

QHR 87001

GRIZZLY

DEPTH = 0010.00  
TILT = 29.72 DG  
BEARING = 209.02 DG

DEPTH = 0020.00  
TILT = 30.76 DG  
BEARING = 209.72 DG

DEPTH = 0030.00  
TILT = 32.43 DG  
BEARING = 205.10 DG

DEPTH = 0040.00  
TILT = 32.52 DG  
BEARING = 204.29 DG

DEPTH = 0050.00  
TILT = 33.07 DG  
BEARING = 208.29 DG

DEPTH = 0060.00  
TILT = 33.11 DG  
BEARING = 209.90 DG

DEPTH = 0070.00  
TILT = 34.40 DG  
BEARING = 210.16 DG

DEPTH = 0080.00  
TILT = 35.47 DG  
BEARING = 200.99 DG

DEPTH = 0090.00  
TILT = 35.35 DG  
BEARING = 208.47 DG

DEPTH = 0100.00  
TILT = 36.07 DG  
BEARING = 205.98 DG

DEPTH = 0110.00  
TILT = 36.46 DG  
BEARING = 206.08 DG

DEPTH = 0120.00  
TILT = 37.23 DG  
BEARING = 206.55 DG

DEPTH = 0130.00  
TILT = 37.56 DG  
BEARING = 207.16 DG

DEPTH = 0140.00  
TILT = 37.67 DG  
BEARING = 208.59 DG

DEPTH = -0150.00  
TILT = 37.96 DG  
BEARING = 210.12 DG

DEPTH = 0160.00  
TILT = 38.61 DG  
BEARING = 214.35 DG

DEPTH = 0170.00  
TILT = 37.93 DG  
BEARING = 212.82 DG

DEPTH = 0180.00  
TILT = 39.08 DG  
BEARING = 216.74 DG

COPY 1  
QHR 87001-019  
GRIZZLY

DATE 870610  
JOB NUMBER 7001  
LOG LABEL 026.3  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 30  
L. CELL 1 CPS 1 256  
L. CELL 1 TILT 2 -30  
L. CELL 1 CPS 2 102  
L. CELL 2 TILT 1 30  
L. CELL 2 CPS 1 256  
L. CELL 2 TILT 2 -30  
L. CELL 2 CPS 2 104

MAG 1 CENTRE 178  
MAG 2 CENTRE 182  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 182  
L. CELL 2 CENTRE 180

MAG DECL 24  
STOP DEPTH 2

739

# QHR 87001 - GRIZZLY

LOG DEPTH 0180.00  
 TRUE DEPTH 0147.49  
 TILT 38.51 DG  
 BEARING 214.78 DG  
 NORTHING -089.31  
 EASTING -049.41

LOG DEPTH 0170.00  
 TRUE DEPTH 0139.67  
 TILT 38.27 DG  
 BEARING 213.59 DG  
 NORTHING -084.19  
 EASTING -045.86

LOG DEPTH 0160.00  
 TRUE DEPTH 0131.82  
 TILT 38.29 DG  
 BEARING 212.23 DG  
 NORTHING -079.83  
 EASTING -042.43

LOG DEPTH 0150.00  
 TRUE DEPTH 0123.97  
 TILT 37.81 DG  
 BEARING 209.35 DG  
 NORTHING -073.79  
 EASTING -039.12

LOG DEPTH 0140.00  
 TRUE DEPTH 0116.07  
 TILT 37.62 DG  
 BEARING 207.88 DG  
 NORTHING -068.45  
 EASTING -036.12

LOG DEPTH 0130.00  
 TRUE DEPTH 0108.15  
 TILT 37.40 DG  
 BEARING 206.86 DG  
 NORTHING -063.85  
 EASTING -033.26

LOG DEPTH 0120.00  
 TRUE DEPTH 0100.21  
 TILT 36.85 DG  
 BEARING 206.31 DG  
 NORTHING -057.63  
 EASTING -030.52

LOG DEPTH 0110.00  
 TRUE DEPTH 0092.21  
 TILT 36.26 DG  
 BEARING 206.03 DG  
 NORTHING -052.26  
 EASTING -027.86

LOG DEPTH 0100.00  
 TRUE DEPTH 0084.15  
 TILT 35.71 DG  
 BEARING 207.22 DG  
 NORTHING -046.94  
 EASTING -025.26

LOG DEPTH 0090.00  
 TRUE DEPTH 0076.03  
 TILT 35.41 DG  
 BEARING 208.73 DG  
 NORTHING -041.75  
 EASTING -022.59

LOG DEPTH 0080.00  
 TRUE DEPTH 0067.88  
 TILT 34.97 DG  
 BEARING 209.57 DG  
 NORTHING -036.67  
 EASTING -019.81

LOG DEPTH 0070.00  
 TRUE DEPTH 0059.69  
 TILT 33.79 DG  
 BEARING 210.03 DG  
 NORTHING -031.68  
 EASTING -016.98

LOG DEPTH 0060.00  
 TRUE DEPTH 0051.38  
 TILT 33.09 DG  
 BEARING 209.09 DG  
 NORTHING -026.87  
 EASTING -014.19

LOG DEPTH 0050.00  
 TRUE DEPTH 0043.00  
 TILT 32.80 DG  
 BEARING 206.29 DG  
 NORTHING -022.10  
 EASTING -011.54

LOG DEPTH 0040.00  
 TRUE DEPTH 0034.59  
 TILT 32.47 DG  
 BEARING 204.70 DG  
 NORTHING -017.24  
 EASTING -009.14

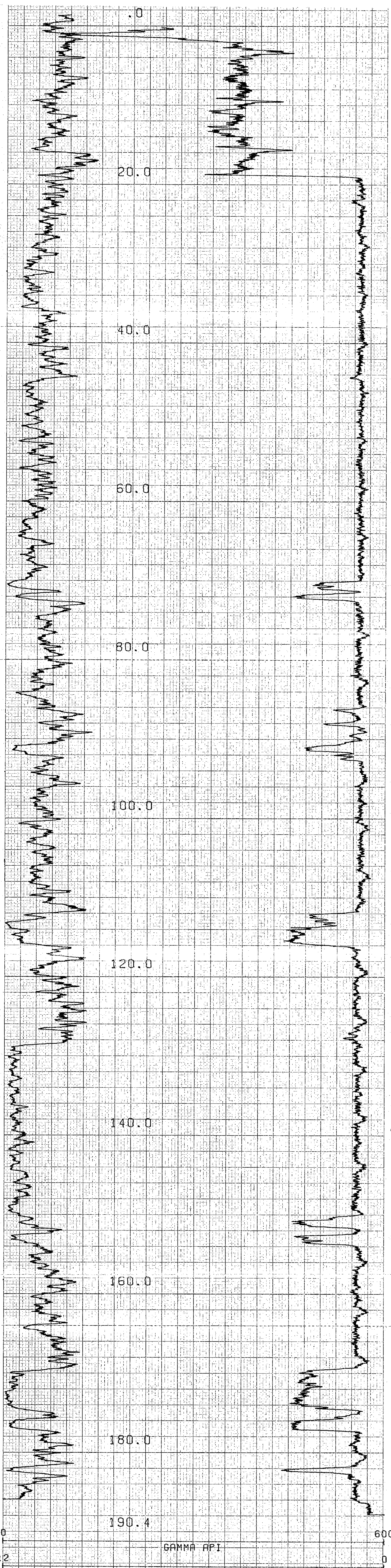
LOG DEPTH 0030.00  
 TRUE DEPTH 0026.15  
 TILT 31.59 DG  
 BEARING 207.41 DG  
 NORTHING -012.36  
 EASTING -006.89

LOG DEPTH 0020.00  
 TRUE DEPTH 0017.63  
 TILT 30.24 DG  
 BEARING 209.37 DG  
 NORTHING -007.71  
 EASTING -004.49

LOG DEPTH 0010.00  
 TRUE DEPTH 0008.99  
 TILT 29.89 DG  
 BEARING 211.21 DG  
 NORTHING -003.32  
 EASTING -002.01

LOG DEPTH 0002.00  
 TRUE DEPTH 0002.00  
 TILT 28.47 DG  
 BEARING 213.40 DG  
 NORTHING +000.00  
 EASTING +000.00





465

467

465

COMPU-LOG #203-0003PLOT 05-30-80

**739**

QHR87001

CENTURY GEOPHYSICAL

CALGARY, ALBERTA

HOLE DIAMETER : 10.0

PROBE # 9069 - 030

SENSOR #2 CAL STD CPS = 5912

SENSOR #2 CAL RUN CPS = 5912

SENSOR #2 CAL BIAS = 0

SENSOR #3 CAL STD CPS = 5912

SENSOR #3 CAL RUN CPS = 5912

SENSOR #3 CAL BIAS = 0

DATA V9L4\*C TRUCK # 6400

R. BERKLEY APPL. #20 CH

SOFTWARE PART #203-0003

*Handwritten notes:*

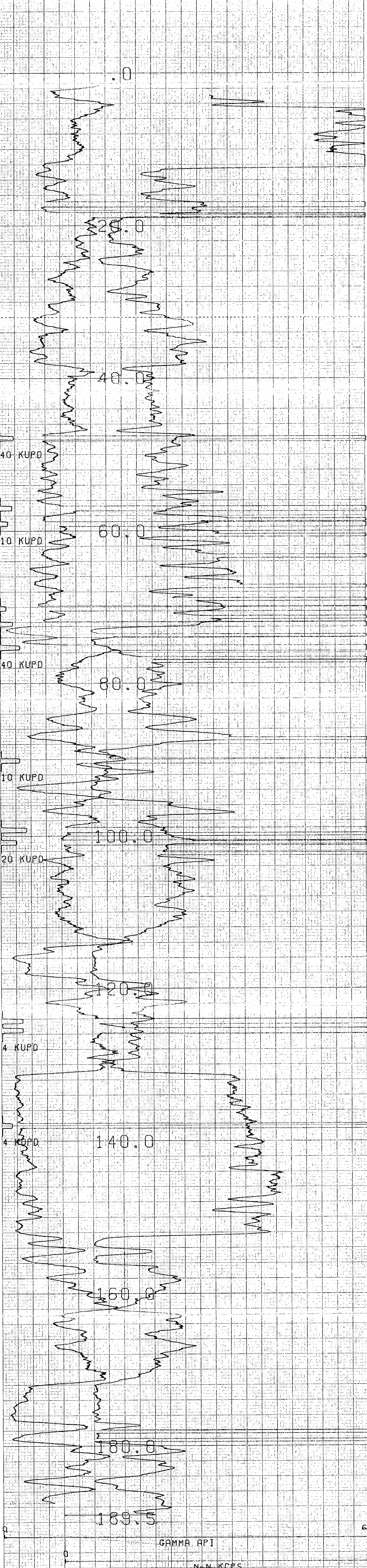
Gamma

5912

5912

5912





441

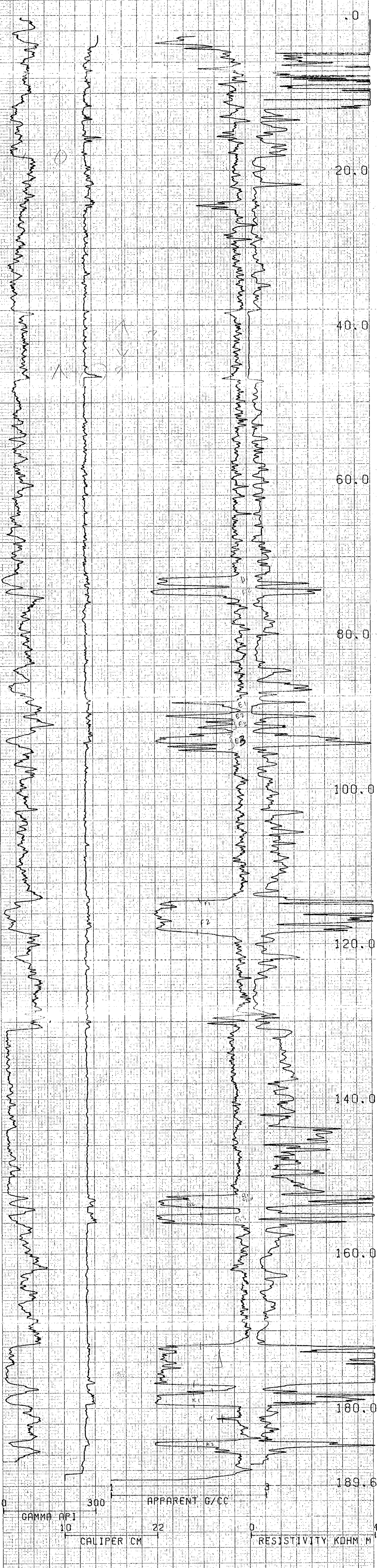
439

437

COMPU-LOG V8L2 PLOT 06-01-80  
 QHR 87001  
 GAMMA NEUTRON (RODS)  
 GRIZZLY  
 HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2WA TRUCK # 604  
 M. HEALY APPL.#7 L1

739





300 APPARENT G/CC  
 10 GAMMA API  
 22 CALIPER CM  
 0 RESISTIVITY KDHM M

COMPU-LOG V8L2 PLOT 06-01-80  
 QHR87001  
 GAMMA DENSITY CALIPR  
 GRIZZLY  
 HOLE DIAMETER : 13.0  
 PROBE # 9030A1- 420  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7500  
 SENSOR #4 CAL BIAS = 31  
 DATA V8L2WA TRUCK # 604  
 M. HEALY APPL. #30 L1

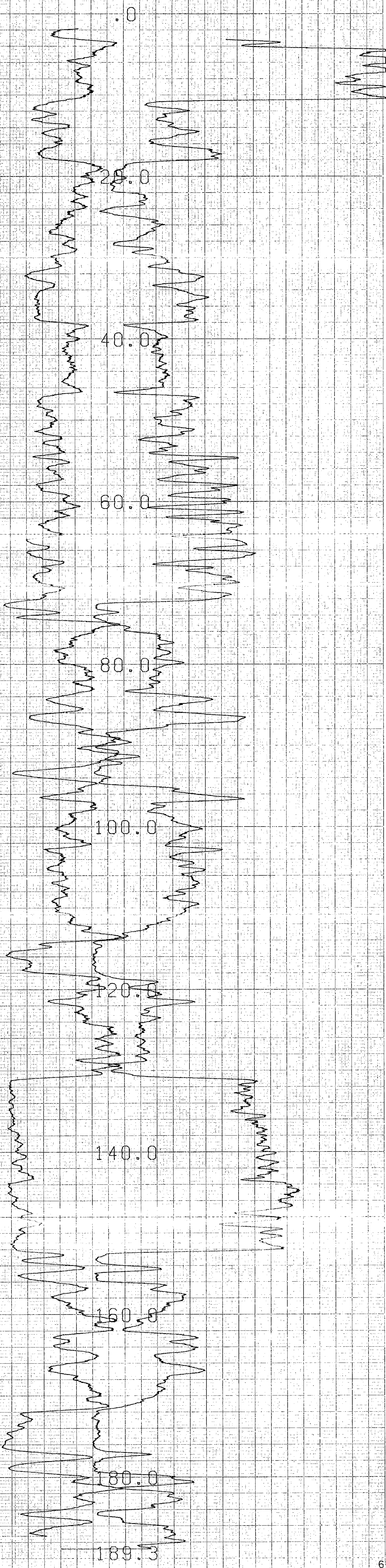
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433

431

429





487

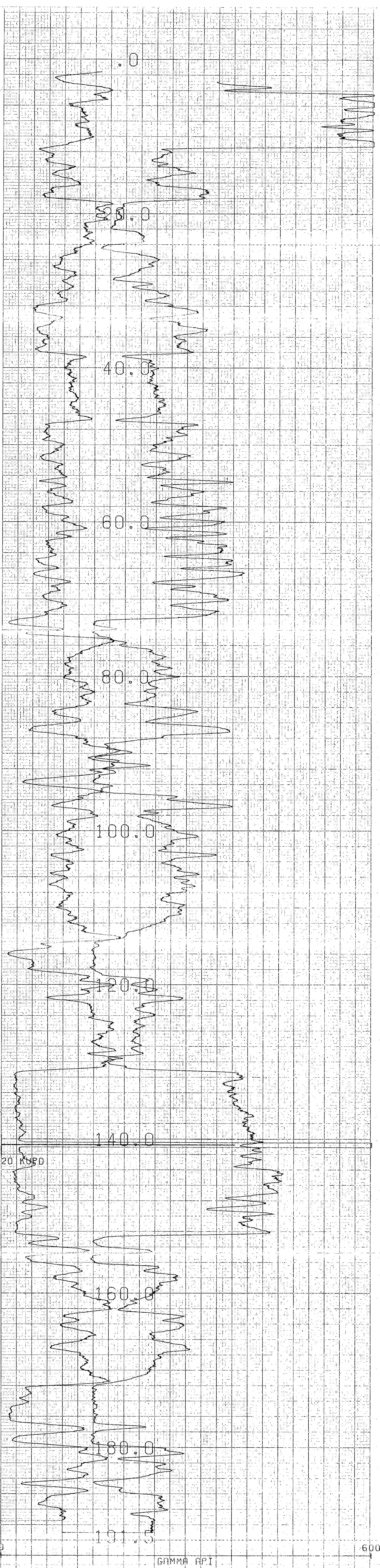
485

483

GAMMA API  
 N-N KCPS  
 COMPU-LOG V8L2 PLOT 06-04-80  
 QMR87001  
 GAMMA NEUTRON DEV 'N  
 GRIZZLEY  
 HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\* A TRUCK # L604  
 G. HOLMLUND APPL. #7 L1

739





385

383

381

COMPU-LOG V8L2 PLOT 02-06-80

QHR87001  
GAMMA NEUTRON (DEV.)  
GRIZLY

HOLE DIAMETER :	13.1
PROBE #	9055A - 005
SENSOR #4 .CAL STD CPS =	152
SENSOR #4 .CAL RUN CPS =	186
SENSOR #4 CAL BIAS =	0
DATA V8L2*#A	TRUCK # 604
M. HEALY	APPL.#7 L1

739

# QHR 87002 - GRIZZLY

LOG DEPTH 0050.00  
 TRUE DEPTH 0044.93  
 TILT 27.55 DG  
 BEARING 210.90 DG  
 NORTHING -018.43  
 EASTING -010.98

LOG DEPTH 0040.00  
 TRUE DEPTH 0036.06  
 TILT 26.81 DG  
 BEARING 211.30 DG  
 NORTHING -014.46  
 EASTING -008.61

LOG DEPTH 0030.00  
 TRUE DEPTH 0027.14  
 TILT 26.35 DG  
 BEARING 210.92 DG  
 NORTHING -010.61  
 EASTING -006.26

LOG DEPTH 0020.00  
 TRUE DEPTH 0018.18  
 TILT 26.22 DG  
 BEARING 210.26 DG  
 NORTHING -006.80  
 EASTING -003.98

LOG DEPTH 0010.00  
 TRUE DEPTH 0009.21  
 TILT 25.66 DG  
 BEARING 210.50 DG  
 NORTHING -002.98  
 EASTING -001.75

LOG DEPTH 0002.00  
 TRUE DEPTH 0002.00  
 TILT 25.35 DG  
 BEARING 211.10 DG  
 NORTHING +000.00  
 EASTING +000.00

DEPTH = 0005.00  
 TILT = 26.36 DG  
 BEARING = 209.28 DG

DEPTH = 0010.00  
 TILT = 25.97 DG  
 BEARING = 209.91 DG

DEPTH = 0015.00  
 TILT = 26.02 DG  
 BEARING = 209.60 DG

DEPTH = 0020.00  
 TILT = 26.48 DG  
 BEARING = 210.61 DG

DEPTH = 0025.00  
 TILT = 25.68 DG  
 BEARING = 213.38 DG

DEPTH = 0030.00  
 TILT = 26.23 DG  
 BEARING = 211.22 DG

DEPTH = 0035.00  
 TILT = 26.55 DG  
 BEARING = 208.51 DG

DEPTH = 0040.00  
 TILT = 27.39 DG  
 BEARING = 211.38 DG

DEPTH = 0045.00  
 TILT = 27.49 DG  
 BEARING = 210.18 DG

DEPTH = 0050.00  
 TILT = 27.70 DG  
 BEARING = 219.43 DG

DEPTH = 0055.00  
 TILT = 27.16 DG  
 BEARING = 209.98 DG

DATE 870610  
 JOB NUMBER 7002  
 LOG LABEL 026.2  
 MAG 1 MAX 229  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 30  
 L. CELL 1 CPS 1 256  
 L. CELL 1 TILT 2 -30  
 L. CELL 1 CPS 2 102  
 L. CELL 2 TILT 1 30  
 L. CELL 2 CPS 1 256  
 L. CELL 2 TILT 2 -30  
 L. CELL 2 CPS 2 104

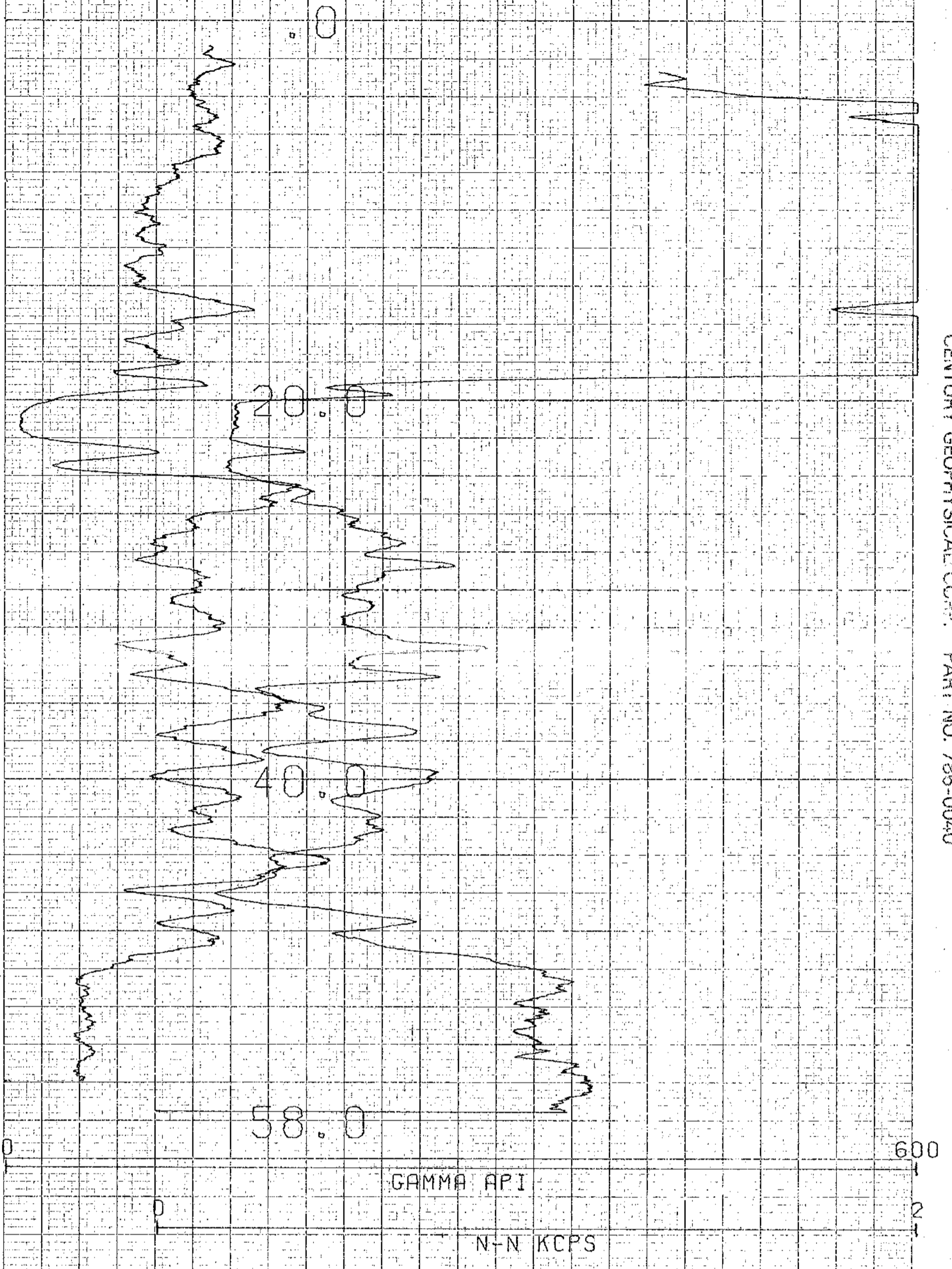
MAG 1 CENTRE 178  
 MAG 2 CENTRE 182  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 182  
 L. CELL 2 CENTRE 180

MAG DECL 24  
 STOP DEPTH 2

739



393



COMPU-DC V8L2 PLOT 02-06-80

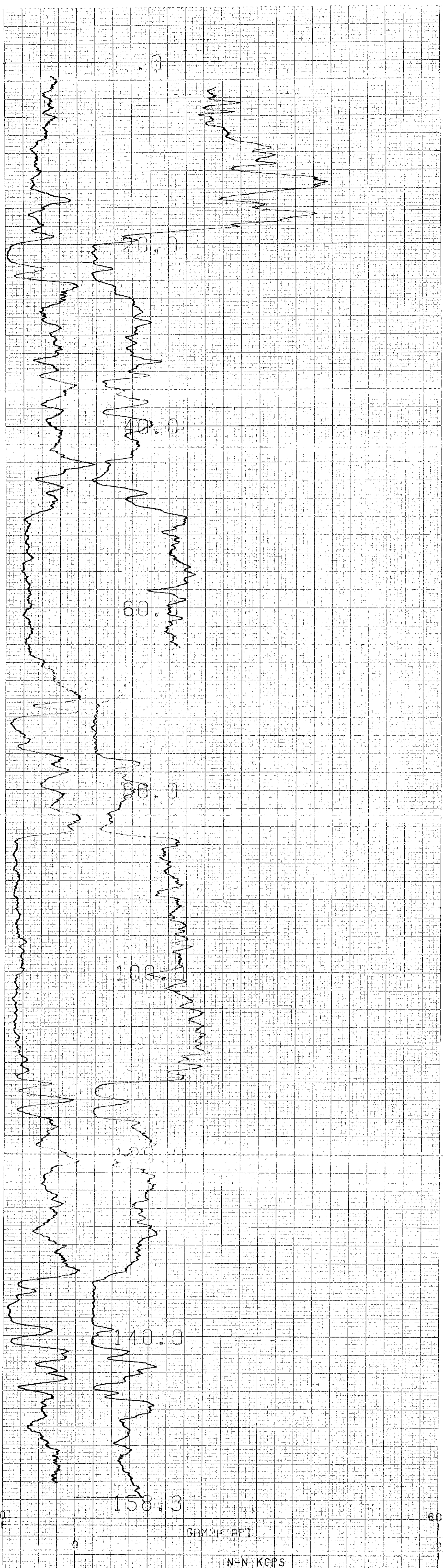
QHR87002  
 GAMMA NEUTRON (DEV.)  
 GRIZZLY

739

HOLE DIAMETER : 13.1  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\*A TRUCK # 604  
 M. HEALY APPL.#7 L1

394





399

397

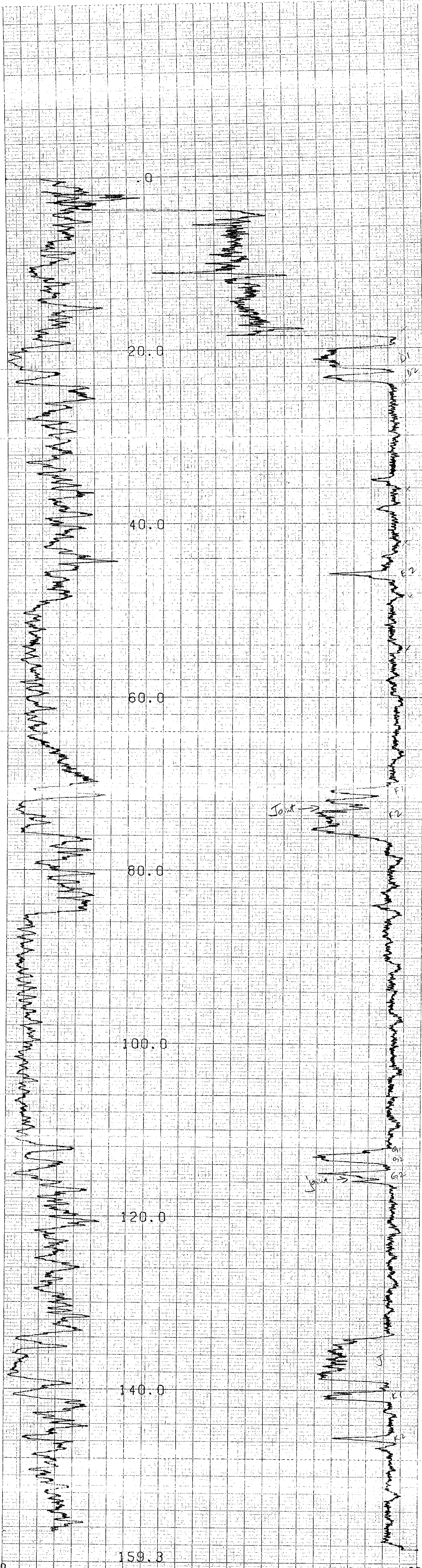
COMPU-LOG V8L2 PLAT 02-06-80

739

QHR87002  
GAMMA NEUTRON (RODS)  
GRIZZLY

HOLE DIAMETER = 13.1  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BTRS = 0  
 DATA V8L2WA TRUCK # 604  
 M. HENLY WFL # 13





COMPU-LOG #203-0003PLOT 06-02-80

739

QHR87002  
GAMMA DENSITY (RODS)  
GRIZZLY

HOLE DIAMETER : 13.1  
 PROBE # 9069 - 030  
 SENSOR #2 CAL STD CPS = -32203  
 SENSOR #2 CAL RUN CPS = -32203  
 SENSOR #2 CAL BIAS = 0  
 SENSOR #3 CAL STD CPS = 5912  
 SENSOR #3 CAL RUN CPS = -32203  
 SENSOR #3 CAL BIAS = 0  
 DATA V9L4\*C TRUCK # 604  
 M. HEALY APPL #20 CH  
 SOFTWARE PART #203-0003

407

405

403

QHR 87-003

LOG DEPTH 0010.00  
TRUE DEPTH 0008.95  
TILT 29.62 DG  
BEARING 211.84 DG  
NORTHING -003.35  
EASTING -002.08

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 29.88 DG  
BEARING 210.84 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0005.00  
TILT = 30.13 DG  
BEARING = 210.09 DG

DEPTH = 0010.00  
TILT = 29.36 DG  
BEARING = 212.83 DG

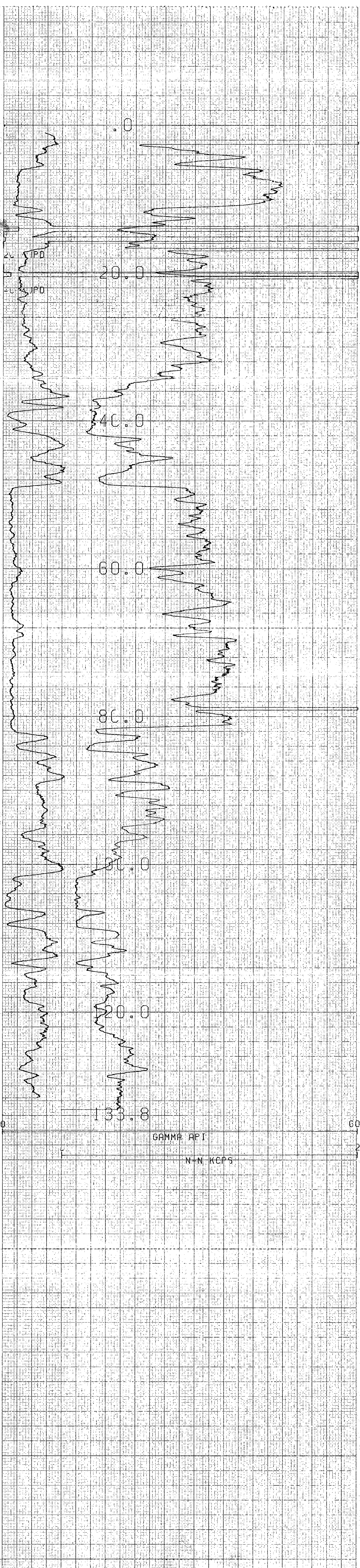
DATE 870625  
JOB NUMBER 7003  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 30  
L. CELL 1 CPS 1 256  
L. CELL 1 TILT 2 -30  
L. CELL 1 CPS 2 102  
L. CELL 2 TILT 1 30  
L. CELL 2 CPS 1 256  
L. CELL 2 TILT 2 -30  
L. CELL 2 CPS 2 104

MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 180  
L. CELL 2 CENTRE 180

MAG DECL 24  
STOP DEPTH 2

739

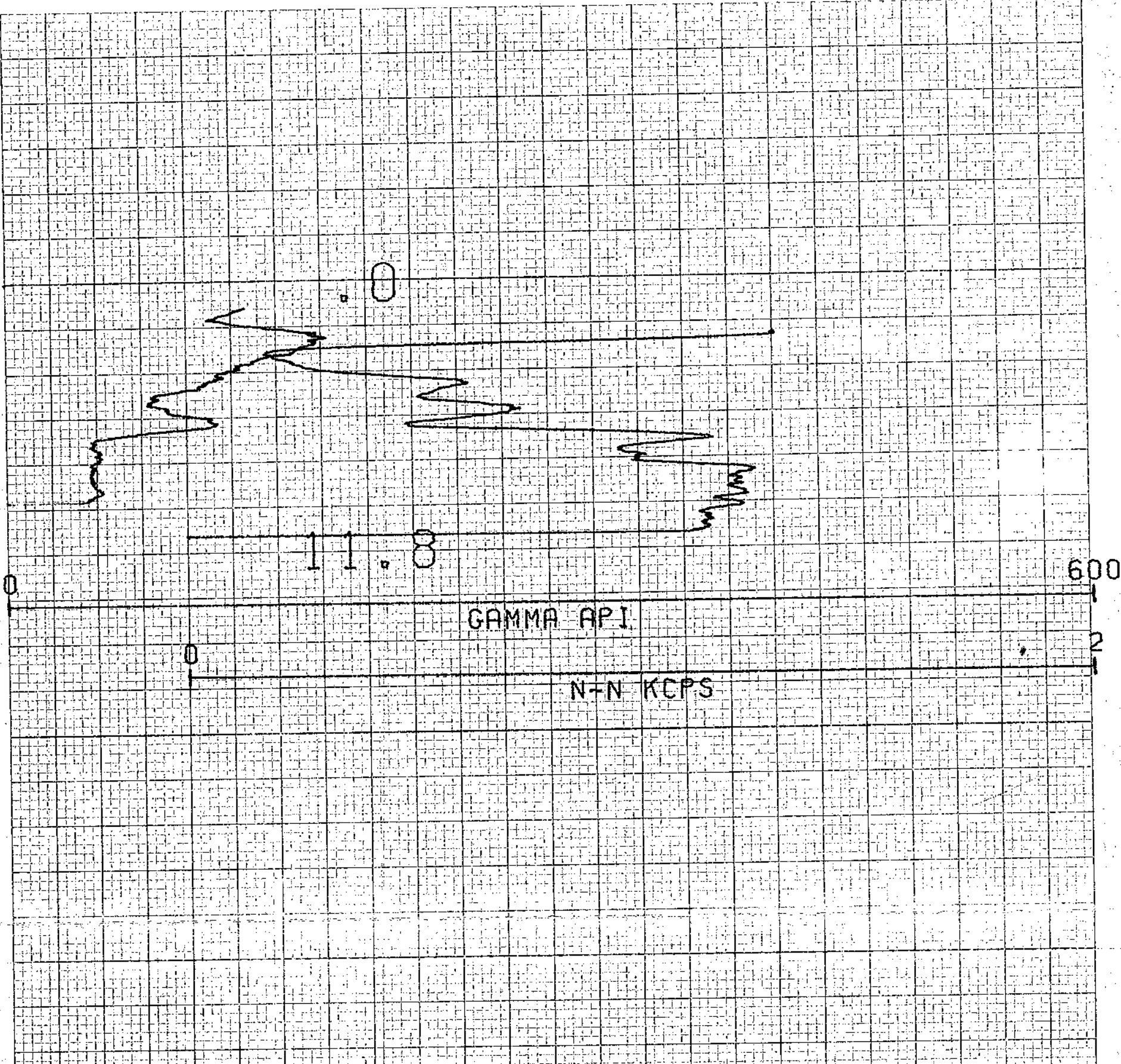




COMPU-LOG V8L2 PLOT 06-03-80  
 QFR87003  
 GAMMA NEUTRON (RODS)  
 GRIZZLY  
 HOLE DIAMETER : 13.1  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\* TRUCK # 600  
 M. HEALY APPL. #7 LI

739





493

COMPU-LOG V8L2 PLOT 06-04-80

739

QHR87003  
 GAMMA NEUTRON DEV 'N  
 GRIZZLEY

HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\*A TRUCK # L604  
 G.HDLMLUND APPL.#7 LI

# QHR 87004 - GRIZZLY

LOG DEPTH 0120.00  
TRUE DEPTH 0101.63  
TILT 33.64 DG  
BEARING 222.74 DG  
NORTHING -049.93  
EASTING -038.66

LOG DEPTH 0110.00  
TRUE DEPTH 0093.31  
TILT 33.17 DG  
BEARING 218.97 DG  
NORTHING -045.86  
EASTING -034.90

LOG DEPTH 0100.00  
TRUE DEPTH 0084.94  
TILT 33.08 DG  
BEARING 217.82 DG  
NORTHING -041.60  
EASTING -031.46

LOG DEPTH 0090.00  
TRUE DEPTH 0076.56  
TILT 32.98 DG  
BEARING 217.62 DG  
NORTHING -037.29  
EASTING -028.11

LOG DEPTH 0080.00  
TRUE DEPTH 0068.17  
TILT 32.70 DG  
BEARING 217.62 DG  
NORTHING -032.98  
EASTING -024.79

LOG DEPTH 0070.00  
TRUE DEPTH 0059.76  
TILT 32.85 DG  
BEARING 216.03 DG  
NORTHING -028.70  
EASTING -021.49

LOG DEPTH 0060.00  
TRUE DEPTH 0051.36  
TILT 32.63 DG  
BEARING 215.74 DG  
NORTHING -024.31  
EASTING -018.30

LOG DEPTH 0050.00  
TRUE DEPTH 0042.94  
TILT 32.07 DG  
BEARING 216.30 DG  
NORTHING -019.94  
EASTING -015.15

LOG DEPTH 0040.00  
TRUE DEPTH 0034.47  
TILT 31.59 DG  
BEARING 216.88 DG  
NORTHING -015.66  
EASTING -012.00

LOG DEPTH 0030.00  
TRUE DEPTH 0025.95  
TILT 30.82 DG  
BEARING 218.64 DG  
NORTHING -011.47  
EASTING -008.86

LOG DEPTH 0020.00  
TRUE DEPTH 0017.36  
TILT 30.76 DG  
BEARING 219.00 DG  
NORTHING -007.46  
EASTING -005.66

LOG DEPTH 0010.00  
TRUE DEPTH 0008.77  
TILT 32.19 DG  
BEARING 214.94 DG  
NORTHING -003.49  
EASTING -002.44

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 33.27 DG  
BEARING 211.04 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0010.00  
TILT = 31.11 DG  
BEARING = 218.85 DG

DEPTH = 0020.00  
TILT = 30.40 DG  
BEARING = 219.14 DG

DEPTH = 0030.00  
TILT = 31.24 DG  
BEARING = 218.14 DG

DEPTH = 0040.00  
TILT = 31.95 DG  
BEARING = 215.63 DG

DEPTH = 0050.00  
TILT = 32.19 DG  
BEARING = 216.98 DG

DEPTH = 0060.00  
TILT = 33.07 DG  
BEARING = 214.51 DG

DEPTH = 0070.00  
TILT = 32.63 DG  
BEARING = 217.55 DG

DEPTH = 0080.00  
TILT = 32.78 DG  
BEARING = 217.69 DG

DEPTH = 0090.00  
TILT = 33.18 DG  
BEARING = 217.56 DG

DEPTH = 0100.00  
TILT = 32.99 DG  
BEARING = 218.09 DG

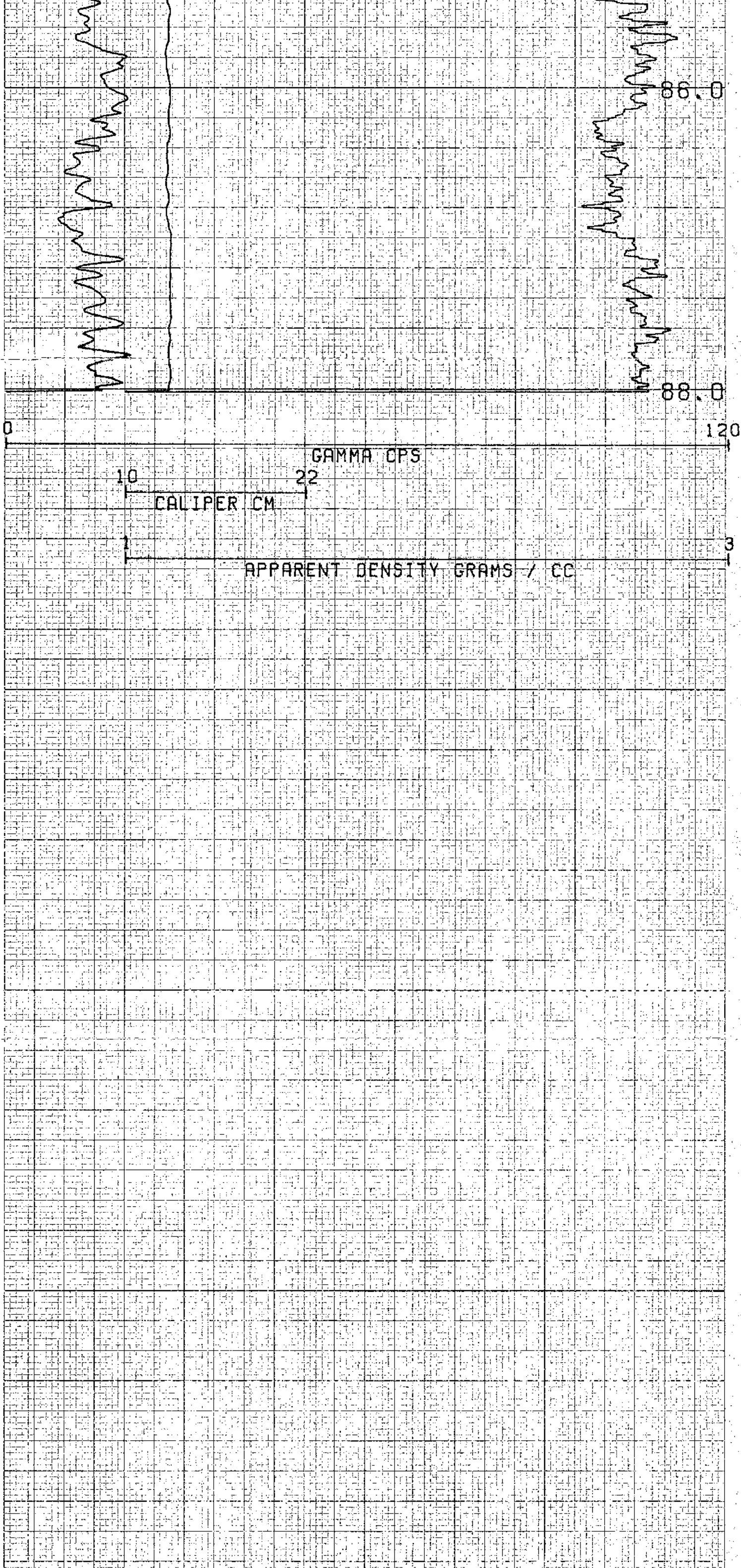
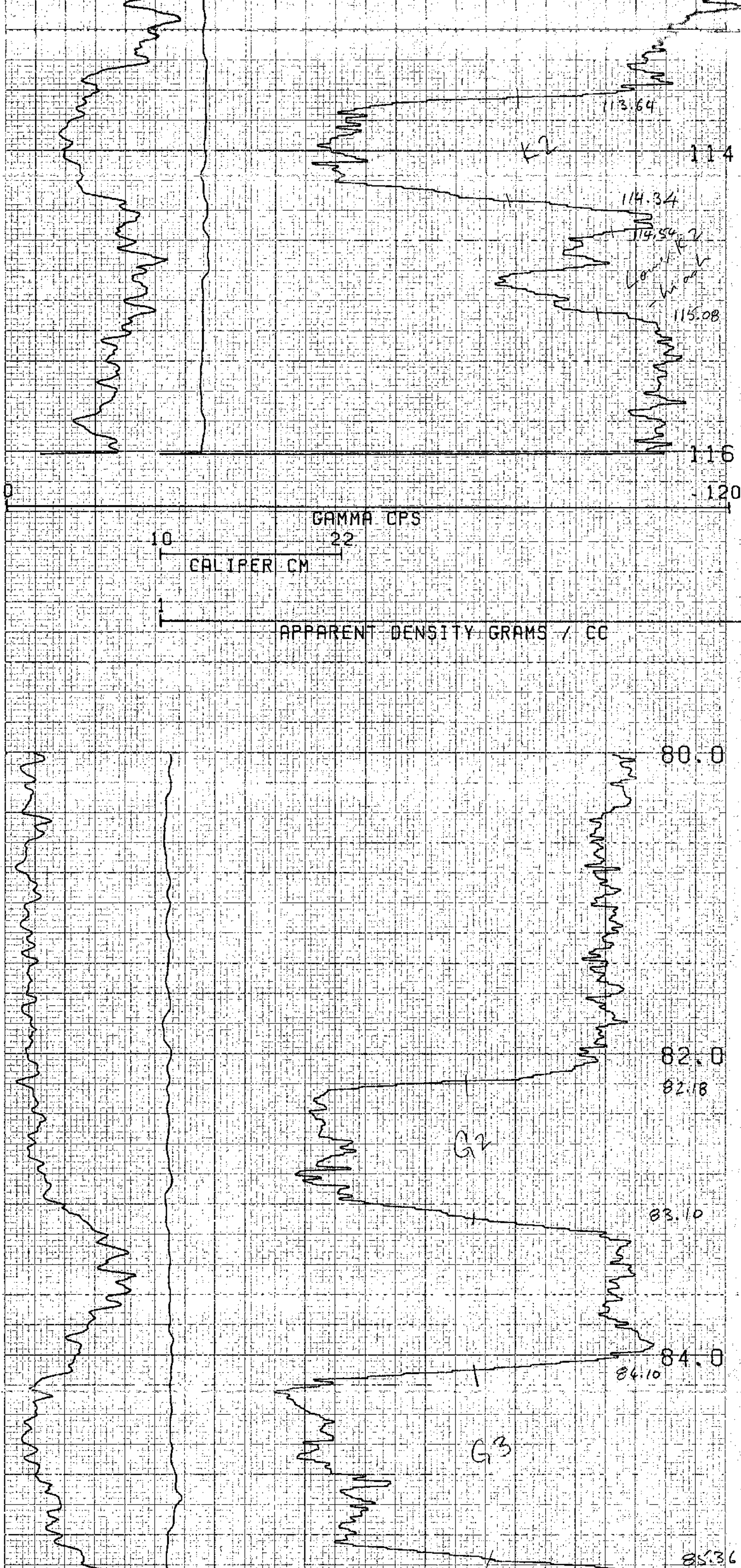
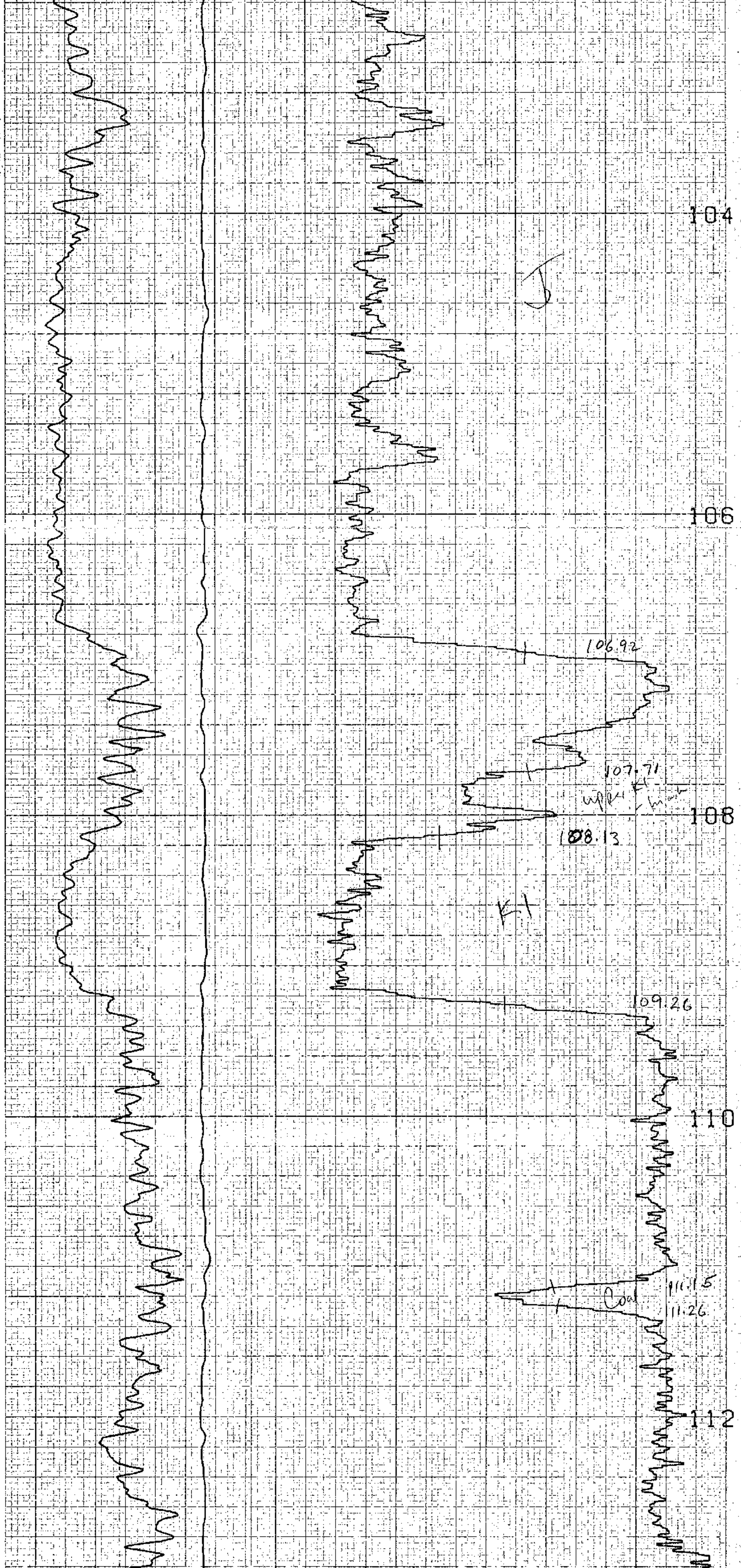
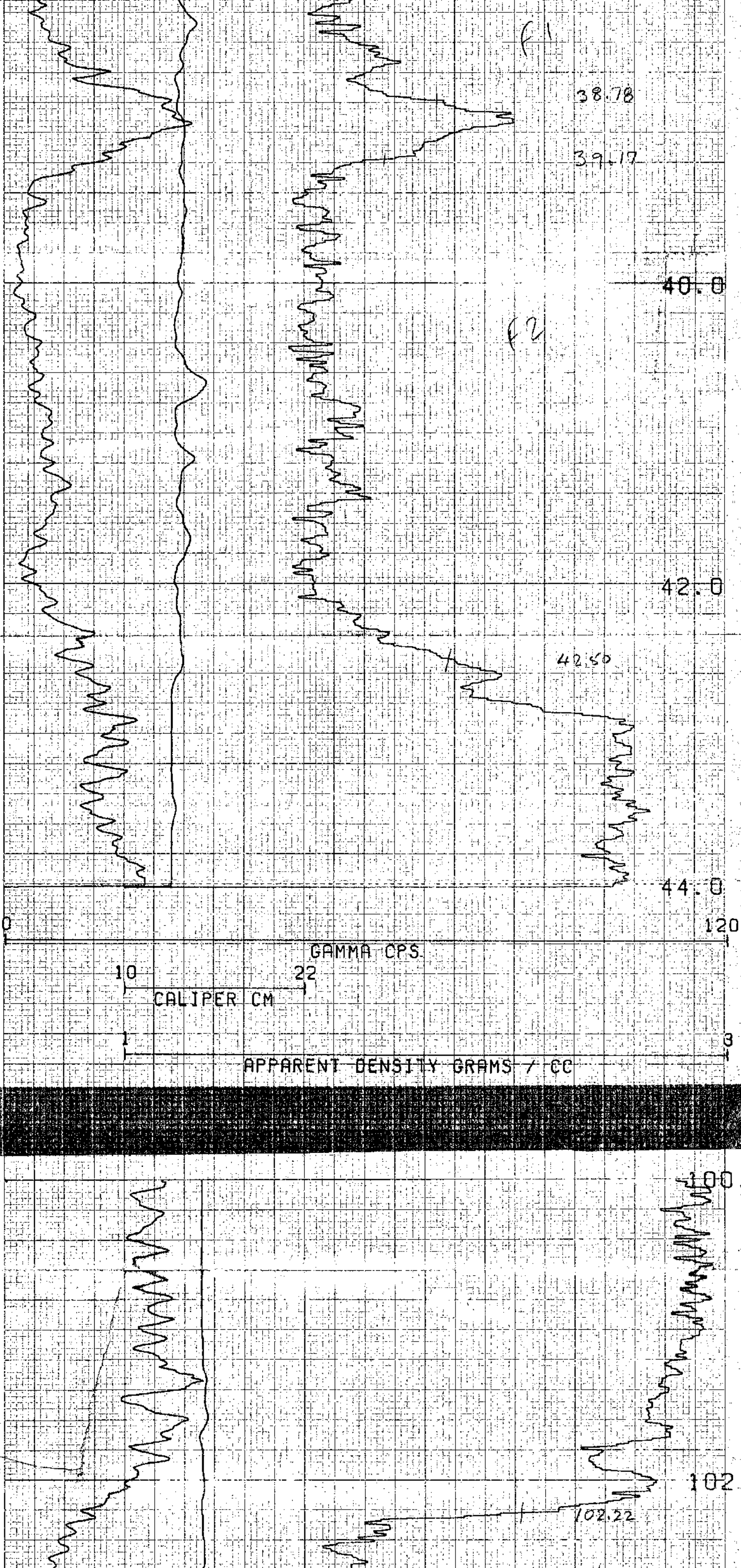
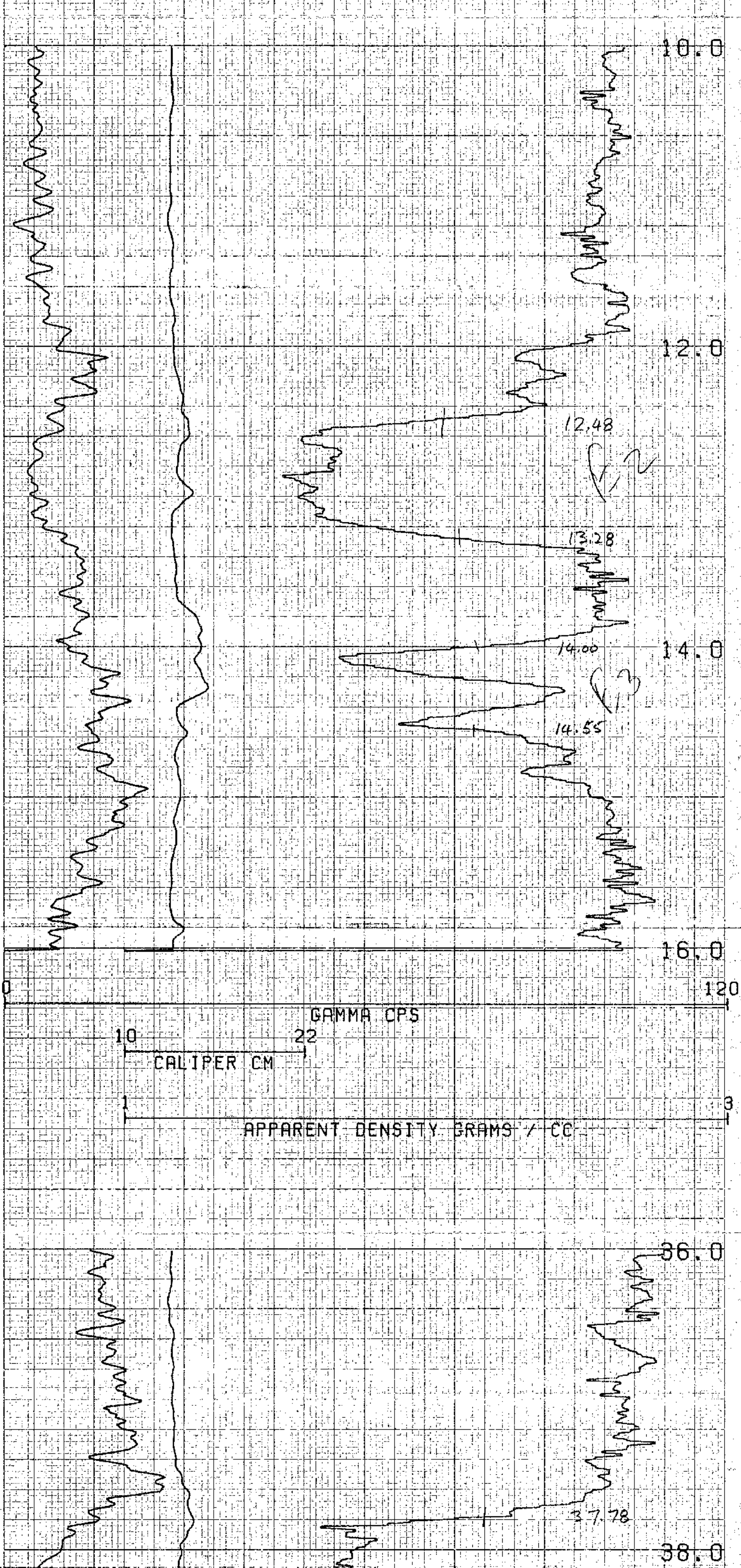
DEPTH = 0110.00  
TILT = 33.34 DG  
BEARING = 219.86 DG

DEPTH = 0120.00  
TILT = 33.95 DG  
BEARING = 225.61 DG

## 739

DATE 870610  
JOB NUMBER 7004  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 30  
L. CELL 1 CPS 1 256  
L. CELL 1 TILT 2 -30  
L. CELL 1 CPS 2 102  
L. CELL 2 TILT 1 30  
L. CELL 2 CPS 1 256  
L. CELL 2 TILT 2 -30  
L. CELL 2 CPS 2 104  
MAG 1 CENTRE 178  
MAG 2 CENTRE 182  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 182  
L. CELL 2 CENTRE 180  
MAG DECL 24  
STOP DEPTH 2

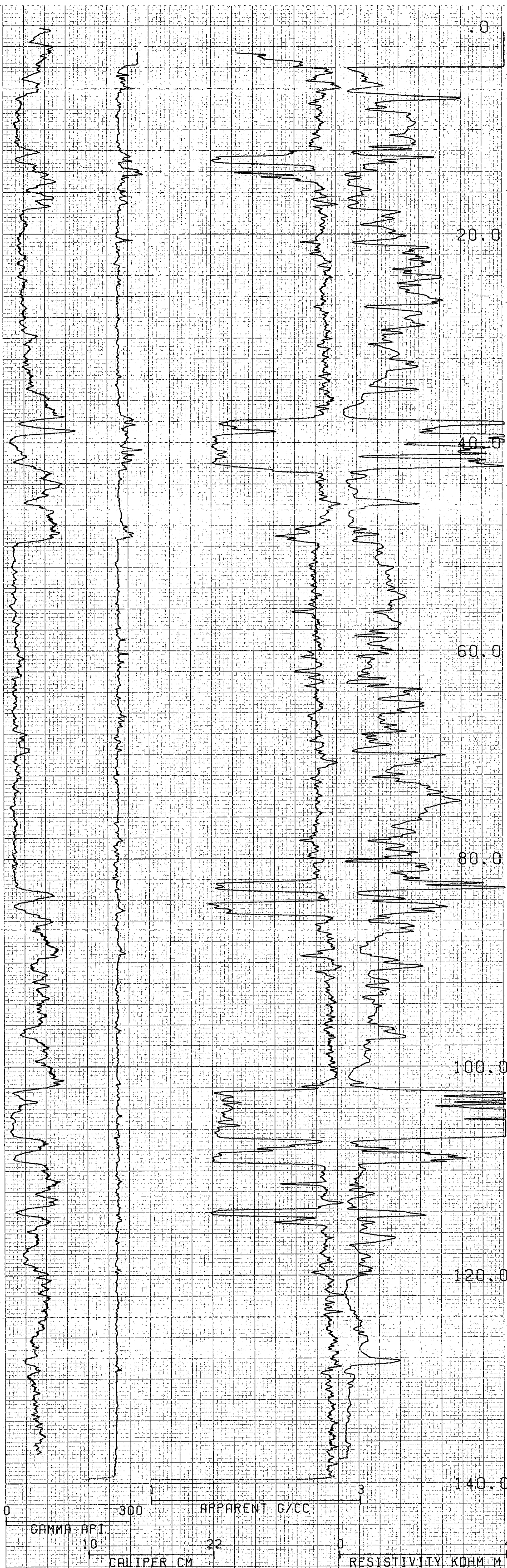




COMPU-LOG V8L2 PLOT 06-04-80  
 QHR87003  
 GAMMA DENSITY CAL.  
 GRIZZLEY  
 HOLE DIAMETER : 13.0  
 PROBE # 9030R1 420  
 SENSOR #1 CAL STD CPS = 6588  
 SENSOR #1 CAL RUN CPS = 7500  
 SENSOR #1 CAL BIAS = 31  
 DATA VBL2WA TRUCK # L604  
 G HDLKLUND APPL. #1708L1

739





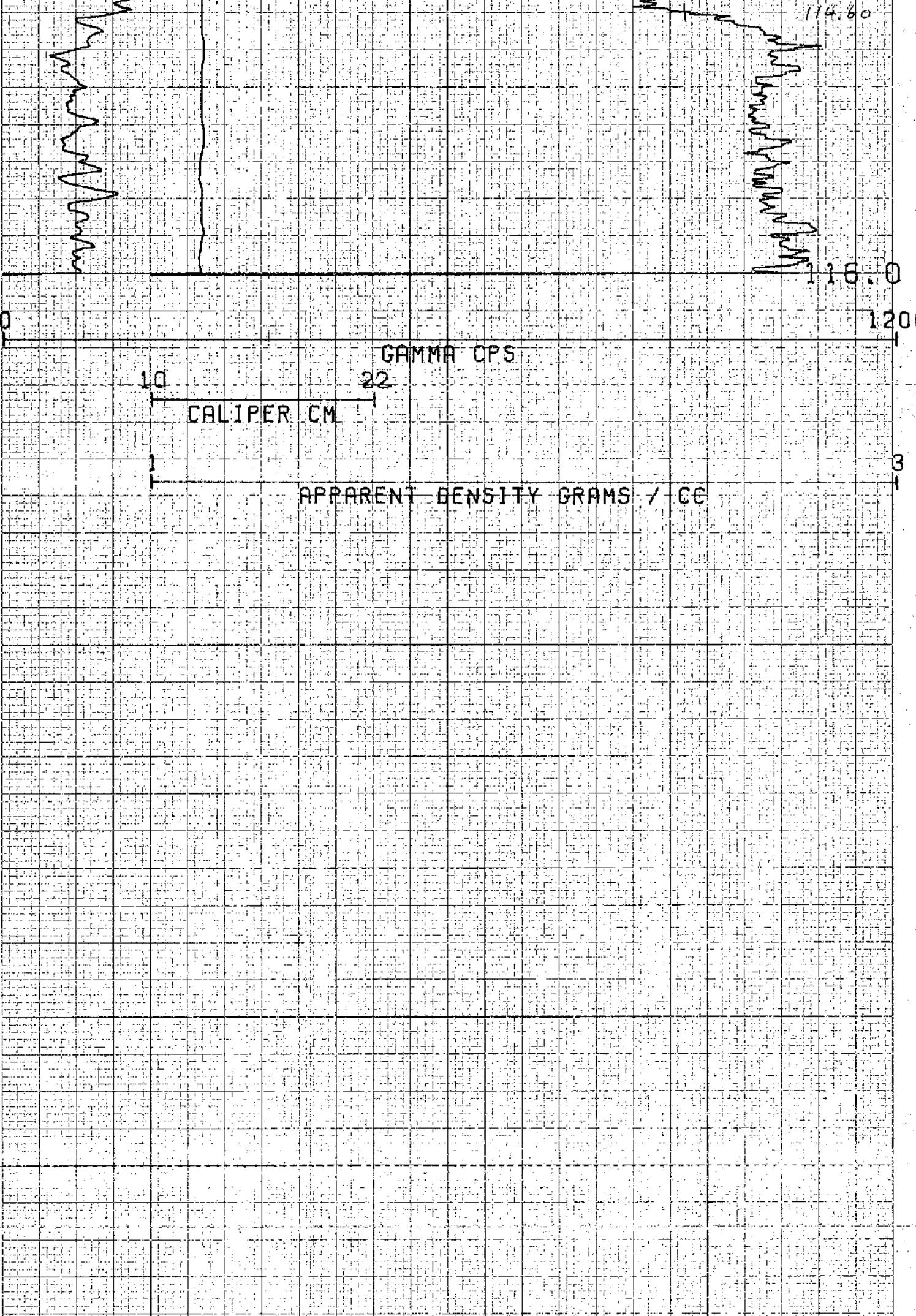
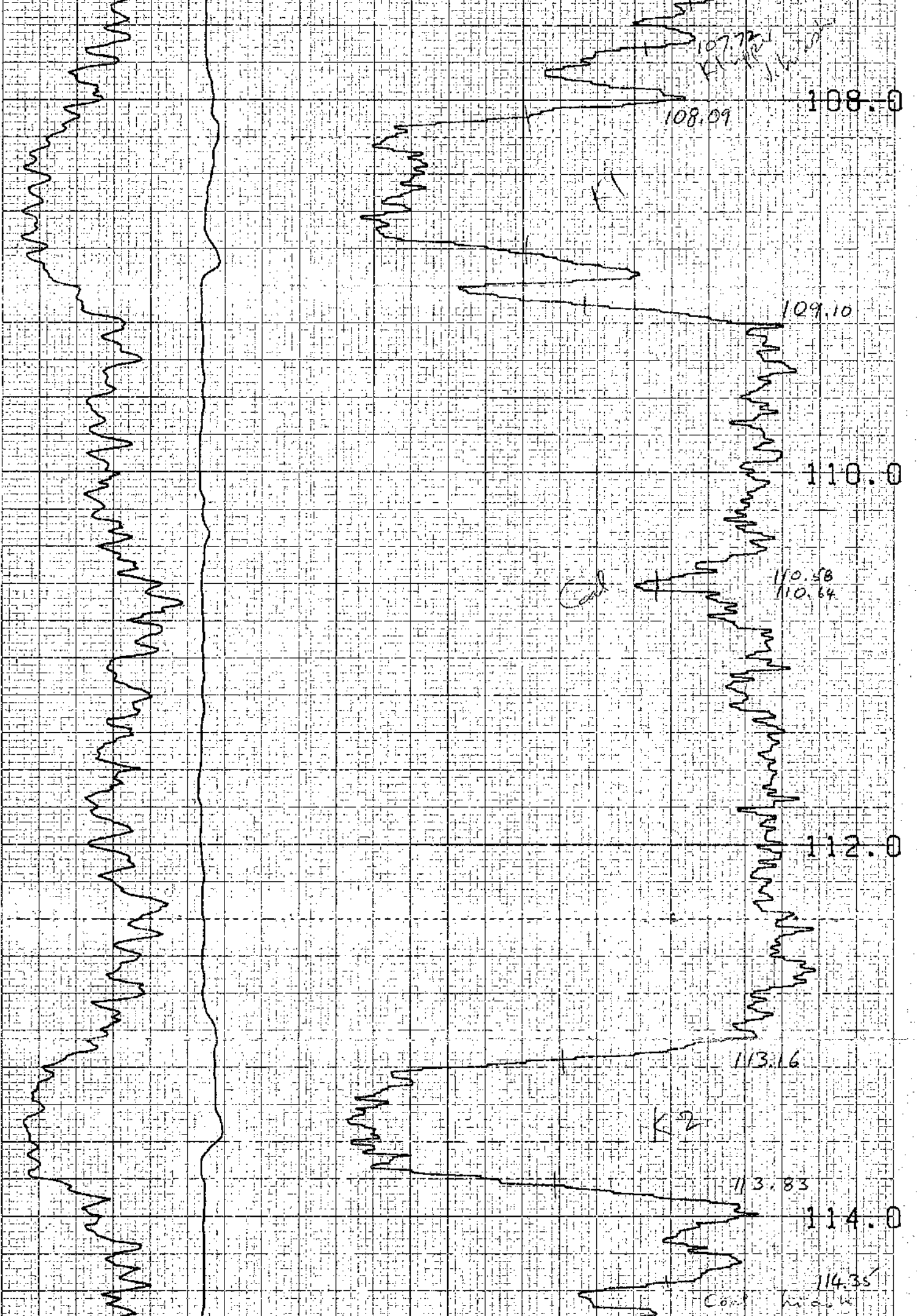
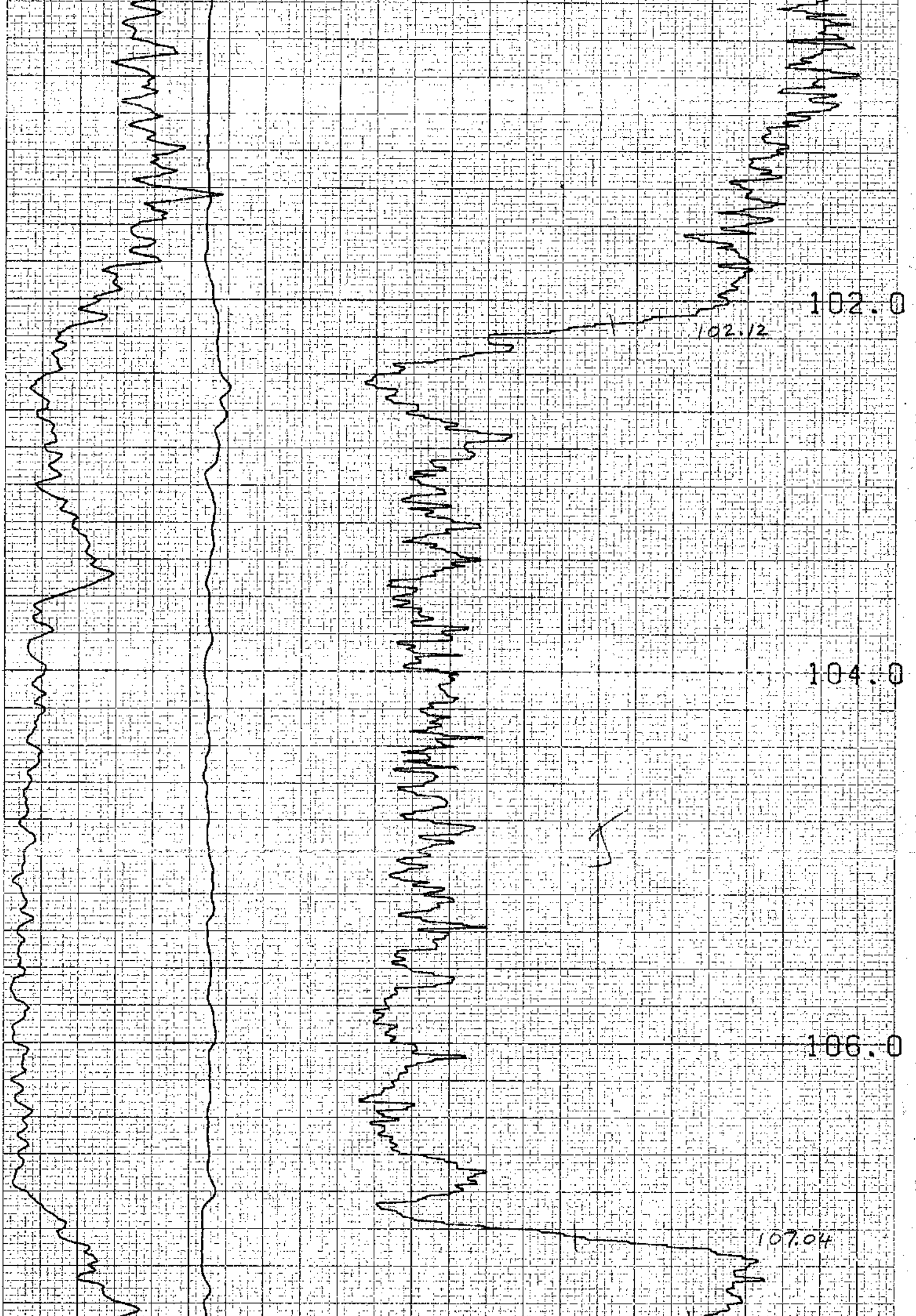
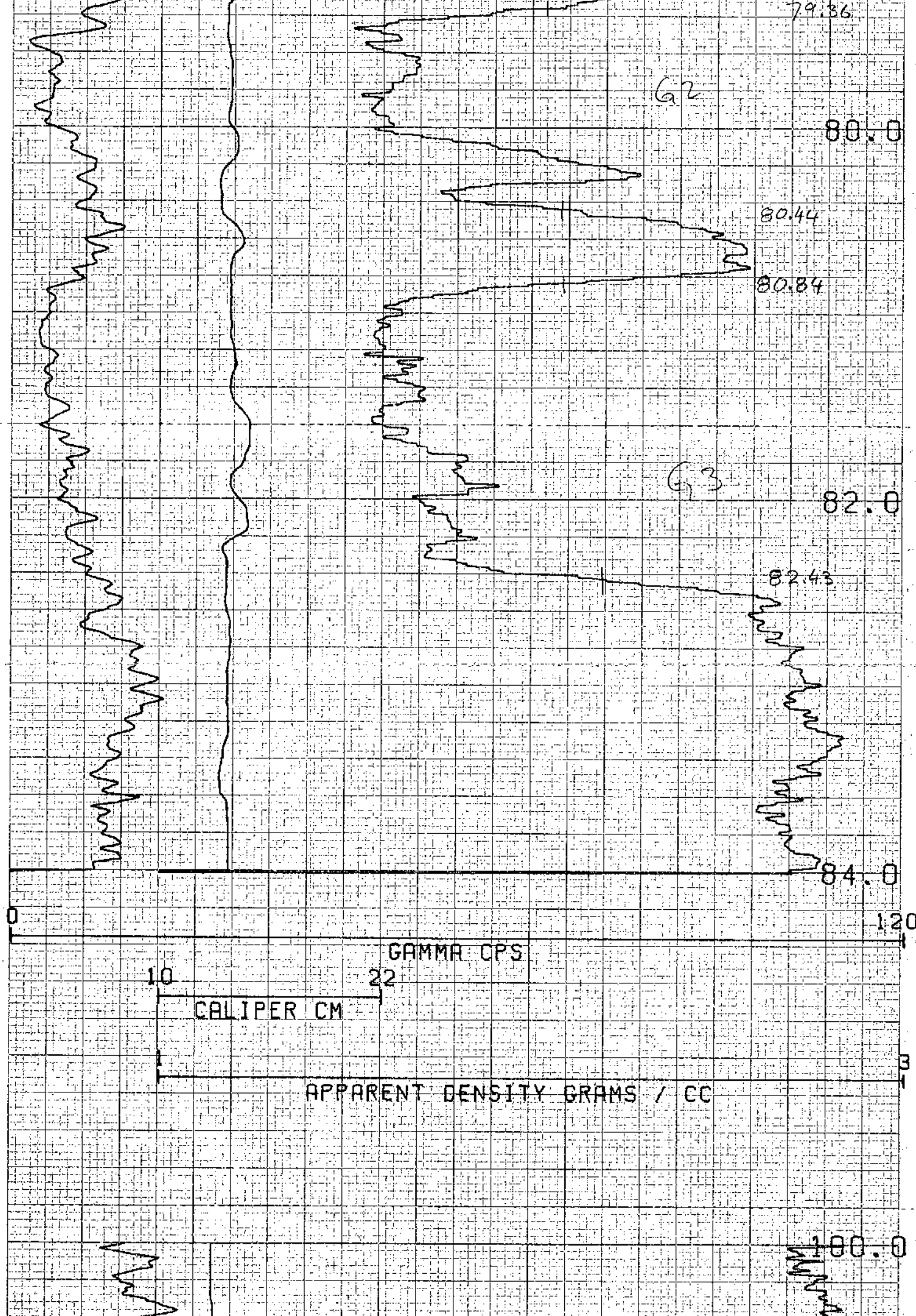
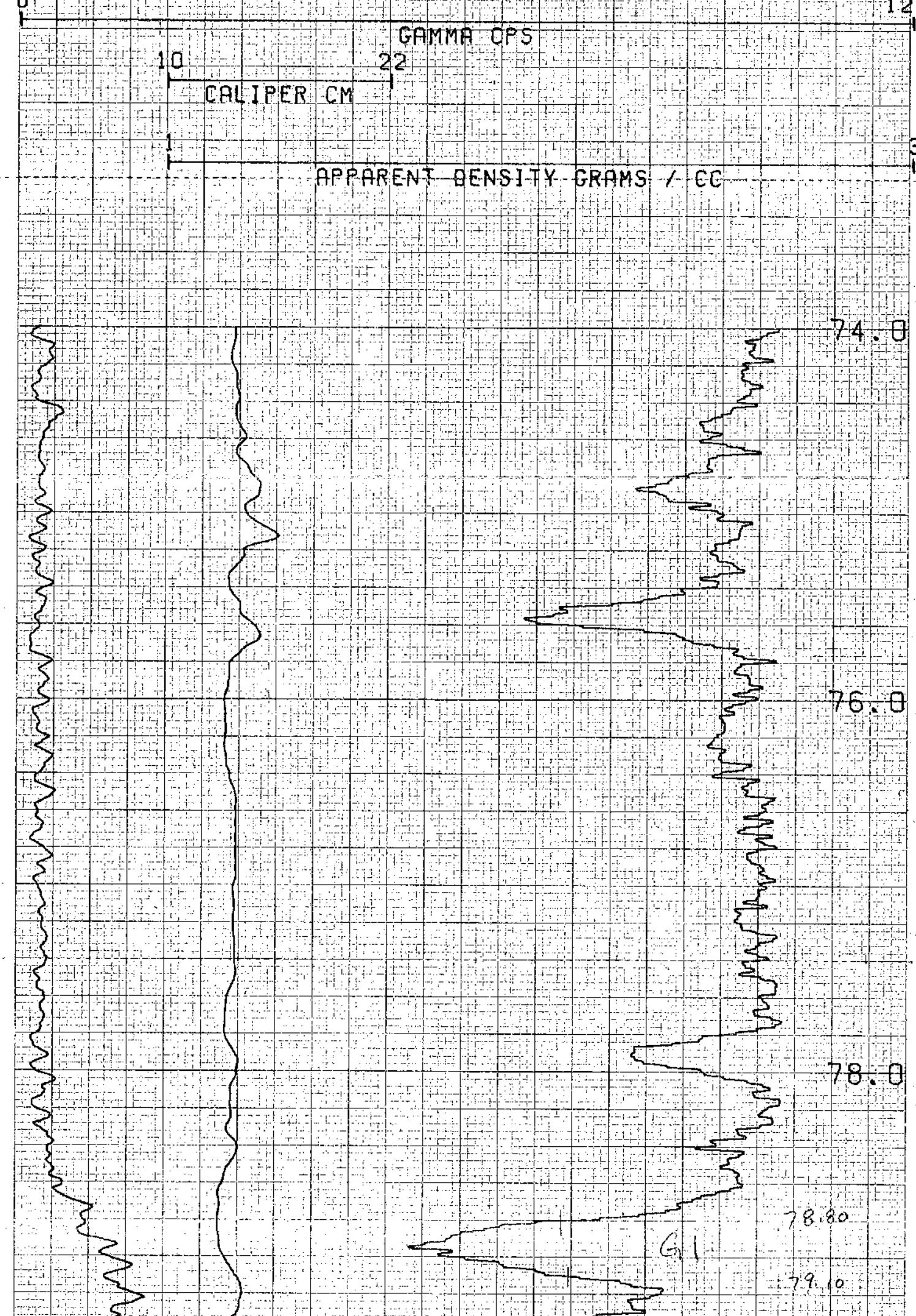
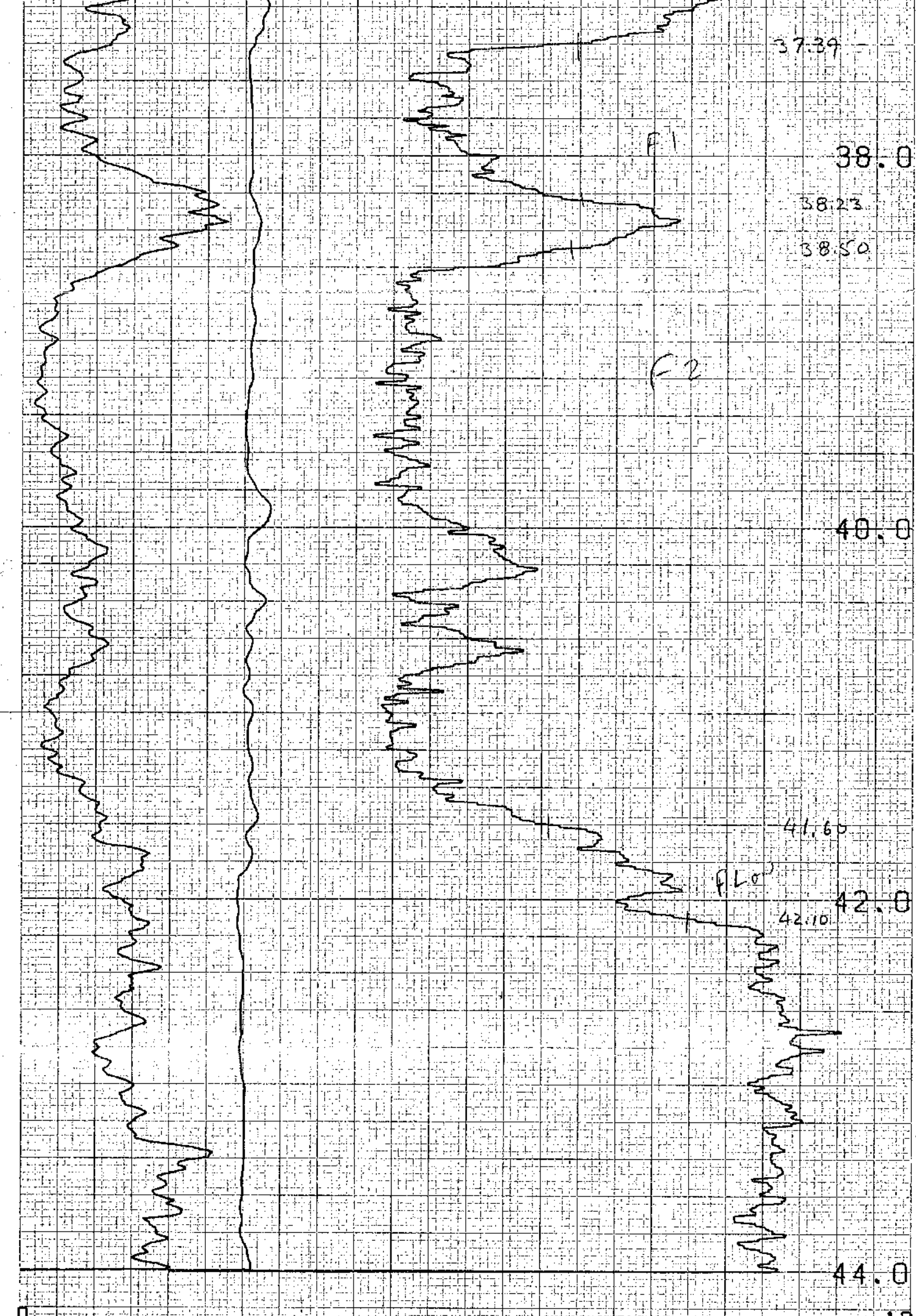
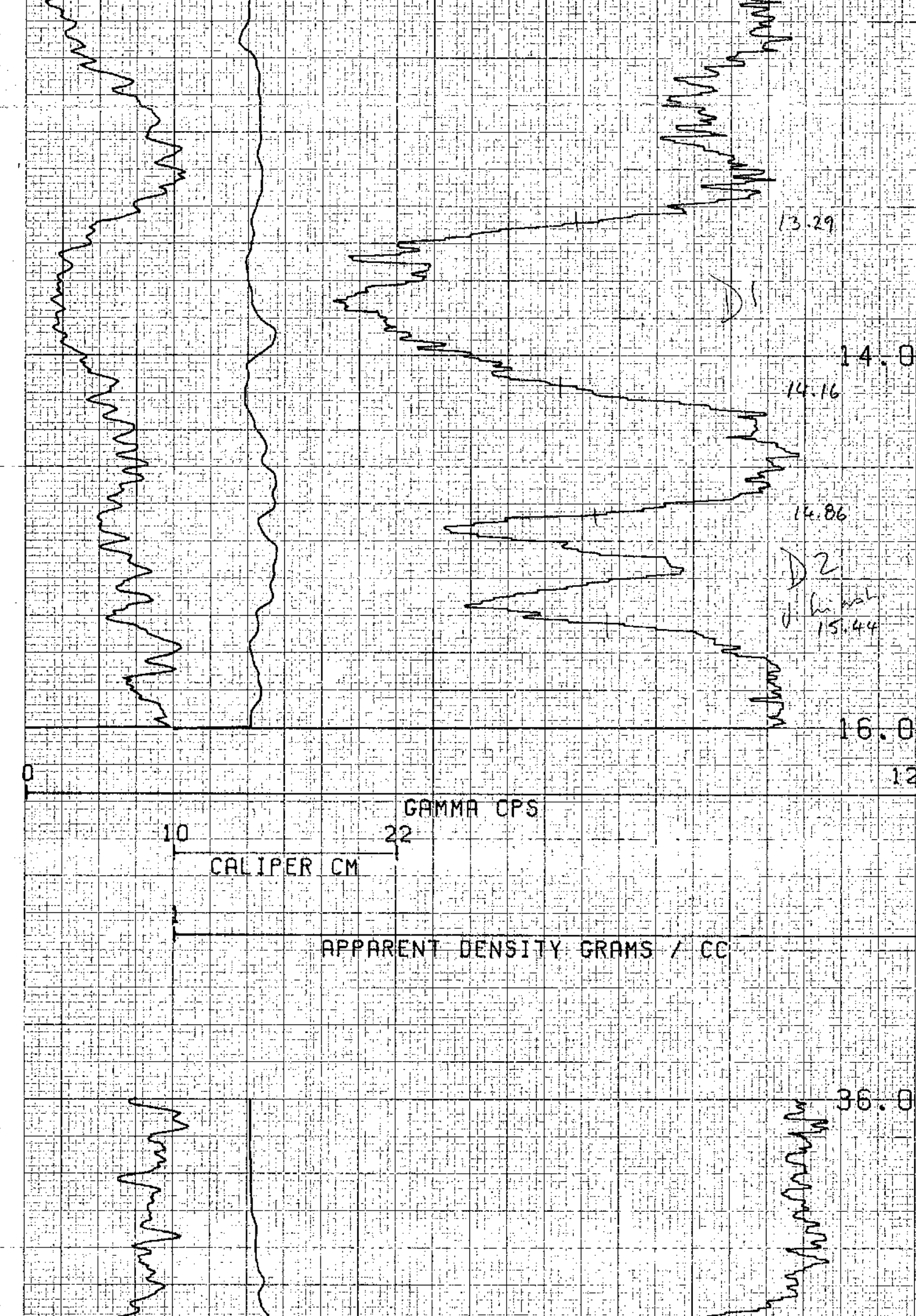
497

495

COMPU-LOG V8L2 PLOT 06-04-80  
 QHR87003  
 GAMMA DENSITY CAL.  
 GRIZZLEY  
 HOLE DIAMETER : 13.0  
 PROBE # 9030A1-420  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7500  
 SENSOR #4 CAL BIAS = 31  
 DATA V8L2WA TRUCK # L604  
 G HOLMLUND APPL #30 L1

739





COMPU-LOG V8L2 PLOT 06-05-81

739

QHR87004

GAMMA DENSITY CALIPR

GRIZZLY EXPLORATION

HOLE DIAMETER : 13.0

PROBE # 9030R1- 420

SENSOR #1 CAL STD CPS = 6588

SENSOR #4 CAL RUN CPS = 7500

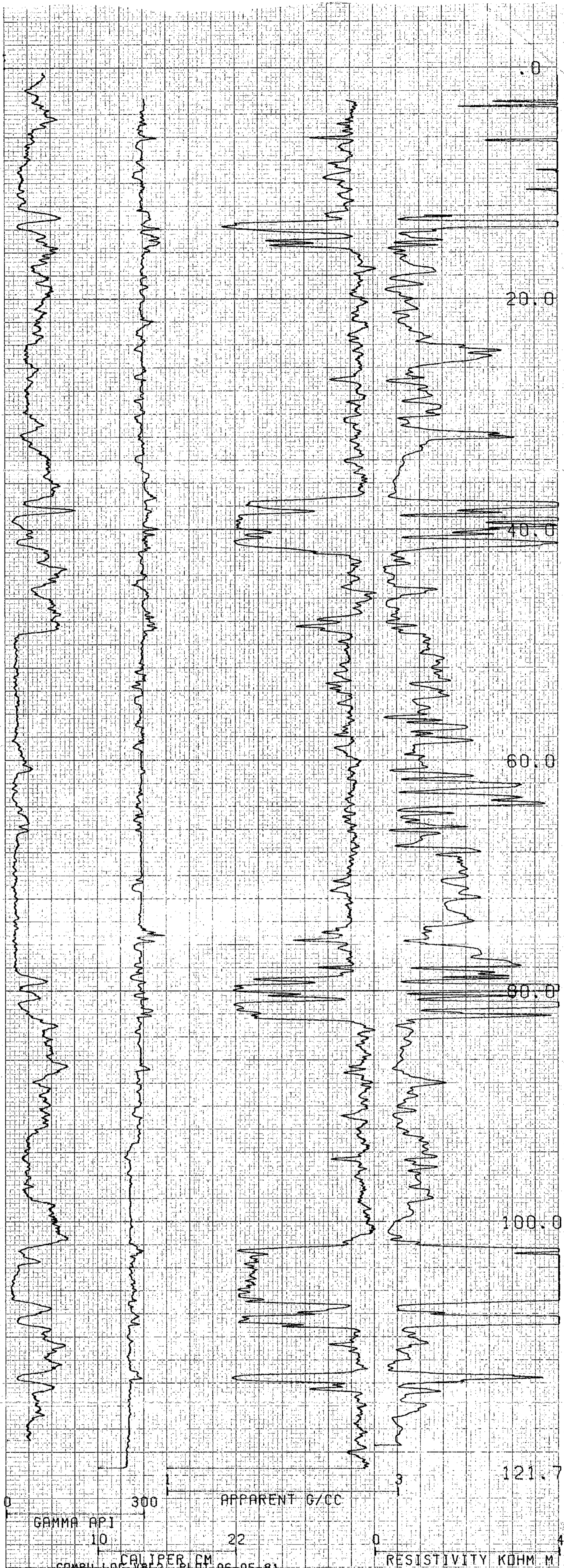
SENSOR #4 CAL BIAS = 31

DATA V8L2\*#A TRUCK # 604

L-PENDLETON APPL.#1708L1

DETAIL





463

461

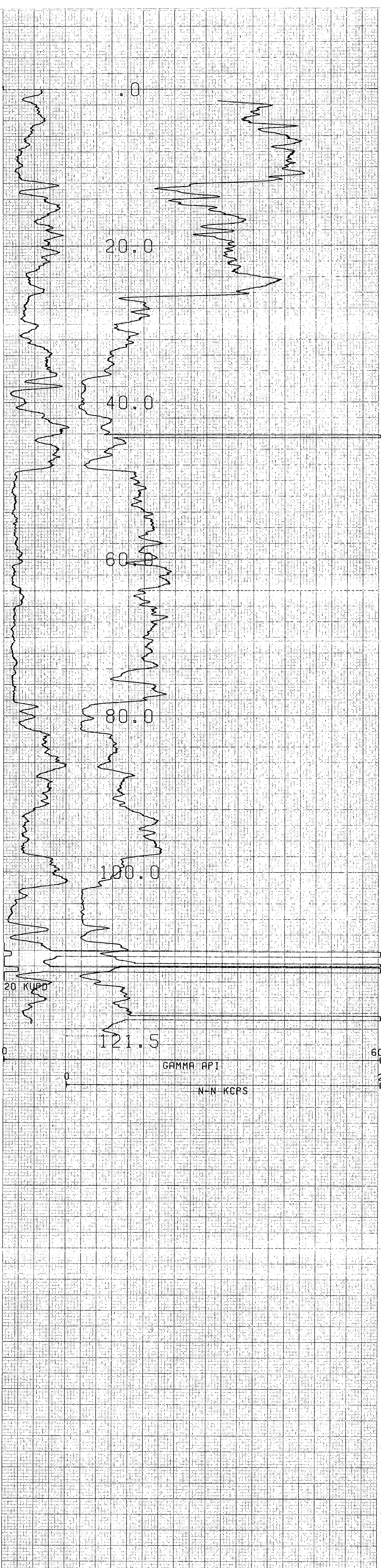
GAMMA API 10  
 APPARENT G/CC 300  
 CALIPER CM 22  
 RESISTIVITY KOHM M 0  
 COMPU LOG V8L2 PLOT 06-05-81

QHR87004  
 GAMMA DENSITY CALIPR  
 GRIZZLY EXPLORATION

739

HOLE DIAMETER : 13.0  
 PROBE # 9030A1- 420  
 SENSOR #1 CAL STD CPS = 6508  
 SENSOR #1 CAL RUN CPS = 7500  
 SENSOR #1 CAL BIAS = 31  
 DATA V8L2\*AA TRUCK # 604  
 L PENDELTON APPL.#30 L1





477

475

473

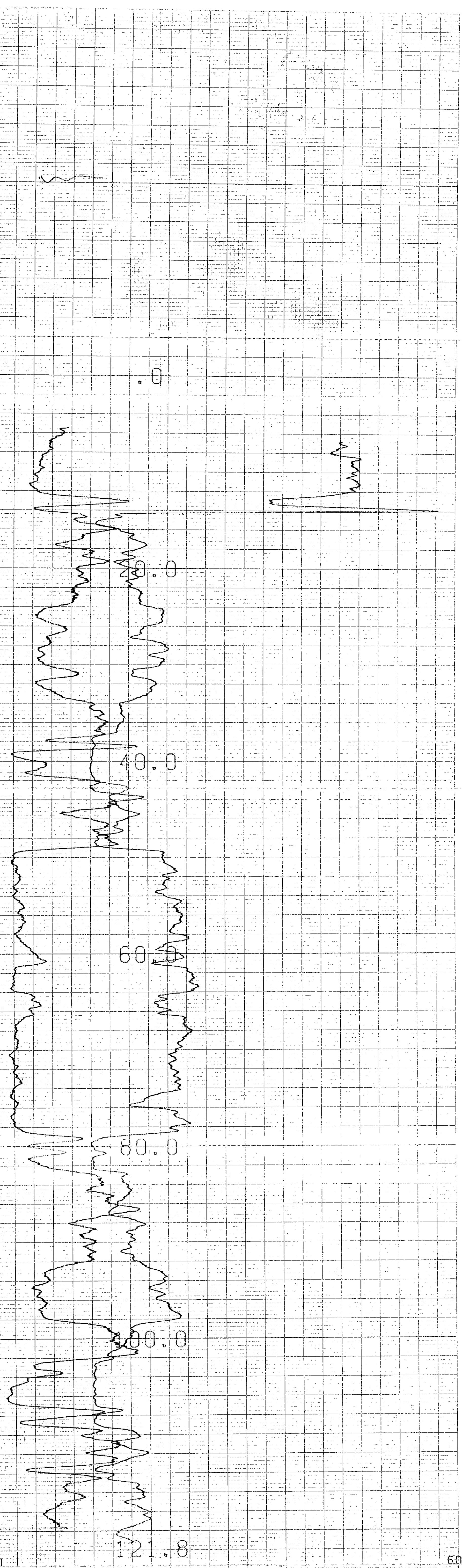
COMPU-LOG V8L2 PLOT 06-04-61

QHR87004  
 GAMMA NEUTRON (RODS)  
 GRIZZLY EXPLORATION

739

HOLE DIAMETER = 13.0  
 PROBE # 9055A - 005  
 SENSOR #1 CAL STD CPS = 152  
 SENSOR #1 CAL RUN CPS = 186  
 SENSOR #1 CAL BIAS = 0  
 DATA V8L2WA TRUCK # 604  
 L PENDELTON APPL.#7 LI





469

467

GAMMA API  
 N-N KCPS  
 COMPU-LOG V8L2 PLOT 06-04-81

739

QHR87004  
 GAMMA NEUTRON DEV'N  
 GRIZZLY EXPLORATION

HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\*RA TRUCK # 604  
 L PENDLETON APPL.#7 U1

QHR 87005

- Grizzly

LOG DEPTH 0110.00  
 TRUE DEPTH 0097.10  
 TILT 29.01 DG  
 BEARING 215.14 DG  
 NORTHING +042.65  
 EASTING -028.27

LOG DEPTH 0100.00  
 TRUE DEPTH 0088.35  
 TILT 28.47 DG  
 BEARING 214.93 DG  
 NORTHING -038.69  
 EASTING -025.48

LOG DEPTH 0090.00  
 TRUE DEPTH 0079.56  
 TILT 28.01 DG  
 BEARING 212.66 DG  
 NORTHING -034.78  
 EASTING -022.75

LOG DEPTH 0080.00  
 TRUE DEPTH 0070.73  
 TILT 27.98 DG  
 BEARING 214.20 DG  
 NORTHING -030.82  
 EASTING -020.21

LOG DEPTH 0070.00  
 TRUE DEPTH 0061.90  
 TILT 28.24 DG  
 BEARING 215.16 DG  
 NORTHING -026.94  
 EASTING -017.57

LOG DEPTH 0060.00  
 TRUE DEPTH 0053.09  
 TILT 28.68 DG  
 BEARING 213.59 DG  
 NORTHING -023.07  
 EASTING -014.85

LOG DEPTH 0050.00  
 TRUE DEPTH 0044.32  
 TILT 29.46 DG  
 BEARING 214.39 DG  
 NORTHING -019.08  
 EASTING -012.19

LOG DEPTH 0040.00  
 TRUE DEPTH 0035.61  
 TILT 29.47 DG  
 BEARING 214.41 DG  
 NORTHING -015.02  
 EASTING -009.41

LOG DEPTH 0030.00  
 TRUE DEPTH 0026.90  
 TILT 28.03 DG  
 BEARING 212.72 DG  
 NORTHING -010.96  
 EASTING -006.63

LOG DEPTH 0020.00  
 TRUE DEPTH 0018.07  
 TILT 26.88 DG  
 BEARING 210.06 DG  
 NORTHING -007.00  
 EASTING -004.09

LOG DEPTH 0010.00  
 TRUE DEPTH 0009.15  
 TILT 26.70 DG  
 BEARING 210.63 DG  
 NORTHING -003.09  
 EASTING -001.83

LOG DEPTH 0002.00  
 TRUE DEPTH 0002.00  
 TILT 26.73 DG  
 BEARING 212.90 DG  
 NORTHING +000.00  
 EASTING +000.00

DATE 870610  
 JOB NUMBER 7005  
 LOG LABEL 026.4  
 MAG 1 MAX 229  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 30  
 L. CELL 1 CPS 1 256  
 L. CELL 1 TILT 2 -30  
 L. CELL 1 CPS 2 102  
 L. CELL 2 TILT 1 30  
 L. CELL 2 CPS 1 256  
 L. CELL 2 TILT 2 -30  
 L. CELL 2 CPS 2 104  
 MAG 1 CENTRE 178  
 MAG 2 CENTRE 182  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 182  
 L. CELL 2 CENTRE 180

MAG DECL 24  
 STOP DEPTH 2

DEPTH = 0010.00  
 TILT = 26.67 DG  
 BEARING = 208.35 DG

DEPTH = 0020.00  
 TILT = 27.09 DG  
 BEARING = 211.76 DG

DEPTH = 0030.00  
 TILT = 28.97 DG  
 BEARING = 213.67 DG

DEPTH = 0040.00  
 TILT = 29.97 DG  
 BEARING = 215.15 DG

DEPTH = 0050.00  
 TILT = 28.95 DG  
 BEARING = 213.63 DG

DEPTH = 0060.00  
 TILT = 28.41 DG  
 BEARING = 213.55 DG

DEPTH = 0070.00  
 TILT = 28.07 DG  
 BEARING = 216.76 DG

DEPTH = 0080.00  
 TILT = 27.88 DG  
 BEARING = 211.63 DG

DEPTH = 0090.00  
 TILT = 28.14 DG  
 BEARING = 213.69 DG

DEPTH = 0100.00  
 TILT = 28.81 DG  
 BEARING = 216.17 DG

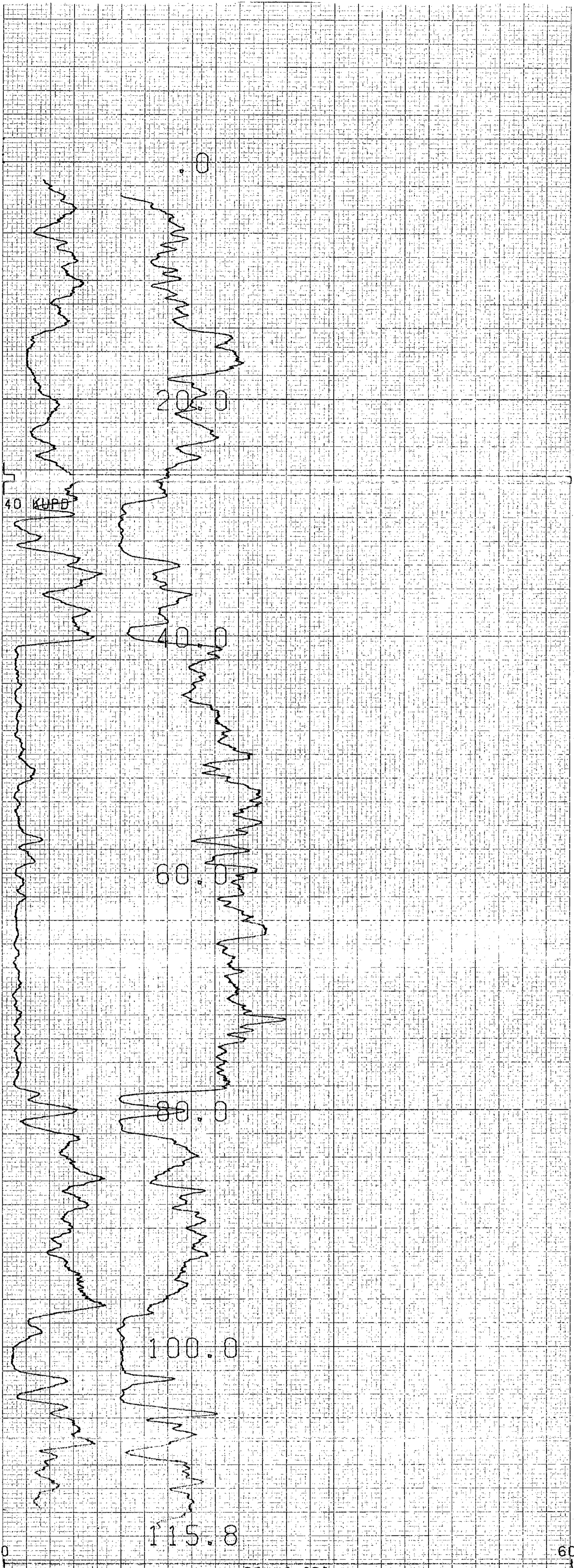
DEPTH = 0110.00  
 TILT = 29.21 DG  
 BEARING = 214.12 DG

739  
 BPB  
 deviation



457

455



COMPU-LOG V8L2 PLOT 06-06-81

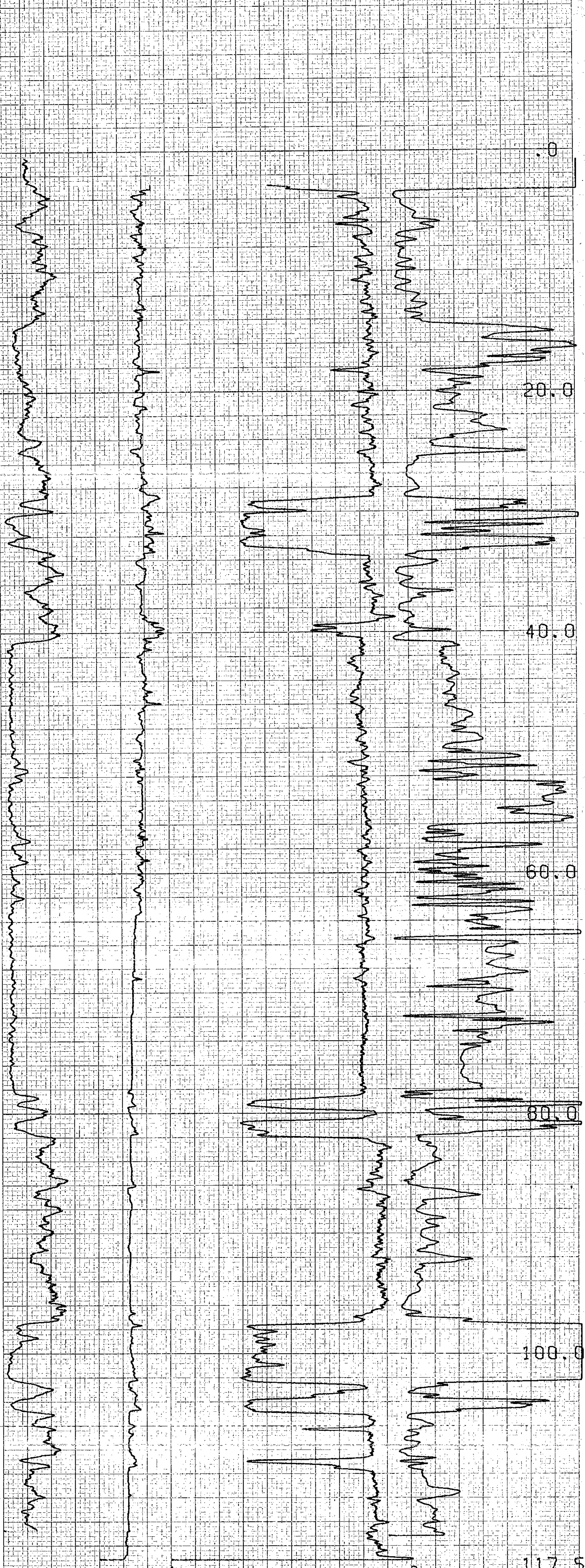
N-N KCPS

739

QHR87005  
 GAMMA NEUTRON (RODS)  
 GRIZZLY EXPLORATION

HOLE DIAMETER = 13.0  
 PROBE # 9055A = 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\*#A TRUCK # 604  
 L PENDLETON APPL #7 L1





447

445

0 300 APPARENT G/CC  
 0 10 22  
 GAMMA API CALIPER CM  
 0 4  
 RESISTIVITY KOHM M  
 COMPU-LOG V8L2 PLOT 06-06-01

QHR87005  
 GAMMA DENSITY CALIPR  
 GRIZZLY EXPLORATION

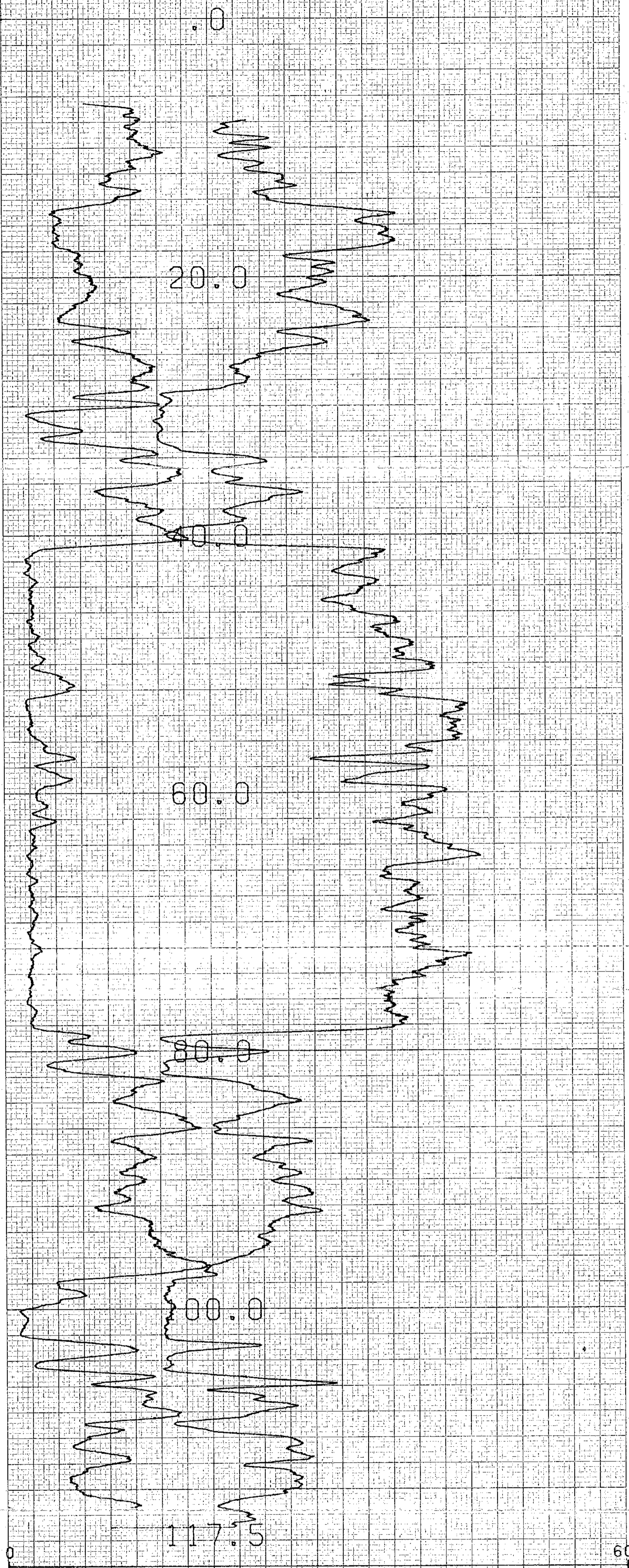
739

HOLE DIAMETER : 13.0  
 PROBE # 9030A1- 420  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7500  
 SENSOR #4 CAL BIAS = 31  
 DATA V8L2\*9A TRUCK # 604  
 L PENDELTON APPL.#30 L1



453

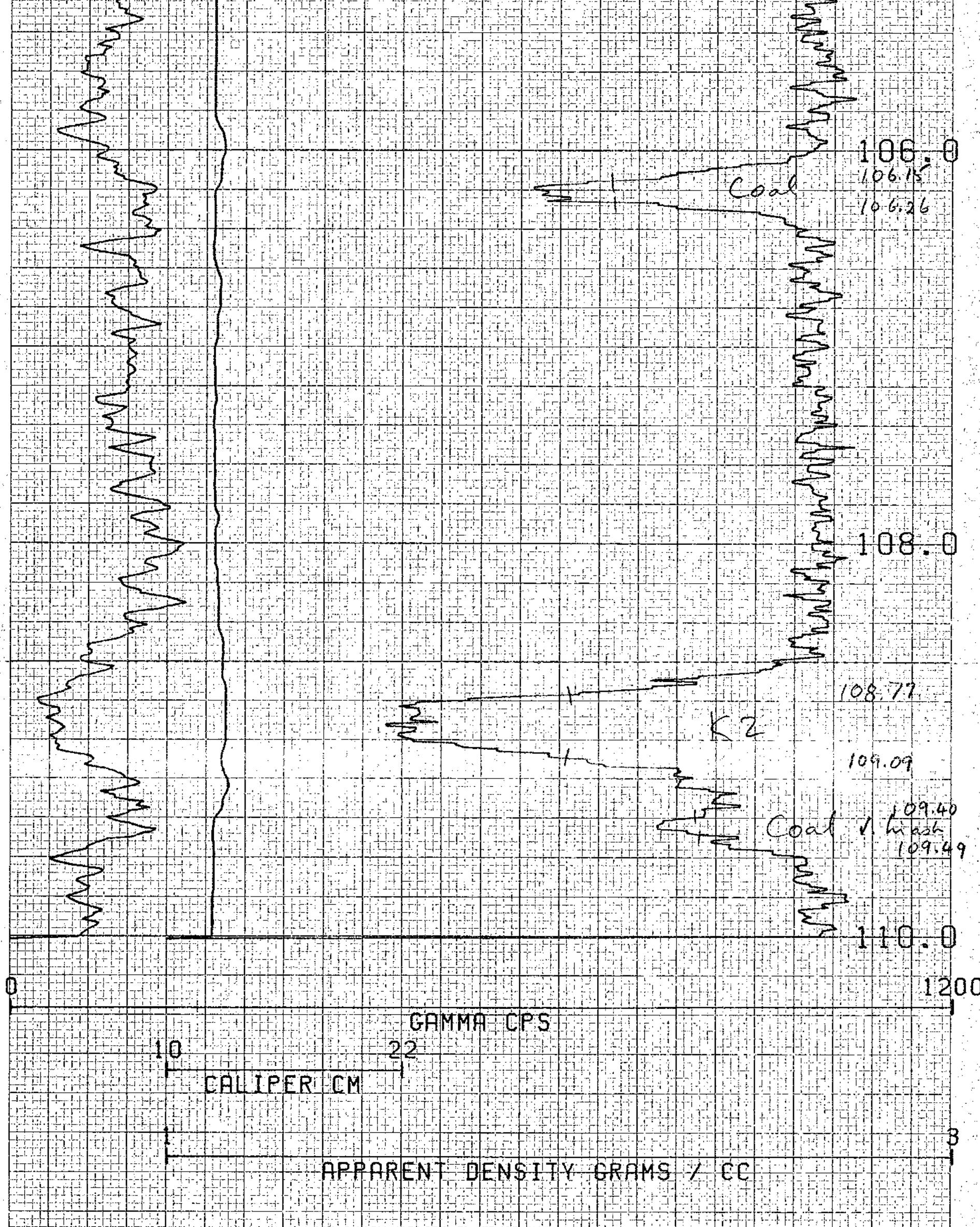
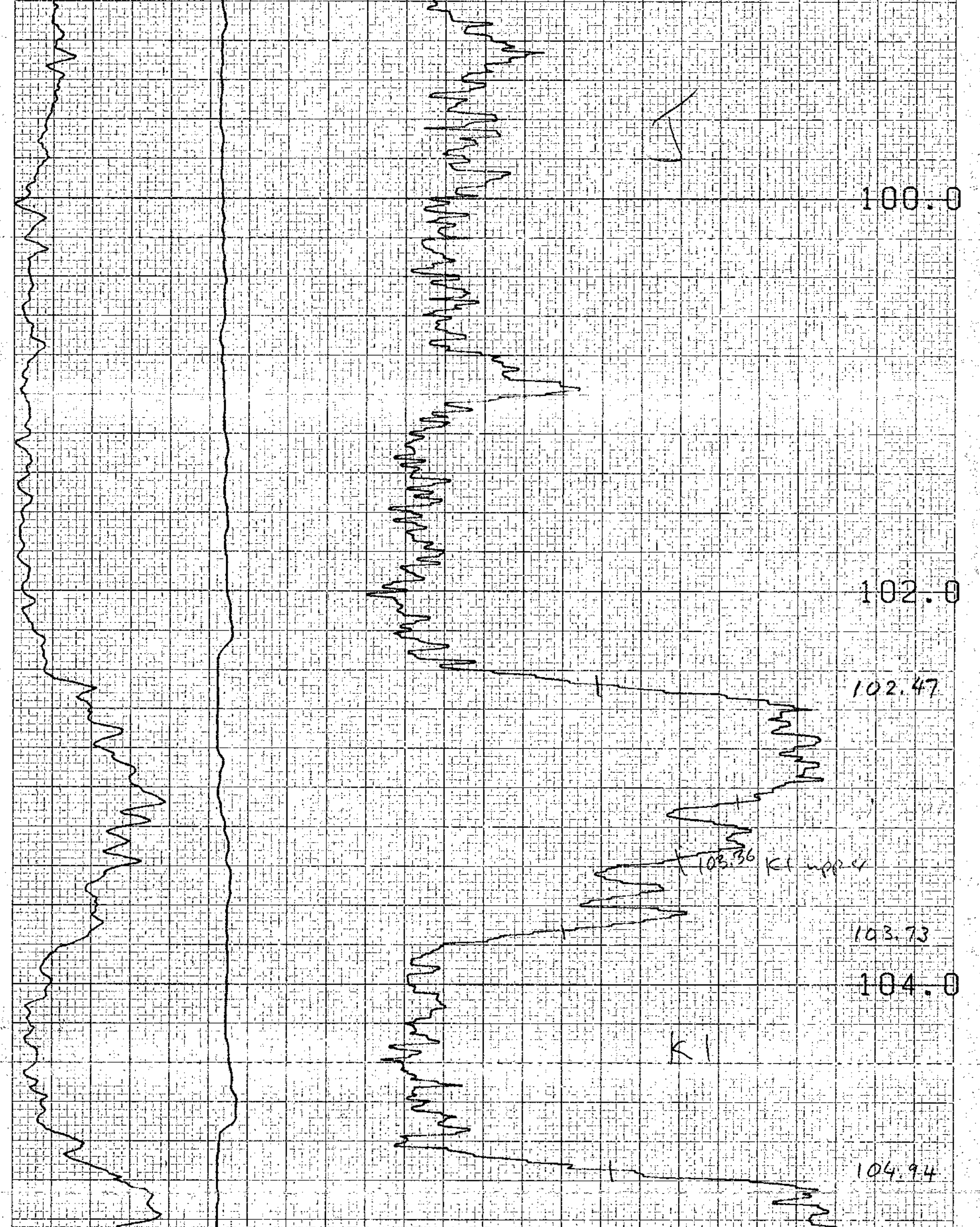
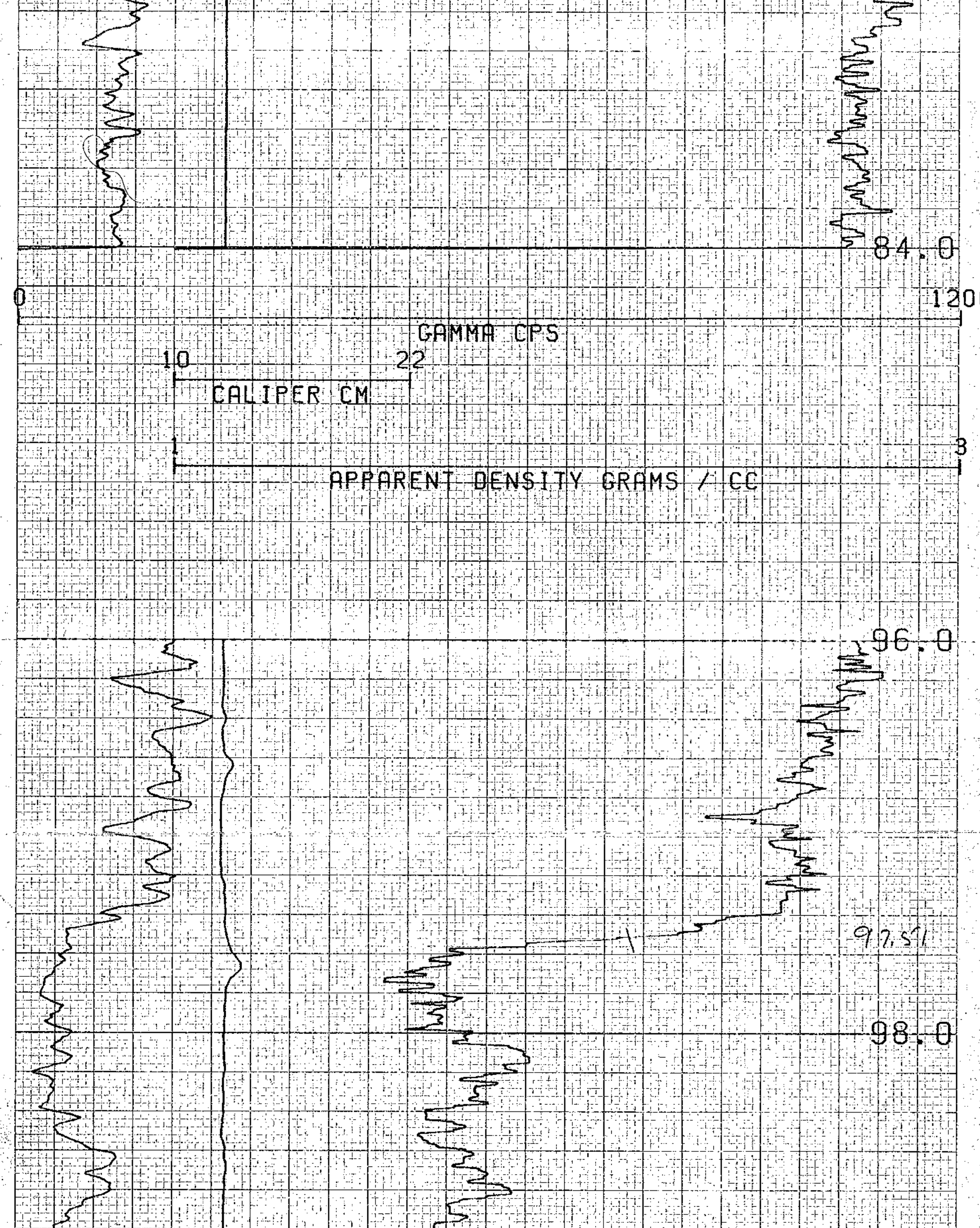
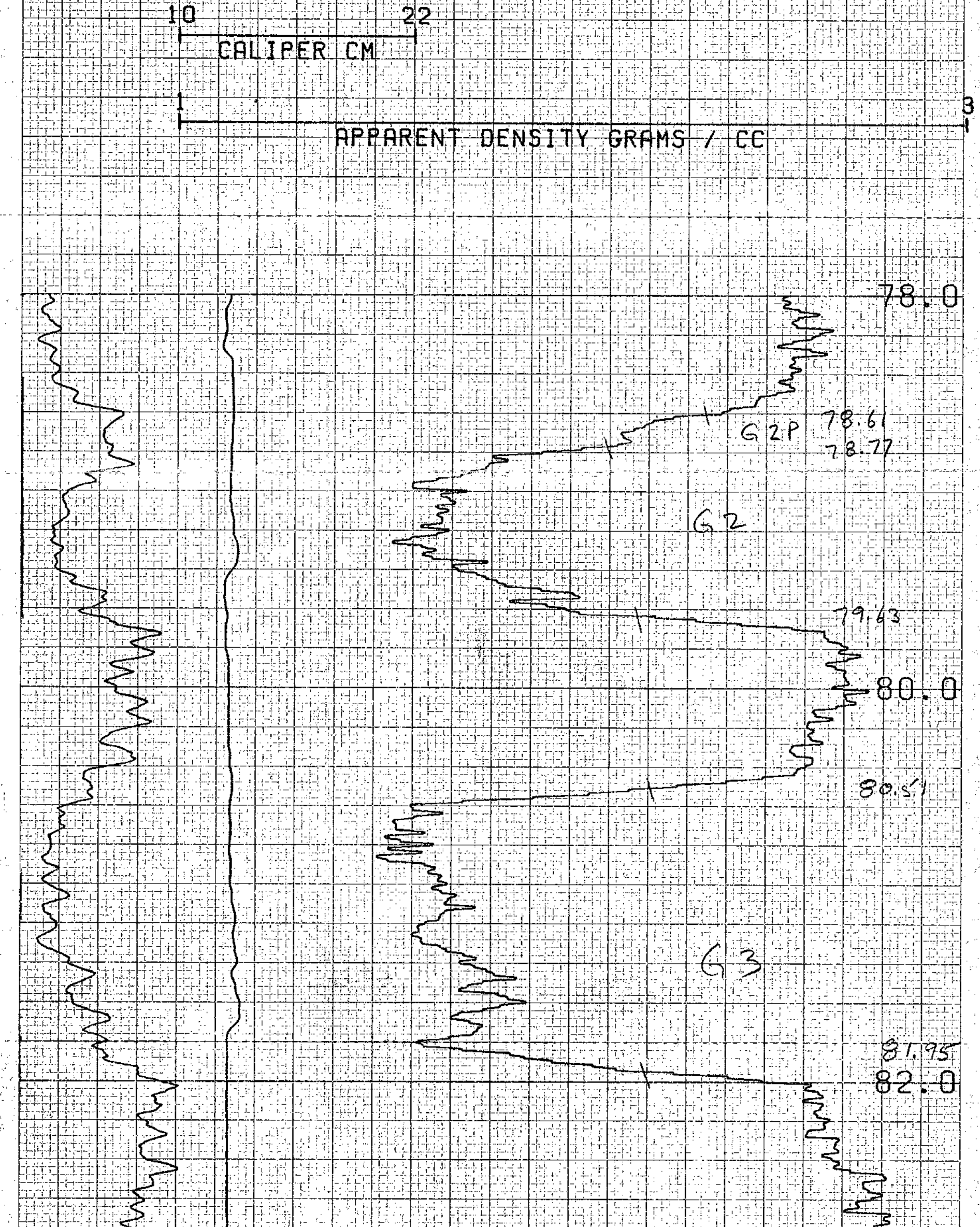
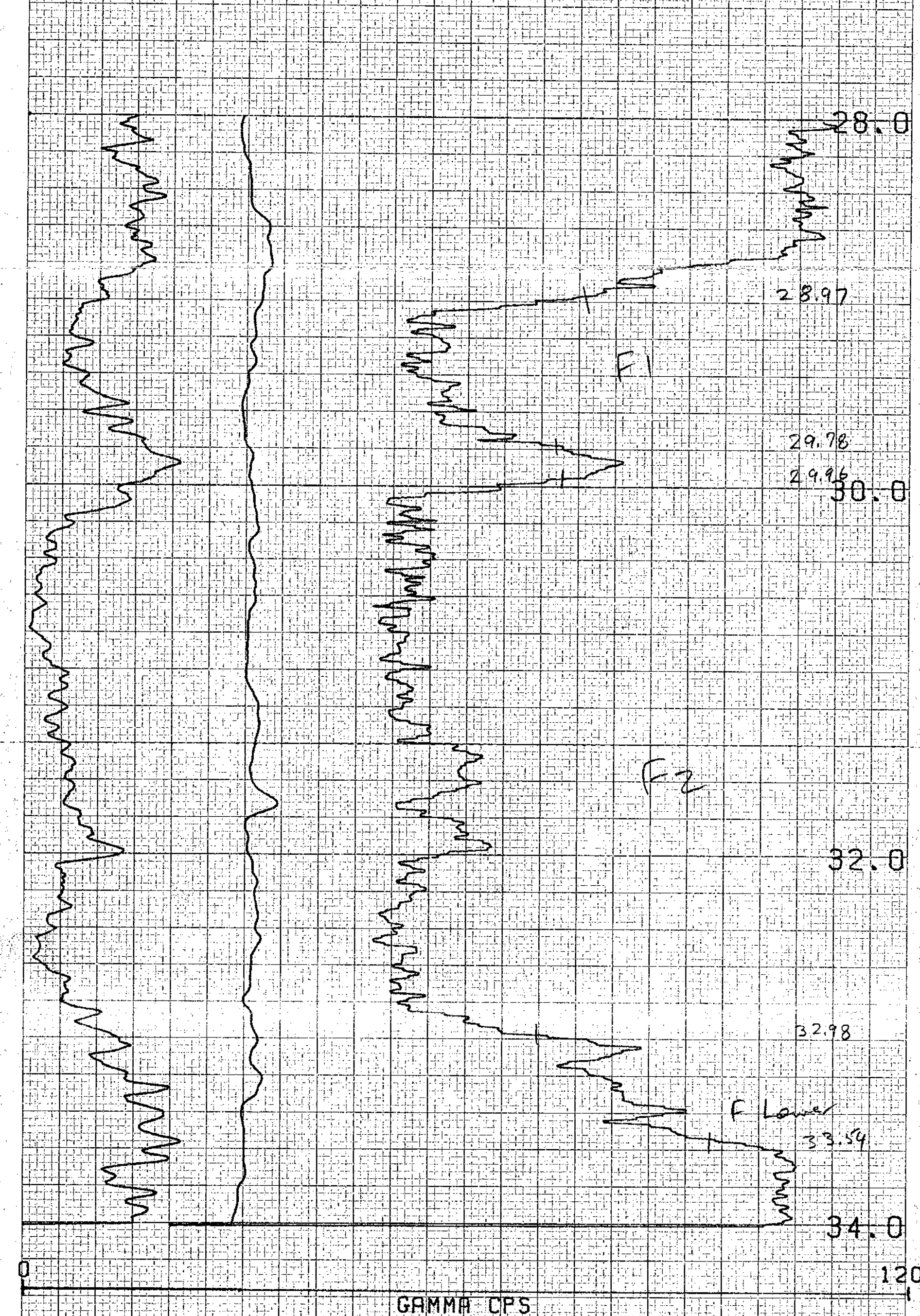
451



COMPU-LOG V8L2 PLOT 06-06-81  
 QHR87005  
 GAMMA NEUTRON DEV'N  
 GRIZZLY EXPLORATION  
 HOLE DIAMETER : 13.0  
 PROBE # 90SSA - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 186  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\*RA TRUCK # 604  
 L PENDLETON APPL.#7 L1

739





COMPU-LOG V8L2 PLOT 06-06-81

QHR87005  
 GAMMA DENSITY CALIPR  
 GRIZZLY EXPLORATION

HOLE DIAMETER : 13.0  
 PROBE # 9030A1-42D  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #1 CAL RUN CPS = 7509

739





LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

SONDE TYPE  
COAL COMBINATION  
SONDE

COAL LITHOLOGY LOG

BOREHOLE QMR87-006  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87-06-09  
DEPTH SCALE 1:200  
LOG SCALE 1 OF 2 LOGS

BOREHOLE DATA  
PERMANENT CATALAN GROUND LEVEL  
ELEVATION OF P.D. 898  
METERS/BREATHERS FROM 0.4 m  
DEPTH REACHED 183 m  
CASING SIZE 4.0 m  
BIT SIZES 1 7 3/4" 4.0 2 5 1/8" 4.0  
CASING SIZES 1 6 5/8" 4.0 2

FLUID DATA  
NATURE A.R.  
SIG 1.00 g/cc  
LEVEL 0.0 m  
VISCOSITY N/A  
Rin at max temp N/A  
BIT N/A

OPERATION DATA  
FIRST READINGS 180 m  
LAST READINGS 00 m  
INTERVAL LOGGED 180 m  
LIMIT-TICK NO. 47/215  
ENGINEER A. J. BOSTON  
WITNESS

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	TC SECS	NORM	FROM	TO	INTERVAL
GAMMA RAY	118		341	Y	9	D	9	1	1.80	180	00	180
L.S. DENSITY		5863	3993	Y	9	D	9	3	7.82	181	01	180
CALIPER		SIDEWALL POSITION										

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

FROM	TO	INTERVAL TOTAL

ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE	DETAIL LOG SCALE	
215	N-N	1:200		LOG RUN IN RODS.

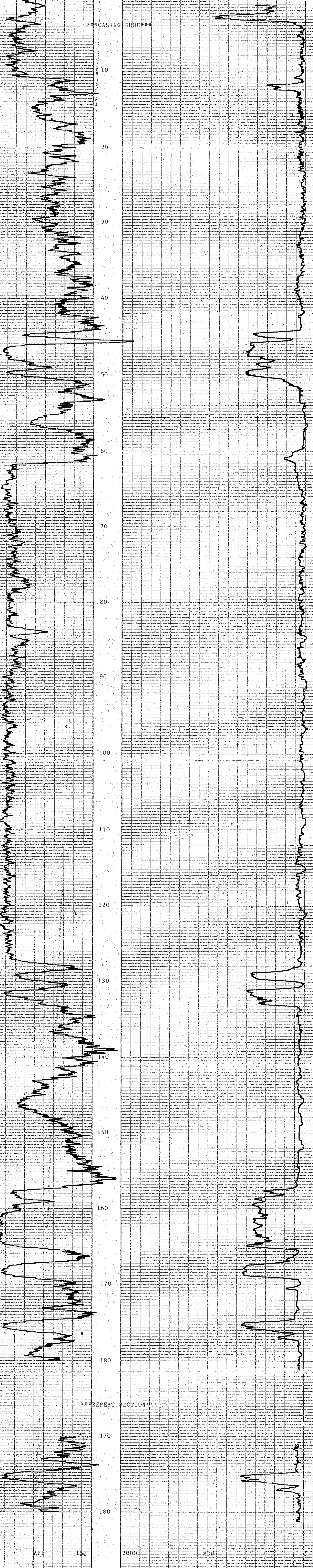
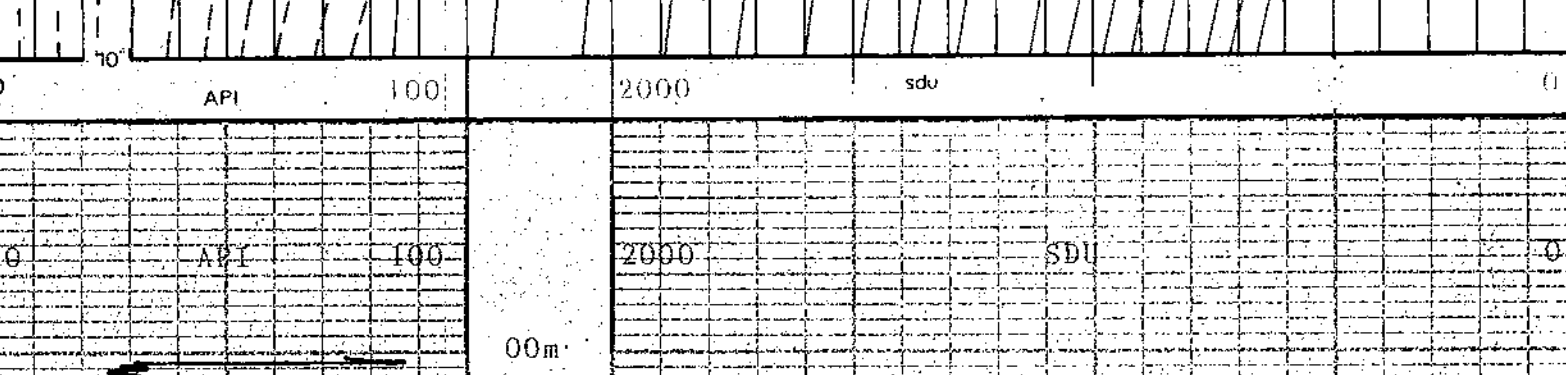
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 341	VALU 9.4 @ 5' DIAM	JIG CAL DATE 87 06 09	0.96 VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE =		JIG No 3993	SPAN	NORM	SDU -	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY
		g/cm <sup>3</sup>

HOLE SIZE CORRECTION DATA



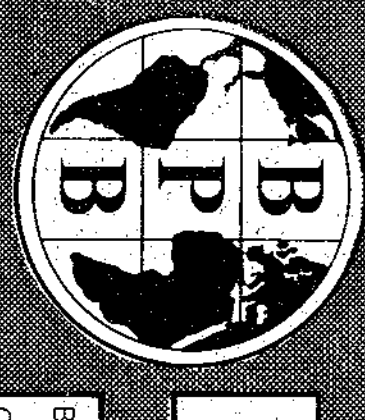
GAMMA RAY	DEPTH	BULK DENSITY
		g/cm <sup>3</sup>



BOREHOLE QMR87-006 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

COAL LITHOLOGY LOG





NEUTRON-NEUTRON  
GAMMA RAY

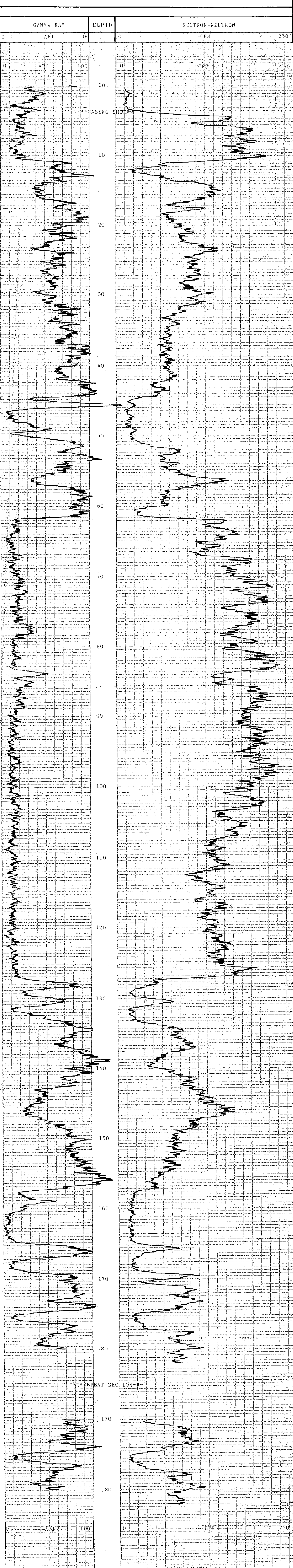
BOREHOLE QMR87-006  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 09

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

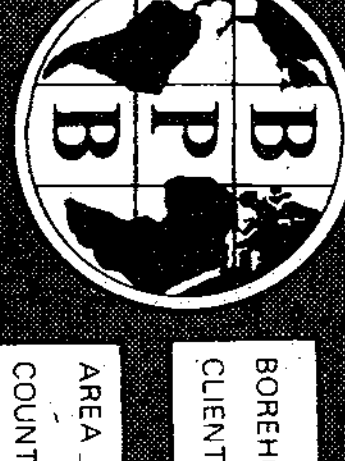
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	SCALE
N-N	Y	9	1.4
GAMMA	Y	9	1.80
REMARKS			
LOC. PIN IN ROSS			
4339			



BOREHOLE QMR87-006  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA





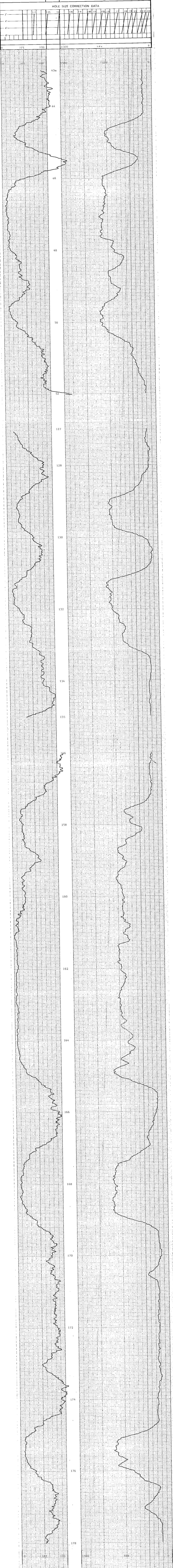
BOREHOLE QMR 87-006  
 CLIENT QUINTETTE  
 AREA GRIZZLY  
 COUNTRY CANADA  
 DATE LOGGED 87 06 09

DISPERSEMENT 1:20  
 OF 3 LOGS

**COAL QUALITY LOG**

BOREHOLE DATA REFER TO LITHOLOGY LOG  
 OPERATION DATA REFER TO LITHOLOGY LOG  
 EQUIPMENT AND RECORDING DATA  
 COAL COMBINATION SOURCE SERIAL POSITION  
 SOUDE TYPE  
 COAL COMBINATION SOURCE  
 LOG SUITE  
 GAMMA RAY  
 L.S. DENSITY

**B P B COAL QUALITY LOG**



HOLE SIZE CORRECTION DATA	
DEPTH (m)	API
2	100
4	100
6	100
8	100
10	100
12	100
14	100
16	100
18	100
20	100
22	100
24	100
26	100
28	100
30	100



BOREHOLE QMR 87-006 AREA GRIZZLY  
 CLIENT QUINTETTE COUNTRY CANADA  
**COAL QUALITY LOG**



QMR 87-007

QHR

Grizzly

LOG DEPTH 0170.00  
TRUE DEPTH 0167.34  
TILT 12.60 DG  
BEARING 91.35 DG  
NORTHING +005.51  
EASTING +025.72

LOG DEPTH 0160.00  
TRUE DEPTH 0157.58  
TILT 13.90 DG  
BEARING 81.56 DG  
NORTHING +005.56  
EASTING +023.54

LOG DEPTH 0150.00  
TRUE DEPTH 0147.87  
TILT 14.14 DG  
BEARING 78.30 DG  
NORTHING +005.21  
EASTING +021.16

LOG DEPTH 0140.00  
TRUE DEPTH 0138.17  
TILT 13.80 DG  
BEARING 75.30 DG  
NORTHING +004.71  
EASTING +018.77

LOG DEPTH 0130.00  
TRUE DEPTH 0128.46  
TILT 13.16 DG  
BEARING 73.72 DG  
NORTHING +004.11  
EASTING +016.46

LOG DEPTH 0120.00  
TRUE DEPTH 0118.72  
TILT 12.59 DG  
BEARING 72.81 DG  
NORTHING +003.47  
EASTING +014.28

LOG DEPTH 0110.00  
TRUE DEPTH 0108.96  
TILT 12.32 DG  
BEARING 68.30 DG  
NORTHING +002.82  
EASTING +012.19

LOG DEPTH 0100.00  
TRUE DEPTH 0099.19  
TILT 11.75 DG  
BEARING 64.43 DG  
NORTHING +002.04  
EASTING +010.21

LOG DEPTH 0090.00  
TRUE DEPTH 0089.40  
TILT 10.69 DG  
BEARING 69.32 DG  
NORTHING +001.16  
EASTING +008.37

LOG DEPTH 0080.00  
TRUE DEPTH 0079.57  
TILT 9.93 DG  
BEARING 76.27 DG  
NORTHING +000.50  
EASTING +006.63

LOG DEPTH 0070.00  
TRUE DEPTH 0069.72  
TILT 8.49 DG  
BEARING 82.69 DG  
NORTHING +000.09  
EASTING +004.96

LOG DEPTH 0060.00  
TRUE DEPTH 0059.83  
TILT 6.61 DG  
BEARING 91.77 DG  
NORTHING -000.09  
EASTING +003.49

LOG DEPTH 0050.00  
TRUE DEPTH 0049.90  
TILT 5.16 DG  
BEARING 91.96 DG  
NORTHING -000.05  
EASTING +002.34

LOG DEPTH 0040.00  
TRUE DEPTH 0039.94  
TILT 4.46 DG  
BEARING 85.00 DG  
NORTHING -000.02  
EASTING +001.44

LOG DEPTH 0030.00  
TRUE DEPTH 0029.97  
TILT 3.64 DG  
BEARING 69.58 DG  
NORTHING -000.09  
EASTING +000.67

LOG DEPTH 0020.00  
TRUE DEPTH 0019.99  
TILT 1.93 DG  
BEARING 139.06 DG  
NORTHING -000.31  
EASTING +000.07

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.10 DG  
BEARING 247.74 DG  
NORTHING -000.05  
EASTING -000.14

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 1.17 DG  
BEARING 274.32 DG  
NORTHING +000.00  
EASTING +000.00

739





BOREHOLE QMR 87-007  
 CLIENT QUINTETTE  
 AREA GRIZZLY  
 COUNTRY CANADA  
 DATE LOGGED 87 06 11  
 DEPTH SCALE 1:200  
 1 OF 3 LOGS

**COAL**  
**LITHOLOGY**  
**LOG**

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

PERMANENT DATUM GROUND LEVEL  
 ELEVATION OF P.D. 818  
 TRANSFER FROM G.L. 818  
 DEPTH REACHED 170.2m  
 CASING SHOE 2.0m  
 BIT SIZES 1 7 3/4" 2.0 2 5 1/8" ID  
 CASING SIZES 1 6 5/8" 2.0 2 TO

**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 or REPLAY	SPEED	T.C SECS	NORM	FROM	TO	INTERVAL		
GAMMA RAY	118	5863	3993	Y	9	D	9	1	-	1.8	168	00	168	Y
L.S. DENSITY	SIDEWALL POSITION			Y	9	D	9	.3	7.82	-	169	01	168	Y
CALIPER				Y	9	D	9	.3	-	1.0	169	01	168	Y

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

FROM	TO	INTERVAL	INTERVAL TOTAL
166m	139m	87m	
152m	133m	80m	
14m	06m	07m	+27m

**ADDITIONAL SONDES RUN**

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS
215	N-N	1:200		
221	F.F.	1:200		
231	VERT			

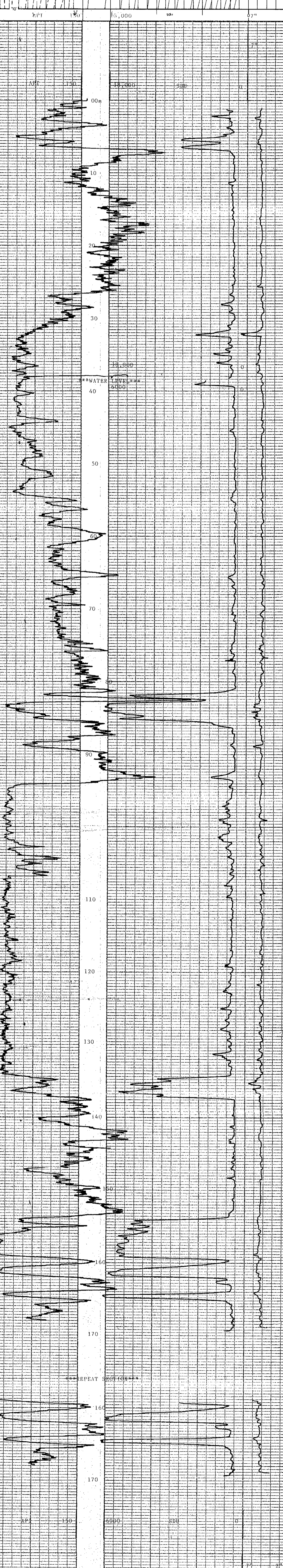
**BPB COAL LITHOLOGY LOG**  
**CALIBRATION DATA**

JIG No.	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	INS	IPS
JIG MARK SHOWN AT ABOVE VALUE -			SPAN	NORM	SOU	INS	IPS

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

**HOLE SIZE CORRECTION DATA**

2	4	6	8	10	12	125	13	135	14	145	15	155	16	17	18	19	20	21	22	23	25	30
---	---	---	---	----	----	-----	----	-----	----	-----	----	-----	----	----	----	----	----	----	----	----	----	----



GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

BOREHOLE QMR 87-007 AREA GRIZZLY  
 CLIENT QUINTETTE COUNTRY CANADA

739





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QNR 87-007  
CLIENT QUINTETTE

AREA CRIZZLY  
COUNTRY Canada  
DATE LOGGED 87 06 11

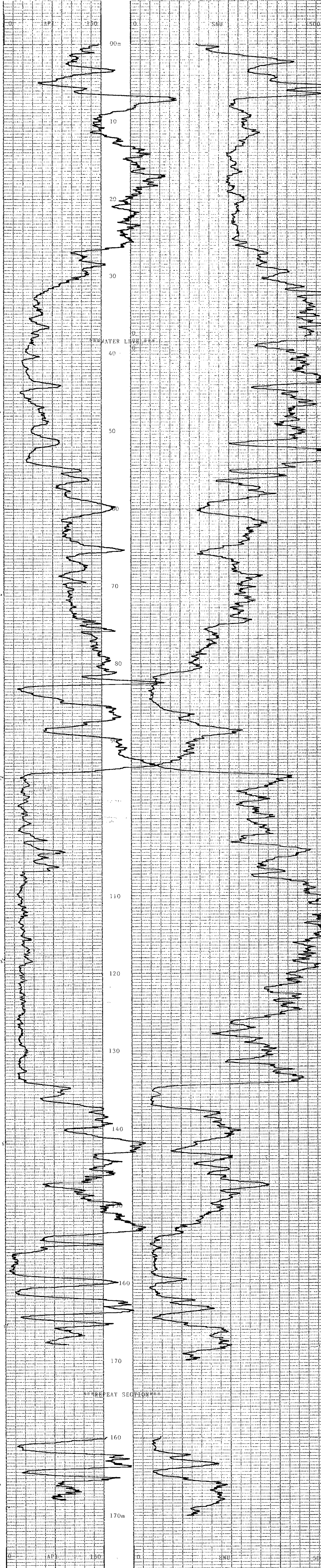
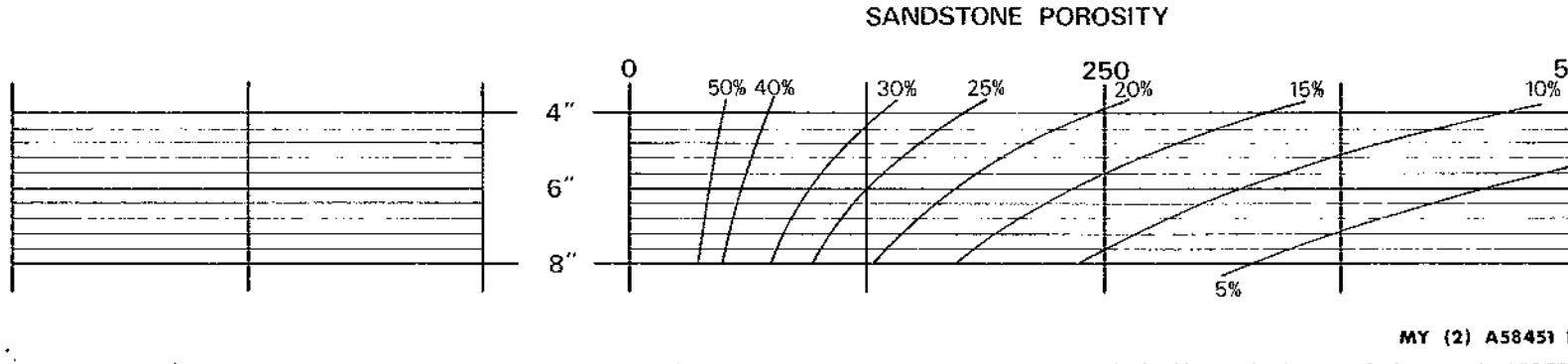
BOREHOLE DATA REFER TO LITHOLOGY LOG  
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	PAVEL	CAJ
N-N	Y	D	1
GAMMA	Y	R	1
SPORE 215		SPORE 4511	

REMARKS  
**739**

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



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



BOREHOLE QNR 87-007  
CLIENT QUINTETTE  
AREA CRIZZLY  
COUNTRY CANADA









BOREHOLE QMR 87-007  
CLIENT QUINTETTE

AREA CRIZZLY  
COUNTRY CANADA

DEPTH SCALE 1:20  
DATE LOGGED 97 06 11

4 of 3 LOGS

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

EQUIPMENT AND RECORDING DATA  
COAL COMBINATION SONDE

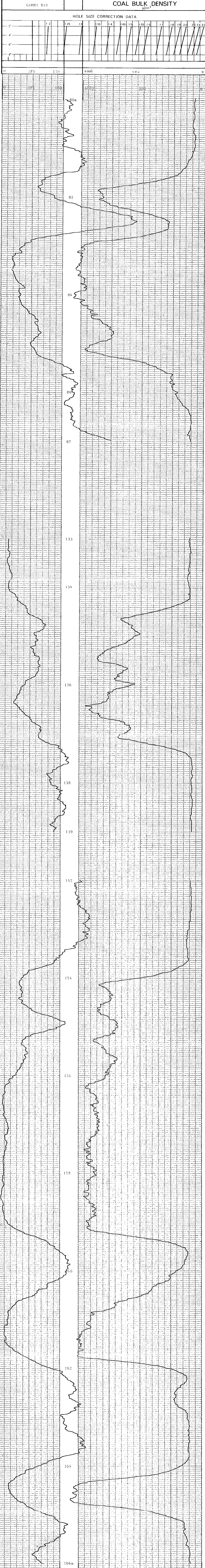
LOG TRAINING PANEL NAME DATE  
LOG NUMBER OF SHEETS 2 2 1 1.50  
GAMA Y 2 2 2 1.50  
IS SENSITIV 2 2 2 1.50

SONDE TYPE  
COMBINATION SONDE

LOG SUITE:  
GAMA RAY  
L S DENSITY

REMARKS  
**739**

**B P B COAL QUALITY LOG**



0	API	150	6000	s d u	0
GAMMA RAY			COAL BULK DENSITY $g/cm^3$		
DEPTH					



BOREHOLE QMR 87-007  
CLIENT QUINTETTE  
AREA CRIZZLY  
COUNTRY CANADA

**COAL QUALITY LOG**













NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-008

CLIENT QUINTETTE

AREA GRIZZLY

COUNTRY CANADA

DATE LOGGED 87 06 12

DEPTH SCALE  
1:200

2 of 3 LOGS

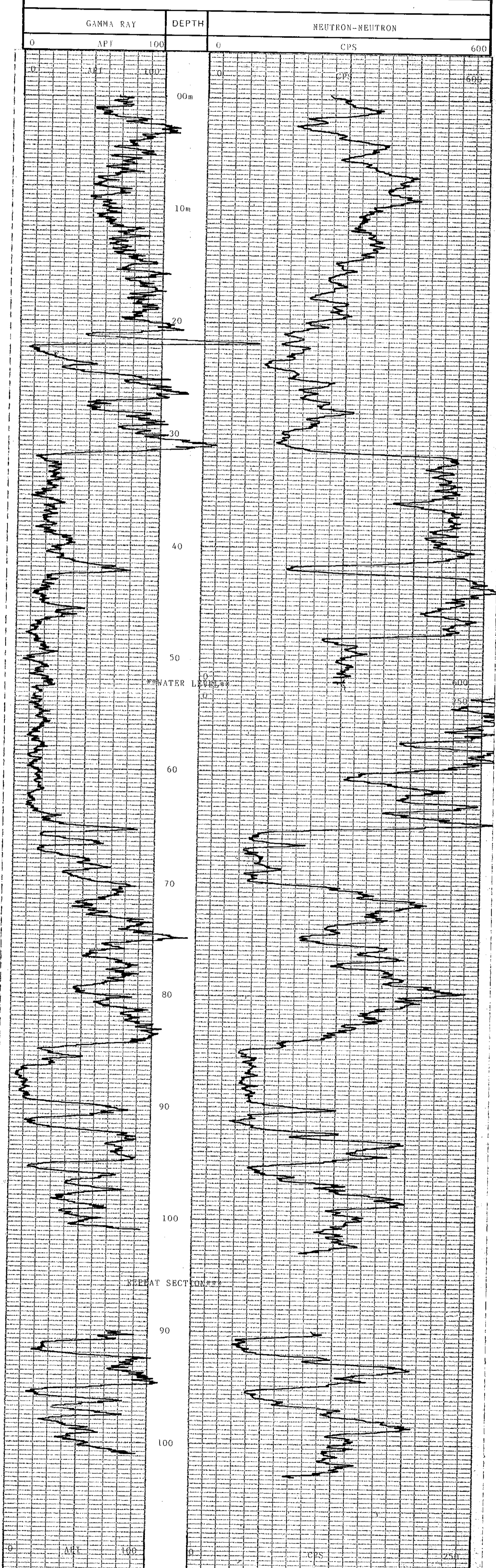
BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	LOG RECORDING SPEED	PANEL	CAL
		RECORDING SPEED	SECS	NORM
N-N	Y	9	1	11.4
GAMMA	Y	9	1	1.78
REMARKS		SOURCE NO. <u>215</u>	SOURCE <u>4.51</u>	

LOG RUN IN RODS  
739

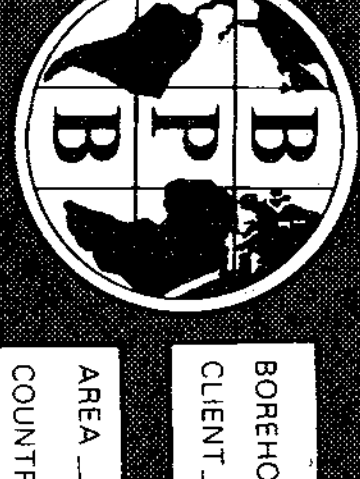


GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0	API	100
0		CPS
0		250



BOREHOLE QHR 87-008 AREA GRIZZLY  
 CLIENT QUINTETTE COUNTRY CANADA





LOG SUITE  
GAMMA RAY  
U.S. DENSITY

SONDE TYPE  
COAL COMBINATION  
SONDE

COAL QUALITY LOG

BOREHOLE QM 87-008  
CLIENT QUINTEYTE  
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 12

DEPTH SCALE 1:20  
3 OF 3 LOGS

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

COAL COMBINATION SCALE

LOG SERIAL POSITION

LOG NO. 126  
LOG DATE 87 06 12  
LOG TIME 13:30  
LOG OPERATOR J.C. HARRIS  
LOG CHECKER J.C. HARRIS  
LOG REVIEWER J.C. HARRIS  
LOG APPROVED J.C. HARRIS  
LOG REVISIONS

SCALE SONDE AND CALIBRATION  
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

DEPTH

GAMMA RAY

COAL BULK DENSITY  $g/cm^3$

HOLE SIZE CORRECTION DATA

DEPTH (m)	1.2	1.25	1.3	1.35	1.4	1.45	1.5	1.55	1.6	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	3.0
0																		
2																		
4																		
6																		
8																		

API 100

AP 180

19m

20

24

26

27

64

66

68

70

72

83

84

86

88

90

92

94

96

98

100

API 100

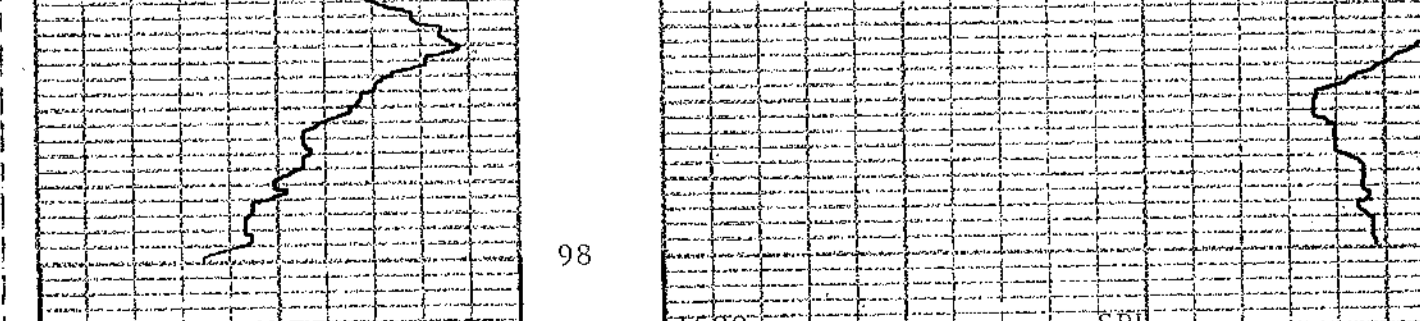
GAMMA RAY

COAL BULK DENSITY  $g/cm^3$

DEPTH

BOREHOLE QM 87-008  
CLIENT QUINTEYTE  
AREA GRIZZLY  
COUNTRY CANADA

COAL QUALITY LOG





GRIZZLY  
QHR 87009

LOG DEPTH 0130.00  
TRUE DEPTH 0129.49  
TILT 7.67 DG  
BEARING 71.16 DG  
NORTHING +002.17  
EASTING +009.55

LOG DEPTH 0120.00  
TRUE DEPTH 0119.58  
TILT 7.04 DG  
BEARING 73.14 DG  
NORTHING +001.74  
EASTING +008.28

LOG DEPTH 0110.00  
TRUE DEPTH 0109.66  
TILT 6.64 DG  
BEARING 76.19 DG  
NORTHING +001.39  
EASTING +007.11

LOG DEPTH 0100.00  
TRUE DEPTH 0099.73  
TILT 6.52 DG  
BEARING 76.63 DG  
NORTHING +001.11  
EASTING +005.99

LOG DEPTH 0090.00  
TRUE DEPTH 0089.79  
TILT 6.01 DG  
BEARING 75.16 DG  
NORTHING +000.85  
EASTING +004.88

LOG DEPTH 0080.00  
TRUE DEPTH 0079.85  
TILT 5.48 DG  
BEARING 75.26 DG  
NORTHING +000.58  
EASTING +003.87

LOG DEPTH 0070.00  
TRUE DEPTH 0069.90  
TILT 4.97 DG  
BEARING 76.97 DG  
NORTHING +000.34  
EASTING +002.94

LOG DEPTH 0060.00  
TRUE DEPTH 0059.94  
TILT 4.22 DG  
BEARING 73.82 DG  
NORTHING +000.14  
EASTING +002.10

LOG DEPTH 0050.00  
TRUE DEPTH 0049.97  
TILT 3.24 DG  
BEARING 68.85 DG  
NORTHING -000.06  
EASTING +001.39

LOG DEPTH 0040.00  
TRUE DEPTH 0039.99  
TILT 2.44 DG  
BEARING 80.49 DG  
NORTHING -000.26  
EASTING +000.86

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 1.52 DG  
BEARING 119.00 DG  
NORTHING -000.33  
EASTING +000.44

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT .99 DG  
BEARING 117.04 DG  
NORTHING -000.20  
EASTING +000.21

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT .99 DG  
BEARING 154.75 DG  
NORTHING -000.12  
EASTING +000.05

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT .82 DG  
BEARING 228.66 DG  
NORTHING +000.00  
EASTING +000.00

739



GRIZZLY

QHR 87009

DEPTH = 0010.00  
TILT = 1.17 DG  
BEARING = 88.84 DG

DEPTH = 0020.00  
TILT = .82 DG  
BEARING = 145.24 DG

DEPTH = 0030.00  
TILT = 2.22 DG  
BEARING = 92.76 DG

DEPTH = 0040.00  
TILT = 2.67 DG  
BEARING = 68.23 DG

DEPTH = 0050.00  
TILT = 3.81 DG  
BEARING = 69.47 DG

DEPTH = 0060.00  
TILT = 4.64 DG  
BEARING = 78.17 DG

DEPTH = 0070.00  
TILT = 5.38 DG  
BEARING = 75.77 DG

DEPTH = 0080.00  
TILT = 5.65 DG  
BEARING = 74.75 DG

DEPTH = 0090.00  
TILT = 6.37 DG  
BEARING = 75.57 DG

DEPTH = 0100.00  
TILT = 6.67 DG  
BEARING = 77.69 DG

DEPTH = 0110.00  
TILT = 6.68 DG  
BEARING = 74.78 DG

DEPTH = 0120.00  
TILT = 7.49 DG  
BEARING = 71.58 DG

DEPTH = 0130.00  
TILT = 7.85 DG  
BEARING = 78.73 DG

DATE 870613  
JOB NUMBER 7009  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 10  
L. CELL 1 CPS 1 206  
L. CELL 1 TILT 2 -10  
L. CELL 1 CPS 2 152  
L. CELL 2 TILT 1 10  
L. CELL 2 CPS 1 207  
L. CELL 2 TILT 2 -10  
L. CELL 2 CPS 2 153  
MAG 1 CENTRE 179  
MAG 2 CENTRE 182  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 180  
MAG DECL 24  
STOP DEPTH 2





BOREHOLE QMR 87-009  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DEPTH SCALE 1:200  
DATE LOGGED 87 06 13

COAL LITHOLOGY LOG

PERMANENT DATUM GROUND LEVEL  
ELEVATION OF P.D. BPB  
MAGNETIC STRONG G.L.  
DEPTH REACHED 132.3m 134.0m  
CASING SHOE 2.0m 2.0m  
BIT SIZES 1 7/8 TO 2.0 2 5/8 TO 2.0  
CASING SIZES 1 6 5/8 TO 2.0 2 TO

SONDE TYPE AIR/WATER  
COAL COMBINATION N/A  
SONDE N/A

LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

OPERATION DATA  
FIRST READING 130m  
LAST READING 00m  
INTERVAL LOGGED 130m  
UNIT-TRUCK No 42/V215  
ENGINEER A. LEBERTON  
WITNESS

739

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT REPLAY	SPEED	TC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY			241	Y	9	D	9	2	-	1.78	130	00	130	Y
L.S. DENSITY	153	5863	3993	Y	9	D	9	.3	7.60	-	131	01	130	Y
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3	-	1.0	131	01	130	Y

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

FROM	TO	INTERVAL	SEAM LOG RUN
117m	87m	26m	
102m	81m	18m	
15m	06m	08m	
			INTERVAL TOTAL 29m

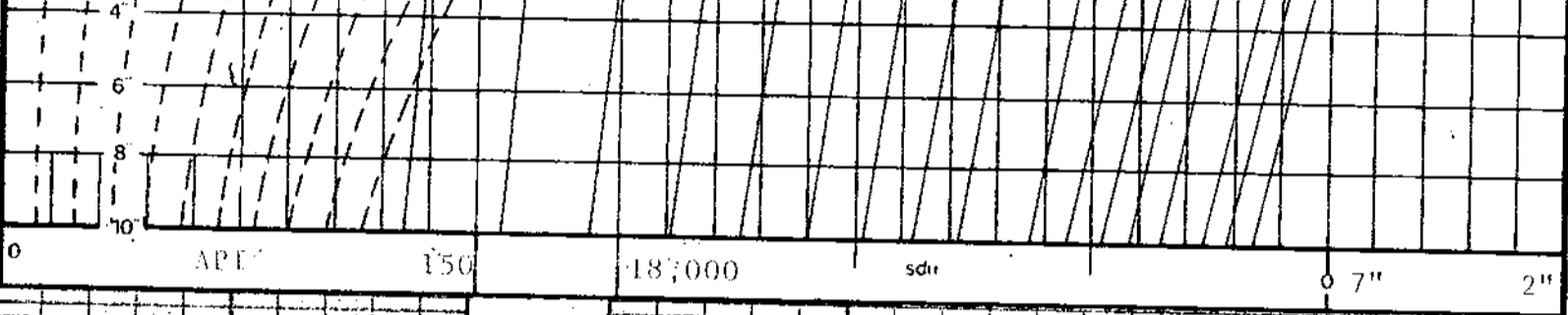
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REMARKS
215	N-N	1:200		REFER TO ADDITIONAL HEADINGS
221	F.E.	1:200		
231	WRT.			

BPB COAL LITHOLOGY LOG CALIBRATION DATA

JIG No	VALUE @ 2" DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES



BOREHOLE QMR 87-009 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

COAL LITHOLOGY LOG













BOREHOLE QMR 87-009  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 13

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

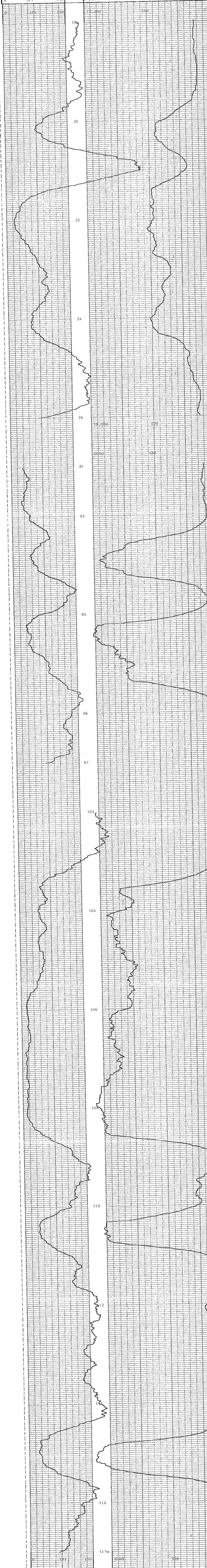
REMARKS

LOG TAPPING POINT SERIAL POSITION  
LOG NO. 1000  
DATE 87 06 13  
DEPTH 117m  
L.S. DENSITY 1.28  
SONDE STONE AND CALIBRATION  
REFER TO LITHOLOGY LOG  
COAL QUALITY LOG INTERVALS

B P B COAL QUALITY LOG

DEPTH	COAL BULK DENSITY g/cm <sup>3</sup>
GAMMA RAY	

HOLE SIZE CORRECTION DATA	
1.2	1.25
1.3	1.35
1.4	1.45
1.5	1.55
1.6	1.65
1.7	1.75
1.8	1.85
1.9	1.95
2.0	2.05
2.2	2.25
2.4	2.45
2.6	2.65
2.8	2.85
3.0	3.05



DEPTH	COAL BULK DENSITY g/cm <sup>3</sup>
GAMMA RAY	



BOREHOLE QMR 87-009  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA

COAL QUALITY LOG





BORRHOLE QHR 87-009  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA

DATE LOGGED 87 06 13

DEPTH SCALE  
 1:20  
 ± 0.1 ± 0.05

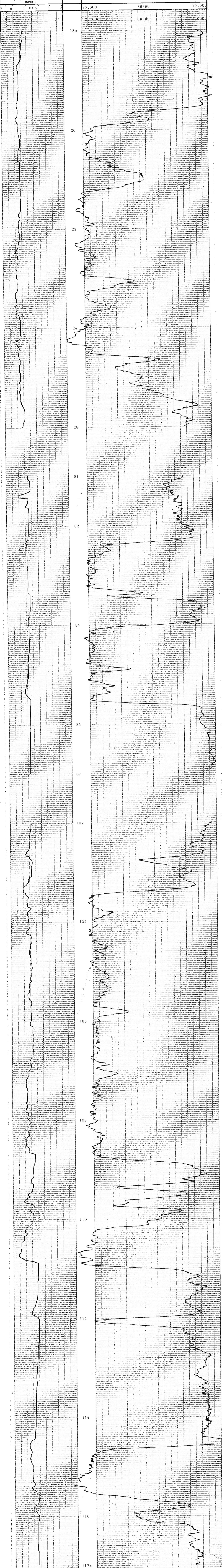
SEAM THICKNESS LOG

SONDE TYPE  
 COAL COMBINATION  
 SONDE

LOG SUITE  
 CALIPER  
 BR DENSITY

REMARKS  
**739**

B P B SEAM THICKNESS LOG



CALIPER INCHES DEPTH BED RESOLUTION DENSITY



BORRHOLE QHR 87-009  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA

SEAM THICKNESS LOG



✓  
QHR 87010  
GRIZZLY

HR 87010

DEPTH = 0010.00  
TILT = 28.44 DG  
BEARING = 41.05 DG

DATE 870615

JOB NUMBER 7010

LOG LABEL 026.1

MAG 1 MAX 229

MAG 1 MIN 129

MAG 2 MAX 228

MAG 2 MIN 130

MAG 3 MAX 205

MAG 3 MIN 155

L. CELL 1 TILT 1 30

L. CELL 1 CPS 1 256

L. CELL 1 TILT 2 -30

L. CELL 1 CPS 2 102

L. CELL 2 TILT 1 30

L. CELL 2 CPS 1 256

L. CELL 2 TILT 2 -30

L. CELL 2 CPS 2 104

MAG 1 CENTRE 178

MAG 2 CENTRE 182

MAG 3 CENTRE 180

L. CELL 1 CENTRE 182

L. CELL 2 CENTRE 180

MAG DECL 24

STOP DEPTH 1

739





COAL

LITHOLOGY

LOG

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

BOREHOLE QHR 87-010  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 15

DEPTH SCALE  
1:200  
1 OF 3 LOGS

BOREHOLE DATA

FORMATION	GROUND LEVEL
ELEVATION OF P.O.	BRP
WATER TABLE	CHLIFER
DEPTH REACHED	167.0m
CASING SHOE	2.4m
BIT SIZES	1 7/8 TO 2.4 2 1/8 TO 10
CASING SIZES	3 TO 4 TO

FLUID DATA

NATURE	AIR/WATER
SG	1.00 & c/c
LENGTH	4.2-4m
VISCOSITY	N/A
TEMP. AT 100cm	N/A
BIT	N/A

OPERATION DATA

FIRST READING	16.2m
LAST READING	0.0m
INTERVAL LOGGED	16.2
UNIT-TRUCK No.	42/V215
ENGINEER	A. LEBRETON
WITNESS	

739

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL		CAL COEFF	DEPTHS		SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT/REPLAY	SPEED	SEC		FROM	TO	
GAMMA RAY	153	5863	241	Y	9	D	9	2	1.78	162	00	162
L.S. DENSITY			3993	Y	9	D	9	.3	7.60	163	01	162
CALIPER	SIDEWALL POSITION											

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)				
FROM	156m	130m	92m	35m
TO	142m	125m	86m	30m
INTERVAL	14m	05m	06m	05m
INTERVAL TOTAL				30m

ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	N-N	1:200		REFER TO ADDITIONAL HEADINGS
221	E.E.	1:200		
231	VERT.			

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ITS	CPS
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU = CPS =	ITS	CPS

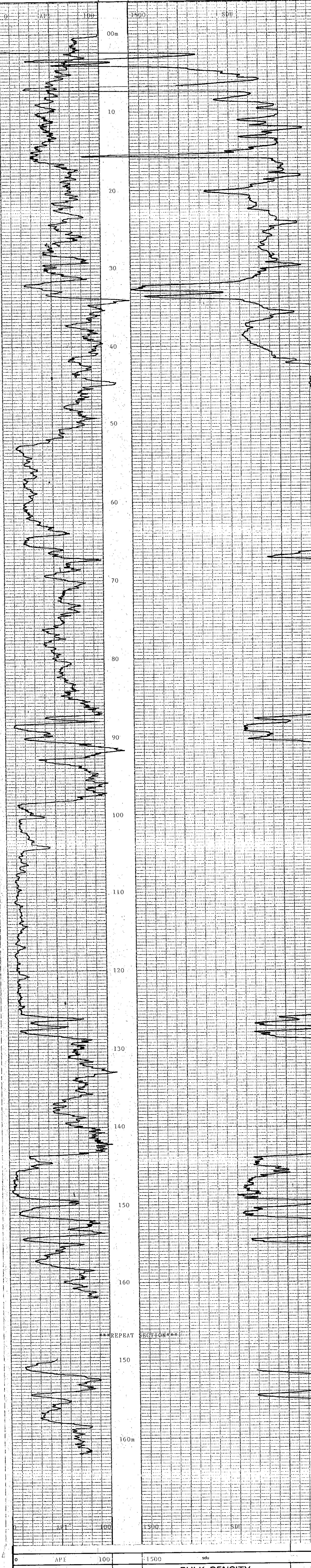
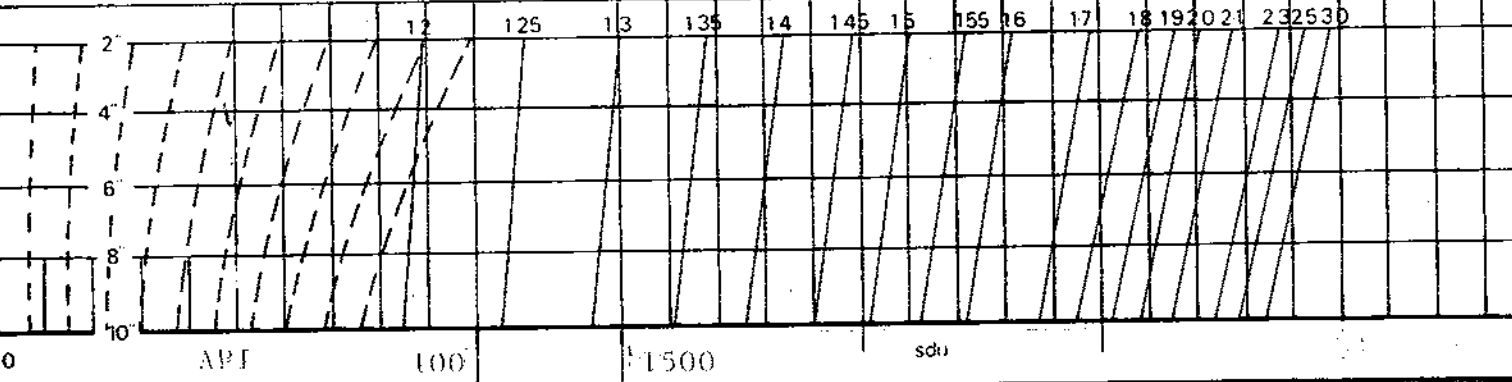
GAMMA RAY

DEPTH

BULK DENSITY

g/cm<sup>3</sup>

HOLE SIZE CORRECTION DATA



\*\*\*REPEAT SECTION\*\*\*

GAMMA RAY	DEPTH	BULK DENSITY	g/cm <sup>3</sup>
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BOREHOLE QHR 87-010 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

COAL LITHOLOGY LOG





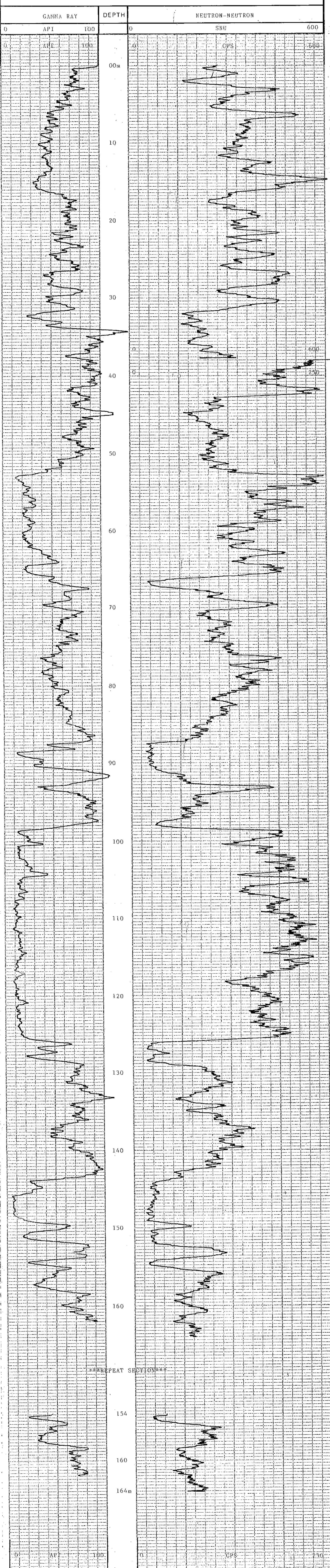
NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-010  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 97 06 15

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

LOG	TAPING	PANEL	CAL
LOG SPEED	LOG SPEED	LOG SPEED	LOG SPEED
N-N	Y	9	D
Y	9	1	11.4
GAMMA	Y	9	2
			1.75
REMARKS LOG RUN IN RODS.			
739			



BOREHOLE QHR 87-010  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA





BOREHOLE QRR 87-010  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA  
 DATE LOGGED 87-09-13

OPEN SCALE  
 1:20  
 3 OF 3 SHEETS

**COAL QUALITY LOG**

**LOG**

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

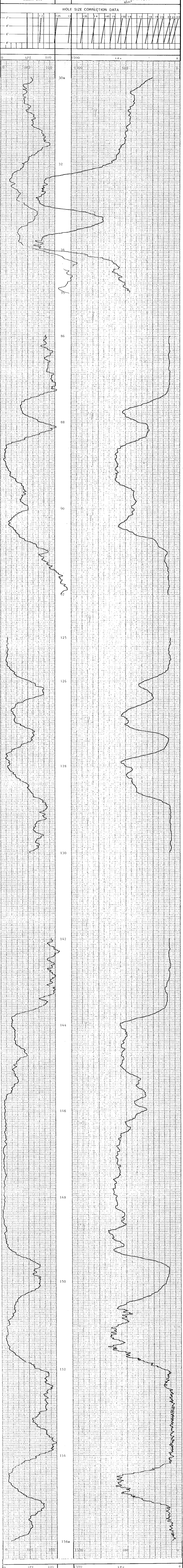
COAL COMBINATION SOURCE  
 LOGS: NAME, POSITION, DATE, COMMENTS, SPEED, SENS, LOGS, L.S. DENSITY, SOURCE, SOURCE AND CALIBRATION, REFER TO LITHOLOGY LOG

**SONDE TYPE:**

COAL QUALITY LOG INTENSIS

LOG SUITE  
 GAMMA RAY  
 L.S. DENSITY

**B P B COAL QUALITY LOG**



GAMMA RAY	DEPTH	COAL BULK DENSITY $g/cm^3$
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BOREHOLE QRR 87-010 AREA GRIZZLY  
 CLIENT QUINTETTE COUNTRY CANADA

**COAL QUALITY LOG**



QHR 87011  
GRIZZLY

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.58 DG  
BEARING 333.21 DG  
NORTHING +000.31  
EASTING -000.28

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.25 DG  
BEARING 293.37 DG  
NORTHING +000.06  
EASTING -000.16

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 1.33 DG  
BEARING 231.58 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0005.00  
TILT = 1.04 DG  
BEARING = 150.99 DG

DEPTH = 0010.00  
TILT = 1.17 DG  
BEARING = 355.15 DG

DEPTH = 0015.00  
TILT = 2.09 DG  
BEARING = 349.26 DG

DEPTH = 0020.00  
TILT = 1.99 DG  
BEARING = 311.28 DG

DEPTH = 0025.00  
TILT = .37 DG  
BEARING = 97.61 DG

DATE 870615  
JOB NUMBER 7011  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 10  
L. CELL 1 CPS 1 206  
L. CELL 1 TILT 2 -10  
L. CELL 1 CPS 2 152  
L. CELL 2 TILT 1 10  
L. CELL 2 CPS 1 207  
L. CELL 2 TILT 2 -10  
L. CELL 2 CPS 2 153  
MAG 1 CENTRE 178  
MAG 2 CENTRE 182  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 182  
L. CELL 2 CENTRE 180  
MAG DECL 24  
STOP DEPTH 2

739





BOREHOLE QHR 87-011  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 15

DEPTH SCALE  
1:200  
1 of 3 LOGS

**COAL**

**LITHOLOGY LOG**

SONDE TYPE: ATR/MATEL  
COAL COMBINATION: 1.00 g/cc  
SONDE: 77.0m

LOG SUITE: GAMMA RAY  
L.S DENSITY  
CALIPER

BOREHOLE DATA	
PERMANENT DATUM	GROUND LEVEL
ELEVATION OF P.D.	98
DRILLER	G.L.
MEASUREMENT FROM	G.L.
DEPTH REACHED	121.5m
CASING SHOE	2.4m
CASING SIZES	1 7/8 TO 5.0 2 5/8 TO 5.0 2
FLUID DATA	
NATURE	AIR/WATER
SG	1.00 g/cc
LEVEL	77.0m
VISCOSITY	N/A
Rm at Press Temp	N/A
BHT	N/A

OPERATION DATA  
FIRST READING 120m  
LAST READING 00m  
INTERVAL LOGGED 120m  
UNIT-TRUCK No 42/V215  
ENGINEER A. LEBBETON  
WITNESS

739

**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	TC SECS		NORM	FROM		TO
GAMMA RAY	153		241	Y	9	D	9	2		1.78	120	00	120
L.S DENSITY		5863	3993	Y	9	D	9	1	7.60		121	01	120
CALIPER	SIDEWALL POSITION												

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)			
FROM	113m	86m	44m
TO	99m	80m	38m
INTERVAL	14m	06m	06m
			INTERVAL TOTAL = 26m

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	N-N	1:200			LOGS RUN IN RODS.

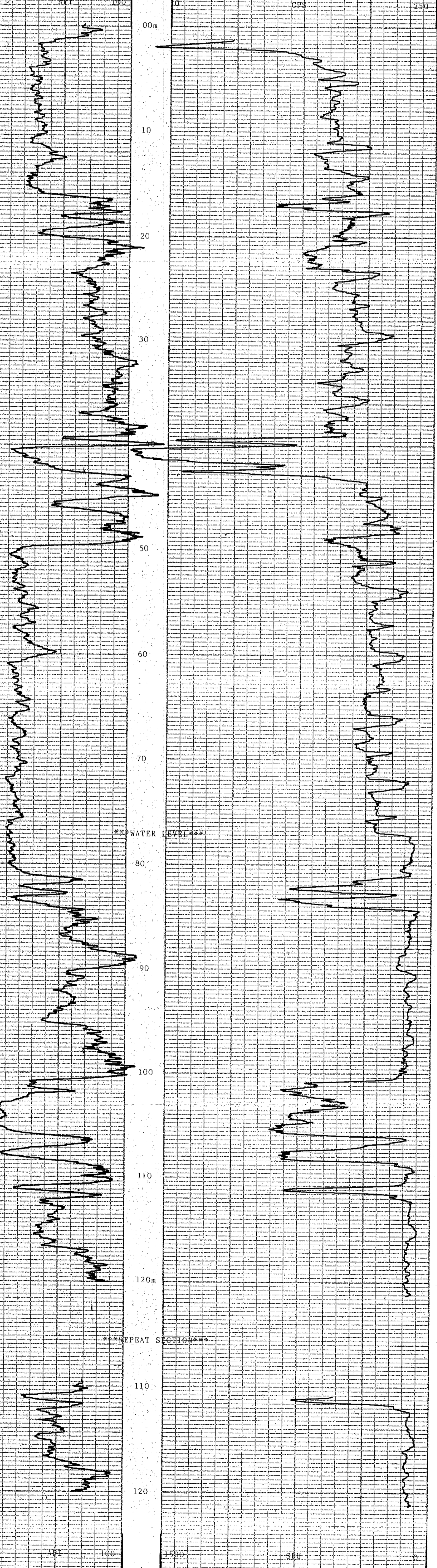
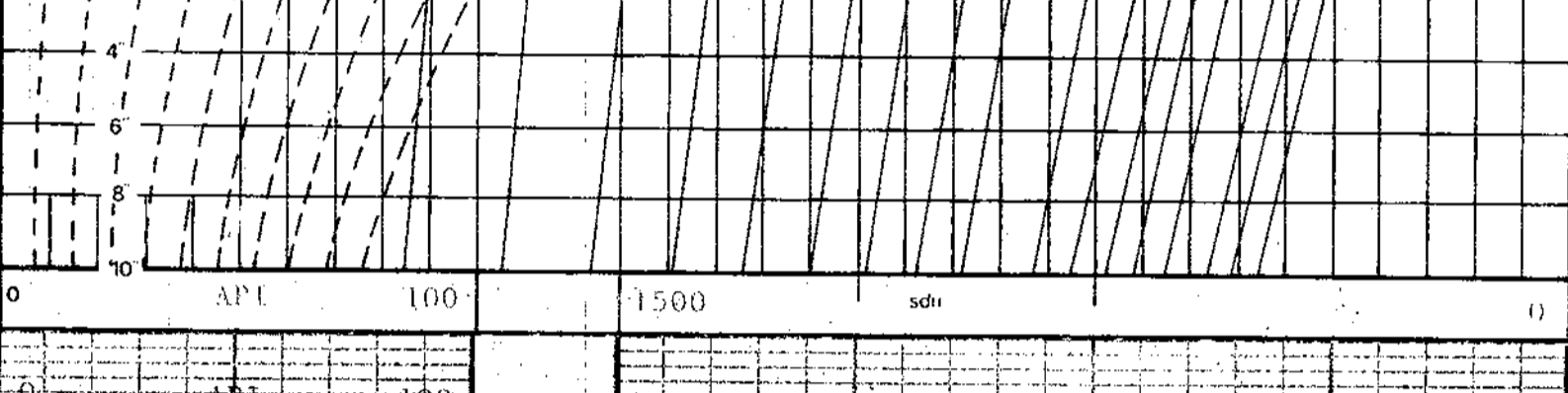
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ms	cps

**GAMMA RAY DEPTH BULK DENSITY**

**HOLE SIZE CORRECTION DATA**



\*\*\*REPEAT SECTION\*\*\*

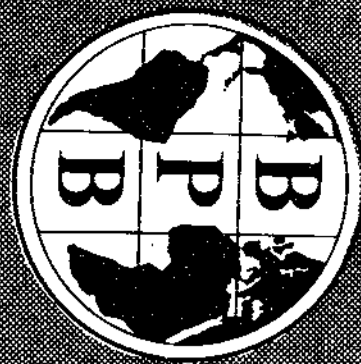
GAMMA RAY	DEPTH	BULK DENSITY
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BOREHOLE QHR 87-011 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

**COAL LITHOLOGY LOG**





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-011

CLIENT QUINTETE

AREA GRIZZLY

COUNTRY CANADA

DATE LOGGED 87 06 15

DEPTH SCALE  
1:200

2 OF 3 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

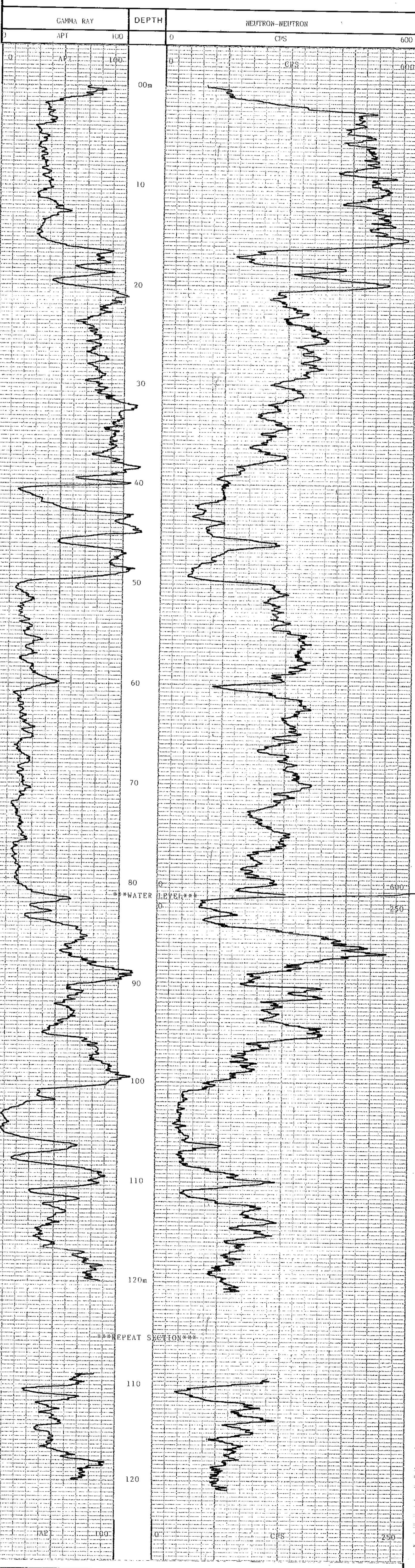
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	RECORDING	PANEL	CODE
N-N	Y	D	9	11.4
GAMMA	Y	R	9	2
				1.78

REMARKS

2339  
\*\*LOGS IN RODS.\*\*\*



BOREHOLE QHR 87-011  
CLIENT QUINTETE  
AREA GRIZZLY  
COUNTRY CANADA









QHR 87012  
GRIZZLY

LOG DEPTH 0180.00  
TRUE DEPTH 0178.54  
TILT 13.33 DG  
BEARING 80.67 DG  
NORTHING +003.54  
EASTING +016.88

LOG DEPTH 0170.00  
TRUE DEPTH 0168.81  
TILT 12.61 DG  
BEARING 79.23 DG  
NORTHING +003.17  
EASTING +014.60

LOG DEPTH 0160.00  
TRUE DEPTH 0159.05  
TILT 11.70 DG  
BEARING 77.39 DG  
NORTHING +002.76  
EASTING +012.45

LOG DEPTH 0150.00  
TRUE DEPTH 0149.26  
TILT 10.95 DG  
BEARING 76.01 DG  
NORTHING +002.32  
EASTING +010.47

LOG DEPTH 0140.00  
TRUE DEPTH 0139.44  
TILT 10.38 DG  
BEARING 75.23 DG  
NORTHING +001.86  
EASTING +008.63

LOG DEPTH 0130.00  
TRUE DEPTH 0129.60  
TILT 9.44 DG  
BEARING 75.22 DG  
NORTHING +001.40  
EASTING +006.89

LOG DEPTH 0120.00  
TRUE DEPTH 0119.74  
TILT 7.97 DG  
BEARING 75.53 DG  
NORTHING +000.98  
EASTING +005.30

LOG DEPTH 0110.00  
TRUE DEPTH 0109.84  
TILT 6.75 DG  
BEARING 77.02 DG  
NORTHING +000.64  
EASTING +003.96

LOG DEPTH 0100.00  
TRUE DEPTH 0099.91  
TILT 5.83 DG  
BEARING 80.84 DG  
NORTHING +000.37  
EASTING +002.81

LOG DEPTH 0090.00  
TRUE DEPTH 0089.96  
TILT 4.64 DG  
BEARING 88.31 DG  
NORTHING +000.21  
EASTING +001.81

LOG DEPTH 0080.00  
TRUE DEPTH 0079.99  
TILT 2.98 DG  
BEARING 96.14 DG  
NORTHING +000.19  
EASTING +001.00

LOG DEPTH 0070.00  
TRUE DEPTH 0070.00  
TILT 1.52 DG  
BEARING 103.16 DG  
NORTHING +000.24  
EASTING +000.48

LOG DEPTH 0060.00  
TRUE DEPTH 0060.00  
TILT 1.52 DG  
BEARING 93.06 DG  
NORTHING +000.38  
EASTING +000.22

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT 1.52 DG  
BEARING 71.46 DG  
NORTHING +000.72  
EASTING -000.94

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 1.25 DG  
BEARING 27.74 DG  
NORTHING +000.23  
EASTING -000.29

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 92 DG  
BEARING 275.89 DG  
NORTHING +000.04  
EASTING -000.39

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.18 DG  
BEARING 228.31 DG  
NORTHING +000.03  
EASTING -000.23

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.34 DG  
BEARING 334.14 DG  
NORTHING +000.16  
EASTING -000.09

LOG DEPTH 0000.00  
TRUE DEPTH 0000.00  
TILT 52 DG  
BEARING 49.38 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
 TILT = 1.85 DG  
 BEARING = 258.30 DG  
  
 DEPTH = 0020.00  
 TILT = 1.52 DG  
 BEARING = 198.32 DG  
  
 DEPTH = 0030.00  
 TILT = 1.33 DG  
 BEARING = 351.85 DG  
  
 DEPTH = 0040.00  
 TILT = 1.17 DG  
 BEARING = 63.64 DG  
  
 DEPTH = 0050.00  
 TILT = 1.88 DG  
 BEARING = 79.28 DG  
  
 DEPTH = 0060.00  
 TILT = 1.17 DG  
 BEARING = 106.85 DG  
  
 DEPTH = 0070.00  
 TILT = 1.88 DG  
 BEARING = 99.47 DG  
  
 DEPTH = 0080.00  
 TILT = 4.89 DG  
 BEARING = 92.80 DG  
  
 DEPTH = 0090.00  
 TILT = 5.19 DG  
 BEARING = 83.83 DG  
  
 DEPTH = 0100.00  
 TILT = 6.46 DG  
 BEARING = 77.85 DG  
  
 DEPTH = 0110.00  
 TILT = 7.04 DG  
 BEARING = 76.19 DG  
  
 DEPTH = 0120.00  
 TILT = 8.89 DG  
 BEARING = 74.87 DG  
  
 DEPTH = 0130.00  
 TILT = 9.99 DG  
 BEARING = 75.56 DG  
  
 DEPTH = 0140.00  
 TILT = 10.76 DG  
 BEARING = 74.90 DG

DEPTH = 0150.00  
 TILT = 11.13 DG  
 BEARING = 77.11 DG  
  
 DEPTH = 0160.00  
 TILT = 12.27 DG  
 BEARING = 77.67 DG  
  
 DEPTH = 0170.00  
 TILT = 12.96 DG  
 BEARING = 80.79 DG  
  
 DEPTH = 0180.00  
 TILT = 13.70 DG  
 BEARING = 80.55 DG

DATE = 870617  
 JOB NUMBER = 7012  
 LOG LABEL = 026.1  
 MAG 1 MAX = 229  
 MAG 1 MIN = 129  
 MAG 2 MAX = 228  
 MAG 2 MIN = 130  
 MAG 3 MAX = 205  
 MAG 3 MIN = 155  
 L. CELL 1 TILT 1 = 10  
 L. CELL 1 CPS 1 = 206  
 L. CELL 1 TILT 2 = -10  
 L. CELL 1 CPS 2 = 152  
 L. CELL 2 TILT 1 = 10  
 L. CELL 2 CPS 1 = 207  
 L. CELL 2 TILT 2 = -10  
 L. CELL 2 CPS 2 = 153  
  
 MAG 1 CENTRE = 178  
 MAG 2 CENTRE = 182  
 MAG 3 CENTRE = 180  
 L. CELL 1 CENTRE = 182  
 L. CELL 2 CENTRE = 180  
  
 MAG DECL = 24  
 STOP DEPTH = 2

QHR 87012  
 GRIZZLY





COAL LITHOLOGY LOG

SONDE TYPE  
COAL COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L.S DENSITY  
CALIPER

BOREHOLE	QHR 87-012
CLIENT	QUINTETTE
AREA	GRIZZLY
COUNTRY	CANADA
DATE LOGGED	87 06 17
DEPTH SCALE	1:200
LOG SCALE	1 OF 5 LOGS

EQUIPMENT AND RECORDING DATA																
LOG	EQUIPMENT	TAPING	PANEL	CAL COEFF	DEPTHS	SEAM LOG RUN										
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECTOR REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL				
GAMMA RAY	153	5863	241	Y	9	D	9	1	-	1.78	181	00	181			
L.S DENSITY			3993	Y	9	D	9	.3	7.60	-	182	01	181			
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3	-	1.0	182	01	181			

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)					INTERVAL TOTAL
FROM	177m	152m	104m	25m	
TO	165m	146m	96m	20m	31m
INTERVAL	12m	06m	08m	05m	

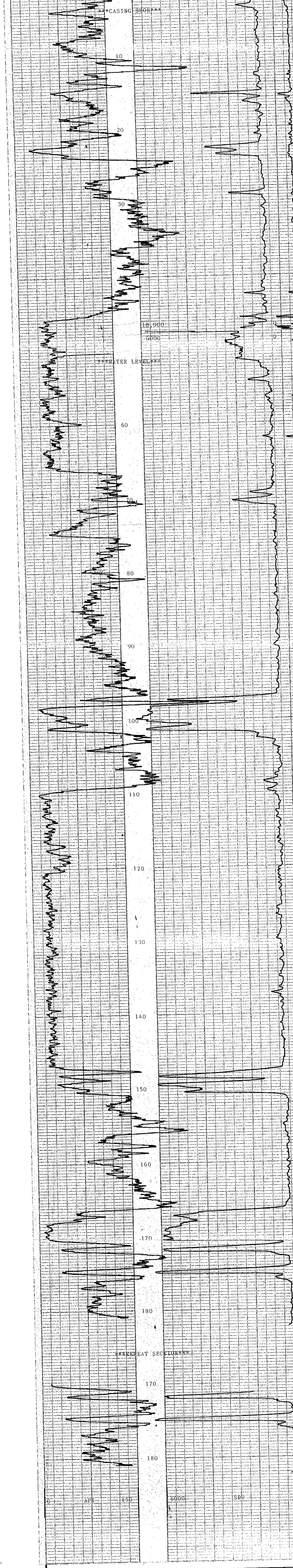
ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	N-N	1:200		
221	F.E.	1:200		

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2" DIAM	JIG CAL DATE	JIG VALUE	SQU @	g/cm <sup>3</sup>	INS	SPS
JIG MARK SHOWN AT ABOVE VALUE		JIG No	SPAN	NORM	SQU @	INS	SPS

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE QHR 87-012 AREA GRIZZLY  
 CLIENT QUINTETTE COUNTRY CANADA  
**COAL LITHOLOGY LOG**

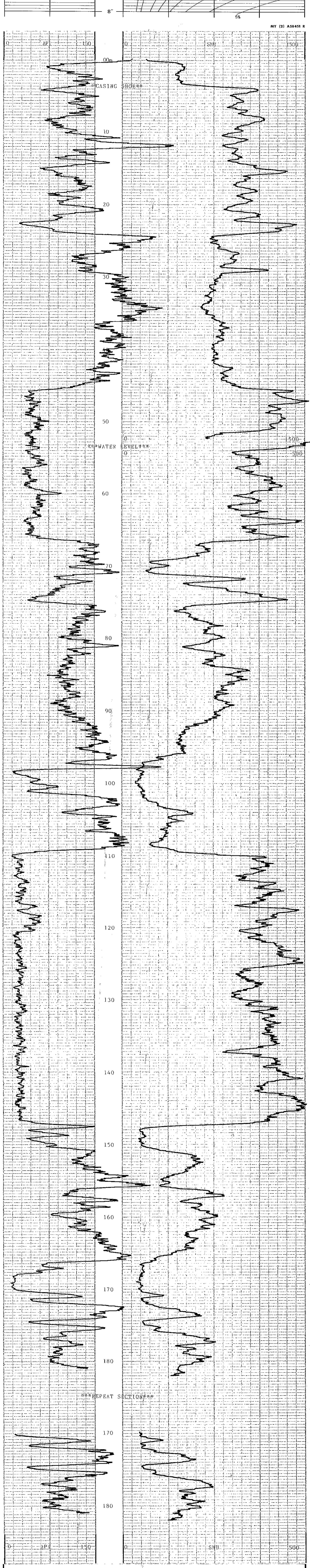
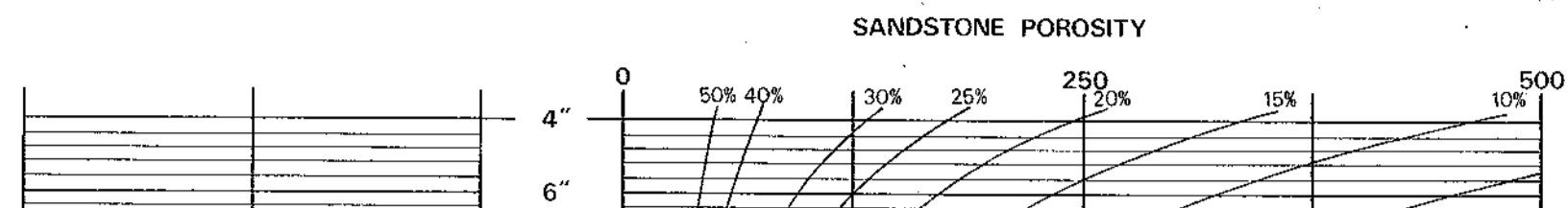
739





NEUTRON-NEUTRON GAMMA RAY			
BOREHOLE	QHR 87-012		
CLIENT	QUINTETTE		
AREA	GRIZZLY		
COUNTRY	CANADA		
DATE LOGGED	87 06 17		
DEPTH SCALE 1:200			
2 OF 5 LOGS			
BOREHOLE DATA	REFER TO LITHOLOGY LOG		
OPERATION DATA	REFER TO LITHOLOGY LOG		
EQUIPMENT AND RECORDING DATA			
LOG	TAPING	PANEL	COEFF
N-N	LOG SPEED	7 FEET/SEC	NORM
Y	RECORDING	9	11.0
Y	REPEAT	9	---
Y	RECORDING	1	---
Y	RECORDING	1	1.78
REMARKS <b>739</b>			

GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0	150	0
API		SNU
		1500



GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0	150	0
		500

BOREHOLE	QHR 87-012	AREA	GRIZZLY
CLIENT	QUINTETTE	COUNTRY	CANADA







FOCUSSED ELECTRIC  
GAMMA RAY

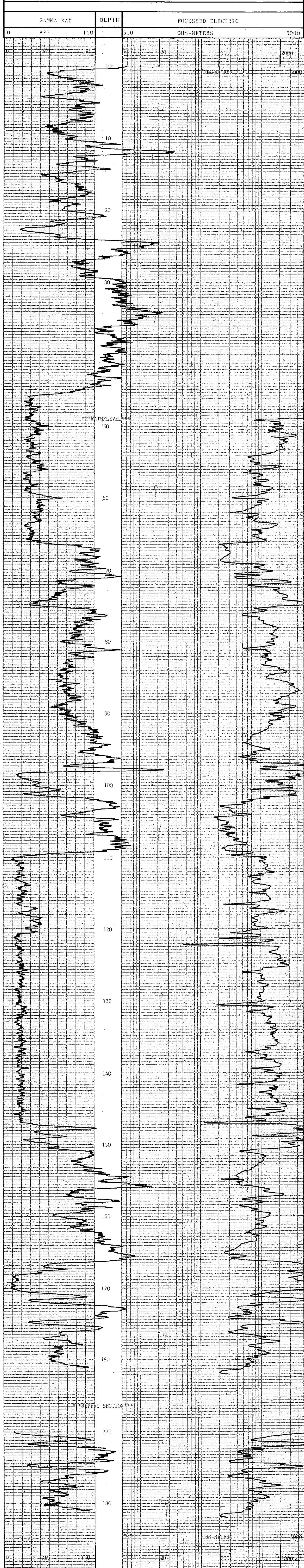
BOREHOLE QRR 87-012  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 17

DEPTH SCALE  
1:200

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

LOG	TAPPING	PANEL	DATE
LOG	RECORD	T.C.	NOV
TAPED	SPEED	SECS	1.0
F. B.	Y	9	D
GAMMA	Y	9	R
		9	2
		--	1.78
REMARKS	SOURCE 2.21 SURF		
	739		



0	API	150	5.0	OHM-METERS	5000
GAMMA RAY		DEPTH	FOCUSSED ELECTRIC		
BOREHOLE QRR 87-012		CLIENT QUINTETTE		AREA GRIZZLY	
				COUNTRY CANADA	







**COAL QUALITY LOG**

SONDE TYPE: \_\_\_\_\_  
 COAL COMBINATION: \_\_\_\_\_  
 SONDE: \_\_\_\_\_

LOG SUITE: \_\_\_\_\_  
 GAMMA RAY: \_\_\_\_\_  
 L.S. DENSITY: \_\_\_\_\_

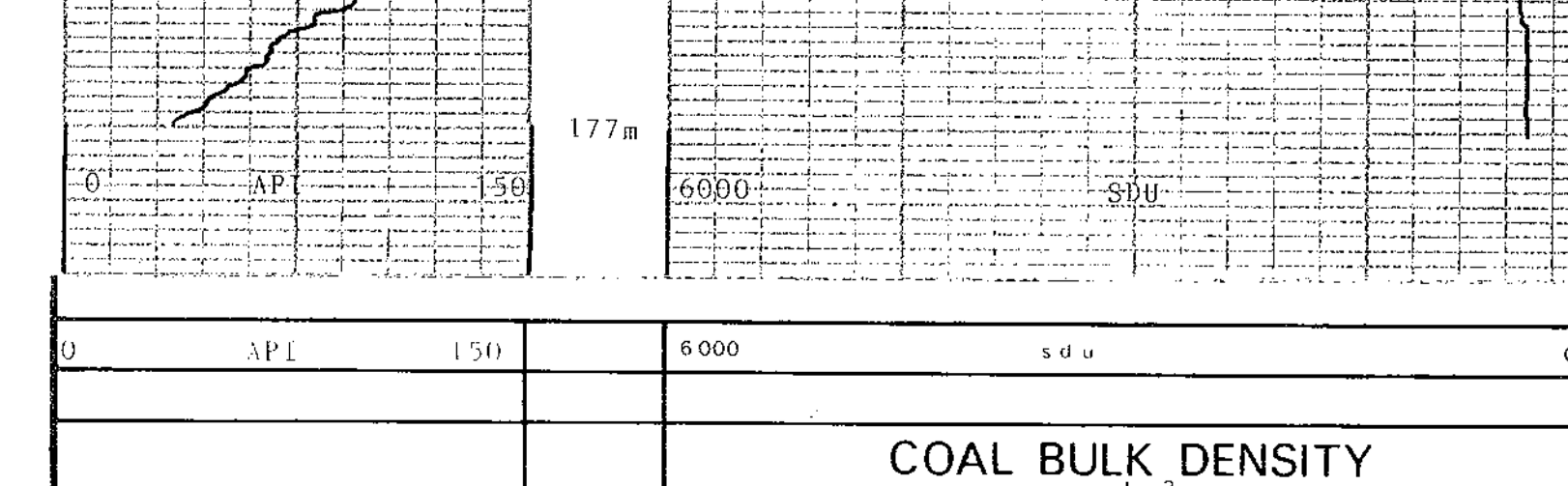
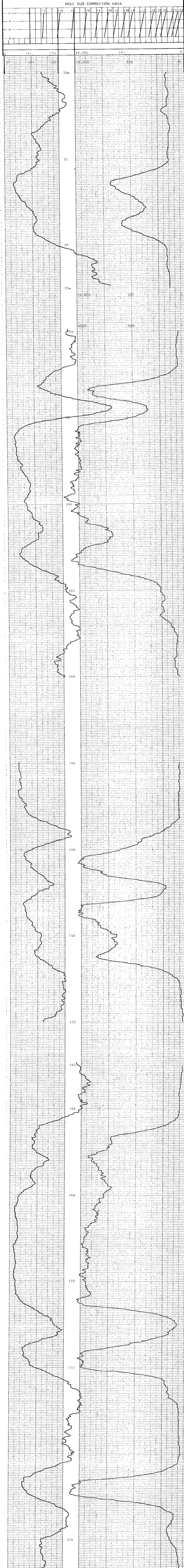
BOREHOLE DATA: refer to lithology log  
 OPERATION DATA: refer to lithology log  
 EQUIPMENT AND RECORDING DATA: \_\_\_\_\_  
 COAL COMBINATION SOURCE: \_\_\_\_\_

LOG TAPPING: \_\_\_\_\_  
 LOG SHEET: \_\_\_\_\_  
 LOG NUMBER: \_\_\_\_\_

BOREHOLE: QHR 87-012  
 CLIENT: QUINTETTE  
 AREA: GRIZZLY  
 COUNTRY: CANADA  
 DATE LOGGED: 87 06 17

DEPTH SCALE: 0 to 18.000  
 LOG SCALE: 0 to 6000

**B P B COAL QUALITY LOG**

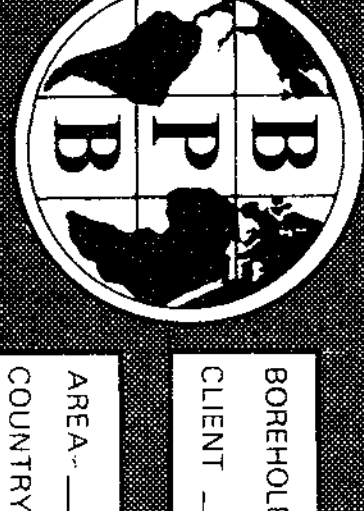


BOREHOLE: QHR 87-012  
 CLIENT: QUINTETTE

AREA: GRIZZLY  
 COUNTRY: CANADA

**COAL QUALITY LOG**





BOREHOLE QHR 87-012  
 CLIENT QUINLETTE

AREA GRIZZLY  
 DEPTH SCALE 1:20  
 COUNTRY CANADA  
 DATE LOGGED 87 06 17

SEAM THICKNESS LOG

SEAM THICKNESS LOG

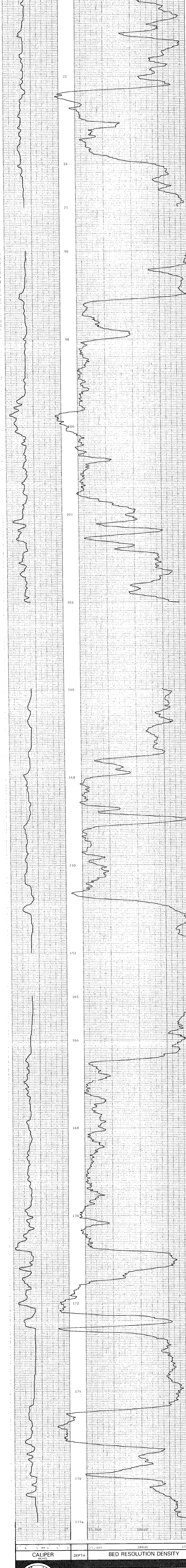
SONDE TYPE  
 COAL COMBINATION  
 SONDE

LOG SUITE  
 CALIPER  
 BR DENSITY

REMARKS  
**739**

BOREHOLE DATA REF: TO LITHOLOGY LOG  
 OPERATION DATA REF: TO LITHOLOGY LOG  
 EQUIPMENT AND RECORDING DATA  
 COAL COMBINATION SONDE  
 LOG LOG SHEET NUMBER 739  
 COURSE X 2 K 2.3 1.65  
 COURSE Y 2 K 3.3 1.65  
 COURSE Z 2 K 3.3 1.65  
 REFER TO LITHOLOGY LOG  
 REFER TO LITHOLOGY LOG

**B P B SEAM THICKNESS LOG**



CALIPER INCHES DEPTH BED RESOLUTION DENSITY



BOREHOLE QHR 87-012 AREA GRIZZLY  
 CLIENT QUINLETTE COUNTRY CANADA

**SEAM THICKNESS LOG**



QHR 87013  
GRIZZLY

LOG DEPTH 0140.00  
TRUE DEPTH 0120.61  
TILT 32.09 DG  
BEARING 297.69 DG  
NORTHING -001.00  
EASTING -035.34

LOG DEPTH 0130.00  
TRUE DEPTH 0112.14  
TILT 31.42 DG  
BEARING 297.68 DG  
NORTHING -056.29  
EASTING -032.87

LOG DEPTH 0120.00  
TRUE DEPTH 0103.61  
TILT 30.81 DG  
BEARING 299.45 DG  
NORTHING -051.68  
EASTING -030.44

LOG DEPTH 0110.00  
TRUE DEPTH 0095.02  
TILT 30.69 DG  
BEARING 299.51 DG  
NORTHING -047.22  
EASTING -027.92

LOG DEPTH 0100.00  
TRUE DEPTH 0086.42  
TILT 30.84 DG  
BEARING 299.18 DG  
NORTHING -042.78  
EASTING -025.41

LOG DEPTH 0090.00  
TRUE DEPTH 0077.83  
TILT 31.04 DG  
BEARING 210.12 DG  
NORTHING -038.30  
EASTING -022.91

LOG DEPTH 0080.00  
TRUE DEPTH 0069.26  
TILT 31.44 DG  
BEARING 211.25 DG  
NORTHING -033.84  
EASTING -020.32

LOG DEPTH 0070.00  
TRUE DEPTH 0060.73  
TILT 31.06 DG  
BEARING 210.70 DG  
NORTHING -029.38  
EASTING -017.61

LOG DEPTH 0060.00  
TRUE DEPTH 0052.16  
TILT 30.99 DG  
BEARING 210.43 DG  
NORTHING -024.94  
EASTING -014.98

LOG DEPTH 0050.00  
TRUE DEPTH 0043.51  
TILT 29.83 DG  
BEARING 211.59 DG  
NORTHING -020.62  
EASTING -012.44

LOG DEPTH 0040.00  
TRUE DEPTH 0034.84  
TILT 30.09 DG  
BEARING 211.46 DG  
NORTHING -016.38  
EASTING -009.83

LOG DEPTH 0030.00  
TRUE DEPTH 0026.19  
TILT 30.08 DG  
BEARING 210.81 DG  
NORTHING -012.10  
EASTING -007.22

LOG DEPTH 0020.00  
TRUE DEPTH 0017.54  
TILT 30.13 DG  
BEARING 211.09 DG  
NORTHING -007.80  
EASTING -004.55

LOG DEPTH 0010.00  
TRUE DEPTH 0008.89  
TILT 30.54 DG  
BEARING 210.44 DG  
NORTHING -003.50  
EASTING -002.05

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 30.71 DG  
BEARING 209.62 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00

TILT = 30.36 DG

BEARING = 211.21 DG

DEPTH = 0020.00

TILT = 29.90 DG

BEARING = 210.98 DG

DEPTH = 0030.00

TILT = 30.27 DG

BEARING = 210.64 DG

DEPTH = 0040.00

TILT = 29.91 DG

BEARING = 212.28 DG

DEPTH = 0050.00

TILT = 29.75 DG

BEARING = 210.90 DG

DEPTH = 0060.00

TILT = 30.44 DG

BEARING = 209.95 DG

DEPTH = 0070.00

TILT = 31.68 DG

BEARING = 211.44 DG

DEPTH = 0080.00

TILT = 31.19 DG

BEARING = 211.06 DG

DEPTH = 0090.00

TILT = 30.89 DG

BEARING = 209.17 DG

DEPTH = 0100.00

TILT = 30.80 DG

BEARING = 209.18 DG

DEPTH = 0110.00

TILT = 30.58 DG

BEARING = 209.84 DG

DEPTH = 0120.00

TILT = 31.03 DG

BEARING = 209.07 DG

DEPTH = 0130.00

TILT = 31.81 DG

BEARING = 206.30 DG

DEPTH = 0140.00

TILT = 32.36 DG

BEARING = 209.09 DG

DATE 870618  
JOB NUMBER 87013  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 30  
L. CELL 1 CPS 1 256  
L. CELL 1 TILT 2 -30  
L. CELL 1 CPS 2 102  
L. CELL 2 TILT 1 30  
L. CELL 2 CPS 1 256  
L. CELL 2 TILT 2 -30  
L. CELL 2 CPS 2 104  
MAG 1 CENTRE 179  
MAG 2 CENTRE 181  
MAG 3 CENTRE 100  
L. CELL 1 CENTRE 182  
L. CELL 2 CENTRE 100  
MAG DECL 24  
STOP DEPTH 2

QHR87013  
GRIZZLY





BOREHOLE QHR 87-013  
CLIENT QUINETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 18

DEPTH SCALE 1:200  
LOG SCALE 1:200

COAL

LITHOLOGY LOG

SONDE TYPE

COAL COMBINATION

LOG SUITE

GAMMA RAY  
L.S. DENSITY  
CALIPER

REMARKS DATA	BOREHOLE DATA
ELEVATION OF T.O.	GROUND LEVEL
MEASUREMENTS FROM	SONDE
DEPTH REACHED	DEPTH
CASING SHOE	DEPTH
BIT SIZES	TO
CASING SIZES	TO
FLUID DATA	
NATURE	
SIG	
LEVEL	
VISCOSITY	
TEMP. AT PRESSURE	
BIT	

OPERATION DATA

FIRST READING 14.2m  
LAST READING 14.2m  
ANTENNA LOGGED 14.2m  
UNIT-TRUCK No. 47-113  
ENGINEER V. LIBERTO  
WITNESS

739

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 REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL	
GAMMA RAY	153	241	Y	9	D	9	1	-	1.75	142	00	142
L.S. DENSITY		3993	Y	9	D	9	3	7.60	-	143	01	142
CALIPER	SIDEWALL POSITION		Y	9	D	9	3	-	1.0	143	01	142

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)			
FROM	TO	INTERVAL	TOTAL
1.16m	1.08m	6.2m	
1.22m	10.2m	5.5m	
1.4m	11.6m	0.7m	2.7m

ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	A-N	1:200		
221	F.E.	1:200		
291	VERT.			

