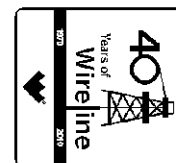


**Weatherford****ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG**

COMPANY SANDRIDGE ENERGY, INC.
WELL SUNNIE 1-16 SWD
FIELD WALDRON WEST
PROVINCE/COUNTY HARPER
COUNTRY/STATE U.S.A/ KANSAS
LOCATION 1312' FSL & 205' FEL



SEC	TWP	RGE	Other Services	
16	35N	6W	MPD/MDN/MML	
API Number	15-007-21779	CMI		
Permit Number				
Permanent Datum G.L., Elevation 1227 feet				
Log Measured From KB			Elevations:	feet
Drilling Measured From K.B.			KB	1239.00
			DF	1237.00
			GL	1227.00
Date	02-JAN-2012			
Run Number	ONE			
Depth Driller	5552.00	feet		
Depth Logger	5547.00	feet		
First Reading	5544.00	feet		
Last Reading	700.00	feet		
Casing Driller	715.00	feet		
Casing Logger	712.00	feet		
Bit Size	8.750	inches		
Hole Fluid Type	WBM			
Density / Viscosity	8.90 lb/USg	45.00 CP		
PH / Fluid Loss	10.00	6.50 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.65 @ 65.0	ohm-m		
Rmf @ Measured Temp	0.52 @ 65.0	ohm-m		
Rmc @ Measured Temp	0.78 @ 65.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.31 @138.0	ohm-m		
Time Since Circulation	8 HOURS			
Max Recorded Temp	138.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13226	OKC		
Recorded By	MIKE GARRISON			
Witnessed By	TAMMY ALCORN			
	3535020/DC11623			

BOREHOLE RECORD

Last Edited: 02-JAN-2012 22:53

Bit Size inches	Depth From feet	Depth To feet
8.750	716.00	5552.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	715.00	24.00

REMARKS

TOOLS RAN: SHA 45, MCG 431, MML 02, MDN 10, MPD 03, MFE 65, MAI 102 RAN IN COMBINATION

HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED.
MDN: DUAL NEUTRON BOW SPRINGS USED.
MPD: 8 INCH PROFILE PLATE USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

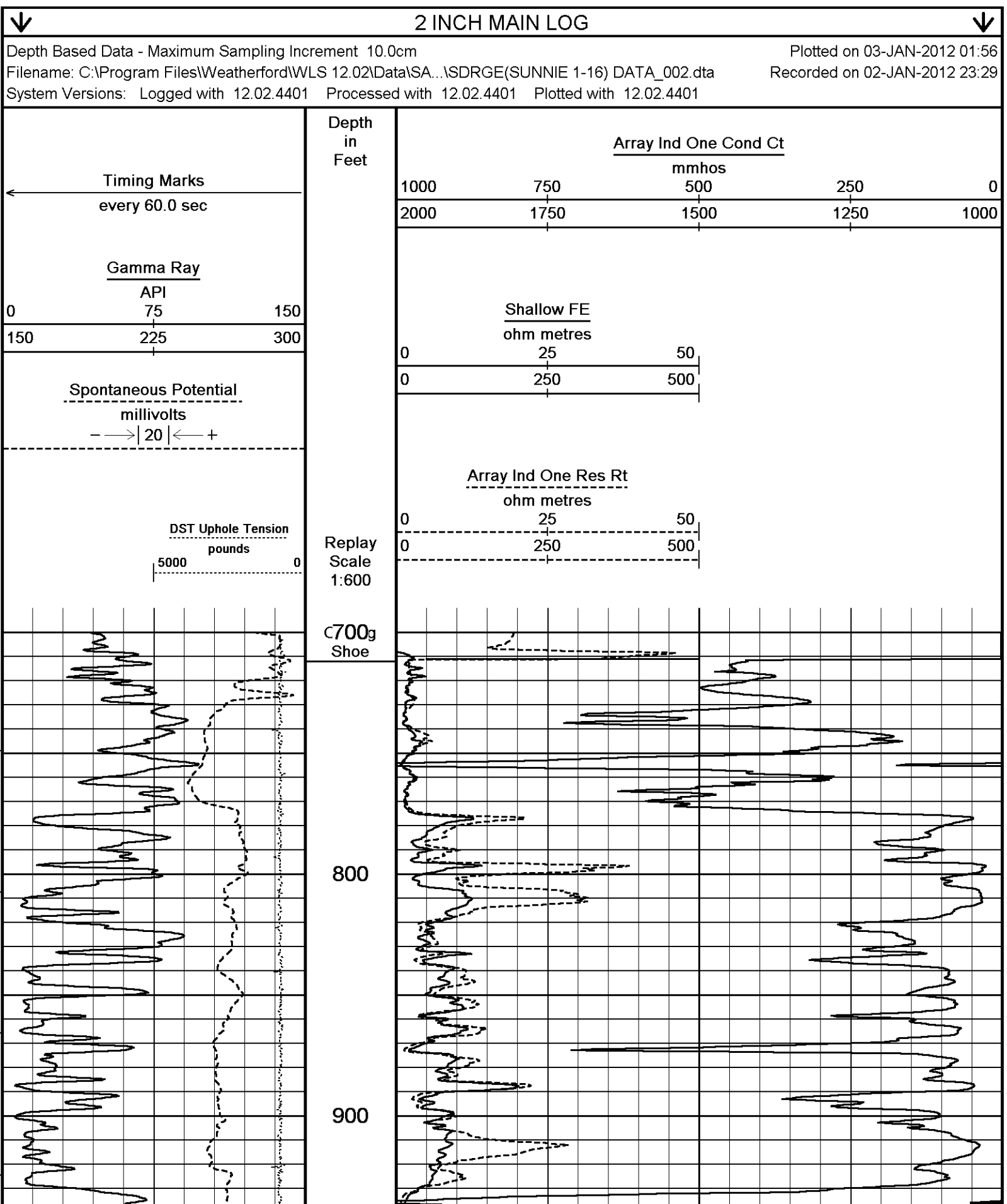
TOTAL HOLE VOLUME FROM TD TO 3100' = 1065CU.FT.
ANNULAR HOLE VOLUME WITH 7.0 INCH PRODUCTION CASING FROM TD TO 3100' = 410 CU.FT.

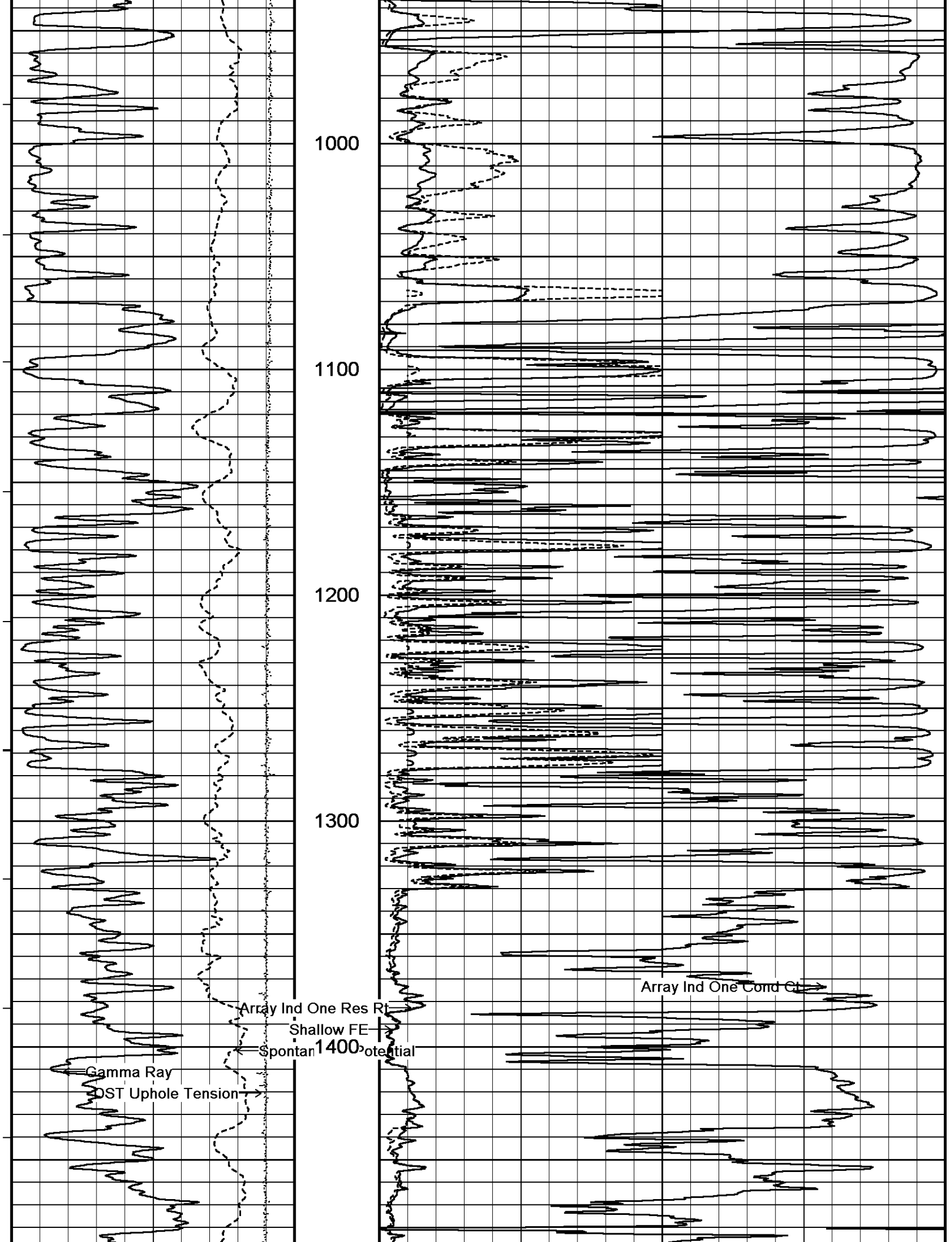
SERVICE ORDER: 3535020

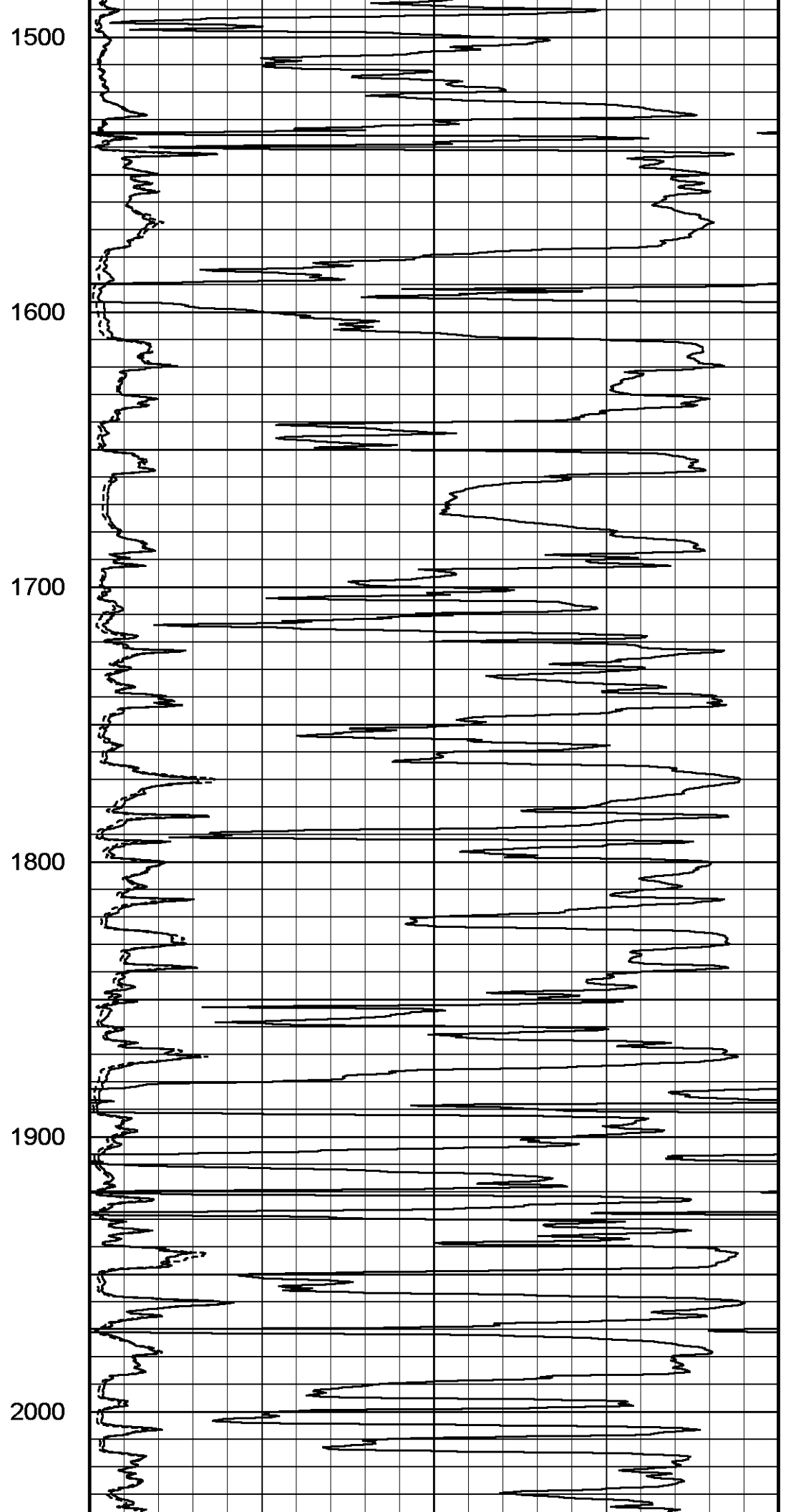
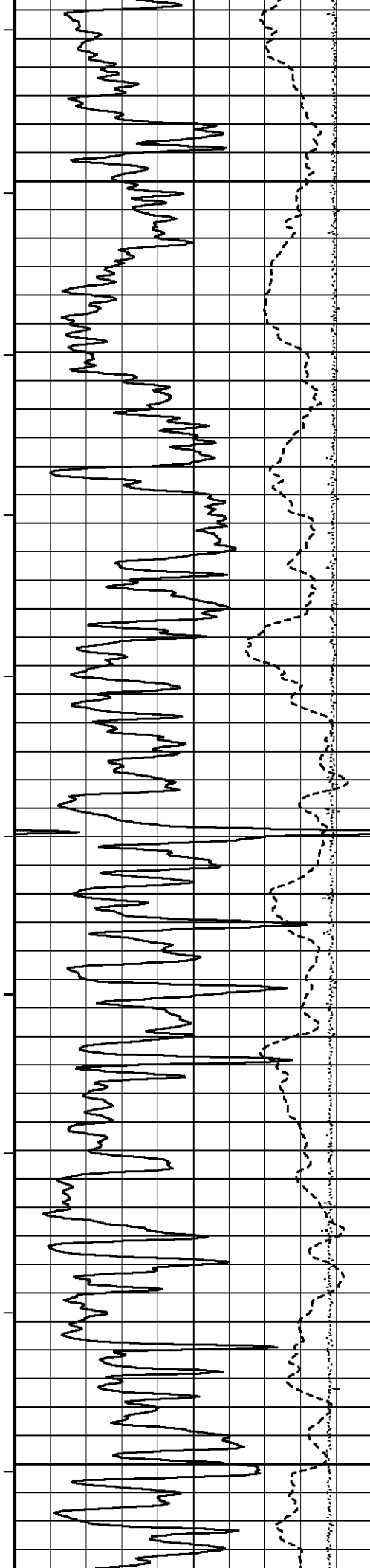
OPERATOR: JASON TURNER

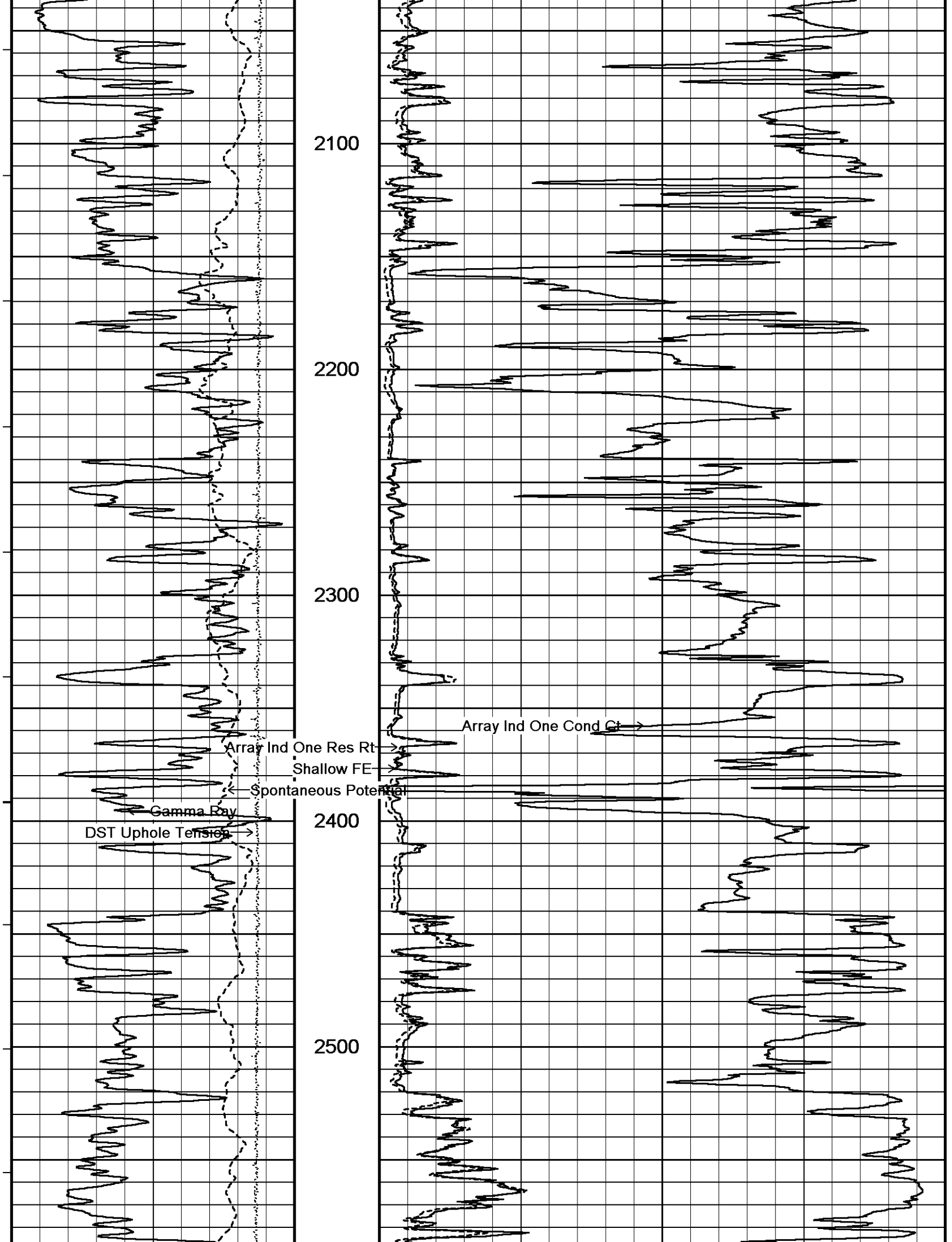
RIG: TOMCAT DRILLING#3

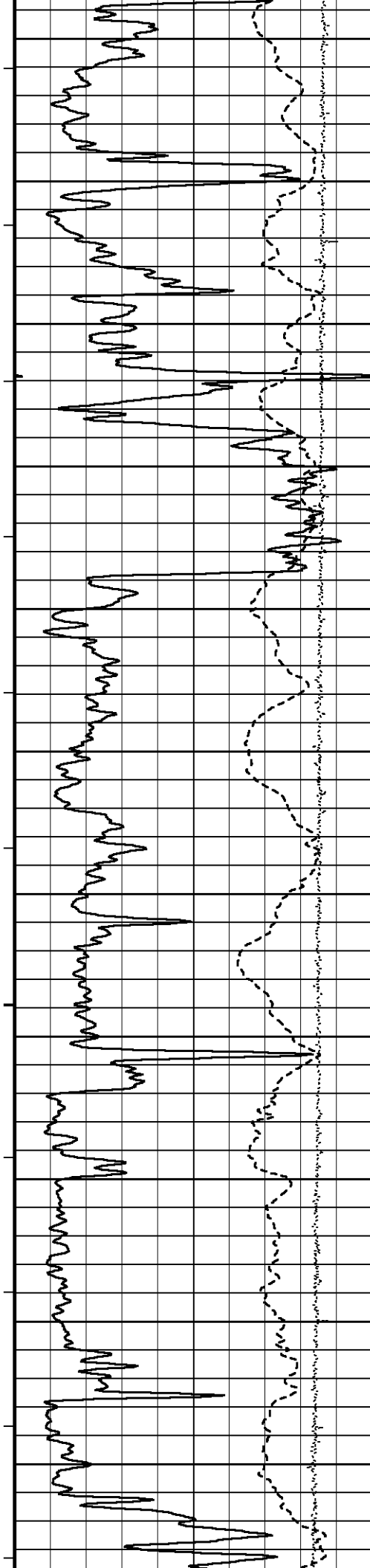
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.











2600

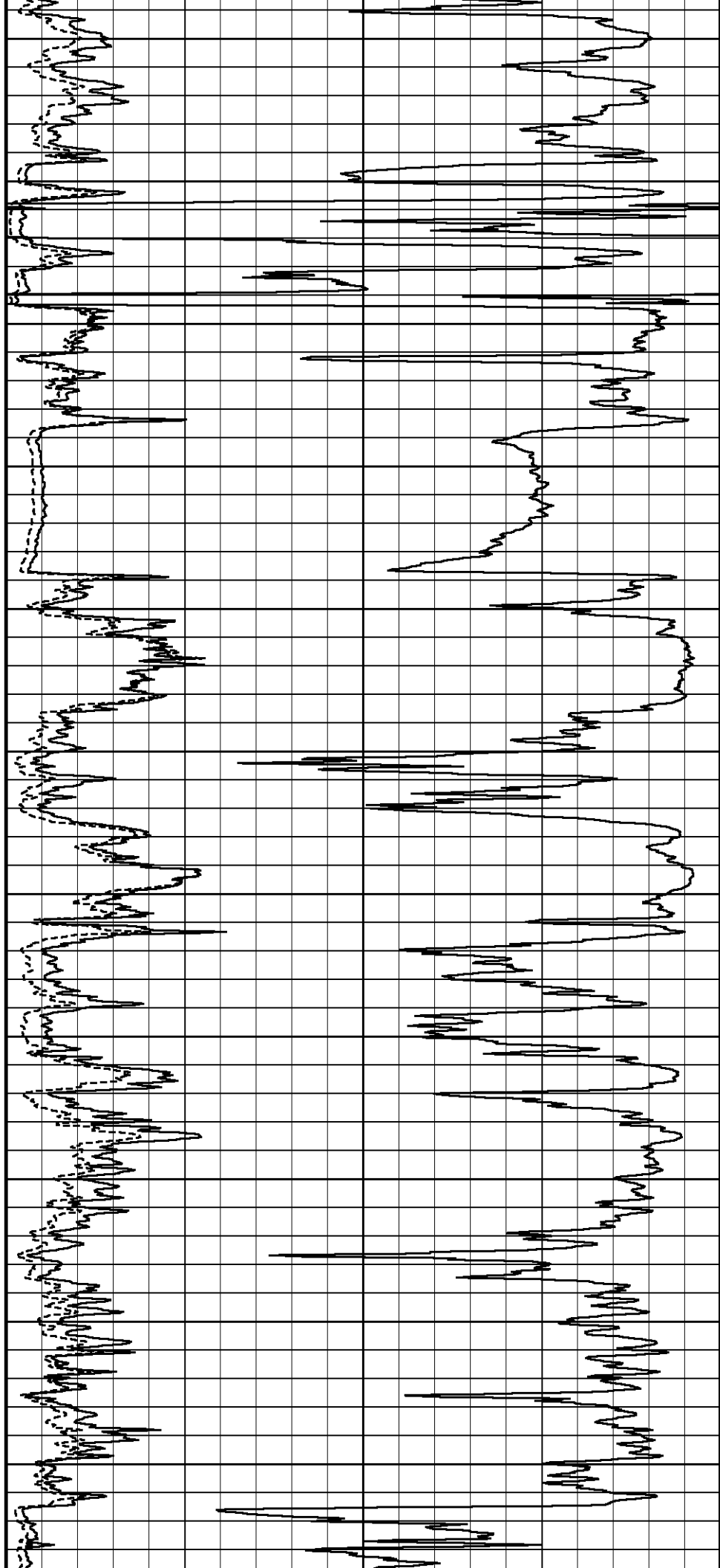
2700

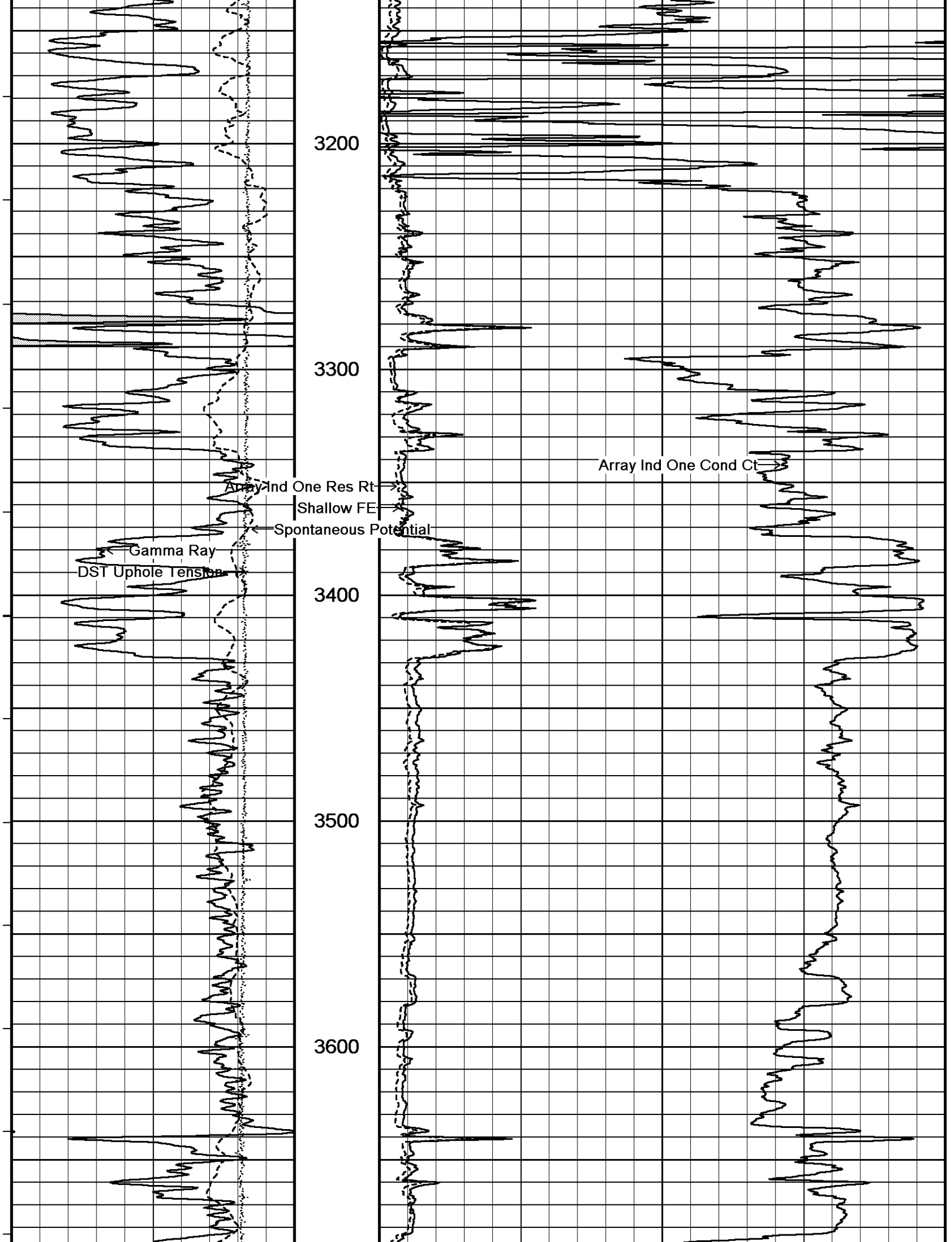
2800

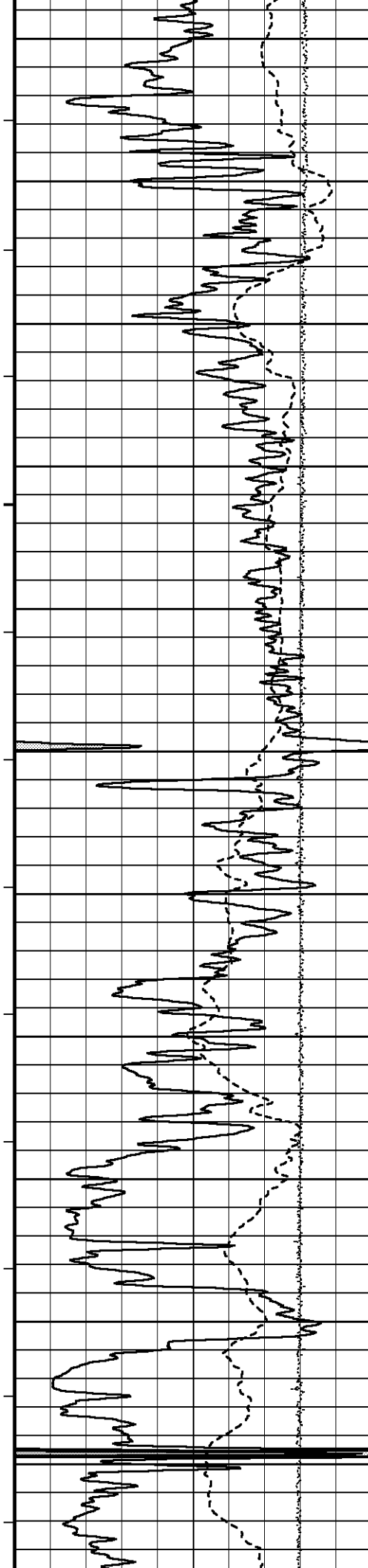
2900

3000

3100







3700

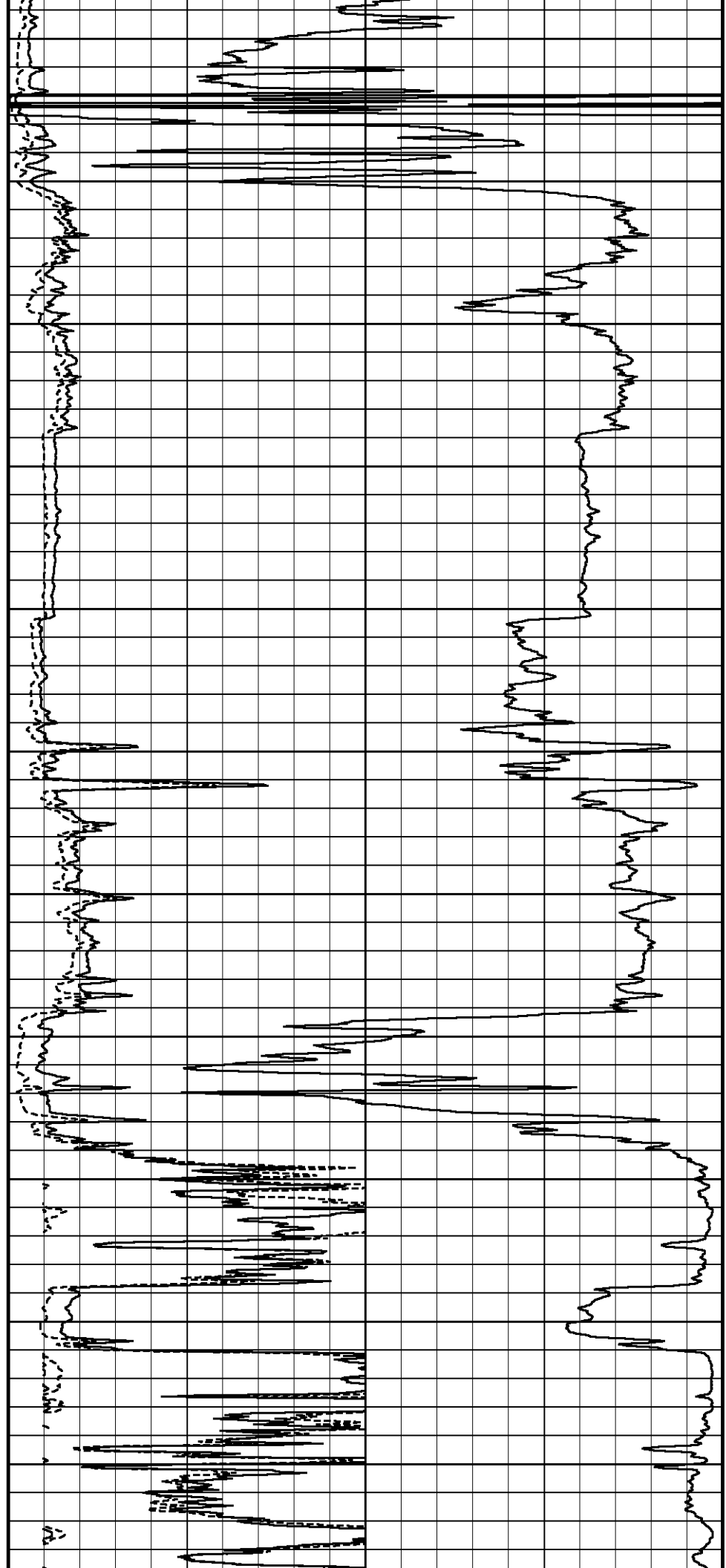
3800

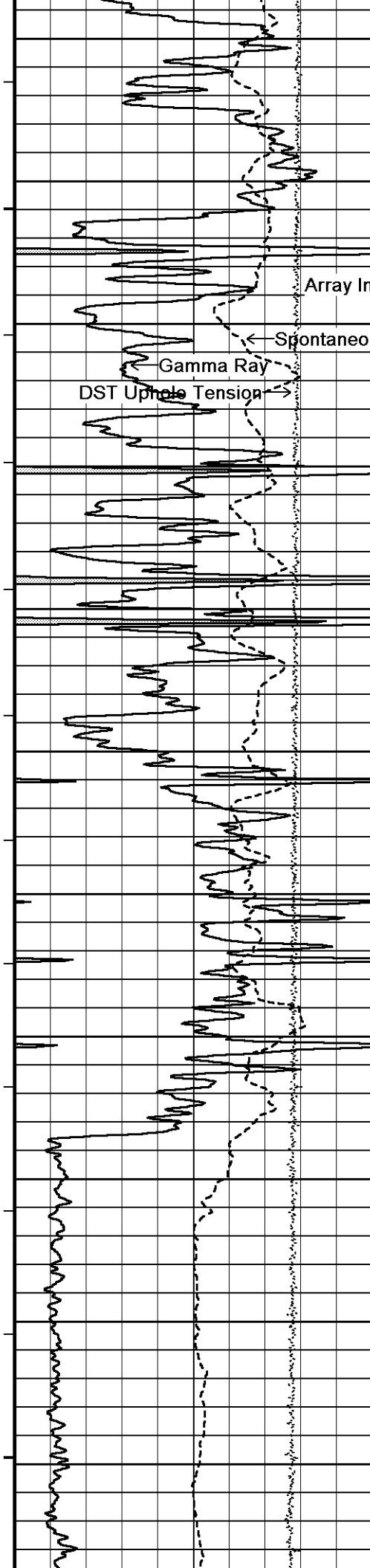
3900

4000

4100

4200





4300

Array Ind One Res Rt

← Spontaneous Potential

Gamma Ray

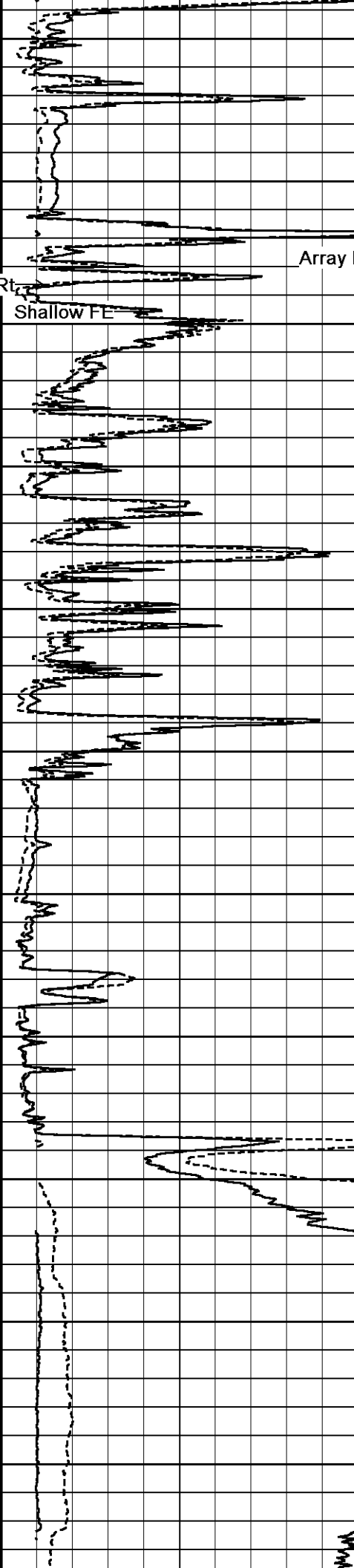
DST Uphole Tension →

4400

4500

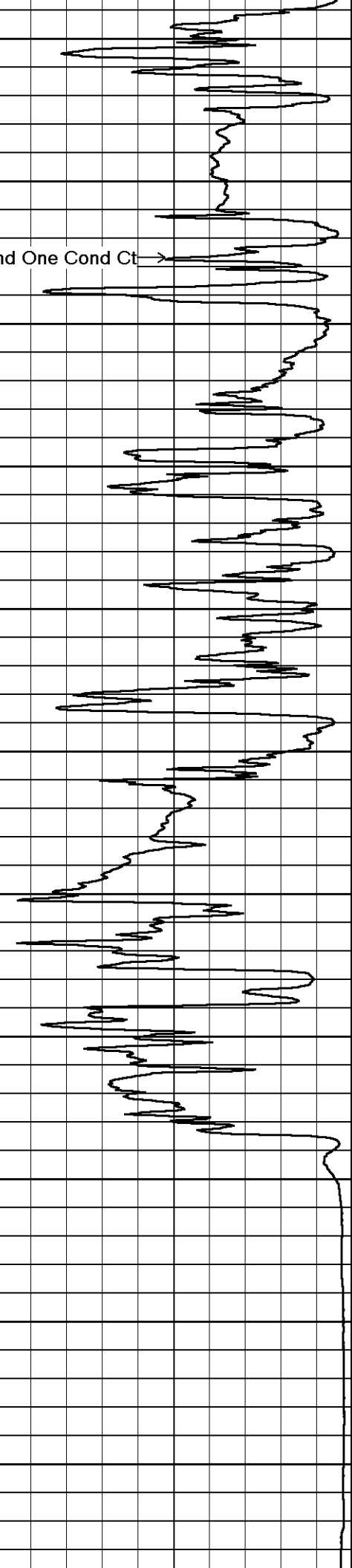
4600

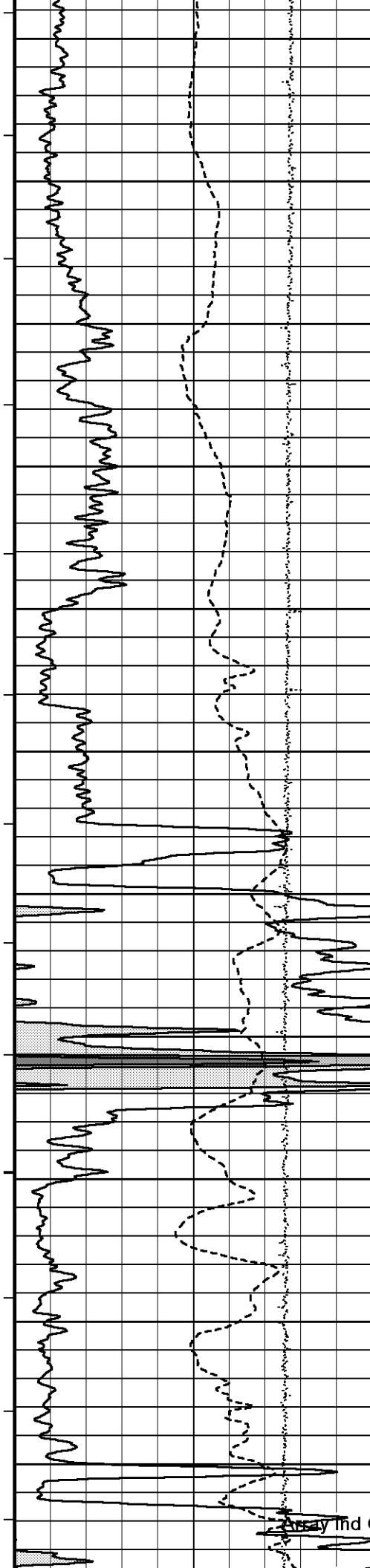
4700



Array Ind One Cond Ct →

Shallow FE





4800

4900

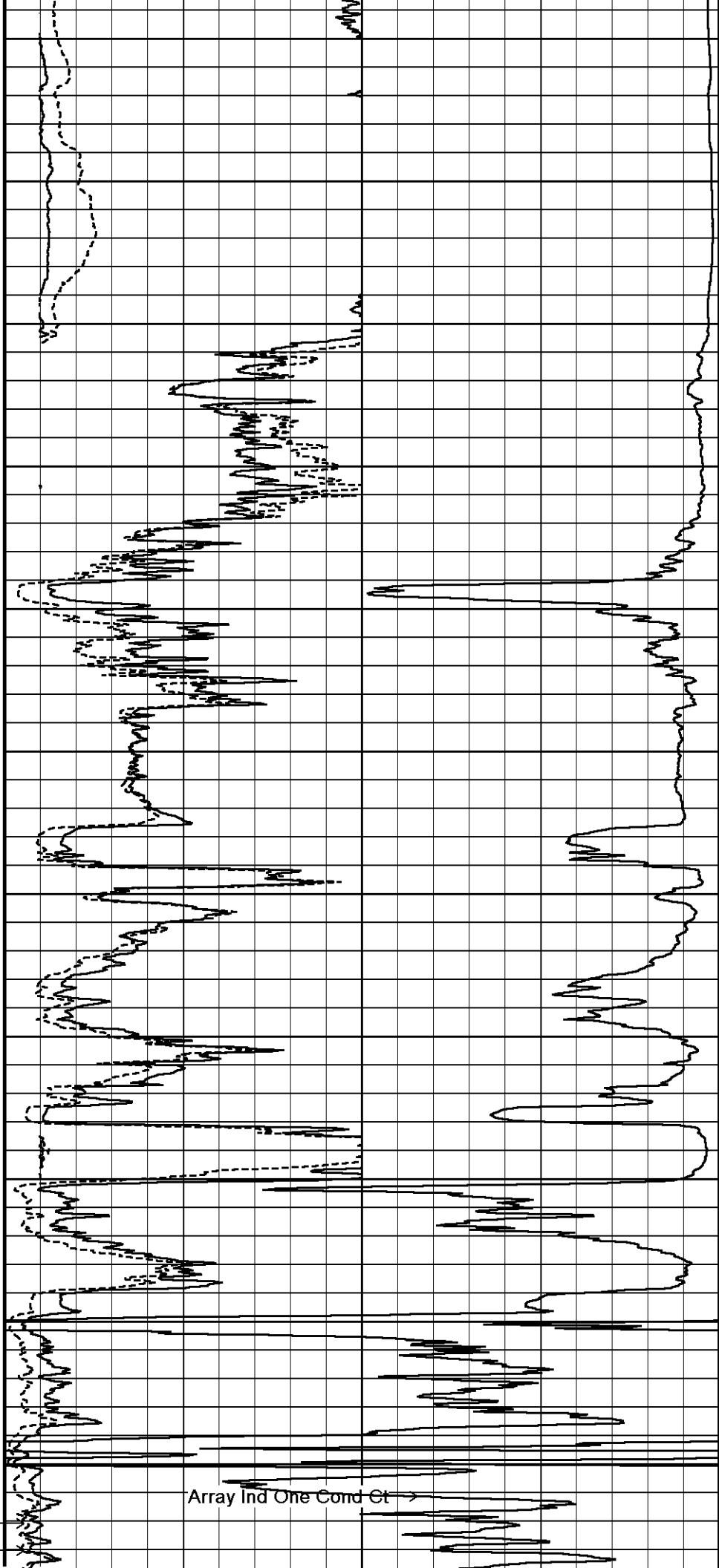
5000

5100

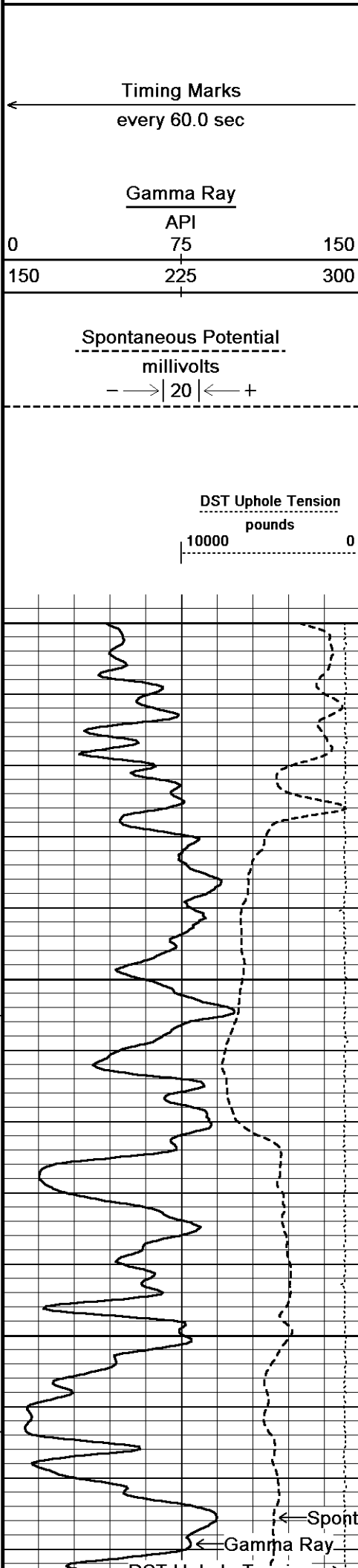
5200

5300

Array Ind One Res Rt
Shallow FE



Array Ind One Cond Ct →



Depth
in
Feet

Borehole
Temp in
deg F

Replay
Scale
1:240

700

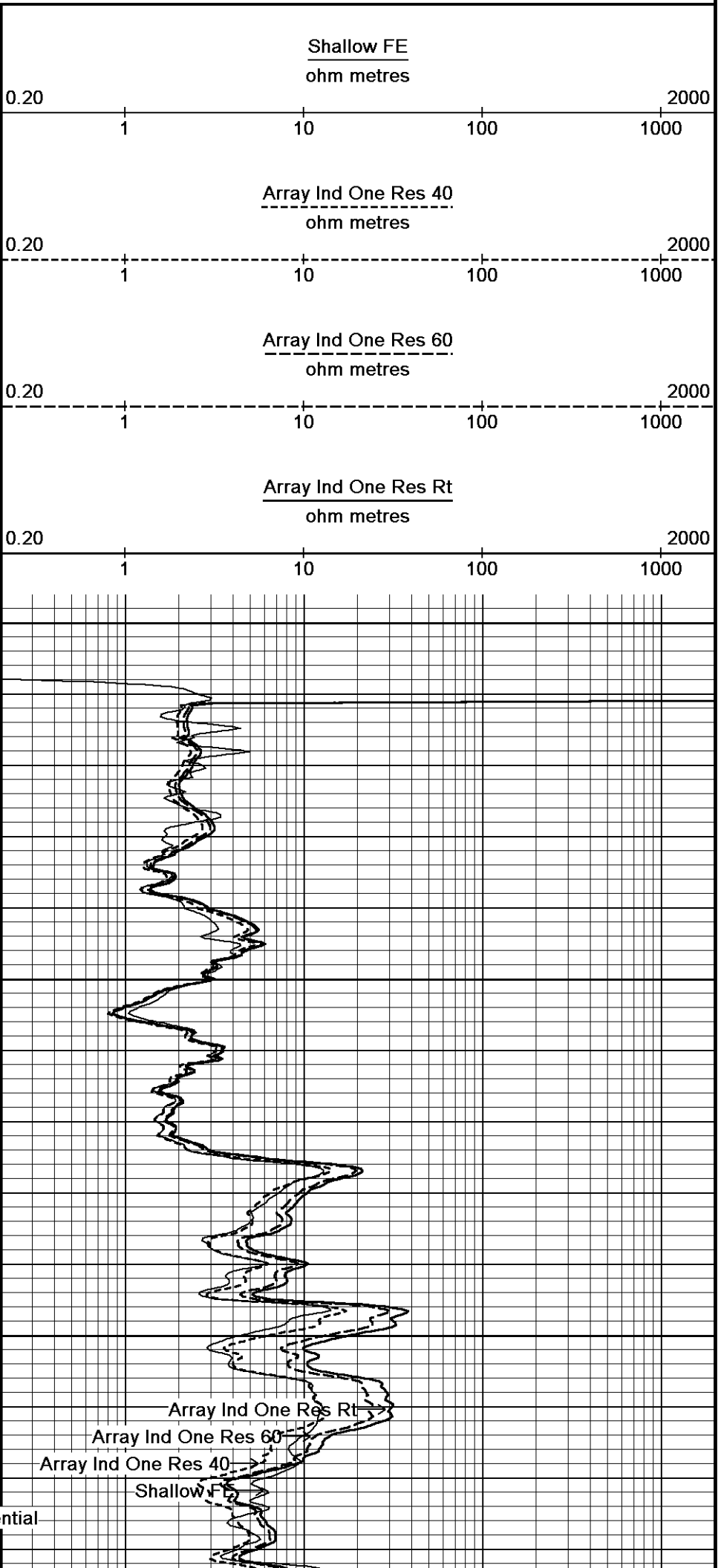
Casing
Shoe

91°

750

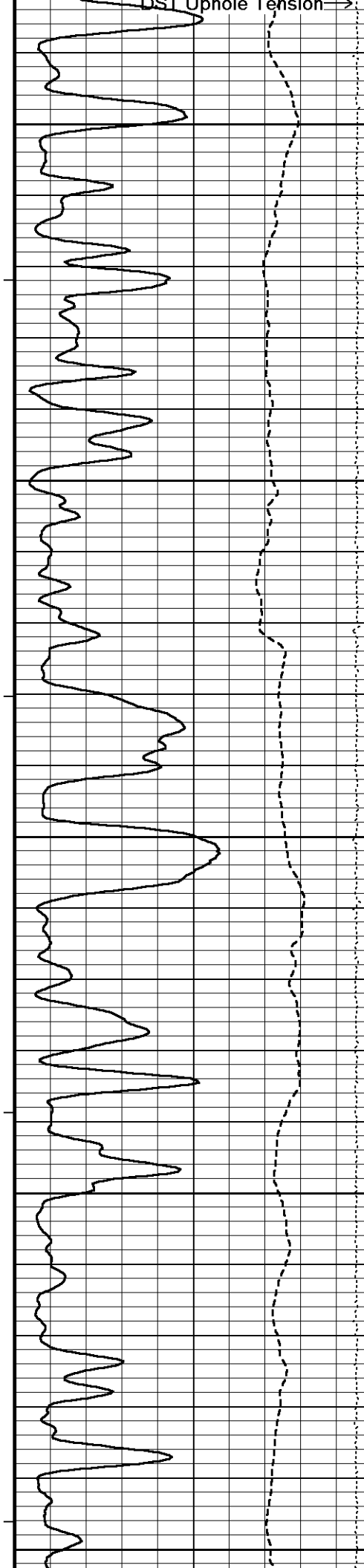
91°

800



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

Spontaneous Potential
Gamma Ray



91°

850

91°

900

92°

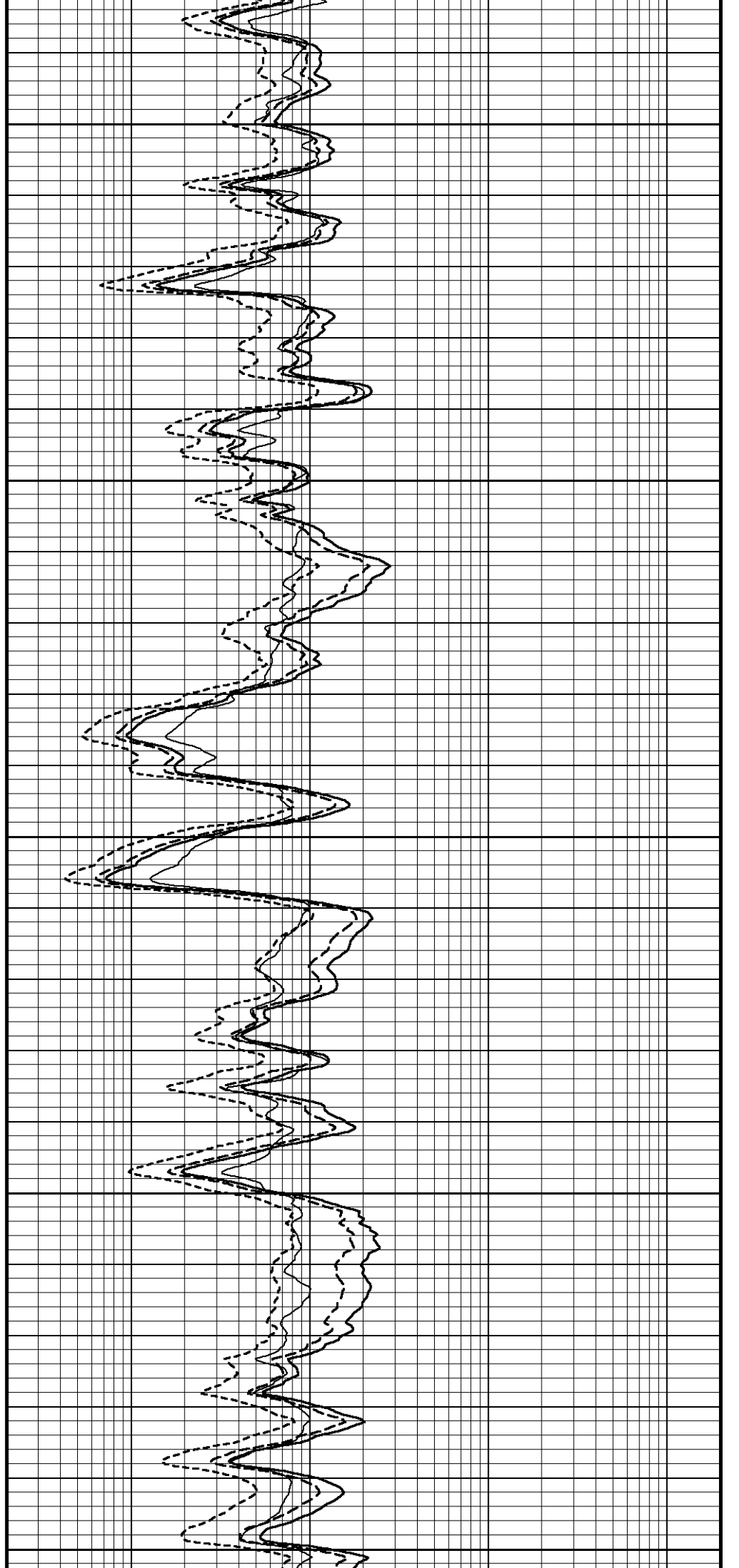
950

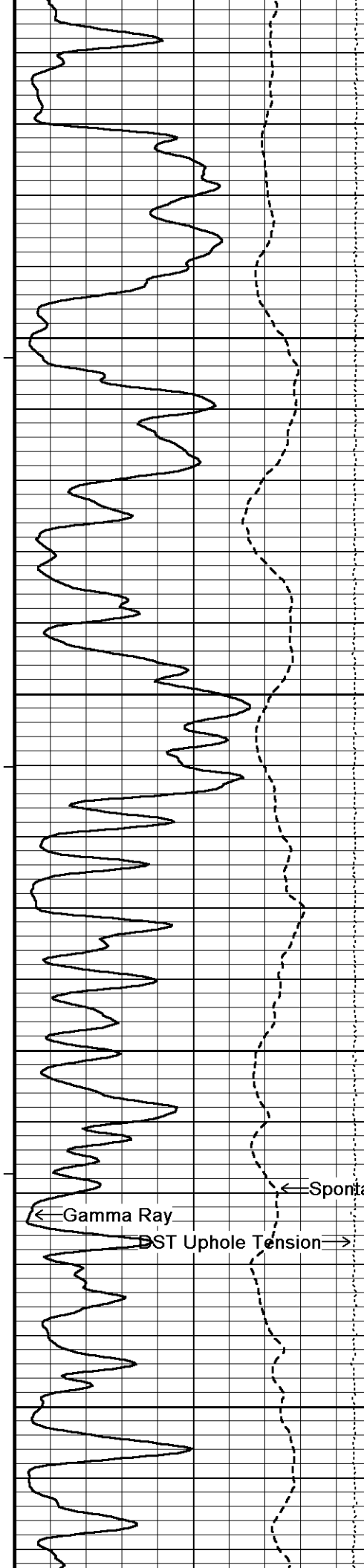
92°

1000

92°

1050





93°

1100

93°

1150

93°

1200

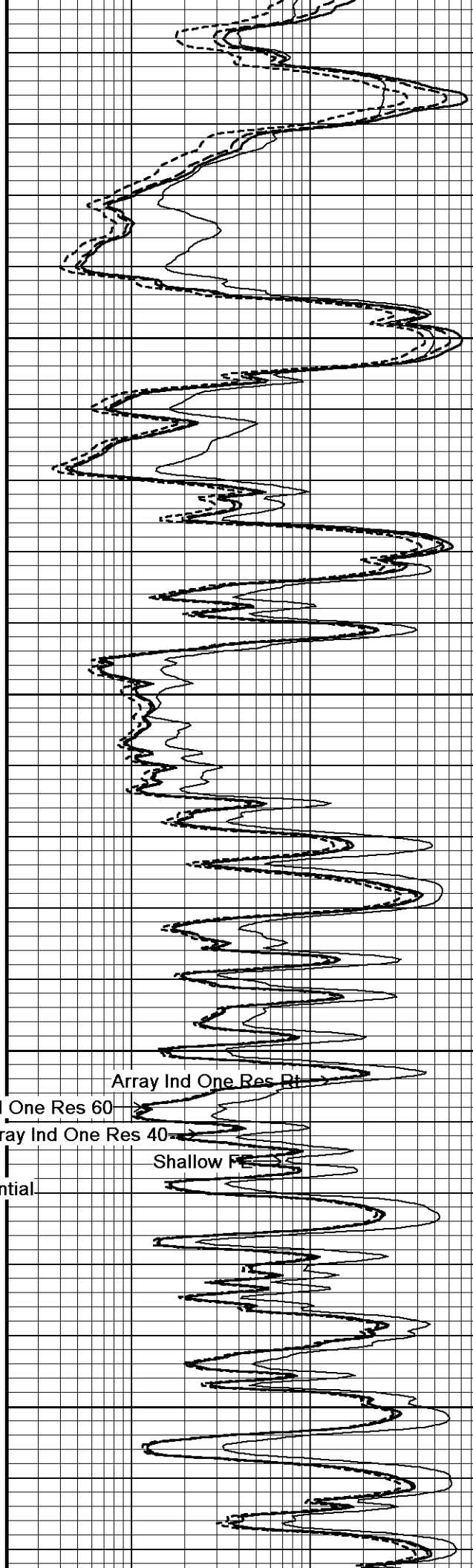
93°

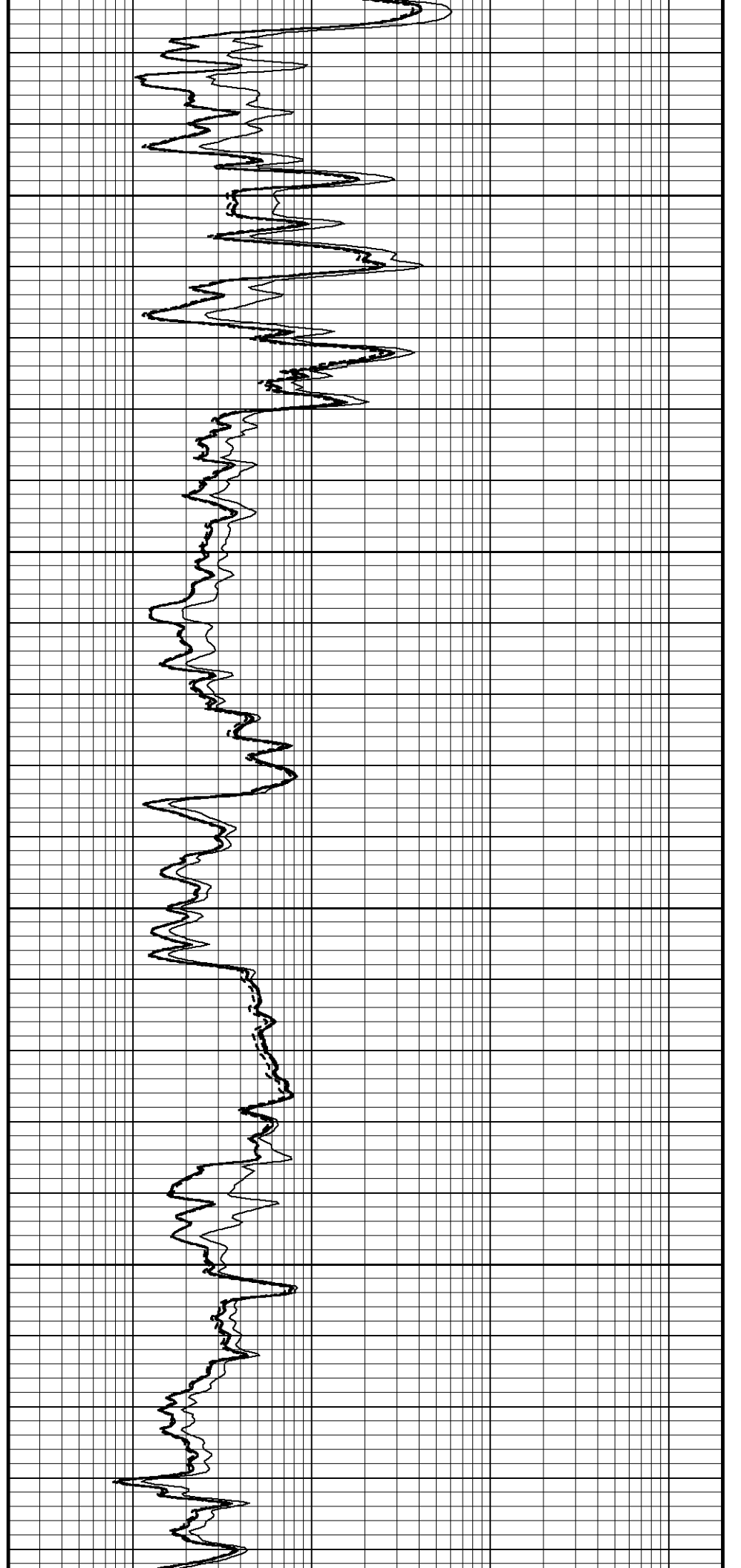
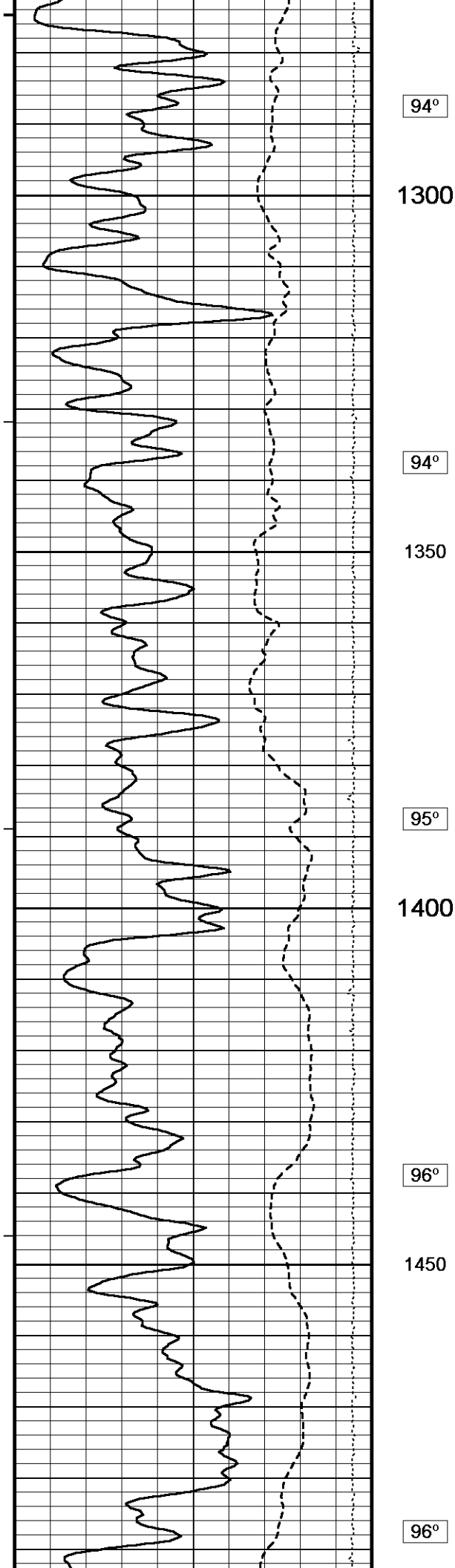
1250

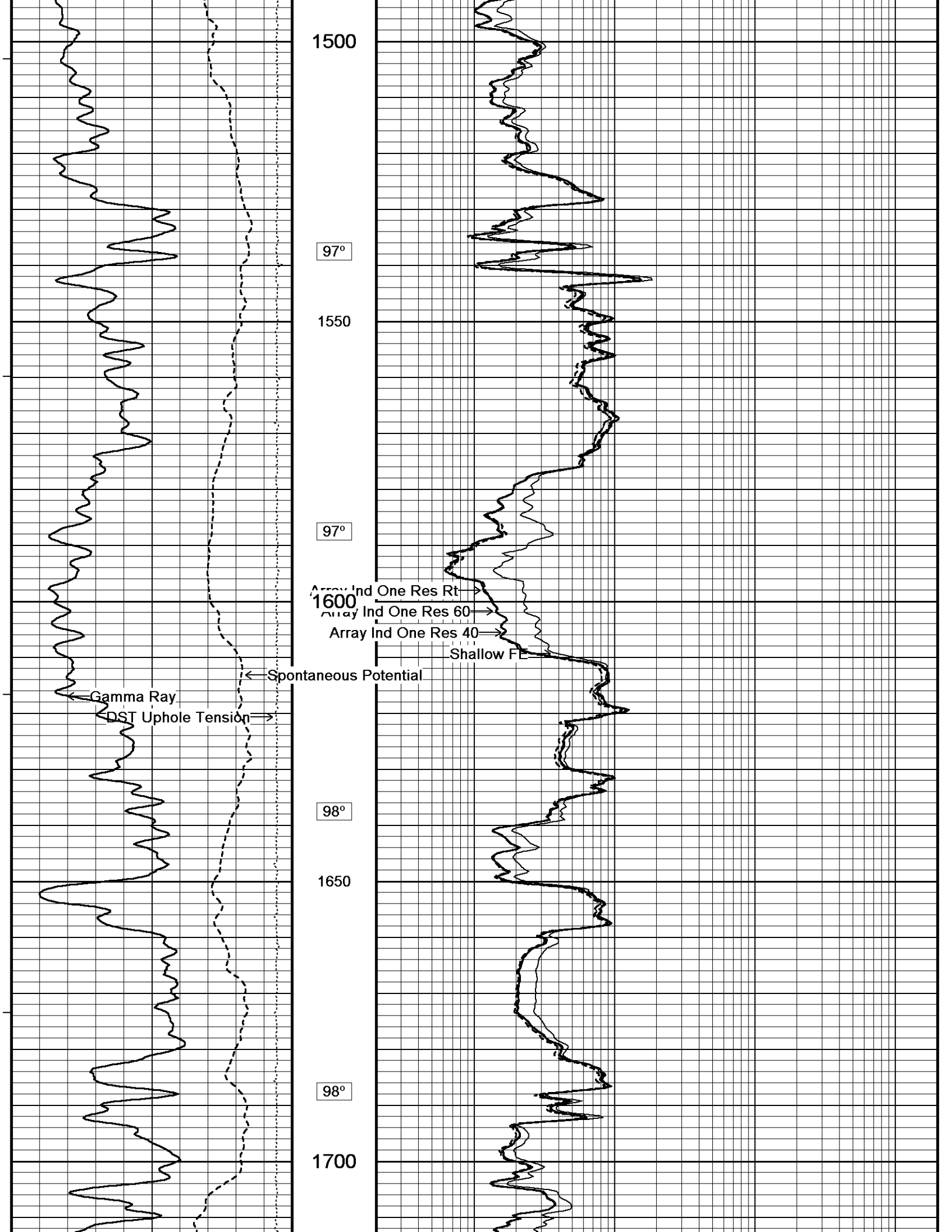
Array Ind One Res 60
Array Ind One Res 40
Shallow PE
Array Ind One Res Rt

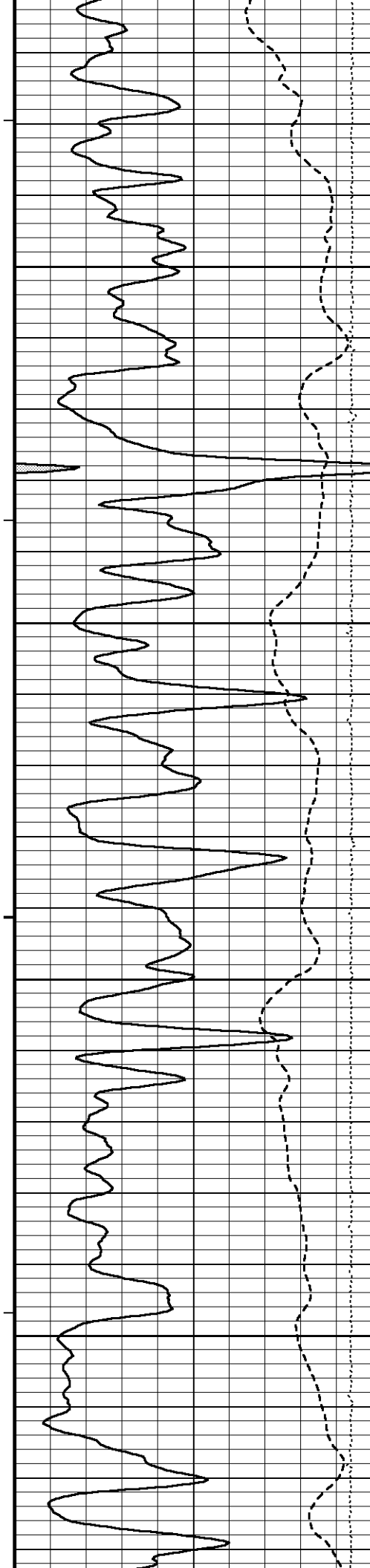
← Gamma Ray
DST Uphole Tension →

← Spontaneous Potential









98°

1750

99°

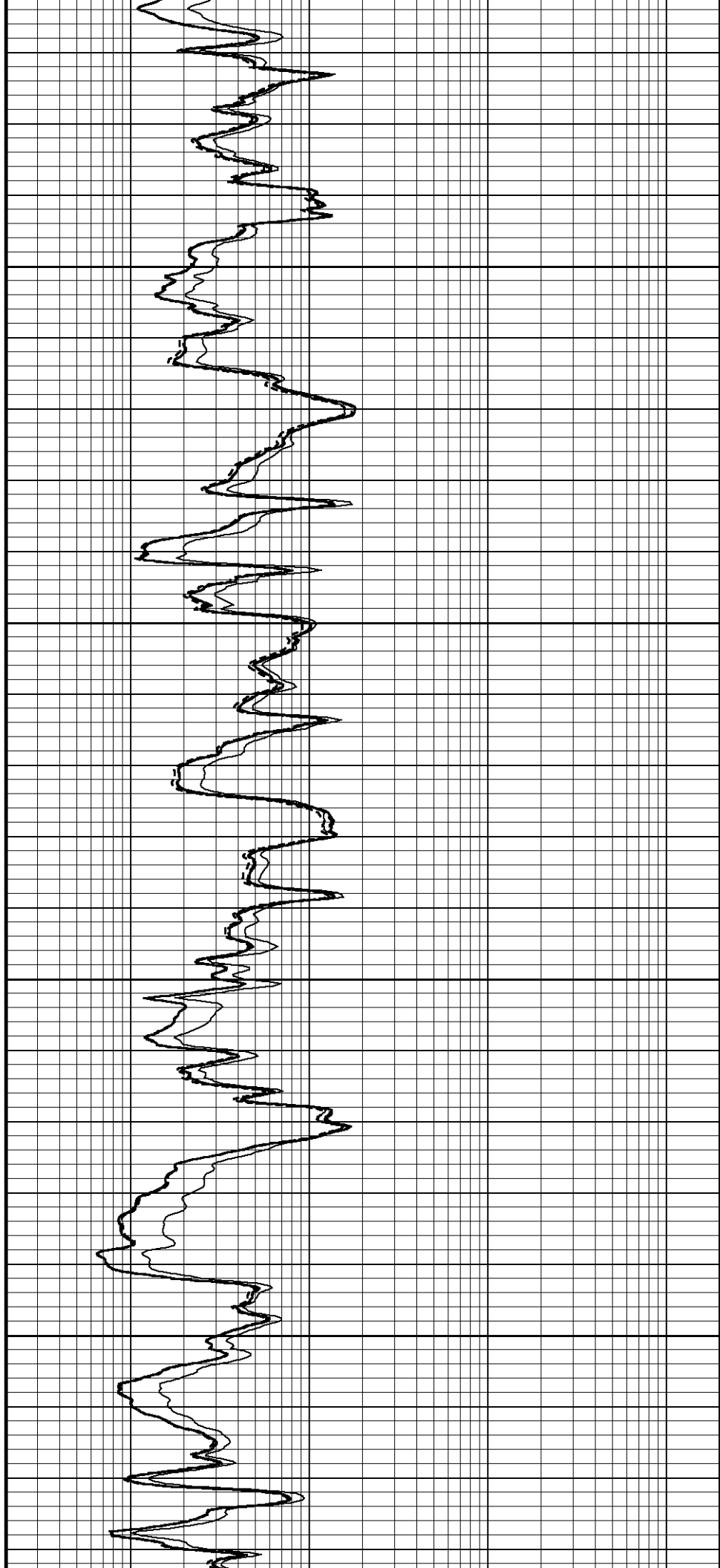
1800

99°

1850

99°

1900





99°

1950

99°

2000

100°

2050

101°

2100

102°

2150

Array Ind One Res Rt

Array Ind One Res 60

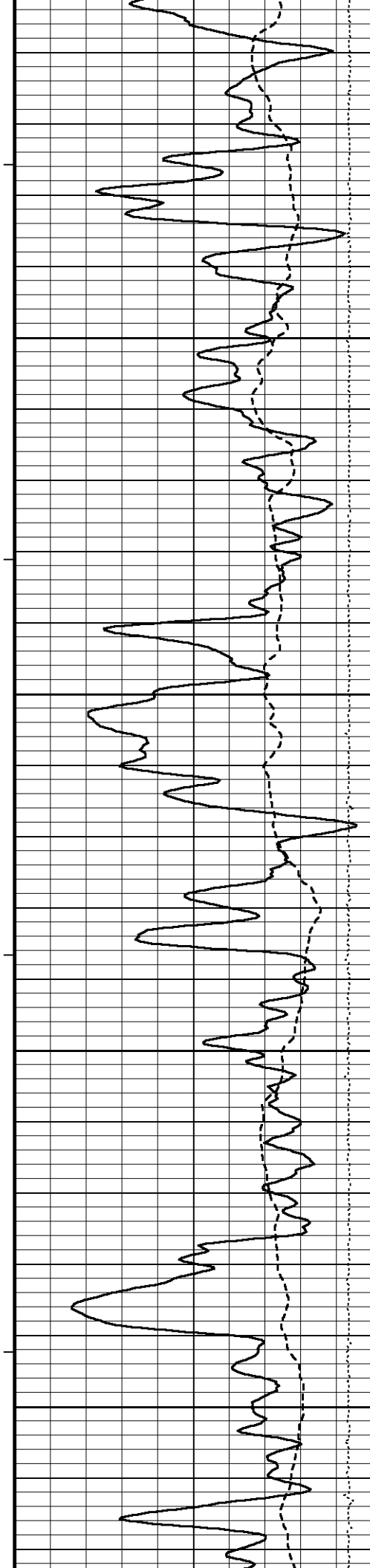
Ind One Res 40

Shallow F

Spontaneous Potential

Gamma Ray

DST Uphole Tension



102°

2200

103°

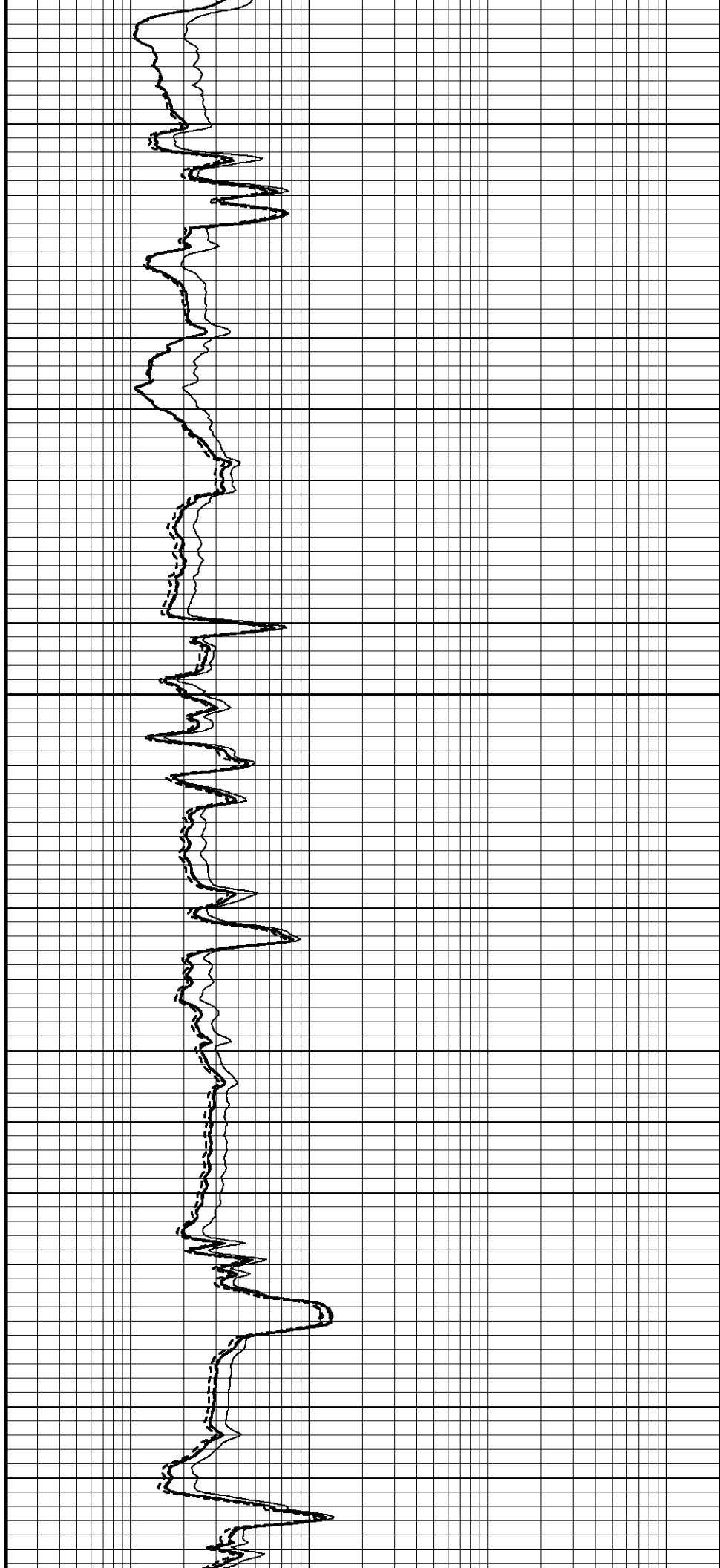
2250

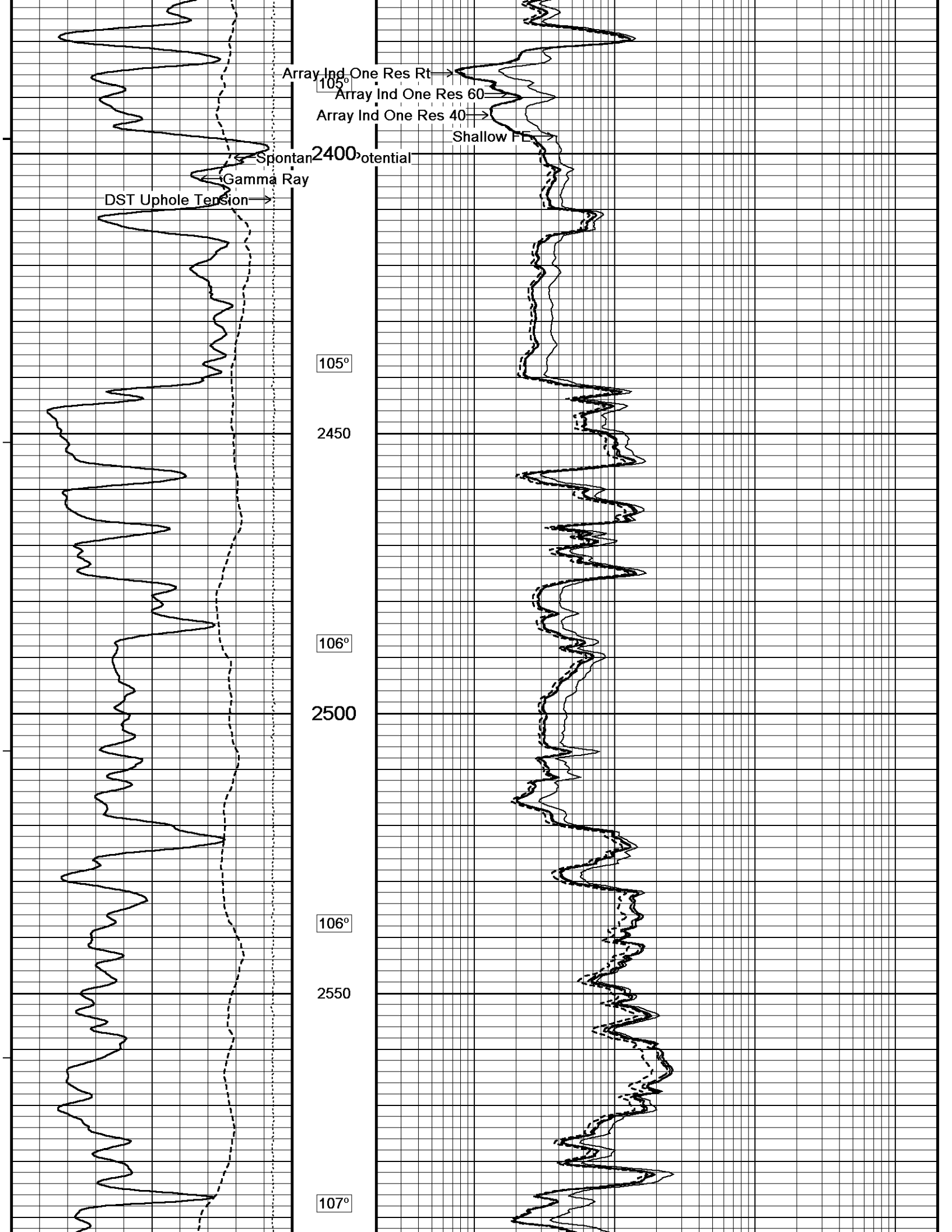
104°

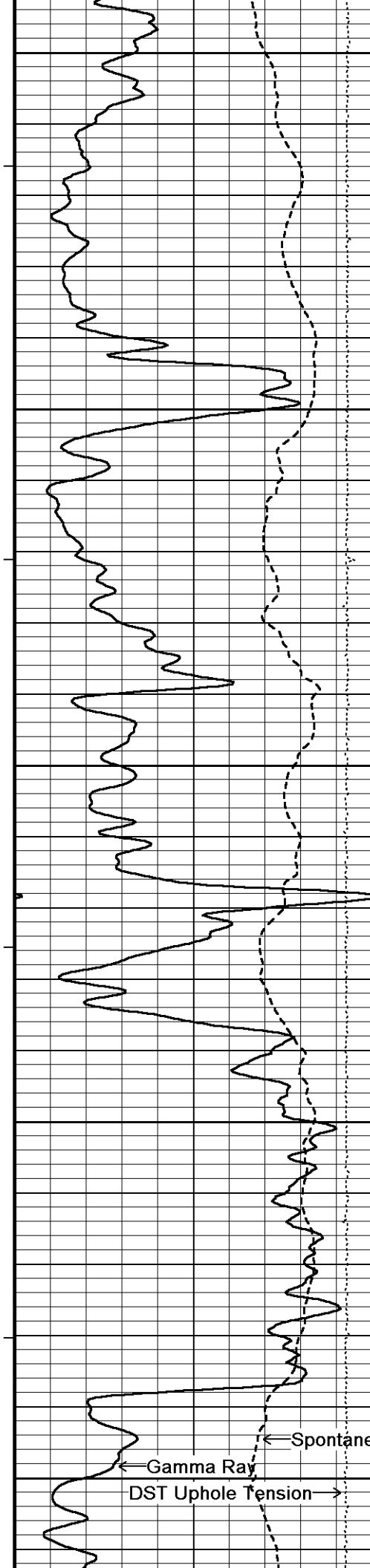
2300

104°

2350







2600

107°

2650

108°

2700

108°

2750

109°

2800

Array Ind One Res Rt
Array Ind One Res 60
Array Ind One Res 40
Shallow FEF

Array Ind One Res Rt

Array Ind One Res 60

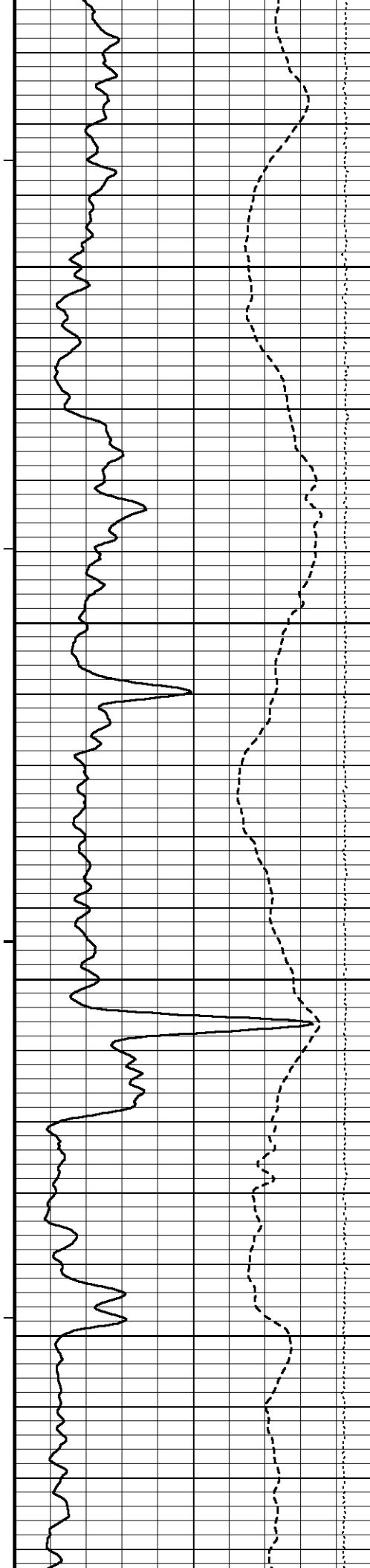
Array Ind One Res 40

Shallow FEF

← Spontaneous Potential

← Gamma Ray

DST Uphole Tension →



109°

2850

110°

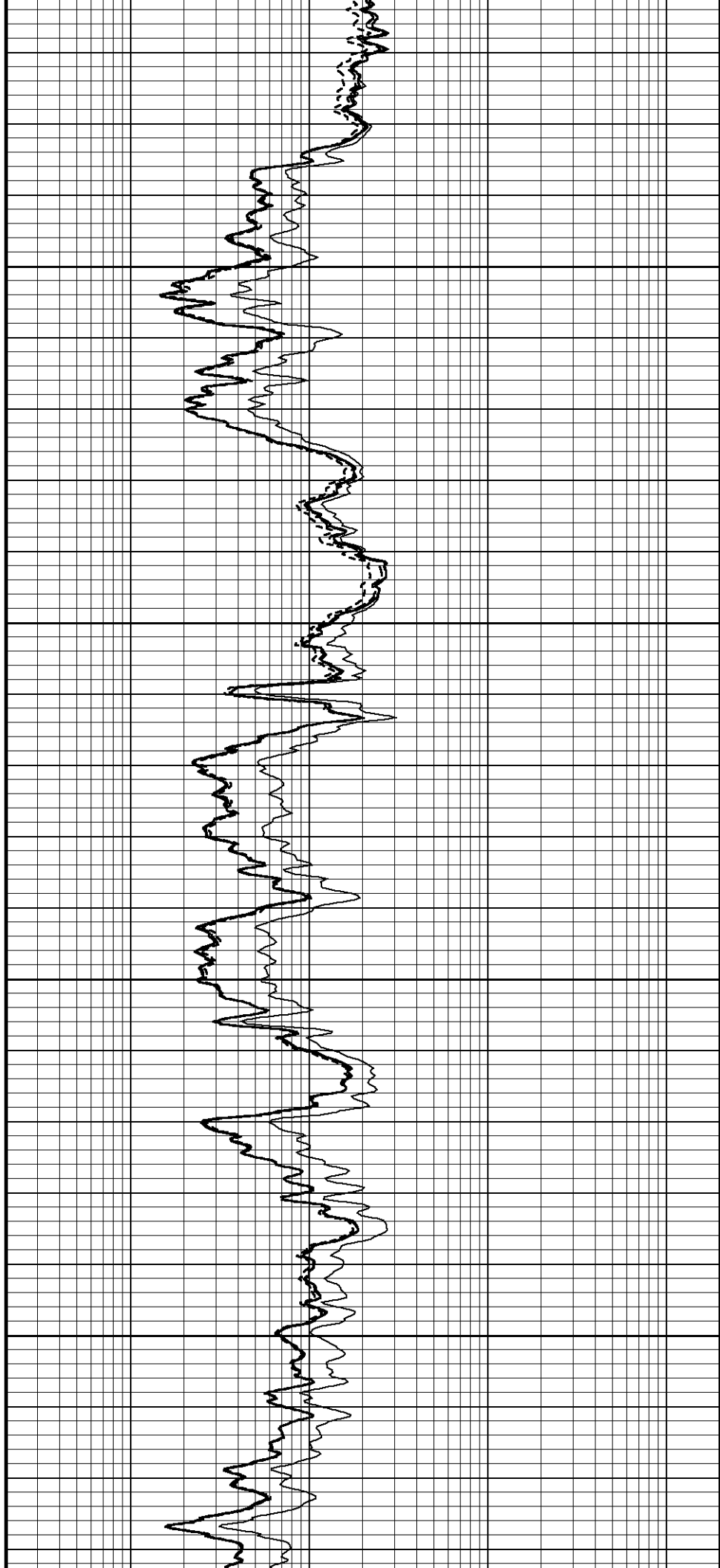
2900

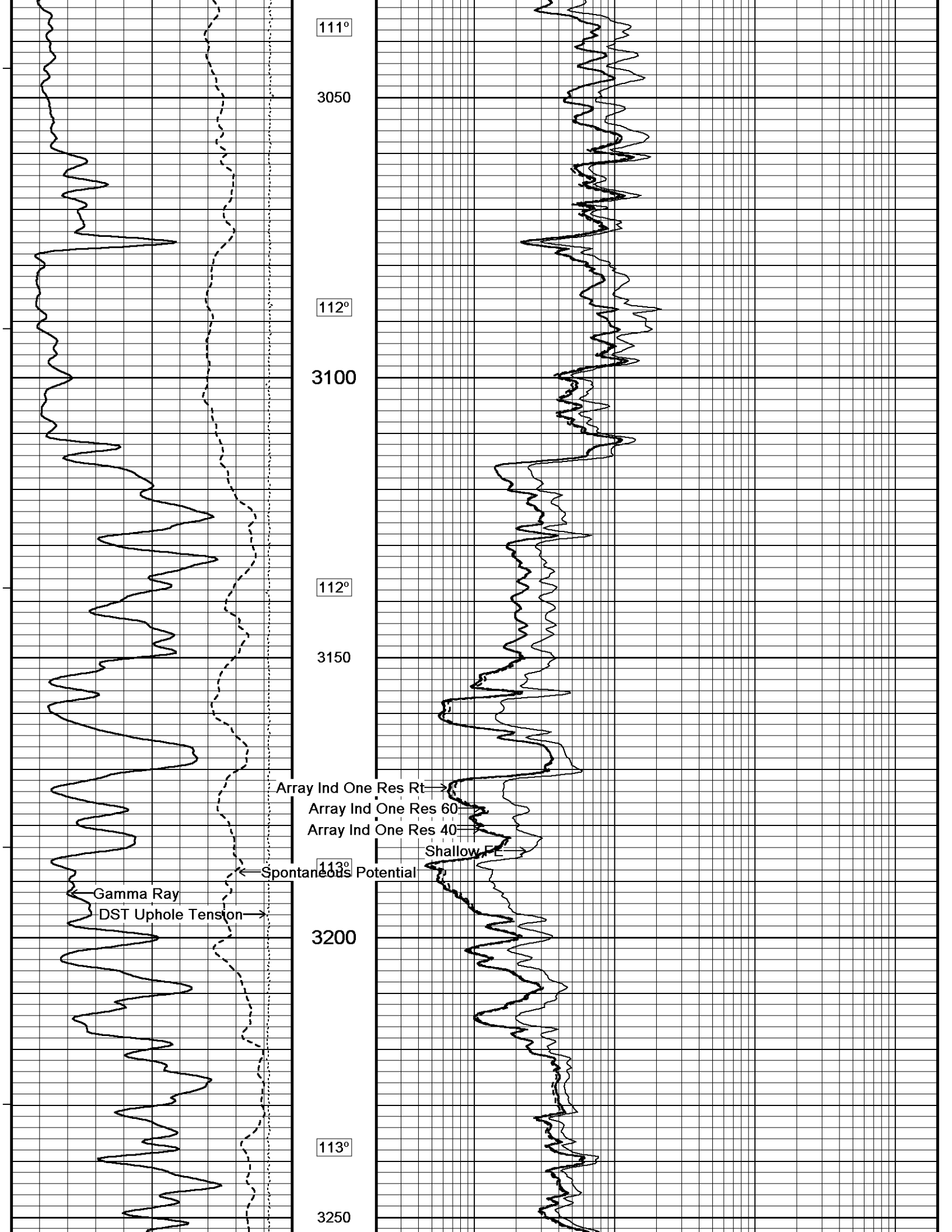
110°

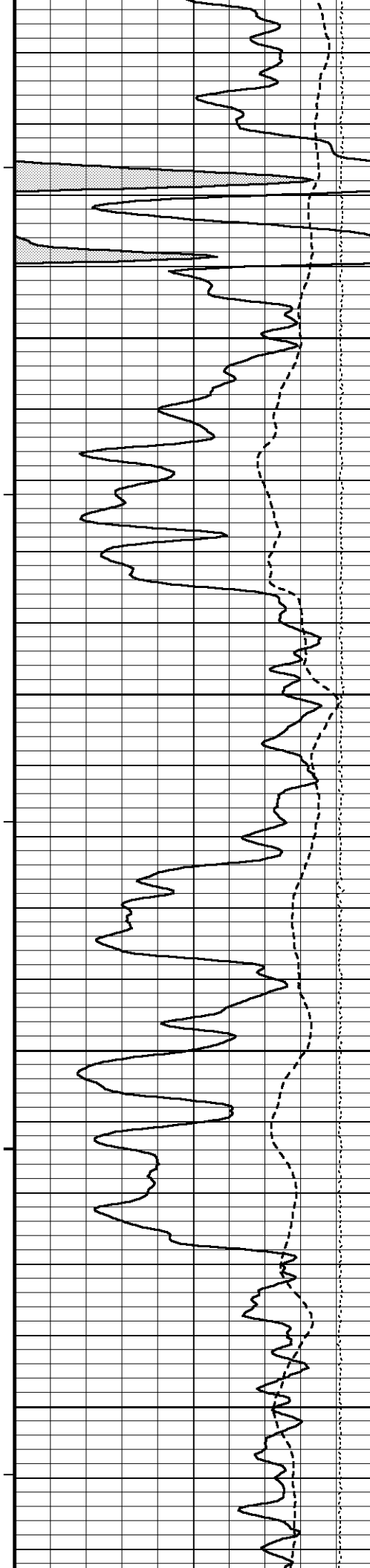
2950

111°

3000







114°

3300

114°

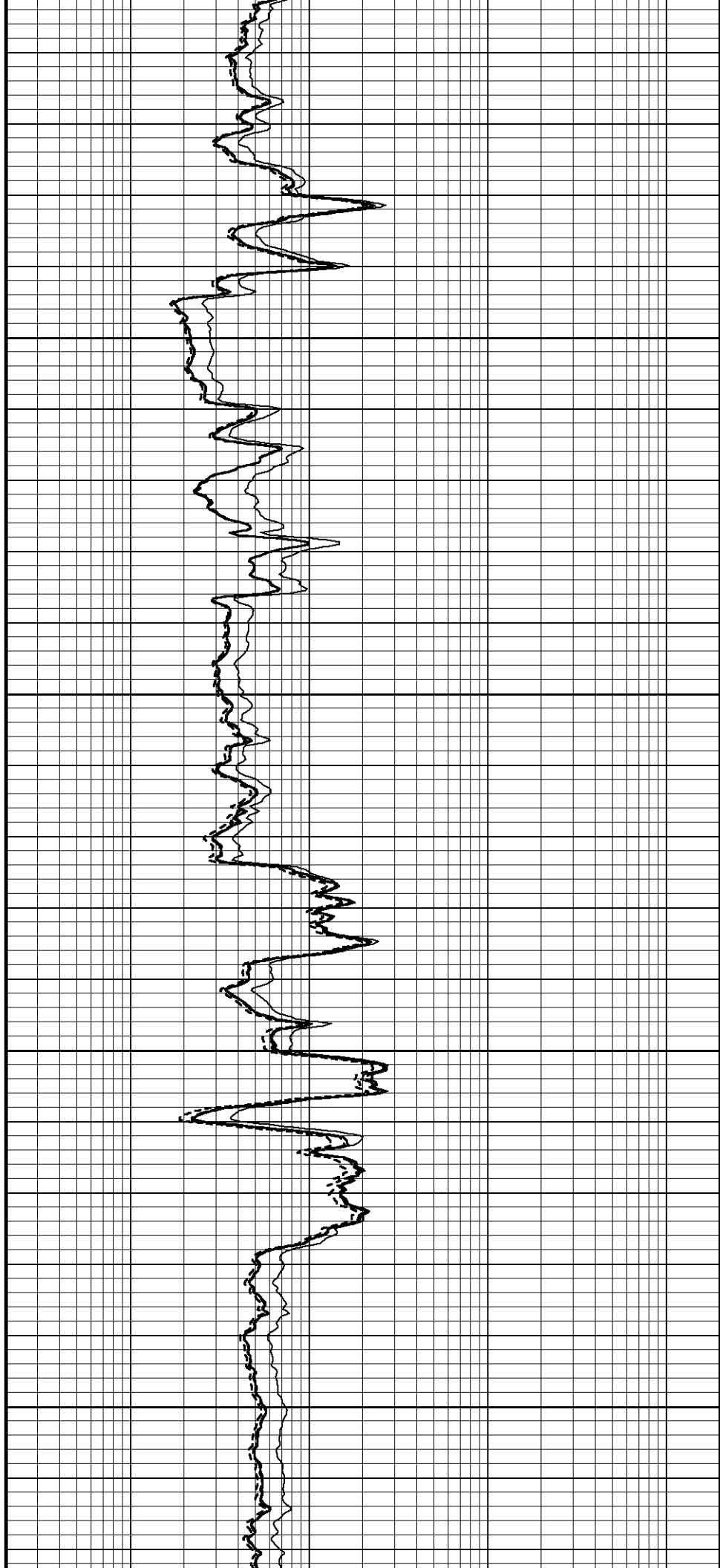
3350

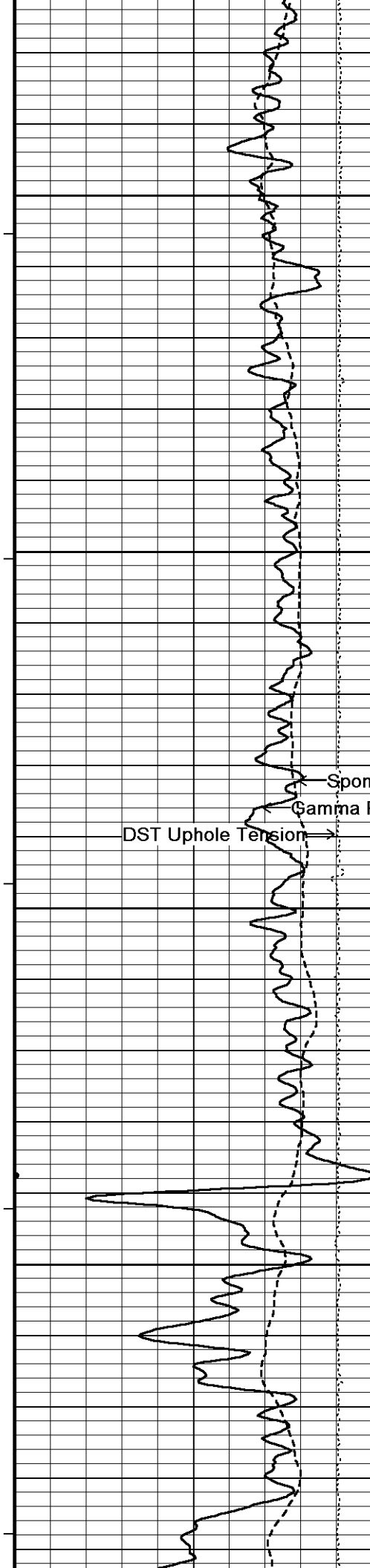
115°

3400

116°

3450





116°

3500

117°

3550

Spontaneous Potential

Gamma Ray

DST Uphole Tension

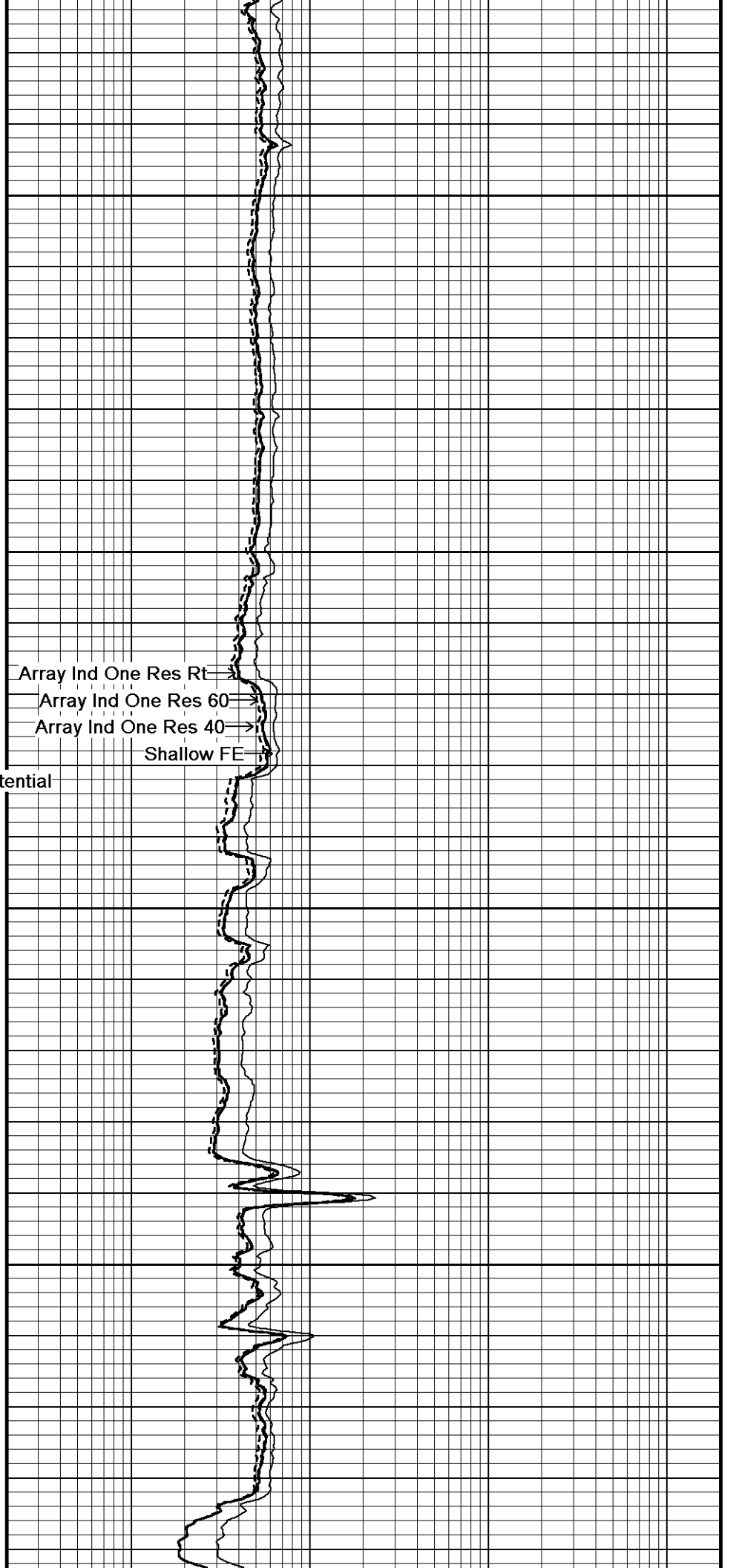
118°

3600

118°

3650

119°

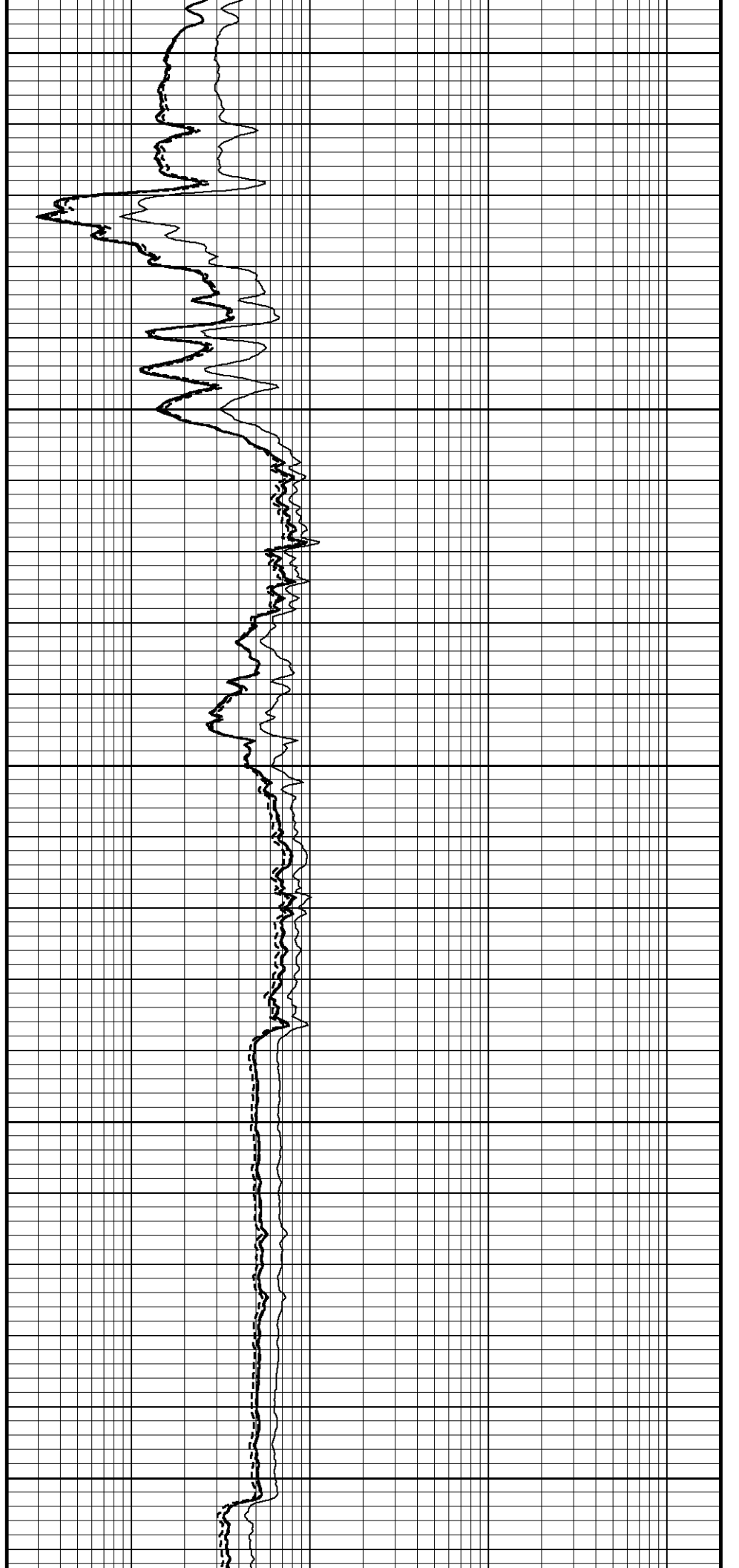
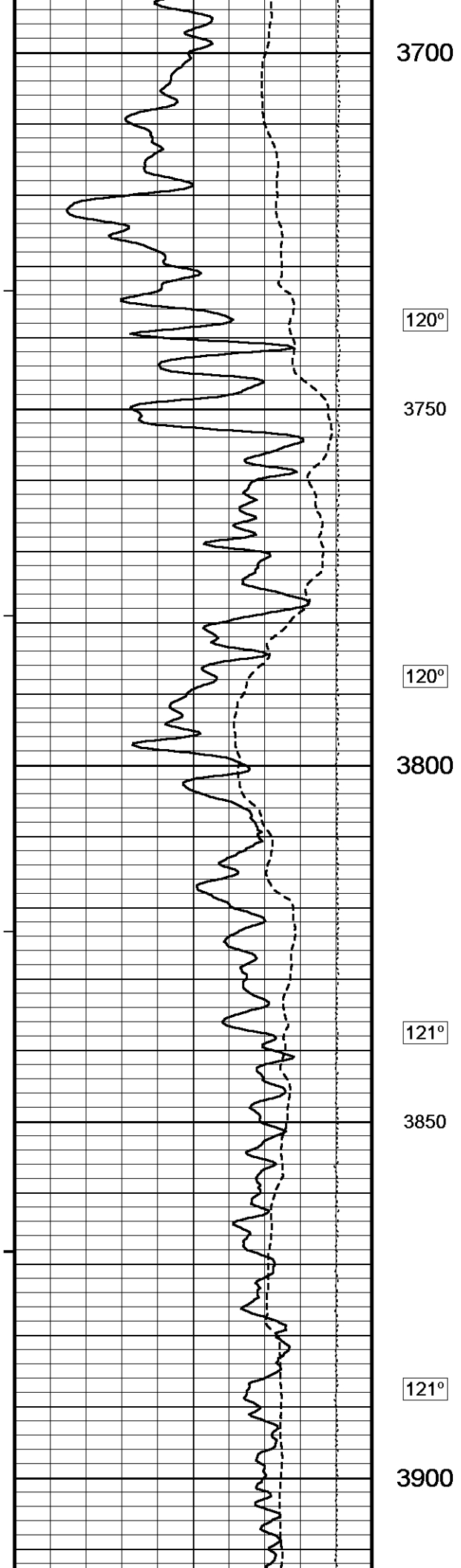


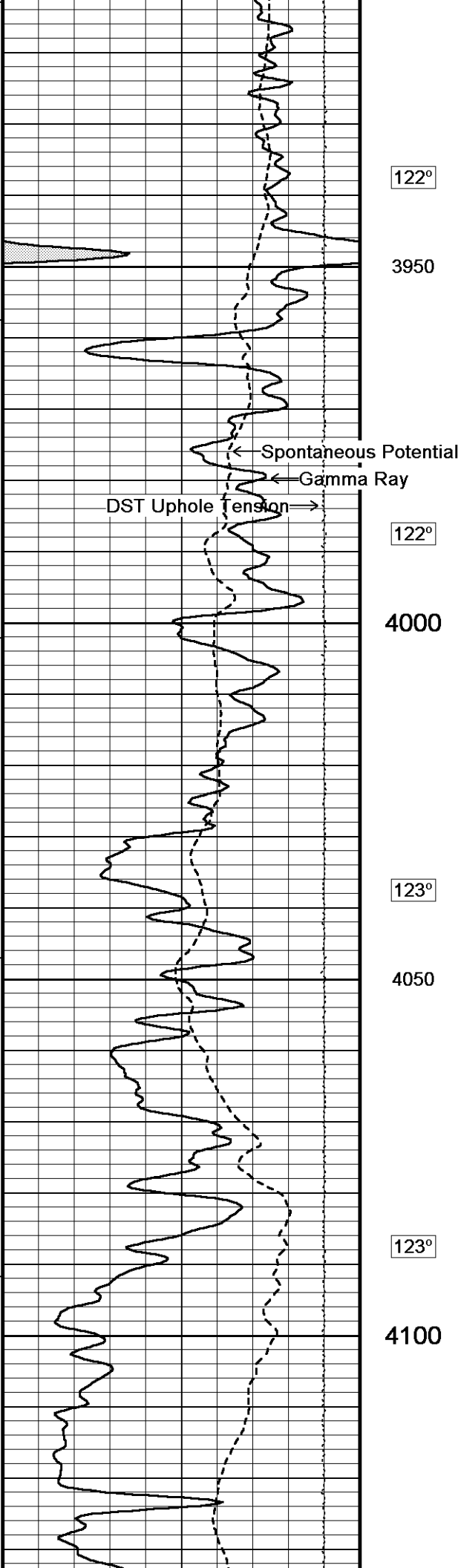
Array Ind One Res Rt

Array Ind One Res 60

Array Ind One Res 40

Shallow FE





122°

3950

Spontaneous Potential

Gamma Ray

DST Uphole tension

122°

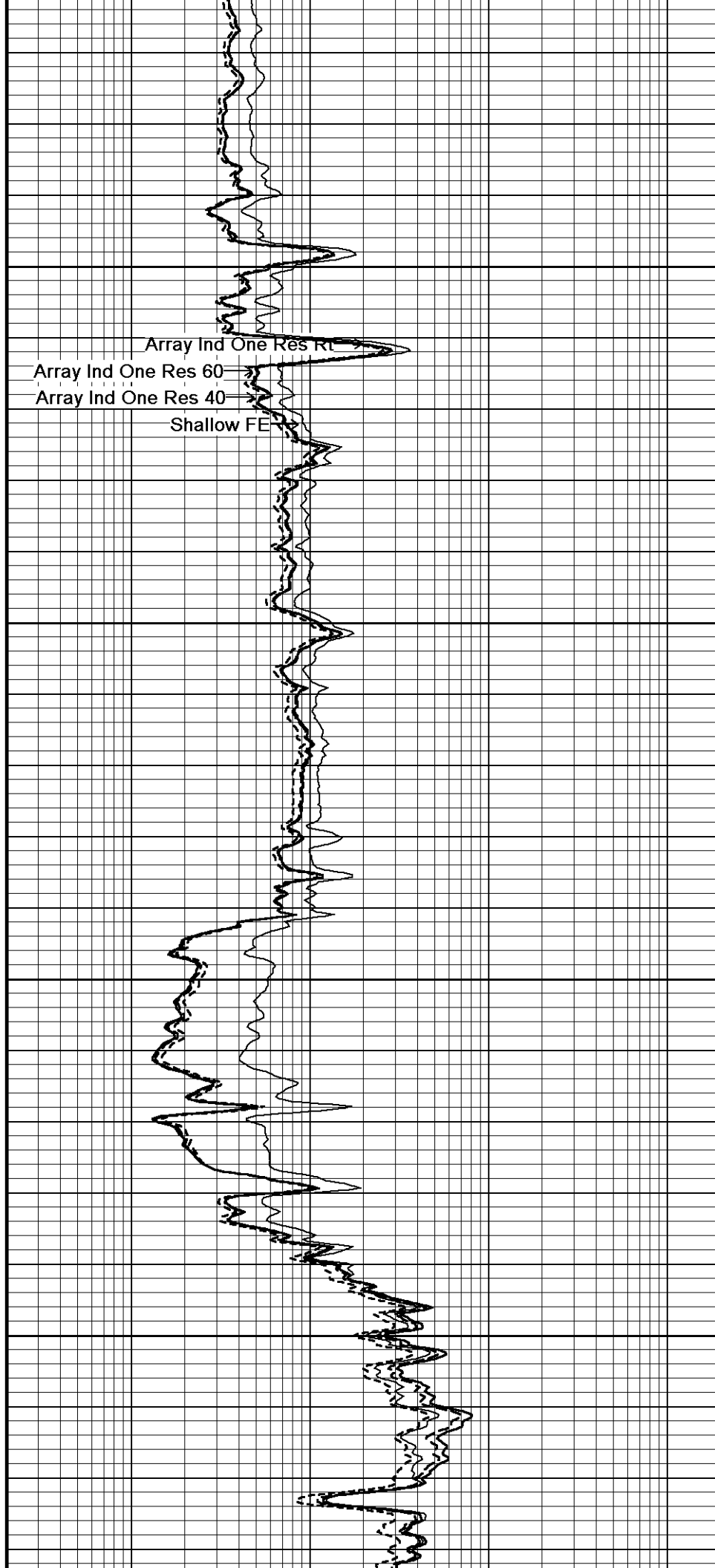
4000

123°

4050

123°

4100

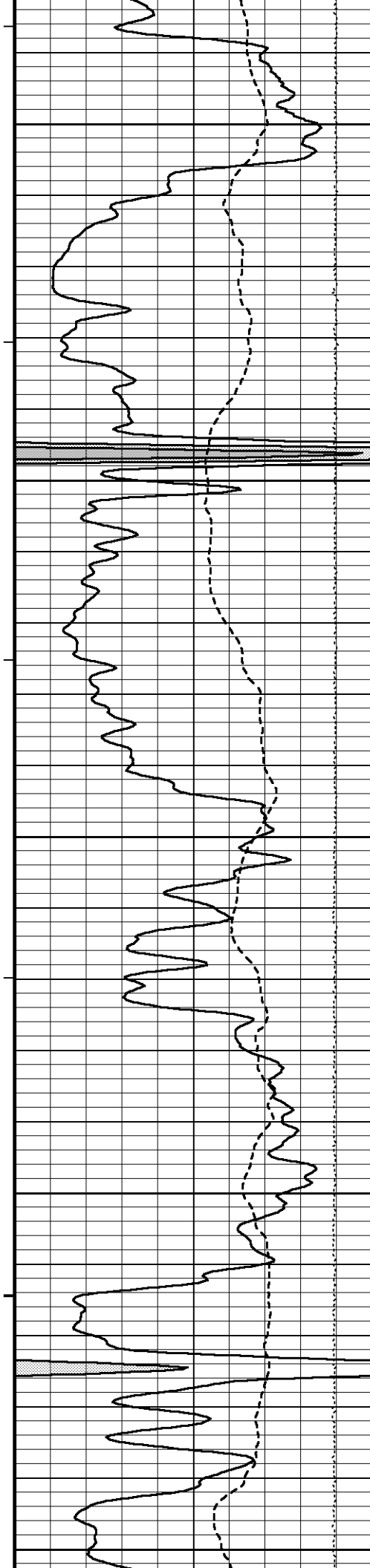


Array Ind One Res Rt

Array Ind One Res 60

Array Ind One Res 40

Shallow FE



123°

4150

124°

4200

124°

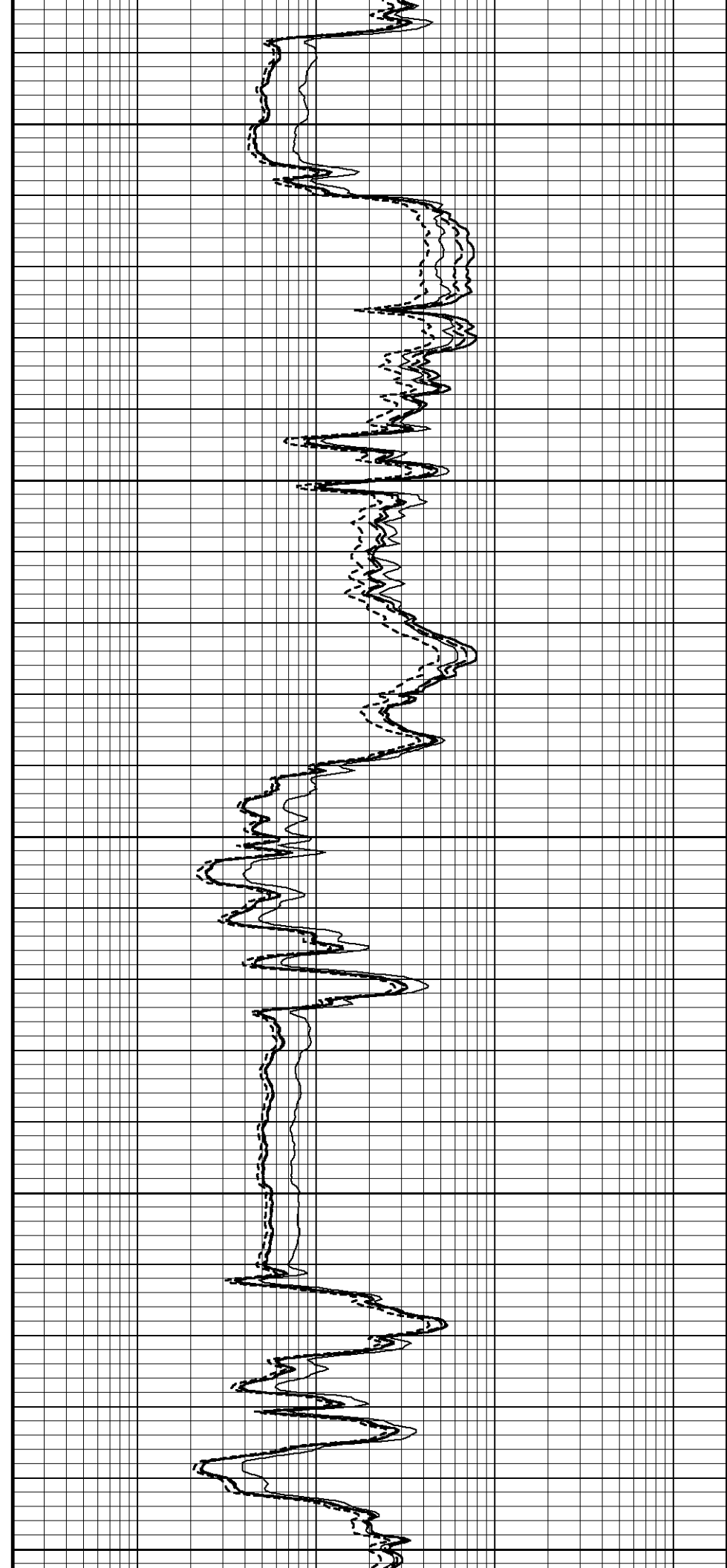
4250

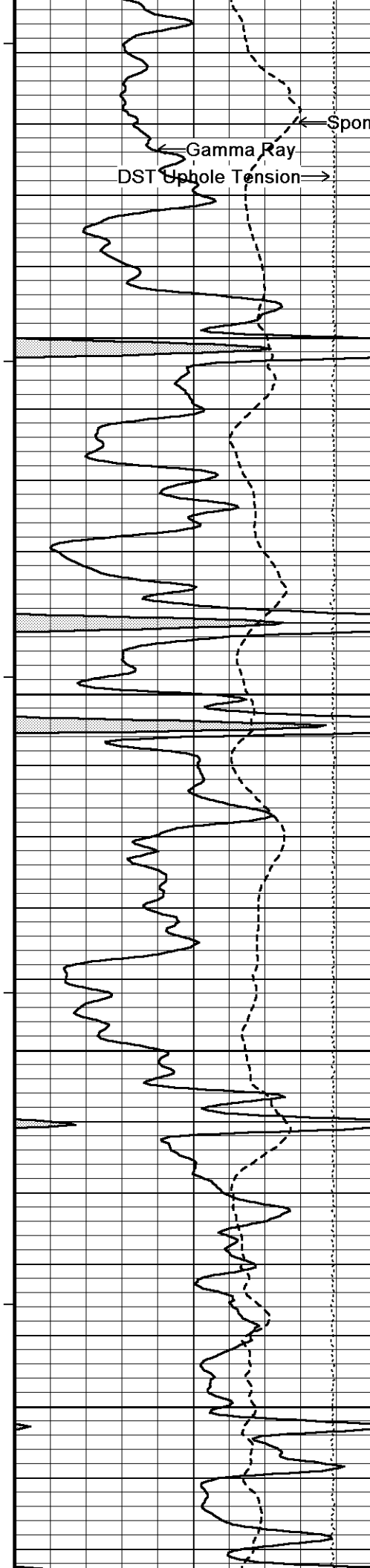
125°

4300

125°

4350





126°

4400

126°

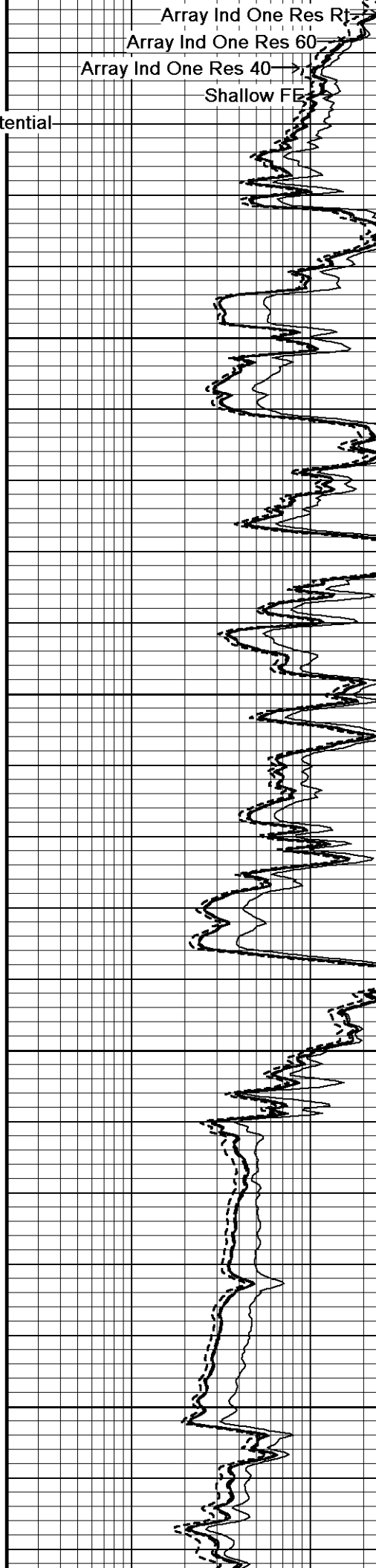
4450

127°

4500

127°

4550

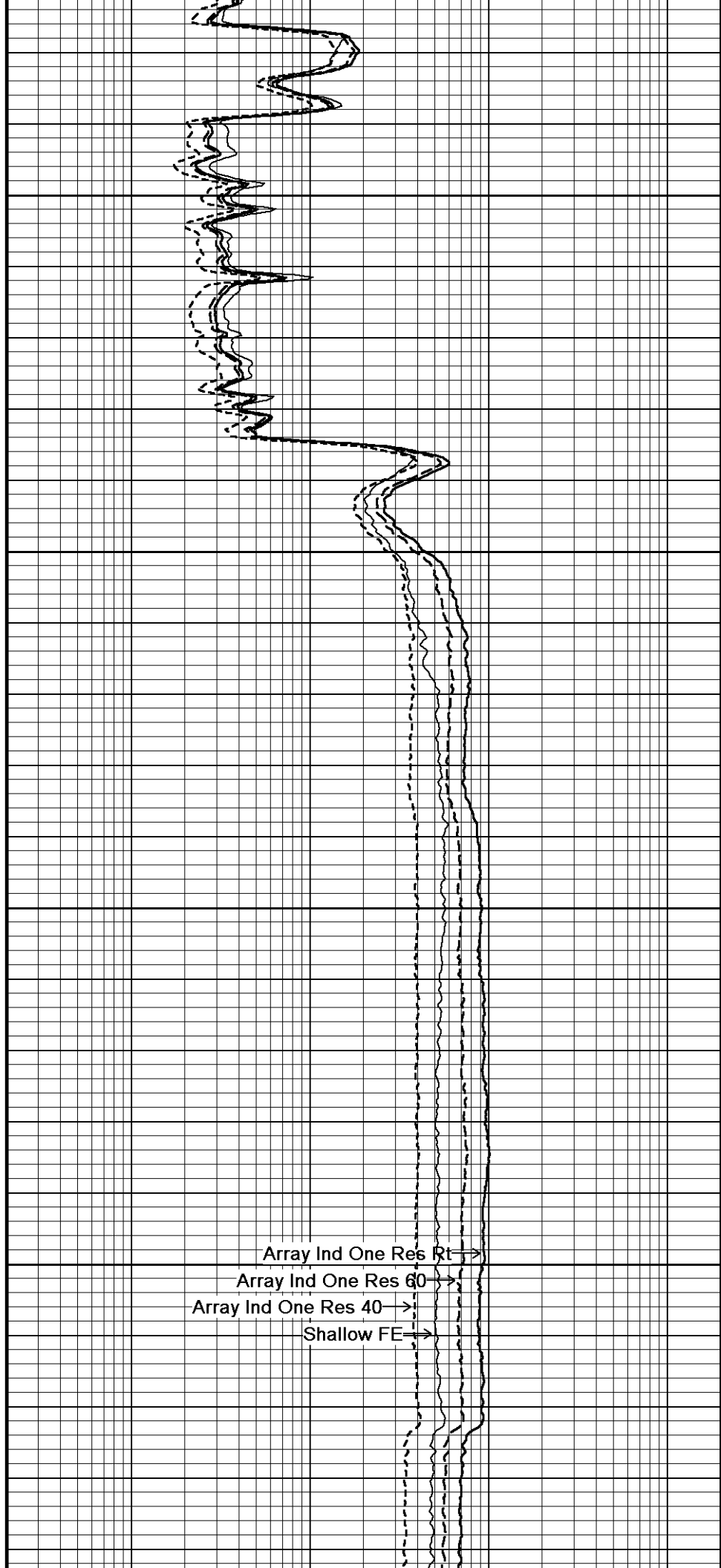
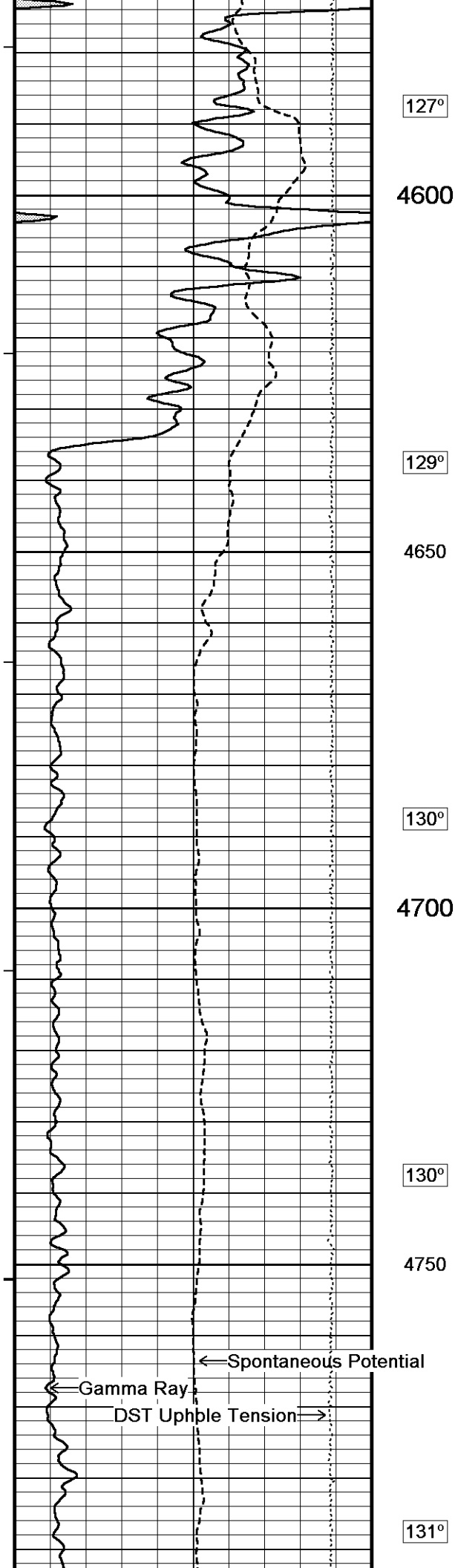


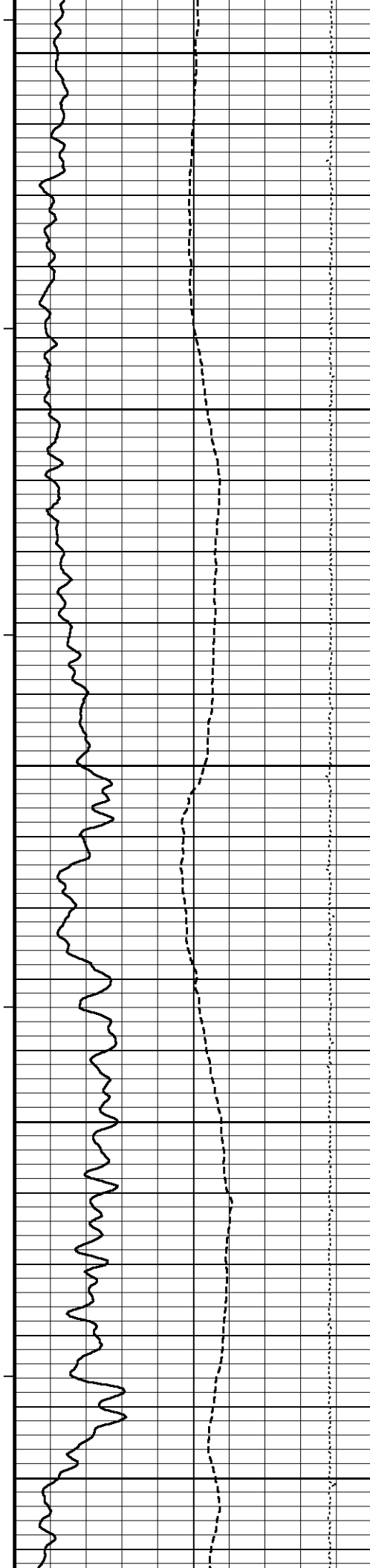
Array Ind One Res Rt

Array Ind One Res 60

Array Ind One Res 40

Shallow FE





4800

131°

4850

132°

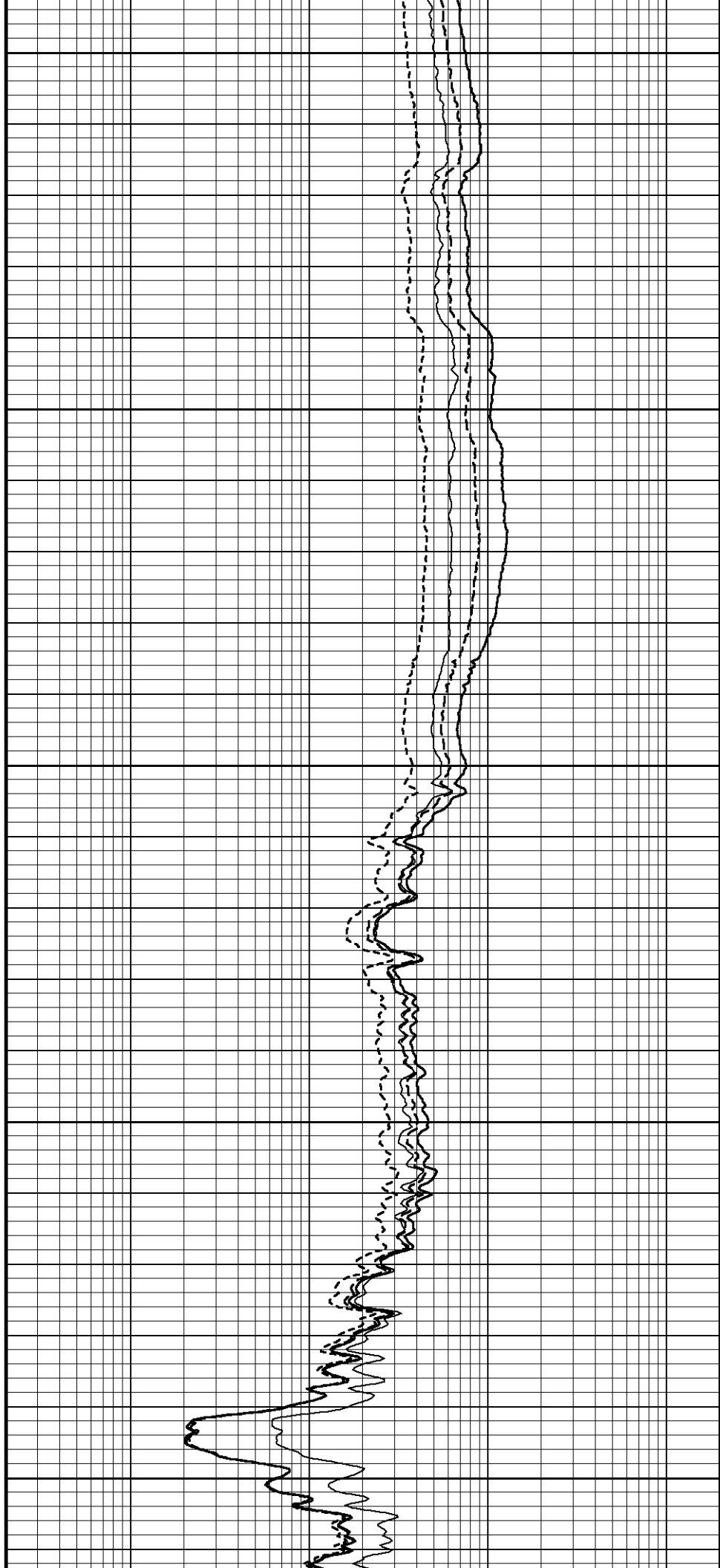
4900

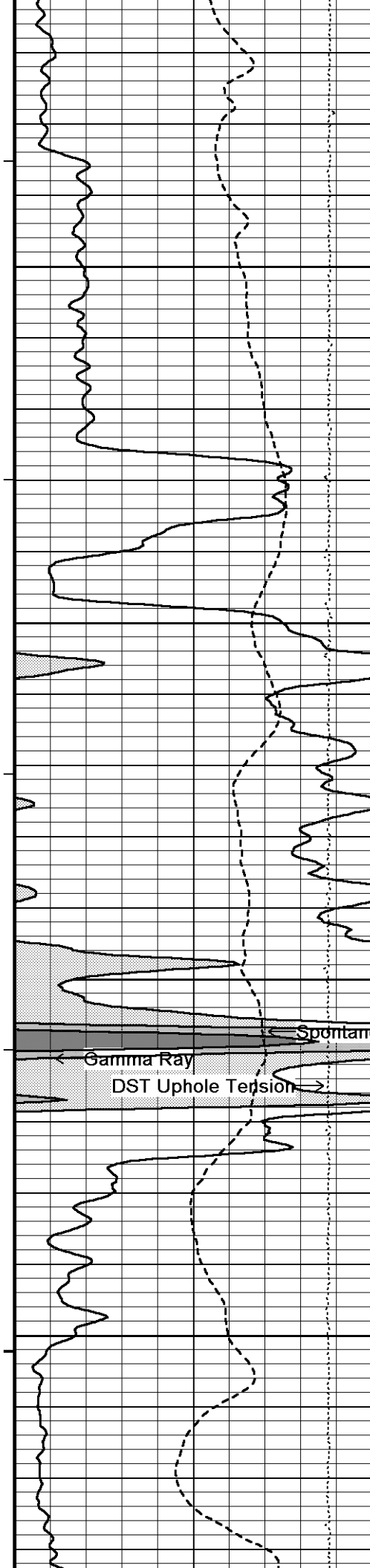
133°

4950

133°

5000





133°

5050

133°

5100

134°

5150

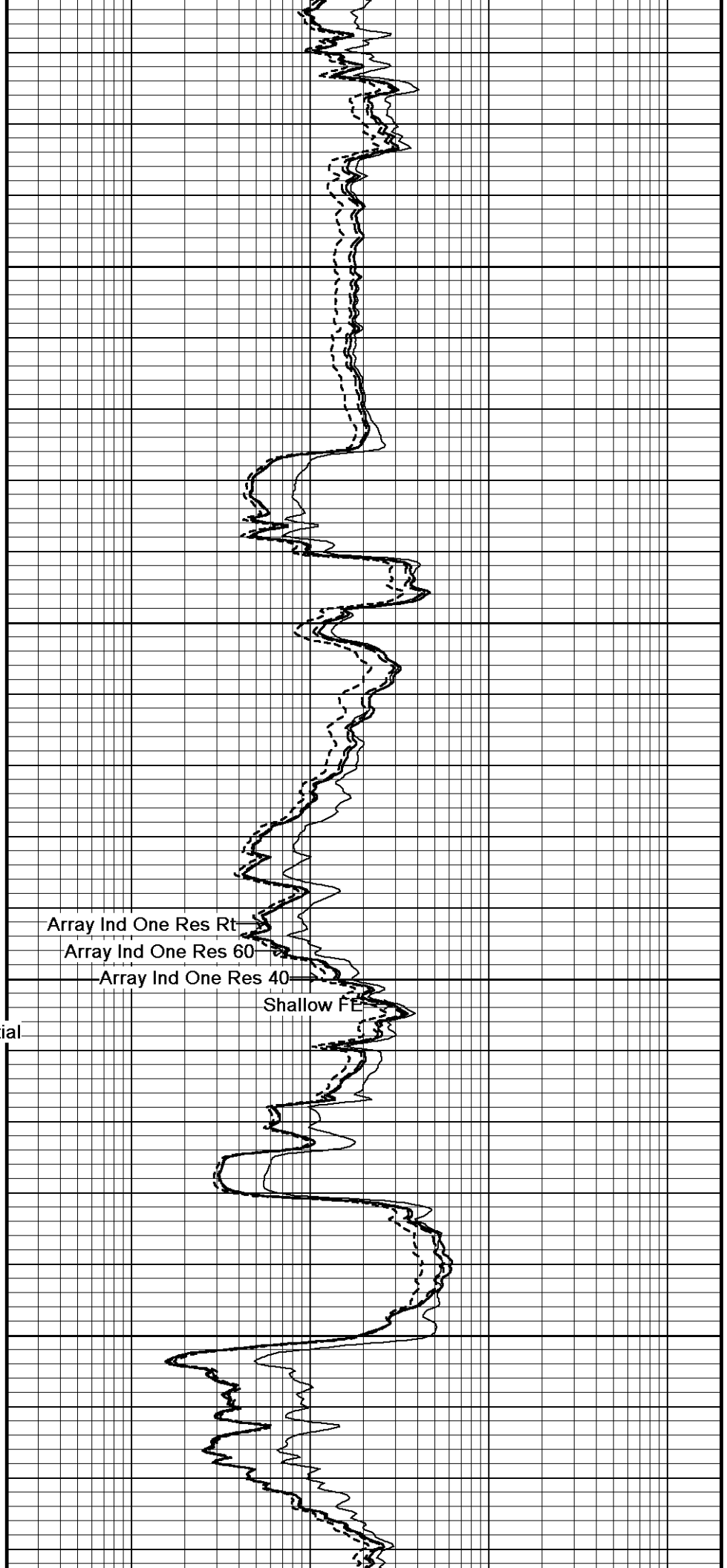
Spontaneous Potential

Gamma Ray

DST Uphole Tension

135°

5200

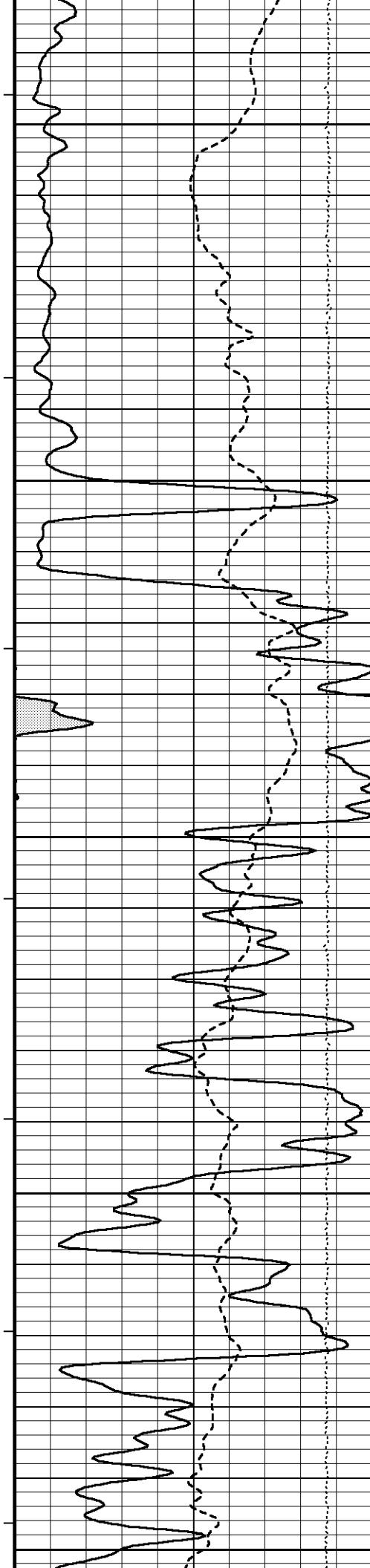


Array Ind One Res Rt

Array Ind One Res 60

Array Ind One Res 40

Shallow FE



137°

5250

136°

5300

136°

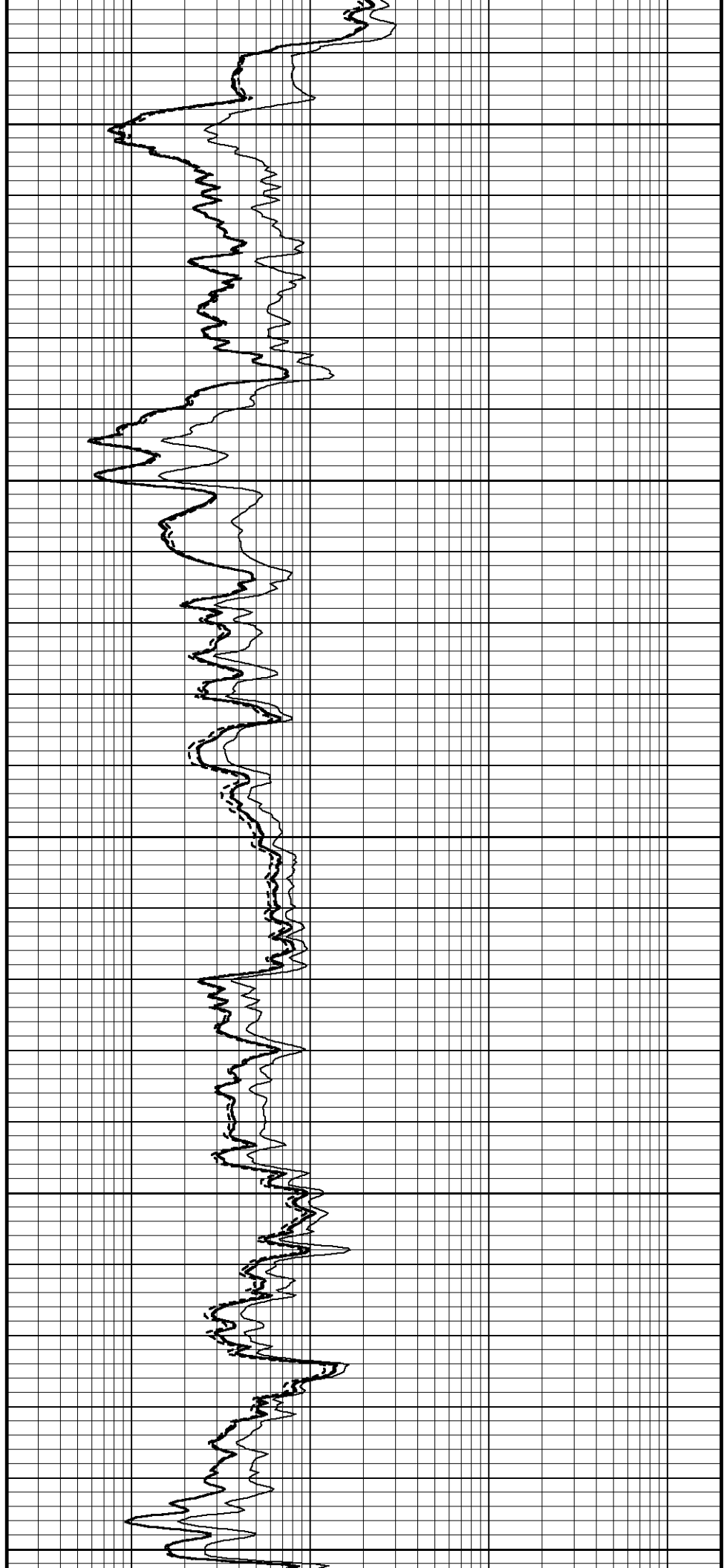
5350

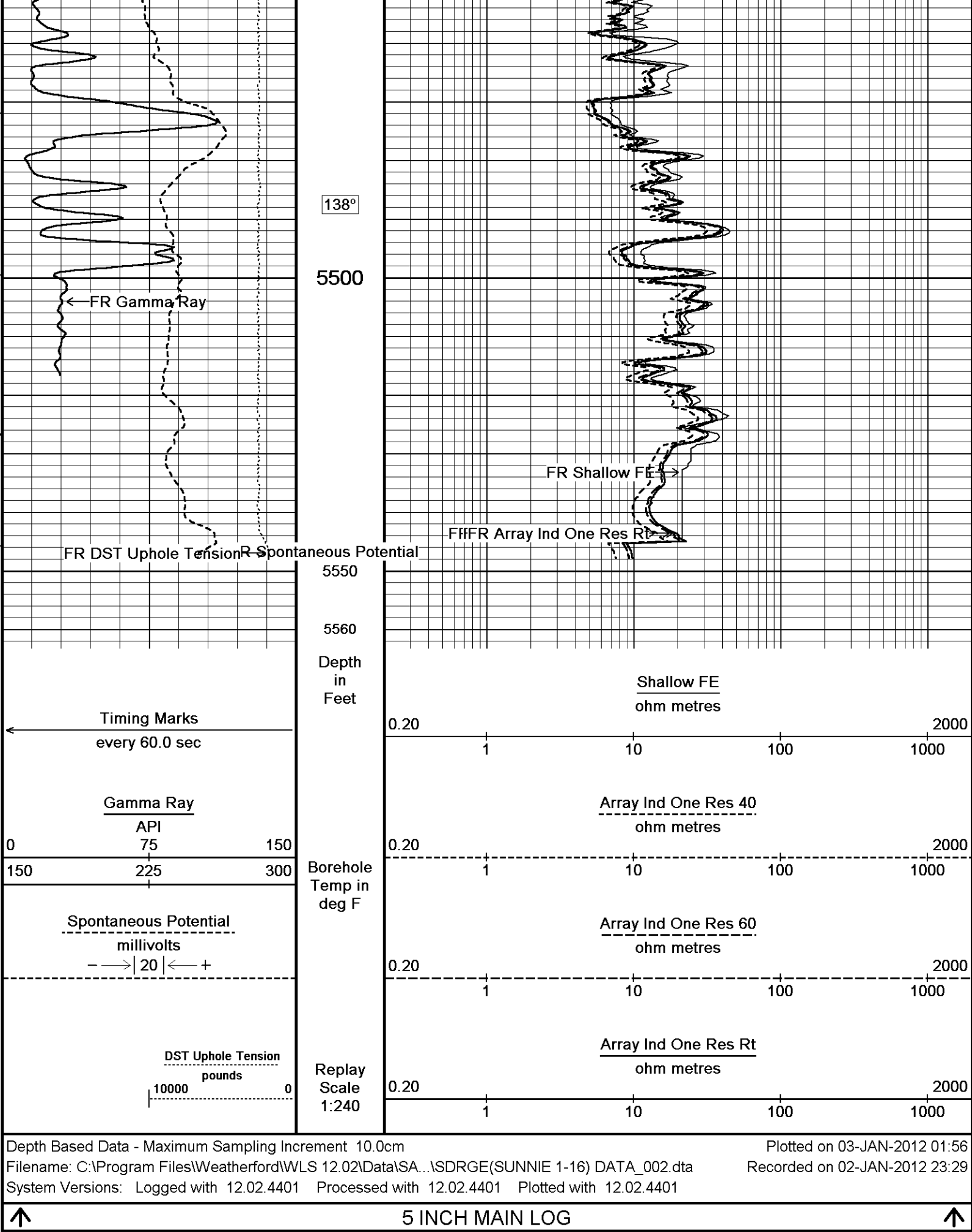
137°

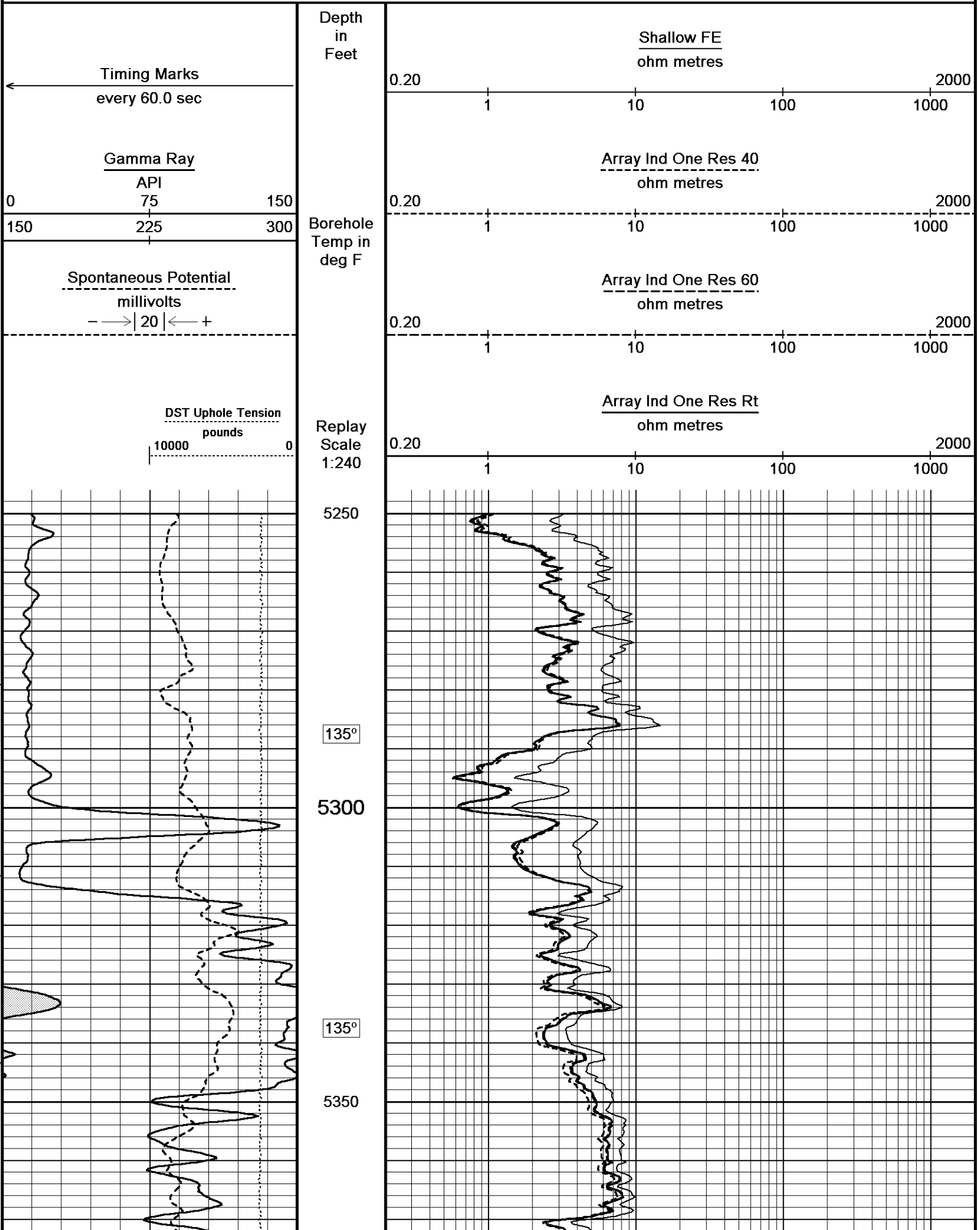
5400

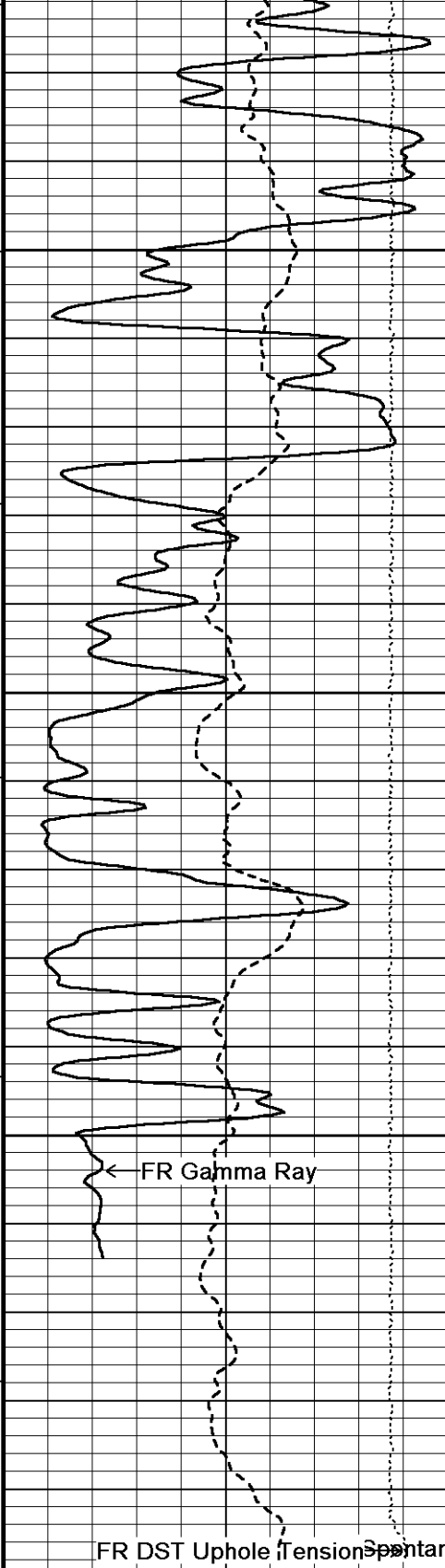
138°

5450









136°

5400

136°

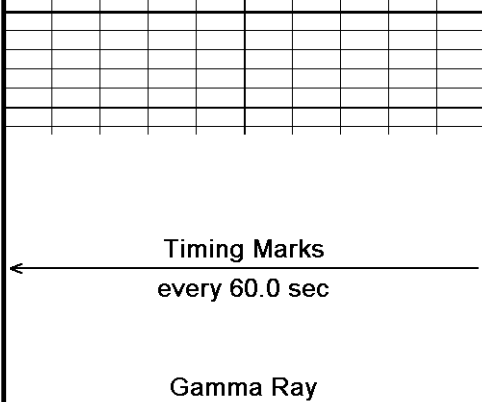
5450

135°

5500

← FR Gamma Ray

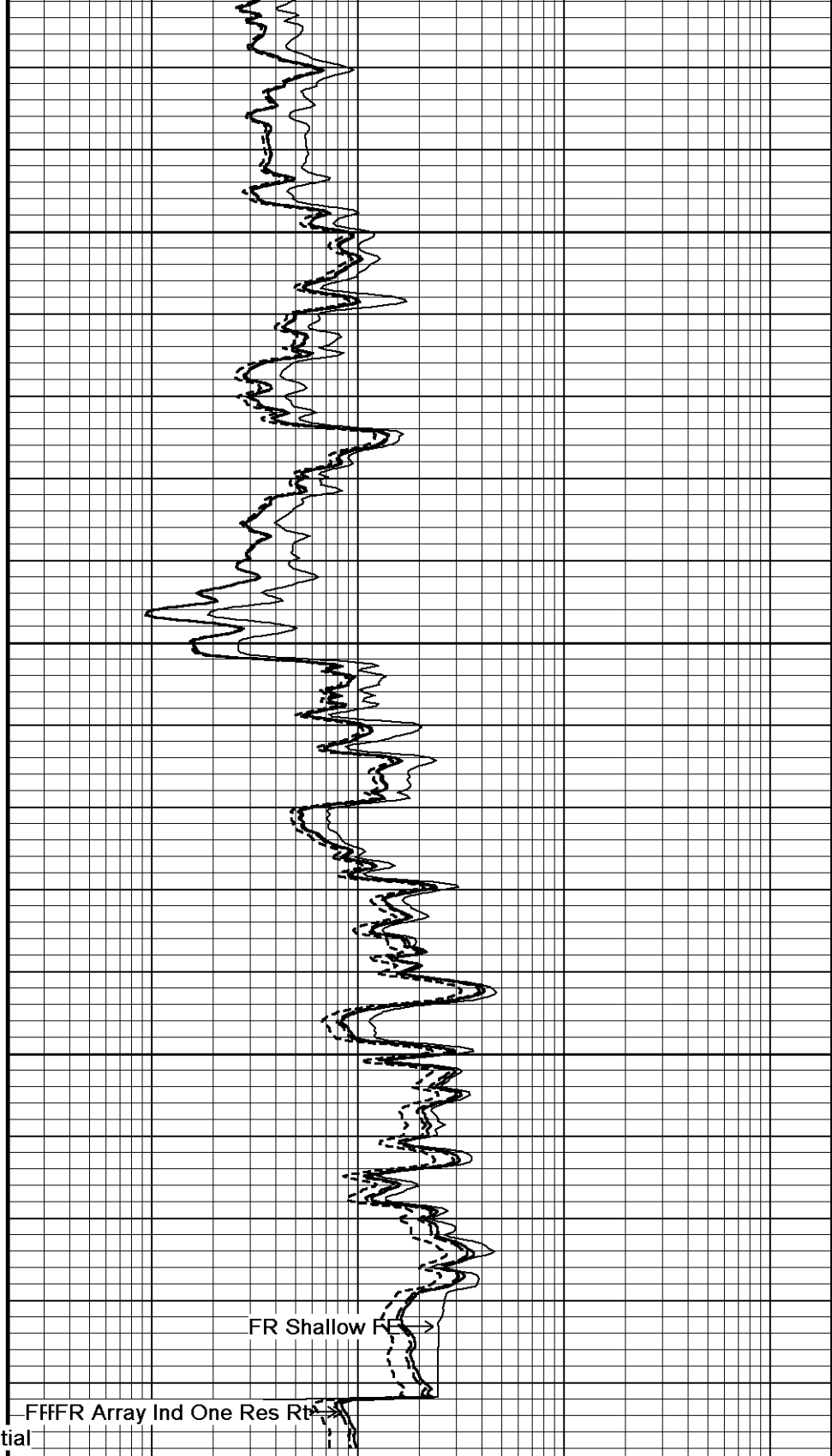
FR DST Uphole Tension Spontaneous Potential



5550

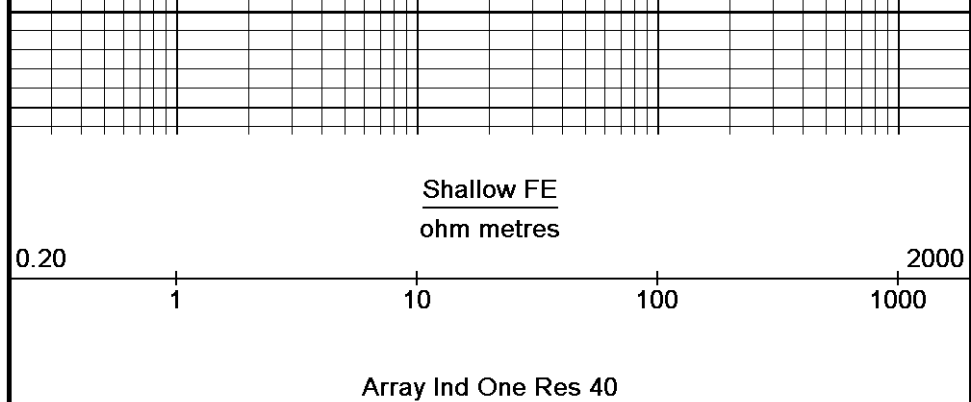
5560

Depth
in
Feet



FR Shallow FE →

FFFR Array Ind One Res Rt



0.20

1

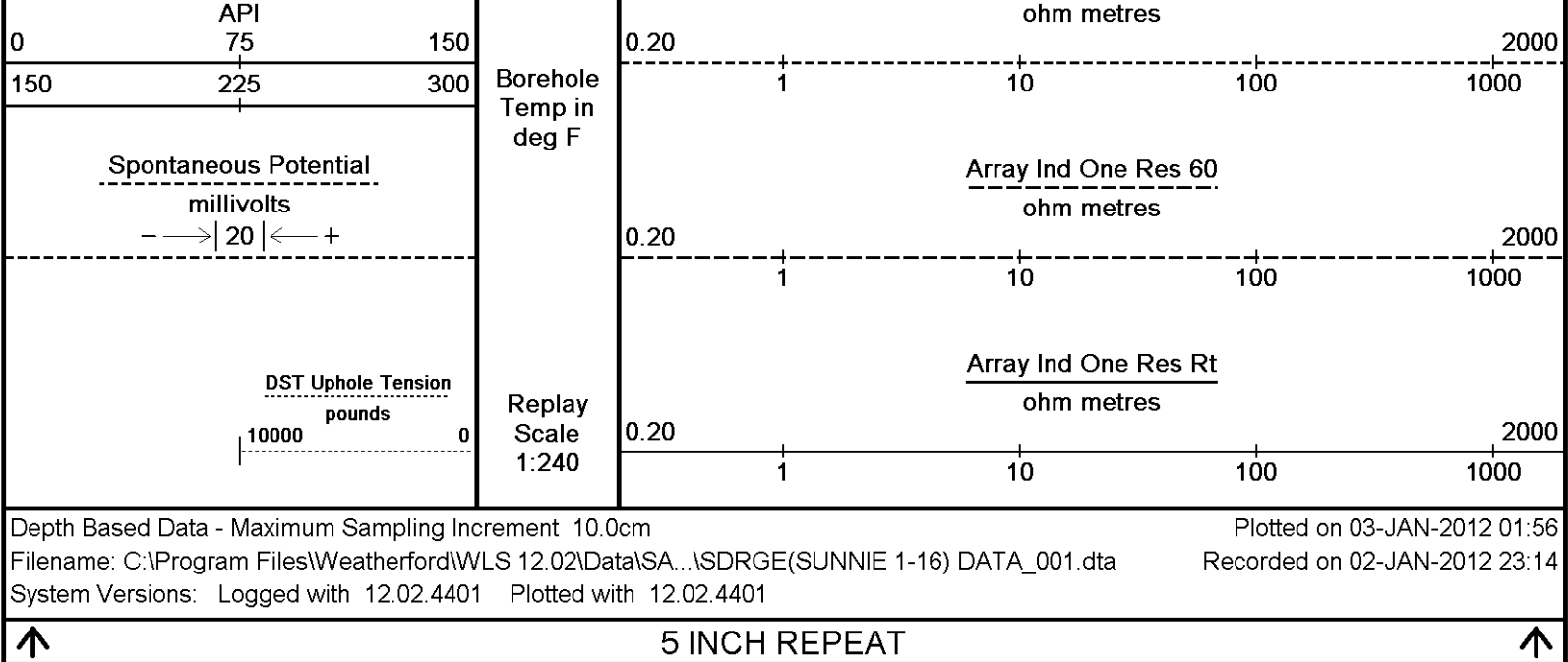
10

100

1000

2000

Array Ind One Res 40



↑

5 INCH REPEAT

↑

BEFORE SURVEY CALIBRATION			
C:\Program Files\Weatherford\WLS 12.02\Data\SANDRIDGE(SUNNIE 1-16 SWD)\SDRGE(SUNNIE 1-16) DATA.dta			
General Constants All 000			Last Edited on 03-JAN-2012 01:20
General Parameters			
Mud Resistivity	0.650	ohm-metres	
Mud Resistivity Temperature	65.000	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	Bit Size		
HVOL Caliper 2	N/A		
Annular Volume Diameter	7.000	inches	
Caliper for Differential Caliper	None		
Rwa Parameters			
Porosity used	Limestone Density Por.		
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 14-OCT-2011 15:32
Reading No	Measured	Calibrated (lbs)	
1	14312.35	0.00	
2	14895.53	205.00	

High Resolution Temperature Calibration MCG-D.J 431			Field Calibration on 02-JAN-2012 21:52
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.J 431			Last Edited on
Pre-filter Length	11		

SP Calibration MCG-D.J 431			Field Calibration on 02-JAN-2012 21:52
	Measured	Calibrated (mV)	
Reference 1	100.0	100.0	
Reference 2	-100.0	-100.0	

Gamma Calibration MCG-D.J 431			Field Calibration on 02-JAN-2012 21:51
-------------------------------	--	--	--

Background	Measured	48	Calibrated (API)	29
Calibrator (Gross)		2147		1290
Calibrator (Net)		2099		1261
Gamma Constants MCG-D.J 431				Last Edited on 02-JAN-2012 21:51
Gamma Calibrator Number		46		
Mud Density		1.07	gm/cc	
Caliper Source for Processing	Density Caliper			
Tool Position	Eccentred			
Concentration of KCl		0.00	kppm	
Micro Normal and Micro Inverse Calibration MML-A 2				Base Calibration on 02-JAN-2012 22:10 Field Check on
Base Calibration				
Channel	Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Resistor 2
Micro Normal	12.0	59.7	2.6	12.8
Micro Inverse	14.9	77.9	1.7	8.4
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	32.4		0.0	
Micro Inverse	16.3		0.0	
Micro Normal and Micro Inverse Constants MML-A 2				Last Edited on 02-JAN-2012 22:11
Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159			
Micro Normal K Factor	0.5110			
Micro Inverse K Factor	0.3380			
Standoff Offset	N/A inches			
Caliper Calibration MML-A 2				Base Calibration on 02-JAN-2012 22:09 Field Calibration on
Base Calibration				
Reading No	Measured		Calibrator Size (in)	
1	15886		5.96	
2	19417		7.98	
3	22902		9.94	
4	26750		11.91	
5	0		0.00	
6	N/A		N/A	
Field Calibration				
	Measured Caliper (in)		Actual Caliper (in)	
	0.00		0.00	
Neutron Calibration MDN-A.A 10				Base Calibration on 12-MAY-2011 18:29 Field Check on 02-JAN-2012 21:55
Base Calibration				
	Near	Measured Far	Near	Calibrated (cps) Far
	3130	98	3714	110
Ratio	31.818		33.764	
Field Calibrator at Base				
			Calibrated (cps)	
			1248	1792
Ratio	0.696			
Field Check				
			Calibrated (cps)	
			914	1360
Ratio	0.672			
Neutron Constants MDN-A.A 10				Last Edited on 27-DEC-2011 12:19
Neutron Source Id	P14033B			
Neutron Jig Number	13226			
Epithermal Neutron	No			
Caliper Source for Processing	Density Caliper			
Stand-off	0.00		inches	
Mud Density	1.00		gm/cc	
Limestone Sigma	7.10		cu	
Sandstone Sigma	4.26		cu	

Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	None	
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	
Salinity Correction	Not Applied	

FE Calibration MFE-A.A 65		Base Calibration on 04-OCT-2011 13:00 Field Check on 02-JAN-2012 21:56	
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	959.5	126.8	
Base Check		281.4	
Field Check		281.2	

FE Constants MFE-A.A 65			Last Edited on 27-DEC-2011 12:19		
Running Mode		No Sleeve			
MFE K Factor		0.1268			
Caliper Source for FE correction		Bit Size			
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-A.A 102		Field Calibration on 02-JAN-2012 21:57	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MAI-A.A 102		Last Edited on
Pre-filter Length	11	

Induction Calibration MAI-A.A 102				Base Calibration on 24-FEB-2011 20:51	
				Field Check on 02-JAN-2012 21:56	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.3	481.3	9.3	966.2	
2	5.4	377.6	7.6	821.4	
3	2.4	255.3	5.2	566.0	
4	1.5	133.4	2.6	279.2	
Array Temperature		78.4	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	13.2	3809.2	
2	0.0	0.0	32.5	3606.3	
3	0.0	0.0	31.5	3124.9	
4	0.0	0.0	20.5	2086.7	
Deep	0.0	0.0	18.9	1999.9	
Medium	0.0	0.0	47.0	4180.8	
Shallow	0.0	0.0	48.8	5374.2	
Array Temperature		0.0	75.3	Deg F	

Induction Constants MAI-A.A 102		Last Edited on 02-JAN-2012 21:57	
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	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0060	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-A 3

Base Calibration on 04-OCT-2011 14:09
Field Calibration on 02-JAN-2012 21:56

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	20208	3.98
2	28784	5.95
3	37424	7.97
4	45392	9.84
5	54503	11.91
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.76	7.98

Photo Density Calibration MPD-A 3

Base Calibration on 21-SEP-2011 14:08
Field Check on 02-JAN-2012 21:56

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	47357	25239	60364	31945
Reference 2	20102	2812	25079	2547

Field Check at Base	1315.7	1670.4
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Field Check	1291.5	1624.9
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PE Calibration				
Base Calibration		Measured	Calibrated	
	WS	WH	Ratio	Ratio
Background	242	1164		
Reference 1	19956	47156	0.429	0.399
Reference 2	5535	19946	0.282	0.273

Field Check at Base	241.8	1163.6
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Density Constants MPD-A 3

Last Edited on 02-JAN-2012 21:56

Density Source Id	260	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.07	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:\Program Files\Weatherford\WLS 12.02\Data\SANDRIDGE(SUNNIE 1-16 SWD)\SDRGE(SUNNIE 1-16) DATA.dta

SHA-F Compact Swivel Head Adaptor
SHA-F 45 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.J 431 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 2 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

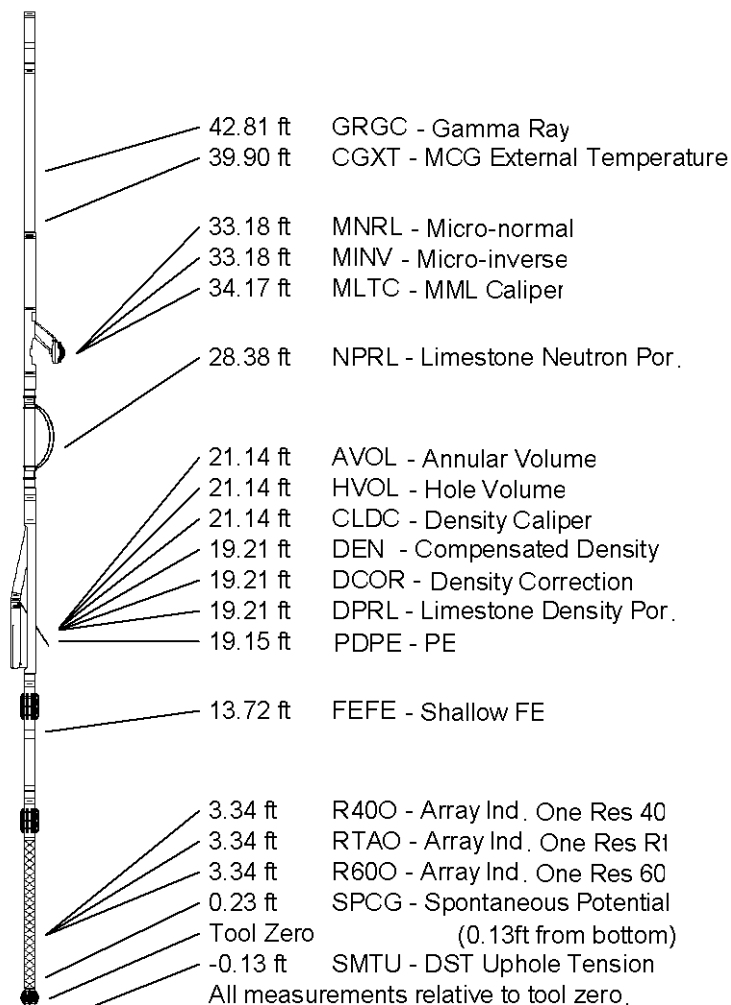
Compact Neutron
MDN-A.A 10 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A 3 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 102 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.83 ft Weight: 410.1 lb



COMPANY SANDRIDGE ENERGY, INC.
WELL SUNNIE 1-16 SWD
FIELD WALDRON WEST
PROVINCE/COUNTY HARPER
COUNTRY/STATE U.S.A/ KANSAS

Elevation Kelly Bushing	1239.00	feet	First Reading	5544.00	feet
Elevation Drill Floor	1237.00	feet	Depth Driller	5552.00	feet
Elevation Ground Level	1227.00	feet	Depth Logger	5547.00	feet



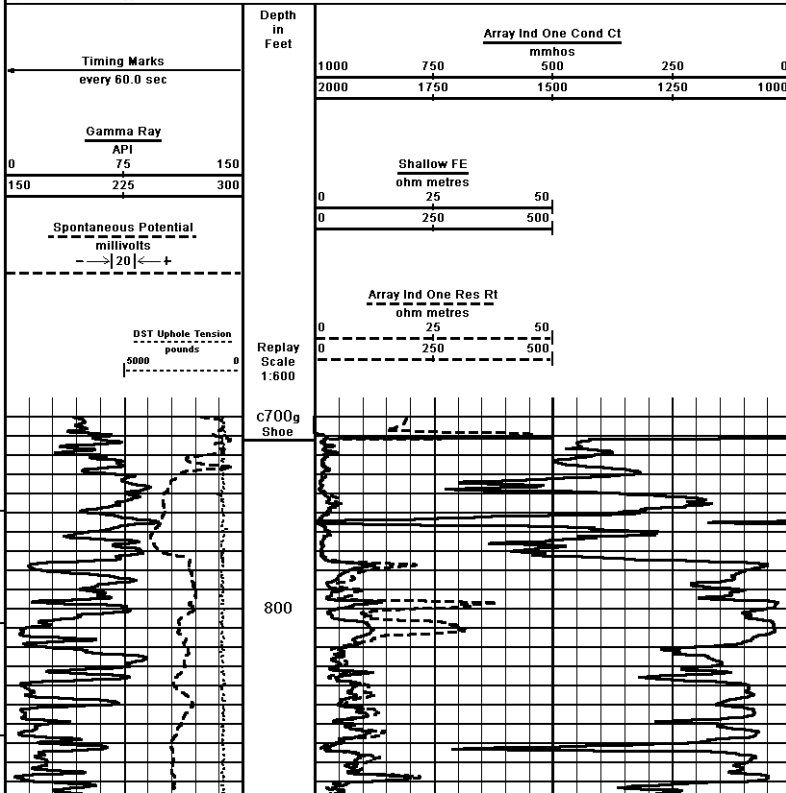
Weatherford

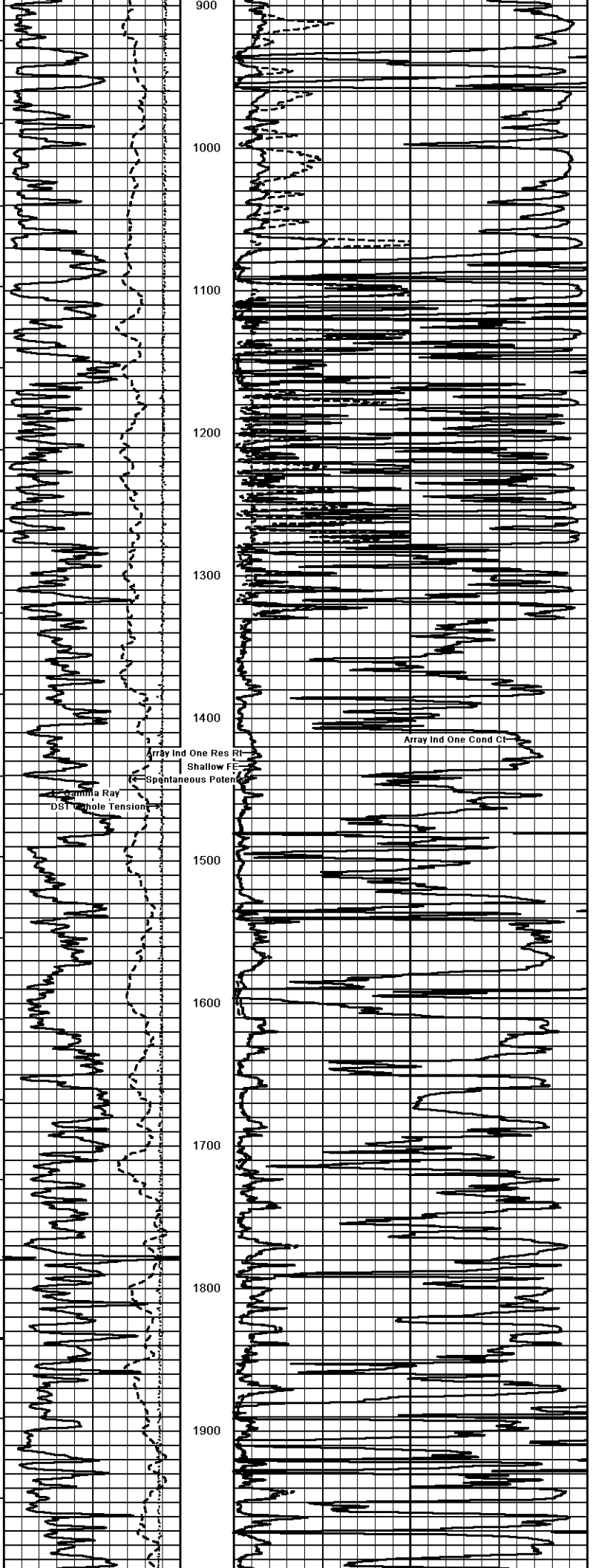
ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG



Weatherford		ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG	
COMPANY SANDRIDGE ENERGY, INC.		WELL SUNNIE 1-16 SWD	
FIELD WALDRON WEST		PROVINCE/COUNTY HARPER	
COUNTRY/STATE U.S.A/ KANSAS		LOCATION 1312' FSL & 205' FEL	
SEC 16	TWP 35N	RSE 15-00' 21-79'	Other Services MP/DND/NM/L
Log Number	15-00' 21-79'	Drilling Measured from KB	Permanent Datum Q.L. Elevation 1227' feet
Date 02-JAN-2012		Log Measured from KB	Elevations: KB 1239.00 DF 1237.00 QL 1227.00
Run Number	ONE	Depth Driller	5552.00 feet
Depth Logger	5547.00 feet	First Reading	5544.00 feet
Last Reading	700.00 feet	Casing Driller	715.00 feet
Casing Logger	712.00 feet	Bit Size	8.750 inches
Hole Fluid Type	WBM	Density / Viscosity	8.90 lb/USg 45.00 CP
PH / Fluid Loss	10.00	Sample Source	FLOWLINE
Run @ Measured Temp	0.65 @ 65.0 ohm-m	Run @ Measured Temp	0.52 @ 65.0 ohm-m
Run @ Measured Temp	0.78 @ 65.0 ohm-m	Source Rmt / Rmt	CALC
Run @ BHT	0.31 @ 38.0 ohm-m	Time Since Circulation	8 HOURS
Max Recorded Temp	138.00 deg F	Equipment Name	COMPACT
Equipment / Base	13226	Recorded By	MIKE GARRISON
Witnessed By	TAMMY ALCOB	Witnessed By	3556020DC11623

1 INCH MAIN LOG
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 03-JAN-2012 01:56
Filename: C:\Program Files\Weatherford\WLS 12.02\Data\SANDRI..VSDROE(SUNNIE 1-16) DATA_002.dta
Recorded on 02-JAN-2012 23:29
System Versions: Logged with 12.02.4401 Processed with 12.02.4401 Plotted with 12.02.4401





Array Ind One Cond Ct

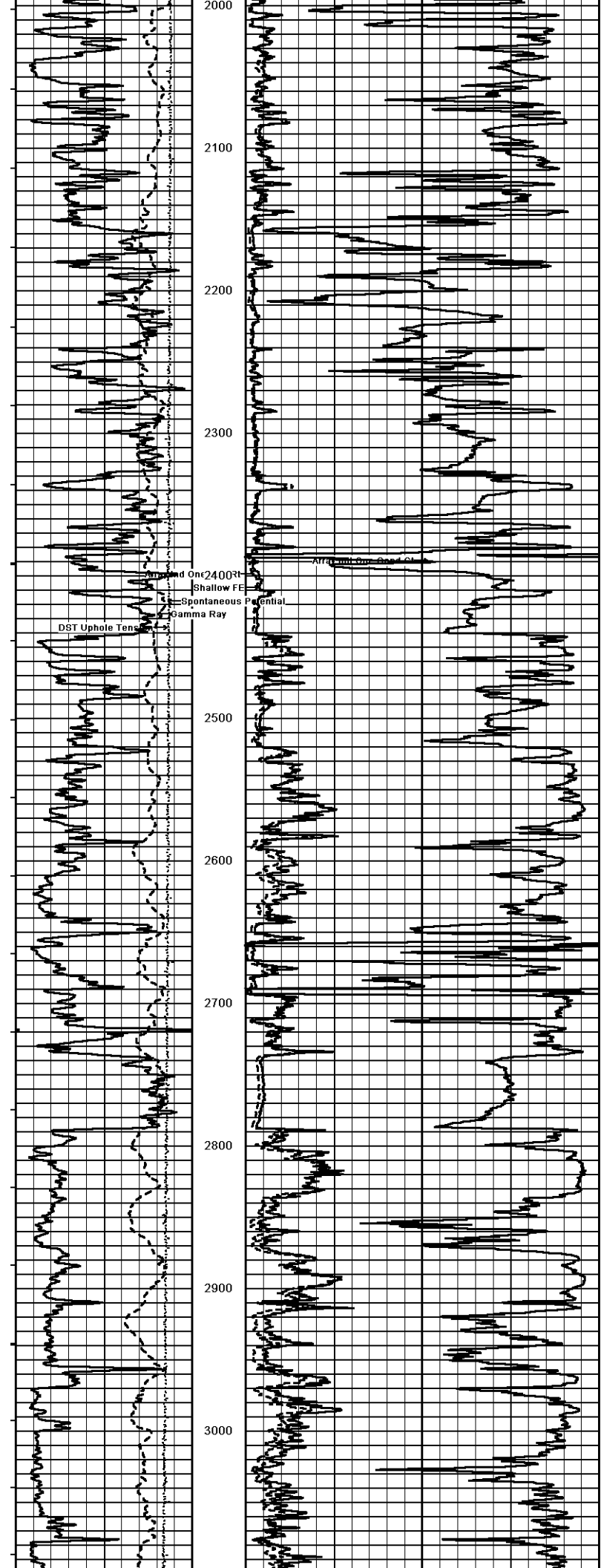
Array Ind One Res Rt

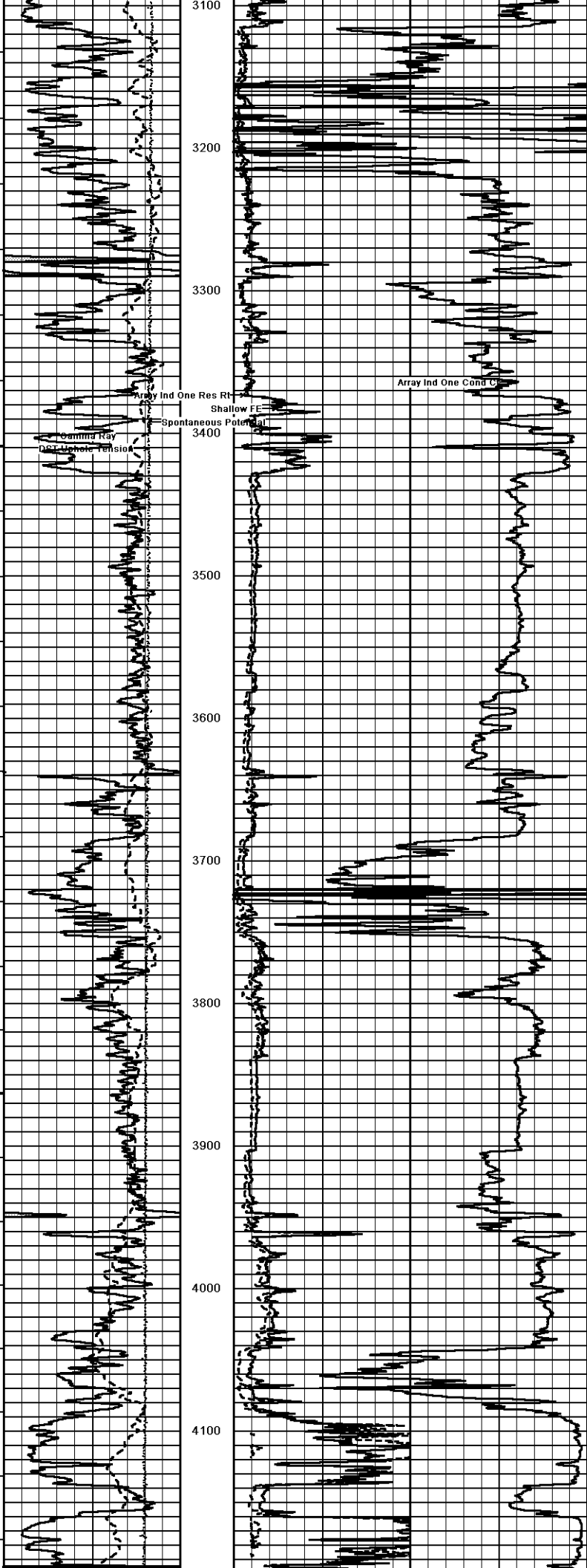
Shallow FES

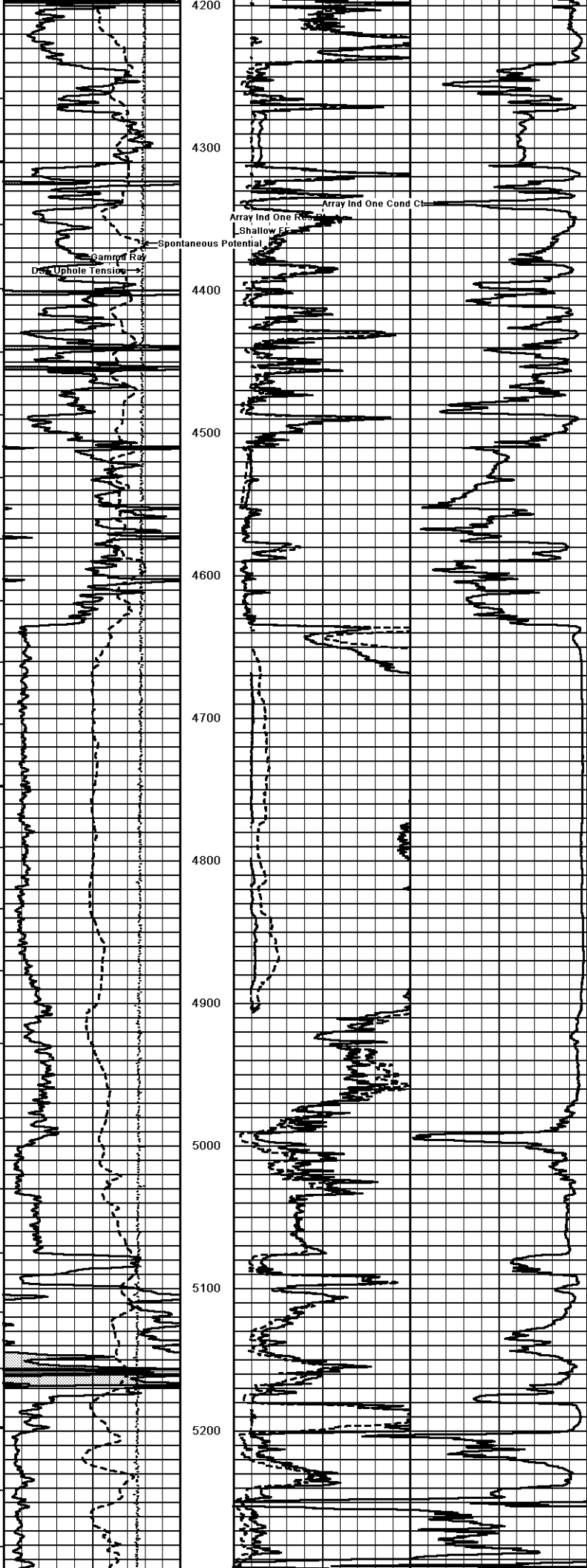
Spontaneous Potential

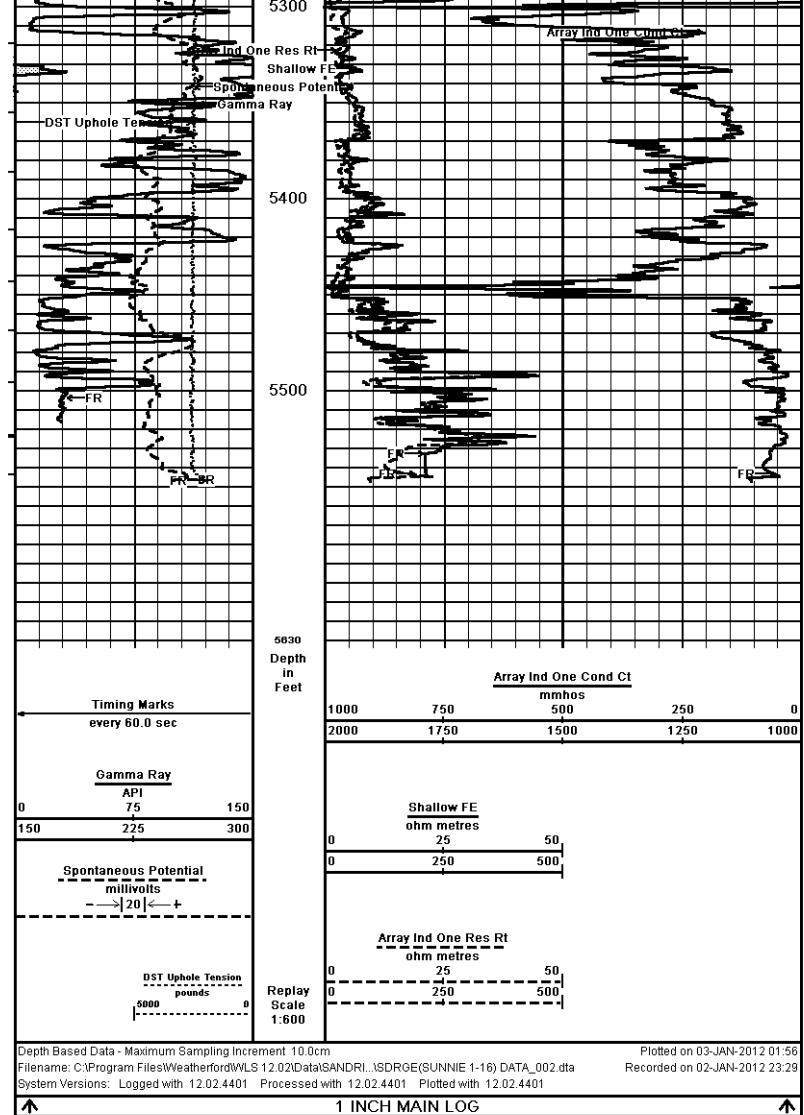
Gamma Ray

DST - Hole Tension









COMPANY	SANDRIDGE ENERGY, INC.			
WELL	SUNNIE 1-16 SWD			
FIELD	WALDRON WEST			
PROVINCE/COUNTY	HARPER			
COUNTRY/STATE	U.S.A/ KANSAS			
Elevation Kelly Bushing	1239.00	feet	First Reading	5544.00 feet
Elevation Drill Floor	1237.00	feet	Depth Driller	5552.00 feet
Elevation Ground Level	1227.00	feet	Depth Logger	5547.00 feet
		ARRAY INDUCTION		
		SHALLOW FOCUSED		
		ELECTRIC LOG		
				