Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	ARDREY #3-35
FIELD	ARDREY
PROVINCE/COUNTY	CLARK
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FSL & 1601' FEL

SEC	TWP	RGE	Other Services
30	35S	24W	MPD/MDN

Latitude
Longitude
API Number 15-025-21572

Permanent Datum GL, Elevation 2533 feet
Log Measured From KB
Drilling Measured From KB @ 12 FEET

Elevations:	feet
KB	2545.00
DF	2543.00
GL	2533.00

Date	07-MAR-2014			
Run Number	ONE			
Service Order	7036-81366181			
Depth Driller	5700.00	feet		
Depth Logger	5692.00	feet		
First Reading	5688.66	feet		
Last Reading	731.00	feet		
Casing Driller	732.00	feet		
Casing Logger	731.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 lb/USg	47.00 CP		
PH / Fluid Loss	9.00	10.00 ml/30Min		
Sample Source	MUDPIT			
Rm @ Measured Temp	0.95 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.76 @ 75.0	ohm-m		
Rmc @ Measured Temp	1.14 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.62 @118.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	118.00	deg F		
Equipment / Base	13096	LIB		
Recorded By	DEREK CARTER		BEN WELDIN	
Witnessed By	PETER DEBENHAM		ROGER PEARSON	
JOB #	LB14-065			

BOREHOLE RECORD

Last Edited: 07-MAR-2014 03:28

Bit Size inches	Depth From feet	Depth To feet
7.875	720.00	5700.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	720.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 X 0.5 INCH STANDOFF
  - MAI: 2 X 0.5 INCH STANDOFF
- 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
- CUSTOMER REQUESTED A HI-RES REPEAT PASS; CUSTOMER ALSO REQUESTED THE REPEAT PASS POROSITIES BE PRESENTED ON A SANDSTONE MATRIX ONLY

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 2290 CU. FT.

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO 4000 FT.: 380 CU. FT.

- SERVICE ORDER # 7036-81366181

- RIG: DUKE DRILLING #4

- ENGINEER: DEREK CARTER

- JUNIOR FIELD ENGINEER: BEN WELDIN

- OPERATOR: NICOLAS ADAME

- LTD OF 5692 FT. (DTD 5700 FT.) DETERMINED TO BE ACCEPTABLE BY COMPANY MAN AND GEOLOGIST

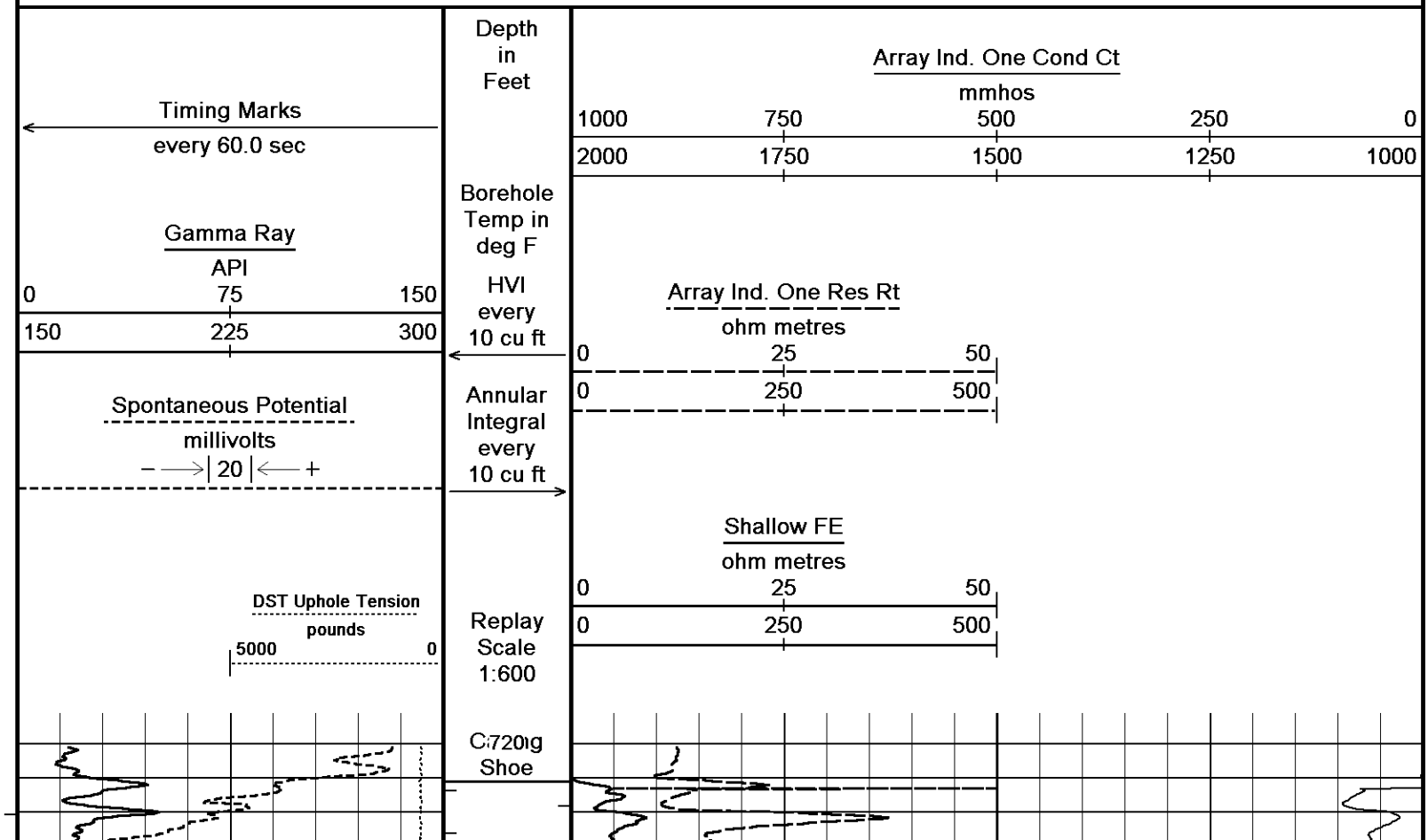
- SP CURVE HAS DISCONTINUITY AT 4253 FT. AFTER WHICH THE SP CURVE IS SHIFTED UP; THE CAUSE OF THIS IS UNKNOWN

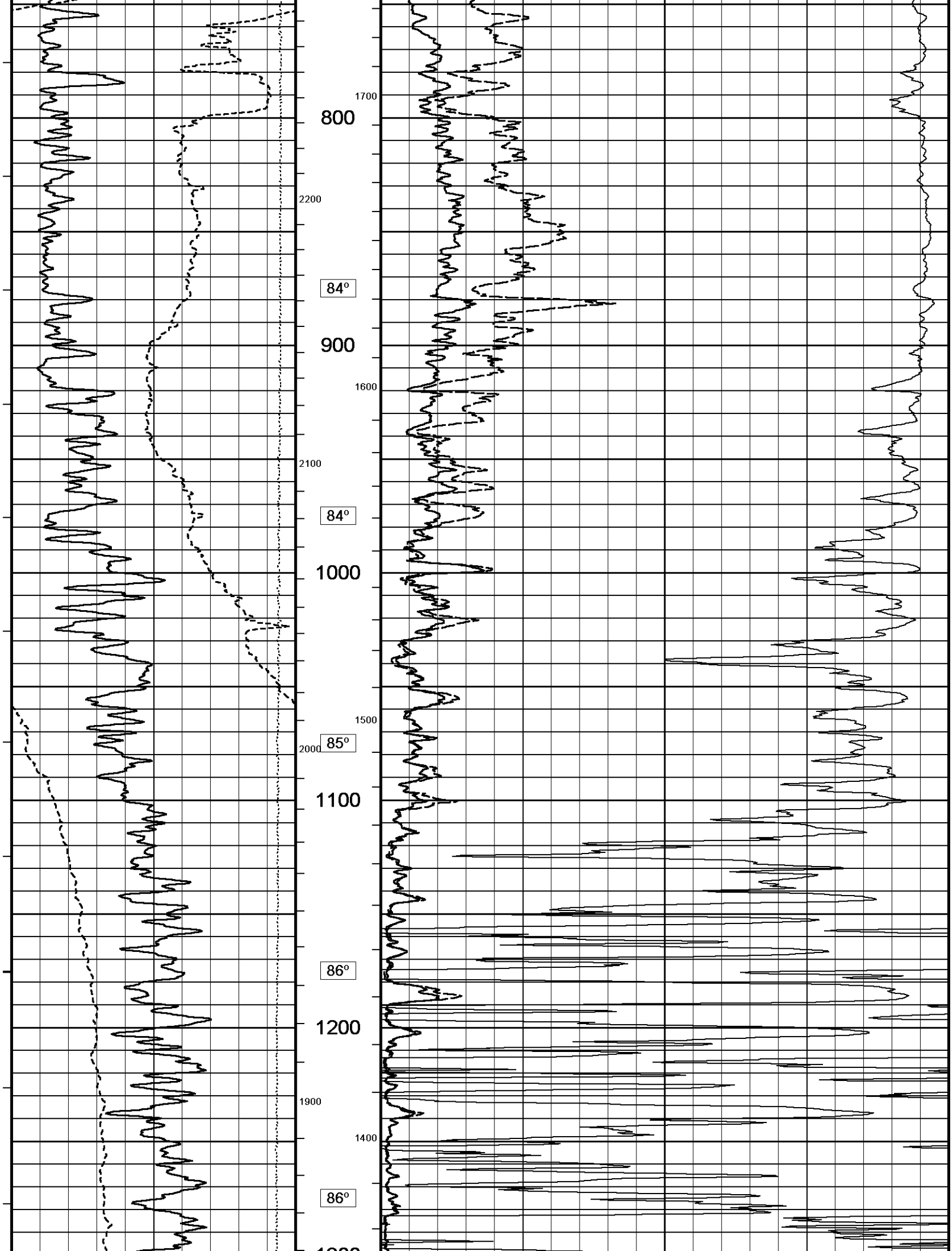
2 INCH MAIN

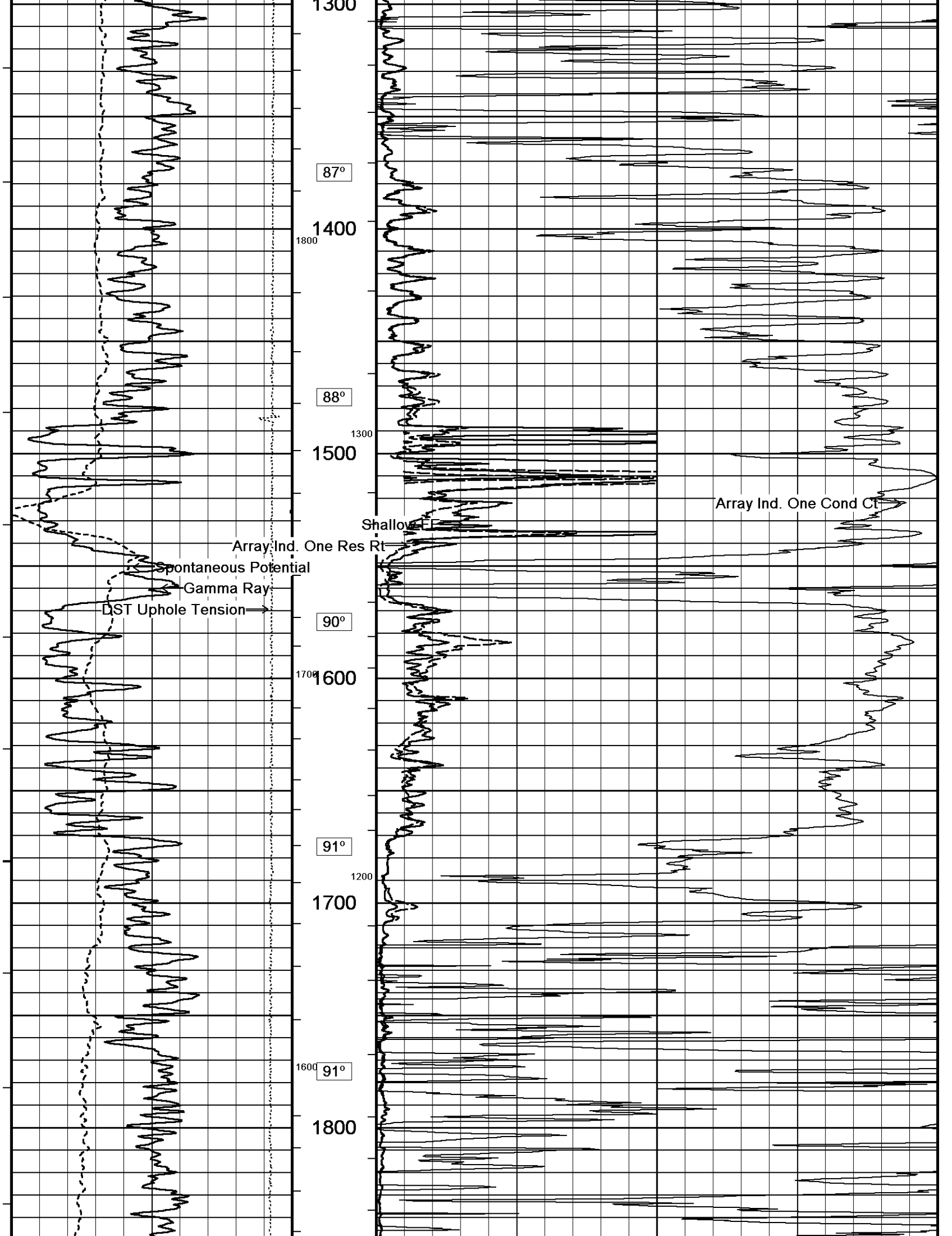
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAR-2014 10:52

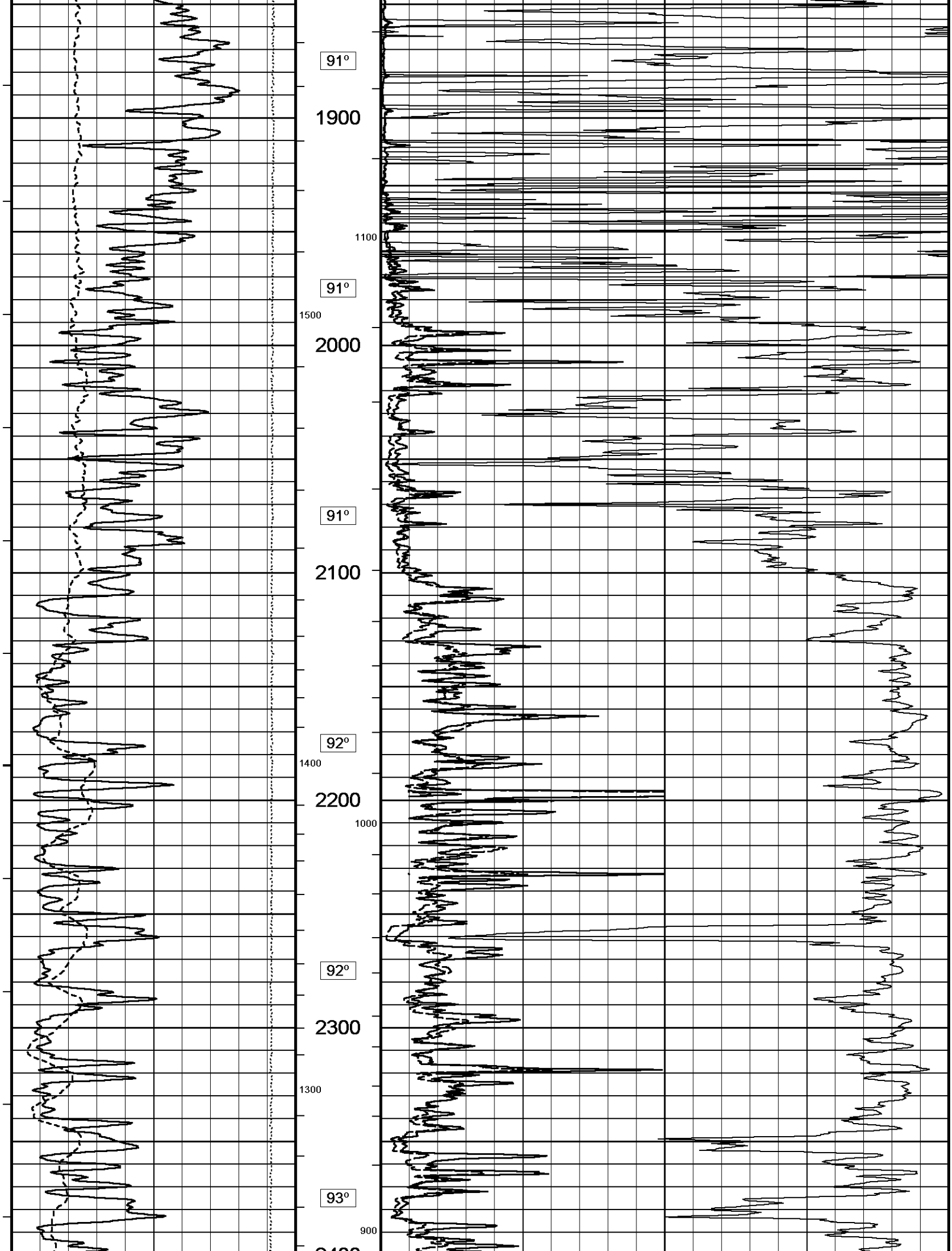
Filename: C:\Minimus\13.08\Logs\30 O'Brien E...\O'Brien Energy Resources Ardrey #3-35 Main_002.dta — Recorded on 07-MAR-2014 07:02

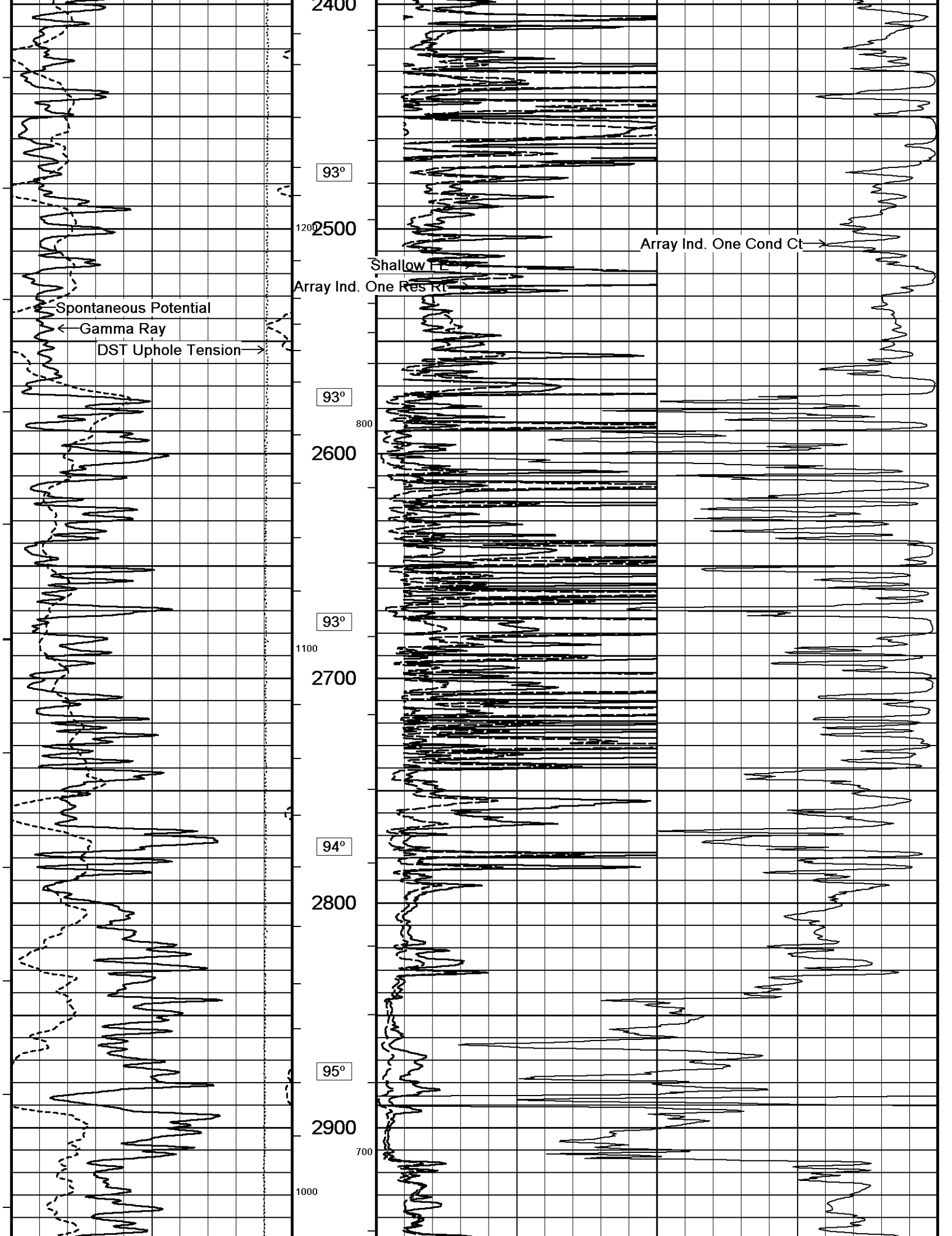
System Versions: Processed with 13.08.2113 Plotted with 13.08.2113

