ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

Weatherford®

COMPANY	MCCOY PETROLEUM CORPORATION
WELL	UMCC A 1-17
FIELD	WILDCAT
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2310' FSL & 990' FWL OF THE _ NE NW SW

SEC	TWP	RGE
17	30S	30W

API Number 15-119-21363
Permit Number

Other Services
MPD/MDN
MAI/MFE
MML

Permanent Datum GL, Elevation 2816 feet
Log Measured From KB
Drilling Measured From KB AT 11 FEET

Elevations:	feet
KB	2827.00
DF	2825.00
GL	2816.00

Date	04-MAR-2014					
Run Number	ONE					
Service Order	5872-81112334					
Depth Driller	5700.00	feet				
Depth Logger	5702.00	feet				
First Reading	5699.00	feet				
Last Reading	1829.00	feet				
Casing Driller	1828.00	feet				
Casing Logger	1829.00	feet				
Bit Size	7.875	inches				
Hole Fluid Type	CHEM					
Density / Viscosity	9.30	lb/USg	62.00	CP		
PH / Fluid Loss	10.00		8.00	ml/30Min		
Sample Source	FLOW LINE					
Rm @ Measured Temp	1.40 @ 70.0	ohm-m				
Rmf @ Measured Temp	1.12 @ 70.0	ohm-m				
Rmc @ Measured Temp	1.68 @ 70.0	ohm-m				
Source Rmf / Rmc	CALC		CALC			
Rm @ BHT	0.83 @118.0	ohm-m				
Time Since Circulation	4 HRS					
Max Recorded Temp	118.00	deg F				
Equipment / Base	13057		LIB			
Recorded By	D. COLE					
Witnessed By	D. WILLIAMS					
JOB #	LB 14-063					

BOREHOLE RECORD

Last Edited: 04-MAR-2014 07:55

Bit Size inches	Depth From feet	Depth To feet
7.875	1828.00	5700.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
CASING	8.625	0.00	1828.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- MCG, MML, MDN, MPD, MFE, AND MAI RAN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
  0.5 INCH STANDOFF USED ON MFE.
  TWO 0.5 INCH STANDOFFS USED ON MSS.
  0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO 4000 FEET: 600 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 4000 FEET: 320 CU. FT.

- RIG: STIRLING

- ENGINEER: D. COLE

- OPERATOR(S): K. PHILLIPS AND C. RAMIREZ

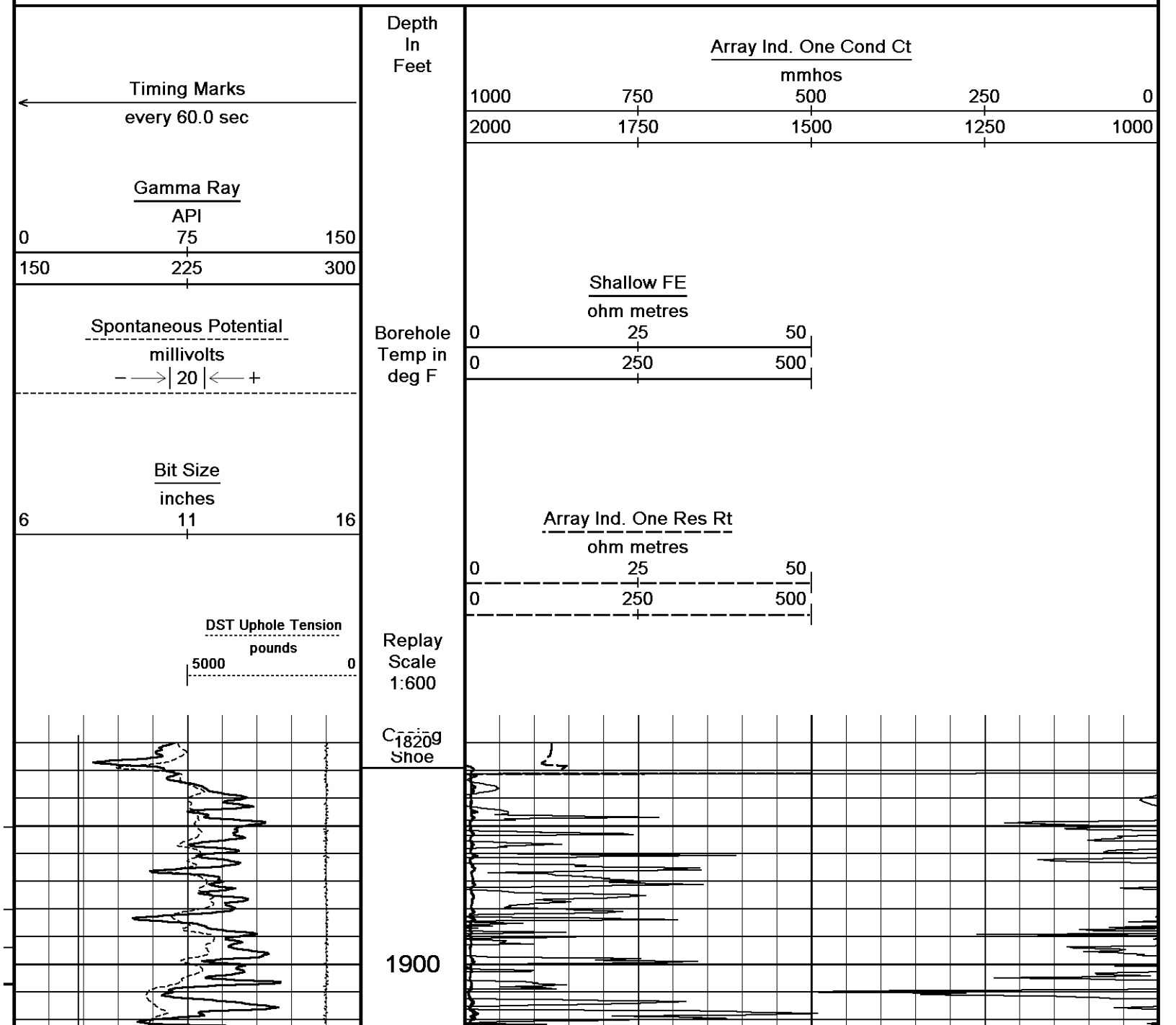
- LCM: 6 LBS/PBL

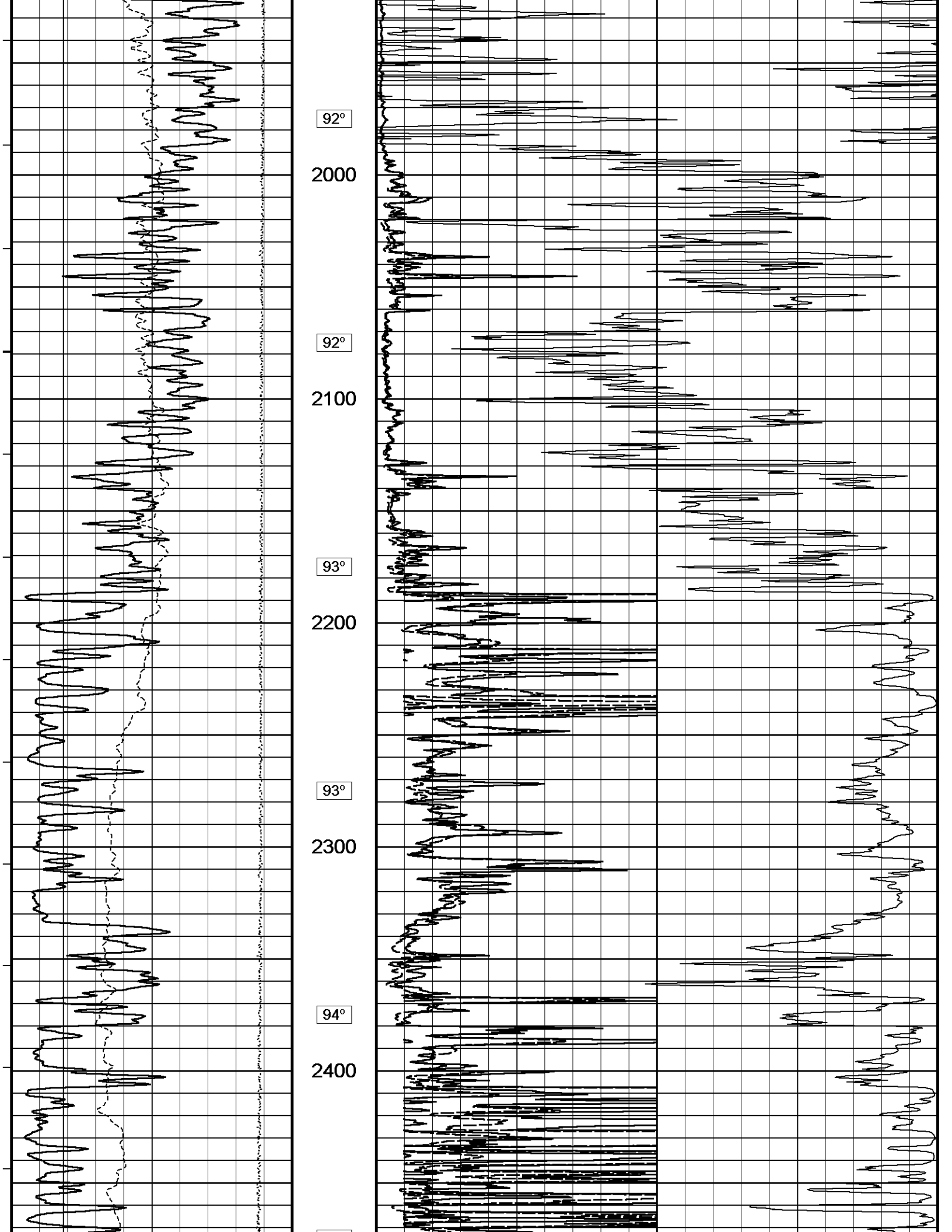
- CHLORIDES: 1800 PPM

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

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-MAR-2014 13:47
Filename: C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 MAIN.dta — Recorded on 04-MAR-2014 10:53
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