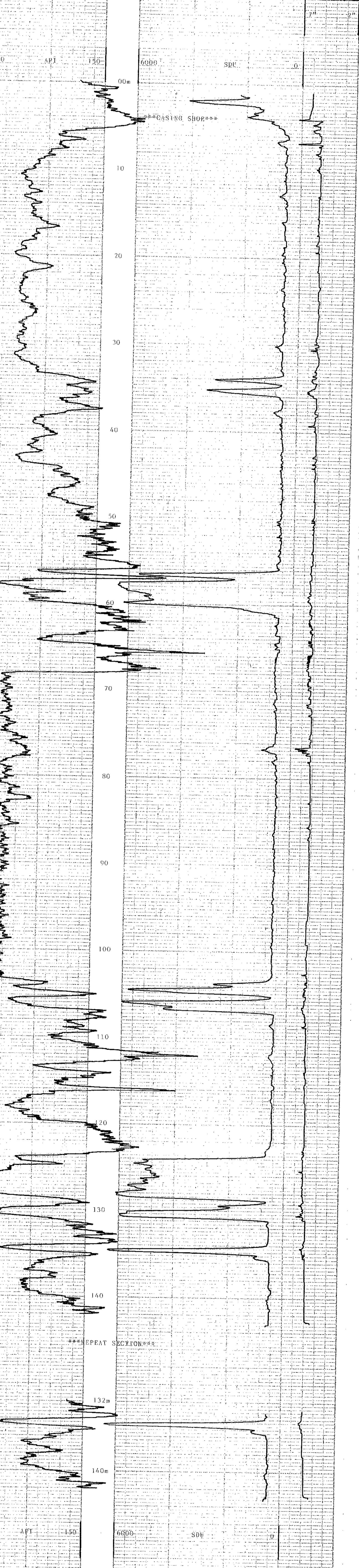
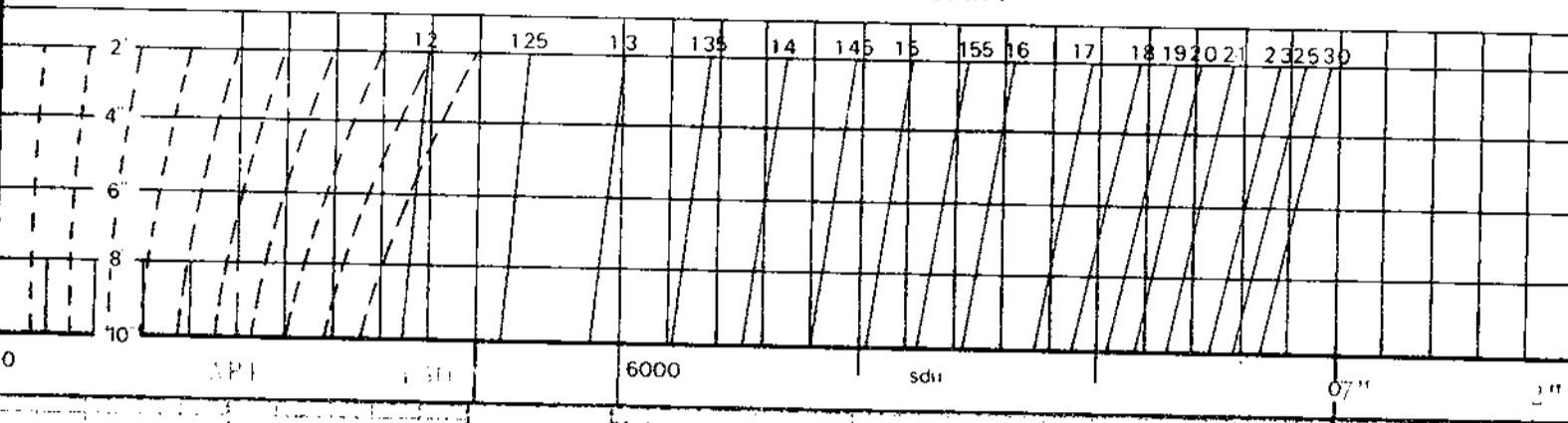
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

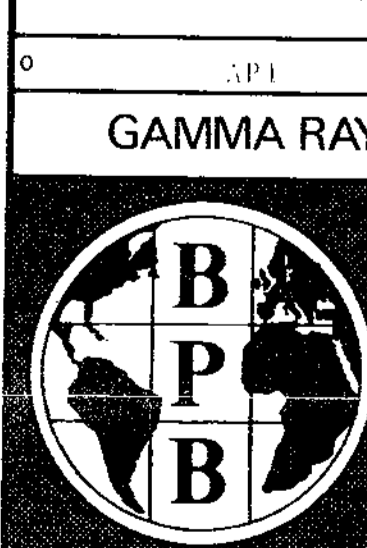
JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	IPS	CPIS

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



BOREHOLE QHR 87-013 AREA GRIZZLY  
CLIENT QUINETTE COUNTRY CANADA

COAL LITHOLOGY LOG

















BOREHOLE QHR 87-013  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA  
 DATE LOGGED 87.09.18

DEPTH SCALE  
 1:20  
 5.0m - 5.0065

SEAM THICKNESS LOG

EQUIPMENT AND RECORDING DATA

SONDE TYPE

COAL COMBINATION SONDE

LOG SUITE  
 CALIPER  
 BR DENSITY

BOREHOLE DATA REFER TO LITHOLOGY LOG

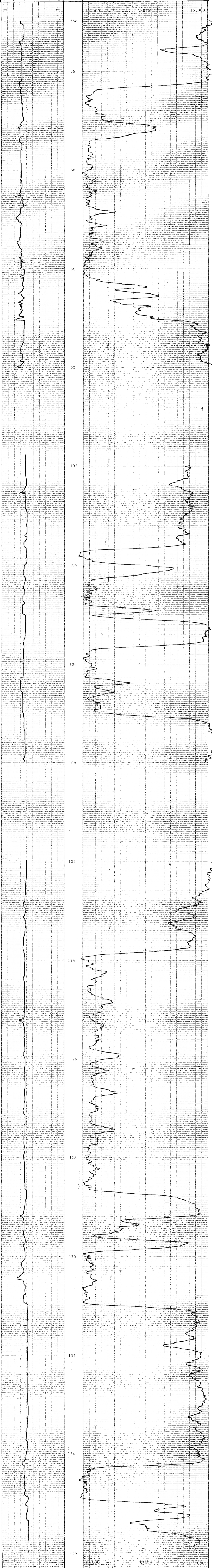
OPERATION DATA REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM TO

SEAM THICKNESS LOG INTERVALS

**B P B SEAM THICKNESS LOG**



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	25,000	SBRDF 15,000



BOREHOLE QHR 87-013  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA

**SEAM THICKNESS LOG**





LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

SONDE TYPE  
COAL  
COMBINATION  
SONDE

COAL  
LITHOLOGY  
LOG

BOREHOLE QHR 87-014  
CLIENT QUINTETTE  
AREA CRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 20  
DEPTH SCALE 1:200  
1 of 3 LOGS

BOHEQUE DATA  
ELEVATION OF P.G. GROUND LEVEL  
MEASUREMENT FROM G.L. 0.1m  
DEPTH REACHED 207.4m  
CASING SQUE 3.0m  
BIT SIZES 1 7/8 TO 3/8 2 3/8 TO 1/2 4 TO 1/4  
CASING SIZES 1 1/2 TO 3/8 2 TO 1/4

FLUID DATA  
SOURCE AIR/WATER  
SG 1.00 8/2/82  
LEVEL 10.5m  
VISCOSITY N/A  
PHI IN FORM N/A

OPERATION DATA  
FIRST READING 20.3m  
LAST READING 0.0m  
INTERVAL LOGGED 20.3m  
UNIT-TRUCK No. 42/V215  
ENGINEER A. LIBERTON  
WITNESSES

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EQUIPMENT AND RECORDING DATA														
COAL COMBINATION SONDE														
LOG	EQUIPMENT	TAPING	PANEL	CAL	DEPTHS		SEAM LOG RUN							
SONDE	SOURCE	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	T.C SECS	NORM	COEFF	FROM	TO	INTERVAL			
GAMMA RAY	153	Y	9	D	9	1	---	1.78	205	00	205			
L.S. DENSITY	5863	Y	9	D	9	.3	7.60	---	206	01	205			
CALIPER	SIDEWALL POSITION													

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)						INTERVAL TOTAL
FROM	201m	156m	76m			
TO	180m	147m	66m			
INTERVAL	21m	09m	10m			40m

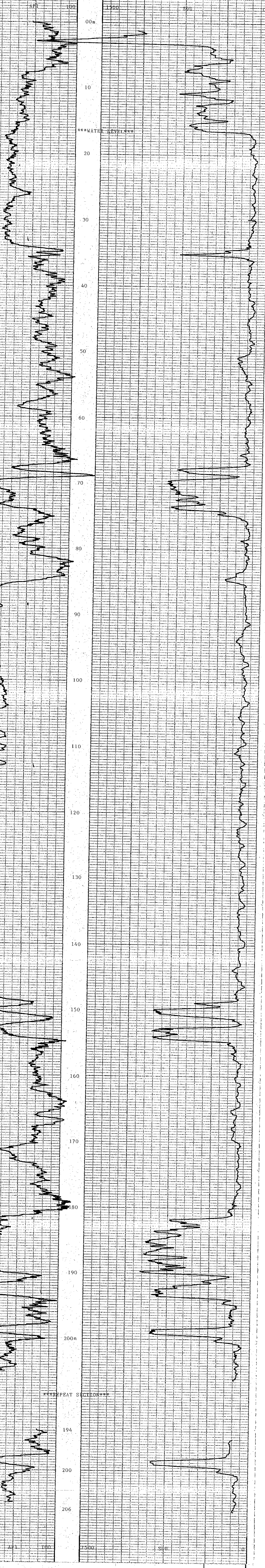
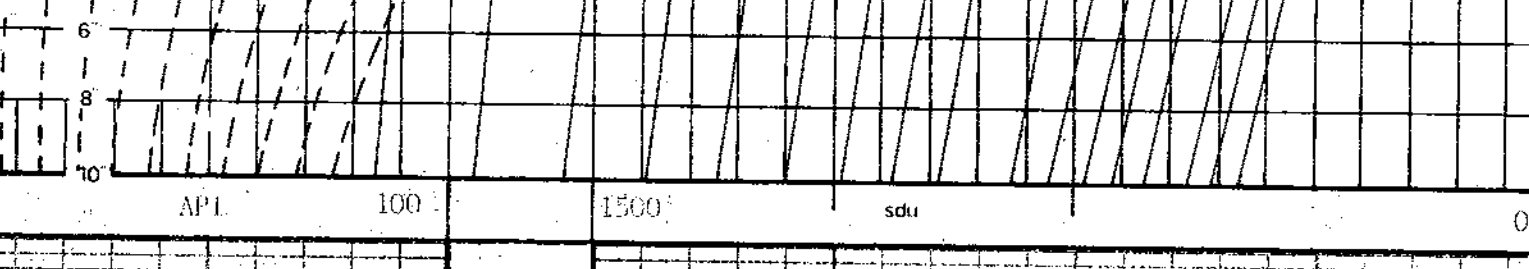
ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	N-N	1:200		REFER TO ADDITIONAL HEADINGS

**BPB COAL LITHOLOGY LOG**

CALIBRATION DATA					
JIG No.	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>
JIG MARK SHOWN AT ABOVE VALUE		JIG No.	SPAN	NORM	SDU - CPS

GAMMA RAY	DEPTH	BULK DENSITY
		g/cm <sup>3</sup>

**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY
		g/cm <sup>3</sup>

BOREHOLE QHR 87-014 AREA CRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA  
**COAL LITHOLOGY LOG**







NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-014  
CLIENT QUINTEITE

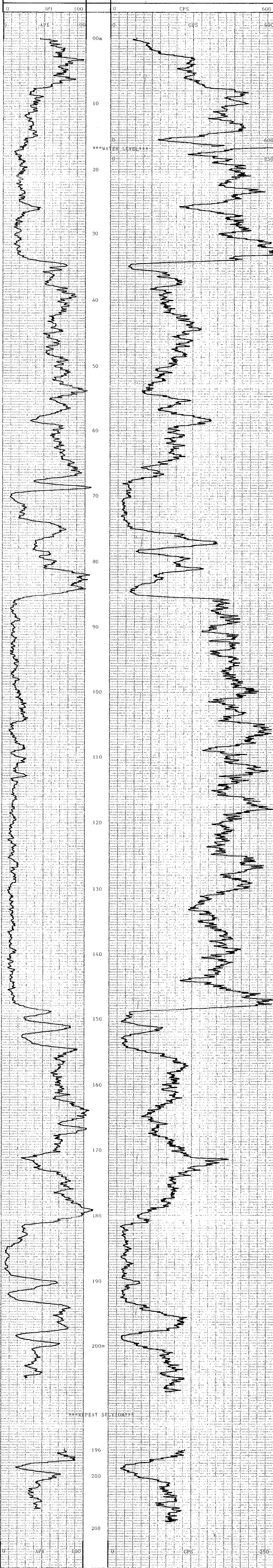
AREA GRIZZLY  
COUNTY CANADA  
DATE LOGGED 87 06 20

DEPTH SCALE  
1:200  
2 OF 3 LOGS

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

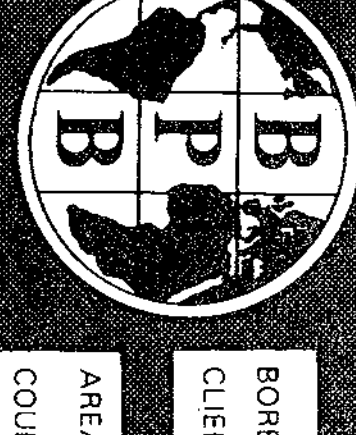
LOG	TAPING	PANEL	COPIES
N-N	LOG RECORDED AT 1.5 INCHES	1	1.0
GAMMA	Y 9 9 0 9 1	1	1.78
REMARKS	*** LOGS RUN IN RODS ***		

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BOREHOLE	QHR 87-014	AREA	GRIZZLY
CLIENT	QUINTEITE	COUNTRY	CANADA





BOREHOLE QHR 87-014  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTY CANADA

DATE LOGGED 87 06 20

3 OF 5 LOGS

**COAL QUALITY LOG**

**LOG**

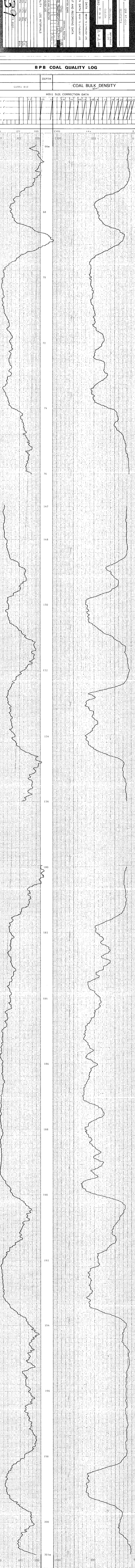
BOREHOLE DATA REFER TO LITHOLOGY LOG  
 OPERATION DATA REFER TO LITHOLOGY LOG  
 EQUIPMENT AND RECORDING DATA REFER TO LITHOLOGY LOG

COAL COMBINATION SCHEME SERIAL POSITION  
 LOG NUMBER 150  
 LOG NAME 150  
 LOG DATE 87 06 20  
 LOG TIME 12:00  
 LOG LOCATION 150  
 LOG SURVEY 150  
 LOG SCALE 1:20  
 SOURCE SCHEME AND CALIBRATION REFER TO LITHOLOGY LOG

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

REMARKS  
 151 N. SOUS

**BPB COAL QUALITY LOG**





QHR 87015  
GRIZZLY

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 1.26 DG  
BEARING 47.00 DG  
NORTHING +000.45  
EASTING +000.32

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT .93 DG  
BEARING 48.62 DG  
NORTHING +000.31  
EASTING +000.16

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.17 DG  
BEARING 56.67 DG  
NORTHING +000.20  
EASTING +000.04

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.13 DG  
BEARING 306.80 DG  
NORTHING +000.09  
EASTING -000.12

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT .74 DG  
BEARING 217.89 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0005.00  
TILT = 1.17 DG  
BEARING = 128.70 DG

DEPTH = 0010.00  
TILT = 1.52 DG  
BEARING = 35.70 DG

DEPTH = 0015.00  
TILT = .82 DG  
BEARING = 351.54 DG

DEPTH = 0020.00  
TILT = .82 DG  
BEARING = 77.63 DG

DEPTH = 0025.00  
TILT = 1.04 DG  
BEARING = 83.43 DG

DEPTH = 0030.00  
TILT = 1.04 DG  
BEARING = 19.60 DG

DEPTH = 0035.00  
TILT = .37 DG  
BEARING = 130.76 DG

DEPTH = 0040.00  
TILT = 1.48 DG  
BEARING = 74.41 DG

DEPTH = 0045.00  
TILT = 3.35 DG  
BEARING = 197.51 DG

DATE 870621  
JOB NUMBER 7015  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 285  
MAG 3 MIN 155  
L. CELL 1 TILT 1 10  
L. CELL 1 CPS 1 206  
L. CELL 1 TILT 2 -10  
L. CELL 1 CPS 2 152  
L. CELL 2 TILT 1 10  
L. CELL 2 CPS 1 207  
L. CELL 2 TILT 2 -10  
L. CELL 2 CPS 2 153  
MAG 1 CENTRE 180  
MAG 2 CENTRE 181  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 179

MAG DECL 24  
STOP DEPTH 2.5

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BOREHOLE QHR 87-015  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 21  
DEPTH SCALE 1:200  
LOGS 10-5

**COAL LITHOLOGY LOG**

SONDE TYPE  
COAL COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L S DENSITY  
CALIPER

BOREHOLE DATA	
PERMANENT DATUM	GROUND LEVEL
ELEVATION OF P.D.	
MEASUREMENTS FROM	BPE
DEPTH REACHED	G.L.
CASING SHOE	56.7m
BIT SIZES	2.0m
	1 7/32 TO 2.0
	2 5/8 TO 2.0
	3 TO
	4 TO
	5 1/8 TO
	6 5/8 TO 2.0
	2 TO

FLUID DATA	
NATURE	AIR/WATER
SG	1.00 g/cc
LEVEL	17.8m
VISCOSITY	N/A
Rm at meas. temp	N/A
BHT	N/A

OPERATION DATA	
FIRST READING	42m
LAST READING	00m
INTERVAL LOGGED	42m
UNIT-TRUCK No	42/V215
ENGINEER	A. TEBRETON
WITNESS	

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**EQUIPMENT AND RECORDING DATA**

COAL COMBINATION SONDE														
LOG	EQUIPMENT			TAPING			PANEL		CAL COEFF	DEPTHS			SEAM LOG RUN	
	SONDE	SOURCE	CAUBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS		NORM	FROM	TO		INTERVAL
GAMMA RAY			241	Y	9	D	9	1		1.78	42	00	42	
L S DENSITY	133	5863	3993	Y	9	D	9	.3	7.60		43	01	42	
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3		1.0	43	01	42	

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)			
FROM	39m		
TO	25m		INTERVAL TOTAL
INTERVAL	14m		14m

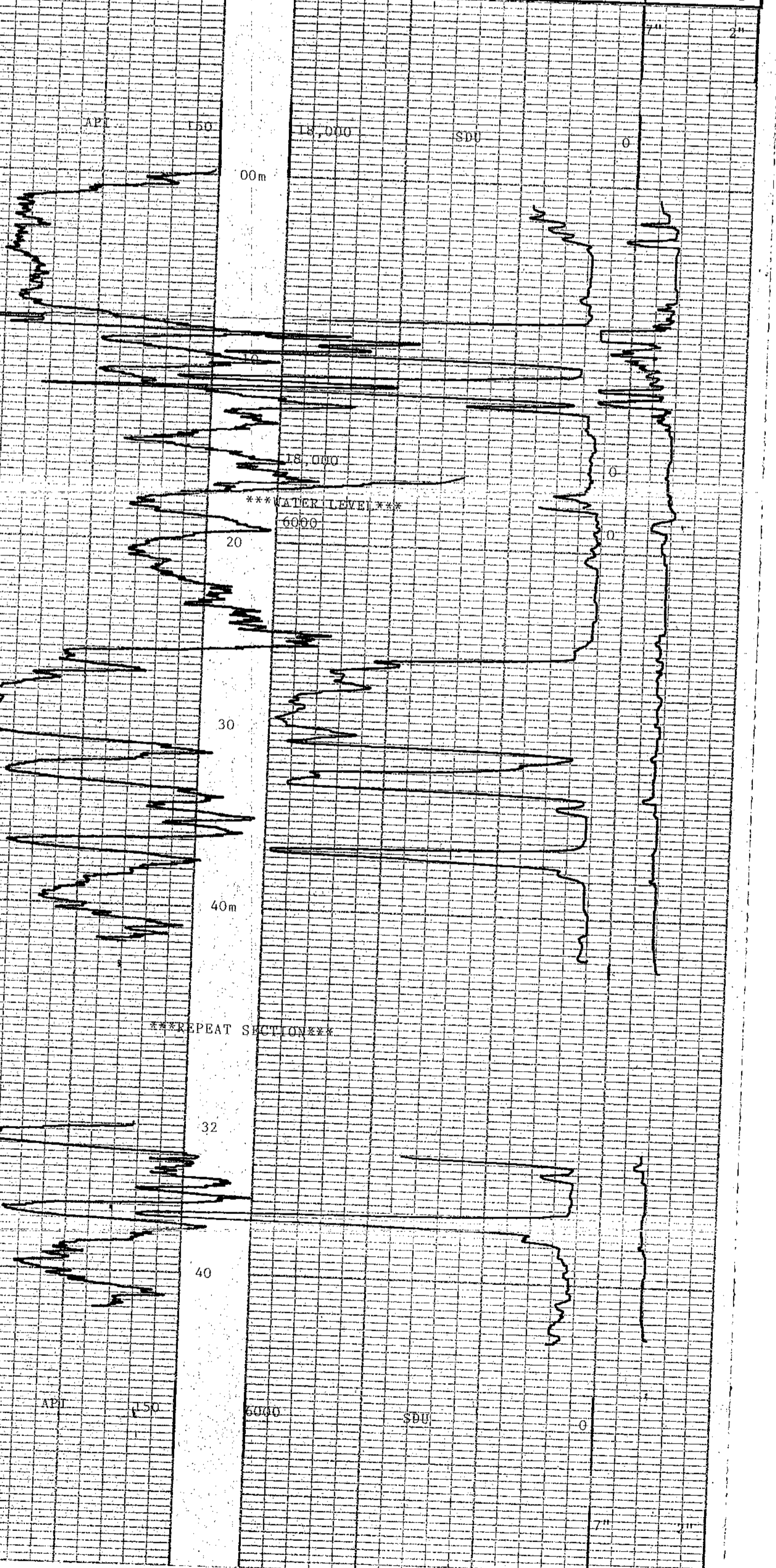
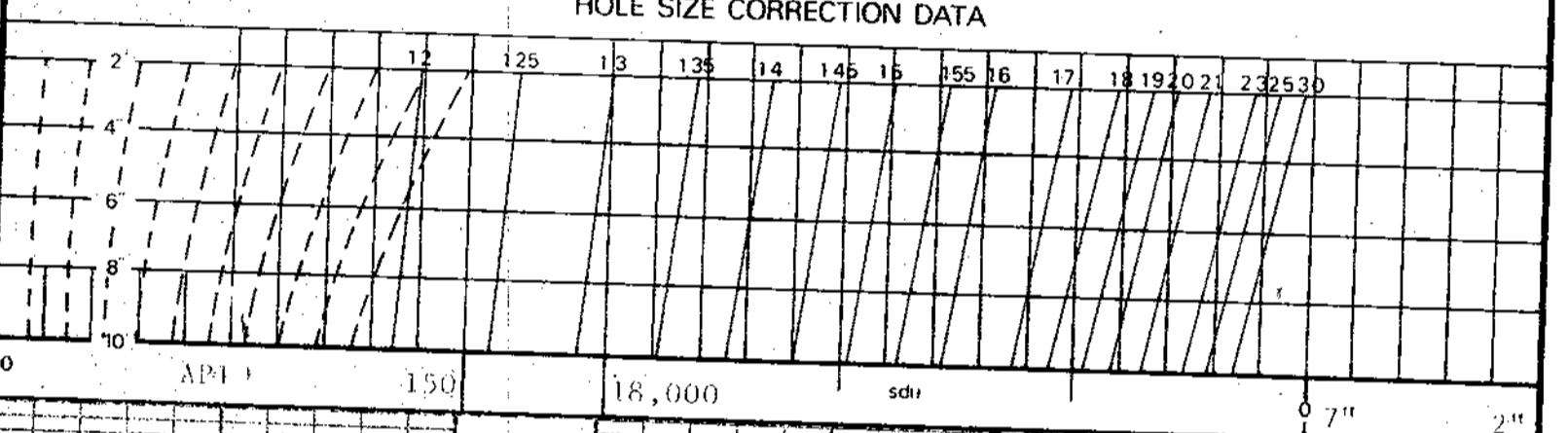
ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	N-N	1:200		REFER TO ADDITIONAL HEADINGS
221	F.E.	1:200		
231	VERT.			

**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE		JIG No	SPAN	NORM	SDU = CPS	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



BOREHOLE QHR 87-015 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

**COAL LITHOLOGY LOG**





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-015

CLIENT QUINTETTE

DEPTH SCALE  
1:200

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 21

2 OF 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

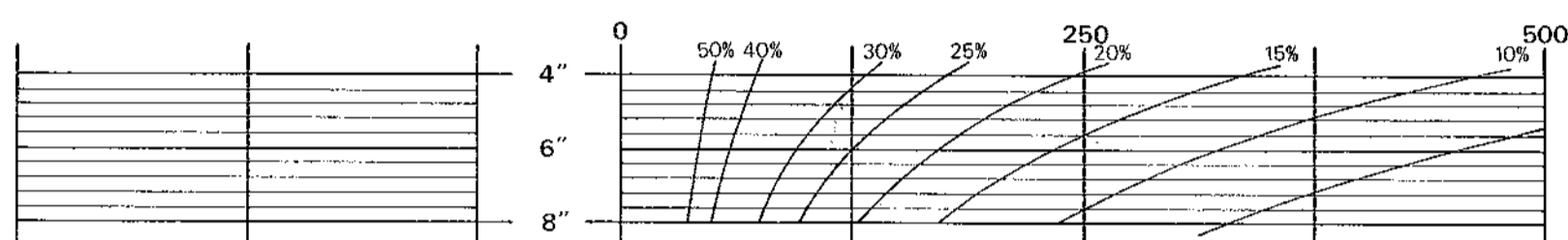
LOG	TAPING	RECORD	DIRECTOR	SPEED	T.C.	PANEL	CAL
		SPEED	REPLAY	SECS	NORM		COEFF
N-N	Y	9	D	9	1	11.0	—
GAMMA	Y	9	R	9	1	—	1.78
		SONDE	215	SONDE	4512		

REMARKS

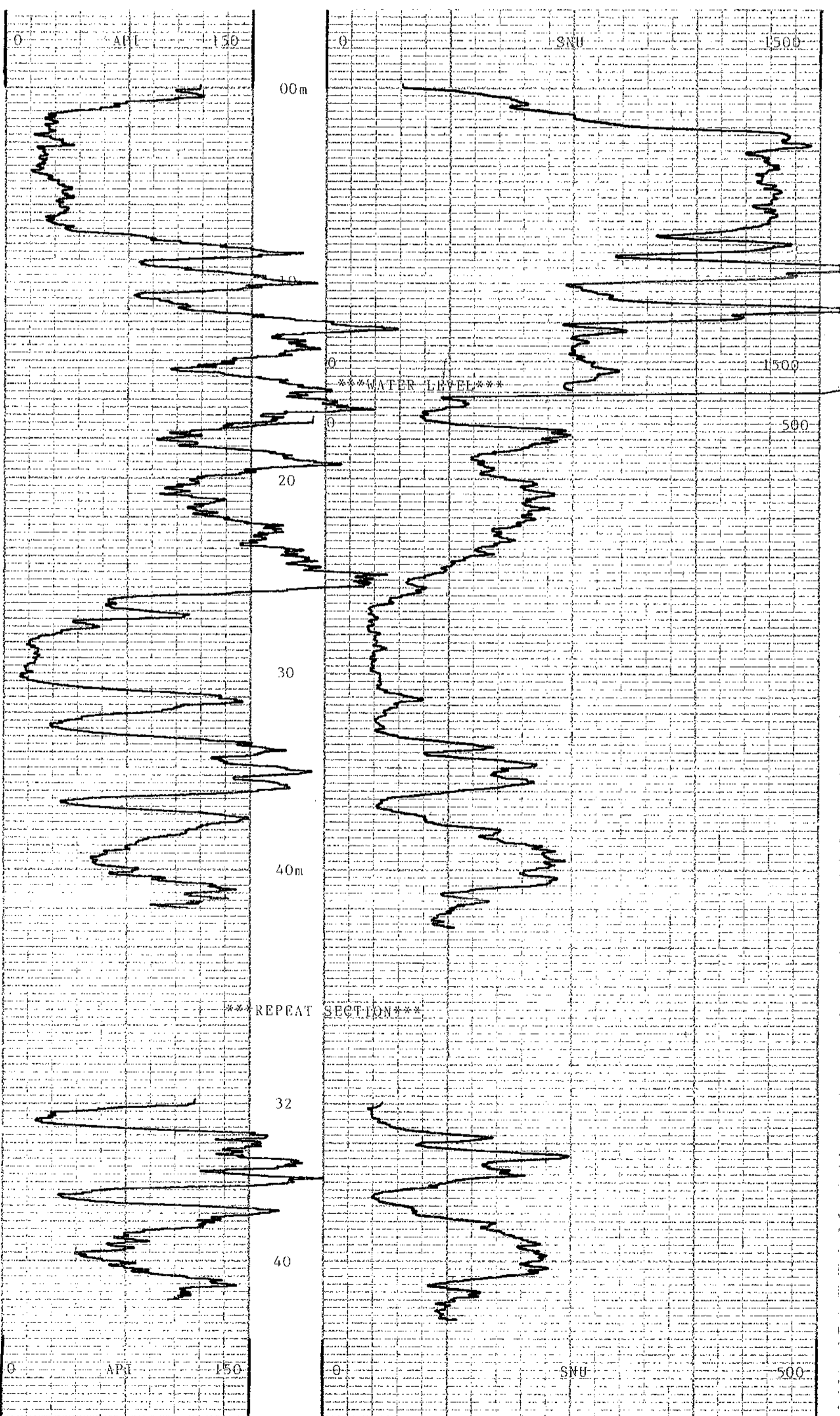
739

GAMMA RAY	DEPTH	NEUTRON-NEUTRON
API	150	SNU
		1500

SANDSTONE POROSITY



MY (2) A58451 R



GAMMA RAY	DEPTH	NEUTRON-NEUTRON
API	150	SNU
		500



BOREHOLE QHR 87-015  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA





FOCUSSED ELECTRIC  
GAMMA RAY

BOREHOLE QHR 87-015

CLIENT QUINTETTE

DEPTH SCALE  
1:200

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 87 06 21

3 OF 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

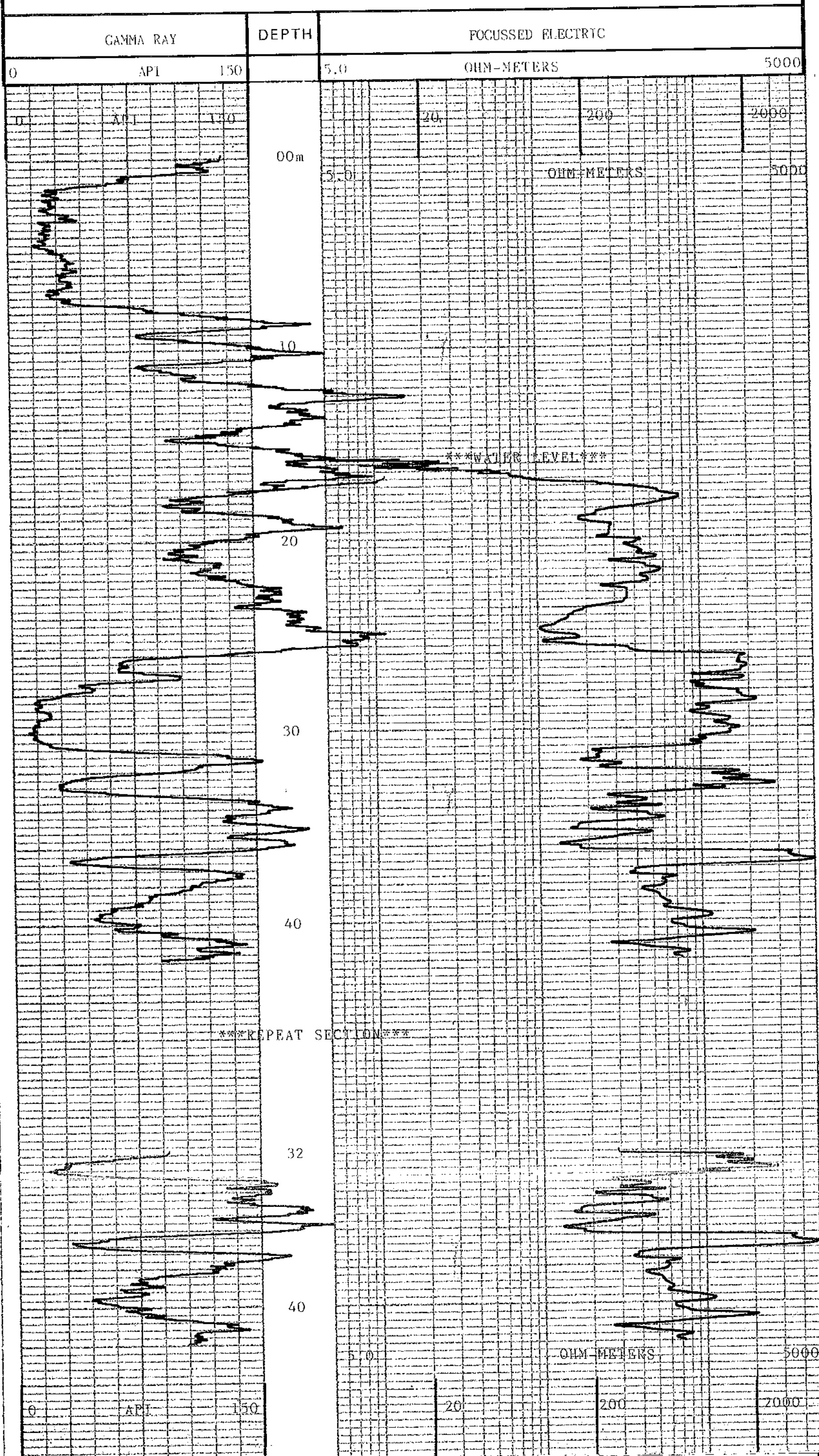
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	RECORDING	REFLECTOR	SPEED	T.C.	PANEL	COAL
	TAPED	SPEED	REPLAY	SECS	NORM		COEFF
F.E.	Y	9	D	9	.3		1.0
GAMMA	Y	9	R	9	1		1.78
		SONDE NO. 221		SOURCE			

REMARKS

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BOREHOLE QHR 87-015  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA





BOREHOLE QHR 87-015  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 87 06 21

DEPTH SCALE  
1:20

4 OF 5 LOGS

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SOURCE

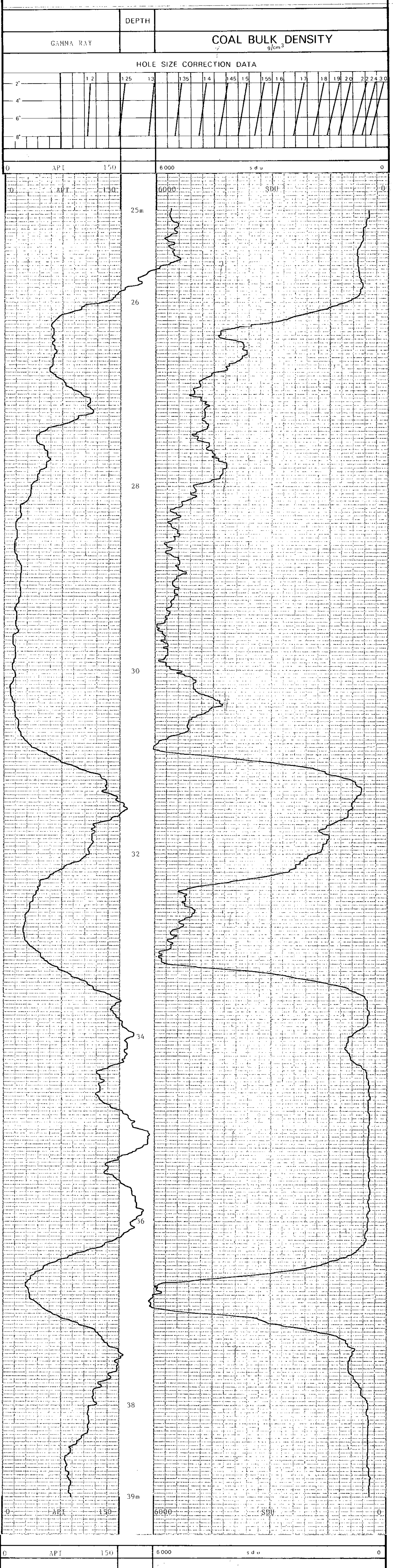
LOG	TAPPING	SOEWALL POSITION	COAL
	LOG	APPROX. SPEED	DEPTH
		RECORDING	
		SPEED	
		SECS	
		NORM	
GAMMA	Y	2	2
GAMMA	Y	2	2
LS DENSITY	Y	2	2
		0.3	1.50

SONDE TYPE:  
COAL COMBINATION SONDE

LOG SUITE  
GAMMA RAY  
LS DENSITY

REMARKS  
**739**

**BPB COAL QUALITY LOG**



0	API	150	6000	SDU	0
GAMMA RAY			COAL BULK DENSITY $g/cm^3$		
DEPTH					



BOREHOLE QHR 87-015  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA

**COAL QUALITY LOG**



QHR 87016  
GRIZZLY

LOG DEPTH 0140.00  
TRUE DEPTH 0120.29  
TILT 35.29 DG  
BEARING 44.72 DG  
NORTHING +051.53  
EASTING +045.51

LOG DEPTH 0130.00  
TRUE DEPTH 0112.13  
TILT 34.20 DG  
BEARING 44.12 DG  
NORTHING +047.42  
EASTING +041.44

LOG DEPTH 0120.00  
TRUE DEPTH 0103.86  
TILT 33.03 DG  
BEARING 41.77 DG  
NORTHING +043.39  
EASTING +037.53

LOG DEPTH 0110.00  
TRUE DEPTH 0095.48  
TILT 31.85 DG  
BEARING 42.04 DG  
NORTHING +039.32  
EASTING +033.90

LOG DEPTH 0100.00  
TRUE DEPTH 0086.99  
TILT 31.25 DG  
BEARING 40.95 DG  
NORTHING +035.40  
EASTING +030.36

LOG DEPTH 0090.00  
TRUE DEPTH 0078.44  
TILT 31.23 DG  
BEARING 37.61 DG  
NORTHING +031.48  
EASTING +026.95

LOG DEPTH 0080.00  
TRUE DEPTH 0069.89  
TILT 31.01 DG  
BEARING 35.97 DG  
NORTHING +027.38  
EASTING +023.80

LOG DEPTH 0070.00  
TRUE DEPTH 0061.32  
TILT 30.60 DG  
BEARING 35.54 DG  
NORTHING +023.21  
EASTING +020.77

LOG DEPTH 0060.00  
TRUE DEPTH 0052.71  
TILT 30.62 DG  
BEARING 36.43 DG  
NORTHING +019.86  
EASTING +017.81

LOG DEPTH 0050.00  
TRUE DEPTH 0044.18  
TILT 30.81 DG  
BEARING 36.55 DG  
NORTHING +014.97  
EASTING +014.79

LOG DEPTH 0040.00  
TRUE DEPTH 0035.49  
TILT 29.83 DG  
BEARING 35.54 DG  
NORTHING +010.89  
EASTING +011.75

LOG DEPTH 0030.00  
TRUE DEPTH 0026.82  
TILT 28.52 DG  
BEARING 34.69 DG  
NORTHING +006.83  
EASTING +009.85

LOG DEPTH 0020.00  
TRUE DEPTH 0018.05  
TILT 27.24 DG  
BEARING 34.97 DG  
NORTHING +002.31  
EASTING +006.14

LOG DEPTH 0010.00  
TRUE DEPTH 0009.14  
TILT 26.86 DG  
BEARING 33.47 DG  
NORTHING -000.84  
EASTING +002.51

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 27.02 DG  
BEARING 31.13 DG  
NORTHING +000.00  
EASTING +000.00

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DEPTH = 0010.00  
 TILT = 26.71 DG  
 BEARING = 35.68 DG  
 DEPTH = 0020.00  
 TILT = 27.78 DG  
 BEARING = 34.25 DG  
 DEPTH = 0030.00  
 TILT = 29.26 DG  
 BEARING = 35.13 DG  
 DEPTH = 0040.00  
 TILT = 30.39 DG  
 BEARING = 35.94 DG  
 DEPTH = 0050.00  
 TILT = 30.83 DG  
 BEARING = 37.35 DG  
 DEPTH = 0060.00  
 TILT = 30.40 DG  
 BEARING = 35.51 DG  
 DEPTH = 0070.00  
 TILT = 30.80 DG  
 BEARING = 35.58 DG  
 DEPTH = 0080.00  
 TILT = 31.22 DG  
 BEARING = 36.36 DG  
 DEPTH = 0090.00  
 TILT = 31.25 DG  
 BEARING = 38.85 DG  
 DEPTH = 0100.00  
 TILT = 31.25 DG  
 BEARING = 43.04 DG  
 DEPTH = 0110.00  
 TILT = 32.44 DG  
 BEARING = 41.04 DG  
 DEPTH = 0120.00  
 TILT = 33.62 DG  
 BEARING = 42.50 DG  
 DEPTH = 0130.00  
 TILT = 34.78 DG  
 BEARING = 45.73 DG  
 DEPTH = 0140.00  
 TILT = 35.80 DG  
 BEARING = 43.70 DG

DATE 870622  
 JOB NUMBER 87016  
 LOG LABEL 026 M  
 MAG 1 MAX 229  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 30  
 L. CELL 1 CPS 1 256  
 L. CELL 1 TILT 2 -30  
 L. CELL 1 CPS 2 102  
 L. CELL 2 TILT 1 30  
 L. CELL 2 CPS 1 256  
 L. CELL 2 TILT 2 -30  
 L. CELL 2 CPS 2 104  
 MAG 1 CENTRE 180  
 MAG 2 CENTRE 181  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 181  
 L. CELL 2 CENTRE 179  
 MAG DECL 24  
 STOP DEPTH 2

QHR 87016  
 GRIZZLY





SONDE TYPE  
COAL  
COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L.S DENSITY  
CALIPER

COAL  
LITHOLOGY  
LOG

PERMANENTATION	GROUND LEVEL
ELEVATION OF P.D.	
DRILLER	
DRILLER	
DEPTH REACHED	146.6m
CASING SHOE	3.0m
BIT SIZES	1 7 3/4 TO 3.0 2 5 1/8 TO 7D
CASING SIZES	1 6 5/8 TO 3.0 2 TO
FLUID DATA	
NATURE	AIR/WATER
LEVEL	127.4m
VISCOSITY	N/A
PH	N/A

BOREHOLE QHR 87-016  
CLIENT QUINTEITE  
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 22  
DEPTH SCALE 1:200  
1 OF 5 LOGS

OPERATION DATA

FIRST READING	14.4m
LAST READING	0.0m
INTERVAL LOGGED	14.4m
UNIT TRACK No.	42/V21.5
ENGINEER	A. LEBERTON
WITNESS	

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	TC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	153		241	Y	9	D	9	t	--	1.78	144	0	144	
L.S DENSITY		5863	3993	Y	9	D	9	.3	7.60	--	145	01	144	
CALIPER		SIDEWALL POSITION		Y	9	D	9	.3	--	1.0	145	01	144	

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

FROM	139m	112m	76m	12m	INTERVAL TOTAL
TO	125m	107m	68m	08m	
INTERVAL	14m	05m	08m	04m	31m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS	REMARKS
215	N-N	1:20C			
221	F.E.	1:20C			
231	VERT				

BPB COAL LITHOLOGY LOG

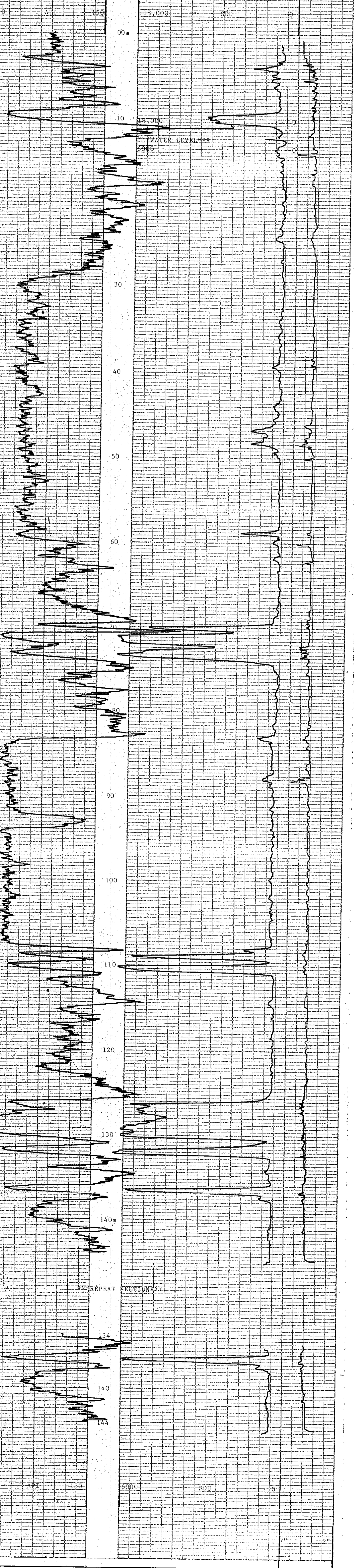
CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE		JIG No	SPAN	NORM	SDU CPS	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------

HOLE SIZE CORRECTION DATA

2	12	125	13	135	14	145	15	155	16	17	18	19	20	21	22	23	25	30
---	----	-----	----	-----	----	-----	----	-----	----	----	----	----	----	----	----	----	----	----



0	API	150	6000	SDU	0.7"	2"
---	-----	-----	------	-----	------	----





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-016  
CLIENT QUINJETTE

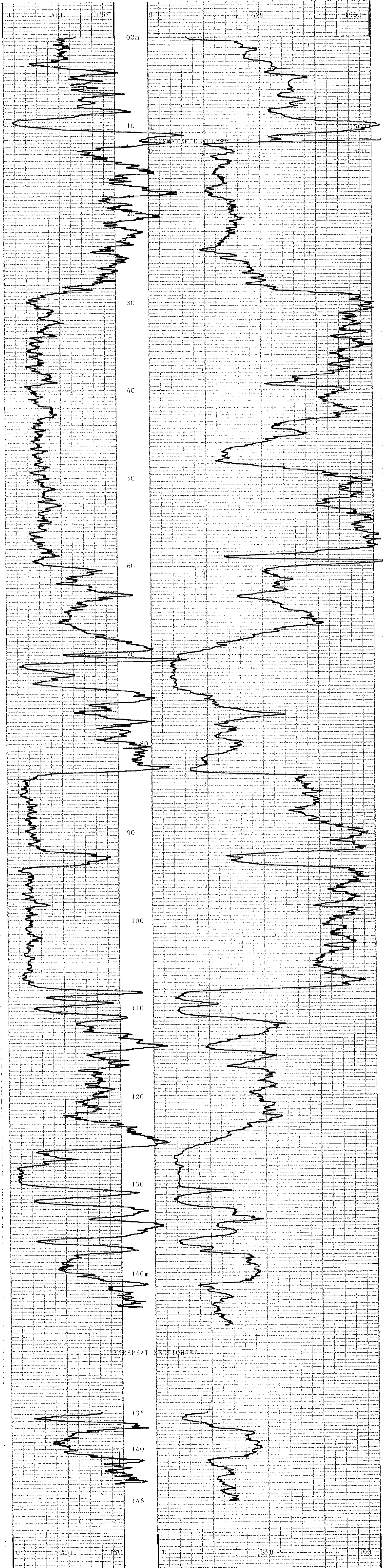
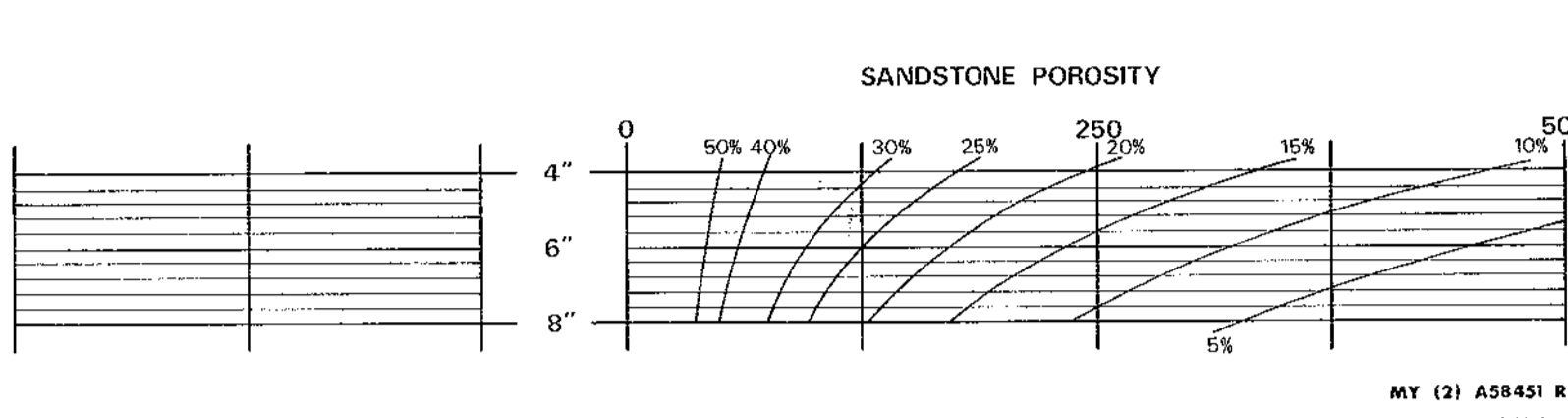
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 22

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

LOG	TAPING	LOG RECORD	ORIG	SPEED	SECS	NORM	CAL
N-N	Y	9	D	9	1	11.0	
GAMMA	Y	9	R	9	1	1.78	

REMARKS  
739

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



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



BOREHOLE QHR 87-016  
CLIENT QUINJETTE  
AREA GRIZZLY  
COUNTRY CANADA





FOCUSED ELECTRIC  
GAMMA RAY

BOREHOLE QHR 87-016

CLIENT QUINTETTE

AREA CRIZZLY

COUNTRY CANADA

DATE LOGGED 87 06 22

DEPTH SCALE  
1:200

3 OF 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

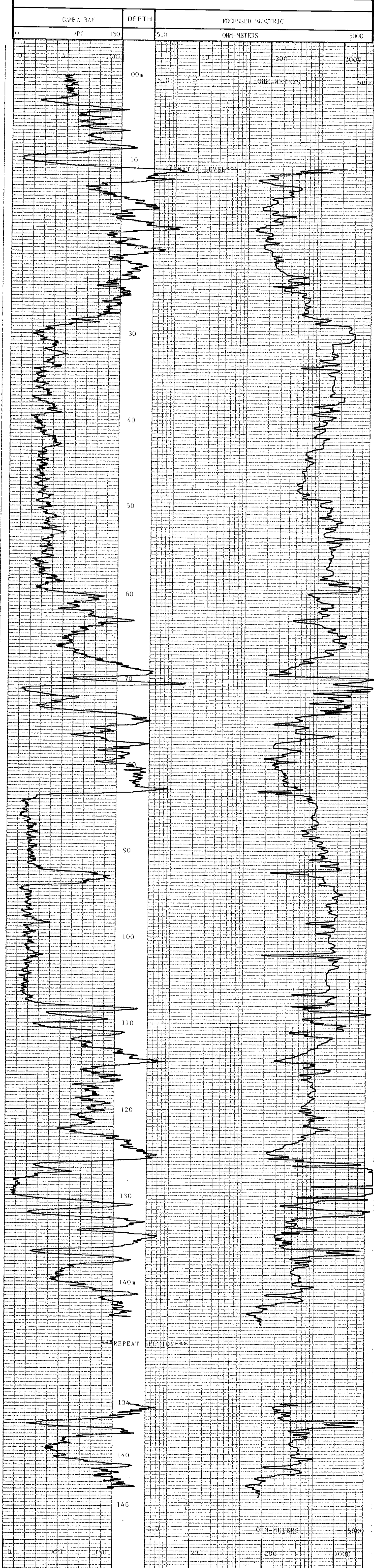
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	LOG RECORD	DIRECT	LOG SPEED	SECS	NORMA	CAL	COEFF
F.E.	Y	9	D	9	9	1.3	---	1.0
GAMMA	Y	9	R	9	1	---	---	1.78

REMARKS

739



GAMMA RAY	DEPTH	FOCUSED ELECTRIC
0	150	5000
0	150	5000



BOREHOLE QHR 87-016  
 CLIENT QUINTETTE  
 AREA CRIZZLY  
 COUNTRY CANADA





BOREHOLE QHR 87-016  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 22

DEPTH SCALE 1:20  
4 OF 5 LOGS

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

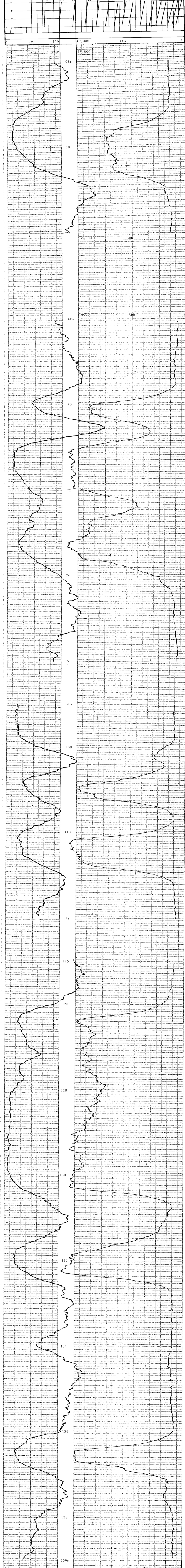
COAL COMBINATION SOURCE  
LOG TYPING SPEED 300 INCH  
SERIAL POSITION 172

SONDE TYPE:  
COAL COMBINATION SONDE

LOG SUITE  
GAMMA RAY  
LS DENSITY

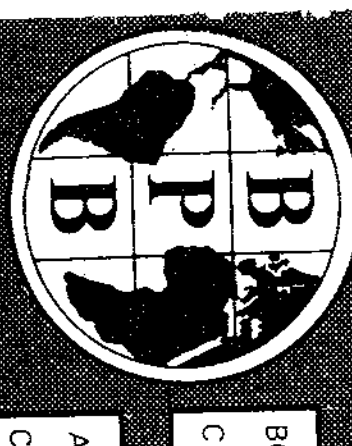
REMARKS  
**739**

**BPB COAL QUALITY LOG**



DEPTH	COAL BULK DENSITY
GAMMA RAY	g/cm <sup>3</sup>





BOREHOLE QHR 87-016  
 CLIENT QUINTETTE

AREA GRIZZLY  
 BERTH SCALE 1:20  
 COUNTRY CANADA

DATE LOGGED 87 06 22  
 5 OF 5 LOGS

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

SEAM THICKNESS LOG

LOG

SONDE TYPE:  
 COAL COMBINATION:  
 COMBINATION:  
 SONDE

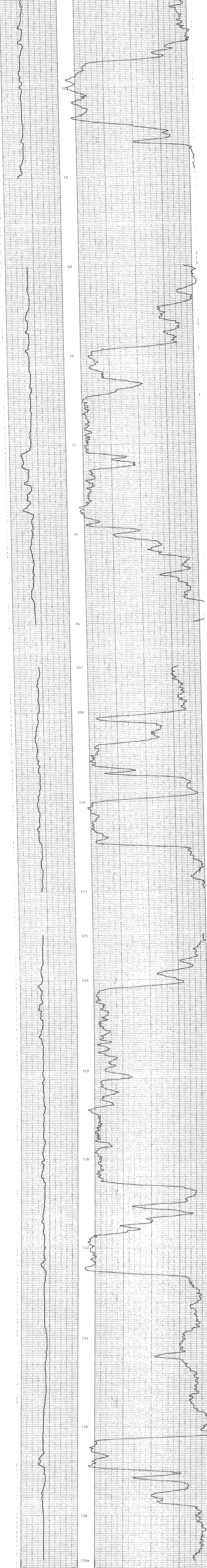
LOG SUITE:  
 CALIPER:  
 BR DENSITY:

SEAM THICKNESS LOG INTERVALS

REMARKS

739

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	25,000	SBRDU 15,000



BOREHOLE QHR 87-016  
 CLIENT QUINTETTE

AREA GRIZZLY  
 COUNTRY CANADA

SEAM THICKNESS LOG



87017

RIZZL-7

LOG DEPTH 0160.00  
TRUE DEPTH 0159.53  
TILT 9.32 DGT  
BEARING 101.37 DGT  
NORTHING -000.65  
EASTING +009.56

LOG DEPTH 0150.00  
TRUE DEPTH 0149.66  
TILT 8.26 DGT  
BEARING 94.34 DGT  
NORTHING -000.33  
EASTING +007.97

LOG DEPTH 0140.00  
TRUE DEPTH 0139.76  
TILT 6.98 DGT  
BEARING 87.52 DGT  
NORTHING -000.22  
EASTING +006.54

LOG DEPTH 0130.00  
TRUE DEPTH 0129.83  
TILT 6.16 DGT  
BEARING 86.94 DGT  
NORTHING -000.27  
EASTING +005.32

LOG DEPTH 0120.00  
TRUE DEPTH 0119.89  
TILT 4.97 DGT  
BEARING 87.46 DGT  
NORTHING -000.33  
EASTING +004.25

LOG DEPTH 0110.00  
TRUE DEPTH 0109.93  
TILT 3.93 DGT  
BEARING 91.48 DGT  
NORTHING -000.37  
EASTING +003.38

LOG DEPTH 0100.00  
TRUE DEPTH 0099.95  
TILT 3.47 DGT  
BEARING 94.39 DGT  
NORTHING -000.35  
EASTING +002.70

LOG DEPTH 0090.00  
TRUE DEPTH 0089.97  
TILT 2.99 DGT  
BEARING 97.38 DGT  
NORTHING -000.31  
EASTING +002.09

LOG DEPTH 0080.00  
TRUE DEPTH 0079.98  
TILT 2.90 DGT  
BEARING 102.06 DGT  
NORTHING -000.24  
EASTING +001.58

LOG DEPTH 0070.00  
TRUE DEPTH 0069.99  
TILT 2.01 DGT  
BEARING 101.21 DGT  
NORTHING -000.13  
EASTING +001.08

LOG DEPTH 0060.00  
TRUE DEPTH 0060.00  
TILT 93 DGT  
BEARING 93.55 DGT  
NORTHING -000.06  
EASTING +000.74

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT 82 DGT  
BEARING 108.76 DGT  
NORTHING -000.05  
EASTING +000.57

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 82 DGT  
BEARING 80.60 DGT  
NORTHING -000.01  
EASTING +000.44

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 82 DGT  
BEARING 99.83 DGT  
NORTHING -000.03  
EASTING +000.29

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 39 DGT  
BEARING 97.62 DGT  
NORTHING -000.01  
EASTING +002.15

LOG DEPTH 0010.00  
TRUE DEPTH 0012.03  
TILT 37 DGT  
BEARING 83.15 DGT  
NORTHING +000.00  
EASTING +000.25

LOG DEPTH 0002.50  
TRUE DEPTH 0002.20  
TILT 37 DGT  
BEARING 149.01 DGT  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
 TILT = 37.02 DG  
 BEARING = 127.28 DG  
 DEPTH = 0020.00  
 TILT = 32.82 DG  
 BEARING = 167.95 DG  
 DEPTH = 0030.00  
 TILT = 32.82 DG  
 BEARING = 131.71 DG  
 DEPTH = 0040.00  
 TILT = 32.82 DG  
 BEARING = 129.49 DG  
 DEPTH = 0050.00  
 TILT = 32.82 DG  
 BEARING = 88.04 DG  
 DEPTH = 0060.00  
 TILT = 31.04 DG  
 BEARING = 99.07 DG  
 DEPTH = 0070.00  
 TILT = 32.98 DG  
 BEARING = 103.36 DG  
 DEPTH = 0080.00  
 TILT = 2.82 DG  
 BEARING = 100.77 DG  
 DEPTH = 0090.00  
 TILT = 3.16 DG  
 BEARING = 93.99 DG  
 DEPTH = 0100.00  
 TILT = 3.77 DG  
 BEARING = 94.78 DG  
 DEPTH = 0110.00  
 TILT = 4.09 DG  
 BEARING = 88.17 DG  
 DEPTH = 0120.00  
 TILT = 5.85 DG  
 BEARING = 86.74 DG  
 DEPTH = 0130.00  
 TILT = 6.46 DG  
 BEARING = 87.14 DG  
 DEPTH = 0140.00  
 TILT = 7.50 DG  
 BEARING = 87.91 DG

DEPTH = 0150.00  
 TILT = 9.02 DG  
 BEARING = 100.77 DG  
 DEPTH = 0160.00  
 TILT = 9.62 DG  
 BEARING = 101.97 DG

DATE = 870624  
 JOB NUMBER = 7017  
 LOG LABEL = 0261  
 MAG 1 MAX = 229  
 MAG 1 MIN = 129  
 MAG 2 MAX = 228  
 MAG 2 MIN = 130  
 MAG 3 MAX = 205  
 MAG 3 MIN = 155  
 L. CELL 1 TILT 1 = 10  
 L. CELL 1 CPS 1 = 206  
 L. CELL 1 TILT 2 = -10  
 L. CELL 1 CPS 2 = 152  
 L. CELL 2 TILT 1 = 10  
 L. CELL 2 CPS 1 = 207  
 L. CELL 2 TILT 2 = -10  
 L. CELL 2 CPS 2 = 153  
 MAG 1 CENTRE = 180  
 MAG 2 CENTRE = 181  
 MAG 3 CENTRE = 180  
 L. CELL 1 CENTRE = 181  
 L. CELL 2 CENTRE = 179  
 MAG DECL = 24  
 STOP DEPTH = 2

QHR 87017  
 GRIZZLY





BOREHOLE QHR 87-017  
CLIENT QUINTETTI

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 24

DEPTH SCALE 1:200  
LOG 3 LOGS

**COAL**

**LITHOLOGY**

**LOG**

SEAM/DICTIONARY (ROUND) LEVEL  
ELEVATION OF S  
CORRECTION  
MAGNETIC SYSTEM  
DEPTH RECORDED  
CASING SHOE  
BIT SIZES  
CASING SIZES

BRB  
G.L.  
16.5  
3.6m  
1 7 3/4 TO 4.0  
2 3 1/8 TO 1 1/2  
3 TO  
6 5/8 TO 4.0

DRILLER  
1.65  
4.0m  
1.0  
2 TO

FLUID DATA

NATURE  
SG  
LEVEL  
VISCOSITY  
Pore Pressure Temp  
BIT

1.07  
1.0  
N/A  
N/A  
N/A

OPERATION DATA

FIRST READING  
LAST READING  
INTERVAL LOGGED  
UNIT-TRUCK No  
ENGINEER  
WITNESS

1.6  
1.6  
4.2/2.15  
A  
A

GAMMA RAY  
L.S. DENSITY  
CALIPER

739

**EQUIPMENT AND RECORDING DATA**

COAL COMBINATION SONDE										CAL COEFF		DEPTHS			SEAM LOG RUN
LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	TAPING RECORD SPEED	DIRECT OF REPLAY	SPEED	PANEL T.C. SECS	NORM	FROM	TO	INTERVAL			
GAMMA RAY	153		241	Y	9	D	9	1		1.78	163	163	163		
DENSITY		5863	3993	Y	9	D	9	3	7.60		164	164	164		
CALIPER	SIDEWALL POSITION			Y	9	D	9	3		1.0	164	164	163		

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)				INTERVAL TOTAL
FROM	152m	121m	79m	51m
TO	136m	115m	72m	43m
INTERVAL	16m	06m	07m	08m

ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS
215	N-N	1:200		
221	F.F.	1:200		
231	VERT.			

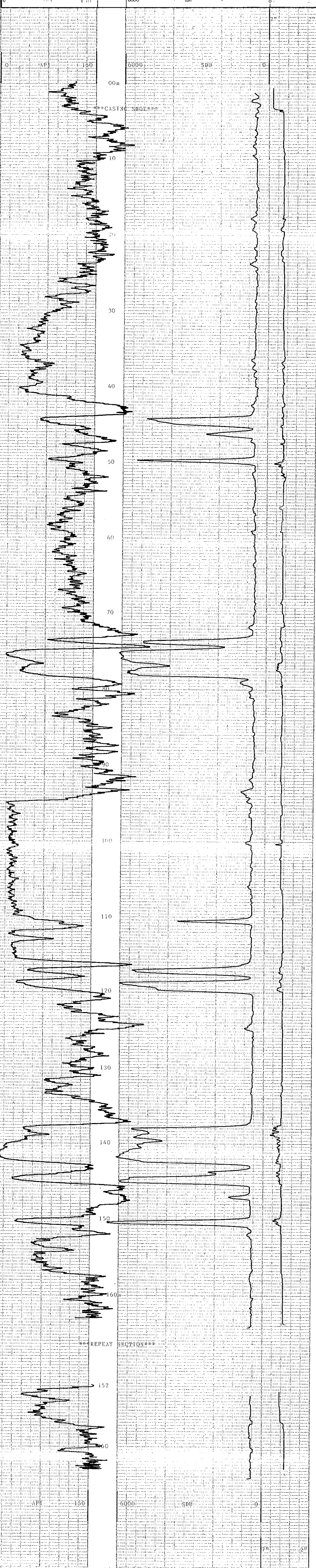
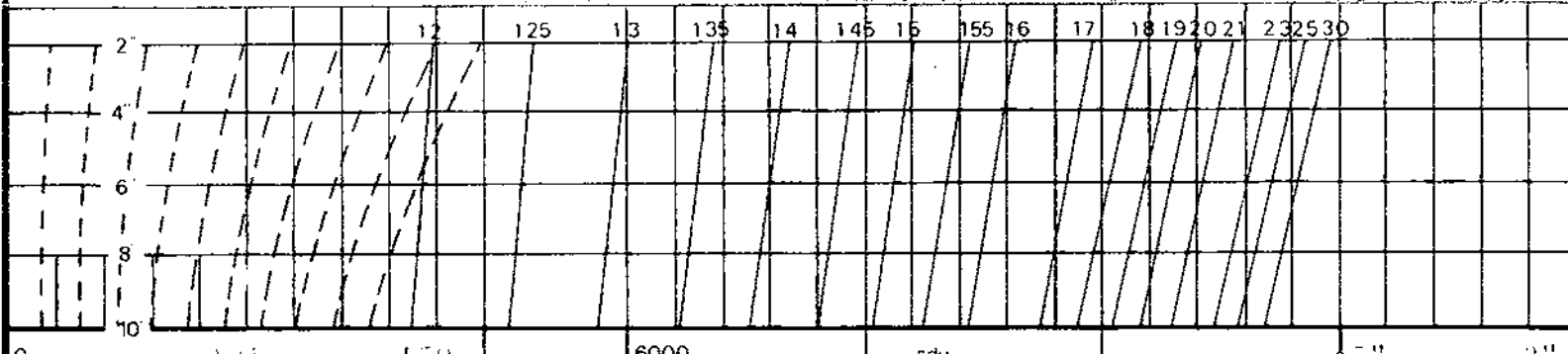
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	INS	CPS
JIG MARK SHOWN AT ABOVE VALUE -				NORM			

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE QHR 87-017 AREA GRIZZLY  
CLIENT QUINTETTI COUNTRY CANADA

**COAL LITHOLOGY LOG**





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-017  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 24

DEPTH SCALE  
1:200  
2 OF 5 PGS

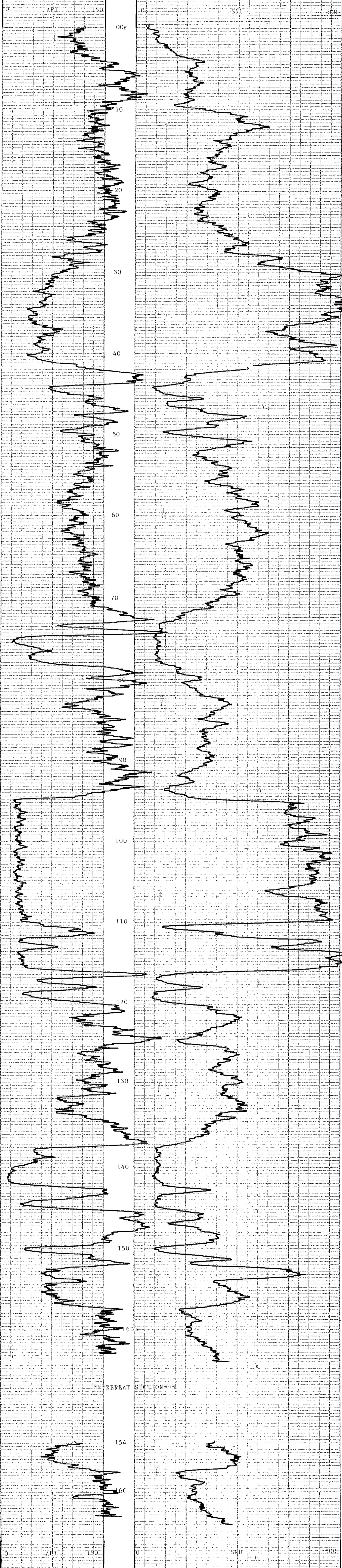
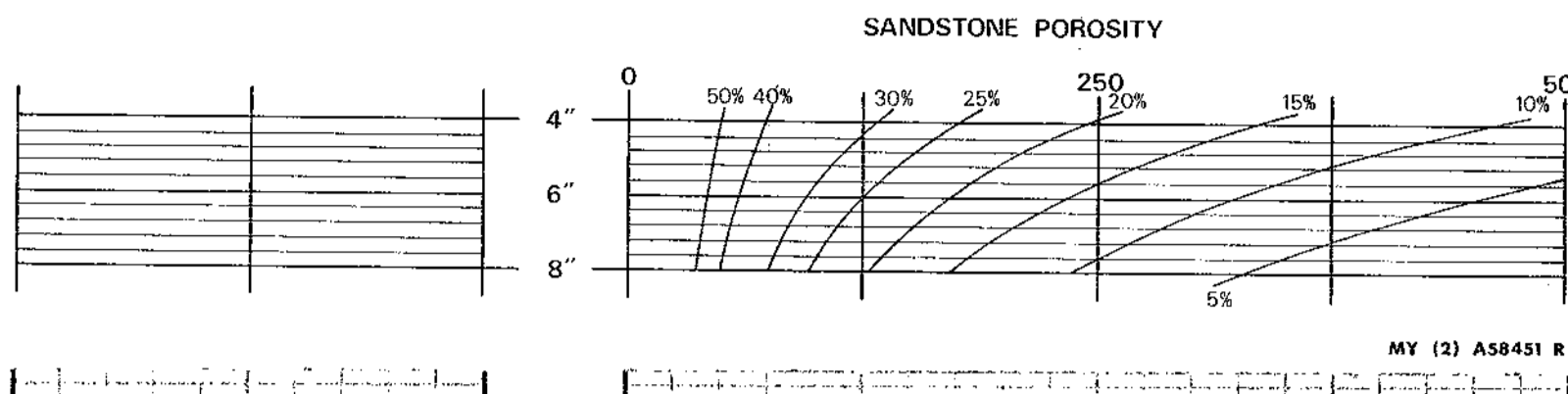
BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	SCALE
N-N	Y	9	11.0
GAMMA	Y	9	1.78
REMARKS			
739			

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



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



BOREHOLE QHR 87-017  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA









BOREHOLE QHR 87-017  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 87 08 24

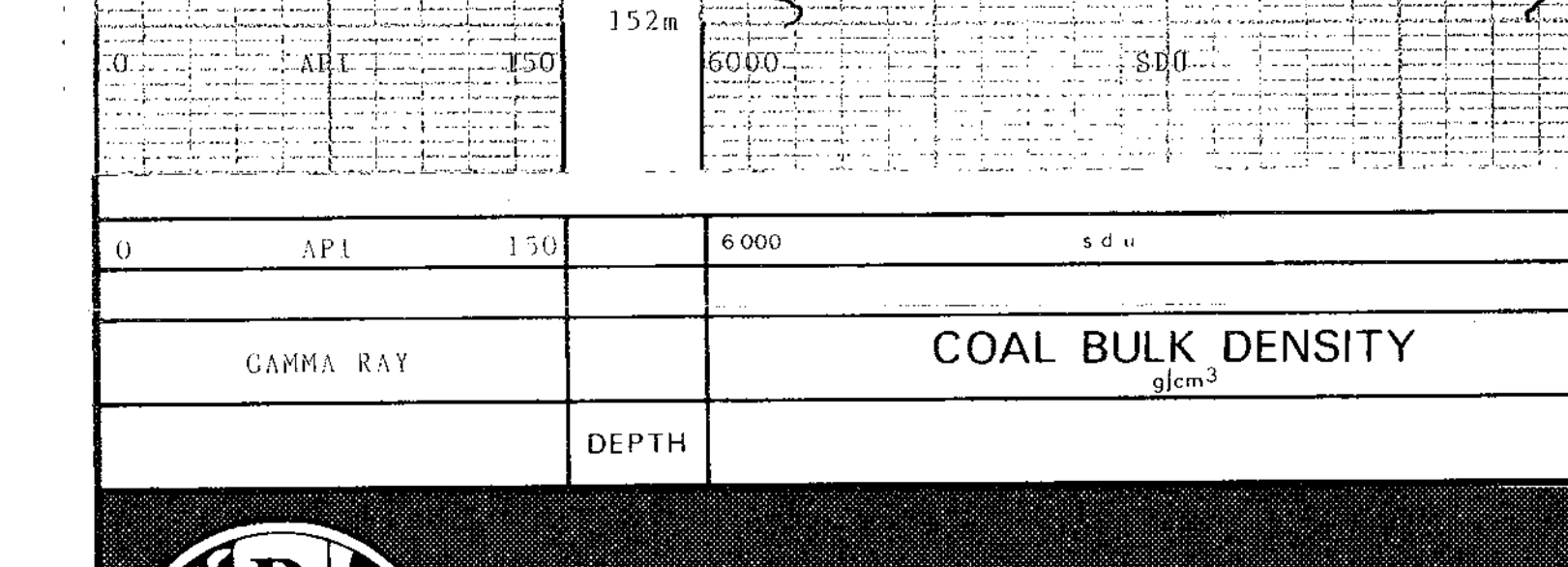
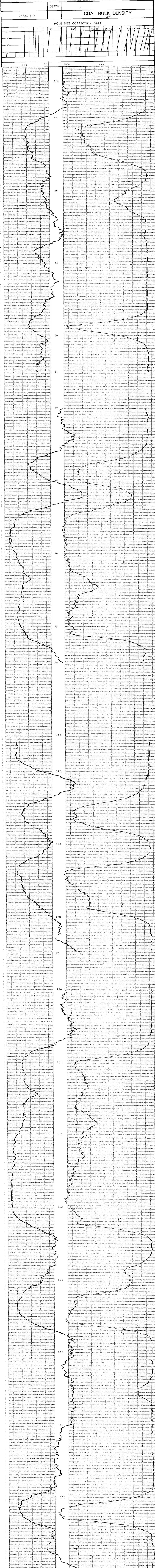
OPERATION DATA REF# TO LITHOLOGY LOG  
EQUIPMENT AND RECORDING DATA REF# TO LITHOLOGY LOG

COAL QUALITY LOG

SONDE TYPE  
COAL COMBINATION  
SONDE

LOG SUITE  
SAMMA RAY  
L.S. DENSITY

B P B COAL QUALITY LOG



BOREHOLE QHR 87-017  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA

COAL QUALITY LOG







QHR 87018

GRIZZLY

LOG DEPTH 0120.00  
TRUE DEPTH 0105.85  
TILT 32.04 DG  
BEARING 56.11 DG  
NORTHING +034.62  
EASTING +042.20

LOG DEPTH 0110.00  
TRUE DEPTH 0097.37  
TILT 31.13 DG  
BEARING 55.83 DG  
NORTHING +031.66  
EASTING +037.79

LOG DEPTH 0100.00  
TRUE DEPTH 0088.81  
TILT 31.08 DG  
BEARING 56.76 DG  
NORTHING +028.75  
EASTING +033.51

LOG DEPTH 0090.00  
TRUE DEPTH 0080.25  
TILT 31.19 DG  
BEARING 55.89 DG  
NORTHING +025.92  
EASTING +029.20

LOG DEPTH 0080.00  
TRUE DEPTH 0071.70  
TILT 30.32 DG  
BEARING 54.42 DG  
NORTHING +023.02  
EASTING +024.91

LOG DEPTH 0070.00  
TRUE DEPTH 0063.07  
TILT 28.32 DG  
BEARING 54.29 DG  
NORTHING +020.08  
EASTING +020.80

LOG DEPTH 0060.00  
TRUE DEPTH 0054.27

TILT 26.38 DG  
BEARING 52.38 DG  
NORTHING +017.31  
EASTING +016.95

LOG DEPTH 0050.00  
TRUE DEPTH 0045.31  
TILT 25.47 DG  
BEARING 51.45 DG  
NORTHING +014.60  
EASTING +013.43

LOG DEPTH 0040.00  
TRUE DEPTH 0036.28  
TILT 25.57 DG  
BEARING 51.33 DG  
NORTHING +011.92  
EASTING +010.06

LOG DEPTH 0030.00  
TRUE DEPTH 0027.26  
TILT 25.51 DG  
BEARING 49.39 DG  
NORTHING +009.22  
EASTING +006.69

LOG DEPTH 0020.00  
TRUE DEPTH 0018.24  
TILT 25.67 DG  
BEARING 45.94 DG  
NORTHING +006.42  
EASTING +003.42

LOG DEPTH 0010.00  
TRUE DEPTH 0009.23  
TILT 25.35 DG  
BEARING 5.23 DG  
NORTHING +003.41  
EASTING +000.31

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 24.70 DG  
BEARING 327.14 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
 TILT = 25.01 DG  
 BEARING = 43.32 DG  
  
 DEPTH = 0020.00  
 TILT = 25.34 DG  
 BEARING = 48.57 DG  
  
 DEPTH = 0030.00  
 TILT = 25.68 DG  
 BEARING = 50.21 DG  
  
 DEPTH = 0040.00  
 TILT = 25.46 DG  
 BEARING = 52.44 DG  
  
 DEPTH = 0050.00  
 TILT = 25.48 DG  
 BEARING = 50.46 DG  
  
 DEPTH = 0060.00  
 TILT = 27.28 DG  
 BEARING = 54.31 DG  
  
 DEPTH = 0070.00  
 TILT = 29.36 DG  
 BEARING = 54.27 DG  
  
 DEPTH = 0080.00  
 TILT = 31.29 DG  
 BEARING = 54.58 DG  
  
 DEPTH = 0090.00  
 TILT = 31.08 DG  
 BEARING = 57.21 DG  
  
 DEPTH = 0100.00  
 TILT = 31.08 DG  
 BEARING = 56.31 DG  
  
 DEPTH = 0110.00  
 TILT = 31.18 DG  
 BEARING = 55.35 DG  
  
 DEPTH = 0120.00  
 TILT = 32.98 DG  
 BEARING = 56.87 DG

DATE 870624  
 JOB NUMBER 7018  
 LOG LABEL 026.1  
 MAG 1 MAX 229  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 30  
 L. CELL 1 CPS 1 256  
 L. CELL 1 TILT 2 -30  
 L. CELL 1 CPS 2 102  
 L. CELL 2 TILT 1 30  
 L. CELL 2 CPS 1 256  
 L. CELL 2 TILT 2 -30  
 L. CELL 2 CPS 2 104  
  
 MAG 1 CENTRE 180  
 MAG 2 CENTRE 181  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 181  
 L. CELL 2 CENTRE 179  
  
 MAG DECL 24  
 STOP DEPTH 2

QHR 87018  
 GRIZZLY





# COAL LITHOLOGY LOG

SONDE TYPE:  
COAL COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

BOREHOLE QIR 87-018  
CLIENT QUINTETTE  
AREA GRIZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 24

DEPTH SCALE  
1:200  
1 OF 3 LOGS

PERMANENT DIALUM GROUPE 1E 11  
ELEVATION OF F.D. BRB  
DEPTHS REACHED 1.2m  
CASING SIZES 1 7 3/4 TO 1.2 2 1 1/4 TO 1.1 3 10 TO 1.1 2 TO 1.1

FLUID DATA  
MATERIAL AIR WATER  
SG 1.00 R/c  
LEVEL 53.0m  
VISCOSITY N/A  
Rate of mass temp N/A  
BIT N/A

OPERATION DATA  
FIRST READING 1.21m  
LAST READING 1.07m  
ANNUAL LOGGED 1.11m  
UNIT-TRUCK No 42/215  
ENGINEER A. LEBRE-DA  
AMNESS

739

## 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	153	5865	241	Y	9	D	9	1	---	1.78	121	93	121
L.S. DENSITY				Y	9	D	9	3	7.60	---	122	01	121
CALIPER	SIDEWALL POSITION			Y	9	D	9	3	---	1.0	122	01	121

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)				INTERVAL TOTAL
FROM	TO	INTERVAL		
106m	79m	56m		30m
92m	73m	46m		
14m	06m	10m		

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	N-N	1:200			
221	F.E.	1:200			
231	VERT.				

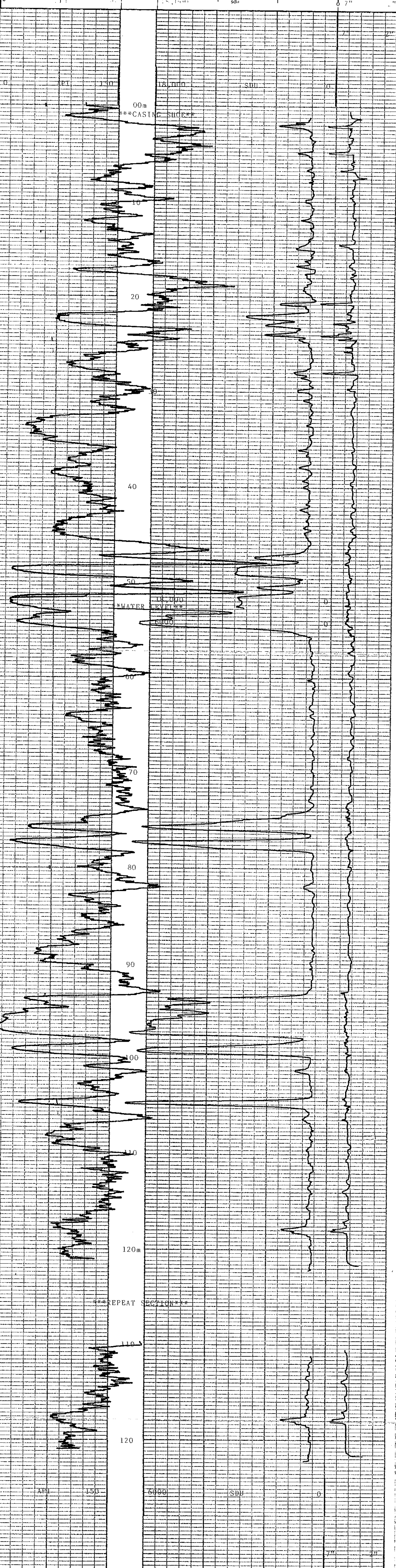
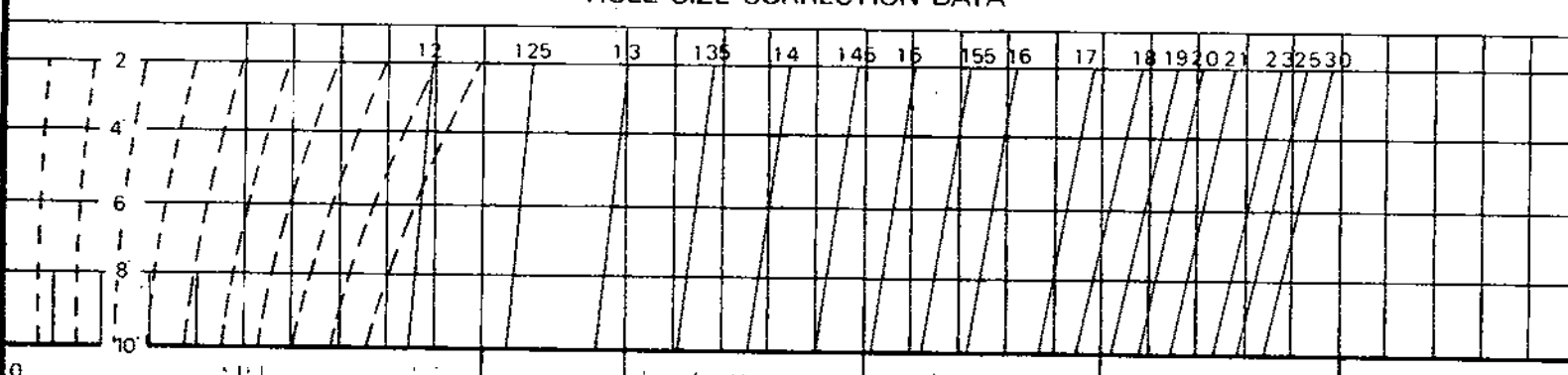
## BPB COAL LITHOLOGY LOG

### CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

### HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES



BOREHOLE QIR 87-018 AREA GRIZLY  
CLIENT QUINTETTE COUNTRY CANADA

## COAL LITHOLOGY LOG





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-018  
CLIENT QUINLETTE

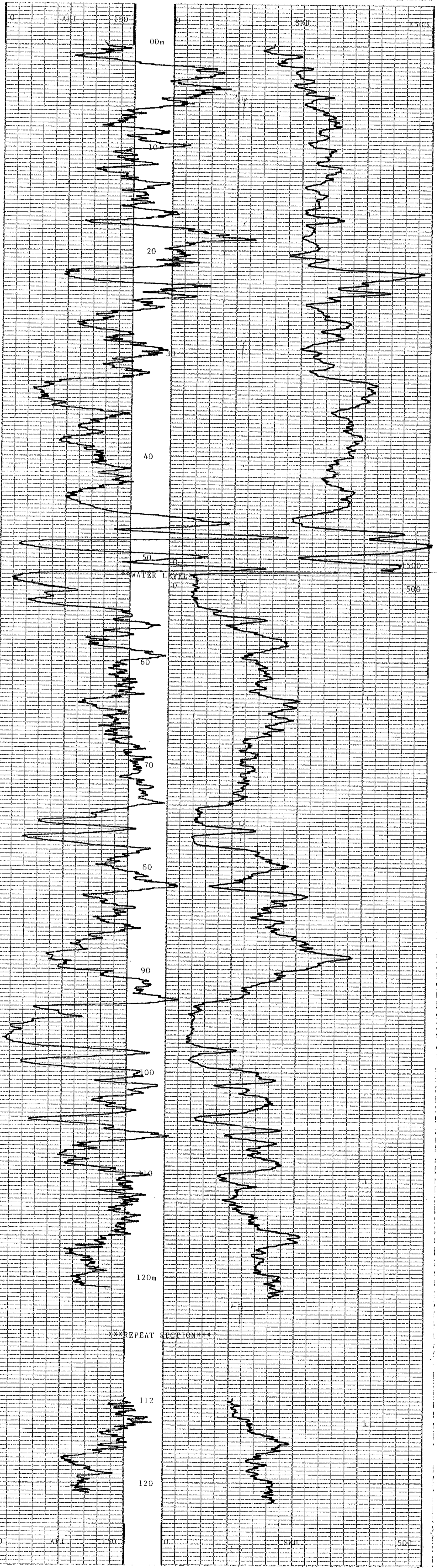
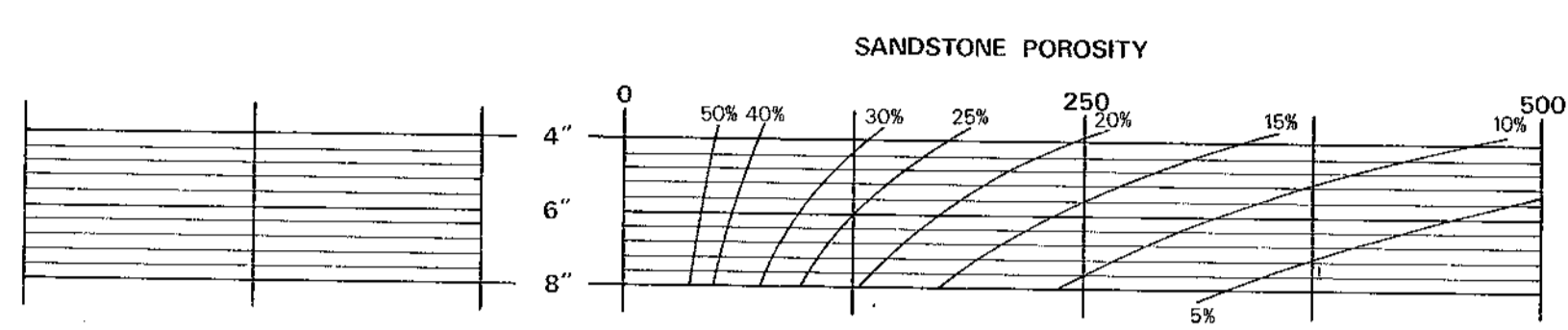
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 24

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

LOG	TAPING	PANEL	CAL
N-N	Y	D	9
GAMMA	Y	R	9
			1
			11.0
			1.78

REMARKS  
**739**

GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0 API 150	0	SNU 1500



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



BOREHOLE QHR 87-018  
CLIENT QUINLETTE  
AREA GRIZZLY  
COUNTRY CANADA





FOCUSED ELECTRIC  
GAMMA RAY

BOREHOLE QHR 87-018

CLIENT QUINLETTE

AREA GRIZZLY

COUNTRY CANADA

DATE LOGGED 87 06 24

DEPTH SCALE  
1:1000

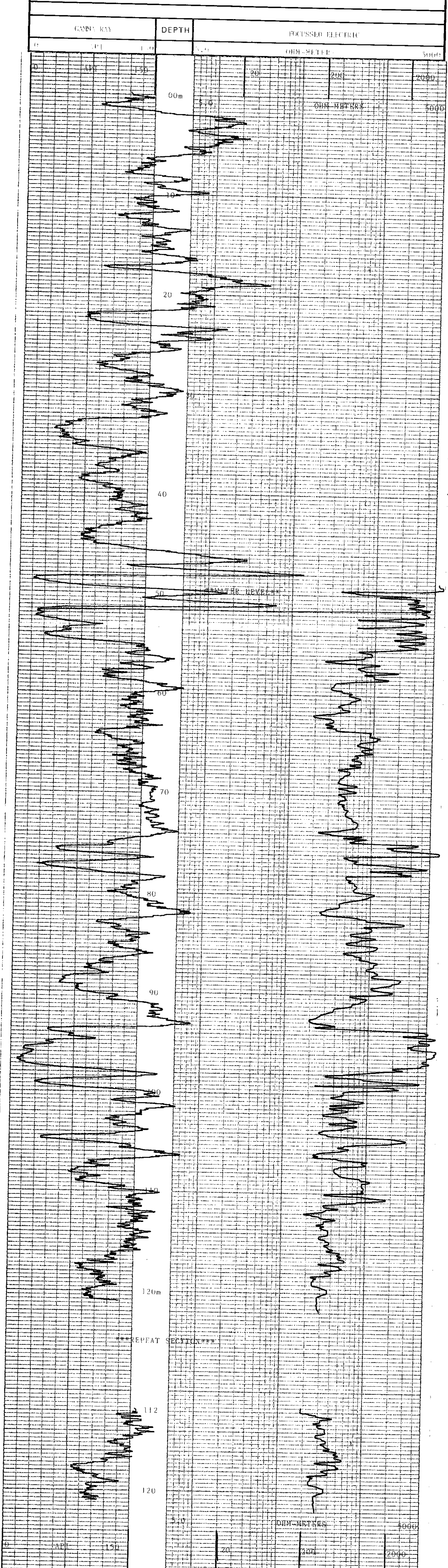
BOREHOLE DATA REFER TO L11101 (G) LOG

OPERATION DATA REFER TO L11101 (G) LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	LOG TAPING	RECORDING SPEED	T.C. SECS	NORM	PANEL	CAL
F.T.	Y	9	D	9	1.7		1.4
GAMMA	Y	9	K	9	1.7		2.2
REMARKS		SCHE	221	SCHE			

739



GAMMA RAY	DEPTH	FOCUSED ELECTRIC
0	0	0
150	120	5000

BOREHOLE QHR 87-018  
CLIENT QUINLETTE  
AREA GRIZZLY  
COUNTRY CANADA











BOREHOLE QHR 87-018  
 CLIENT QUINTEITE

AREA CRIZZLY  
 COUNTRY CANADA  
 DATE LOGGED 87 06 24  
 LOGS 3-0-2

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

SEAM THICKNESS LOG  
 EQUIPMENT AND RECORDING DATA

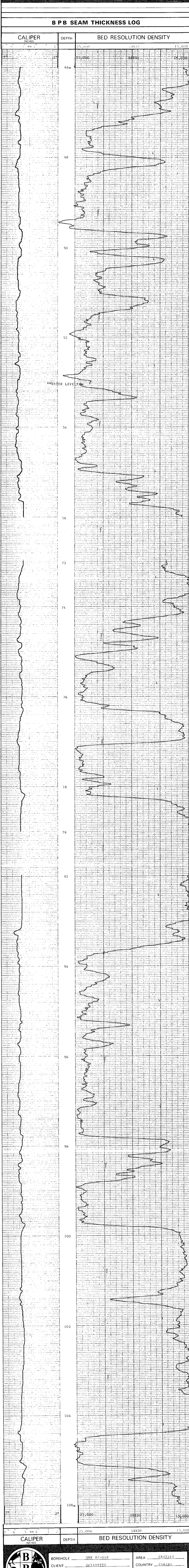
LOG  
 COAL COMBINATION SONDE  
 LOG 1000  
 CALIPER 2  
 BRUSHING Y 2 R 2 J 3 N 10

SONDE TYPE  
 COAL  
 COMBINATION  
 SONDE

LOG SUITE  
 CALIPER  
 BR DENSITY

REMARKS  
**739**

**B P B SEAM THICKNESS LOG**



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	25,000	SBRDI 15,000



BOREHOLE QHR 87-018  
 CLIENT QUINTEITE  
 AREA CRIZZLY  
 COUNTRY CANADA  
**SEAM THICKNESS LOG**



QHR 87-019  
GRIZZLY

LOG DEPTH 0110.00  
TRUE DEPTH 0096.86  
TILT 31.16 DG  
BEARING 46.20 DG  
NORTHING +034.15  
EASTING +038.40

LOG DEPTH 0100.00  
TRUE DEPTH 0088.30  
TILT 29.42 DG  
BEARING 50.99 DG  
NORTHING +030.56  
EASTING +034.66

LOG DEPTH 0090.00  
TRUE DEPTH 0079.59  
TILT 29.26 DG  
BEARING 50.68 DG  
NORTHING +027.47  
EASTING +030.85

LOG DEPTH 0080.00  
TRUE DEPTH 0070.87  
TILT 29.23 DG  
BEARING 50.24 DG  
NORTHING +024.38  
EASTING +027.07

LOG DEPTH 0070.00  
TRUE DEPTH 0062.14  
TILT 28.65 DG  
BEARING 50.37 DG  
NORTHING +021.25  
EASTING +023.31

LOG DEPTH 0060.00  
TRUE DEPTH 0053.37  
TILT 27.88 DG  
BEARING 50.70 DG  
NORTHING +018.19  
EASTING +019.62

LOG DEPTH 0050.00  
TRUE DEPTH 0044.53  
TILT 27.66 DG  
BEARING 50.69 DG  
NORTHING +015.23  
EASTING +016.00

LOG DEPTH 0040.00  
TRUE DEPTH 0035.67  
TILT 27.25 DG  
BEARING 50.75 DG  
NORTHING +012.29  
EASTING +012.40

LOG DEPTH 0030.00  
TRUE DEPTH 0026.78  
TILT 27.27 DG  
BEARING 49.96 DG  
NORTHING +009.39  
EASTING +008.86

LOG DEPTH 0020.00  
TRUE DEPTH 0017.89  
TILT 27.88 DG  
BEARING 46.90 DG  
NORTHING +006.45  
EASTING +005.35

LOG DEPTH 0010.00  
TRUE DEPTH 0009.05  
TILT 28.27 DG  
BEARING 30.78 DG  
NORTHING +003.25  
EASTING +001.93

LOG DEPTH 0002.00  
TRUE DEPTH 0002.00  
TILT 28.46 DG  
BEARING 17.11 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
TILT = 28.07 DG  
BEARING = 44.46 DG

DEPTH = 0020.00  
TILT = 27.70 DG  
BEARING = 49.33 DG

DEPTH = 0030.00  
TILT = 26.84 DG  
BEARING = 50.58 DG

DEPTH = 0040.00  
TILT = 27.66 DG  
BEARING = 50.92 DG

DEPTH = 0050.00  
TILT = 27.66 DG  
BEARING = 50.45 DG

DEPTH = 0060.00  
TILT = 28.10 DG  
BEARING = 50.94 DG

DEPTH = 0070.00  
TILT = 29.21 DG  
BEARING = 49.80 DG

DEPTH = 0080.00  
TILT = 29.26 DG  
BEARING = 50.68 DG

DEPTH = 0090.00  
TILT = 29.26 DG  
BEARING = 50.68 DG

DEPTH = 0100.00  
TILT = 29.58 DG  
BEARING = 51.30 DG

DEPTH = 0110.00  
TILT = 32.74 DG  
BEARING = 41.10 DG

DATE 870625  
JOB NUMBER 7019  
LOG LABEL 026  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 30  
L. CELL 1 CPS 1 256  
L. CELL 1 TILT 2 -30  
L. CELL 1 CPS 2 102  
L. CELL 2 TILT 1 30  
L. CELL 2 CPS 1 256  
L. CELL 2 TILT 2 -30  
L. CELL 2 CPS 2 104  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 180  
L. CELL 2 CENTRE 180  
MAG DECL 24  
STOP DEPTH 2

QHR 87019  
GRIZZLY









FOCUSSED ELECTRIC  
GAMMA RAY

BOREHOLE QHR 87-019  
CLIENT QUINTETTE

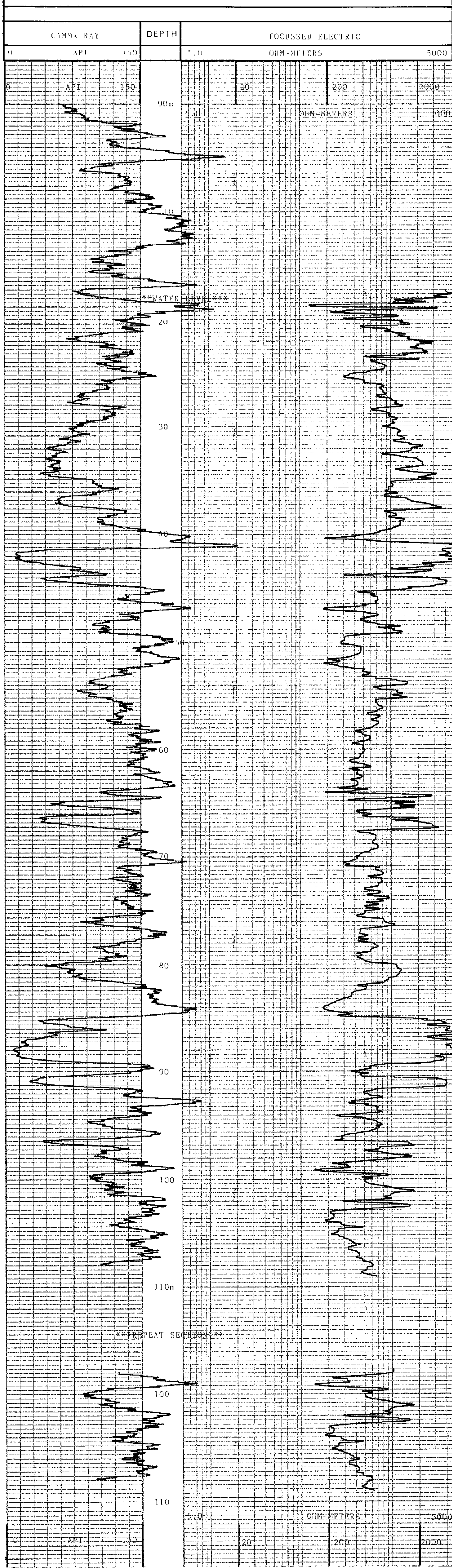
AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 25

DEPTH SCALE  
1:200

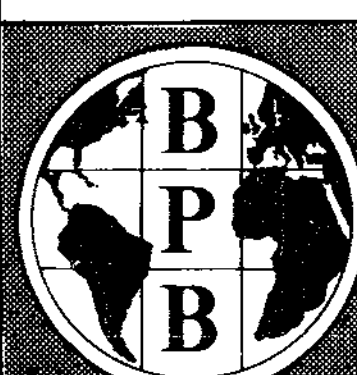
BOREHOLE DATA REFER TO LITHOLOGY LOG  
OPERATION DATA REFER TO LITHOLOGY LOG  
EQUIPMENT AND RECORDING DATA

LOG	TAPING	RECORDING	PANEL	CAL			
F.E.	Y	9	D	9	.3	---	1.0
GAMMA	Y	9	R	9	1	---	1.78
SONDE 221		SOURCE					

REMARKS  
**739**



0	API	150	5.0	OHM-METERS	5000
GAMMA RAY		DEPTH		FOCUSSED ELECTRIC	



BOREHOLE QHR 87-019  
CLIENT QUINTETTE  
AREA GRIZZLY  
COUNTRY CANADA





BOREHOLE QHR 87-019  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 87 06 25

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

COAL QUALITY LOG

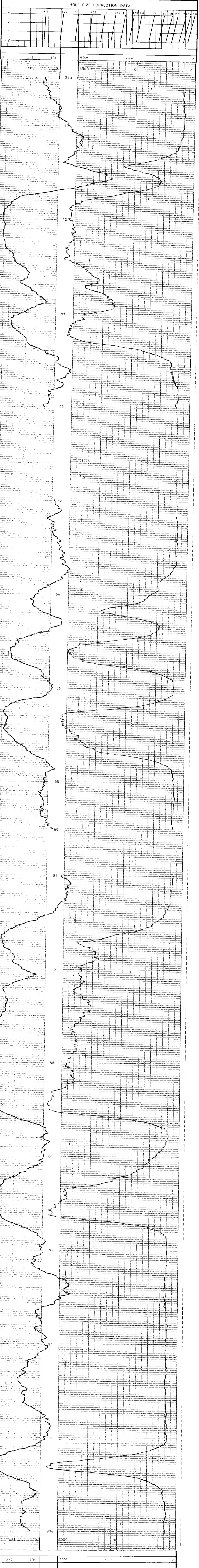
LOG

SONDE TYPE:  
COAL COMBINATION  
SONDE

LOG SUITE:  
GAMMA RAY  
L.S. DENSITY

REMARKS  
**739**

**B P B COAL QUALITY LOG**



0	AP1	150	6000	SDU	0
GAMMA RAY		COAL BULK DENSITY			
DEPTH		g/cm <sup>3</sup>			



BOREHOLE QHR 87-019  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

**COAL QUALITY LOG**





BOREHOLE QHR 87-019  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 87 06 23

5.0-5. LOGS

SEAM THICKNESS

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

EQUIPMENT AND RECORDING DATA

LOG

COAL COMBINATION SONDE SERIAL POSITION  
LOG TAPING PANEL COEF  
CALIPER Y 2 R 2 3 8 10

SONDE TYPE  
COAL COMBINATION  
SONDE

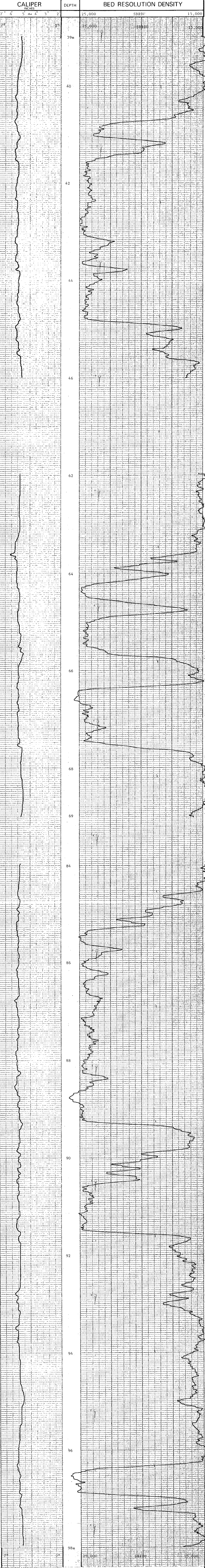
SEAM THICKNESS LOG INTERVALS

LOG SUITE  
CALIPER  
BR DENSITY

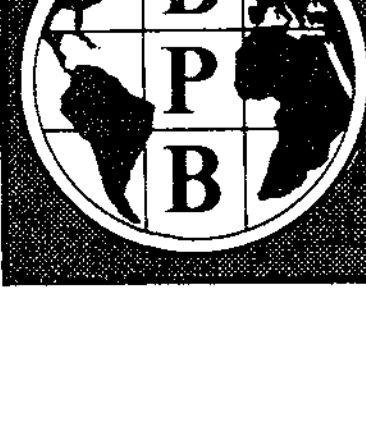
REMARKS

739

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 dia 4 3 2	39m	25,000 SBRDU 15,000
	40	
	42	
	44	
	46	
	62	
	64	
	66	
	68	
	69	
	84	
	86	
	88	
	90	
	92	
	94	
	96	
	98m	25,000 SBRDU 15,000



BOREHOLE QHR 87-019  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

SEAM THICKNESS LOG





BOREHOLE QHR 87-019  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 87 06 25

DEPTH SCALE 1:200

LOGS 1 of 5

**COAL**

**LITHOLOGY LOG**

**BOREHOLE DATA**

PERMANENT/TEMP	GROUND LEVEL
ELEVATION OF P.D.	
MEASUREMENTS FROM	DRILLER
DEPTH REACHED	G.L.
CASING SHOE	111.6m
BIT SIZES	2.0m
	1 7/8 TO 2.0 2 5/8 TO 2.0
	3 TO 4 TO
CASING SIZES	1 6 5/8 TO 2.0 1 2 TO

**FLUID DATA**

VALUE	AIR/WATER
SG	1.00 8.0C
LEVEL	22.4m
VISCOSITY	N/A
PH AT MEAS. TEMP	N/A
PH	N/A

**LOG SUITE**

GAMMA RAY  
L.S. DENSITY  
CALIPER

**OPERATION DATA**

FIRST READING	108m
LAST READING	00m
INTERVAL LOGGED	108m
UNIT-TRUCK No	422/V215
ENGINEER	A. LEBRETON
WITNESS	

739

**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	TC SECS		NORM	FROM	TO	
GAMMA RAY L.S. DENSITY CALIPER	153		241	Y	9	D	9	1	—	1.78	108	00	108
		5863	3993	Y	9	D	9	.3	7.60	—	109	01	108
				Y	9	D	9	.3	—	1.0	109	01	108

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

FROM	98m	69m	46m	
TO	84m	62m	39m	INTERVAL TOTAL
INTERVAL	14m	07m	07m	28m

**ADDITIONAL SONDES RUN**

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS
215	N-N	1:200		
221	F.E.	1:200		
231	VERT.			