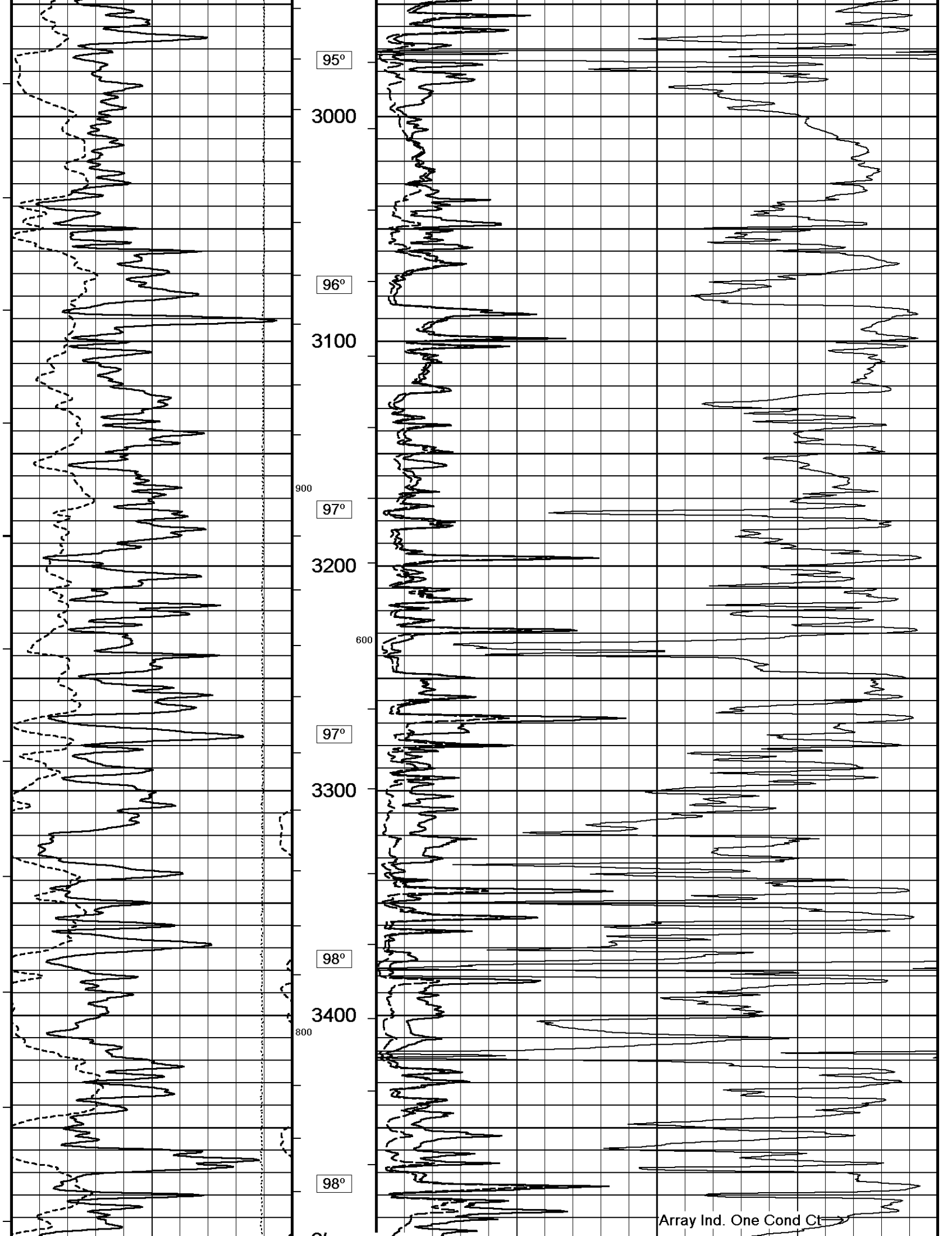


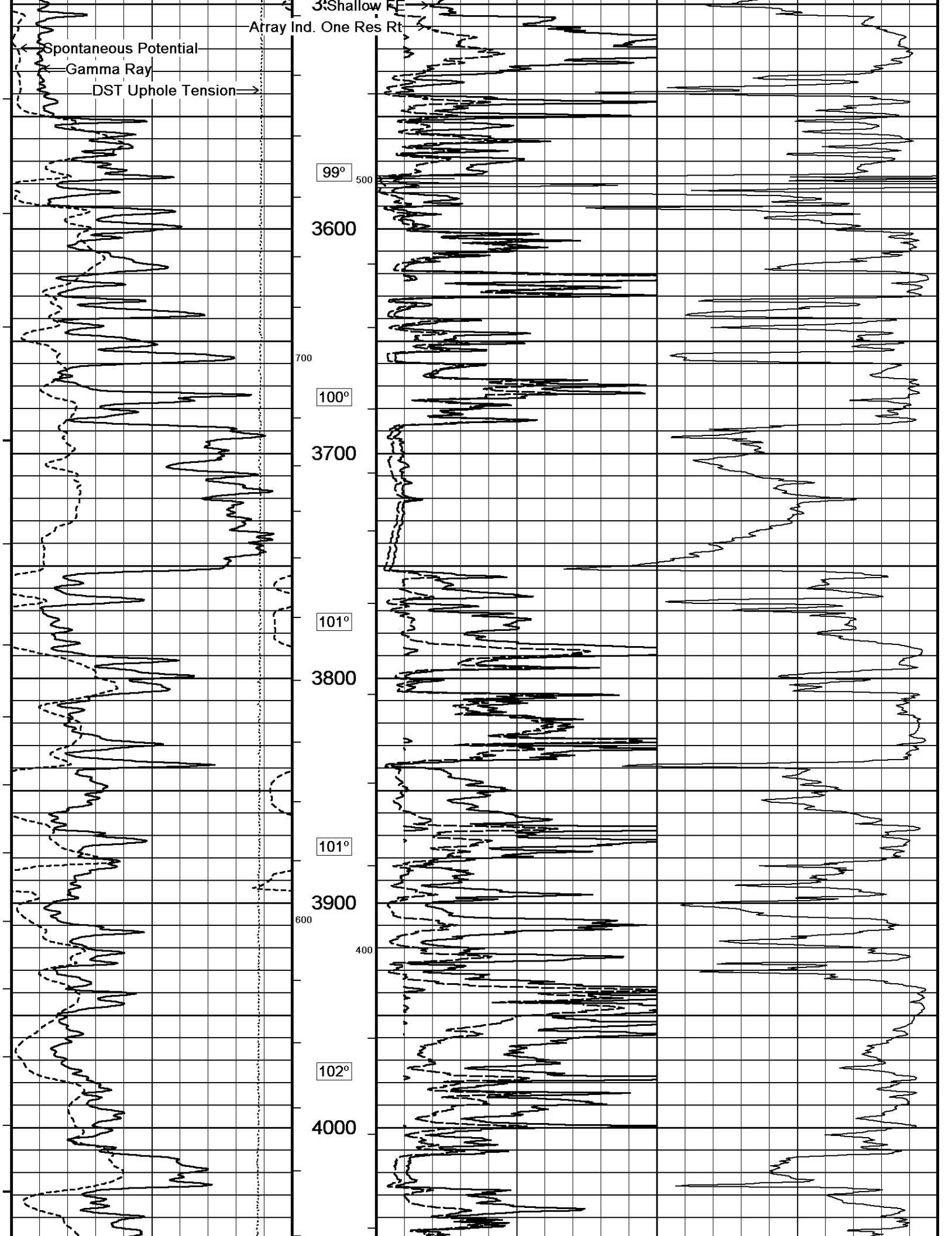

1700
800
2200
84°
900
1600
2100
84°
1000
1500
2000
85°
1100
86°
1200
1900
1400
86°

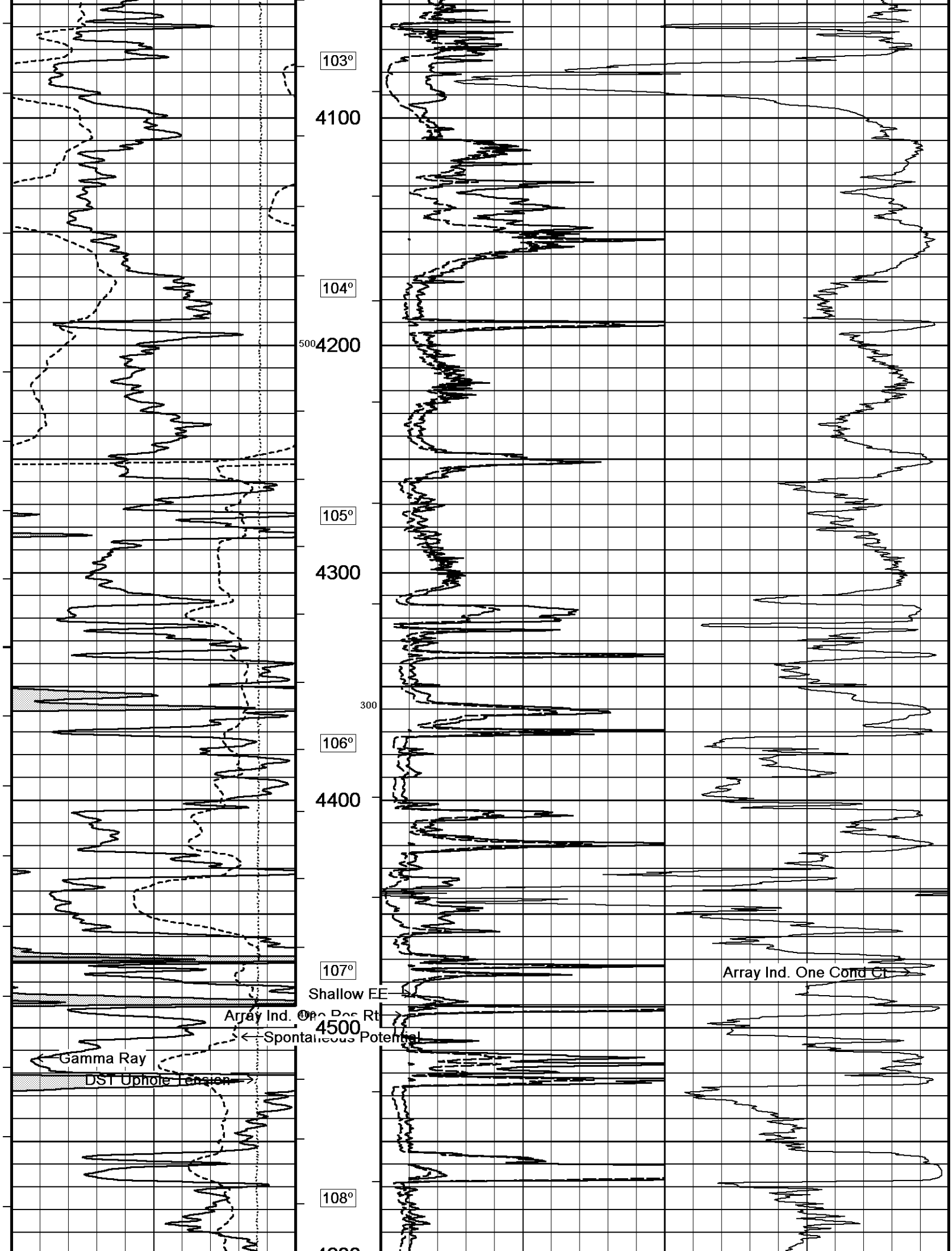

1300
87°
1400
1800
88°
1300
1500
Array Ind. One Cond Ct
Shallow Ct
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
90°
1700
1600
91°
1200
1700
1600
91°
1800

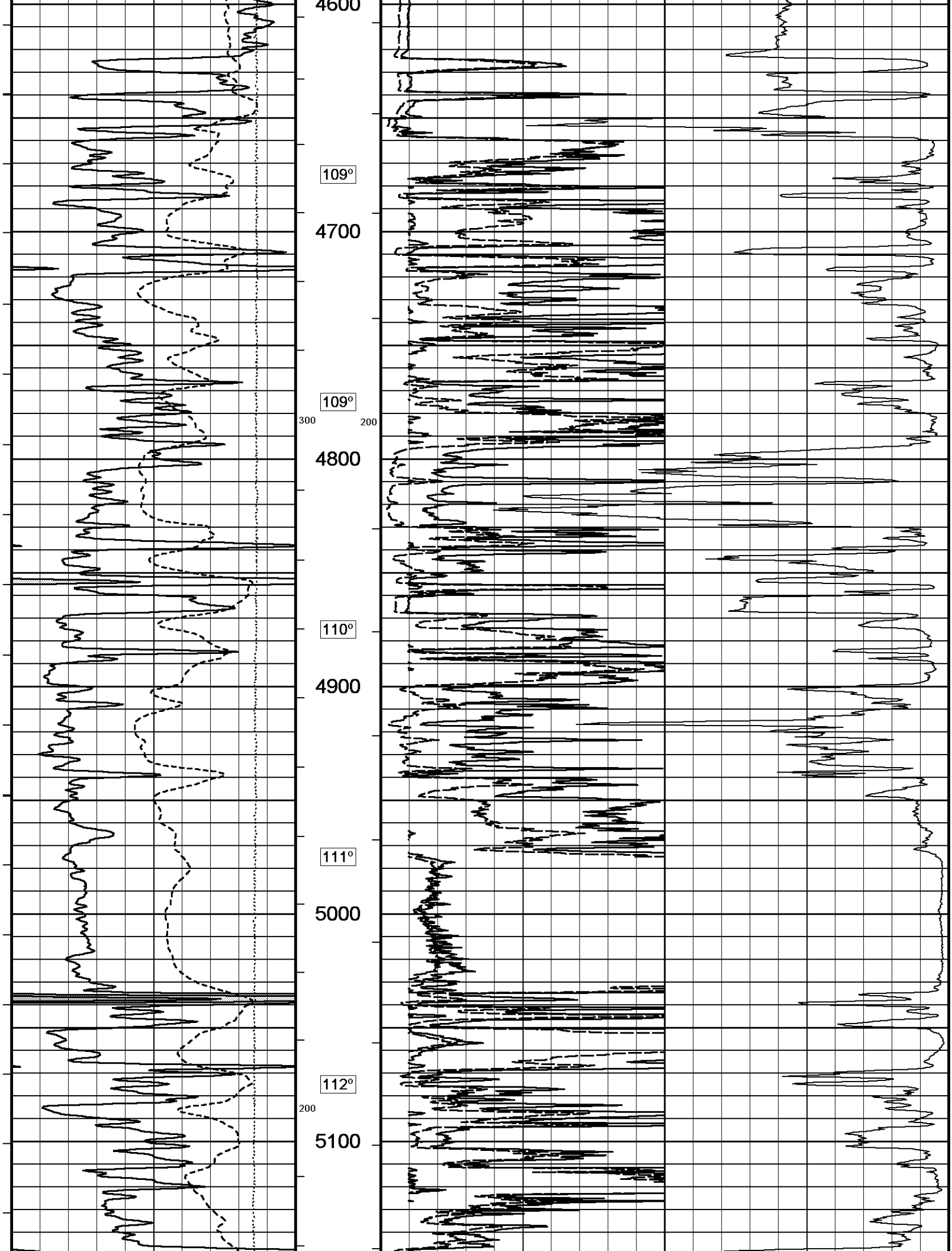

91°
1900
1100
91°
1500
2000
91°
2100
92°
1400
2200
1000
92°
2300
1300
93°
900

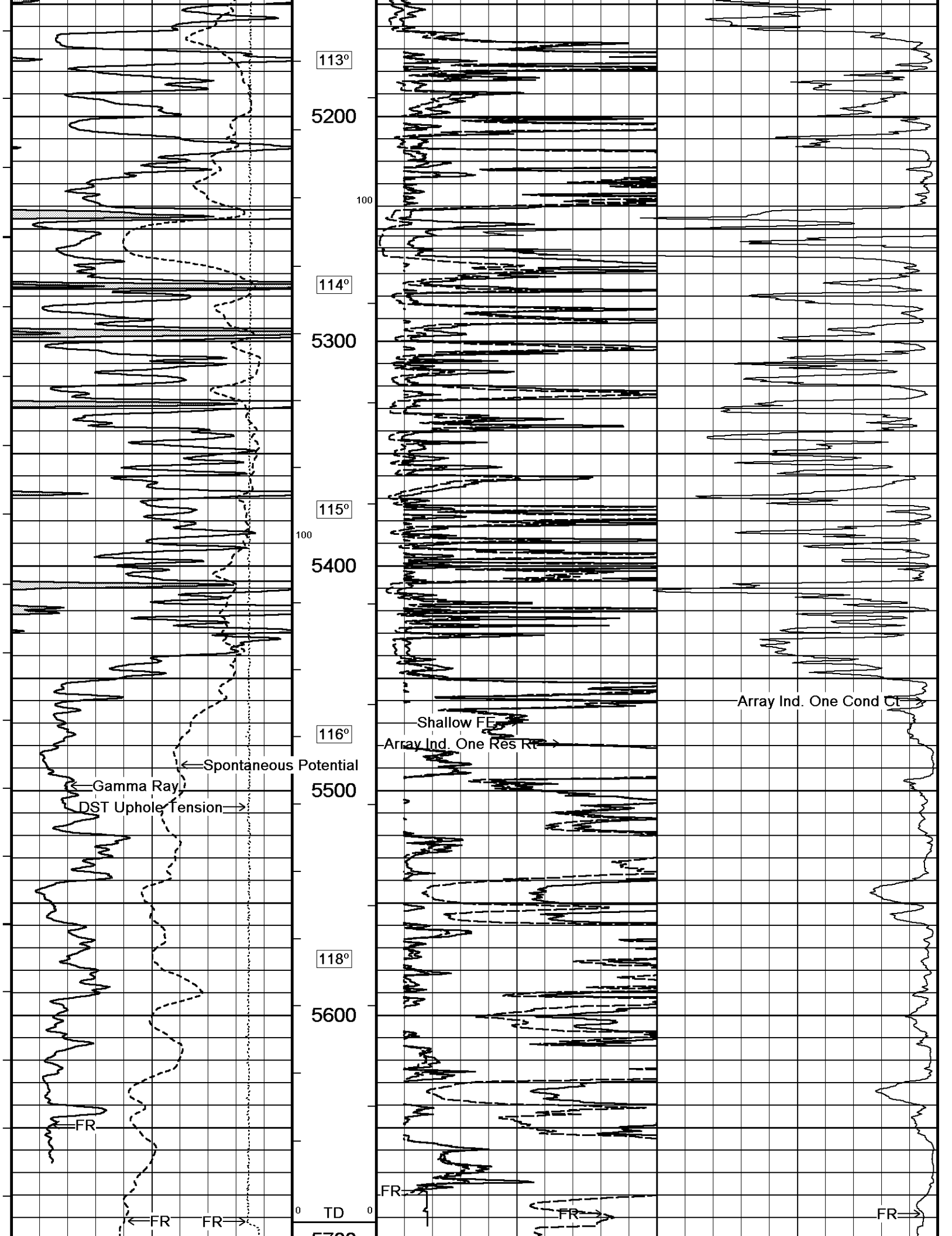

2400
93°
2500
1200
Array Ind. One Cond Ct
Shallow Ft
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
93°
800
2600
93°
1100
2700
94°
2800
95°
2900
700
1000

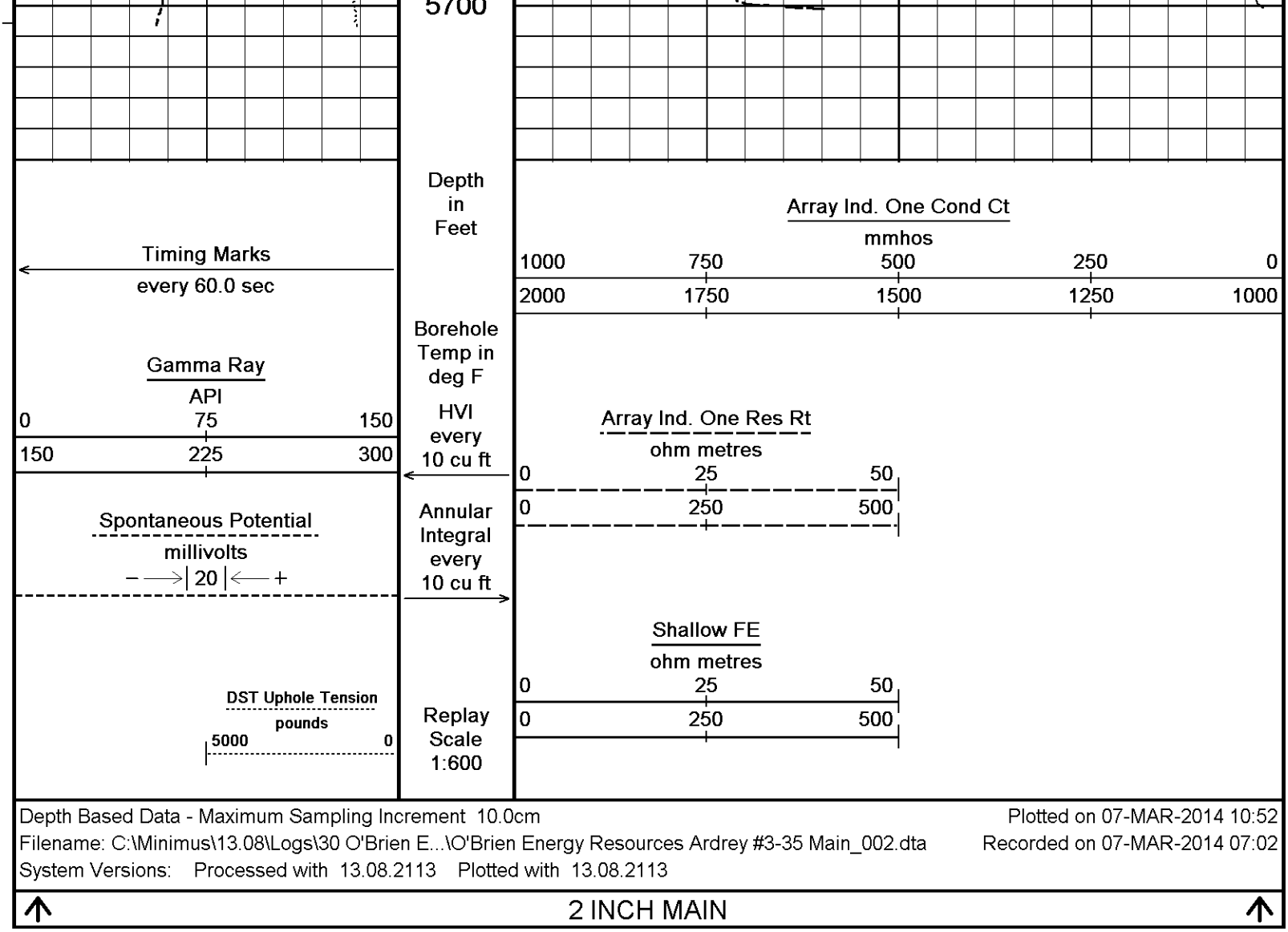

95°
3000
96°
3100
900
97°
3200
600
97°
3300
98°
3400
800
98°
Array Ind. One Cond Ct


3:Shallow FE
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
99°
500
3600
700
100°
3700
101°
3800
101°
3900
600
400
102°
4000


103°
4100
104°
500
4200
105°
4300
300
106°
4400
107°
Shallow EE
Array Ind. One Cond Ct
Array Ind. One Res Rt
4500
Spontaneous Potential
Gamma Ray
DST Uphole Tension
108°


4600
109°
4700
109°
300
200
4800
110°
4900
111°
5000
112°
200
5100


113°
5200
100
114°
5300
115°
100
5400
116°
5500
118°
5600
0
TD
0
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
FR
FR
Shallow FE
Array Ind. One Res Rt
FR
FR
Array Ind. One Cond Ct
FR

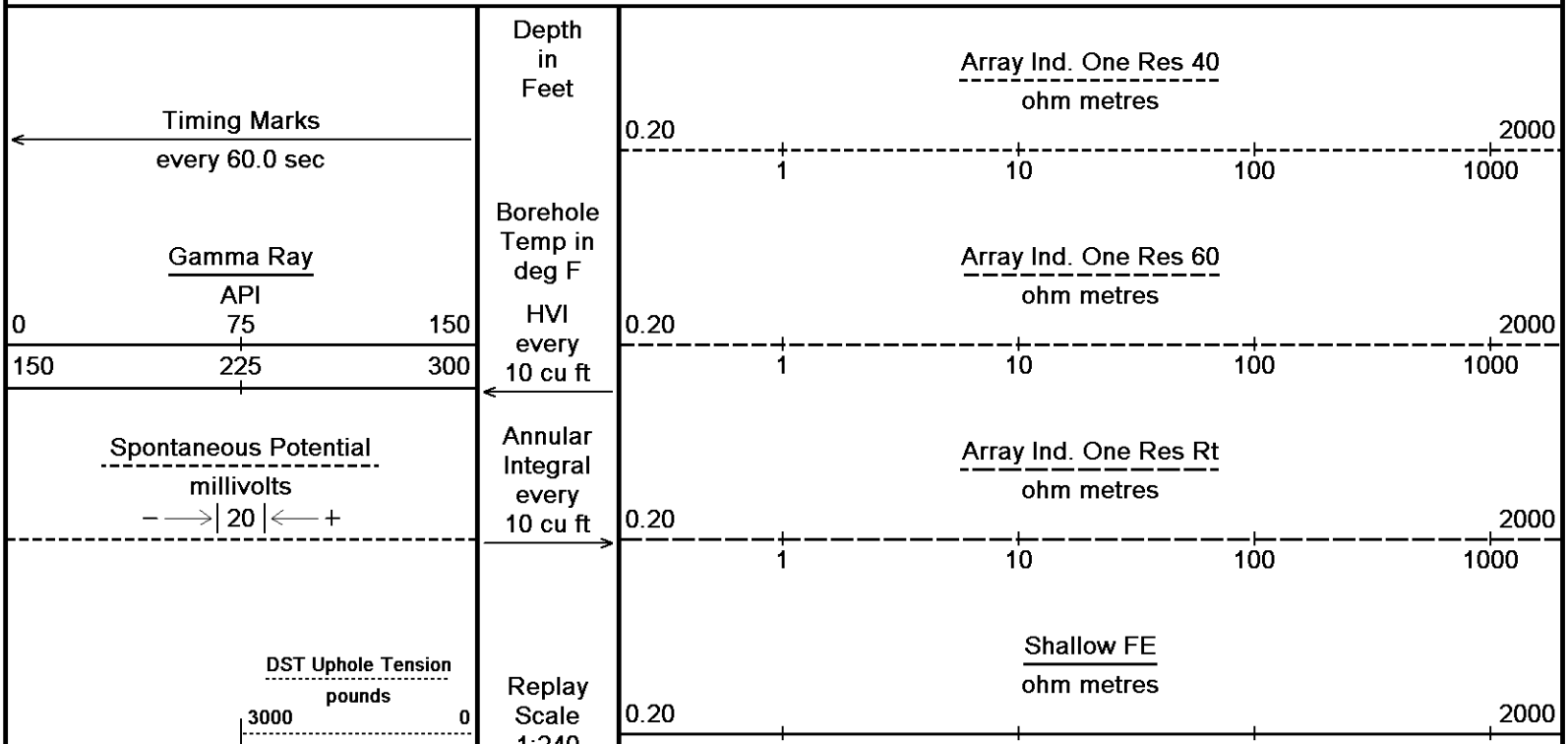


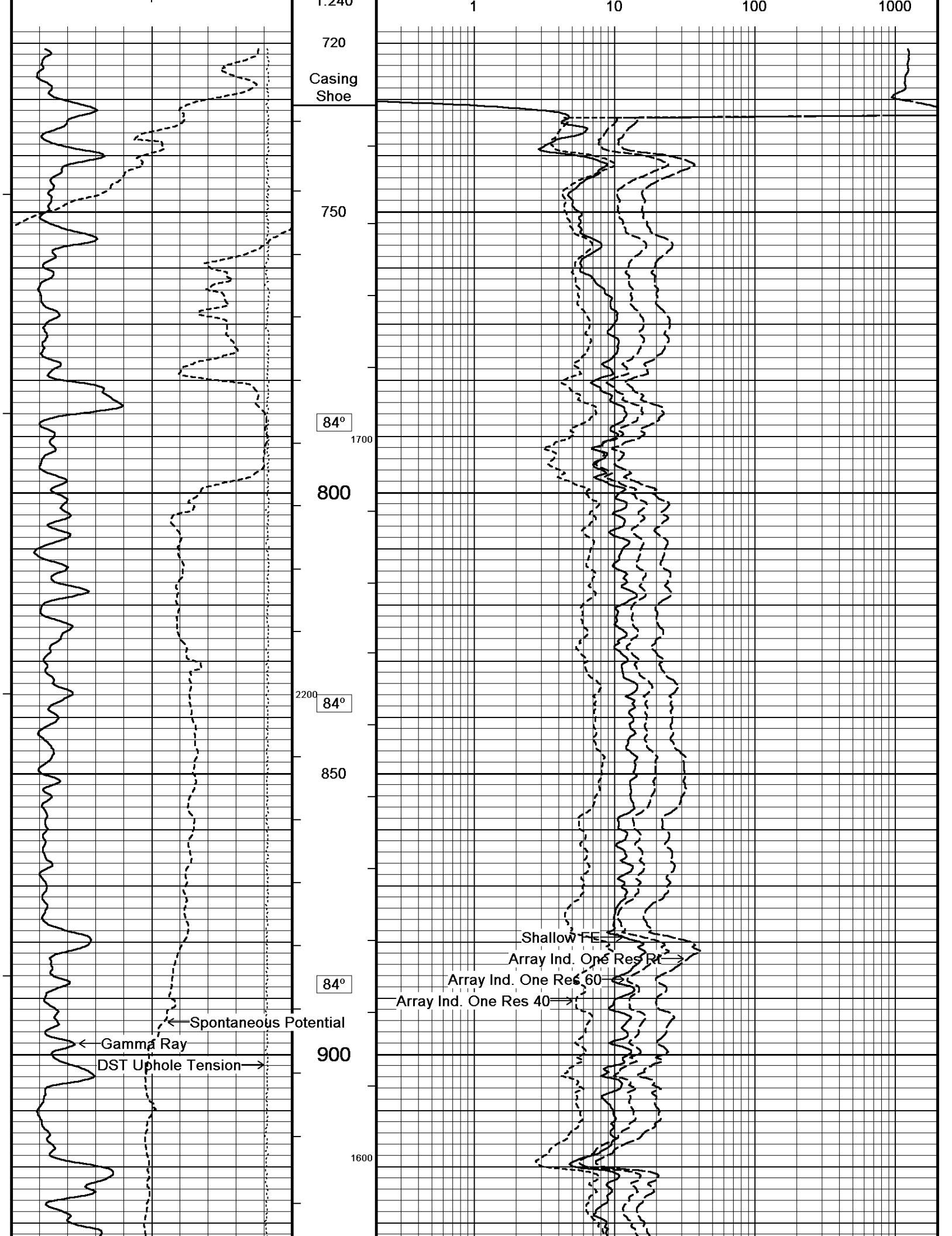
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Brien E...\O'Brien Energy Resources Ardrey #3-35 Main_002.dta — Recorded on 07-MAR-2014 07:02
System Versions: Processed with 13.08.2113 Plotted with 13.08.2113

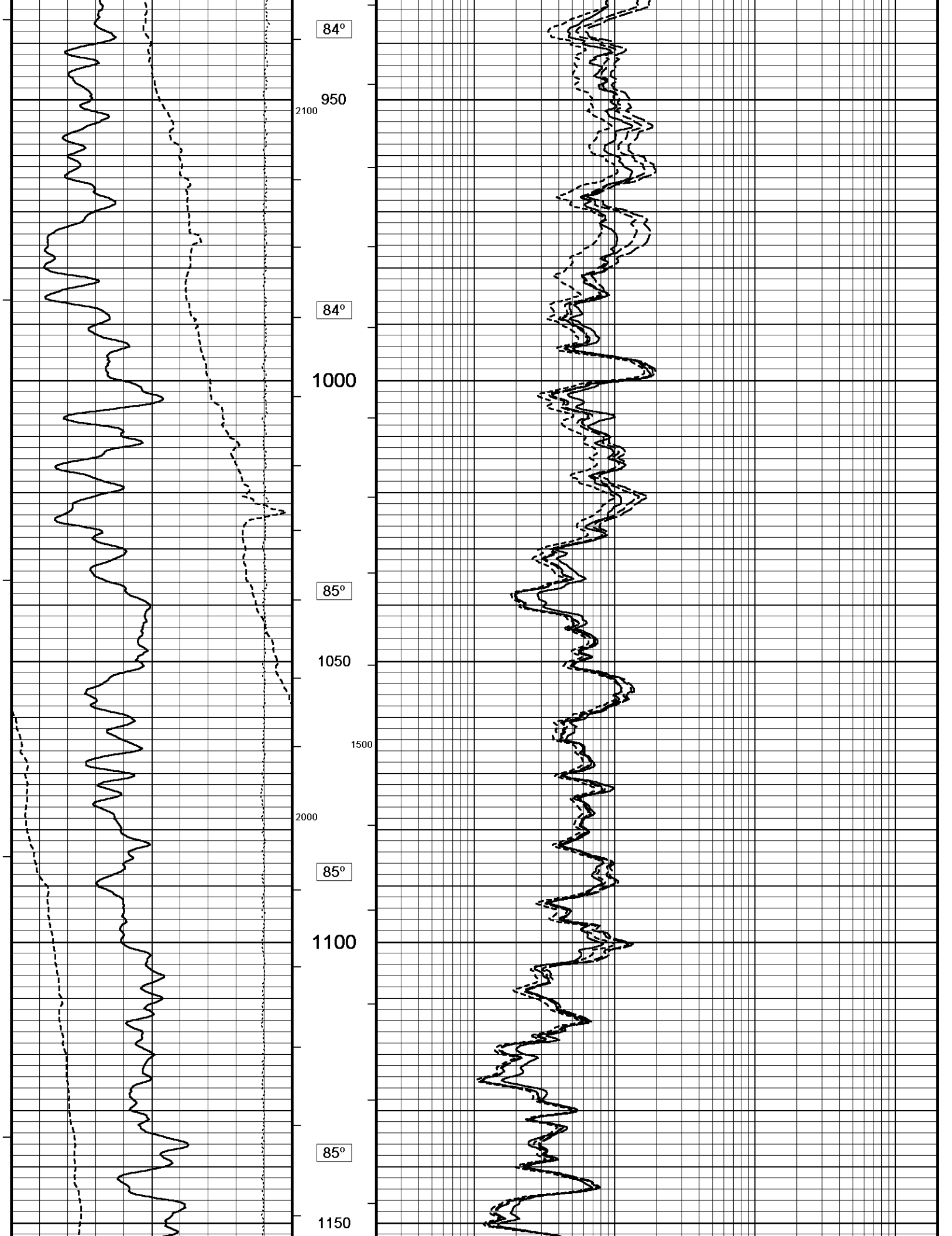
2 INCH MAIN

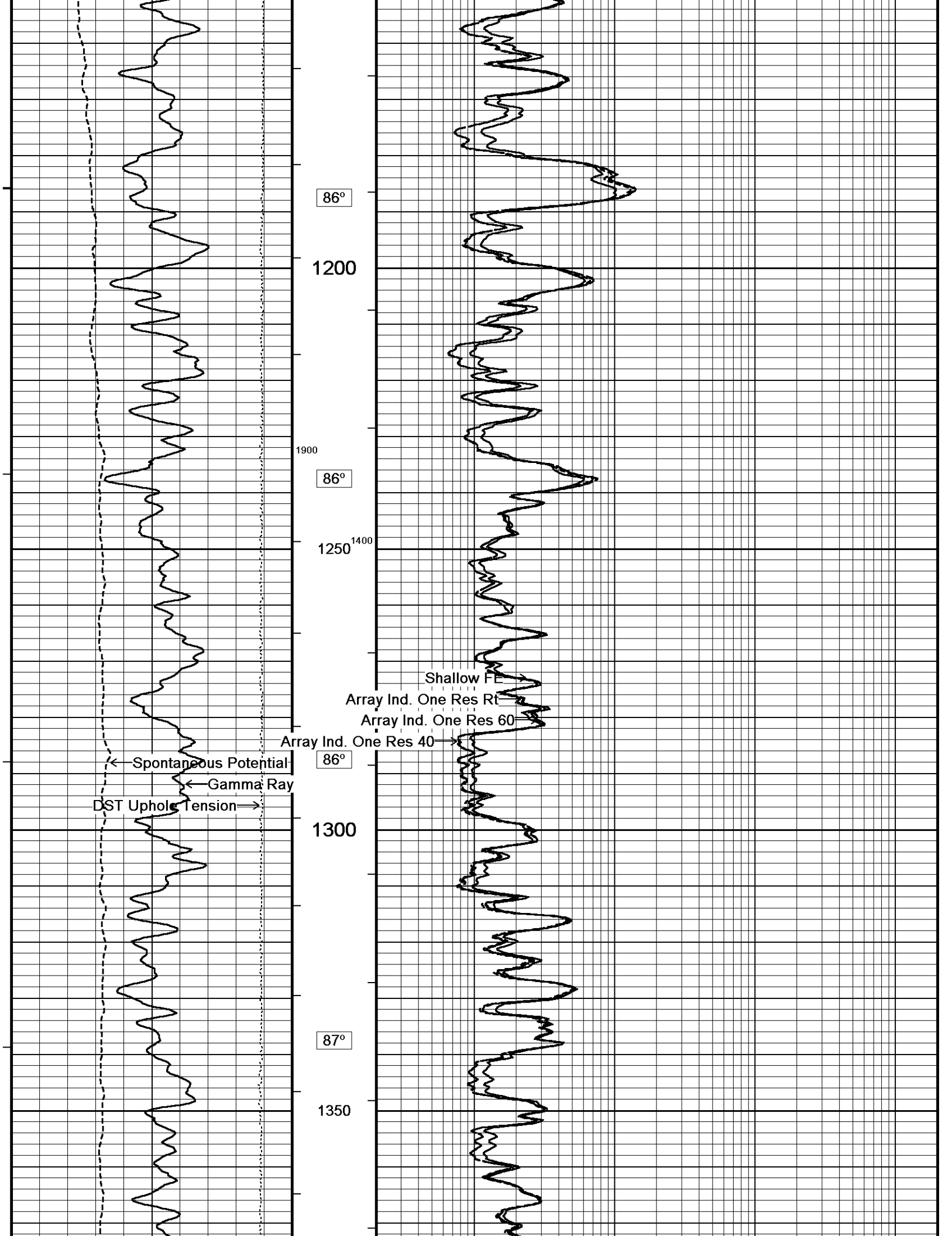
5 INCH MAIN

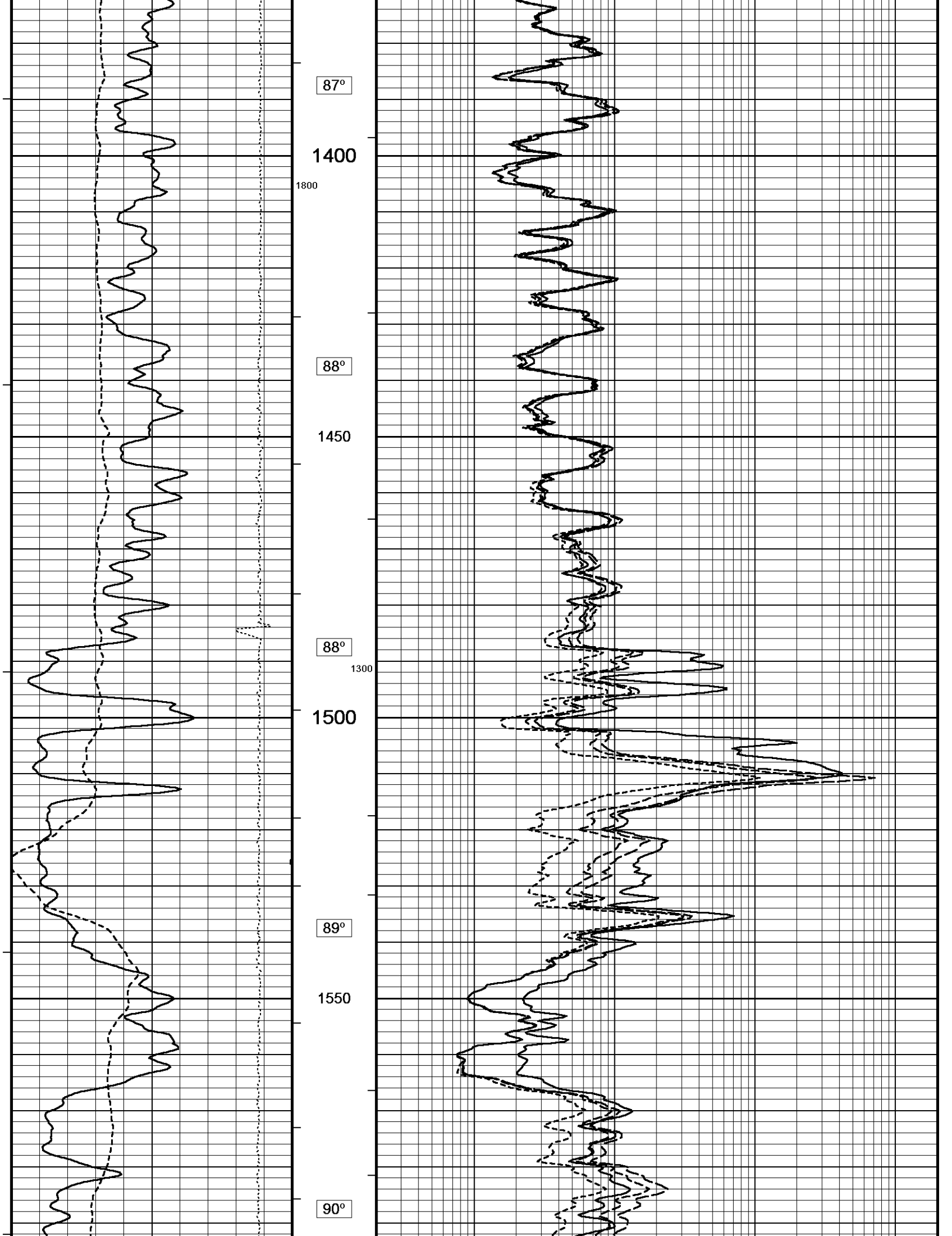
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Brien E...\O'Brien Energy Resources Ardrey #3-35 Main_002.dta — Recorded on 07-MAR-2014 07:02
System Versions: Processed with 13.08.2113 Plotted with 13.08.2113

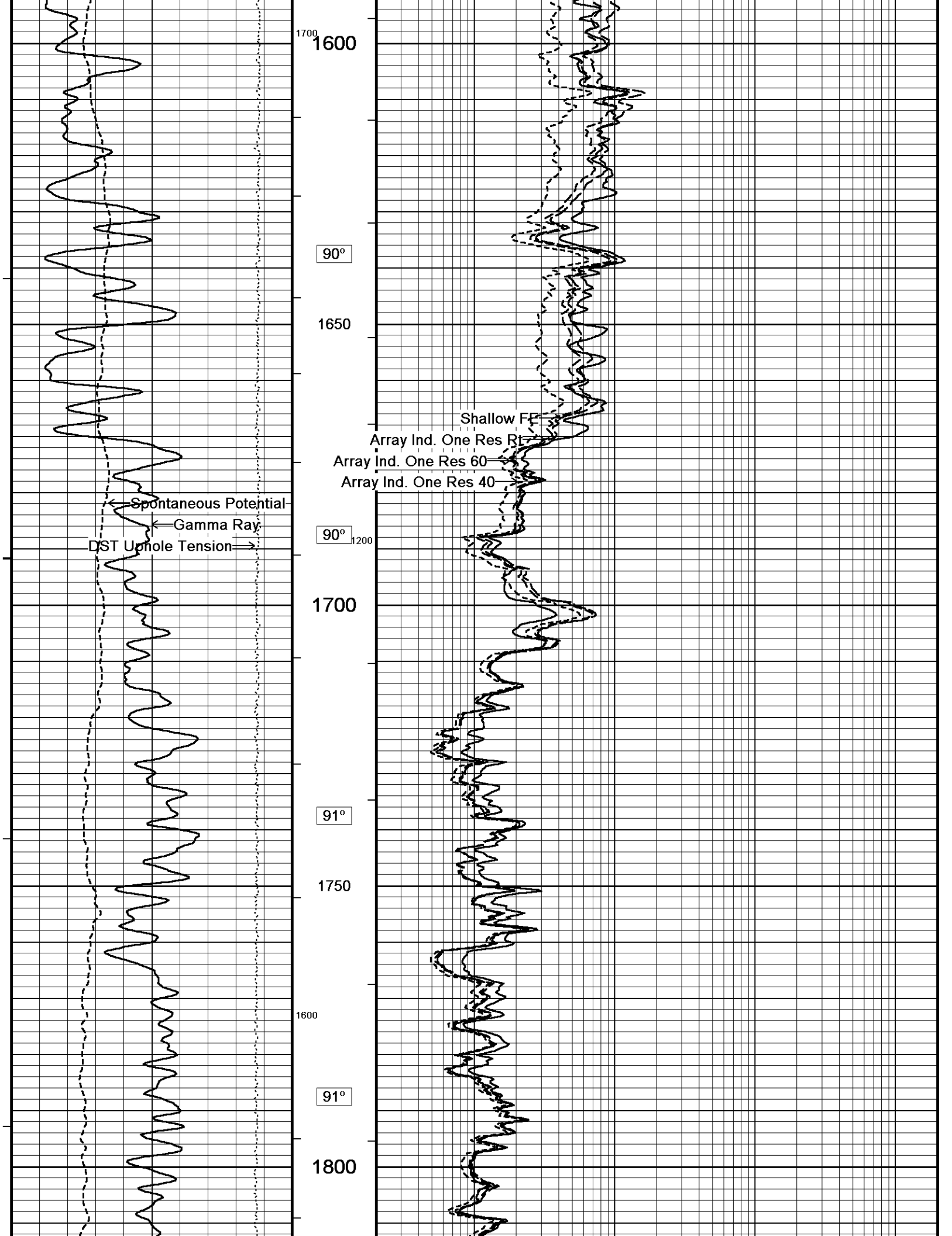


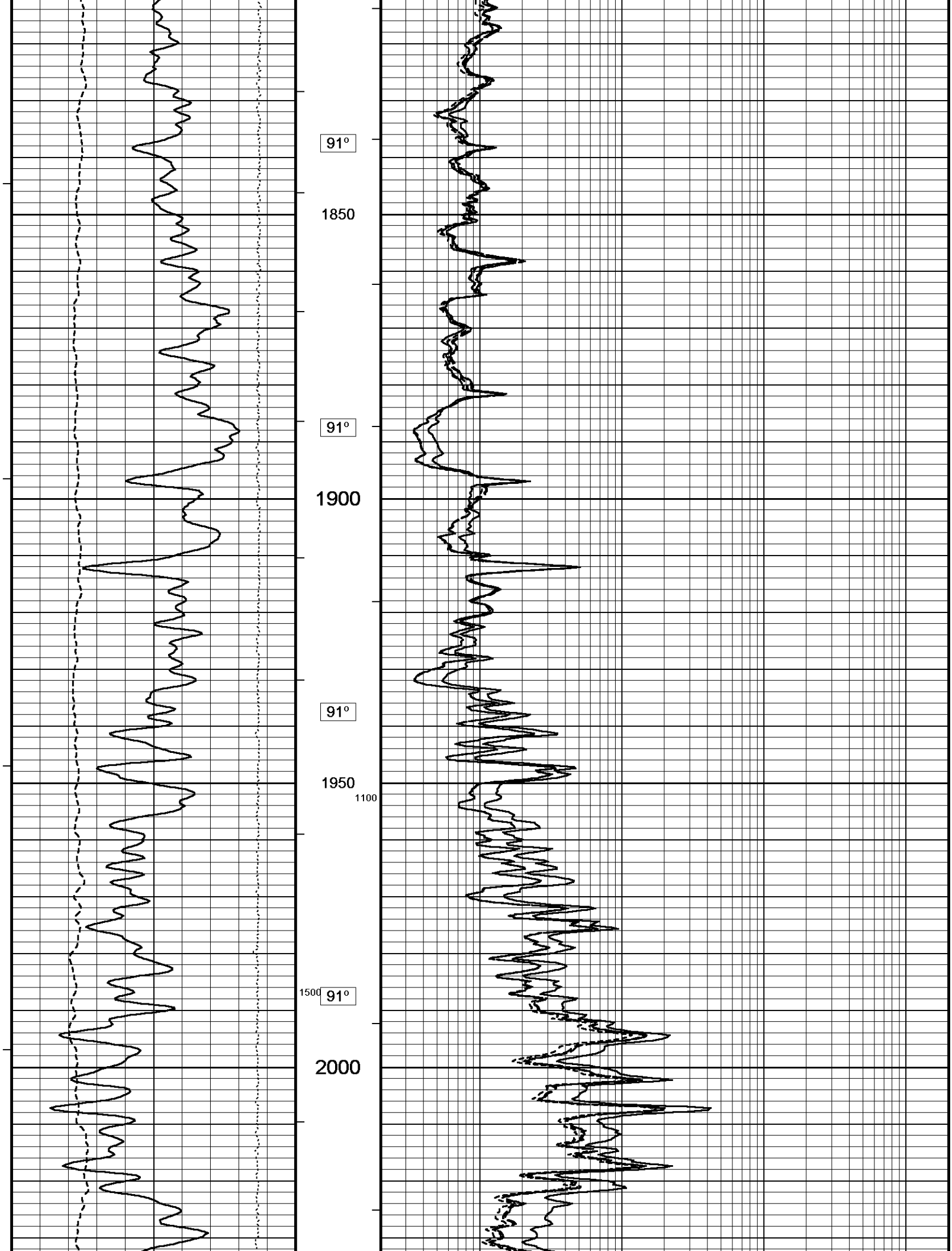

1:240
1
10
100
1000
720
Casing
Shoe
750
84°
1700
800
2200
84°
850
84°
900
1600
Shallow TF
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension

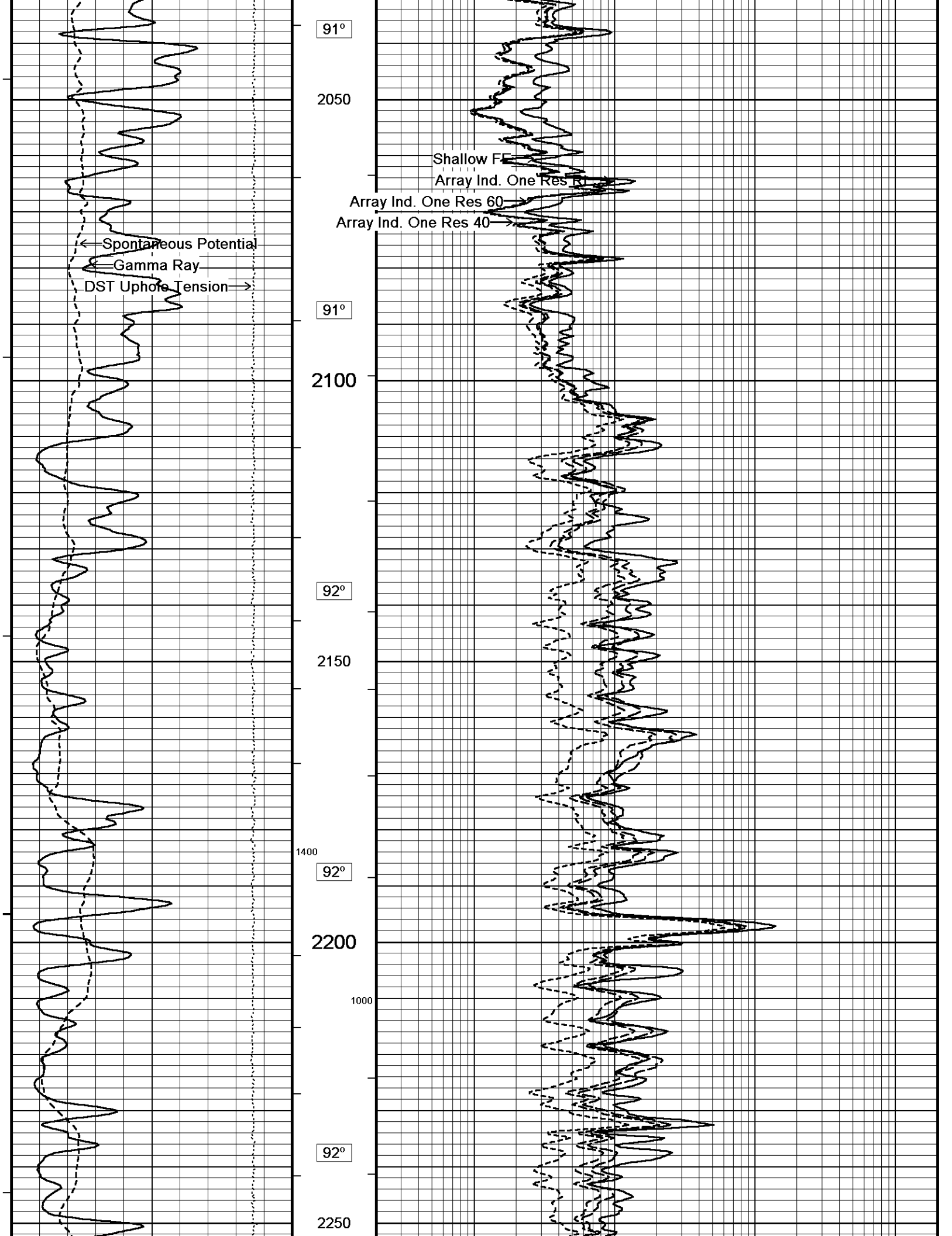

84°
950
2100
84°
1000
85°
1050
1500
2000
85°
1100
85°
1150

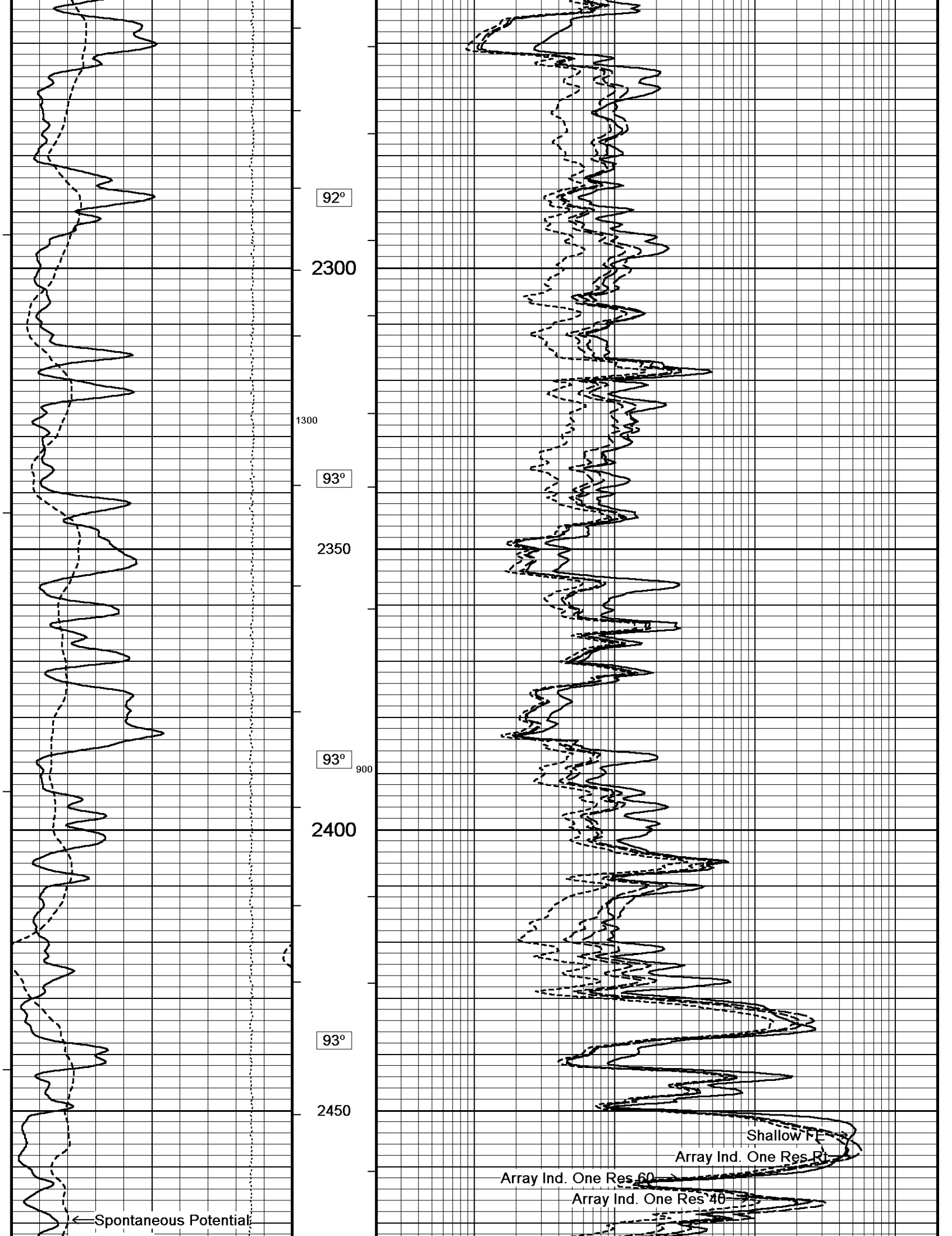

86°
1200
1900
86°
1250
1400
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
86°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
1300
87°
1350

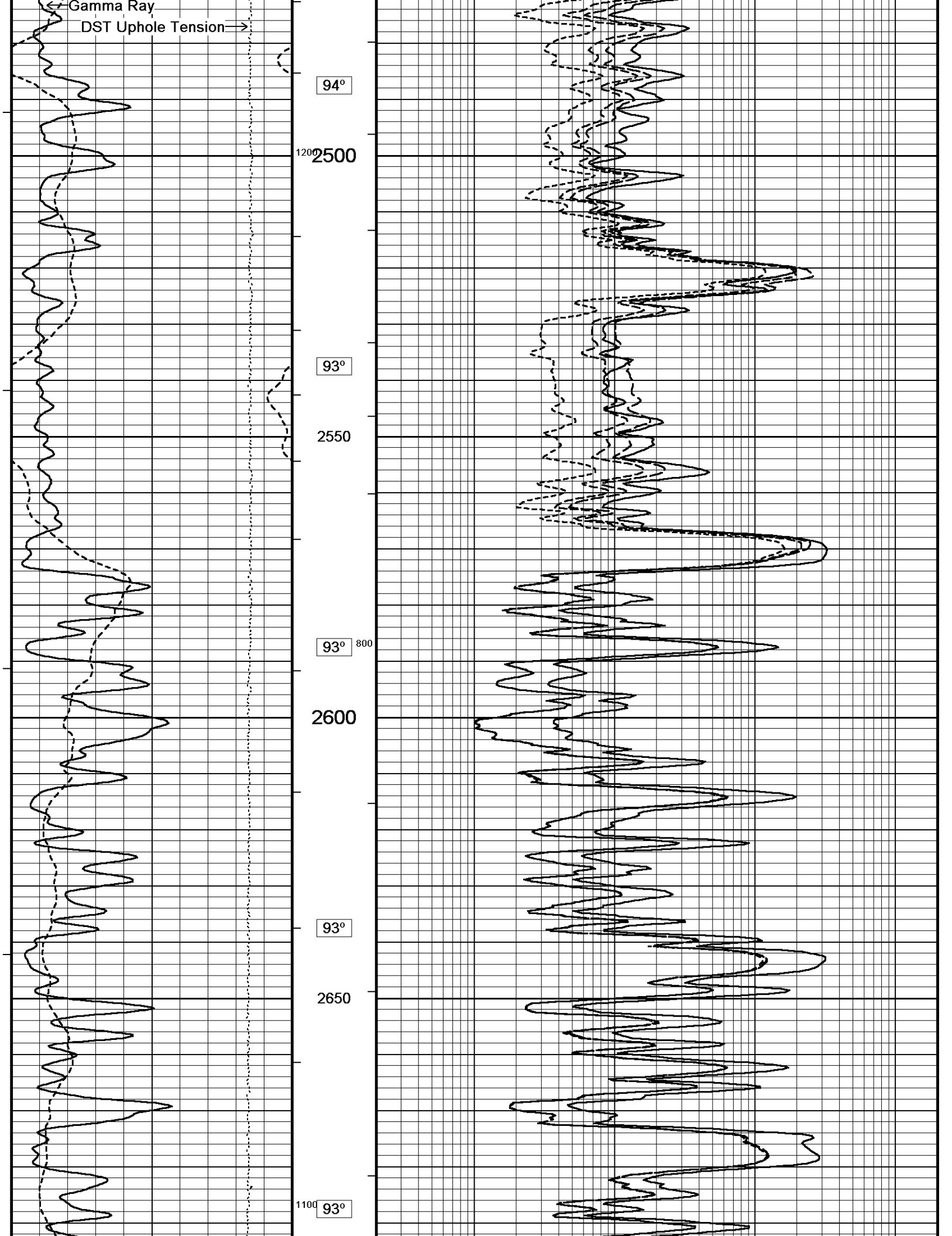

87°
1400
1800
88°
1450
88°
1300
1500
89°
1550
90°

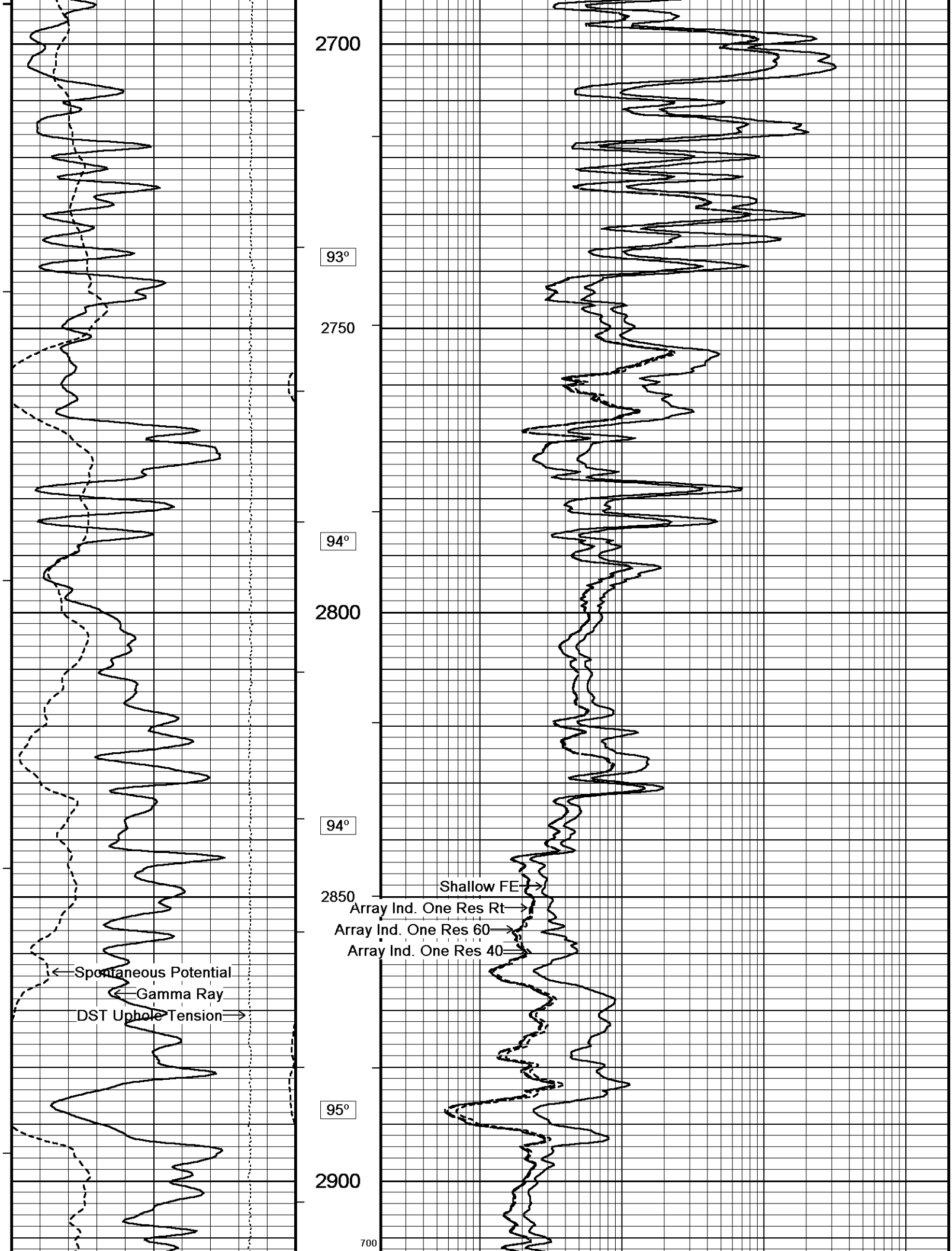

1700
1600
90°
1650
Shallow FF
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
90°
1200
1700
91°
1750
1600
91°
1800

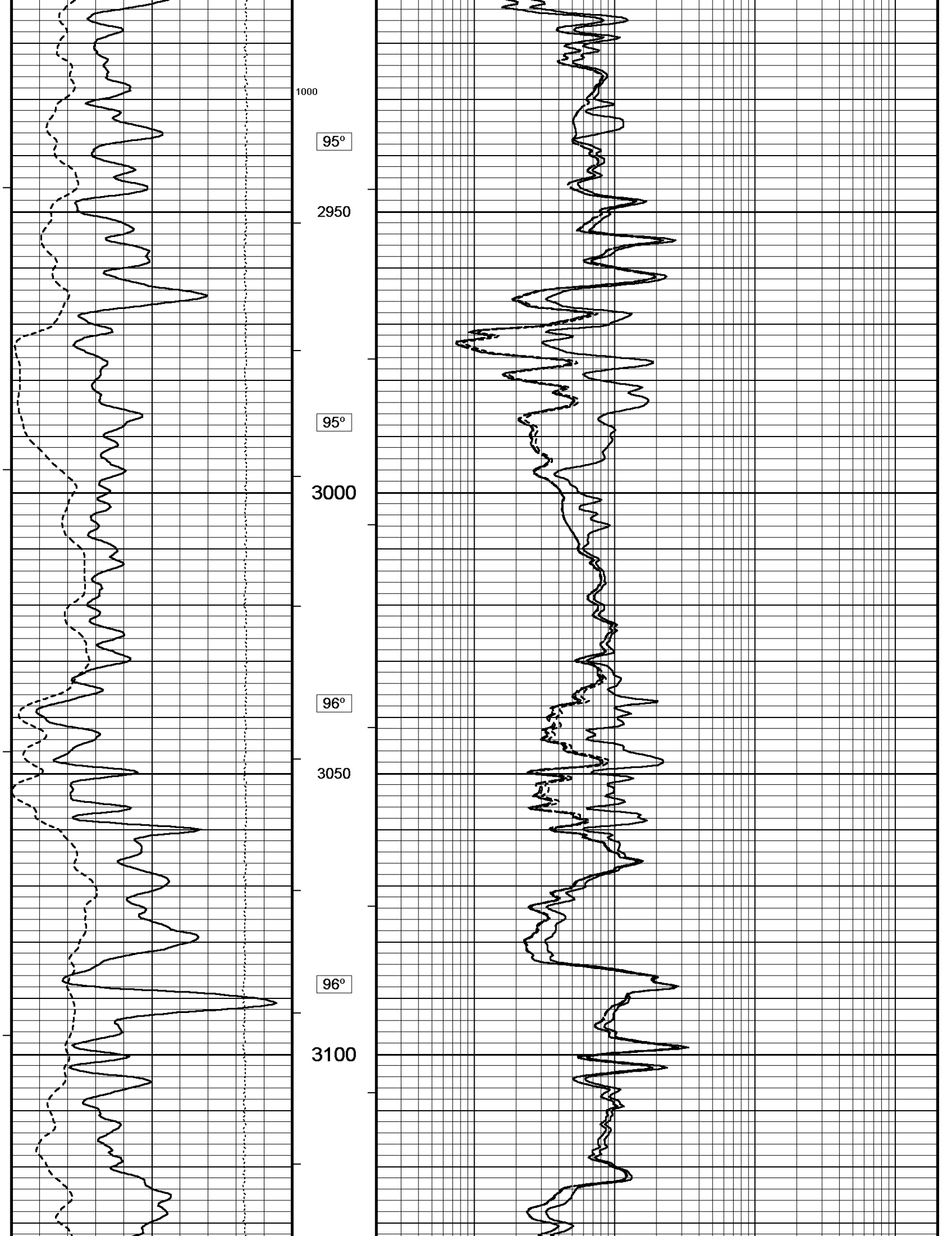

91°
1850
91°
1900
91°
1950
1100
1500
91°
2000

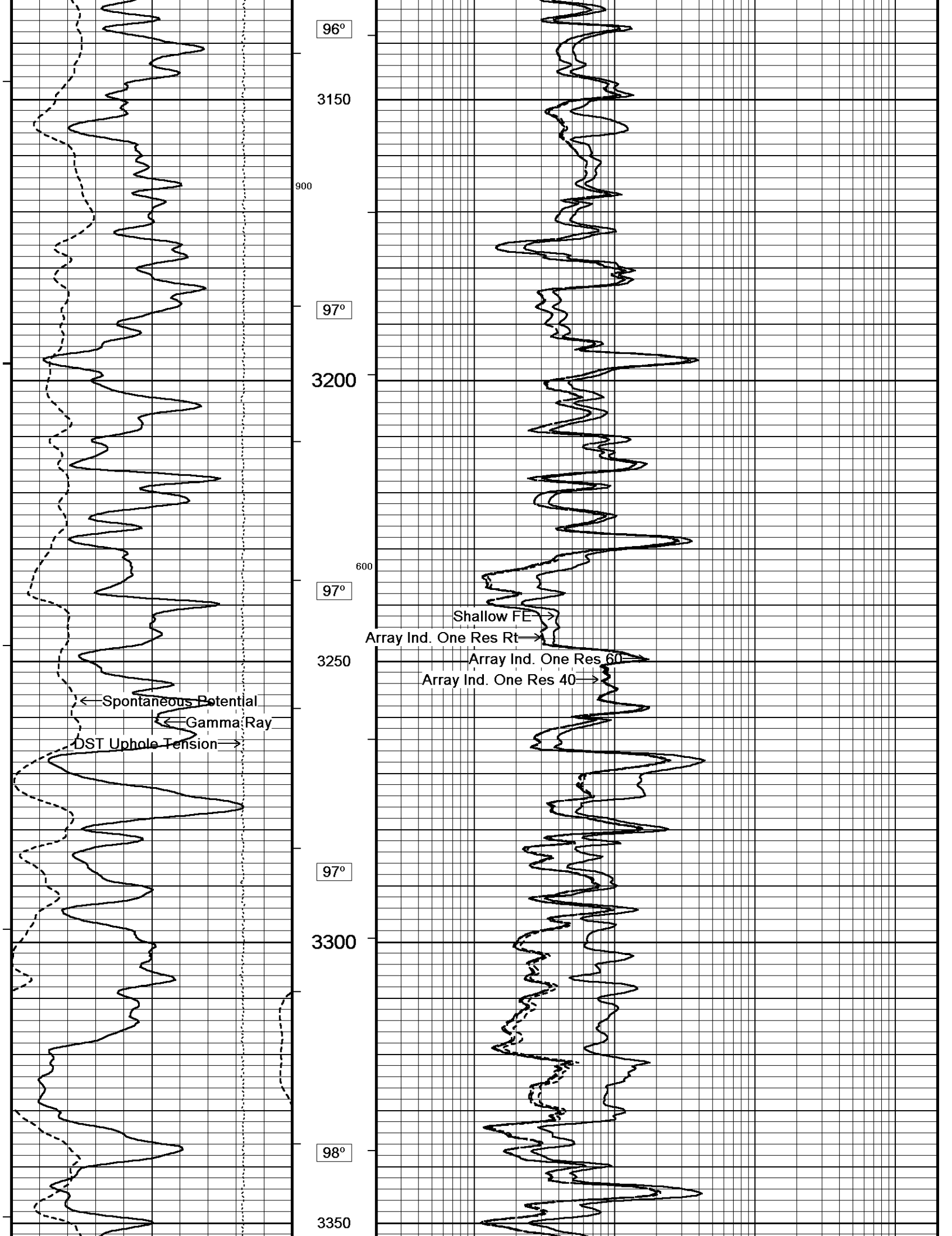

91°
2050
Shallow FE
Array Ind. One Res RT
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
91°
2100
92°
2150
1400
92°
2200
1000
92°
2250

