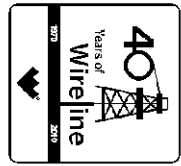




**Weatherford**<sup>®</sup>

ARRAY INDUCTION  
SHALLOW FOCUSED  
ELECTRIC LOG

COMPANY SHAKESPEARE OIL COMPANY, INC.  
 WELL PETERSON #1-8  
 FIELD STRATFORD WEST  
 PROVINCE/COUNTY LOGAN  
 COUNTRY/STATE U.S.A. / KANSAS  
 LOCATION 1950' FSL & 1655' FWL SW/4



SEC TWP RGE Other Services  
 8 13S 32W MDN/MPD MSS  
 API Number 15-109-20997 MML  
 Permit Number

Permanent Datum G.L., Elevation 2965 feet  
 Log Measured From K.B. @ 5 FEET above Permanent Datum  
 Drilling Measured From K.B.

Elevations: feet  
 KB 2970.00  
 DF 2968.00  
 GL 2965.00

Date	29-JUN-2011
Run Number	ONE
Depth Driller	4660.00 feet
Depth Logger	4658.00 feet
First Reading	4655.00 feet
Last Reading	220.00 feet
Casing Driller	220.00 feet
Casing Logger	220.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.40 lb/USg 68.00 CP
PH / Fluid Loss	9.50 10.40 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	0.45 @ 94.0 ohm-m
Rmf @ Measured Temp	0.36 @ 94.0 ohm-m
Rmc @ Measured Temp	0.54 @ 94.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.37 @ 115.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	115.00 deg F
Equipment Name	COMPACT
Equipment / Base	13057 LIB
Recorded By	L. SCOTT
Witnessed By	DON WILLIAMS
S.O.# / JOB#	3531097 LB11-148

BOREHOLE RECORD			Last Edited: 29-JUN-2011 19:45	
Bit Size inches	Depth From feet	Depth To feet		
7.875	220.00	4658.00		
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	220.00	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= 171 cu. ft.  
 Service order #3531097  
 Rig: WW #2  
 Engineer: L. Scott  
 Operator(s): N. Adame

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

# 2 INCH MAIN PASS

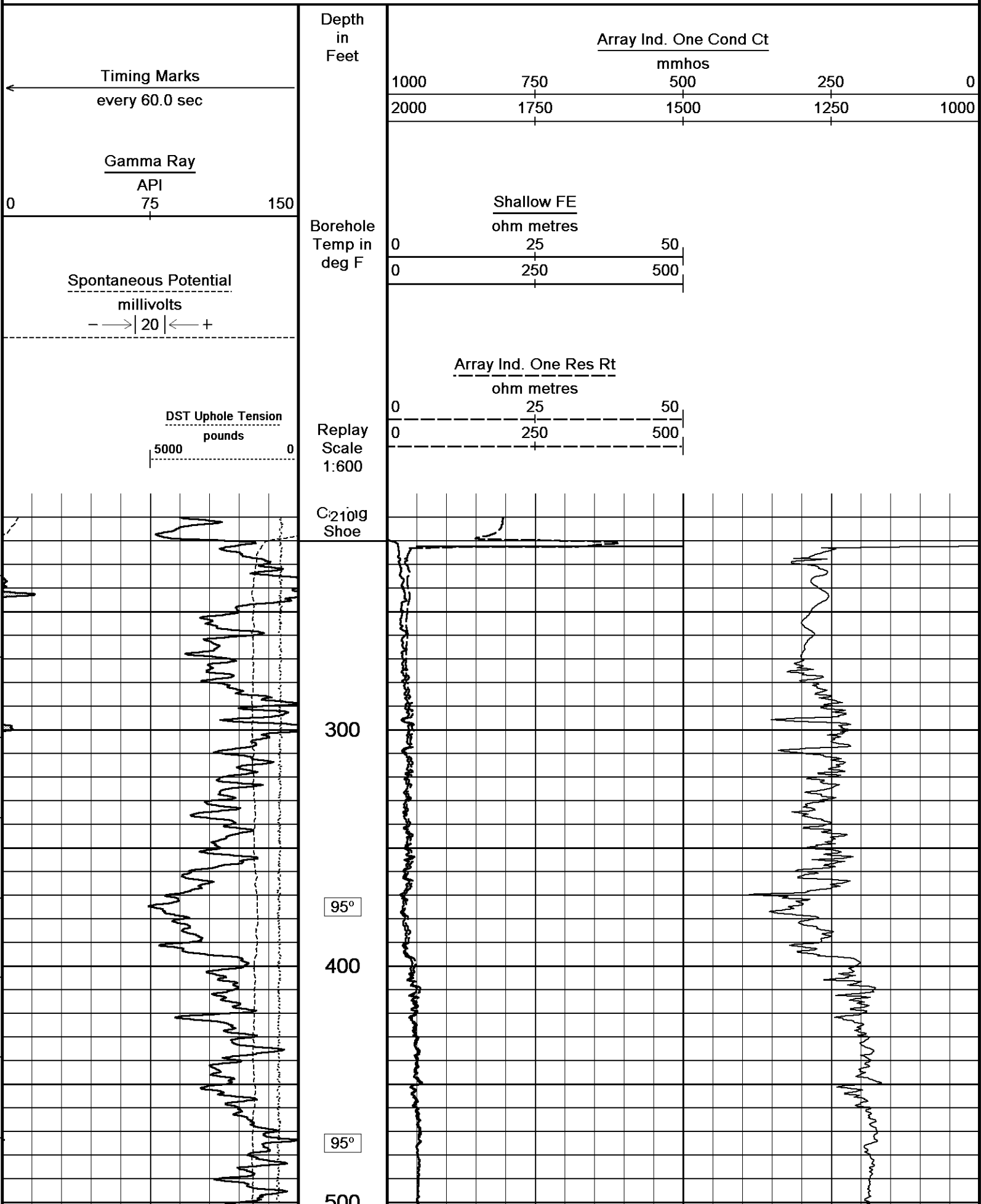
Depth Based Data - Maximum Sampling Increment 10.0cm

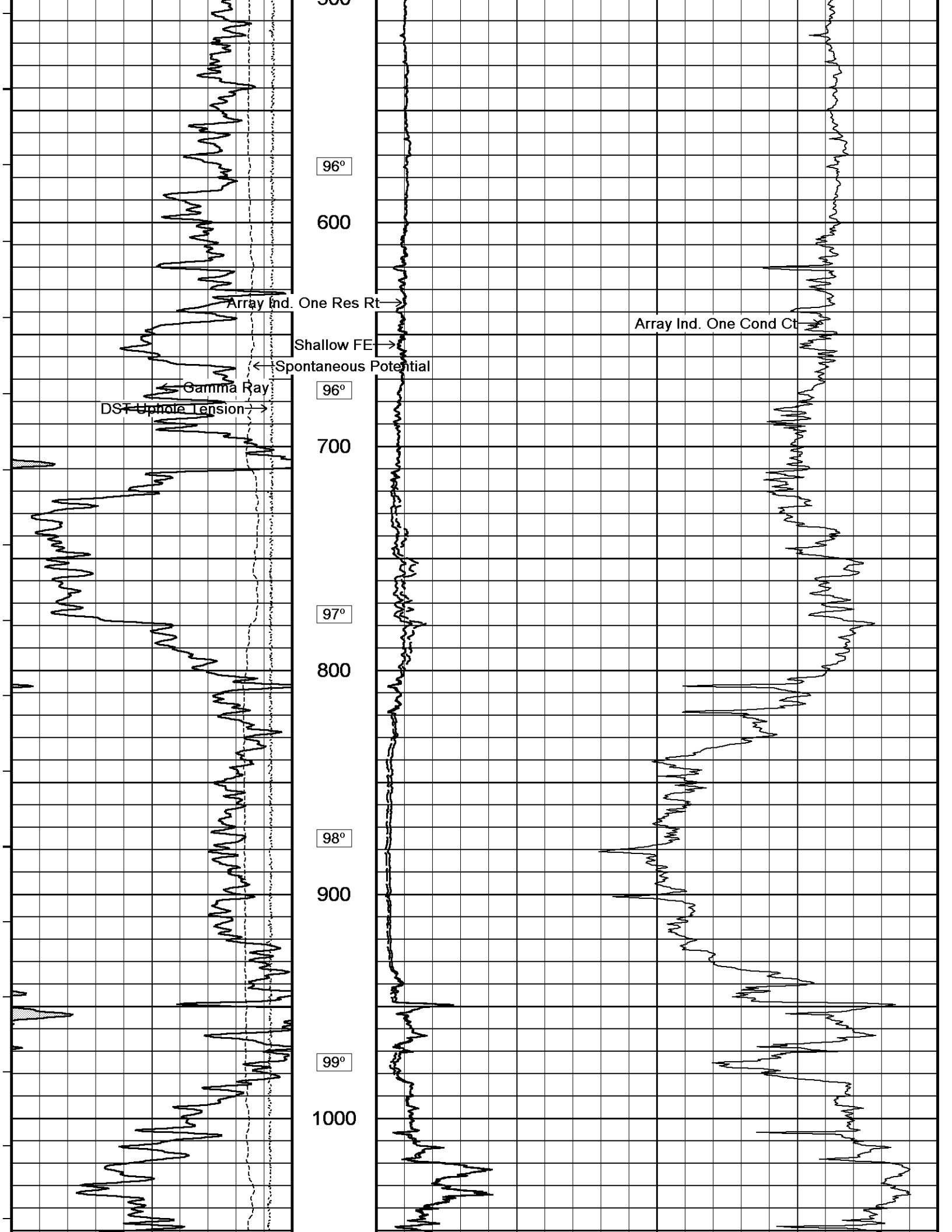
Plotted on 29-JUN-2011 21:07

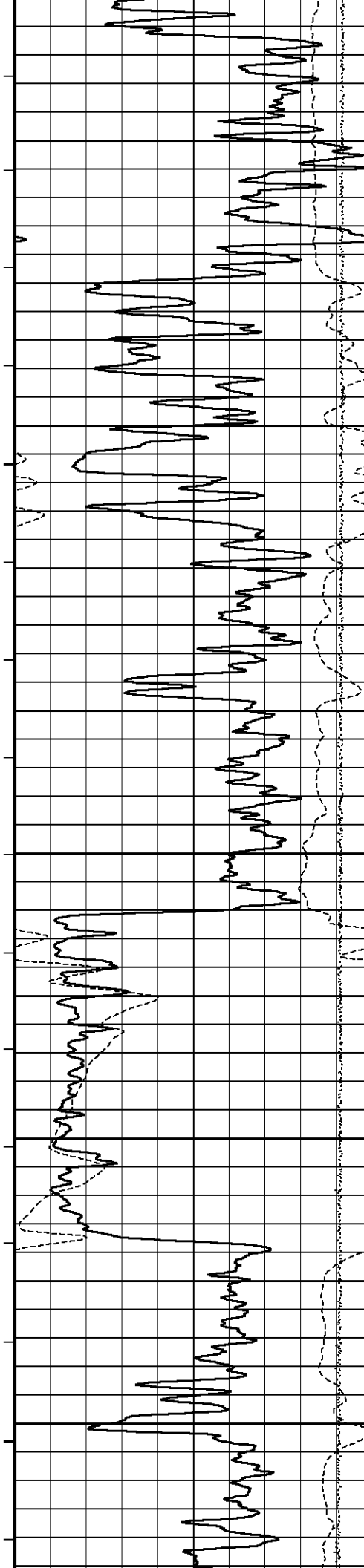
Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_002.dta

Recorded on 29-JUN-2011 18:40

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186







100°

1100

100°

1200

100°

1300

101°

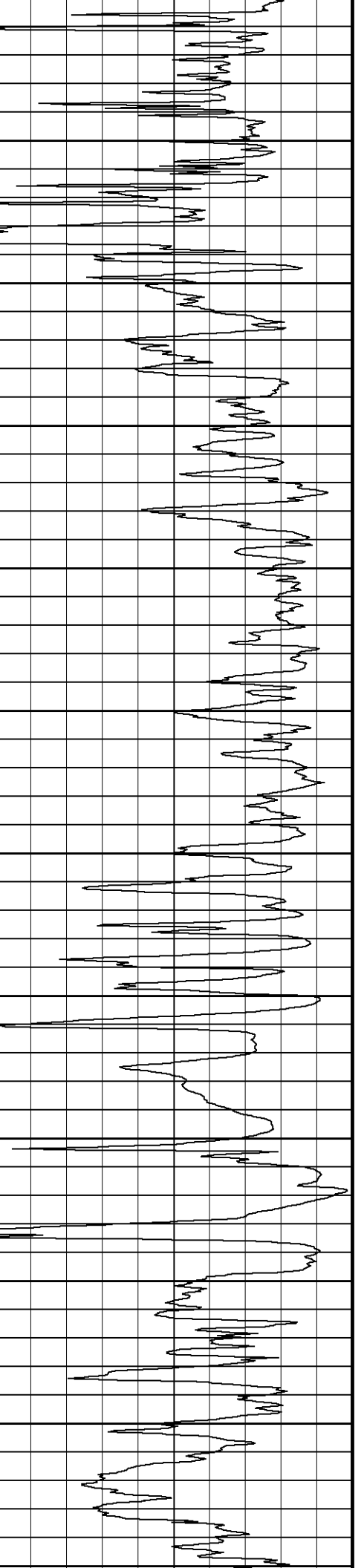
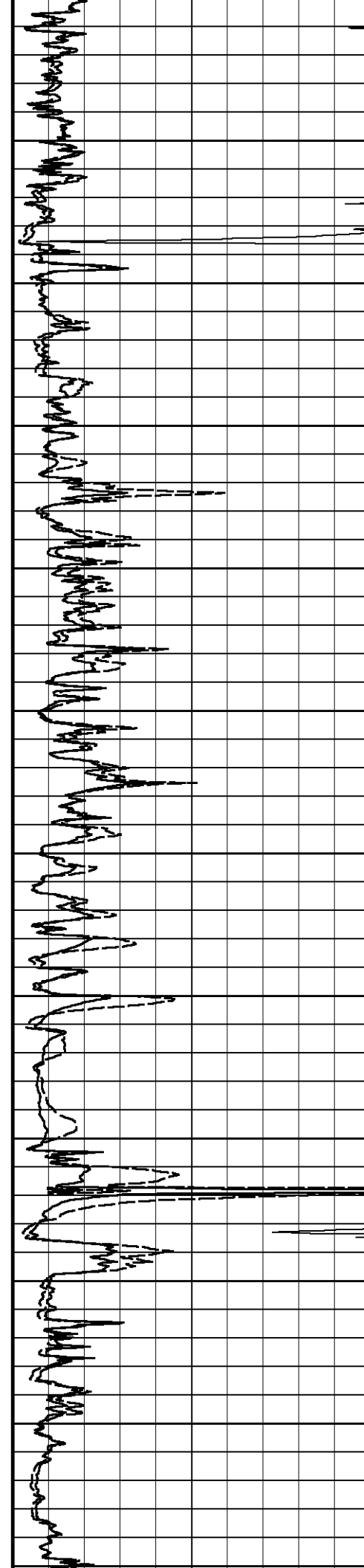
1400

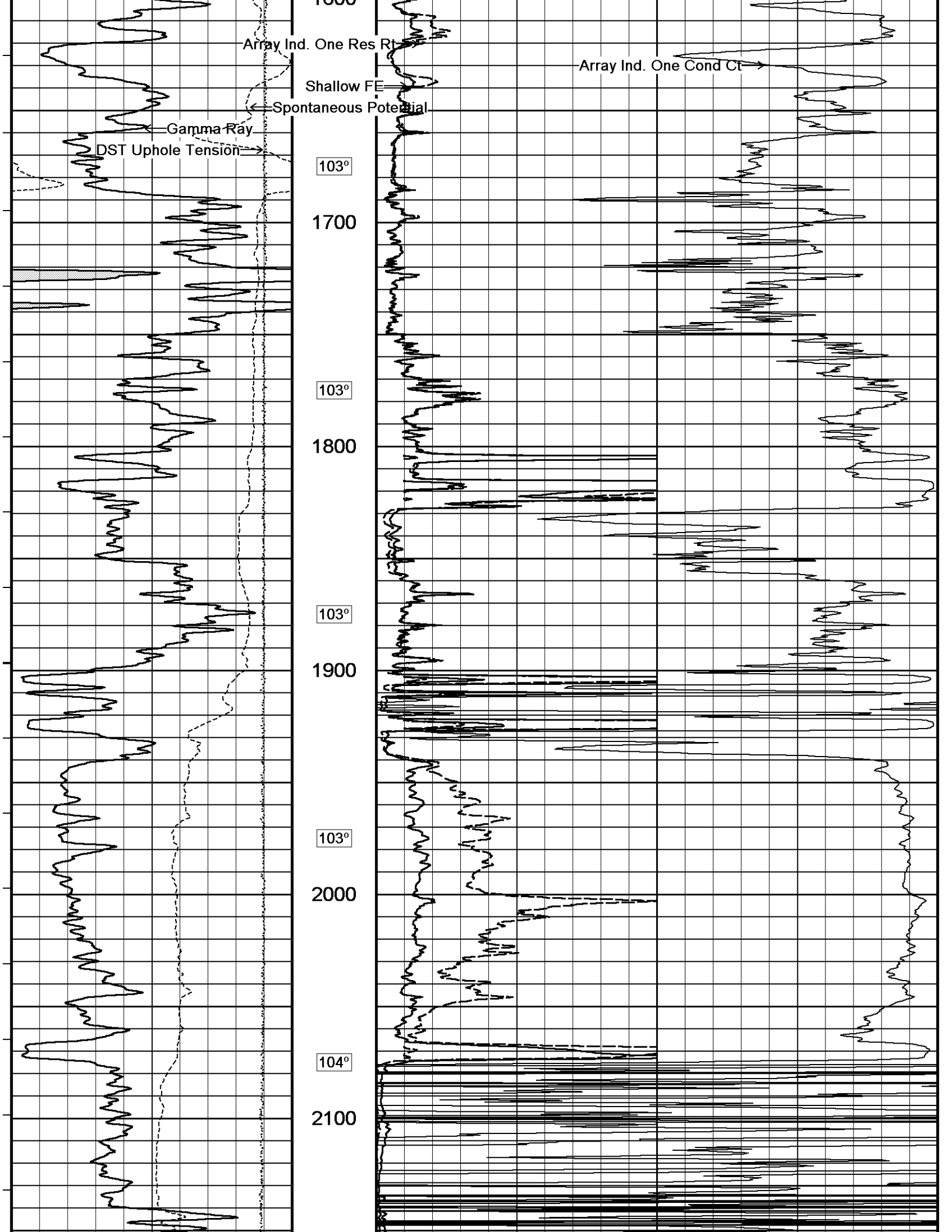
102°

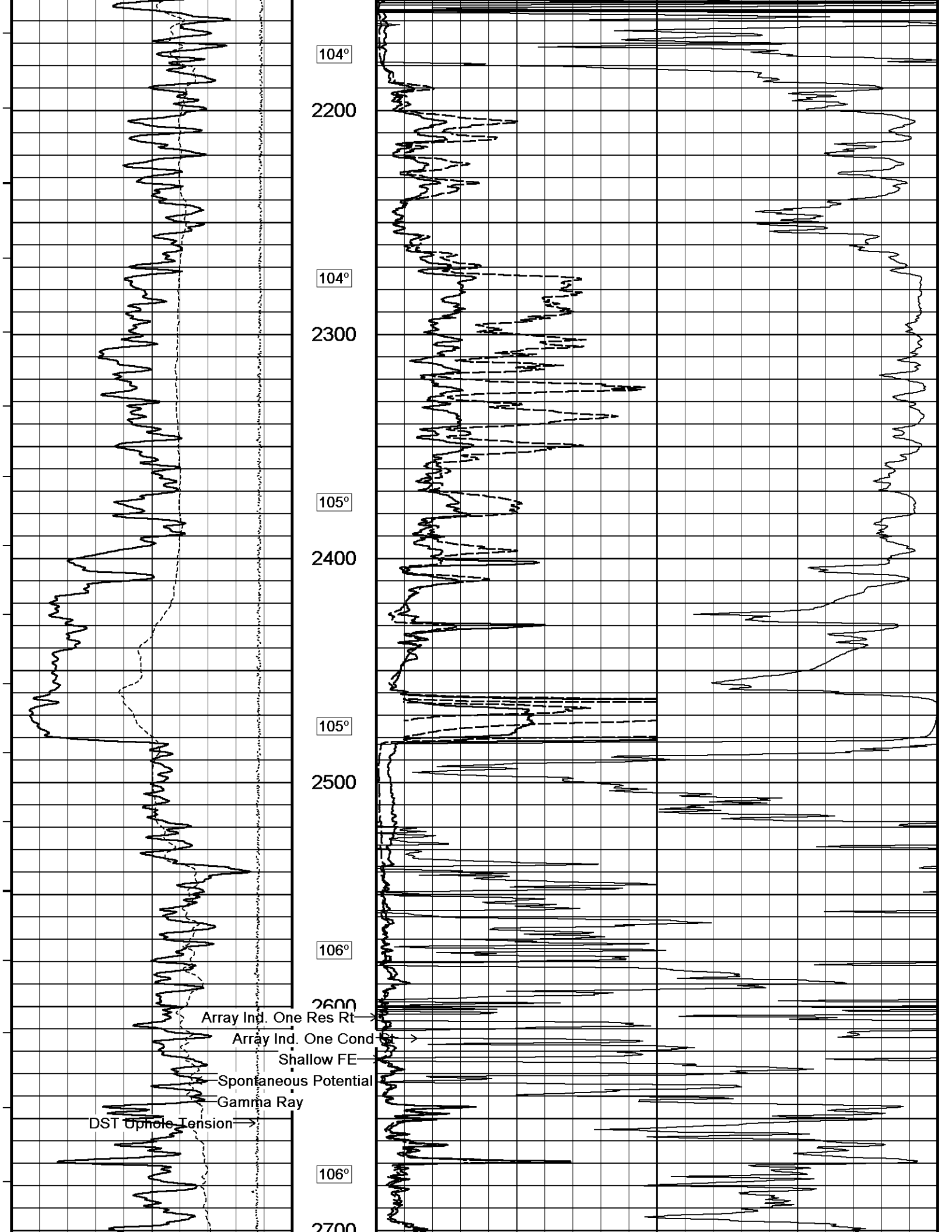
1500

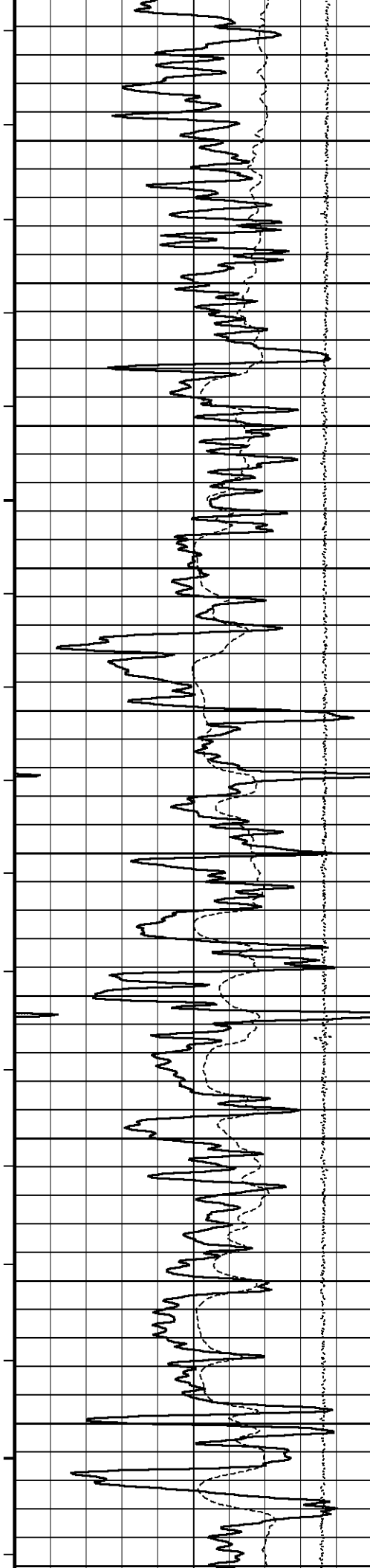
102°

1600









2700

107°

2800

107°

2900

108°

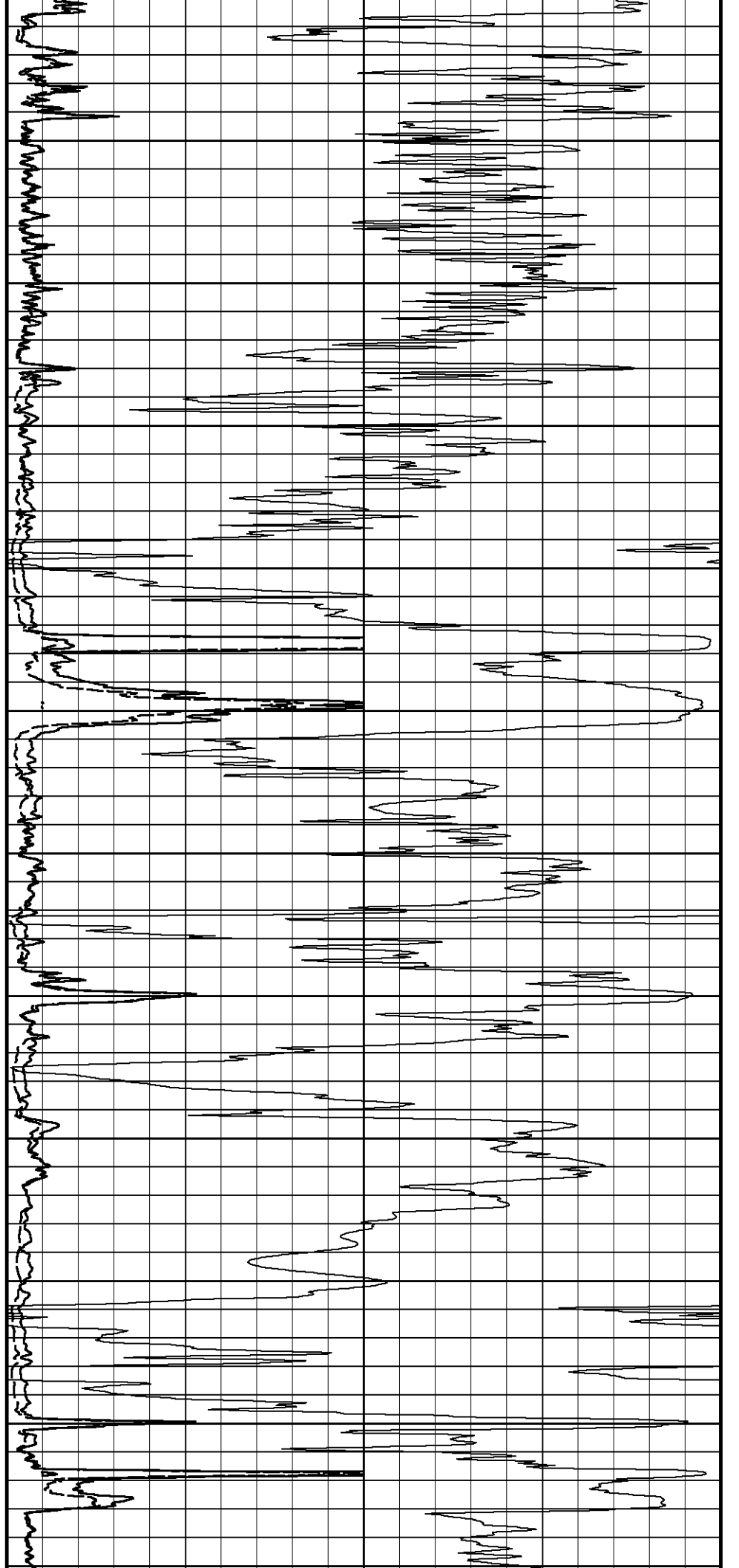
3000

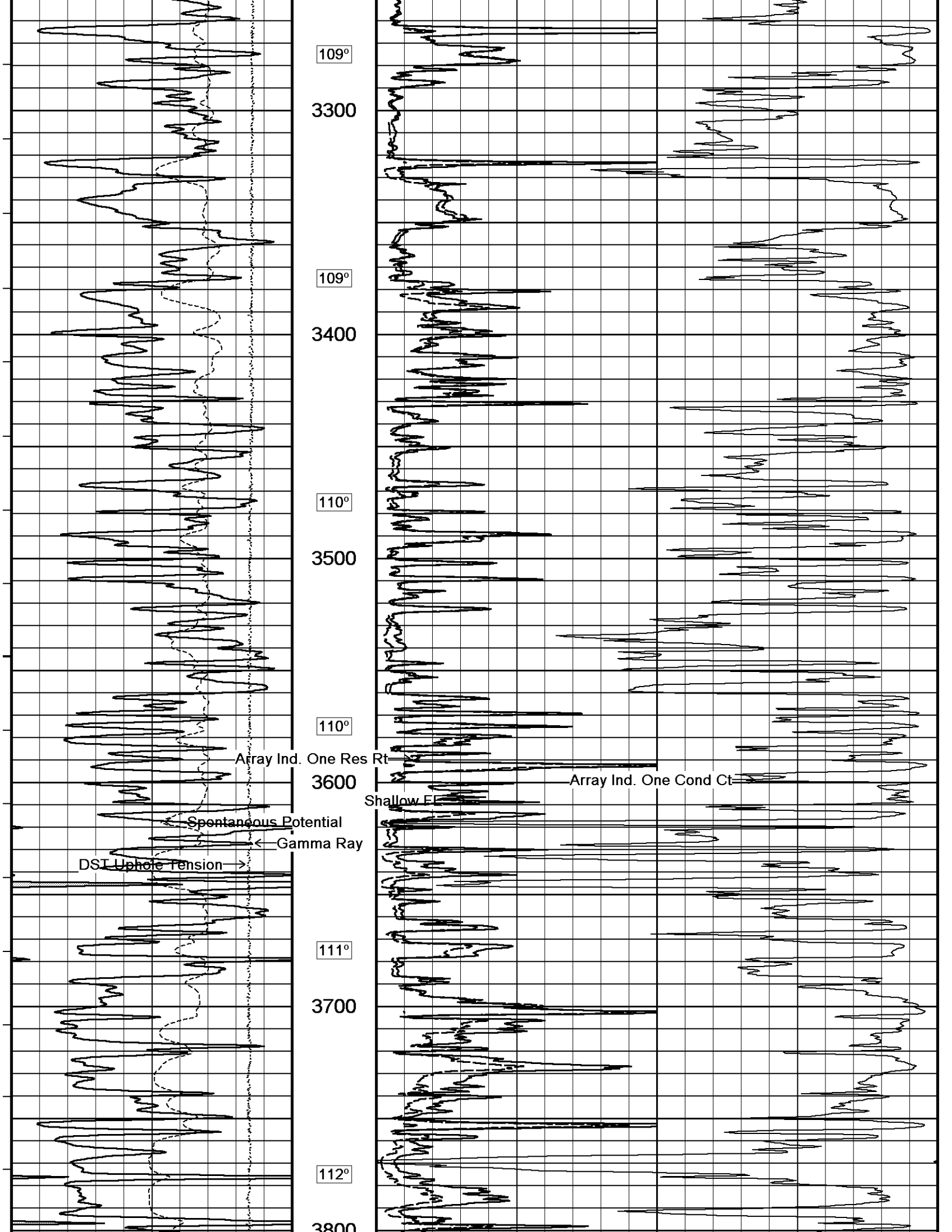
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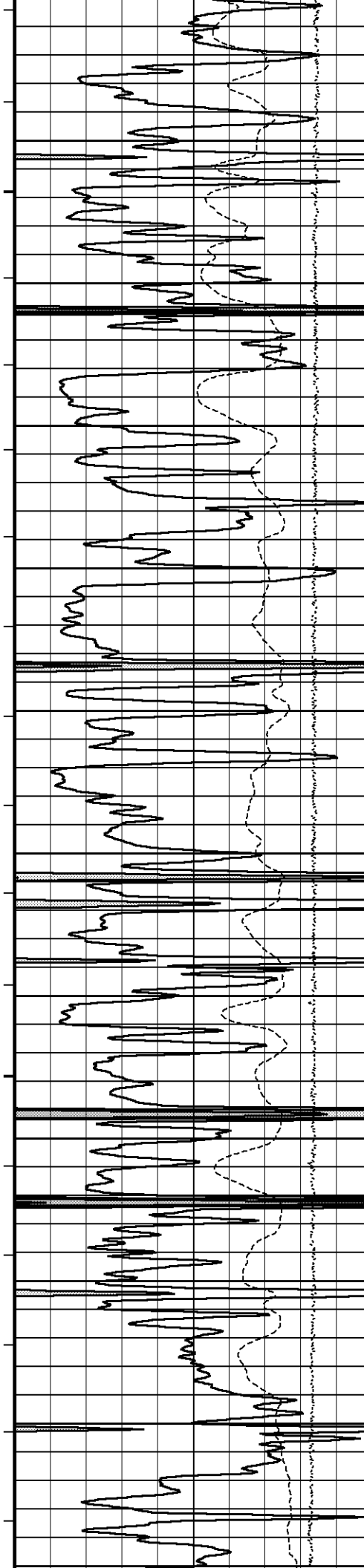
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108°

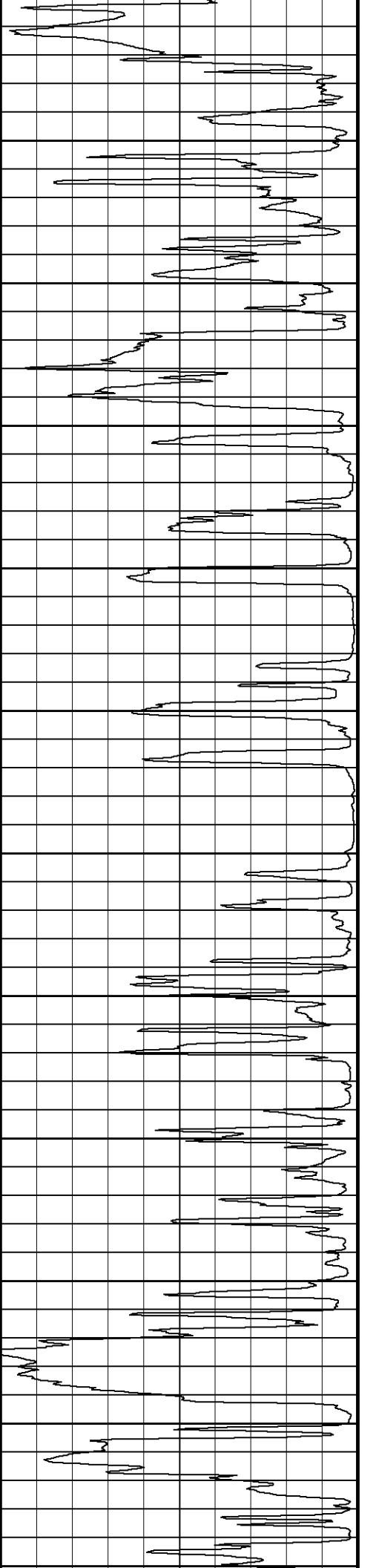
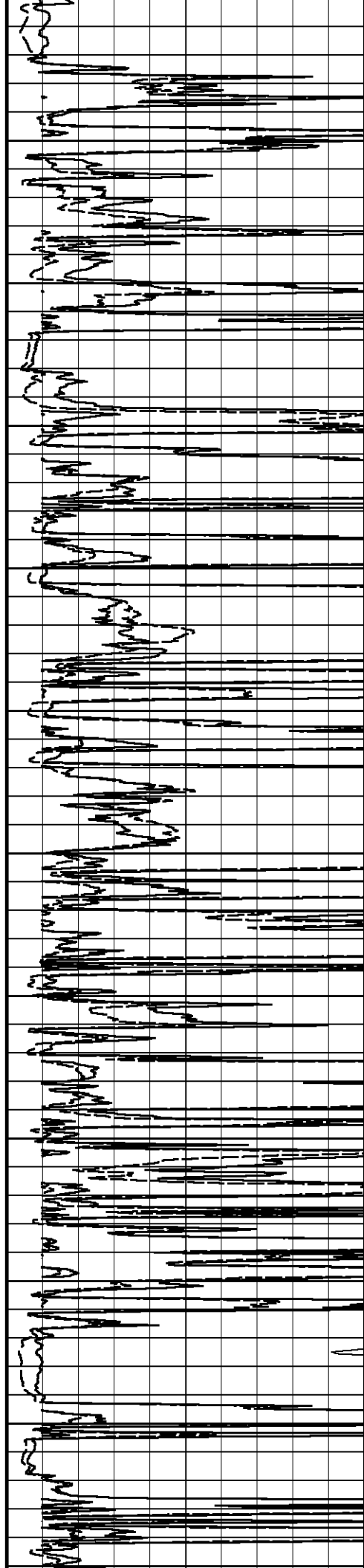
3200

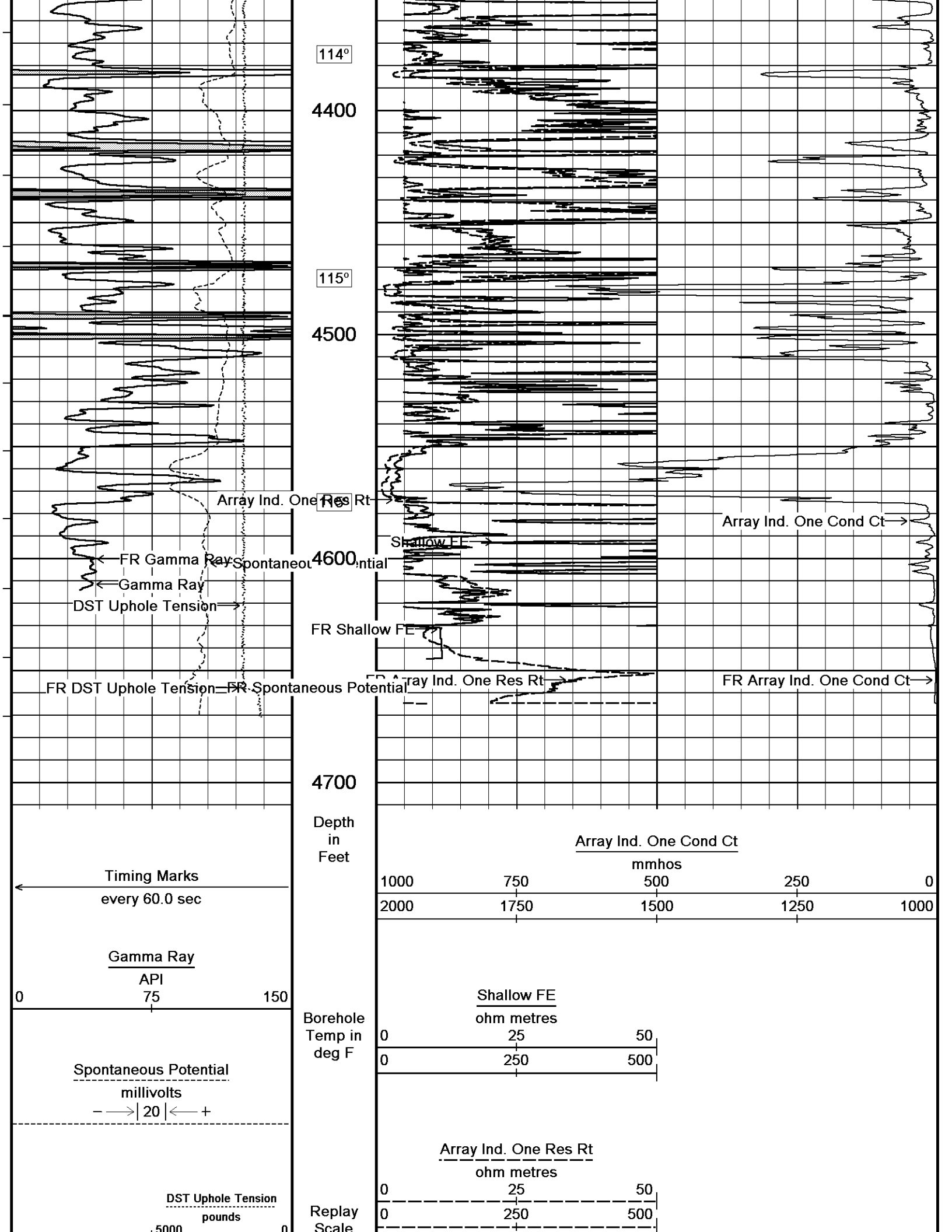






3300  
112°  
3900  
112°  
4000  
112°  
4100  
112°  
4200  
113°  
4300





Scale  
1:600

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 29-JUN-2011 21:07

Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_002.dta

Recorded on 29-JUN-2011 18:40

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186



### 2 INCH MAIN PASS



### 5 INCH MAIN PASS



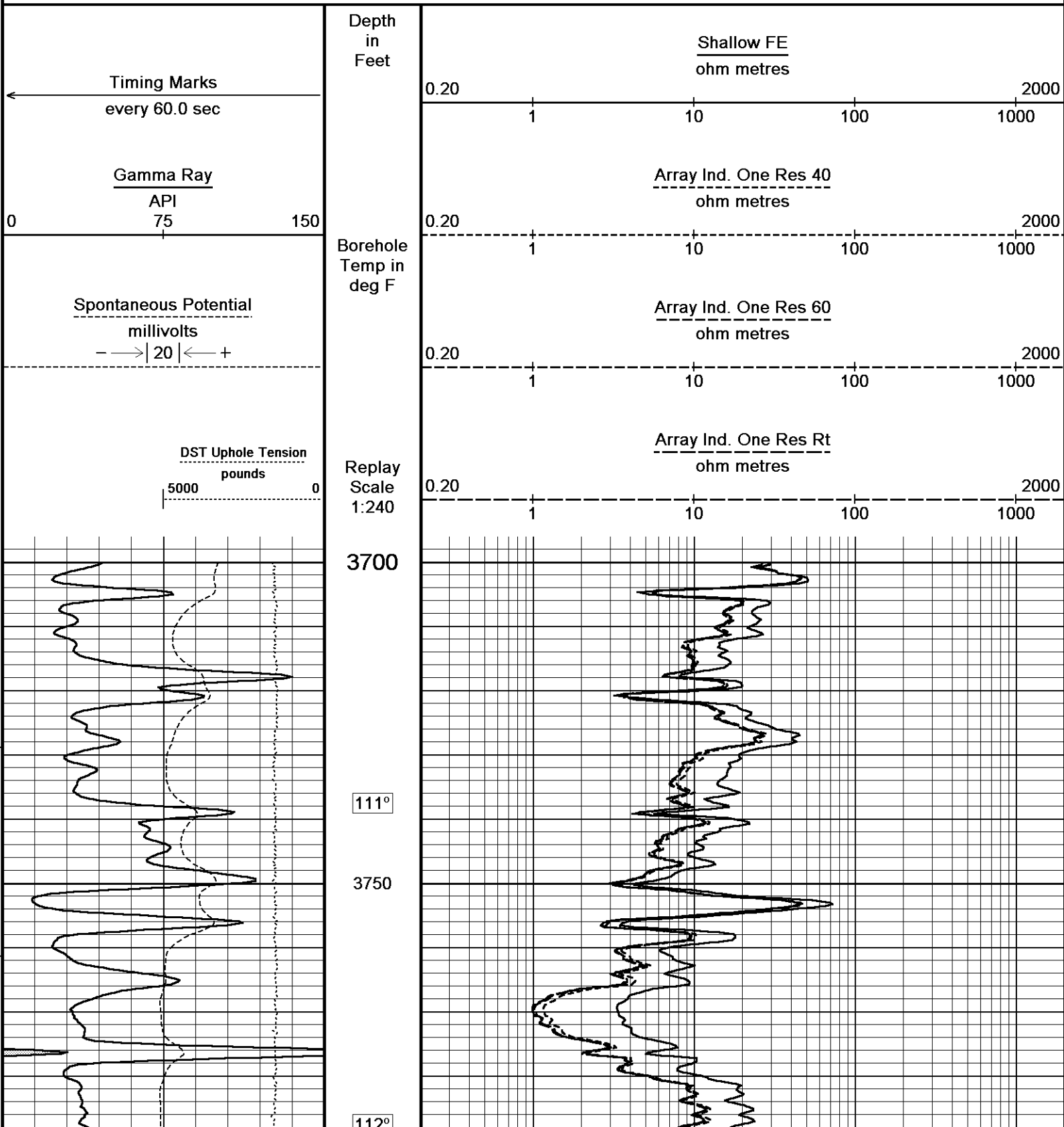
Depth Based Data - Maximum Sampling Increment 10.0cm

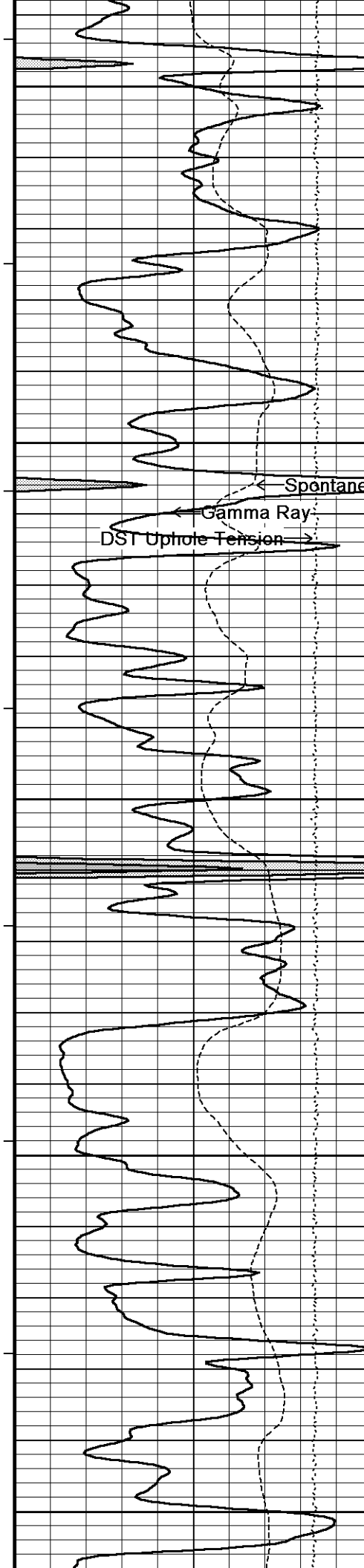
Plotted on 29-JUN-2011 21:07

Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_002.dta

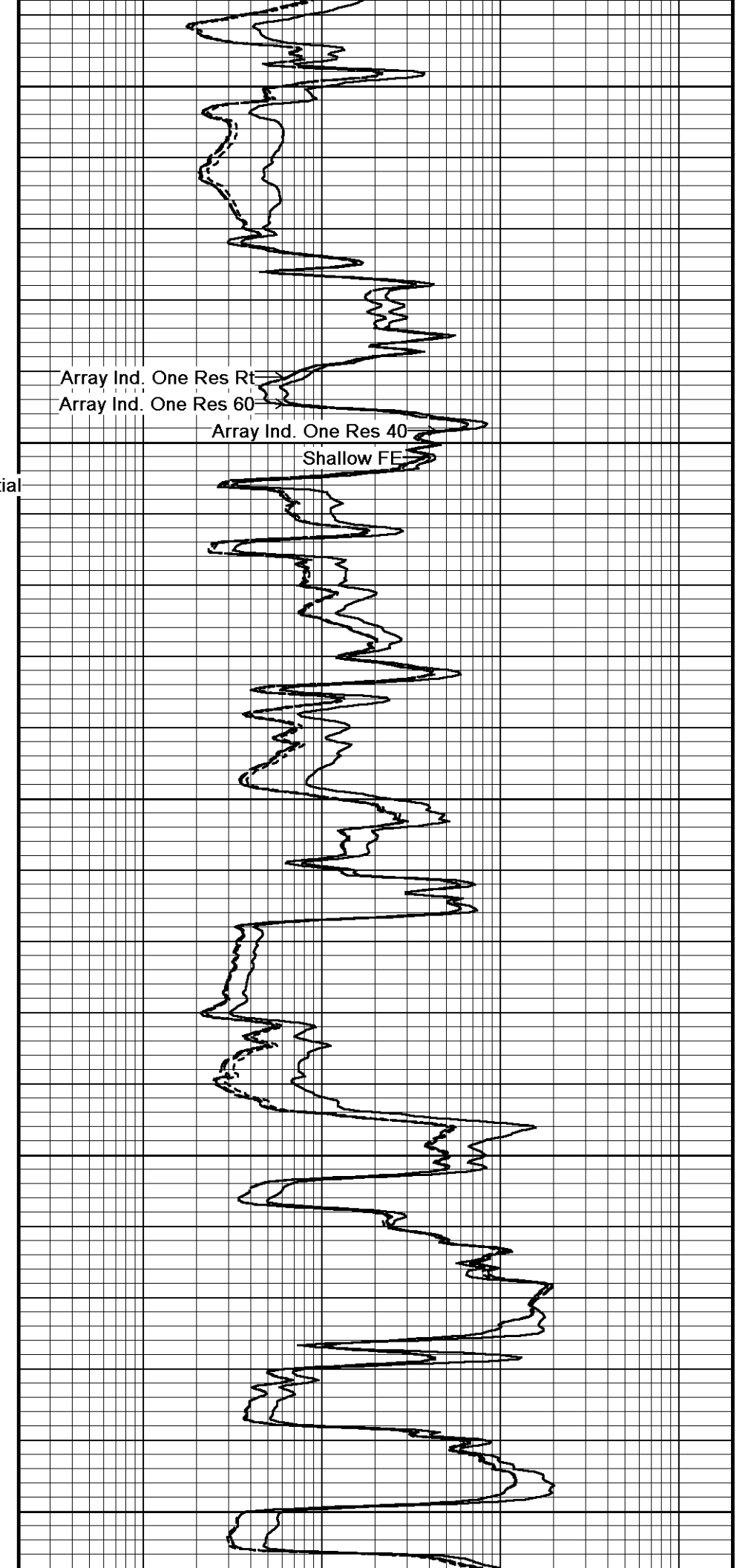
Recorded on 29-JUN-2011 18:40

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

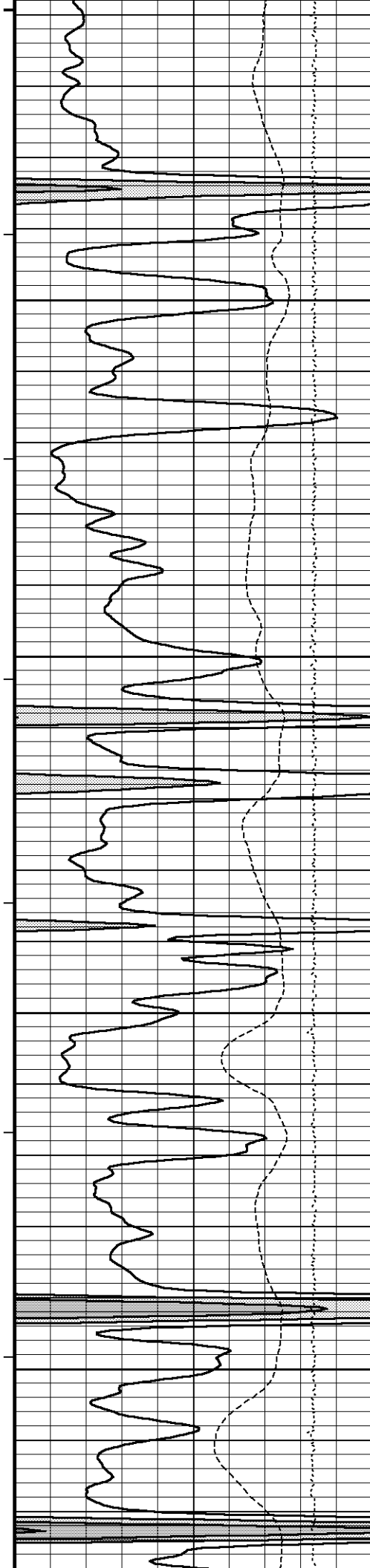




112°  
3800  
112°  
3850  
Spontaneous Potential  
Gamma Ray  
DST Uphole Tension  
112°  
3900  
112°  
3950  
112°  
4000



112°  
Array Ind. One Res Rt  
Array Ind. One Res 60  
Array Ind. One Res 40  
Shallow FE



112°

4050

112°

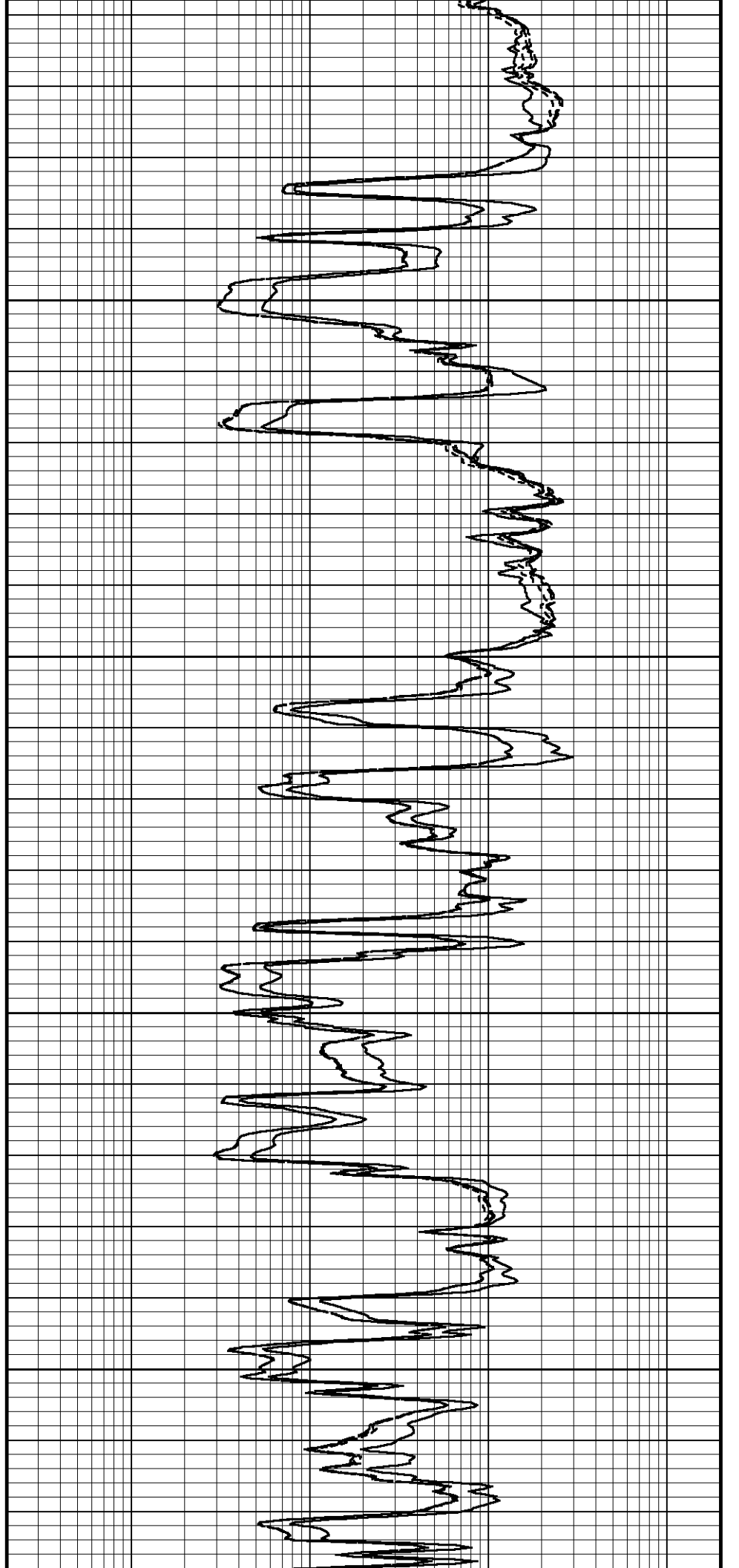
4100

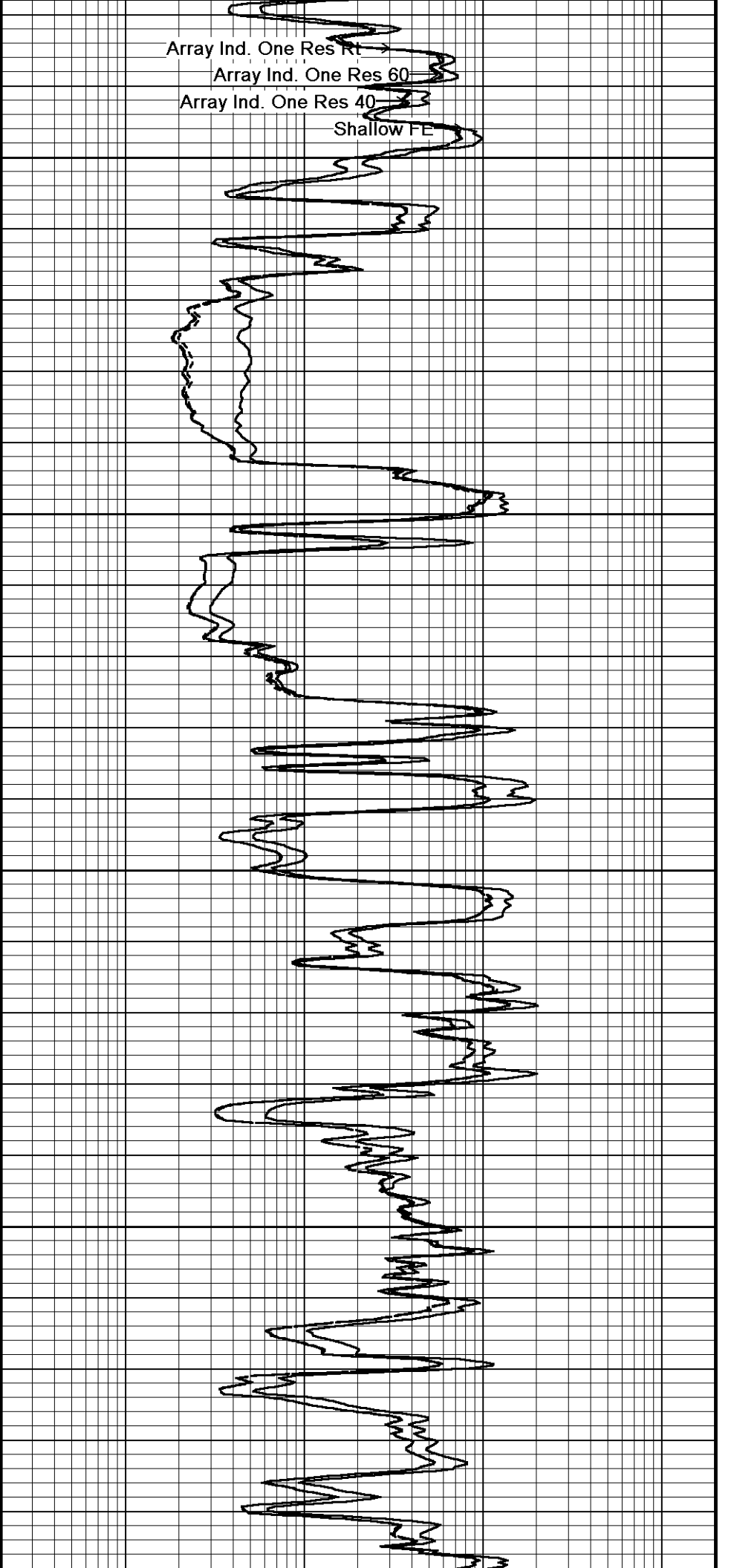
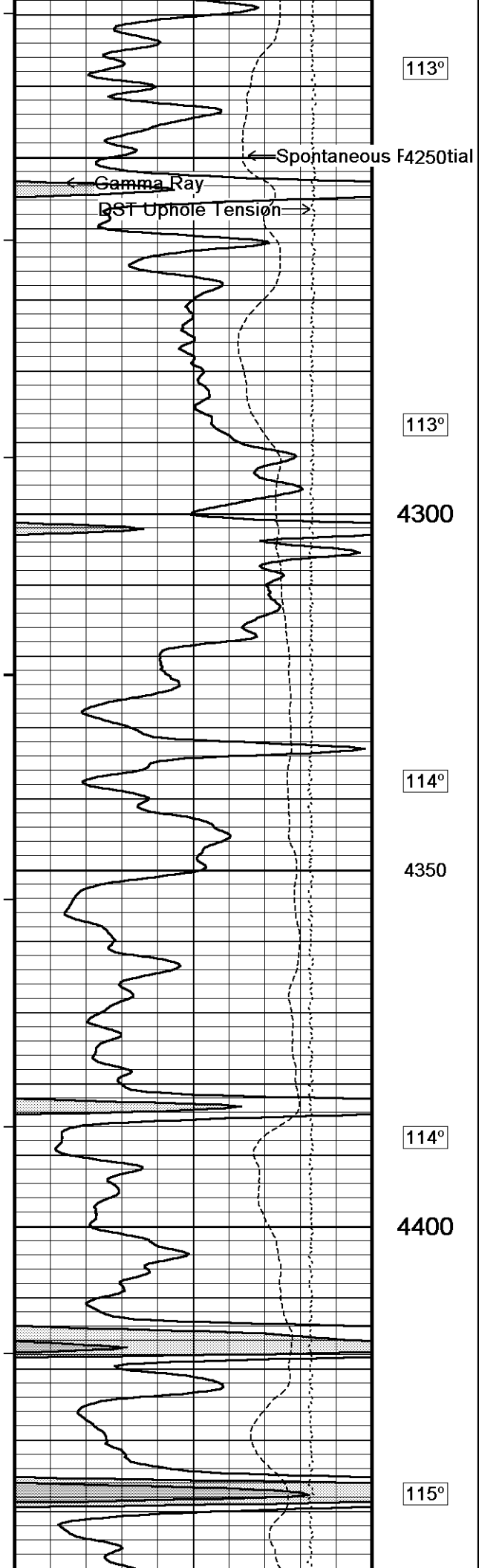
112°

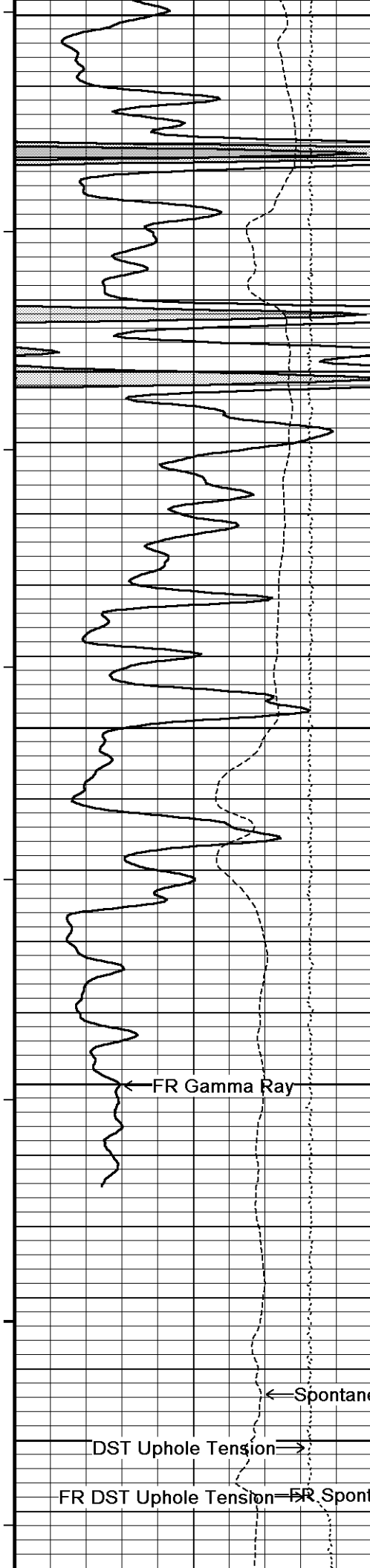
4150

113°

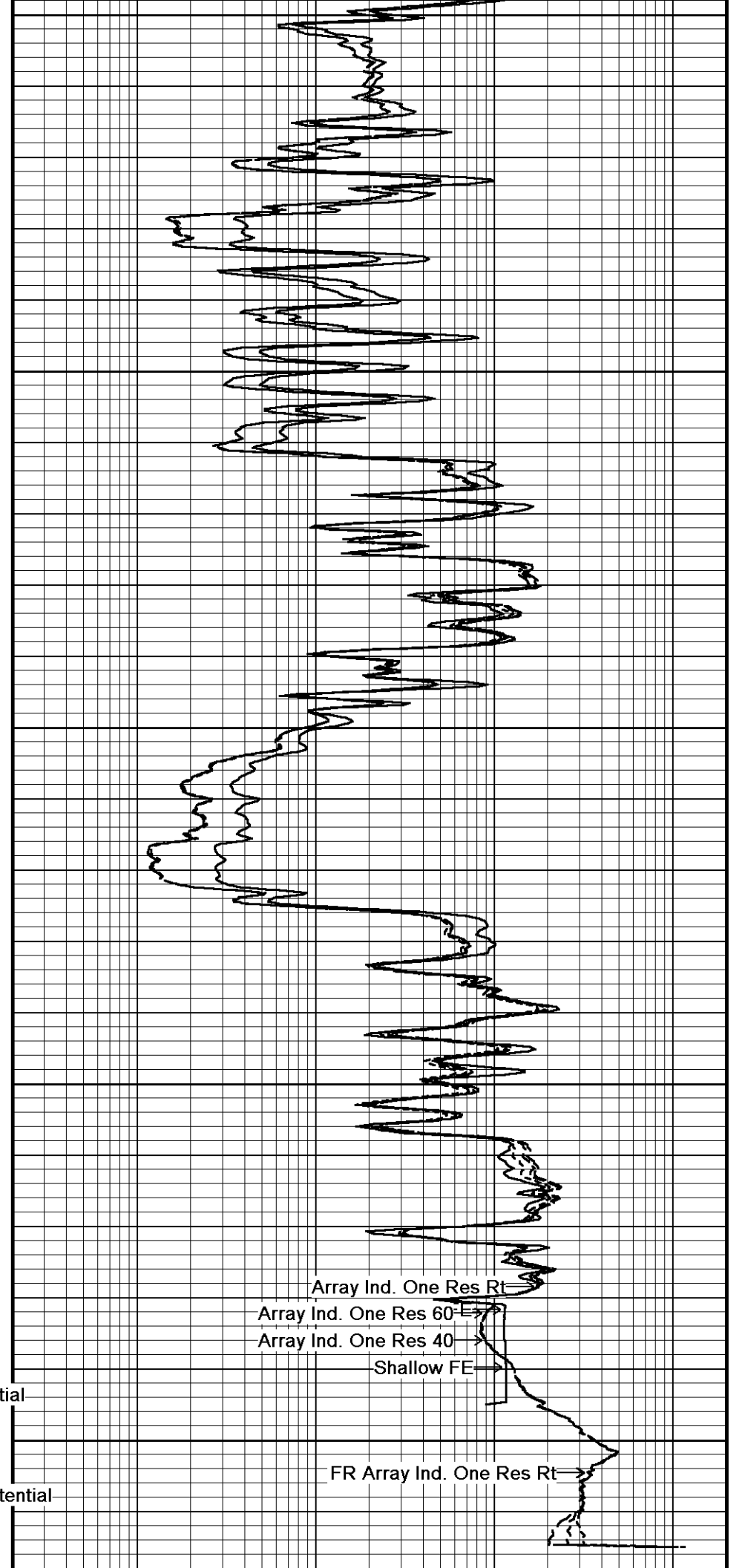
4200



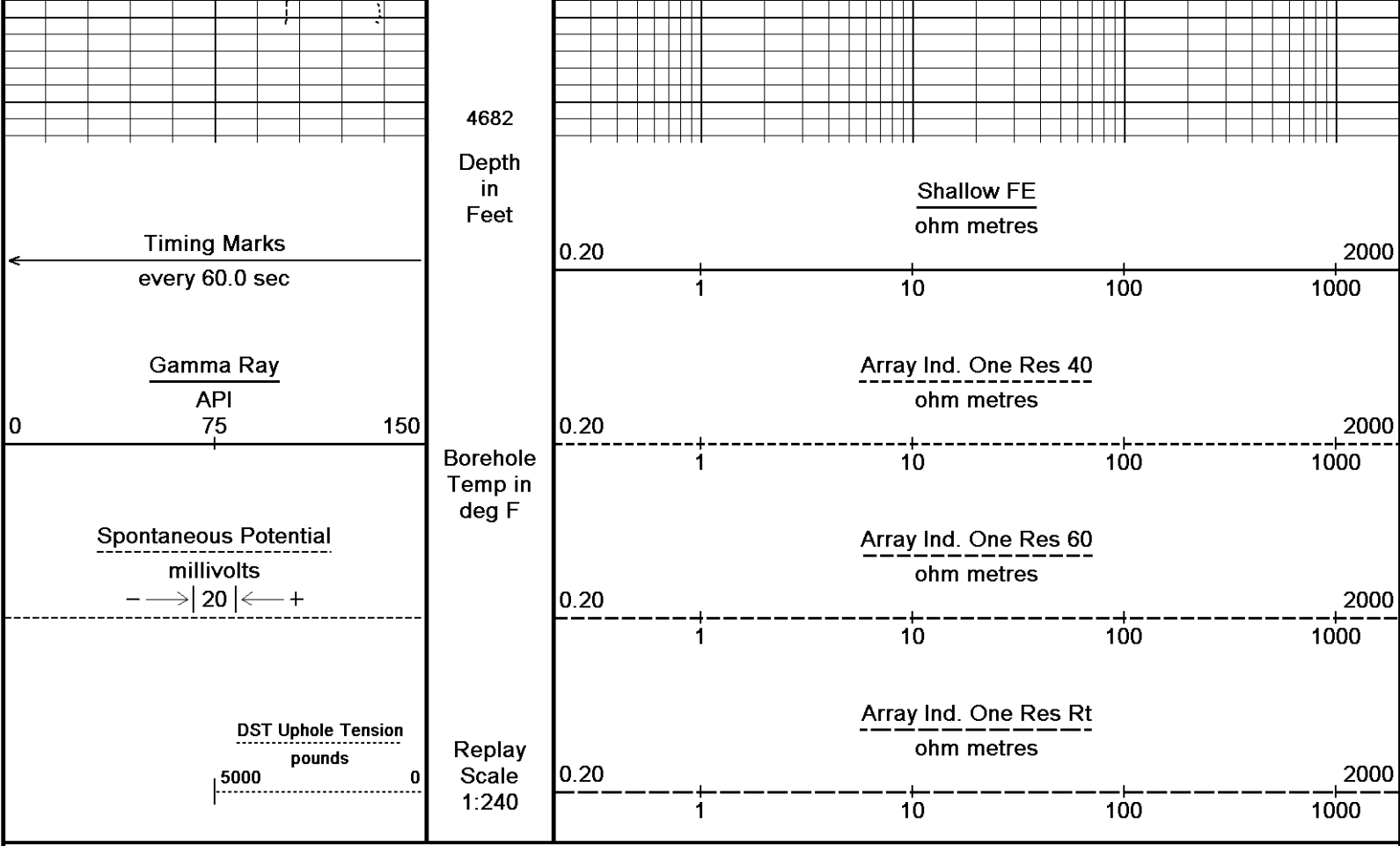




4450  
115°  
4500  
116°  
4550  
115°  
4600  
4650



Array Ind. One Res Rt  
Array Ind. One Res 60  
Array Ind. One Res 40  
Shallow FE  
FR Array Ind. One Res Rt

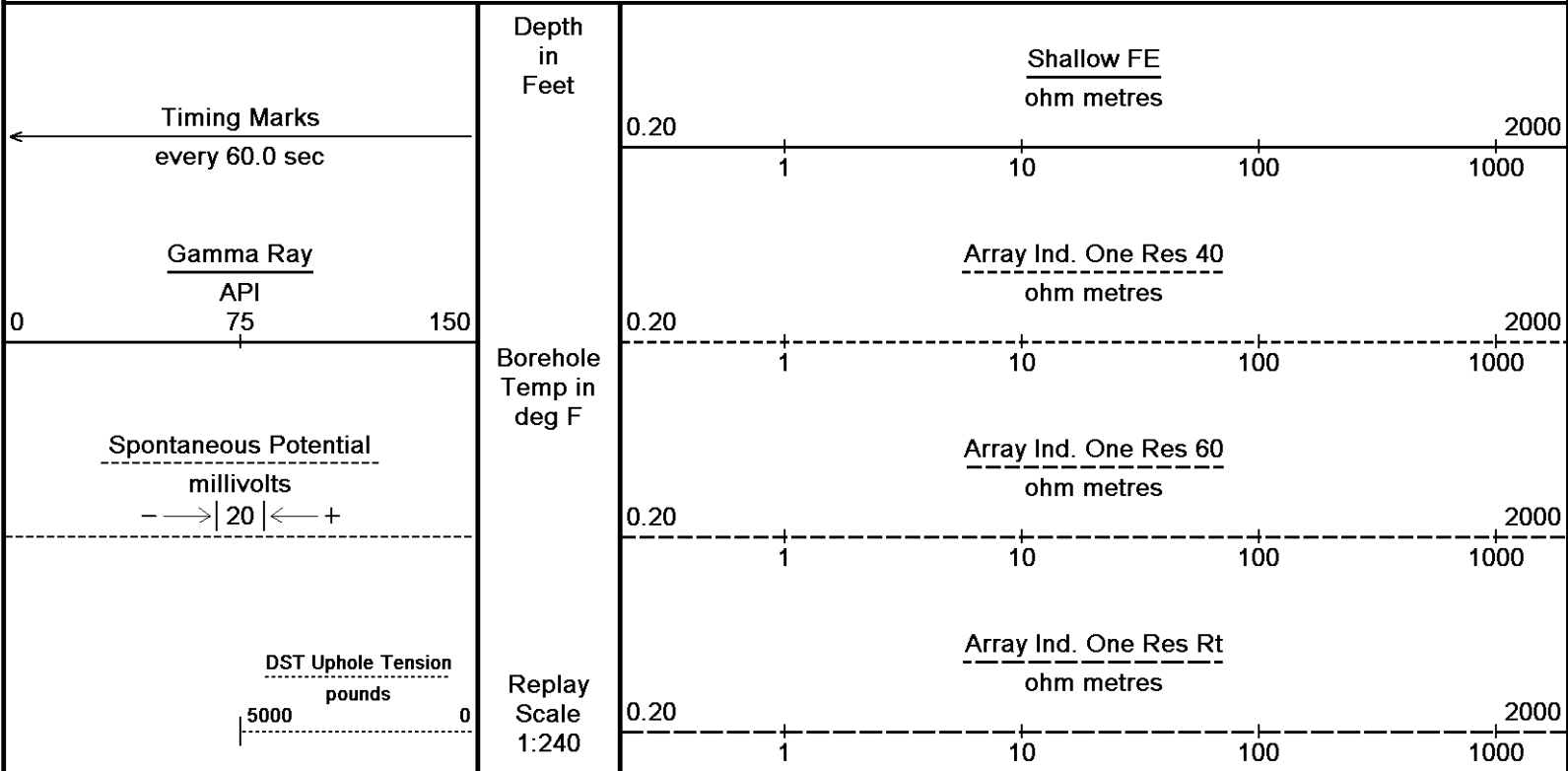


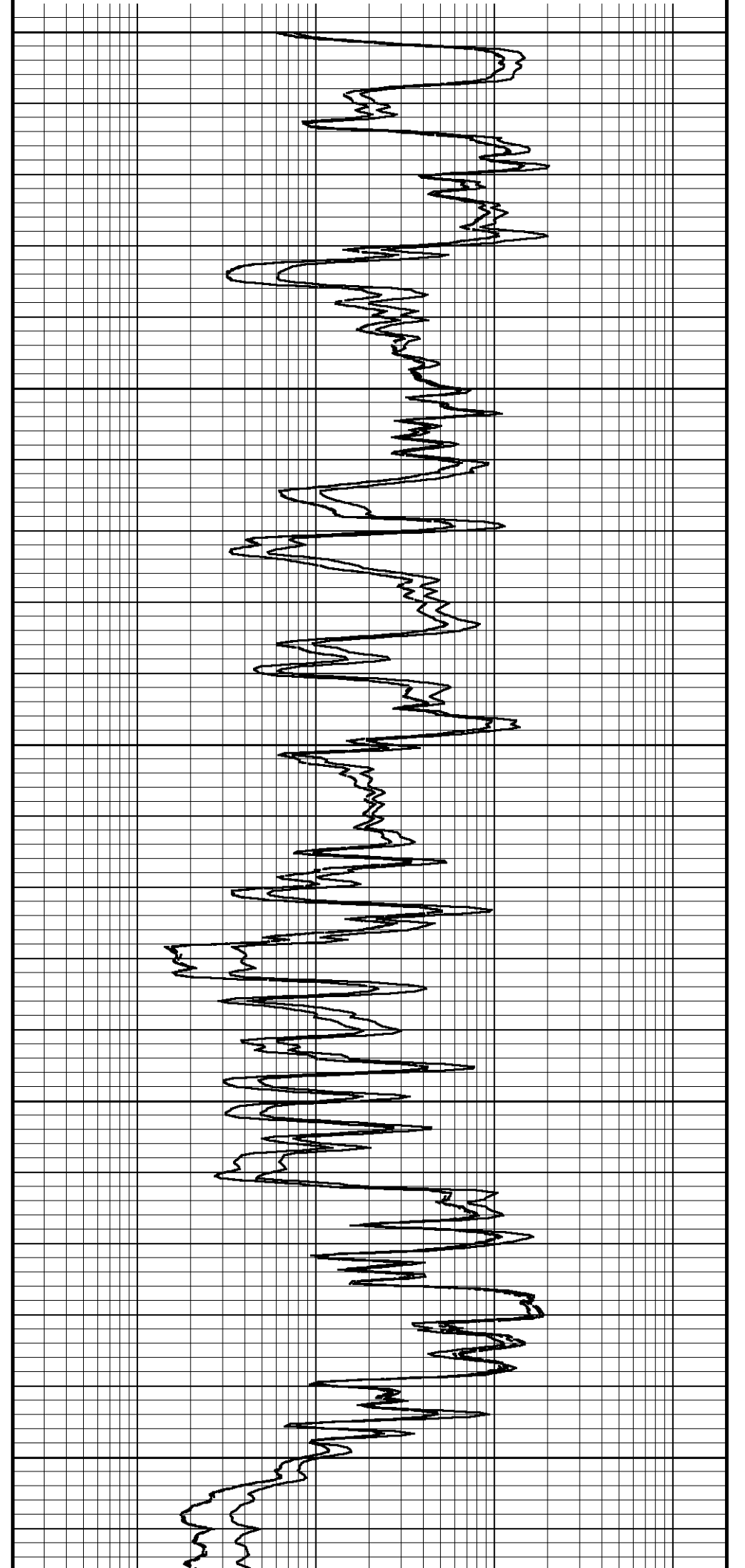
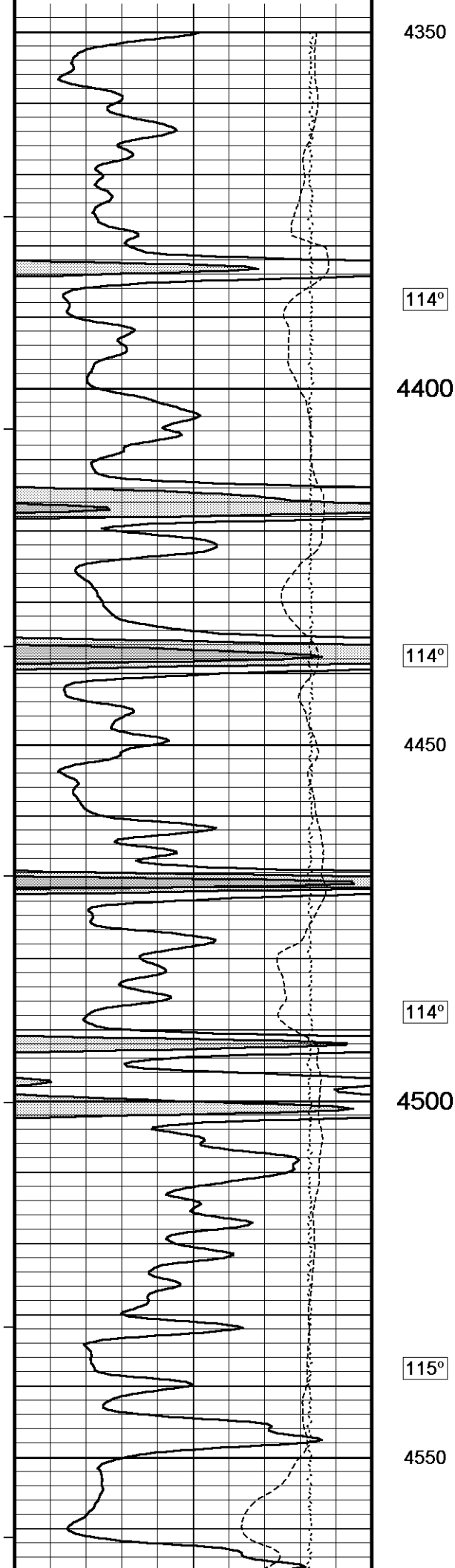
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 29-JUN-2011 21:07  
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_002.dta Recorded on 29-JUN-2011 18:40  
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

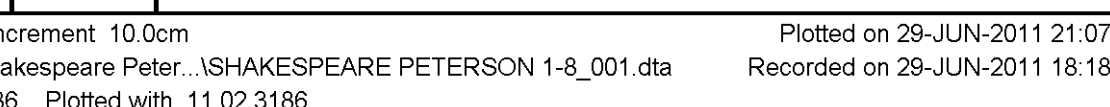
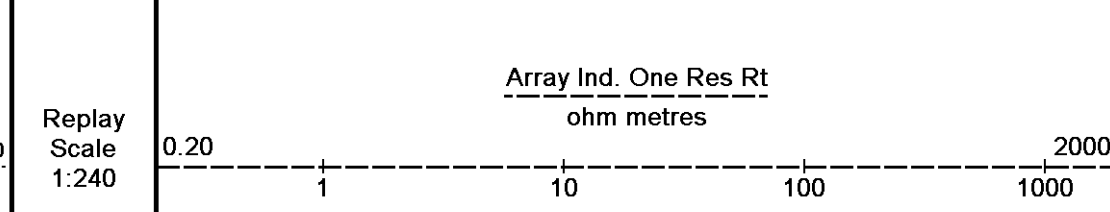
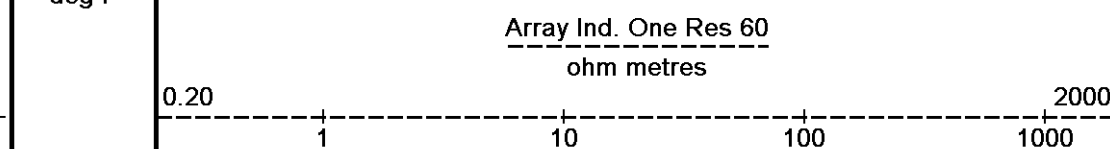
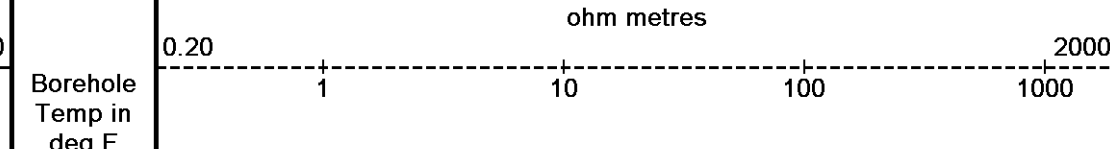
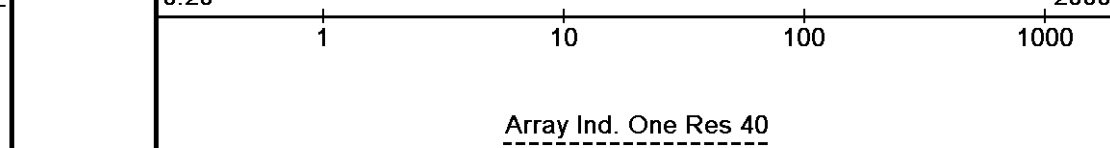
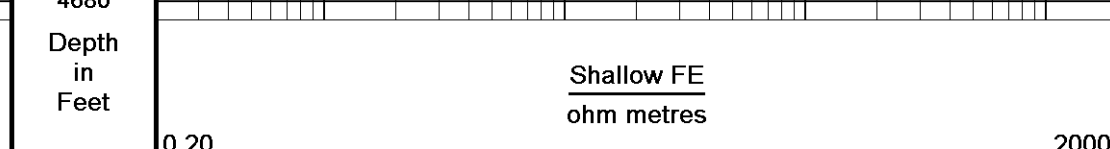
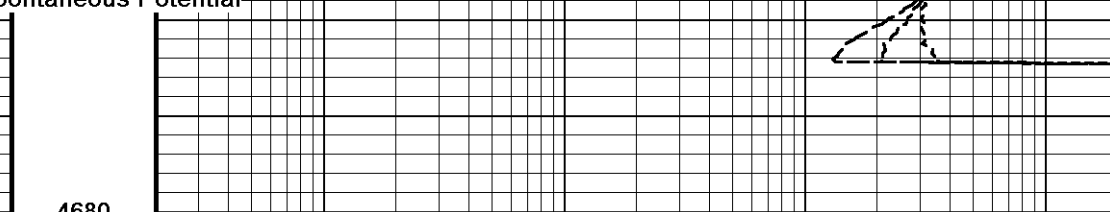
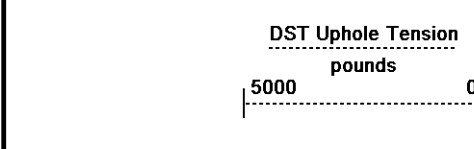
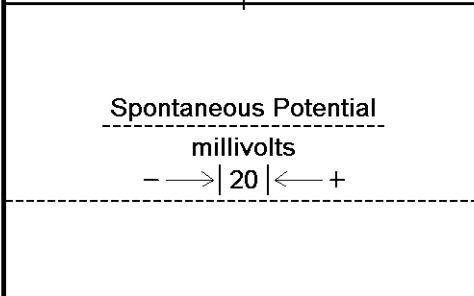
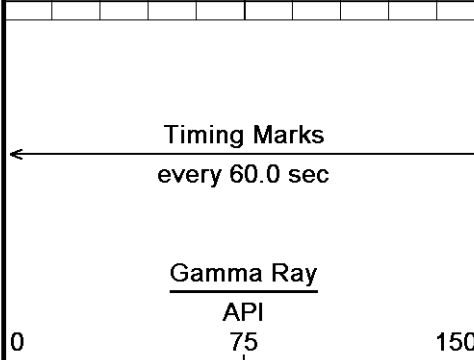
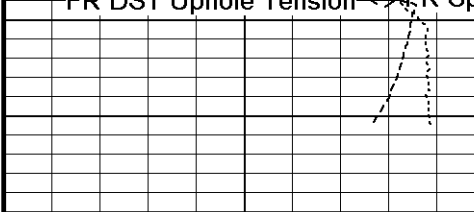
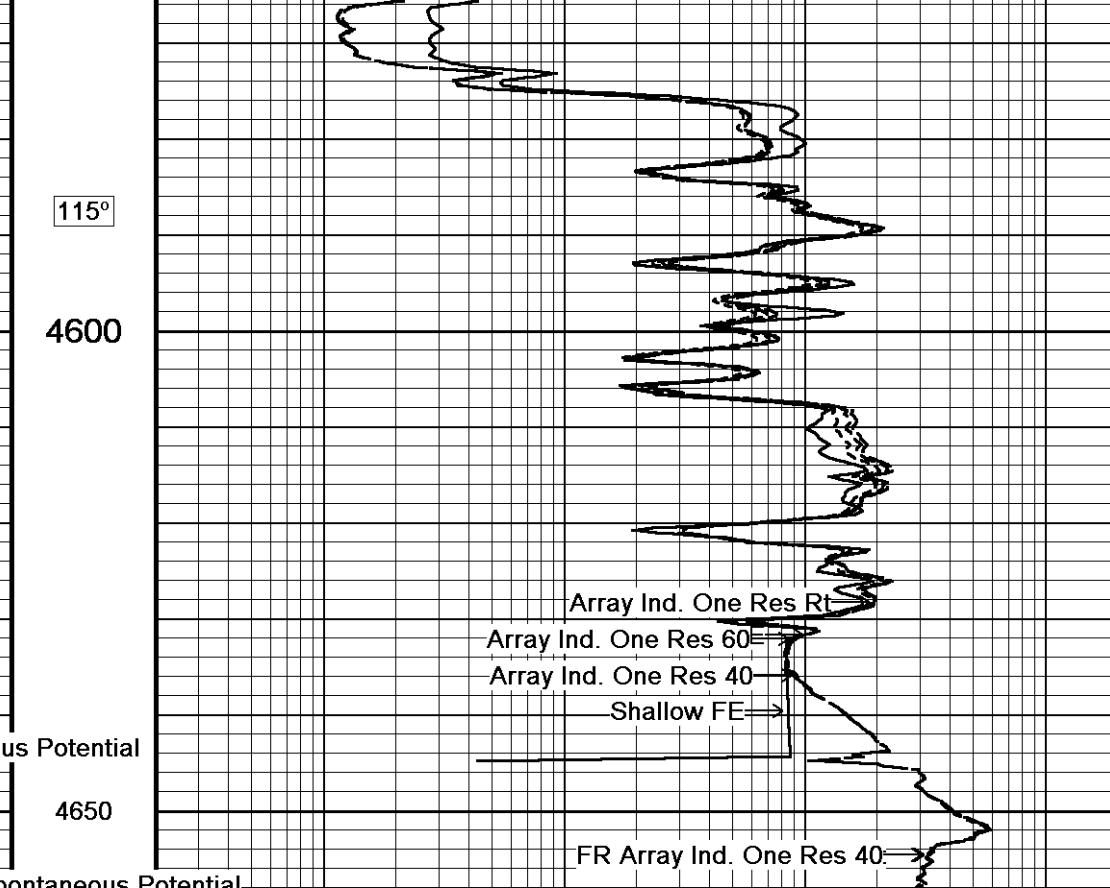
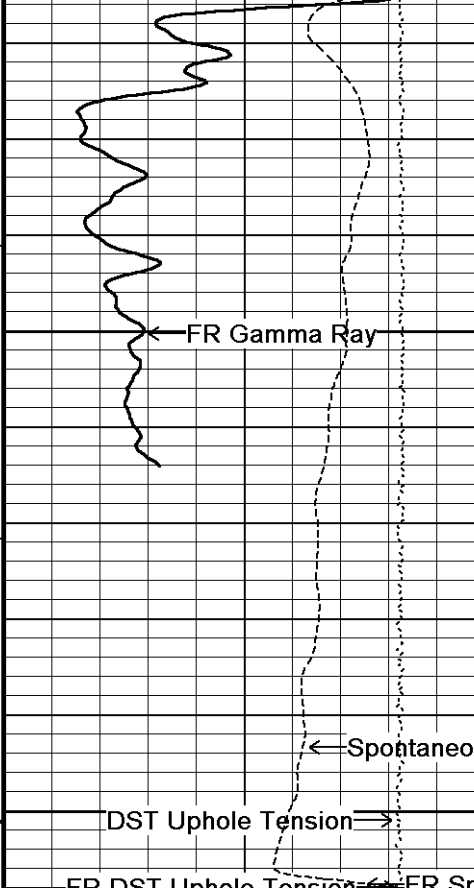
↑ 5 INCH MAIN PASS ↑

↓ 5 INCH REPEAT PASS ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 29-JUN-2011 21:07  
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_001.dta Recorded on 29-JUN-2011 18:18  
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186







Depth Based Data - Maximum Sampling Increment 10.0cm  
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8\_001.dta  
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186  
 Plotted on 29-JUN-2011 21:07  
 Recorded on 29-JUN-2011 18:18

# BEFORE SURVEY CALIBRATION

C:\Minimus 11.02.3186\Data\Shakespeare Peterson #1-8\SHAKESPEARE PETERSON 1-8.dta

## General Constants All 000

Last Edited on 29-JUN-2011,16:55

### General Parameters

Mud Resistivity	0.450	ohm-metres
Mud Resistivity Temperature	94.000	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	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

## 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 28-JUN-2011 14:29

	Measured	Calibrated (API)
Background	64	44
Calibrator (Gross)	1113	769
Calibrator (Net)	1049	725

## Gamma Constants MCG-B 34

Last Edited on 29-JUN-2011,16:56

Gamma Calibrator Number	grc38	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Bit Size	
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
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## Caliper Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:38

Field Calibration on 28-JUN-2011 14:15

### 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

Field Calibration	Measured Caliper (in) 6.04	Actual Caliper (in) 5.98
-------------------	-------------------------------	-----------------------------

Micro Normal and Micro Inverse Calibration MML-A 4		Base Calibration on 16-MAY-2011 09:23 Field Check on 28-JUN-2011 14:07
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 28-JUN-2011,14:06
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 28-JUN-2011 14:23
Base Calibration		
		Measured                      Calibrated (cps)
	Near        Far	Near        Far
Ratio	3166        99	3714        110
	31.935	33.764
Field Calibrator at Base		Calibrated (cps)
Ratio		1629        2336
		0.697
Field Check		Calibrated (cps)
Ratio		1621        2337
		0.693

Neutron Constants MDN-A.B 65		Last Edited on 29-JUN-2011,16:56
Neutron Source Id	757	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.13	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 28-JUN-2011 14:43
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 29-JUN-2011,16:57
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 29-JUN-2011,16:56

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

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

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

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A	
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	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
Sonic 2 Despiker	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

Pre-filter Length 11

## Induction Calibration MAI-A.A 45

Base Calibration on 13-AUG-2010,13:32  
Field Check on 28-JUN-2011 14:42

## Base Calibration

## Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	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	19.6	3845.9
2	0.0	0.0	33.2	3632.1
3	0.0	0.0	30.1	3050.7
4	0.0	0.0	20.5	2094.1
Deep	0.0	0.0	18.1	1920.8
Medium	0.0	0.0	43.4	4051.4
Shallow	0.0	0.0	50.4	5476.2

Array Temperature 0.0 84.8 Deg F

## Induction Constants MAI-A.A 45

Last Edited on 29-JUN-2011,16:56

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 16-MAY-2011 09:53  
Field Calibration on 28-JUN-2011 14:08

## Base Calibration

Reading No	Measured	Calibrator Size (in)
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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)
6.02	5.98

Photo Density Calibration MPD-B 65

Base Calibration on 16-MAY-2011 10:48  
Field Check on 28-JUN-2011 14:14

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
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Field Check

1248.2	1194.8
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PE Calibration

Base Calibration	WS	Measured		Calibrated
		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
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Field Check

226.0	1110.4
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Density Constants MPD-B 65

Last Edited on 29-JUN-2011,16:56

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	1.13 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	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Shakespeare Peterson #1-8\SHAKESPEARE PETERSON 1-8.dta

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

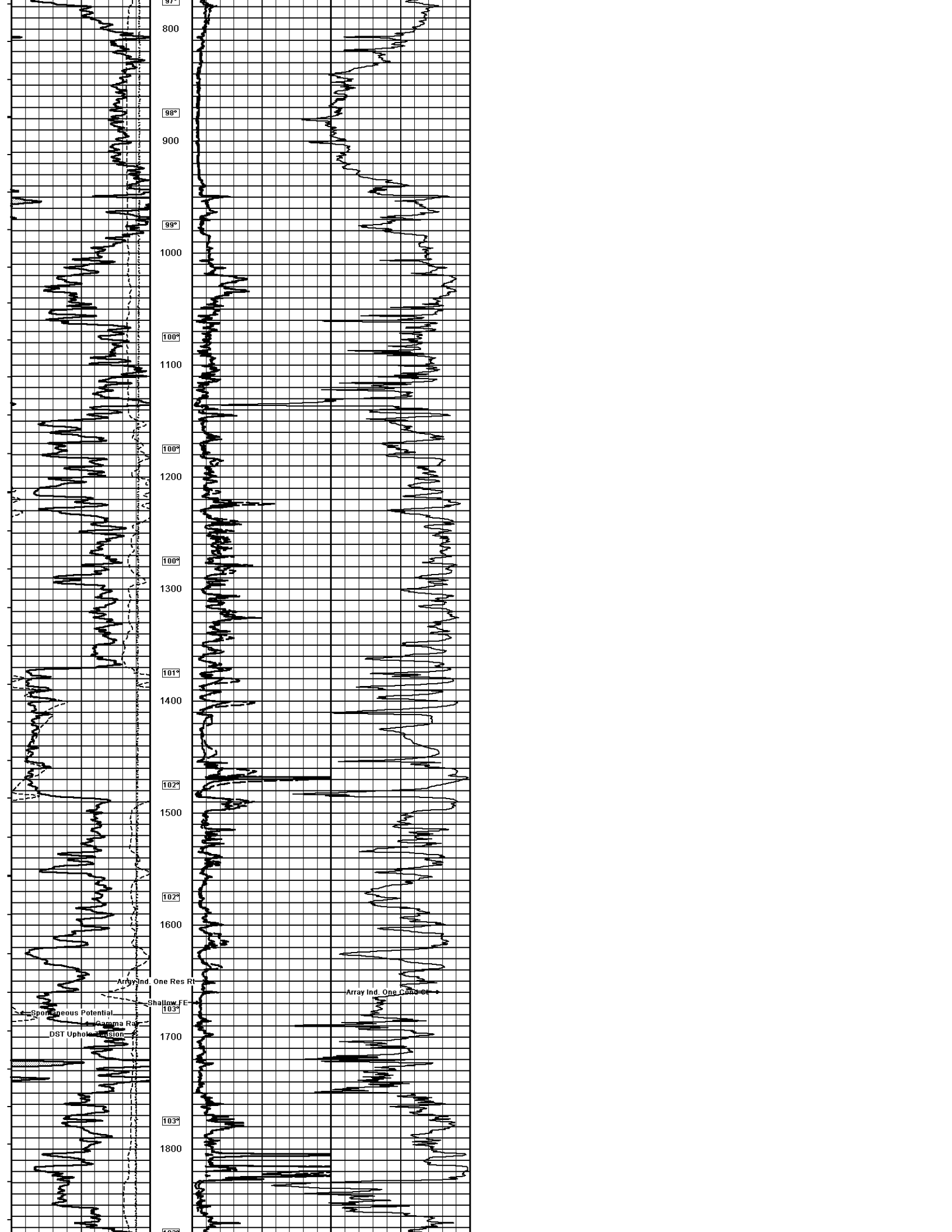


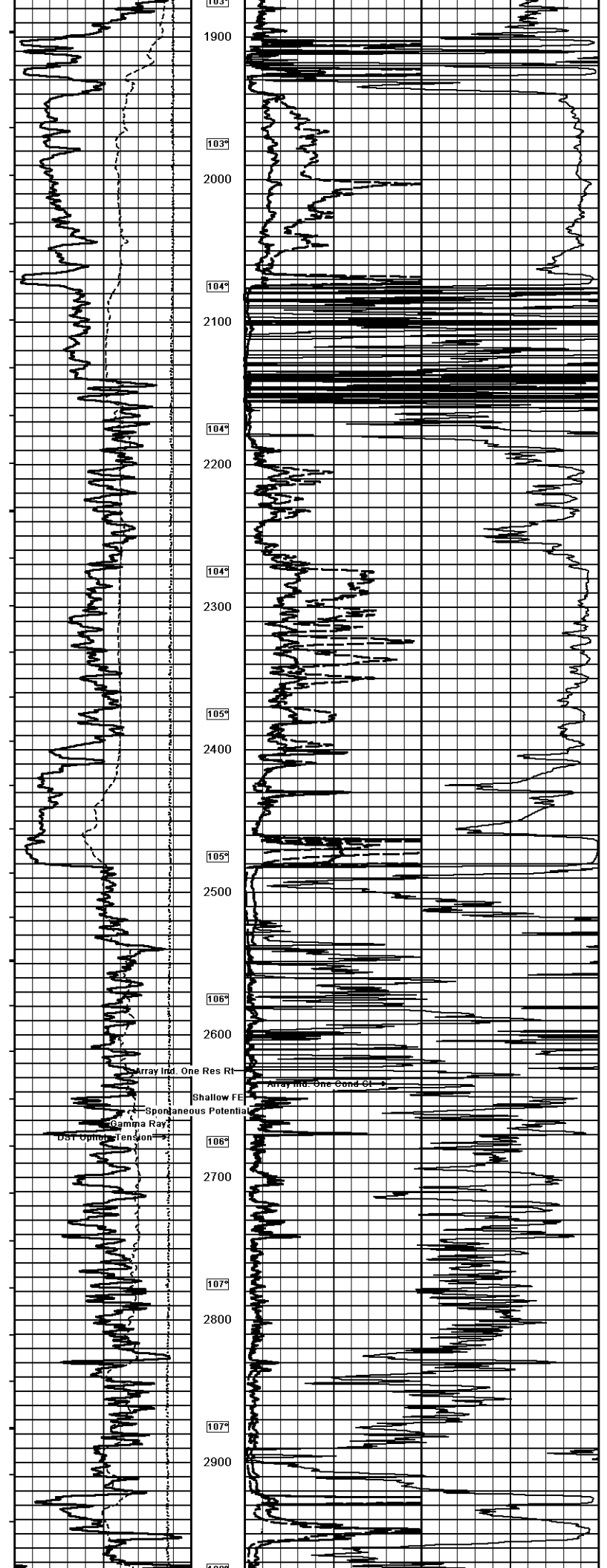
57.56 ft  
54.65 ft

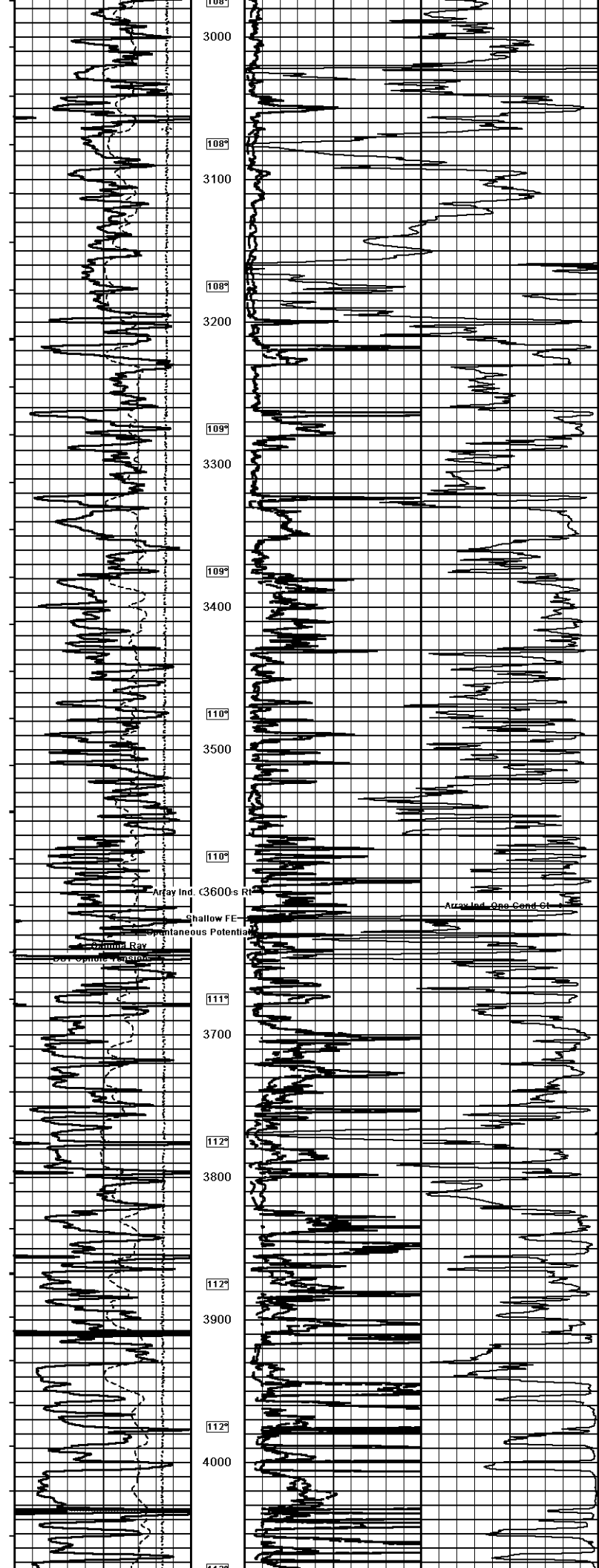
GRGC - Gamma Ray  
CGXT - MCG External Temperature

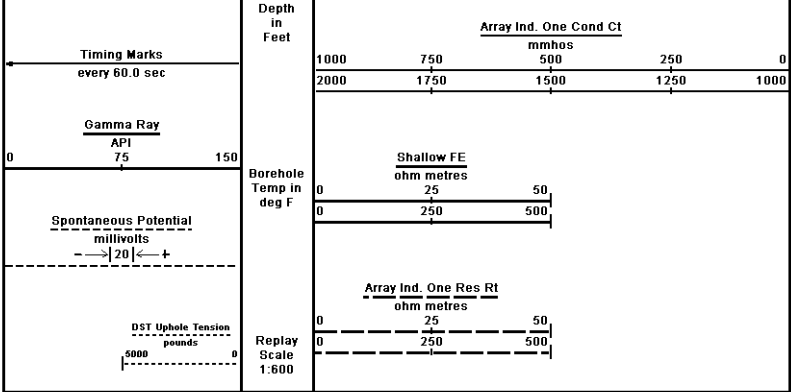
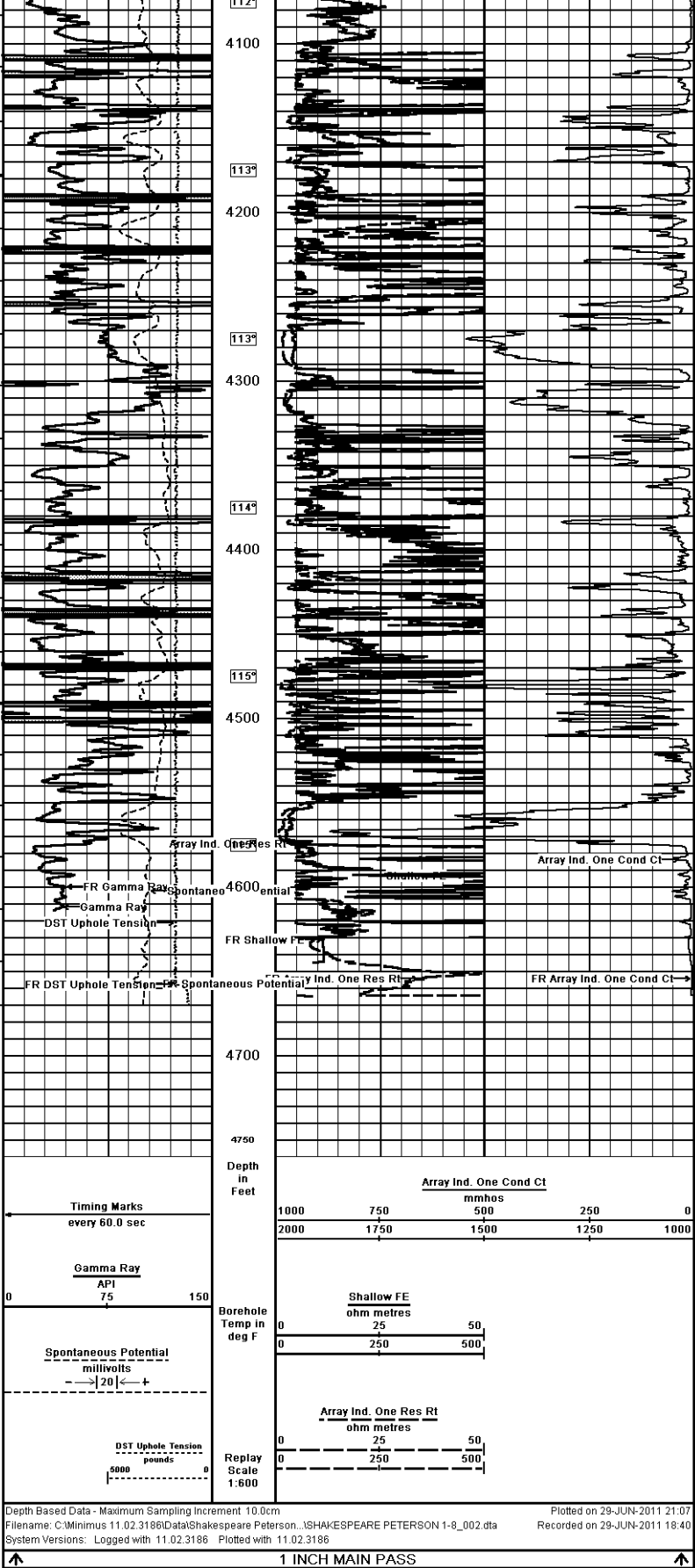












Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 29-JUN-2011 21:07  
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peterson...SHAKESPEARE PETERSON 1-8\_002.dta  
 Recorded on 29-JUN-2011 18:40  
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

COMPANY SHAKESPEARE OIL COMPANY, INC.  
 WELL PETERSON #1-8  
 FIELD STRATFORD WEST  
 PROVINCE/COUNTY LOGAN  
 COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2970.00	feet	First Reading	4655.00	feet
Elevation Drill Floor	2968.00	feet	Depth Driller	4660.00	feet
Elevation Ground Level	2965.00	feet	Depth Logger	4658.00	feet

**Weatherford** ARRAY INDUCTION  
 SHALLOW FOCUSED  
 ELECTRIC LOG