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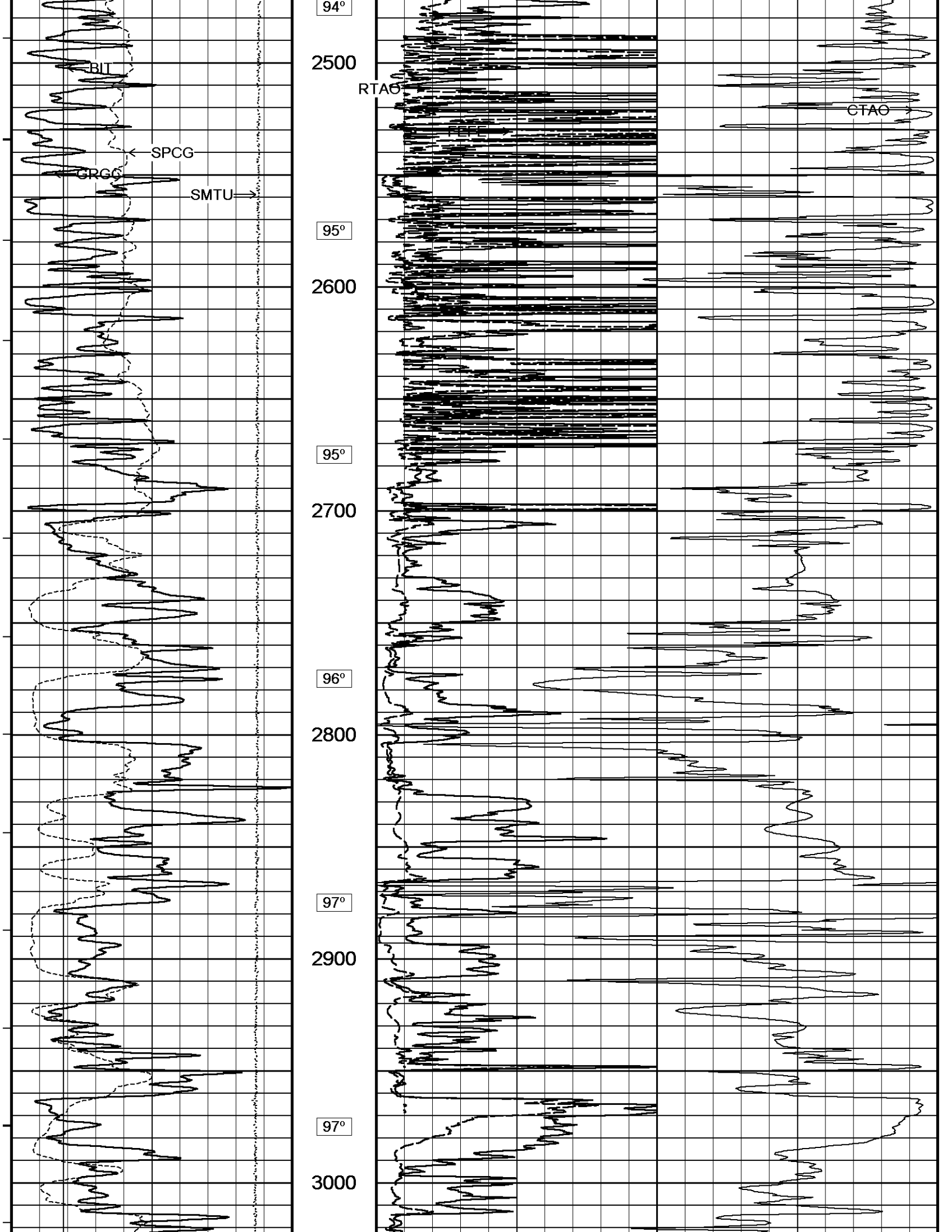
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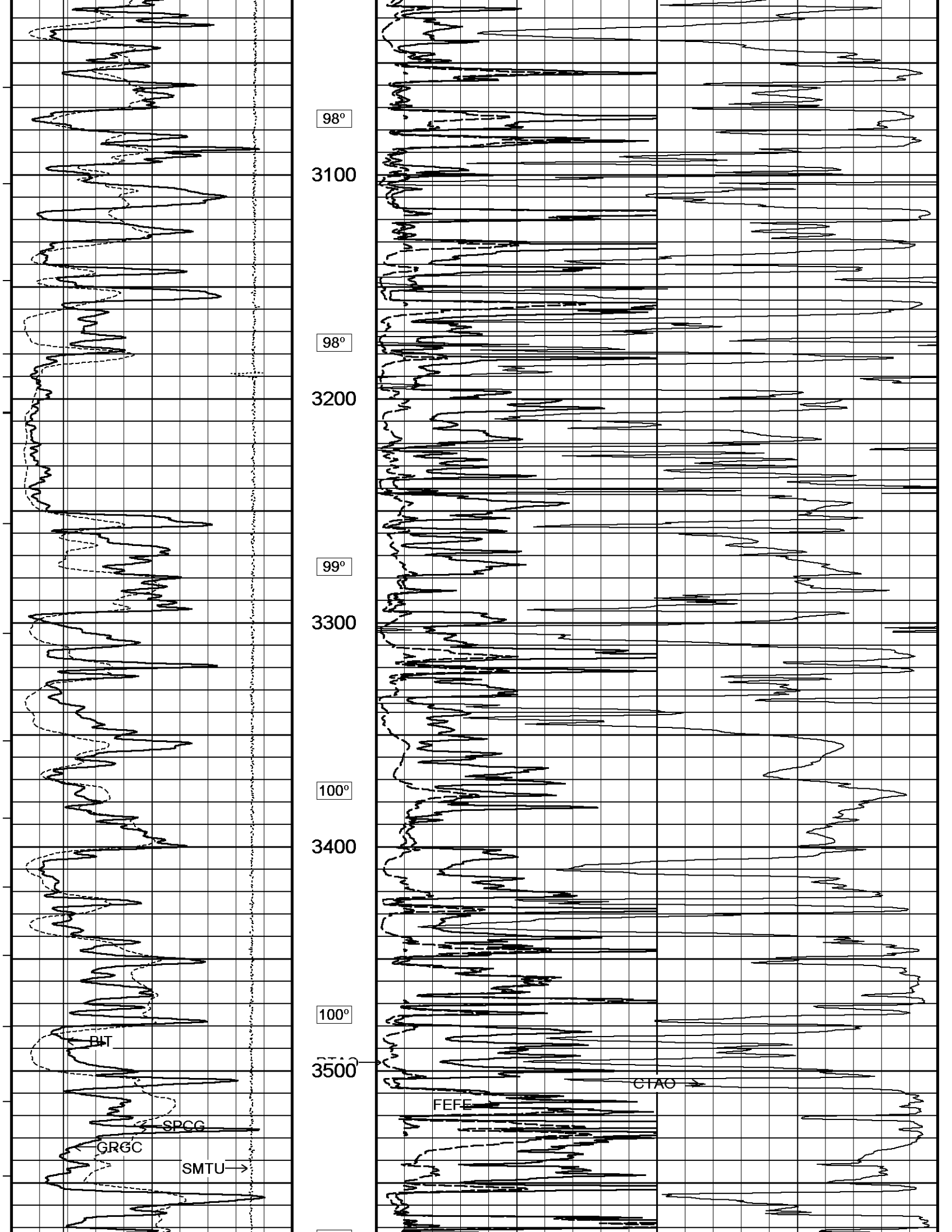
2900
97°
3000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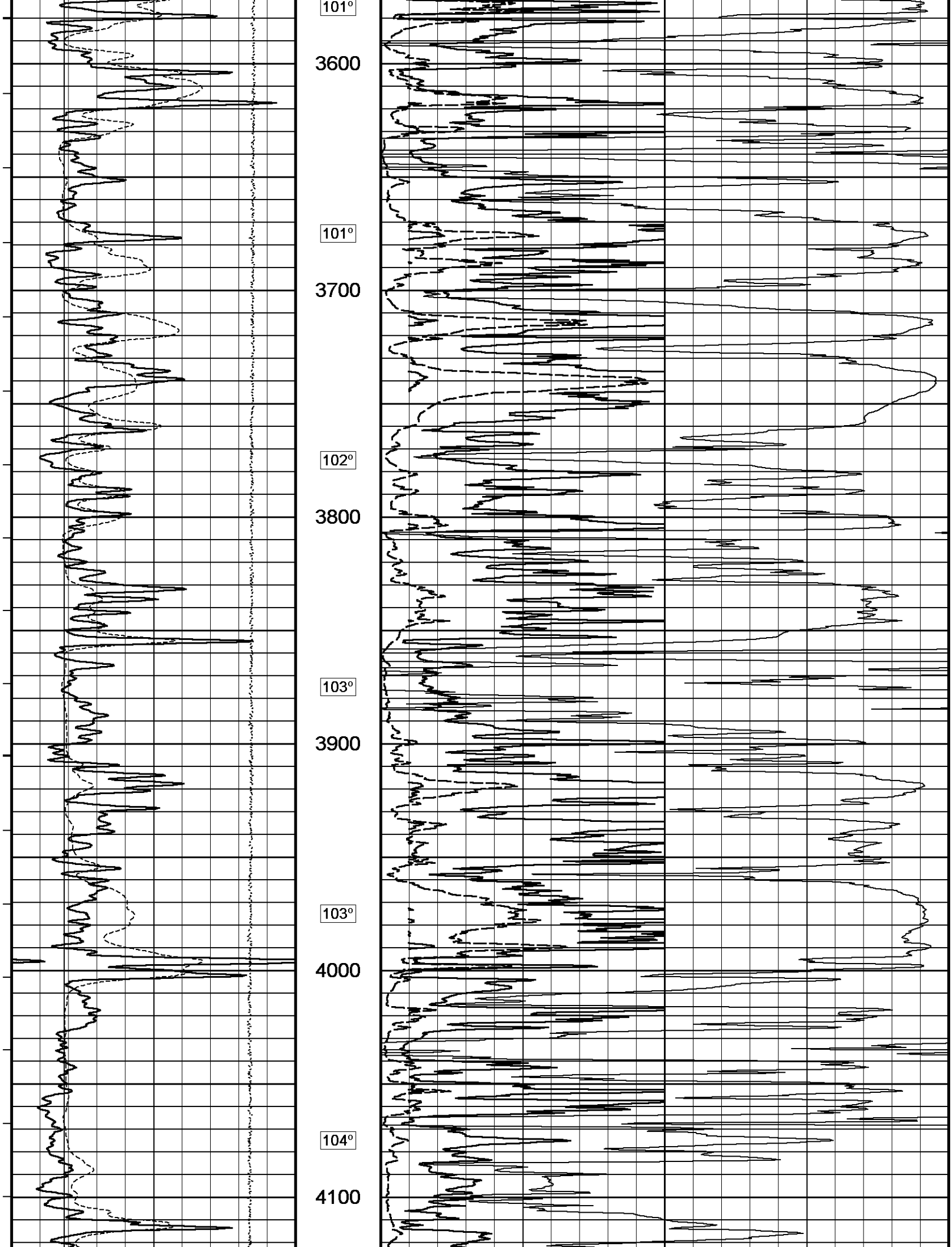
SPCG
GRGC
SMTU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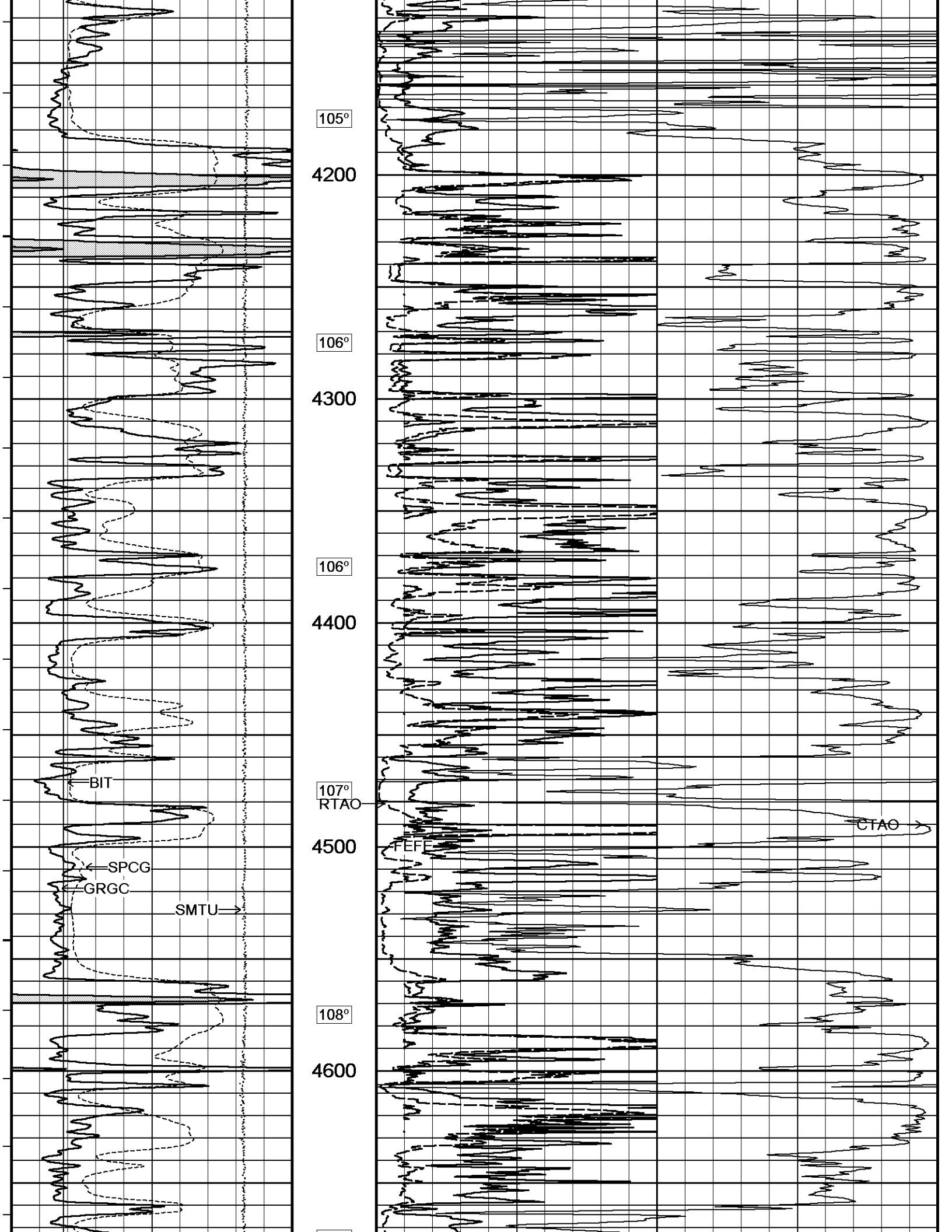
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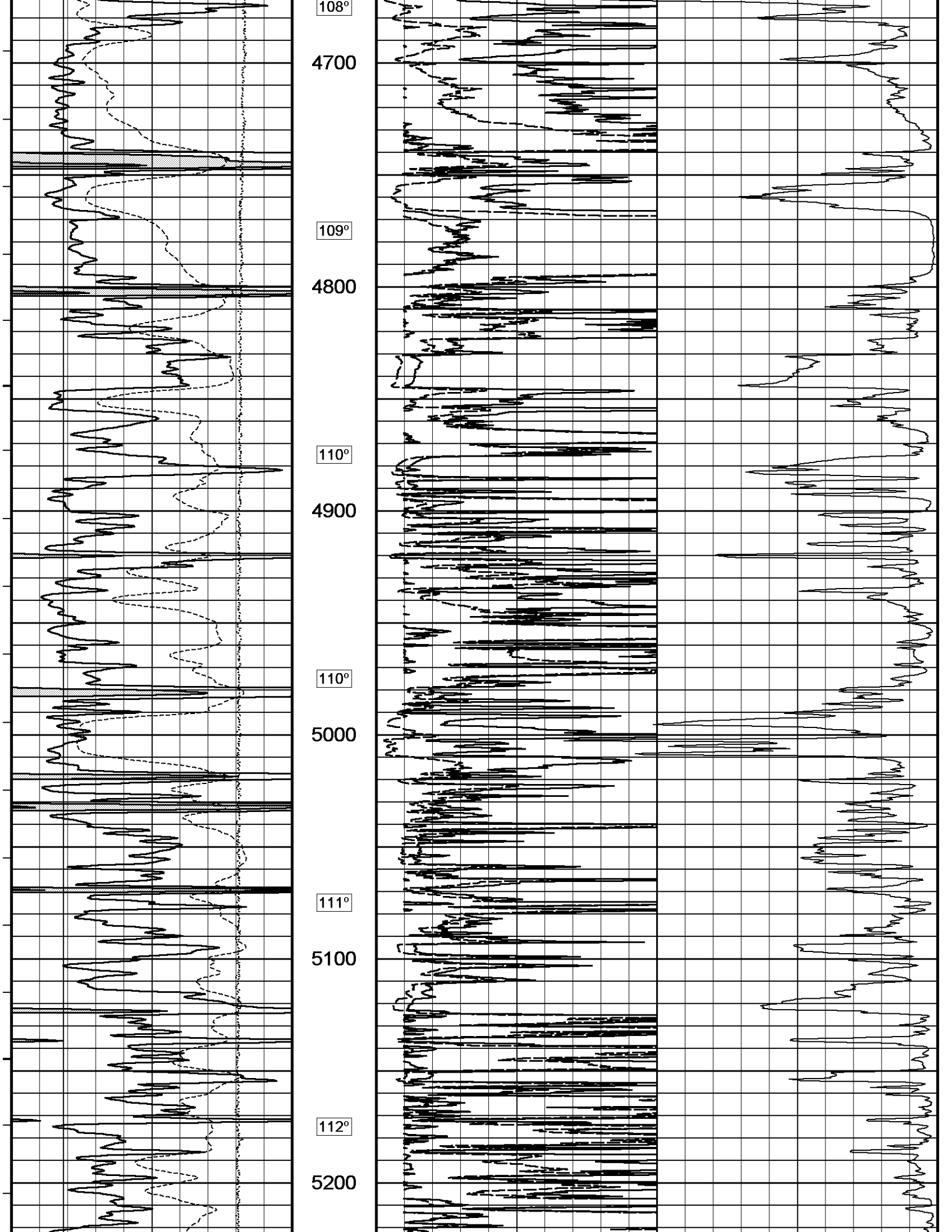
CTAO
4500
FEFE
SPCG
GRGC
SMTU
108°
4600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112°
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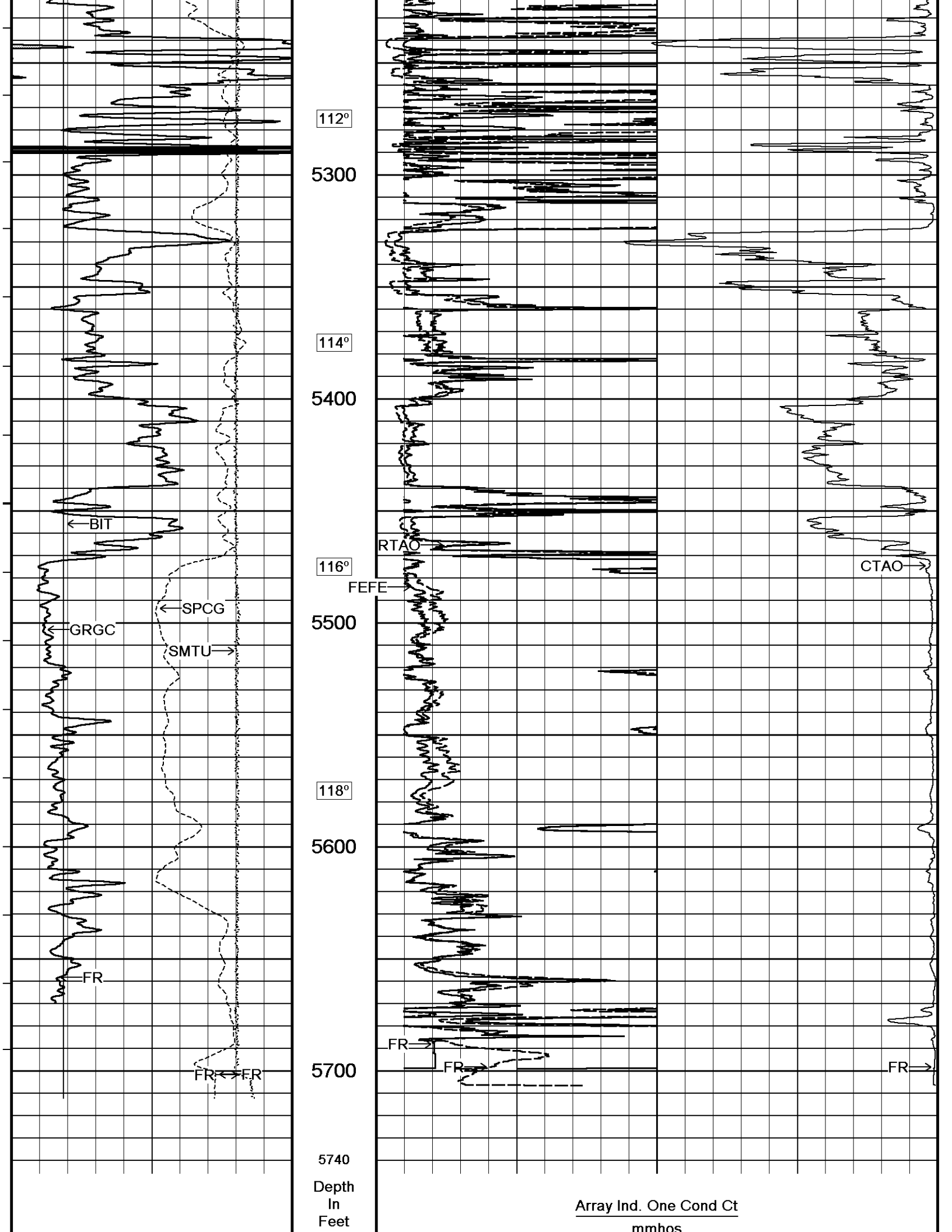
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5300
114°
5400
BIT
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116°
CTAO
FEFE
SPCG
5500
GRGC
SMTU
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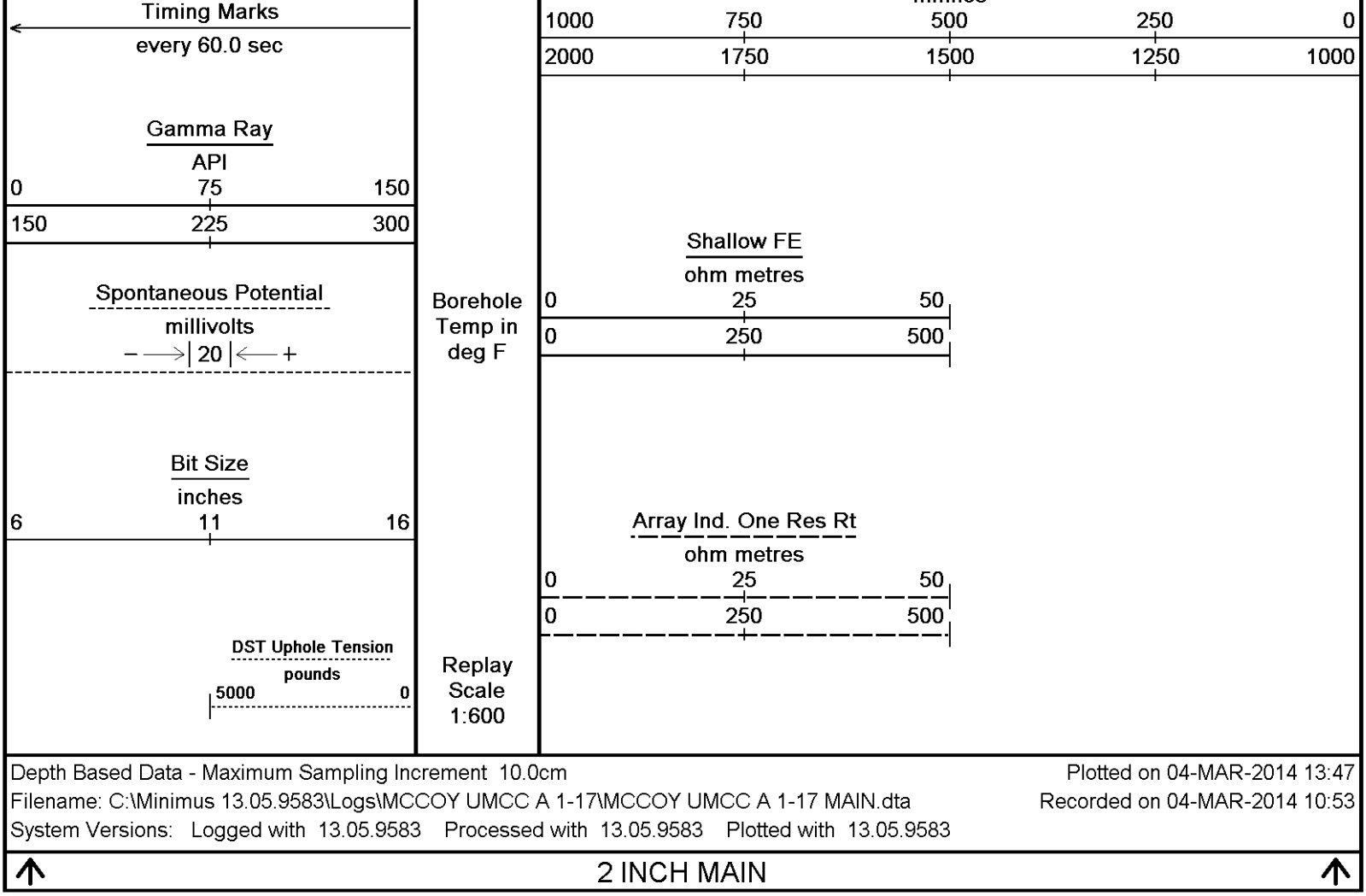
5600
FR
FR
FR
FR
FR
5700
5740
Depth
In
Feet
Array Ind. One Cond Ct
mmhos



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-MAR-2014 13:47
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2 INCH MAIN

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-MAR-2014 13:47
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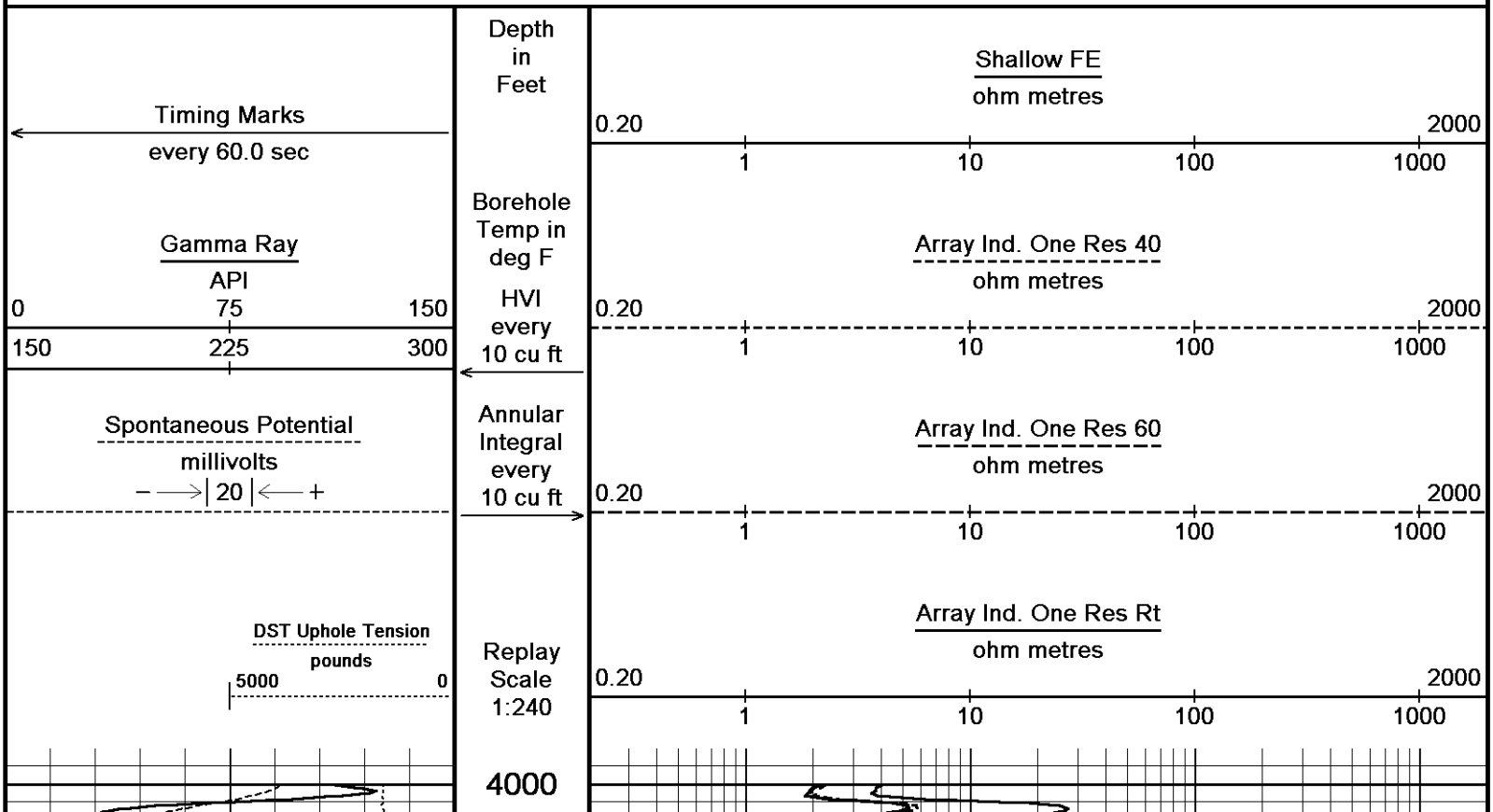