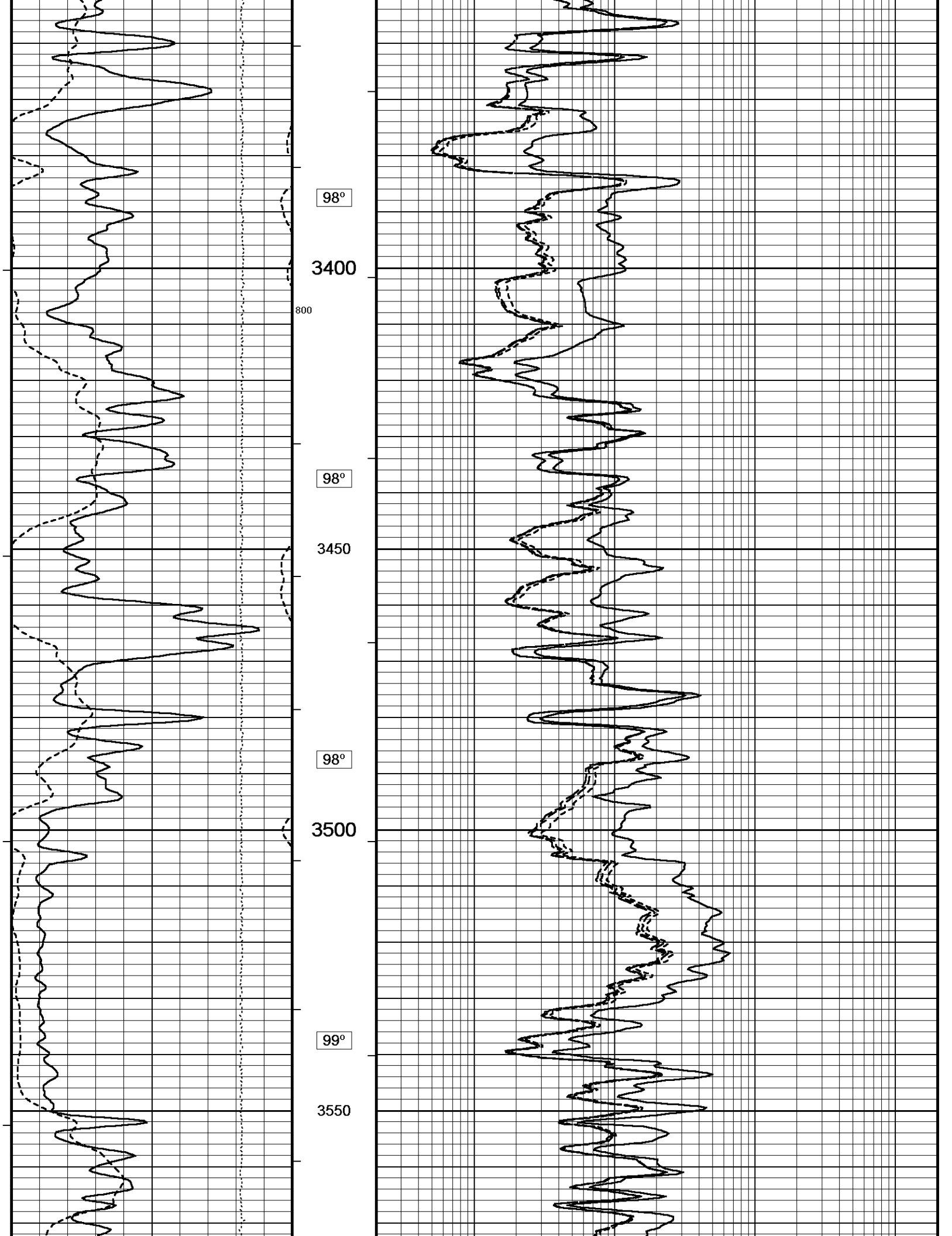

92°
2300
1300
93°
2350
93°
900
2400
93°
2450
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
←Spontaneous Potential

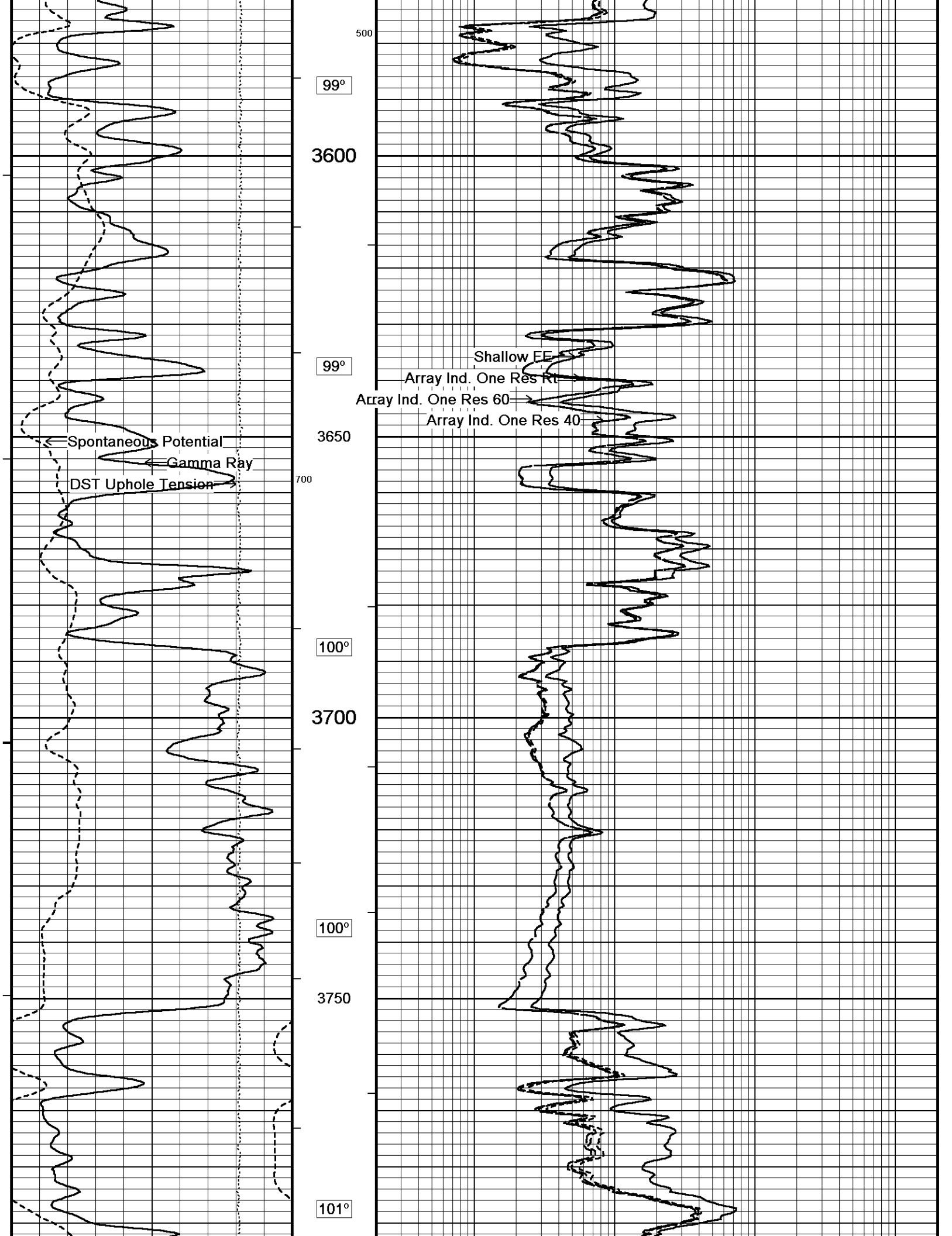

←Gamma Ray
DST Uphole Tension→
94°
1200
2500
93°
2550
93°
800
2600
93°
2650
1100
93°

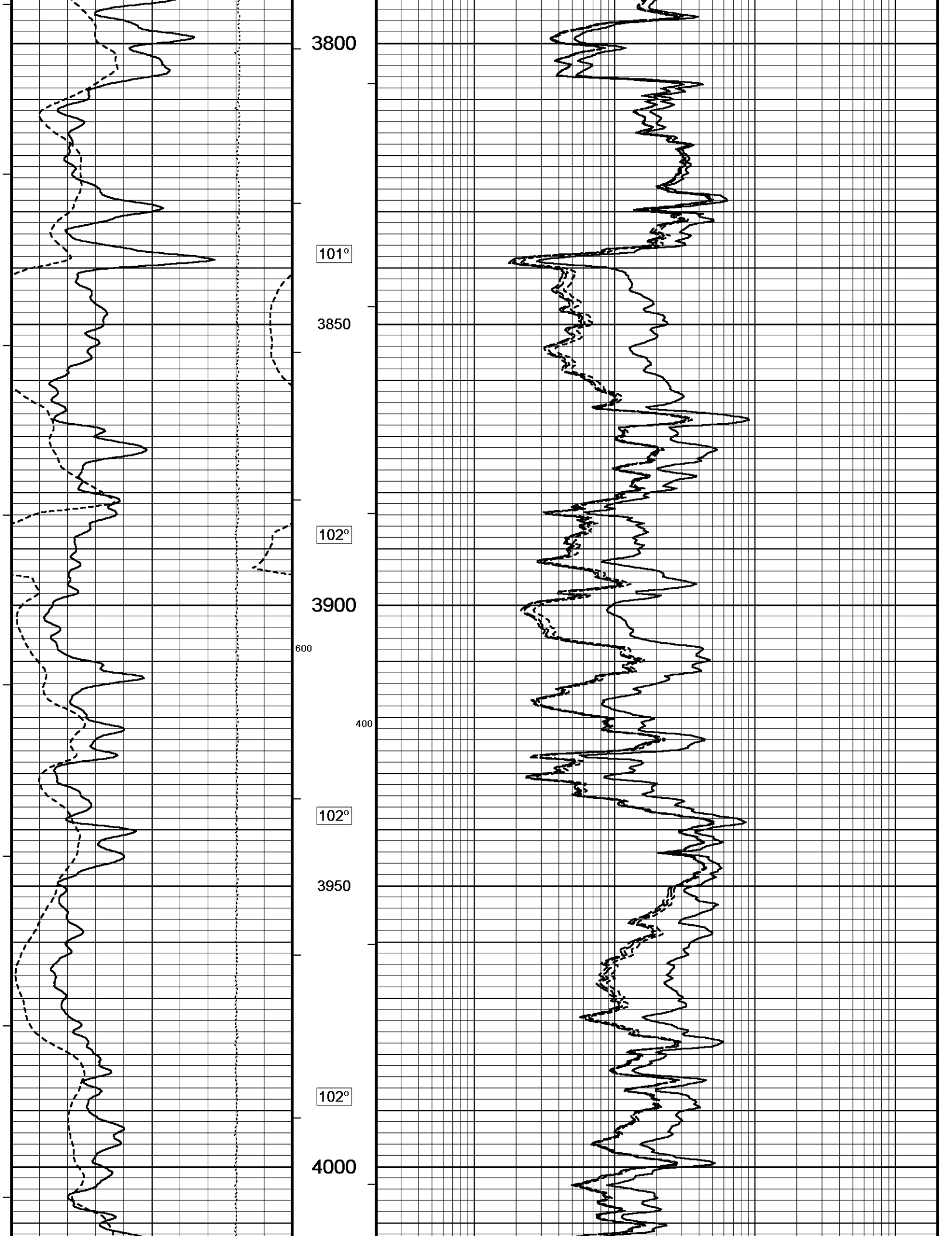

2700
93°
2750
94°
2800
94°
2850
95°
2900
700
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension

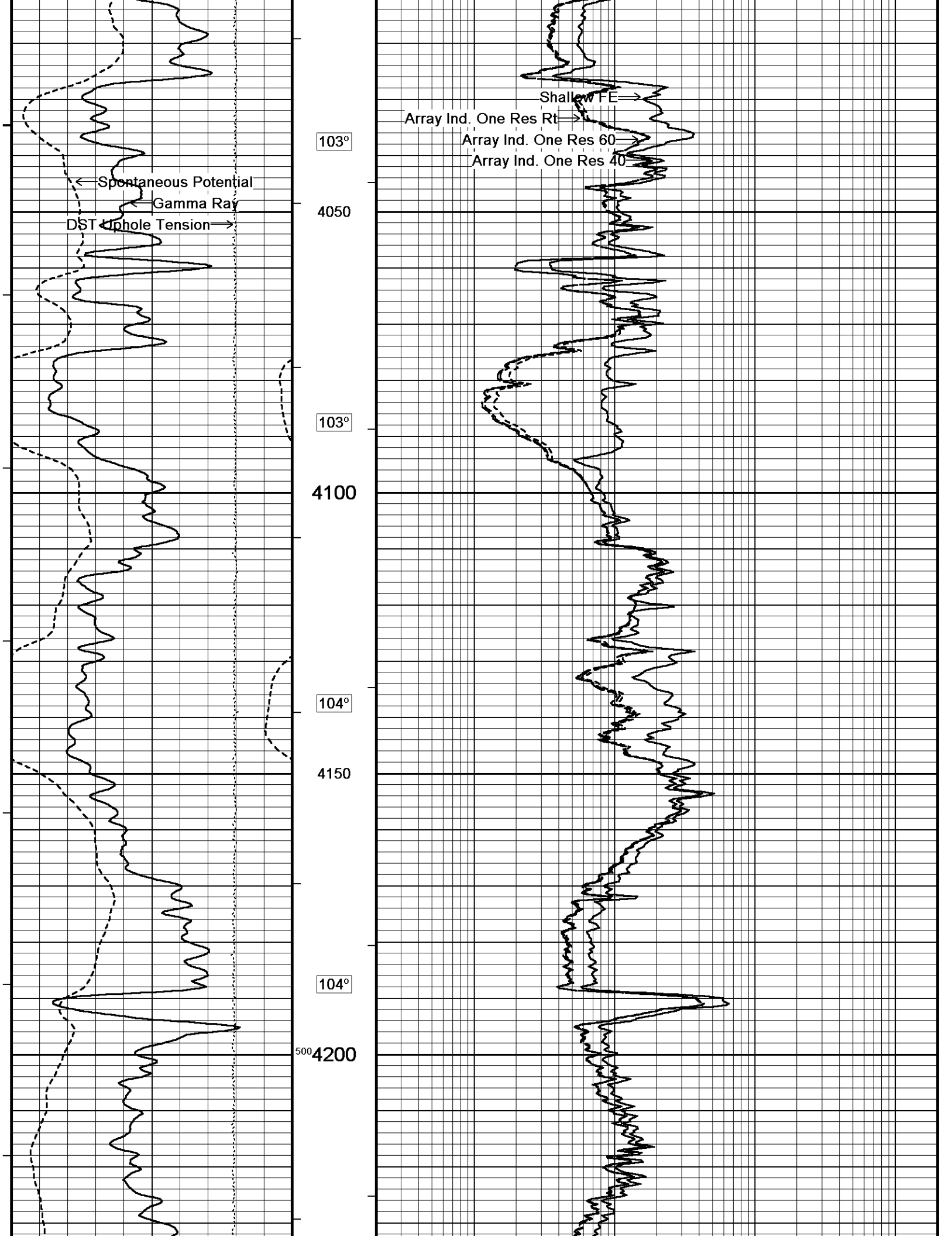

1000
95°
2950
95°
3000
96°
3050
96°
3100

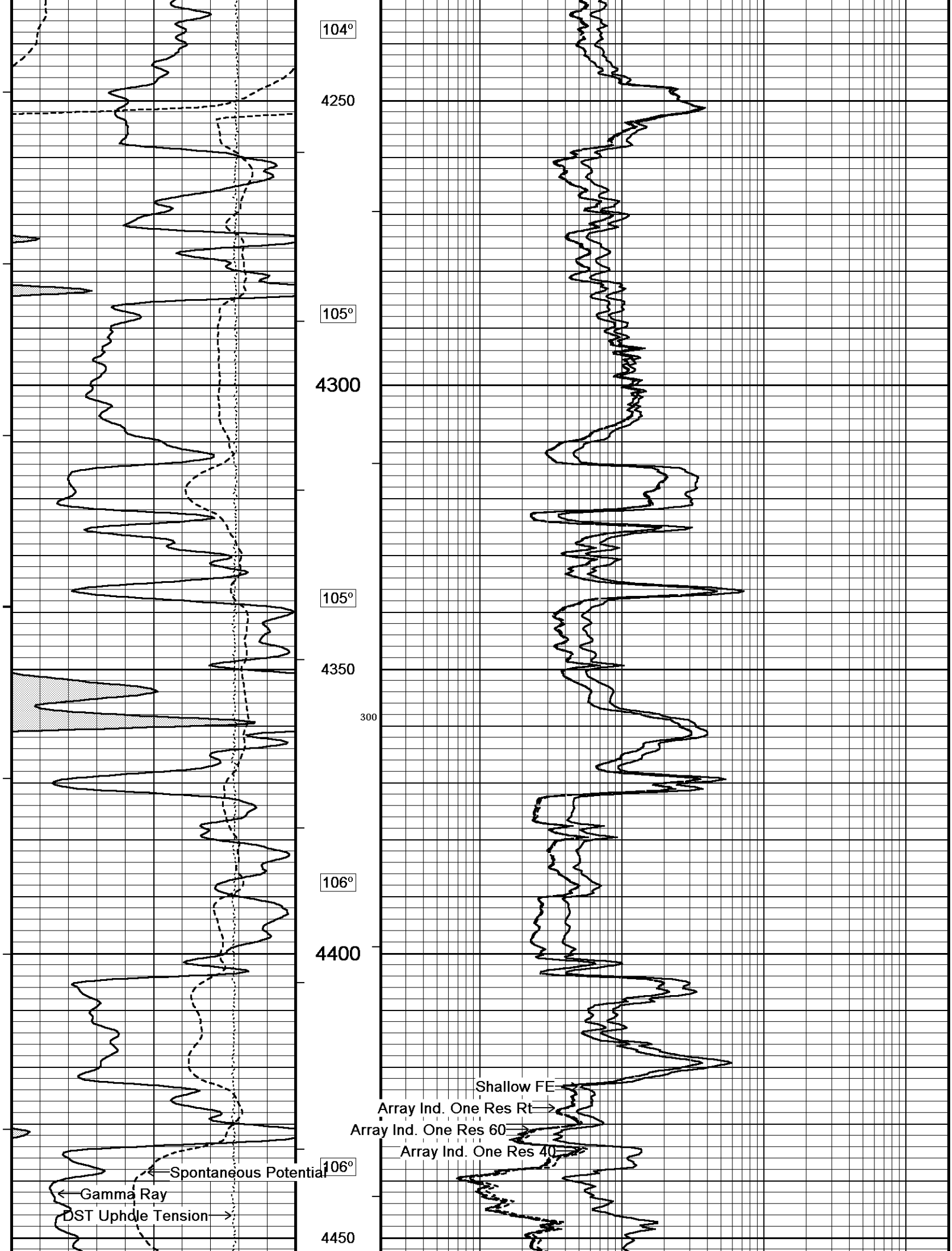

96°
3150
900
97°
3200
600
97°
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
3250
Spontaneous Potential
Gamma Ray
DST Uphole Tension
97°
3300
98°
3350

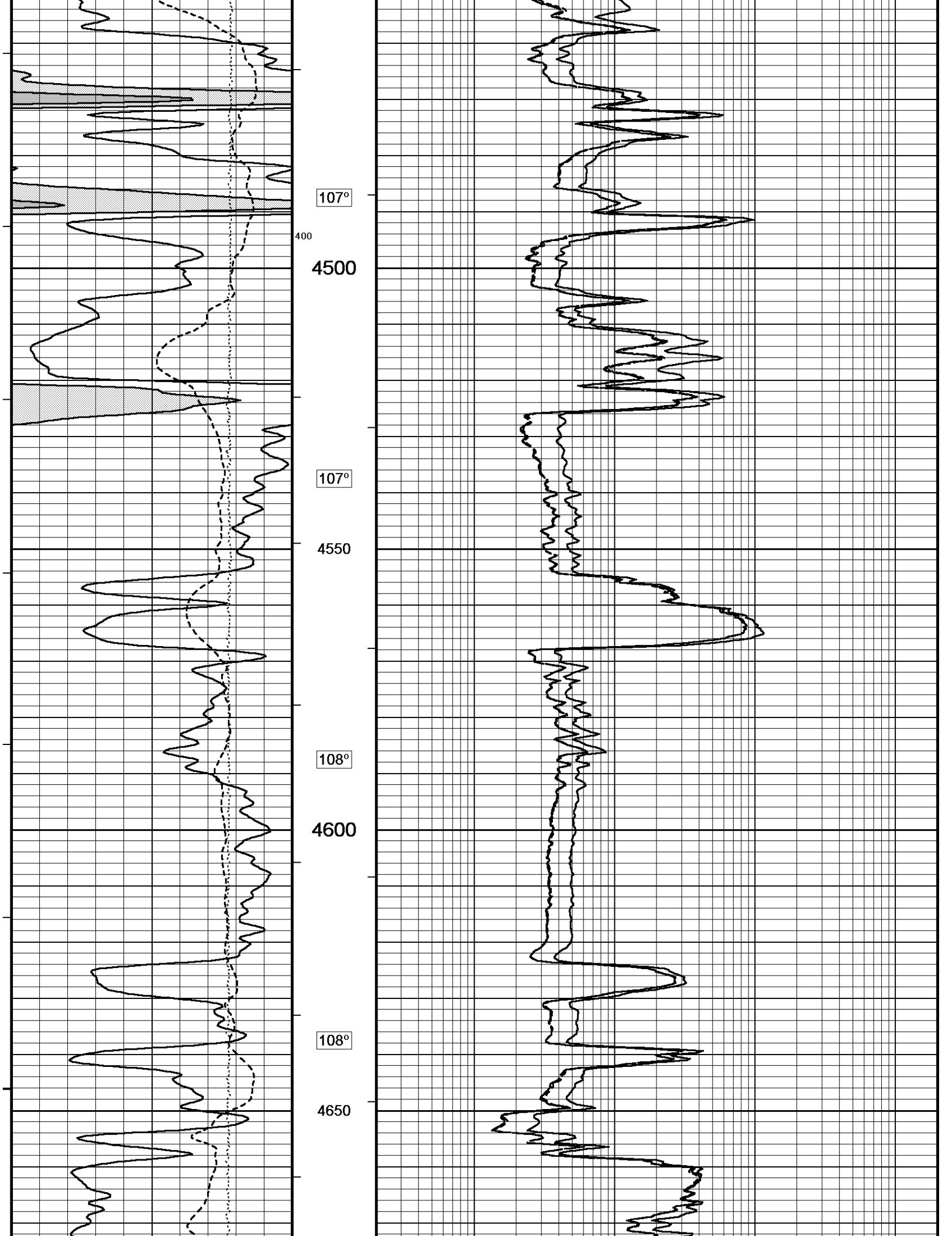

98°
3400
800
98°
3450
98°
3500
99°
3550

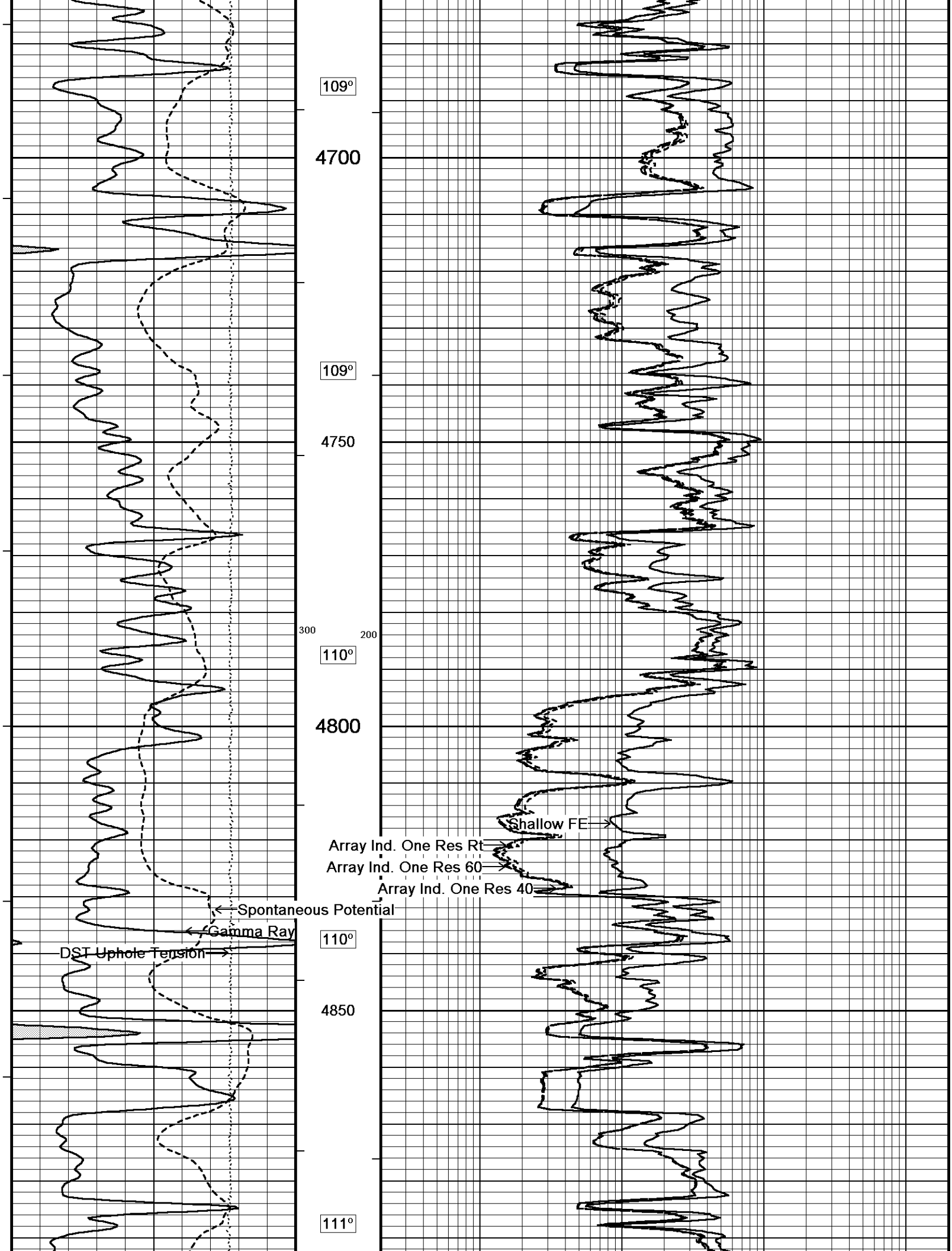

500
99°
3600
99°
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
3650
Spontaneous Potential
Gamma Ray
DST Uphole Tension
700
100°
3700
100°
3750
101°

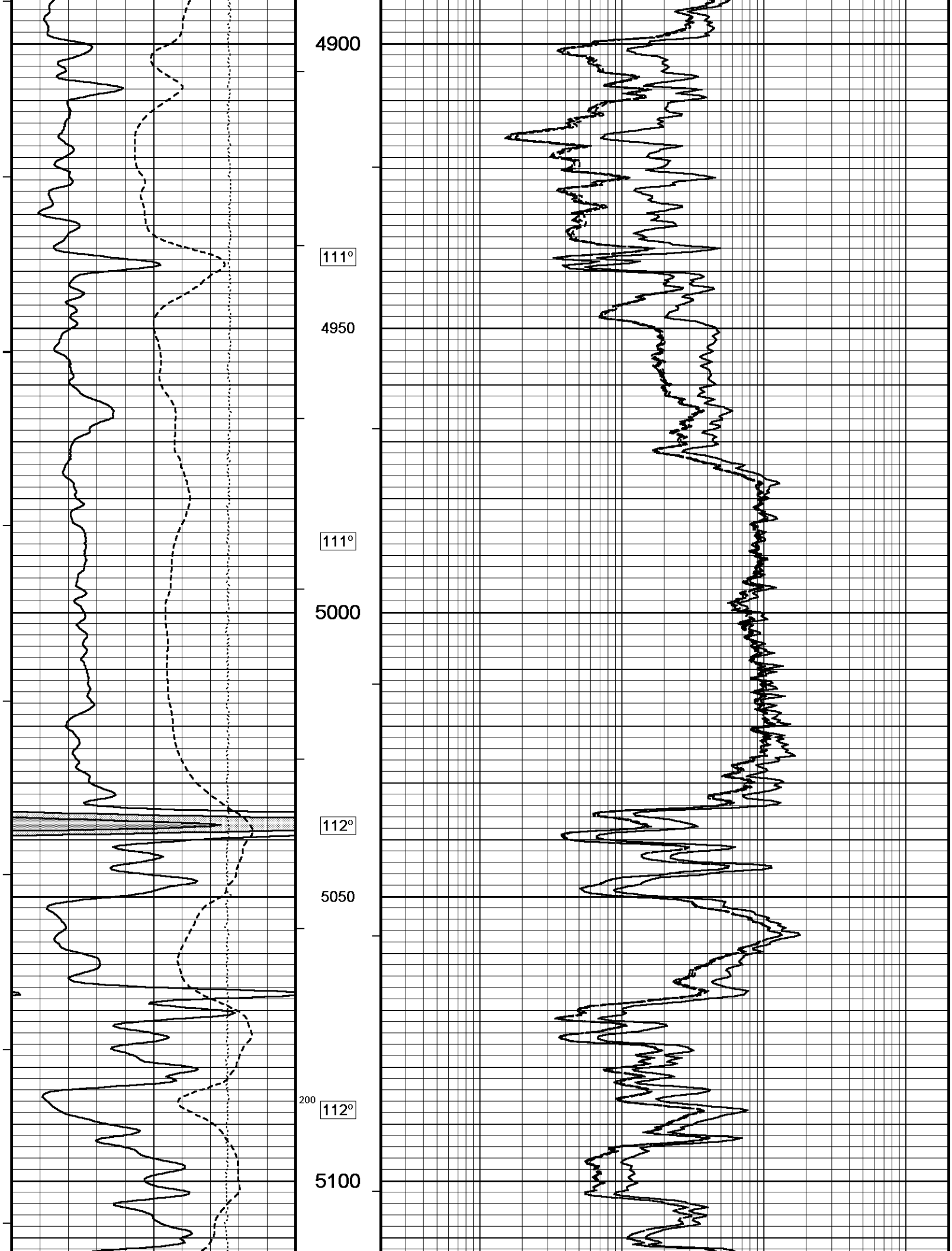

3800
101°
3850
102°
3900
600
400
102°
3950
102°
4000

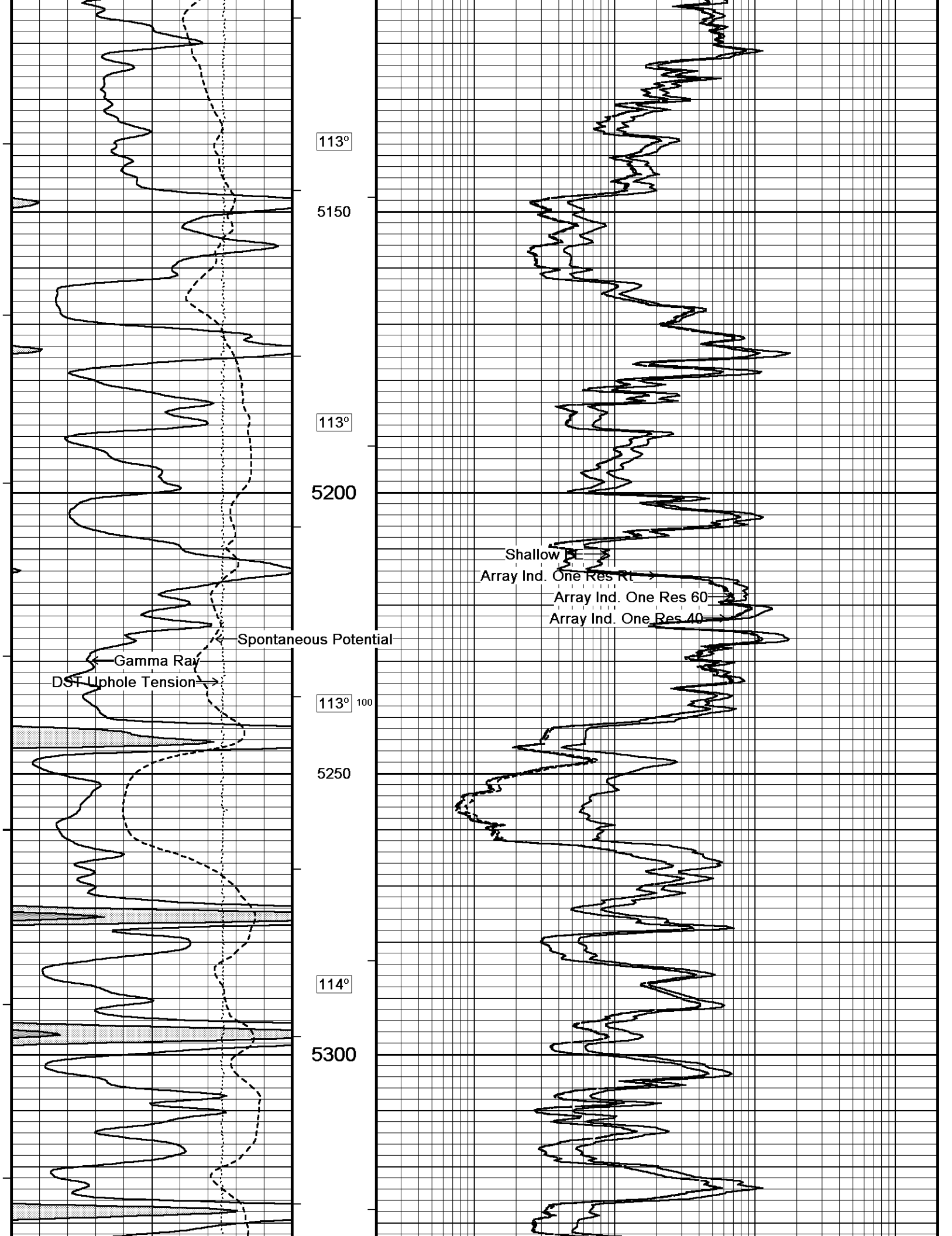

Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
103°
4050
103°
4100
104°
4150
104°
500
4200

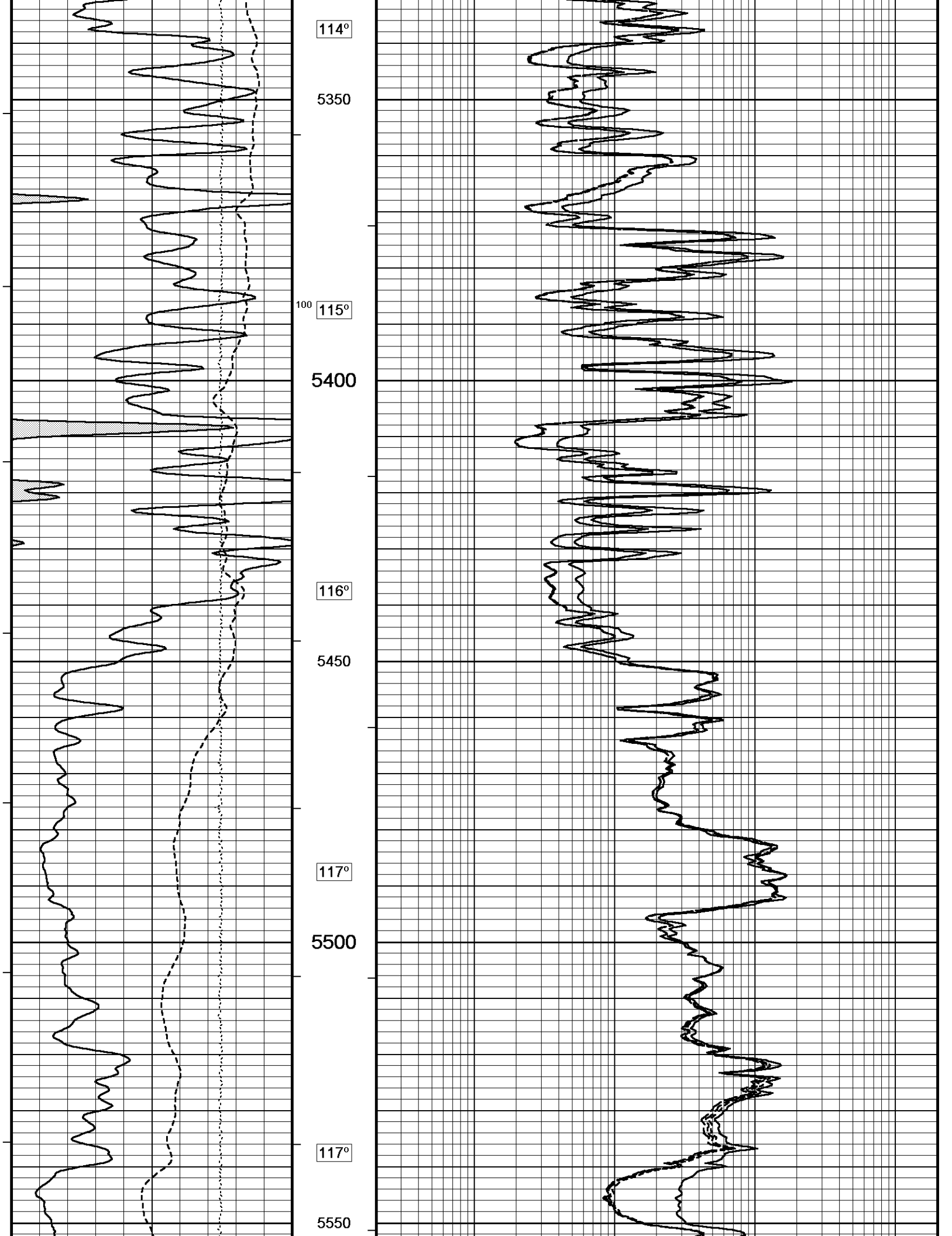

104°
4250
105°
4300
105°
4350
300
106°
4400
106°
4450
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphdle Tension

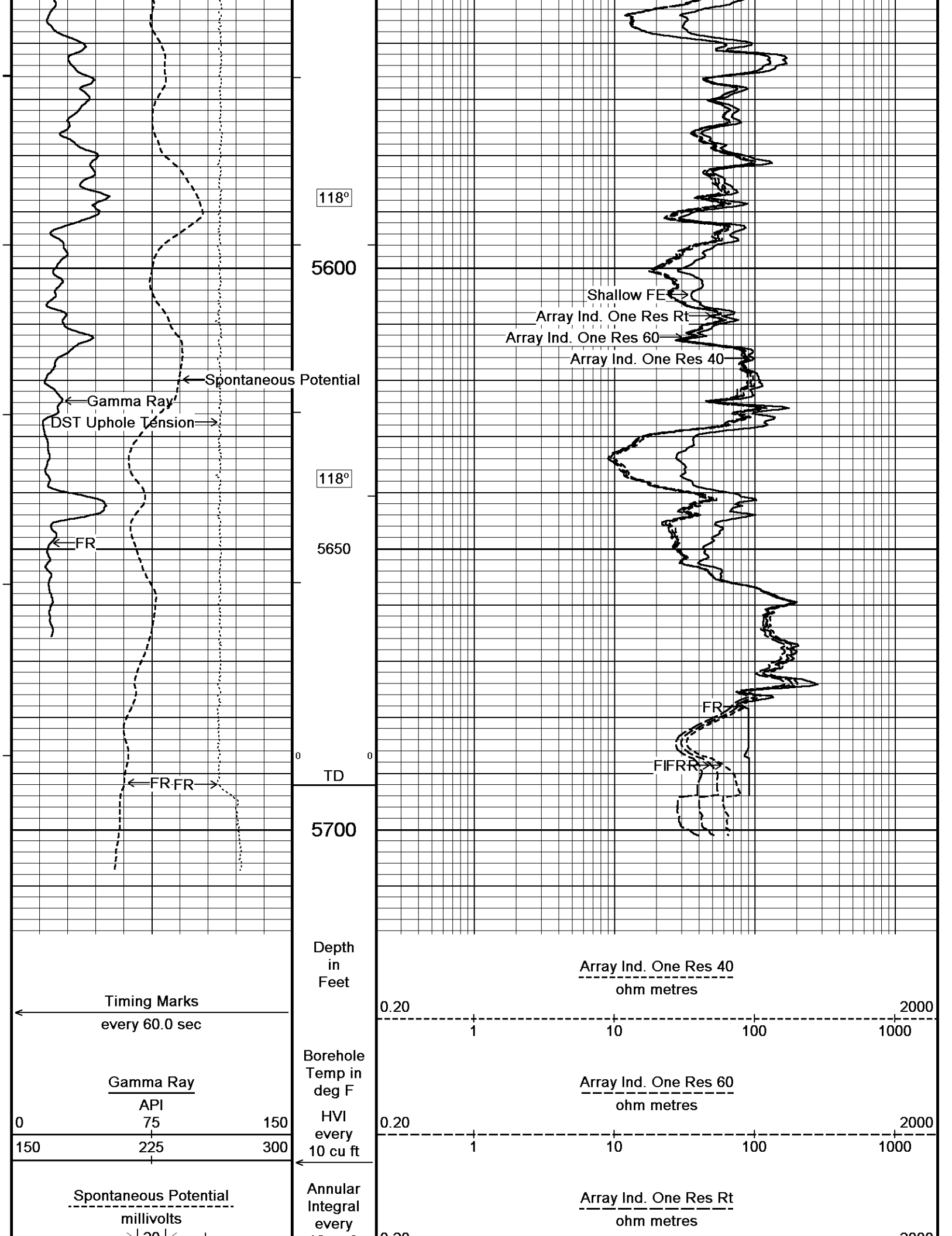

107°
400
4500
107°
4550
108°
4600
108°
4650

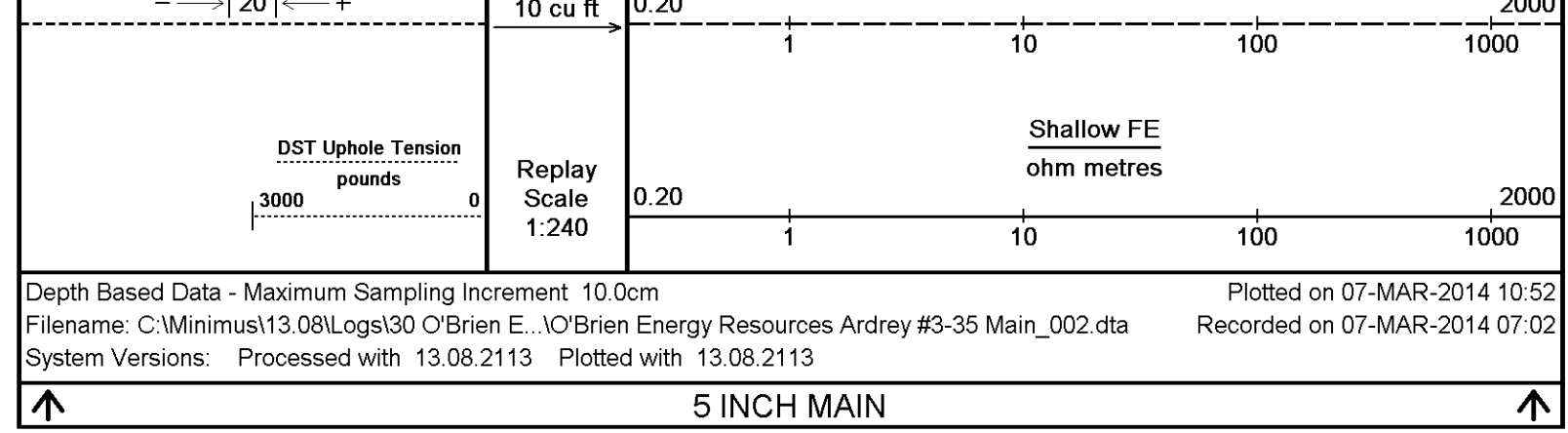

109°
4700
109°
4750
300
200
110°
4800
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
4850
111°


4900
111°
4950
111°
5000
112°
5050
200
112°
5100


113°
5150
113°
5200
Shallow RE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
113° 100
5250
114°
5300


114°
5350
100
115°
5400
116°
5450
117°
5500
117°
5550


118°
5600
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
118°
FR
5650
FR
FIFRR
0
0
TD
FR
FR
5700
Depth in Feet
Timing Marks
every 60.0 sec
Array Ind. One Res 40
ohm metres
0.20
2000
1
10
100
1000
Borehole Temp in deg F
Gamma Ray
API
0
75
150
150
225
300
HVI every 10 cu ft
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
Spontaneous Potential
millivolts
Annular Integral every
Array Ind. One Res Rt
ohm metres

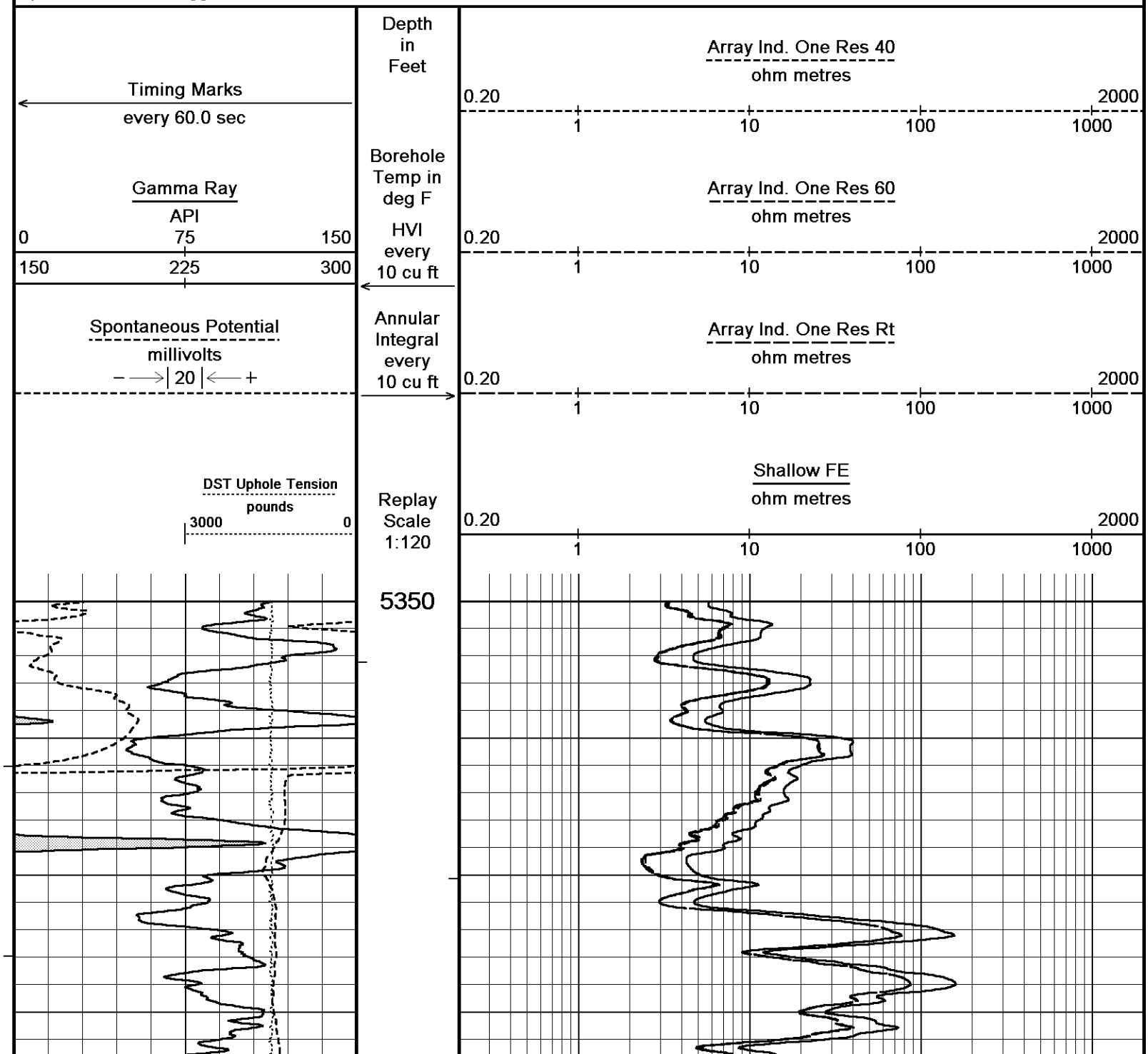


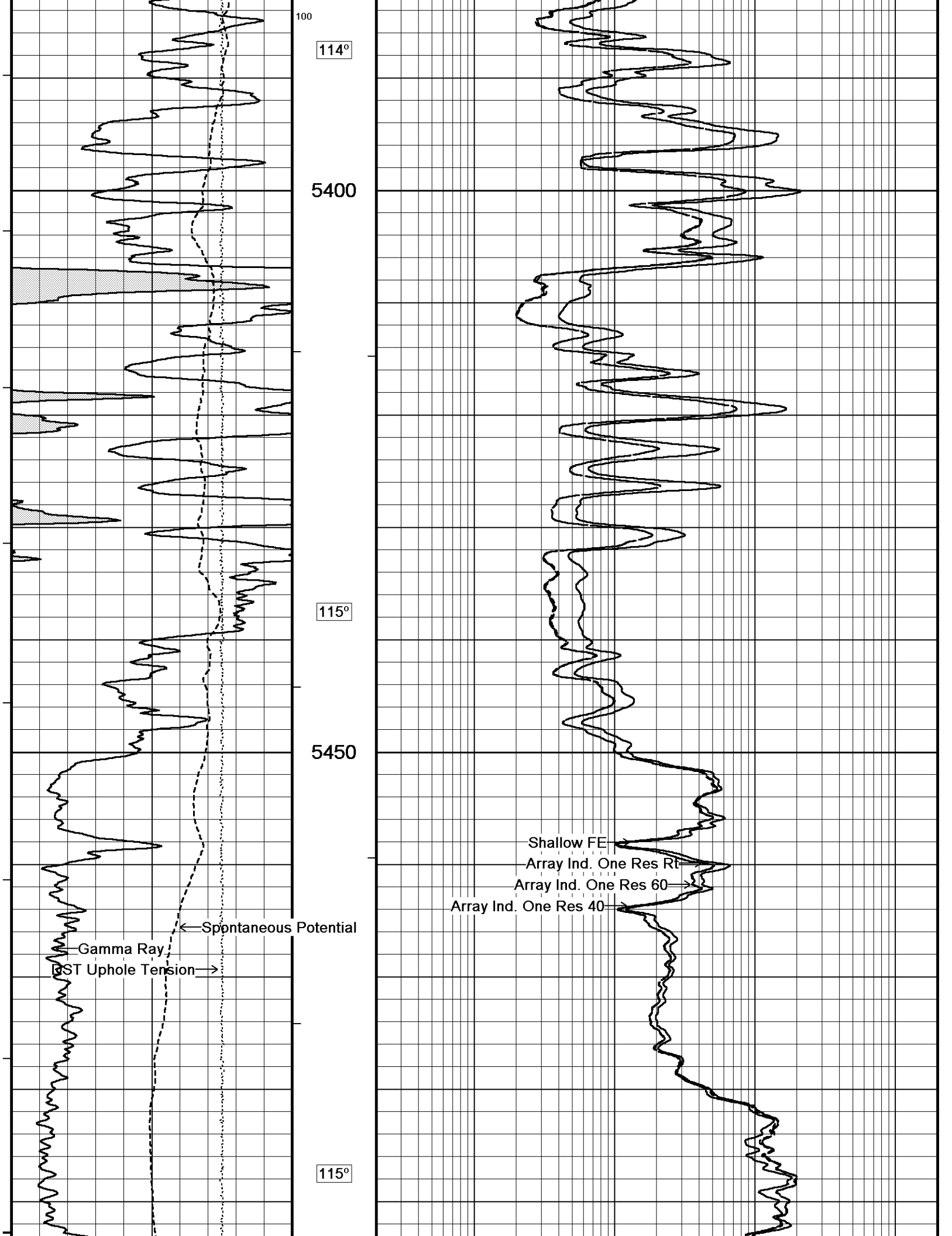
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Brien E...\O'Brien Energy Resources Ardrey #3-35 Main_002.dta — Recorded on 07-MAR-2014 07:02
System Versions: Processed with 13.08.2113 Plotted with 13.08.2113

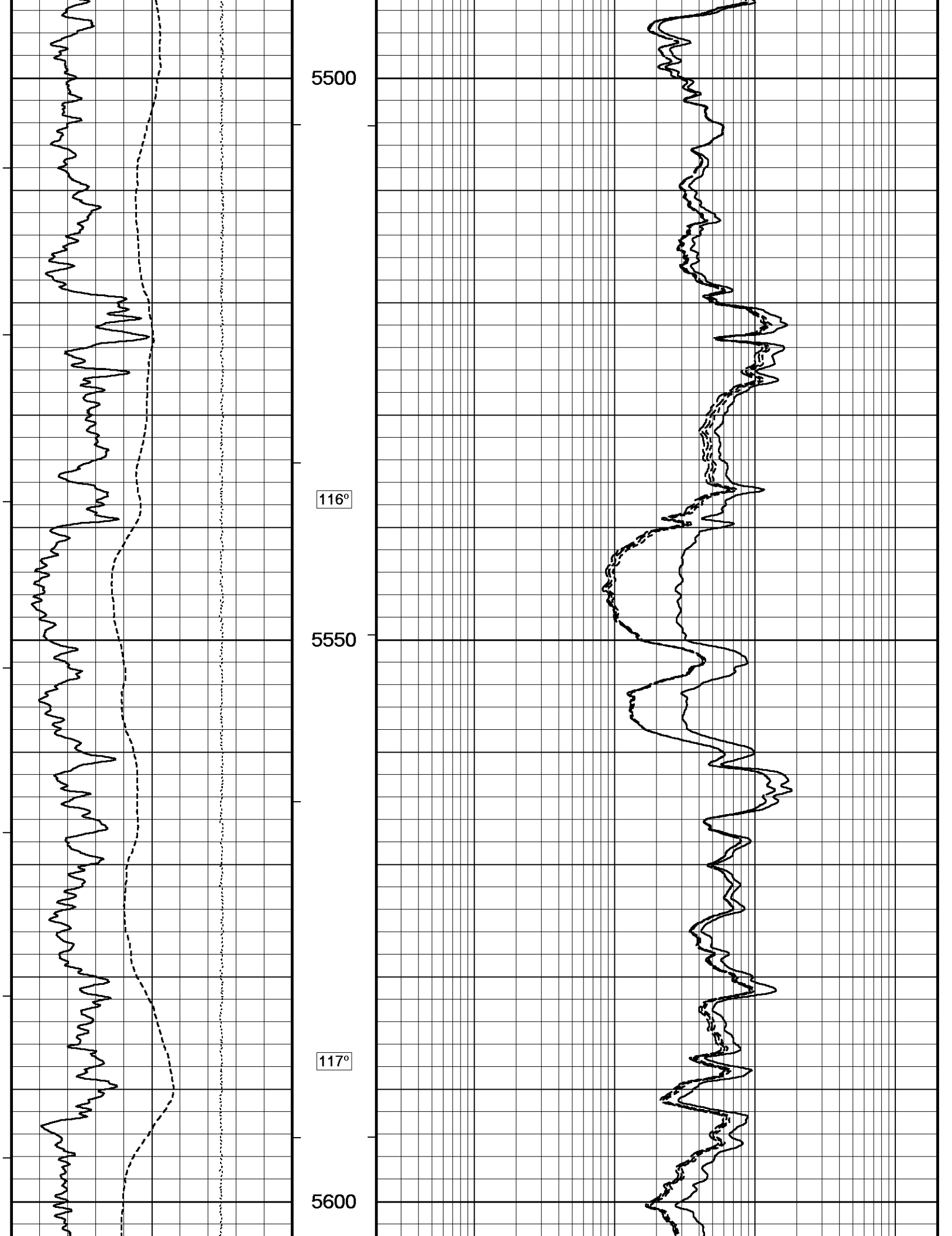
5 INCH MAIN

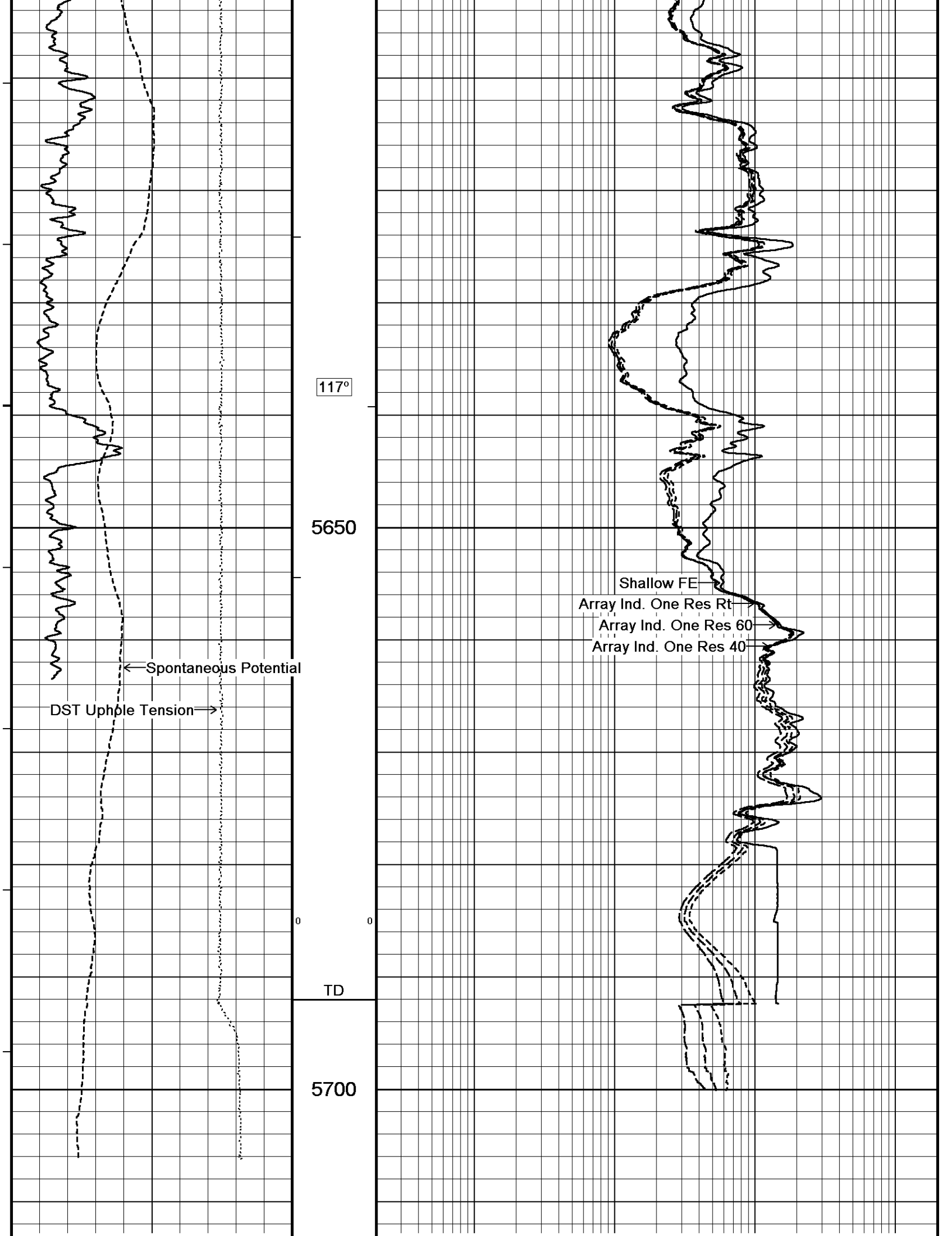
10 INCH HI RESOLUTION

Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Bri...\O'Brien Energy Resources Ardrey #3-35 Hi-Resolution.dta — Recorded on 07-MAR-2014 05:59
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113




100
114°
5400
115°
5450
115°
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
SST Uphole Tension


5500
116°
5550
117°
5600


117°
5650
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
DST Uphole Tension
0
0
TD
5700

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

DST Uphole Tension
pounds
3000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:120

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

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

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

Shallow FE
ohm metres
0.20 1 10 100 1000 2000

Depth Based Data - Maximum Sampling Increment 2.5cm
Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Bri...\O'Brien Energy Resources Ardrey #3-35 Hi-Resolution.dta
Recorded on 07-MAR-2014 05:59
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113

10 INCH HI RESOLUTION

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Brien Energ...\o'brien energy resources ardrey #3-35 Repeat.dta
Recorded on 07-MAR-2014 05:59
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

DST Uphole Tension
pounds
3000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

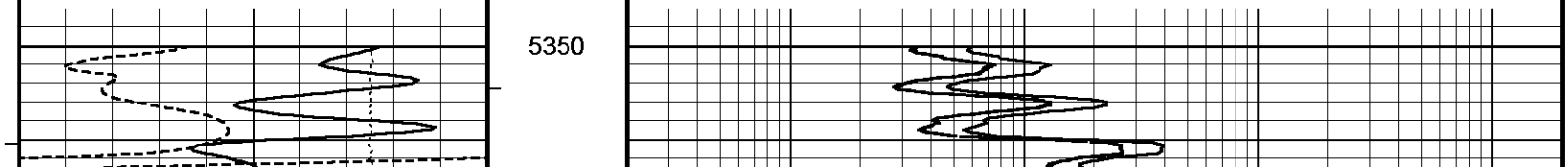
Array Ind. One Res 40
ohm metres
0.20 1 10 100 1000 2000

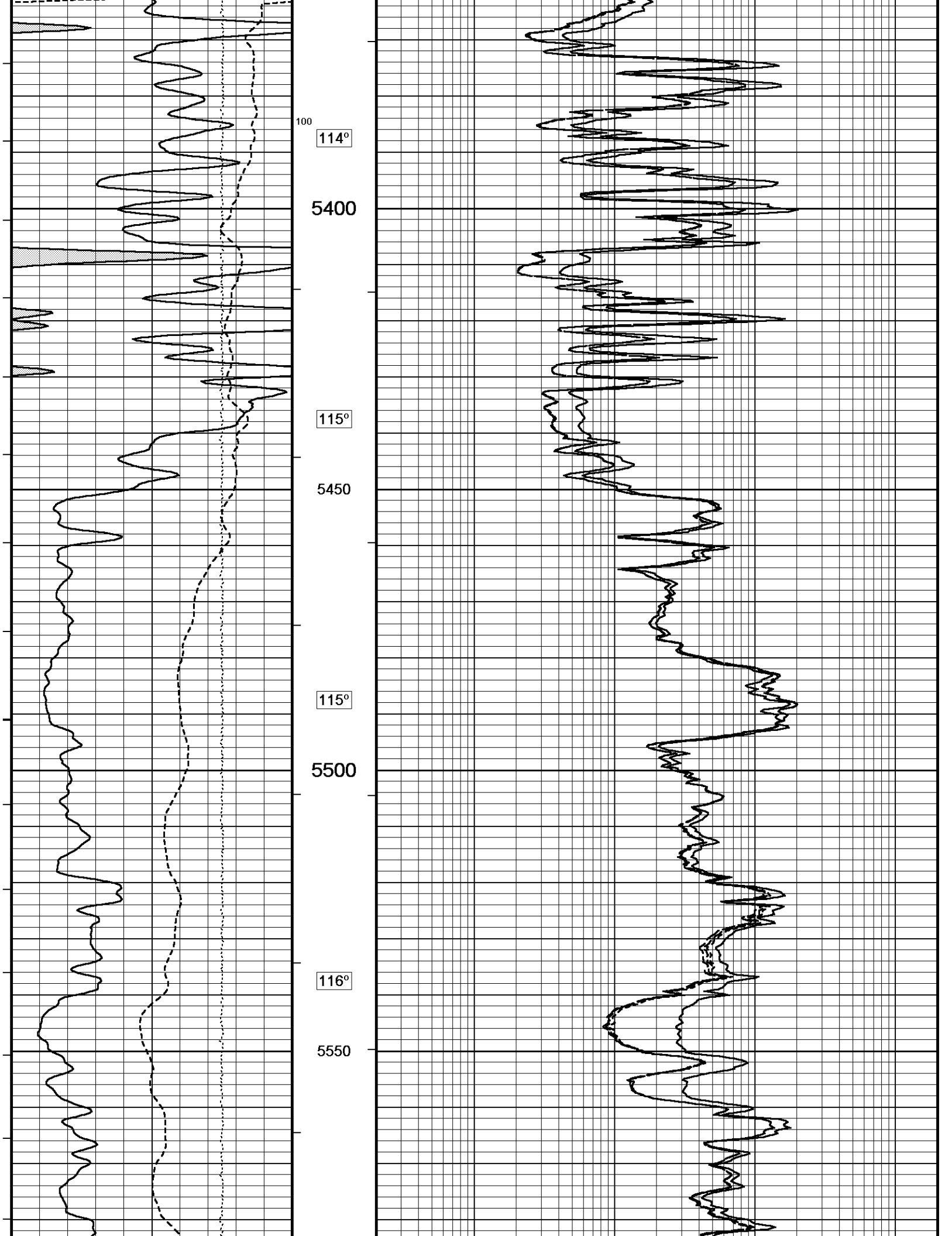
Array Ind. One Res 60
ohm metres
0.20 1 10 100 1000 2000

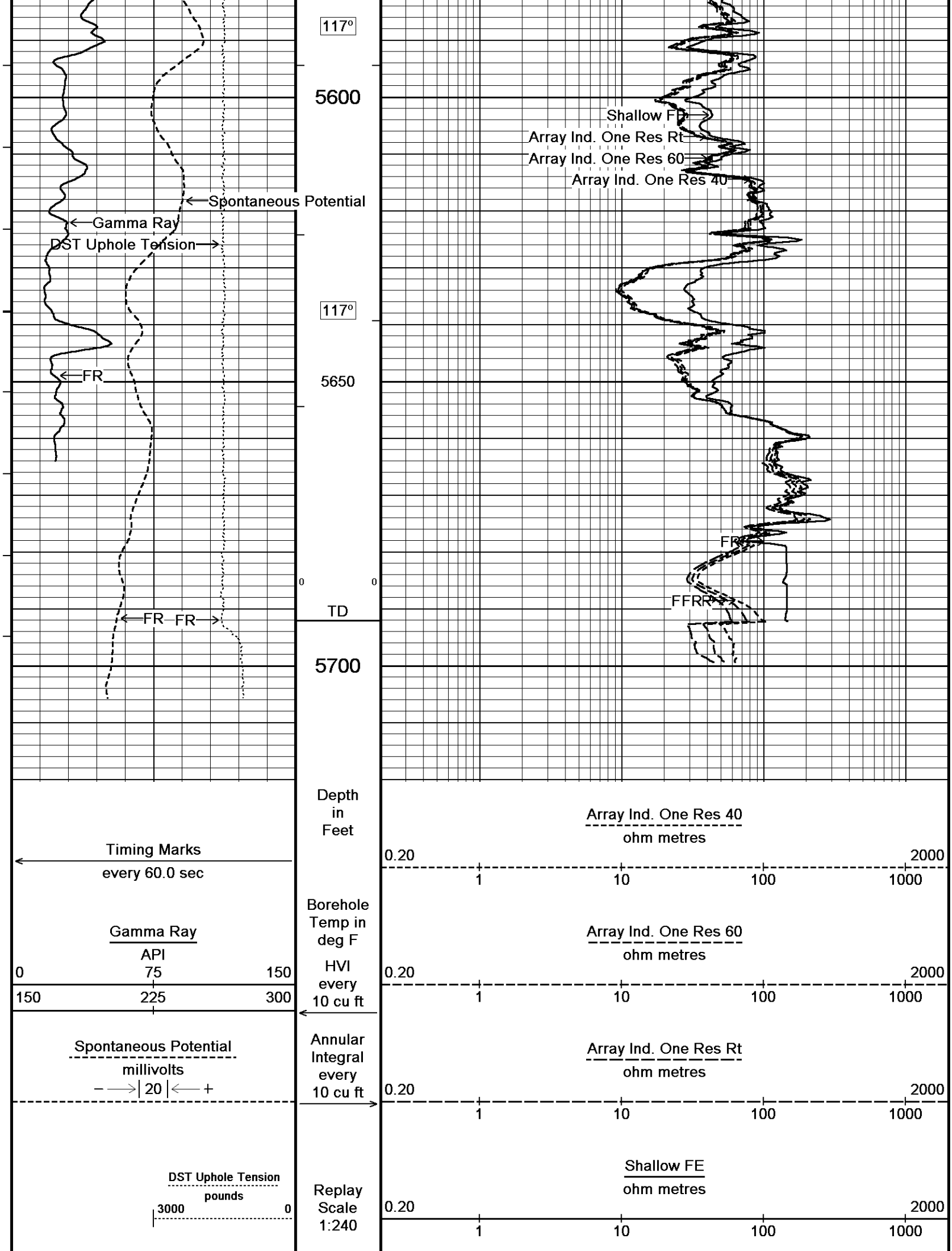
Array Ind. One Res Rt
ohm metres
0.20 1 10 100 1000 2000

Shallow FE
ohm metres
0.20 1 10 100 1000 2000

5350




100
114°
5400
115°
5450
115°
5500
116°
5550


117°
5600
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
117°
FR
5650
0
0
TD
FR
FR
FR
FFRR
5700
Depth in Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
HVI
every 10 cu ft
Spontaneous Potential
millivolts
– 20 +
Annular Integral every 10 cu ft
DST Uphole Tension
pounds
3000
0
Replay Scale 1:240
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
Shallow FE
ohm metres
0.20
2000
1
10
100
1000

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAR-2014 10:52
Filename: C:\Minimus\13.08\Logs\30 O'Brien Energ...\o'brien energy resources ardrey #3-35 Repeat.dta — Recorded on 07-MAR-2014 05:59
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus\13.08\Logs\30 O'Brien Energy Resources Ardrey #3-35\o'brien energy resources ardrey #3-35 Repeat.dta

General Constants All 000

Last Edited on 07-MAR-2014,04:02

General Parameters		
Mud Resistivity	0.950	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-B 39

Field Calibration on 06-MAR-2014 18:04

	Measured	Calibrated (API)
Background	66	44
Calibrator (Gross)	1142	769
Calibrator (Net)	1076	725

Gamma Constants MCG-B 39

Last Edited on 07-MAR-2014,03:30

Gamma Calibrator Number	GRC038	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Constants MCG-B 39

Last Edited on

Pre-filter Length	11

FE Calibration MFE-A.A 135

Base Calibration on 22-FEB-2014 12:33
Field Check on 06-MAR-2014 17:43

	Measured	Calibrated (ohm-m)
Base Calibration		
Reference 1	0.0	0.0
Reference 2	963.4	126.8
Base Check		281.3
Field Check		281.3

FE Constants MFE-A.A 135

Last Edited on 07-MAR-2014,03:29

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 167

Base Calibration on 22-FEB-2014,14:07
Field Check on 06-MAR-2014 17:41

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.3	474.2	9.3	967.1
2	6.3	388.4	7.6	822.1
3	3.3	259.4	5.2	566.5
4	1.9	133.0	2.6	279.5

Array Temperature 76.8 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			12.5	3843.8
2			29.5	3481.7
3			29.1	3057.4
4			19.8	2084.7
Deep			18.6	2052.0
Medium			42.2	3997.0
Shallow			42.8	5060.8

Array Temperature 64.5 Deg F

Induction Constants MAI-A.A 167

Last Edited on 07-MAR-2014,03:29

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-C.A 216

Base Calibration on 22-FEB-2014,15:53
Field Calibration on 06-MAR-2014 18:12

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16592	3.99
2	26576	5.98

3	36592	7.97
4	46339	9.86
5	57568	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.93	7.97

DOWNHOLE EQUIPMENT

C:\Minimus\13.08\Logs\30 O'Brien Energy Resources Ardrey #3-35\o'brien energy resources ardrey #3-35 Repeat.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.244 in

Compact Comms Gamma
MCG-B 39 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

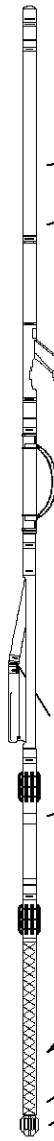
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 49.73 ft Weight: 399.0 lb



42.87 ft	GRGC - Gamma Ray
39.96 ft	CGXT - MCG External Temperature
34.24 ft	MLTC - MML Caliper
28.45 ft	NPRL - Limestone Neutron Por.
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)

All measurements relative to tool zero.

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	ARDREY #3-35
FIELD	ARDREY
PROVINCE/COUNTY	CLARK
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2545.00	feet	First Reading	5688.66	feet
Elevation Drill Floor	2543.00	feet	Depth Driller	5700.00	feet
Elevation Ground Level	2533.00	feet	Depth Logger	5692.00	feet

ARRAY INDUCTION

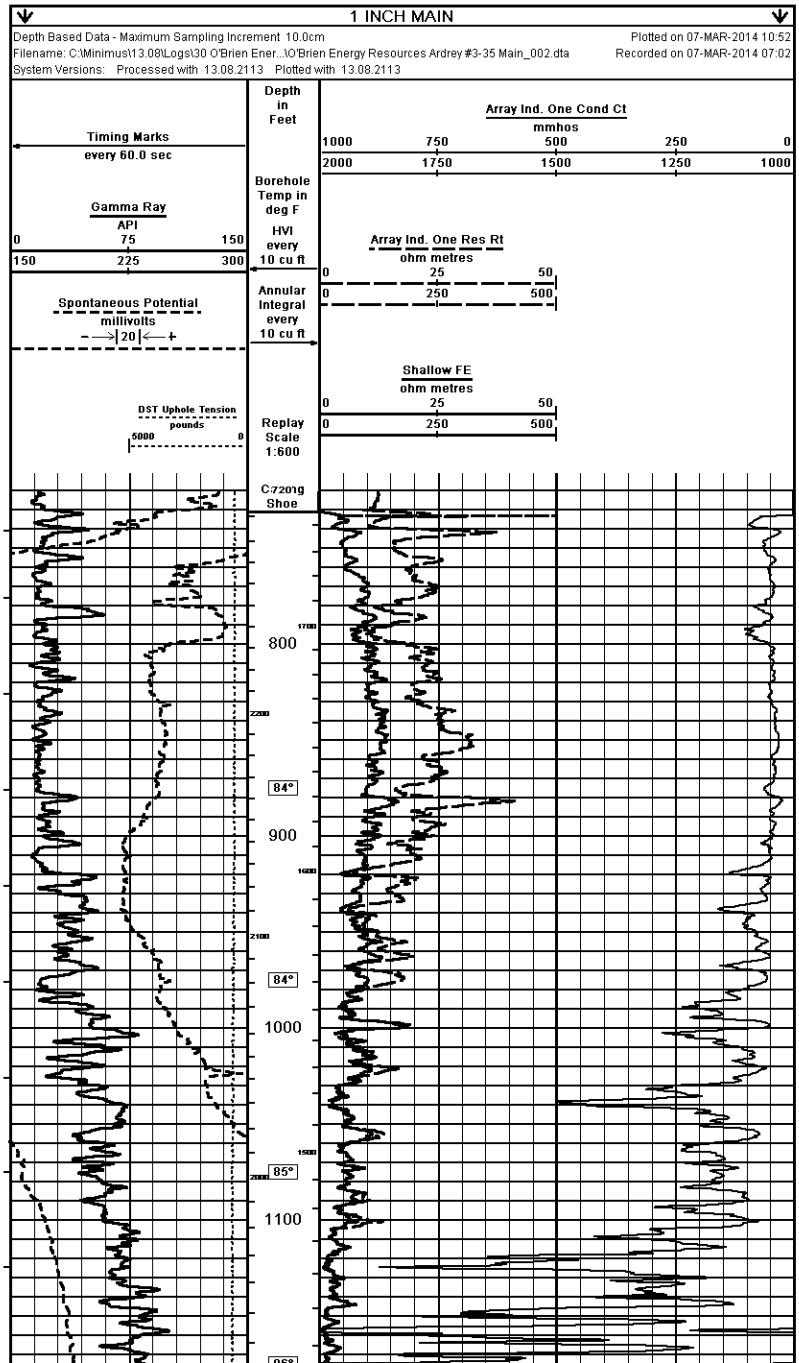
Weatherford®

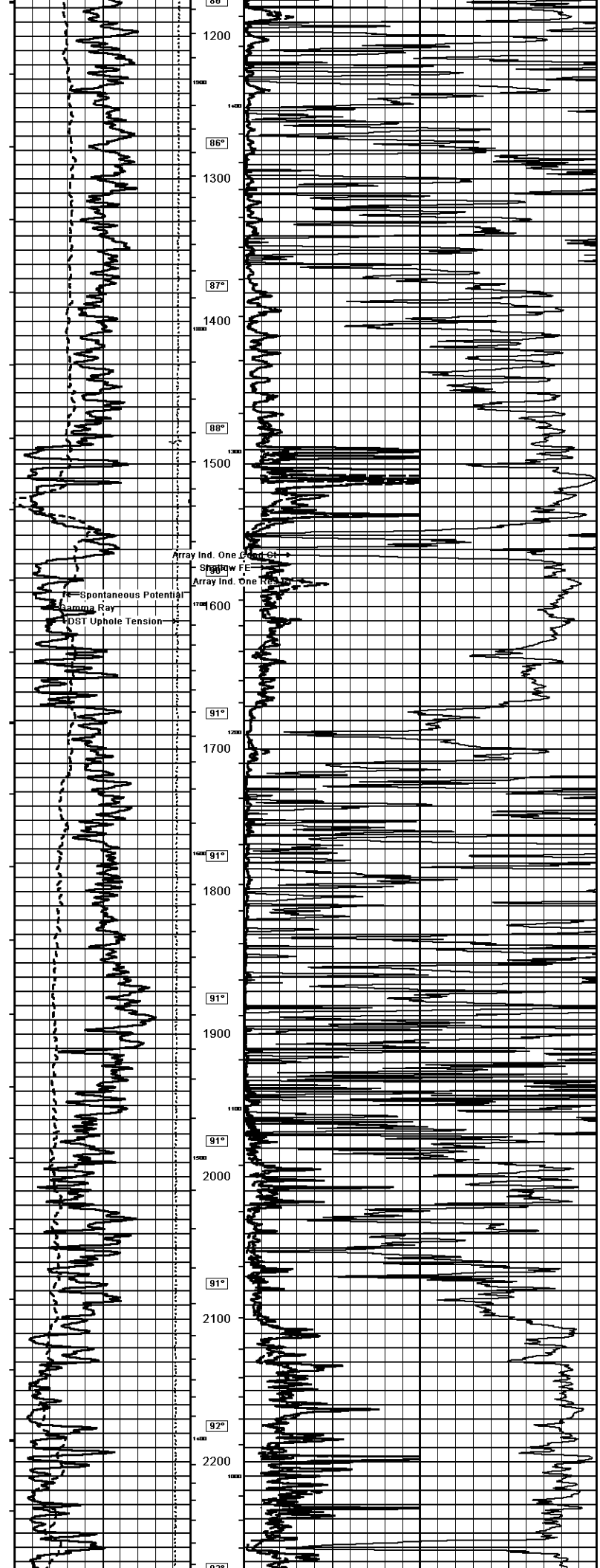
SHALLOW FOCUSED ELECTRIC LOG

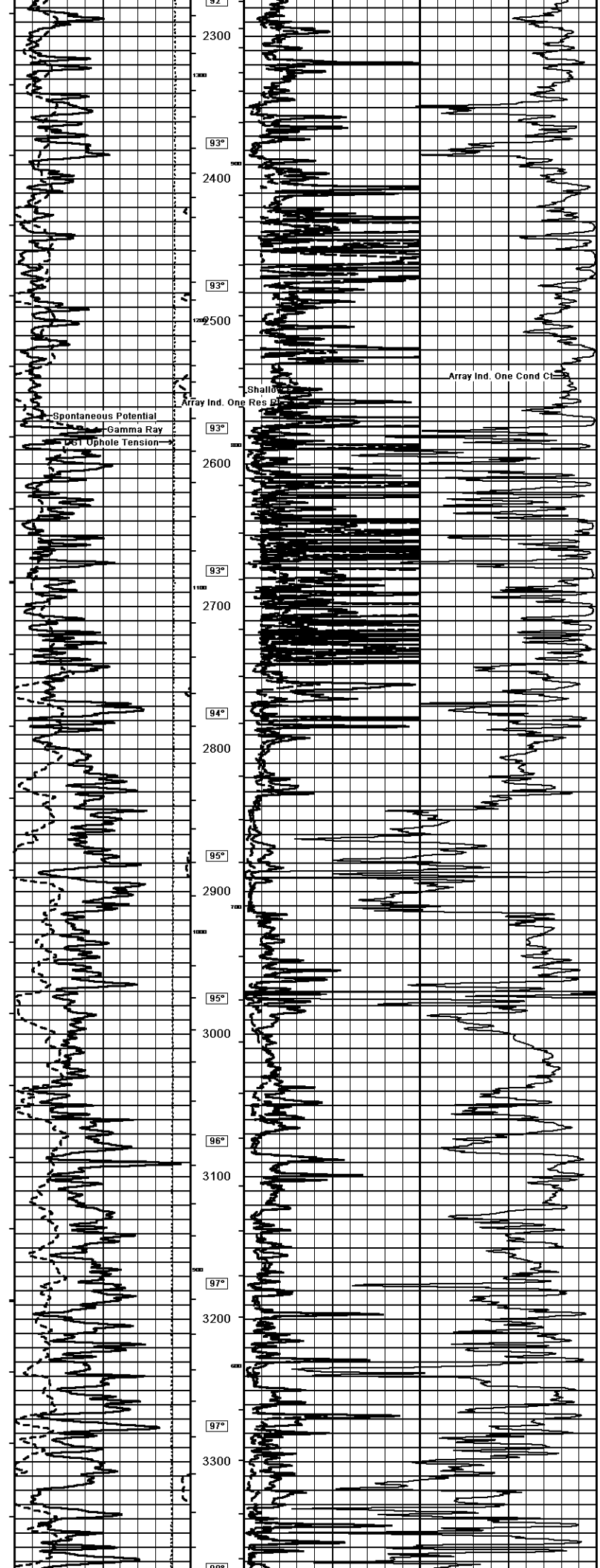
Weatherford

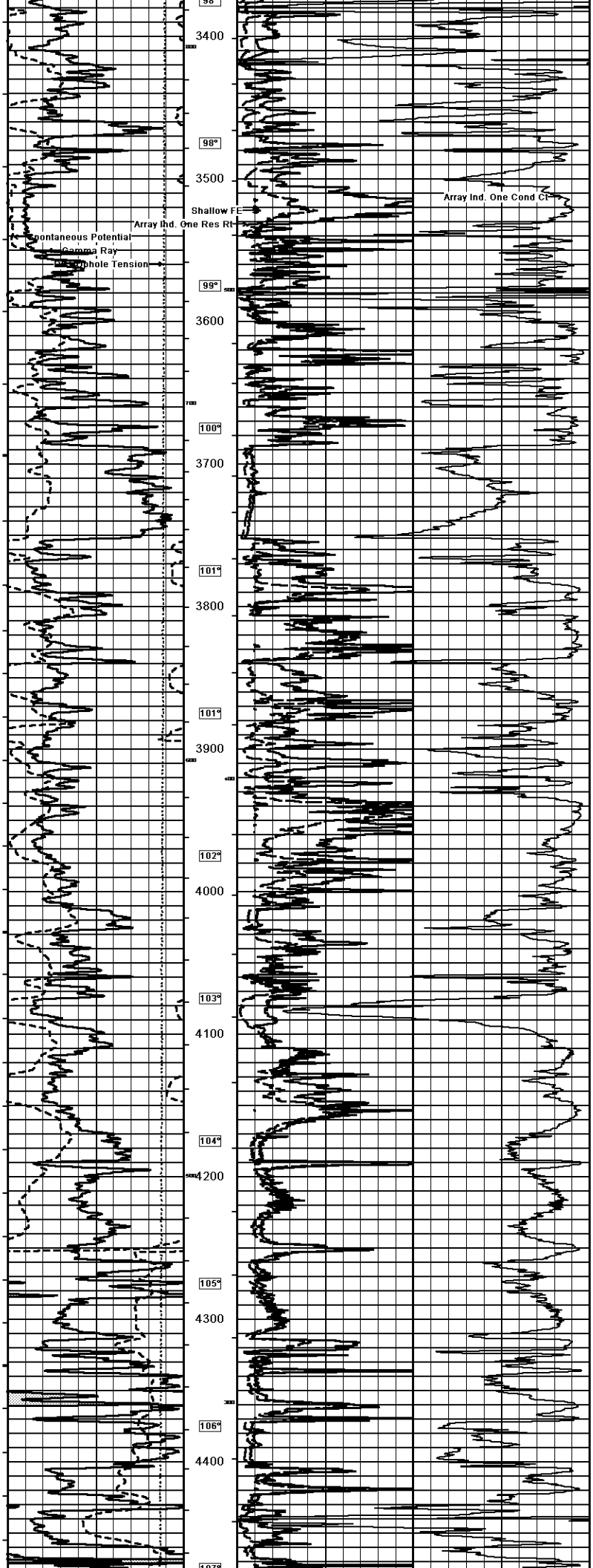
ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

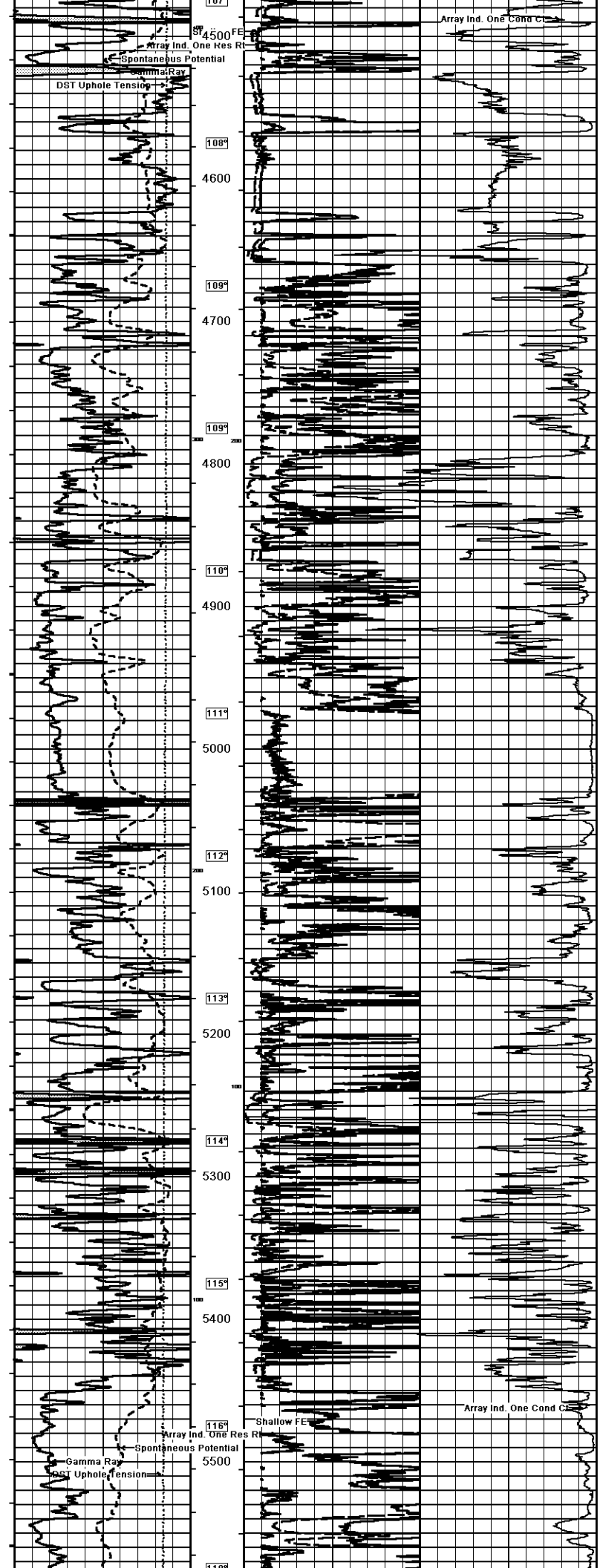
COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	ARDREY #3-35
FIELD	ARDREY
PROVINCE/COUNTY	CLARK
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FSL & 1601' FEL
SEC 30 TWP 35S RGE 24W	Other Services MPDMDN
Latitude	
Longitude	
API Number	15-025-21572
Permanent Datum GL Elevation 2533 feet	Elevations: KB 2545.00 feet, DF 2543.00, GL 2533.00
Log Measured From KB	
Drilling Measured From KB @ 12 FEET	
Date	07-MAR-2014
Run Number	ONE
Service Order	7036-81366181
Depth Driller	5700.00 feet
Depth Logger	5693.00 feet
First Reading	5688.66 feet
Last Reading	731.00 feet
Casing Driller	732.00 feet
Casing Logger	731.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.20 lb/USg 47.00 CP
PH / Fluid Loss	9.00 10.00 ml/30Min
Sample Source	MUDPIT
Rm @ Measured Temp	0.95 @ 75.0 ohm-m
Rmf @ Measured Temp	0.76 @ 75.0 ohm-m
Rmc @ Measured Temp	1.14 @ 75.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.62 @ 118.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	118.00 deg F
Equipment / Base	LIB
Recorded By	13096 DEREK CARTER BEN WELDIN
Witnessed By	PETER DEBENHAM ROGER PEARSON
JOB #	LB14-065

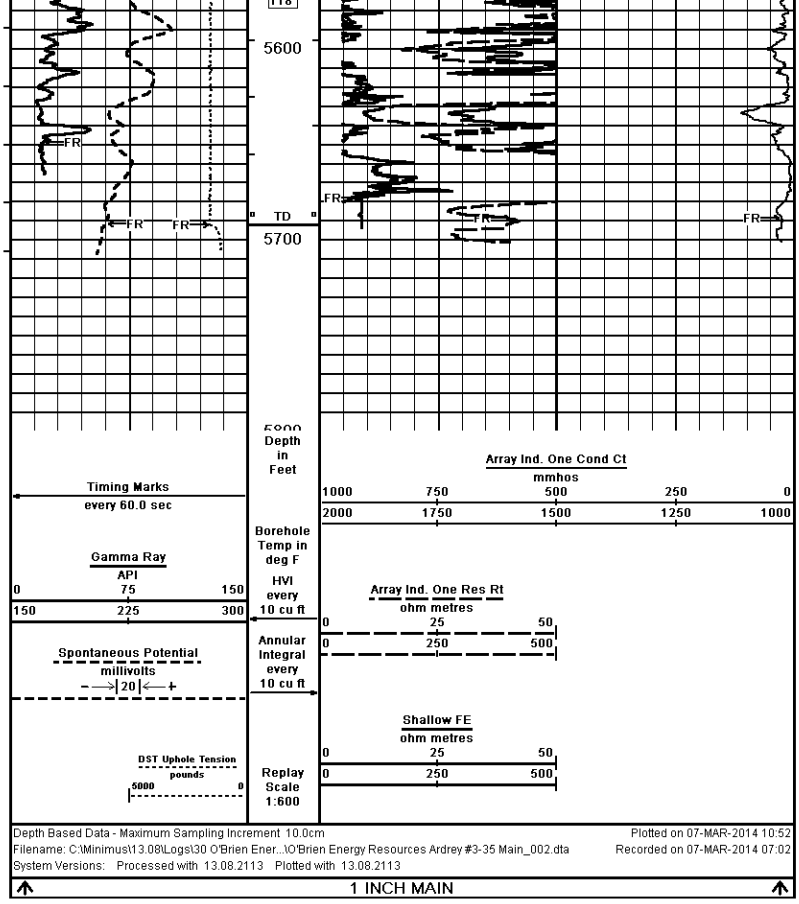



1200
86°
1300
87°
1400
88°
1500
Array Ind. One Guard Cond
Shallow FE
Array Ind. One Res
SP Spontaneous Potential
Gamma Ray
HDST Uphole Tension
1600
91°
1700
91°
1800
91°
1900
91°
2000
91°
2100
92°
2200


2300
93°
2400
93°
2500
Array Ind. One Cond Cl
Shallow
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DGT Uphole Tension
93°
2600
93°
2700
94°
2800
95°
2900
95°
3000
96°
3100
97°
3200
97°
3300


98°
3400
98°
3500
Shallow FE
Array Ind. One Res Rt
pontaneous Potential
Gamma Ray
hole Tension
99°
3600
100°
3700
101°
3800
101°
3900
102°
4000
103°
4100
104°
4200
105°
4300
106°
4400
Array Ind. One Cond Ct


Array Ind. One Cond Cl
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4500
4600
4700
4800
4900
5000
5100
5200
5300
5400
5500
Shallow FE
Array Ind. One Cond Cl
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension



COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	ARDREY #3-35
FIELD	ARDREY
PROVINCE/COUNTY	CLARK
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2545.00	feet	First Reading	5688.66	feet
Elevation Drill Floor	2543.00	feet	Depth Driller	5700.00	feet
Elevation Ground Level	2533.00	feet	Depth Logger	5692.00	feet

Weatherford

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG