Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	K3 OIL & GAS OPERATING COMPANY
WELL	CATHERINE COBERLY UNIT 30-14
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1209' FSL & 2495' FWL

SEC 30	TWP 15S	RGE 28W	Other Services
Latitude			MPD/MDN MML
Longitude			MSS
API Number	15-063-22187		

Permanent Datum GL, Elevation 2542 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	2550.00
DF	2548.00
GL	2542.00

Date	06-MAY-2014			
Run Number	ONE			
Service Order	4558-86610112			
Depth Driller	4425.00	feet		
Depth Logger	4429.00	feet		
First Reading	4426.00	feet		
Last Reading	263.00	feet		
Casing Driller	268.00	feet		
Casing Logger	263.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 lb/USg		54.00 CP	
PH / Fluid Loss	9.50		8.80 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.71 @ 95.0	ohm-m		
Rmf @ Measured Temp	0.57 @ 95.0	ohm-m		
Rmc @ Measured Temp	0.85 @ 95.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.56 @120.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	120.00	deg F		
Equipment / Base	13244		LIB	
Recorded By	ADAM SILL			
Witnessed By	PAT DEENIHAN			
JOB #	LB14-139			

BOREHOLE RECORD

Last Edited: 06-MAY-2014 22:44

Bit Size inches	Depth From feet	Depth To feet
7.875	268.00	4425.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	268.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.08.2113.

- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
    0.5 INCH STANDOFF USED ON MFE.
    TWO 0.5 INCH STANDOFFS USED ON MSS.
    0.5 INCH STANDOFF USED ON MAI.

- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.

- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.

- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1801 CU.FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3500 FEET: 157 CU.FT.

- RIG: DUKE #8.

- ENGINEER: A. SILL.

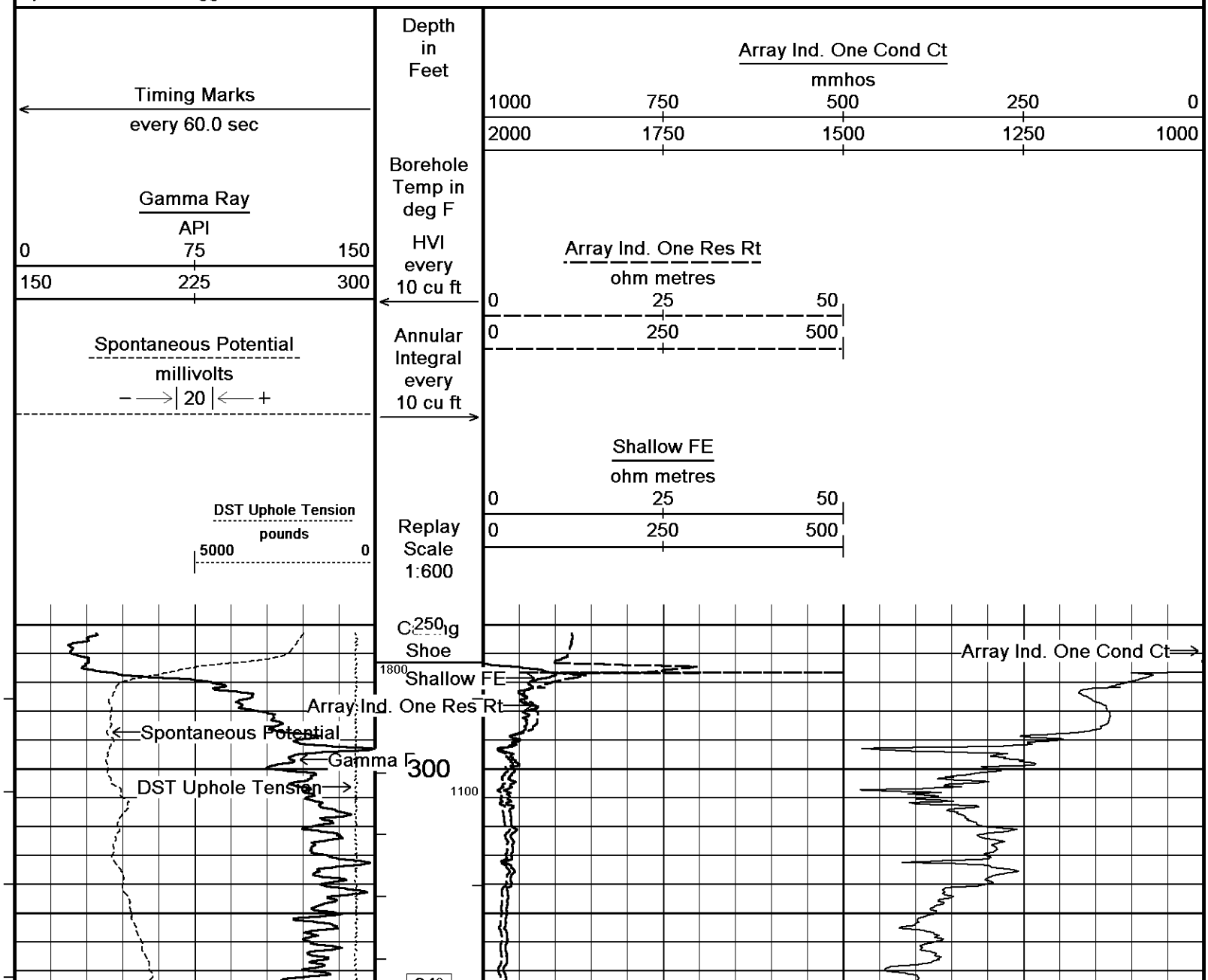
- OPERATOR: J. LaPOINT.

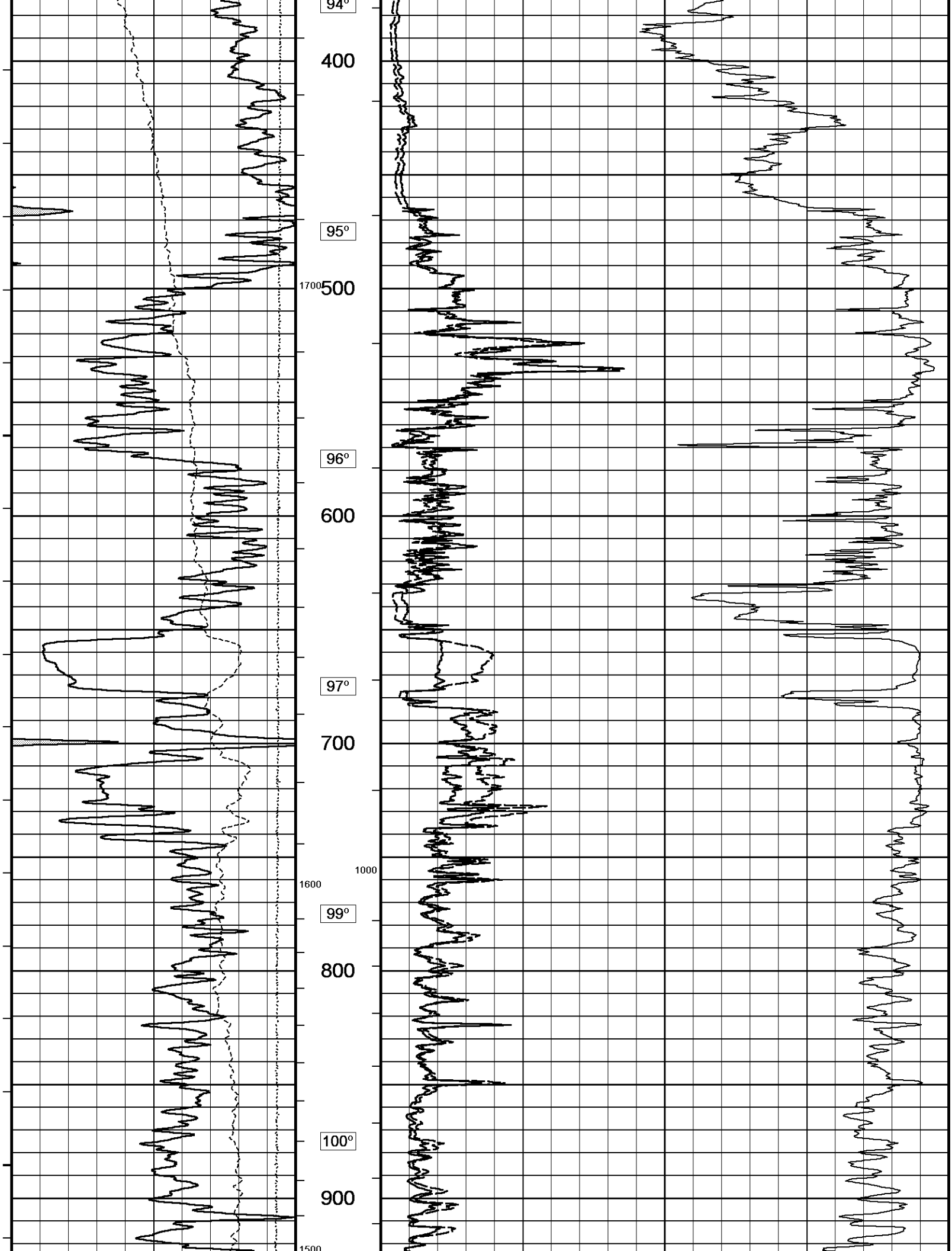
2 INCH MAIN

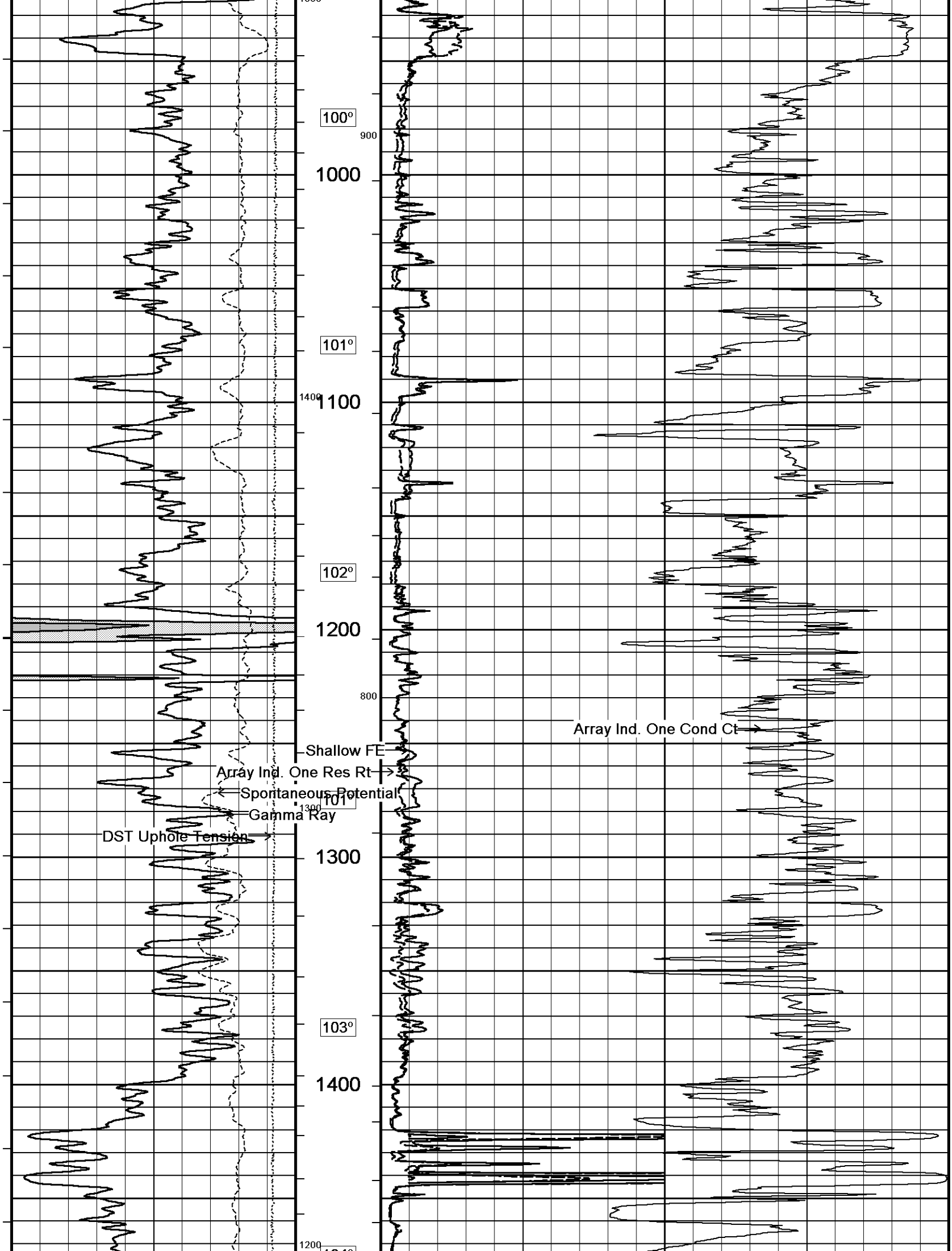
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAY-2014 03:55

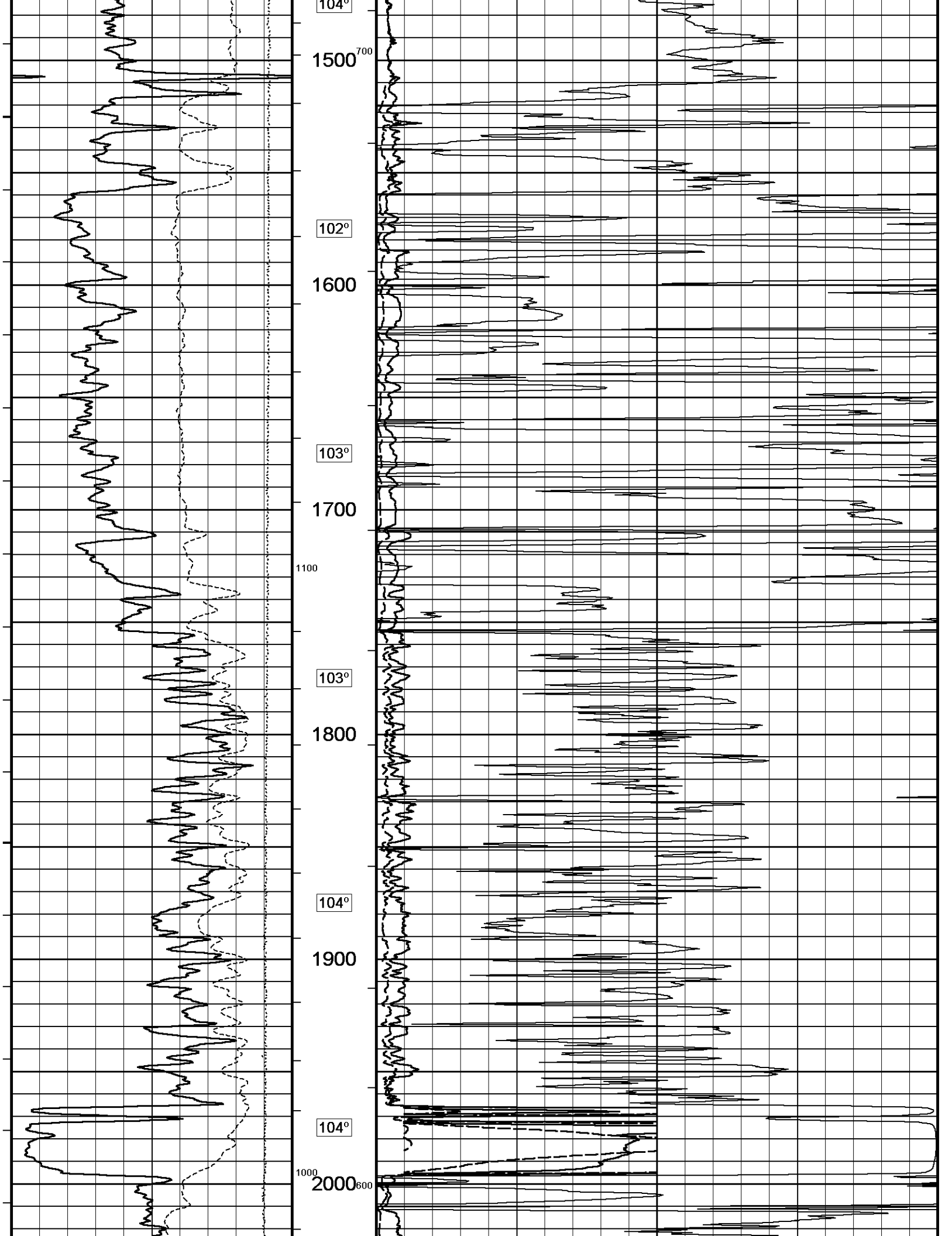
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_002.dta — Recorded on 07-MAY-2014 00:37

