



# COMPACT TRIPLE COMBO QUICKLOOK LOG

**COMPANY** BILL BARRETT CORPORATION  
**WELL** GGU MILLER 24D-32-691  
**FIELD** GIBSON GULCH  
**PROVINCE/COUNTY** GARFIELD  
**COUNTRY/STATE** U.S.A. / COLORADO  
**LOCATION** SHL: 1225' FSL & 2288' FWL  
 BHL: 1184' FSL & 1990' FWL

**SEC** 32 **TWP** 6S **RGE** 91W **Other Services**  
**API Number** 05-045-19427  
**Permit Number**

**Permanent Datum G.L., Elevation 6120 feet**  
**Log Measured From K.B. @ 22 FEET above Permanent Datum**  
**Drilling Measured From K.B.**

**Elevations:**  
 KB 6142.00  
 DF 6141.00  
 GL 6120.00

Date	20-NOV-2010	
Run Number	ONE	
Depth Driller	7875.00	feet
Depth Logger	7878.00	feet
First Reading	7875.00	
Last Reading	788.00	
Casing Driller	788.00	feet
Casing Logger	788.00	feet
Bit Size	7.875	inches
Hole Fluid Type	LSND	
Density / Viscosity	10.70 lb/USg	50.00 CP
PH / Fluid Loss	8.80	7.20 ml/30Min
Sample Source	FLOW LINE	
Rm @ Measured Temp	1.81 @ 90.0	ohm-m
Rmf @ Measured Temp	1.45 @ 90.0	ohm-m
Rmc @ Measured Temp	2.17 @ 90.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.824 @202.0	ohm-m
Time Since Circulation	6 HOURS	
Max Recorded Temp	202.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13045	GD_JCT
Recorded By	D.KUNTZ	
Witnessed By	C.CROW	

## BOREHOLE RECORD

Last Edited: 20-NOV-2010 15:35

Bit Size inches	Depth From feet	Depth To feet
8.750	788.00	3697.00
7.880	3697.00	7875.00

## CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	788.00	36.00

## REMARKS

TOOLS: SHA, MCG, MDN, MPD, SKJ, MFE, AND MAI RAN IN COMBINATION

HARDWARE: MPD: (1) 8 INCH PROFILE PLATE  
 MAI: (1) 0.5 INCH STANDOFF  
 MDN: (1) DUAL BOWSPRING

2.68 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY WILL AFFECT REPEATABILITY AND DATA QUALITY.

UNDERGAUGE CALIPER READINGS FROM 7510-7550 FEET AND FROM 6600-6625 FEET REPEATED AND VERIFIED.

UNDERGAUGE CALIPER READINGS FROM 7380-7400 FEET NOT REPEATED DUE TO WIRELINE HITTING A LEDGE AT THE SAME DEPTH WHILE RUNNING IN HOLE.

TIGHT PULL ENCOUNTERED AT 6790 FEET AND PULLED 2700 POUNDS.

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 9.10" (9 5/8", 36 LB/FT CASING)

8.75 INCH BIT USED FROM SURFACE CASING TO 3697 FEET.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2705 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1925 CU.FT.

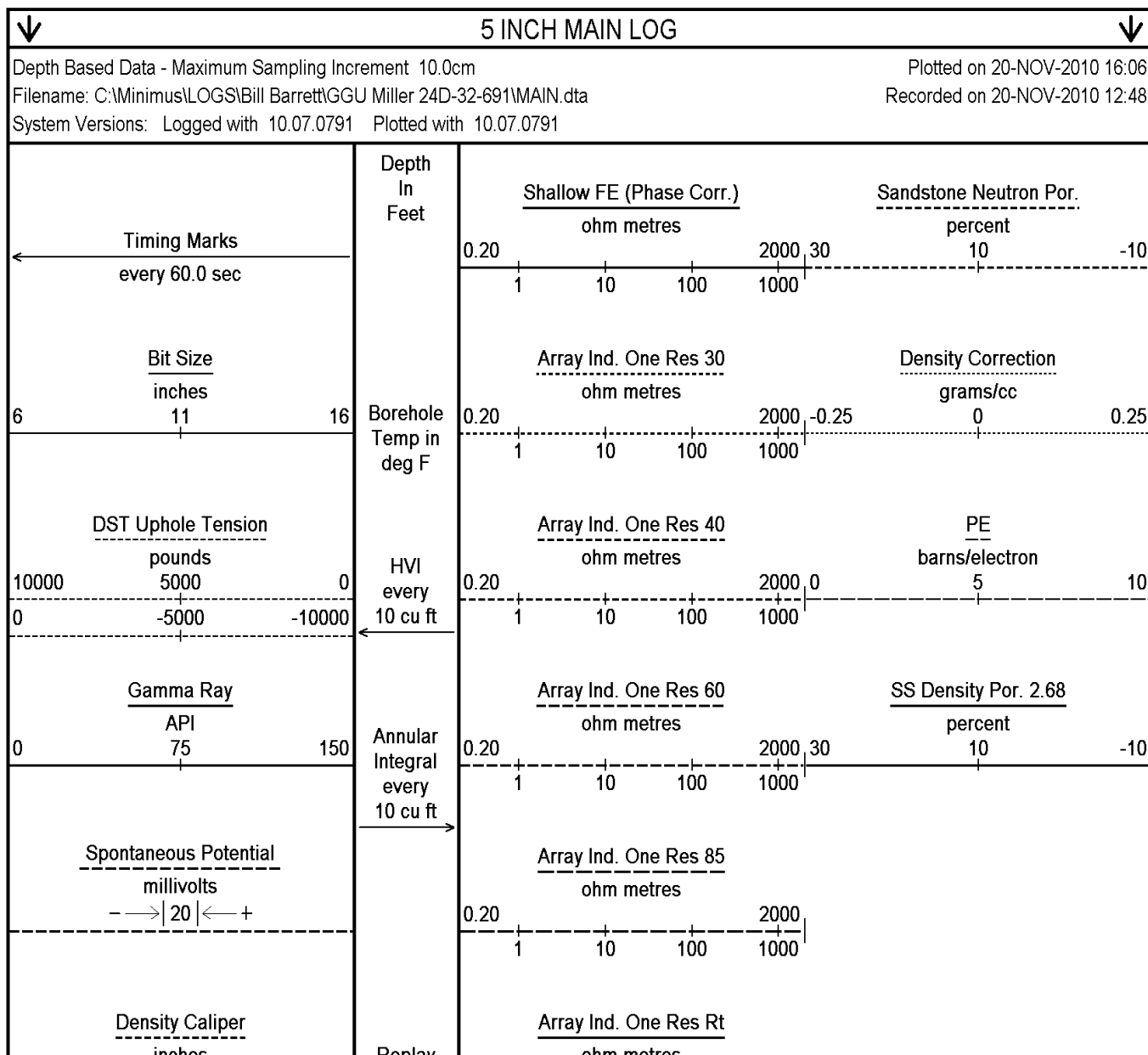
ENGINEER: D.KUNTZ / J.GARCIA/ O.GOYZUETA(JFE)

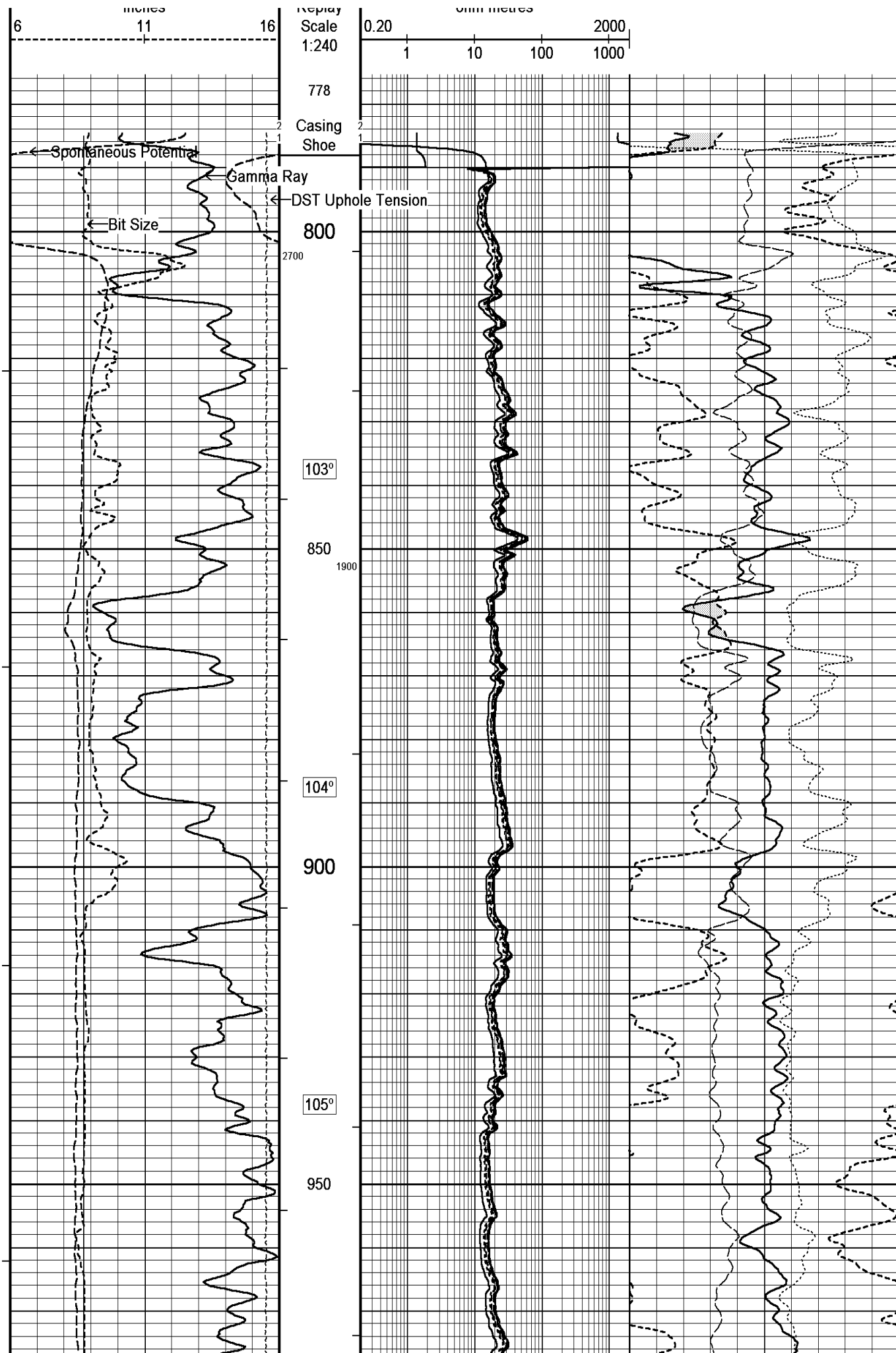
OPERATOR: S.KAISER

SERVICE ORDER: #3526198

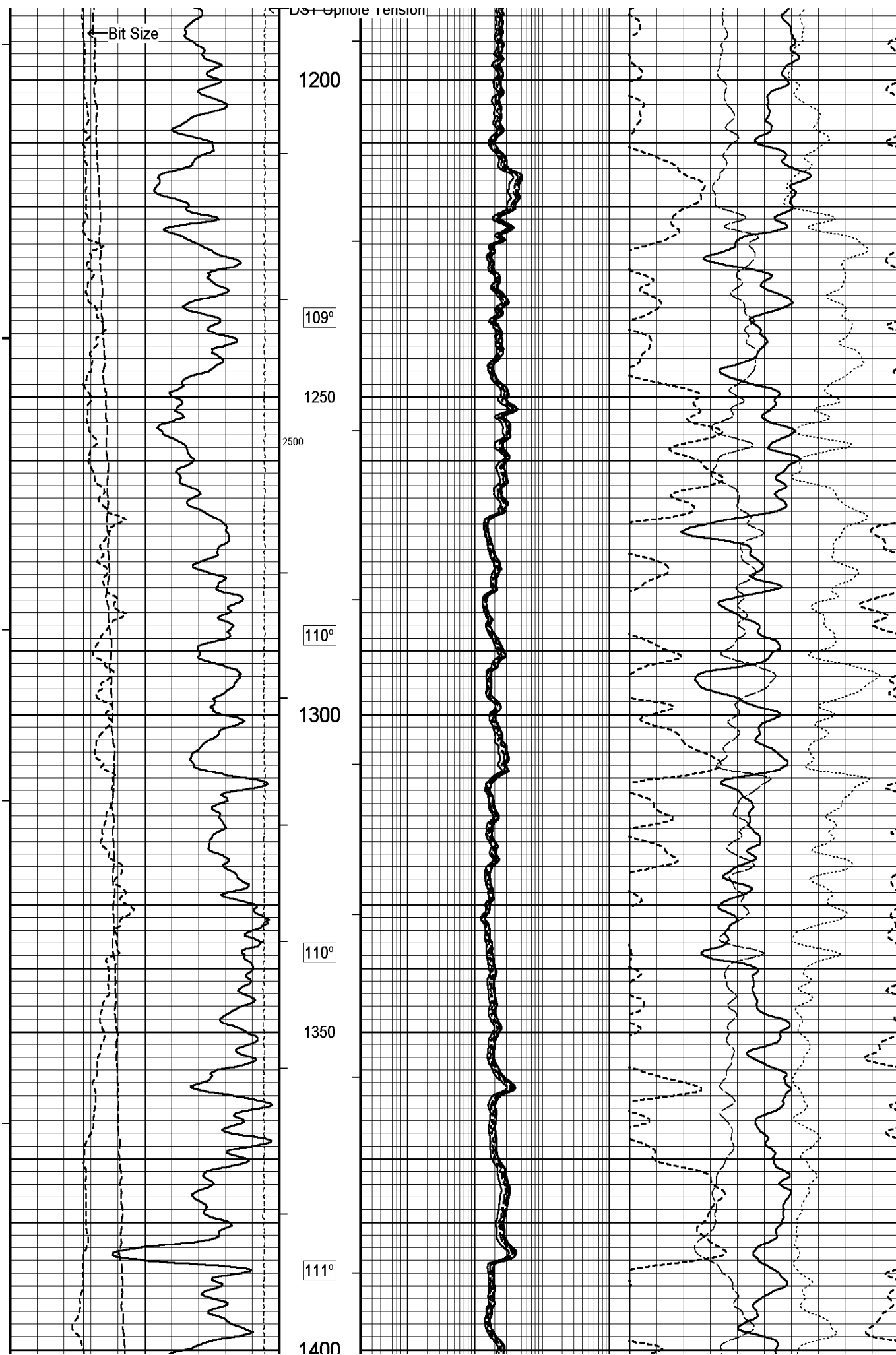
RIG: PATTERSON #307

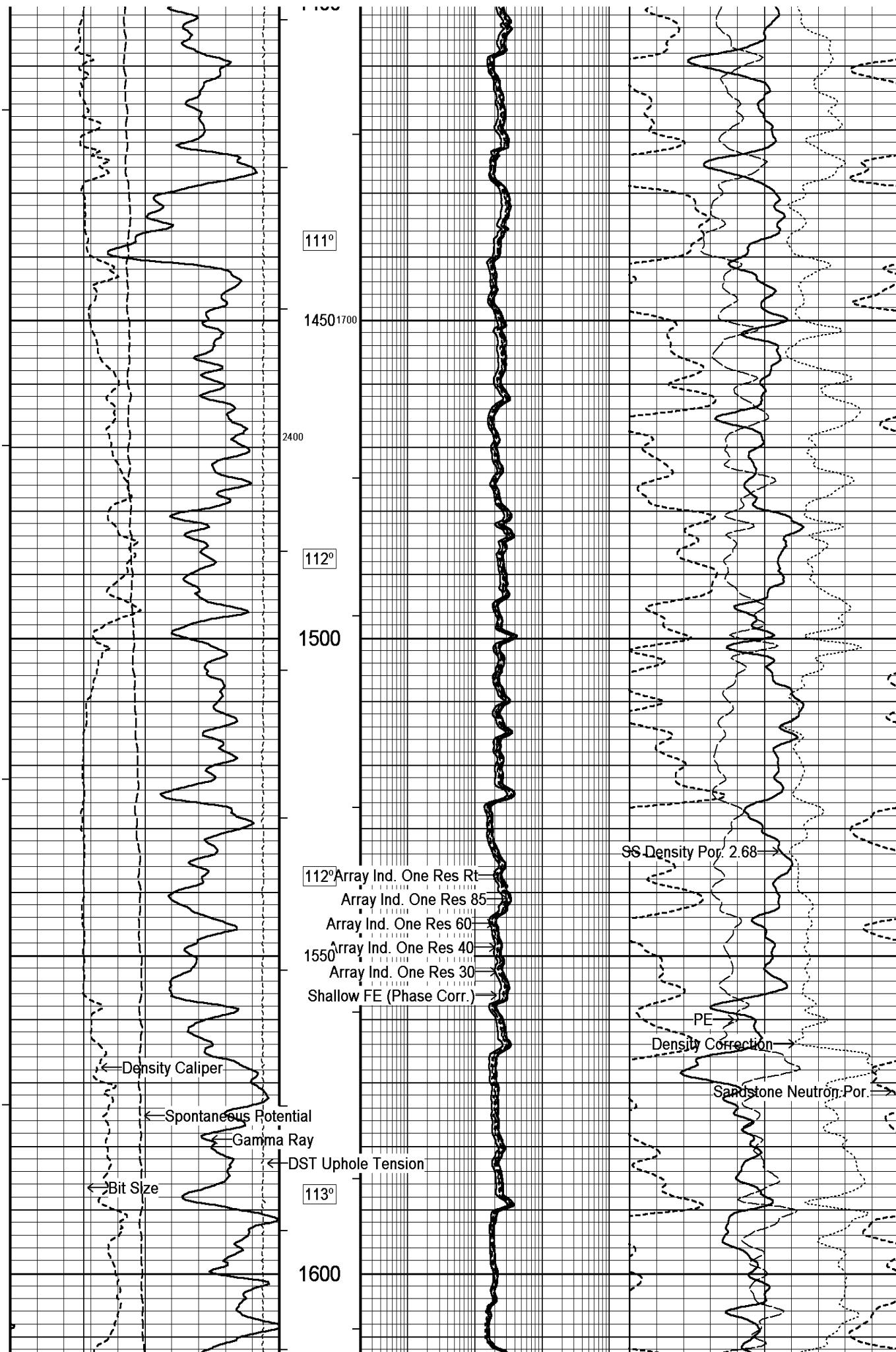
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