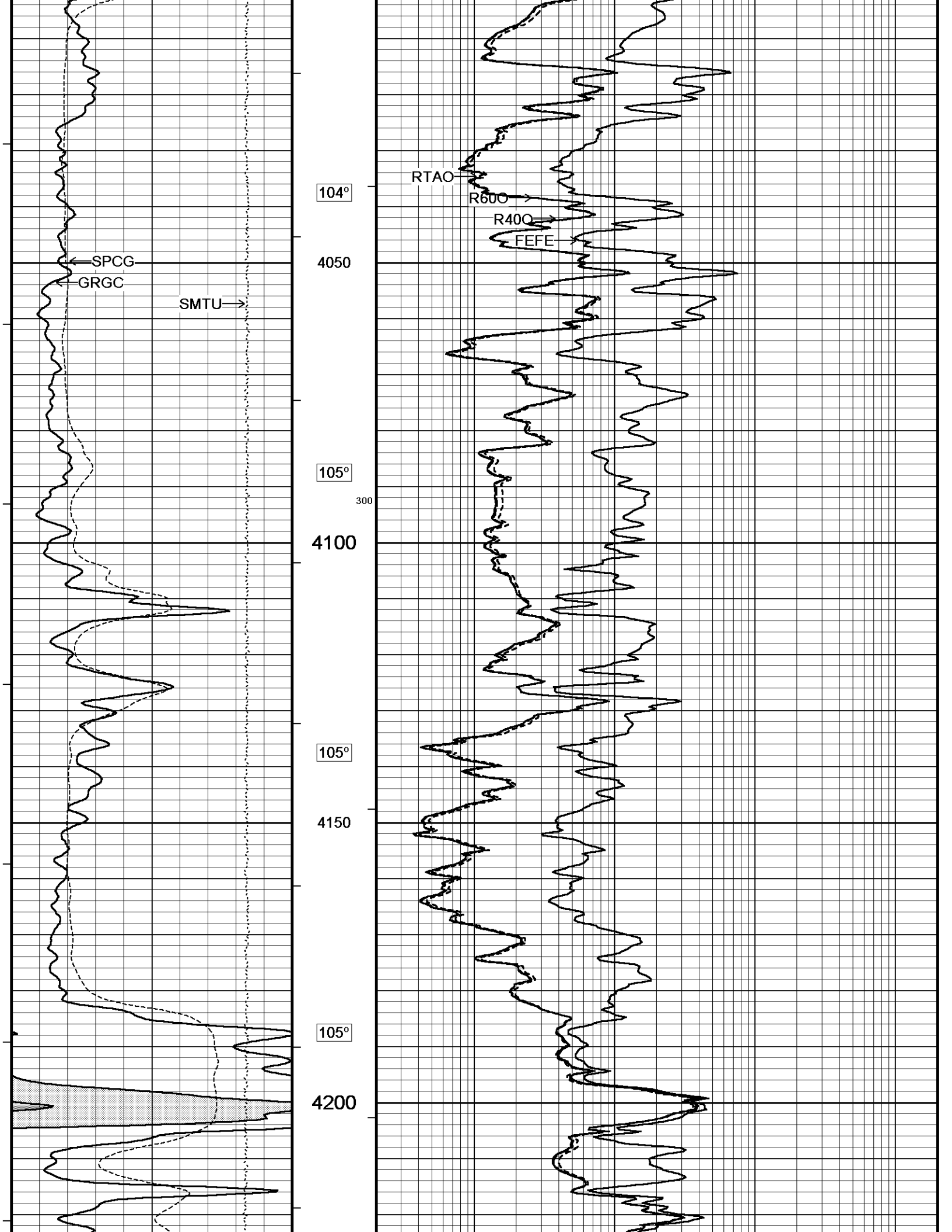
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R40O
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SPCG
GRGC
SMTU
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4100
105°
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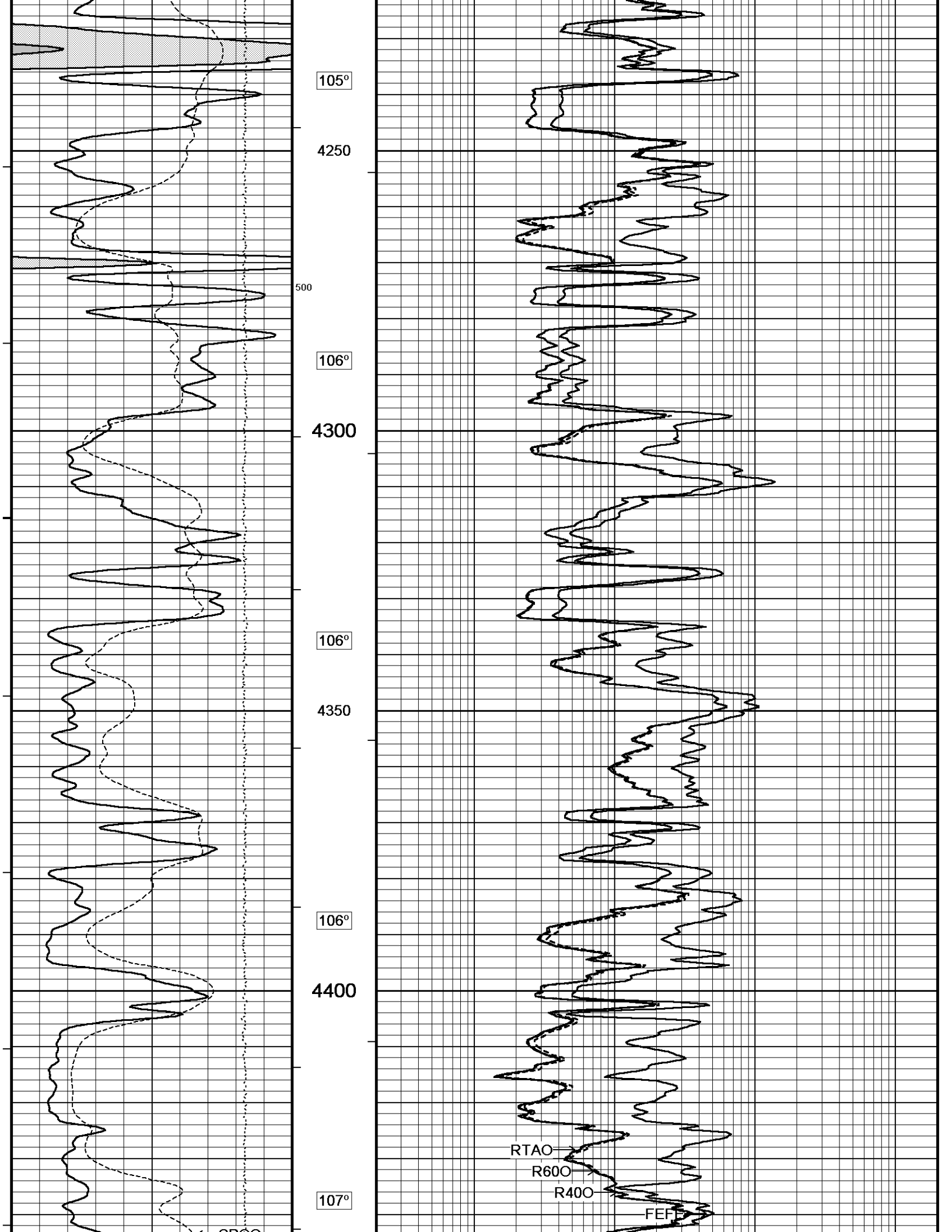
105°
4200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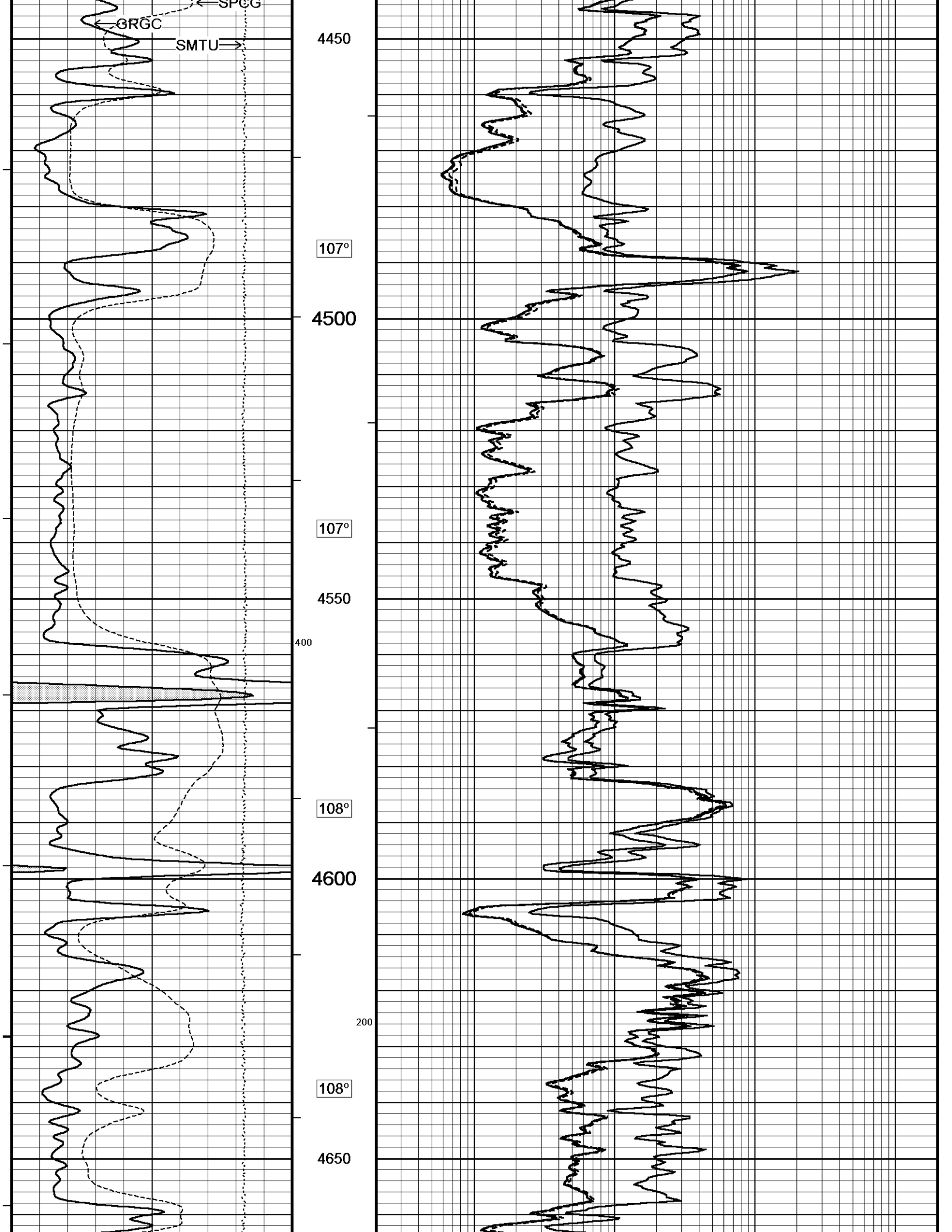
4400
107°
RTAO
R60O
R40O
FEFF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SMTU
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400
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4600
200
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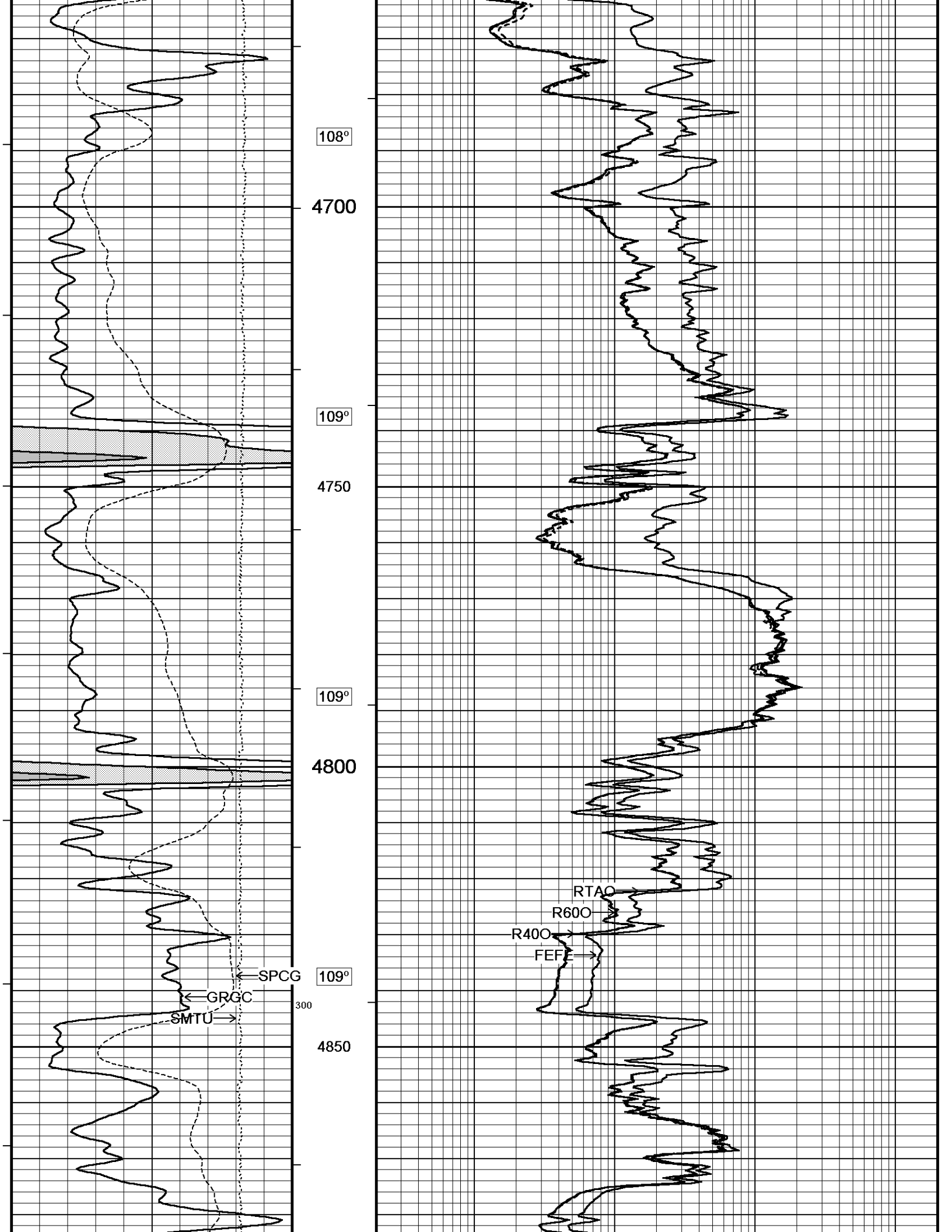
