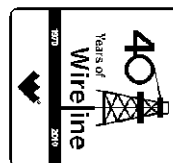




Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY REDLAND RESOURCES
WELL DAVID # 25-15
FIELD WILDCAT
PROVINCE/COUNTY HODGEMAN
COUNTRY/STATE KANSAS / U.S.A.
LOCATION 353' FSL & 2561' FEL SE/4



SEC TWP RGE Other Services
25 23S 25W MPD/MDN
API Number 15-083-21729 MSS
Permit Number MML

Permanent Datum G.L., Elevation 2497 feet
Log Measured From KB
Drilling Measured From K.B. @2509

Elevations:
KB 2509.00
DF 2507.00
GL 2497.00

Date	12-DEC-2011	
Run Number	ONE	
Depth Driller	4920.00	feet
Depth Logger	4921.00	feet
First Reading	4918.00	feet
Last Reading	219.00	feet
Casing Driller	217.00	feet
Casing Logger	219.00	feet
Bit Size	7.875	inches
Hole Fluid Type	CHEMICAL	
Density / Viscosity	9.10 lb/USg	59.00 CP
PH / Fluid Loss	10.00	7.20 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	1.68 @ 52.0	ohm-m
Rmf @ Measured Temp	1.34 @ 52.0	ohm-m
Rmc @ Measured Temp	2.02 @ 52.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.88 @103.0	ohm-m
Time Since Circulation	5 HOURS	
Max Recorded Temp	103.00	deg F
Equipment Name	COMPACT	
Equipment / Base	1396	LIB
Recorded By	F. MARTINS	A. GIAMBALVO
Witnessed By	C. THOMAS	
S.O. / JOB #	3534681	LB11-313

BOREHOLE RECORD

Last Edited: 12-DEC-2011 17:27

Bit Size inches	Depth From feet	Depth To feet
7.875	219.00	4921.00

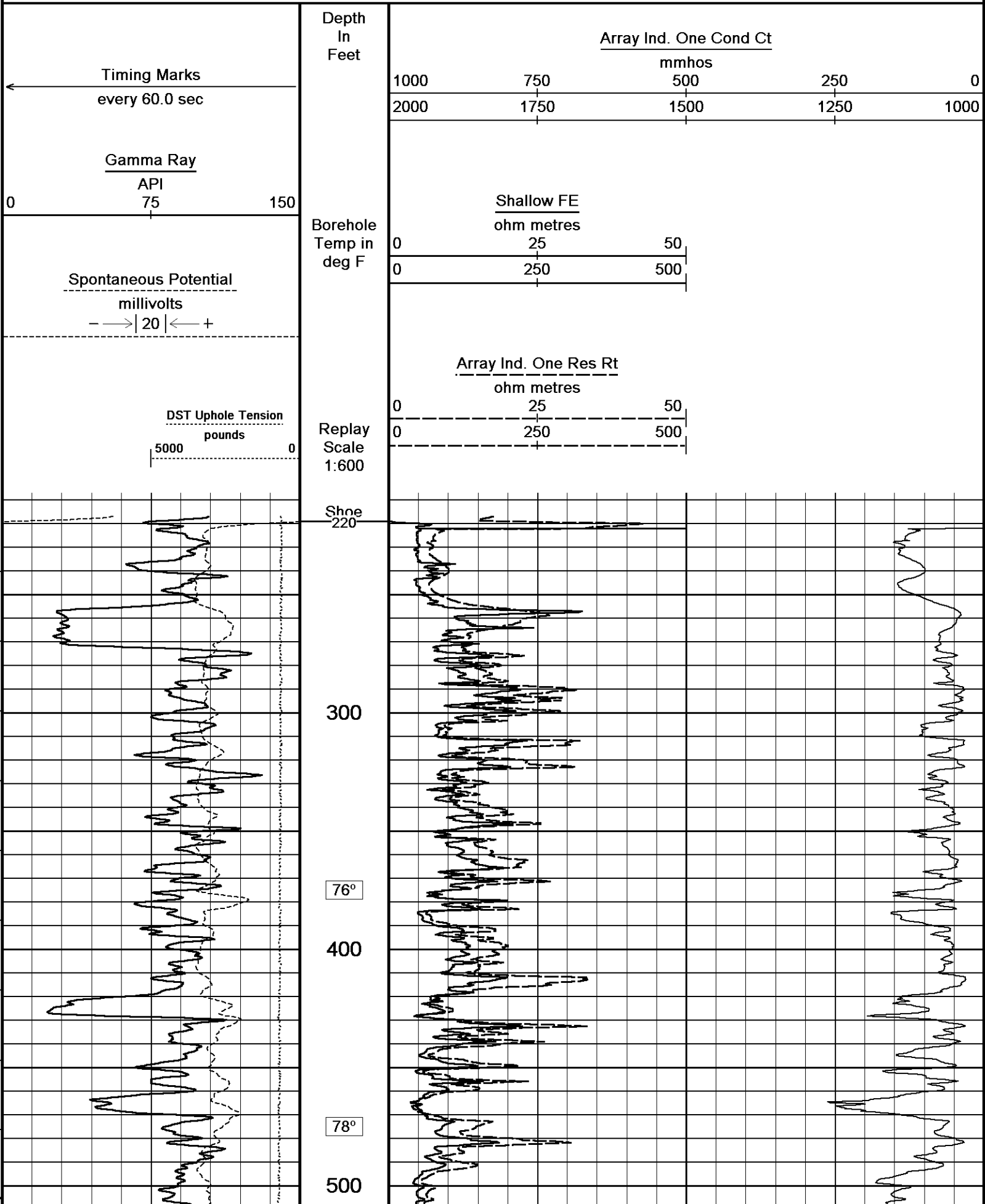
CASING RECORD

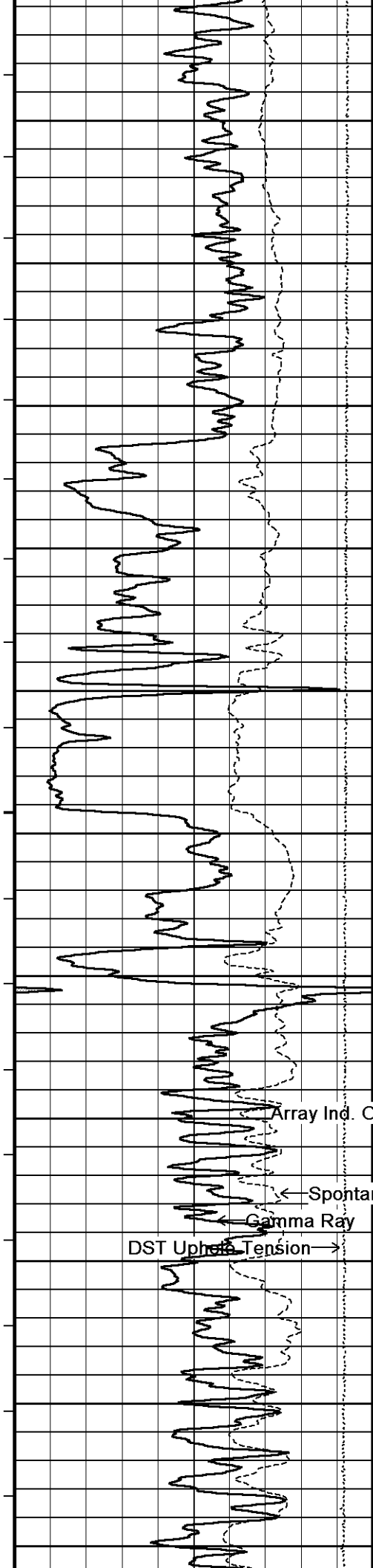
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	219.00	24.00

REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MML, MSS
Hardware: MPD: 8 inch profile plate used. MAI, MSS and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.
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.
Annular volume with 4.5 inch production casing = 223 cu. ft
Service order # 3534681
Rig: Duke # 9
Engineer: F. Martins, A. Giambalvo
Operator(s): M. Stegman

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.





78°

600

79°

700

80°

800

79°

Array Ind. One 900Rt

Shallow FE

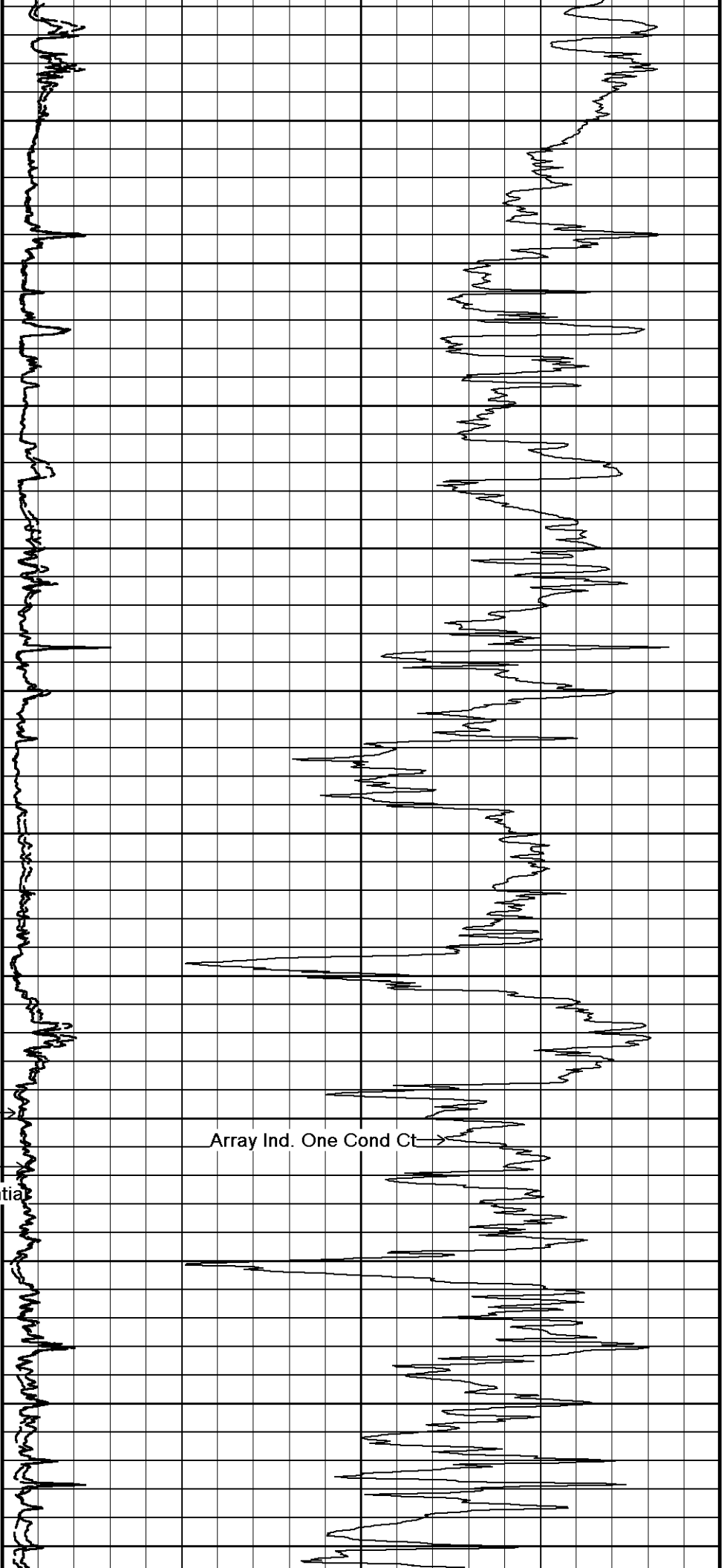
← Spontaneous Potential

Gamma Ray

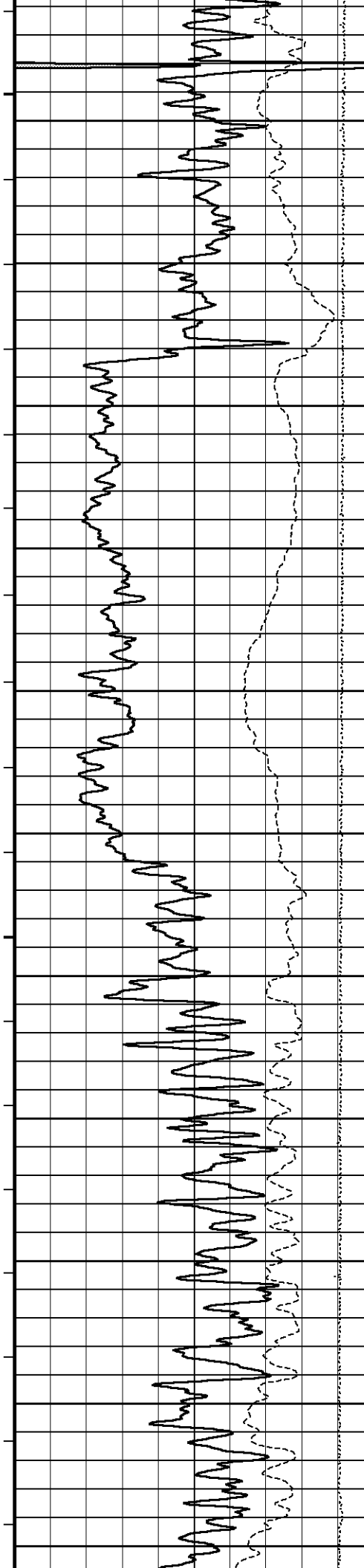