**REMARKS**

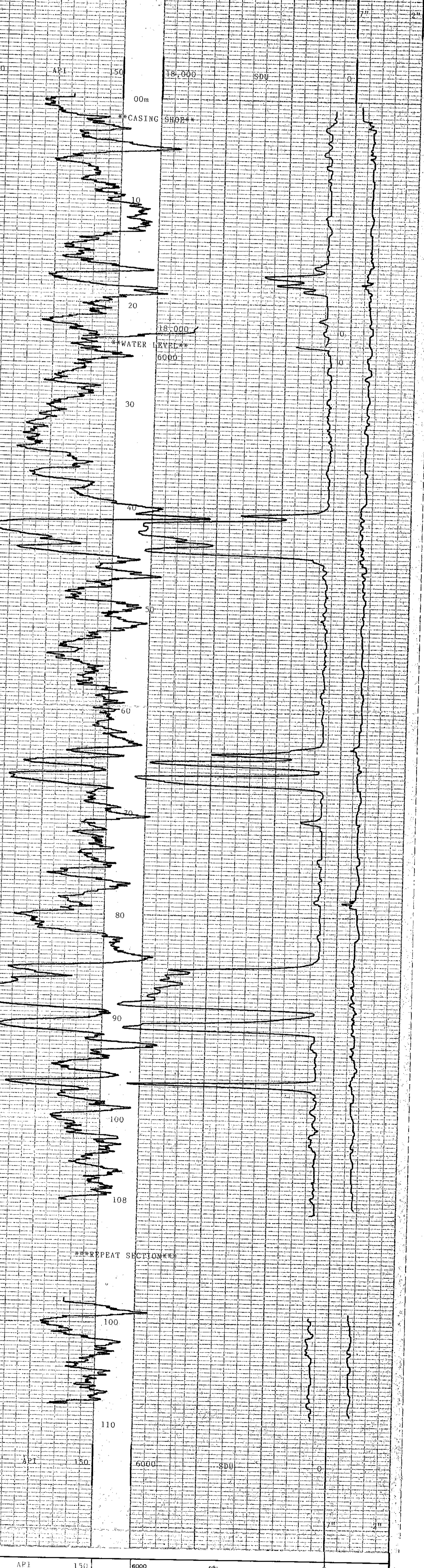
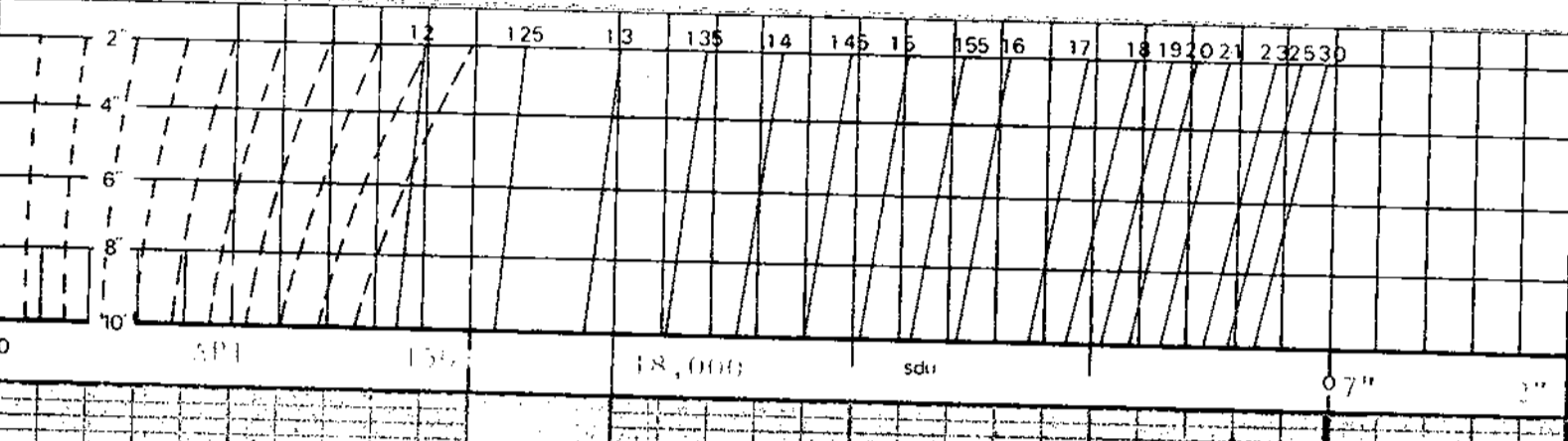
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ms	cps

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

BOREHOLE QHR 87-019 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA

**COAL LITHOLOGY LOG**



QHR 87020

GRIZZLY

LOG DEPTH 0240.00  
TRUE DEPTH 0191.52  
TILT 42.91 DG  
BEARING 213.95 DG  
NORTHING -118.98  
EASTING -074.29

LOG DEPTH 0230.00  
TRUE DEPTH 0184.20  
TILT 43.05 DG  
BEARING 212.78 DG  
NORTHING -113.33  
EASTING -070.48

LOG DEPTH 0220.00  
TRUE DEPTH 0176.89  
TILT 43.12 DG  
BEARING 212.68 DG  
NORTHING -107.59  
EASTING -066.79

LOG DEPTH 0210.00  
TRUE DEPTH 0169.59  
TILT 42.87 DG  
BEARING 212.22 DG  
NORTHING -101.83  
EASTING -063.10

LOG DEPTH 0200.00  
TRUE DEPTH 0162.26  
TILT 42.41 DG  
BEARING 212.94 DG  
NORTHING -096.08  
EASTING -059.48

LOG DEPTH 0190.00  
TRUE DEPTH 0154.88  
TILT 41.82 DG  
BEARING 214.14 DG  
NORTHING -090.42  
EASTING -055.81

LOG DEPTH 0180.00  
TRUE DEPTH 0147.43  
TILT 40.75 DG  
BEARING 213.10 DG  
NORTHING -084.90  
EASTING -052.06

LOG DEPTH 0170.00  
TRUE DEPTH 0139.86  
TILT 39.81 DG  
BEARING 212.95 DG  
NORTHING -079.43  
EASTING -048.50

LOG DEPTH 0160.00  
TRUE DEPTH 0132.18  
TILT 39.63 DG  
BEARING 214.63 DG  
NORTHING -074.06  
EASTING -045.02

LOG DEPTH 0150.00  
TRUE DEPTH 0124.48  
TILT 38.69 DG  
BEARING 213.75 DG  
NORTHING -068.81  
EASTING -041.39

LOG DEPTH 0140.00  
TRUE DEPTH 0116.67  
TILT 37.55 DG  
BEARING 212.13 DG  
NORTHING -063.61  
EASTING -037.92

LOG DEPTH 0130.00  
TRUE DEPTH 0108.74  
TILT 37.04 DG  
BEARING 212.35 DG  
NORTHING -058.45  
EASTING -034.68

LOG DEPTH 0120.00  
TRUE DEPTH 0100.76  
TILT 36.72 DG  
BEARING 212.67 DG  
NORTHING -053.36  
EASTING -031.45

LOG DEPTH 0110.00  
TRUE DEPTH 0092.75  
TILT 36.47 DG  
BEARING 212.85 DG  
NORTHING -048.33  
EASTING -028.22

LOG DEPTH 0100.00  
TRUE DEPTH 0084.71  
TILT 36.23 DG  
BEARING 212.51 DG  
NORTHING -043.33  
EASTING -025.00

LOG DEPTH 0090.00  
TRUE DEPTH 0076.64  
TILT 36.14 DG  
BEARING 211.53 DG  
NORTHING -038.35  
EASTING -021.82

LOG DEPTH 0080.00  
TRUE DEPTH 0068.56  
TILT 35.59 DG  
BEARING 210.76 DG  
NORTHING -033.32  
EASTING -018.74

LOG DEPTH 0070.00  
TRUE DEPTH 0060.43  
TILT 35.12 DG  
BEARING 210.35 DG  
NORTHING -028.32  
EASTING -015.76

LOG DEPTH 0060.00  
TRUE DEPTH 0052.25  
TILT 34.56 DG  
BEARING 209.88 DG  
NORTHING -023.36  
EASTING -012.85

LOG DEPTH 0050.00  
TRUE DEPTH 0044.01  
TILT 33.83 DG  
BEARING 208.91 DG  
NORTHING -018.44  
EASTING -010.02

LOG DEPTH 0040.00  
TRUE DEPTH 0035.70  
TILT 33.27 DG  
BEARING 207.02 DG  
NORTHING -013.56  
EASTING -007.33

LOG DEPTH 0030.00  
TRUE DEPTH 0027.34  
TILT 31.40 DG  
BEARING 206.97 DG  
NORTHING -008.68  
EASTING -004.84

LOG DEPTH 0020.00  
TRUE DEPTH 0018.81  
TILT 28.27 DG  
BEARING 211.56 DG  
NORTHING -004.03  
EASTING -002.47

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 26.61 DG  
BEARING 214.84 DG  
NORTHING +000.00  
EASTING +000.00

COPY 1

QHR 87020-87039

TRANSFER &

GRIZZLY

739



DEPTH = 0010.00  
TILT = 26.61 DG  
BEARING = 214.84 DG

DEPTH = 0020.00  
TILT = 29.93 DG  
BEARING = 208.28 DG

DEPTH = 0030.00  
TILT = 32.88 DG  
BEARING = 205.66 DG

DEPTH = 0040.00  
TILT = 33.66 DG  
BEARING = 208.39 DG

DEPTH = 0050.00  
TILT = 34.00 DG  
BEARING = 209.43 DG

DEPTH = 0060.00  
TILT = 35.11 DG  
BEARING = 210.34 DG

DEPTH = 0070.00  
TILT = 35.13 DG  
BEARING = 210.36 DG

DEPTH = 0080.00  
TILT = 36.05 DG  
BEARING = 211.16 DG

DEPTH = 0090.00  
TILT = 36.23 DG  
BEARING = 211.90 DG

DEPTH = 0100.00  
TILT = 36.22 DG  
BEARING = 213.12 DG

DEPTH = 0110.00  
TILT = 36.72 DG  
BEARING = 212.58 DG

DEPTH = 0120.00  
TILT = 36.72 DG  
BEARING = 212.76 DG

DEPTH = 0130.00  
TILT = 37.36 DG  
BEARING = 211.93 DG

DEPTH = 0140.00  
TILT = 37.73 DG  
BEARING = 212.32 DG

DEPTH = 0150.00  
TILT = 39.64 DG  
BEARING = 215.18 DG

DEPTH = 0160.00  
TILT = 39.62 DG  
BEARING = 214.08 DG

DEPTH = 0170.00  
TILT = 39.99 DG  
BEARING = 211.83 DG

DEPTH = 0180.00  
TILT = 41.51 DG  
BEARING = 214.37 DG

DEPTH = 0190.00  
TILT = 42.13 DG  
BEARING = 213.92 DG

DEPTH = 0200.00  
TILT = 42.70 DG  
BEARING = 211.97 DG

DEPTH = 0210.00  
TILT = 43.04 DG  
BEARING = 212.48 DG

DEPTH = 0220.00  
TILT = 43.21 DG  
BEARING = 212.72 DG

DEPTH = 0230.00  
TILT = 42.88 DG  
BEARING = 212.83 DG

DEPTH = 0240.00  
TILT = 42.93 DG  
BEARING = 215.06 DG

DATE 010787  
JOB NUMBER 0020  
LOG LABEL 025.1  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 180  
L. CELL 2 CENTRE 181

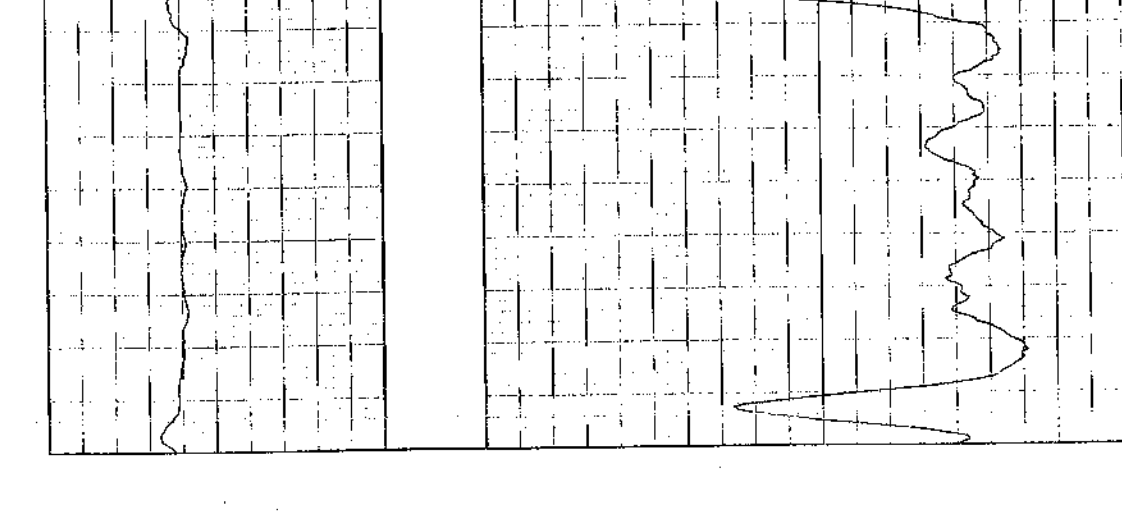
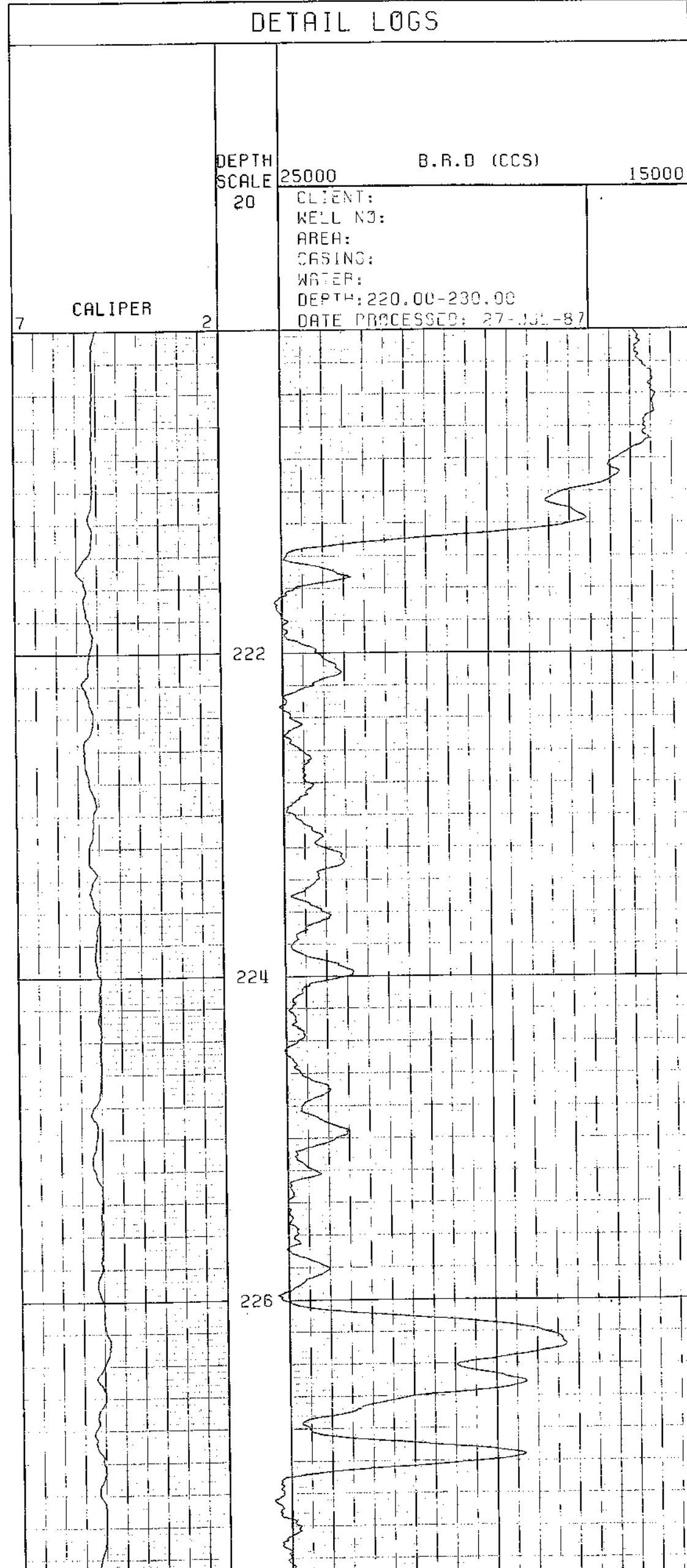
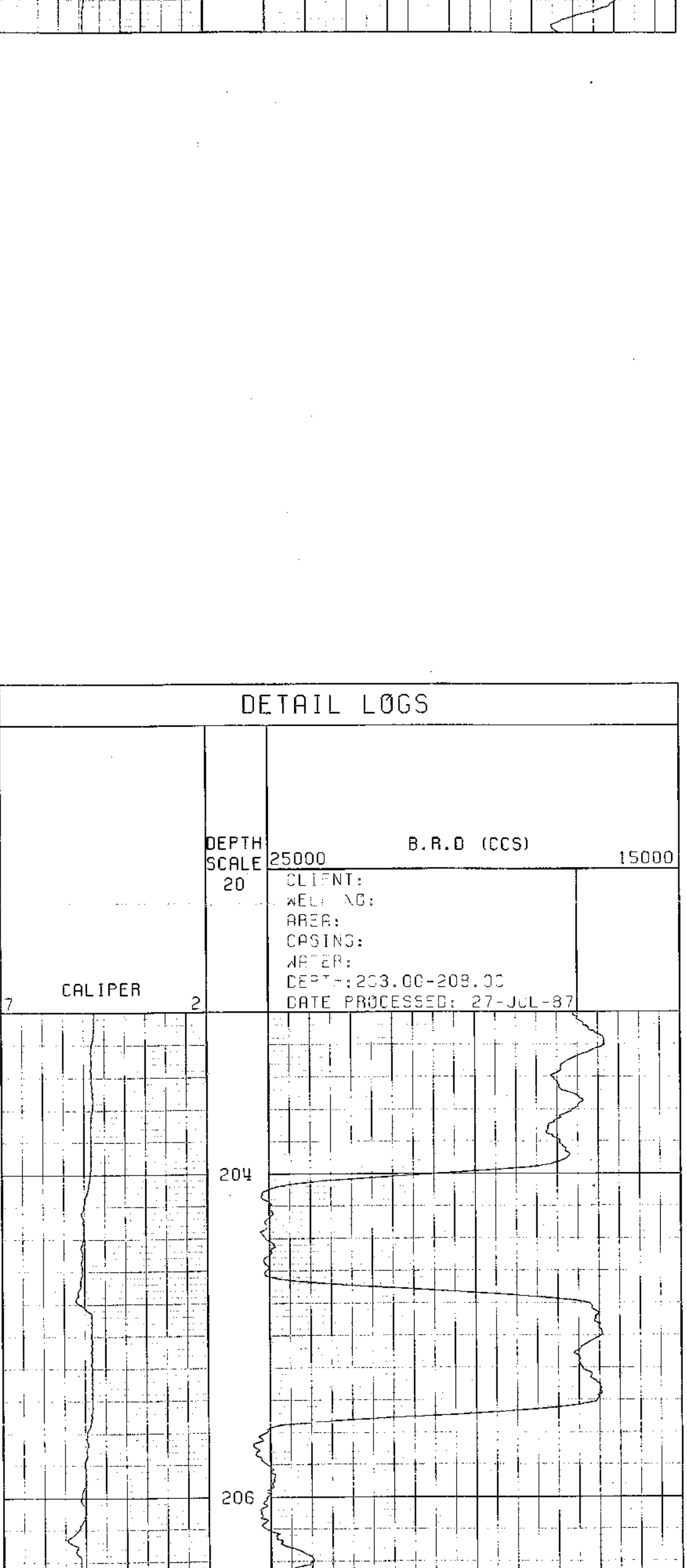
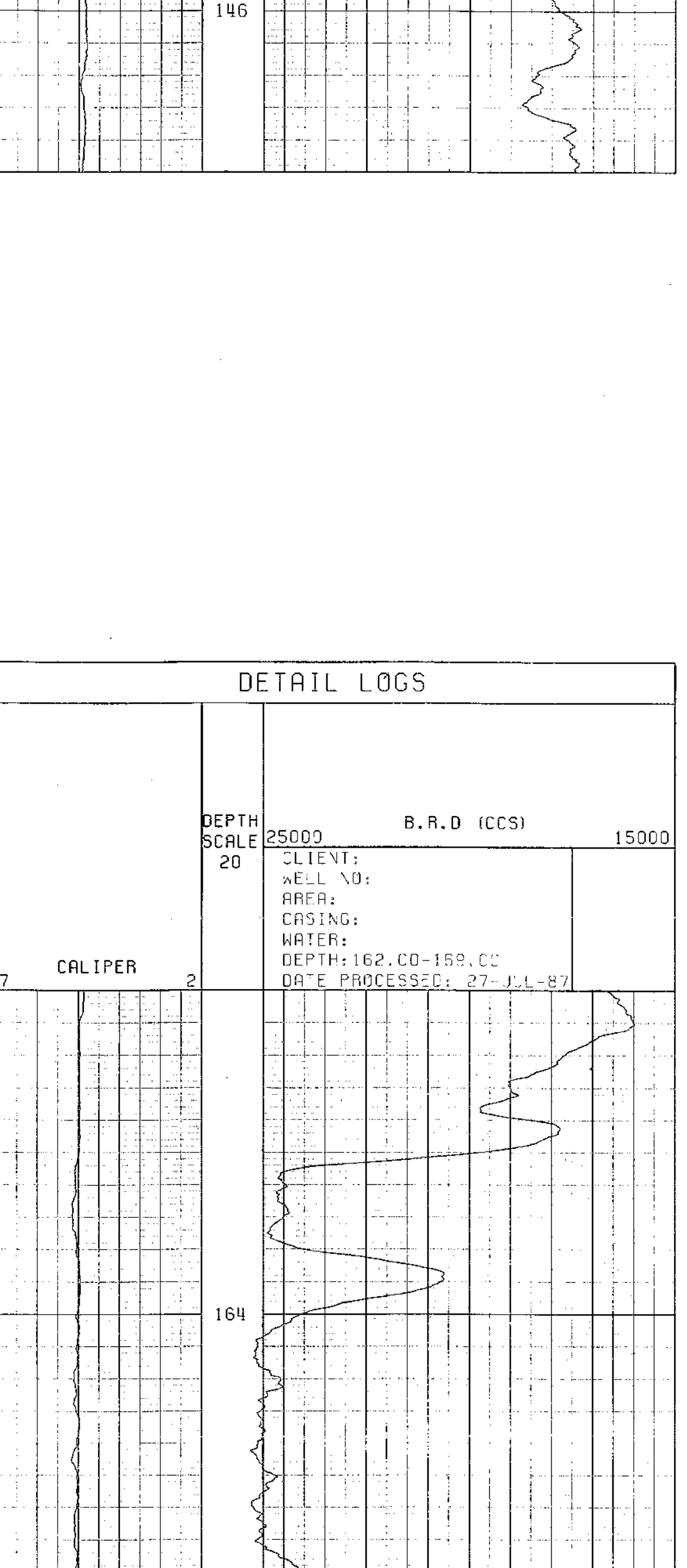
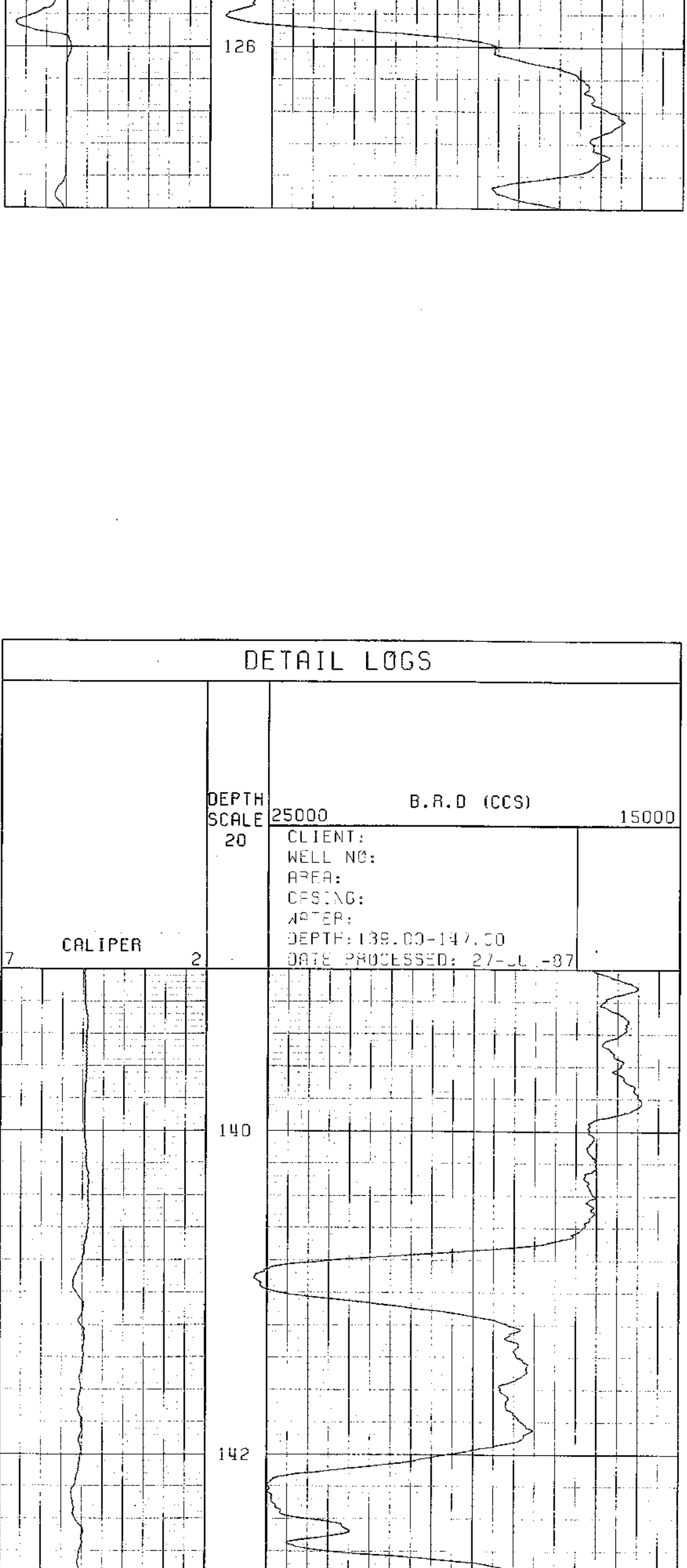
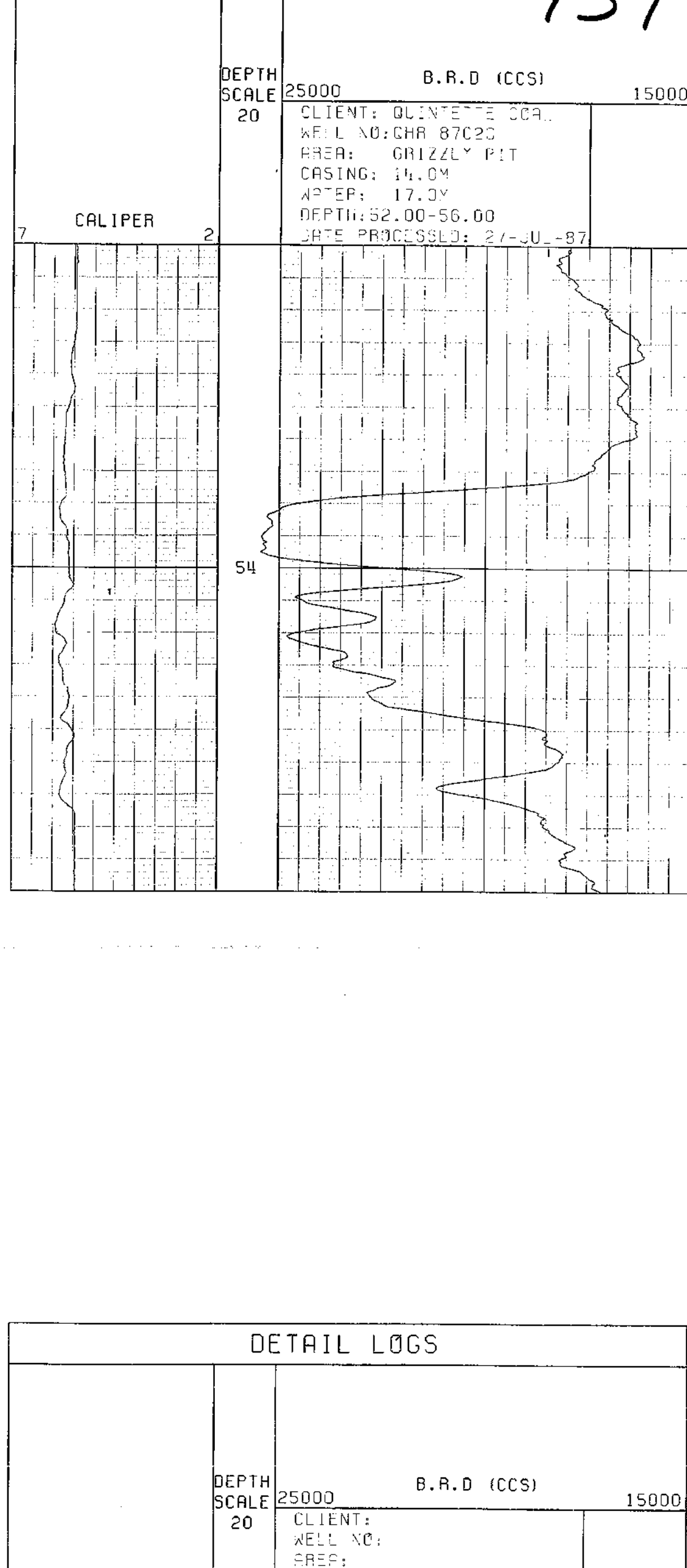
MAG DECL 024  
TCP DEPTH 0010

QHR 87020  
GRIZZLY



DETAIL LOGS

739



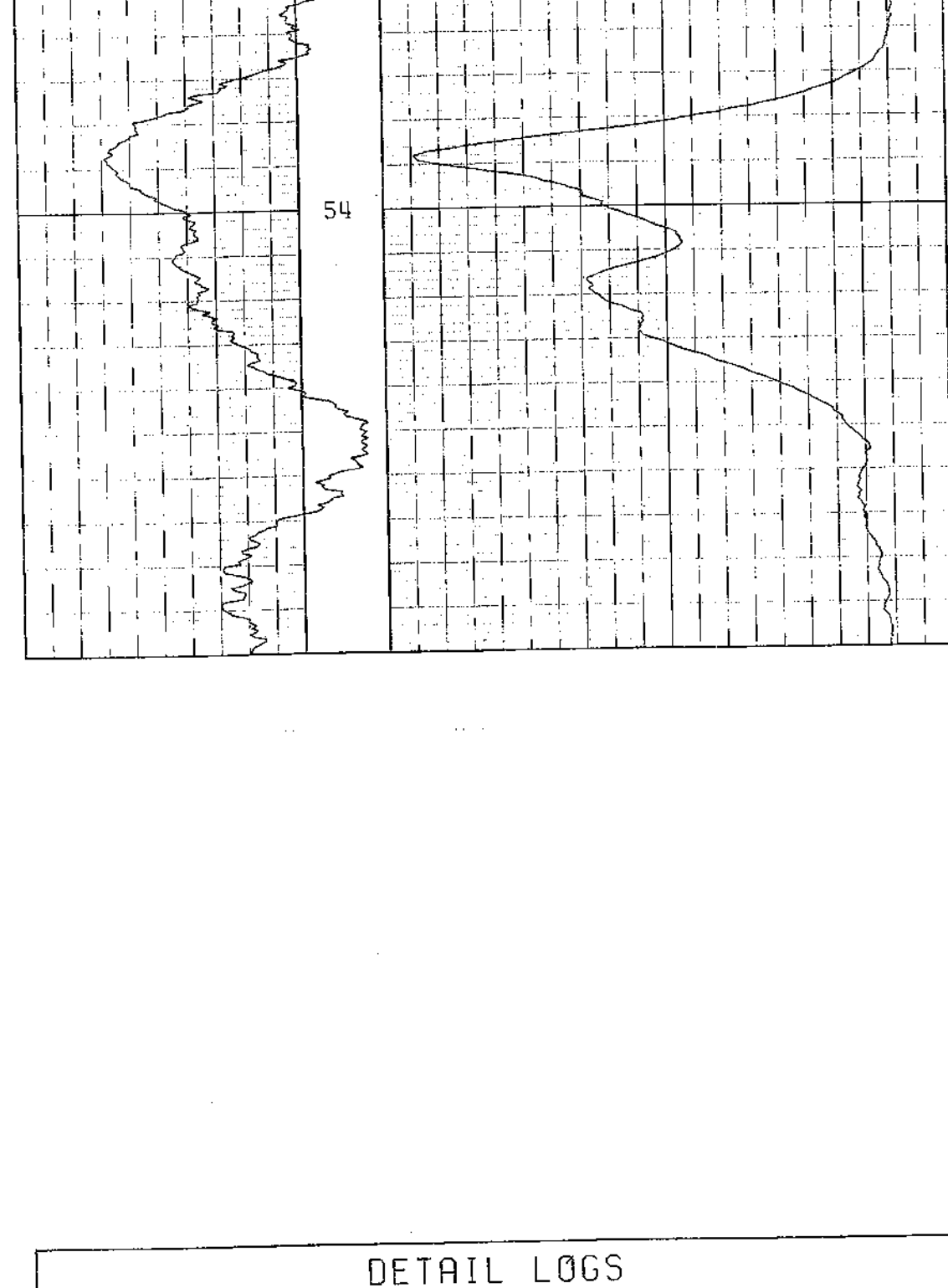


DETAIL LOGS

739

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT: GUNNETTE COP.  
WELL NO: GHR 87020  
AREA: GRIZZLY PIT  
CASING: 14.0M  
WATER: 17.0M  
DEPTH: 52.00-56.00  
DATE PROCESSED: 27-JUL-87

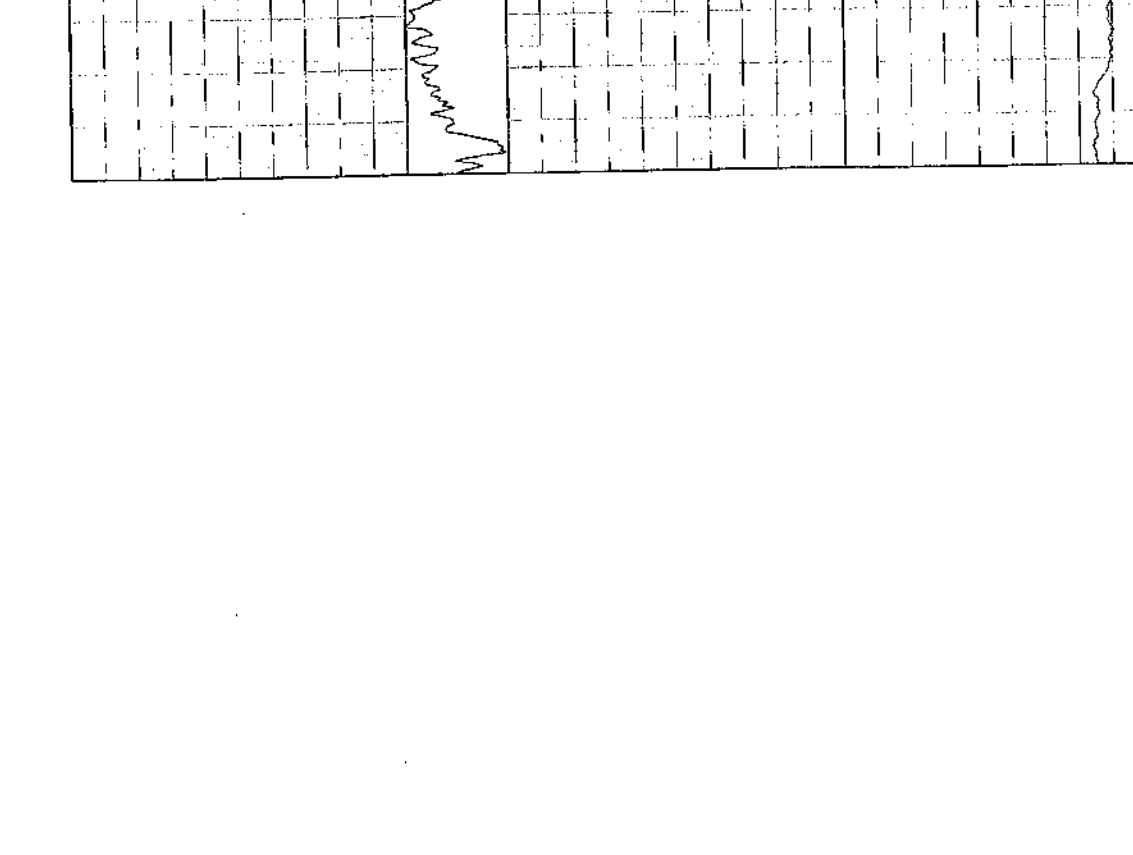
GAMMA RAY 150



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 123.00-127.00  
DATE PROCESSED: 27-JUL-87

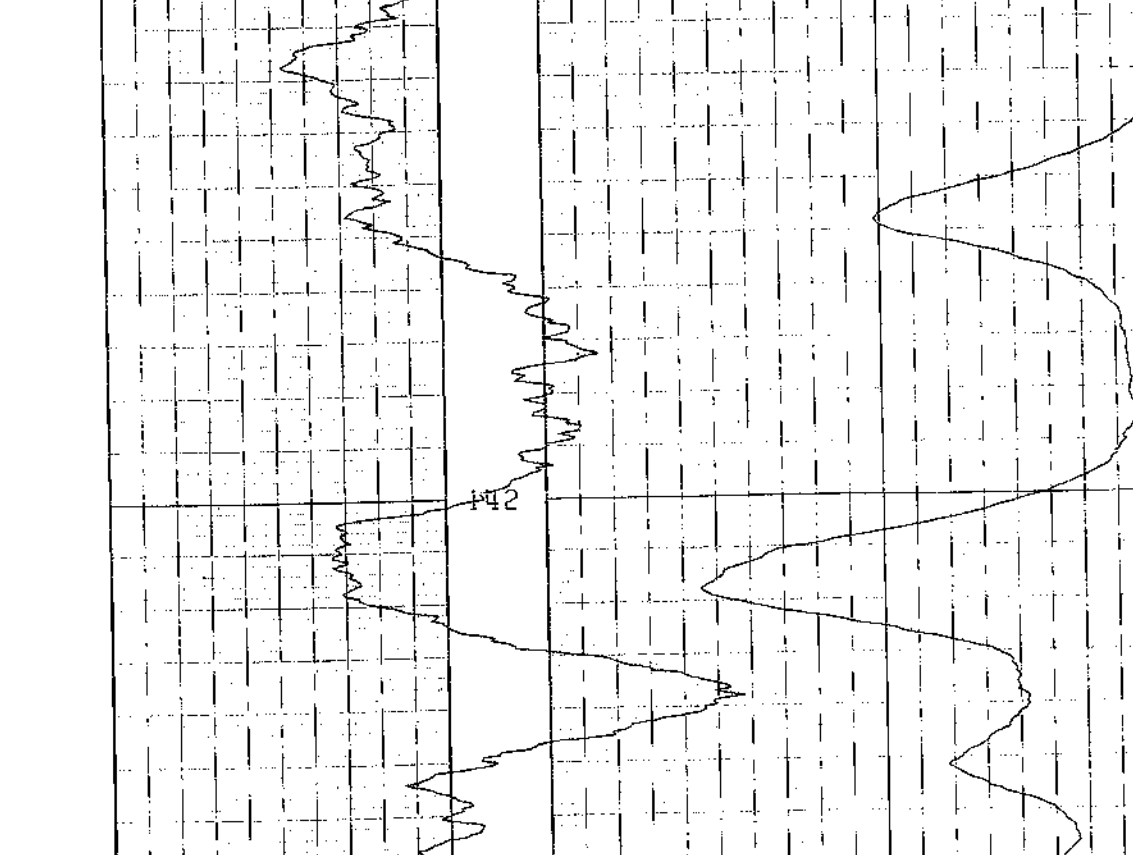
GAMMA RAY 150



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 139.00-147.00  
DATE PROCESSED: 27-JUL-87

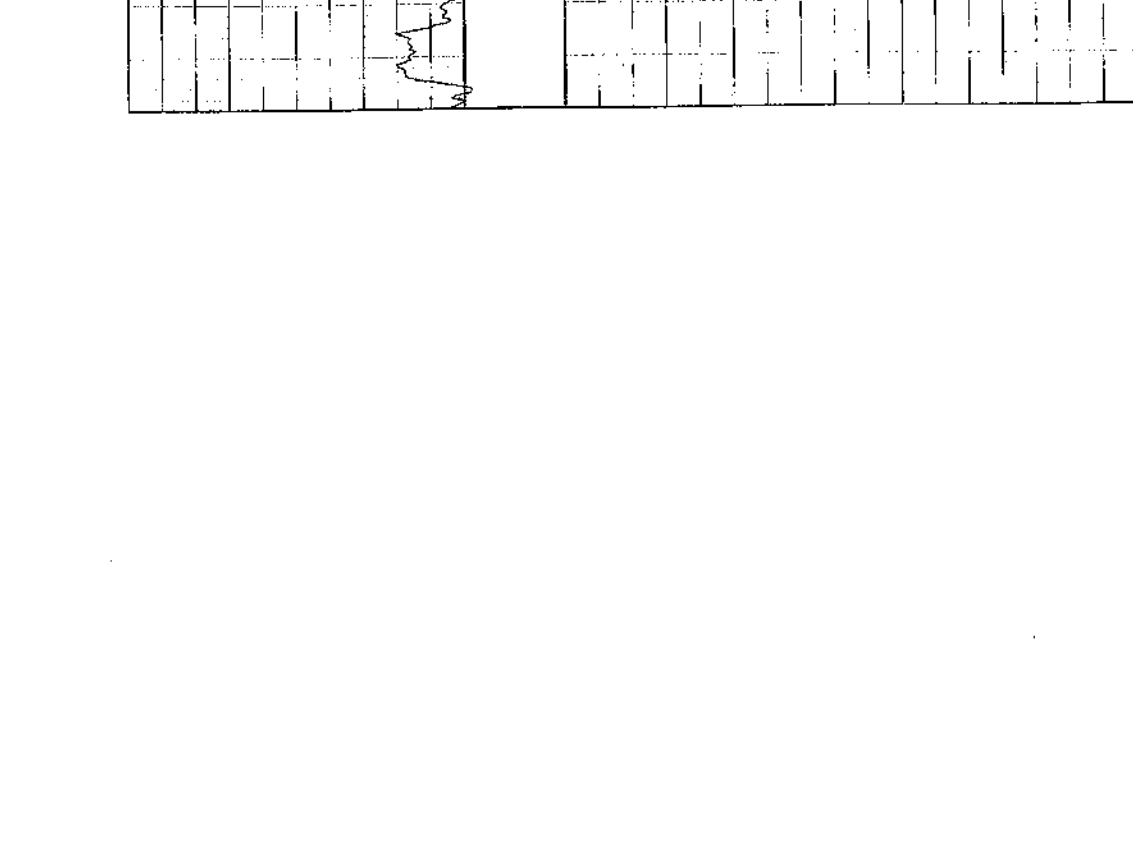
GAMMA RAY 150



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 162.00-169.00  
DATE PROCESSED: 27-JUL-87

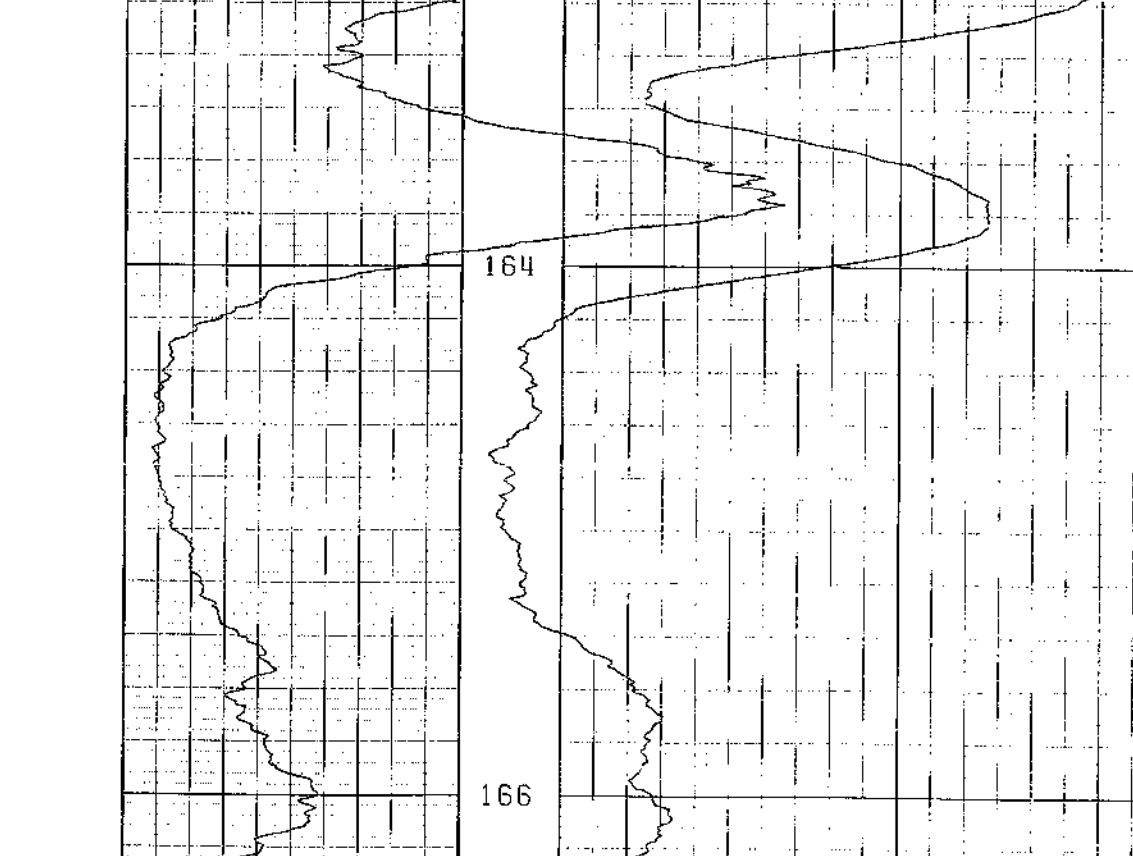
GAMMA RAY 150



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 203.00-208.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
20 CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 220.00-230.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150







# COAL LITHOLOGY LOG

SONDE TYPE  
COAL COMBINATION  
SONDE #

LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

REGISTRATION  
ELEVATION OF P.D.  
MAGNETIC DEVIATION  
DEPTH REACHED  
BIT SIZES  
CASING SIZES

FLUID DATA  
WATER  
LEVEL  
VISCOSITY  
BIT

OPERATION DATA  
FIRST READING  
LAST READING  
INTERVAL LOGGED  
UNIT TRACK NO.  
ENGINEER  
WITNESS

BOREHOLE QHR 87-020  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA

DATE LOGGED 01/JUN/87

DEPTH SCALE  
1:200  
1 OF 5 LOSS

BOREHOLE DATA  
GEOLID LEVEL  
GPR  
GAILER  
C-1  
24.0m  
24.0m  
6.28m

EQUIPMENT AND RECORDING DATA														
COAL COMBINATION SONDE				TAPING				PANEL		CAL COEFF		DEPTHS		SEAM LOG RUN
LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT REPLAY	SPEED	TC SECS	NORM	FROM	TO	MIRVAL		
GAMMA RAY	183B	5852			9	D	9	1		1.6	242	00	242	
L.S. DENSITY			367	Y	9	D	9	3	7.58		242	00	242	
CALIPER			7"	Y	9	D	9	3		1.0	242	00	242	

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)							INTERVAL TOTAL	
FROM	TO	INTERVAL	FROM	TO	INTERVAL	FROM	TO	INTERVAL
229.0m	207.0m	22.0m	169.0m	147.0m	22.0m	56.0m		
220.0m	203.0m	17.0m	162.0m	139.0m	23.0m	52.0m		
9.0m	4.0m	5.0m	7.0m	8.0m	1.0m	37.0m		

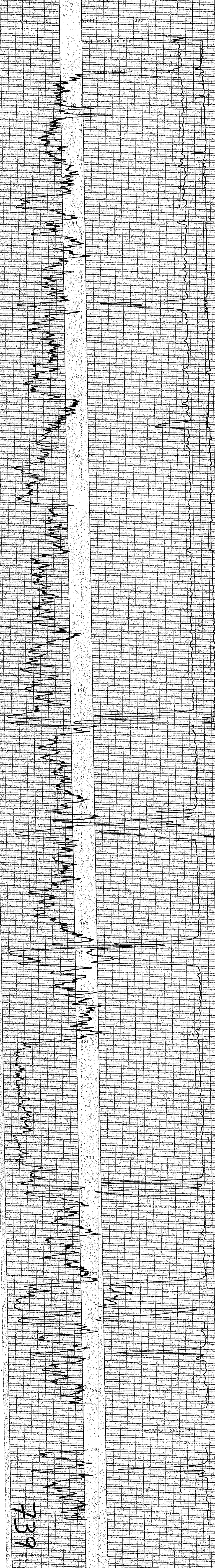
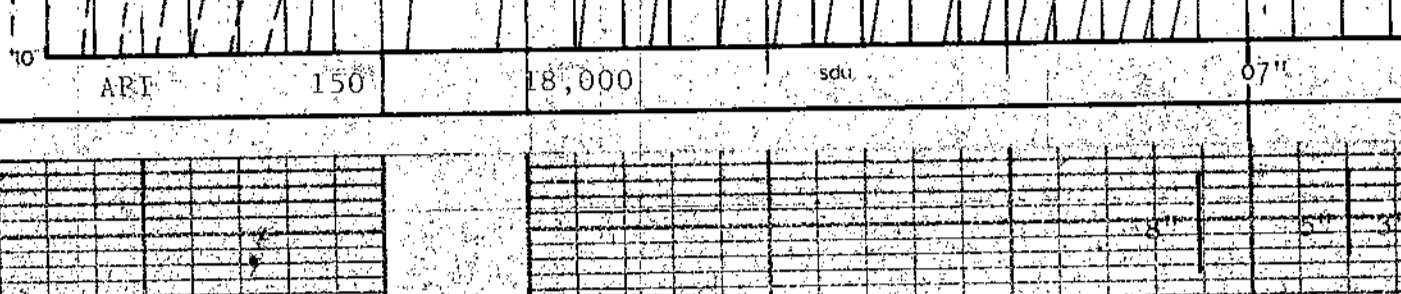
ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	N-N	1:200		
209	F.E.	1:200		

## BPB COAL LITHOLOGY LOG

### CALIBRATION DATA

JIG No.	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE		JIG No.	SPAN	NORM	SDU	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY (g/cm <sup>3</sup> )	CALIPER (INCHES)
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GAMMA RAY	DEPTH	BULK DENSITY (g/cm <sup>3</sup> )	CALIPER (INCHES)
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NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 81-020

CLIENT QUINTETTE

AREA GRIZZLY

COUNTRY CANADA

DATE LOGGED 01/JUL/87

2 OF 3 LOGS

DEPTH SCALE  
1:200

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

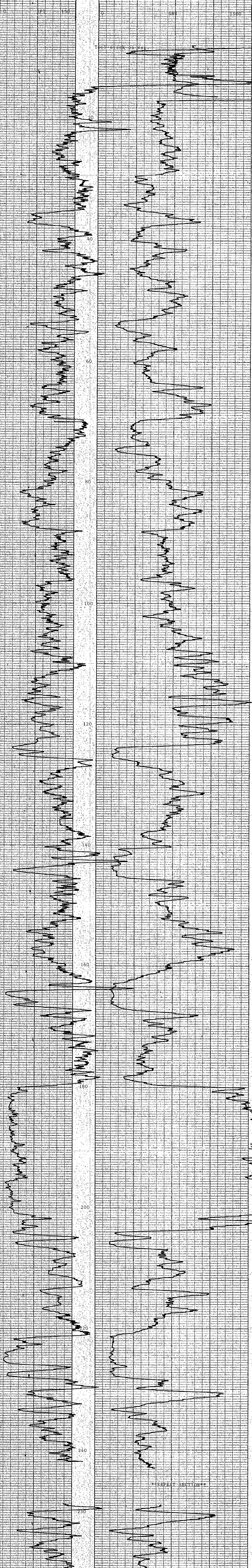
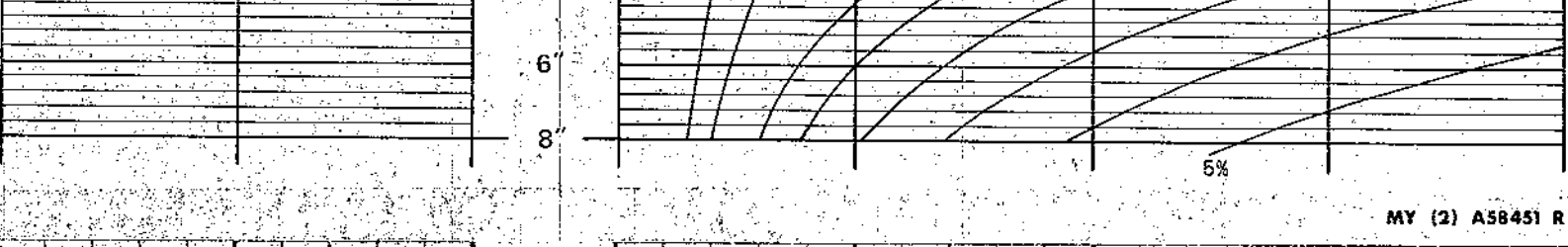
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	DATE
LOG	RECORDING	SPEED	SCALE
N-N	Y	D	9
GAMMA	Y	R	9
		I	1
REMARKS	SCALE 21.5	SCALE	

739

GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0	150	0
APIA		SNU
		1500

SANDSTONE POROSITY



MY (2) A58451 R





FOCUSSED ELECTRIC  
GAMMA RAY

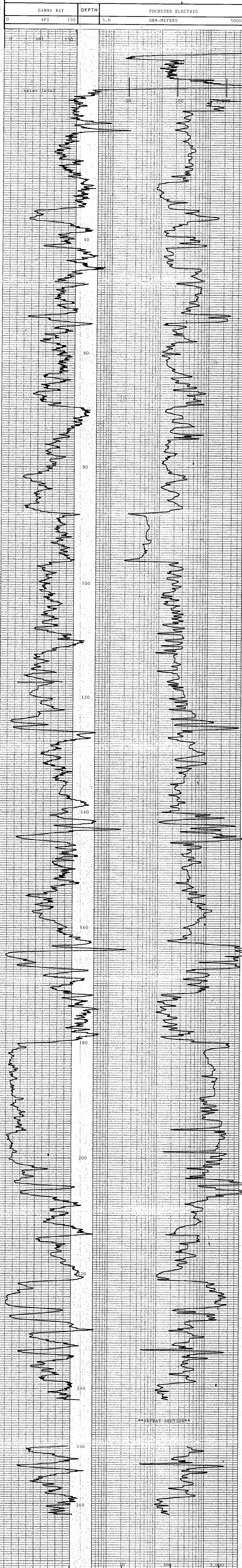
BOREHOLE QHR 87-020  
CLIENT QUINTETTE

AREA GRIZZLY  
COUNTRY CANADA  
DATE LOGGED 01/11/87

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

EQUIPMENT AND RECORDING DATA

LOG TYPING PANEL CAT  
LOG RECORDING SPEED SECS INCHES  
F.E. Y 9 D 9 3 1.0  
GAMMA Y 9 K 9 1  
REMARKS  
**739**



GAMMA RAY API 150 DEPTH 5.0 OHM METERS 5000



BOREHOLE QHR 87-020 AREA GRIZZLY  
CLIENT QUINTETTE COUNTRY CANADA



QHR 87021  
TRANSFER

LOG DEPTH 0070.00  
TRUE DEPTH 0069.96  
TILT 3.50 DG  
BEARING 220.93 DG  
NORTHING -000.94  
EASTING -001.94

LOG DEPTH 0060.00  
TRUE DEPTH 0059.98  
TILT 2.47 DG  
BEARING 236.76 DG  
NORTHING -000.48  
EASTING -001.54

LOG DEPTH 0050.00  
TRUE DEPTH 0049.99  
TILT 1.68 DG  
BEARING 265.82 DG  
NORTHING -000.25  
EASTING -001.18

LOG DEPTH 0040.00  
TRUE DEPTH 0039.99  
TILT 1.61 DG  
BEARING 281.65 DG  
NORTHING -000.23  
EASTING -000.88

LOG DEPTH 0030.00  
TRUE DEPTH 0029.99  
TILT 1.90 DG  
BEARING 265.12 DG  
NORTHING -000.28  
EASTING -000.61

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.64 DG  
BEARING 236.56 DG  
NORTHING -000.25  
EASTING -000.28

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.27 DG  
BEARING 203.32 DG  
NORTHING -000.10  
EASTING -000.04

LOG DEPTH 0005.00  
TRUE DEPTH 0005.00  
TILT 1.18 DG  
BEARING 186.15 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0010.00  
TILT = 1.35 DG  
BEARING = 220.48 DG

DEPTH = 0020.00  
TILT = 1.92 DG  
BEARING = 252.64 DG

DEPTH = 0030.00  
TILT = 1.88 DG  
BEARING = 277.60 DG

DEPTH = 0040.00  
TILT = 1.35 DG  
BEARING = 285.69 DG

DEPTH = 0050.00  
TILT = 2.01 DG  
BEARING = 245.95 DG

DEPTH = 0060.00  
TILT = 2.93 DG  
BEARING = 227.58 DG

DEPTH = 0070.00  
TILT = 4.07 DG  
BEARING = 214.29 DG

DATE 040787  
JOB NUMBER 0021  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126

MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 180  
L. CELL 2 CENTRE 181  
MAG DECL 024  
STOP DEPTH 0005

QHR 87021  
TRANSFER

Geophysical tool lost  
in hole.  
Blocked at 70m.

739





COAL

LITHOLOGY

LOG

SONDE TYPE  
COAL  
COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

BOREHOLE QHR 87021  
CLIENT Quintette Coal Ltd.

AREA Transfer  
COUNTRY Canada  
DEPTH SCALE 1:200

DATE LOGGED 02/Jul/87  
LOG LOSS

BOREHOLE DATA

PERMANENT DATUM	Ground Level
ELEVATION OF P.O.	N/A
MEASUREMENTS FROM	848
DEPTH REACHED	171.68
CASING SPACE	2.0
BIT SIZES	1 5.4 TO 1.1 2 TO 2.0
CASING SIZES	1 6.5 TO 2.0 2 TO

FLUID DATA

NATURE	Air/Water
SG	1.01 gm/cc
LEVEL	21.0m
VISCOSITY	N/A
PH at 10 deg temp	N/A
PH	N/A

OPERATION DATA

FIRST READING	1.49
LAST READING	0
INTERNAL LOGGED	1.68
UNIT-TRUCK No	116/1217
ENGINEER	James
WITNESS	James

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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	TC SECS	NORM	FROM	TO	INTERVAL	
GAMMA RAY	183B	5852									
L.S. DENSITY		367	Y	9	D	9	1	1.58	69	00	69
CALIPER		104.1	Y	9	D	9	1	7.58	69	00	69
		7" .2"	Y	9	D	9	3	-	69	00	69

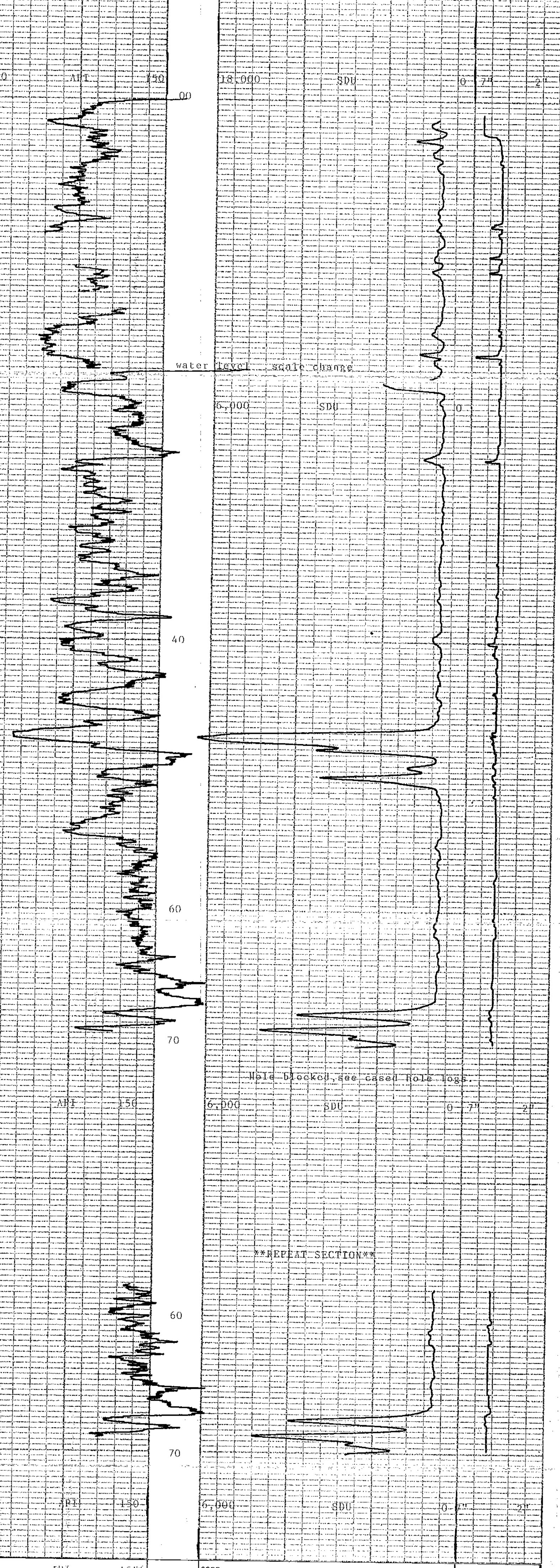
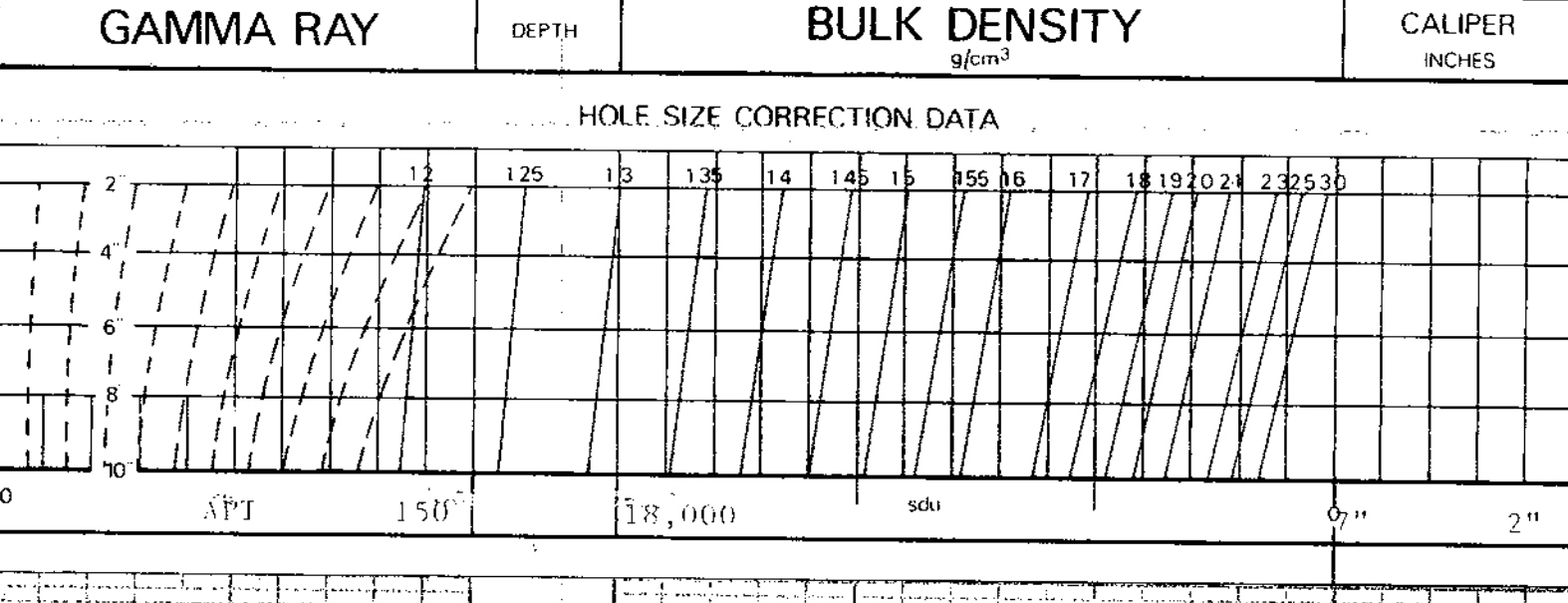
COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)											
FROM	157.0m	131.0m	101.0m	74.0m	49.0m	INTERVAL TOTAL					
TO	145.0m	125.0m	94.0m	66.0m	45.0m						
INTERVAL	7.0m	6.0m	7.0m	8.0m	4.0m	32.0m					

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS	REMARKS
209	FE	1:200			Tool stuck at 39.0m See cased hole logs for data to T.D.
215	NN	1:200			
231	Vert				

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

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



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE QHR 87021 AREA Transfer  
CLIENT Quintette Coal Ltd. COUNTRY Canada

COAL LITHOLOGY LOG





(Cased Hole)  
Gamma Density Caliper

BOREHOLE QHR 87021  
CLIENT Quintette Coal

AREA Transfer  
COUNTRY Canada

DATE LOGGED 02/Jul/87

DEPTH SCALE  
1:200

2.066 LOGS

BOREHOLE DATA REFER TO Lithology LOG

OPERATION DATA REFER TO Lithology LOG

EQUIPMENT AND RECORDING DATA

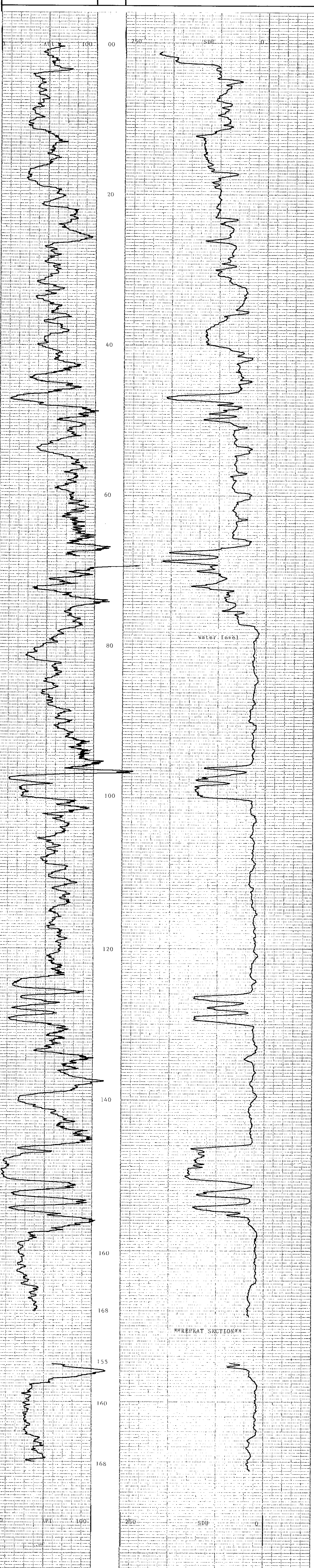
LOG	TAPING	RECORDING	PANEL	DATE
GR	Y	9	D	9
ISD	Y	9	D	9
Cal	Y	9	D	9

REMARKS  
**739**

Gamma Ray

Long Spaced Density

0	API	100	DEPTH	250	SDU	0
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0	API	100	DEPTH	250	SDU	0
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QHR 87022

Gamma Ray      Long Spaced Density



BOREHOLE QHR 87021      AREA Transfer  
CLIENT Quintette Coal Ltd.      COUNTRY Canada





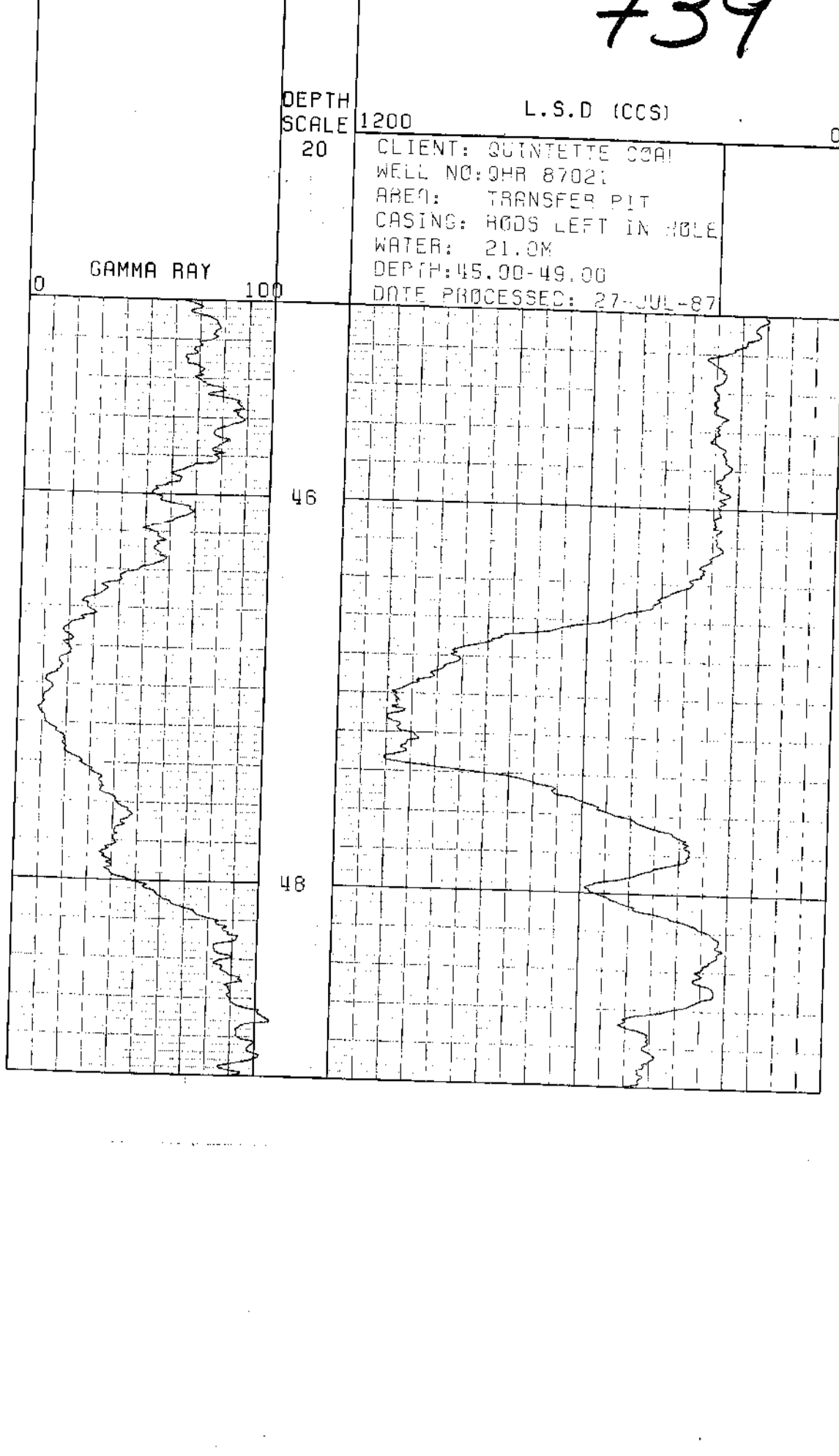




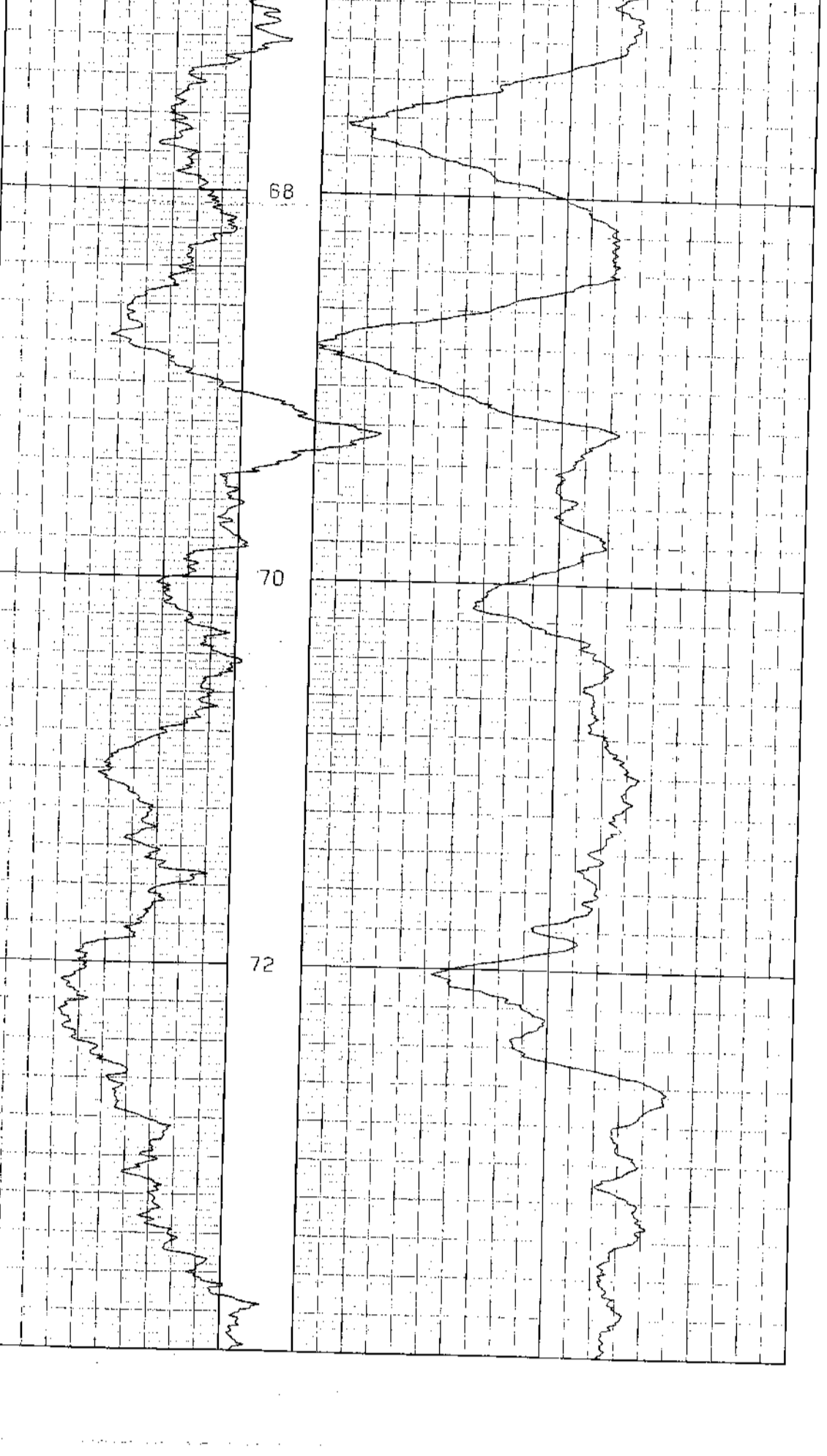


DETAIL LOGS

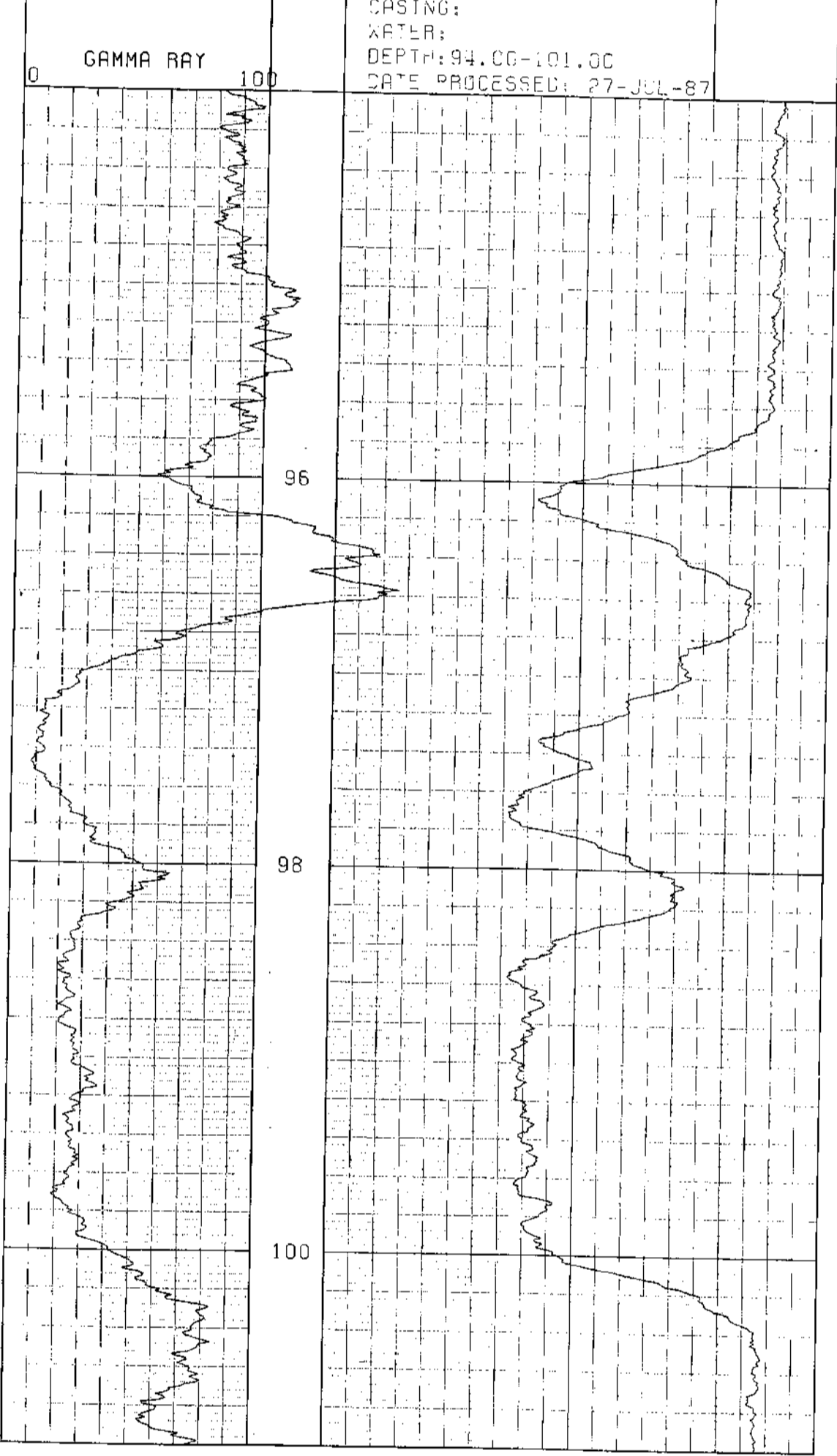
739



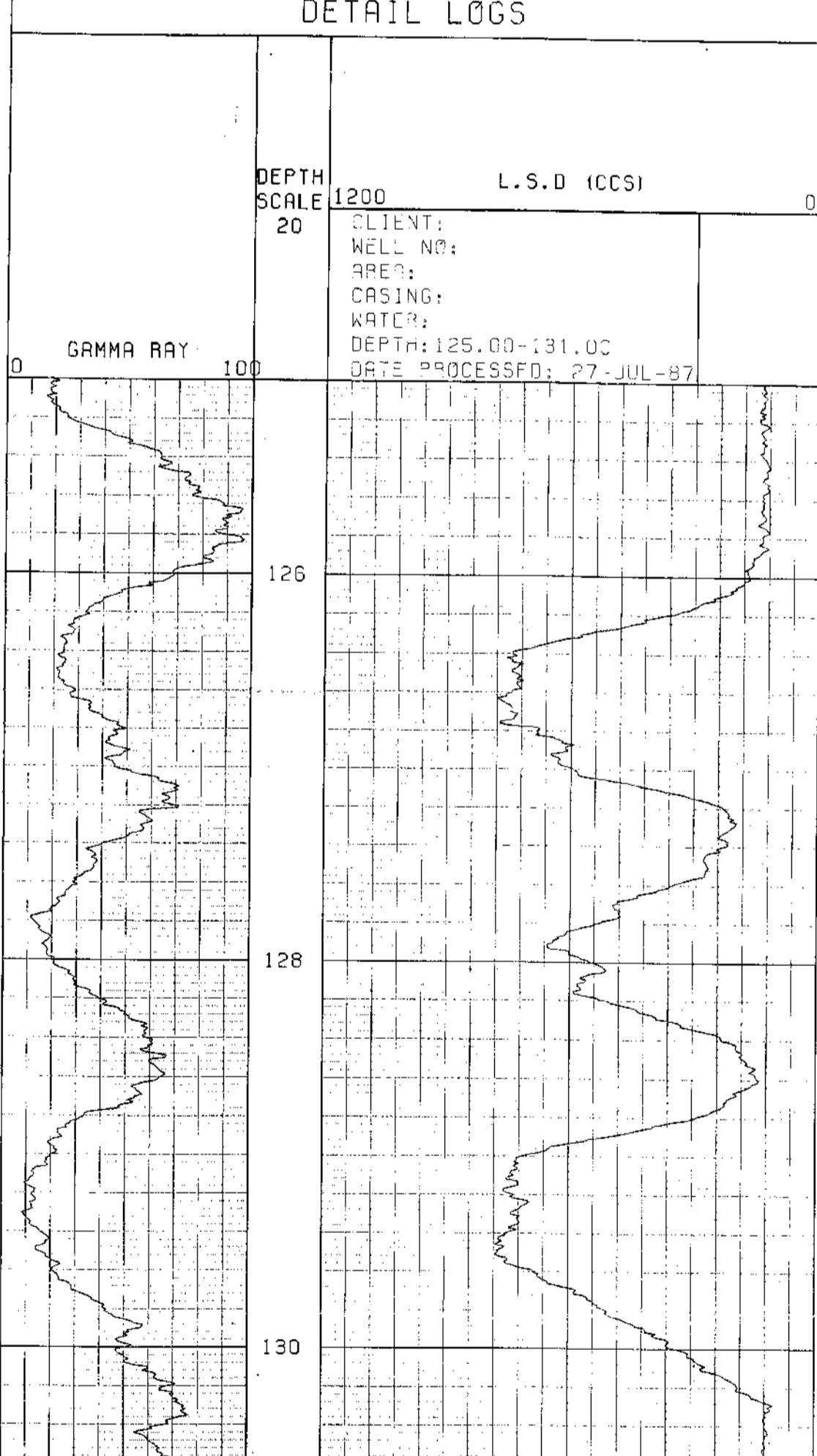
DETAIL LOGS



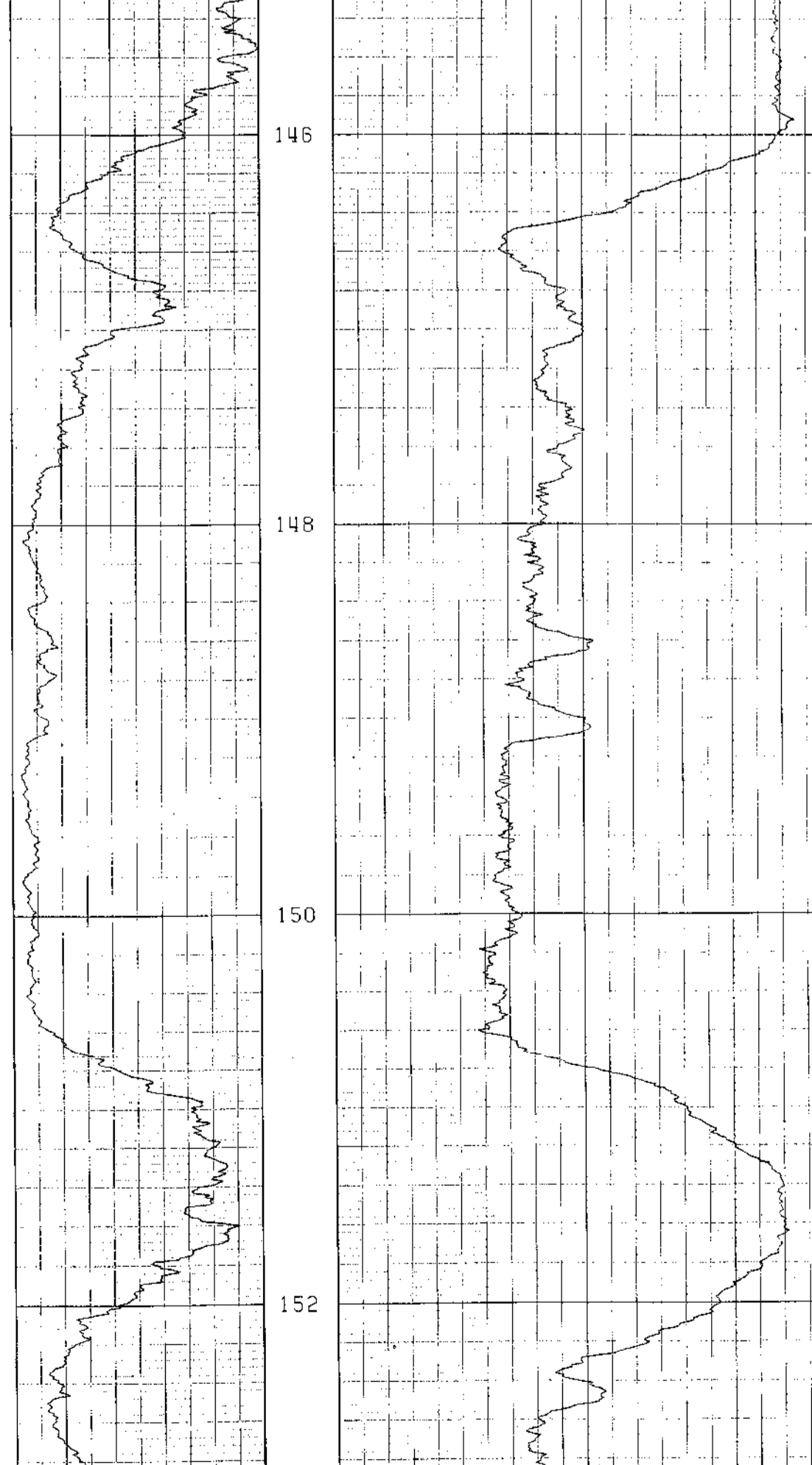
DETAIL LOGS



DETAIL LOGS



DETAIL LOGS





QHR 87022  
TRANSFER

LOG DEPTH 0140.00  
TRUE DEPTH 0139.74  
TILT 5.17 DG  
BEARING 167.93 DG  
NORTHING -007.36  
EASTING +000.61

LOG DEPTH 0130.00  
TRUE DEPTH 0129.78  
TILT 5.00 DG  
BEARING 167.65 DG  
NORTHING -006.48  
EASTING +000.42

LOG DEPTH 0120.00  
TRUE DEPTH 0119.82  
TILT 4.87 DG  
BEARING 168.30 DG  
NORTHING -005.63  
EASTING +000.23

LOG DEPTH 0110.00  
TRUE DEPTH 0109.86  
TILT 5.19 DG  
BEARING 166.91 DG  
NORTHING -004.80  
EASTING +000.06

LOG DEPTH 0100.00  
TRUE DEPTH 0099.90  
TILT 4.52 DG  
BEARING 172.47 DG  
NORTHING -003.92  
EASTING -000.13

LOG DEPTH 0090.00  
TRUE DEPTH 0089.93  
TILT 3.57 DG  
BEARING 173.60 DG  
NORTHING -003.13  
EASTING -000.24

LOG DEPTH 0080.00  
TRUE DEPTH 0079.95  
TILT 3.13 DG  
BEARING 181.03 DG  
NORTHING -002.51  
EASTING -000.31

LOG DEPTH 0070.00  
TRUE DEPTH 0069.96  
TILT 2.48 DG  
BEARING 183.34 DG  
NORTHING -001.97  
EASTING -000.30

LOG DEPTH 0060.00  
TRUE DEPTH 0059.97  
TILT 1.96 DG  
BEARING 175.25 DG  
NORTHING -001.53  
EASTING -000.27

LOG DEPTH 0050.00  
TRUE DEPTH 0049.98  
TILT 1.26 DG  
BEARING 187.99 DG  
NORTHING -001.19  
EASTING -000.30

LOG DEPTH 0040.00  
TRUE DEPTH 0039.98  
TILT 1.12 DG  
BEARING 194.25 DG  
NORTHING -000.97  
EASTING -000.27

LOG DEPTH 0030.00  
TRUE DEPTH 0029.98  
TILT 2.24 DG  
BEARING 207.51 DG  
NORTHING -000.78  
EASTING -000.22

LOG DEPTH 0020.00  
TRUE DEPTH 0019.99  
TILT 2.53 DG  
BEARING 185.64 DG  
NORTHING -000.43  
EASTING -000.04

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.77 DG  
BEARING 147.72 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
TILT = 1.77 DG  
BEARING = 147.72 DG

DEPTH = 0020.00  
TILT = 3.28 DG  
BEARING = 223.56 DG

DEPTH = 0030.00  
TILT = 1.21 DG  
BEARING = 191.46 DG

DEPTH = 0040.00  
TILT = 1.03 DG  
BEARING = 197.05 DG

DEPTH = 0050.00  
TILT = 1.49 DG  
BEARING = 178.93 DG

DEPTH = 0060.00  
TILT = 2.43 DG  
BEARING = 171.56 DG

DEPTH = 0070.00  
TILT = 2.52 DG  
BEARING = 195.11 DG

DEPTH = 0080.00  
TILT = 3.74 DG  
BEARING = 166.94 DG

DEPTH = 0090.00  
TILT = 3.40 DG  
BEARING = 180.27 DG

DEPTH = 0100.00  
TILT = 5.64 DG  
BEARING = 164.68 DG

DEPTH = 0110.00  
TILT = 4.74 DG  
BEARING = 169.15 DG

DEPTH = 0120.00  
TILT = 4.99 DG  
BEARING = 167.46 DG

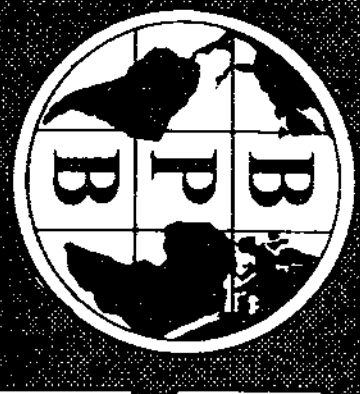
DEPTH = 0130.00  
TILT = 5.02 DG  
BEARING = 167.85 DG

DEPTH = 0140.00  
TILT = 5.32 DG  
BEARING = 168.01 DG

DATE = 030787  
JOB NUMBER = 0023  
LOG LABEL = 025.2  
MAG 1 MAX = 229  
MAG 1 MIN = 131  
MAG 2 MAX = 230  
MAG 2 MIN = 131  
MAG 3 MAX = 205  
MAG 3 MIN = 155  
L. CELL 1 TILT 1 = 08  
L. CELL 1 CPS 1 = 258  
L. CELL 1 TILT 2 = -08  
L. CELL 1 CPS 2 = 181  
L. CELL 2 TILT 1 = 08  
L. CELL 2 CPS 1 = 258  
L. CELL 2 TILT 2 = -08  
L. CELL 2 CPS 2 = 181  
MAG 1 CENTRE = 180  
MAG 2 CENTRE = 180  
MAG 3 CENTRE = 180  
L. CELL 1 CENTRE = 220  
L. CELL 2 CENTRE = 221  
MAG DECL = 024  
STOP DEPTH = 0010

QHR 87022  
TRANSFER





LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPERS

SONDE TYPE  
COAL  
COMBINATION  
SONDE

COAL  
LITHOLOGY  
LOG

BOREHOLE QHR 87022  
CLIENT Quintette Coal Ltd.  
AREA Transfer  
COUNTRY Canada  
DATE LOGGED 03/11/1987

DEPTH SCALE 1:200  
1 or 4 LOGS

BOREHOLE DATA  
PERMANENT DATUM Ground Level  
ELEVATION OF P.D. N/A  
MASONRY FROM G.L. 98  
DEPTH REACHED 144.6 G.L.  
CASING SHOE 2.5  
BIT SIZES 1 5.1 TO 17 2 TO  
3 TO 4 TO  
CASING SIZES 1 5.1 TO 2.5 2 TO

FLUID DATA  
NATURE Air/Water  
SG 1.01 gm/cc  
LEVEL 63.0m  
VISCOSITY N/A  
Rm in mm (in) N/A  
BHT N/A

OPERATION DATA  
FIRST READING 142  
LAST READING 0  
INTERVAL LOGGED 142  
UNIT-TRUCK No 1166/1217  
ENGINEER Cavendish  
WITNESS James

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	TC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	183B	5852					9	2	-	1.6	142	00	142	
L.S. DENSITY			0041	Y	9	D	9	1	7.58	-	142	00	142	
CALIPER	SIDEWALL POSITION		7" 2"	Y	9	D	9	3	-	-	142	00	142	

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

FROM	TO	INTERVAL	SEAM THICKNESS	INTERVAL TOTAL
116.0m	90.0m	56.0m		
104.0m	83.0m	49.0m		
12.0m	7.0m	7.0m		26.0m

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REMARKS
215	NN	1:200		REFER TO ADDITIONAL HEADINGS
227	Vent			

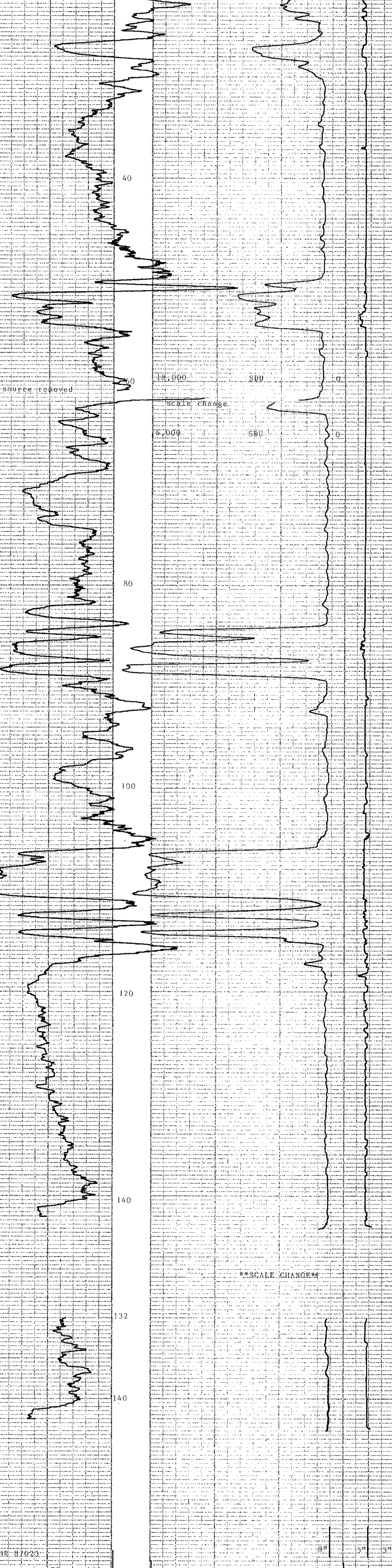
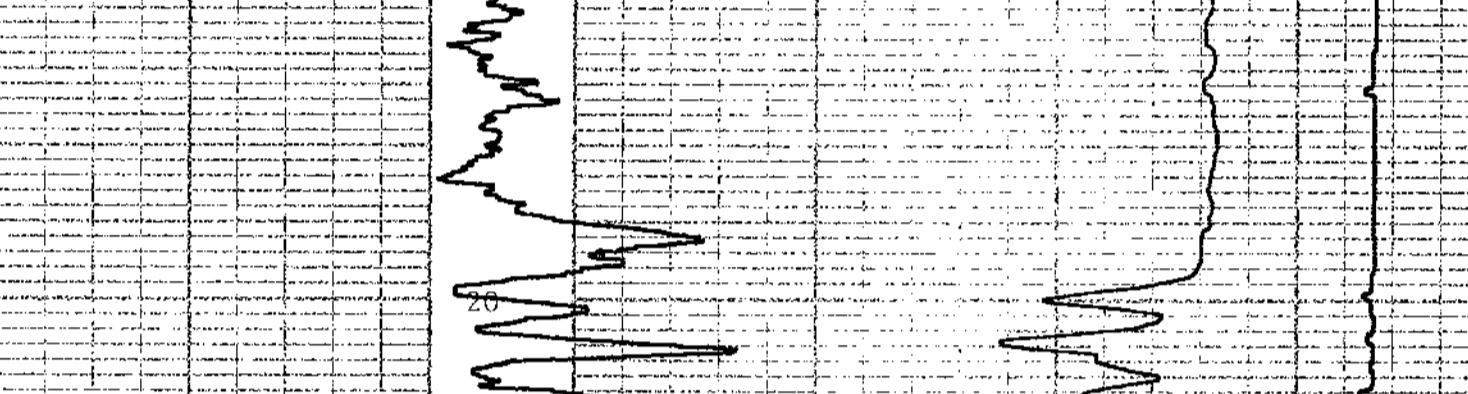
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	INS	CPS

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



BOREHOLE QHR 87022  
CLIENT Quintette Coal  
AREA Transfer  
COUNTRY Canada

COAL LITHOLOGY LOG





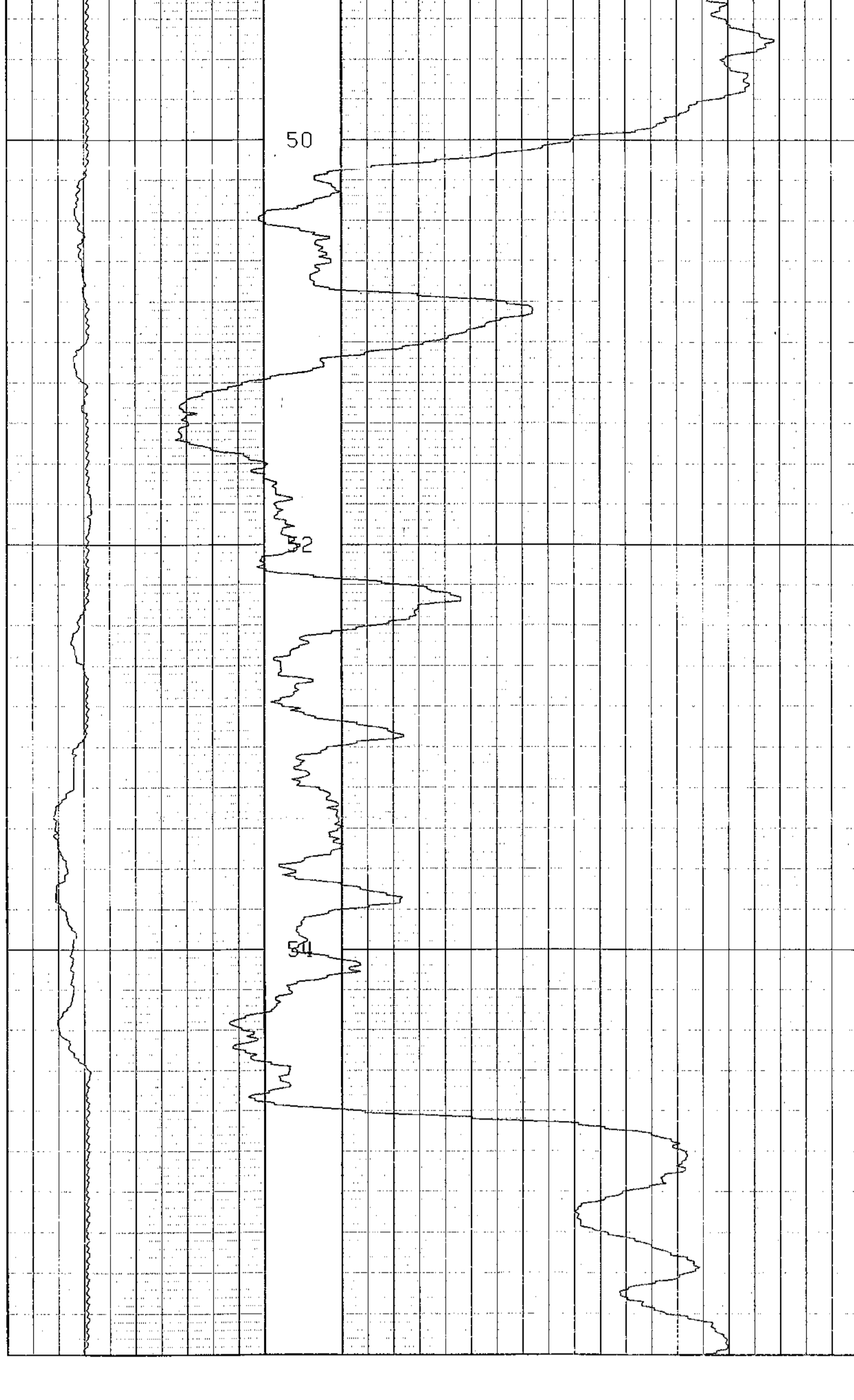


DETAIL LOGS

739

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 20 CLIENT: QUINTETTE COAL  
 WELL NO: OHR 87022  
 AREA: TRANSFER PIT  
 CASING: 2.50M  
 WATER: 63.0M  
 DEPTH: 49.00-56.00  
 DATE PROCESSED: 27-JUL-87

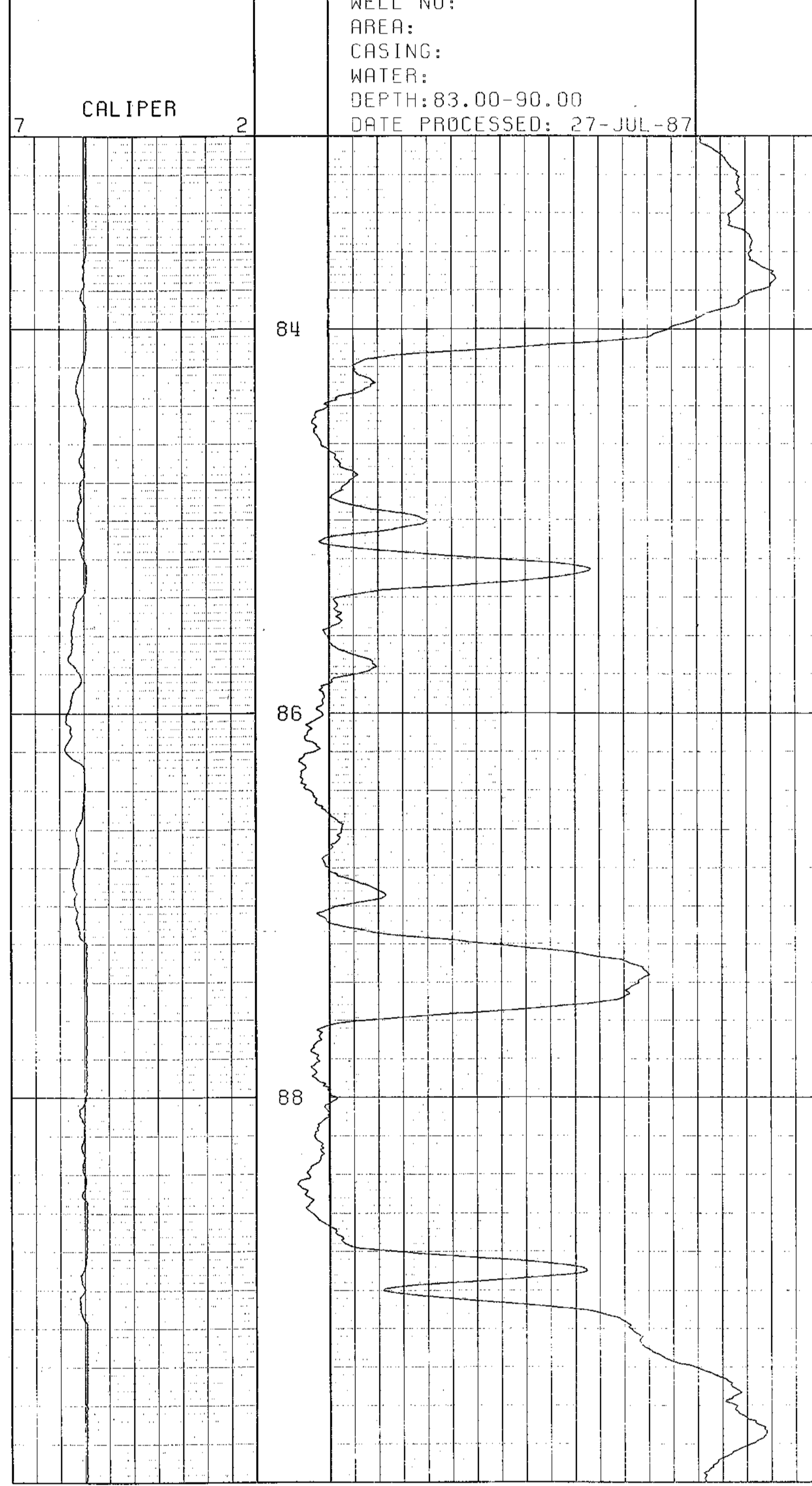
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 20 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 83.00-90.00  
 DATE PROCESSED: 27-JUL-87

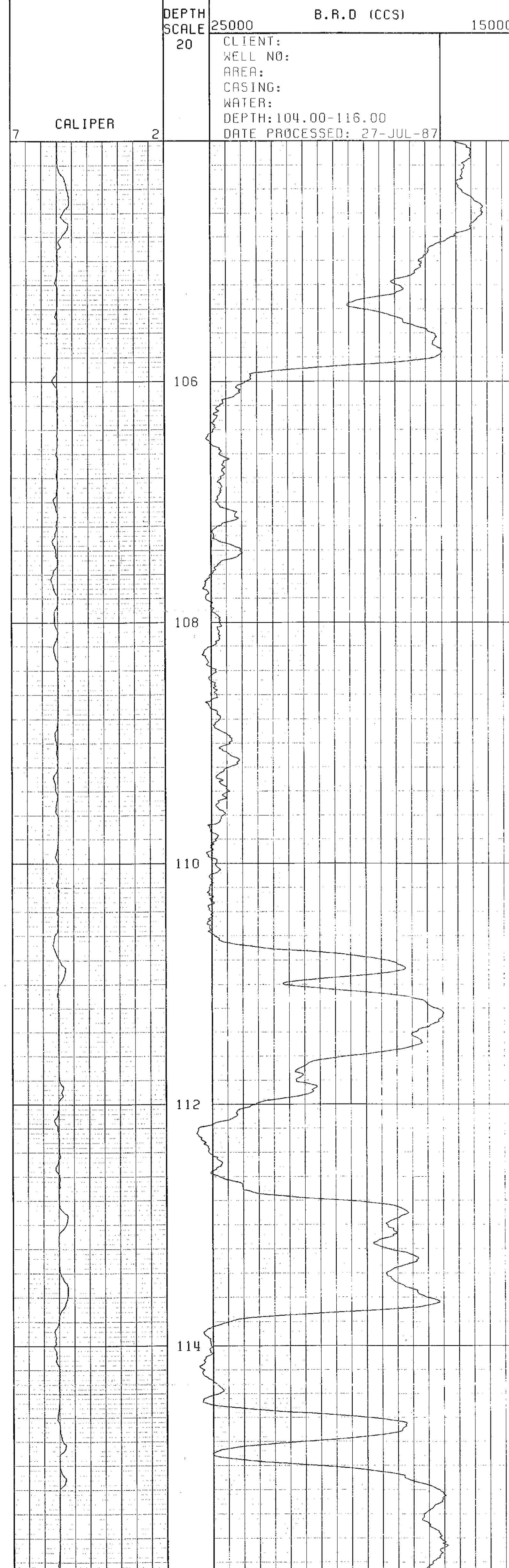
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 20 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 104.00-116.00  
 DATE PROCESSED: 27-JUL-87

7 CALIPER 2





DETAIL LOGS

739

DEPTH SCALE

10000  
20

L.S.D (CCS)

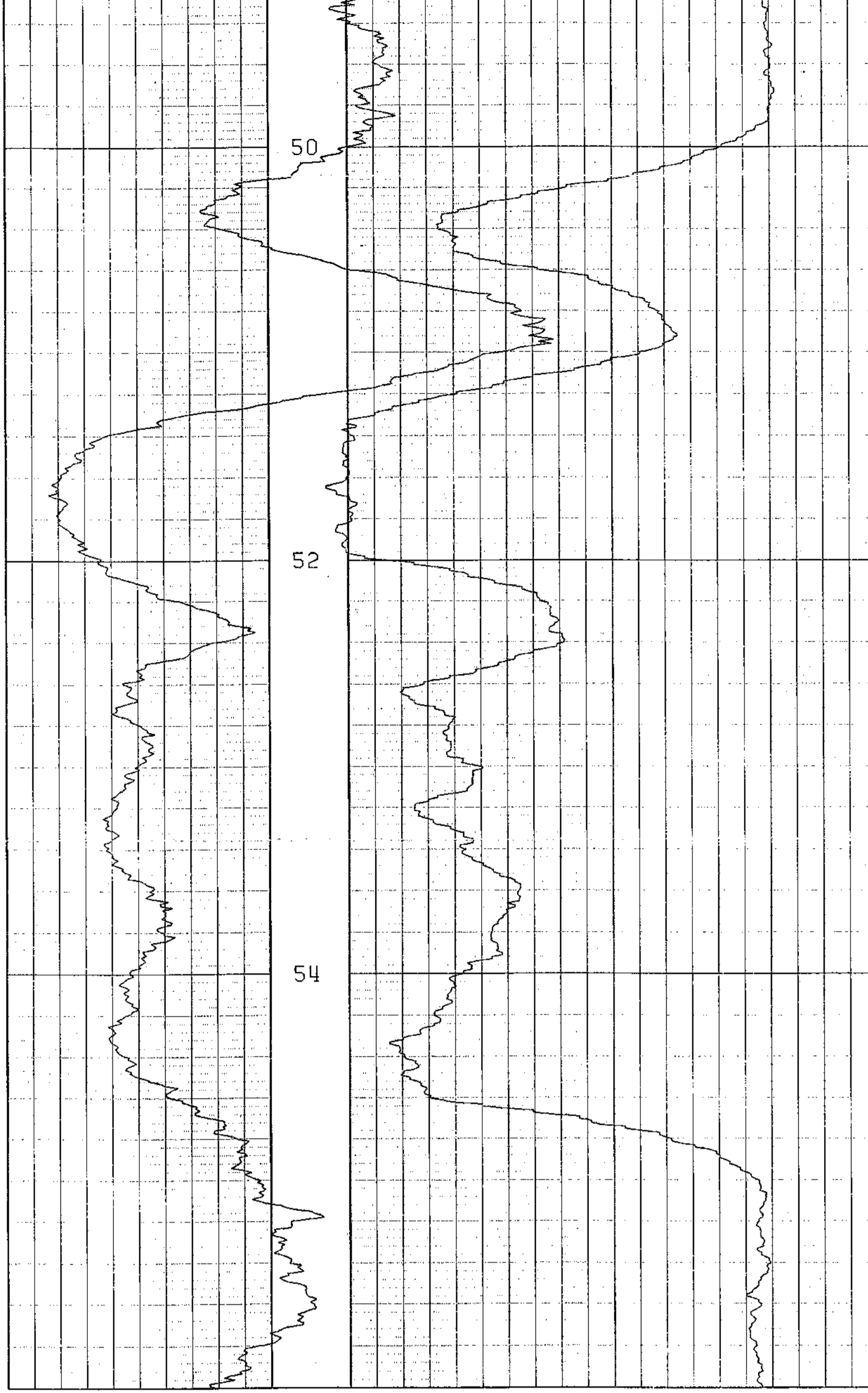
0

CLIENT: QUINTETTE COAL  
WELL NO: OHR 87022  
AREA: TRANSFER PIT  
CASING: 2.50M  
WATER: 63.0M  
DEPTH: 49.00-56.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY

0

150



50

52

54

DETAIL LOGS

DEPTH SCALE

6000  
20

L.S.D (CCS)

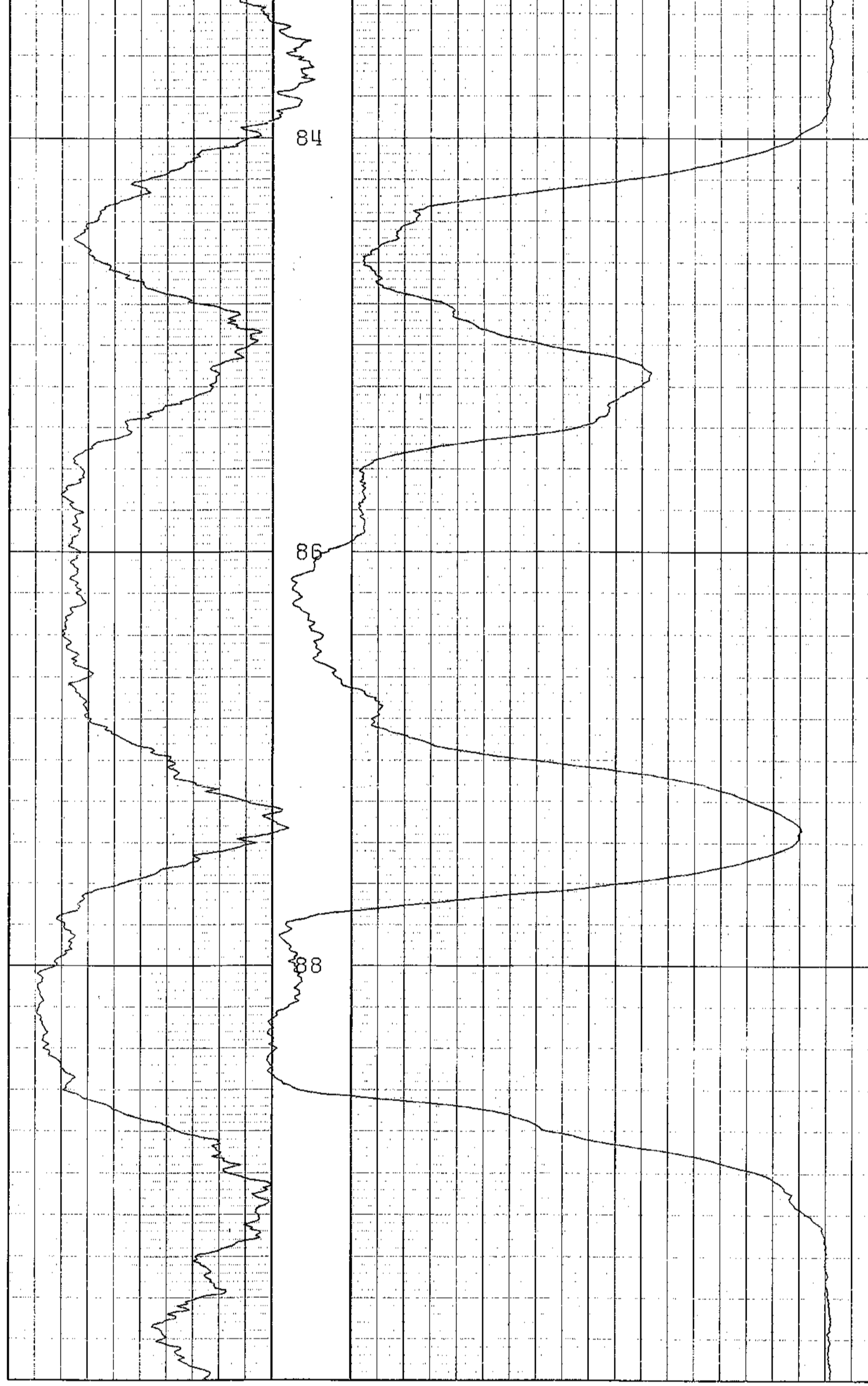
0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 83.00-90.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY

0

150



84

86

88

DETAIL LOGS

DEPTH SCALE

6000  
20

L.S.D (CCS)

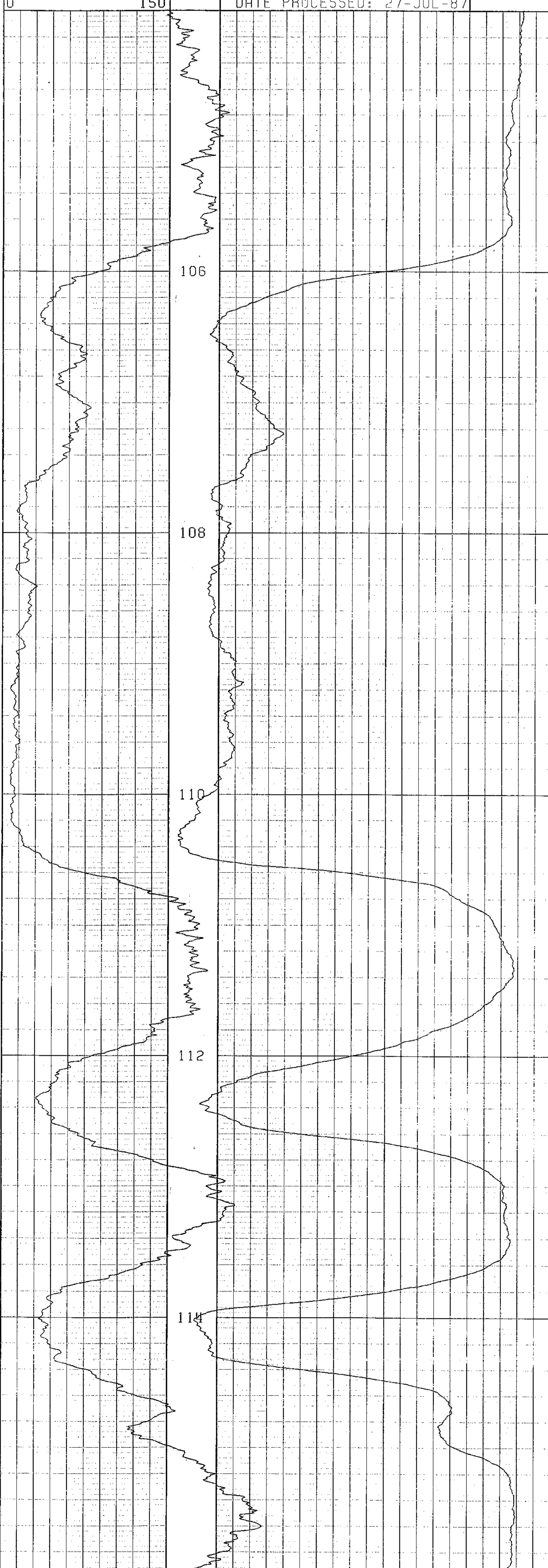
0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 104.00-116.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY

0

150



106

108

110

112

114



QHR87023  
TRANSFER

LOG DEPTH 0170.00  
TRUE DEPTH 0168.33  
TILT 14.34 DG  
BEARING 67.44 DG  
NORTHING +006.72  
EASTING +018.02

LOG DEPTH 0160.00  
TRUE DEPTH 0158.64  
TILT 13.51 DG  
BEARING 67.23 DG  
NORTHING +005.77  
EASTING +015.73

LOG DEPTH 0150.00  
TRUE DEPTH 0148.92  
TILT 12.12 DG  
BEARING 67.30 DG  
NORTHING +004.87  
EASTING +013.58

LOG DEPTH 0140.00  
TRUE DEPTH 0139.14  
TILT 11.05 DG  
BEARING 67.65 DG  
NORTHING +004.06  
EASTING +011.64

LOG DEPTH 0130.00  
TRUE DEPTH 0129.33  
TILT 9.67 DG  
BEARING 63.83 DG  
NORTHING +003.33  
EASTING +009.86

LOG DEPTH 0120.00  
TRUE DEPTH 0119.47  
TILT 8.57 DG  
BEARING 59.67 DG  
NORTHING +002.59  
EASTING +008.36

LOG DEPTH 0110.00  
TRUE DEPTH 0109.58  
TILT 7.72 DG  
BEARING 55.89 DG  
NORTHING +001.83  
EASTING +007.07

LOG DEPTH 0100.00  
TRUE DEPTH 0099.67  
TILT 7.00 DG  
BEARING 50.69 DG  
NORTHING +001.08  
EASTING +005.96

LOG DEPTH 0090.00  
TRUE DEPTH 0089.74  
TILT 6.74 DG  
BEARING 99.99 DG  
NORTHING +000.31  
EASTING +005.01

LOG DEPTH 0080.00  
TRUE DEPTH 0079.81  
TILT 5.95 DG  
BEARING 133.42 DG  
NORTHING +000.51  
EASTING +003.86

LOG DEPTH 0070.00  
TRUE DEPTH 0069.86  
TILT 4.85 DG  
BEARING 91.43 DG  
NORTHING +001.23  
EASTING +003.10

LOG DEPTH 0060.00  
TRUE DEPTH 0059.90  
TILT 4.08 DG  
BEARING 46.68 DG  
NORTHING +001.25  
EASTING +002.26

LOG DEPTH 0050.00  
TRUE DEPTH 0049.93  
TILT 3.77 DG  
BEARING 44.18 DG  
NORTHING +000.76  
EASTING +001.74

LOG DEPTH 0040.00  
TRUE DEPTH 0039.95  
TILT 3.70 DG  
BEARING 52.97 DG  
NORTHING +000.29  
EASTING +001.28

LOG DEPTH 0030.00  
TRUE DEPTH 0029.97  
TILT 3.15 DG  
BEARING 59.45 DG  
NORTHING -000.09  
EASTING +000.76

LOG DEPTH 0020.00  
TRUE DEPTH 0019.99  
TILT 2.27 DG  
BEARING 125.36 DG  
NORTHING -000.37  
EASTING +000.29

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.72 DG  
BEARING 191.18 DG  
NORTHING -000.14  
EASTING -000.02

LOG DEPTH 0005.00  
TRUE DEPTH 0005.00  
TILT 1.67 DG  
BEARING 206.71 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
TILT = 175.77 DG  
BEARING = 175.65 DG

DEPTH = 0020.00  
TILT = 2.77 DG  
BEARING = 75.07 DG

DEPTH = 0030.00  
TILT = 3.53 DG  
BEARING = 43.83 DG

DEPTH = 0040.00  
TILT = 3.86 DG  
BEARING = 62.12 DG

DEPTH = 0050.00  
TILT = 3.67 DG  
BEARING = 26.25 DG

DEPTH = 0060.00  
TILT = 4.49 DG  
BEARING = 67.11 DG

DEPTH = 0070.00  
TILT = 5.21 DG  
BEARING = 115.75 DG

DEPTH = 0080.00  
TILT = 6.70 DG  
BEARING = 151.10 DG

DEPTH = 0090.00  
TILT = 6.79 DG  
BEARING = 48.89 DG

DEPTH = 0100.00  
TILT = 7.21 DG  
BEARING = 52.49 DG

DEPTH = 0110.00  
TILT = 8.23 DG  
BEARING = 59.28 DG

DEPTH = 0120.00  
TILT = 8.91 DG  
BEARING = 60.07 DG

DEPTH = 0130.00  
TILT = 10.43 DG  
BEARING = 67.60 DG

DEPTH = 0140.00  
TILT = 11.66 DG  
BEARING = 67.70 DG

DEPTH = 0150.00  
TILT = 12.57 DG  
BEARING = 66.90 DG

DEPTH = 0160.00  
TILT = 14.45 DG  
BEARING = 67.55 DG

DEPTH = 0170.00  
TILT = 14.24 DG  
BEARING = 67.32 DG

DATE 040787  
JOB NUMBER 0023  
LOG LABEL 002.2  
MAG 1 MAX 229  
MAG 1 MIN 131  
MAG 2 MAX 230  
MAG 2 MIN 131  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 08  
L. CELL 1 CPS 1 258  
L. CELL 1 TILT 2 -08  
L. CELL 1 CPS 2 181  
L. CELL 2 TILT 1 08  
L. CELL 2 CPS 1 258  
L. CELL 2 TILT 2 -08  
L. CELL 2 CPS 2 181

MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 220  
L. CELL 2 CENTRE 220  
MAG DECL 024  
STOP DEPTH 0005

QHR 87023  
TRANSFER





BOREHOLE QHR 87023  
 CLIENT Quintette Coal Ltd.

AREA Transfer  
 COUNTRY Canada  
 DATE LOGGED 04/Jul/87

DEPTH SCALE 1:200  
 LOG OF 4 LOGS

BOREHOLE DATA  
 PERMANENT/TEMP Ground Level  
 ELEVATION OF P.D. N/A  
 DRILLER

LITHOLOGY LOG  
 DEPTH REACHED 171  
 CASING SIZE 6.0  
 BIT SIZES 3 TO 11  
 CASING SIZES 1 TO 4

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

OPERATION DATA  
 FIRST READING 170  
 LAST READING 0  
 INTERVAL LOGGED 170  
 UNIT THICKNESS 146/170  
 ENGINEER Canadian  
 WITNESS James

739

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE												
LOG	EQUIPMENT		TAPING		PANEL		CAL COEFF	DEPTHS		SEAM LOG RUN		
	SONDE	SOURCE	CAIBRATOR	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL
GAMMA RAY	183R	5852								158	171	00
L.S. DENSITY			367	Y	9	D	9	1	-	171	00	171
CALIPER	SIDEWALL POSITION		0041	Y	9	D	9	1	7.58	-	171	00
			" . 2"	Y	9	D	9	1	-	-	171	00

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

FROM	159.0m	134.0m	104.0m	81.0m	60.0m	INTERVAL
TO	147.0m	127.0m	97.0m	71.9m	53.0m	TOTAL
INTERVAL	12.0m	7.0m	7.0m	10.0m	7.0m	42.0m

ADDITIONAL SONDES RUN				REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
215	NK	1:200		REFER TO ADDITIONAL HEADINGS
227	Vert	-		

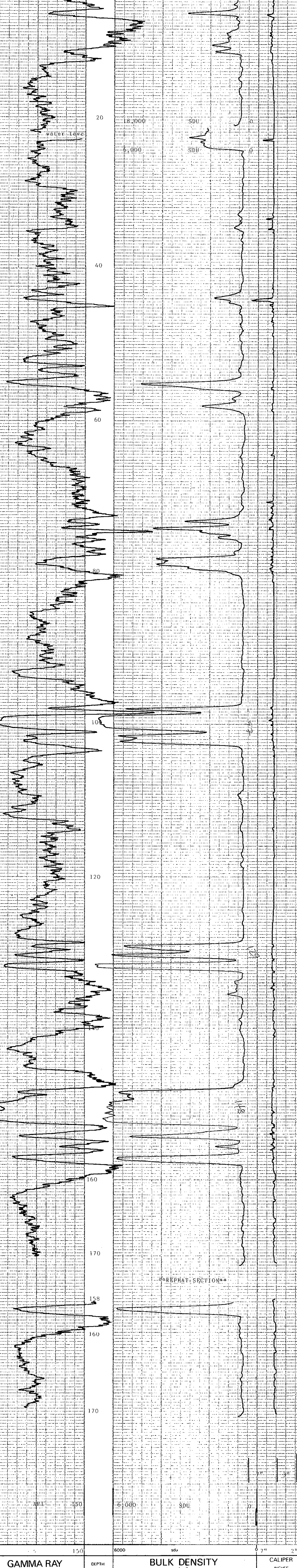
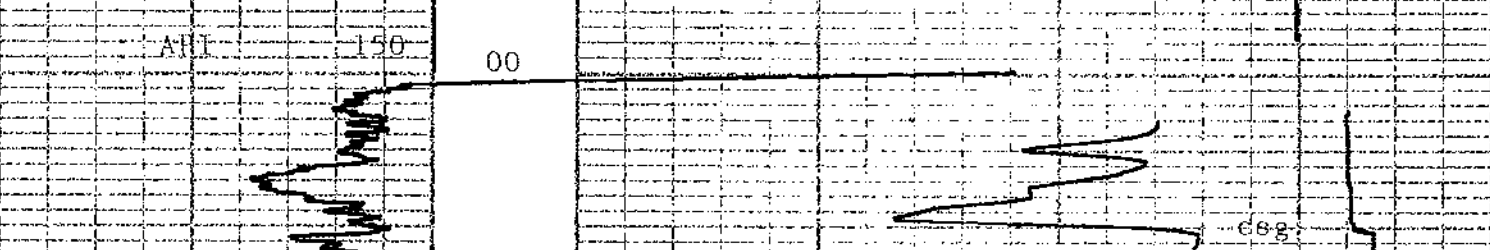
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps
JIG MARK SHOWN AT ABOVE VALUE -				NORM	0.85		

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

BOREHOLE QHR 87023 AREA Transfer  
 CLIENT Quintette Coal COUNTRY Canada

COAL LITHOLOGY LOG

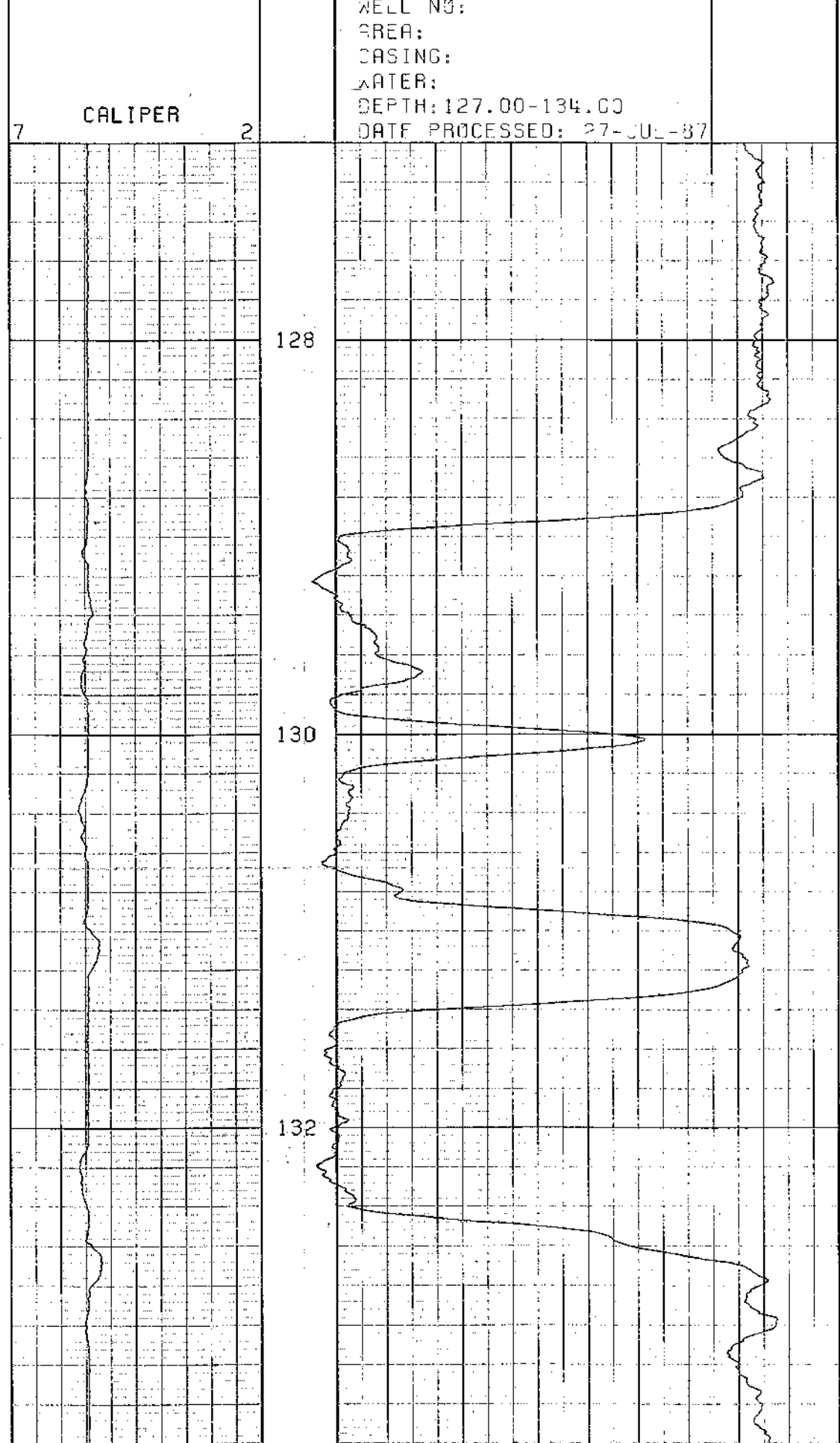
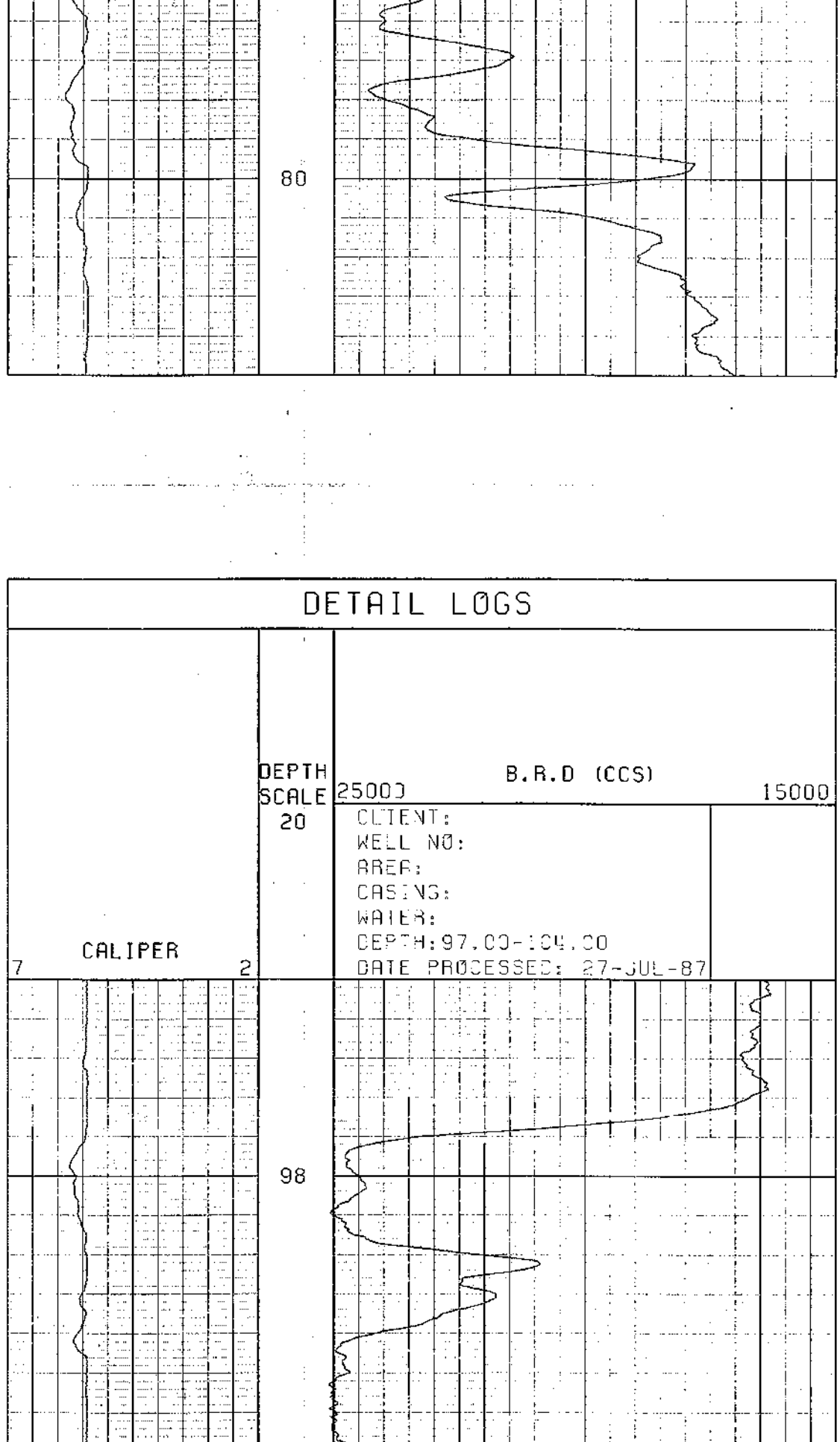
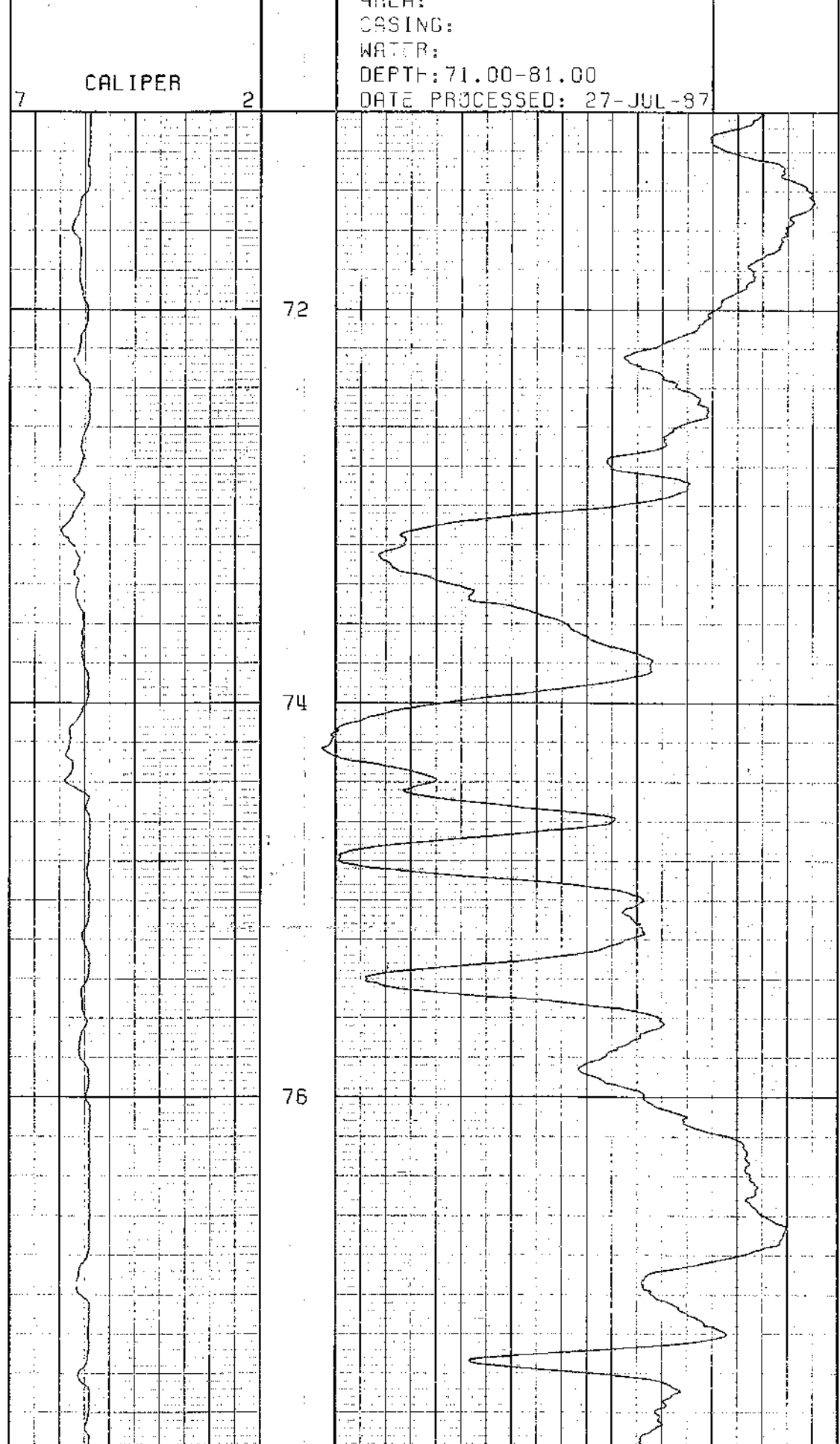
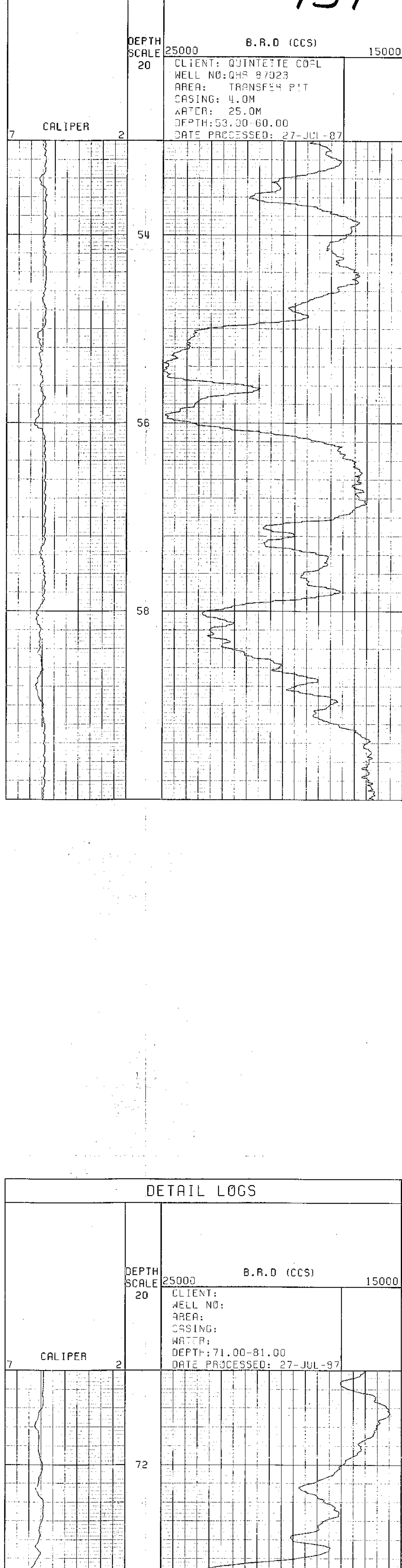






DETAIL LOGS

739



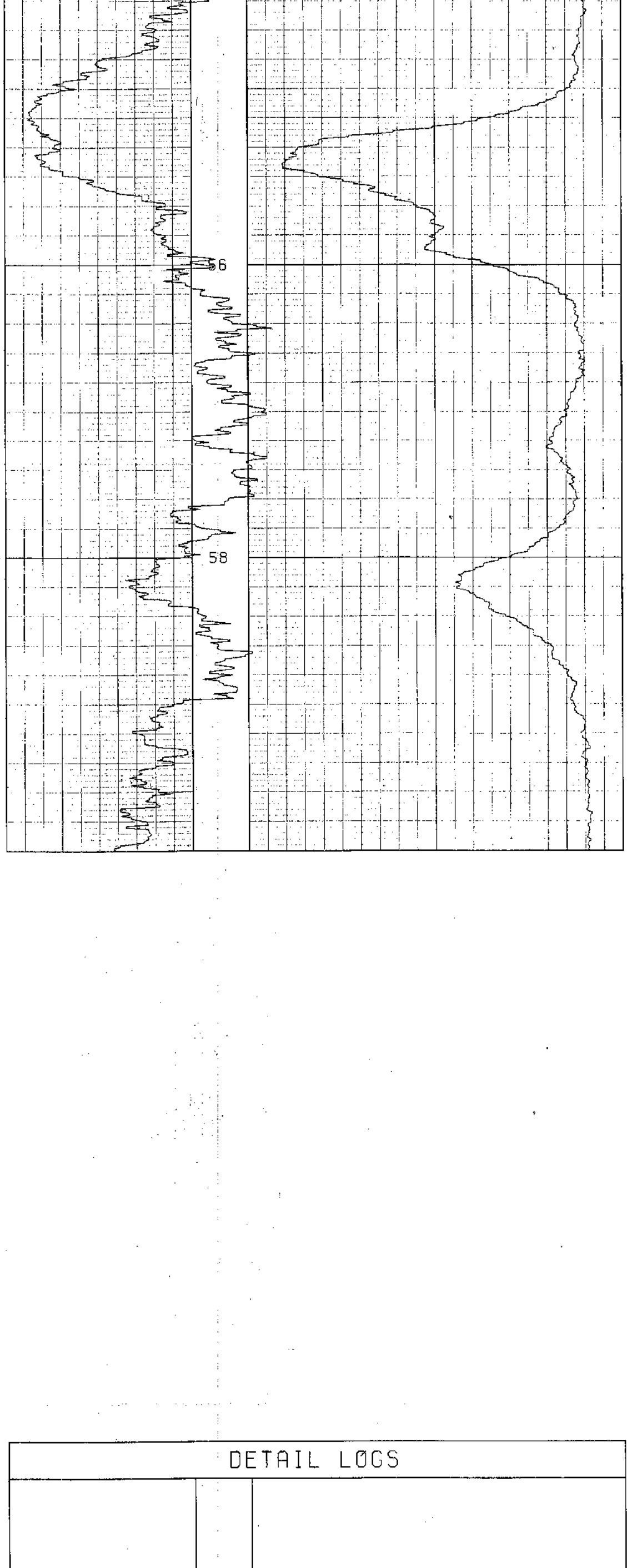


DETAIL LOGS

739

DEPTH SCALE	6000	L.S.D (CCS)	0
CLIENT: GJINTEPTE COAL			
WELL NO: 0HR 87023			
AREA: TRANSFER PIT			
CASING: 4.0M			
WATER: 25.0M			
DEPTH: 53.00-63.00			
DATE PROCESSED: 27-JUL-87			

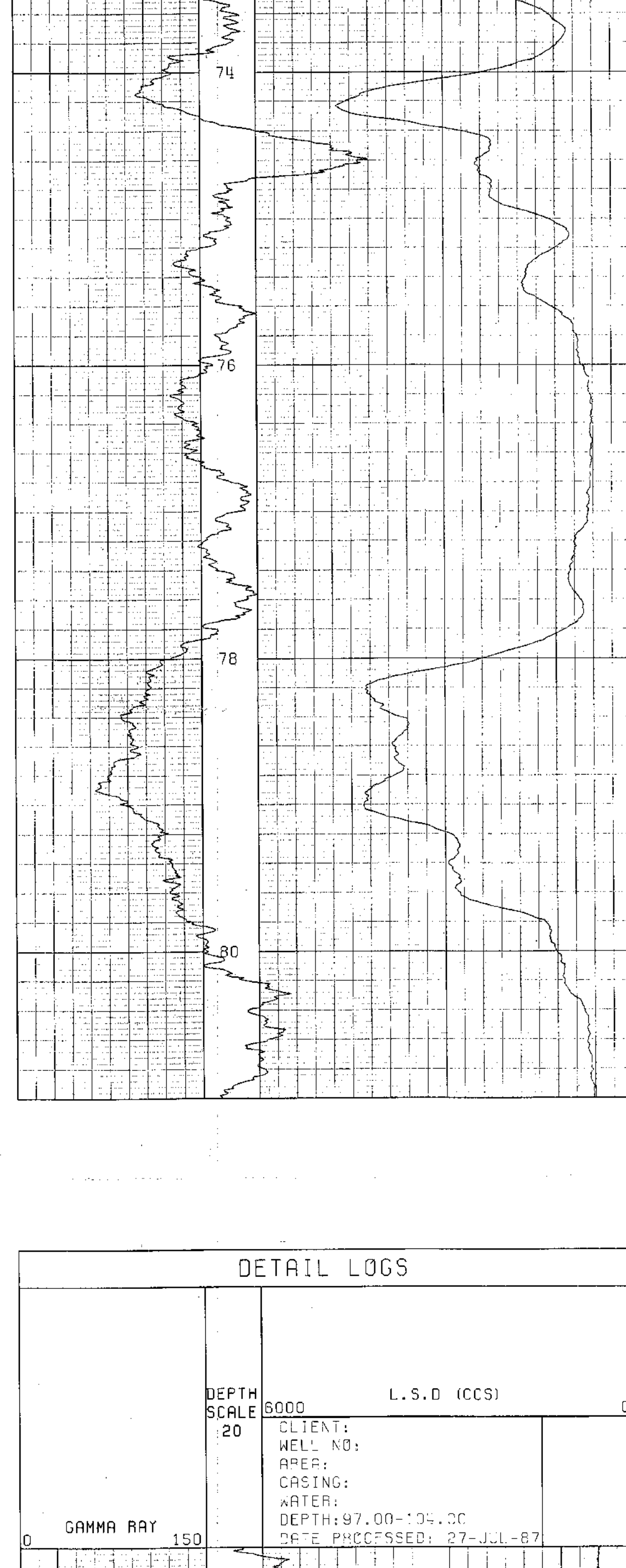
GAMMA RAY



DETAIL LOGS

DEPTH SCALE	6000	L.S.D (CCS)	0
CLIENT:			
WELL NO:			
AREA:			
CASING:			
WATER:			
DEPTH: 71.00-81.00			
DATE PROCESSED: 27-JUL-87			

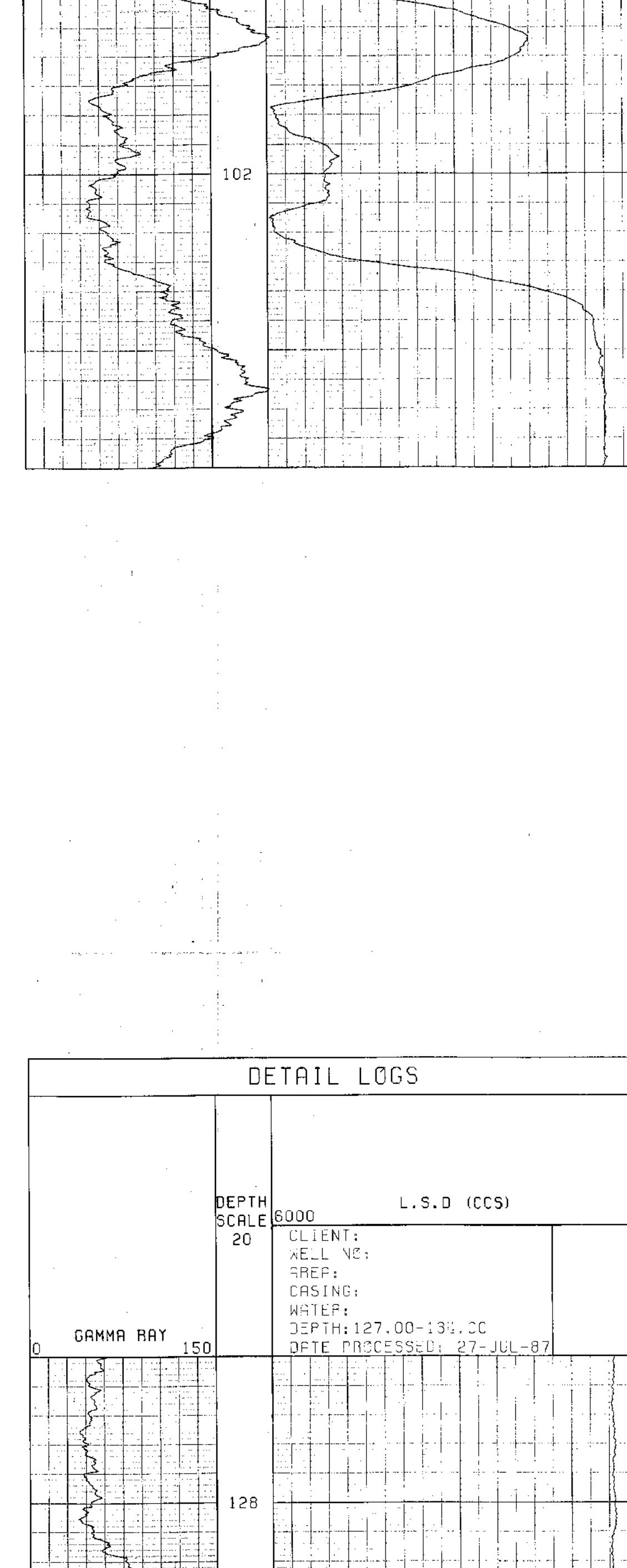
GAMMA RAY



DETAIL LOGS

DEPTH SCALE	6000	L.S.D (CCS)	0
CLIENT:			
WELL NO:			
AREA:			
CASING:			
WATER:			
DEPTH: 97.00-104.00			
DATE PROCESSED: 27-JUL-87			

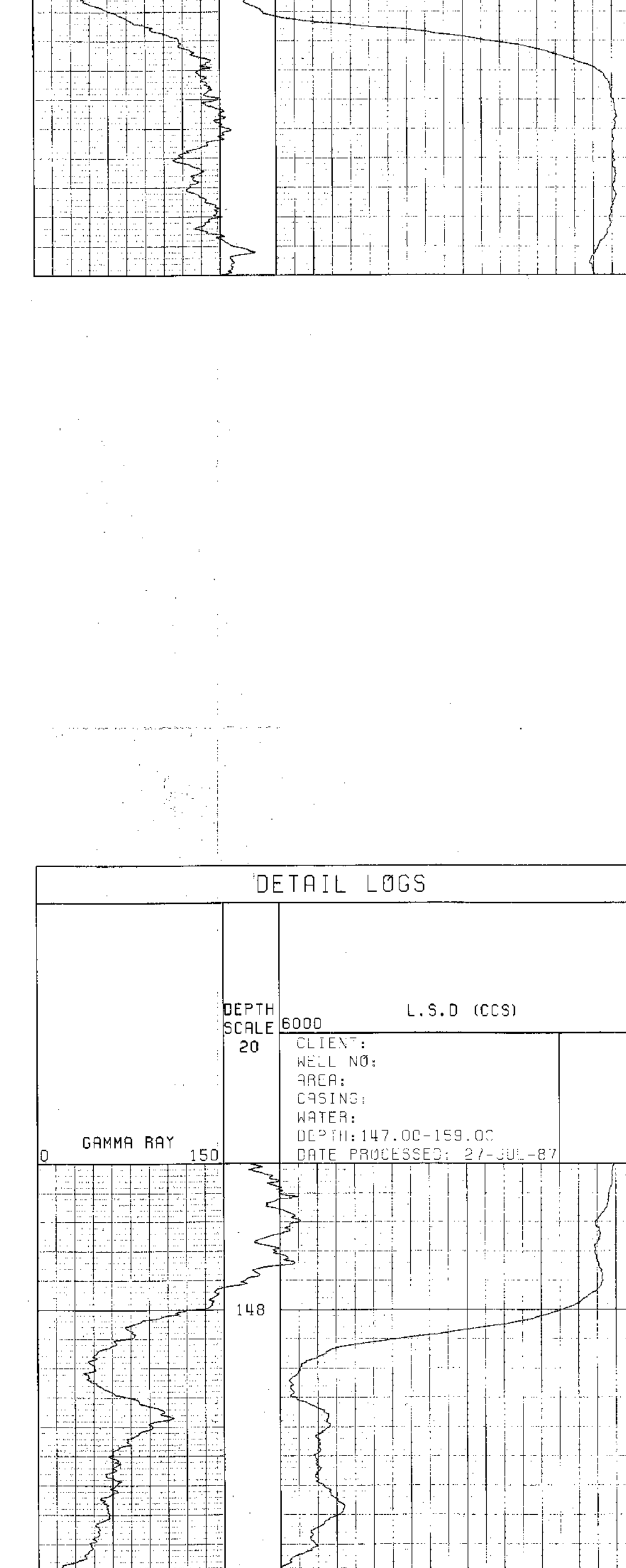
GAMMA RAY



DETAIL LOGS

DEPTH SCALE	6000	L.S.D (CCS)	0
CLIENT:			
WELL NO:			
AREA:			
CASING:			
WATER:			
DEPTH: 127.00-134.00			
DATE PROCESSED: 27-JUL-87			

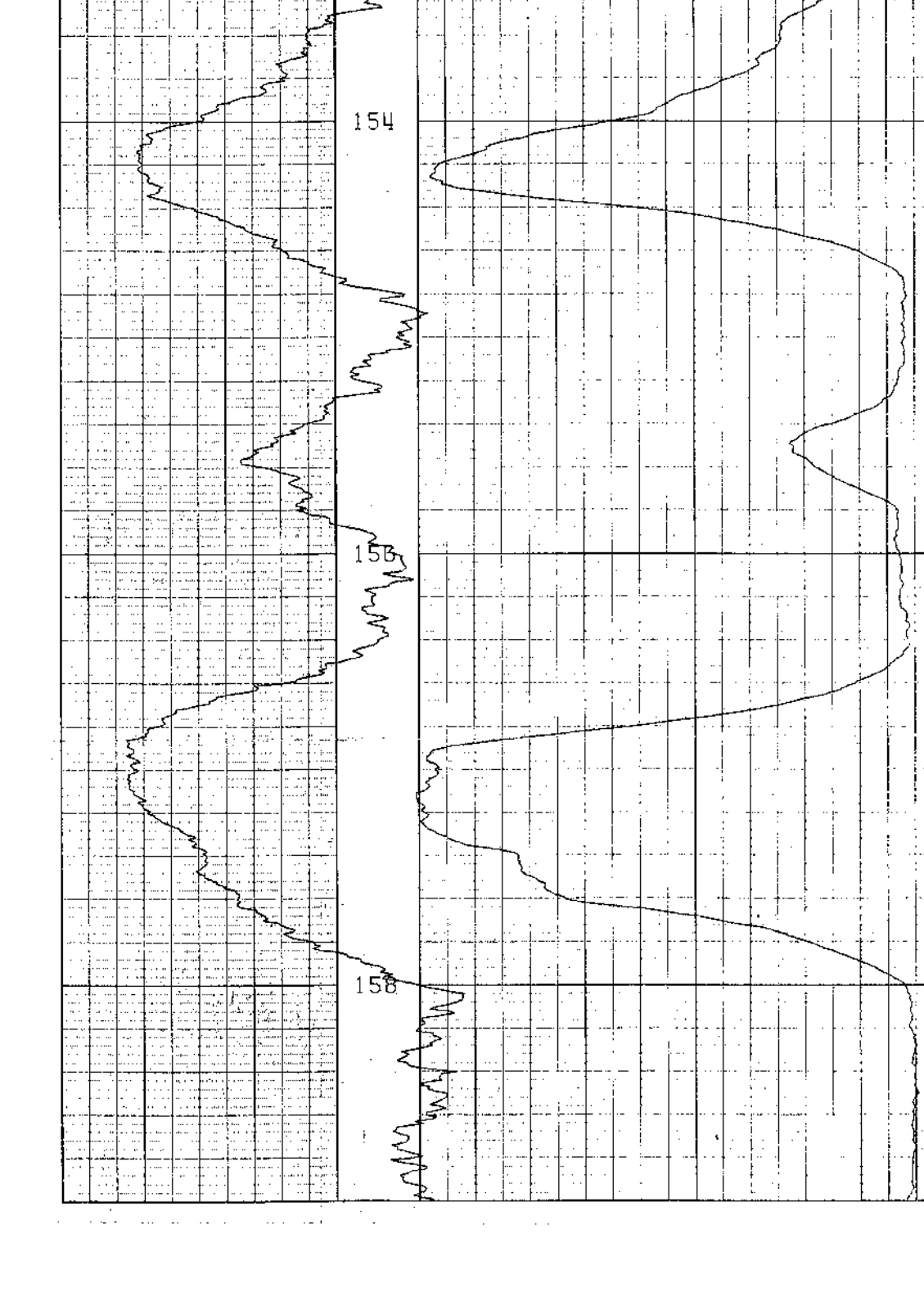
GAMMA RAY



DETAIL LOGS

DEPTH SCALE	6000	L.S.D (CCS)	0
CLIENT:			
WELL NO:			
AREA:			
CASING:			
WATER:			
DEPTH: 147.00-159.00			
DATE PROCESSED: 27-JUL-87			

GAMMA RAY





DEPTH = 0010.00  
TILT = 1.68 DG  
BEARING = 178.22 DG

DEPTH = 0020.00  
TILT = 1.06 DG  
BEARING = 172.76 DG

DEPTH = 0030.00  
TILT = 1.88 DG  
BEARING = 192.02 DG

DEPTH = 0040.00  
TILT = 1.90 DG  
BEARING = 194.33 DG

DEPTH = 0050.00  
TILT = 2.85 DG  
BEARING = 190.43 DG

DEPTH = 0060.00  
TILT = 3.38 DG  
BEARING = 199.42 DG

DEPTH = 0070.00  
TILT = 3.71 DG  
BEARING = 203.21 DG

DEPTH = 0080.00  
TILT = 4.50 DG  
BEARING = 197.89 DG

DEPTH = 0090.00  
TILT = 5.70 DG  
BEARING = 204.45 DG

DEPTH = 0100.00  
TILT = 6.36 DG  
BEARING = 205.68 DG

DEPTH = 0110.00  
TILT = 8.04 DG  
BEARING = 209.22 DG

DEPTH = 0120.00  
TILT = 8.06 DG  
BEARING = 204.92 DG

DATE = 050787  
JOB NUMBER = 0024  
LOG LABEL = 025.2  
MAG 1 MAX = 228  
MAG 1 MIN = 129  
MAG 2 MAX = 228  
MAG 2 MIN = 130  
MAG 3 MAX = 205  
MAG 3 MIN = 155  
L. CELL 1 TILT 1 = 20  
L. CELL 1 CPS 1 = 233  
L. CELL 1 TILT 2 = -20  
L. CELL 1 CPS 2 = 126  
L. CELL 2 TILT 1 = 20  
L. CELL 2 CPS 1 = 232  
L. CELL 2 TILT 2 = -20  
L. CELL 2 CPS 2 = 126  
MAG 1 CENTRE = 180  
MAG 2 CENTRE = 180  
MAG 3 CENTRE = 180  
L. CELL 1 CENTRE = 181  
L. CELL 2 CENTRE = 180

MAG DECL = 024  
STOP DEPTH = 0005

QHR87024  
TRANSFER



QHR 87024  
TRANSFER

LOG DEPTH 0120.00  
TRUE DEPTH 0119.64  
TILT 8.05 DG  
BEARING 207.07 DG  
NORTHING -007.27  
EASTING -002.73

LOG DEPTH 0110.00  
TRUE DEPTH 0109.74  
TILT 7.20 DG  
BEARING 207.45 DG  
NORTHING -006.02  
EASTING -002.09

LOG DEPTH 0100.00  
TRUE DEPTH 0099.82  
TILT 6.03 DG  
BEARING 205.07 DG  
NORTHING -004.90  
EASTING -001.52

LOG DEPTH 0090.00  
TRUE DEPTH 0089.88  
TILT 5.10 DG  
BEARING 201.17 DG  
NORTHING -003.95  
EASTING -001.07

LOG DEPTH 0080.00  
TRUE DEPTH 0079.92  
TILT 4.11 DG  
BEARING 200.55 DG  
NORTHING -003.12  
EASTING -000.75

LOG DEPTH 0070.00  
TRUE DEPTH 0069.95  
TILT 3.55 DG  
BEARING 201.31 DG  
NORTHING -002.45  
EASTING -000.50

LOG DEPTH 0060.00  
TRUE DEPTH 0059.97  
TILT 3.11 DG  
BEARING 194.92 DG  
NORTHING -001.87  
EASTING -000.27

LOG DEPTH 0050.00  
TRUE DEPTH 0049.98  
TILT 2.37 DG  
BEARING 192.30 DG  
NORTHING -001.35  
EASTING -000.13

LOG DEPTH 0040.00  
TRUE DEPTH 0039.99  
TILT 1.89 DG  
BEARING 193.17 DG  
NORTHING -000.94  
EASTING -000.04

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 1.47 DG  
BEARING 182.39 DG  
NORTHING -000.62  
EASTING +000.02

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.37 DG  
BEARING 175.49 DG  
NORTHING -000.36  
EASTING +000.03

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.51 DG  
BEARING 171.56 DG  
NORTHING -000.13  
EASTING +000.01

LOG DEPTH 0005.00  
TRUE DEPTH 0005.00  
TILT 1.35 DG  
BEARING 164.91 DG  
NORTHING +000.00  
EASTING +000.00

739





# COAL LITHOLOGY LOG

SONDE TYPE: \_\_\_\_\_  
 COAL COMBINATION: \_\_\_\_\_  
 SONDE: \_\_\_\_\_

LOG SUITE:  
 GAMMA RAY  
 L.S. DENSITY  
 CALIPER

BOREHOLE: OHR 87024  
 CLIENT: Quintette Coal Ltd.

AREA: Transfer  
 COUNTRY: Canada  
 DATE LOGGED: 05/JUL/87

PERMANENT DATA: Ground Level  
 ELEVATION OF P.D.: N/A  
 MEASUREMENTS FROM: 0.1  
 DEPTH REACHED: 128.5  
 CASING SIZE: 4.0  
 BIT SIZES: 1 5.4 TO 1.0, 2 TO, 3 TO, 4 TO  
 CASING SIZES: 1 6.0 TO 4, 2 TO

FLUID DATA  
 NATURE: Air/Water  
 SG: 1.01 gm/cc  
 LEVEL: 25.0  
 VISCOSITY: N/A  
 Hm in tubes (cm): N/A  
 BH: N/A

OPERATION DATA  
 FIRST READING: 126  
 LAST READING: 0  
 INTERVAL LOGGED: 126  
 UNIT-TICK No: 1166/1117  
 ENGINEER: Cavendish  
 WITNESS: James

# 739

## EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING		PANEL		CAL COEFF		DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL	
GAMMA RAY	183B	5852								1.53	126	00	126
L.S. DENSITY			367	Y	9	D	9	2	-	1.28	126	00	126
CALIPER	SIDEWALL POSITION		0041	Y	9	D	9	1	7.28	-	126	00	126
			7" .2"	Y	9	D	9	3	-	-	126	00	126

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)										
FROM	117	92	54	27						INTERVAL TOTAL
TO	105	86	47	23						
INTERVAL	12	6	7	4						20

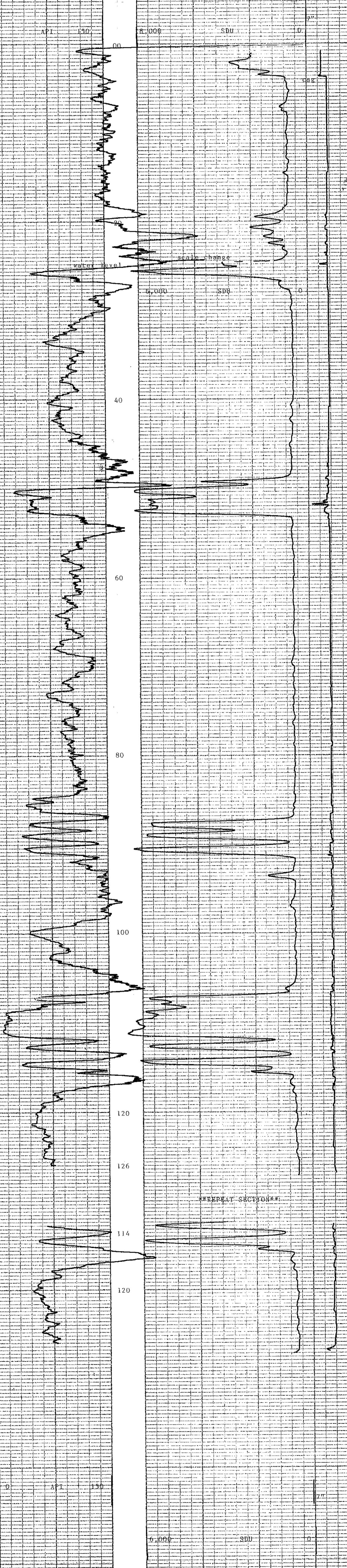
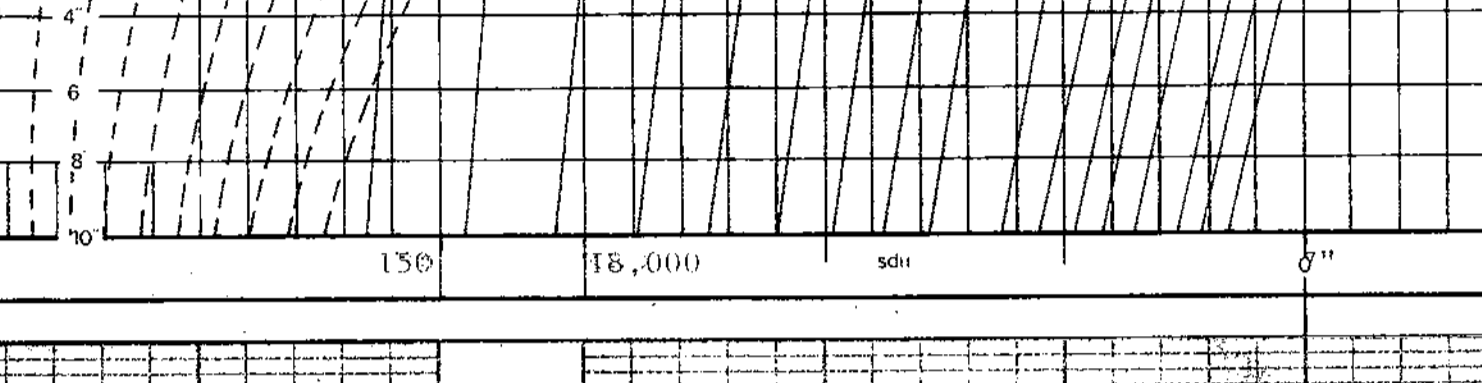
ADDITIONAL SONDES RUN				REMARKS	
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER	
215	NN	1:200		TO	
231	Veri			ADDITIONAL HEADINGS	

## BPB COAL LITHOLOGY LOG CALIBRATION DATA

JIG No	VALUE @ 2" DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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### HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



BOREHOLE: OHR 87024  
 CLIENT: Quintette Coal  
 AREA: Transfer  
 COUNTRY: Canada

## COAL LITHOLOGY LOG





Gamma Ray & Neutron Neutron

BOREHOLE QHR 87024

CLIENT Quintette Coal Ltd.

AREA Transfer

COUNTRY Canada

DATE LOGGED 05/JUL/87

DEPTH SCALE 1:200

2 OF 4 LOGS

BOREHOLE DATA REFER TO Lithology LOG

OPERATION DATA REFER TO Lithology LOG

EQUIPMENT AND RECORDING DATA

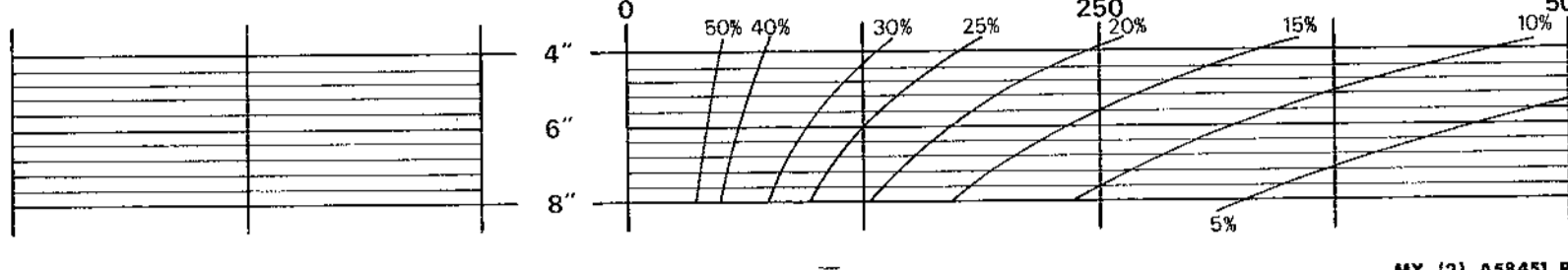
LOG	TAPING	RECORDING	PANEL	COEFF.
GR	Y	9	D	9
Y	9	D	9	2
NN	Y	9	D	9
				2
				1.3
				1.56

REMARKS

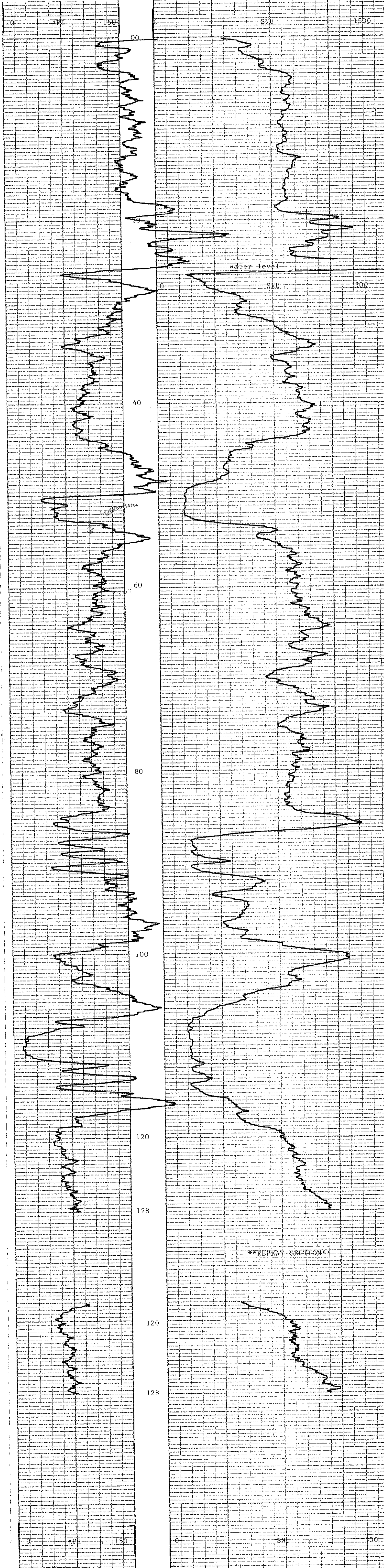
739

GAMMA RAY	DEPTH	NEUTRON NEUTRON
0 APT 150	0	SNU 1500

SANDSTONE POROSITY



MY (2) A58451 R



GAMMA RAY	DEPTH	NEUTRON NEUTRON
0 APT 150	0	SNU 500

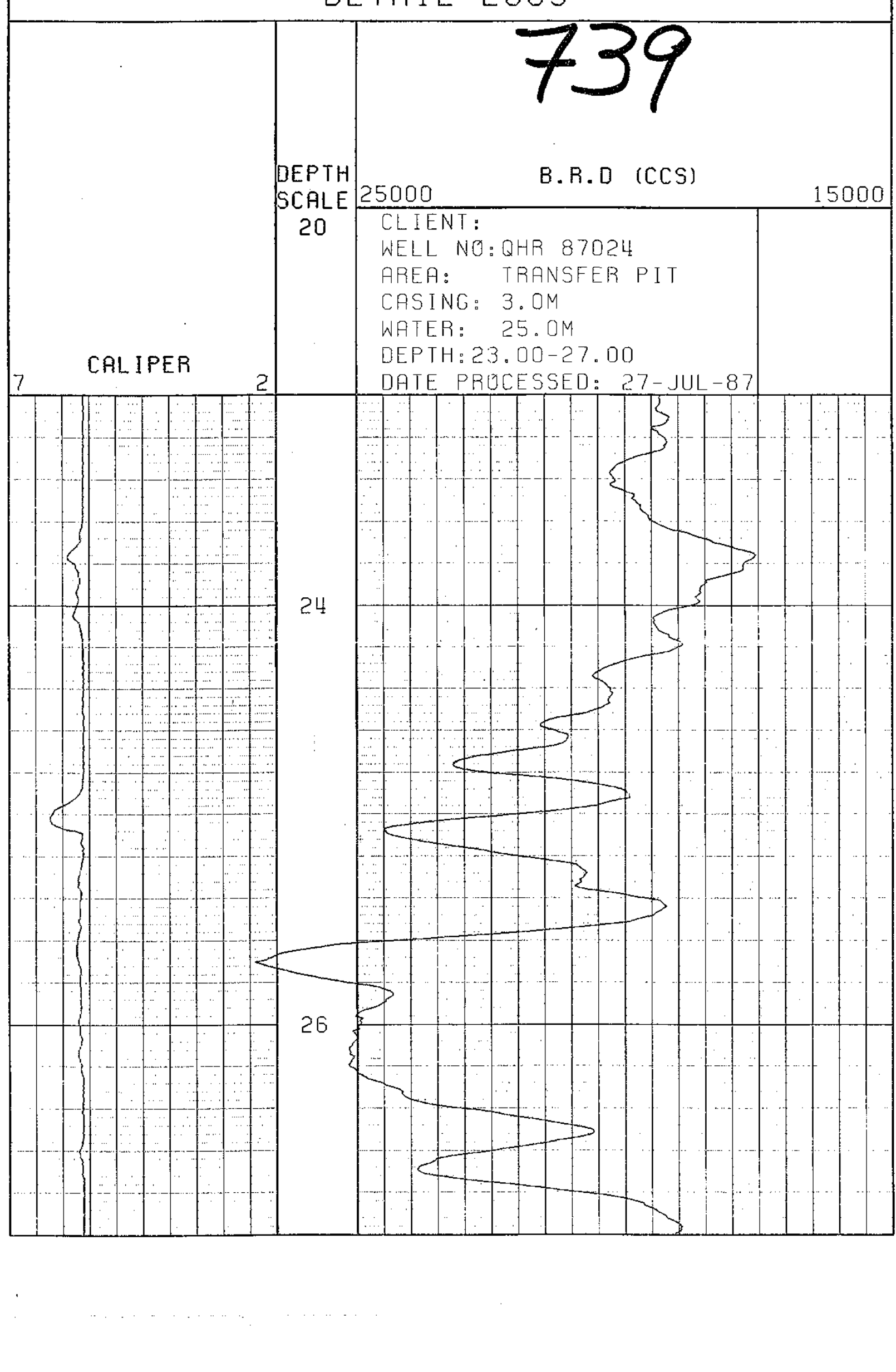


BOREHOLE QHR 87024 AREA Transfer  
 CLIENT Quintette Coal Ltd. COUNTRY Canada

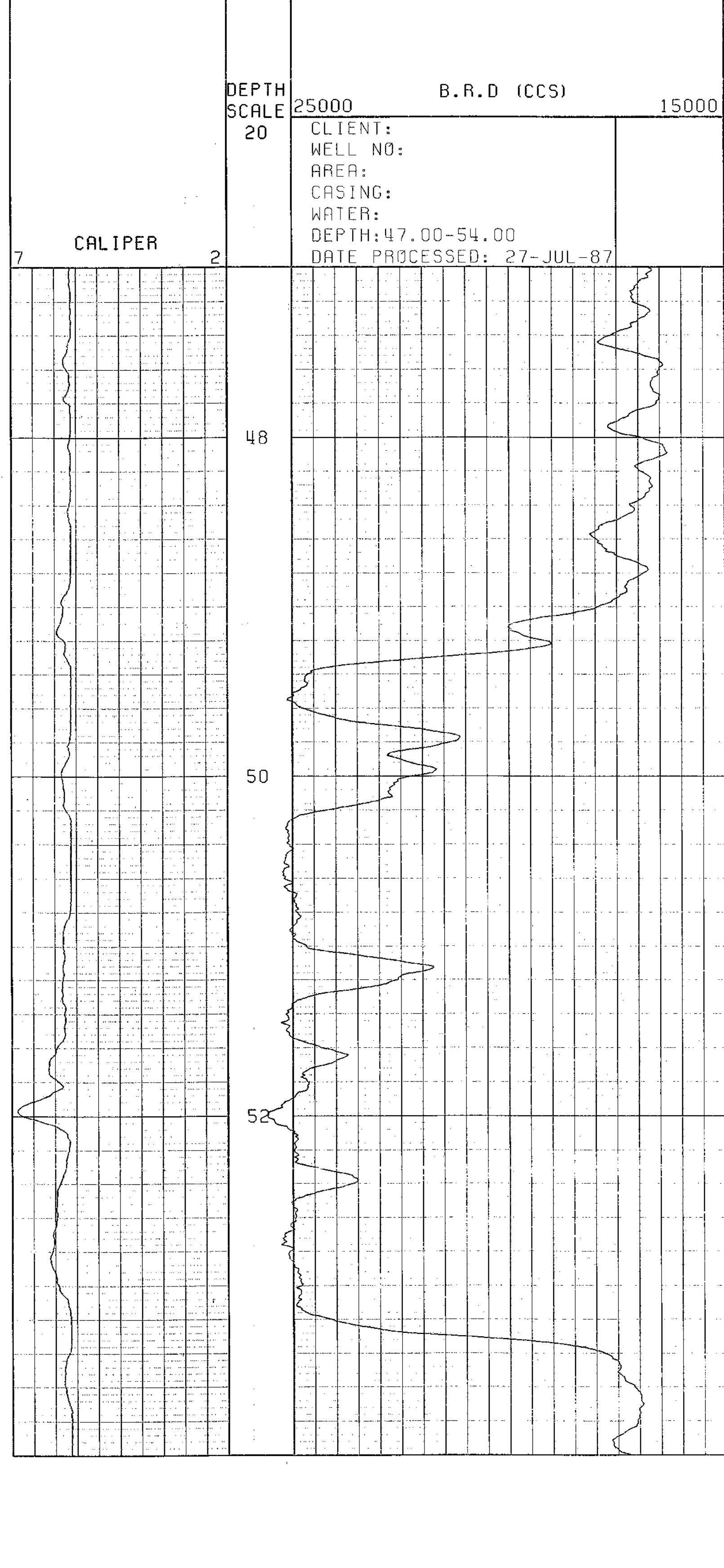


DETAIL LOGS

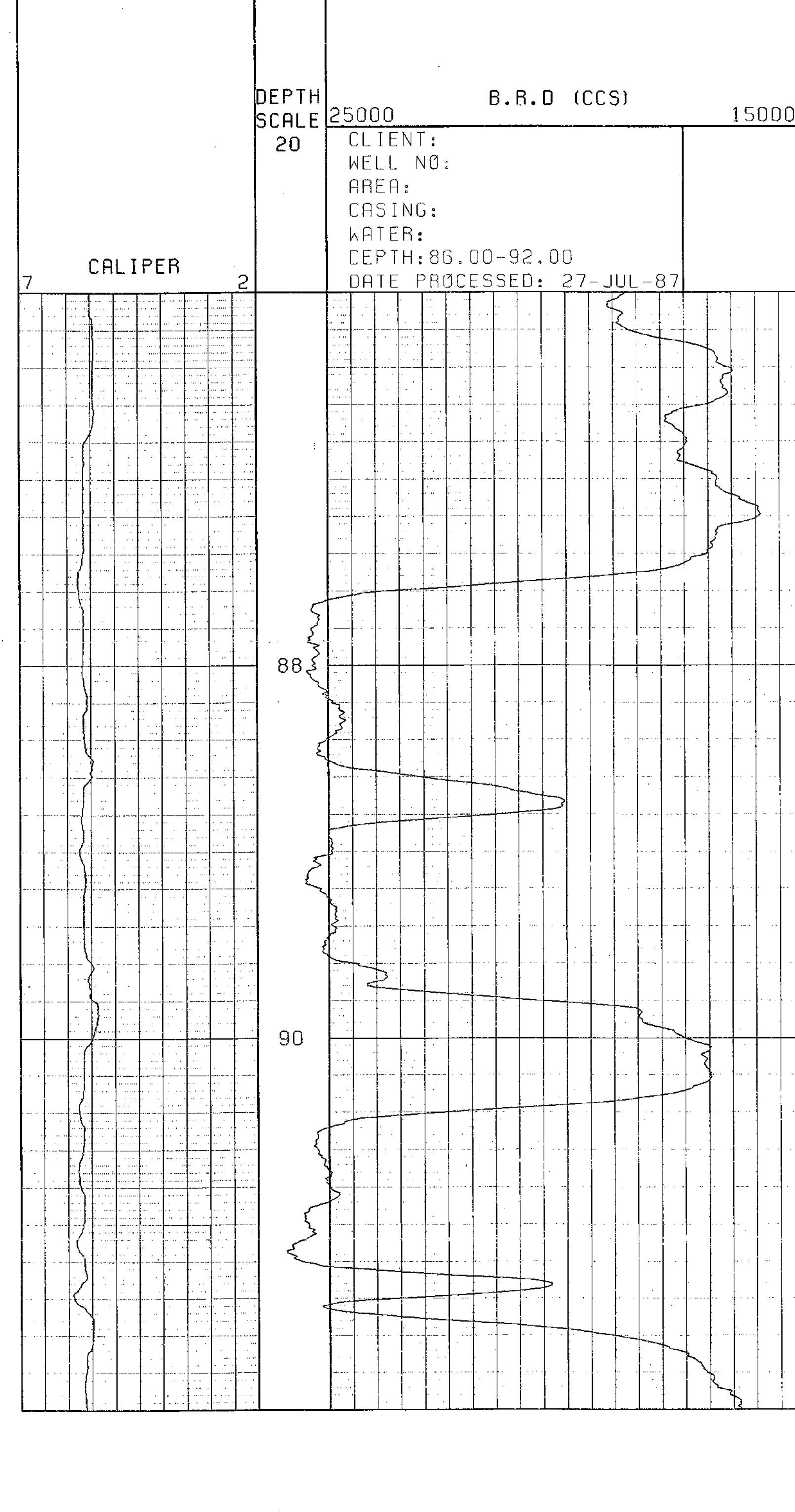
739



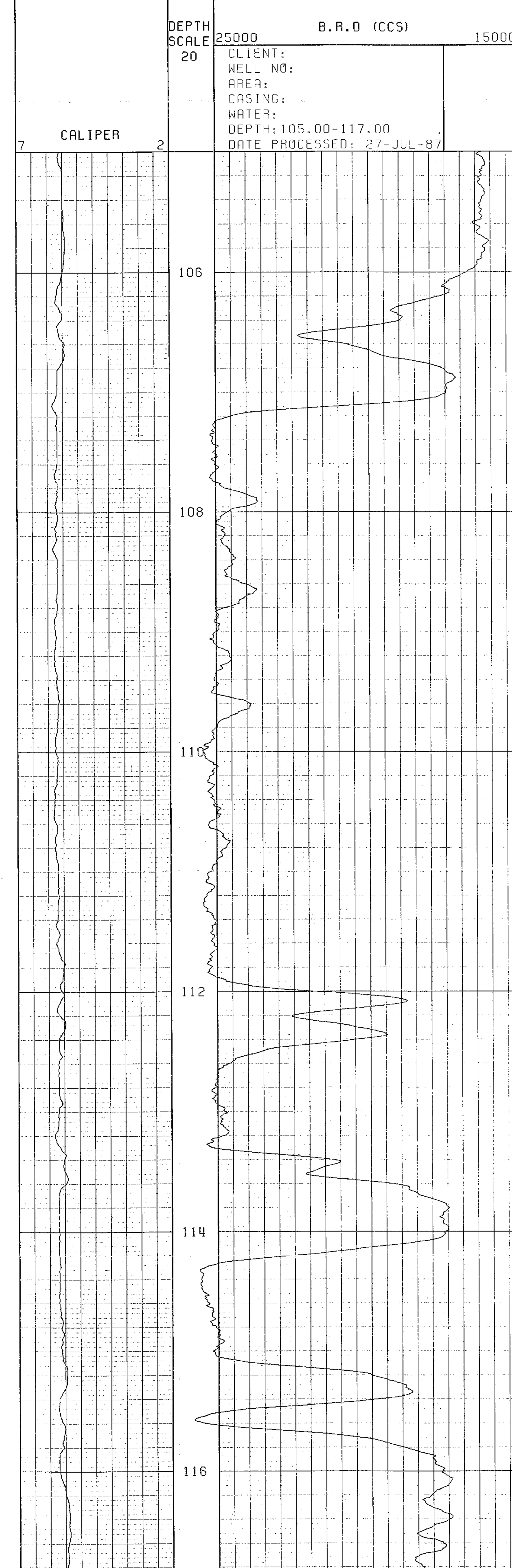
DETAIL LOGS



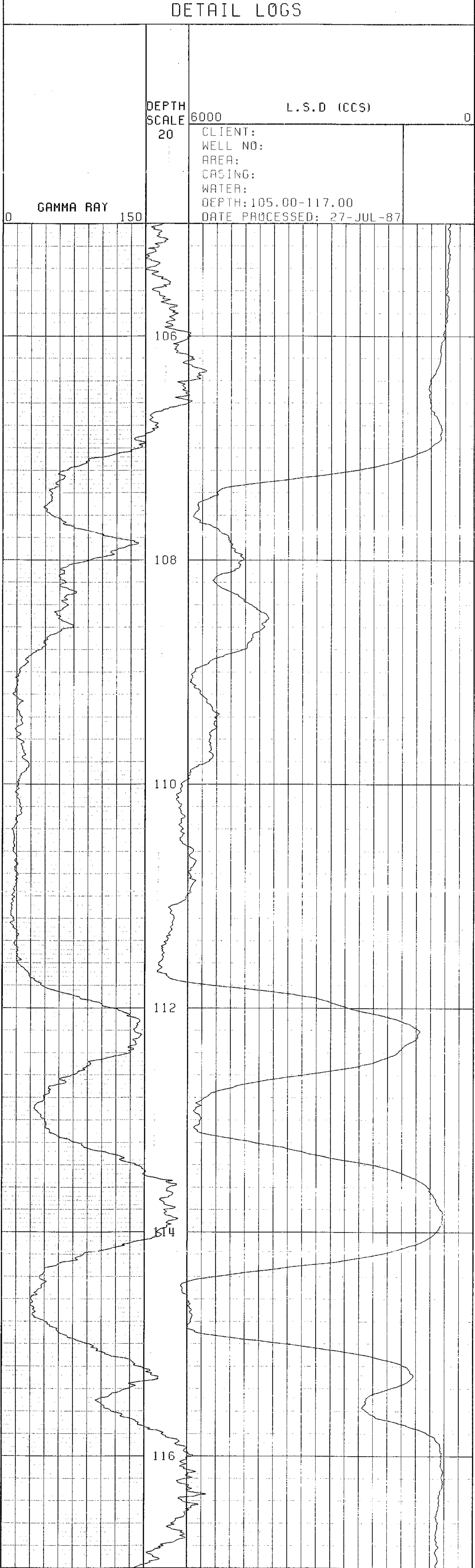
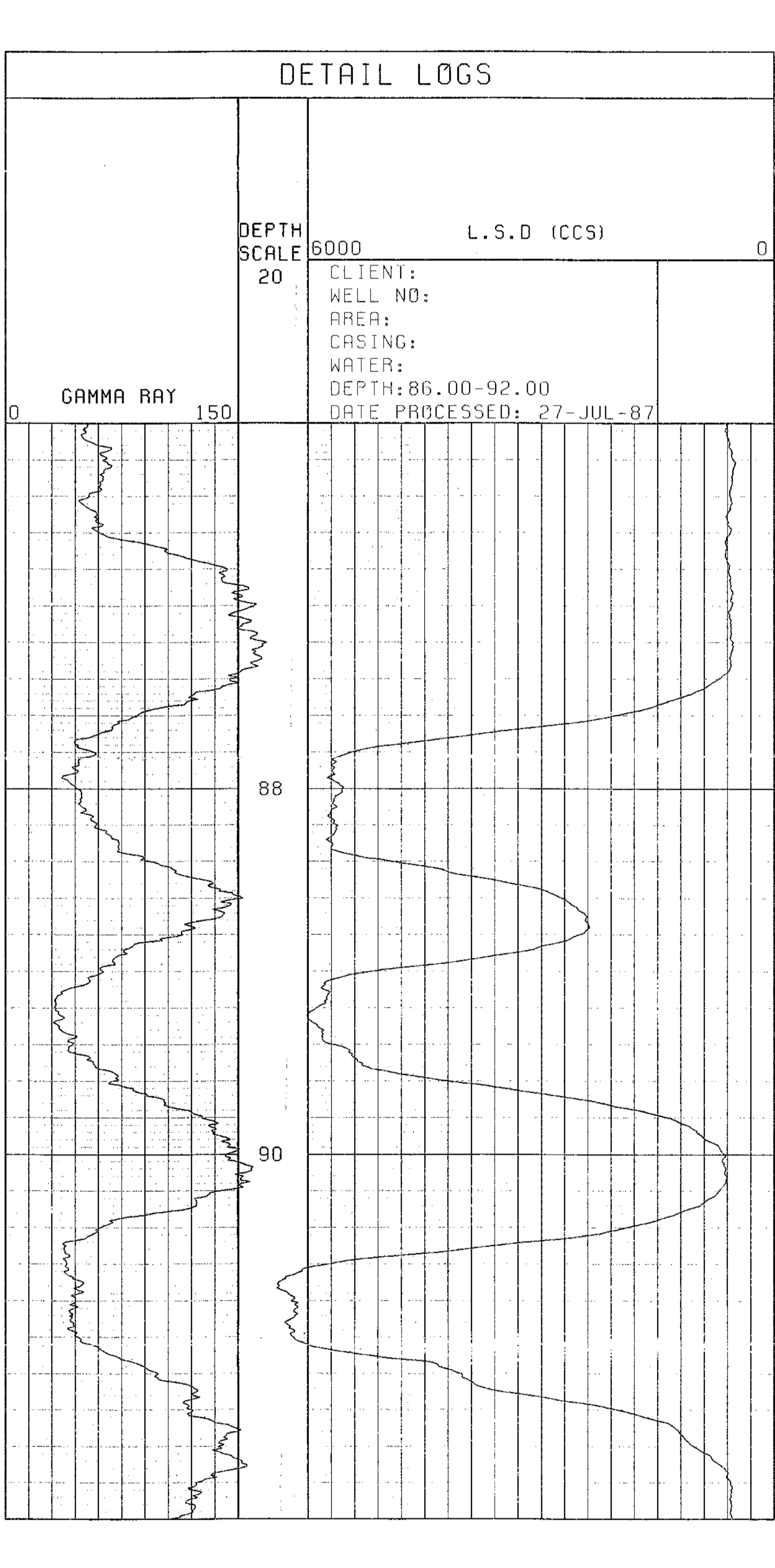
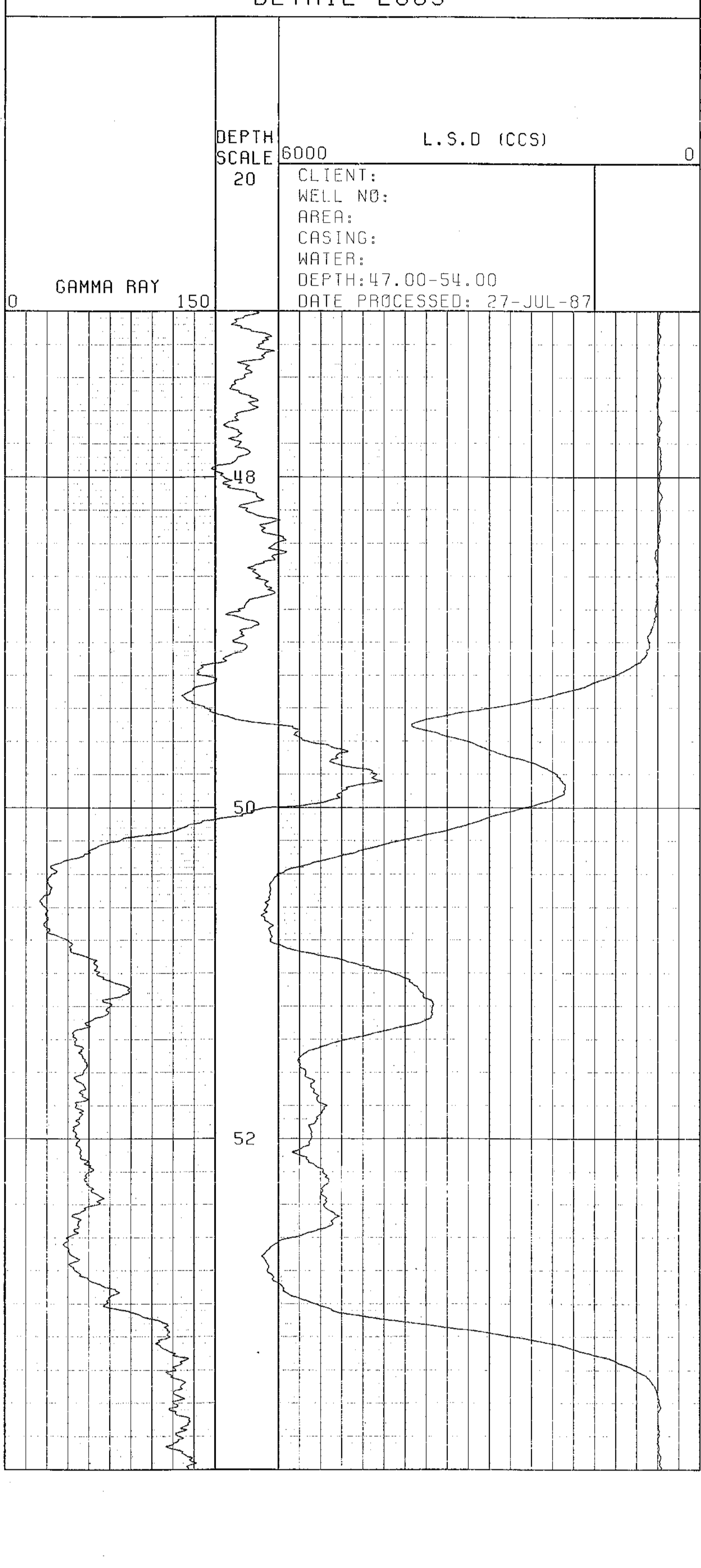
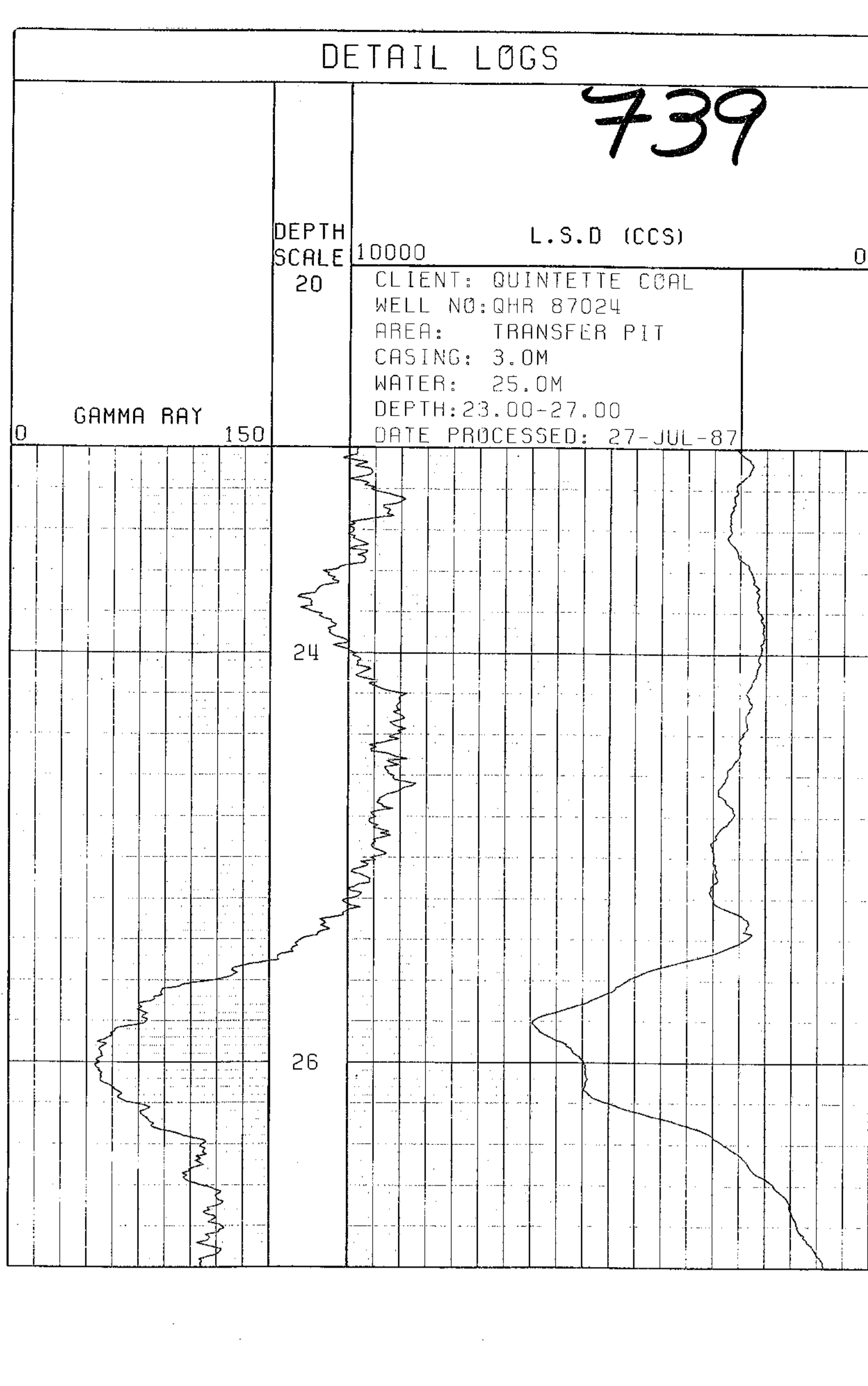
DETAIL LOGS



DETAIL LOGS









QHR 87025  
TRANSFER

LOG DEPTH 0110.00  
TRUE DEPTH 0109.96  
TILT 2.81 DG  
BEARING 133.71 DG  
NORTHING -001.40  
EASTING -001.47

LOG DEPTH 0100.00  
TRUE DEPTH 0099.97  
TILT 2.32 DG  
BEARING 187.98 DG  
NORTHING -001.06  
EASTING -001.82

LOG DEPTH 0090.00  
TRUE DEPTH 0089.98  
TILT 2.26 DG  
BEARING 186.82 DG  
NORTHING -000.66  
EASTING -001.77

LOG DEPTH 0080.00  
TRUE DEPTH 0079.99  
TILT 1.90 DG  
BEARING 196.92 DG  
NORTHING -000.27  
EASTING -001.72

LOG DEPTH 0070.00  
TRUE DEPTH 0070.00  
TILT 1.43 DG  
BEARING 231.39 DG  
NORTHING +000.04  
EASTING -001.63

LOG DEPTH 0060.00  
TRUE DEPTH 0060.00  
TILT 1.35 DG  
BEARING 267.80 DG  
NORTHING +000.19  
EASTING -001.43

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT 1.53 DG  
BEARING 285.41 DG  
NORTHING +000.20  
EASTING -001.20

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 1.45 DG  
BEARING 273.99 DG  
NORTHING +000.13  
EASTING -000.94

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 1.35 DG  
BEARING 262.65 DG  
NORTHING +000.11  
EASTING -000.69

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.51 DG  
BEARING 283.62 DG  
NORTHING +000.14  
EASTING -000.45

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT 1.78 DG  
BEARING 293.76 DG  
NORTHING +000.08  
EASTING -000.19

LOG DEPTH 0003.00  
TRUE DEPTH 0003.00  
TILT 1.88 DG  
BEARING 283.43 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
 TILT = 1.67 DG  
 BEARING = 304.09 DG  
  
 DEPTH = 0020.00  
 TILT = 1.35 DG  
 BEARING = 263.14 DG  
  
 DEPTH = 0030.00  
 TILT = 1.35 DG  
 BEARING = 262.17 DG  
  
 DEPTH = 0040.00  
 TILT = 1.55 DG  
 BEARING = 285.81 DG  
  
 DEPTH = 0050.00  
 TILT = 1.50 DG  
 BEARING = 285.00 DG  
  
 DEPTH = 0060.00  
 TILT = 1.19 DG  
 BEARING = 250.59 DG  
  
 DEPTH = 0070.00  
 TILT = 1.68 DG  
 BEARING = 212.18 DG  
  
 DEPTH = 0080.00  
 TILT = 2.12 DG  
 BEARING = 181.65 DG  
  
 DEPTH = 0090.00  
 TILT = 2.40 DG  
 BEARING = 190.39 DG  
  
 DEPTH = 0100.00  
 TILT = 2.24 DG  
 BEARING = 185.57 DG  
  
 DEPTH = 0110.00  
 TILT = 3.39 DG  
 BEARING = 81.84 DG

DATE 070787  
 JOB NUMBER 0025  
 LOG LABEL 025.2  
 MAG 1 MAX 228  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 20  
 L. CELL 1 CPS 1 233  
 L. CELL 1 TILT 2 -20  
 L. CELL 1 CPS 2 126  
 L. CELL 2 TILT 1 20  
 L. CELL 2 CPS 1 232  
 L. CELL 2 TILT 2 -20  
 L. CELL 2 CPS 2 126  
  
 MAG 1 CENTRE 180  
 MAG 2 CENTRE 180  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 180  
 L. CELL 2 CENTRE 181

MAG DECL 024  
 STOP DEPTH 0003  
 PHR 87025  
 TRANSFER





BOREHOLE: OHR 87025  
 CLIENT: Quintette Coal Ltd.

AREA: Transfer  
 COUNTRY: Canada  
 DATE LOGGED: 7/11/87

DEPTH SCALE: 1:200  
 LOGS: 1 OF 4

**COAL**

**LITHOLOGY LOG**

**BOREHOLE DATA**

PERMANENT DATA	Ground Level
ELEVATION OF P.D.	N/A
WAS SURVEYED FROM	898
DEPTH REACHED	G.L.
CASING SHAPE	116
CASING SIZES	6.0 TO 6.0
BIT SIZES	1 5.4 TO 2 TO 3 TO 4 TO 6.0

**FLUID DATA**

NATURE	117/Meter
SG	1.01 gm/cc
LEVEL	59.9m
VISCOSITY	N/A
Rm at meas temp	N/A
RH T	N/A

**SONDE TYPE**

COAL COMBINATION SONDE

**LOG SUITE**

GAMMA RAY  
 L.S DENSITY  
 CALIPER

OPERATION DATA

FIRST READING: 108.0m  
 LAST READING: 0.0m  
 INTERVAL LOGGED: 108.0m  
 UNIT-TRUCK No: 116/4217  
 ENGINEER: Cavendish  
 WITNESS: James

**739**

**EQUIPMENT AND RECORDING DATA**

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	TC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	183B	5852		Y	9	D	9	2	-	1.56	108	00	108	
L.S DENSITY			0041	Y	9	D	9	1	7.56	-	108	00	108	
CALIPER	SIDEWALL POSITION		7" .2"	Y	9	D	9	3	-	-	108	00	108	

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

FROM	101	70	37	INTERVAL TOTAL
TO	87	63	31	
INTERVAL	14	7	6	

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO ADDITIONAL HEADINGS
215	NN	1-200		
231	Vert	CDS		

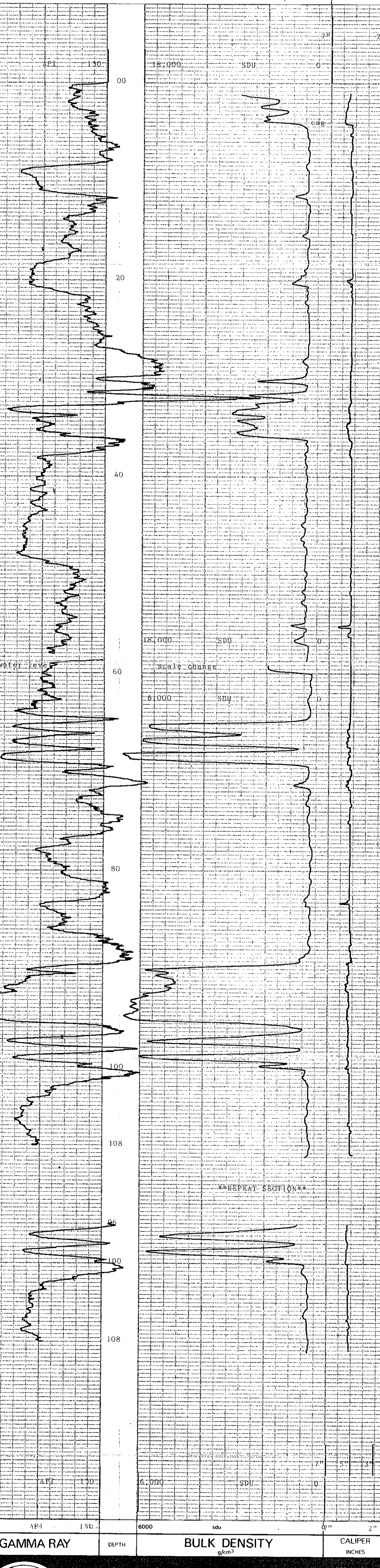
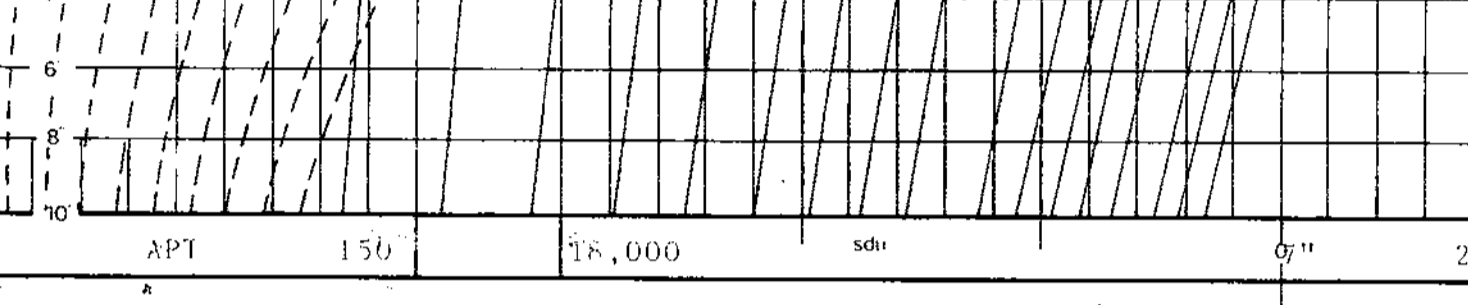
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU CPS*	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

**HOLE SIZE CORRECTION DATA**

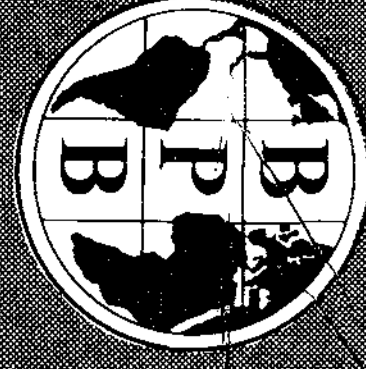


GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

BOREHOLE: OHR 87025 AREA: Transfer  
 CLIENT: Quintette Coal Ltd. COUNTRY: Canada

**COAL LITHOLOGY LOG**





Gamma Ray & Neutron Neutron

BOREHOLE QHR 87025  
CLIENT Quintette Coal Ltd.

AREA Transfer  
COUNTRY Canada  
DATE LOGGED 7/14/87  
2 OF 4 LOGS

DEPTH SCALE  
1:1000

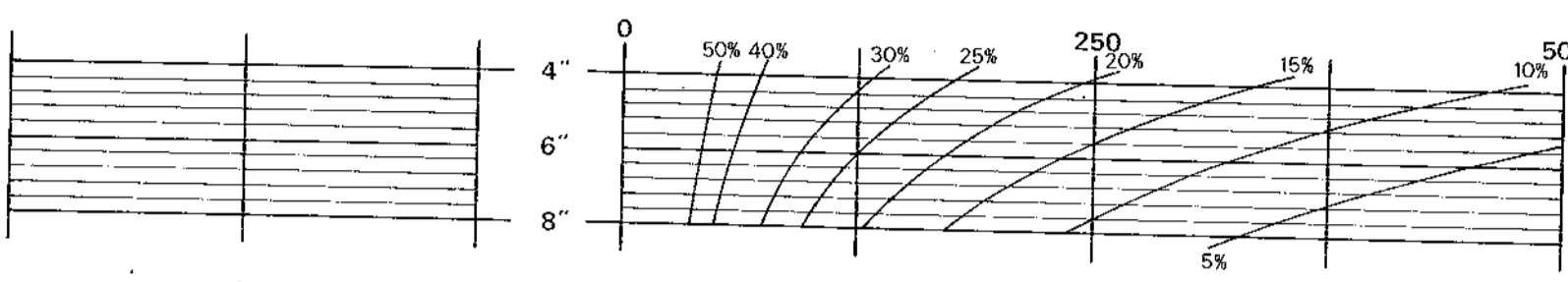
BOREHOLE DATA REFER TO Lithology LOG  
OPERATION DATA REFER TO Lithology LOG  
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	CAL
LOG	RECORDING	SPEED	NORM
Y	9	9	1.76
N	9	9	1.7
N	9	2	1.7
N	9	2	1.7

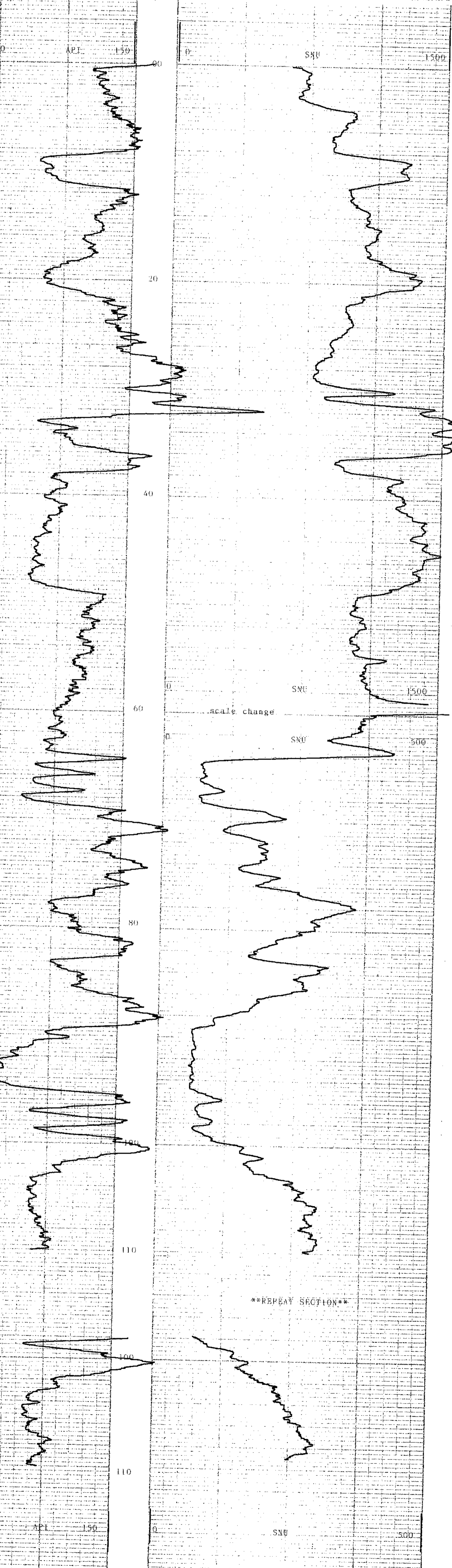
REMARKS  
**739**

GAMMA RAY	DEPTH	NEUTRON NEUTRON
0 150		0 15,000

SANDSTONE POROSITY



MY (2) A58451 R



GAMMA RAY	DEPTH	NEUTRON NEUTRON
0 150		0 15,000



BOREHOLE QHR 87025  
CLIENT Quintette Coal Ltd.  
AREA Transfer  
COUNTRY Canada



DETAIL LOGS

739

DEPTH SCALE 25000 B.R.D (CCS) 15000

20 CLIENT: QUINTETTE CORP  
WELL NO: QHR 87025

AREA: TRANSFER PIT  
CASING: 4.0M

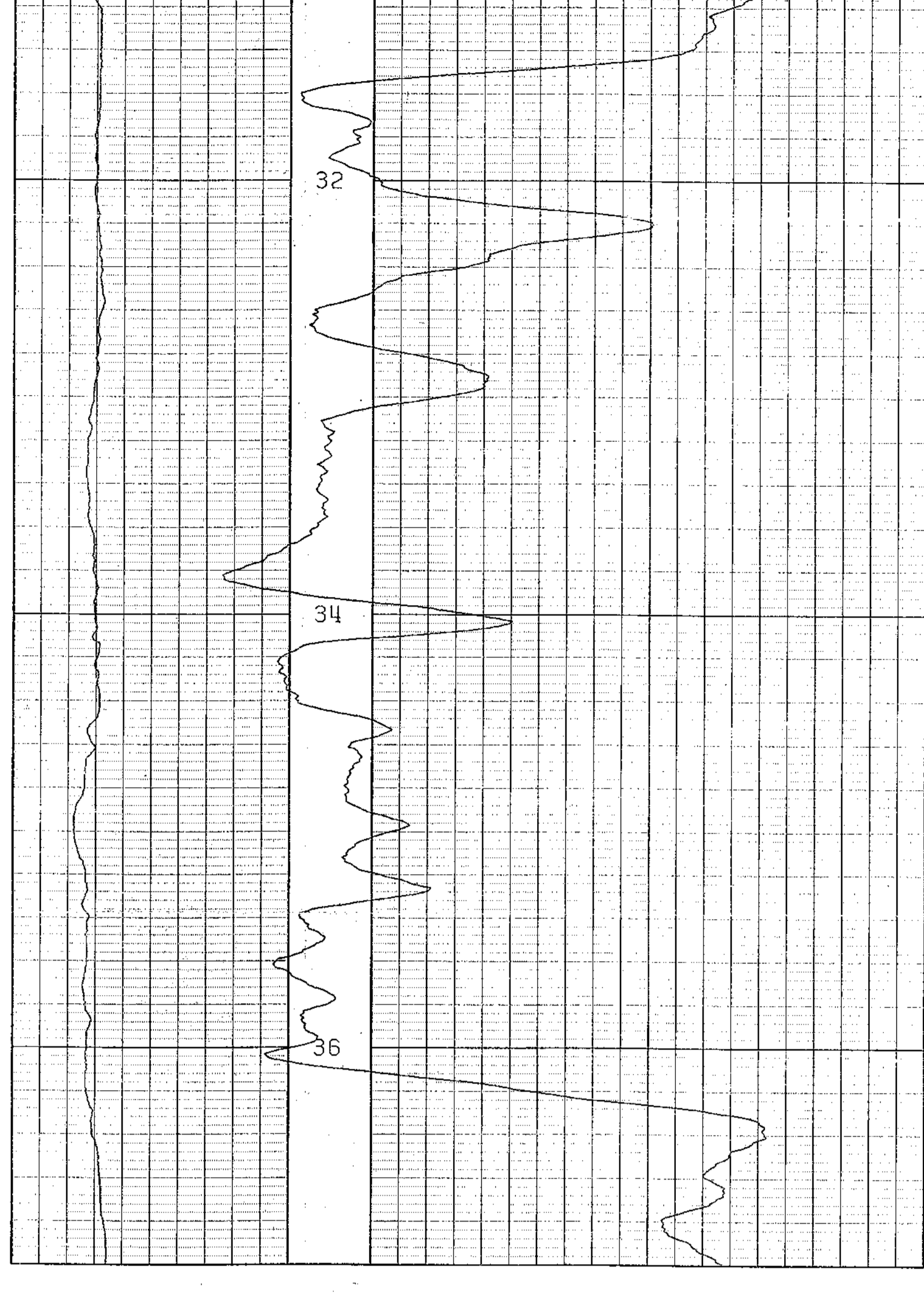
WATER: 59.0M  
DEPTH: 31.00-37.00

DATE PROCESSED: 27-JUL-87

CALIPER

7

2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000

20 CLIENT: QUINTETTE CORP  
WELL NO: QHR 87025

AREA: TRANSFER PIT  
CASING: 4.0M

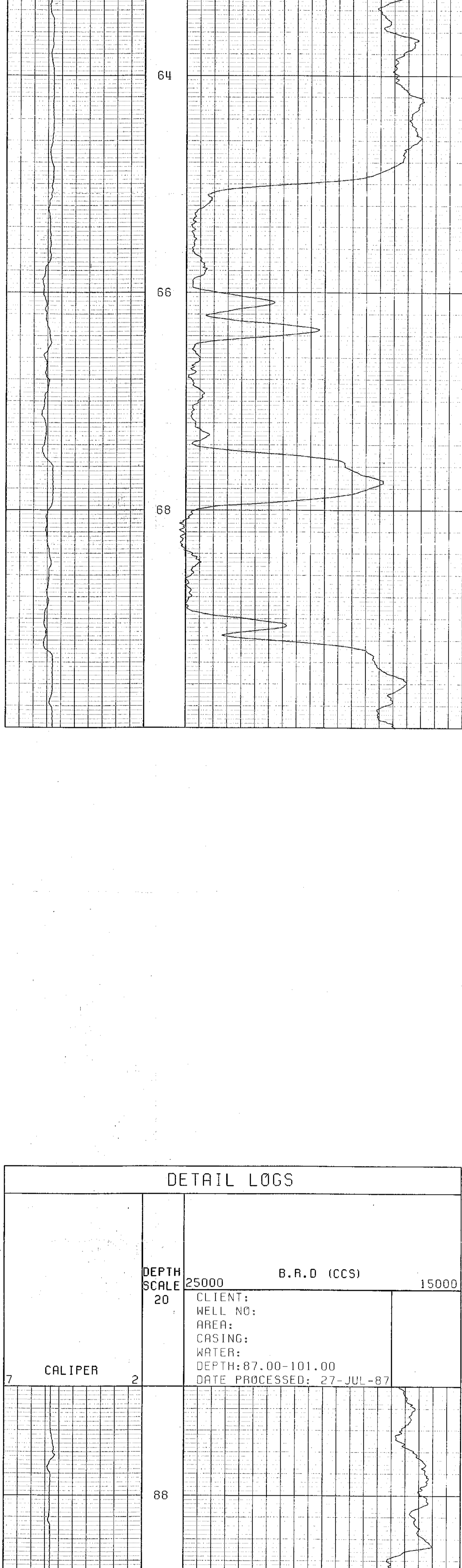
WATER: 59.0M  
DEPTH: 63.00-70.00

DATE PROCESSED: 27-JUL-87

CALIPER

7

2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000

20 CLIENT: QUINTETTE CORP  
WELL NO: QHR 87025

AREA: TRANSFER PIT  
CASING: 4.0M

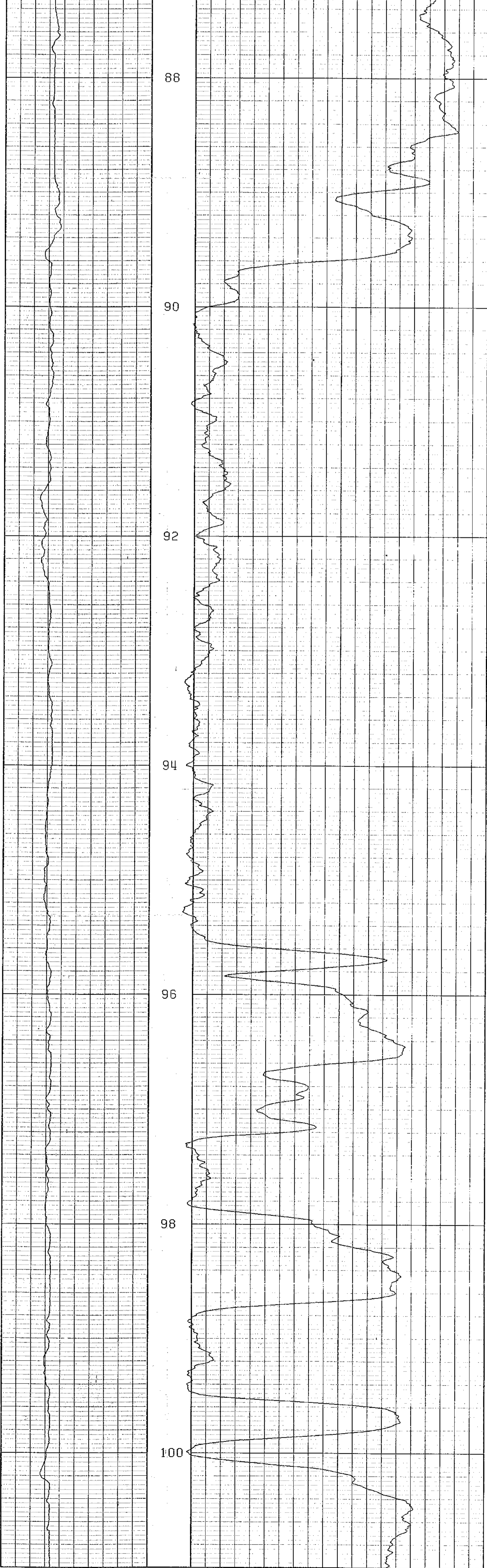
WATER: 59.0M  
DEPTH: 87.00-101.00

DATE PROCESSED: 27-JUL-87

CALIPER

7

2



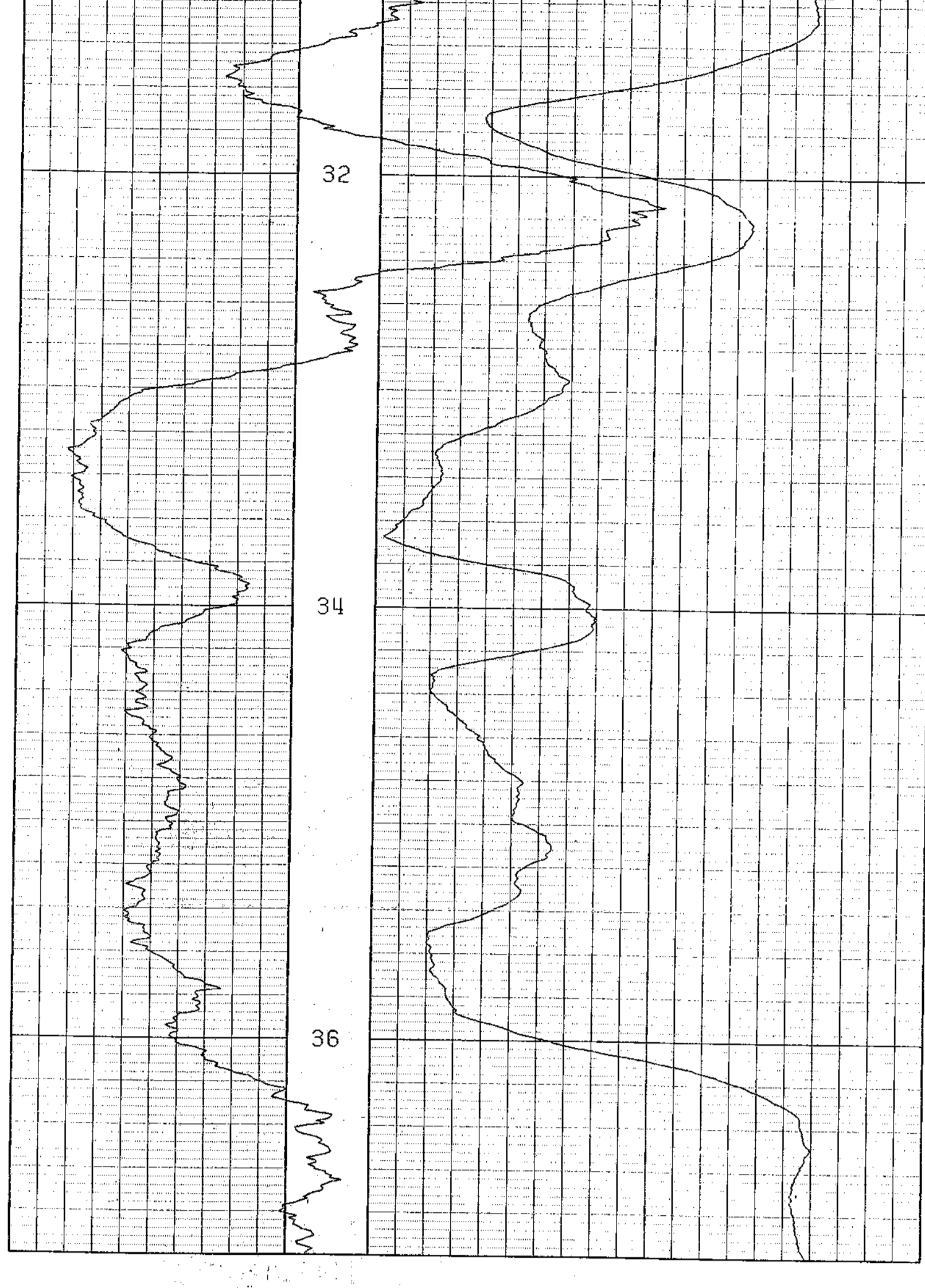


DETAIL LOGS

739

DEPTH SCALE 10000 L.S.D (CCS) 0  
 CLIENT: QUINTETTE COAL  
 WELL NO:  
 AREA: TRANSFER PIT  
 CASING: 4.0M  
 WATER: 59.0M  
 DEPTH: 31.00-37.00  
 DATE PROCESSED: 27-JUL-87

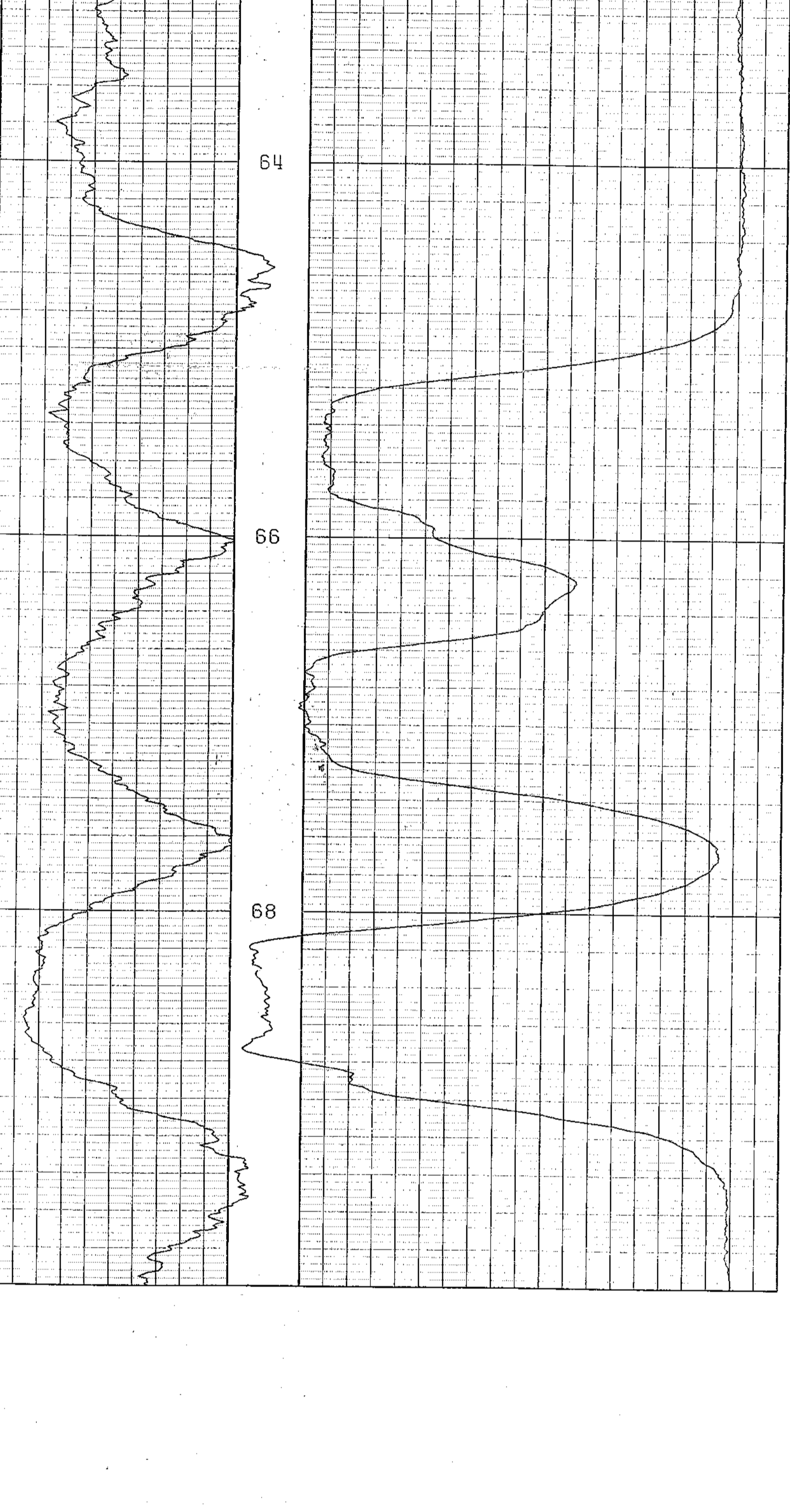
GAMMA RAY



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 63.00-70.00  
 DATE PROCESSED: 27-JUL-87

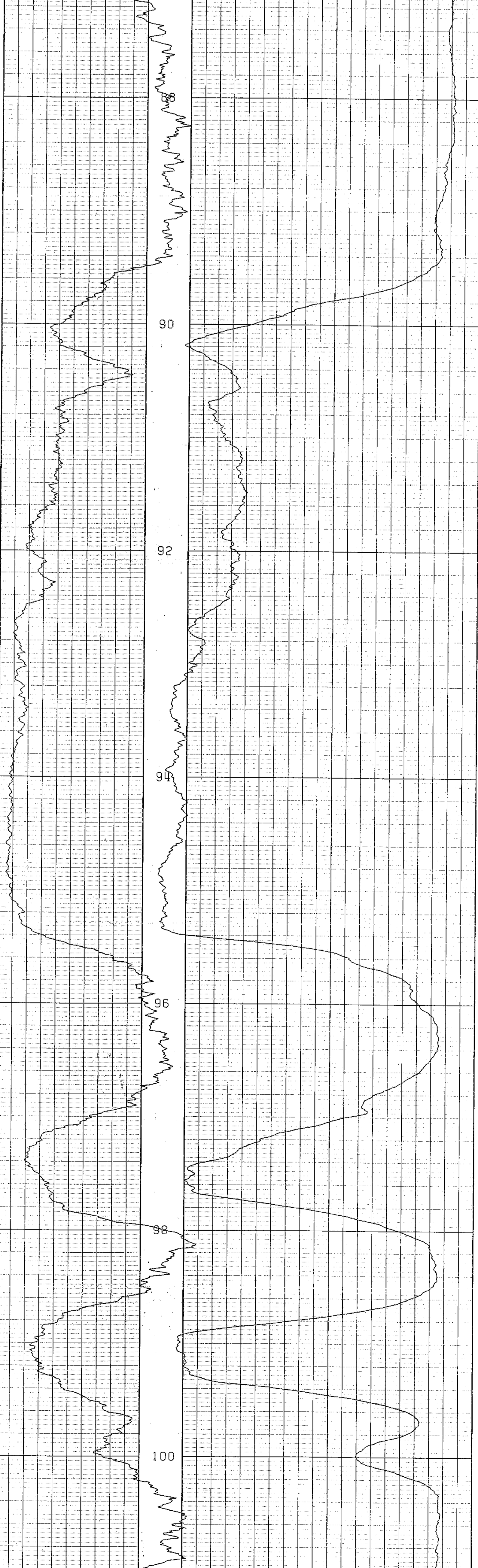
GAMMA RAY



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 87.00-101.00  
 DATE PROCESSED: 27-JUL-87

GAMMA RAY





QHR87026  
TRANSFER

LOG DEPTH 0140.00  
TRUE DEPTH 0139.52  
TILT 7.32 DG  
BEARING 58.30 DG  
NORTHING +003.49  
EASTING +009.92

LOG DEPTH 0130.00  
TRUE DEPTH 0129.60  
TILT 6.86 DG  
BEARING 61.48 DG  
NORTHING +002.82  
EASTING +008.84

LOG DEPTH 0120.00  
TRUE DEPTH 0119.67  
TILT 6.26 DG  
BEARING 66.49 DG  
NORTHING +002.24  
EASTING +007.79

LOG DEPTH 0110.00  
TRUE DEPTH 0109.73  
TILT 5.79 DG  
BEARING 67.50 DG  
NORTHING +001.81  
EASTING +006.79

LOG DEPTH 0100.00  
TRUE DEPTH 0099.78  
TILT 5.11 DG  
BEARING 70.98 DG  
NORTHING +001.42  
EASTING +005.85

LOG DEPTH 0090.00  
TRUE DEPTH 0089.82  
TILT 4.79 DG  
BEARING 72.28 DG  
NORTHING +001.13  
EASTING +005.01

LOG DEPTH 0080.00  
TRUE DEPTH 0079.86  
TILT 4.87 DG  
BEARING 72.52 DG  
NORTHING +000.88  
EASTING +004.21

LOG DEPTH 0070.00  
TRUE DEPTH 0069.90  
TILT 4.21 DG  
BEARING 76.64 DG  
NORTHING +000.62  
EASTING +003.40

LOG DEPTH 0060.00  
TRUE DEPTH 0059.93  
TILT 3.98 DG  
BEARING 76.19 DG  
NORTHING +000.45  
EASTING +002.69

LOG DEPTH 0050.00  
TRUE DEPTH 0049.95  
TILT 3.82 DG  
BEARING 79.81 DG  
NORTHING +000.29  
EASTING +002.01

LOG DEPTH 0040.00  
TRUE DEPTH 0039.97  
TILT 3.39 DG  
BEARING 84.33 DG  
NORTHING +000.17  
EASTING +001.36

LOG DEPTH 0030.00  
TRUE DEPTH 0029.99  
TILT 2.74 DG  
BEARING 86.87 DG  
NORTHING +000.11  
EASTING +000.77

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.39 DG  
BEARING 77.05 DG  
NORTHING +000.08  
EASTING +000.29

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT .53 DG  
BEARING 57.66 DG  
NORTHING +000.03  
EASTING +000.05

LOG DEPTH 0003.00  
TRUE DEPTH 0003.00  
TILT .53 DG  
BEARING 50.27 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
TILT = 53 DG  
BEARING = 65.06 DG

DEPTH = 0020.00  
TILT = 2.26 DG  
BEARING = 89.04 DG

DEPTH = 0030.00  
TILT = 3.22 DG  
BEARING = 84.70 DG

DEPTH = 0040.00  
TILT = 3.57 DG  
BEARING = 83.96 DG

DEPTH = 0050.00  
TILT = 4.07 DG  
BEARING = 75.66 DG

DEPTH = 0060.00  
TILT = 3.90 DG  
BEARING = 76.73 DG

DEPTH = 0070.00  
TILT = 4.52 DG  
BEARING = 76.55 DG

DEPTH = 0080.00  
TILT = 5.21 DG  
BEARING = 68.48 DG

DEPTH = 0090.00  
TILT = 4.38 DG  
BEARING = 76.08 DG

DEPTH = 0100.00  
TILT = 5.84 DG  
BEARING = 65.87 DG

DEPTH = 0110.00  
TILT = 5.74 DG  
BEARING = 69.13 DG

DEPTH = 0120.00  
TILT = 6.79 DG  
BEARING = 63.85 DG

DEPTH = 0130.00  
TILT = 6.93 DG  
BEARING = 59.10 DG

DEPTH = 0140.00  
TILT = 7.71 DG  
BEARING = 57.49 DG

DATE 070787  
JOB NUMBER 0026  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 180  
L. CELL 2 CENTRE 181  
MAG DECL 024  
STOP DEPTH 0003

QHR 87026  
TRANSFER





LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

SONDE TYPE  
COAL  
COMBINATION  
SONDE

COAL  
LITHOLOGY  
LOG

PERMANENTIALITY	Ground Level	DRILLER	
ELEVATION OF P.D.	N/A	BR	
MEASUREMENTS FROM	C.L.	G.L.	
DEPTH REACHED	140.0m	140.0m	
CASING SHOE	6.0	6.0	
BIT SIZES	1 5.4 TO TD 2 TO		
	3 TO 4 TO		
CASING SIZES	1 6.0 TO 6.0 2 TO		

BOREHOLE QHR 87026  
CLIENT Quintette Coal Ltd.  
AREA Transfer  
COUNTRY Canada  
DATE LOGGED 7/11/87  
DEPTH SCALE 1:200  
LOGS 1 of 4

739

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT		TAPING		PANEL		CAL COEFF		DEPTHS		SEAM LOG RUN	
	SONDE	SOURCE	CAURATOR	LOG TAPE	RECORD SPEED	DIRECT or REFLAY	SPEED	TC SECS	NORM	FROM		TO
GAMMA RAY	183B	5852								1.56	138.00	138
L.S. DENSITY			367	Y	9	D	9	2				
CALIPER			0041	Y	9	D	9	1	7.56		138.00	138
			7" 2"	Y	9	D	9	3			138.00	138

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)										
FROM	135	110	70	47	17					INTERVAL TOTAL
TO	121	103	63	43	12					39.0m
INTERVAL	16	7	7	4	5					

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	NN	1:200			
231	Vert	CDS			

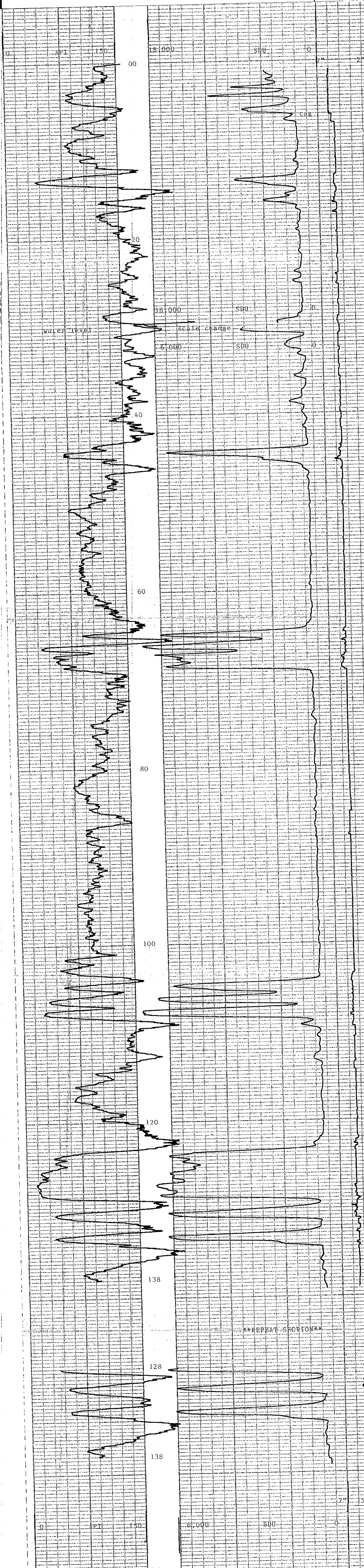
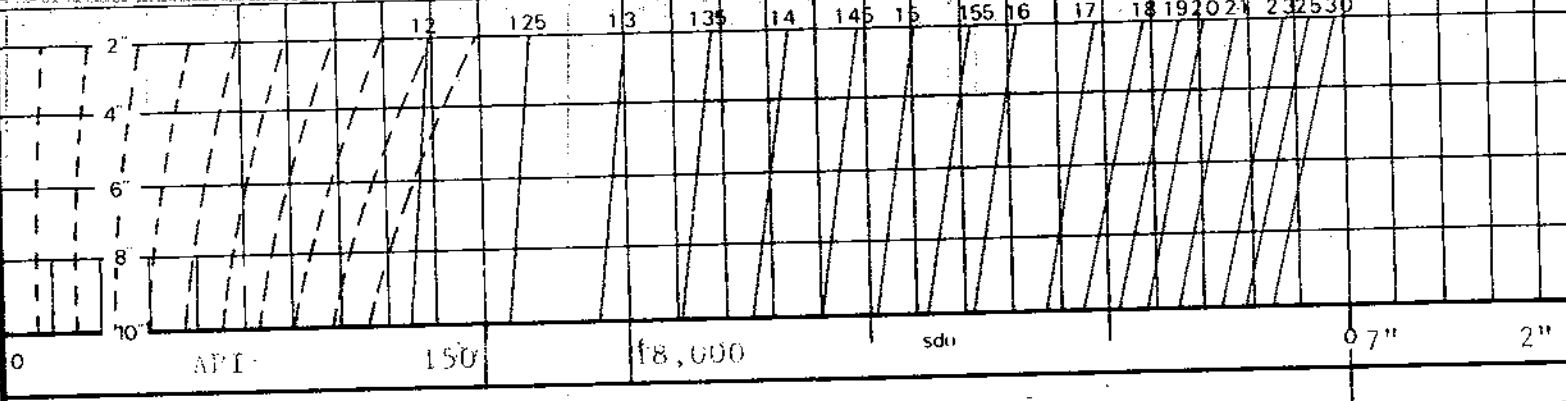
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SOU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE		JIG No	SPAN	NORM	SOU	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
		g/cm <sup>3</sup>	INCHES



BOREHOLE QHR 87026 AREA Transfer  
CLIENT Quintette Coal Ltd. COUNTRY Canada

COAL LITHOLOGY LOG







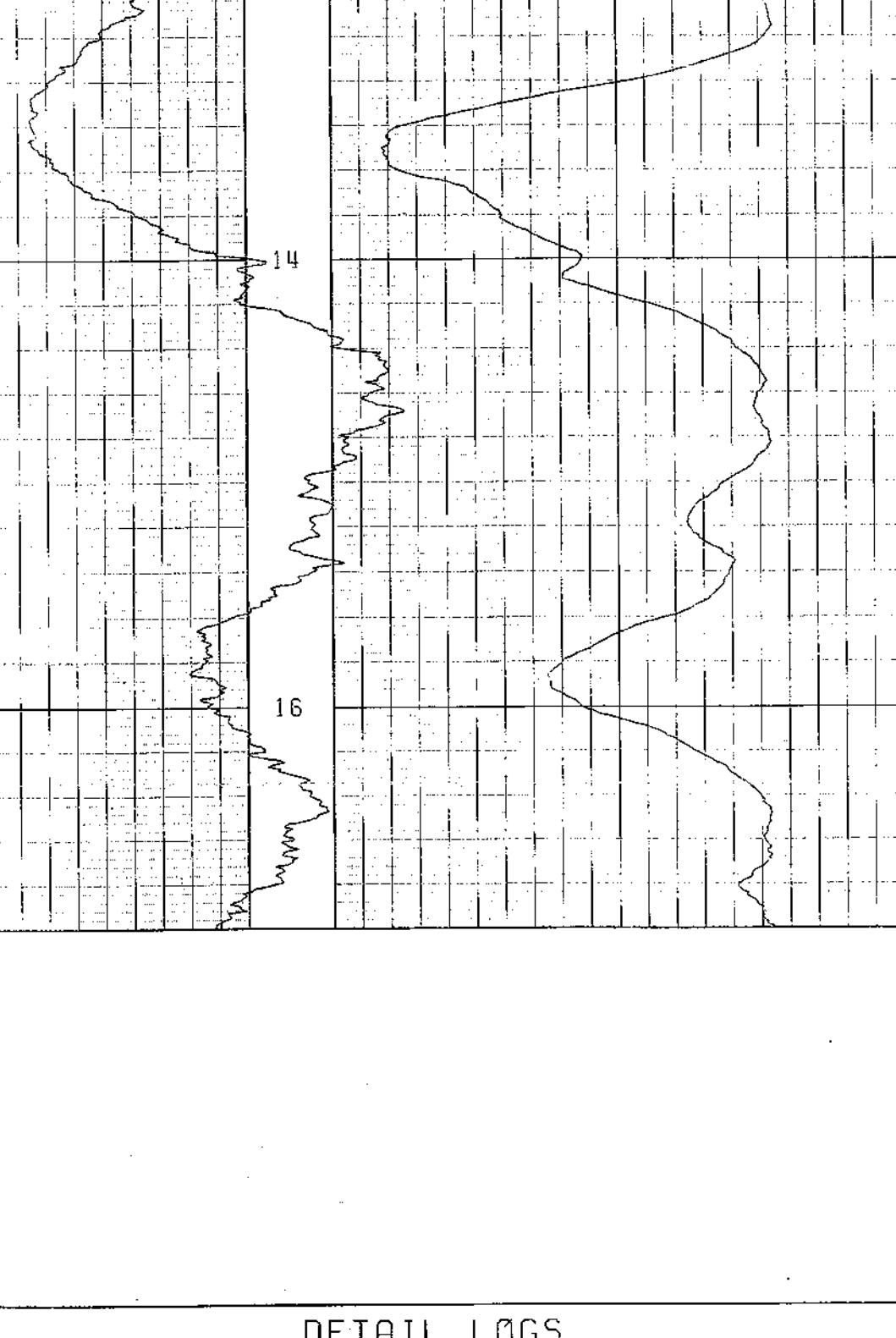
DETAIL LOGS

739

DEPTH SCALE 10000 L.S.D (CCS) 0

CLIENT: QUINTETTE COIL  
WELL NO: QAR 87026  
AREA: TRANSFER PIT  
CASING: 6.0M  
WATER: 30.0M  
DEPTH: 12.00-17.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

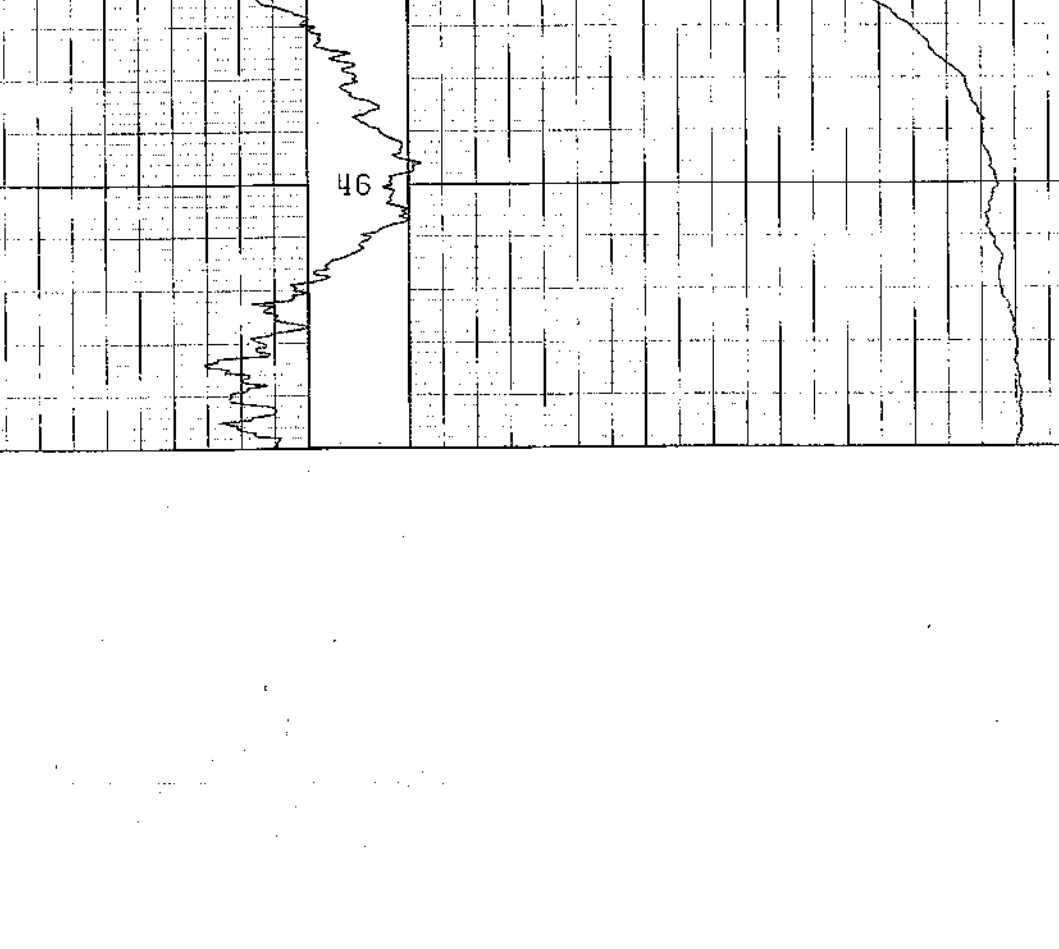


DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 43.00-47.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

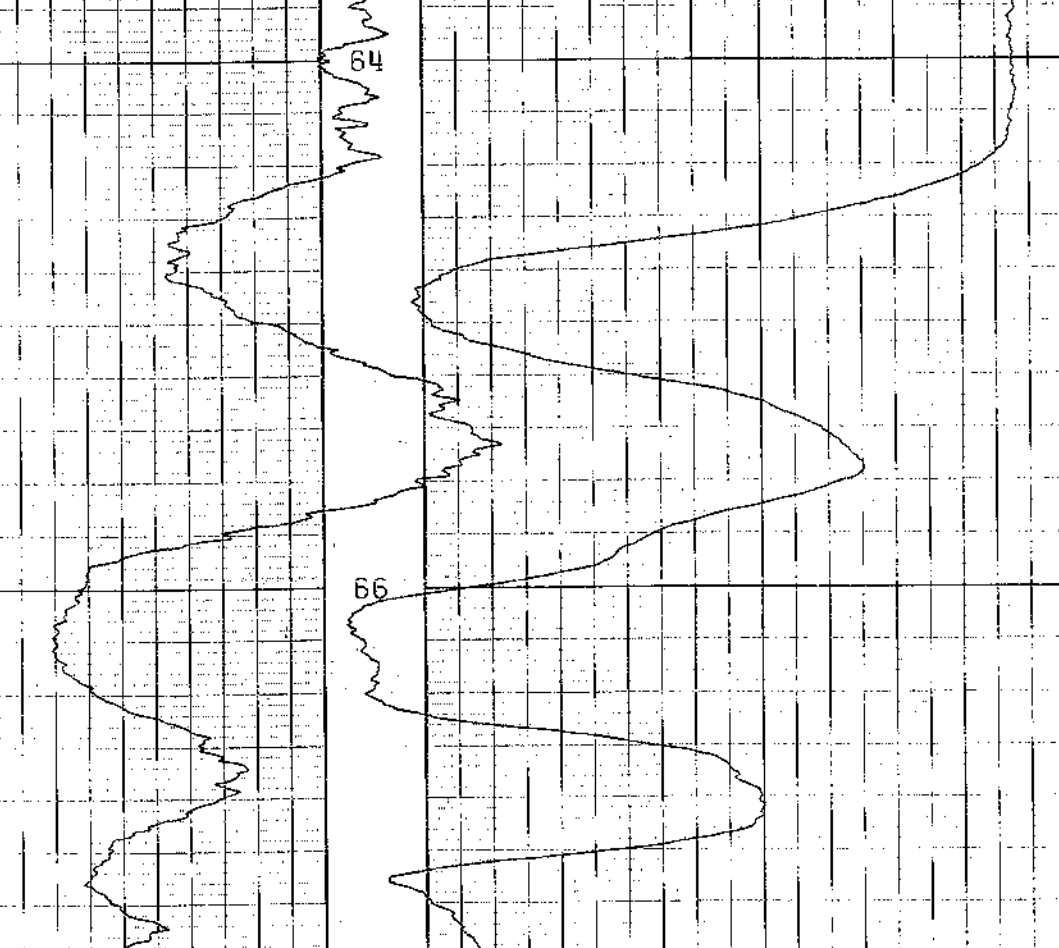


DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 63.00-70.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

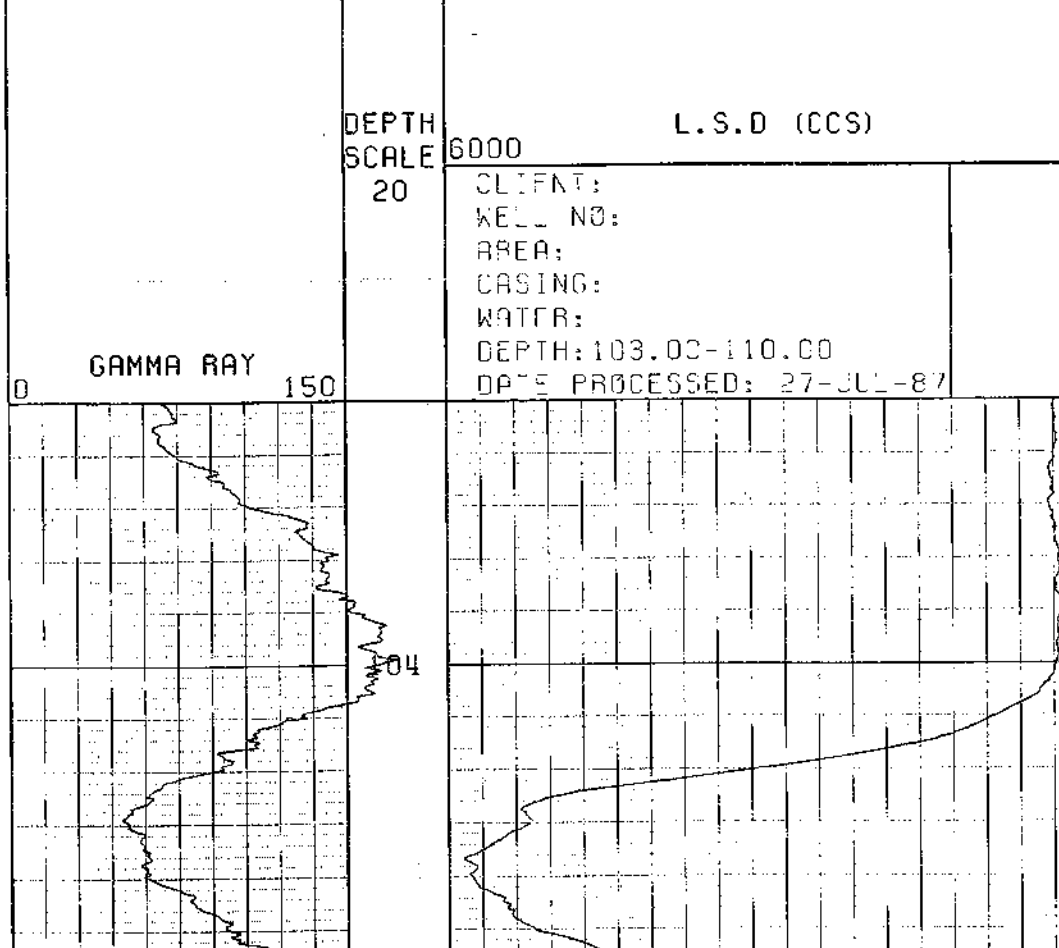


DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 103.00-110.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

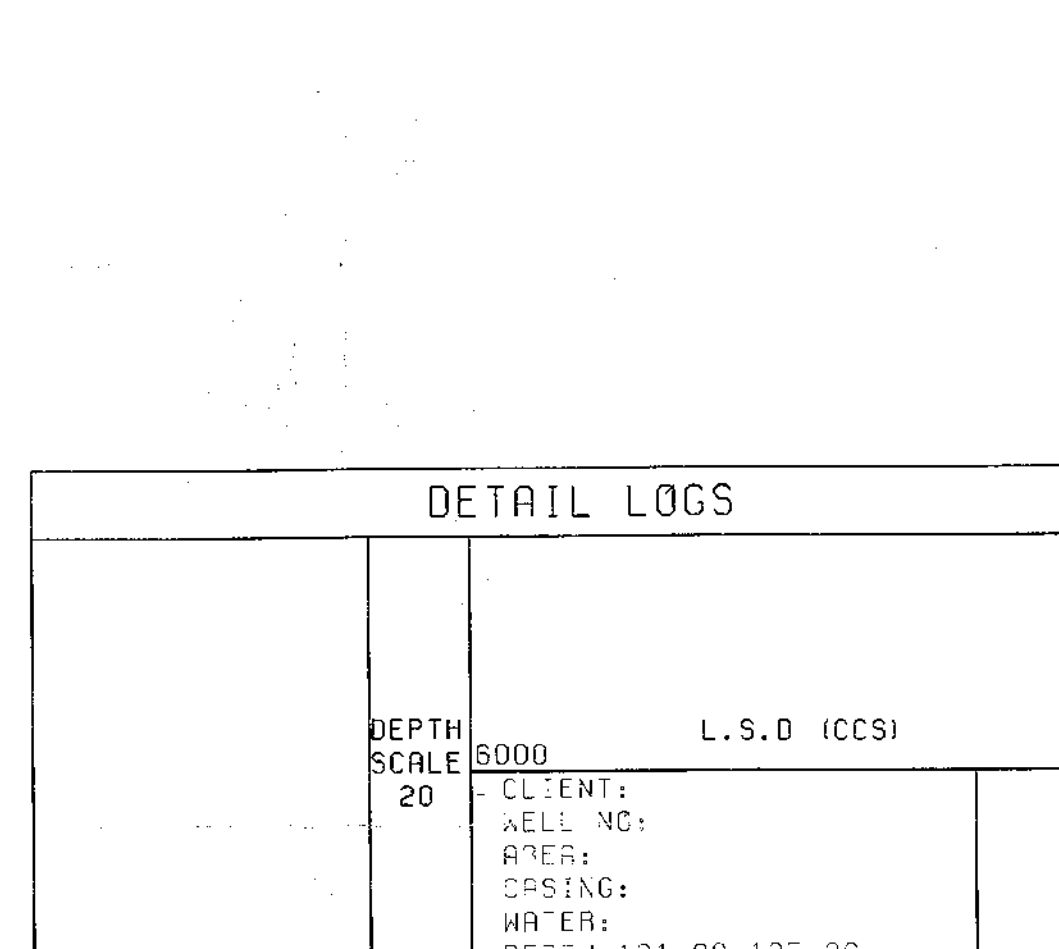


DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 121.00-135.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

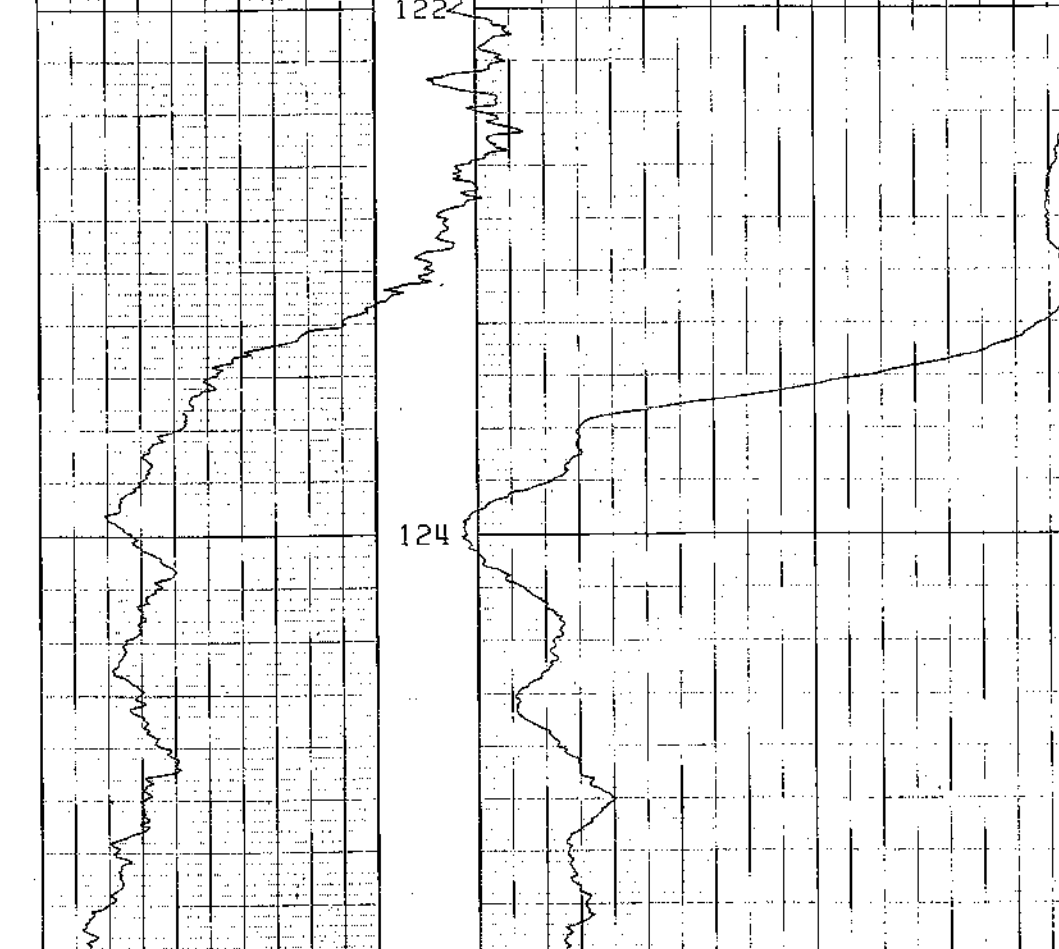


DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0

CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 121.00-135.00  
DATE PROCESSED: 27-JUL-87

GAMMA RAY 150

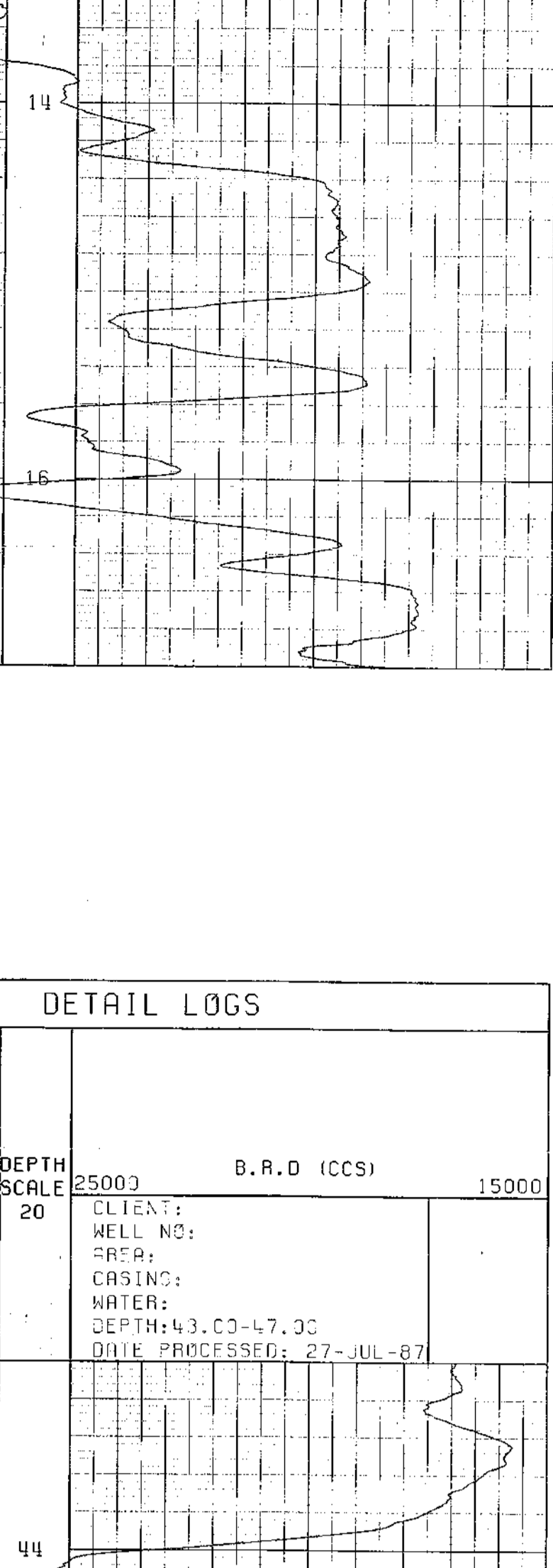
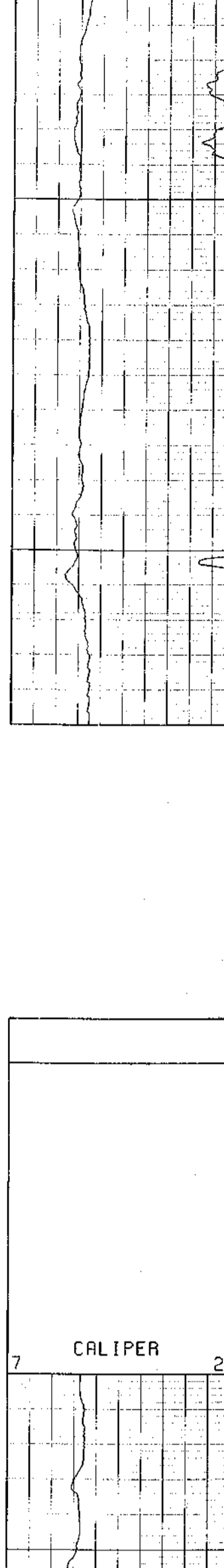




DETAIL LOGS

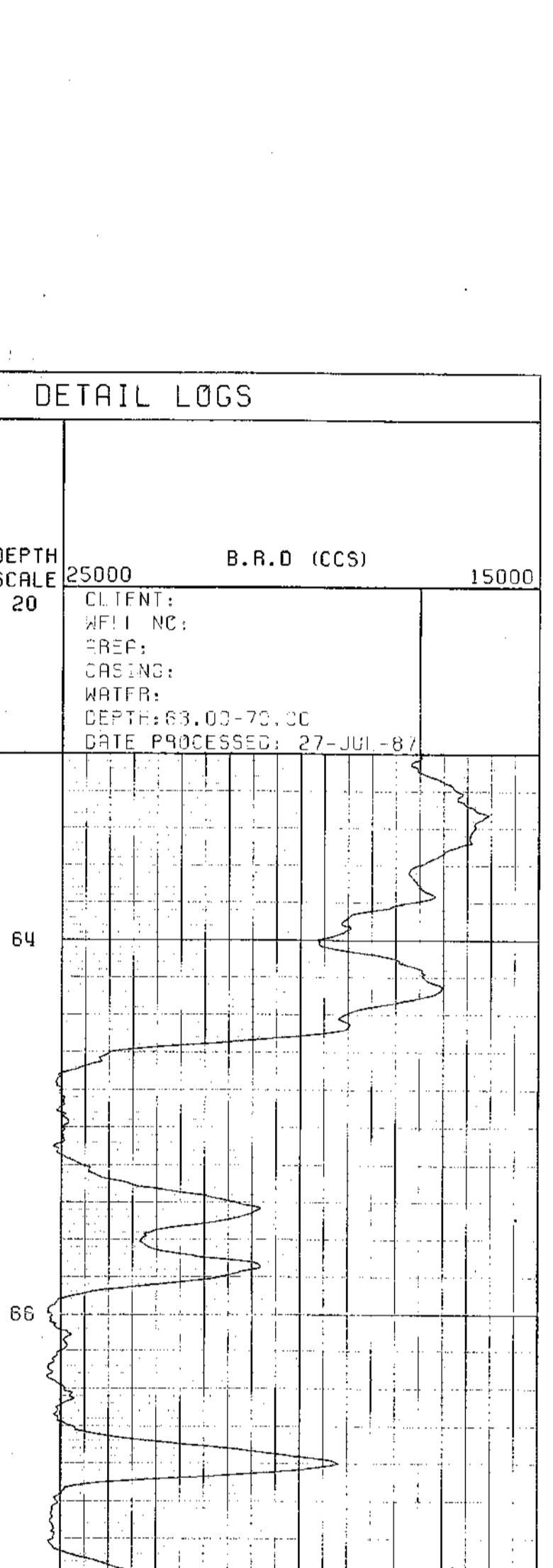
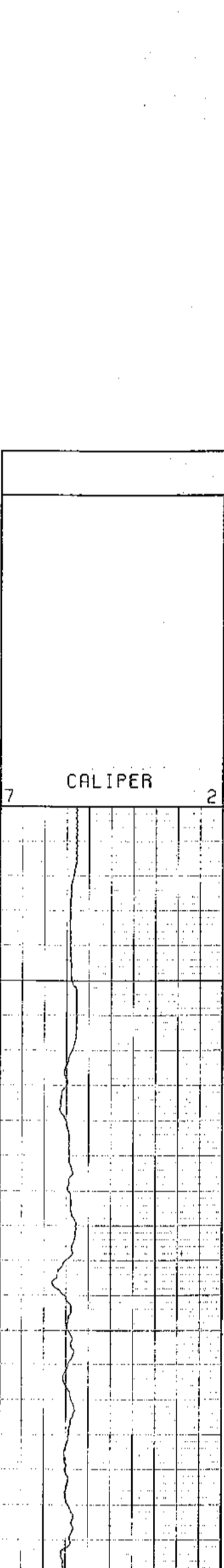
739

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT: GUINETTE COPL  
 WELL NO: 87026  
 AREA: TRANSFER PLOT  
 CASING: 5.0Y  
 WATER: 30.0M  
 DEPTH: 12.00-17.00  
 DATE PROCESSED: 27-JUL-87



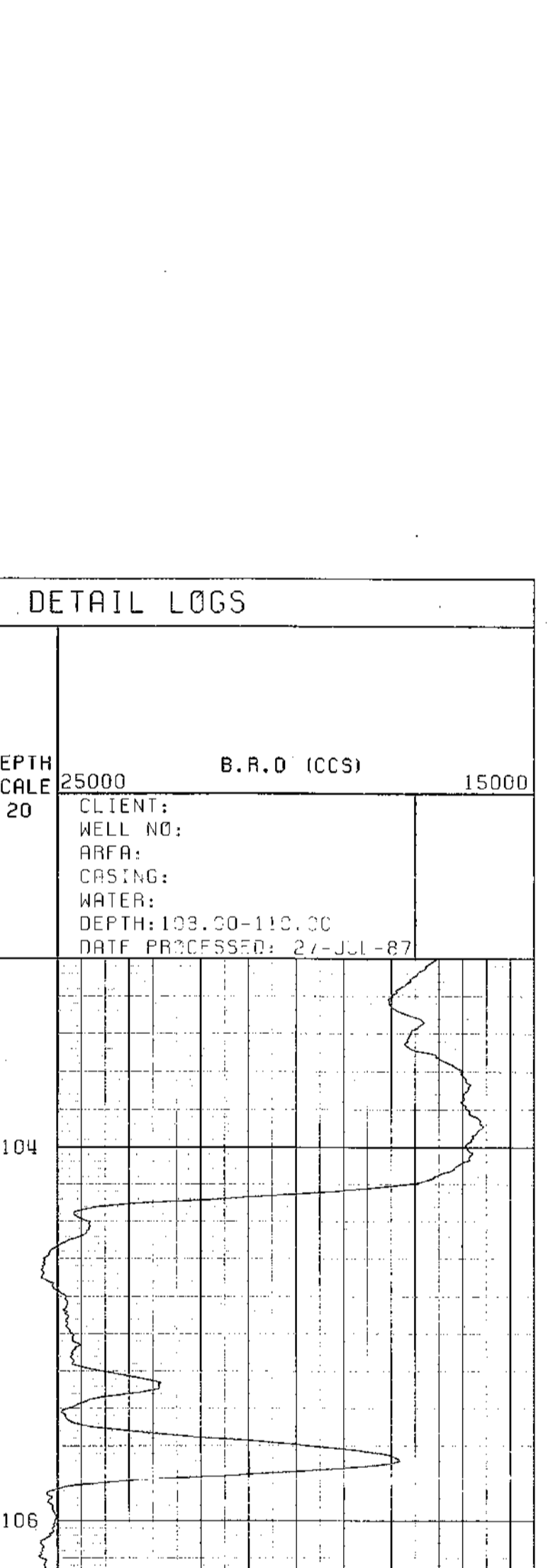
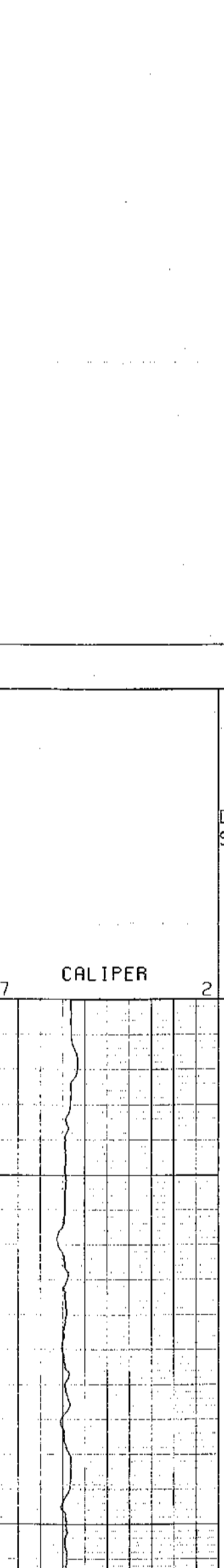
DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 43.00-47.00  
 DATE PROCESSED: 27-JUL-87



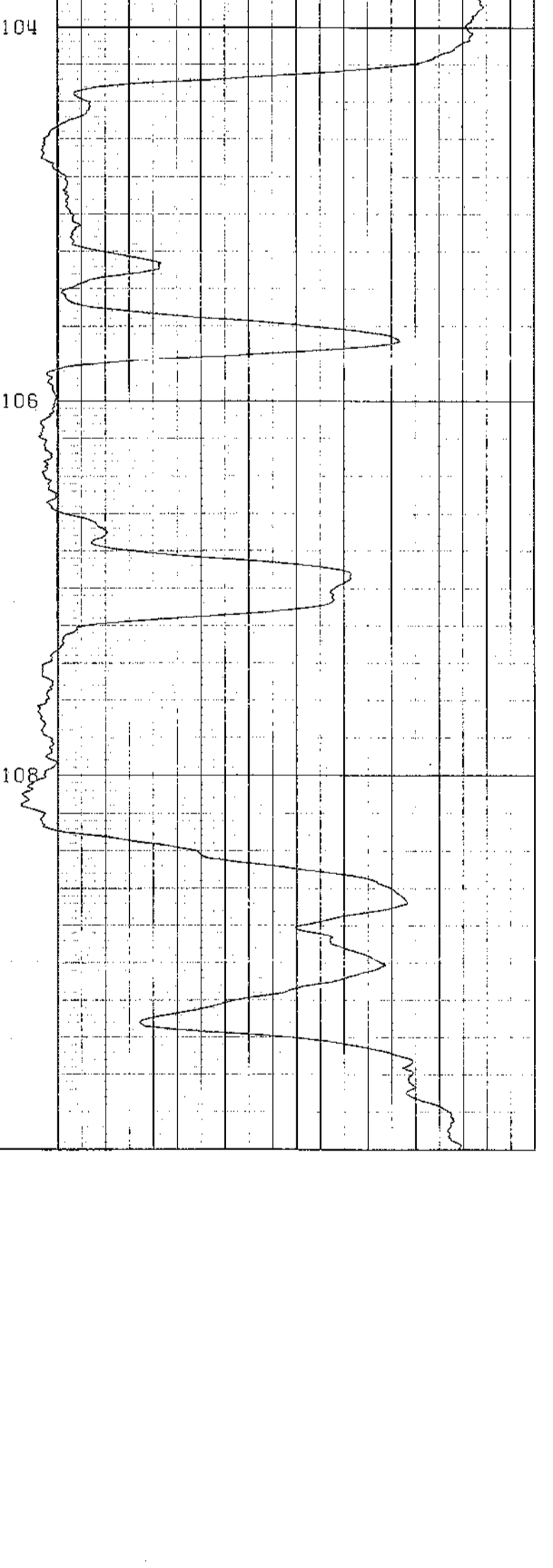
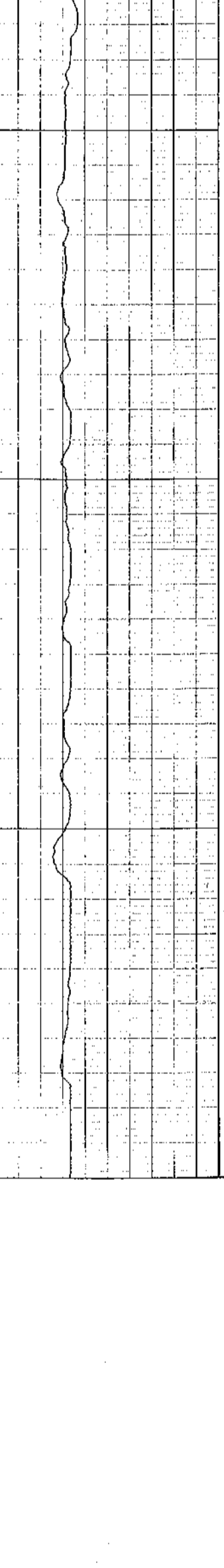
DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 63.00-70.00  
 DATE PROCESSED: 27-JUL-87



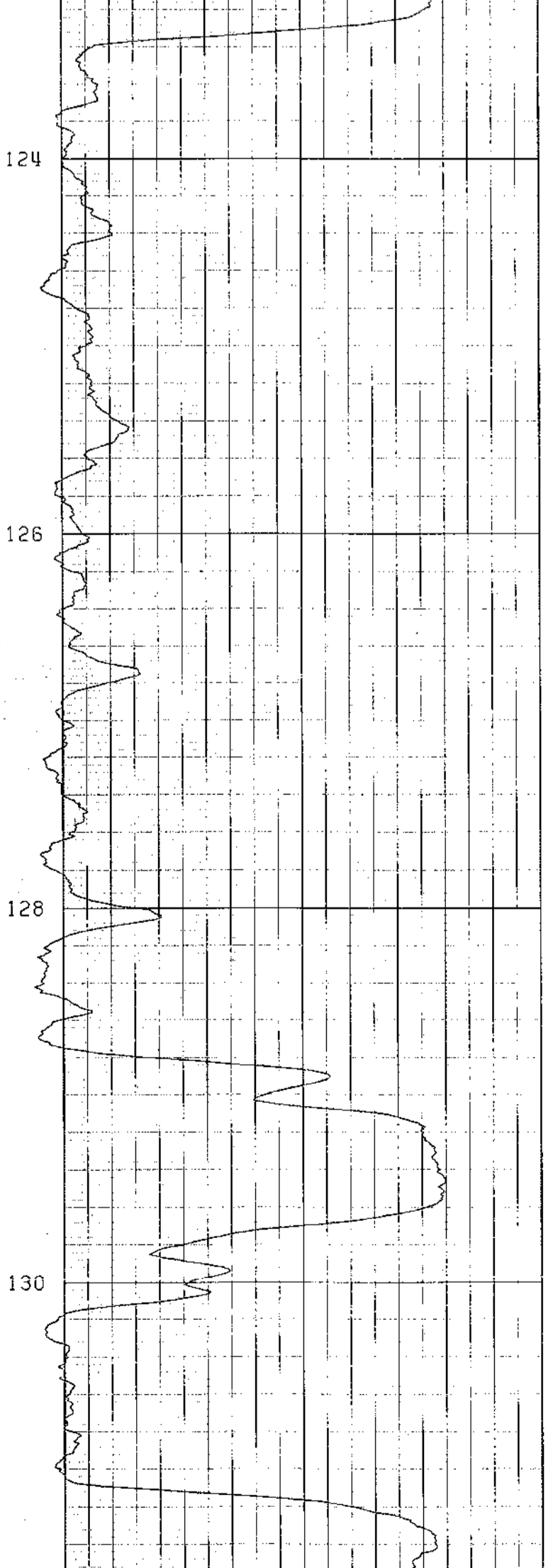
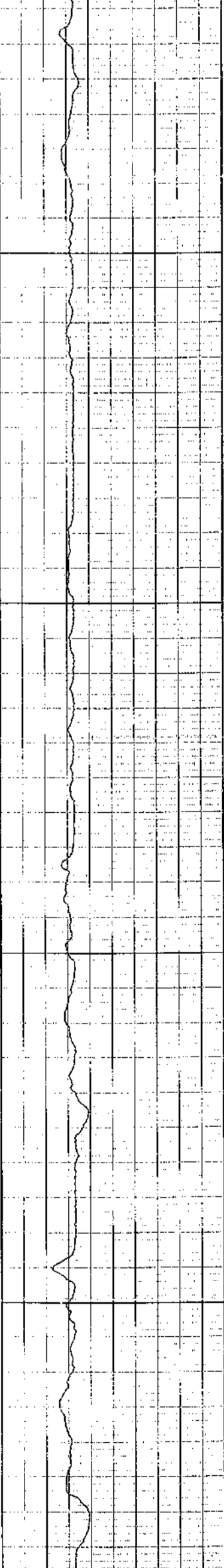
DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 103.00-110.00  
 DATE PROCESSED: 27-JUL-87



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 121.00-135.00  
 DATE PROCESSED: 27-JUL-87





QHR87027  
TRANSFER

LOG DEPTH 0080.00  
TRUE DEPTH 0079.97  
TILT 2.03 DG  
BEARING 190.07 DG  
NORTHING -001.71  
EASTING -000.12

LOG DEPTH 0070.00  
TRUE DEPTH 0069.98  
TILT 2.00 DG  
BEARING 190.98 DG  
NORTHING -001.36  
EASTING -000.06

LOG DEPTH 0060.00  
TRUE DEPTH 0059.99  
TILT 1.84 DG  
BEARING 186.57 DG  
NORTHING -001.02  
EASTING -000.00

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT 1.73 DG  
BEARING 166.59 DG  
NORTHING -000.70  
EASTING +000.03

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 1.73 DG  
BEARING 162.25 DG  
NORTHING -000.40  
EASTING -000.03

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 1.19 DG  
BEARING 197.82 DG  
NORTHING -000.11  
EASTING -000.12

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT .68 DG  
BEARING 281.75 DG  
NORTHING +000.08  
EASTING -000.06

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT .64 DG  
BEARING 44.07 DG  
NORTHING +000.05  
EASTING +000.05

LOG DEPTH 0003.00  
TRUE DEPTH 0003.00  
TILT .75 DG  
BEARING 103.36 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0010.00  
TILT = .53 DG  
BEARING = 344.79 DG

DEPTH = 0020.00  
TILT = .84 DG  
BEARING = 218.71 DG

DEPTH = 0030.00  
TILT = 1.55 DG  
BEARING = 176.94 DG

DEPTH = 0040.00  
TILT = 1.92 DG  
BEARING = 147.56 DG

DEPTH = 0050.00  
TILT = 1.55 DG  
BEARING = 185.62 DG

DEPTH = 0060.00  
TILT = 2.12 DG  
BEARING = 187.52 DG

DEPTH = 0070.00  
TILT = 1.88 DG  
BEARING = 194.43 DG

DEPTH = 0080.00  
TILT = 2.18 DG  
BEARING = 185.72 DG

DATE 010797  
JOB NUMBER 117  
LOG LABEL 025.2  
MAG 1 MAX 229  
MAG 1 MIN 129  
MAG 2 MAX 329  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 180  
MAG DECL 024  
STOP DEPTH 0003

739





**COAL LITHOLOGY LOG**

SONDE TYPE  
COAL COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L. S. DENSITY  
CALIPER

BOREHOLE QHR 87027  
CLIENT Quintette Coal Ltd.

AREA Transfer  
COUNTRY Canada  
DATE LOGGED 7/JUL/87

**BOREHOLE DATA**

PERMANENT DATUM (Ground Level)  
ELEVATION OF P.D. N/A  
MEASUREMENTS FROM G.L. DRILLER  
DEPTH REACHED 80.0  
CASING SHOE 4.0  
BIT SIZES 1 5.4 TO TD 2 TO  
3 TO 4 TO  
CASING SIZES 1 6.0 TO 4.0 2 TO

**FLUID DATA**

NATURE Air/Water  
SG 1.0 gm/cc.  
LEVEL 31.0  
VISCOSITY N/A  
Bhp at meas. temp N/A  
BHRT N/A

**OPERATION DATA**

FIRST READING 79  
LAST READING 0  
INTERVAL LOGGED 79  
UNIT-TRUCK No 116/217  
ENGINEER Cavendish  
WITNESS James

**739**

**EQUIPMENT AND RECORDING DATA**

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	IC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	183B	5852												
L.S. DENSITY			367	Y	9	D	9	2	-	1.56	80	00	80	
CALIPER	SIDEWALL POSITION		004J	Y	9	D	9	1	7.56	-	80	00	80	
			7" .2"	Y	9	D	9	.3	-	-	80	00	80	

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

FROM	53	23	INTERVAL TOTAL
TO	40	15	
INTERVAL	13	8	21.0m

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	NN	1:200			
231	Vert.	CDS			

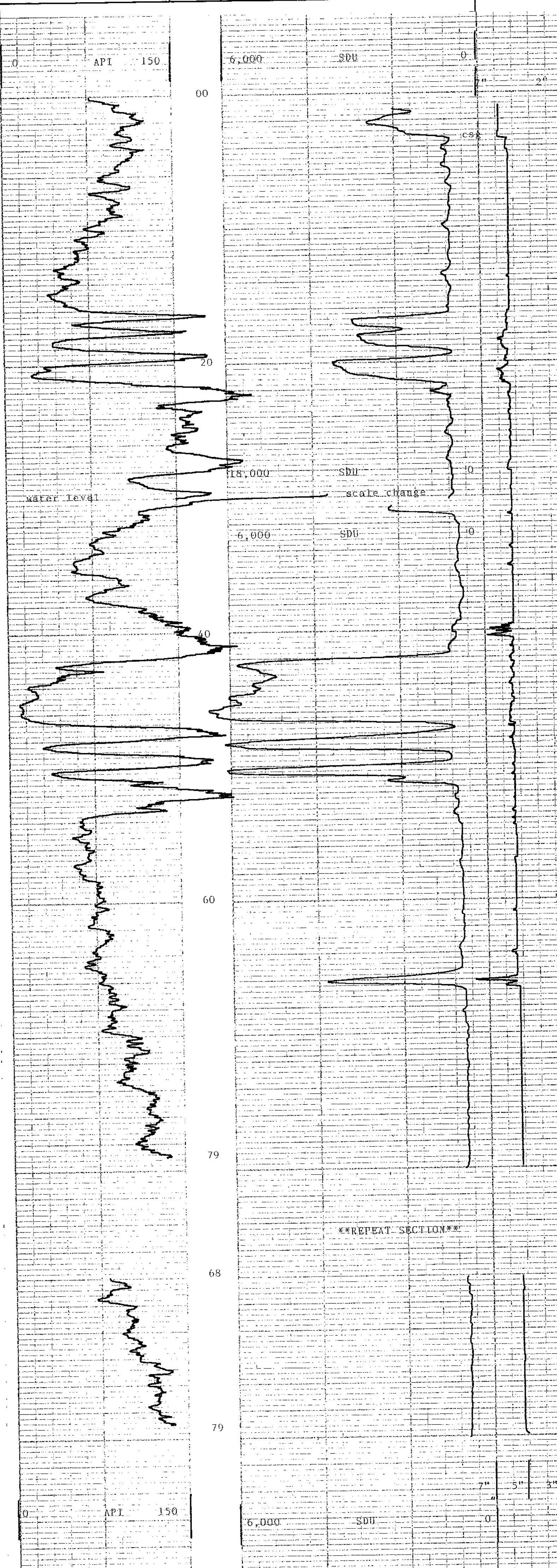
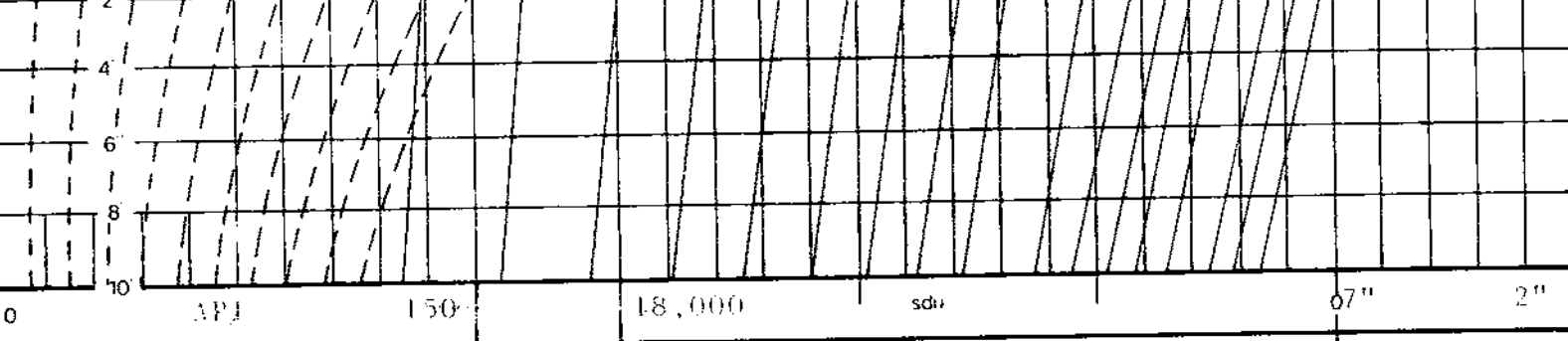
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU / CPS	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE QHR 87027 AREA Transfer  
CLIENT Quintette Coal Ltd. COUNTRY Canada

**COAL LITHOLOGY LOG**







DETAIL LOGS

739

DEPTH SCALE

25000

B.R.D (CCS)

15000

20

CLIENT: QUINTETTE COFL

WELL NO: OHR 87027

AREA: TRANSFER PIT

CASING: 4.0M

WATER: 31.0M

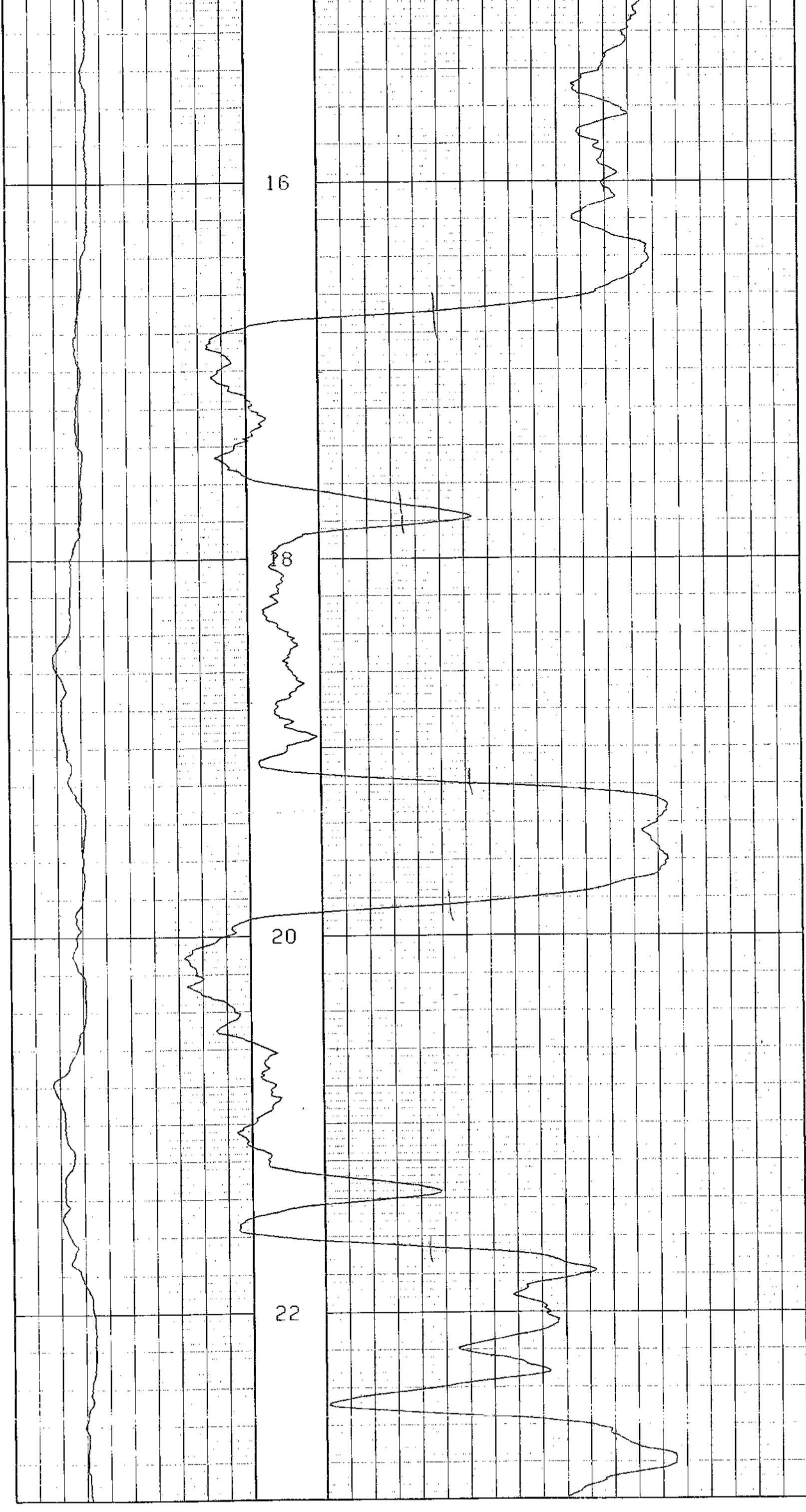
DEPTH: 15.00-23.00

DATE PROCESSED: 27-JUL-87

CALIPER

2

7



DETAIL LOGS

DEPTH SCALE

25000

B.R.D (CCS)

15000

20

CLIENT:

WELL NO:

AREA:

CASING:

WATER:

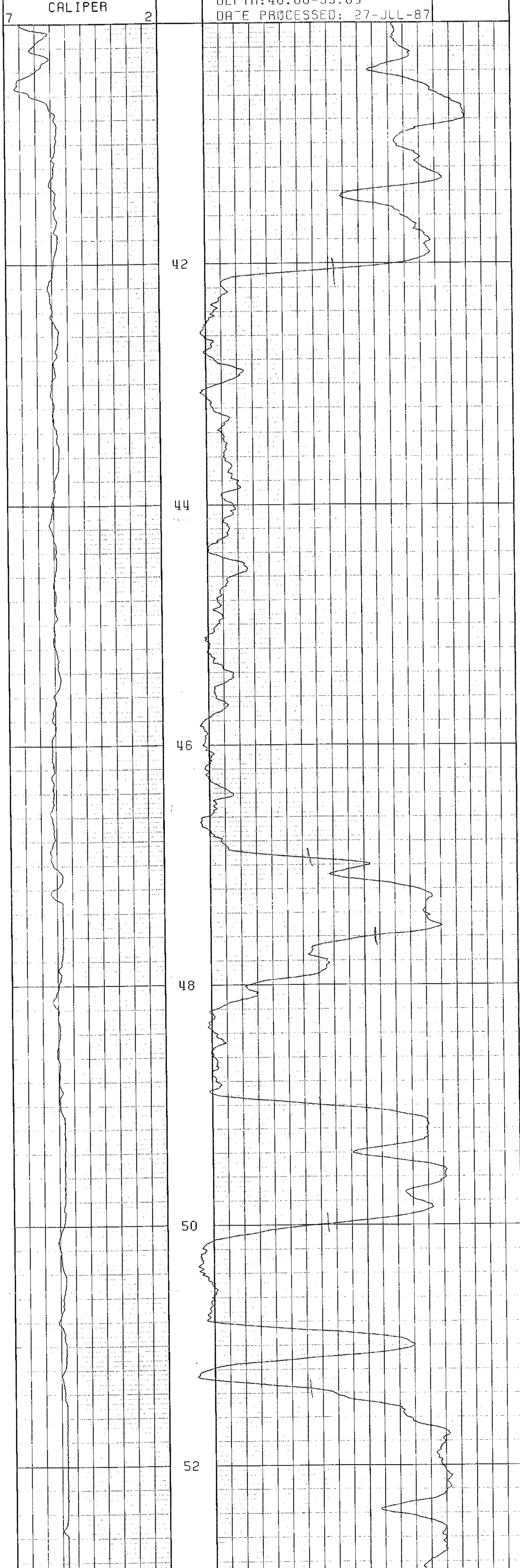
DEPTH: 40.00-53.00

DATE PROCESSED: 27-JUL-87

CALIPER

2

7





DETAIL LOGS

739

DEPTH SCALE

10000

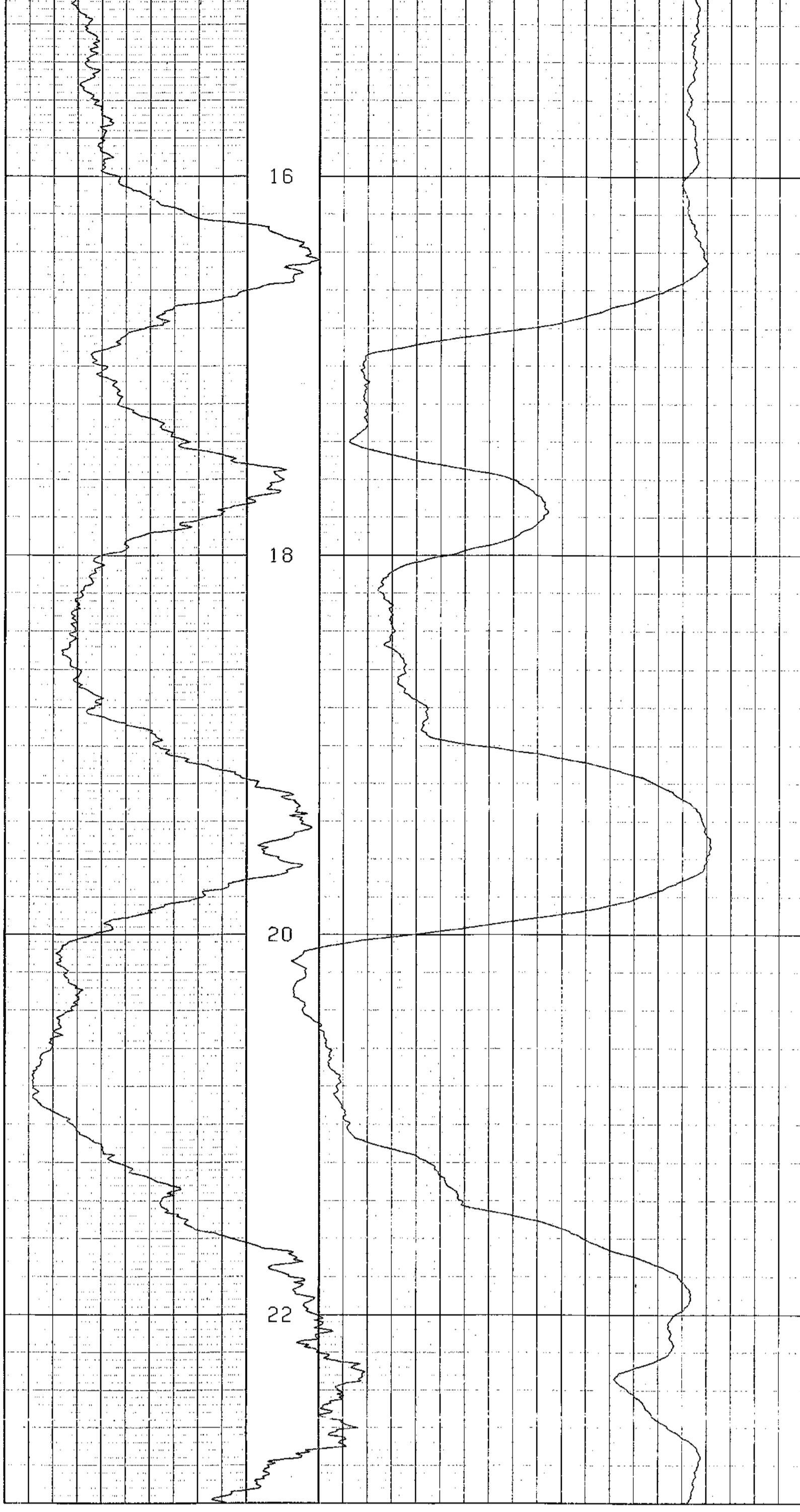
L.S.D (CCS)

0

CLIENT: QUINTETTE COFL  
 WELL NO: QHR 87027  
 AREA: TRANSFER PIT  
 CASING: 4.0M  
 WATER: 31.0M  
 DEPTH: 15.00-23.00  
 DATE PROCESSED: 27-JUL-87

GAMMA RAY

0 150



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DEPTH = 0010.00  
TILT = 1.06 DG  
BEARING = 92.74 DG

DEPTH = 0020.00  
TILT = .37 DG  
BEARING = 135.35 DG

DEPTH = 0030.00  
TILT = .84 DG  
BEARING = 282.98 DG

DEPTH = 0040.00  
TILT = .84 DG  
BEARING = 180.04 DG

DEPTH = 0050.00  
TILT = .37 DG  
BEARING = 210.80 DG

DEPTH = 0060.00  
TILT = .84 DG  
BEARING = 244.63 DG

DEPTH = 0070.00  
TILT = 1.54 DG  
BEARING = 227.61 DG

DEPTH = 0080.00  
TILT = 2.40 DG  
BEARING = 227.90 DG

DEPTH = 0090.00  
TILT = 3.19 DG  
BEARING = 206.78 DG

DEPTH = 0100.00  
TILT = 3.38 DG  
BEARING = 194.49 DG

DEPTH = 0110.00  
TILT = 4.05 DG  
BEARING = 200.85 DG

DEPTH = 0120.00  
TILT = 4.54 DG  
BEARING = 198.94 DG

DEPTH = 0130.00  
TILT = 5.05 DG  
BEARING = 199.97 DG

DEPTH = 0140.00  
TILT = 6.03 DG  
BEARING = 190.11 DG

DEPTH = 0150.00  
TILT = 6.45 DG  
BEARING = 193.19 DG

DEPTH = 0160.00  
TILT = 6.79 DG  
BEARING = 191.99 DG

DEPTH = 0170.00  
TILT = 7.55 DG  
BEARING = 190.60 DG

DATE 080787

JOB NUMBER 0028

LOG LABEL 025.2

MAG 1 MAX 228

MAG 1 MIN 129

MAG 2 MAX 228

MAG 2 MIN 130

MAG 3 MAX 205

MAG 3 MIN 155

L. CELL 1 TILT 1 20

L. CELL 1 CPS 1 233

L. CELL 1 TILT 2 -20

L. CELL 1 CPS 2 126

L. CELL 2 TILT 1 20

L. CELL 2 CPS 1 232

L. CELL 2 TILT 2 -20

L. CELL 2 CPS 2 126

MAG 1 CENTRE 180

MAG 2 CENTRE 179

MAG 3 CENTRE 180

L. CELL 1 CENTRE 180

L. CELL 2 CENTRE 180

MAG DECL 024

STOP DEPTH 0005

739 QHR 87028



QHR 87028

LOG DEPTH 0170.00  
TRUE DEPTH 0169.61  
TILT 7.17 DG  
BEARING 191.30 DG  
NORTHING -008.10  
EASTING -002.77

LOG DEPTH 0160.00  
TRUE DEPTH 0159.69  
TILT 6.62 DG  
BEARING 192.59 DG  
NORTHING -006.87  
EASTING -002.52

LOG DEPTH 0150.00  
TRUE DEPTH 0149.76  
TILT 6.24 DG  
BEARING 191.65 DG  
NORTHING -005.74  
EASTING -002.27

LOG DEPTH 0140.00  
TRUE DEPTH 0139.82  
TILT 5.54 DG  
BEARING 195.04 DG  
NORTHING -004.68  
EASTING -002.05

LOG DEPTH 0130.00  
TRUE DEPTH 0129.87  
TILT 4.79 DG  
BEARING 199.45 DG  
NORTHING -003.75  
EASTING -001.80

LOG DEPTH 0120.00  
TRUE DEPTH 0119.91  
TILT 4.30 DG  
BEARING 199.89 DG  
NORTHING -002.96  
EASTING -001.52

LOG DEPTH 0110.00  
TRUE DEPTH 0109.94  
TILT 3.72 DG  
BEARING 197.67 DG  
NORTHING -002.25  
EASTING -001.27

LOG DEPTH 0100.00  
TRUE DEPTH 0099.96  
TILT 3.29 DG  
BEARING 200.63 DG  
NORTHING -001.63  
EASTING -001.07

LOG DEPTH 0090.00  
TRUE DEPTH 0089.98  
TILT 2.80 DG  
BEARING 217.34 DG  
NORTHING -001.10  
EASTING -000.87

LOG DEPTH 0080.00  
TRUE DEPTH 0079.99  
TILT 1.97 DG  
BEARING 227.76 DG  
NORTHING -000.71  
EASTING -000.57

LOG DEPTH 0070.00  
TRUE DEPTH 0070.00  
TILT 1.19 DG  
BEARING 236.12 DG  
NORTHING -000.48  
EASTING -000.32

LOG DEPTH 0060.00  
TRUE DEPTH 0060.00  
TILT .60 DG  
BEARING 227.72 DG  
NORTHING -000.36  
EASTING -000.14

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT .60 DG  
BEARING 195.42 DG  
NORTHING -000.29  
EASTING -000.06

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT .84 DG  
BEARING 231.51 DG  
NORTHING -000.19  
EASTING -000.04

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT .60 DG  
BEARING 209.16 DG  
NORTHING -000.09  
EASTING +000.07

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT .71 DG  
BEARING 114.04 DG  
NORTHING -000.00  
EASTING +000.12

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT .53 DG  
BEARING 13.37 DG  
NORTHING +000.04  
EASTING +000.01

LOG DEPTH 0005.00  
TRUE DEPTH 0005.00  
TILT .00 DG  
BEARING 293.99 DG  
NORTHING +000.00  
EASTING +000.00





BOREHOLE QR 87028  
 CLIENT Quintette Coal Ltd.

AREA Transfer  
 COUNTRY Canada  
 DATE LOGGED 08/Jul/87

REP. SCALE  
 1:200  
 1 of 4 LOGS

**COAL**

**LITHOLOGY LOG**

REMARKS: Ground Level  
 RESISTION @ 2.0: 9.8  
 MASS-DENSIFICATION: 9.3  
 DEPTH REACHED: 172  
 CASING SHAPE: 5.0  
 BIT SIZES: 1 5.4 TO 1.0 2 5.0 TO 1.0  
 CASING SIZES: 1 6.1 TO 5.0 2 4 TO 1.0

FLUID DATA  
 NATURE: 1.01 Brk.C.C.  
 SG: 1.01  
 LEVEL: 2.0  
 VISCOSITY: N/A  
 RING LOSS TEST: N/A  
 SPT: N/A

**SONDE TYPE**

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

OPERATION DATA  
 FIRST READING: 172  
 LAST READING: 0  
 INTERVAL LOGGED: 171  
 UNIT-TRUCK NO: 1467237  
 ENGINEER: C. Campbell  
 WITNESS: 1467237

**739**

**EQUIPMENT AND RECORDING DATA**

LOG	EQUIPMENT	SOURCE	CALIBRATOR	LOG TAPED	TAPING RECORD SPEED	DIRECT REPLAY	PANEL SPEED	TC SECS	NORM	CAL COEFF	DEPTHS FROM	TO	INTERVAL	SEAM LOG RUN
GAMMA RAY	183B	5852	367	Y	9	D	9	2	-	1.56	170	00	170	
L.S. DENSITY			0041	Y	9	D	9	1	7.56	-	170	00	170	
CALIPER			7" .2"	Y	9	D	9	3	-	-	170	00	170	

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

FROM	TO	INTERVAL TOTAL
167	140	113
85	63	22
155	133	106
77	57	20
INTERVAL	12	7
	3	8
	6	36.0m

SONDE	LOG	GENERAL SCALE	DETAIL SCALE	LOG	LOG	REFER TO ADDITIONAL HEADINGS	REMARKS
215	YN	1:200					
231	Vert	CDS					

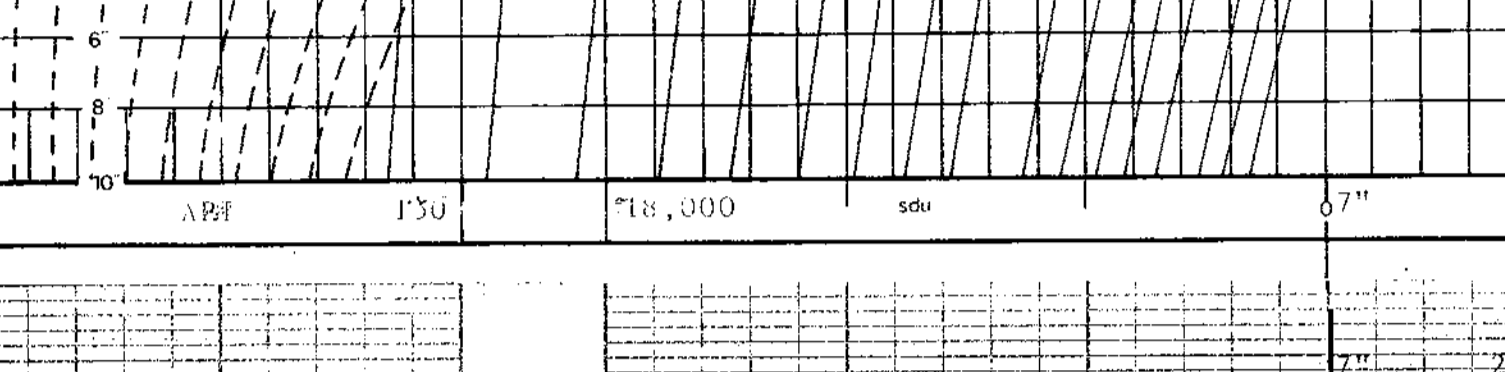
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps
JIG MARK SHOWN AT ABOVE VALUE				NORM	SDU	ms	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE QR 87028 AREA Transfer  
 CLIENT Quintette Coal Ltd. COUNTRY Canada

**COAL LITHOLOGY LOG**





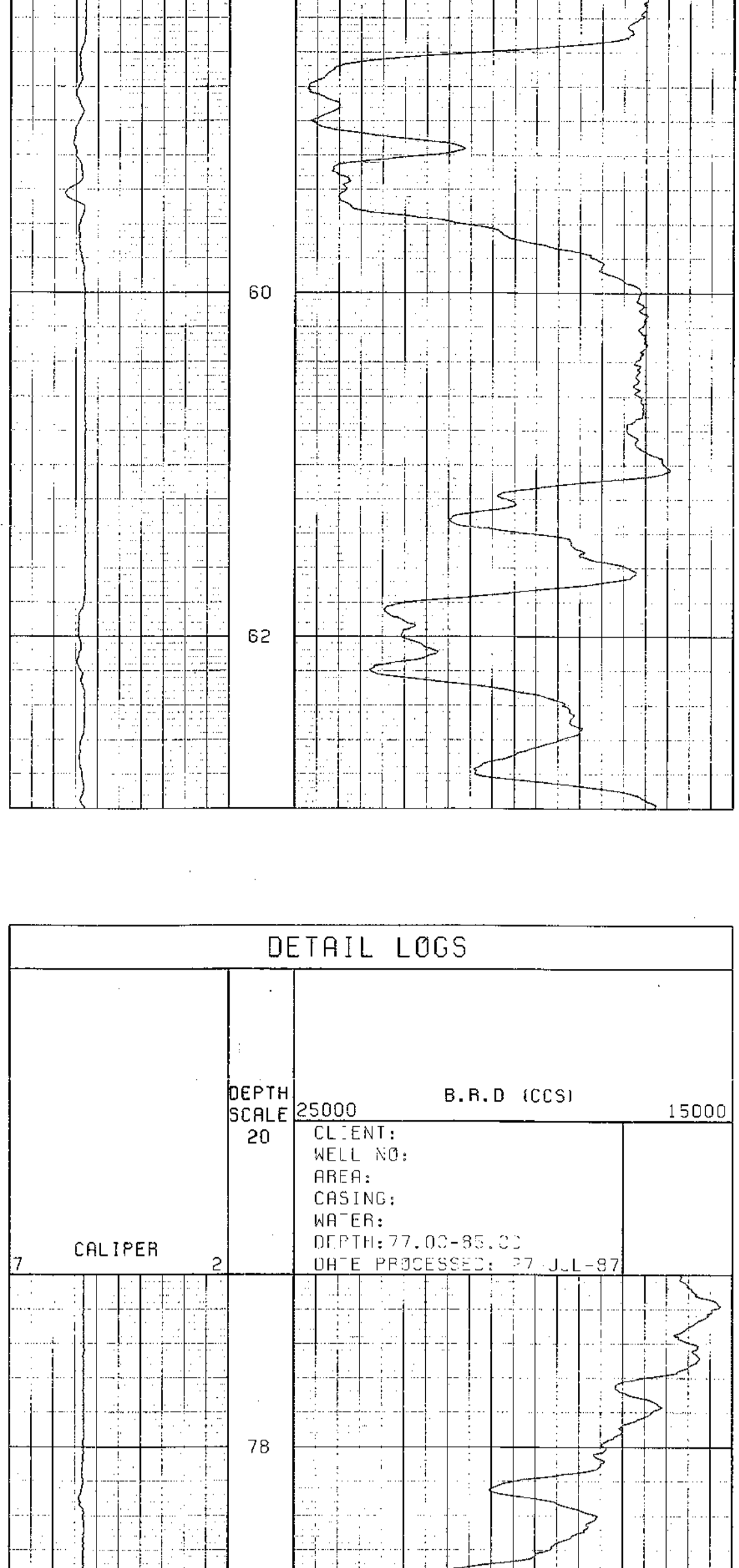


DETAIL LOGS

739

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT: QUINTETTE COFL  
WELL NO: 9HR 87029  
AREA: TRANSFER PIT  
CASING: 4.0M  
WATER: 20.0M  
DEPTH: 57.00-59.00  
DATE PROCESSED: 27-JUL-87

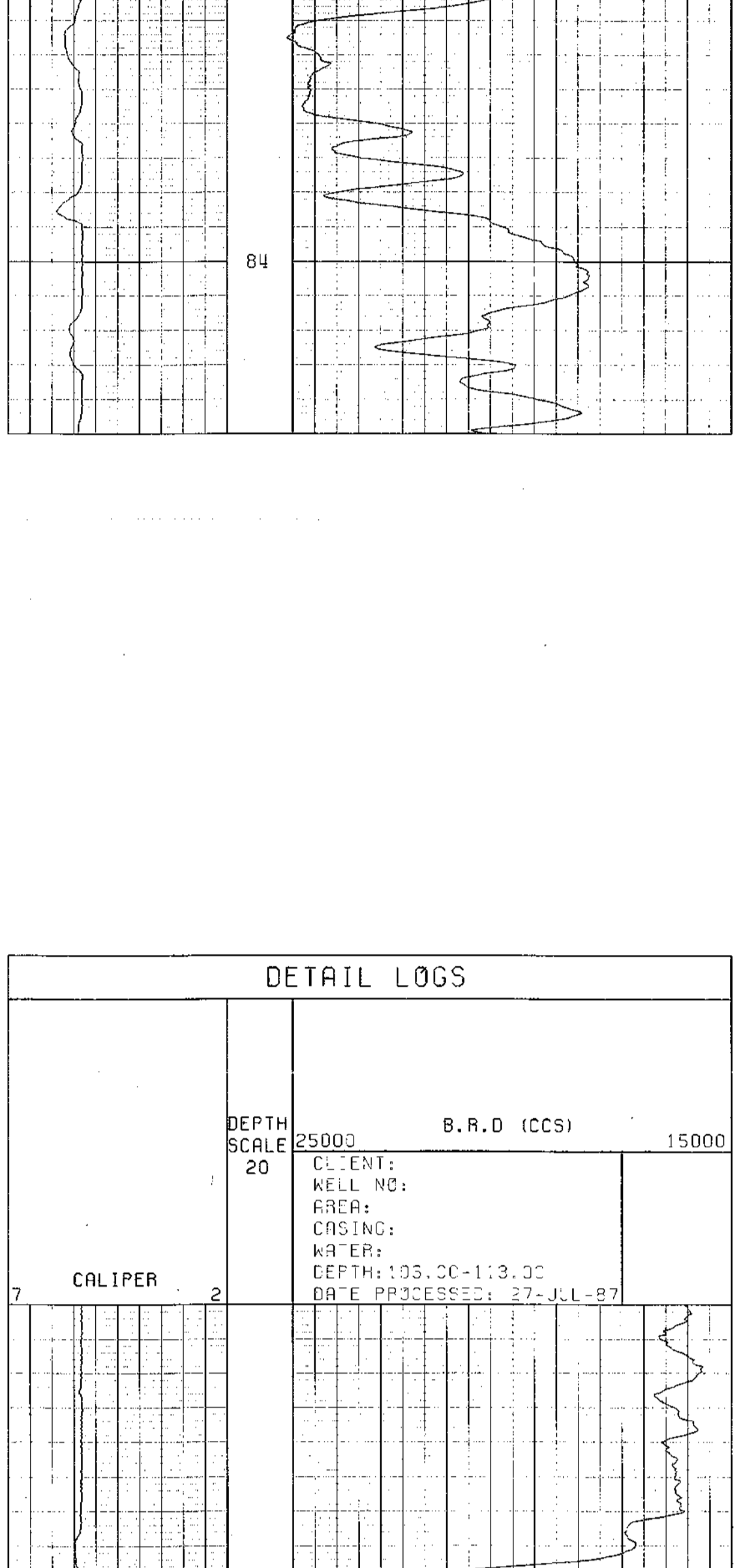
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 77.00-85.00  
DATE PROCESSED: 27-JUL-87

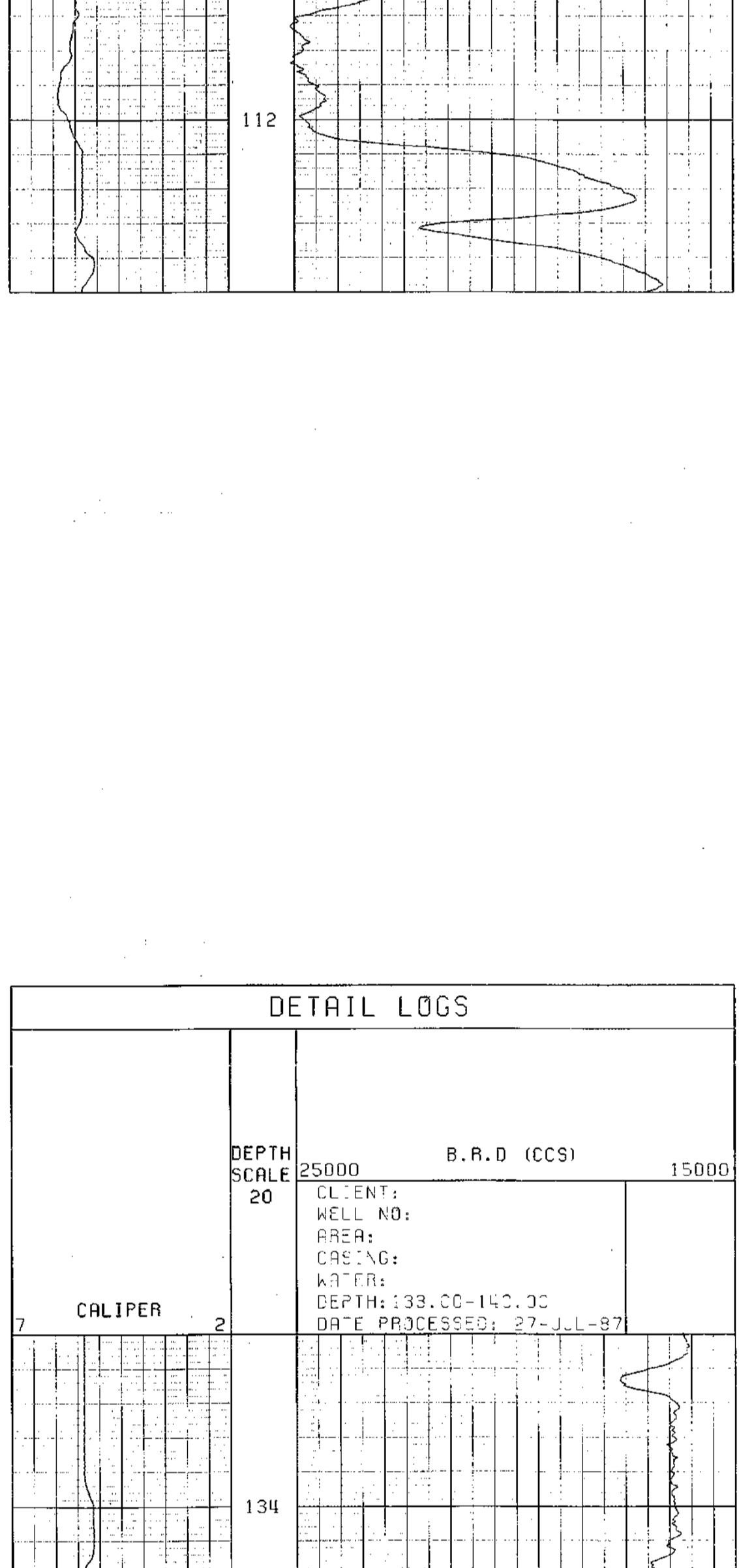
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 105.00-113.00  
DATE PROCESSED: 27-JUL-87

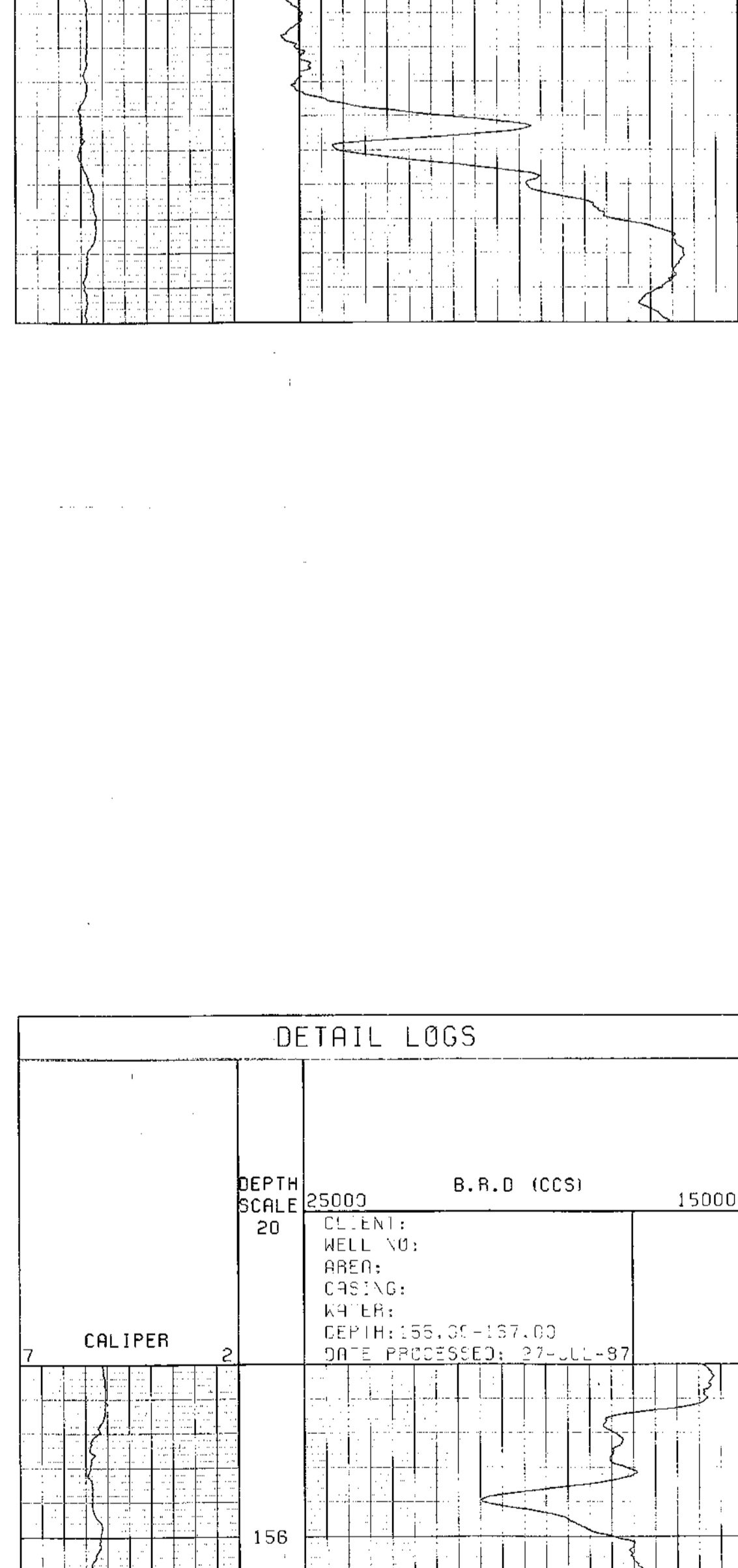
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 133.00-140.00  
DATE PROCESSED: 27-JUL-87

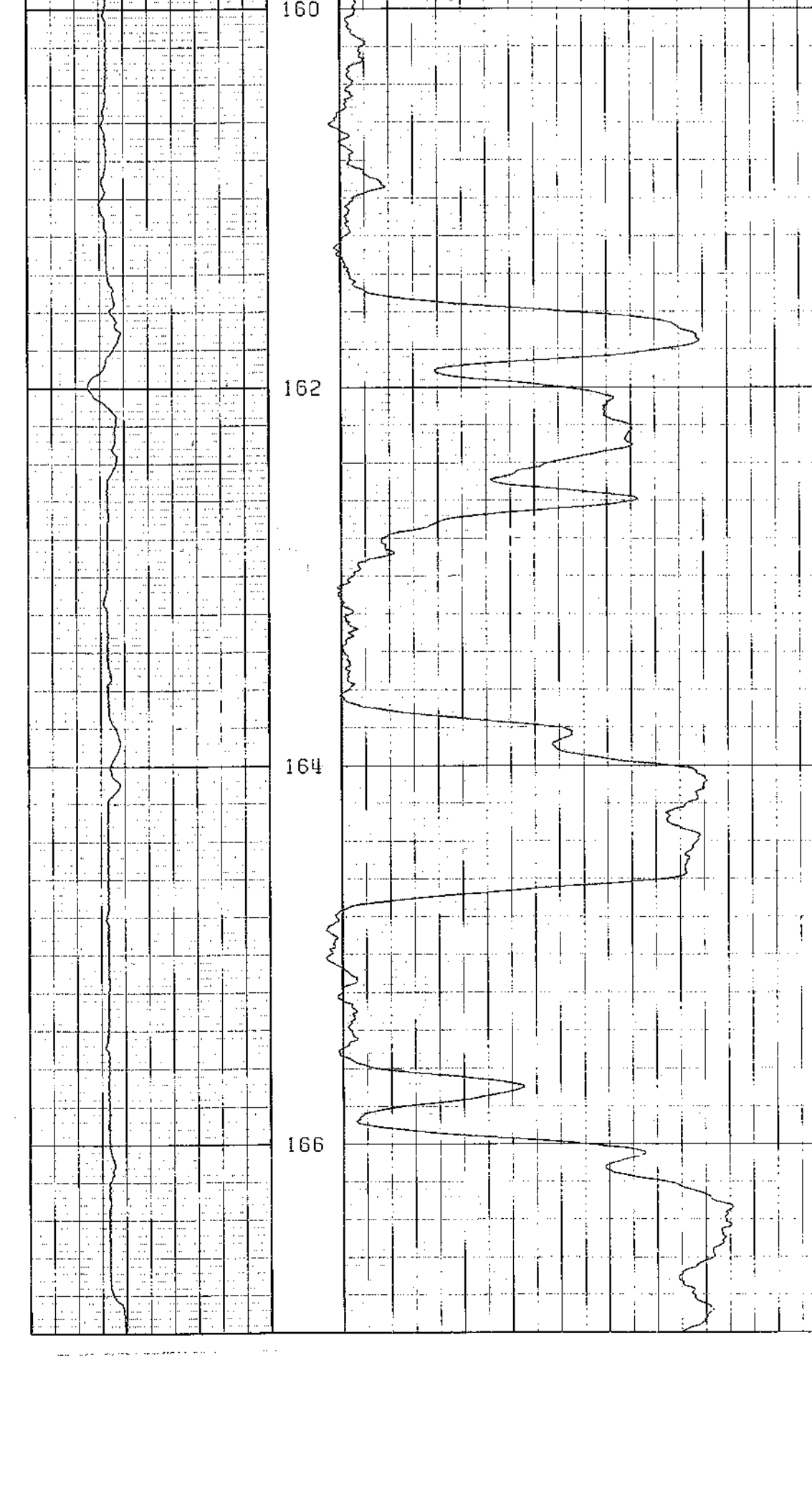
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 155.00-157.00  
DATE PROCESSED: 27-JUL-87

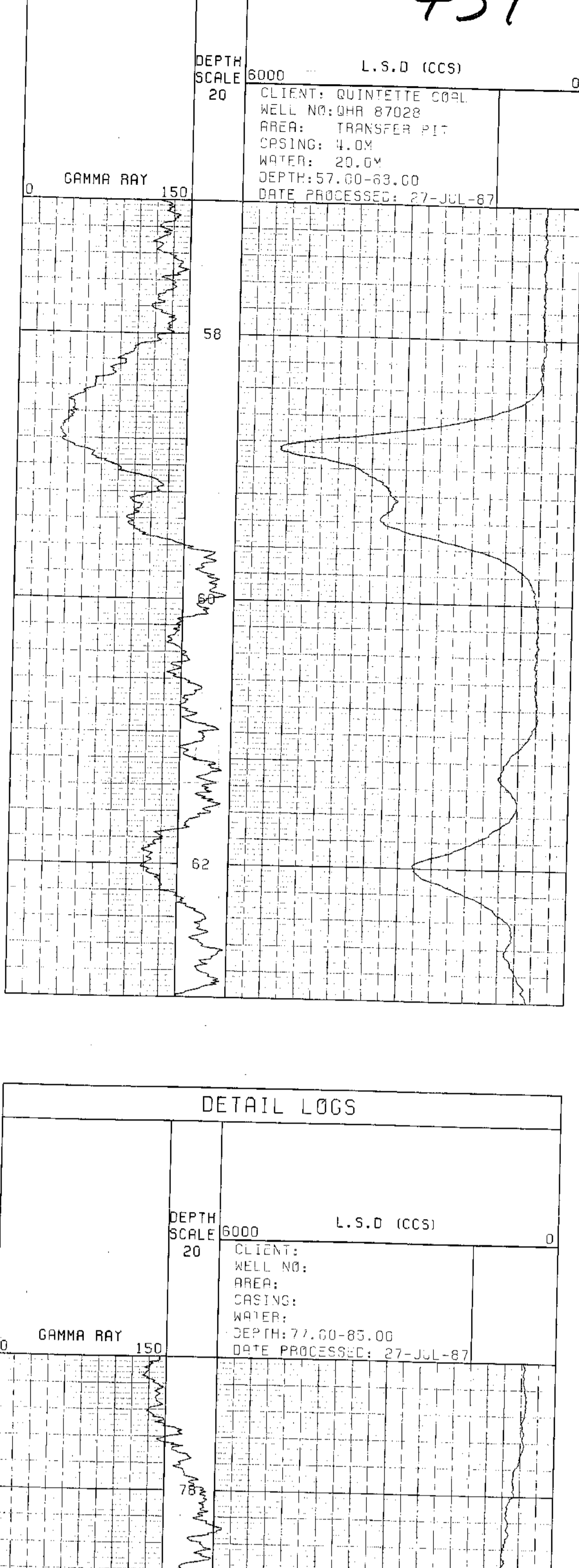
7 CALIPER 2



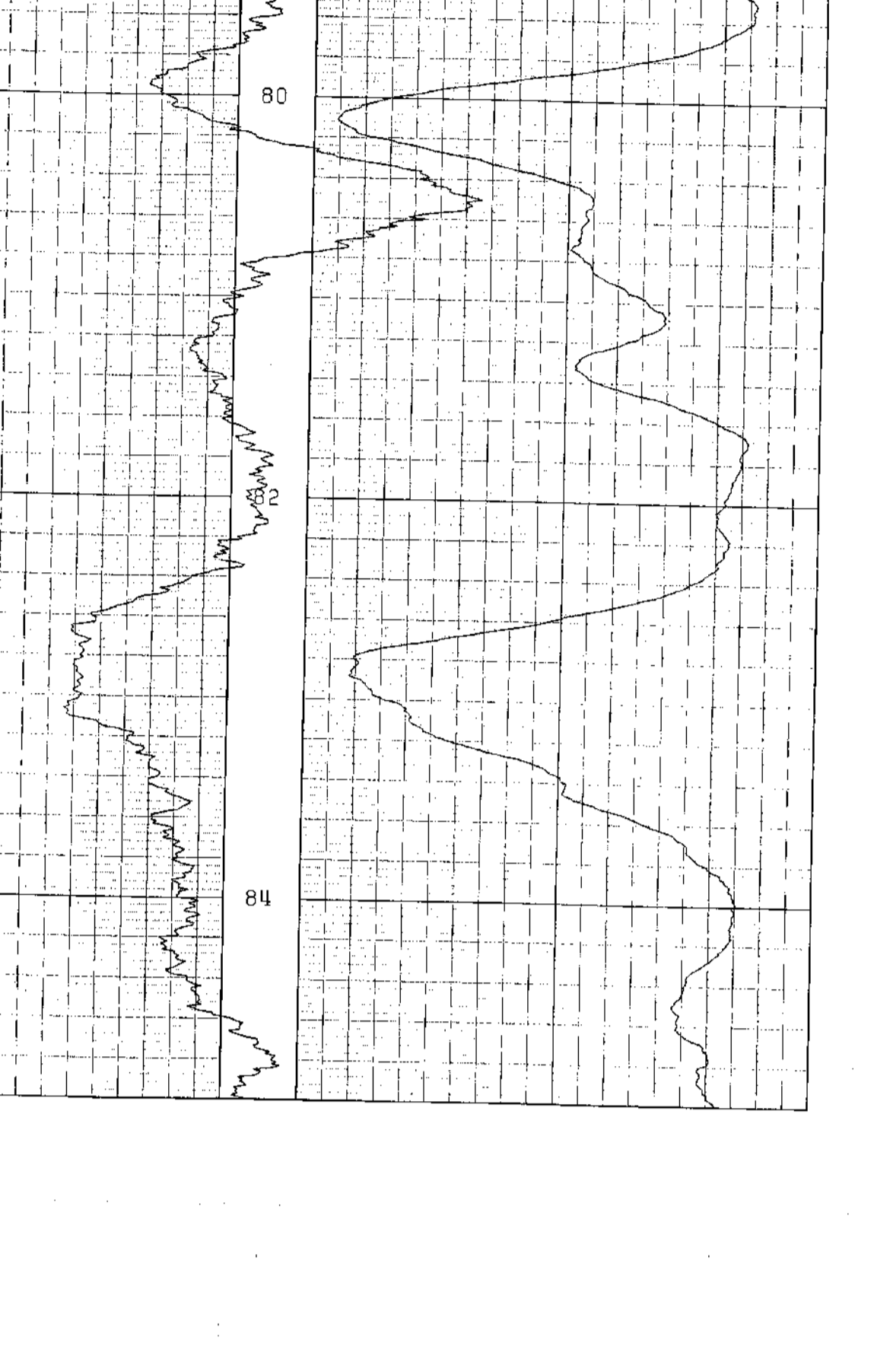


DETAIL LOGS

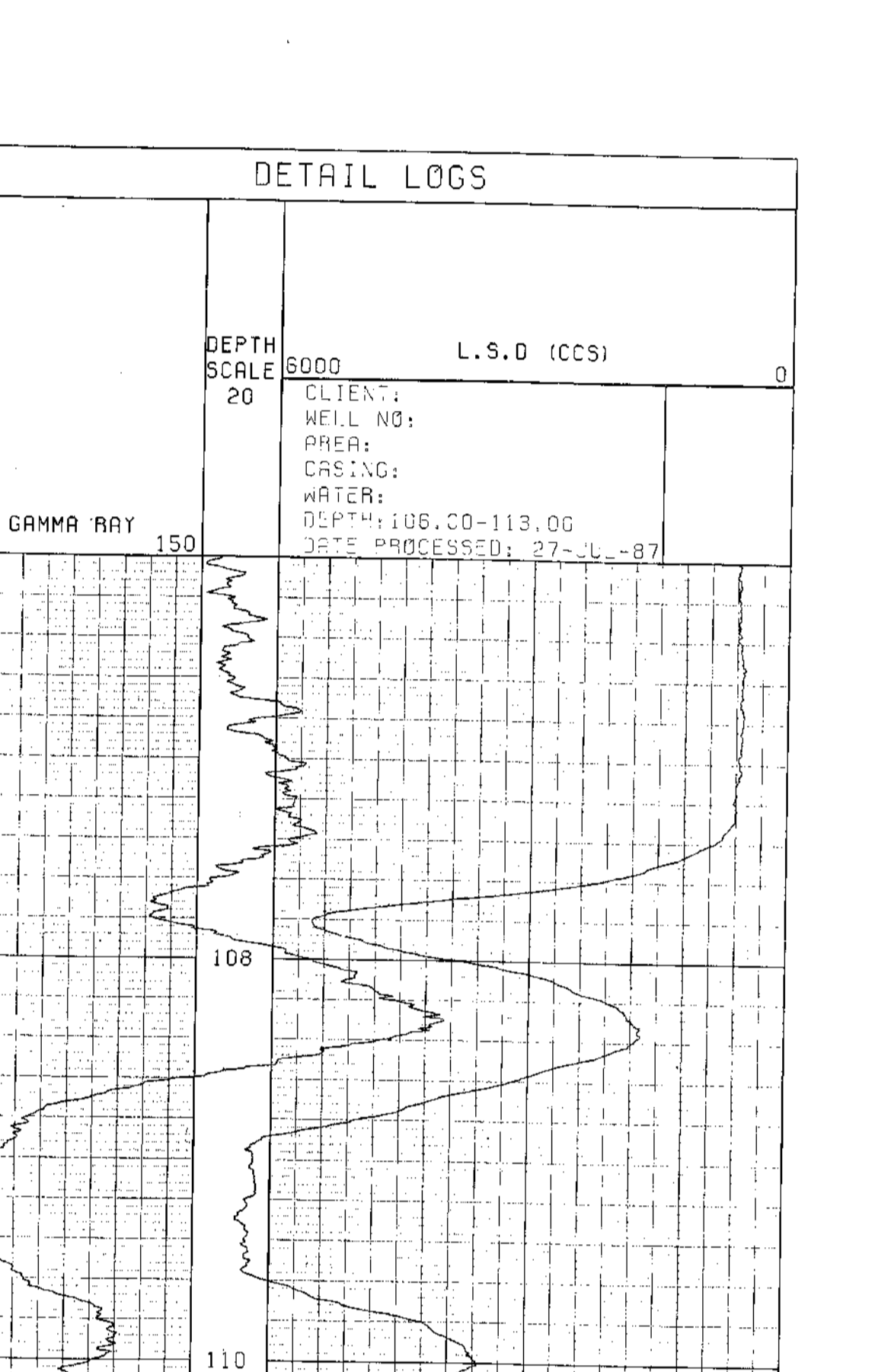
739



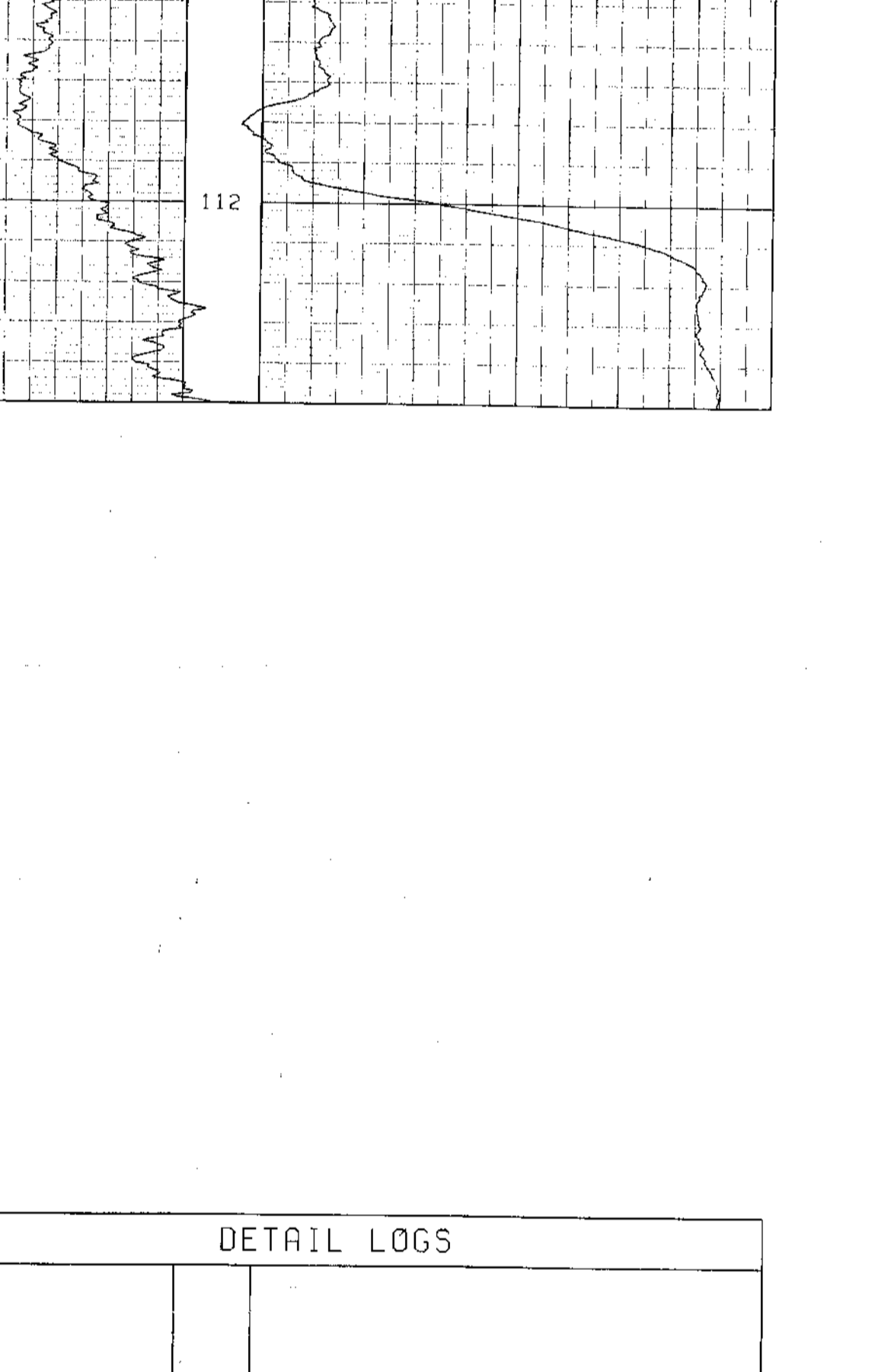
DETAIL LOGS



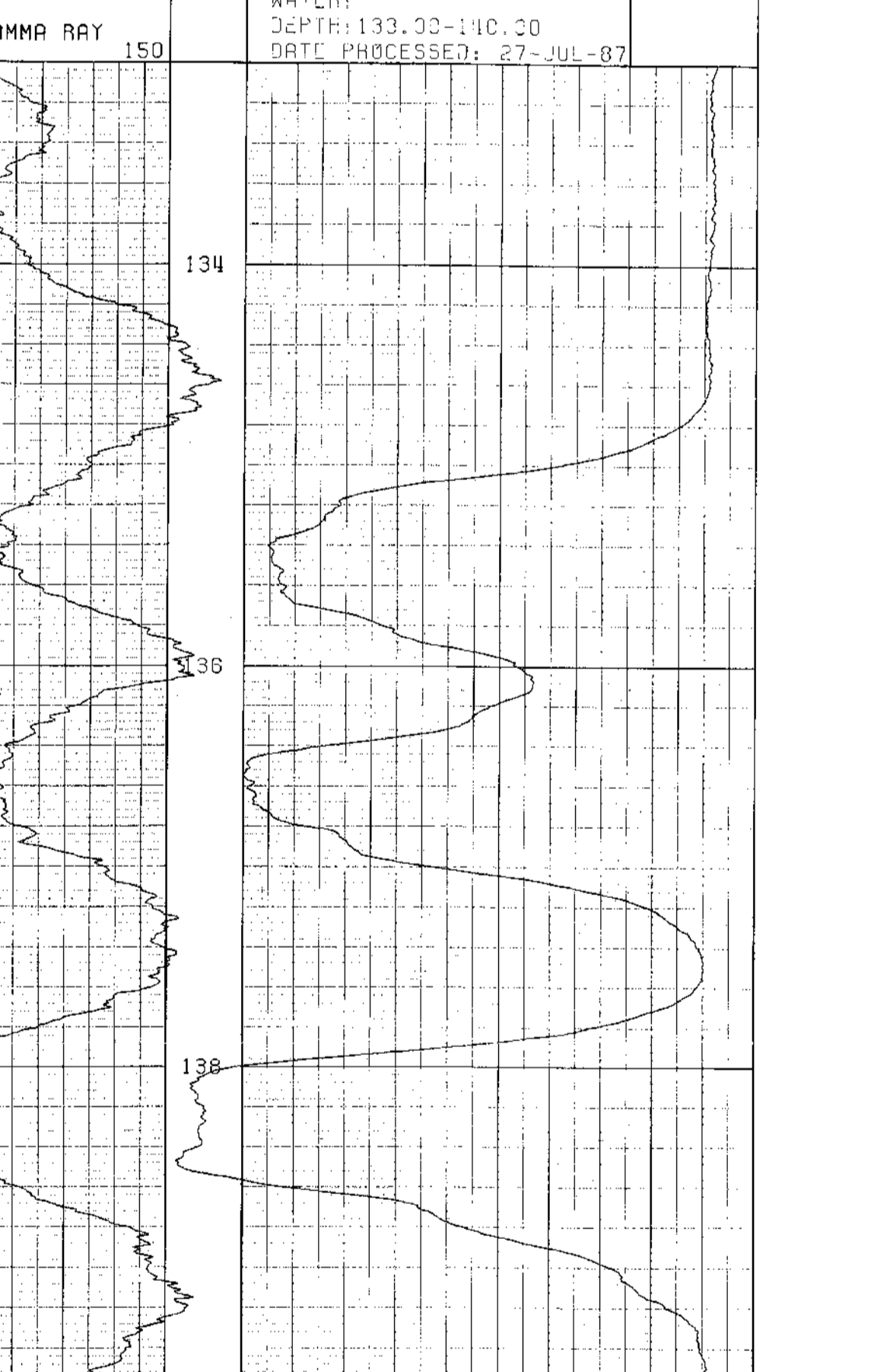
DETAIL LOGS



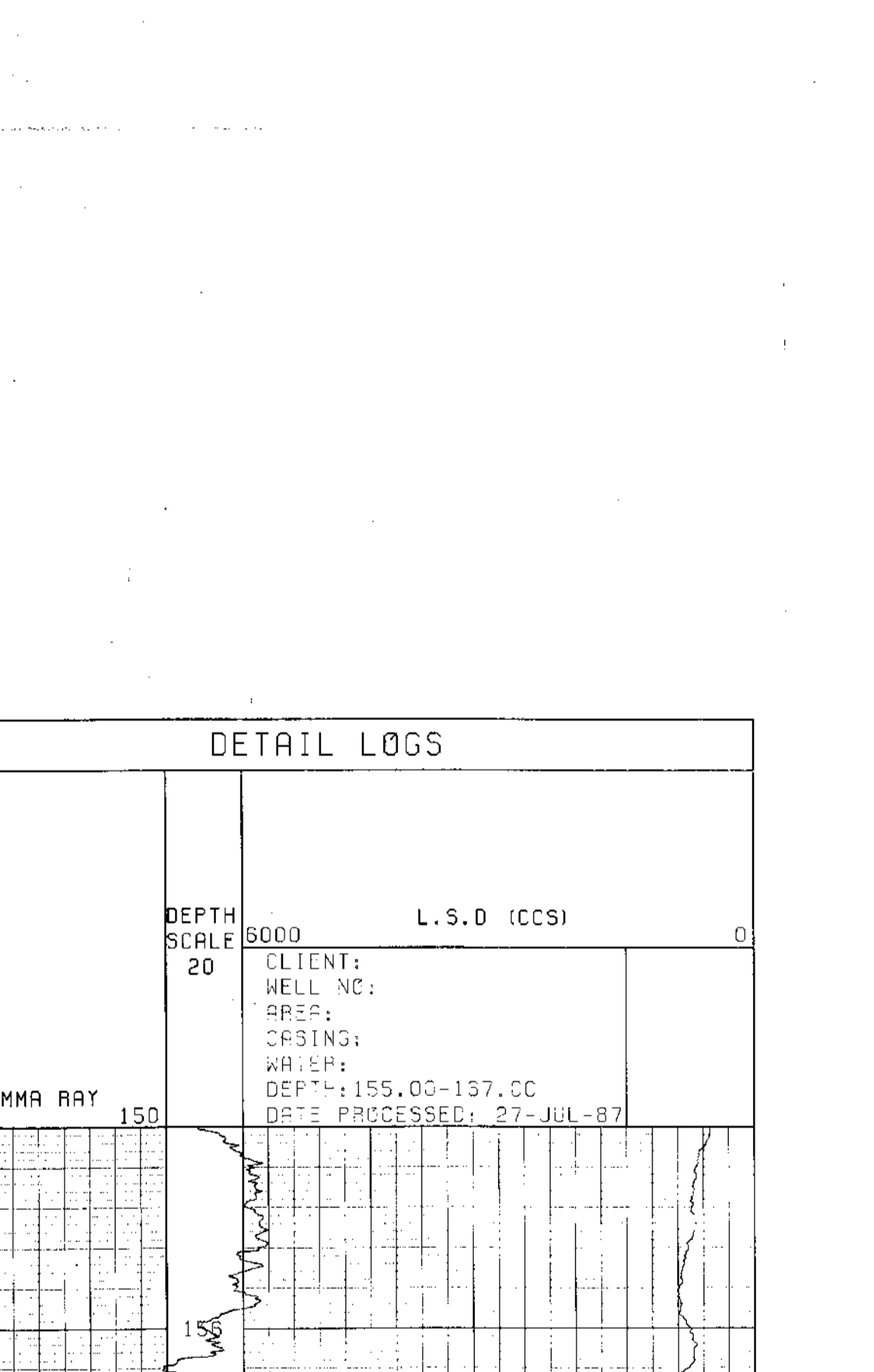
DETAIL LOGS



DETAIL LOGS



DETAIL LOGS





DEPTH = 0010.00  
TILT = 1.13 DG  
BEARING = 7.07 DG

DEPTH = 0020.00  
TILT = 2.40 DG  
BEARING = 352.67 DG

DEPTH = 0030.00  
TILT = 2.93 DG  
BEARING = 51.30 DG

DEPTH = 0040.00  
TILT = 6.58 DG  
BEARING = 70.01 DG

DEPTH = 0050.00  
TILT = 6.92 DG  
BEARING = 72.43 DG

DEPTH = 0060.00  
TILT = 9.67 DG  
BEARING = 69.26 DG

DEPTH = 0070.00  
TILT = 10.71 DG  
BEARING = 70.07 DG

DEPTH = 0080.00  
TILT = 11.47 DG  
BEARING = 71.21 DG

DEPTH = 0090.00  
TILT = 11.57 DG  
BEARING = 69.95 DG

DEPTH = 0100.00  
TILT = 11.47 DG  
BEARING = 70.32 DG

DEPTH = 0110.00  
TILT = 11.34 DG  
BEARING = 79.61 DG

DATE 100787  
JOB NUMBER 70029  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 180

MAG DECL 024  
STOP DEPTH 0003

QHR 87029

739



LOG DEPTH 0050.00  
 TRUE DEPTH 0049.89  
 TILT 6.75 DG  
 BEARING 71.22 DG  
 NORTHING +001.67  
 EASTING +001.95

LOG DEPTH 0040.00  
 TRUE DEPTH 0039.96  
 TILT 4.75 DG  
 BEARING 60.65 DG  
 NORTHING +001.29  
 EASTING +000.84

LOG DEPTH 0030.00  
 TRUE DEPTH 0029.99  
 TILT 2.66 DG  
 BEARING 21.98 DG  
 NORTHING +000.89  
 EASTING +000.12

LOG DEPTH 0020.00  
 TRUE DEPTH 0020.00  
 TILT 1.76 DG  
 BEARING 359.87 DG  
 NORTHING +000.46  
 EASTING -000.85

LOG DEPTH 0010.00  
 TRUE DEPTH 0010.00  
 TILT 1.31 DG  
 BEARING 340.75 DG  
 NORTHING +000.15  
 EASTING -000.05

LOG DEPTH 0003.00  
 TRUE DEPTH 0003.00  
 TILT 1.49 DG  
 BEARING 314.44 DG  
 NORTHING +000.00  
 EASTING +000.00

LOG DEPTH 0110.00  
 TRUE DEPTH 0108.84  
 TILT 11.40 DG  
 BEARING 74.96 DG  
 NORTHING +005.26  
 EASTING +012.47

LOG DEPTH 0100.00  
 TRUE DEPTH 0099.04  
 TILT 11.52 DG  
 BEARING 70.13 DG  
 NORTHING +004.74  
 EASTING +010.56

LOG DEPTH 0090.00  
 TRUE DEPTH 0089.24  
 TILT 11.52 DG  
 BEARING 70.58 DG  
 NORTHING +004.06  
 EASTING +008.68

LOG DEPTH 0080.00  
 TRUE DEPTH 0079.44  
 TILT 11.09 DG  
 BEARING 70.64 DG  
 NORTHING +003.40  
 EASTING +006.79

LOG DEPTH 0070.00  
 TRUE DEPTH 0069.63  
 TILT 10.19 DG  
 BEARING 69.67 DG  
 NORTHING +002.76  
 EASTING +004.98

LOG DEPTH 0060.00  
 TRUE DEPTH 0059.79  
 TILT 8.30 DG  
 BEARING 70.85 DG  
 NORTHING +002.15  
 EASTING +003.32





BOREHOLE QHR 87029  
CLIENT Quintette Coal Ltd.

AREA Transfer  
COUNTRY Canada  
DATE LOGGED 10/Jul/87

DEPTH SCALE 1:200  
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)	N/A
ELEVATION OF P.O.	898
DRILLER	DRILLER
MEASUREMENTS FROM G.L.	G.L.
DEPTH REACHED	110
CASING SHOE	6.0
CASING SIZES	1 6.0 TO 5.0 2 TO
BIT SIZES	1 5.4 TO TD 2 TO
	3 TO 4 TO
	1 6.0 TO 5.0 2 TO

**FLUID DATA**

NATURE	Air/Water
SG	1.01 gm/cc
LEVEL	19.0m
VISCOSITY	N/A
Run at meas temp	N/A
BHT	N/A

**OPERATION DATA**

FIRST READING	108
LAST READING	0
INTERVAL LOGGED	108
UNIT-TRUCK No	126/217
ENGINEER	Cavendish
WITNESS	Moore

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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	TC SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	153B	5852		Y	9	D	9	2	-	1.48	108	00	108	
L.S DENSITY			6041	Y	9	D	9	1	41	-	108	00	108	
CALIPER	SIDEWALL POSITION		7" .2"	Y	9	D	9	3	-	-	108	00	108	

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

FROM	77	54	21	INTERVAL TOTAL
TO	65	47	14	
INTERVAL	12	12	7	31.0M

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	NK	1:200			
231	Vert	CDS			

**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

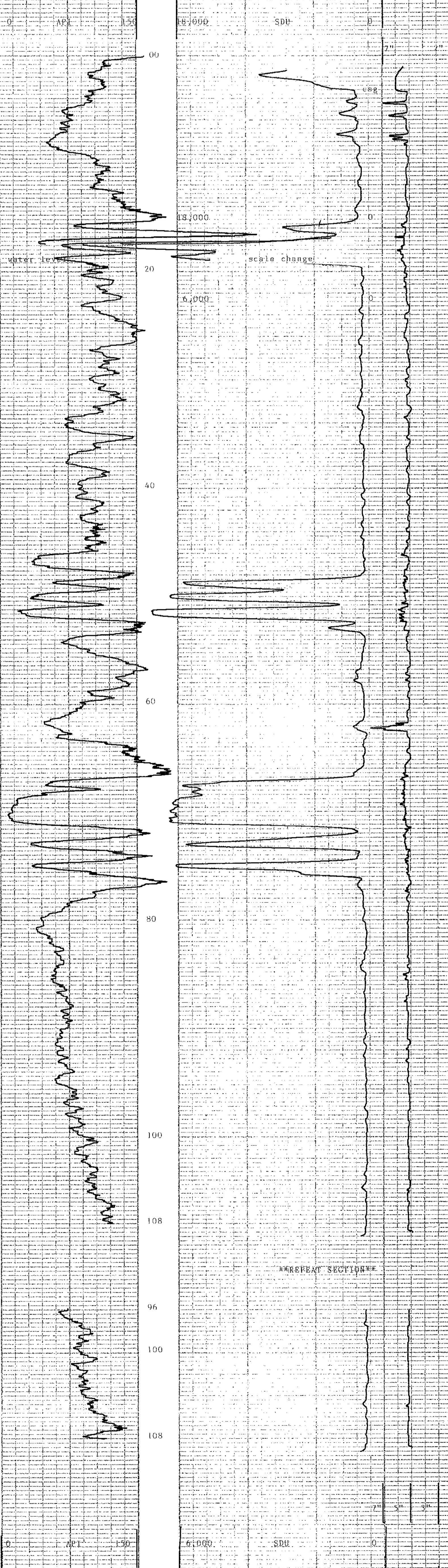
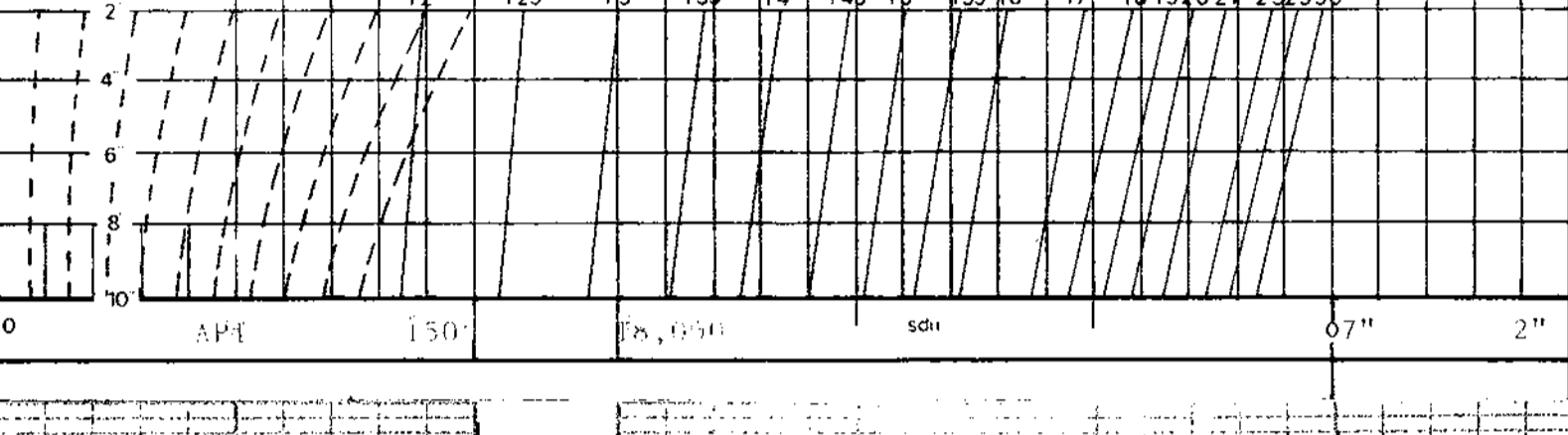
JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU - CPS	ins	cps

**GAMMA RAY**

**BULK DENSITY**

**CALIPER**

**HOLE SIZE CORRECTION DATA**



**GAMMA RAY**

**BULK DENSITY**

**CALIPER**



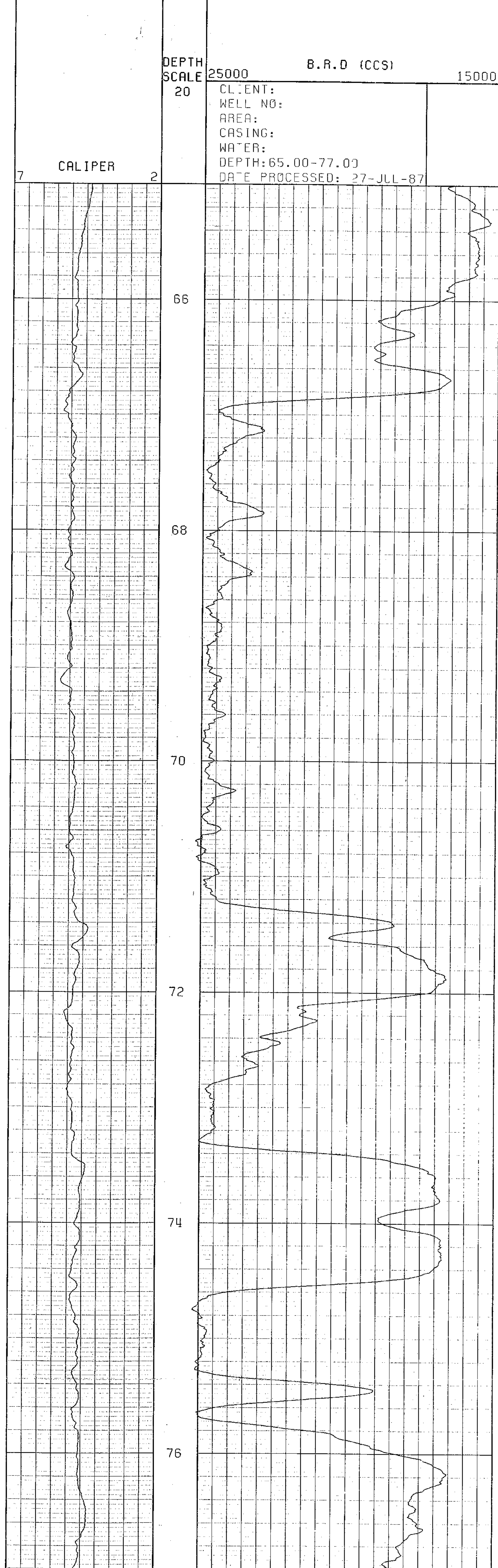
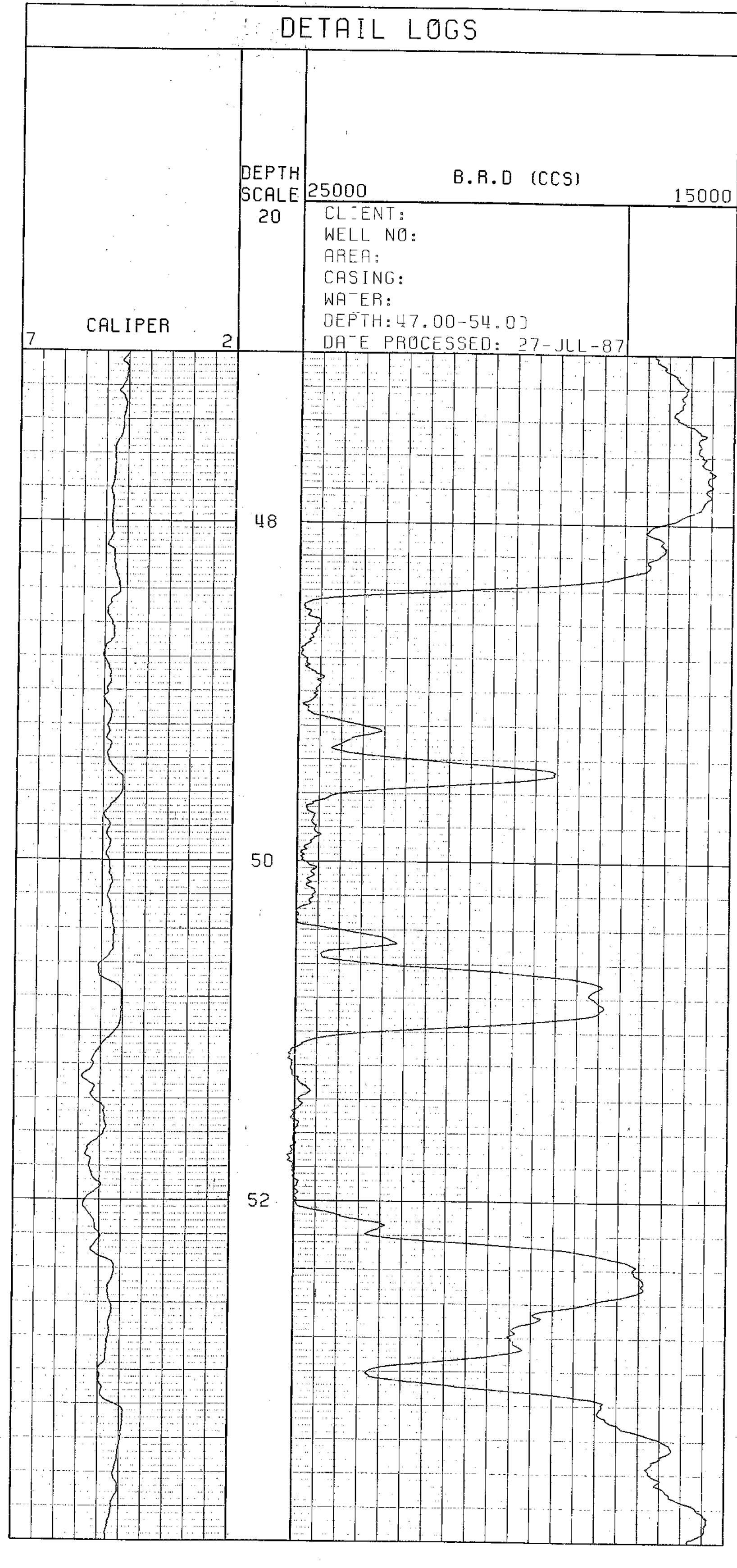
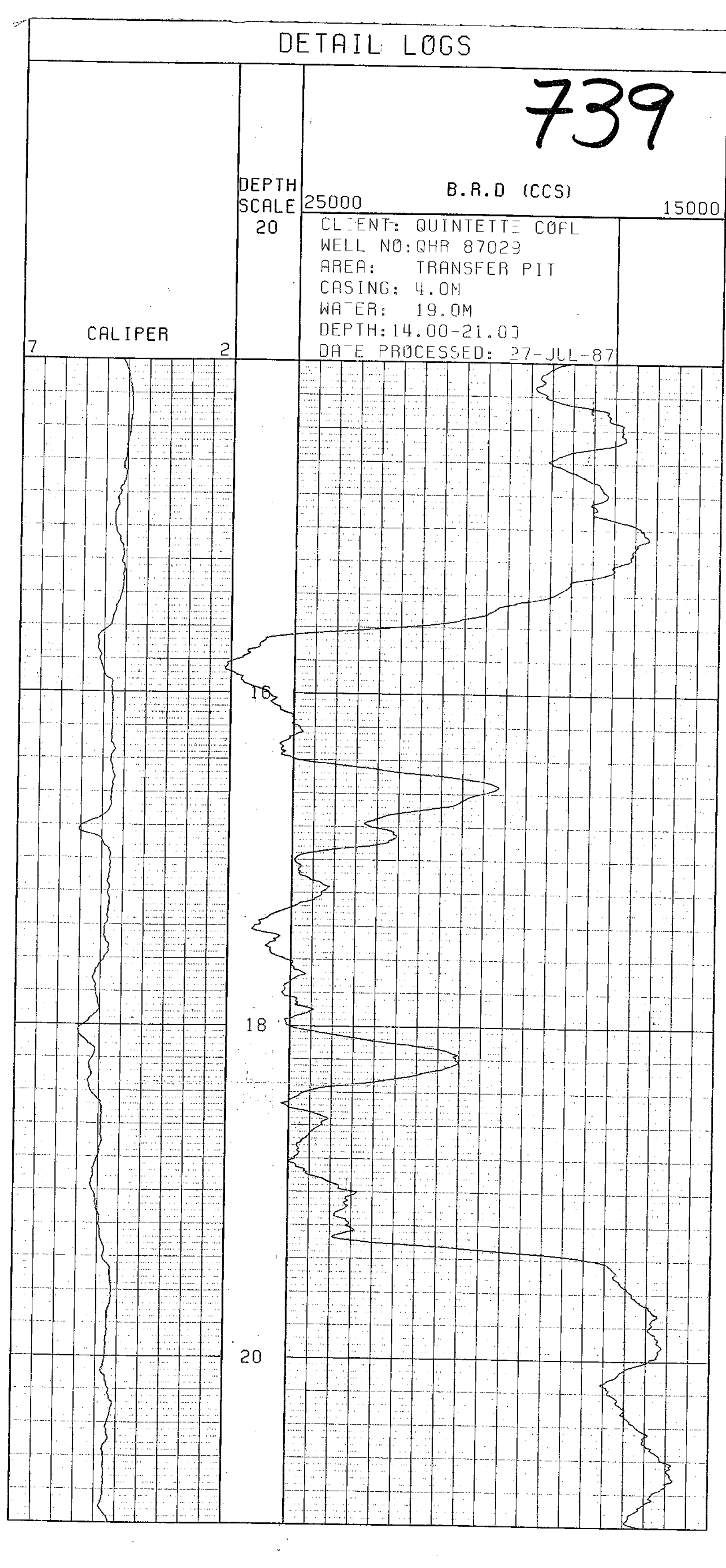
BOREHOLE QHR 87029 AREA Transfer  
CLIENT Quintette Coal Ltd. COUNTRY Canada

**COAL LITHOLOGY LOG**





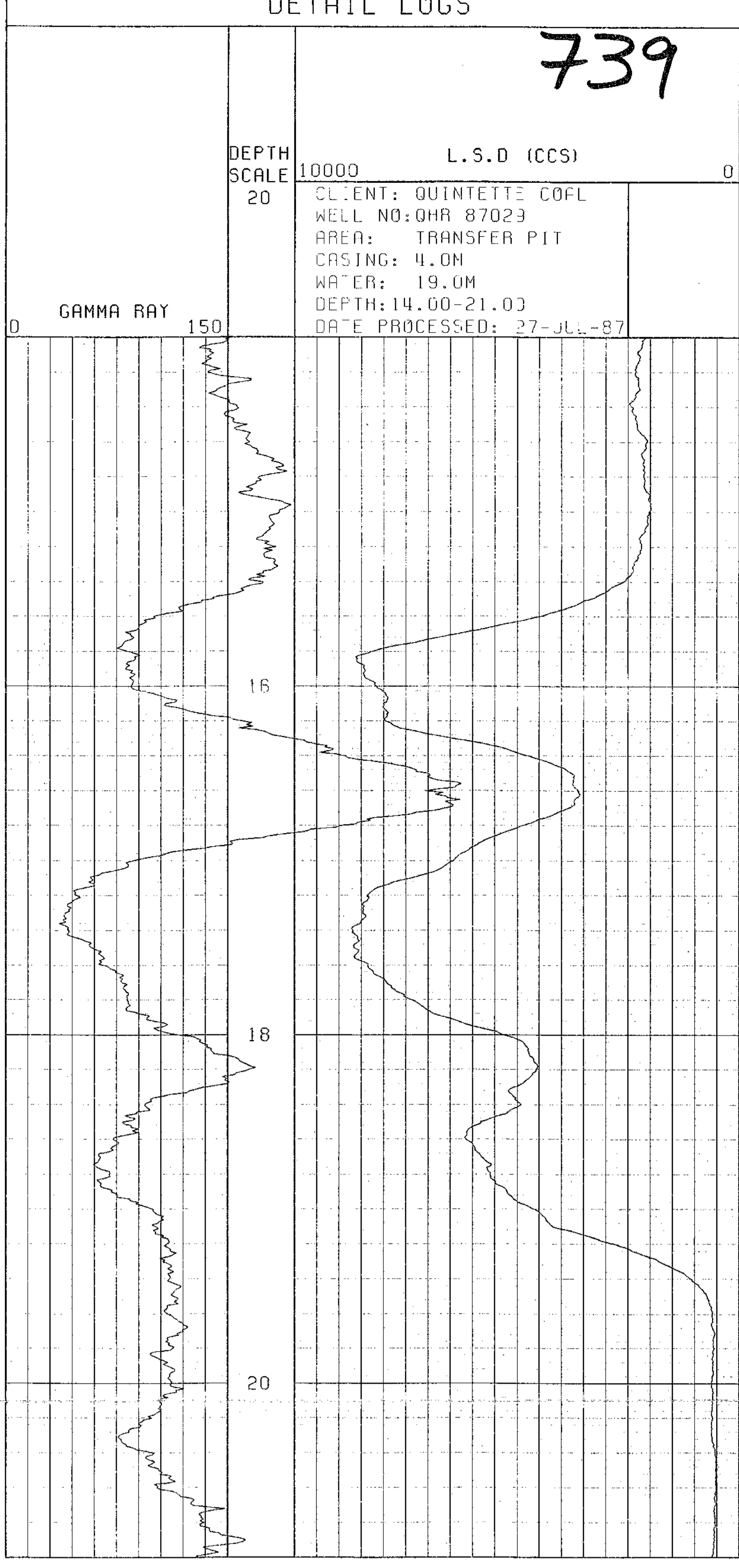




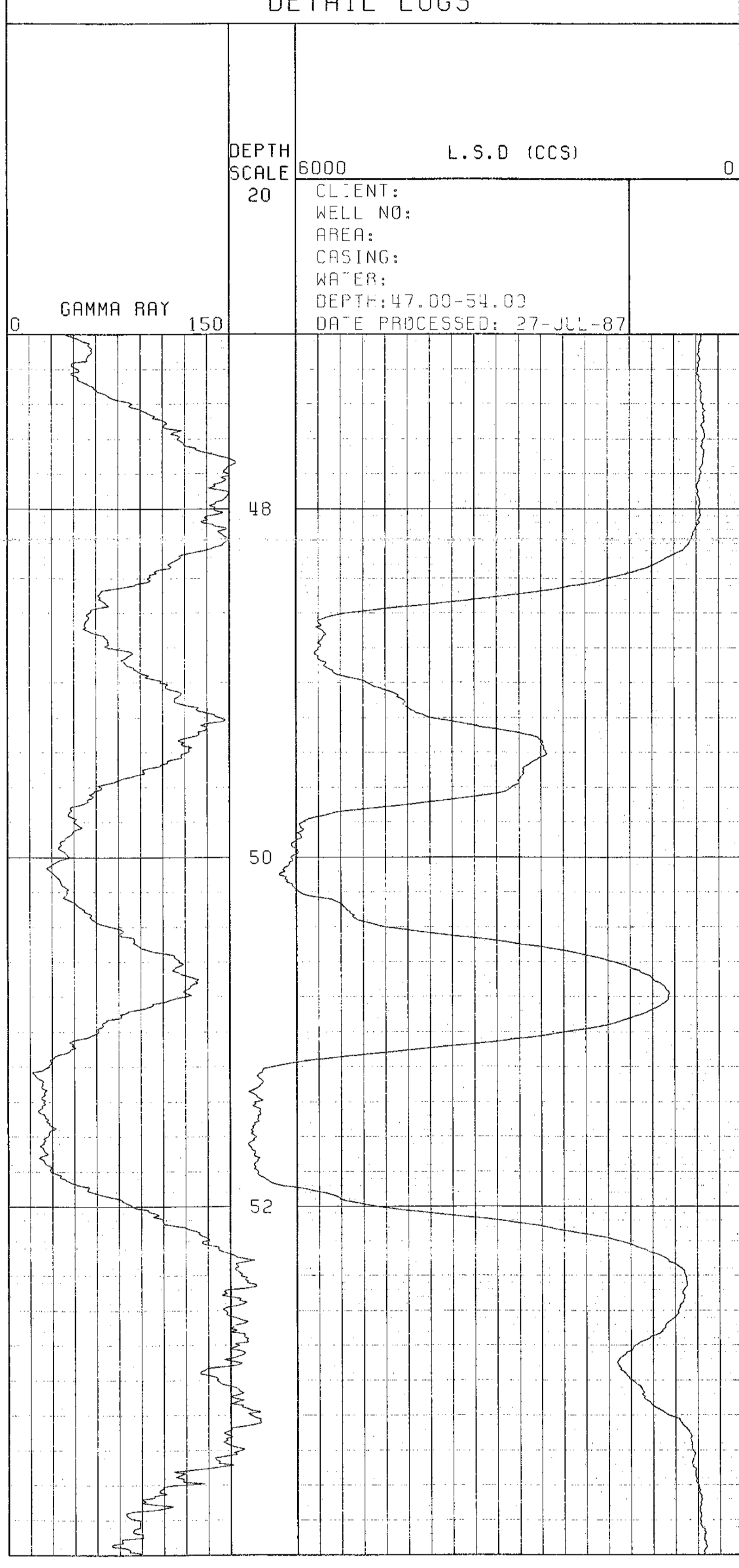


DETAIL LOGS

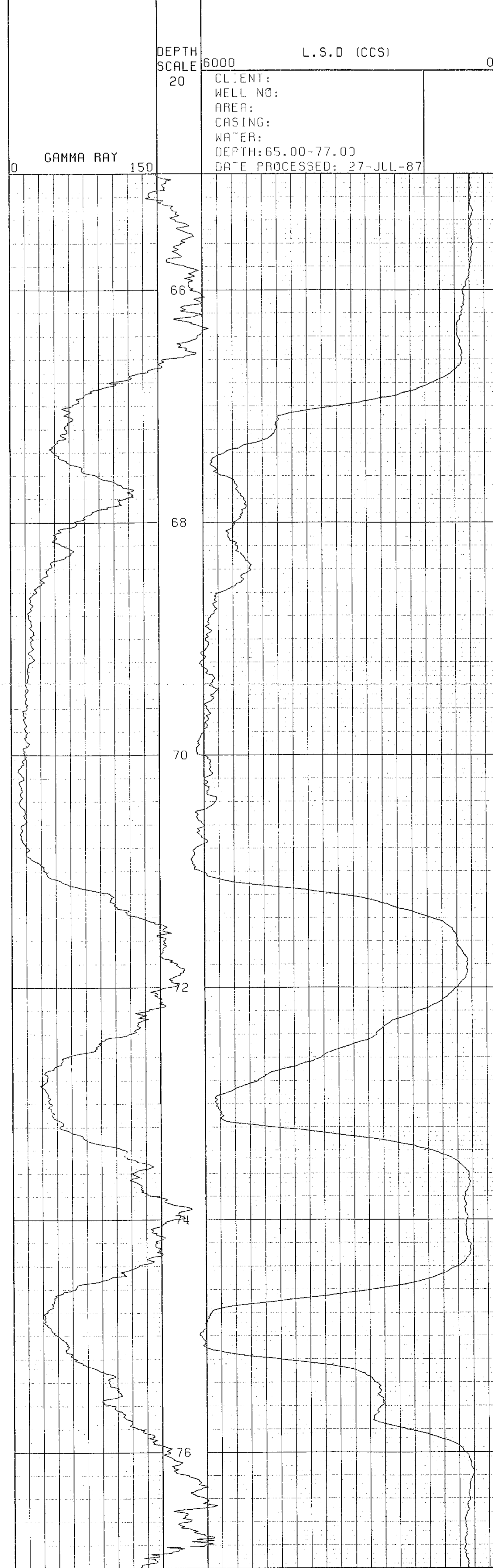
739



DETAIL LOGS



DETAIL LOGS





DEPTH = 0010.00  
TILT = .53 DG  
BEARING = 155.05 DG

DEPTH = 0020.00  
TILT = .84 DG  
BEARING = 130.89 DG

DEPTH = 0030.00  
TILT = .53 DG  
BEARING = 355.02 DG

DEPTH = 0040.00  
TILT = .84 DG  
BEARING = 155.36 DG

DEPTH = 0050.00  
TILT = 1.06 DG  
BEARING = 93.19 DG

DEPTH = 0060.00  
TILT = .75 DG  
BEARING = 196.47 DG

DEPTH = 0070.00  
TILT = .53 DG  
BEARING = 77.63 DG

DEPTH = 0080.00  
TILT = 1.19 DG  
BEARING = 129.36 DG

DATE 110787  
JOB NUMBER 0030  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 180  
MAG DECL 024  
STOP DEPTH 0003

QHR87030

739



LOG DEPTH 0080.00  
 TRUE DEPTH 0080.00  
 TILT .86 DG  
 BEARING 103.49 DG  
 NORTHING -000.40  
 EASTING +000.76

LOG DEPTH 0070.00  
 TRUE DEPTH 0070.00  
 TILT .64 DG  
 BEARING 137.05 DG  
 NORTHING -000.36  
 EASTING +000.61

LOG DEPTH 0060.00  
 TRUE DEPTH 0060.00  
 TILT .90 DG  
 BEARING 144.83 DG  
 NORTHING -000.28  
 EASTING +000.53

LOG DEPTH 0050.00  
 TRUE DEPTH 0050.00  
 TILT .95 DG  
 BEARING 124.28 DG  
 NORTHING -000.15  
 EASTING +000.44

LOG DEPTH 0040.00  
 TRUE DEPTH 0040.00  
 TILT .68 DG  
 BEARING 75.19 DG  
 NORTHING -000.06  
 EASTING +000.30

LOG DEPTH 0030.00  
 TRUE DEPTH 0030.00  
 TILT .68 DG  
 BEARING 62.95 DG  
 NORTHING -000.09  
 EASTING +000.19

LOG DEPTH 0020.00  
 TRUE DEPTH 0020.00  
 TILT .68 DG  
 BEARING 142.97 DG  
 NORTHING -000.14  
 EASTING +000.08

LOG DEPTH 0010.00  
 TRUE DEPTH 0010.00  
 TILT .45 DG  
 BEARING 165.30 DG  
 NORTHING -000.05  
 EASTING +000.01

LOG DEPTH 0003.00  
 TRUE DEPTH 0003.00  
 TILT .37 DG  
 BEARING 175.55 DG  
 NORTHING +000.00  
 EASTING +000.00





**COAL**

**LITHOLOGY**

**LOG**

LOG SUITE  
GAMMA RAY  
L. S. DENSITY  
CALIPER

SONDE TYPE:  
COAL  
COMBINATION  
SONDE

BOREHOLE: GUR 87030  
CLIENT: Quintette Coal Ltd.  
AREA: Transfer  
COUNTRY: Canada  
DATE LOGGED: 11/Jul/87  
DEPTH SCALE: 1:200  
1 OF 4 LOGS

PERMANENT DATUM: Ground Level  
ELEVATION OF P.O.: 87.0  
MEASUREMENT FROM: C.L.  
DEPTH REACHED: 86.8  
CASING SHOE: 6.0  
BRIT SIZES: 1 5/8 TO 2 TO 4 TO  
CASING SIZES: 1 1/2 TO 2 TO

FLUID DATA  
NATURE: Air/Water  
SIG: 1.01 gm/cc  
LEVEL: 45.8m  
VISCOSITY: N/A  
Rm & mean temp: N/A  
BHT: N/A

OPERATION DATA  
FIRST READING: 55.71  
LAST READING: 01.41  
INTERVAL LOGGED: 95.0  
UNIT-TUBCK No: 116/2017  
ENGINEER: G. S. S. S. S.  
WITNESS: J. S. S. S.

739

**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 REPLAY	SPEED	TC SECS		NORM	FROM		TO
GAMMA RAY	153B	5852		Y	9	D	9	2	-	1.44	85	00	85
L. S. DENSITY			367	Y	9	D	9	1	7.38	-	85	00	85
CALIPER	SIDEWALL POSITION		7" 2"	Y	9	D	9	3	-	-	85	00	85

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

FROM	69	39	INTERVAL TOTAL
TO	57	32	
INTERVAL	12	7	

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAILED SCALE LOG		
215	NN	1:200			
231	Vert	CDS			

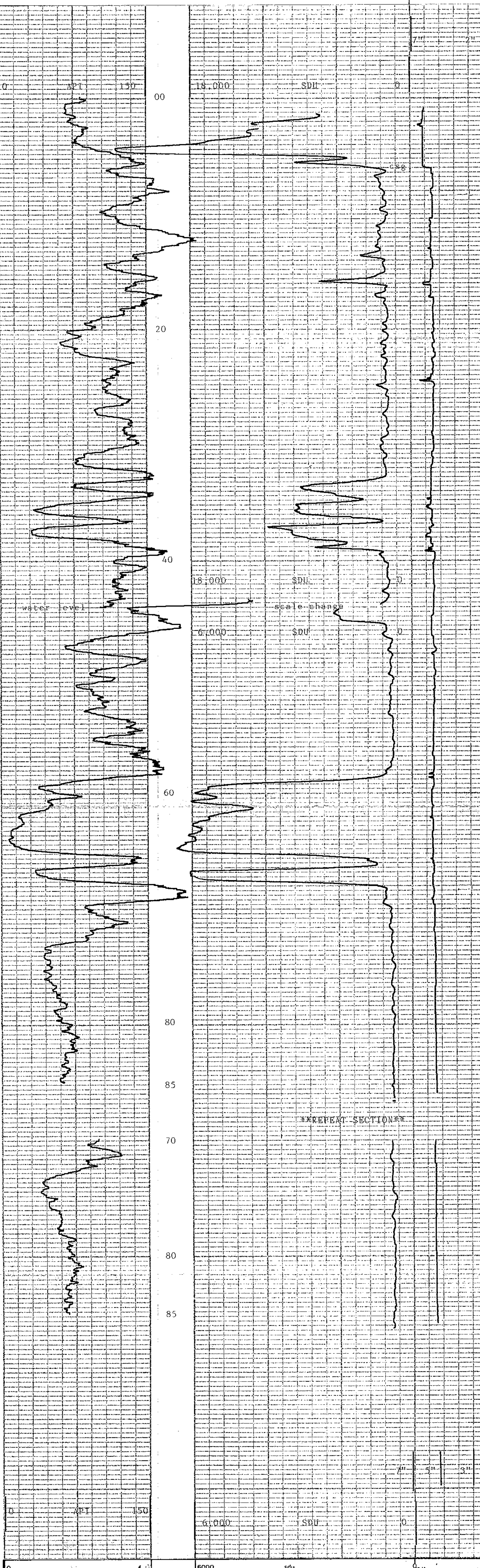
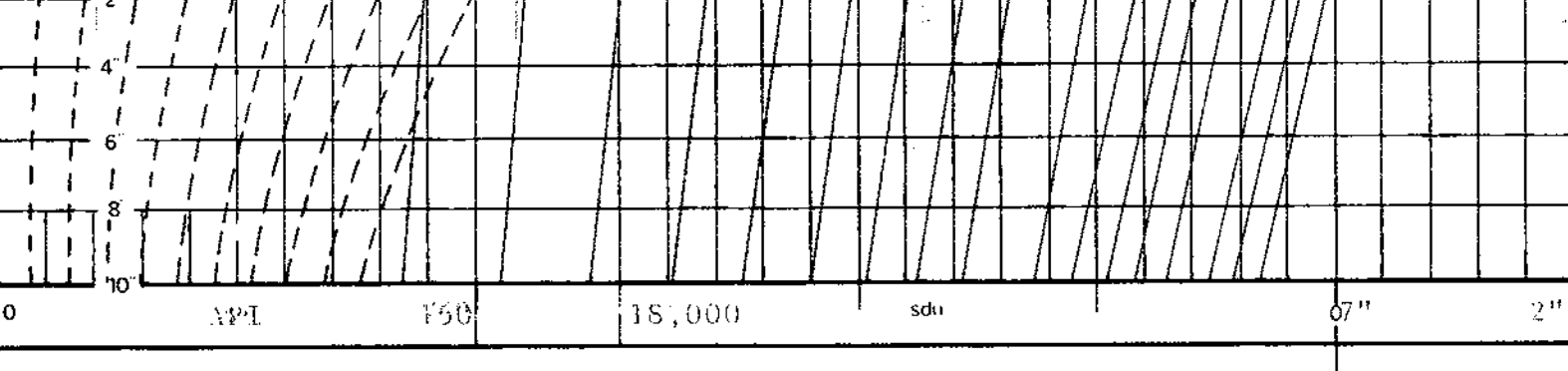
**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ms	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU - CPS	ms	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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**HOLE SIZE CORRECTION DATA**



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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BOREHOLE: GUR 87030  
CLIENT: Quintette Coal Ltd.  
AREA: Transfer  
COUNTRY: Canada

**COAL LITHOLOGY LOG**







DETAIL LOGS

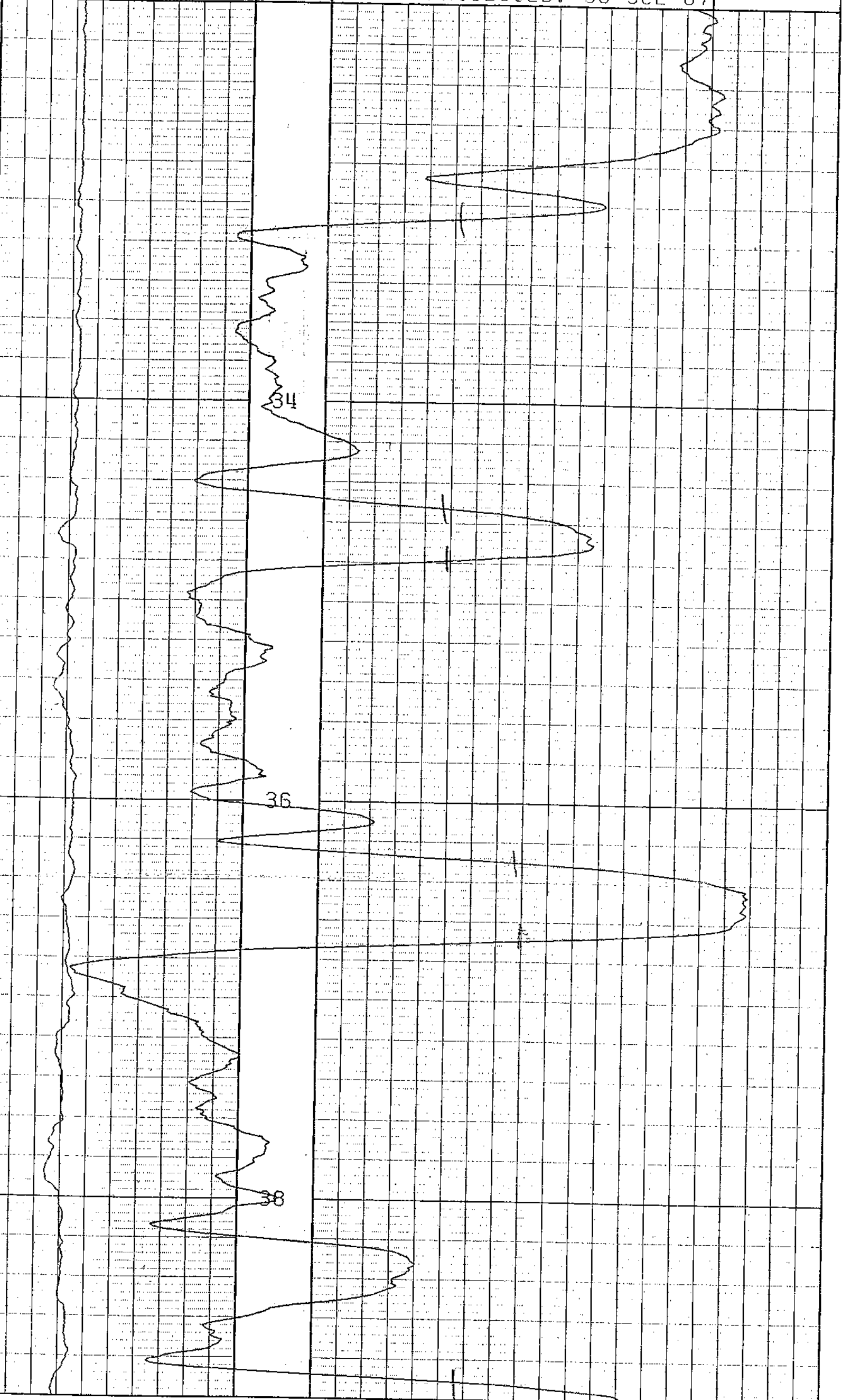
739

DEPTH SCALE 25000 15000  
 20 B.R.D (CCS)

CLIENT: QUINTETTE COFL  
 WELL NO: QHR 8703J  
 AREA: TRANSFER PIT  
 CASING: 5.0M  
 WATER: 46.8M  
 DEPTH: 32.00-39.0J  
 DATE PROCESSED: 30-JUL-87

CALIPER

7 2



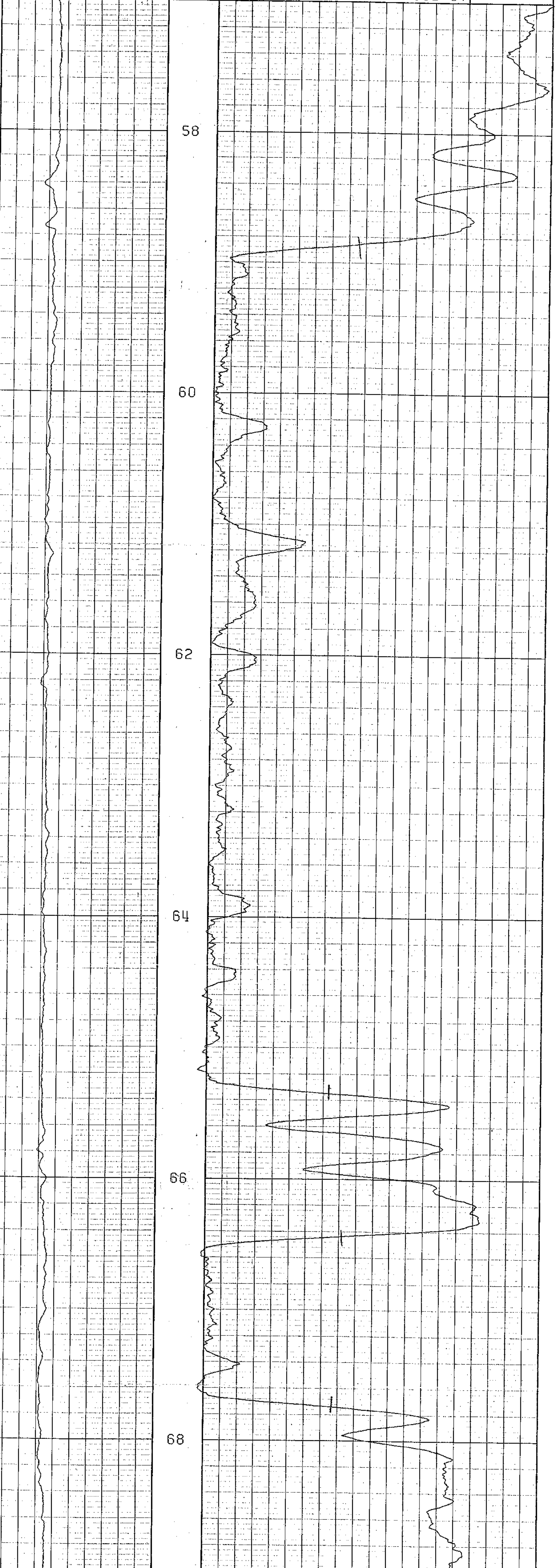
DETAIL LOGS

DEPTH SCALE 25000 15000  
 20 B.R.D (CCS)

CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 57.00-69.0J  
 DATE PROCESSED: 30-JUL-87

CALIPER

7 2





DETAIL LOGS

739

DEPTH SCALE 20

L.S.D (CCS)

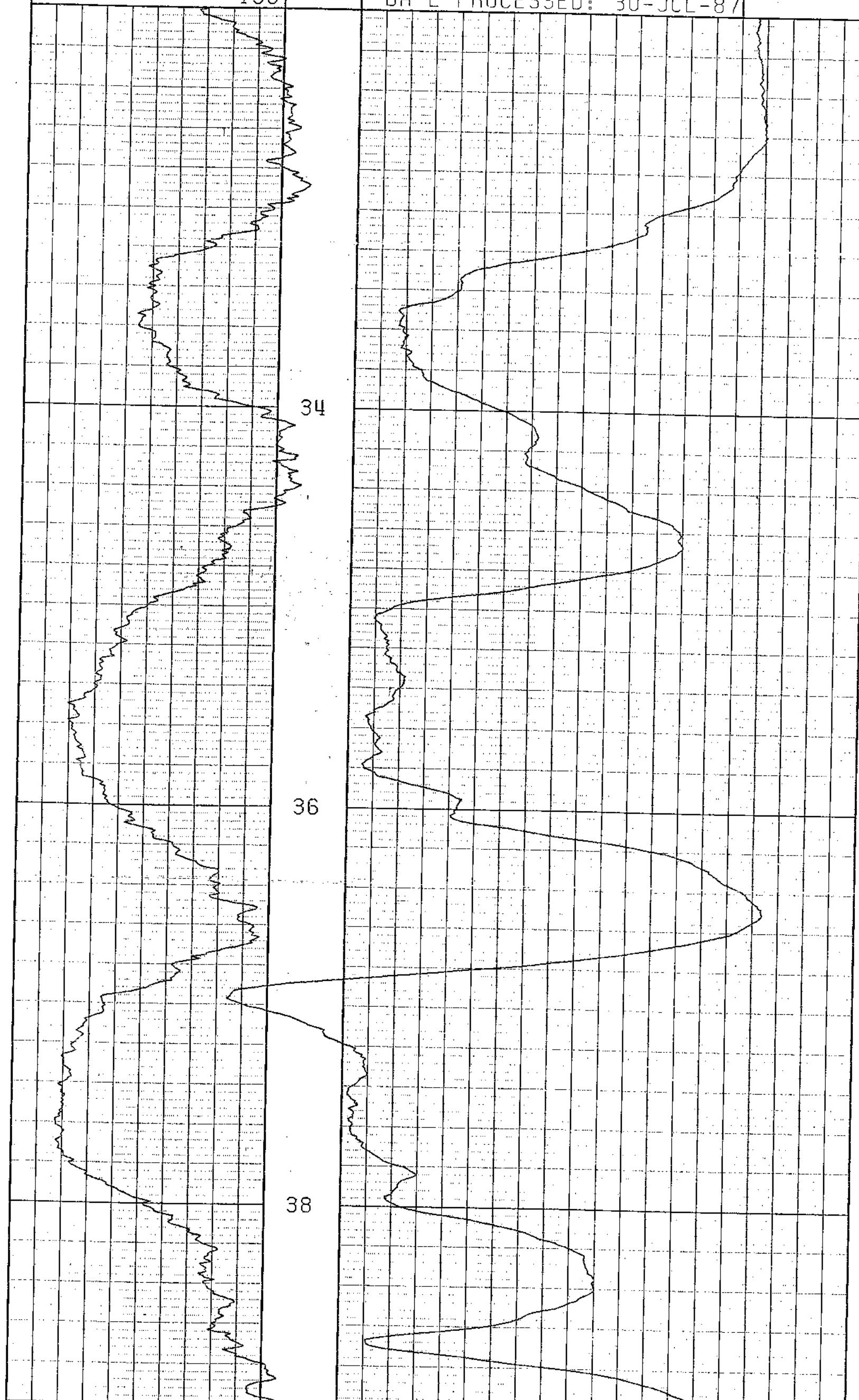
0

CLIENT: QUINTETTE COFL  
 WELL NO: QHR 8703D  
 AREA: TRANSFER PIT  
 CASING: 5.0M  
 WATER: 46.8M  
 DEPTH: 32.00-39.00  
 DATE PROCESSED: 30-JUL-87

GAMMA RAY

0

150



DETAIL LOGS

DEPTH SCALE 20

L.S.D (CCS)

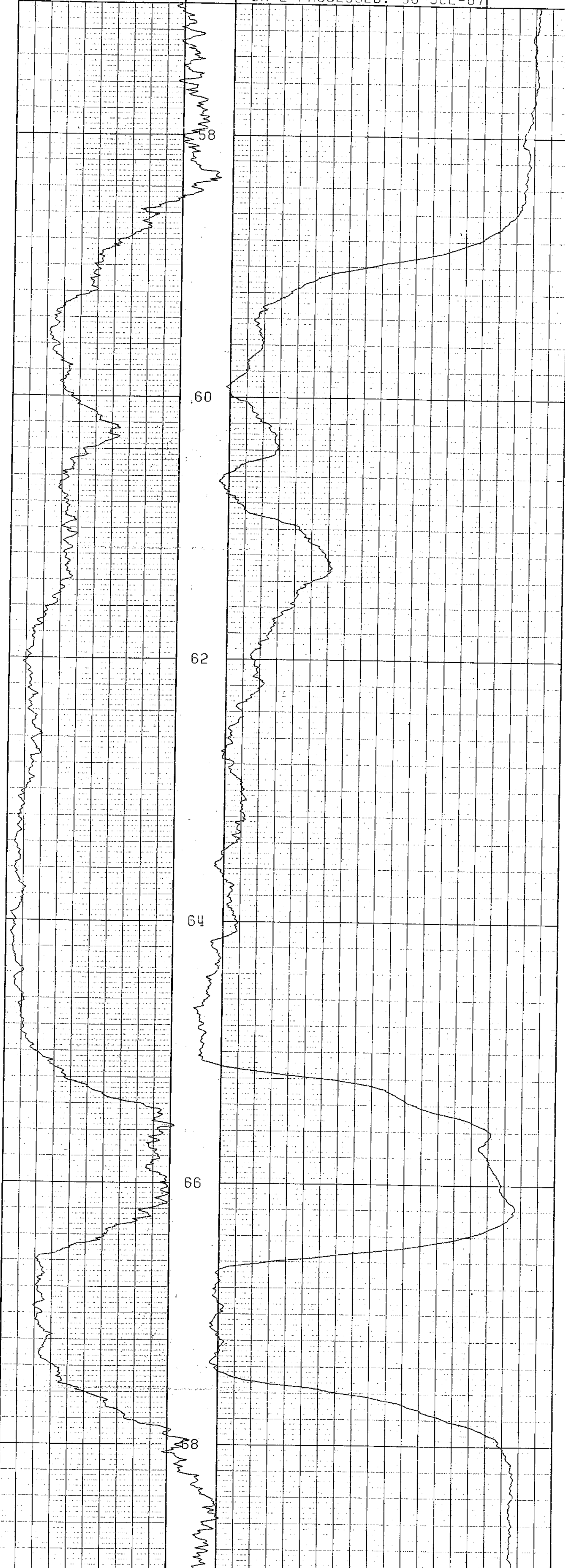
0

CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 57.00-69.00  
 DATE PROCESSED: 30-JUL-87

GAMMA RAY

0

150





QHR 87031

DEPTH = 0005.00  
TILT = 1.35 DG  
BEARING = 177.89 DG

DEPTH = 0010.00  
TILT = .84 DG  
BEARING = 198.07 DG

DEPTH = 0015.00  
TILT = 1.13 DG  
BEARING = 177.26 DG

DEPTH = 0020.00  
TILT = 1.35 DG  
BEARING = 163.20 DG

DEPTH = 0025.00  
TILT = 1.55 DG  
BEARING = 184.12 DG

DEPTH = 0030.00  
TILT = 1.55 DG  
BEARING = 181.88 DG

DEPTH = 0035.00  
TILT = 1.59 DG  
BEARING = 189.66 DG

DEPTH = 0040.00  
TILT = 1.18 DG  
BEARING = 213.74 DG

DEPTH = 0045.00  
TILT = 1.67 DG  
BEARING = 192.96 DG

DEPTH = 0050.00  
TILT = 2.19 DG  
BEARING = 201.47 DG

LOG DEPTH 0050.00  
TRUE DEPTH 0050.00  
TILT 1.68 DG  
BEARING 207.60 DG  
NORTHING -001.02  
EASTING -000.13

LOG DEPTH 0040.00  
TRUE DEPTH 0040.00  
TILT 1.36 DG  
BEARING 197.81 DG  
NORTHING -000.76  
EASTING -000.00

LOG DEPTH 0030.00  
TRUE DEPTH 0030.00  
TILT 1.45 DG  
BEARING 172.54 DG  
NORTHING -000.53  
EASTING +000.07

LOG DEPTH 0020.00  
TRUE DEPTH 0020.00  
TILT 1.09 DG  
BEARING 180.64 DG  
NORTHING -000.28  
EASTING +000.03

LOG DEPTH 0010.00  
TRUE DEPTH 0010.00  
TILT .84 DG  
BEARING 157.38 DG  
NORTHING -000.09  
EASTING +000.03

LOG DEPTH 0003.00  
TRUE DEPTH 0003.00  
TILT .84 DG  
BEARING 116.70 DG  
NORTHING +000.00  
EASTING +000.00

DATE 120787  
JOB NUMBER 0031  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 181

MAG DECL 024  
STOP DEPTH 0003

QHR 87031

739

log 1





Gamma Ray & Neutron Neutron

BOREHOLE QHR 87031

CLIENT Quintette Coal Ltd.

AREA Transfer

DEPTH SCALE 1:200

COUNTRY Canada

DATE LOGGED 12/11/87

2 OF 4 LOGS

BOREHOLE DATA REFER TO Lithology LOG

OPERATION DATA REFER TO Lithology LOG

EQUIPMENT AND RECORDING DATA

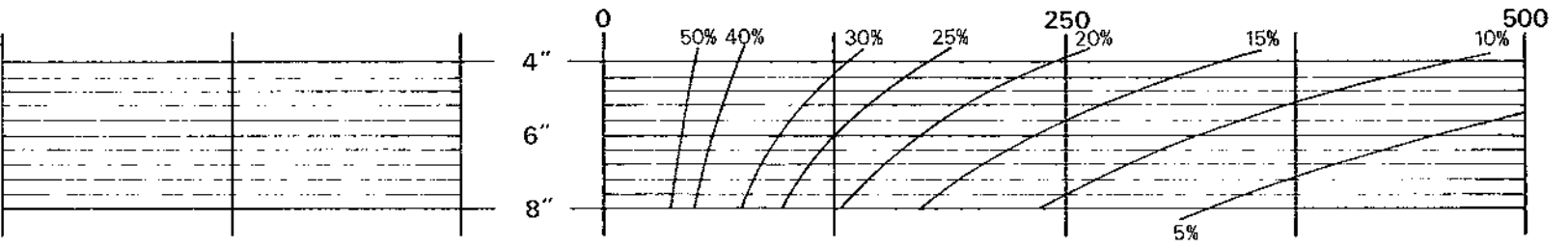
LOG	TAPING	RECORD DIRECTOR	T.C. SPEED	PANEL	CAL	
	LOG TAPED	RECORD REFLAY	SPEED	S.F.C.S. NORM	COEFF	
GR	Y	9	D	9	2	1.56
NN	Y	9	D	9	2	1.25
SONDE NO. 215 SOURCE NO. 4512						

REMARKS

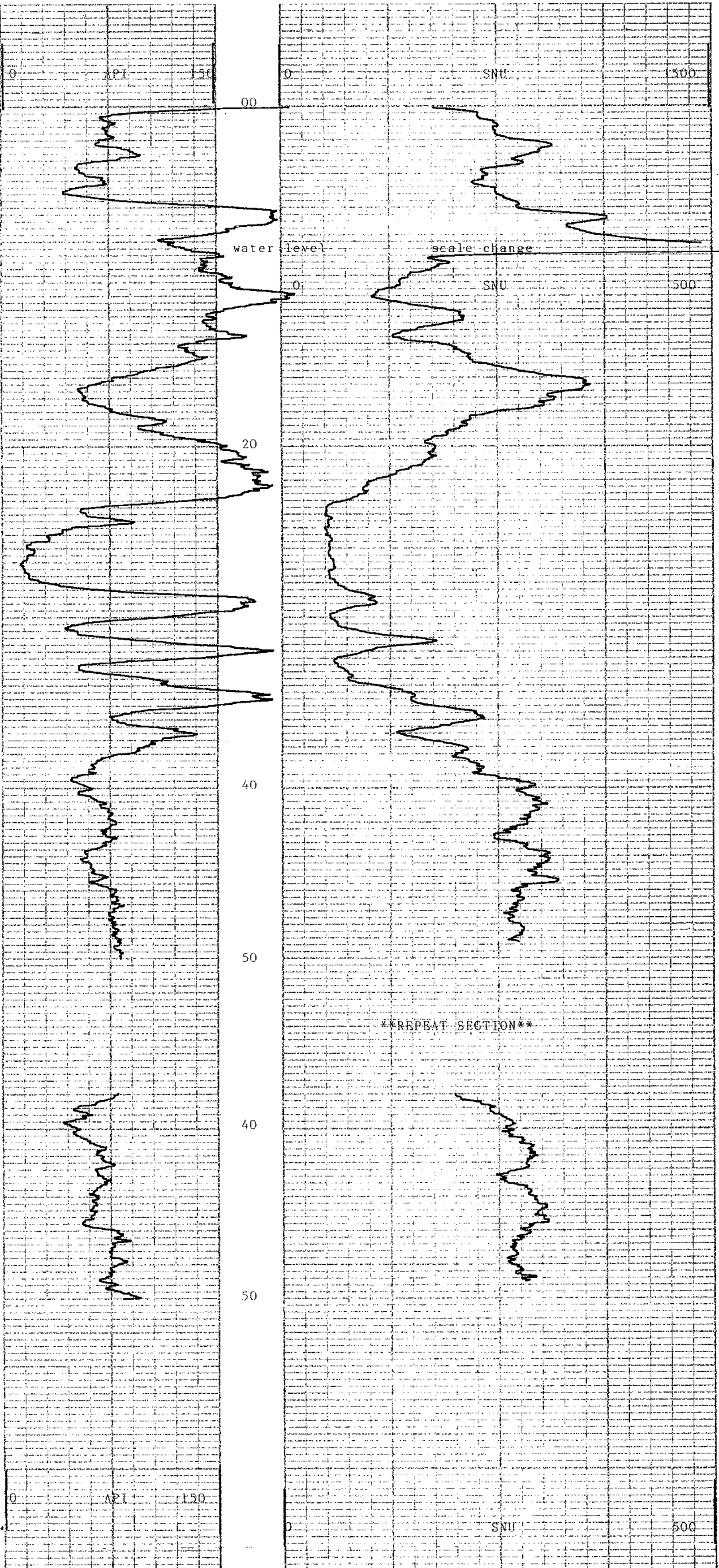
739

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

SANDSTONE POROSITY



MY (2) A58451 R



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



BOREHOLE QHR 87031  
CLIENT Quintette Coal Ltd.

AREA Transfer  
COUNTRY Canada





**COAL**  
**LITHOLOGY**  
**LOG**

BOREHOLE QHR 87031  
 CLIENT Quintette Coal Ltd.  
 AREA Transfer DEPTH SCALE 1:200  
 COUNTRY Canada  
 DATE LOGGED 12/Jul/87 2 OF 4 LOGS

PERMANENT DATUM Ground Level  
 ELEVATION OF P.D. N/A  
 MEASUREMENTS FROM 898 DRILLER  
 DEPTH REACHED 50.0M 50.0M  
 CASING SHOE 5.0m  
 BIT SIZES 1 5/4 TO TD 2 TO 5.0m  
3 TO 4 TO  
1 5/0 TO 5.0 2 TO

SONDE TYPE: COAL COMBINATION SONDE  
 LOG SUITE: GAMMA RAY L.S. DENSITY CALIPER  
 FLUID DATA: Air/Water  
 SG: 1.01 gm/cc  
 LEVEL: 7.8m  
 VISCOSITY: N/A  
 Rm at meas. Temp: N/A  
 BHT: N/A

OPERATION DATA  
 FIRST READING 48  
 LAST READING 0  
 INTERVAL LOGGED 48  
 UNIT-TRUCK No 1166/V217  
 ENGINEER Caymondiah  
 WITNESS Moore

739

**EQUIPMENT AND RECORDING DATA**

COAL COMBINATION SONDE				TAPING			PANEL		CAL COEFF		DEPTHS			SEAM LOG RUN
LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPE	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL		
GAMMA RAY	153B	5852	367	Y	9	D	9	2	-	1.44	48	00	48	
L.S. DENSITY			0041	Y	9	D	9	1	7.38	-	48	00	48	
CALIPER	SIDEWALL POSITION		7" . . 2"	Y	9	D	9	3	-	-	48	00	48	

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

FROM	36	INTERVAL TOTAL	
TO	22		
INTERVAL	14		14.0m

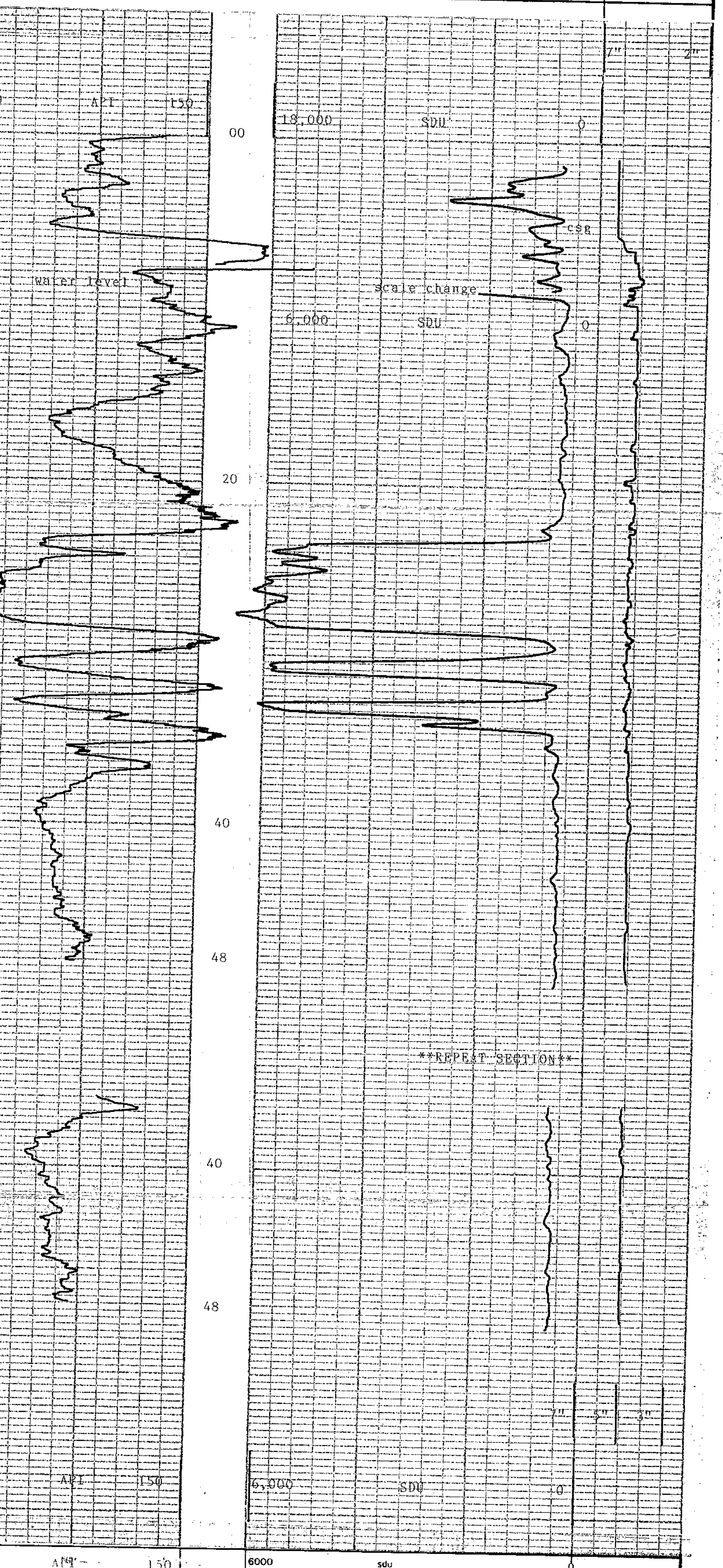
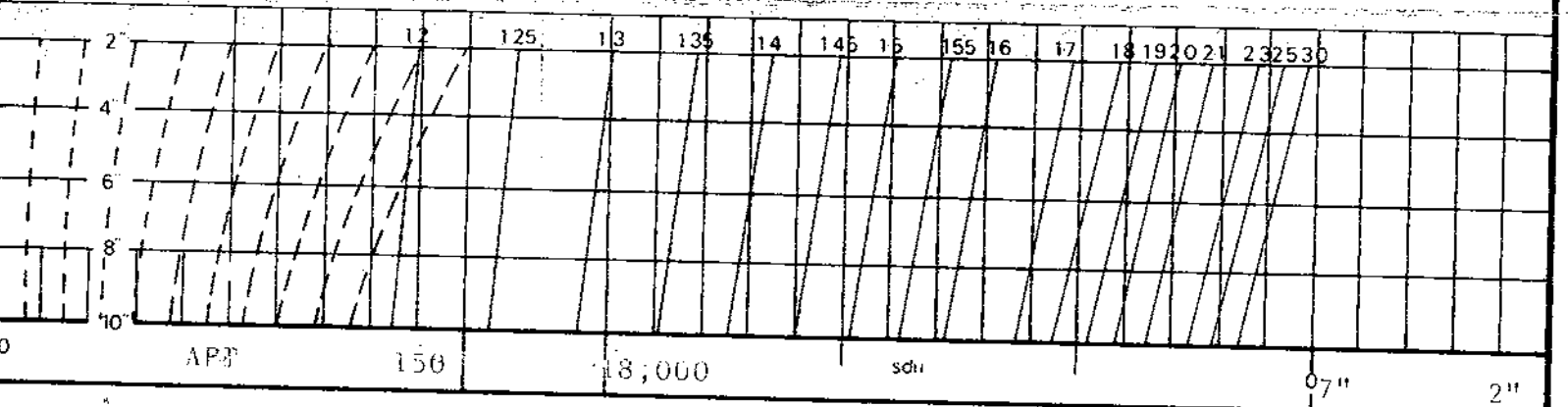
ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	NN	1:200			
231	Vert	CDS			

**BPB COAL LITHOLOGY LOG**  
**CALIBRATION DATA**

JIG No	VALUE @ 2" DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ins	cps

**GAMMA RAY**      **BULK DENSITY**      **CALIPER**  
 DEPTH      g/cm<sup>3</sup>      INCHES

**HOLE SIZE CORRECTION DATA**



**GAMMA RAY**      **BULK DENSITY**      **CALIPER**  
 DEPTH      g/cm<sup>3</sup>      INCHES



BOREHOLE QHR 87031      AREA Transfer  
 CLIENT Quintette Coal Ltd.      COUNTRY Canada

**COAL LITHOLOGY LOG**



DETAIL LOGS

739

DEPTH SCALE

25000

B.R.D (CCS)

15000

20

CLIENT: QUINTETTE COFL

WELL NO: QHR 87031

AREA: TRANSFER PIT

CASING: 5.0M

WATER: 7.8M

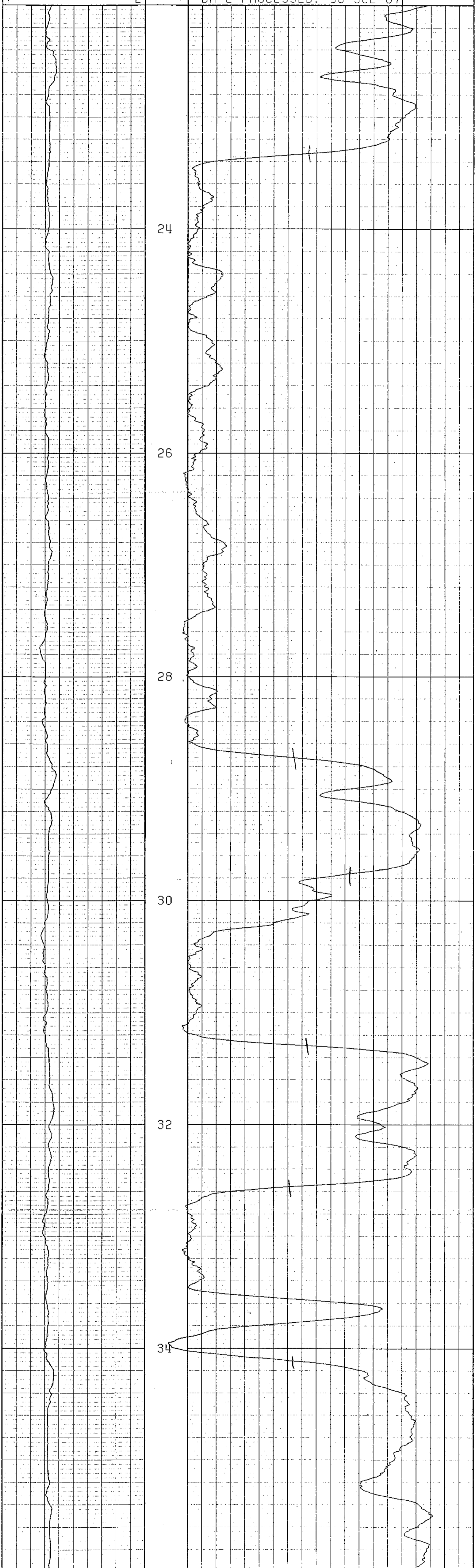
DEPTH: 22.00-36.00

DATE PROCESSED: 30-JUL-87

CALIPER

7

2





DETAIL LOGS

739

DEPTH SCALE 6000  
20

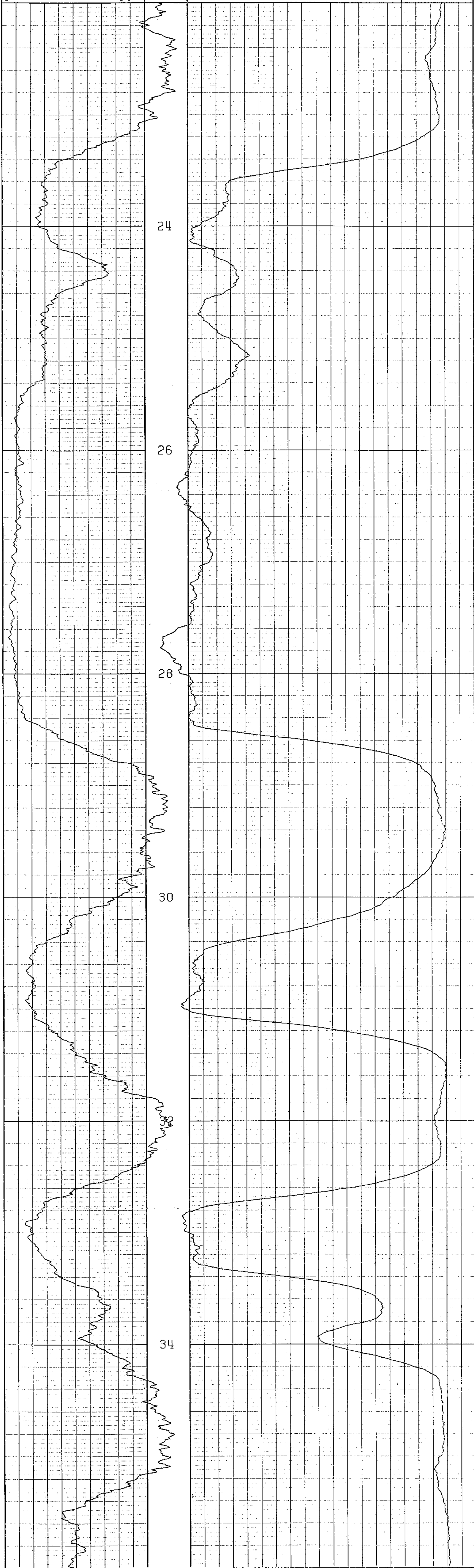
L.S.D (CCS)

0

GAMMA RAY

0 150

CLIENT: QUINTETTE COFL  
WELL NO: QHR 87031  
AREA: TRANSFER PIT  
CASING: 5.0M  
WATER: 7.8M  
DEPTH: 22.00-36.00  
DATE PROCESSED: 30-JUL-87





DATE 130787  
 JOB NUMBER 0032  
 LOG LABEL 025.2  
 MAG 1 MAX 228  
 MAG 1 MIN 129  
 MAG 2 MAX 228  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 20  
 L. CELL 1 CPS 1 233  
 L. CELL 1 TILT 2 -20  
 L. CELL 1 CPS 2 126  
 L. CELL 2 TILT 1 20  
 L. CELL 2 CPS 1 232  
 L. CELL 2 TILT 2 -20  
 L. CELL 2 CPS 2 126  
  
 MAG 1 CENTRE 180  
 MAG 2 CENTRE 180  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 181  
 L. CELL 2 CENTRE 180

MAG DECL 024  
 STOP DEPTH 0003

QHR 87032

DEPTH = 0010.00  
 TILT = 2.12 DG  
 BEARING = 102.12 DG

DEPTH = 0020.00  
 TILT = 2.40 DG  
 BEARING = 96.49 DG

DEPTH = 0030.00  
 TILT = 2.40 DG  
 BEARING = 113.12 DG

DEPTH = 0040.00  
 TILT = 3.36 DG  
 BEARING = 121.92 DG

DEPTH = 0050.00  
 TILT = 1.92 DG  
 BEARING = 102.51 DG

DEPTH = 0060.00  
 TILT = 2.66 DG  
 BEARING = 147.51 DG

DEPTH = 0070.00  
 TILT = 2.02 DG  
 BEARING = 156.38 DG

DEPTH = 0080.00  
 TILT = 1.90 DG  
 BEARING = 156.56 DG

DEPTH = 0090.00  
 TILT = 2.36 DG  
 BEARING = 151.84 DG

739



LOG DEPTH 0090.00  
 TRUE DEPTH 0089.92  
 TILT 2.13 DG  
 BEARING 154.20 DG  
 NORTHING -001.89  
 EASTING +002.70

LOG DEPTH 0080.00  
 TRUE DEPTH 0079.93  
 TILT 1.96 DG  
 BEARING 156.47 DG  
 NORTHING -001.56  
 EASTING +002.54

LOG DEPTH 0070.00  
 TRUE DEPTH 0069.94  
 TILT 2.34 DG  
 BEARING 151.95 DG  
 NORTHING -001.24  
 EASTING +002.40

LOG DEPTH 0060.00  
 TRUE DEPTH 0059.95  
 TILT 2.29 DG  
 BEARING 125.01 DG  
 NORTHING -000.88  
 EASTING +002.21

LOG DEPTH 0050.00  
 TRUE DEPTH 0049.96  
 TILT 2.64 DG  
 BEARING 112.21 DG  
 NORTHING -000.65  
 EASTING +001.88

LOG DEPTH 0040.00  
 TRUE DEPTH 0039.97  
 TILT 2.88 DG  
 BEARING 117.52 DG  
 NORTHING -000.47  
 EASTING +001.45

LOG DEPTH 0030.00  
 TRUE DEPTH 0029.98  
 TILT 2.40 DG  
 BEARING 104.80 DG  
 NORTHING -000.24  
 EASTING +001.00

LOG DEPTH 0020.00  
 TRUE DEPTH 0019.99  
 TILT 2.26 DG  
 BEARING 99.31 DG  
 NORTHING -000.13  
 EASTING +000.60

LOG DEPTH 0010.00  
 TRUE DEPTH 0010.00  
 TILT 1.84 DG  
 BEARING 109.43 DG  
 NORTHING -000.07  
 EASTING +000.21

LOG DEPTH 0003.00  
 TRUE DEPTH 0003.00  
 TILT 1.55 DG  
 BEARING 116.74 DG  
 NORTHING +000.00  
 EASTING +000.00





**COAL LITHOLOGY LOG**

**SONDE TYPE**  
**COAL COMBINATION SONDE**

**LOG SUITE**  
 GAMMA RAY  
 L.S. DENSITY  
 CALIPER

**BOREHOLE** QHR 87032  
**CLIENT** Quintette Coal Ltd.  
**AREA** Transfer  
**COUNTRY** Canada  
**DATE LOGGED** 13/Jul/87  
**DEPTH SCALE** 1:200  
**LOGS** 1 of 4

**BOREHOLE DATA**  
**PERMANENT DATUM** Ground Level  
**ELEVATION OF P.D.** N/A  
**DRILLER** BPB  
**MEASUREMENTS FROM** C.I.  
**DEPTH REACHED** 92.7  
**CASING SHOE** 93.0  
**BIT SIZES** 1 5.4 TO 11.0 2 TO 11.0  
**CASING SIZES** 1 6.0 TO 7.0 2 TO 7.0

**FLUID DATA**  
**NATURE** Air/Water  
**SG** 1.01 gm/cc  
**LEVEL** 9.0m  
**VISCOSITY** N/A  
**PH at mass temp** N/A  
**PH** N/A

**OPERATION DATA**  
**FIRST READING** 91.0  
**LAST READING** 91.0  
**INTERVAL LOGGED** 91.0  
**UNIT-TRUCK No** 1146/V217  
**ENGINEER** Carveth  
**WITNESS** Johnson

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**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 or REPLAY	SPEED	TC SECS	NORM	FROM	TO	INTERVAL	
GAMMA RAY	153B	5852	367	Y	9	D	9	2	-	1.44	91	00	91
L.S. DENSITY			0041	Y	9	D	9	1	7.38	-	91	00	91
CALIPER	SIDEWALL POSITION		7" .2"	Y	9	D	9	3	-	-	91	00	91

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

FROM	TO	INTERVAL	TOTAL
83	56	15	
69	49	8	
14	7	7	28.0m

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
231	Vert	CDS			
215	NN	1:200			

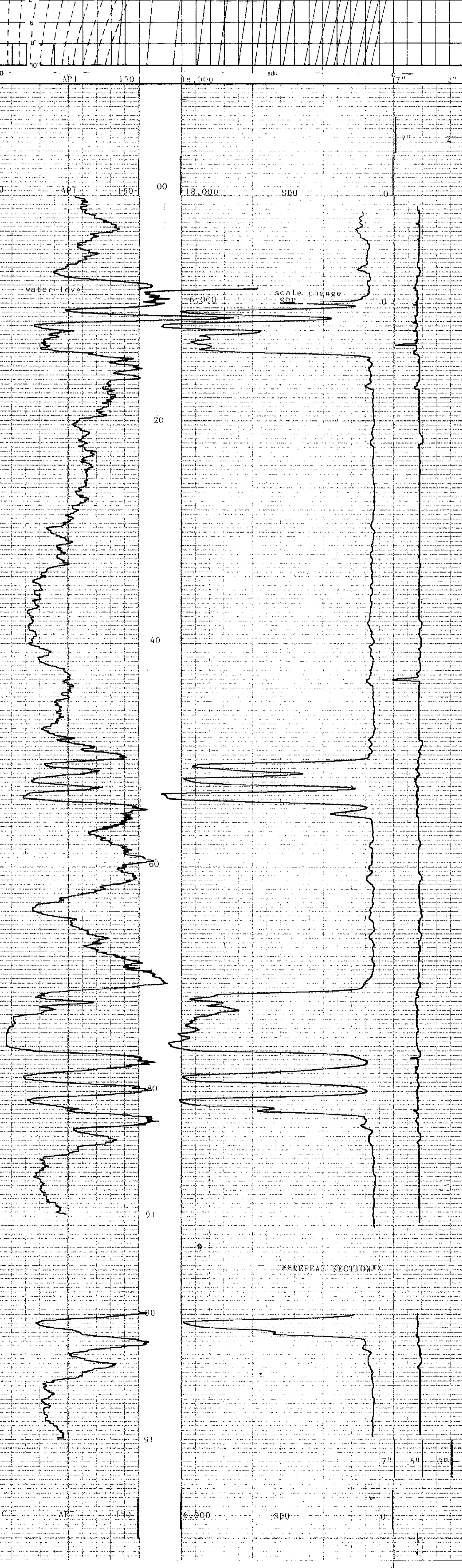
**BPB COAL LITHOLOGY LOG CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps

JIG No	SPAN	NORM	SDU	g/cm <sup>3</sup>	ins	cps

**GAMMA RAY** DEPTH **BULK DENSITY** CALIPER

HOLE SIZE CORRECTION DATA



**GAMMA RAY** DEPTH **BULK DENSITY** CALIPER



**BOREHOLE** QHR 87032 **AREA** Transfer  
**CLIENT** Quintette Coal Ltd. **COUNTRY** Canada

**COAL LITHOLOGY LOG**





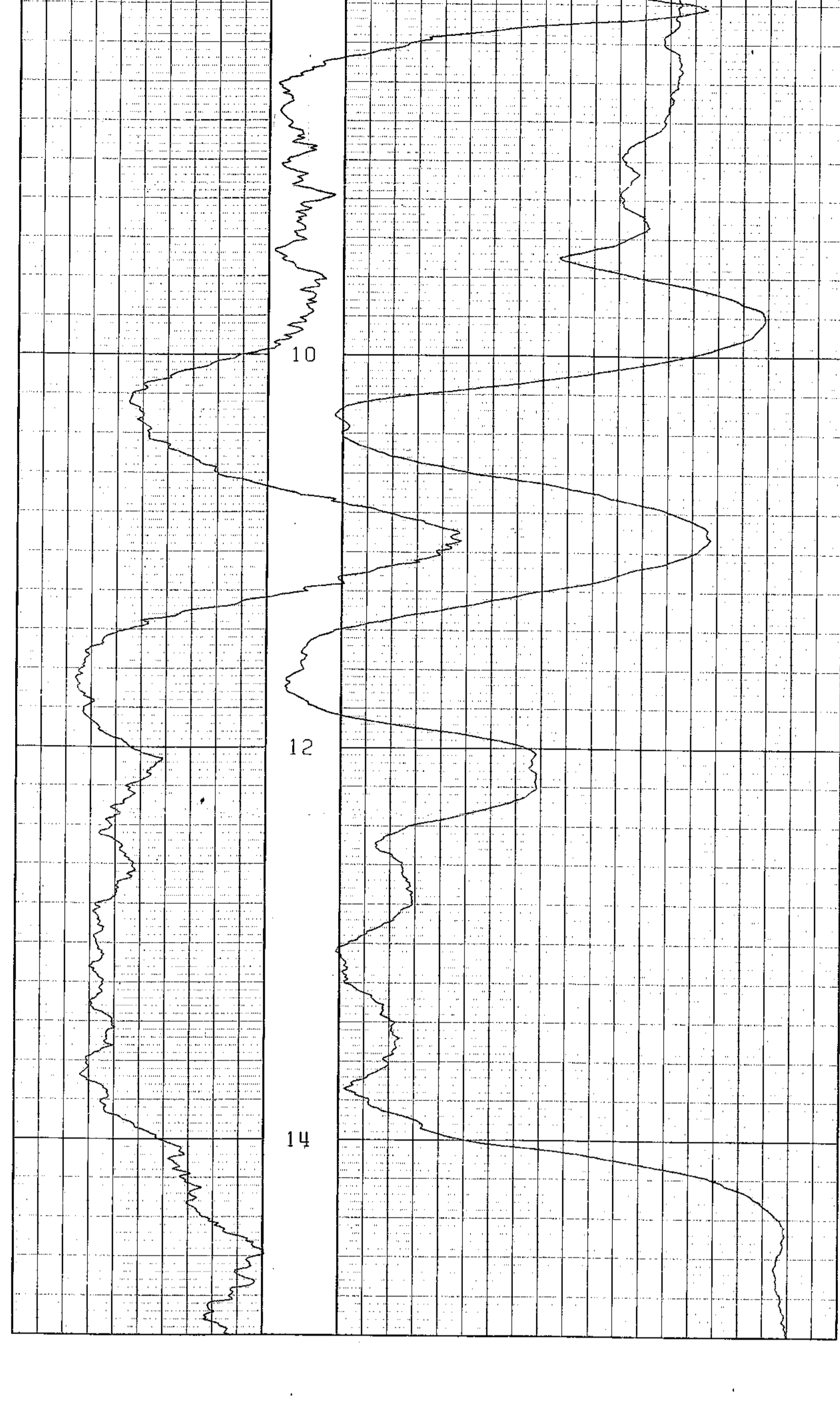


DETAIL LOGS

739

DEPTH SCALE 6000 L.S.D (CCS) 0  
CLIENT: QUINTETTE COFL  
WELL NO: QHR 87032  
AREA: TRANSFER PIT  
CASING: 2.0M  
WATER: 10.0M  
DEPTH: 8.00-15.00  
DATE PROCESSED: 30-JUL-87

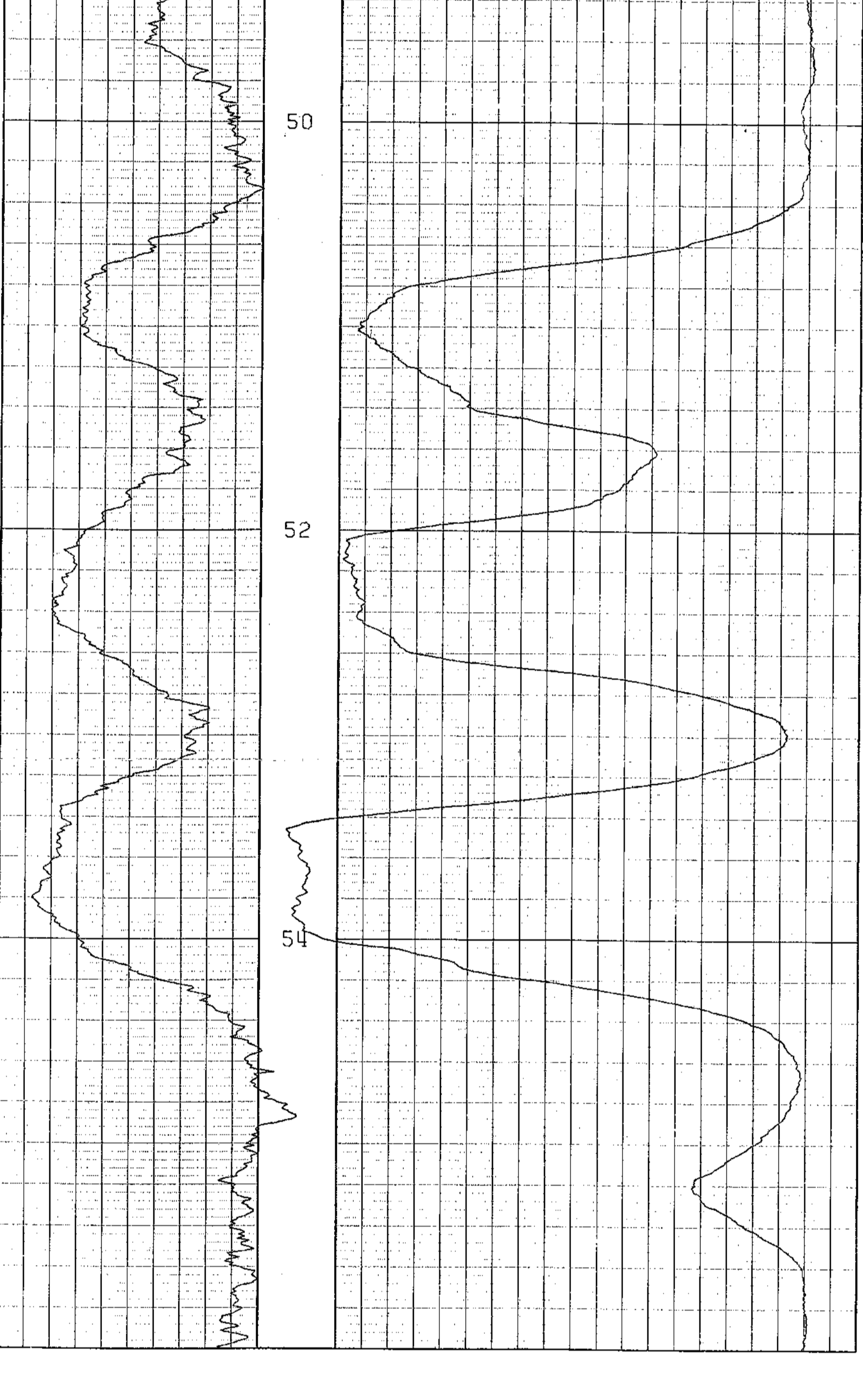
GAMMA RAY



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 49.00-56.00  
DATE PROCESSED: 30-JUL-87

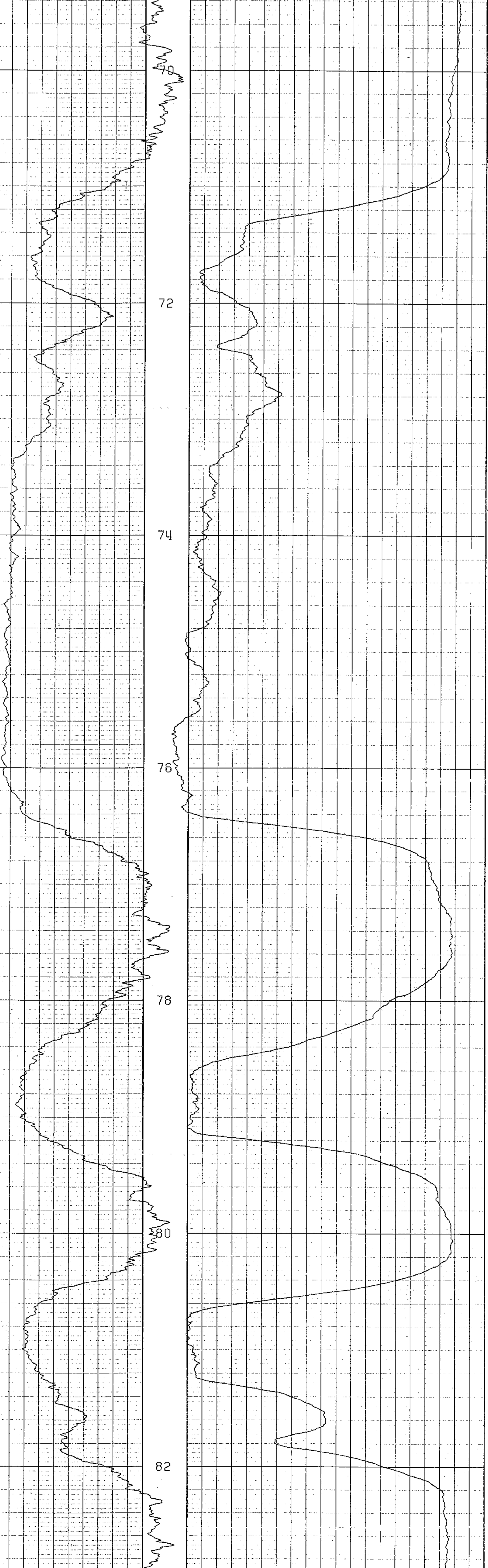
GAMMA RAY



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
CLIENT:  
WELL NO:  
AREA:  
CASING:  
WATER:  
DEPTH: 69.00-83.00  
DATE PROCESSED: 30-JUL-87

GAMMA RAY



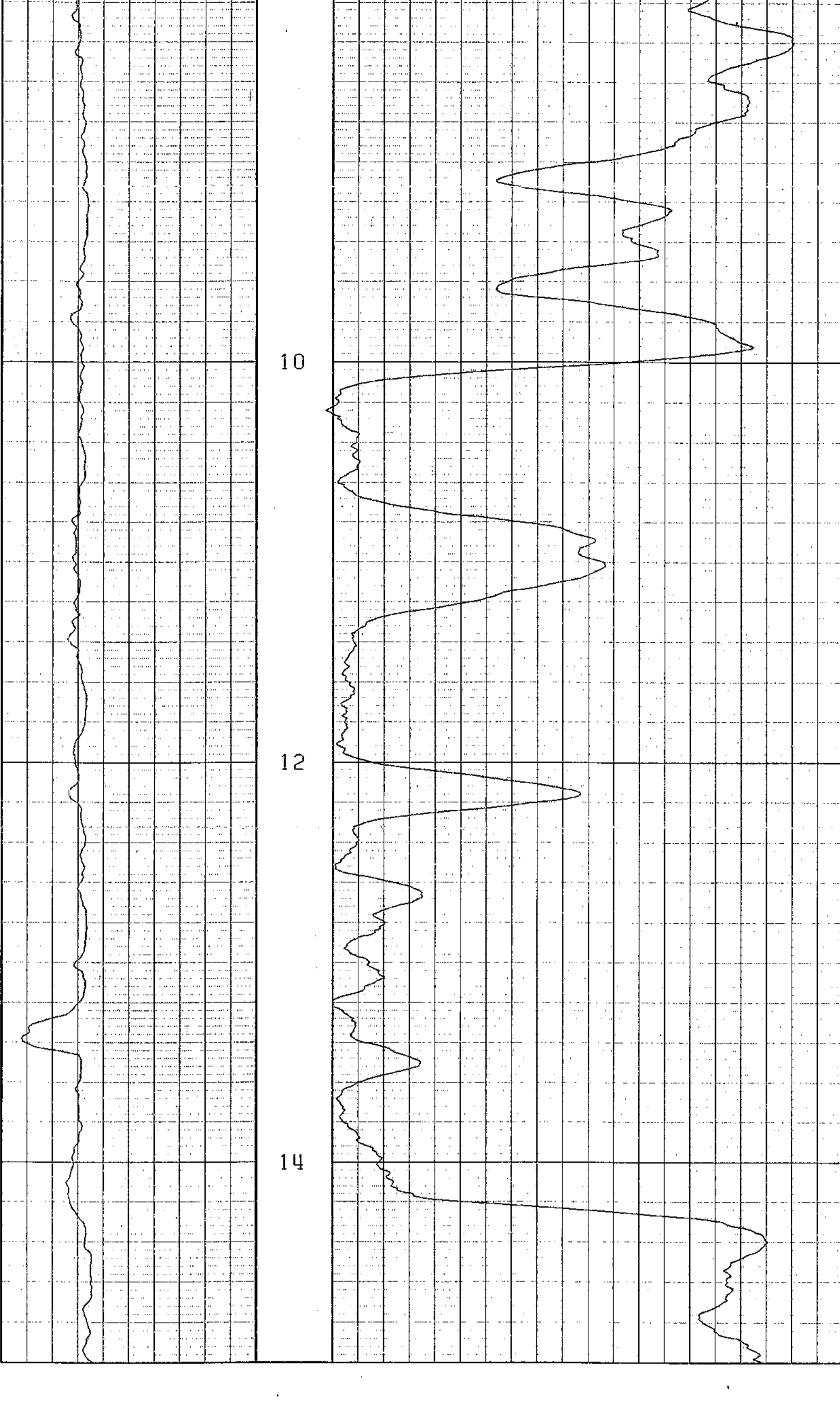


DETAIL LOGS

739

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT: QUINTETTE COFL  
 WELL NO: GHR 87032  
 AREA: TRANSFER PIT  
 CASING: 2.0M  
 WATER: 10.0M  
 DEPTH: 8.00-15.00  
 DATE PROCESSED: 30-JUL-87

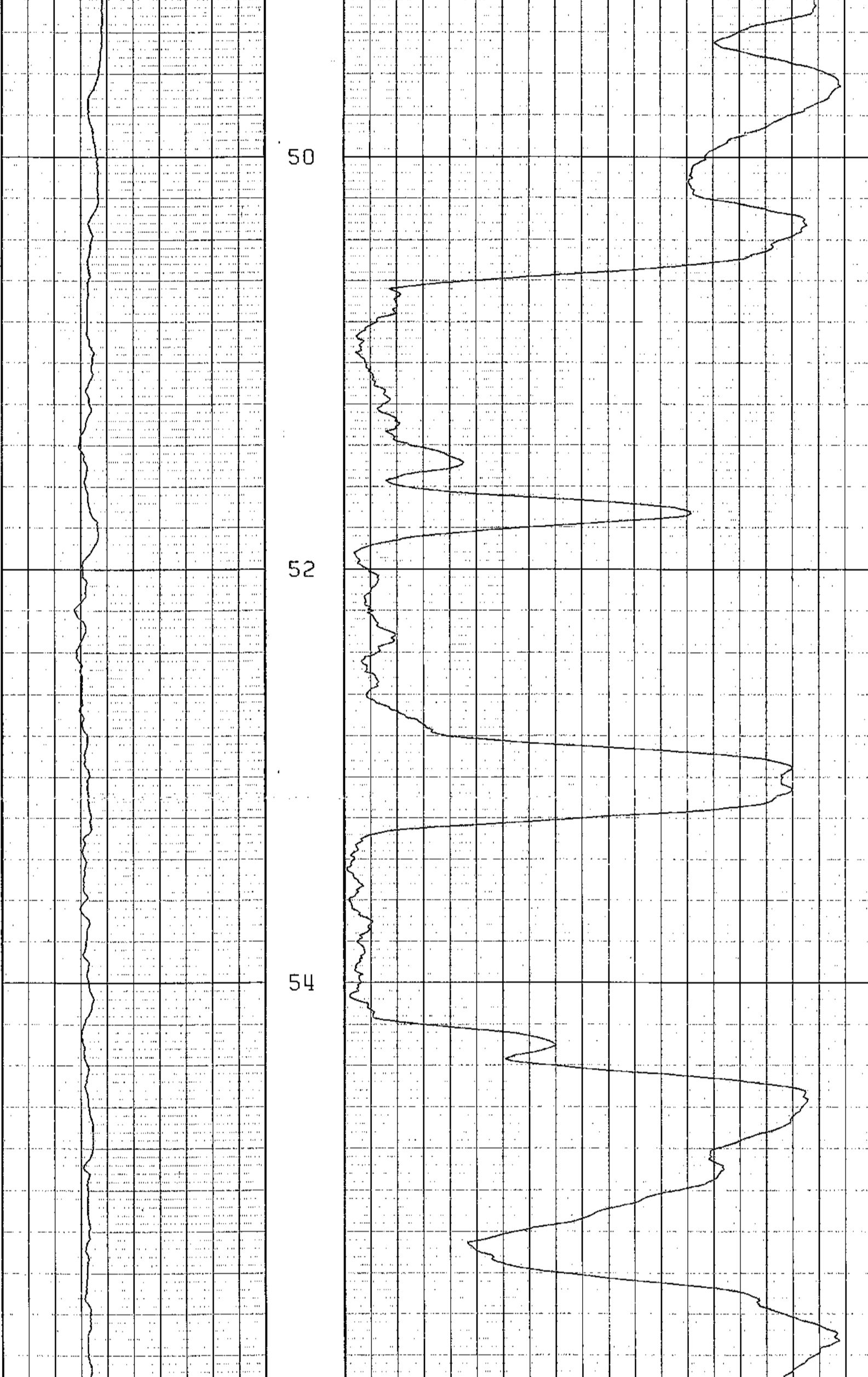
CALIPER



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 49.00-56.00  
 DATE PROCESSED: 30-JUL-87

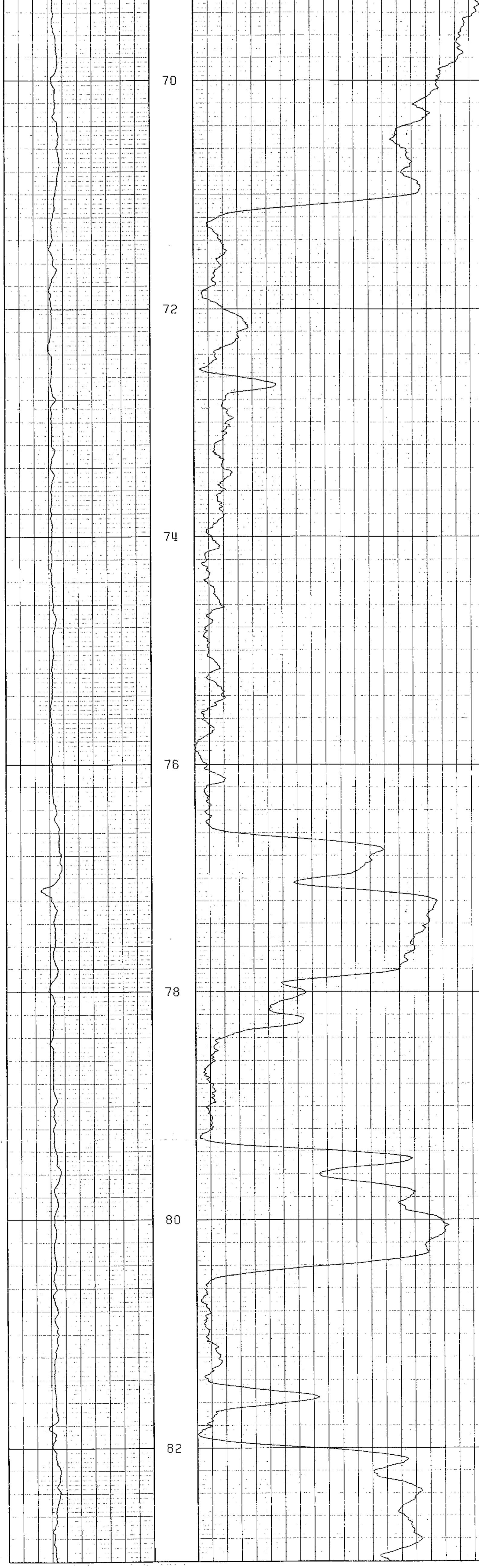
CALIPER



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
 CLIENT:  
 WELL NO:  
 AREA:  
 CASING:  
 WATER:  
 DEPTH: 69.00-83.00  
 DATE PROCESSED: 30-JUL-87

CALIPER





QHR 87033

LOG DEPTH 0090.00  
TRUE DEPTH 0089.93  
TILT 3.22 DG  
BEARING 89.85 DG  
NORTHING +000.60  
EASTING +002.86

LOG DEPTH 0080.00  
TRUE DEPTH 0079.95  
TILT 2.61 DG  
BEARING 97.29 DG  
NORTHING +000.60  
EASTING +002.30

LOG DEPTH 0070.00  
TRUE DEPTH 0069.96  
TILT 2.10 DG  
BEARING 97.65 DG  
NORTHING +000.66  
EASTING +001.85

LOG DEPTH 0060.00  
TRUE DEPTH 0059.97  
TILT 2.16 DG  
BEARING 85.31 DG  
NORTHING +000.71  
EASTING +001.49

LOG DEPTH 0050.00  
TRUE DEPTH 0049.98  
TILT 2.33 DG  
BEARING 75.40 DG  
NORTHING +000.67  
EASTING +001.11

LOG DEPTH 0040.00  
TRUE DEPTH 0039.99  
TILT 1.37 DG  
BEARING 72.05 DG  
NORTHING +000.57  
EASTING +000.71

LOG DEPTH 0030.00  
TRUE DEPTH 0029.99  
TILT 1.78 DG  
BEARING 59.14 DG  
NORTHING +000.50  
EASTING +000.49

LOG DEPTH 0020.00  
TRUE DEPTH 0019.99  
TILT 1.65 DG  
BEARING 36.22 DG  
NORTHING +000.43  
EASTING +000.37

LOG DEPTH 0010.00  
TRUE DEPTH 0009.99  
TILT 2.32 DG  
BEARING 45.43 DG  
NORTHING +000.19  
EASTING +000.20

LOG DEPTH 0003.00  
TRUE DEPTH 0003.00  
TILT 2.52 DG  
BEARING 69.20 DG  
NORTHING +000.00  
EASTING +000.00

DEPTH = 0010.00  
TILT = 2.12 DG  
BEARING = 21.66 DG

DEPTH = 0020.00  
TILT = 1.19 DG  
BEARING = 50.79 DG

DEPTH = 0030.00  
TILT = .37 DG  
BEARING = 67.49 DG

DEPTH = 0040.00  
TILT = 2.38 DG  
BEARING = 76.61 DG

DEPTH = 0050.00  
TILT = 2.29 DG  
BEARING = 74.19 DG

DEPTH = 0060.00  
TILT = 2.02 DG  
BEARING = 96.43 DG

DEPTH = 0070.00  
TILT = 2.18 DG  
BEARING = 90.86 DG

DEPTH = 0080.00  
TILT = 3.03 DG  
BEARING = 95.73 DG

DEPTH = 0090.00  
TILT = 3.41 DG  
BEARING = 83.98 DG

DATE 140787  
JOB NUMBER 0032  
LOG LABEL 025.2  
MAG 1 MAX 228  
MAG 1 MIN 129  
MAG 2 MAX 228  
MAG 2 MIN 130  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 20  
L. CELL 1 CPS 1 233  
L. CELL 1 TILT 2 -20  
L. CELL 1 CPS 2 126  
L. CELL 2 TILT 1 20  
L. CELL 2 CPS 1 232  
L. CELL 2 TILT 2 -20  
L. CELL 2 CPS 2 126  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 181  
L. CELL 2 CENTRE 180  
MAG DECL 024  
STOP DEPTH 0003

QHR 87033

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LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

SONDE TYPE:  
COAL  
COMBINATION  
SONDE

COAL  
LITHOLOGY  
LOG

BOREHOLE QHR 87-033  
CLIENT QUINTEITE  
AREA TRANSFER  
COUNTRY CANADA  
DATE LOGGED 87 07 14  
DEPTH SCALE 1:200

**BOREHOLE DATA**

PERMANENT DATUM	GROUND LEVEL
ELEVATION OF P.D.	
MEASUREMENTS FROM	G.L.
DEPTH REACHED	98.7m
CASING SHOE	99.0m
BIT SIZES	1 6 1/2 TO 2.0 2 5 1/2 TO 1 1/2
CASING SIZES	1 6" TO 2.0 2 4" TO
FLUID DATA	
NATURE	AIR/WATER
SG	1.00 g/cc
LEVEL	86.0m
VISCOSITY	N/A
PH	N/A
BHT	N/A

**OPERATION DATA**

FIRST READING	9.6m
LAST READING	0.0m
INTERVAL LOGGED	9.6m
UNIT-TRUCK No	46/217
ENGINEER	W. CAUVENDISH
WITNESS	

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**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	TC SECS		NORM	FROM		TO
GAMMA RAY L.S. DENSITY CALIPER	183	5852	367	Y	9	D	9	1	---	1.56	96	00	96
				Y	9	D	9	.3	7.56	---	97	01	96
				Y	9	D	9	.3	---	1.0	97	01	96

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

FROM	73m	37m	10m	INTERVAL TOTAL
TO	59m	30m	01m	
INTERVAL	14m	07m	09m	

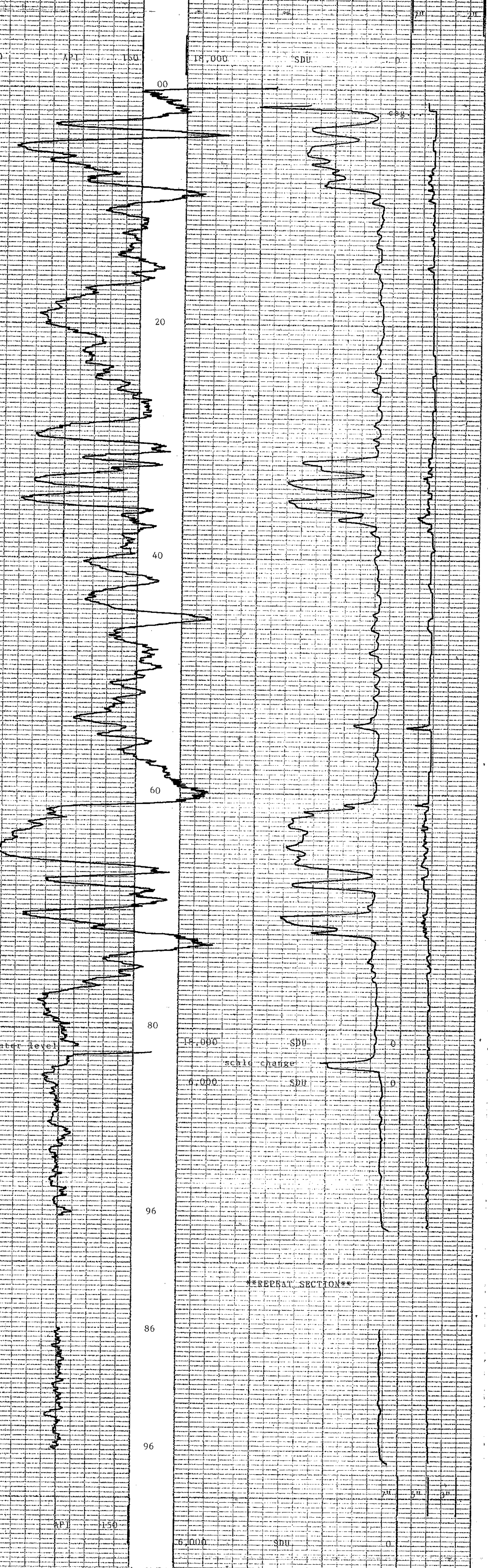
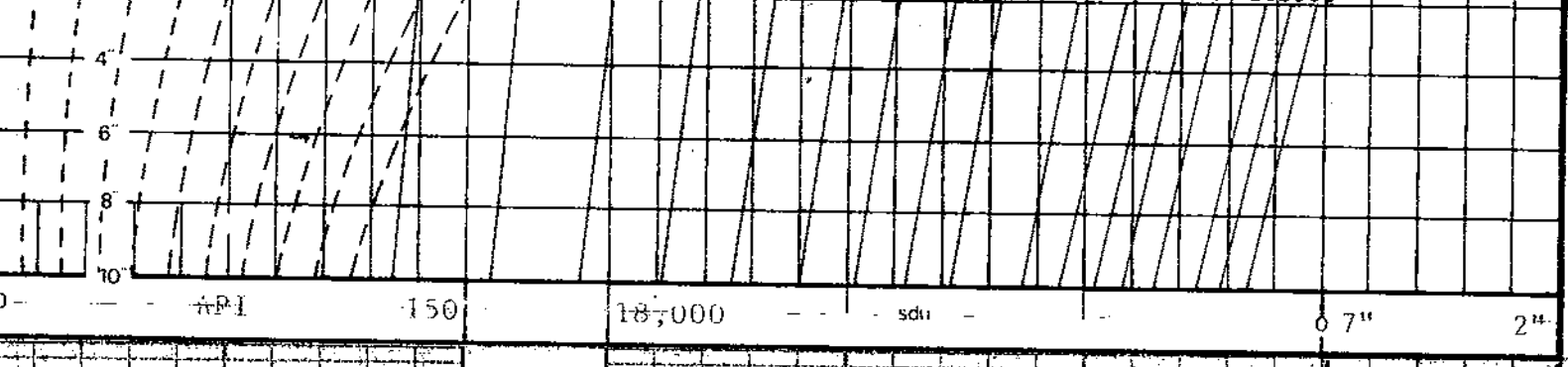
ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAILED SCALE LOG		
215	N-N	1:200			
231	VERT.				

**BPB COAL LITHOLOGY LOG**

**CALIBRATION DATA**

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU (a)	g/cm <sup>3</sup>	INS	CPS
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU = CPS	INS	CPS

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------



BOREHOLE QHR 87-033 AREA TRANSFER  
CLIENT QUINTEITE COUNTRY CANADA

**COAL LITHOLOGY LOG**





NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-033

CLIENT QUINTETTE

AREA TRANSFER

COUNTRY CANADA

DATE LOGGED 87 07 14

DEPTH SCALE  
1:200

2 OF 4 LOGS

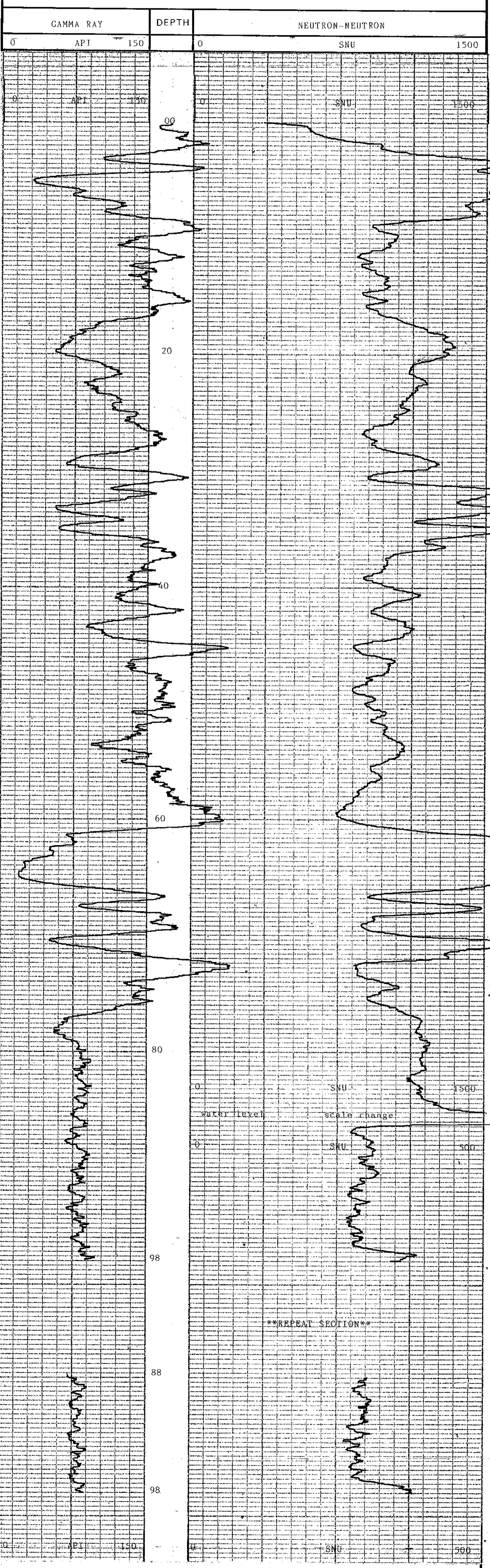
BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	T.C.	NORM	COEFF
	LOG RECORDED		SECS		
	TAPED		REPLAY		
N-N	Y	9	D	9	1
				12.50	
GAMMA	Y	9	R	9	1
					1.56
SONDE 215 SOURCE 4512					

REMARKS  
**739**



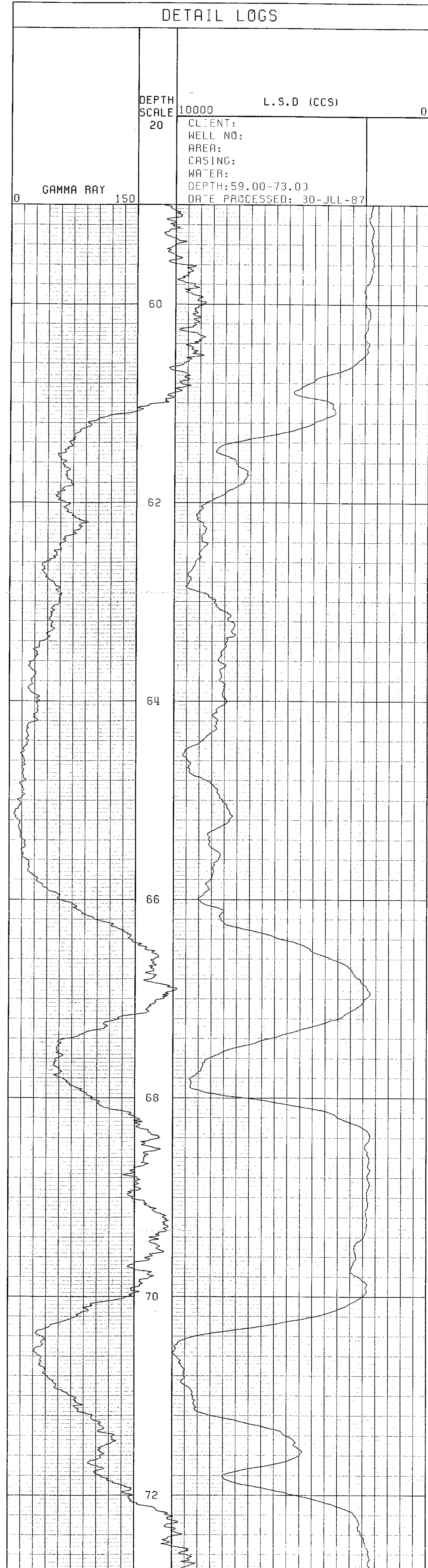
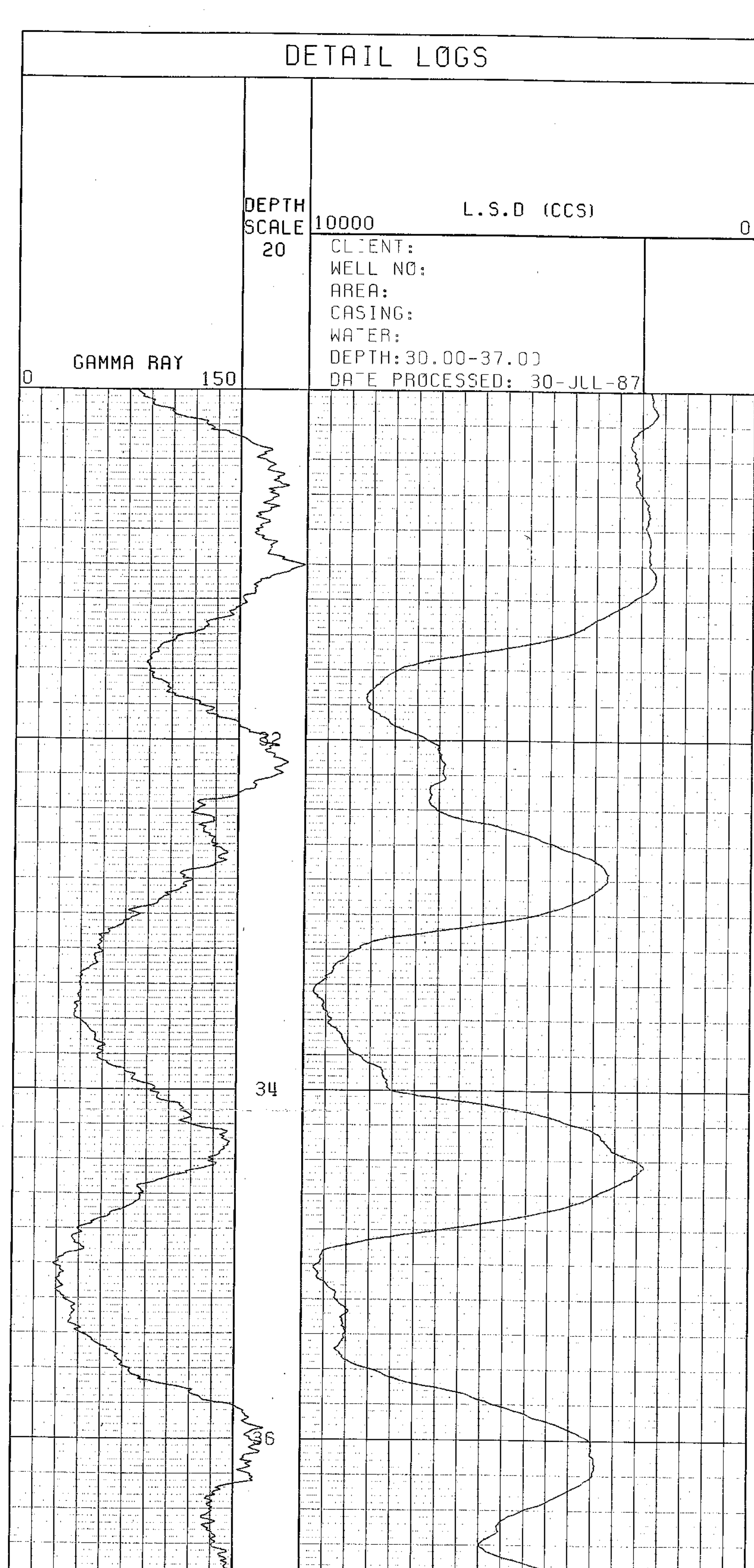
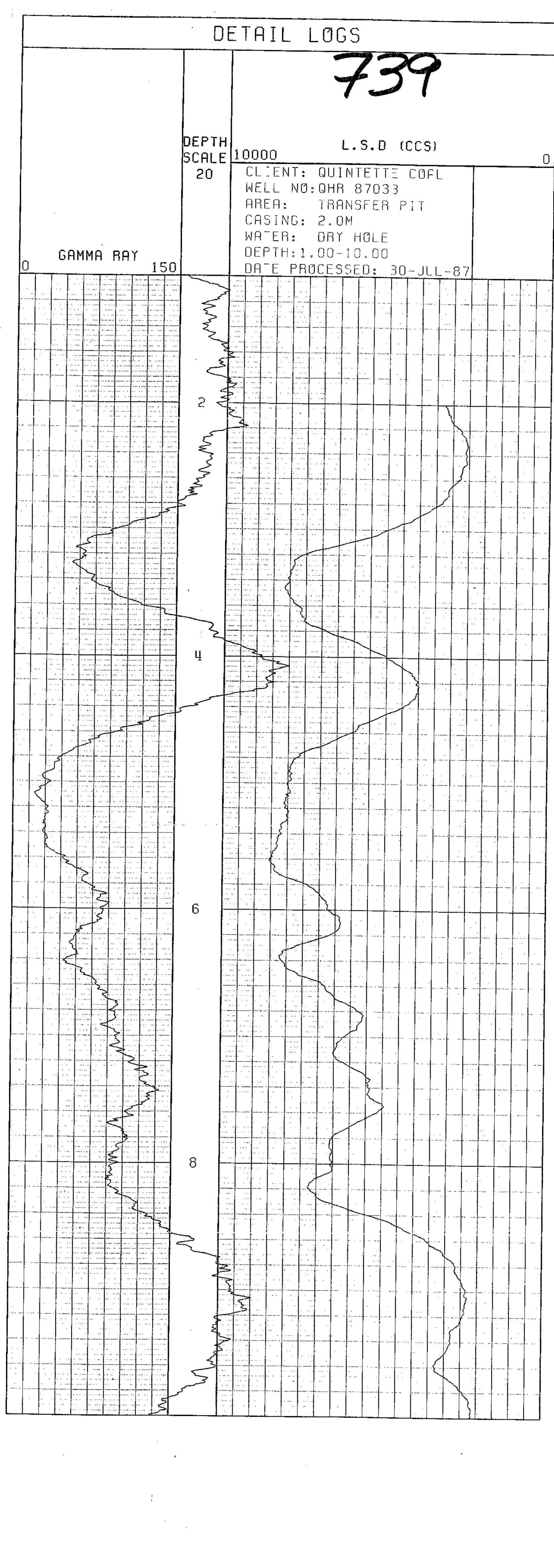
GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0	API	150
0		SNU
		500



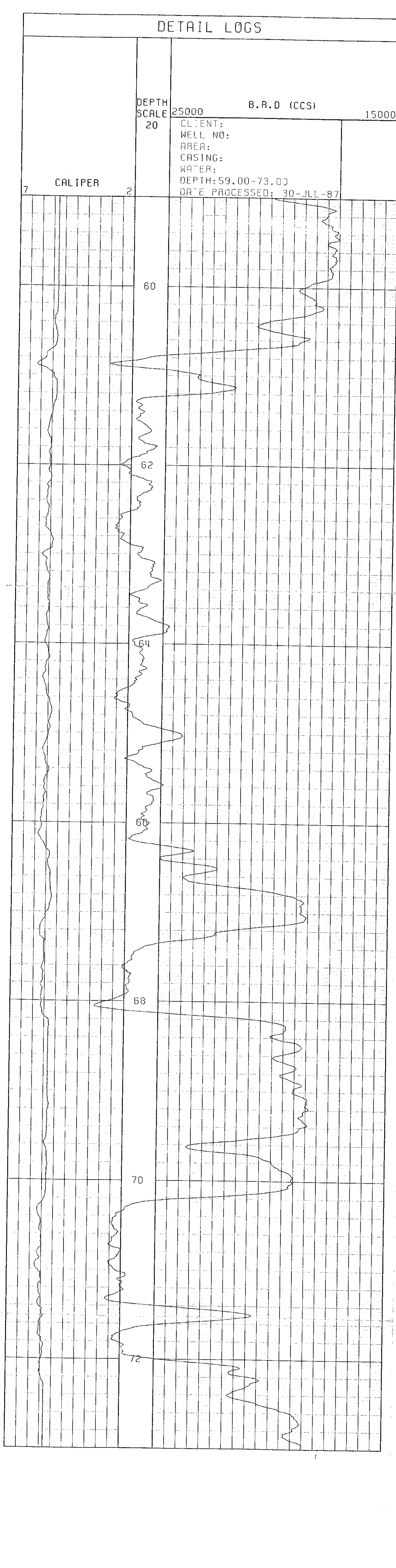
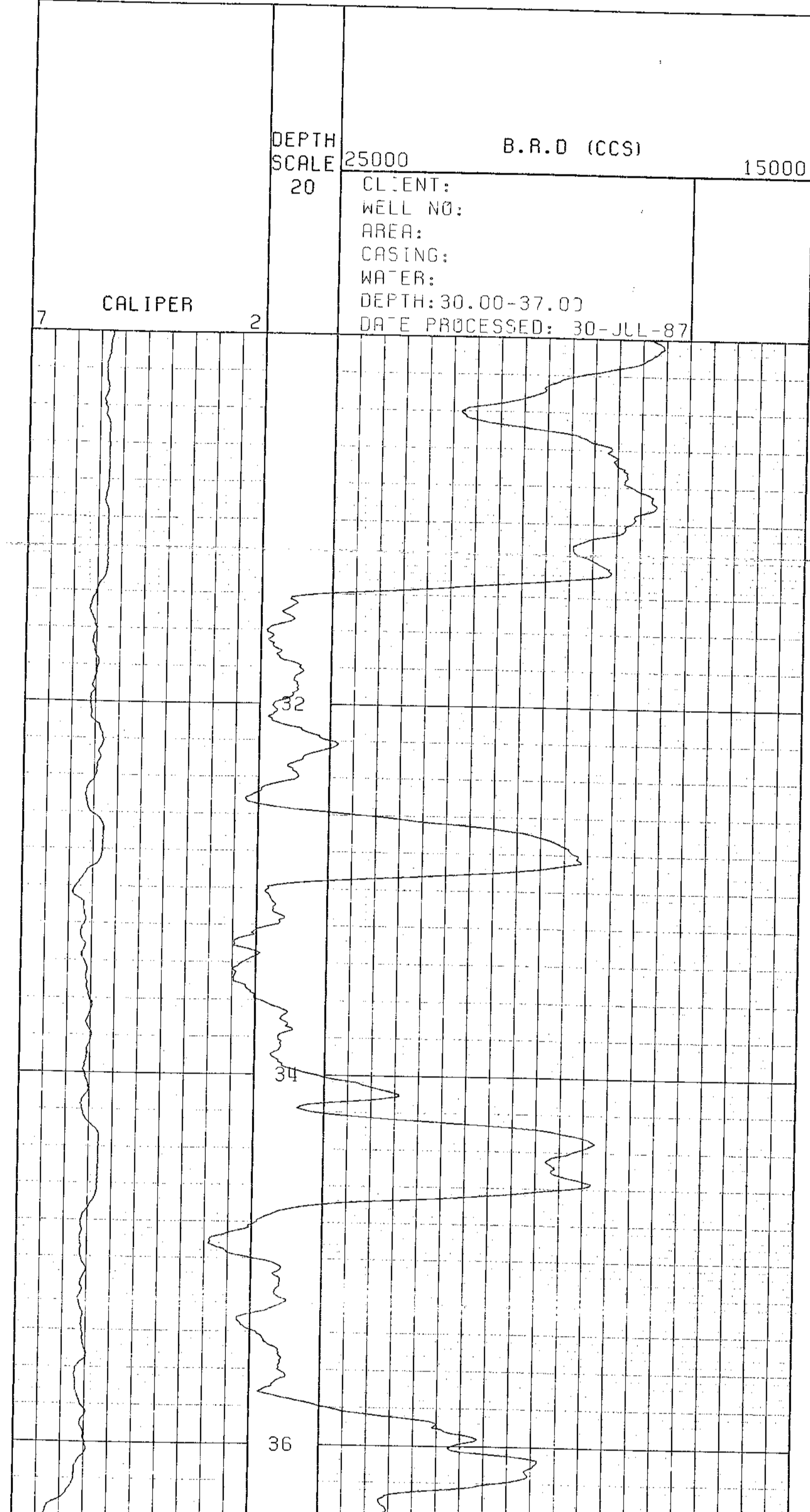
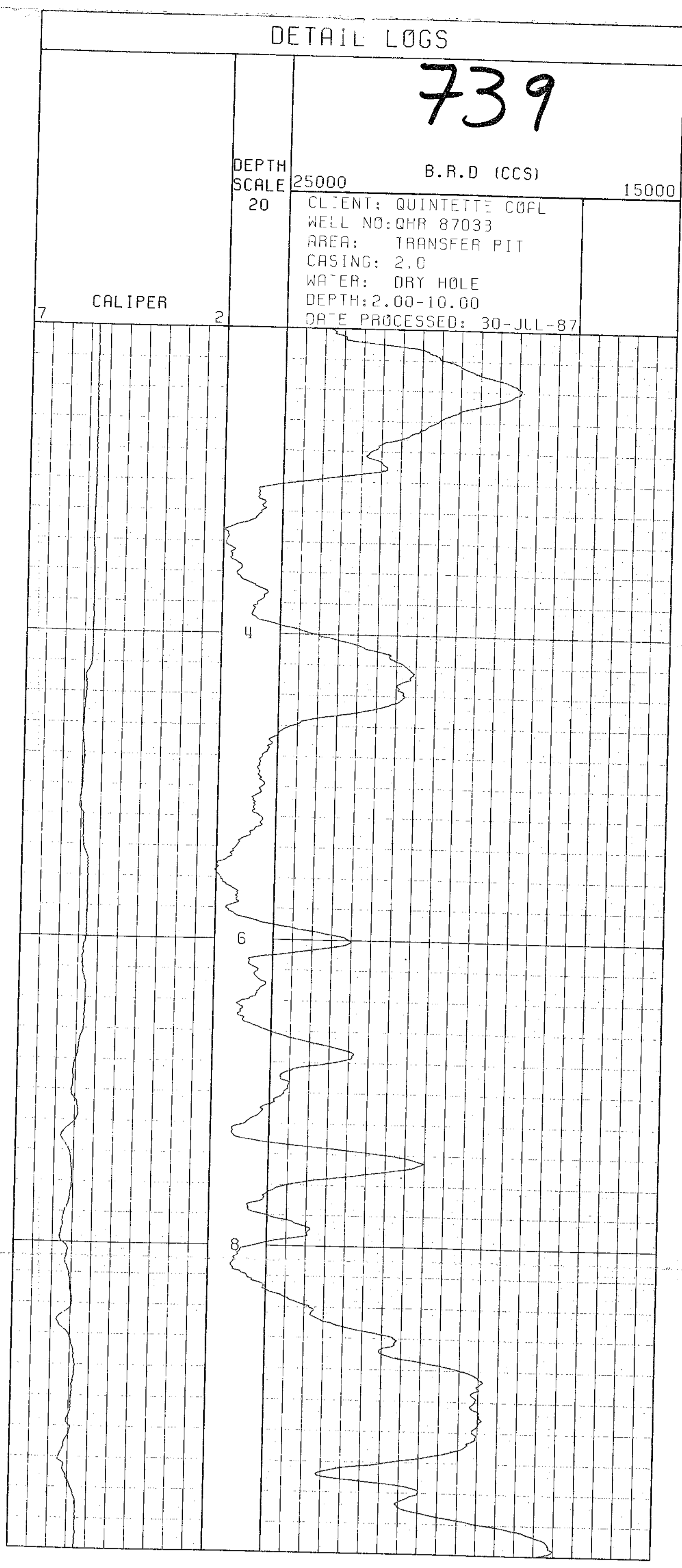
BOREHOLE QHR 87-033  
CLIENT QUINTETTE

AREA TRANSFER  
COUNTRY CANADA











QHR 8703  
TRANSFER

LOG DEPTH 0120.00  
TRUE DEPTH 0119.54  
TILT 8.92 DG  
BEARING 53.96 DG  
NORTHING +005.33  
EASTING +007.10

LOG DEPTH 0110.00  
TRUE DEPTH 0109.66  
TILT 7.64 DG  
BEARING 57.23 DG  
NORTHING +004.42  
EASTING +005.84

LOG DEPTH 0100.00  
TRUE DEPTH 0099.75  
TILT 7.44 DG  
BEARING 63.10 DG  
NORTHING +003.70  
EASTING +004.72

LOG DEPTH 0090.00  
TRUE DEPTH 0089.83  
TILT 6.36 DG  
BEARING 66.86 DG  
NORTHING +003.12  
EASTING +003.57

LOG DEPTH 0080.00  
TRUE DEPTH 0079.89  
TILT 4.02 DG  
BEARING 66.16 DG  
NORTHING +002.68  
EASTING +002.55

LOG DEPTH 0070.00  
TRUE DEPTH 0069.91  
TILT 3.14 DG  
BEARING 62.03 DG  
NORTHING +002.40  
EASTING +001.91

LOG DEPTH 0060.00  
TRUE DEPTH 0059.93  
TILT 2.42 DG  
BEARING 57.51 DG  
NORTHING +002.14  
EASTING +001.42

LOG DEPTH 0050.00  
TRUE DEPTH 0049.94  
TILT 1.83 DG  
BEARING 34.35 DG  
NORTHING +001.91  
EASTING +001.07

LOG DEPTH 0040.00  
TRUE DEPTH 0039.95  
TILT 1.57 DG  
BEARING 8.42 DG  
NORTHING +001.65  
EASTING +000.88

LOG DEPTH 0030.00  
TRUE DEPTH 0029.95  
TILT 2.90 DG  
BEARING 15.42 DG  
NORTHING +001.38  
EASTING +000.84

LOG DEPTH 0020.00  
TRUE DEPTH 0019.96  
TILT 3.58 DG  
BEARING 28.56 DG  
NORTHING +000.89  
EASTING +000.71

LOG DEPTH 0010.00  
TRUE DEPTH 0009.98  
TILT 3.42 DG  
BEARING 50.43 DG  
NORTHING +000.34  
EASTING +000.41

LOG DEPTH 0001.00  
TRUE DEPTH 0001.00  
TILT 3.83 DG  
BEARING 70.59 DG  
NORTHING +000.00  
EASTING +000.00

739



DEPTH = 0010.00  
TILT = 3.02 DG  
BEARING = 30.27 DG

DEPTH = 0020.00  
TILT = 4.14 DG  
BEARING = 26.85 DG

DEPTH = 0030.00  
TILT = 1.67 DG  
BEARING = 3.98 DG

DEPTH = 0040.00  
TILT = 1.46 DG  
BEARING = 12.86 DG

DEPTH = 0050.00  
TILT = 2.20 DG  
BEARING = 55.85 DG

DEPTH = 0060.00  
TILT = 2.64 DG  
BEARING = 59.18 DG

DEPTH = 0070.00  
TILT = 3.63 DG  
BEARING = 64.89 DG

DEPTH = 0080.00  
TILT = 4.40 DG  
BEARING = 67.43 DG

DEPTH = 0090.00  
TILT = 8.31 DG  
BEARING = 66.30 DG

DEPTH = 0100.00  
TILT = 6.57 DG  
BEARING = 59.90 DG

DEPTH = 0110.00  
TILT = 8.71 DG  
BEARING = 54.55 DG

DEPTH = 0120.00  
TILT = 9.12 DG  
BEARING = 53.38 DG

DATE 870809  
JOB NUMBER 0034  
LOG LABEL 026.1  
MAG 1 MAX 229  
MAG 1 MIN 131  
MAG 2 MAX 230  
MAG 2 MIN 131  
MAG 3 MAX 205  
MAG 3 MIN 155  
L. CELL 1 TILT 1 08  
L. CELL 1 CPS 1 258  
L. CELL 1 TILT 2 -08  
L. CELL 1 CPS 2 181  
L. CELL 2 TILT 1 08  
L. CELL 2 CPS 1 258  
L. CELL 2 TILT 2 -08  
L. CELL 2 CPS 2 181  
MAG 1 CENTRE 180  
MAG 2 CENTRE 180  
MAG 3 CENTRE 180  
L. CELL 1 CENTRE 220  
L. CELL 2 CENTRE 220  
MAG DECL 024  
STOP DEPTH 0001

QHR57035  
TRANSFER





SONDE TYPE  
COAL  
COMBINATION  
SONDE

LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

COAL  
LITHOLOGY  
LOG

BOREHOLE QHR 87-035  
CLIENT QUINTETTE  
AREA TRANSFER  
COUNTRY CANADA  
DATE LOGGED 87 08 09

PERMANENT DATUM GROUND LEVEL  
ELEVATION OF P.O. BPB  
MEASUREMENTS FROM G.L. G.L.  
DEPTH REACHED 129m 130m  
CASING SPACE 6.1m 6.1m  
BIT SIZES 1 8.3" TO 6.1m 2 5.1" TO 3.0m  
CASING SIZES 1 6.1" TO 6.1m 2 TO

FLUID DATA  
NATURE WATER  
SG 1.01 g/cc  
LEVEL 36.0m  
VISCOSITY N/A  
PH AT PRESS. TEMP N/A  
DHT N/A

OPERATION DATA  
FIRST READINGS 1.26m  
LAST READINGS 0.0m  
INTERVAL LOGGED 1.26m  
UNIT-TRUCK No V217/46  
ENGINEER M. COX  
WITNESS

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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			367	Y	9	D	9	1	-	1.44	126	0	126	Y	
L.S. DENSITY	153		5852	0041	Y	9	D	9	.3	7.38	-	127	1	126	Y
CALIPER	SIDEWALL POSITION			Y	9	D	9	.3	-	.001	127	1	126	Y	

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

FROM	122m	96m	67m	42m	INTERVAL TOTAL
TO	110m	90m	60m	38m	
INTERVAL	12m	6m	7m	4m	29m

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

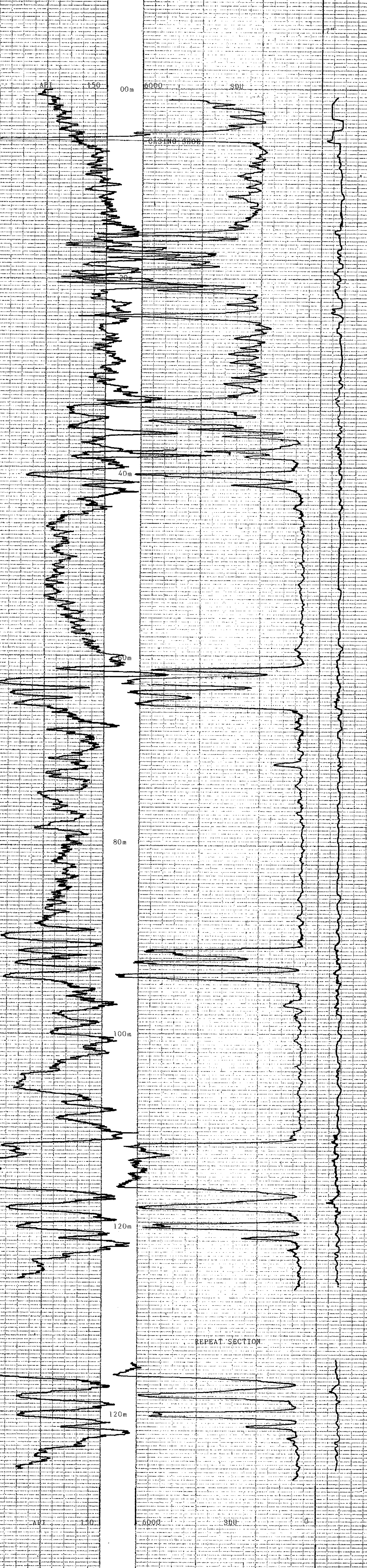
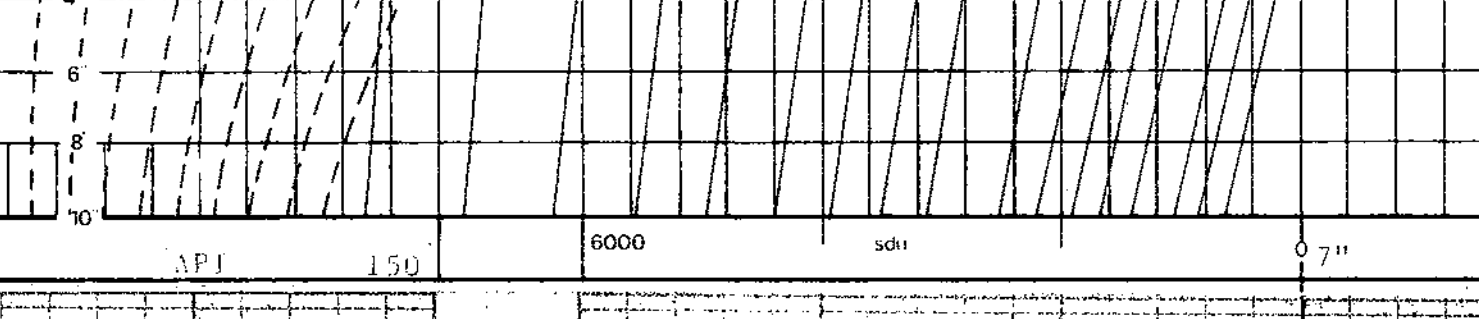
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	INS	CPS

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES

BOREHOLE QHR 87-034 AREA TRANSFER  
CLIENT QUINTETTE COUNTRY CANADA

COAL LITHOLOGY LOG







NEUTRON-NEUTRON  
GAMMA RAY

BOREHOLE QHR 87-034

CLIENT QUINTETTE

AREA TRANSFER DEPTH SCALE 1:200

COUNTRY CANADA

DATE LOGGED 87 08 09 2 OF 4 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

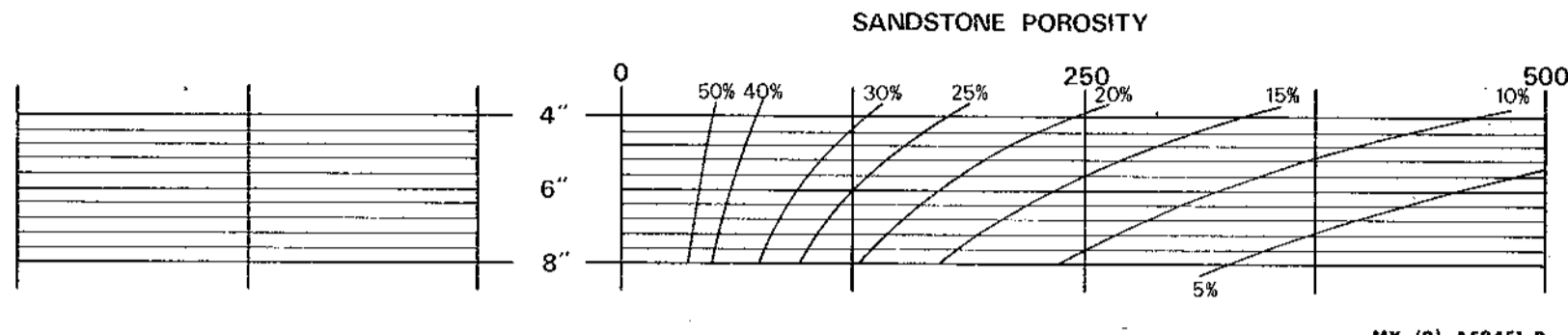
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	DATE
N-N	Y	9	9 1 11.7
GAMMA	Y	9	9 1 1.47
SOUND		21.5	6.51

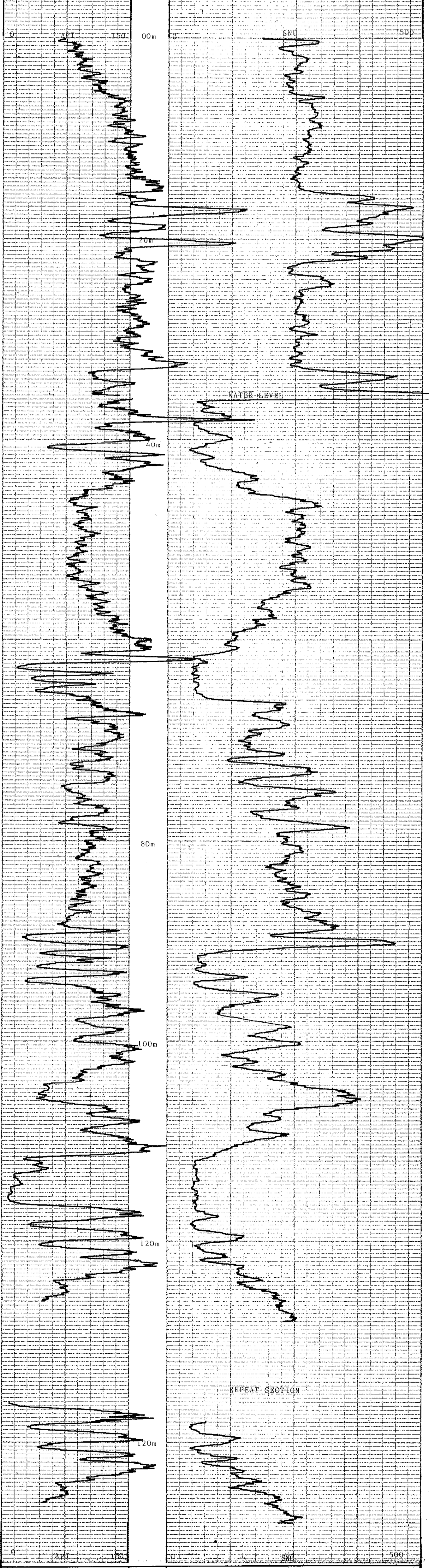
REMARKS

**739**

DEPTH	NEUTRON-NEUTRON	
0	API 150	SNU 500



MY (2) A58451 R



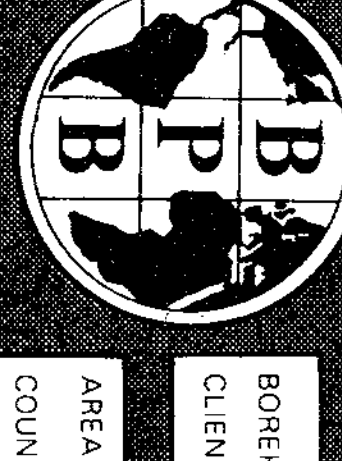
DEPTH	NEUTRON-NEUTRON	
0	API 150	SNU 500



BOREHOLE QHR 87-034 AREA TRANSFER

CLIENT QUINTETTE COUNTRY CANADA





BOREHOLE QHR S7-0736  
 CLIENT QUINTETTE

AREA TRANSFER  
 COUNTRY CANADA  
 DATE LOGGED 27 JUN 07

**COAL QUALITY LOG**

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

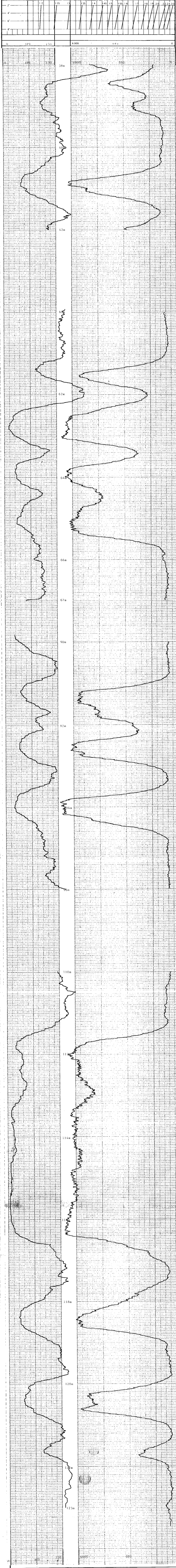
SONDE TYPE  
 COAL COMBINATION  
 SONDE

LOG SUITE  
 GAMMA RAY  
 LS DENSITY

COAL QUALITY LOG INTERVALS  
 FROM 1.2m TO 123m  
 INTERVAL 1.2m  
 FROM 1.2m TO 110m  
 INTERVAL 1.2m  
 FROM 110m TO 123m  
 INTERVAL 1.2m

REMARKS  
**739**

**B P B COAL QUALITY LOG**

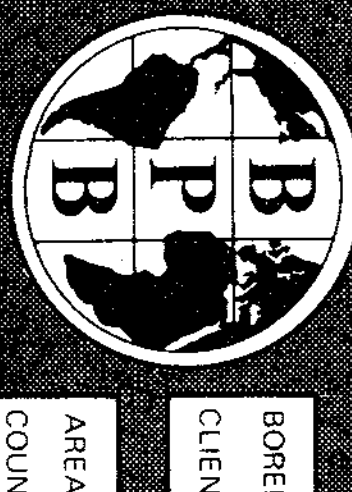


**B P B COAL QUALITY LOG**

BOREHOLE QHR S7-0736  
 CLIENT QUINTETTE  
 AREA TRANSFER  
 COUNTRY CANADA







BOREHOLE QIR 87-034  
 CLIENT QUINTETTE

AREA TRANSFER  
 COUNTRY CANADA  
 DATE LOGGED 82.08.89

SEAM THICKNESS LOG

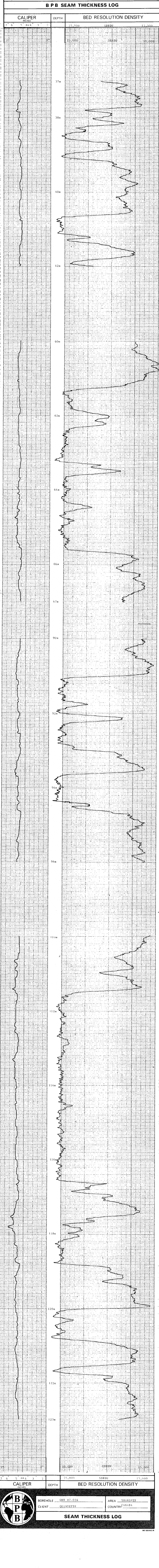
EQUIPMENT AND RECORDING DATA

LOG LOG 100  
 CALIPER 1  
 CAR RESIST 2  
 CAR RESIST 3  
 CAR RESIST 4  
 CAR RESIST 5  
 CAR RESIST 6  
 CAR RESIST 7  
 CAR RESIST 8  
 CAR RESIST 9  
 CAR RESIST 10

SEAM THICKNESS LOG INTERVALS

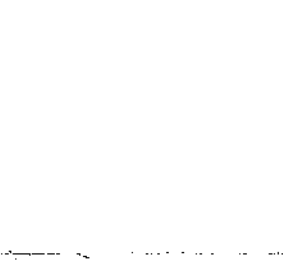
LOG SUITE  
 CALIPER  
 BR DENSITY

**B P B SEAM THICKNESS LOG**



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	25,000	SBRDU 15,000

BOREHOLE QIR 87-034  
 CLIENT QUINTETTE  
 AREA TRANSFER  
 COUNTRY CANADA  
**SEAM THICKNESS LOG**





QHR87036  
TRANSFER

LOG DEPTH 0110.00  
TRUE DEPTH 0109.59  
TILT 6.99 DG  
BEARING 159.68 DG  
NORTHING -008.16  
EASTING +003.19

LOG DEPTH 0100.00  
TRUE DEPTH 0099.66  
TILT 6.34 DG  
BEARING 157.00 DG  
NORTHING -007.01  
EASTING +002.77

LOG DEPTH 0090.00  
TRUE DEPTH 0089.72  
TILT 5.69 DG  
BEARING 158.45 DG  
NORTHING -006.00  
EASTING +002.34

LOG DEPTH 0080.00  
TRUE DEPTH 0079.77  
TILT 5.43 DG  
BEARING 162.00 DG  
NORTHING -005.07  
EASTING +001.97

LOG DEPTH 0070.00  
TRUE DEPTH 0069.82  
TILT 5.17 DG  
BEARING 163.65 DG  
NORTHING -004.17  
EASTING +001.68

LOG DEPTH 0060.00  
TRUE DEPTH 0059.86  
TILT 4.89 DG  
BEARING 167.00 DG  
NORTHING -003.30  
EASTING +001.43

LOG DEPTH 0050.00  
TRUE DEPTH 0049.90  
TILT 4.55 DG  
BEARING 169.34 DG  
NORTHING -002.47  
EASTING +001.24

LOG DEPTH 0040.00  
TRUE DEPTH 0039.93  
TILT 4.20 DG  
BEARING 165.70 DG  
NORTHING -001.69  
EASTING +001.09

LOG DEPTH 0030.00  
TRUE DEPTH 0029.96  
TILT 3.10 DG  
BEARING 159.12 DG  
NORTHING -000.98  
EASTING +000.91

LOG DEPTH 0020.00  
TRUE DEPTH 0019.97  
TILT 2.03 DG  
BEARING 139.39 DG  
NORTHING -000.48  
EASTING +000.72

LOG DEPTH 0010.00  
TRUE DEPTH 0009.98  
TILT 3.39 DG  
BEARING 113.39 DG  
NORTHING -000.21  
EASTING +000.48

LOG DEPTH 0001.00  
TRUE DEPTH 0001.00  
TILT 4.91 DG  
BEARING 102.30 DG  
NORTHING +000.00  
EASTING +000.00

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DEPTH = 0010.00  
 TILT = 1.88 DG  
 BEARING = 124.49 DG  
  
 DEPTH = 0020.00  
 TILT = 2.18 DG  
 BEARING = 154.29 DG  
  
 DEPTH = 0030.00  
 TILT = 4.03 DG  
 BEARING = 163.96 DG  
  
 DEPTH = 0040.00  
 TILT = 4.37 DG  
 BEARING = 167.45 DG  
  
 DEPTH = 0050.00  
 TILT = 4.73 DG  
 BEARING = 171.24 DG  
  
 DEPTH = 0060.00  
 TILT = 5.05 DG  
 BEARING = 162.76 DG  
  
 DEPTH = 0070.00  
 TILT = 5.28 DG  
 BEARING = 164.55 DG  
  
 DEPTH = 0080.00  
 TILT = 5.59 DG  
 BEARING = 159.62 DG  
  
 DEPTH = 0090.00  
 TILT = 5.80 DG  
 BEARING = 157.27 DG  
  
 DEPTH = 0100.00  
 TILT = 6.88 DG  
 BEARING = 156.73 DG  
  
 DEPTH = 0110.00  
 TILT = 7.10 DG  
 BEARING = 162.63 DG

DATE 870810  
 JOB NUMBER 0036  
 LOG LABEL 026.1  
 MAG 1 MAX 229  
 MAG 1 MIN 129  
 MAG 2 MAX 229  
 MAG 2 MIN 130  
 MAG 3 MAX 205  
 MAG 3 MIN 155  
 L. CELL 1 TILT 1 20  
 L. CELL 1 CPS 1 233  
 L. CELL 1 TILT 2 -20  
 L. CELL 1 CPS 2 126  
 L. CELL 2 TILT 1 20  
 L. CELL 2 CPS 1 232  
 L. CELL 2 TILT 2 -20  
 L. CELL 2 CPS 2 126  
  
 MAG 1 CENTRE 179  
 MAG 2 CENTRE 179  
 MAG 3 CENTRE 180  
 L. CELL 1 CENTRE 180  
 L. CELL 2 CENTRE 179  
  
 MAG DECL 024  
 STOP DEPTH 0001

QHR87036  
 TRANSFER





LOG SUITE  
GAMMA RAY  
L.S. DENSITY  
CALIPER

SONDE TYPE  
COAL  
COMBINATION  
SONDE

COAL  
LITHOLOGY  
LOG

BOREHOLE QHR 87-036  
CLIENT QUINTETTE  
AREA TRANSFER  
COUNTRY CANADA  
DATE LOGGED 87.08.09  
DEPTH SCALE 1:200  
1 OF 4 LOGS

BOREHOLE DATA

PERMANENT DATUM GROUND LEVEL  
ELEVATION OF B  
MEASUREMENT FROM G.L. 117.60m  
DEPTH REACHED 118.00m  
CASING SIZE 3.50m  
BIT SIZES 1 8 3/4" TO 3.5m 2 5 1/2" TO 1.8m  
CASING SIZES 1 6 3/4" TO 3.5m 2 TO

FLUID DATA

NATURE WATER  
SG 1.018/cg  
LEVEL 23.40m  
VISCOSITY N/A  
Rm at meas temp N/A  
BHT N/A  
OPERATION DATA  
FIRST READING 115.00m  
LAST READING 00m  
INTERNAL LOGGED 11.5m  
UNIT-TRUCK No 46/V217  
ENGINEER M. COX  
WITNESS

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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	DIRECTOR REPLAY	SPEED	TC SECS		FROM	TO	INTERVAL		
GAMMA RAY	153		367	Y	9	D	9	1	-	1.4	115	0	115	Y
L.S. DENSITY	SIDEWALL POSITION	5852	0041	Y	9	D	9	.3	-	7.4	116	1	115	Y
CALIPER				Y	9	D	9	.3	-	1.0	116	1	115	Y

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

FROM	110m	83m	55m	28m	INTERVAL TOTAL
TO	96m	77m	49m	24m	
INTERVAL	14m	6m	6m	4m	30m

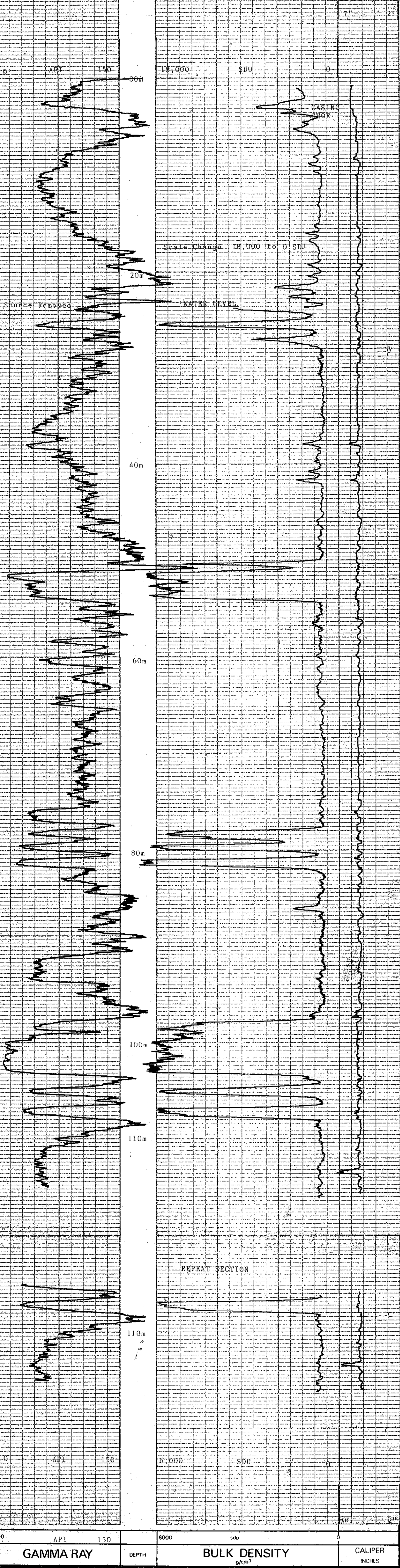
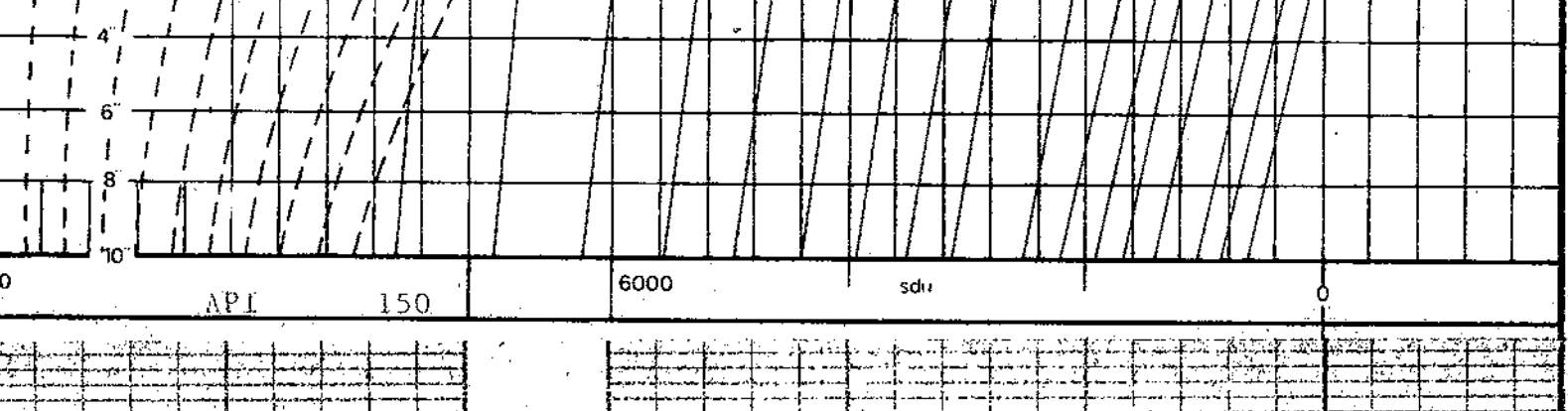
ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
215	N-N	1:200			
231	VERT				

BPB COAL LITHOLOGY LOG  
CALIBRATION DATA

JIG No	VALUE @ 2 DIAM	JIG CAL DATE	JIG VALUE	SDU @	g/cm <sup>3</sup>	ins	cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No	SPAN	NORM	SDU =	ins	cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
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HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	BULK DENSITY g/cm <sup>3</sup>	CALIPER INCHES
-----------	-------	--------------------------------	----------------

BOREHOLE QHR 87-036 AREA TRANSFER  
CLIENT QUINTETTE COUNTRY CANADA  
COAL LITHOLOGY LOG







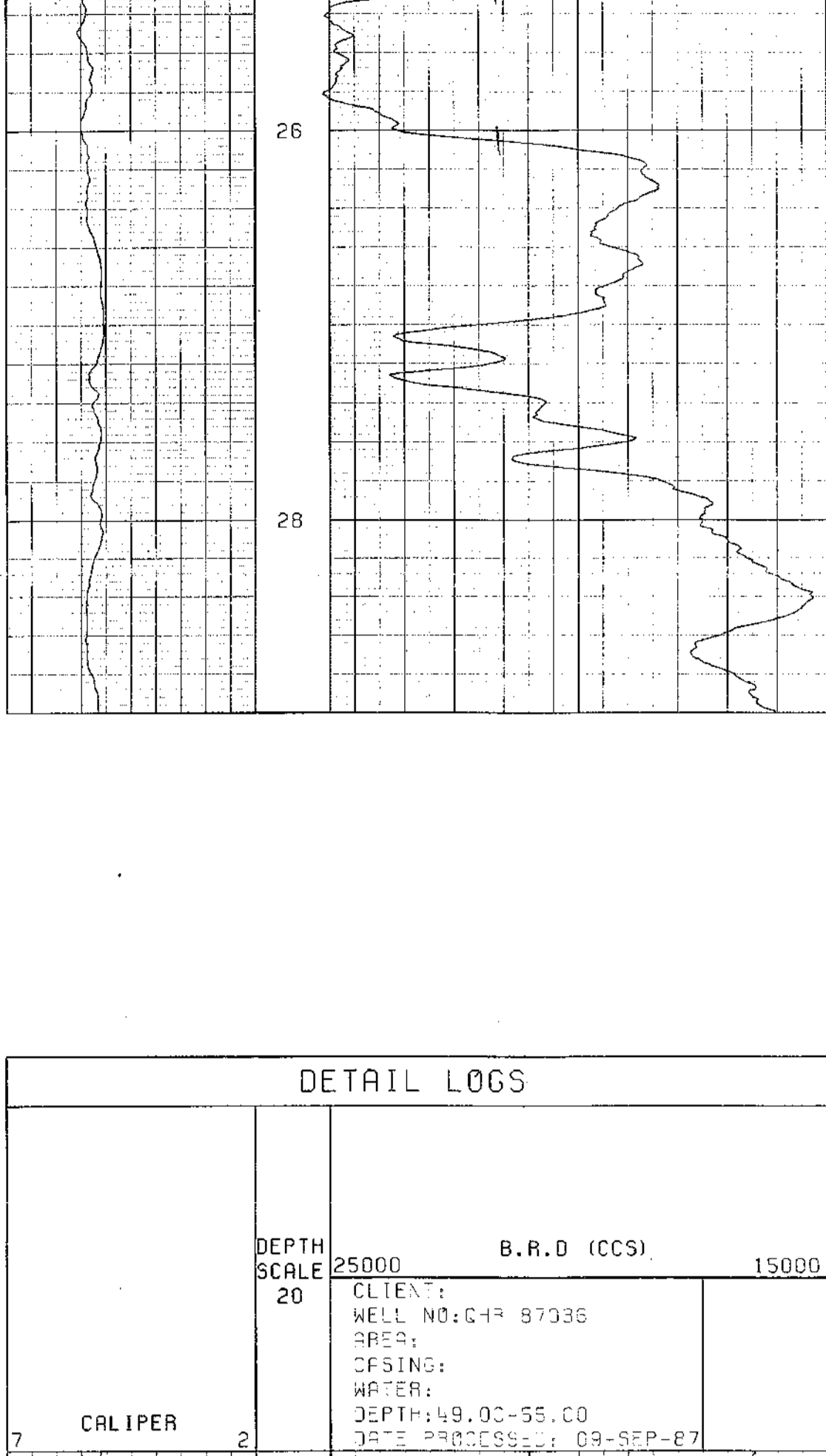


DETAIL LOGS

Rids 739

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT: GUINETTE COAL LTD.  
WELL NO: G-R 87036  
AREA: TRANSFER PIT  
CASING: 3.5V  
WATER: 21.4M  
DEPTH: 24.00-28.00  
DATE PROCESSED: 09-SEP-87

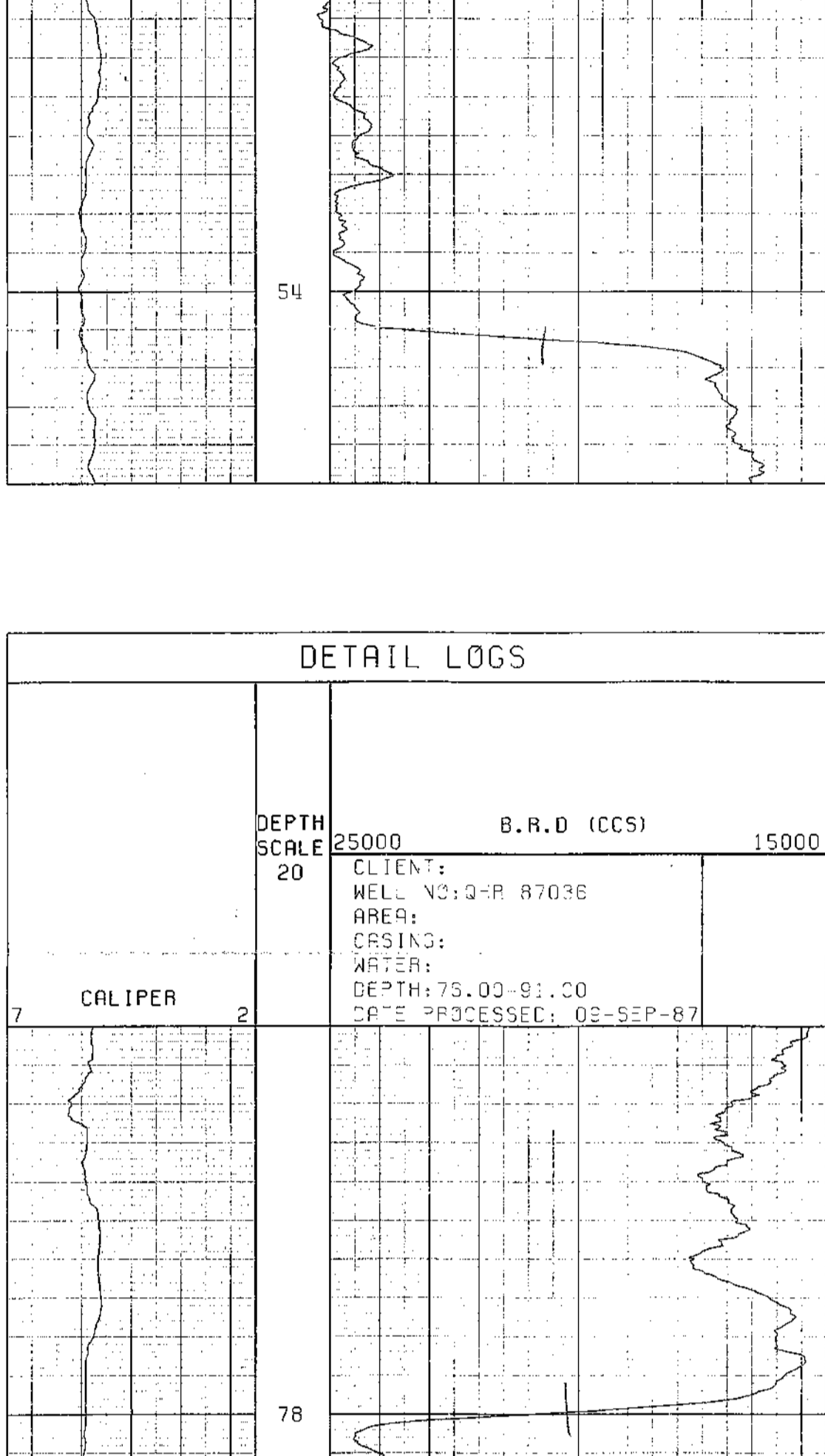
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT: GUINETTE COAL LTD.  
WELL NO: G-R 87036  
AREA: TRANSFER PIT  
CASING: 3.5V  
WATER: 21.4M  
DEPTH: 49.00-55.00  
DATE PROCESSED: 09-SEP-87

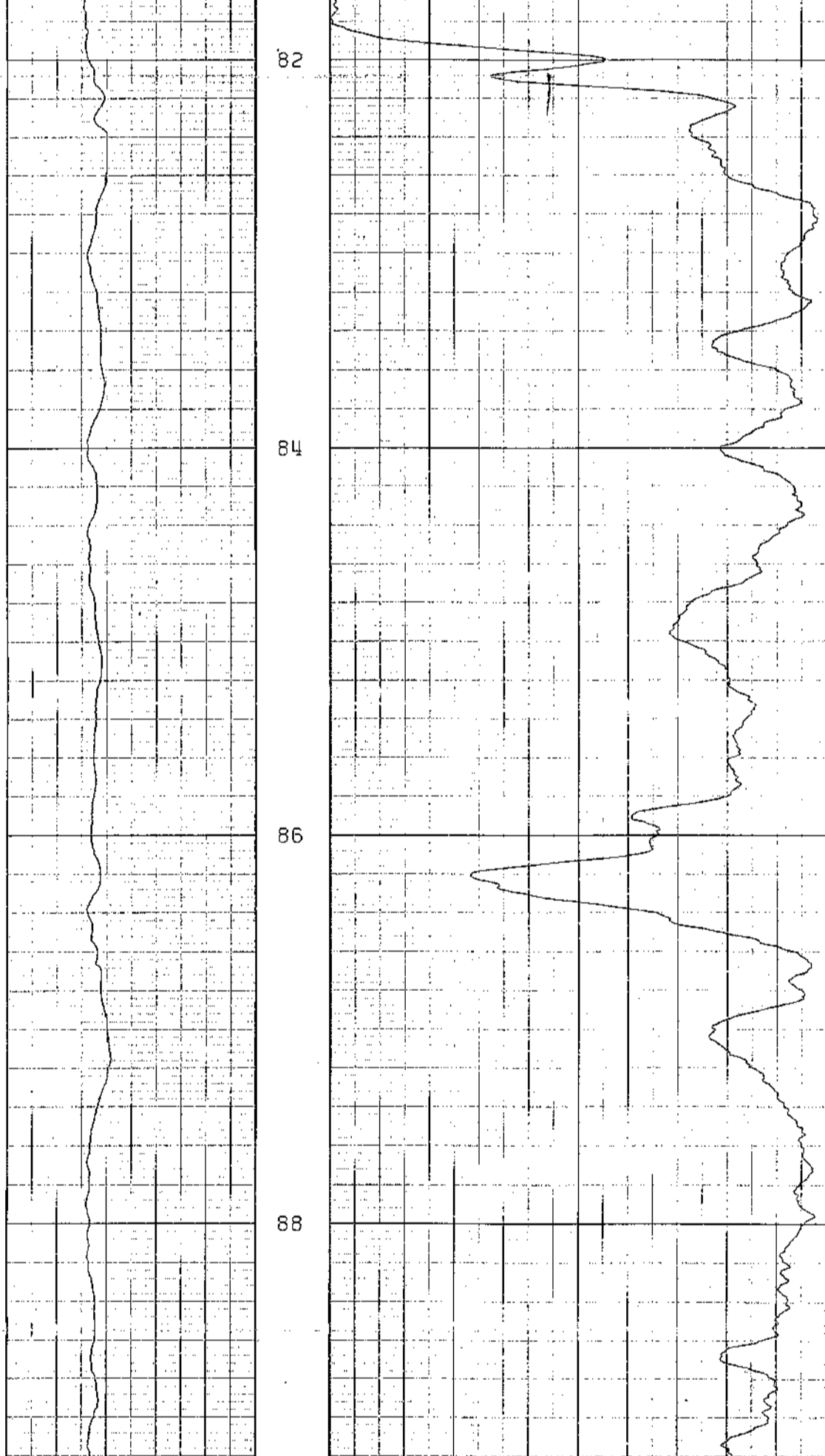
7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT: GUINETTE COAL LTD.  
WELL NO: G-R 87036  
AREA: TRANSFER PIT  
CASING: 3.5V  
WATER: 21.4M  
DEPTH: 75.00-91.00  
DATE PROCESSED: 09-SEP-87

7 CALIPER 2



DETAIL LOGS

DEPTH SCALE 25000 B.R.D (CCS) 15000  
CLIENT: GUINETTE COAL LTD.  
WELL NO: G-R 87036  
AREA: TRANSFER PIT  
CASING: 3.5V  
WATER: 21.4M  
DEPTH: 94.00-110.00  
DATE PROCESSED: 09-SEP-87

7 CALIPER 2

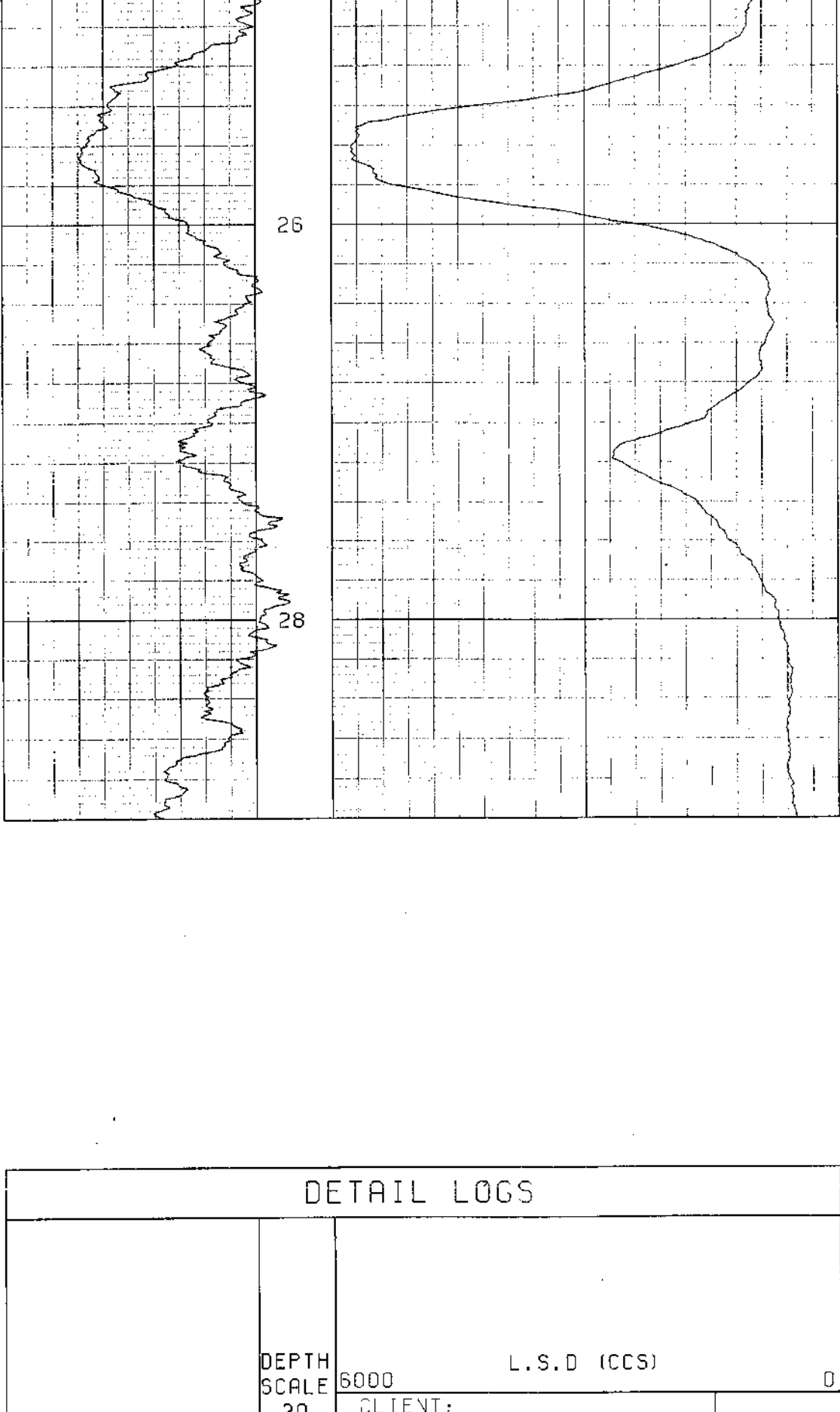




DETAIL LOGS

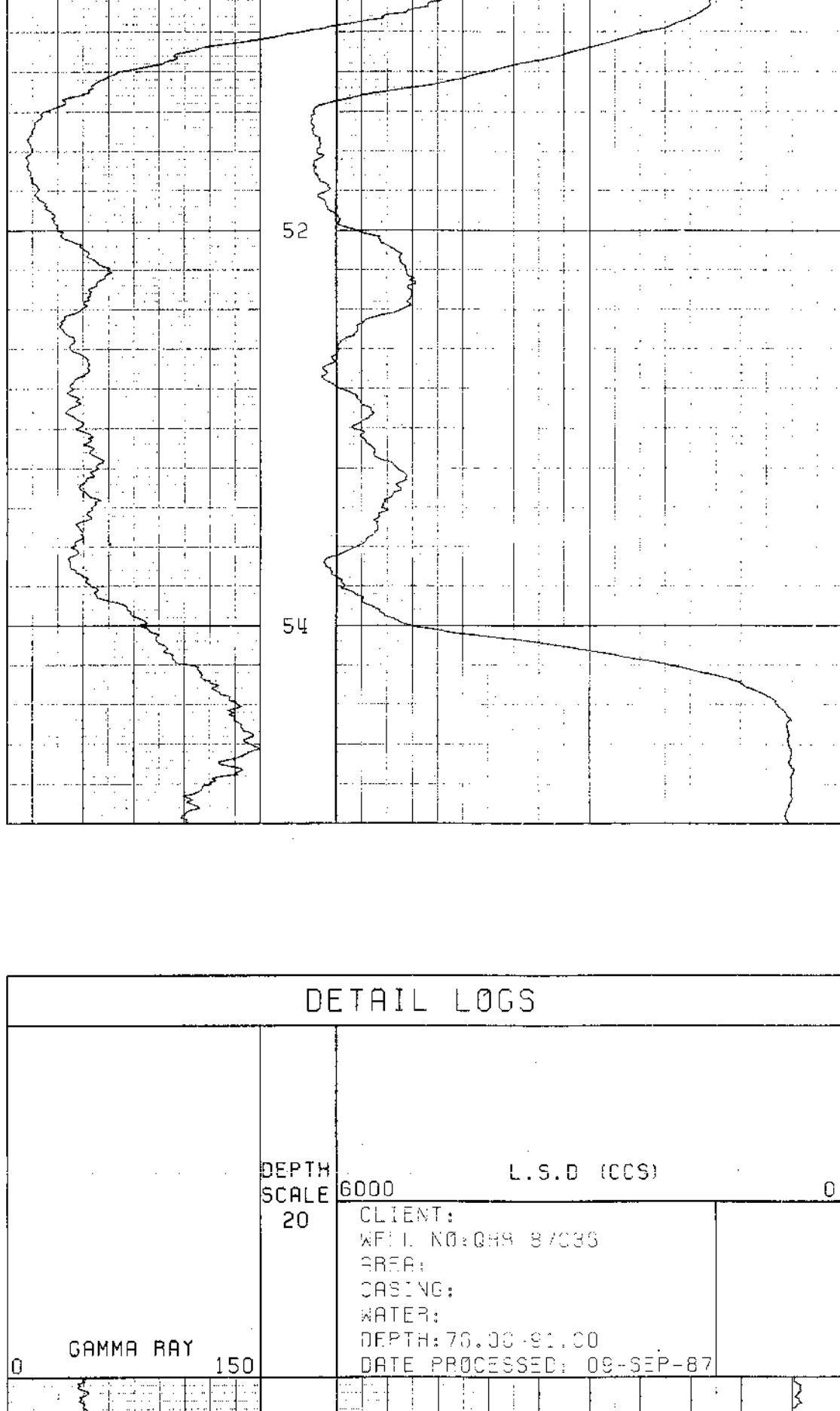
739

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT: QUINTETTA OZAL LTD.  
 WELL NO: QHR 87036  
 AREA: TRANSFER PIT  
 CASING: 3.5M  
 WATER: 22.4M  
 DEPTH: 24.00-28.00  
 DATE PROCESSED: 09-SEP-87



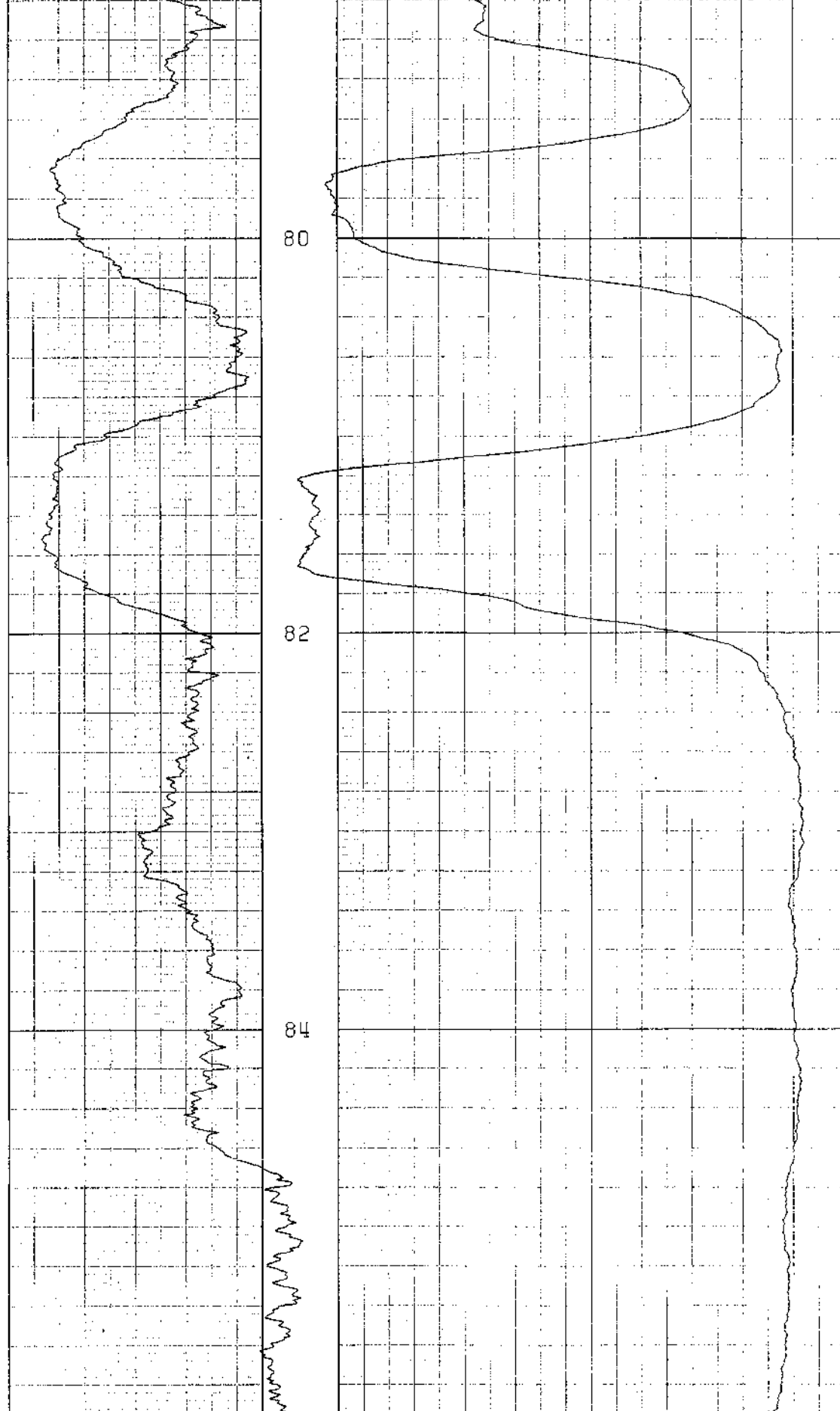
DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT: QUINTETTA OZAL LTD.  
 WELL NO: QHR 87036  
 AREA: TRANSFER PIT  
 CASING: 3.5M  
 WATER: 22.4M  
 DEPTH: 48.00-55.00  
 DATE PROCESSED: 09-SEP-87



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT: QUINTETTA OZAL LTD.  
 WELL NO: QHR 87036  
 AREA: TRANSFER PIT  
 CASING: 3.5M  
 WATER: 22.4M  
 DEPTH: 76.00-81.00  
 DATE PROCESSED: 09-SEP-87



DETAIL LOGS

DEPTH SCALE 6000 L.S.D (CCS) 0  
 CLIENT: QUINTETTA OZAL LTD.  
 WELL NO: QHR 87036  
 AREA: TRANSFER PIT  
 CASING: 3.5M  
 WATER: 22.4M  
 DEPTH: 94.00-110.00  
 DATE PROCESSED: 09-SEP-87