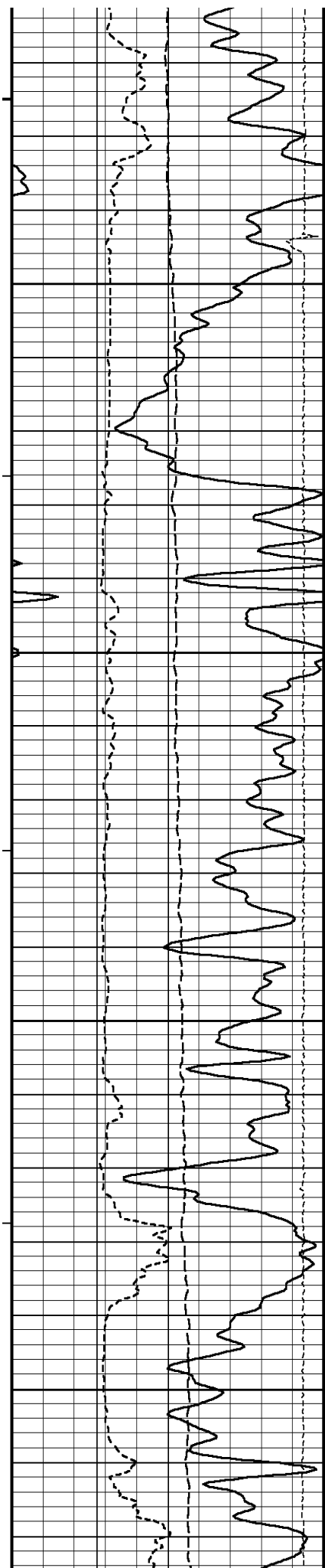












113°

1650

113°

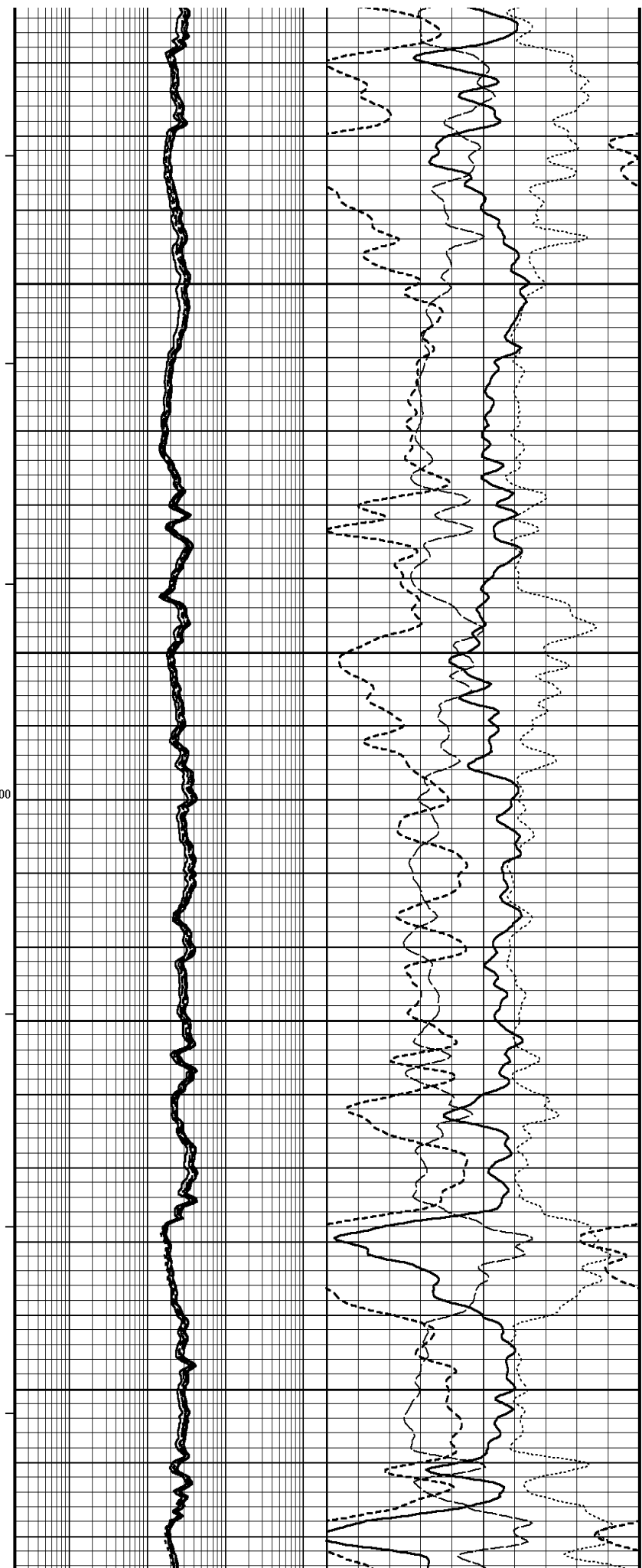
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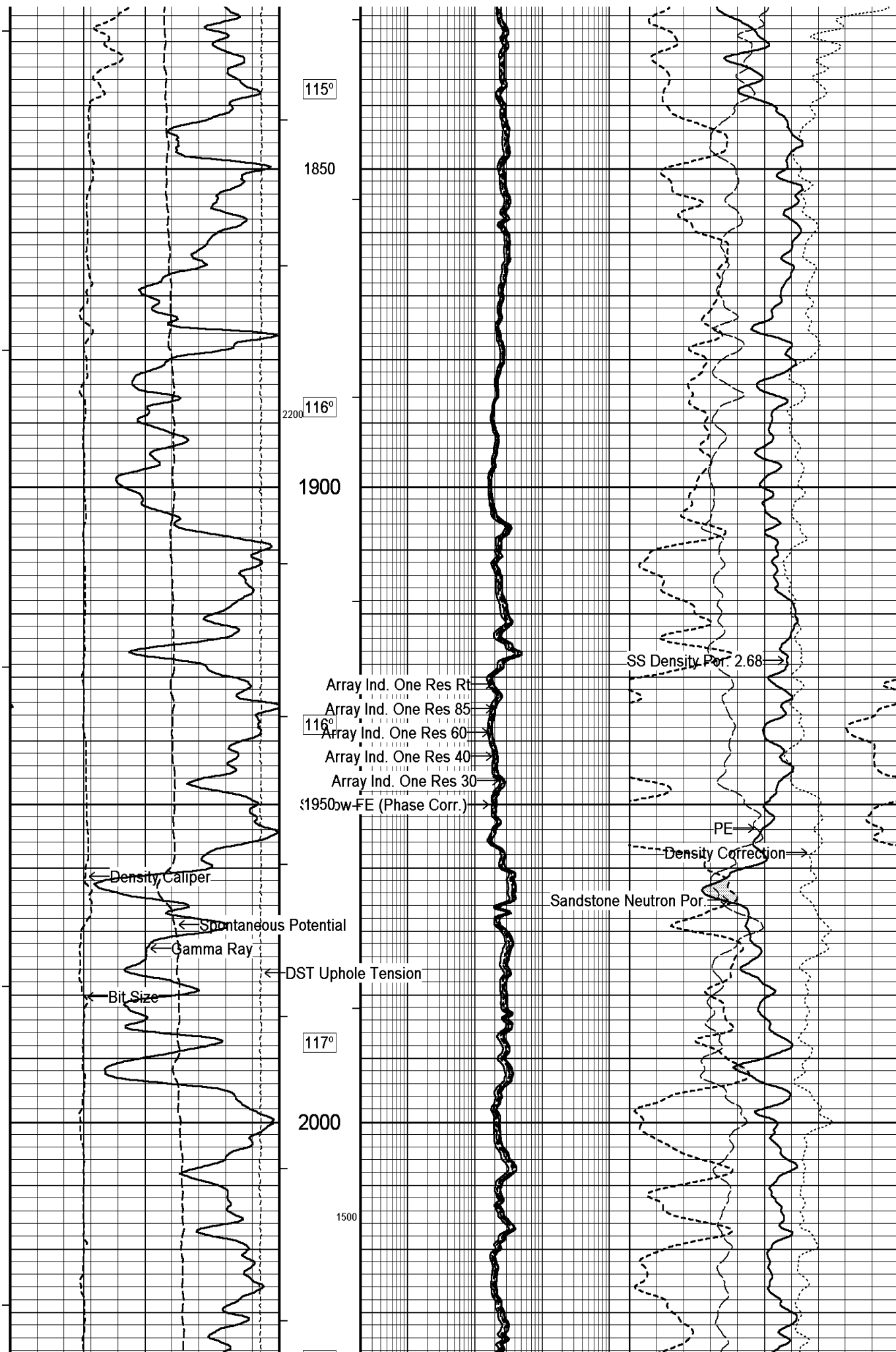
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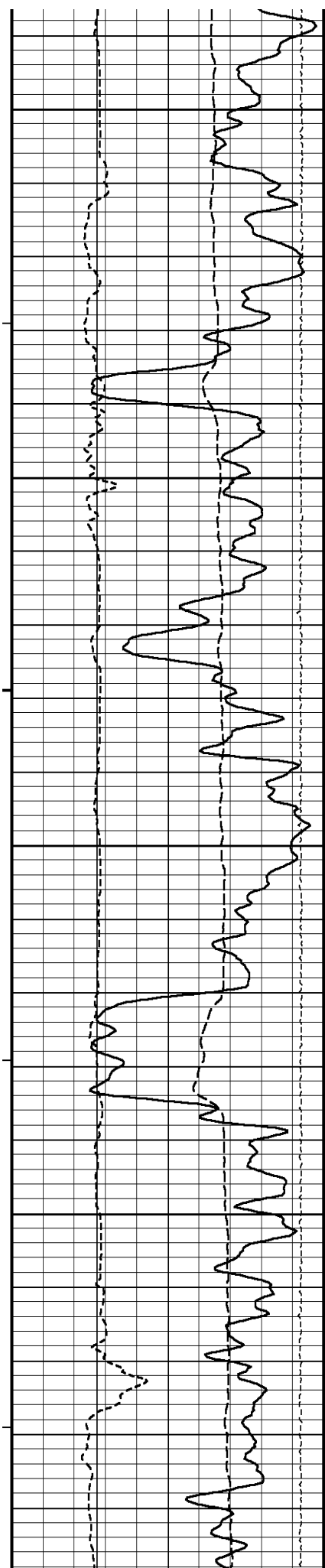
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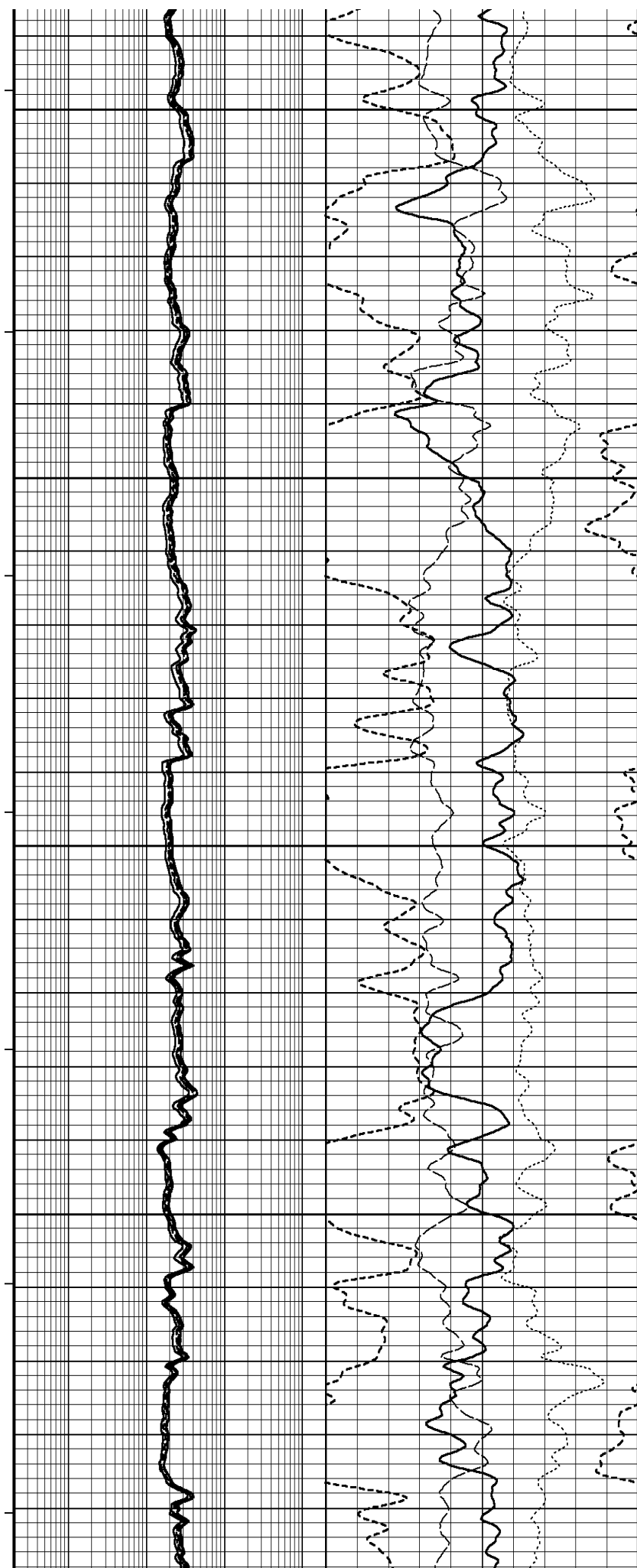
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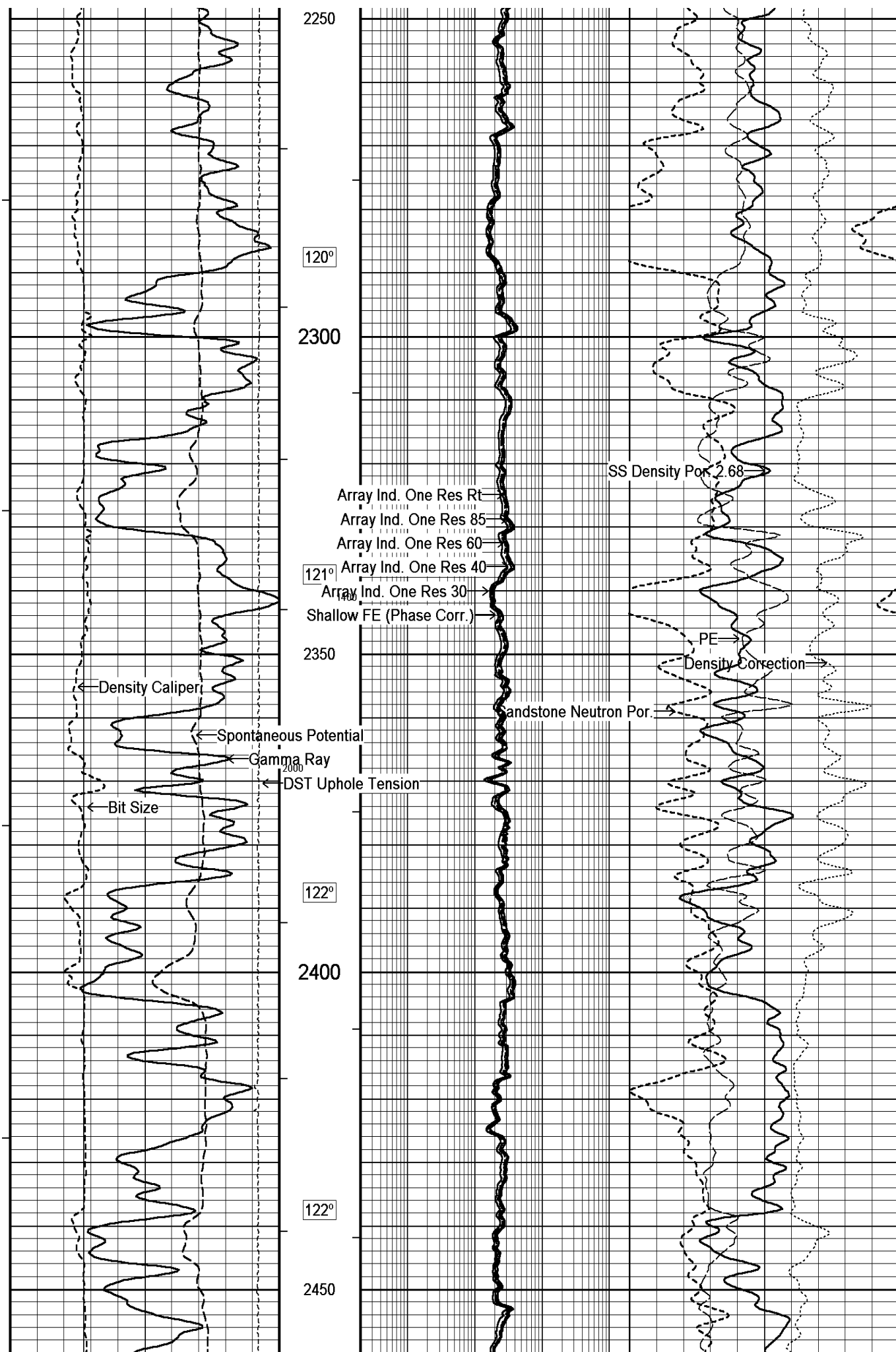


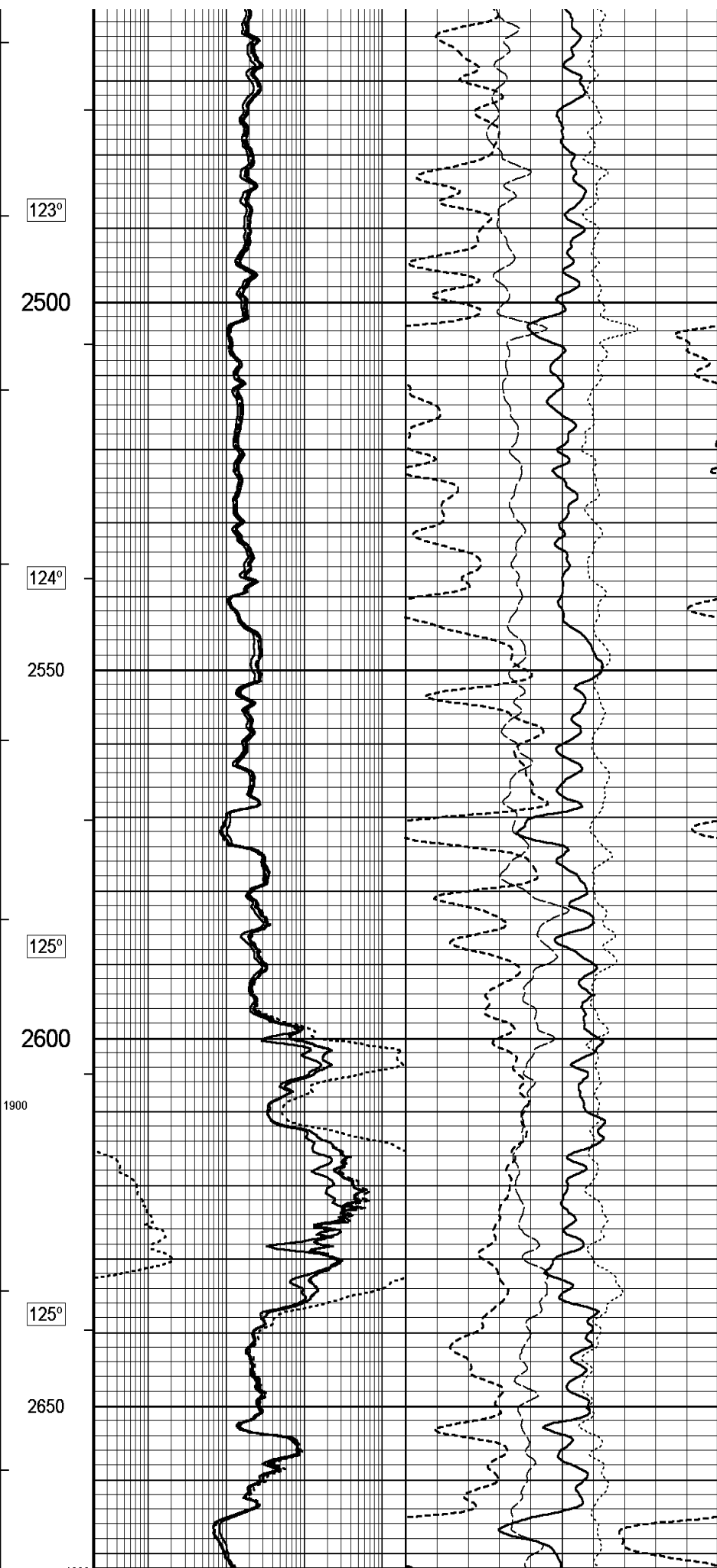
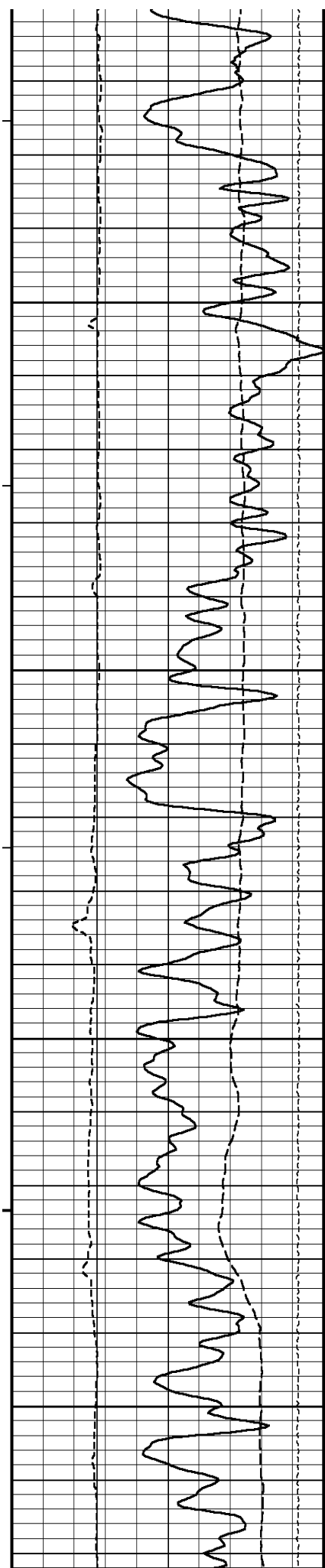


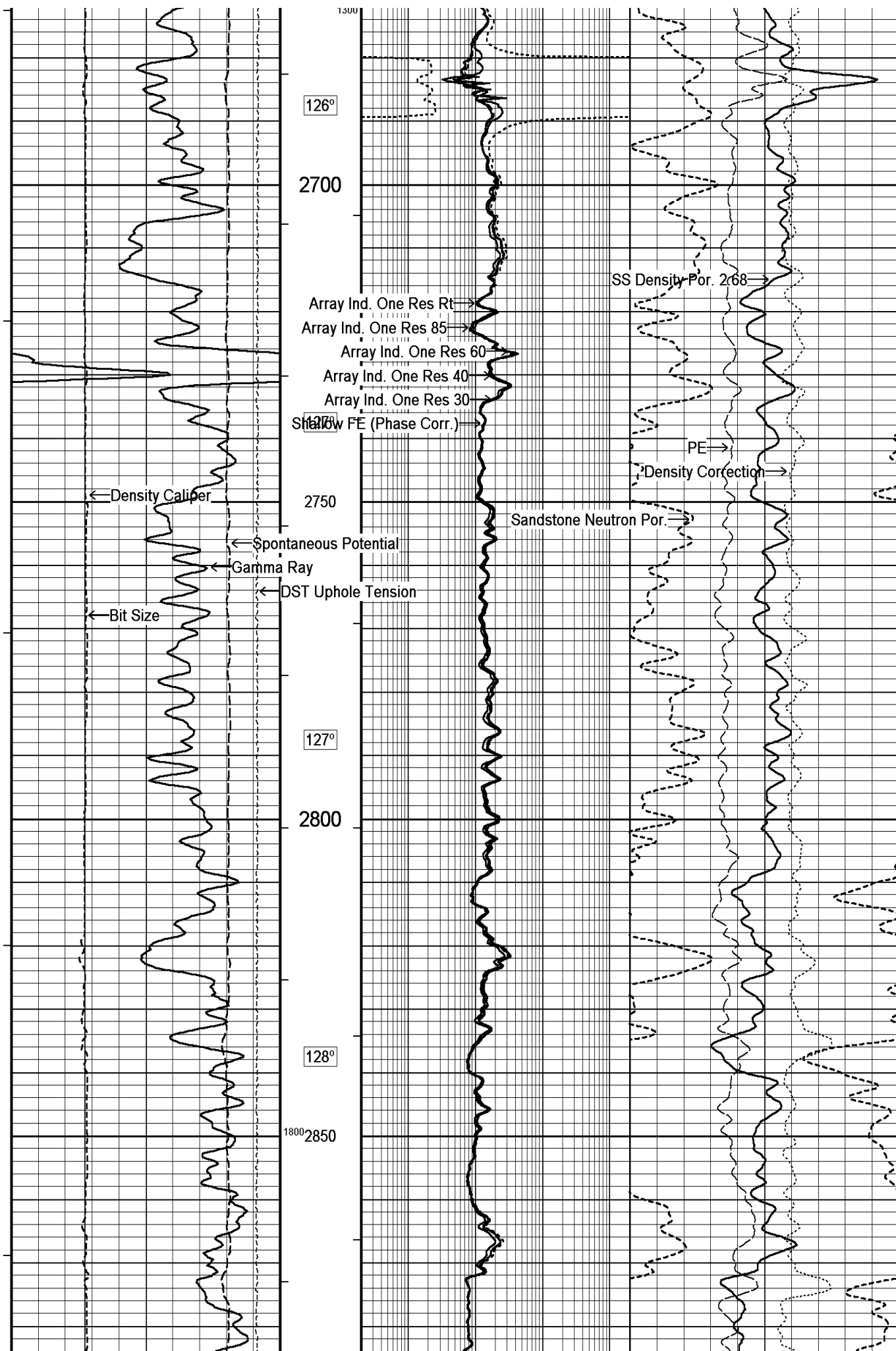


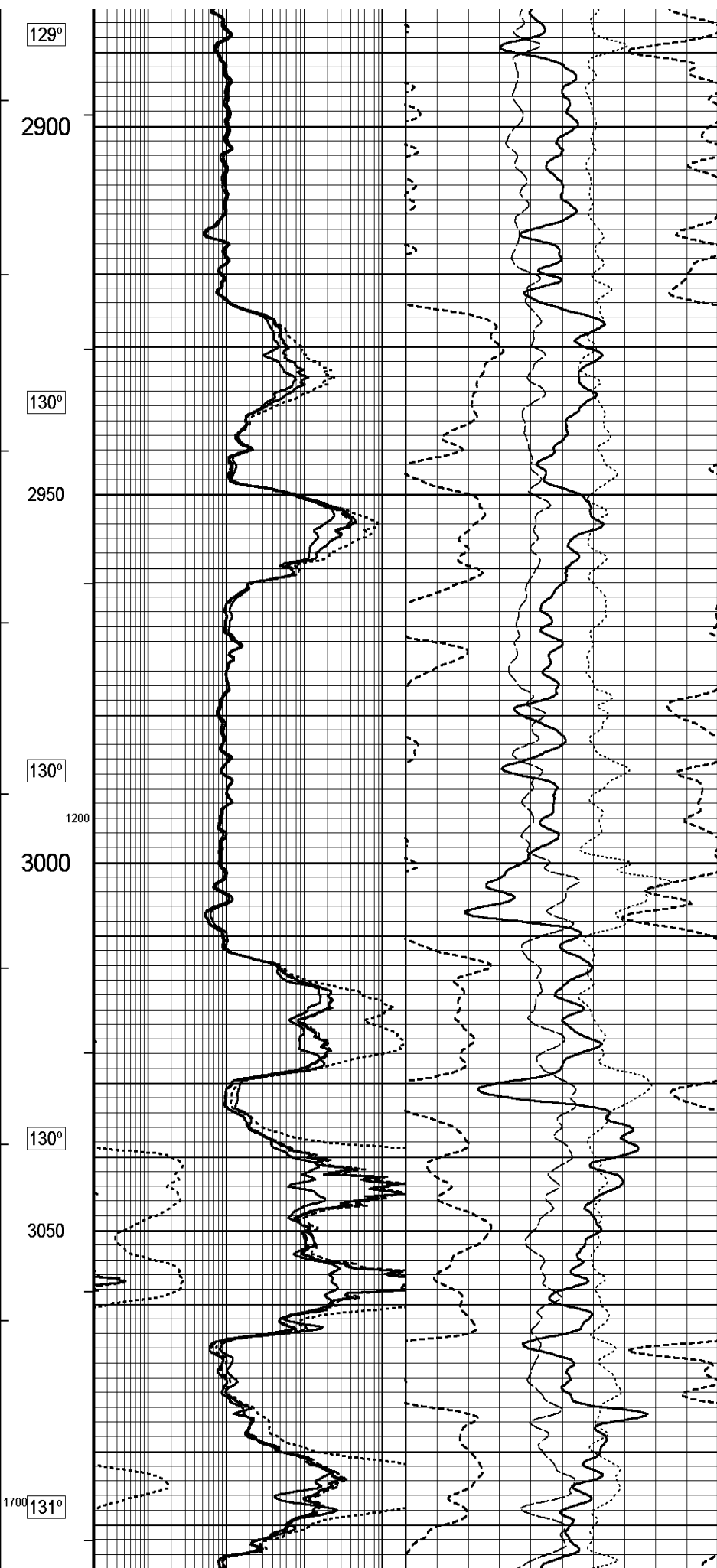
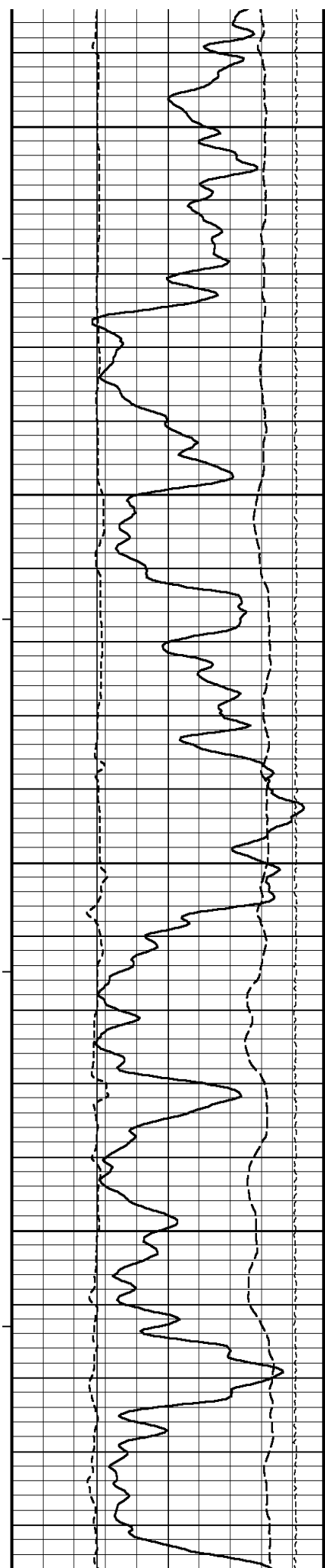
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2050  
118°  
2100  
119°  
2150  
119°  
2200  
120°

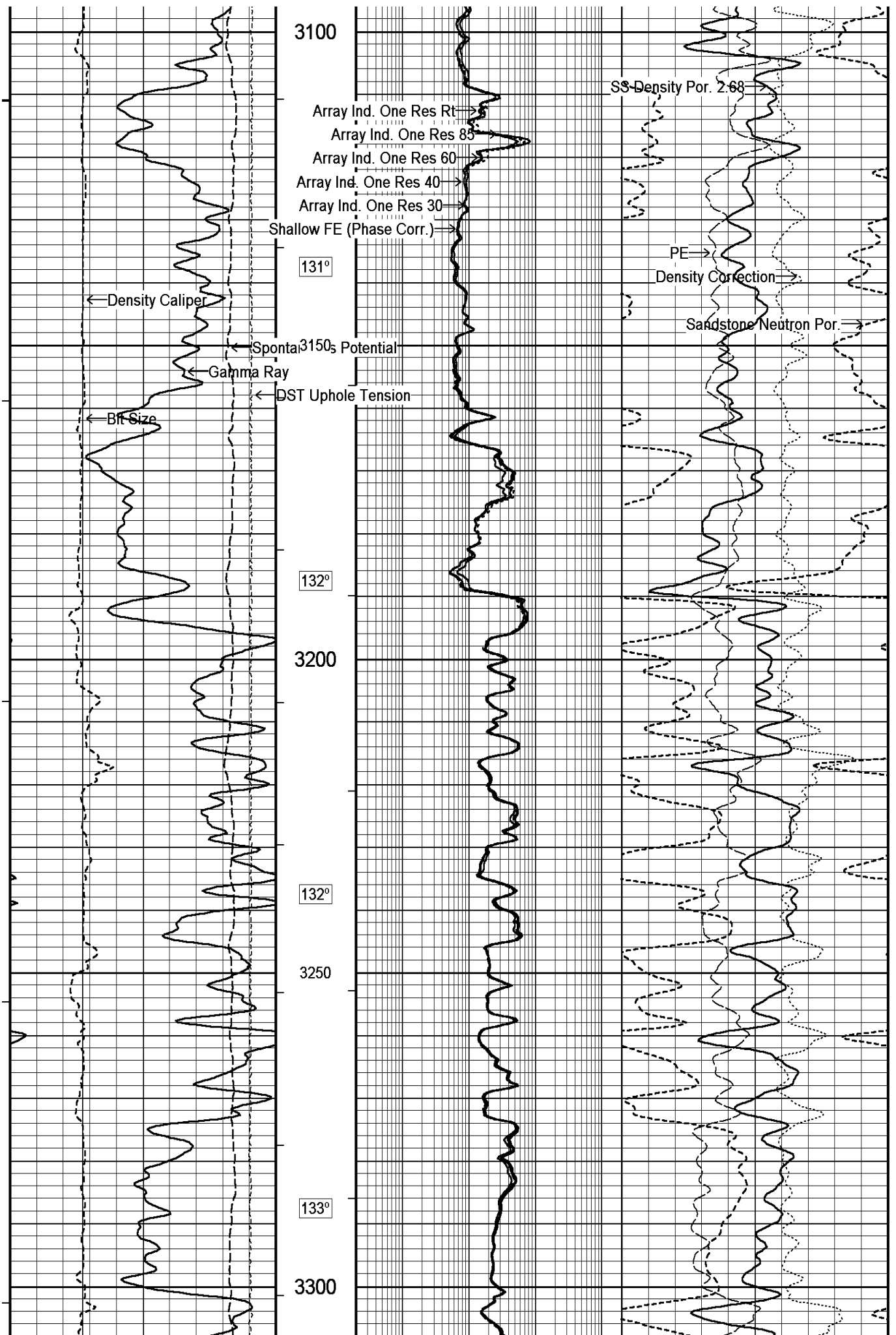


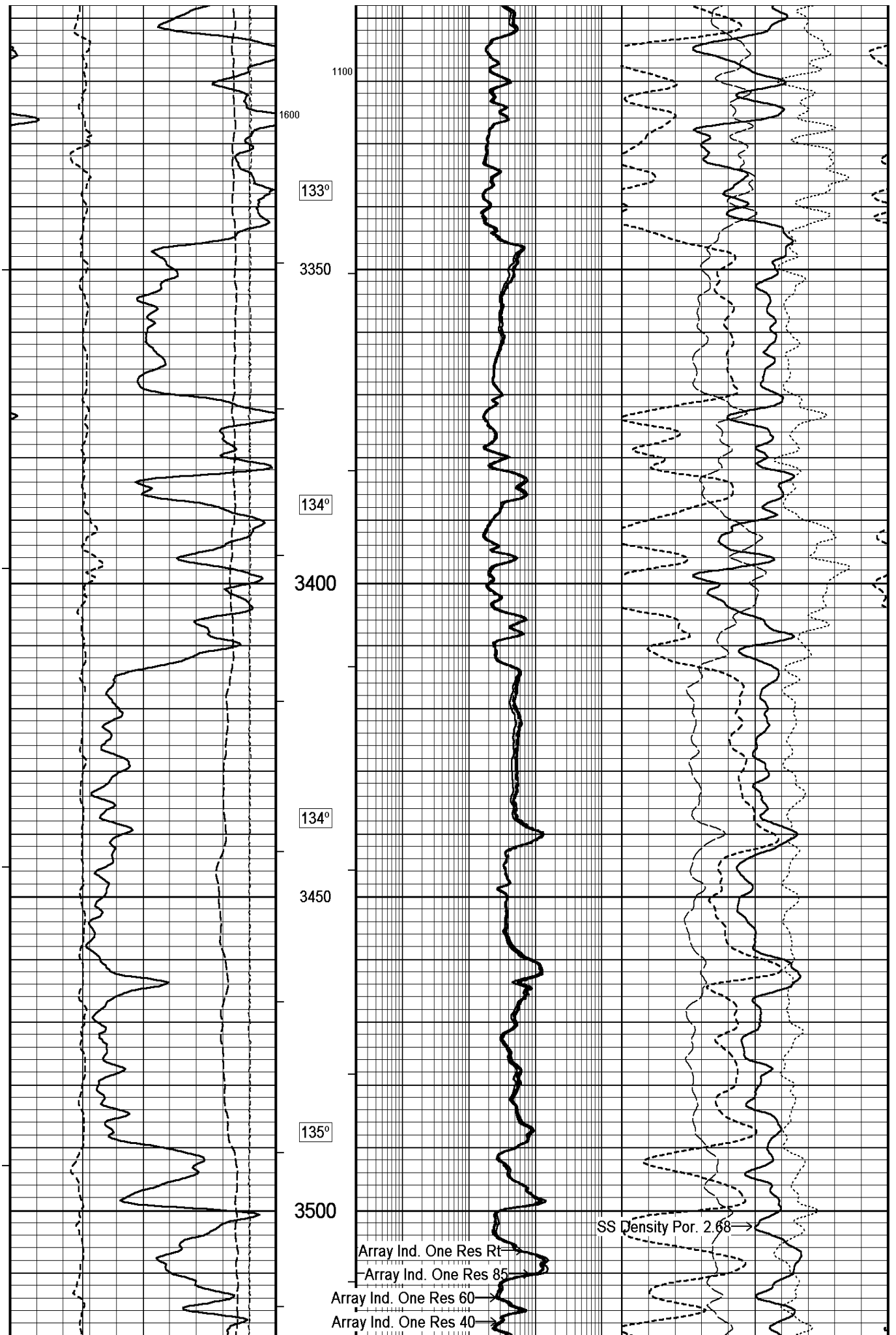


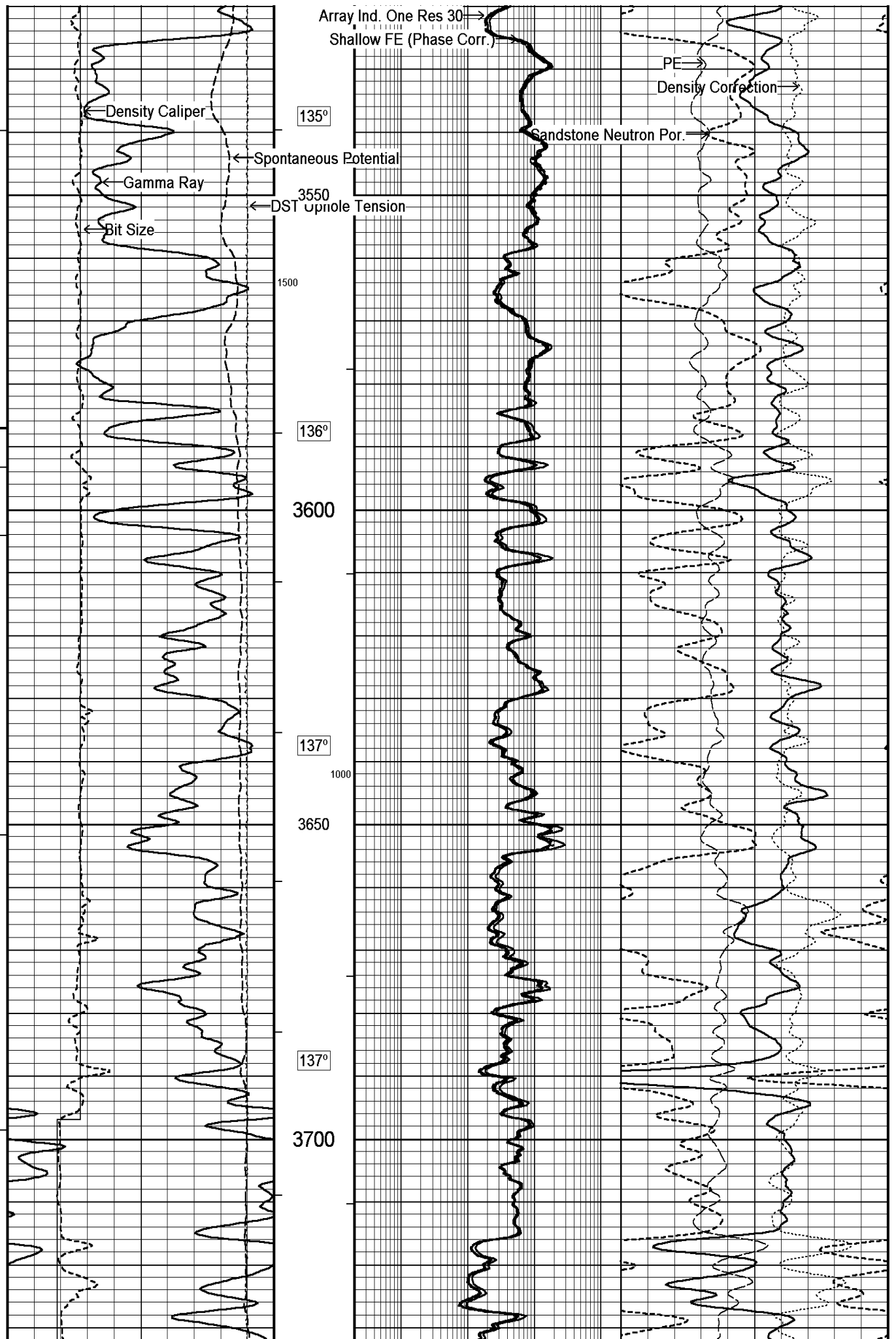


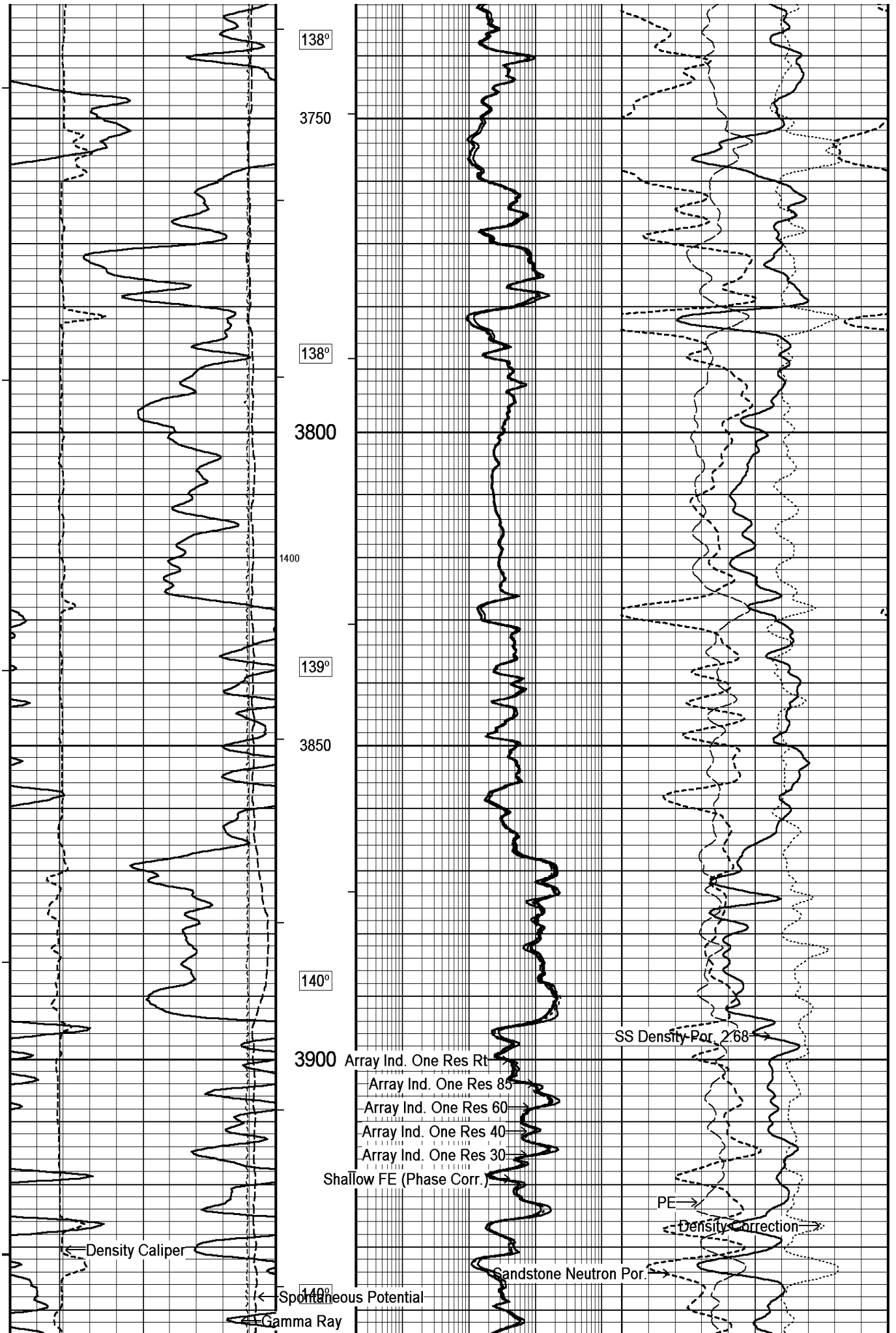


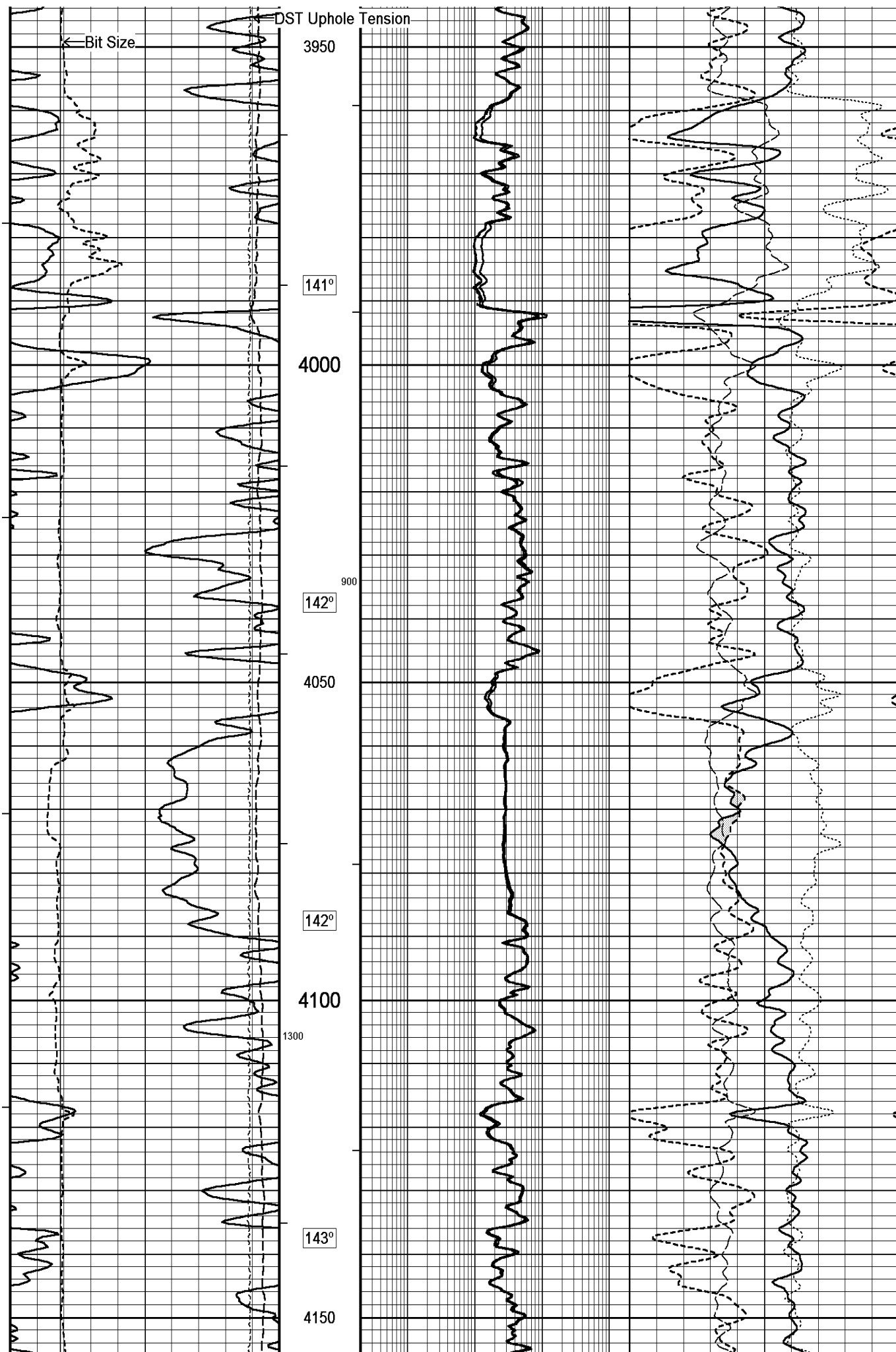


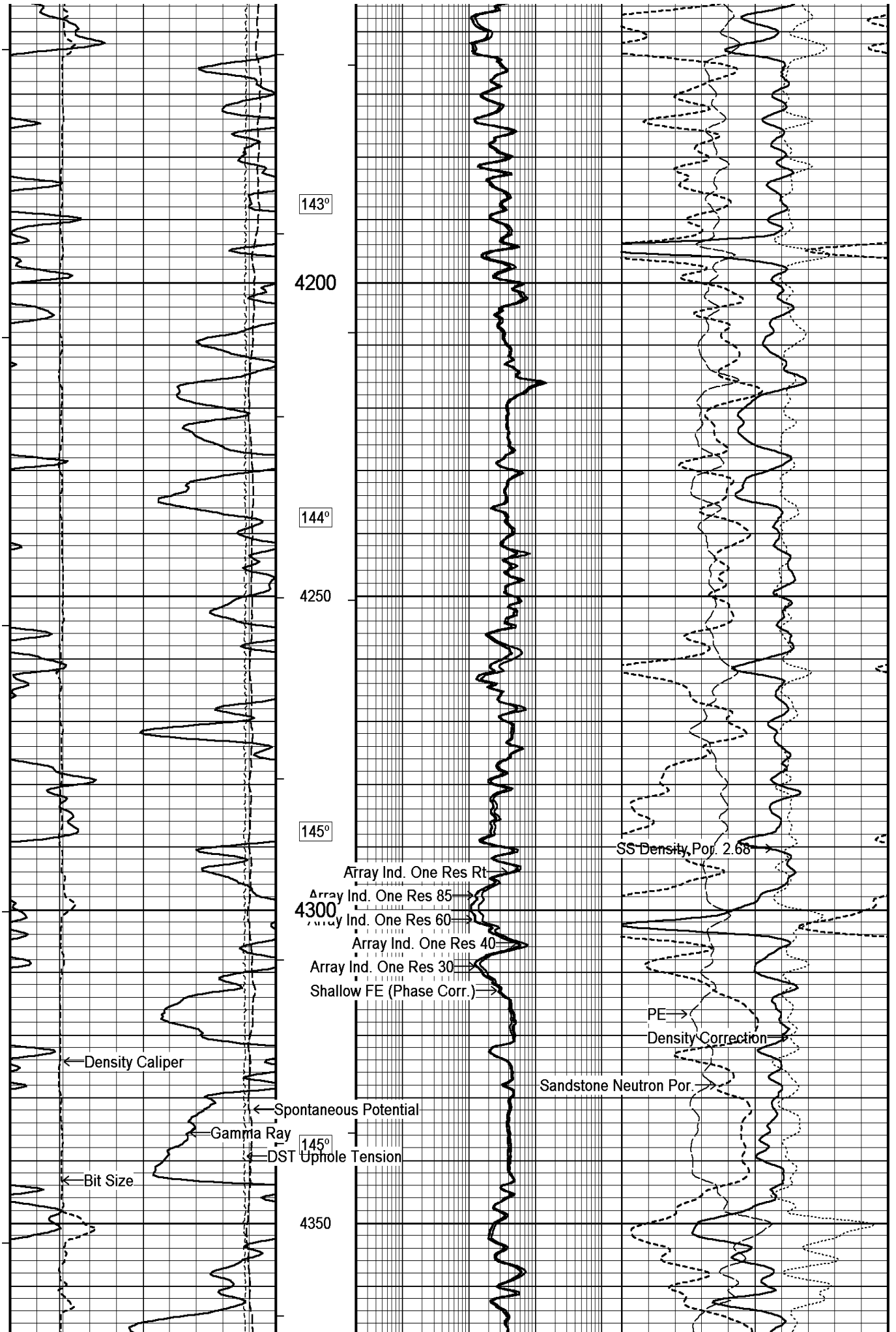


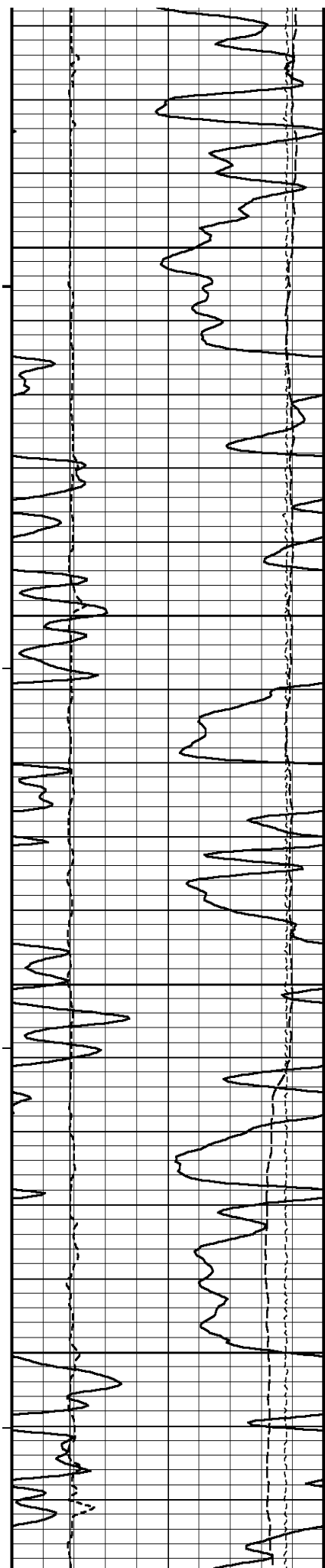












146°

1200

4400

147°

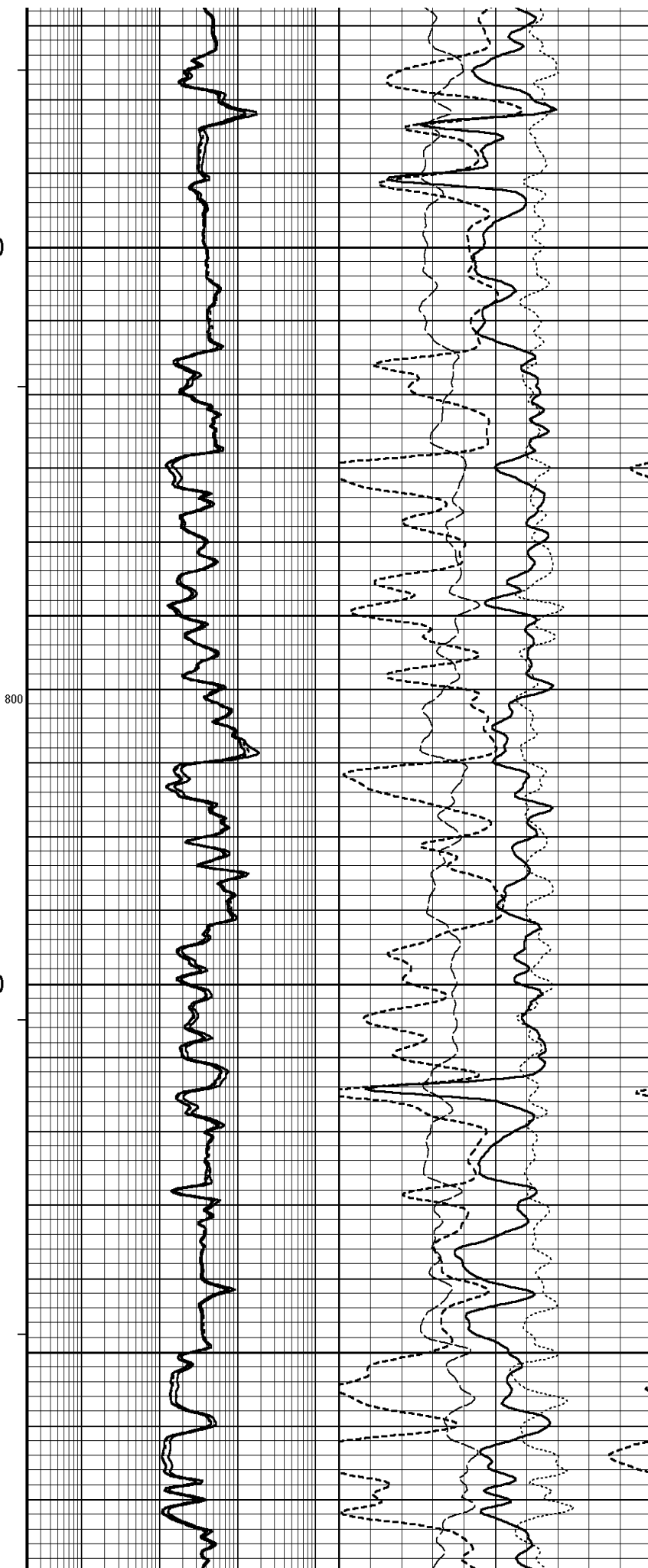
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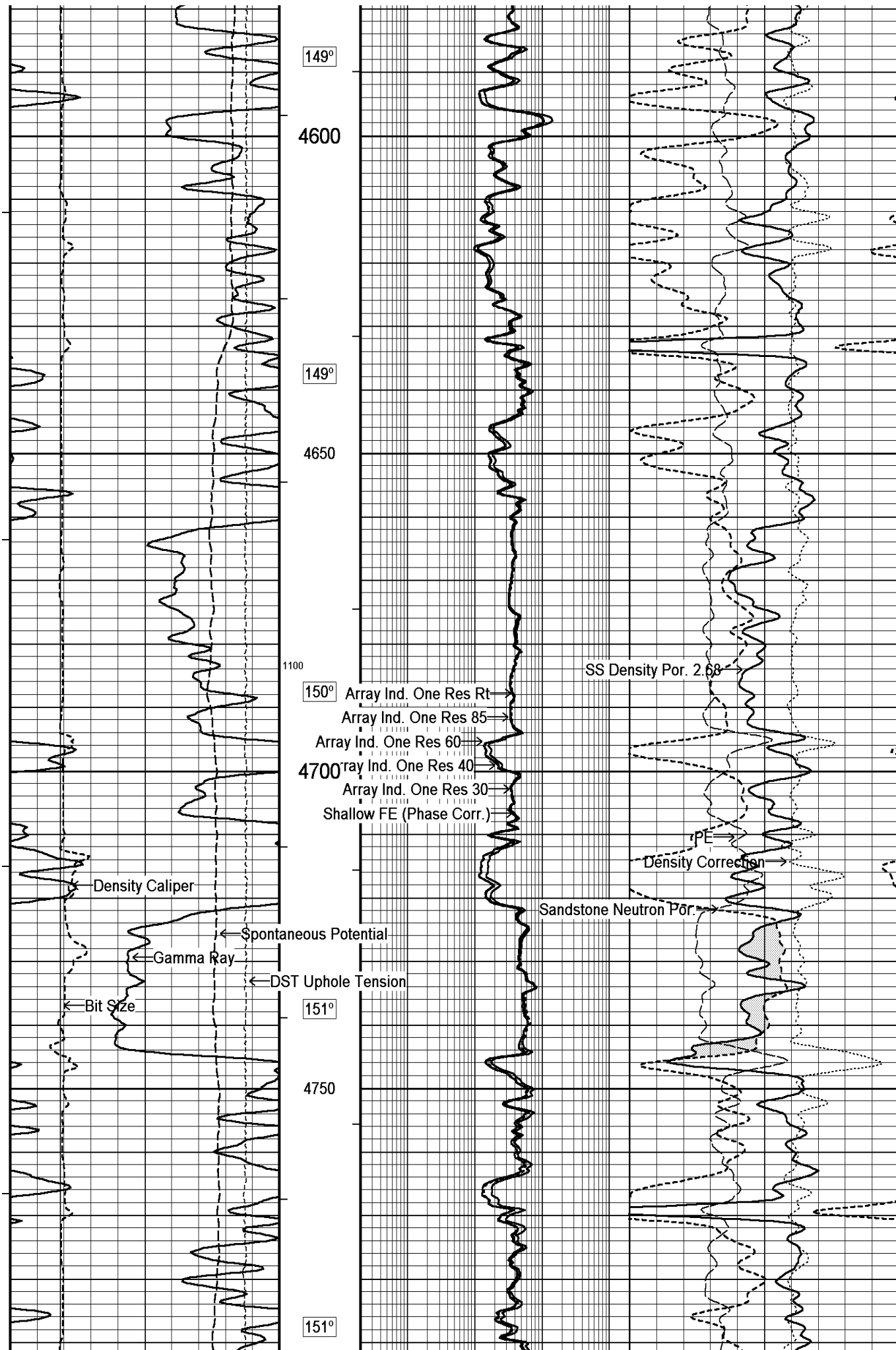
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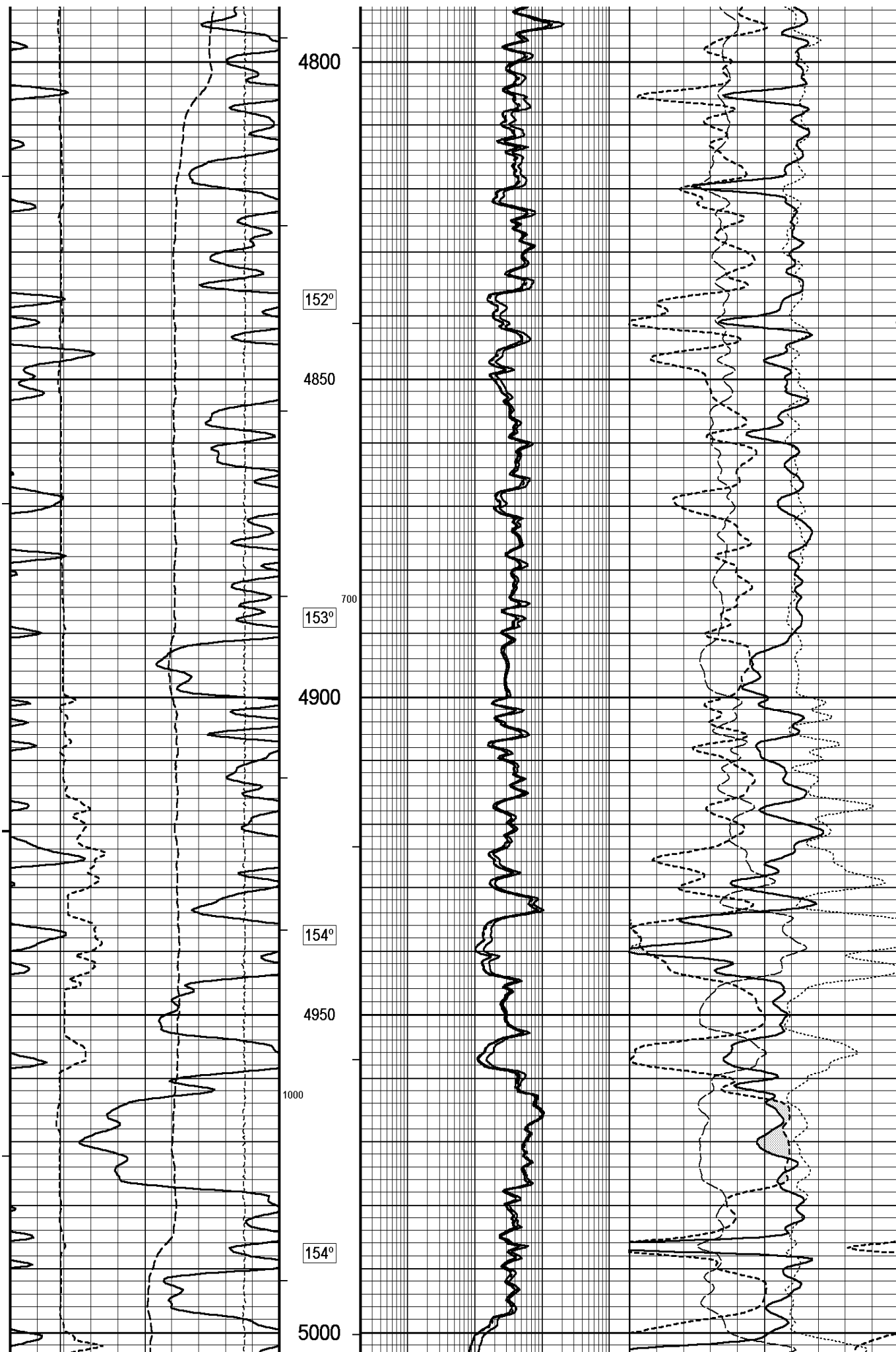
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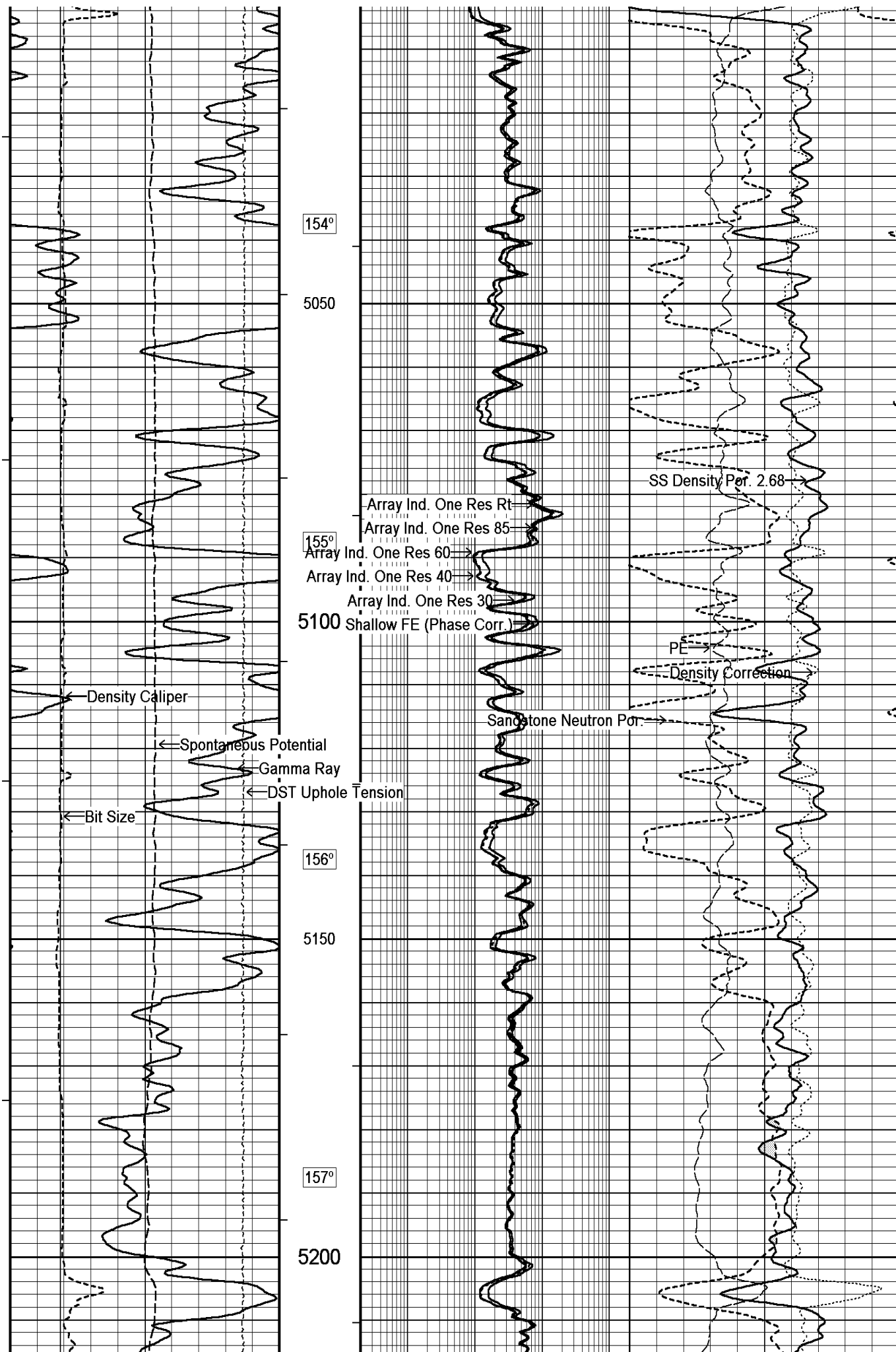
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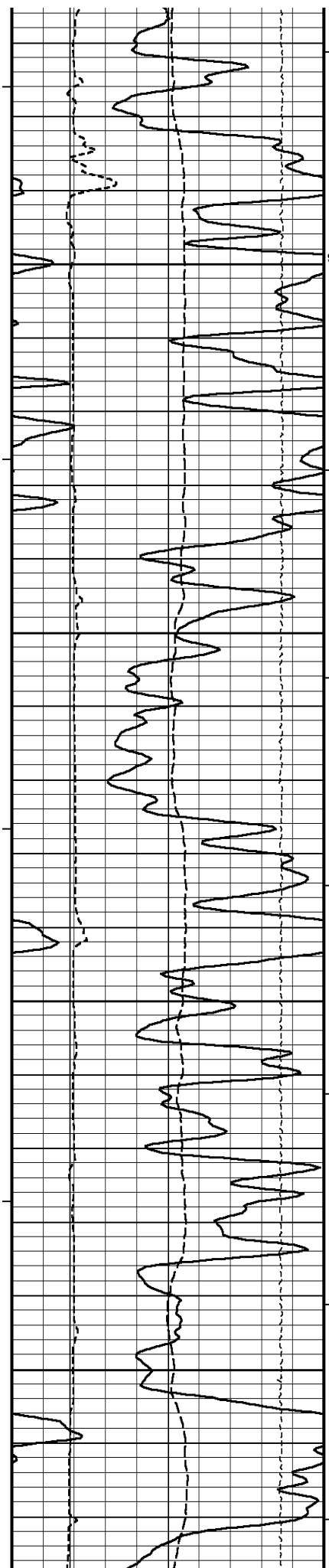
4550











157°

900 5250

158°

600

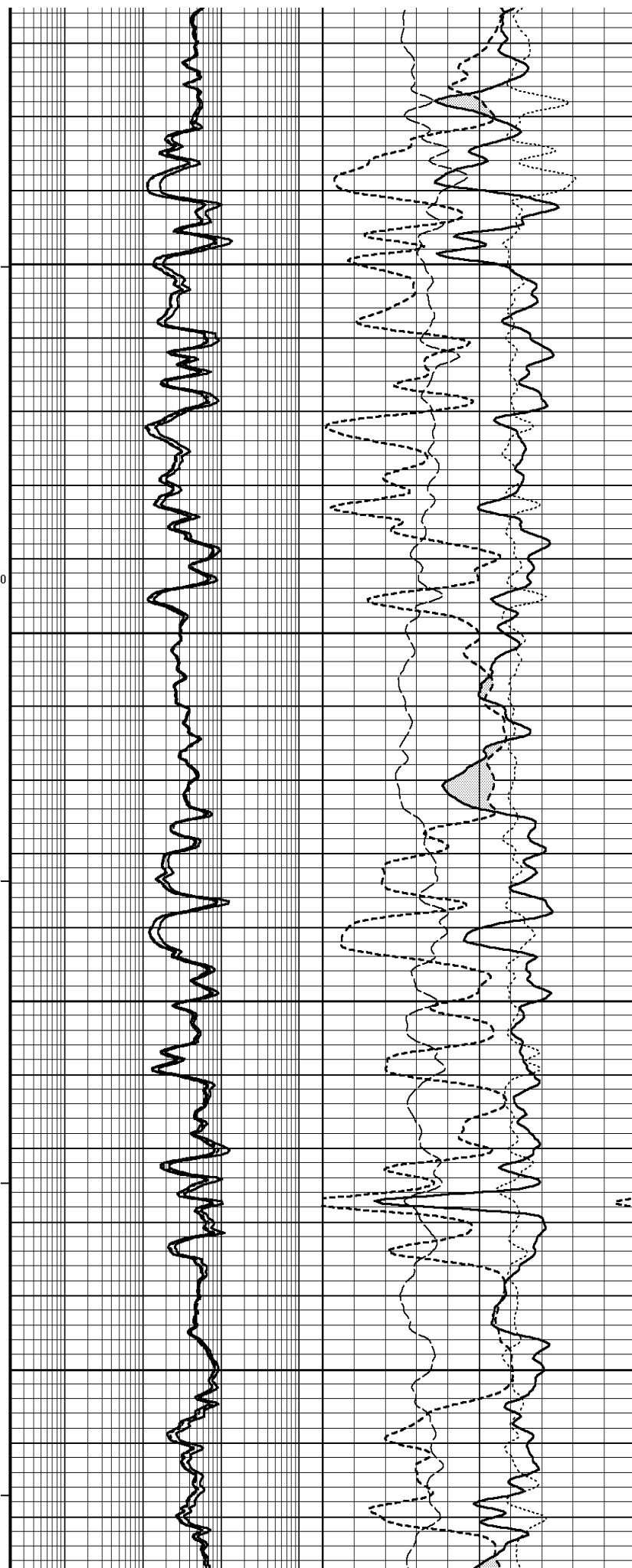
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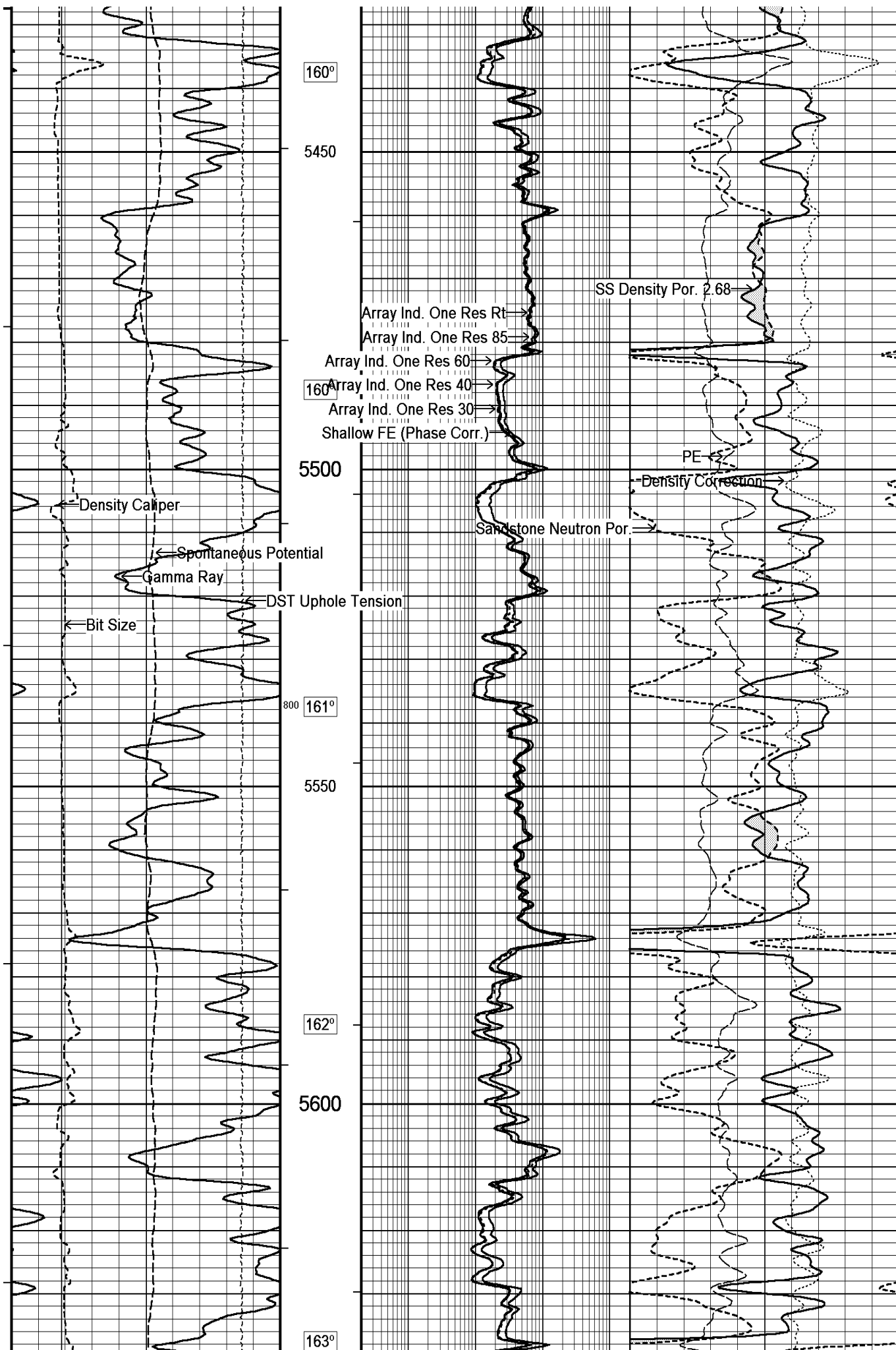
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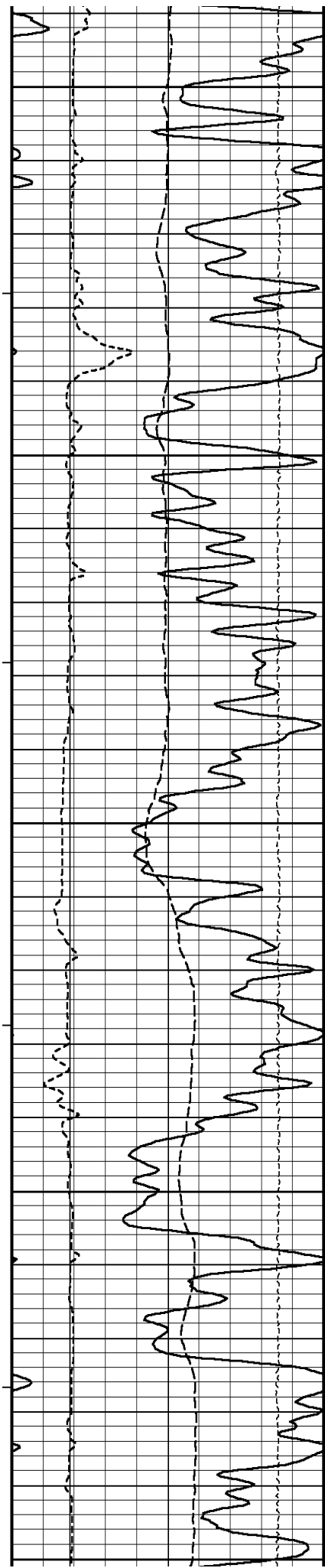
5350

159°

5400







5650

164°

5700

500

165°

5750

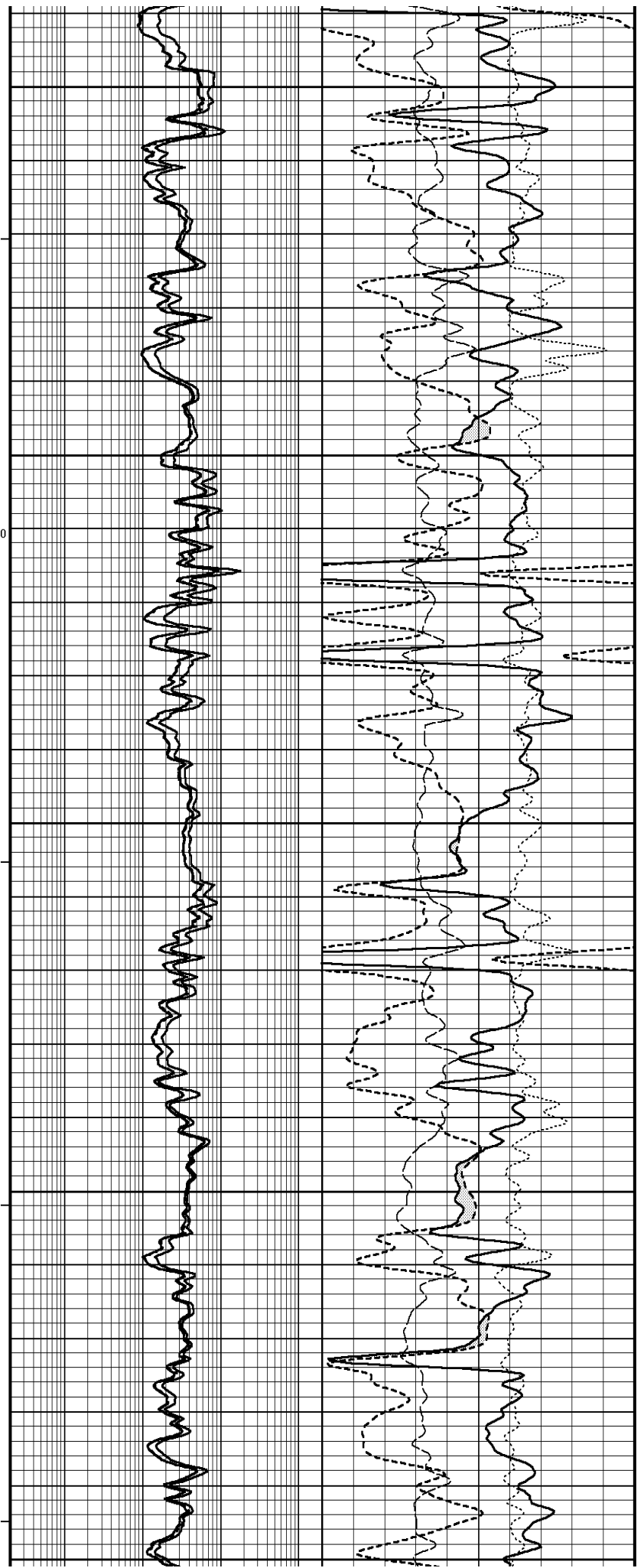
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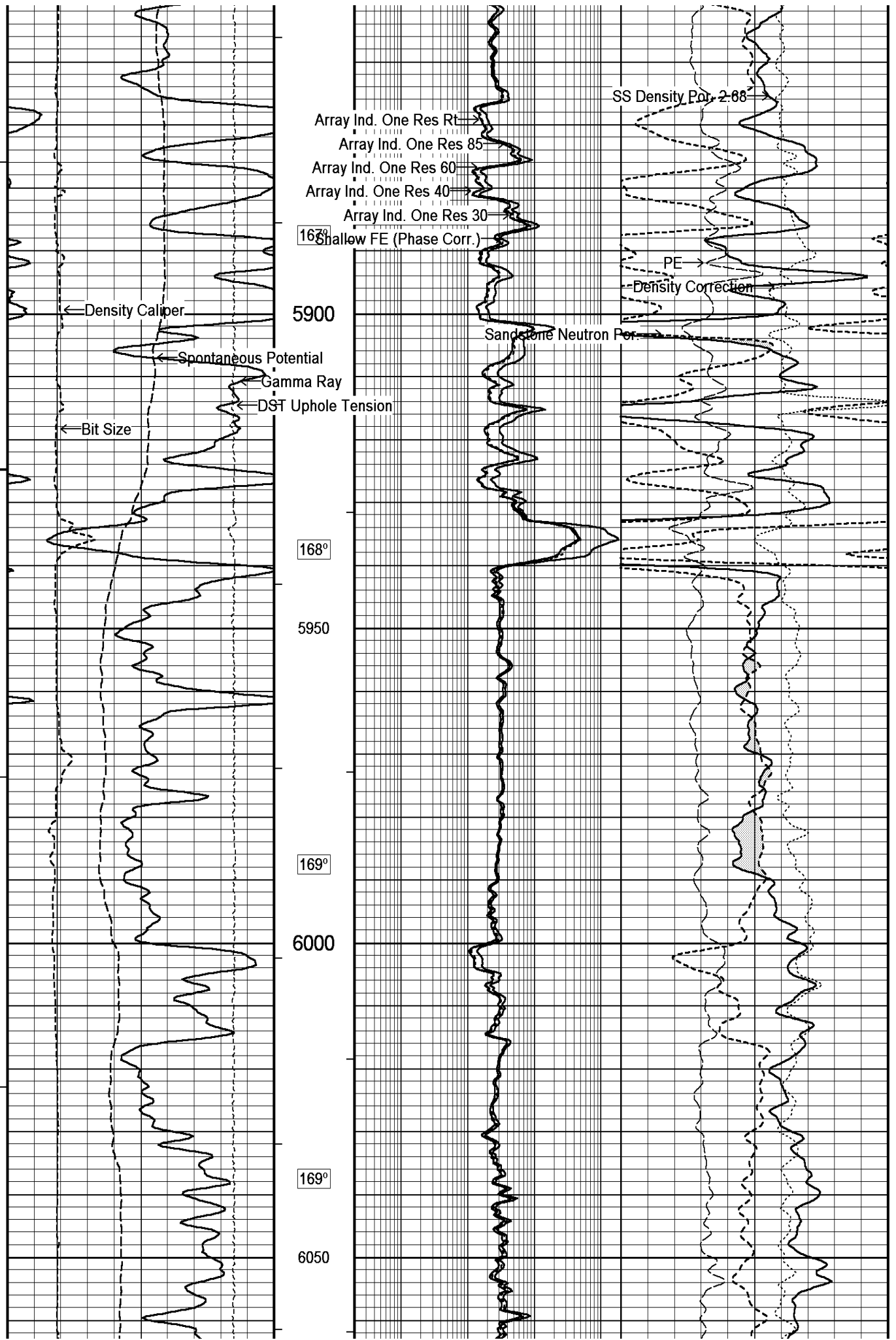
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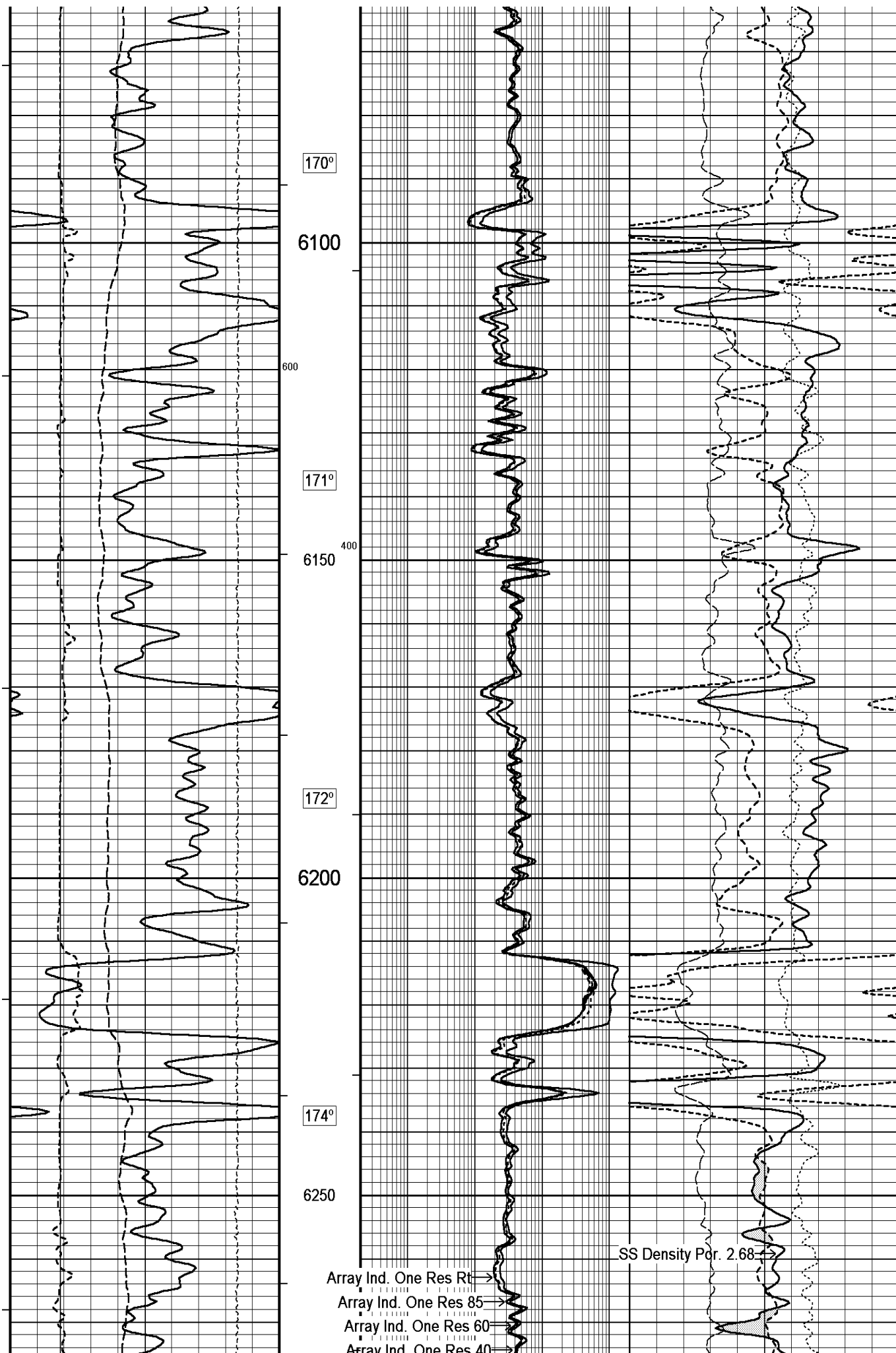
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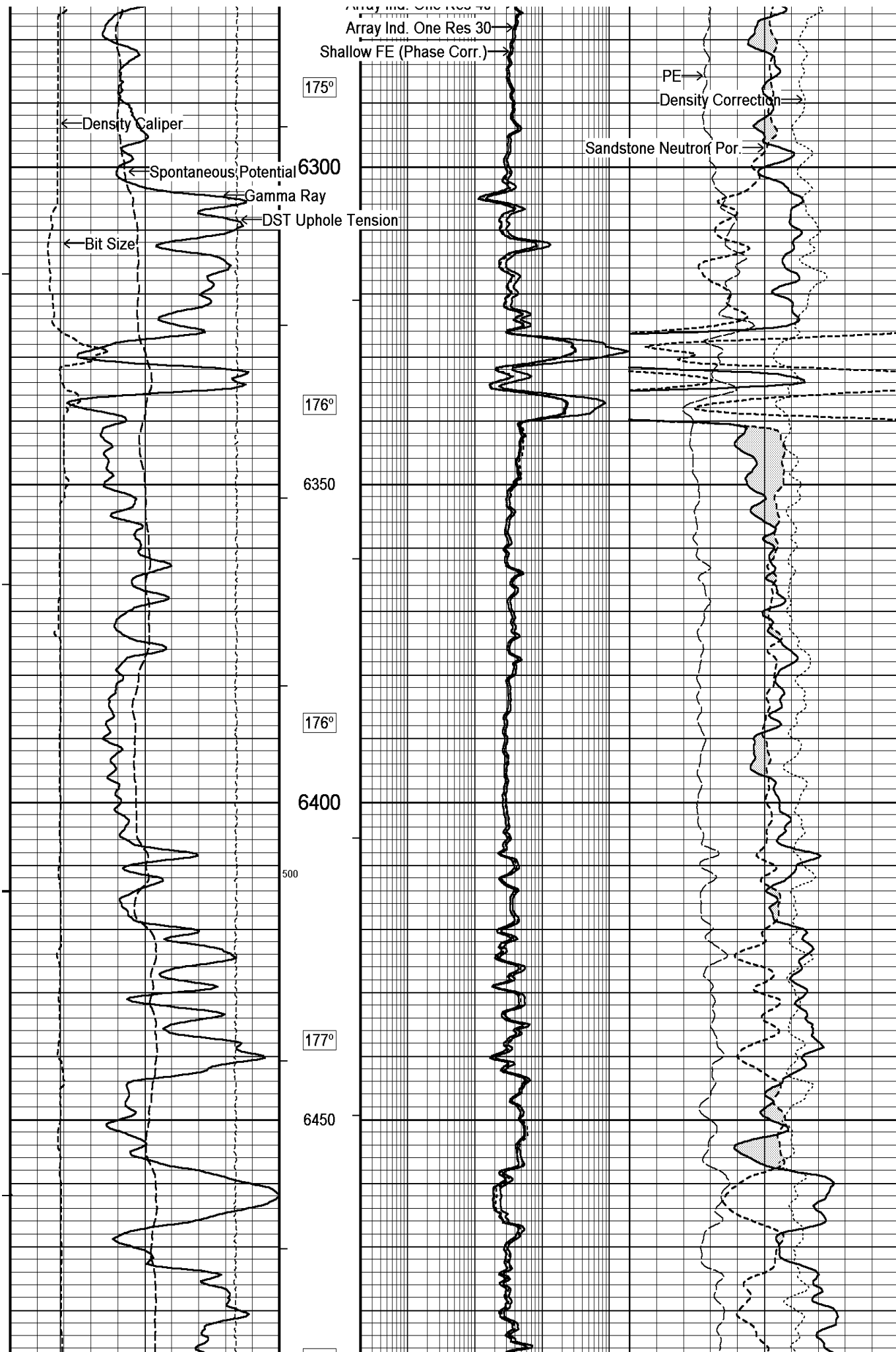
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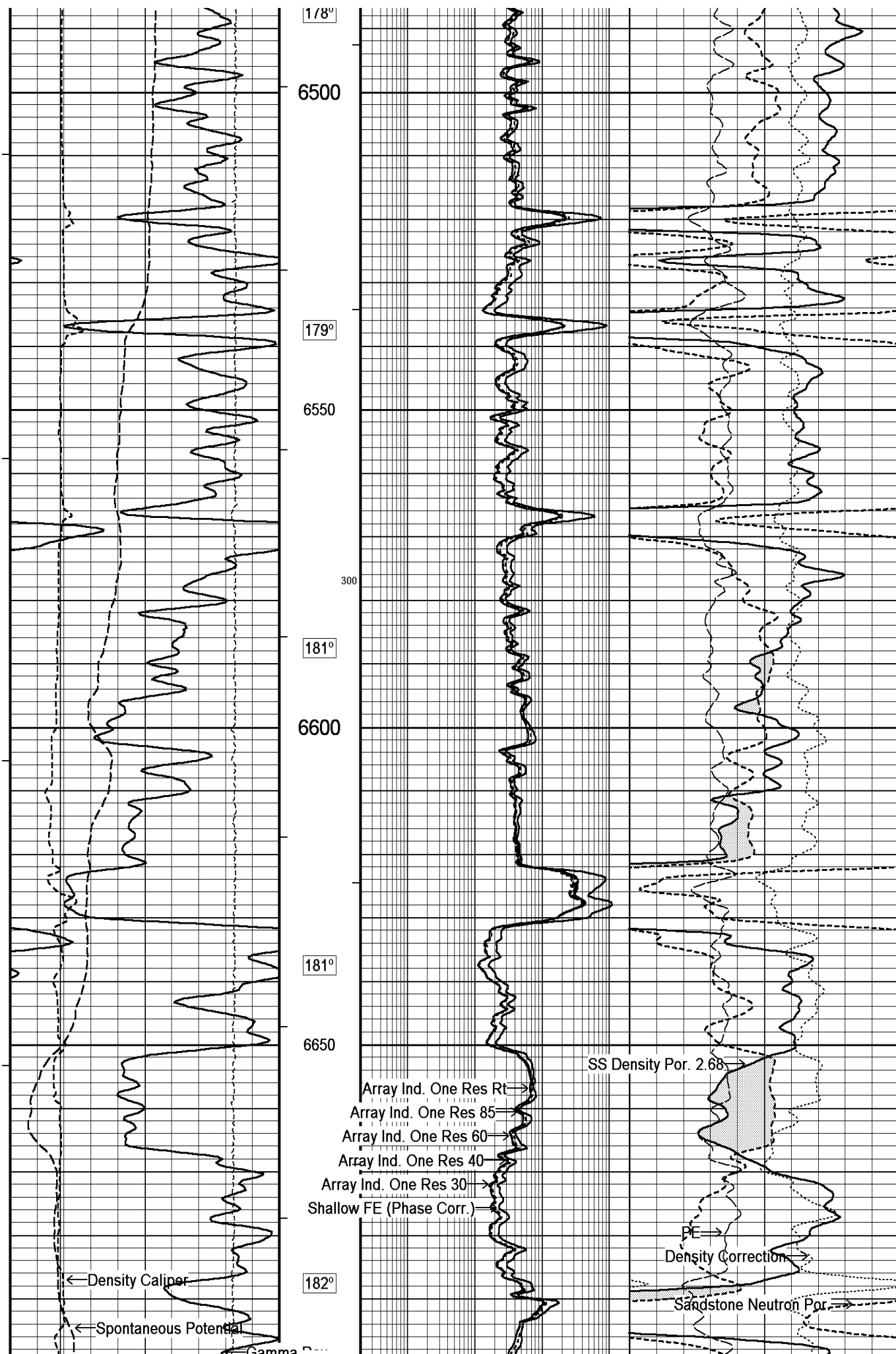
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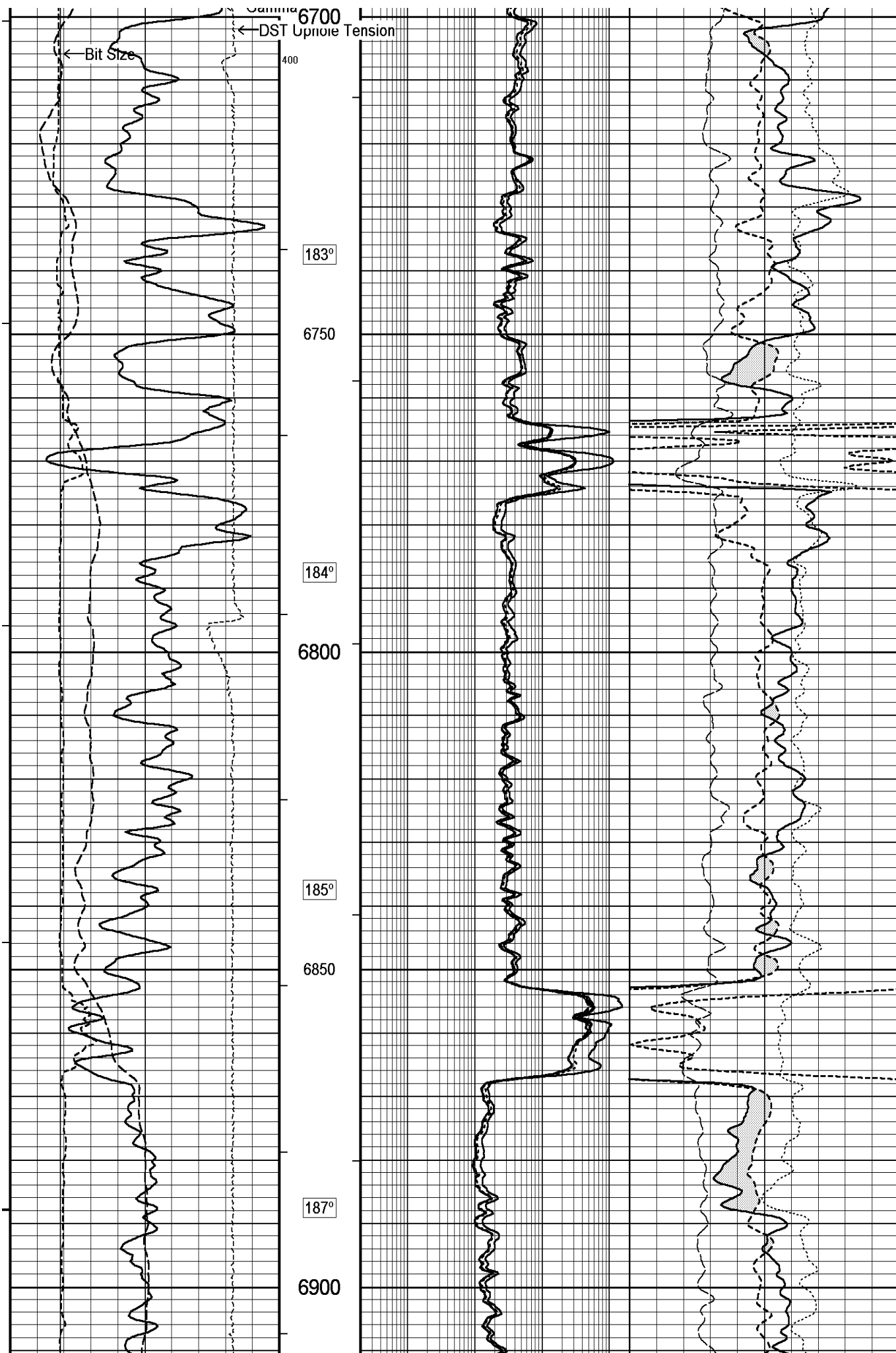


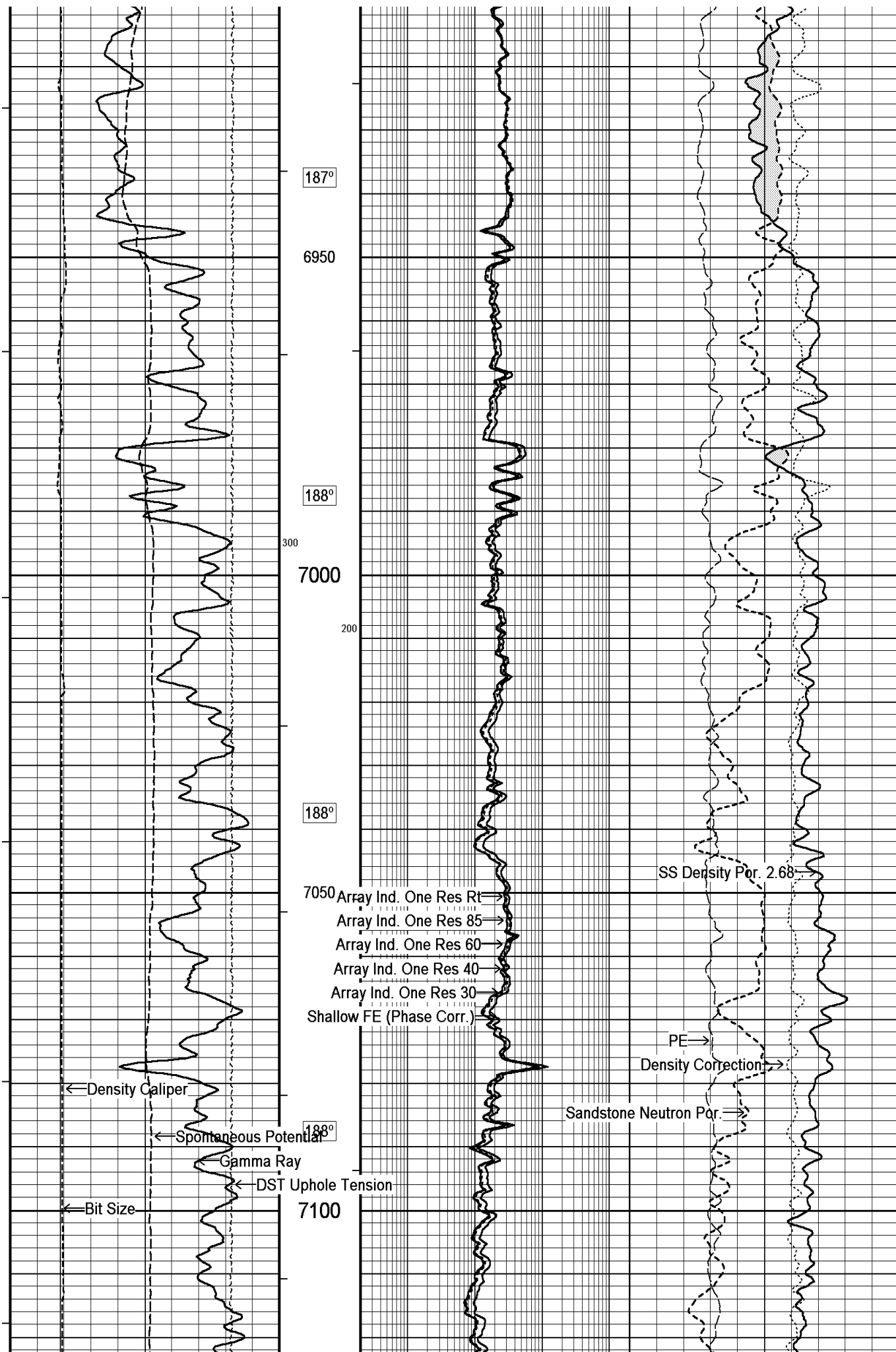


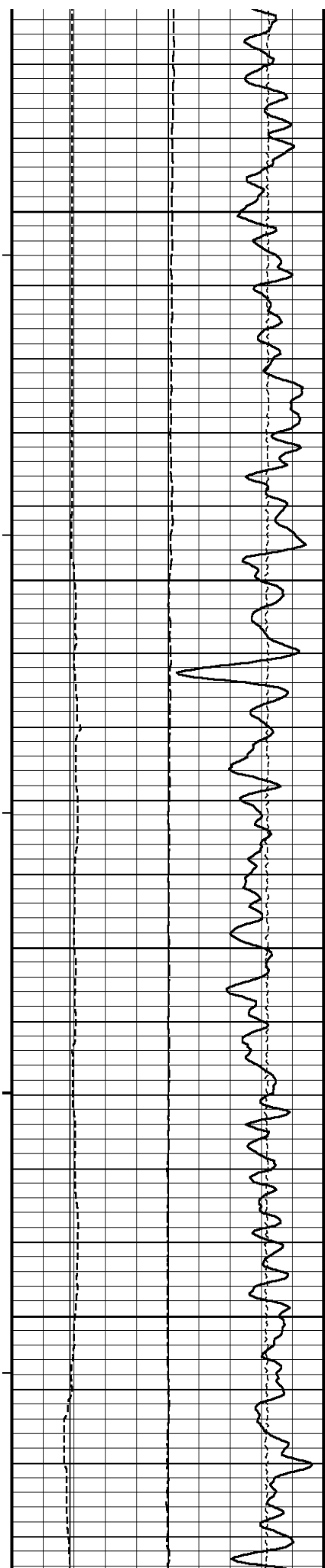












188°

7150

188°

7200

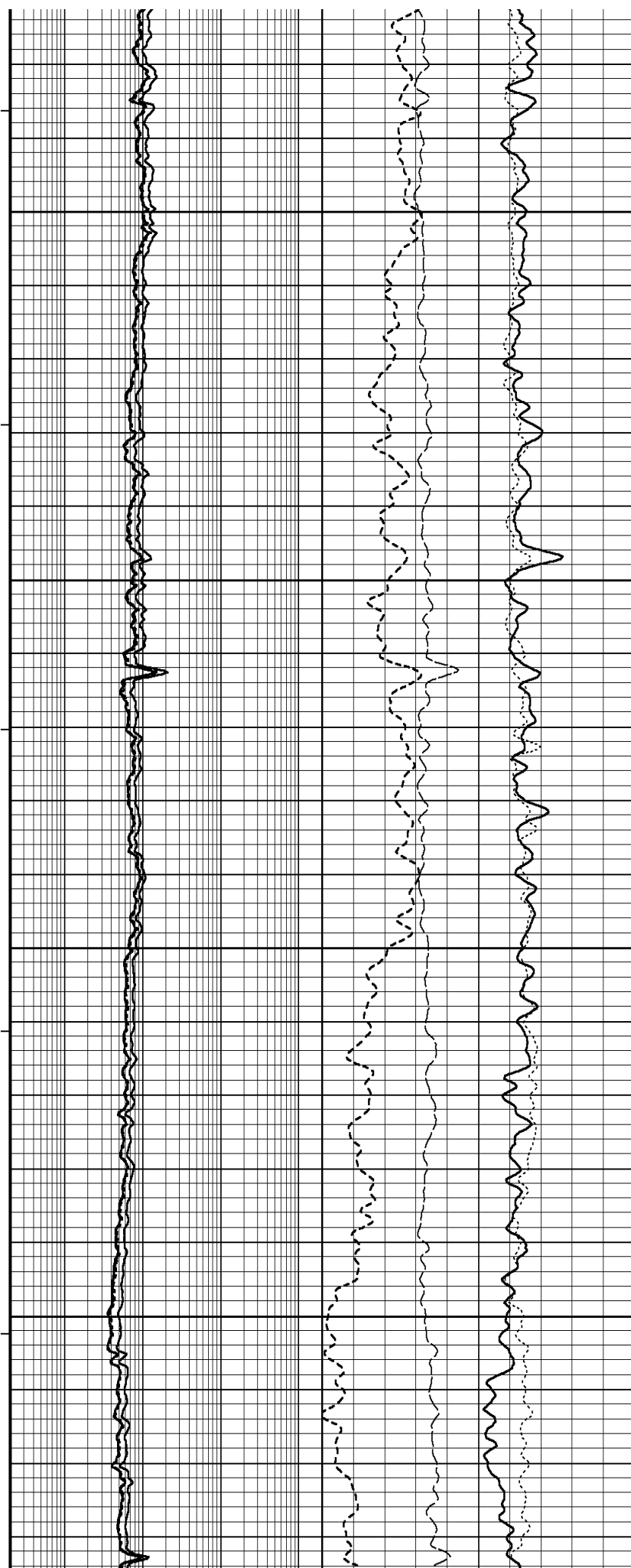
187°

7250

200

188°

7300



188°

7150

188°

7200

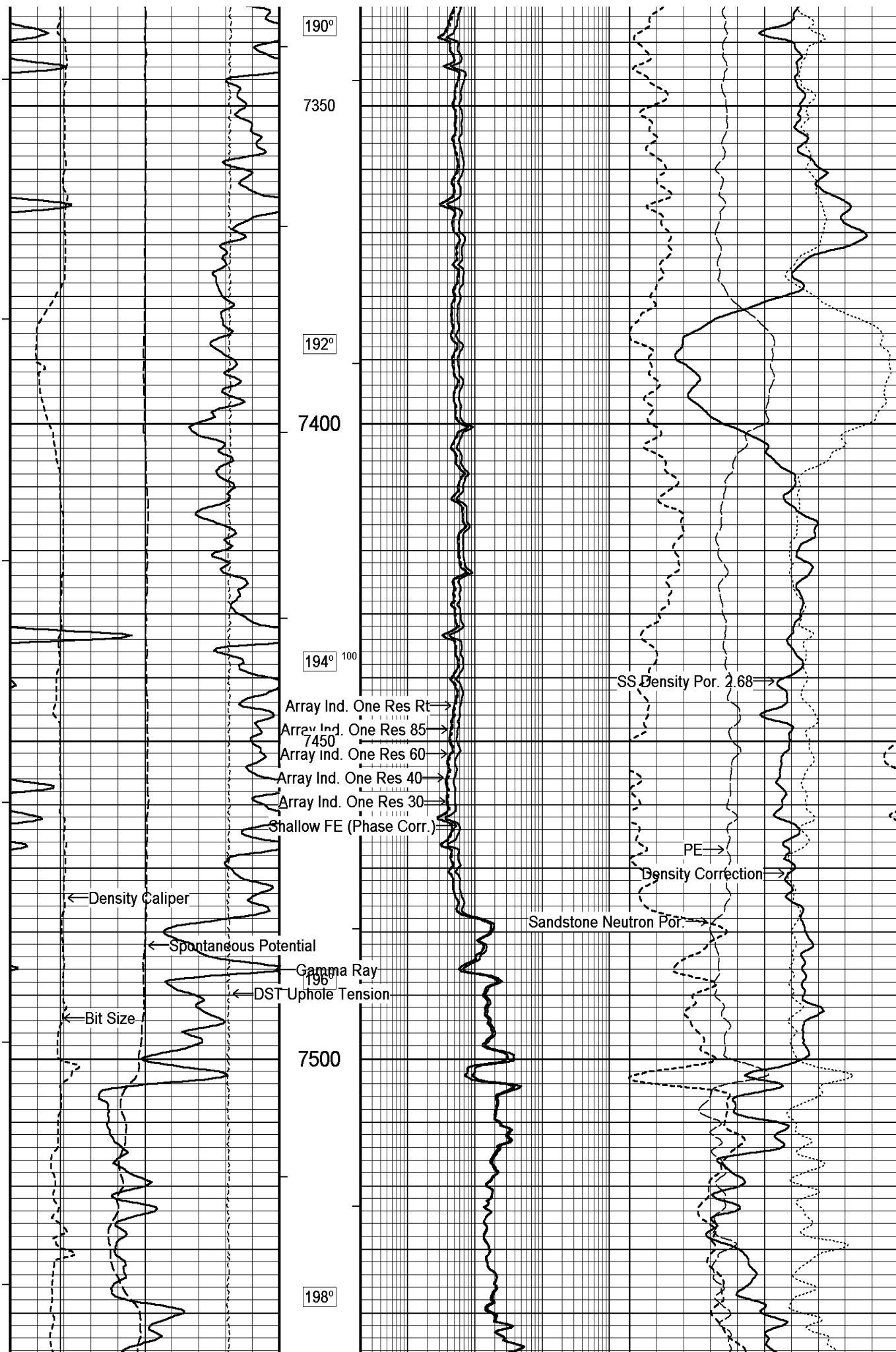
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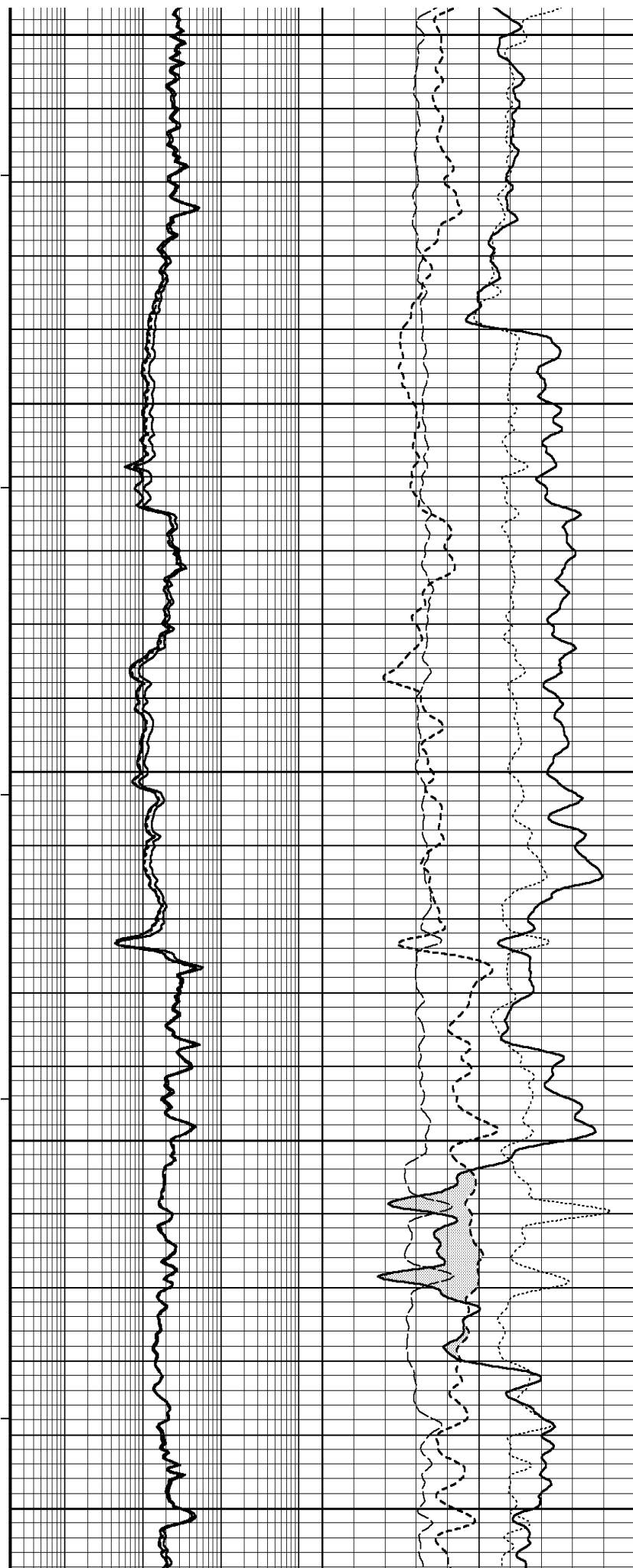
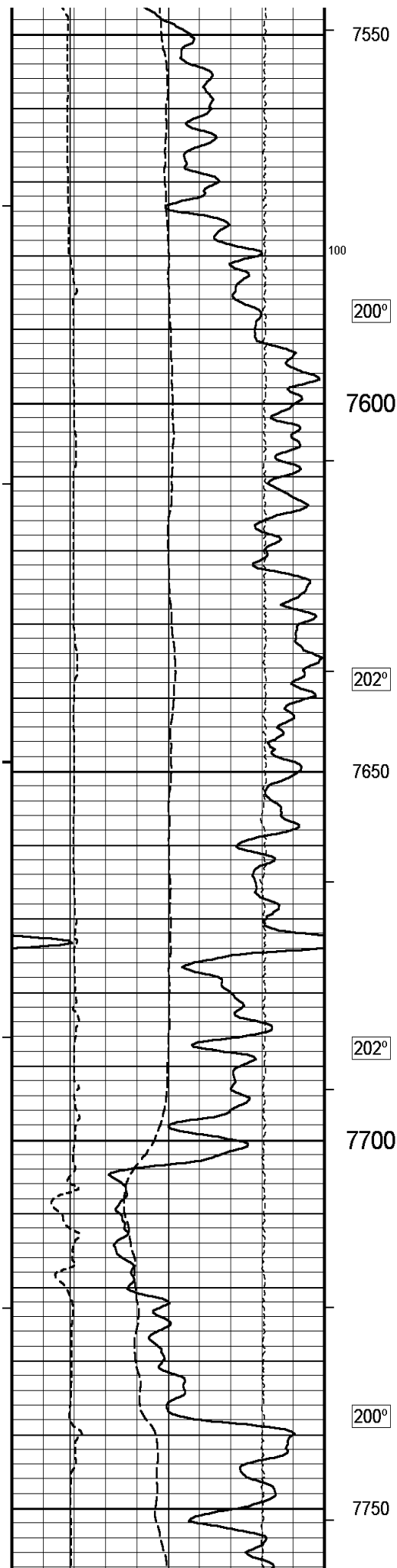
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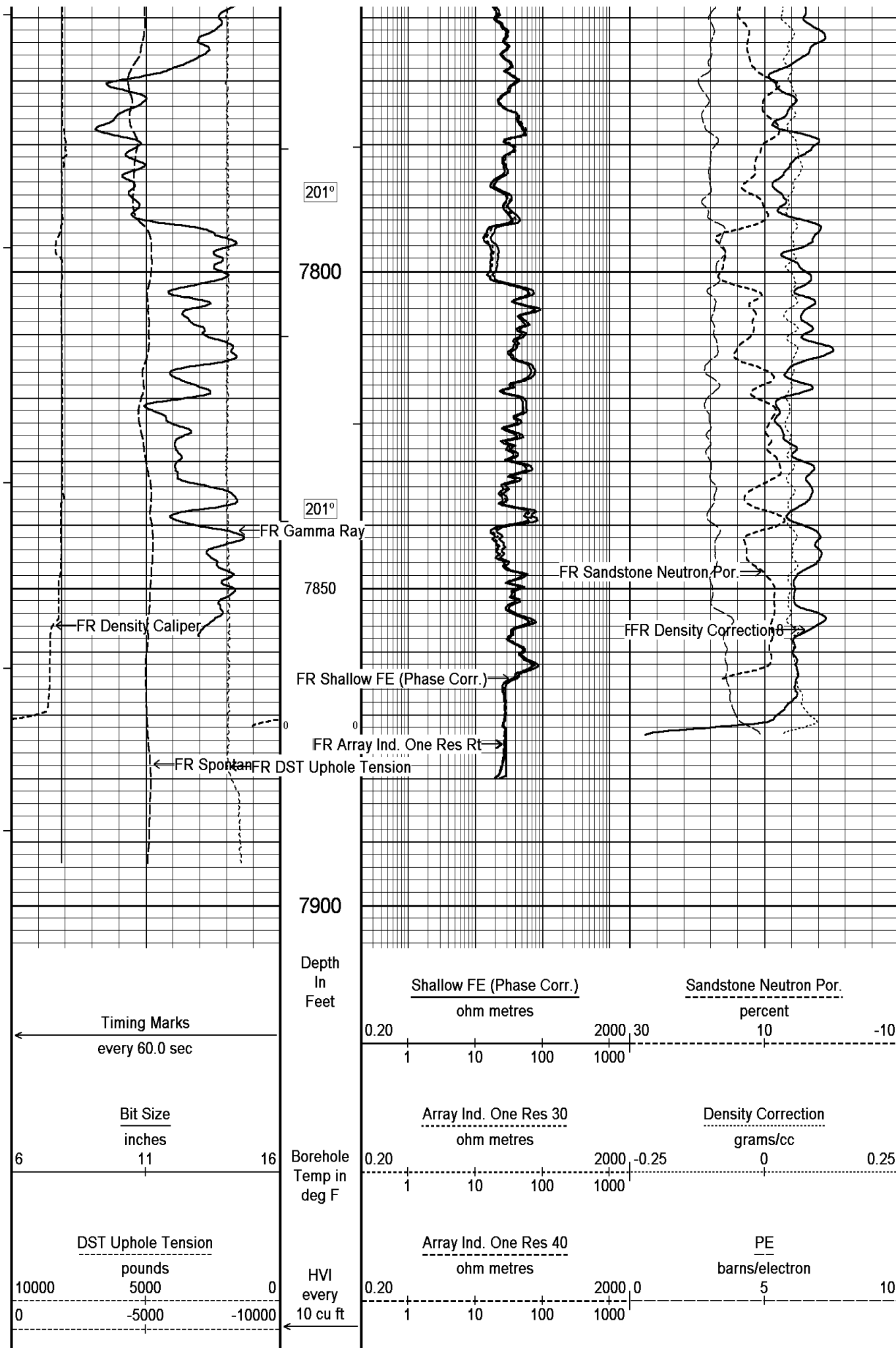
200

188°

7300







201°

7800

201°

7850

FR Density Caliper

FR Gamma Ray

FR Sandstone Neutron Por.

FFR Density Correction

FR Shallow FE (Phase Corr.)

FR Array Ind. One Res Rt

FR Spontaneous Potential

FR DST Uphole Tension

7900

Depth  
in  
Feet

Shallow FE (Phase Corr.)

Sandstone Neutron Por.

ohm metres  
0.20 1 10 100 2000

percent  
10 -10

Timing Marks  
every 60.0 sec

Bit Size  
inches

Array Ind. One Res 30  
ohm metres

Density Correction  
grams/cc

6 11 16

0.20 1 10 100 2000

Array Ind. One Res 40  
ohm metres

PE  
barns/electron

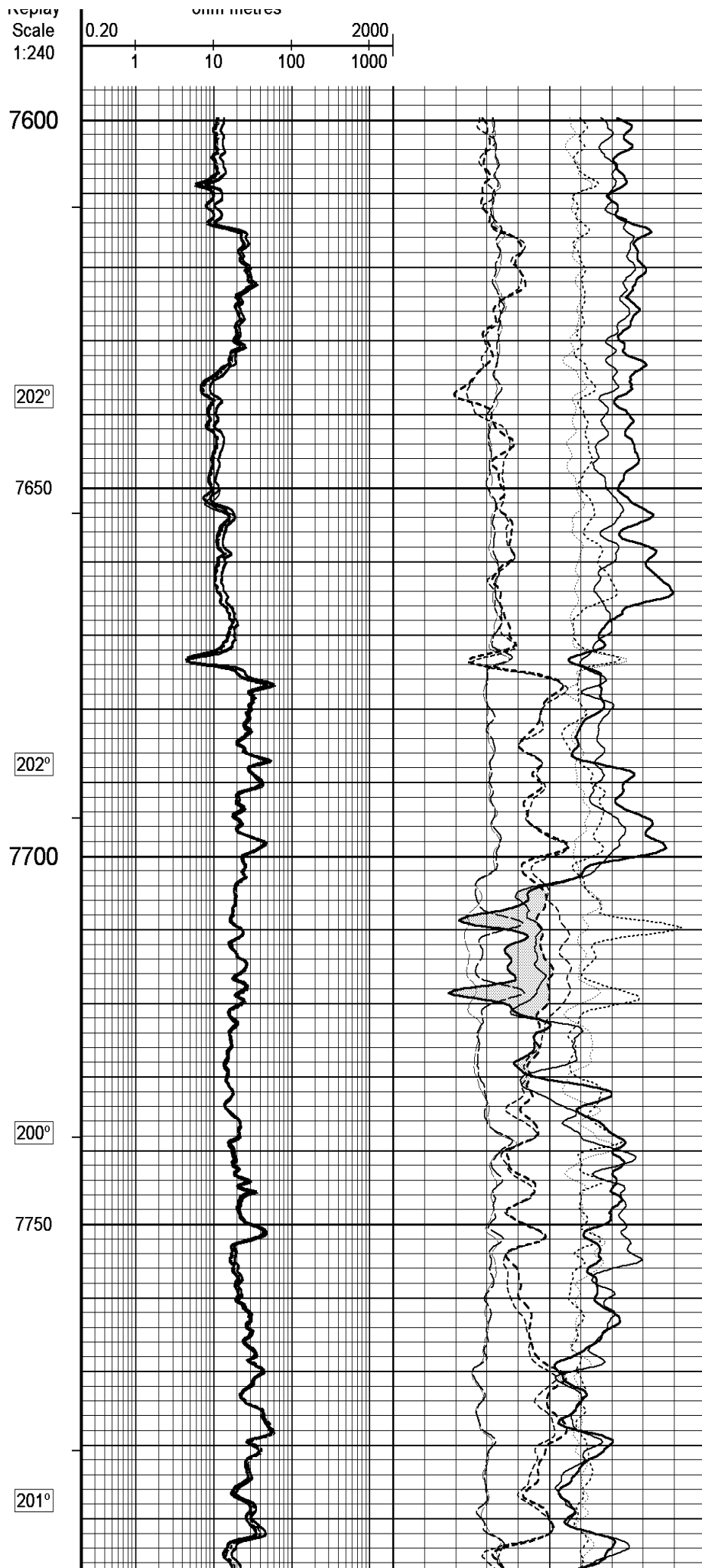
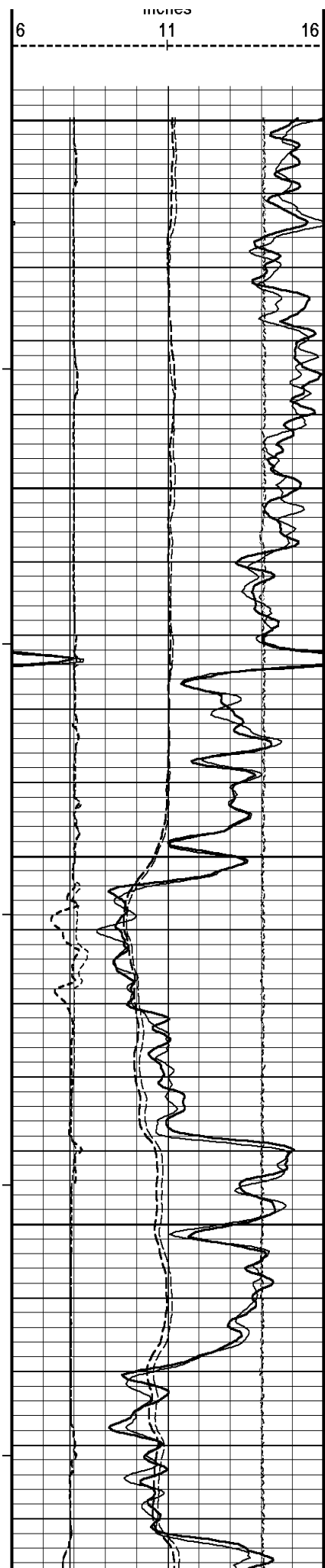
Borehole  
Temp in  
deg F

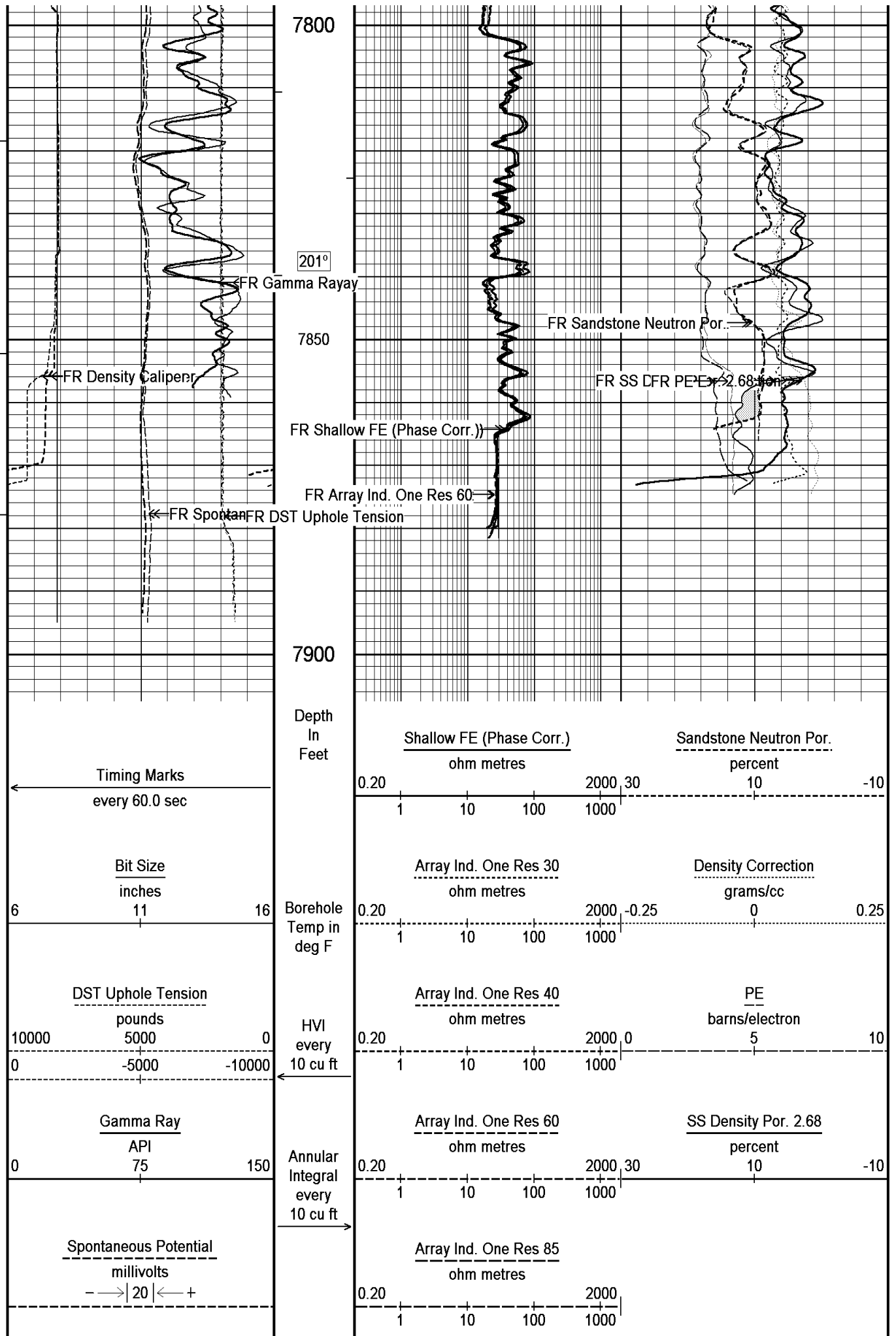
DST Uphole Tension  
pounds  
10000 5000 0  
0 -5000 -10000

0.20 1 10 100 2000

HVI  
every  
10 cu ft







7800

201°

7850

7900

Depth  
In  
Feet

Timing Marks  
every 60.0 sec

Bit Size  
inches  
6 11 16

Borehole  
Temp in  
deg F

DST Uphole Tension  
pounds  
10000 5000 0  
0 -5000 -10000

HVI  
every  
10 cu ft

Gamma Ray  
API  
0 75 150

Annular  
Integral  
every  
10 cu ft

Spontaneous Potential  
millivolts  
- -> | 20 | <- +

FR Gamma Rayay

FR Density Caliper

FR Spontan

FR Shallow FE (Phase Corr.)

FR Array Ind. One Res 60

FR DST Uphole Tension

FR Sandstone Neutron Por.

FR SS DFR PE 2.68

Shallow FE (Phase Corr.)

ohm metres  
0.20 1 10 100 1000 2000 30

Sandstone Neutron Por.

percent  
10 -10

Array Ind. One Res 30

ohm metres  
0.20 1 10 100 1000 2000 -0.25

Density Correction

grams/cc  
0 0.25

Array Ind. One Res 40

ohm metres  
0.20 1 10 100 1000 2000 0

PE

barns/electron  
5 10

Array Ind. One Res 60

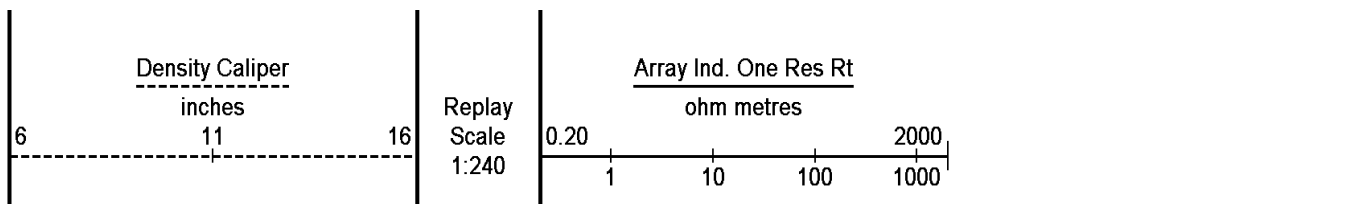
ohm metres  
0.20 1 10 100 1000 2000 30

SS Density Por. 2.68

percent  
10 -10

Array Ind. One Res 85

ohm metres  
0.20 1 10 100 1000 2000



Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 20-NOV-2010 16:07  
 Filename: C:\Minimus\LOGS\Bill Barrett\GGU Miller 24D-32-691\MAIN.dta  
 Recorded on 20-NOV-2010 12:48  
 Filename: C:\Minimus\LOGS\Bill Barrett\GGU Miller 24D-32-691\REPEAT.dta  
 Recorded on 20-NOV-2010 12:28  
 System Versions: Logged with 10.07.0791 Plotted with 10.07.0791

↑ OVERLAY ↑

**BEFORE SURVEY CALIBRATION**  
 C:\Minimus\LOGS\Bill Barrett\GGU Miller 24D-32-691\REPEAT.dta

General Constants All 000 Last Edited on 20-NOV-2010,11:53

General Parameters		
Mud Resistivity	1.810	ohm-metres
Mud Resistivity Temperature	90.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	None	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 000 Field Calibration on 20-NOV-2010 11:09

Reading No	Measured	Calibrated (lbs)
1	15548.93	0.00
2	17625.57	365.00

High Resolution Temperature Calibration MCG 287 Field Calibration on 20-NOV-2010,11:20

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

High Resolution Temperature Constants MCG 287 Last Edited on 27-OCT-2010,11:54

Pre-filter Length	11
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SP Calibration MCG 287 Field Calibration on 20-NOV-2010,11:20

	Measured	Calibrated (mV)
Reference 1	95.0	104.2
Reference 2	-87.4	-104.5

Gamma Calibration MCG 287 Field Calibration on 20-NOV-2010,11:20

	Measured	Calibrated (API)
Background	90	62
Calibrator (Gross)	848	589
Calibrator (Net)	759	527

Gamma Constants MCG 287 Last Edited on 20-NOV-2010,11:19

Gamma Calibrator Number	GDC 174
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Gamma Calibrator Number	GR0114		
Mud Density	1.00	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

Neutron Calibration MDN 112

Base Calibration on 25-OCT-2010,16:11  
Field Check on 20-NOV-2010,11:18

Base Calibration					
	Measured		Calibrated (cps)		
	Near	Far	Near	Far	
	3130	99	3714	110	
Ratio	31.503		33.764		
Field Calibrator at Base					
			Calibrated (cps)		
			2252	3194	
Ratio			0.705		
Field Check					
			Calibrated (cps)		
			2249	3167	
Ratio			0.710		

Neutron Constants MDN 112

Last Edited on 20-NOV-2010,09:37

Neutron Source Id	P44384		
Neutron Jig Number	NJ6584		
Epithermal Neutron	No		
Caliper Source for Processing	Density Caliper		
Stand-off	0.00	inches	
Mud Density	1.00	gm/cc	
Limestone Sigma	7.10	cu	
Sandstone Sigma	7.00	cu	
Dolomite Sigma	4.70	cu	
Formation Pressure Source	None		
Formation Pressure	N/A	kpsi	
Temperature Source	None		
Temperature	N/A	degrees F	
Mud Salinity	1.00	kppm	
Formation Fluid Salinity Source	None		
Formation Fluid Salinity	N/A	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE 179

Base Calibration on 15-OCT-2010 11:16  
Field Check on 20-NOV-2010 11:13

Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	962.4	126.8	
Base Check			
		280.5	
Field Check			
		280.7	

FE Constants MFE 179

Last Edited on 20-NOV-2010,09:40

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	

High Resolution Temperature Calibration MAI 106

Field Calibration on 20-NOV-2010,11:12

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

High Resolution Temperature Constants MAI 106

Last Edited on 10-NOV-2010,07:35

## Induction Calibration MAI 106

Base Calibration on  
Field Check on 20-NOV-2010 11:12

## Base Calibration

## Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.5	486.3	9.3	966.2
2	5.8	391.9	7.6	821.4
3	3.0	262.9	5.2	566.0
4	1.4	138.3	2.6	279.2

Array Temperature 74.6 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)		Deg F
	Low	High	Low	High	
1	0.0	0.0	15.5	3750.1	
2	0.0	0.0	31.1	3456.0	
3	0.0	0.0	29.9	3023.2	
4	0.0	0.0	20.2	2003.0	
Deep	0.0	0.0	18.7	1962.6	
Medium	0.0	0.0	43.2	4027.1	
Shallow	0.0	0.0	45.8	5109.9	
Array Temperature		0.0		82.0	Deg F

## Induction Constants MAI 106

Last Edited on 20-NOV-2010,09:41

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.	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 220

Base Calibration on 27-OCT-2010,18:51  
Field Calibration on 20-NOV-2010,09:38

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14272	4.00
2	22416	5.96
3	30368	7.98
4	38432	9.86
5	47536	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.90	8.93

Photo Density Calibration MPD 220

Base Calibration on 27-OCT-2010 19:35  
Field Check on 20-NOV-2010 11:18

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52933	16878	53237	19445
Reference 2	24114	2409	25135	2545

Field Check at Base

1196.9	1213.9
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Field Check

1191.4	1210.9
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PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	215	1060		
Reference 1	17971	52737	0.344	0.320
Reference 2	6633	23964	0.280	0.274

Field Check at Base

214.5	1059.9
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Field Check

214.6	1055.3
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Density Constants MPD 220

Last Edited on 20-NOV-2010,09:39

Density Source Id	P44263B	
Nylon Calibrator Number	532	
Aluminium Calibrator Number	532	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.28	gm/cc
Mud Density Z/A Correction	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)	
2.68	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	

AFTER SURVEY CALIBRATION

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FE Check MFE 179

Before Survey Check 20-NOV-2010 11:13  
After Survey Check on 20-NOV-2010 15:53

Before (ohm-m) 280.7  
After (ohm-m) 280.7

Induction Check MAI 106

Before Survey Check on  
After Survey Check on 20-NOV-2010 15:51

Channel	Before Survey (mmho/m)		After Survey (mmho/m)		Deg F
	Low	High	Low	High	
1	0.0	0.0	15.5	3750.2	
2	0.0	0.0	31.1	3456.0	
3	0.0	0.0	29.9	3023.2	
4	0.0	0.0	20.3	2002.9	
Deep	0.0	0.0	18.8	1962.6	
Medium	0.0	0.0	43.2	4027.2	
Shallow	0.0	0.0	45.8	5109.8	
Array Temperature		0.0		81.0	Deg F

Photo Density Check MPD 220

Before Survey Check on 20-NOV-2010 11:18  
After Survey Check on 20-NOV-2010 15:57

Density Check

	Near		Far	
	Before	After	Before	After
	1191.4	1189.6	1210.9	1204.9

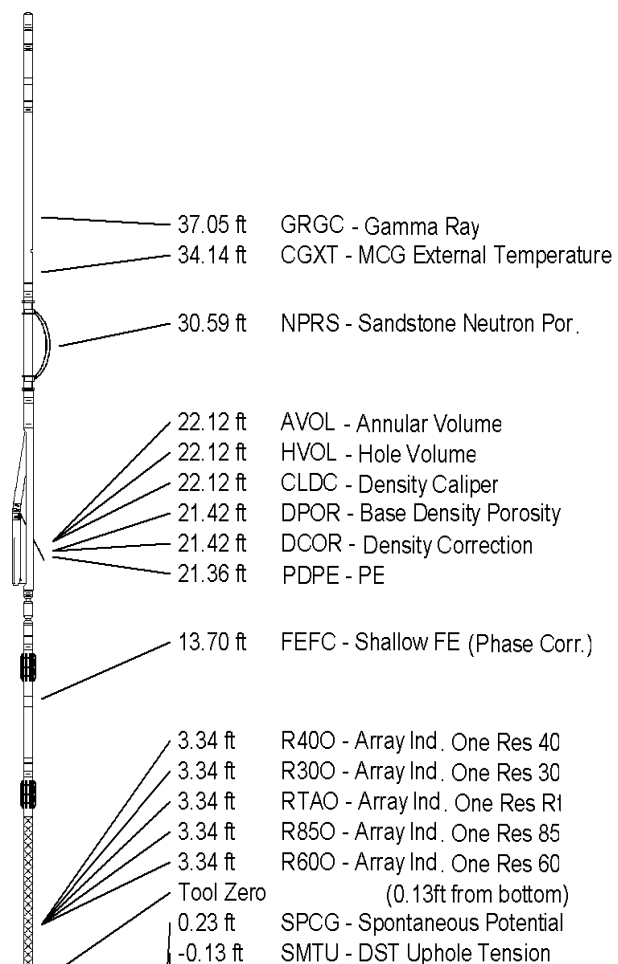
PE Check

	Before	After
WS	214.6	213.2
WH	1055.3	1053.6

DOWNHOLE EQUIPMENT

C:\Minimus\LOGS\Bill Barrett\GGU Miller 24D-32-691\MAIN.dta

- 3/8" Triple Cone Cable Head (MCB C A)  
MCB 5 Length: 1.58 ft Weight: 15.4 lb
- SHA-J.A Compact Swivel Head Adaptor  
SHA 213 Length: 2.30 ft Weight: 22.0 lb
- Compact Gamma  
MCG 287 Length: 8.70 ft Weight: 63.9 lb
- Compact Neutron  
MDN 112 Length: 5.04 ft Weight: 50.7 lb
- Compact Density/Caliper  
MPD 220 Length: 9.59 ft Weight: 90.4 lb
- SKJ-D.A Compact Knuckle Joint  
SKJ 154 Length: 2.17 ft Weight: 24.3 lb
- Compact Focussed Electric  
MFE 179 Length: 6.03 ft Weight: 48.5 lb
- Compact Induction  
MAI 106 Length: 10.81 ft Weight: 48.5 lb
- Total Length: 46.21 ft Weight: 363.8 lb





All measurements relative to tool zero.

COMPANY	BILL BARRETT CORPORATION
WELL	GGU MILLER 24D-32-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6142.00	feet	First Reading	7875.00	
Elevation Drill Floor	6141.00	feet	Depth Driller	7875.00	feet
Elevation Ground Level	6120.00	feet	Depth Logger	7878.00	feet



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