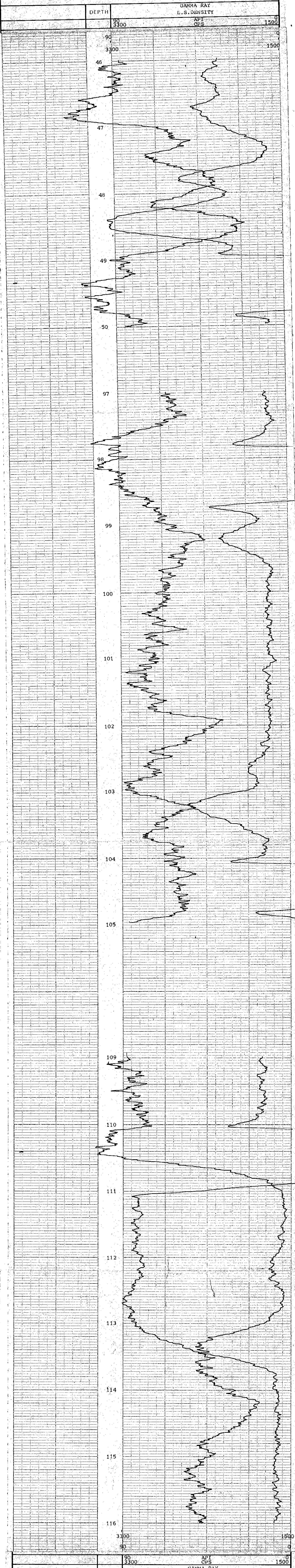
BOREHOLE BP-77
CLIENT BP Exp., Coal Division

AREA Sukunka
COUNTRY Canada
DATE LOGGED 2/8/79

BOREHOLE DATA refers to LITHOLOGY LOG
OPERATION DATA refers to LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA
LOG TAPEING PANEL CAT
LOG RECORDING SPEED SEC. NORM. TAPE SPEED (FEET/MIN) Gamma Y 2 R 2 Z 1.6
ISD Y 2 R 2 Z 1
SCOPE 78

REMARKS
Detail sections re-logged with drill-rods raised 3.7m to eliminate effect of rod-joints.



BOREHOLE BP-77
CLIENT BP Exp., Coal Division
AREA Sukunka
COUNTRY Canada

PR- SOKUNKA 79(8)A

BP EXPLORATION CANADA LTD.
SOKUNKA MINES LTD.
THE COAL ACT, SEC. 17 (2) (a) + (b)
DETAILS OF UNDERGROUND
DEVELOPMENT AND PRODUCTION IN
1979

**(to accompany report - Sokunka
Exploration Program - 1979)*

OPEN FILE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 6666



To: Alec Matheson
Coal Resources Geology

Date: April 2, 1980

Our File:

Re: BP Exploration Canada Limited
Limited Production Permits 1-5 inclusive
Coal Licence Nos. 3102, 3103, 3111-3113

Enclosed are two copies of the report entitled Details of Underground Development and Production in 1979 that have been submitted in accordance with Section 17(2) of the Coal Act Regulations. This report is in addition to the earlier report entitled Sukunka Exploration Program 1979 - Volumes I & II which you reviewed in February.

Paul Hagen
Coal Administrator

Enclosures
/df

MINISTRY OF MINES
AND PETROLEUM RESOURCES

Rec'd APR - 2 1980

| | | |
|-----|--|--|
| AM | | |
| RSB | | |

BP Exploration Canada Limited

333 Fifth Avenue S.W., Calgary, Alberta T2P 3B6 • Telephone (403) 237-1234

March 26, 1980

Mr. P. Hagen,
Office of the Administrator, (Coal),
Ministry of Energy, Mines and Petroleum Resources,
The Province of British Columbia,
Parliament Buildings,
VICTORIA, B.C.
V8V 1X4

Dear Mr. Hagen:

The Coal Act, Section 17(2)(a) and (b).
Limited Production Permits.
Details of Underground Development and
Production Within Licence
No.'s 3112 (Sukunka Main Colliery)
and 3103 (No. 1 Mine)

In accordance with the above, details of coal production and development in 1979 are as follows:

1. Licence No. 3112 Sukunka Main Colliery, 10,440 tonnes

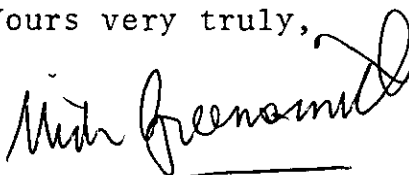
The accompanying plan, Drawing No. 30137, Scale 1/2500, shows the extent of the underground development in the Lower Chamberlain Seam from whence the coal was mined.

2. Licence No. 3103, No. 1 Mine, 800 tonnes

Similarly, Drawing No. 30138, Scale 1/2500, shows the extent of the underground development, also in the Lower Chamberlain Seam.

3. Sheet 3, or Topographical Map, Scale 1/50,000, shows the location of the licences referred to.

Yours very truly,



Victor Greensmith
General Manager
Sukunka Mines Ltd.

VG/lw

Attach.



SHEET 3 — BULLMOOSE CR. — HASLER CR.

Scale 1: 50,000

BP SUKUNKA '77-'79 EXPLORATION PROGRAMS
 MINISTRY OF MINES & PETROLEUM RESOURCES, 1977
 DWNG. No. 40152

• BORE HOLE - 1978
 y ADIT
 T TRENCH
 ○ BORE HOLE
 — ROADWAY (Used by BP)
 POSITION OF M. of M. & P. ROADWAY INACCURATE THROUGH PROSPECT