ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

Weatherford

COMPANY	GRAND MESA OPERATING
WELL	DIRKS #1-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1168' FSL & 969' FWL

SEC	TWP	RGE	Other Services
4	16S	33W	MDN/MPD MML MSS

API Number 15-171-20812
Permit Number

Permanent Datum G.L., Elevation 3063 feet
Log Measured From K.B. @ 5 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	3068.00
DF	3066.00
GL	3063.00

Date	22-JUN-2011		
Run Number	ONE		
Depth Driller	4870.00	feet	
Depth Logger	4867.00	feet	
First Reading	4864.00	feet	
Last Reading	222.00	feet	
Casing Driller	222.00	feet	
Casing Logger	222.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.20 lb/USg	56.00 CP	
PH / Fluid Loss	10.50	8.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.45 @ 93.0	ohm-m	
Rmf @ Measured Temp	0.36 @ 93.0	ohm-m	
Rmc @ Measured Temp	0.54 @ 93.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.36 @115.0	ohm-m	
Time Since Circulation	2 HOURS		
Max Recorded Temp	115.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13057	LIB	
Recorded By	R. HOFFMAN		
Witnessed By	STEVE STRIBLING		
S.O. # / JOB #	3529167		LB11-139

BOREHOLE RECORD

Last Edited: 23-JUN-2011 05:45

Bit Size (inches)	Depth From (feet)	Depth To (feet)
7.875	222.00	4867.00

CASING RECORD

Type	Size (inches)	Depth From (feet)	Shoe Depth (feet)	Weight (pounds/ft)
SURFACE	8.625	0.00	222.00	24.00

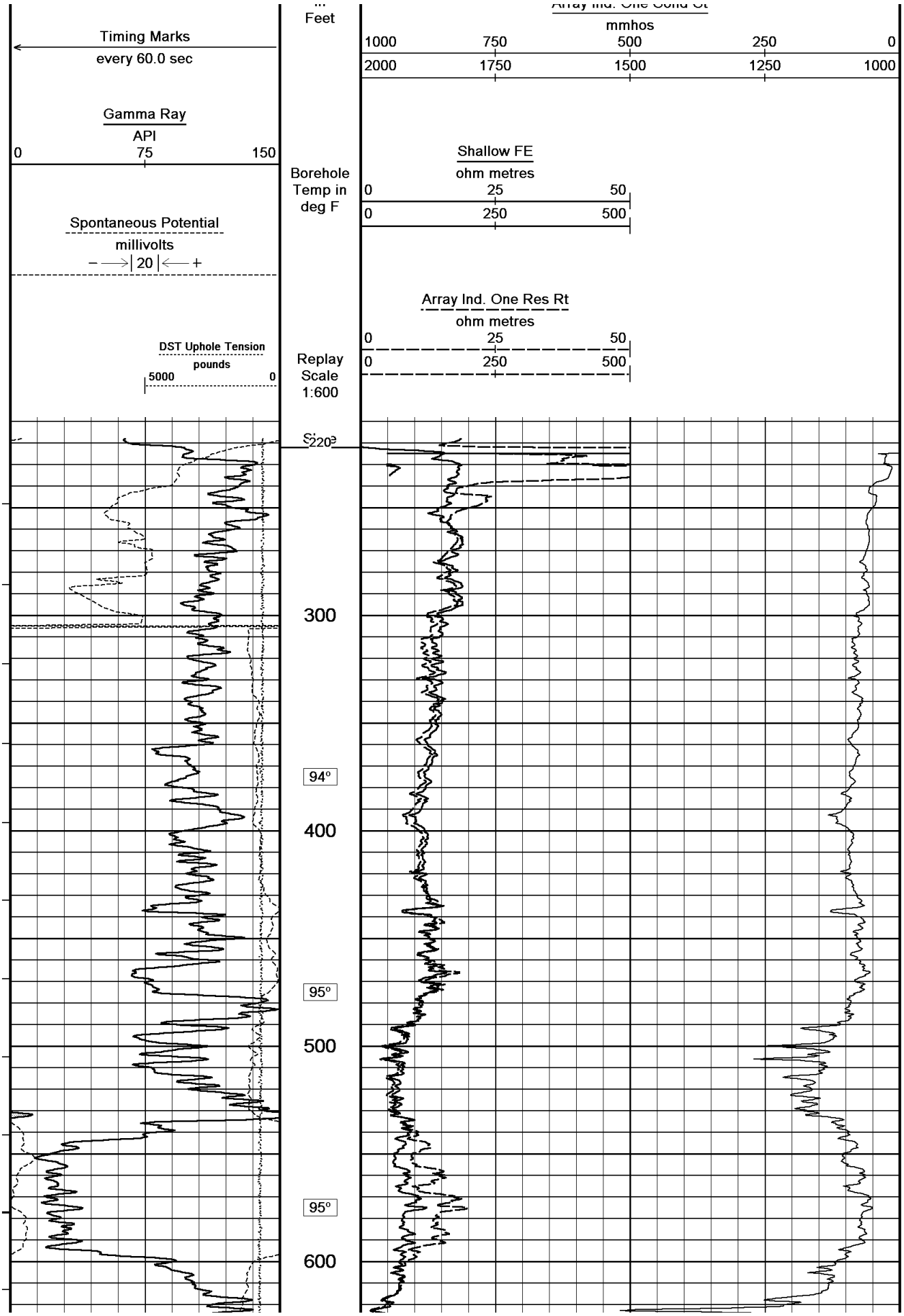
REMARKS

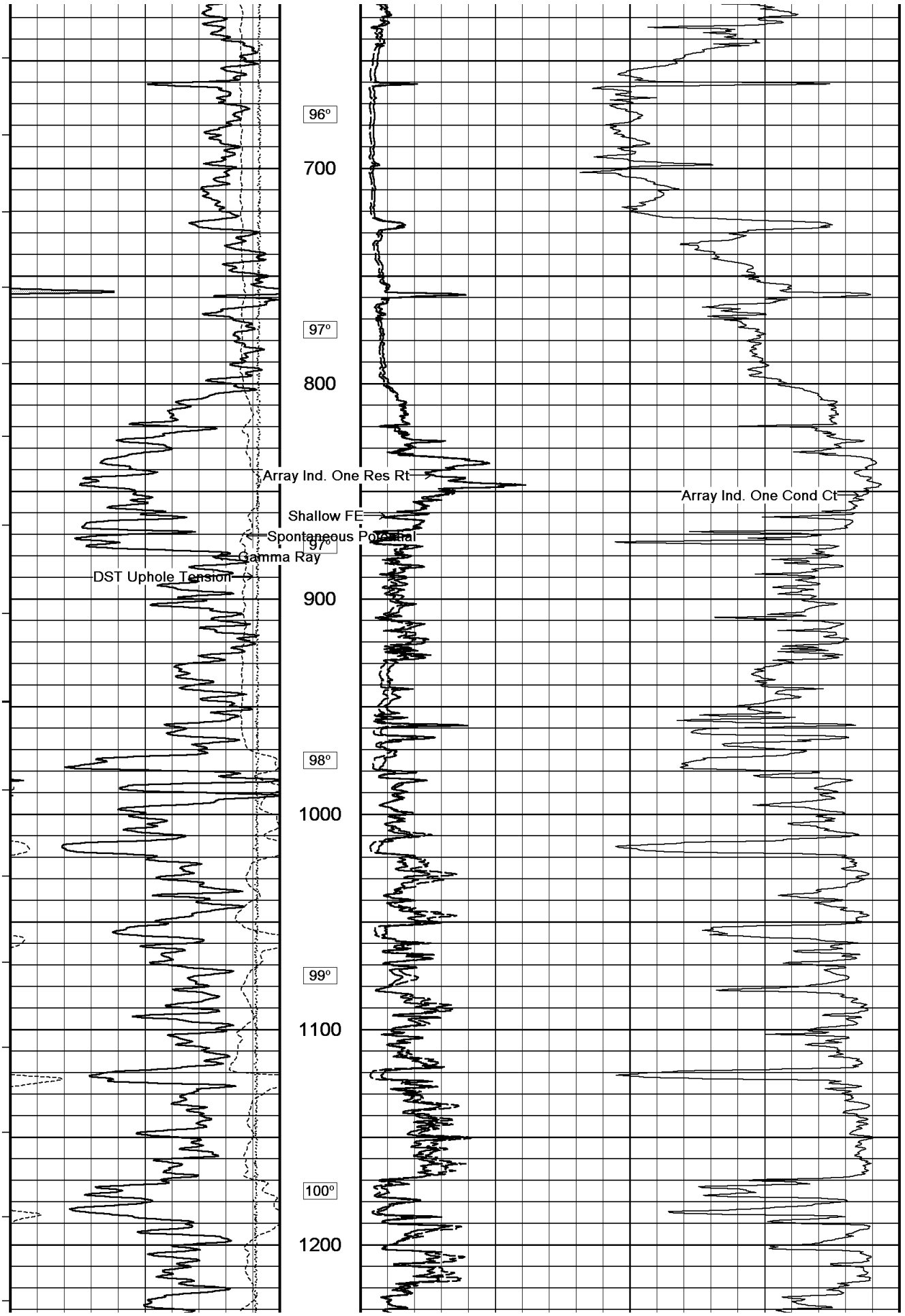
Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI, MSS.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing= 301 cu. ft.
Service order #3529167
Rig: Murfin #24
Engineer: R. Hoffman
Operator(s): N. Adame

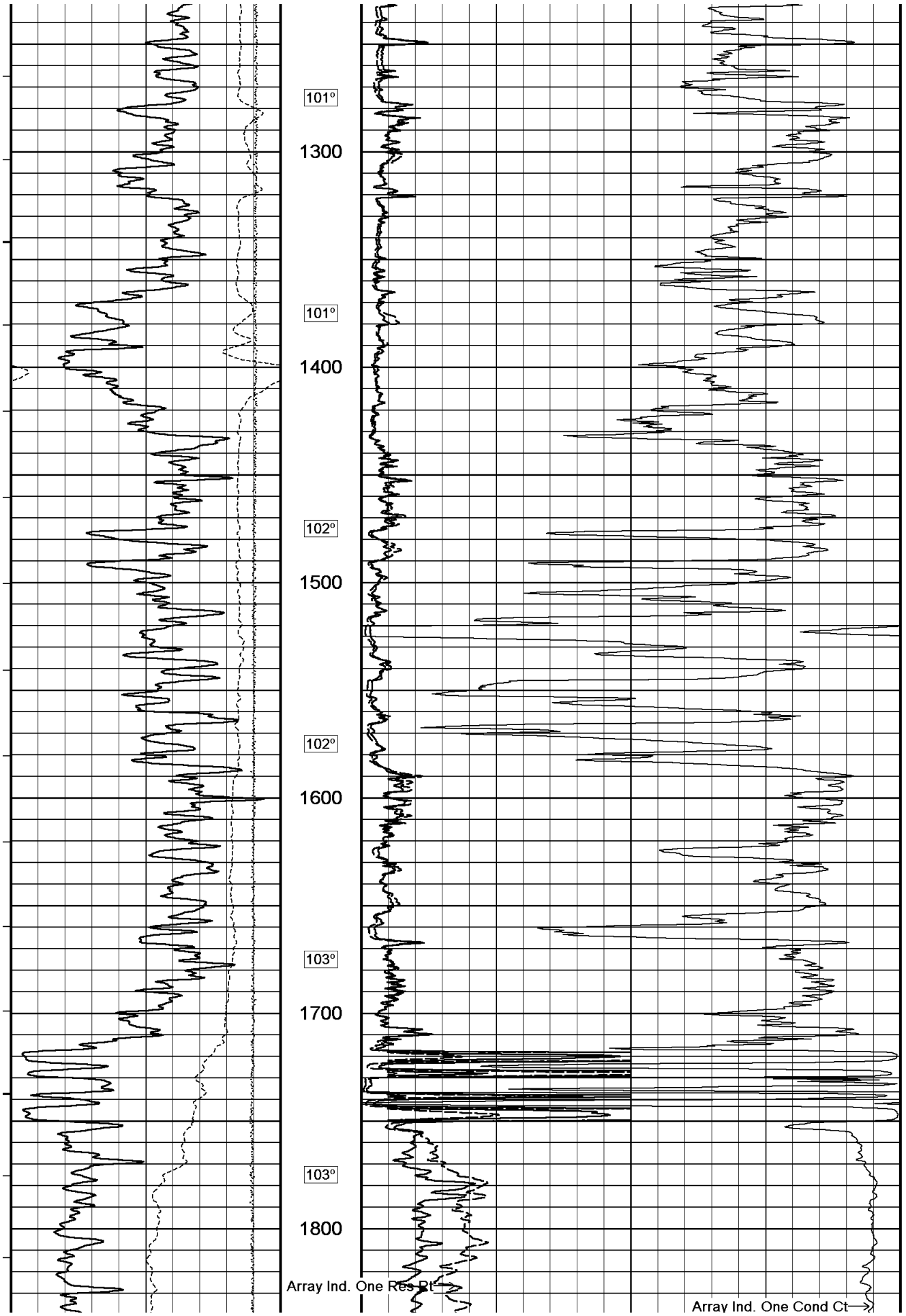
2 INCH MAIN PASS

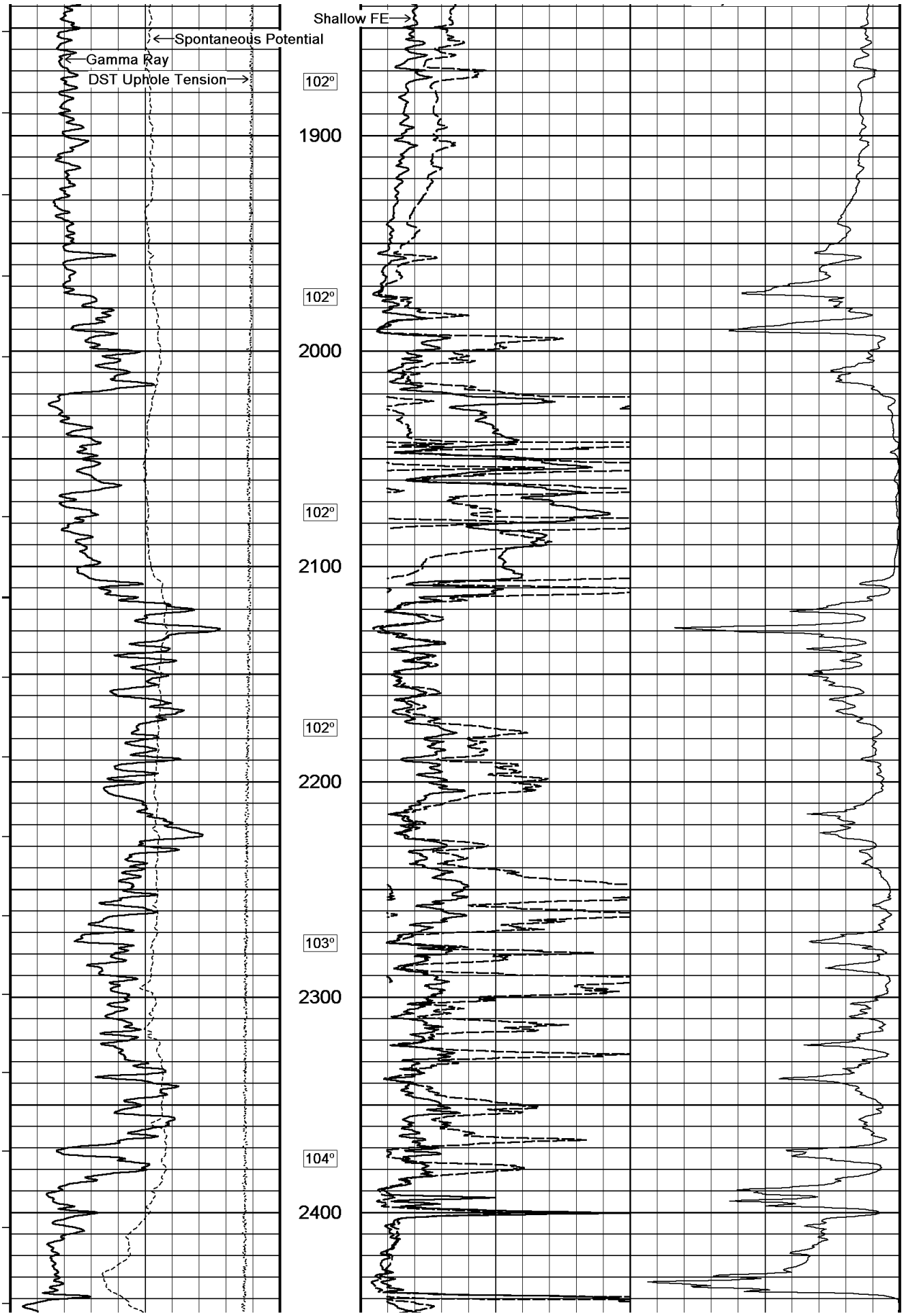
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

