ARRAY INDUCTION
SHALLOW FOCUSSED
ELECTRIC LOG

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHELPS #8-31
FIELD	MAURICE NORTHEAST
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1812' FSL & 461' FEL

SEC	TWP	RGE	Other Services
31	13S	31W	MPD/MDN MML

API Number 15-063-21874
Permit Number

Permanent Datum G.L., Elevation 2917 feet
Log Measured From K.B. @ 5 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	2922.00
DF	2921.00
GL	2917.00

Date	29-OCT-2010				
Run Number	ONE				
Depth Driller	4720.00	feet			
Depth Logger	4717.00	feet			
First Reading	4714.00	feet			
Last Reading	219.00	feet			
Casing Driller	220.00	feet			
Casing Logger	219.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	CHEMICAL				
Density / Viscosity	9.30 lb/USg		57.00 CP		
PH / Fluid Loss	10.00		9.60 ml/30Min		
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.93 @ 77.0	ohm-m			
Rmf @ Measured Temp	0.74 @ 77.0	ohm-m			
Rmc @ Measured Temp	1.12 @ 77.0	ohm-m			
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.58 @125.0	ohm-m			
Time Since Circulation	4 HOURS				
Max Recorded Temp	125.00	deg F			
Equipment Name	COMPACT				
Equipment / Base	13096		LIB		
Recorded By	LYNN SCOTT				
Witnessed By	BOB PETERSEN				
S.O.# / JOB#	3524589			LB10-270	

BOREHOLE RECORD

Last Edited: 29-OCT-2010 16:05

Bit Size inches	Depth From feet	Depth To feet
7.875	219.00	4717.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	219.00	24.00

REMARKS

Tools Run: MAI, MPD, MCG, MDN, MML, MFE, SKJ
Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Eccentraliser used.
2.71 G/CC Limestone density matrix used to calculate porosity.
Borhole rugosity, tight pulls, and washouts will affect data quality.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing=194 cu. ft.
Service order #3524589
Rig: Murfin #24
Engineer: L. Scott
Operator(s): J. LaPoint

2 Inch Main Pass

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_002.dta
Recorded on 29-OCT-2010 13:55
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

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
0 -5000

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

200 Casing Shoe

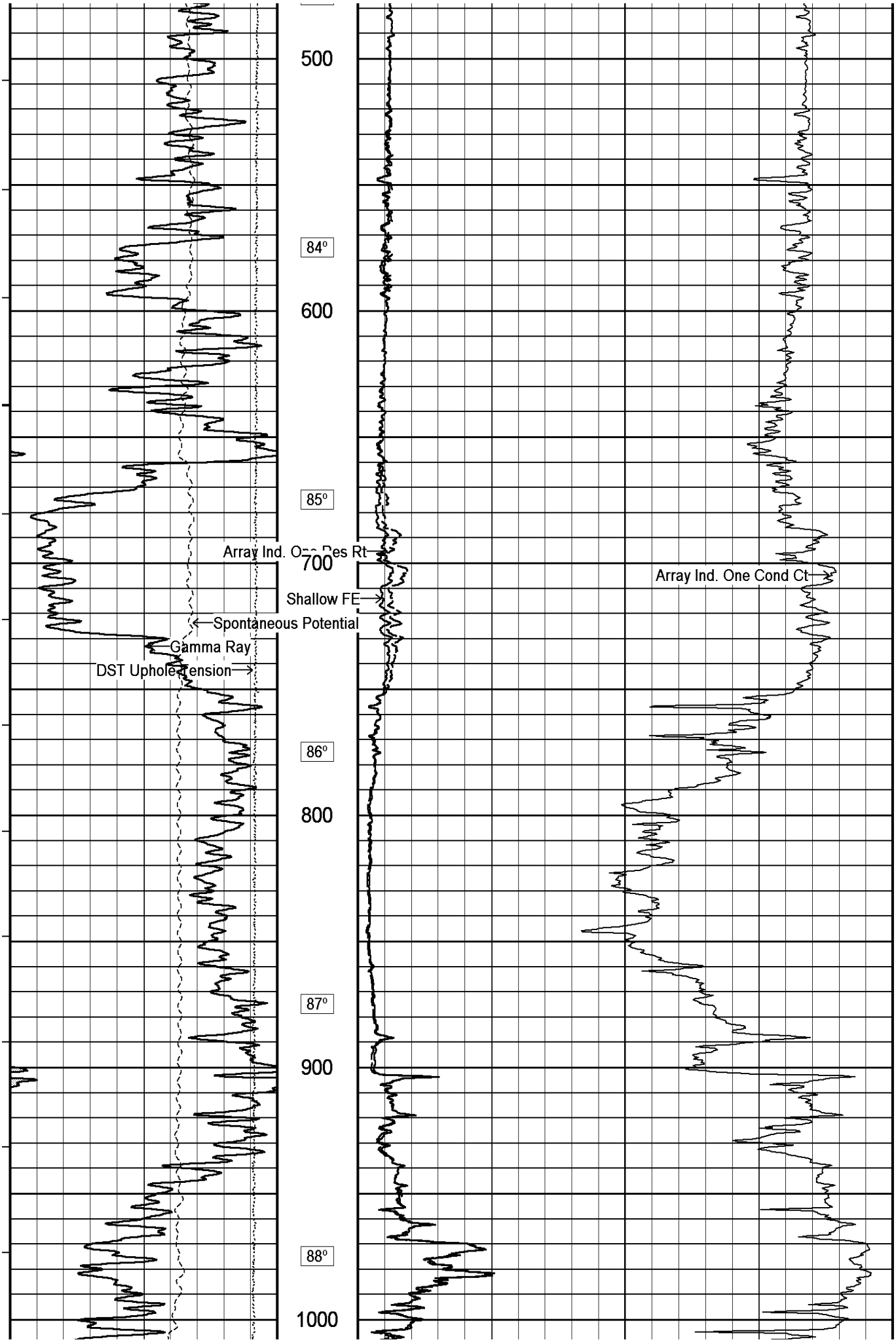
81°

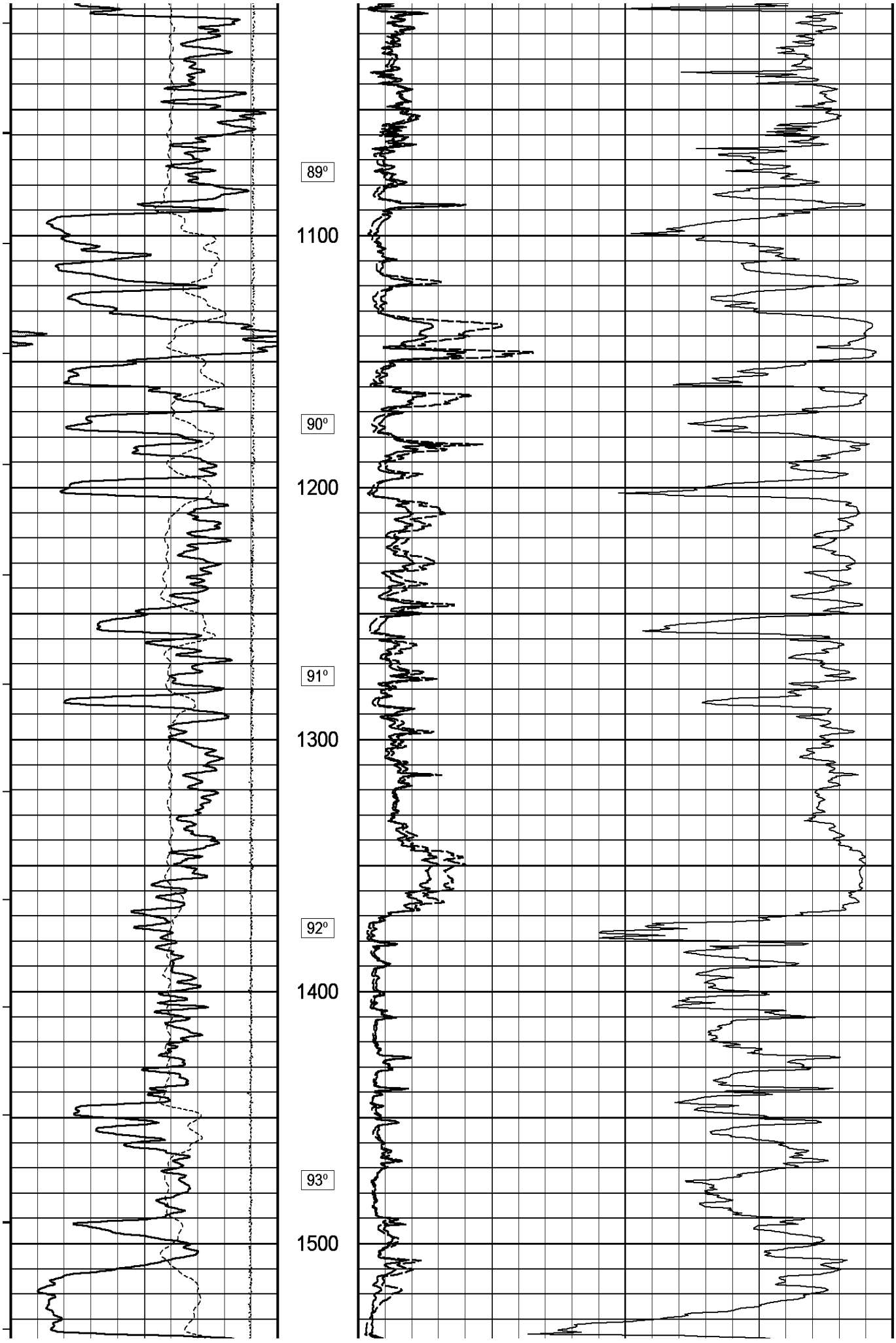
300

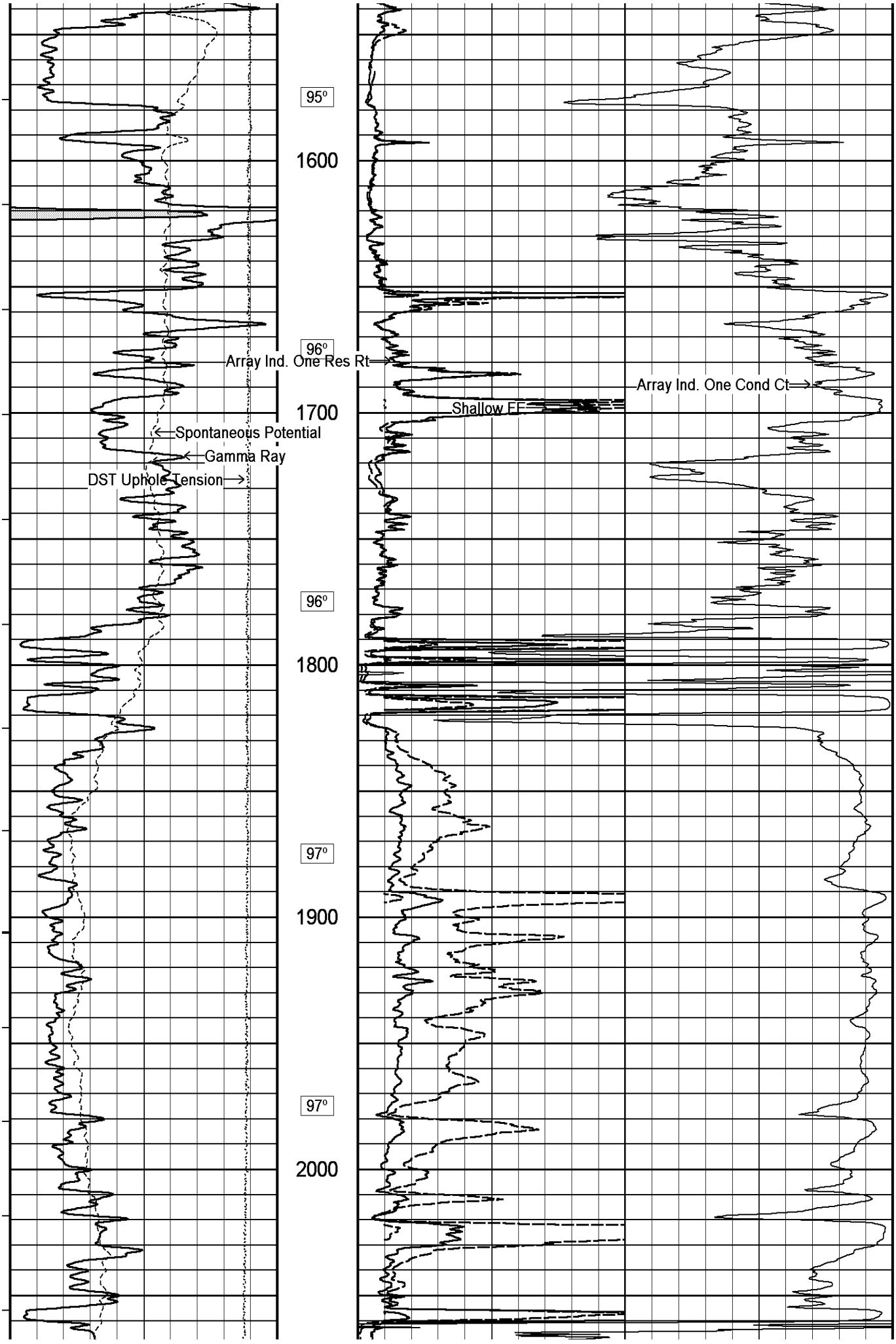
82°

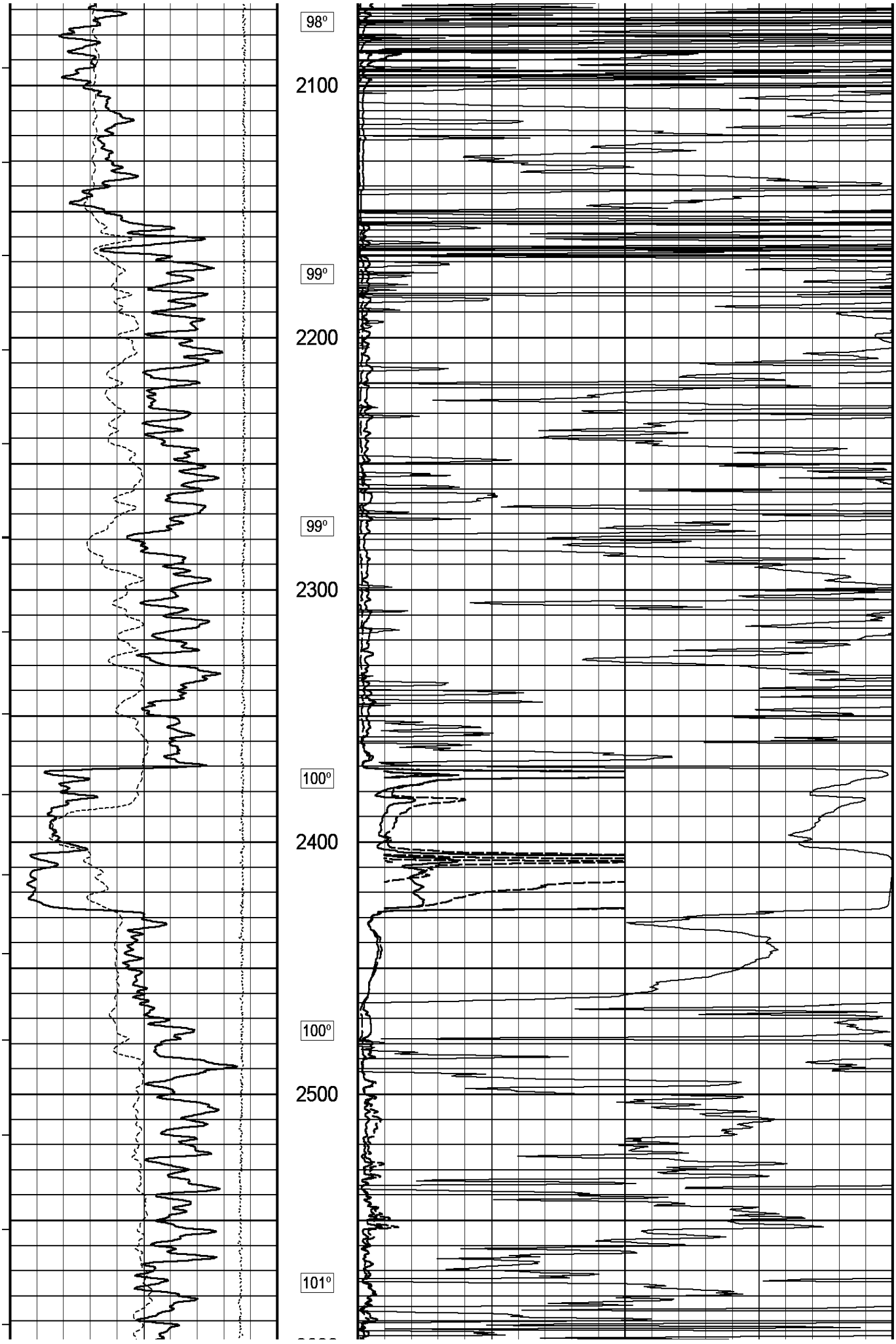
400

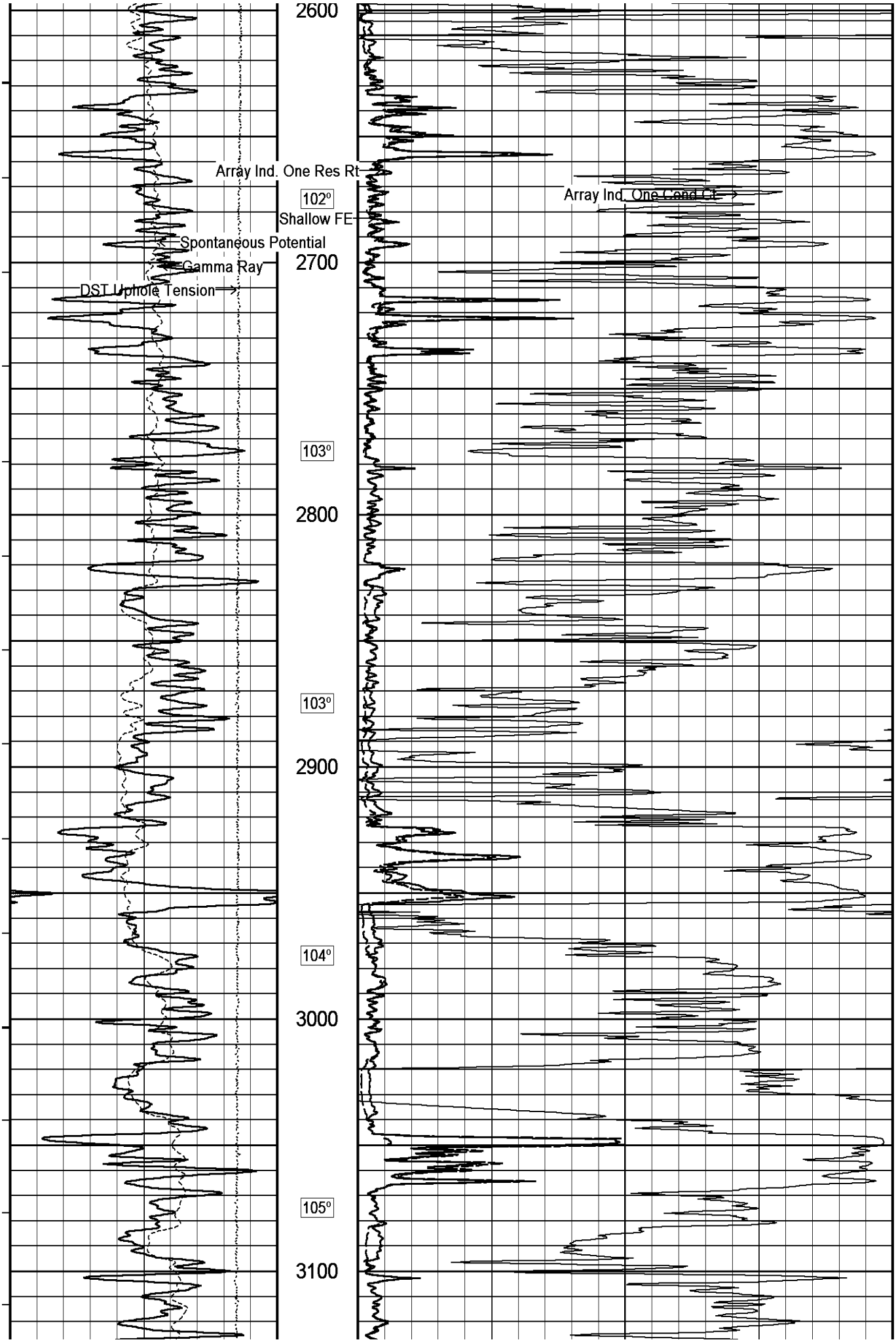
83°

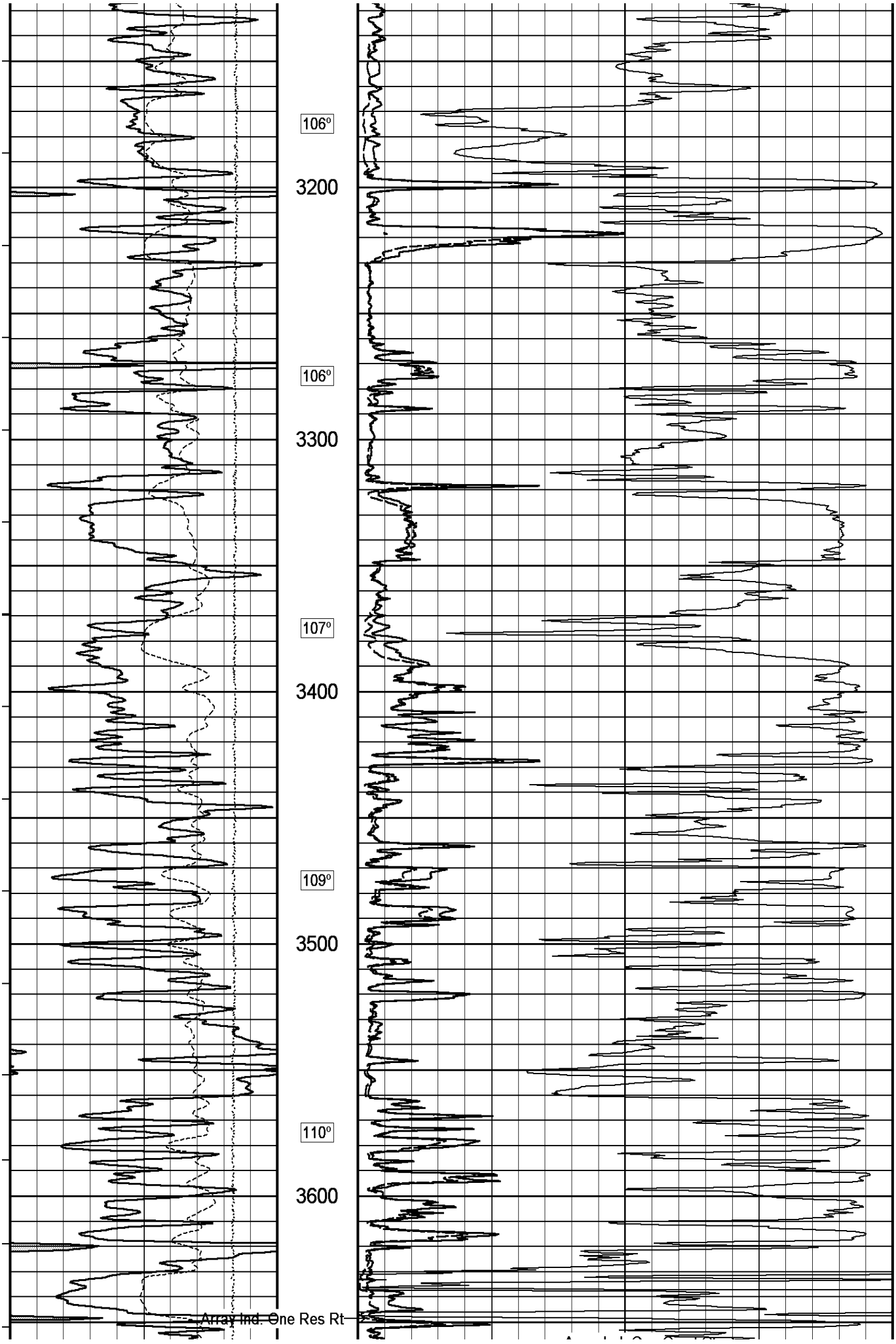

500
84°
600
85°
Array Ind. One Res Rt
700
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
86°
800
87°
900
88°
1000
Array Ind. One Cond Ct

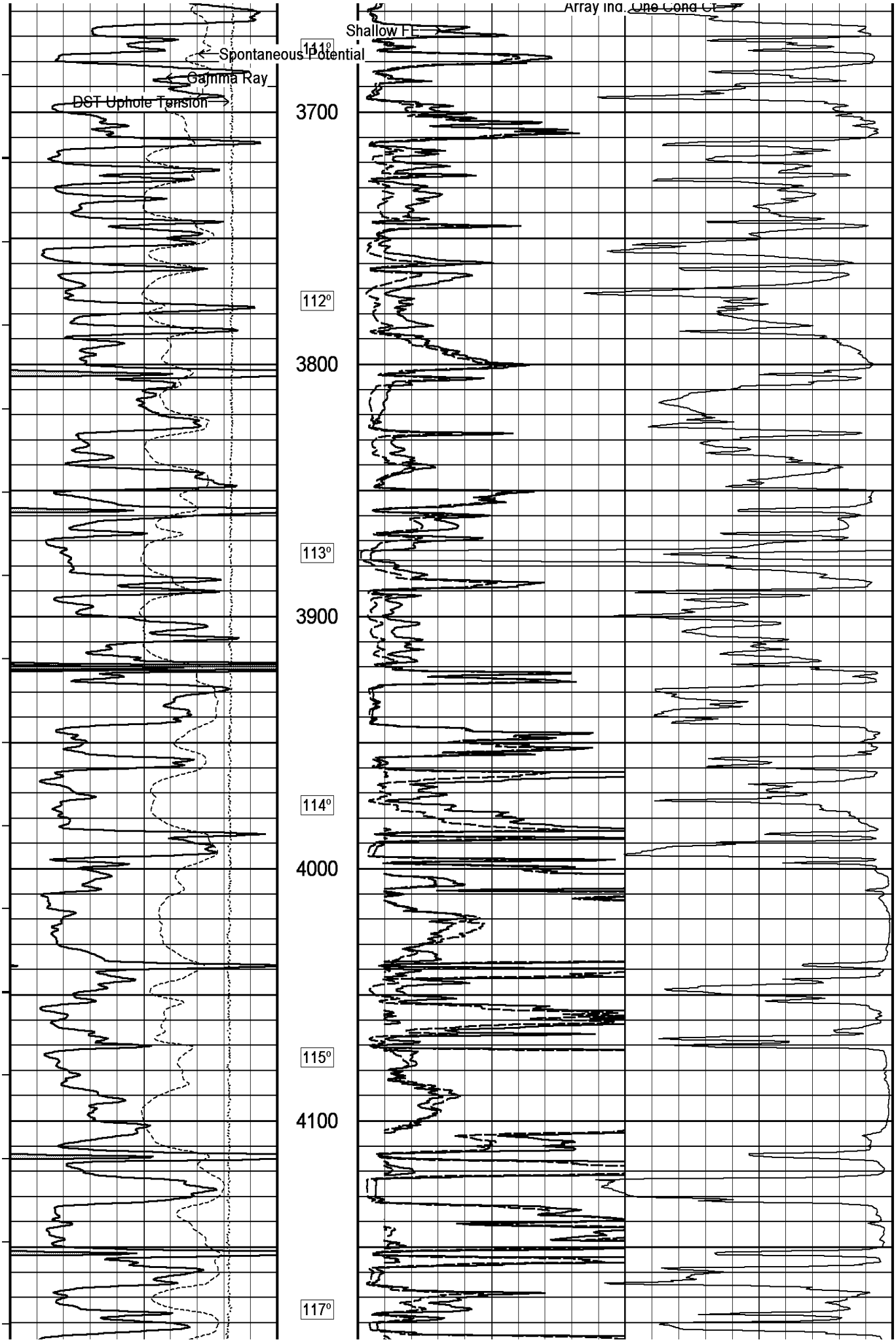

89°
1100
90°
1200
91°
1300
92°
1400
93°
1500

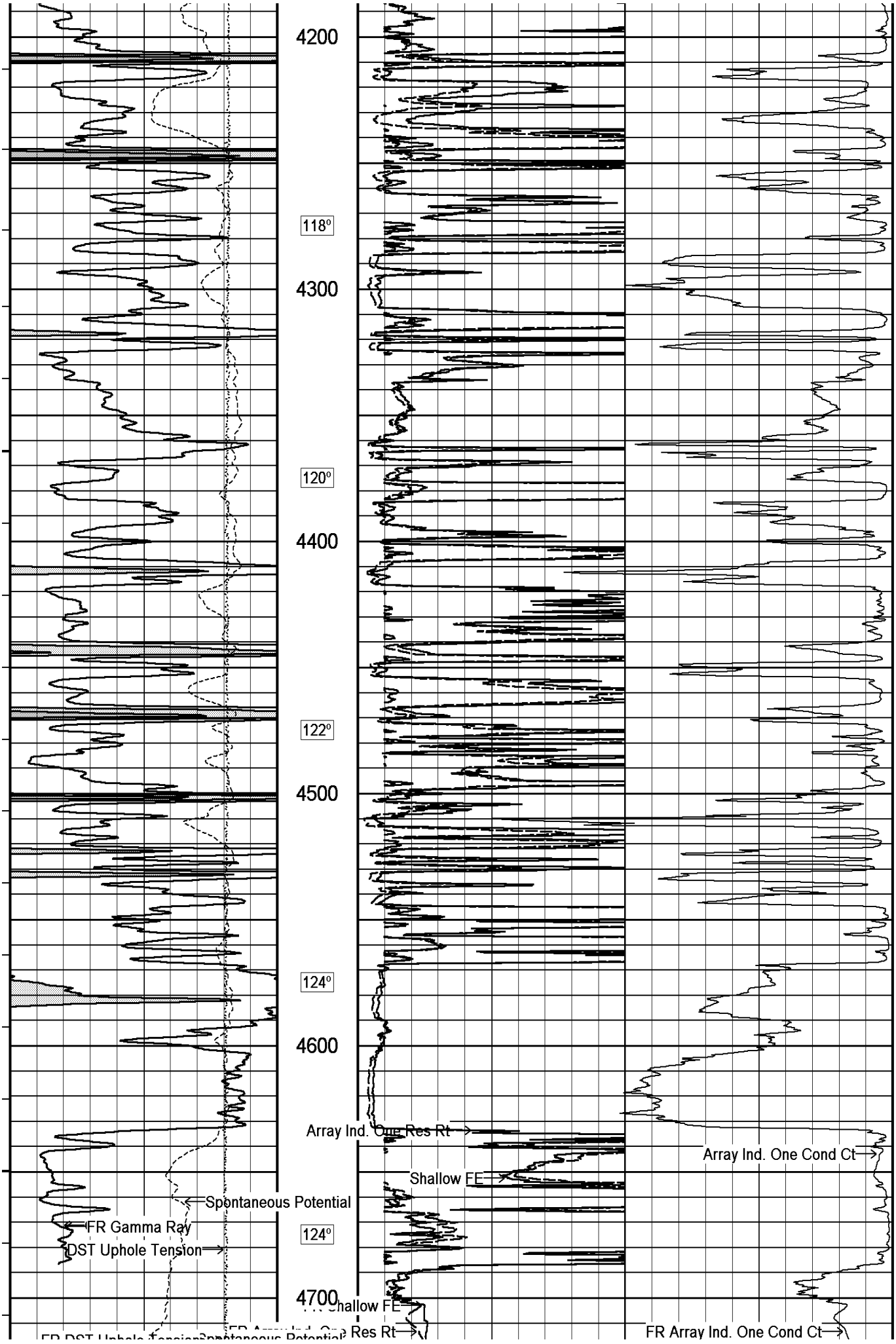

95°
1600
96°
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FF
1700
Spontaneous Potential
Gamma Ray
DST Uphole Tension
96°
1800
97°
1900
97°
2000

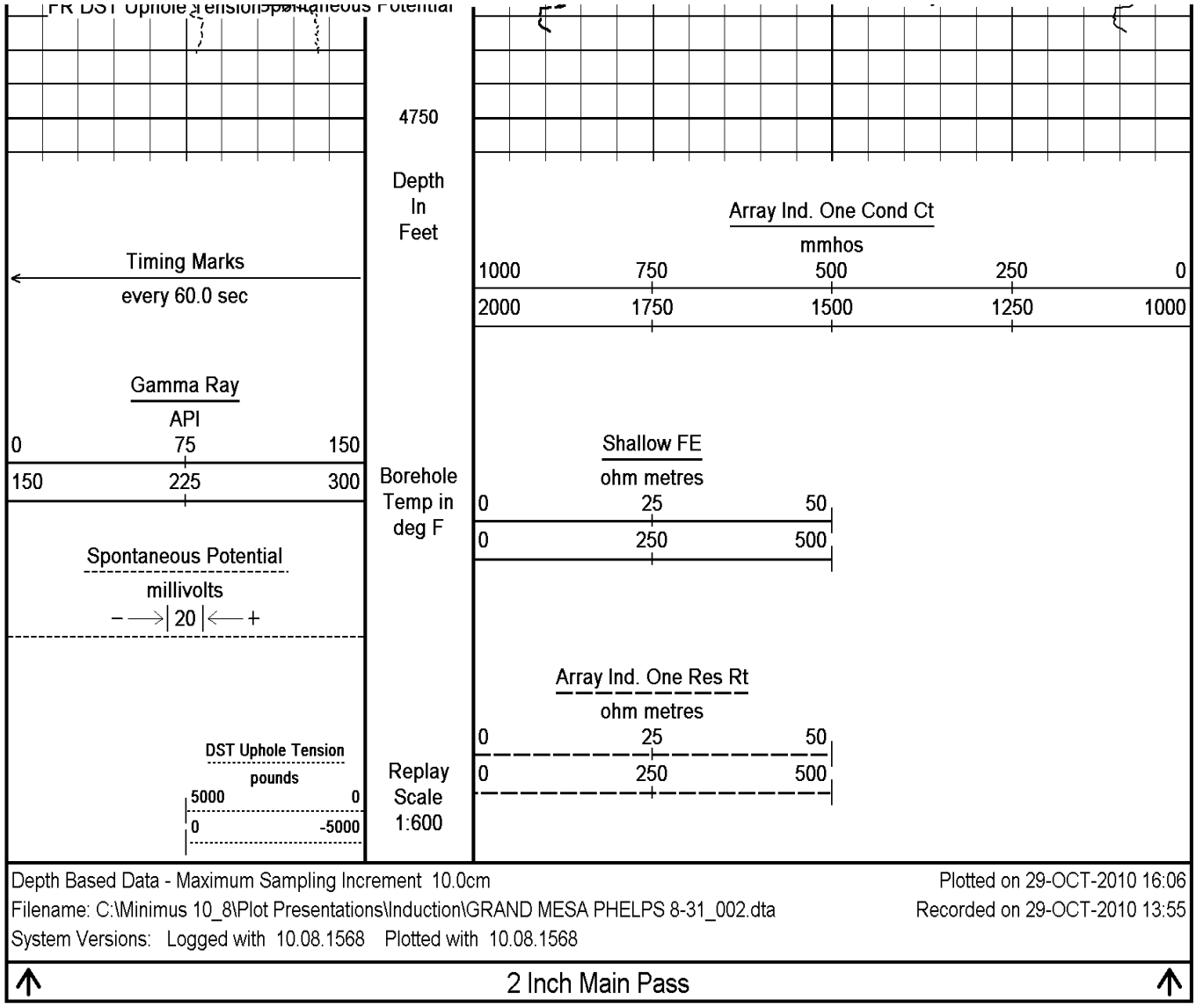

98°
2100
99°
2200
99°
2300
100°
2400
100°
2500
101°

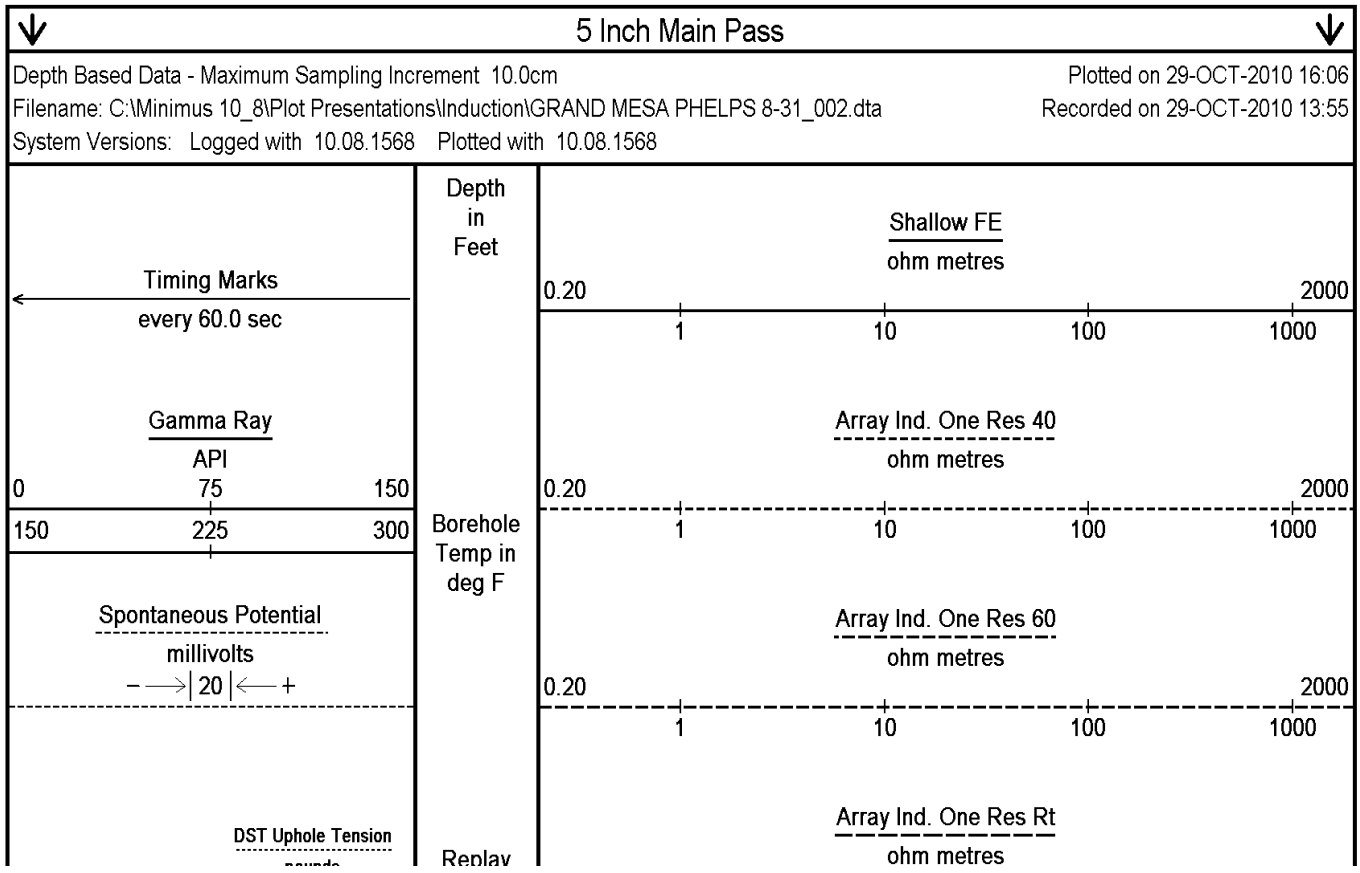

2600
Array Ind. One Res Rt
102°
Shallow FE
Spontaneous Potential
Gamma Ray
2700
DST Uphole Tension
Array Ind. One Cond Ct
103°
2800
103°
2900
104°
3000
105°
3100

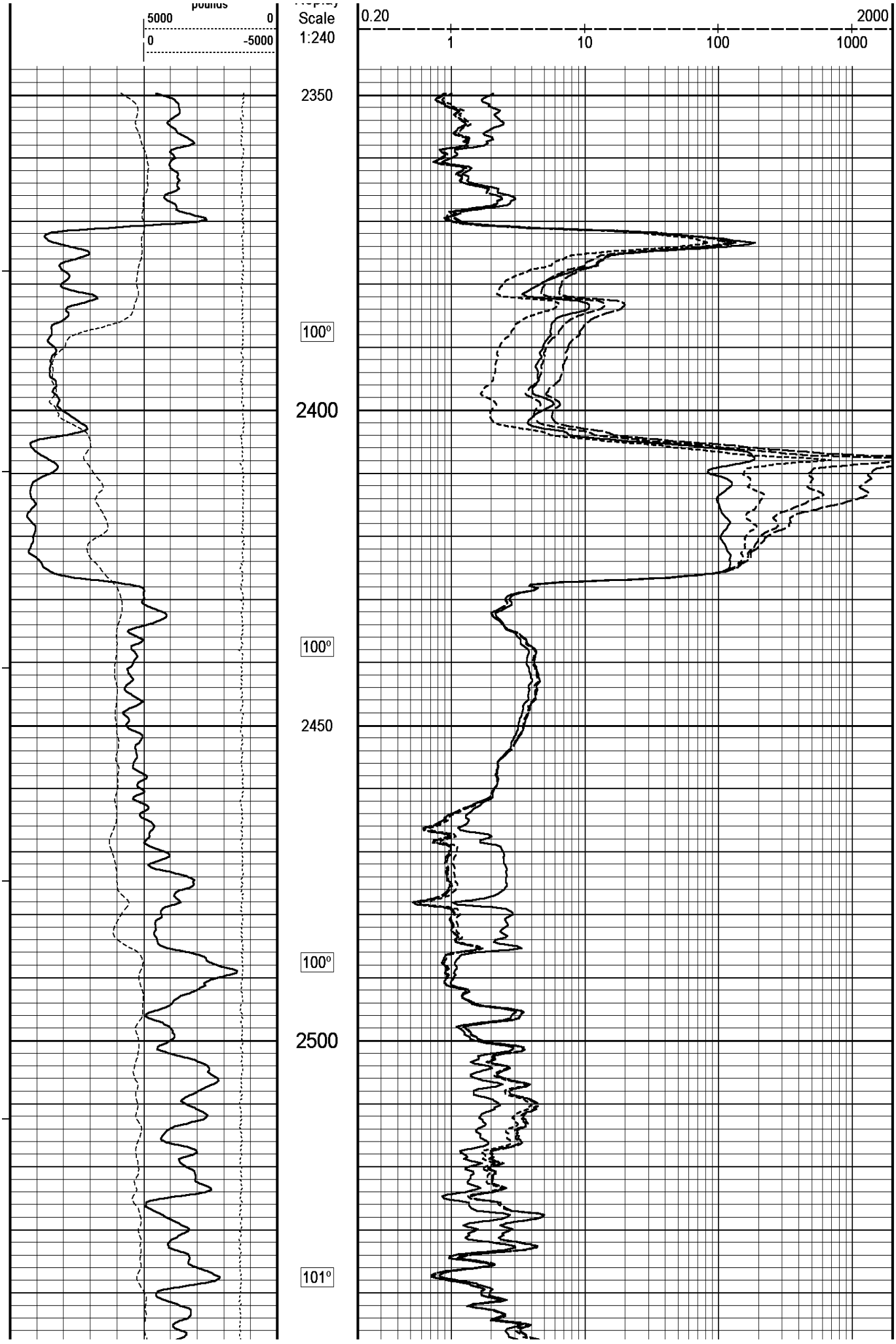

106°
3200
106°
3300
107°
3400
109°
3500
110°
3600
Array Ind. One Res Rt

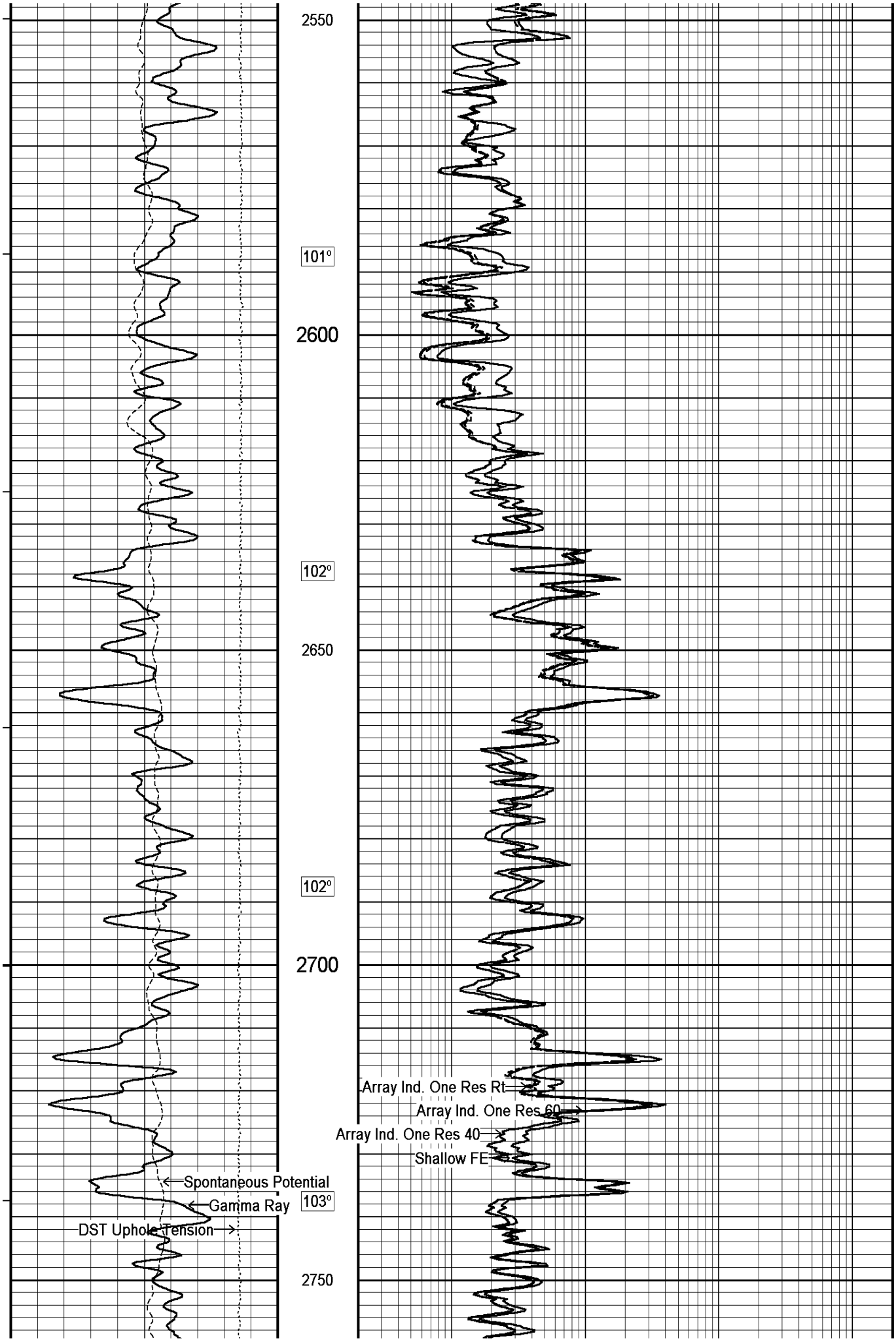

Array Ind. One Cond Ct
Shallow Ft
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
3700
112°
3800
113°
3900
114°
4000
115°
4100
117°

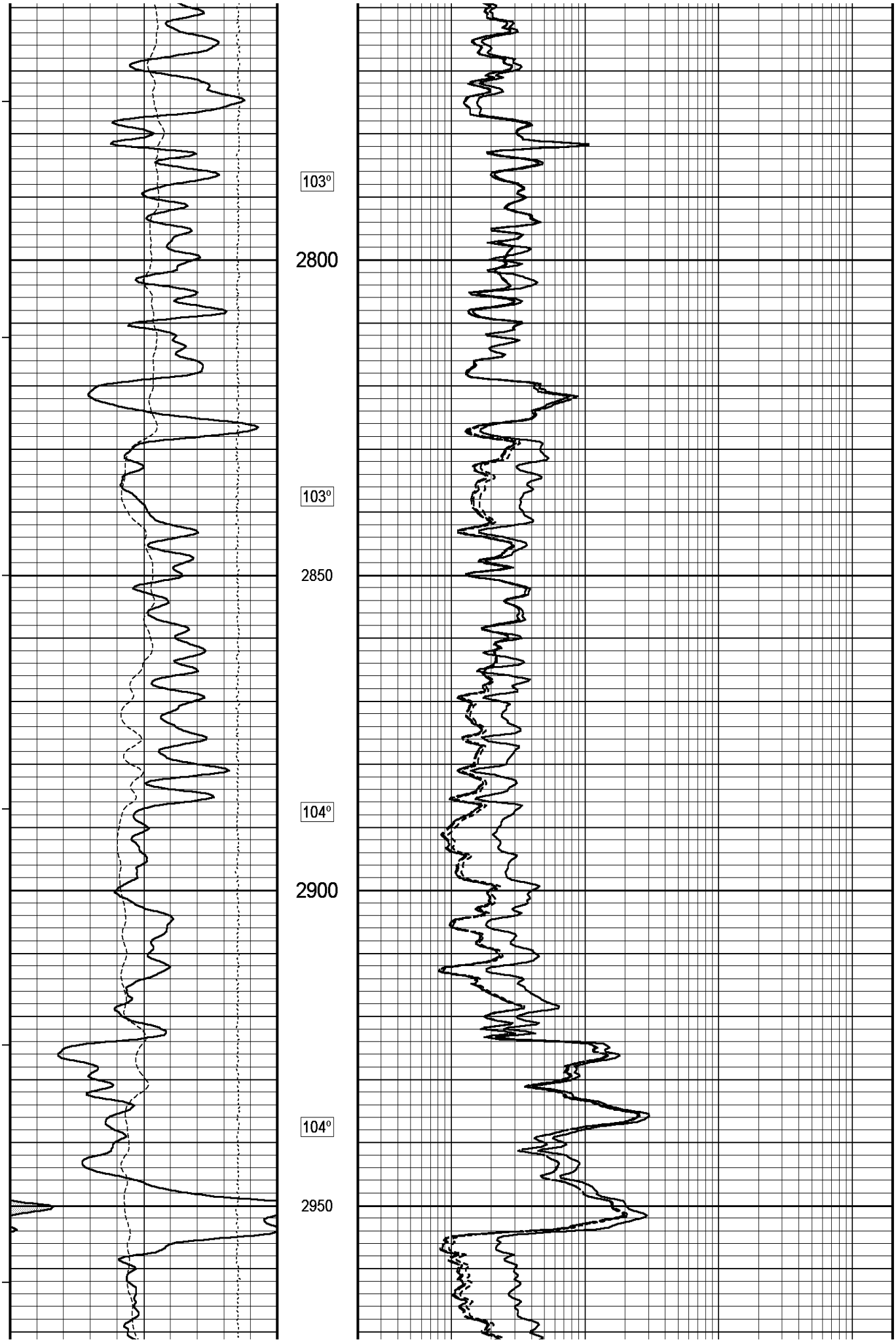

4200
118°
4300
120°
4400
122°
4500
124°
4600
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
FR Gamma Ray
DST Uphole Tension
124°
4700
Shallow FE
FR Array Ind. One Cond Ct
Array Ind. One Cond Ct

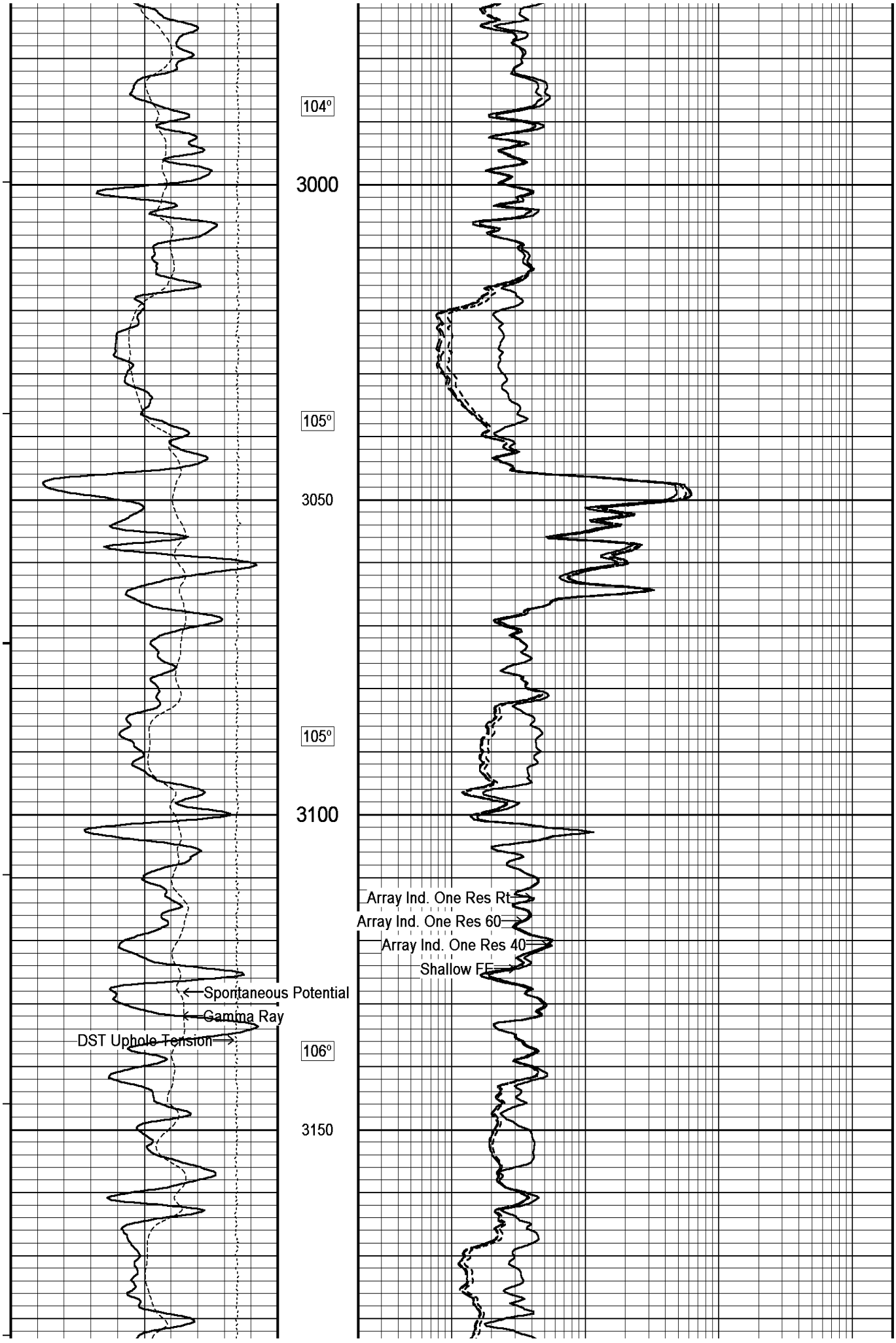

FR DST Uphole Tension Spontaneous Potential
4750
Depth In Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0 75 150
150 225 300
Spontaneous Potential
millivolts
20
DST Uphole Tension
pounds
5000 0
0 -5000
Borehole Temp in deg F
Replay Scale 1:600
Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 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
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_002.dta
Recorded on 29-OCT-2010 13:55
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568
2 Inch Main Pass

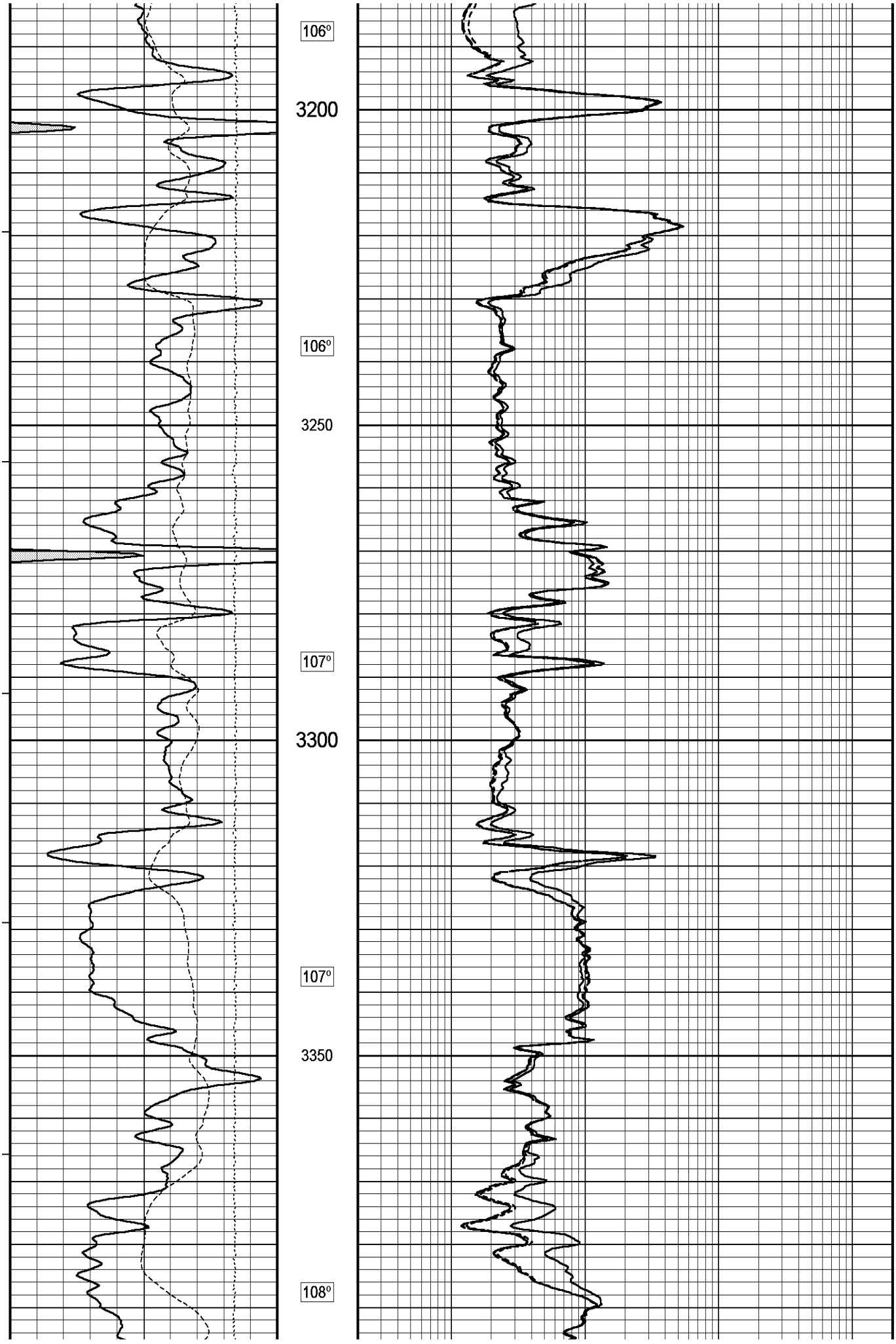

5 Inch Main Pass
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_002.dta
Recorded on 29-OCT-2010 13:55
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568
Depth in Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0 75 150
150 225 300
Spontaneous Potential
millivolts
20
DST Uphole Tension
Borehole Temp in deg F
Replay
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

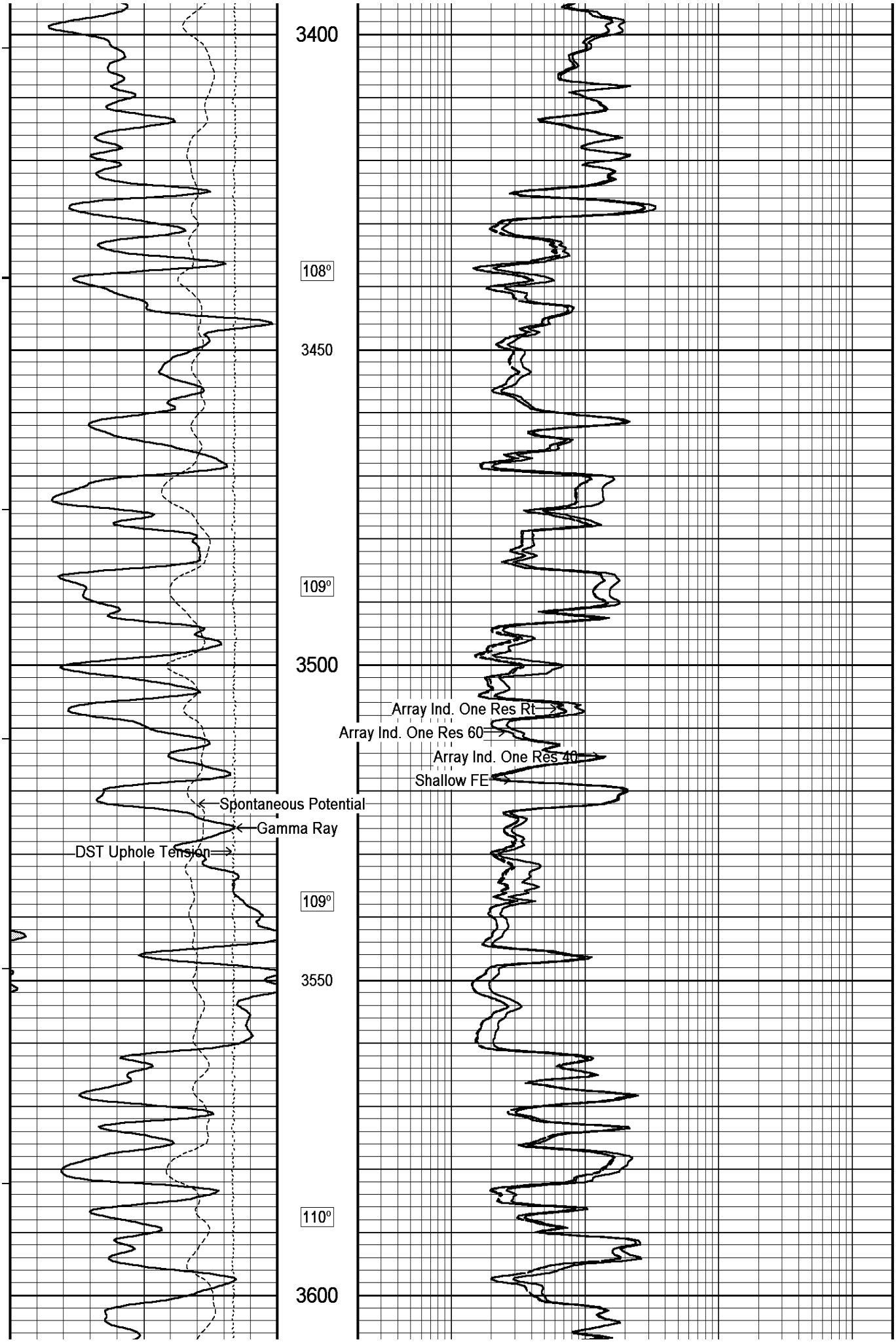

pounds
5000
0
0
-5000
Scale
1:240
0.20
2000
1
10
100
1000
2350
100°
2400
100°
2450
100°
2500
101°

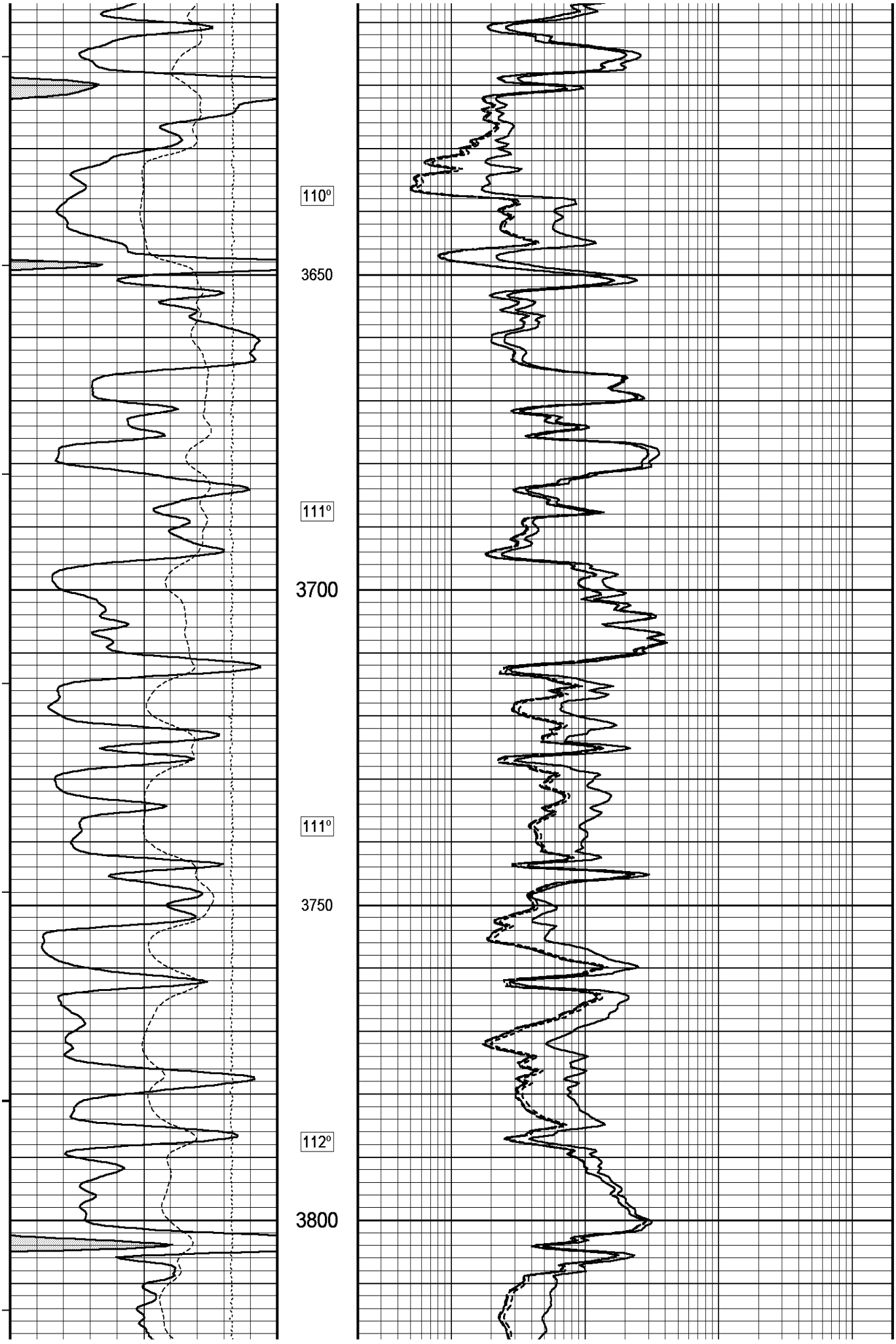

2550
101°
2600
102°
2650
102°
2700
103°
2750
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

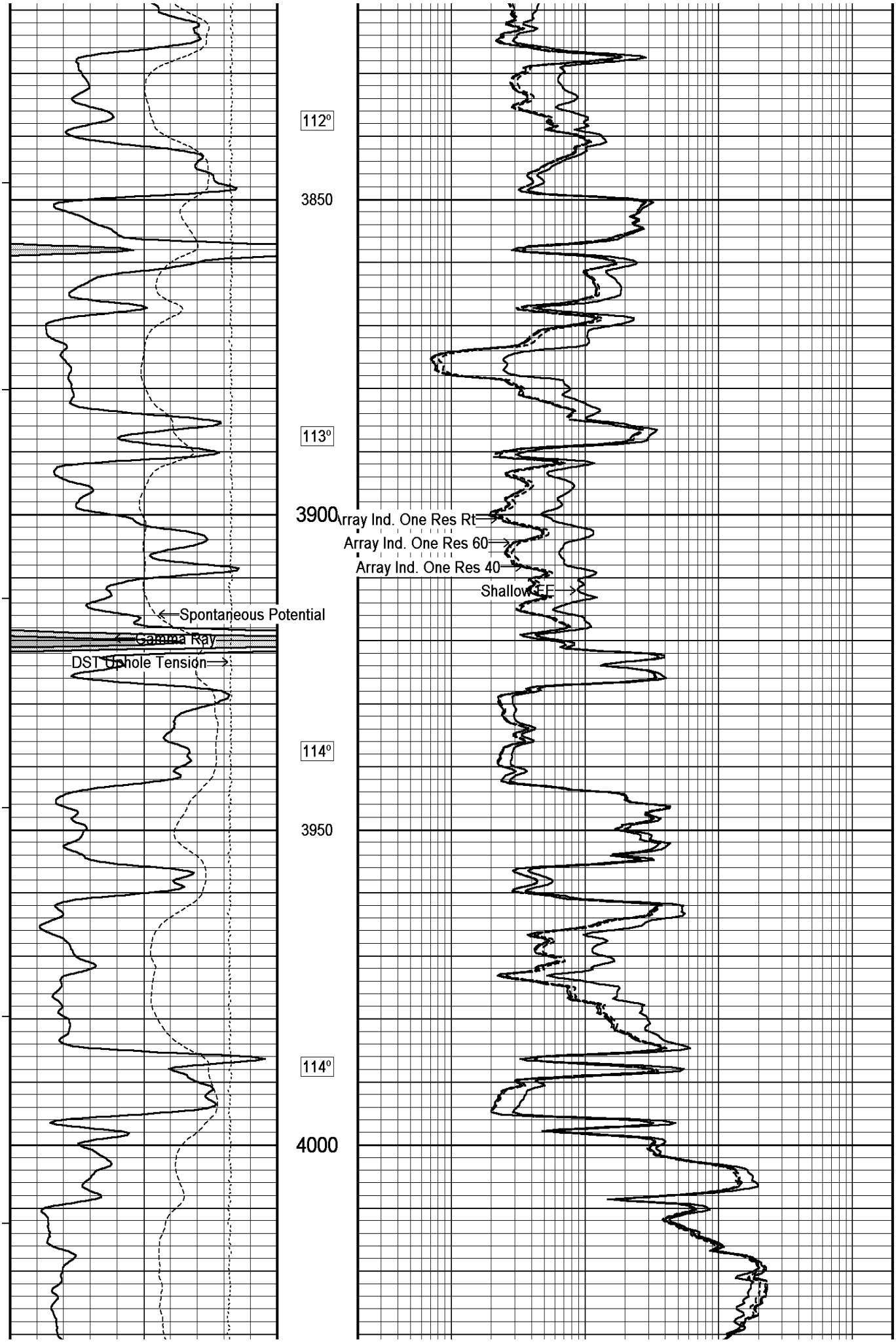

103°
2800
103°
2850
104°
2900
104°
2950

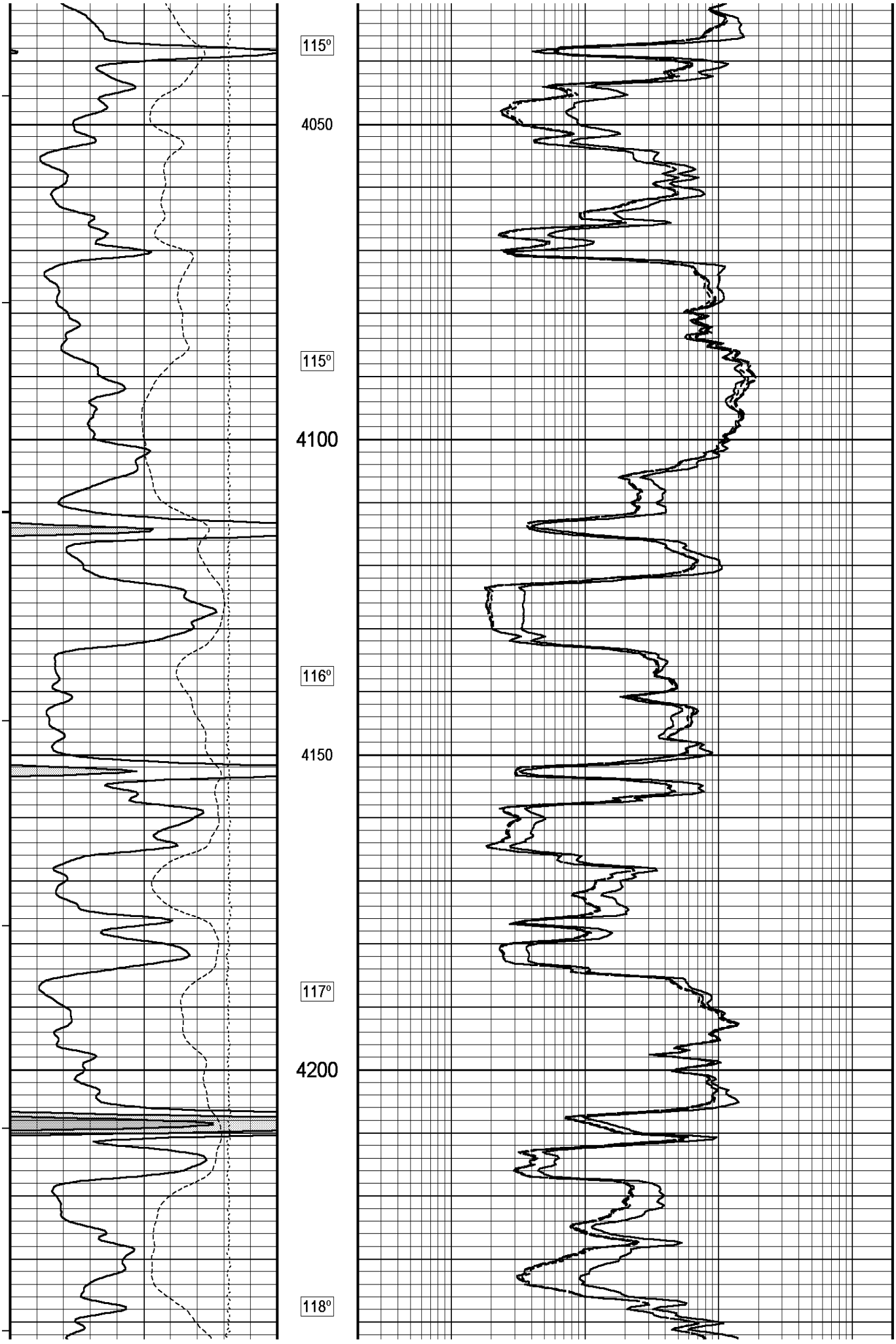

104°
3000
105°
3050
105°
3100
106°
3150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension

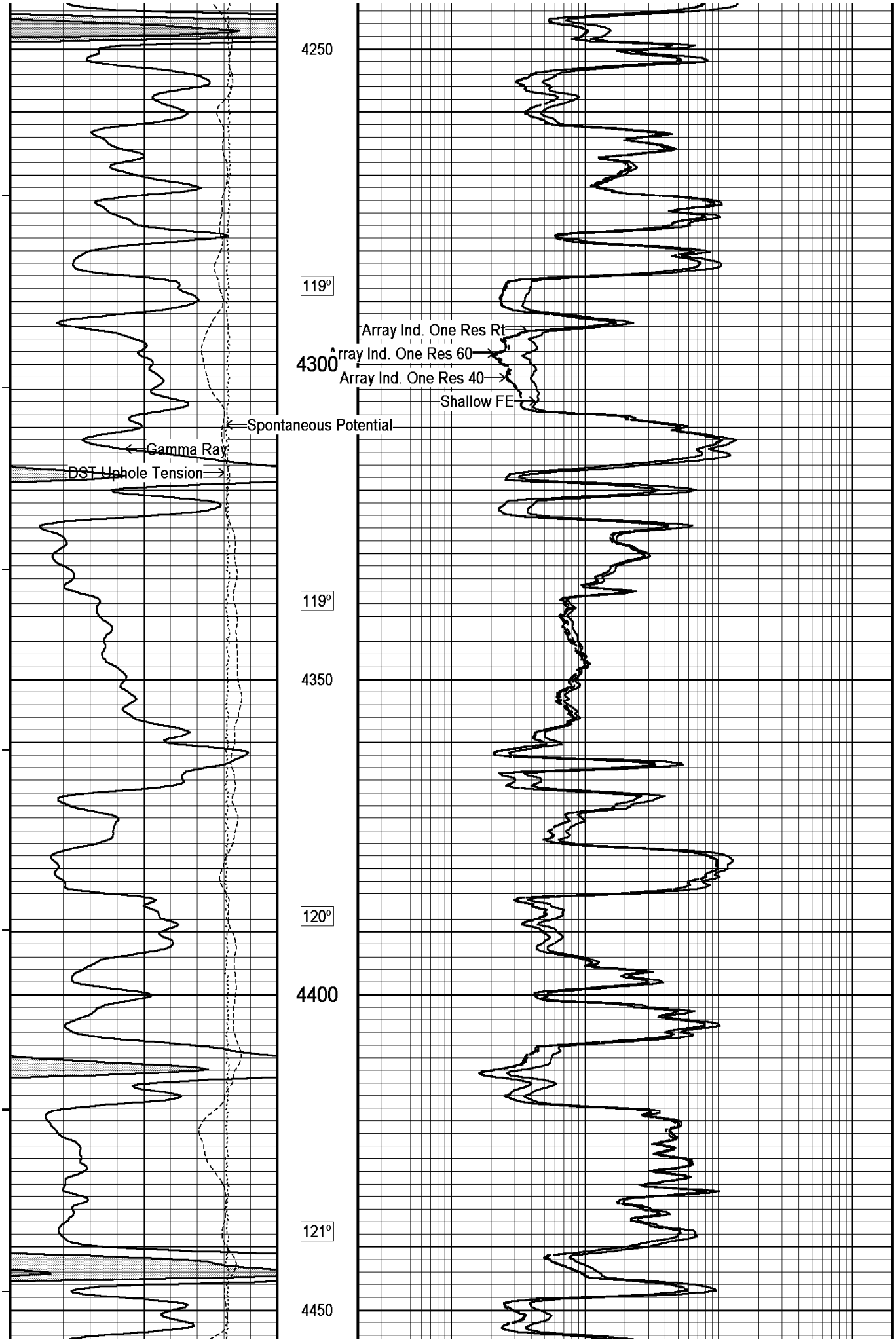

106°
3200
106°
3250
107°
3300
107°
3350
108°

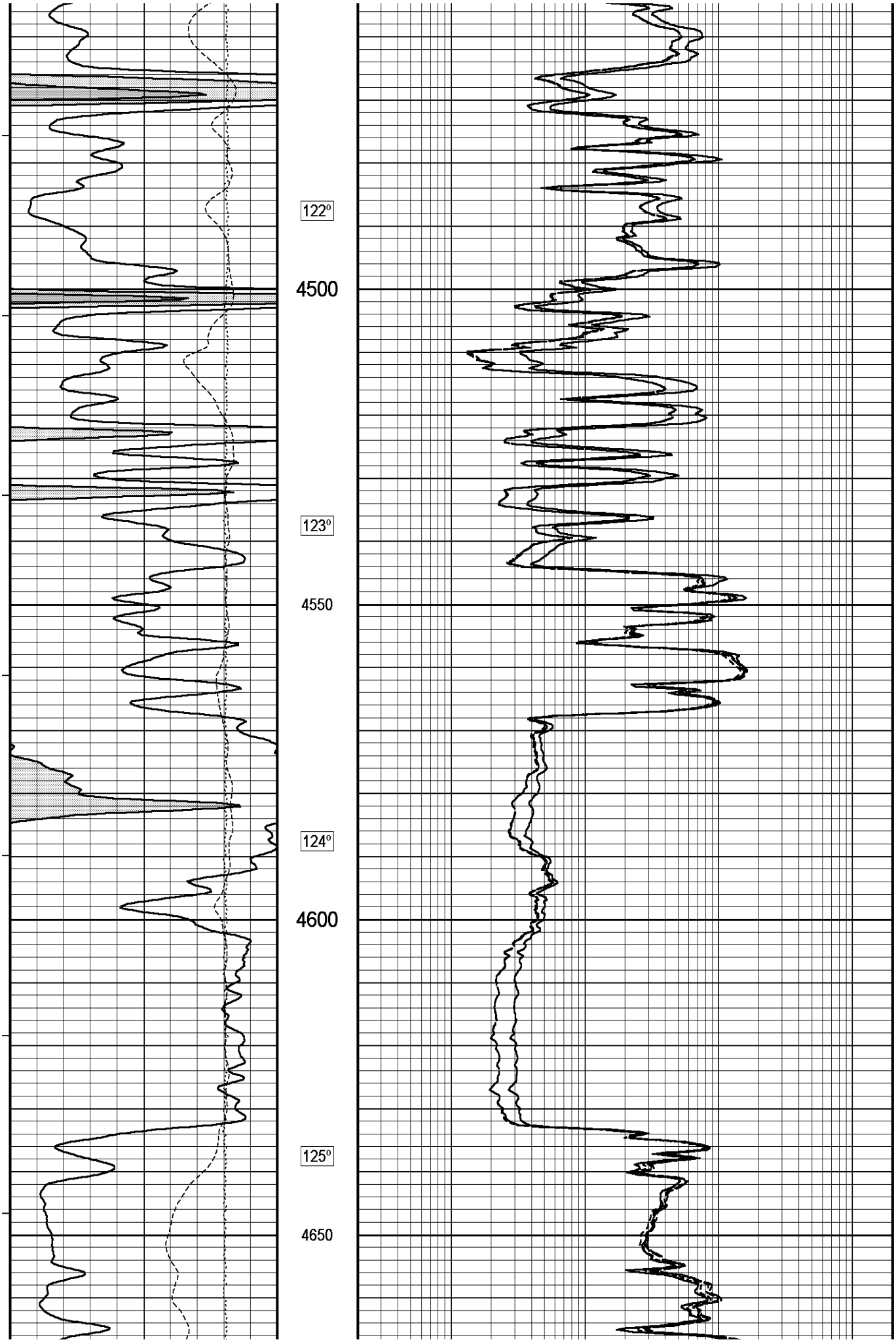

3400
108°
3450
109°
3500
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
109°
3550
110°
3600

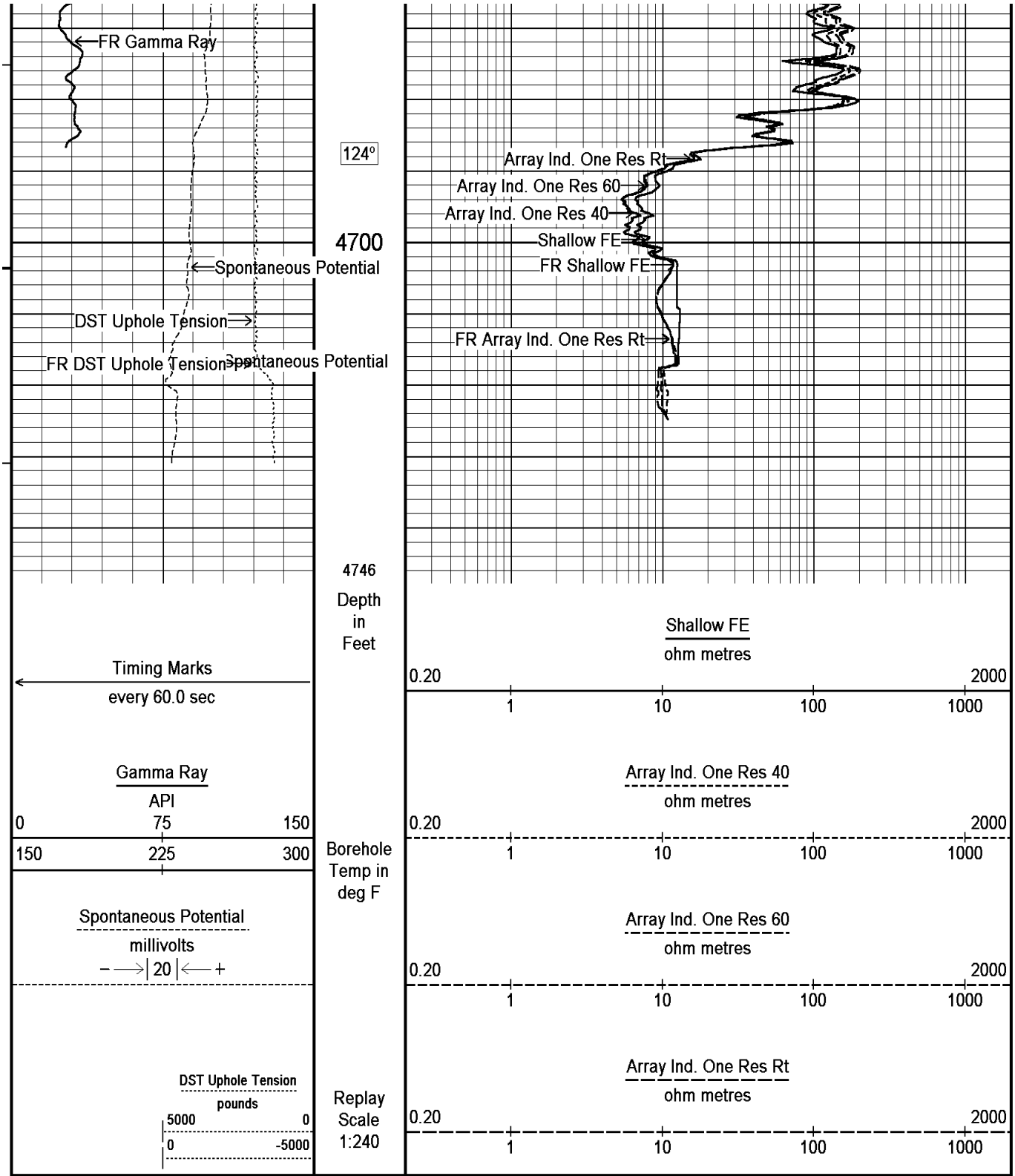

110°
3650
111°
3700
111°
3750
112°
3800


112°
3850
113°
3900
114°
3950
114°
4000
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow EE
Spontaneous Potential
Gamma Ray
DST Uphole Tension


115°
4050
115°
4100
116°
4150
117°
4200
118°


4250
119°
Array Ind. One Res Rt
Array Ind. One Res 60
4300
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
119°
4350
120°
4400
121°
4450


122°
4500
123°
4550
124°
4600
125°
4650



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_002.dta — Recorded on 29-OCT-2010 13:55
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

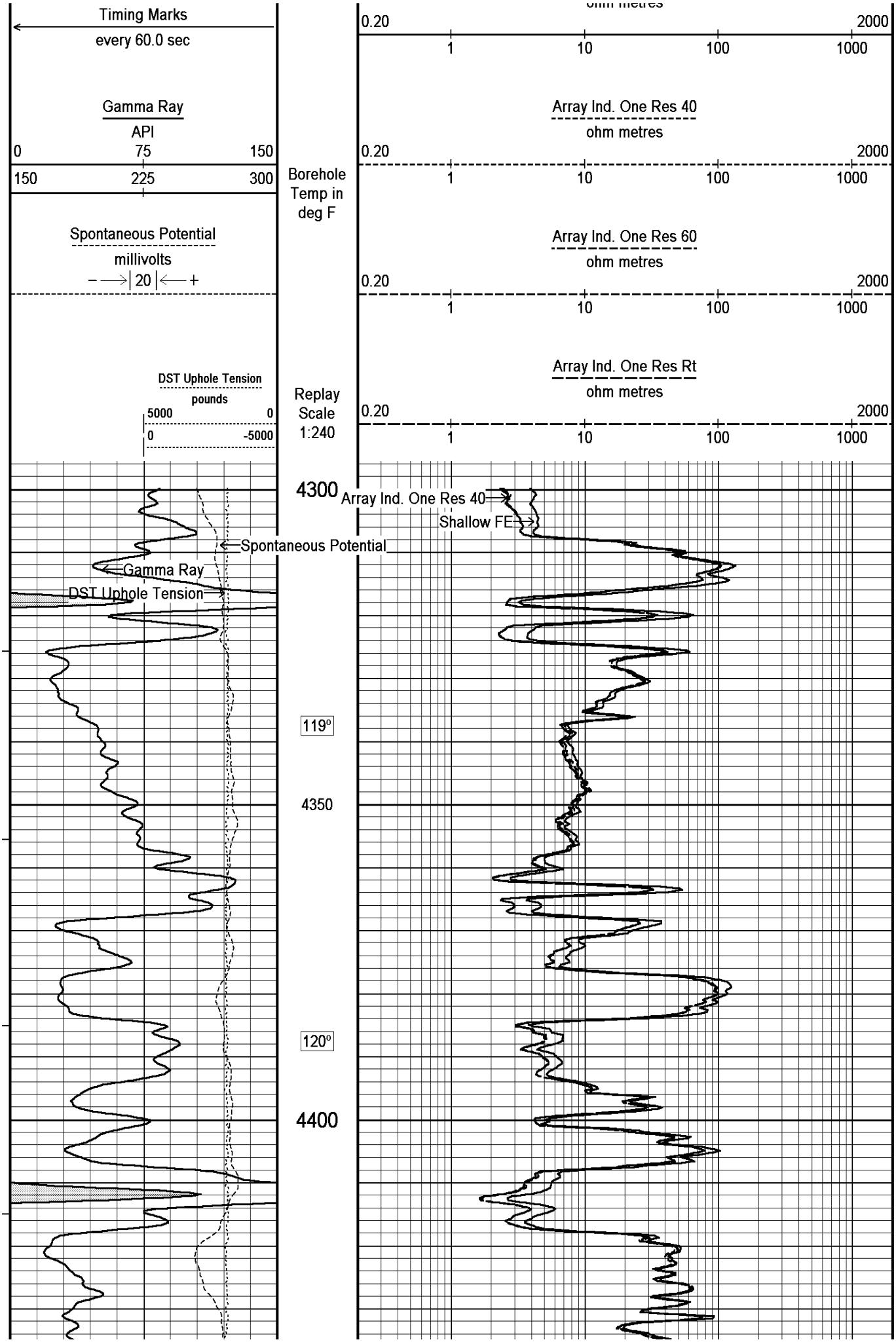
5 Inch Main Pass

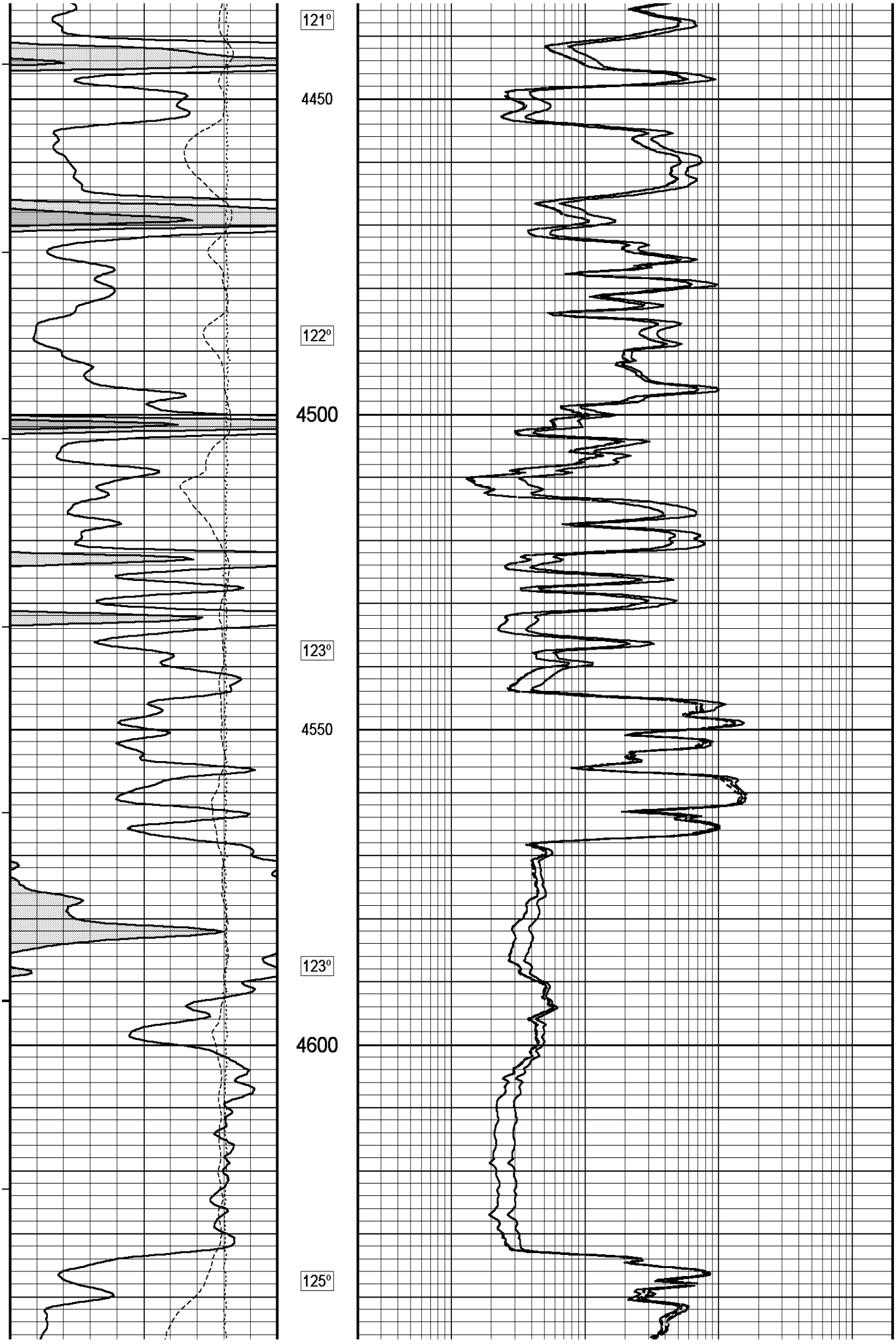
Repeat Section

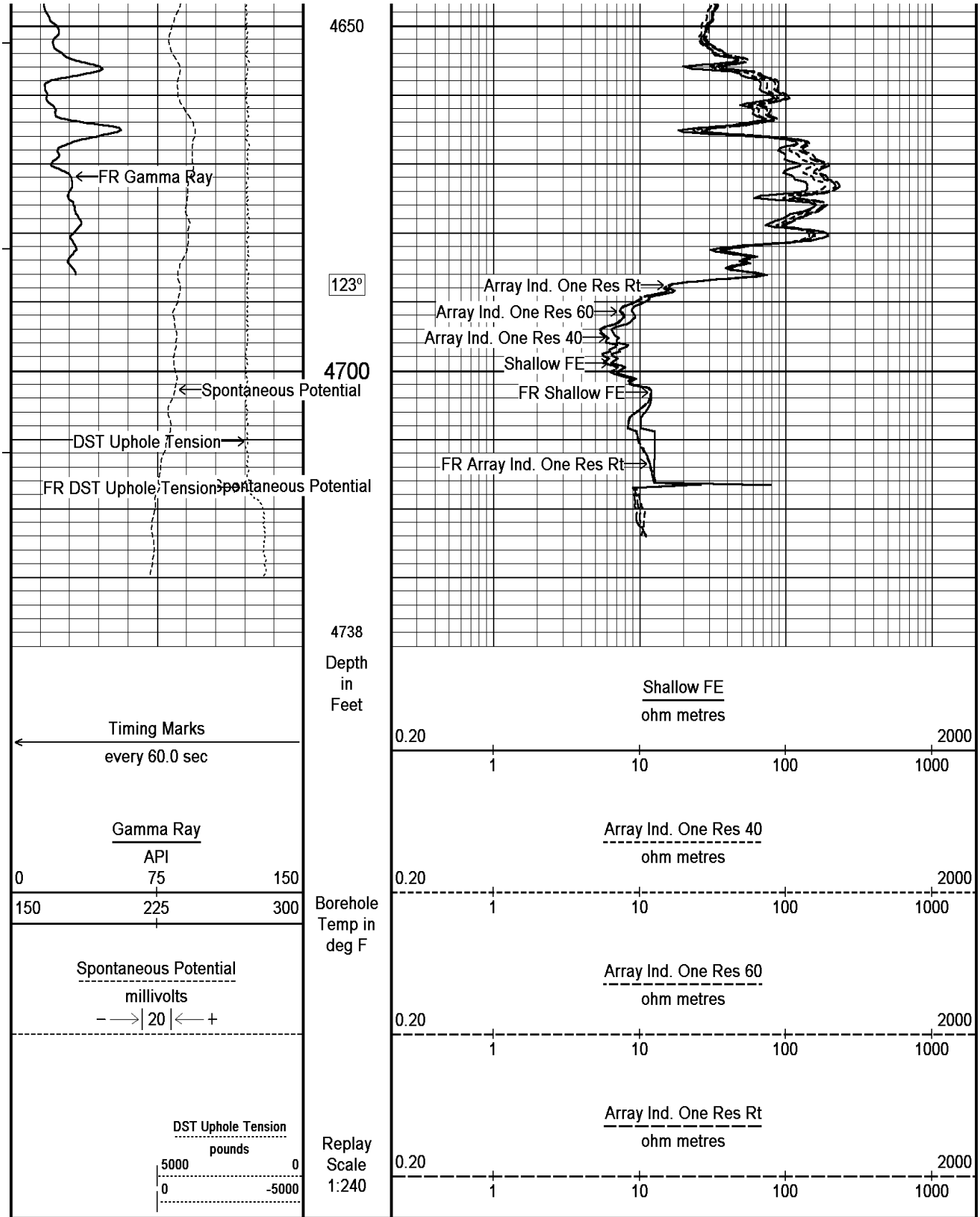
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_001.dta — Recorded on 29-OCT-2010 13:29
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Depth in Feet

Shallow FE
ohm metres


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
0
-5000
Borehole Temp in deg F
Replay Scale 1:240
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res 40
Array Ind. One Res 60
Array Ind. One Res Rt
4300
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
119°
4350
120°
4400


121°
4450
122°
4500
123°
4550
123°
4600
125°



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_001.dta
Recorded on 29-OCT-2010 13:29
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Repeat Section

BEFORE SURVEY CALIBRATION

C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31.dta

General Constants All 000

Last Edited on 29-OCT-2010,12:57

General Parameters		
Mud Resistivity	0.930	ohm-metres
Mud Resistivity Temperature	77.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Limestone Density Por.	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

Down-hole Tension Calibration SMS 000

Field Calibration on 24-OCT-2010 17:20

Reading No	Measured	Calibrated (lbs)
1	-1900.90	7.00
2	-1905.46	473.00

High Resolution Temperature Calibration MCG 067

Field Calibration on 06-AUG-2010,10:40

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

High Resolution Temperature Constants MCG 067

Last Edited on 06-AUG-2010,10:39

Pre-filter Length	11

SP Calibration MCG 067

Field Calibration on 09-SEP-2010 13:54

	Measured	Calibrated (mV)
Reference 1	104.1	100.0
Reference 2	-95.6	-100.0

Gamma Calibration MCG 067

Field Calibration on 28-OCT-2010 22:54

	Measured	Calibrated (API)
Background	63	43
Calibrator (Gross)	731	499
Calibrator (Net)	667	456

Gamma Constants MCG 067

Last Edited on 11-OCT-2010,09:23

Gamma Calibrator Number	grcc141	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML 004

Base Calibration on 13-OCT-2010 10:02
Field Check on 28-OCT-2010 22:43

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 004

Last Edited on 28-OCT-2010,22:42

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 004

Base Calibration on 13-OCT-2010 09:56
Field Calibration on 28-OCT-2010 22:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14810	5.96
2	18235	7.98
3	21638	9.95
4	25413	11.91
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.97	5.96

Neutron Calibration MDN 041

Base Calibration on 13-OCT-2010 12:02
Field Check on 28-OCT-2010 22:59

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3163	98	3714	110
Ratio	32.297		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2080	3027
Ratio	0.687	

Field Check

	Calibrated (cps)	
	2116	3035
Ratio	0.697	

Neutron Constants MDN 041

Last Edited on 29-OCT-2010,12:49

Neutron Source Id	p31124b	
Neutron Jig Number	nj5736	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.12	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	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 067

Base Calibration on 13-OCT-2010 09:44
Field Check on 28-OCT-2010 22:40

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	961.4	126.8
Base Check		280.8
Field Check		280.8

FE Constants MFE 067

Last Edited on 28-OCT-2010,22:38

Running Mode	No Sleeve

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

High Resolution Temperature Calibration MAI 188

Field Calibration on 02-AUG-2010,11:00

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

High Resolution Temperature Constants MAI 188

Pre-filter Length	11

Induction Calibration MAI 188

Base Calibration on 09-SEP-2010,10:03
Field Check on 28-OCT-2010 22:38

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	16.5	472.3	9.3	966.2
2	6.0	378.3	7.6	821.4
3	3.5	260.7	5.2	566.0
4	1.1	135.1	2.6	279.2

Array Temperature	82.2	Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	13.9	3849.0	
2	0.0	0.0	30.7	3570.8	
3	0.0	0.0	28.4	3042.0	
4	0.0	0.0	21.0	2039.7	
Deep	0.0	0.0	18.1	1924.6	
Medium	0.0	0.0	40.3	4056.9	
Shallow	0.0	0.0	45.1	5363.4	
Array Temperature	0.0		60.4		Deg F

Induction Constants MAI 188

Last Edited on 28-OCT-2010,22:36

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 061

Base Calibration on 13-OCT-2010 11:11
Field Calibration on 28-OCT-2010 22:41

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19181	4.01
2	29014	5.96
3	39136	7.98
4	49217	9.95
5	59496	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.97	5.96

Photo Density Calibration MPD 061

Base Calibration on 13-OCT-2010 11:34
Field Check on 28-OCT-2010 22:49

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	41790	18625	59556	30836
Reference 2	16181	1657	24941	2541

Field Check at Base

682.5	840.7

Field Check

683.6	837.7

PE Calibration

Base Calibration

	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	124	608		
Reference 1	16630	41682	0.402	0.371
Reference 2	4501	16101	0.282	0.272

Field Check at Base

124.3	608.4

Field Check

125.9	611.4

Density Constants MPD 061

Last Edited on 29-OCT-2010,12:50

Density Source Id	20718b	
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	1.12	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 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB 5 Length: 1.58 ft Weight: 15.4 lb

Compact Gamma
MCG 67 Length: 8.70 ft Weight: 63.9 lb

Compact Micro-log
MML 4 Length: 7.97 ft Weight: 81.6 lb

Compact Neutron
MDN 41 Length: 5.04 ft Weight: 50.7 lb

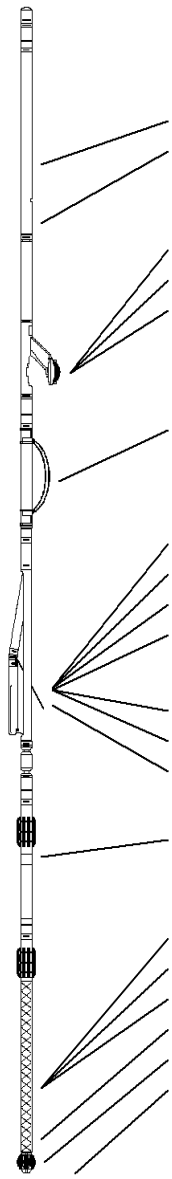
Compact Density/Caliper
MPD 61 Length: 9.59 ft Weight: 90.4 lb

SKJ-D.A Compact Knuckle Joint
SKJ 91 Length: 2.17 ft Weight: 24.3 lb

Compact Focussed Electric
MFE 67 Length: 6.03 ft Weight: 48.5 lb

Compact Induction
MAI 188 Length: 10.81 ft Weight: 48.5 lb

Total Length: 51.88 ft Weight: 423.3 lb



45.02 ft GRGC - Gamma Ray
42.11 ft CGXT - MCG External Temperature
35.39 ft MINV - Micro-inverse
35.39 ft MNRL - Micro-normal
35.39 ft MLTC - MML Caliper
30.59 ft NPRL - Limestone Neutron Por.
22.12 ft CLDC - Density Caliper
22.12 ft AVOL - Annular Volume
22.12 ft HVOL - Hole Volume
21.42 ft DEN - Compensated Density
21.42 ft DCOR - Density Correction
21.42 ft DPRL - Limestone Density Por.
21.36 ft PDPE - PE
13.70 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
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	GRAND MESA OPERATING COMPANY
WELL	PHELPS #8-31
FIELD	MAURICE NORTHEAST
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2922.00	feet	First Reading	4714.00	feet
Elevation Drill Floor	2921.00	feet	Depth Driller	4720.00	feet

Elevation Ground Level	2917.00	feet	Depth Logger	4717.00	feet

ARRAY INDUCTION
SHALLOW FOCUSSED
ELECTRIC LOG

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ARRAY INDUCTION
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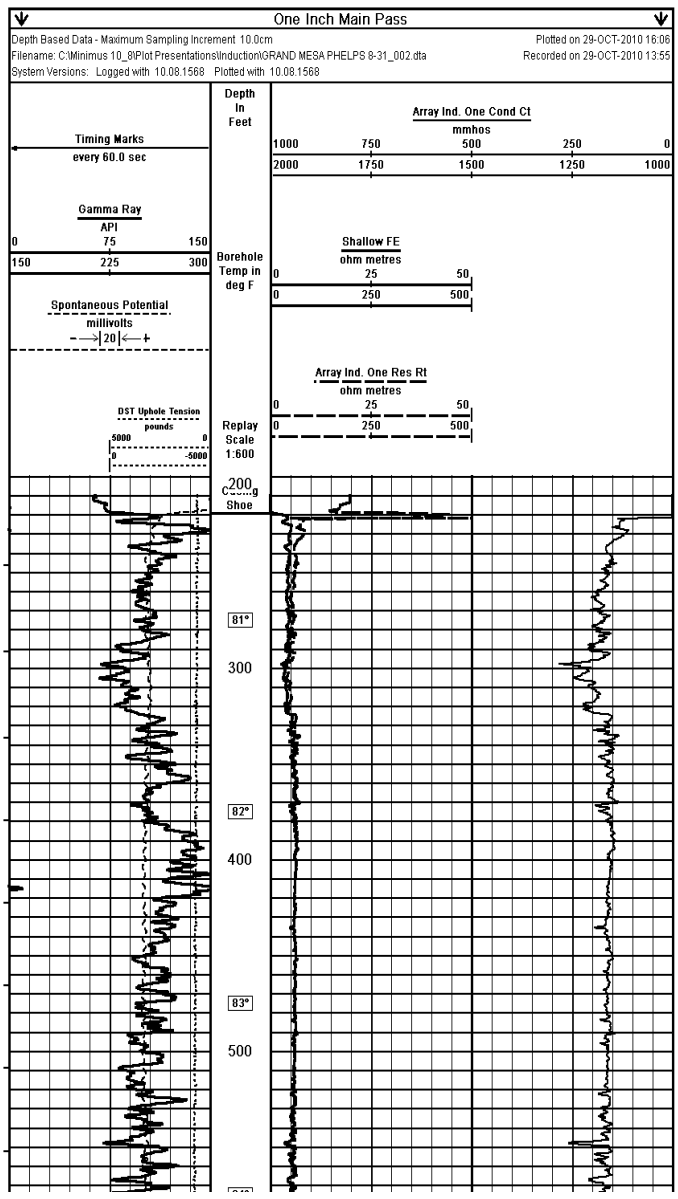
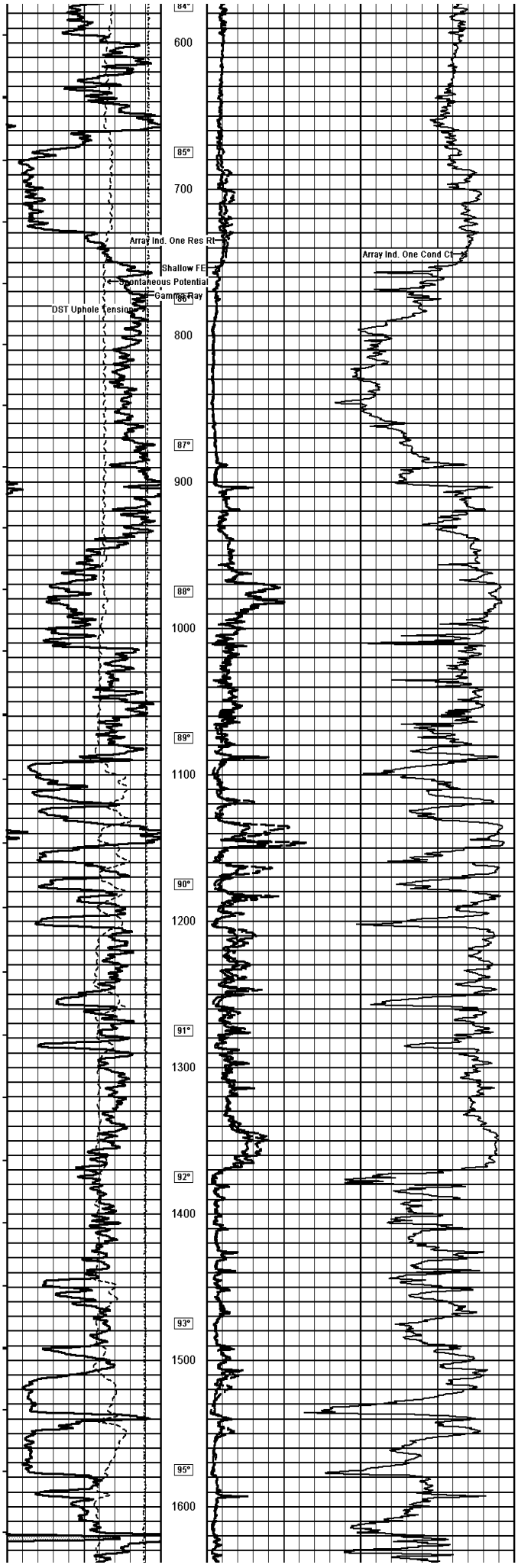
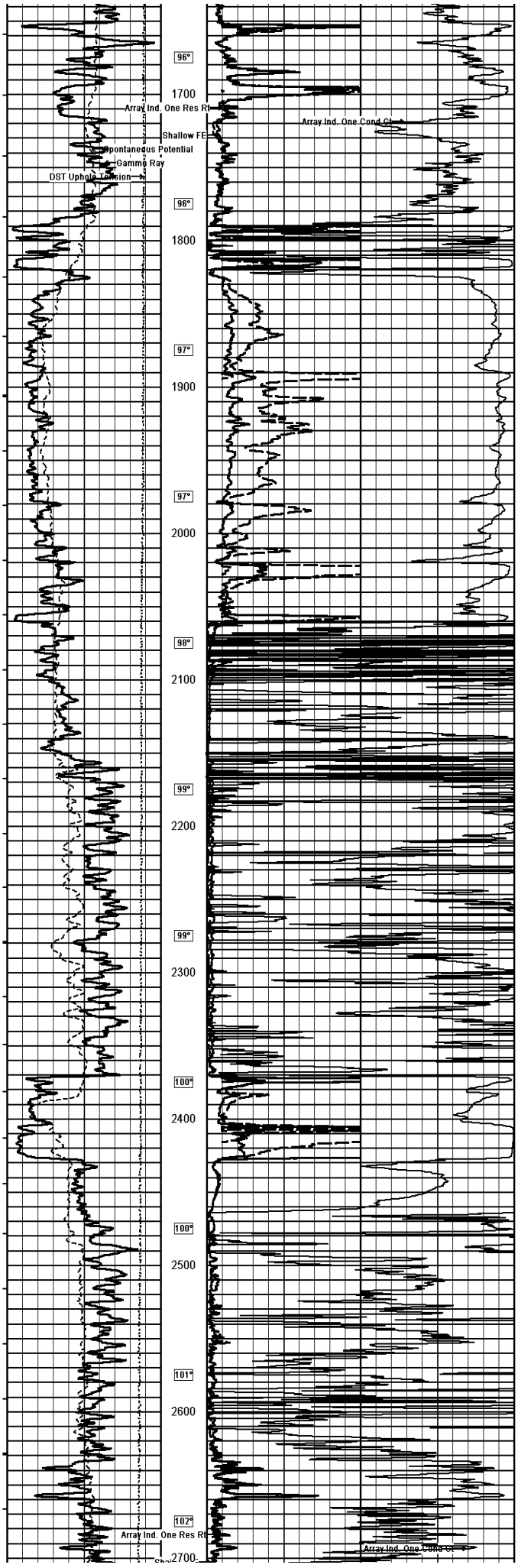
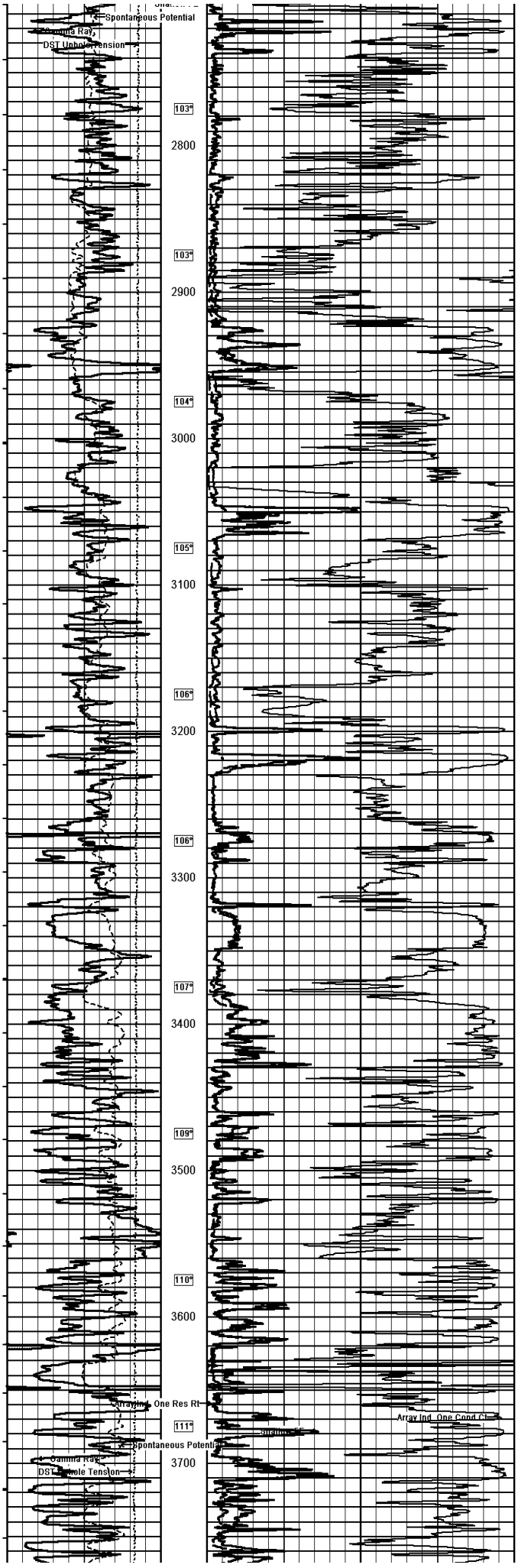
ELECTRIC LOG

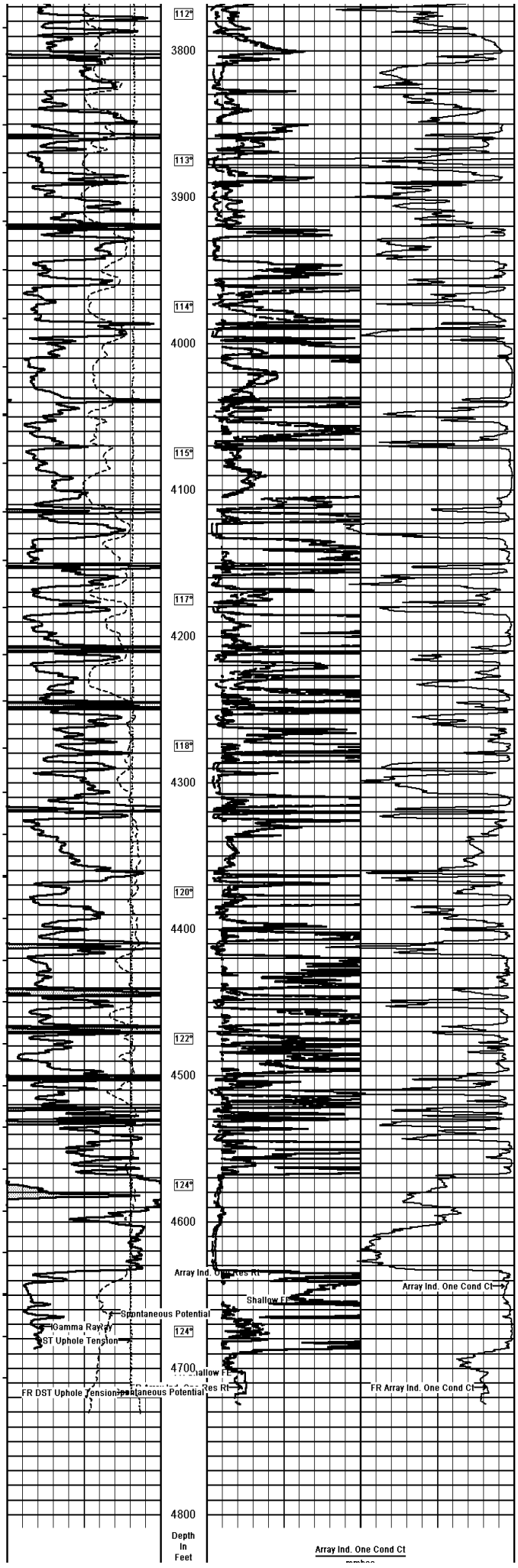
COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHELPS #8-31
FIELD	MAURICE NORTHEAST
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1812' FSL & 461' FEL
SEC	31
TWP	13S
RGE	31W
API Number	15-063-21874
Permit Number	
Other Services	MPD/MDN
Permanent Datum G.L. Elevation 2917 feet	MML
Log Measured From K.B. @ 5 FEET above Permanent Datum	Elevations: KB 2922.00
Drilling Measured From K.B.	DF 2921.00
	GL 2917.00
	feet
Date	29-OCT-2010
Run Number	ONE
Depth Driller	4720.00 feet
Depth Logger	4717.00 feet
First Reading	4714.00 feet
Last Reading	219.00 feet
Casing Driller	220.00 feet
Casing Logger	219.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.30 lb/USg 57.00 CP
PH / Fluid Loss	10.00 9.60 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	0.93 @ 77.0 ohm-m
Rmf @ Measured Temp	0.74 @ 77.0 ohm-m
Rmc @ Measured Temp	1.12 @ 77.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.58 @125.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	125.00 deg F
Equipment Name	COMPACT
Equipment / Base	13096 LIB
Recorded By	LYNN SCOTT
Witnessed By	BOB PETERSEN
S.O.# / JOB#	3524589 LB10-270

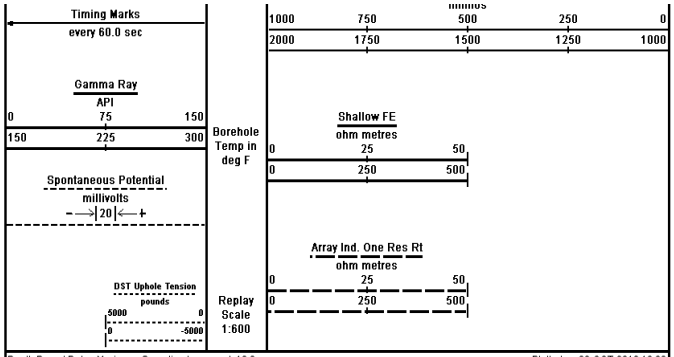



600
700
800
900
1000
1100
1200
1300
1400
1500
1600
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond Ct


96°
1700
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
96°
1800
97°
1900
97°
2000
98°
2100
99°
2200
99°
2300
100°
2400
100°
2500
101°
2600
102°
Array Ind. One Res Rt
2700
Array Ind. One Cond Ct


Spontaneous Potential
DST Unbole Tension
103°
2800
103°
2900
104°
3000
105°
3100
106°
3200
106°
3300
107°
3400
109°
3500
110°
3600
111°
3700
Spontaneous Potential
DST Unbole Tension


112°
3800
113°
3900
114°
4000
115°
4100
117°
4200
118°
4300
120°
4400
122°
4500
124°
4600
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
124°
Gamma Ray
DST Uphole Tension
4700
Shallow FE
FR DST Uphole Tension
Spontaneous Potential
Res Rt
FR Array Ind. One Cond Ct
Array Ind. One Cond Ct
4800
Depth
In
Feet
Array Ind. One Cond Ct



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-OCT-2010 16:06
Filename: C:\Minimus 10_8\Plot Presentations\Induction\GRAND MESA PHELPS 8-31_002.dta — Recorded on 29-OCT-2010 13:55
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

One Inch Main Pass

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHELPS #8-31
FIELD	MAURICE NORTHEAST
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2922.00	feet	First Reading	4714.00	feet
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