

**KPNLRRDH 84007**

**DESCRIPTIVE LOG**

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.52	1.52			SILTSTONE	CLYY.DK.BN IRON STAINING AND WEATHERING OF SILT. 5 0% COAL CONCHOIDAL FRACTURE C2/C3. ALSO SOME CARBONACEOUS CLAYSTONE PRESENT. V ERY FINE FRAGMENTS OF COAL.
	1.52	3.04	1.52		I	COAL	C-1.DK.BLK VERY MINOR WEATHERING.CONCHOIDAL FRACTU RE. VERY SHINEY.NO BANDING.
	3.04	4.56	1.52		I	COAL	C-1.DK.BLK CONCHOIDALLY FRACTURED COAL CHIPS; VERY SHINEY; SOME SILTSTONE CHIPS; WEATHERE D AND IRON STAINED; FINE GRAINED SILTST ONE
	4.56	6.08	1.52			SANDSTONE	SLTY.VFG.LT.GY WEATHERED AND IRON STAINED. MODIFIES CO LOUR. INDIVIDUAL GRAINS VISIBLE.
	6.08	7.60	1.52			SILTSTONE	CLYY.M.GY A SMALL NUMBER OF COAL CHIPS-C3. IRON S TAINING MODIFIES COLOUR. STONE CHIPS PR ESENT. POORLY CONSOLIDATED CLAYSTONE.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	7.60	9.12	1.52			SANDSTONE	SLTY.FG.M.GY SOME CHIPS IRON STAINED AND WEATHERED T HROUGHOUT; WEATHERING MODIFIES COLOUR; ABUNDANT QUARTZ GRAINS AND CEMENT CONST ITUTE SANDSTONE
	9.12	10.64	1.52			SANDSTONE	SLTY.FG.M.BN.LAM WEATHERING AND IRON STAINING MODIFIES C LOUR. VERY FAINT LAMINATIONS PRESENT I N SOME CHIPS.
	10.64	12.16	1.52			SILTSTONE	SSY.M.GY WEATHERING AND IRON STAINING MODIFIES C LOUR. SOME SANDSTONE CHIPS PRESENT. VE RY FINE COAL STRINGER AND FAINT LAMINAE
	12.16	13.68	1.52			SANDSTONE	VFG.LT.GY WEATHERING AND IRON STAINING MODIFIES C LOUR; VERY FINE GRAIN SAND GRAINS COMP OSING WELL ROUNDED 1 mm SIZE CHIPS IN U NCLEAN SAMPLE
	13.68	15.20	1.52			SANDSTONE	SLTY.VFG.LT.GY INDIVIDUAL GRAINS NOTICEBLE AND DISTINC T. IRON STAINING MODIFIES COLOUR GIVING A RED TINGE. MODERATE ROUNDED CHIPS IN UNCLEAN SAMPLE.

\* DENOTES MEASURED BCA



84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	15.20	16.72	1.52			ROCK LOSS	NO CUTTING RECOVERED
	16.72	18.24	1.52			SILTSTONE	CLYY.M.BN VERY FINE SILT SIZE CHIPS RECOVERED. POWDERS VERY EASILY. CLEANED SAMPLE UNOBTAINABLE. VERY FINE COAL CHIPS - BANDED 1 mm WIDE SILT SIZE CHIPS IN UNCLEAN SAMPLE.
	18.24	19.76	1.52			SANDSTONE	SLTY.FG.LT.BN WEATHERING AND IRON STAINING MODIFIES COLOUR. SANDSTONE CHIPS AND SILTSTONE CHIPS.
	19.76	21.28	1.52			SILTSTONE	SSY.M.GY IRON STAINED AND WEATHERED. SOME VERY FINE GRAINED SANDSTONE.
	21.28	22.80	1.52			CLAYSTONE	CARB.M-DK.GY MINOR IRON STAINING AND WEATHERING. FINE COAL CHIPS PRESENT IN THE CLAYSTONE.
	22.80	27.37	4.57			ROCK LOSS	NO CUTTING RECOVERED.
	27.37	28.89	1.52			CLAYSTONE	SLTY.M.GY SILT SIZE CHIPS POORLY CONSOLIDATED IN CLAYSTONE AND MUD. VERY MUCKY WHEN WET.

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	28.89	29.86	0.97		H	COAL	C-1.M-DK.BLK. VERY SHINEY CONCHOIDAL FRACTURED COAL CHIPS. SOME CARBONACEOUS CLAYSTONE. SOME FAINT BANDING IN A FEW COAL CHIPS. SOME SANDSTONE CHIPS ALSO PRESENT.

\* DENOTES MEASURED BCA  
NEWPAGE

Gk Mount Klappan 84(3)A

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GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84007

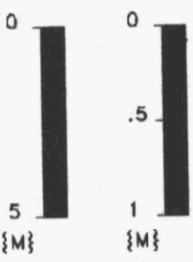
GEOLOGIST : DUFORDJENNER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

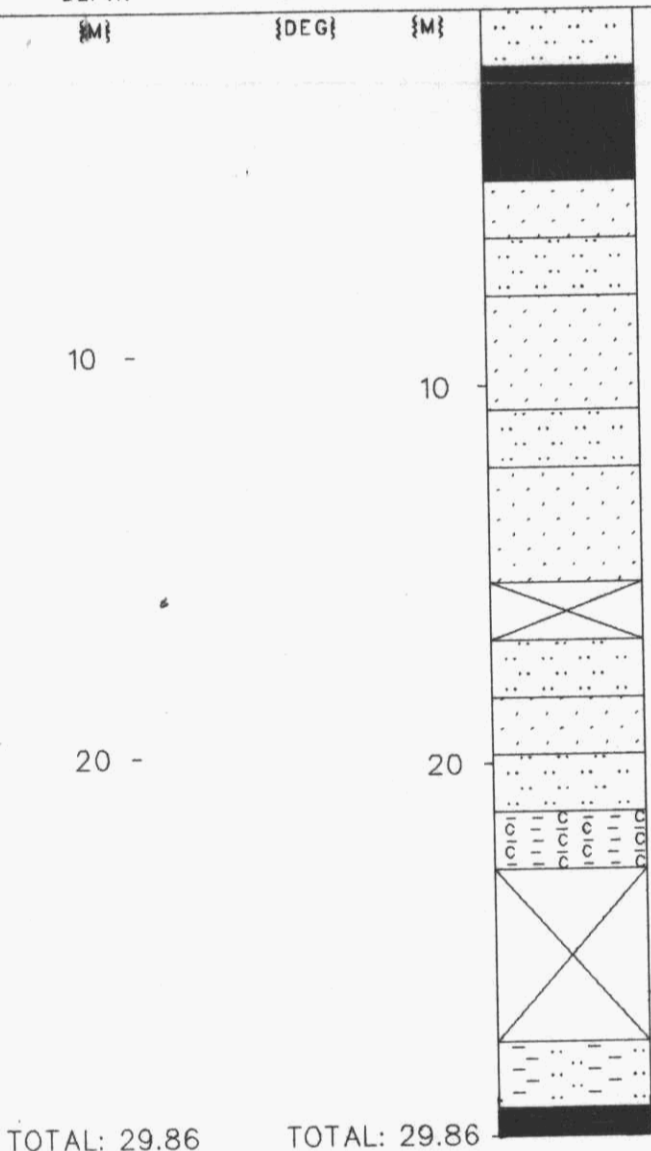
SCALE : 1:200 1:40



NORTHING: 6344094.0 N  
 EASTING: 506095.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH      BCA      TRUE DEPTH      1:200  
 {M}                  {DEG}              {M}

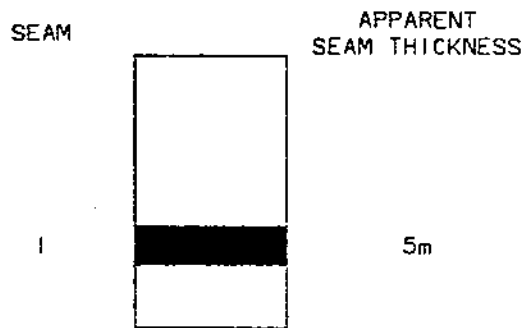


TOTAL: 29.86      TOTAL: 29.86

REMARKS :  
 NO GEOPHYSICAL LOGS RUN.

**KPNLRRDH 84008**

MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84008



THICKNESSES ARE APPARENT  
NO CORE TAKEN

SCALE 1:1000

GULF CANADA RESOURCES INC.  
14/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84008

DATE - 12/02/84

- HISTORY -

START DATE - 06/29/84  
 END DATE - 06/30/84

CONTRACTOR - DENHAM DRILLING                      OPERATOR - GCRI  
 GEOLOGIST - DUFORDJENNER                          SURVEYOR - .

REMARKS - LOGGED TO 35.80m COAL INTERVAL: 22.72m TO 27.84m (5.12M) | SEAM.NO CORE OBTAINED. DESCRIPTIVE LOG IN Terval THICKNESSES ADJUSTED TO COAL TOPS ON GEOPHY SICAL LOGS. THICKNESSES ARE APPARENT.

- LOCATION -

PROVINCE - BC	ZONE - 9
ELEVATION - 1827.00	NORTHING - 6344283.00
LICENCE/LEASE NUMBER - 7152	EASTING - 505969.00
	LATITUDE - 571437
	LONGITUDE - 1285404

- ORIENTATION -

LENGTH - 36.60	INCLINATION - 86.5
	AZIMUTH - 333.6
HOLE SIZE - 120.7	
CEMENT - N	CASING DEPTH (M) - 3.05
PLUG - N	AQUIFER DEPTHS (M) - 0.00
PIEZ -	0.00
	LOST CIRC. DEPTHS (M) - 0.00
	0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

**KPNLRRDH 84008**

**DESCRIPTIVE LOG**

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	1.52	1.52			TOPSOIL	VFG.LT-M.BN OVERBURDEN CONTAINING GRASSES AND PLANT REMAINS; MUD; CLAY AND SILT.
90	1.52	2.98	1.46			OVERBURDEN	VFG.M.GY WEATHERED AND IRON STAINED. UNCONSOLIDATED MUD AND CLAY AND UNCONSOLIDATED SILT AND CLAY.
90	2.98	4.39	1.41			SILTSTONE	SSY.M.GY GRITTY; VERY FINE GRAIN PROMINANT; SOME IRON STAINING; VERY FAINT AND MINOR LAMINATIONS
90	4.39	5.80	1.41			SILTSTONE	SSY.M.GY.LAM GRITTY; SOME WEATHERING AND IRON STAINING; SEPARATE FINE GRAINED SAND CHIPS FROM SILT CHIPS.
90	5.80	7.21	1.41			SILTSTONE	SSY.LT.BN GRITTY; SOME WEATHERING AND IRON STAINING; SEPARATE FINE GRAINED SAND CHIPS FROM SILT CHIPS.
90	7.21	8.62	1.41			SILTSTONE	SSY.LT.GY GRITTY. SOME WEATHERING AND IRON STAINING.

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	8.62	10.03	1.41			SANDSTONE	SLTY.VFG.LT.BN VERY GRITTY; WEATHERED AND IRON STAINED; DISTINCT VERY FINE GRAINED SAND CHIPS AND SILT CHIPS
90	10.03	11.44	1.41			SANDSTONE	SLTY.VFG.LT.BN.LAM WEAKENED AND POORLY CONSOLIDATED IN SOME CHIPS. FAINT LAMINATIONS IN SOME CHIPS.
90	11.44	12.85	1.41			SILTSTONE	SSY.M.GY.LAM DISTINCT LAMINATIONS. IRON STAINING. GRITTY.
90	12.85	14.26	1.41			SILTSTONE	SSY.M.GY SOME WEATHERING. SOME QUARTZ VEINING PRESENT. GRITTY.
90	14.26	15.67	1.41			SILTSTONE	M.GY.LAM FAINT LAMINATIONS IN SOME CHIPS. IRON STAINING.
90	15.67	17.08	1.41			SILTSTONE	M.GY IRON STAINING PRESENT.
90	17.08	18.49	1.41			SILTSTONE	M.GY IRON STAINED. GRITTY.

\* DENOTES MEASURED BCA

2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	18.49	19.90	1.41			SILTSTONE	M.GY SOME IRON STAINING.
90	19.90	21.31	1.41			SILTSTONE	CLYY.GY MODERATE IRON STAINING.
90	21.31	22.72	1.41			SILTSTONE	CARB.M-DK.GY.LAM VERY LITTLE IRON STAINING. COAL STRINGERS IN SILT CHIPS. CONCHOIDALLY FRACTURED COAL CHIPS-C2. SOME FINE COAL LAMINATIONS IN SILT CHIPS.
90	22.72	24.24	1.52	I		COAL	C-3.DK.BLK.LAM CONCHOIDAL FRACTURED COAL CHIPS. SOME FINE LAMINATIONS; BORDERLINE C2/C3.
90	24.24	25.76	1.52	I		COAL	C-2.DK.BLK.LAM FINE COAL LAMINATIONS IN CARBONACEOUS CLAYSTONE. CONCHOIDAL FRACTURED COAL CHIPS.
90	25.76	27.28	1.52	I		COAL	C-3.DK.BLK.LAM SOME CONCHOIDALLY FRACTURED COAL CHIPS. FINE LAMINATIONS IN SOME CHIPS.
90	27.28	27.84	0.56	I		COAL LOSS	

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	27.84	29.36	1.52			SILTSTONE	M.GY SOME COAL CHIPS PRESENT-C3. SOME IRON STAINING.
90	29.36	30.88	1.52			SILTSTONE	SSY.M.GY SOME COAL CHIPS PRESENT-C3. MINOR IRON STAINING.
90	30.88	32.40	1.52			SILTSTONE	SSY.M.GY IRON STAINING PRESENT; VERY FINE GRAINED SAND; COAL CHIPS PRESENT (C-3)
90	32.40	33.92	1.52			SANDSTONE	SLTY.VFG.GY GRITTY. INDIVIDUAL GRAINS EASILY VISIBLE WITH THE NAKED EYE. VERY FINE COAL CHIP CHIPS PRESENT BUT MINOR.
90	33.92	35.44	1.52			SILTSTONE	GY MINOR IRON STAINING PRESENT.
90	35.44	36.60	1.16			ROCK LOSS	

\* DENOTES MEASURED BCA  
NEWPAGE

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GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84008

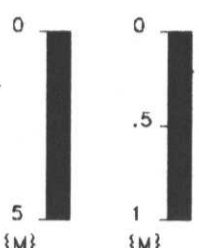
GEOLOGIST : DUFORDJENNER

DATE : DEC 05/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200    1:40

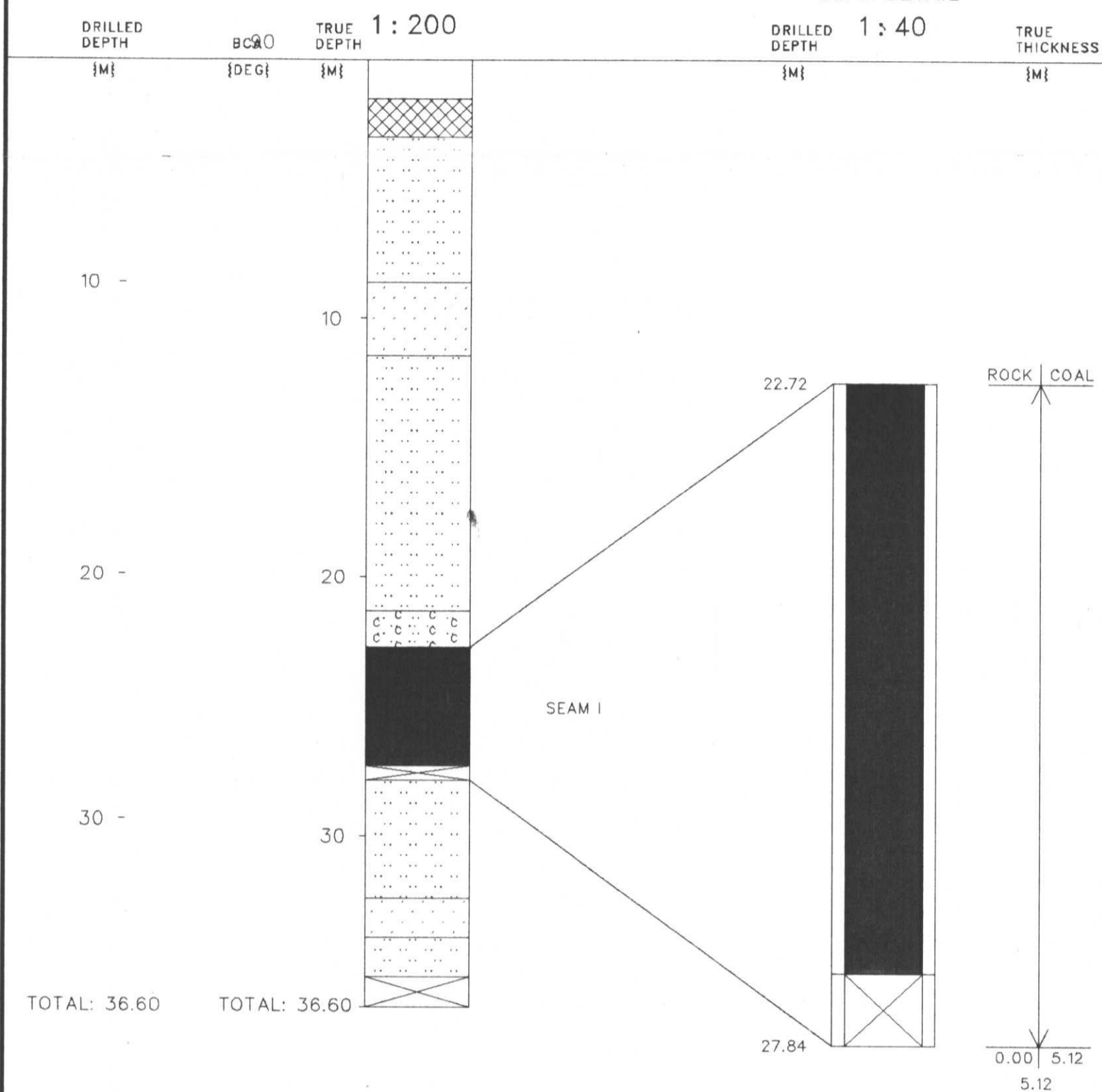


NORTHING: 6344283.0 N  
 EASTING: 505969.0 E

INCLINATION: 86.5°  
 BEARING: 333.6°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL



REMARKS :  
 THICKNESSES ARE APPARENT DUE TO LACK OF CORE

GR Mount Klappan 8401A  
**709**

GR Mount Klappan 84(3)A

# VERTICAL DEVIATION

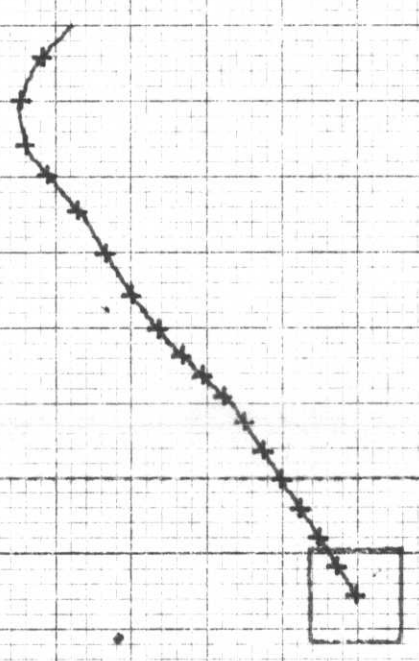
COMPU-LOG V8L1 DEVIATION  
DATA FROM : V8L2B

CLIENT : GULF CANADA RES. INC.  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-008-OPEN  
DATE OF LOG : 06-29-84  
PROBE : 9055A 0005

SCALE: .25 M/DIV  
MAG DECL: 29.5  
TRUE DEPTH: 35.6 M  
AZIMUTH: 333.6  
DISTANCE: 2.10 M

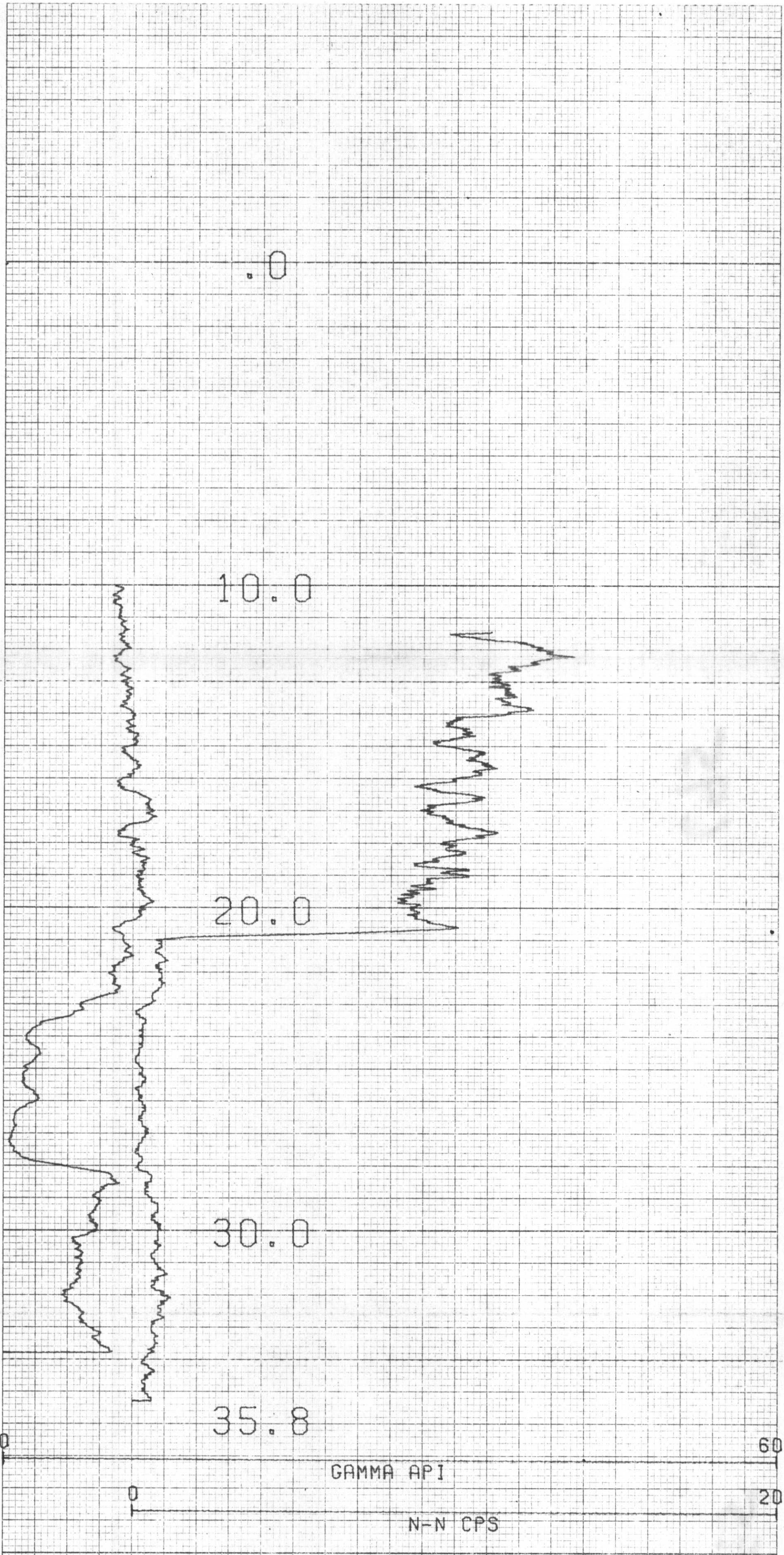
+ = 2.0 M INCR  
Δ = TOP OF ZONE  
◇ = BOTTOM OF ZONE

TRUE NORTH ↑



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COMPU-LDG V8L2 PLOT 06-29-84

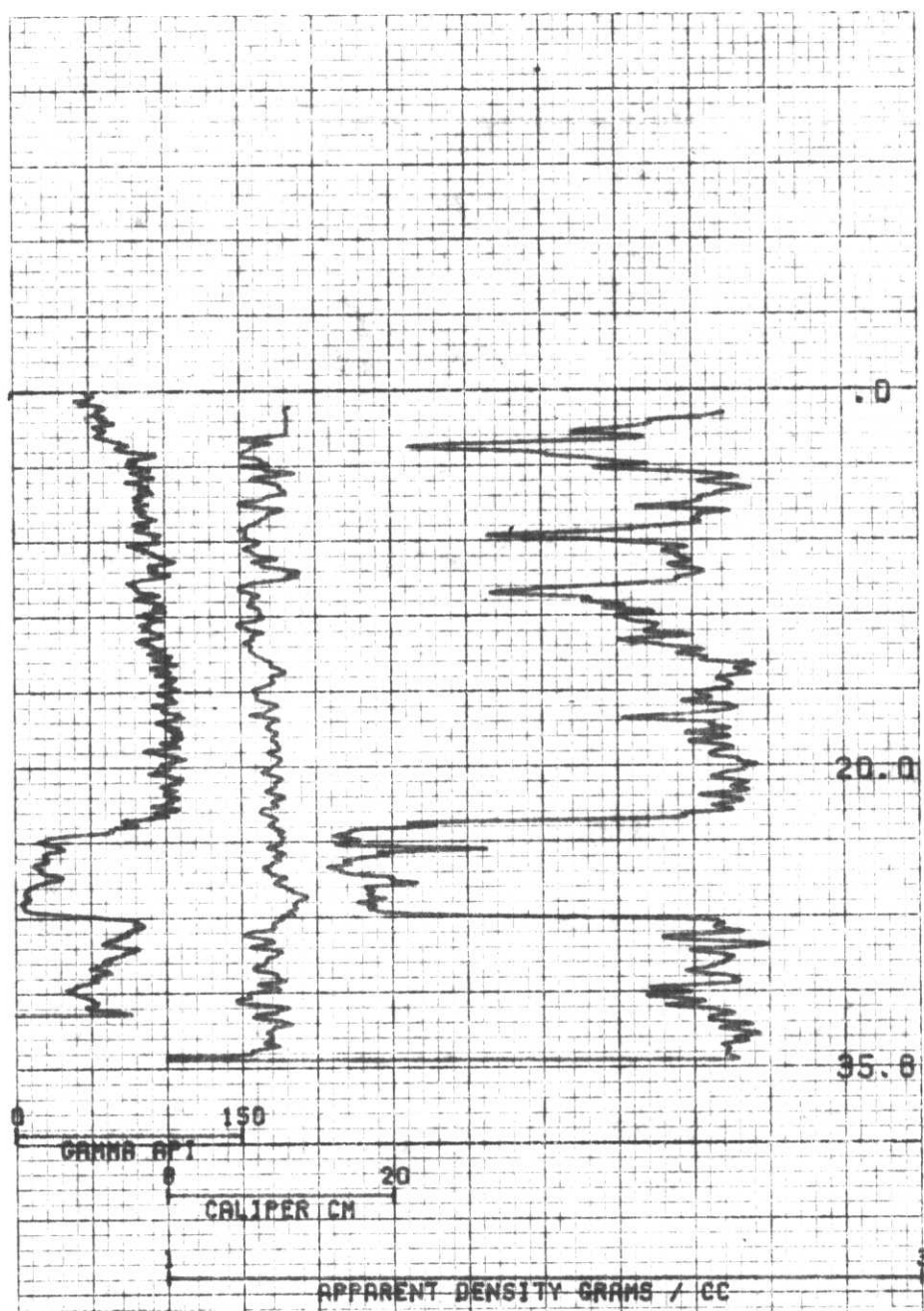
RDH-84-008-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 237  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL.#7 L1

**709**

GR Mount Klappan  
84(3)H





CONPU-LOG VER 2.0007 06-28-84

RDH-84-008-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER = 13.0  
 PROBE # 8030A - 110  
 SENSOR #4 CAL STD CPS = 6500  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA VOL 20 TRUCK # F011  
 D. SCHACK APPL. #705 LI

GR Mount Klappan 84(3)A

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# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

COMPANY

Gulf Canada Resources Inc.

BOREHOLE

RDH-84-008--Open

AREA

Mt. Klappan

ELEVATION

COUNTY

STATE

British Columbia

SECTION

TOWNSHIP

RANGE

## HOLE DATA

TOTAL DEPTH - DRILLER

36.6 m

BIT SIZE

12.1 cm

TOTAL DEPTH - LOGGER

35.8 m

CASING - TYPE & SIZE

TOTAL FOOTAGE LOGGED

35.8 m

CASING DEPTH

LOGGING SPEED

9.0m/min

BOREHOLE FLUID

Air & H<sub>2</sub>O

REFERENCE LEVEL

Ground

FLUID RESISTIVITY

PROBE NO.

9030A-418

SOFTWARE LEVEL

8.2\*A

SCALE SELECTION:

OPERATOR  
 CLIENT

Tape 1 TK 3

REMARKS:

EXPANDED 1:40

Smoothing 7,5,5

BOREHOLE

RDH-84-008

DATE

06-29-84

UNIT/OPERATOR

P811/D. Bomback

FIELD OFFICE

Calgary

## EQUIPMENT DATA

PROB. MODEL	9010	9030	9050/55	9080
PROBE DIAMETER	1.97"	2.0"	1.97"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	8.75" x 1.25"	1.125" x 4.5"	8.75" x 4.0"	5" x 3.0"
STD. K-FACTOR	1.50 x 10 <sup>-6</sup>	—	5.50 x 10 <sup>-6</sup>	1.62 x 10 <sup>-6</sup>
STD. DEADTIME	1.11 sec	—	1.10/1.1 sec	1.11 sec
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K-FACTOR x 10 <sup>-6</sup>	—	—	—	—
DEADTIME / sec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—
DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.0"
SOURCE TYPE	—	Cs <sup>137</sup>	—	Cs <sup>137</sup>
SOURCE NO.	—	VE-1-283	—	—
SOURCE STRENGTH	—	125 mCi	—	—
SOURCE SPACING	—	19 cm	—	—
Cal Std	—	6588	—	—
Cal Run	—	7127	—	—
DETECTOR TYPE	—	—	HP	—
DETECTOR SIZE	—	—	1.0" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—
SNGL. PT. RESISTANCE	1.40 x 2.51"	—	1.40 x 2.51"	1.10 x 2.51"
RESISTIVITY	—	6" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

NATURAL GAMMA

DENSITY

NEUTRON



# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE	DATE
RDH-84-008	06-29-84
UNIT/OPERATOR	FIELD OFFICE
P811/D. Bomback	Calgary

COMPANY	
Gulf Canada Resources Inc.	
BOREHOLE	
RDH-84-008-Open	
AREA	ELEVATION
Mt. Klappan	
COUNTY	STATE
	British Columbia
SECTION	TOWNSHIP
	RANGE

## EQUIPMENT DATA

PROBE MODEL	9010	9030	9050/55	9080
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	Nal	Nal	Nal	Nal
DETECTOR SIZE	.875" x 1.25"	1.125" x 4.5"	.875" x 4.0"	.5" x 3.0"
STD. K-FACTOR	1.50 x 10 <sup>-5</sup>	—	.550 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1 μsec	—	1.18 μsec	1 μsec
CALIB. MODEL LOC.	—	—	—	—
CALIB DATE	—	—	—	—
K-FACTOR x 10 <sup>-5</sup>	—	—	—	—
DEADTIME μsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—

DETECTOR TYPE	—	Nal	—	Nal
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.0"
SOURCE TYPE	—	Cs <sup>137</sup>	—	Cs <sup>137</sup>
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—

DETECTOR TYPE	—	—	He <sup>3</sup>	—
DETECTOR SIZE	—	—	1.0" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	71-1-264	—
SOURCE STRENGTH	—	—	1 Ci	—
SOURCE SPACING	—	—	45.7 cm	—
Cal Std	—	—	152	—
Cal Run	—	—	237	—

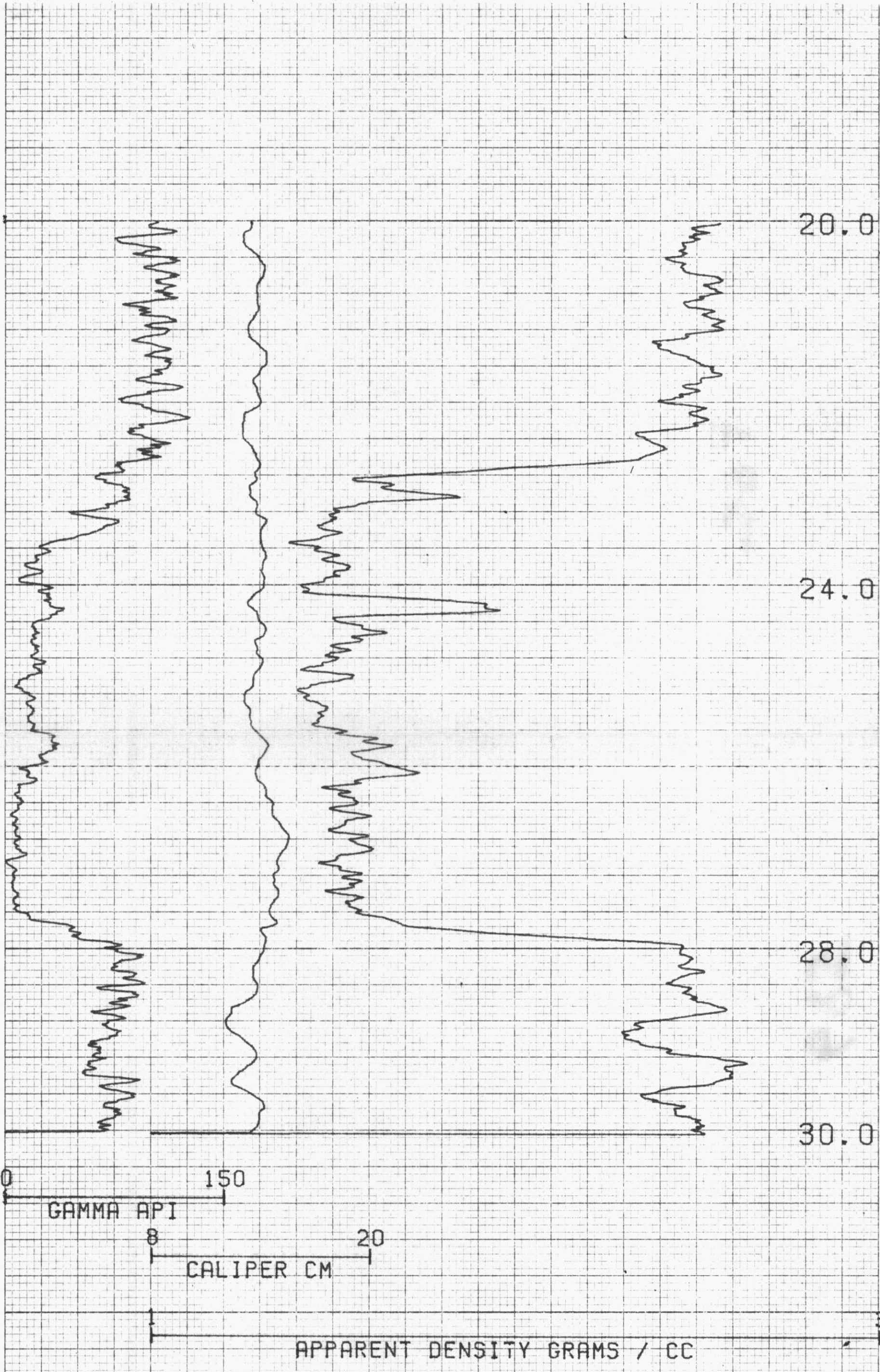
SNGL. PT RESISTANCE	1.4"D x 2.5'L	—	1.4"D x 2.5'L	1.1"D x 2.5'L
RESISTIVITY	—	8" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

## HOLE DATA

TOTAL DEPTH — DRILLER	: 36.6 m	BIT SIZE	: 12.1cm
TOTAL DEPTH — LOGGER	: 35.8 m	CASING — TYPE & SIZE	: -----
TOTAL FOOTAGE LOGGED	: 35.8 m	CASING DEPTH	: -----
LOGGING SPEED	: 9.0m/min	BOREHOLE FLUID	: Air & H2o
REFERENCE LEVEL	: Ground	FLUID RESISTIVITY	: ----- @ °F
PROBE NO.	: 9055A-005	SOFTWARE LEVEL	: 8.2*A
		SCALE SELECTION	: <input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			: Tape 1 TK 4

REMARKS:





COMPU-LOG V8L2 PLOT 06-29-84

RDH-84-008-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

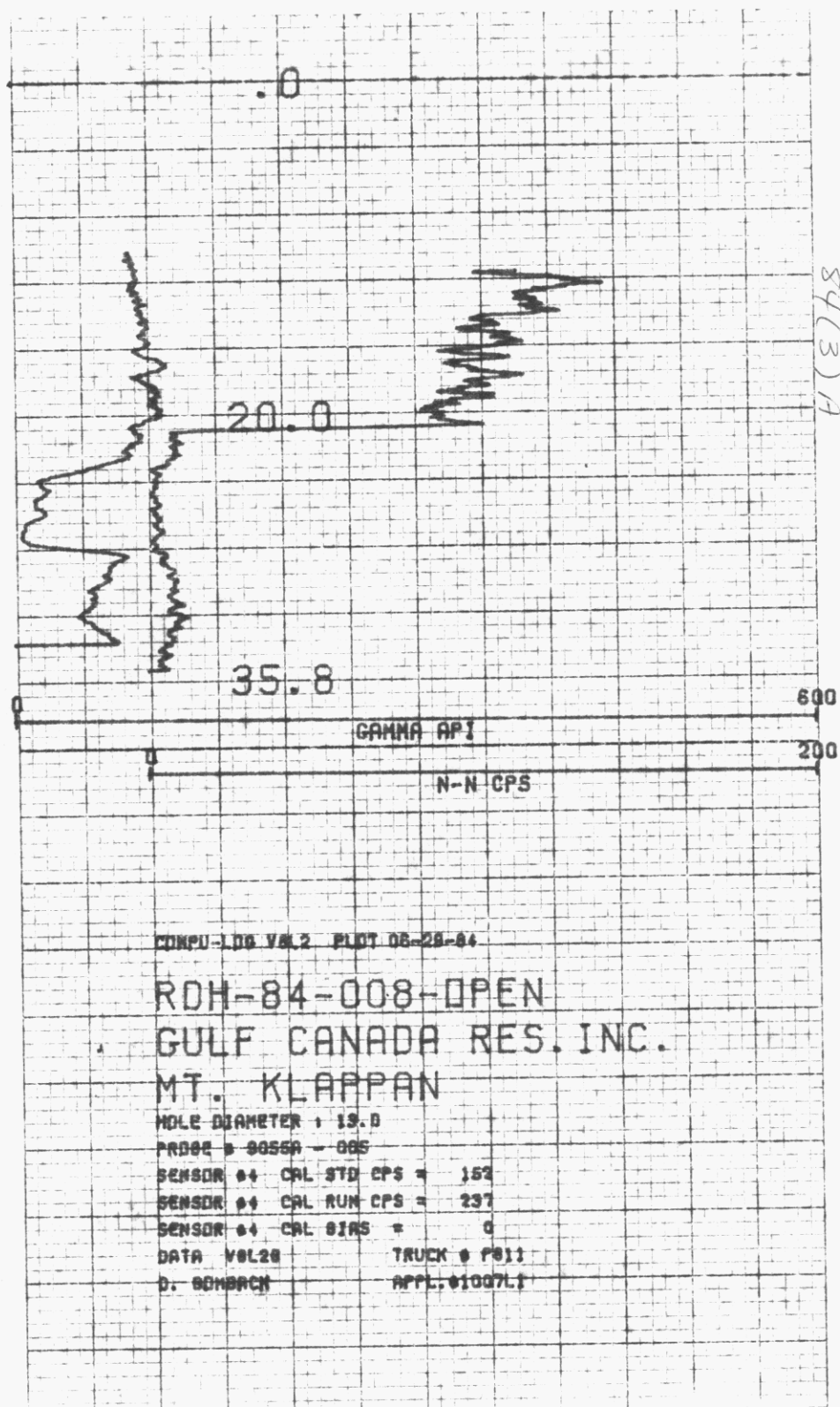
HOLE DIAMETER : 13.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # PB11  
 D. BOMBACK APPL.#2703L1

SMOOTHING 7.5,5

**709**

GR-Mount Klappan 84(3)A

COPY EXPANDED SCALE  
CENTURY GEOPHYSICAL C



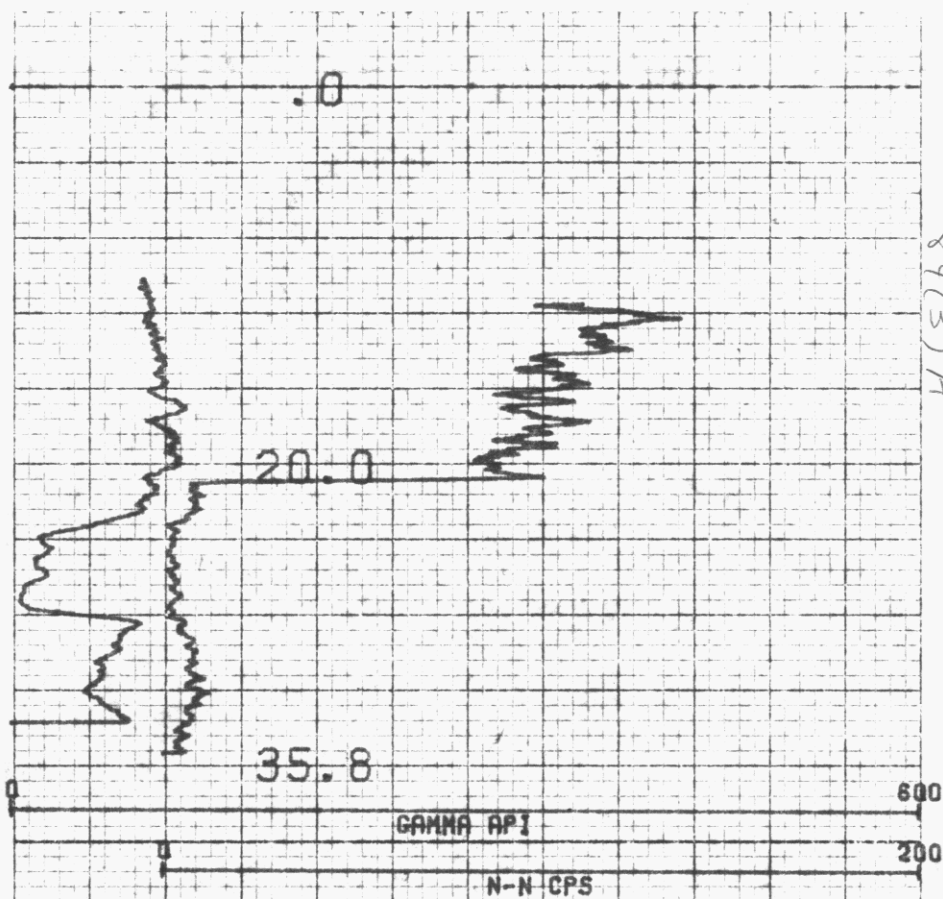
GR-Mount Klappan  
 84(3)A

CENTURY GEOPHYSICAL CORP. PART NO. 780

709 ~~88~~

COPY  
 REDUCED SCALE





GR Mount Klappan  
84(3) A

CENTURY GEOPHYSICAL CORP. PART NO. 78

COMPU-LOG VOL 2 PLOT 06-28-84

RDH-84-008-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

WOLE DIAMETER = 13.0

PROBE # 9055A - 005

SENSOR #4 CAL STD CPS = 152

SENSOR #4 CAL RUN CPS = 237

SENSOR #4 CAL BIAS = 0

DATA VOL 28

TRUCK # P811

D. SCHMIDT

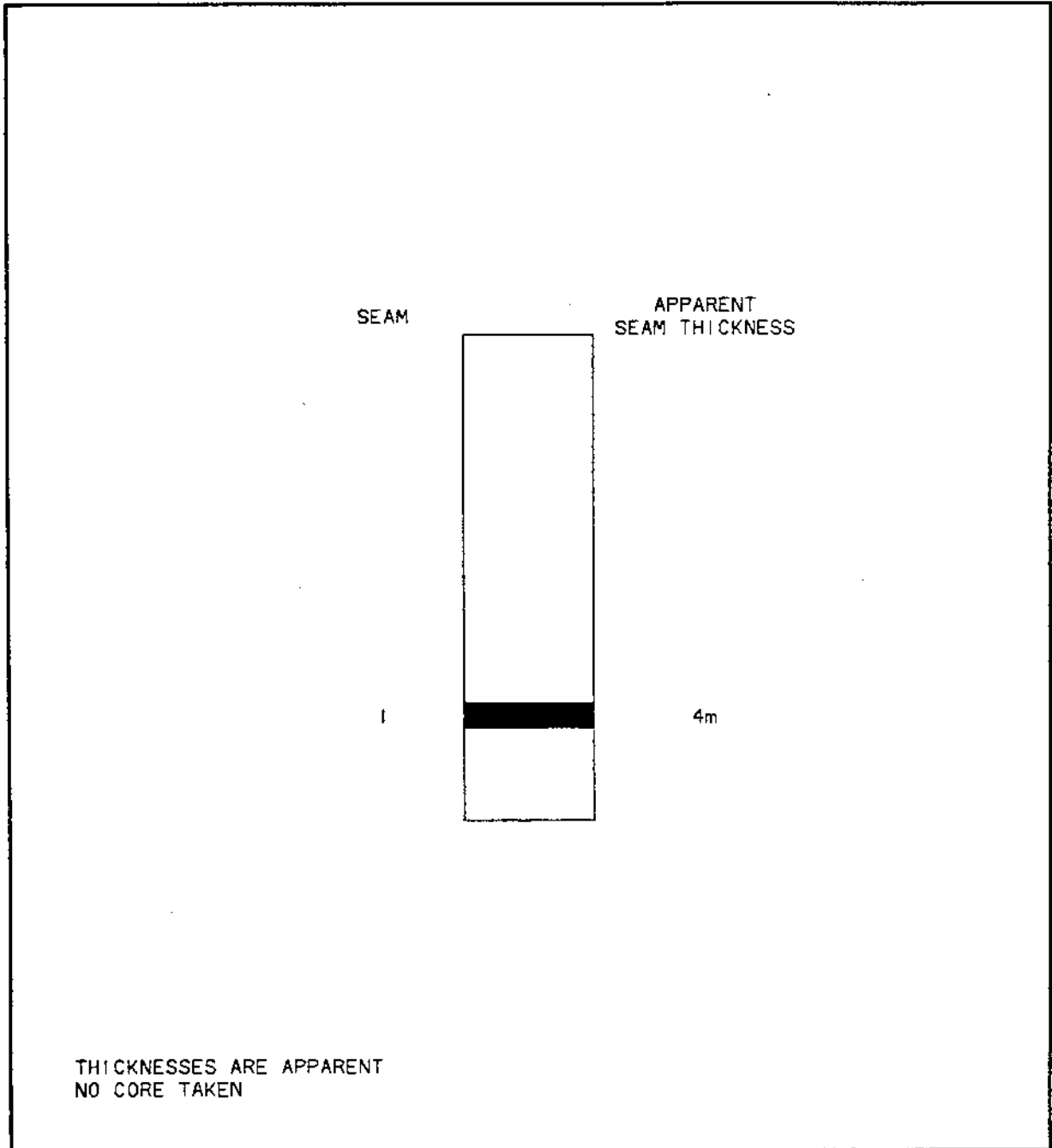
APPL. #10071

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COPY  
REDUCED SCALE


**KPNLRRDH 84009**

MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84009



SCALE 1:1000

GULF CANADA RESOURCES INC.  
14/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84009

DATE - 12/02/84

- HISTORY -

START DATE - 06/30/84  
 END DATE - 07/01/84

CONTRACTOR - DENHAM DRILLING  
 GEOLOGIST - K. JENNER

OPERATOR - GCRI  
 SURVEYOR -

REMARKS - LOGGED TO 72.4M. COAL INTERVAL: 56.88M TO 60.80M (3  
 .92m): 1 SEAM OVERBURDEN 2.44m; ICE MIXED WITH CHI  
 P SAMPLES AT 21m AND 36m. CORED 9.14m TO 12.19m. B  
 CA 81 DEGREES AND 87 ? DEGREES. DESCRIPTIVE LOG IN  
 t thk adjusted to coal tops on geophysical logs.  
 THICKNESSES ARE APPARENT.

- LOCATION -

PROVINCE - BC  
 ELEVATION - 1842.40

ZONE - 9  
 NORTHING - 6344198.00  
 EASTING - 505888.00

LICENCE/LEASE NUMBER - 7152

LATITUDE - 571434  
 LONGITUDE - 1285409

- ORIENTATION -

LENGTH - 76.20

INCLINATION - 82.8  
 AZIMUTH - 306.3

HOLE SIZE - 120.7

CEMENT - N  
 PLUG - N  
 PIEZ -

CASING DEPTH (M) - 3.05  
 AQUIFER DEPTHS (M) - 0.00  
 0.00  
 LOST CIRC. DEPTHS (M) - 0.00  
 0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE



**KPNLRRDH 84009**

**DESCRIPTIVE LOG**

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	1.42	1.42			SILTSTONE	M.GY.LAM SOME ORGANIC MATTER
90	1.42	2.84	1.42			SILTSTONE	M.GY.LAM
90	2.84	4.26	1.42			SILTSTONE	M.GY SOME IRON STAINING
90	4.26	5.68	1.42			SILTSTONE	M.GY
90	5.68	7.10	1.42			SILTSTONE	M.GY SOME IRON STAINING
90	7.10	8.52	1.42			SILTSTONE	M.GY
90	8.52	11.44	2.92			ROCK LOSS	NO CUTTING RECOVERED.
90	11.44	12.86	1.42			SILTSTONE	M.GY
90	12.86	14.28	1.42			SHALE	M.BLK FISSILE
90	14.28	15.70	1.42			SHALE	M.BLK FISSILE

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	15.70	17.12	1.42			SHALE	CARB.M.BLK SOME COAL
90	17.12	18.54	1.42			SILTSTONE	M.BN ALSO SOME GRAY SHALE
90	18.54	19.96	1.42			SILTSTONE	LT.GY
90	19.96	21.38	1.42			SILTSTONE	PYR.M.GY SOME PYRITE
90	21.38	22.80	1.42			SILTSTONE	M.GY
90	22.80	24.22	1.42			SILTSTONE	PYR.M.GY SOME PYRITE LAMINATIONS
90	24.22	25.64	1.42			SILTSTONE	M.BN.LAM SOME GRAY SILTSTONE.
90	25.64	27.06	1.42			SILTSTONE	M.GY TRACE OF COAL
90	27.06	28.48	1.42			SILTSTONE	M.GY
90	28.48	29.90	1.42			SILTSTONE	M.GY

\* DENOTES MEASURED BCA

FORM 4001

2

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	29.90	31.32	1.42			SILTSTONE	M.GY
	31.32	32.74	1.42			SILTSTONE	DK.GY
	32.74	34.16	1.42			SILTSTONE	LT.BN IRON STAINED.
	34.16	35.58	1.42			SILTSTONE	M.BN ALSO SOME BROWN GRITTY; POORLY CONSOLIDATED MATERIAL.
	35.58	37.00	1.42			SILTSTONE	LT.GY
	37.00	38.42	1.42			SILTSTONE	LT.GY ALSO POORLY CONSOLIDATED CLAY.
	38.42	39.84	1.42			CLAYSTONE	LT.BN POORLY CONSOLIDATED; ALSO SHALE FRAGMENTS.
	39.84	41.26	1.42			CLAYSTONE	LT.BN POORLY CONSOLIDATED; ALSO SHALE FRAGMENTS.

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	41.26	42.68	1.42			CLAYSTONE	LT.BN ALSO GRAY SILTSTONE FRAGMENTS.
	42.68	44.10	1.42			CLAYSTONE	LT.BN ALSO GRAY SILTSTONE FRAGMENTS.
	44.10	45.52	1.42			SILTSTONE	CLYY.M.GY SOME CLAY FRAGMENTS.
	45.52	46.94	1.42			SILTSTONE	CLYY.M.GY SOME CLAY FRAGMENTS.
	46.94	48.36	1.42			SILTSTONE	CLYY.M.GY SOME CLAY FRAGMENTS.
	48.36	49.78	1.42			SILTSTONE	CLYY.M.GY SOME CLAY FRAGMENTS.
	49.78	51.20	1.42			SILTSTONE	DK.GY
	51.20	52.62	1.42			SILTSTONE	CLYY.DK.GY SOME CLAY FRAGMENTS.
	52.62	54.04	1.42			SILTSTONE	DK.GY
	54.04	55.46	1.42			SILTSTONE	DK.GY

\* DENOTES MEASURED BCA

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4  
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84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	55.46	56.88	1.42			SILTSTONE	CARB. DK. GY SOME COAL FRAGMENTS.
90	56.88	58.40	1.52		I	COAL	C-2. BLK
90	58.40	59.92	1.52		I	COAL	C-2. BLK
90	59.92	60.80	0.88		I	COAL	C-2. BLK ALSO SILTSTONE FRAGMENTS.
90	60.80	62.96	2.16			SILTSTONE	CARB. DK. GY SOME COAL FRAGMENTS.
90	62.96	64.48	1.52			SILTSTONE	DK. GY SOME IRON STAINING.
90	64.48	66.00	1.52			SILTSTONE	CARB. M. GY SOME COAL FRAGMENTS.
90	66.00	67.52	1.52			SILTSTONE	CARB. DK. GY SOME COARSE SILTSTONE COAL FRAGMENTS.
90	67.52	69.04	1.52			SILTSTONE	DK. GY

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	69.04	70.56	1.52			SILTSTONE	LT. GY SPECKLED APPEARANCES. SOME IRON STAINING.
90	70.56	72.08	1.52			SILTSTONE	LT. GY SPECKLED APPEARANCES. SOME IRON STAINING.
90	72.08	76.20	4.12			ROCK LOSS	

\* DENOTES MEASURED BCA  
NEWPAGE



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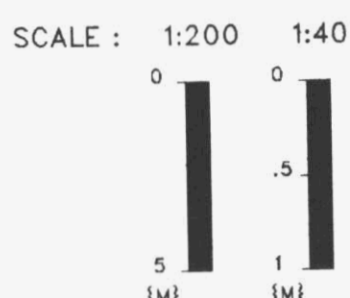
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84009

GEOLOGIST : K. JENNER

DATE : DEC 05/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

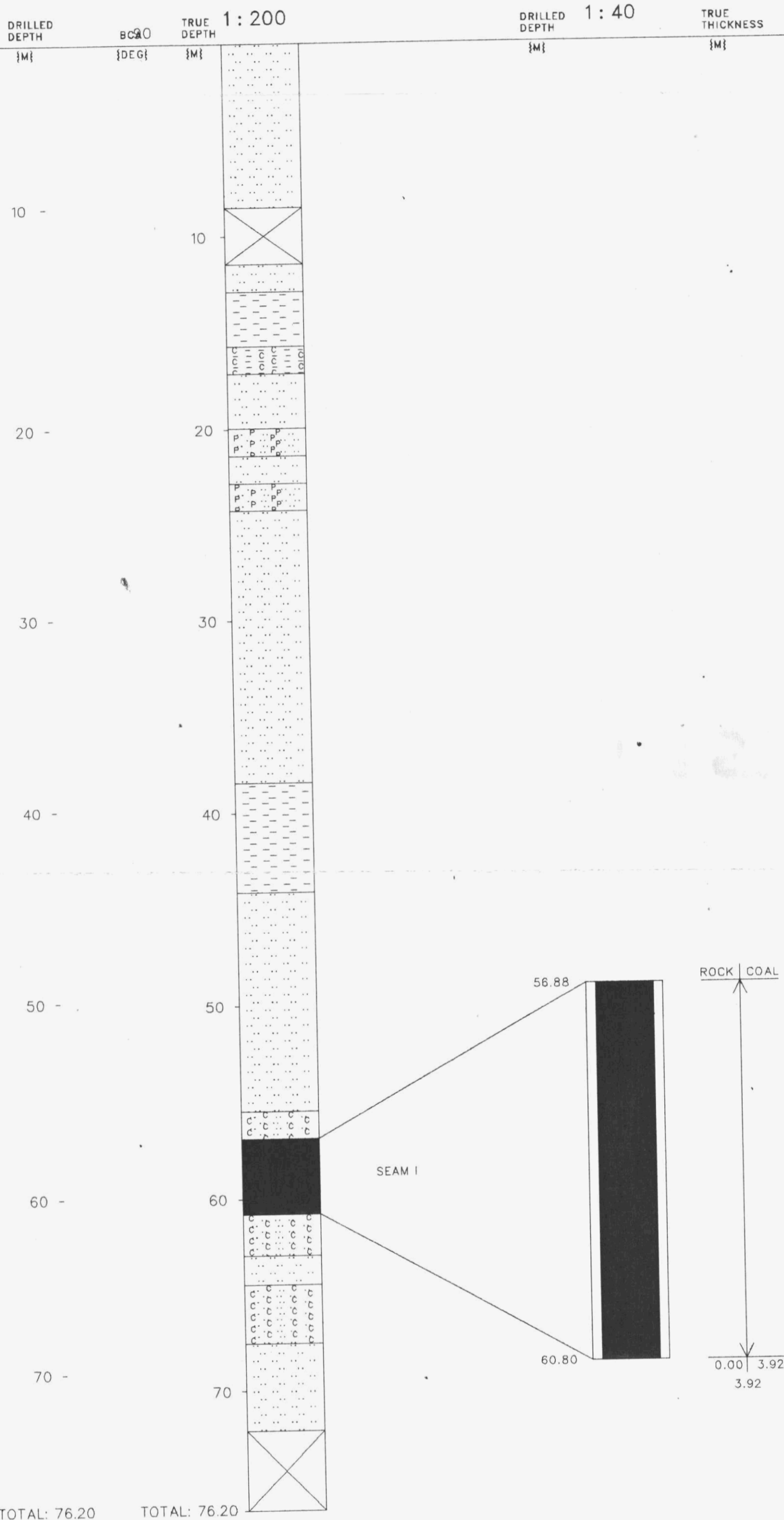


NORTHING: 6344198.0 N  
 EASTING: 505888.0 E

INCLINATION: 82.8°  
 BEARING: 306.3°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

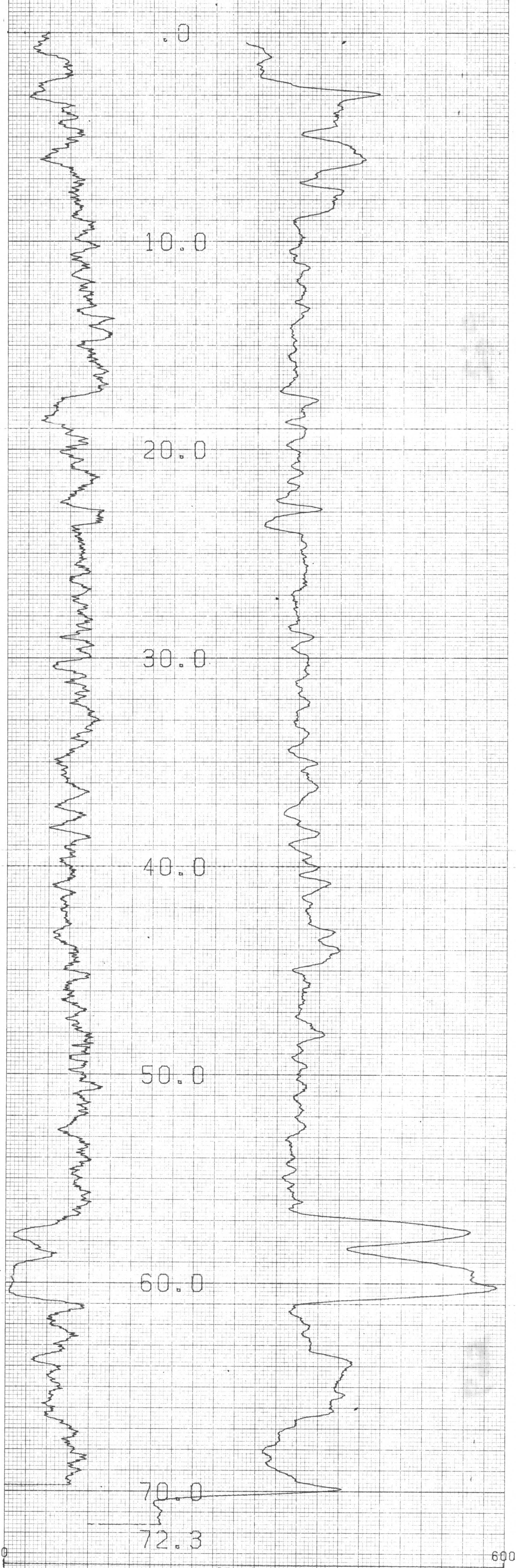
SEAM DETAIL



REMARKS :

THICKNESSES ARE APPARENT DUE TO LACK OF CORE





COMPU-LOG V8L2 PLOT 06-30-84

RDH-84-009-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

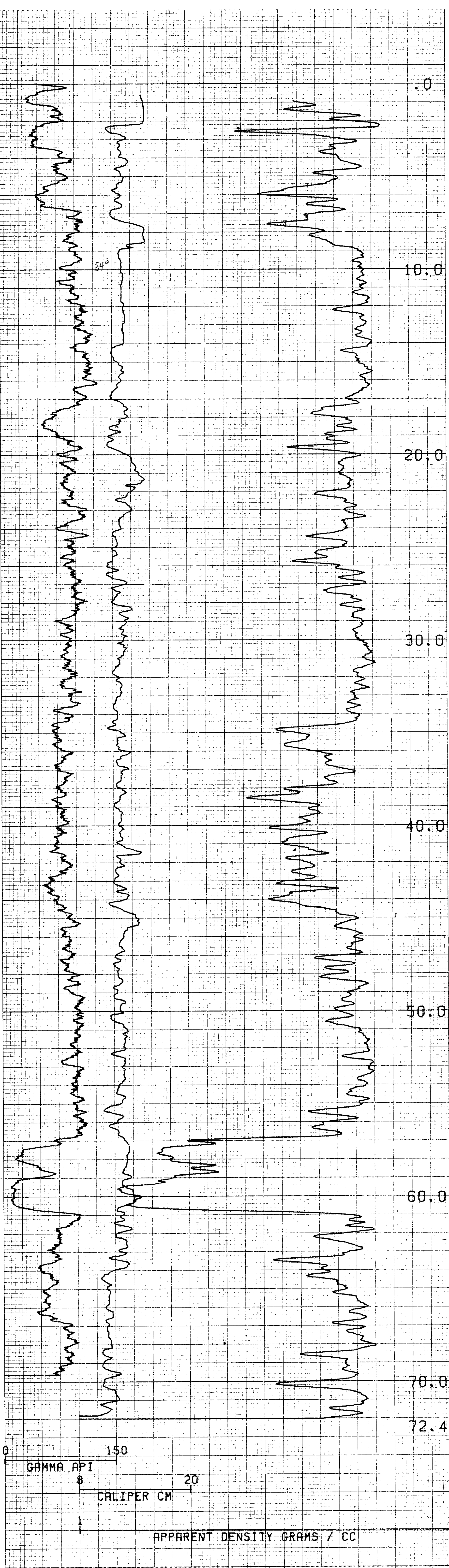
HOLE DIAMETER : 12.1  
 PROBE # 9067 530  
 SENSOR #2 CAL STD CPS = 165  
 SENSOR #2 CAL RUN CPS = 250  
 SENSOR #2 CAL BIAS = 0  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. #1007L1

GR Mount Klappan 8/13/79

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709



GR Mount Klappan 84(3)2



0 150  
 GAMMA API  
 8 20  
 CALIPER CM

APPARENT DENSITY GRAMS / CC

COMPU-LOG V8L2 PLAT 06-30-84

RDH-84-009-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER = 12.1  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 D. BDMBACK APPL. #3703L1

709

GR Mount Klappan 84(3)A

# VERTICAL DEVIATION

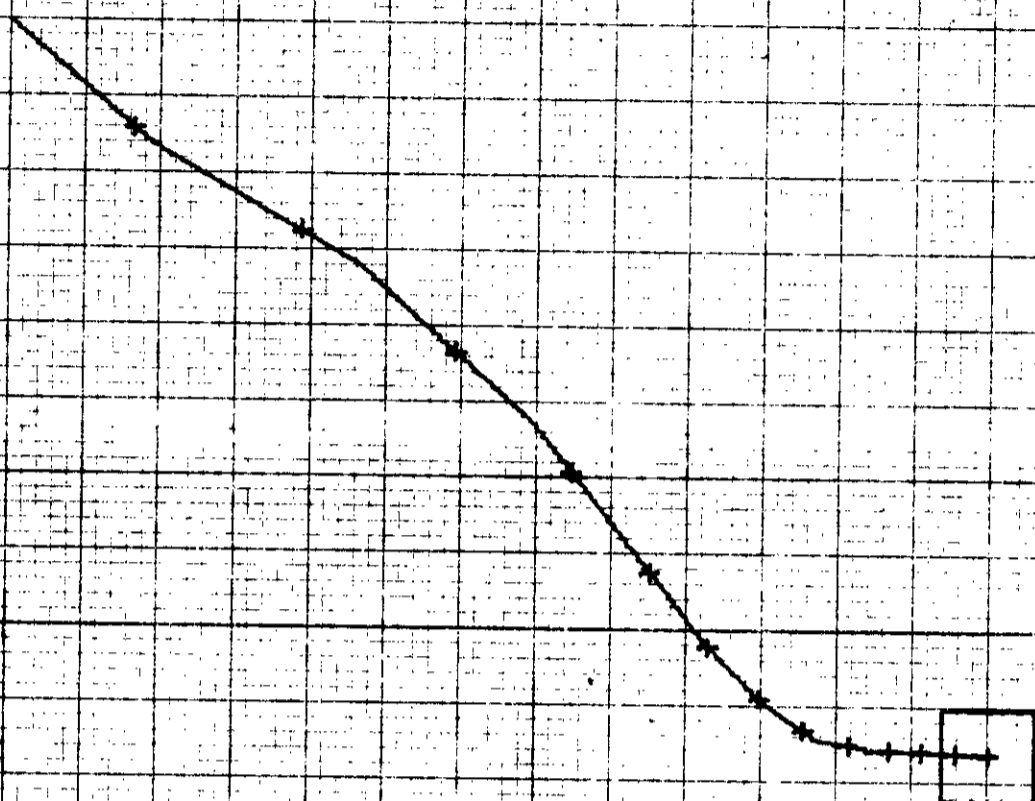
COMPU-LOG V8L1 DEVIATION  
DATA FROM : V8L2B

CLIENT : GULF CANADA RES. INC.  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-009-OPEN  
DATE OF LOG : 86-30-84  
PROBE : 9055A 0005

SCALE: .50 M/DIV  
MAG DECL: 29.5  
TRUE DEPTH: 63.6 M  
AZIMUTH: 306.3  
DISTANCE: 8.06 M

+ = 5.0 M INCR  
△ = TOP OF ZONE  
◇ = BOTTOM OF ZONE

TRUE NORTH ↑



**709**  
**RF**





# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE  
RDH-84-009  
UNIT/OPERATOR  
P811/D. Bomback

DATE  
06-30-84  
FIELD OFFICE  
Calgary

COMPANY  
Gulf Canada Resources Inc.

BOREHOLE  
RDH-84-009-Open

AREA  
Mt. Klappan

ELEVATION  
STATE  
British Columbia

COUNTY

SECTION TOWNSHIP RANGE

## EQUIPMENT DATA

PROBE MODEL	9010	9030	9050/55	9060
PROBE DIAMETER	1.87"	2.0"	1.97"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	8.75" x 1.25"	1.25" x 4.5"	8.75" x 4.0"	5" x 3.0"
STD. K-FACTOR	1.50 x 10 <sup>-3</sup>		550 x 10 <sup>-4</sup>	1.62 x 10 <sup>-4</sup>
STD. DEADTIME	1.4 sec		1.18 sec	1.2 sec
CALIB. MODEL LOC. #				
CALIB. DATE				
K-FACTOR x 10 <sup>-3</sup>				
DEADTIME μsec				
TEST READING				
WATER FACTOR				
CASING FACTOR				

NATURAL GAMMA				
DETECTOR TYPE				
DETECTOR SIZE		5" x 1.5"		5" x 3"
SOURCE TYPE		5"		5"
SOURCE NO.		VL-1-283		
SOURCE STRENGTH		125mCi		
SOURCE SPACING		19" cm		
Cal Std		6588		
Cal Run		7127		

DENSITY				
DETECTOR TYPE			He <sup>3</sup>	
DETECTOR SIZE			1.0" x 0.5"	
SOURCE TYPE			AmBe	
SOURCE NO.				
SOURCE STRENGTH				
SOURCE SPACING				

NEUTRON				
SNOW PT RESISTANCE	1.0" x 2.5"	1.0" x 2.5"	1.0" x 2.5"	1.0" x 2.5"
RESISTIVITY		5" FOCUSED		
SELF-POTENTIAL	YES		YES	YES
TEMPERATURE			YES	
DEVIATION (%)			NO / YES	
CALIPER		YES		

## HOLE DATA

TOTAL DEPTH - DRILLER	70.1 m	BIT SIZE	12.1 cm
TOTAL DEPTH - LOGGER	72.4 m	CASING - TYPE & SIZE	steel
TOTAL FOOTAGE LOGGED	72.4 m	CASING DEPTH	102.7 m
LOGGING SPEED	9.0 m/min	BOREHOLE FLUID	Air & H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	
PROBE NO.	9030A-418	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			Tape 2 TK 1

REMARKS:  
EXPANDED 1:40 Smoothing 7, 5, 5





# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE RDH -84-009	DATE 06-30-84
UNIT/OPERATOR P811/D. Bomback	FIELD OFFICE Calgary

COMPANY Gulf Canada Resources Inc.	
BOREHOLE RDH-84-009-- Open	
AREA Mt. Klappan	ELEVATION
COUNTY	STATE British Columbia
SECTION	TOWNSHIP
	RANGE

## EQUIPMENT DATA

PROBE MODEL	9010	9030	9050/55	9060
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	Nal	Nal	Nal	Nal
DETECTOR SIZE	.875" x 1.25"	1.125" x 4.5"	.875" x 4.0"	.5" x 3.0"
STD. K-FACTOR	1.58 x 10 <sup>-5</sup>	—	.558 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1.11 sec	—	1.18 μsec	1.11 sec
CALIB. MODEL LOC.	—	—	—	—
CALIB DATE	—	—	—	—
K-FACTOR x 10 <sup>-5</sup>	—	—	—	—
DEADTIME μsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—

DETECTOR TYPE	—	Nal	—	Nal
DETECTOR SIZE	—	.5" x 1.5"	—	.5" x 3.0"
SOURCE TYPE	—	Ce <sup>137</sup>	—	Ce <sup>137</sup>
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—

DETECTOR TYPE	—	—	He <sup>3</sup>	—
DETECTOR SIZE	—	—	1.0" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—

SNGL PT RESISTANCE	1.4"D x 2.5'L	—	1.4"D x 2.5'L	1.1"D x 2.5'L
RESISTIVITY	—	6" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

## HOLE DATA

TOTAL DEPTH — DRILLER : 70.1 m	BIT SIZE : 12.1 cm
TOTAL DEPTH — LOGGER : 64.5 m	CASING — TYPE & SIZE : steel
TOTAL FOOTAGE LOGGED : 64.5 m	CASING DEPTH : 2.7 m
LOGGING SPEED : 18m/min	BOREHOLE FLUID : Air & H2o
REFERENCE LEVEL : Ground	FLUID RESISTIVITY : ----- @ °F:
PROBE NO. : 9055A-005	SOFTWARE LEVEL : 8.2*A
	SCALE SELECTION : <input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
	Tape 2 TK 2

REMARKS:

DEVIATION ONLY



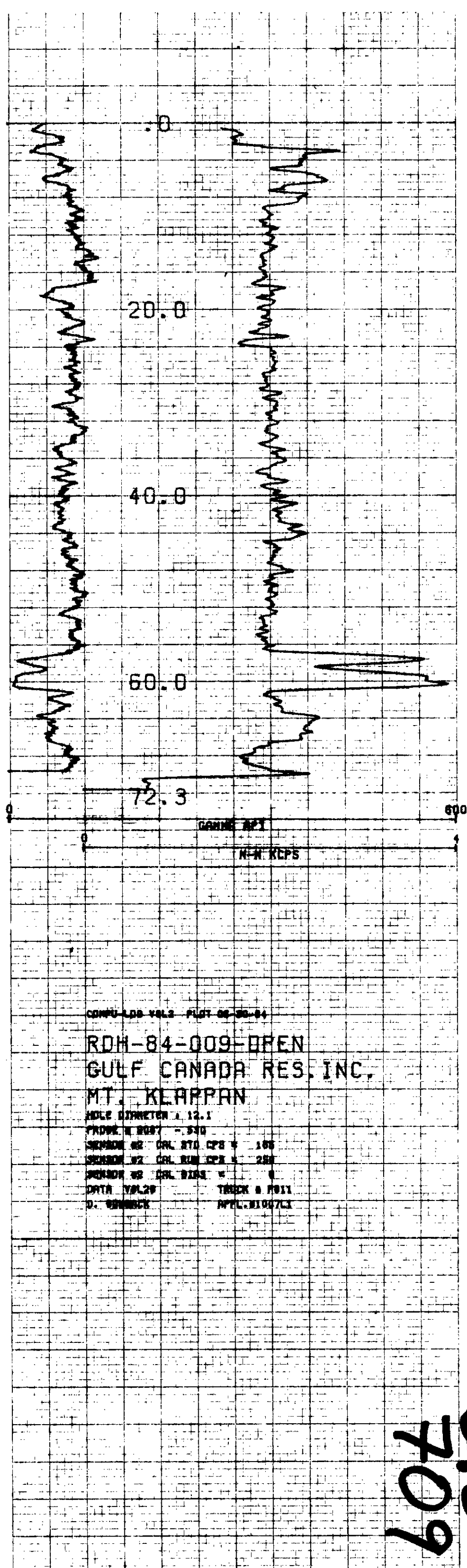
COPY REDUCED  
SCALE

ART NO. 786-0038

16

CENTURY GEOPHYSICAL CORP. PART NO. 786-0038

16



*GR Mount Klappan 84(3)1*

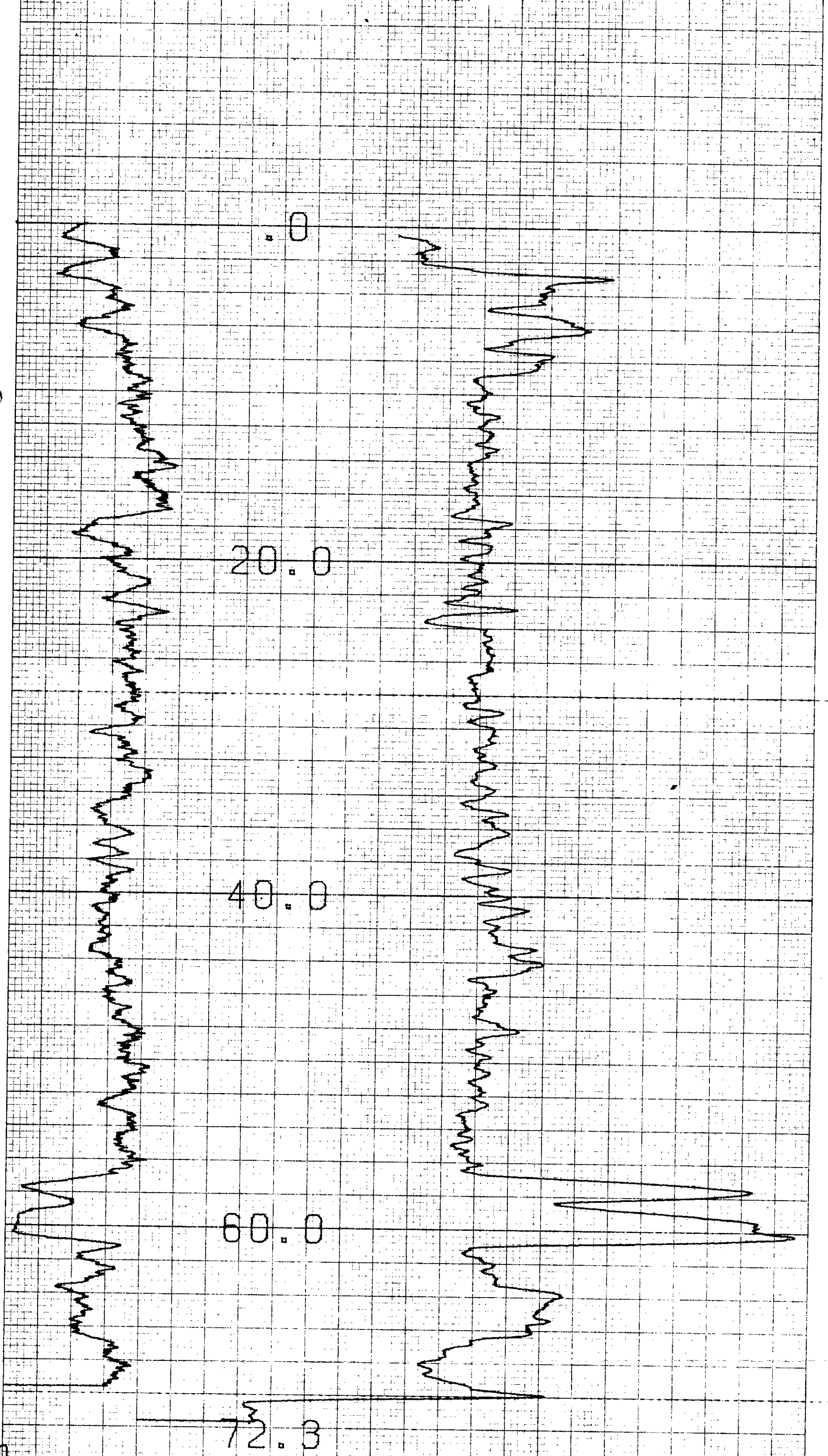
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GR Mount Klappan 84(3)H

COPY REDUCED SCALE

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GAMMA API

N-N KCPS

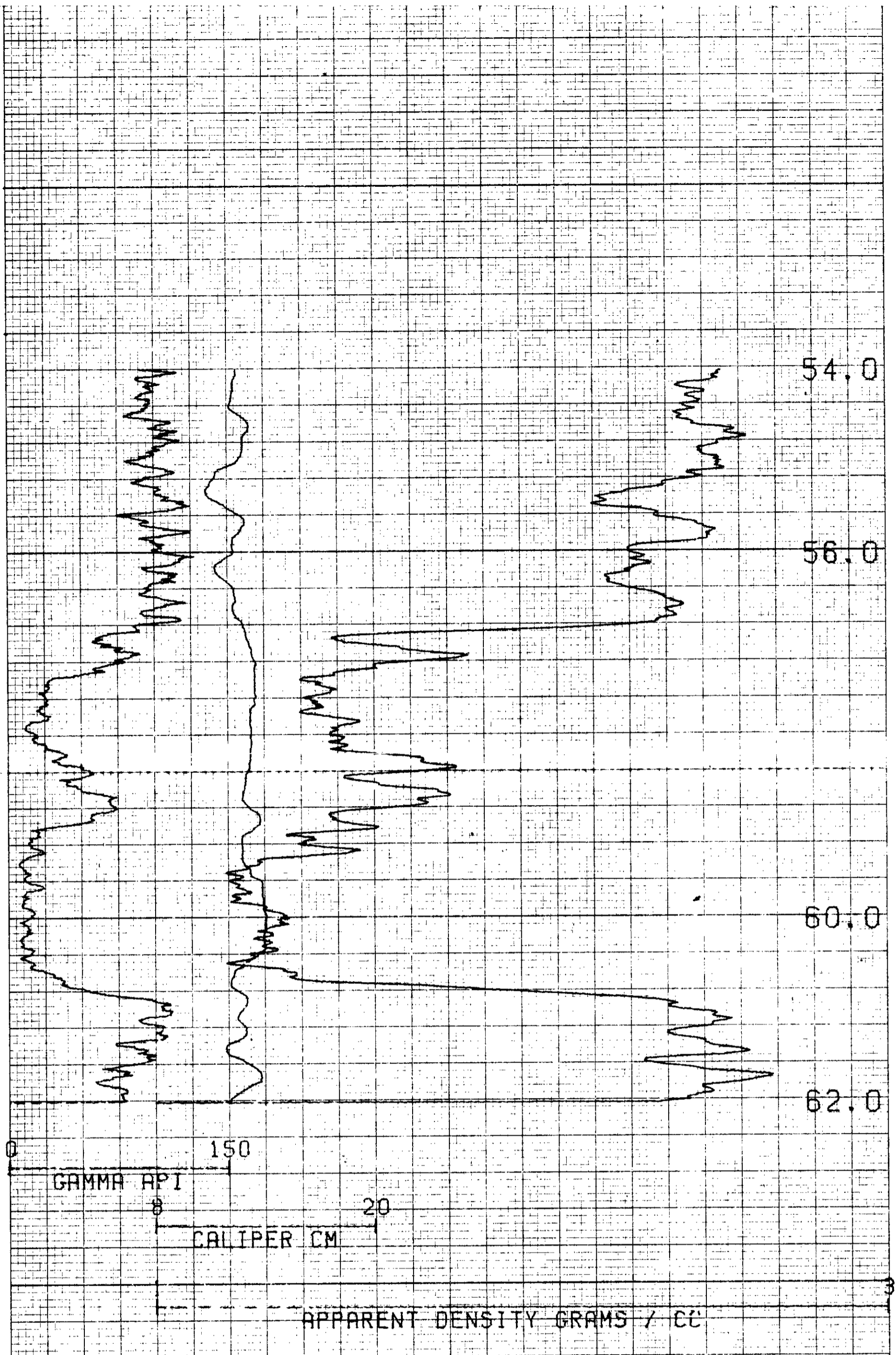
COMPU-LOG V8L2 PLOT 06-30-84

RDH-84-009-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9067 - 530  
 SENSOR #2 CAL STD CPS = 165  
 SENSOR #2 EAL RUN CPS = 250  
 SENSOR #2 CAL BIAS = 0  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. #1007L1

GR-Mount Klappan 84(3)A

COPY EXPANDED SCALE



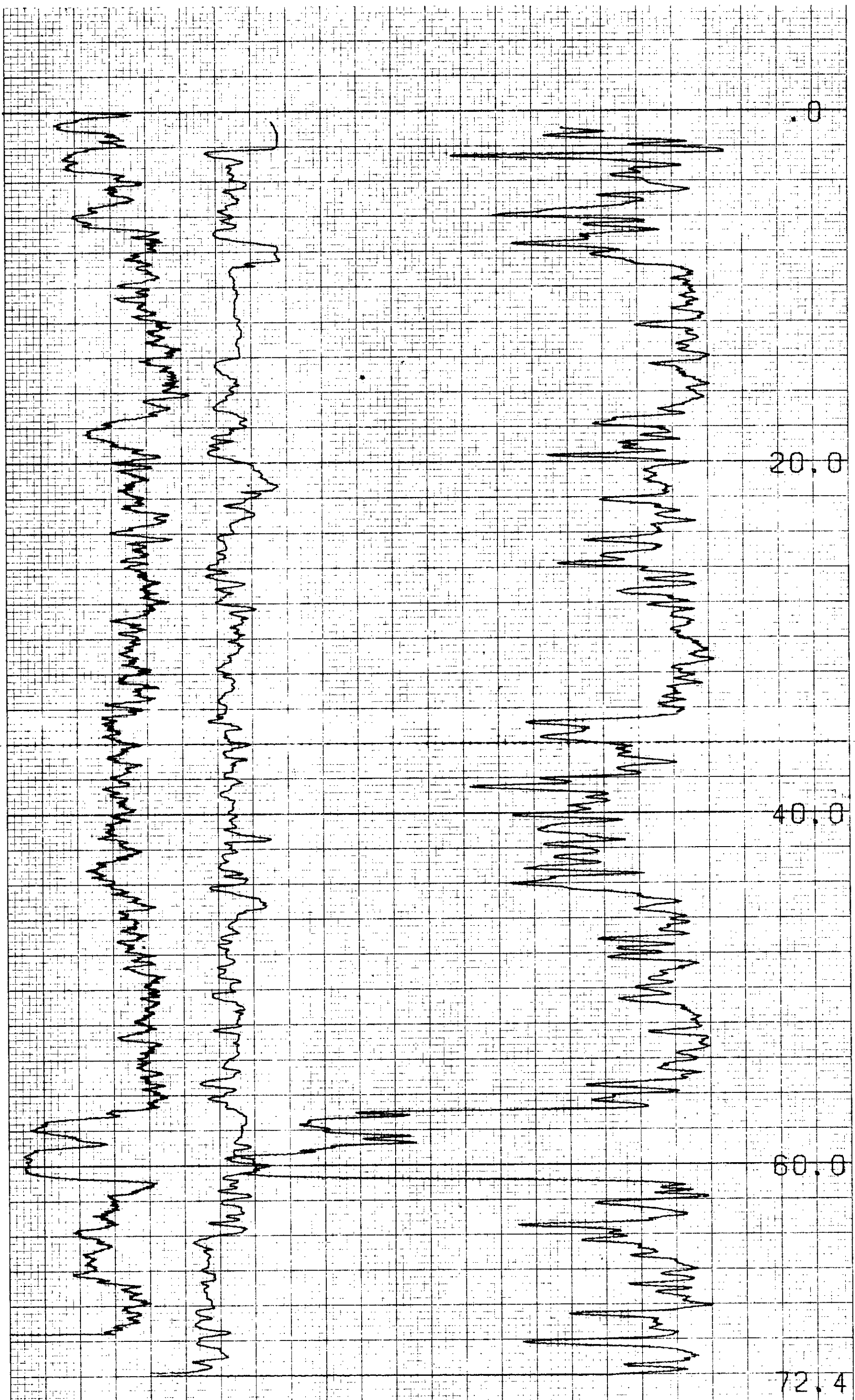
COMPU-LOG V8L2 PLOT 06-30-84

RDH-84-009-UPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9030A - 410  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # PB11  
 D. BOMBACK APPL. #3703L1

SMOOTHING 7,5,5

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GAMMA API  
 CALIPER CM  
 APPARENT DENSITY GRAMS / CC

COMPU-LOG V8L2 PLOT 06-30-84

RDH-84-009-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9030A 410  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24

DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. #3703L1

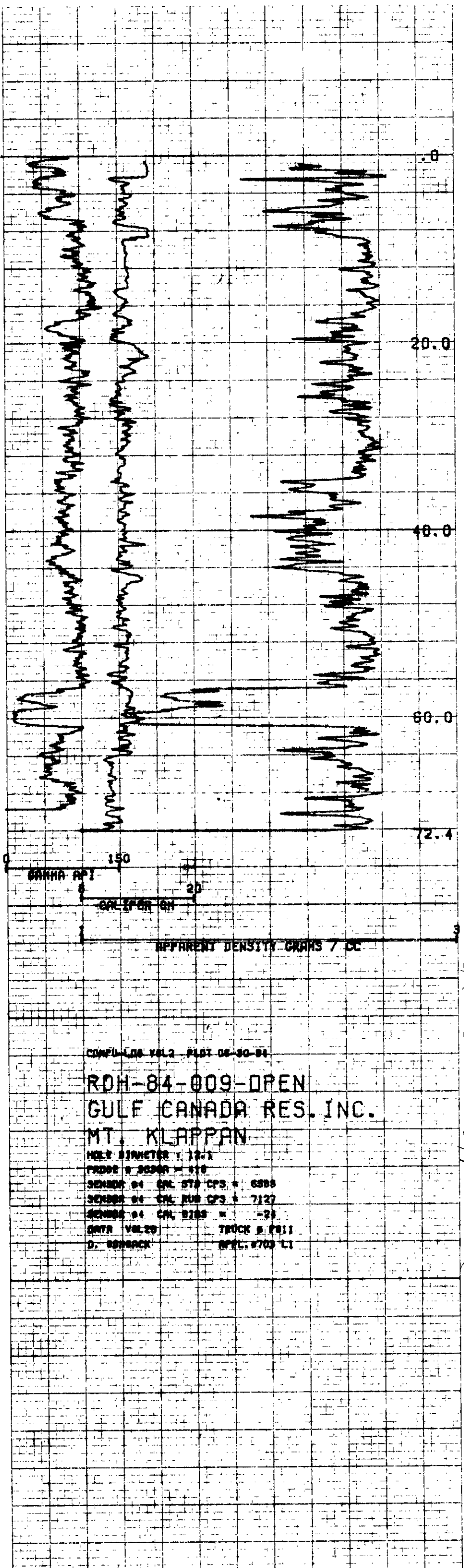
**675**  
**709**



COPY  
REDUCED SCALE

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GR-Masure Klappan 54(37)



**KPNLRRDH 84010**

MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84010



HOLE ABANDONED  
NO GEOPHYSICAL LOG RUN

SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84





**KPNLRRDH 84010**

**DESCRIPTIVE LOG**



PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.52	1.52			CLAYSTONE	LT-M.BN TOPSOIL; PLANT ROOT PRESENT. MUD POORLY CONSOLIDATED.
	1.52	3.04	1.52			CLAYSTONE	SLTY.M.BN MODERATELY CONSOLIDATED CLAYSTONE; CONTAINS SOME VERY FINE GRAINED SANDSTONE CHIPS SIMILAR TO TOPSOIL
	3.04	4.56	1.52			CLAYSTONE	SLTY.LT-M.GY MODERATELY CONSOLIDATED CLAYSTONE. SOAPY FEELING WHEN WET.
	4.56	6.08	1.52			CLAYSTONE	M.GY SOME WEATHERING AND IRON STAINING. MODERATELY WELL CONSOLIDATED.
	6.08	7.60	1.52			CLAYSTONE	M-DK.GY MUD; VERY MUCKY WHEN WET. CONTAINS MINOR AMOUNTS OF FIBER OR ROOTS.
	7.60	9.12	1.52			ROCK LOSS	NO CUTTING RECOVERED.
	9.12	10.64	1.52			CLAYSTONE	M-DK.GY VERY MUDDY. WELL CONSOLIDATED. BREAKS A PART IN WATER; BECOMES MUCKY.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	10.64	12.16	1.52			CLAYSTONE	M.GY SOAPY FEELING WHEN WET, NOT GRITTY. SMALL BALL OF STRING ALSO FOUND.
	12.16	13.72	1.56			CLAYSTONE	DK.GY MINOR CARBONATE PRESENT. SOAPY FEELING WHEN WET, NOT GRITTY. MUCKY WHEN WET. WELL CONSOLIDATED.

\* DENOTES MEASURED BCA  
NEWPAGE

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GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84010

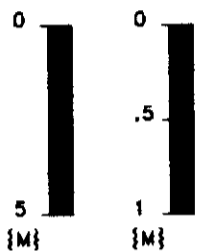
GEOLOGIST : K. JENNER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40



NORTHING: 6344022.0 N  
 EASTING: 506220.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH      BCA      TRUE DEPTH      1:200

{M}

{DEG}

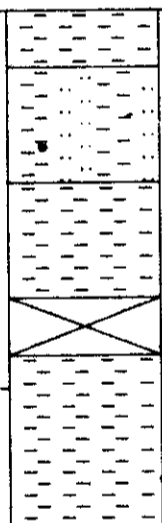
{M}

10

10

TOTAL: 13.72

TOTAL: 13.72



REMARKS :

NO GEOPHYSICAL LOGS RUN.

**KPNLRRDH 84011**

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84011

DATE - 12/02/84

- HISTORY -

START DATE - 07/01/84  
 END DATE - 07/02/84

CONTRACTOR - DENHAM DRILLING                      OPERATOR - GCRI  
 GEOLOGIST - K. JENNER                              SURVEYOR -

REMARKS - LOGGED TO 52.9m. COAL INTERVAL: 42.36m TO 47.68m:  
 (5.32M); 1 SEAM.TWINNED RDH84001. FUL. CORED 9.14m  
 TO 10.21m (ND BDG); 39.62m TO 40.84M (BCA 78 DEGR  
 EES AND 81 DEGREES). COAL CORING Unsuccessful.

- LOCATION -

PROVINCE - BC	ZONE - 9
ELEVATION - 1824.50	NORTHING - 6344134.00
LICENCE/LEASE NUMBER - 7152	EASTING - 505958.00
	LATITUDE - 571432
	LONGITUDE - 1285405

- ORIENTATION -

LENGTH - 54.86	INCLINATION - 86.5
	AZIMUTH - 324.0
HOLE SIZE - 120.7	

CEMENT - N	CASING DEPTH (M) -	3.05
PLUG - N	AQUIFER DEPTHS (M) -	0.00
PIEZ -		0.00
	LOST CIRC. DEPTHS (M) -	0.00
		0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE





# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE  
RDH-84-011

DATE  
07-02-84

UNIT/OPERATOR  
P811/D. Bomback

FIELD OFFICE  
Calgary

## EQUIPMENT DATA

PROBE MODEL	9010	9020	905055	9080
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	8.75" x 1.25"	1.125" x 4.5"	8.75" x 4.8"	5" x 3.0"
STD. K-FACTOR	1.50 x 10 <sup>-4</sup>	---	5.00 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1.11µsec	---	1.16µsec	1.11µsec
CALIB. MODEL LOC.	---	---	---	---
CALIB. DATE	---	---	---	---
K-FACTOR x 10 <sup>-4</sup>	---	---	---	---
DEADTIME µsec	---	---	---	---
TEST READING	---	---	---	---
WATER FACTOR	---	---	---	---
CASING FACTOR	---	---	---	---

NATURAL GAMMA				
DETECTOR TYPE	---	NaI	---	NaI
DETECTOR SIZE	---	5" x 1.5"	---	5" x 3.0"
SOURCE TYPE	---	Co <sup>60</sup>	---	Co <sup>60</sup>
SOURCE NO.	---	VL-1-283	---	---
SOURCE STRENGTH	---	125mCi	---	---
SOURCE SPACING	---	19cm	---	---
Cal Std	---	6588	---	---
Cal Run	---	7127	---	---

DENSITY				
DETECTOR TYPE	---	---	NaI	---
DETECTOR SIZE	---	---	1.8" x 6.0"	---
SOURCE TYPE	---	---	AmBe	---
SOURCE NO.	---	---	---	---
SOURCE STRENGTH	---	---	---	---
SOURCE SPACING	---	---	---	---

NEUTRON				
DETECTOR TYPE	---	---	---	---
DETECTOR SIZE	---	---	---	---
SOURCE TYPE	---	---	---	---
SOURCE NO.	---	---	---	---
SOURCE STRENGTH	---	---	---	---
SOURCE SPACING	---	---	---	---

SNGL. PT RESISTANCE	1.4" x 2.5"	---	1.4" x 2.5"	1.1" x 2.5"
RESISTIVITY	---	8" FOCUSED	---	---
SELF POTENTIAL	YES	---	YES	YES
TEMPERATURE	---	---	YES	---
DEVIATION	---	---	NO / YES	---
CALIPER	---	YES	---	---

COMPANY  
Gulf Canada Resources Inc.

BOREHOLE  
RDH-84-011-Open

AREA  
Mt. Klappan

ELEVATION  
STATE  
British Columbia

COUNTY  
SECTION

TOWNSHIP RANGE

## HOLE DATA

TOTAL DEPTH — DRILLER : 45.7	BIT SIZE : 12.1cm
TOTAL DEPTH — LOGGER : 52.9 m	CASING — TYPE & SIZE : -----
TOTAL FOOTAGE LOGGED : 52.9 m	CASING DEPTH : -----
LOGGING SPEED : 9.0m/min	BOREHOLE FLUID : Air & H2o
REFERENCE LEVEL : Ground	FLUID RESISTIVITY : ----- @ °F
PROBE NO. : 9030A-418	SOFTWARE LEVEL : 8.2*A
	SCALE SELECTION : <input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
	Tape 3 TK 1

REMARKS:  
EXPANDED 1:40 Smoothing 7,5,5





**CENTURY GEOPHYSICAL CORPORATION**

Tulsa, Oklahoma

BOREHOLE  
RDH-84-011

DATE  
07-02-84

UNIT/OPERATOR  
P811/D. Bomback

FIELD OFFICE  
Calgary

COMPANY  
Gulf Canada Resources Inc.

BOREHOLE  
RDH-84-011-Open

AREA  
Mt. Klappan

ELEVATION  
STATE  
British Columbia

COUNTY

STATE

SECTION

TOWNSHIP

RANGE

**EQUIPMENT DATA**

**HOLE DATA**

TOTAL DEPTH — DRILLER : 45.7m	BIT SIZE : 12.1 cm
TOTAL DEPTH — LOGGER : 52.6m	CASING — TYPE & SIZE : -----
TOTAL FOOTAGE LOGGED : 52.6m	CASING DEPTH : -----
LOGGING SPEED : 18.0m/min	BOREHOLE FLUID : Air & H <sub>2</sub> O
REFERENCE LEVEL : Ground	FLUID RESISTIVITY : ----- @ °F
PROBE NO. : 9055A-005	SOFTWARE LEVEL : 8.2*A
	SCALE SELECTION : <input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
	Tape 3 TK 2

REMARKS:

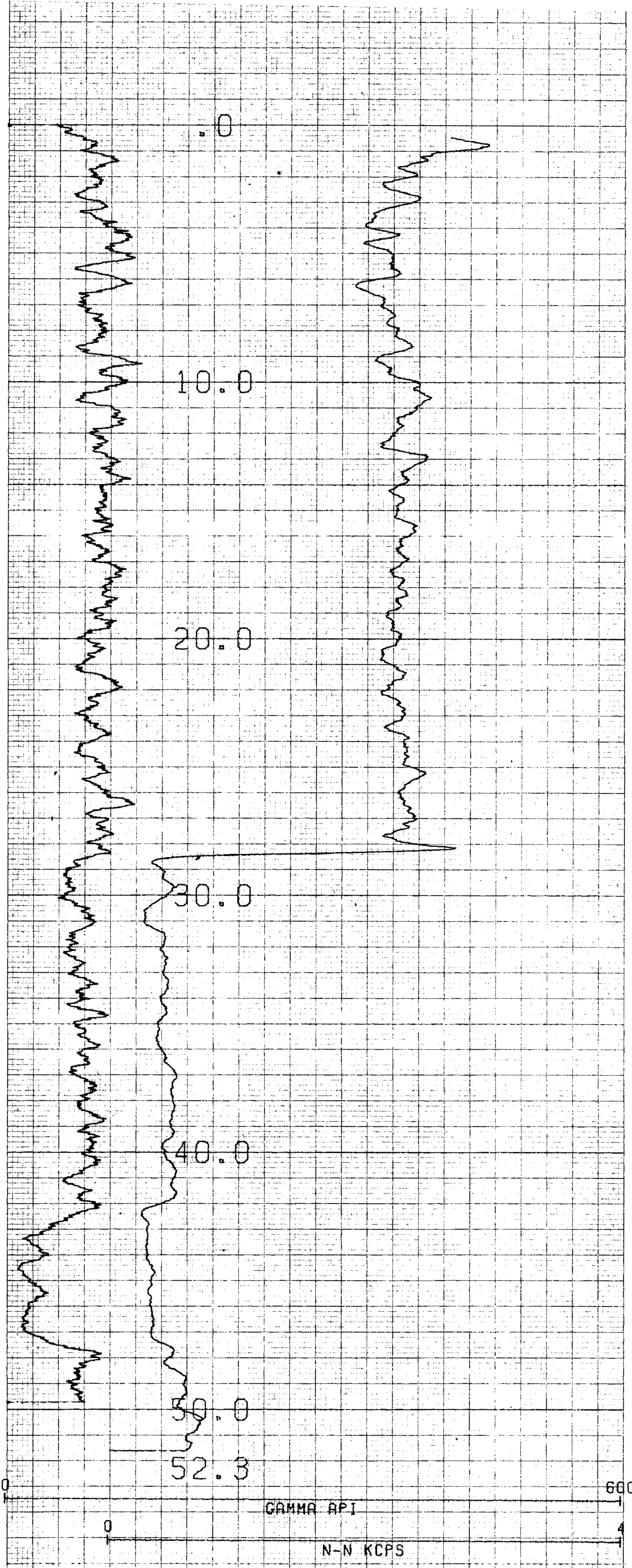
DEVIATION ONLY

PROBE MODEL	9076	9080	90855	9080
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	3.75" x 1.25"	1.125" x 4.5"	3.75" x 4.0"	5" x 3.0"
STD. K-FACTOR	1.98 x 10 <sup>-5</sup>	---	568 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1.11µsec	---	1.10µsec	1.11µsec
CALIB. MODEL LOC.	---	---	---	---
CALIB. DATE	---	---	---	---
K-FACTOR x 10 <sup>-5</sup>	---	---	---	---
DEADTIME µsec	---	---	---	---
TEST READING	---	---	---	---
WATER FACTOR	---	---	---	---
CASING FACTOR	---	---	---	---

NATURAL GAMMA		DENSITY	
DETECTOR TYPE	---	NaI	---
DETECTOR SIZE	---	5" x 1.5"	---
SOURCE TYPE	---	Cs <sup>137</sup>	---
SOURCE NO.	---	---	---
SOURCE STRENGTH	---	---	---
SOURCE SPACING	---	---	---

NEUTRON		DENSITY	
DETECTOR TYPE	---	---	---
DETECTOR SIZE	---	---	---
SOURCE TYPE	---	---	---
SOURCE NO.	---	---	---
SOURCE STRENGTH	---	---	---
SOURCE SPACING	---	---	---

SNGL. PT RESISTANCE	1.4"D x 2.5'L	---	1.4"D x 2.5'L	1.1"D x 2.5'L
RESISTIVITY	---	IF FOCUSED	---	---
SELF POTENTIAL	YES	---	YES	YES
TEMPERATURE	---	---	YES	---
DEVIATION	---	---	NO / YES	---
CALIPER	---	YES	---	---



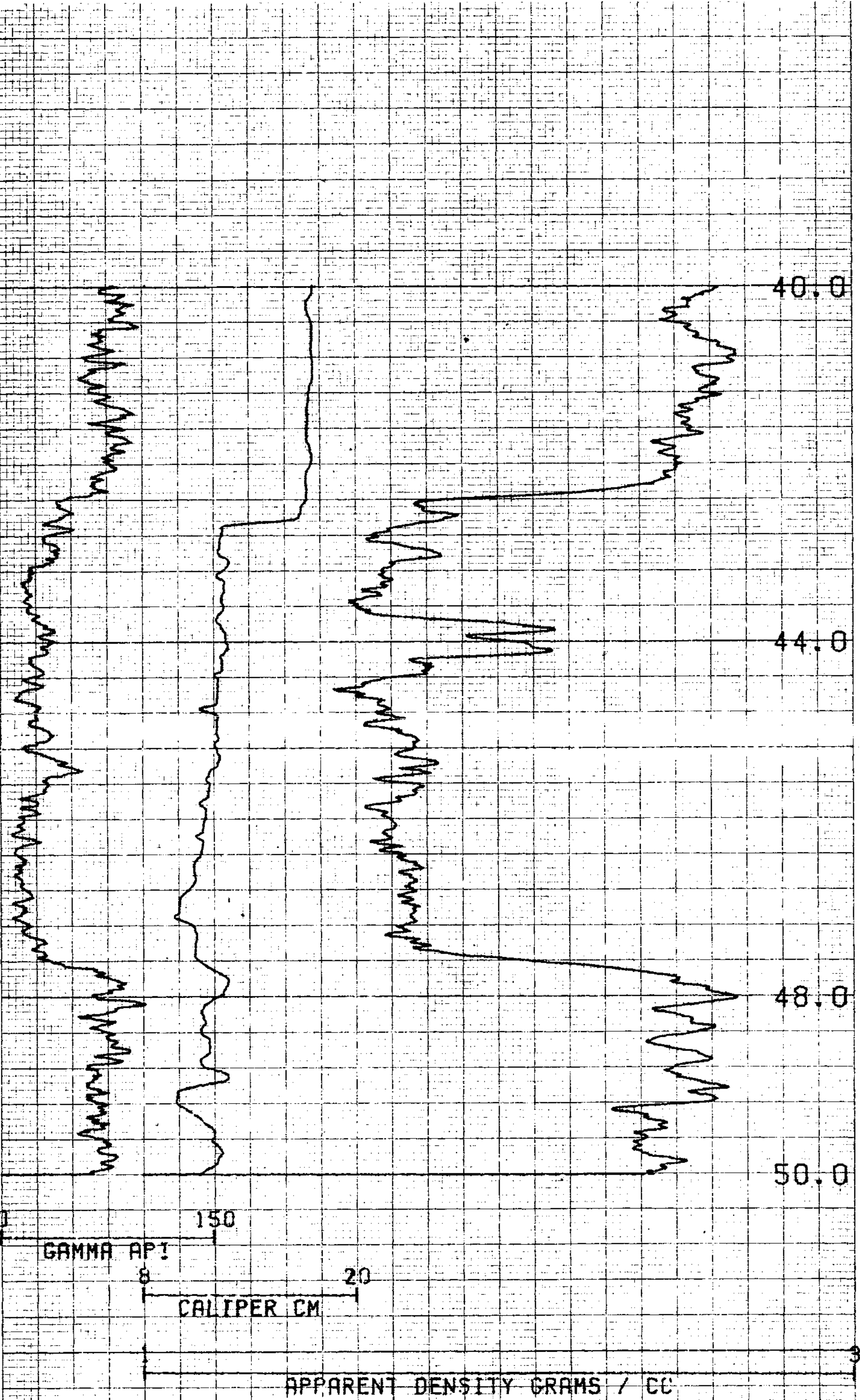
COMPU-LOG V8L2 P DT 07-02-84  
 RDH-84-011-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9067 - 530  
 SENSOR #2 CAL STD CPS = 165  
 SENSOR #2 CAL RUN CPS = 250  
 SENSOR #2 CAL BIAS = 0  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. #7 LI

1100  
 GR. Mount Klappan 84(3)A

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 709





COMPU-LOG V8L2 PLOT 07-02-84

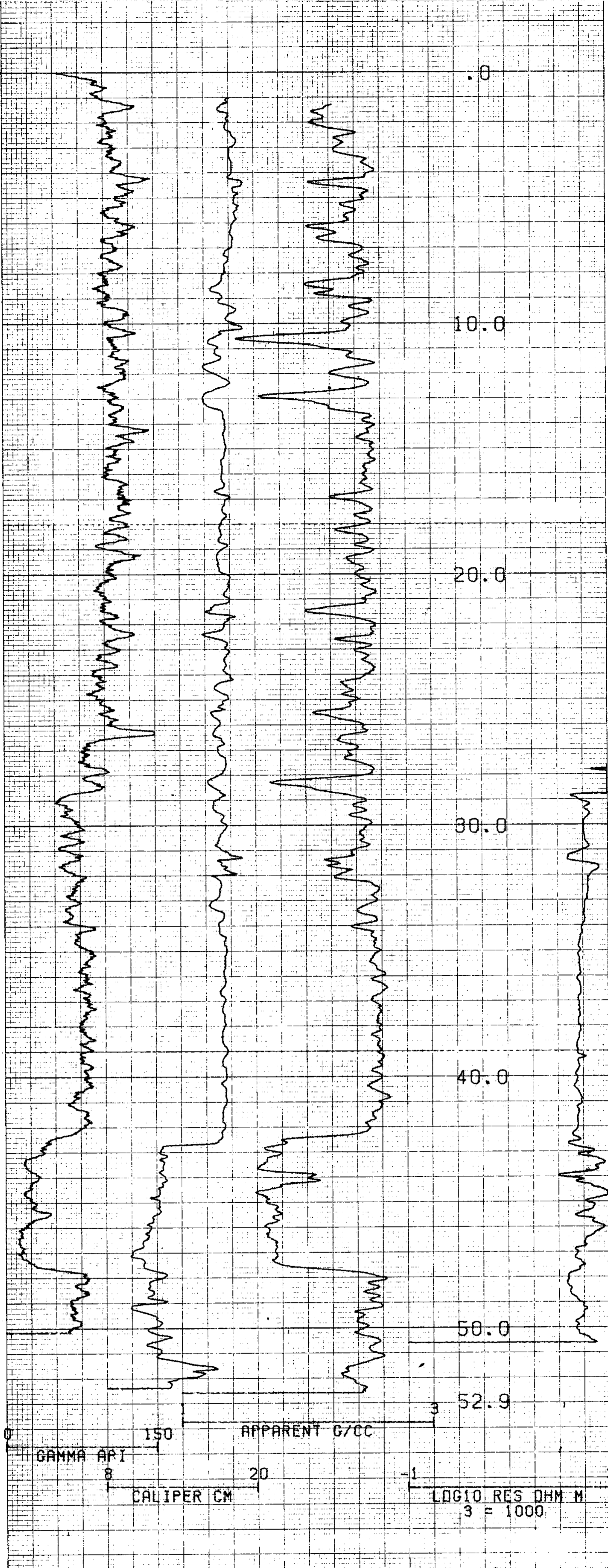
RDH-84-011-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9030A - 410  
 SENSOR #4 CAL STD CPS = 6508  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. #3763L1

SMOOTHING 7,5,5

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GR Mount Klappan 841329



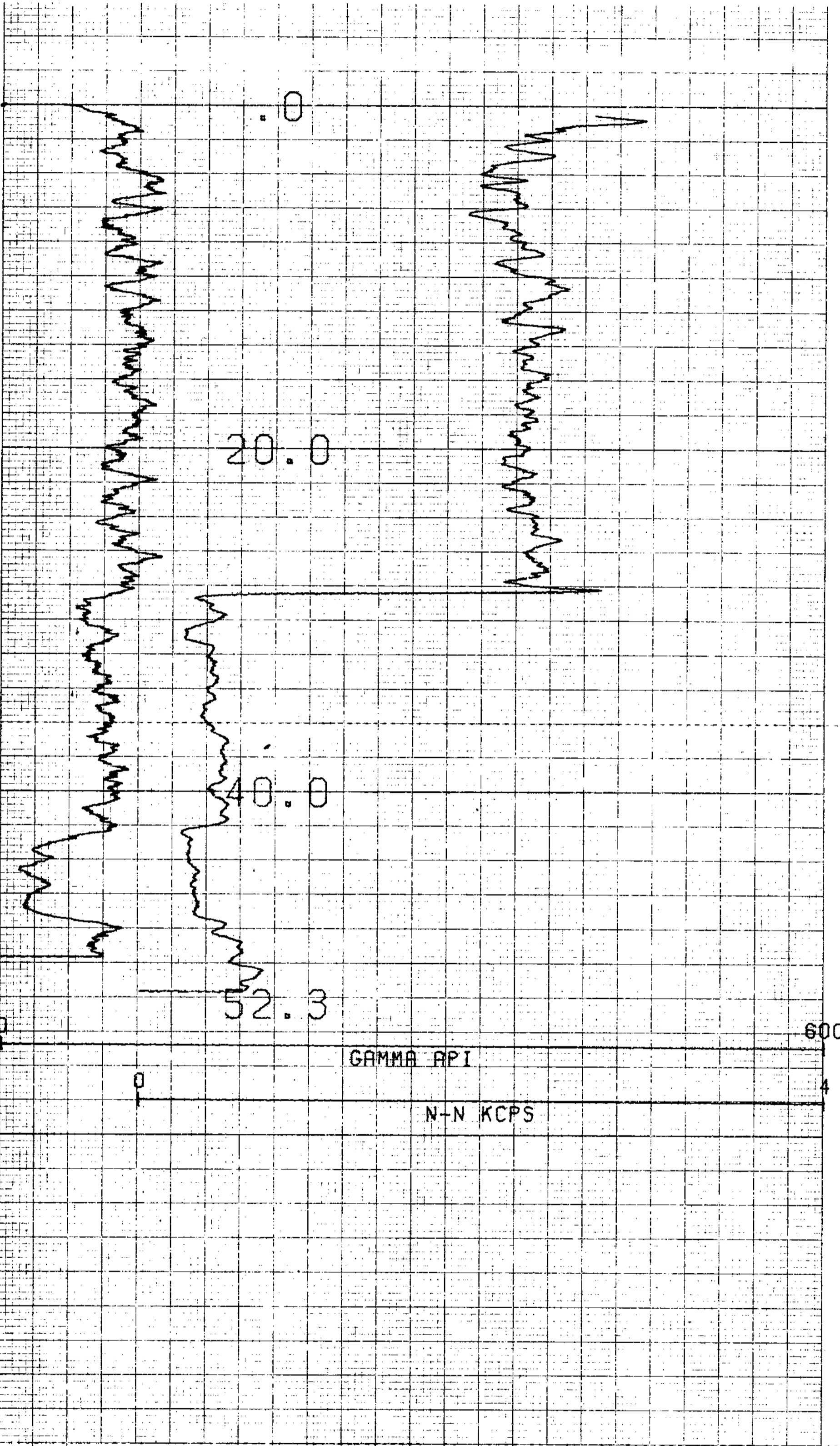
COMPU-LOG V8L2 PLOT 07-02-84

RDH-84-011-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER = 12.1  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 D. 80MBAK APPL. #2028L1

**709**



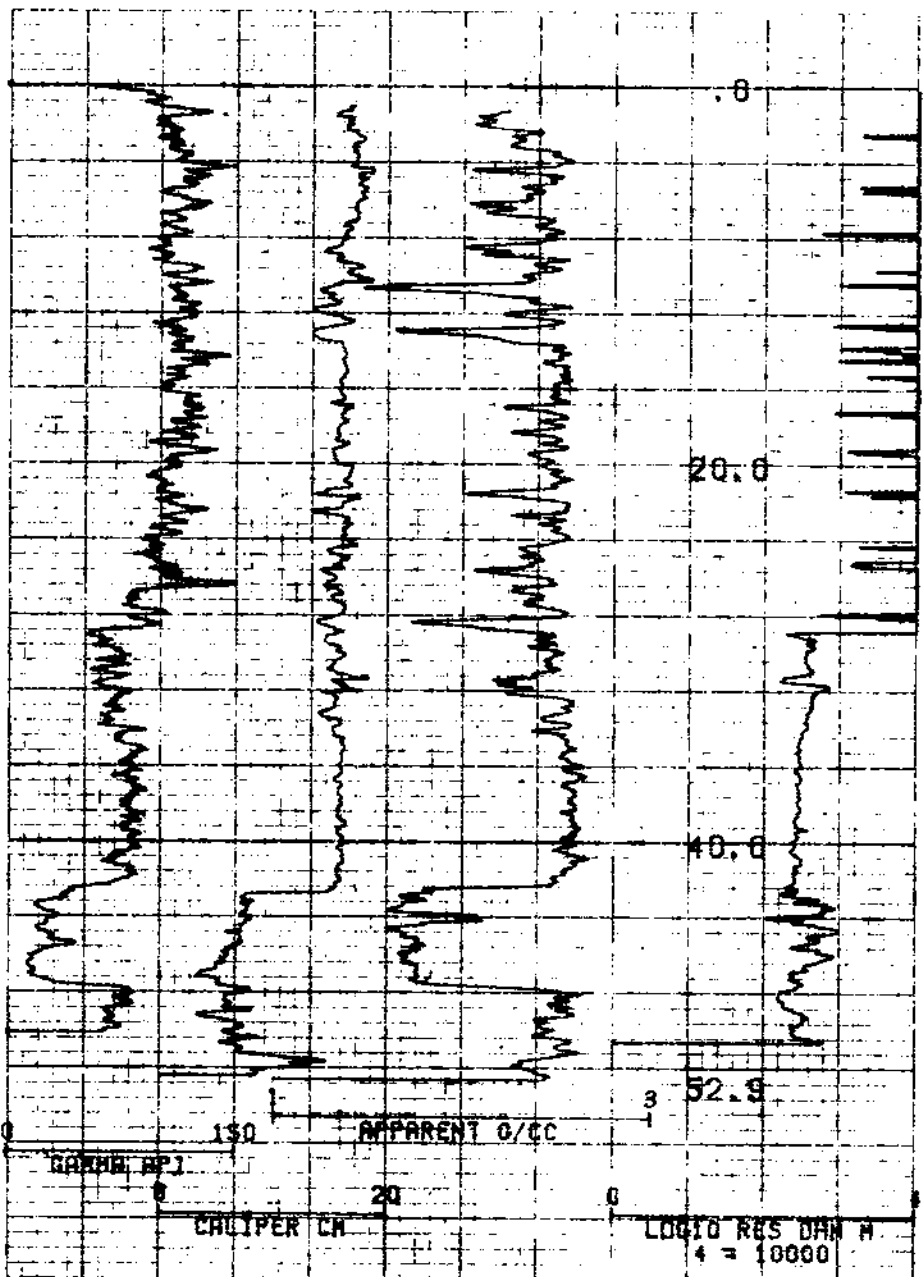


COMPU-LOG V8L2 PLDT 07-02-84  
 RDH-84-011-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER = 12.1  
 PROBE # 9067 - 530  
 SENSOR #2 CAL STD CPS = 165  
 SENSOR #2 CAL RUN CPS = 250  
 SENSOR #2 CAL BIAS = 0  
 DATA V8L28 TRUCK # P011  
 D. BOMBACK APPL. #7 LI

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GR Mount Klappan 841314



COMP LOG VOL 2 PLOT 07-03-84

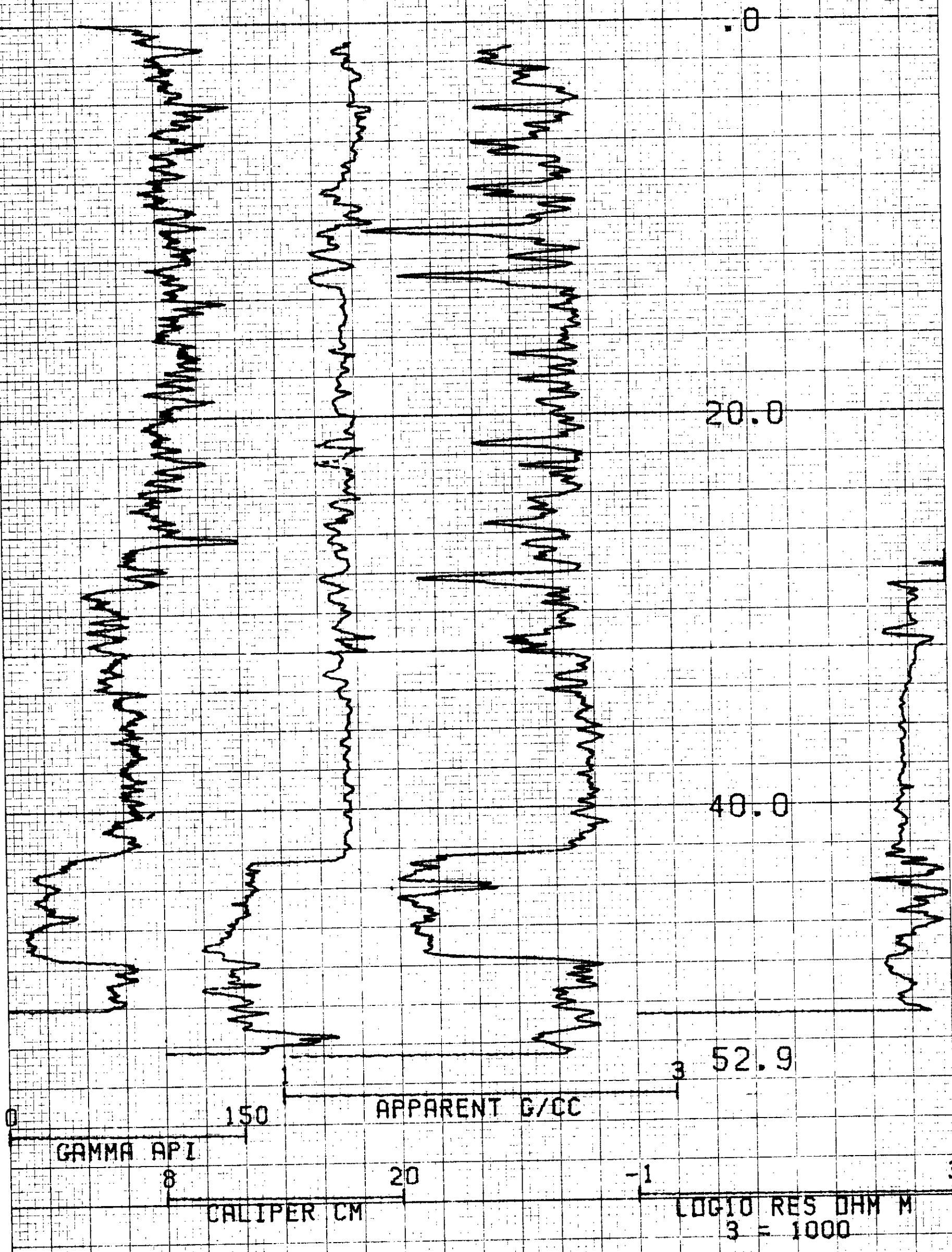
RDH-84-011-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER 12.1  
 PRDCE 0-0000 410  
 SENSOR 04 CAL STD CPS = 0500  
 SENSOR 04 CAL RUN CPS = 7127  
 SENSOR 04 CAL 0100 4 -24  
 DATA VOL 20 TRUCK # 7011  
 D. SCHMACK APP. 050201

61711001122 Klappan 54(3)H

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COPY REDUCED SCALE

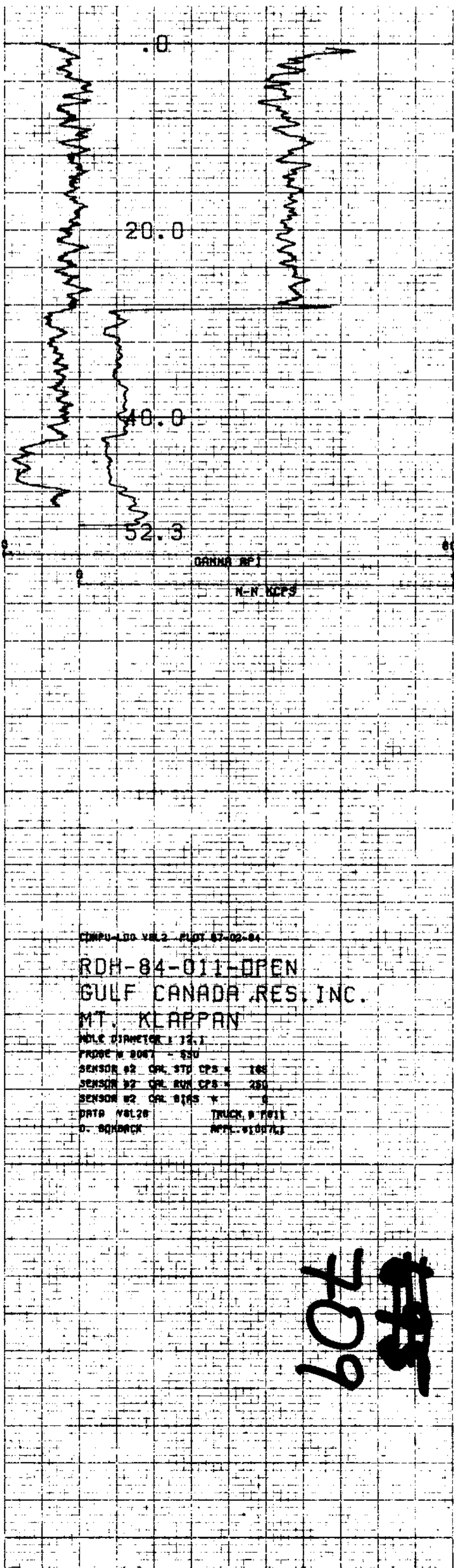


COMPU-LOG VBL2 PLOT 07-02-84

RDH-84-011-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA VBL2B TRUCK # P811  
 D. BOBACK APPL. #2026L1

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CENTURY GEOPHYSICAL CORP. PART NO. 786-0038

16

SR. Mount Klappan 84(3)A

CMPU-LOO VAL2 - PLOT 87-02-84  
 RDH-84-011-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 POLE DIAMETER 1 1/2" I  
 PROBE N 8047 - 830  
 SENSOR #2 CAL STD CPS = 188  
 SENSOR #2 CAL RUN CPS = 280  
 SENSOR #2 CAL BIPS = 0  
 DATA VAL28 TRUCK # 1011  
 D. BOHACK APPL. #100761

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CENTURY (

COPY REDUCED SCALE



G.R. Mount Klappan 84(3)A

# VERTICAL DEVIATION

COMPU-LOG VBL1 DEVIATION  
DATA FROM : VBL2B

CLIENT : GULF CANADA RES. INC.  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-011-OPEN  
DATE OF LOG : 07-02-84  
PROBE : 9055A 0005

SCALE: .25 M/DIV  
MAG DECL: 29.5  
TRUE DEPTH: 52.4 M  
AZIMUTH: 324.0  
DISTANCE: 3.15 M

+ = 2.0 M INCR  
Δ = TOP OF ZONE  
◊ = BOTTOM OF ZONE

TRUE NORTH ↑

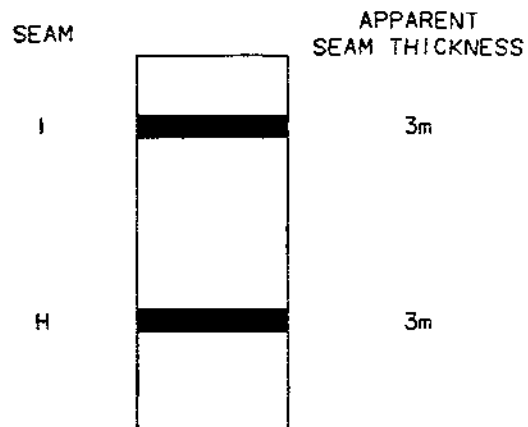
~~1005~~  
709



**KPNLRRDH 84012**



MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84012



THICKNESSES ARE APPARENT  
NO CORE TAKEN

SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84012

DATE - 12/02/84

- HISTORY -

START DATE - 07/02/84  
END DATE - 07/02/84

CONTRACTOR - DENHAM DRILLING  
GEOLOGIST - K. JENNER

OPERATOR - GCRI  
SURVEYOR -

REMARKS - THICKNESSES ARE APPARENT.

- LOCATION -

PROVINCE - BC  
ELEVATION - 1782.00

ZONE - 9  
NORTHING - 6344088.00  
EASTING - 506068.00

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571430  
LONGITUDE - 1285358

- ORIENTATION -

LENGTH - 50.30

INCLINATION - 0.0  
AZIMUTH - 0.0

HOLE SIZE - 130.2

CEMENT - N  
PLUG - N  
PIEZ -

CASING DEPTH (M) - 3.05  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

**KPNLRRDH 84012**

**DESCRIPTIVE LOG**

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.15	1.15			SILTSTONE	CLYY.LT-M.GY GRITTY. 50% SILTSTONE; 50% POORLY CONSO LIDATED MUD-CLAY; LIGHT BROWN AND GRAY IN COLOUR.
	1.15	2.30	1.15			CLAY	SLTY.LT-M.BN.LAM. FINE LAMINATIONS IN SOME CHIPS. WEATHER ED AND IRON STAINED. POORLY INDURATED.
	2.30	3.45	1.15			CLAY	SLTY.LT-M.BN IRON STAINED AND WEATHERED. FAINT LAMINA TIONS IN SOME CHIPS. POORLY CONSOLIDATE D CLAY AND MUD.
	3.45	4.60	1.15			CLAY	SLTY.LT-M.BN IRON STAINED AND WEATHERED. POORLY CONS OLIDATED CLAY AND SILTSTONE.
	4.60	5.75	1.15			SILTSTONE	CLYY.M-DK.BN WEATHERED AND IRON STAINED. GRITTY.
	5.75	6.90	1.15			SILTSTONE	CLYY.M.GY LESS GRITTY. WEATHERED AND IRON STAINED . VERY FINE GRAINED SILTSTONE.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	6.90	8.06	1.16			SILTSTONE	CLYY.DK.GY POORLY CONSOLIDATED CLAY. MINOR IRON ST AINING. VERY SMALL FRAGMENTS OF COAL CH IPS (1 mm * 1 mm) - C2 AND CONCHOIDAL F RACTURE.
	8.06	9.35	1.29		I	COAL LOSS	
	9.35	10.87	1.52		I	COAL	C-2.DK.BLK CONCHOIDALLY FRACTURED SHINEY COAL CHIP S. VERY SMALL COAL CHIPS. NO IRON STAIN ING. SOME CARBONACEOUS CLAY BUT MINOR.
	10.87	12.39	1.52			SILTSTONE	CLYY.M.GY WEATHERED AND IRON STAINED. VERY SMALL FRAGMENTS OF COAL. SOME POORLY CONSOLID ATED CLAY. FINE LAMINATIONS ON COAL CHI PS AND BANDING.
	12.39	13.91	1.52			SANDSTONE	SLTY.VFG.M.BN WEATHERED AND IRON STAINED. VERY FINE G RAINED SANDSTONE. VERY TINY COAL CHIPS; LESS THAN 1 mm-C2. SUB-CONCHOIDAL FRAC TURE.

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	13.91	15.43	1.52			SANDSTONE	MG.LT.BN PROMINANT IRON STAINING AND WEATHERING; MODIFIES COLOUR. INDIVIDUAL GRAIN VISIBLE.
	15.43	16.95	1.52			SANDSTONE	MG.M.BN PROMINANT IRON STAINING AND WEATHERING.
	16.95	18.47	1.52			SANDSTONE	FG.LT.GY WEATHERING AND IRON STAINING; MODIFIES COLOUR. MODERATELY SORTED. WELL ROUNDED
	18.47	19.99	1.52			CLAYSTONE	SSY.LT.BN POORLY CONSOLIDATED CLAY AND MUD. VERY MUCKY WHEN WET. SOME SANDSTONE CHIPS IN CORPORATED IN CLAYSTONE BLOBS.
	19.99	21.51	1.52			SANDSTONE	CLYY.VFG.LT.GY WEATHERED AND IRON STAINED; MODIFIES CO LOUR.
	21.51	23.03	1.52			SANDSTONE	SLTY.FG WEATHERED AND IRON STAINED; MODIFIES CO LOUR; VERY FINE GRAINED SANDSTONE; SOME LARGER MORE MASSIVE CHIPS; FINE GRAIN SILTSTONE

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	23.03	24.55	1.52			SILTSTONE	CLYY.M.GY WEATHERING AND IRON STAINING; MODIFIES COLOUR. ONE VERY FINE COAL FRAGMENT FOU ND INCORPORATED IN SILTSTONE CHIPS. POO RLY CONSOLIDATED CLAY.
	24.55	26.07	1.52			CLAYSTONE	SLTY.DK.GY POORLY CONSOLIDATED CLAY AND MUD WITH S ILTSTONE CHIPS.
	26.07	27.59	1.52			CLAYSTONE	SLTY.LT.GY LARGER CHIPS OF CLAYSTONE. SOME SILTSTO NE CHIPS AND FINE SANDSTONE CHIPS. IRON STAINING PRESENT.
	27.59	29.11	1.52			CLAYSTONE	SLTY.LT.GY LARGE CLAYSTONE CHIPS AND POORLY UNCONS OLIDATED CLAY AND MUD. VERY MUCKY WHEN WHEN WET.
	29.11	30.63	1.52			MUDSTONE	DK.GY POWDERS EASILY. VERY SOFT. CONSOLIDATED INTO VERY FINE GRAINS LESS THAN 1 MM. SOME MINOR IRON STAINING.
	30.63	34.04	3.41			ROCK LOSS	

\* DENOTES MEASURED BCA



PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	34.04	37.08	3.04		H	COAL LOSS	
	37.08	41.65	4.57			CLAYSTONE	SLTY.M.GY SMALL CHIPS OF C3 COAL. CONCHOIDALLY FRACTURED AND FAINT BANDING. CLAYSTONE CHIPS WITH SOME SILTSTONE CHIPS. SOME IRON BANDING.
	41.65	46.22	4.57			SILTSTONE	SSY.M.GY IRON STAINED AND WEATHERED. SOME FINE COAL CHIPS. CONCHOIDAL FRACTURED C2/C1 SANDSTONE AND SILTSTONE CHIPS. SOME QUARTZ VEINING.
	46.22	50.30	4.08			ROCK LOSS	

\* DENOTES MEASURED BCANENPAGE

GR Mount Klappan 84(3)A

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84012

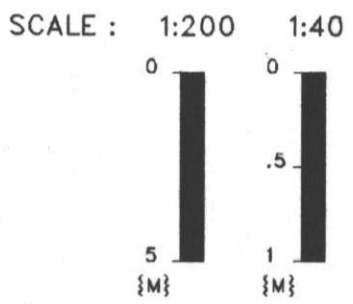
~~675~~  
**709**

GEOLOGIST : K. JENNER

DATE : DEC 04/84

DRAWING NO. :

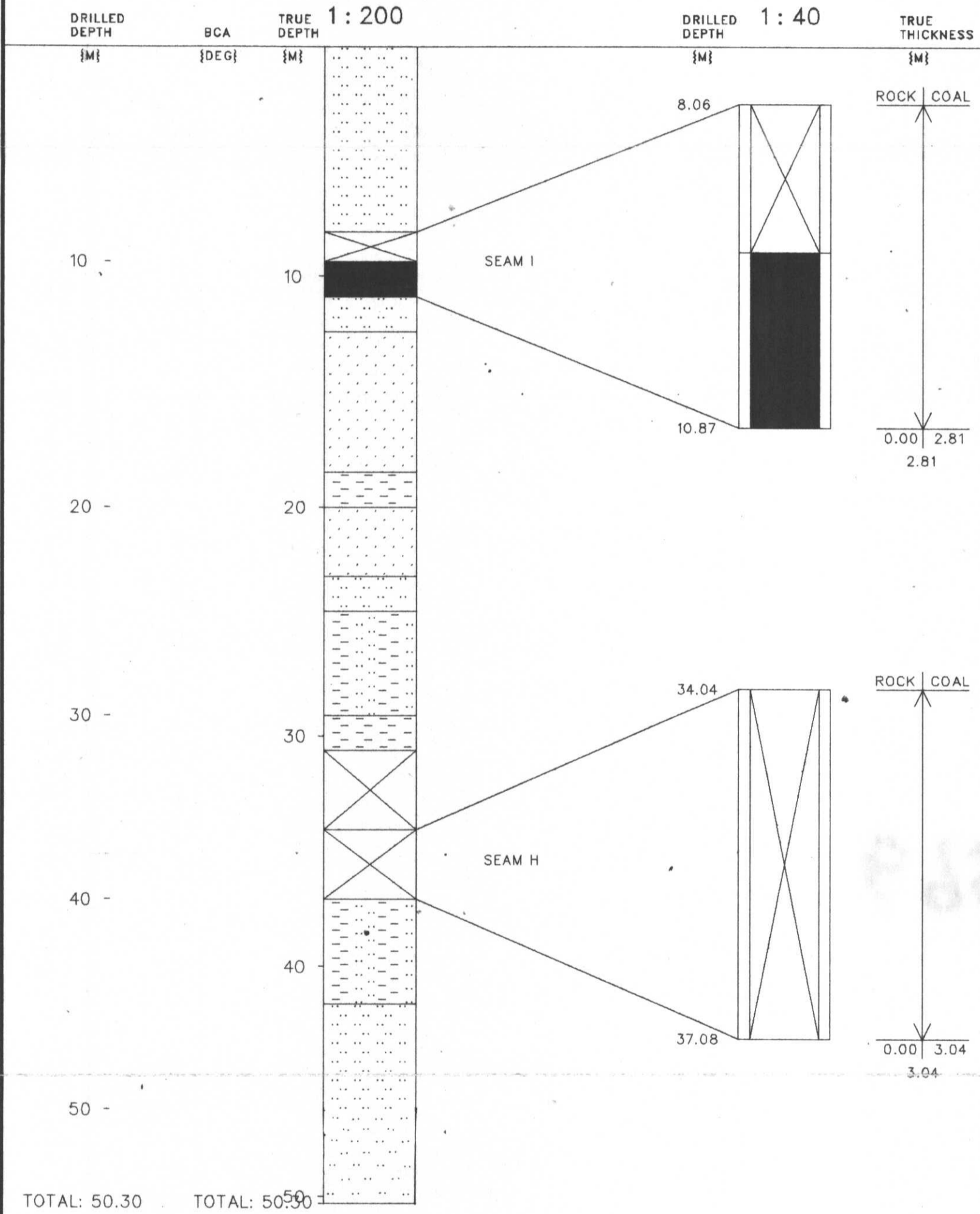
LITHOLOGIC SYMBOLS



NORTHING: 6344088.0 N  
 EASTING: 506068.0 E

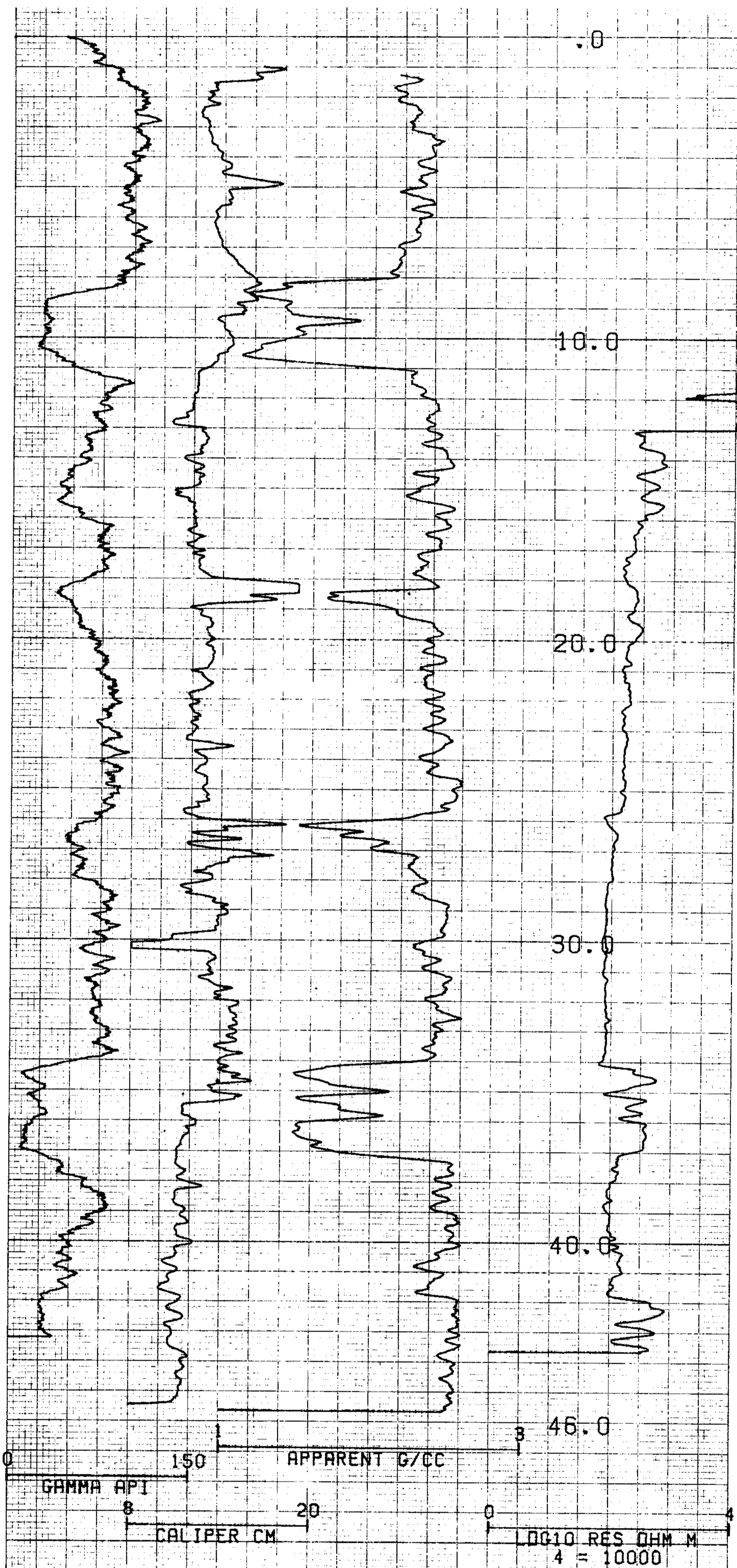
	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL



REMARKS :

THICKNESSES ARE 'APPARENT' DUE TO NO CORE TAKEN.  
 HOLE MAY HAVE DRILLED THROUGH SLUMPED MATERIAL.  
 THICKNESSES ARE 'APPARENT' DUE TO LACK OF CORE.



COMPU-LOG V8L2 PL0T 07-02-84

RDH-84-012-OPEN  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 12.1  
 PROBE # 9030A - 41B  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 O. BOMBACK APPL. #1029L1

GR-1100000 KLAPPAN 8/31/84

**709**

331

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# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE	DATE
RDH-84-012	07-02-84
UNIT/OPERATOR	FIELD OFFICE
P811/D. Bomback	Calgary

COMPANY

Gulf Canada Resources Inc.

BOREHOLE

RDH-84-012-open

AREA

Mt. Klappan

ELEVATION

75006 28000

COUNTY

STATE

British Columbia

SECTION

TOWNSHIP

RANGE

## HOLE DATA

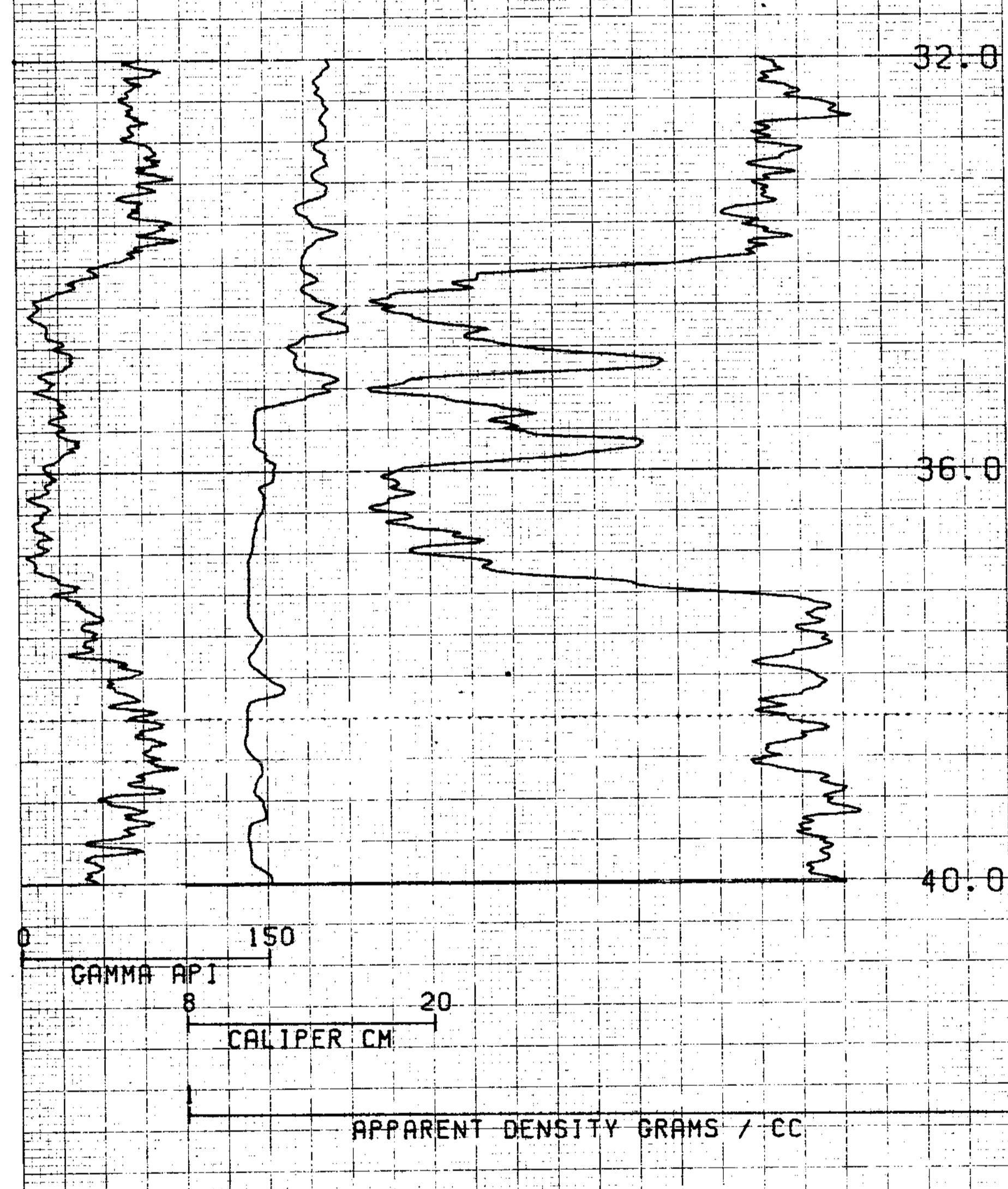
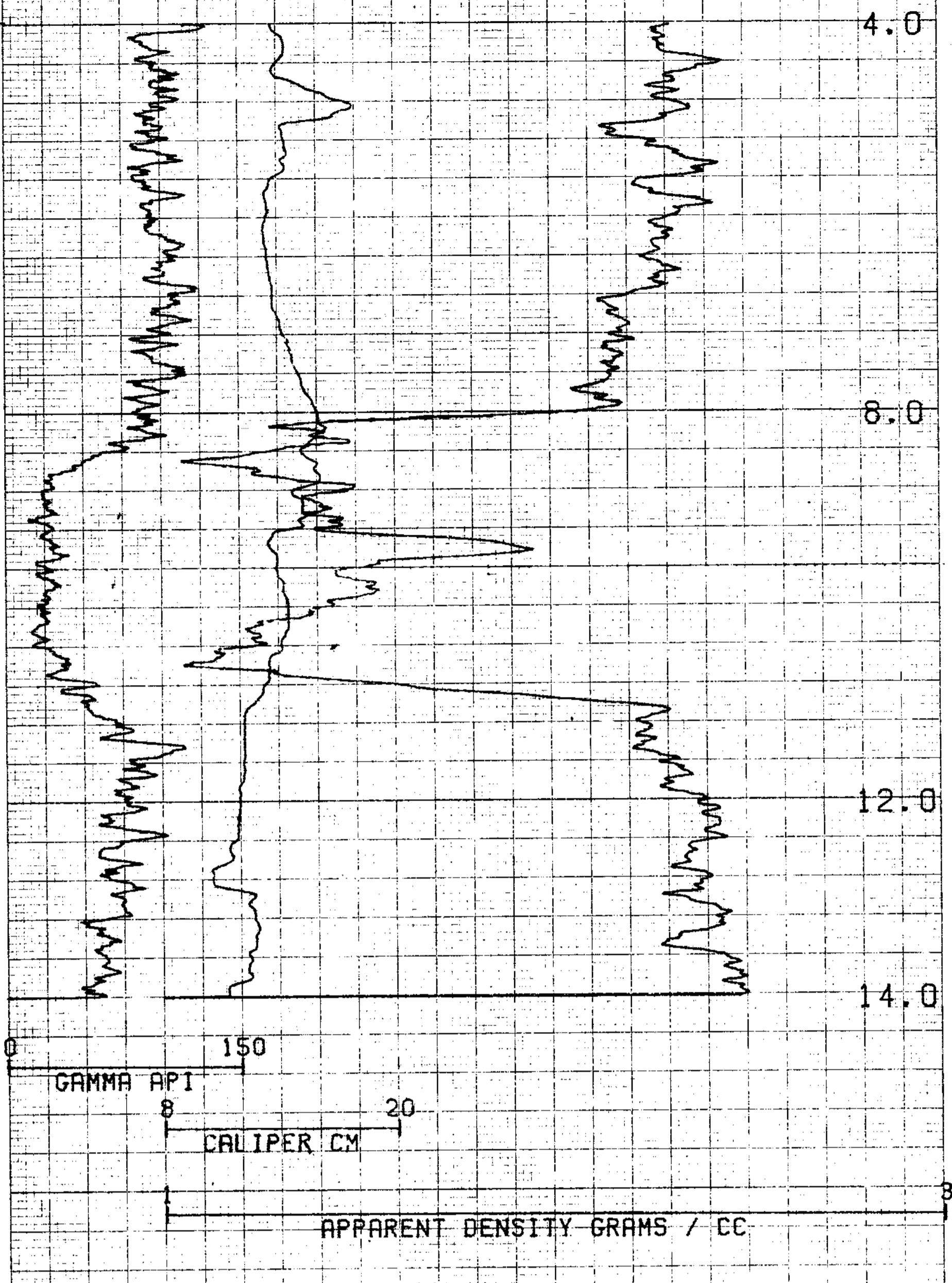
TOTAL DEPTH - DRILLER	60.3m	BIT SIZE	13.0cm
TOTAL DEPTH - LOGGER	46.0m	CASING - TYPE & SIZE	-----
TOTAL FOOTAGE LOGGED	46.0m	CASING DEPTH	-----
LOGGING SPEED	9.0m/min	BOREHOLE FLUID	Air & H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ °F
PROBE NO.	9030-A-418	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input checked="" type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			Tape 3 TK 4

REMARKS: Expanded 1:40 Smoothing 7,5,5  
Hole blocked in several places. Unable to lower 9055A or 9067 downhole.

## EQUIPMENT DATA

PROBE MODEL	9010	9030	90555	9060
PROBE DIAMETER	1.0"	2.0"	1.0"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	8.75" x 1.25"	1.125" x 1.0"	8.75" x 4.0"	5.7" x 3.0"
STD. K FACTOR	150 x 10 <sup>-6</sup>	---	550 x 10 <sup>-6</sup>	100 x 10 <sup>-6</sup>
STD. DEADTIME	1.11 sec	---	1.10 sec	1.11 sec
CALIB. MODEL LOC.	---	---	---	---
CALIB. DATE	---	---	---	---
K FACTOR x 10 <sup>-6</sup>	---	---	---	---
DEADTIME x 10 <sup>-6</sup>	---	---	---	---
TEST READINGS	---	---	---	---
WATER FACTOR	---	---	---	---
CASING FACTOR	---	---	---	---
DETECTOR TYPE	---	NaI	---	NaI
DETECTOR SIZE	---	5" x 1.5"	---	5" x 1.0"
SOURCE TYPE	---	Cs <sup>137</sup>	---	Cs <sup>137</sup>
SOURCE NO.	---	41-1-283	---	---
SOURCE STRENGTH	---	125mCi	---	---
SOURCE SPACING	---	19cm	---	---
Cal Std	---	6588	---	---
Cal Yunc	---	7127	---	---
DETECTOR TYPE	---	---	NaI	---
DETECTOR SIZE	---	---	1.0" x 1.0"	---
SOURCE TYPE	---	---	AmBe	---
SOURCE NO.	---	---	---	---
SOURCE STRENGTH	---	---	---	---
SOURCE SPACING	---	---	---	---
SINGL. PT. RESISTANCE	1.0" x 2.5"	---	1.4" x 2.5"	1.0" x 1.5"
RESISTIVITY	---	8" FOCUSED	---	---
SELF POTENTIAL	YES	---	YES	YES
TEMPERATURE	---	---	YES	---
DEVIATION	---	---	NO / YES	---
CALIPER	---	YES	---	---

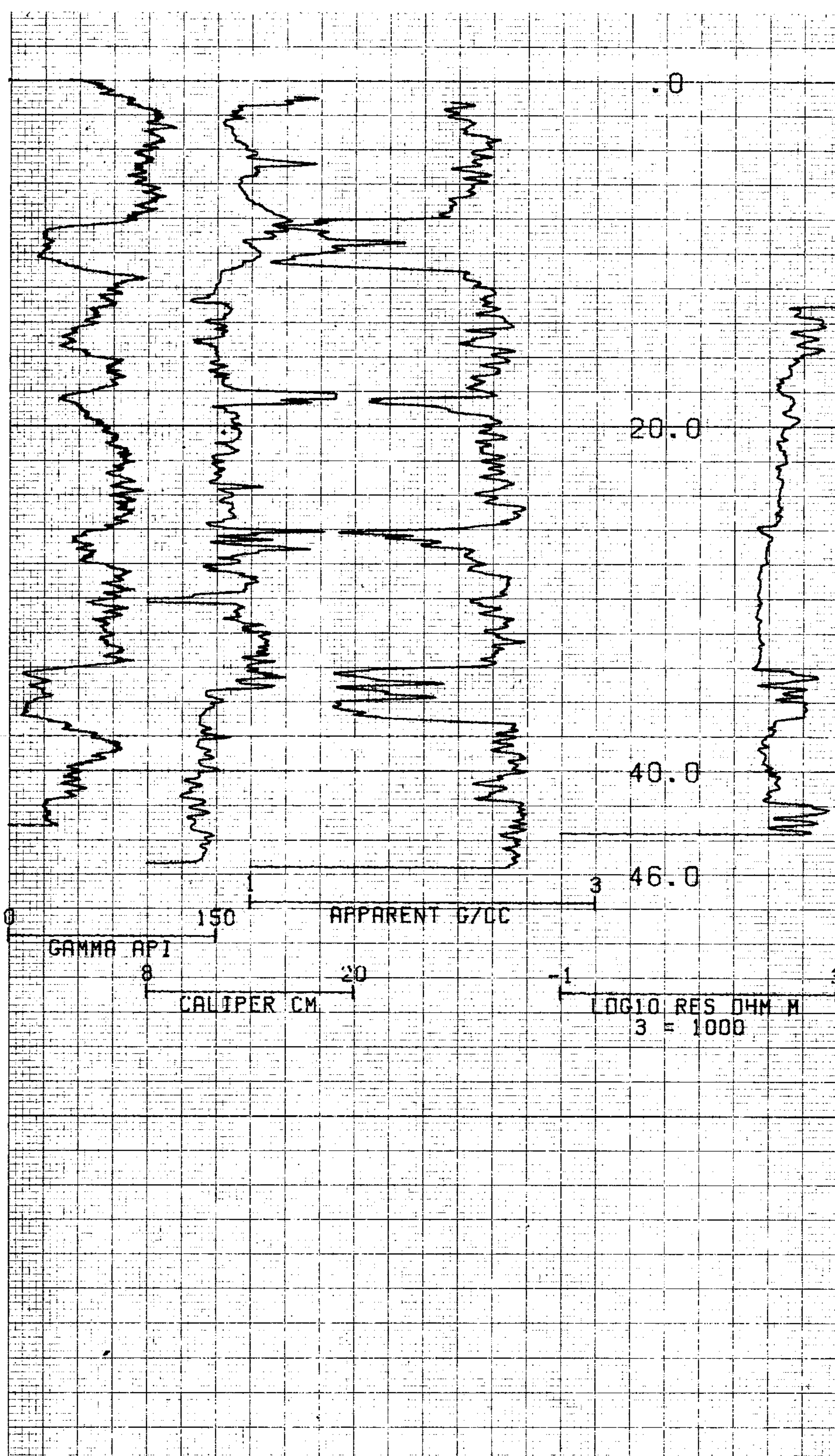
COPY EXPANDED SCALE



COMPU-LOG VBL2 PLDT 07-02-84  
 RDH-84-012-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 HOLE DIAMETER : 12.1  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA VBL2B TRUCK # P611  
 D. BOMBACK APPL. #2703L1  
 SMOOTHING 7.5

709



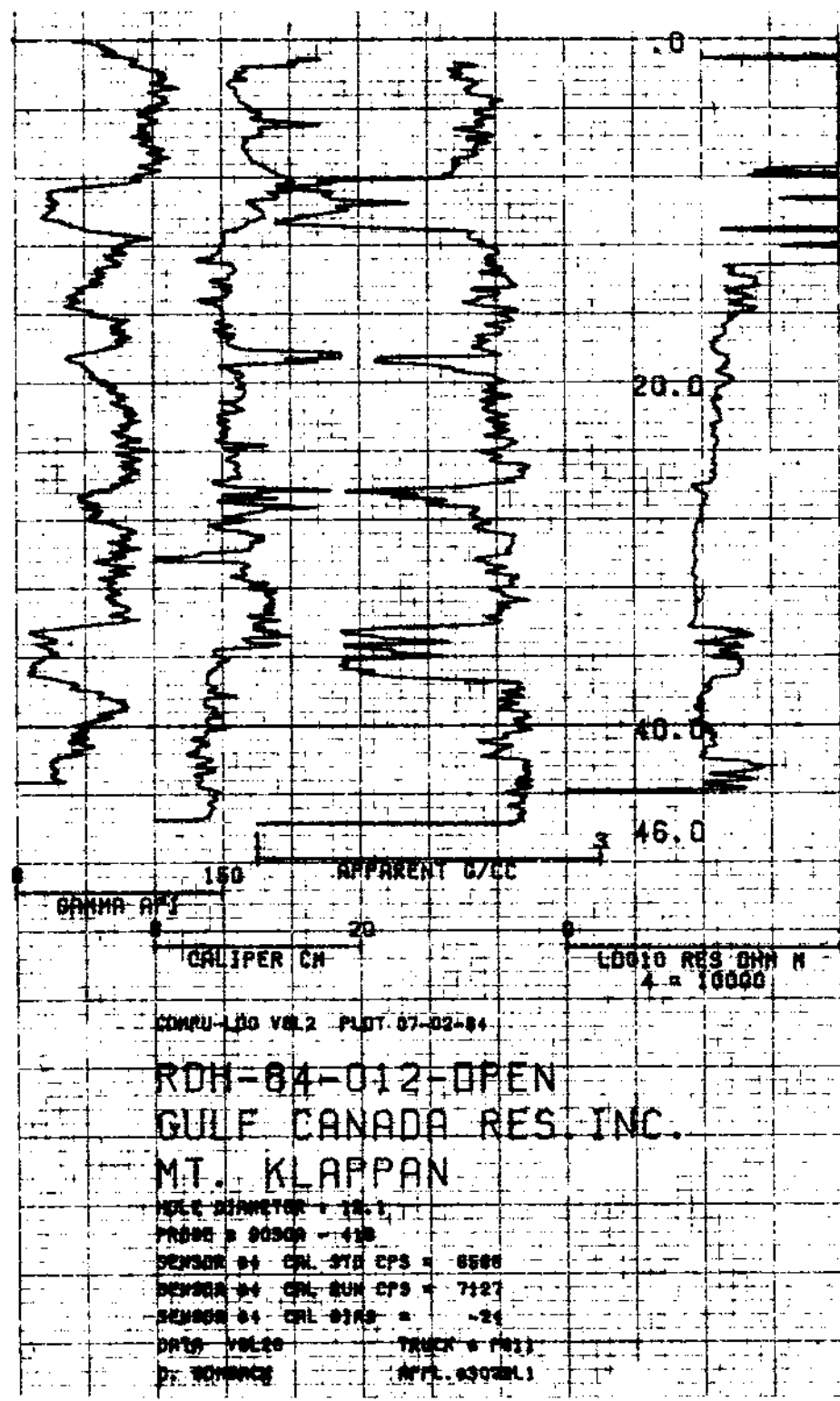


COMPU-LOG V8L2 PLOT 07-02-84  
 RDH-84-012-OPEN  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 HOLE DIAMETER = 12.1  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7127  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 D. BOMBACK APPL. # A

~~685~~  
 709

GR. 110422 Klappan 84(3)A  
COPY REDUCED SCALE

~~695~~  
709



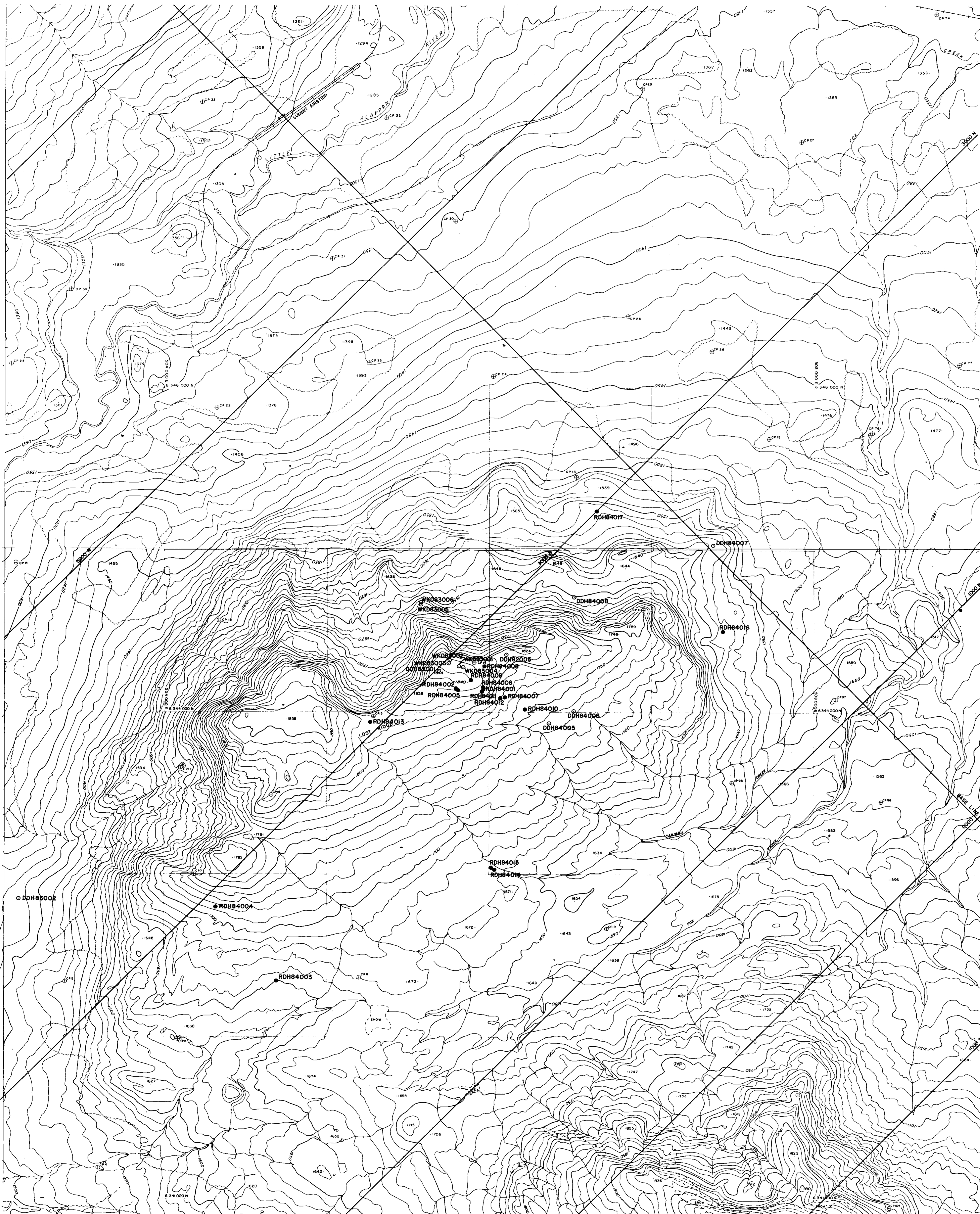
CENTURY GEOPHYSICAL CORP. PART NO. 78

**LOST-FOX AREA**

**DRILL HOLE LOCATION MAP**

**1:10 000**





LEGEND

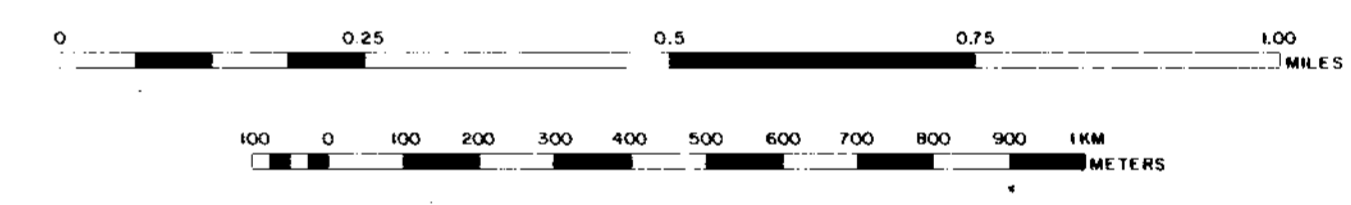
BUILDING	---	---
ROAD, HARD SURFACE	---	---
ROAD, UNPAVED	---	---
CART TRACK	---	---
TRAIL	---	---
RAILROAD BED	---	---
RIVER	---	---
STREAM, DEFINITE	---	---
STREAM, APPROXIMATE	---	---
SPLIT	---	---
LAKE	---	---
WATER LEVEL	---	---
SWAMP	---	---
BEAVER DAM	---	---
TREE LINE	---	---
CUT LINE	---	---
CONTOURS, INDEX	---	---
CONTOURS, INTERMEDIATE	---	---
CONTOURS, APPROXIMATE	---	---
SPOT ELEVATION	---	---
FIELD CONTROL POINT	---	---
COAL LICENCE	---	---

NOTES

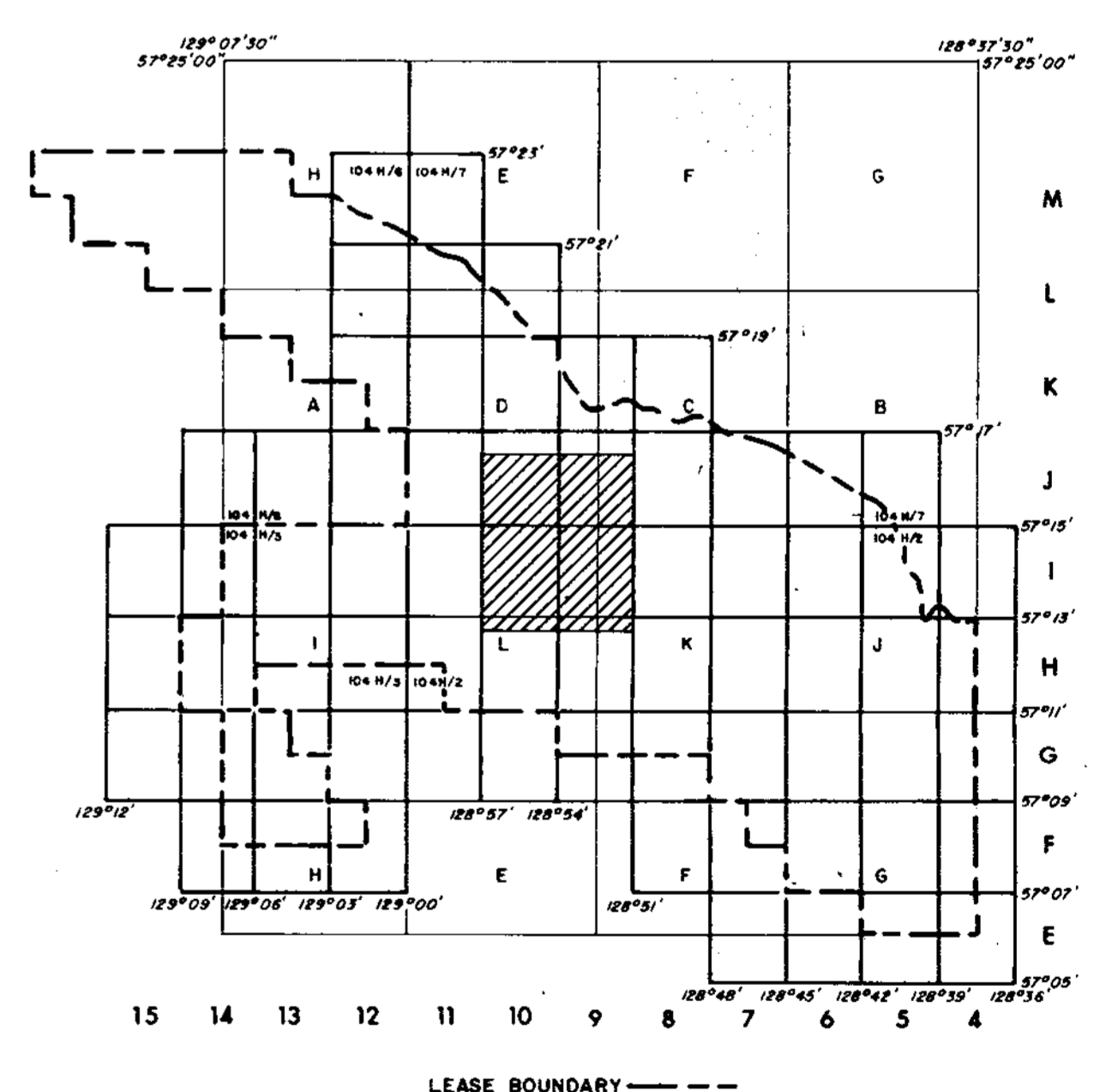
CONTOUR INTERVAL: 10 METERS  
 SURVEY CONTROL TAKEN FROM EXISTING PHOTOIDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.  
 RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL  
 COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:80,000 (APPROXIMATE)



SCALE 1:10,000



MT. KLAPPAN AREA  
INDEX MAP



709  
~~708~~

GA Mount Klappan 84C37A

**GULF CANADA RESOURCES INC.**  
 Coal Division

CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY  
 1984  
 LOST - FOX AREA  
 DRILL HOLE LOCATION MAP**

PREPARED BY: V.L.D. DRAWING No. KPN84LF-C05  
 APPROVED BY: V.L.D. DATE: JAN. 1985



MOUNT KLAPPAN COAL PROJECT

LOST - FOX AREA

GEOLOGICAL REPORT

1984

APPENDIX V

1984 ROTARY DRILL HOLE DATA

VOLUME II

KPNLRRDH84013 TO KPNLRRDH84017



GULF CANADA RESOURCES INC.

COAL DIVISION

709

APPENDIX V

VOLUME II

LOST-FOX AREA

1984 ROTARY DRILL HOLE DATA

KPNLRRDH84013

to

KPNLRRDH84017

APPENDIX V

VOLUME II

LOST-FOX AREA

1984 ROTARY DRILL HOLE DATA

KPNLRRDH 84013

KPNLRRDH 84014

KPNLRRDH 84015

KPNLRRDH 84016

KPNLRRDH 84017

(For each where available)

Data Source Summary

Descriptive Log

Stratigraphic Log

Geophysical Logs

Deviation Survey

1:10 000 Drill Hole Location Map

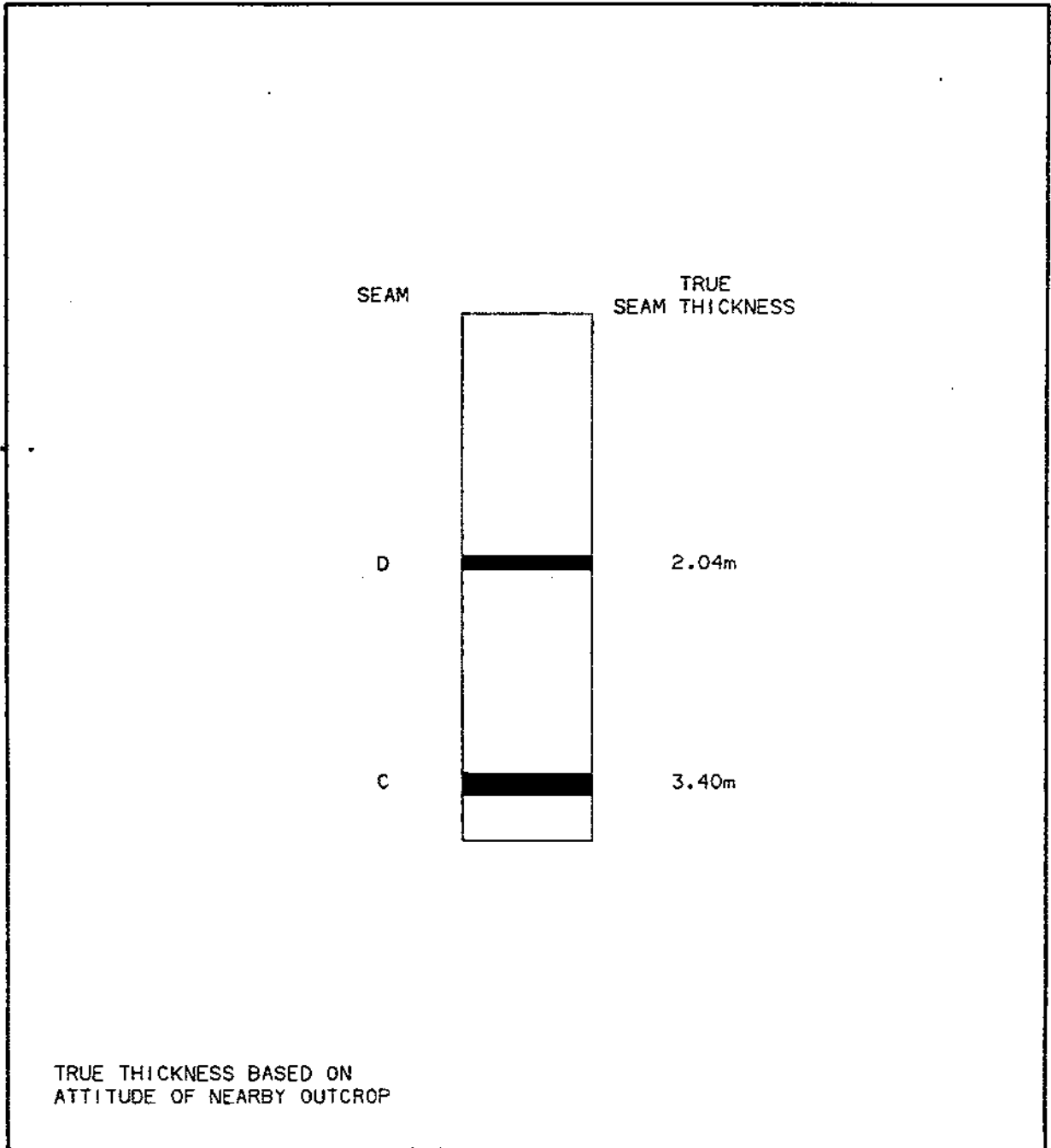
VALID COMPONENT DESCRIPTION CODES

MODIFIER	GRAIN SIZE	COLOR
ROCK (PBL) PEBBLY	(CBL ) COBBLE	(BLK ) BLACK
(SSY ) SANDY (PYR) PYRITIC	(PBL ) PEBBLE	(BN ) BROWN
(SLTY) SILTY	(GRAN) GRANULAR	(BF ) BUFF
(CLYY) CLAYEY	(VCG ) VERY COARSE GRAINED	(GN ) GREEN
(CARB) CARBONACEOUS	(CG ) COARSE GRAINED	(GY ) GREY
(GYP ) GYPSIFEROUS	(MG ) MEDIUM GRAINED	(MAR ) MAROON
(FER ) FERRUGINOUS	(FG ) FINE GRAINED	(ORNG) ORANGE
COAL (C-1,C-2,C-3)	(VFG ) VERY FINE GRAINED	(PURP) PURPLE
(C-4,C-5,C-6)		(YEL ) YELLOW
SED STRUCTURES	BEDDING	(TAN ) TAN
(XBDG ) CROSS BEDDED	(MAS ) MASSIVE	(BLU ) BLUE
(WRMBUR) WORM BURROW	(VTHKB) VERY THICK	(WH ) WHITE
(RIPMK ) RIPPLE MARKS	(THKB ) THICK	COLOR MOD
(BIOTRB) BOITURBATED	(MB ) MEDIUM	(LT ) LIGHT
(RTB ) ROOTLET BED	(THNB ) THIN	(M ) MEDIUM
(SSD ) SOFT SED.DEF.	(VTHNB) VERY THIN	(DK ) DARK
SORTING	(LAM ) LAMINATED	(LT-M )
(VPR ) VERY POOR	CORE STATE	(M-DK )
(PR ) POOR	(PWRD ) POWDERED	(LT-DK)
(MOD ) MODERATE	(VSHRD) VERY SHEARED	(S-P ) SALT/PEP
(WEL ) WELL	(SHRD ) SHEARED	(WEATH) WEATHERED
(VWEL) VERY WELL	(VBKRN) VERY BROKEN	
	(BKRN ) BROKEN (SLD ) SOLID	



**KPNLRRDH 84013**

MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84013



SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84013

DATE - 12/02/84

- HISTORY -

START DATE - 09/14/84

END DATE - 09/16/84

CONTRACTOR - DENHAM DRILLING  
GEOLOGIST - B. GLOVER

OPERATOR - GULF CANADA  
SURVEYOR -

REMARKS - BCA: 77 BASED ON NEARBY OUTCROP

- LOCATION -

PROVINCE - BC  
ELEVATION - 1823.00

ZONE - 9  
NORTHING - 6343940.00  
EASTING - 505266.00

LICENCE/LEASE NUMBER - 7152

LATITUDE - 571426  
LONGITUDE - 1285446

- ORIENTATION -

LENGTH - 86.87

INCLINATION - 88.4  
AZIMUTH - 0.0

HOLE SIZE - 120.7

CEMENT -  
PLUG -  
PIEZ -

CASING DEPTH (M) - 9.44  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

**KPNLRRDH 84013**

**DESCRIPTIVE LOG**



PROJECT: KPM BLOCK: LR DATA SOURCE: RDHB4013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 77	0.00	7.62	7.62			OVERBURDEN	M.GY UNCONSOLIDATED CLAY; SUBROUNDED TO SUBANGULAR SANDSTONE AND SILTSTONE FRAGMENTS; CASING SET AT 9.45 M
77	7.62	15.24	7.62			SILTSTONE	M.GY
77	15.24	18.29	3.05			SILTSTONE	M.GY MINOR SANDSTONE INTERBEDS
77	18.29	25.91	7.62			SANDSTONE	FG.DK.GY
77	25.91	30.78	4.87			SANDSTONE	FG.M.GY SHATTERED
77	30.78	31.09	0.31			MUDSTONE	DK.GY INTERMIXED WITH MEDIUM GREY CLAY
77	31.09	38.45	7.36			SANDSTONE	FG.MEL.M.GY INTERBEDDED MUDSTONE
77	38.45	40.54	2.09		D	COAL	C-3.BLK MUDSTONE SPLITS; SOME C-2 AND C-4 COAL

\* DENOTES MEASURED BCA

PROJECT: KPM BLOCK: LR DATA SOURCE: RDHB4013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	40.54	41.15	0.61			SILTSTONE	DK.GY INTERBEDDED FINE GRAINED SANDSTONE; VERY SHATTERED
77	41.15	78.28	37.13			SANDSTONE	MEL.M.GY INTERBEDDED SILTSTONE
77	78.28	81.77	3.49		C	COAL	C-4.BLK DIRTY SEAM; SOME C-3 COAL; ABUNDANT INTERBEDDED CARBONACEOUS MUDSTONE; SLIGHT WATER LOSS
77	81.77	82.60	0.83			MUDSTONE	GY SLIGHT WATER LOSS
77	82.60	86.87	4.27			SANDSTONE	CG.MEL.DK.GY TOTAL DEPTH OF HOLE

\* DENOTES MEASURED BCA  
NEWPAGE

709

GR-Mount Klappan 84(3)A

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84013

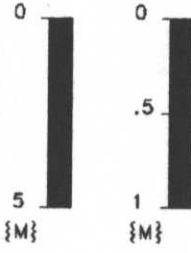
GEOLOGIST : B. GLOVER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40

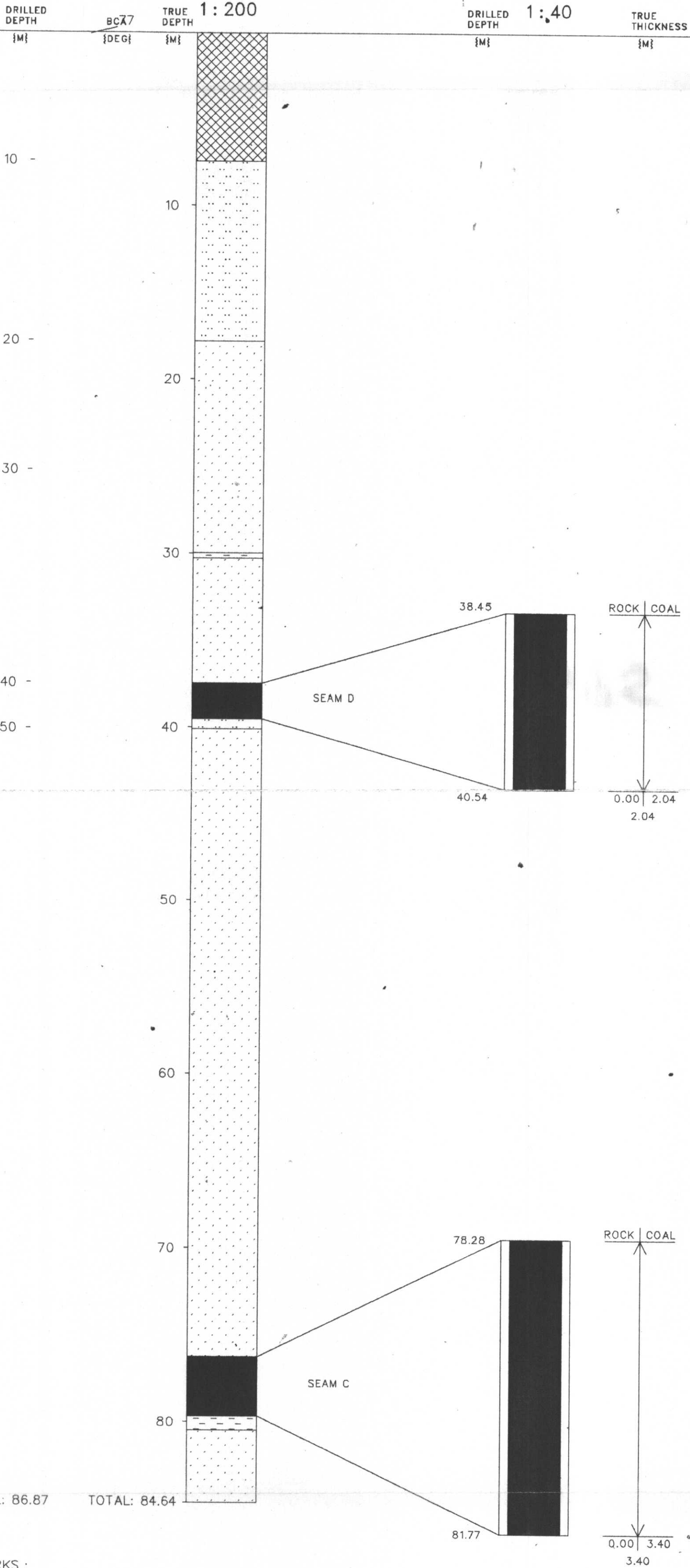


NORTHING: 6343940.0 N  
 EASTING: 505266.0 E

INCLINATION: 88.4°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL

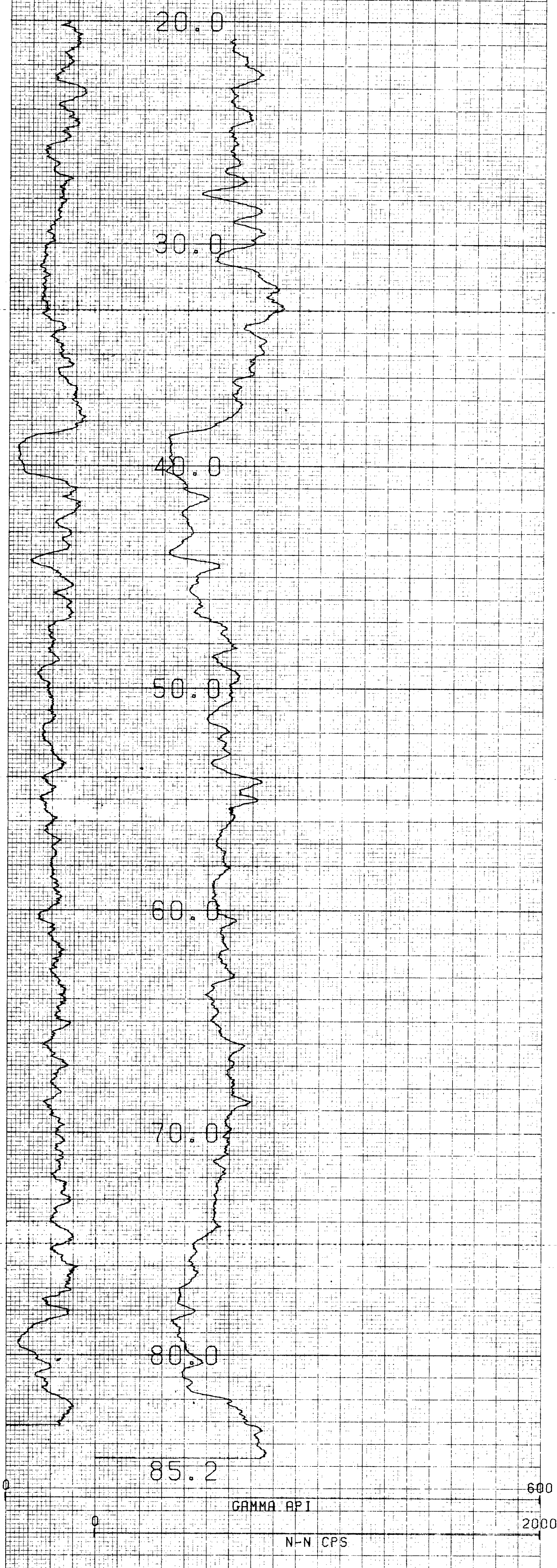


463

461

GR-110901 KLAPPAN 34(3)A

459



COMPI-LOG V8L2 PLOT 09-17-84

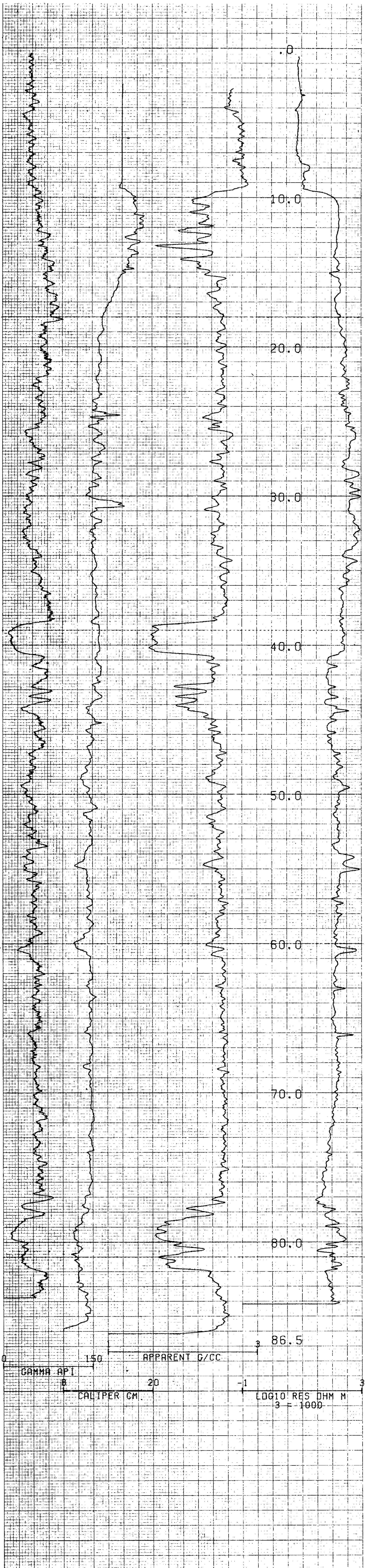
RDH-84-013  
 GULF CANADA RES. INC  
 MT. KLAPPAN

~~675~~  
**709**

HOLE DIAMETER : 11.4  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARDD APPL. #1007L1

1160





427

425

709  
~~675~~

COMPU-LOG V8L2 PLOT 09-17-84  
 RDH-84-013  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 HOLE DIAMETER : 11.4  
 PROBE # 9090A - 41B  
 SENSOR #4 CAL STD CPS = 6580  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # P811  
 K. SKAROD APPL.#2028LI

G.R. Mearns Klappan 84(3)79

423



GR - Mount Klappan 84(3)H

# VERTICAL DEVIATION

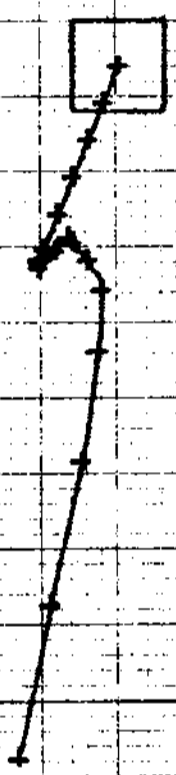
~~709~~  
709

COMPU-LOG VBL1 DEVIATION  
DATA FROM : VBL2

CLIENT : GULF CANADA RES. INC  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-013  
DATE OF LOG : 09-17-84  
PROBE : 9055A 0005

SCALE: .25 M/DIV  
MAG DECL: 29.5  
TRUE DEPTH: 85.0 M  
AZIMUTH: 186.4  
DISTANCE: 2.33 M

+ = S.O M INCR  
Δ = TOP OF ZONE  
◊ = BOTTOM OF ZONE  
TRUE NORTH ↑





# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

COMPANY  
OWNER

GuTf Canada Resources Inc.

BOREHOLE

RDH-84-013

AREA

Mt. Klappan

ELEVATION

COUNTY

STATE

SECTION

TOWNSHIP

RANGE

## HOLE DATA

TOTAL DEPTH — DRILLER	86.5m	BIT SIZE	11.4cm
TOTAL DEPTH — LOGGER	86.5m	CASING — TYPE & SIZE	16.8cm steel
TOTAL FOOTAGE LOGGED	86.5m	CASING DEPTH	9.7m
LOGGING SPEED	9m/min	BOREHOLE FLUID	H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ °F
PROBE NO.	9030A-418	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			Tape #1 TK #1

REMARKS:

BOREHOLE

RDH-84-013

DATE

9/17/84

UNIT/OPERATOR

P811 K. Skarbo

FIELD OFFICE

Calgary

## EQUIPMENT DATA

PROBE MODEL	8810	8830	8850/55	8880
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	8.75" x 4.25"	1.125" x 4.5"	8.75" x 4.0"	5" x 3.0"
STD. K FACTOR	1.50 x 10 <sup>-2</sup>	—	5.50 x 10 <sup>-2</sup>	1.62 x 10 <sup>-2</sup>
STD. DEADTIME	1.1 μsec	—	1.10 μsec	1.1 μsec
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K FACTOR: 10 <sup>-2</sup>	—	—	—	—
DEADTIME: μsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—
DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.0"
SOURCE TYPE	—	Cs <sup>137</sup>	—	Cs <sup>137</sup>
SOURCE NO.	—	283	—	—
SOURCE STRENGTH	—	125mCi	—	—
SOURCE SPACING	—	19cm	—	—
Cal Std	—	6588	—	—
Cal Run	—	7133	—	—
DETECTOR TYPE	—	—	NaI	—
DETECTOR SIZE	—	—	1.8" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—
SINGL. PT RESISTANCE	1.4"D x 2.5'L	—	1.4"D x 2.5'L	1.1"D x 2.5'L
RESISTIVITY	—	8" FOCUSER	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—



# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE	DATE
RDH-84-013	9/17/84
UNIT/OPERATOR	FIELD OFFICE
P811 K. Skarbo	Calgary

COMPANY  
Gulf Canada Resources Inc.

BOREHOLE  
RDH-84-013

AREA  
MT. Klappan

COUNTY  
STATE

SECTION  
TOWNSHIP  
RANGE

## HOLE DATA

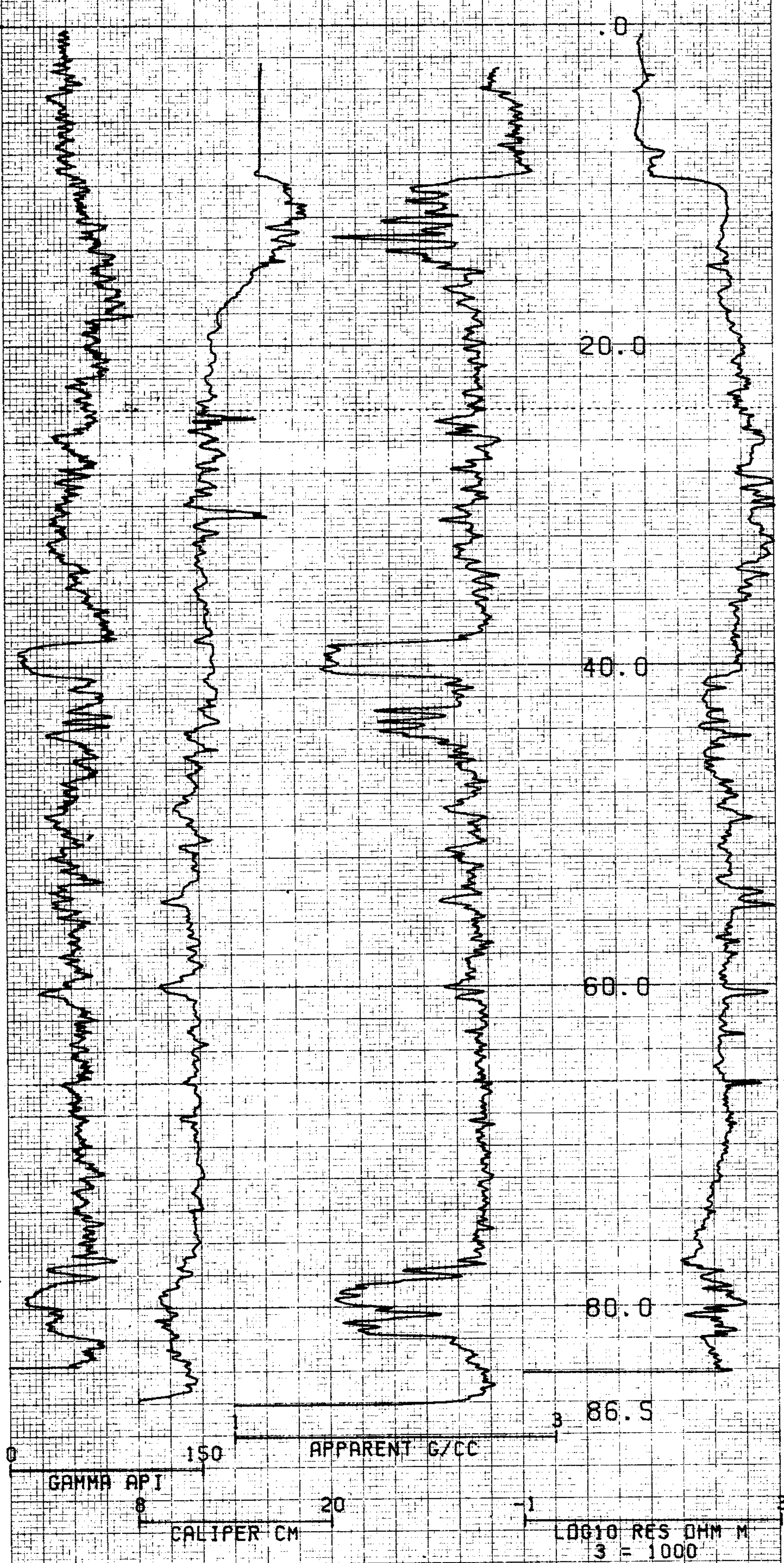
TOTAL DEPTH — DRILLER	: 86.5m	BIT SIZE	: 11.4cm
TOTAL DEPTH — LOGGER	: 85.2m	CASING — TYPE & SIZE	: 16.8cm steel
TOTAL FOOTAGE LOGGED	: 85.2m	CASING DEPTH	: 9.7m
LOGGING SPEED	: 9m/min	BOREHOLE FLUID	: H <sub>2</sub> O
REFERENCE LEVEL	: Ground	FLUID RESISTIVITY	: @ °F
PROBE NO.	: 9055A-005	SOFTWARE LEVEL	: 8.2*A
		SCALE SELECTION	: <input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
		Tape #1	TK #2

REMARKS:

## EQUIPMENT DATA

PROBE MODEL	9010	9030	9050/55	9060
PROBE DIAMETER	1.87"	2.9"	1.87"	1.4"
NATURAL GAMMA	DETECTOR TYPE	NaI	NaI	NaI
	DETECTOR SIZE	.875" x 1.25"	1.125" x 4.5"	.875" x 4.0"
	STD. K-FACTOR	1.59 x 10 <sup>-5</sup>	—	.558 x 10 <sup>-5</sup>
	STD. DEADTIME	1 μsec	—	1.18 μsec
	CALIB. MODEL LOC.	—	—	—
	CALIB. DATE	—	—	—
	K-FACTOR x 10 <sup>-5</sup>	—	—	—
	DEADTIME μsec	—	—	—
	TEST READING	—	—	—
	WATER FACTOR	—	—	—
CASING FACTOR	—	—	—	
DENSITY	DETECTOR TYPE	—	NaI	—
	DETECTOR SIZE	—	.5" x 1.5"	.5" x 3.0"
	SOURCE TYPE	—	Co <sup>137</sup>	Co <sup>137</sup>
	SOURCE NO.	—	—	—
	SOURCE STRENGTH	—	—	—
	SOURCE SPACING	—	—	—
NEUTRON	DETECTOR TYPE	—	—	He <sup>3</sup>
	DETECTOR SIZE	—	—	1.0" x 6.0"
	SOURCE TYPE	—	—	AmBe
	SOURCE NO.	—	—	264
	SOURCE STRENGTH	—	—	IC1
	SOURCE SPACING	—	—	40cm
Cal Std	—	—	152	
Cal Run	—	—	203	
SNGL. PT RESISTANCE	1.4"D x 2.5'L	—	1.4"D x 2.5'L	1.1"D x 2.5'L
RESISTIVITY	—	6" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—





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COMPU-LOG V8L2 PLOT 09-17-84

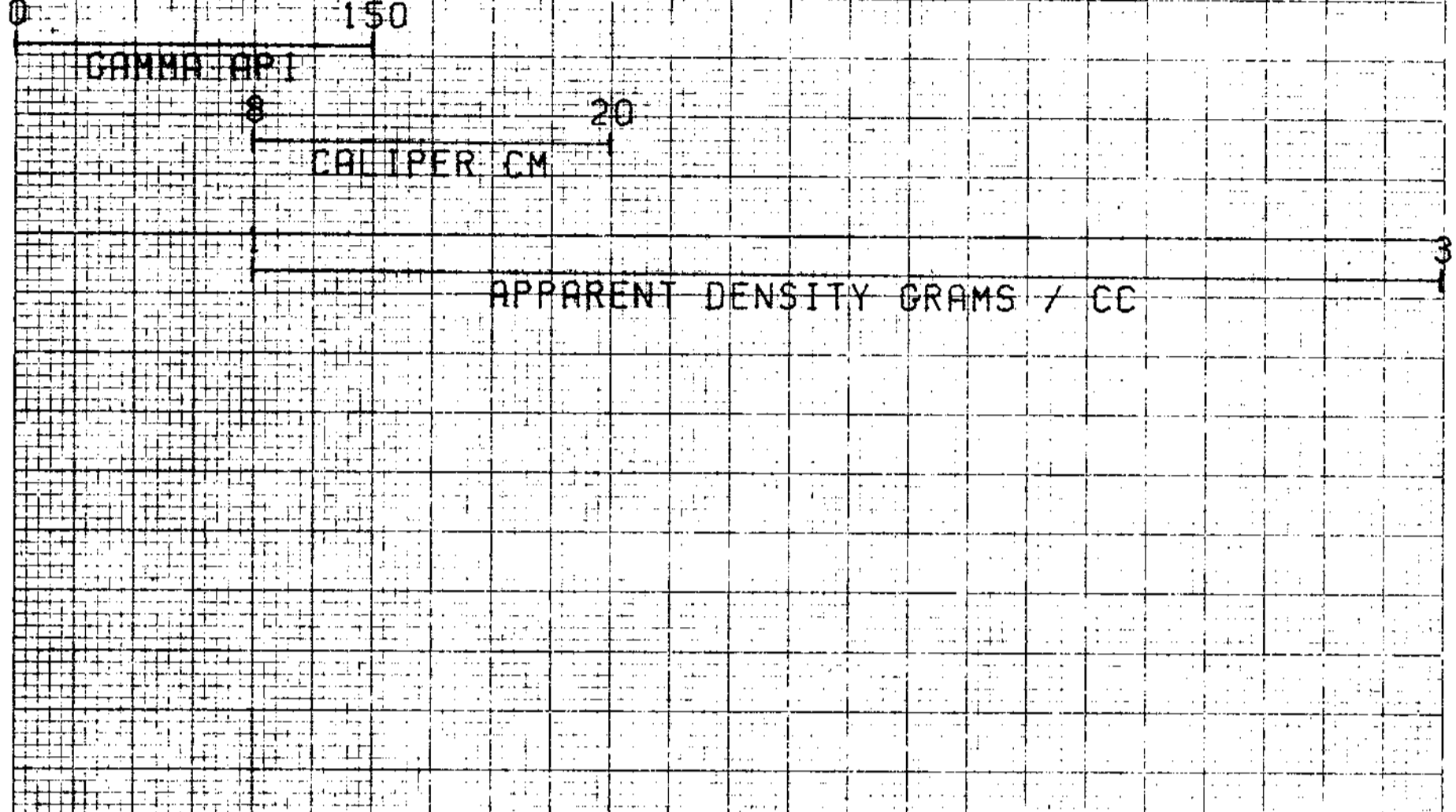
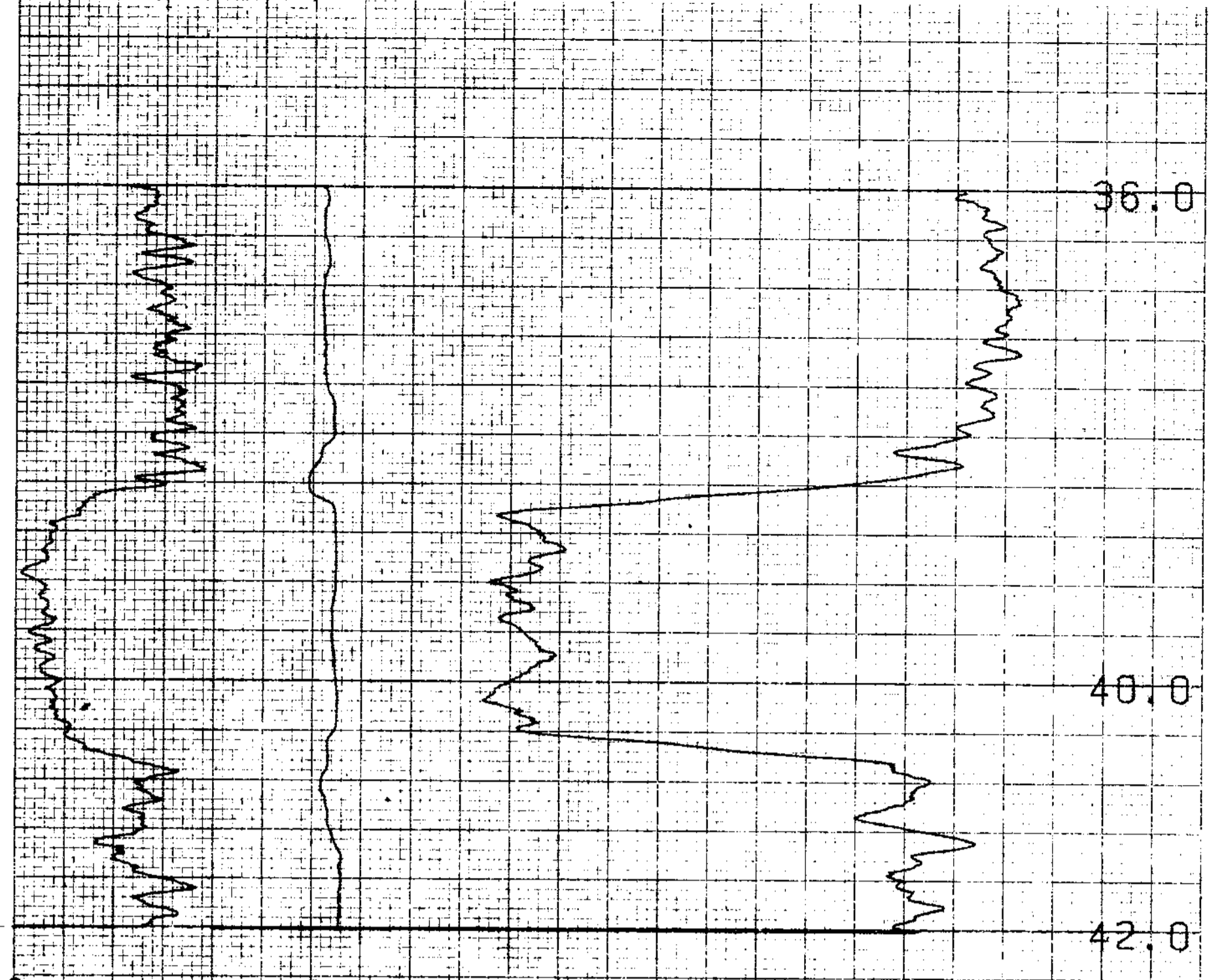
RDH-84-013  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

~~709~~ 709

HOLE DIAMETER : 11.4  
 PROBE # 9030H - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L28 TRUCK # P811  
 K. SKARSD APP#1028L1

COPY- REDUCED SCALE





709  
~~695~~

COMPU-LOG V8L2 PLOT 09-17-84

RDH-84-013  
GULF CANADA RES. INC.  
MT. KLAPPAN

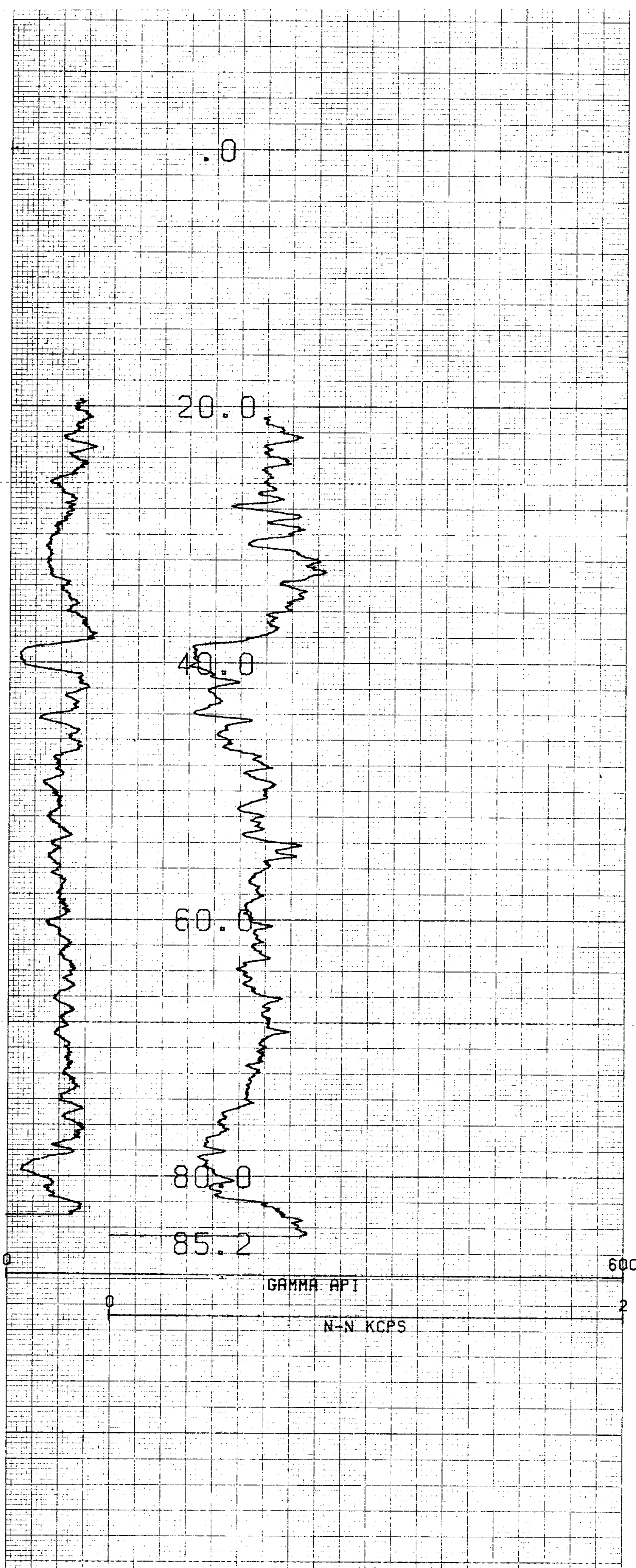
HOLE DIAMETER : 11.4  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2B TRUCK # PB11  
 K. SKARBA APPL. #3708L1

381

379

GR-Logcut Klappan 87(3)A

COPY-REDUCED SCALE



COMPU-LOG VBL2 PLOT 09-17-84

RDH-84-013  
GULF CANADA RES. INC  
MT. KLAPPAN

~~575~~  
709

HOLE DIAMETER : 11.4  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA VBL2 TRUCK # P811  
 K. SKARBD APPL. #1007L1

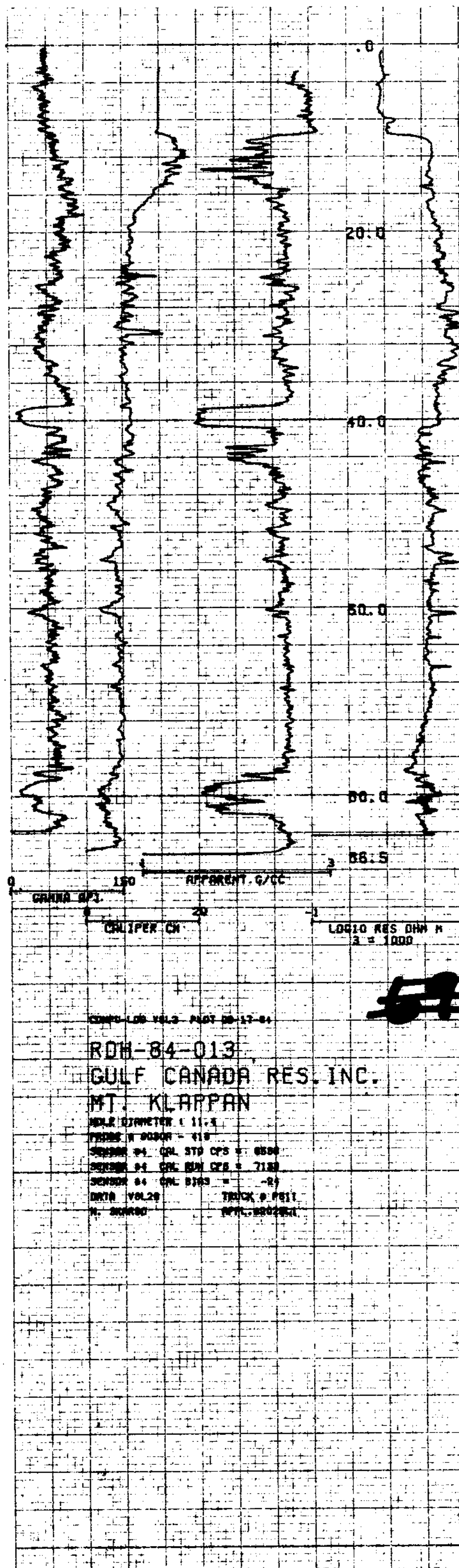


GR. MOUNT KLAPPAN S4(9)H

COPY- REDUCED SCALE

CENTURY GEOPHYSICAL CORP. PART NO. 786-0038

CENTURY

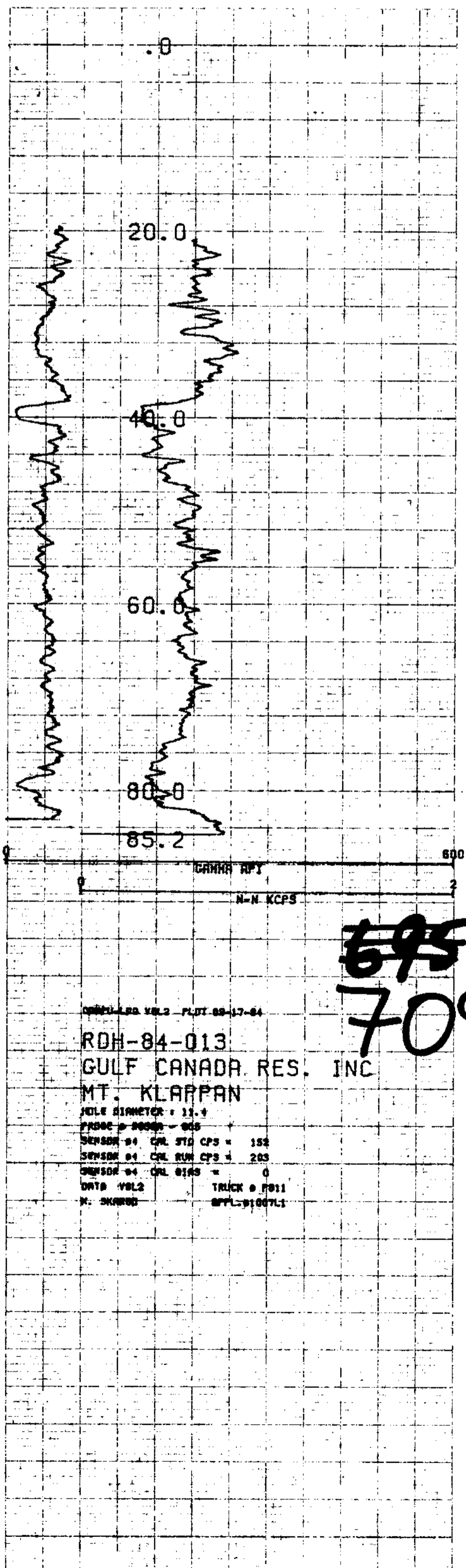


COMP LOG VOLS. PLOT 08-17-84

RDH-84-013  
GULF CANADA RES. INC.  
MT. KLAPPAN

WELL DIAMETER = 11.5  
 PAPER # 00000 = 410  
 SENSOR #4 CAL STD CPS = 6500  
 SENSOR #4 CAL RUN CPS = 7100  
 SENSOR #4 CAL BIAS = -21  
 DATA VOL 20 TRACK # 011  
 H. BOARD APP. 8502001

GR - Mount Klappan 84(3)A



COPY-REDUCED SCALE



**KPNLRRDH 84014**

MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84014

SEAM

E



TRUE  
SEAM THICKNESS

3.29m

TRUE THICKNESS BASED ON TWO  
CORES TAKEN IN THIS HOLE

SCALE 1:1000

GLLF CANADA RESOURCES INC.  
13/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84014

DATE - 12/02/84

- HISTORY -

START DATE - 09/16/84

END DATE - 09/16/84

CONTRACTOR - DENHAM DRILLING

GEOLOGIST - B. GLOVER

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - ATTEMPTED CORING FROM BEDROCK; COAL BENEATH UNCONSOLIDATED OVERBURDEN; HOLE CAVING IN WHILE CORING.

- LOCATION -

PROVINCE - BC

ELEVATION - 1677.50

ZONE - 9

NORTHING - 6343042.00

EASTING - 506030.00

LICENCE/LEASE NUMBER - 7152

LATITUDE - 571356

LONGITUDE - 1285400

- ORIENTATION -

LENGTH - 22.56

INCLINATION - 0.0

AZIMUTH - 0.0

HOLE SIZE - 130.2

CEMENT -

PLUG -

PIEZ -

CASING DEPTH (M) - 13.41

AQUIFER DEPTHS (M) - 0.00

0.00

LOST CIRC. DEPTHS (M) - 0.00

0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

**KPNLRRDH 84014**

**DESCRIPTIVE LOG**



84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	0.00	3.35	3.35			OVERBURDEN	M.GY UNCONSOLIDATED CLAY CONTAINING SILTSTON E. FRAGMENTS.
66	3.35	3.66	0.31			MUDSTONE	DK.GY
66	3.66	4.00	0.34			MUDSTONE	CARB.DK.GY
66	4.00	7.60	3.60		E	COAL	WITH INTERBEDDED MUDSTONE; DIRTY SEAM
66	7.60	12.50	4.90			MUDSTONE	CARB.DK.GY MINOR COALY STRINGERS
66	12.50	13.21	0.71			MUDSTONE	BLK
66	13.21	14.69	1.48			MUDSTONE	CARB.BLK MINOR COALY STRINGERS; CASING SET AT 13.41 M.
* 66	14.69	16.46	1.77			SILTSTONE	M.GY BRKN CORE #1 13.41-16.46 M, 0.76 M RECOVERED ; INTERBEDDED MUDSTONE

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	16.46	18.44	1.98			MUDSTONE	DK.GY.SLD CORE #2 16.46-18.44 M; 1.92 M RECOVERED ; 1 BIVALVEFOSSIL(?); MINOR COALY STRINGERS
70	18.44	19.51	1.07			MUDSTONE	DK.GY
70	19.51	22.56	3.05			SANDSTONE	MEL.H.GY TOTAL DEPTH OF HOLE

\* DENOTES MEASURED BCA  
NEWPAGE

709

~~675~~

GR-Mount Klappan 84(3)A

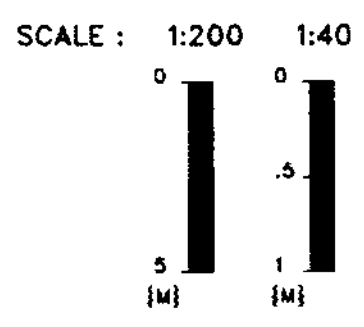
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84014

GEOLOGIST : B. GLOVER

DATE : DEC 04/84

DRAWING NO. :

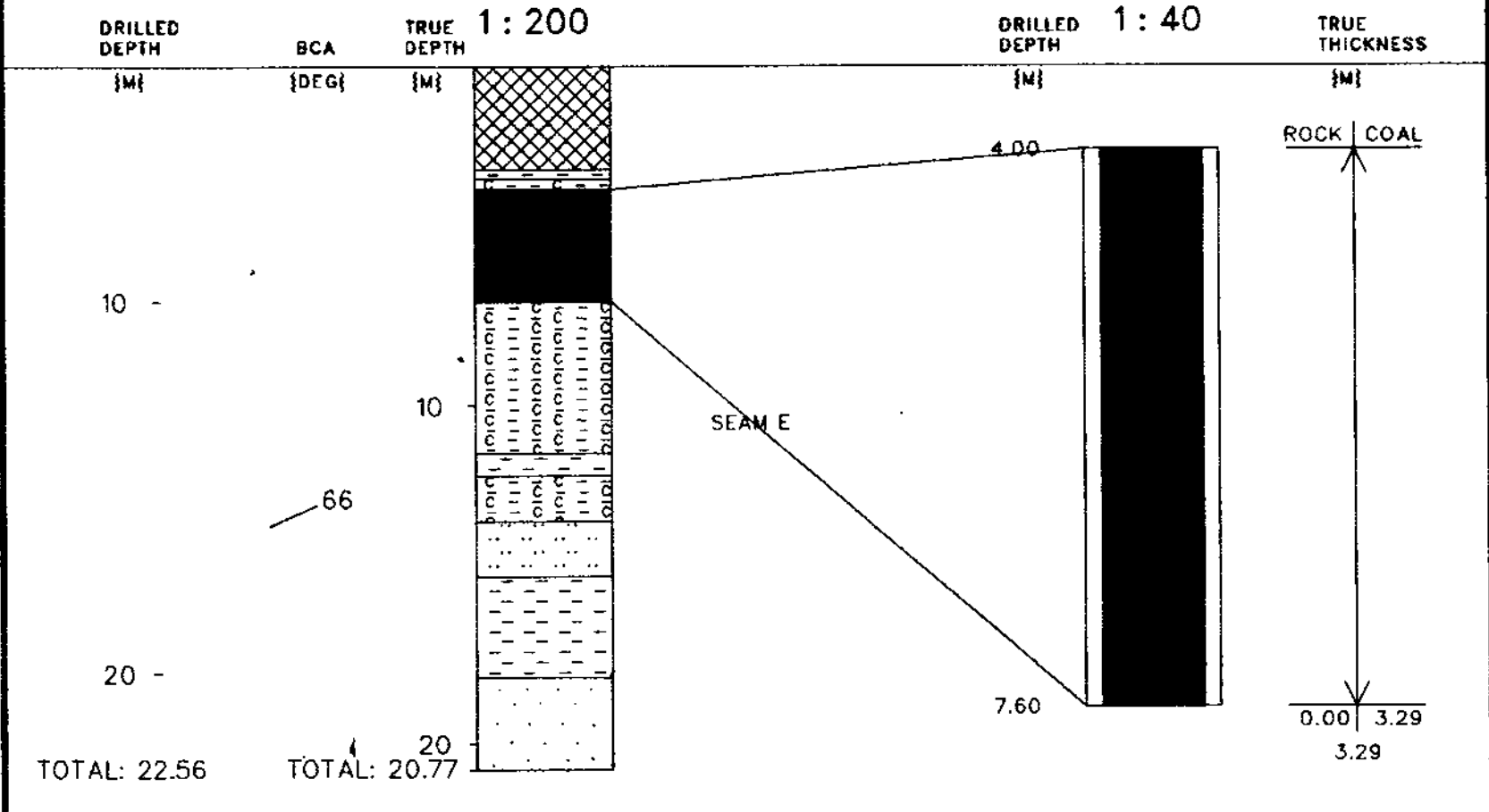
LITHOLOGIC SYMBOLS



NORTHING: 6343042.0 N  
 EASTING: 506030.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

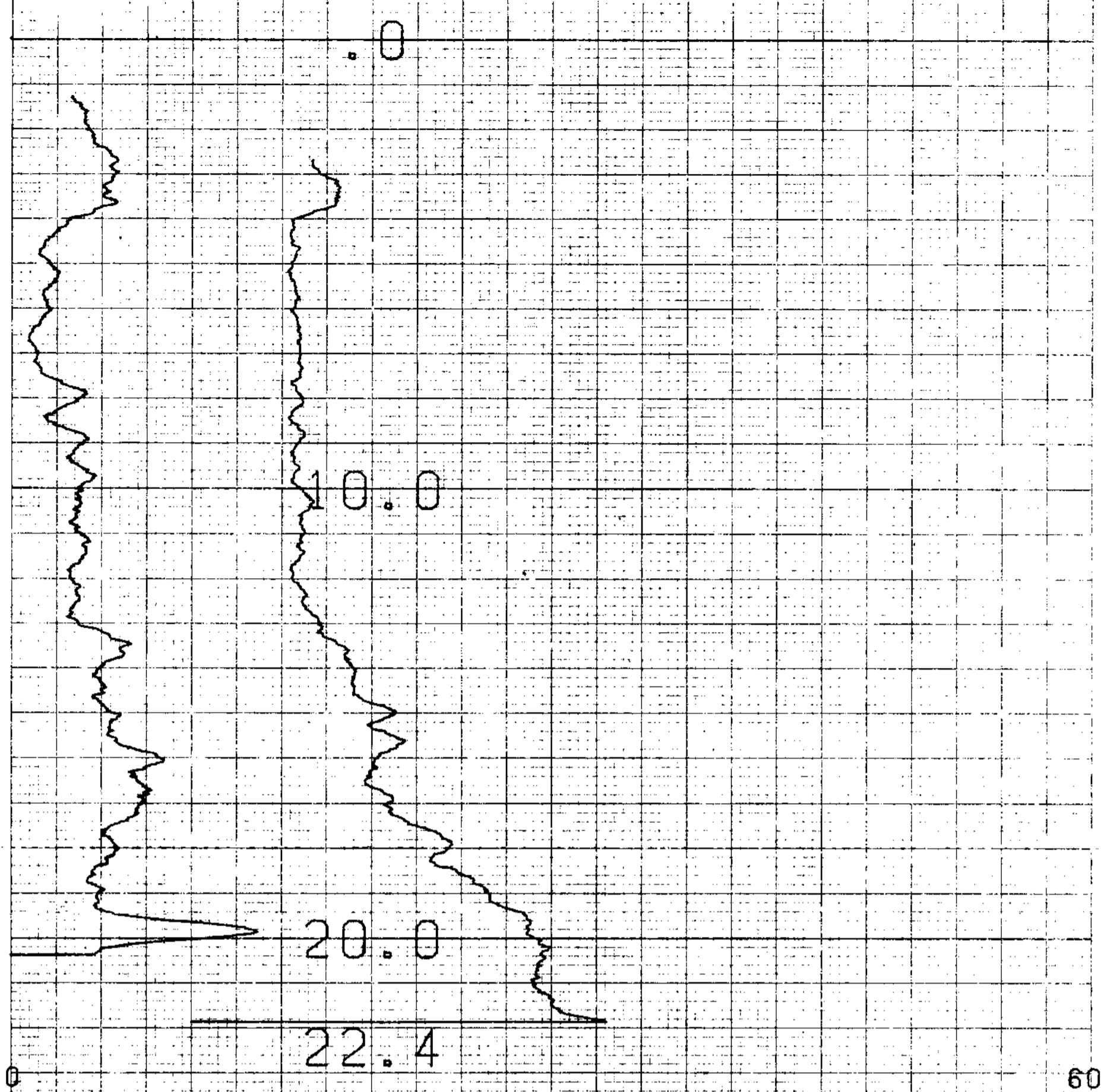
SEAM DETAIL



REMARKS :

TRUE THICKNESS BASED ON BCA'S OBTAINED FROM TWO CORES TAKEN IN THIS HOLE.

PLOT 2 17:58:00 TUES 4 DEC, 1984 JOB-TSTCEGO GULF CANADA DISPLA 9.0



203

GR-119-119-119 Klappan 84(3)A

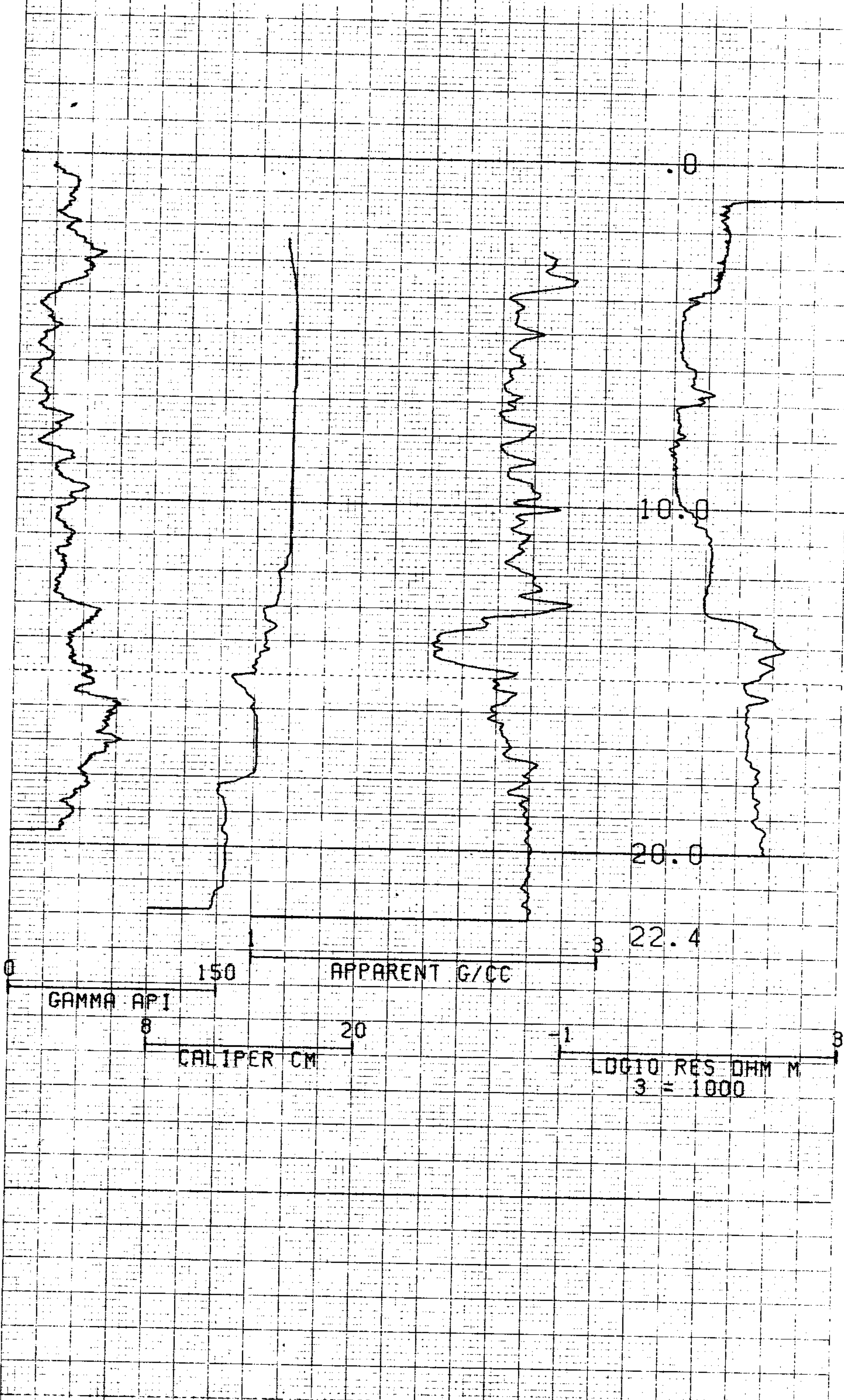
201

COMPU-LOG V8L2 PLOT 09-19-84

709

RDH-84-014  
 GULF CANADA RES. INC  
 MT. KLAPPAN

HOLE DIAMETER = 13.0  
 PROBE # 0055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARBO APPL. #1007LI



COMPU-LOG V8L2 PLOT 09-19-84

RDH-84-014  
GULF CANADA RES. INC  
MT. KLAPPAN

~~675~~  
**709**

HOLE DIAMETER = 13.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # P811  
 K. SKARBO APPL. #2028L1

125

GR-110 Unit Klappan 54(3)7



# VERTICAL DEVIATION

COMPU-LOG V8L1 DEVIATION

DATA FROM : V8L2

CLIENT : GULF CANADA RES. INC

LOCATION : MT. KLAPPAN

HOLE ID : RDH-84-014

DATE OF LOG : 09-19-84

PROBE : 9055A 0005

~~709~~  
709

SCALE: .25 M/DIV

MAG DECL: 29.5

TRUE DEPTH: 22.1 M

AZIMUTH: 291.0

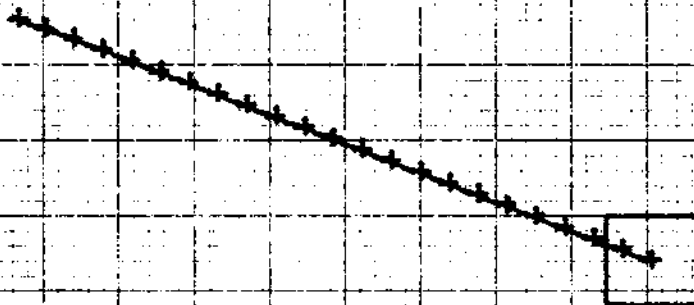
DISTANCE: 2.25 M

+ = 1.0 M INCR

Δ = TOP OF ZONE

◇ = BOTTOM OF ZONE

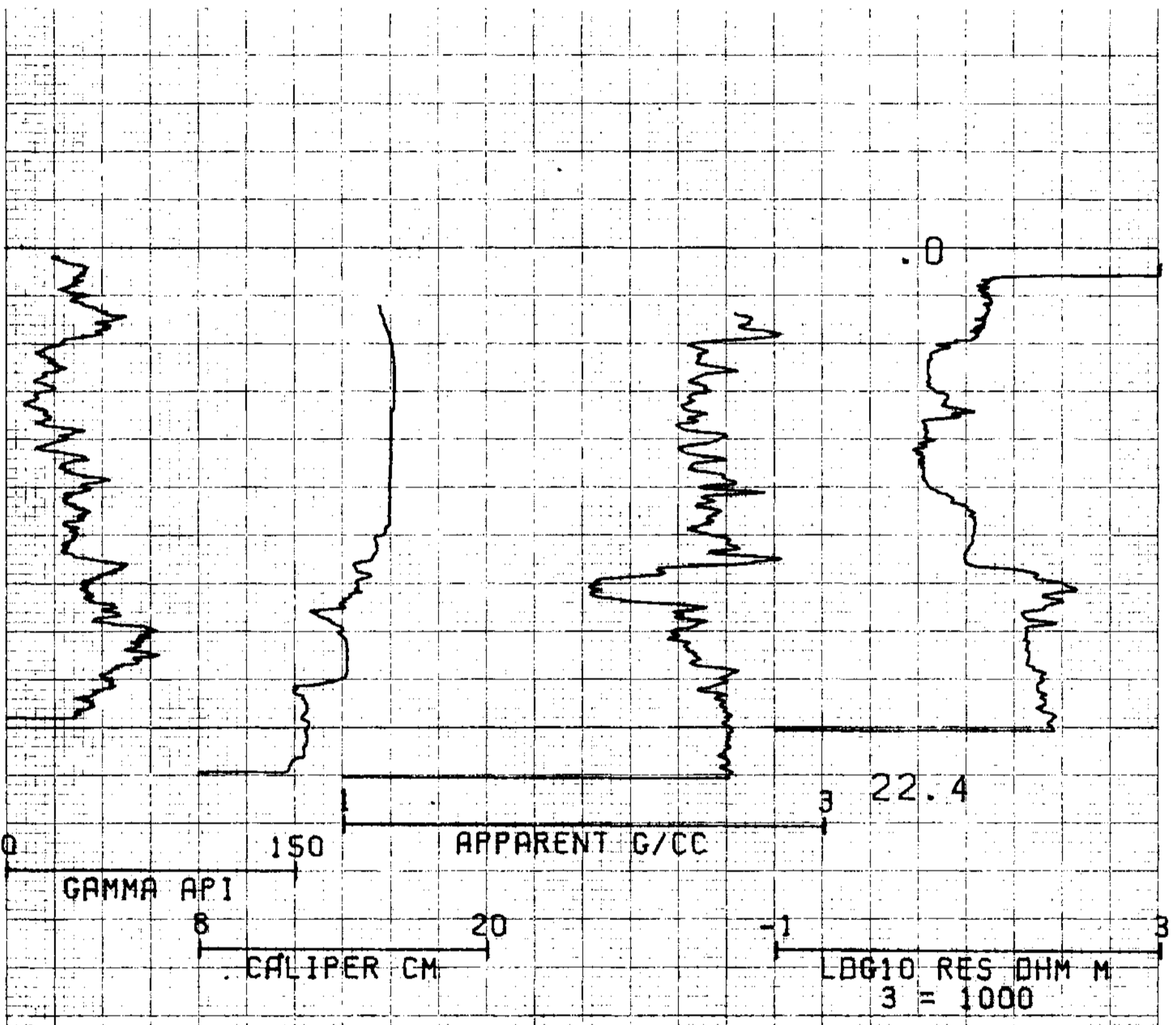
TRUE NORTH ↑



GR Mount Klappan 84(3)A







COMPU-LOG V8L2 PLOT 09-19-84

RDH-84-014  
 GULF CANADA RES. INC  
 MT. KLAPPAN

~~115~~  
709

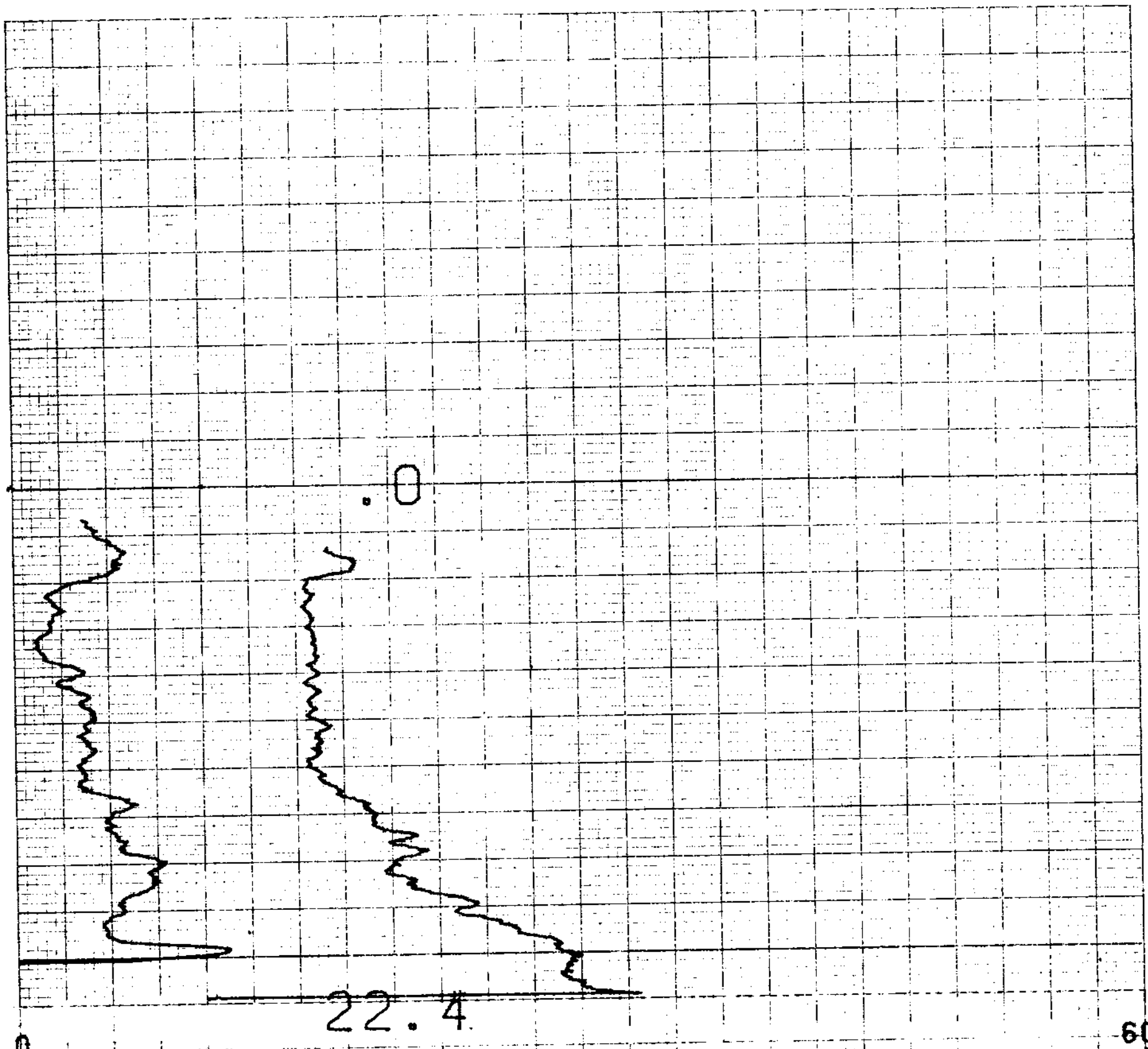
HOLE DIAMETER : 13.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # F011  
 K. SKARBE APPL. #1026L1

COPY- REDUCED SCALE

315

GR-Mount Klappan 84(8)A





GAMMA API

N-N KCPS

COMPU-LOG V8L2 PLOT 09-19-84

RDH-84-014

GULF CANADA RES. INC

MT. KLAPPAN

HOLE DIAMETER : 18.0

PROBE # 9055A - 005

SENSOR #4 CAL STD CPS = 152

SENSOR #4 CAL RUN CPS = 203

SENSOR #4 CAL BIAS = 0

DATA V8L2

TRUCK # F811

K. SKARBE

APPL. #1007L1

~~709~~  
709

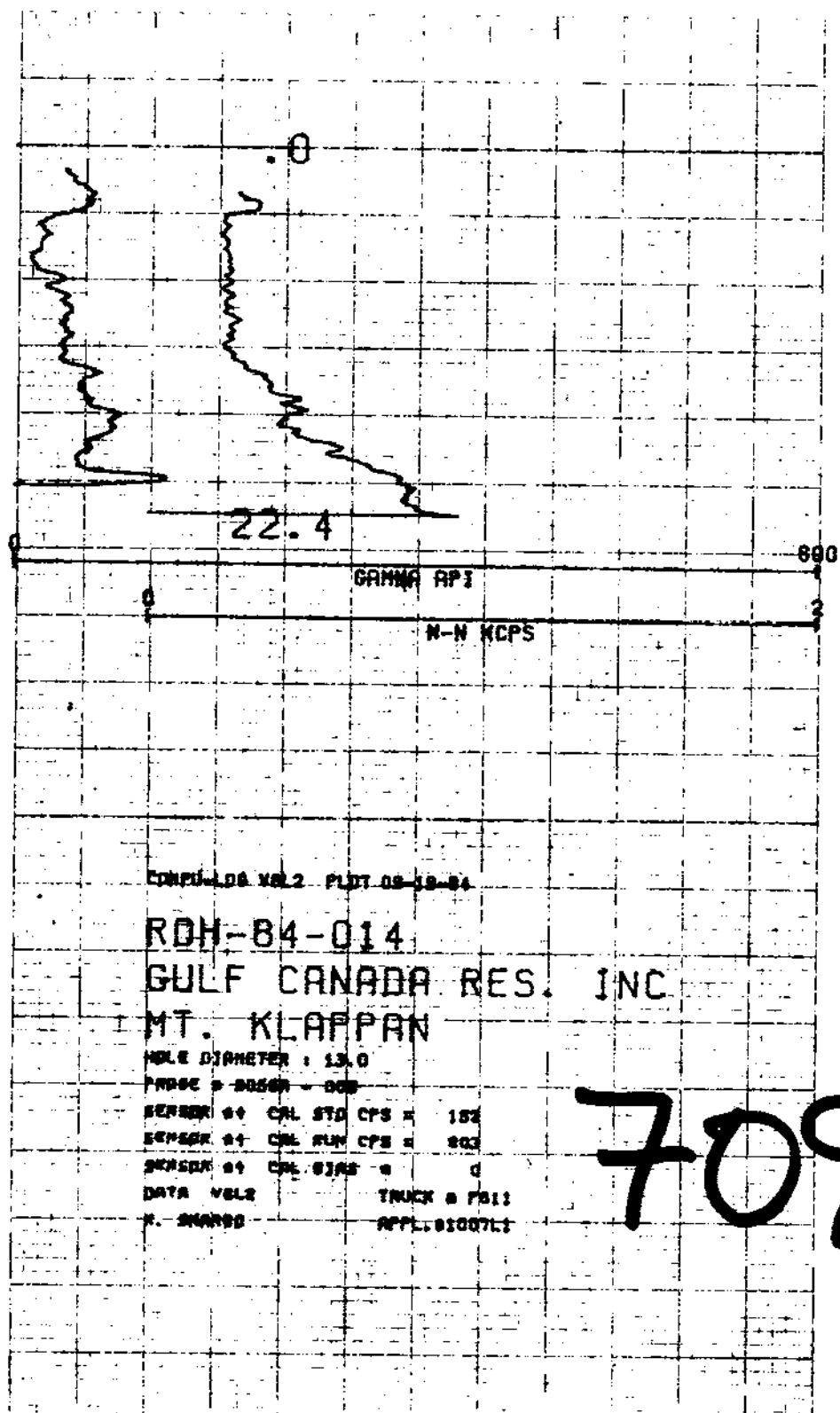
COPY-REDUCED SCALE

GR. Mount Klappan S4(3)A



COPY - REDUCED SCALE

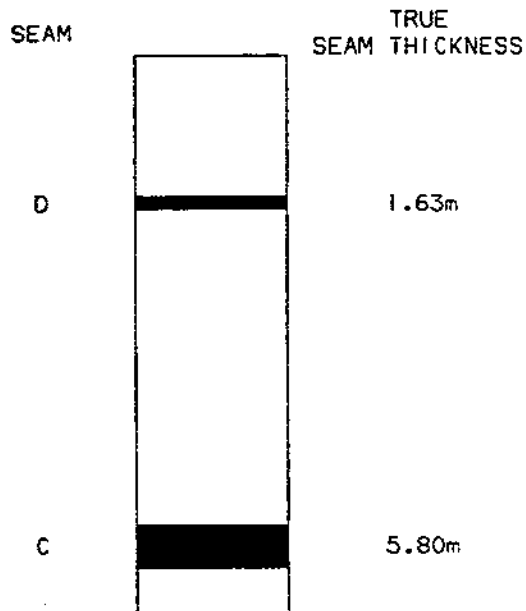
OR-Mount Klappan 8413)H



**KPNLRRDH 84015**



MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84015



TRUE THICKNESS BASED ON ATTITUDE  
OF NEARBY OUTCROP AS WELL AS  
NEARBY CORED ROTARY HOLE

SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84015

DATE - 12/02/84

- HISTORY -

START DATE - 09/17/84

END DATE - 09/18/84

CONTRACTOR - DENHAM DRILLING

GEOLOGIST - B. GLOVER

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - MINOR COAL/CARBONACEOUS MUDSTONE DIRECTLY UNDERLYI  
NG SURFICIAL OVERBURDEN --POSSIBLY ERODED. BCA: 70  
BASED ON NEARBY OUTCROP.

- LOCATION -

PROVINCE - BC  
ELEVATION - 1678.00

LICENCE/LEASE NUMBER - 7152

ZONE - 9  
NORTHING - 6343050.00  
EASTING - 506012.00

LATITUDE - 571357  
LONGITUDE - 1285401

- ORIENTATION -

LENGTH - 78.94

HOLE SIZE - 120.7

INCLINATION - 0.0  
AZIMUTH - 0.0

CEMENT -  
PLUG -  
PIEZ -

CASING DEPTH (M) - 10.60  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

**KPNLRRDH 84015**

**DESCRIPTIVE LOG**

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	0.00	2.74	2.74			OVERBURDEN	UNCONSOLIDATED CLAY CONTAINING SILTSTONE AND SANDSTONE FRAGMENTS
70	2.74	3.96	1.22		E	MUDSTONE	CARB. DK. GY MINOR COALY STRINGERS
70	3.96	5.49	1.53		E	MUDSTONE	CARB. DK. GY COALY STRINGERS
70	5.49	6.71	1.22			MUDSTONE	CARB. DK. GY
70	6.71	8.84	2.13			SILTSTONE	M. GY
70	8.84	11.58	2.74			MUDSTONE	DK. GY CASING SET AT 10.06 M
70	11.58	20.74	9.16			SANDSTONE	FG. M. GY
70	20.74	22.47	1.73		D	COAL	C-3. BLK SOME C-2 AND C-4 COAL; CARBONACEOUS MUD STONE INTERBEDS
70	22.47	22.86	0.39			MUDSTONE	DK. GY COALY STRINGERS

\* DENOTES MEASURED BCA

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	22.86	26.52	3.66			MUDSTONE	DK. GY
70	26.52	40.54	14.02			SANDSTONE	FG. M. GY
70	40.54	43.89	3.35			SILTSTONE	DK. GY VERY HARD
70	43.89	44.20	0.31			SANDSTONE	FG. M. GY
70	44.20	45.42	1.22			SILTSTONE	DK. GY VERY HARD
70	45.42	59.44	14.02			SILTSTONE	M. GY
70	59.44	66.23	6.79			SILTSTONE	M. GY
70	66.23	72.40	6.17		C	COAL	C-3. BLK SAME C-2 AND C-4 COAL; CARBONACEOUS MUD STONE INTERBEDS
70	72.40	78.94	6.54			MUDSTONE	DK. GY TOTAL DEPTH OF HOLE

\* DENOTES MEASURED BCA  
NEWPAGE



GR-Mount Klappan 84(3)A

709 ~~575~~

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84015

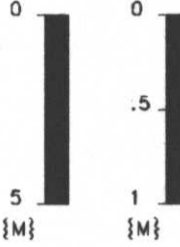
GEOLOGIST : B. GLOVER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

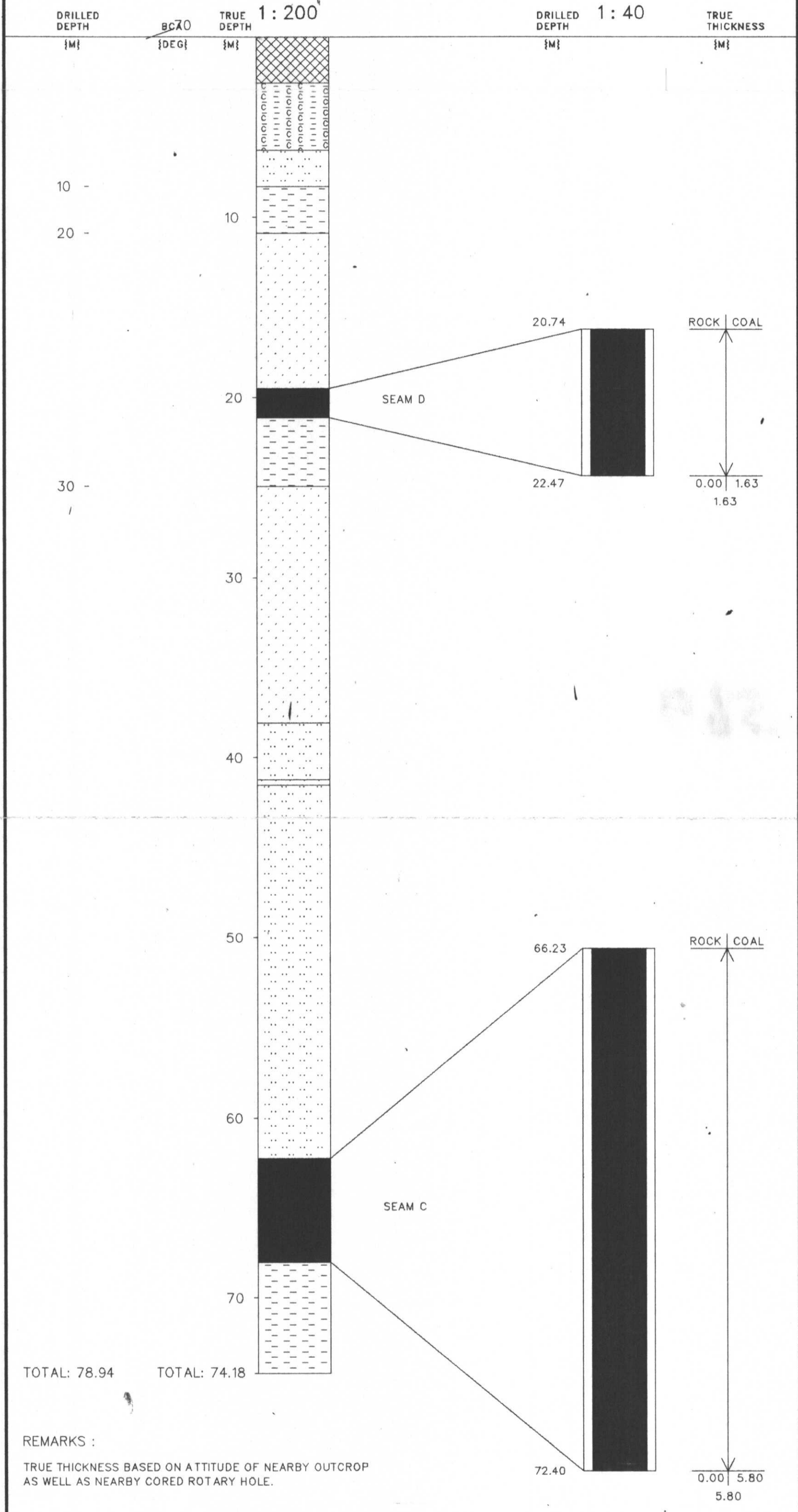
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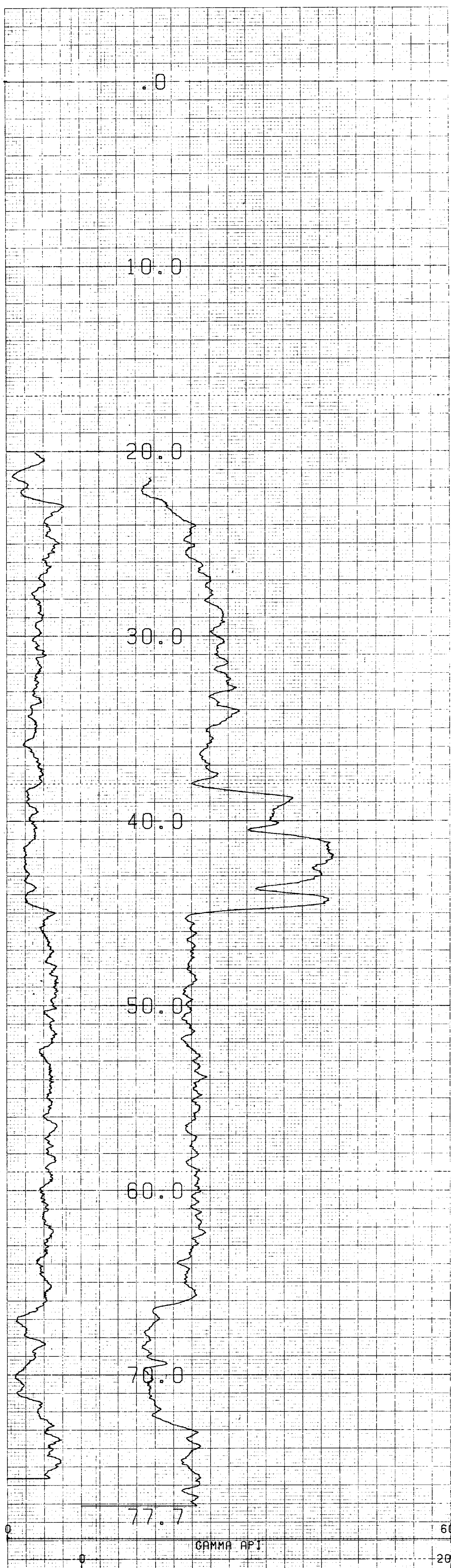
NORTHING: 6343050.0 N  
 EASTING: 506012.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL



PLOT 2 17.55.18 TUCS 4 DEC, 1984 JOB-151CEGO GULF CANADA DISSPLA 9.0



COMPU-LOG V8L2 PLOT 09-18-84

RDH-84-015  
GULF CANADA RES. INC.  
MT. KLAPPAN

709

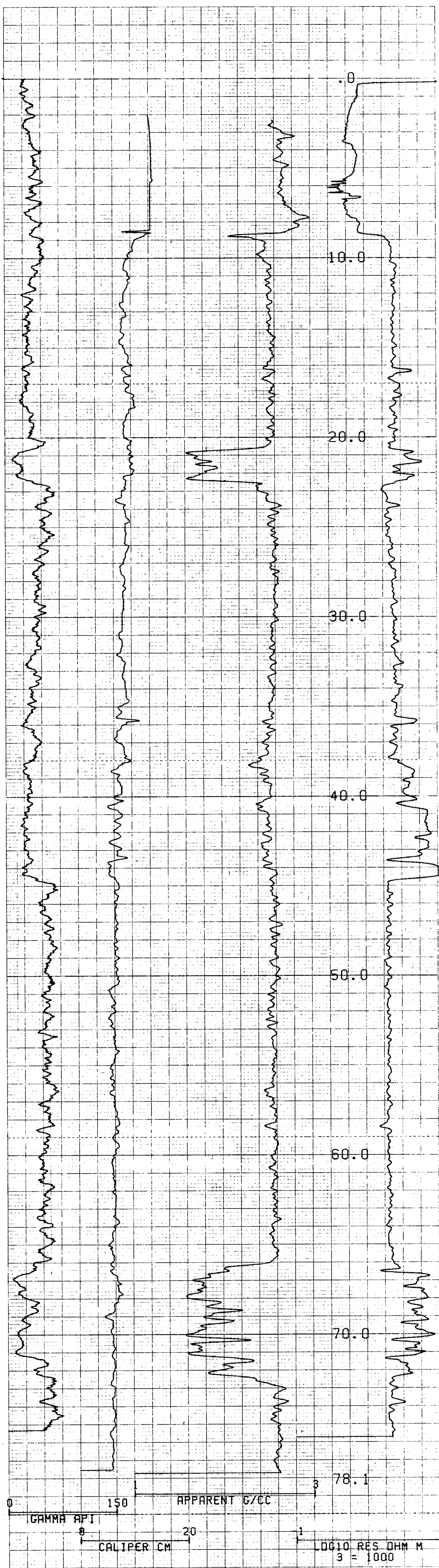
HOLE DIAMETER : 11.4  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARBO APPL. #1007L1

213

211

GK-Mount Klappan 84(3) A





COMPU-LOG V8L2 PLOT 09-18-84

RDH-84-015  
GULF CANADA RES. INC.  
MT. KLAPPAN

HOLE DIAMETER : 11.4  
 PROBE # 9030A 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # P811  
 K. SKARBD APPL. #2028L1

**709**

103

101

GR Mount Klappan 84(3)A

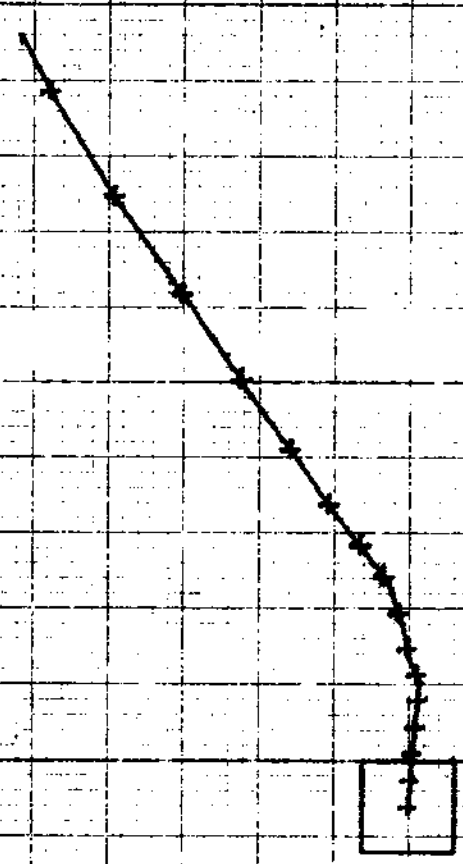
# VERTICAL DEVIATION

COMPU-LOG VBL1 DEVIATION  
DATA FROM : VBL2

~~615~~  
709

CLIENT : GULF CANADA RES. INC.  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-015  
DATE OF LOG : 09-18-84  
PROBE : 9055A 0005

SCALE: .50 M/DIV	+ = 5.0 M INCR
MAG DECL: 29.5	Δ = TOP OF ZONE
TRUE DEPTH: 77.3 M	◊ = BOTTOM OF ZONE
AZIMUTH: 333.1	
DISTANCE: 5.71 M	TRUE NORTH ↑



GR Mount Klappan 84(3)A







# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE	DATE
RDH-84-015	9/18/84
UNIT/OPERATOR	FIELD OFFICE
P811 K. Skarbo	Calgary

COMPANY	
Gulf Canada Resources Inc	
BOREHOLE	
RDH-84-015	
AREA	ELEVATION
Mt. Klappan	
COUNTY	STATE
SECTION	TOWNSHIP
	RANGE

## EQUIPMENT DATA

PROBE MODEL	9011	9012	90955	9090
PROBE DIAMETER	1.57"	2.1"	1.87"	1.4"
DETECTOR TYPE	Nd	Nd	Nd	Nd
DETECTOR SIZE	3.75" x 1.25"	1.125" x 4.5"	3.75" x 4.5"	5" x 3.5"
STD. K-FACTOR	1.50 x 10 <sup>-5</sup>	---	558 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1.11 sec	---	1.10 sec	1.11 sec
CALIB. MODEL LOC.	---	---	---	---
CALIB. DATE	---	---	---	---
K-FACTOR x 10 <sup>-5</sup>	---	---	---	---
DEADTIME	1.11 sec	---	---	---
TEST READING	---	---	---	---
WATER FACTOR	---	---	---	---
CASING FACTOR	---	---	---	---

NATURAL GAMMA	
DETECTOR TYPE	---
DETECTOR SIZE	5" x 1.5"
SOURCE TYPE	Ca <sup>137</sup>
SOURCE NO.	---
SOURCE STRENGTH	---
SOURCE SPACING	---

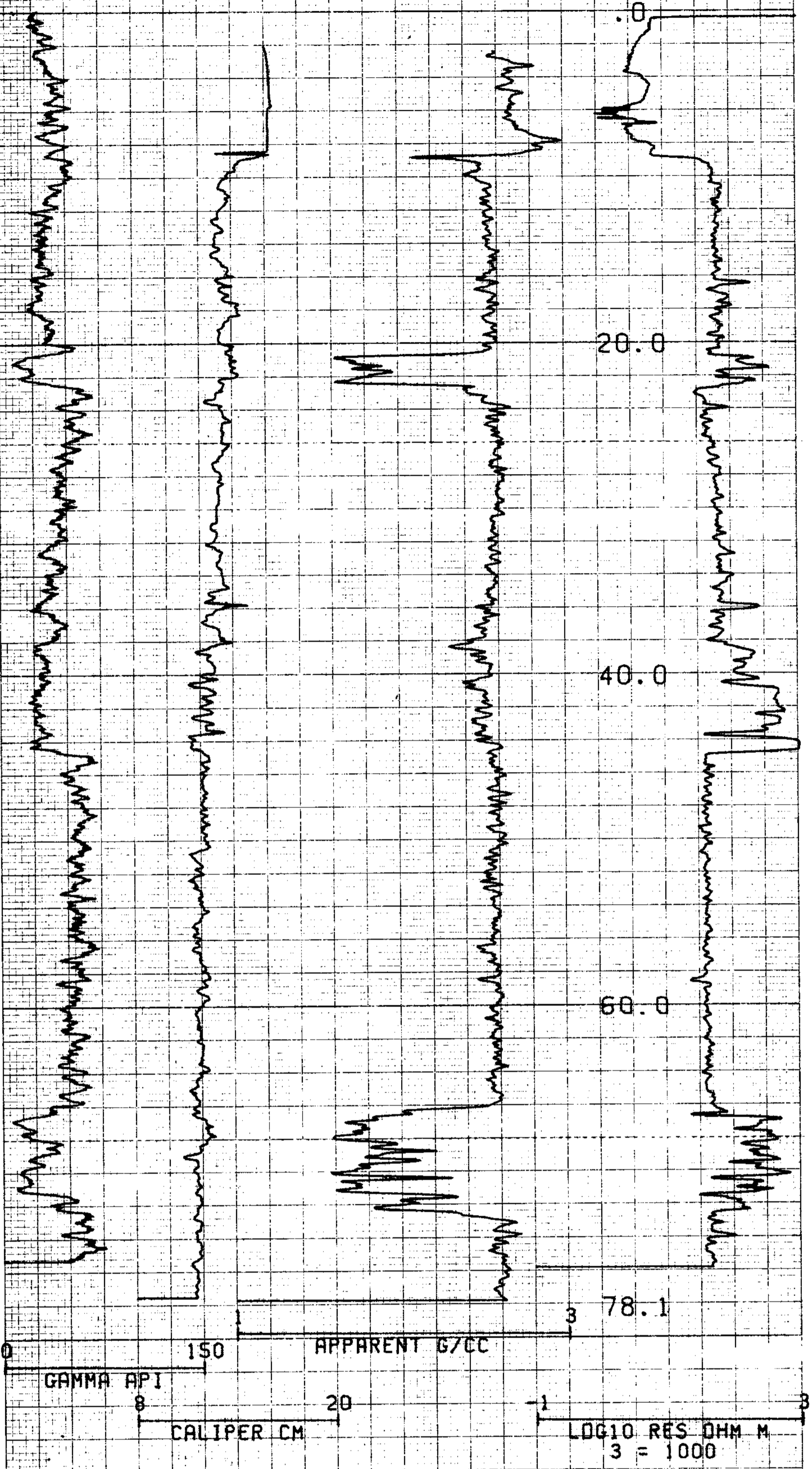
DENSITY	
DETECTOR TYPE	---
DETECTOR SIZE	---
SOURCE TYPE	AmBe
SOURCE NO.	264
SOURCE STRENGTH	1Ci
SOURCE SPACING	40cm
Cal Std	152
Cal Run	203

NEUTRON	
DETECTOR TYPE	---
DETECTOR SIZE	---
SOURCE TYPE	---
SOURCE NO.	---
SOURCE STRENGTH	---
SOURCE SPACING	---
SNGL. PT RESISTANCE	1.4'D x 2.5'L
RESISTIVITY	6" FOCUSED
SELF POTENTIAL	YES
TEMPERATURE	---
DEVIATION	NO / YES
CALIPER	YES

## HOLE DATA

TOTAL DEPTH — DRILLER	78.0m	BIT SIZE	11.4cm
TOTAL DEPTH — LOGGER	77.7m	CASING — TYPE & SIZE	16.8cm steel
TOTAL FOOTAGE LOGGED	77.7m	CASING DEPTH	8.8m
LOGGING SPEED	9m/min	BOREHOLE FLUID	H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ *F
PROBE NO.	9055A-005	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
		Tape #1	TK#4

REMARKS:



307

305

COMPU-LOG V8L2 PLOT 09-18-84

RDH-84-015

GULF CANADA RES. INC.

MT. KLAPPAN

HOLE DIAMETER : 11.4

PROBE # 9030A - 418

SENSOR #4 CAL STD CPS = 6508

SENSOR #4 CAL RUN CPS = 7133

SENSOR #4 CAL BIAS = -24

DATE V8L2

K. SKARDD

TRUCK # P811

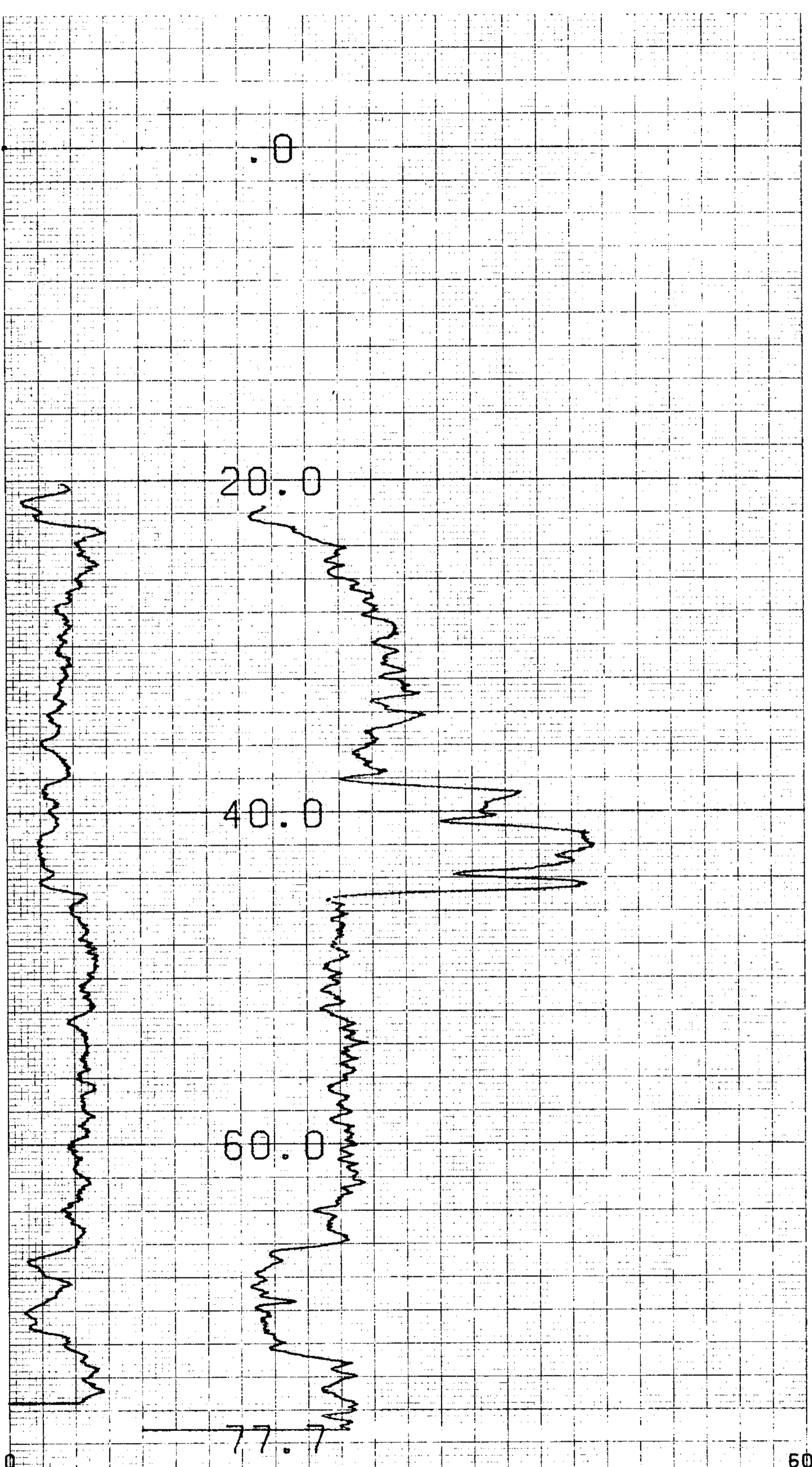
APPL. #1028L1

~~709~~  
709

G.R. Mount Klappan 84(3)A



COPY-REDUCED SCALE



COMPU-LOG V8L2 PLOT 09-18-84

RDH-84-015  
 GULF CANADA RES. INC.  
 MT. KLAPPAN

HOLE DIAMETER : 11.4  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 209  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARBD APPL. #1007L1

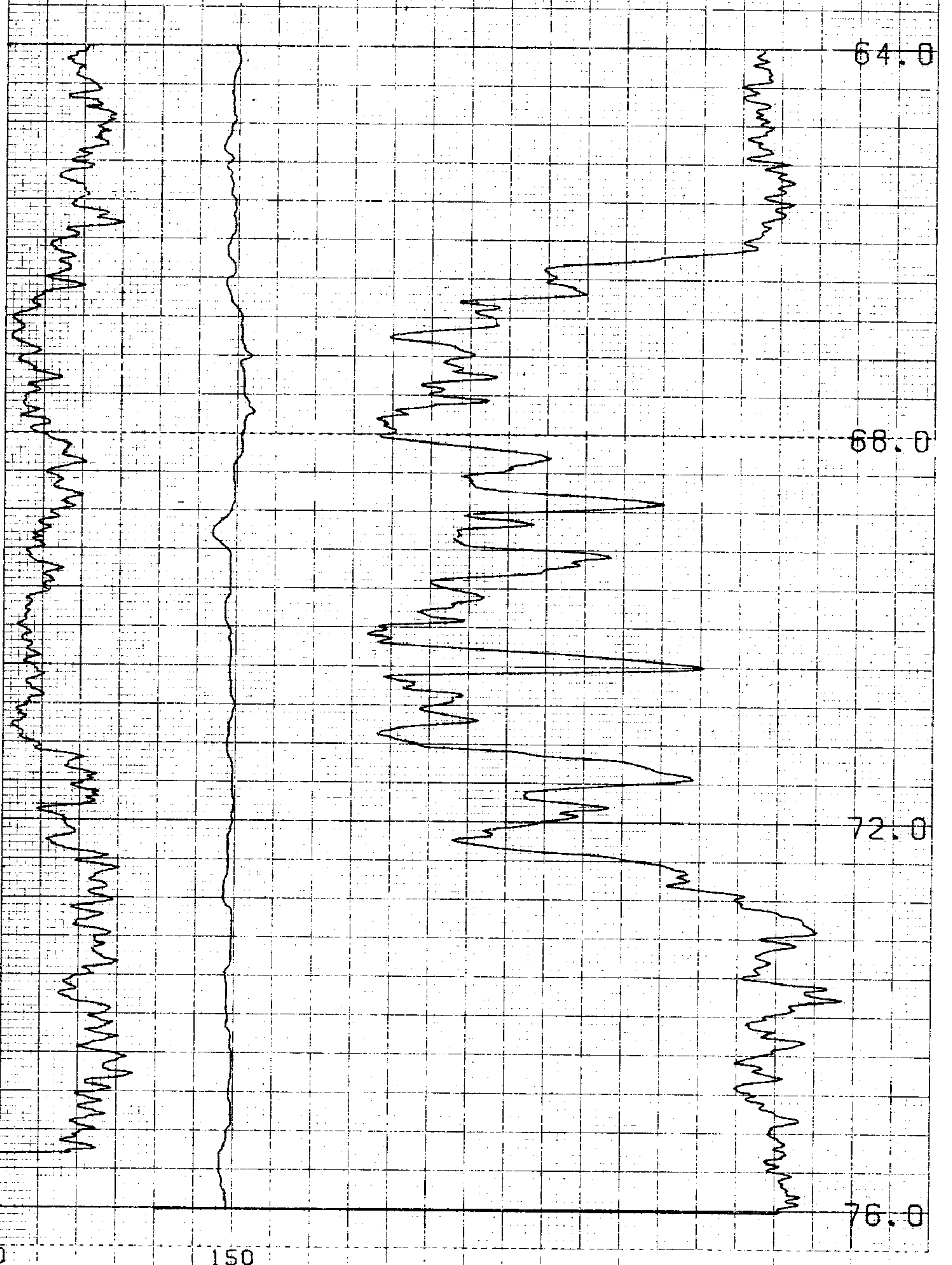
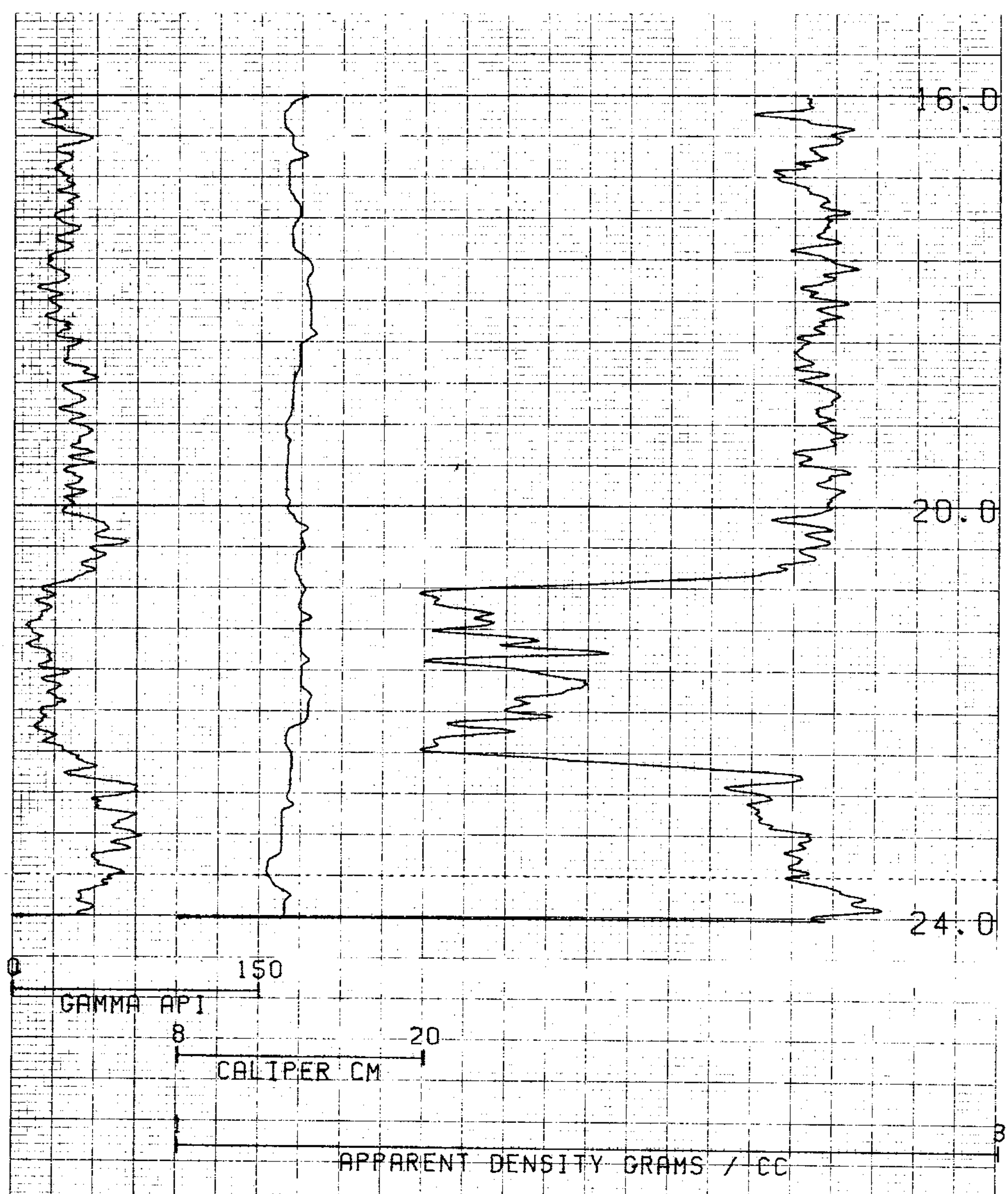
~~709~~  
 709

233

GR Mount Klappan 84(3)A



COPY - EXPANDED SCALE



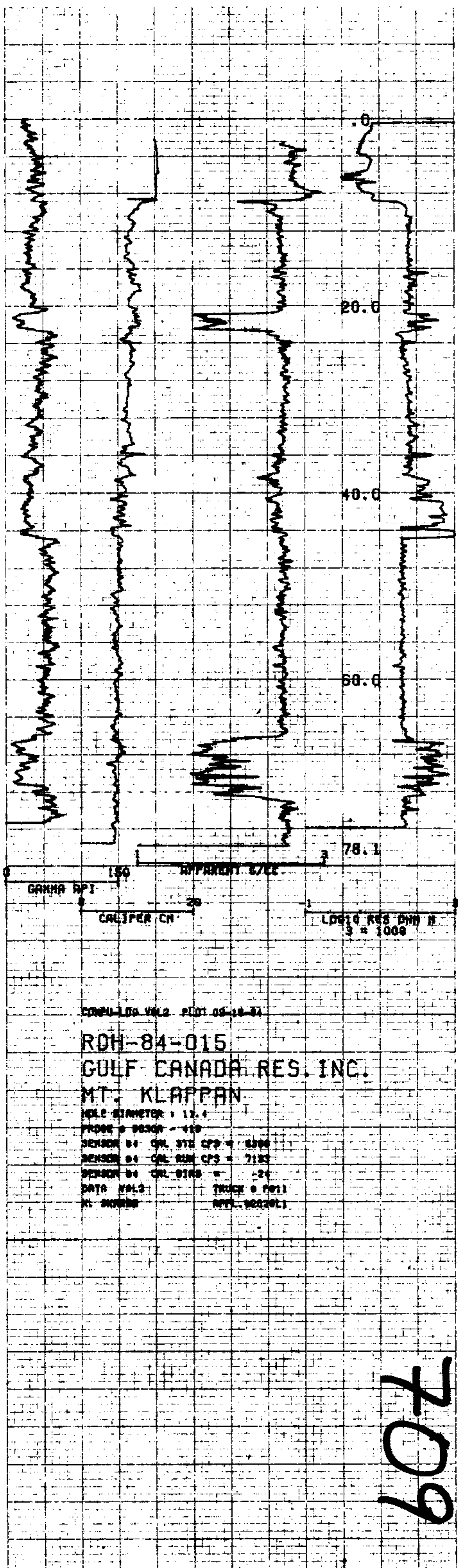
~~709~~  
709

RDH-84-015  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 HOLE DIAMETER : 11.4  
 PROBE # 9036A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # P811  
 K. SKARBU GPHL #3709L1  
 SMOOTHING 7.5,5

COPY - REDUCED SCALE

ART NO. 786-0038

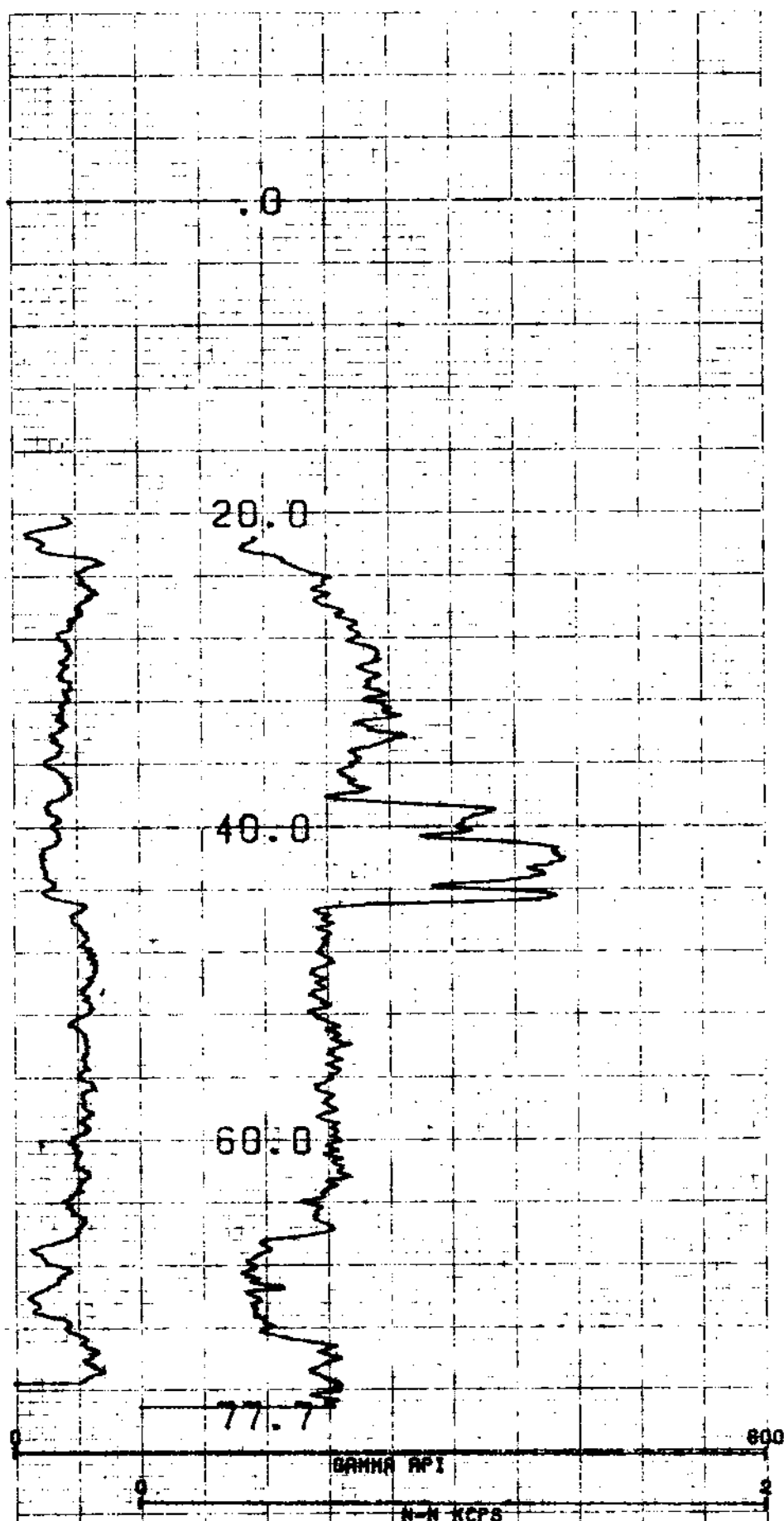
CENTURY GEOPHYSICAL CORP. PART NO. 786-0038



GR-Mount Klappan SH(3)A

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COMPU-DO VOL2 PLOT 89-10-84  
 RDH-84-015  
 GULF CANADA RES. INC.  
 MT. KLAPPAN  
 HOLE DIAMETER = 11.4  
 PROBE = 8808A - 005  
 SENSOR #1 CAL. STA CPS = 192  
 SENSOR #4 CAL. RUN CPS = 283  
 SENSOR #4 CAL. BINS = 0  
 DATA VOL2 TRACK # F011  
 A. SOURCE APPL. #1007L1

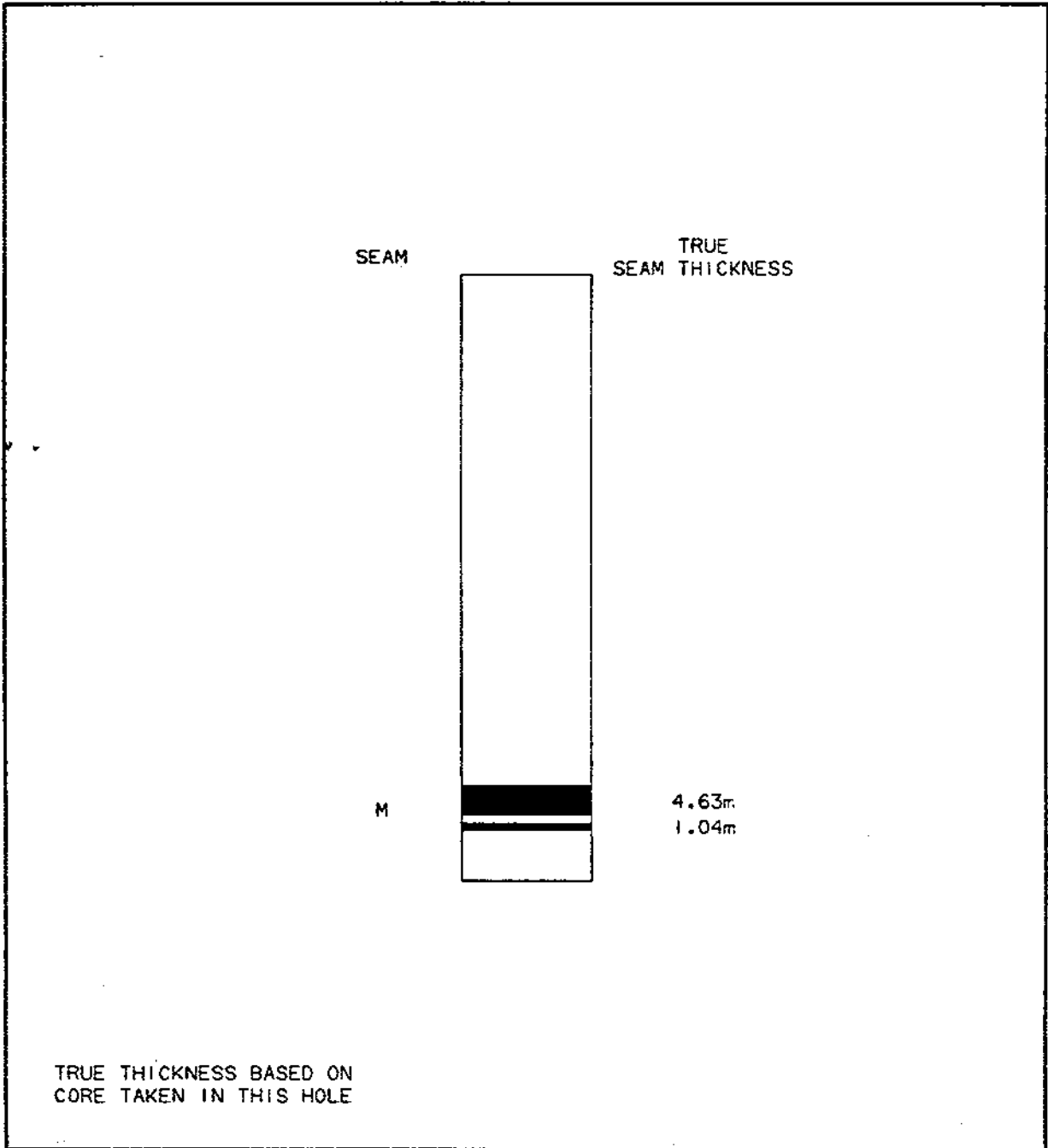
GR-MOUNT Klappan S4(3)A

COPY - REDUCED SCALE

**KPNLRRDH 84016**



MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84016



SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84





**KPNLRRDH 84016**

**DESCRIPTIVE LOG**

PROJECT: KPM BLOCK: LR DATA SOURCE: RDH84016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	17.68	17.68			OVERBURDEN	M.GY UNCONSOLIDATED CLAY WITH ROCK FRAGMENTS
71	17.68	18.90	1.22			MUDSTONE	DK.GY CASING SET AT 18.90 M
71	18.90	22.56	3.66			MUDSTONE	DK.GY
71	22.56	24.99	2.43			MUDSTONE	DK.GY.BRKN CORE #1 22.56-24.99 M; 0.30 M RECOVERED ; SILTSTONE INTERBEDS
71	24.99	25.90	0.91			MUDSTONE	DK.GY
71	25.90	26.30	0.40			MUDSTONE	CARB.BLK C-4 TO C-5 COAL STRINGERS
71	26.30	31.09	4.79			MUDSTONE	BLK SLIGHTLY CARBONACEOUS; MINOR COALY STRINGERS
71	31.09	47.20	16.11			MUDSTONE	DK.GY CALCITE STRINGERS
71	47.20	54.30	7.10		N	MUDSTONE	CARB.BLK SOME C-3 TO C-5 COAL STRINGERS

\* DENOTES MEASURED BCA

PROJECT: KPM BLOCK: LR DATA SOURCE: RDH84016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	54.30	54.86	0.56			MUDSTONE	DK.GY
* 71	54.86	57.76	2.90			MUDSTONE	BLK.SLD CORE #2 54.86-57.76 M; 2.90 M RECOVERY; MODERATELY CARBONACEOUS WITH SOME PLANT FOSSILS; MINOR FRACTURES INFILLED WITH CLAY; MINOR COALY STRINGERS (1 MM)
71	57.76	84.60	26.84			MUDSTONE	BLK CALCITE STRINGERS
71	84.60	89.50	4.90		M	COAL	C-2.BLK C-2 TO C-4 COAL; MINOR MUDSTONE LAMINAE
71	89.50	90.79	1.29		M	MUDSTONE	DK.GY
71	90.79	91.89	1.10		M	COAL	C-3 SOME C-2 COAL; MINOR MUDSTONE LAMINAE
71	91.89	100.58	8.69			MUDSTONE	BLK HARD; MODERATELY CARBONACEOUS; CALCITE STRINGERS; TOTAL DEPTH OF HQLE

\* DENOTES MEASURED BCA  
NEWPAGE



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GR-Mount Klappan 84(3)A

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84016

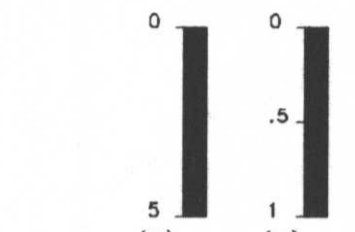
GEOLOGIST : K. JENNER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40

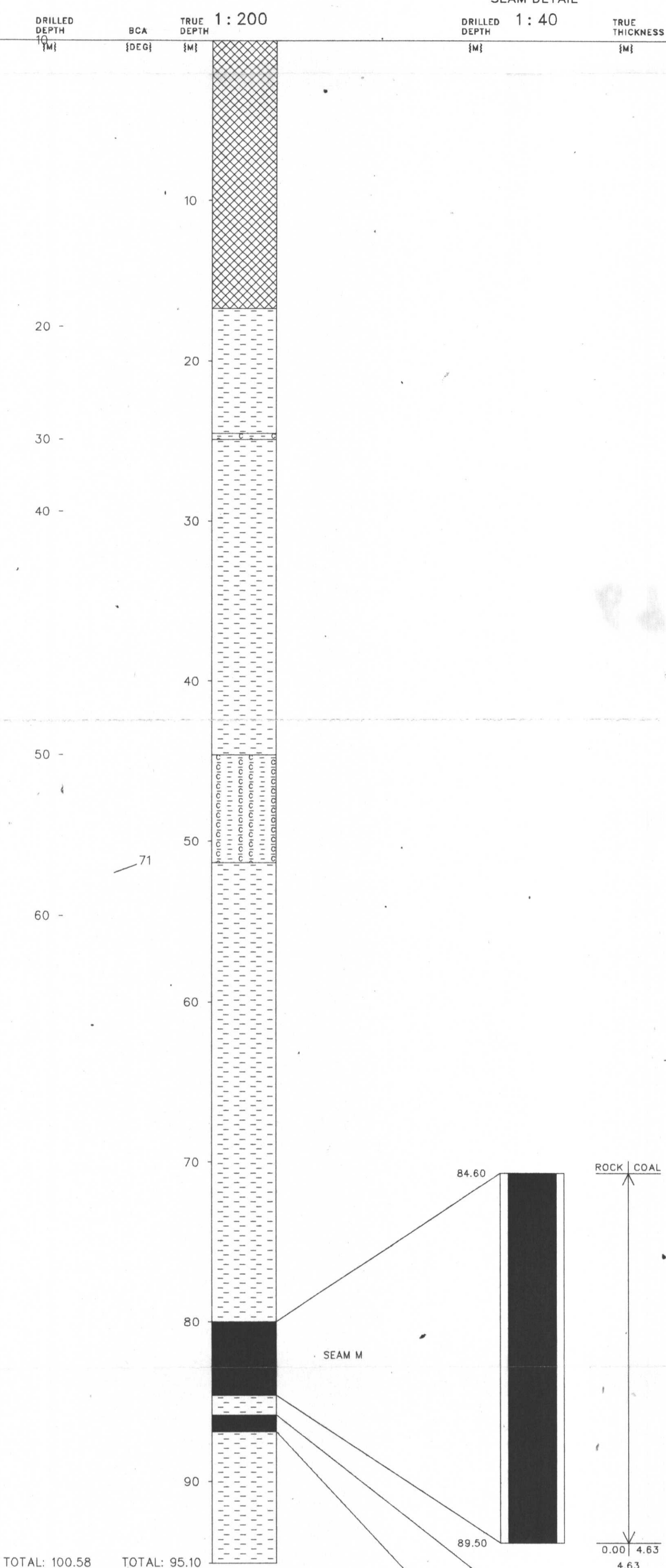


NORTHING: 6344496.0 N  
 EASTING: 507440.0 E

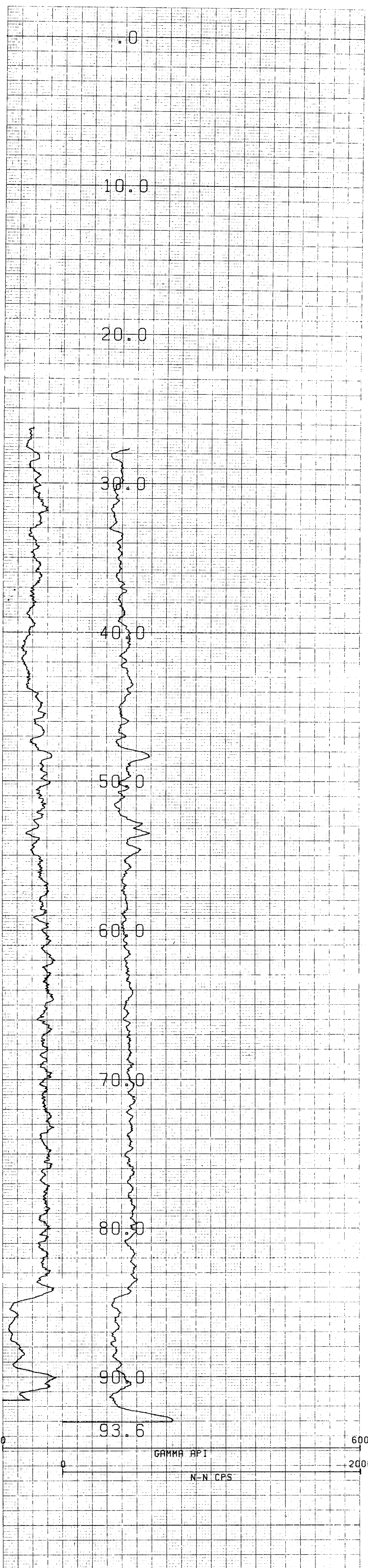
INCLINATION: 85.9°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL



REMARKS :  
 TRUE THICKNESS BASED ON BCA OBTAINED FROM ONE CORE TAKEN FROM THIS HOLE.

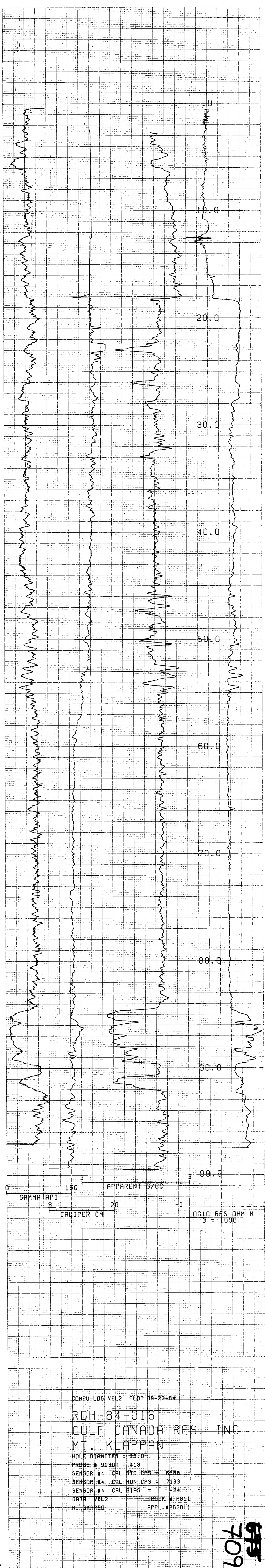


COMPU-LOG V8L2 PLOT 09-22-84  
 RDH-84-016  
 GULF CANADA RES. INC  
 MT. KLAPPAN  
 HOLE DIAMETER : 13.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARBO APPL.#1007L1

**709**

GR Mount Klappan 8/11/37





139

137

135

133

COMPU-LOG VBL2 PLOT 09-22-84  
 RDH-84-016  
 GULF CANADA RES. INC  
 MT. KLAPPAN  
 HOLE DIAMETER : 13.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA VBL2 TRUCK # PB11  
 K. SKARBD APPL.#2028L1

**675**  
**709**

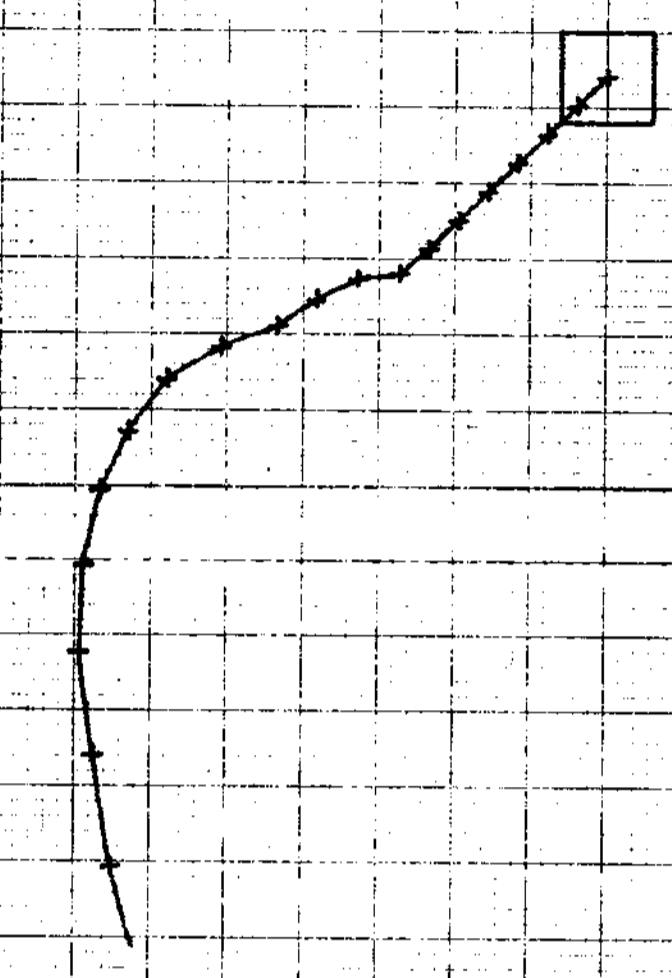
G.R. Mount Klappan 84(3)A

# VERTICAL DEVIATION

COMPU-LOG VBLI DEVIATION  
DATA FROM : VBL2

CLIENT : GULF CANADA RES. INC  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-016  
DATE OF LOG : 09-22-84  
PROBE : 9055A 0005

SCALE: .50 M/DIV	+ = 5.0 M INCR
MAG DECL: 29.5	Δ = TOP OF ZONE
TRUE DEPTH: 93.1 M	◊ = BOTTOM OF ZONE
AZIMUTH: 208.3	
DISTANCE: 6.54 M	TRUE NORTH ↑



~~1709~~  
1709





# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE	DATE
RDH-84-016	9/22/84
UNIT/OPERATOR	FIELD OFFICE
P811 K. Skarbo	Calgary

COMPANY

Gulf Canada Resources Inc.

BOREHOLE

RDH-84-016

AREA

Mt. Klappan

ELEVATION

COUNTY

STATE

SECTION

TOWNSHIP

RANGE

## EQUIPMENT DATA

PROBE MODEL	8010	8020	8050S	8060
PROBE DIAMETER	1.87"	2.8"	1.87"	1.8"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	4.75" x 1.25"	1.25" x 4.5"	4.75" x 4.0"	5" x 3.0"
STD. K FACTOR	1.50 x 10 <sup>-4</sup>	—	550 x 10 <sup>-4</sup>	1.02 x 10 <sup>-4</sup>
STD. DEADTIME	1.1 μsec	—	1.10 μsec	1.1 μsec
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K FACTOR x 10 <sup>-4</sup>	—	—	—	—
DEADTIME μsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—

NATURAL GAMMA

DENSITY

NEUTRON

DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.0"
SOURCE TYPE	—	Cs <sup>137</sup>	—	Cs <sup>137</sup>
SOURCE NO.	—	283	—	—
SOURCE STRENGTH	—	125mCi	—	—
SOURCE SPACING	—	19cm	—	—
Cal Std	—	6588	—	—
Cal Run	—	7133	—	—

DETECTOR TYPE	—	—	NaI	—
DETECTOR SIZE	—	—	1.8" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—

## HOLE DATA

TOTAL DEPTH — DRILLER	97.3m	BIT SIZE	13.0cm
TOTAL DEPTH — LOGGER	99.9m	CASING — TYPE & SIZE	16.8" steel
TOTAL FOOTAGE LOGGED	99.9m	CASING DEPTH	18.9m
LOGGING SPEED	9m/min	BOREHOLE FLUID	H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ °F
PROBE NO.	9030A-418	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
		Tape #4	TK #1

REMARKS

SINGL. PT. RESISTANCE	1.0' x 2.5'	—	1.0' x 2.5'	1.0' x 2.5'
RESISTIVITY	—	6" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—



# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

**COMPANY**

Gulf Canada Resources Inc.

**BOREHOLE**

RDH-84-016

**AREA**

Mt. Klappan

**ELEVATION**

**COUNTY**

**STATE**

British Columbia

**SECTION**

**TOWNSHIP**

**RANGE**

## HOLE DATA

TOTAL DEPTH — DRILLER	97.3m	BIT SIZE	13.0cm
TOTAL DEPTH — LOGGER	93.6m	CASING — TYPE & SIZE	16.8cm steel
TOTAL FOOTAGE LOGGED	93.6m	CASING DEPTH	18.9m
LOGGING SPEED	9m/min	BOREHOLE FLUID	H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ 'F
PROBE NO.	9055A-005	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			Tape #3 TK #4

**REMARKS:**

**BOREHOLE**

RDH-84-016

**DATE**

9/22/84

**UNIT/OPERATOR**

P811 K. Skarbo

**FIELD OFFICE**

Calgary

## EQUIPMENT DATA

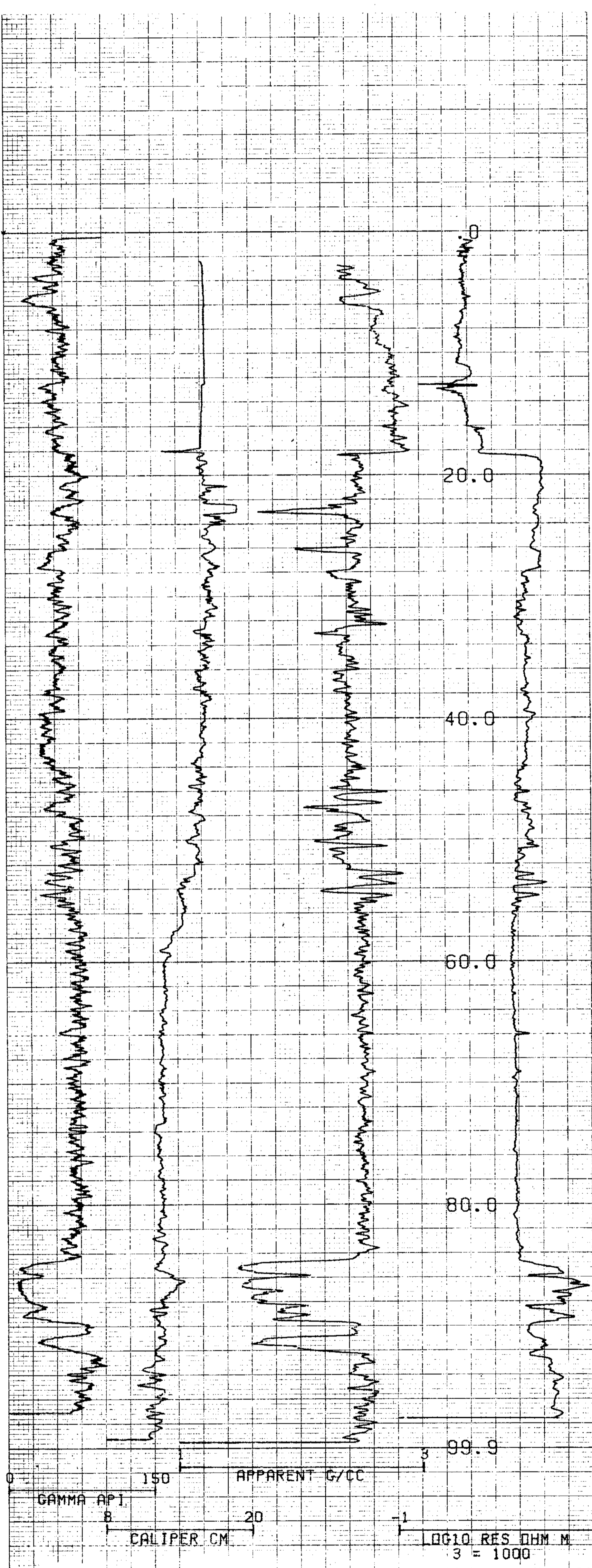
PROBE MODEL	8110	9000	9055	9000
PROBE DIAMETER	1.87"	2.0"	1.87"	1.87"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	3.75" x 1.25"	1.10" x 1.10"	3.75" x 4.1"	5" x 3.1"
STD. K-FACTOR	1.50 x 10 <sup>-4</sup>	—	500 x 10 <sup>-4</sup>	1.82 x 10 <sup>-4</sup>
STD. DEADTIME	1.11µsec	—	1.70µsec	1.11µsec
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K-FACTOR x 10 <sup>-4</sup>	—	—	—	—
DEADTIME µsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—
DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.1"
SOURCE TYPE	—	Ca <sup>222</sup>	—	Ca <sup>222</sup>
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—
DETECTOR TYPE	—	—	NaI	—
DETECTOR SIZE	—	—	1.87" x 0.87"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	264	—
SOURCE STRENGTH	—	—	1Ci	—
SOURCE SPACING	—	—	40cm	—
Cal Std	—	—	152	—
Cal Run	—	—	203	—
SNEL. FT. RESISTANCE	1.470 x 257	—	1.470 x 257	1.170 x 257
RESISTIVITY	—	IF FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

NATURAL GAMMA

DENSITY

NEUTRON

GR-Mount Klappan 84(3)A  
COPY-REDUCED SCALE



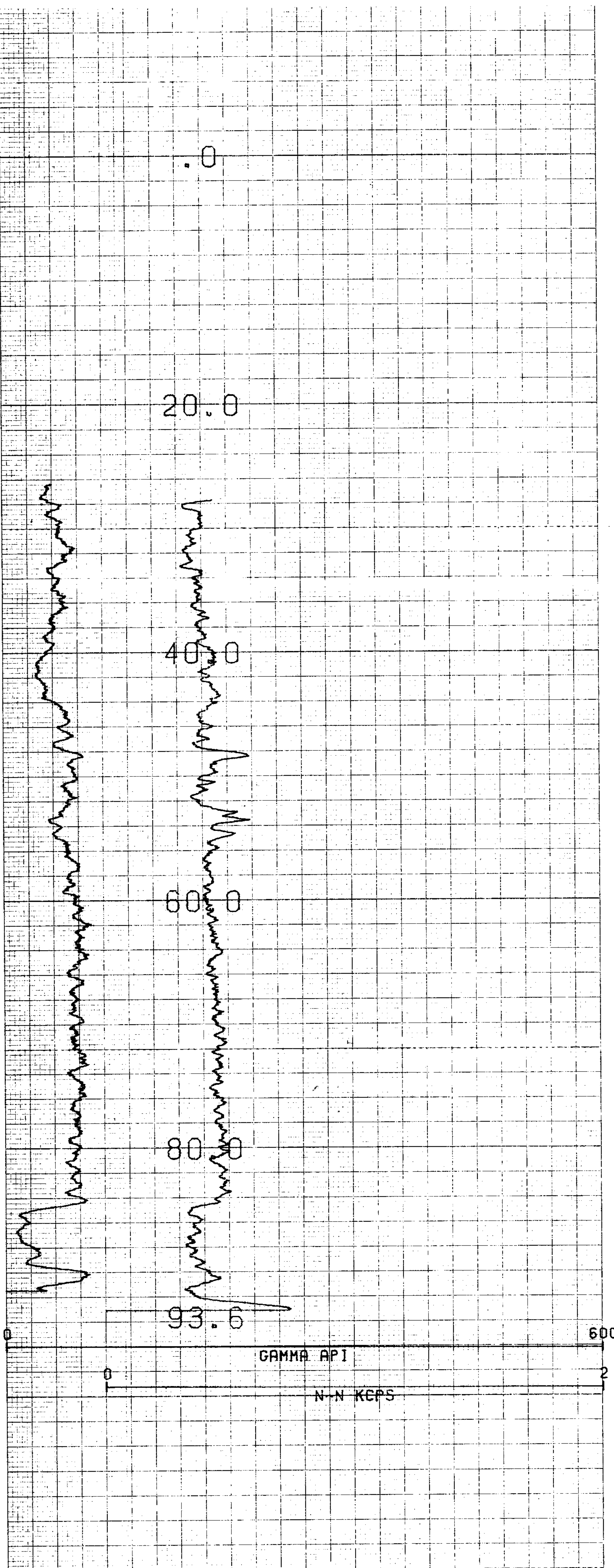
COMPU-LDG V8L2 PLOT 09-22-84

RDH-84-016  
GULF CANADA RES. INC  
MT. KLAPPAN

HOLE DIAMETER = 13.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # F811  
 K. SKAREB APPL. #1028L1

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COMPU-LOG VBL2 PLOT 09-22-84

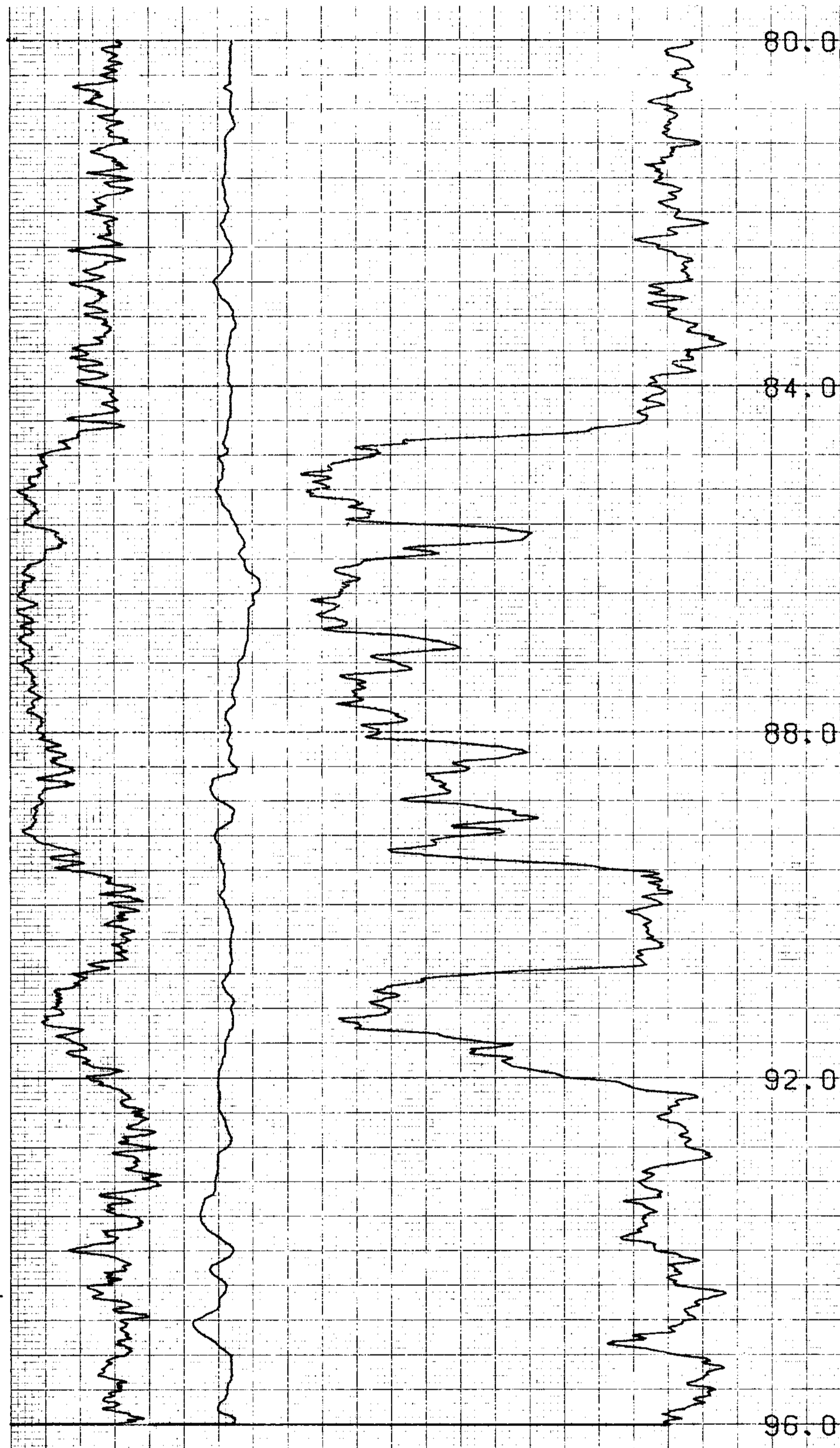
RDH-84-016  
GULF CANADA RES. INC  
MT. KLAPPAN

HOLE DIAMETER : 13.0  
 PROBE # 9058A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA VBL2 TRUCK # F811  
 K. SKARBE APPL. #1007L1

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COPY - EXPANDED SCALE  
DR. Albert Klappan 84/3/79



150  
 0 8 20 8  
 GAMMA API  
 CALIPER CM  
 APPARENT DENSITY GRAMS / CC

COMPU-LOG V8L2 PLOT 09-22-84

RDH-84-016  
 GULF CANADA RES. INC  
 MT. KLAPPAN

HOLE DIAMETER : 13.0  
 PROBE # 9030A 416  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # P811  
 K. SKARBD / APPL. #3703L1

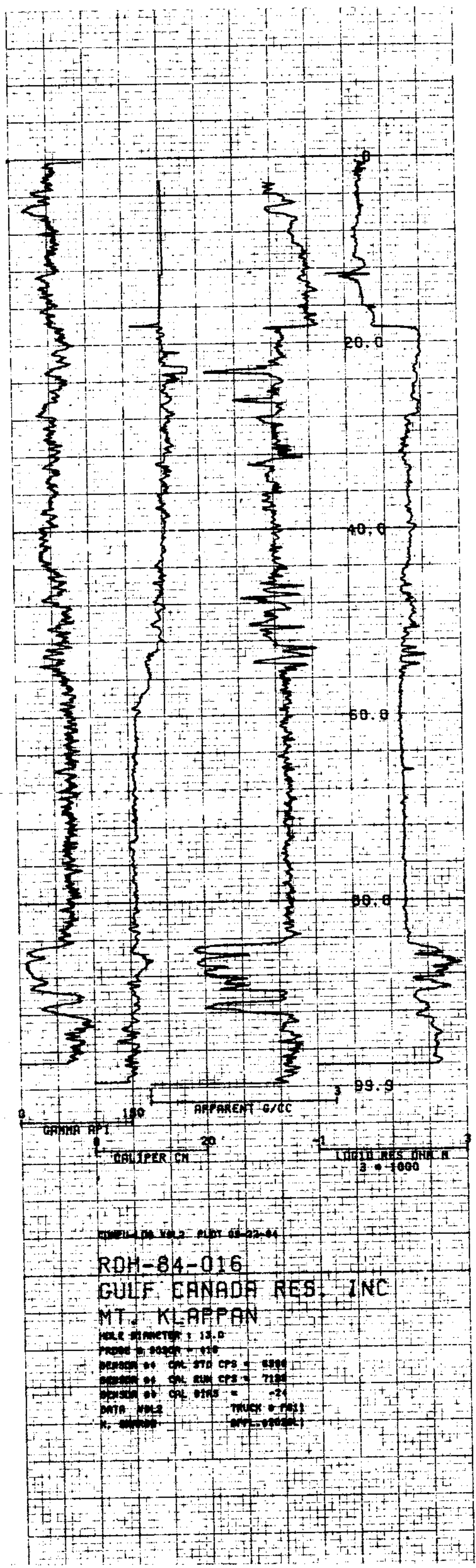
SMOOTHING 7.5.5

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709

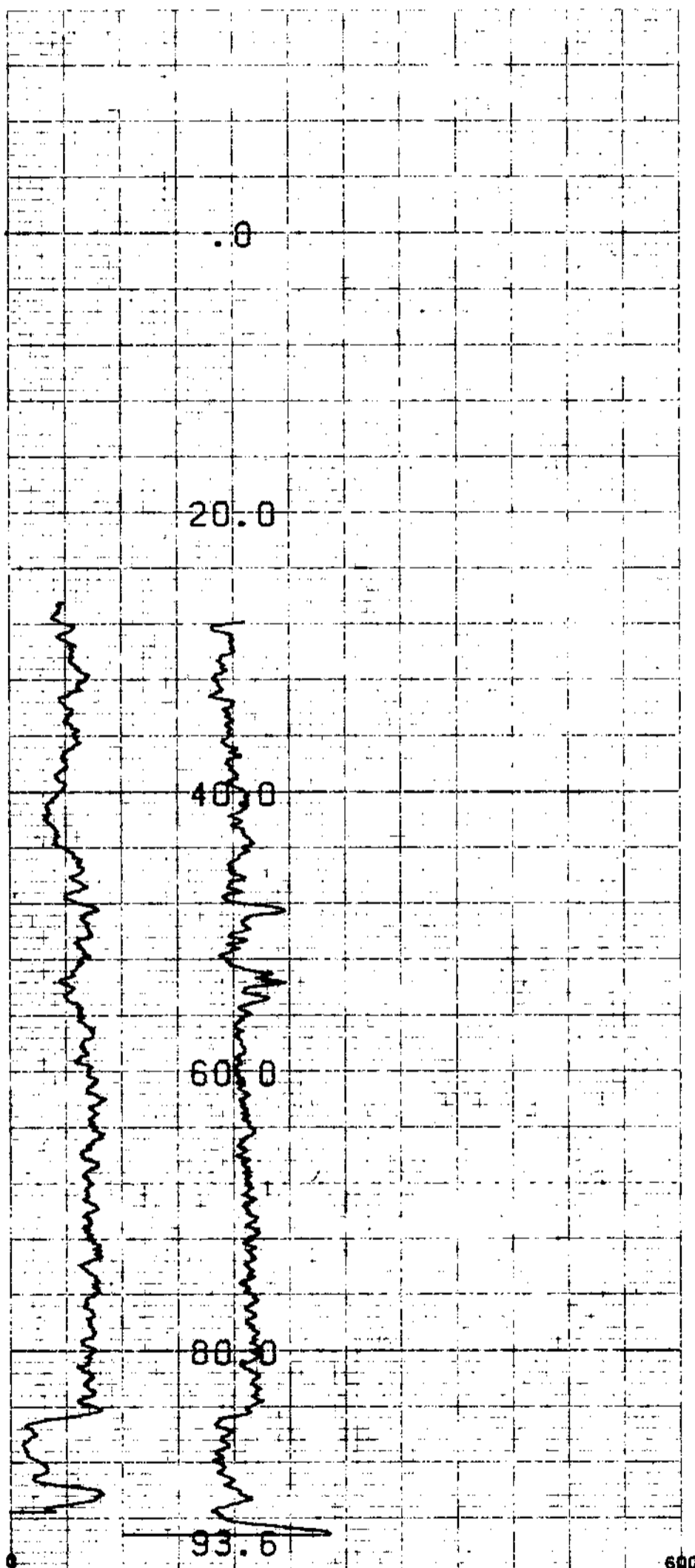
COPY-REDUCED SCALE

CENTURY GEOPHYSICAL CORP. PART NO. 786-0038

GR Mearns Klappan 84(3)H



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COMPIL DB VOL 2 PLOT 06-22-84

RDH-84-016  
 GULF CANADA RES. INC  
 MT. KLAPPAN

WELL DIAMETER : 12.0  
 PROBE : 00808 - 008  
 SENSOR #1 CAL STD CPS = 152  
 SENSOR #1 CAL RUN CPS = 203  
 SENSOR #1 CAL BIAS = 0  
 DATA VOL 2 TRACK # P11  
 N. 80000 APPL-01007L1

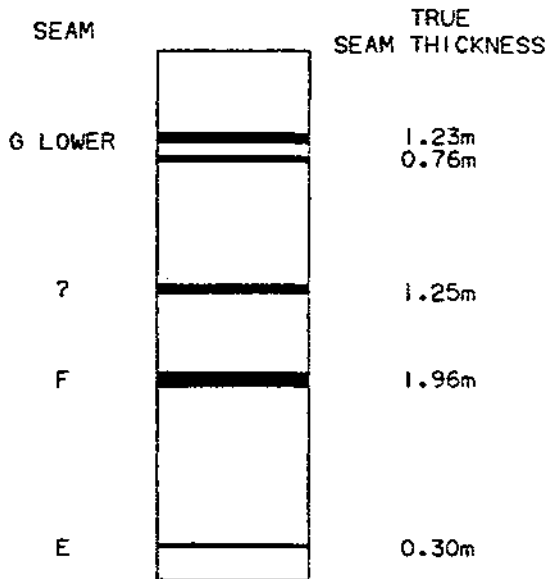
~~709~~  
 709

COPY - REDUCED SCALE

KPNLRRDH 84017



MOUNT KLAPPAN COAL PROPERTY  
LOST-FOX AREA  
ROTARY DRILL HOLE  
KPNLRRDH84017



TRUE THICKNESS BASED ON  
ATTITUDES OF NEARBY OUTCROPS

SCALE 1:1000

GULF CANADA RESOURCES INC.  
13/12/84



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH84017

DATE - 12/02/84

- HISTORY -

START DATE - 09/22/84

END DATE - 09/24/84

CONTRACTOR - DENHAM DRILLING

GEOLOGIST - K. JENNER

OPERATOR - GCRI

SURVEYOR -

REMARKS - BCA: 66 BASED ON OUTCROP.

- LOCATION -

PROVINCE - BC

ELEVATION - 1537.50

LICENCE/LEASE NUMBER - 7169

ZONE - 9

NORTHING - 6345234.00

EASTING - 506659.00

LATITUDE - 571507

LONGITUDE - 1285323

- ORIENTATION -

LENGTH - 77.72

HOLE SIZE - 120.7

INCLINATION - 87.1

AZIMUTH - 0.0

CEMENT -

PLUG -

PIEZ -

CASING DEPTH (M) - 4.00

AQUIFER DEPTHS (M) - 0.00

0.00

LOST CIRC. DEPTHS (M) - 0.00

0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

**KPNLRRDH 84017**

**DESCRIPTIVE LOG**

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 66	0.00	4.57	4.57			SANDSTONE	FG. MEL. M. GY HARD; CASING SET AT 4.57 M
66	4.57	11.90	7.33			SANDSTONE	FG. MEL. M. GY HARD
66	11.90	13.25	1.35		G(LOWER)	COAL	C-3. BLK CARBONACEOUS MUDSTONE SPLIT
66	13.25	15.97	2.72		G(LOWER)	MUDSTONE	M. GY SOFT
66	15.97	16.80	0.83		G(LOWER)	COAL	C-3. BLK MINOR CARBONACEOUS MUDSTONE SPLITS
66	16.80	18.29	1.49			MUDSTONE	M. GY SOFT
66	18.29	21.03	2.74			MUDSTONE	M. GY SOFT
66	21.03	21.34	0.31			SANDSTONE	DK. GY
66	21.34	28.04	6.70			MUDSTONE	M. GY
66	28.04	29.26	1.22			SILTSTONE	M. GY

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH84017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	29.26	33.92	4.66			MUDSTONE	DK. GY INTERBEDDED SANDSTONE
66	33.92	35.29	1.37			COAL	C-3 SOME C-4 COAL; INTERBEDDED MUDSTONE
66	35.29	36.27	0.98			MUDSTONE	CARB. DK. GY
66	36.27	46.87	10.60			MUDSTONE	DK. GY INTERBEDDED DARK GREY SILTSTONE; HARD
66	46.87	49.02	2.15		F	COAL	C-3. BLK SOME C-2 AND C-4 COAL; INTERLAMINATED M UDSTONE
66	49.02	53.04	4.02			MUDSTONE	CARB. DK. GY
66	53.04	60.05	7.01			SANDSTONE	FG. MEL. M. GY HARD
66	60.05	61.08	1.03			MUDSTONE	CARB. DK. GY INTERBEDDED COAL THROUGHOUT
66	61.08	61.87	0.79			MUDSTONE	SLTY. DK. GY INTERBEDDED SILTSTONE

\* DENOTES MEASURED BCA



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GR-Mount Klappan 84(3)A

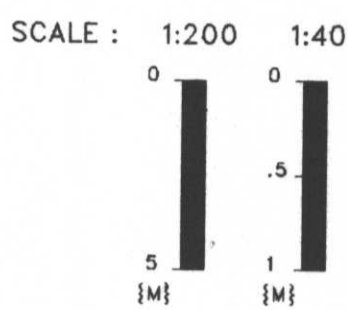
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH84017

GEOLOGIST : K. JENNER

DATE : DEC 04/84

DRAWING NO. :

LITHOLOGIC SYMBOLS

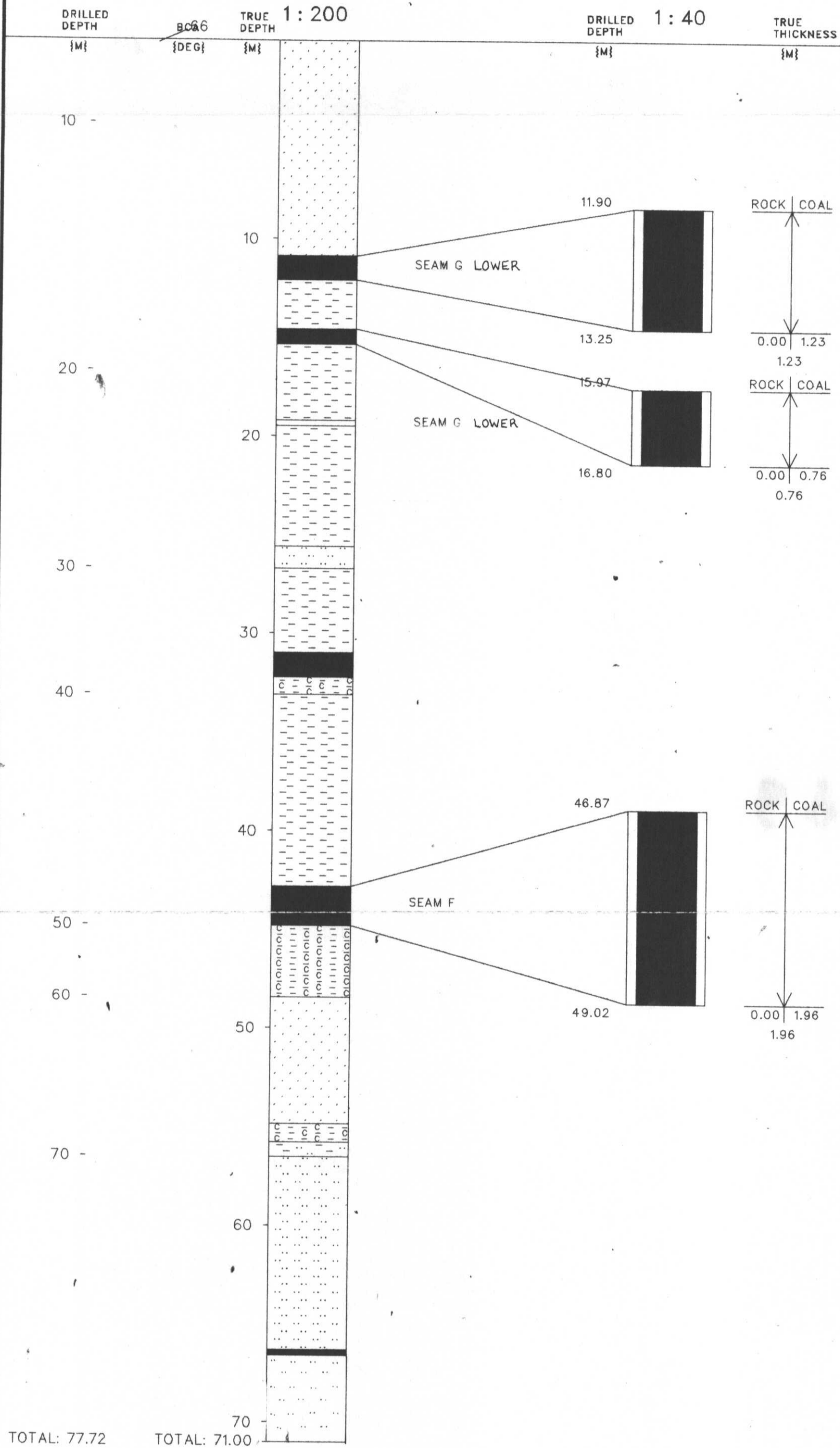


NORTHING: 6345234.0 N  
 EASTING: 506659.0 E

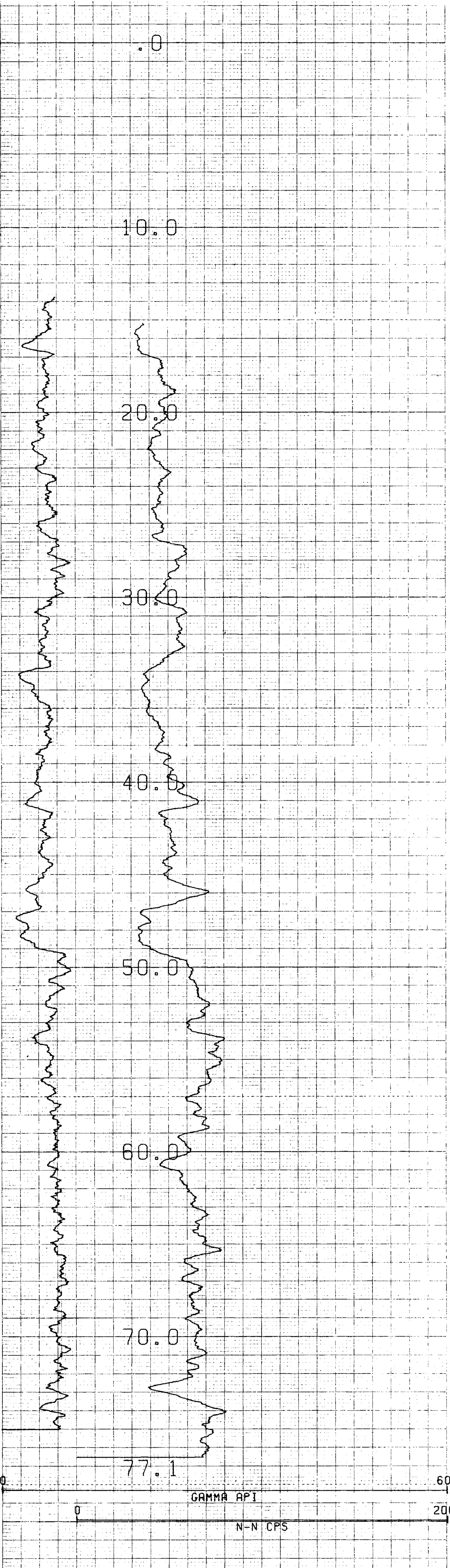
INCLINATION: 87.1°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SEAM DETAIL



REMARKS :  
 TRUE THICKNESS BASED ON ATTITUDES OF NEARBY OUTCROPS



CDMPU-LOG V8L2 PLOT 09-24-84

RDH-84-017  
GULF CANADA RES. INC  
MT. KLAPPAN

HOLE DIAMETER : 12.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # P811  
 K. SKARBO APPL. #1007L1

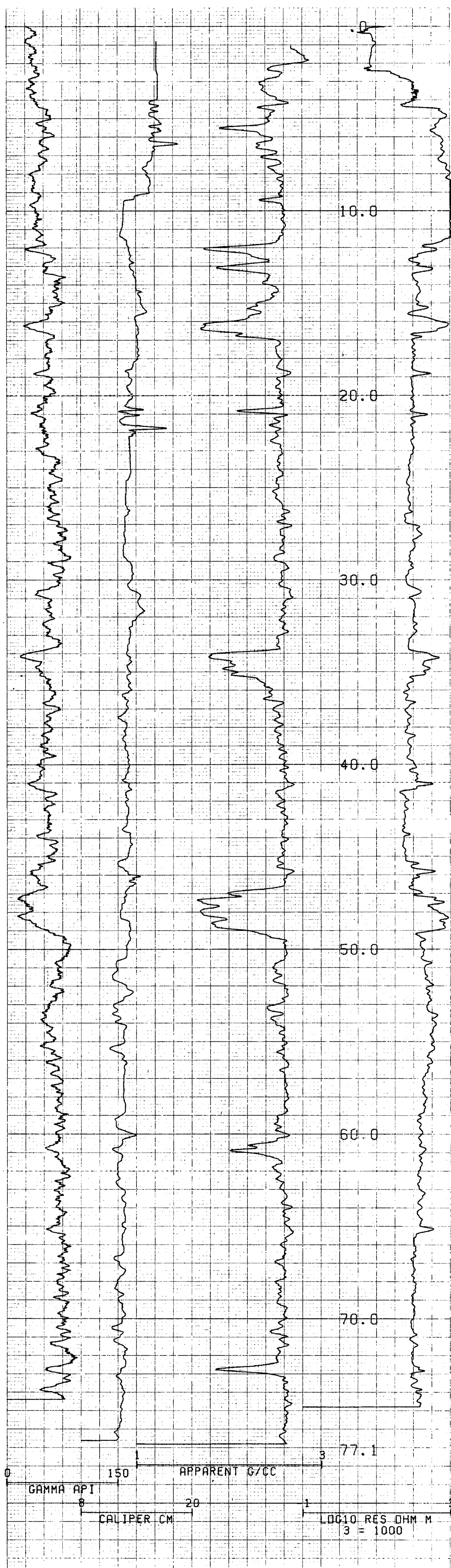
~~105~~  
709

175

175

GR-Mount Klappan 84(3)A





COMPU-LOG V8L2 PLOT 09-24-84

RDH-84-017  
GULF CANADA RES. INC  
MT. KLAPPAN

HOLE DIAMETER : 12.0  
 PROBE # 9030A - 41B  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7133  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # P811  
 K. SKARBD APPL. #2028L1

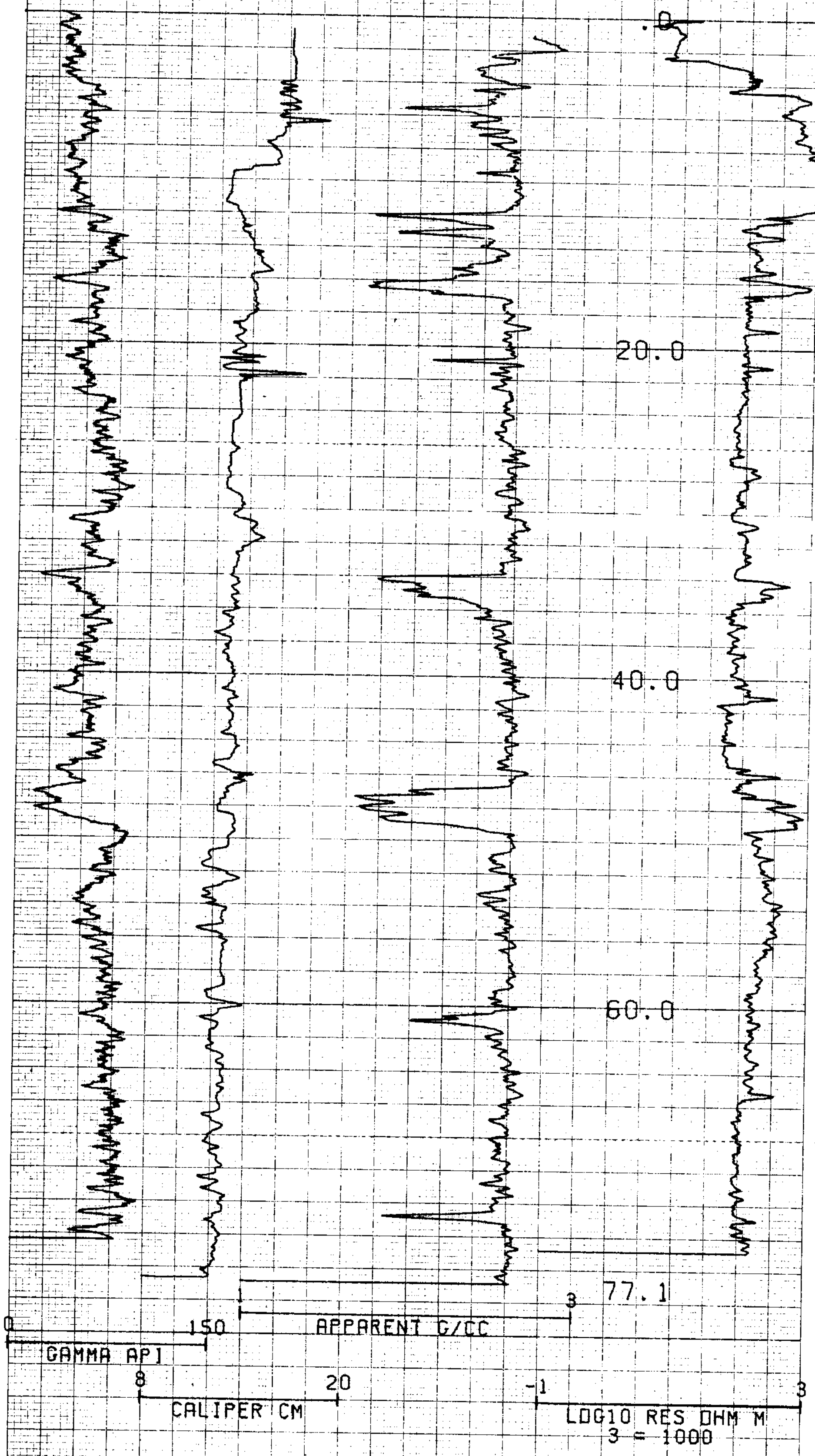
**709**

161

159

GR-Mount Klappan 84(3)A

157



COMPU-LOG V8L2 . PLOT 09-24-84

RDH-84-017  
GULF CANADA RES. INC  
MT. KLAPPAN

WOLE DIAMETER : 12.0  
PROBE # 9030A - 418  
SENSOR #4 CAL STD CPS = 6588  
SENSOR #4 CAL RUN CPS = 7133  
SENSOR #4 CAL BIAS = -24

DATA V8L2 TRUCK # P811  
K. SKARBD APPL. #1028L1

~~685~~  
709



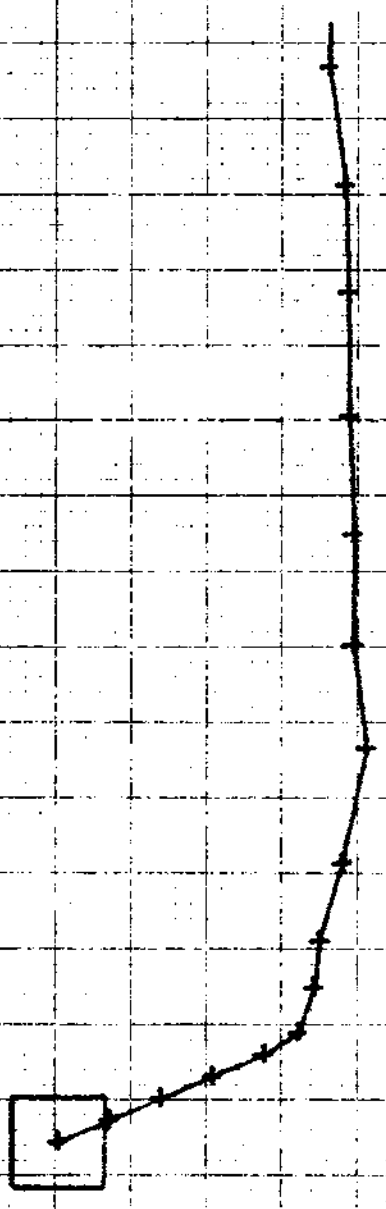
# VERTICAL DEVIATION

COMPU-LOG V8L1 DEVIATION  
DATA FROM : V8L2

CLIENT : GULF CANADA RES. INC  
LOCATION : MT. KLAPPAN  
HOLE ID : RDH-84-017  
DATE OF LOG : 09-24-84  
PROBE : 9055A 0005

SCALE: .25 M/DIV  
MAG DECL: 29.5  
TRUE DEPTH: 76.9 M  
AZIMUTH: 13.5  
DISTANCE: 3.82 M

+ = S.O.M. INCR  
Δ = TOP OF ZONE  
◊ = BOTTOM OF ZONE  
TRUE NORTH ↑



**709**

*Gr Mount Klappan 84(8) A*



# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE

RDH-84-017

UNIT/OPERATOR

P811 K. Skarbo

DATE

9/24/84

FIELD OFFICE

Calgary

COMPANY

Gulf Canada Resources Inc

BOREHOLE

RDH-84-017

AREA

Mt. Klappan

ELEVATION

COUNTY

STATE

British Columbia

SECTION

TOWNSHIP

RANGE

## EQUIPMENT DATA

PROBE MODEL	0010	0020	0025S	0030
PROBE DIAMETER	1.0"	2.0"	1.0"	1.0"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	3.75" x 1.25"	1.125" x 4.5"	3.75" x 4.5"	5" x 3.0"
STD. K FACTOR	1.50 x 10 <sup>-1</sup>	—	5.00 x 10 <sup>-1</sup>	1.02 x 10 <sup>-1</sup>
STD. DEADTIME	1/1.000	—	1.10/1.000	1/1.000
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K FACTOR x 10 <sup>-1</sup>	—	—	—	—
DEADTIME /1.000	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—
DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	5" x 1.5"	—	5" x 3.0"
SOURCE TYPE	—	Cs <sup>137</sup>	—	Cs <sup>137</sup>
SOURCE NO.	—	283	—	—
SOURCE STRENGTH	—	125mCi	—	—
SOURCE SPACING	—	19cm	—	—
Cal Std	—	6588	—	—
Cal Run	—	7133	—	—
DETECTOR TYPE	—	—	NaI	—
DETECTOR SIZE	—	—	1.0" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—
SNGL PT RESISTANCE	1.4"D x 25'L	—	1.4"D x 25'L	1.1"D x 25'L
RESISTIVITY	—	0" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

## HOLE DATA

TOTAL DEPTH - DRILLER	77.7m	BIT SIZE	12.0cm
TOTAL DEPTH - LOGGER	77.1m	CASING - TYPE & SIZE	16.8 cm steel
TOTAL FOOTAGE LOGGED	77.1m	CASING DEPTH	4.6m
LOGGING SPEED	9m/min	BOREHOLE FLUID	H <sub>2</sub> O
REFERENCE LEVEL	Ground	FLUID RESISTIVITY	@ °F
PROBE NO.	9030A-418	SOFTWARE LEVEL	8.2*A
		SCALE SELECTION	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
			Tape #4 TK #2

REMARKS:

18/12/84

VIVE M. WARD

18/12/84

18/12/84

18/12/84



# CENTURY GEOPHYSICAL CORPORATION

Tulsa, Oklahoma

BOREHOLE RDH-84-017	DATE 9/24/84
UNIT/OPERATOR P811 K. Skarbo	FIELD OFFICE Calgary

### COMPANY

Gulf Canada Resources Inc.

### BOREHOLE

RDH-84-017

### AREA

Mt. Klappan

### ELEVATION

### COUNTY

### STATE

British Columbia

### SECTION

### TOWNSHIP

### RANGE

## EQUIPMENT DATA

PROBE MODEL	9010	9030	9050/55	9060
PROBE DIAMETER	1.87"	2.0"	1.87"	1.4"
DETECTOR TYPE	NaI	NaI	NaI	NaI
DETECTOR SIZE	.875" x 1.25"	1.125" x 4.5"	.875" x 4.0"	.5" x 3.0"
STD. K-FACTOR	1.58 x 10 <sup>-5</sup>	—	.558 x 10 <sup>-5</sup>	1.82 x 10 <sup>-5</sup>
STD. DEADTIME	1 μsec	—	1.18 μsec	1 μsec
CALIB. MODEL LOC.	—	—	—	—
CALIB. DATE	—	—	—	—
K-FACTOR x 10 <sup>-5</sup>	—	—	—	—
DEADTIME μsec	—	—	—	—
TEST READING	—	—	—	—
WATER FACTOR	—	—	—	—
CASING FACTOR	—	—	—	—

DETECTOR TYPE	—	NaI	—	NaI
DETECTOR SIZE	—	.5" x 1.5"	—	.5" x 3.0"
SOURCE TYPE	—	Co <sup>57</sup>	—	Co <sup>57</sup>
SOURCE NO.	—	—	—	—
SOURCE STRENGTH	—	—	—	—
SOURCE SPACING	—	—	—	—

DETECTOR TYPE	—	—	He <sup>3</sup>	—
DETECTOR SIZE	—	—	1.0" x 6.0"	—
SOURCE TYPE	—	—	AmBe	—
SOURCE NO.	—	—	264	—
SOURCE STRENGTH	—	—	1Ci	—
SOURCE SPACING	—	—	40cm	—
Cal Std	—	—	152	—
Cal Run	—	—	203	—

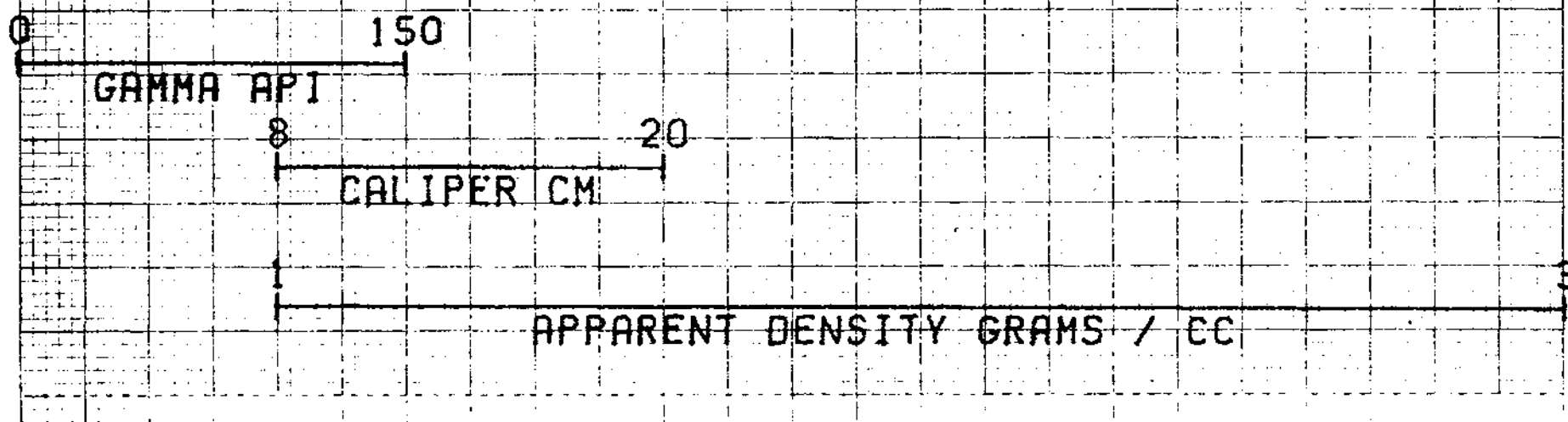
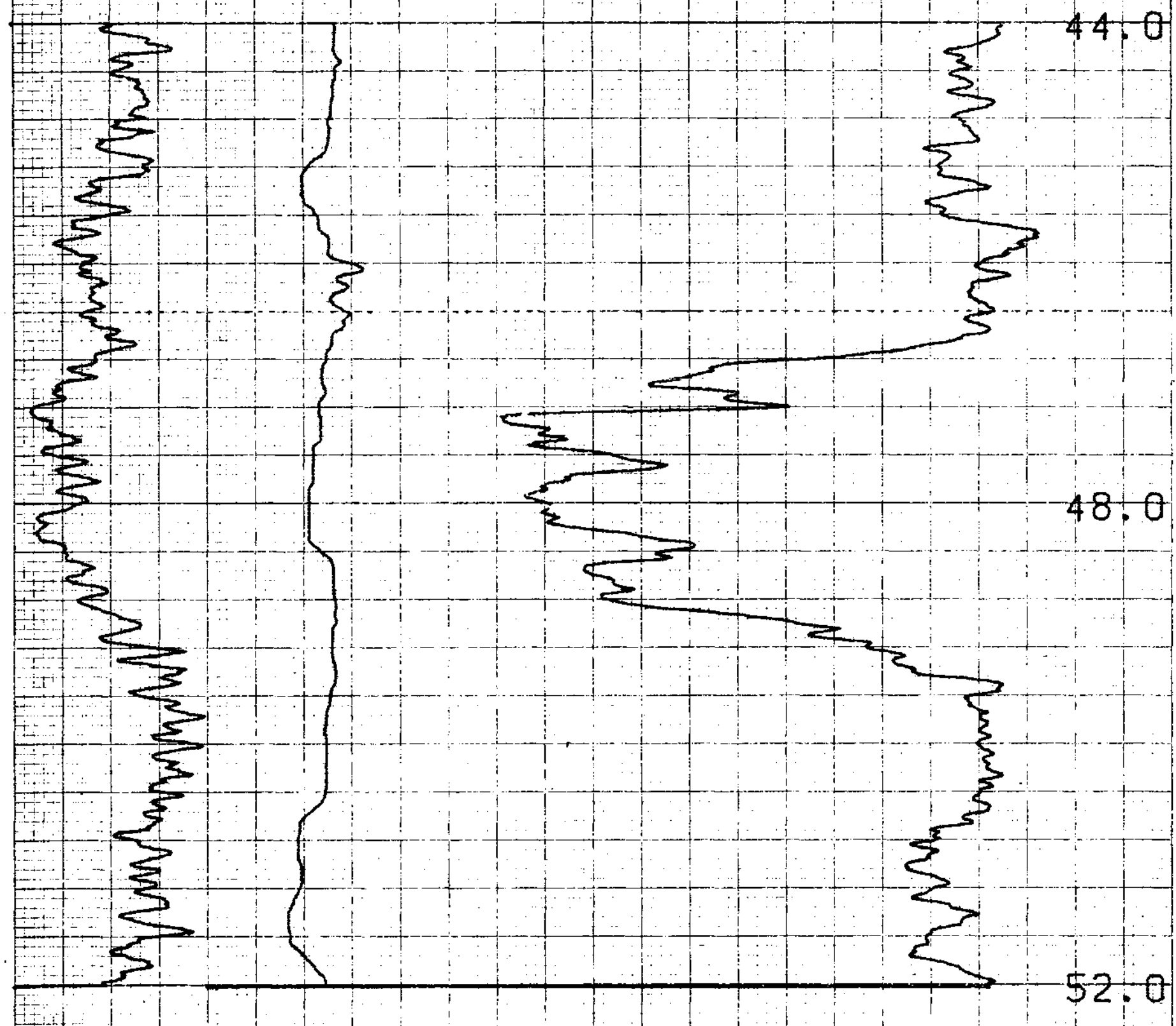
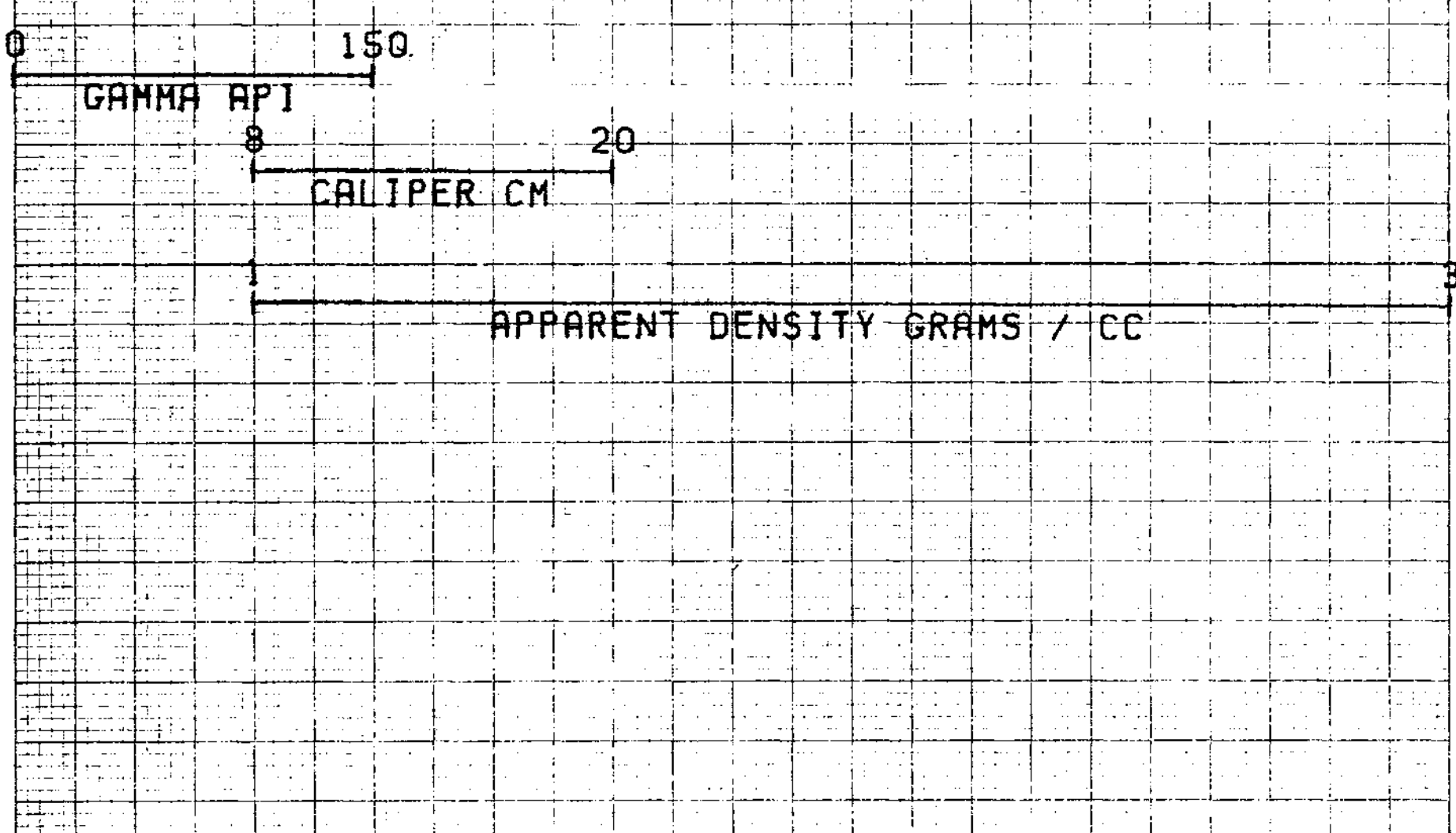
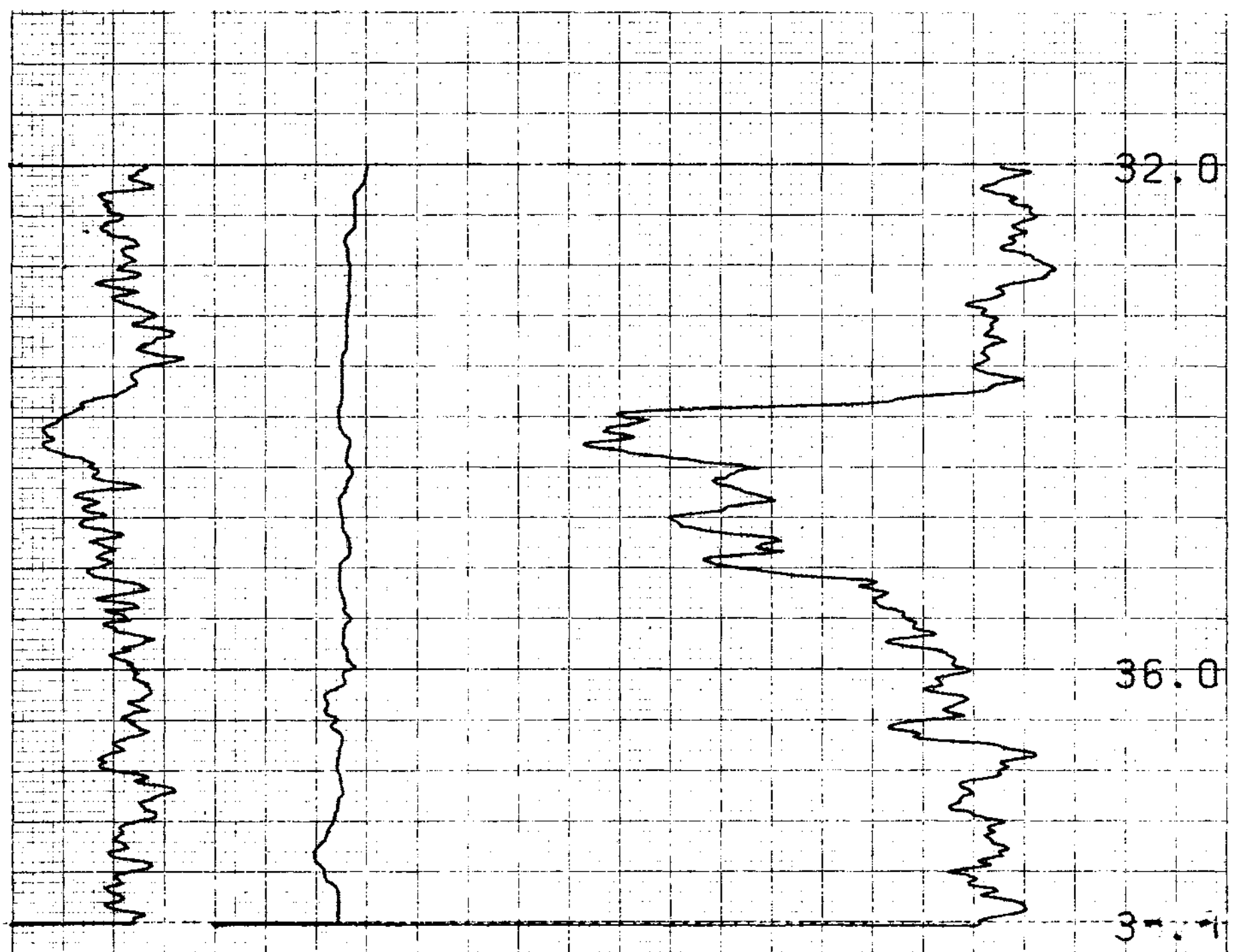
SNGL. PT RESISTANCE	1.4"D x 2.5"L	—	1.4"D x 2.5"L	1.1"D x 2.5"L
RESISTIVITY	—	8" FOCUSED	—	—
SELF POTENTIAL	YES	—	YES	YES
TEMPERATURE	—	—	YES	—
DEVIATION	—	—	NO / YES	—
CALIPER	—	YES	—	—

## HOLE DATA

TOTAL DEPTH — DRILLER :	77.7m	BIT SIZE :	12.0cm
TOTAL DEPTH — LOGGER :	77.1m	CASING — TYPE & SIZE :	16.8cm steel
TOTAL FOOTAGE LOGGED :	77.1m	CASING DEPTH :	4.6m
LOGGING SPEED :	9m/min	BOREHOLE FLUID :	H <sup>2</sup> O
REFERENCE LEVEL :	Ground	FLUID RESISTIVITY :	@ °F
PROBE NO. :	9055A-005	SOFTWARE LEVEL :	8.2*A
		SCALE SELECTION :	<input type="checkbox"/> OPERATOR <input type="checkbox"/> CLIENT
		Tape #4	TK #3

REMARKS:





COMPU-LOG V8L2 PLOT 09-24-84

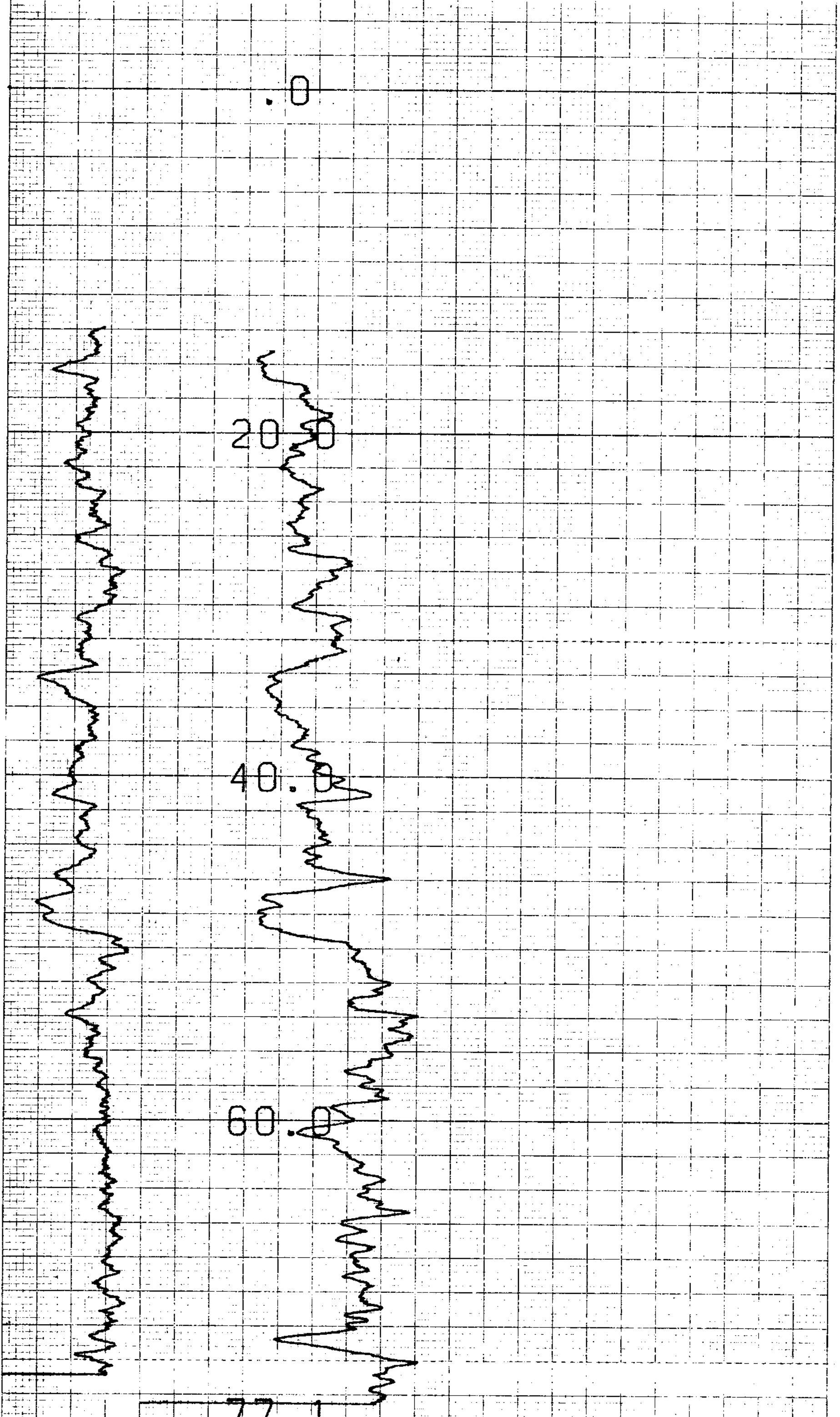
RDH-84-017  
GULF CANADA RES. INC  
MT. KLAPPAN

HOLE DIAMETER : 12.0  
 PROBE # 9030A - 418  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 7193  
 SENSOR #4 CAL BIAS = -24  
 DATA V8L2 TRUCK # F811  
 K. SKAROD APPL. #3703L1

SMOOTHING 7.5,S

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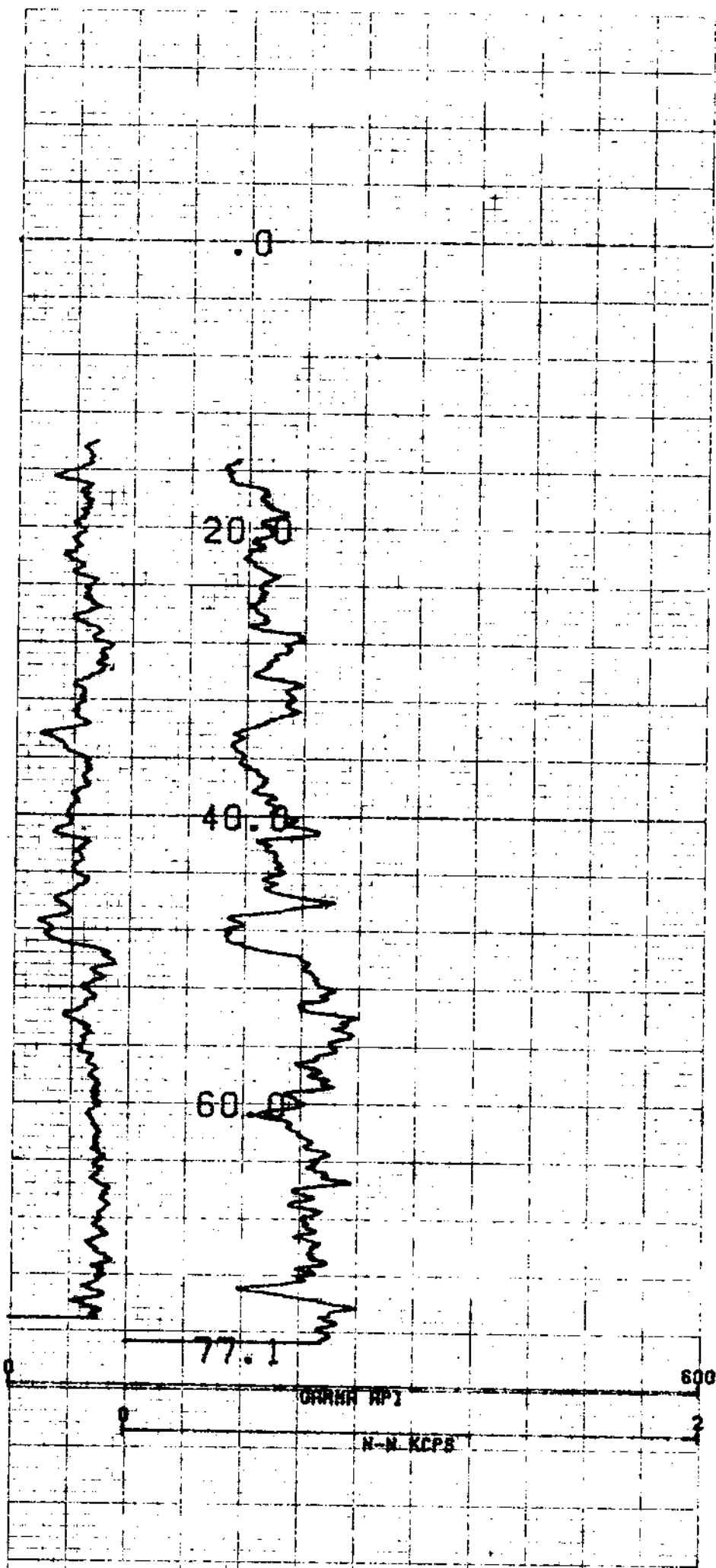


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 0  
 GAMMA API  
 N-N KCPS

COMPU-LOG V8L2 PLOT 09-24-84  
 RDH-84-017  
 GULF CANADA RES. INC  
 MT. KLAPPAN  
 HOLE DIAMETER : 12.0  
 PROBE # 9055A - 005  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 203  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2 TRUCK # F811  
 K. SKARBB APPL. #1007L1

~~815~~  
 709





GR Mount Klappan 84(3)H

CONSOLE YML2 PLOT 09-24-84

RDH-84-017  
 GULF CANADA RES. INC  
 MT. KLAPPAN

WELL DIAMETER = 12.0  
 PROBE = 80300 = 008  
 SENSOR 04 CAL STD CPS = 152  
 SENSOR 04 CAL RUN CPS = 203  
 SENSOR 04 CAL SENS = 0  
 DATA VBL2 TRACK # P011  
 N. SHARDS WPL-91007L2

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 709

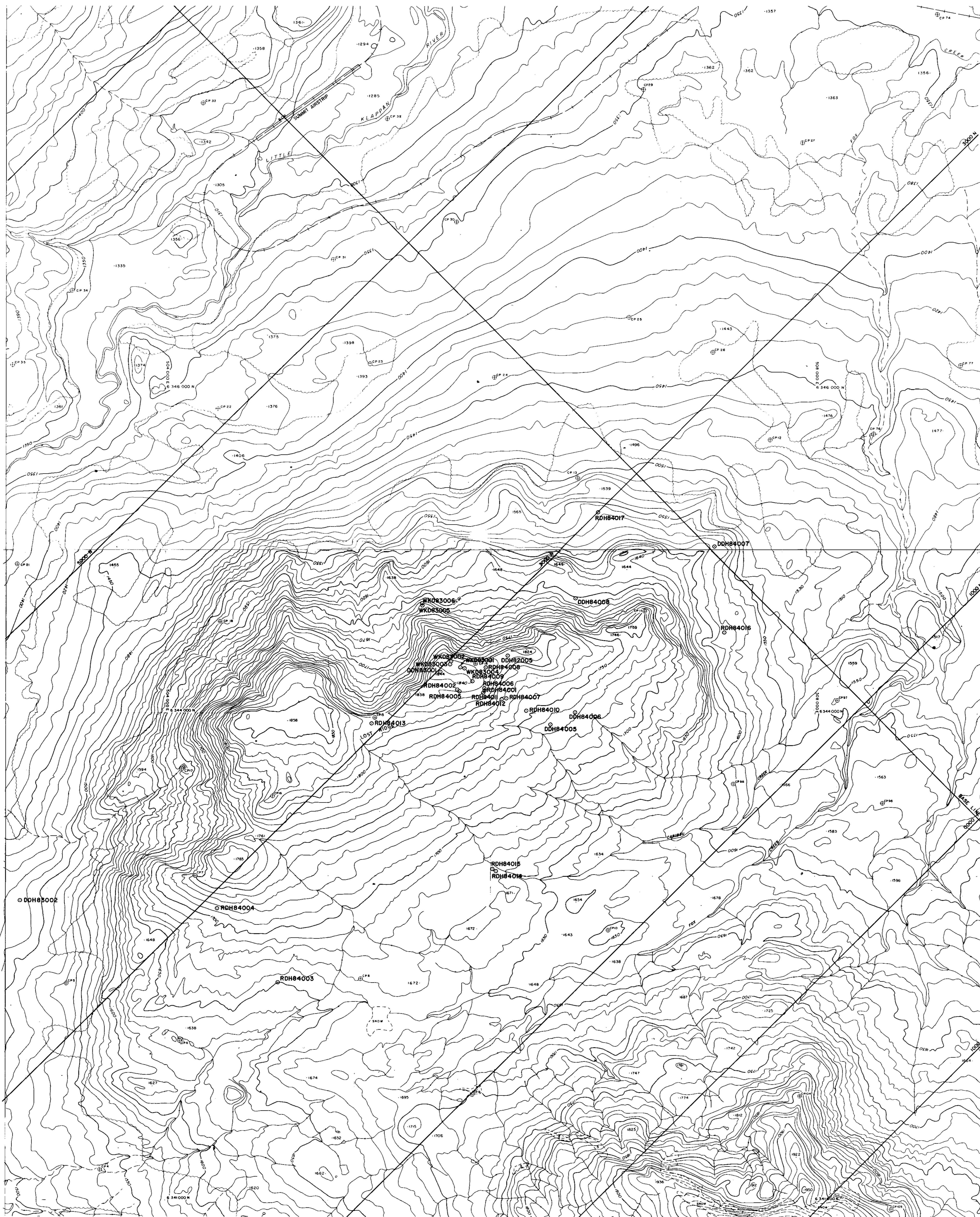
COPY - REDUCED SCALE

LOST-FOX AREA

DRILL HOLE LOCATION MAP

1:10 000



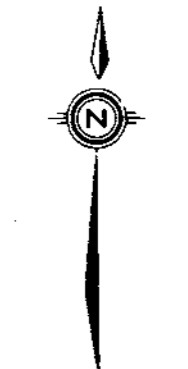


LEGEND

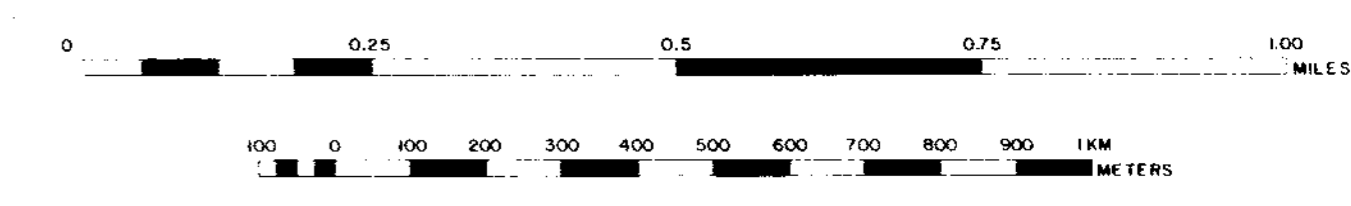
BUILDING	---	□
ROAD, HARD SURFACE	---	□
ROAD, LOOSE SURFACE	---	□
CART TRACK	---	□
TRAIL	---	□
RAILROAD BED	---	□
RIVER	---	□
STREAM, DEFINITE	---	□
STREAM, APPROXIMATE	---	□
LAKE	---	□
WATER LEVEL	---	□
SWAMP	---	□
BEAVER DAM	---	□
TREE LINE	---	□
CUT LINE	---	□
CONTOURS, INDEX	---	□
CONTOURS, INTERMEDIATE	---	□
CONTOURS, DEPRESSION	---	□
CONTOURS, APPROXIMATE	---	□
SPOT ELEVATION	---	□
FIELD CONTROL POINT	---	□
COAL LICENCE	---	□

NOTES

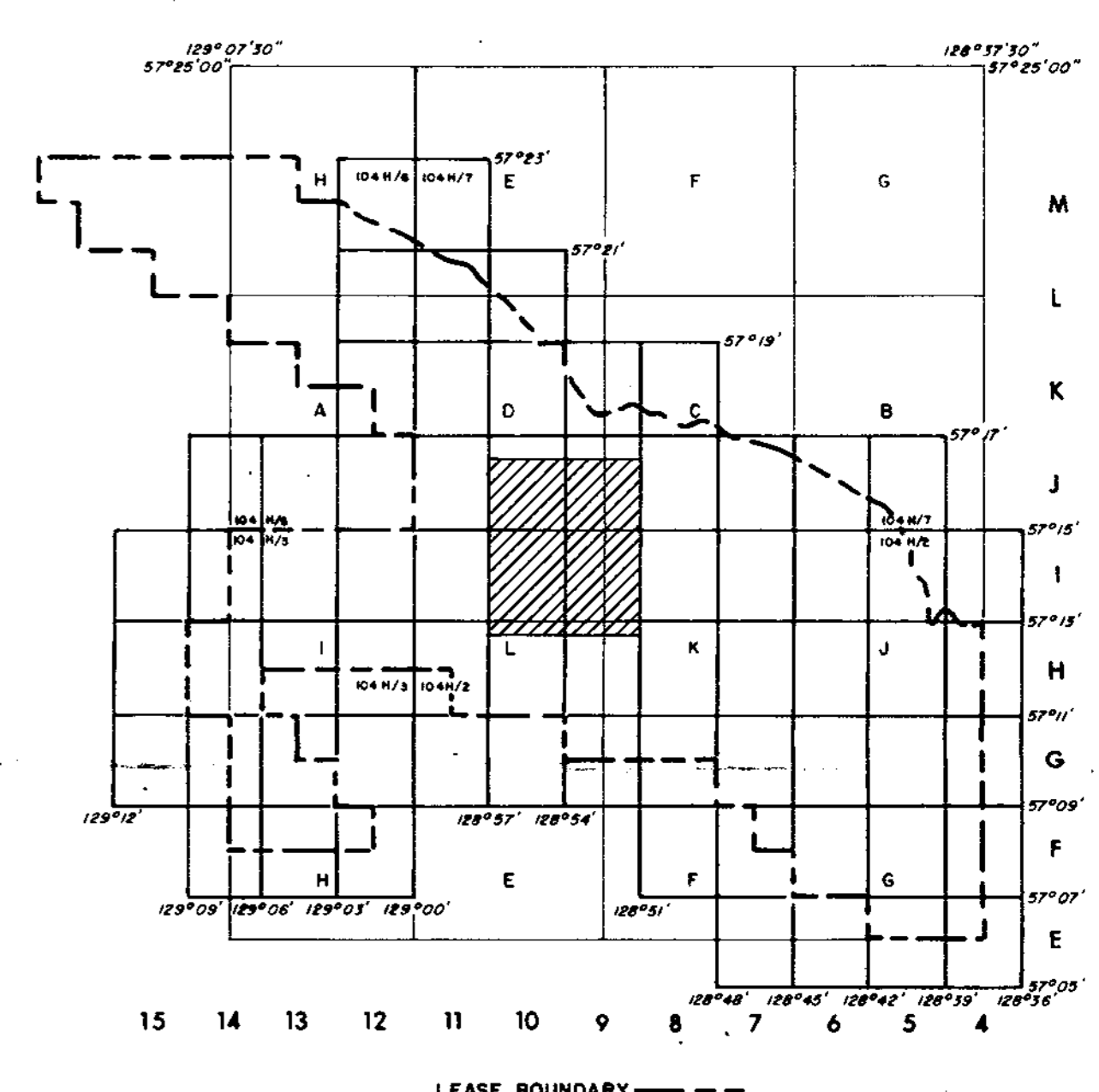
CONTOUR INTERVAL: 10 METERS  
 SURVEY CONTROL: TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.E.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.  
 RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL  
 COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



SCALE 1:10,000



MT. KLAPPAN AREA  
INDEX MAP



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GR. Mount Klappan 84(2)A  
**GULF CANADA RESOURCES INC.**  
 Coal Division  
 CALGARY ALBERTA

**Gulf**

MOUNT KLAPPAN COAL PROPERTY  
 1984  
 LOST - FOX AREA  
 DRILL HOLE LOCATION MAP

PREPARED BY: V.L.D. DRAWING No. KPN84LF-C05  
 APPROVED BY: V.L.D. DATE: JAN, 1985