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GRGC
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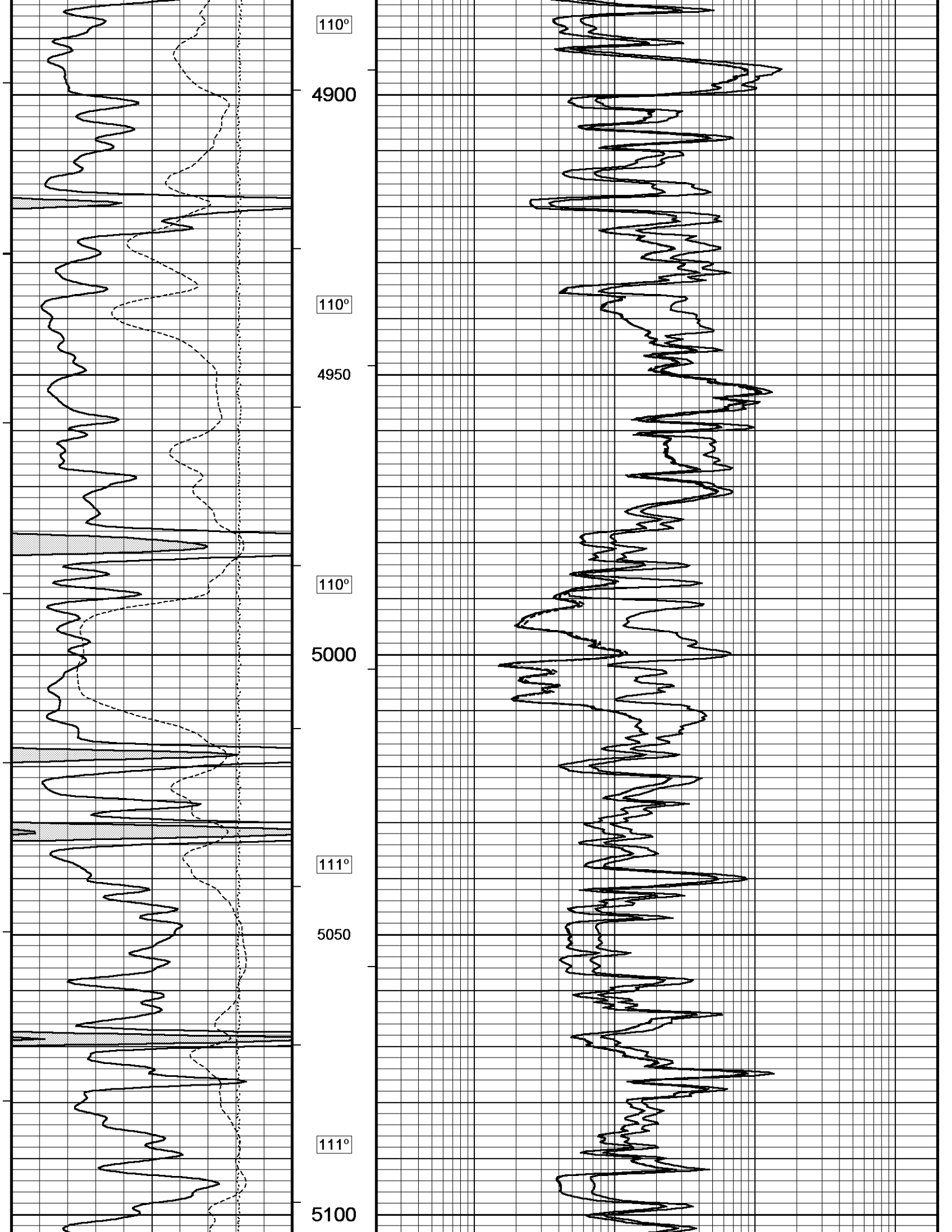
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111°
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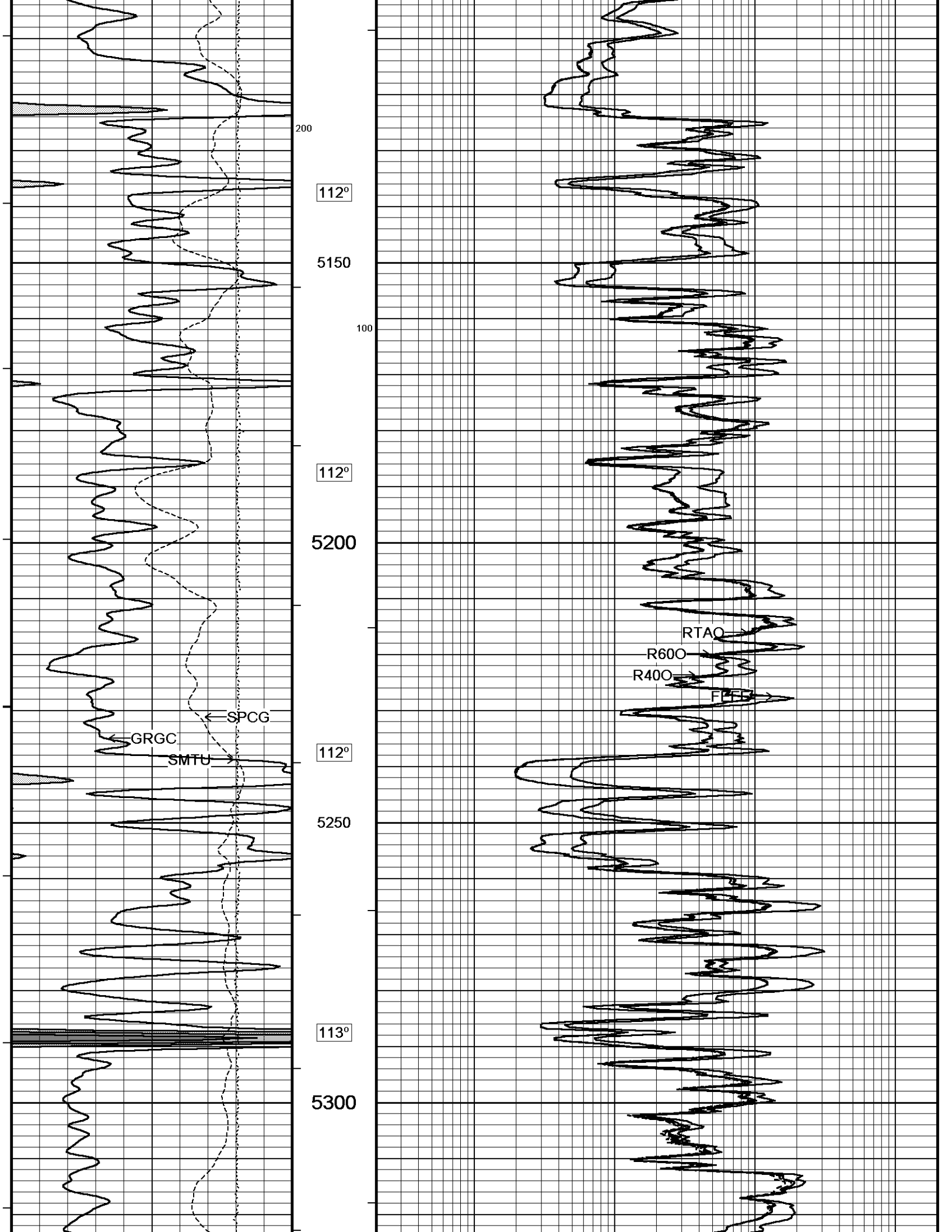
200
112°
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R40O
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GRGC
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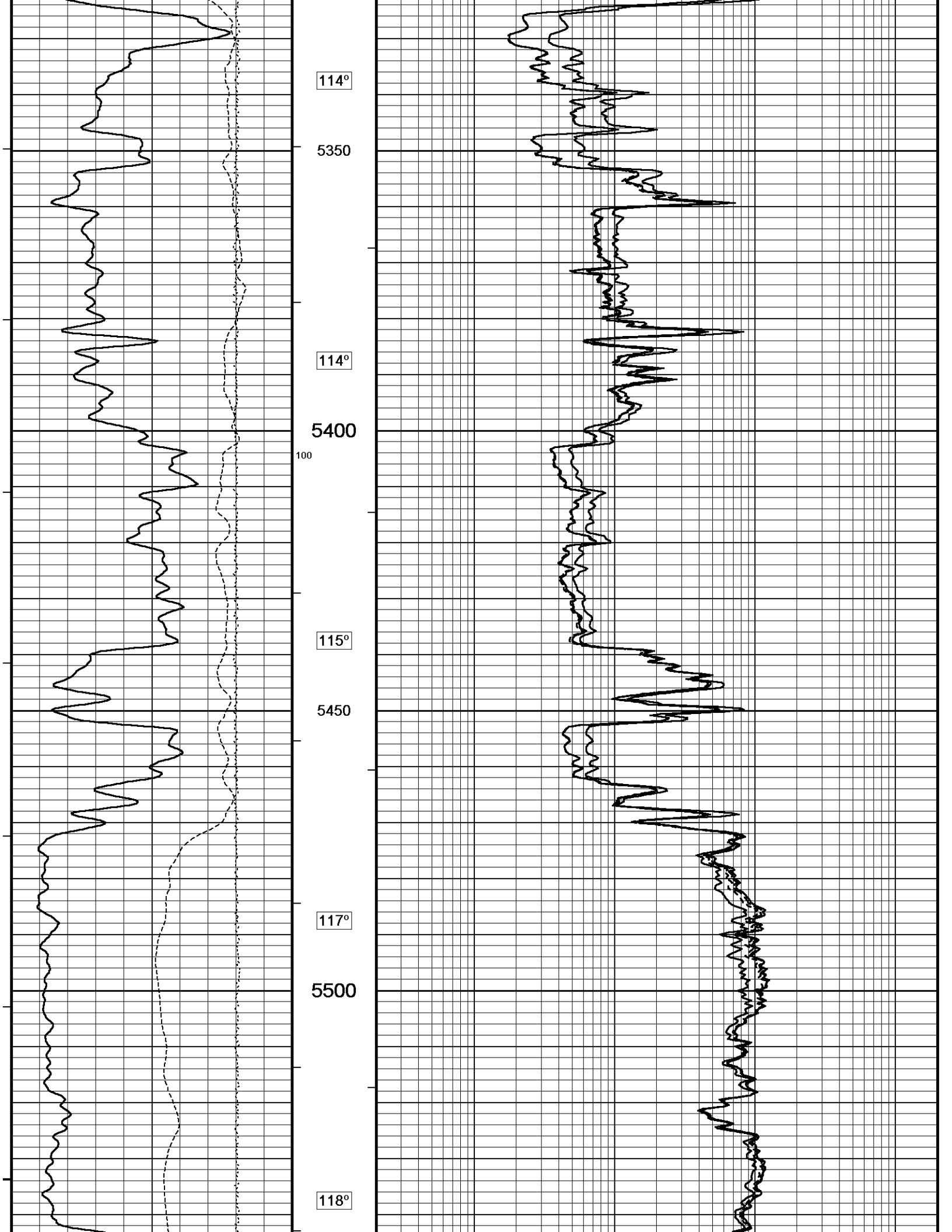
5250
113°
5300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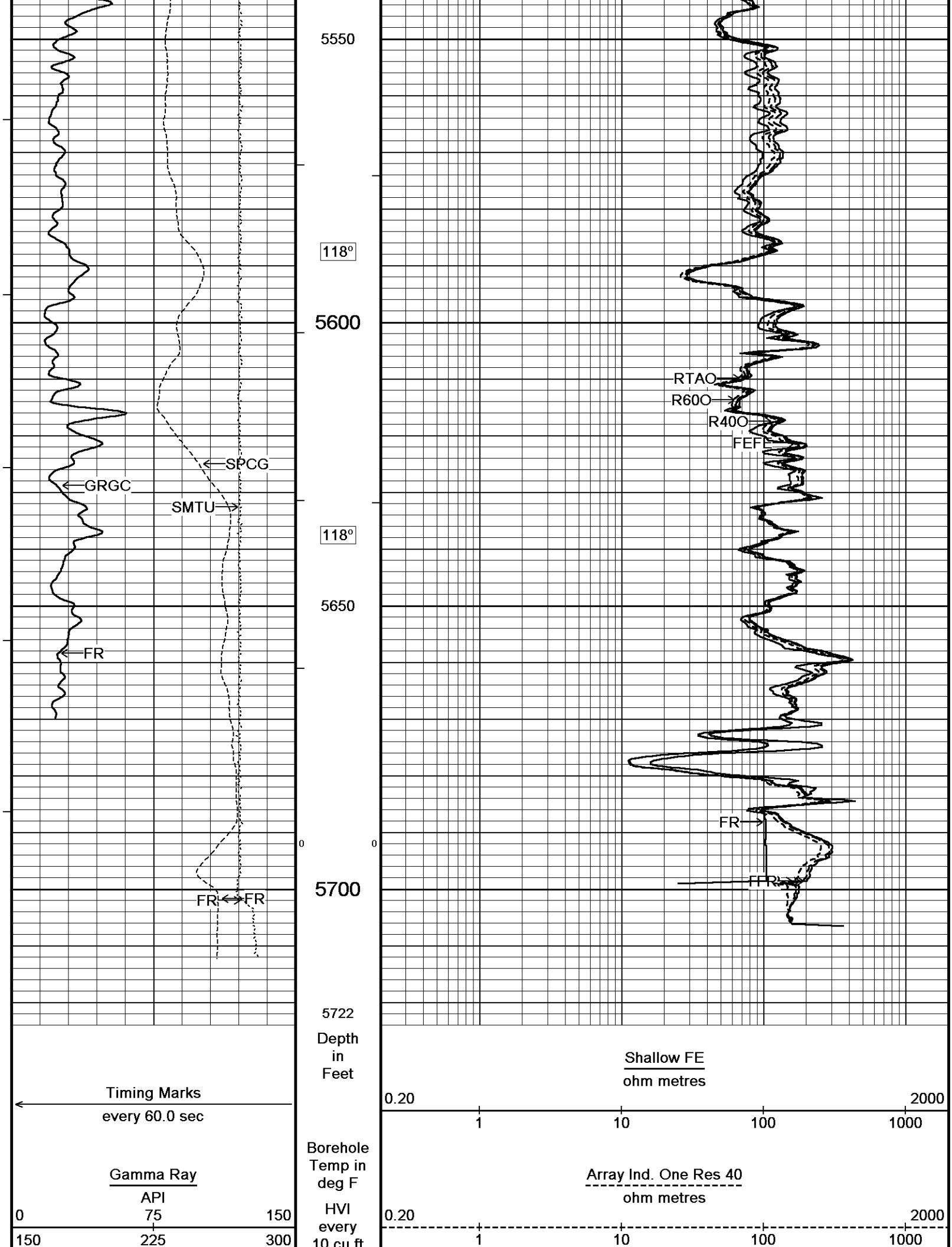
5500
118°


5550
118°
5600
RTAO
R60O
R40O
FEFE
SPCG
GRGC
SMTU
118°
5650
FR
0
0
5700
FR
FR
FR
FR
5722
Depth in Feet
Timing Marks
every 60.0 sec
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
HVI every 10 cu ft
Array Ind. One Res 40
ohm metres
0.20
2000
1
10
100
1000

Spontaneous Potential
millivolts
– → | 20 | ← +

DST Uphole Tension
pounds
5000 0

Annular Integral every 10 cu ft

Replay Scale 1:240

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

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5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 04-MAR-2014 13:47
Filename: C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 REPEAT3.dta
Recorded on 04-MAR-2014 10:05
System Versions: Processed with 13.05.9583 Plotted with 13.05.9583

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

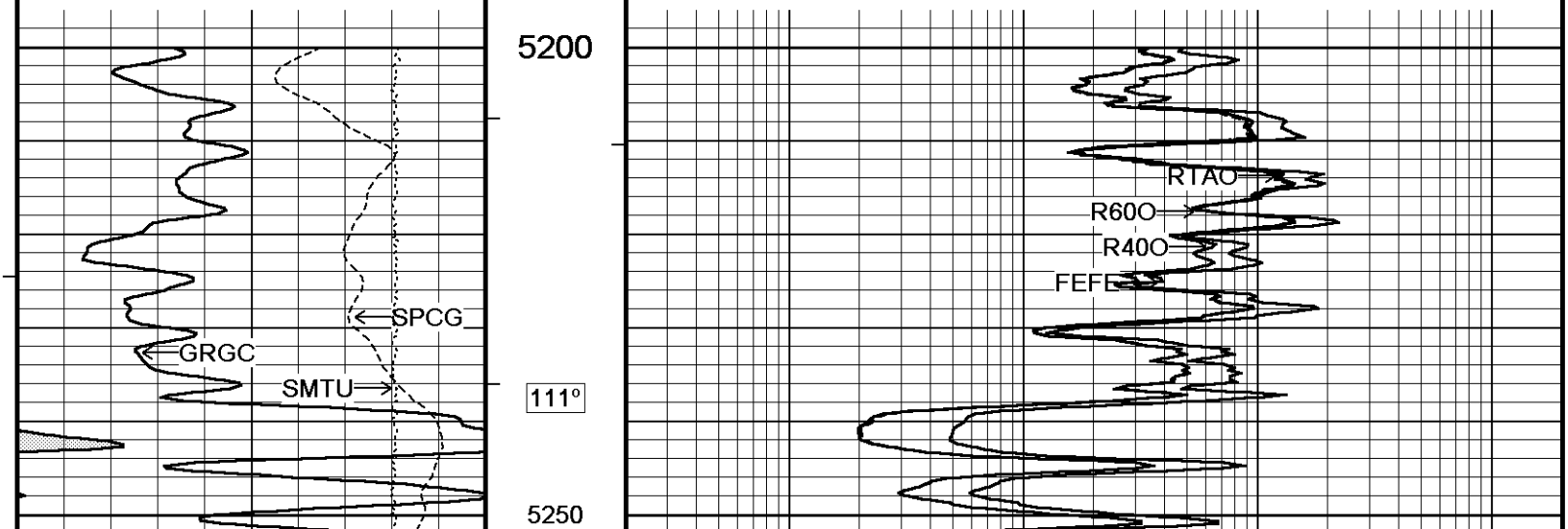
Replay Scale 1:240

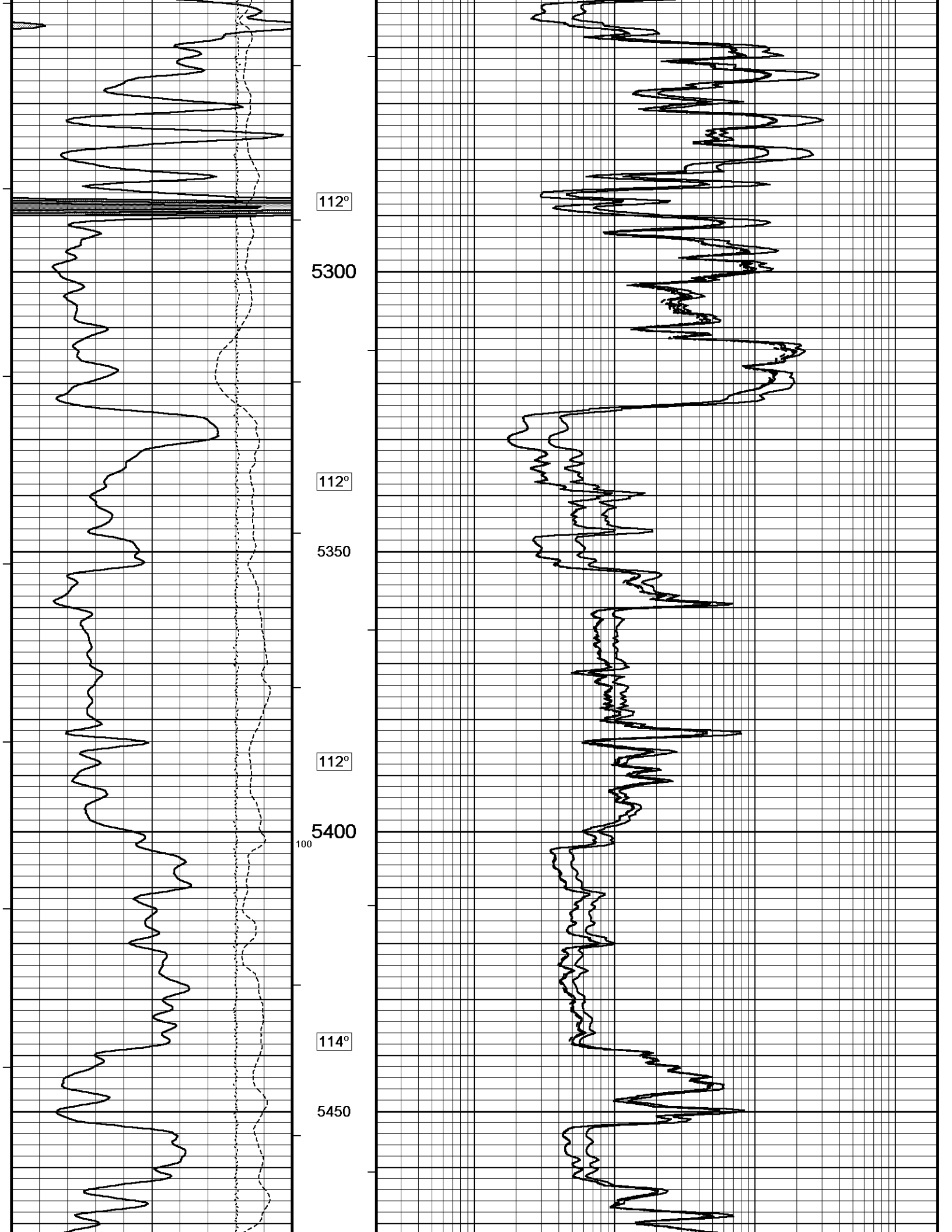
Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 40
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

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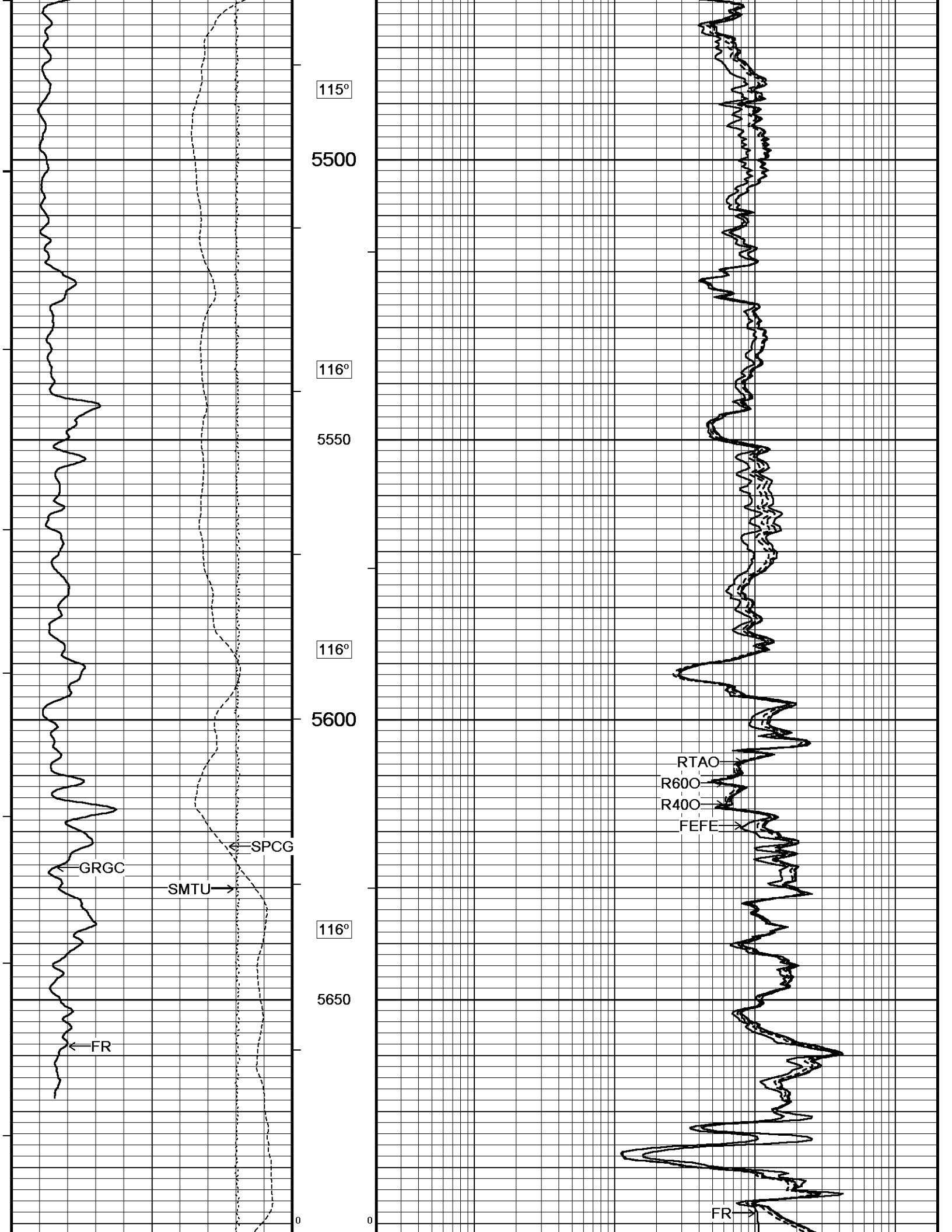
5400
100
114°
5450


115°
5500
116°
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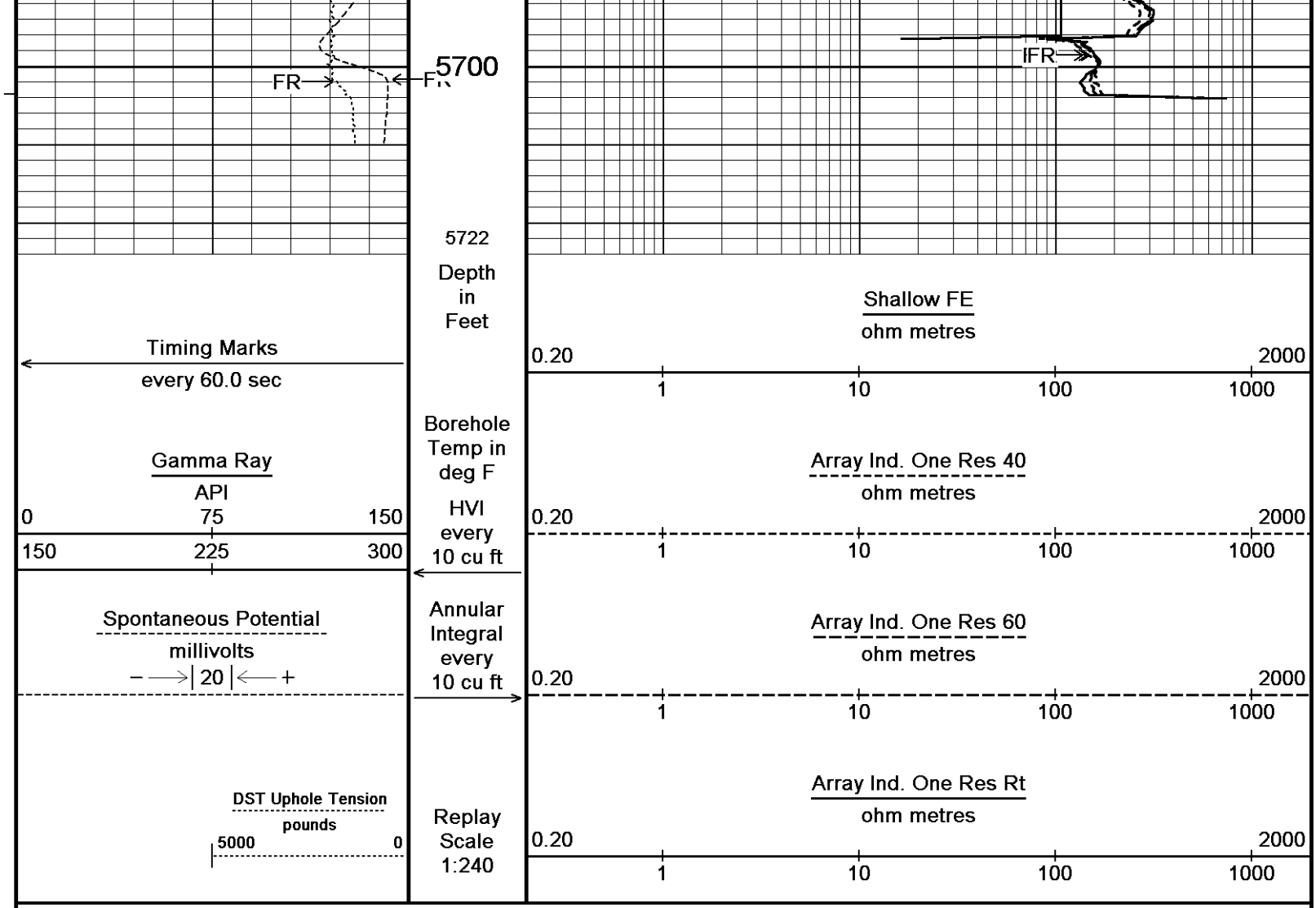
R60O
R40O
FEFE
FR
0
0



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-MAR-2014 13:47

Filename: C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 REPEAT3.dta — Recorded on 04-MAR-2014 10:05

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REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 REPEAT3.dta

General Constants All 000 — Last Edited on 04-MAR-2014,08:13

General Parameters		
Mud Resistivity	1.400	ohm-metres
Mud Resistivity Temperature	70.000	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	5.500	inches
Caliper for Differential Caliper	MMR 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	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 443

Field Calibration on 04-MAR-2014 02:57

Field Calibration on 04-MAR-2014 03:57

	Measured	Calibrated (API)
Background	75	48
Calibrator (Gross)	1215	773
Calibrator (Net)	1140	725

Gamma Constants MCG-D.K 443

Last Edited on 04-MAR-2014,07:49

Gamma Calibrator Number	GRC38	
Mud Density	1.11	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Centred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 443

Field Calibration on 04-MAR-2014,09:07

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-D.K 443

Last Edited on 04-MAR-2014,09:07

Pre-filter Length	11

FE Calibration MFE-B.J 352

Base Calibration on 17-JAN-2014 13:04
Field Check on 04-MAR-2014 03:40

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	9.9	1.3
Reference 2	962.7	126.8
Base Check		281.7
Field Check		281.9

FE Constants MFE-B.J 352

Last Edited on 04-MAR-2014,07:50

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.	MCG External Temperature	
Stand-off	0.5	inches

Induction Calibration MAI-A.A 45

Base Calibration on 21-MAY-2013,16:47
Field Check on 04-MAR-2014 03:38

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	14.4	472.6	9.3	966.2
2	5.7	374.0	7.6	821.4
3	3.4	261.2	5.2	566.0
4	2.5	133.9	2.6	279.2

Array Temperature 0.0 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			18.9	3850.9
2			31.9	3628.7
3			28.8	3049.1
4			18.4	2079.0
Deep			16.2	1911.2
Medium			42.7	4060.0
Shallow			49.9	5481.8

Array Temperature 64.7 Deg F

Induction Constants MAI-A.A 45

Last Edited on 04-MAR-2014,07:50

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	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG 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	

Caliper Calibration MPD-B 31

Base Calibration on 24-FEB-2014 03:42
Field Calibration on 04-MAR-2014,10:20

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18272	3.99
2	26496	5.98
3	35155	7.97
4	43472	9.86
5	52816	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.76	7.81

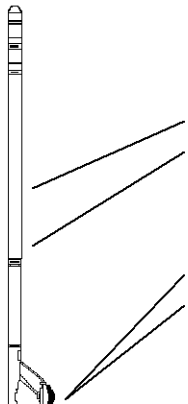
DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 REPEAT3.dta

CBH-C, Cablehead, 11 pin
CBH-CA 170 LG: 2.40 ft WT: 24.3 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 443 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in



43.50 ft	GRGC - Gamma Ray
40.59 ft	CGXT - MCG External Temperature
33.24 ft	MINV - MMR MicroLog Inverse
33.24 ft	MNRL - MMR MicroLog Normal

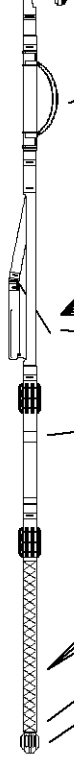
Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 51.18 ft Weight: 407.9 lb



28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DPRL - Limestone Density Por.
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
3.34 ft	RTAO - Array Ind. One Res Rt
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	MCCOY PETROLEUM CORPORATION
WELL	UMCC A 1-17
FIELD	WILDCAT
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2827.00	feet	First Reading	5699.00	feet
Elevation Drill Floor	2825.00	feet	Depth Driller	5700.00	feet
Elevation Ground Level	2816.00	feet	Depth Logger	5702.00	feet

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ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

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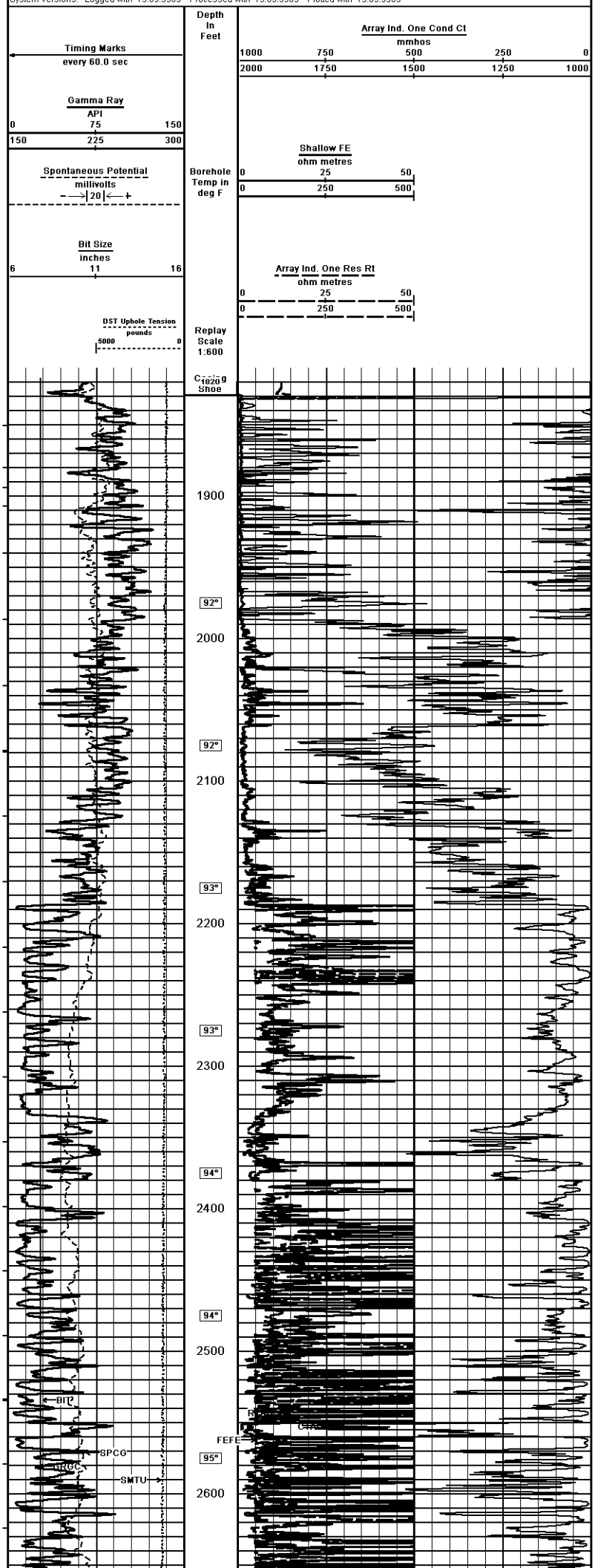
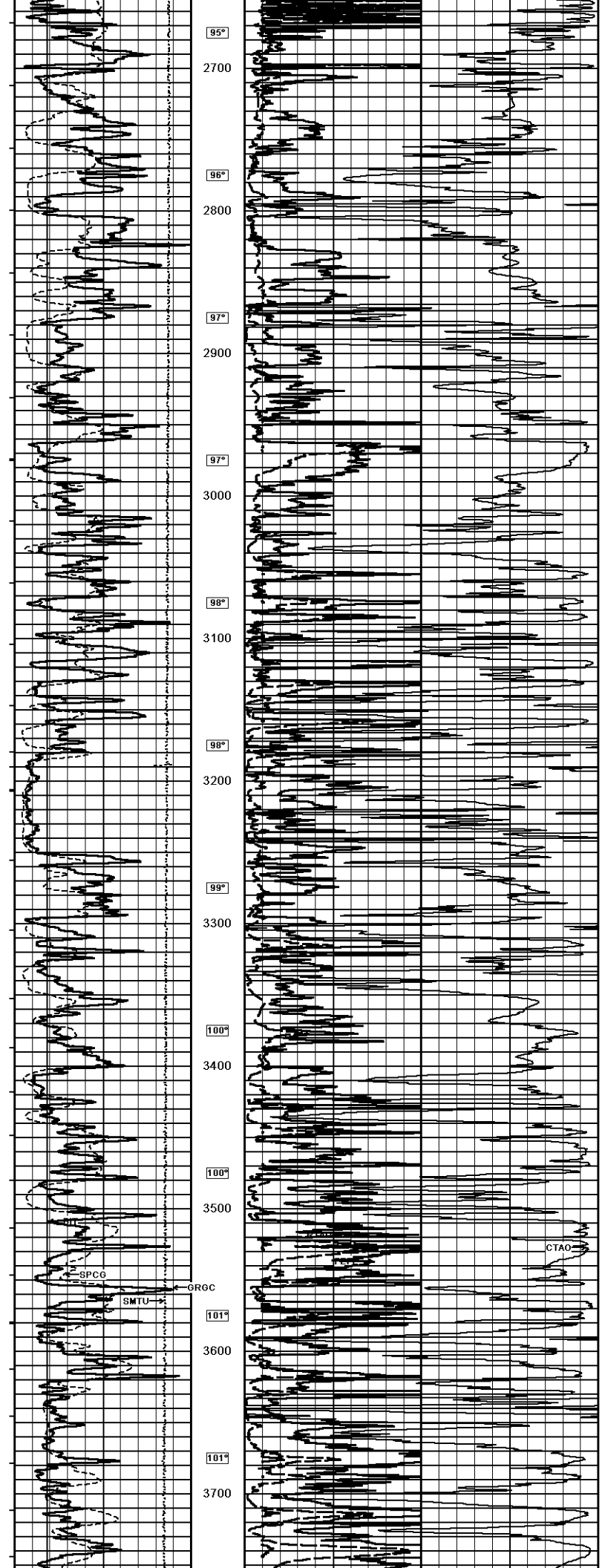
COMPANY: MCCOY PETROLEUM CORPORATION
WELL: UMCC A 1-17
FIELD: WILDCAT
PROVINCE/COUNTY: MEADE
COUNTRY/STATE: U.S.A. / KANSAS
LOCATION: 2310' FSL & 990' FWL OF THE NE NW SW
SEC: 17 TWP: 30S RGE: 30W
API Number: 15-119-21363
Other Services: MPD/MDN MAI/MFE IMML
Permanent Datum: GL Elevation 2816 feet
Log Measured From: KB
Drilling Measured From: KB AT 11 FEET

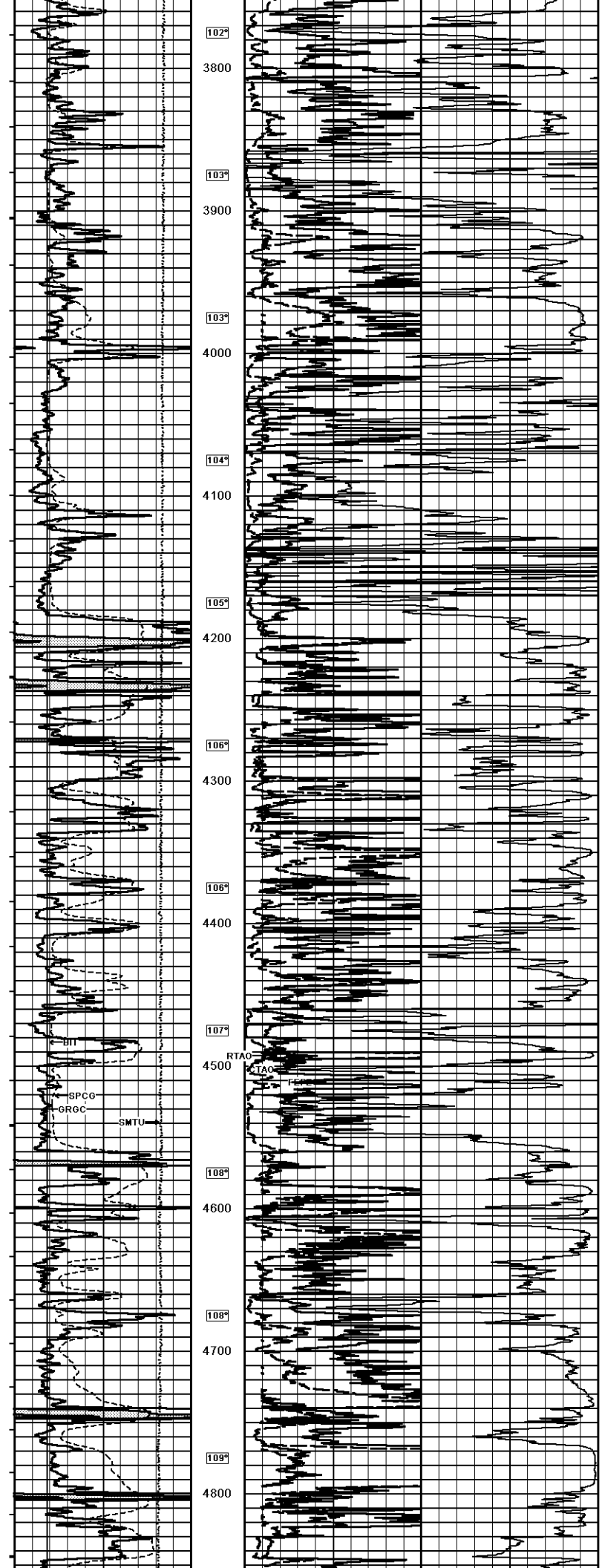
Elevations:						
KB	2827.00	feet				
DF	2825.00					
GL	2816.00					
Date	04-MAR-2014					
Run Number	ONE					
Service Order	5872-811112334					
Depth Driller	5700.00	feet				
Depth Logger	5702.00	feet				
First Reading	5699.00	feet				
Last Reading	1829.00	feet				
Casing Driller	1828.00	feet				
Casing Logger	1829.00	feet				
Bit Size	7.875	inches				
Hole Fluid Type	CHEM					
Density/Viscosity	9.30	lbm/USg	62.00	CP		
PH / Fluid Loss	10.00		8.00	ml/30Min		
Sample Source	FLOWLINE					
Rm @ Measured Temp	1.40 @ 70.0	ohm-m				
Rmf @ Measured Temp	1.12 @ 70.0	ohm-m				
Rmc @ Measured Temp	1.68 @ 70.0	ohm-m				
Source Rmf / Rmc	CALC		CALC			
Rm @ BHT	0.83 @118.0	ohm-m				
Time Since Circulation	4 HRS					
Max Recorded Temp	118.00	deg F				
Equipment / Base	13057	LIB				
Recorded By	D. COLE					
Witnessed By	D. WILLIAMS					
JOB #	LB 14-063					

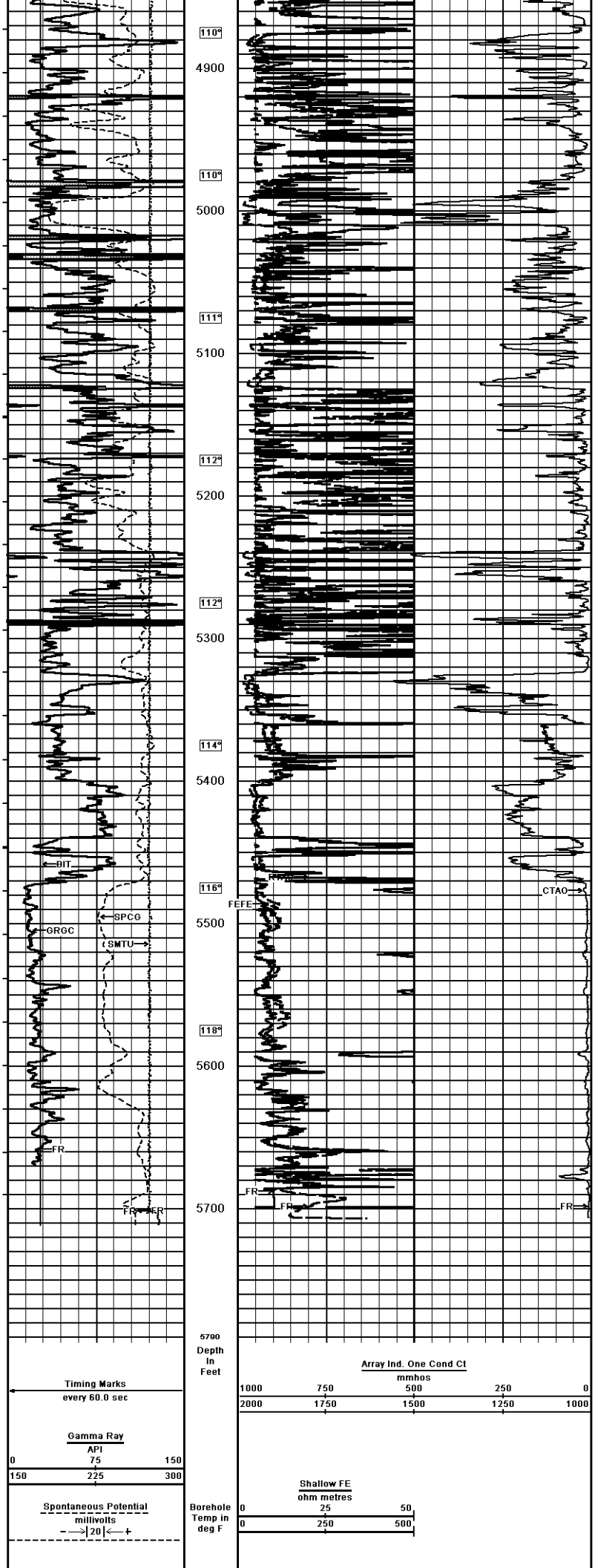
1 INCH MAIN

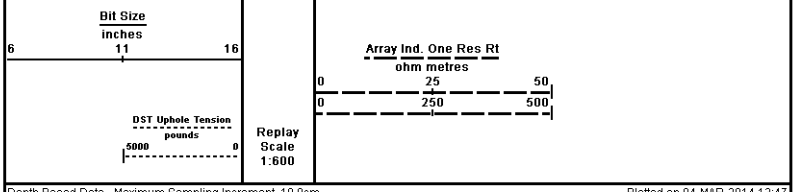
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 04-MAR-2014 13:47
Filename: C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 MAIN.dta
Recorded on 04-MAR-2014 10:53
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583


Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Spontaneous Potential
millivolts
20
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
Depth
In
Feet
Borehole
Temp in
deg F
Replay
Scale
1:600
Array Ind. One Cond Ct
mmhos
1000
750
500
250
0
2000
1750
1500
1250
1000
Shallow FE
ohm metres
0
25
50
0
250
500
Array Ind. One Res Rt
ohm metres
0
25
50
0
250
500
Casing
1820
Shoe
1900
92°
2000
92°
2100
93°
2200
93°
2300
94°
2400
94°
2500
95°
2600
BIT
SPCG
GRGC
SMTU
FEFE


95°
2700
96°
2800
97°
2900
97°
3000
98°
3100
98°
3200
99°
3300
100°
3400
100°
3500
CTAO
SPCG
GRGC
SMTU
101°
3600
101°
3700


102°
3800
103°
3900
103°
4000
104°
4100
105°
4200
106°
4300
106°
4400
107°
BIT
RTAO
4500
TAO
SPCG
GRGC
SMTU
108°
4600
108°
4700
109°
4800


110°
4900
110°
5000
111°
5100
112°
5200
112°
5300
114°
5400
116°
5500
118°
5600
5700
5790
BIT
GRGC
SPCG
SMTU
FR
FR
FEFE
FR
FR
CTAO
FR
Depth
In
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Spontaneous Potential
millivolts
20
Borehole
Temp in
deg F
Array Ind. One Cond Ct
mmhos
1000
750
500
250
0
2000
1750
1500
1250
1000
Shallow FE
ohm metres
0
25
50
0
250
500



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-MAR-2014 13:47

Filename: C:\Minimus 13.05.9583\Logs\MCCOY UMCC A 1-17\MCCOY UMCC A 1-17 MAIN.dta — Recorded on 04-MAR-2014 10:53

System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

1 INCH MAIN

COMPANY	MCCOY PETROLEUM CORPORATION
WELL	UMCC A 1-17
FIELD	WILDCAT
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