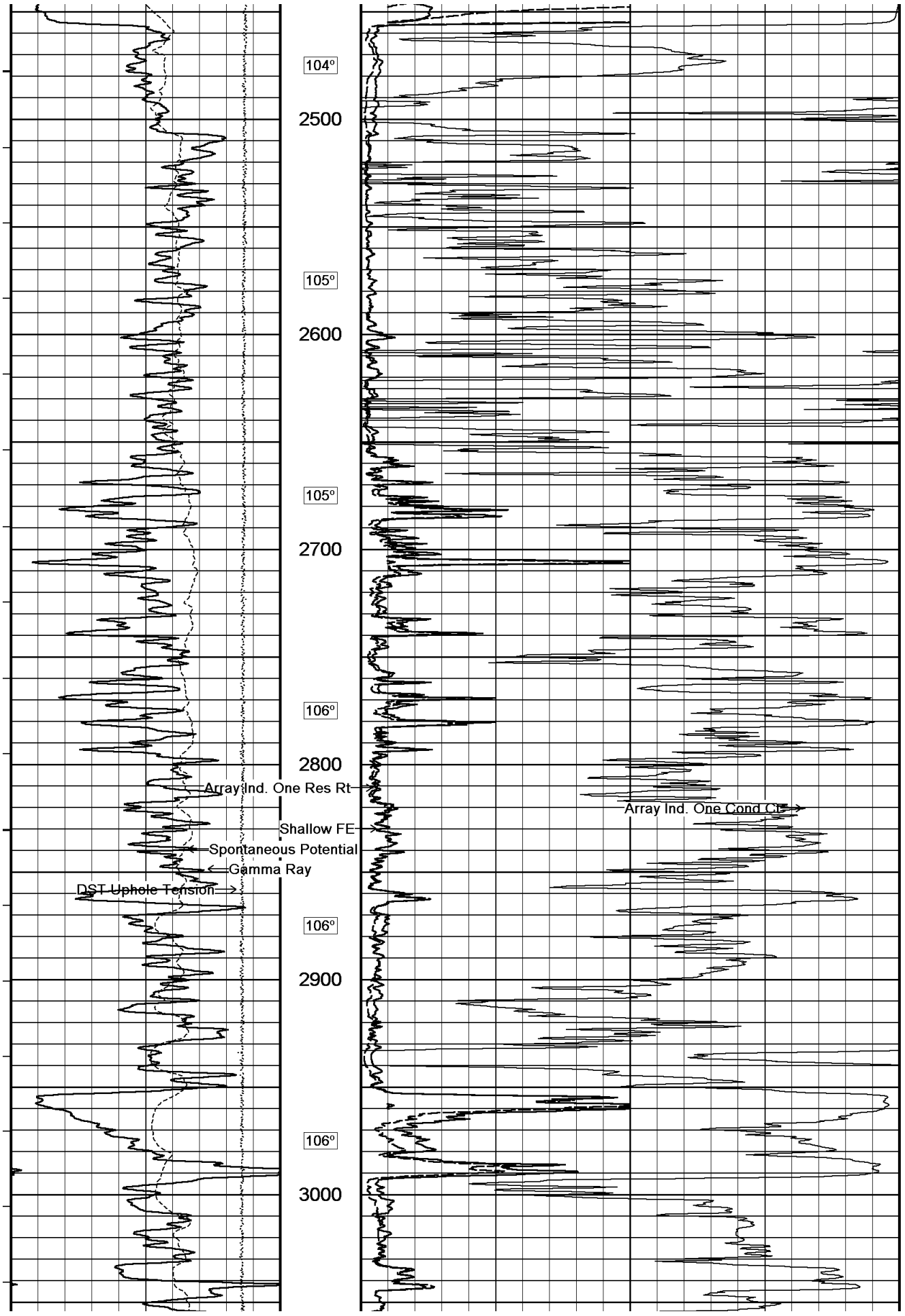
	Depth In	Array Ind. One Cond Ct

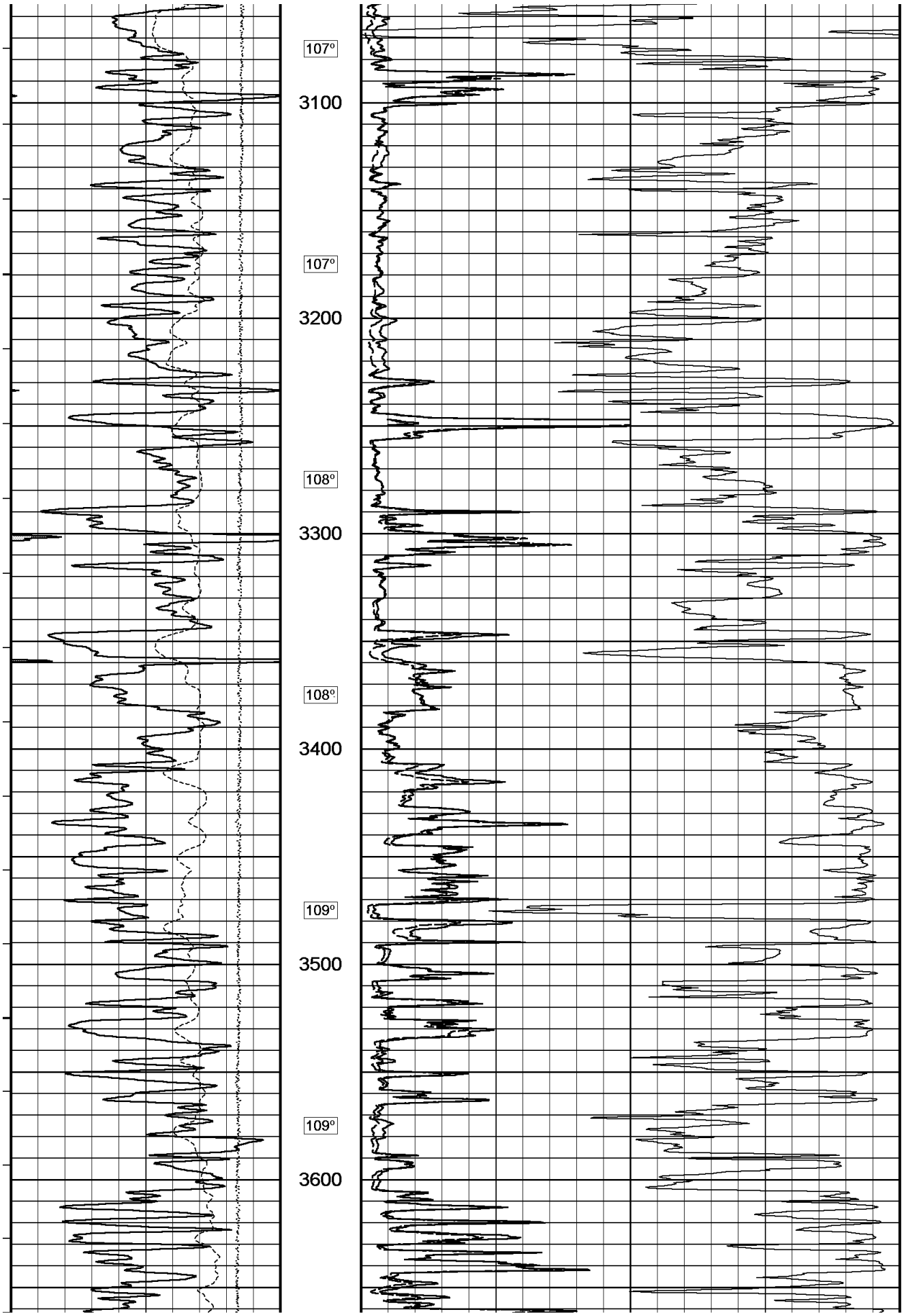

Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Spontaneous Potential
millivolts
20
DST Uphole Tension
pounds
5000
0
Feet
Borehole Temp in deg F
Replay Scale 1:600
mmhos
1000
750
500
250
0
2000
1750
1500
1250
1000
Shallow FE
ohm metres
0
25
50
0
250
500
Array Ind. One Res Rt
ohm metres
0
25
50
0
250
500
220
300
94°
400
95°
500
95°
600

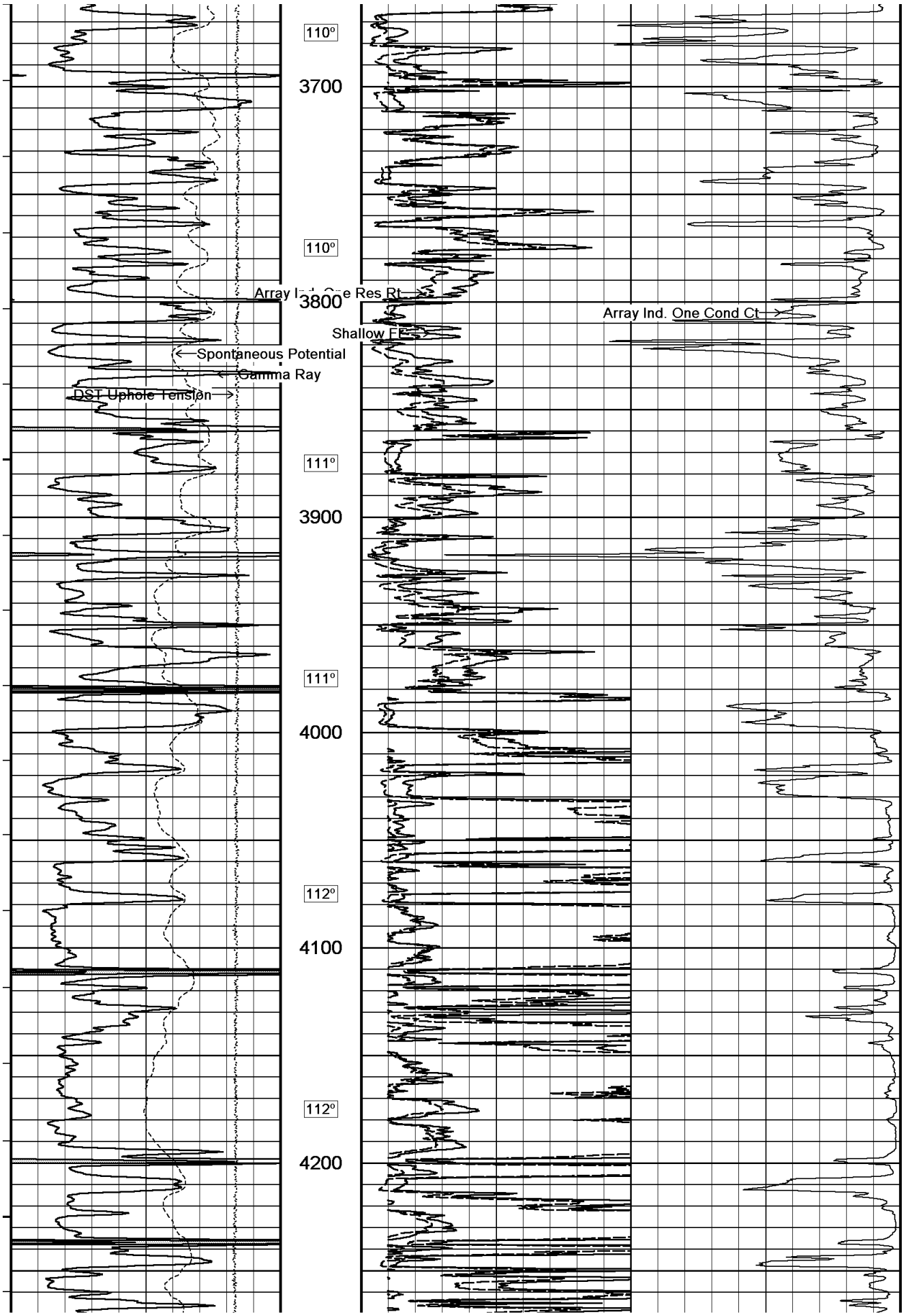

96°
700
97°
800
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
97°
Gamma Ray
DST Uphole Tension
900
98°
1000
99°
1100
100°
1200
Array Ind. One Cond Ct

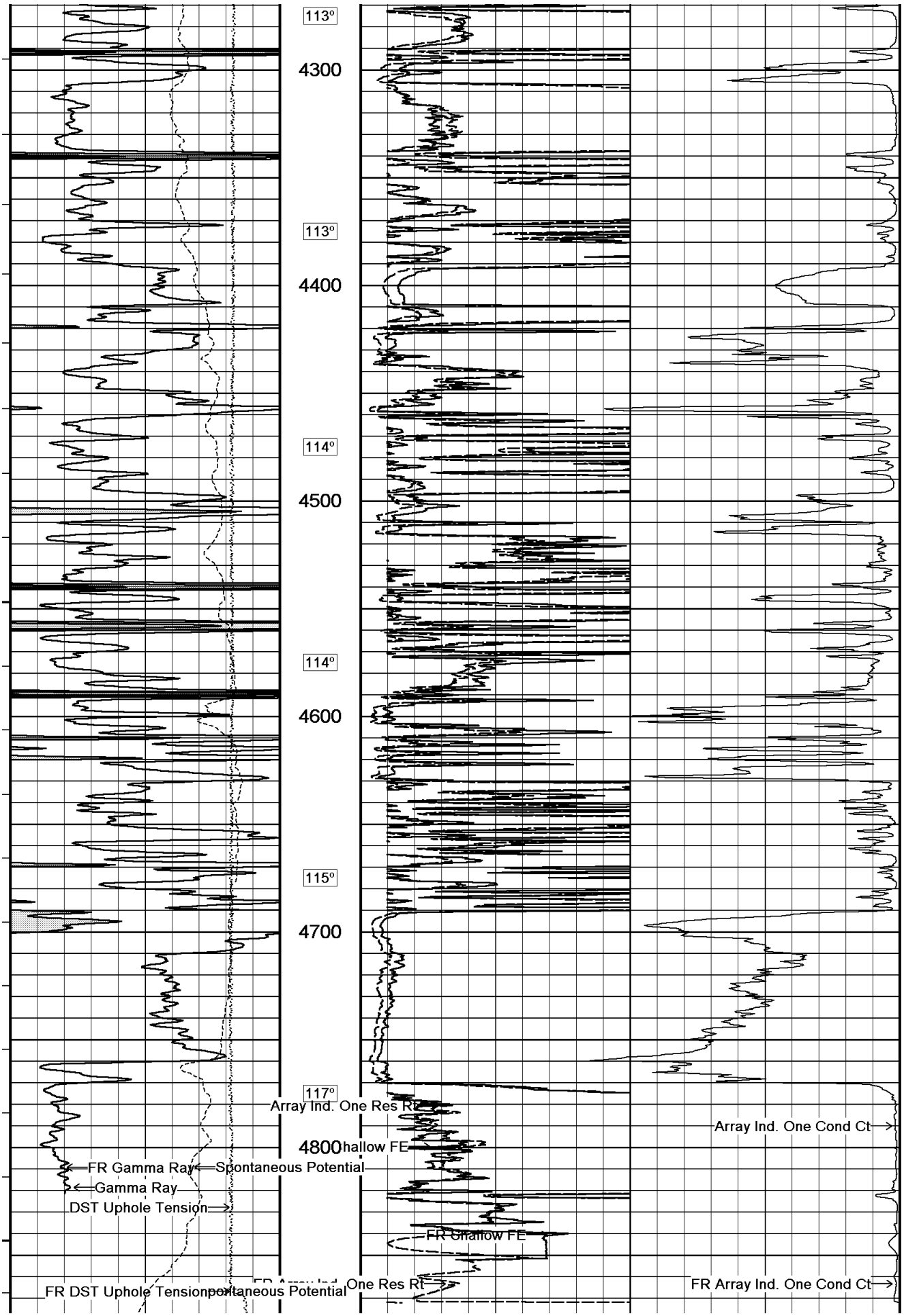

101°
1300
101°
1400
102°
1500
102°
1600
103°
1700
103°
1800
Array Ind. One Res Rt
Array Ind. One Cond Ct

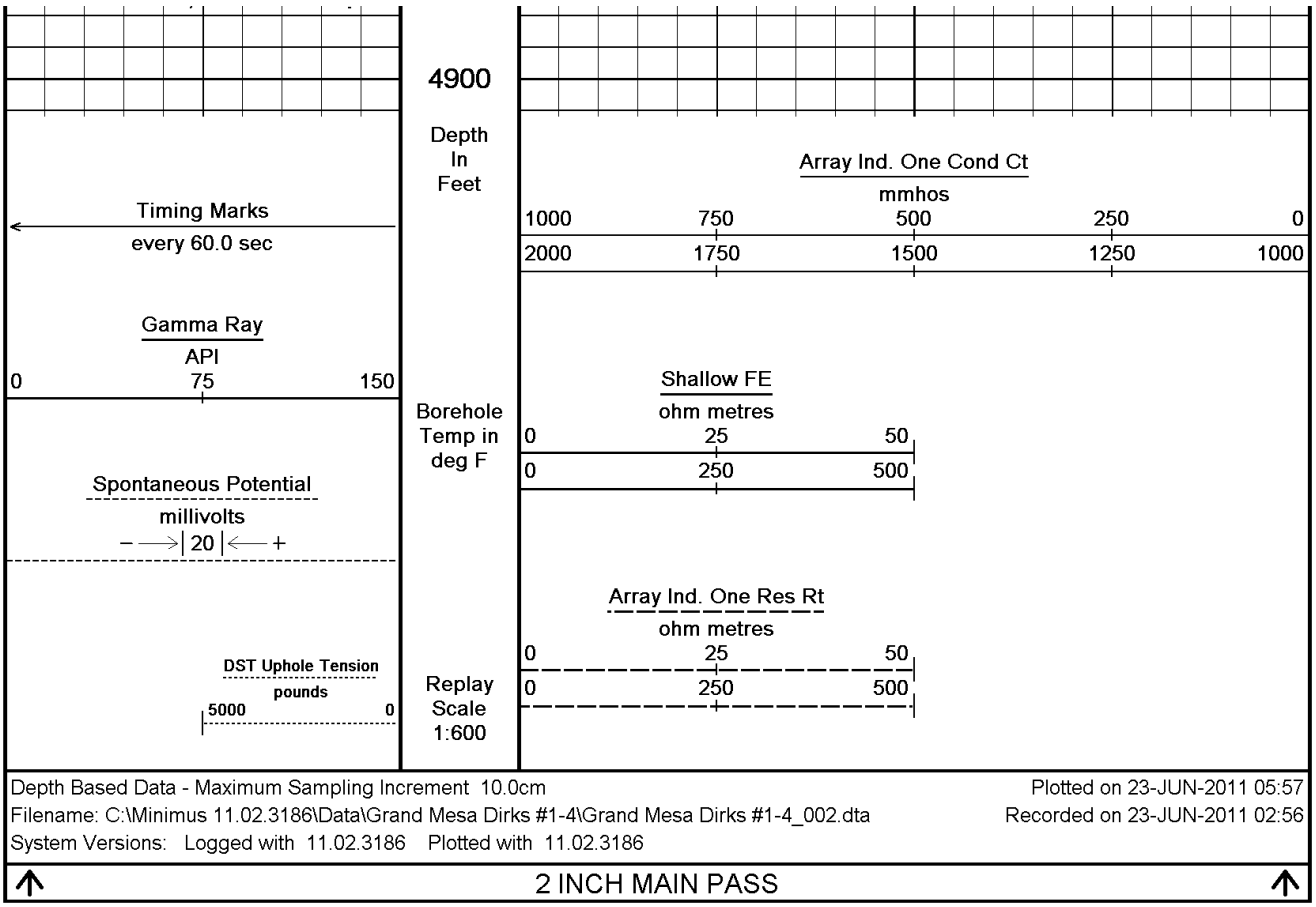

Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
102°
1900
102°
2000
102°
2100
102°
2200
103°
2300
104°
2400


104°
2500
105°
2600
105°
2700
106°
2800
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond Ct
106°
2900
106°
3000


107°
3100
107°
3200
108°
3300
108°
3400
109°
3500
109°
3600


110°
3700
110°
Array Ind. One Res Rt
3800
Array Ind. One Cond Ct
Shallow Fo
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
3900
111°
4000
112°
4100
112°
4200


113°
4300
113°
4400
114°
4500
114°
4600
115°
4700
117°
4800
Array Ind. One Res Rt
Array Ind. One Cond Ct
hallow FE
FR Gamma Ray
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR Shallow FE
FR DST Uphole Tension
pontaneous Potential
One Res Rt
FR Array Ind. One Cond Ct

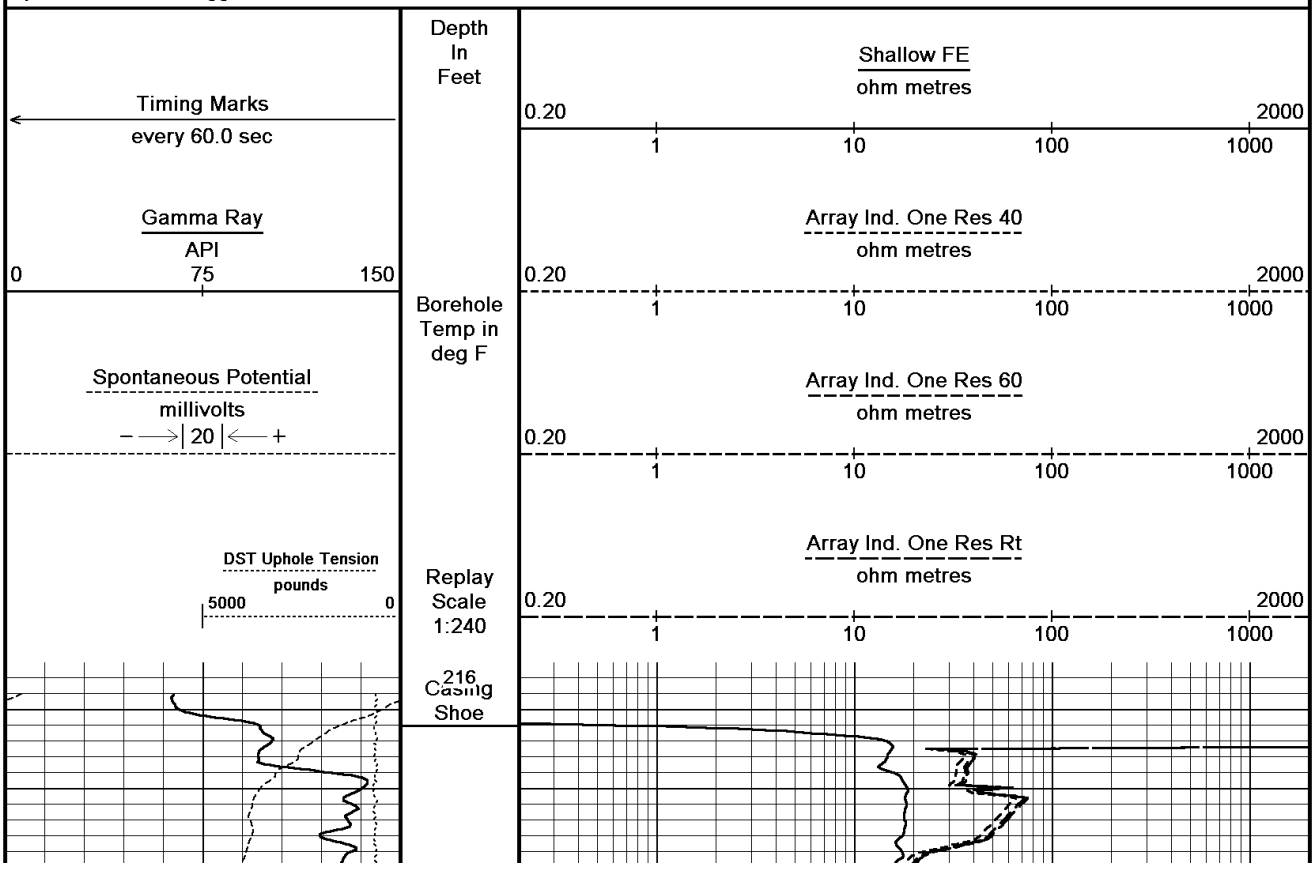


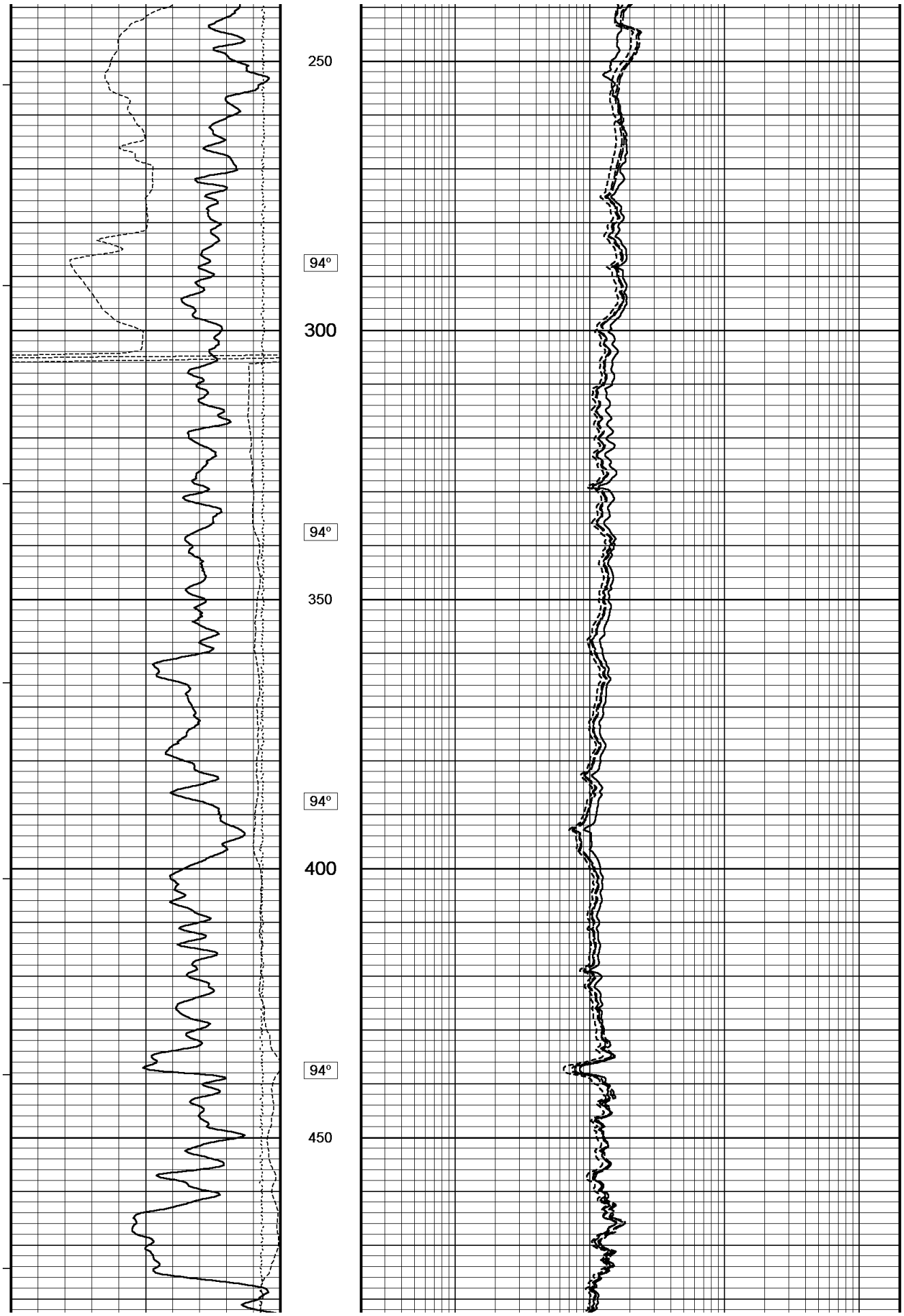
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

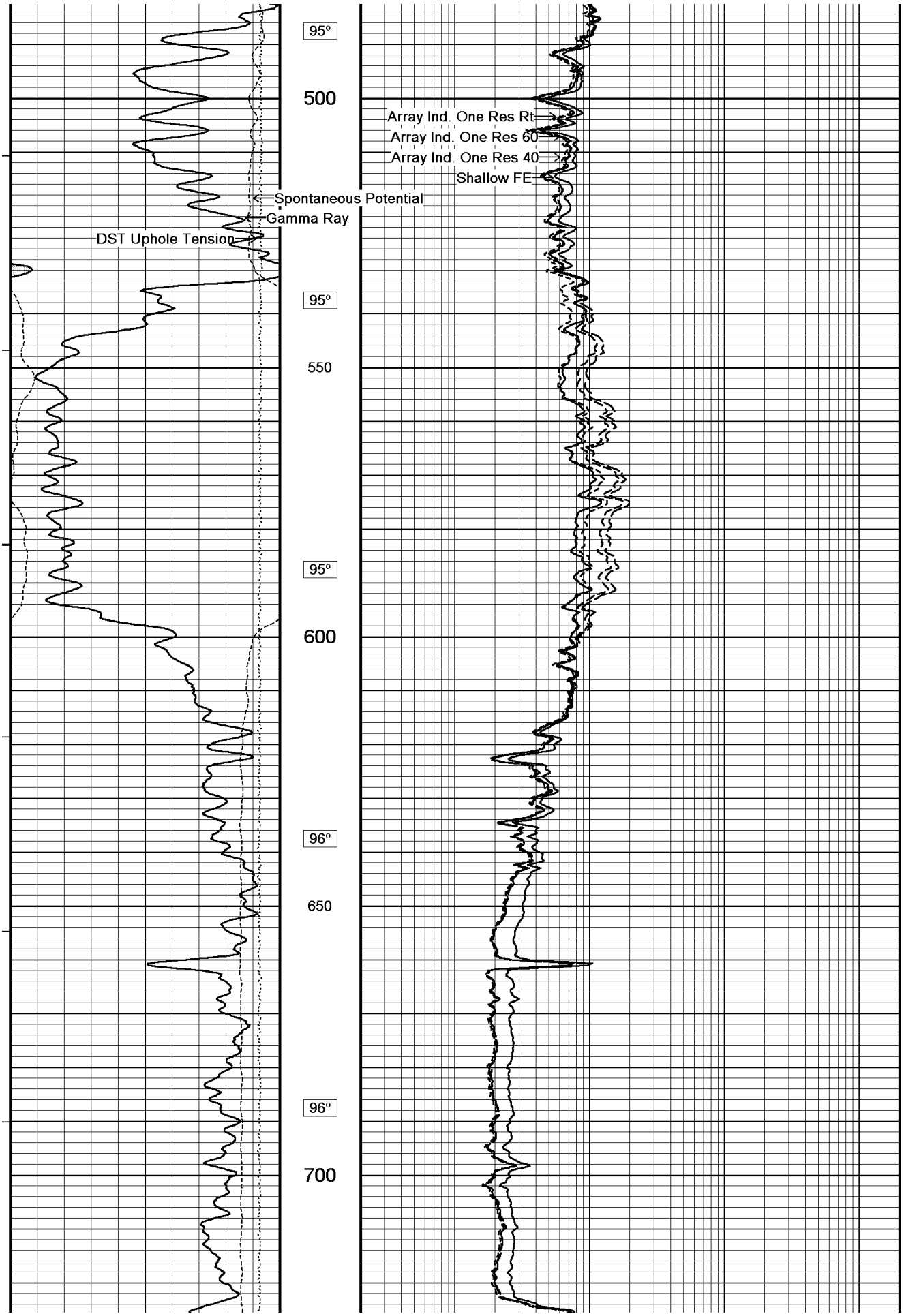
2 INCH MAIN PASS

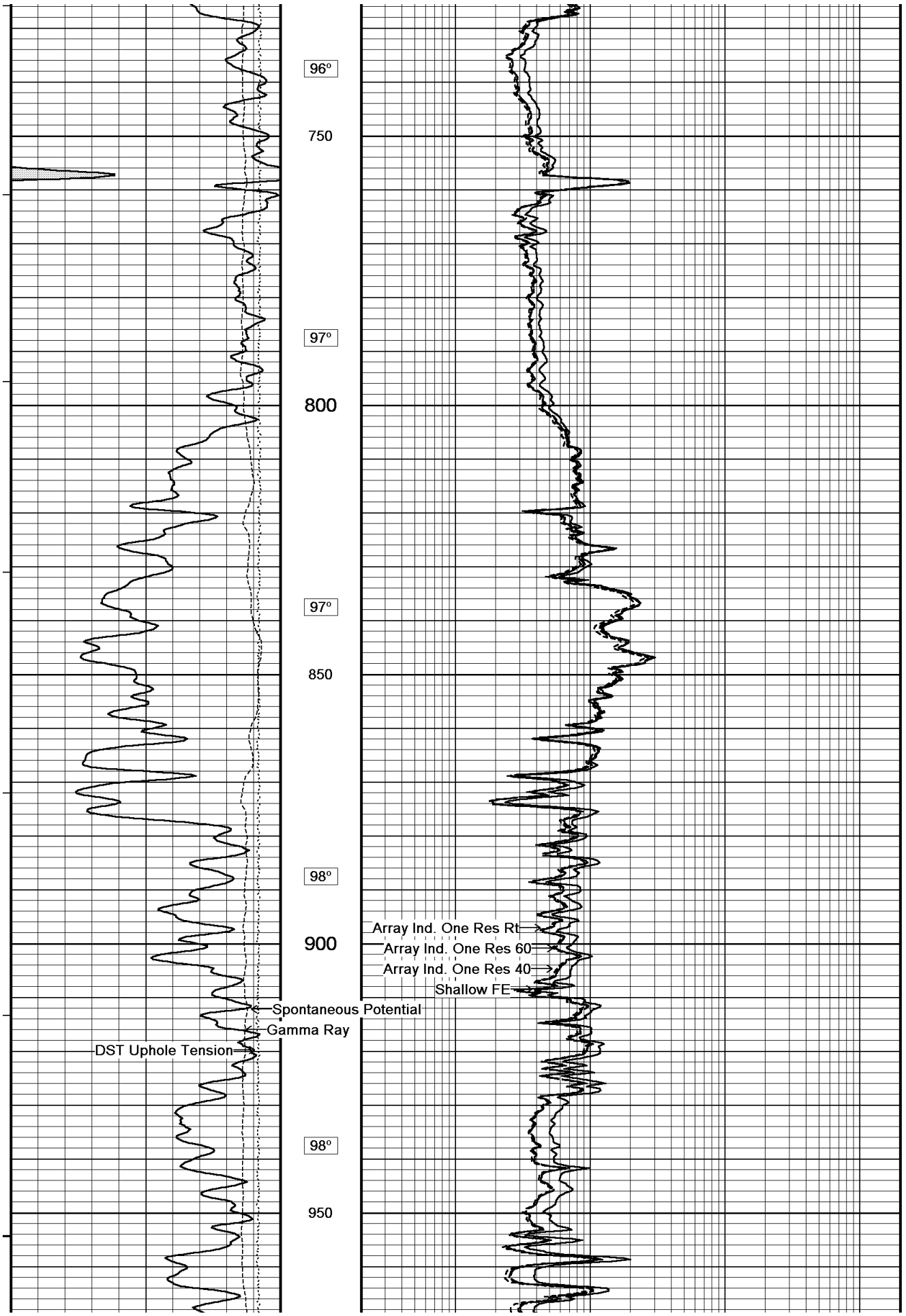
5 INCH MAIN PASS

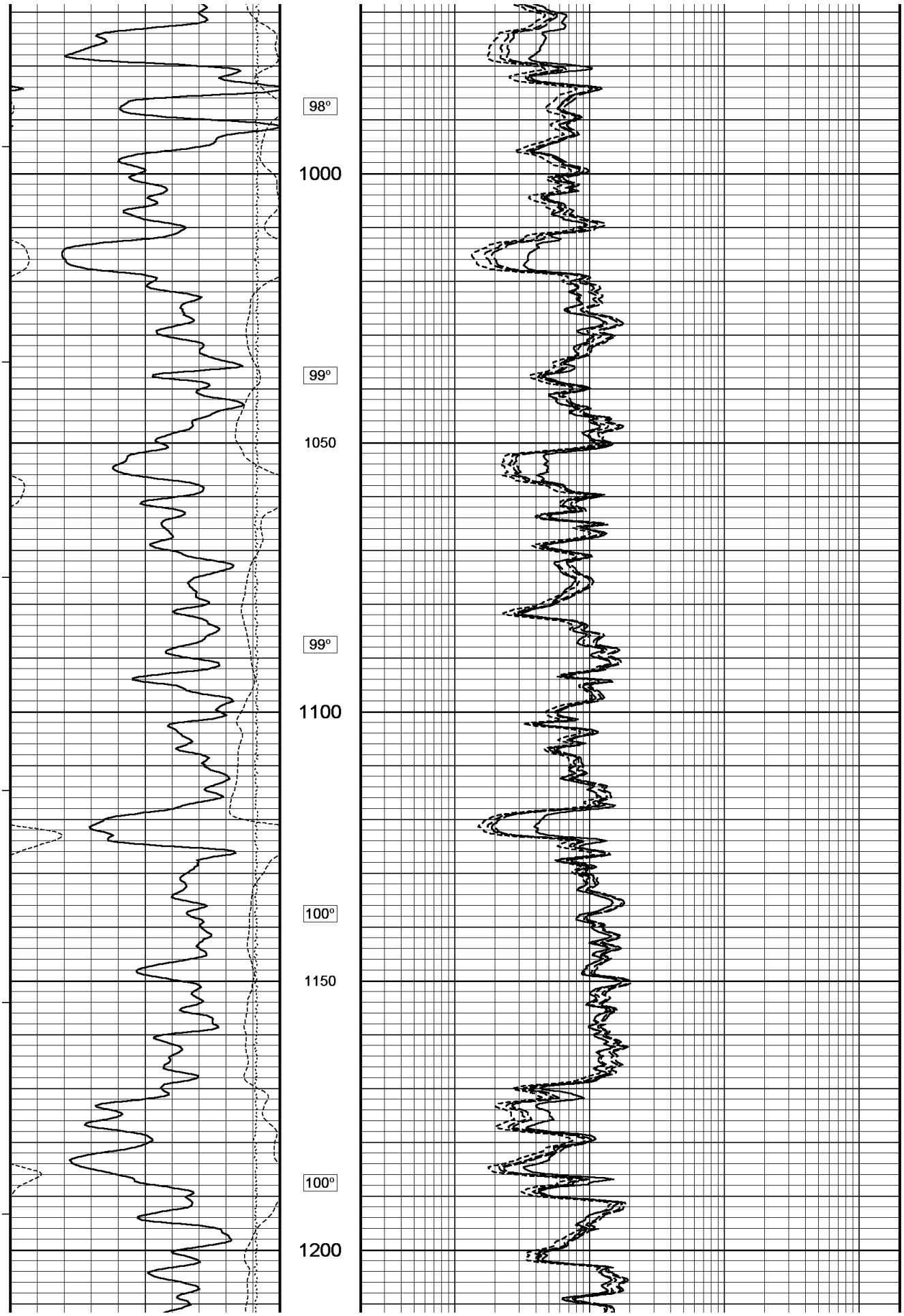
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

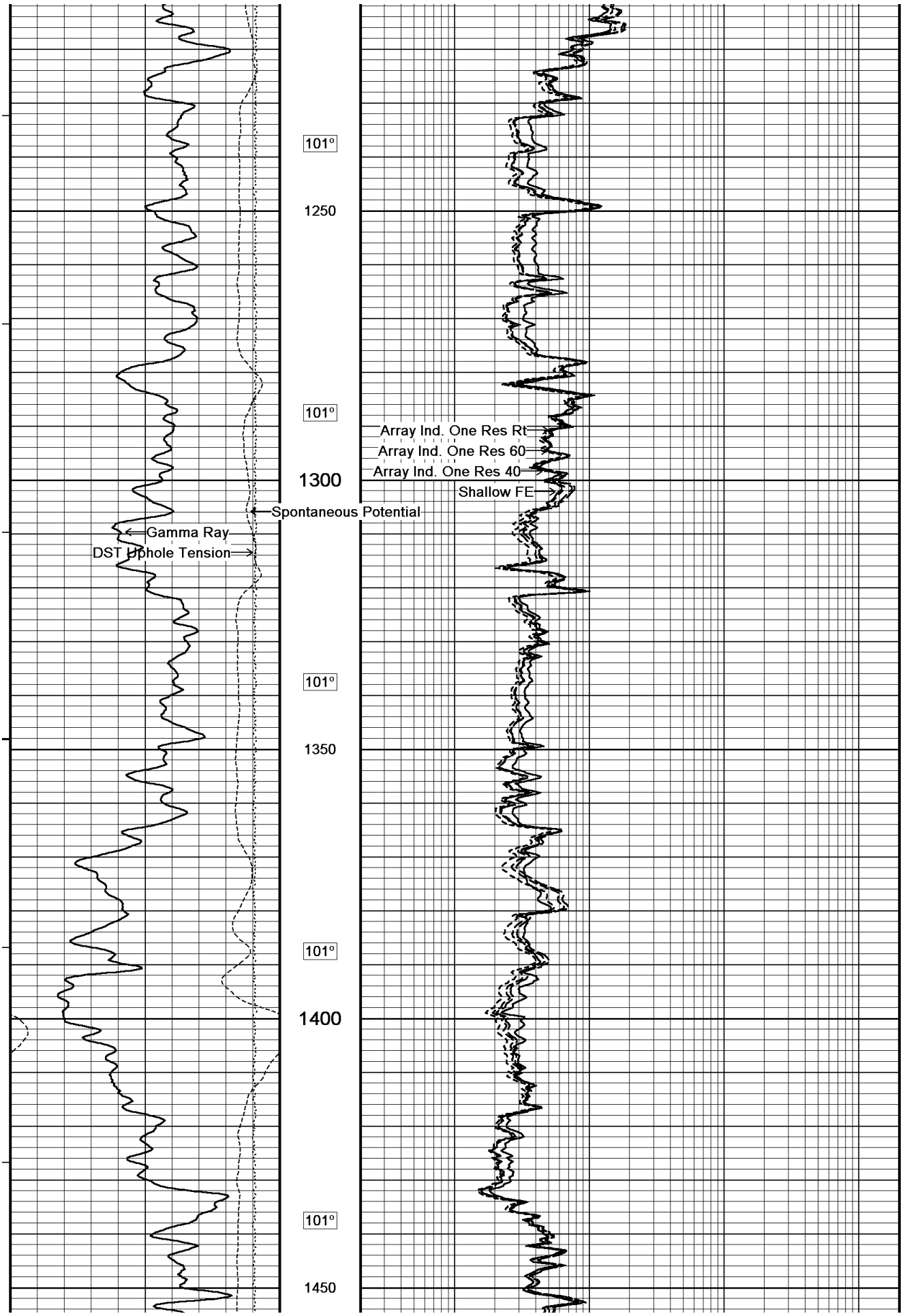


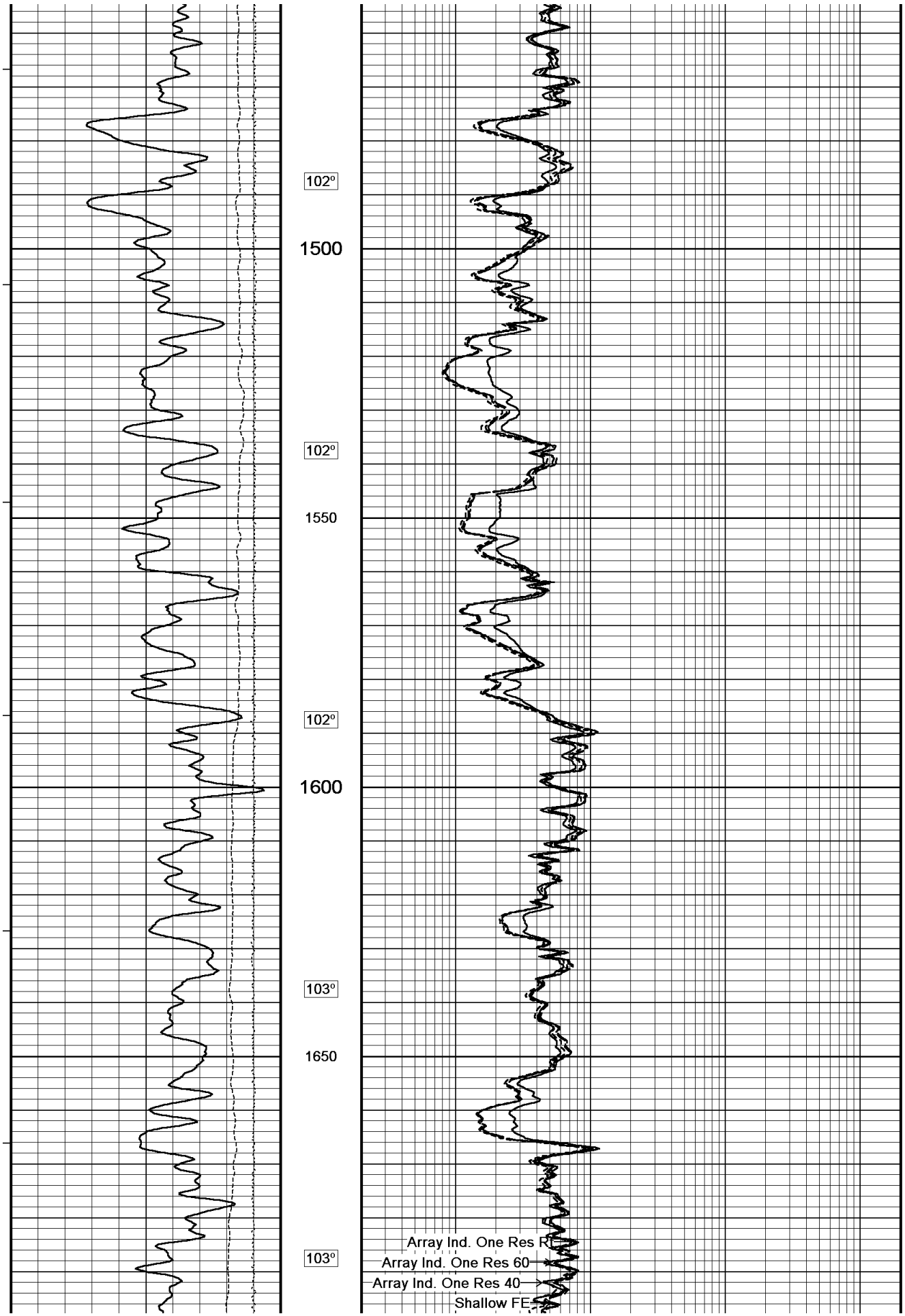

250
94°
300
94°
350
94°
400
94°
450

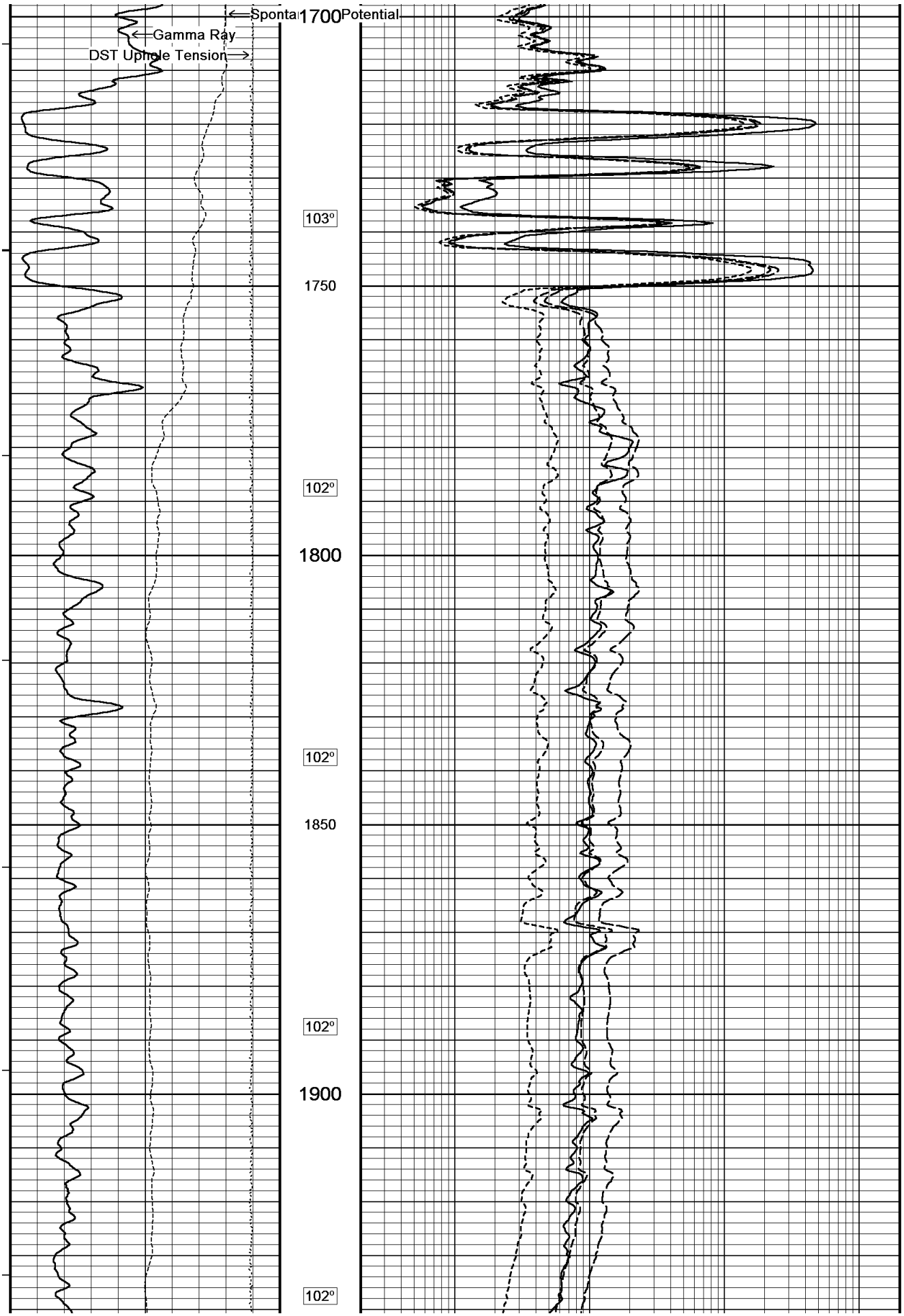

95°
500
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
95°
550
95°
600
96°
650
96°
700

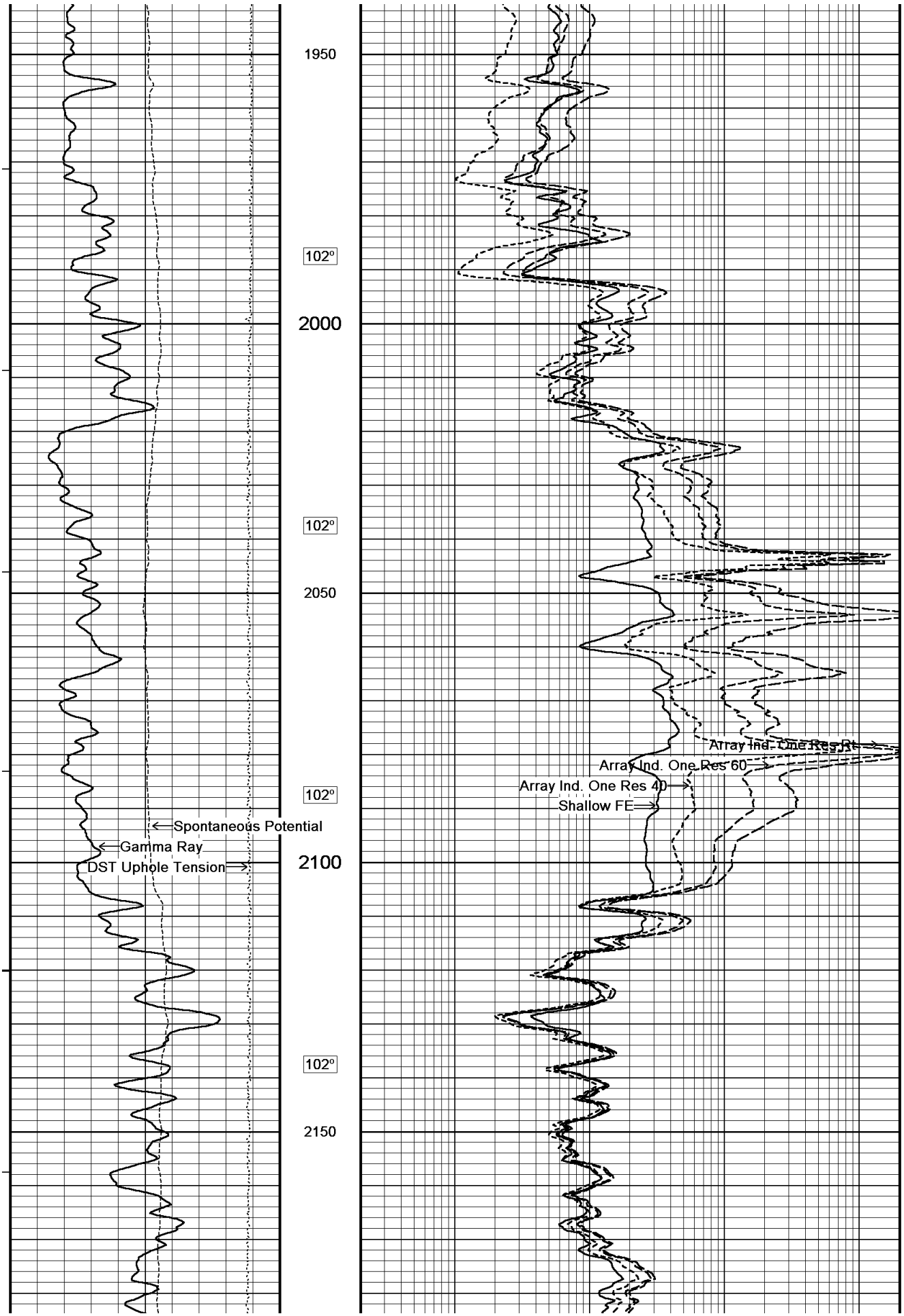

96°
750
97°
800
97°
850
98°
900
98°
950
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension

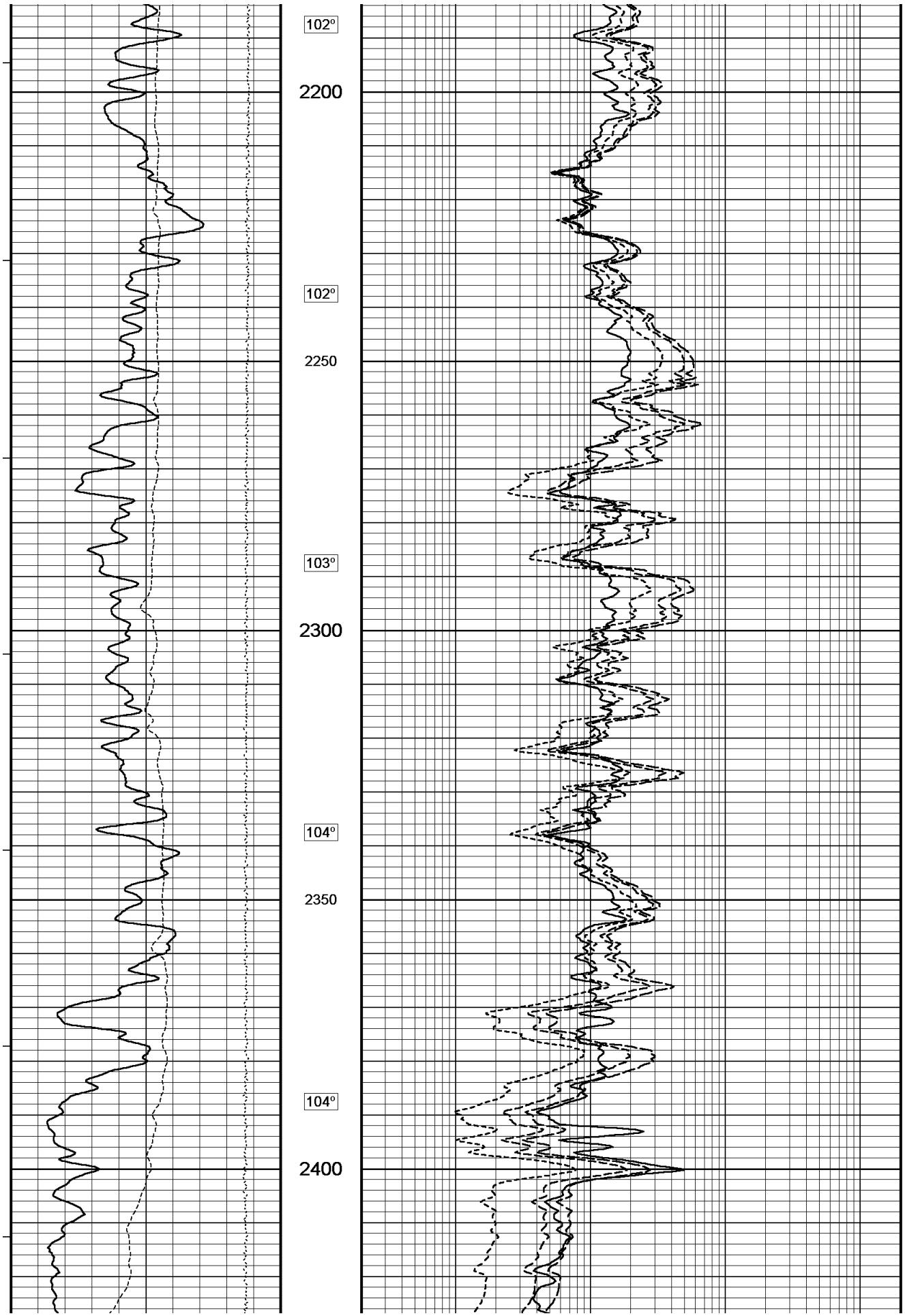

98°
1000
99°
1050
99°
1100
100°
1150
100°
1200

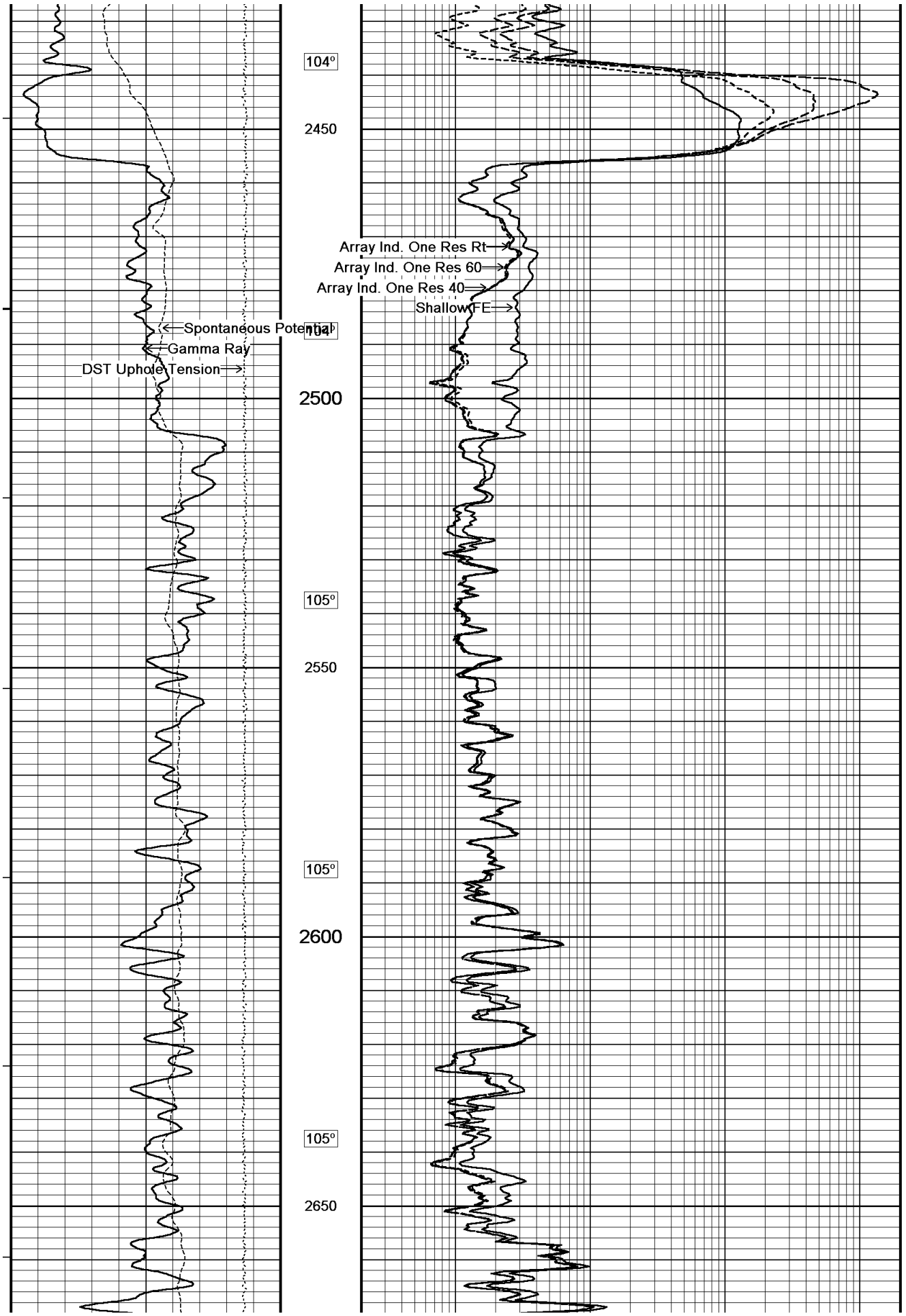

101°
1250
101°
1300
Spontaneous Potential
Gamma Ray
DST Uphole Tension
101°
1350
101°
1400
101°
1450
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

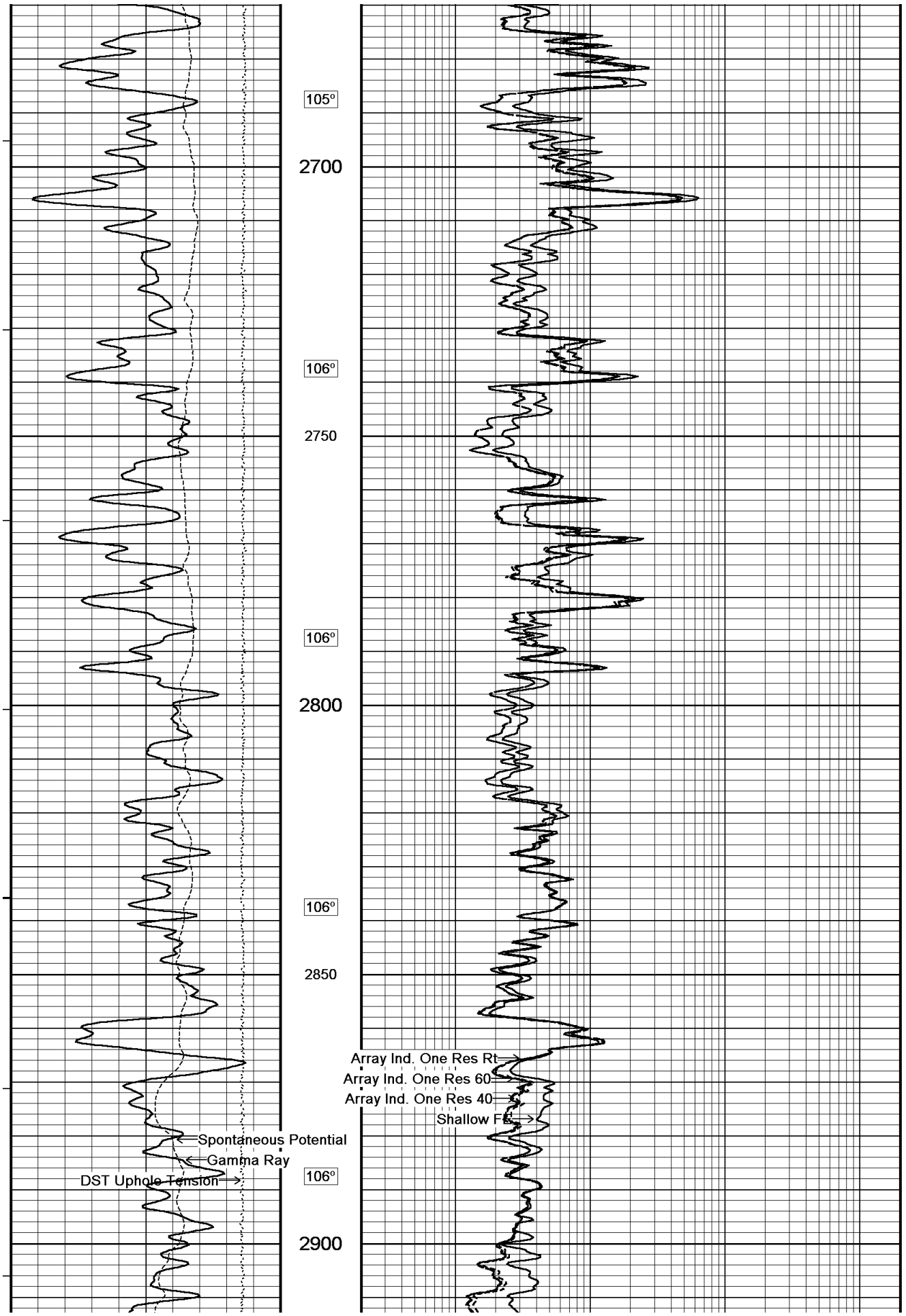

102°
1500
102°
1550
102°
1600
103°
1650
103°
Array Ind. One Res R
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

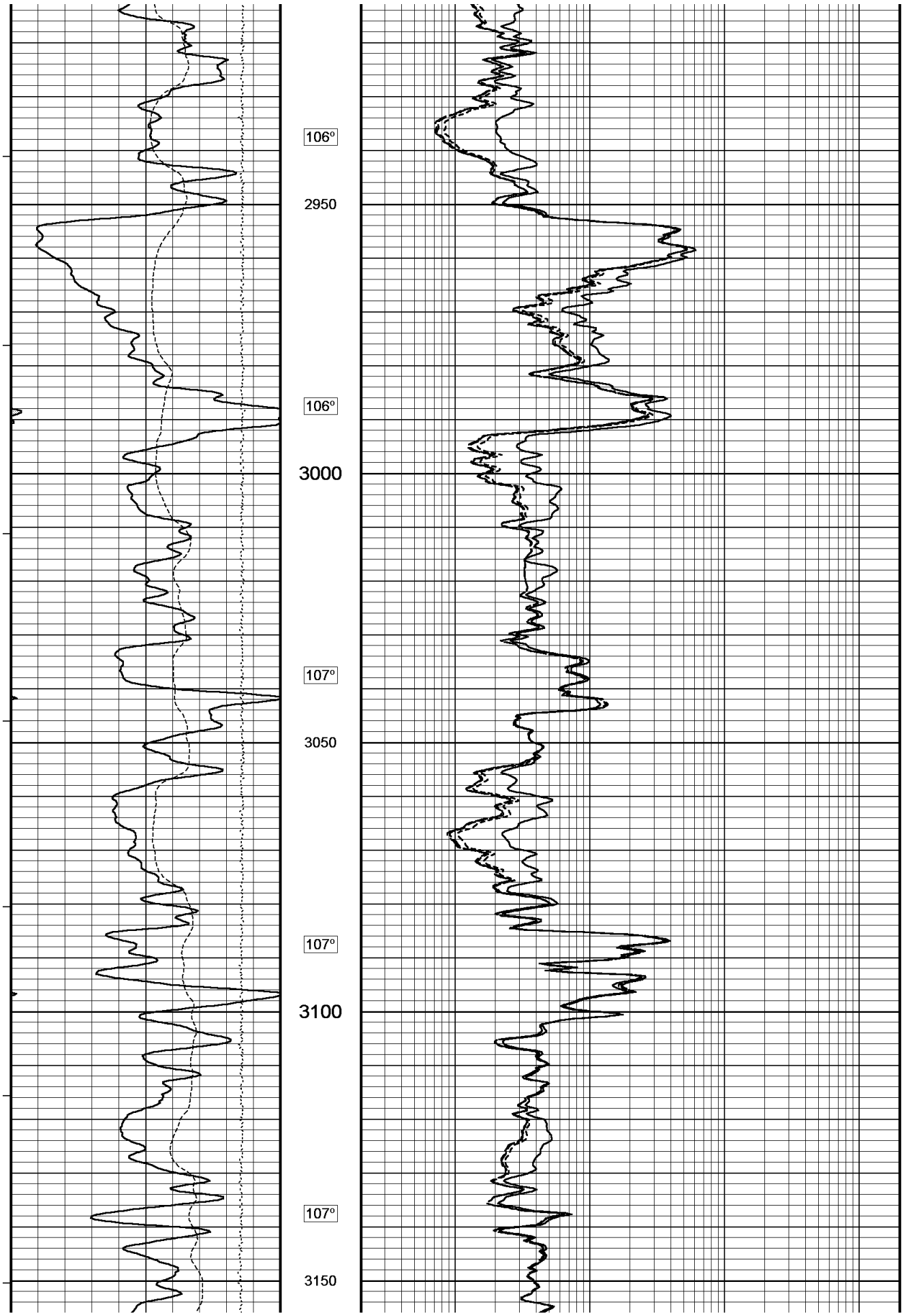

Spontaneous Potential
Gamma Ray
DST Uphole Tension
1700
103°
1750
102°
1800
102°
1850
102°
1900
102°

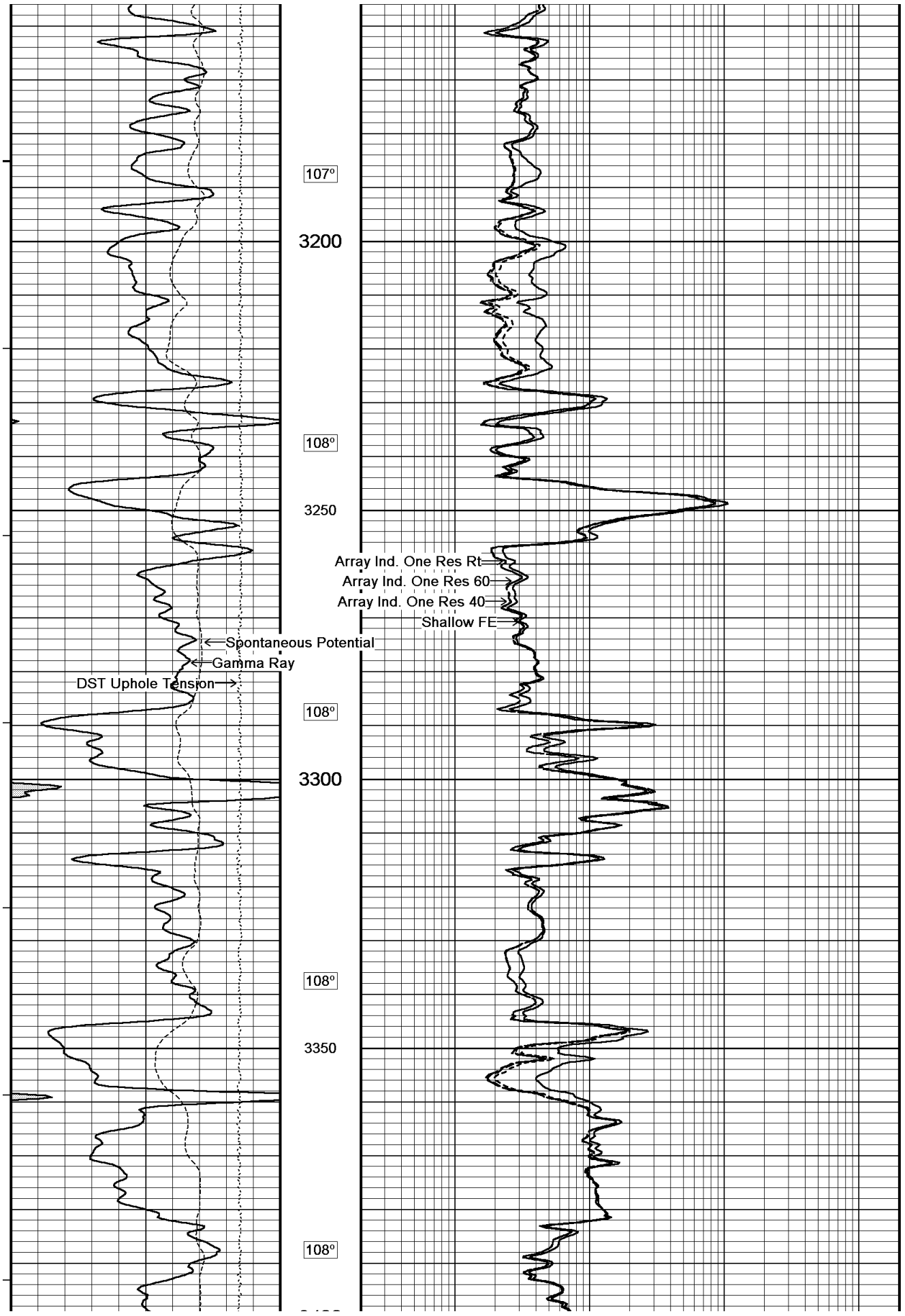

1950
102°
2000
102°
2050
102°
2100
102°
2150
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

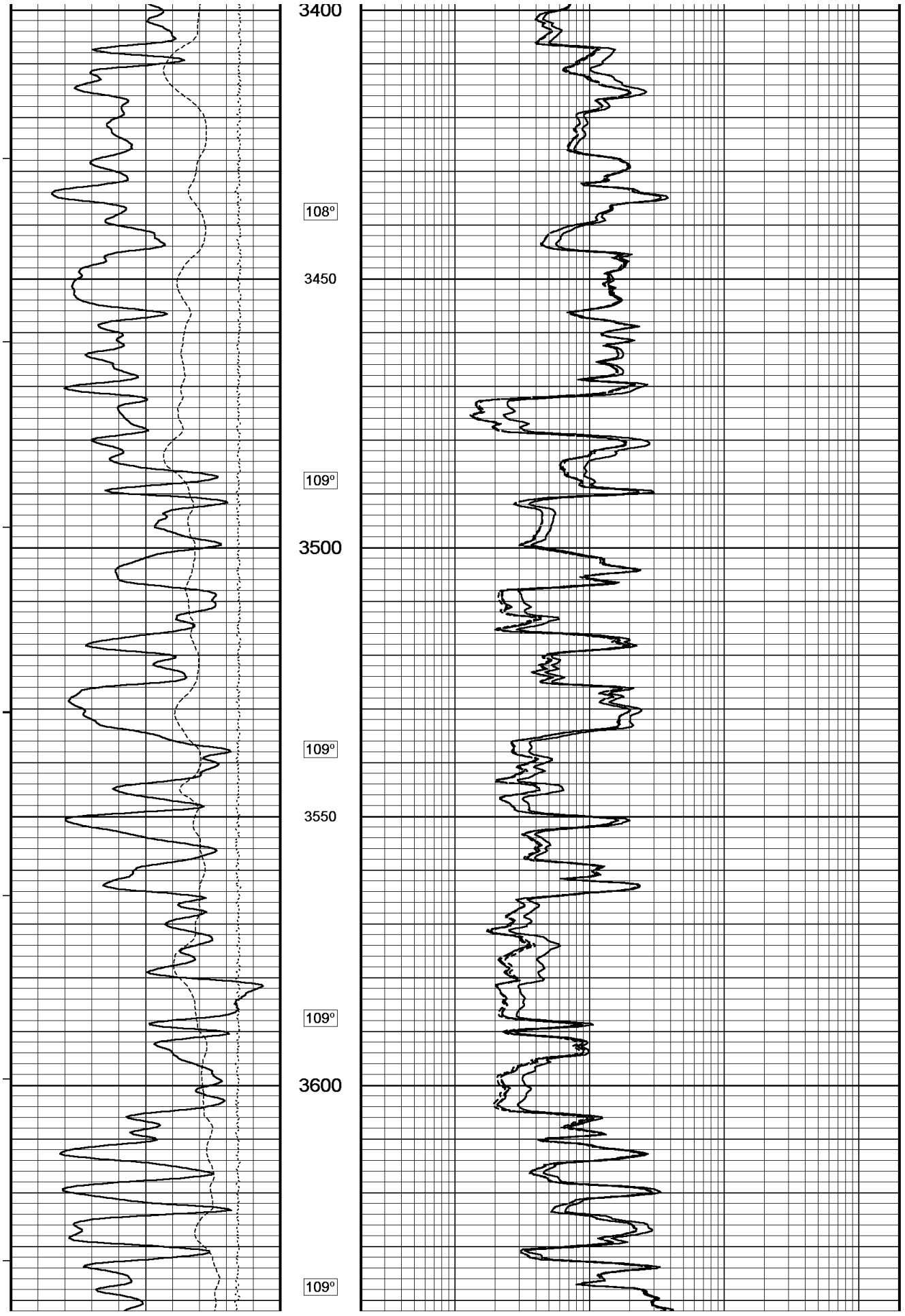

102°
2200
102°
2250
103°
2300
104°
2350
104°
2400

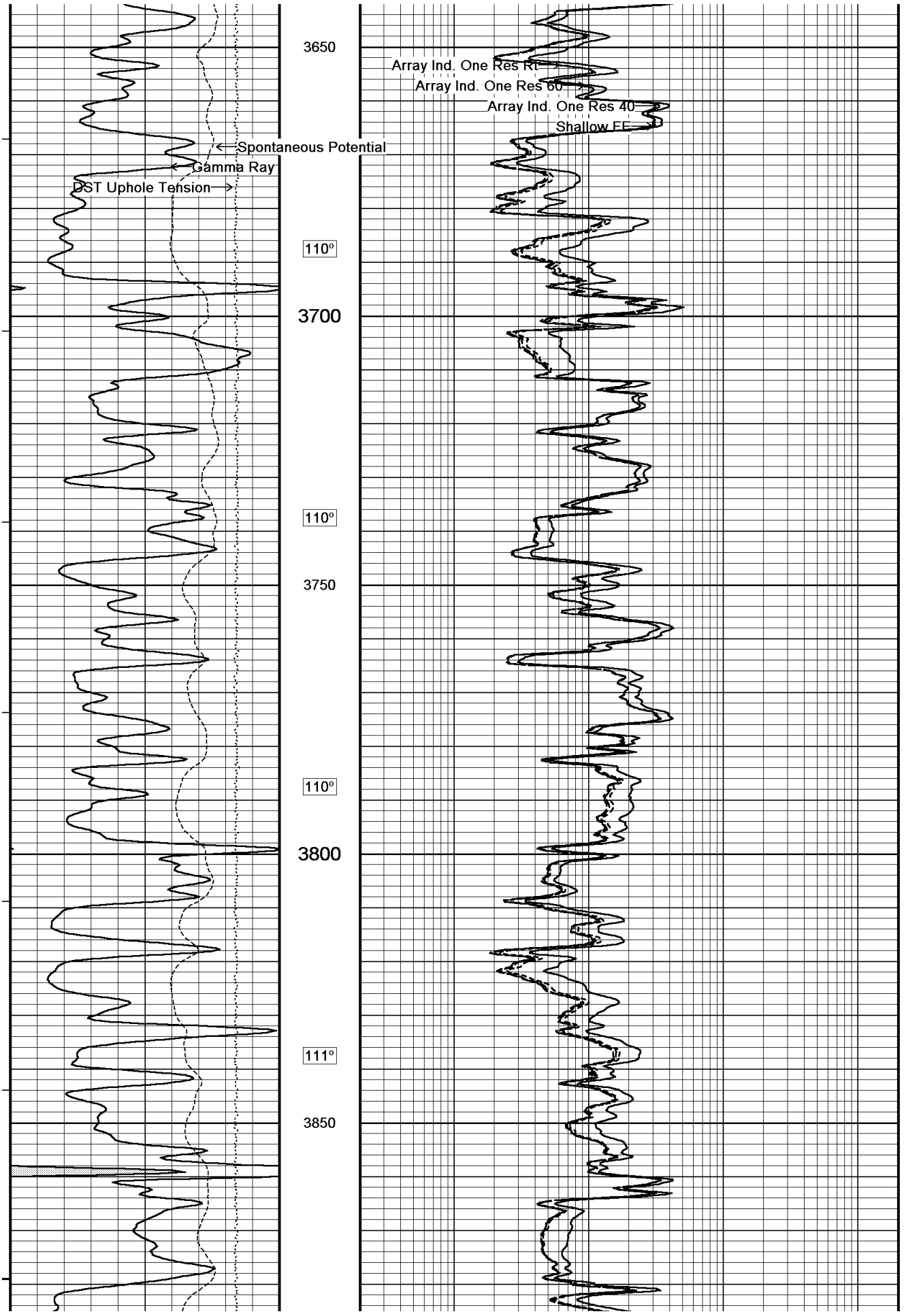

104°
2450
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
104°
2500
105°
2550
105°
2600
105°
2650

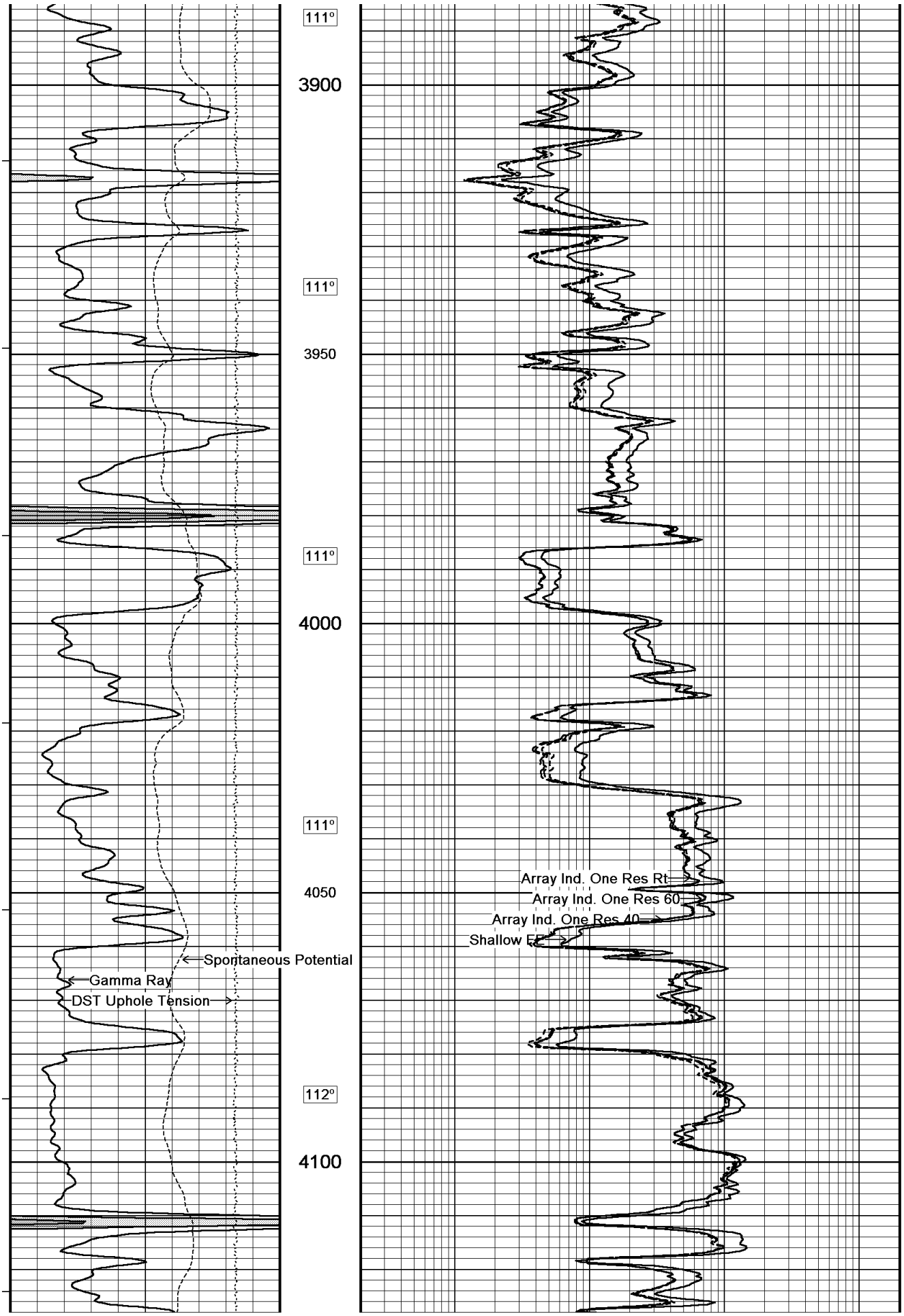

105°
2700
106°
2750
106°
2800
106°
2850
106°
2900
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow Fo
Spontaneous Potential
Gamma Ray
DST Uphole Tension

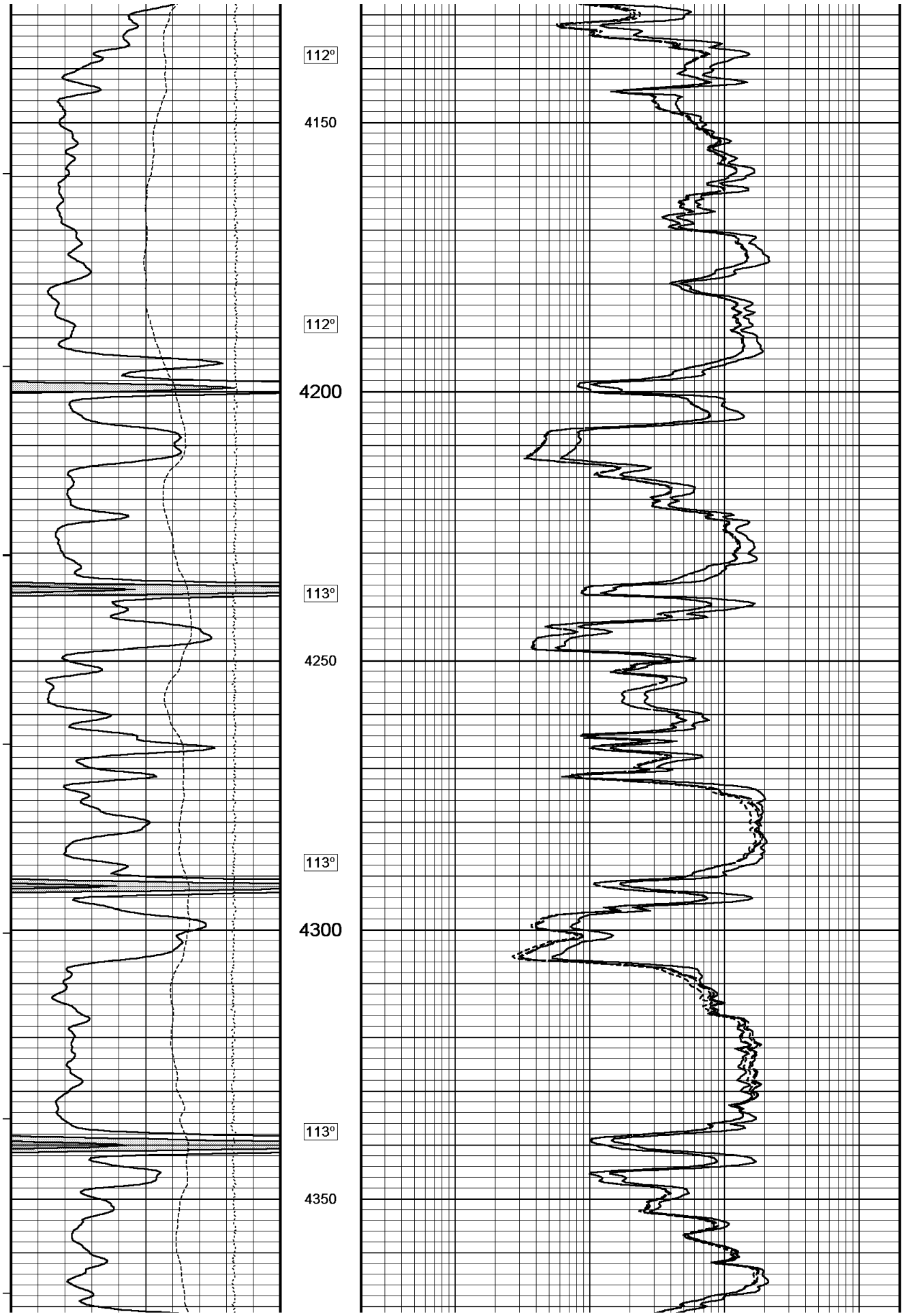

106°
2950
106°
3000
107°
3050
107°
3100
107°
3150

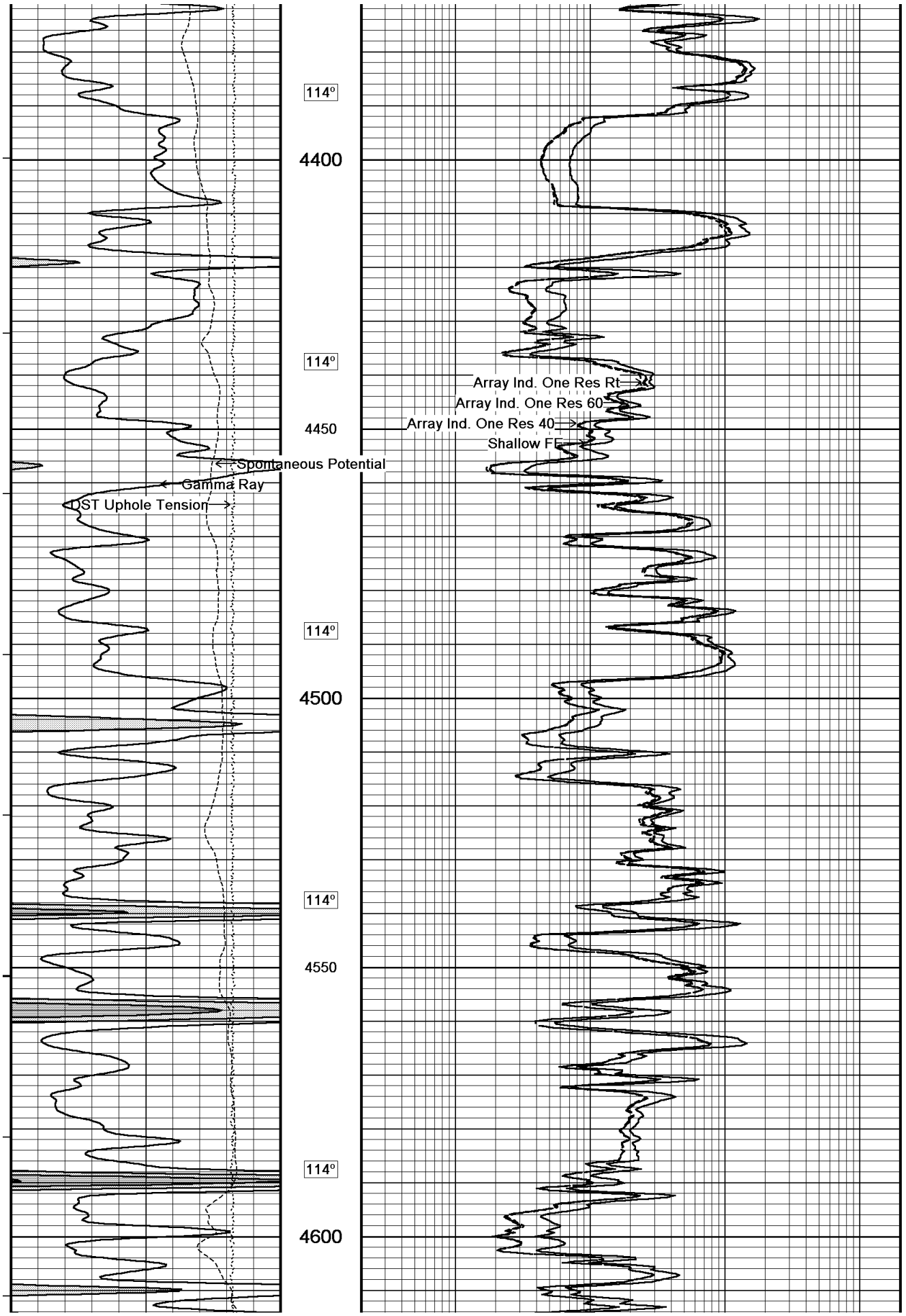

107°
3200
108°
3250
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
108°
3300
108°
3350
108°

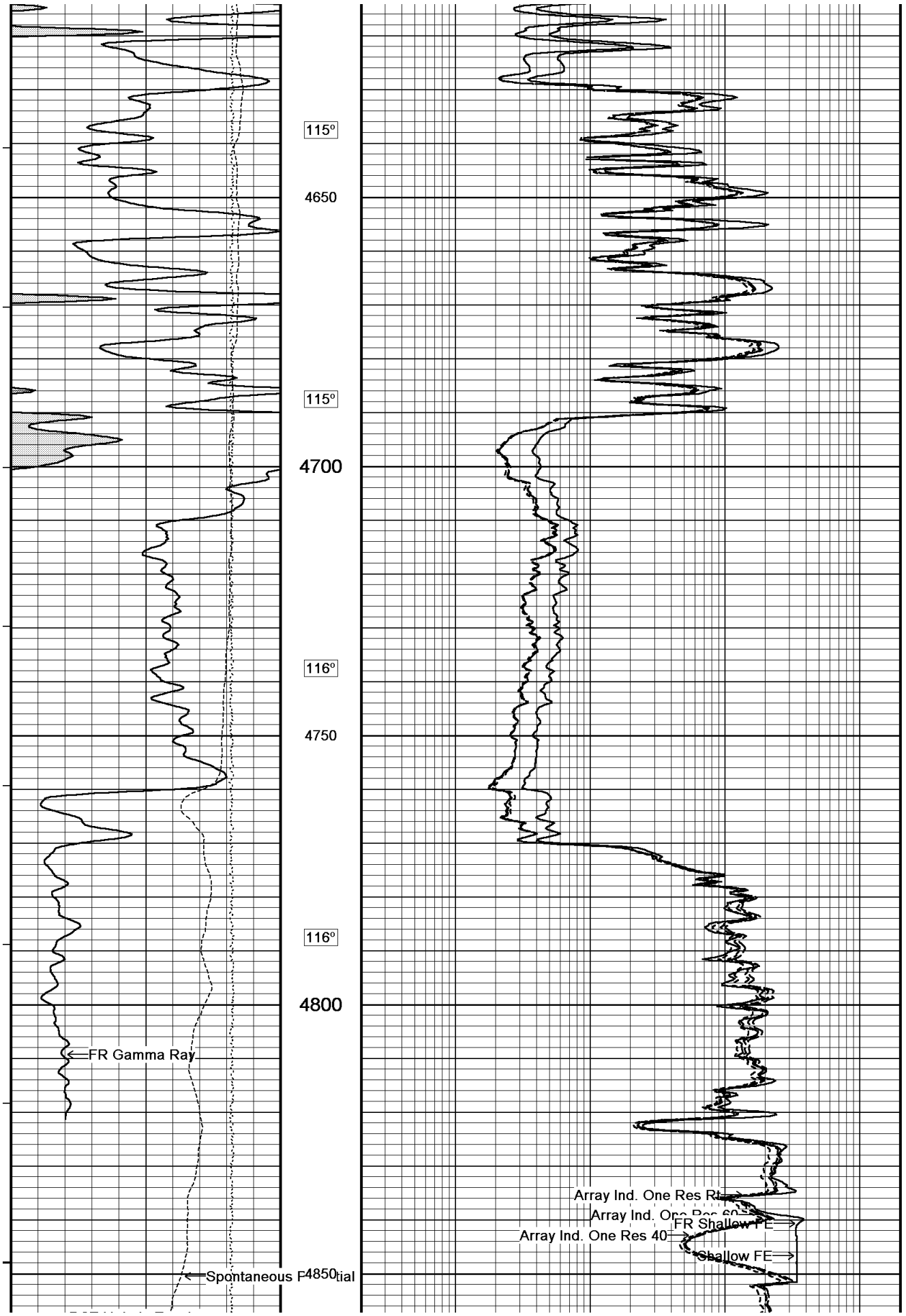

3400
108°
3450
109°
3500
109°
3550
109°
3600
109°

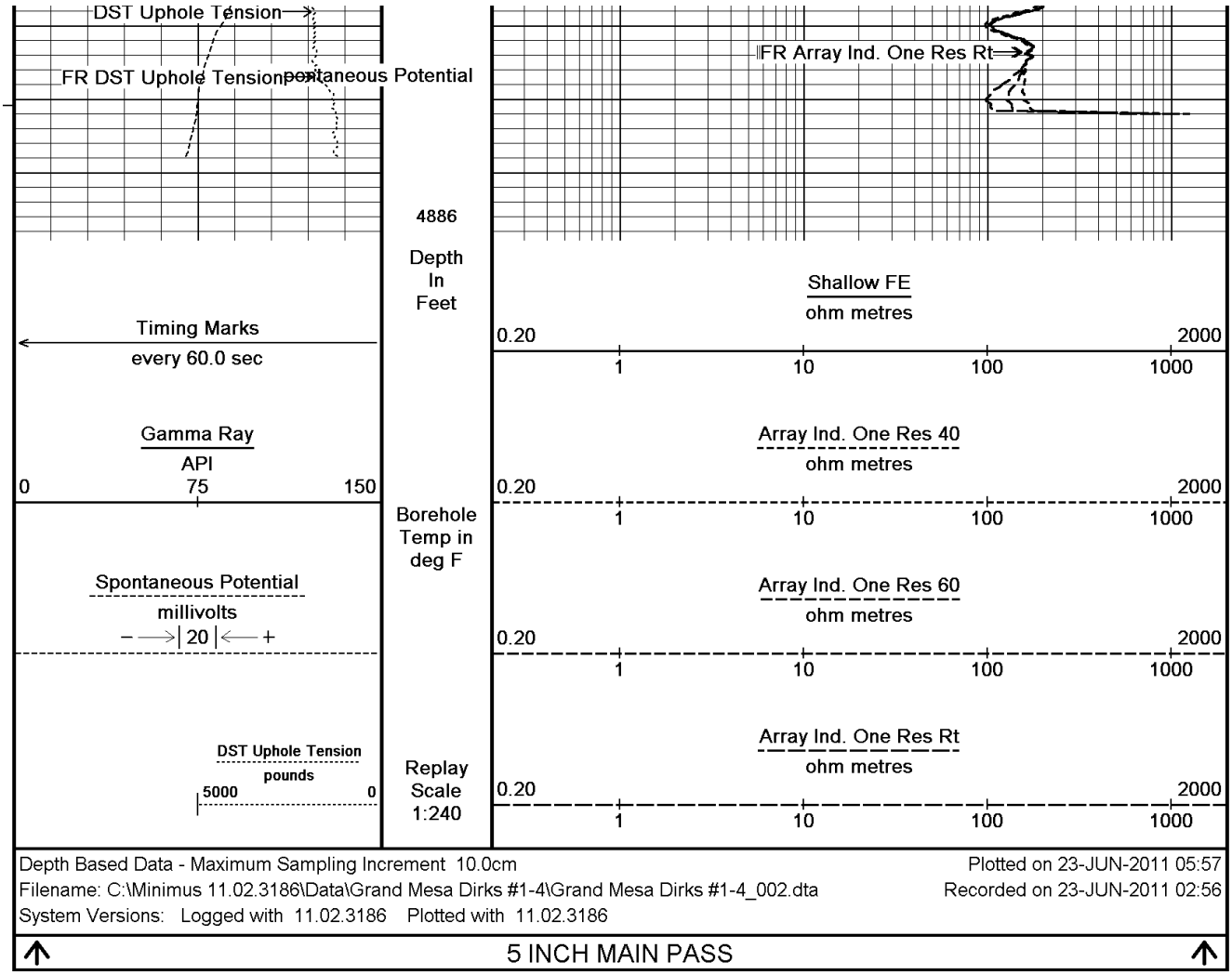

3650
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
3700
110°
3750
110°
3800
111°
3850


111°
3900
111°
3950
111°
4000
111°
4050
112°
4100
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow Ft


112°
4150
112°
4200
113°
4250
113°
4300
113°
4350


114°
4400
114°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
4450
Spontaneous Potential
Gamma Ray
DST Uphole Tension
114°
4500
114°
4550
114°
4600


115°
4650
115°
4700
116°
4750
116°
4800
FR Gamma Ray
Spontaneous P
4850
tial
Array Ind. One Res Rt
Array Ind. One Res 60
FR Shallow FE
Array Ind. One Res 40
Shallow FE

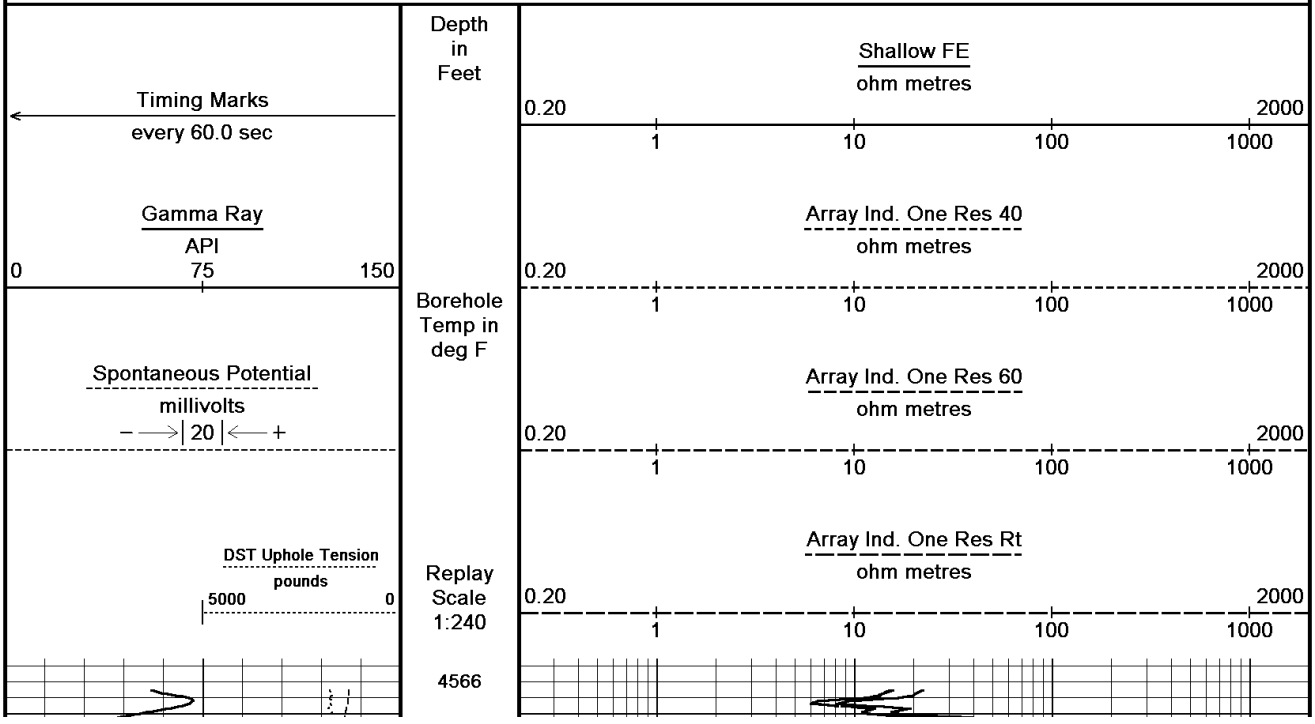


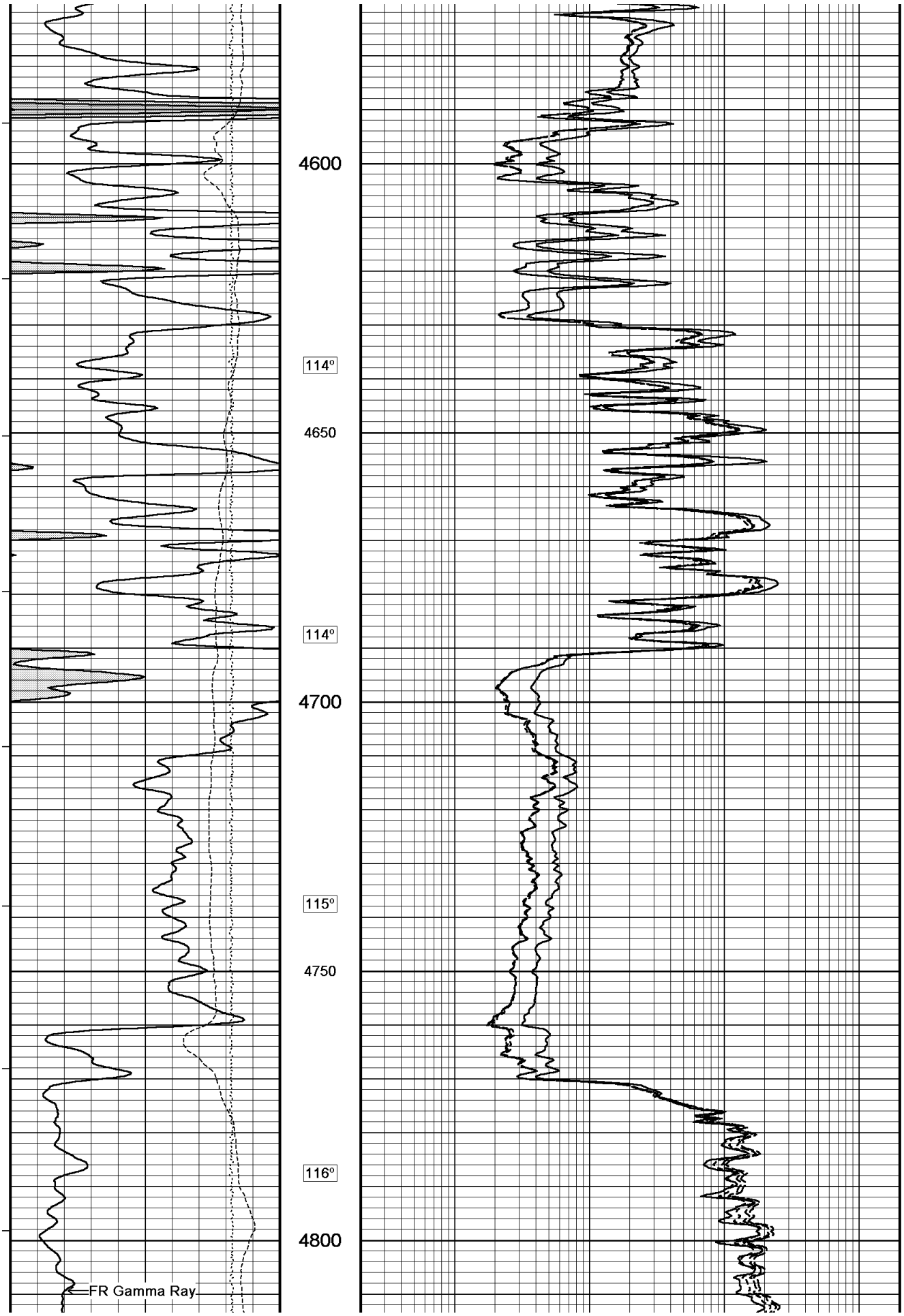
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

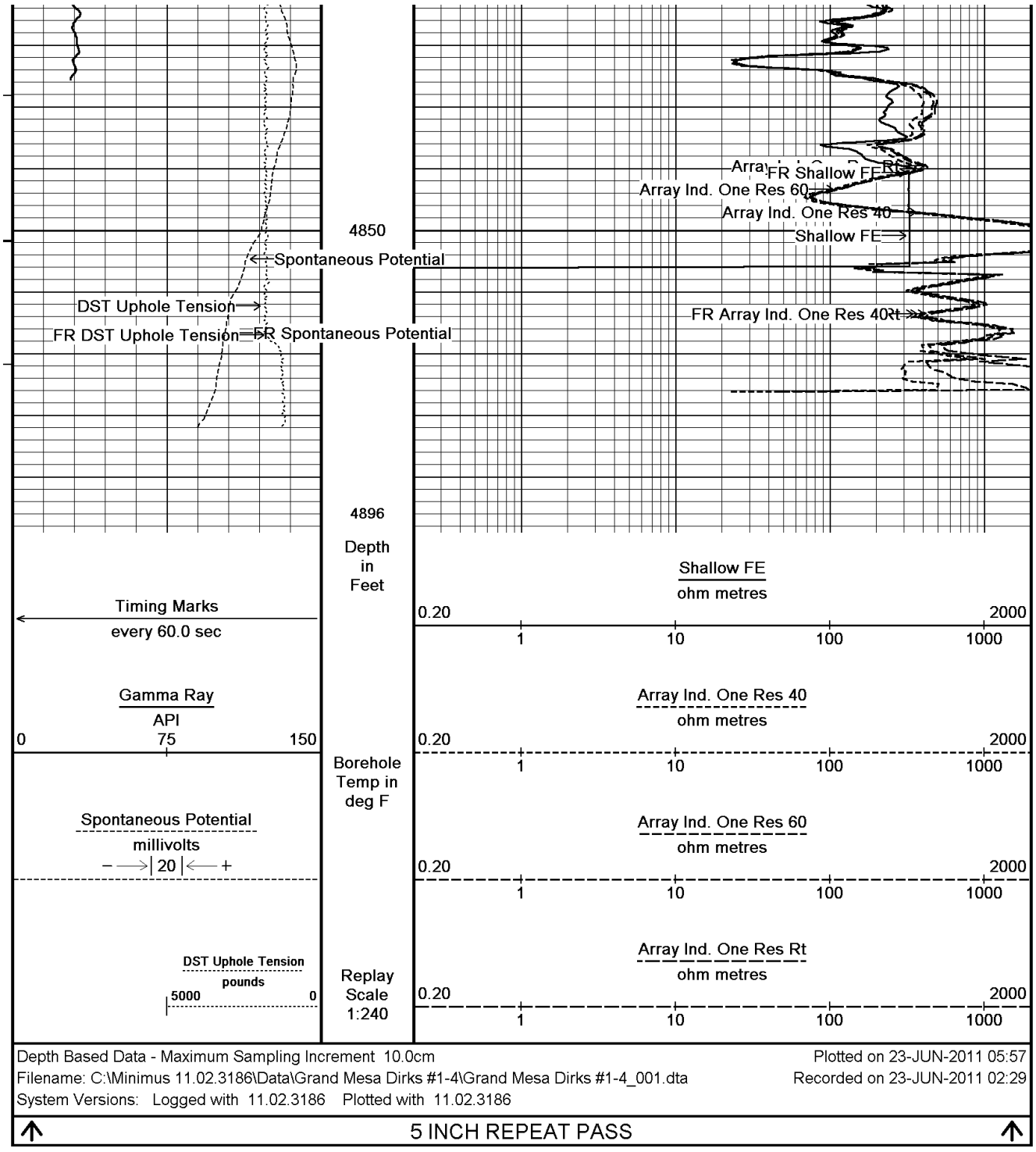
5 INCH MAIN PASS

5 INCH REPEAT PASS

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta — Recorded on 23-JUN-2011 02:29
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186




4600
114°
4650
114°
4700
115°
4750
116°
4800
FR Gamma Ray



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57

Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta — Recorded on 23-JUN-2011 02:29

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\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta

General Constants All 000 — Last Edited on 22-JUN-2011,23:31

General Parameters		
Mud Resistivity	0.450	ohm-metres
Mud Resistivity Temperature	93.000	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	

Caliper for Differential Caliper | Density 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

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

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 15-JUN-2011 08:26

	Measured	Calibrated (API)
Background	57	39
Calibrator (Gross)	1112	764
Calibrator (Net)	1055	725

Gamma Constants MCG-B 34

Last Edited on 22-JUN-2011,23:30

Gamma Calibrator Number	grc38	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

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

Caliper Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:38
Field Calibration on 15-JUN-2011 08:44

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)
6.01	5.98

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:23
Field Check on 15-JUN-2011 08:27

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 19-JUN-2011,16:09

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

Neutron Calibration MDN-A.B 65

Base Calibration on 16-MAY-2011 11:23
Field Check on 15-JUN-2011 08:59

Base Calibration

Measured | Calibrated (apu)

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3166	99	3714	110
Ratio	31.935		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1629	2336
Ratio	0.697	

Field Check	Calibrated (cps)	
	1612	2335
Ratio	0.690	

Neutron Constants MDN-A.B 65

Last Edited on 22-JUN-2011,23:30

Neutron Source Id	757	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.50	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

Base Calibration

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

FE Constants MFE-A.A 55

Last Edited on 22-JUN-2011,23:31

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 19-JUN-2011,16:10

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 15-JUN-2011 09:03

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	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)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	19.2	3846.0	
2	0.0	0.0	33.1	3632.5	
3	0.0	0.0	30.1	3051.2	
4	0.0	0.0	20.5	2094.4	
Deep	0.0	0.0	18.0	1921.1	
Medium	0.0	0.0	43.4	4052.1	
Shallow	0.0	0.0	50.2	5476.8	
Array Temperature		0.0		75.9	Deg F

Induction Constants MAI-A.A 45

Last Edited on 22-JUN-2011,23:31

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	

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 16-MAY-2011 09:53
Field Calibration on 15-JUN-2011 08:41

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13344	3.99
2	21952	5.98
3	30560	7.97
4	38880	9.86
5	48095	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.95	5.98

Photo Density Calibration MPD-B 65

Base Calibration on 16-MAY-2011 10:48
Field Check on 15-JUN-2011 08:34

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	51543	24465	59556	30836
Reference 2	20910	2298	24941	2541

Field Check at Base

1247.1	1201.6

Field Check

1249.3	1196.7

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	227	1108		
Reference 1	19826	51340	0.390	0.371
Reference 2	5731	20764	0.280	0.272

Field Check at Base

226.6	1107.8

Field Check

227.3	1112.5

Density Constants MPD-B 65

Last Edited on 22-JUN-2011,23:30

Density Source Id	254	
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 (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
0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta

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

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

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

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

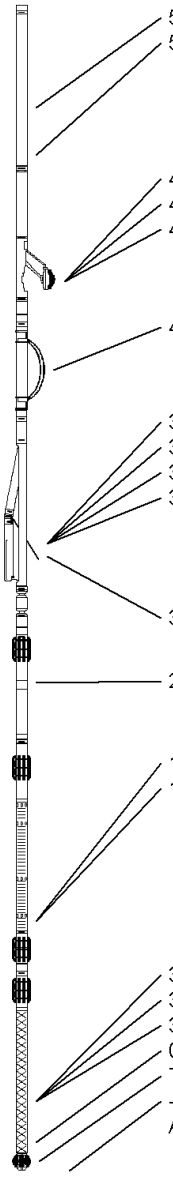
SKJ-D.A Compact Knuckle Joint
SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.84 ft Weight: 480.6 lb



57.56 ft	GRGC - Gamma Ray
54.65 ft	CGXT - MCG External Temperature
47.93 ft	MINV - Micro-inverse
47.93 ft	MNRL - Micro-normal
48.92 ft	MLTC - MML Caliper
43.13 ft	NPRL - Limestone Neutron Por.
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
33.90 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
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
WELL	DIRKS #1-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT

PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3068.00	feet	First Reading	4864.00	feet
Elevation Drill Floor	3066.00	feet	Depth Driller	4870.00	feet
Elevation Ground Level	3063.00	feet	Depth Logger	4867.00	feet

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ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	GRAND MESA OPERATING		
WELL	DIRKS #1-4		
FIELD	WILDCAT		
PROVINCE/COUNTY	SCOTT		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	1168' FSL & 969' FWL		Other Services: MDN/MPD, MML, MSS
SEC 4	TWP 16S	RGE 33W	
API Number	15-171-20812		
Permit Number			
Permanent Datum G.L., Elevation 3063 feet			Elevations:
Log Measured From K.B. @ 5 FEET above Permanent Datum			KB 3068.00 feet
Drilling Measured From K.B.			DF 3066.00
			GL 3063.00
Date	22-JUN-2011		
Run Number	ONE		
Depth Driller	4870.00 feet		
Depth Logger	4867.00 feet		
First Reading	4864.00 feet		
Last Reading	222.00 feet		
Casing Driller	222.00 feet		
Casing Logger	222.00 feet		
Bit Size	7.875 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.20 lb/USg	56.00 CP	
PH / Fluid Loss	10.50	8.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.45 @ 93.0 ohm-m		
Rmf @ Measured Temp	0.36 @ 93.0 ohm-m		
Rmc @ Measured Temp	0.54 @ 93.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.36 @115.0 ohm-m		
Time Since Circulation	2 HOURS		
Max Recorded Temp	115.00 deg F		
Equipment Name	COMPACT		
Equipment / Base	13057	LIB	
Recorded By	R. HOFFMAN		
Witnessed By	STEVE STRIBLING		
S.O. # / JOB #	3529167		LB11-139

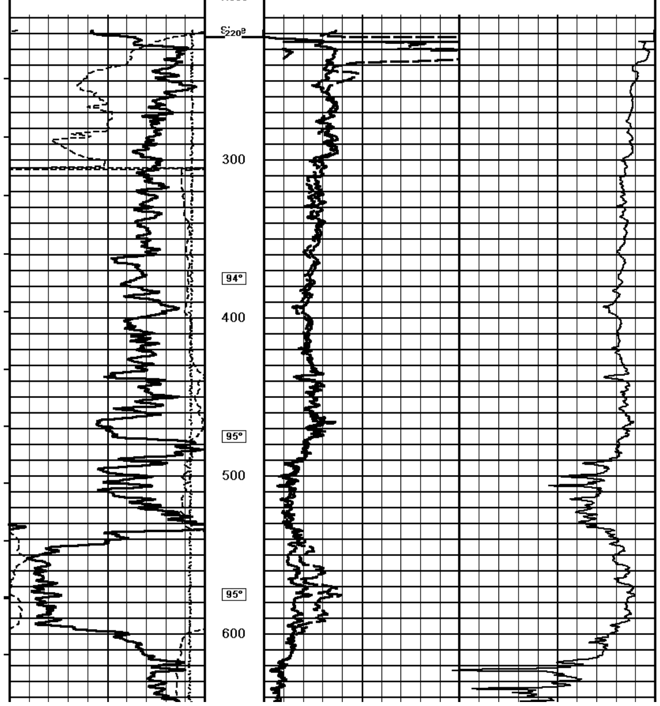
1 INCH MAIN PASS

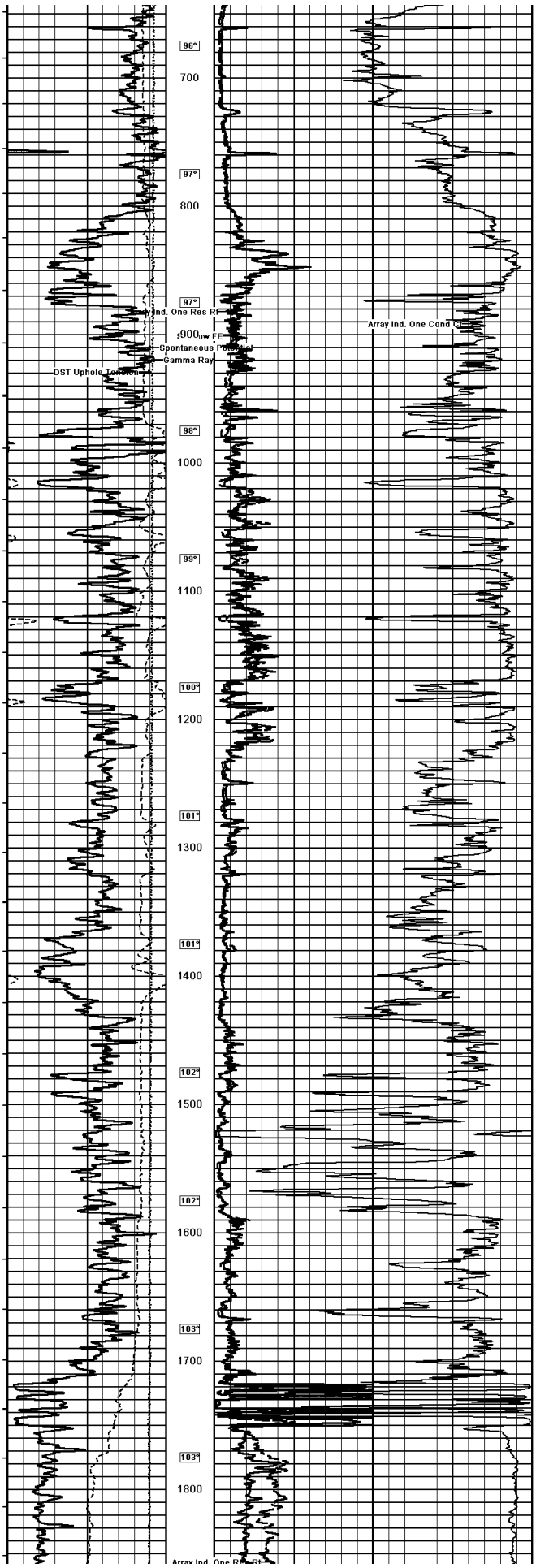
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:57

Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

Track 1	Depth	Track 2/3
Timing Marks every 60.0 sec	Depth In Feet	Array Ind. One Cond Ct, mmhos: 1000 – 750 – 500 – 250 – 0; 2000 – 1750 – 1500 – 1250 – 1000
Gamma Ray, API: 0 – 75 – 150	Borehole Temp in deg F	Shallow FE, ohm metres: 0 – 25 – 50; 0 – 250 – 500
Spontaneous Potential, millivolts: −→|20|←+		
DST Uphole Tension, pounds: 5000 – 0	Replay Scale 1:600	Array Ind. One Res Rt, ohm metres: 0 – 25 – 50; 0 – 250 – 500




96°
700
97°
800
97°
900
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1000
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1200
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1600
103°
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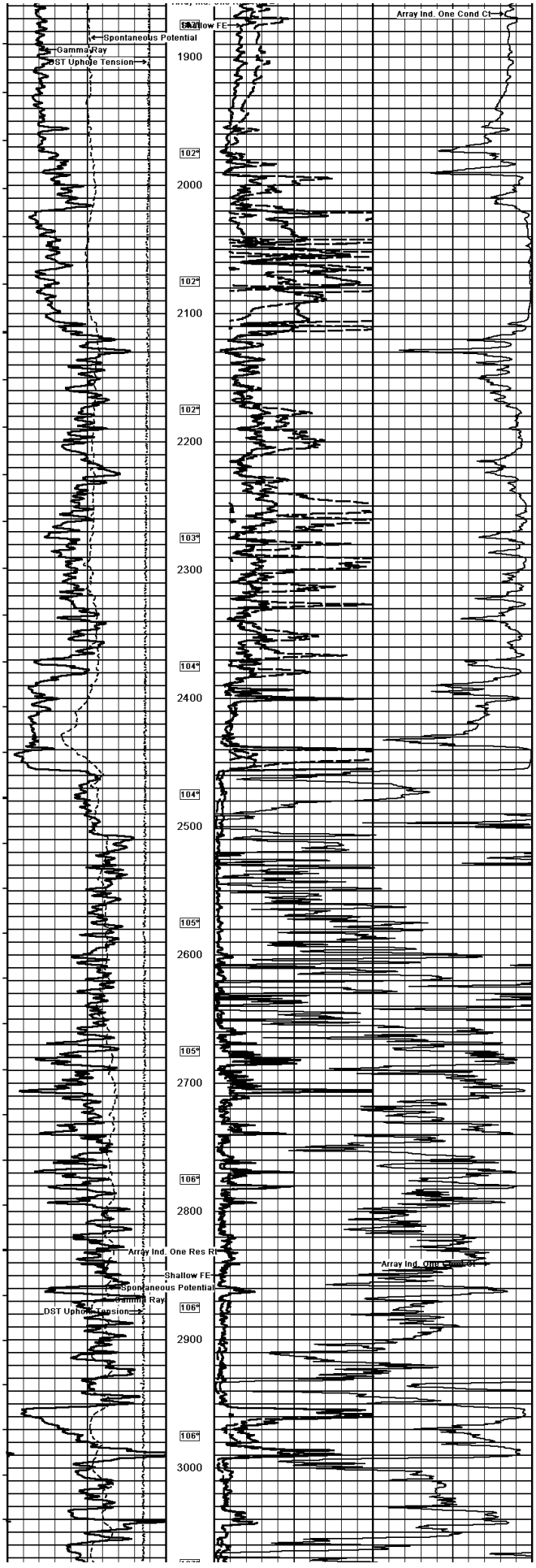
1800
Array Ind. One Cond C
Gamma Ray


Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
1900
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2200
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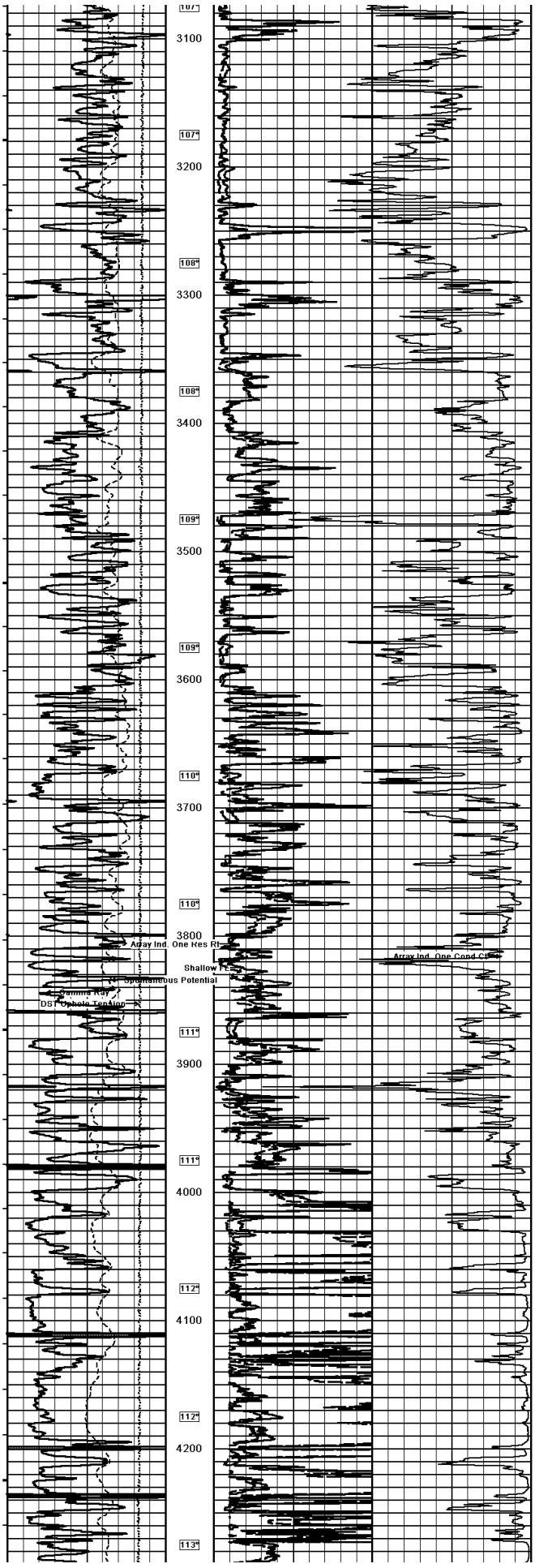
2800
2900
3000
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension


3100
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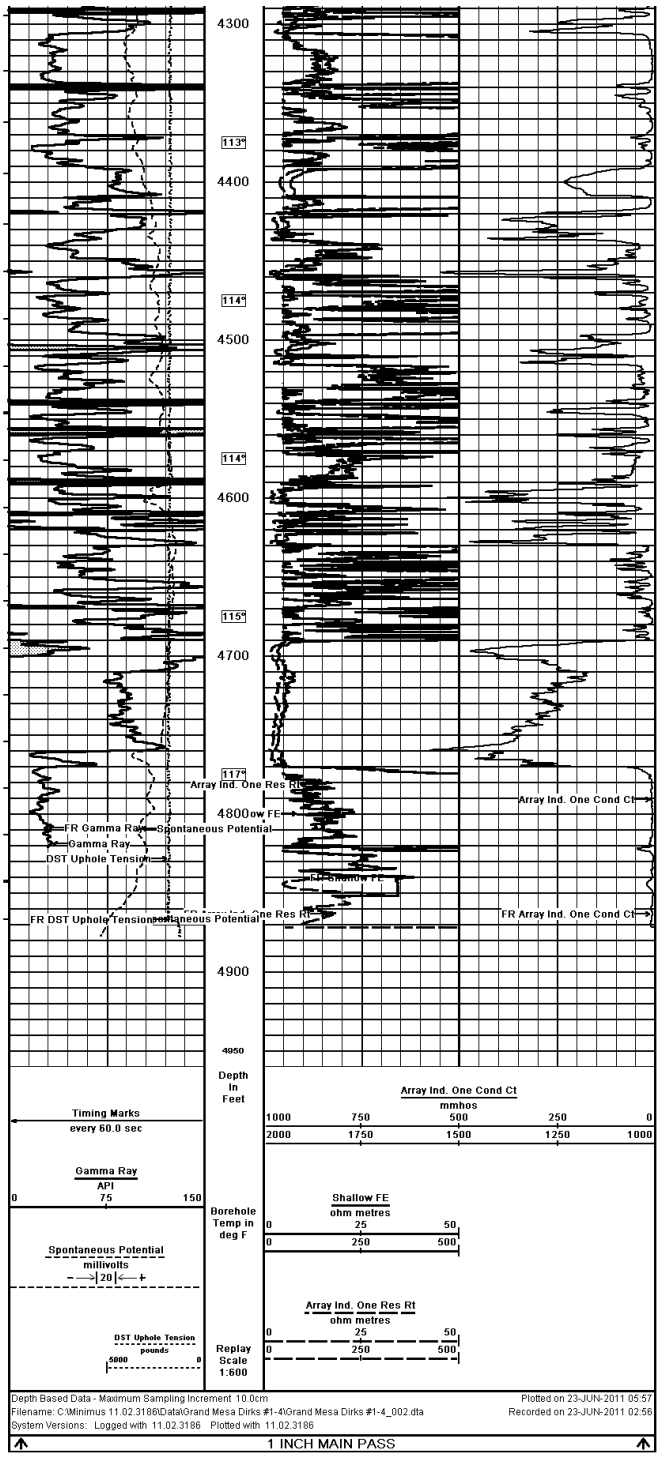
4000
4100
4200
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow Res
Spontaneous Potential
Gamma Ray
DSI Cable Tension



COMPANY	GRAND MESA OPERATING
WELL	DIRKS #1-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3068.00	feet	First Reading	4864.00	feet
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40 Wireline