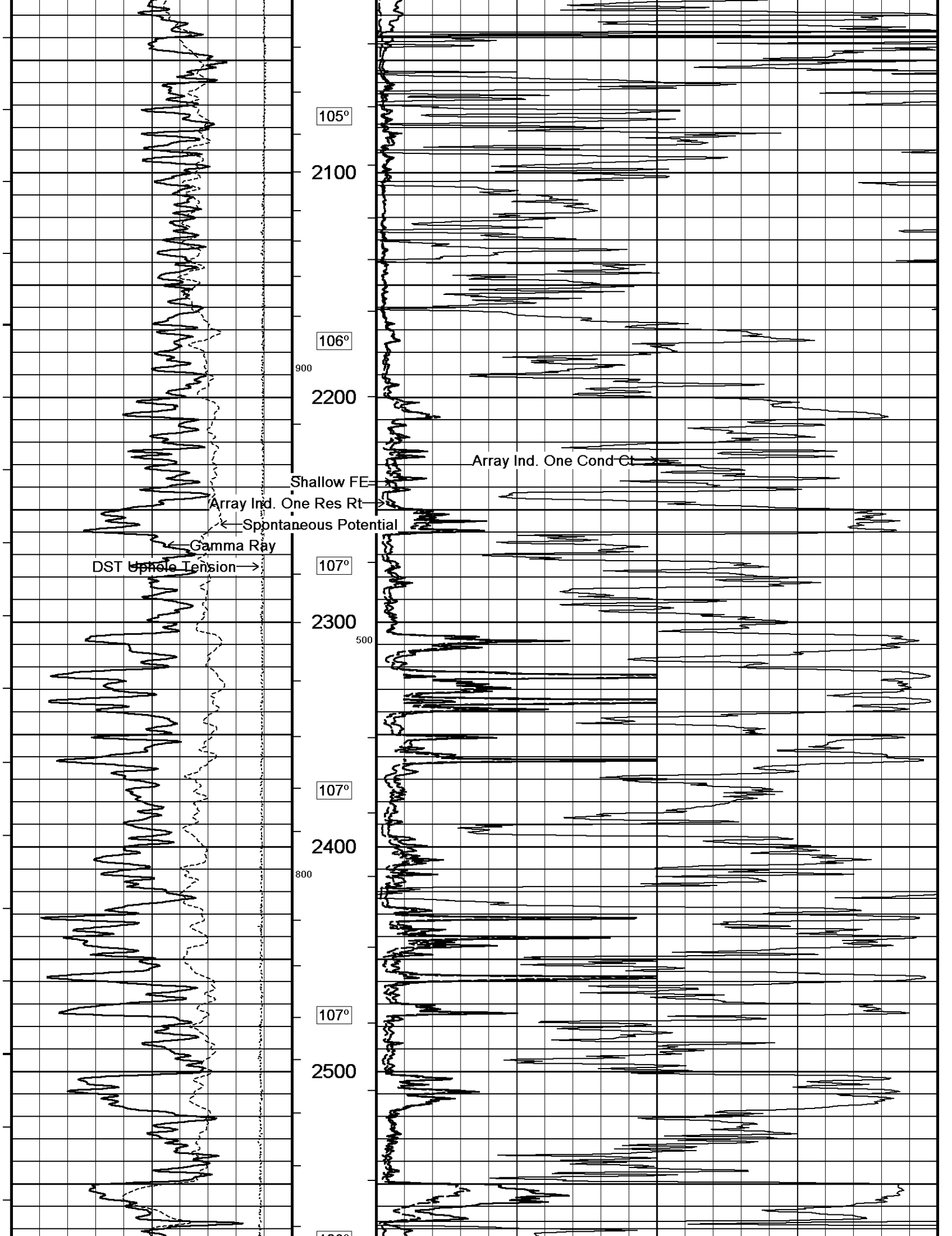
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

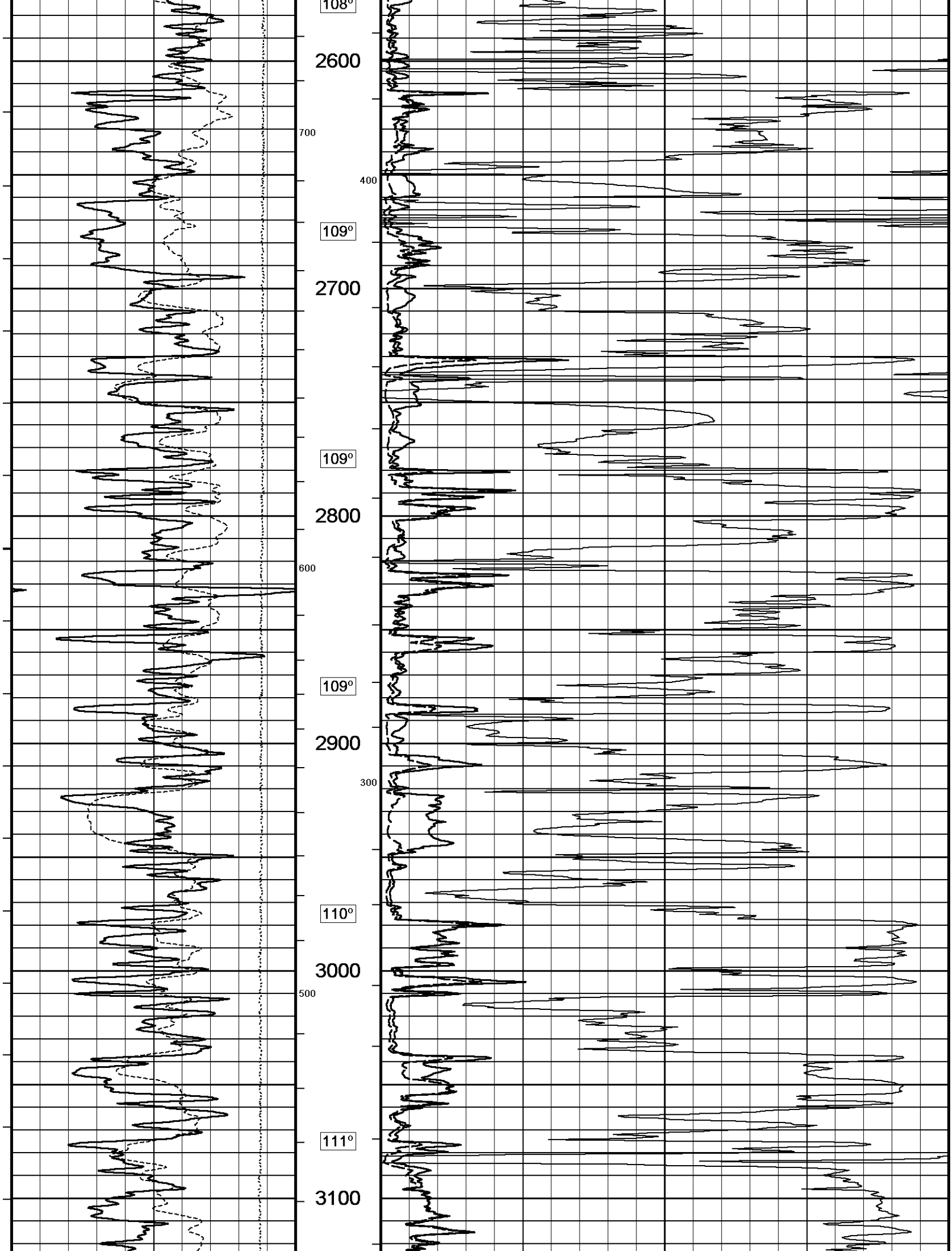


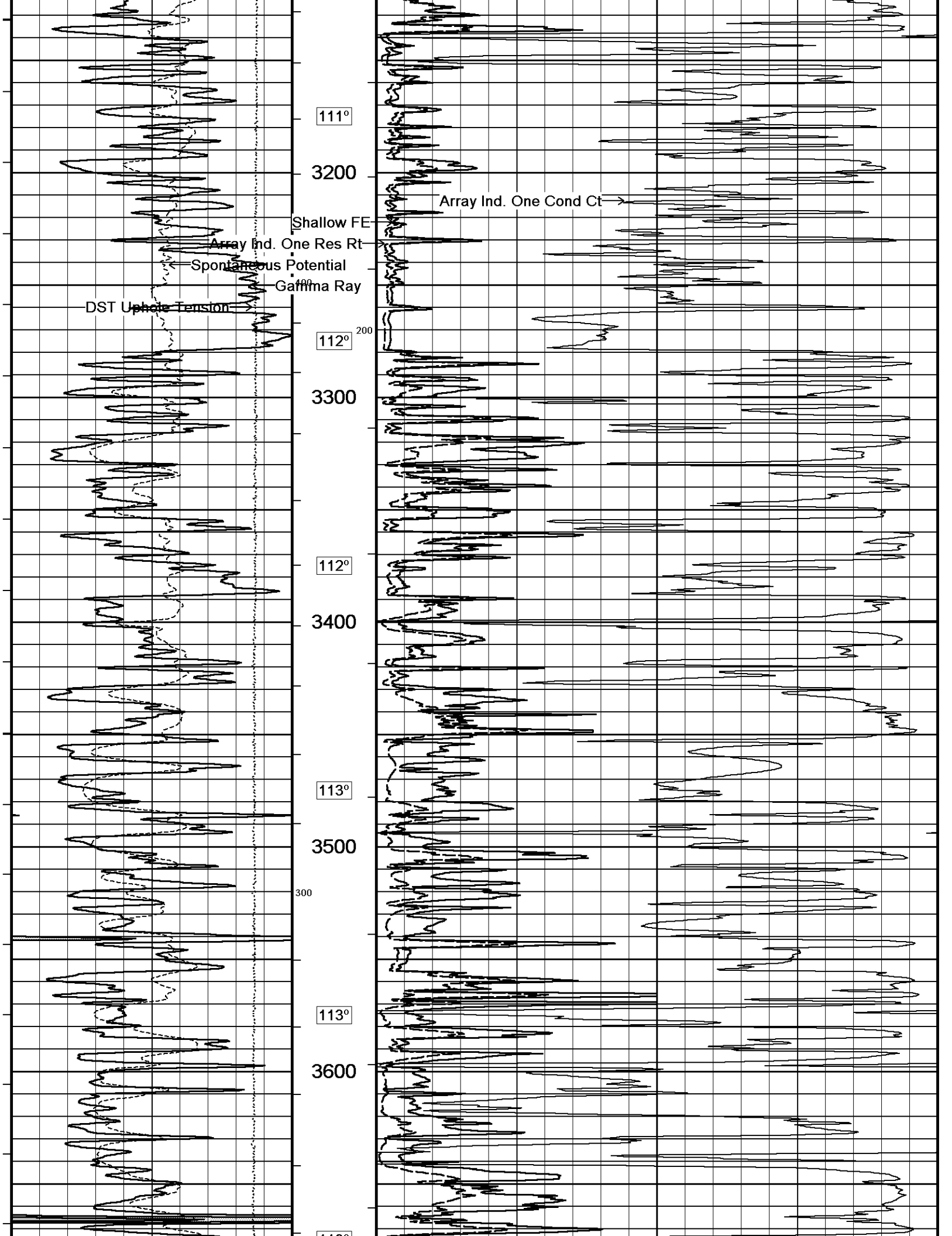

94°
400
95°
1700
500
96°
600
97°
700
1000
1600
99°
800
100°
900
1500

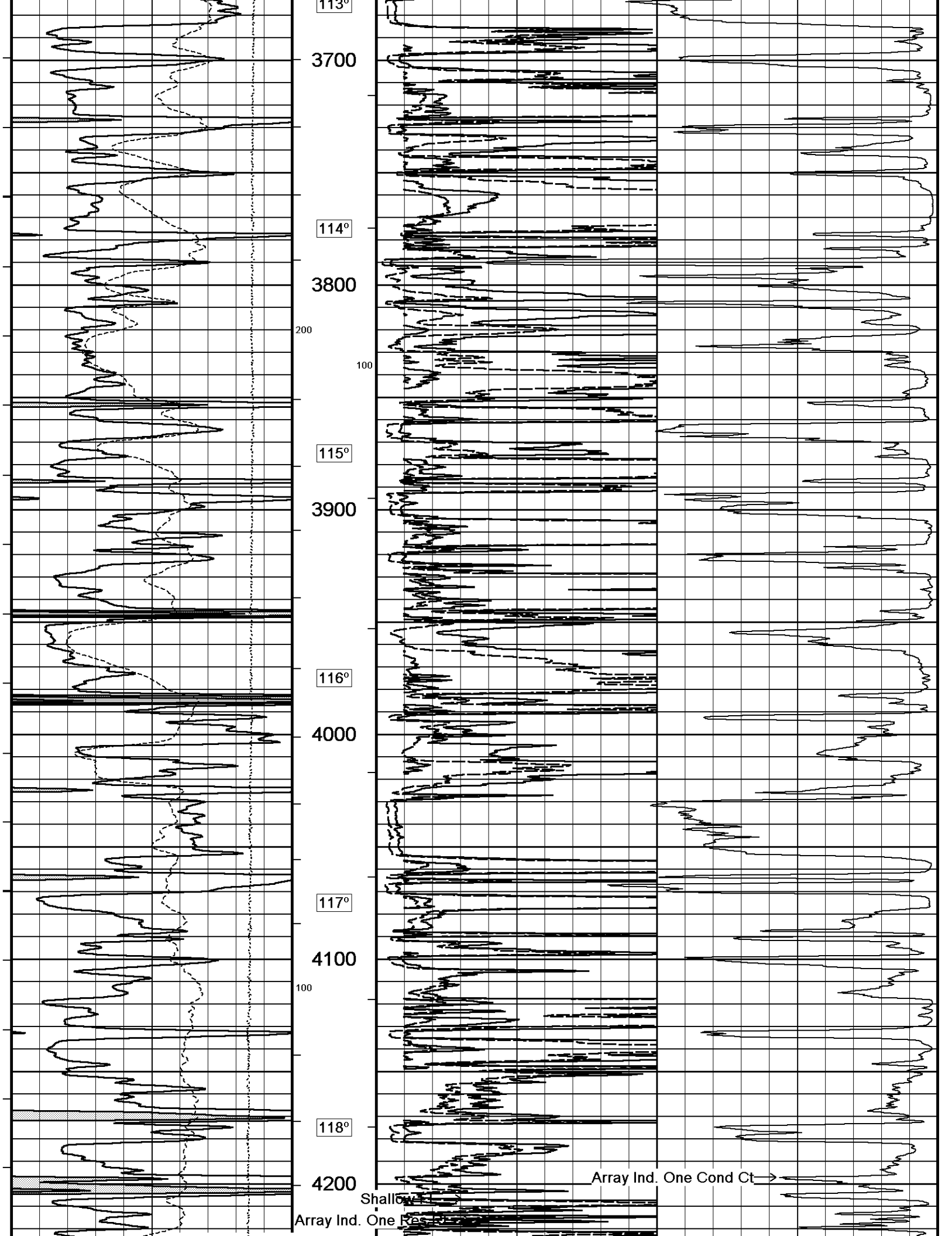

100°
900
1000
101°
1400
1100
102°
1200
800
Array Ind. One Cond Ct
Shallow FE
Array Ind. One Res Rt
Sporitaneous Potential
101
1300
Gamma Ray
DST Uphole Tension
1300
103°
1400
1200

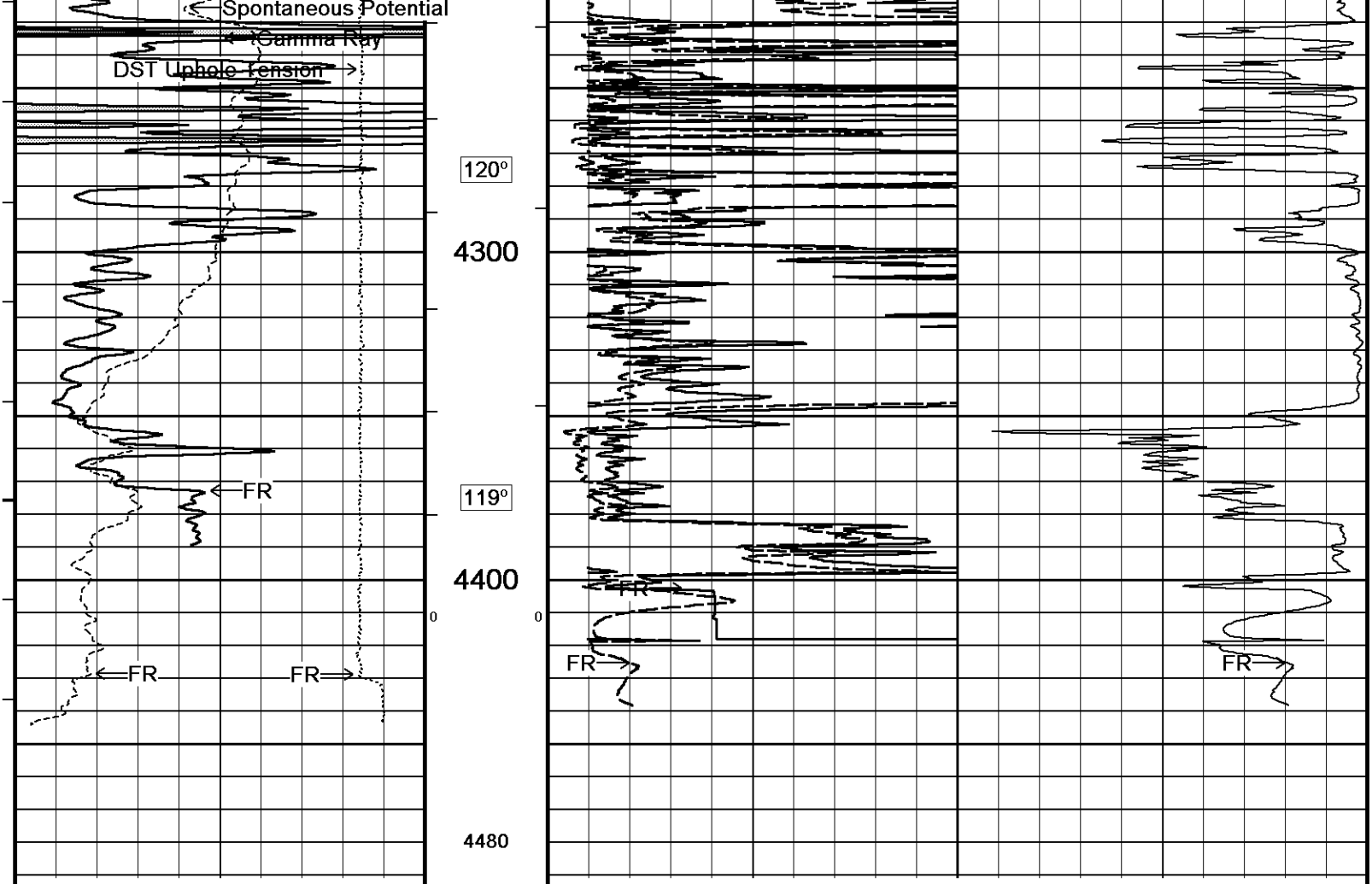

104°
1500
700
102°
1600
103°
1700
1100
103°
1800
104°
1900
104°
1000
2000
600


105°
2100
106°
900
2200
Array Ind. One Cond Ct
Shallow FE
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
2300
500
107°
2400
800
107°
2500


