ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

Weatherford

COMPANY	OXY USA, INC.
WELL	ELIZABETH A. COX #6
FIELD	VICTORY
PROVINCE/COUNTY	HASKELL
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2080' FSL & 1230' FEL

40 Years of Wireline 1970 2010

SEC	TWP	RGE
8	30S	33W

API Number 15-081-21943
Permit Number

Other Services
MDN/MPD
MML
MSS

Permanent Datum G.L., Elevation 2968 feet
Log Measured From K.B. @ 11 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	2979.00
DF	2977.00
GL	2968.00

Date	05-JUL-2011		
Run Number	ONE		
Depth Driller	5560.00 feet		
Depth Logger	5566.00 feet		
First Reading	5563.00 feet		
Last Reading	0.00 feet		
Casing Driller	1815.00 feet		
Casing Logger	1818.00 feet		
Bit Size	8.750 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.10 lb/USg	41.00 CP	
PH / Fluid Loss	10.40	7.60 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.37 @ 84.0 ohm-m		
Rmf @ Measured Temp	1.10 @ 84.0 ohm-m		
Rmc @ Measured Temp	1.64 @ 84.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.84 @139.0 ohm-m		
Time Since Circulation	5 HOURS		
Max Recorded Temp	140.00 deg F		
Equipment Name	COMPACT		
Equipment / Base	13057	LIB	
Recorded By	A. GIAMBALVO		
Witnessed By	AUSTIN GARNER	BILL KEMP	
S.O. / JOB #	3531101	LB11-154	

BOREHOLE RECORD

Last Edited: 05-JUL-2011 19:05

Bit Size inches	Depth From feet	Depth To feet
8.750	1818.00	5566.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1818.00	36.00

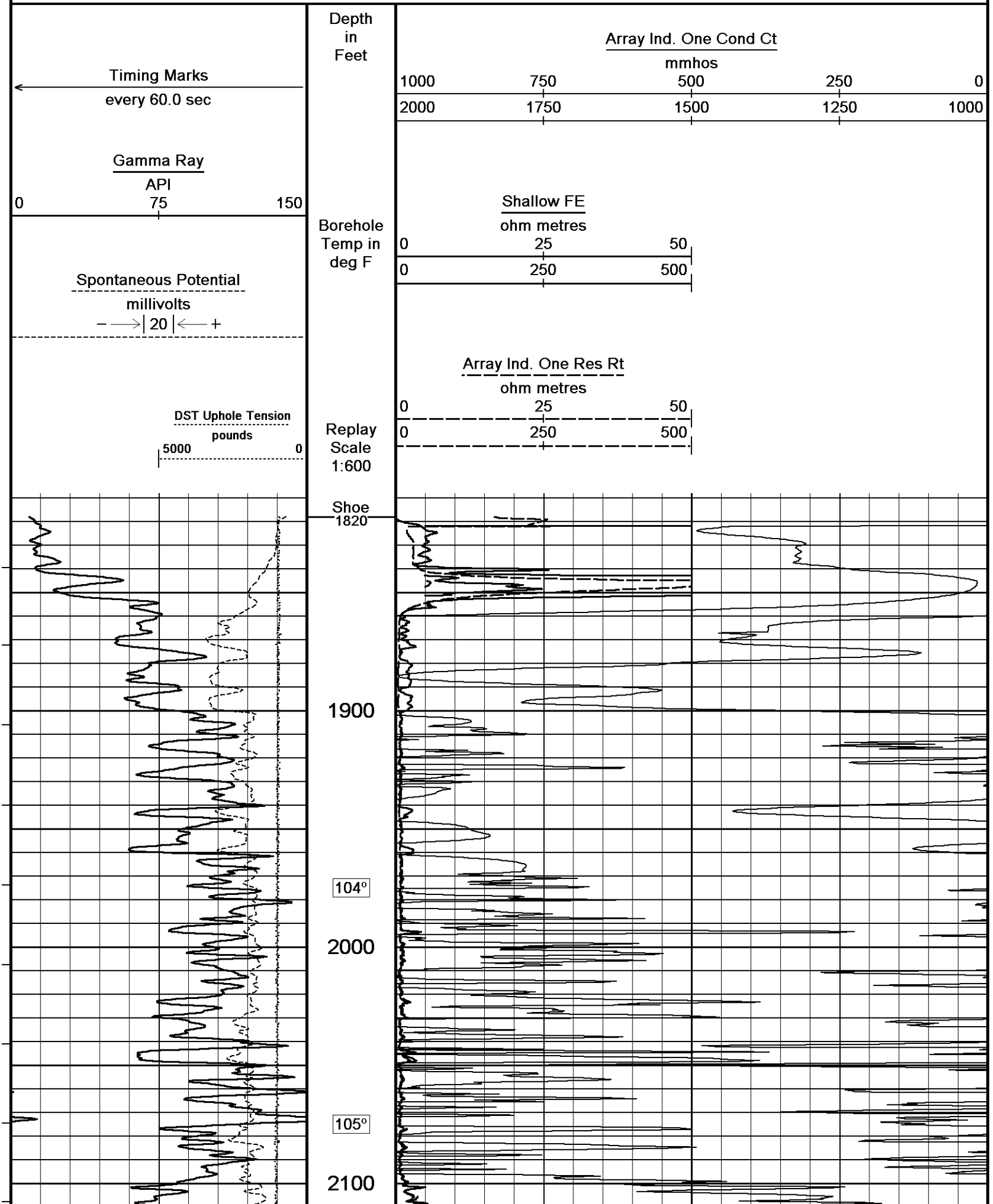
REMARKS

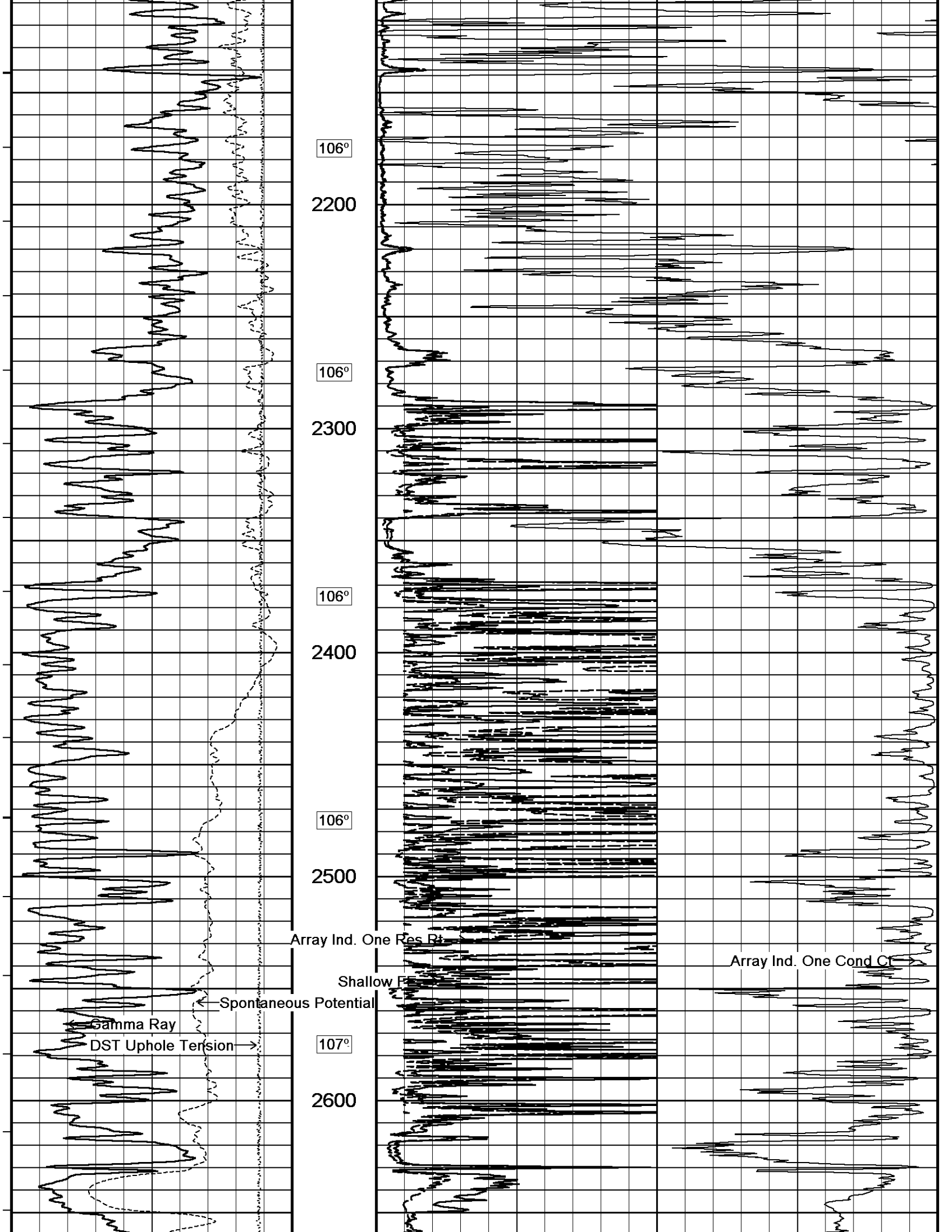
Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI, MSS.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
All intervals logged and scaled per customer's request.
Annular volume with 7 inch production casing from TD to 3500 = 305 cu. ft.
Service order #3531101
Rig: Trinidad Drilling #202
Engineer: A. Giambalvo
Operator(s): B. Reeves

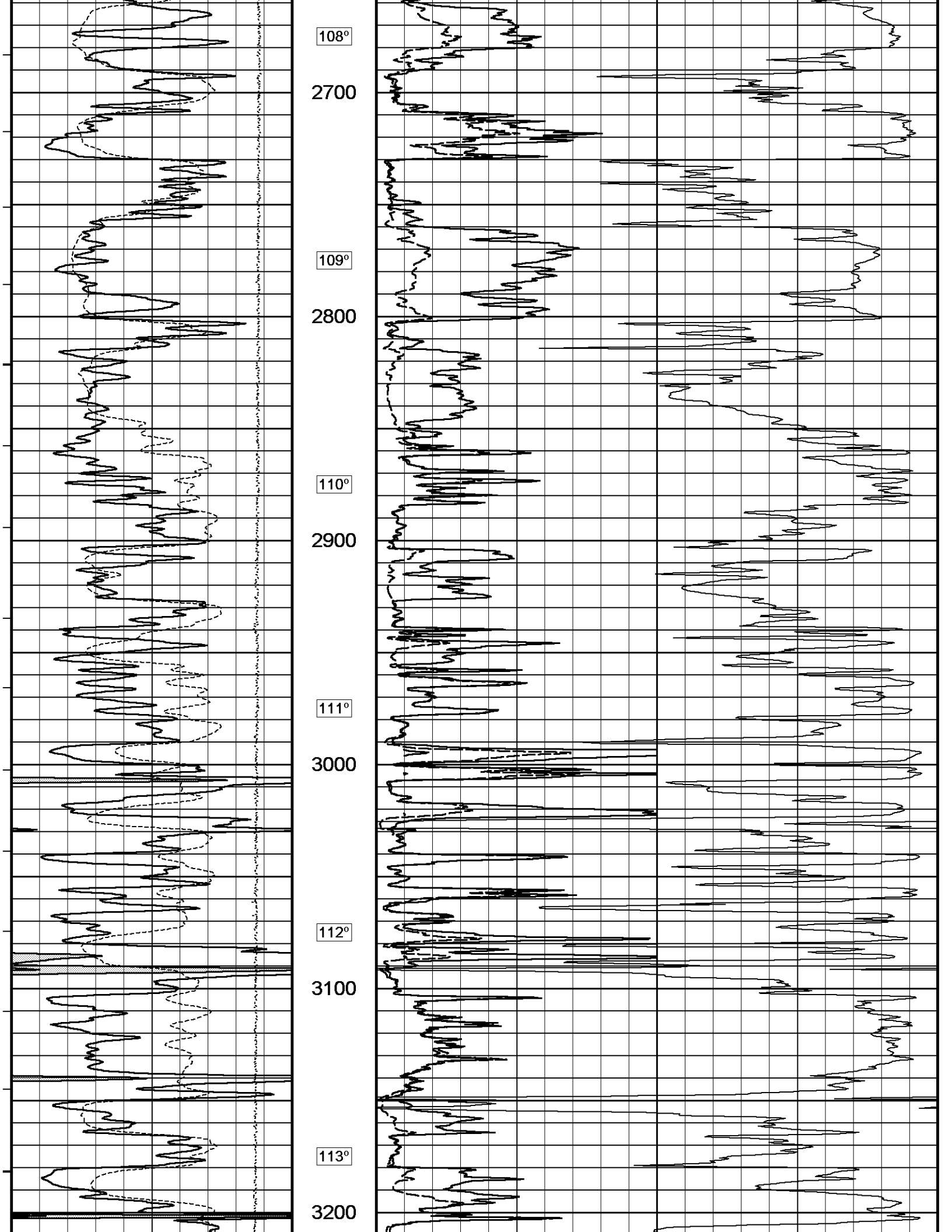
2 INCH MAIN PASS

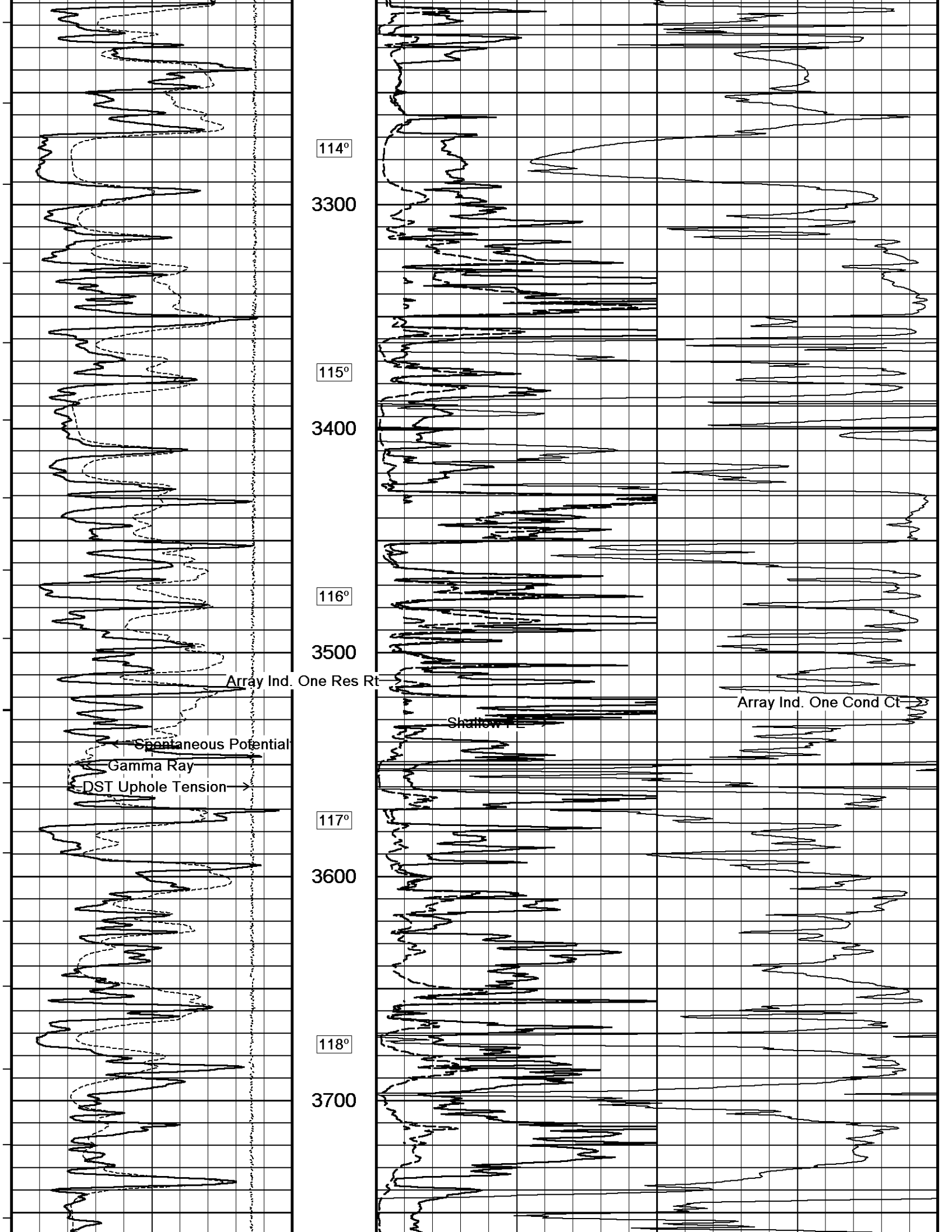
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

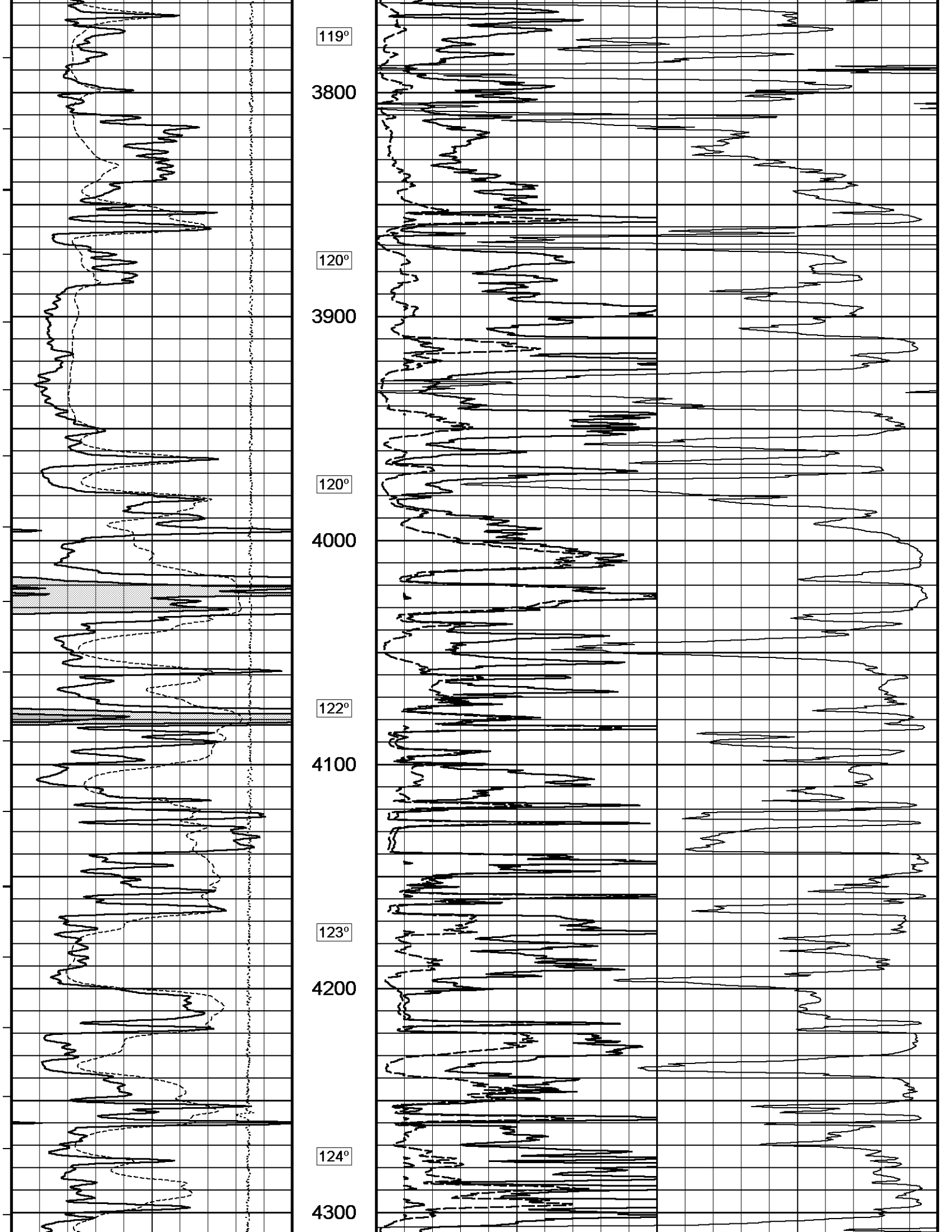
Plotted on 05-JUL-2011 19:16
Recorded on 05-JUL-2011 16:55

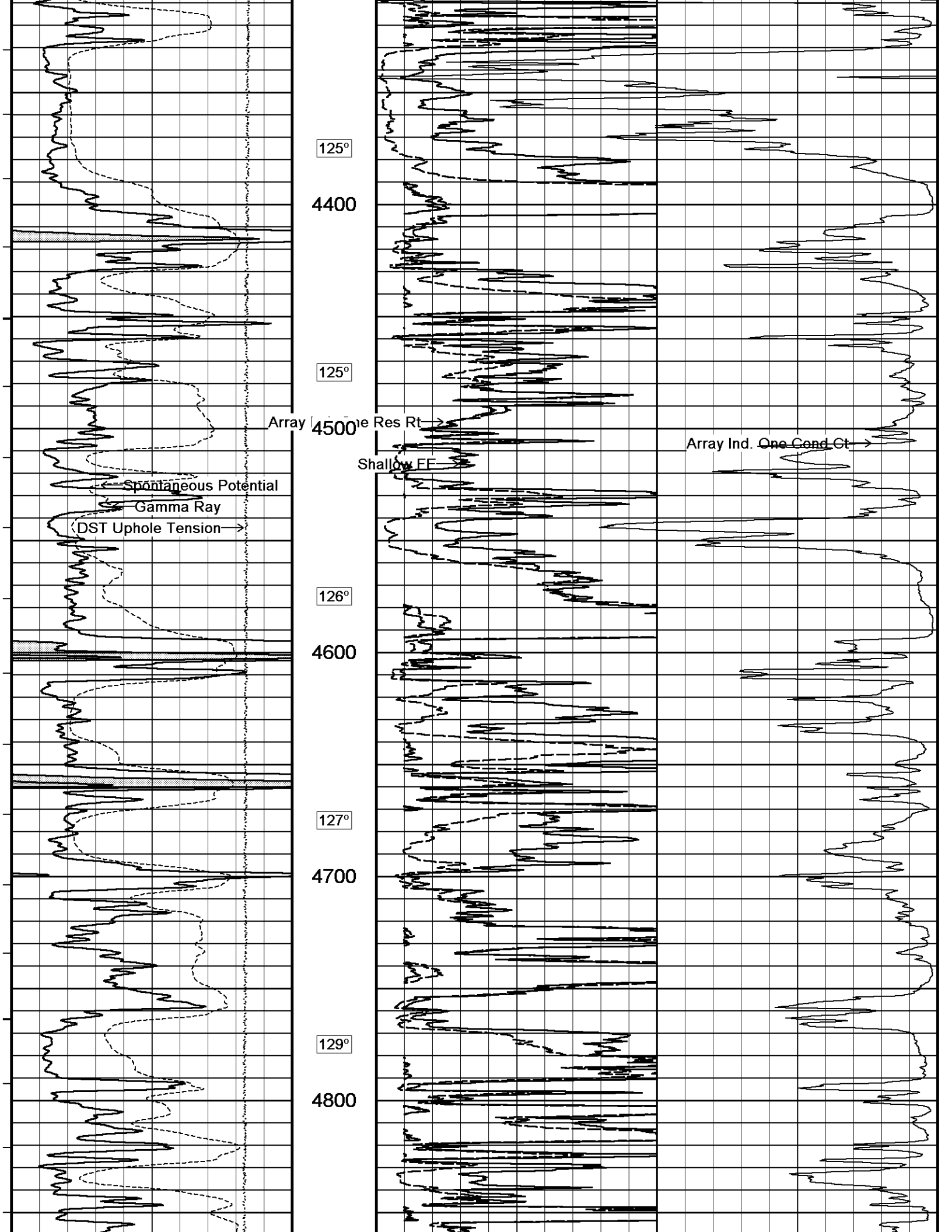


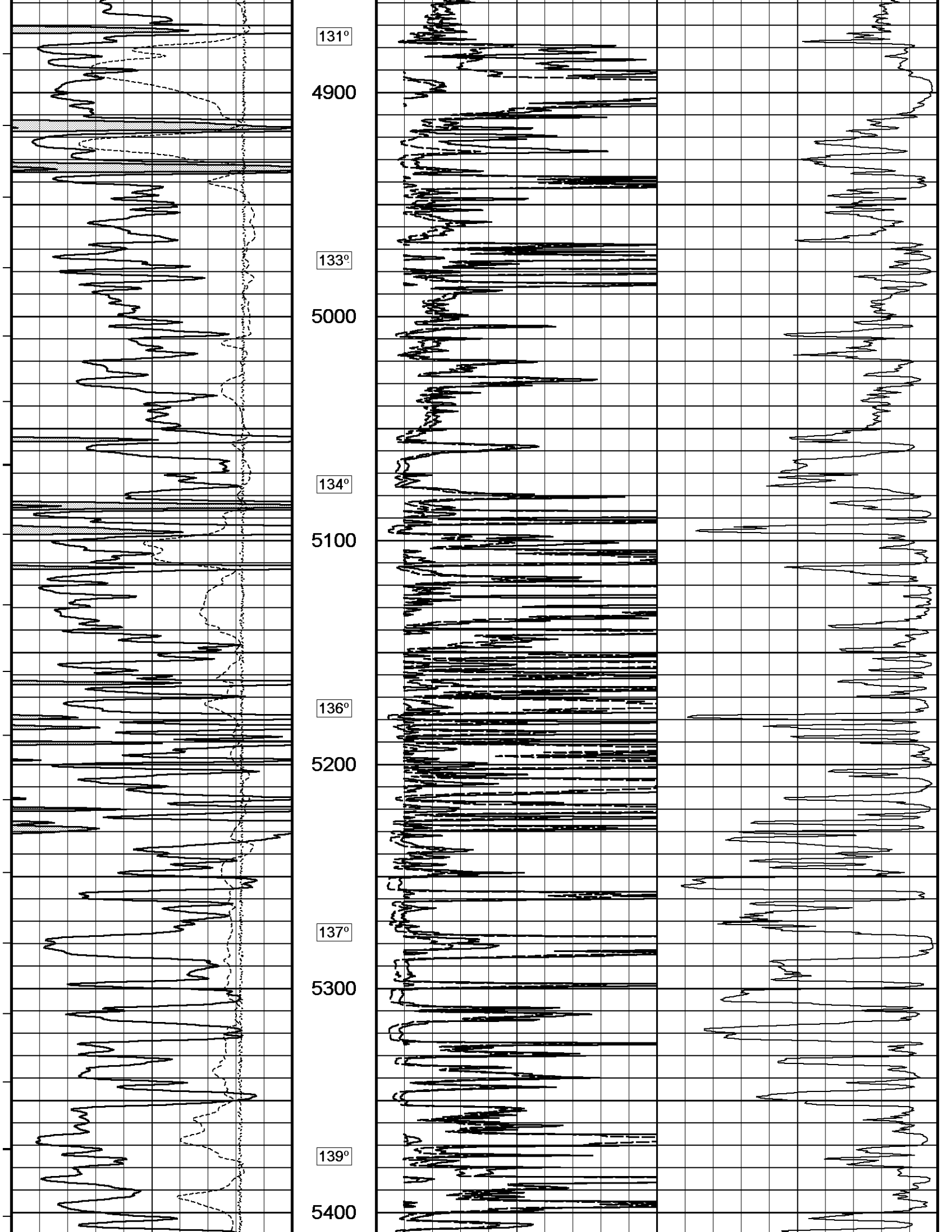

106°
2200
106°
2300
106°
2400
106°
2500
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow Rt
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
2600

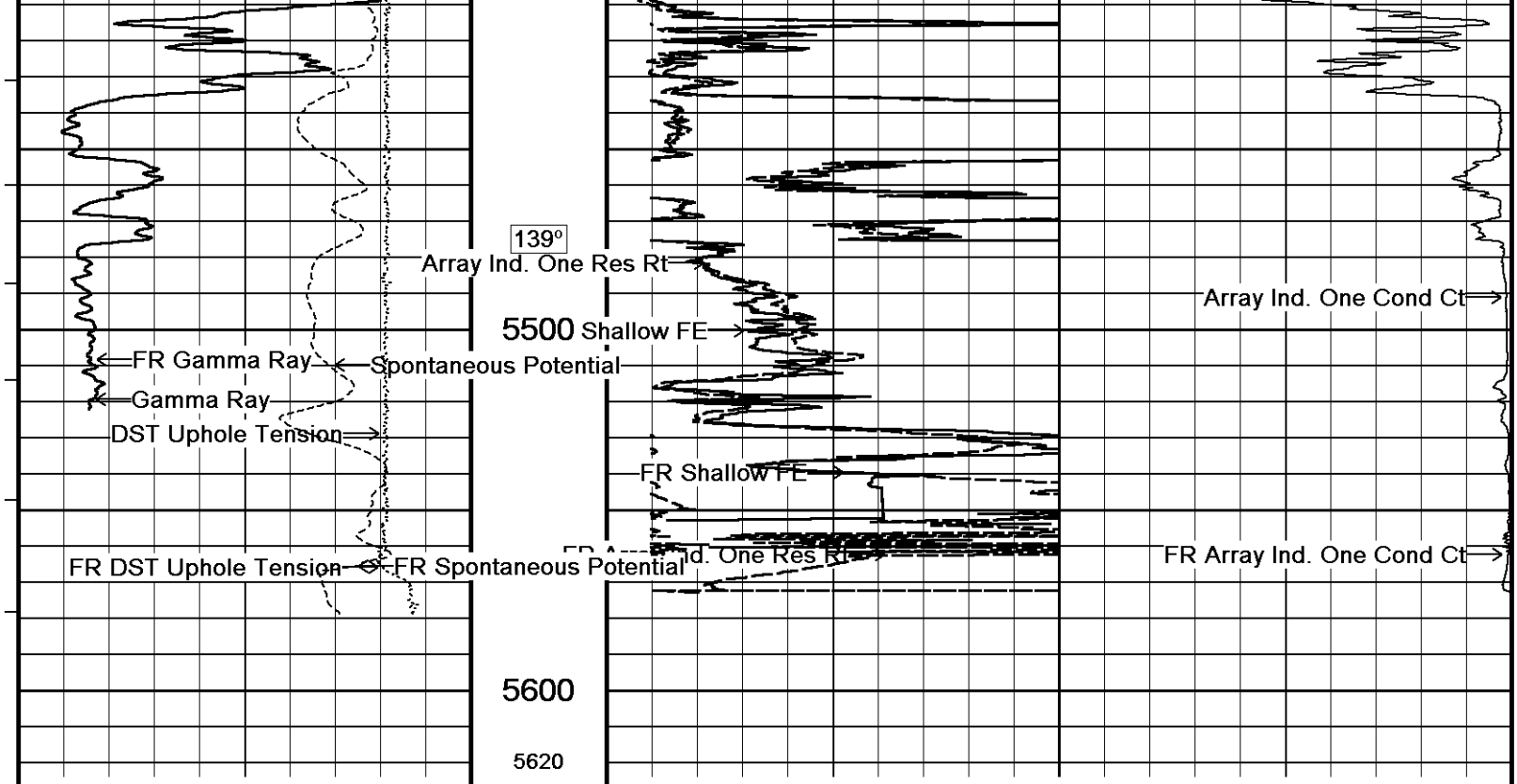

108°
2700
109°
2800
110°
2900
111°
3000
112°
3100
113°
3200


114°
3300
115°
3400
116°
3500
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow Res
Spontaneous Potential
Gamma Ray
DST Uphole Tension
117°
3600
118°
3700


119°
3800
120°
3900
120°
4000
122°
4100
123°
4200
124°
4300


125°
4400
125°
Array
4500
Shallow FF
Spontaneous Potential
Gamma Ray
DST Uphole Tension
126°
4600
127°
4700
129°
4800
Array Ind. One Cond Ct


131°
4900
133°
5000
134°
5100
136°
5200
137°
5300
139°
5400



5600

5620

Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− 20 +

DST Uphole Tension
pounds
5000 0

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

Shallow FE
ohm metres
0 25 50
0 250 500

Borehole Temp in deg F

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

Replay Scale 1:600

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-JUL-2011 19:16
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta
Recorded on 05-JUL-2011 16:55
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

2 INCH MAIN PASS

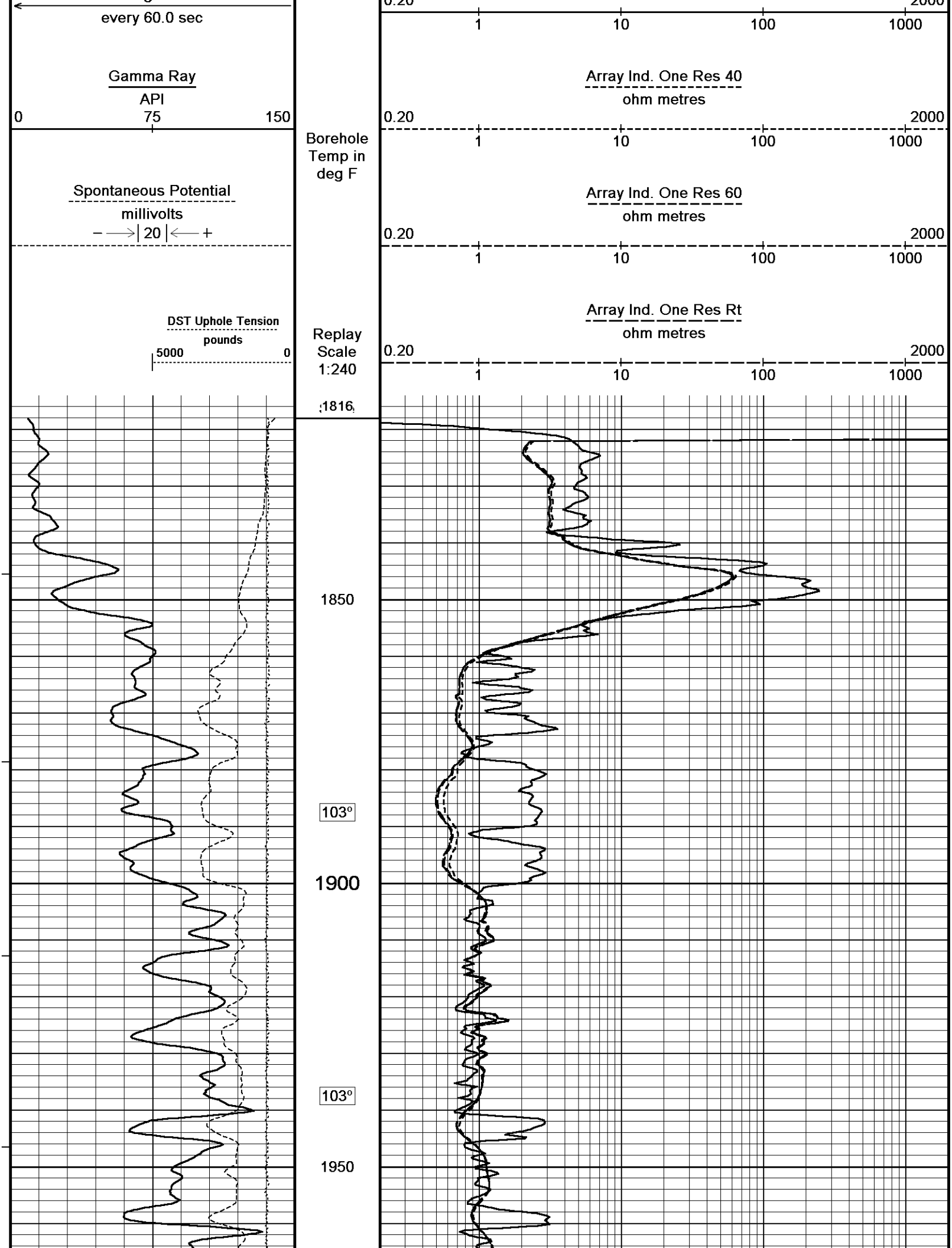
5 INCH MAIN PASS

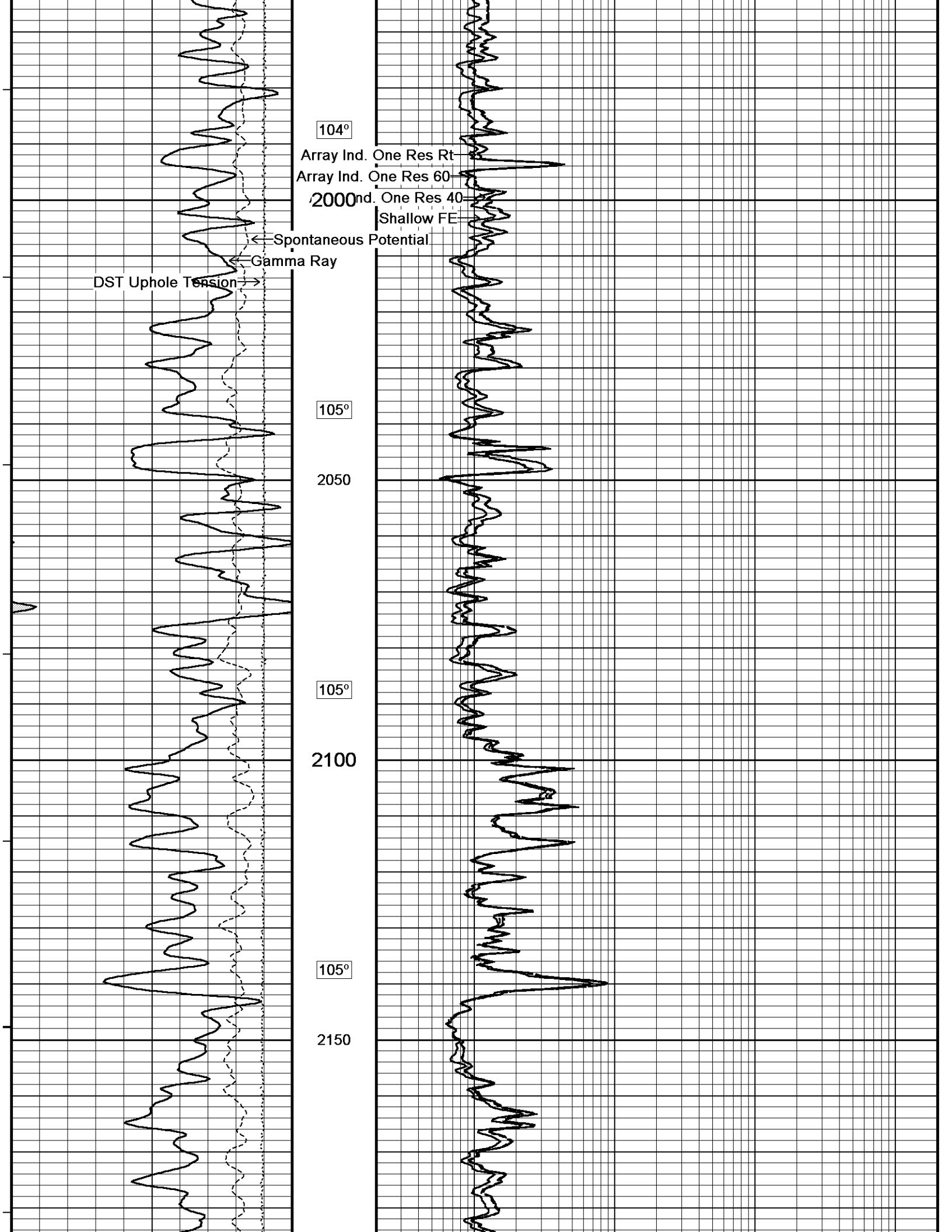
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-JUL-2011 19:16
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta
Recorded on 05-JUL-2011 16:55
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

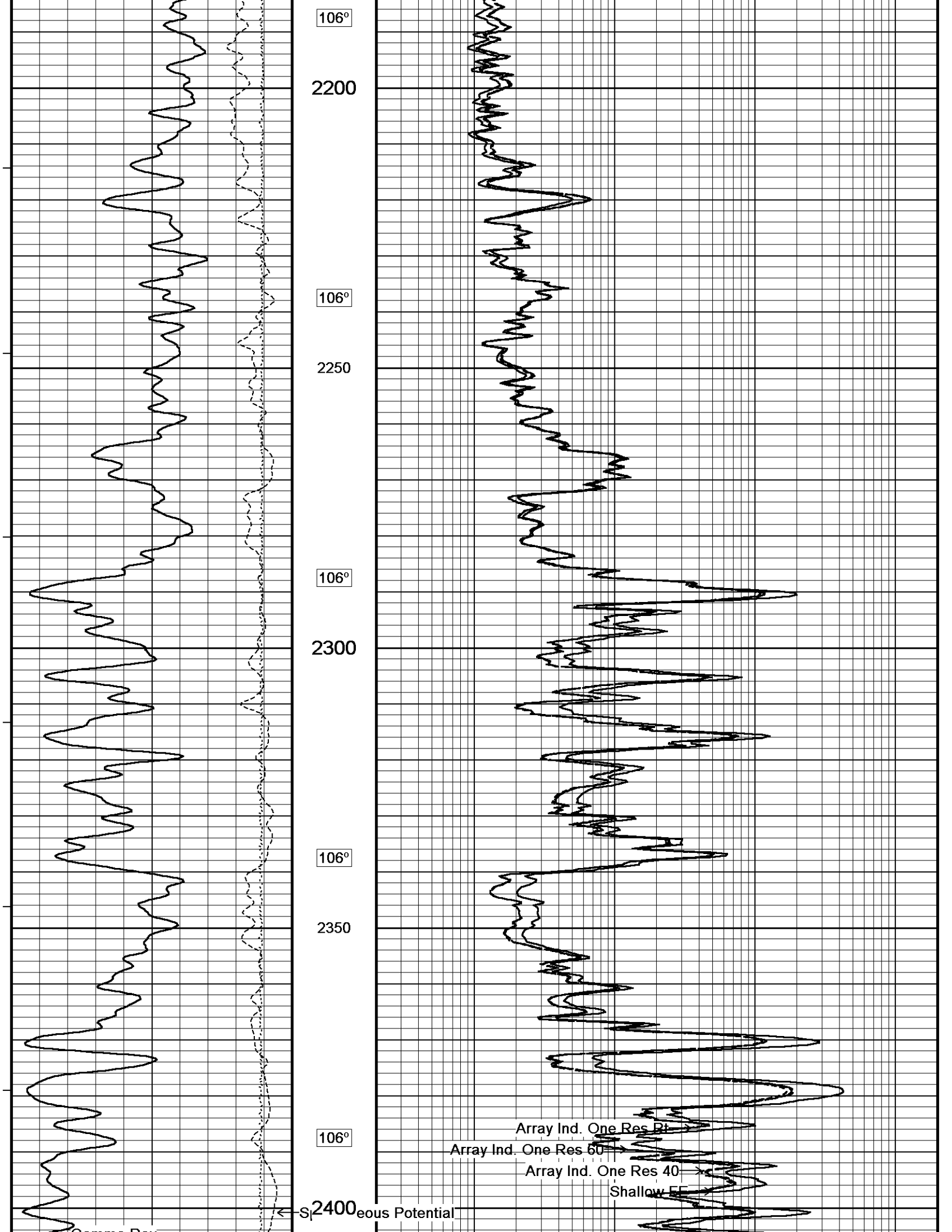
Depth in Feet

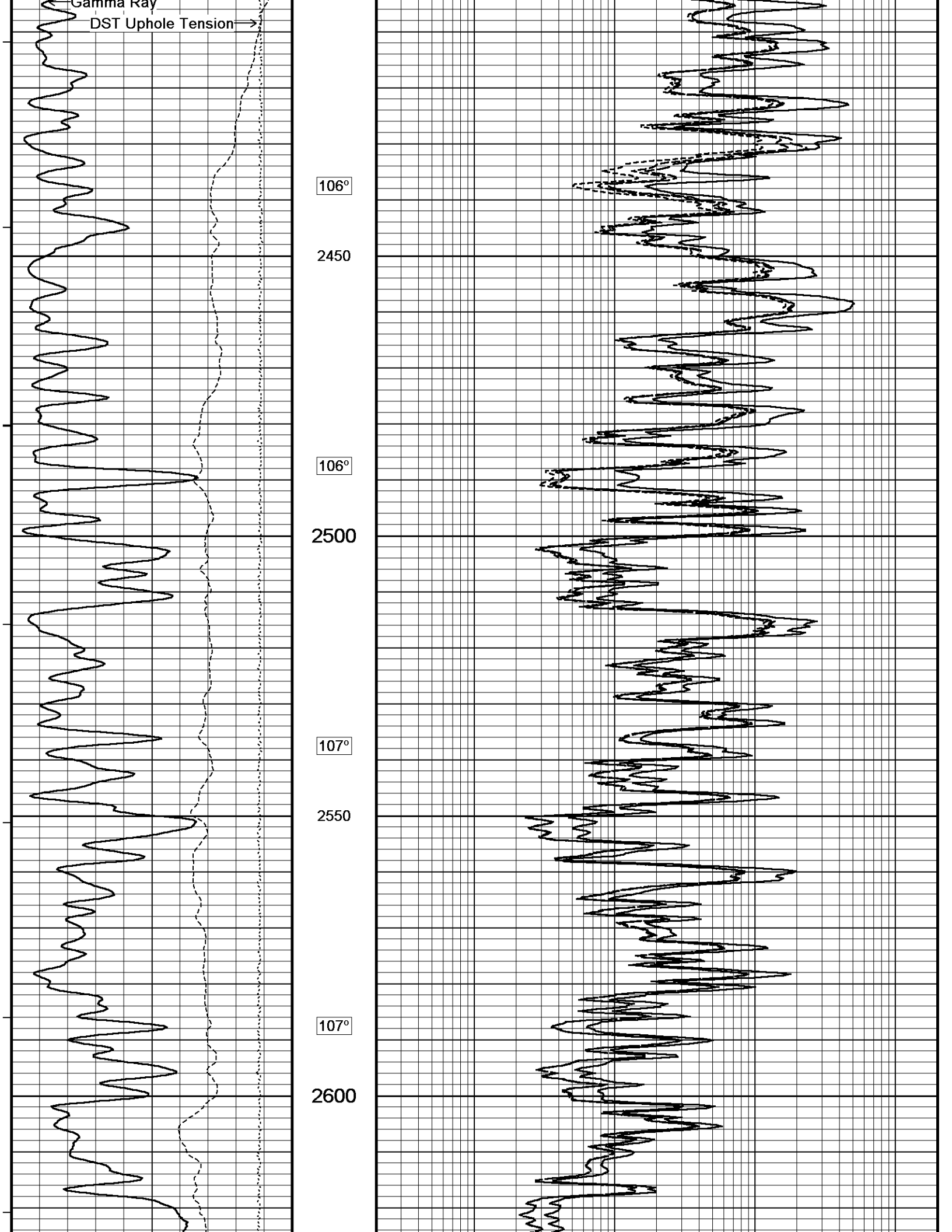
Timing Marks

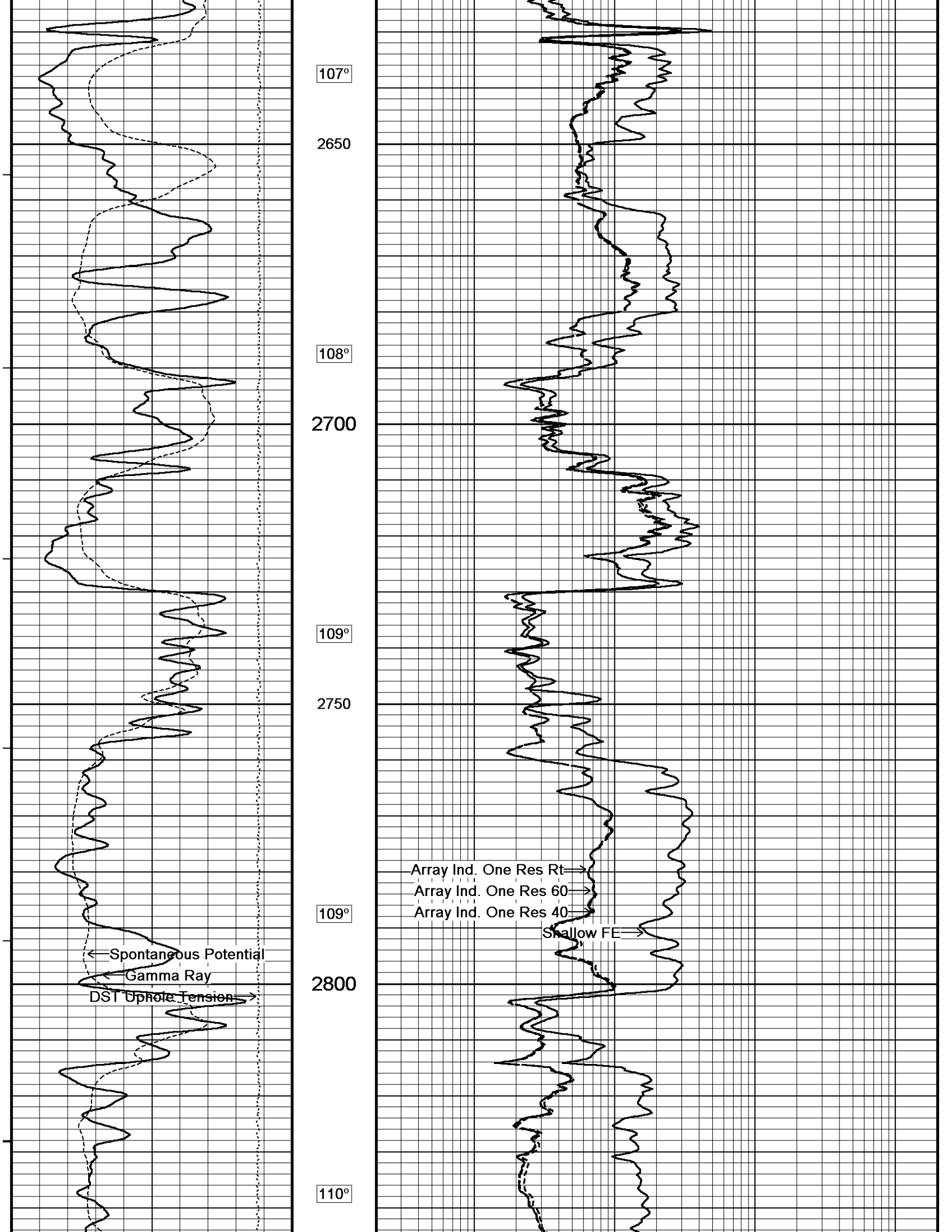
Shallow FE
ohm metres
0.20 2000

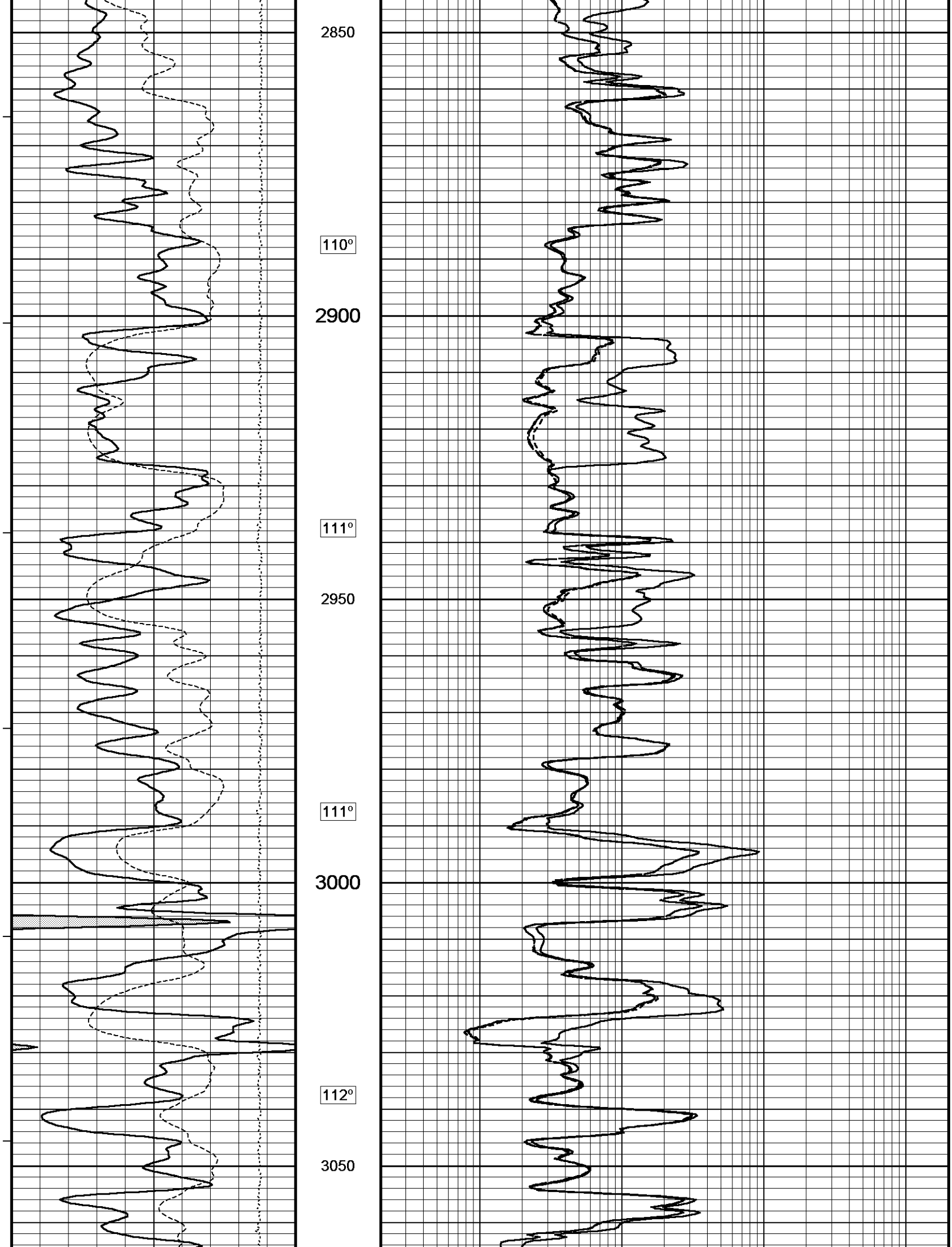

every 60.0 sec
Gamma Ray
API
0
75
150
Spontaneous Potential
millivolts
− 20 +
DST Uphole Tension
pounds
5000
0
Borehole Temp in deg F
Replay Scale 1:240
1816
1850
103°
1900
103°
1950
0.20
1
10
100
1000
2000
Array Ind. One Res 40
ohm metres
Array Ind. One Res 60
ohm metres
Array Ind. One Res Rt
ohm metres

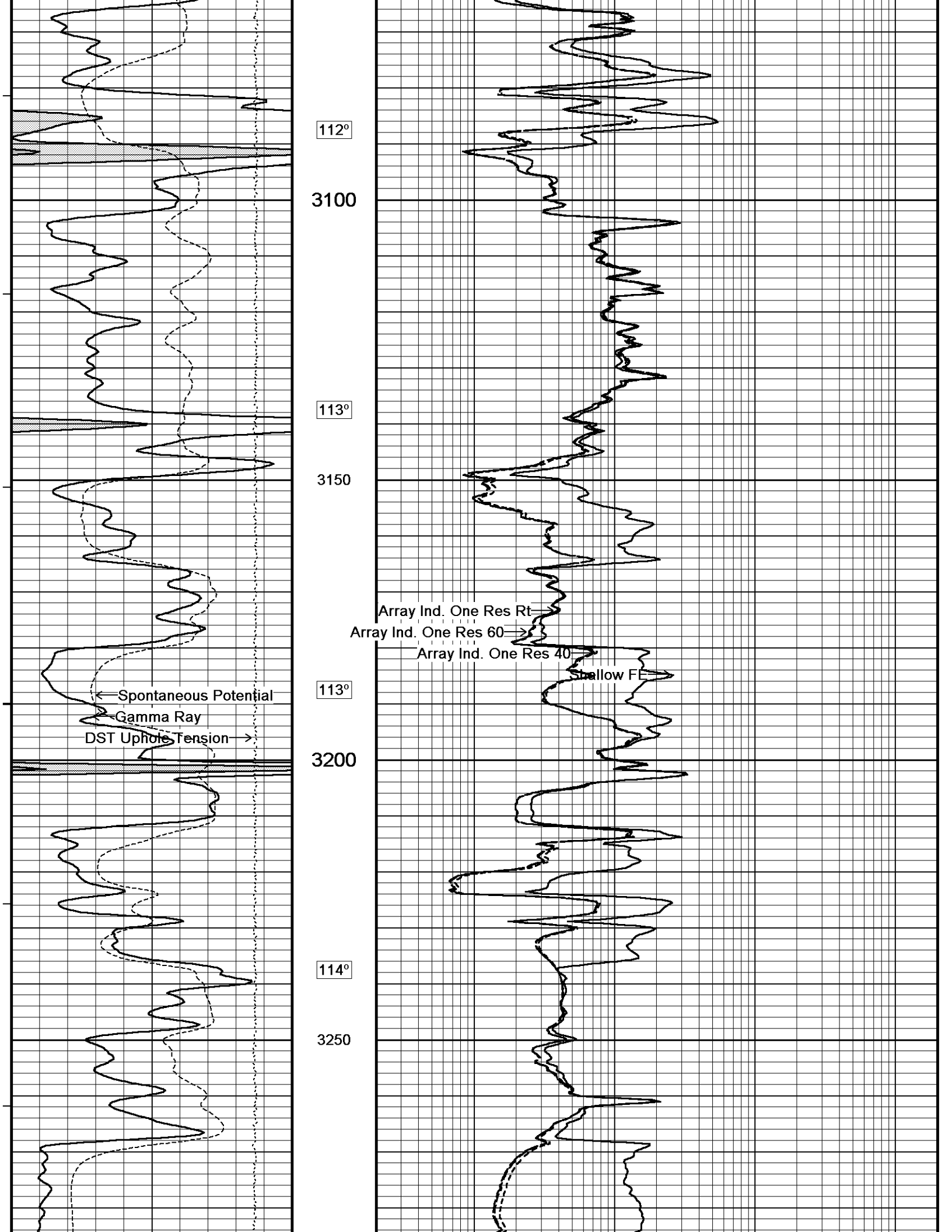

104°
Array Ind. One Res Rt
Array Ind. One Res 60
2000nd. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
105°
2050
105°
2100
105°
2150

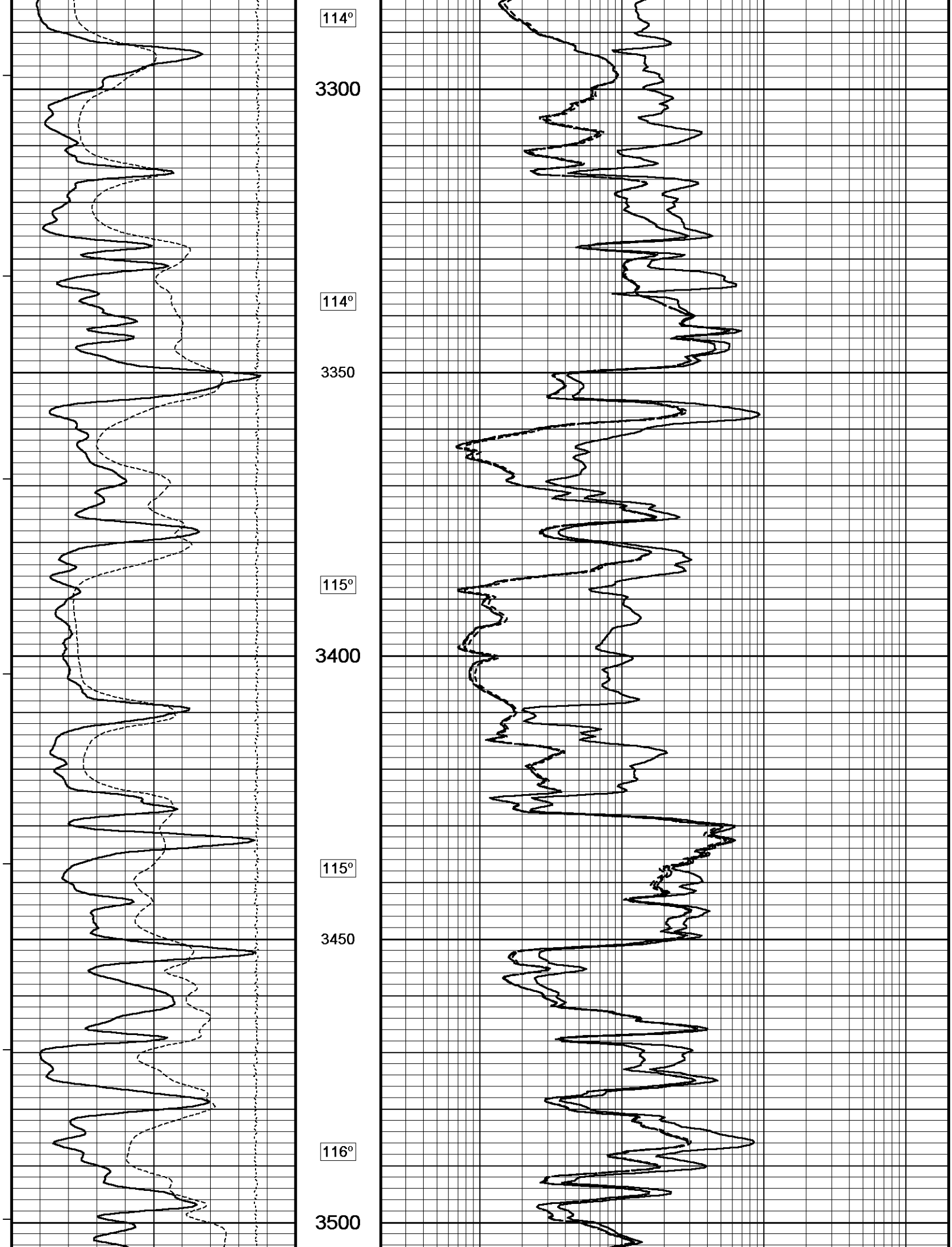

106°
2200
106°
2250
106°
2300
106°
2350
106°
2400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
eous Potential

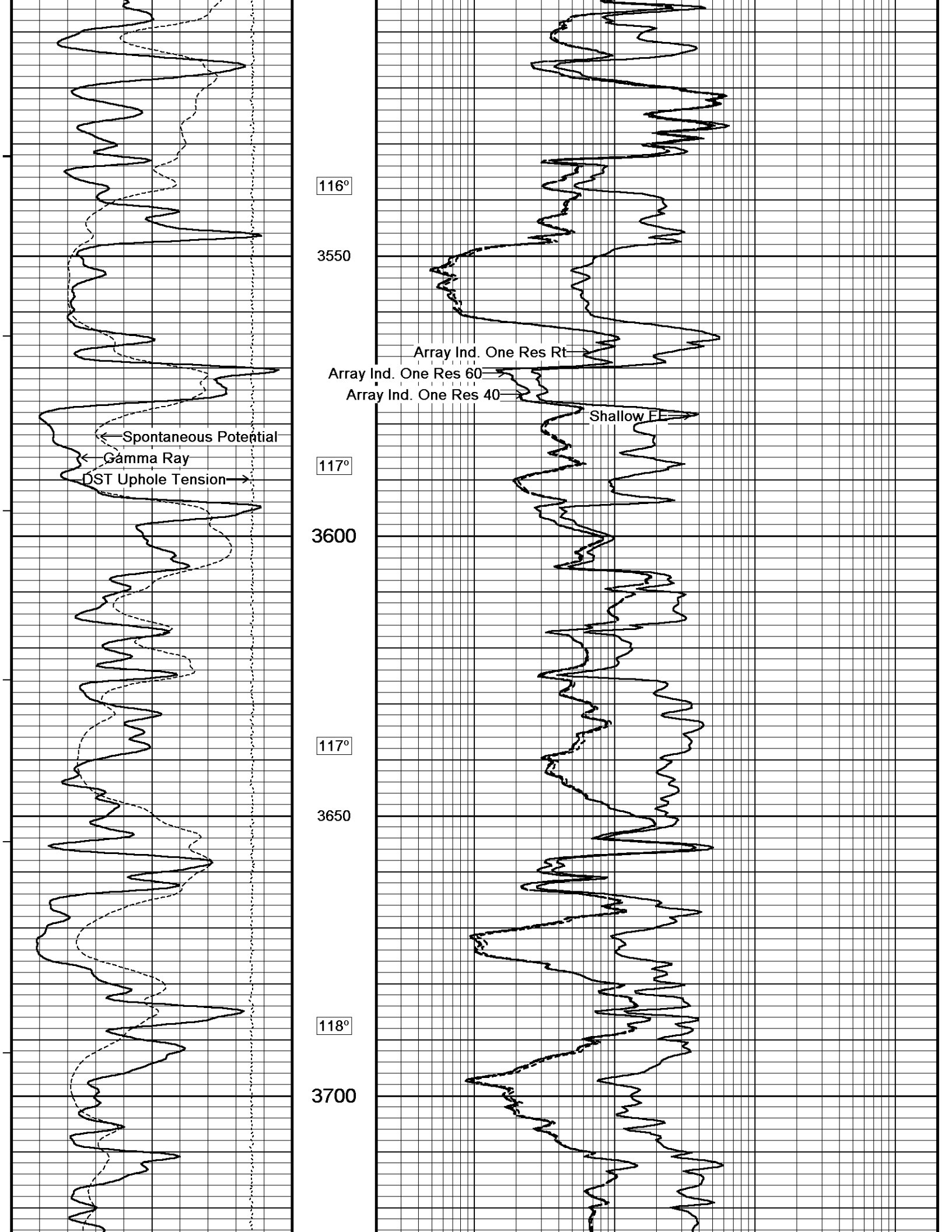

Gamma Ray
DST Uphole Tension
106°
2450
106°
2500
107°
2550
107°
2600

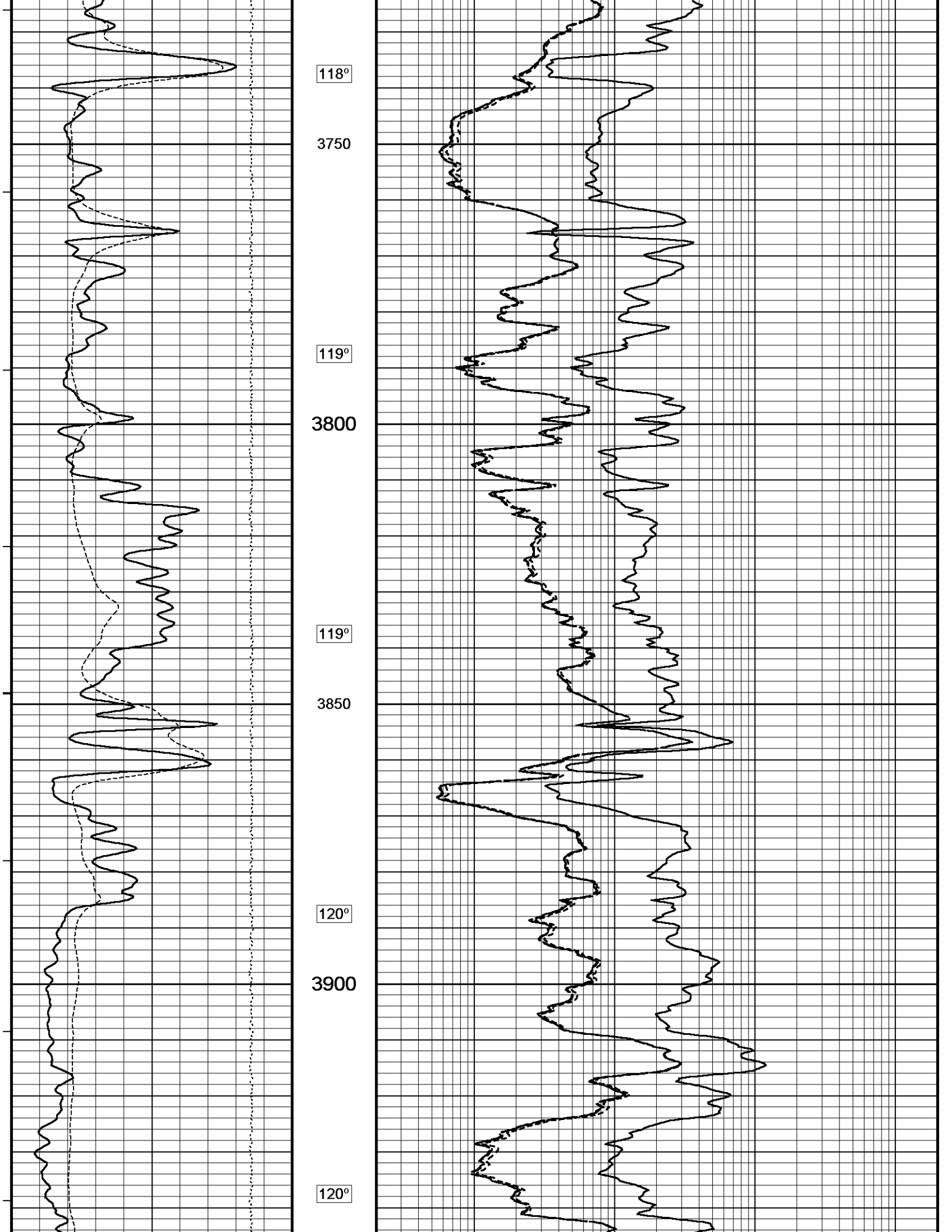

107°
2650
108°
2700
109°
2750
109°
2800
110°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension

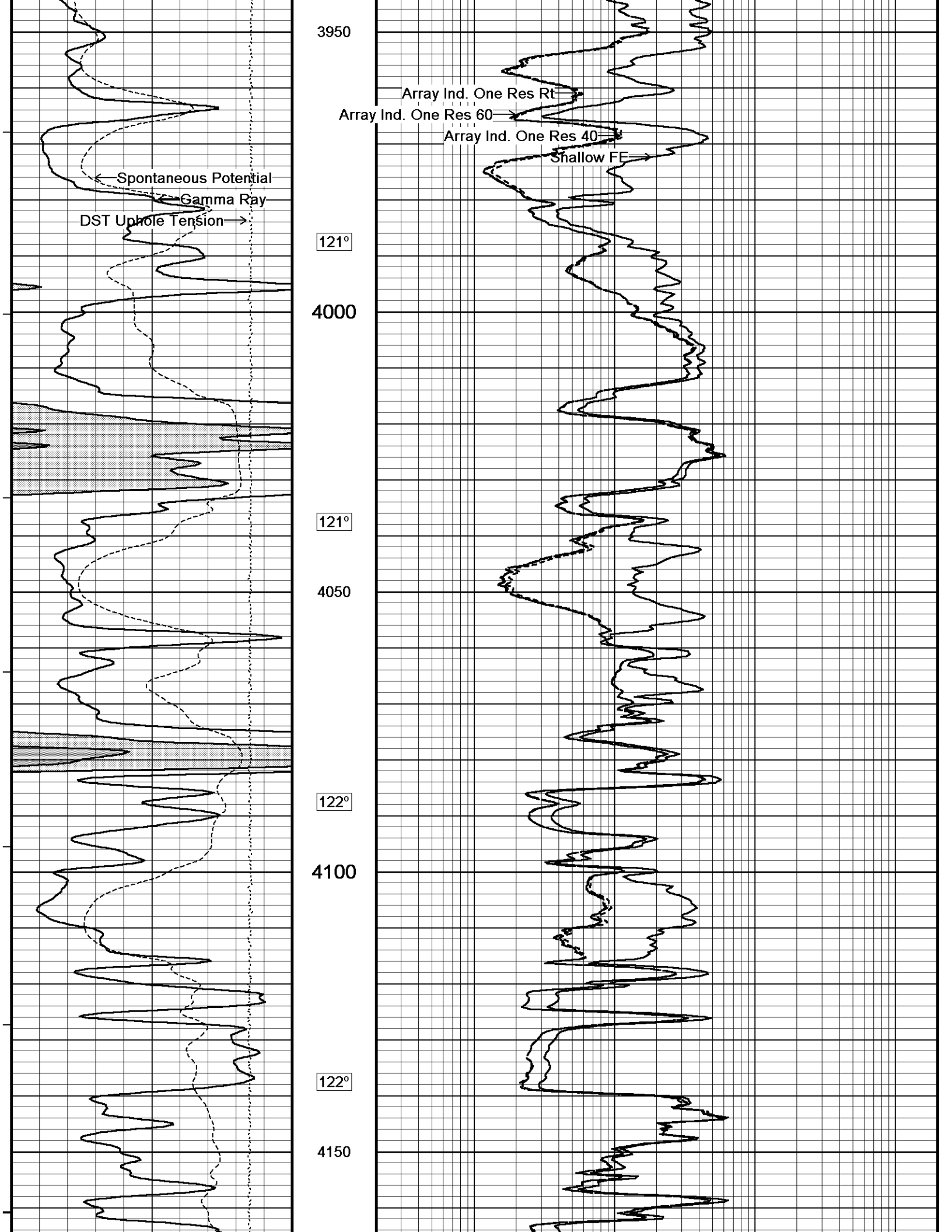

2850
110°
2900
111°
2950
111°
3000
112°
3050

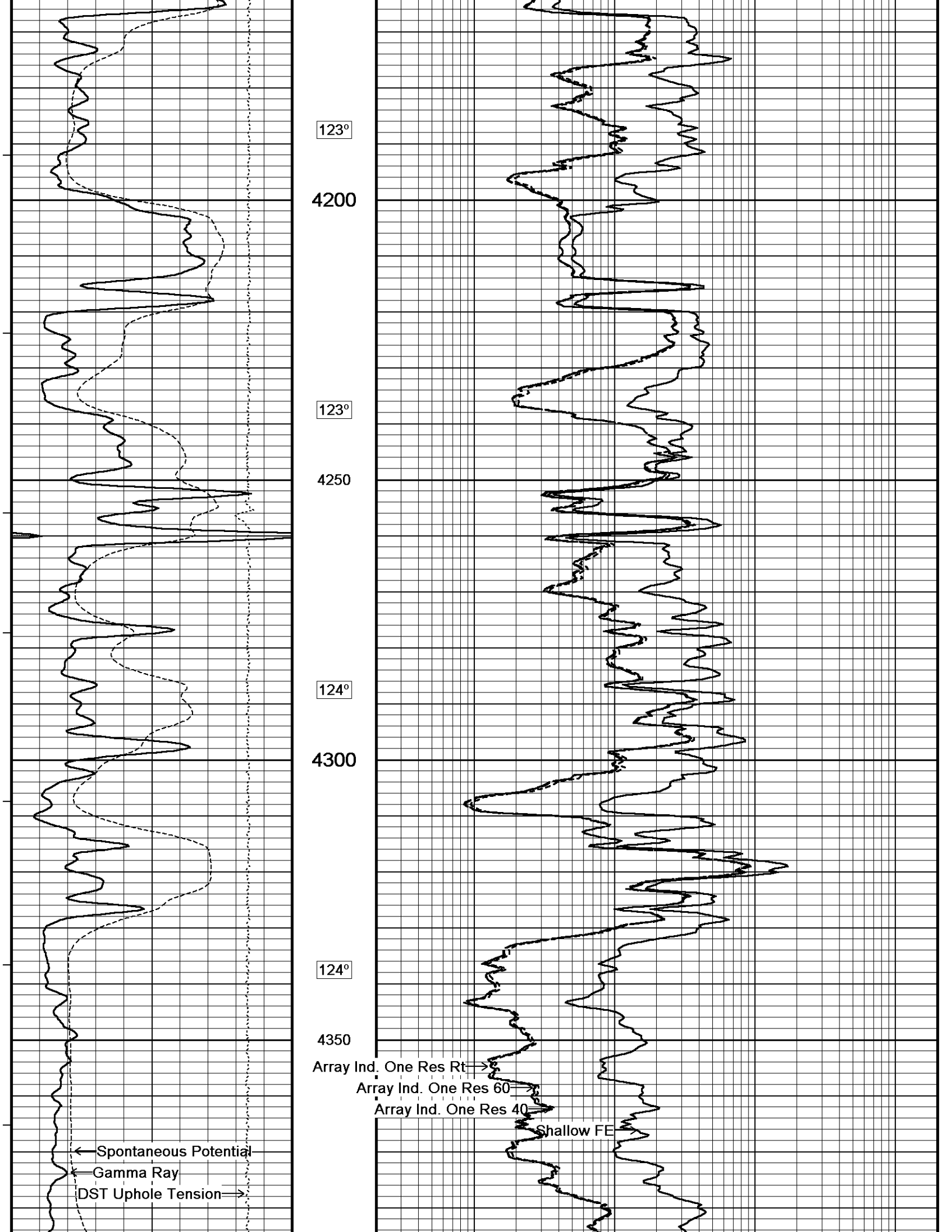

112°
3100
113°
3150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
113°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
3200
114°
3250

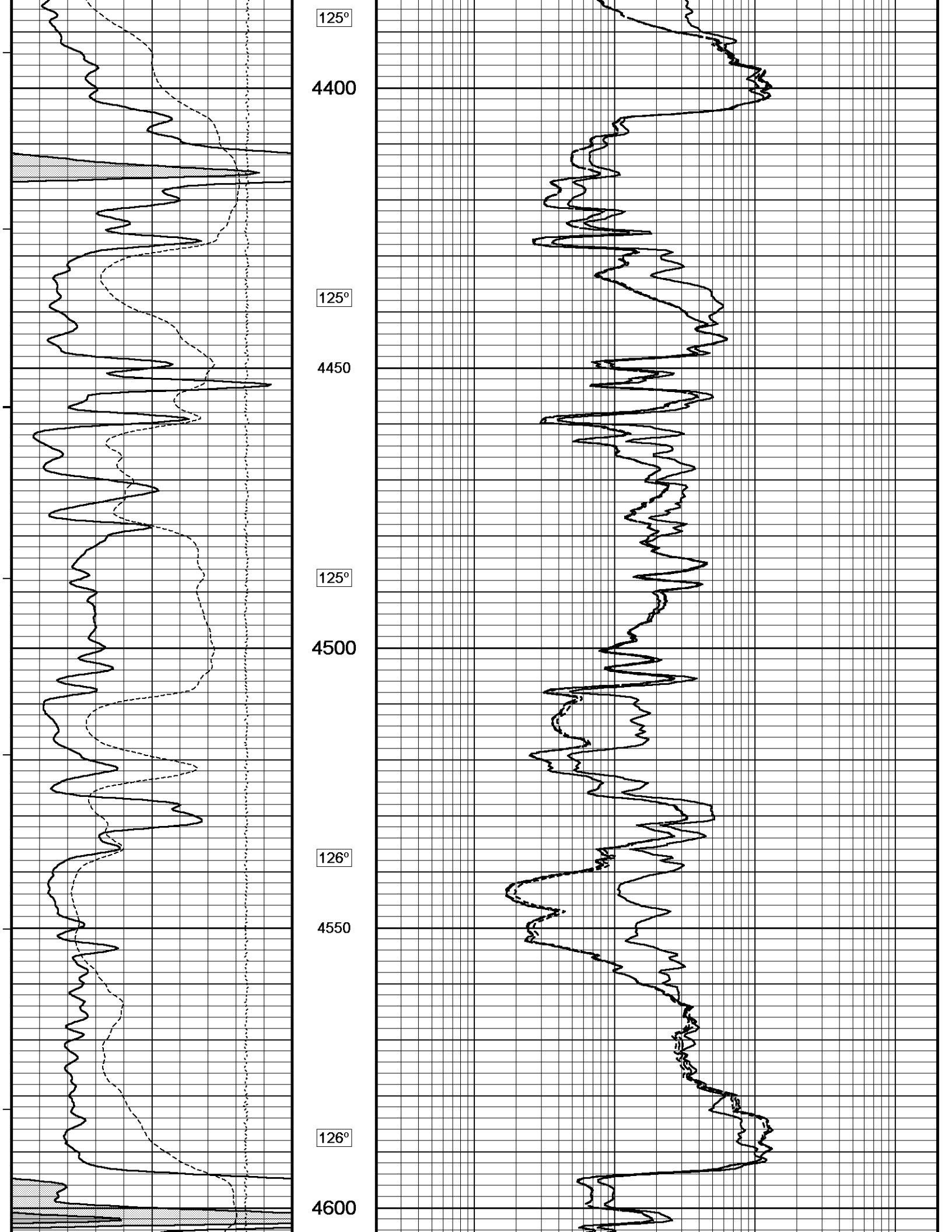

114°
3300
114°
3350
115°
3400
115°
3450
116°
3500

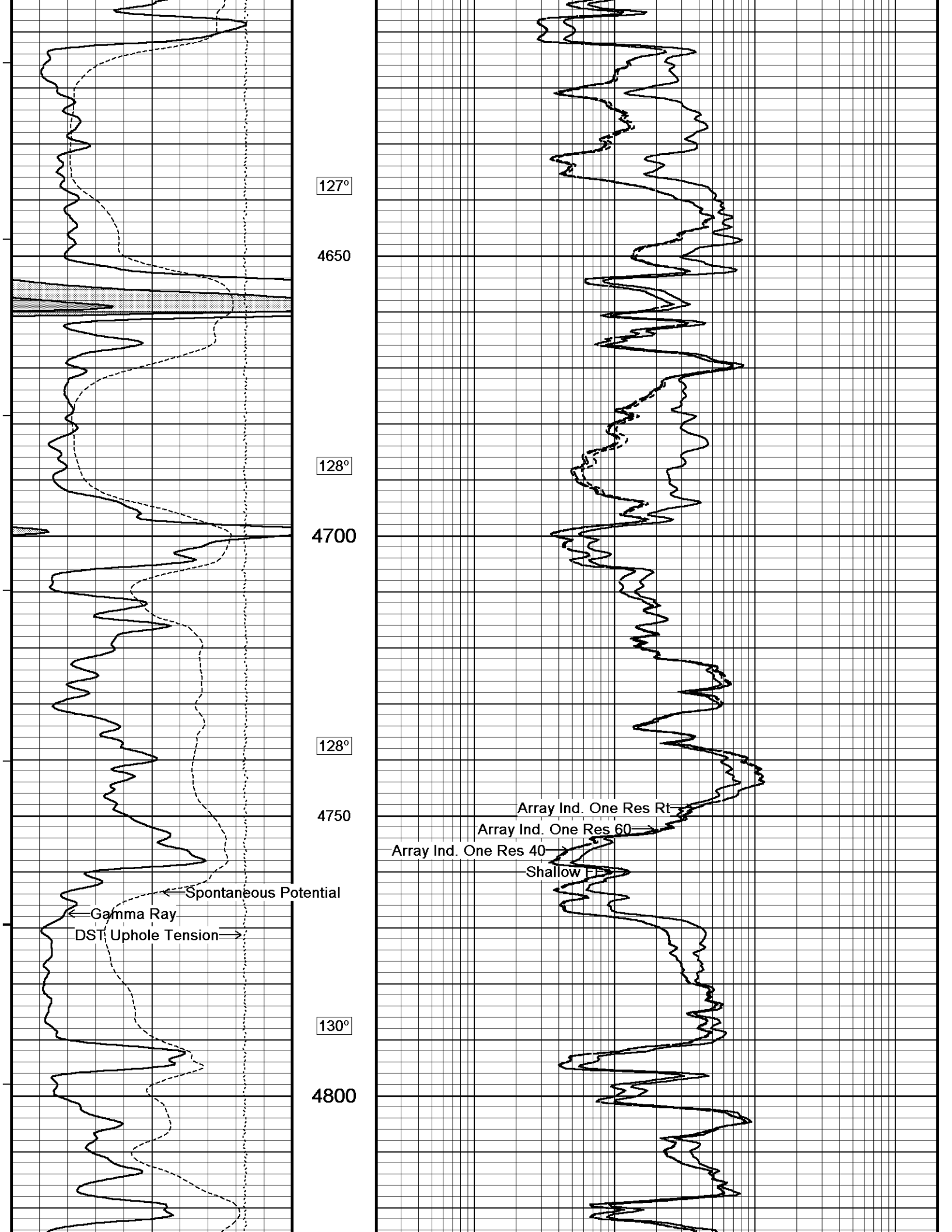

116°
3550
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
117°
3600
117°
3650
118°
3700

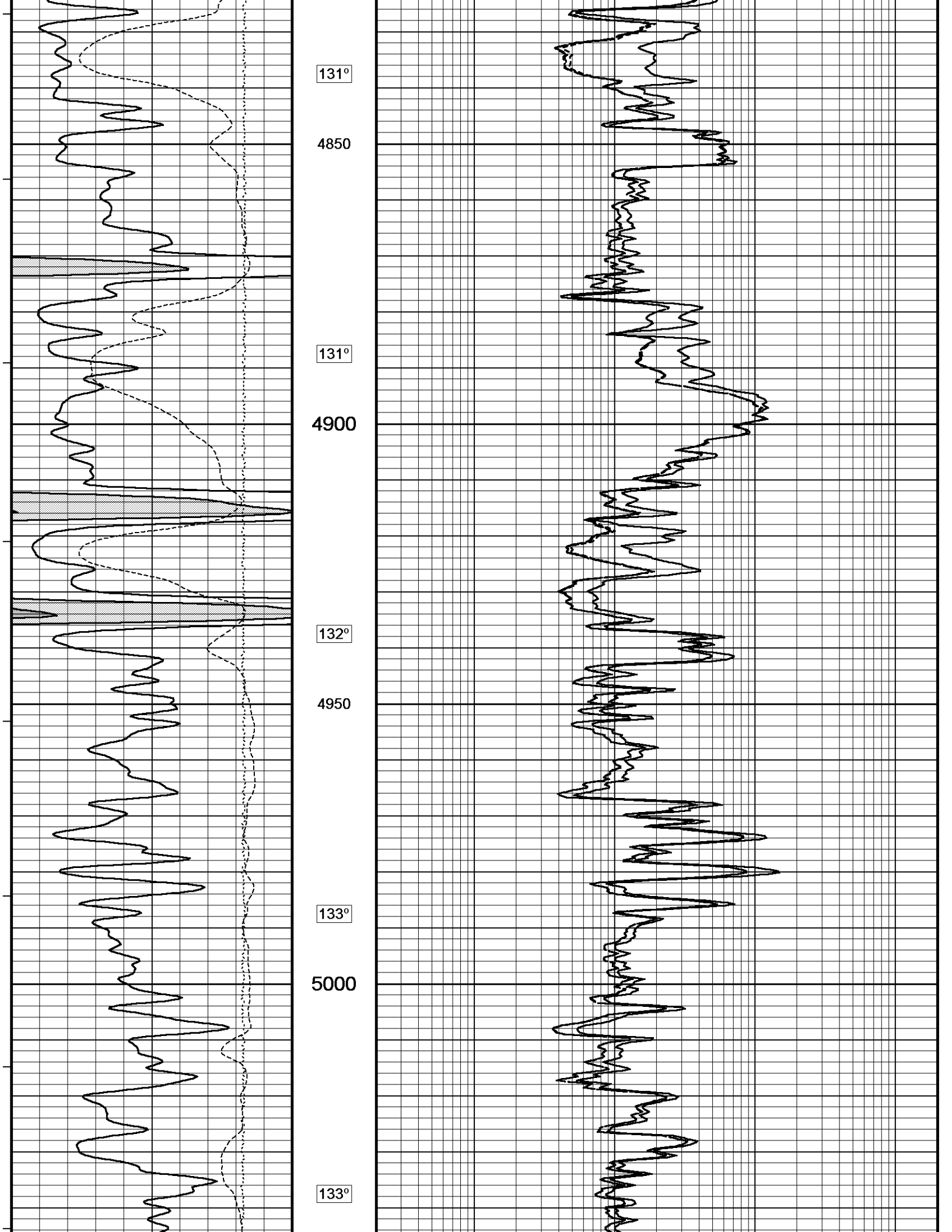

118°
3750
119°
3800
119°
3850
120°
3900
120°

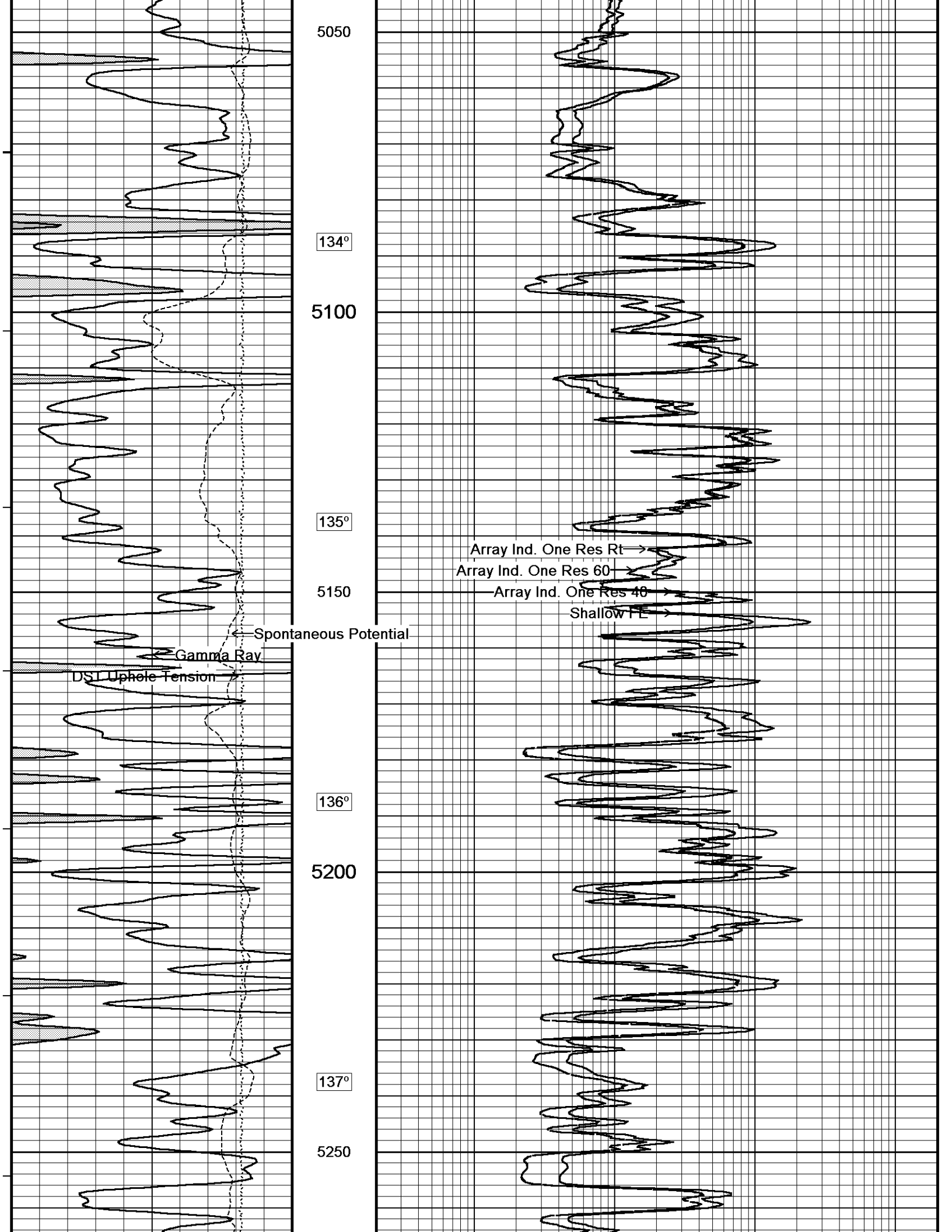

3950
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
121°
4000
121°
4050
122°
4100
122°
4150

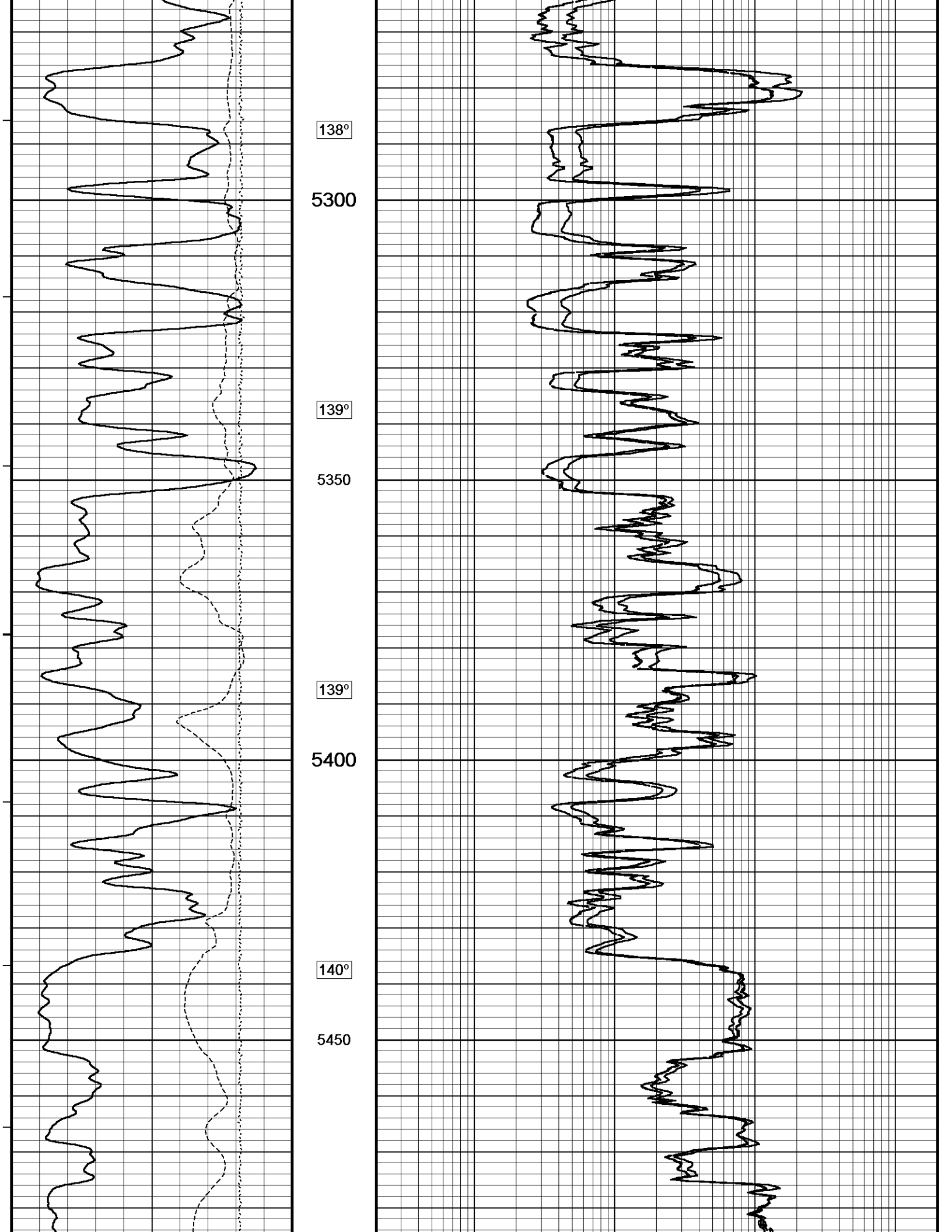

123°
4200
123°
4250
124°
4300
124°
4350
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension

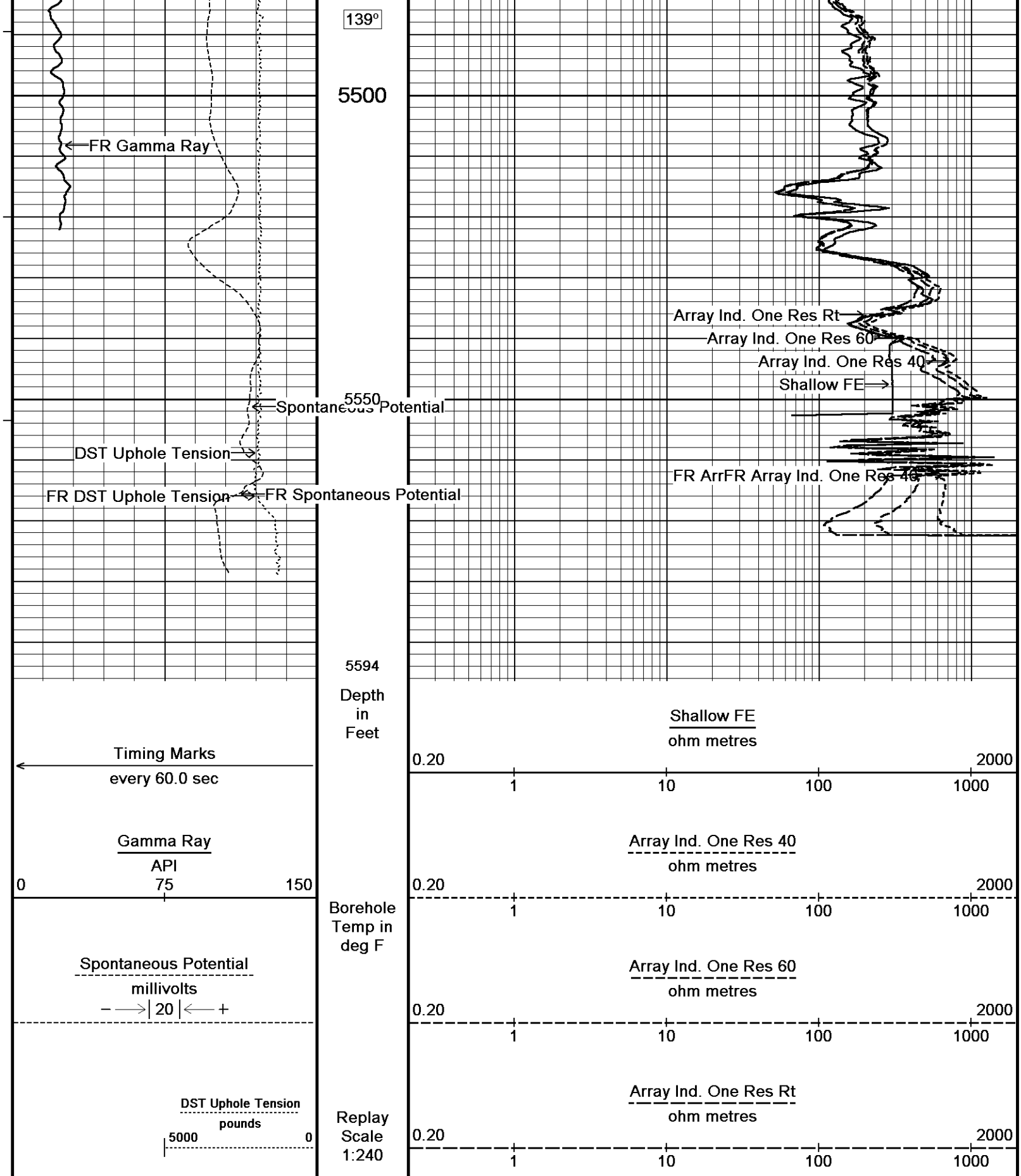

125°
4400
125°
4450
125°
4500
126°
4550
126°
4600


127°
4650
128°
4700
128°
4750
130°
4800
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow


131°
4850
131°
4900
132°
4950
133°
5000
133°


5050
134°
5100
135°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FL
5150
Spontaneous Potential
Gamma Ray
DST Uphole Tension
136°
5200
137°
5250


138°
5300
139°
5350
139°
5400
140°
5450

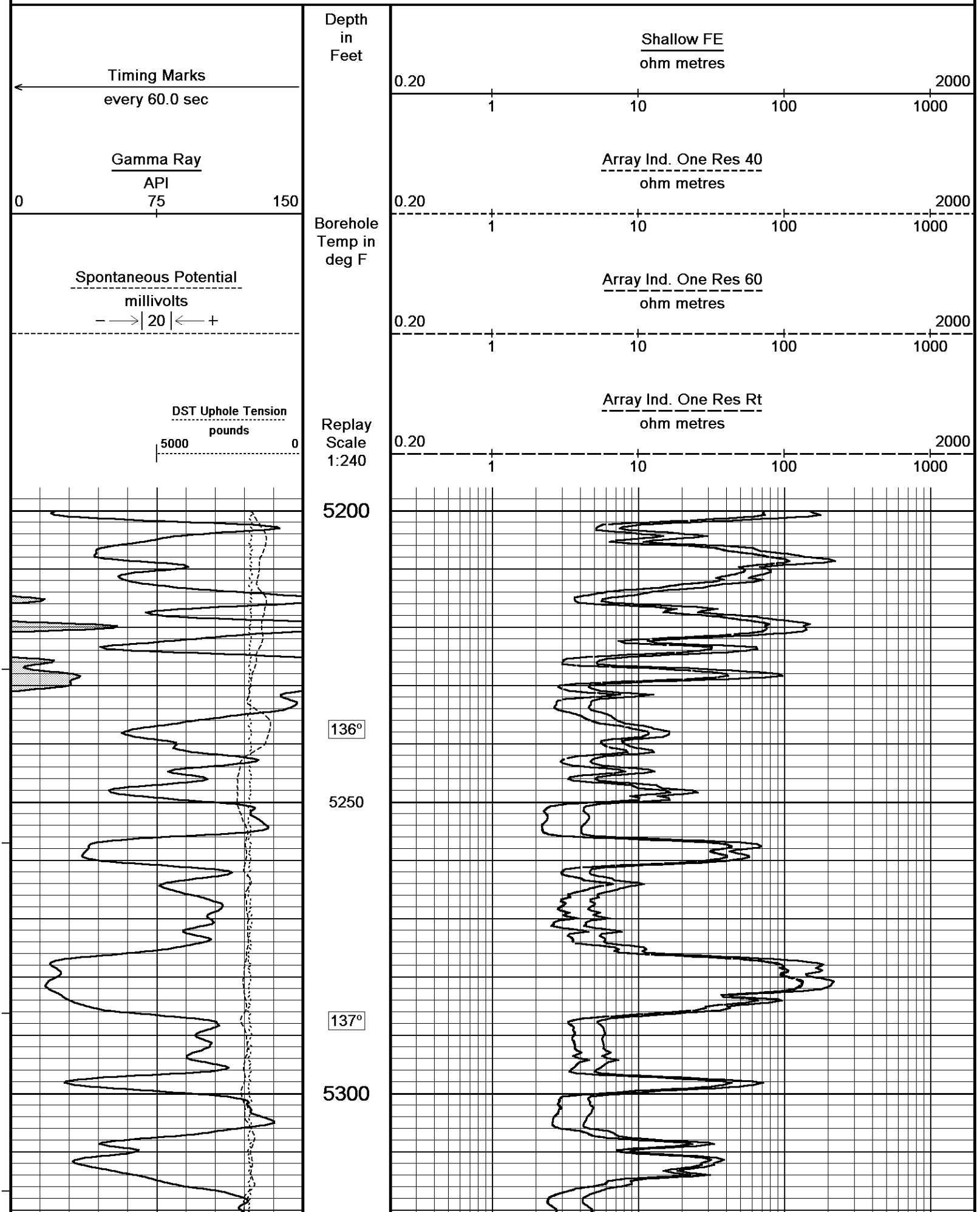


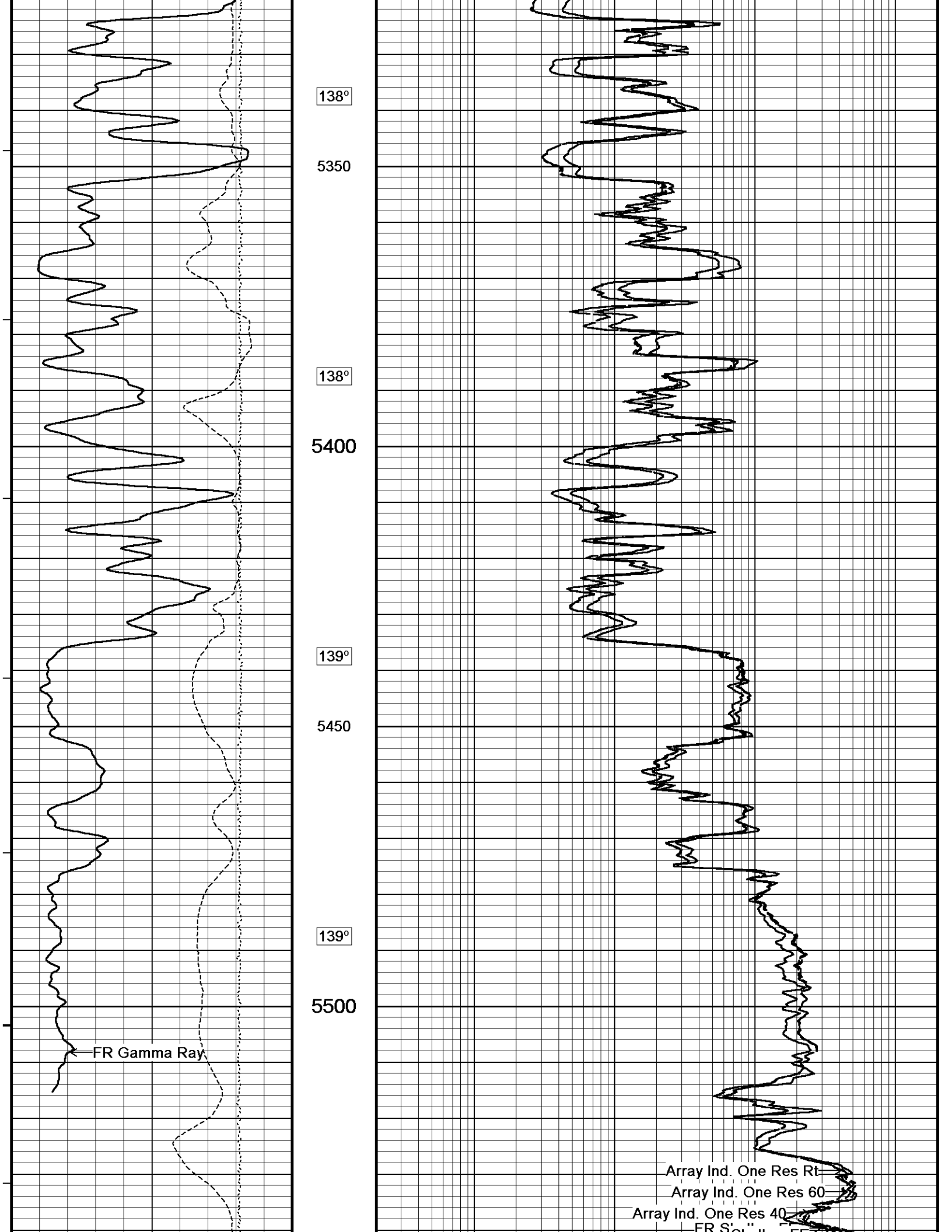
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-JUL-2011 19:16
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta
Recorded on 05-JUL-2011 16:55
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

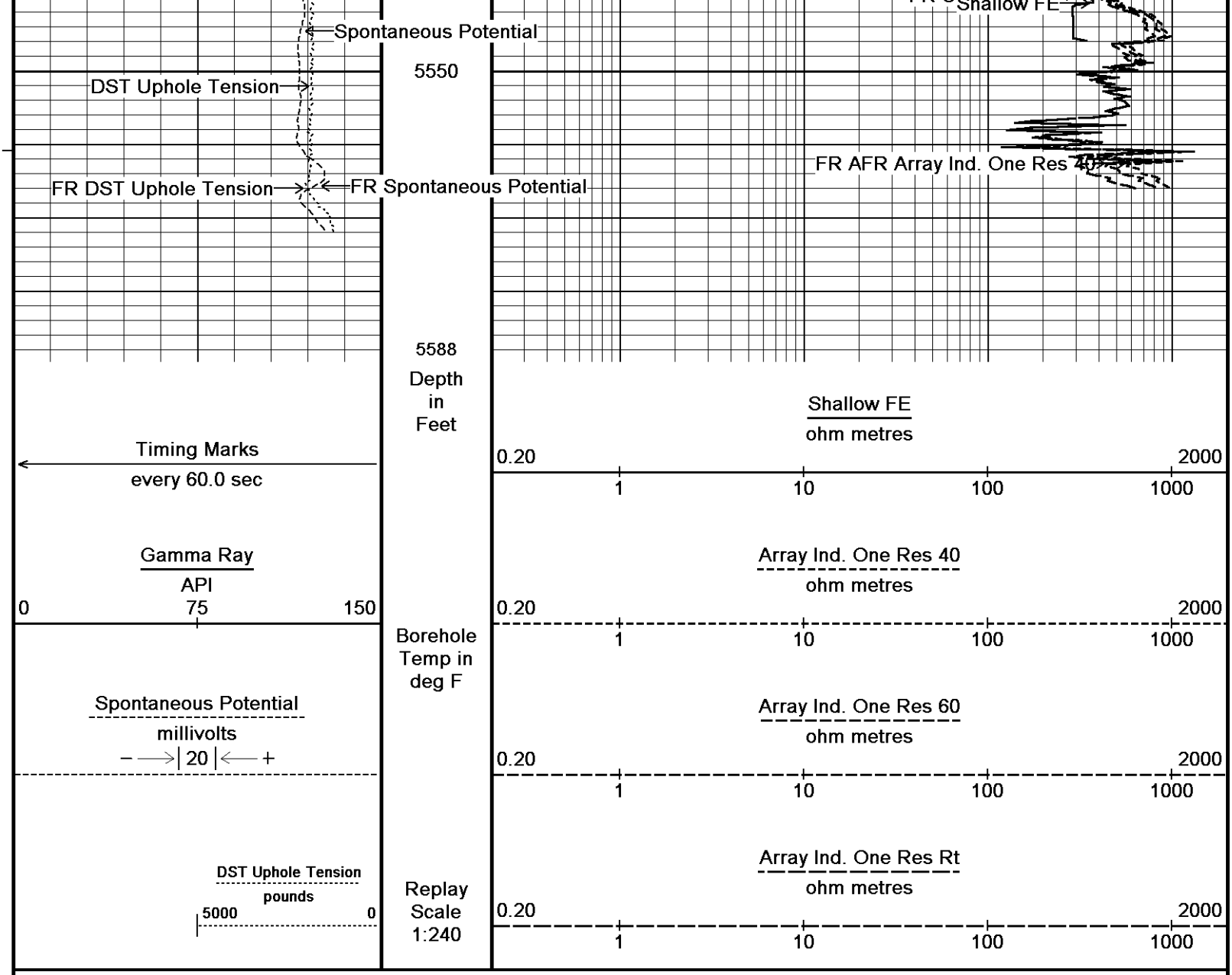
5 INCH MAIN PASS

5 INCH REPEAT PASS

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-JUL-2011 19:16
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_003.dta
Recorded on 05-JUL-2011 16:18
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186




138°
5350
138°
5400
139°
5450
139°
5500
FR Gamma Ray
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-JUL-2011 19:16

Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_003.dta — Recorded on 05-JUL-2011 16:18

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

5 INCH REPEAT PASS

BEFORE SURVEY CALIBRATION

C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta

General Constants All 000 — Last Edited on 05-JUL-2011,10:26

General Parameters		
Mud Resistivity	1.370	ohm-metres
Mud Resistivity Temperature	84.000	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	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	

Resistivity used	Array Ind. Clib Res Rt
RWA Constant A	0.610
RWA Constant M	2.150

Down-hole Tension Calibration SMS 0

Field Calibration on 05-JUN-2011 04:37

Reading No	Measured	Calibrated (lbs)
1	13499.89	0.00
2	14983.70	496.00

High Resolution Temperature Calibration MCG-B 34

Field Calibration on 05-MAR-2011,23:56

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

High Resolution Temperature Constants MCG-B 34

Last Edited on

Pre-filter Length	11

SP Calibration MCG-B 34

Field Calibration on 20-APR-2011 14:53

	Measured	Calibrated (mV)
Reference 1	106.7	100.0
Reference 2	-95.0	-100.0

Gamma Calibration MCG-B 34

Field Calibration on 04-JUL-2011 17:52

	Measured	Calibrated (API)
Background	68	48
Calibrator (Gross)	1100	773
Calibrator (Net)	1033	725

Gamma Constants MCG-B 34

Last Edited on 05-JUL-2011,10:27

Gamma Calibrator Number	grc38	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:23
Field Check on 04-JUL-2011 17:17

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.1	2.6	12.8
Micro Inverse	15.6	78.3	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.2	32.2
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 05-JUL-2011,10:27

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	N/A	inches

Caliper Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:38
Field Calibration on 04-JUL-2011 17:54

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14953	5.98
2	18280	7.97
3	21656	9.86
4	25588	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.10	5.98

Neutron Calibration MDN-A.B 65

Base Calibration on 02-JUL-2011 23:27
Field Check on 04-JUL-2011 18:14

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3269	103	3714	110
Ratio	31.795		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1562	2227
Ratio	0.701	

Field Check

	Calibrated (cps)	
	1585	2221
Ratio	0.714	

Neutron Constants MDN-A.B 65

Last Edited on 05-JUL-2011,10:28

Neutron Source Id	757	
Neutron Jig Number	5824NE	
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	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	MCG External Temperature	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 21-JUN-2011 10:19
Field Check on 04-JUL-2011 17:15

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	953.6	126.8
Base Check		281.3
Field Check		281.3

FE Constants MFE-A.A 55

Last Edited on 05-JUL-2011,10:28

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

Sonic Constants MSS-A.A 126

Last Edited on 05-JUL-2011,10:29

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

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

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 13-AUG-2010,13:31

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length 11

Induction Calibration MAI-A.A 45

Base Calibration on 13-AUG-2010,13:32
Field Check on 04-JUL-2011 17:13

Base Calibration

Test Loop Calibration Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	14.5	473.5	9.3	966.2
2	5.2	373.4	7.6	821.4
3	2.8	260.6	5.2	566.0
4	1.6	132.2	2.6	279.2

Array Temperature 86.2 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	20.2	3846.1
2	0.0	0.0	33.4	3631.8
3	0.0	0.0	30.3	3050.4
4	0.0	0.0	20.6	2093.8

Deep	0.0	0.0	18.2	1920.5	
Medium	0.0	0.0	43.5	4051.0	
Shallow	0.0	0.0	50.7	5475.8	
Array Temperature		0.0		92.2	Deg F

Induction Constants MAI-A.A 45

Last Edited on 05-JUL-2011,10:29

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-B 65

Base Calibration on 01-JUL-2011 18:46
Field Calibration on 04-JUL-2011 18:03

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13710	3.99
2	22224	5.98
3	30784	7.97
4	39184	9.86
5	48352	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.97	5.98

Photo Density Calibration MPD-B 65

Base Calibration on 02-JUL-2011 22:55
Field Check on 04-JUL-2011 18:02

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	50829	24574	59556	30836
Reference 2	20710	2286	24941	2541

Field Check at Base

1245.3	1199.3

Field Check

1247.3 1189.8

PE Calibration

Base Calibration

	Measured WS	Measured WH	Measured Ratio	Calibrated Ratio
Background	226	1107		
Reference 1	19076	50633	0.381	0.371
Reference 2	5565	20564	0.274	0.272

Field Check at Base

225.7 1107.0

Field Check

226.2 1113.9

Density Constants MPD-B 65

Last Edited on 05-JUL-2011,10:28

Density Source Id	254	
Nylon Calibrator Number	695	
Aluminium Calibrator Number	698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.09	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)
2.71	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	

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-B 34 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

- 57.56 ft GRGC - Gamma Ray
- 54.65 ft CGXT - MCG External Temperature

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

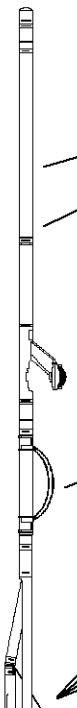
- 47.93 ft MINV - Micro-inverse
- 47.93 ft MNRL - Micro-normal
- 48.92 ft MLTC - MML Caliper

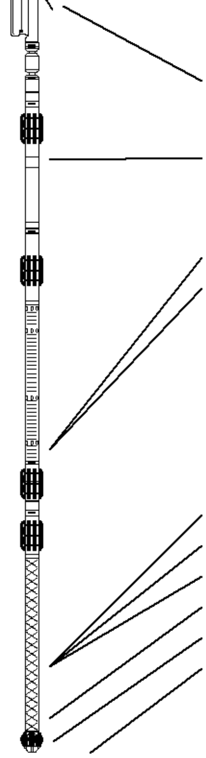
Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

- 43.13 ft NPRL - Limestone Neutron Por.

Compact Density/Caliper
MPD-B 65 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

- 35.89 ft CLDC - Density Caliper
- 33.96 ft DPRL - Limestone Density Por.
- 33.96 ft DEN - Compensated Density
- 33.96 ft DCOR - Density Correction





Tool		Offset	Measurement
SKJ-D.A Compact Knuckle Joint SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in		33.90 ft	PDPE - PE
Compact Focussed Electric MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in		26.24 ft	FEFE - Shallow FE
Compact Sonic MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in		12.96 ft	DT35 - 3-5' Compensated Sonic
		12.96 ft	SPRL - Wyllie Lime. Sonic Por.
Compact Induction MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in		3.34 ft	R40O - Array Ind. One Res 40
		3.34 ft	RTAO - Array Ind. One Res Rt
		3.34 ft	R60O - Array Ind. One Res 60
Total	Length: 64.42 ft Weight: 496.0 lb	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	OXY USA, INC.
WELL	ELIZABETH A. COX #6
FIELD	VICTORY
PROVINCE/COUNTY	HASKELL
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2979.00	feet	First Reading	5563.00	feet
Elevation Drill Floor	2977.00	feet	Depth Driller	5560.00	feet
Elevation Ground Level	2968.00	feet	Depth Logger	5566.00	feet

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SHALLOW FOCUSED
ELECTRIC LOG

40 Years of Wireline 1970 2010

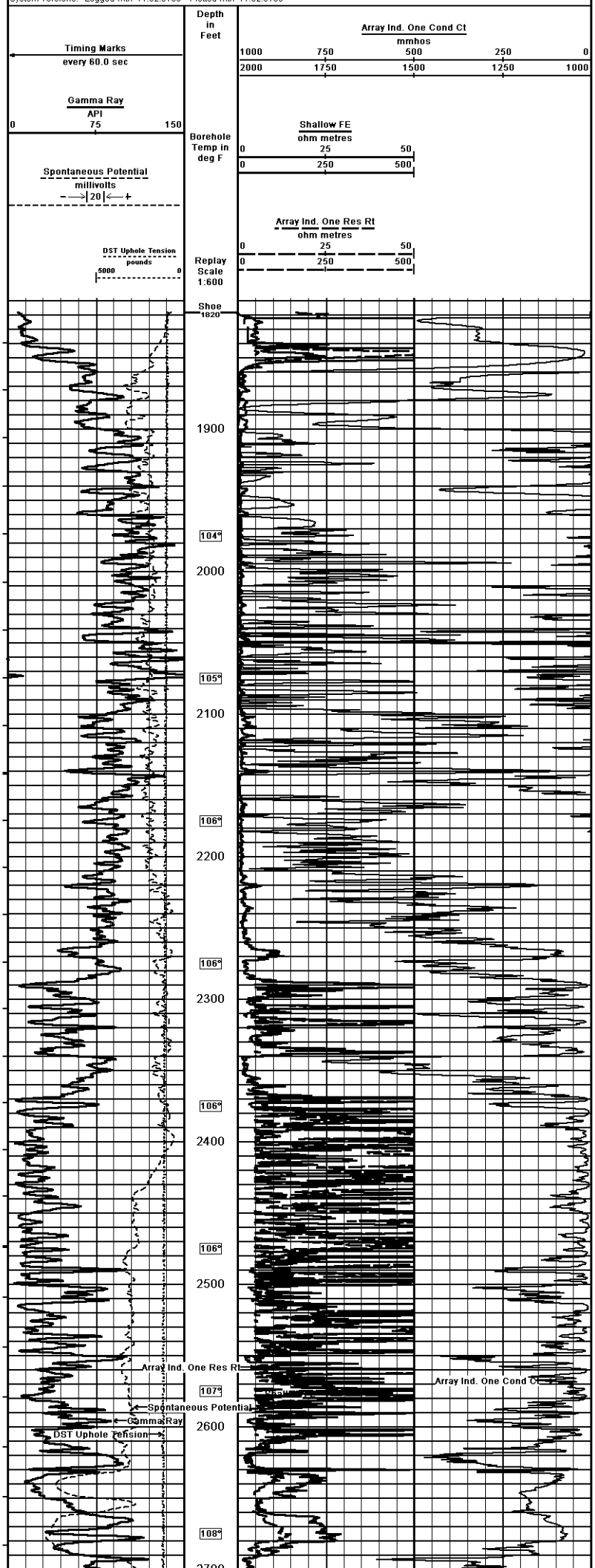
Weatherford — ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	OXY USA, INC.
WELL	ELIZABETH A. COX #6
FIELD	VICTORY
PROVINCE/COUNTY	HASKELL
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2080' FSL & 1230' FEL
SEC 8 TWP 30S RGE 33W	Other Services: MDN/MPD, MML, MSS
API Number 15-081-21943	
Permit Number	
Permanent Datum G.L., Elevation 2968 feet	Elevations: feet
Log Measured From K.B. @ 11 FEET above Permanent Datum	KB 2979.00
Drilling Measured From K.B.	DF 2977.00
	GL 2968.00

Date	05-JUL-2011		
Run Number	ONE		
Depth Driller	5560.00 feet		
Depth Logger	5566.00 feet		
First Reading	5563.00 feet		
Last Reading	0.00 feet		
Casing Driller	1815.00 feet		
Casing Logger	1818.00 feet		
Bit Size	8.750 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.10 lb/USg	41.00 CP	
PH / Fluid Loss	10.40	7.60 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.37 @ 84.0 ohm-m		
Rmf @ Measured Temp	1.10 @ 84.0 ohm-m		
Rmc @ Measured Temp	1.64 @ 84.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.84 @139.0 ohm-m		
Time Since Circulation	5 HOURS		
Max Recorded Temp	140.00 deg F		
Equipment Name	COMPACT		
Equipment / Base	13057	LIB	
Recorded By	A. GIAMBALVO		
Witnessed By	AUSTIN GARNER		BILL KEMP
S.O. / JOB #	3531101		LB11-154

1 INCHMAIN PASS

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-JUL-2011 19:16
Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta — Recorded on 05-JUL-2011 16:55
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186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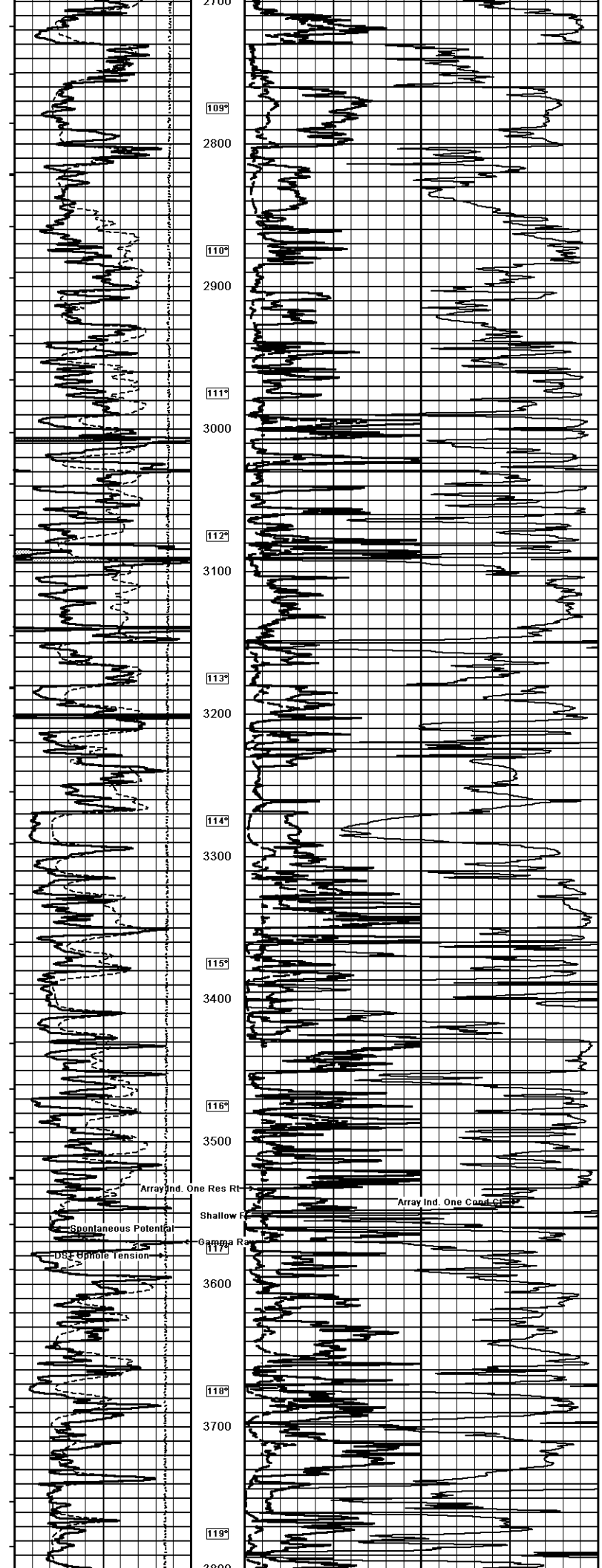
every 60.0 sec
Gamma Ray
API
0
75
150
Spontaneous Potential
millivolts
20
DST Uphole Tension
pounds
5000
0
Depth
in
Feet
Borehole
Temp in
deg F
Replay
Scale
1:600
Array Ind. One Cond Ct
mmhos
1000
750
500
250
0
2000
1750
1500
1250
1000
Shallow FE
ohm metres
0
25
50
0
250
500
Array Ind. One Res Rt
ohm metres
0
25
50
0
250
500
Shoe
1820
1900
104°
2000
105°
2100
106°
2200
106°
2300
106°
2400
106°
2500
Array Ind. One Res Rt
107°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond Ct
2600
108°
2700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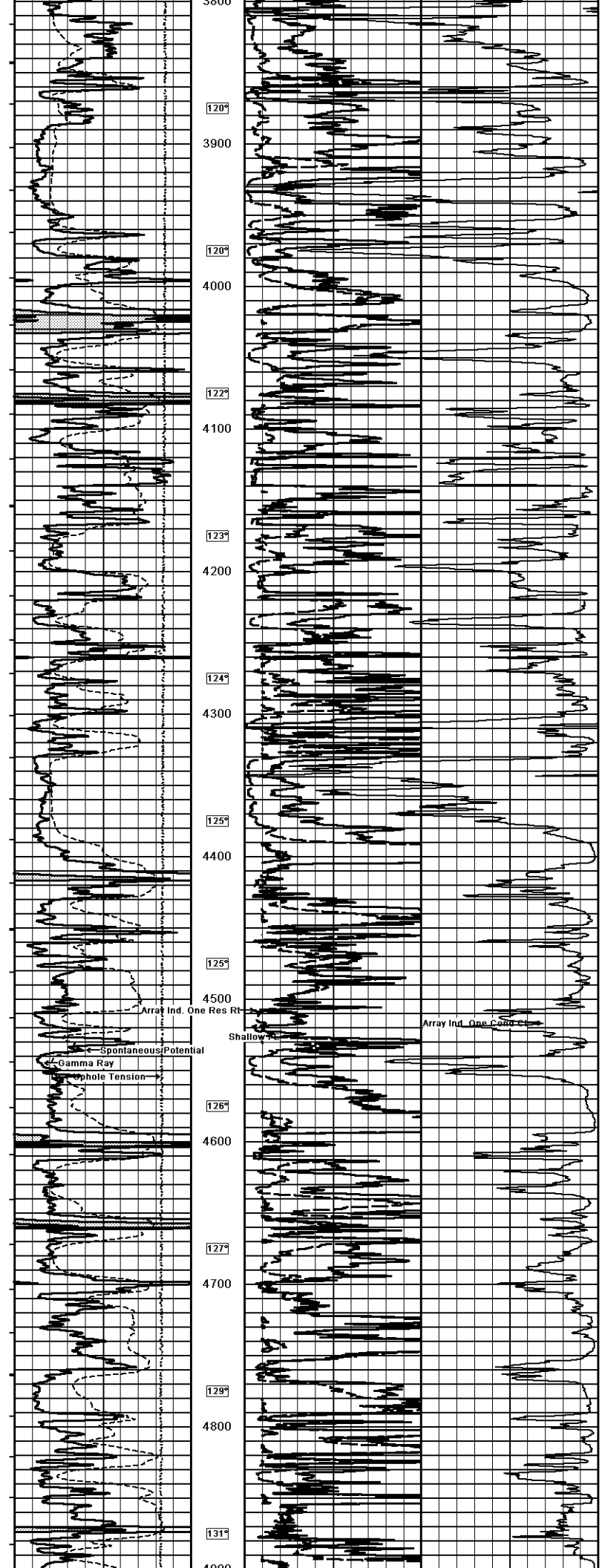
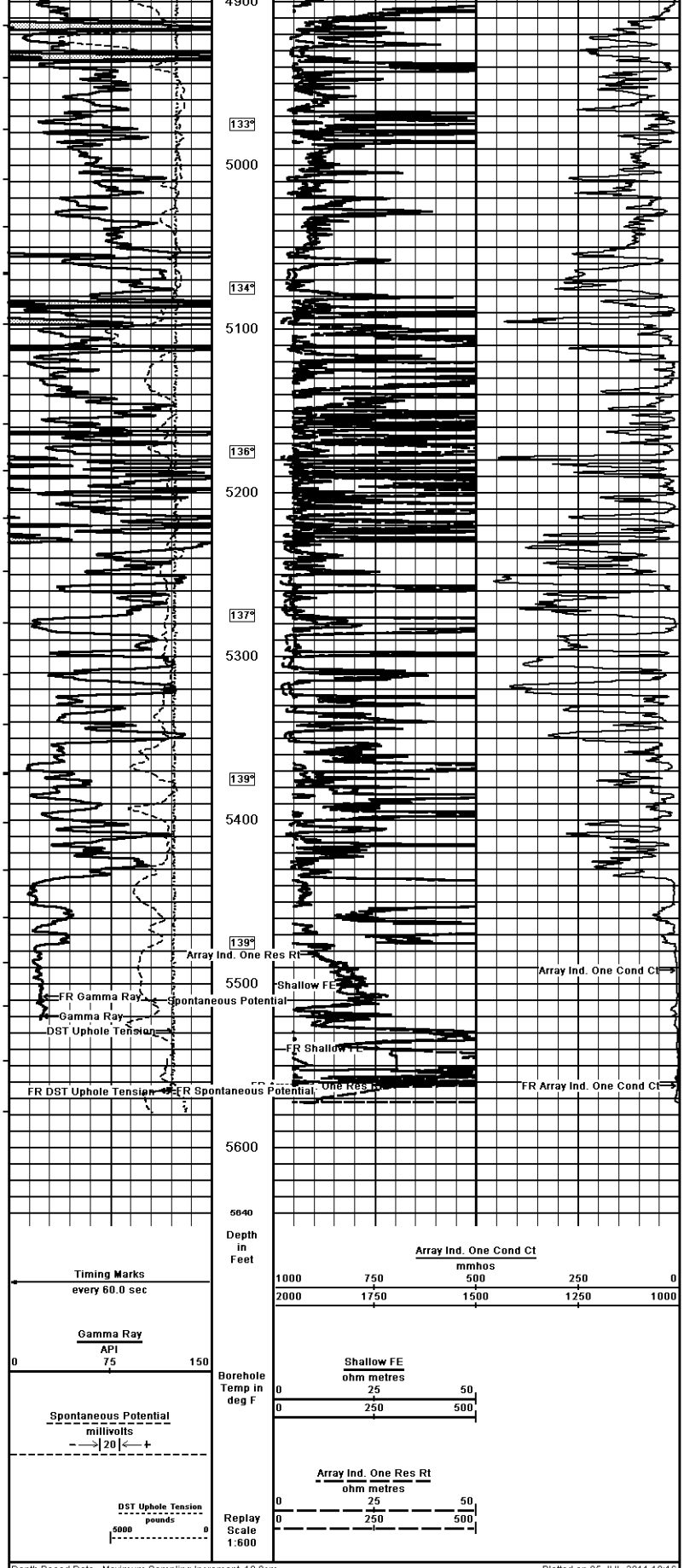
109°
2800
110°
2900
111°
3000
112°
3100
113°
3200
114°
3300
115°
3400
116°
3500
Array Ind. One Res Rt
Array Ind. One Cond Cl
Shallow R
Spontaneous Potential
Gamma Ra
117°
DSI Cable Tension
3600
118°
3700
119°


3800
120°
3900
120°
4000
122°
4100
123°
4200
124°
4300
125°
4400
125°
4500
Array Ind. One Res Rt
Array Ind. One Cond Cnd
Shallow
Spontaneous Potential
Gamma Ray
Cphole Tension
126°
4600
127°
4700
129°
4800
131°



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-JUL-2011 19:16

Filename: C:\Minimus 11.02.3186\Data\Oxy Elizabeth A. Cox #6\Oxy Elizabeth A. Cox #6_004.dta — Recorded on 05-JUL-2011 16:55

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

1 INCH MAIN PASS

COMPANY	OXY USA, INC.
WELL	ELIZABETH A. COX #6
FIELD	VICTORY
PROVINCE/COUNTY	HASKELL
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2979.00	feet	First Reading	5563.00	feet
Elevation Drill Floor	2977.00	feet	Depth Driller	5560.00	feet
Elevation Ground Level	2968.00	feet	Depth Logger	5566.00	feet

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ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG