



Weatherford

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

COMPANY	BEREXCO, LLC.		
WELL	KANE UNIT #4-14		
FIELD	ALFORD		
PROVINCE/COUNTY	KIOWA		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	1560' FSL & 1380' FWL		
SEC 14	TWP 30S	RGE 19W	Other Services
Latitude	MPD/MDN		
Longitude	MSS		
API Number	15-097-21839		
Permanent Datum GL, Elevation 2215 feet			
Log Measured From KB, 12.00 feet above Permanent Datum			
Drilling Measured From KB			
Date	16-DEC-2018		
Run Number	ONE		
Service Order	4558-232171566		
Depth Driller	5300.00	feet	
Depth Logger	5299.00	feet	
First Reading	5296.00	feet	
Last Reading	685.00	feet	
Casing Driller	685.00	feet	
Casing Logger	685.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.30 lb/USg	52.00 CP	
PH / Fluid Loss	11.00	8.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.63 @ 75.0	ohm-m	
Rmf @ Measured Temp	0.50 @ 75.0	ohm-m	
Rmc @ Measured Temp	0.76 @ 75.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.44 @108.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	108.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	ADAM SILL		
Witnessed By	CLINT BLEIER		

Elevations:	feet
KB	2227.00
DF	2225.00
GL	2215.00

BOREHOLE RECORD				Last Edited: 16-DEC-2018 15:49
Bit Size inches		Depth From feet		Depth To feet
7.875		685.00		5300.00
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	685.00	24.00

REMARKS
- SOFTWARE ISSUE: WLS 18.03.9344.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 2060 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 4000 FEET: 221 CU.FT.

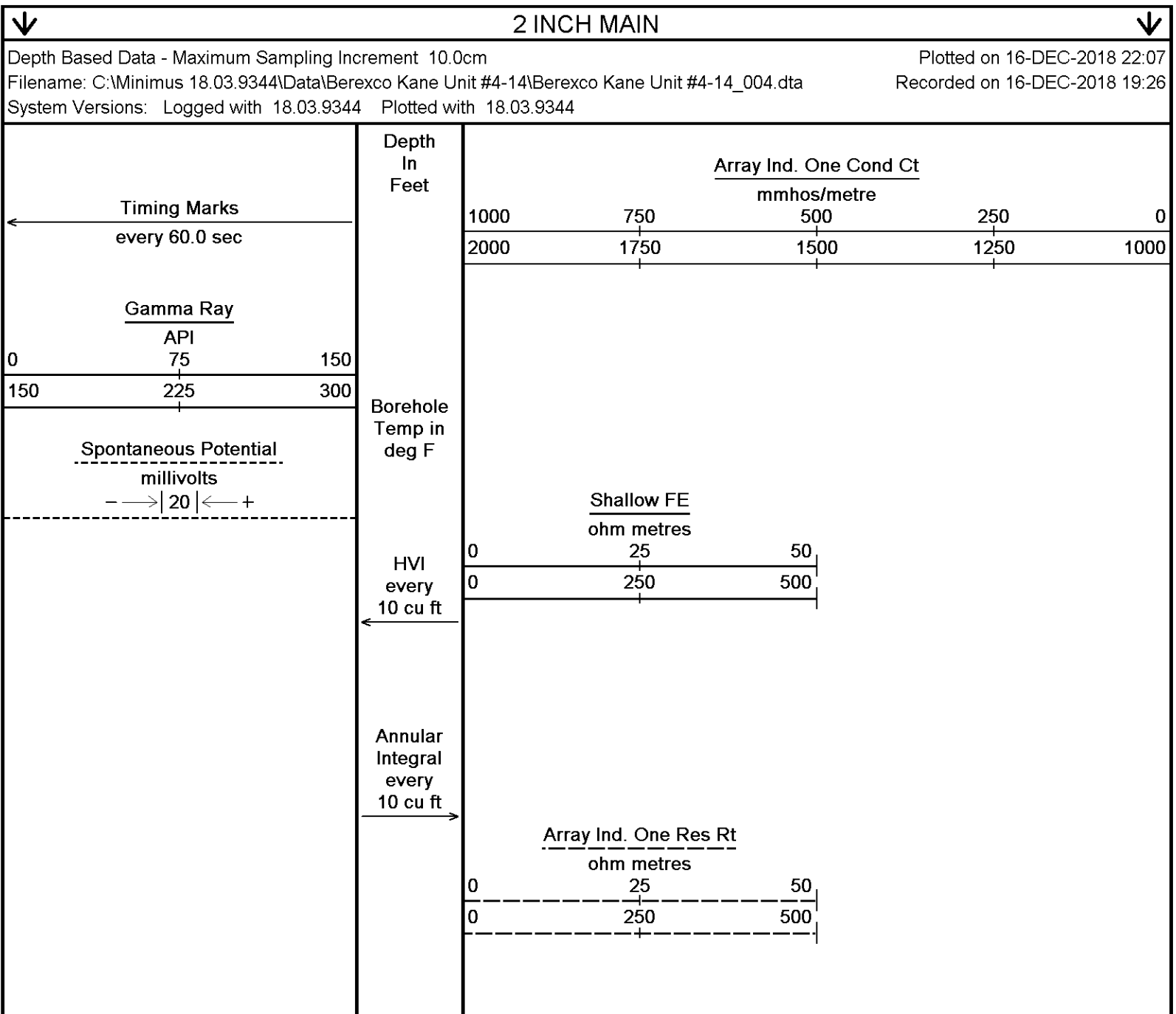
- RIG: FOSSIL DRILLING #3.

- ENGINEER: A. SILL.

- OPERATOR: B. TOVAR, B. COPELAND.

**** SP IS CYCLIC DUE TO AN UNKNOWN CAUSE, CHECKED SP FISH PLACEMENT AND CHECKED RIG FOR ANY KIND OF STRAY VOLTAGE AND COULD NOT FIND A CAUSE. ****

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.



DST Uphole Tension
pounds
5000 0

Replay
Scale
1:600

670
Casing
Shoe

700

2000

80°

800

1200

81°

900

81°

1000

1800

1100

82°

1100

Spontaneous Potential

Array Ind. One Res Rt →

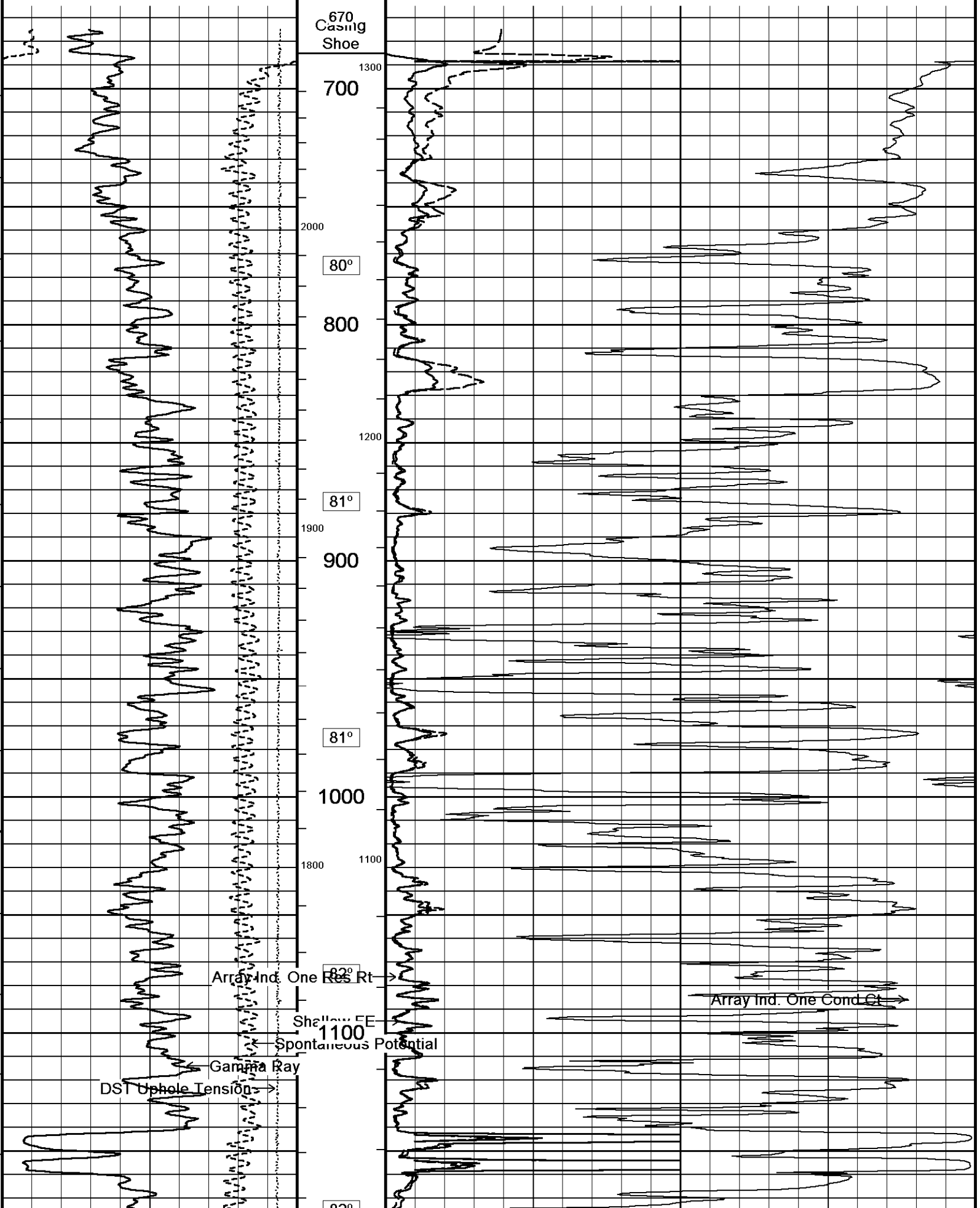
Shear FE

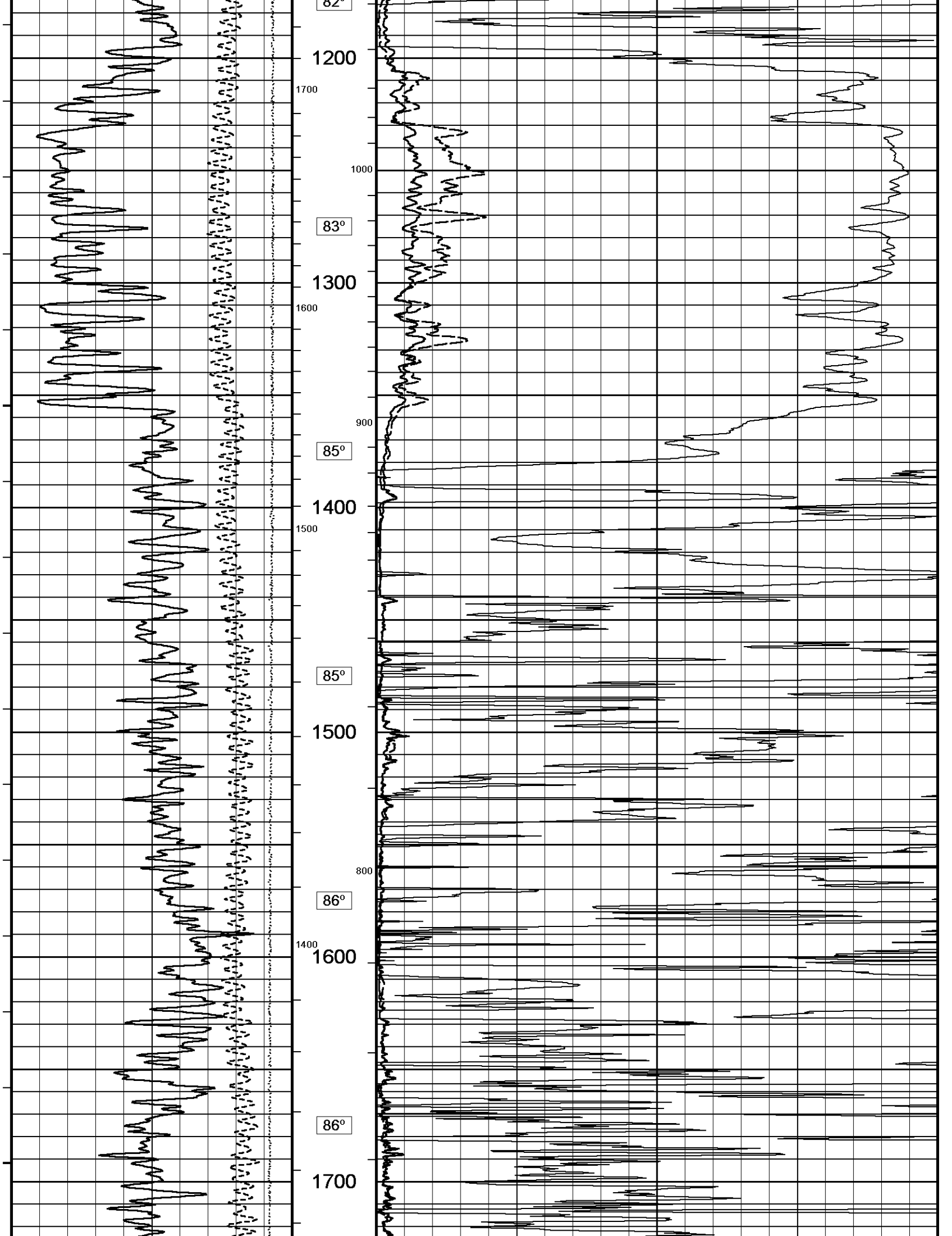
Gamma Ray

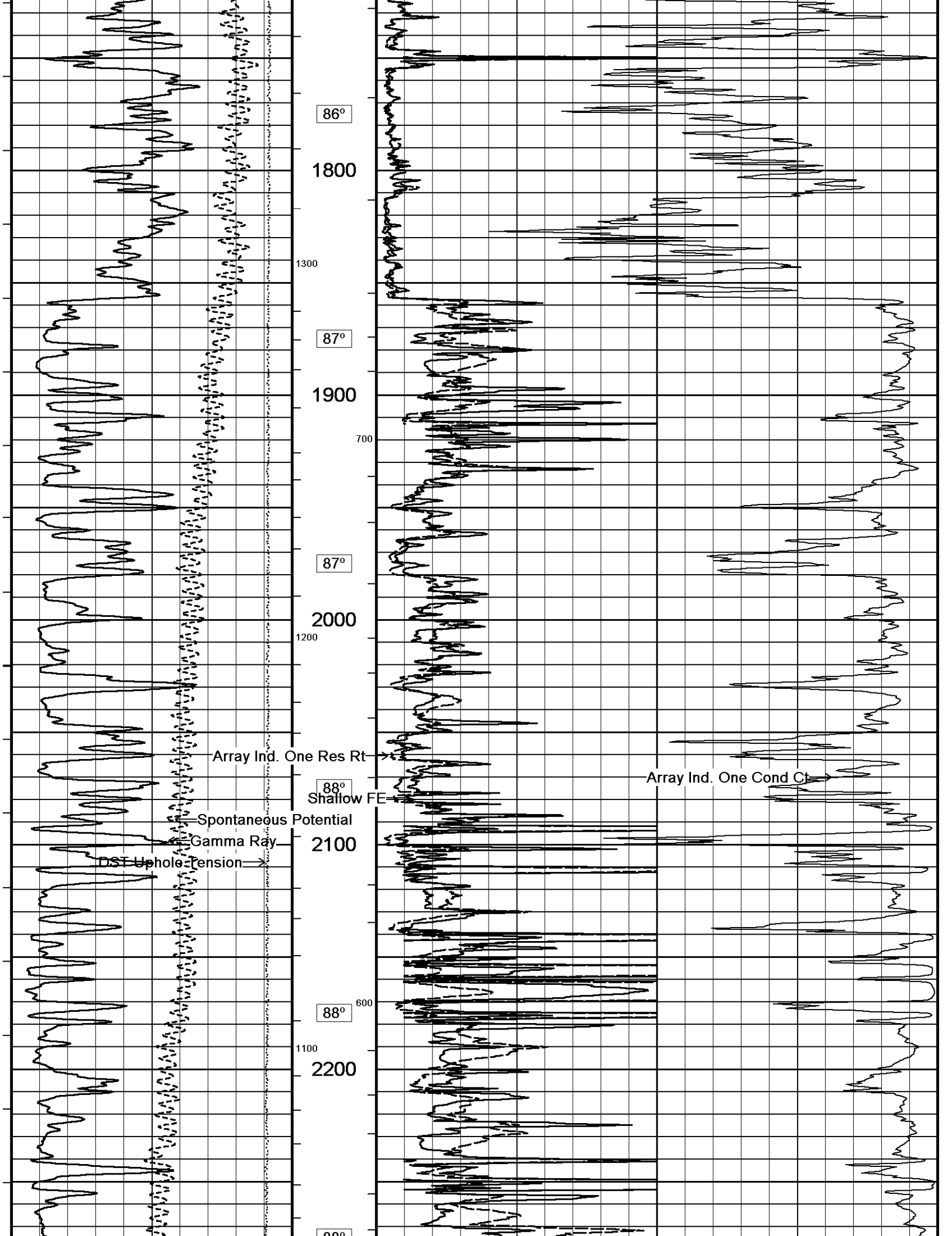
DST Uphole Tension →

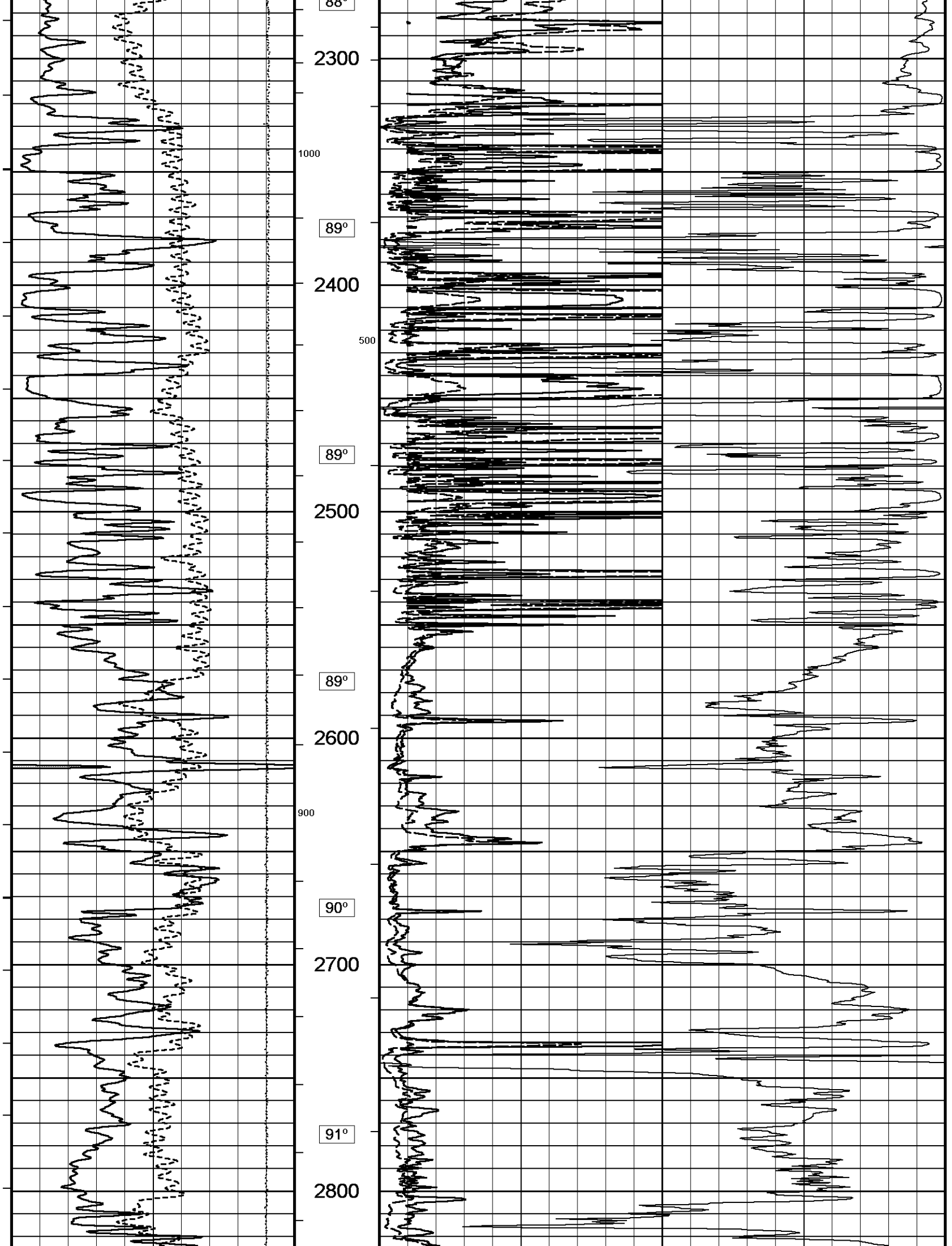
Array Ind. One Cond Ct →

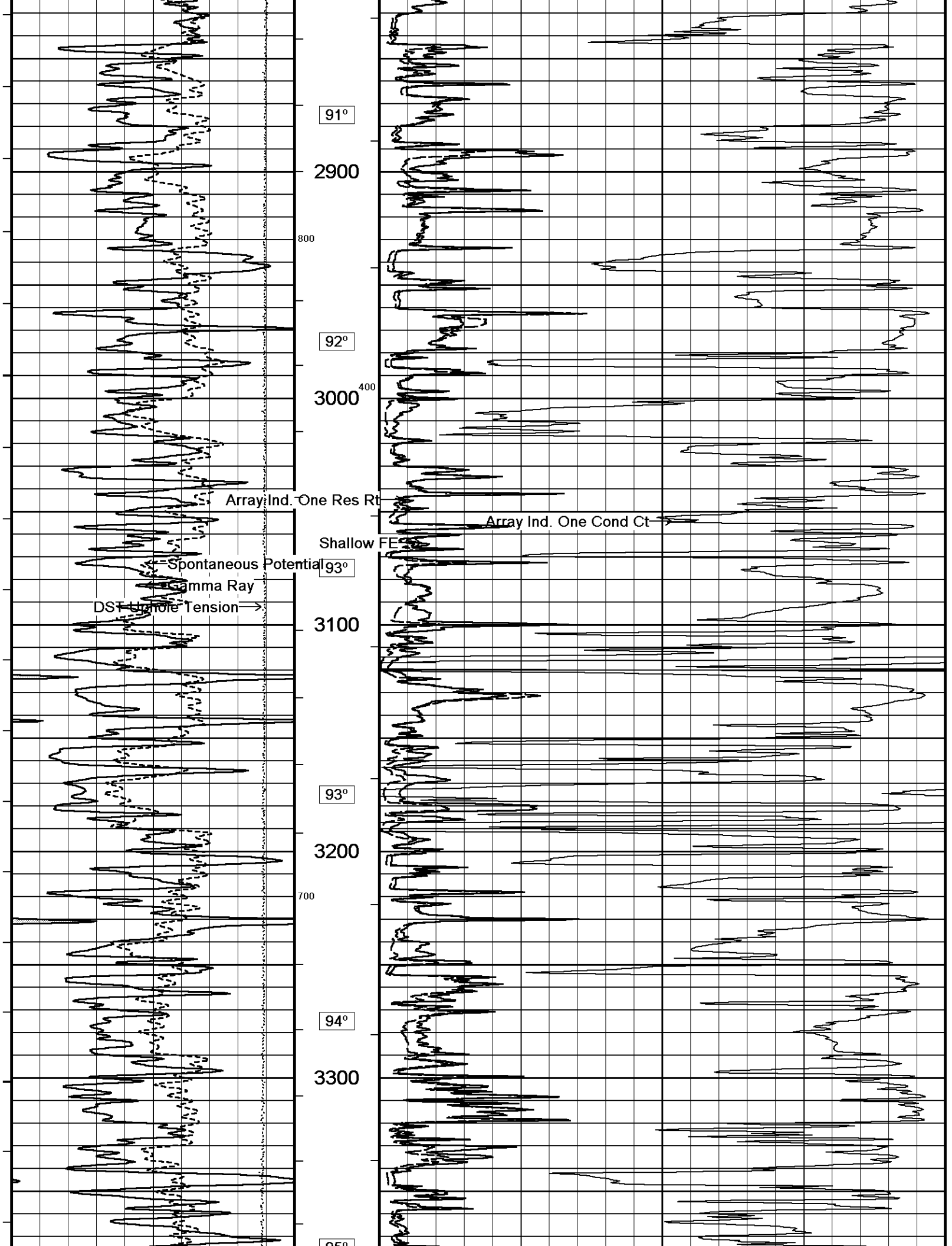
82°

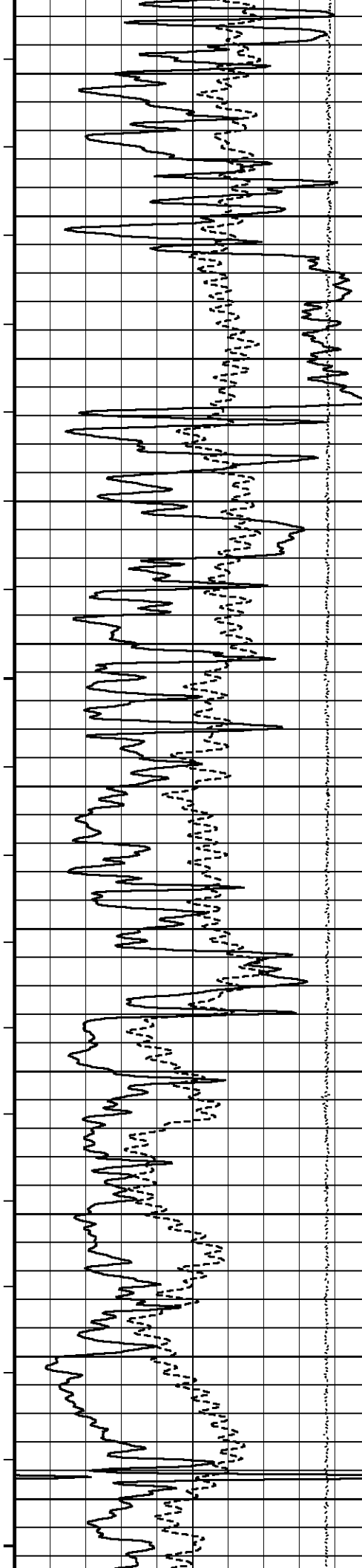




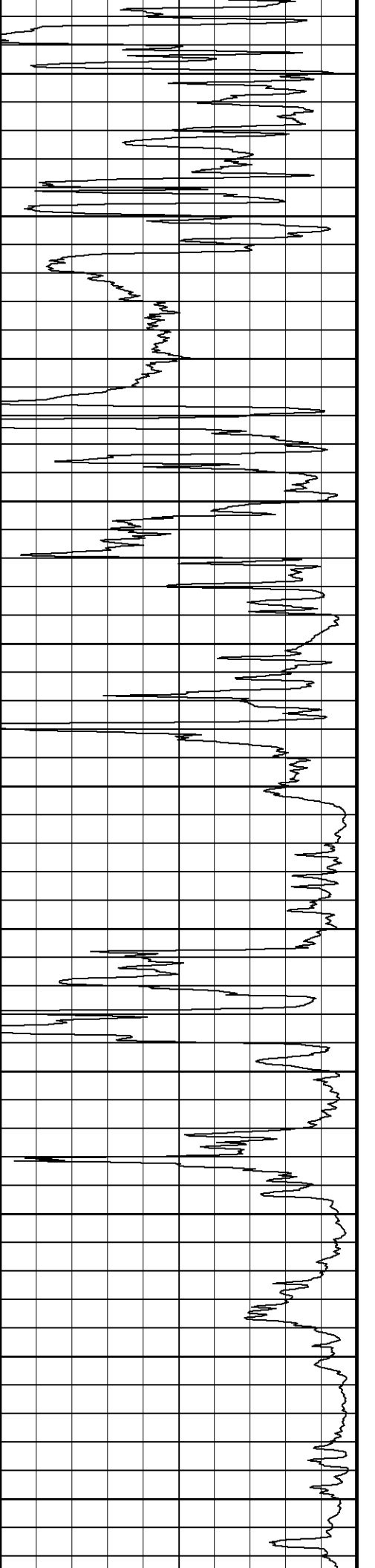
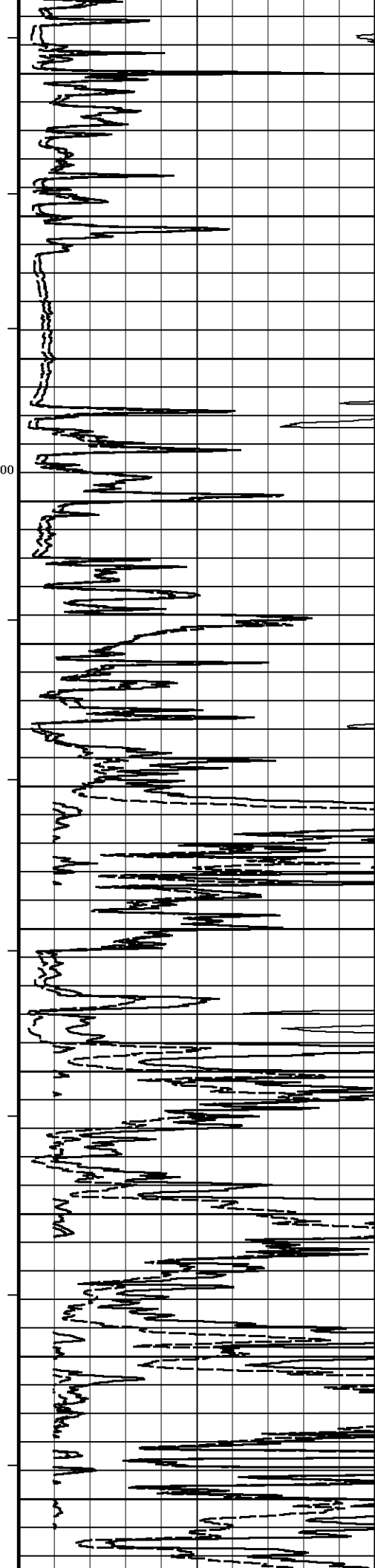


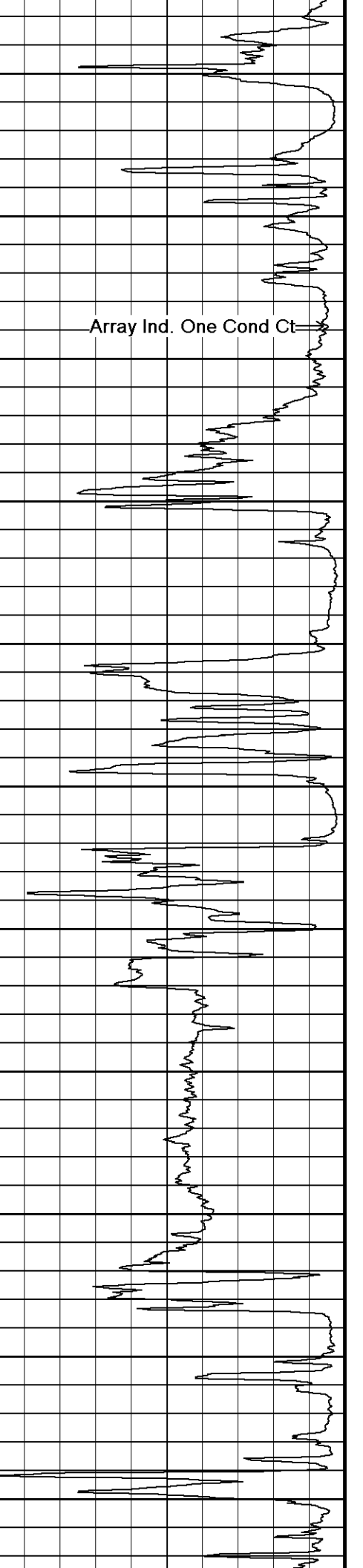
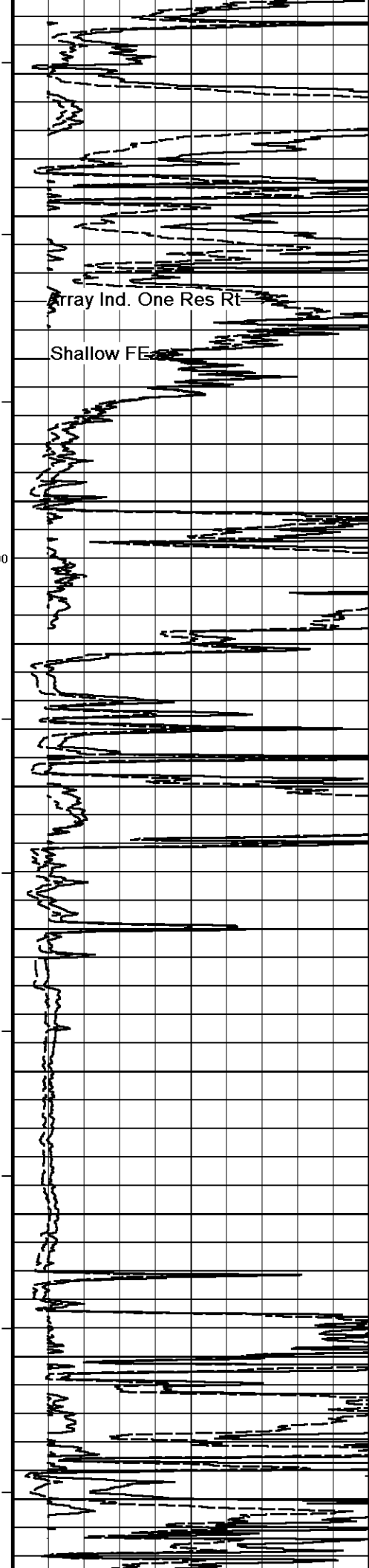
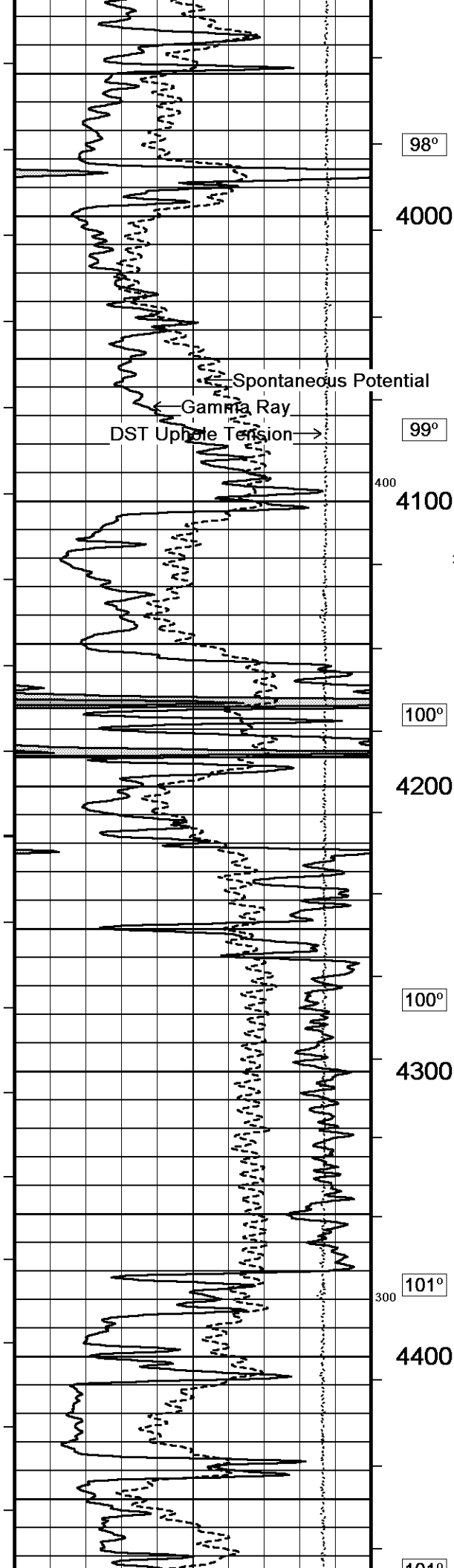


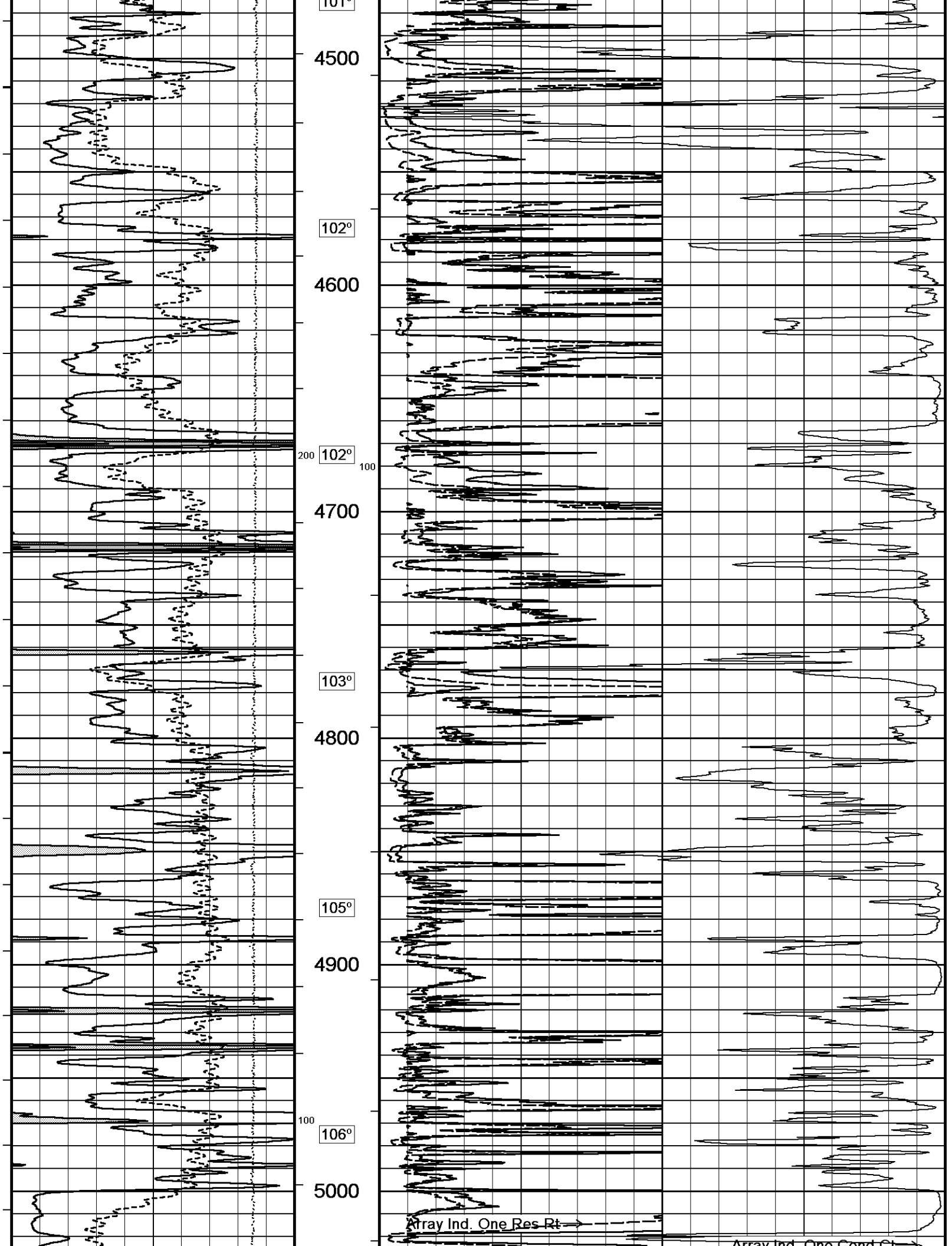


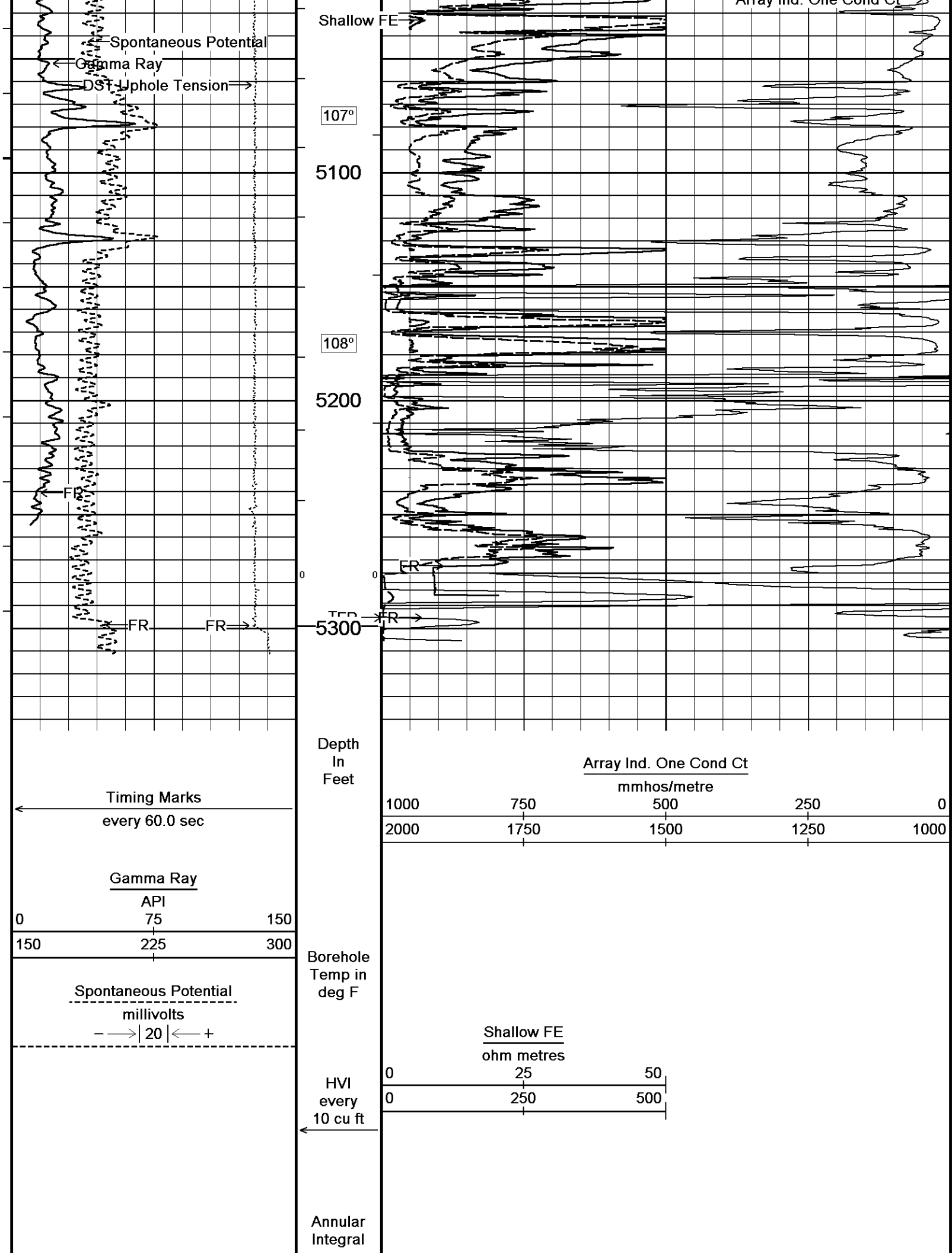


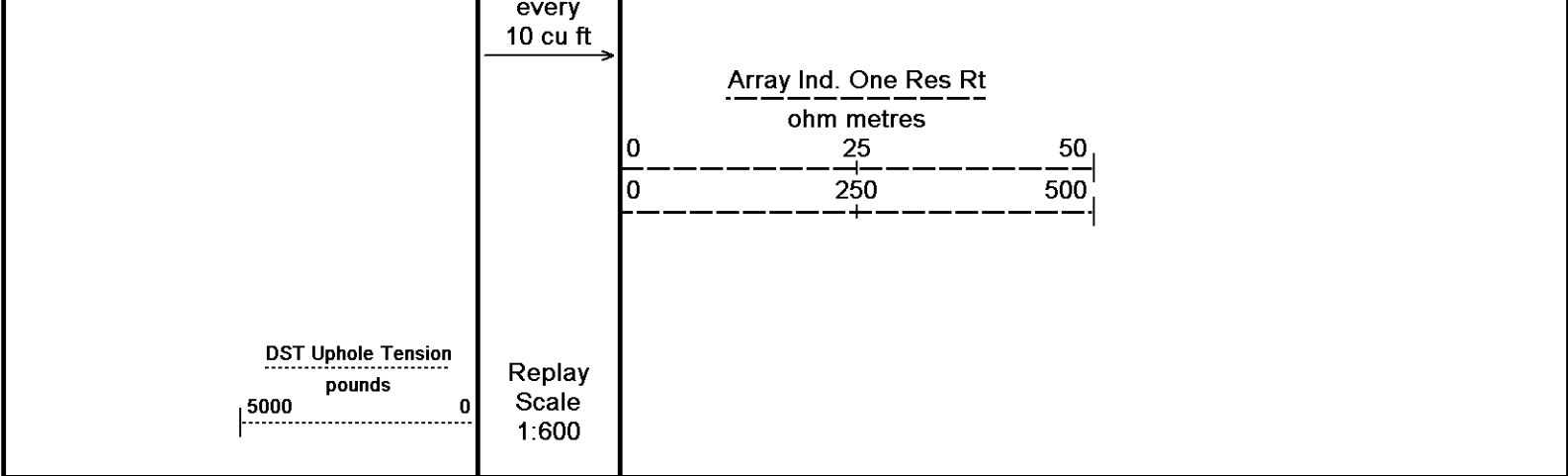
95°
3400
95°
3500
600
300
96°
3600
97°
3700
97°
3800
500
98°
3900











Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 16-DEC-2018 22:07
Filename: C:\Minimus 18.03.9344\Data\Berexco Kane Unit #4-14\Berexco Kane Unit #4-14_004.dta	Recorded on 16-DEC-2018 19:26
System Versions: Logged with 18.03.9344 Plotted with 18.03.9344	

↑

2 INCH MAIN

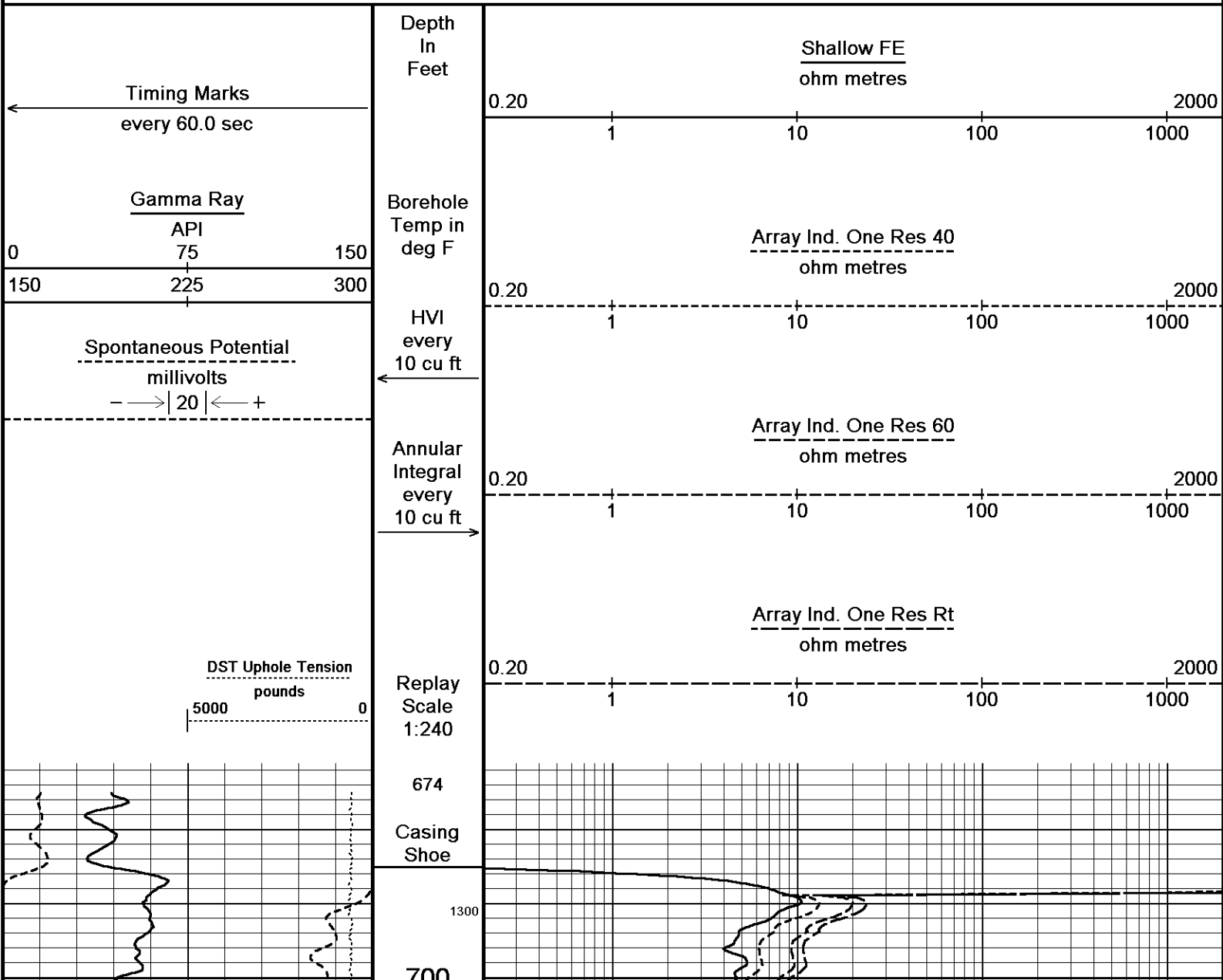
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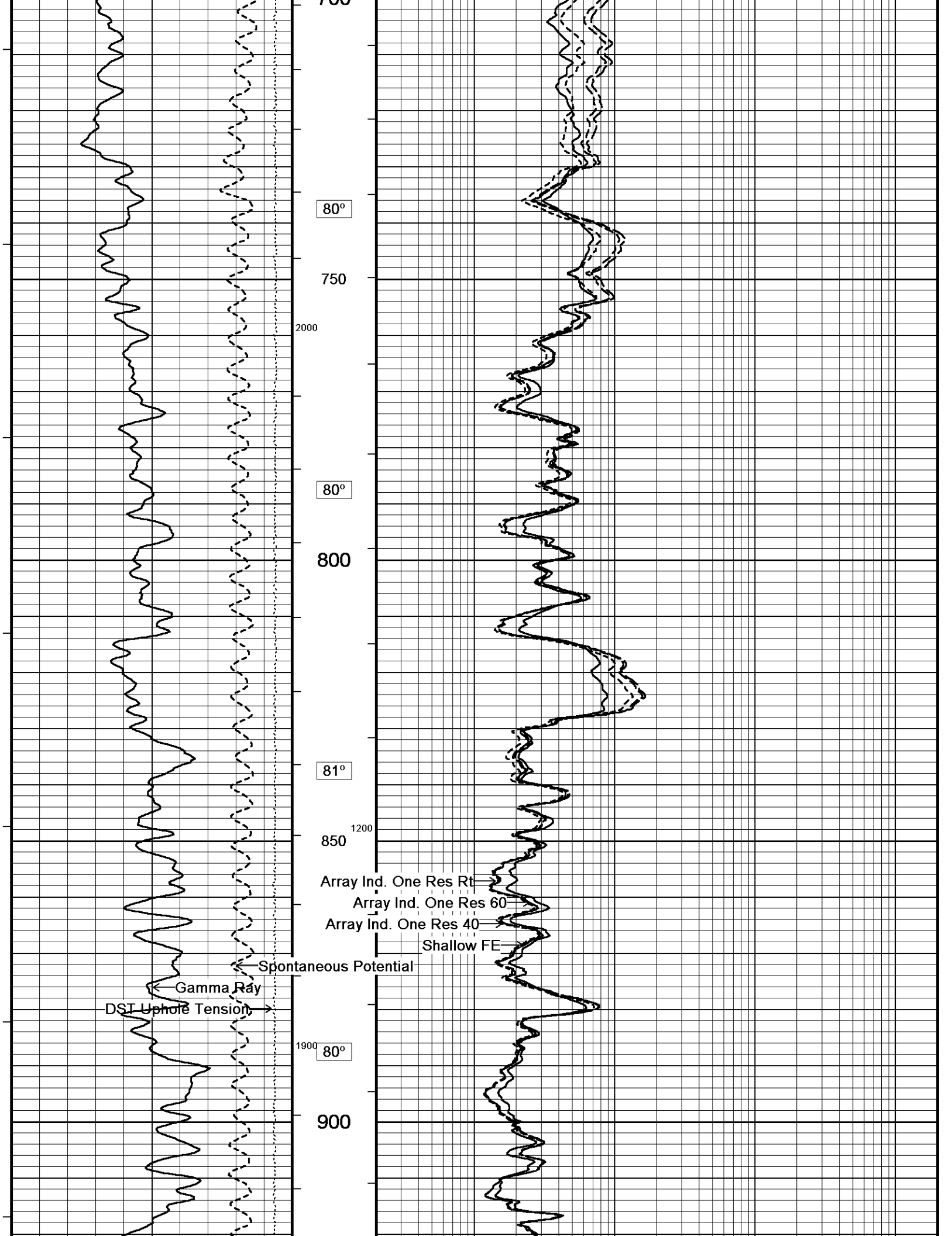
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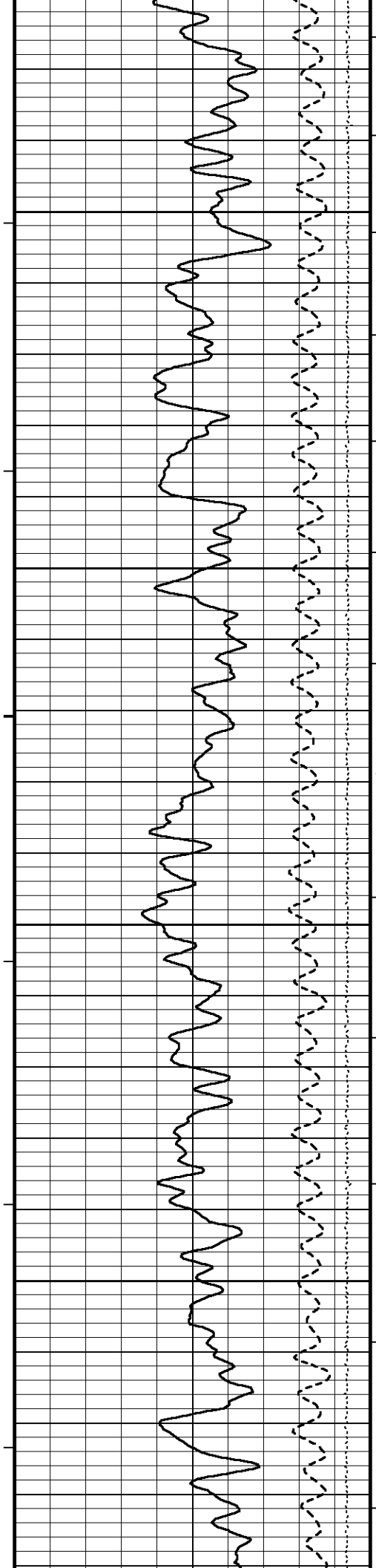
5 INCH MAIN

↓

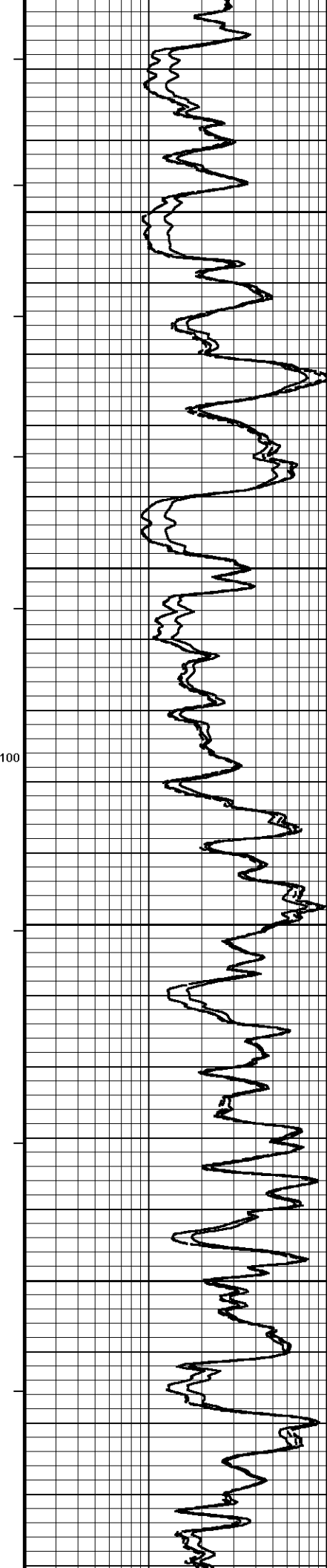
Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 16-DEC-2018 22:07
Filename: C:\Minimus 18.03.9344\Data\Berexco Kane Unit #4-14\Berexco Kane Unit #4-14_004.dta	Recorded on 16-DEC-2018 19:26
System Versions: Logged with 18.03.9344 Plotted with 18.03.9344	

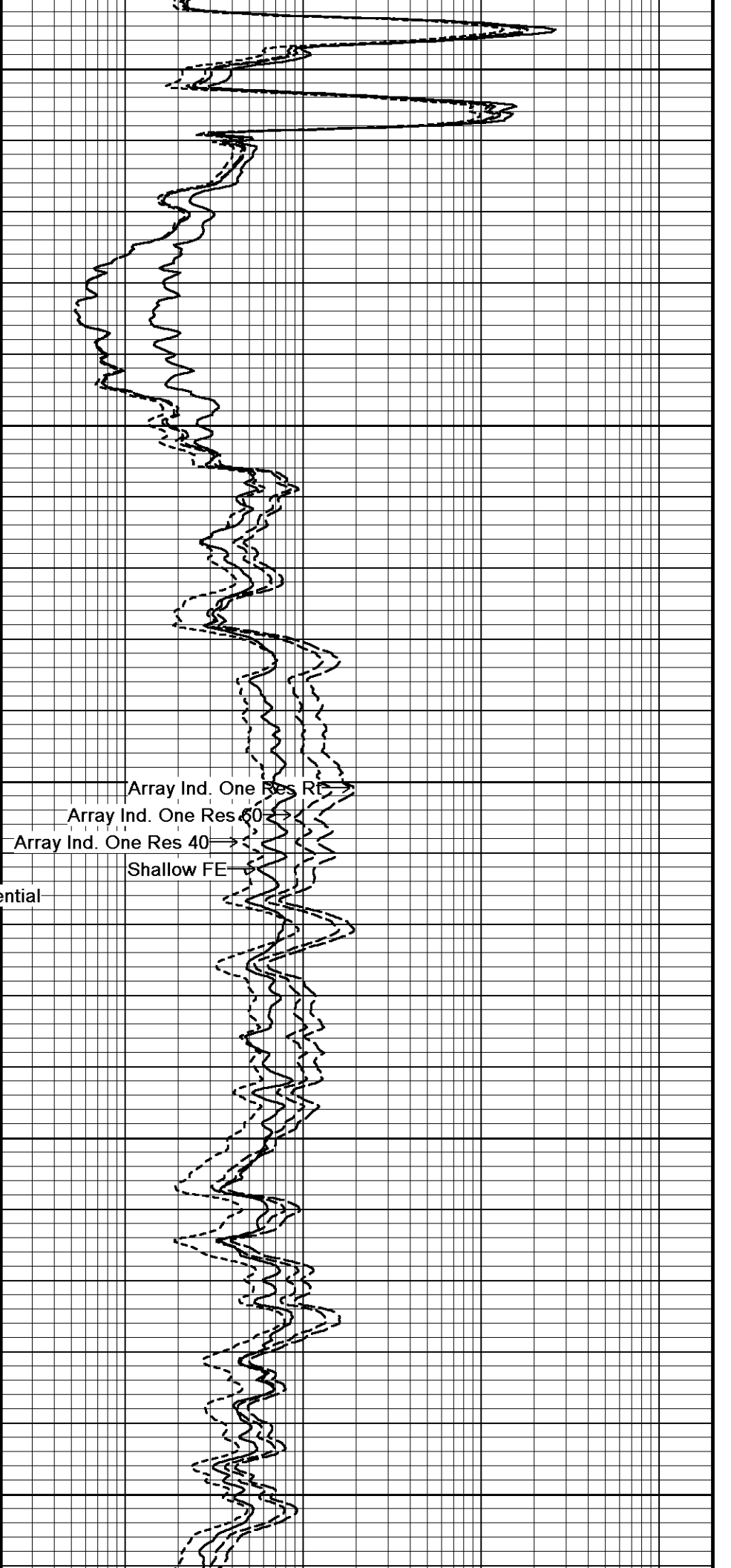
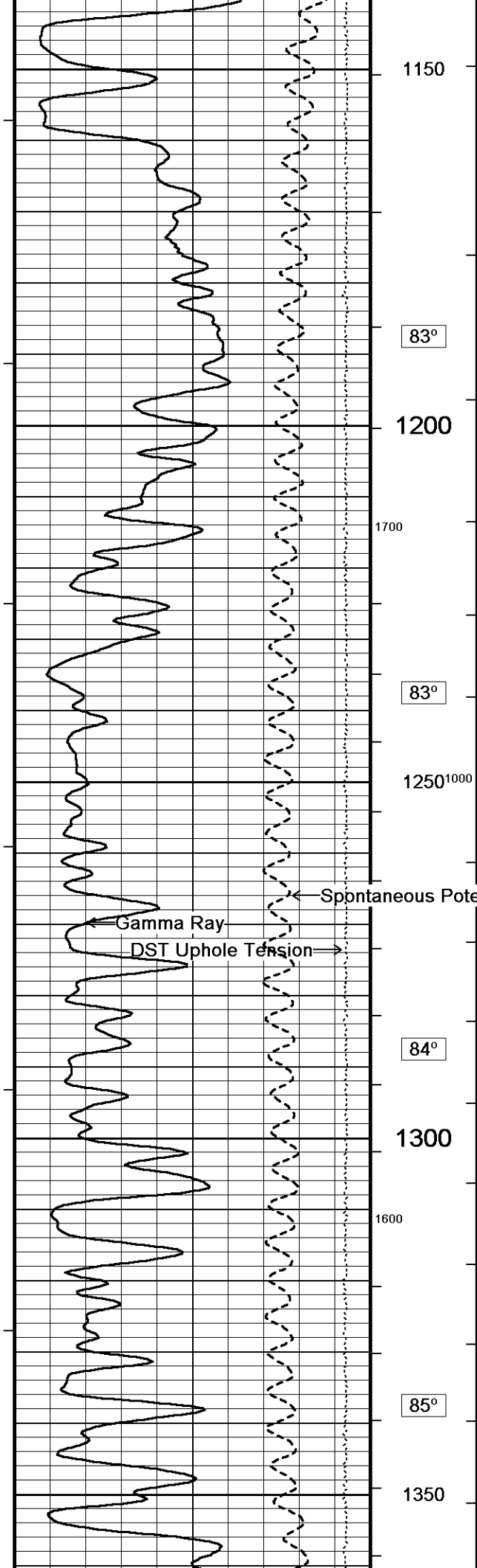


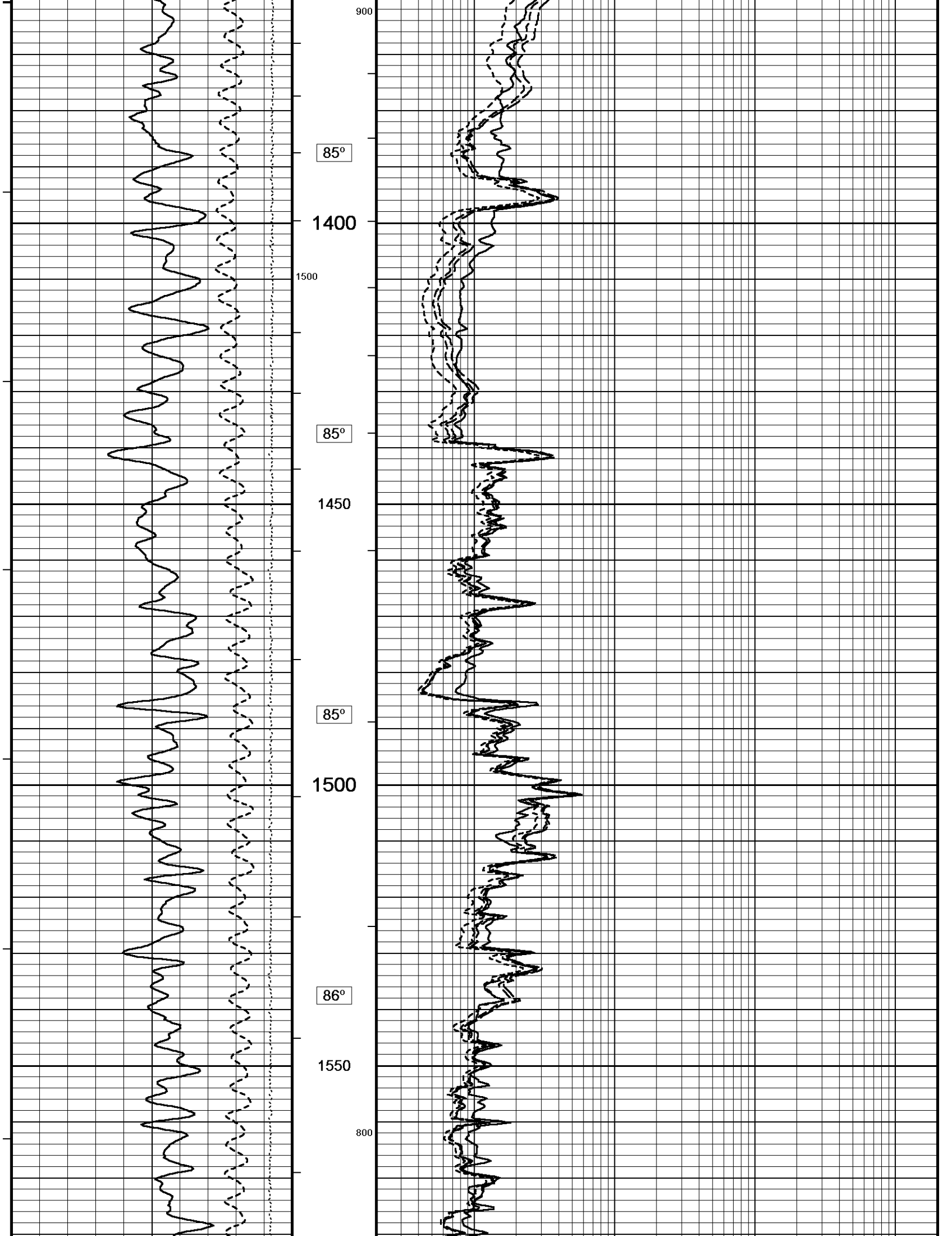


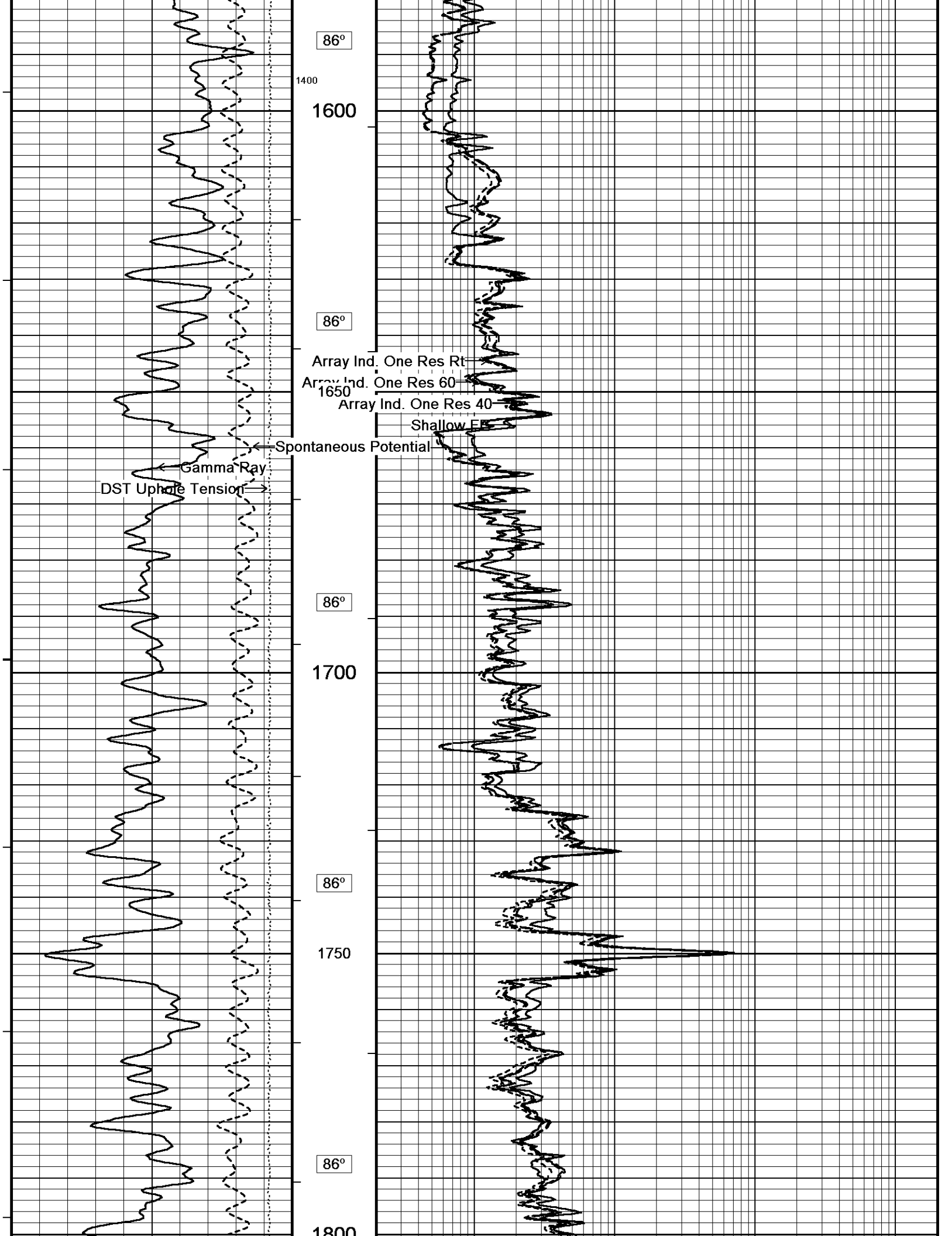


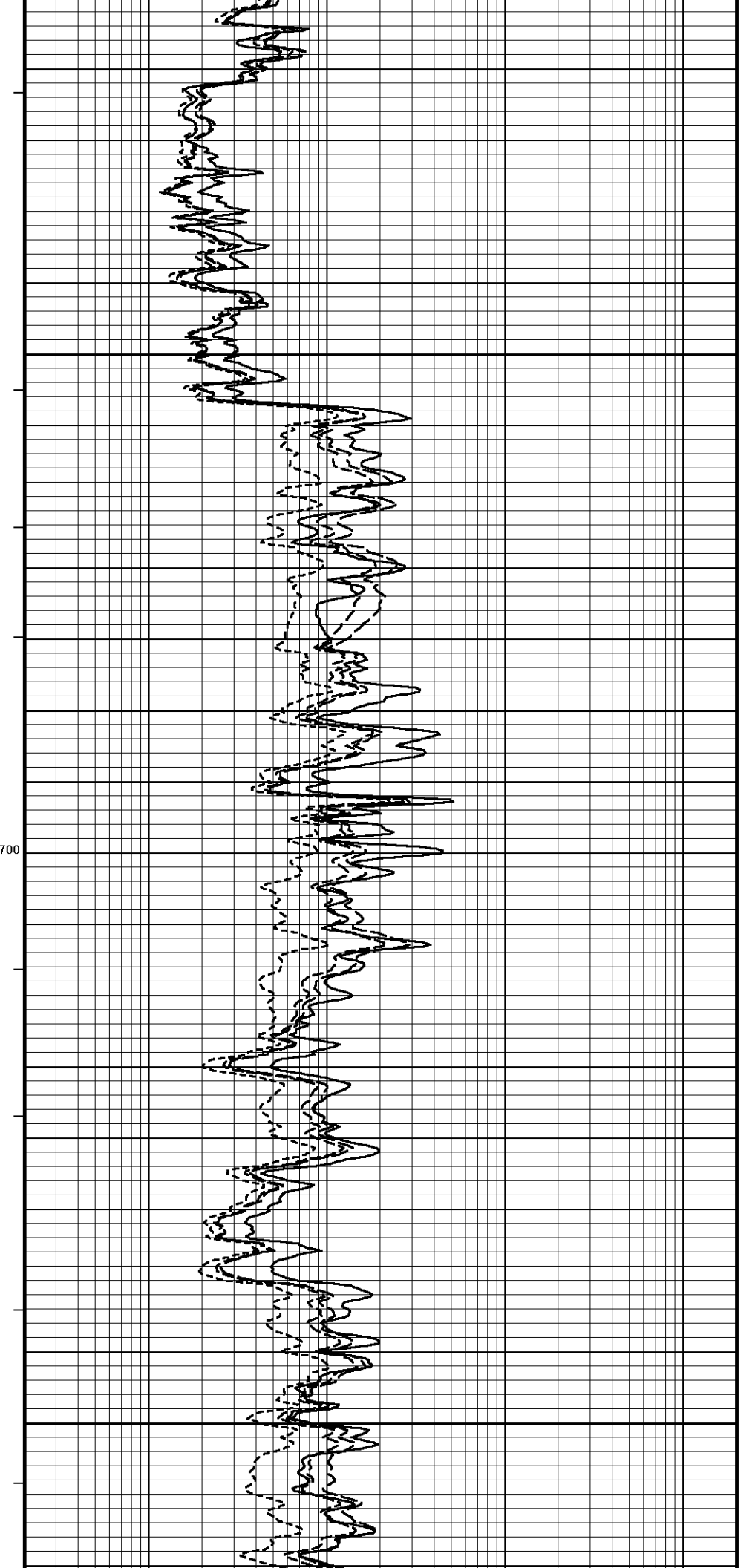
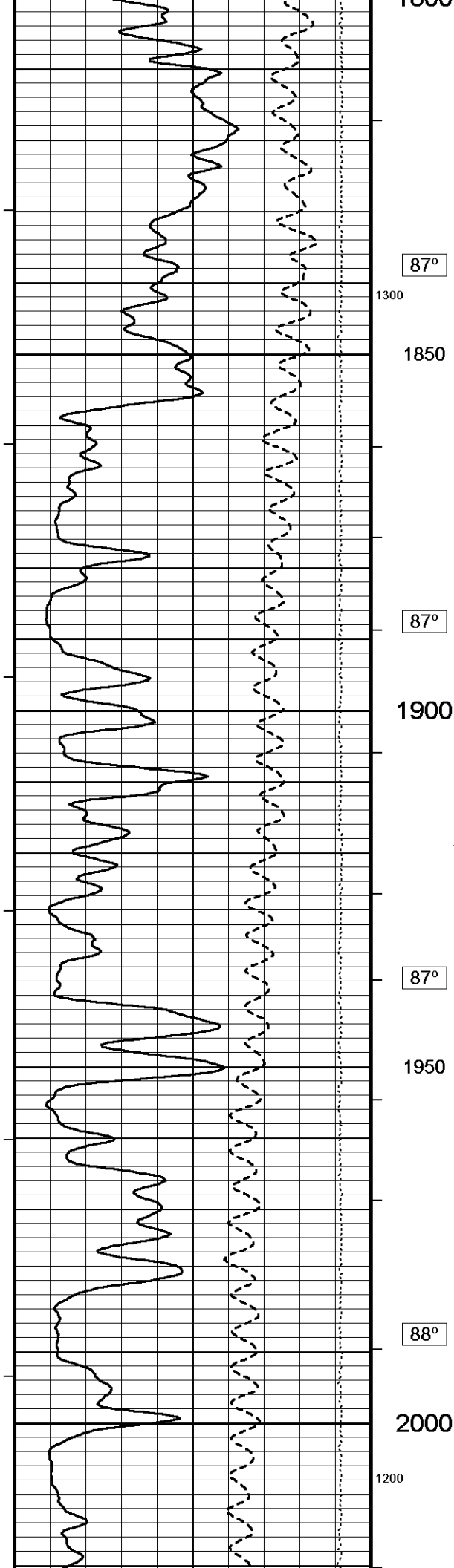
81°
950
1000
1800
1050
1100
82°
82°

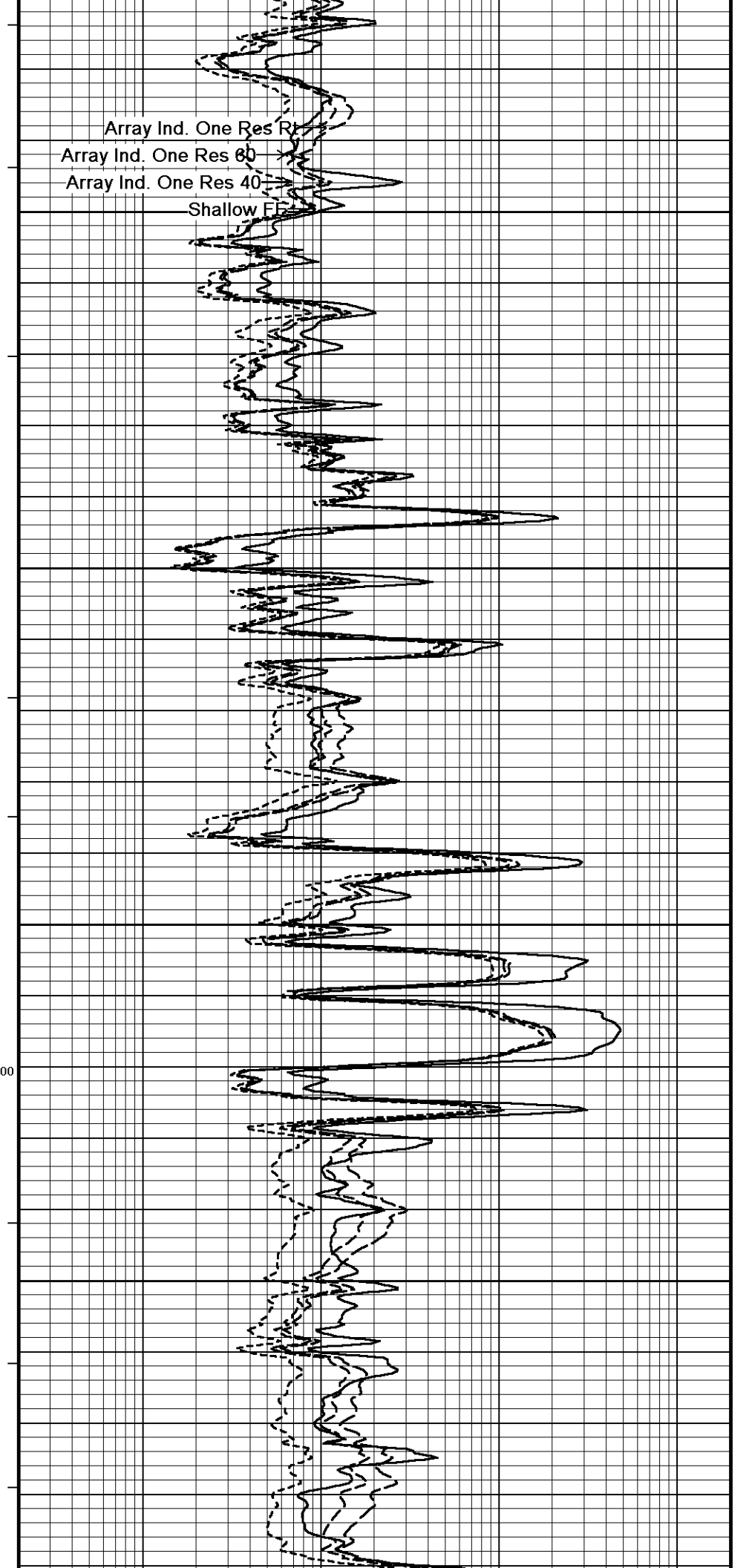
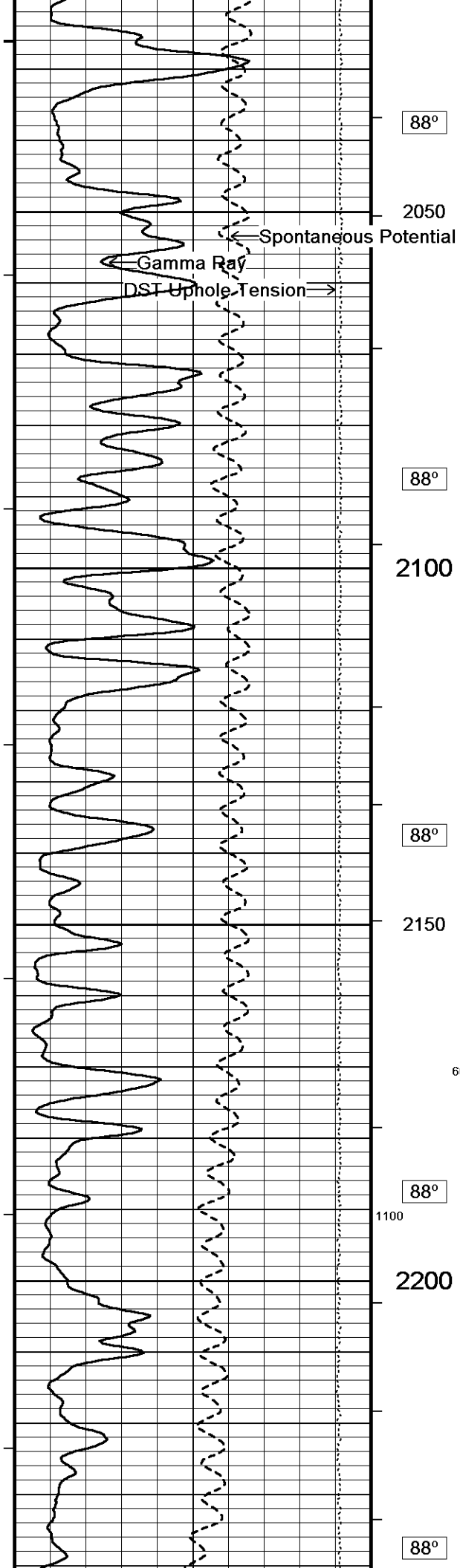


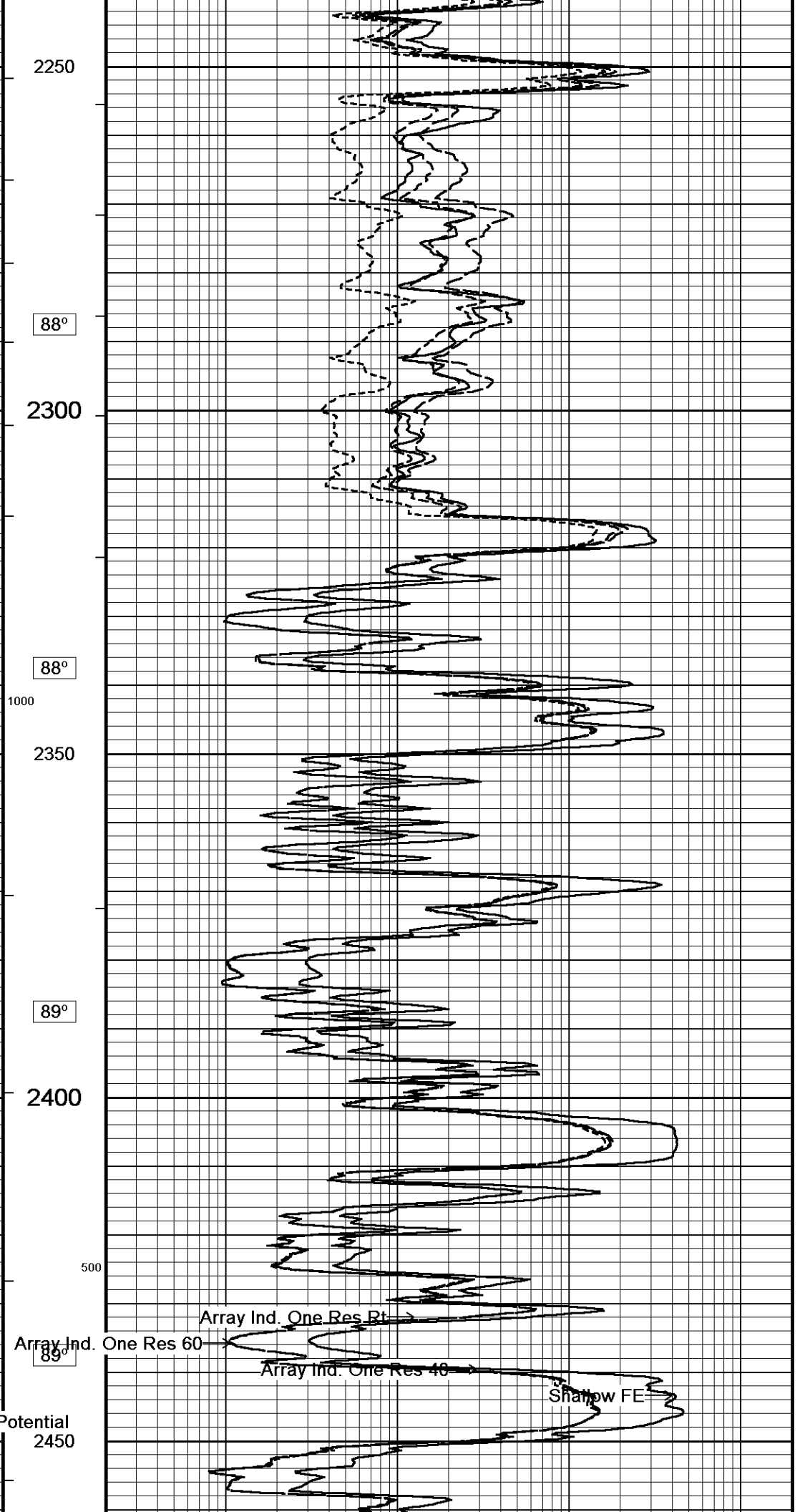
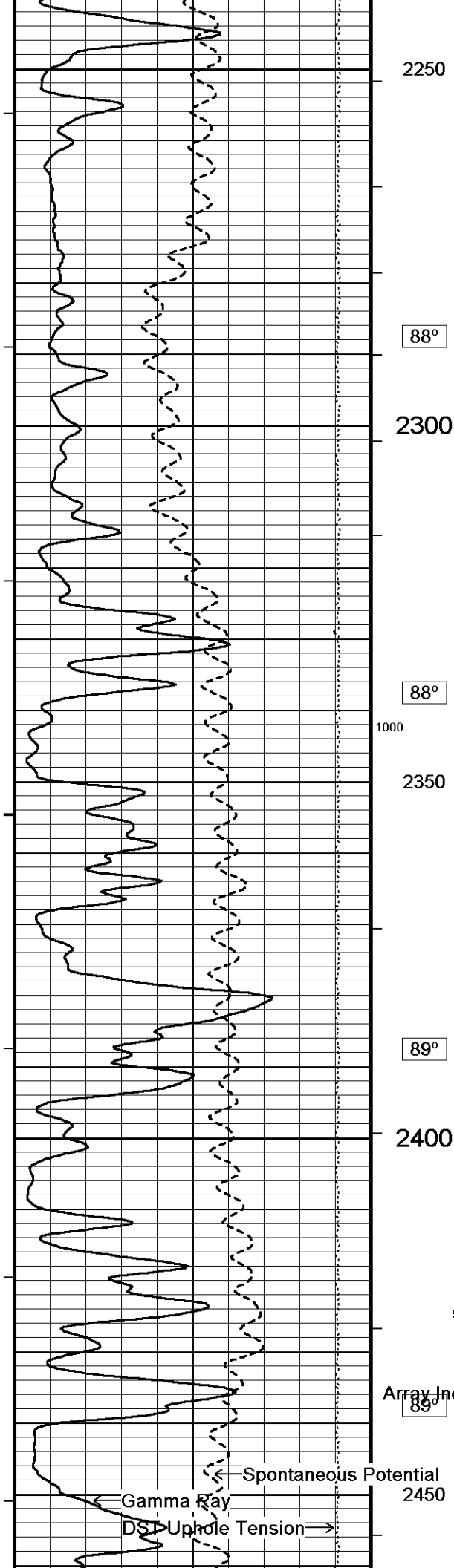


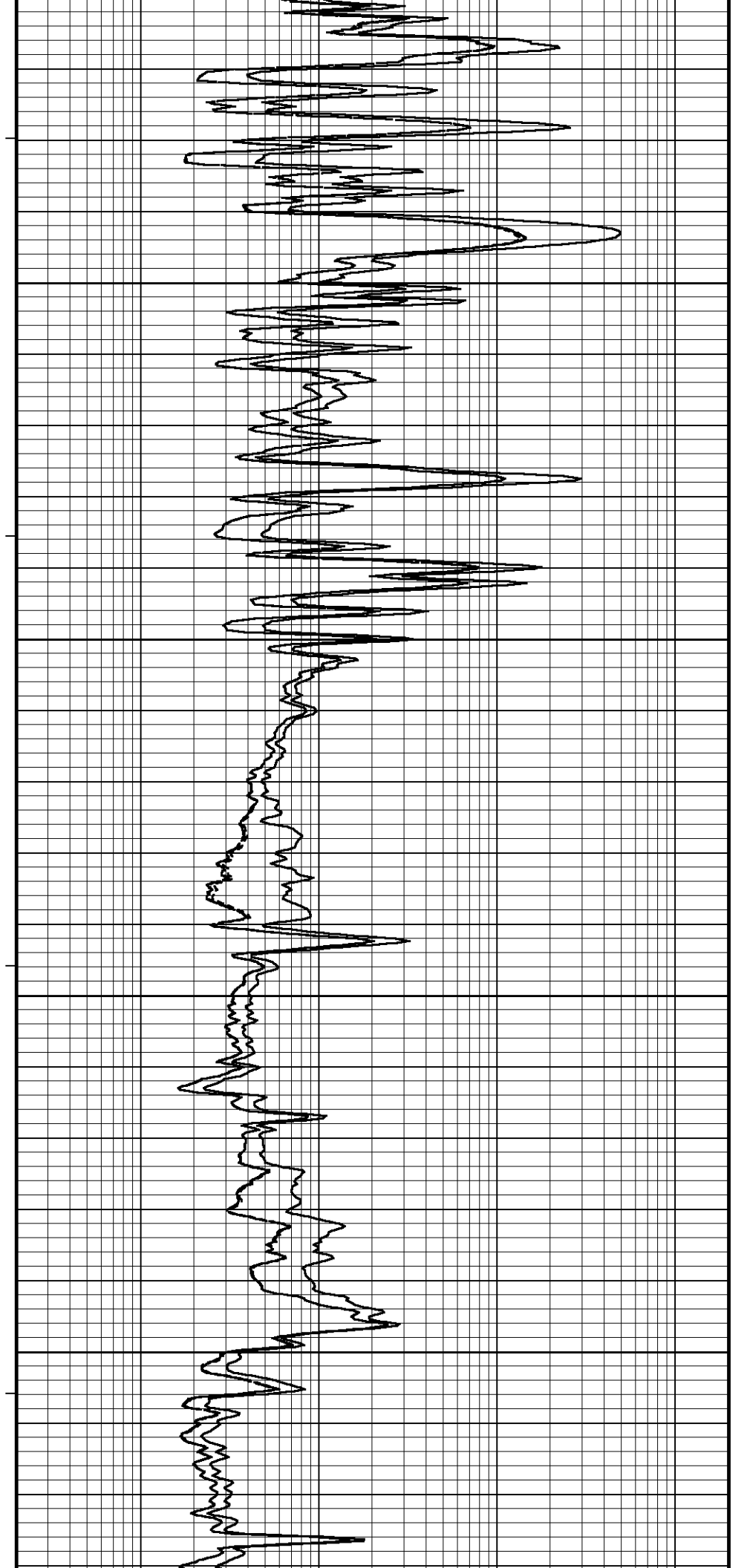
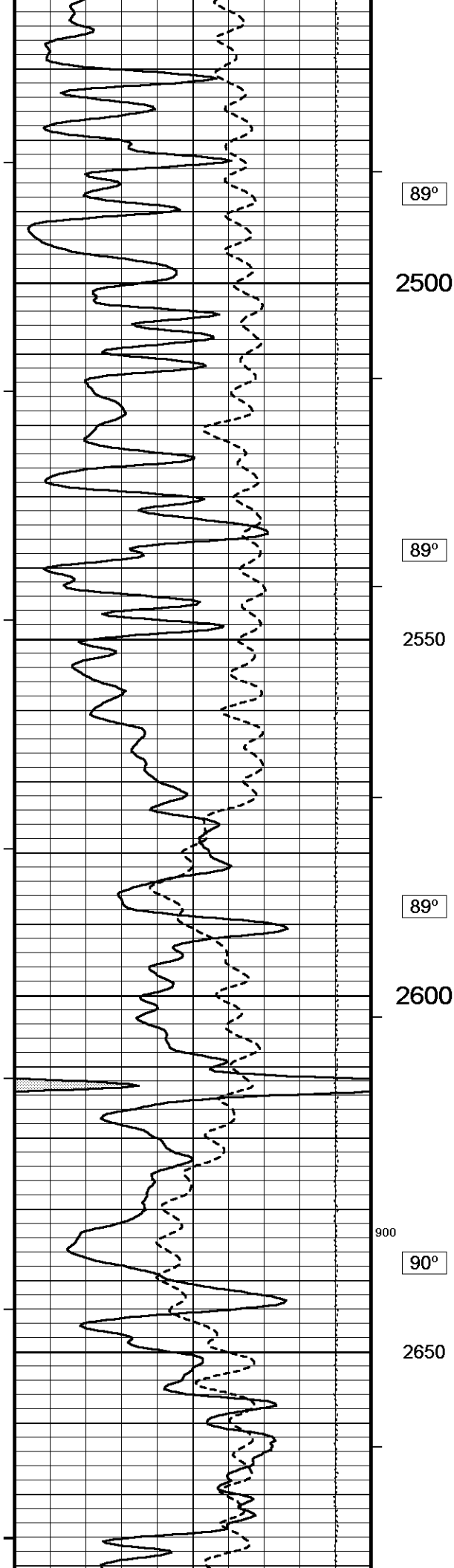


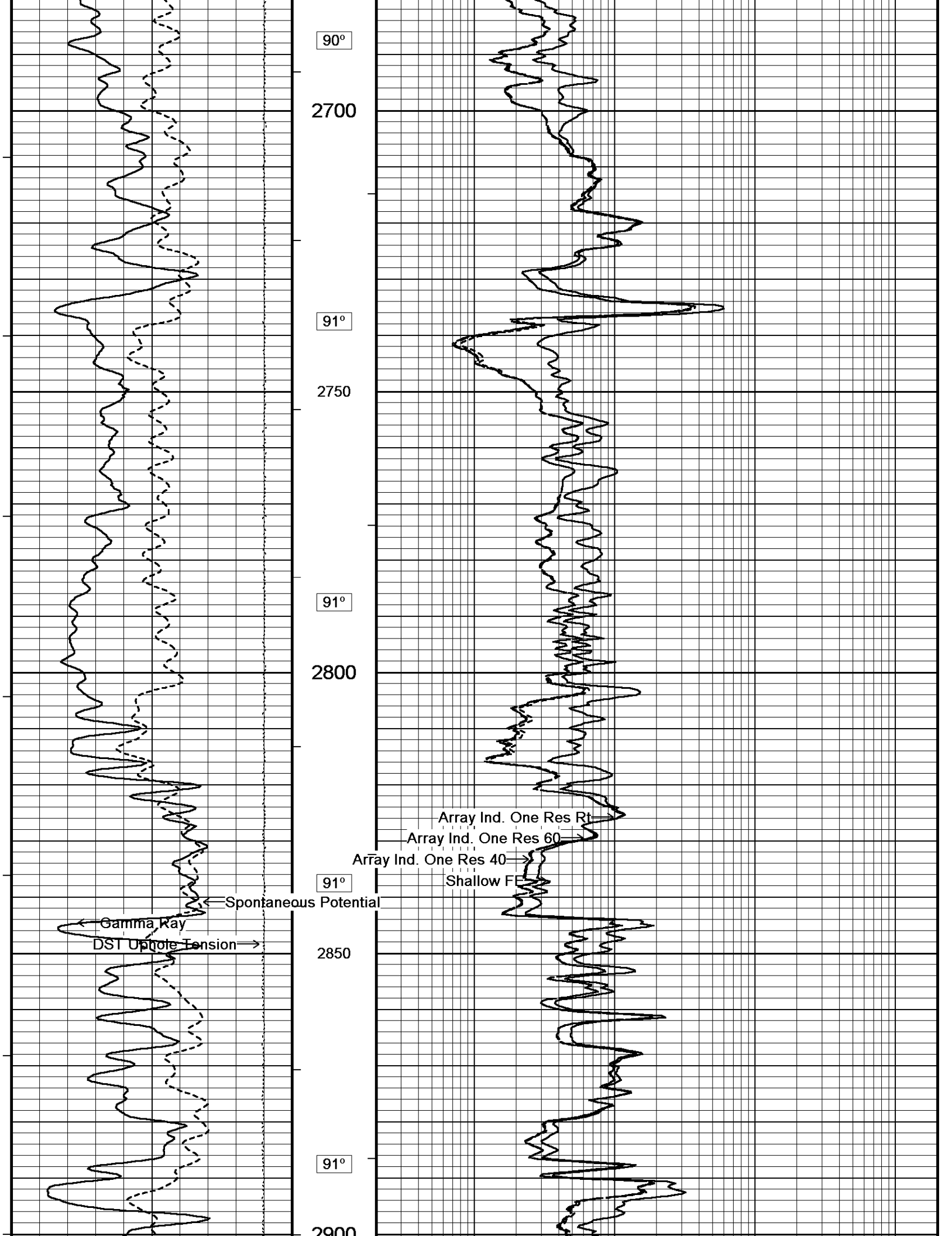


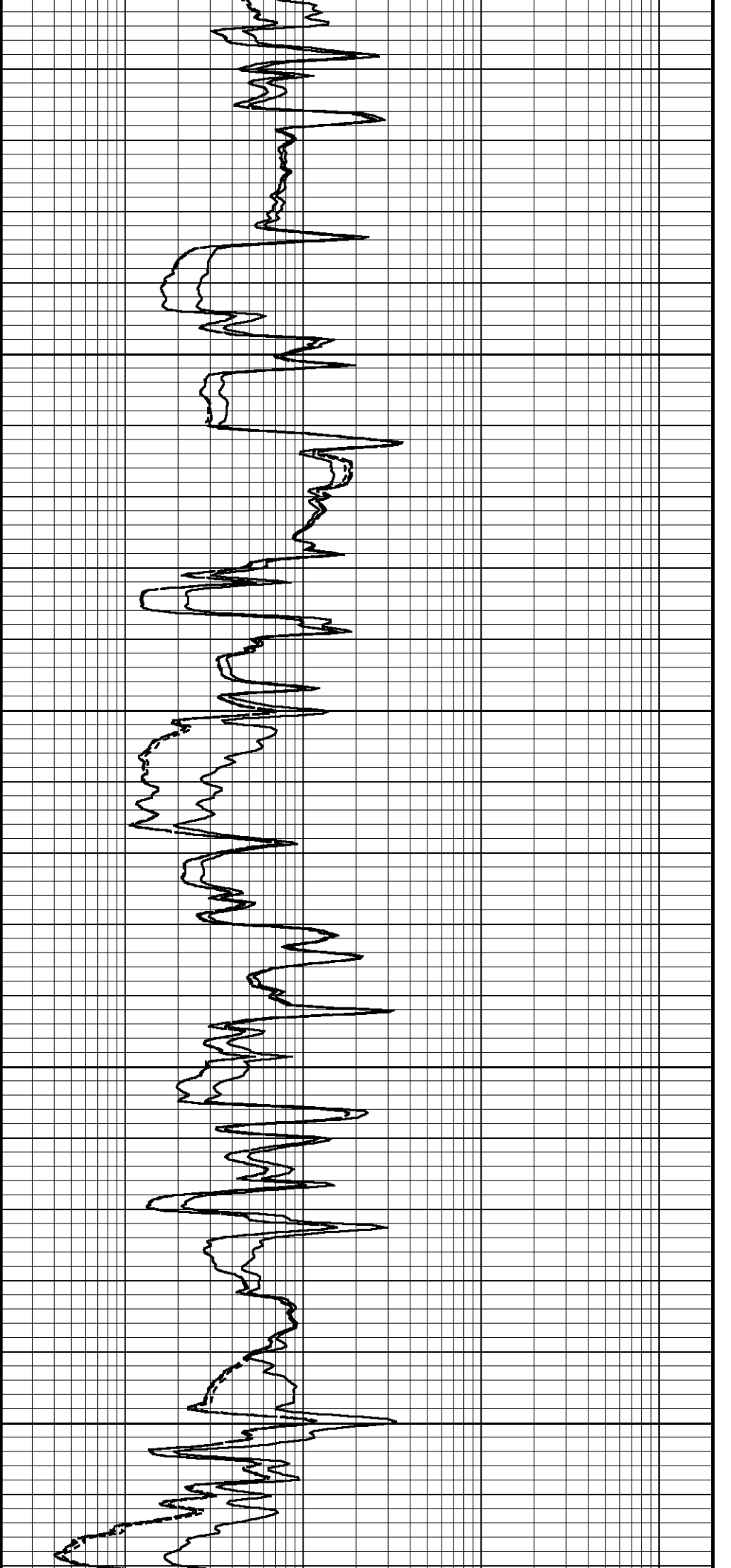
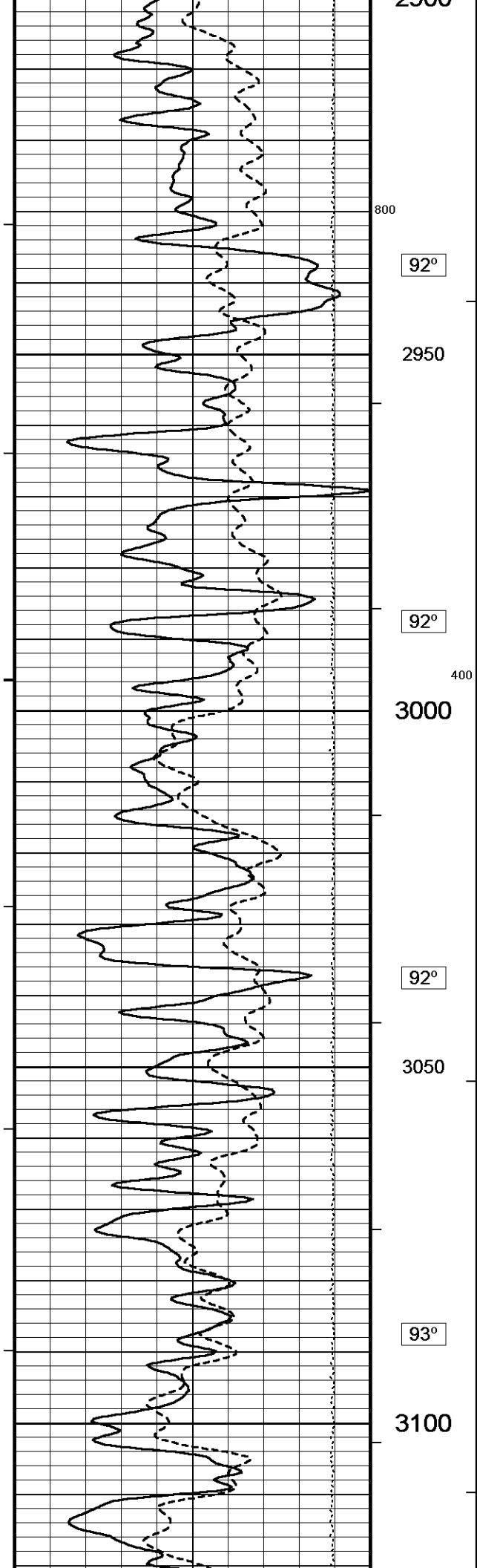


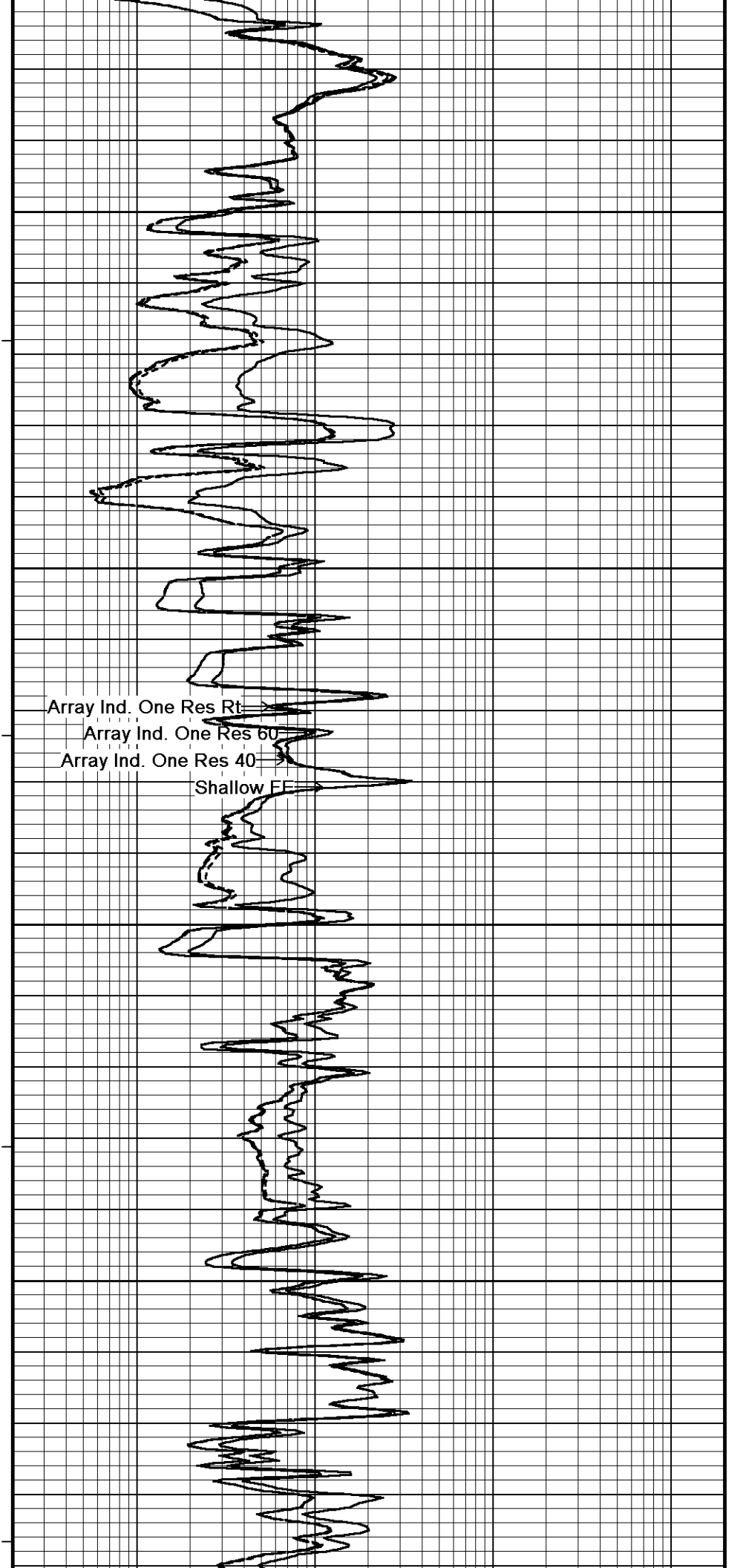
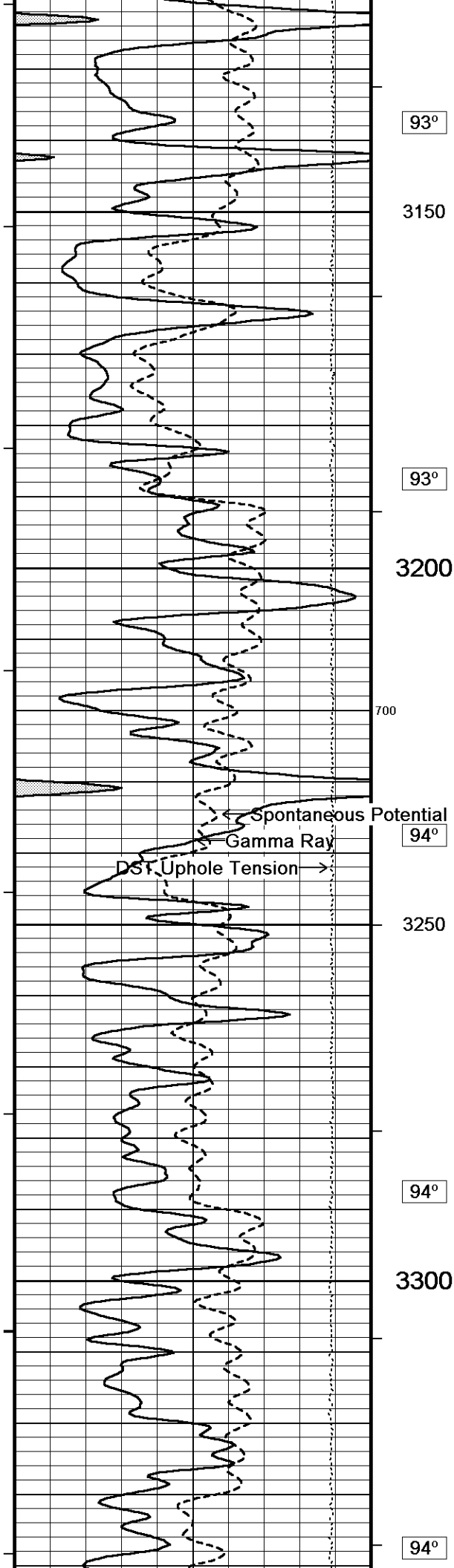


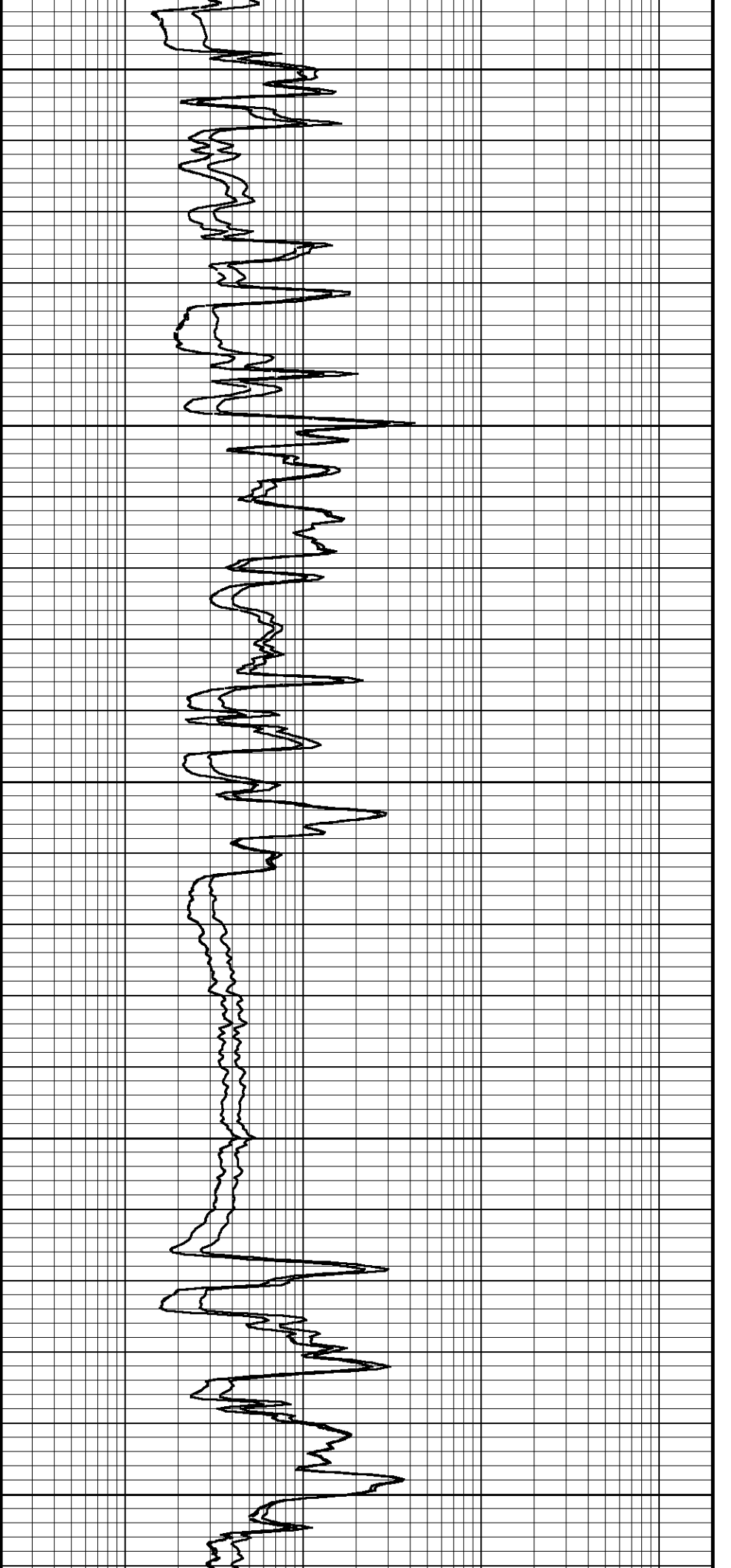
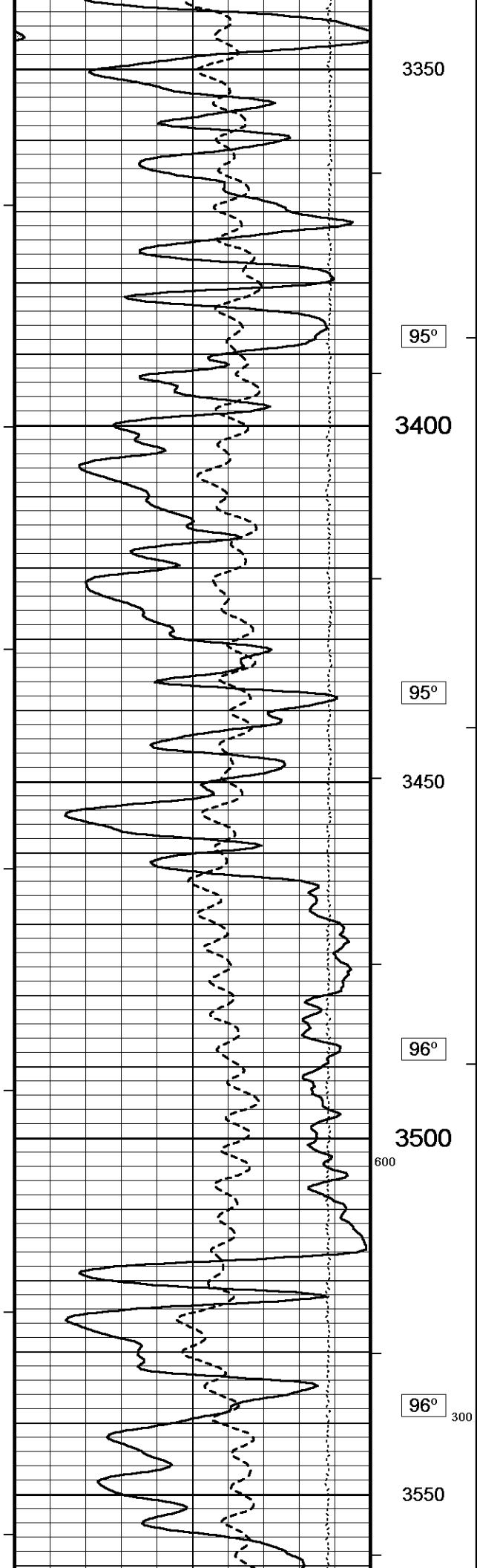


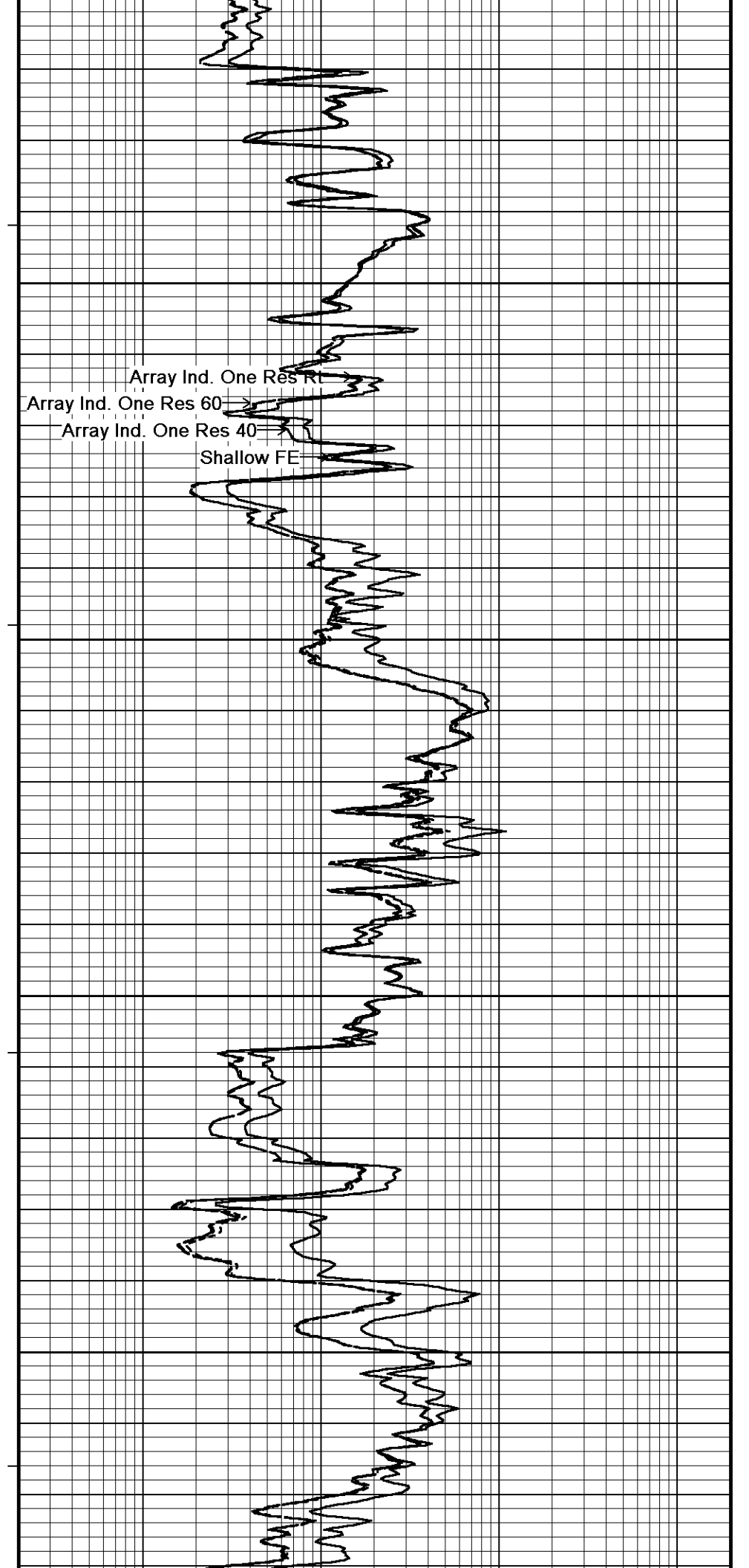
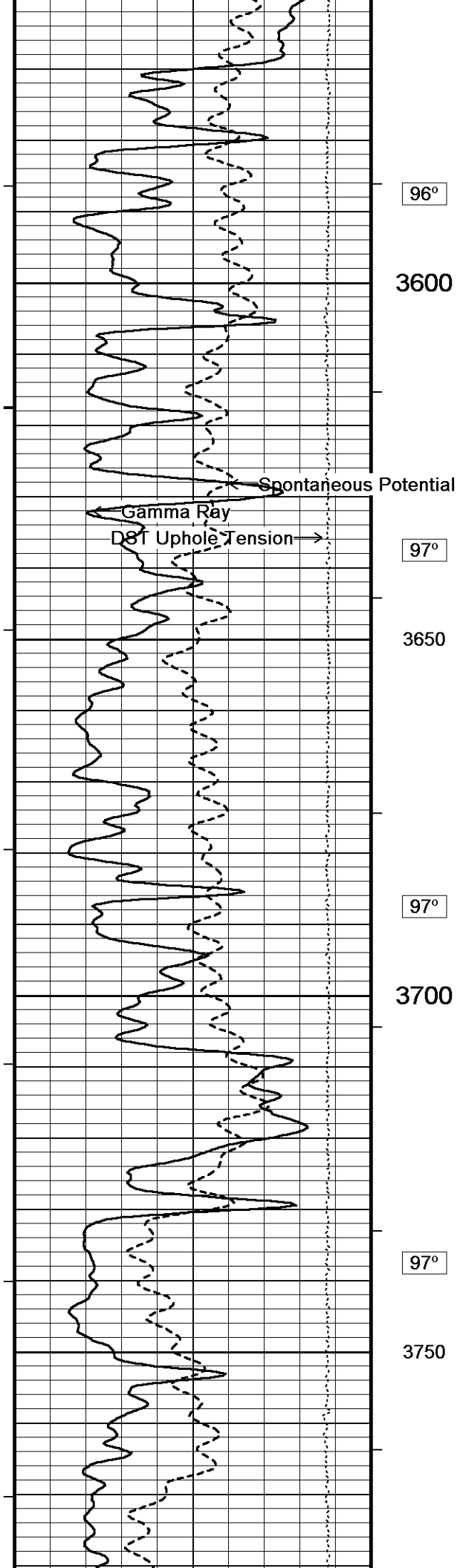


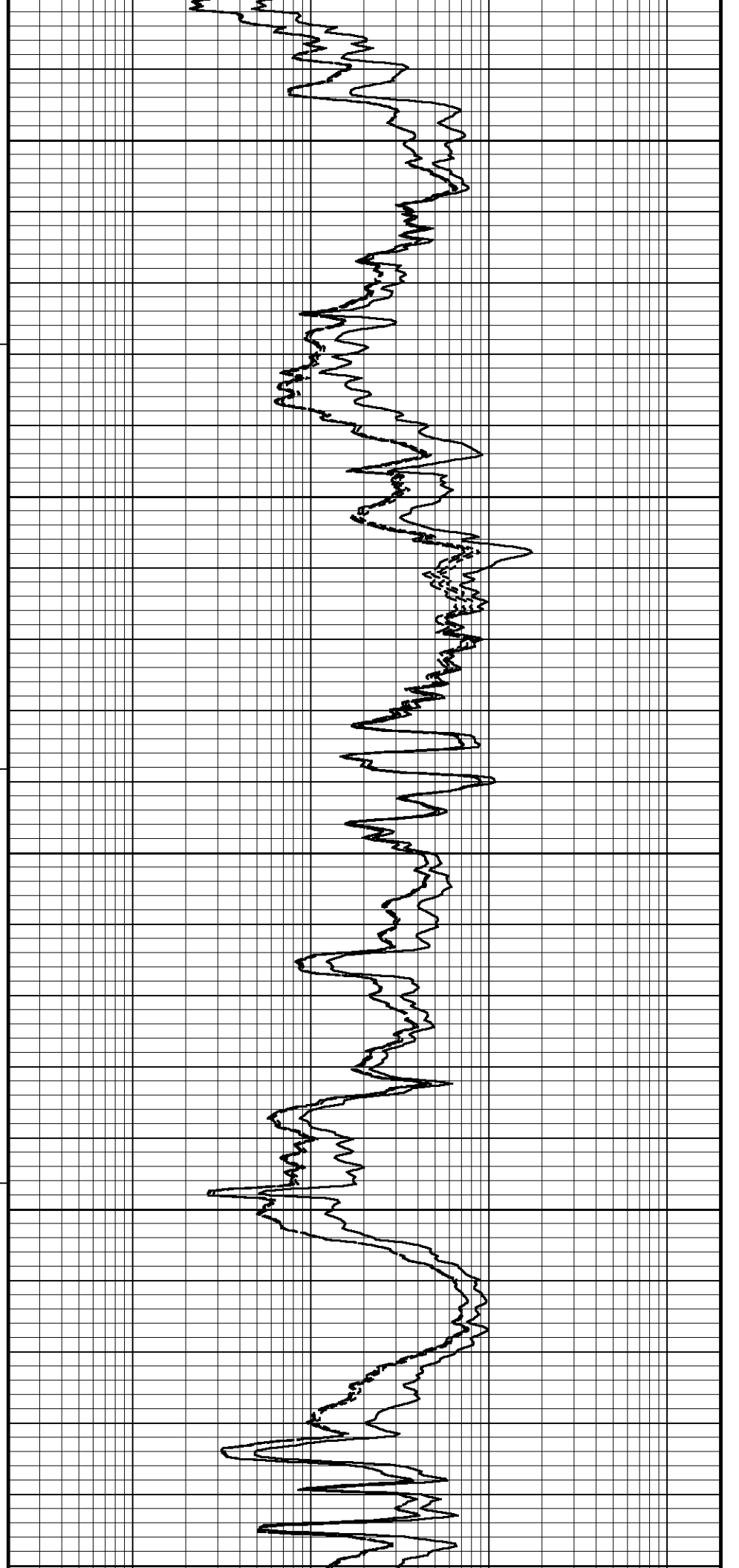
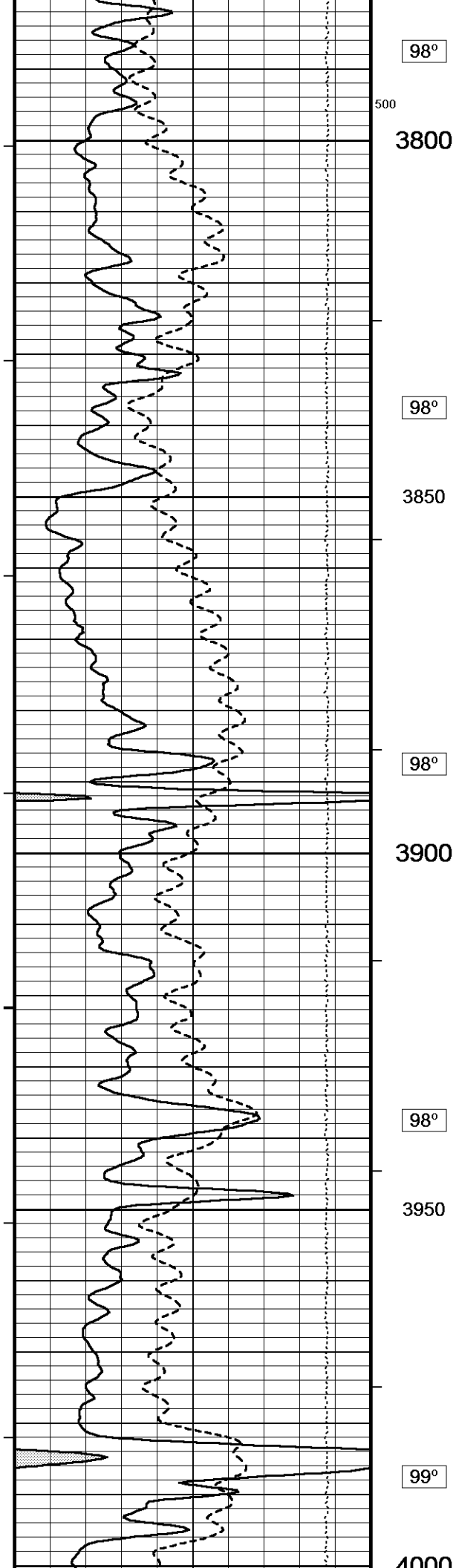


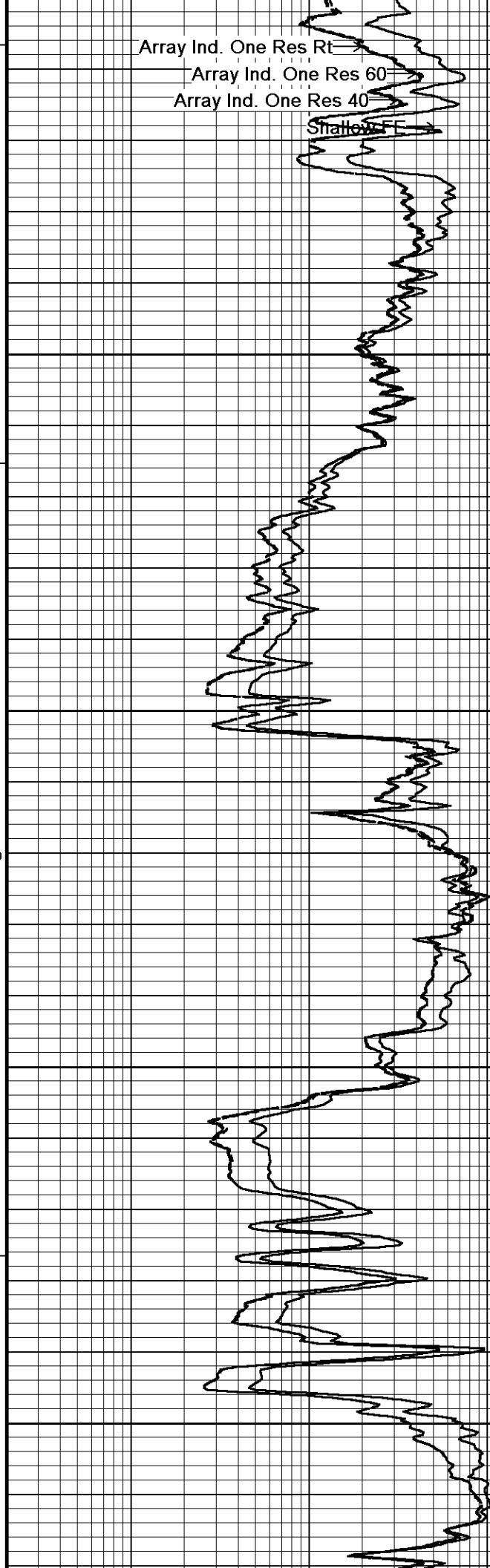
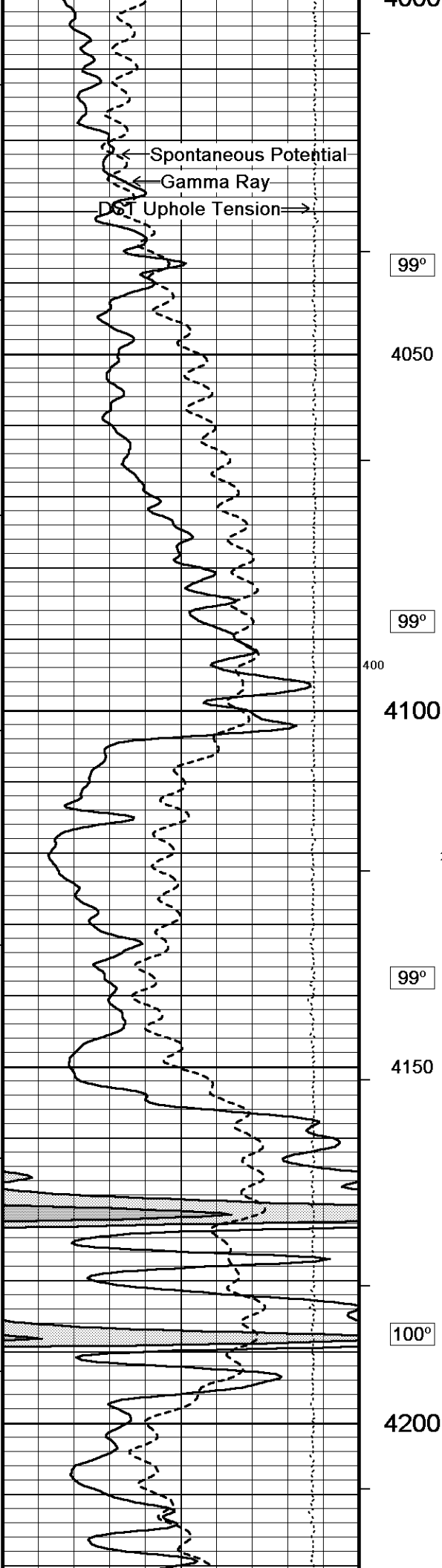


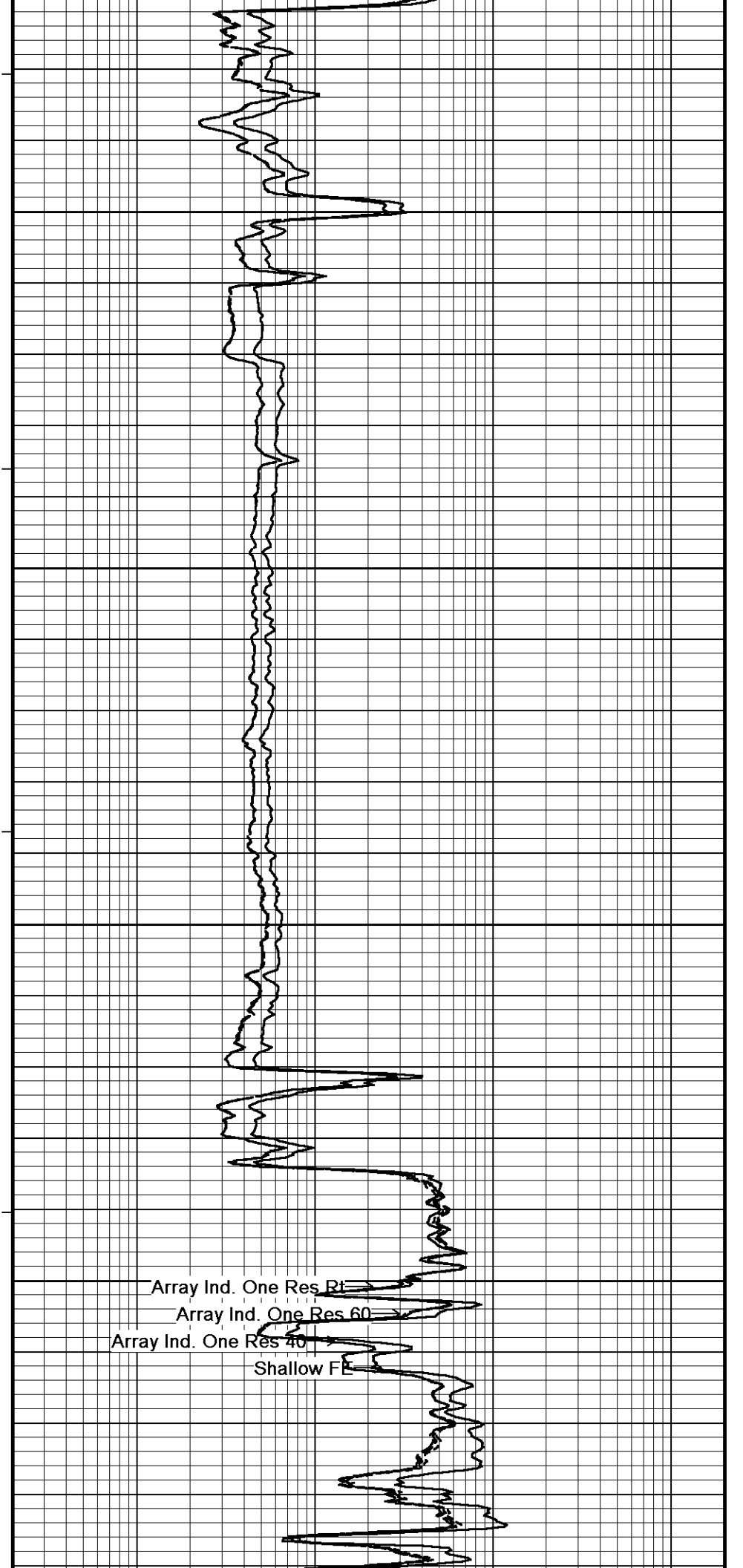
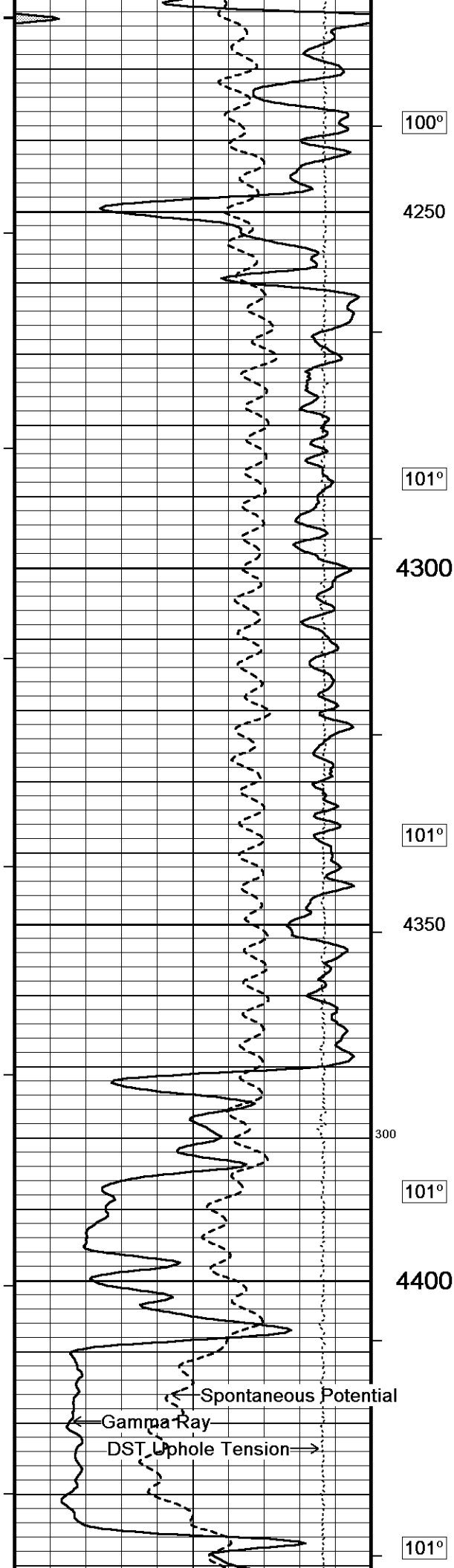


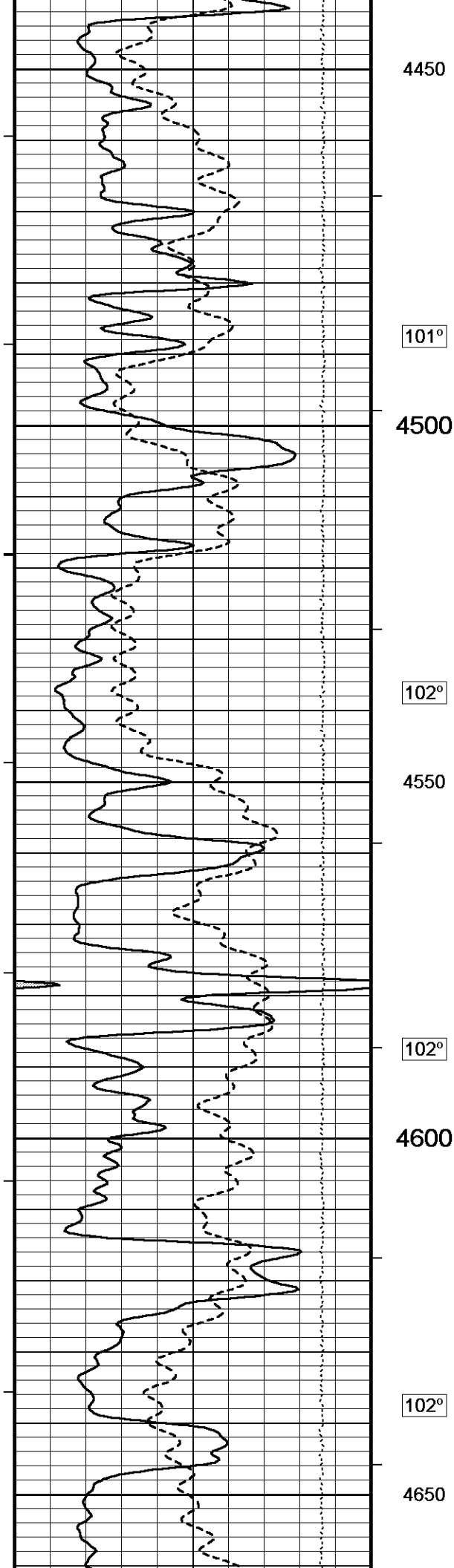












4450

101°

4500

102°

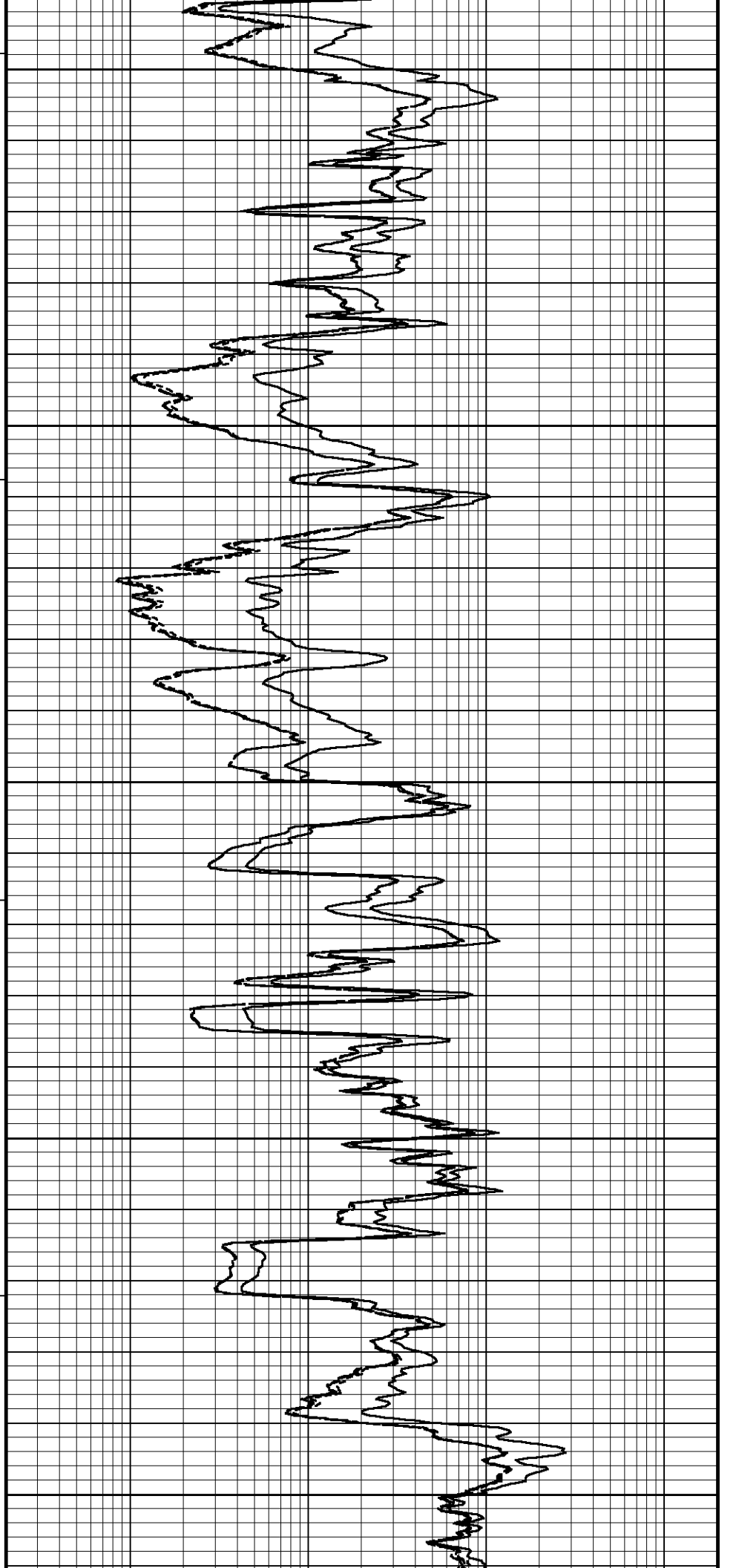
4550

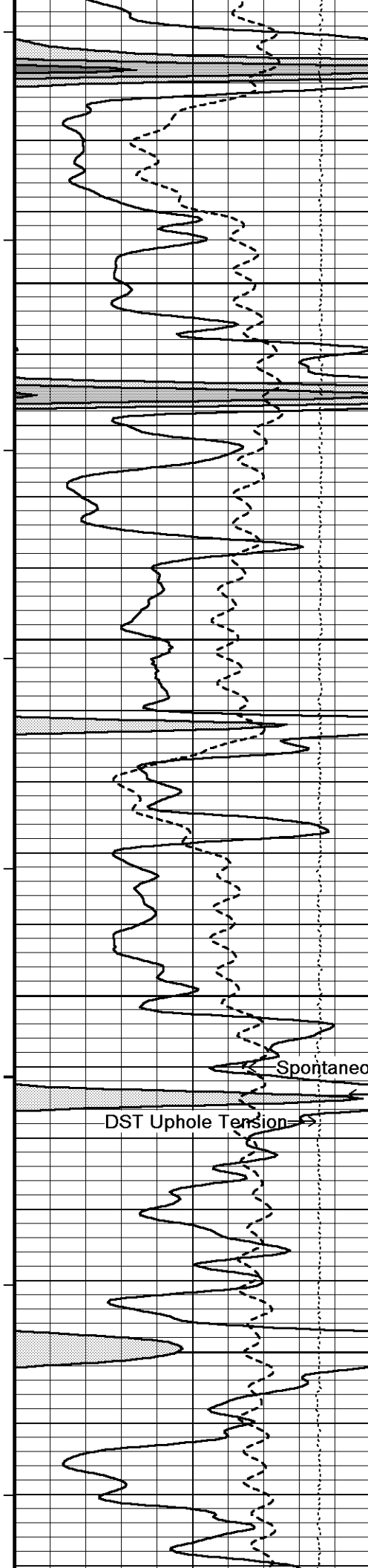
102°

4600

102°

4650





200

102°

4700

103°

4750

103°

4800

Spontaneous Potential

Gamma Ray

DST Uphole Tension

104°

4850

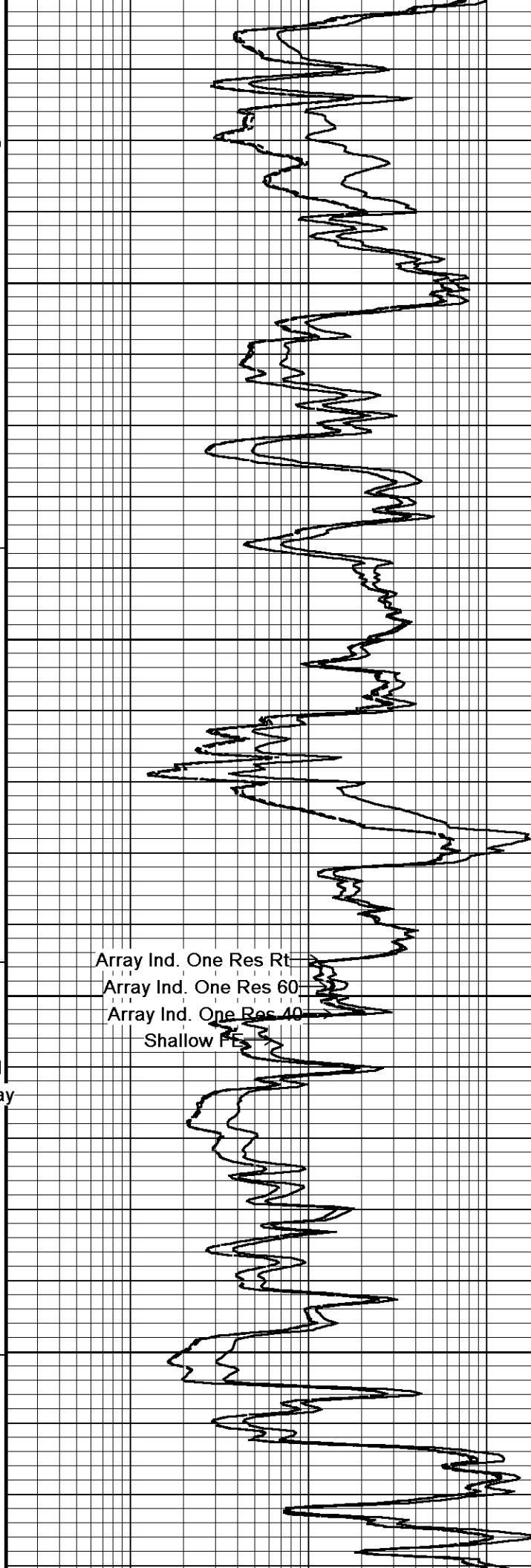
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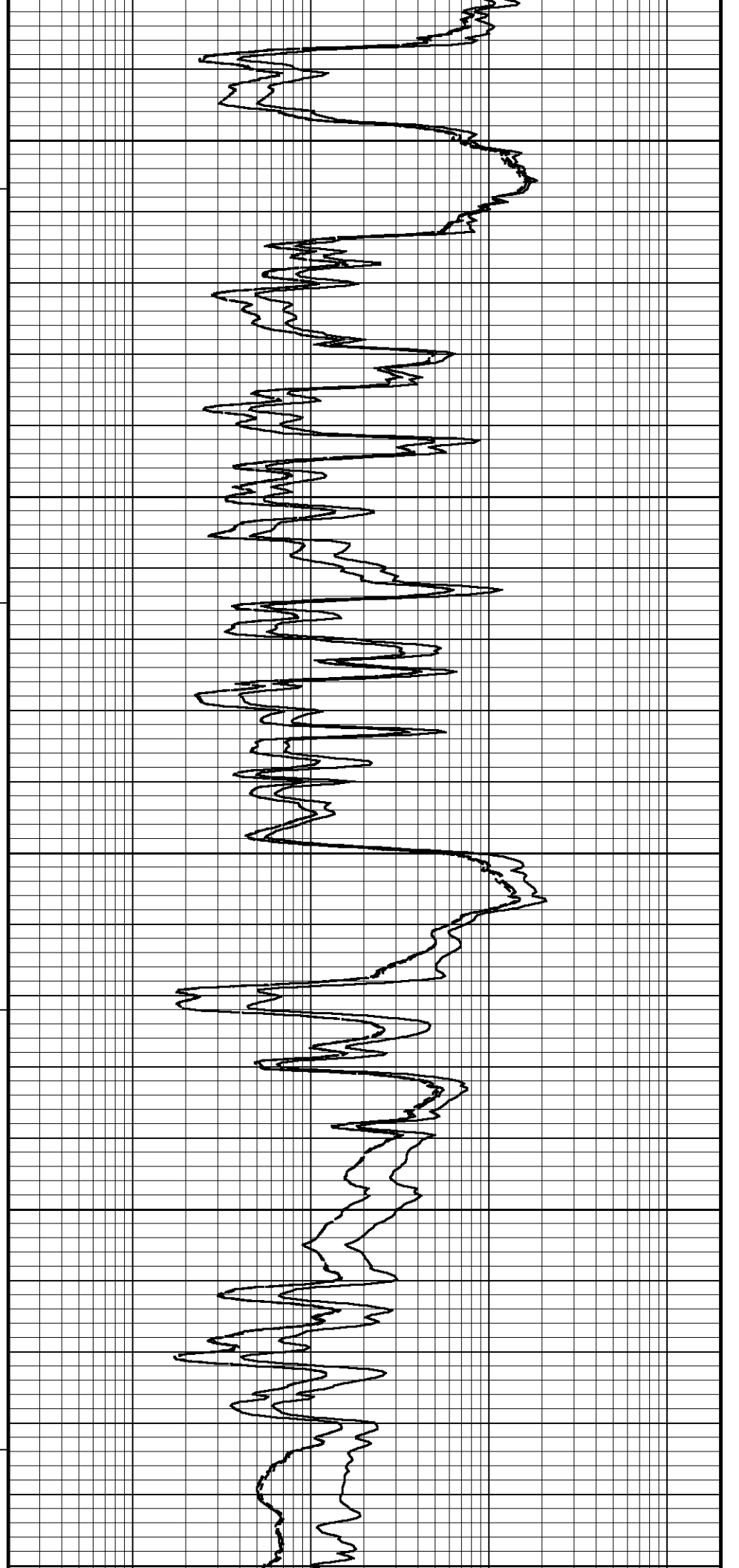
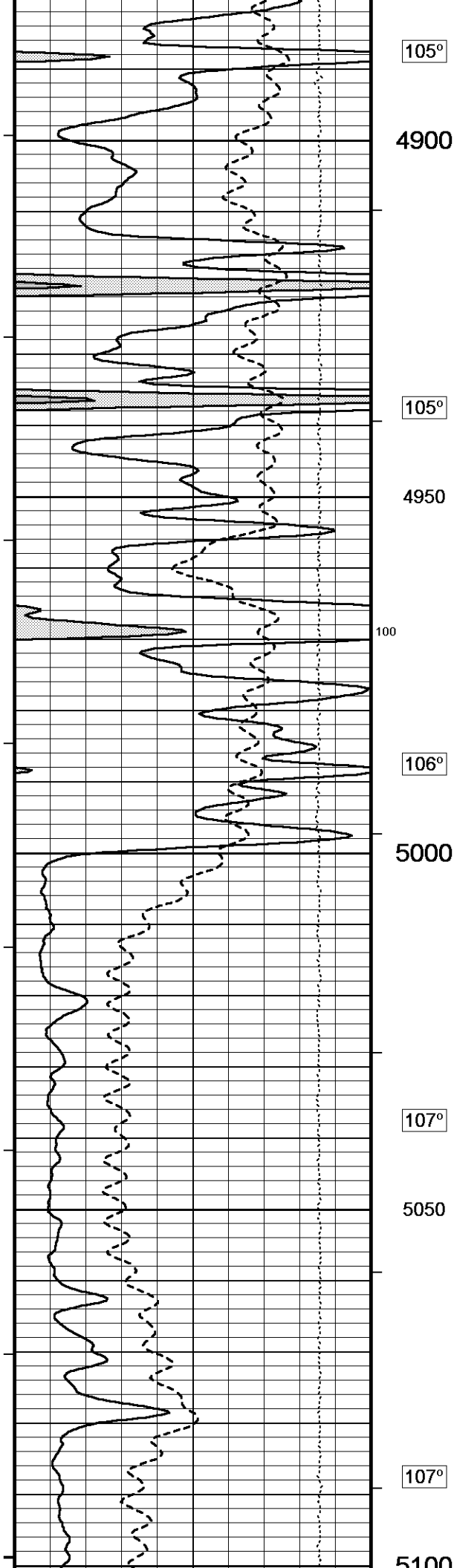
Array Ind. One Res Rt

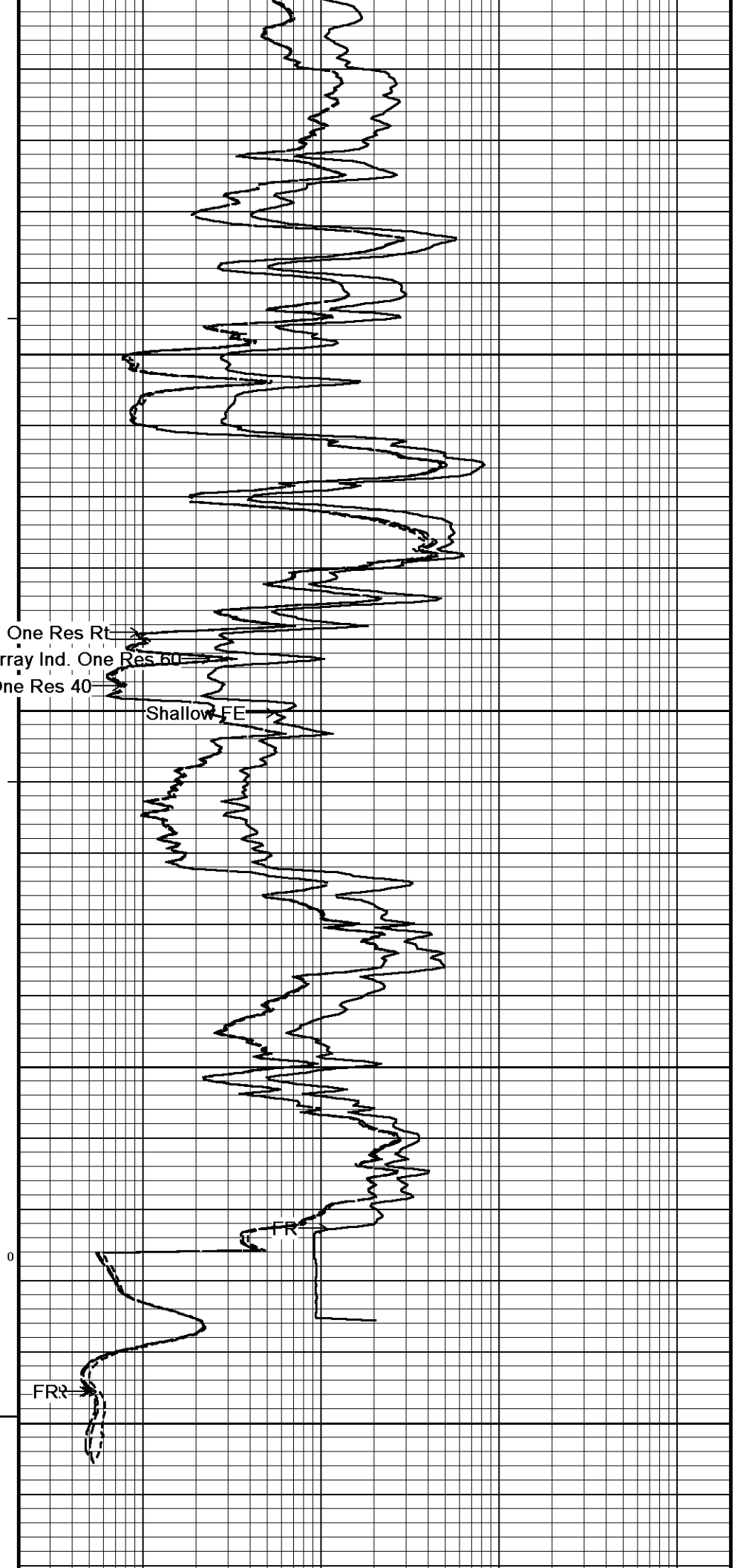
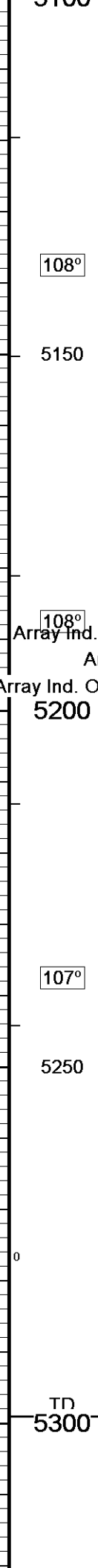
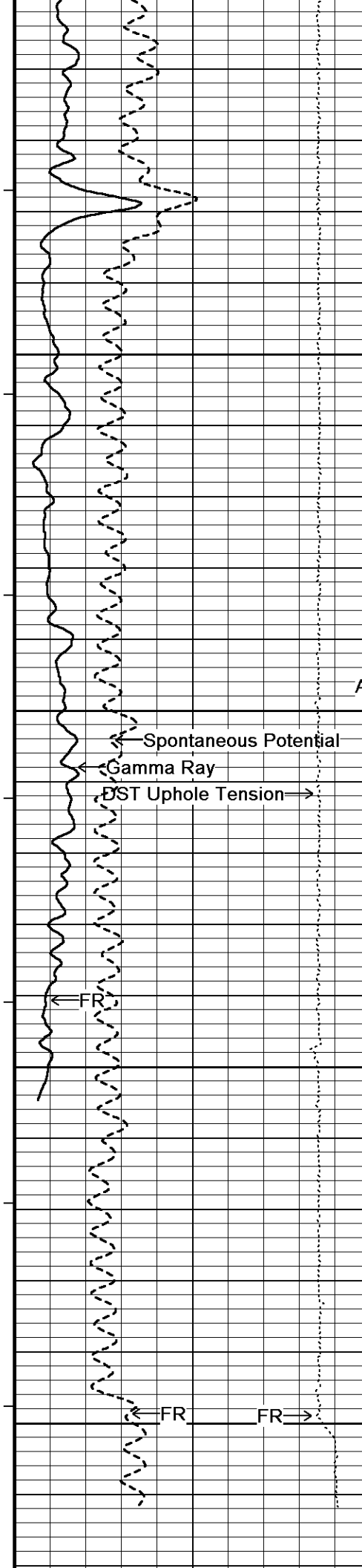
Array Ind. One Res 60

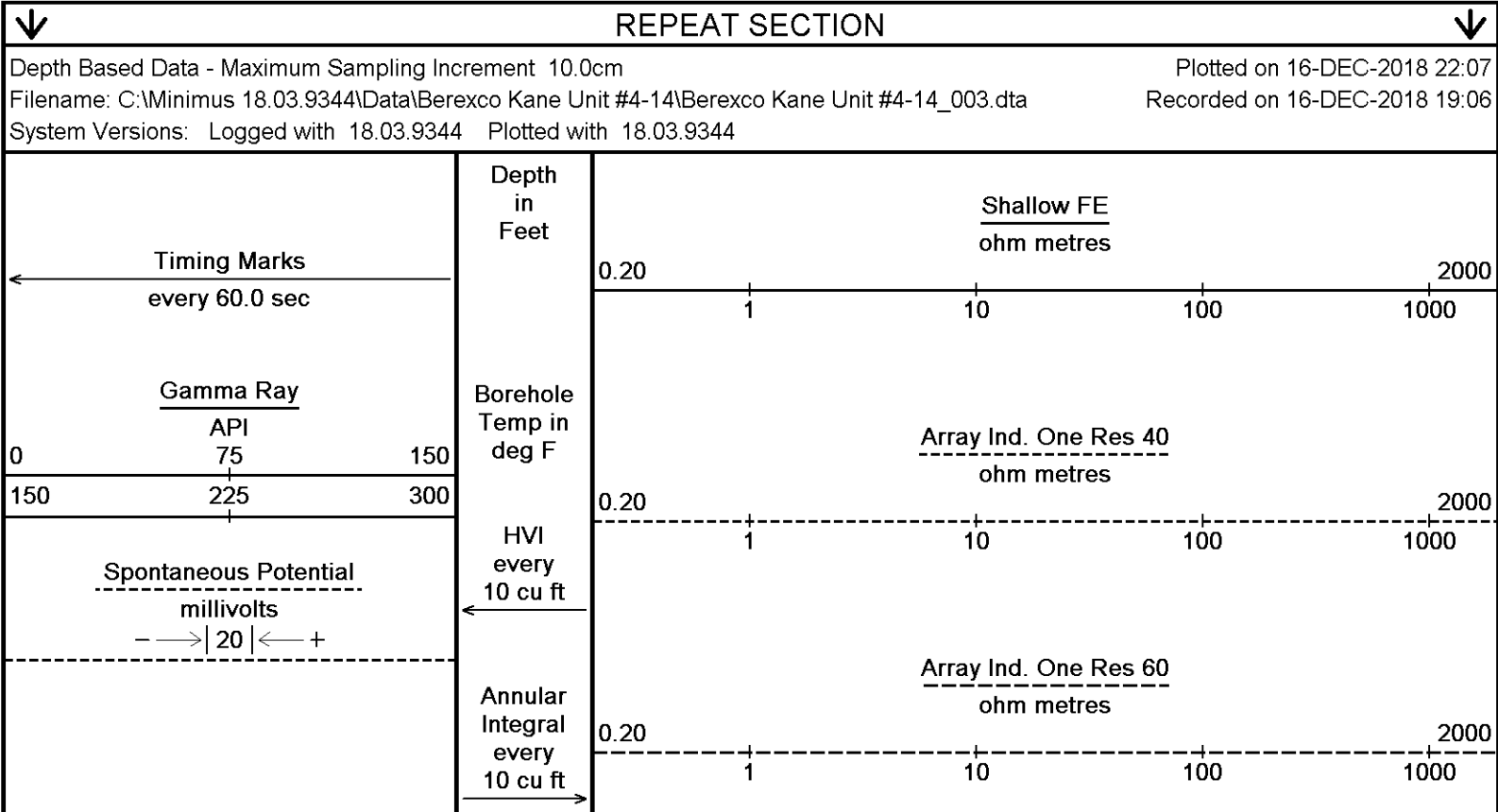
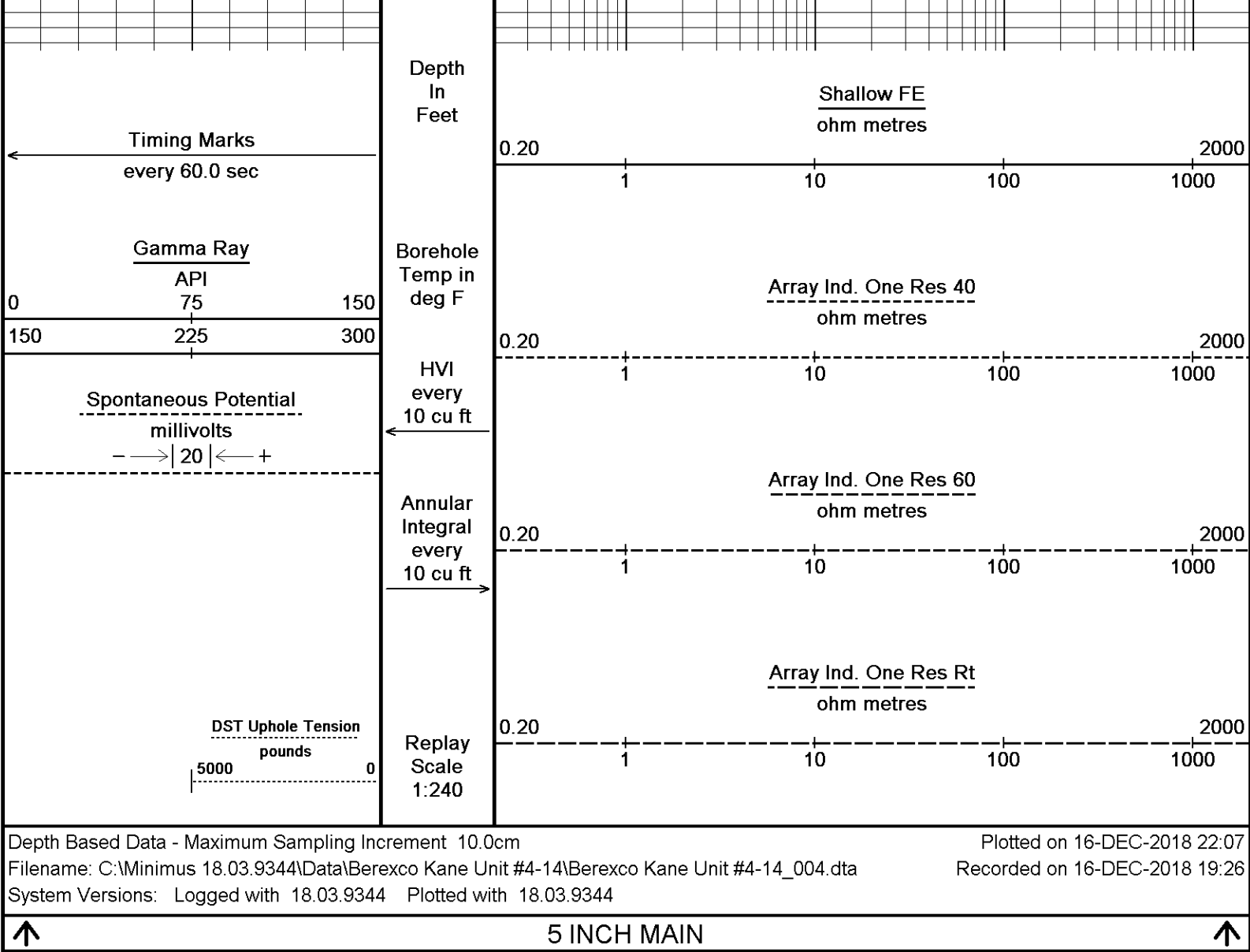
Array Ind. One Res 40

Shallow PE









DST Uphole Tension
pounds

5000 0

Replay
Scale
1:240

5000

105°

5050

106°

5100

106°

5150

Array Ind. One Res Rt
ohm metres

0.20

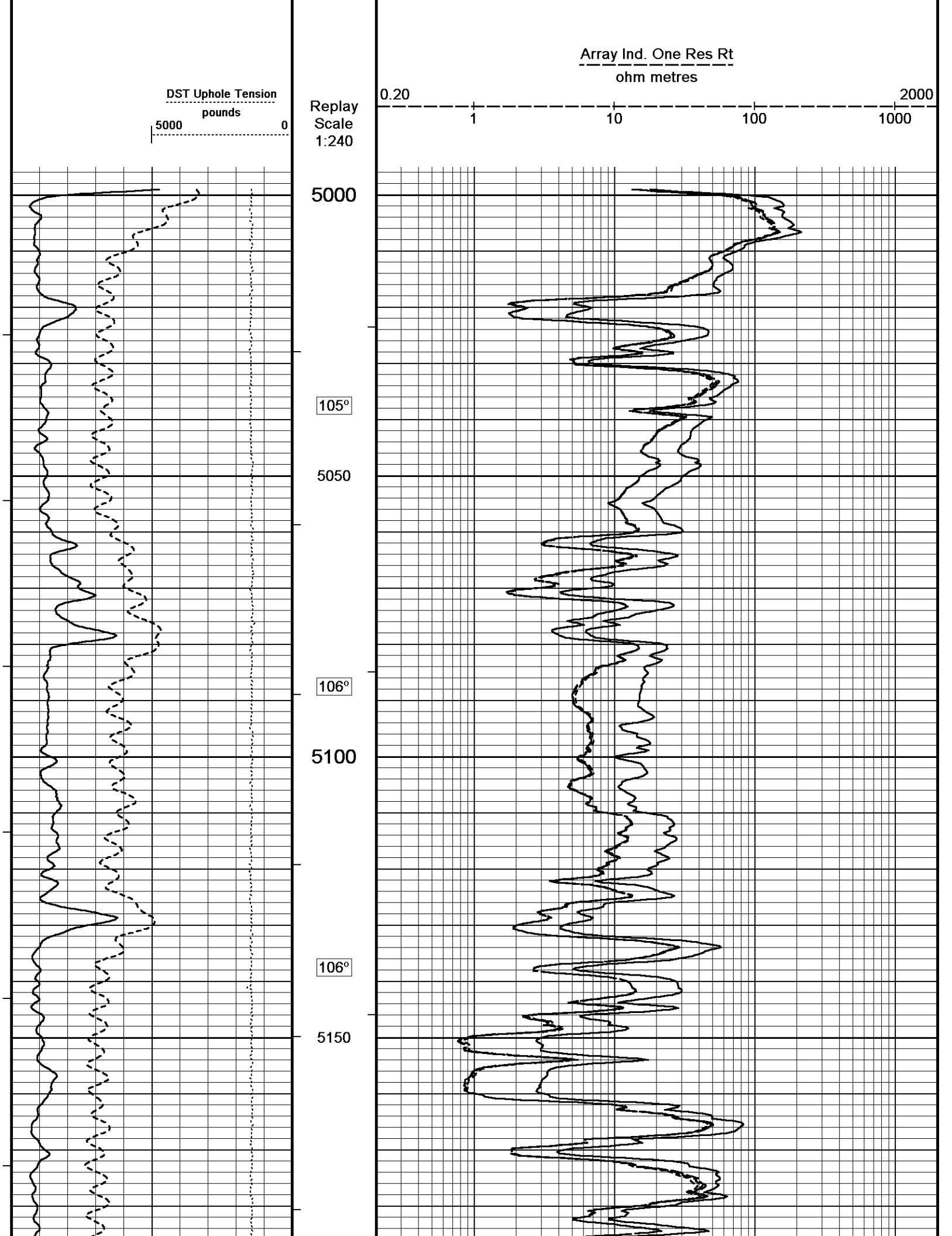
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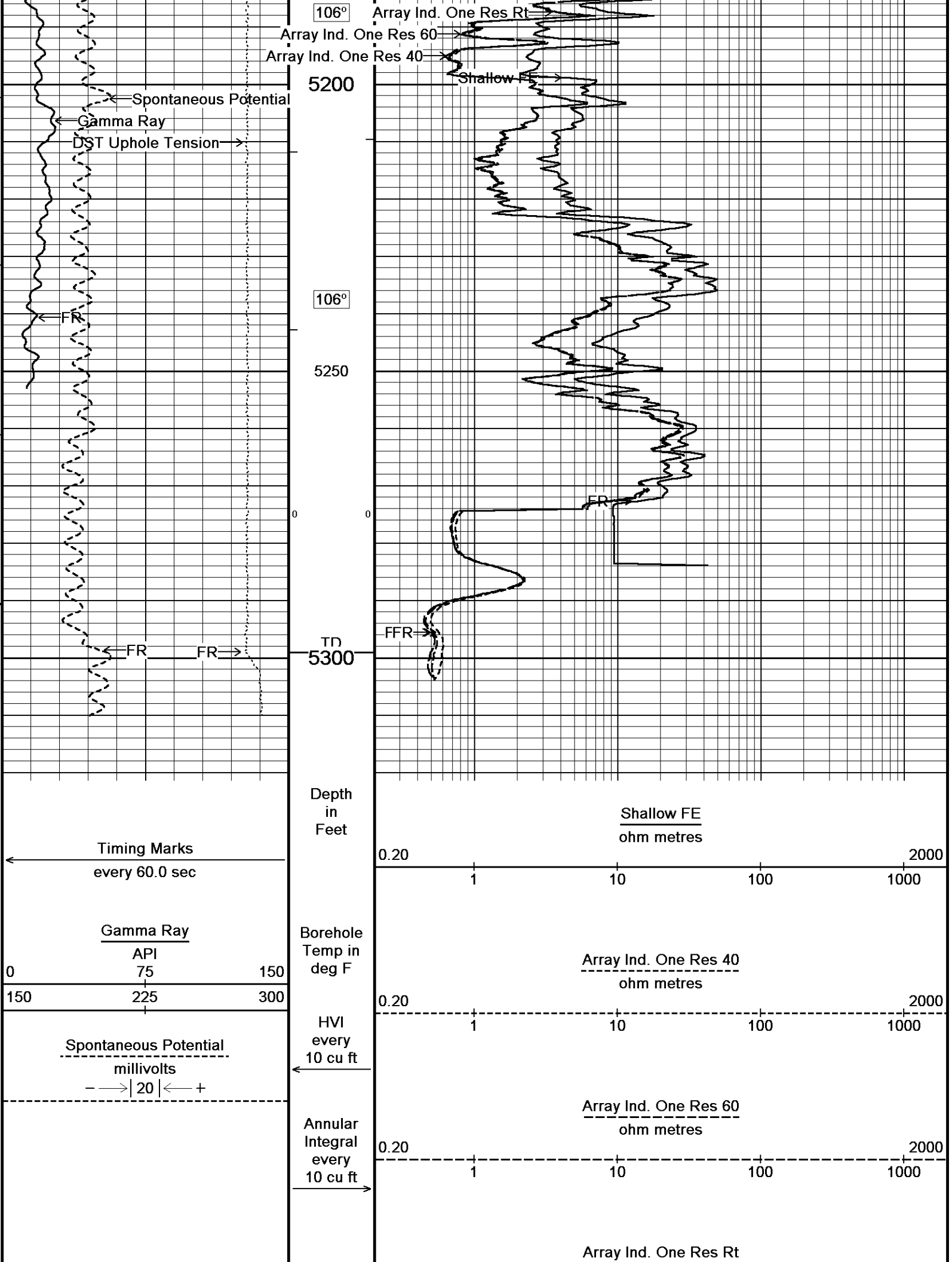
10

100

1000

2000





DST Uphole Tension pounds 5000 0	Replay Scale 1:240	0.20 ohm metres 2000 1 10 100 1000
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Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 16-DEC-2018 22:07

Filename: C:\Minimus 18.03.9344\Data\Berexco Kane Unit #4-14\Berexco Kane Unit #4-14_003.dta
Recorded on 16-DEC-2018 19:06

System Versions: Logged with 18.03.9344
Plotted with 18.03.9344

↑
REPEAT SECTION
↑

BEFORE SURVEY CALIBRATION

C:\Minimus 18.03.9344\Data\Berexco Kane Unit #4-14\Berexco Kane Unit #4-14_003.dta

General Constants All 000
Last Edited on 16-DEC-2018,18:26

General Parameters		
Mud Resistivity	0.630	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. Two Res Rt	
RWA Constant A	0.620	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0
Field Calibration on 16-DEC-2018 18:04

Reading No	Measured	Calibrated (lbs)
1	15452.93	0.00
2	16827.81	527.00

SP Calibration MCG-D.K 443
Field Calibration on 10-DEC-2018 15:37

	Measured	Calibrated (mV)
Reference 1	100.8	99.9
Reference 2	-98.4	-99.9

High Resolution Temperature Calibration MCG-D.K 443
Field Calibration on 12-OCT-2018,05:20

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	212.00	212.00

High Resolution Temperature Constants MCG-D.K 443
Last Edited on 12-OCT-2018,05:20

Pre-filter Length	11
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Gamma Calibration MCG-D.K 443
Field Calibration on 16-DEC-2018 12:32

	Measured	Calibrated (API)
Background	105	74
Calibrator (Gross)	758	530
Calibrator (Net)	653	456

Gamma Calibration Tolerances MCG-D.K 443

Ratio

1.431Counts/API

Gamma Constants MCG-D.K 443
Last Edited on 16-DEC-2018,15:50

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Micro Normal and Micro Inverse Calibration MMR-B.A 91

Base Calibration on 04-DEC-2018 12:12
Field Check on 16-DEC-2018 12:15

	Resistor 1 (ohm)	Resistor 2 (ohm)
	10.0	50.0
Base Calibration		
	Measured	Calibrated (ohm-m)
Micro Normal	10.4 49.9	5.1 25.6
Micro Inverse	9.9 49.4	3.4 16.9
Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	93.9	93.9
Micro Inverse	62.3	62.3

Micro Normal & Micro Inverse Calibration Tolerance MMR-B.A 91

Micro Normal Res. 1	10.4		ohm	Micro Normal Res. 2	49.9		ohm
Micro Inverse Res. 1	9.9		ohm	Micro Inverse Res. 2	49.4		ohm
Micro Normal Base Check	93.9		ohm-m				
Micro Inverse Base Check	62.3		ohm-m				
Micro Normal Field Check	93.9		ohm-m				
Micro Inverse Field Check	62.3		ohm-m				

Micro Normal and Micro Inverse Constants MMR-B.A 91

Last Edited on 13-APR-2018,05:04

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	0.0000 inches

Caliper Calibration MMR-B.A 91

Base Calibration on 04-DEC-2018 12:06
Field Calibration on 16-DEC-2018 12:14

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14099	5.98
2	17485	7.97
3	20790	9.86
4	24525	11.92
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.95	7.97

Caliper Calibration Tolerances MMR-B.A 91

Short Arm Field Cal.	7.95		in
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Micro-Resistivity Caliper Constants MMR-B.A 91

Sonde Configuration	Resistivity Mode
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Micro Laterolog Calibration MMR-B.A 91

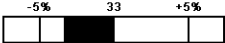
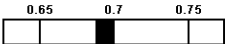
Base Calibration on 31-DEC-1999 00:00
Field Check on 31-DEC-1999 00:00

	Resistor 1 (ohm)	Resistor 2 (ohm)
	0.0	0.0
Base Calibration		
	Measured	Calibrated (ohm-m)
Ref 1	Ref 2	Ref 1 Ref 2

0.0	0.0	0.0	0.0
Base Check (ohm-m)	Field Check (ohm-m)		
0.0	0.0		

Micro Laterolog Constants MMR-B.A 91			
Pad Type	6 in Solid Nylon B23059		
Standoff Offset	0.0000	inches	
Micro Laterolog K Factor	0.0128		
Micro Laterolog Rm K Factor	N/A		
Mudcake Thickness Correction Constants			
Mud Cake Source	Constant Value		
Mud Cake Thickness	0.4000	inches	
Mud Cake Thickness Caliper			
Mud Cake Resistivity	0.1500	ohm-m	
Mud Cake Resistivity Temp.	20.00	Degrees C	
Mud Cake Resistivity Source	Constant Value		
Temp. for Rmc Corr.	MCG External Temperature		

Neutron Calibration MDN-B.A 292				Base Calibration on 04-DEC-2018,13:14	
				Field Check on 16-DEC-2018 12:19	
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far		Near	Far
	2910	91		3714	110
Ratio	31.871			33.764	
Field Calibrator at Base					
				Calibrated (cps)	
				2207	3209
Ratio				0.688	
Field Check					
				Calibrated (cps)	
				2208	3237
Ratio				0.682	

Neutron Calibration Tolerances MDN-B.A 292			
Ratio	31.871		
Base Check	0.688		
Field Check	0.682		

Neutron Constants MDN-B.A 292		Last Edited on 16-DEC-2018,15:50	
Neutron Source Id	P0204NN		
Neutron Jig Number	NJ5736		
Air Hole Processing	Legacy		
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	None		
Formation Pressure	N/A	kpsi	
Temperature Source	Constant Value		
Temperature	68.00	degrees F	
Mud Salinity	0.00	kppm	
Salinity Correction	Not Applied		
Formation Fluid Salinity Source	None		
Formation Fluid Salinity	N/A	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE-B.J 352		Base Calibration on 04-DEC-2018 11:51 Field Check on 16-DEC-2018 12:06	
	Resistor 1 (ohm)	Resistor 2 (ohm)	
	0.0	1000.0	
Base Calibration			

Base Calibration		
Reference 1	Measured 0.0	Calibrated (ohm-m) 0.0
Reference 2	982.1	126.8
Base Check		276.0
Field Check		276.0

FE Calibration Tolerances MFE-B.J 352				
Reference 2	982.1	-3% 980.0 +3%	ohm	
Base Check	276.0	-2% 277.0 +2%	ohm-m	
Field Check	276.0	-2% 276.0 +2%	ohm-m	

FE Constants MFE-B.J 352			Last Edited on 16-DEC-2018,15:50		
Running Mode		No Sleeve			
MFE K Factor		0.1268			
Borehole Correction Constants					
Sonde Position		0.5		inches	
Hole Size Source		Density Caliper			
Hole Size Constant Value		N/A		inches	
Rm Source		Global Value: Temperature Corrected			
Temp. for Rm Corr.		MCG External Temperature			

Sonic Constants MSS-C.K 319			Last Edited on 08-JUL-2018,09:57		
Maximum Boundary Contrast	70.00	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				
Correction for Sonde Skew	Applied				
Cycle Stretch Algorithm	Applied				
MN3FT	0.00	micro-sec			
MX3FT	1500.00	micro-sec			
Hunt-Raymer Constant	83.13	micro-sec/ft			
Sonde Mode	Compensated				
Hole Type	Open Hole				
Sonde Parameters					
	Measured	Calibrated			
Offset		0.0000			
Free Pipe	0.0000				
Peak Amplitude Source					
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)	Depth (ft)		
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		
0.00	0.00	0.00	0.00		
Full Waveform Parameters					
Use 3' Waveform to derive TR	No				

Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
Waveform Discriminator Filter	Not Applied	
Semblance Window Width	150.00	micro-sec
Semblance Processing Enabled	Yes	
Tracking Boxes Enabled In Processing	Yes	

Induction Calibration MAI-B.J 390

Factory Loop Calibration 10-DEC-2018 18:16

Field Check on 16-DEC-2018 12:05

Factory Loop Calibration

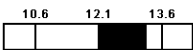
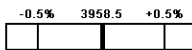
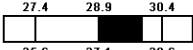
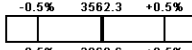
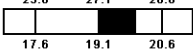
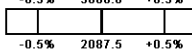
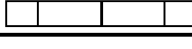
High Conductivity Reference Resistor	3.3	ohm
Low Conductivity Reference Resistor	333.3	ohm

Array	Measured Signal (unitless)		Reference Conductivity (mmho/m)		Calibration	
	Low	High	Low	High	Gain	Offset
1 (near)	16.8	458.6	9.3	966.2	2.166	-27.2
2	6.3	377.7	7.6	821.4	2.191	-6.2
3	3.8	258.6	5.2	566.0	2.200	-3.0
4 (far)	1.9	132.3	2.6	279.2	2.121	-1.4
Array Temperature	77.9		Deg F			

Tool Checks

Array	Factory Reference (mmho/m)		Before Survey (mmho/m)		
	Low	High	Low	High	
1 (near)	12.1	3958.5	13.2	3960.0	
2	28.9	3562.3	30.0	3563.3	
3	27.1	3060.6	28.0	3061.3	
4 (far)	19.1	2087.5	19.7	2087.8	
Array Temperature	63.5		64.1		Deg F

Induction Check Tolerances MAI-B.J 390

Low Array 1	13.2		mmho/m	High Array 1	3960.0		mmho/m
Low Array 2	30.0		mmho/m	High Array 2	3563.3		mmho/m
Low Array 3	28.0		mmho/m	High Array 3	3061.3		mmho/m
Low Array 4	19.7		mmho/m	High Array 4	2087.8		mmho/m

Induction Constants MAI-B.J 390

Last Edited on 16-DEC-2018,15:49

Induction Model	RtAP-WBM		
Borehole Correction Constants			
Tool Centred	No		
Hole Size Source	Density Caliper		
Hole Size Constant Value	N/A	inches	
Stand-off Type	Fins		
Stand-off	0.50	inches	
Number of Fins on Stand-off	8.0000		
Stand-off Fin Angle	45.00	degrees	
Stand-off Fin Width	0.5000	inches	
Rm Source	Global Value: Constant Temperature		
Temp. for Rm Corr.	N/A		
Borehole Correction Method	Default		
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

Symmetrised Receiver Gains

Receiver 1	1.00
Receiver 2	1.00
Receiver 3	1.00
Receiver 4	1.00

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	

High Resolution Temperature Calibration MAI-B.J 390

Field Calibration on 15-MAY-2018,12:48

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

High Resolution Temperature Constants MAI-B.J 390

Last Edited on 06-MAR-2018,13:01

Pre-filter Length 11

Caliper Calibration MPD-C.A 216

Base Calibration on 04-DEC-2018 12:24

Field Calibration on 16-DEC-2018 12:07

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15599	3.99
2	24289	5.98
3	32989	7.97
4	41250	9.86
5	50464	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

Caliper Calibration Tolerances MPD-C.A 216

Long Arm Field Cal. 7.96

7.57	7.97	8.37
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 in

Photo Density Calibration MPD-C.A 216

Base Calibration on 04-DEC-2018 12:43

Field Check on 16-DEC-2018 12:13

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	996	1188		
Reference 1	49174	23910	59556	30836
Reference 2	19716	2252	24941	2541

Field Check at Base

996.3	1187.9
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Field Check

1007.7	1215.2
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PE Calibration

Base Calibration	Measured	Calibrated
WS	WH Ratio	Ratio

Background	183	895		
Reference 1	20502	49024	0.422	0.371
Reference 2	5636	19607	0.291	0.272

Field Check at Base

182.6	895.4
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Field Check

187.1	905.9
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Photo Density Calibration Tolerances MPD-C.A 216

Near Density Ratio	2.57	-5% 2.52 +5% 0.089 0.110 0.131
PE Calibration	0.122	-5% 0.110 +5%

Far Density Ratio	21.36	-5% 21.00 +5%
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Near Den. Field Check	1007.7	-3% 996.3 +3%
PE WS Field Check	187.1	-6% 182.6 +6%

Far Den. Field Check	1215.2	-3% 1187.9 +3%
PE WH Field Check	905.9	-6% 895.4 +6%

Density Constants MPD-C.A 216

Last Edited on 16-DEC-2018,15:50

Density Source Id	P50557B	
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 Type		
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	
Precision Enhanced Density Processing	Applied	
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 18.03.9344\Data\Berexco Kane Unit #4-14\Berexco Kane Unit #4-14_003.dta

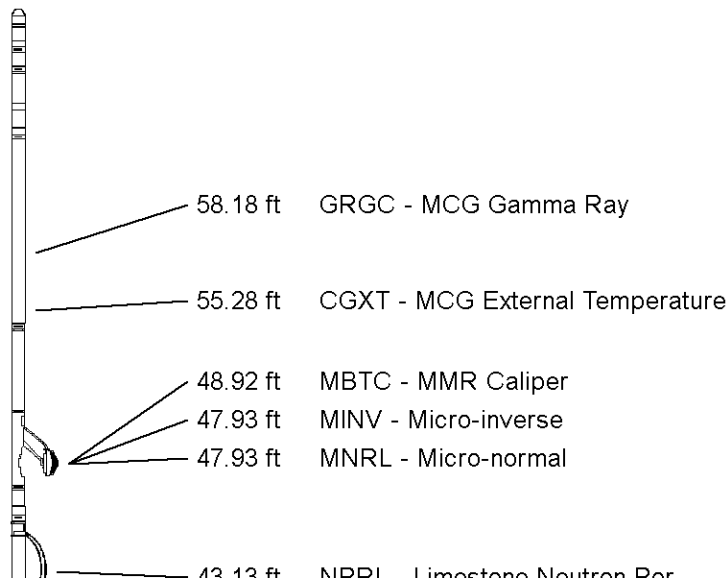
Cablehead, 11 pin
CBH-CB 264 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Swivel Head Adaptor
SHA-J.B 595 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Comms Gamma
MCG-D.K 443 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-B.A 91 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-B.A 292 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in



Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.913 in

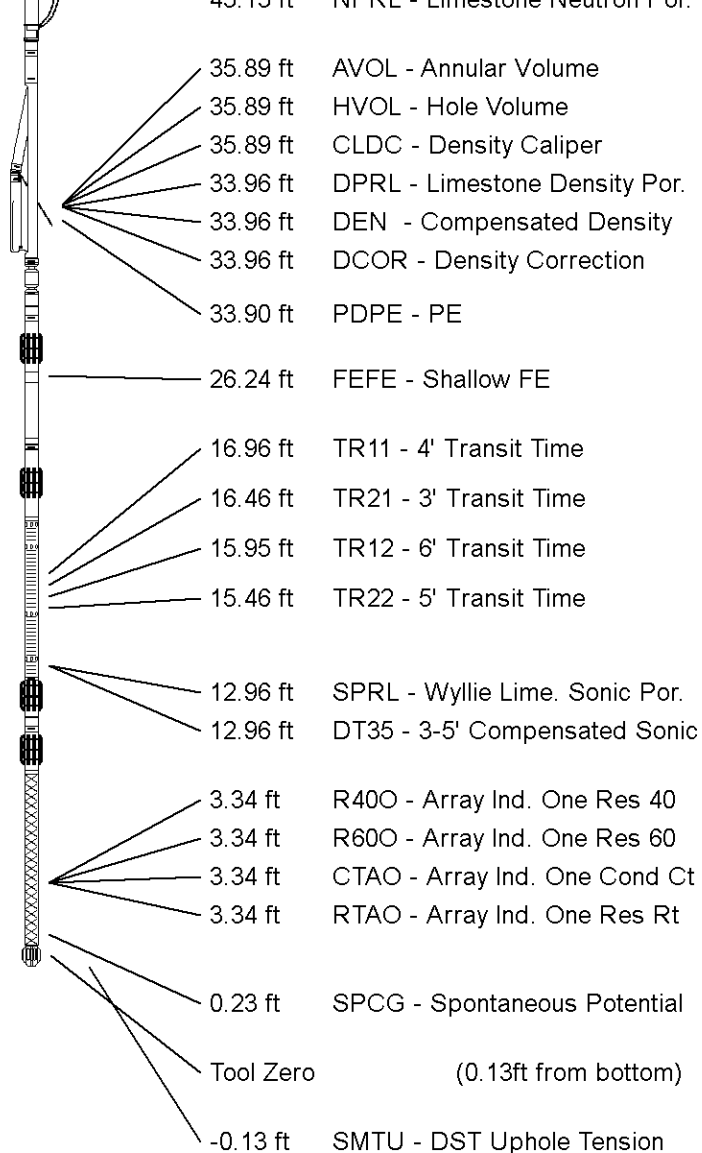
Compact Knuckle Joint
SKJ-D.A 167 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-C.K 319 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-B.J 390 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 68.16 ft Weight: 526.9 lb



All measurements relative to tool zero.

COMPANY BEREXCO, LLC.
WELL KANE UNIT #4-14
FIELD ALFORD
PROVINCE/COUNTY KIOWA
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2227	feet	First Reading	5296.00	feet
Elevation Drill Floor	2225	feet	Depth Driller	5300.00	feet
Elevation Ground Level	2215	feet	Depth Logger	5299.00	feet

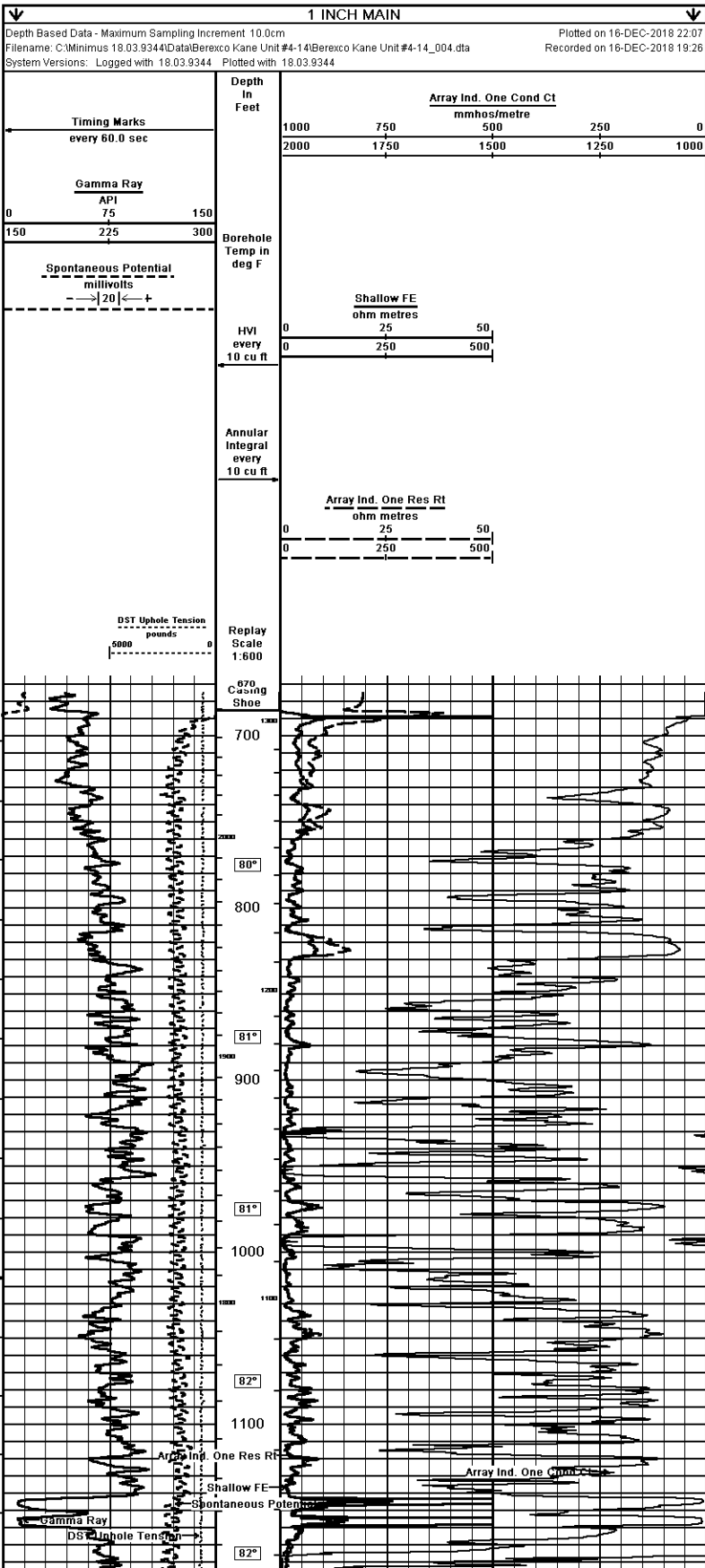


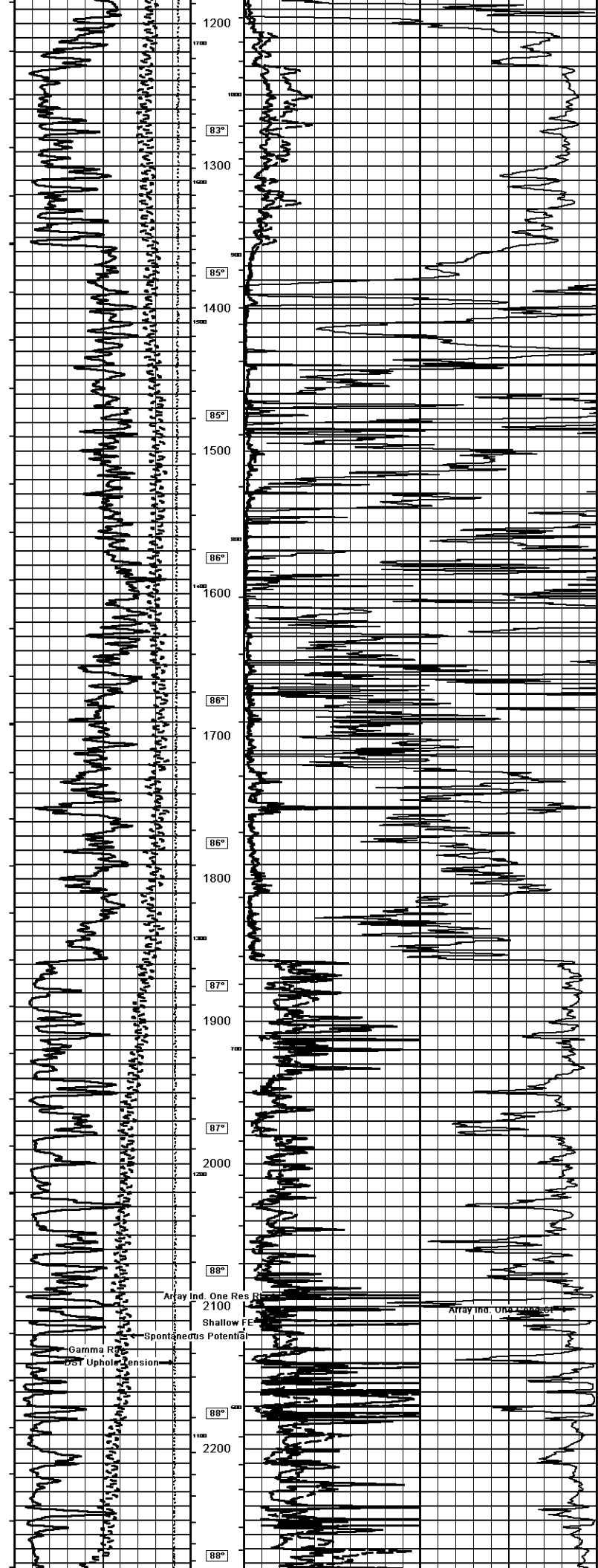
ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

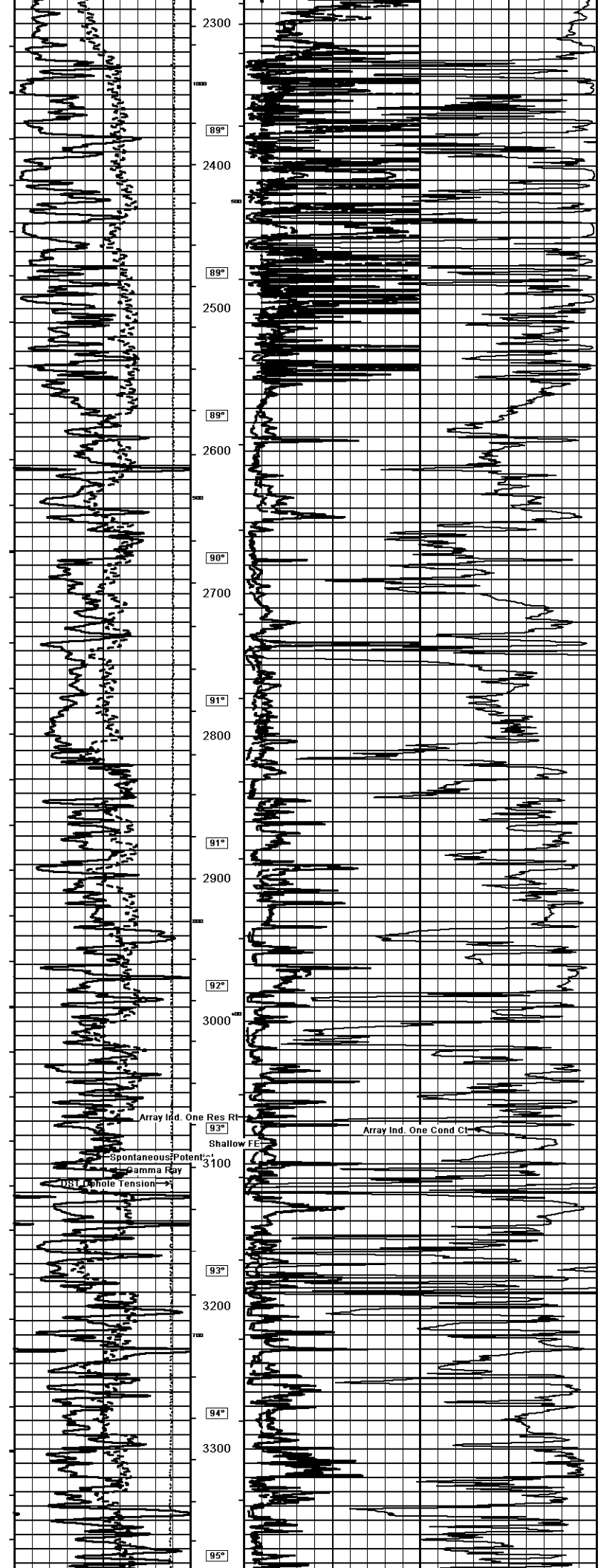
Weatherford®

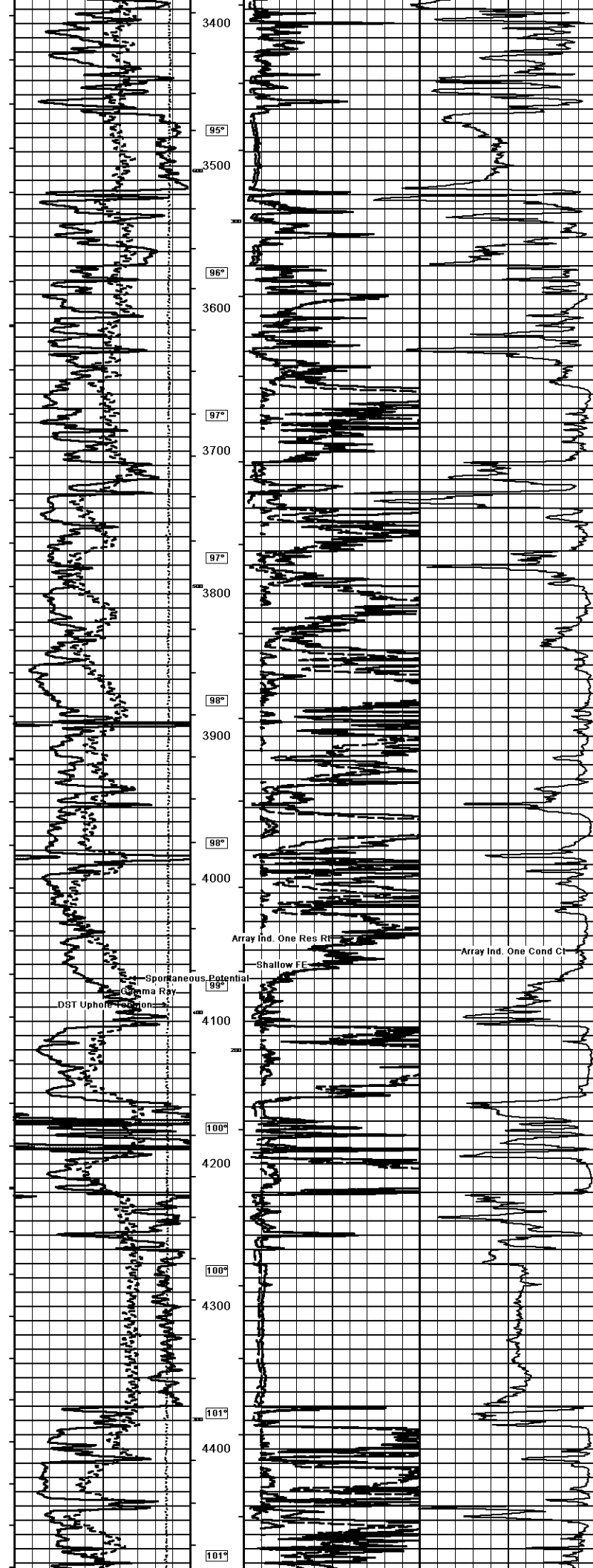
Weatherford		Weatherford	
COMPANY	BEREXCO, L.L.C.	WELL	KANE UNIT #4-14
FIELD	ALFORD	PROVINCE/COUNTY	KIOWA
COUNTRY/STATE	U.S.A. / KANSAS	LOCATION	15601 FSL & 15601 FSL
SEC 14	TWP 30S R3E 15W	DATE	11-DEC-2017
Latitude	35.08721033	Longitude	-97.21033
Permanent Datum G.L. Elevation	2215 feet	Log Measured From	KB, 12.00 feet above P.B.
Drilling Measured From	KB	Run Number	ONE
Service Order	4558-2217	Depth Driller	5300.00
Depth Logger	5299.00	First Reading	5296.00
Last Reading	685.00	Casing Driller	685.00
Casing Logger	685.00	Bit Size	7 8/75
Hole Fluid Type	CHEMICAL	Density/Viscosity	9.30
PH / Fluid Loss	11.00	Sample Source	FLOW LINE
Run @ Measured Temp	0.53 @ 75.0	Run @ Measured Temp	0.50 @ 75.0
Run @ Measured Temp	0.75 @ 75.0	Run @ Measured Temp	0.44 @ 108.0
Run @ Measured Temp	0.44 @ 108.0	Time Since Circulation	5 HOURS
Max Recorded Temp	108.00	Equipment / Base	13096
Recorded By	ADAM SILL	Witnessed By	CLINT BLEIER

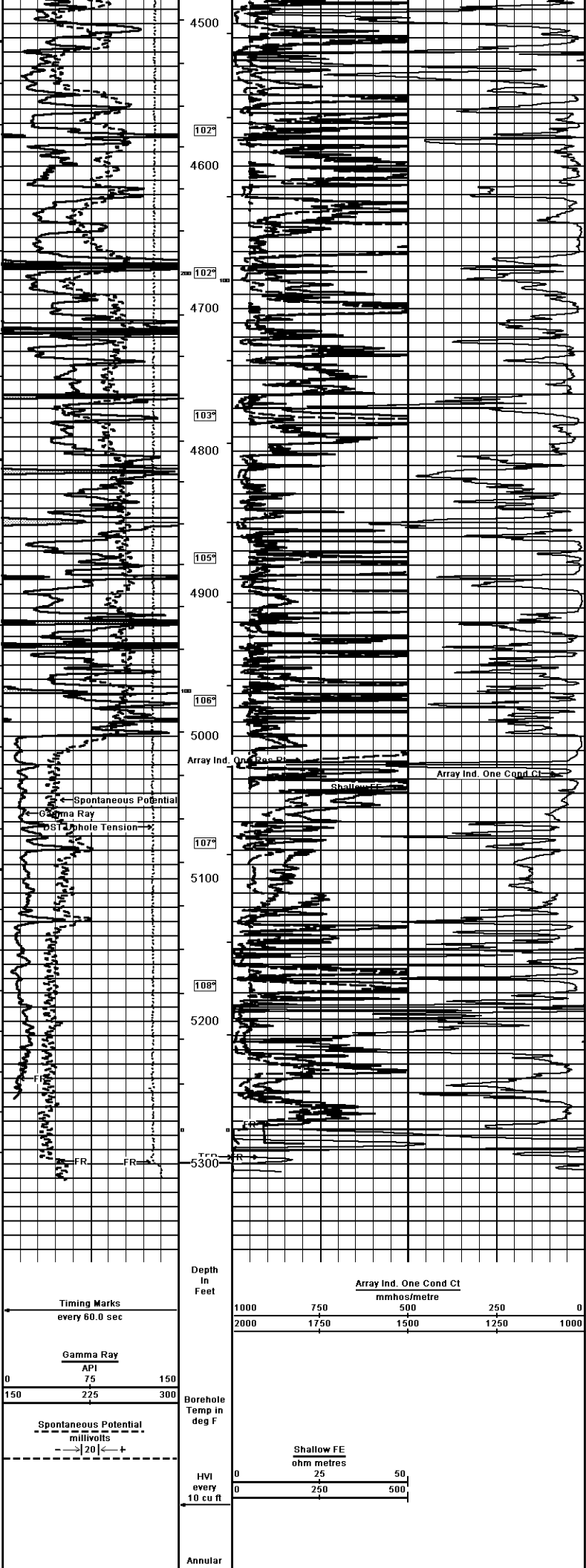
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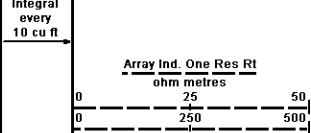












DST Uphole Tension
pounds
5000

Replay
Scale
1:600

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 16-DEC-2018 22:07
Filename: C:\Minimus 18.03.9344\Data\Bereco Kane Unit #4-14\Bereco Kane Unit #4-14_004.dta
Recorded on 16-DEC-2018 19:26
System Versions: Logged with 18.03.9344 Plotted with 18.03.9344

1 INCH MAIN

COMPANY	BEREXCO, LLC.			
WELL	KANE UNIT #4-14			
FIELD	ALFORD			
PROVINCE/COUNTY	KIOWA			
COUNTRY/STATE	U.S.A. / KANSAS			
Elevation Kelly Bushing	2227	feet	First Reading	5296.00 feet
Elevation Drill Floor	2225	feet	Depth Driller	5300.00 feet
Elevation Ground Level	2215	feet	Depth Logger	5289.00 feet



ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG