

**Weatherford****CML MESSENGER SHUTTLE
ARRAY INDUCTION**

COMPANY				SANDRIDGE ENERGY			
WELL				SEAN 3119 3-18H			
FIELD				ARLIE NE			
PROVINCE/COUNTY				COMANCHE			
COUNTRY/STATE				U.S.A. / KANSAS			
LOCATION				225' FNL & 1980' FEL			
SEC	TWP	RGE	Other Services				
19	31S	18W	MDNMMPD				
API Number		15-033-21686					
Permit Number							
Permanent Datum G.L., Elevation 2142 feet							
Log Measured From KB							
Drilling Measured From K.B. @ 20 FEET							
Date	02-FEB-2013				Elevations:	feet	
Run Number	ONE				KB	2156.00	
Service Order	3539535				DF	2156.00	
Depth Driller	9971.00			feet	GL	2136.00	
Depth Logger	9971.00			feet			
First Reading	9948.00			feet			
Last Reading	5050.00			feet			
Casing Driller	5493.00			feet			
Casing Logger	5493.00			inches			
Bit Size	6.125						
Hole Fluid Type	WBM			lb/USg			
Density / Viscosity	8.60	lb/USg	28.00	CP			
PH / Fluid Loss	9.50		9.50				
Sample Source	FLOWLINE						
Rm @ Measured Temp	0.67 @ 74.0			ohm-m			
Rmf @ Measured Temp	0.54 @ 74.0			ohm-m			
Rmc @ Measured Temp	0.80 @ 74.0			ohm-m			
Source Rmf / Rmc	CALC		CALC				
Rm @ BHT	0.38 @ 129.0			ohm-m			
Time Since Circulation	1 HOUR						
Max Recorded Temp	129.00			deg F			
Equipment / Base	18077		OKC				
Recorded By	STEVEN TOTTEY						
Witnessed By	JOE HILEMAN						

Elevations:	feet
KB	2156.00
DF	2156.00
GL	2136.00

BOREHOLE RECORD

Last Edited: 02-FEB-2013 11:51

Bit Size inches	Depth From feet	Depth To feet
8.750	0.00	5493.00
6.125	5493.00	9971.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	7.000	0.00	5493.00	24.00

REMARKS

LOGGED WITH WLS 13.04.8492

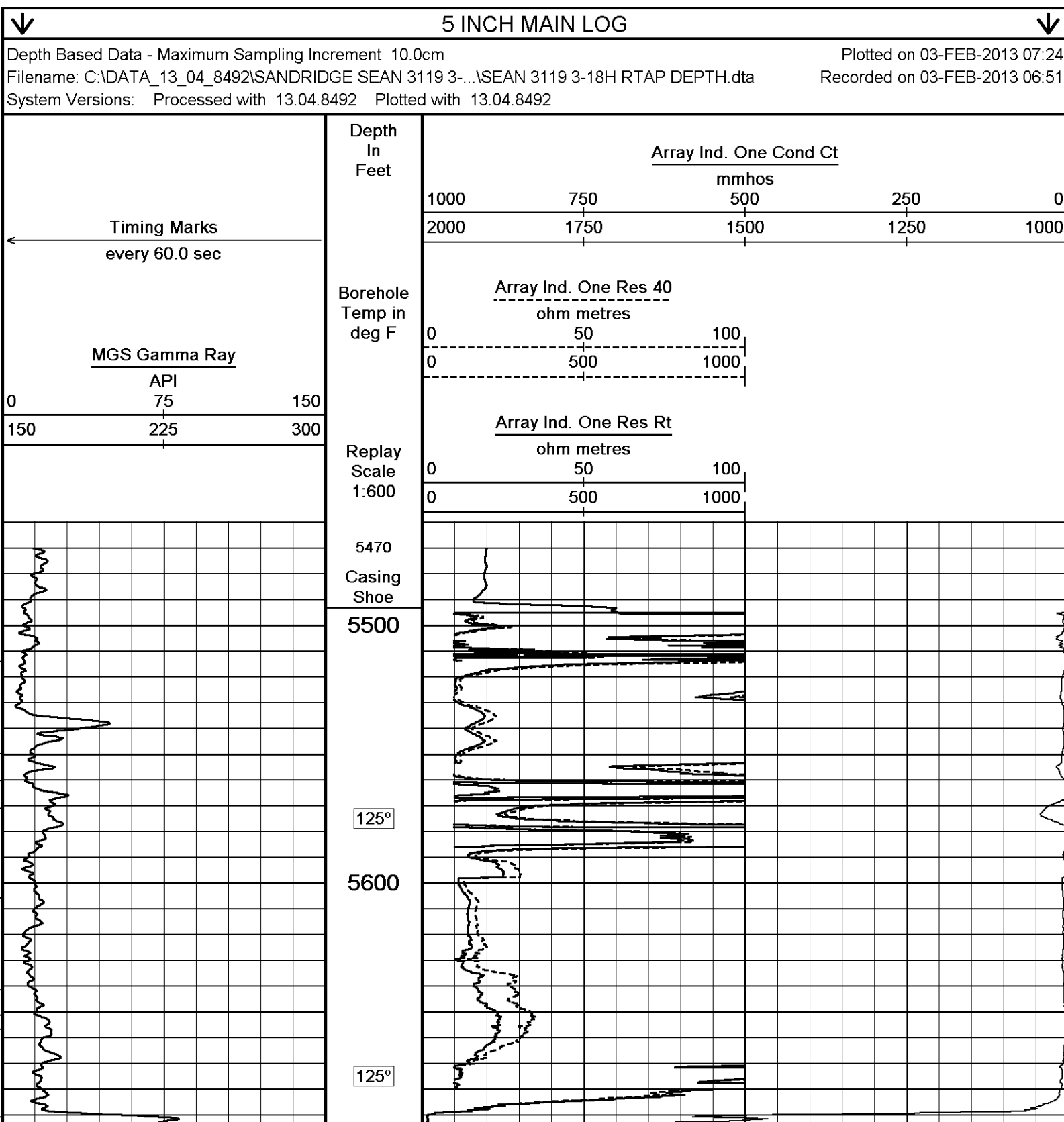
LOGGED USING MESSENGER SHUTTLE METHOD OF DEPLOYMENT AND MEMORY LOGGING SYSTEM
DEPTHS SET BACK TO PIPE STRAP DEPTH AND COMPARED TO MWD DEPTHSTOOLS RAN: SRT-69,SKJ-472,200V MBS-117,MMSE-133,MTI-076, MGS-142,MCL-063,SKJ-479,SHA-451,MIS-608, MDN-391,
MPD-166,MIS-607, SHA-438, SKJ-479,MISB-597, MFE134,MISB 575, MAI-170 RAN IN COMBINATIONHARDWARE: MAI: MIS-B 0.5" STANDOFF USED ABOVE MAI, 0.5" STAND-OFF RAN BELOW MAI
MDN: MIS-A DOUBLE BOWSPRING USED ABOVE MDN.
MPD: 4INCH PROFILE PLATE USED, MIS-A SINGLE BOWSPRING USED BELOW MPDDRILL PIPE DEPTH DURING DEPLOYMENT : 9874
LOGGING TOOL DEPTH AFTER DEPLOYMENT: 99572.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST

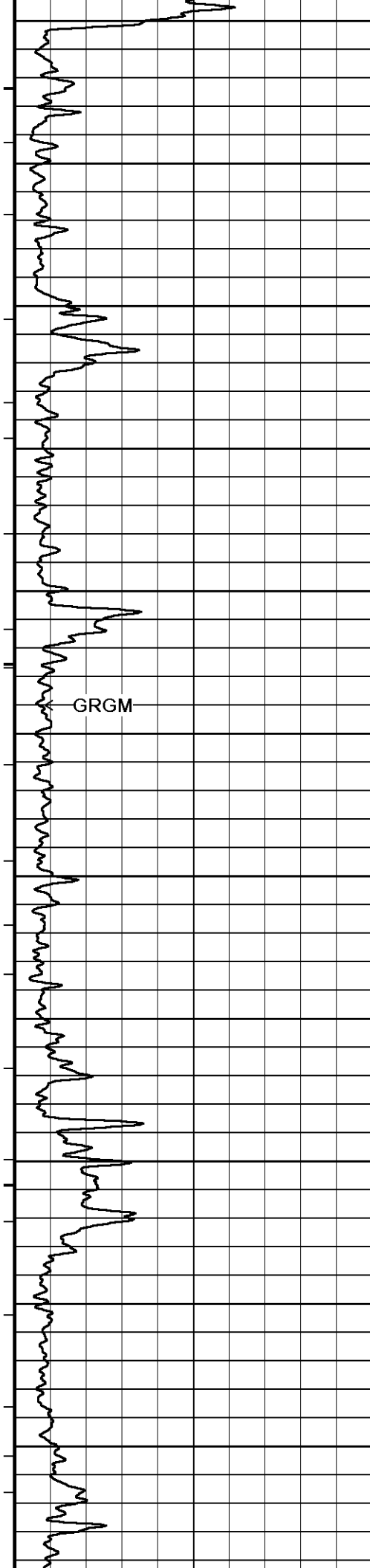
OPERATORS: M SLOBODKIN AND GIL GARCIA

RIG: LARIAT #38

LOG RESPONSES EFFECTED BY HOLE RUGOSITY

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.





5700

126°

5800

126°

5900

RTAO

R400

CTAO

126°

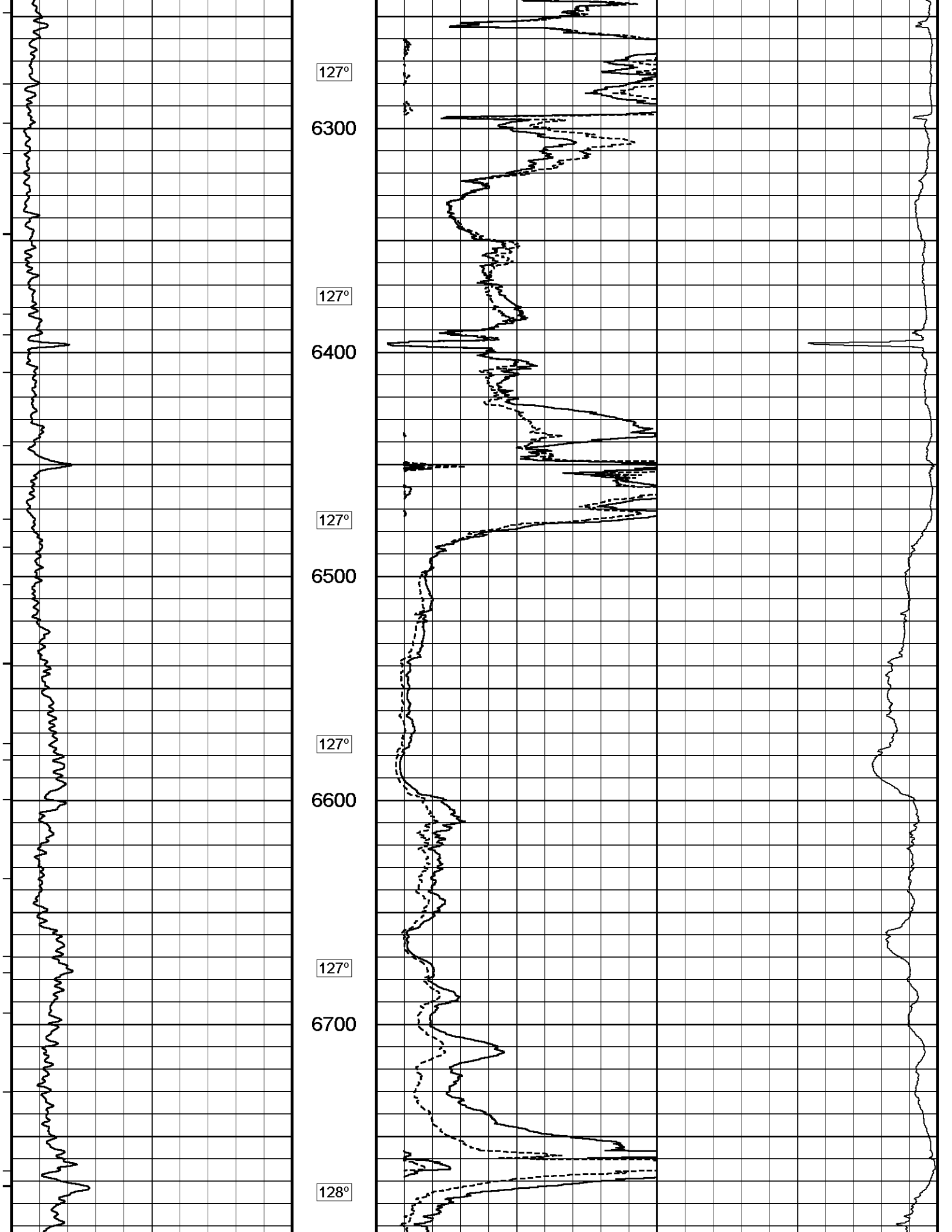
6000

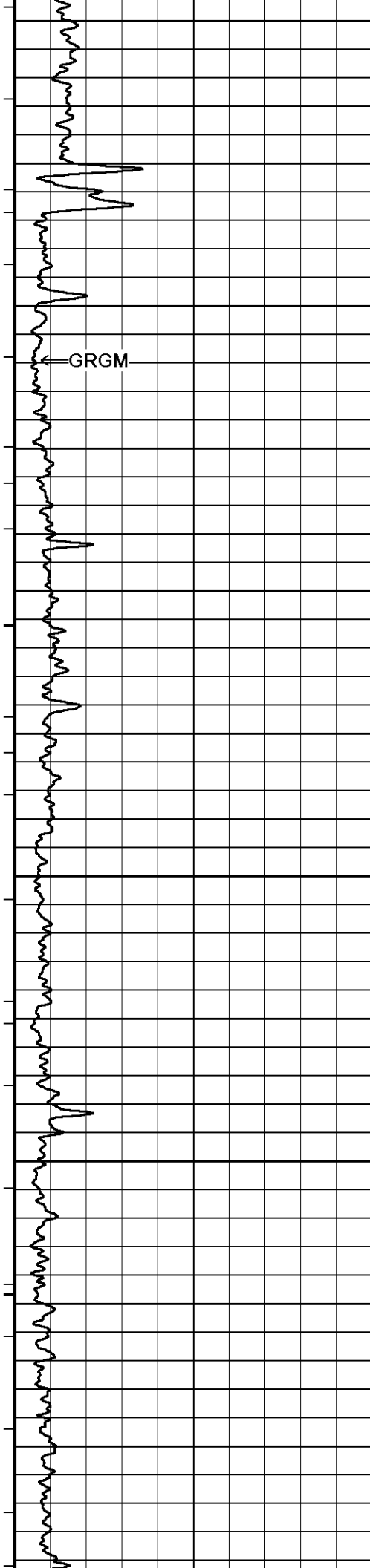
127°

6100

127°

6200





6800

128°

6900

128°

7000

128°

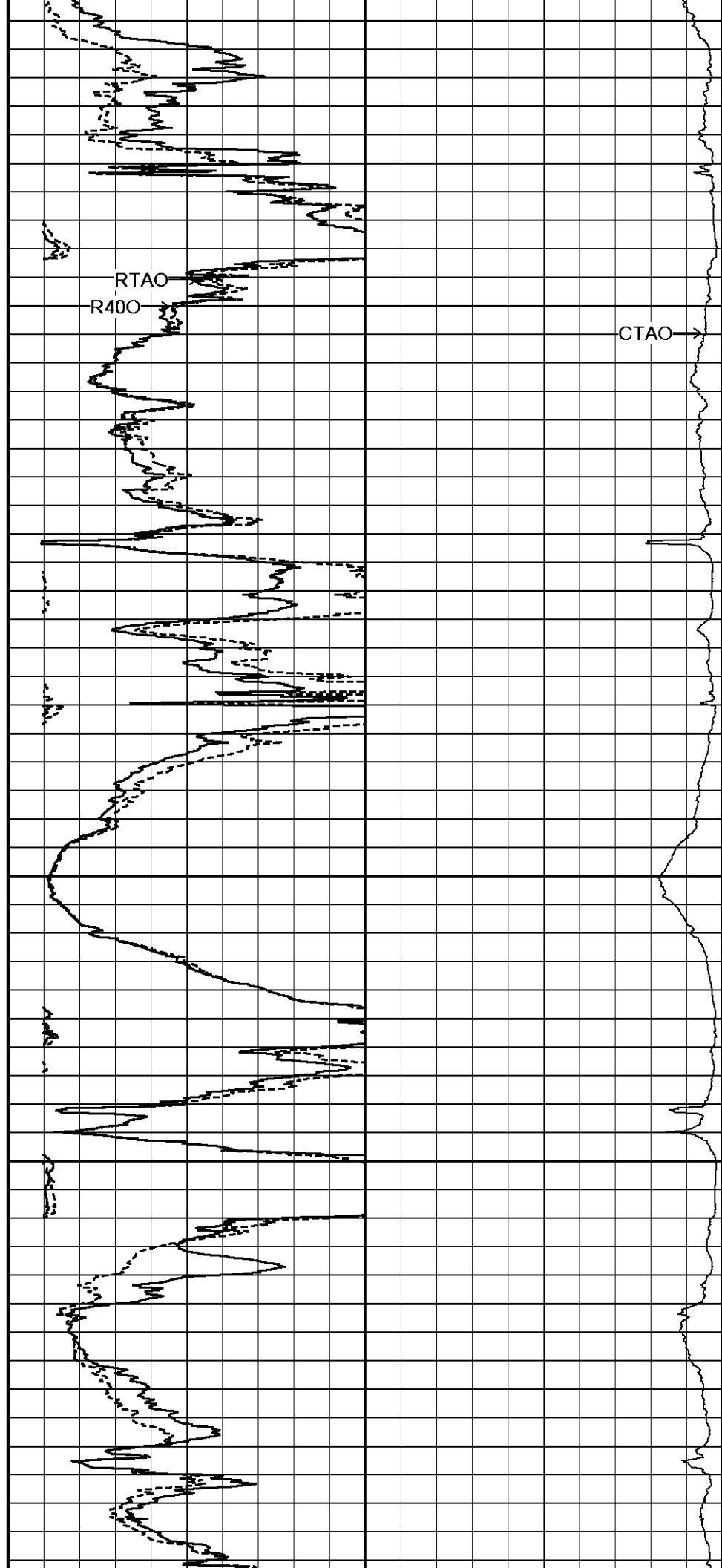
7100

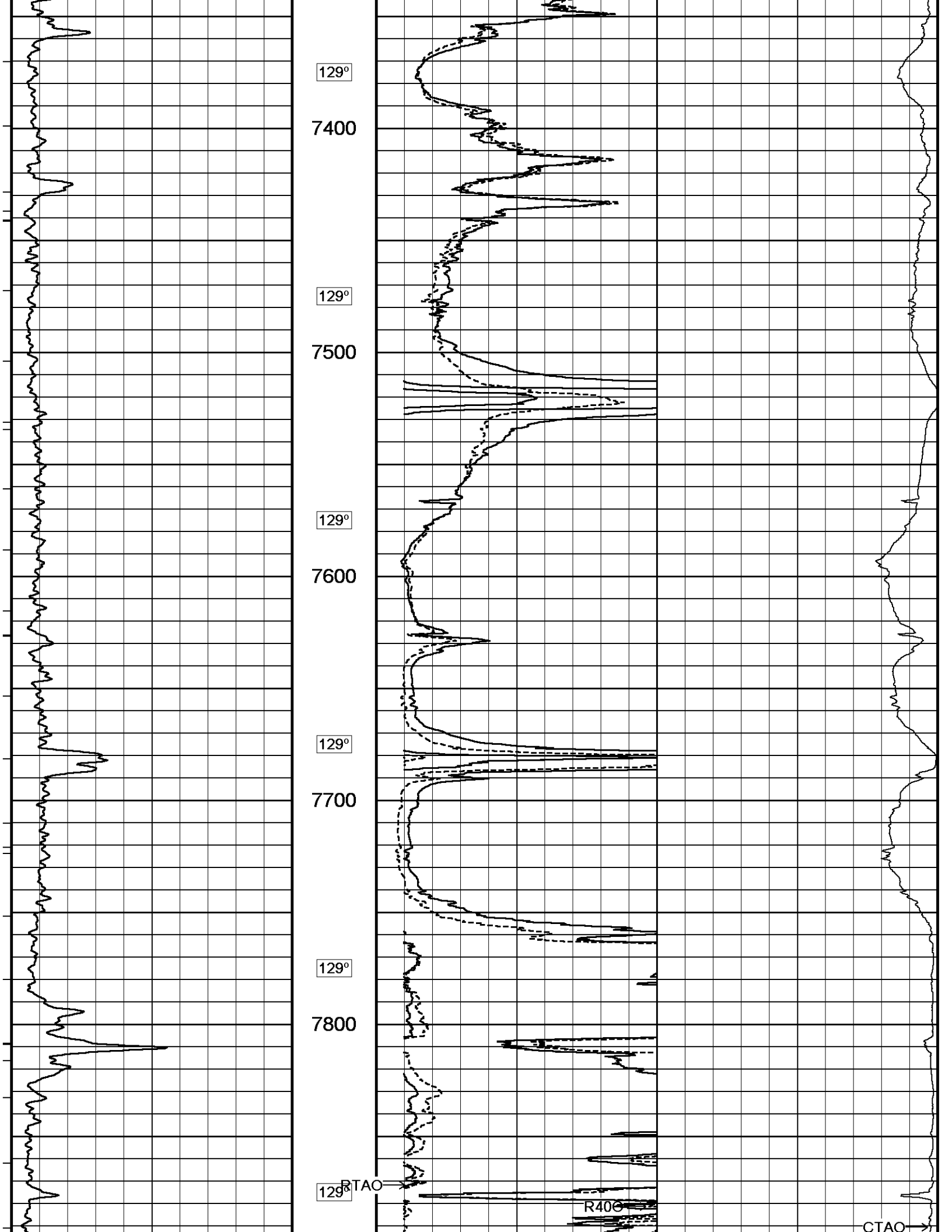
128°

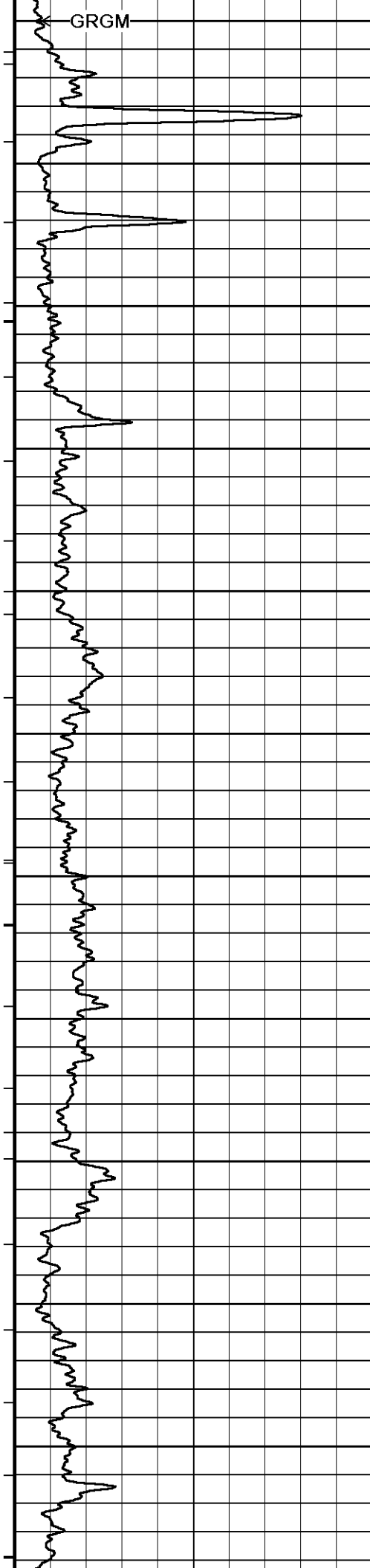
7200

128°

7300







7900

130°

8000

129°

8100

130°

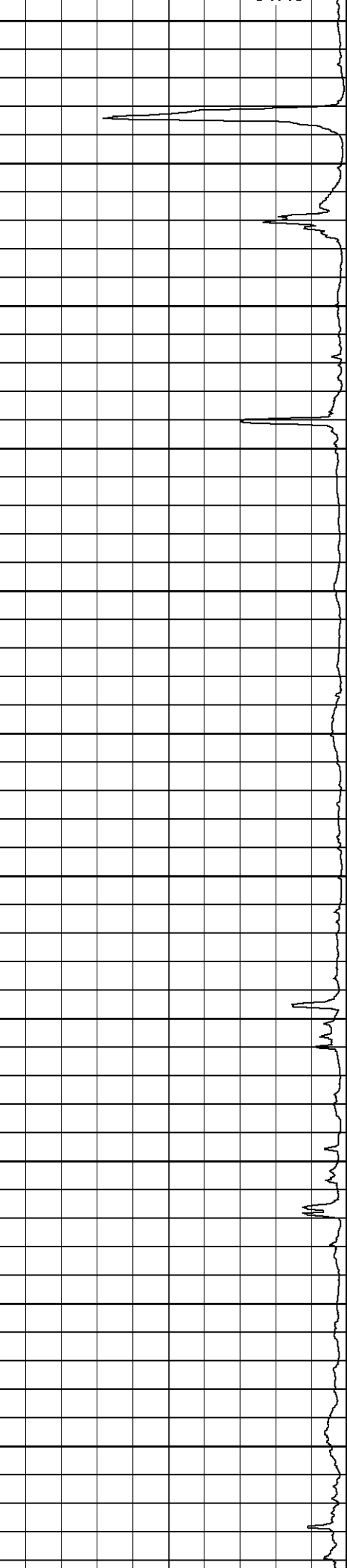
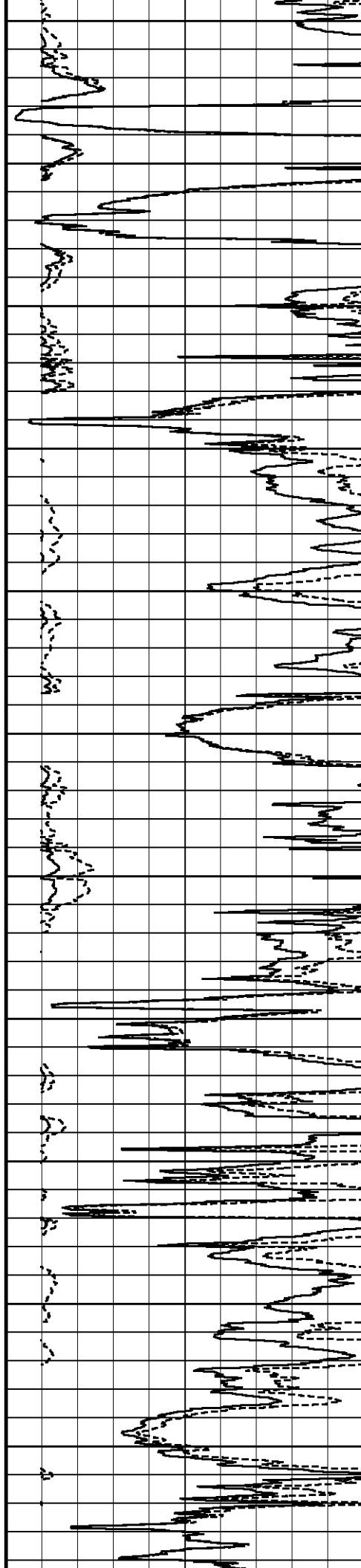
8200

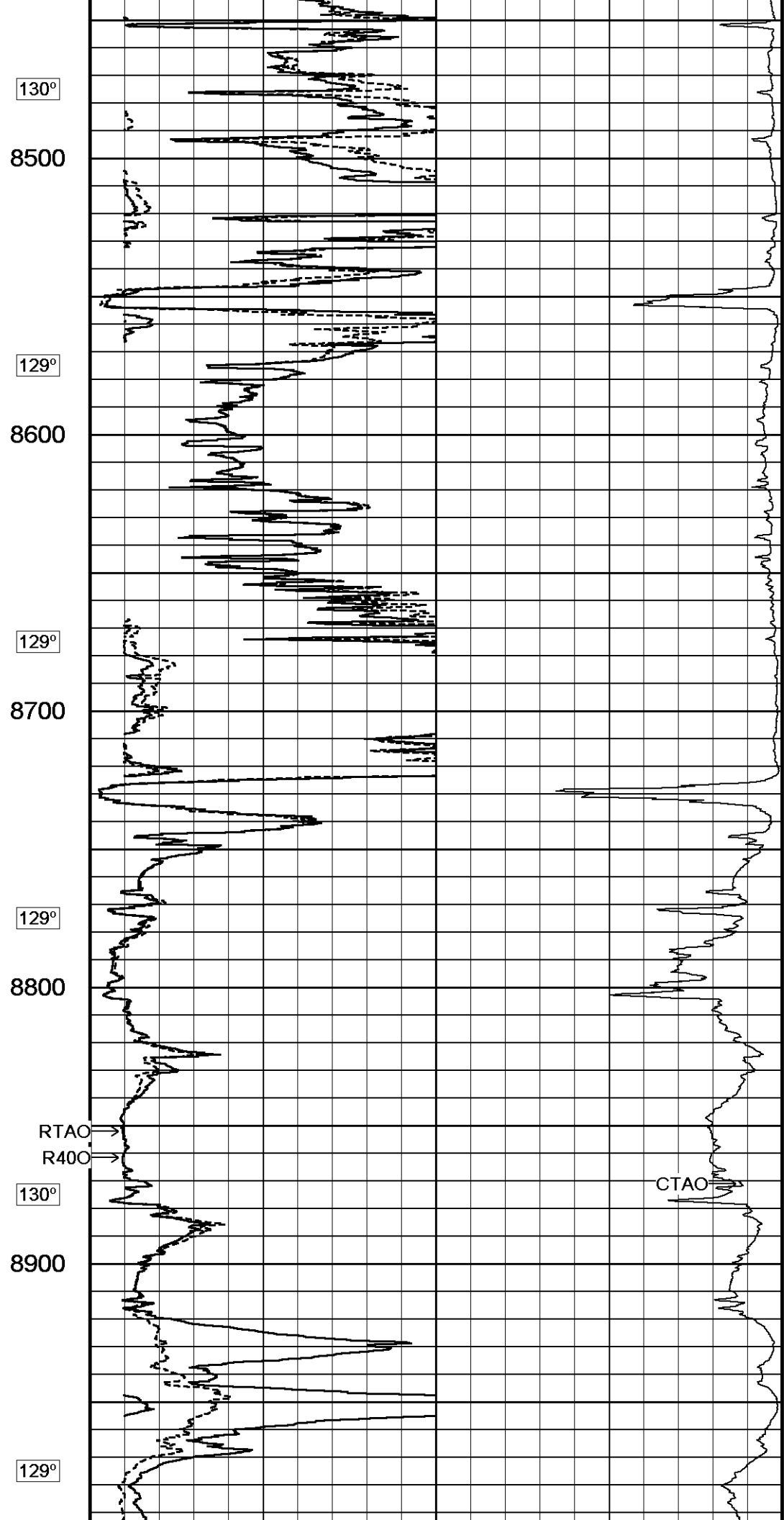
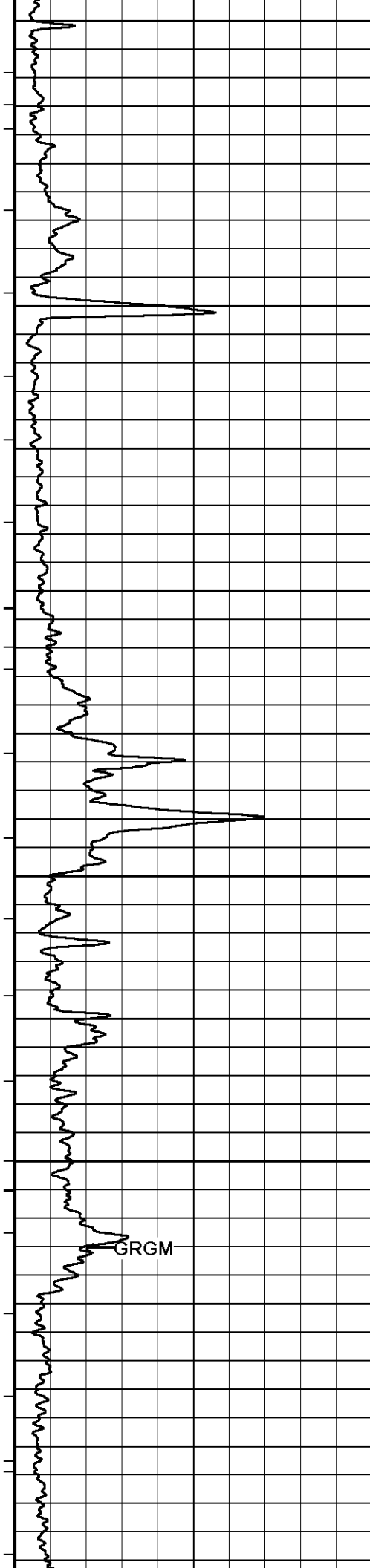
130°

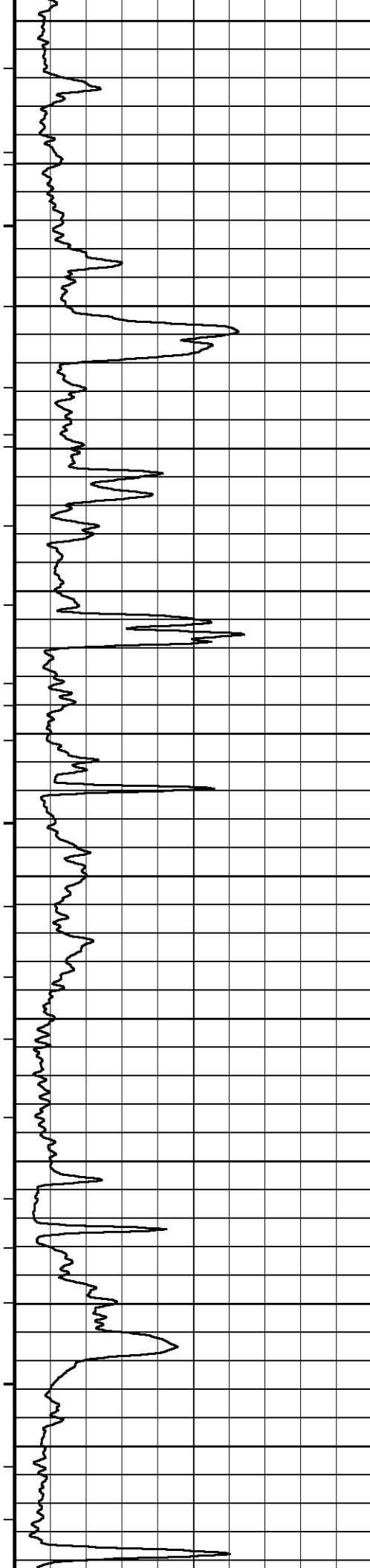
8300

130°

8400







9000

129°

9100

129°

9200

129°

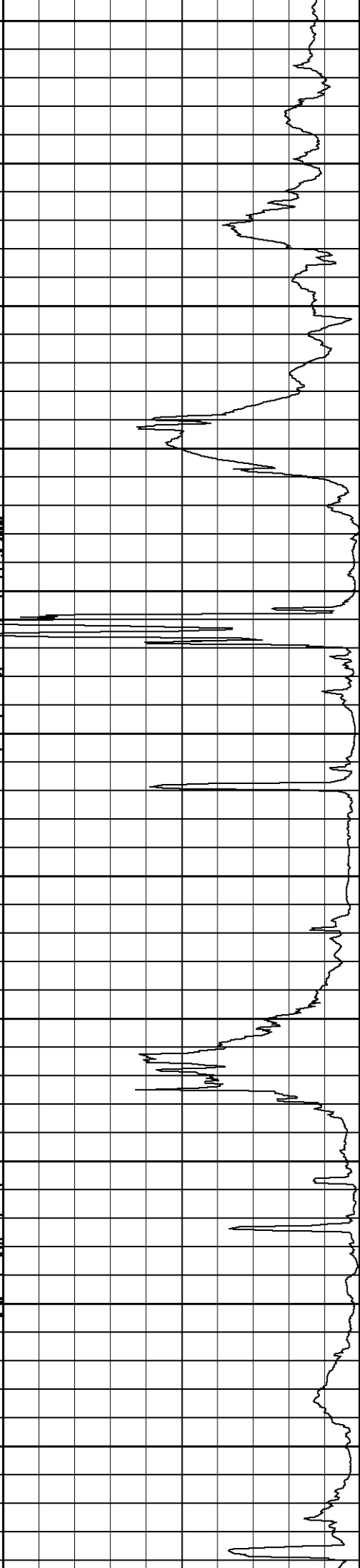
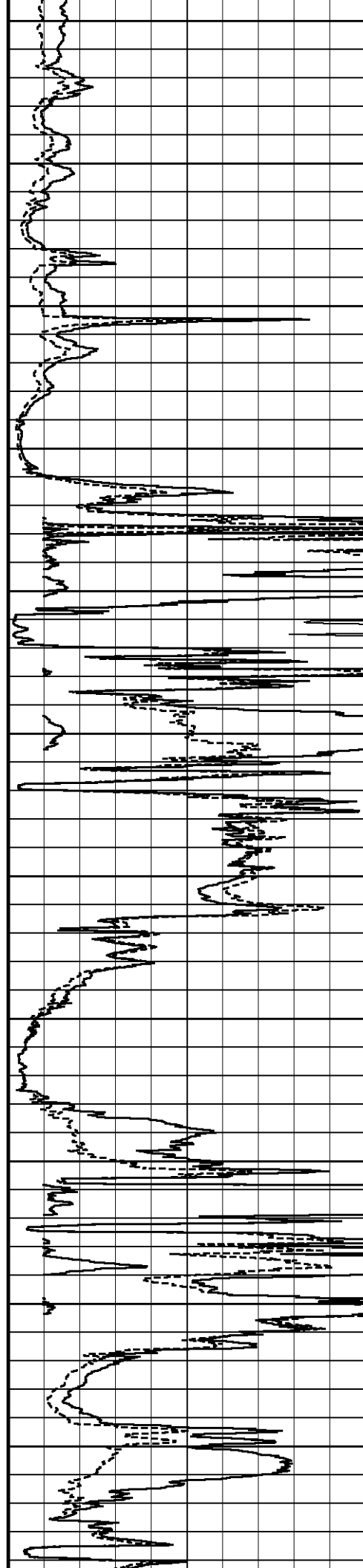
9300

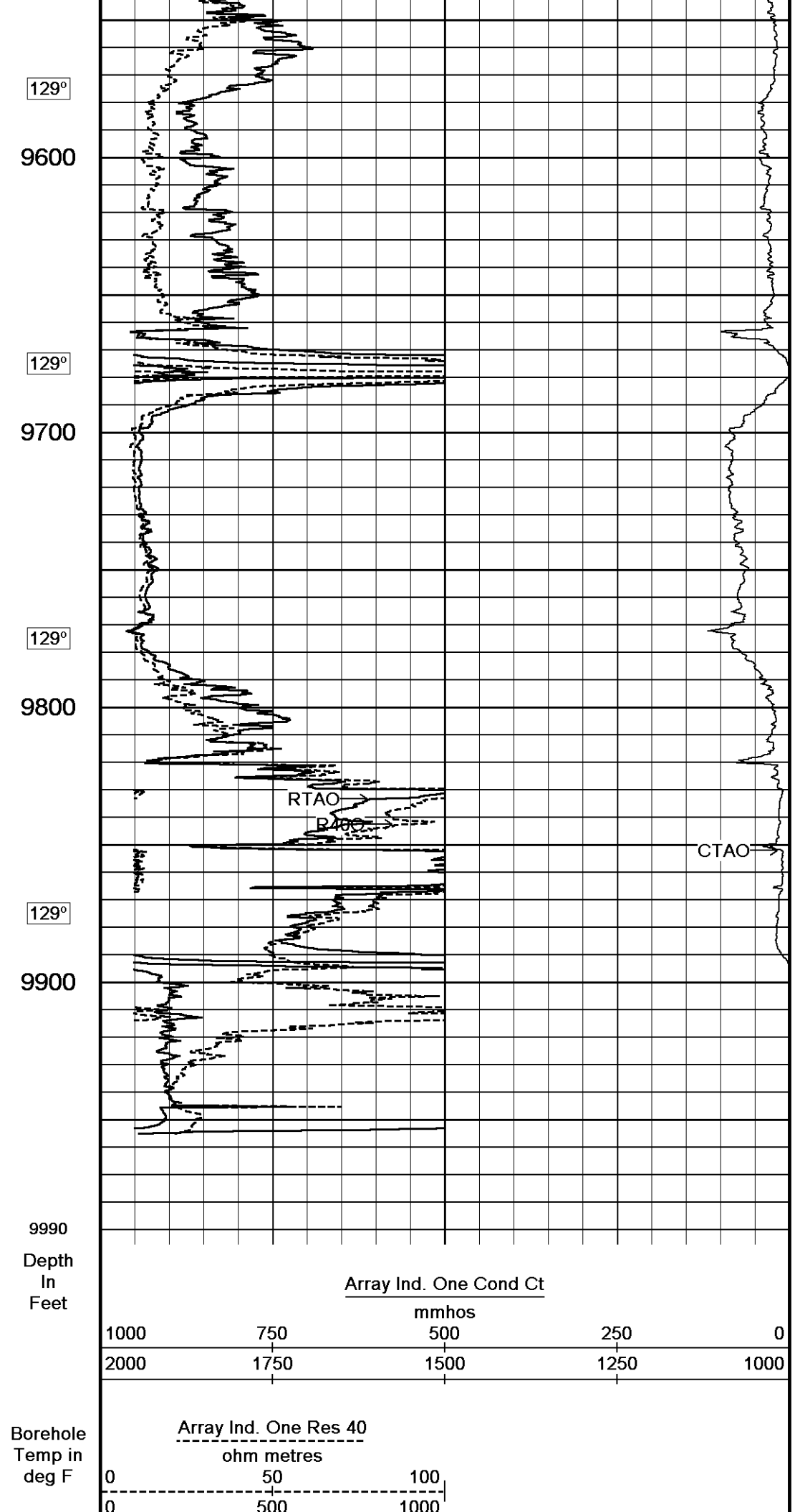
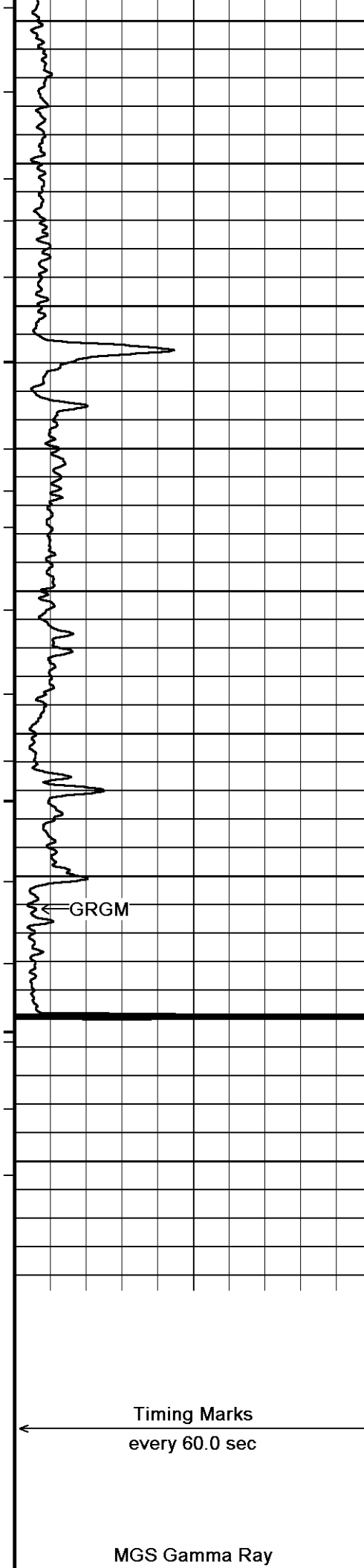
129°

9400

130°

9500





API

075150

150225300

Replay Scale 1:600

Array Ind. One Res Rt

ohm metres

050100

05001000

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 03-FEB-2013 07:24

Filename: C:\DATA_13_04_8492\SANDRIDGE SEAN 3119 3-...\SEAN 3119 3-18H RTAP DEPTH.dta

Recorded on 03-FEB-2013 06:51

System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

5 INCH MAIN LOG

Timing Marks every 60.0 sec

MGS Gamma Ray

API

075150

150225300

MCL C. Collar Locator

-10000010000

Depth In Feet

Borehole Temp in deg F

Replay Scale 1:240

5468

Casing Shoe

5500

124°

Array Ind. One Res 40

ohm metres

0.2011010010002000

Array Ind. One Res 60

ohm metres

0.2011010010002000

Array Ind. One Res 85

ohm metres

0.2011010010002000

Array Ind. One Res Rt

ohm metres

0.2011010010002000

Depth Based Data - Maximum Sampling Increment 10.0cm

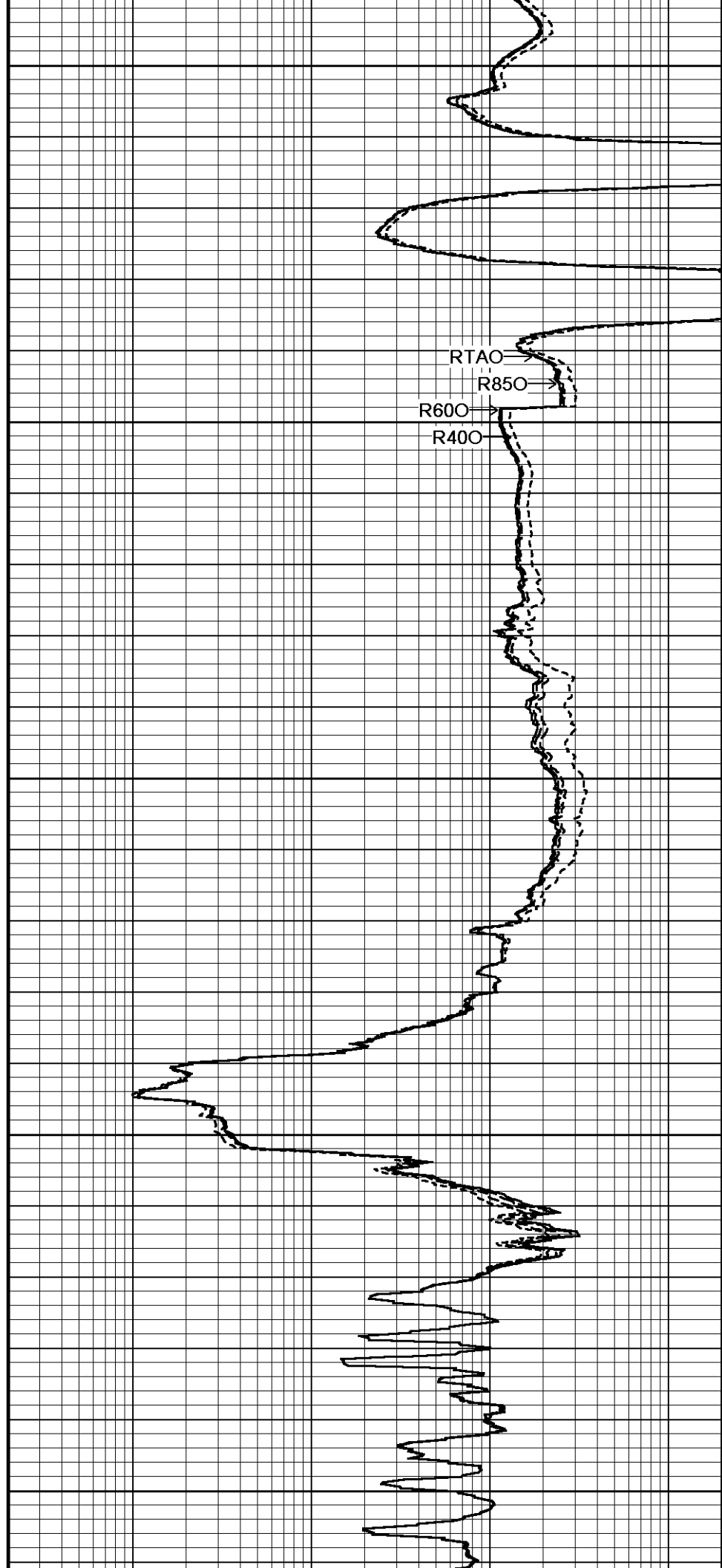
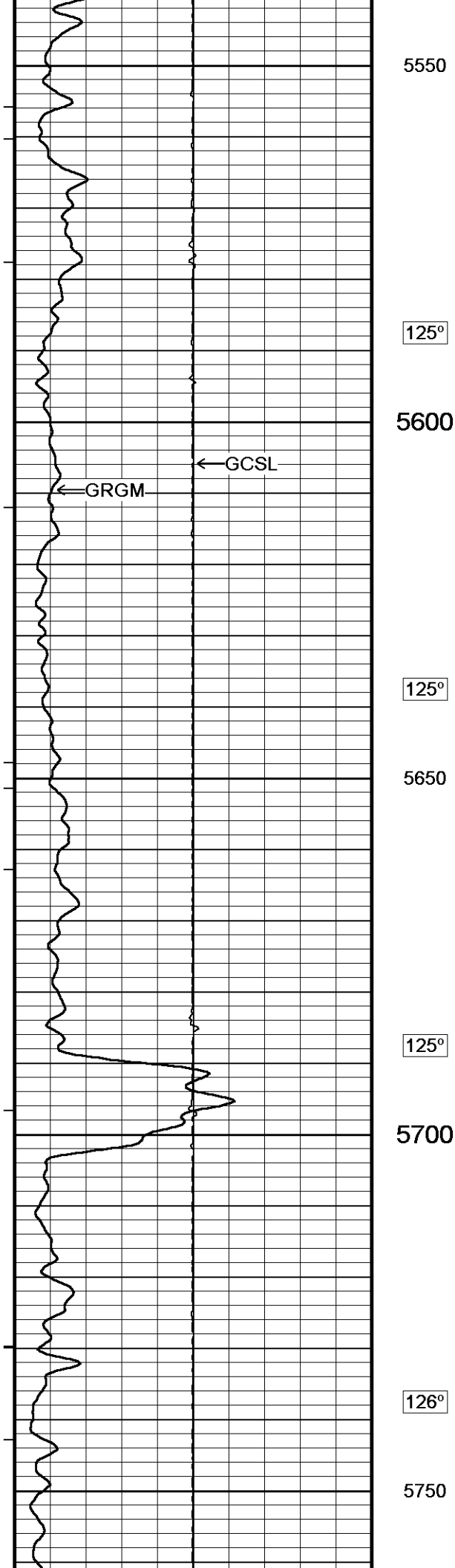
Plotted on 03-FEB-2013 07:24

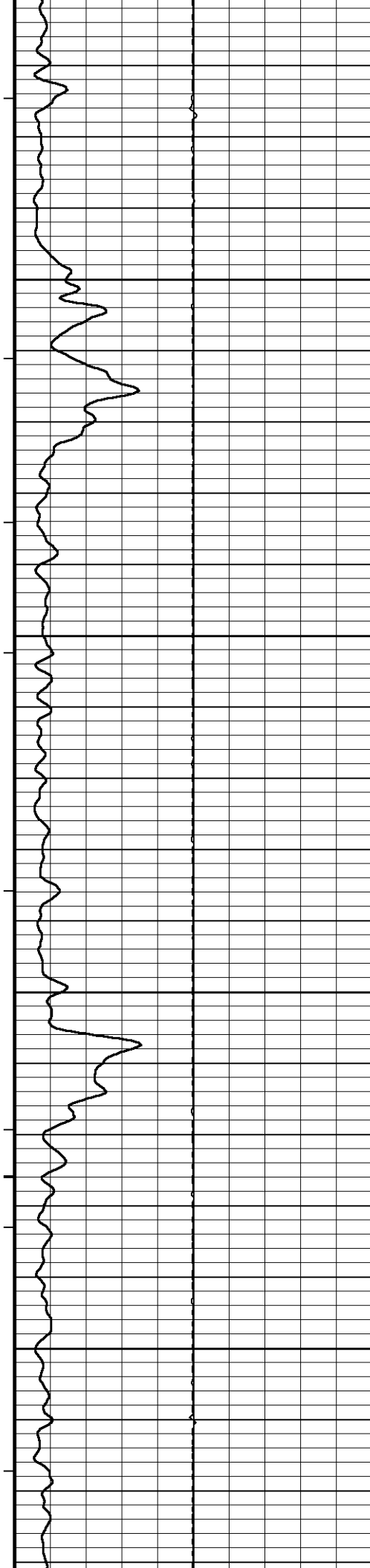
Filename: C:\DATA_13_04_8492\SANDRIDGE SEAN 3119 3-...\SEAN 3119 3-18H RTAP DEPTH.dta

Recorded on 03-FEB-2013 06:51

System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

5 INCH MAIN LOG





126°

5800

126°

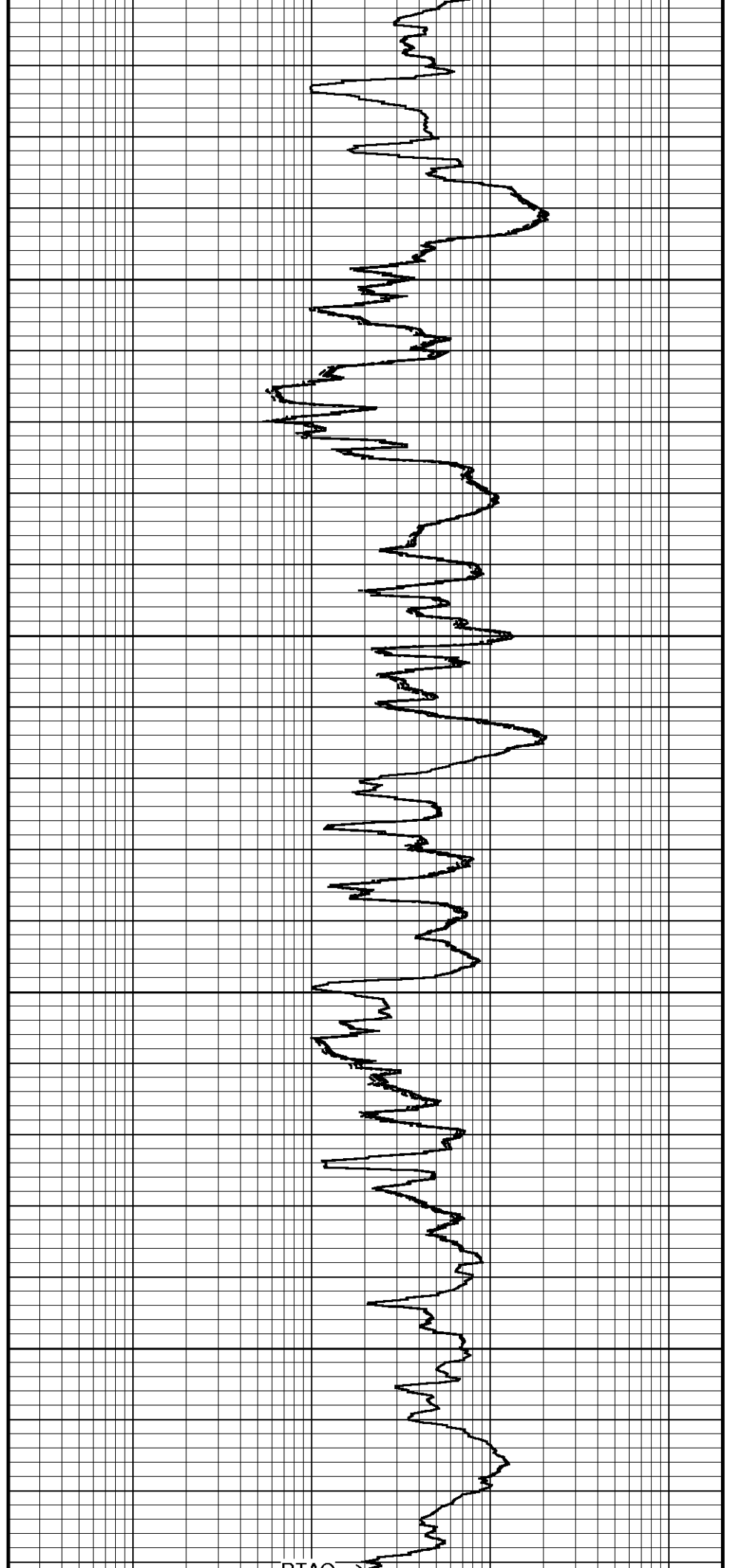
5850

126°

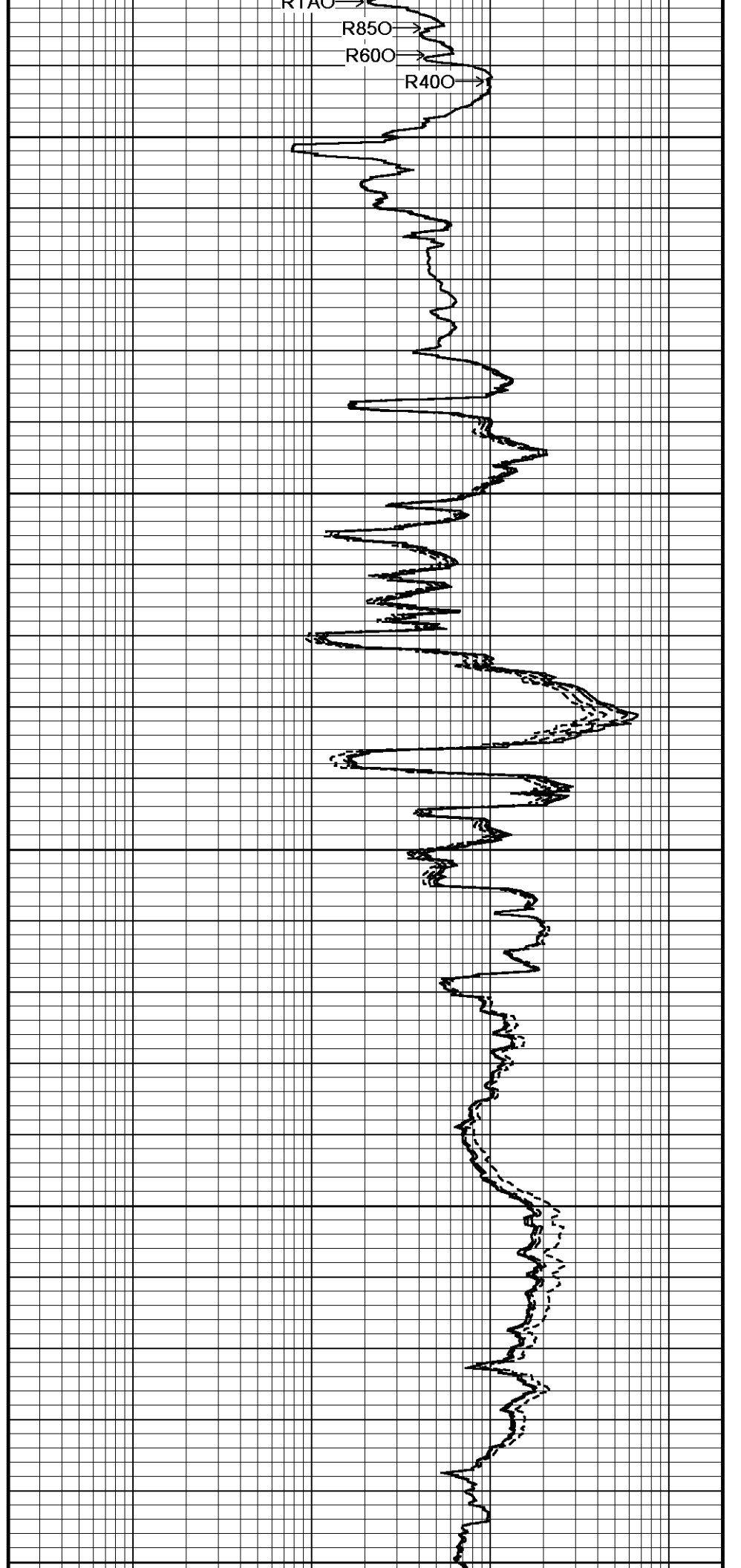
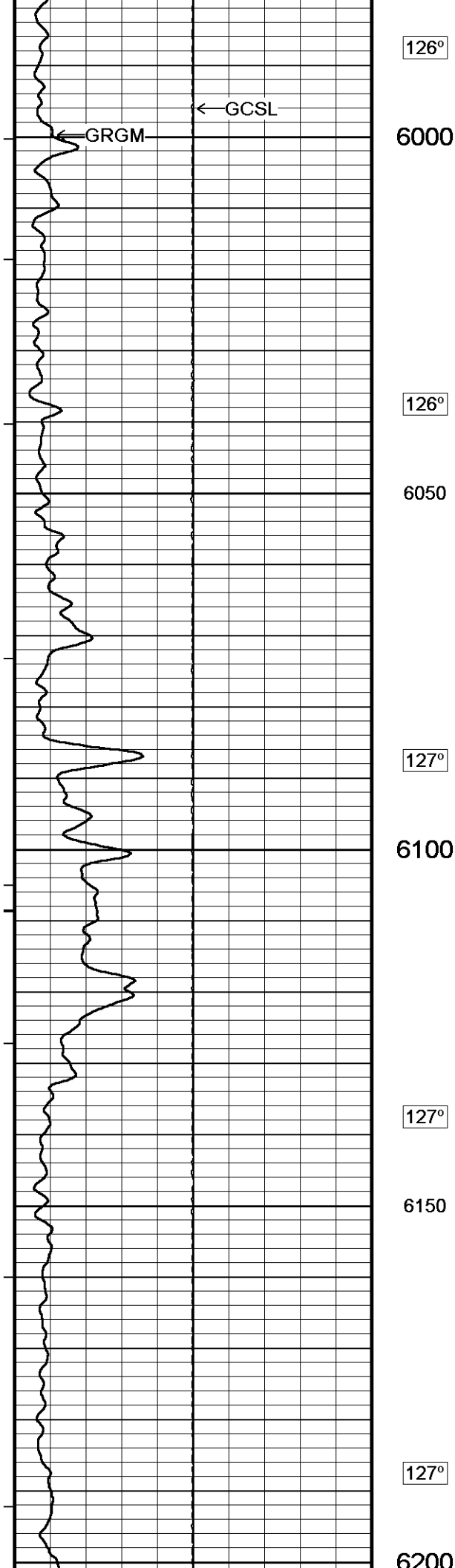
5900

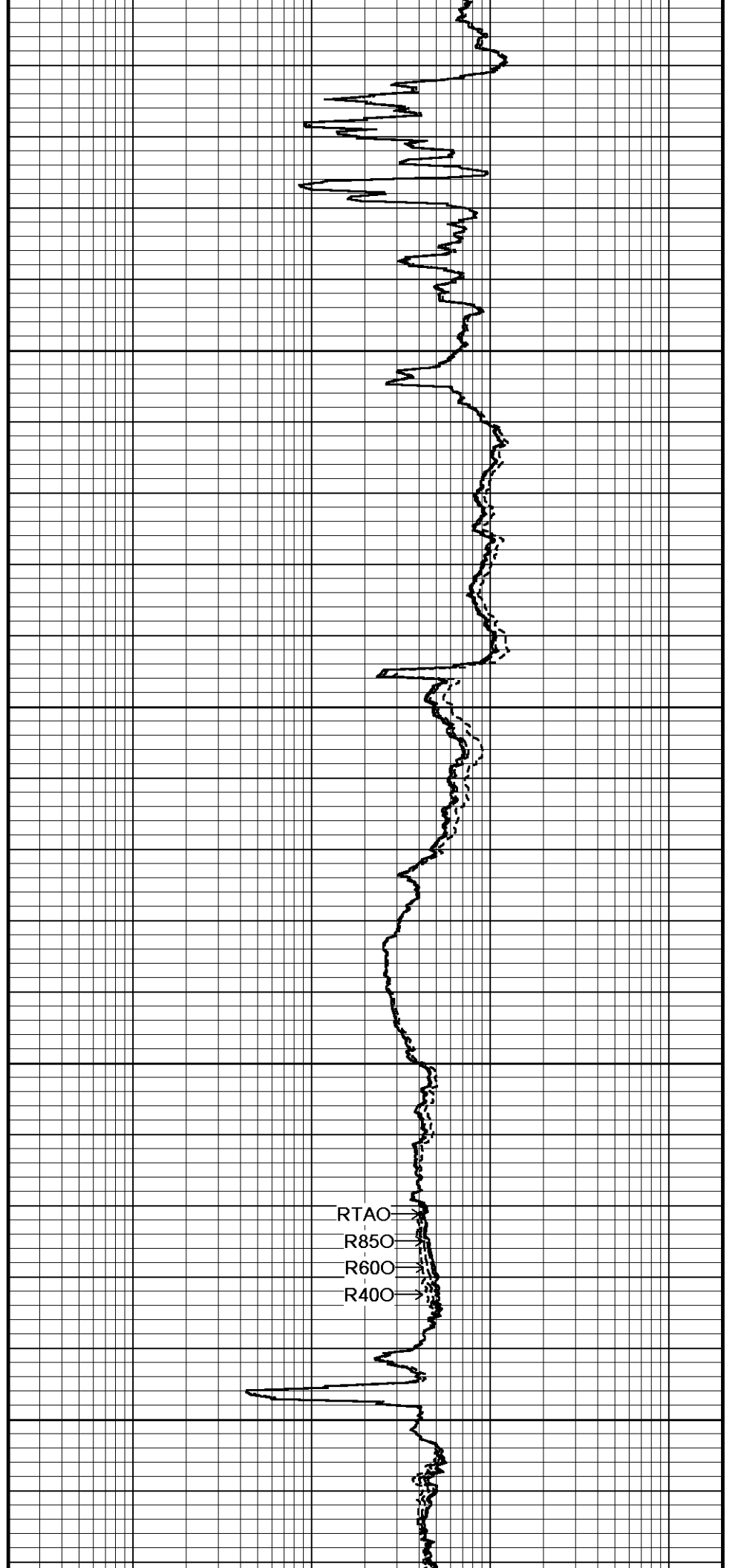
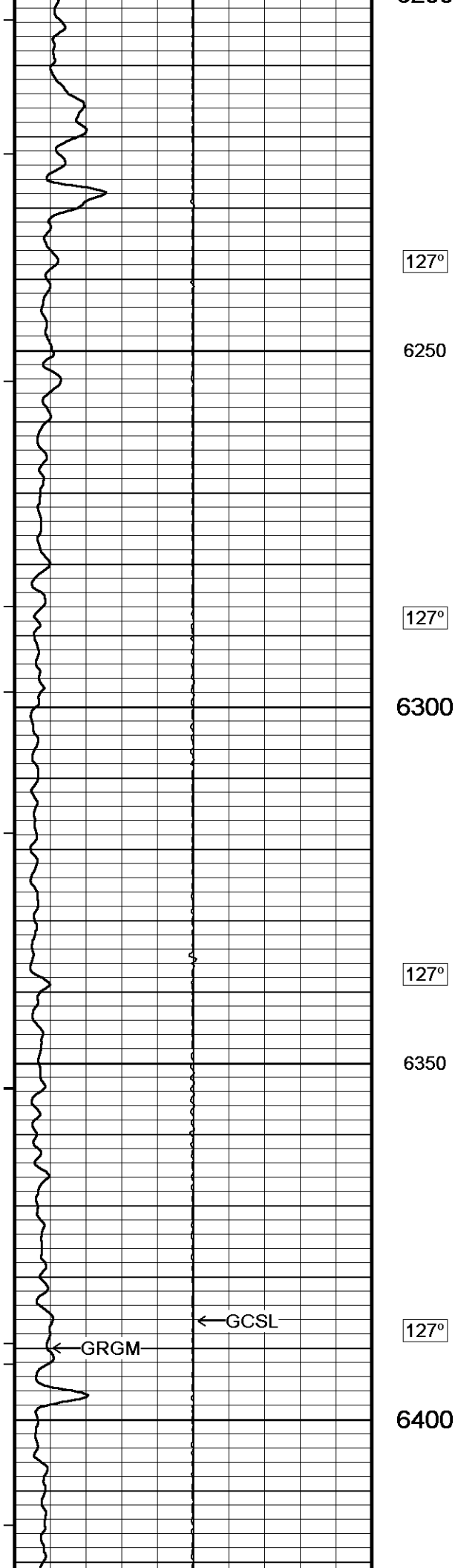
126°

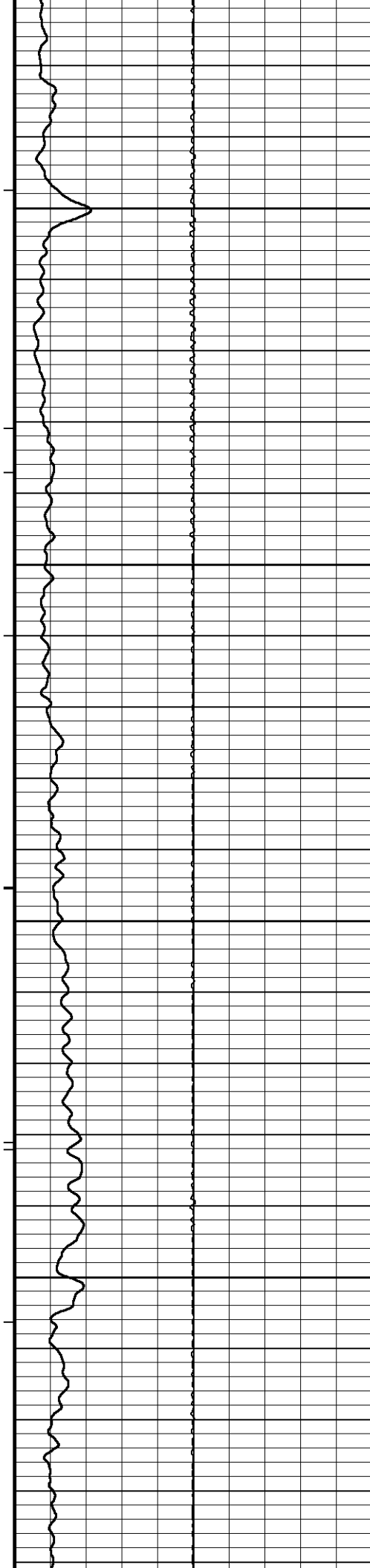
5950



2140







127°

6450

127°

6500

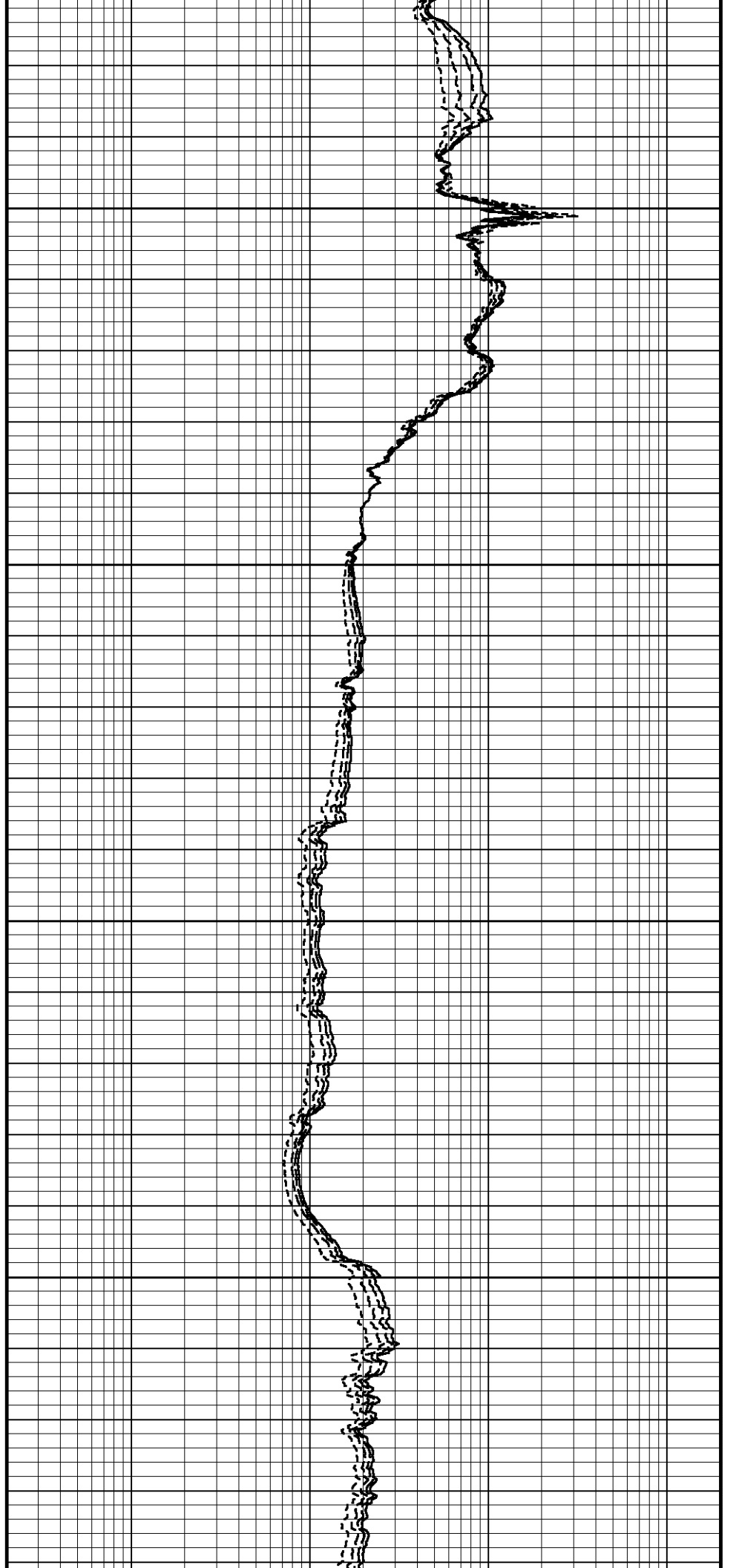
127°

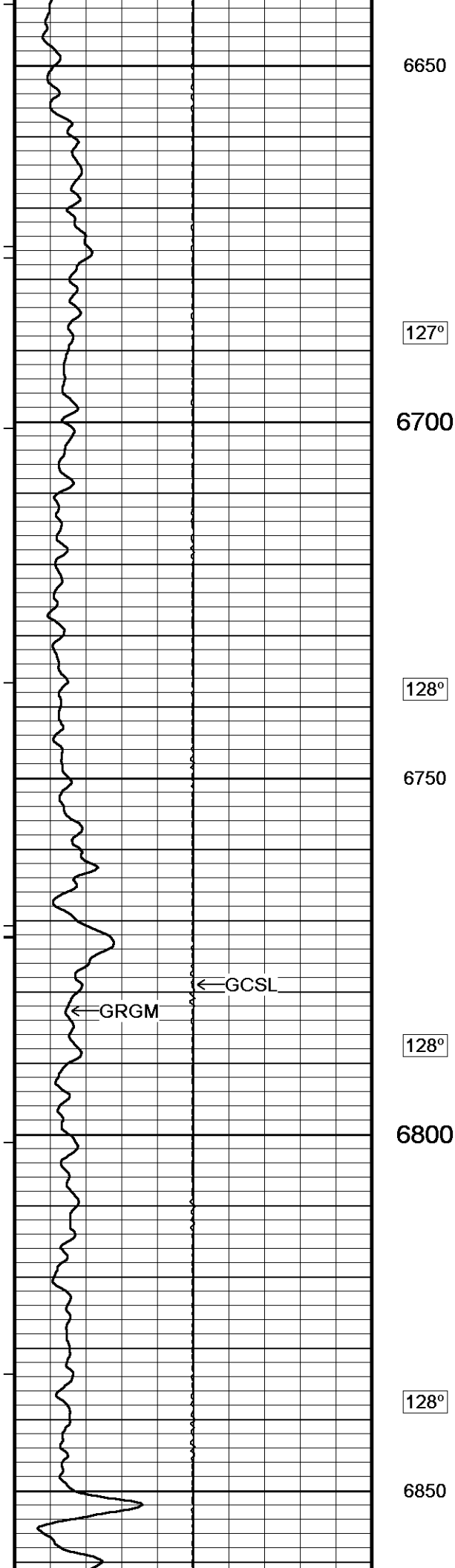
6550

127°

6600

127°



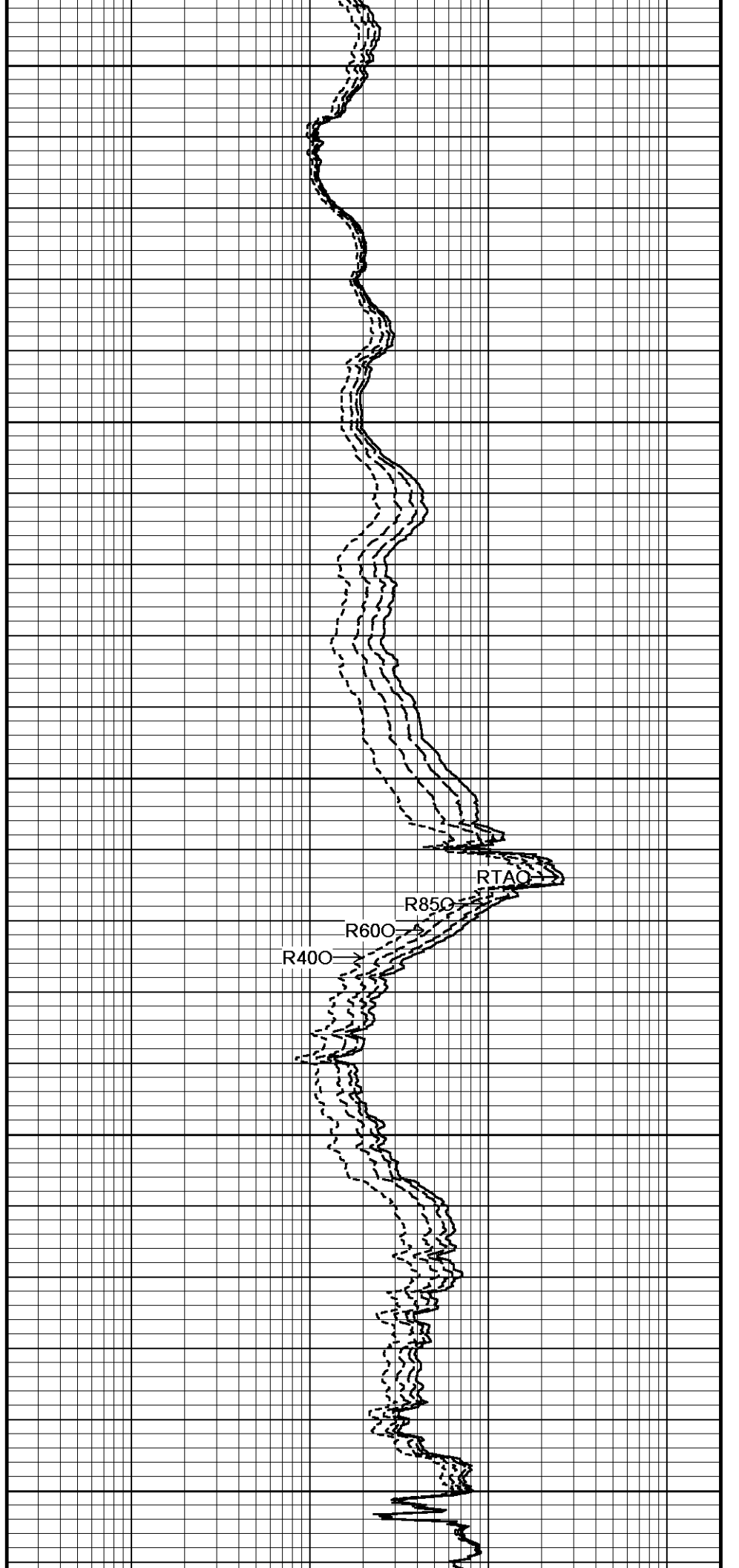


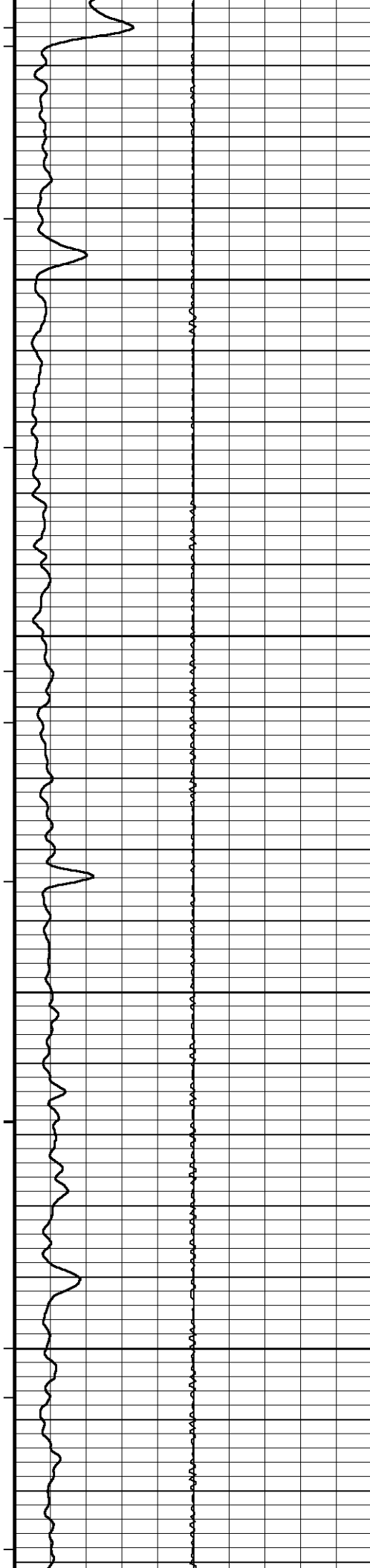
127°

128°

128°

128°





128°

6900

128°

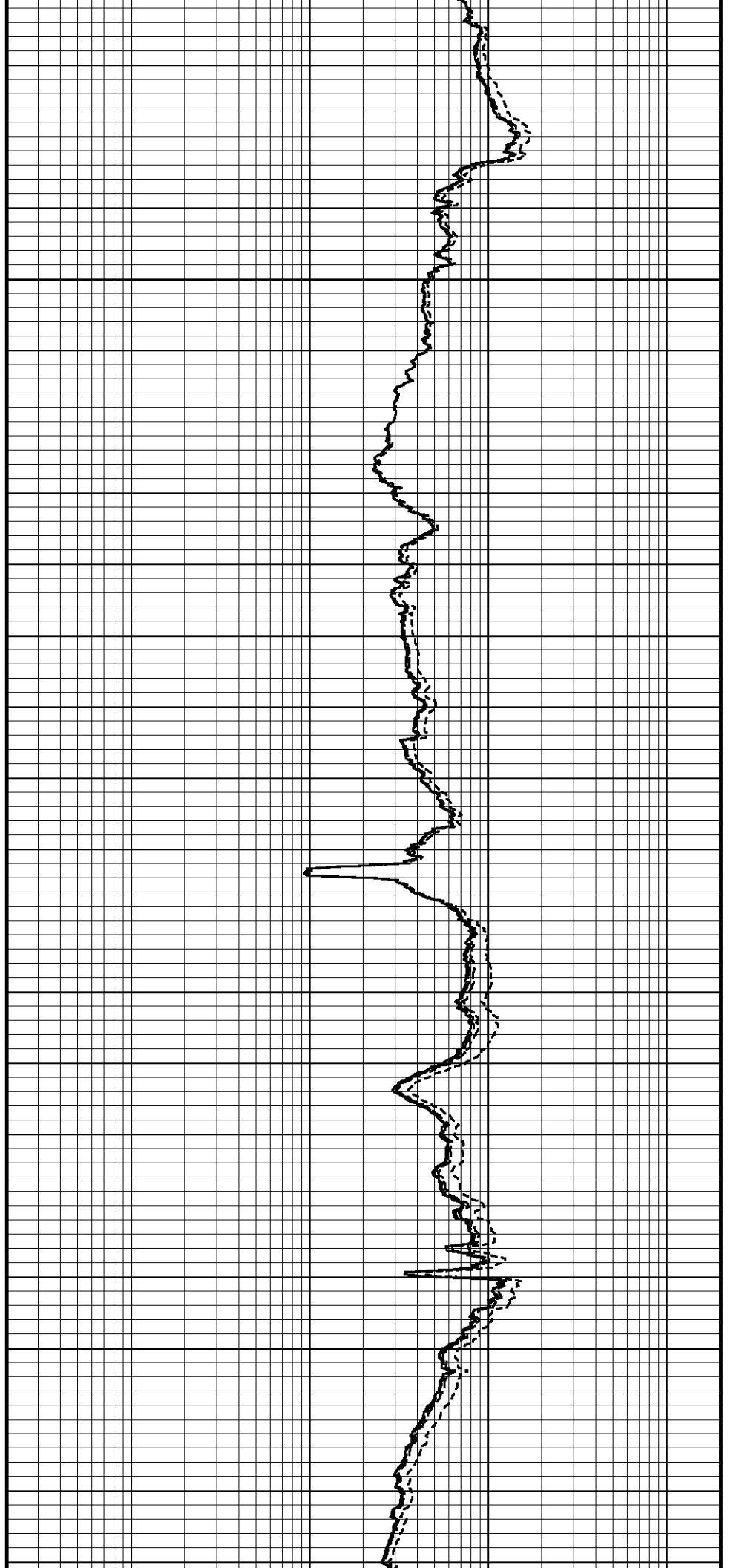
6950

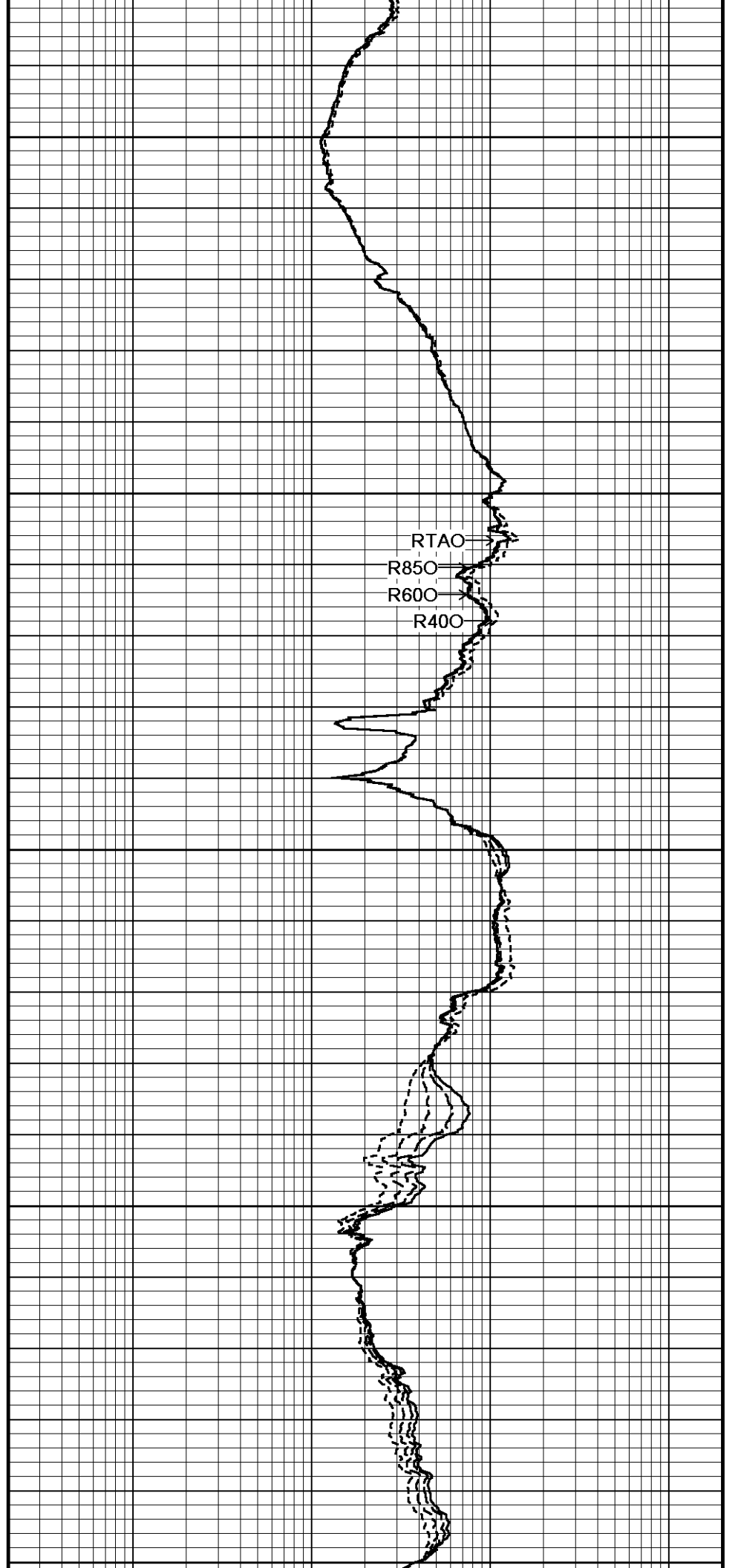
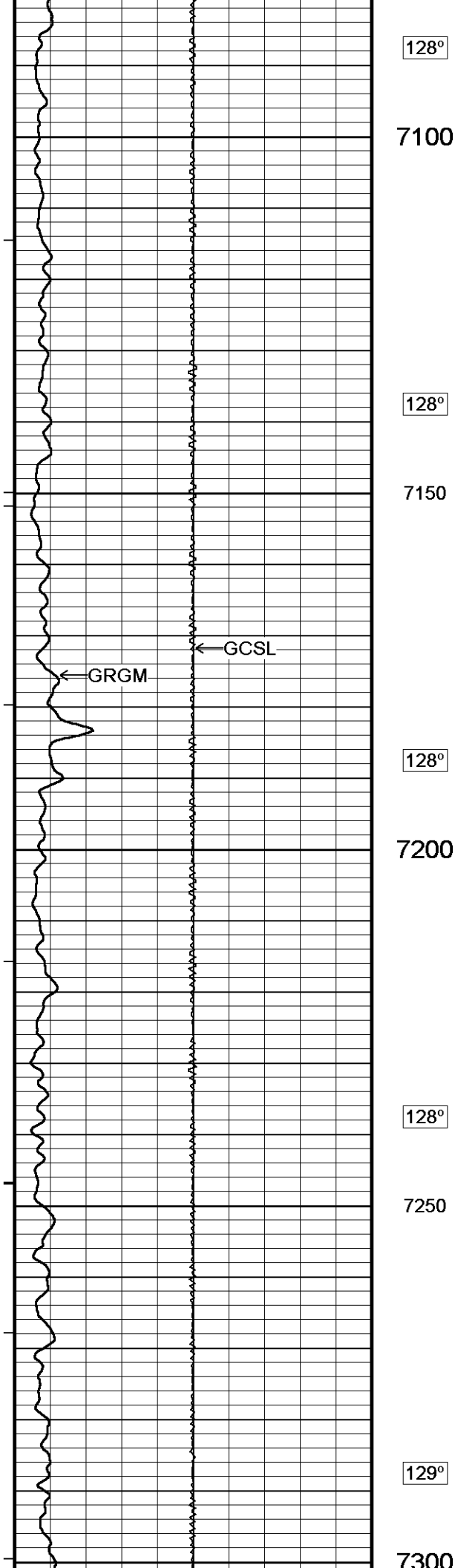
128°

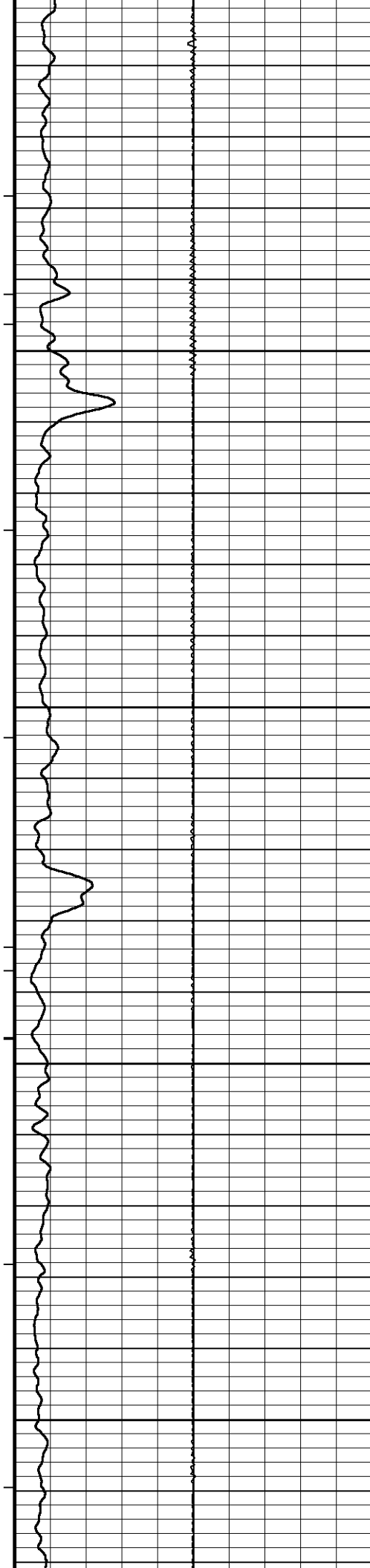
7000

128°

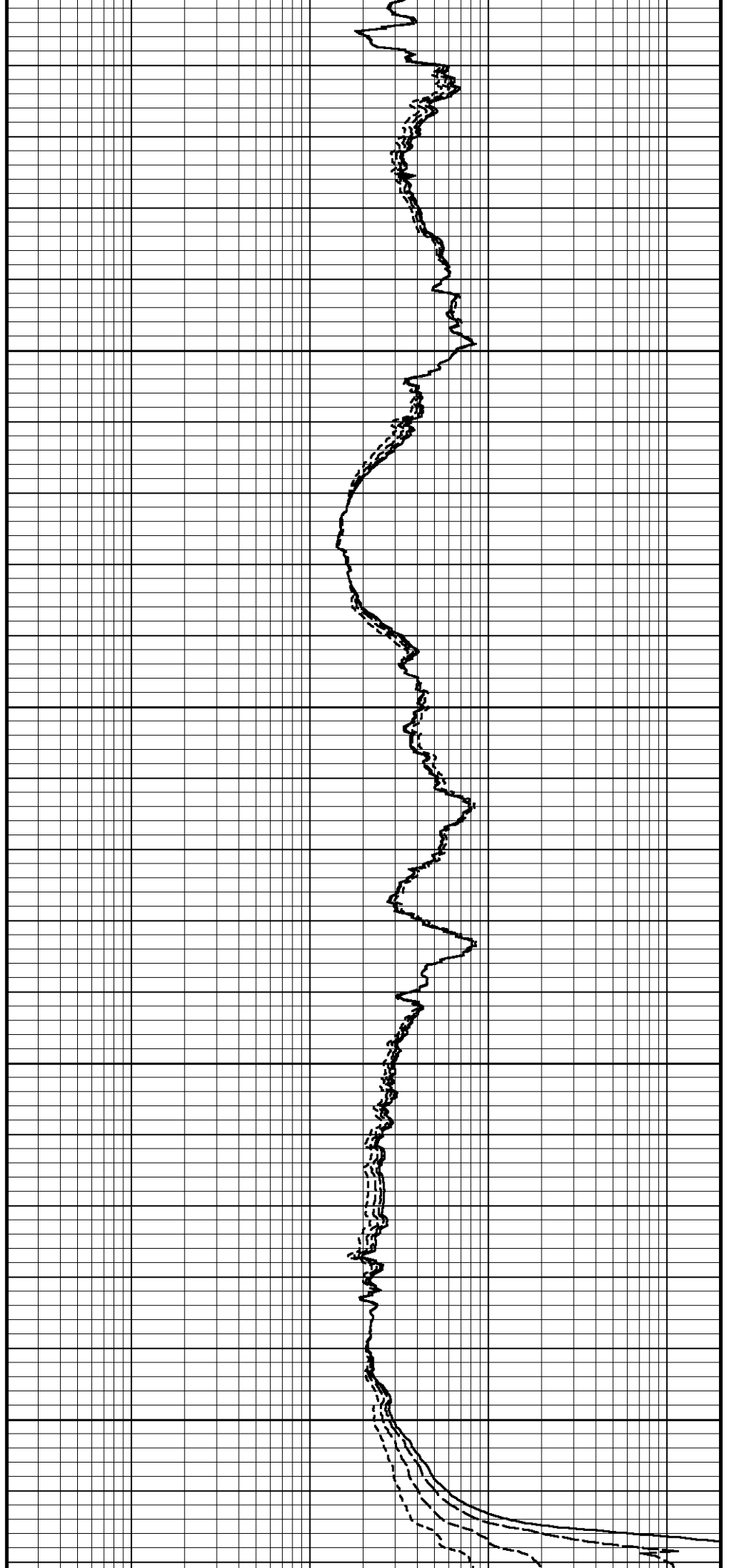
7050

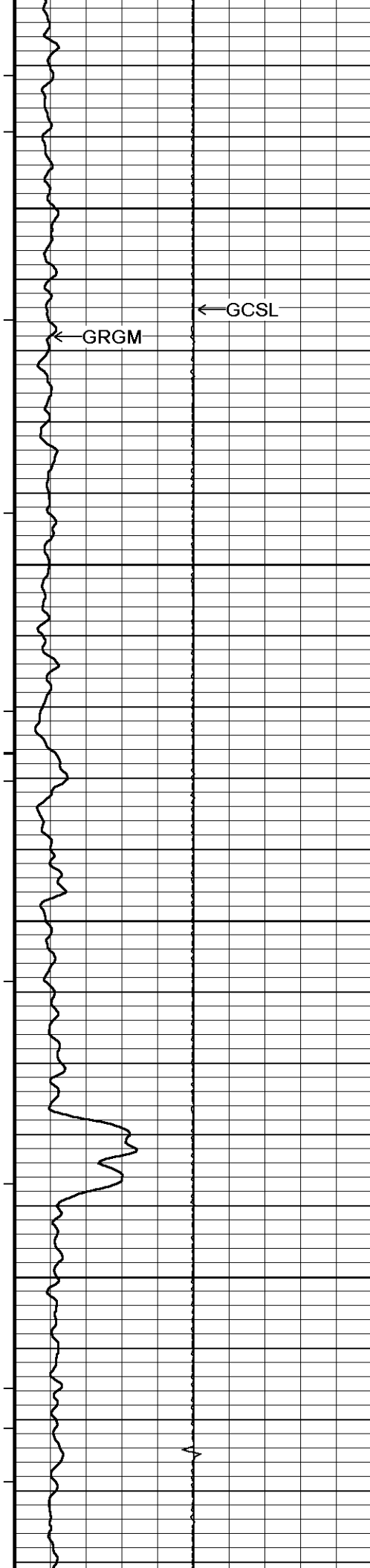






7300
129°
7350
129°
7400
129°
7450
129°
7500





129°

7550

129°

7600

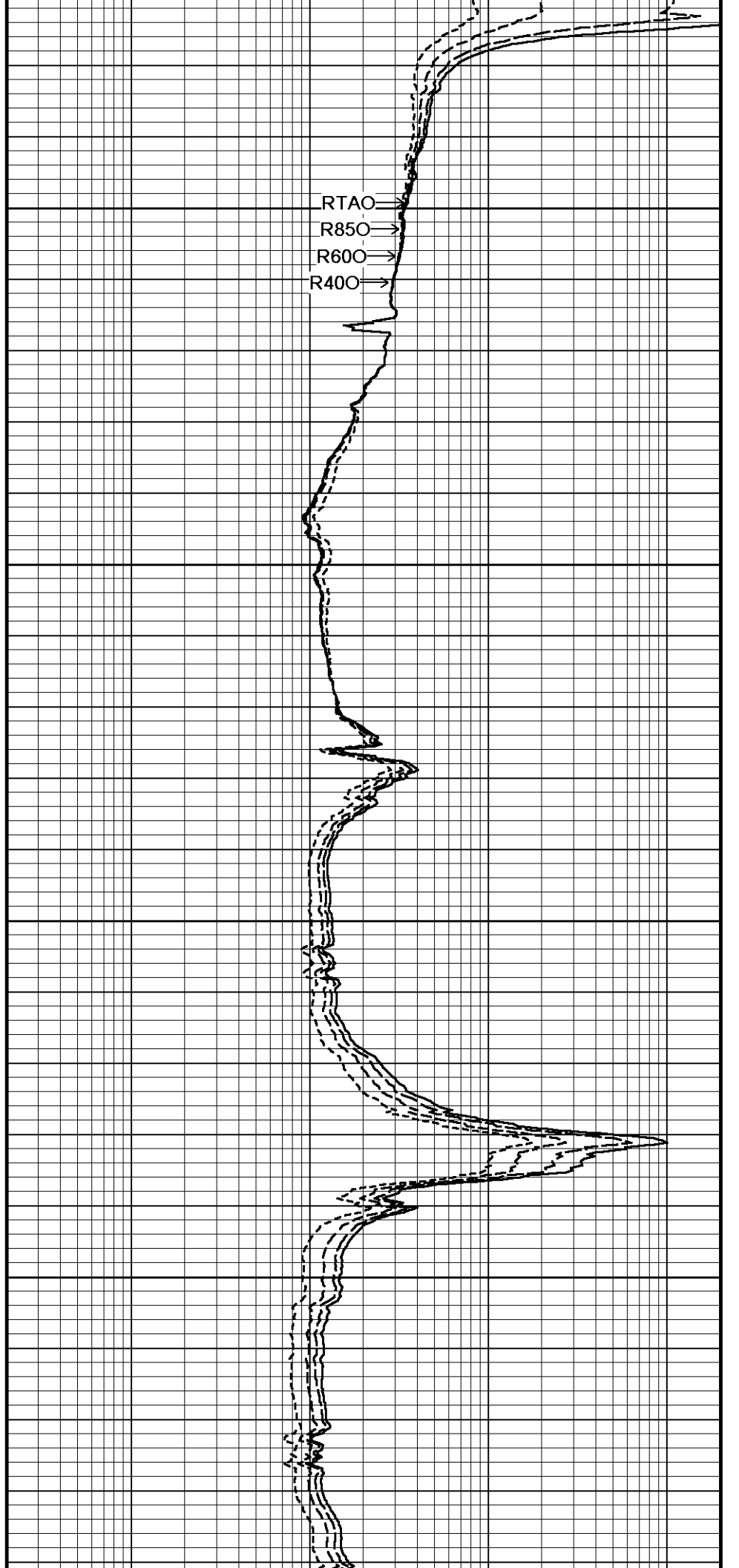
129°

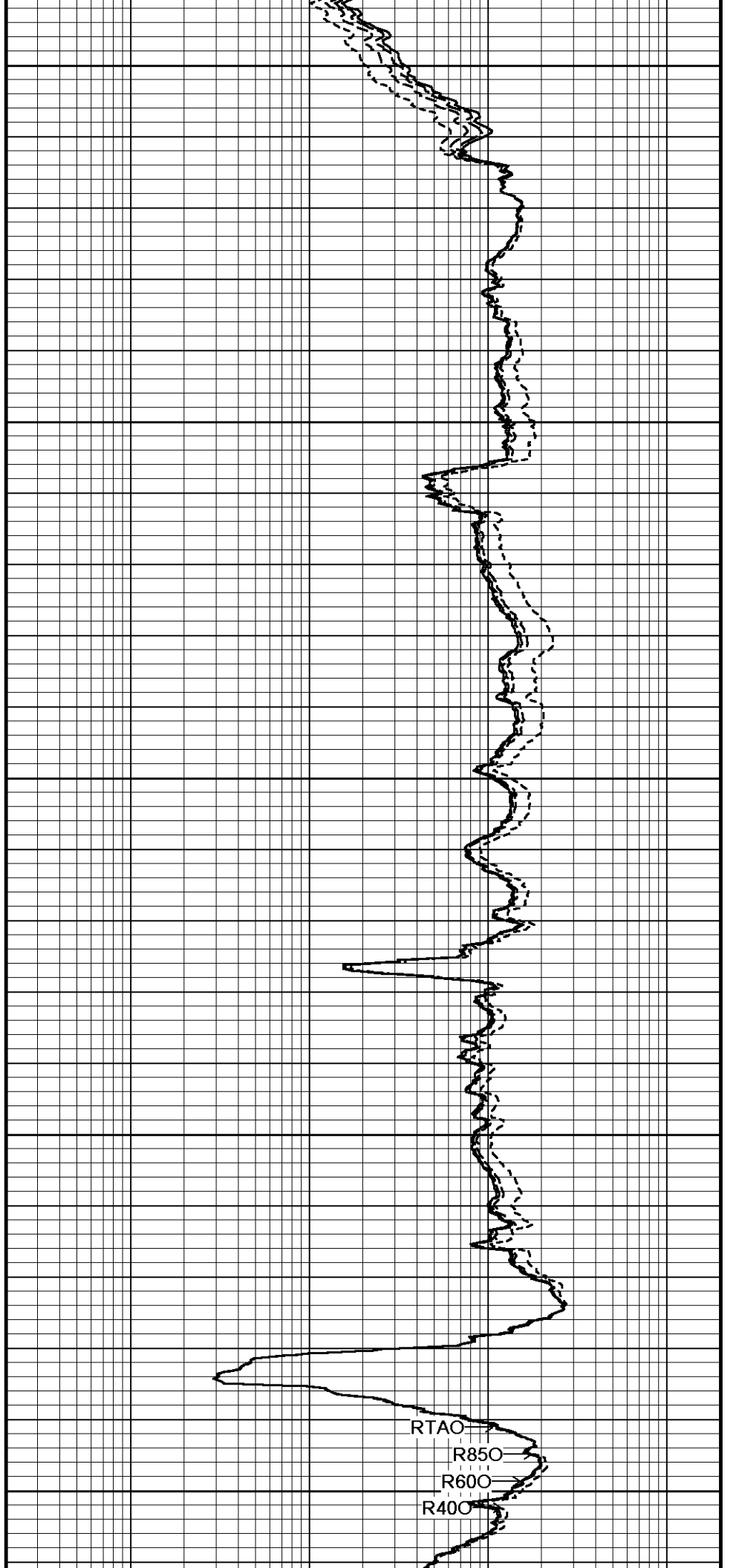
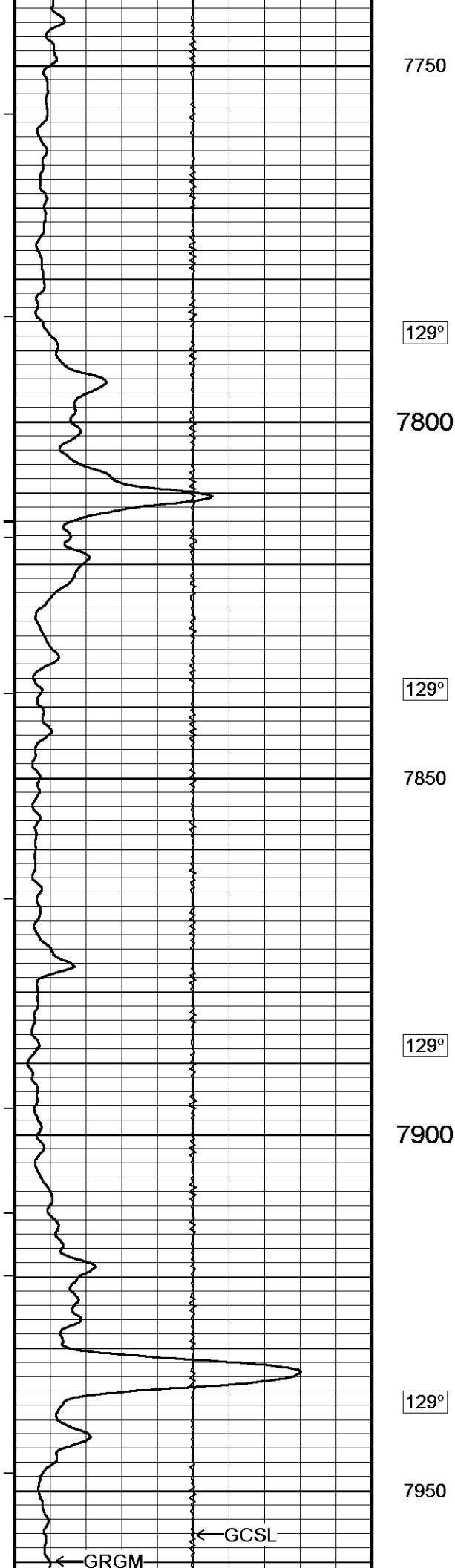
7650

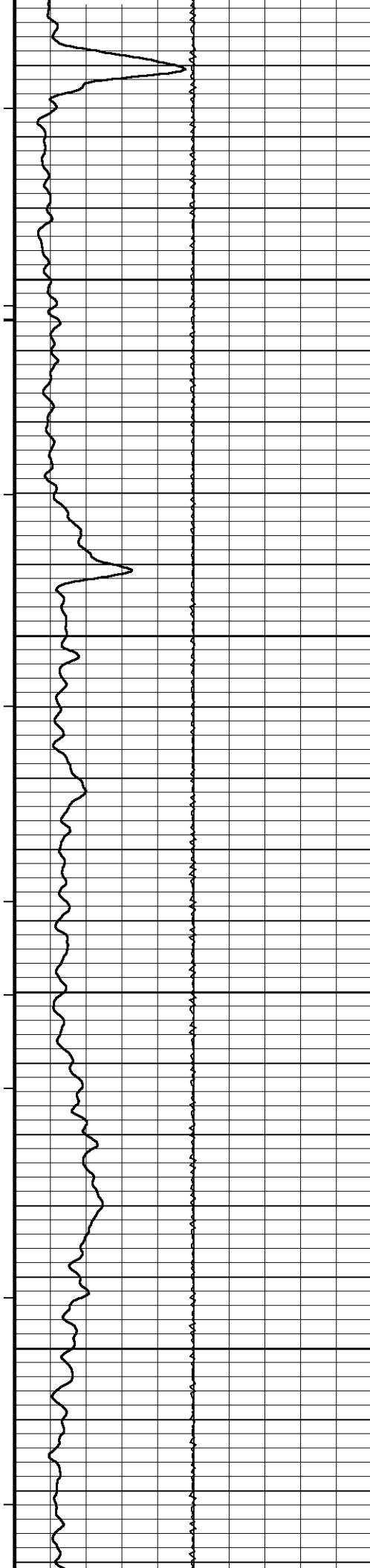
129°

7700

129°







129°

8000

129°

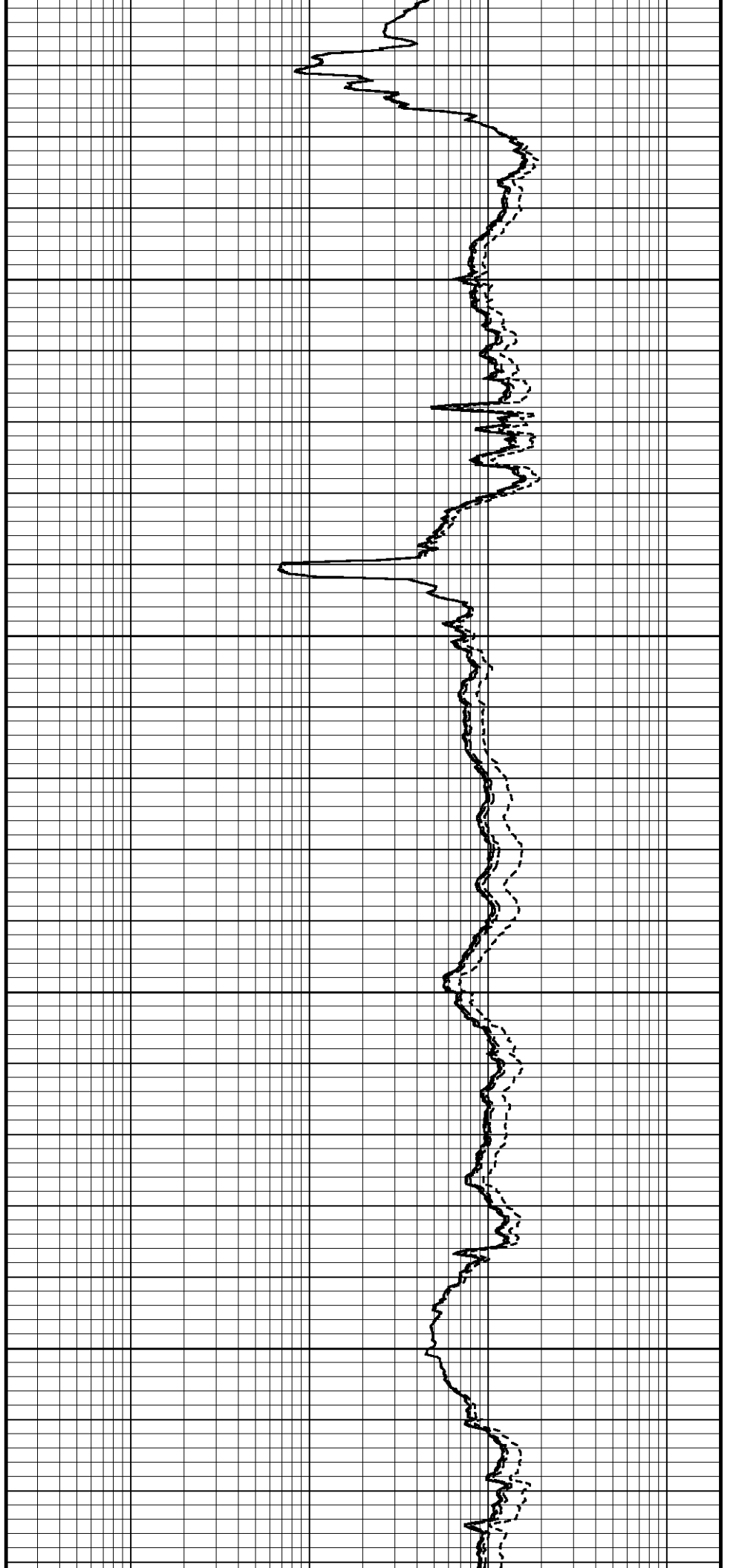
8050

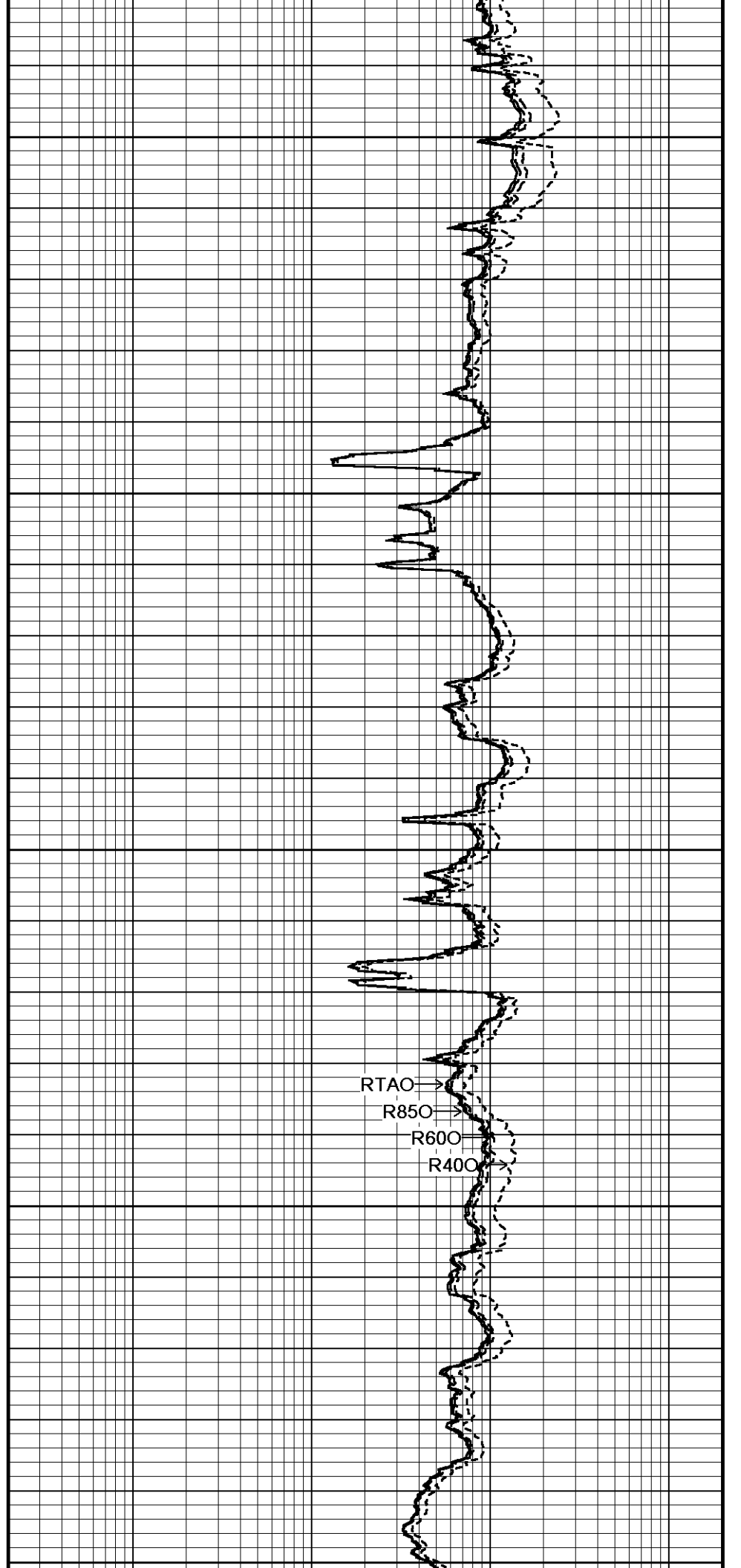
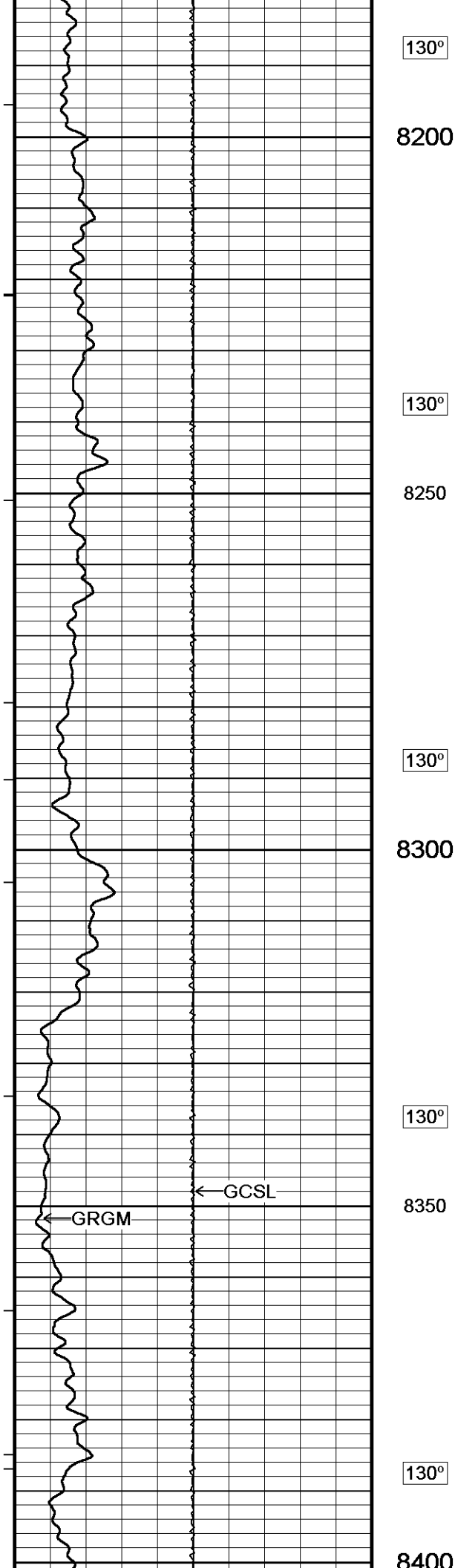
129°

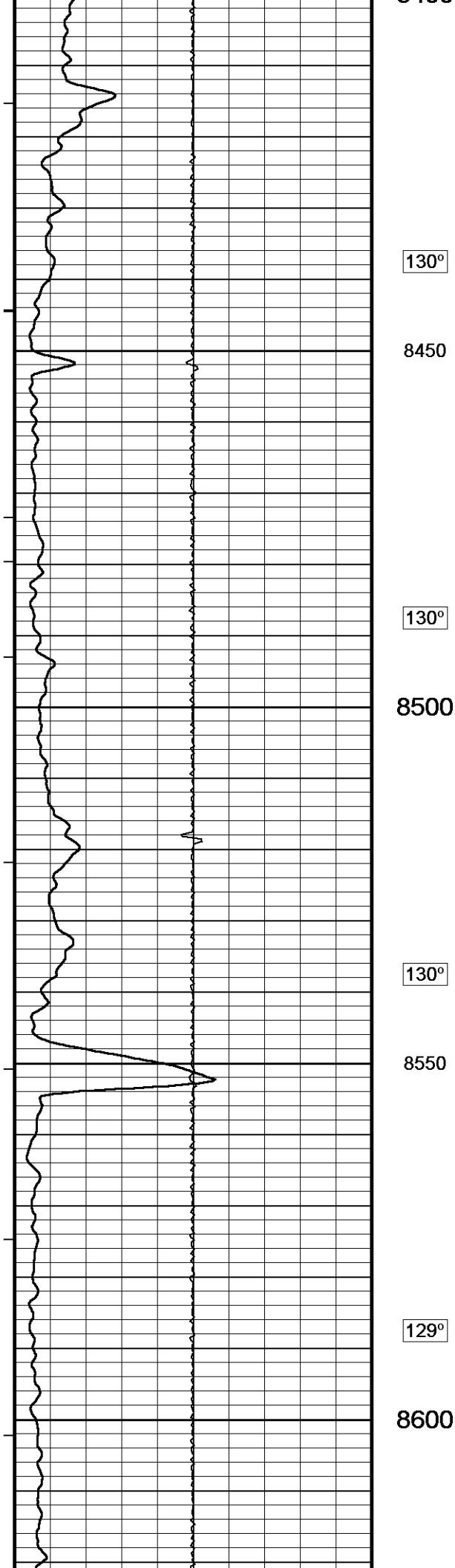
8100

130°

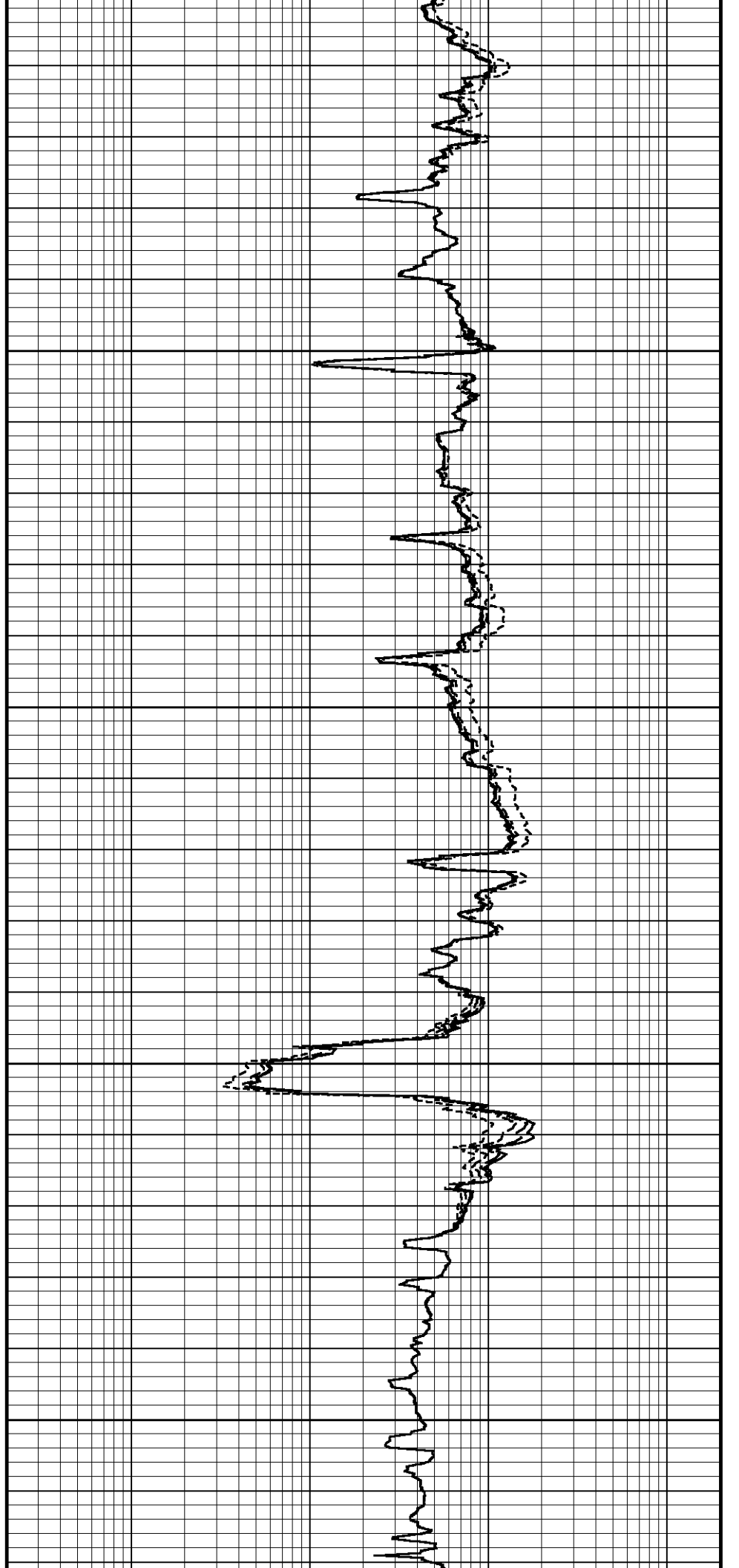
8150

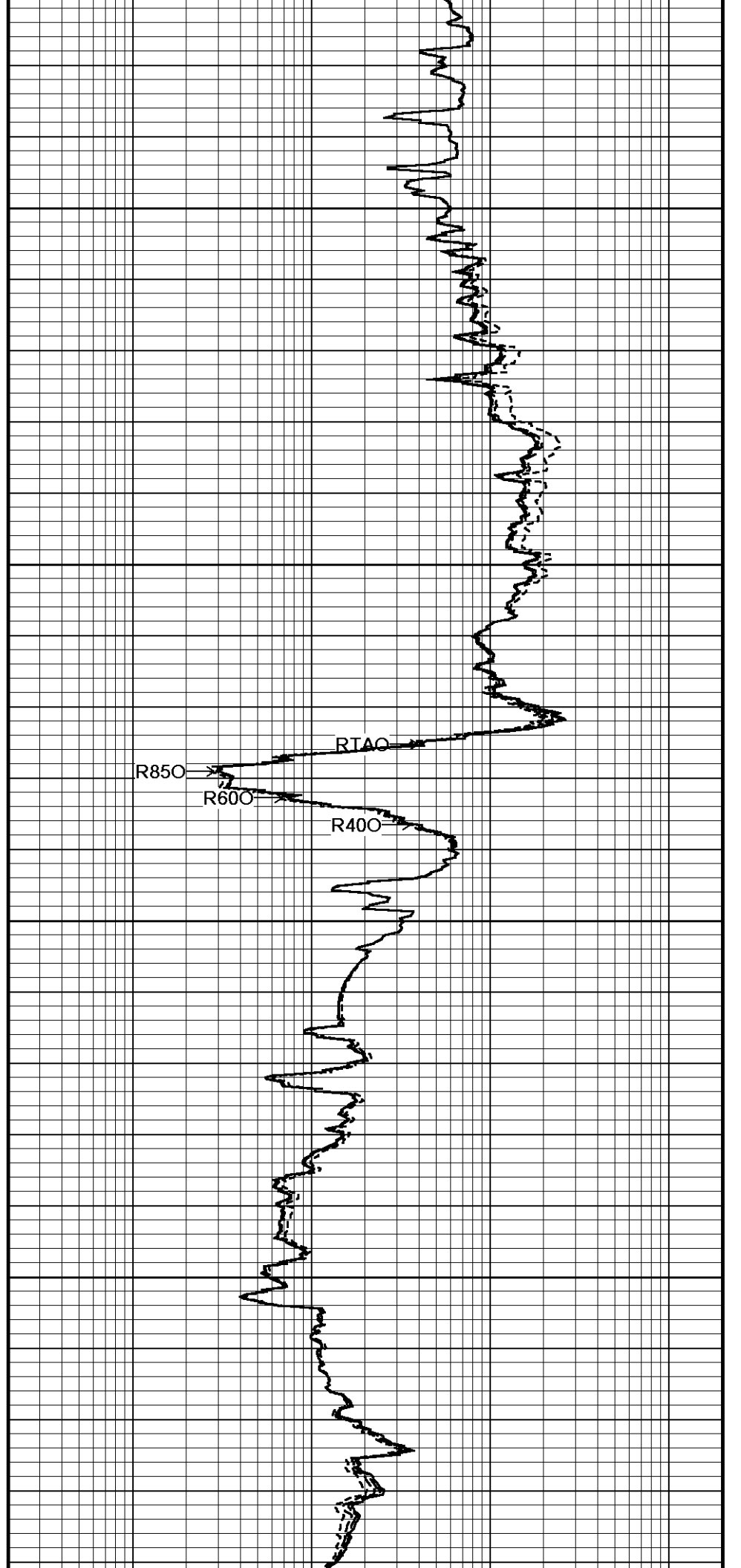
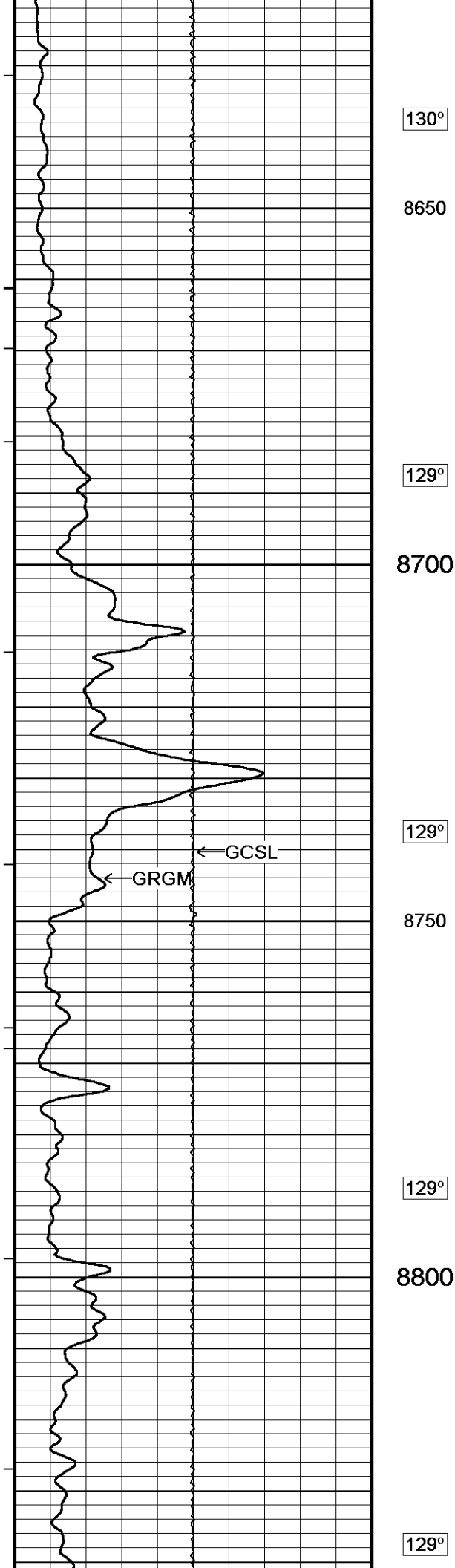


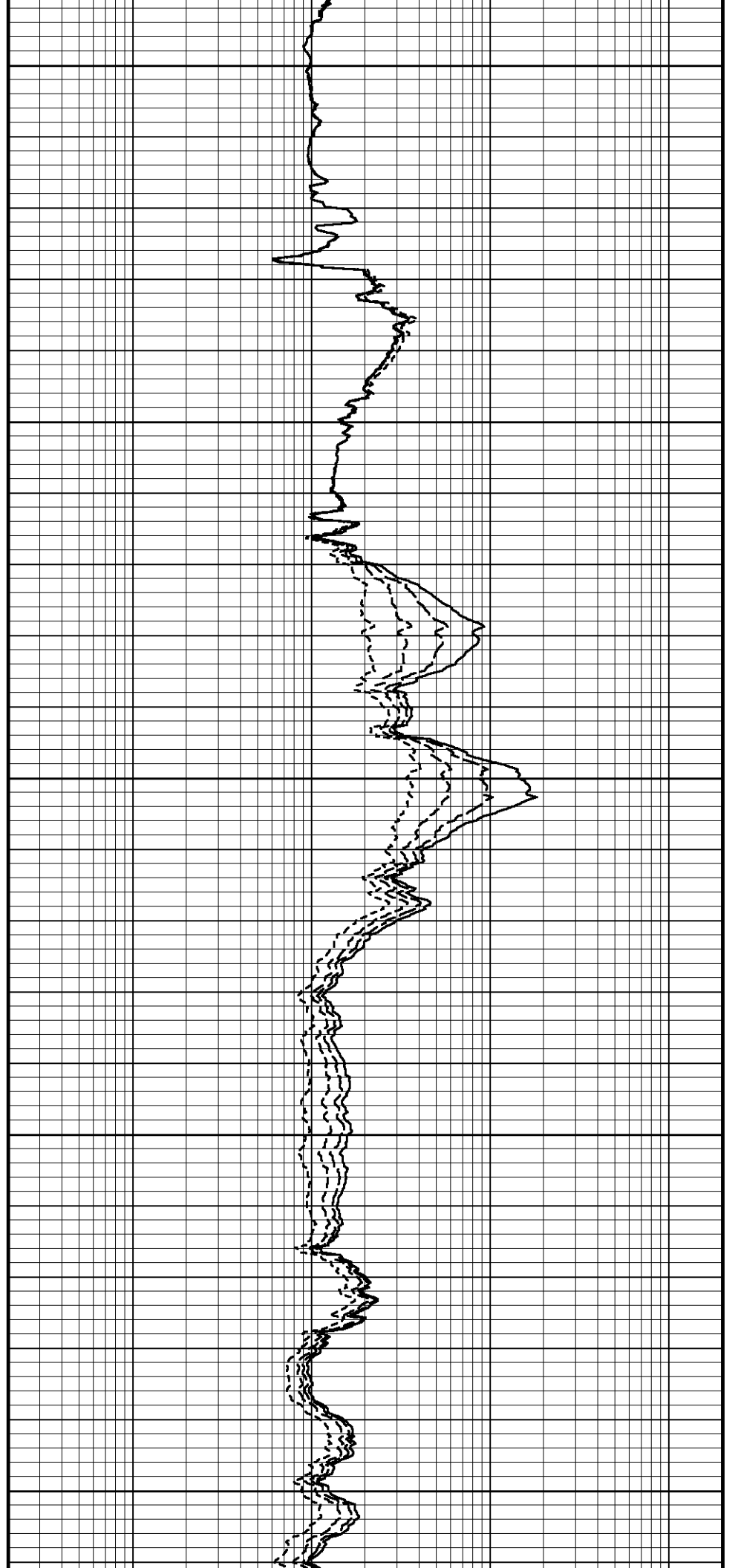
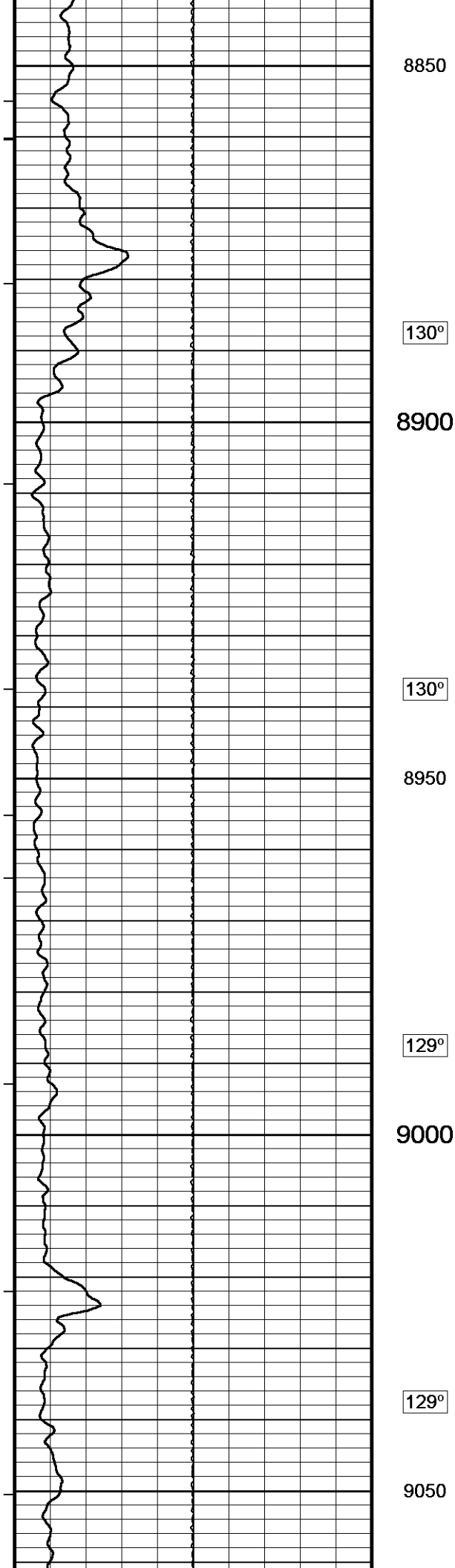


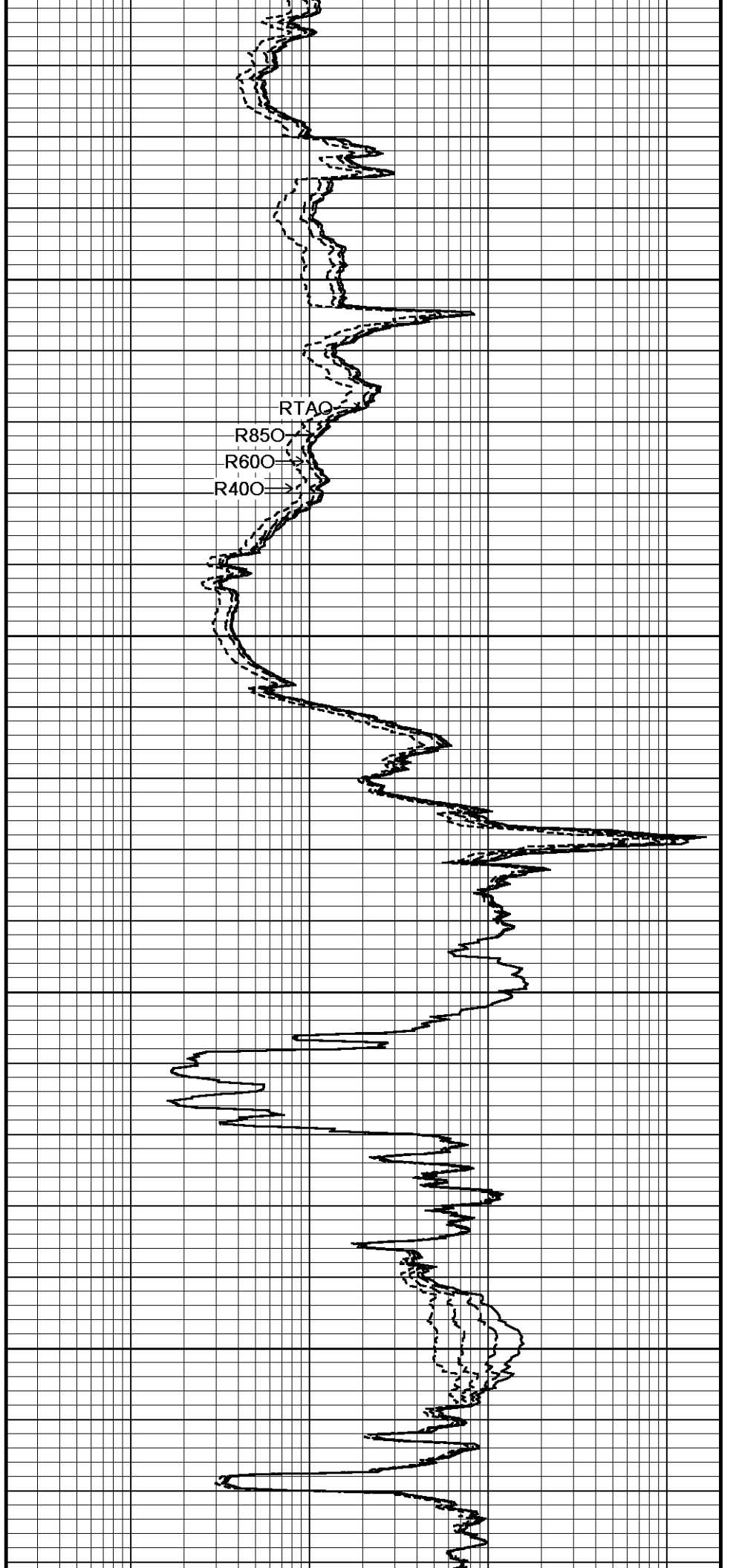
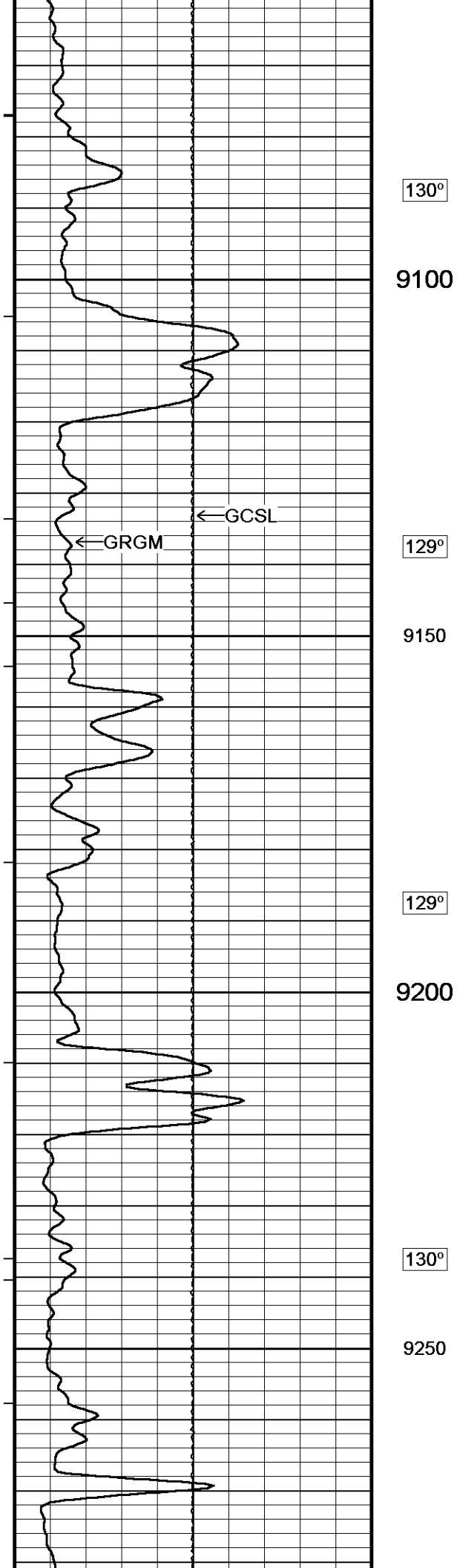


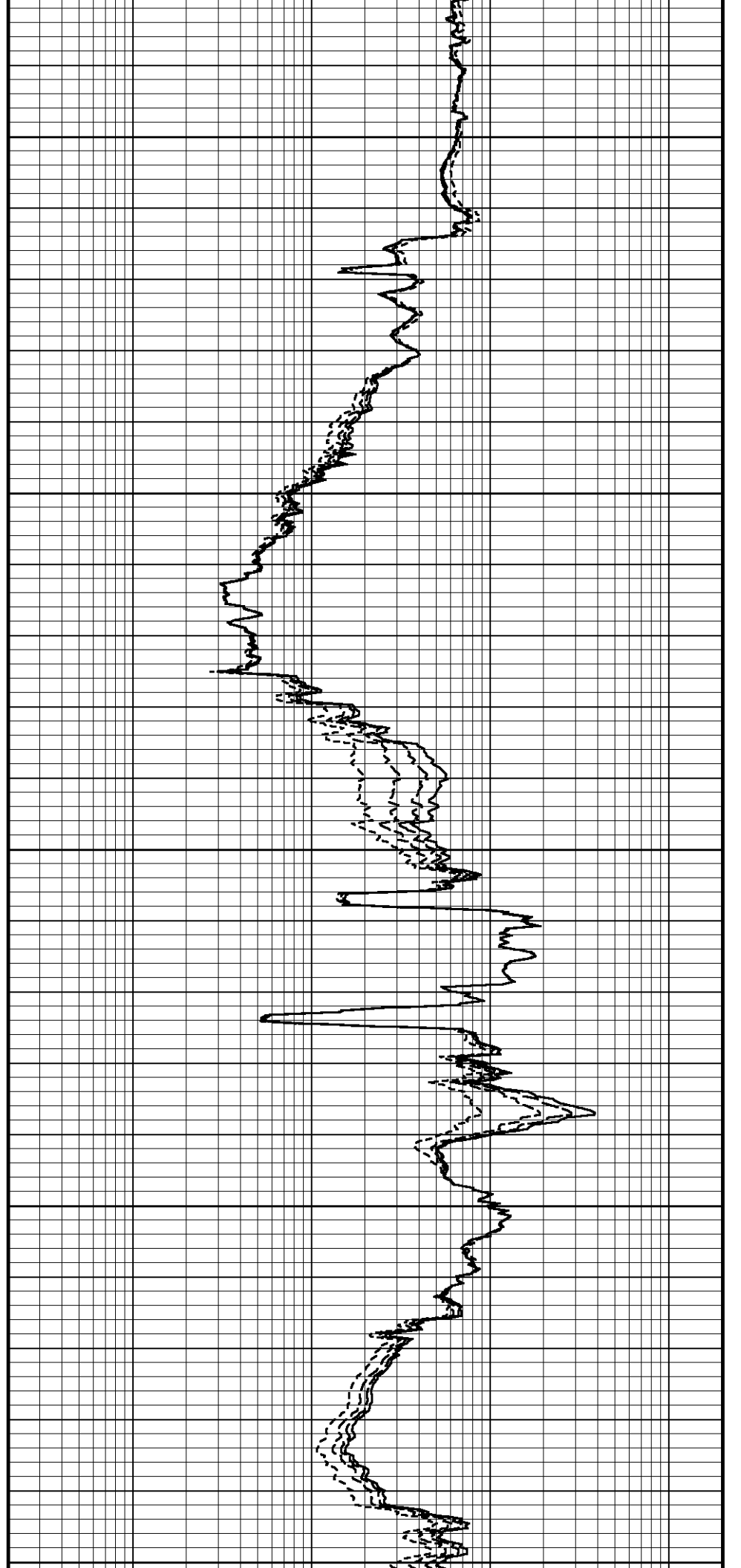
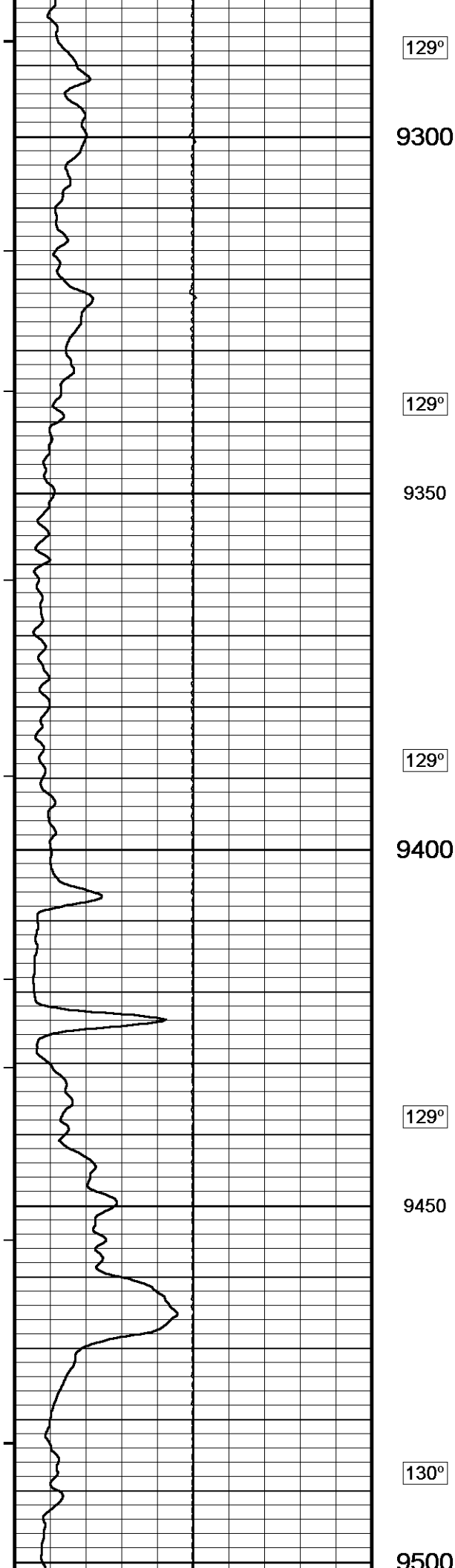
8450 130° 8500 130° 8550 130° 8600 129°

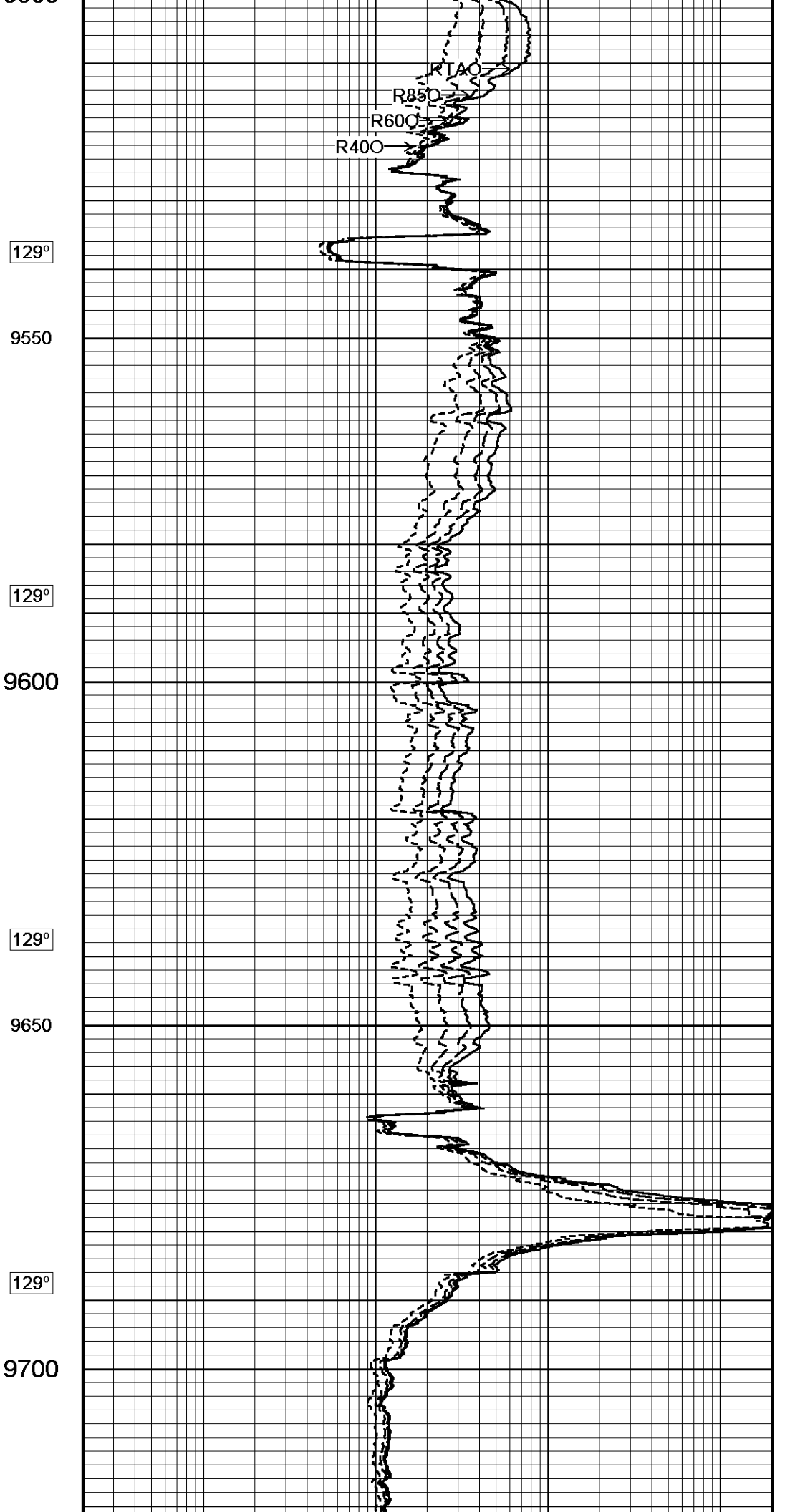
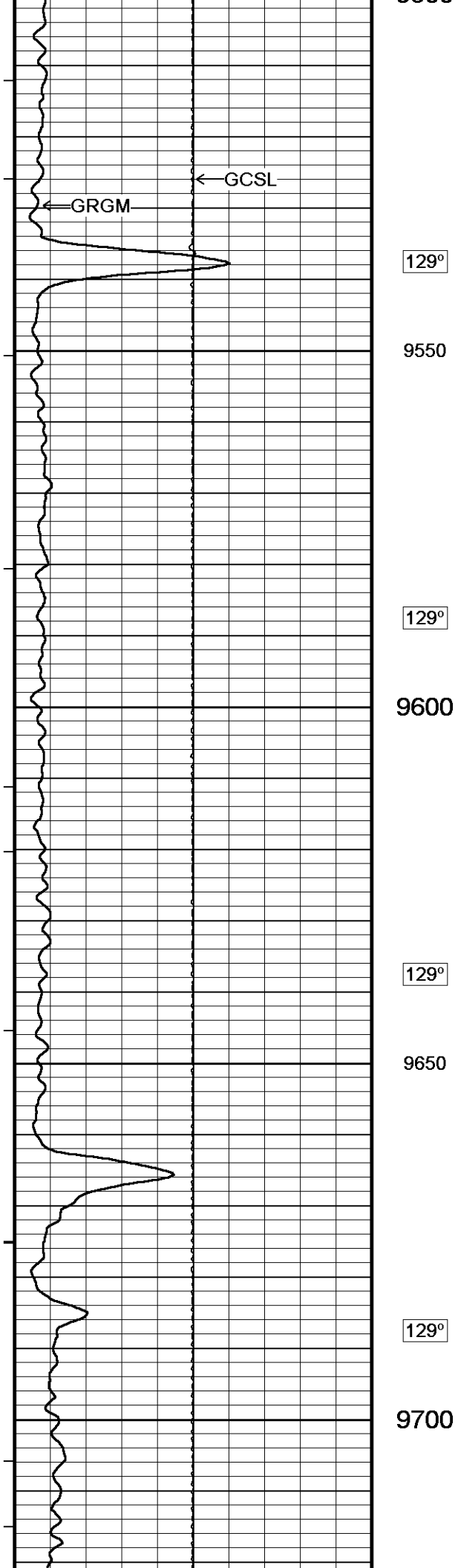


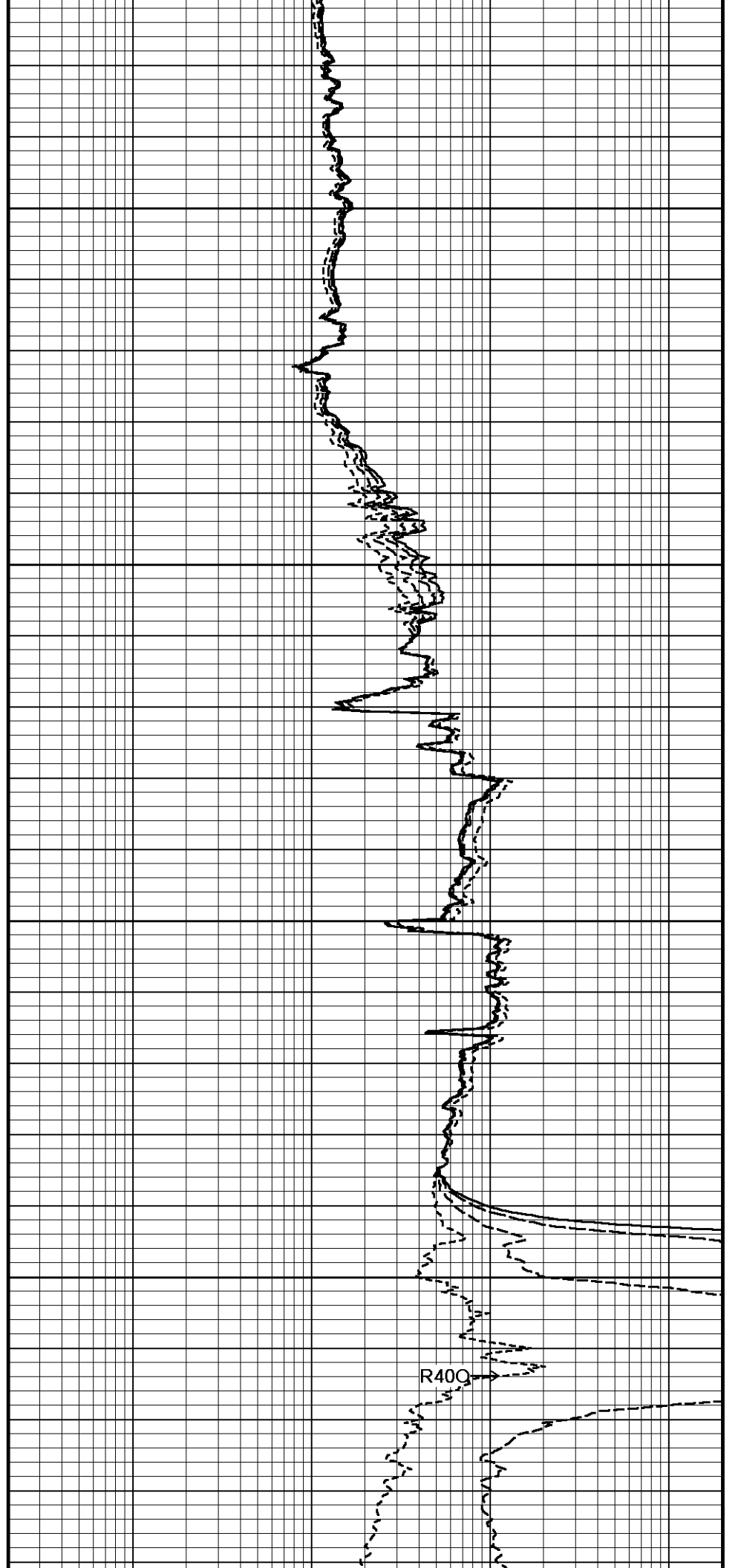
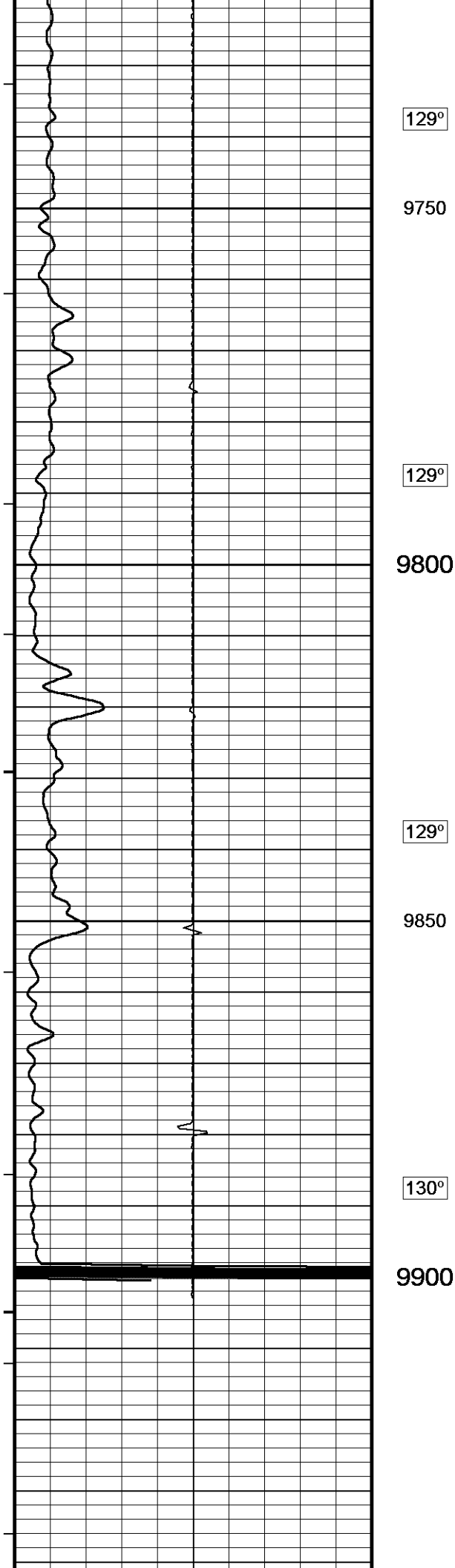


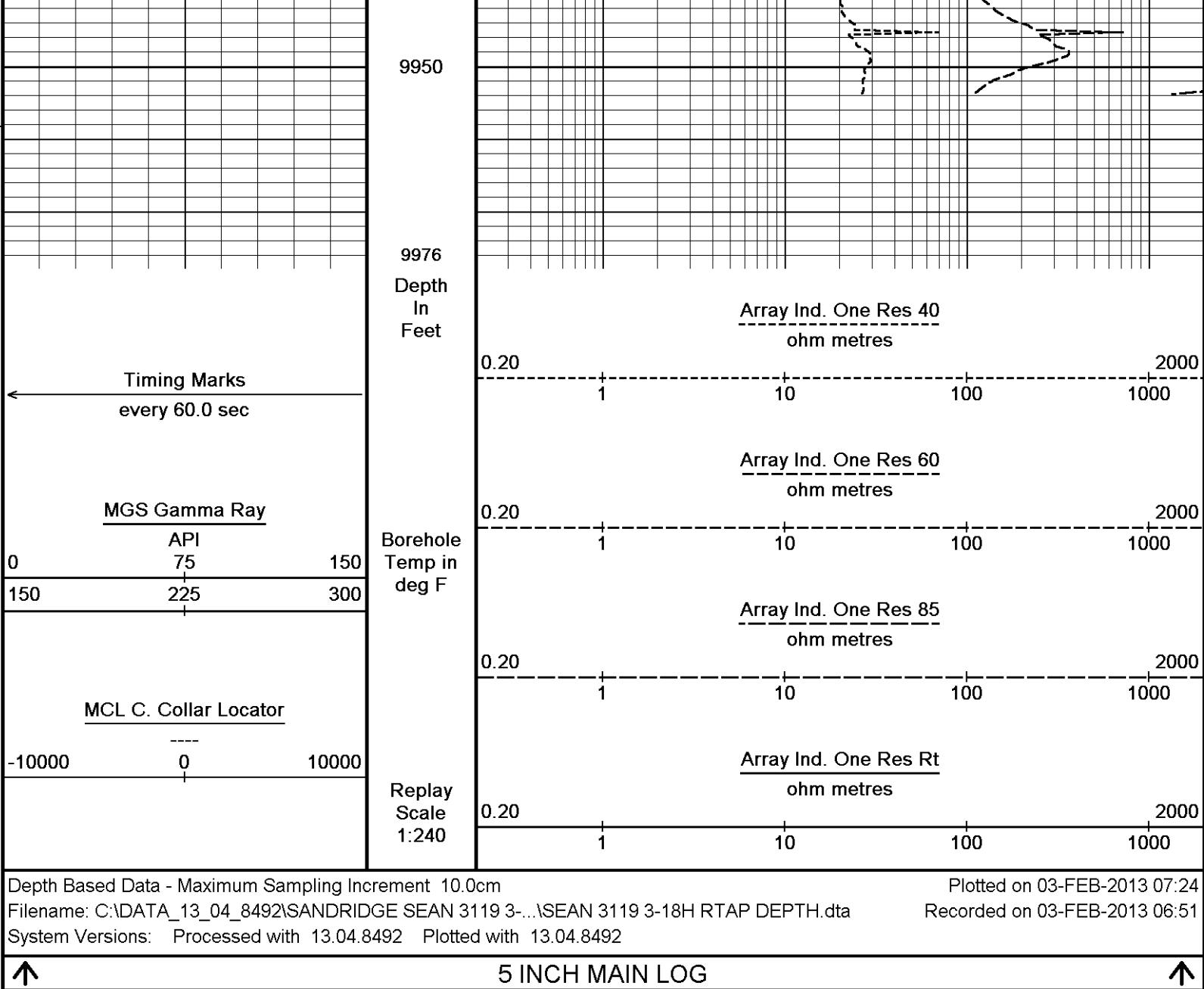












BEFORE SURVEY CALIBRATION		
C:\DATA_13_04_8492\SANDRIDGE SEAN 3119 3-18H\SEAN 3119 3-18H RTAP DEPTH.dta		
General Constants All 000		Last Edited on 03-FEB-2013,06:56
General Parameters		
Mud Resistivity	0.670	ohm-metres
Mud Resistivity Temperature	74.000	degrees F
Water Level	0.000	feet
Borehole Fluid 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	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

MMS Parameters MMS-E.B 133

Last Edited on 02-FEB-2013 11:44

Logging Parameters

Firmware Version	2v40	
Caliper Open On	MAI	
Caliper Open Delay		minutes
Caliper Closed On	Unknown	
Caliper Closed Delay	N/A	minutes
Sample Rate	1.00	seconds
Use Deep Sleep	No	
Delay Deep Sleep	N/A	
Deep Sleep Wake Time	N/A	minutes
Deep Sleep Wake on Temperature	N/A	
Deep Sleep Wake Temperature	N/A	degrees C
Deep Sleep Wake on Pressure	N/A	
Deep Sleep Wake Pressure	N/A	psi
MMI Pad Pressure	0.0	

Release Parameters

Pulse Duration Base Level	10.0	seconds
Pulse Duration Transition Time	60.0	seconds
Pulse Duration Status Pulse From	20.0	seconds
Pulse Duration Caliper Close From	145.0	seconds
Pulse Duration Caliper Open From	150.0	seconds
Pulse Duration Release Pulse From	215.0	seconds
Pulse Duration Release Pulse To	280.0	seconds
Pulse Release Duration	240.0	seconds
Pulse Discriminator Pressure Band	8625.0	seconds
Pulse Pressure Discriminator	19768.0	seconds
Use Negative Pulsing	No	
Good Status Reply Open Hole	65535.0	seconds
Good Status Reply Cased Hole	20.0	seconds
Bad Status Reply	60.0	seconds
Status Pulse To	80.0	seconds
Caliper Close To		seconds
Caliper Open To	210.0	seconds

Configuration

MMS,MGS,MDN,MPD,MPD,MFE,MAI

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	

Gamma Calibration MGS-C.J 142

Field Calibration on 31-JAN-2013,15:26

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

Gamma Constants MGS-C.J 142

Last Edited on 31-JAN-2013,15:26

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
Field Check on 31-JAN-2013,15:26

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)	
	2045	3097
Ratio	0.660	

Neutron Constants MDN-B.J 391

Last Edited on 02-FEB-2013,10:36

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	

FE Calibration MFE-A.A 134

Base Calibration on 06-JAN-2013,21:47
Field Check on 31-JAN-2013 15:22

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	972.5	126.8
Base Check		279.1
Field Check		278.5

FE Constants MFE-A.A 134

Last Edited on 31-JAN-2013,15:21

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr	MGS External Temperature	

Temp. for Rm Corr.	MGS External Temperature	0.5	inches	
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 31-JAN-2013 15:20	
Base Calibration				
Test Loop Calibration		Measured	Calibrated (mmho/m)	
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			12.0	3756.3
2			30.1	3532.5
3			27.6	2999.7
4			18.7	2044.5
Deep			15.7	1907.1
Medium			41.3	3984.5
Shallow			46.7	5295.6
Array Temperature			66.3	Deg F
Induction Constants MAI-A.A 170			Last Edited on 03-FEB-2013,06:56	
Induction Model	RtAP-WBM			
Caliper for Borehole Corr.	Bit Size			
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 31-JAN-2013 15:26

Density Calibration

Base Calibration

	Measured	Calibrated (sdu)
	Near	Far
Reference 1	52312	25766
Reference 2	21569	2501

Field Check at Base

1066.7	1302.0
--------	--------

Field Check

1058.7	1311.0
--------	--------

PE Calibration

Base Calibration

	Measured	Calibrated
	WH	Ratio
Background	192	947
Reference 1	20819	52122
Reference 2	5899	21442

Field Check at Base

192.4	946.7
-------	-------

Field Check

189.9	941.0
-------	-------

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

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\SANDRIDGE SEAN 3119 3-18H\SEAN 3119 3-18H RTAP DEPTH.dta

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

MBS-G.A 200v Compact Battery Sub
 MBS-G.A 115 LG: 10.61 ft WT: 70.5 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

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

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

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

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

Compact Focussed Electric
 MFE-A.A 134 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
 MIS-E.B 596 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: 86.65 ft Weight: 637.1 lb



61.76 ft
 59.77 ft

GRGM - MGS Gamma Ray
 GSXT - MGS External Temperature

42.89 ft

NPRL - Limestone Neutron Por.

35.65 ft
 35.65 ft
 35.65 ft
 33.72 ft
 33.72 ft
 33.72 ft
 33.65 ft

AVOL - Annular Volume
 HVOL - Hole Volume
 CLDC - Density Caliper
 DPRL - Limestone Density Por.
 DEN - Compensated Density
 DCOR - Density Correction
 PDPE - PE

3.34 ft
 3.34 ft
 3.34 ft
 3.34 ft
 3.34 ft
 3.34 ft
 3.34 ft

CTAF - Array Ind. Four Cond Ct
 R20F - Array Ind. Four Res 20
 R60F - Array Ind. Four Res 60
 R40F - Array Ind. Four Res 40
 R30F - Array Ind. Four Res 30
 R85F - Array Ind. Four Res 85
 RTAF - Array Ind. Four Res Rt



Tool Zero (0.13ft from bottom)
All measurements relative to tool zero.

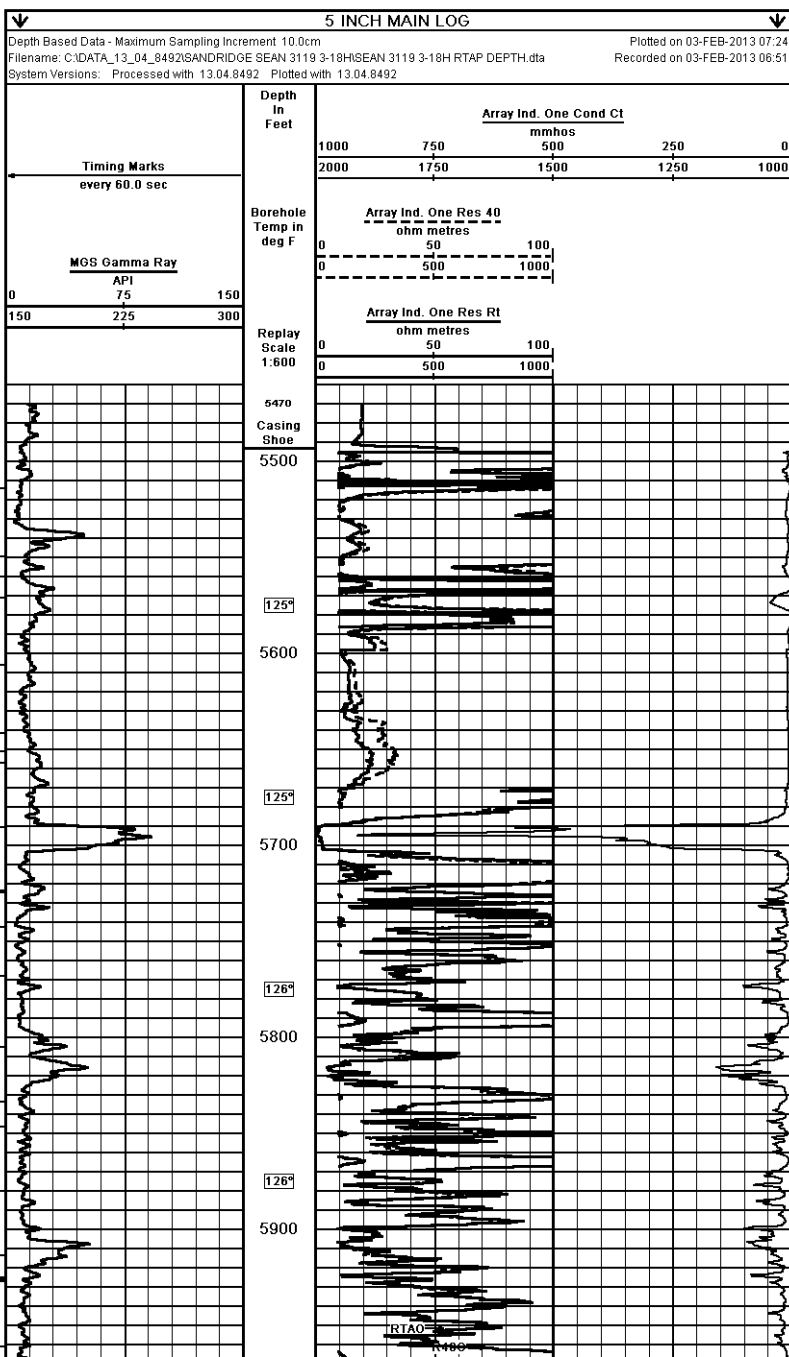
COMPANY	SANDRIDGE ENERGY
WELL	SEAN 3119 3-18H
FIELD	ARLIE NE
PROVINCE/COUNTY	COMANCHE
COUNTRY/STATE	U.S.A. / KANSAS

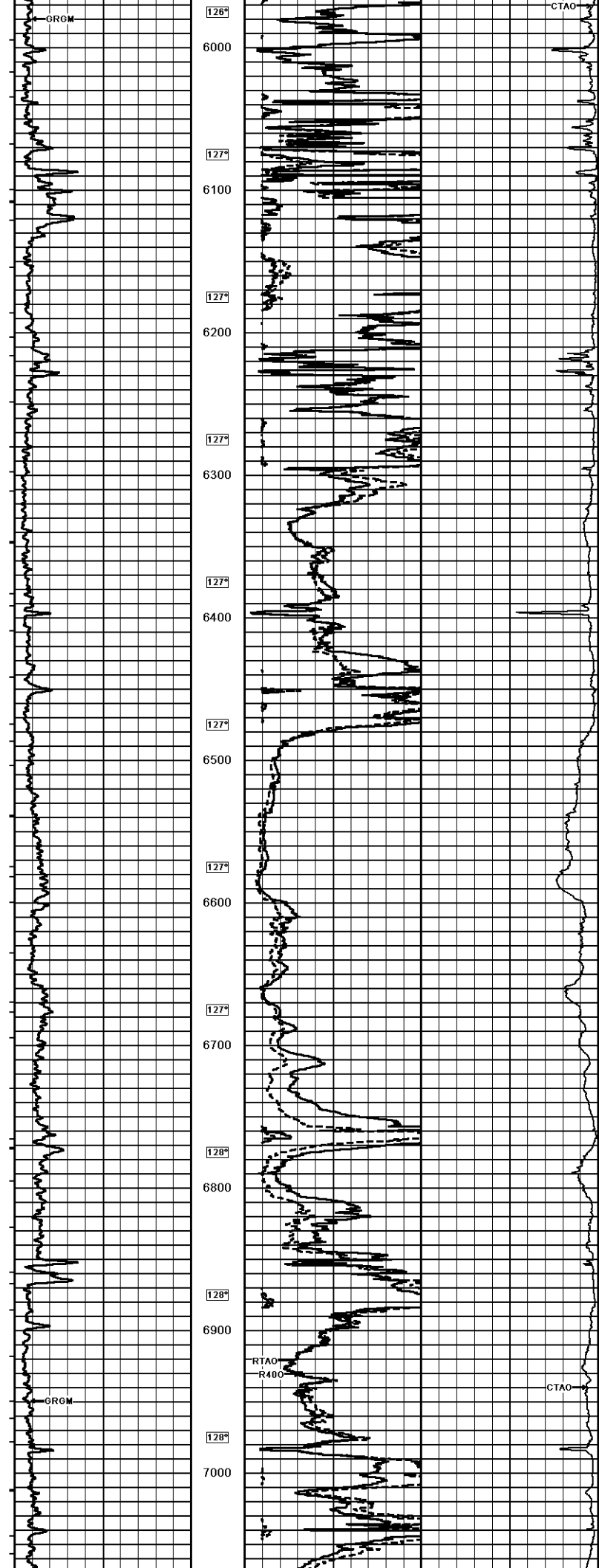
Elevation Kelly Bushing	2156.00	feet	First Reading	9948.00	feet
Elevation Drill Floor	2156.00	feet	Depth Driller	9971.00	feet
Elevation Ground Level	2136.00	feet	Depth Logger	9971.00	feet

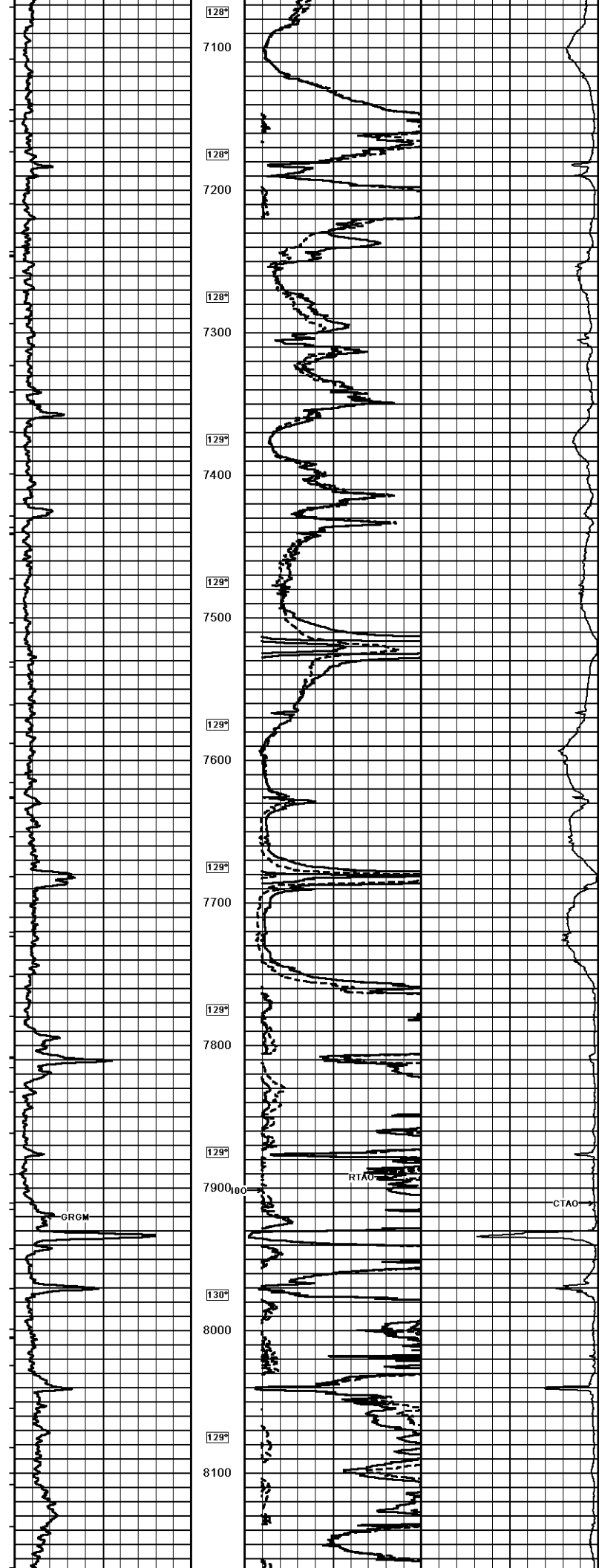


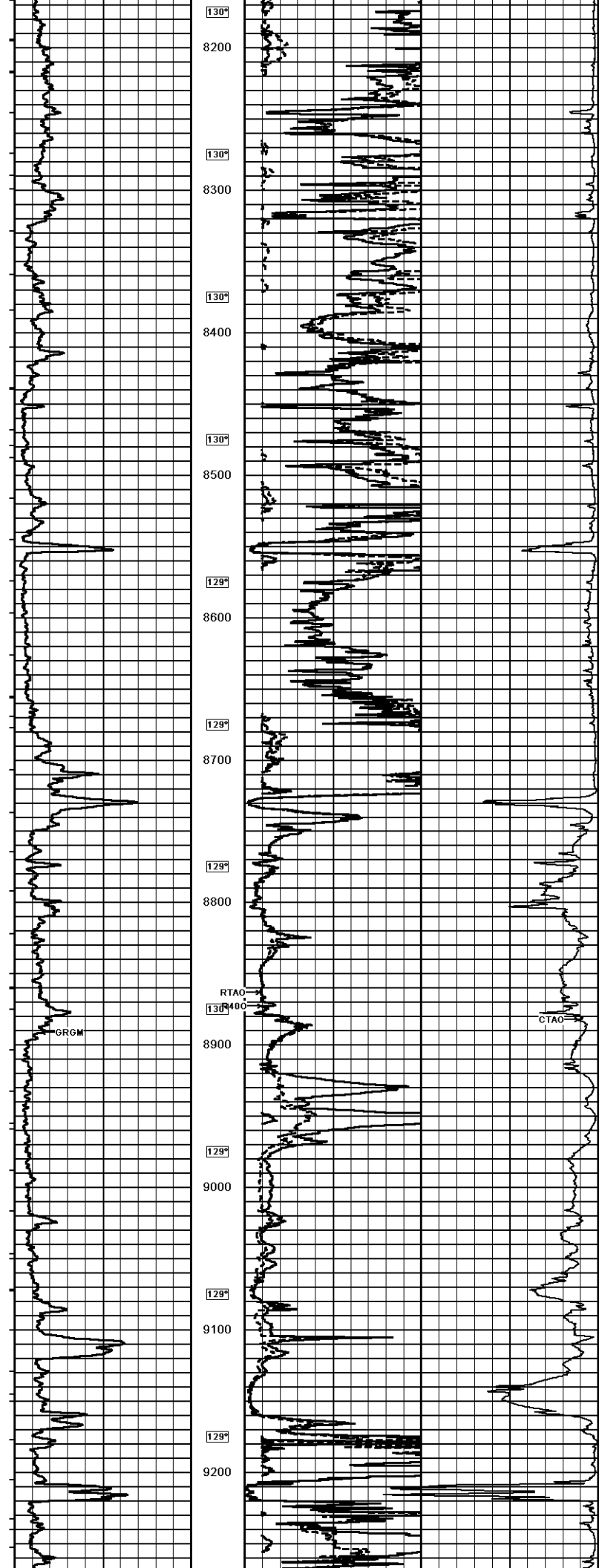
CML MESSENGER SHUTTLE
ARRAY INDUCTION

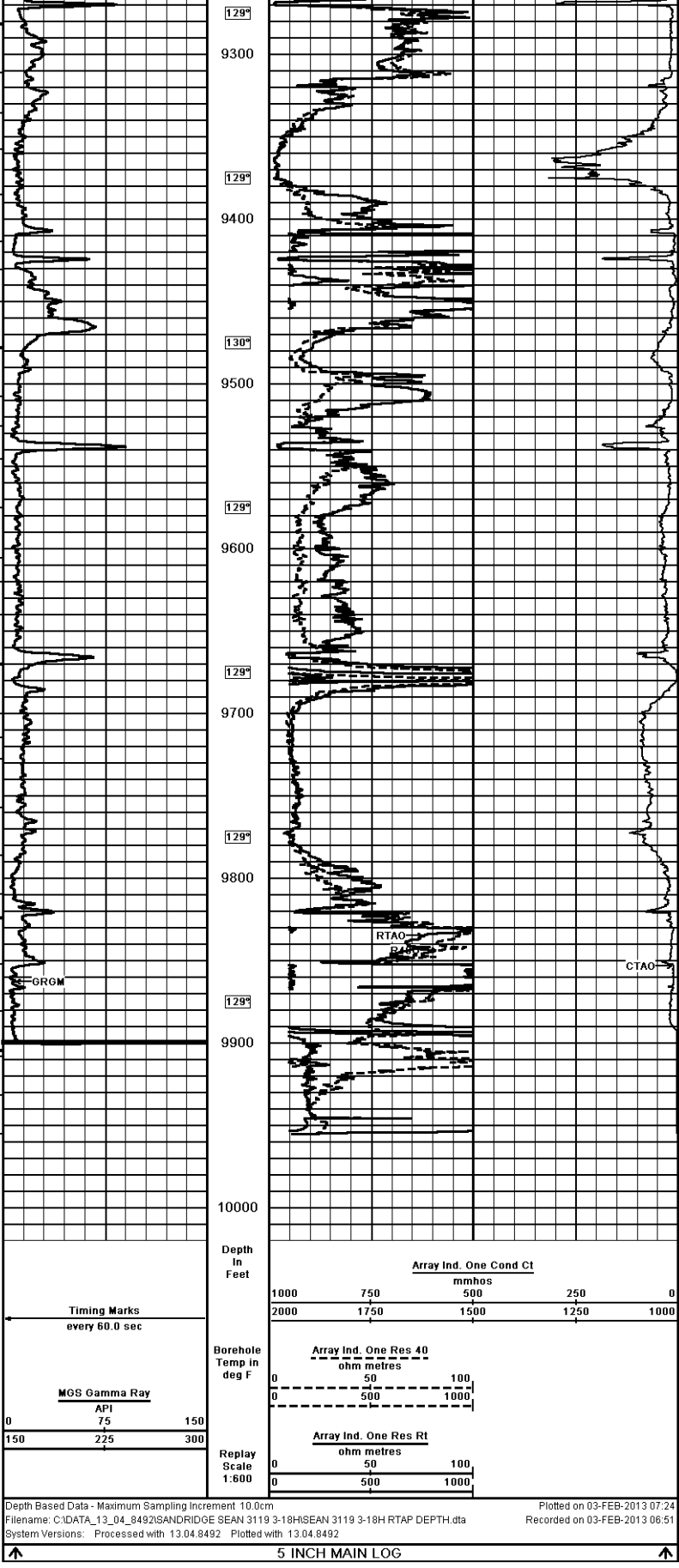
Weatherford®











COMPANY	SANDRIDGE ENERGY				
WELL	SEAN 3119 3-18H				
FIELD	ARLIE NE				
PROVINCE/COUNTY	COMANCHE				
COUNTRY/STATE	U.S.A. / KANSAS				
Elevation Kelly Bushing	2156.00	feet	First Reading	9948.00	feet
Elevation Drill Floor	2156.00	feet	Depth Driller	9971.00	feet
Elevation Ground Level	2136.00	feet	Depth Logger	9971.00	feet

