ARRAY INDUCTION - RTAP
SHALLOW FOCUSED
ELECTRIC LOG

Weatherford®

COMPANY	BILL BARRETT CORPORATION
WELL	GGU FEDERAL 42C-29-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO
LOCATION	SHL: 1234' FNL & 1312' FEL
	BHL: 1800' FNL & 664' FEL

40 Years of Wireline 1970 2010

SEC	TWP	RGE	Other Services
29	6S	91W	MPD/MDN

API Number 05-045-19800
Permit Number

Permanent Datum G.L., Elevation 6104 feet
Log Measured From K.B. @ 23 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	6127.00
DF	6126.00
GL	6104.00

Date	31-JAN-2011			
Run Number	ONE			
Depth Driller	7435.00	feet		
Depth Logger	7433.00	feet		
First Reading	7429.00			
Last Reading	200.00			
Casing Driller	844.00	feet		
Casing Logger	848.00	feet		
Bit Size	7.880	inches		
Hole Fluid Type	LSND			
Density / Viscosity	10.60 lb/USg	60.00 CP		
PH / Fluid Loss	9.30	6.80 ml/30Min		
Sample Source	FLOW LINE			
Rm @ Measured Temp	4.60 @ 71.0	ohm-m		
Rmf @ Measured Temp	3.68 @ 71.0	ohm-m		
Rmc @ Measured Temp	5.52 @ 71.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	1.81 @184.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	184.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13173	GD JCT		
Recorded By	S.LACKEY			
Witnessed By	C. CROW			

BOREHOLE RECORD

Last Edited: 31-JAN-2011 20:43

Bit Size inches	Depth From feet	Depth To feet
8.750	844.00	3900.00
7.880	3900.00	7435.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	844.00	36.00

REMARKS

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

HARDWARE: MPD: 8 INCH PROFILE PLATE USED.
ONE 0.5 INCH STANDOFFS USED ON INDUCTION.
ONE 0.5 INCH STANDOFFS USED ON MFE.
DUAL BOWSPRING USED ON NEUTRON.

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.

DENSITY POROSITY IS READING HIGH, NEUTRON POROSITY AND DCOR ARE READING LOW DUE TO 5 TO 8% LCM USED IN THE MUD SYSTEM.

UNDERGAUGED SECTION FROM 2800 FT TO 3220 FT REPEATED TO VERIFY LOG QUALITY

UNDERGAUGED SECTION FROM 2800FT TO 3220FT REPEATED TO VERIFY LOG QUALITY.

SEVERAL ATEMPTS TO REDUCE NOISE ON SP WERE UNSUCCESSFUL

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.94" (9 5/8", 36 LB/FT CASING)

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2540 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1760 CU.FT.

SERVICE ORDER: # 3524978

RIG: PATTERSON #307

2 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 01-FEB-2011 03:02
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta
Recorded on 01-FEB-2011 01:32
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth In Feet

Borehole Temp in deg F

Replay Scale 1:600

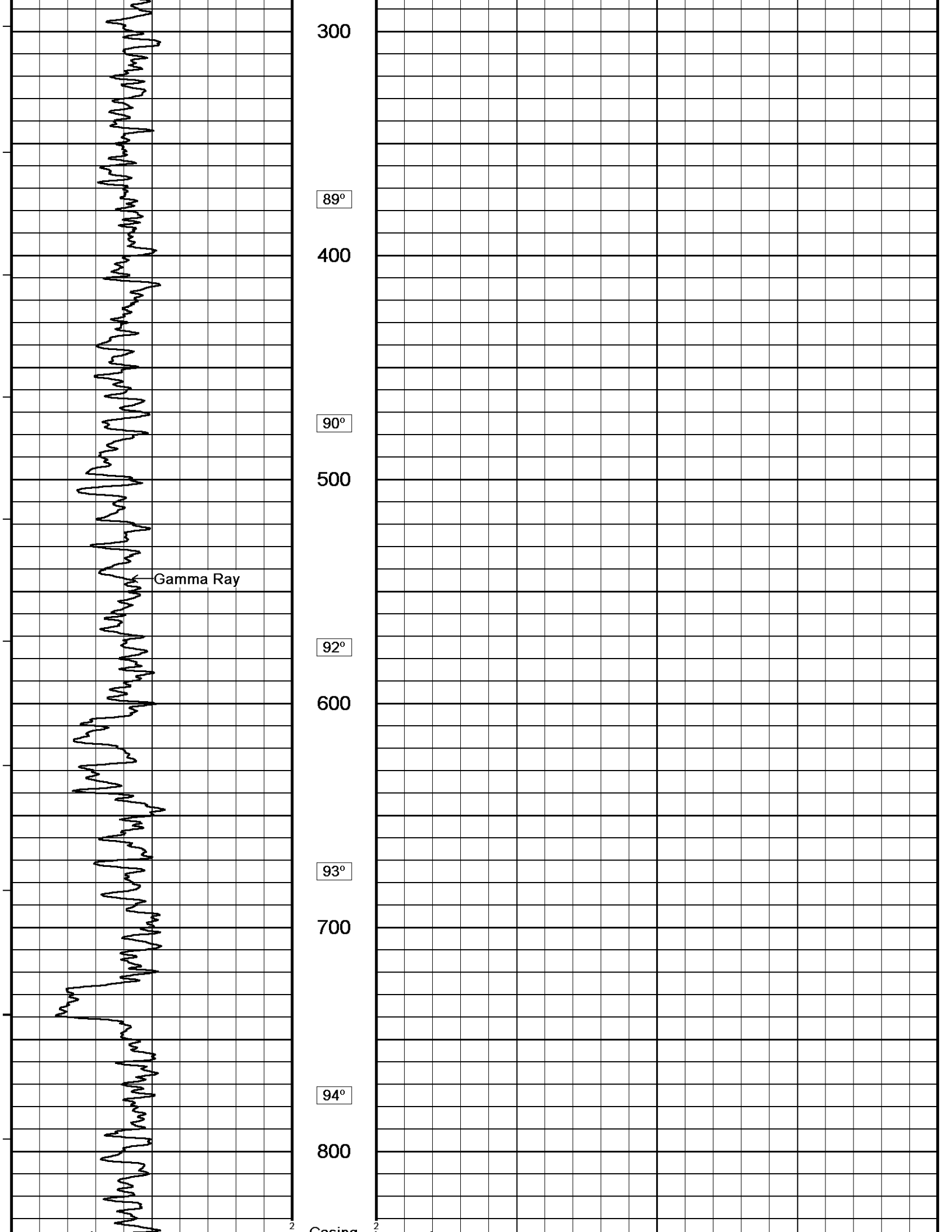
200

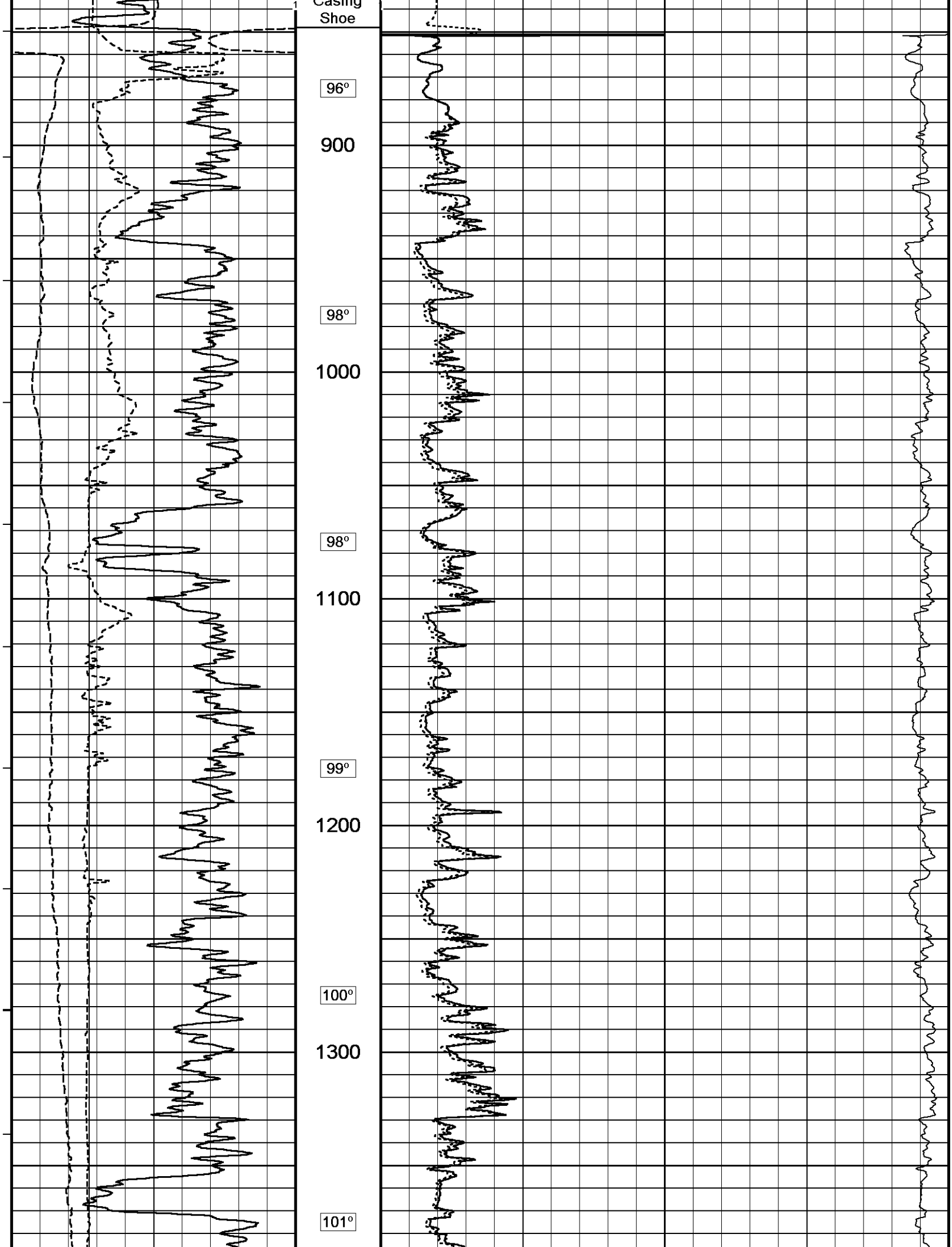
88°

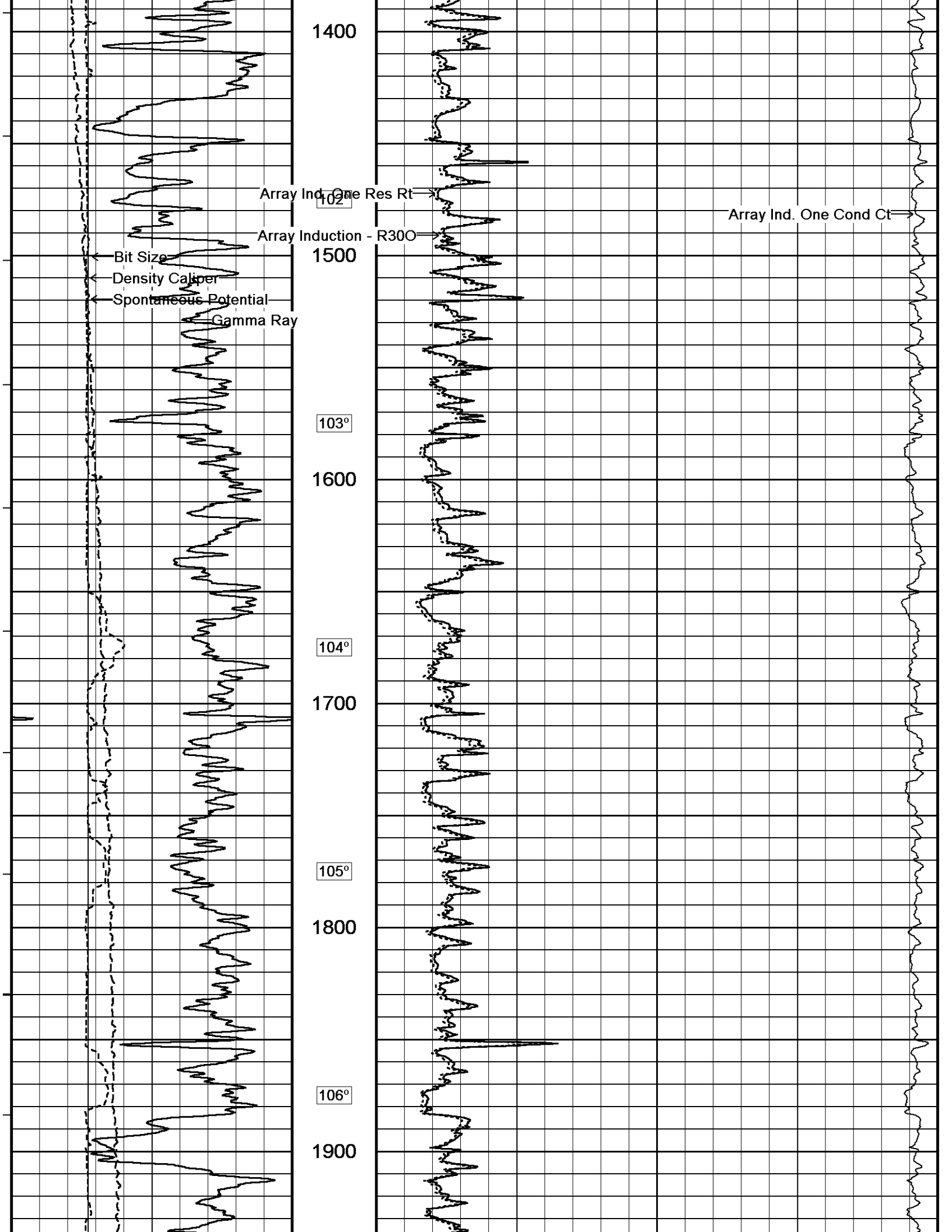
Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 1500 1250 1000

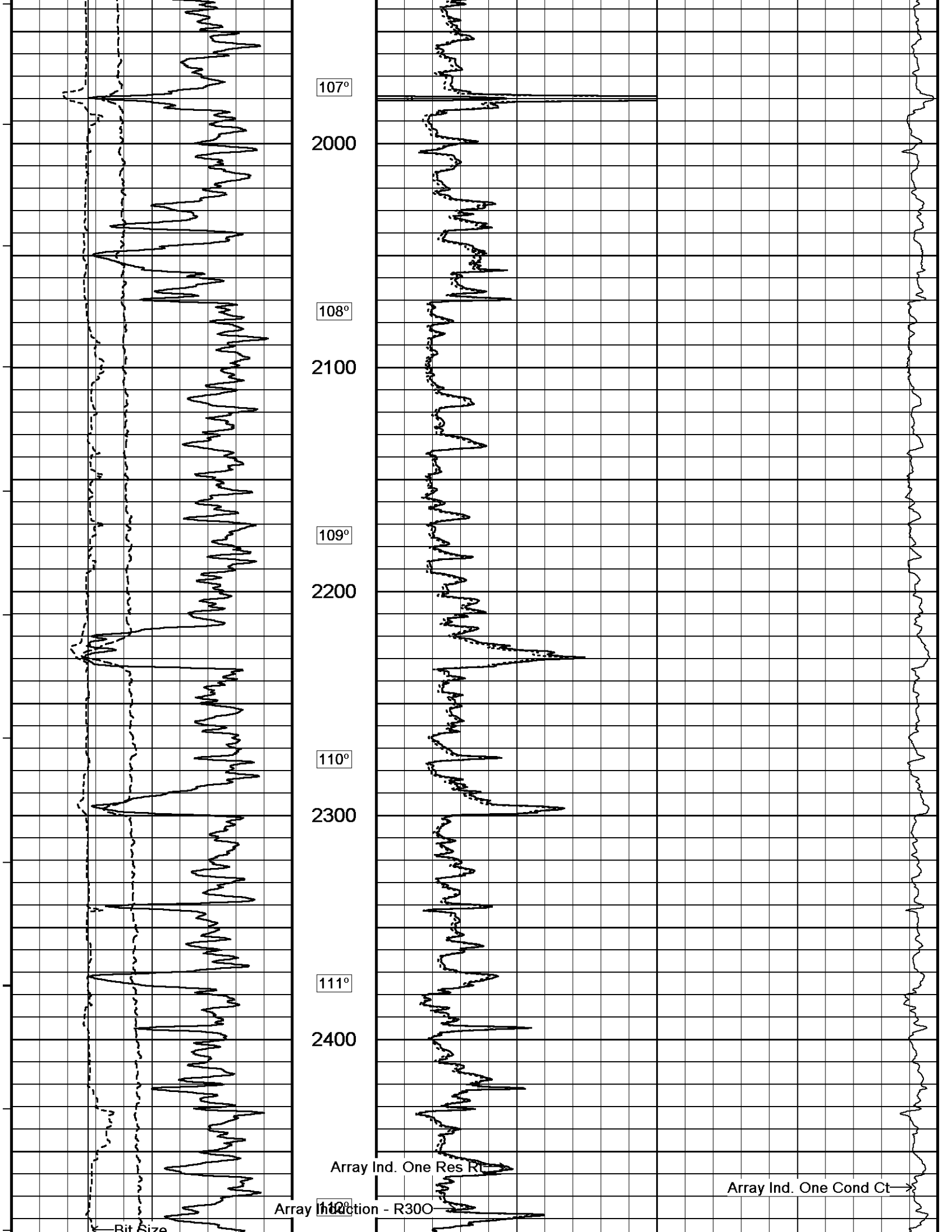
Array Induction - R30
ohm metres
0 50 100
0 500 1000

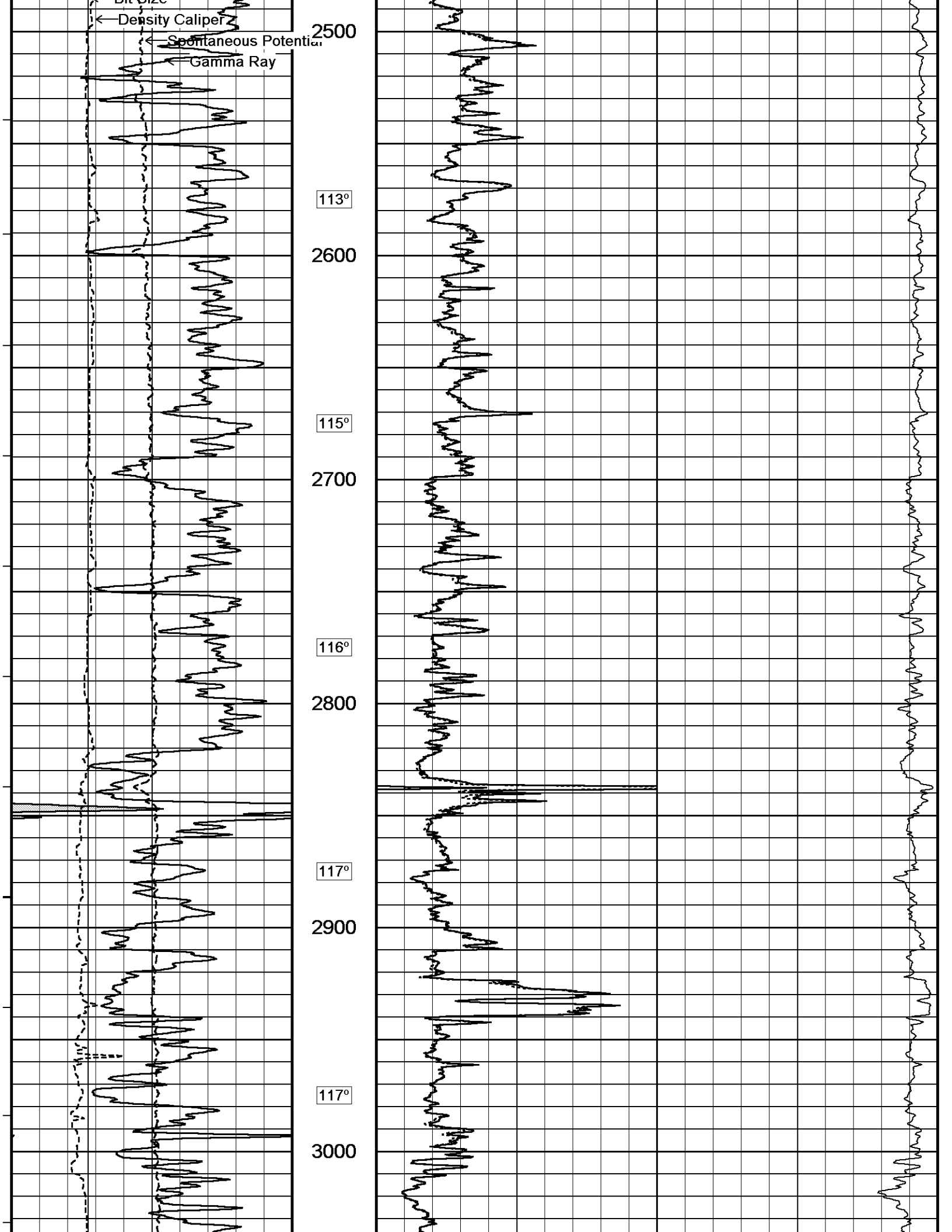
Array Ind. One Res Rt
ohm metres
0 50 100

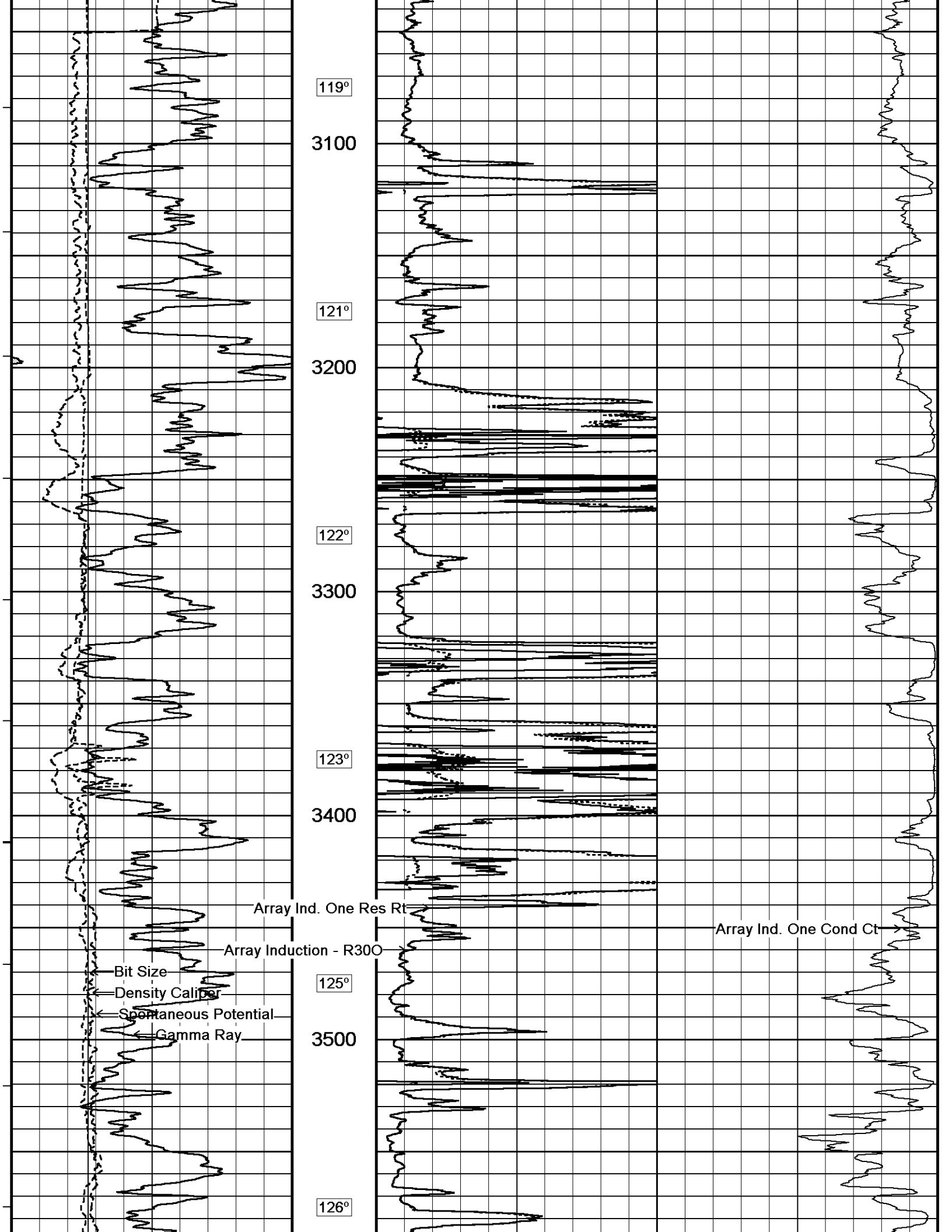

300
89°
400
90°
500
Gamma Ray
92°
600
93°
700
94°
800
Casing

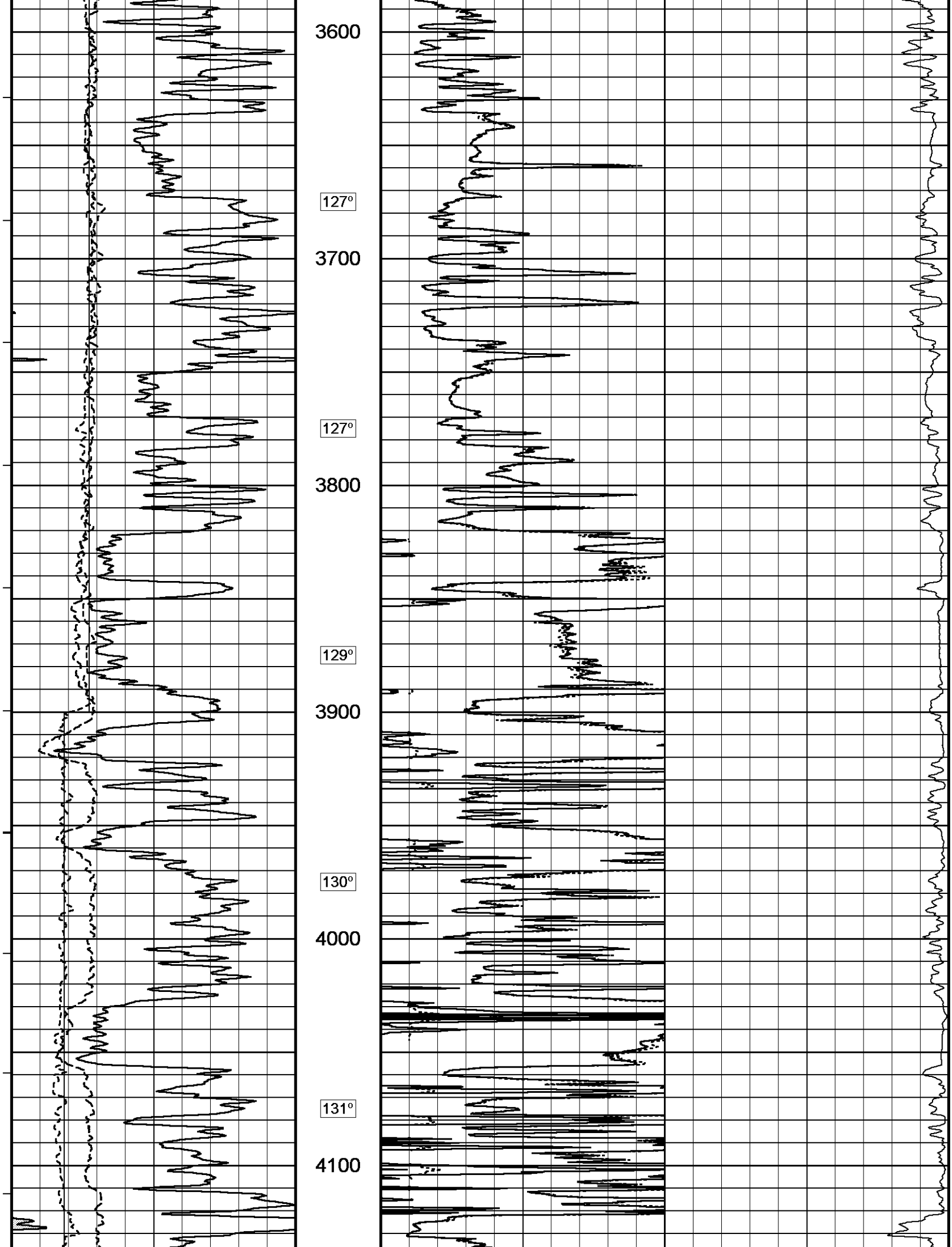

Casing
Shoe
96°
900
98°
1000
98°
1100
99°
1200
100°
1300
101°

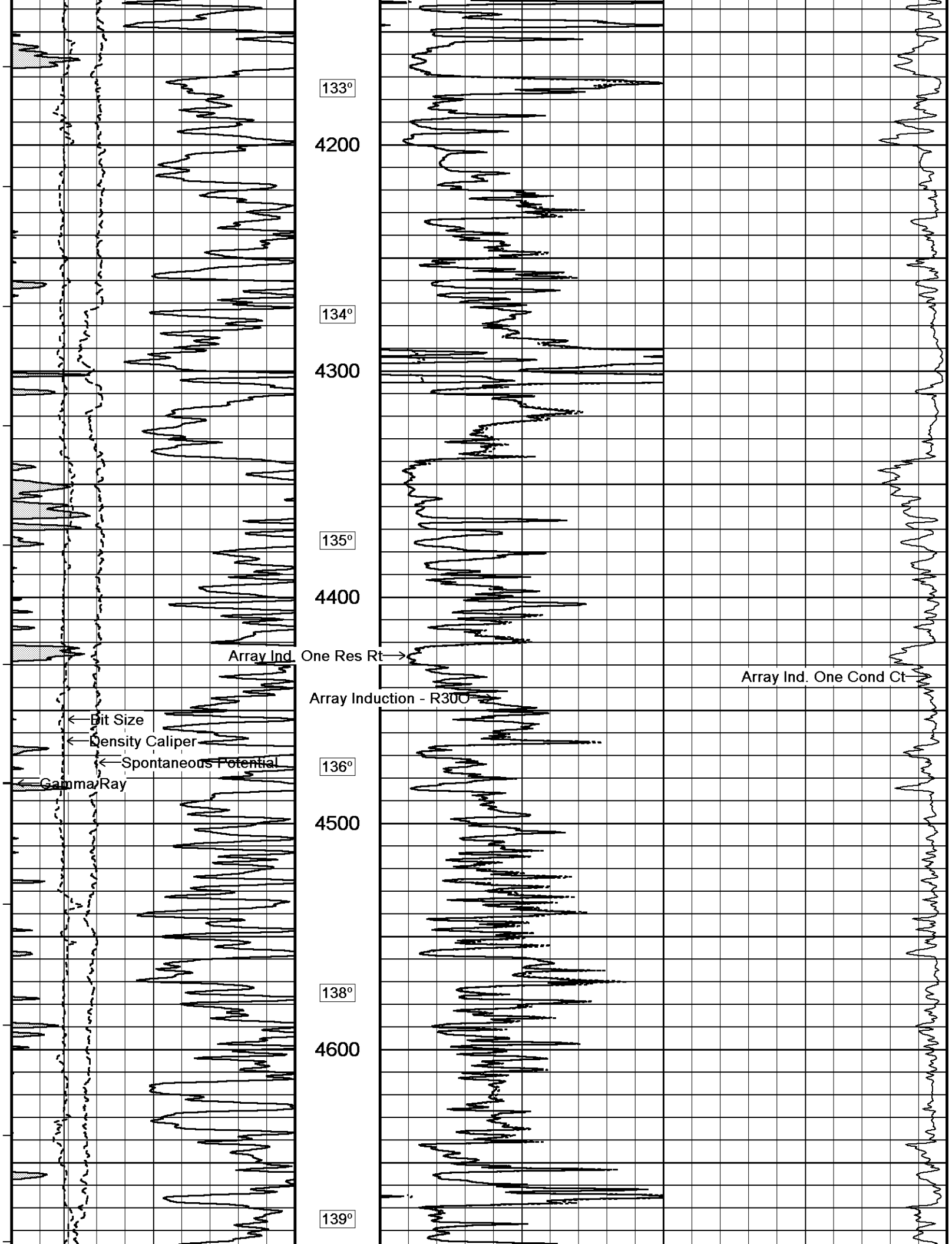

1400
Array Ind. One Res Rt
102°
Array Ind. One Cond Ct
Array Induction - R30
1500
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
103°
1600
104°
1700
105°
1800
106°
1900

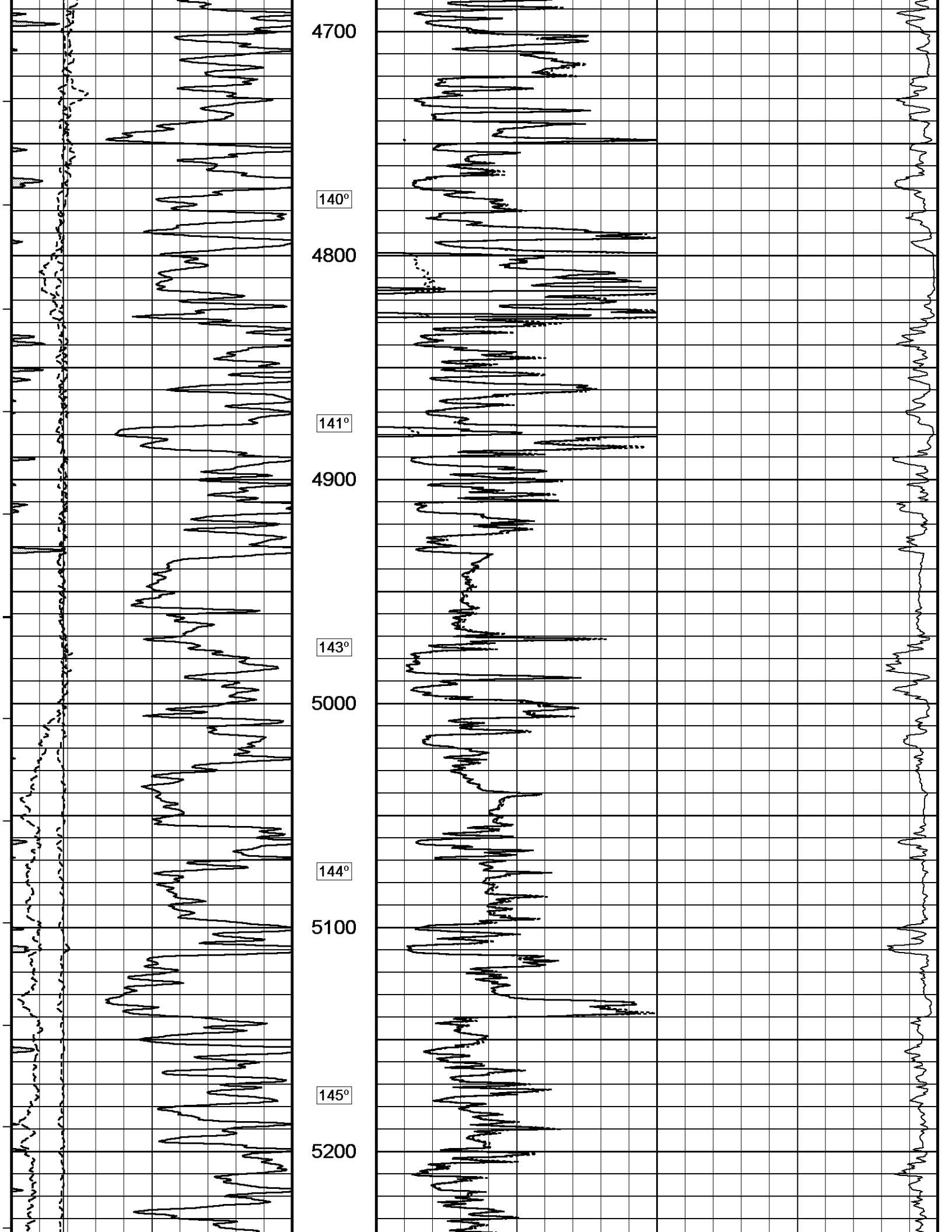

107°
2000
108°
2100
109°
2200
110°
2300
111°
2400
112°
Array Ind. One Res Rt
Array Ind. One Cond Ct
Array Induction - R30
Bit Size

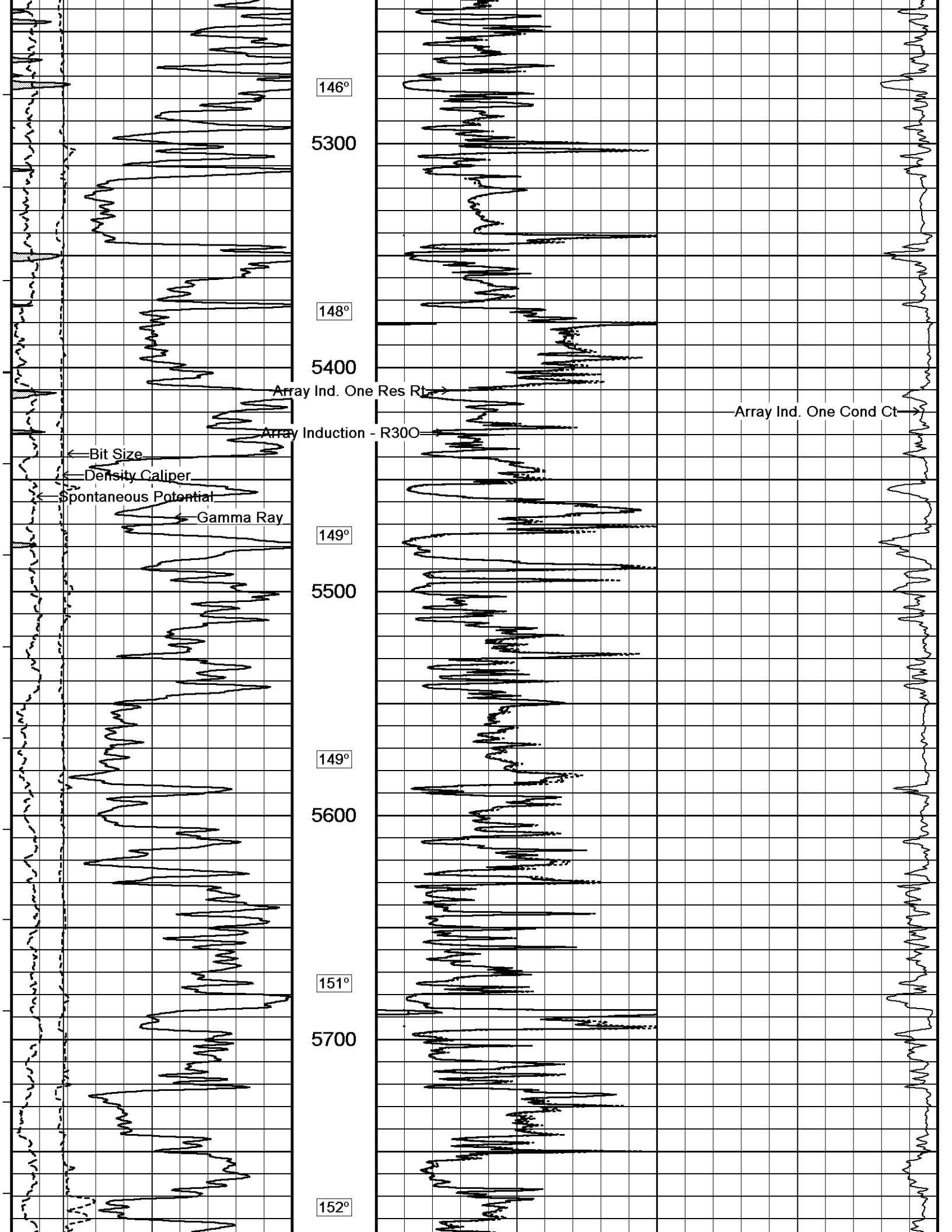

Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
2500
113°
2600
115°
2700
116°
2800
117°
2900
117°
3000

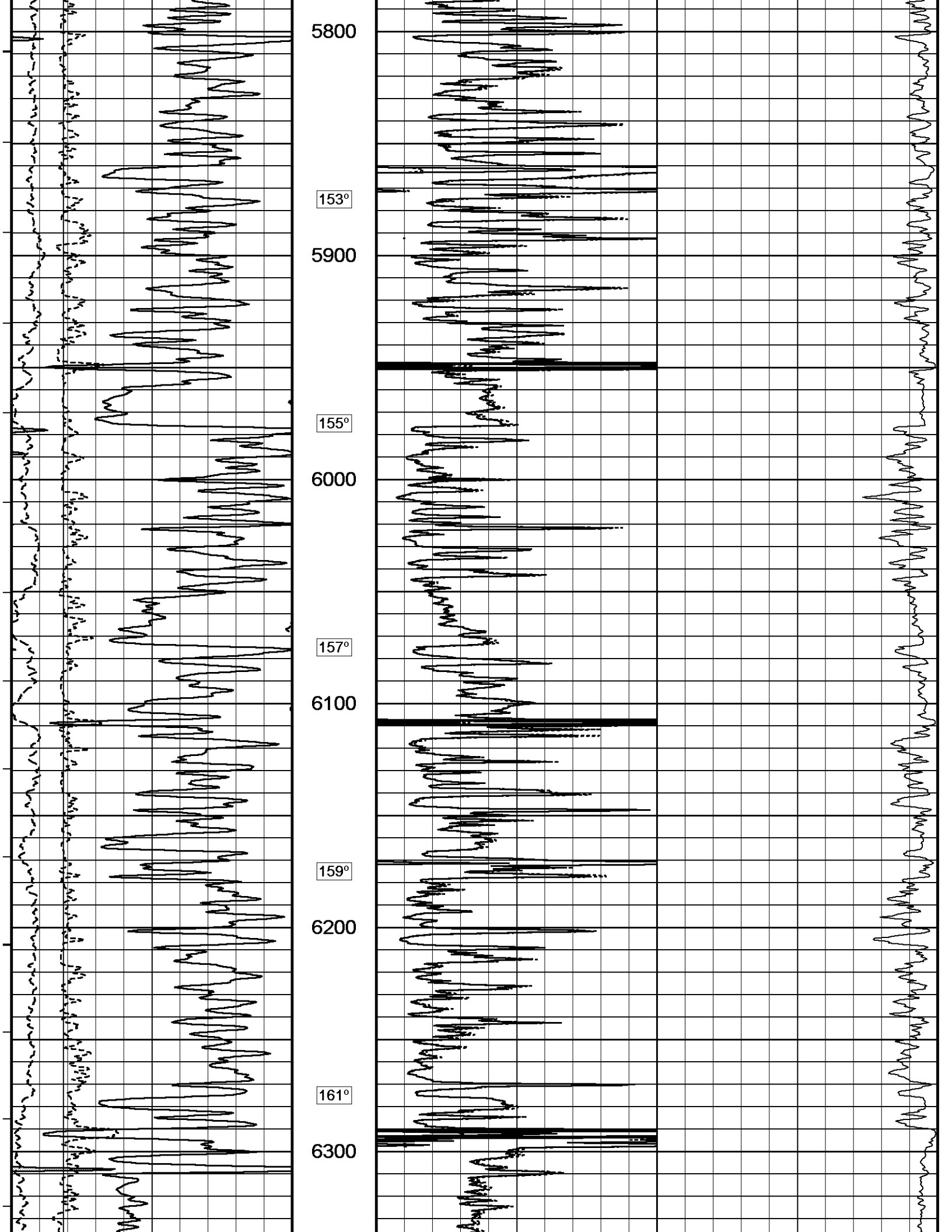

119°
3100
121°
3200
122°
3300
123°
3400
125°
3500
126°
Array Ind. One Res Rt
Array Induction - R30
Array Ind. One Cond Ct
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray

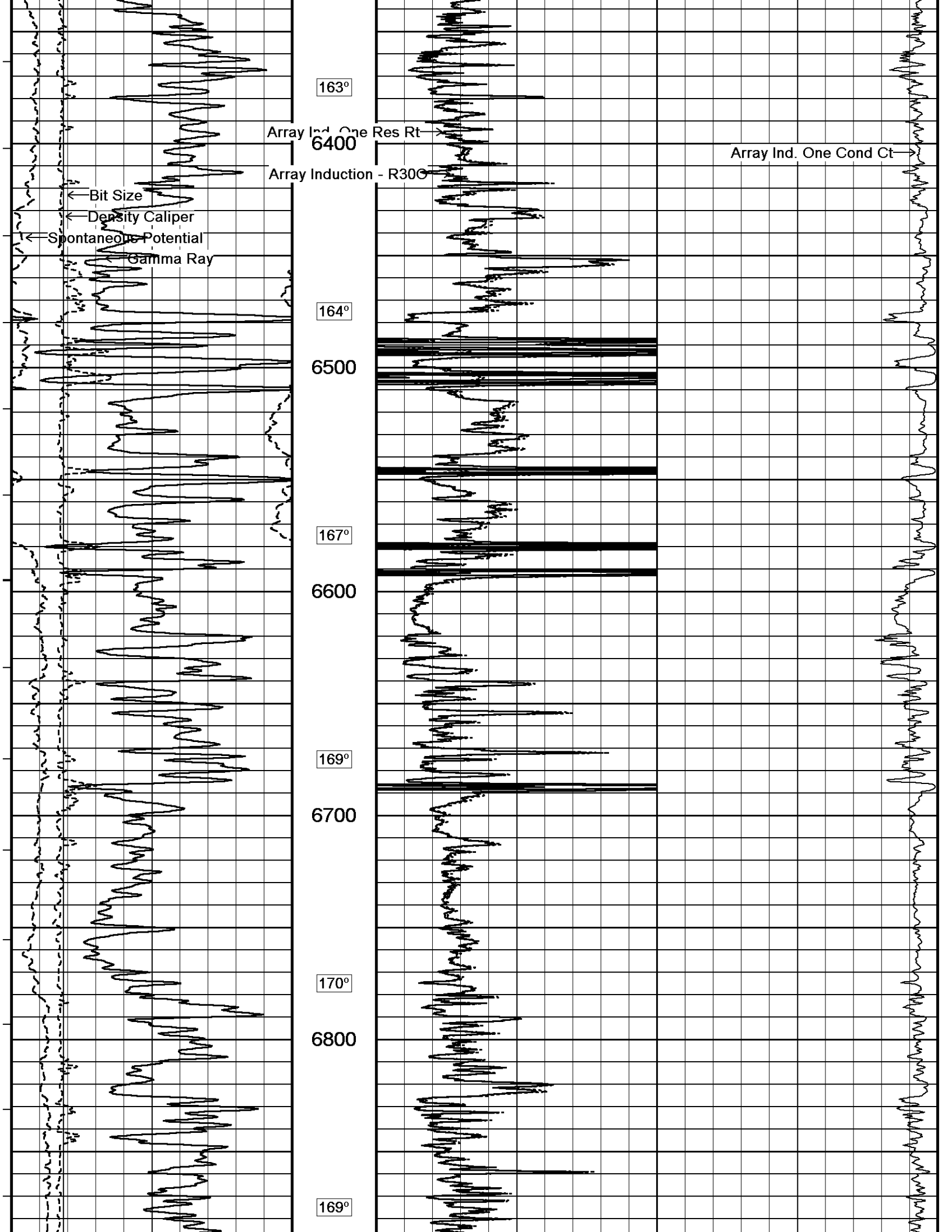

3600
127°
3700
127°
3800
129°
3900
130°
4000
131°
4100

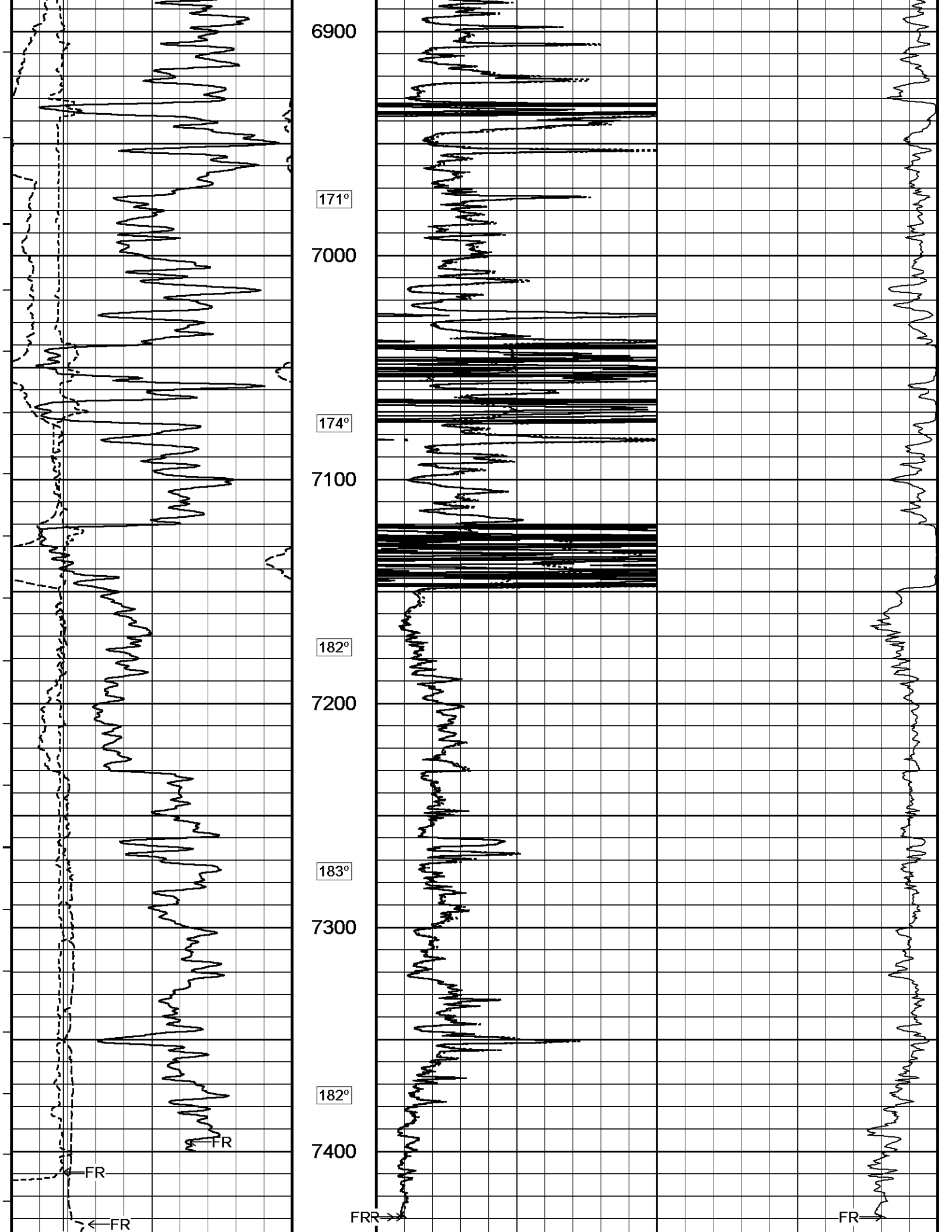

133°
4200
134°
4300
135°
4400
Array Ind. One Res Rt
Array Induction - R30
Array Ind. One Cond Ct
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
136°
4500
138°
4600
139°


4700
140°
4800
141°
4900
143°
5000
144°
5100
145°
5200


146°
5300
148°
5400
Array Ind. One Res Rt
Array Induction - R30
Array Ind. One Cond Ct
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
149°
5500
149°
5600
151°
5700
152°


5800
153°
5900
155°
6000
157°
6100
159°
6200
161°
6300


163°
Array Ind. One Res Rt
6400
Array Induction - R30
Array Ind. One Cond Ct
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
164°
6500
167°
6600
169°
6700
170°
6800
169°


6900
171°
7000
174°
7100
182°
7200
183°
7300
182°
7400
FR
FR
FR
FR
FR

7450

Depth In Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 1500 1250 1000

Array Induction - R30O
ohm metres
0 50 100
0 500 1000

Borehole Temp in deg F

Array Ind. One Res Rt
ohm metres
0 50 100

Replay Scale 1:600

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta
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Plotted on 01-FEB-2011 03:02
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2 INCH MAIN LOG

5 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta
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Plotted on 01-FEB-2011 03:02
Recorded on 01-FEB-2011 01:32

Depth In Feet

Timing Marks
every 60.0 sec

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

Gamma Ray
API
0 75 150

Spontaneous Potential

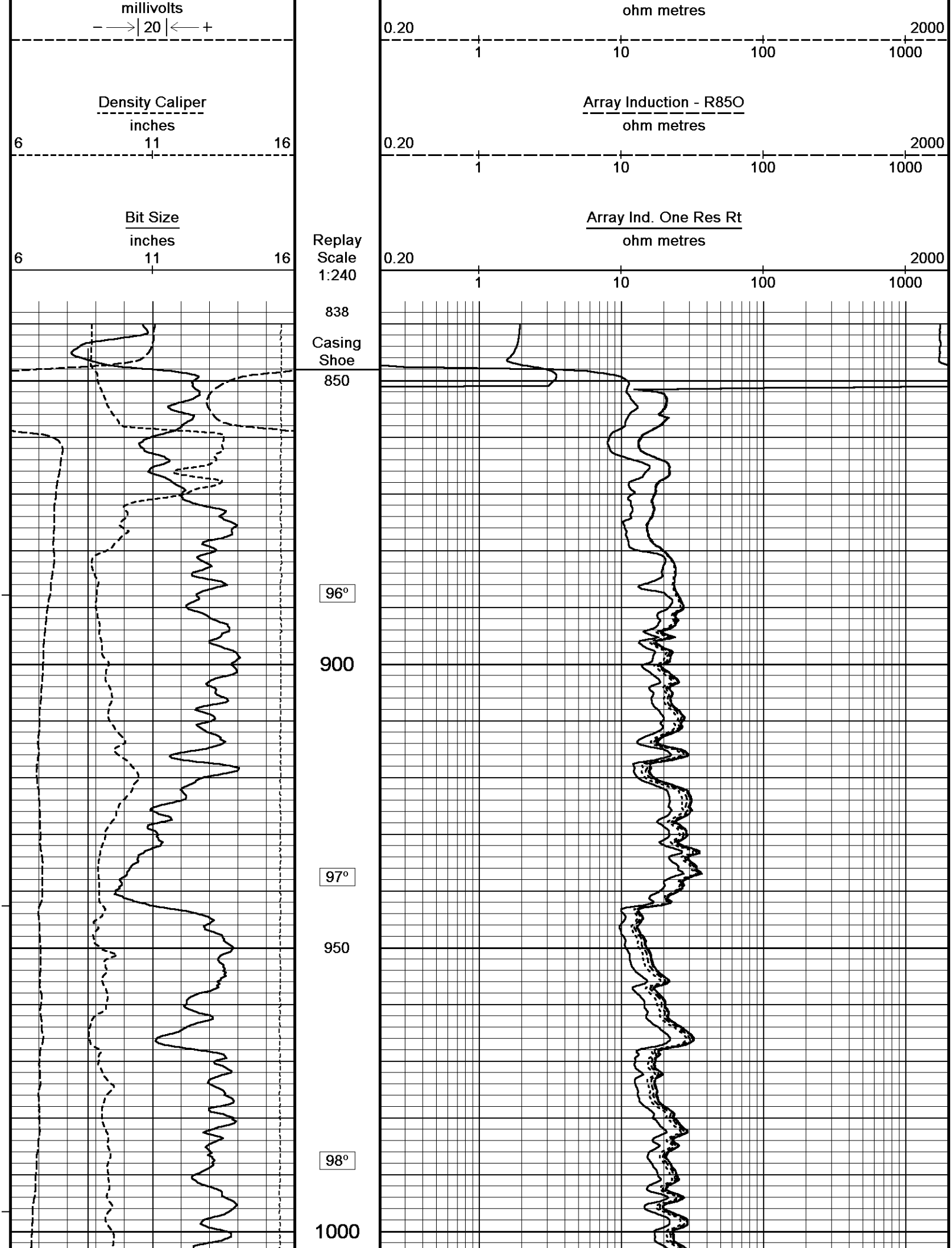
Shallow FE (Phase Corr.)
ohm metres
0.20 2000
1 10 100 1000

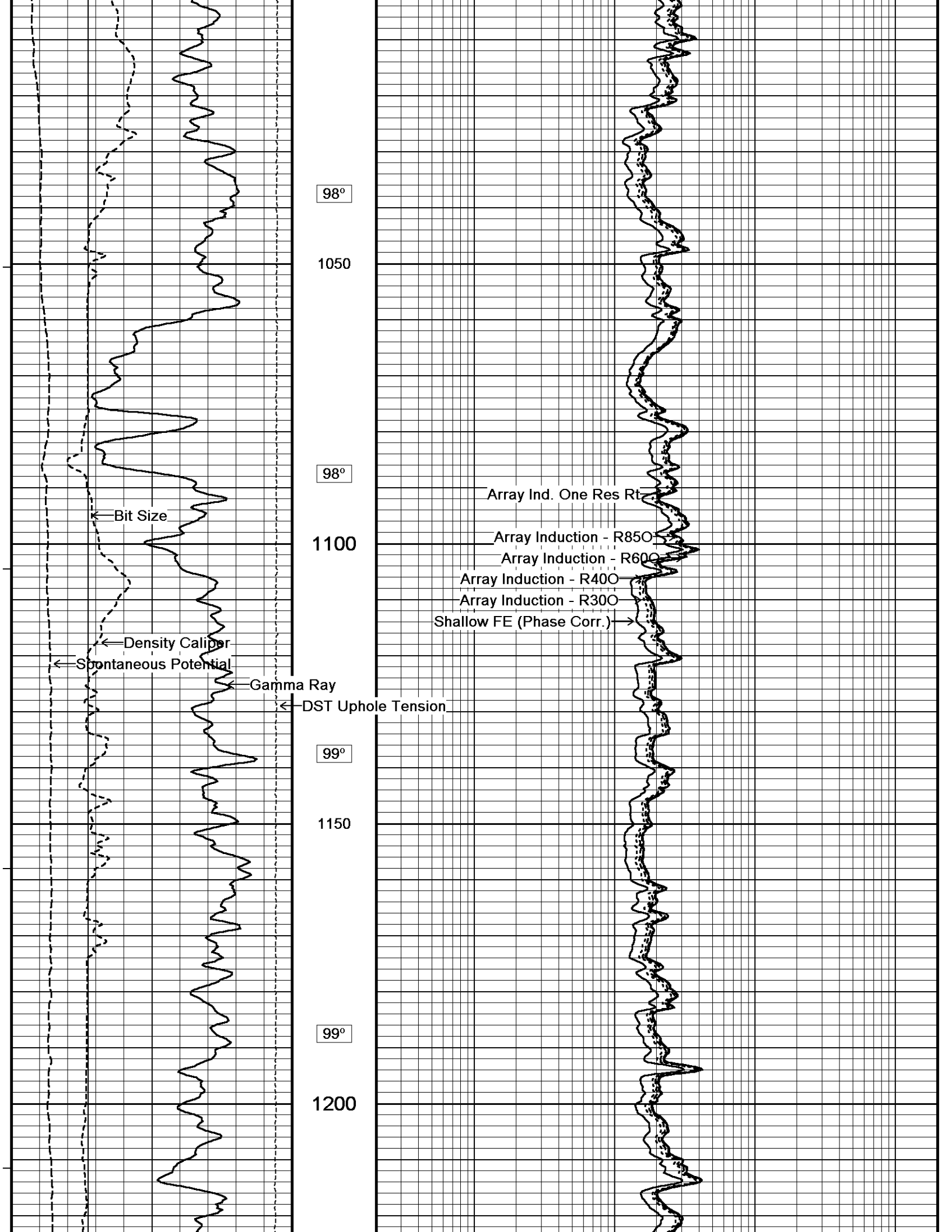
Array Induction - R30O
ohm metres
0.20 2000
1 10 100 1000

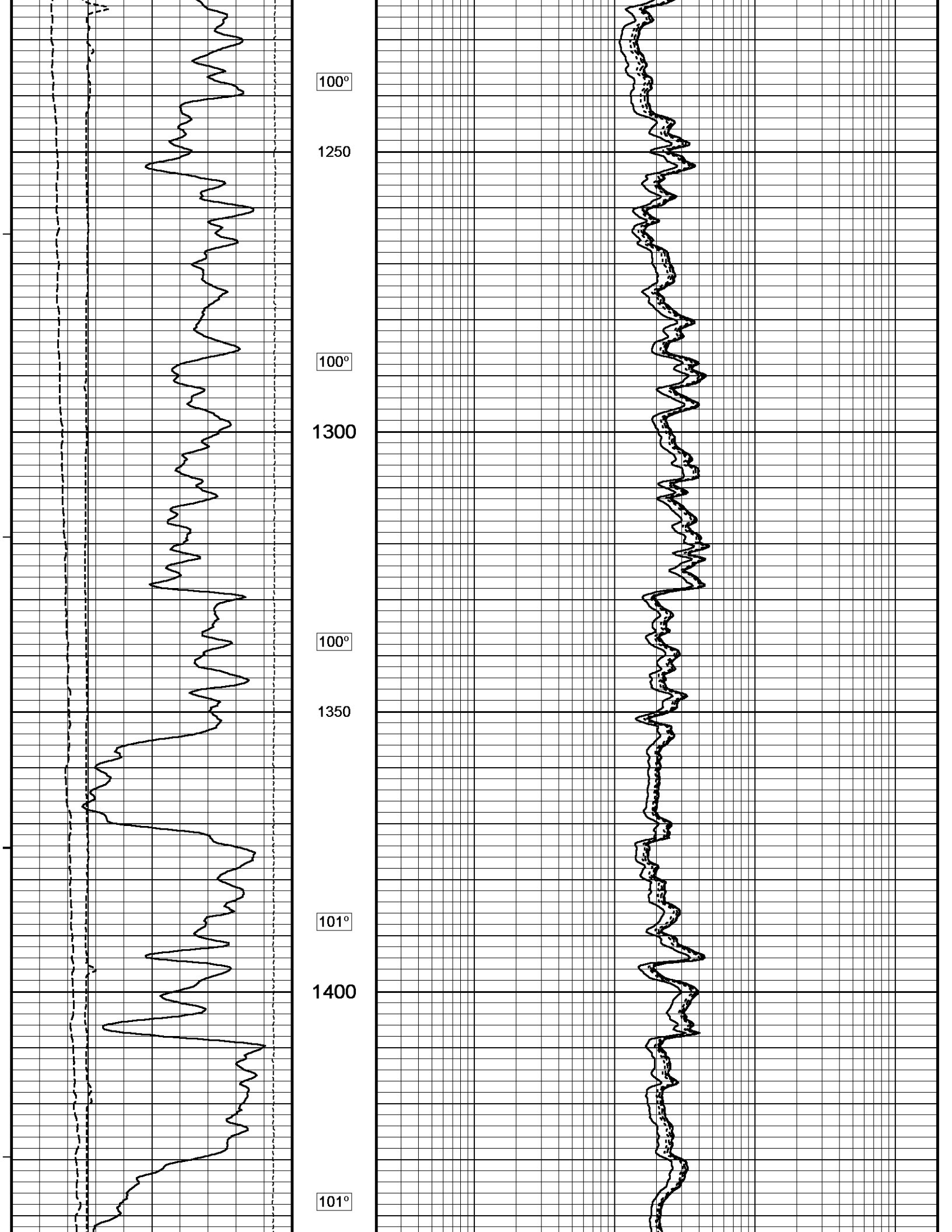
Array Induction - R40O
ohm metres
0.20 2000
1 10 100 1000

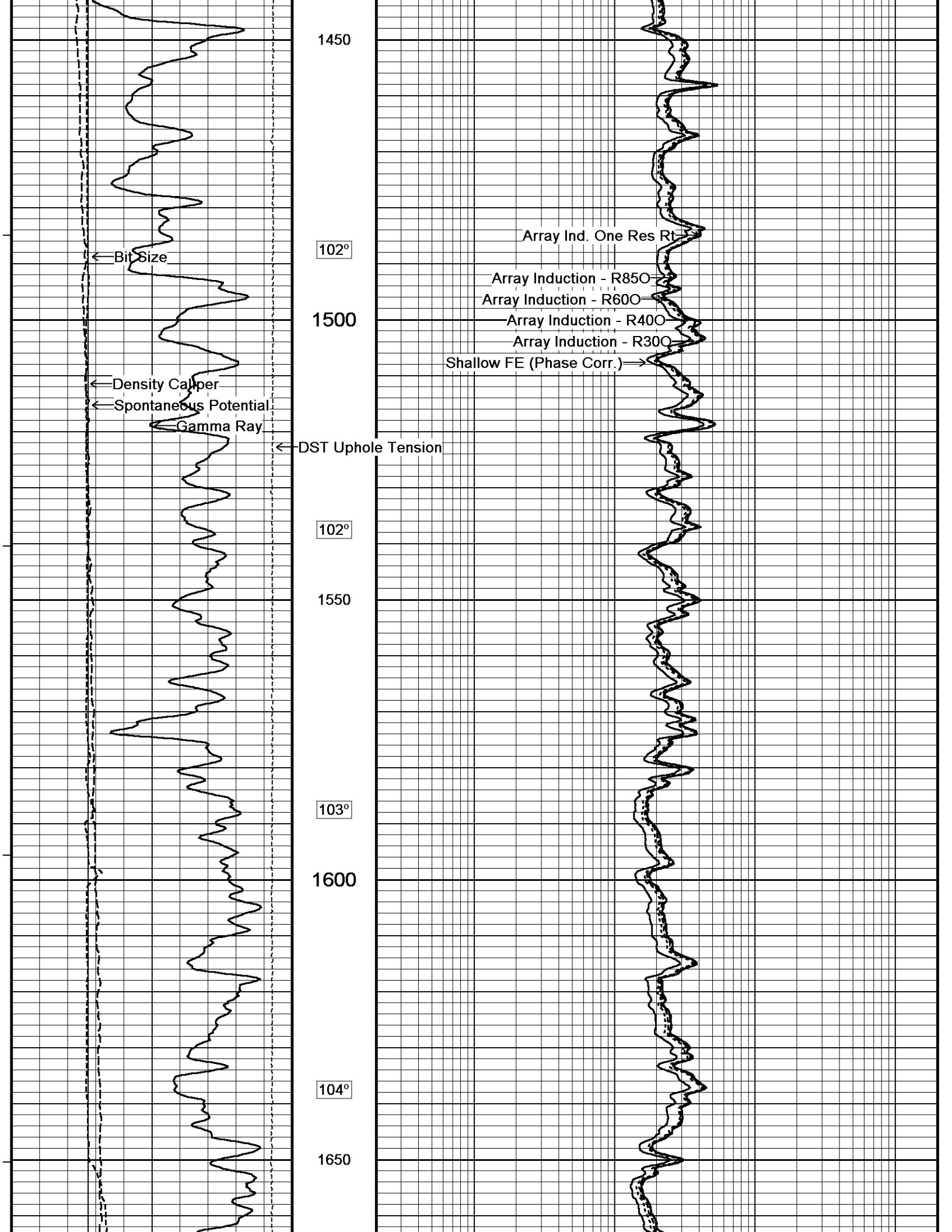
Array Induction - R60O

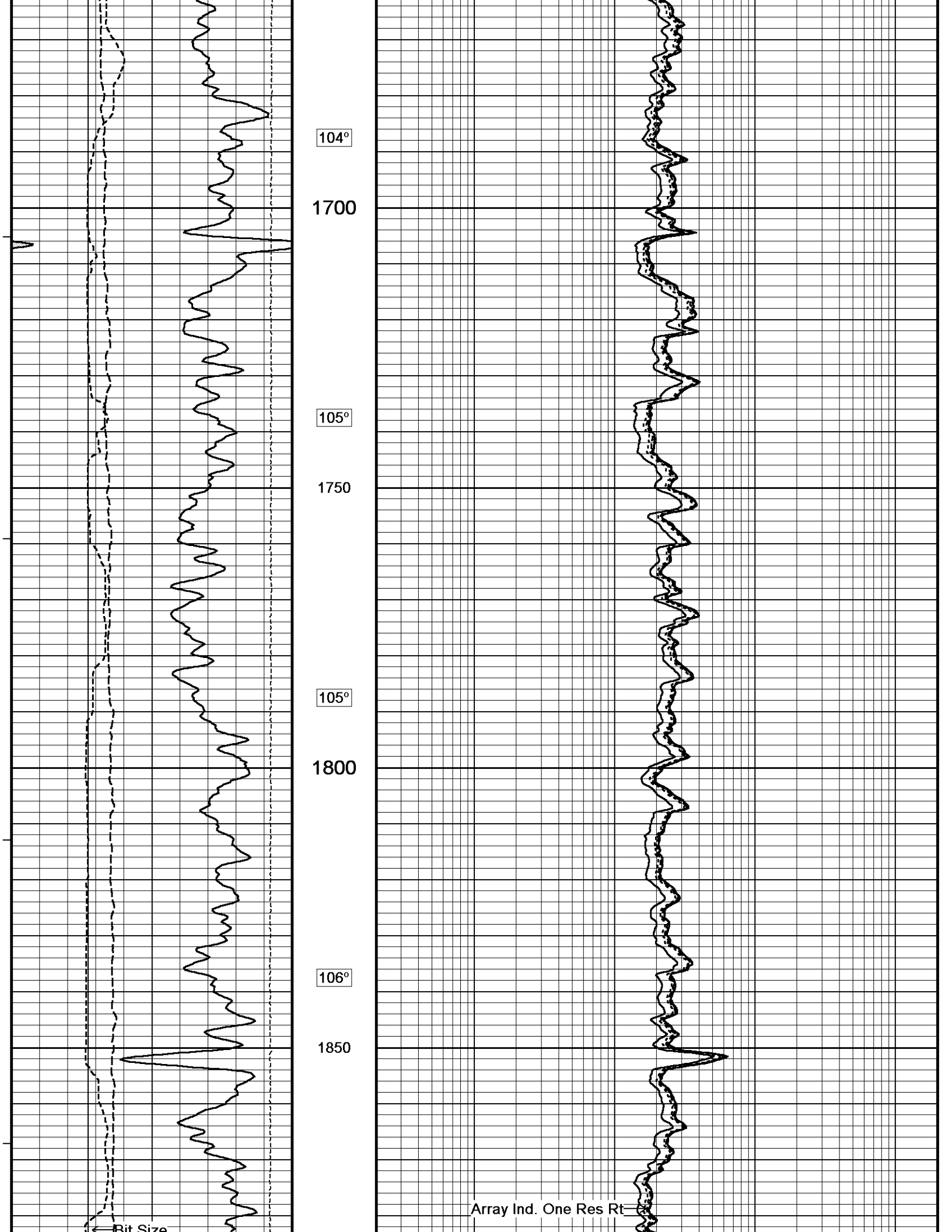
Borehole Temp in deg F

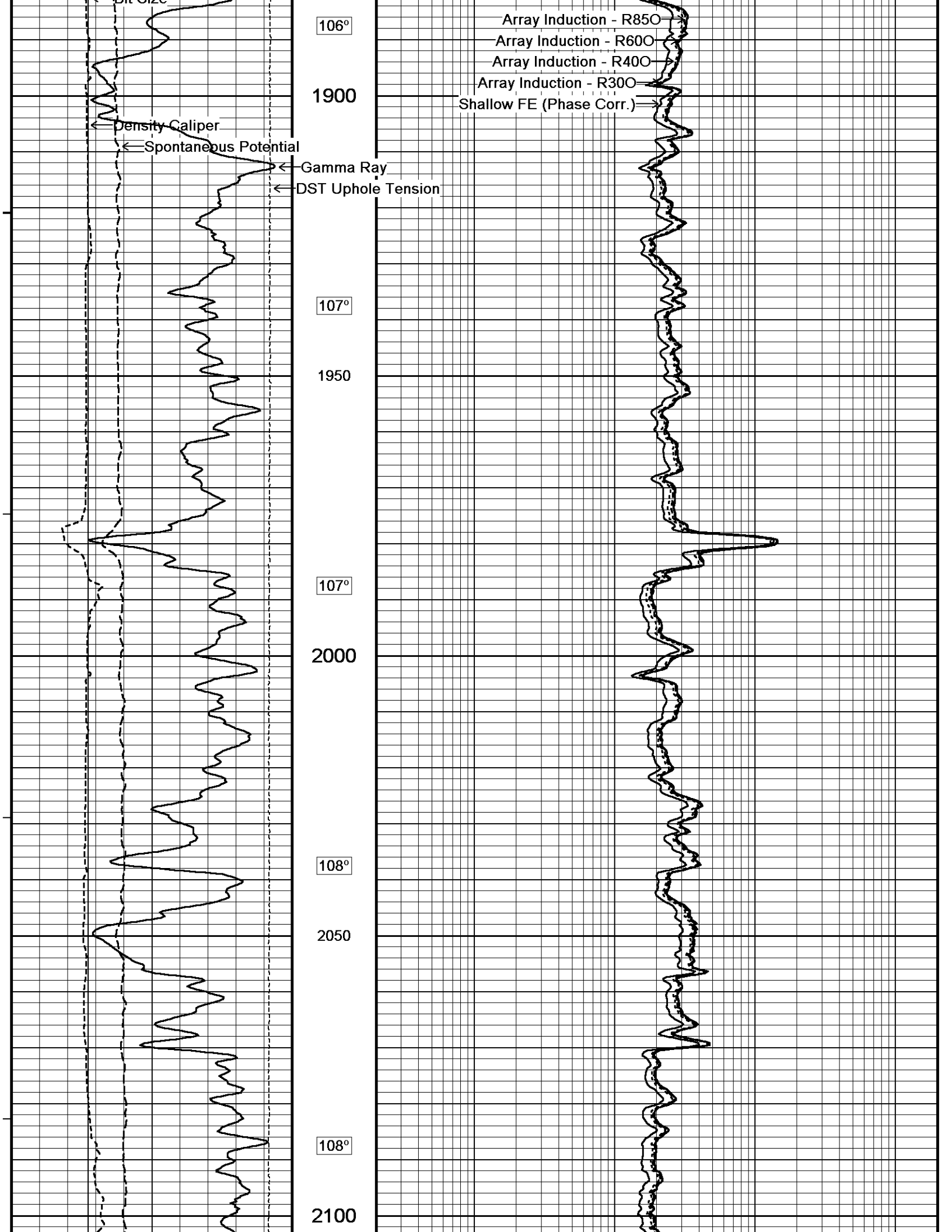

millivolts
– → | 20 | ← +
Density Caliper
inches
6
11
16
Bit Size
inches
6
11
16
Replay
Scale
1:240
838
Casing
Shoe
850
96°
900
97°
950
98°
1000
ohm metres
0.20
2000
1
10
100
1000
Array Induction - R85O
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res Rt
ohm metres
0.20
2000
1
10
100
1000

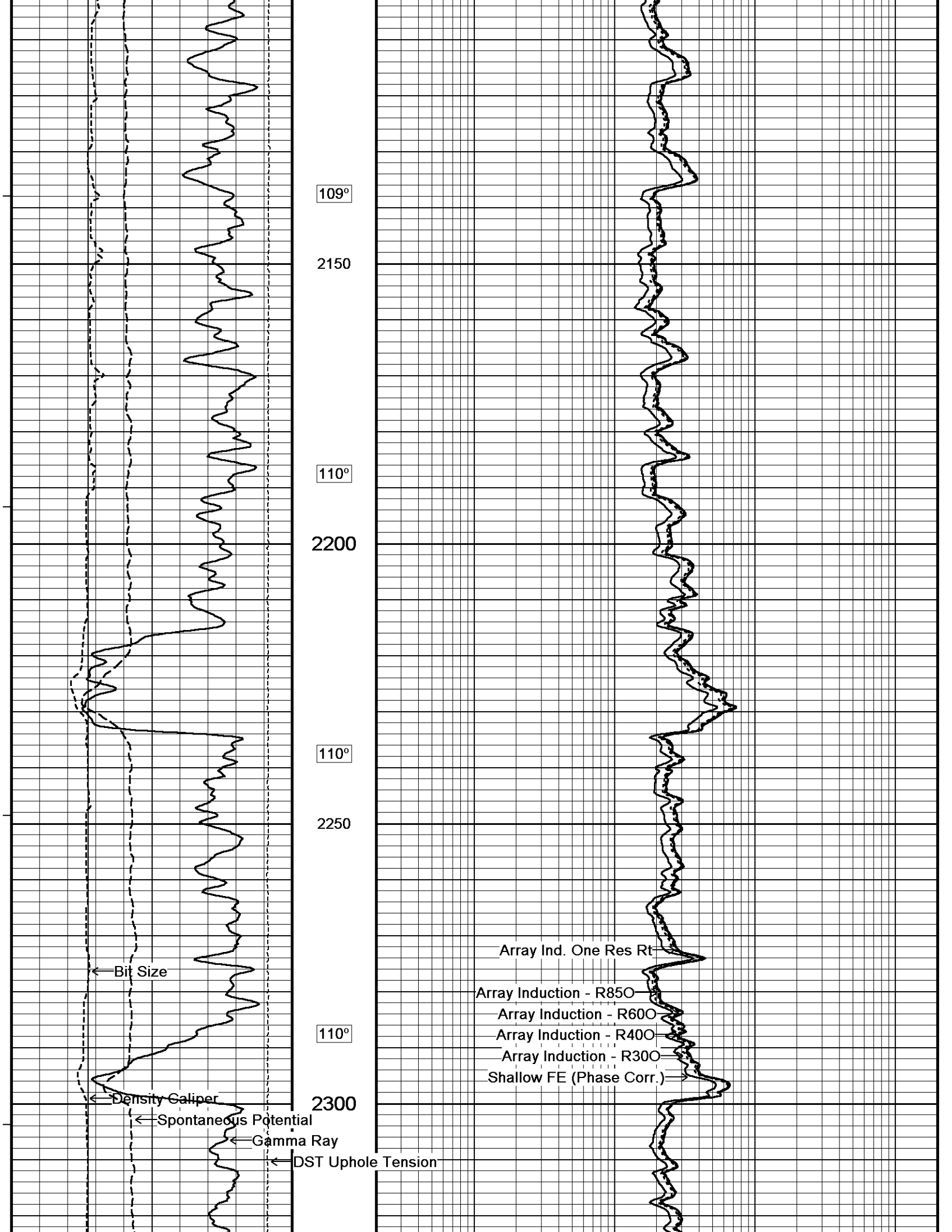

98°
1050
98°
Bit Size
1100
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
99°
1150
99°
1200
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

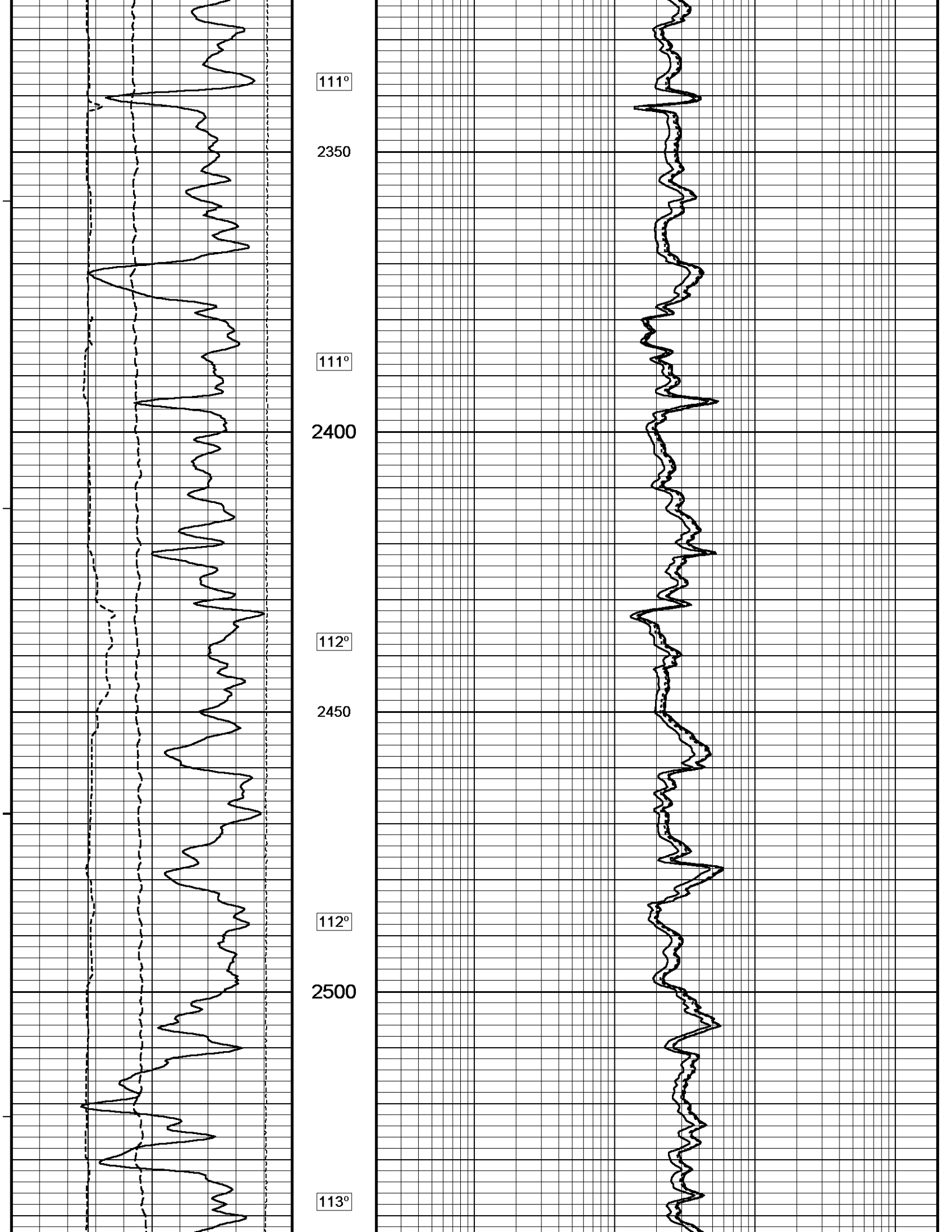

100°
1250
100°
1300
100°
1350
101°
1400
101°

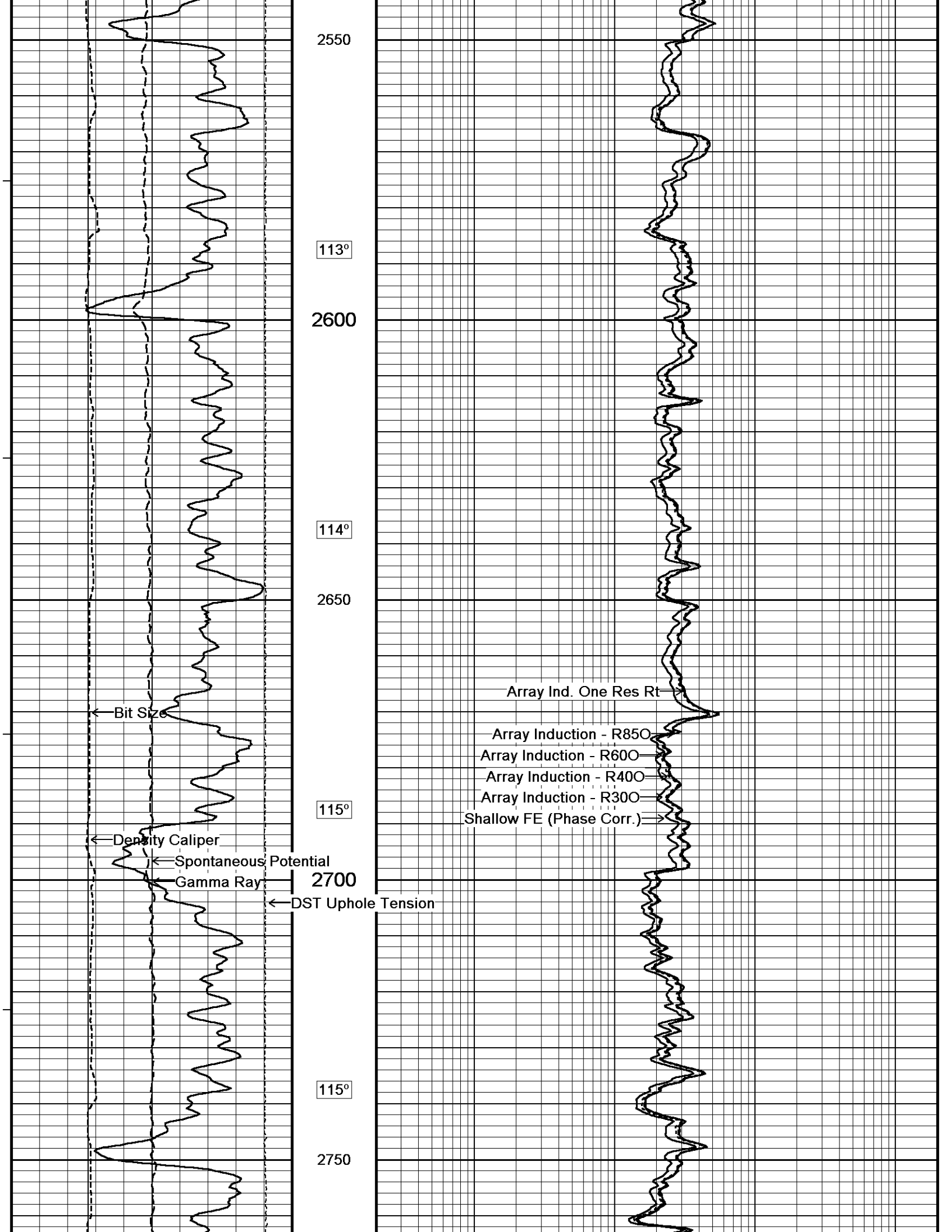

1450
Array Ind. One Res Rt
102°
Bit Size
Array Induction - R85O
Array Induction - R60O
1500
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
102°
1550
103°
1600
104°
1650

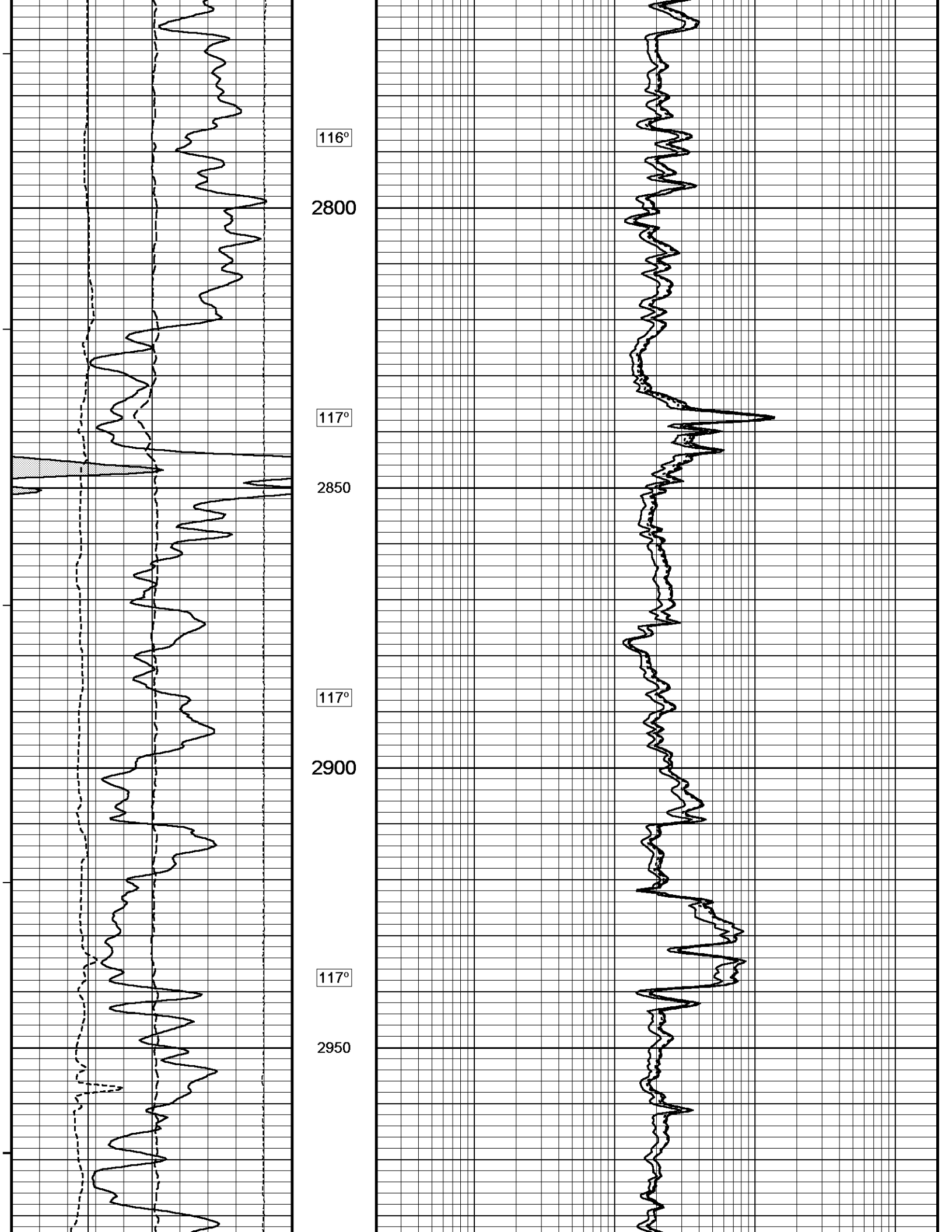

104°
1700
105°
1750
105°
1800
106°
1850
Array Ind. One Res Rt
Bit Size

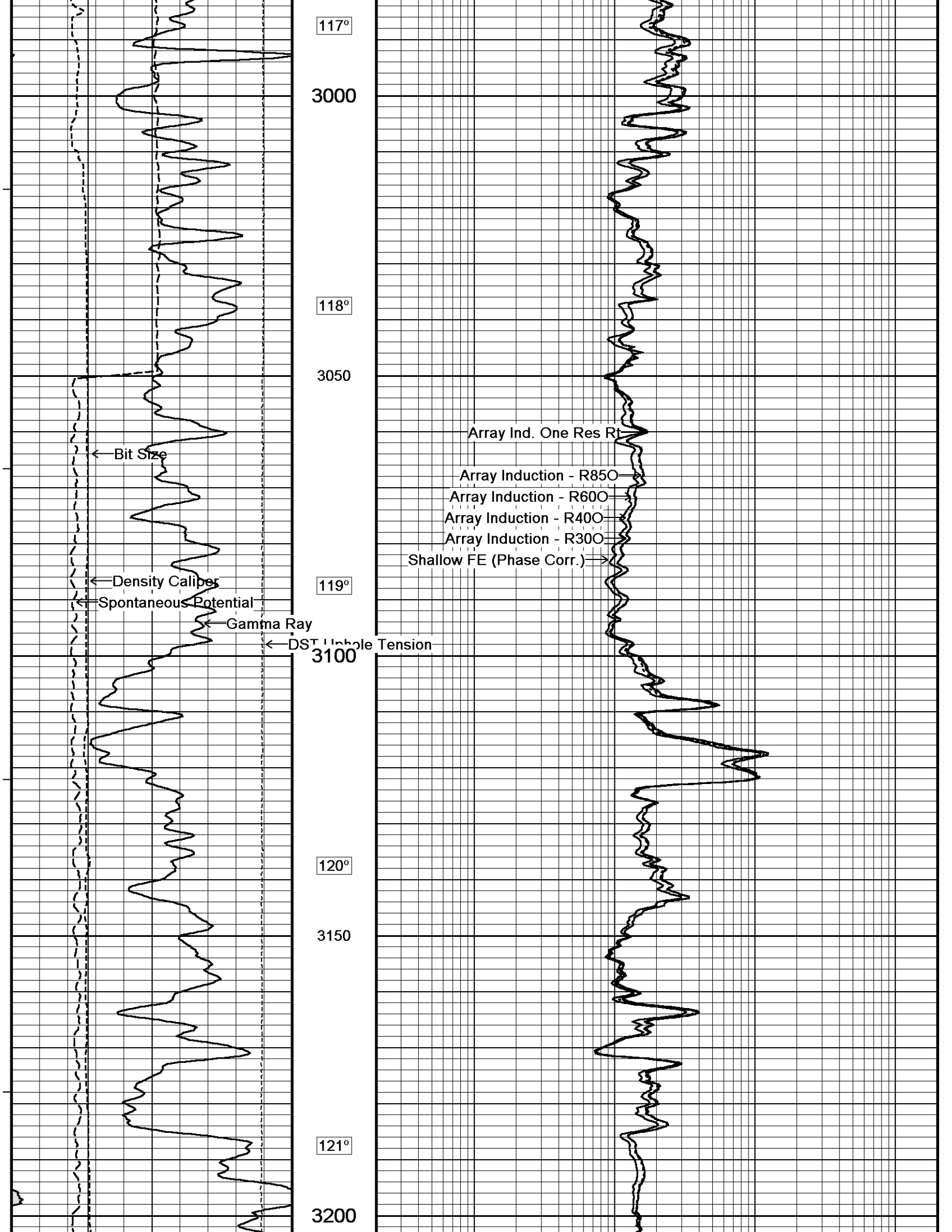

Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
106°
1900
107°
1950
107°
2000
108°
2050
108°
2100

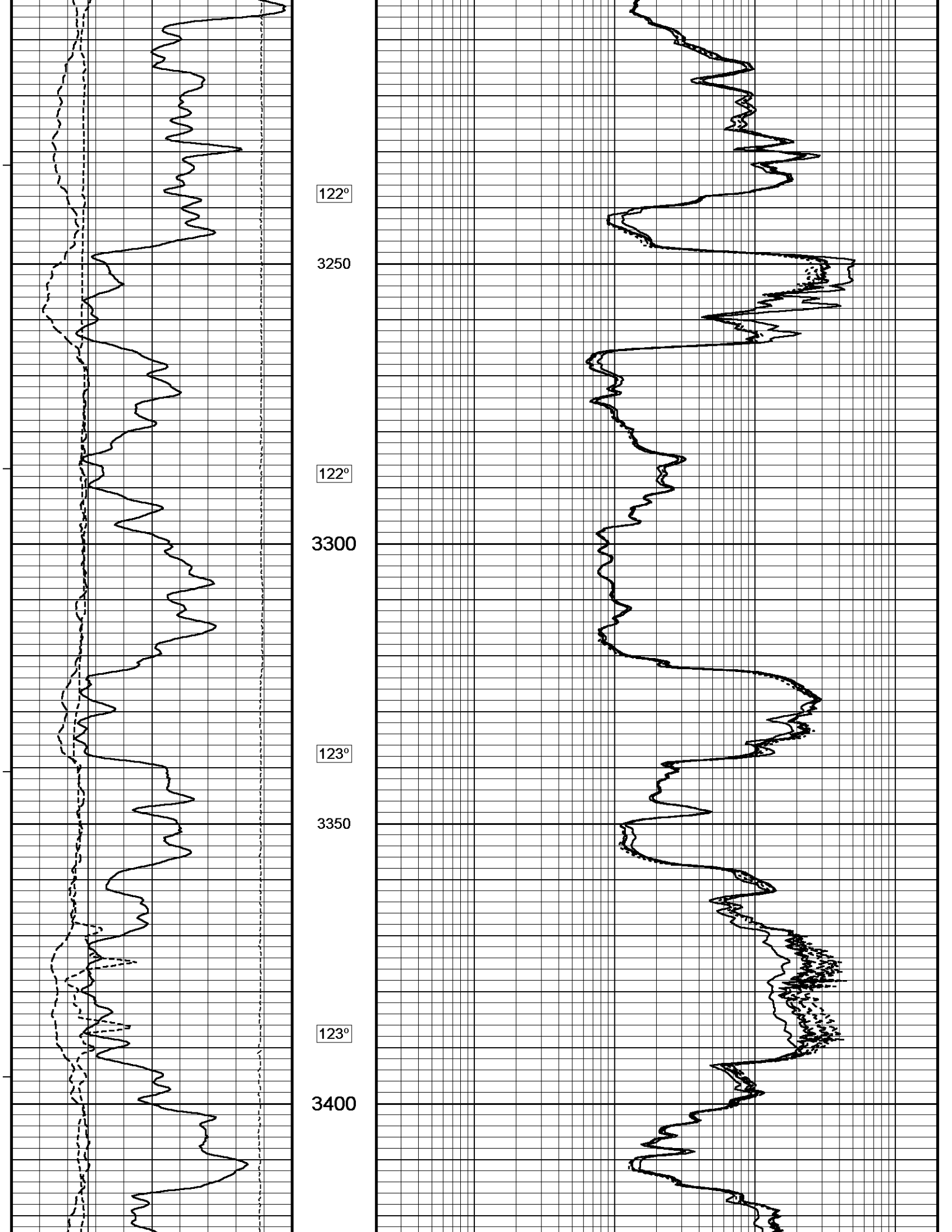

109°
2150
110°
2200
110°
2250
110°
2300
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

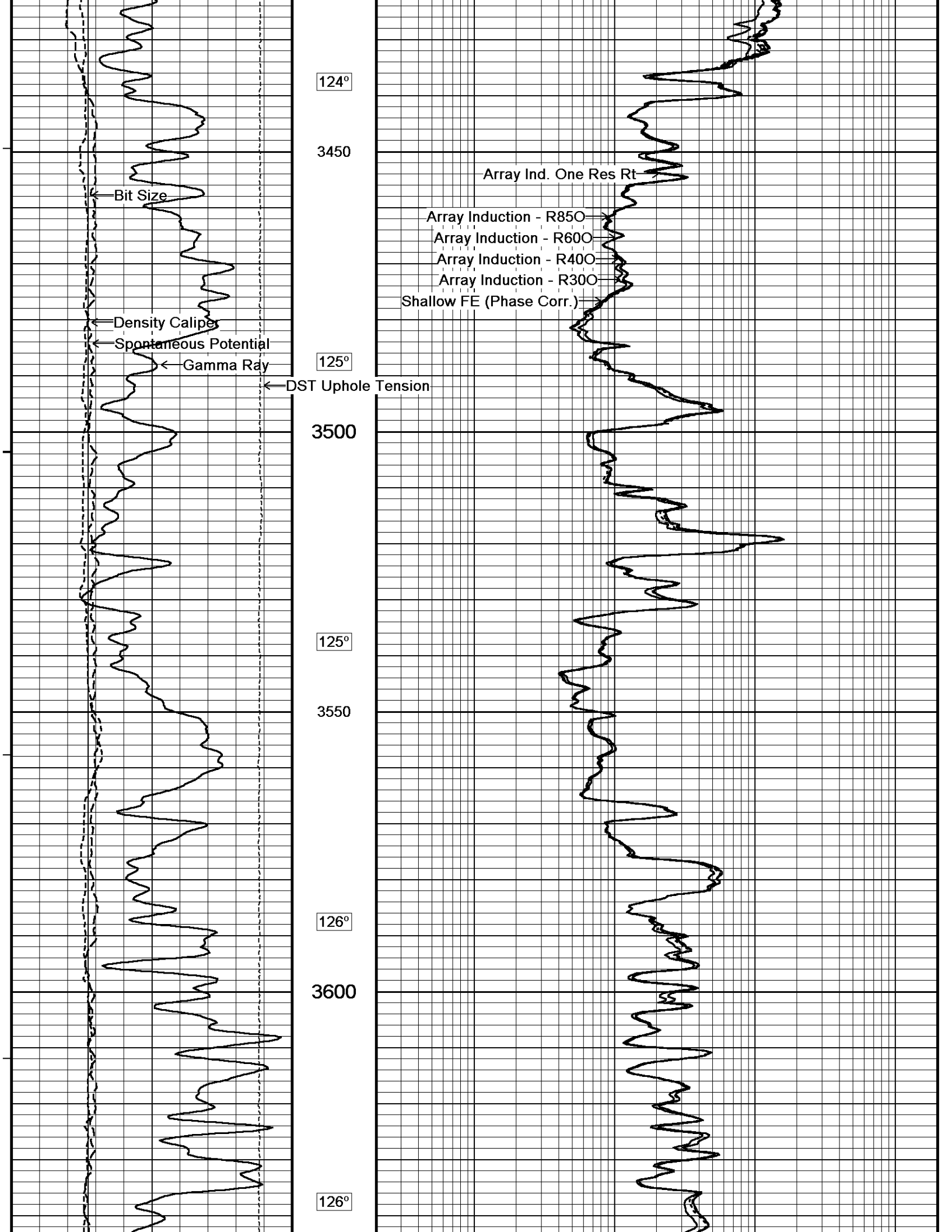

111°
2350
111°
2400
112°
2450
112°
2500
113°

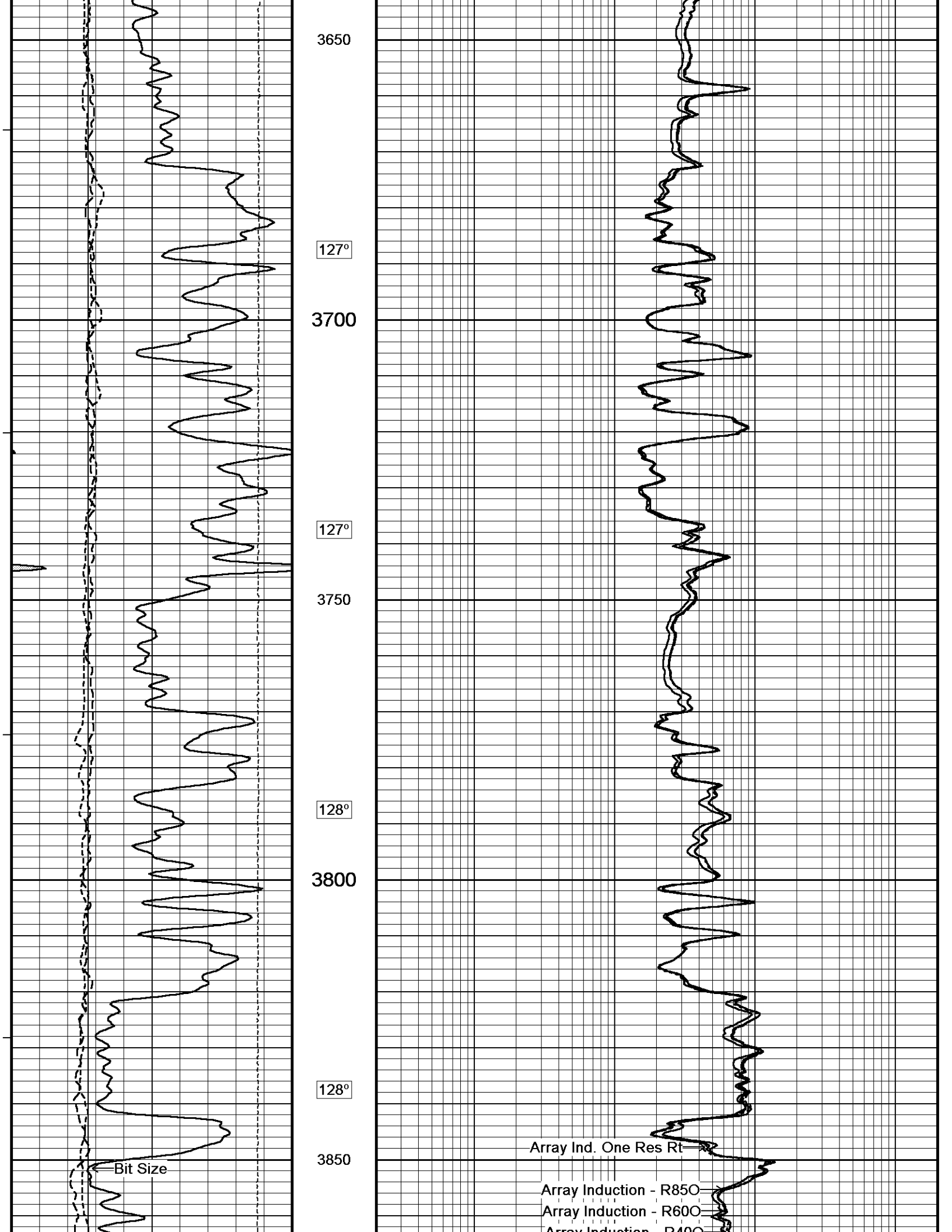

2550
113°
2600
114°
2650
Array Ind. One Res Rt
Bit Size
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
115°
Shallow FE (Phase Corr.)
Density Caliper
Spontaneous Potential
Gamma Ray
2700
DST Uphole Tension
115°
2750

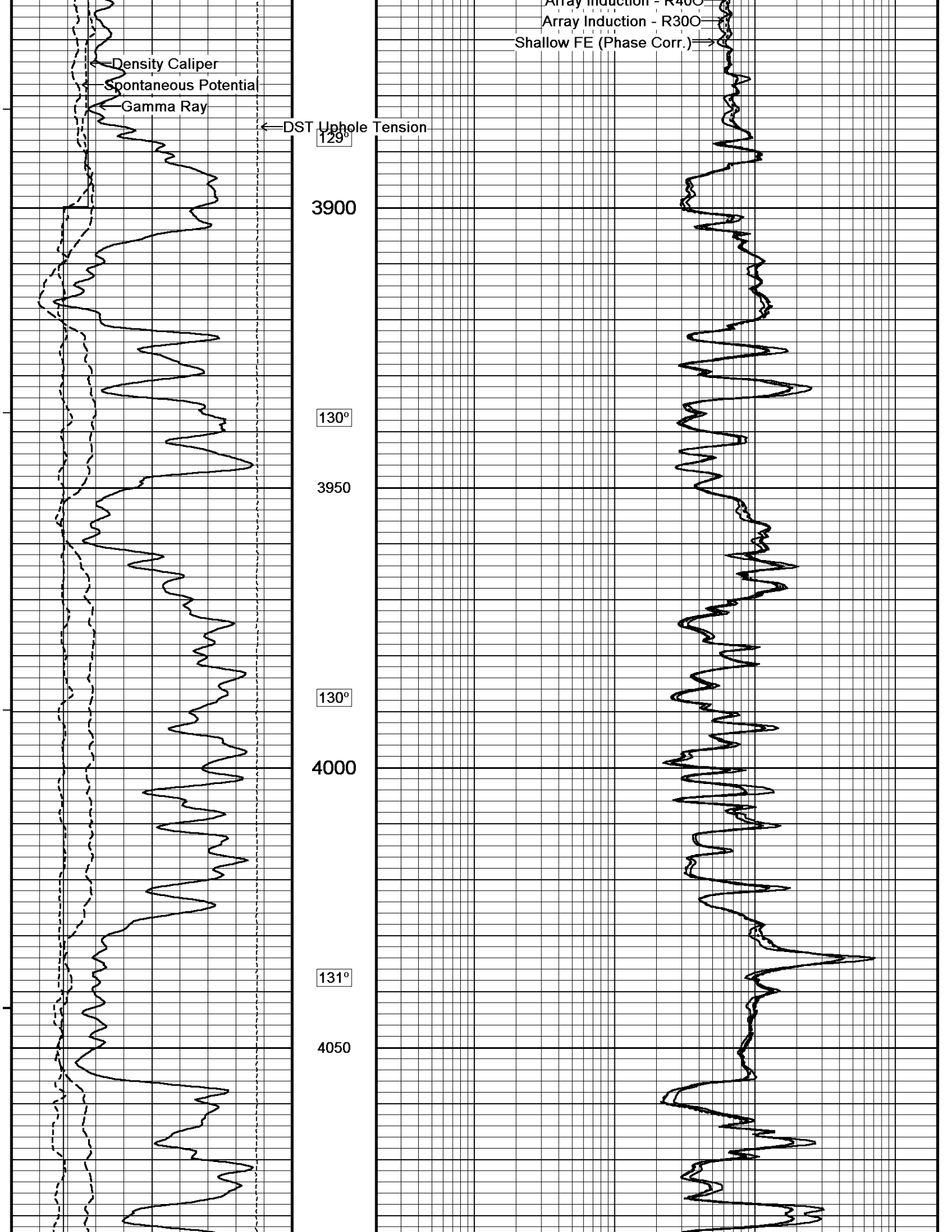

116°
2800
117°
2850
117°
2900
117°
2950

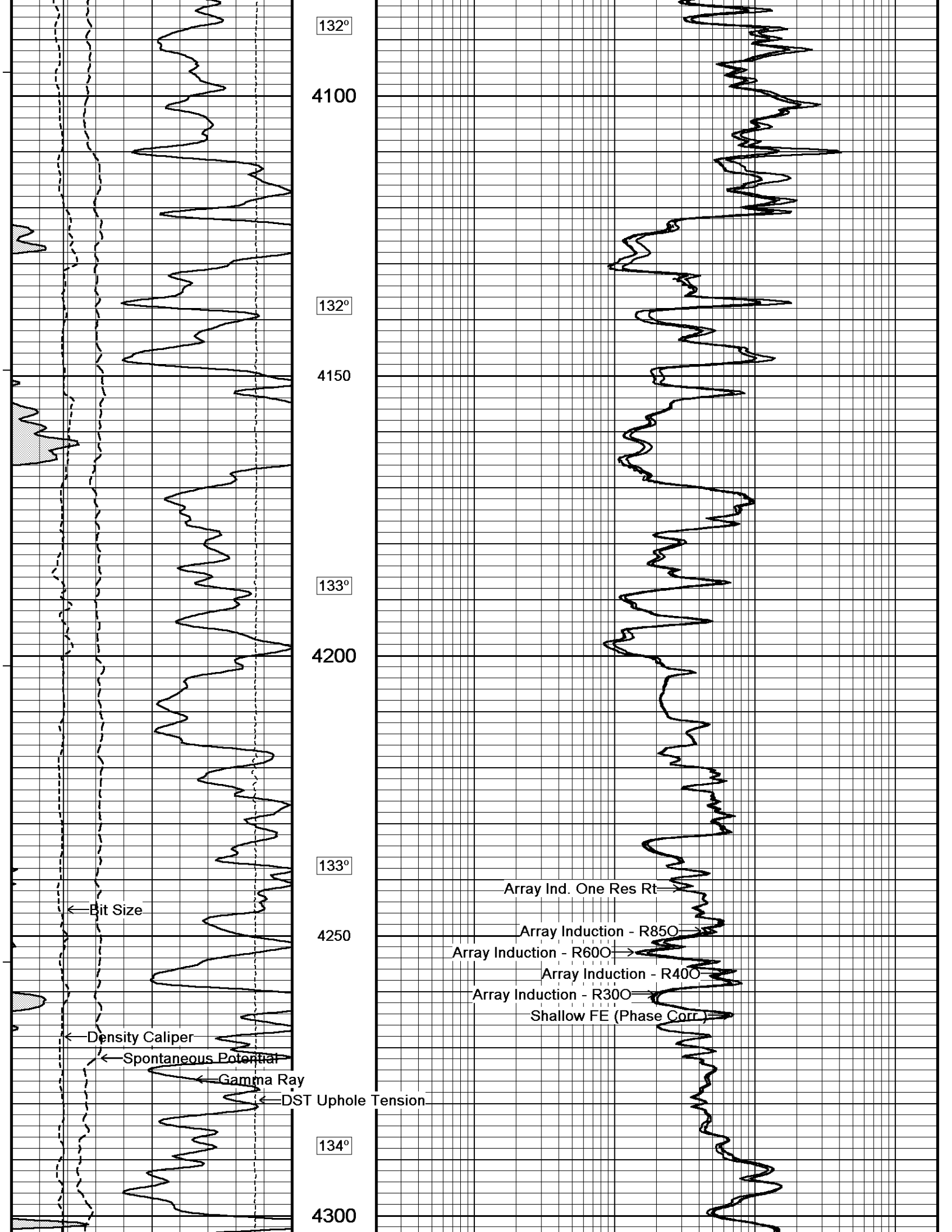

117°
3000
118°
3050
Array Ind. One Res Rt
Bit Size
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
Density Caliper
119°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
3100
120°
3150
121°
3200

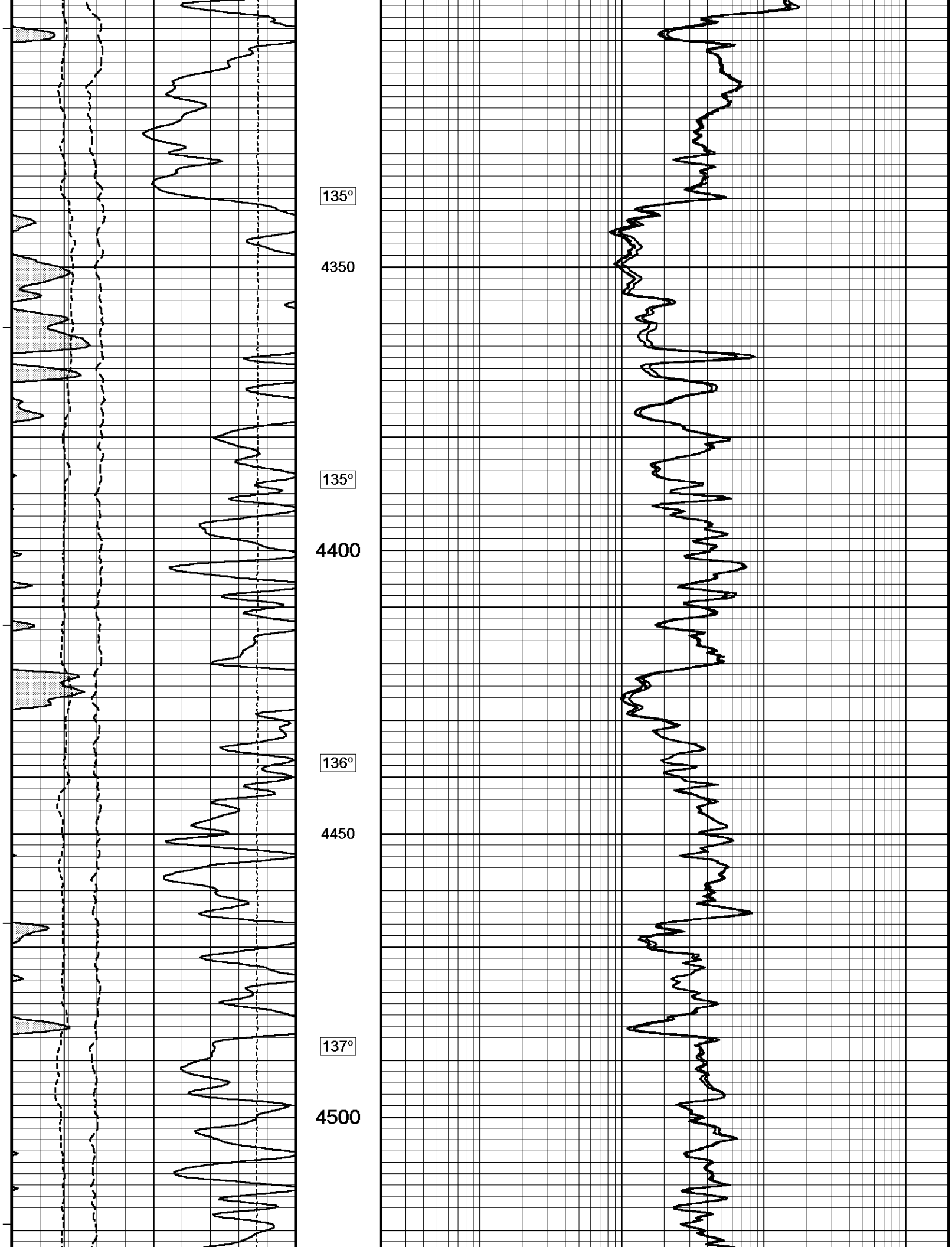

122°
3250
122°
3300
123°
3350
123°
3400

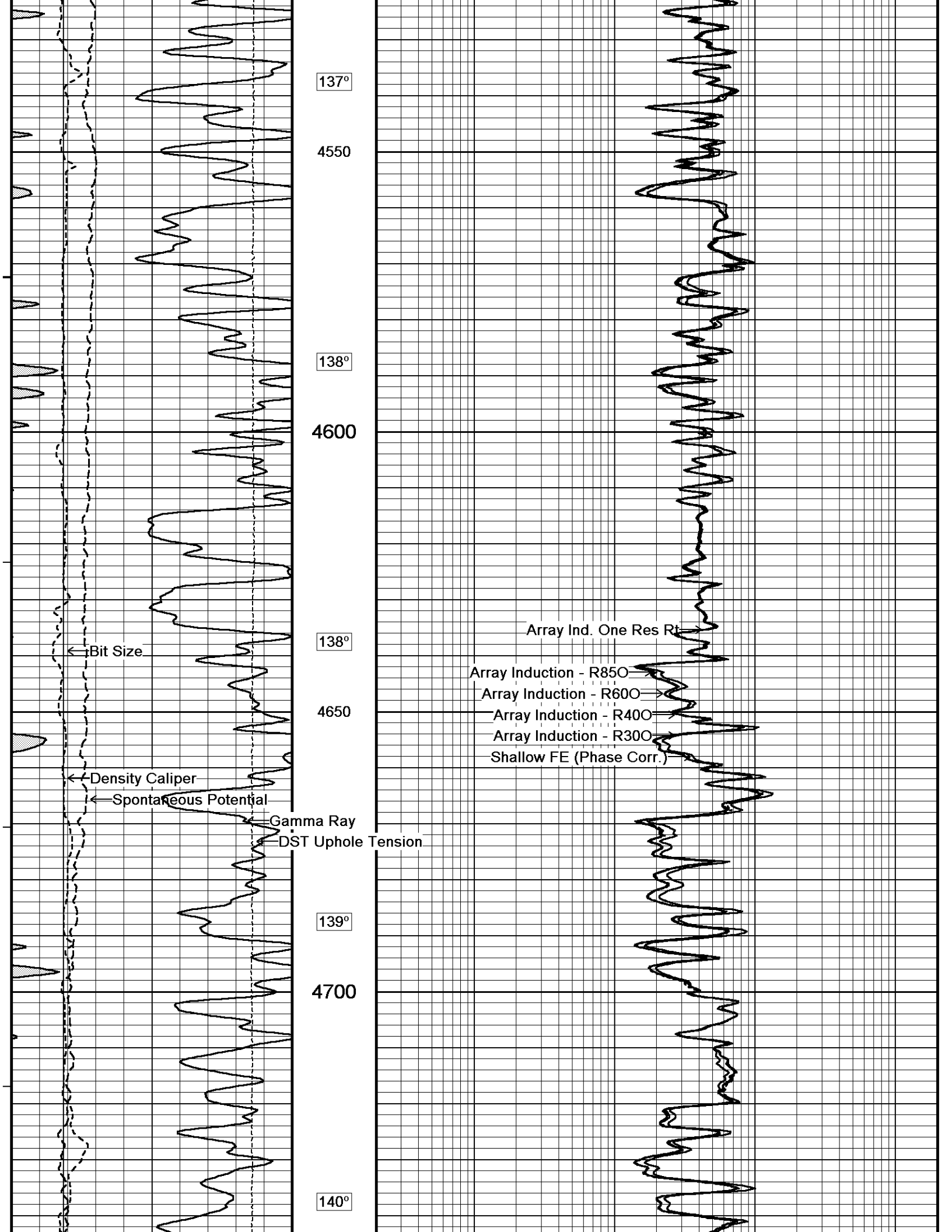

124°
3450
Array Ind. One Res Rt
Bit Size
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
Density Caliper
Spontaneous Potential
Gamma Ray
125°
DST Uphole Tension
3500
125°
3550
126°
3600
126°

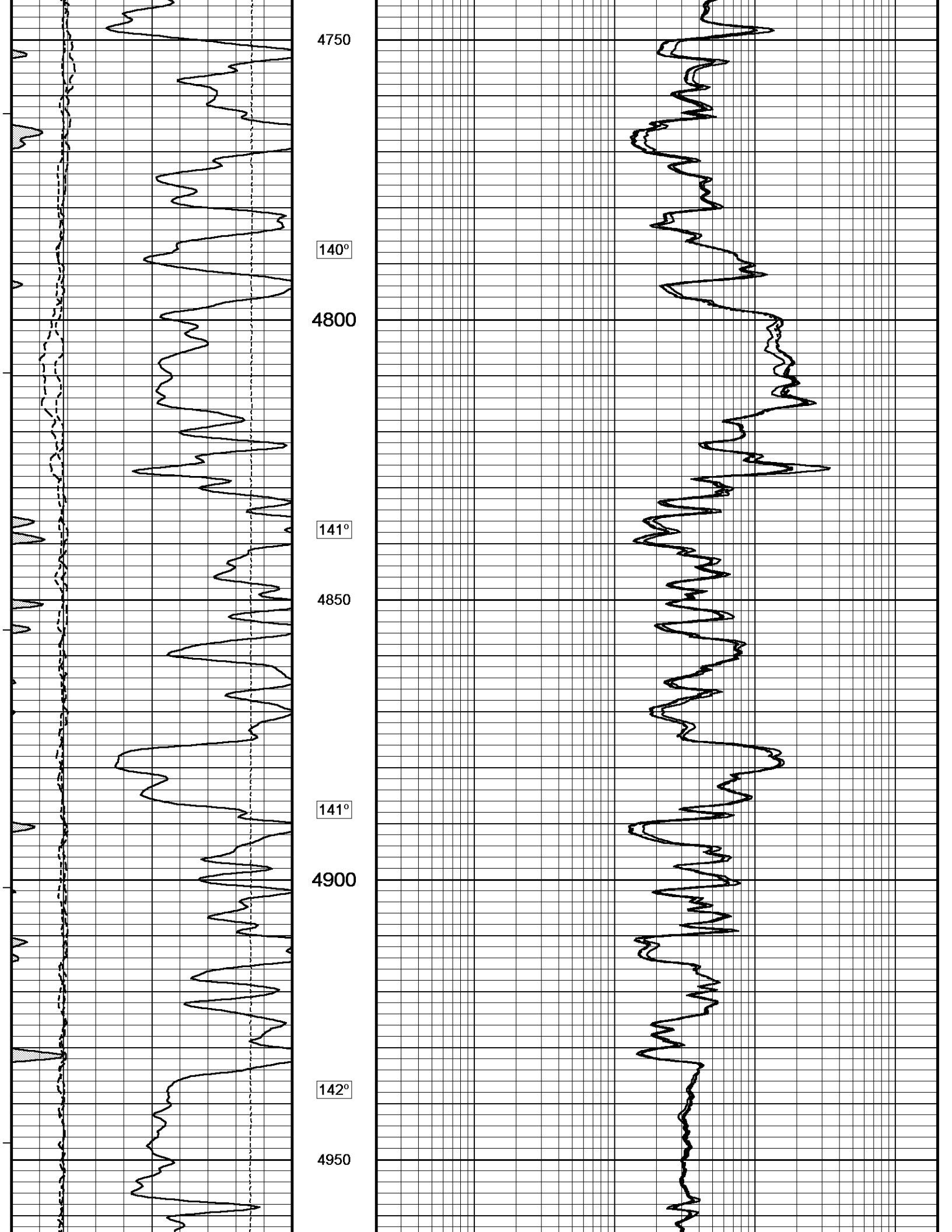

3650
127°
3700
127°
3750
128°
3800
128°
3850
Bit Size
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O

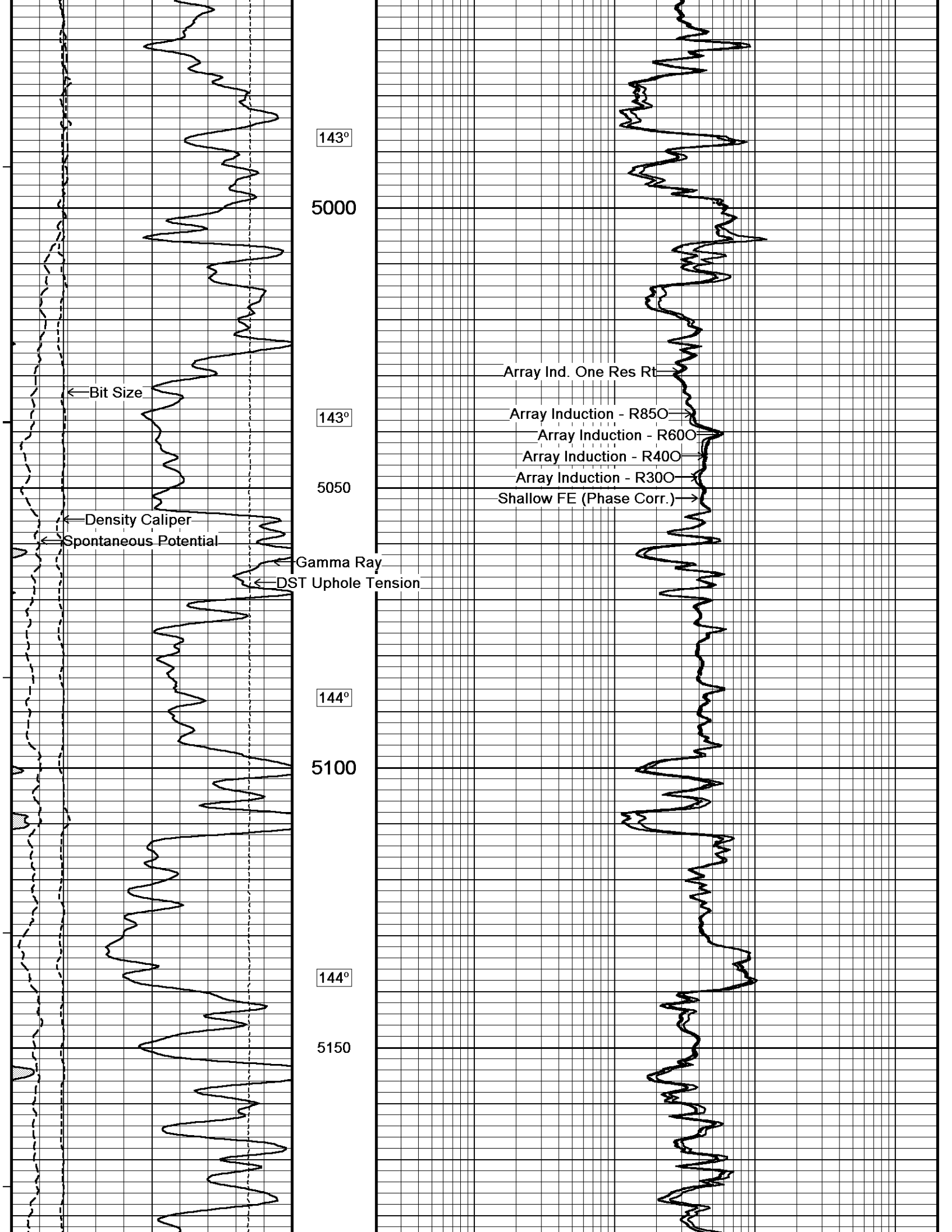

Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
129°
3900
130°
3950
130°
4000
131°
4050

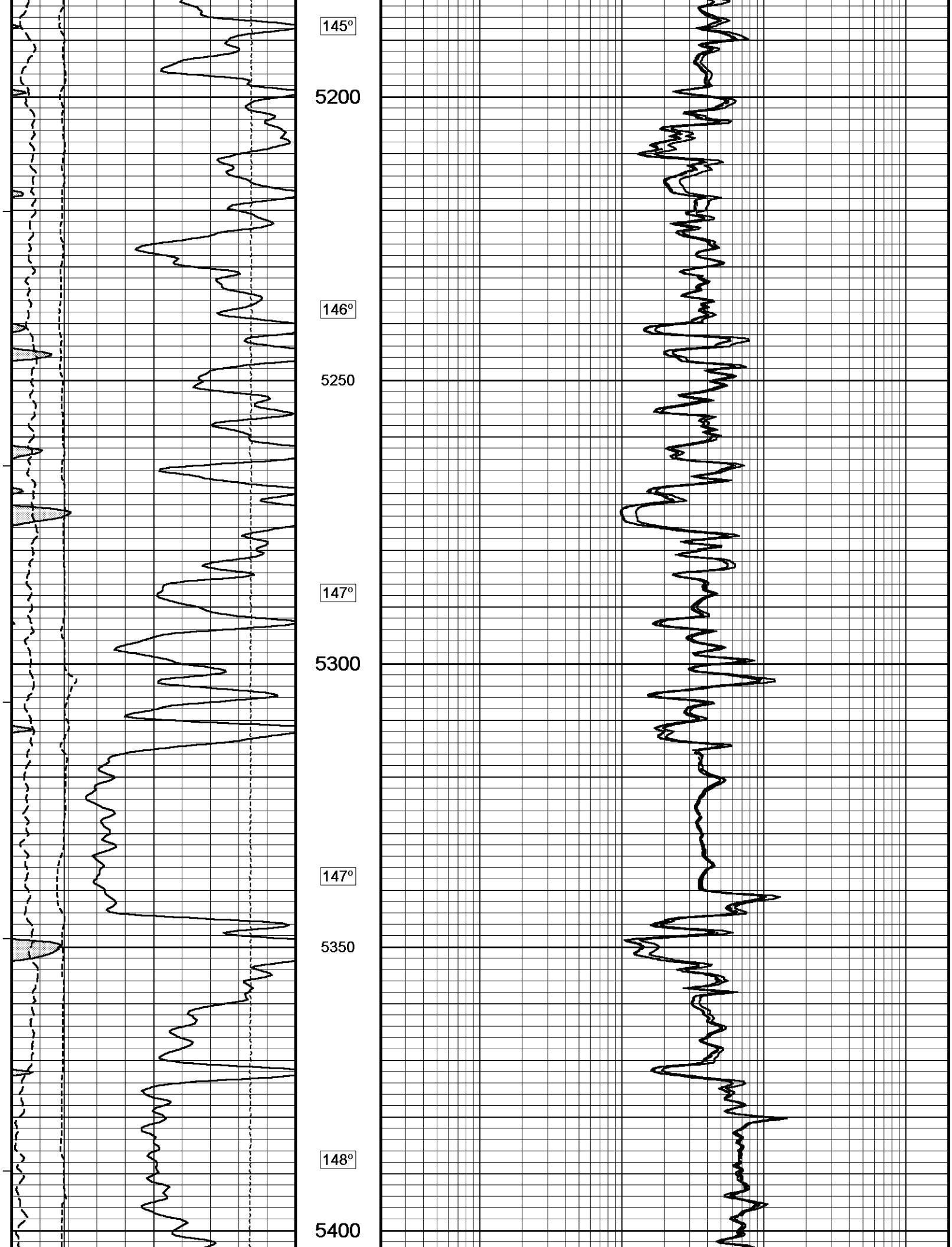

132°
4100
132°
4150
133°
4200
133°
4250
134°
4300
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

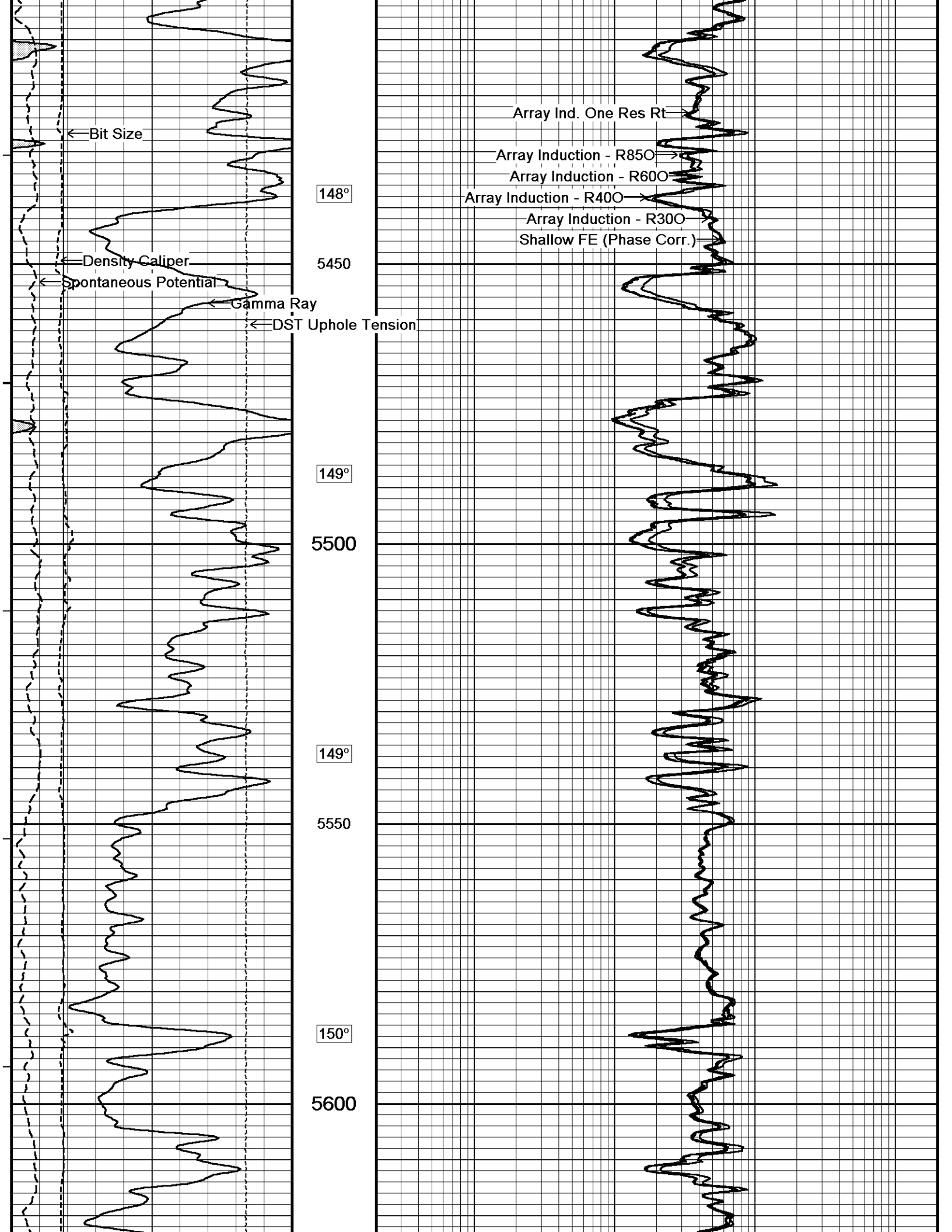

135°
4350
135°
4400
136°
4450
137°
4500

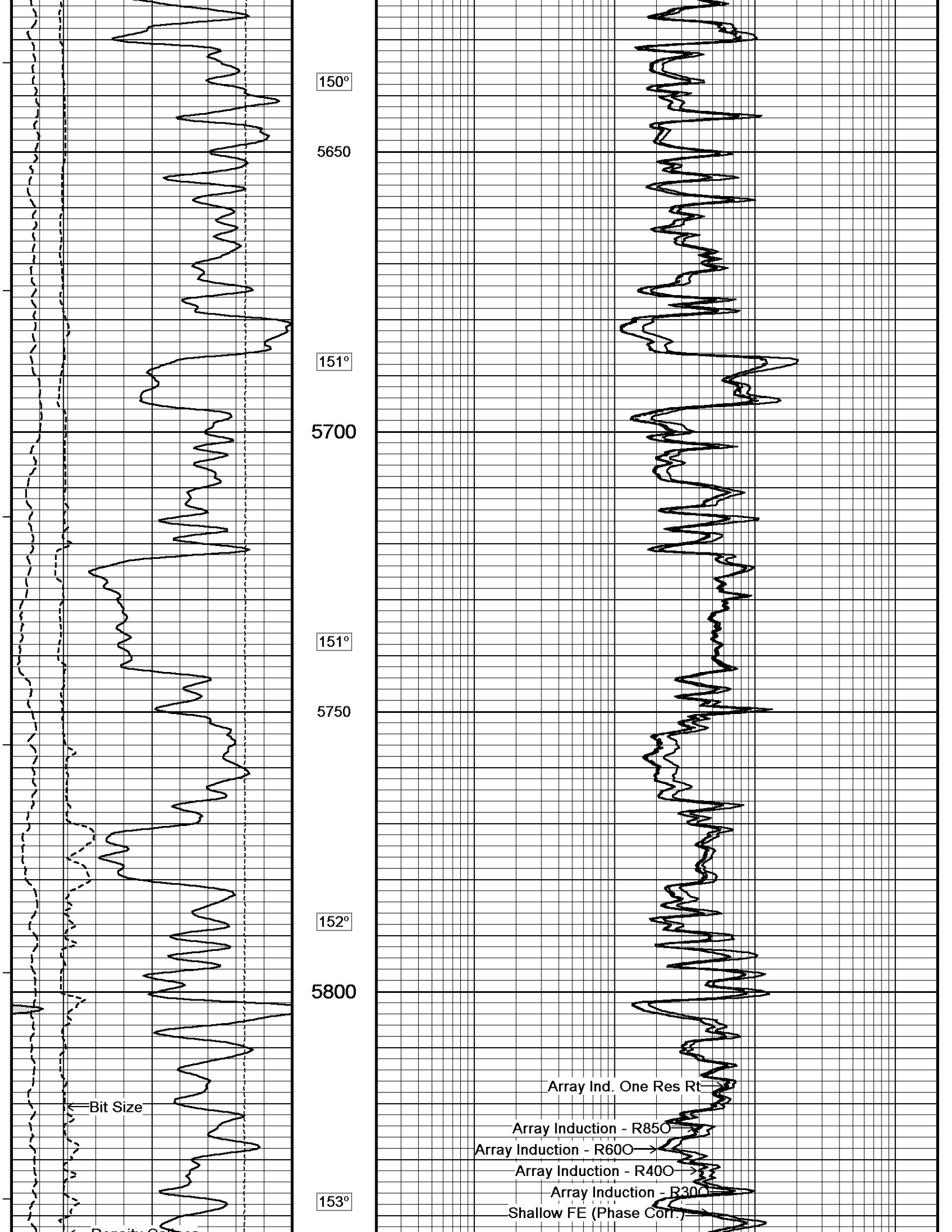

137°
4550
138°
4600
138°
Bit Size
4650
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
139°
4700
140°
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

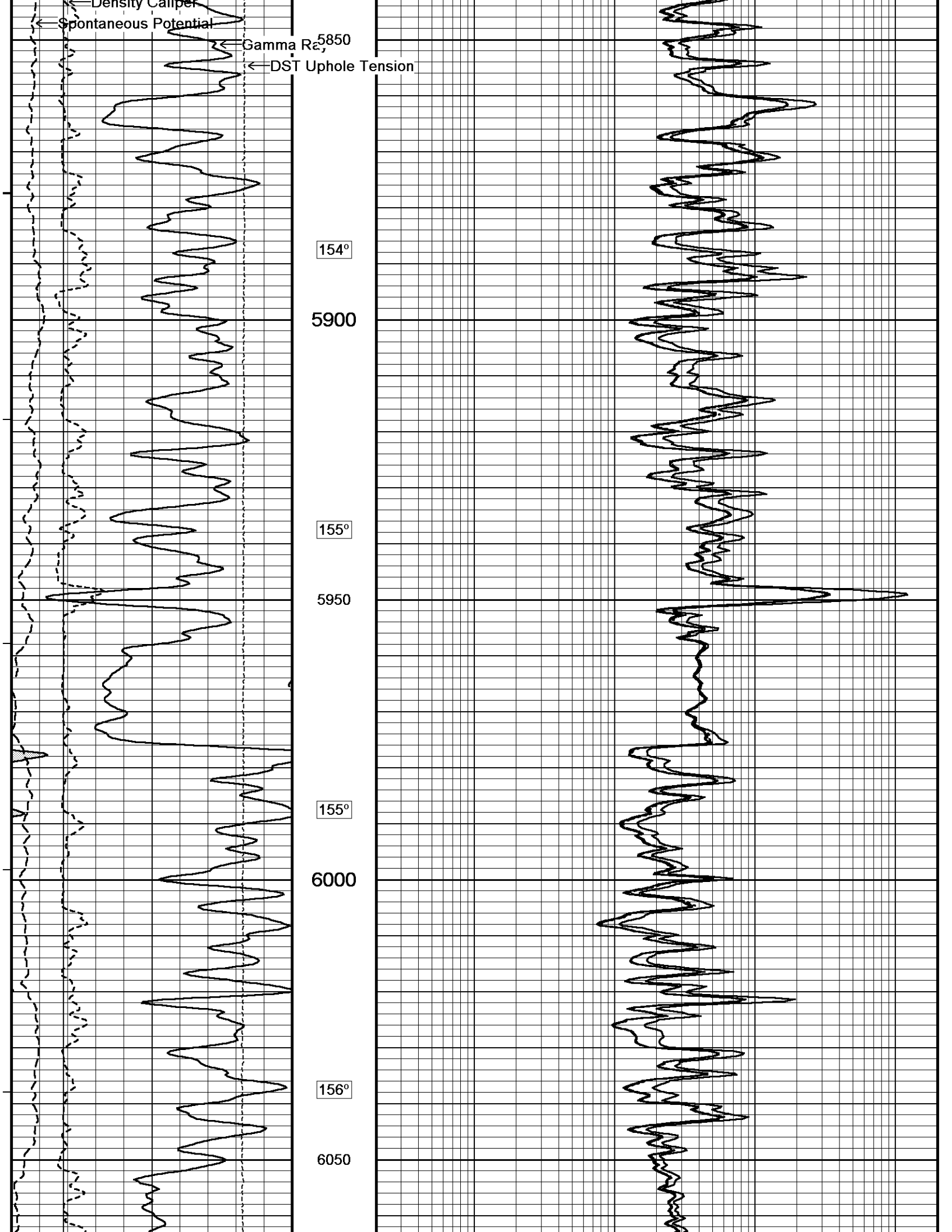

4750
140°
4800
141°
4850
141°
4900
142°
4950

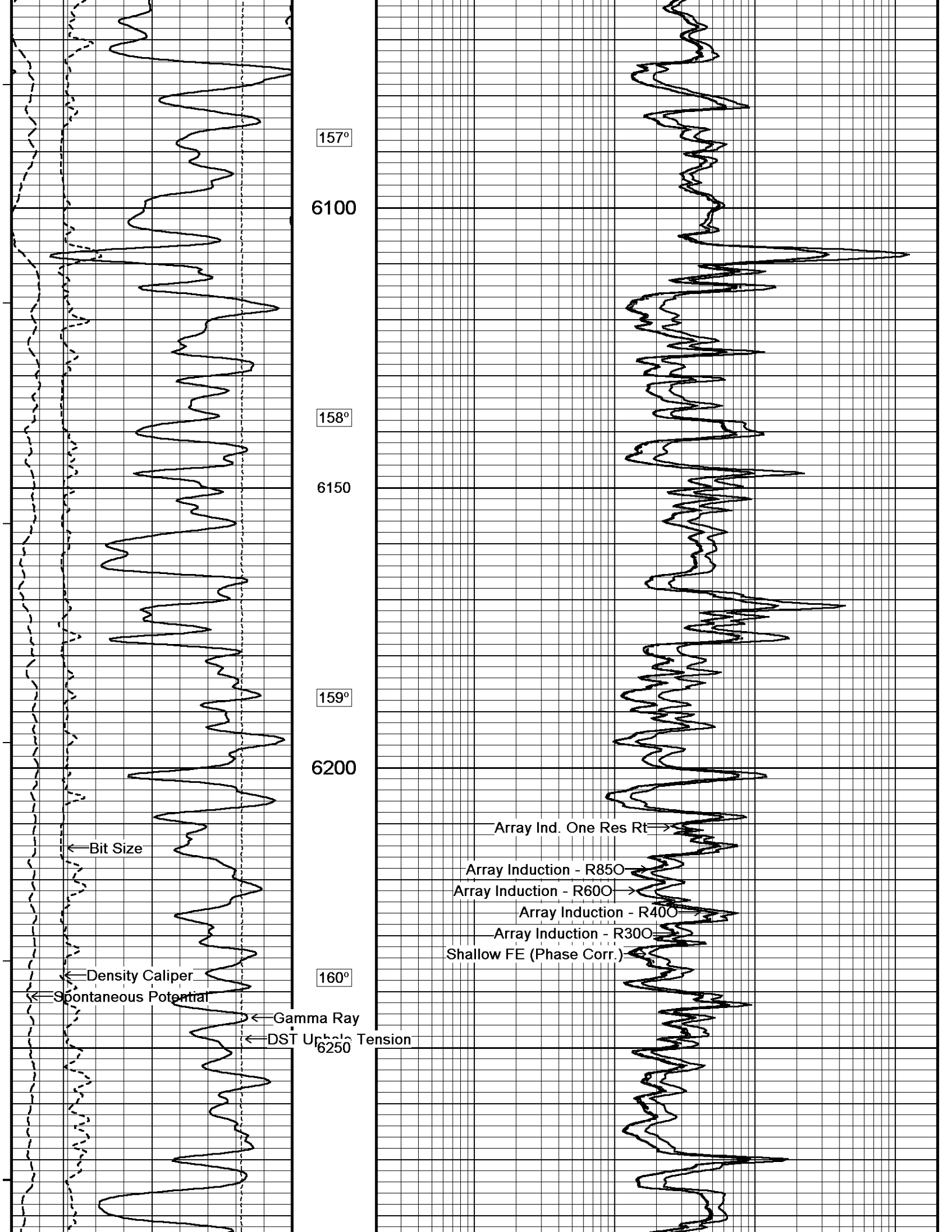

143°
5000
Array Ind. One Res Rt
Bit Size
143°
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
5050
Shallow FE (Phase Corr.)
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
144°
5100
144°
5150

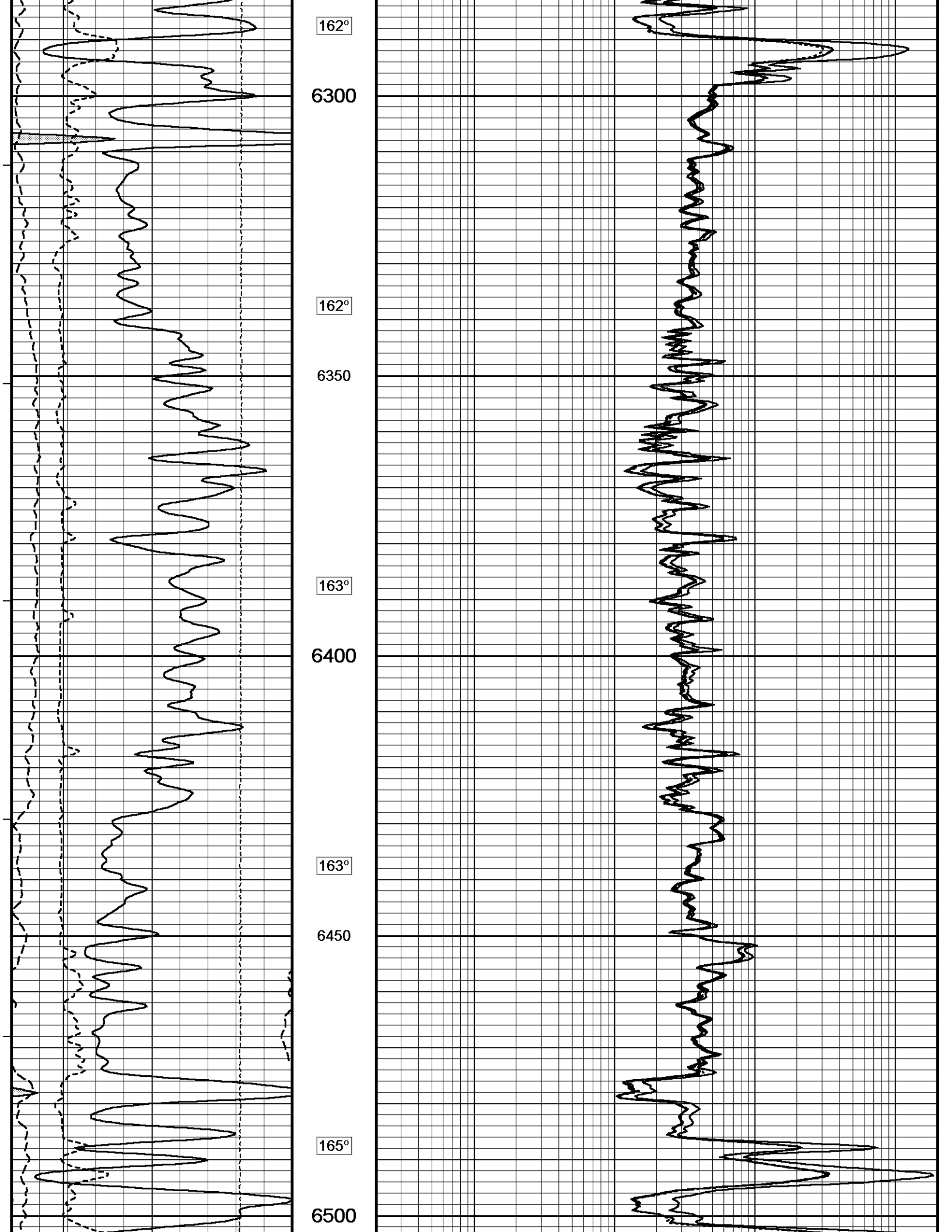

145°
5200
146°
5250
147°
5300
147°
5350
148°
5400

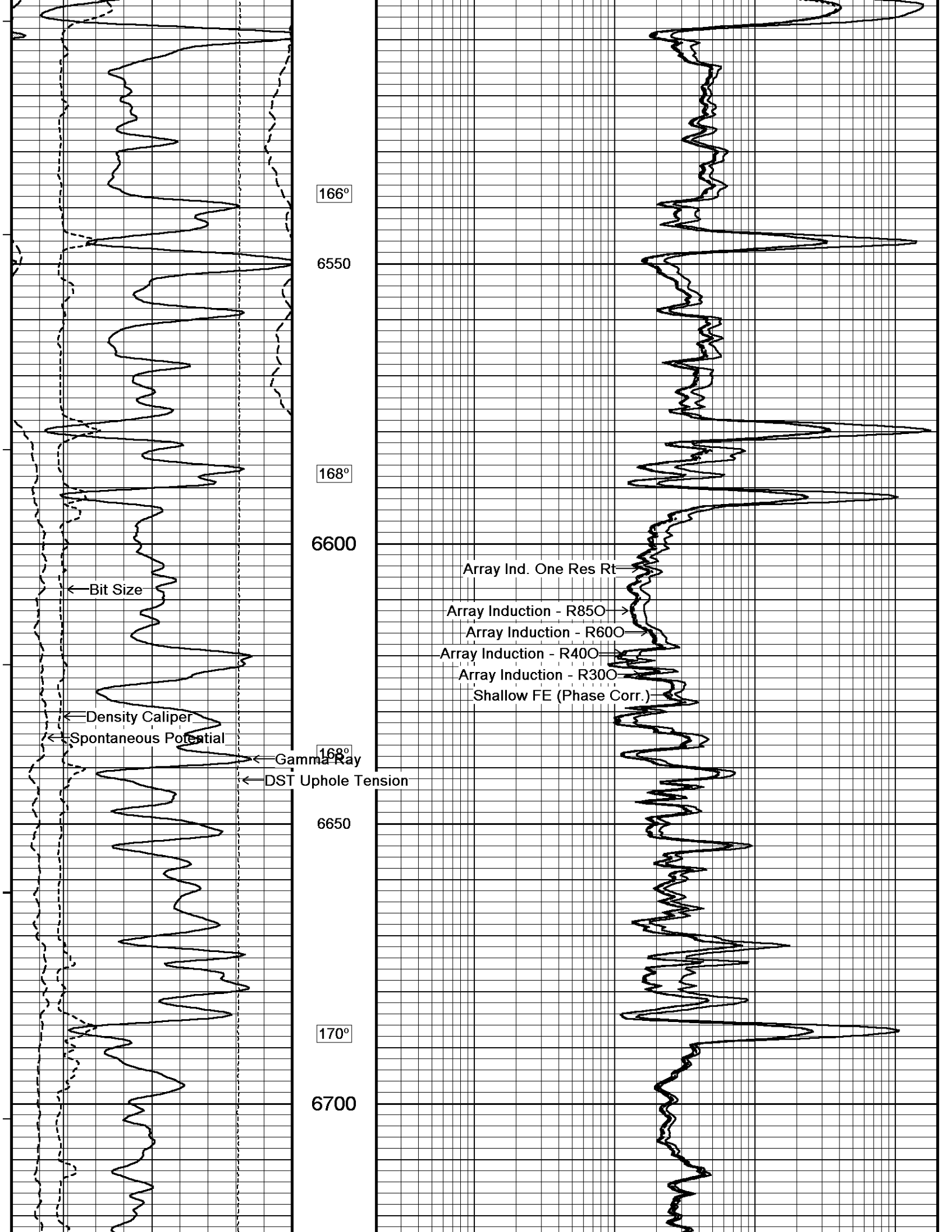

Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)
148°
149°
149°
150°
5450
5500
5550
5600

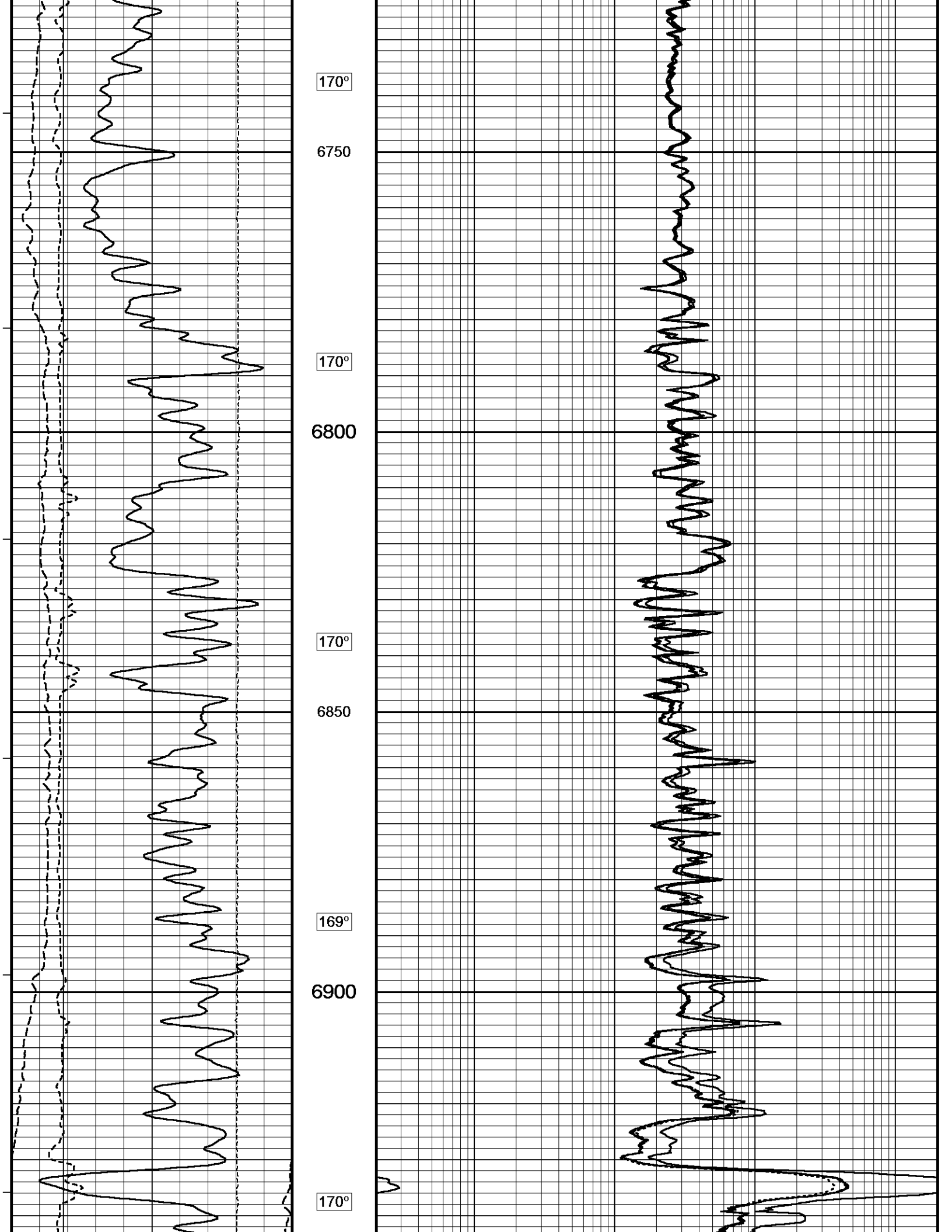

150°
5650
151°
5700
151°
5750
152°
5800
153°
Bit Size
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

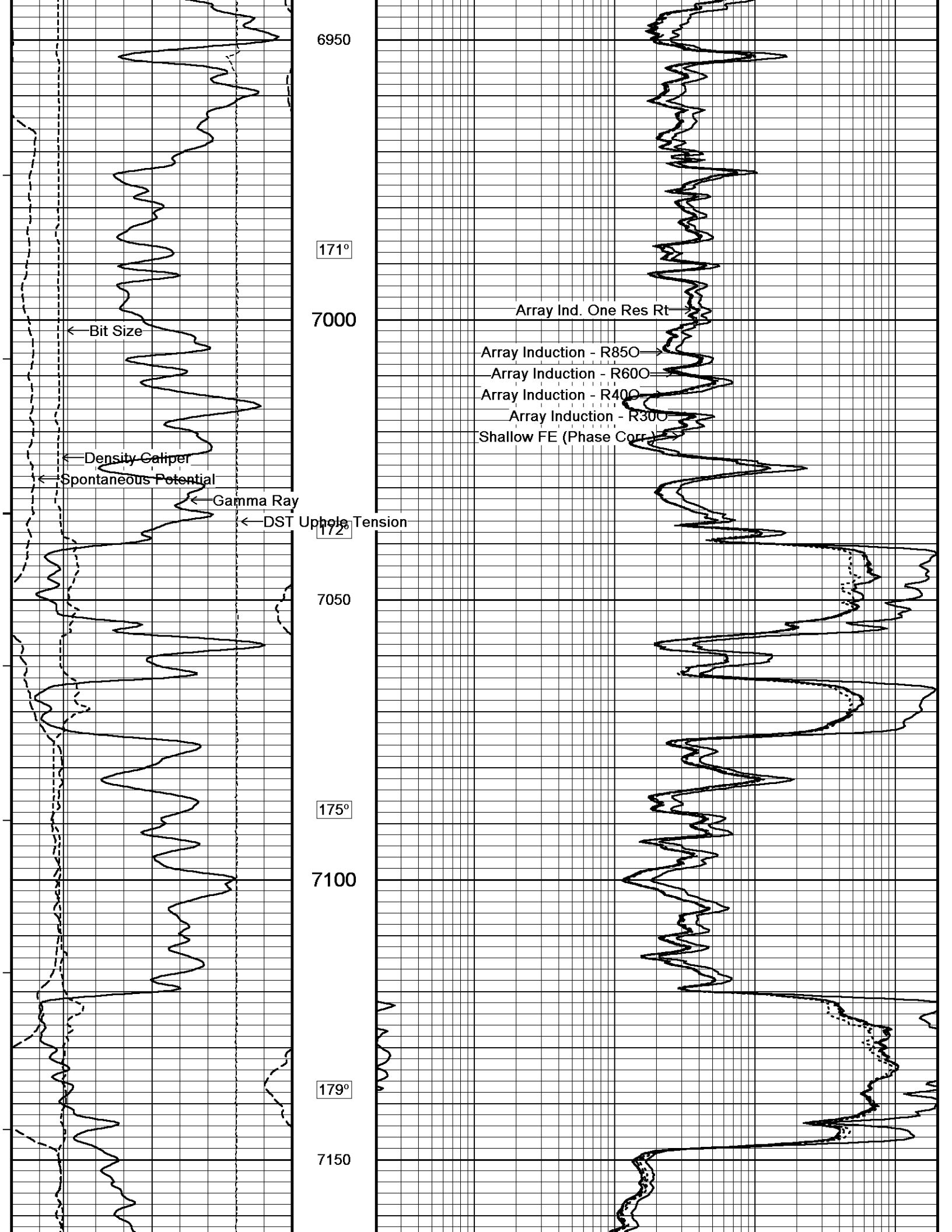

Density Caliper
Spontaneous Potential
Gamma Ra
DST Uphole Tension
5850
154°
5900
155°
5950
155°
6000
156°
6050

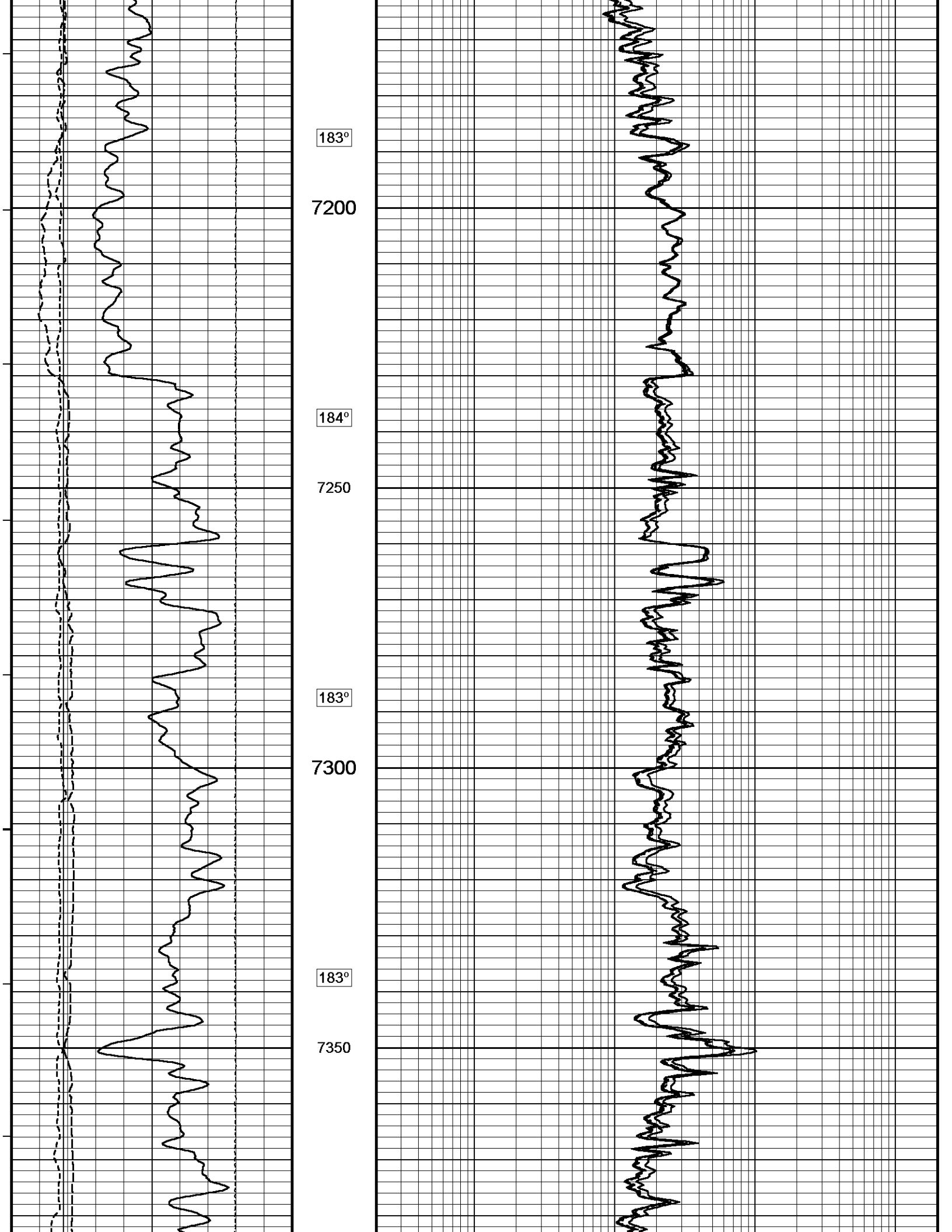

157°
6100
158°
6150
159°
6200
160°
6250
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)

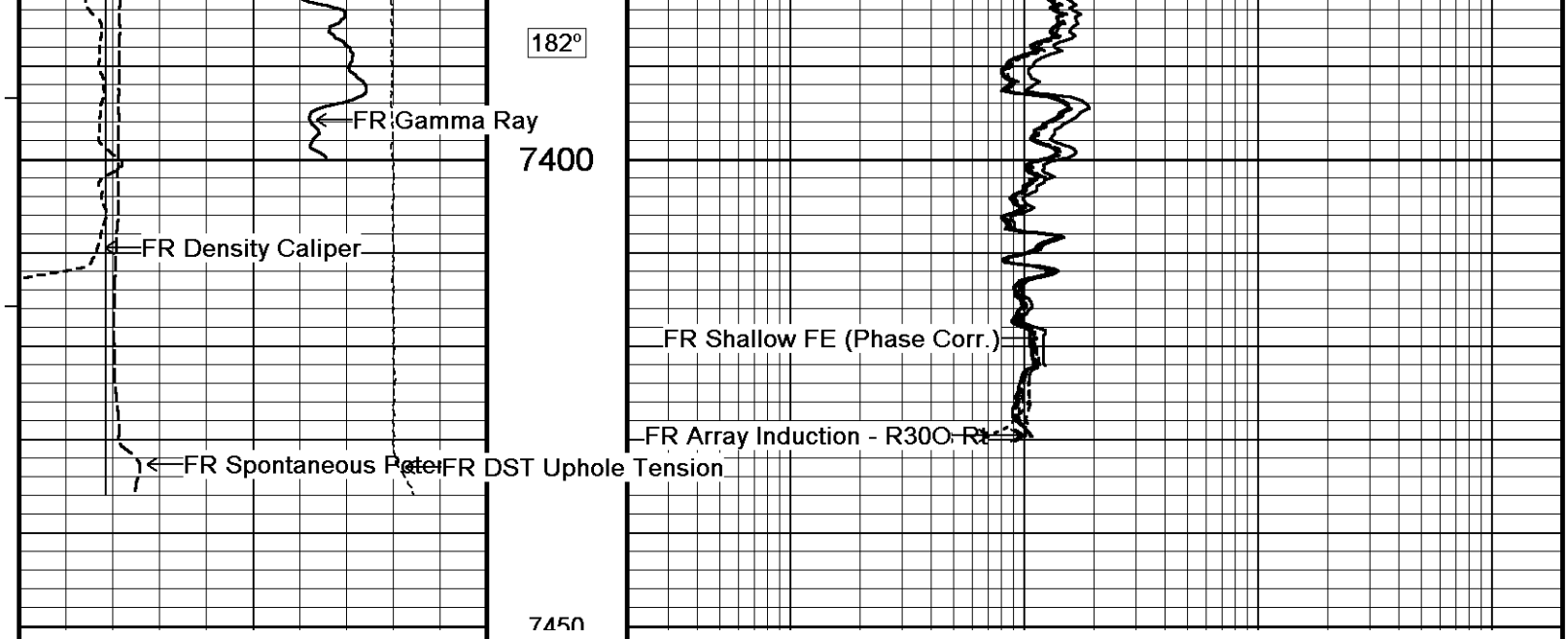

162°
6300
162°
6350
163°
6400
163°
6450
165°
6500


166°
6550
168°
6600
Bit Size
Density Caliper
Spontaneous Potential
168°
Gamma Ray
DST Uphole Tension
6650
170°
6700
Array Ind. One Res Rt
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr.)


170°
6750
170°
6800
170°
6850
169°
6900
170°


6950
171°
7000
Array Ind. One Res Rt
Bit Size
Array Induction - R85O
Array Induction - R60O
Array Induction - R40O
Array Induction - R30O
Shallow FE (Phase Corr)
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
172°
7050
175°
7100
179°
7150


183°
7200
184°
7250
183°
7300
183°
7350



7450

Depth In Feet

Timing Marks
every 60.0 sec

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

Gamma Ray
API
0 75 150

Borehole Temp in deg F

Spontaneous Potential
millivolts
− → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Replay Scale 1:240

Shallow FE (Phase Corr.)
ohm metres
0.20 2000
1 10 100 1000

Array Induction - R30O
ohm metres
0.20 2000
1 10 100 1000

Array Induction - R40O
ohm metres
0.20 2000
1 10 100 1000

Array Induction - R60O
ohm metres
0.20 2000
1 10 100 1000

Array Induction - R85O
ohm metres
0.20 2000
1 10 100 1000

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

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 01-FEB-2011 03:02
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta
Recorded on 01-FEB-2011 01:32
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

5 INCH MAIN LOG

OVERLAY

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 01-FEB-2011 03:02

Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta
Recorded on 01-FEB-2011 01:32
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\repeat.dta
Recorded on 31-JAN-2011 23:19
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

Timing Marks
every 60.0 sec

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

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth In Feet

Borehole Temp in deg F

Replay Scale 1:240

7200

184°

7250

Shallow FE (Phase Corr.)
ohm metres
0.20 2000
1 10 100 1000

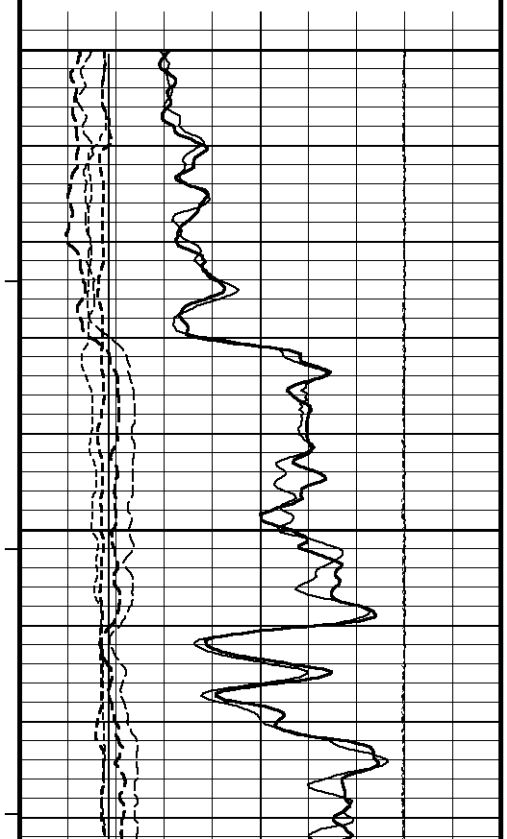
Array Induction - R30O
ohm metres
0.20 2000
1 10 100 1000

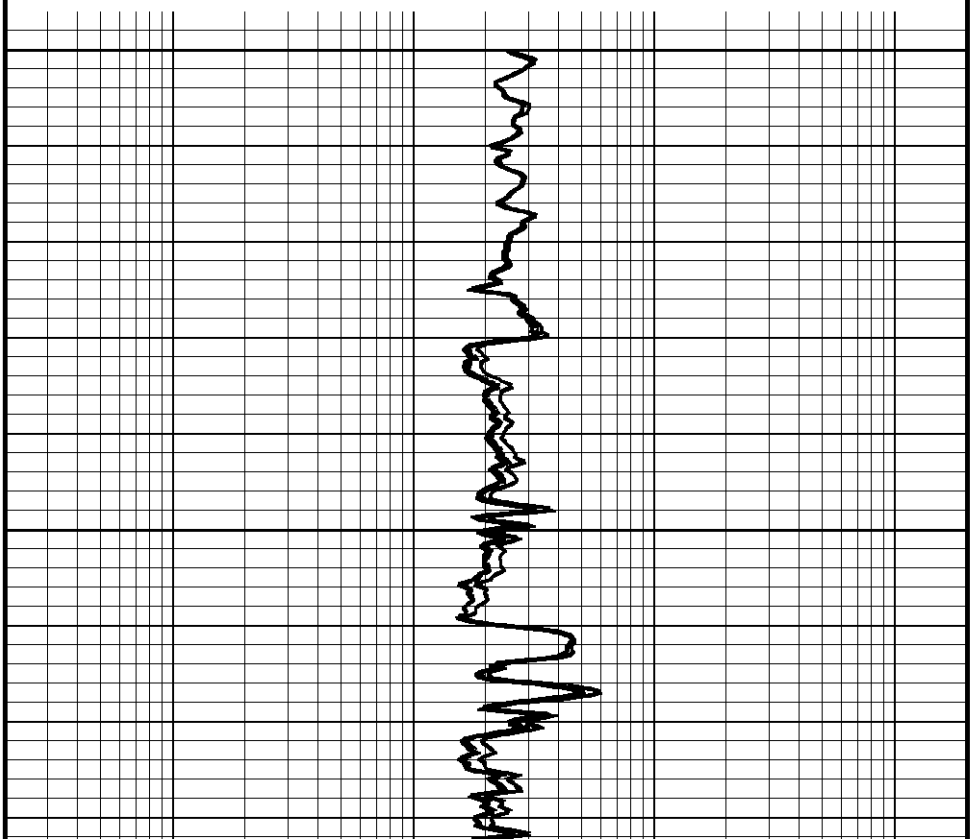
Array Induction - R40O
ohm metres
0.20 2000
1 10 100 1000

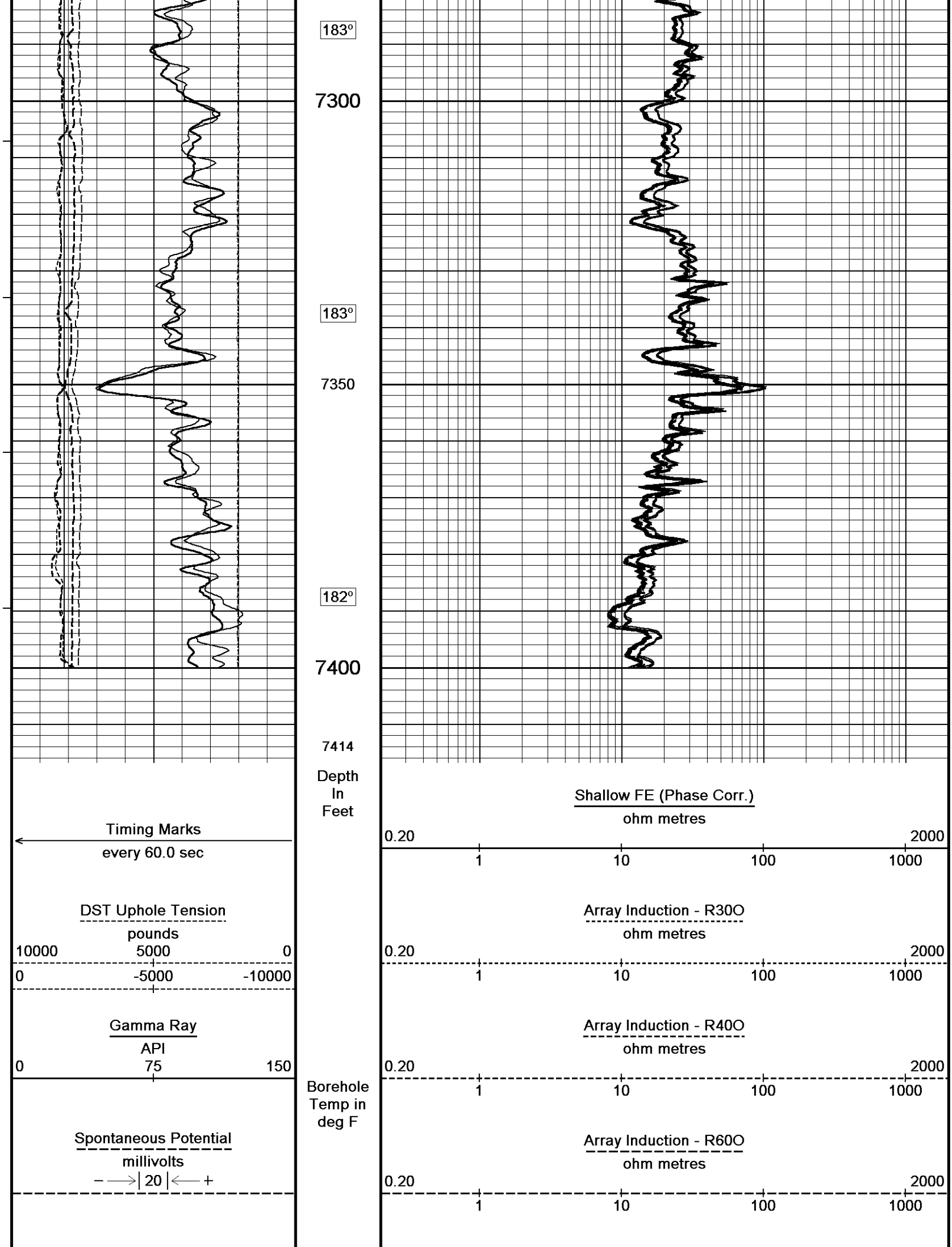
Array Induction - R60O
ohm metres
0.20 2000
1 10 100 1000

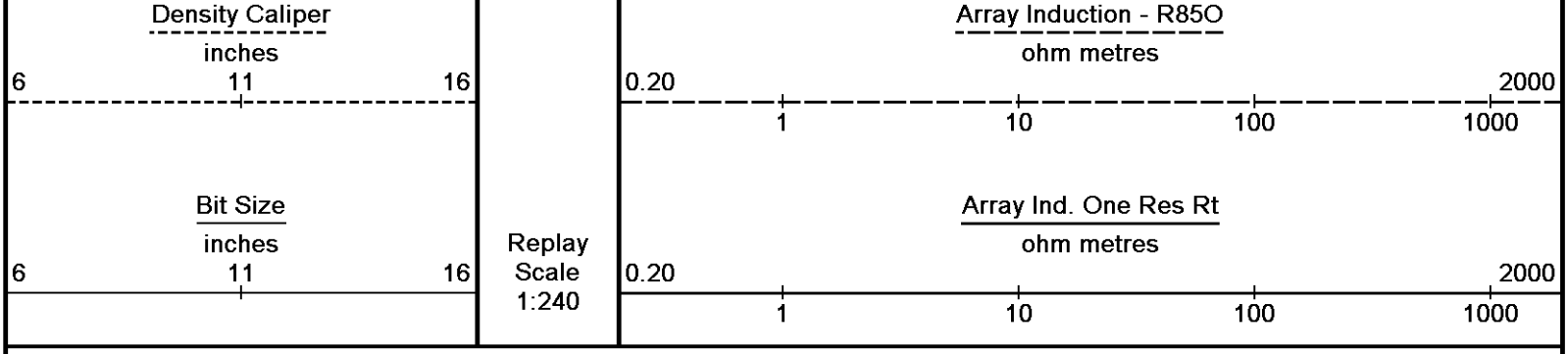
Array Induction - R85O
ohm metres
0.20 2000
1 10 100 1000

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






183°
7300
183°
7350
182°
7400
7414
Depth In Feet
Timing Marks
every 60.0 sec
DST Uphole Tension
pounds
10000 5000 0
0 -5000 -10000
Gamma Ray
API
0 75 150
Spontaneous Potential
millivolts
− 20 +
Borehole Temp in deg F
Shallow FE (Phase Corr.)
ohm metres
0.20 2000
1 10 100 1000
Array Induction - R30O
ohm metres
0.20 2000
1 10 100 1000
Array Induction - R40O
ohm metres
0.20 2000
1 10 100 1000
Array Induction - R60O
ohm metres
0.20 2000
1 10 100 1000



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 01-FEB-2011 03:02
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta — Recorded on 01-FEB-2011 01:32
Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\repeat.dta — Recorded on 31-JAN-2011 23:19
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

OVERLAY

BEFORE SURVEY CALIBRATION

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

General Constants All 000

Last Edited on 31-JAN-2011,22:51

General Parameters		
Mud Resistivity	4.600	ohm-metres
Mud Resistivity Temperature	70.000	degrees F
Water Level	0.000	feet
Density/Neutron 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. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 31-JAN-2011

Reading No	Measured	Calibrated (lbs)
1	16500.00	250.00
2	17700.00	350.00

High Resolution Temperature Calibration MCG-C 192

Field Calibration on 31-JAN-2011,20:29

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

High Resolution Temperature Constants MCG-C 192

Last Edited on 13-DEC-2010,09:50

Pre-filter Length	11

SP Calibration MCG-C 192

Field Calibration on 31-JAN-2011,19:52

	Measured	Calibrated (mV)
Reference 1	102.5	101.0
Reference 2	-98.8	-101.0

Gamma Calibration MCG-C 192

Field Calibration on 31-JAN-2011 19:52

	Measured	Calibrated (API)
Background	89	61
Calibrator (Gross)	1425	973
Calibrator (Net)	1336	912

Gamma Constants MCG-C 192

Last Edited on 31-JAN-2011,20:29

Gamma Calibrator Number	GRC-072	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Neutron Calibration MDN-A.B 160

Base Calibration on 25-DEC-2010,03:47
Field Check on 31-JAN-2011 20:01

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3208	98	3714	110
Ratio	32.812		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1323	1983
Ratio	0.667	

Field Check

	Calibrated (cps)	
	1290	1990
Ratio	0.648	

Neutron Constants MDN-A.B 160

Last Edited on 26-JAN-2011,15:55

Neutron Source Id	1056	
Neutron Jig Number	5922	
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	0.00	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 85

Base Calibration on 04-JAN-2011 14:22
Field Check on 31-JAN-2011 22:14

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	968.2	126.8
Base Check		280.9
Field Check		281.2

FE Constants MFE-A.A 85

Last Edited on 31-JAN-2011,20:28

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-B.A 212

Field Calibration on 25-JAN-2011,16:12

	Measured	Calibrated(Deg F)
Lower	10.00	50.00
Upper	100.00	212.00

High Resolution Temperature Constants MAI-B.A 212

Last Edited on 03-JAN-2011,01:08

Pre-filter Length	11

Induction Calibration MAI-B.A 212

Base Calibration on 12-NOV-2010,10:48
Field Check on

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	16.6	473.9	9.3	966.2
2	6.2	387.5	7.6	821.4
3	3.9	263.1	5.2	566.0
4	2.0	132.9	2.6	279.2

Array Temperature 71.2 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0
Deep	0.0	0.0	0.0	0.0
Medium	0.0	0.0	0.0	0.0
Shallow	0.0	0.0	0.0	0.0
Array Temperature		0.0		0.0 Deg F

Induction Constants MAI-B.A 212

Last Edited on 01-FEB-2011,02:42

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	0.0000	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 167

Base Calibration on 21-JAN-2011 16:11
Field Calibration on 25-JAN-2011,16:15

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18525	4.00

2	27040	5.96
3	34832	7.98
4	43072	9.86
5	52544	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.05	5.96

Photo Density Calibration MPD-B 167

Base Calibration on 21-JAN-2011 15:55
Field Check on 31-JAN-2011 22:12

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	48339	18513	53115	19186
Reference 2	22777	3049	25020	2536

Field Check at Base

1168.2	1745.6

Field Check

1174.5	1744.2

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	216	1046		
Reference 1	14699	48168	0.307	0.320
Reference 2	5890	22643	0.263	0.272

Field Check at Base

216.3	1045.7

Field Check

212.6	1046.1

Density Constants MPD-B 167

Last Edited on 31-JAN-2011,20:25

Density Source Id	P50561B	
Nylon Calibrator Number	507	
Aluminium Calibrator Number	507	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.27	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)
2.68	
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

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

FE Check MFE-A.A 85

Before Survey Check 31-JAN-2011 22:14
After Survey Check on 01-FEB-2011 02:40

Before (ohm-m)	After (ohm-m)
281.2	280.8

281.2 280.8

Induction Check MAI-B.A 212

Before Survey Check on
After Survey Check on 01-FEB-2011 02:45

Channel	Before Survey (mmho/m) Low	Before Survey (mmho/m) High	After Survey (mmho/m) Low	After Survey (mmho/m) High
1	0.0	0.0	13.4	3844.4
2	0.0	0.0	29.6	3491.4
3	0.0	0.0	27.5	3023.8
4	0.0	0.0	19.6	2088.0
Deep	0.0	0.0	17.0	2015.1
Medium	0.0	0.0	39.6	3941.5
Shallow	0.0	0.0	44.1	5104.7
Array Temperature		0.0		55.5

Photo Density Check MPD-B 167

Before Survey Check on 31-JAN-2011 22:12
After Survey Check on 01-FEB-2011 02:38

Density Check

Near Before	Near After	Far Before	Far After
1174.5	1172.5	1744.2	1747.9

PE Check

	Before	After
WS	212.6	213.1
WH	1046.1	1045.3

DOWNHOLE EQUIPMENT

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

SHA-F Compact Swivel Head Adaptor
SHA-F 82 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 192 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Neutron
MDN-A.B 160 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

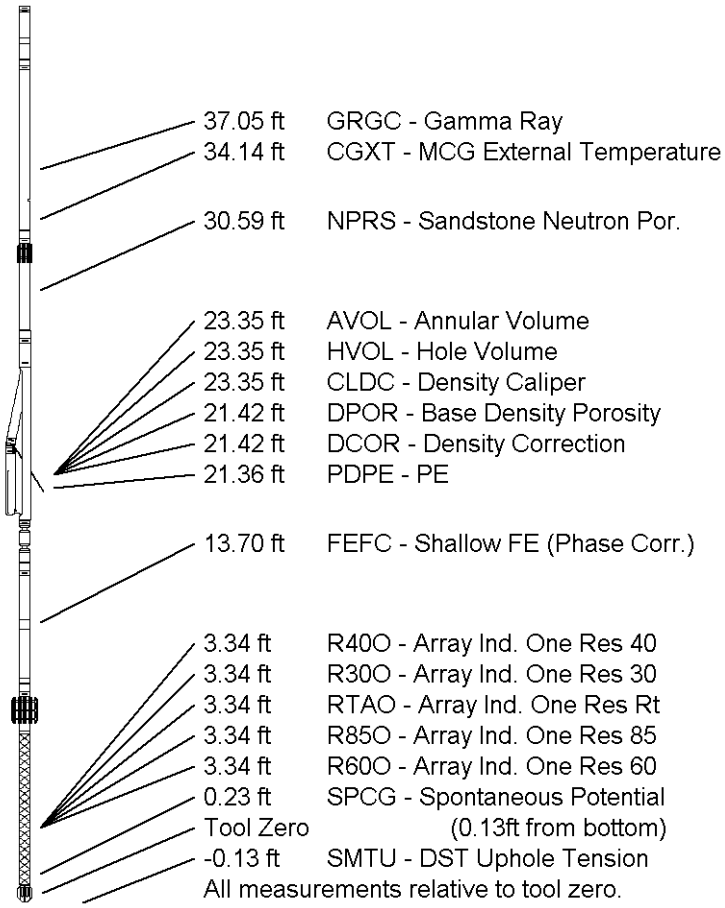
Compact Density/Caliper
MPD-B 167 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 114 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 85 LG: 6.03 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-B.A 212 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 45.08 ft Weight: 352.7 lb



COMPANY	BILL BARRETT CORPORATION
WELL	GGU FEDERAL 42C-29-691
FIELD	GIBSON GULCH

PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6127.00	feet	First Reading	7429.00	
Elevation Drill Floor	6126.00	feet	Depth Driller	7435.00	feet
Elevation Ground Level	6104.00	feet	Depth Logger	7433.00	feet

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SHALLOW FOCUSED
ELECTRIC LOG

40 Years of Wireline 1970 2010