Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FNL & 335' FWL

SEC	TWP	RGE	Other Services
34	33N	29W	MPD/MDN MML

Latitude
Longitude
API Number 15-119-21392

Permanent Datum GL, Elevation 2539 feet
Log Measured From KB
Drilling Measured From KB @ 13 feet

Elevations:	feet
KB	2552.00
DF	2550.00
GL	2539.00

Date	02-SEP-2015				
Run Number	ONE				
Service Order	7884-128390013				
Depth Driller	6400.00	feet			
Depth Logger	6399.00	feet			
First Reading	6396.00	feet			
Last Reading	1493.00	feet			
Casing Driller	1496.00	feet			
Casing Logger	1493.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	WBM				
Density / Viscosity	9.10	lb/USg	71.00 CP		
PH / Fluid Loss	11.50		7.40 ml/30Min		
Sample Source	MUD PIT				
Rm @ Measured Temp	1.32 @ 75.0	ohm-m			
Rmf @ Measured Temp	1.05 @ 75.0	ohm-m			
Rmc @ Measured Temp	1.58 @ 75.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.76 @132.0	ohm-m			
Time Since Circulation	3 HOURS				
Max Recorded Temp	132.00	deg F			
Equipment / Base	13096	LIB			
Recorded By	MILES WILKINS				
Witnessed By	ROGER PEARSON		PETE DEEBIHAM		
JOB # :	LB15-119				

BOREHOLE RECORD

Last Edited: 02-SEP-2015 11:13

Bit Size inches	Depth From feet	Depth To feet
7.875	1496.00	6400.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1496.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 15.01.3109.
- 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.
  - REPEAT AND HIGH RESOLUTION SECTIONS PLOTTED ON SANDSTONE MATRIX PER CUSTOMER REQUEST.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
  - HIGH RESOLUTION LOGS REQUESTED FROM TD TO 5650 FT.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING.: 1800 CU. FT.

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE CASING: 1259 CU. FT.

- SERVICE ORDER # 7884-128390013.

- RIG: DUKE DRILLING #7.

- ENGINEER: MILES WILKINS.

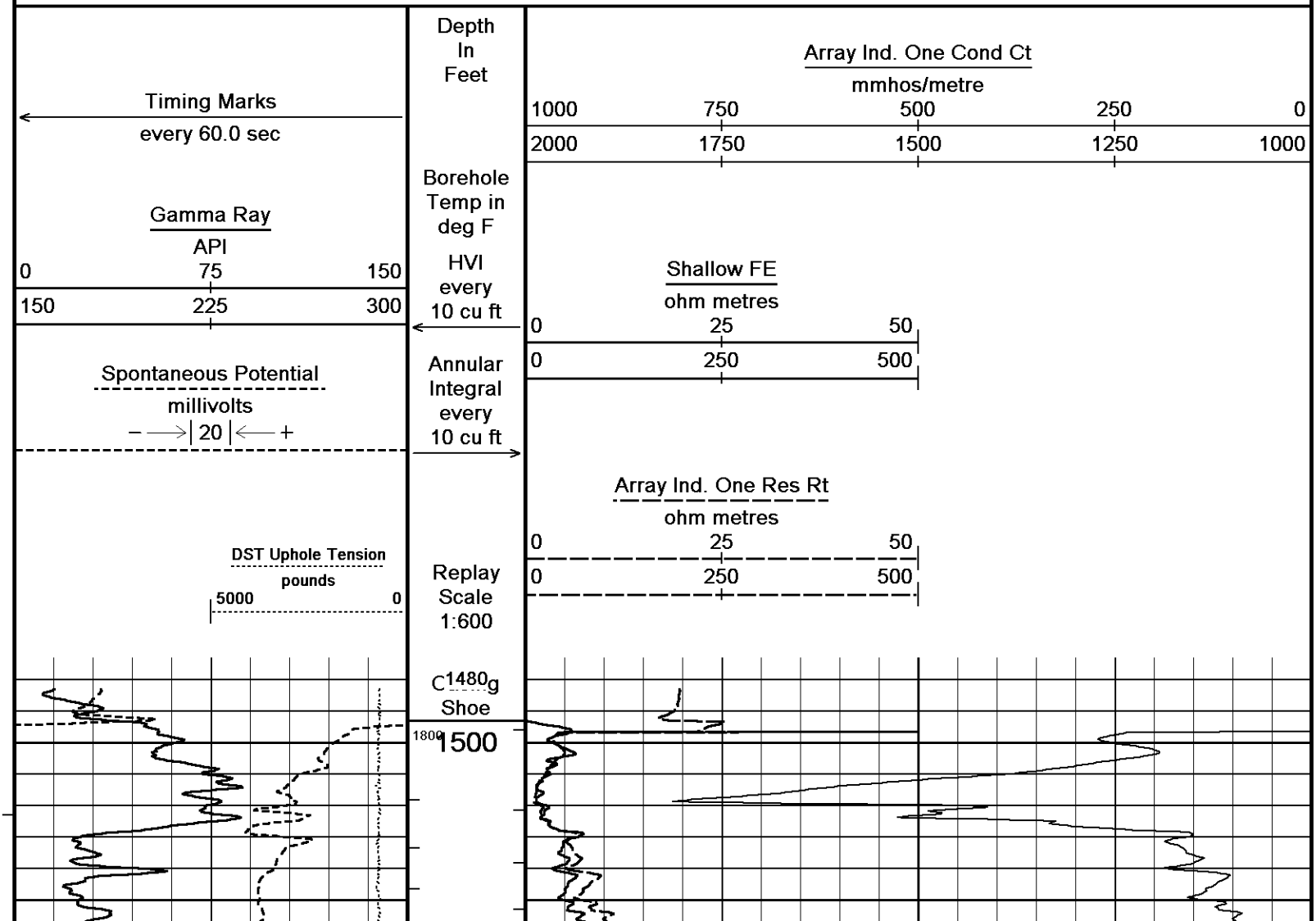
- OPERATORS: JOHN LAPOINT _NICK ADAME.

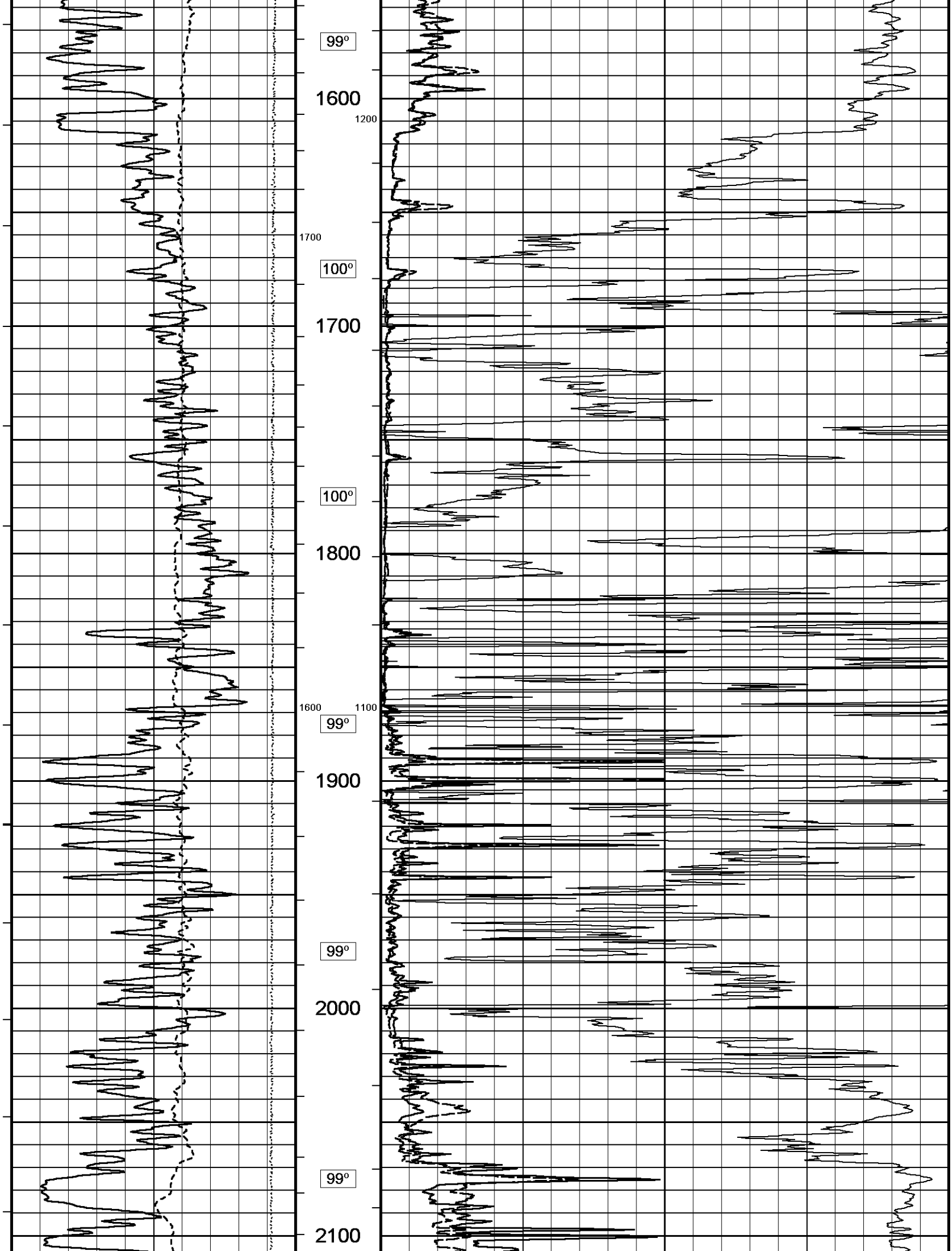
2 INCH MAIN

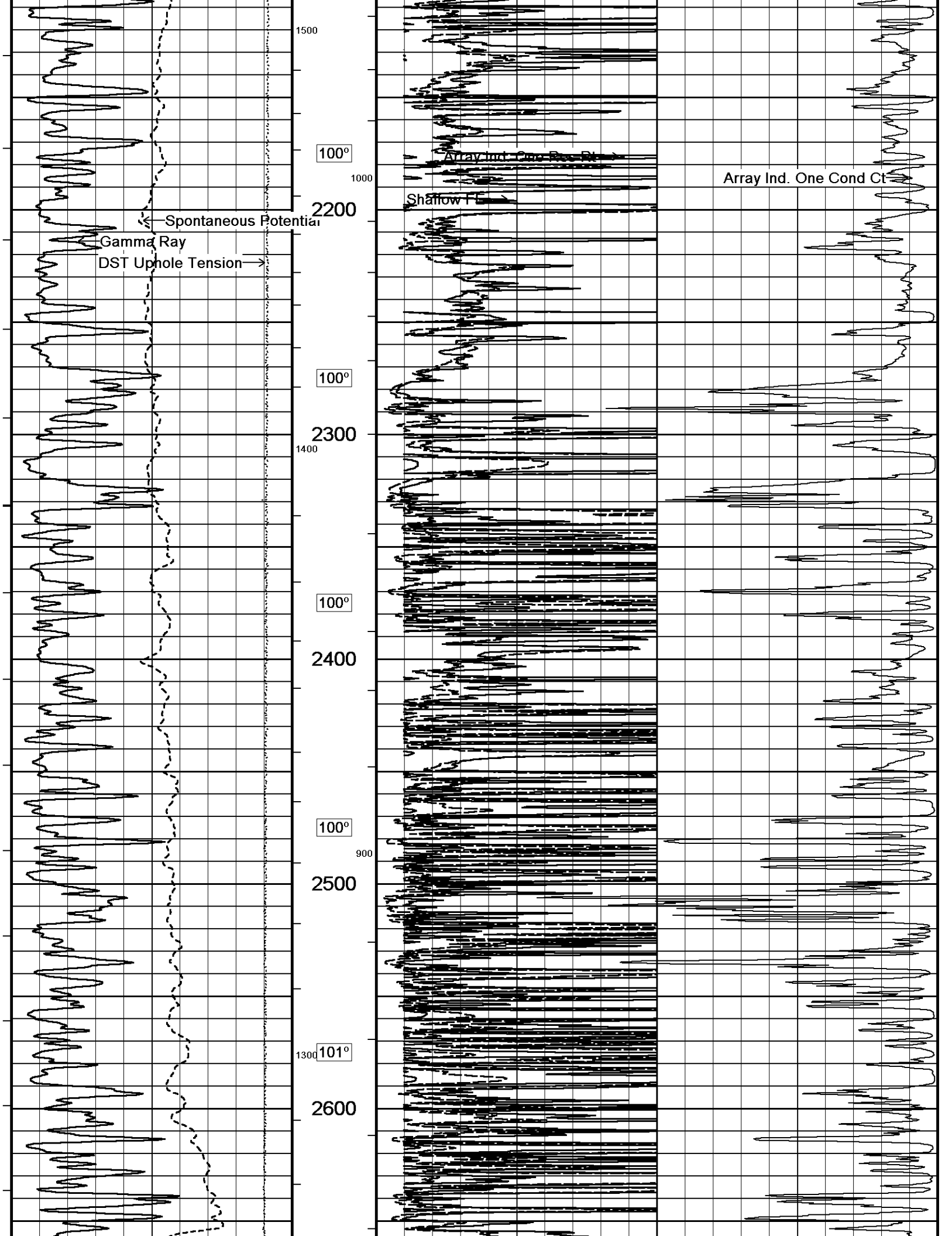
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:54

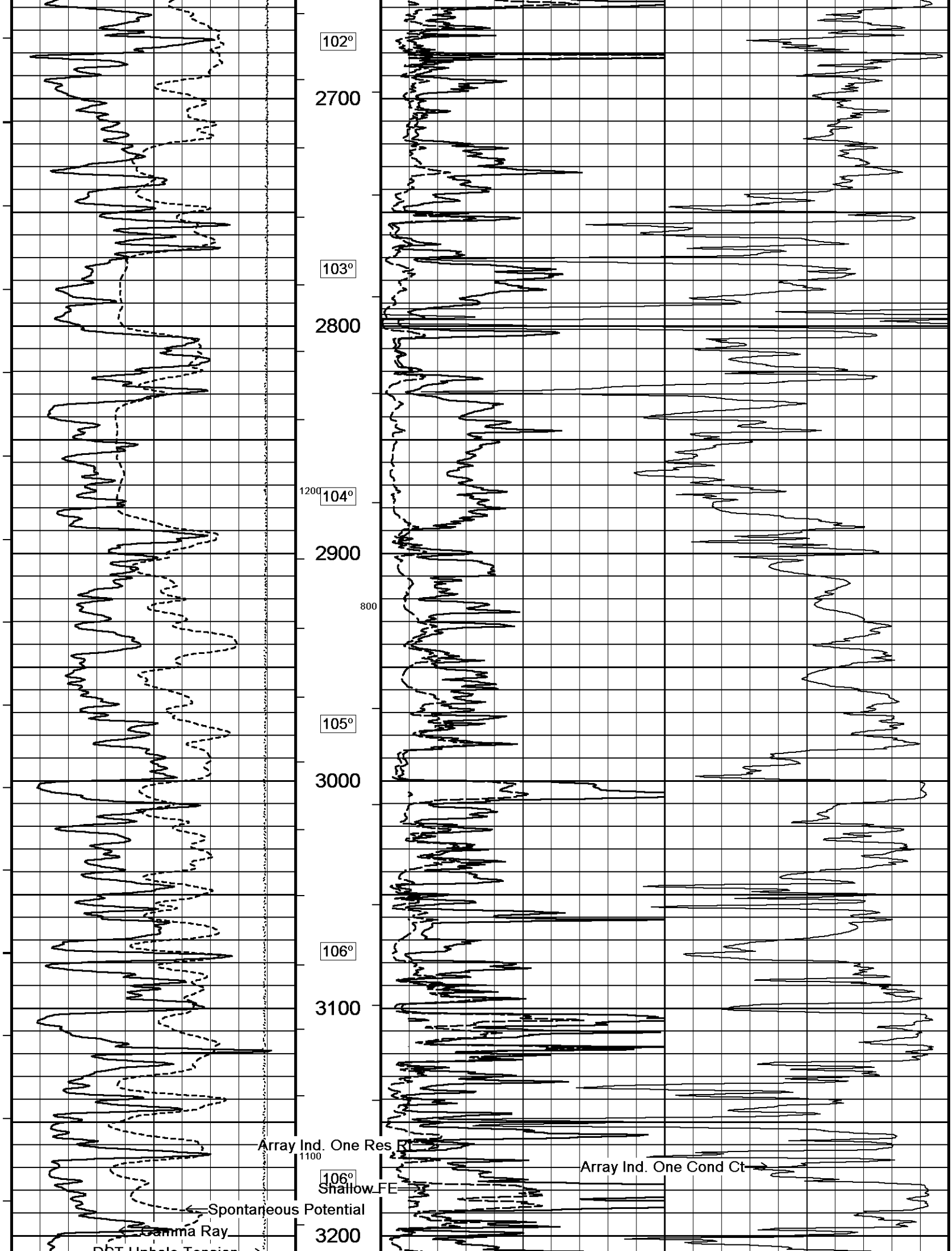
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta — Recorded on 02-SEP-2015 14:55

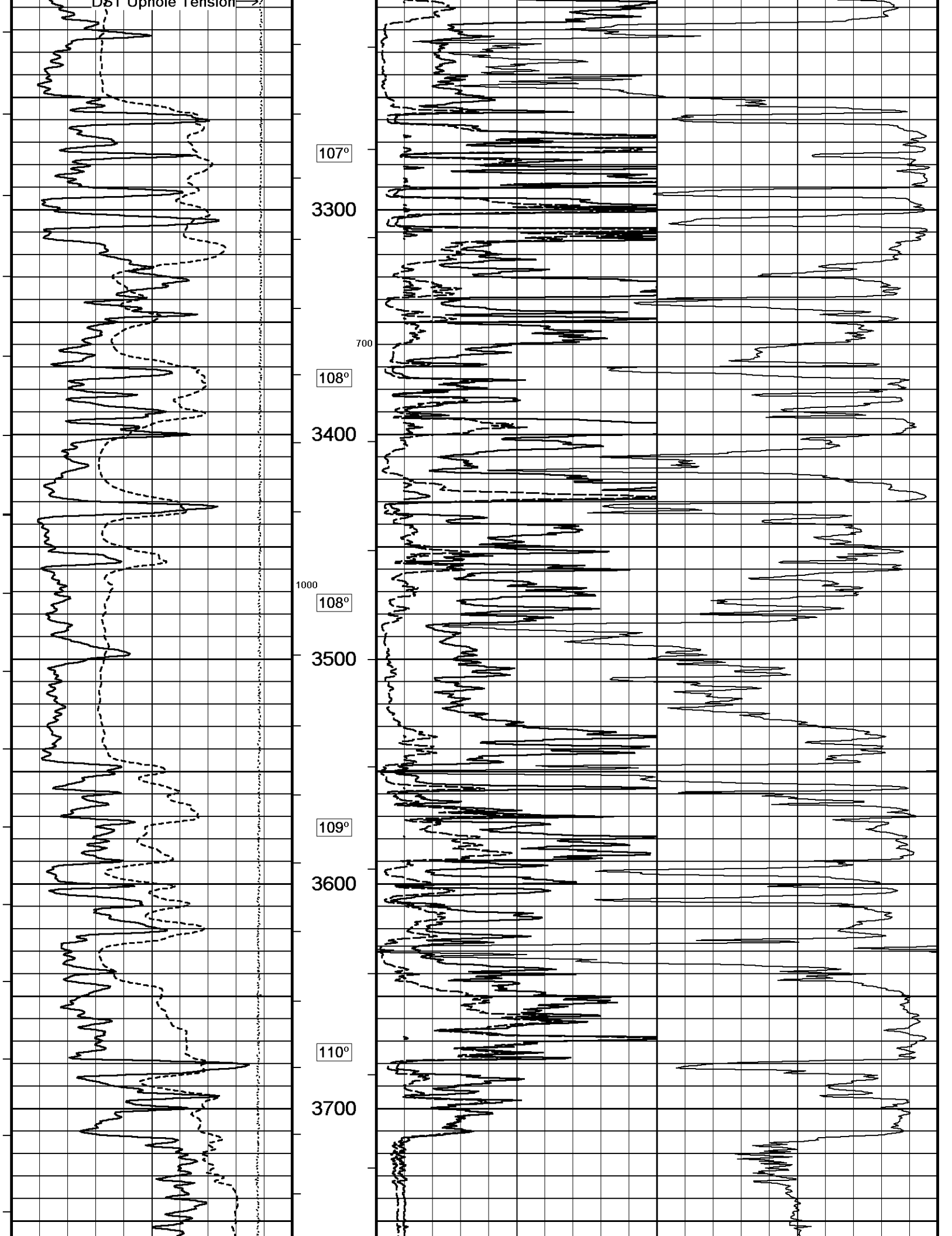
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

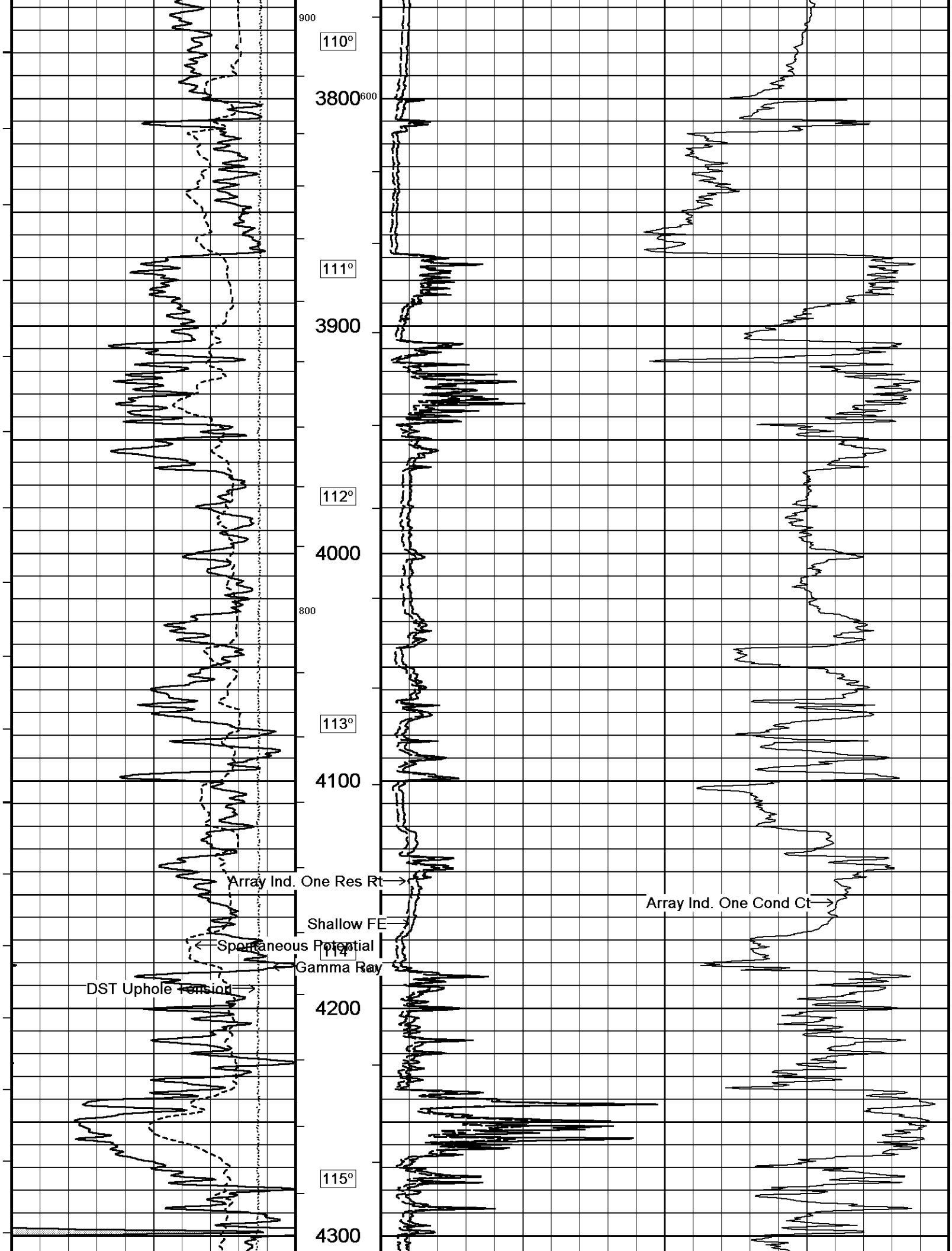


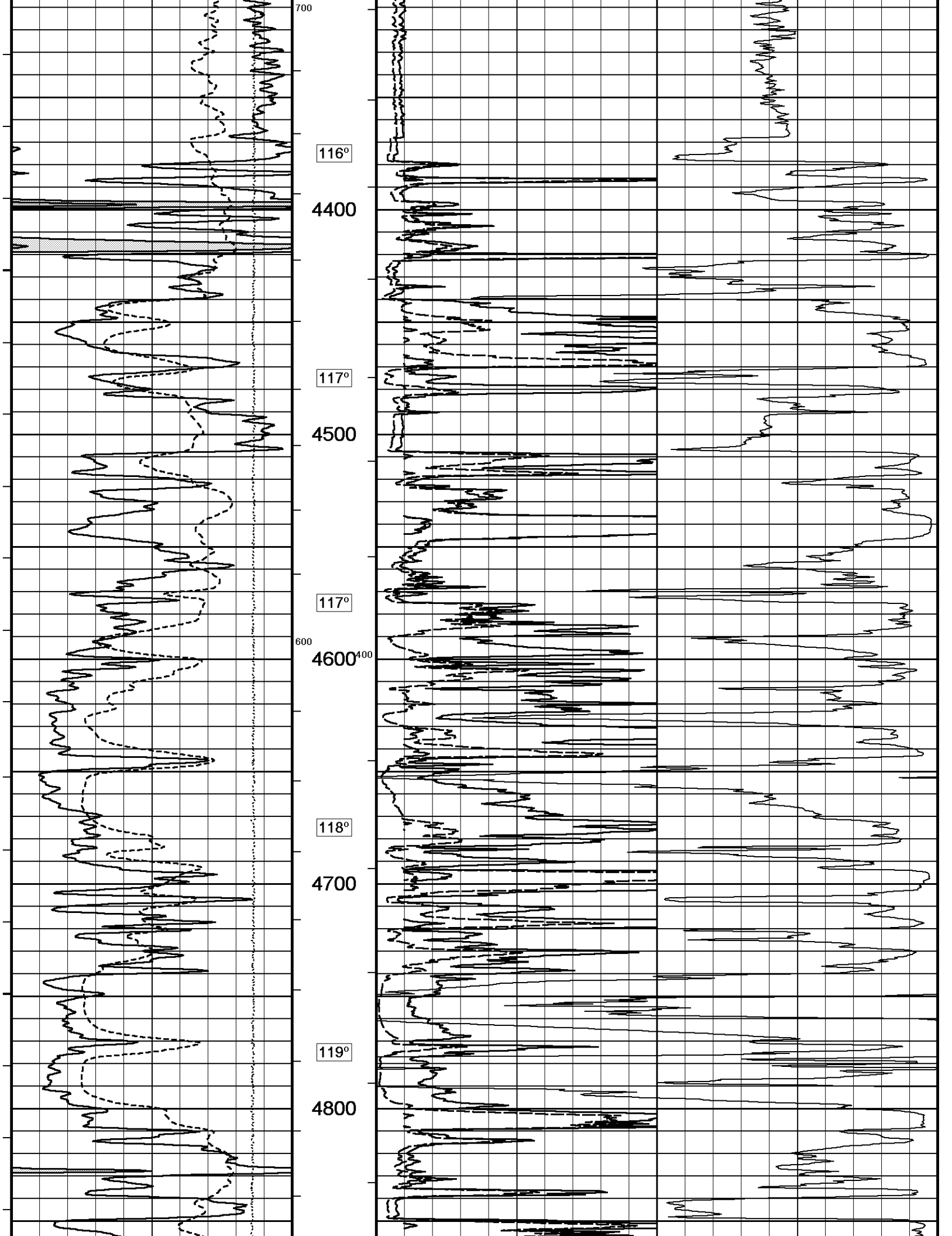

99°
1600
1200
1700
100°
1700
100°
1800
1600
1100
99°
1900
99°
2000
99°
2100

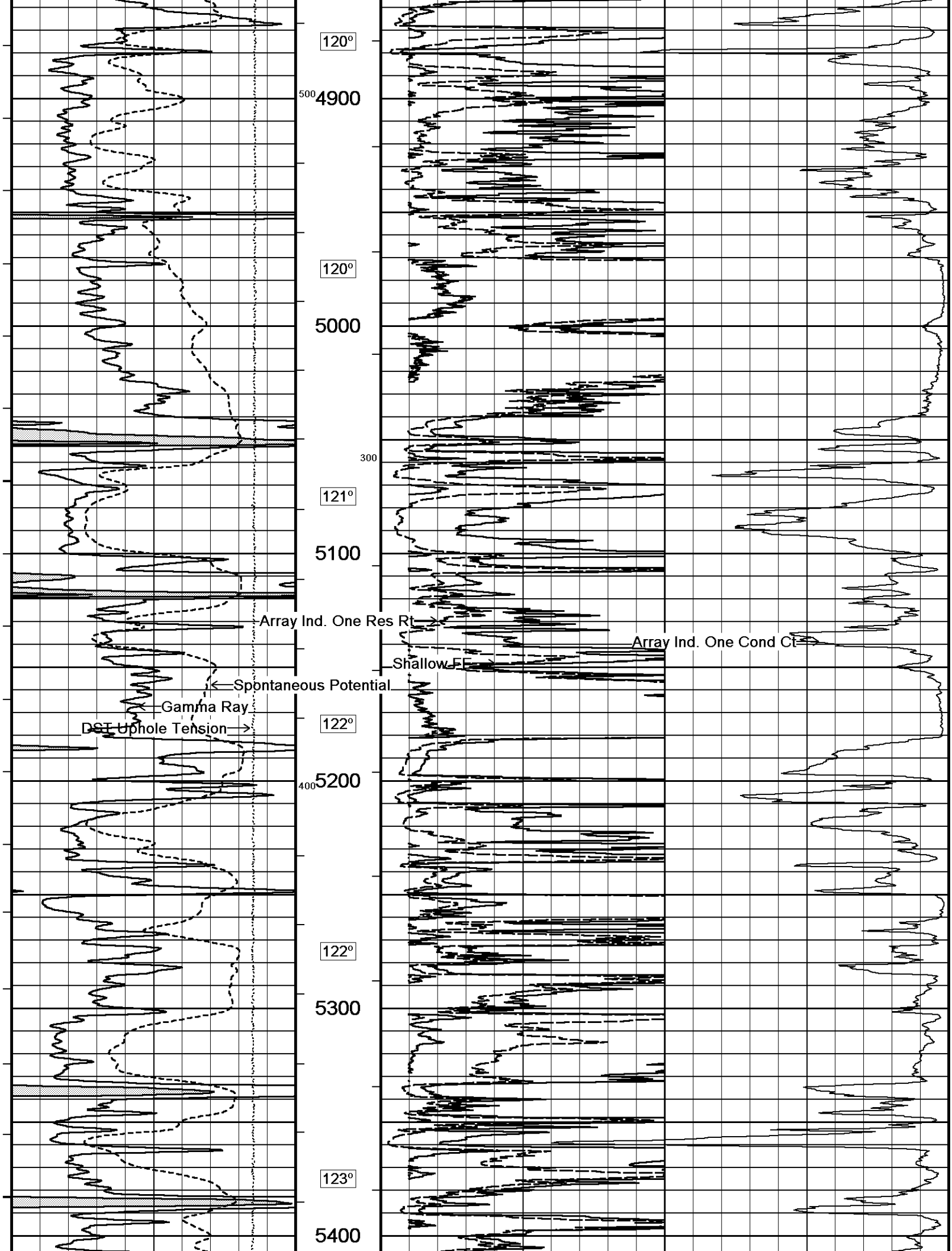

1500
100°
1000
Array Ind. One Cond Ct
2200
Spontaneous Potential
Gamma Ray
DST Uphole Tension
100°
2300
1400
100°
2400
100°
900
2500
1300
101°
2600

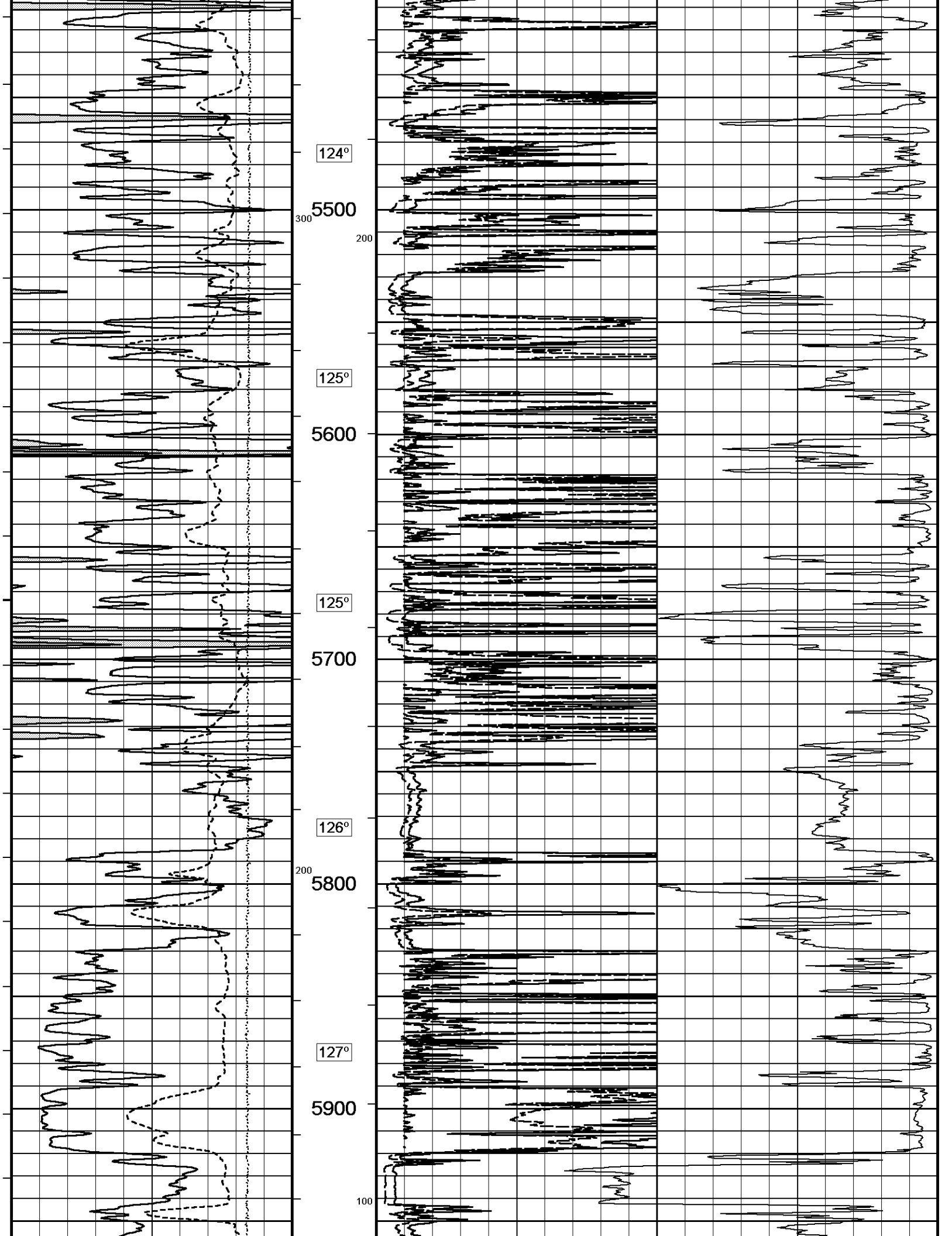

102°
2700
103°
2800
1200
104°
2900
800
105°
3000
106°
3100
Array Ind. One Res Rt
1100
106°
Shallow FE
Array Ind. One Cond Ct
Spontaneous Potential
Gamma Ray
3200

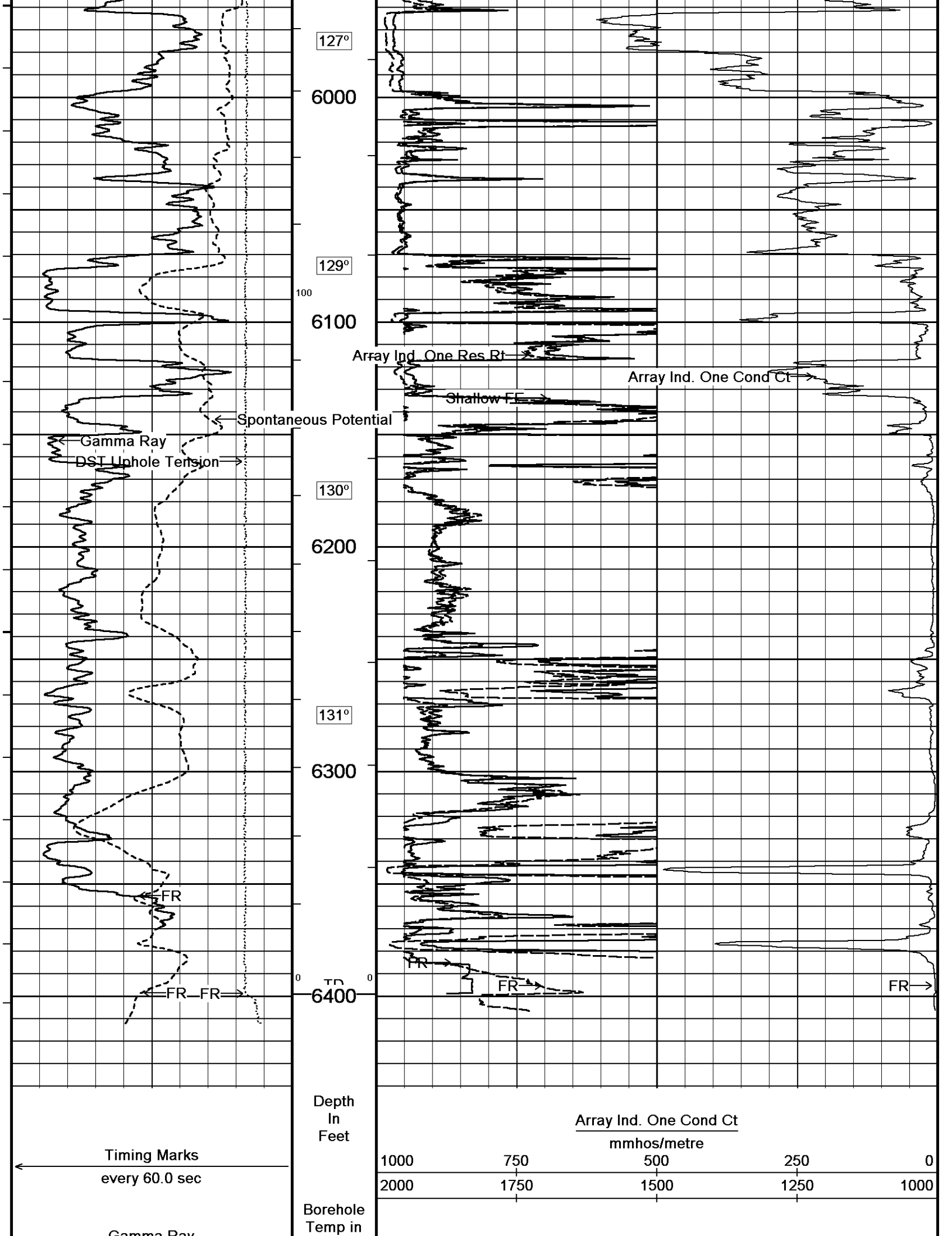

DGT Uphole Tension
107°
3300
700
108°
3400
1000
108°
3500
109°
3600
110°
3700


900
110°
3800
600
111°
3900
112°
4000
800
113°
4100
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
114°
Gamma Ray
DST Uphole Tension
4200
Array Ind. One Cond Ct
115°
4300


700
116°
4400
117°
4500
117°
600
4600400
118°
4700
119°
4800


120°
500
4900
120°
5000
300
121°
5100
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FF
Spontaneous Potential
Gamma Ray
DST Uphole Tension
122°
400
5200
122°
5300
123°
5400


124°
5500
300
200
125°
5600
125°
5700
126°
200
5800
127°
5900
100


127°
6000
129°
100
6100
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
130°
6200
131°
6300
FR
FR
FR
FR
FR
0
TD
0
6400
Depth
In
Feet
Timing Marks
every 60.0 sec
Array Ind. One Cond Ct
mmhos/metre
1000
750
500
250
0
2000
1750
1500
1250
1000
Borehole
Temp in

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

DST Uphole Tension
pounds
5000 0

deg F
HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:600

Shallow FE
ohm metres
0 25 50
0 250 500

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

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

2 INCH MAIN

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

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

4000

800

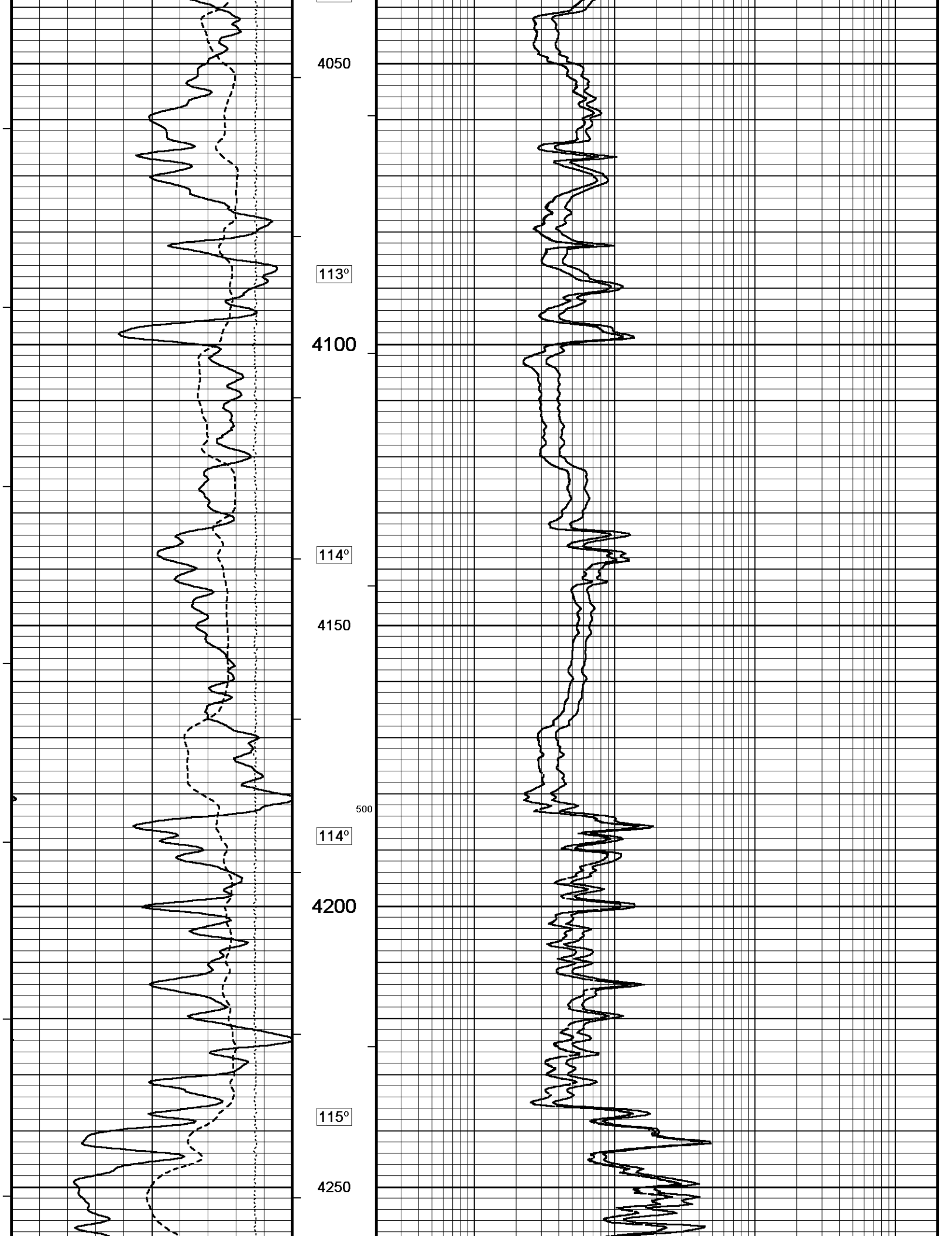
113°

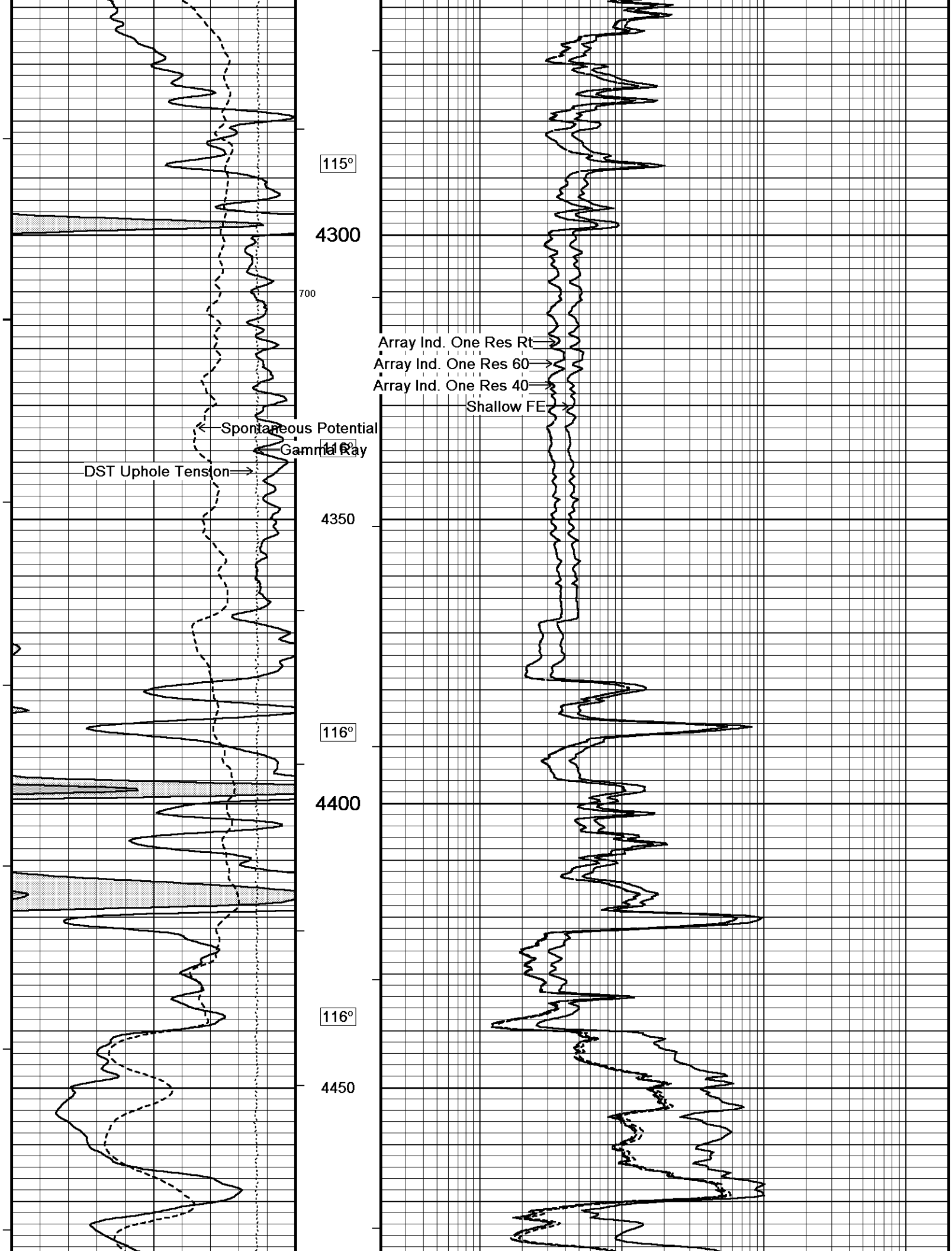
Shallow FE
ohm metres
0.20 2000
1 10 100 1000

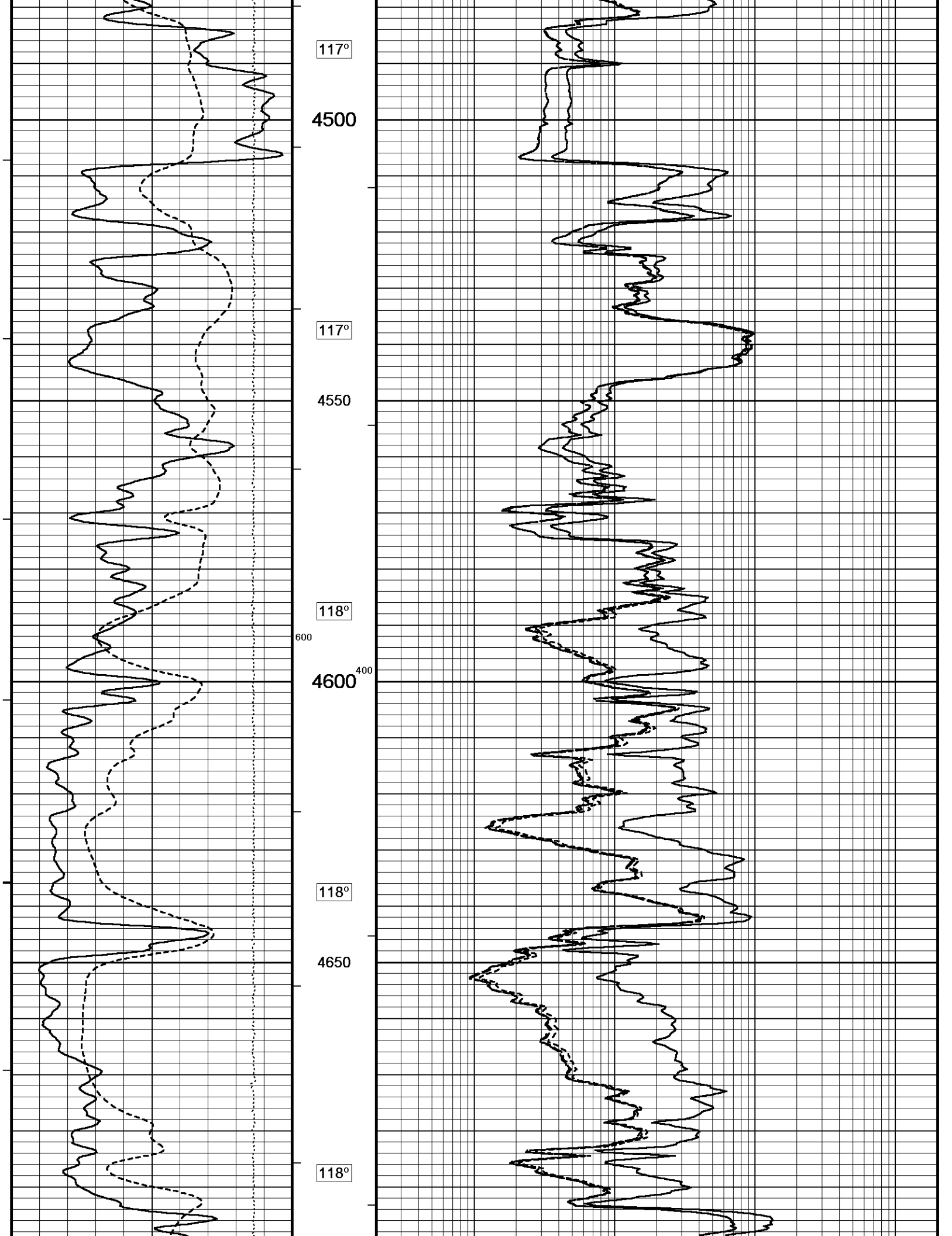
Array Ind. One Res 40
ohm metres
0.20 2000
1 10 100 1000

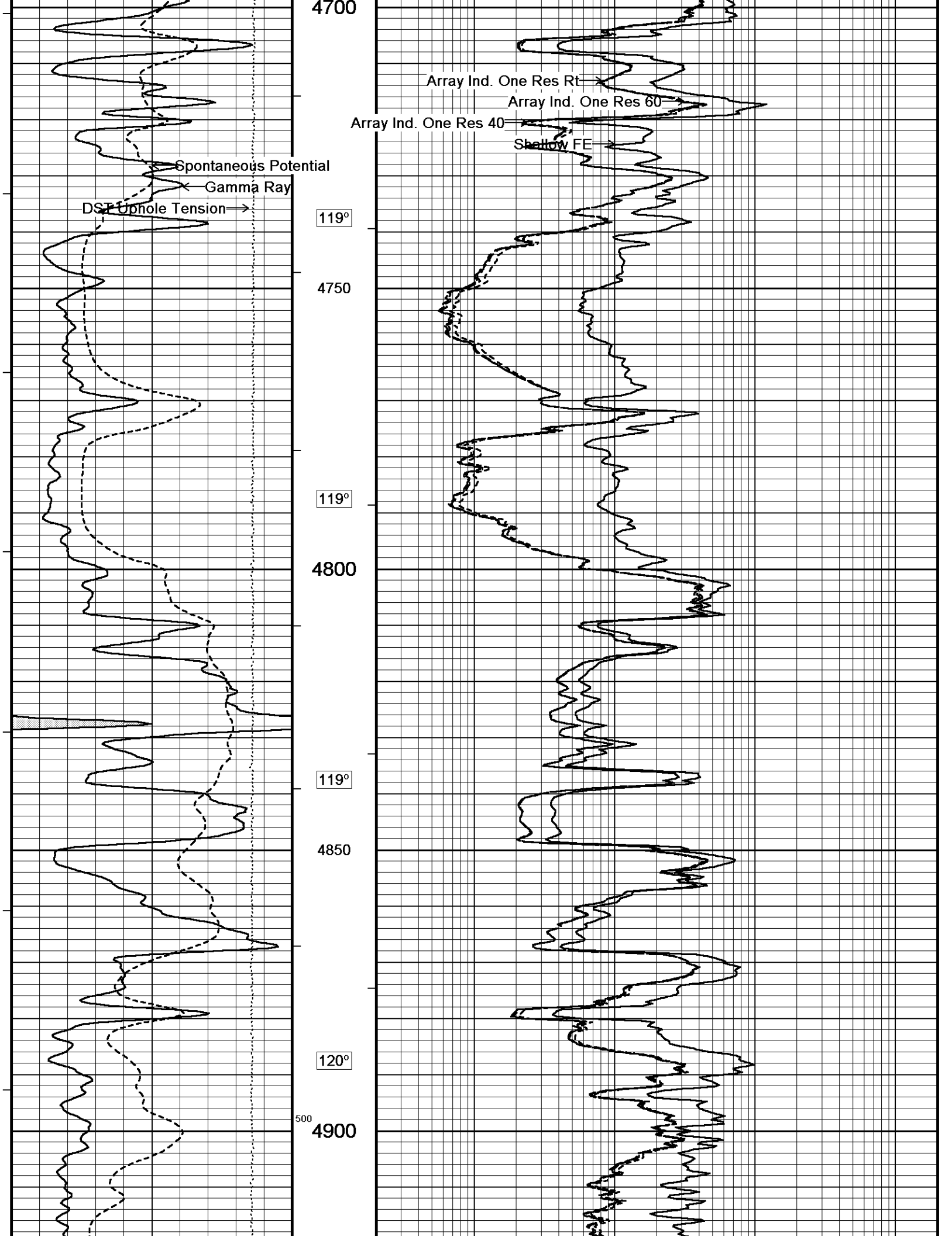
Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

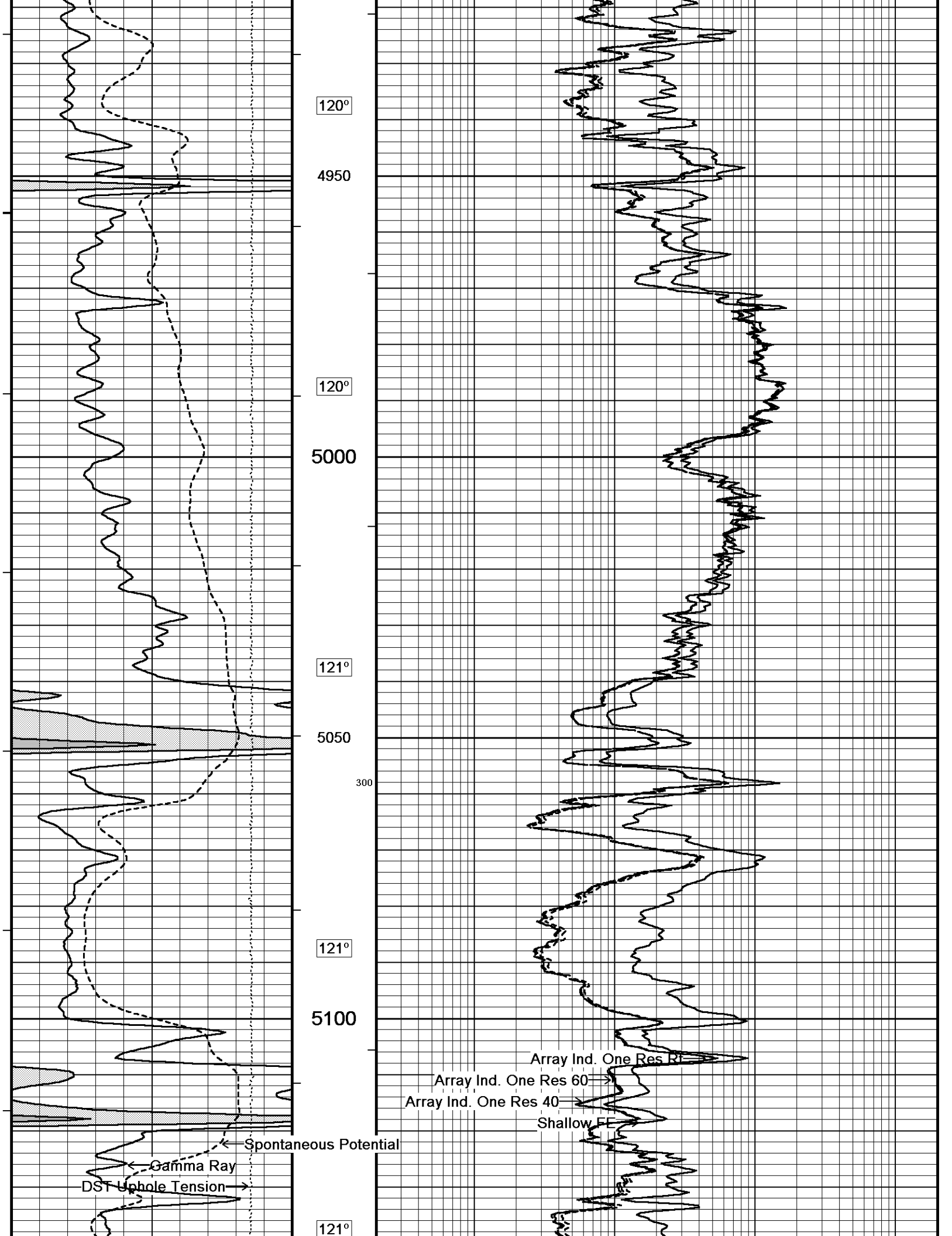
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

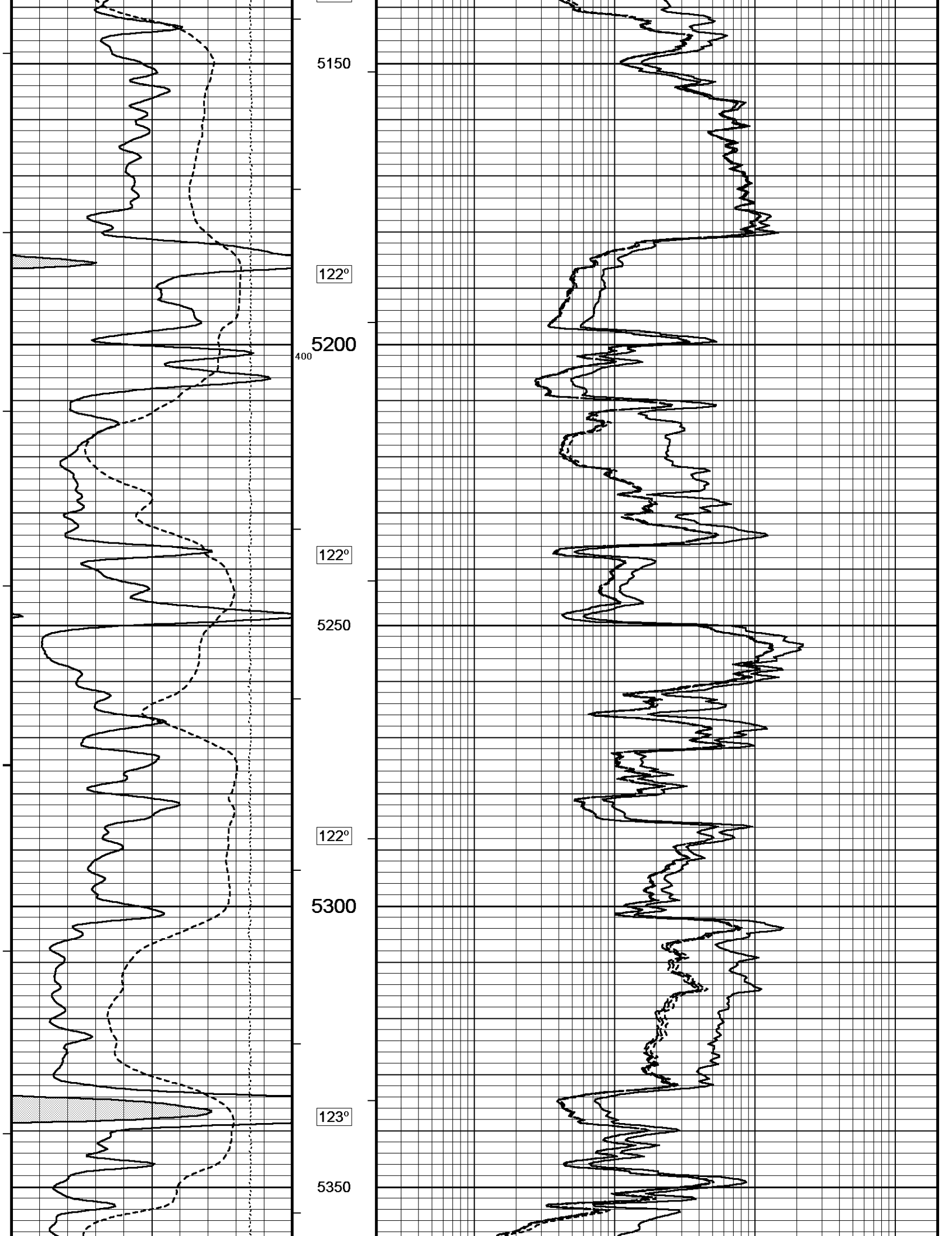

4050
113°
4100
114°
4150
500
114°
4200
115°
4250

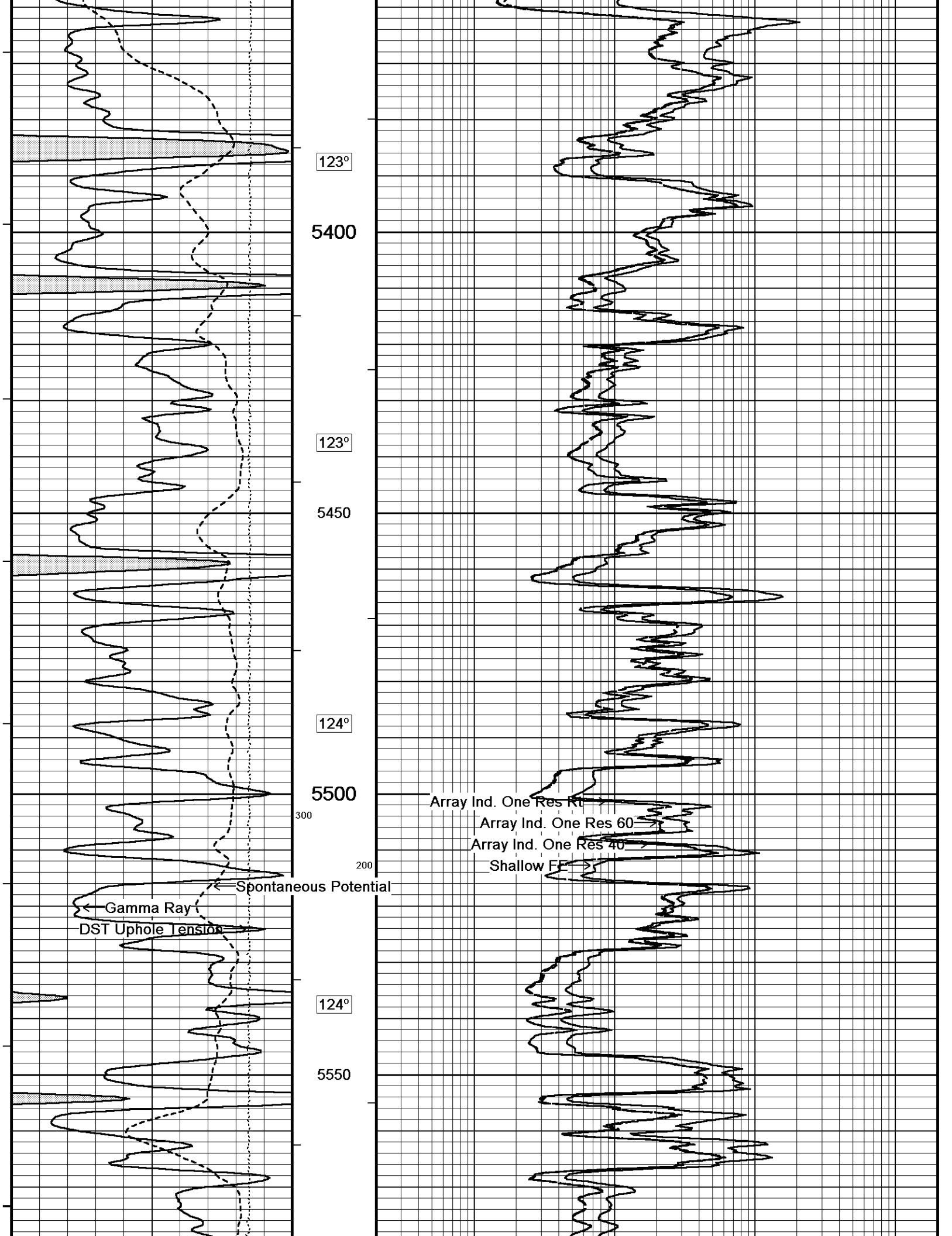

115°
4300
700
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
116°
4350
116°
4400
116°
4450

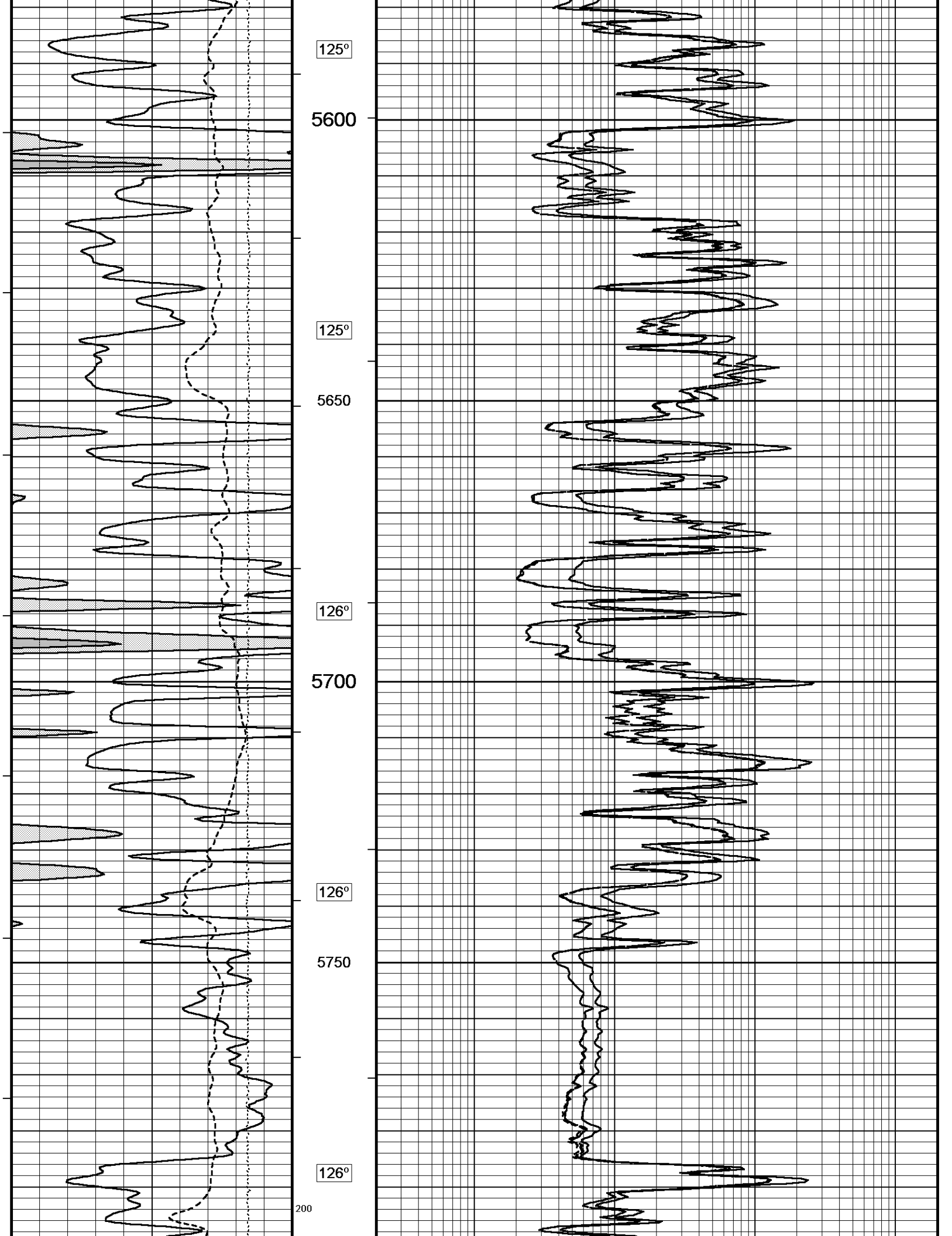

117°
4500
117°
4550
118°
600
4600
400
118°
4650
118°

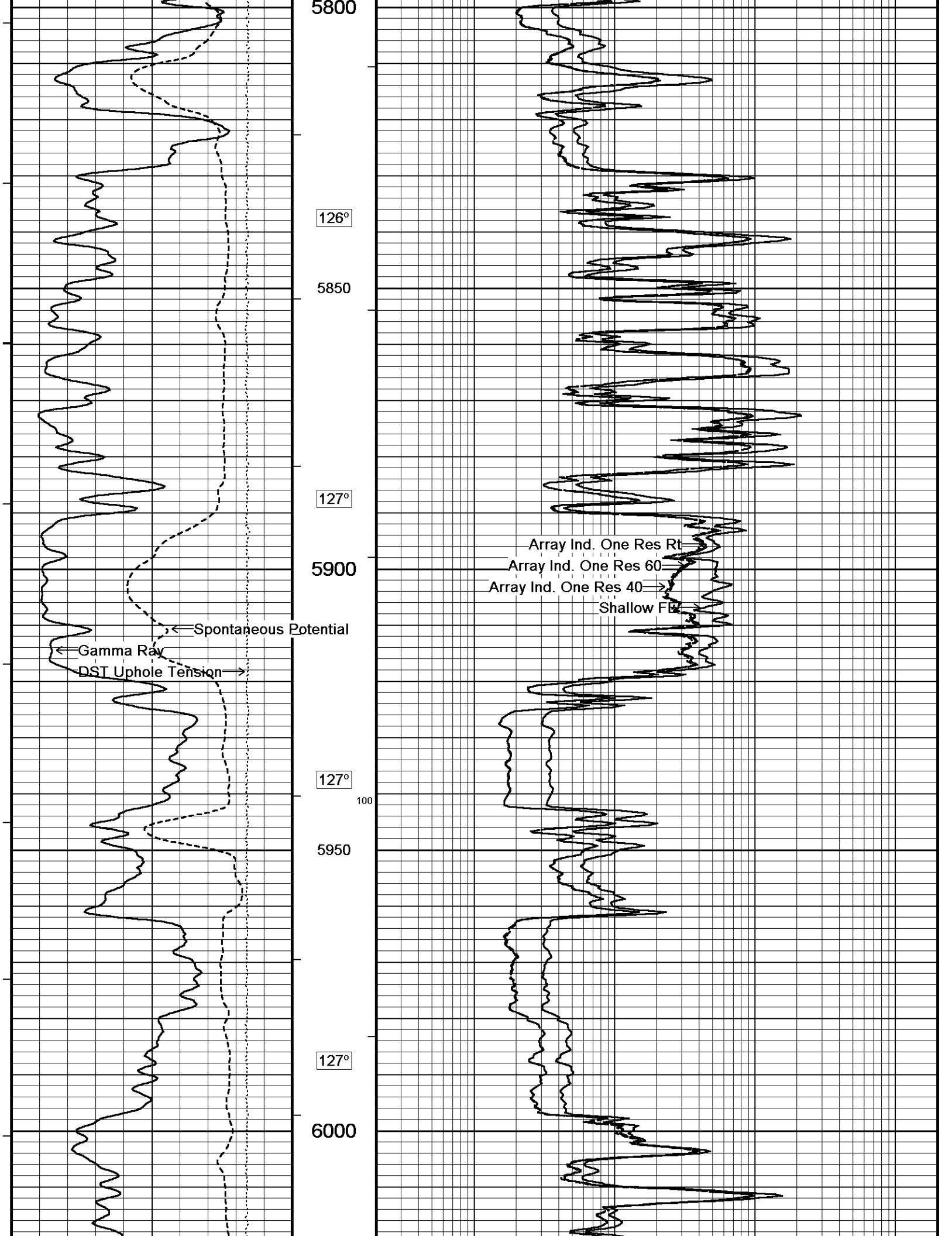

4700
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DSTT Uphole Tension
119°
4750
119°
4800
119°
4850
120°
500
4900

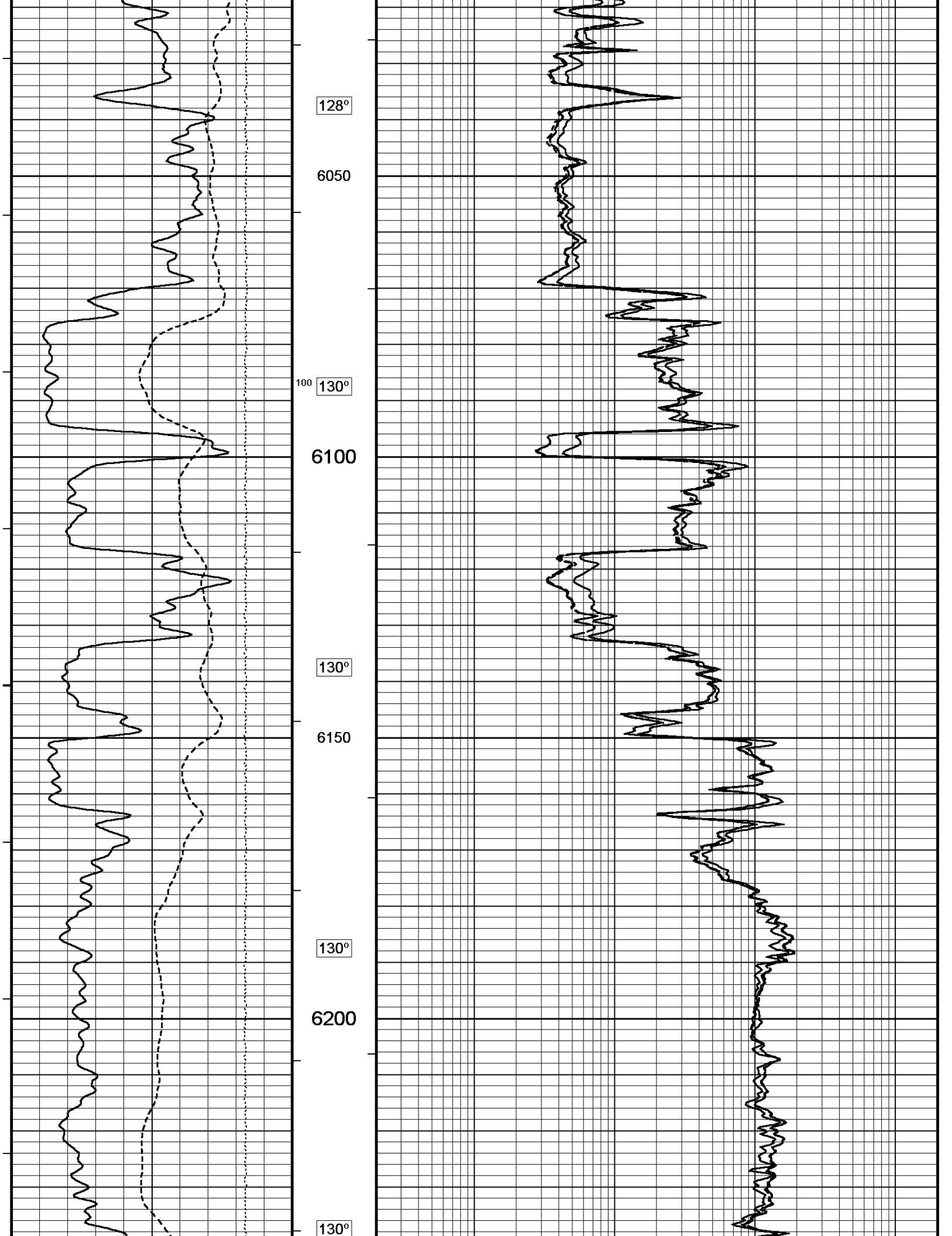

120°
4950
120°
5000
121°
5050
300
121°
5100
121°
Array Ind. One Res RT
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension

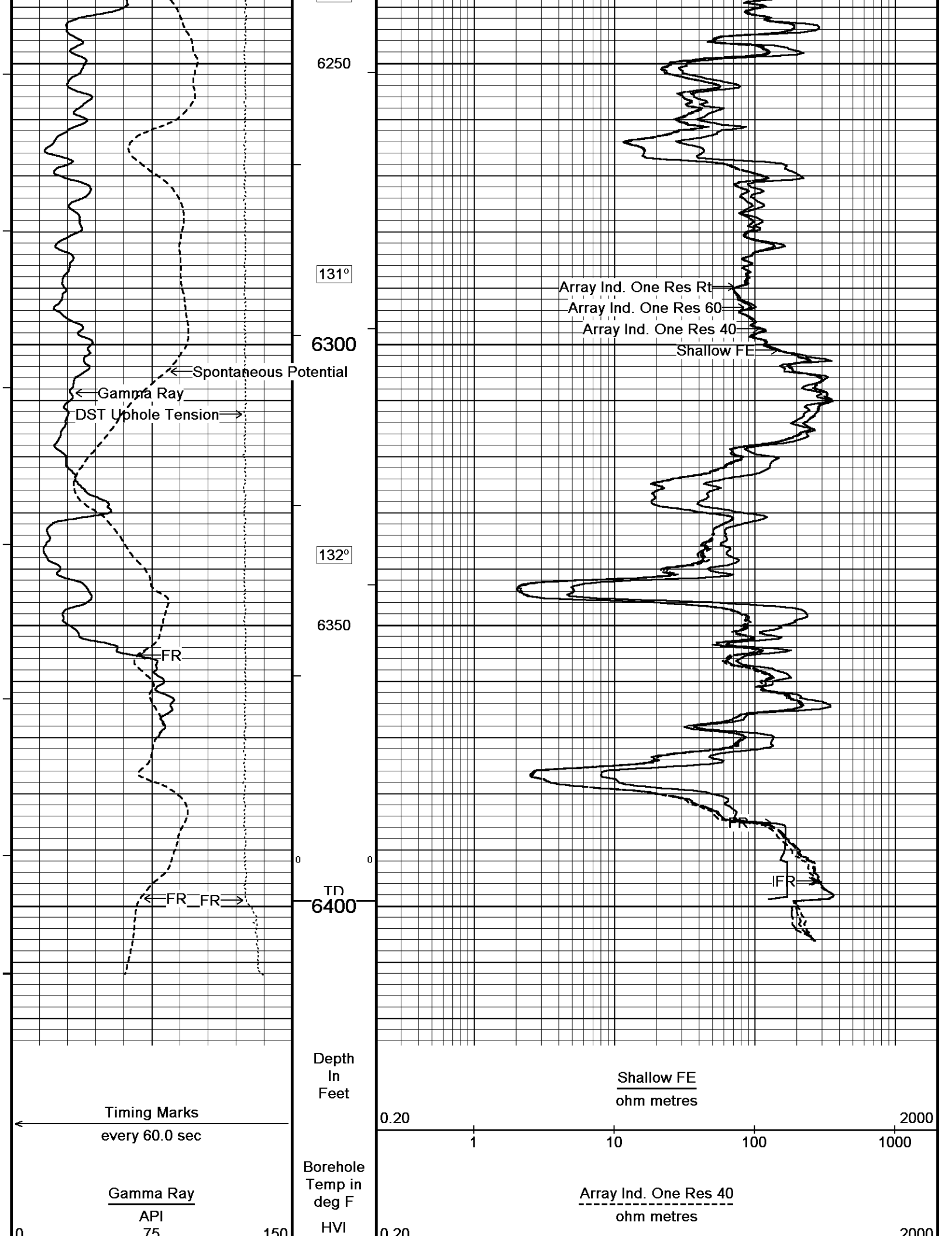

5150
122°
5200
400
122°
5250
122°
5300
123°
5350


123°
5400
123°
5450
124°
5500
300
200
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
124°
5550


125°
5600
125°
5650
126°
5700
126°
5750
126°
200


5800
126°
5850
127°
5900
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow Fo
Spontaneous Potential
Gamma Ray
DST Uphole Tension
127°
100
5950
127°
6000


128°
6050
100
130°
6100
130°
6150
130°
6200
130°


6250
131°
6300
132°
6350
TD
6400
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
FR
FR
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
FR
IFR
Timing Marks
every 60.0 sec
Depth
In
Feet
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Gamma Ray
API
0
75
150
Borehole
Temp in
deg F
HVI
Array Ind. One Res 40
ohm metres
0.20
2000

150 225 300

every 10 cu ft

1 10 100 1000

Spontaneous Potential
millivolts
− → | 20 | ← +

Annular Integral every 10 cu ft

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

DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

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

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta — Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

Depth in Feet

Timing Marks
every 60.0 sec

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Borehole Temp in deg F

Gamma Ray
API
0 75 150

HVI every 10 cu ft

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

150 225 300

Annular Integral every 10 cu ft

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

Spontaneous Potential
millivolts
− → | 20 | ← +

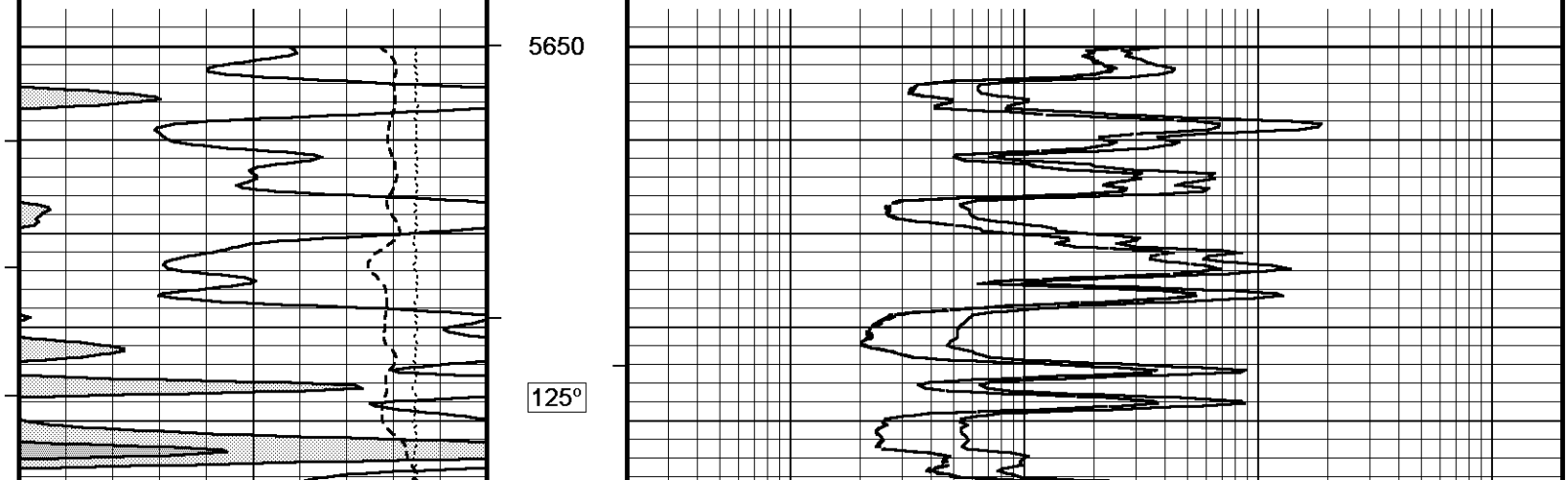
DST Uphole Tension
pounds
5000 0

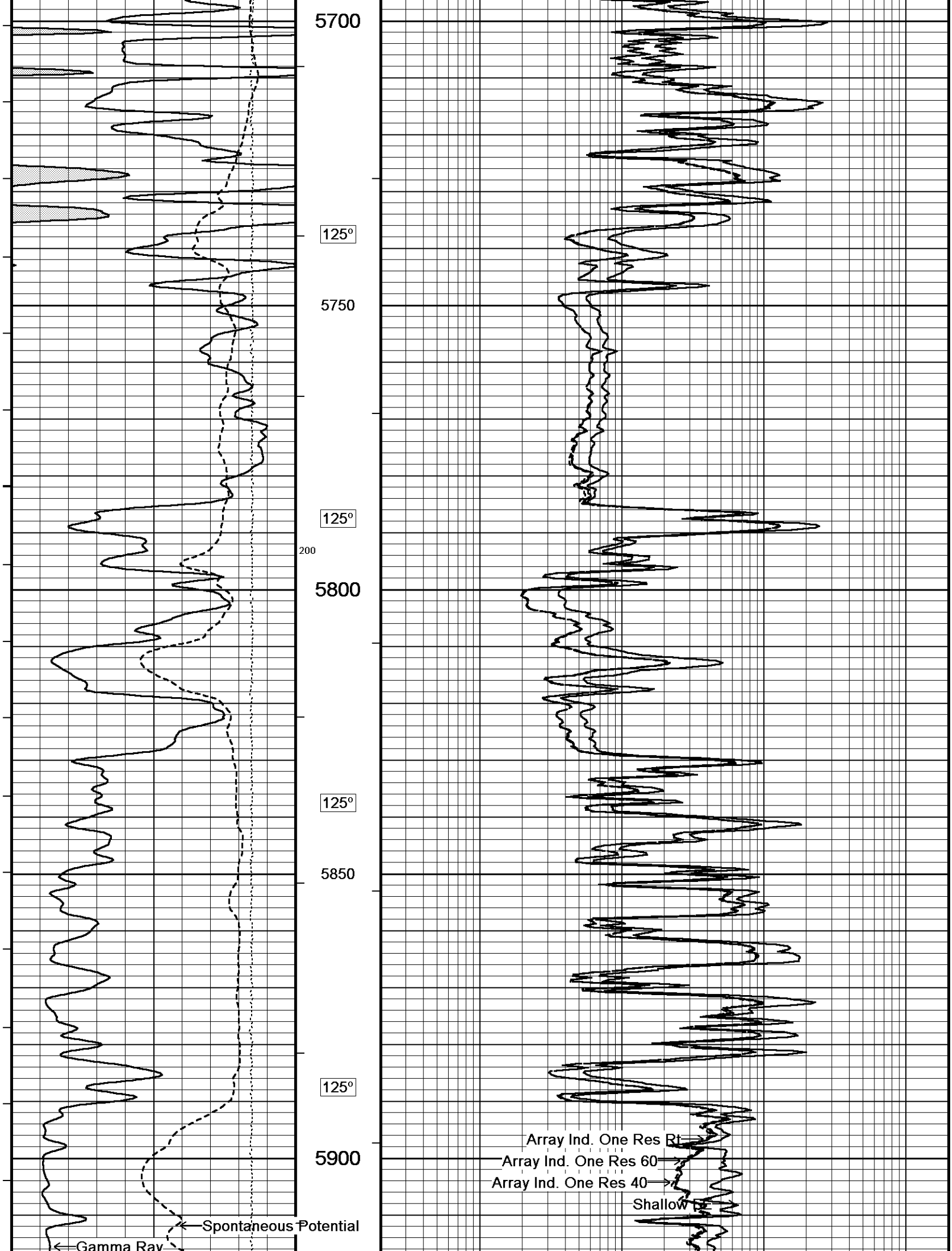
Replay Scale 1:240

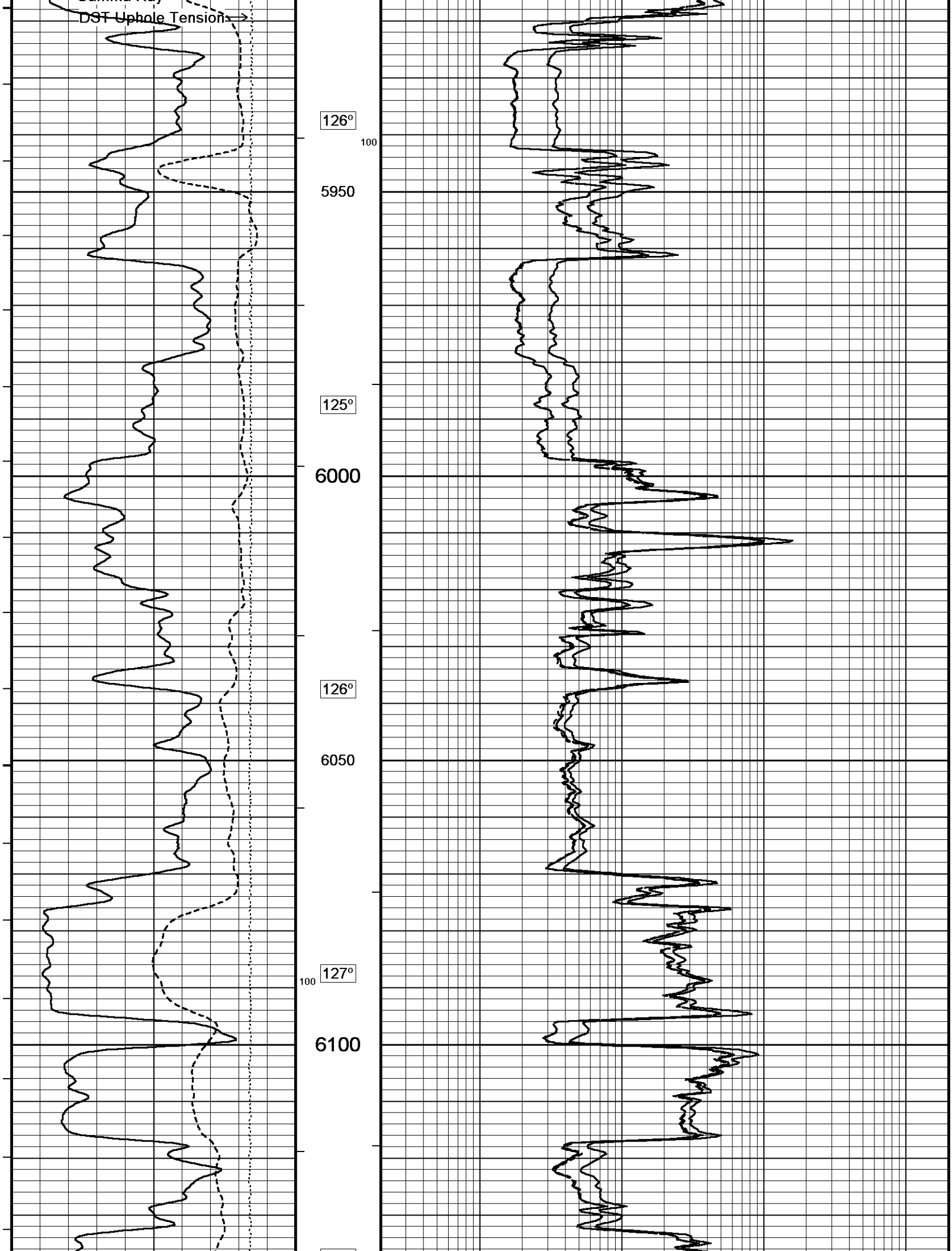
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

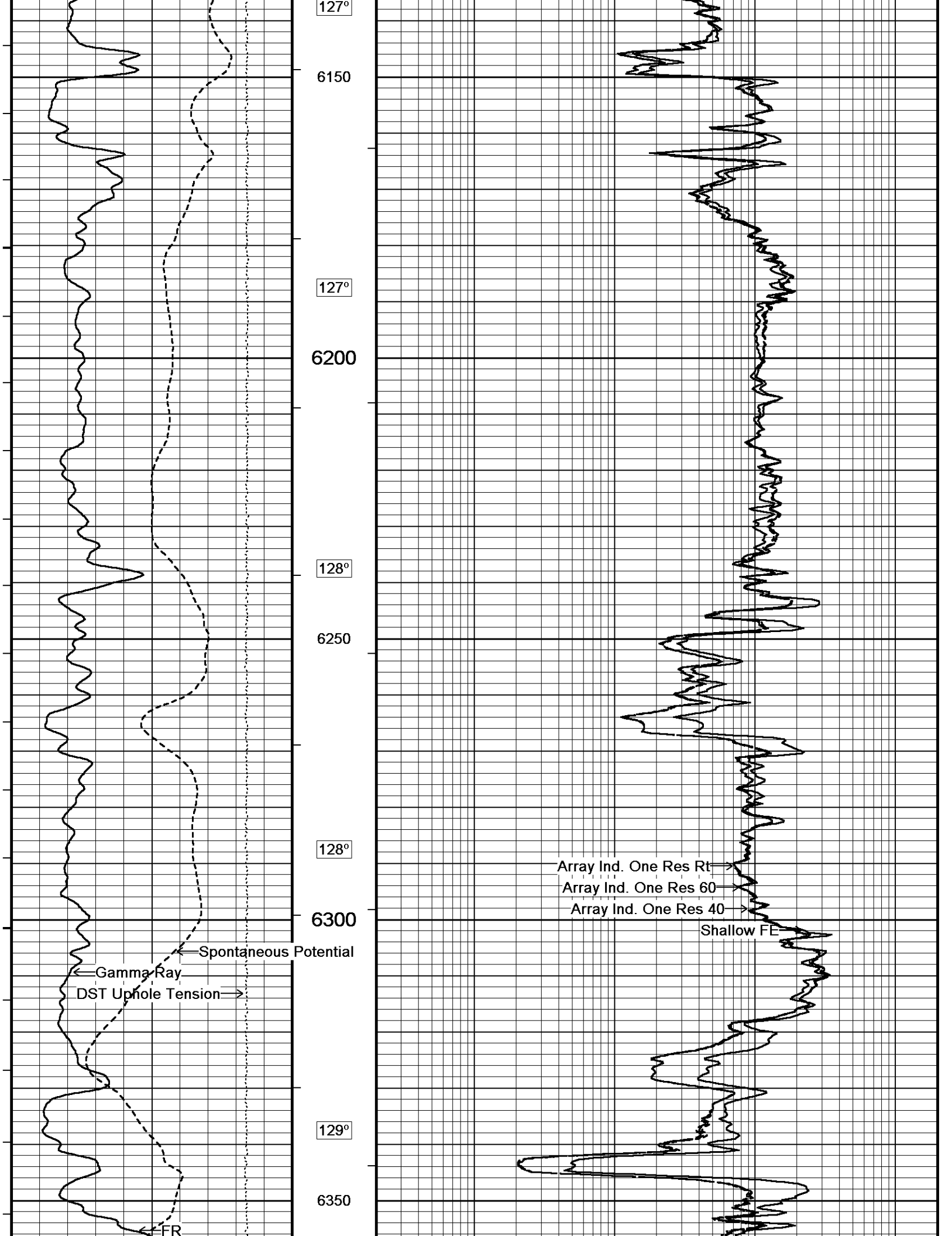
5650

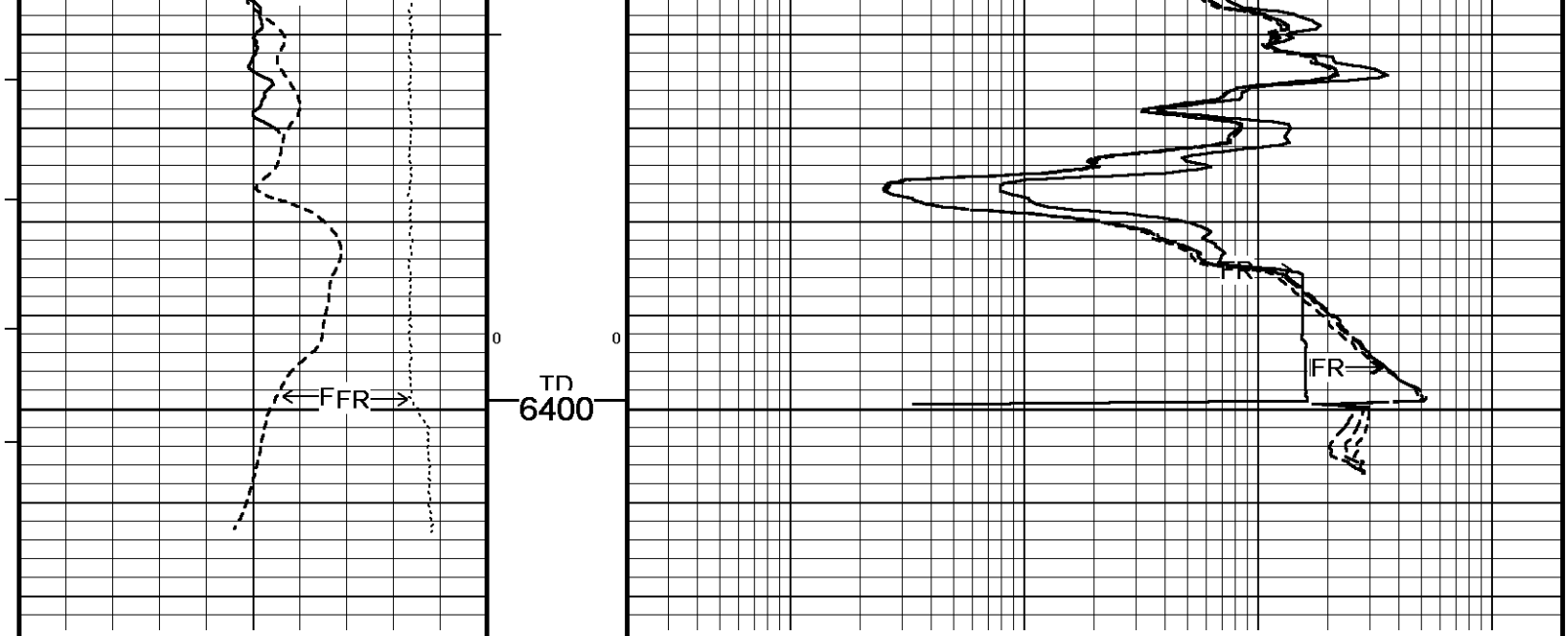
125°




5700
125°
5750
125°
200
5800
125°
5850
125°
5900
Spontaneous Potential
Gamma Ray
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow R


Gamma Ray
DST Uphole Tension
126°
100
5950
125°
6000
126°
6050
100
127°
6100


127°
6150
127°
6200
128°
6250
128°
6300
129°
6350
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE



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 1:240

Shallow FE
ohm metres
0.20 1 10 100 2000

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

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

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

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta
Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

REPEAT SECTION

10 INCH HIGH RESOLUTION

Depth Based Data - Maximum Sampling Increment 2.5cm
Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta
Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

Depth in Feet

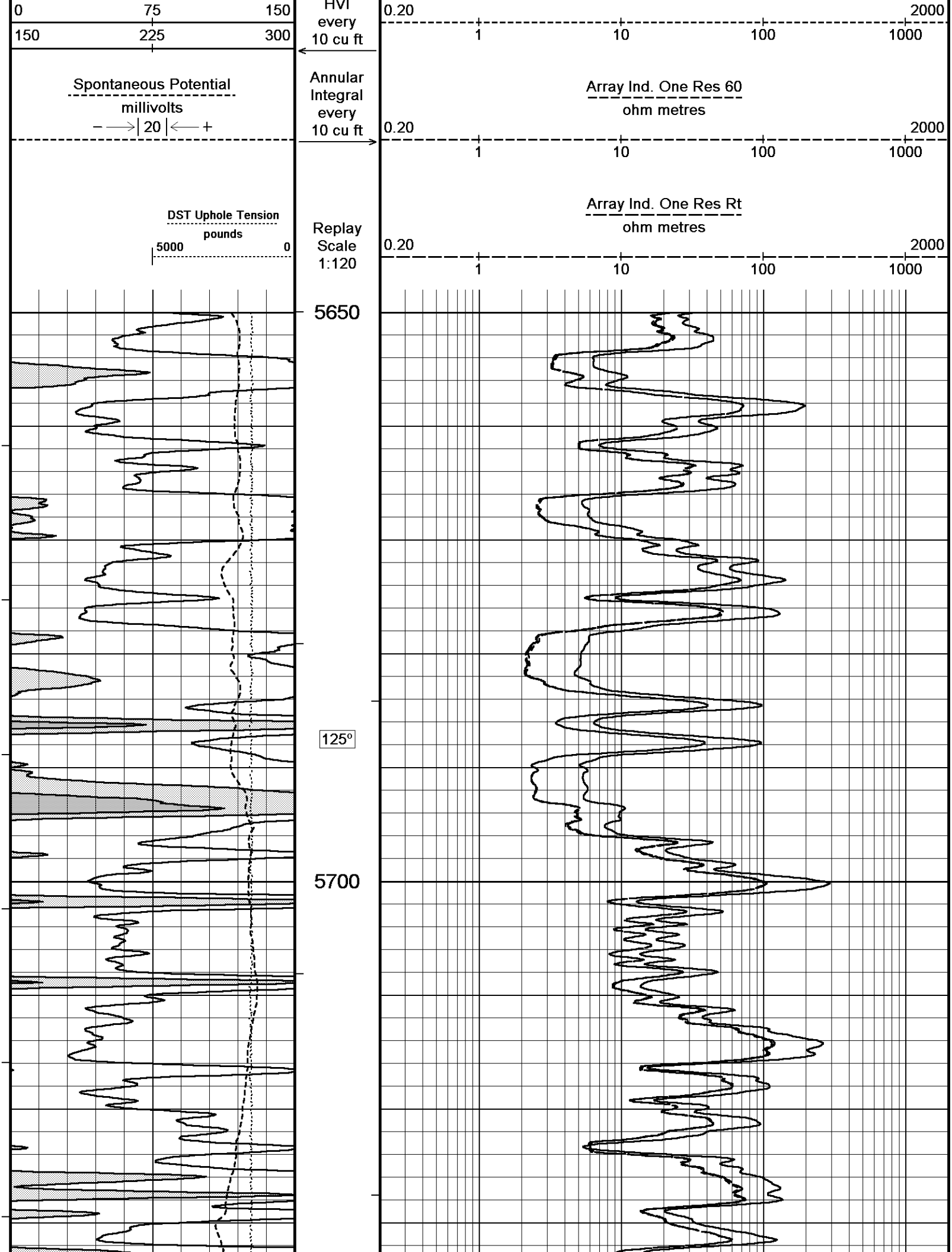
Timing Marks
every 60.0 sec

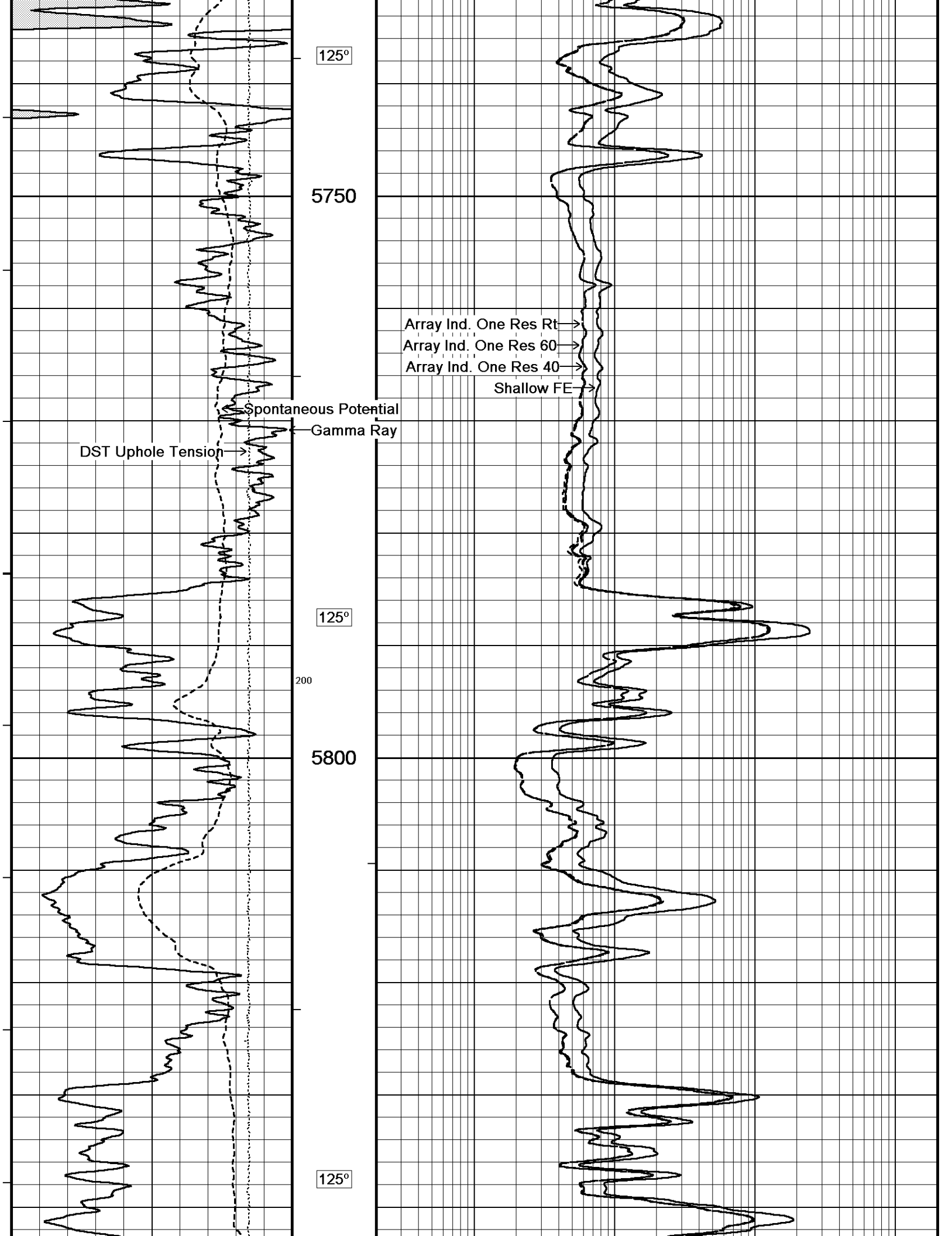
Gamma Ray
API

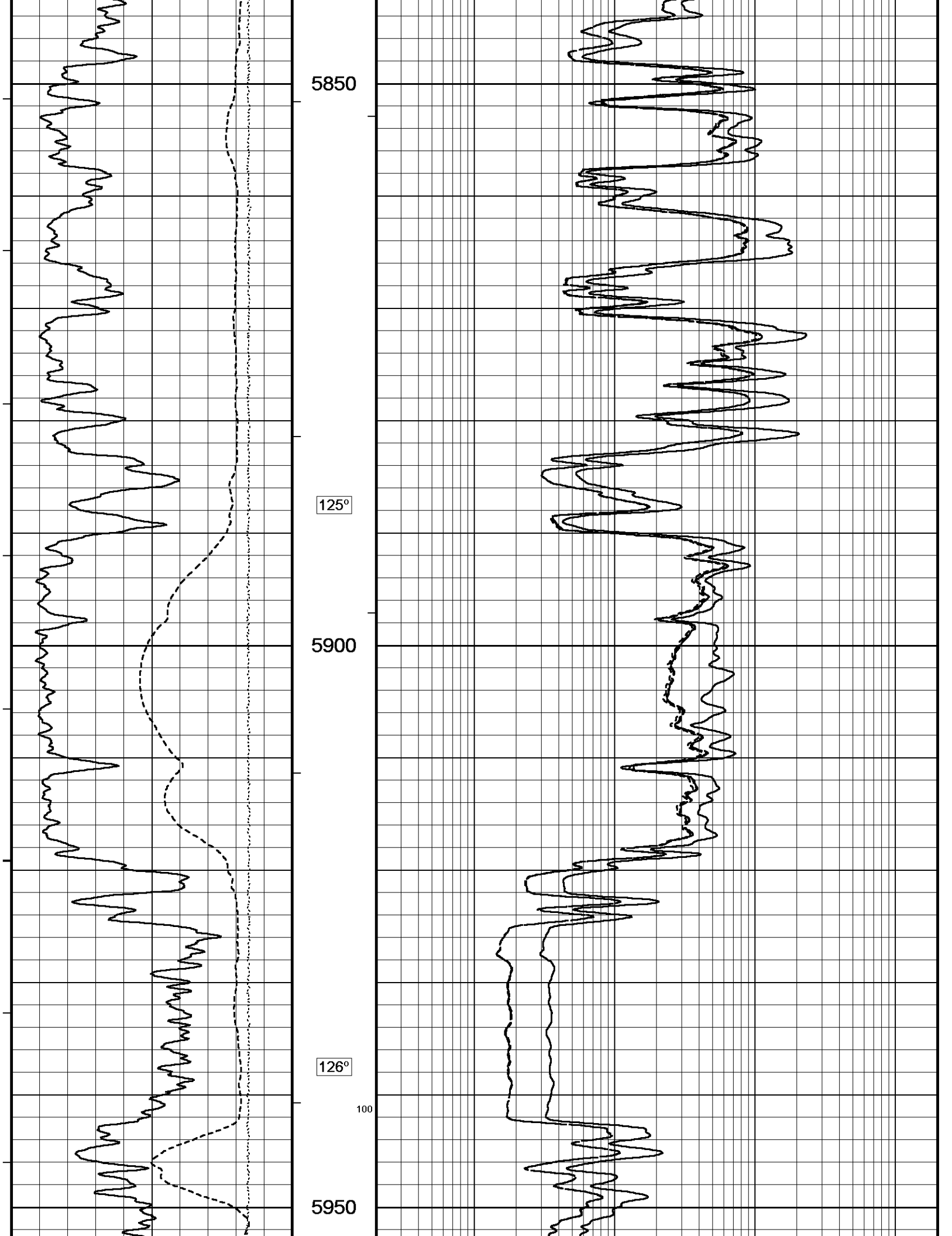
Borehole Temp in deg F

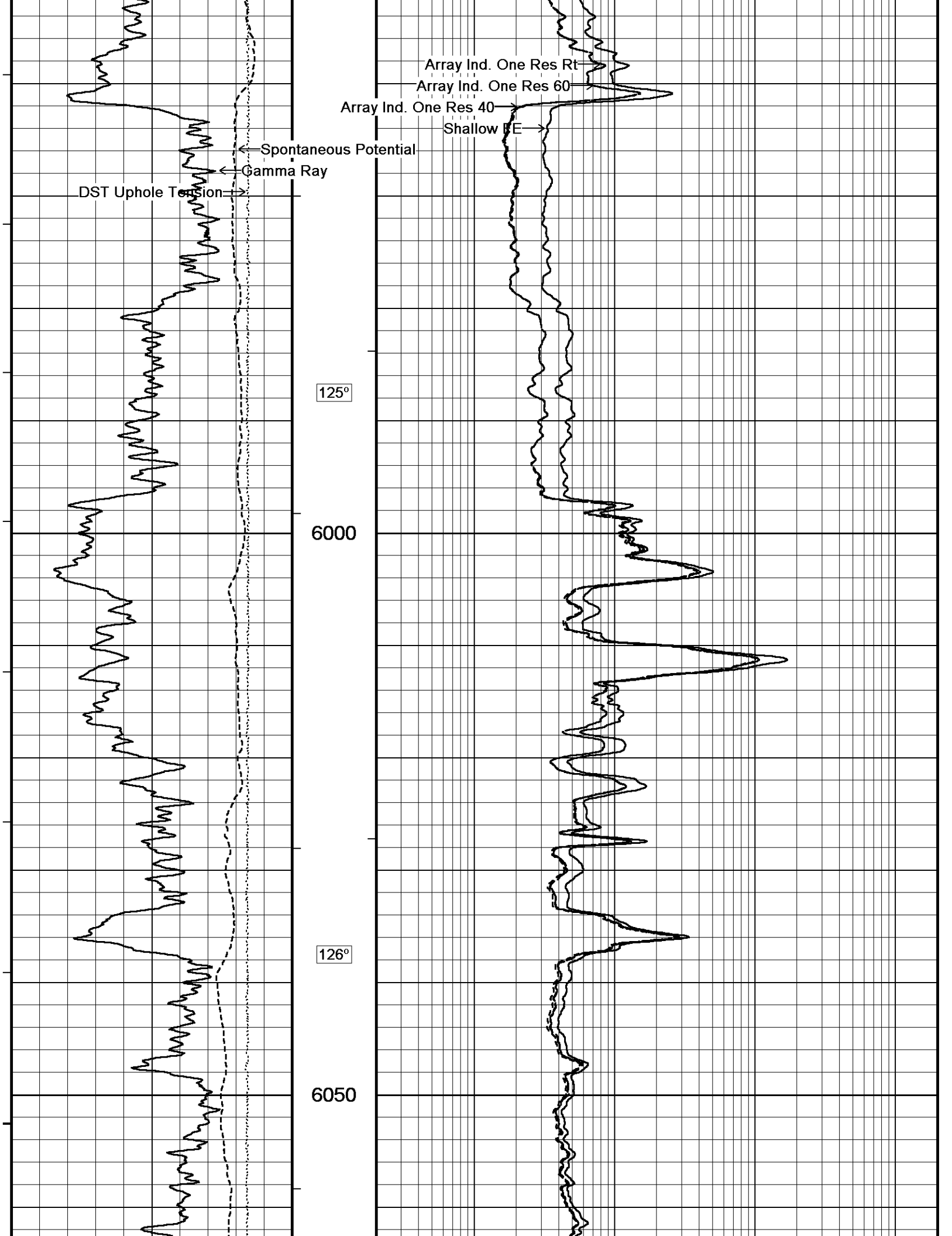
Shallow FE
ohm metres
0.20 1 10 100 2000

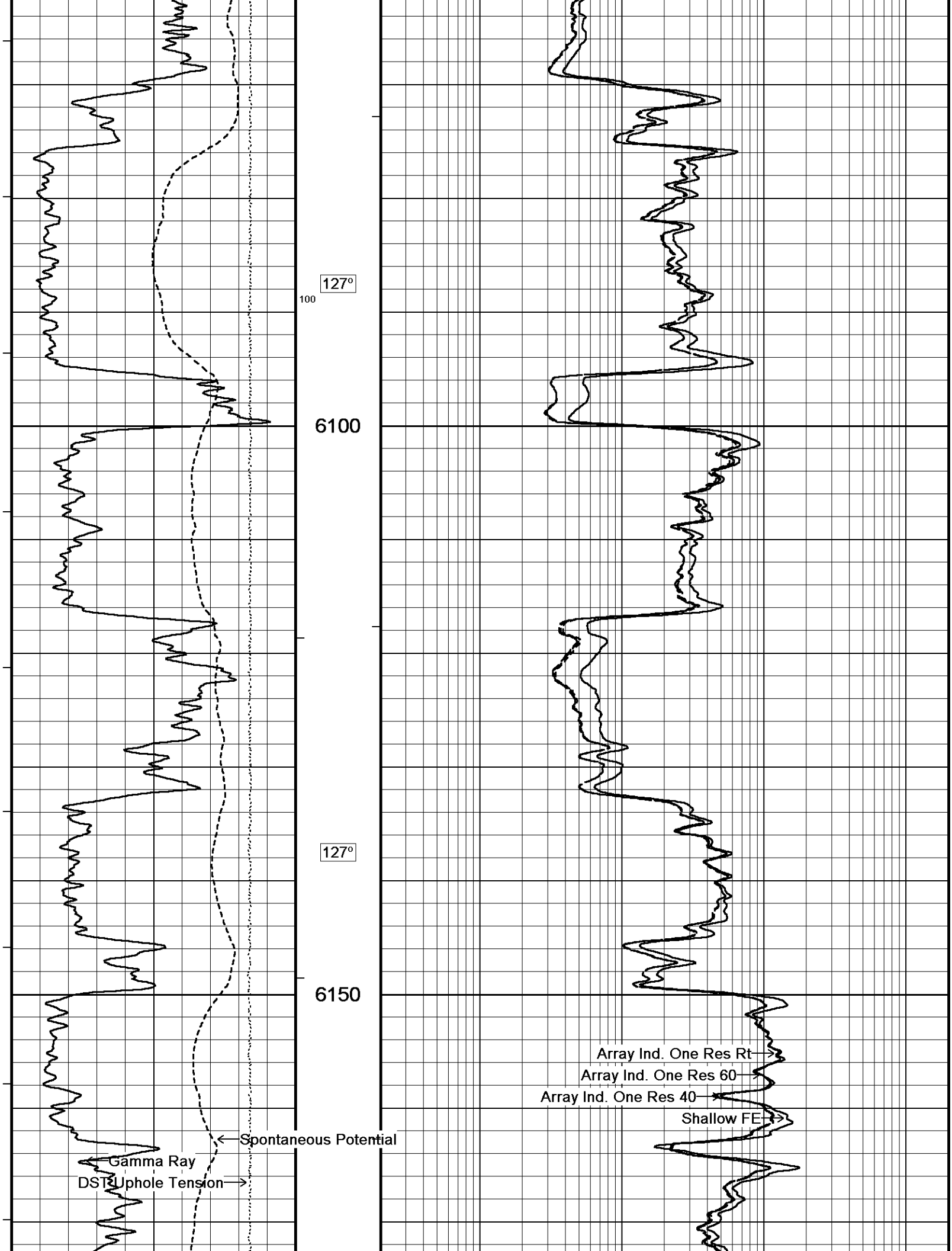
Array Ind. One Res 40
ohm metres

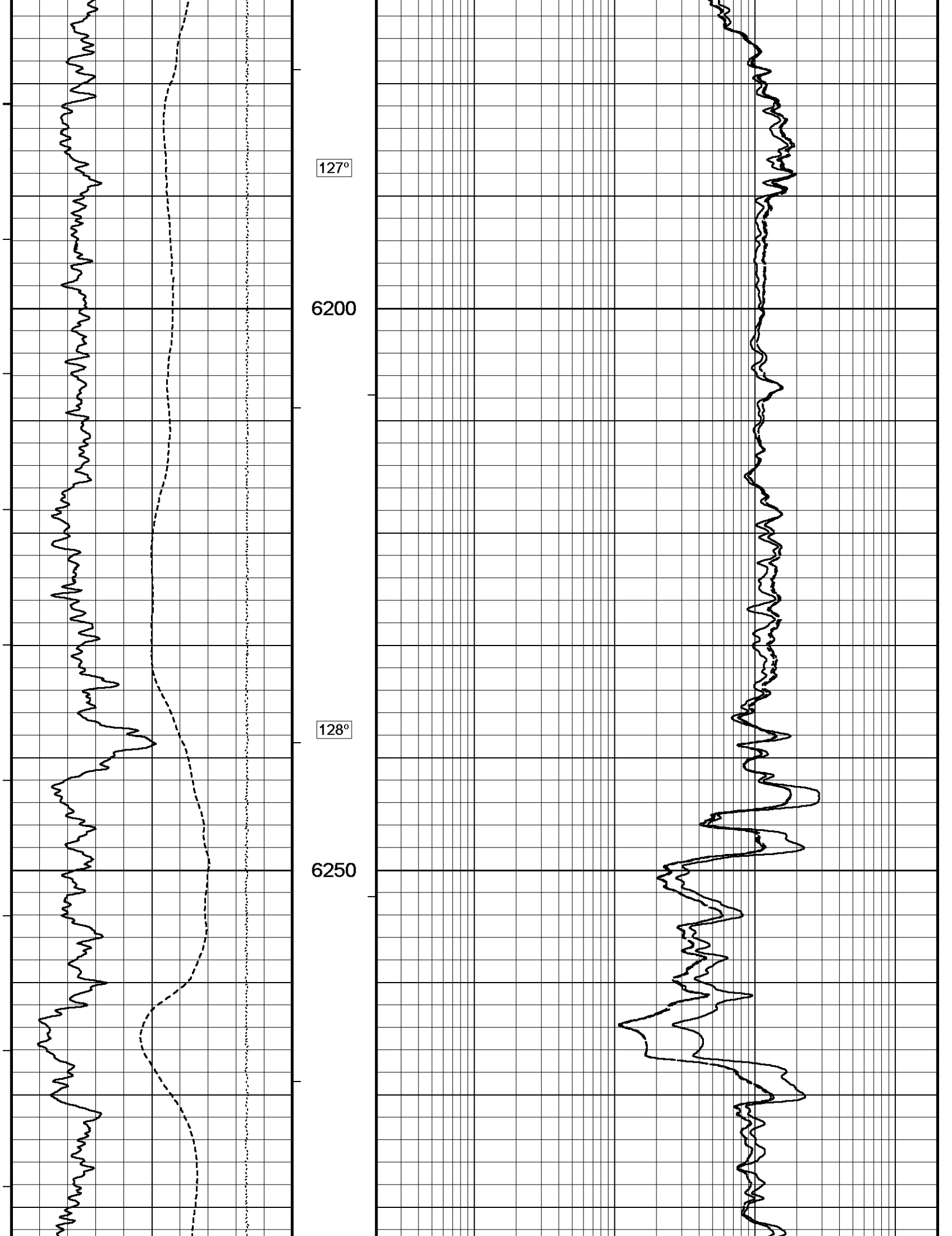

0
75
150
150
225
300
HVI
every
10 cu ft
Annular
Integral
every
10 cu ft
Spontaneous Potential
millivolts
20
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:120
0.20
2000
1
10
100
1000
Array Ind. One Res 60
ohm metres
Array Ind. One Res Rt
ohm metres
5650
125°
5700

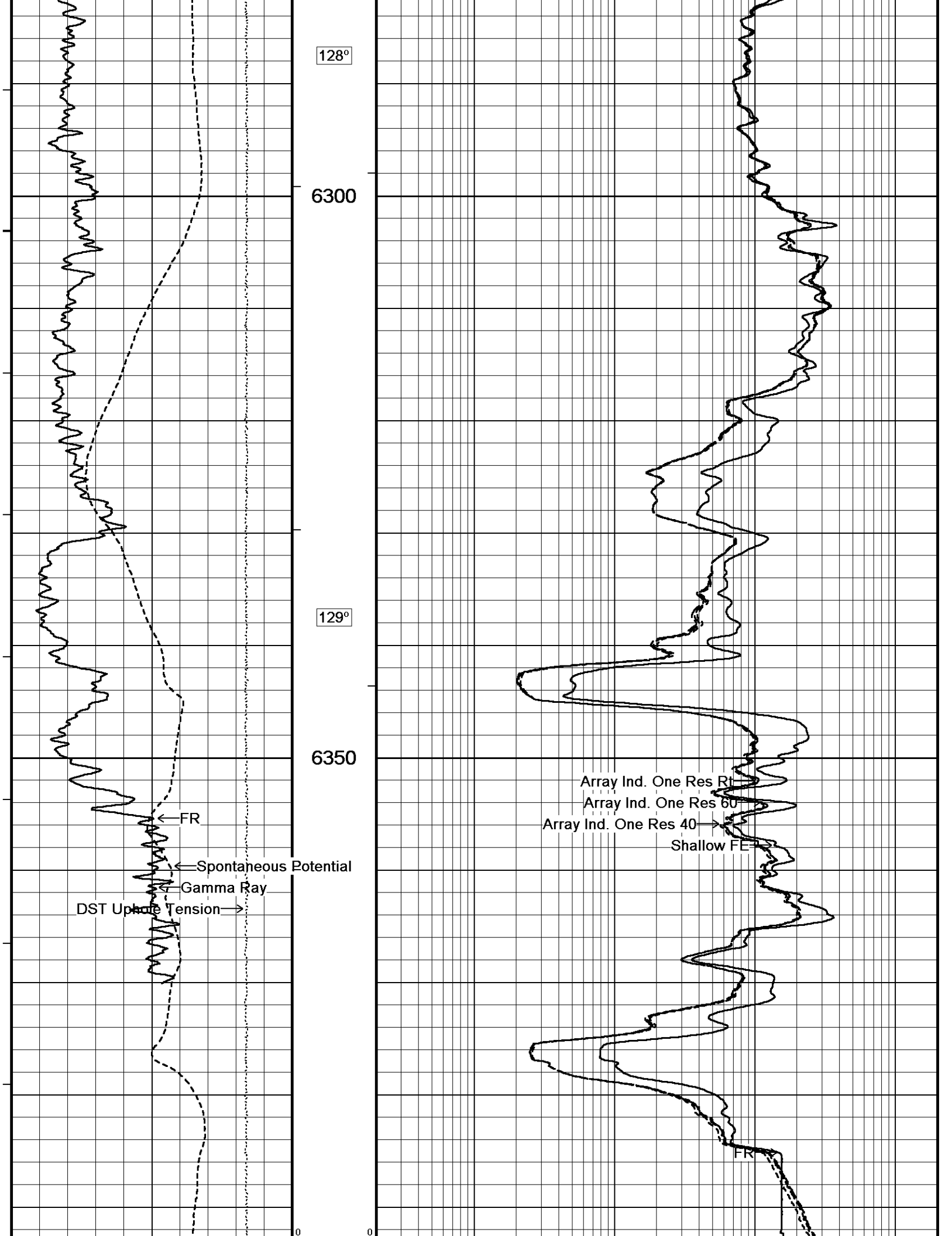

125°
5750
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
125°
200
5800
125°

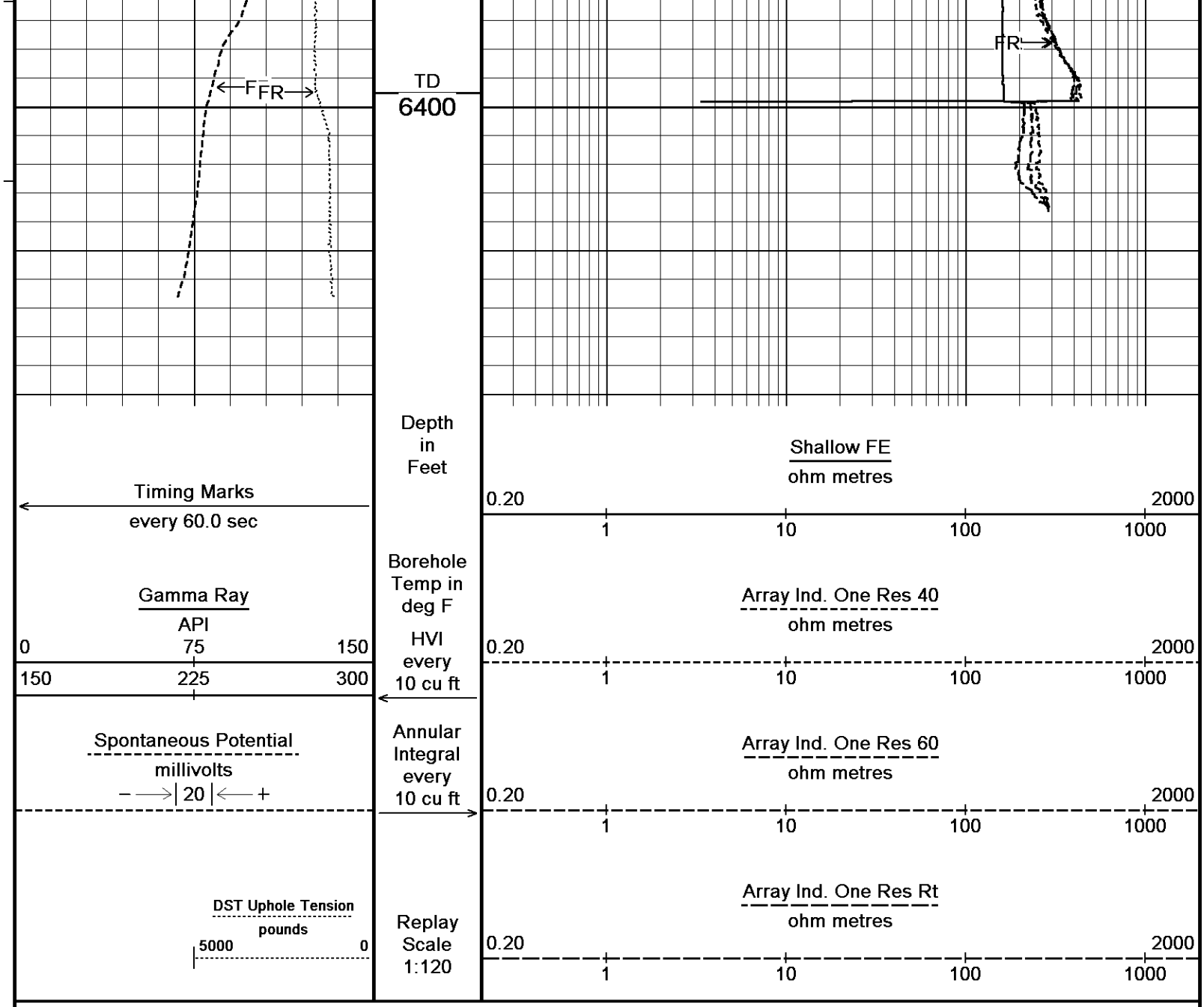

5850
125°
5900
126°
100
5950


Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow EE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
125°
6000
126°
6050


127°
100
6100
127°
6150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension


127°
6200
128°
6250


128°
6300
129°
6350
FR
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res RI
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
FR
0
0



Depth Based Data - Maximum Sampling Increment 2.5cm
Plotted on 02-SEP-2015 17:54
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta
Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

10 INCH HIGH RESOLUTION

BEFORE SURVEY CALIBRATION

C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta

General Constants All 000

Last Edited on 02-SEP-2015,11:28

General Parameters		
Mud Resistivity	1.320	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	MMR Caliper	

Rwa Parameters

Porosity used	Crossplot Porosity
Resistivity used	Array Ind. One Res Rt
RWA Constant A	0.610
RWA Constant M	2.150
SW/APOR Tool Source	0.000

High Resolution Temperature Calibration MCG-B 39

Field Calibration on 21-DEC-2014,10:31

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

High Resolution Temperature Constants MCG-B 39

Last Edited on 28-AUG-2014,01:02

Pre-filter Length	11

Gamma Calibration MCG-B 39

Field Calibration on 01-SEP-2015 20:56

	Measured	Calibrated (API)
Background	71	49
Calibrator (Gross)	1115	774
Calibrator (Net)	1044	725

Gamma Calibration Tolerances MCG-B 39

		1.40	1.475	1.55	
Ratio	1.441				Counts/API

Gamma Constants MCG-B 39

Last Edited on 02-SEP-2015,11:29

Gamma Calibrator Number	GRC038	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

FE Calibration MFE-A.A 135

Base Calibration on 07-AUG-2015 08:39
Field Check on 01-SEP-2015 20:17

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	962.9	126.8
Base Check		281.2
Field Check		281.1

FE Calibration Tolerances MFE-A.A 135

		-3%	980.0	+3%	
Reference 2	962.9				ohm

		-2%	277.0	+2%	
Base Check	281.2				ohm-m

		-2%	281.2	+2%	
Field Check	281.1				ohm-m

FE Constants MFE-A.A 135

Last Edited on 02-SEP-2015,11:30

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Borehole Correction Constants		
Sonde Position	0.5	inches
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	

Induction Calibration MAI-A.A 111

Base Calibration on 05-AUG-2014,09:34
Field Check on 01-SEP-2015 21:12

Base Calibration

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	17.6	473.6	9.3	966.2
2	6.4	385.9	7.6	821.4
3	3.2	264.0	5.2	566.0
4	2.1	135.5	2.6	279.2
Array Temperature		23.0	Deg F	

Test Loop Calibration Verified 07-AUG-2015 11:25

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	13.4	3873.4	
2	0.0	0.0	30.1	3527.3	
3	0.0	0.0	29.2	3020.4	
4	0.0	0.0	19.2	2057.8	
Deep			17.9	1961.5	
Medium			43.2	3975.1	
Shallow			44.8	5231.7	
Array Temperature		0.0		88.1	Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6	13.0 / 17.0 / 21.0	mmho/m	High Conductivity 1	473.6	430.0 / 475.0 / 520.0	mmho/m
Low Conductivity 2	6.4	4.5 / 6.0 / 7.5	mmho/m	High Conductivity 2	385.9	345.0 / 385.0 / 425.0	mmho/m
Low Conductivity 3	3.2	1.0 / 3.5 / 6.0	mmho/m	High Conductivity 3	264.0	240.0 / 260.0 / 280.0	mmho/m
Low Conductivity 4	2.1	0.0 / 2.0 / 4.0	mmho/m	High Conductivity 4	135.5	120.0 / 135.0 / 150.0	mmho/m
Background Vx 1	0.0	-110.0 / -32.5 / 45.0	mmho/m	Phase Check Loop 1	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 2	0.0	-35.0 / 20.0 / 75.0	mmho/m	Phase Check Loop 2	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 3	0.0	-60.0 / 2.5 / 65.0	mmho/m	Phase Check Loop 3	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 4	0.0	-50.0 / -17.5 / 15.0	mmho/m	Phase Check Loop 4	0.0	-2.0 / 0.0 / 2.0	%

Induction Constants MAI-A.A 111

Last Edited on 02-SEP-2015,11:30

Induction Model	RtAP-WBM	
Borehole Correction Constants		
Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
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
Rm Source	Global Value: Temperature Corrected	
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 07-AUG-2015 11:34
Field Calibration on 01-SEP-2015 20:26

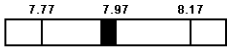
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20064	3.99
2	30304	5.98
3	40448	7.97
4	50192	9.86
5	61024	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.92	7.97

Caliper Calibration Tolerances MPD-C.A 216

Short Arm Field Cal. 7.92 

in

DOWNHOLE EQUIPMENT

C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta

CBH-C, Cablehead, 11 pin
CBH-CA 233 LG: 2.40 ft WT: 24.3 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-Resistivity
MMR-B.A 98 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

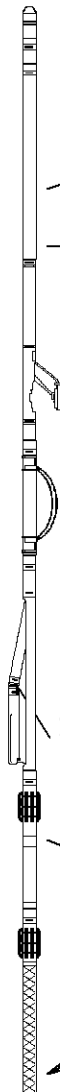
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

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

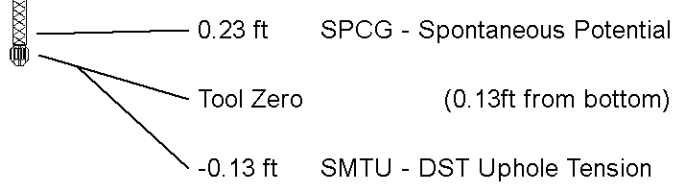
Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 51.18 ft Weight: 407.9 lb



43.50 ft	GRGC - MCG Gamma Ray
40.59 ft	CGXT - MCG External Temperature
34.24 ft	MBTC - MMR Caliper
33.24 ft	MINV - MMR MicroLog Inverse
33.24 ft	MNRL - MMR MicroLog Normal
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.28 ft	DPRL - Limestone Density Por.
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
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



All measurements relative to tool zero.

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2552.00	feet	First Reading	6396.00	feet
Elevation Drill Floor	2550.00	feet	Depth Driller	6400.00	feet
Elevation Ground Level	2539.00	feet	Depth Logger	6399.00	feet

Weatherford®

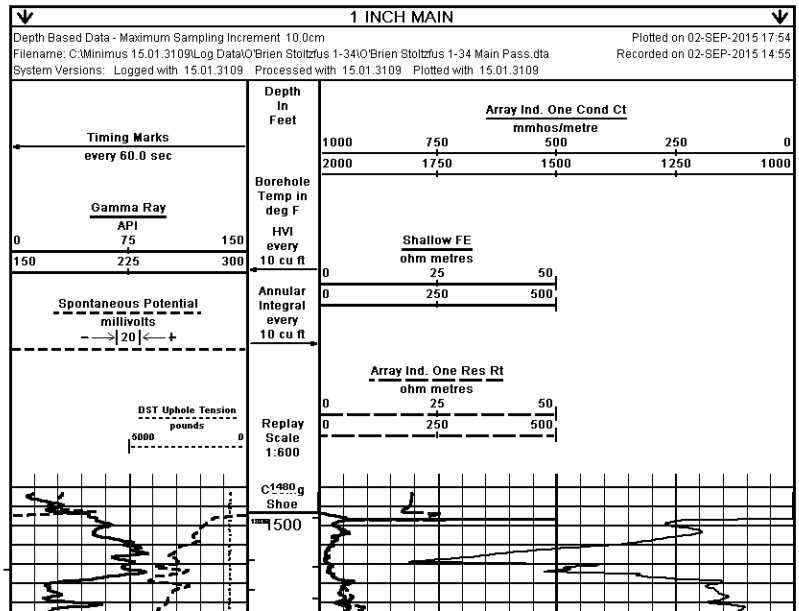
ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

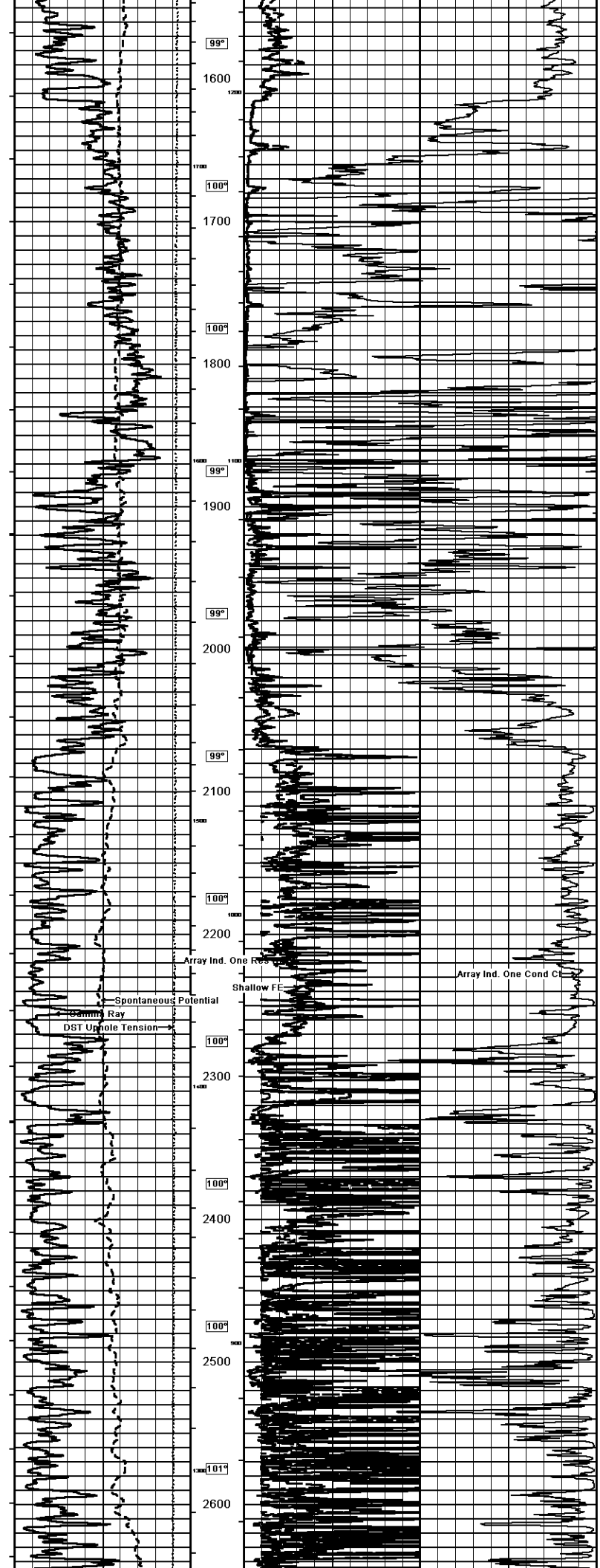
COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FNL & 335' FWL
SEC 34 TWP 33N RGE 29W	Other Services: MPDIMDN
Latitude	
Longitude	
API Number	
Permanent Datum GL, Elevation 2539 feet	15-119-21392
Log Measured From KB	Elevations: KB 2552.00 feet
Drilling Measured From KB @ 13 feet	DF 2550.00 GL 2539.00
Date	02-SEP-2015
Run Number	ONE
Service Order	7884-123390013
Depth Driller	6400.00 feet
Depth Logger	6399.00 feet
First Reading	6396.00 feet
Last Reading	1493.00 feet
Casing Driller	1496.00 feet
Casing Logger	1493.00 feet
Bit Size	7.875 inches
Hole Fluid Type	WBM
Density / Viscosity	9.10 lb/USg 71.00 CP
PH / Fluid Loss	11.50 7.40 ml/30Min
Sample Source	MUD PIT
Rm @ Measured Temp	1.32 @ 75.0 ohm-m
Rmf @ Measured Temp	1.05 @ 75.0 ohm-m
Rmc @ Measured Temp	1.58 @ 75.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.76 @ 132.0 ohm-m
Time Since Circulation	3 HOURS
Max Recorded Temp	132.00 deg F
Equipment / Base	LIB
Recorded By	MILES WILKINS
Witnessed By	ROGER PEARSON
JOB #	LB15-119

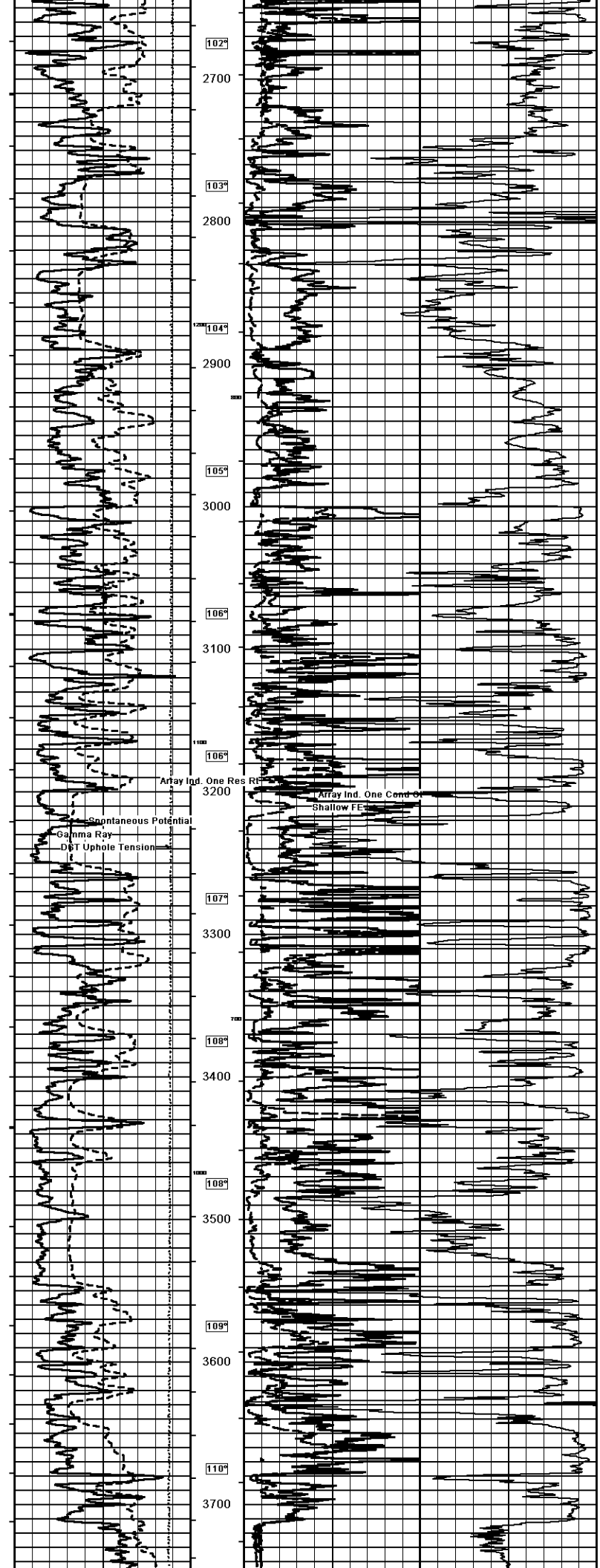
ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

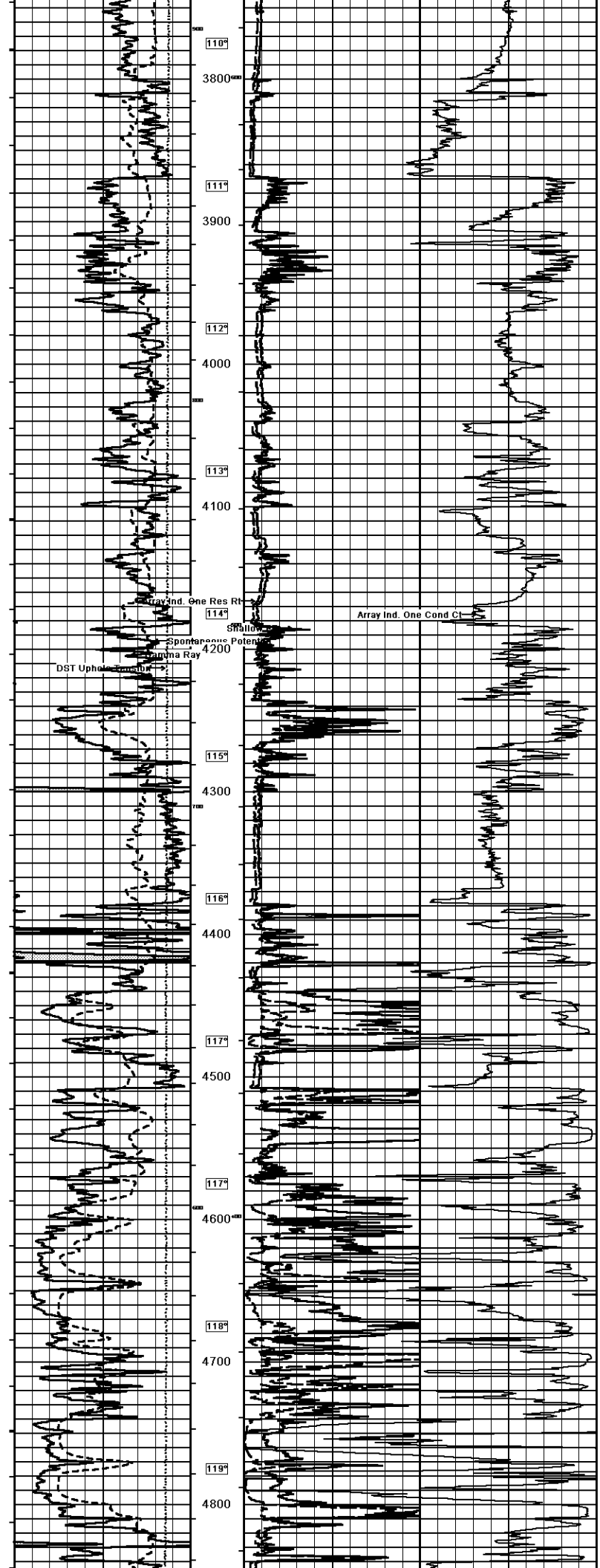
Weatherford

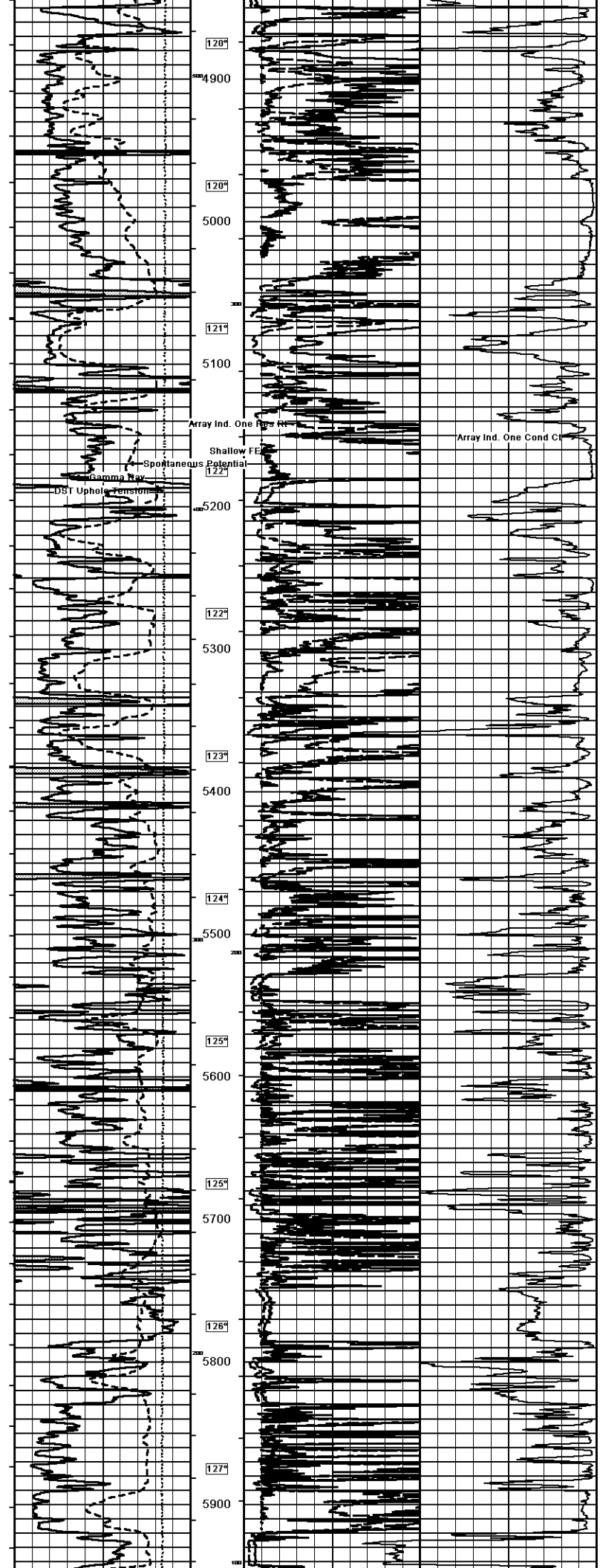
PETE DEEBHAM

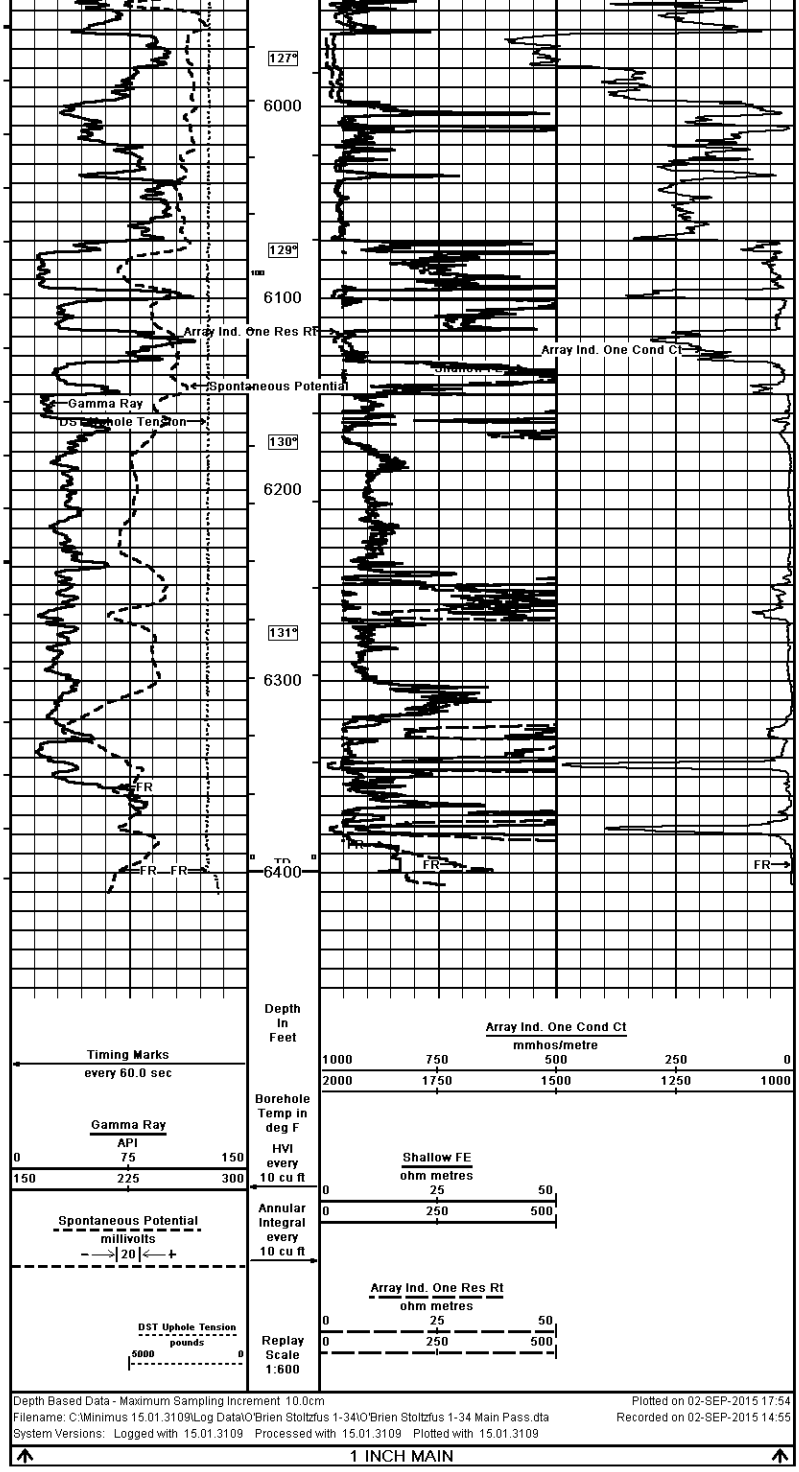



99°
1600
100°
1700
100°
1800
99°
1900
99°
2000
99°
2100
100°
2200
Array Ind. One Res
Shallow FE
Array Ind. One Cond Ct
Spontaneous Potential
Gamma Ray
DST Uphole Tension
100°
2300
100°
2400
100°
2500
101°
2600


102°
2700
103°
2800
104°
2900
105°
3000
106°
3100
106°
Array Ind. One Res RF
3200
Array Ind. One Cond 0'
Shallow FE
Spontaneous Potential
Gamma Ray
DBT Uphole Tension
107°
3300
108°
3400
108°
3500
109°
3600
110°
3700


110°
3800
111°
3900
112°
4000
113°
4100
Array Ind. One Res Rt
114°
Array Ind. One Cond Ct
Shallow
Spontaneous Potential
4200
Gamma Ray
DST Uphole Correction
115°
4300
116°
4400
117°
4500
117°
4600
118°
4700
119°
4800


120°
4900
120°
5000
121°
5100
Array Ind. One Res RI
Shallow FE
Spontaneous Potential
122°
Gamma Ray
DST Uphole Tension
5200
122°
5300
123°
5400
124°
5500
125°
5600
125°
5700
126°
5800
127°
5900
Array Ind. One Cond CI



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:54

Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta — Recorded on 02-SEP-2015 14:55

System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

1 INCH MAIN

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2552.00	feet	First Reading	6396.00	feet
Elevation Drill Floor	2550.00	feet	Depth Driller	6400.00	feet
Elevation Ground Level	2539.00	feet	Depth Logger	6399.00	feet

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ELECTRIC LOG