108°
2600
700
400
109°
2700
109°
2800
600
109°
2900
300
110°
3000
500
111°
3100


111°
3200
Array Ind. One Cond Ct
Shallow FE
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
400
DST Uphole Tension
112°
200
3300
112°
3400
113°
3500
300
113°
3600


113°
3700
114°
3800
200
100
115°
3900
116°
4000
117°
4100
100
118°
4200
Array Ind. One Cond Ct
Shallow
Array Ind. One Res



4480

Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− 20 +

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:600

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

Array Ind. One Res Rt
ohm metres
0 25 50
0 250 500

Shallow FE
ohm metres
0 25 50
0 250 500

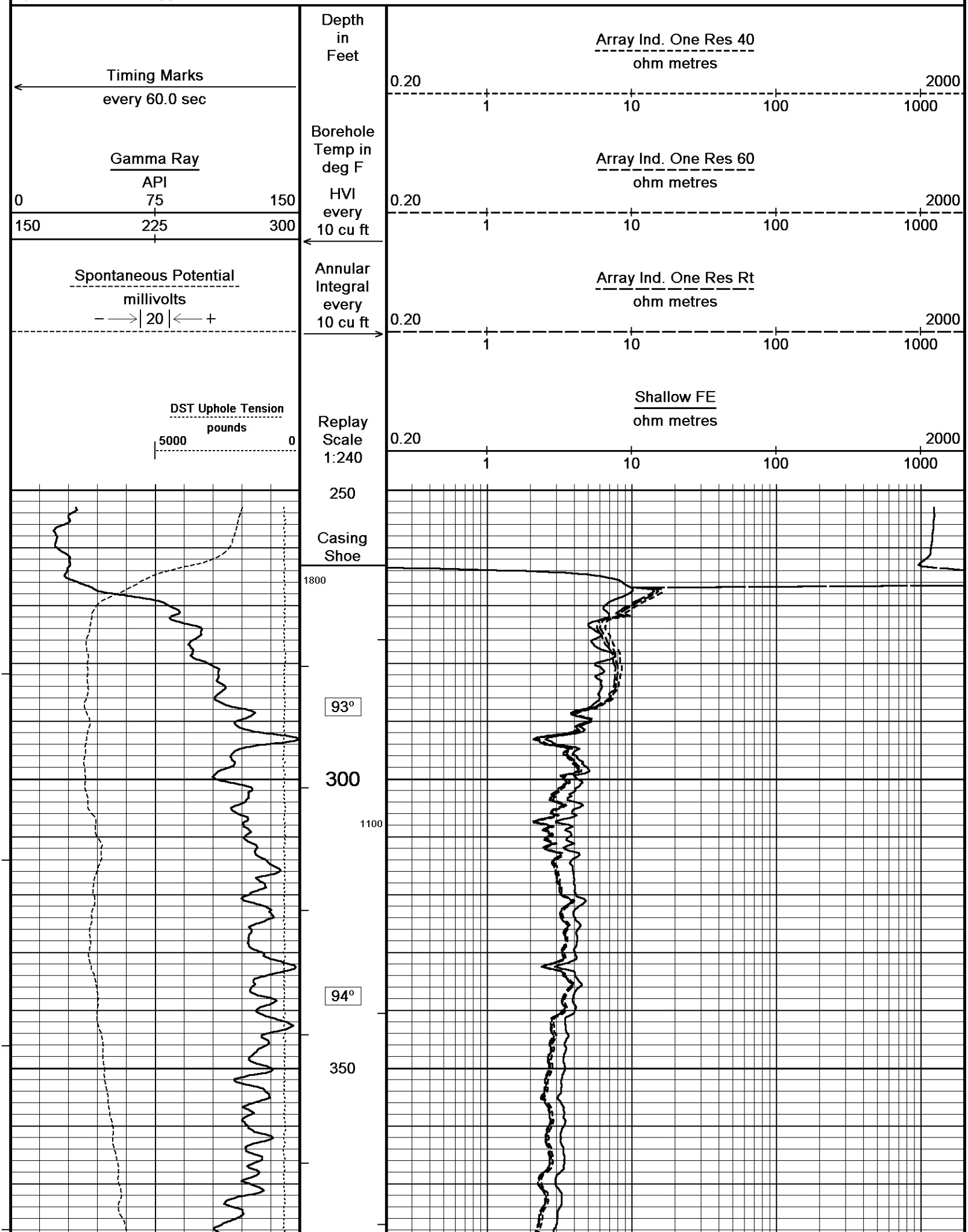
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAY-2014 03:55
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_002.dta
Recorded on 07-MAY-2014 00:37
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

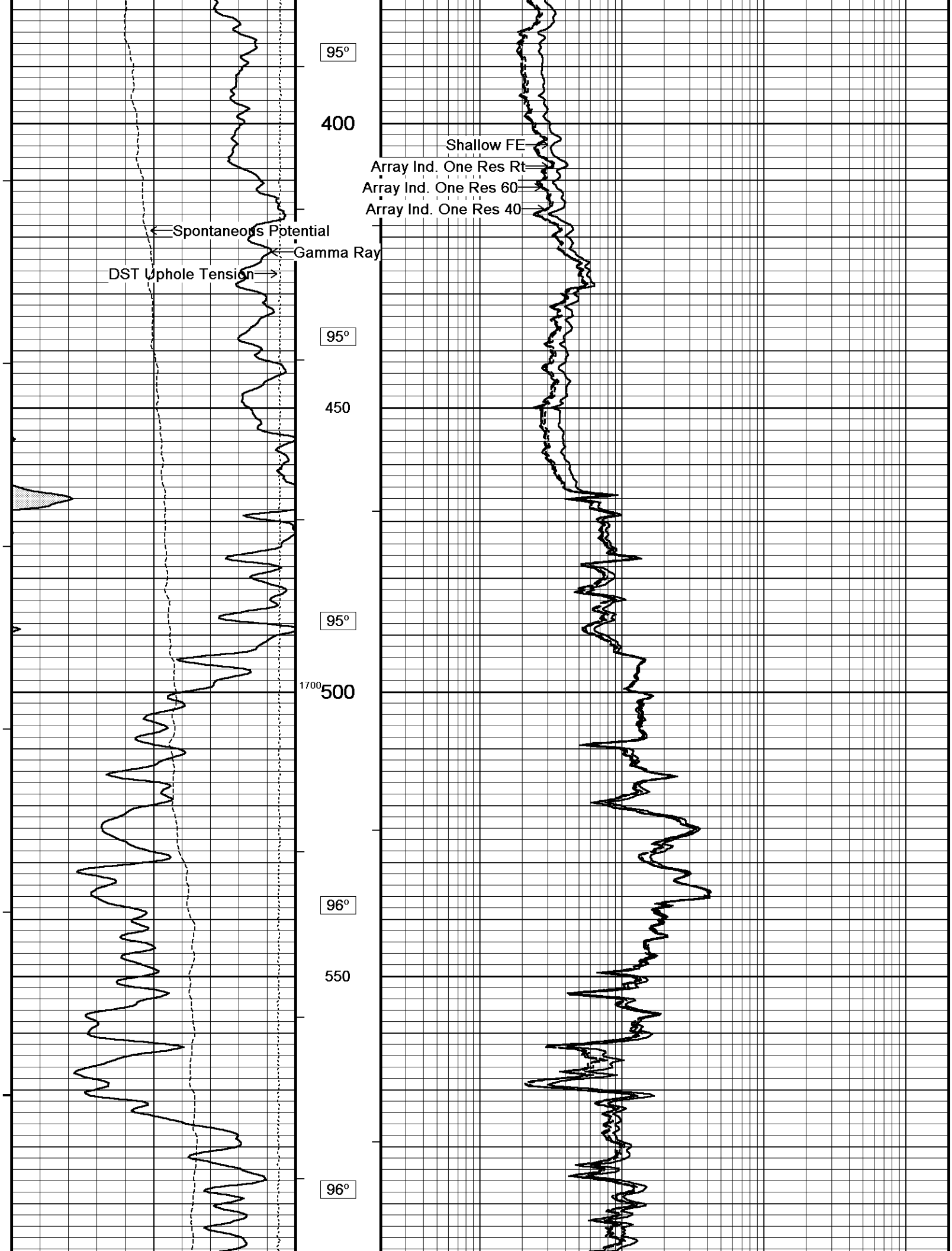
2 INCH MAIN

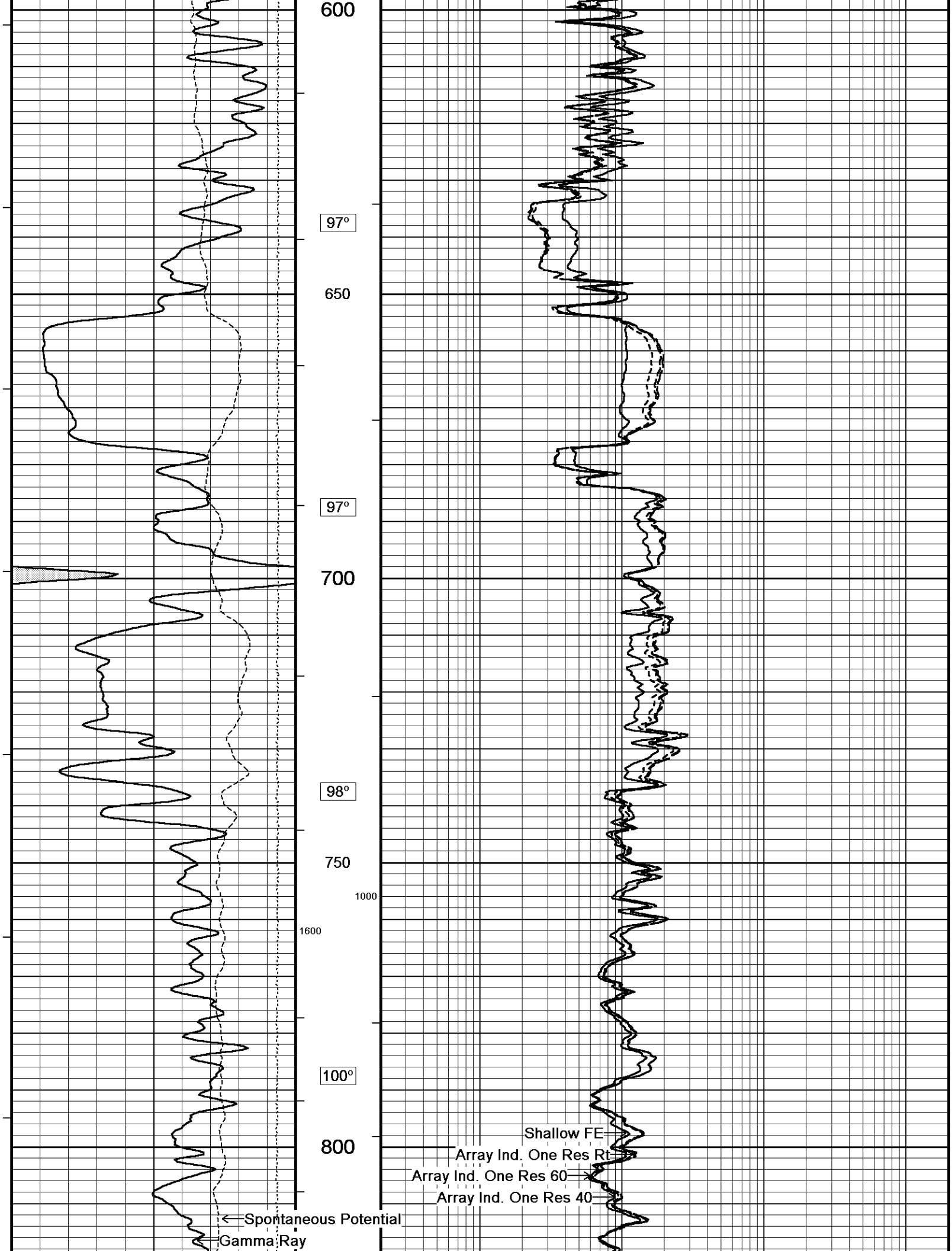
5 INCH MAIN

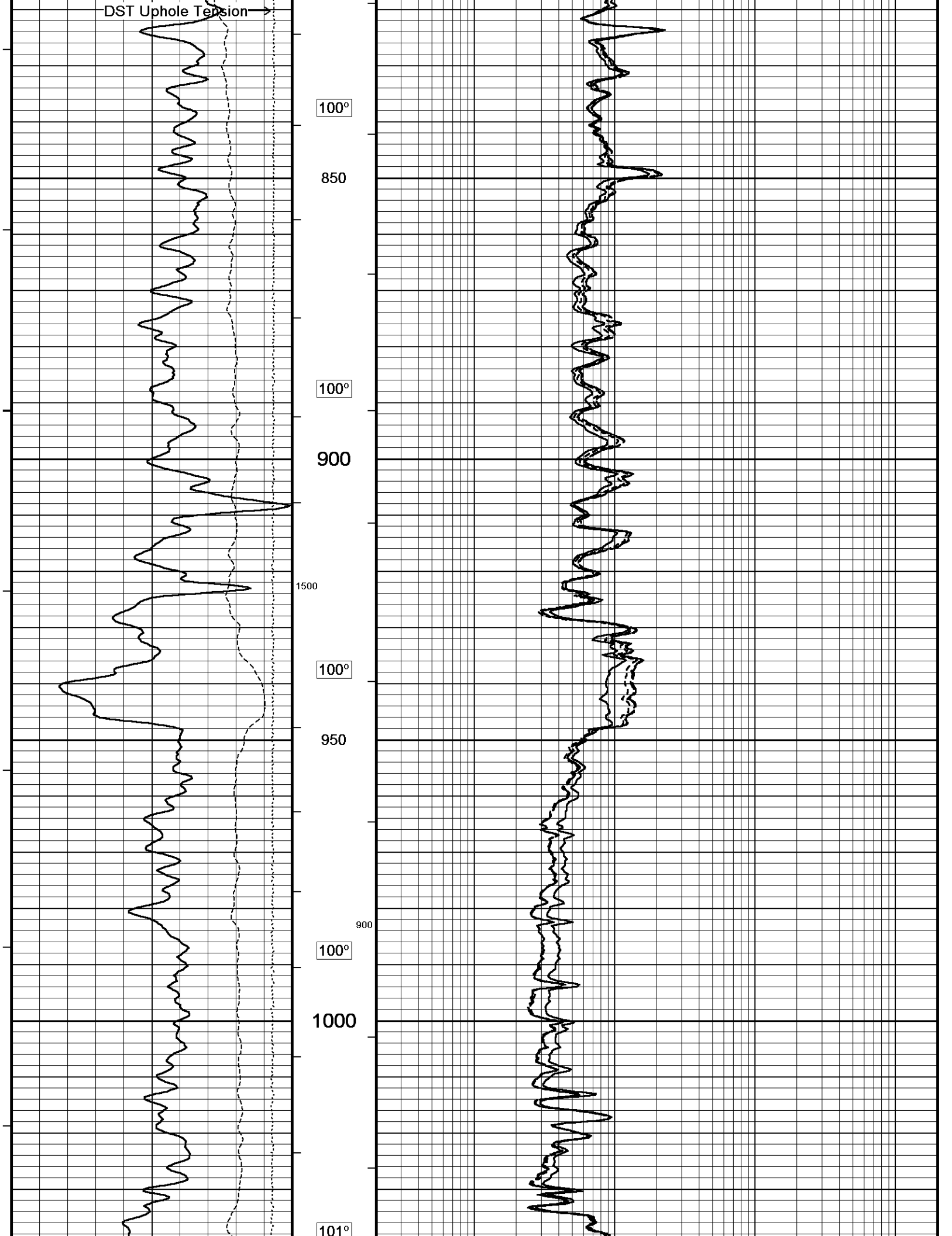
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAY-2014 03:55

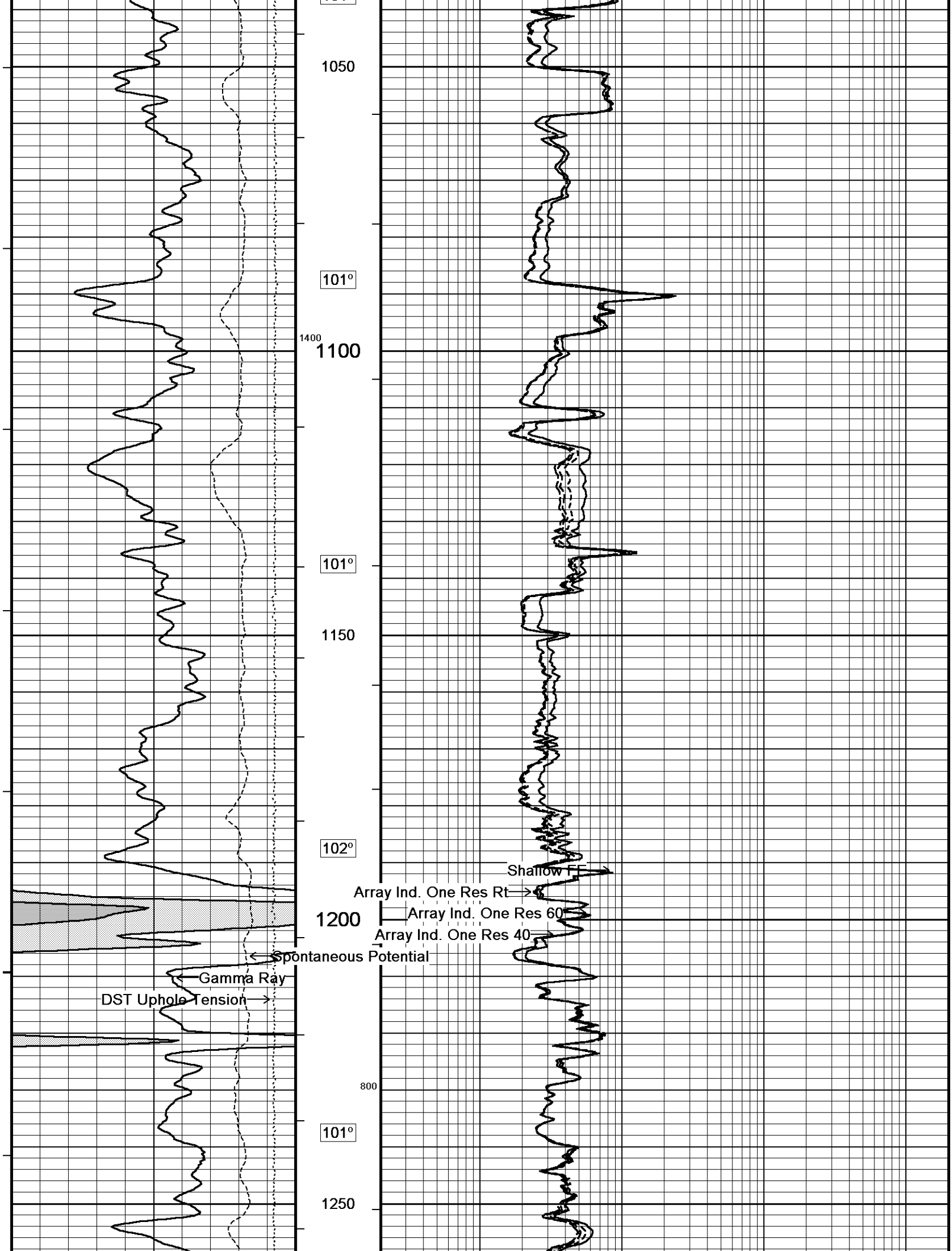
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_002.dta Recorded on 07-MAY-2014 00:37
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

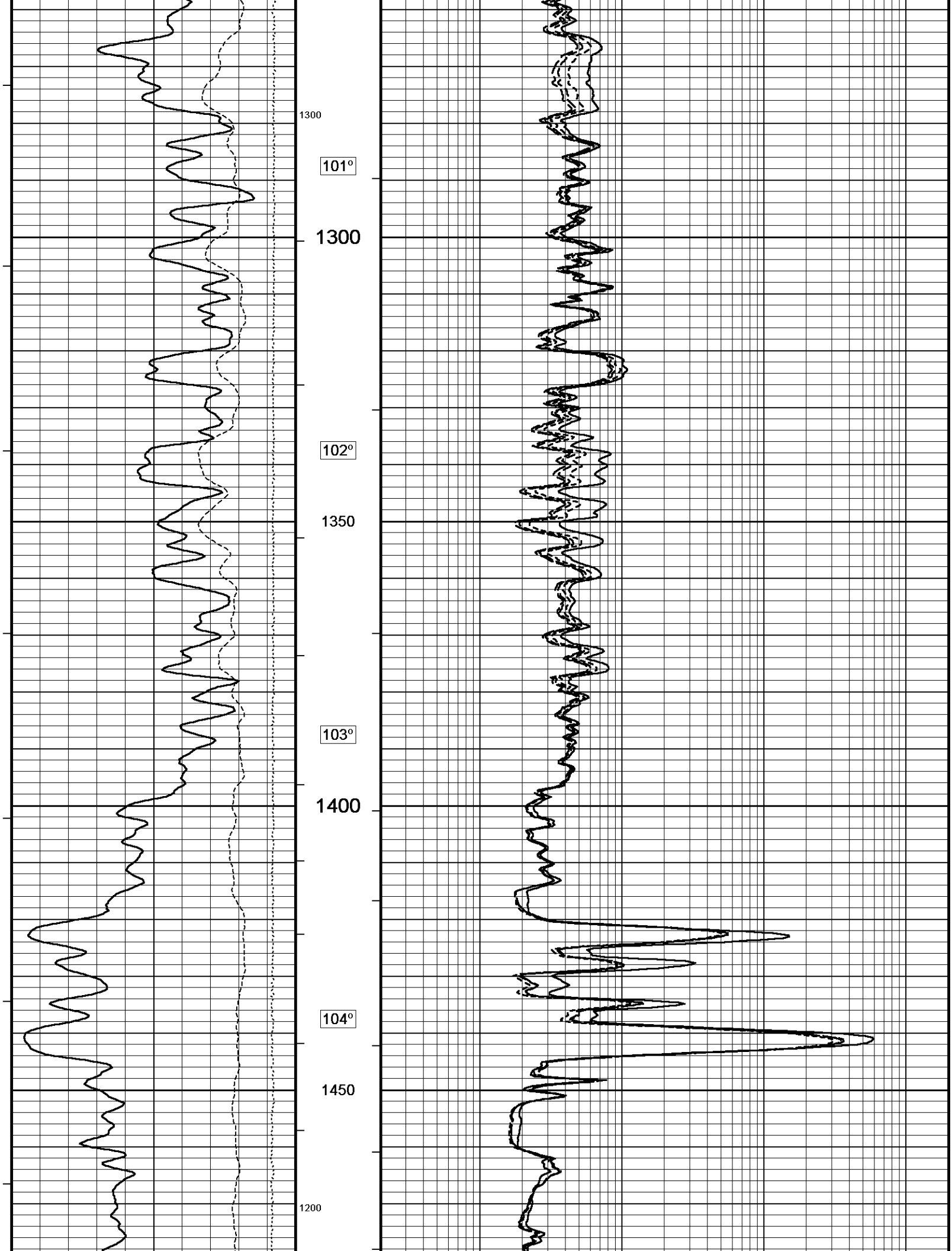


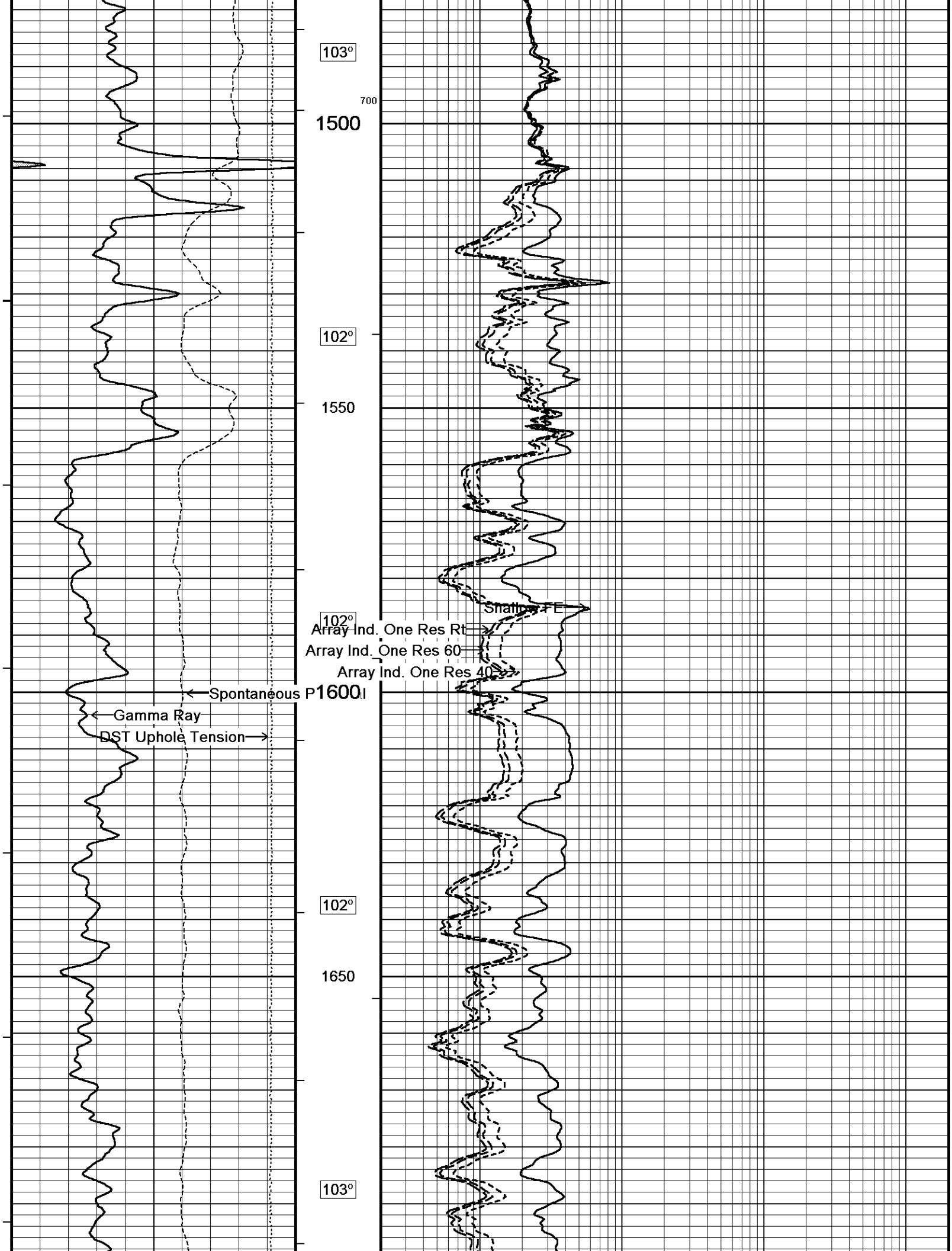

95°
400
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
95°
450
95°
1700
500
96°
550
96°

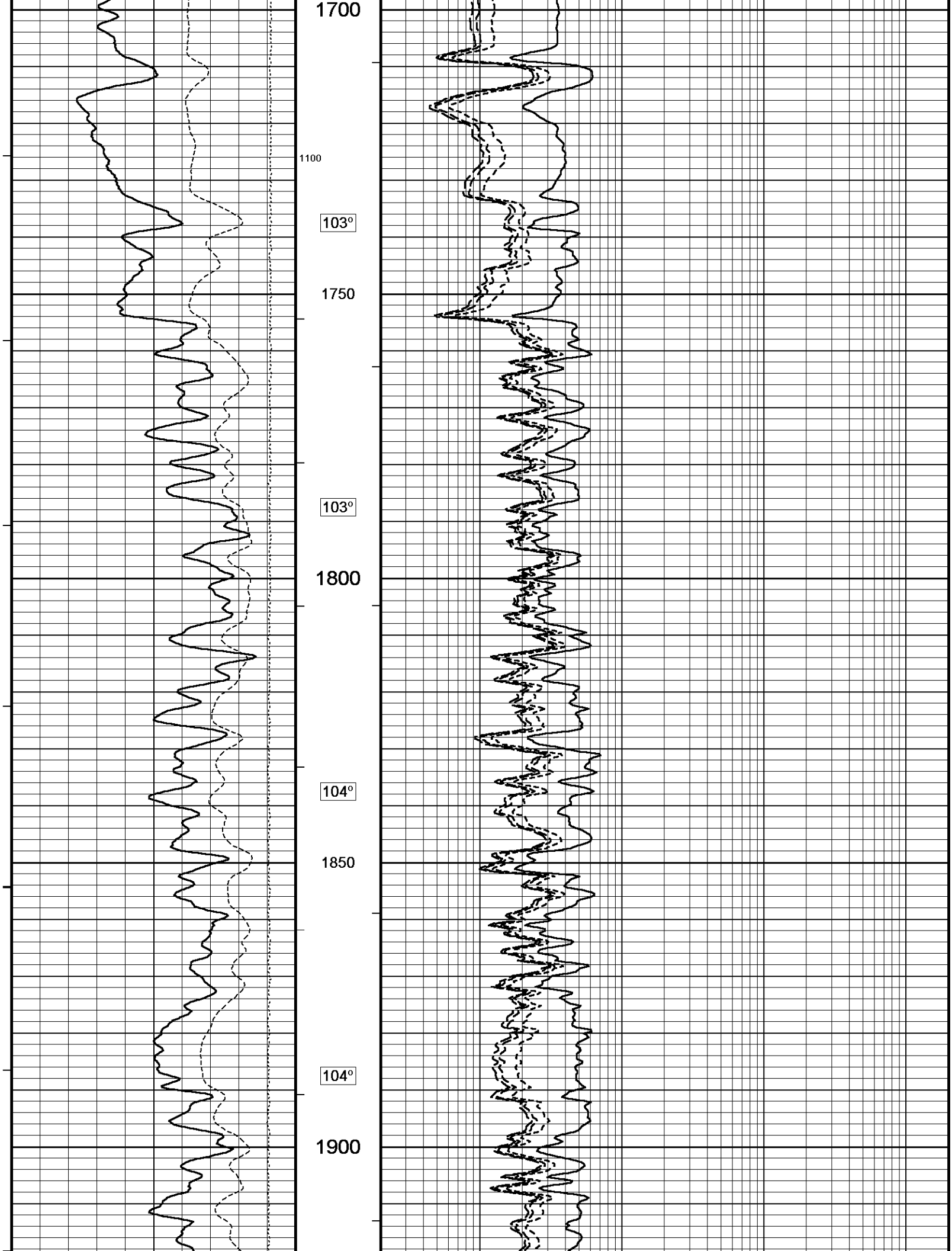

600
97°
650
97°
700
98°
750
1000
1600
100°
800
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray

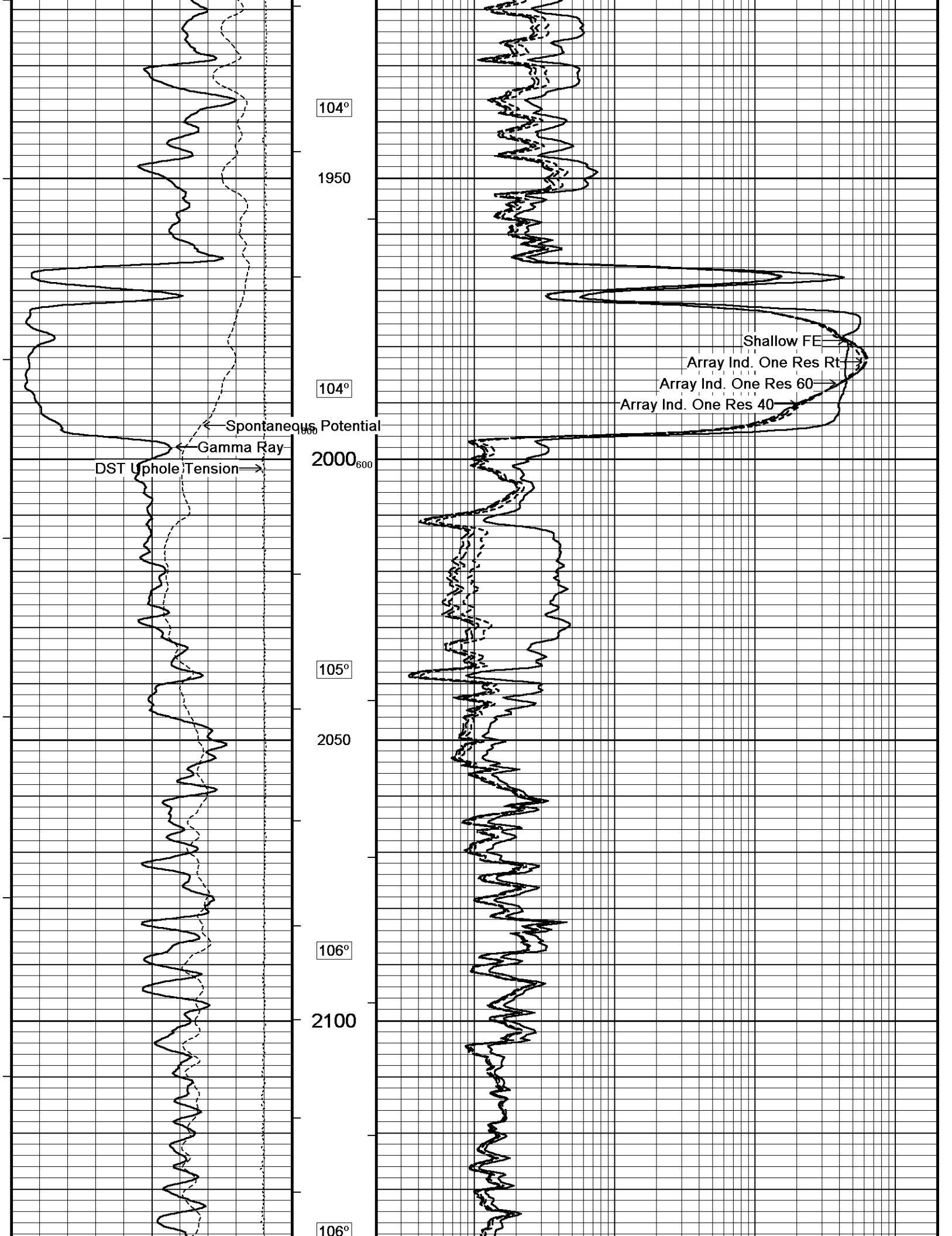

DST Uphole Tension
100°
850
100°
900
1500
100°
950
900
100°
1000
101°

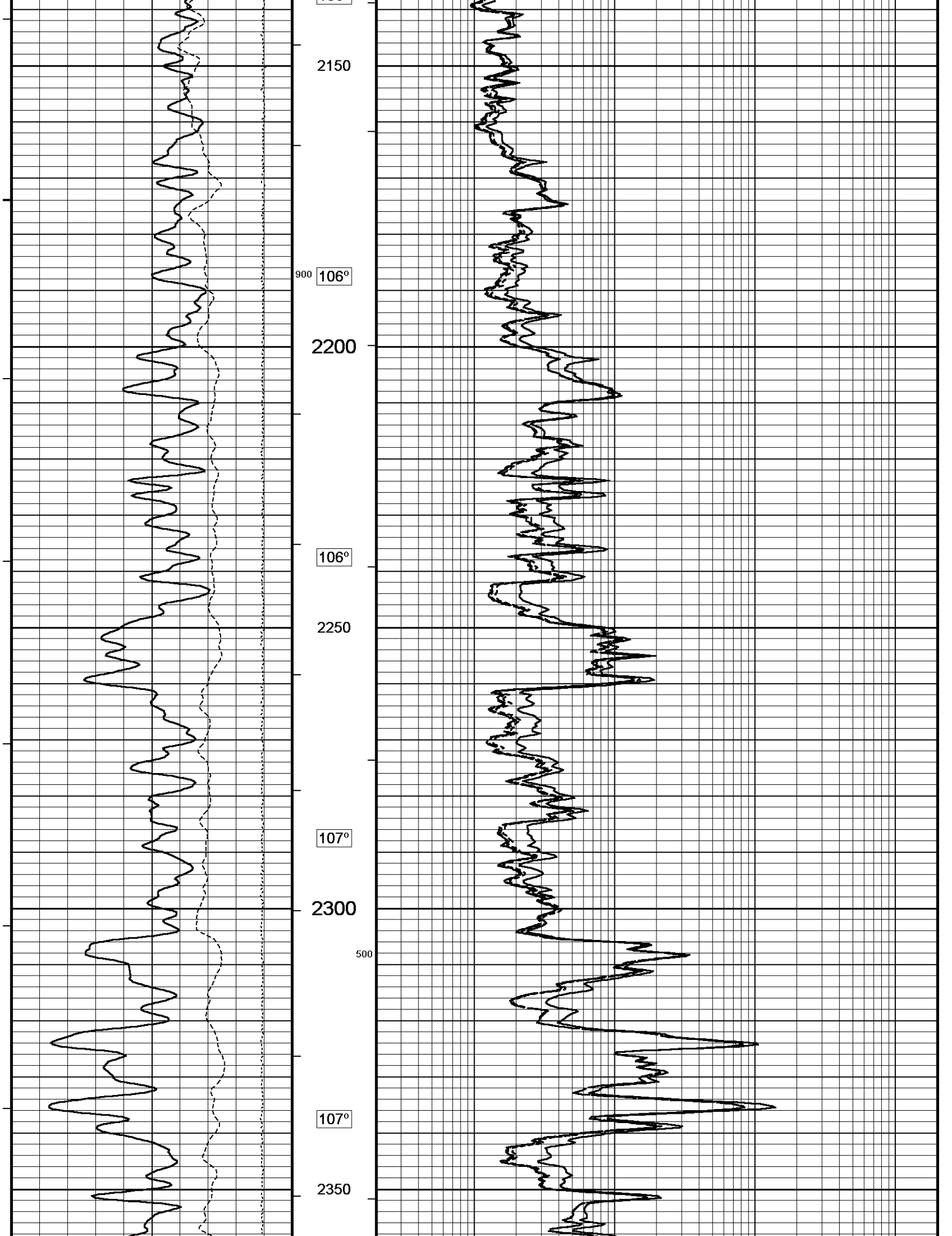

1050
101°
1400
1100
101°
1150
102°
Shallow FE
Array Ind. One Res Rt
1200
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
800
101°
1250

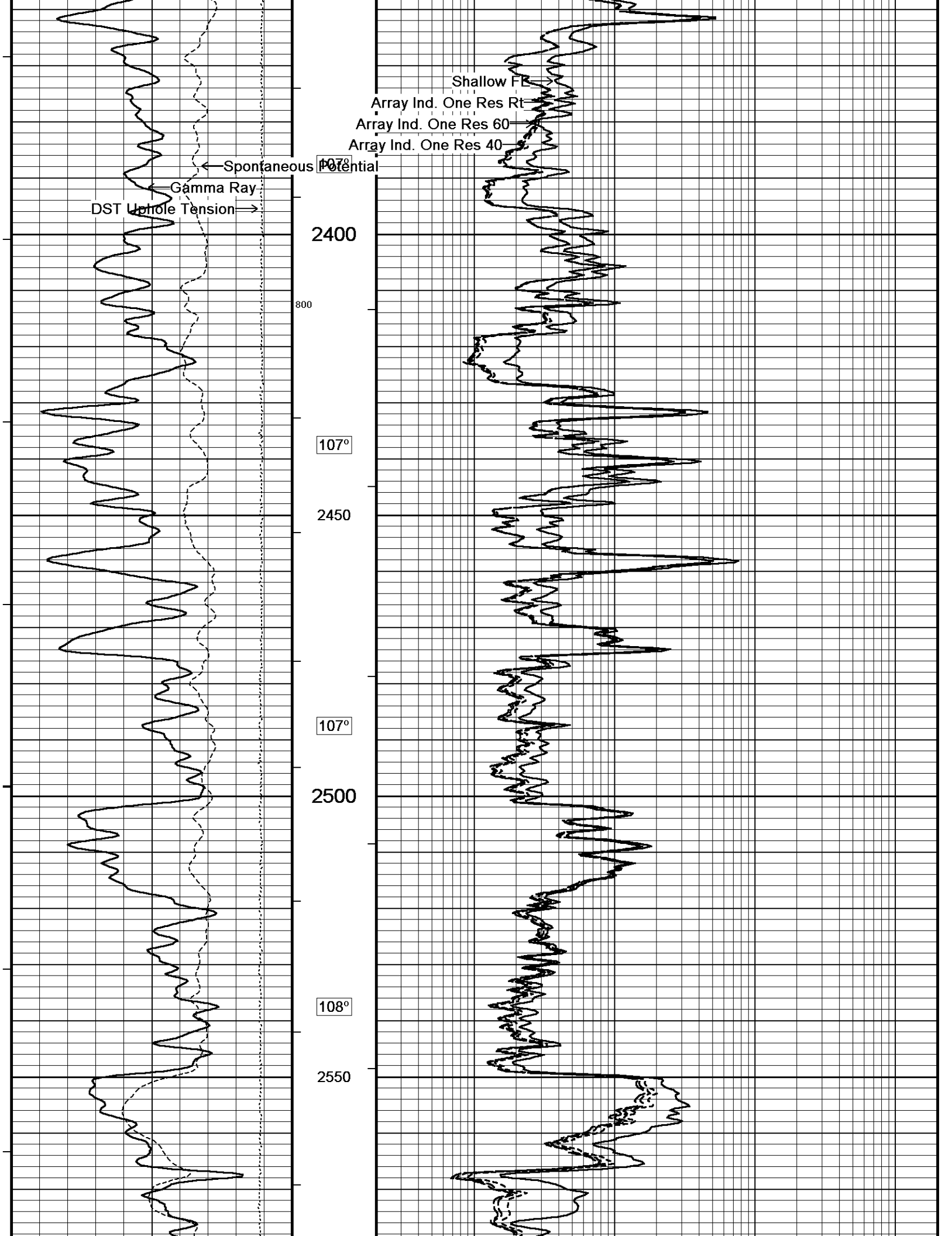

1300
101°
1300
102°
1350
103°
1400
104°
1450
1200

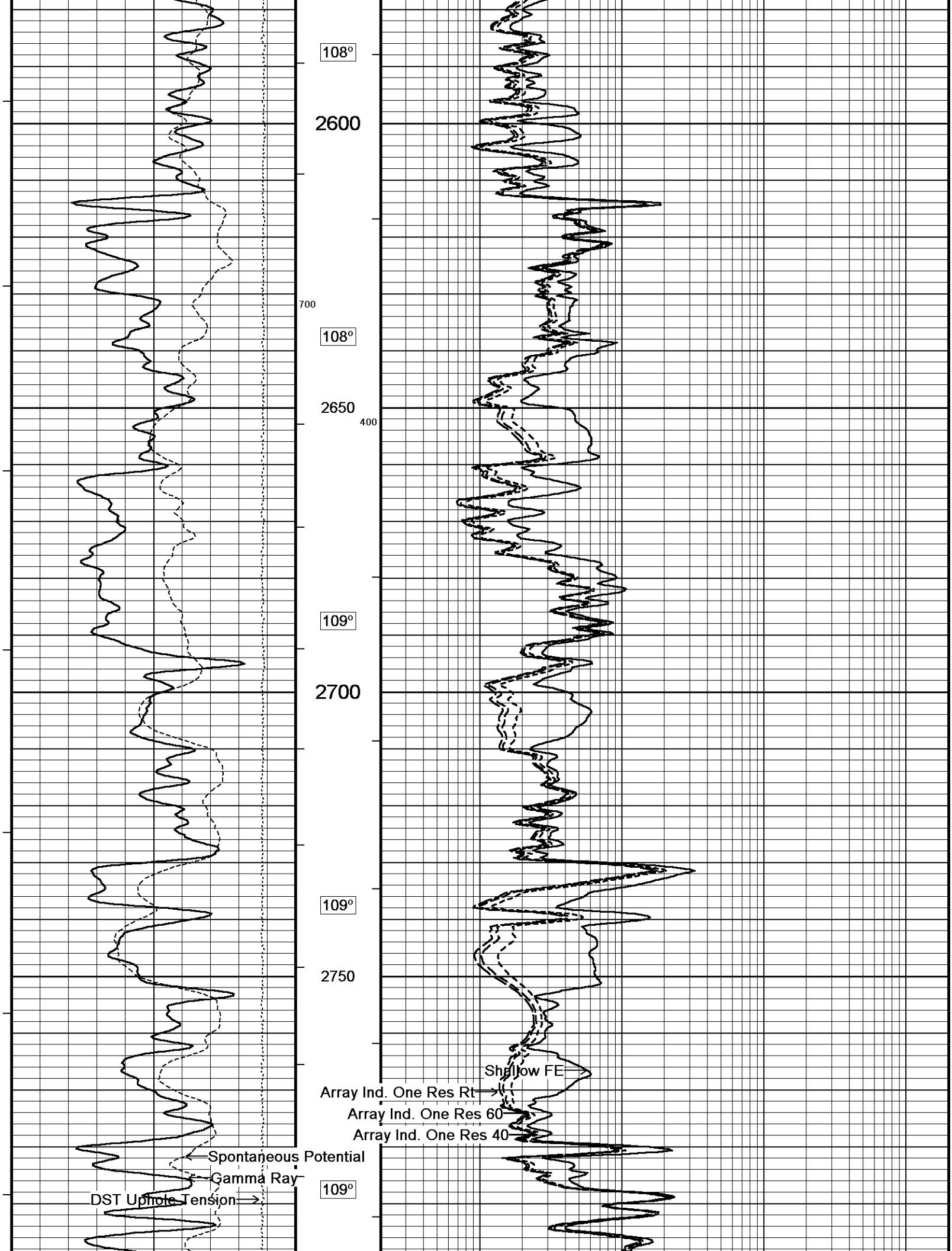

103°
700
1500
102°
1550
102°
Shallow Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous P
1600
Gamma Ray
DST Uphole Tension
102°
1650
103°

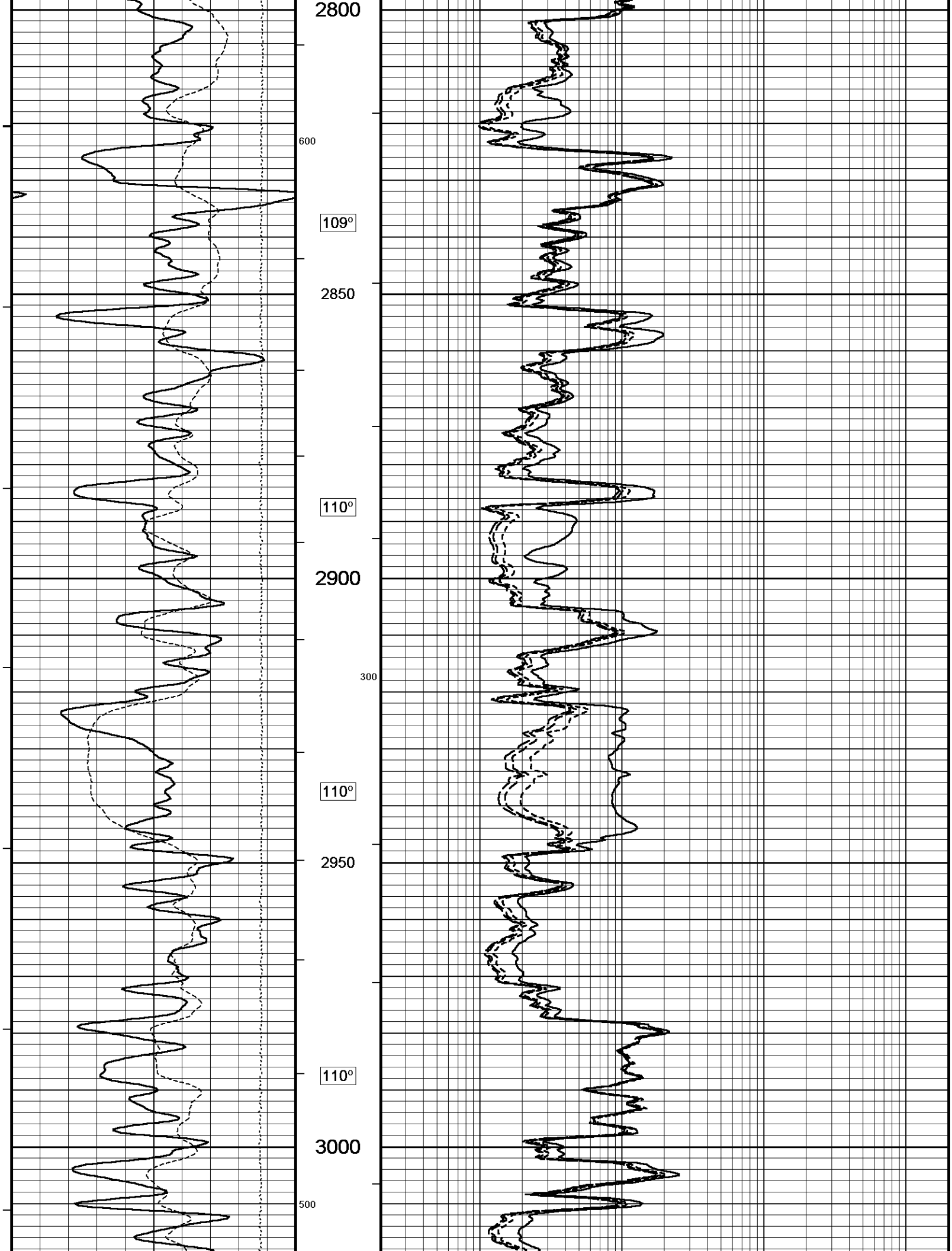

1700
1100
103°
1750
103°
1800
104°
1850
104°
1900

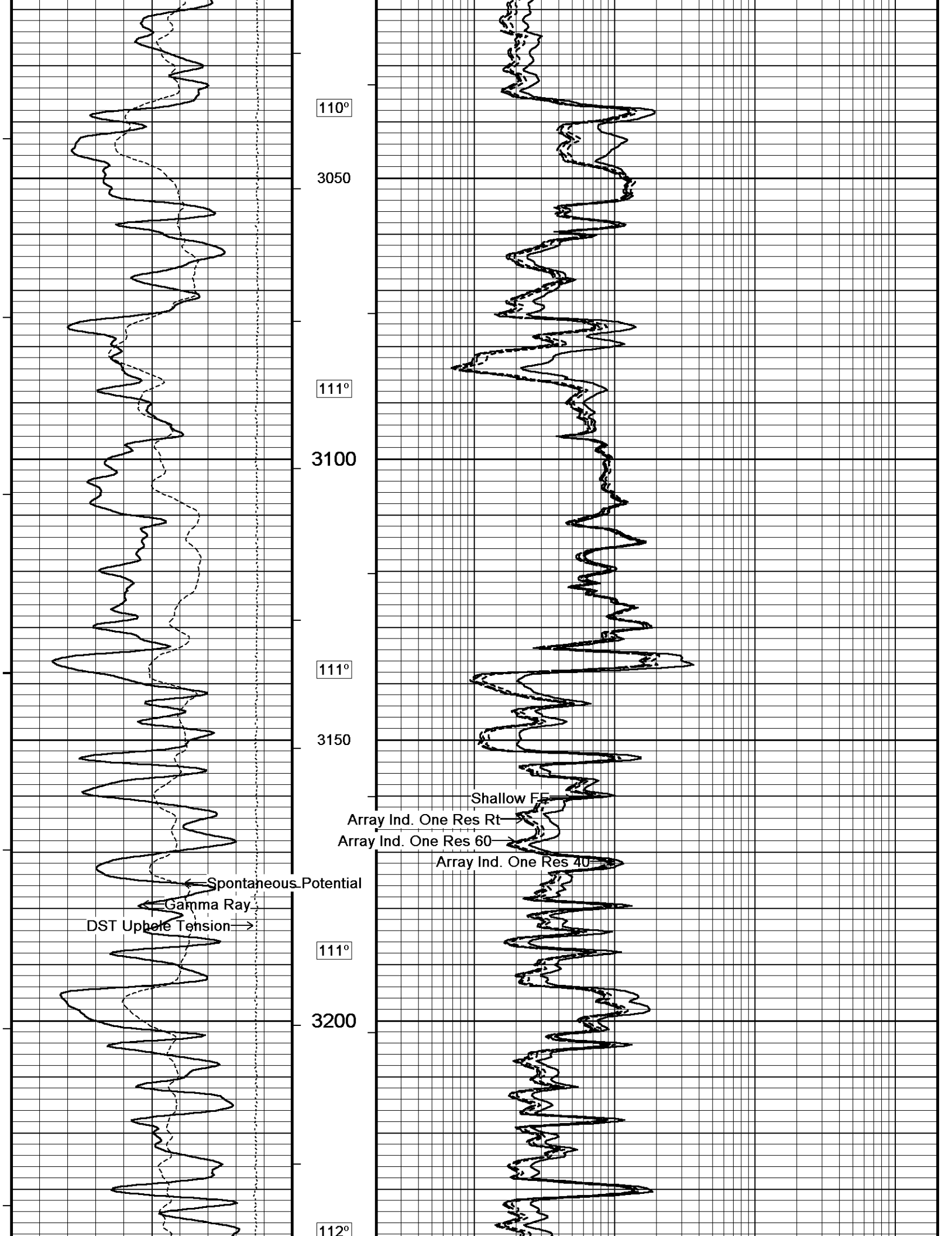

104°
1950
104°
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
2000
105°
2050
106°
2100
106°

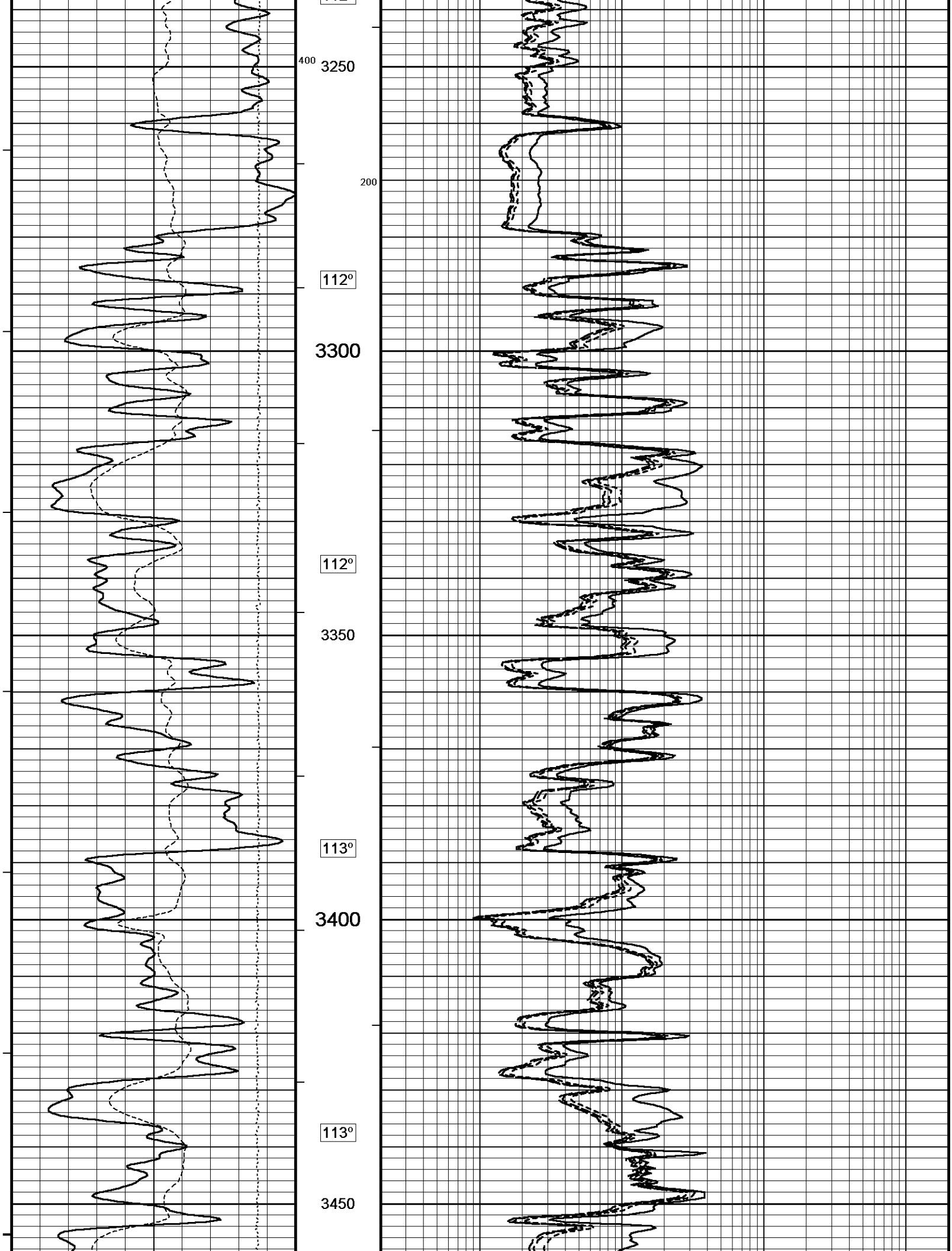

2150
900
106°
2200
106°
2250
107°
2300
500
107°
2350

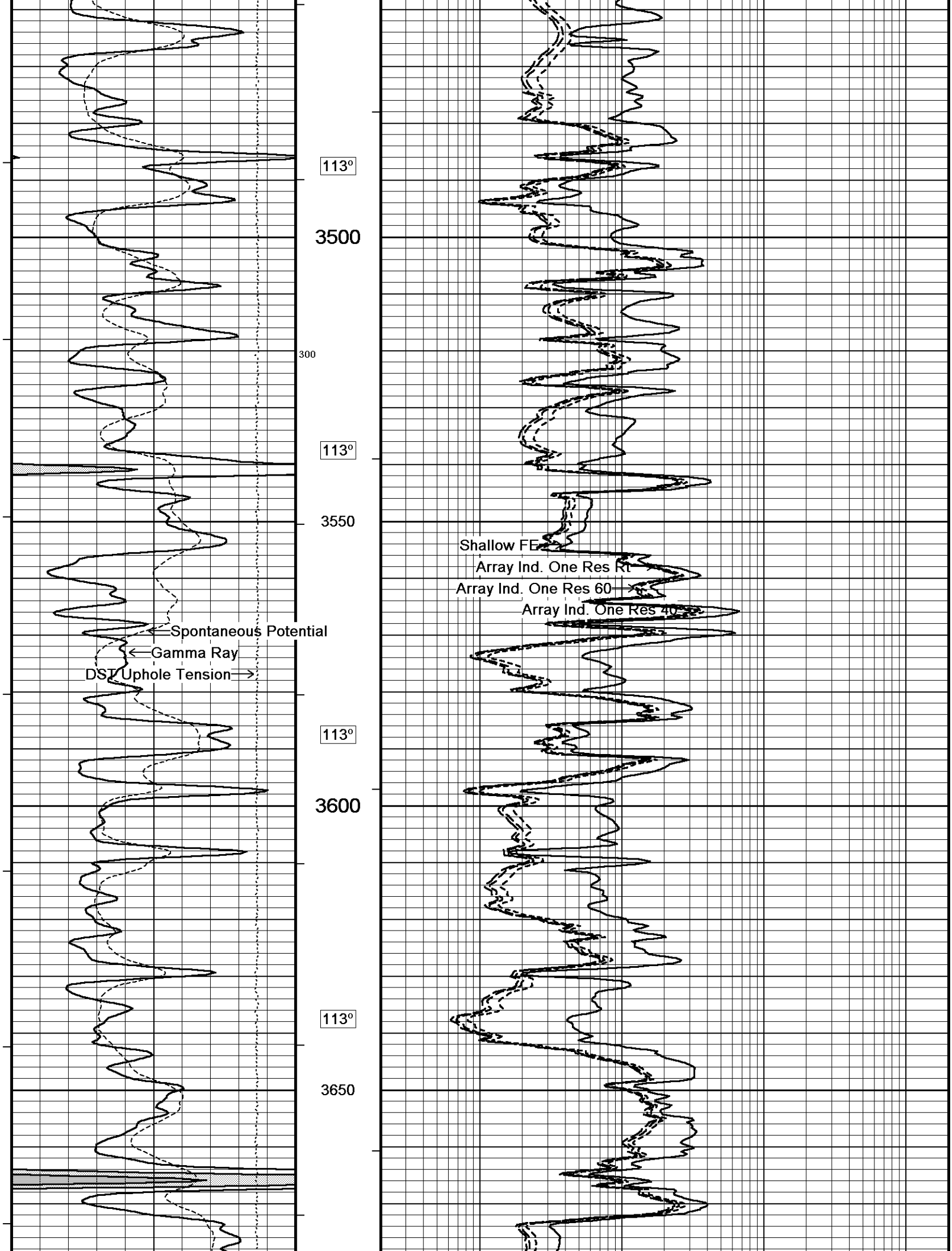

Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
2400
800
107°
2450
107°
2500
108°
2550

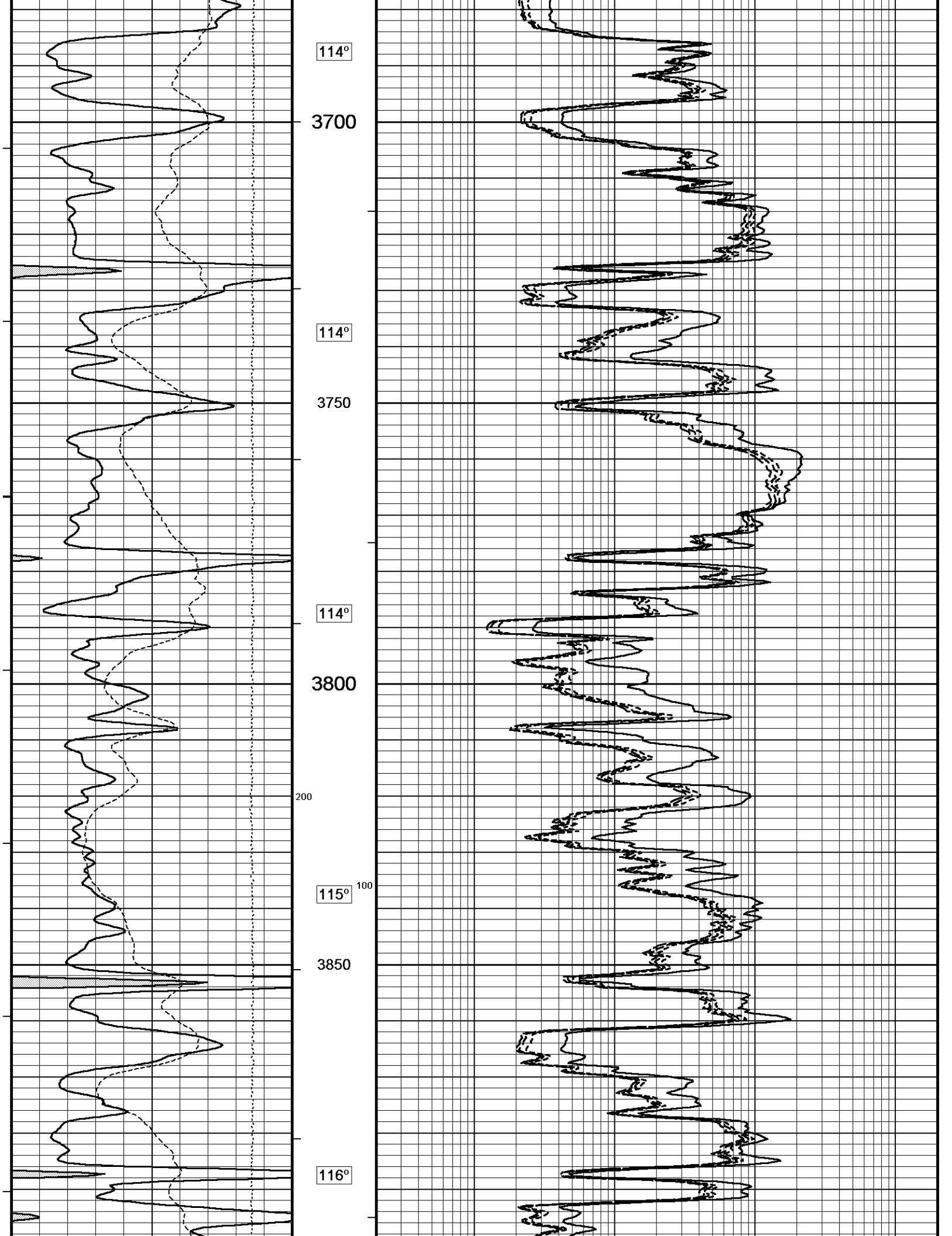

108°
2600
700
108°
2650
400
109°
2700
109°
2750
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
109°
DST Uphole Tension

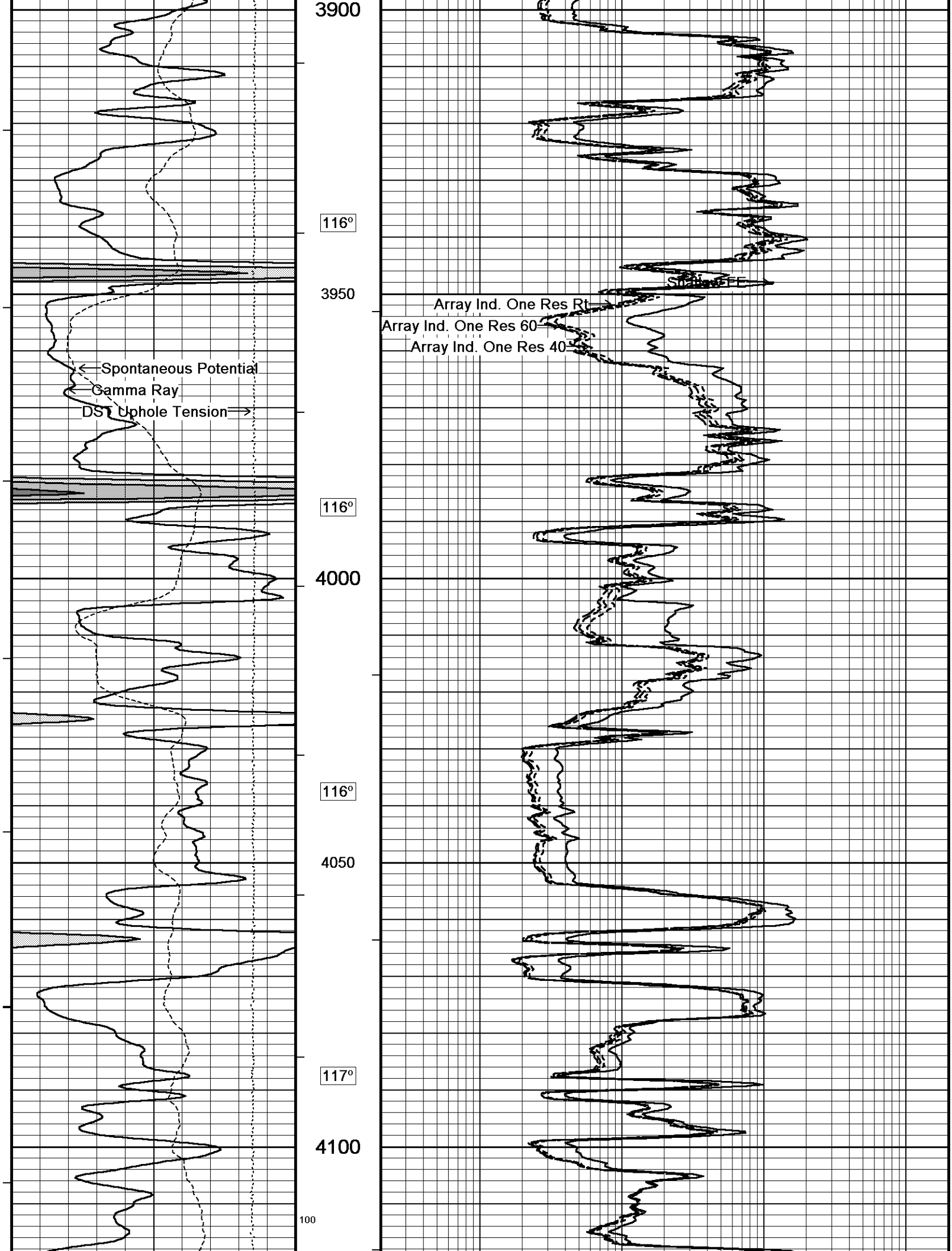

2800
600
109°
2850
110°
2900
300
110°
2950
110°
3000
500

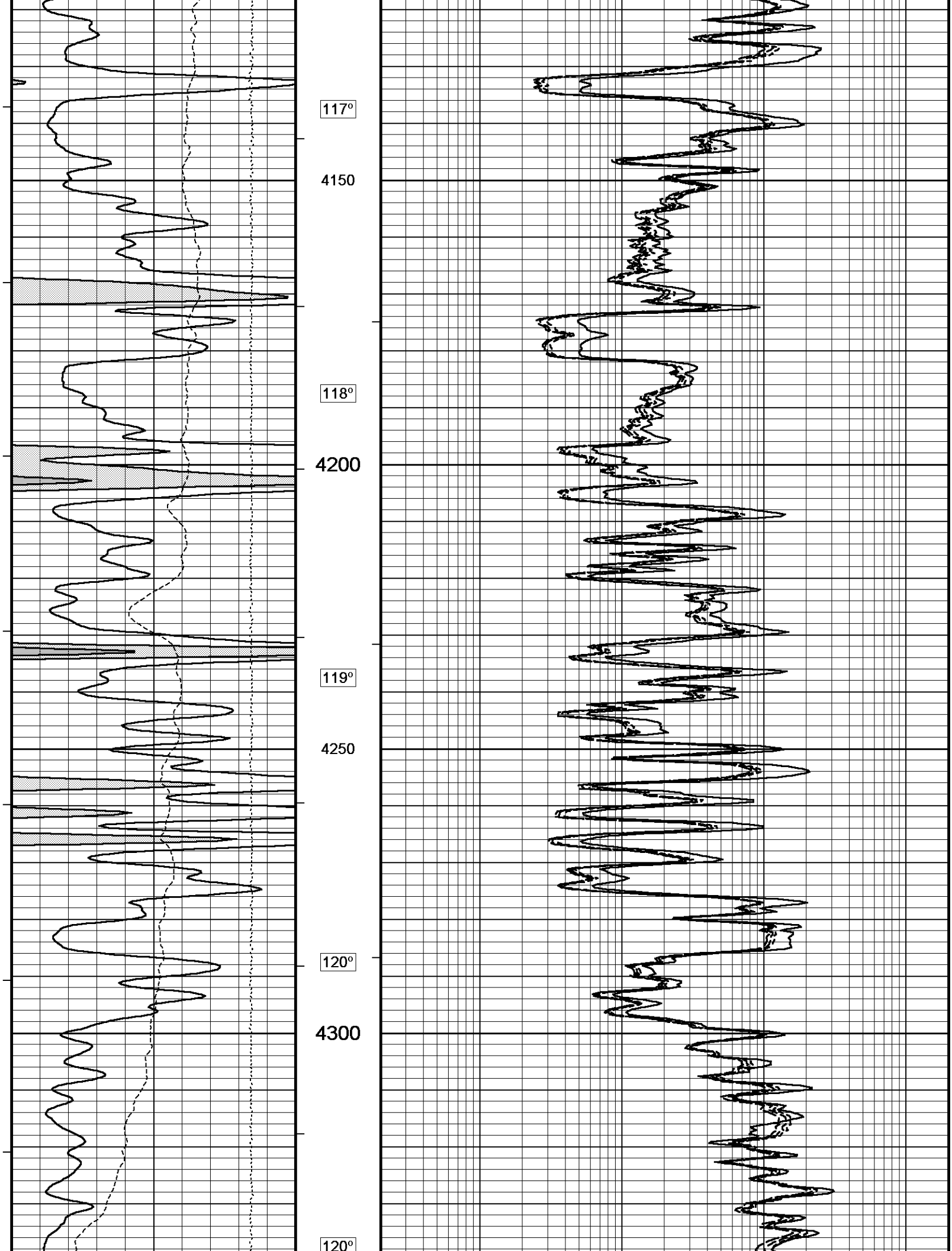

110°
3050
111°
3100
111°
3150
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
3200
112°

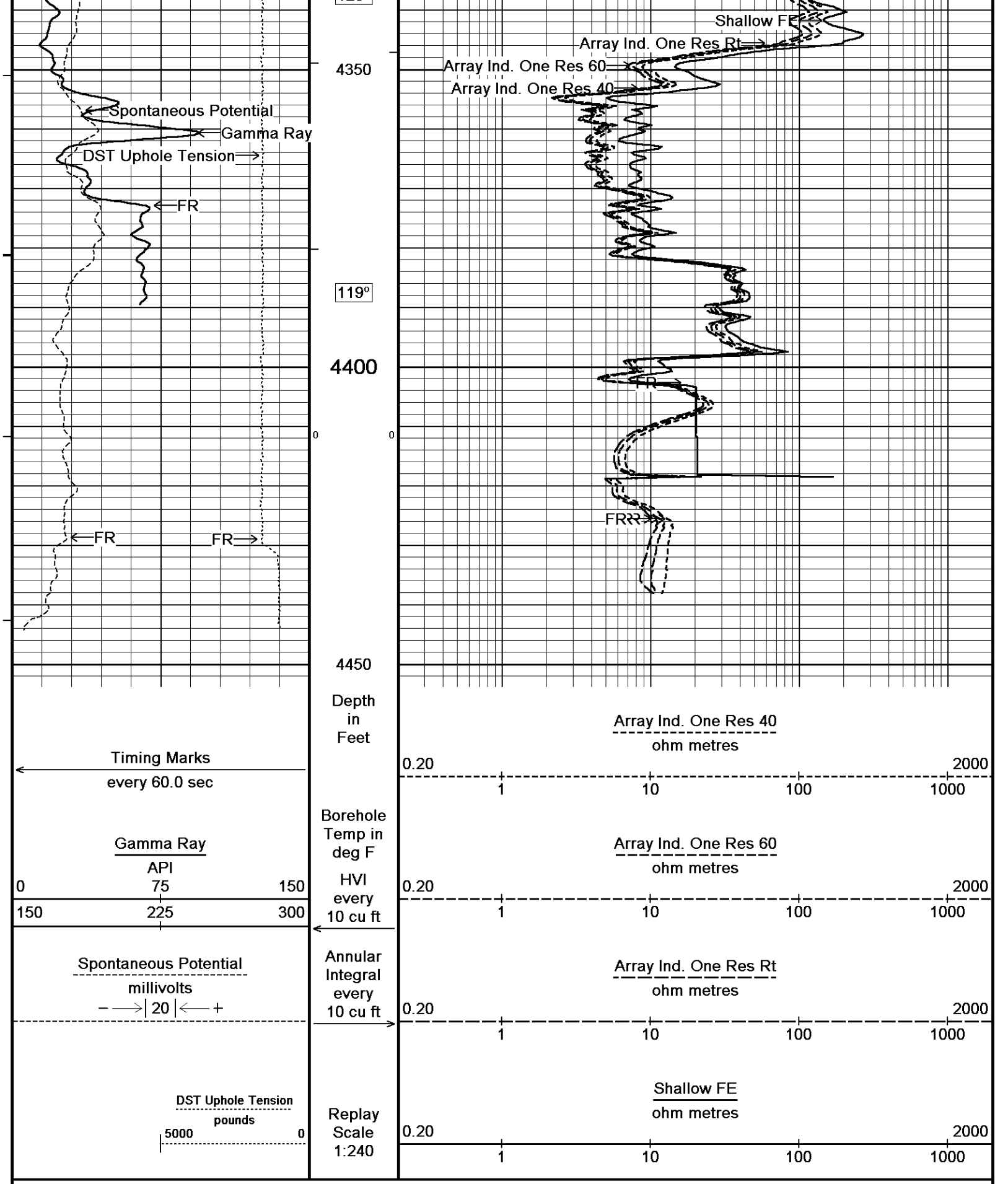

400
3250
200
112°
3300
112°
3350
113°
3400
113°
3450


113°
3500
300
113°
3550
Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
113°
3600
113°
3650


114°
3700
114°
3750
114°
3800
200
115°
100
3850
116°


3900
116°
3950
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spontaneous Potential
Gamma Ray
DST Uphole Tension
116°
4000
116°
4050
117°
4100
100


117°
4150
118°
4200
119°
4250
120°
4300
120°



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAY-2014 03:55
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_002.dta
Recorded on 07-MAY-2014 00:37
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAY-2014 03:55
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_001.dta
Recorded on 07-MAY-2014 00:20
System Versions: Logged 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
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

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

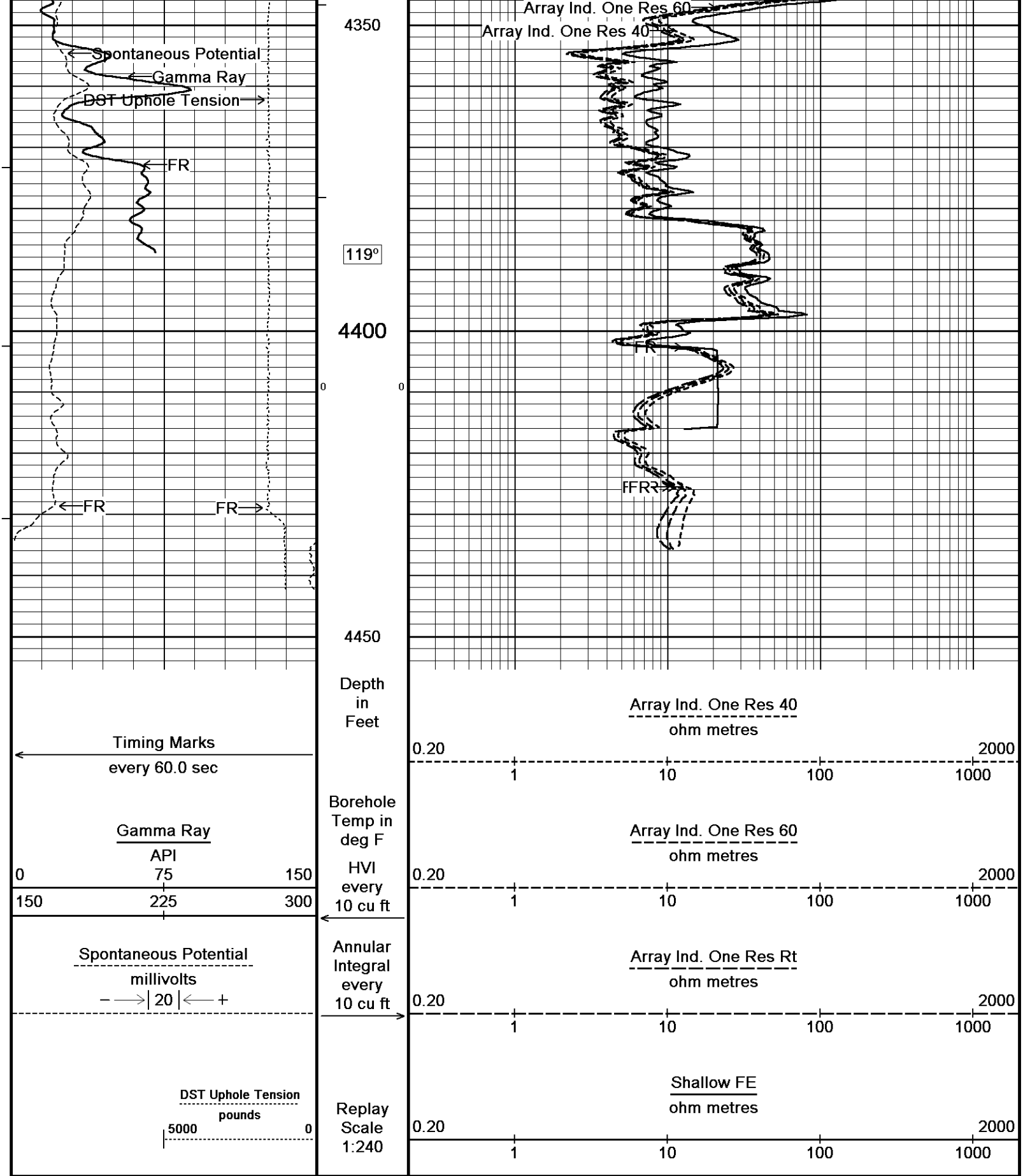
Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

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

4228
4250
119°
4300
120°

Shallow FE
Array Ind. One Res Rt



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-MAY-2014 03:55
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine...\K3 Oil Catherine Coberly Unit 30-14_001.dta
Recorded on 07-MAY-2014 00:20
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Logs\K3 Oil Catherine Coberly Unit 30-14\K3 Oil Catherine Coberly Unit 30-14_002.dta

General Constants All 000

Last Edited on 06-MAY-2014,23:59

General Parameters		
Mud Resistivity	0.710	ohm-metres
Mud Resistivity Temperature	95.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 06-MAY-2014 23:40

Reading No	Measured	Calibrated (lbs)
1	15071.71	0.00
2	15879.48	481.00

Gamma Calibration MCG-C 150

Field Calibration on 06-MAY-2014 18:51

	Measured	Calibrated (API)
Background	68	46
Calibrator (Gross)	1139	771
Calibrator (Net)	1071	725

Gamma Constants MCG-C 150

Last Edited on 06-MAY-2014,22:46

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	%

SP Calibration MCG-C 150

Field Calibration on 10-MAR-2014 13:42

	Measured	Calibrated (mV)
Reference 1	99.9	99.0
Reference 2	-97.7	-98.8

High Resolution Temperature Calibration MCG-C 150

Field Calibration on 08-MAR-2014,10:59

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

High Resolution Temperature Constants MCG-C 150

Last Edited on 06-MAY-2014,18:36

Pre-filter Length	11

Caliper Calibration MMR-C.A 248

Base Calibration on 24-MAR-2014 11:12
Field Calibration on 06-MAY-2014 18:35

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13253	5.96
2	16528	7.97
3	19726	9.95
4	23473	11.91
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.04	7.97

Micro Normal and Micro Inverse Calibration MMR-C.A 248

Base Calibration on 24-MAR-2014 11:03
Field Check on 06-MAY-2014 18:36

Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	10.1	49.8	5.1	25.6
Micro Inverse	9.9	49.5	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	93.6	93.6
Micro Inverse	62.2	62.2

Micro Normal and Micro Inverse Constants MMR-C.A 248

Last Edited on 23-JAN-2014,17:04

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	0.5110	
Micro Inverse K Factor	0.3380	
Standoff Offset	0.0000	inches

Neutron Calibration MDN-B.J 387

Base Calibration on 21-JAN-2014 13:56
Field Check on 06-MAY-2014 18:56

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	2848	86	3714	110
Ratio	32.942		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1737	2564
Ratio	0.677	

Field Check	Calibrated (cps)	
	1757	2605
Ratio	0.675	

Neutron Constants MDN-B.J 387

Last Edited on 06-MAY-2014,22:46

Neutron Source Id	P58125B	
Neutron Jig Number	5824NE	
Epithermal Neutron		
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 24-MAR-2014 10:21
Field Check on 06-MAY-2014 18:26

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	951.2	126.8
Base Check		281.7
Field Check		281.5

FE Constants MFE-A.A 55

Last Edited on 06-MAY-2014,22:45

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

Sonic Constants MSS-A.A 73

Last Edited on 06-MAY-2014,22:45

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A

Peak Amplitude Source N/A

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing N/A

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A
N/A	N/A	N/A	
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Induction Calibration MAI-A.A 5

Base Calibration on 21-JAN-2014,09:50
Field Check on 06-MAY-2014 18:24

Base Calibration

Test Loop Calibration	Measured	Calibrated (mmho/m)

Channel	Low	High	Low	High
1	16.3	470.8	9.3	966.2
2	5.6	376.1	7.6	821.4
3	2.6	266.1	5.2	566.0
4	1.6	130.0	2.6	279.2

Array Temperature 71.1 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			16.2	3863.5
2			32.1	3590.5
3			30.0	2971.0
4			20.9	2126.0
Deep			18.6	1912.1
Medium			43.2	3860.5
Shallow			47.7	5372.0

Array Temperature 90.1 Deg F

Induction Constants MAI-A.A 5

Last Edited on 06-MAY-2014,22:45

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	

High Resolution Temperature Calibration MAI-A.A 5

Field Calibration on 21-JAN-2014,15:43

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

High Resolution Temperature Constants MAI-A.A 5

Last Edited on 04-APR-2014,15:47

Pre-filter Length	11

Caliper Calibration MPD-D.A 480

Base Calibration on 02-APR-2014 14:28
Field Calibration on 06-MAY-2014 18:28

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17565	3.99
2	27501	5.98
3	37544	7.97
4	47406	9.86
5	58484	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

Photo Density Calibration MPD-D.A 480

Base Calibration on 02-APR-2014 14:48
Field Check on 06-MAY-2014 18:33

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Background	1280	1474		
Reference 1	56490	26296	59556	30836
Reference 2	23070	2655	24941	2541

Field Check at Base

1280.1	1473.9

Field Check

1278.5	1472.7

PE Calibration

Base Calibration	WS	Measured WH	Measured Ratio	Calibrated Ratio
Background	244	1141		
Reference 1	23700	56281	0.425	0.371
Reference 2	6865	22924	0.304	0.272

Field Check at Base

243.9	1141.4

Field Check

241.3	1140.2

Density Constants MPD-D.A 480

Last Edited on 06-MAY-2014,22:46

Density Source Id	P50557B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	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 (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Logs\K3 Oil Catherine Coberly Unit 30-14\K3 Oil Catherine Coberly Unit 30-14_002.dta

CBH-C, Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 150 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-C.A 248 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-D.A 480 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-A.A 73 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 5 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 63.70 ft Weight: 480.6 lb

56.02 ft	GRGC - Gamma Ray
53.11 ft	CGXT - MCG External Temperature
45.76 ft	MINV - MMR MicroLog Inverse
45.76 ft	MNRL - MMR MicroLog Normal
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	CLDC - Density Caliper
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
12.96 ft	DT35 - 3-5' Compensated Sonic
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
3.34 ft	RTAO - Array Ind. One Res Rt
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	K3 OIL & GAS OPERATING COMPANY
WELL	CATHERINE COBERLY UNIT 30-14
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2550.00	feet	First Reading	4426.00	feet
Elevation Drill Floor	2548.00	feet	Depth Driller	4425.00	feet
Elevation Ground Level	2542.00	feet	Depth Logger	4429.00	feet

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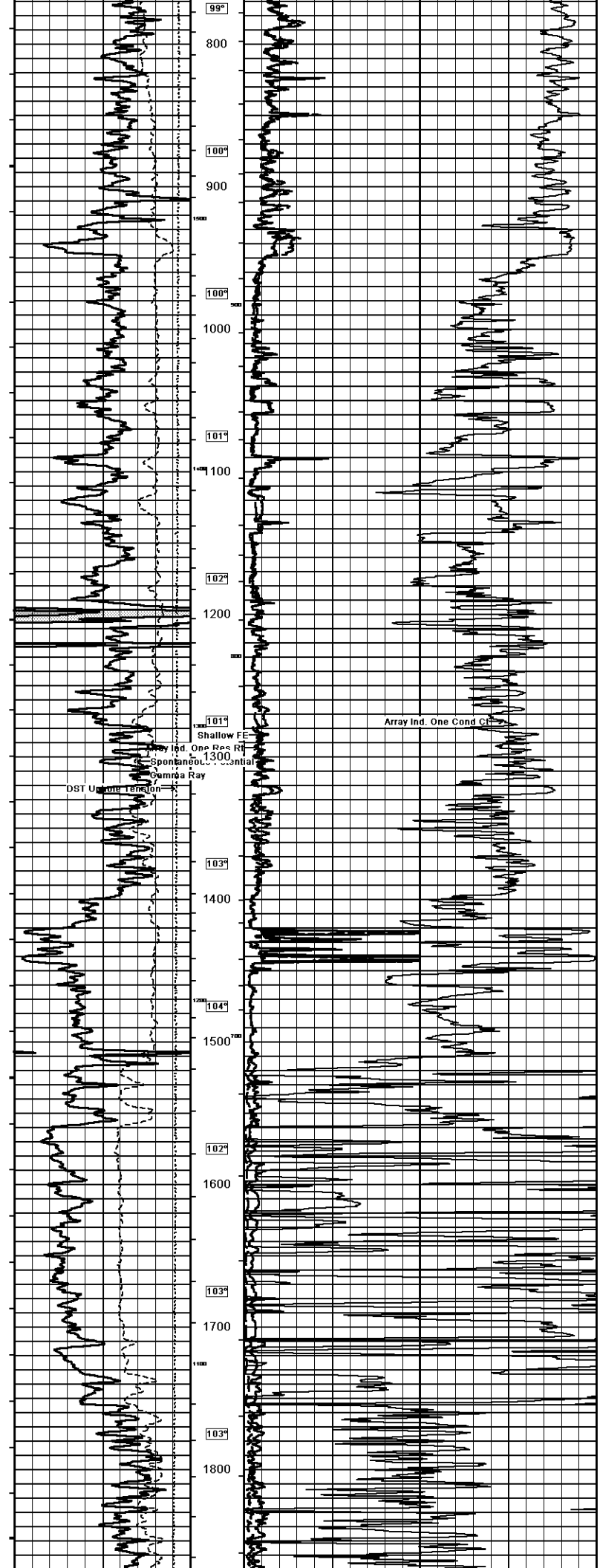
COMPANY	K3 OIL & GAS OPERATING COMPANY
WELL	CATHERINE COBERLY UNIT 30-14
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1209' FSL & 2495' FWL
SEC 30 TWP 15S RGE 28W	Other Services: MPD,MMDN, MSS
Latitude	
Longitude	
API Number	15-063-22187
Permanent Datum: GL Elevation 2542 feet	Elevations: KB 2550.00 feet, DF 2548.00, GL 2542.00
Log Measured From: KB	
Drilling Measured From: KB	
Date	06-MAY-2014
Run Number	ONE
Service Order	4556-86610112
Depth Driller	4425.00 feet
Depth Logger	4428.00 feet
First Reading	4426.00 feet
Last Reading	263.00 feet
Casing Driller	268.00 feet
Casing Logger	263.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density/Viscosity	9.20 lb/USg 54.00 CP
PH/Fluid Loss	9.50 8.80 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	0.71 @ 95.0 ohmm-m
Rmf @ Measured Temp	0.57 @ 95.0 ohmm-m
Rmc @ Measured Temp	0.85 @ 95.0 ohmm-m
Source Rmf/Rmc	CALC CALC
Rm @ BHT	0.56 @ 120.0 ohmm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	120.00 deg F
Equipment / Base	13244 LIB
Recorded By	ADAM SILL
Witnessed By	PAT DEENIHAN
JOB #	LB14-139

1 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 07-MAY-2014 03:55
Filename: C:\Minimus 13.08.2113\Logs\K3 Oil Catherine Co...\K3 Oil Catherine Coberly Unit 30-14_002.dta — Recorded on 07-MAY-2014 00:37
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113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102°
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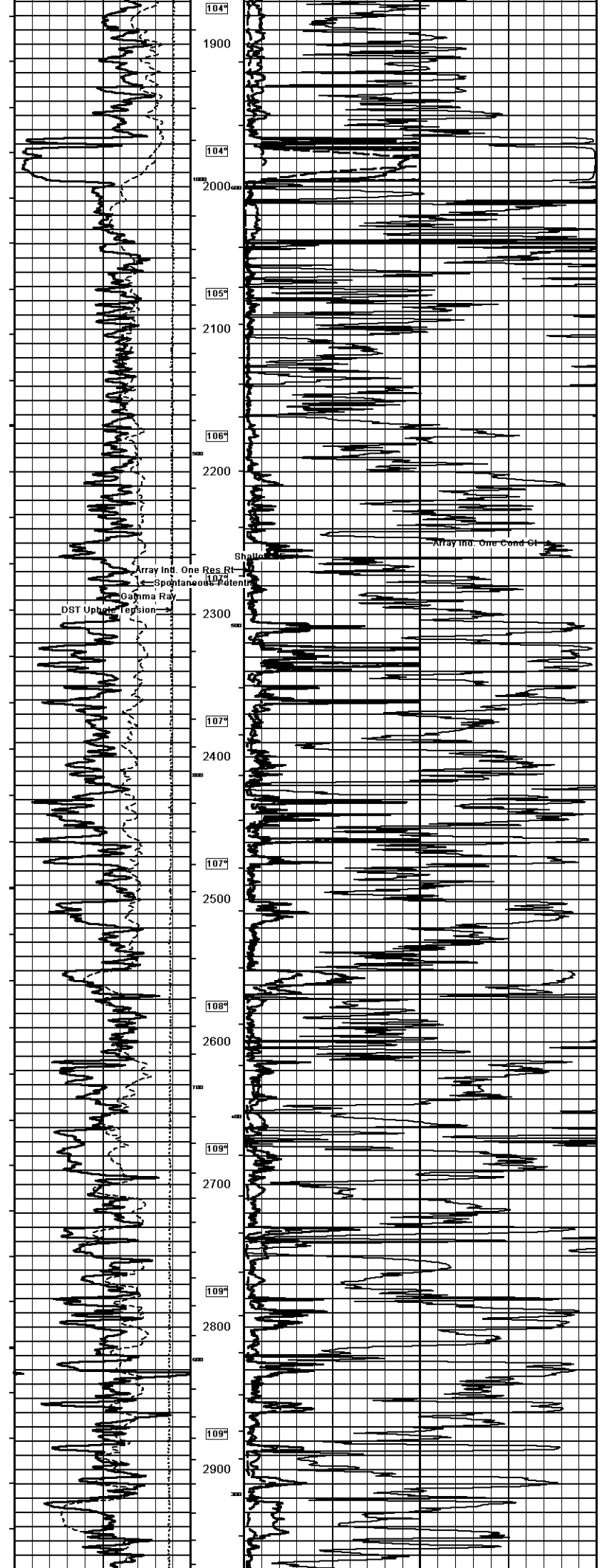
Shallow FE
Array Ind. One Rec RI
Spontaneous Potential
Gamma Ray
1300
DST Uphole Tension
Array Ind. One Cond Cl
103°
1400
104°
1500
102°
1600
103°
1700
103°
1800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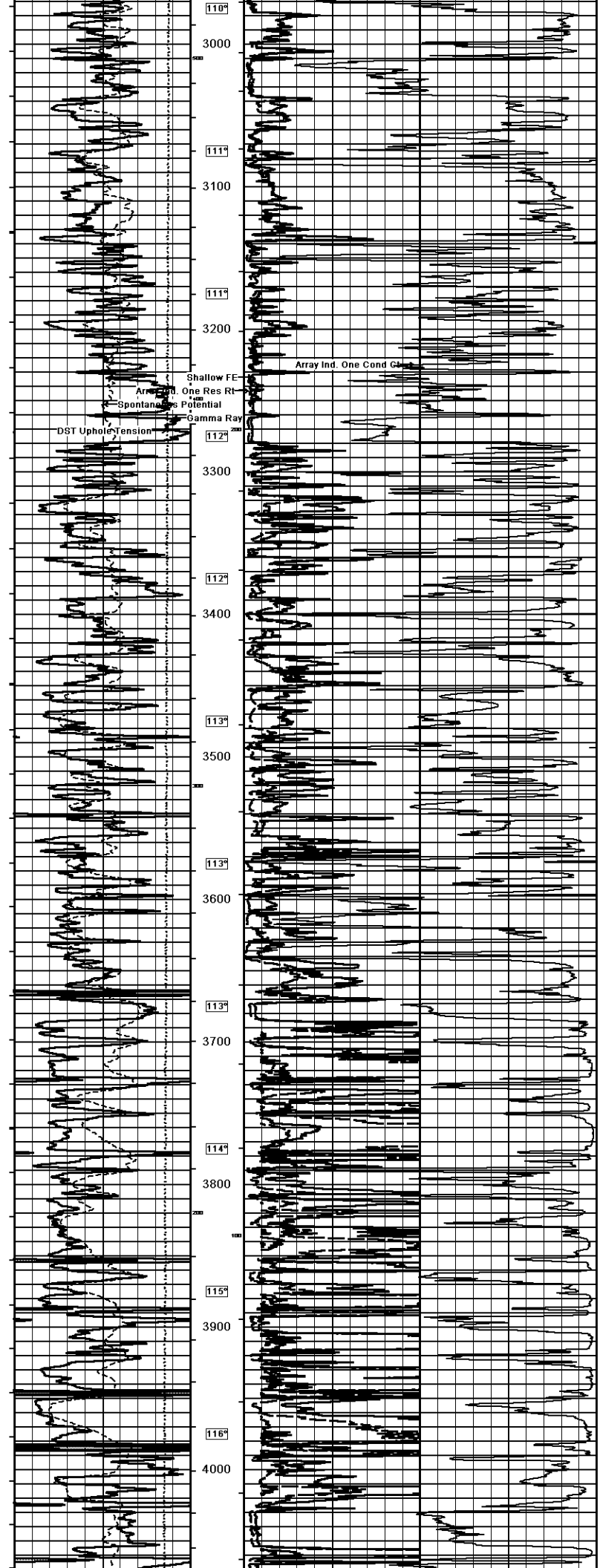
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3000
111°
3100
111°
3200
Array Ind. One Cond Gl
Shallow FE
Array Ind. One Res Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
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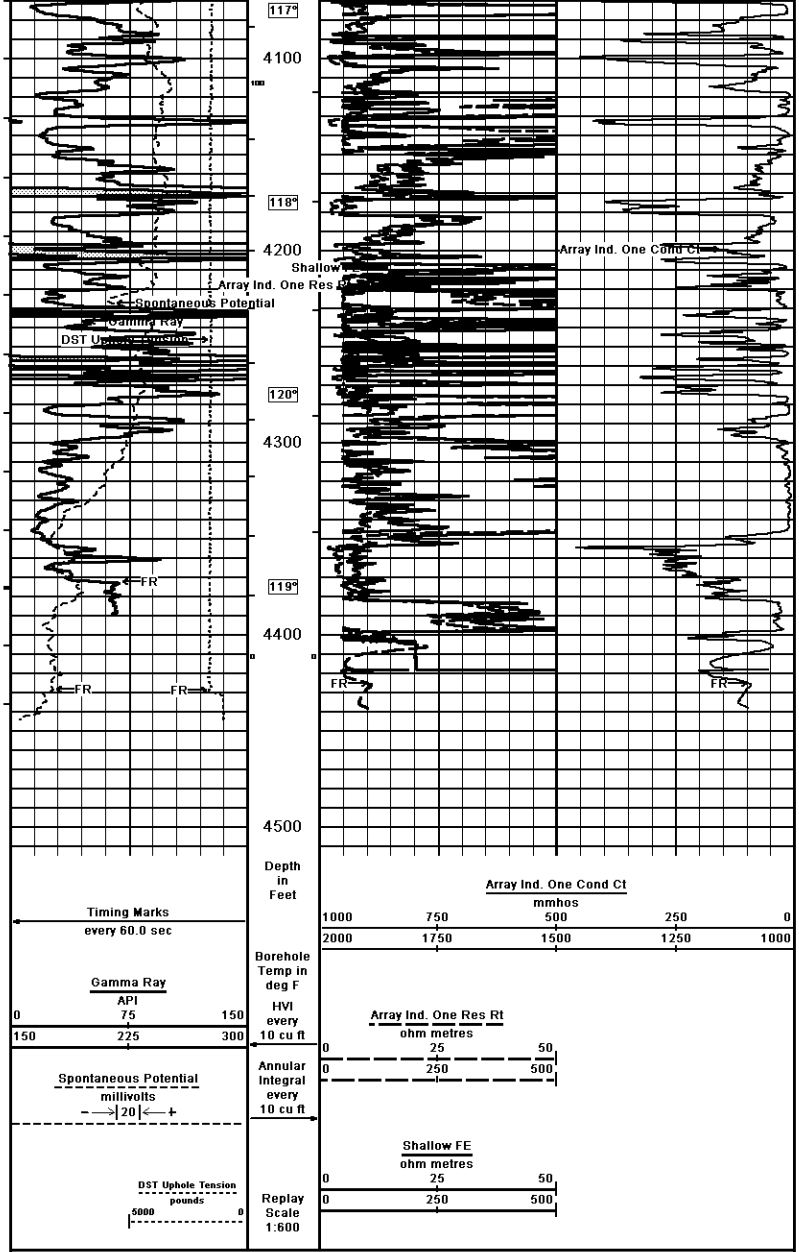
116°
4000



COMPANY	K3 OIL & GAS OPERATING COMPANY
WELL	CATHERINE COBERLY UNIT 30-14
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
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