



**Weatherford**<sup>®</sup>

**CML MESSENGER SHUTTLE  
ARRAY INDUCTION  
ELECTRIC LOG**

COMPANY SOURCE ENERGY MIDCON LLC  
WELL SOURCE 9-41-3-11H  
FIELD WILDCAT  
PROVINCE/COUNTY SUMNER  
COUNTRY/STATE USA / KANSAS  
LOCATION SW NE NE NE  
335' FNL & 400' FEL

SEC 9 TWP 34S RGE 1E Other Services MDNMPD CMI  
API Number 15-191-22664  
Permit Number  
Permanent Datum GL, Elevation 1208 feet  
Log Measured From KB  
Drilling Measured From KB @ 18' AGL

Elevations:  
KB 1226.00  
DF 1224.00  
GL 1208.00

Date	20-JAN-2013
Run Number	ONE
Service Order	3539531
Depth Driller	7907.00 feet
Depth Logger	7907.00 feet
First Reading	7870.00 feet
Last Reading	4300.00 feet
Casing Driller	4300.00 feet
Casing Logger	4300.00 inches
Bit Size	6.750
Hole Fluid Type	WATER
Density / Viscosity	8.50 lb/USg 27.00 CP
PH / Fluid Loss	9.00 9.00
Sample Source	FLOWLINE
Rm @ Measured Temp	2.29 @ 75.0 ohm-m
Rmf @ Measured Temp	1.72 @ 75.0 ohm-m
Rmc @ Measured Temp	3.40 @ 75.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.37 @128.0 ohm-m
Time Since Circulation	40 HOURS
Max Recorded Temp	128.00 deg F
Equipment / Base	18077 OKC
Recorded By	M JOHNSON
Witnessed By	J CALDARO-BAIRD
	GUTHMUELLER

**BOREHOLE RECORD**

Last Edited: 22-JAN-2013 13:21

Bit Size inches	Depth From feet	Depth To feet
13.500	0.00	325.00
9.875	325.00	4300.00
6.750	4300.00	7907.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURF	10.750	0.00	325.00	40.00
INTER	7.625	0.00	4300.00	24.00

**REMARKS**

LOGGED WITH WLS 13.04.8492

LOGGED USING MESSENGER SHUTTLE METHOD OF DEPLOYMENT AND MEMORY LOGGING SYSTEM  
DEPTHS SET BACK TO PIPE STRAP DEPTH AND COMPARED TO MWD DEPTHS

TOOLS RAN: SRT-69,SKJ-472,200V MBS-117,MMSE-157,MTI-076, MGS-142,MCL-063,SKJ-479,SHA-451,MIS-608, MDN-391,  
MPD-394,MIS-607, SHA-438, SKJ-479,MISD-707,MIM 209, MIE-251,MIS-160,MISB-597 MAI-170 RAN IN COMBINATION

HARDWARE: MAI: MIS-B 0.5" STANDOFF USED ABOVE MAI, 0.5" STAND-OFF RAN BELOW MAI  
MIE: MISD CENTRALIZERS USED ABOVE AND BELOW IMAGER

MDN: MIS-A DOUBLE BOWSPRING USED ABOVE MDN.  
MPD: 4INCH PROFILE PLATE USED, MIS-A SINGLE BOWSPRING USED BELOW MPD

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY  
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST  
 CHLORIDES = 1800 PPM

DRILL PIPE DEPTH DURING DEPLOYMENT: 7777  
 LOGGING TOOL DEPTH AFTER DEPLOYMENT: 7877

OPERATORS: R ROLLINS, J TURNER

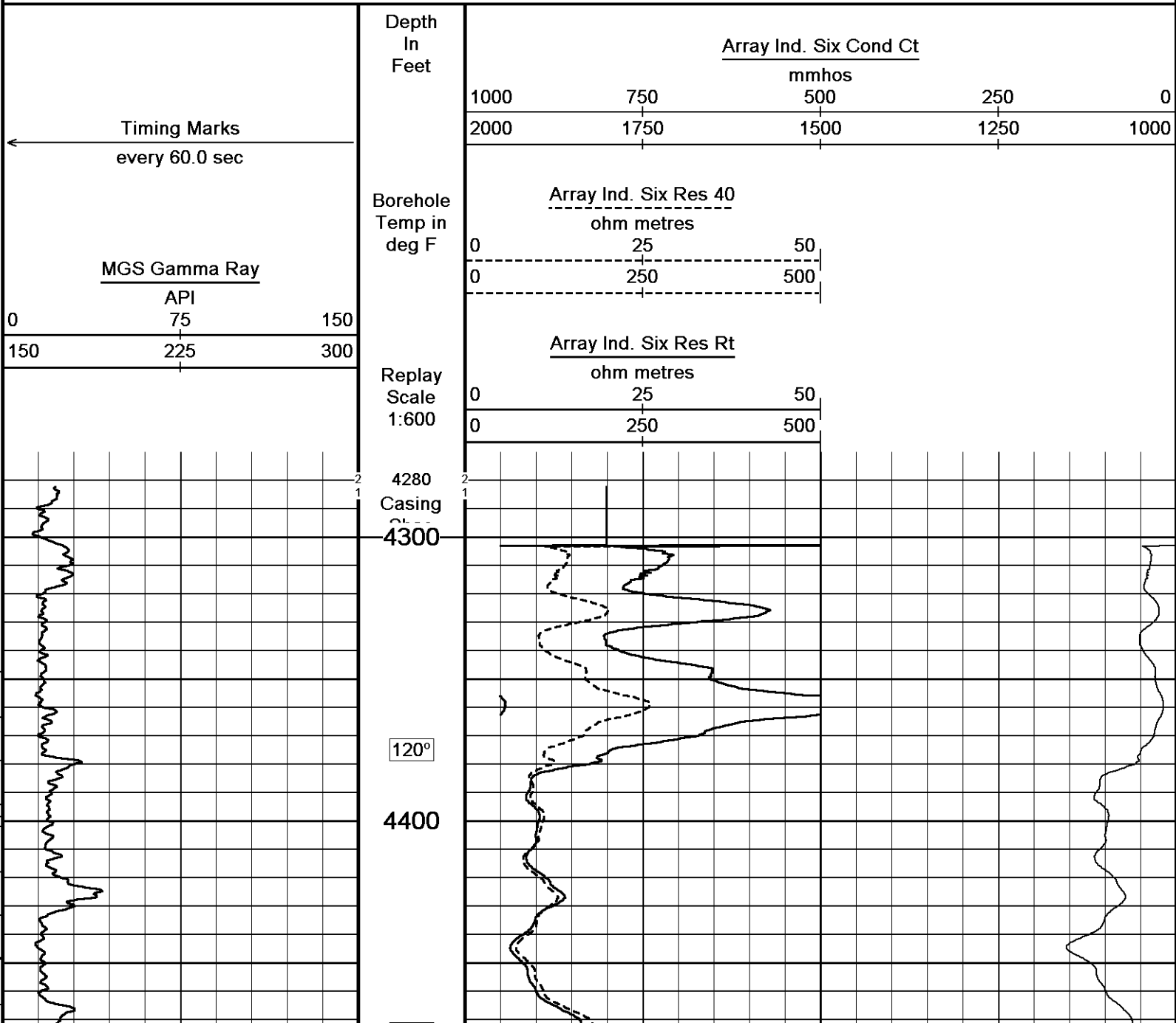
RIG: PISTOL 2

LOG RESPONSES EFFECTED BY HOLE RUGOSITY AND BIT WHIRL

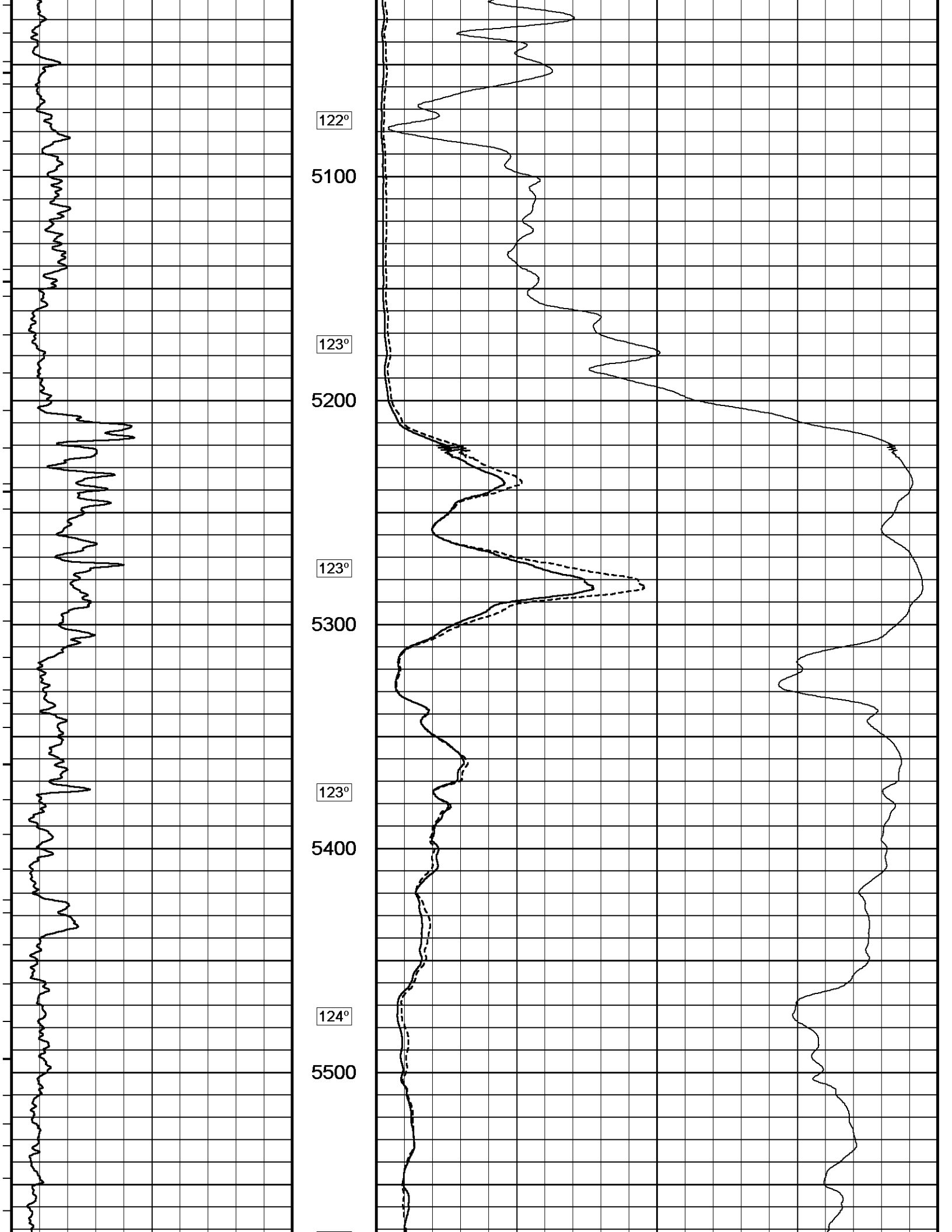
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

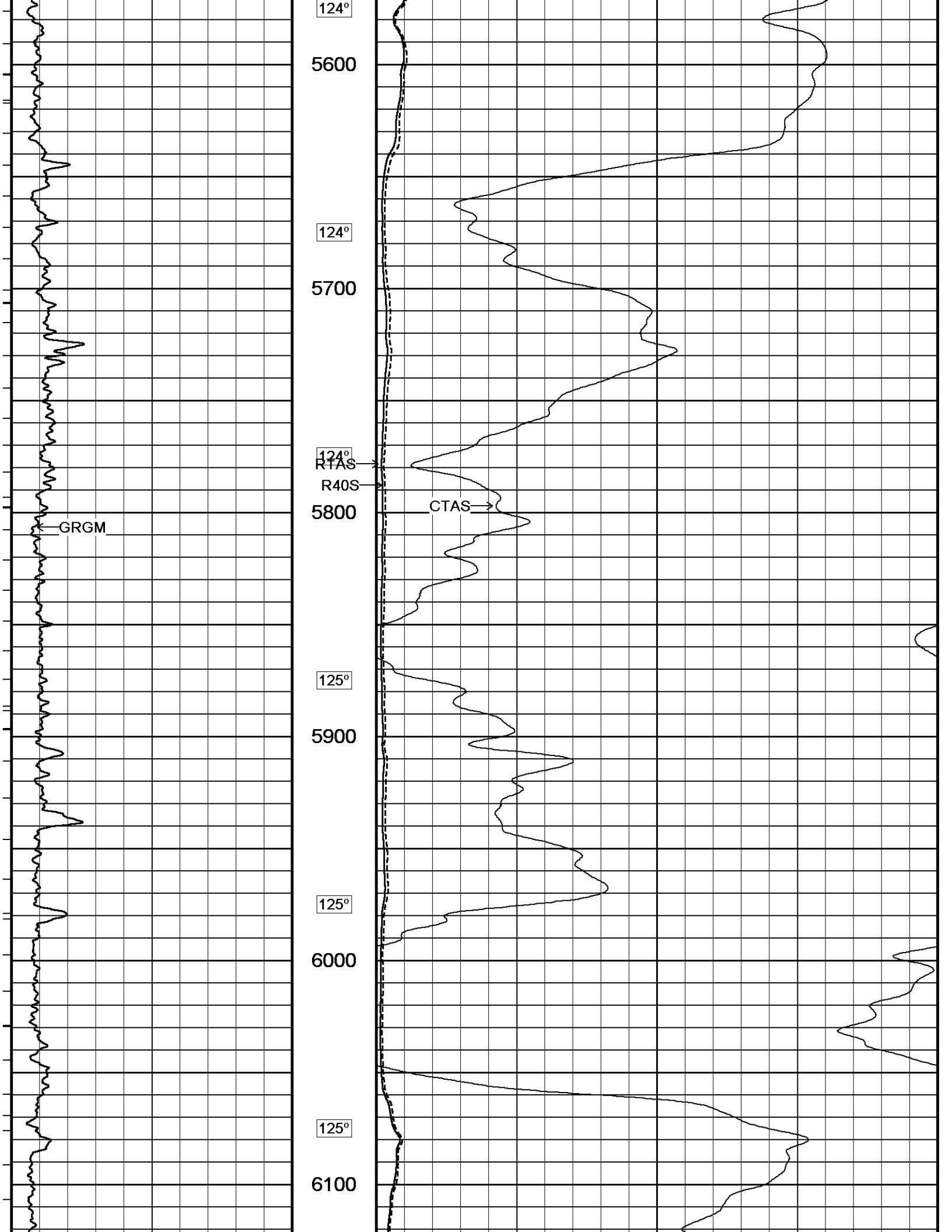
**2 INCH MAIN LOG**

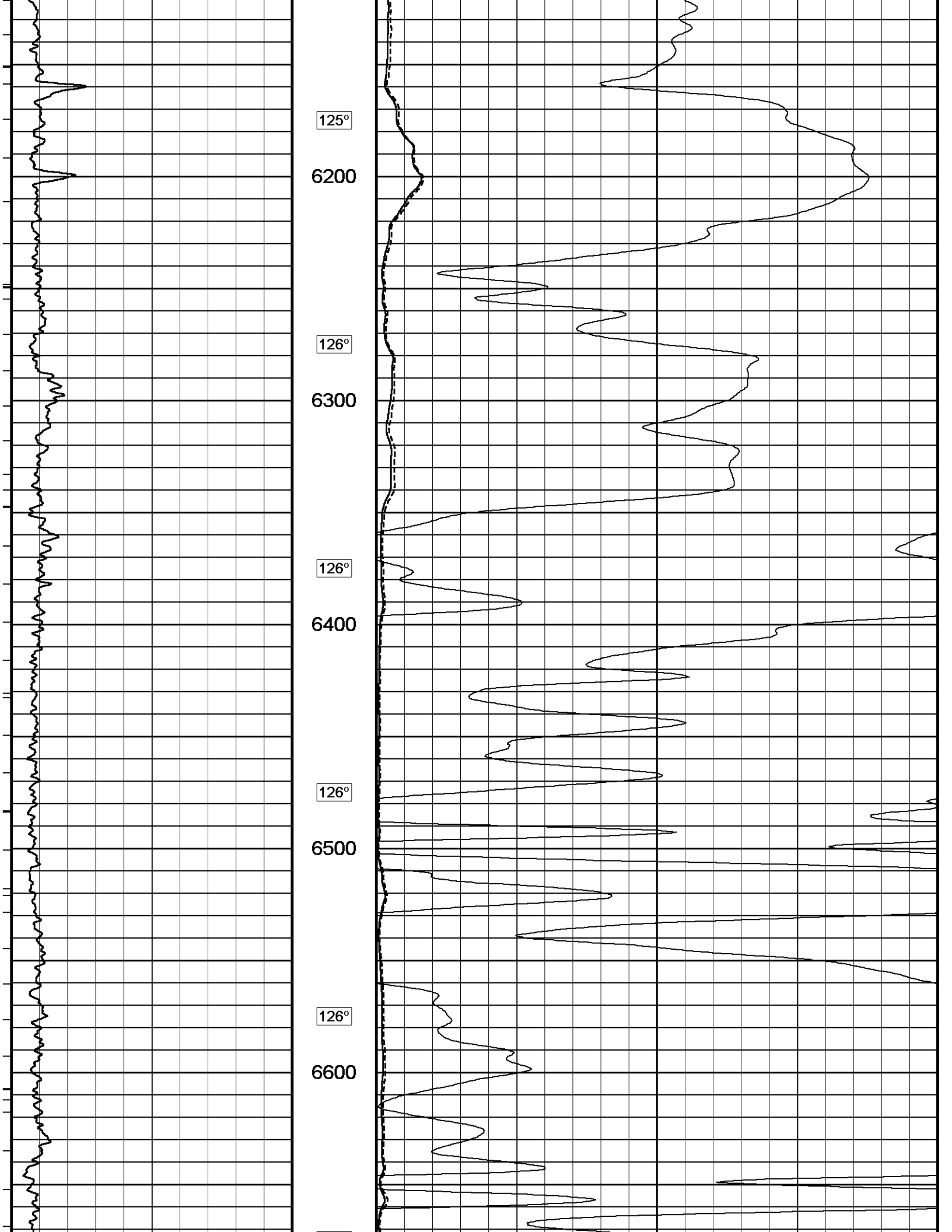
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 22-JAN-2013 14:05  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H\33366RTAP.dta Recorded on 22-JAN-2013 12:13  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

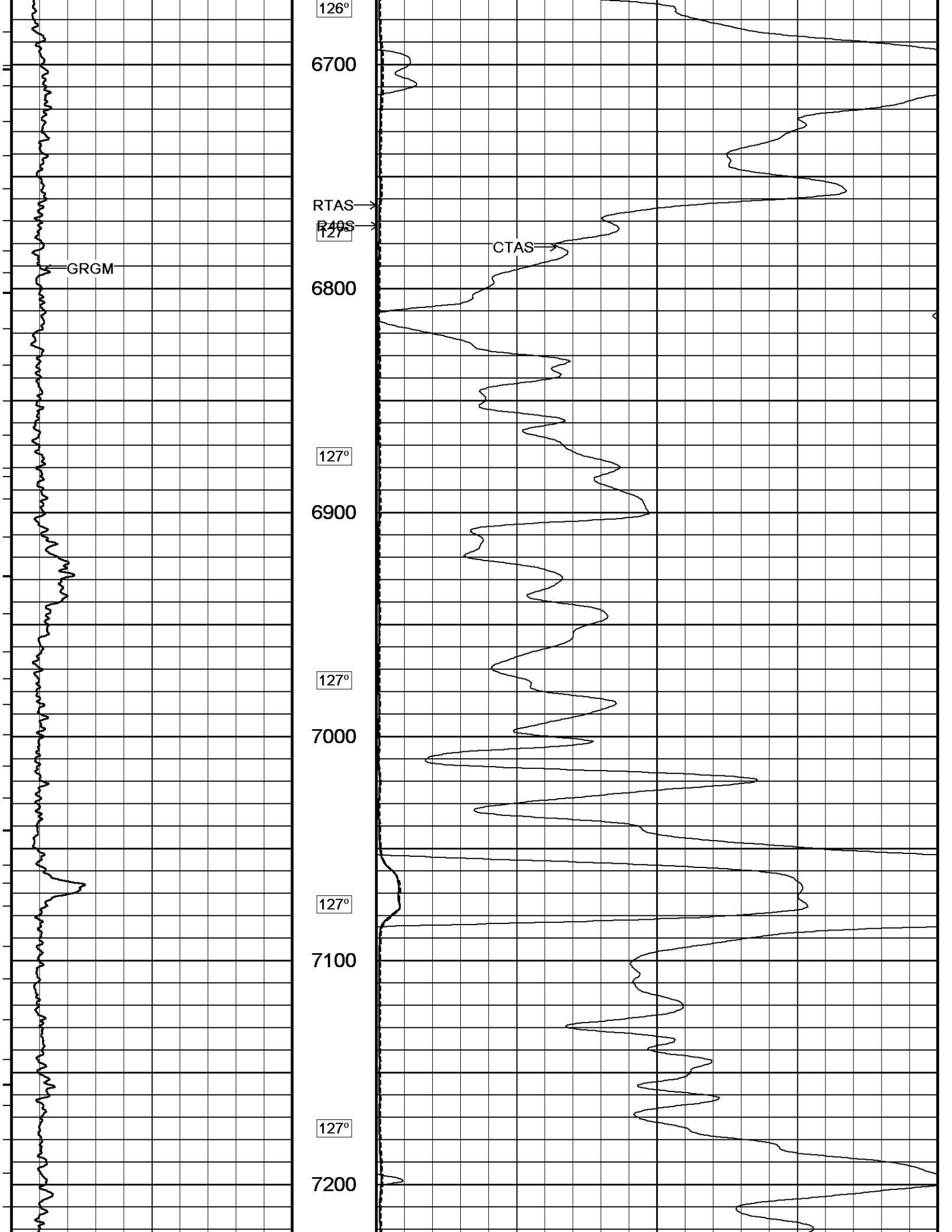


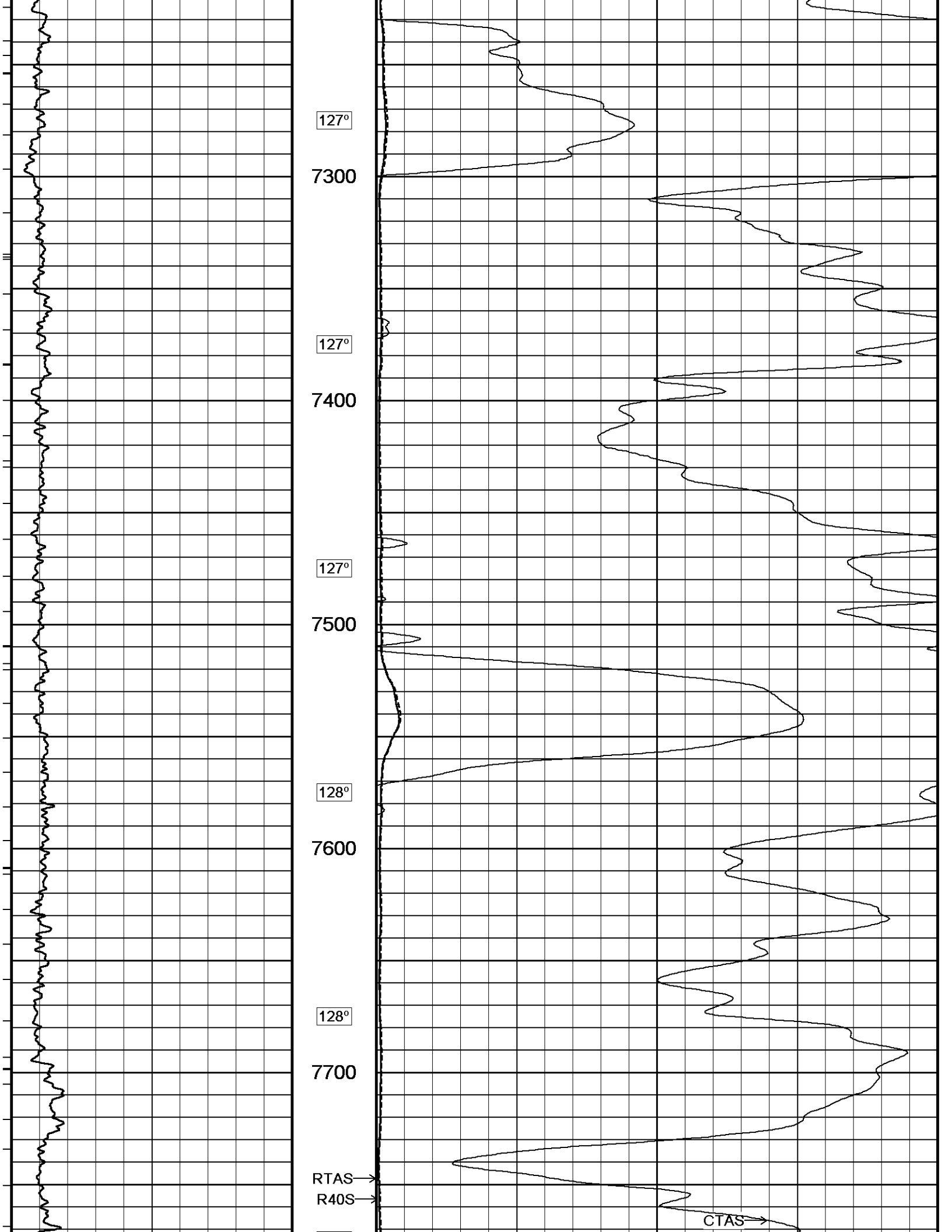




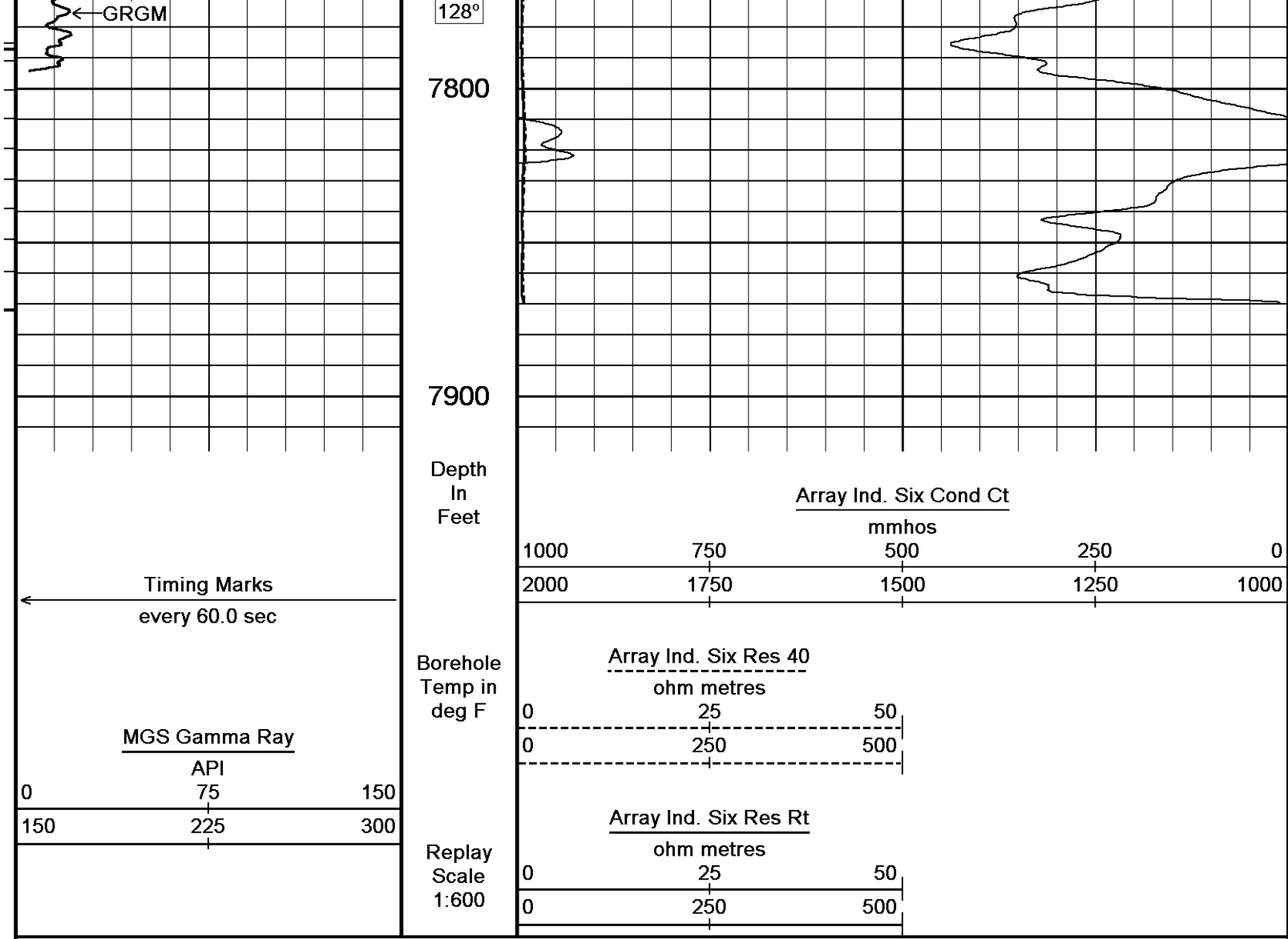










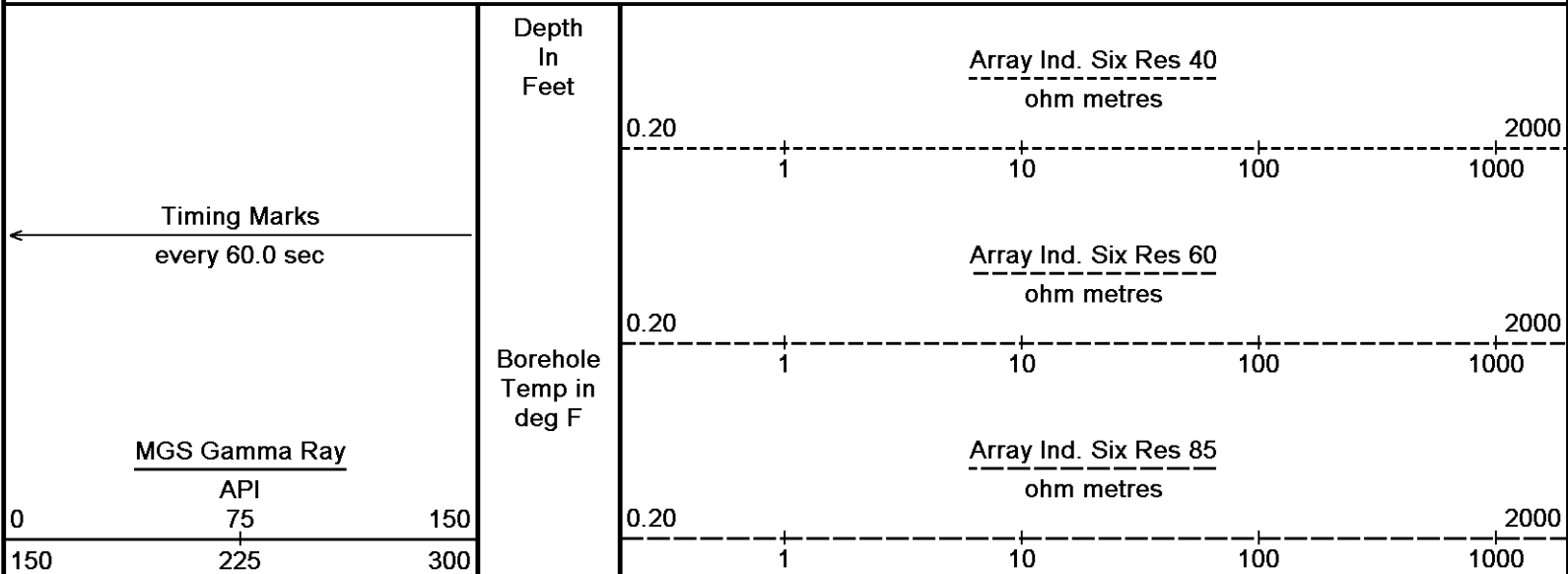


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-JAN-2013 14:05  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H\33366RTAP.dta  
 Recorded on 22-JAN-2013 12:13  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

↑ 2 INCH MAIN LOG ↑

↓ 5 INCH MAIN LOG ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-JAN-2013 14:05  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H\33366RTAP.dta  
 Recorded on 22-JAN-2013 12:13  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492



Array Ind. Six Res Rt  
ohm metres

0.20

2000

Replay  
Scale  
1:240

1 10 100 1000

4278

Casing  
4300

119°

4350

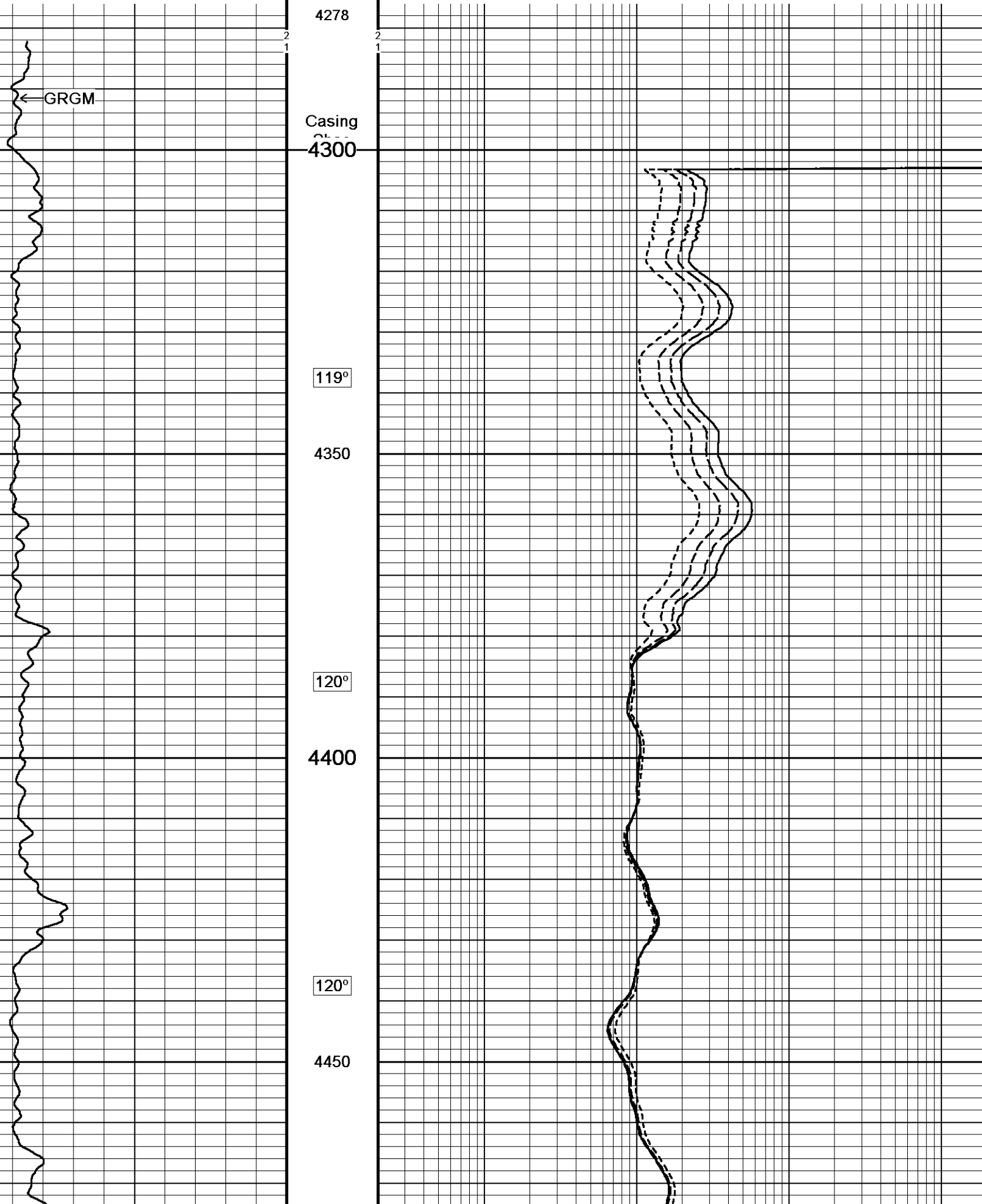
120°

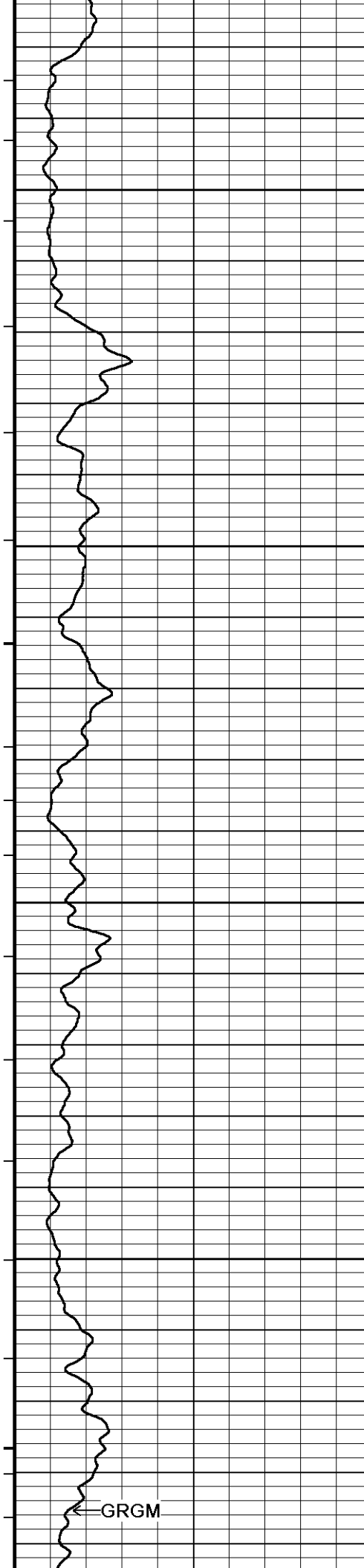
4400

120°

4450

← GRGM





120°

4500

120°

4550

121°

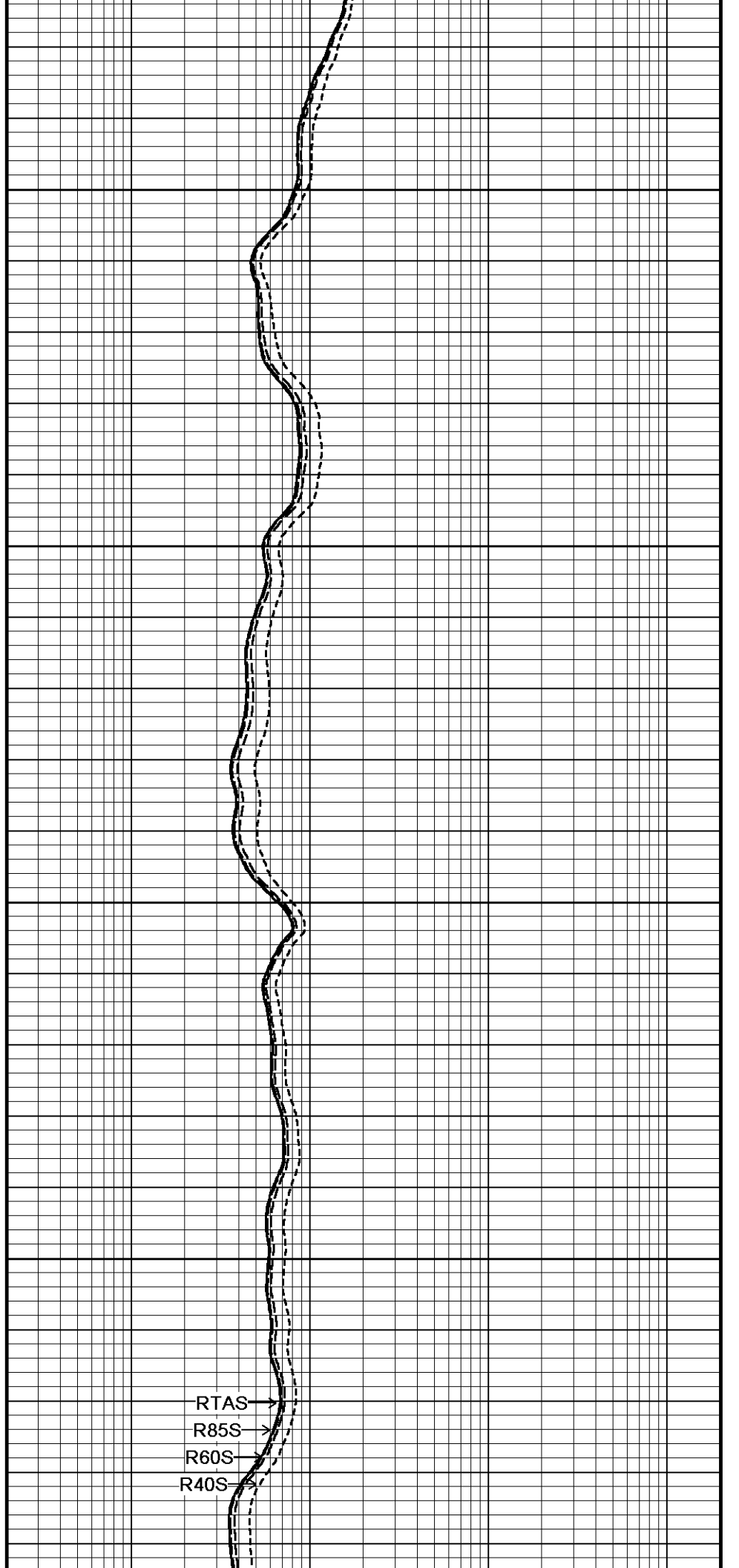
4600

121°

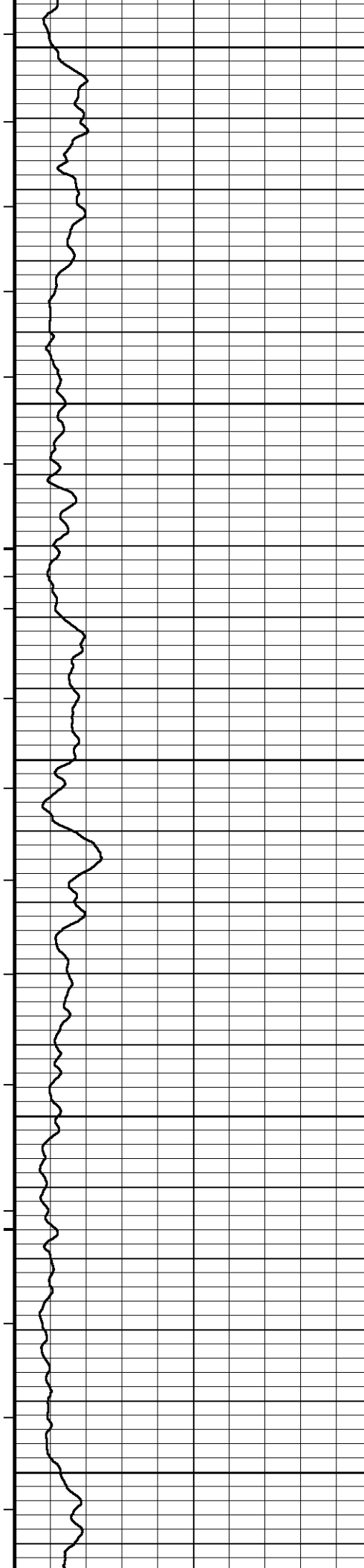
4650

← GRGM

121°



RTAS →  
R85S →  
R60S →  
R40S →



4700

121°

4750

121°

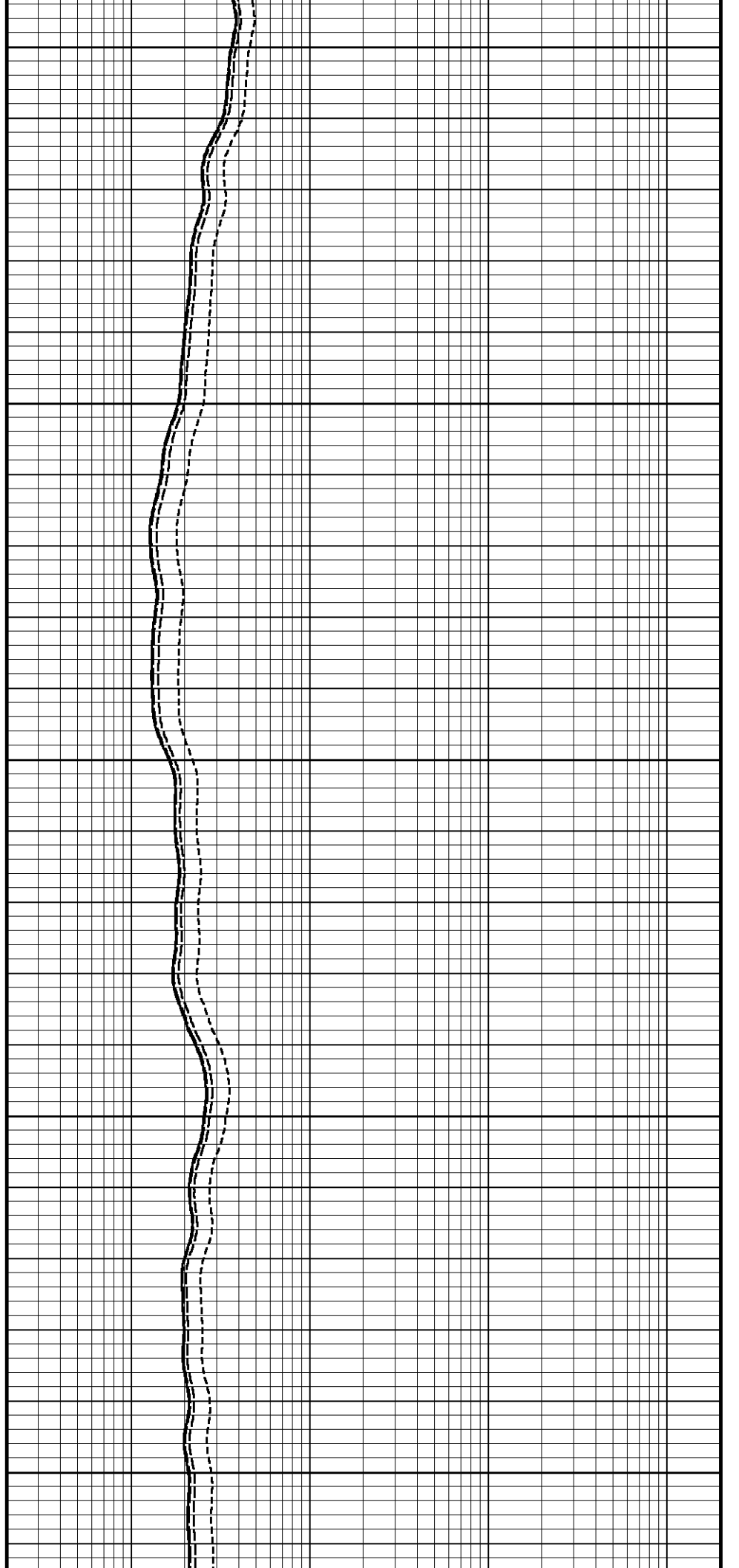
4800

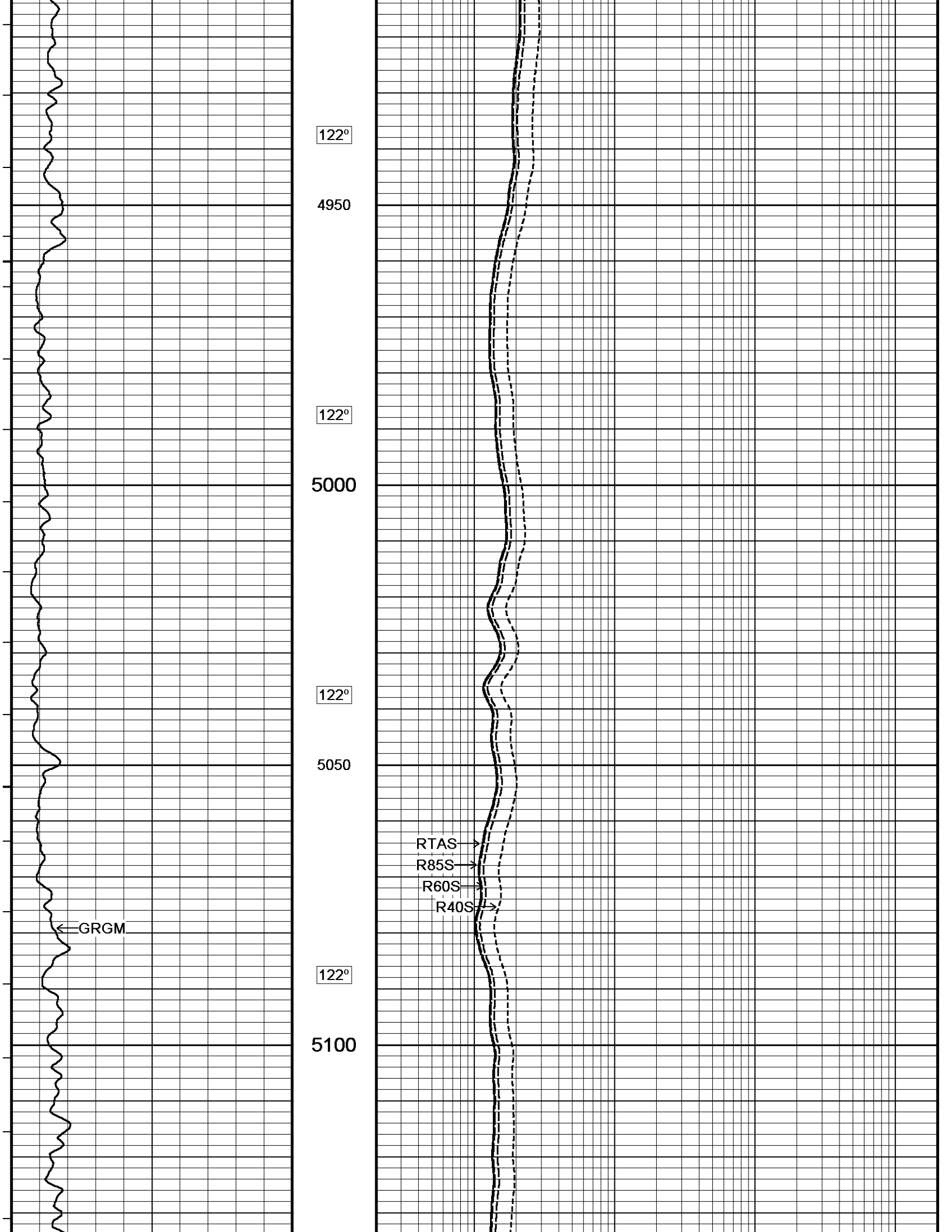
121°

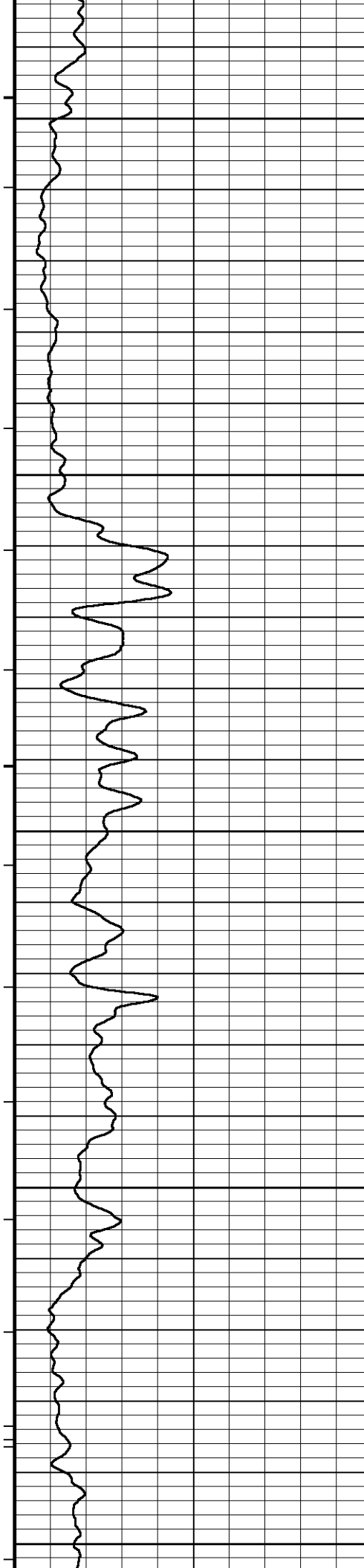
4850

122°

4900







122°

5150

123°

5200

123°

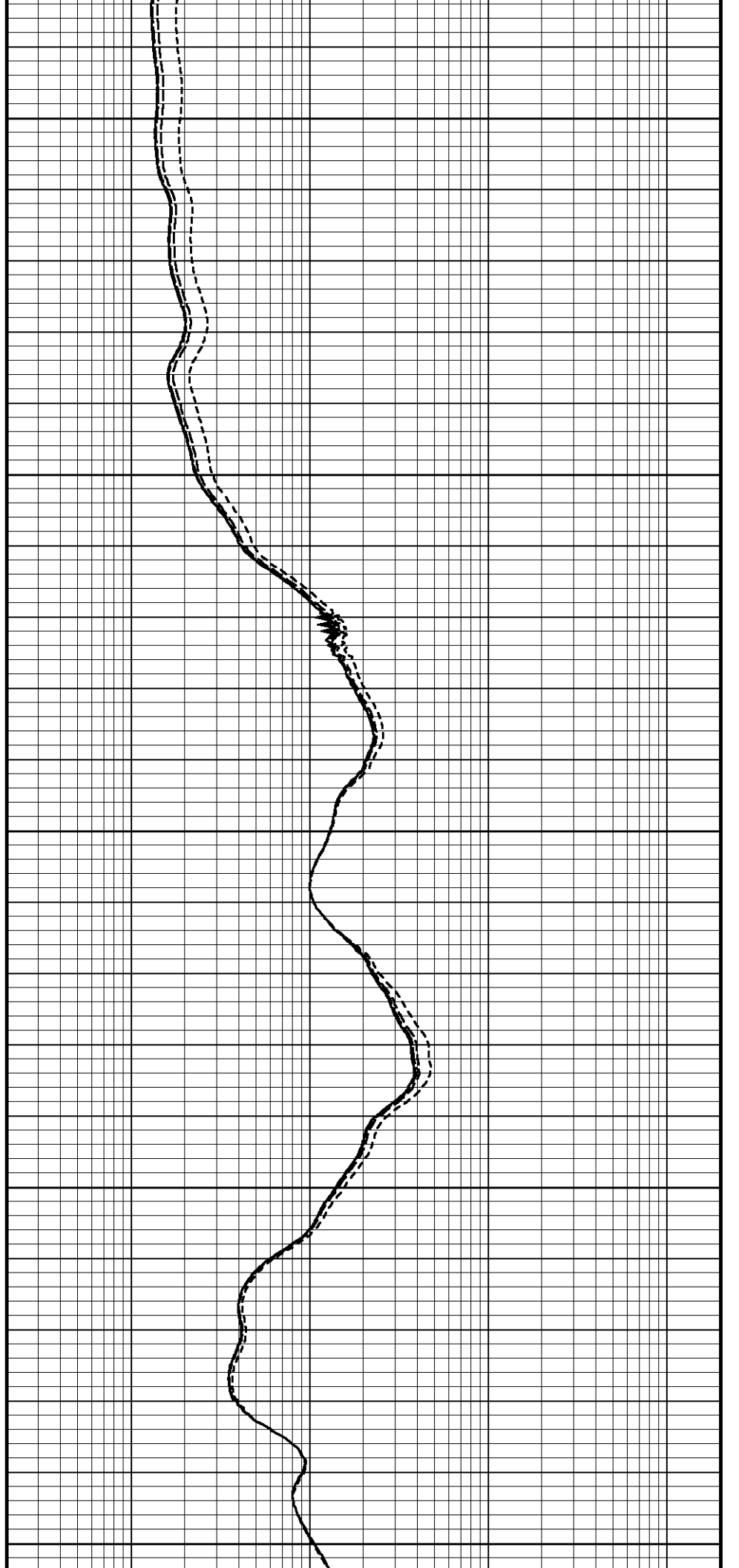
5250

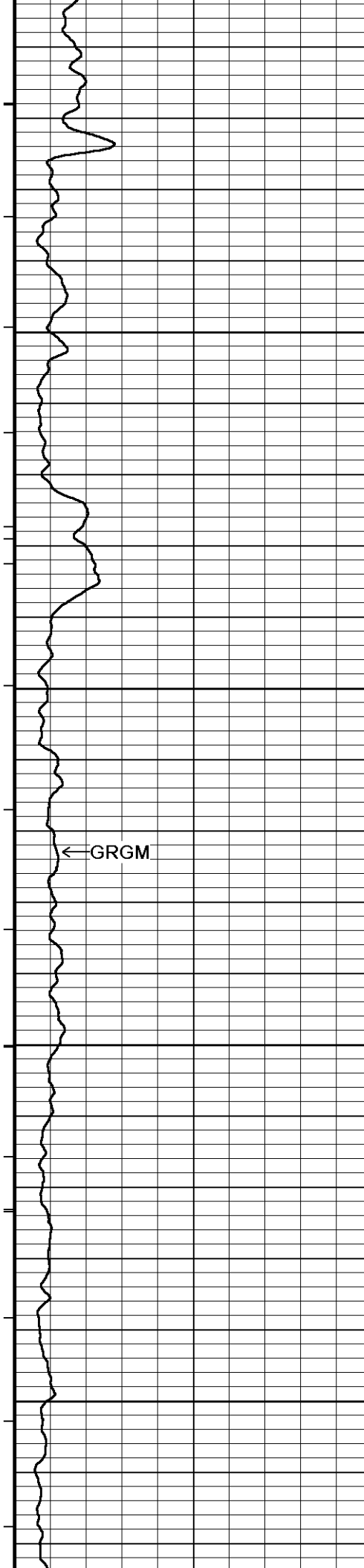
123°

5300

123°

5350





124°

5400

124°

5450

← GRGM

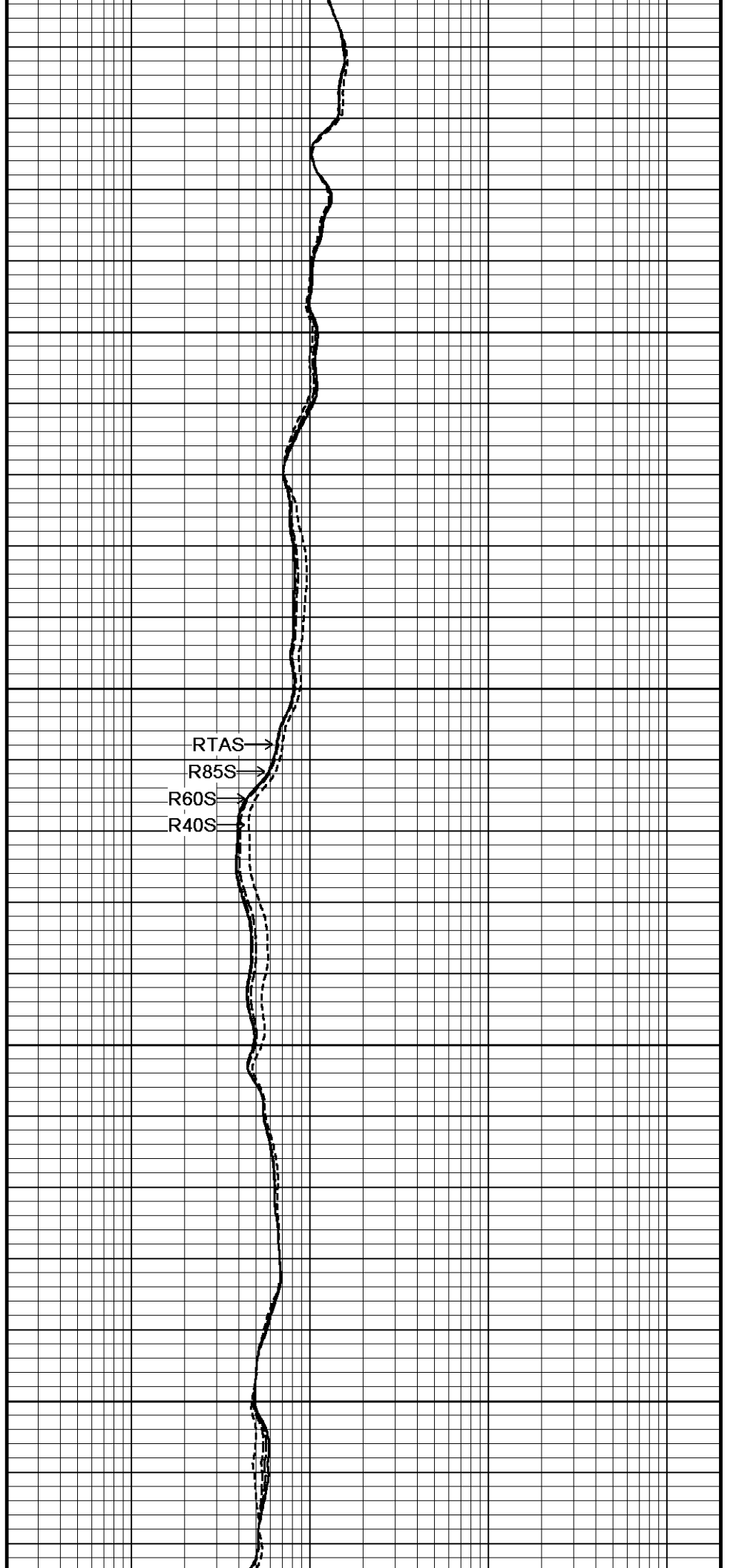
RTAS →  
R85S →  
R60S →  
R40S →

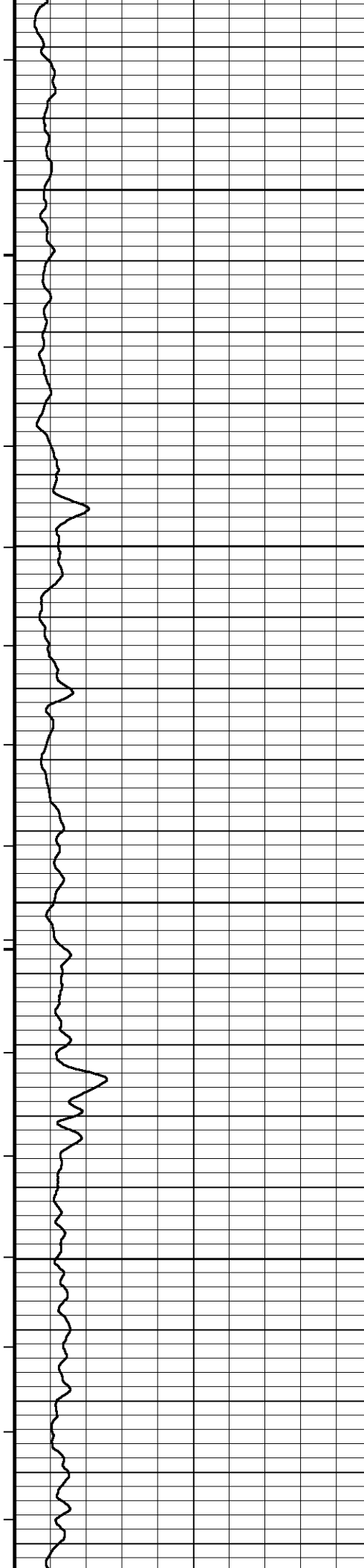
124°

5500

124°

5550





124°

5600

124°

5650

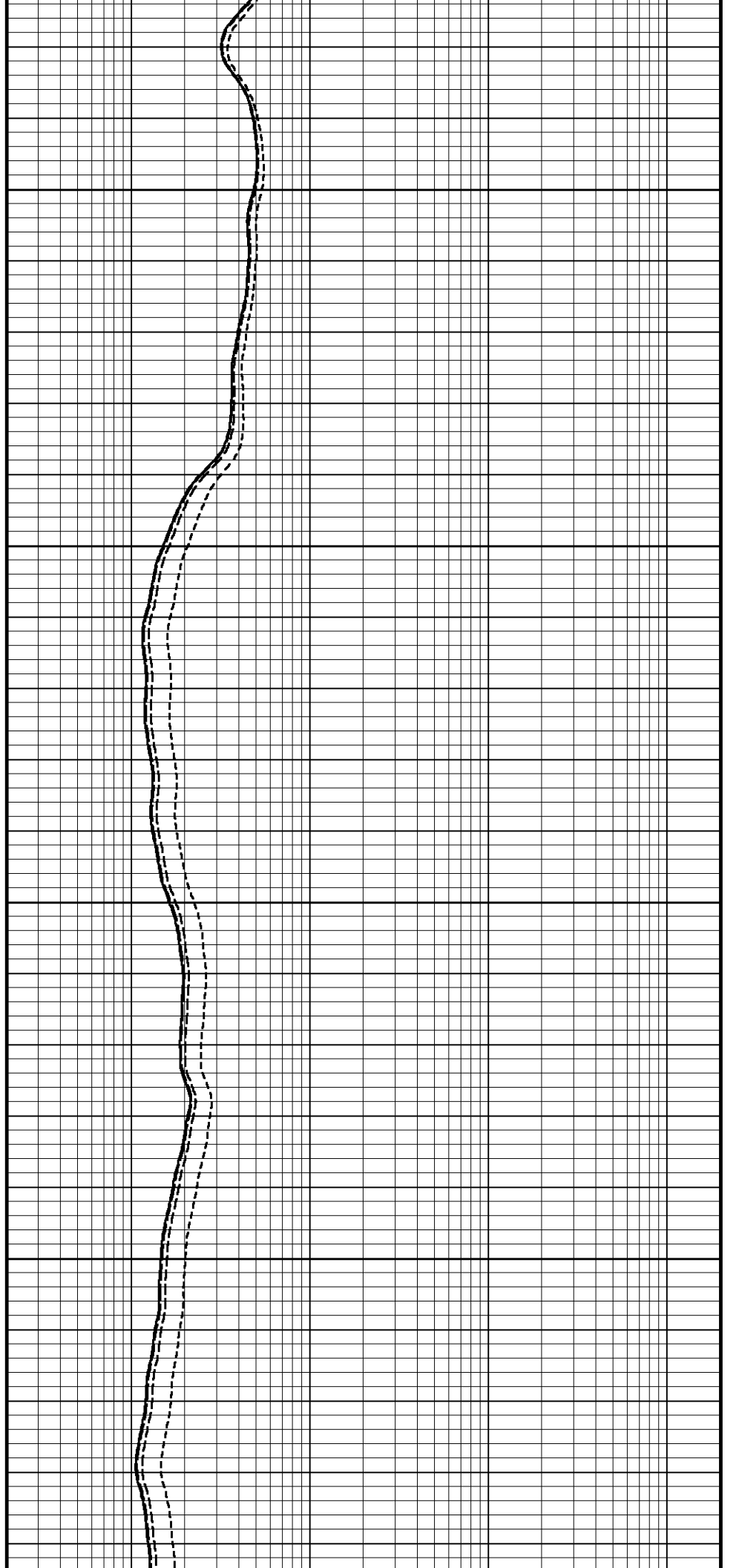
124°

5700

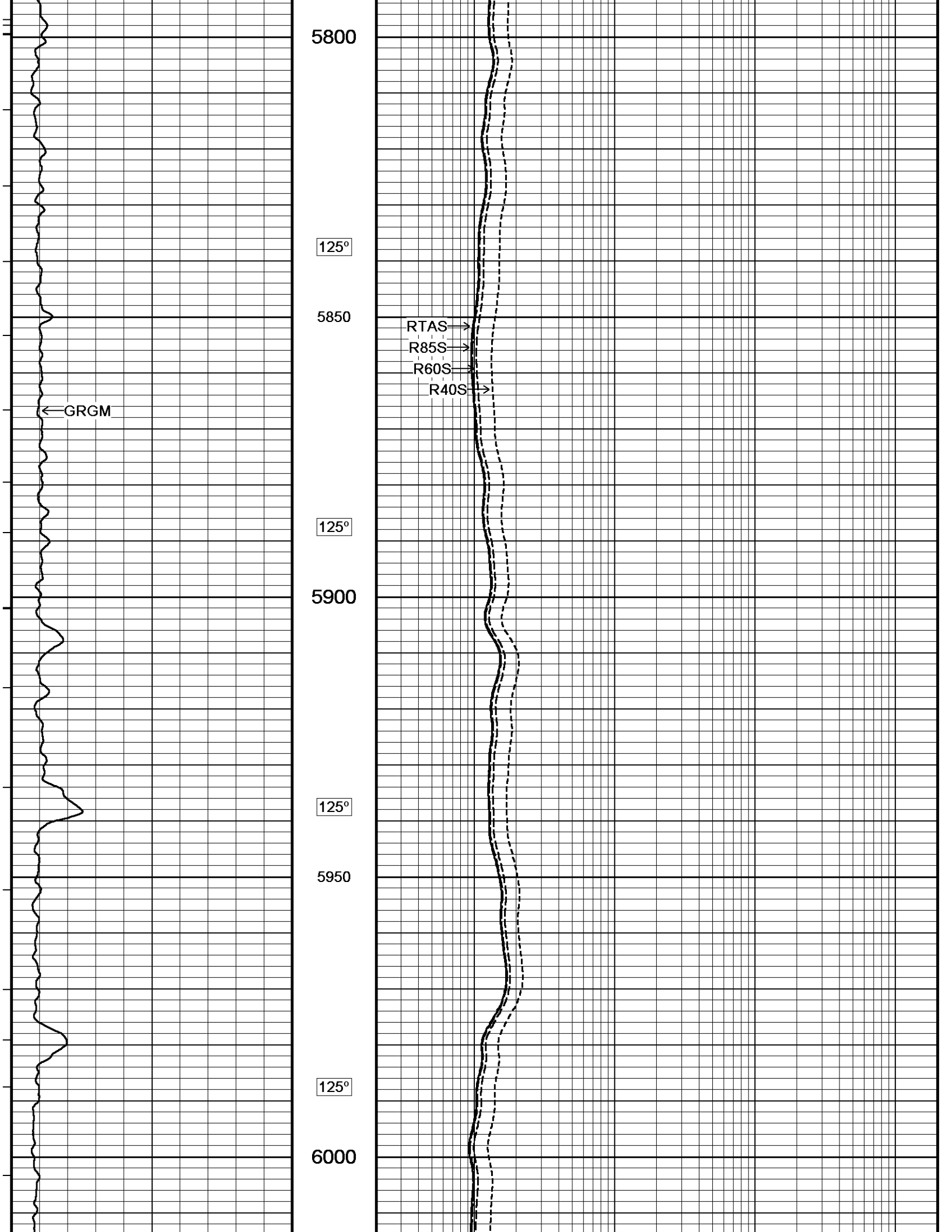
124°

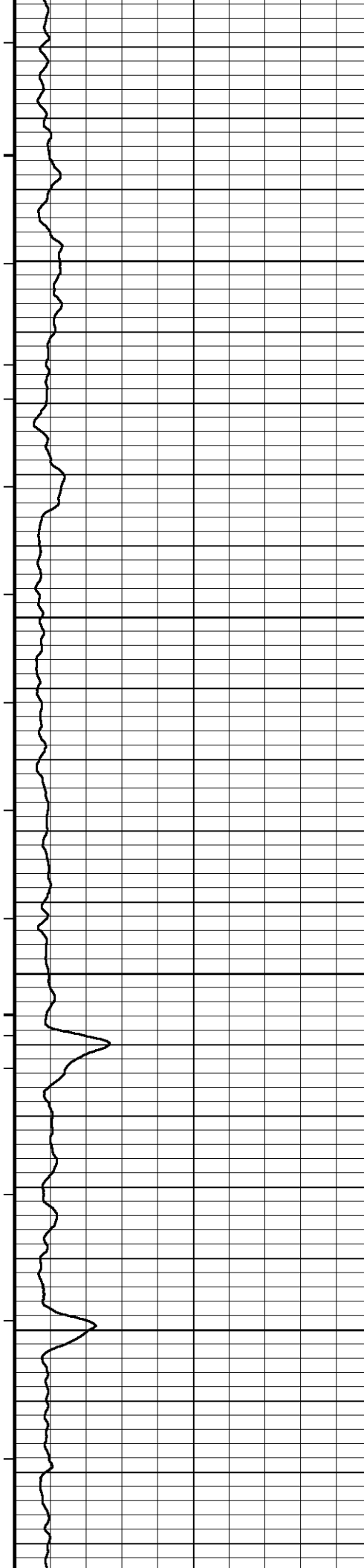
5750

124°









125°

6050

125°

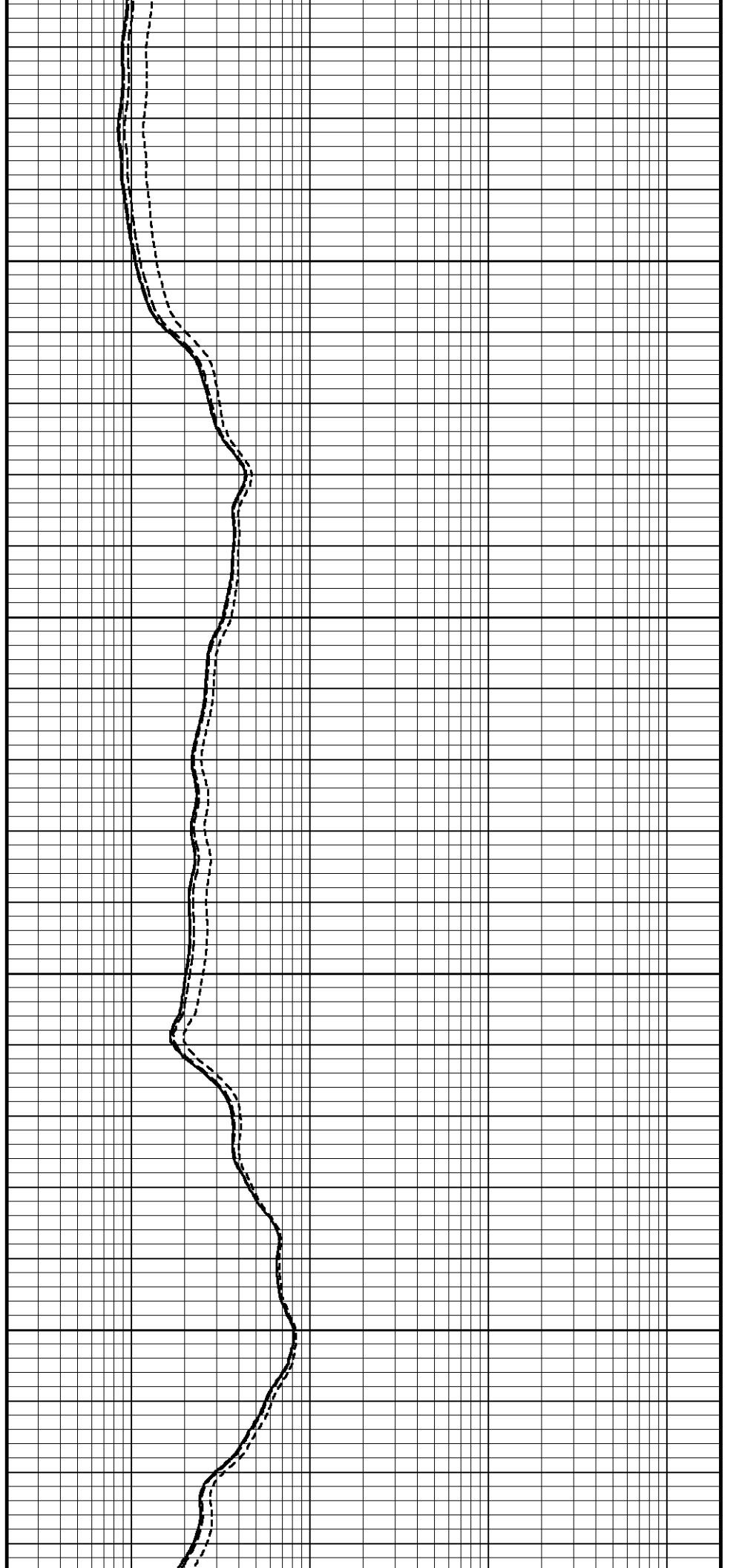
6100

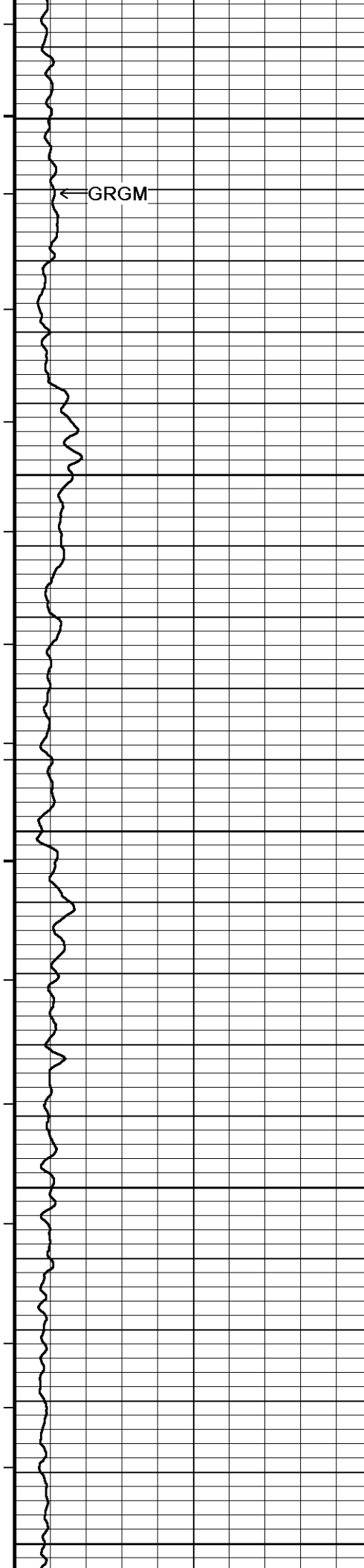
125°

6150

125°

6200





126°

6250

RTAS →  
R85S →  
R60S →  
R40S →

126°

6300

126°

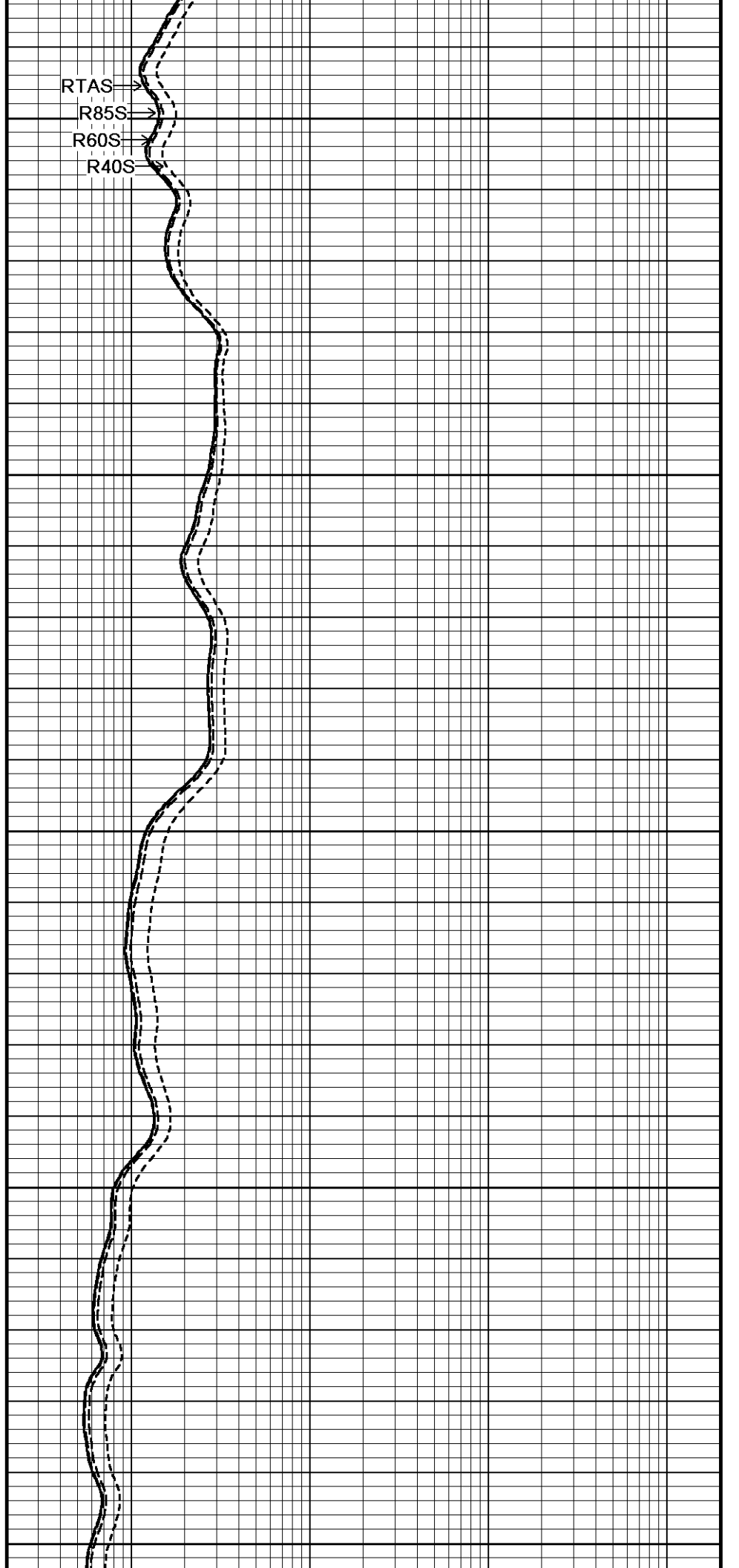
6350

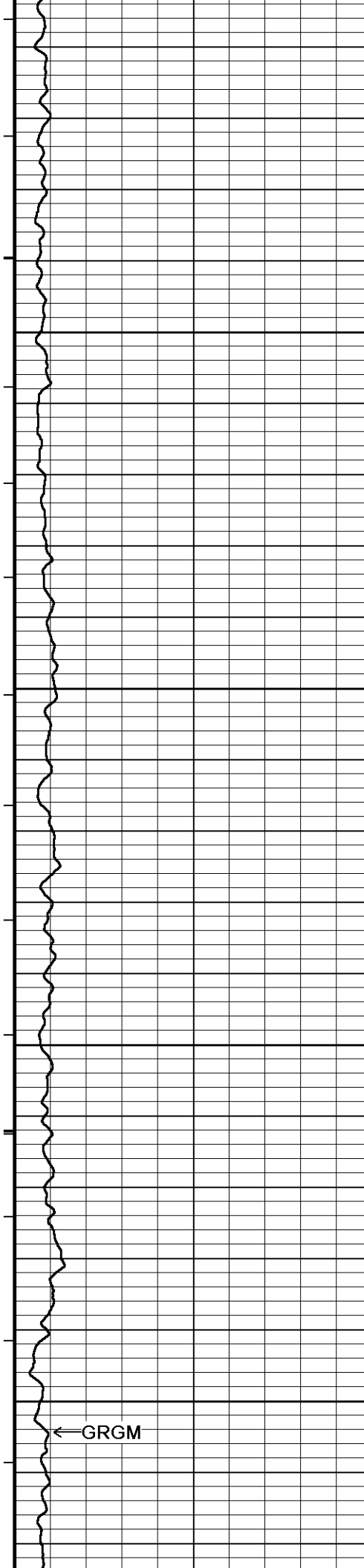
126°

6400

126°

6450





126°

6500

126°

6550

126°

6600

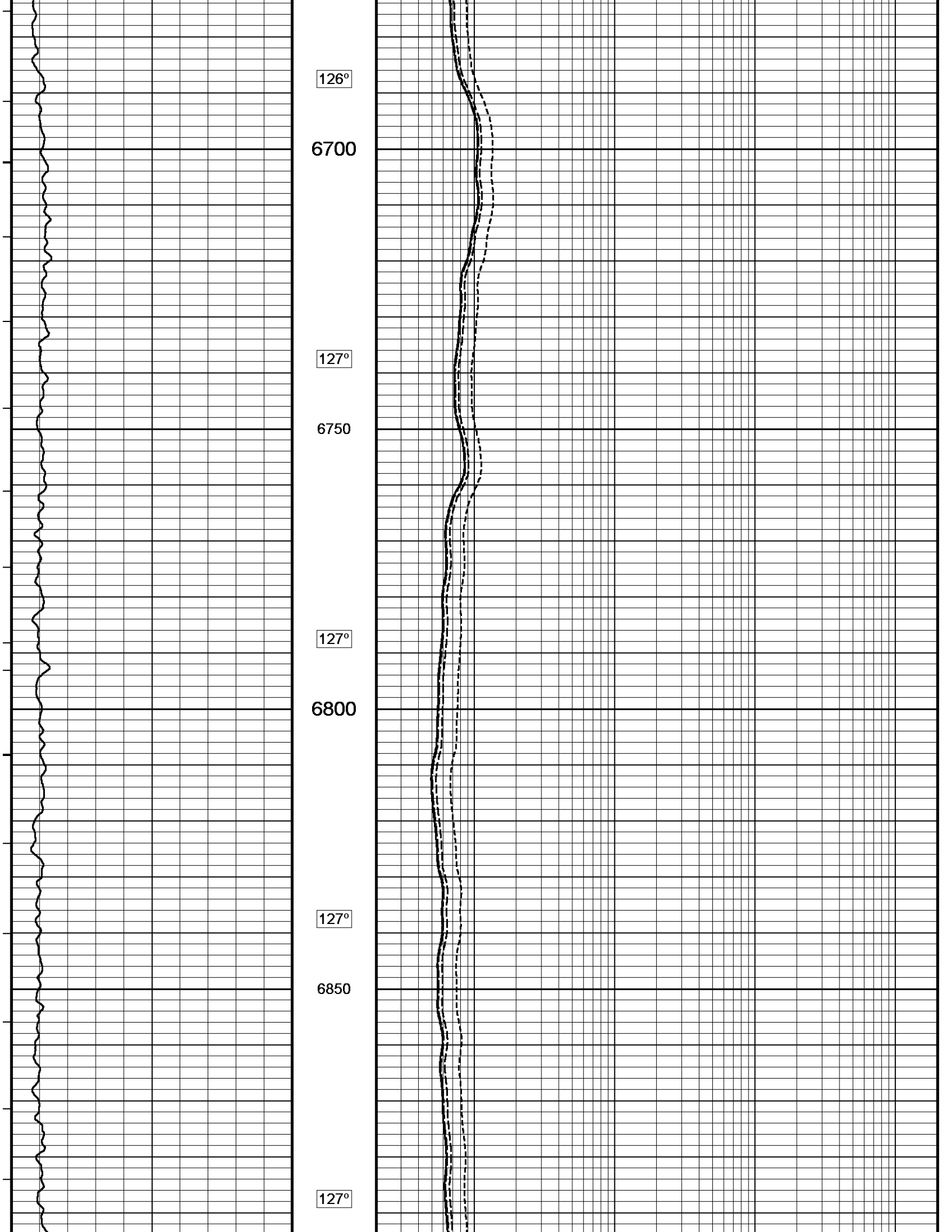
126°

6650



RTAS →  
R85S →  
R60S →  
R40S →

← GRGM



126°

6700

127°

6750

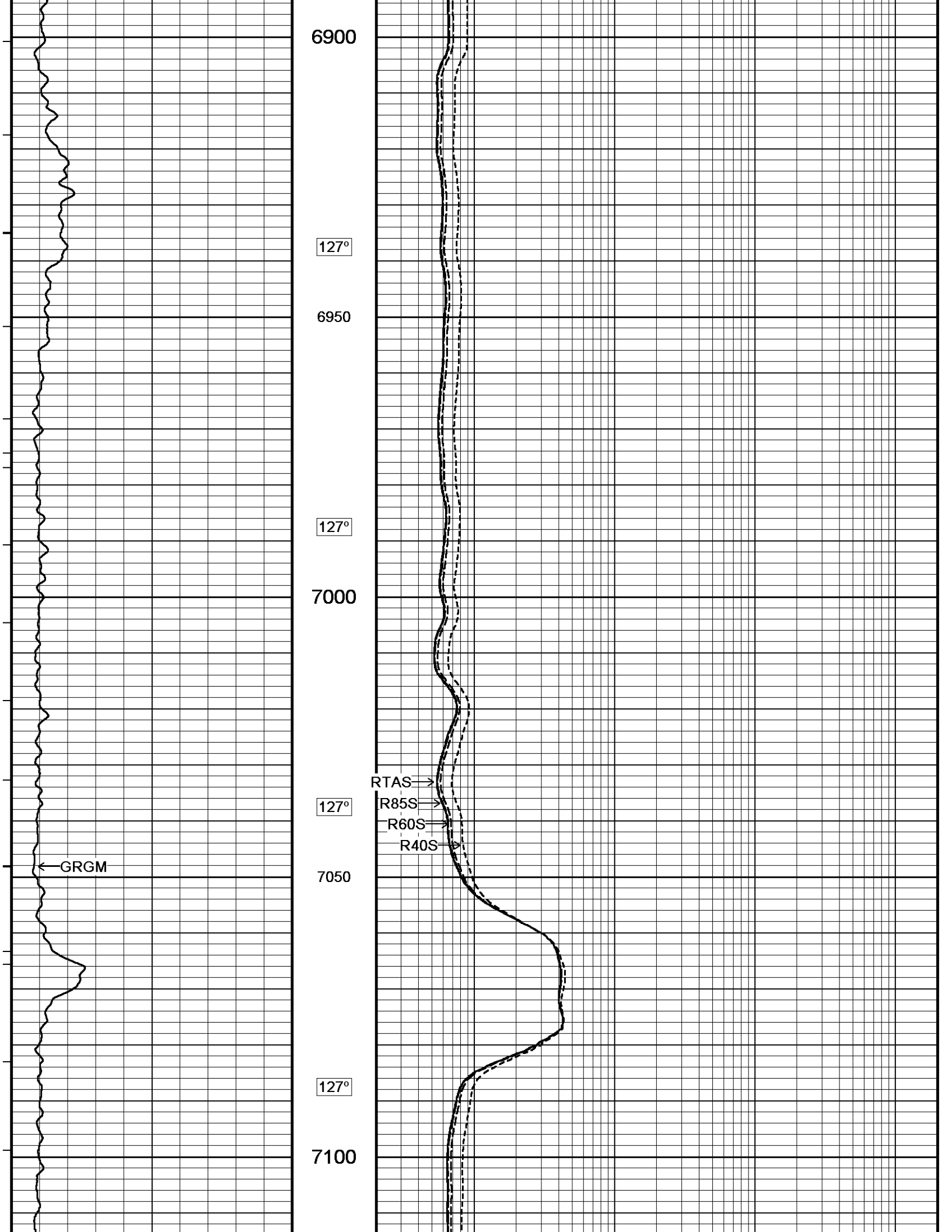
127°

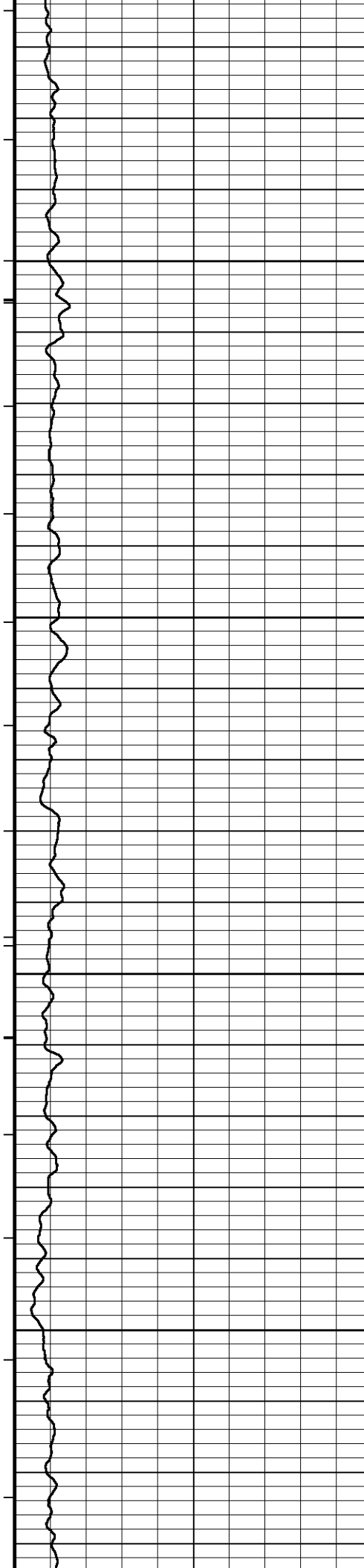
6800

127°

6850

127°





127°

7150

127°

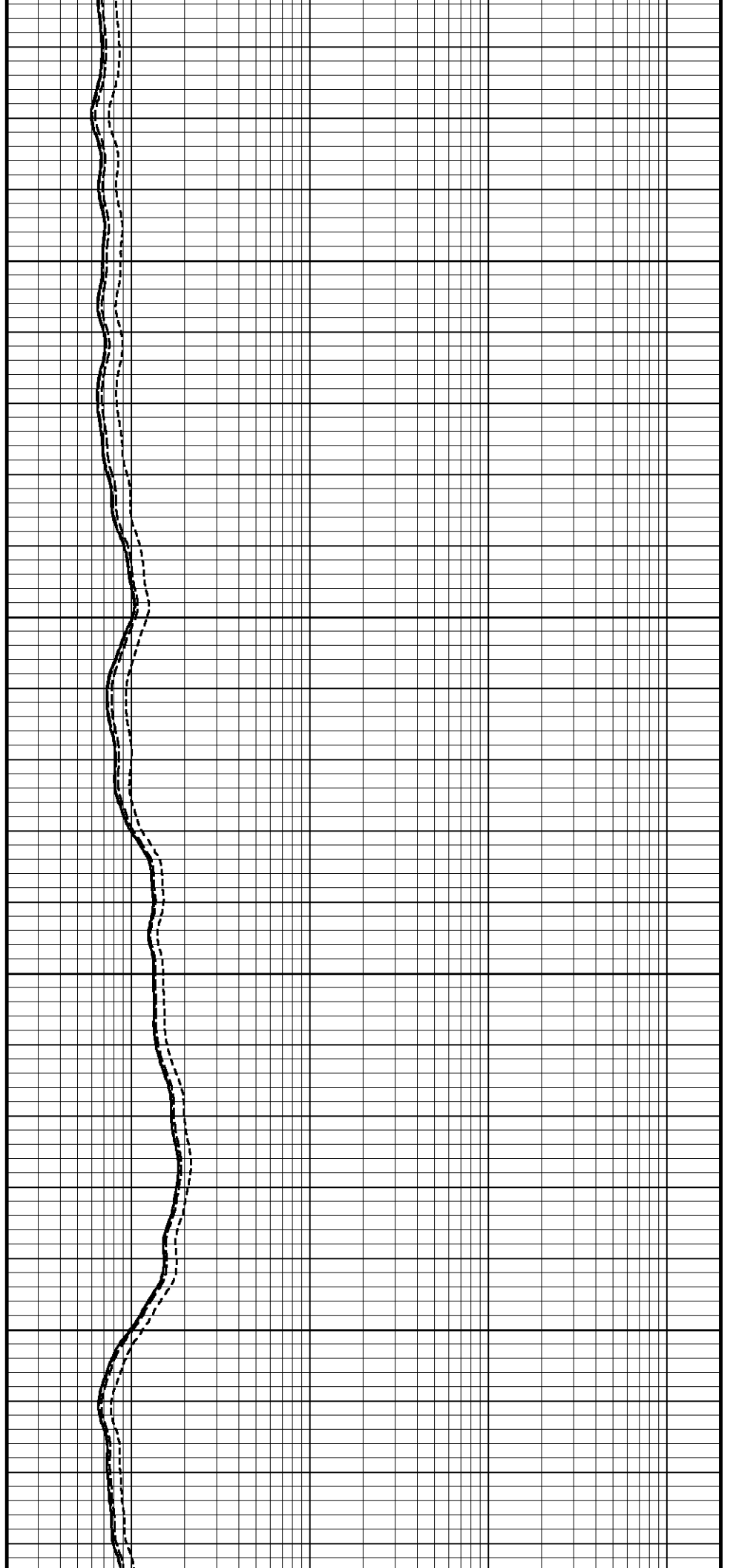
7200

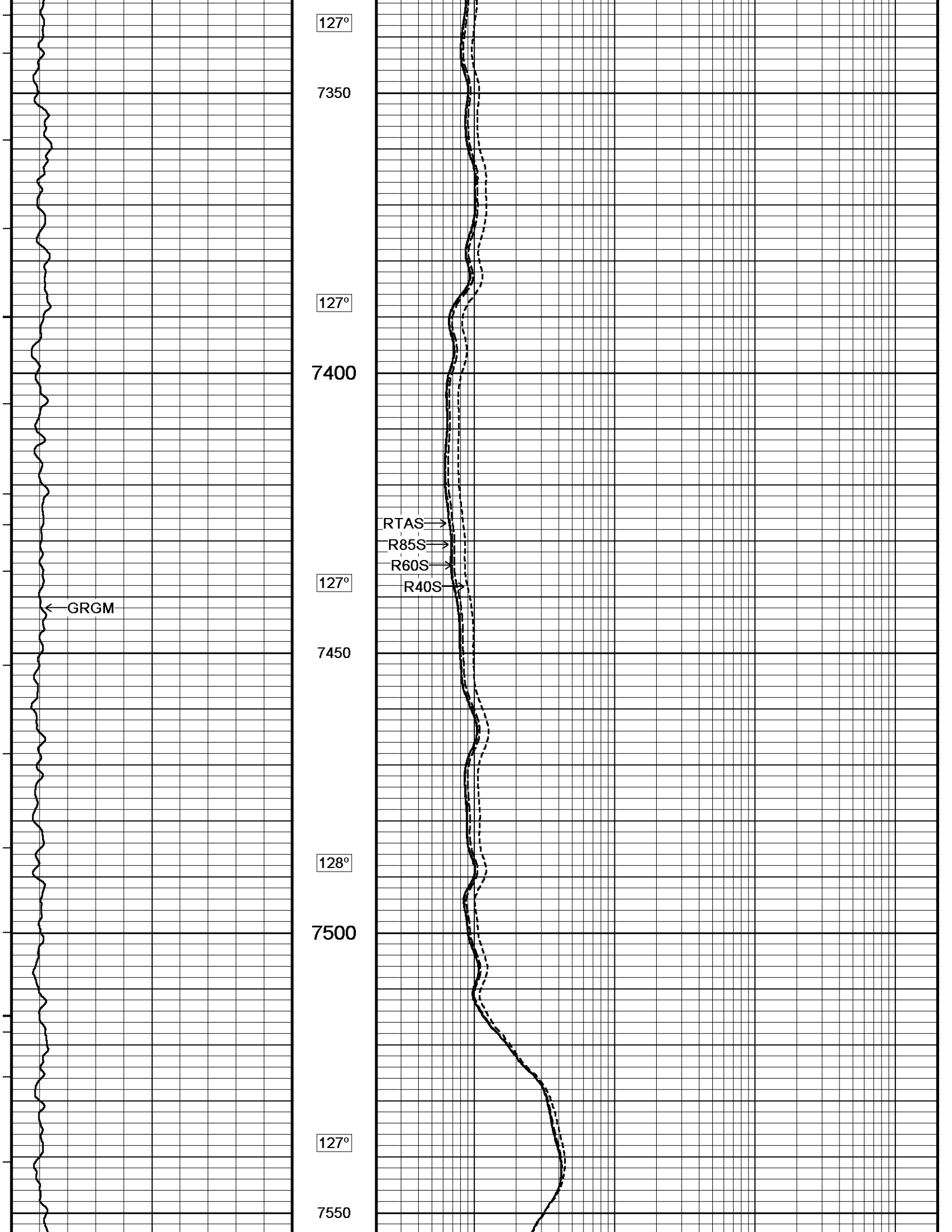
127°

7250

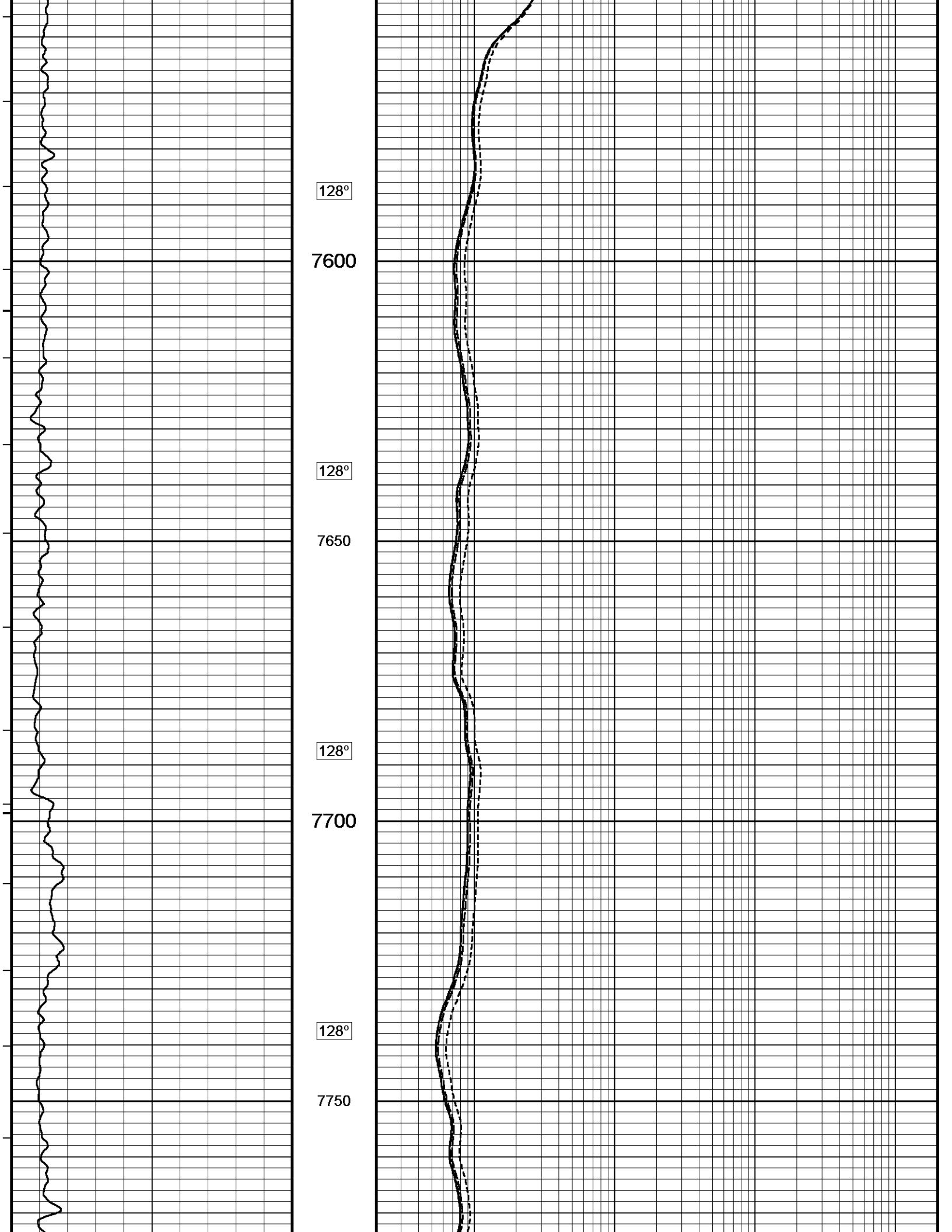
127°

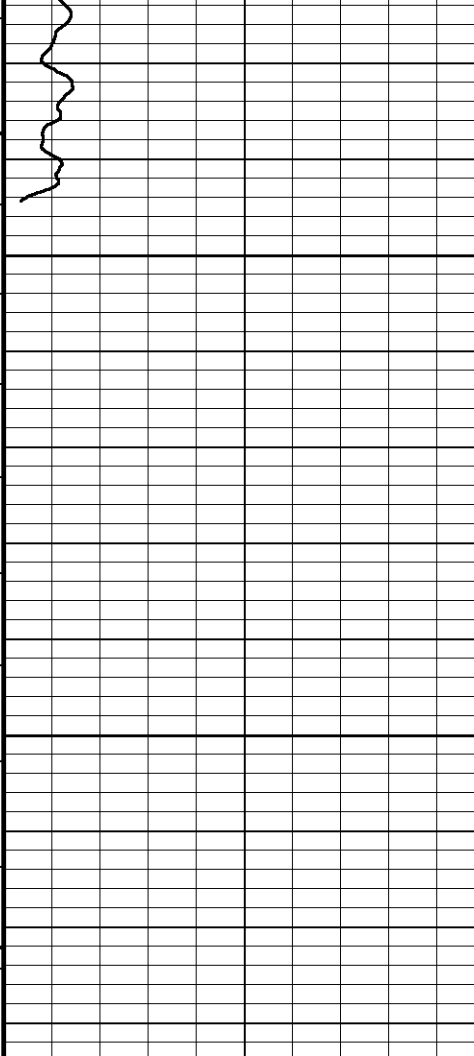
7300











128°

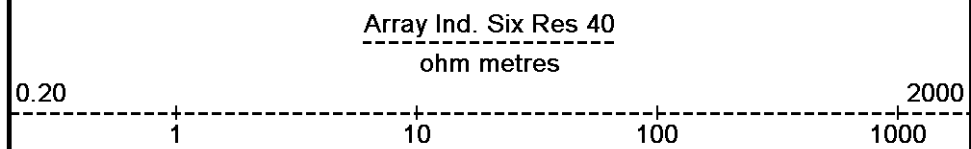
7800

RTAS  
R85S  
R60S  
R40S

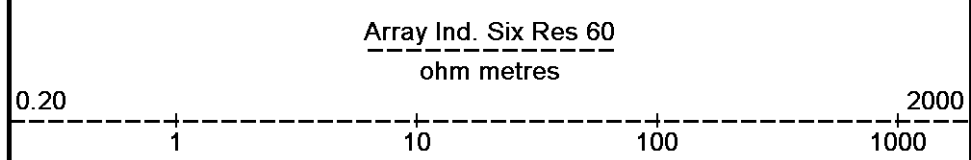
7850

7884

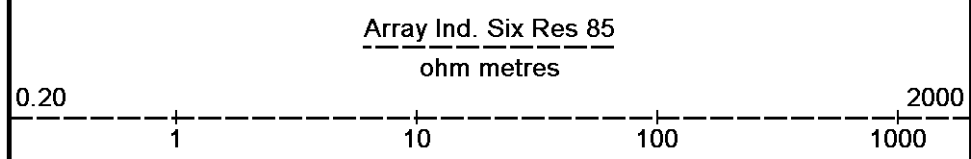
Depth  
In  
Feet



Timing Marks  
every 60.0 sec

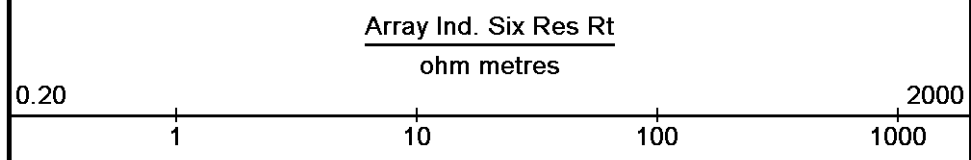


Borehole  
Temp in  
deg F



MGS Gamma Ray

0	75	150
150	225	300



Replay  
Scale  
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H33366RTAP.dta  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492  
 Plotted on 22-JAN-2013 14:05  
 Recorded on 22-JAN-2013 12:13

General Constants All 000

Last Edited on 22-JAN-2013,13:01

General Parameters

Mud Resistivity 2.800 ohm-metres  
 Mud Resistivity Temperature 61.000 degrees F  
 Water Level 0.000 feet  
 Borehole Fluid Processing Wet Hole

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method Single Caliper  
 HVOL Caliper 1 Density Caliper  
 HVOL Caliper 2 N/A  
 Annular Volume Diameter 4.500 inches  
 Caliper for Differential Caliper None

Rwa Parameters

Porosity used Base Density Porosity  
 Resistivity used Array Ind. Six Res Rt  
 RWA Constant A 0.610  
 RWA Constant M 2.150

Strain Gauge Constants MMS-E.B 133

Last Edited on 07-DEC-2012,11:16

Atmospheric Pressure 14.70 psi  
 Serial Number 241946  
 Calibration Date 09-JUL-08  
 Base Check Date  
 Dead Weight Serial Number 0  
 Dead Weight Gravitational Correction 1.0

Temperature	75.0		150.0		250.0		350.0		degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	
0.0	0.069	0.073	0.062	0.063	0.042	0.042	0.021	0.021	
3000.0	5.240	5.253	5.235	5.245	5.219	5.228	5.199	5.209	
6000.0	10.422	10.442	10.421	10.439	10.408	10.425	10.388	10.406	
9000.0	15.616	15.637	15.619	15.638	15.609	15.627	15.593	15.610	
12000.0	20.827	20.839	20.834	20.843	20.828	20.838	20.815	20.823	
15000.0	26.051		26.060		26.056		26.046		

SP Calibration MGS-C.J 142

Field Calibration on 18-JAN-2013,11:54

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

High Resolution Temperature Calibration MGS-C.J 142

Field Calibration on 18-JAN-2013,11:54

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MGS-C.J 142

Last Edited on 18-JAN-2013,11:54

Pre-filter Length 11

Gamma Calibration MGS-C.J 142

Field Calibration on 18-JAN-2013 12:14

	Measured	Calibrated (API)
Background	45	32
Calibrator (Gross)	1033	728
Calibrator (Net)	988	696

Gamma Constants MGS-C.J 142

Last Edited on 20-JAN-2013,05:20

Gamma Calibrator Number 036  
 Mud Density 1.02 gm/cc  
 Caliper Source for Processing Density Caliper  
 Tool Position Eccentred  
 Concentration of KCl 0.00 kppm

Neutron Calibration MDN-B.J 391

Base Calibration on 02-JAN-2013 14:51

## Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3090	94	3714	110
Ratio	32.975		33.764	
Field Calibrator at Base			Calibrated (cps)	
			2305	2968
Ratio			0.777	
Field Check			Calibrated (cps)	
			2172	3286
Ratio			0.702	

## Neutron Constants MDN-B.J 391

Last Edited on 22-JAN-2013,12:59

Neutron Source Id	N1055		
Neutron Jig Number	N639		
Epithermal Neutron	No		
Caliper Source for Processing	Density Caliper		
Stand-off	0.00	inches	
Mud Density	1.02	gm/cc	
Limestone Sigma	7.10	cu	
Sandstone Sigma	4.26	cu	
Dolomite Sigma	4.70	cu	
Formation Pressure Source	None		
Formation Pressure	N/A	kpsi	
Temperature Source	MGS External Temperature		
Temperature	N/A	degrees F	
Mud Salinity	4.40	kppm	
Salinity Correction	Not Applied		
Formation Fluid Salinity Source	None		
Formation Fluid Salinity	N/A	kppm	
Barite Mud Correction	Not Applied		

## Accelerometer Parameters MIE-B.A 251

Date Of Last Accelerometer Calibration	24-APR-2012,13:39		
	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.091702	-1.113310	-1.088555
Offset	-0.000215	-0.000676	-0.005994

## Accelerometer Constants MIE-B.A 251

Last Edited on 01-NOV-2012,10:26

Accelerometer Calibrator Number	000			
Accelerometer Temperature Characterisation				
X Accelerometer				
Serial Number	976			
Calibration Date	20-Jan-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.72608e-009	1.72721e-008	-6.13859e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.83857e-004	2.93851e-007	1.09539e-009
Y Accelerometer				
Serial Number	960			
Calibration Date	12-Dec-2010			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-6.40711e-006	-6.44857e-009	1.38169e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.56312e-004	2.55563e-007	1.07139e-009
Z Accelerometer				
Serial Number	1000			
Calibration Date	10-Feb-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.67116e-005	-4.93763e-011	-1.12123e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.94378e-004	2.69411e-007	1.29596e-009

## Base Calibration

Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)
1	26649	26625	5.96
2	36751	36963	7.98
3	47001	46902	9.94
4	57873	57685	11.90
5	0	0	0.00

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	25494	25699	26105	25337	5.96
2	33482	34167	35219	33869	7.98
3	41725	42674	44327	42918	9.94
4	51609	52555	53317	52045	11.90
5	0	0	0	0	0.00

## Field Calibration

	Measured Pads 1-5 Caliper(in)	Measured Pads 3-7 Caliper(in)	Actual Caliper(in)		Actual Caliper(in)
	8.00	7.69	8.03		
	Measured Pad 2 Caliper(in)	Measured Pad 4 Caliper(in)	Measured Pad 6 Caliper(in)	Measured Pad 8 Caliper(in)	Actual Caliper(in)
	4.09	3.99	3.86	3.99	8.03

## Caliper Constants MIE-B.A 251

Last Edited on 01-NOV-2012,10:26

Caliper Difference for BRKT 0.120 inches

## Magnetometer Parameters MIE-B.A 251

Date Of Last Magnetometer Calibration	14-MAY-2012,18:47		
	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	-1.002176	-0.997148
Offset	0.002005	-0.016205	0.000680

## Magnetometer Constants MIE-B.A 251

Last Edited on

Magnetometer Calibrator Number 000

## Navigation Constants MIE-B.A 251

Last Edited on 20-JAN-2013,04:23

Magnetic Declination 4.07 degrees East

## Compact Micro Imager Constants MIE-B.A 251

Last Edited on

Sonde Configuration	Imager Mode
Arm-Pad Kit	Normal Pads (12.25 in)
Arm-Pad Kit Serial Number	
Centre Pad 1 Rotational Offset	0.00 degrees
Image/Borehole Ovality Reference	Azimuth of Pad 1
Non Active Buttons	Omit
Search Angle	0.00 degrees
Correlation Interval	1.00 metres
Correlation Step	0.50 metres
Current Offset	0.0000 mAmp
Squasher Start	0.0500 mAmp
Image Processing	Enabled

## High Resolution Temperature Calibration MAI-A.A 170

Field Calibration on 14-JAN-2013,12:49

	Measured	Calibrated(Deg F)
Lower	0.00	10.00
Upper	100.00	100.00

## High Resolution Temperature Constants MAI-A.A 170

Last Edited on 14-JAN-2013,12:49

Pre-filter Length 11

## Induction Calibration MAI-A.A 170

Base Calibration on 02-FEB-2012 17:42

Field Check on 20-JAN-2013 05:14

Base Calibration		Measured		Calibrated (mmho/m)	
Test Loop Calibration	Channel	Low	High	Low	High

1	17.7	487.1	9.3	966.2
2	6.2	384.7	7.6	821.4
3	3.7	266.1	5.2	566.0
4	2.2	136.5	2.6	279.2

Array Temperature 72.1 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1			9.1	3751.1
2			29.0	3529.4
3			26.9	2997.1
4			18.2	2042.7
Deep			15.1	1905.2
Medium			40.6	3981.4
Shallow			44.9	5291.1
Array Temperature			33.8	Deg F

Induction Constants MAI-A.A 170

Last Edited on 22-JAN-2013,13:01

Induction Model		RtAP-WBM	
Caliper for Borehole Corr.		Density Caliper	
Hole Size for Borehole Correction		N/A	inches
Tool Centred		No	
Stand-off Type		Fins	
Stand-off		0.50	inches
Number of Fins on Stand-off		6.0000	
Stand-off Fin Angle		60.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.	MGS External Temperature		
Squasher Start		0.0020	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000
Calibration Site Corrections			
Channel 1		0.00	mmhos/metre
Channel 2		0.00	mmhos/metre
Channel 3		0.00	mmhos/metre
Channel 4		0.00	mmhos/metre
Apparent Porosity and Water Saturation Constants			
Archie Constant (A)		1.00	
Cementation Exponent (M)		2.00	
Saturation Exponent (N)		2.00	
Saturation of Water for Apor		100.00	percent
Resistivity of Water for Apor and Sw		0.05	ohm-m
Resistivity of Mud Filtrate for Sw		0.00	ohm-m
Source for Rt		0.00	
Source for Rxo		0.00	

Photo Density Calibration MPD-C.J 394

Base Calibration on 02-JAN-2013 13:20  
Field Check on 20-JAN-2013 05:07

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52312	25766	59869	31110
Reference 2	21569	2501	24557	2522
Field Check at Base				
	1066.7	1302.0		
Field Check				

PE Calibration

Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	192	947		
Reference 1	20819	52122	0.403	0.369
Reference 2	5899	21442	0.278	0.271
Field Check at Base				
	192.4	946.7		
Field Check				
	190.2	944.6		

Density Constants MPD-C.J 394

Last Edited on 20-JAN-2013,18:20

Density Source Id	236	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.02	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

Caliper Calibration MPD-C.J 394

Base Calibration on 02-JAN-2013 13:28  
Field Calibration on 20-JAN-2013 05:10

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16928	4.02
2	25088	6.00
3	33568	8.03
4	41376	10.02
5	50656	12.01
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.00	6.00

DOWNHOLE EQUIPMENT

C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H\33366RTAP.dta

Shuttle Running Tool 3.5" )  
SRT-A.A 69 LG: 6.62 ft WT: 37.5 lb OD: 2.52 in



SKJ-E.B Compact Knuckle Joint  
SKJ-E.B 472 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Spacer  
MLK-A 2 LG: 14.23 ft WT: 30.9 lb OD: 2.24 in

Spacer  
MLK-A 3 LG: 14.23 ft WT: 30.9 lb OD: 2.24 in

MBS-G.A 200v Compact Battery Sub  
MBS-G.A 117 LG: 17.06 ft WT: 123.5 lb OD: 2.24 in

Compact Memory Sub E.B  
MMS-E.B 133 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.  
MTI-B.A 76 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in





Compact Short Gamma  
MGS-C.J 142 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

83.57 ft GRGM - MGS Gamma Ray

81.59 ft GSXT - MGS External Temperature

Compact Collar Locator  
MCL-B.J 63 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

79.57 ft GCSL - MCL C. Collar Locator

SKJ-E.B Compact Knuckle Joint  
SKJ-E.B 479 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor  
SHA-J.A 451 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub  
MIS-D.B 608 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron  
MDN-B.J 391 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

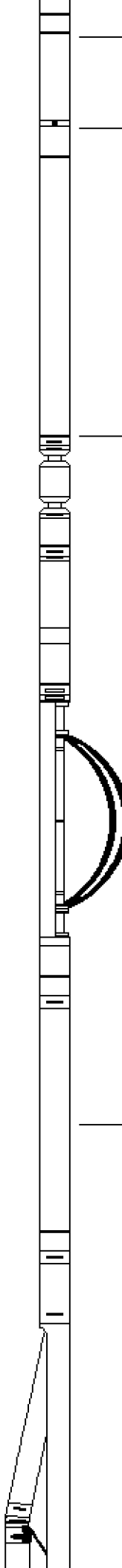
64.70 ft NPRL - Limestone Neutron Por.

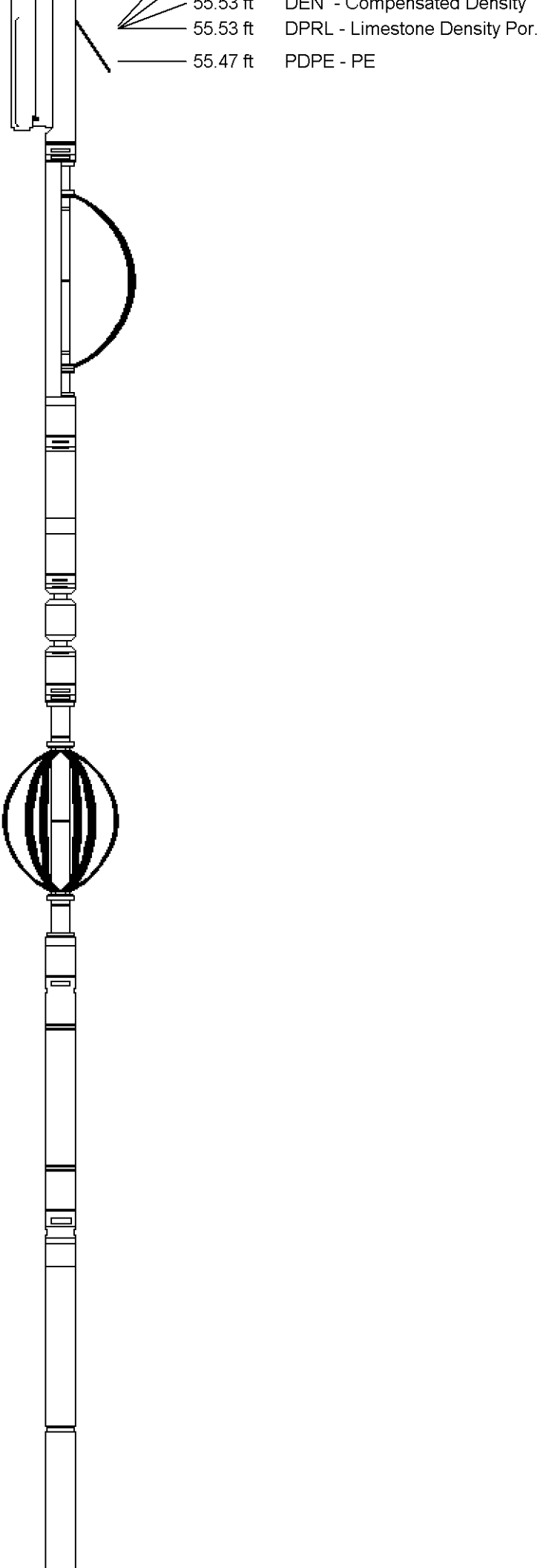
Compact Density/Caliper  
MPD-C.J 394 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

57.46 ft CLDC - Density Caliper

55.53 ft DCOR - Density Correction

55.53 ft DENL - Compensated Density





MIS-D.B Compact Inline Bowspring sub  
 MIS-D.B 607 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

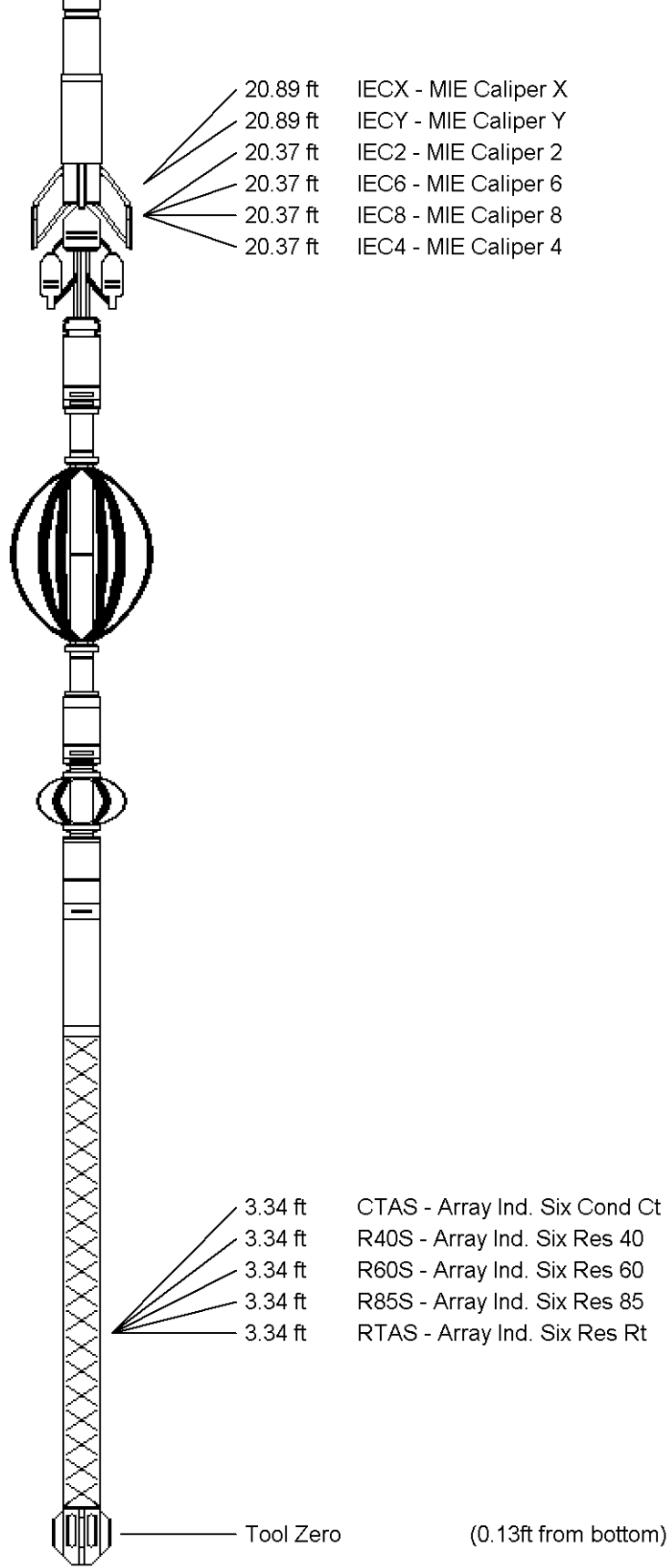
SHA-J.A Compact Swivel Head Adaptor  
 SHA-J.A 438 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint  
 SKJ-E.B 478 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub  
 MIS-D.B 707 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact MMI Memory Section  
 MIM-A.A 209 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section  
 MIE-B.A 251 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in



MIS-A.A Compact Inline Bowspring sub  
 MIS-A.A 160 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub  
 MIS-E.B 597 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction  
 MAI-A.A 170 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 145.53 ft Weight: 903.9 lb

All measurements relative to tool zero.

COMPANY	SOURCE ENERGY MIDCON LLC
WELL	SOURCE 9-41-3-11H
FIELD	WILDCAT
PROVINCE/COUNTY	SUMNER
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing 2226.00 feet  
 Elevation Drill Floor 1224.00 feet  
 Elevation Ground Level 1208.00 feet

First Reading 7870.00 feet  
 Depth Driller 7907.00 feet  
 Depth Logger 7907.00 feet

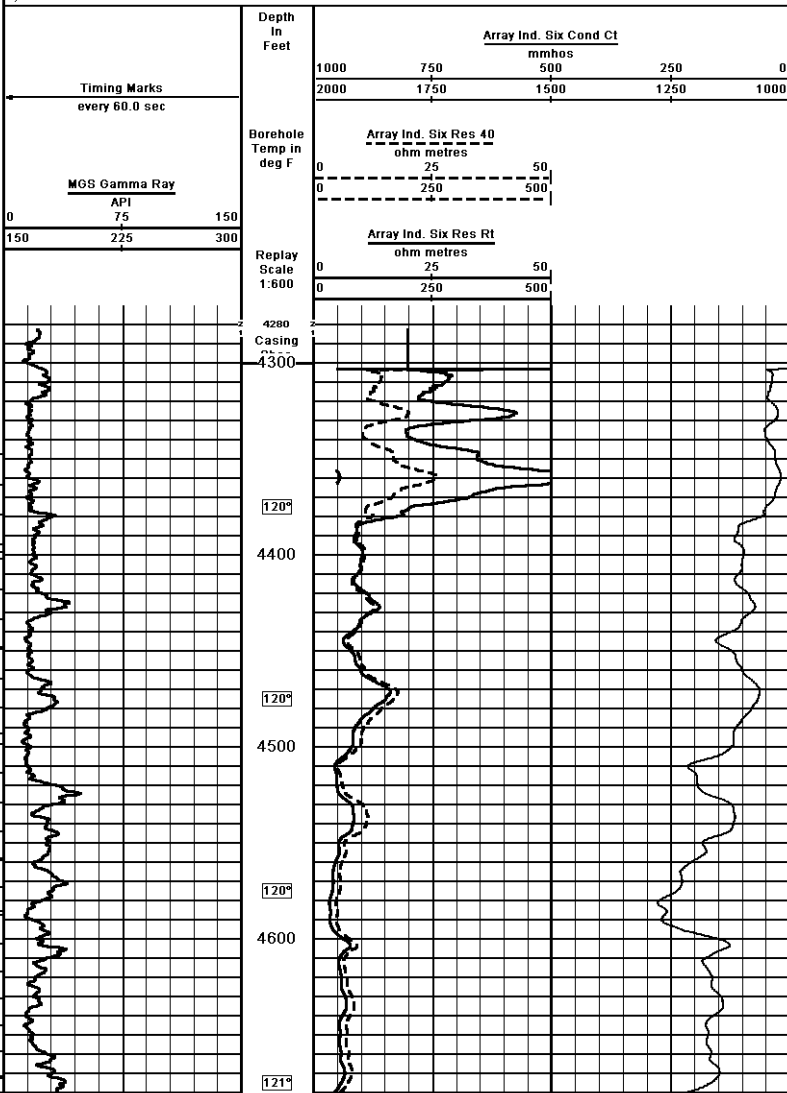


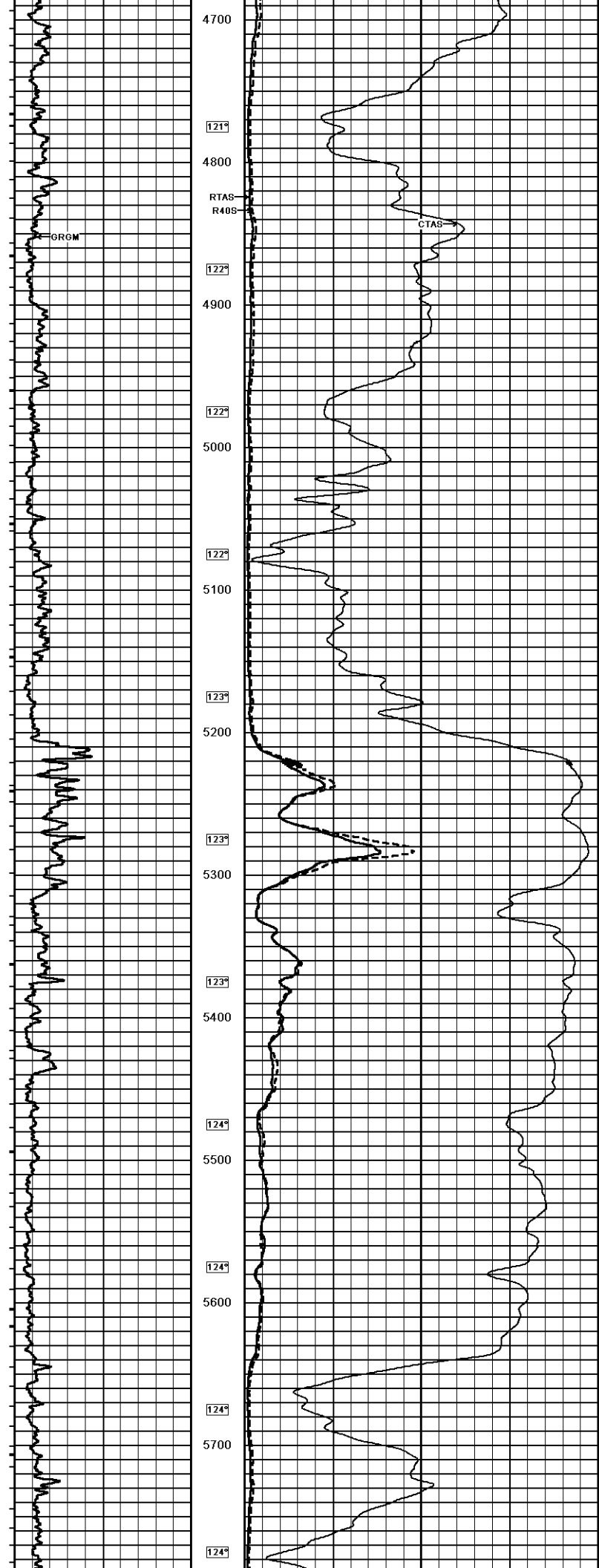
**Weatherford**<sup>®</sup>

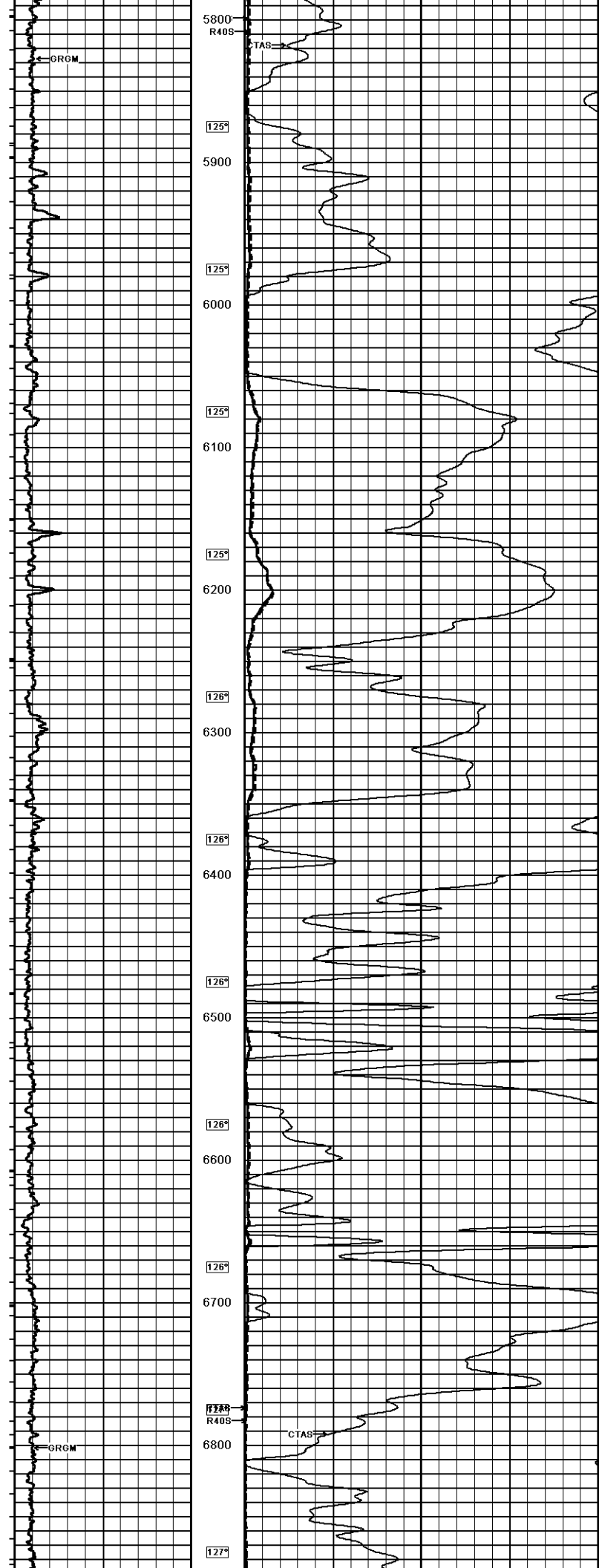
**CML MESSENGER SHUTTLE  
 ARRAY INDUCTION  
 ELECTRIC LOG**

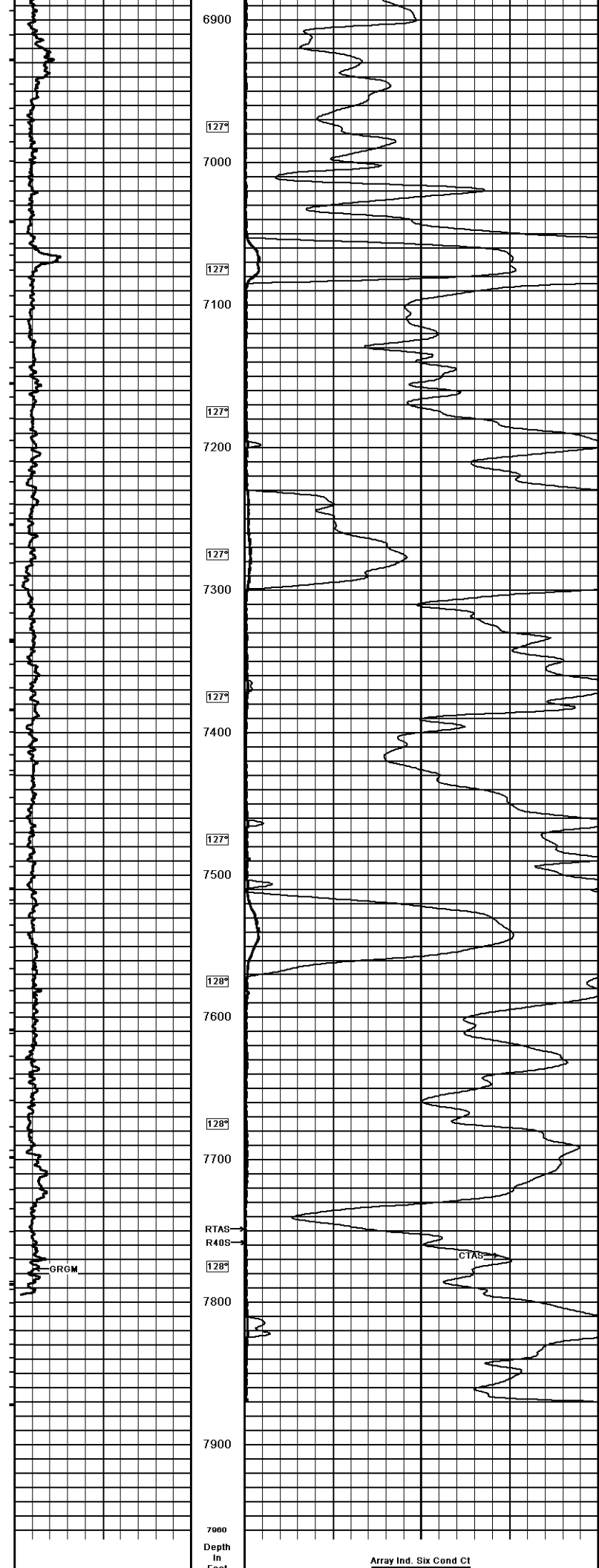
<b>Weatherford</b>		<b>CML MESSENGER SHUTTLE ARRAY INDUCTION ELECTRIC LOG</b>	
COMPANY	SOURCE ENERGY MIDCON LLC	WELL	WILDCAT
FIELD	SOURCE 9-41-3-11H	PROVINCE/COUNTRY	SUMNER USA / KANSAS
COUNTRY/STATE	SW NE NE NE	LOCATION	335' FNL & 400' FEEL
SEC	1	TIME	15:19:22884
WELL NUMBER	151-91-22884	OTHER SERVICES	CMI
PERMANENT DATUM Q-L ELEVATION	1208 feet	LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB @ 18' AGL	DATE	20-JAN-2013
WELL NUMBER	ONE	DEPTH DRILLER	3539541
DEPTH DRILLER	7907.00	DEPTH LOGGER	7870.00
FIRST READING	7870.00	CASING READING	4300.00
CASING DRILLER	4300.00	WATER	8.50
WATER	8.50	DENSITY/VISCOSITY	9.00
PH / FLUID LOSS	9.00	FLOWLINE	2.29 @ 75.0
SAMPLE SOURCE	2.29 @ 75.0	FORM @ MEASURED TEMP	1.72 @ 75.0
FORM @ MEASURED TEMP	1.72 @ 75.0	FORM @ MEASURED TEMP	3.40 @ 75.0
SOURCE PLOT / PLOT	CALC	FORM @ BHT	1.37 @ 28.0
FORM @ BHT	1.37 @ 28.0	TIME SINCE CIRCULATION	40 HOURS
TIME SINCE CIRCULATION	40 HOURS	MAX RECORDED TEMP	138.00
MAX RECORDED TEMP	138.00	EQUIPMENT / BASE	18077
EQUIPMENT / BASE	18077	RECORDED BY	M JOHANSON
RECORDED BY	M JOHANSON	VALUED BY	J CALDWELL
VALUED BY	J CALDWELL		

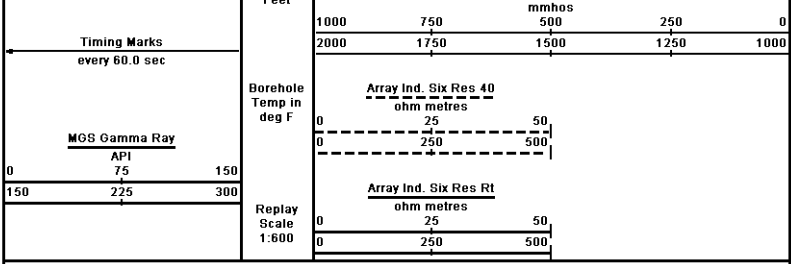
**1 INCH MAIN LOG**  
 Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-JAN-2013 14:05  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H\33366RTAP.dta  
 Recorded on 22-JAN-2013 12:13  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492












Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-JAN-2013 14:05  
 Filename: C:\DATA\_13\_04\_8492\SOURCE Source 9-41-3-11H33366RTAP.dta  
 Recorded on 22-JAN-2013 12:13  
 System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

↑ 1 INCH MAIN LOG ↑

COMPANY	SOURCE ENERGY MIDCON LLC				
WELL	SOURCE 9-41-3-11H				
FIELD	WILDCAT				
PROVINCE/COUNTY	SUMNER				
COUNTRY/STATE	USA / KANSAS				
Elevation Kelly Bushing	1226.00	feet	First Reading	7870.00	feet
Elevation Drill Floor	1224.00	feet	Depth Driller	7907.00	feet
Elevation Ground Level	1208.00	feet	Depth Logger	7907.00	feet



CML MESSENGER SHUTTLE  
 ARRAY INDUCTION  
 ELECTRIC LOG