DST Up

80°

1000



Array Ind. One Cond Ct



81°

1100

80°

1200

81°

1300

82°

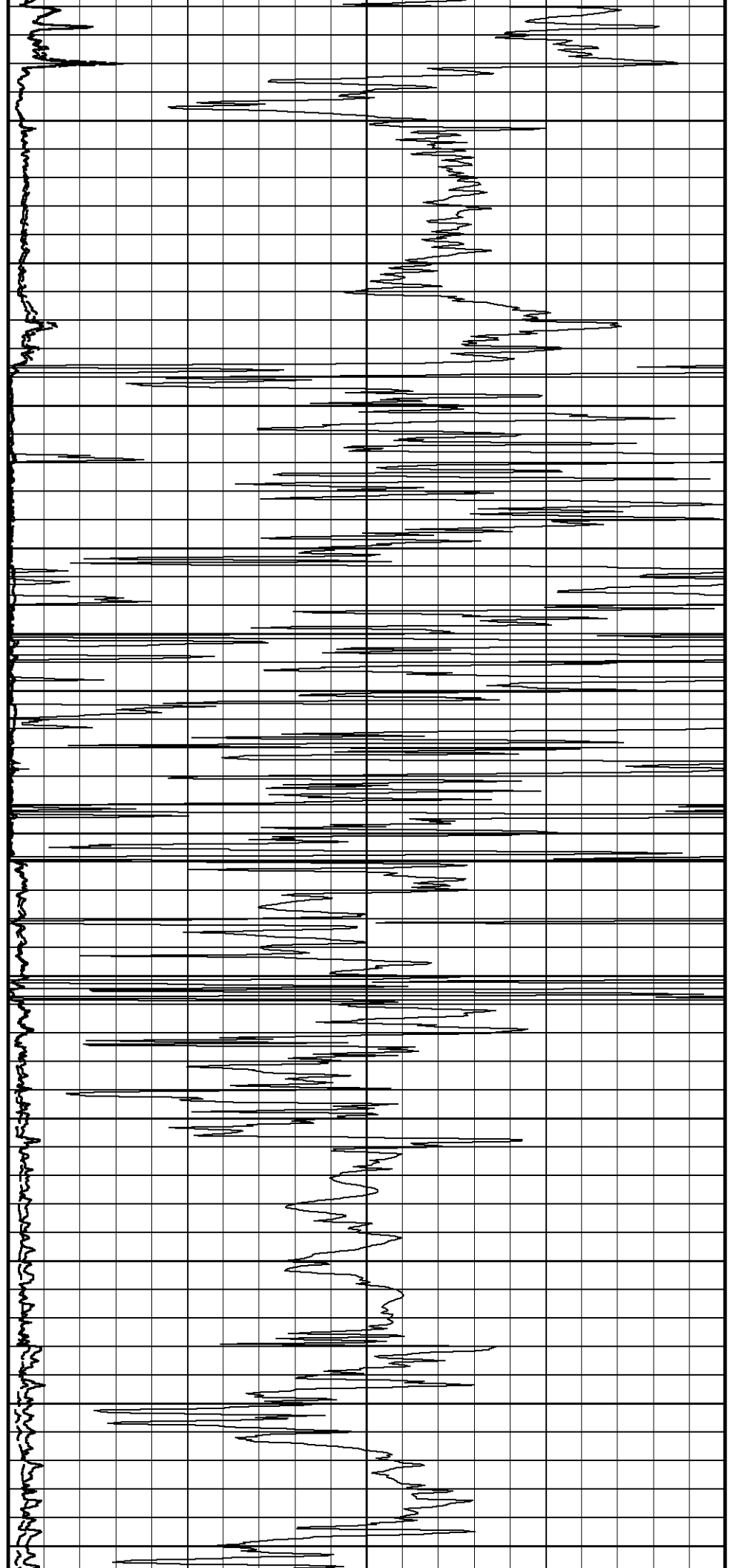
1400

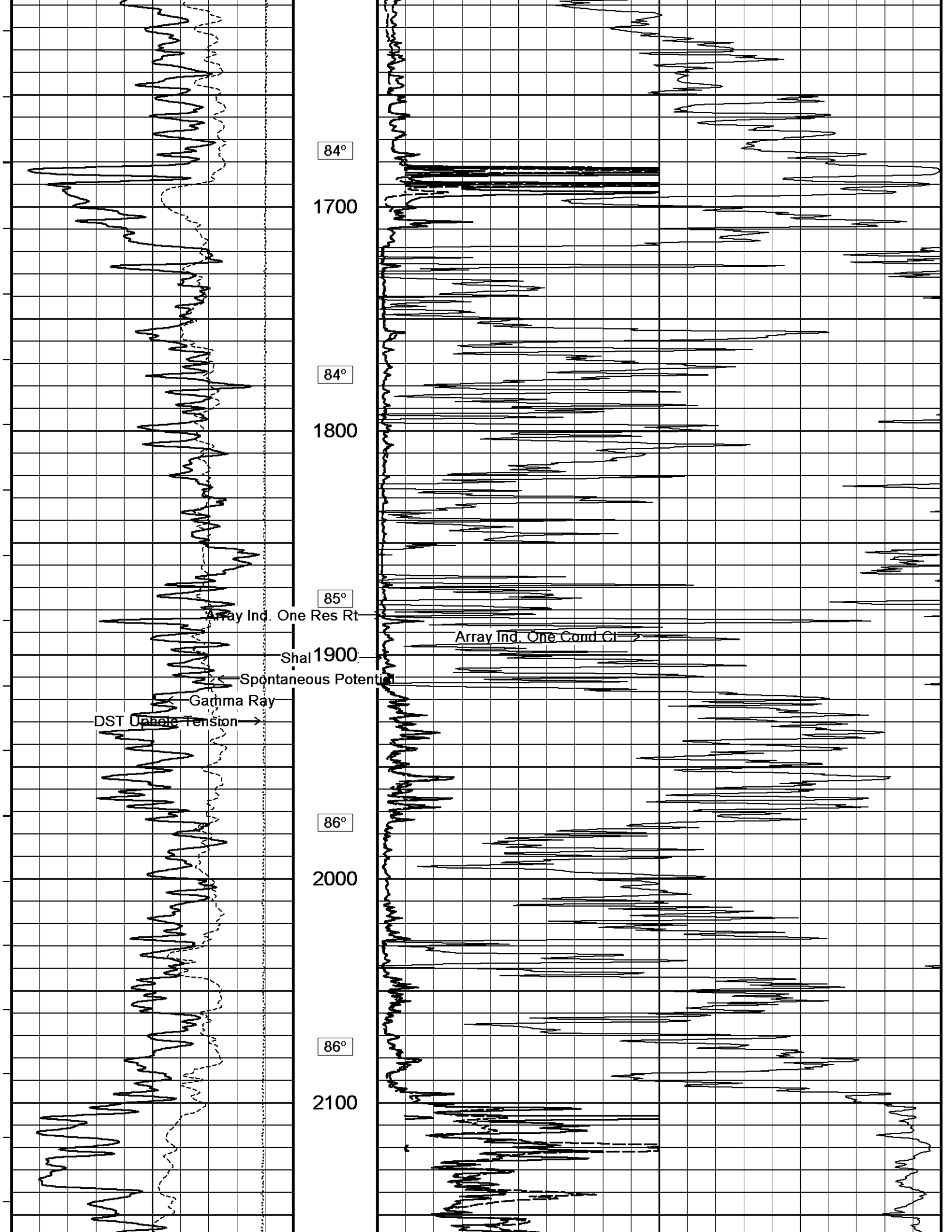
82°

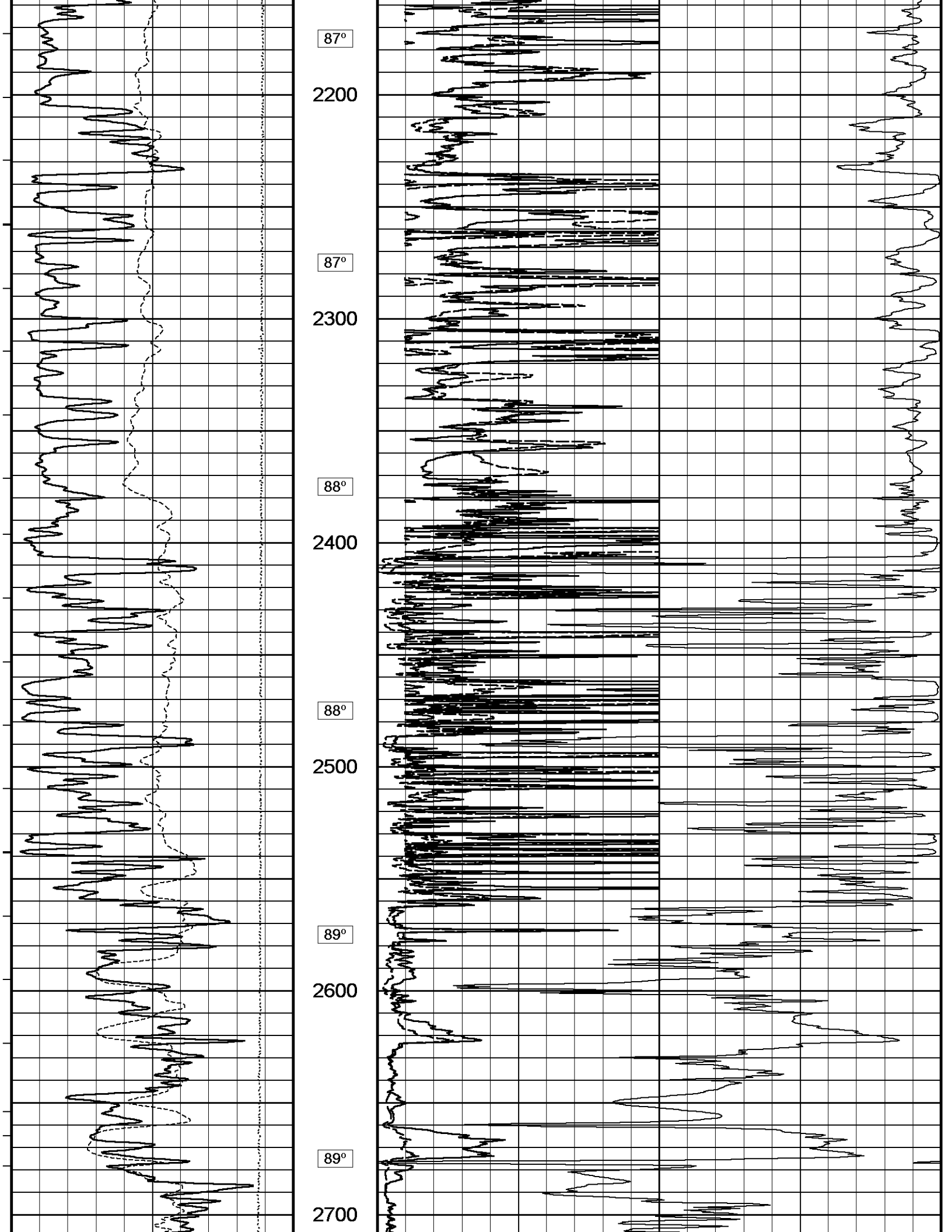
1500

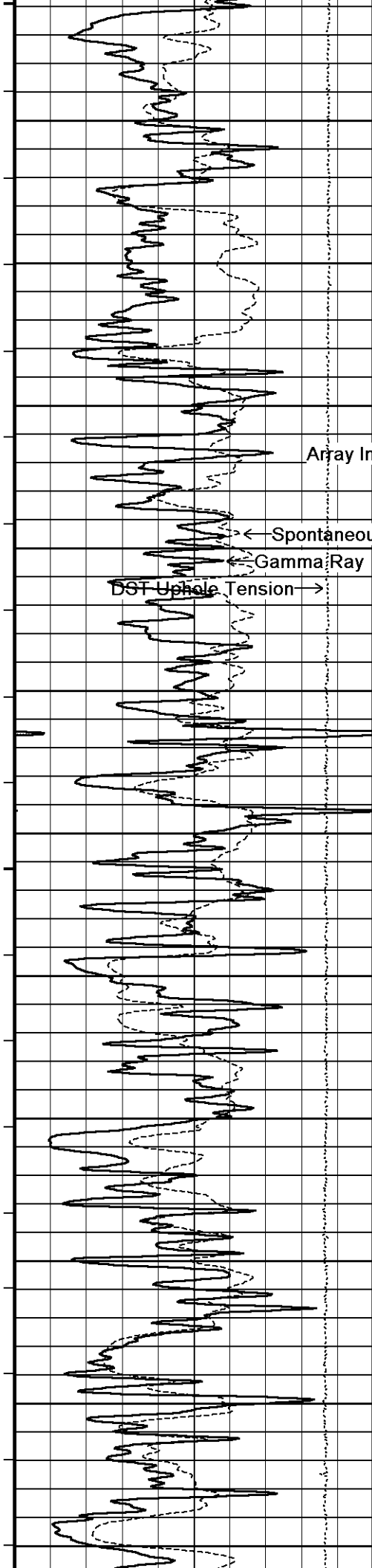
83°

1600









Array Ind. One Res Rt

90°

Shallow TE

← Spontaneous Potential

← Gamma Ray

DST Up-hole Tension →

90°

2800

2900

91°

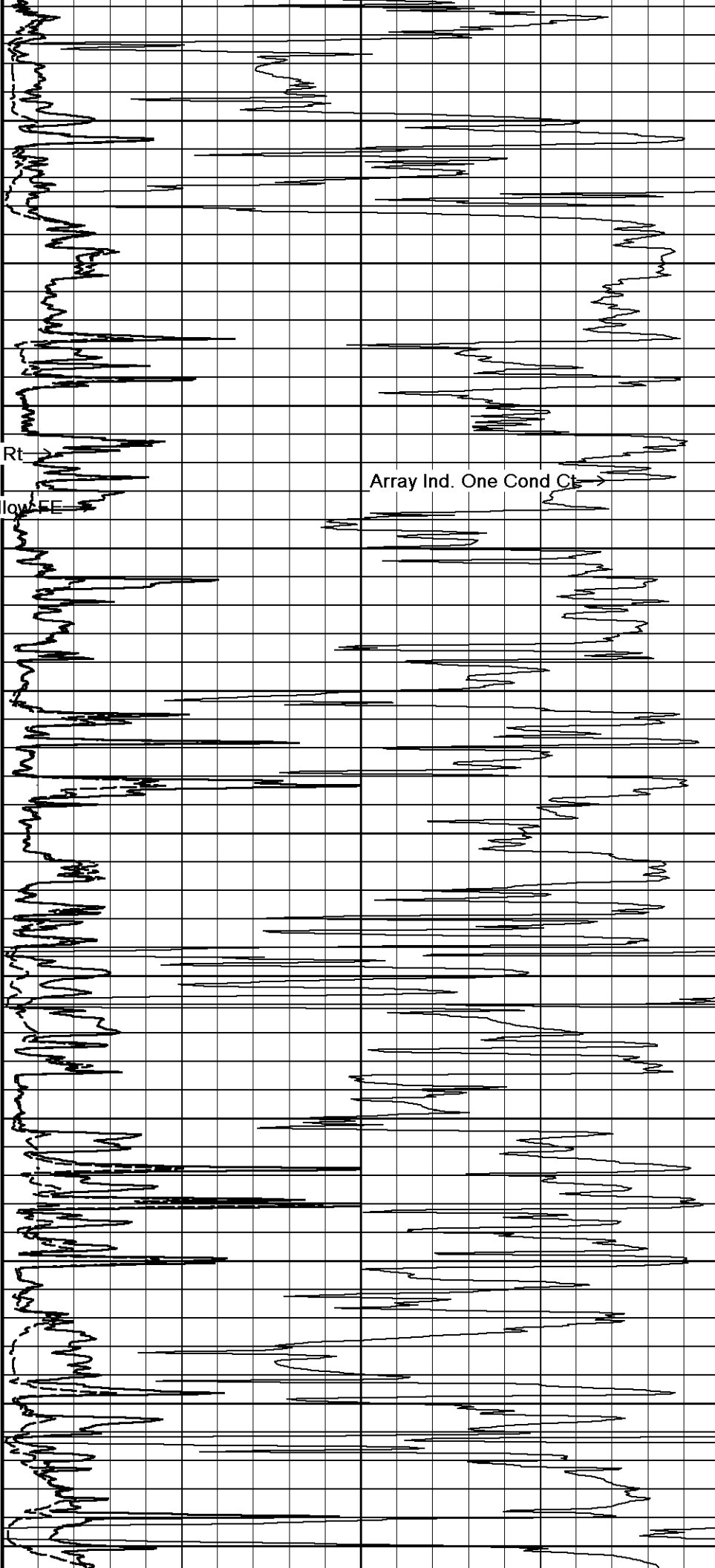
3000

91°

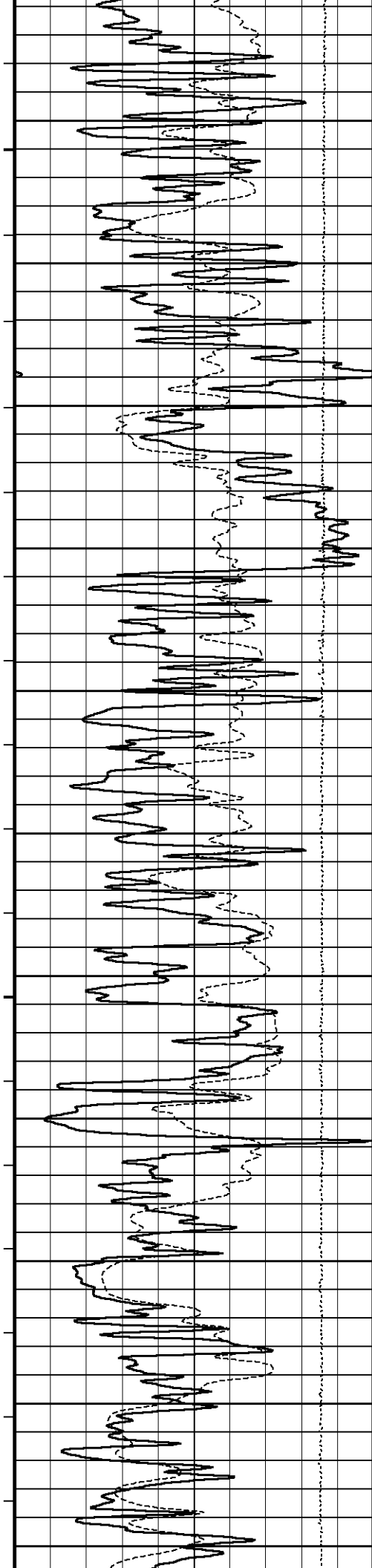
3100

92°

3200



Array Ind. One Cond Ct



93°

3300

93°

3400

94°

3500

94°

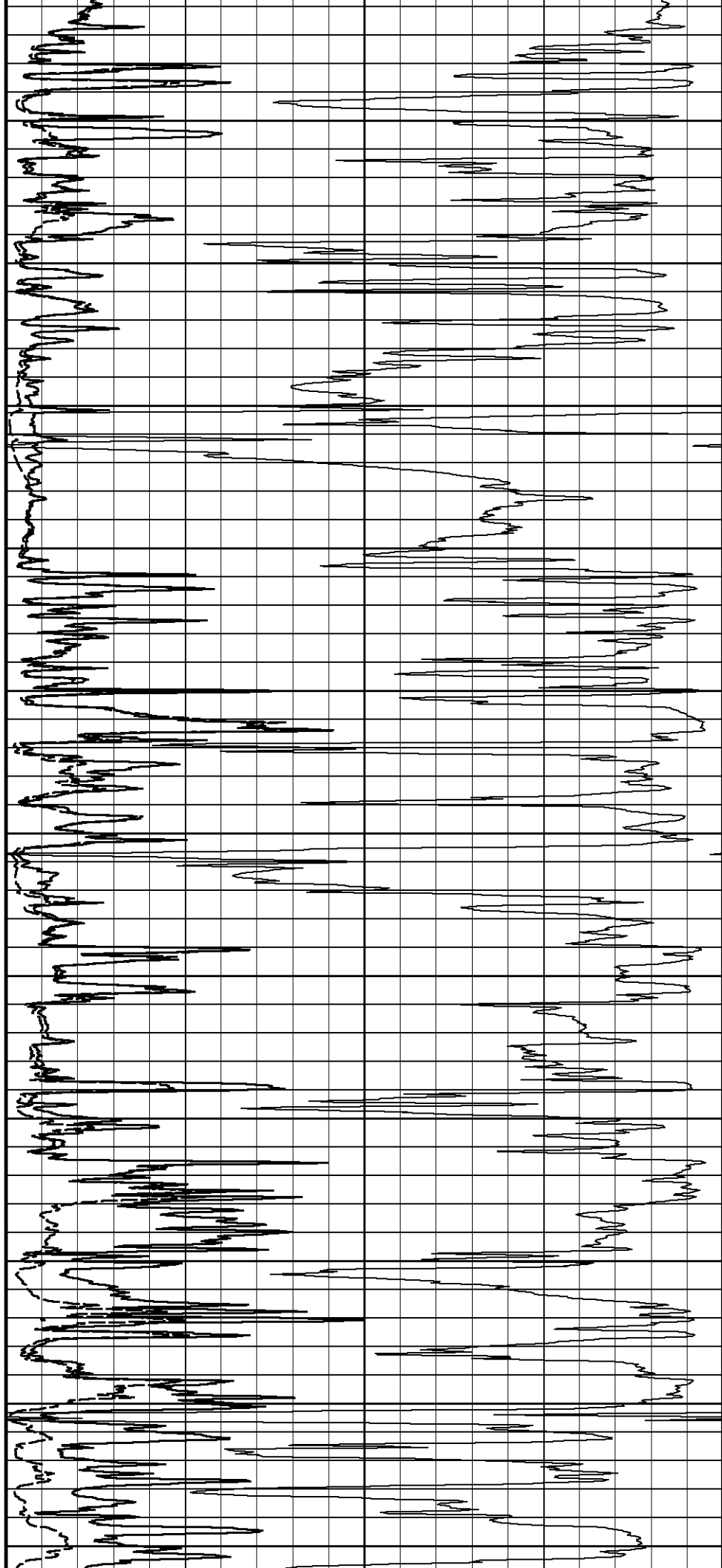
3600

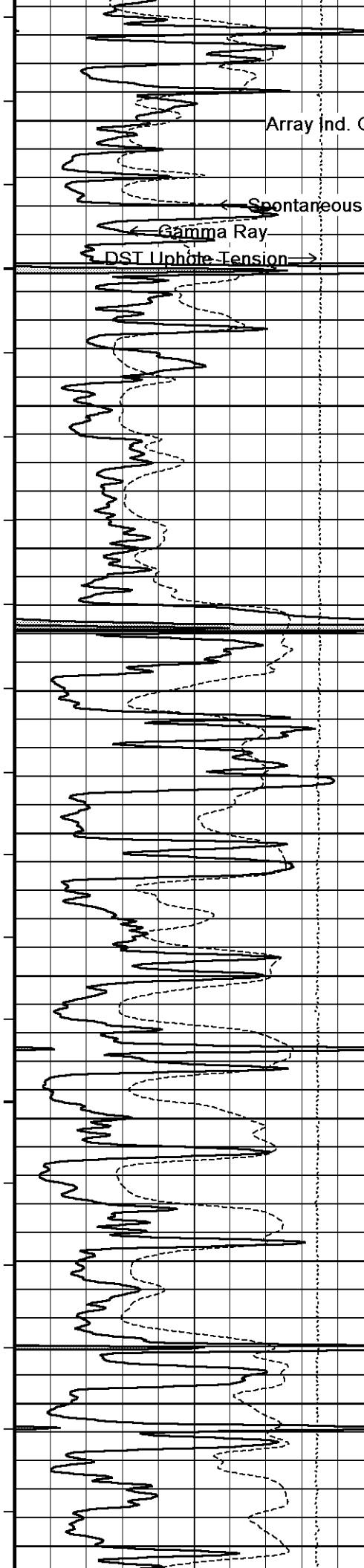
95°

3700

96°

3800





Array Ind. One Res Rt

Shallow FE

Spontaneous Potential

Gamma Ray

DST Up/Down Tension

3900

96°

4000

97°

4100

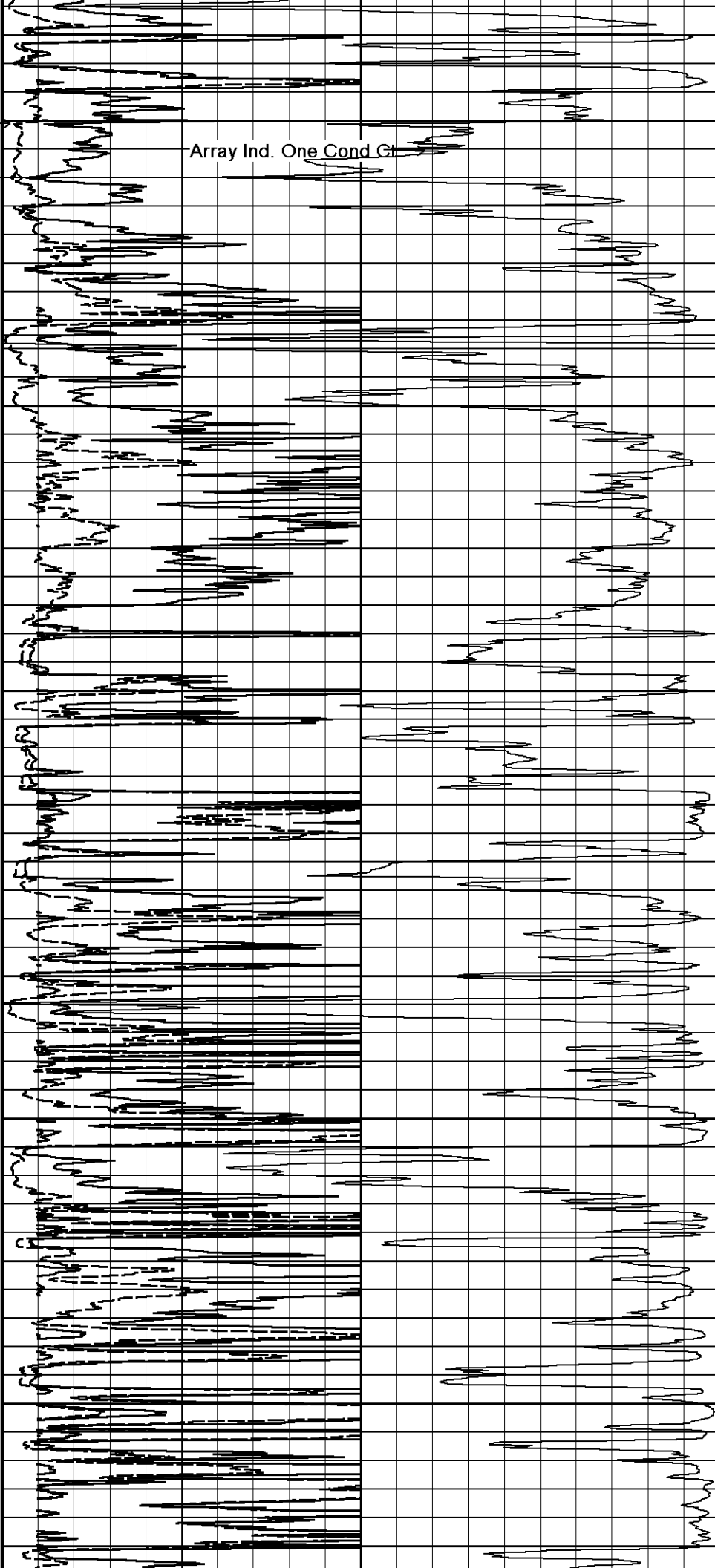
96°

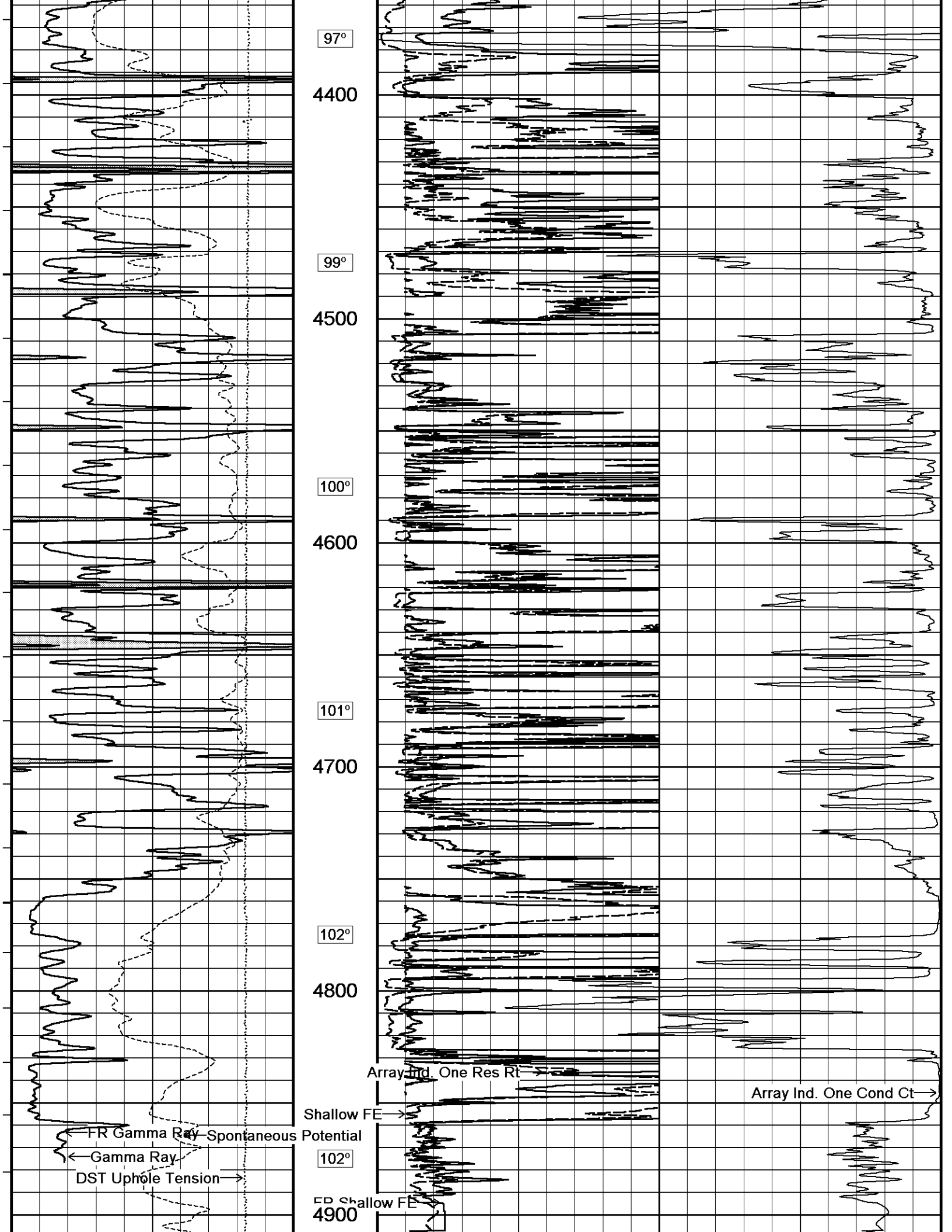
4200

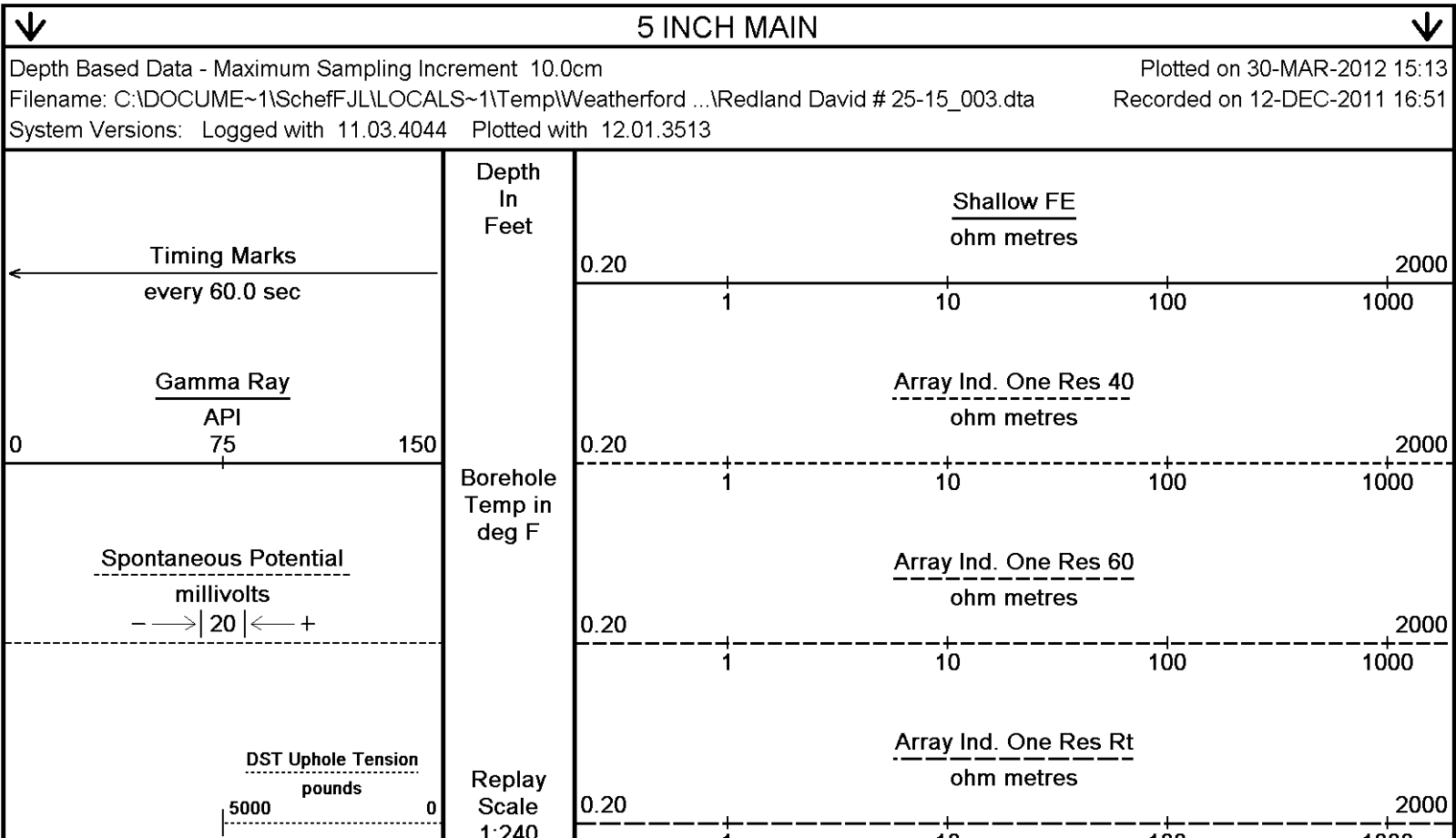
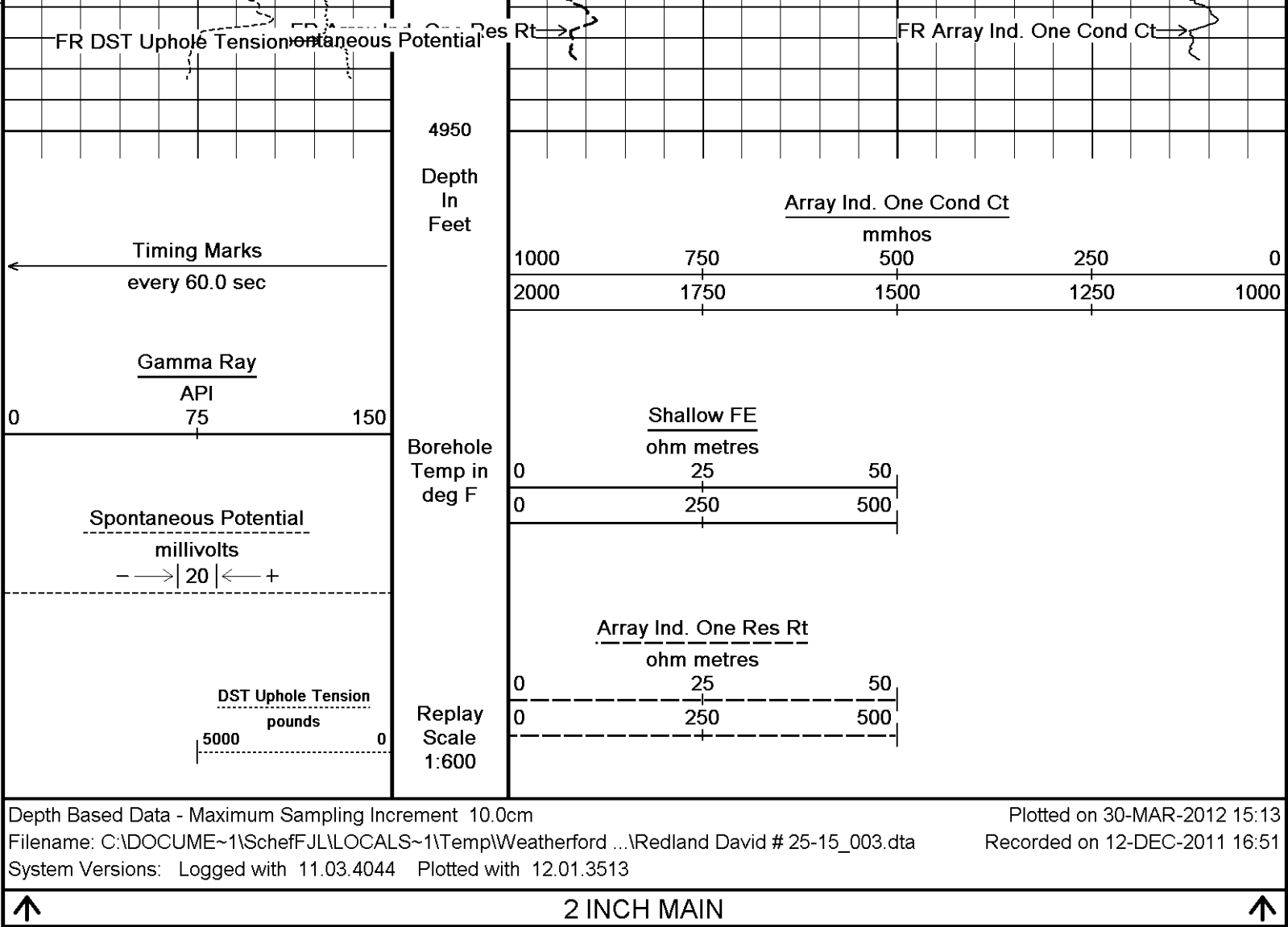
97°

4300

Array Ind. One Cond Gr







216
Side

250

75°

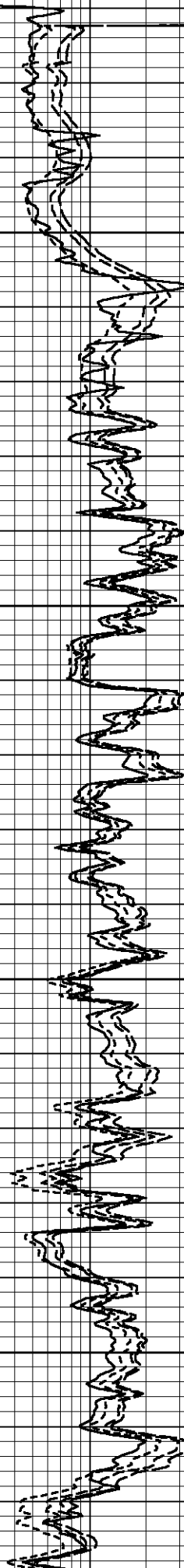
300

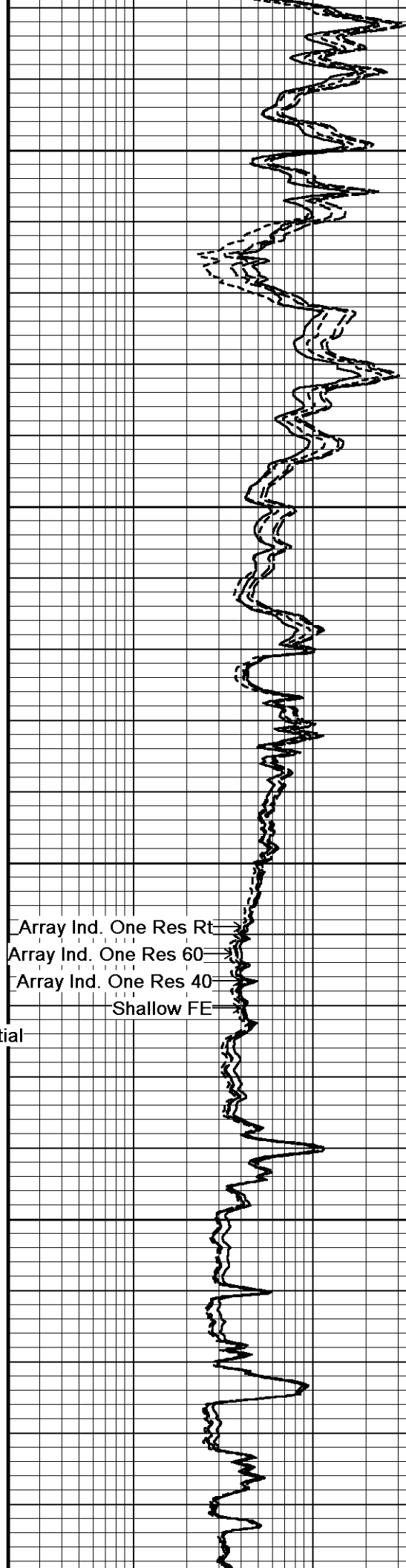
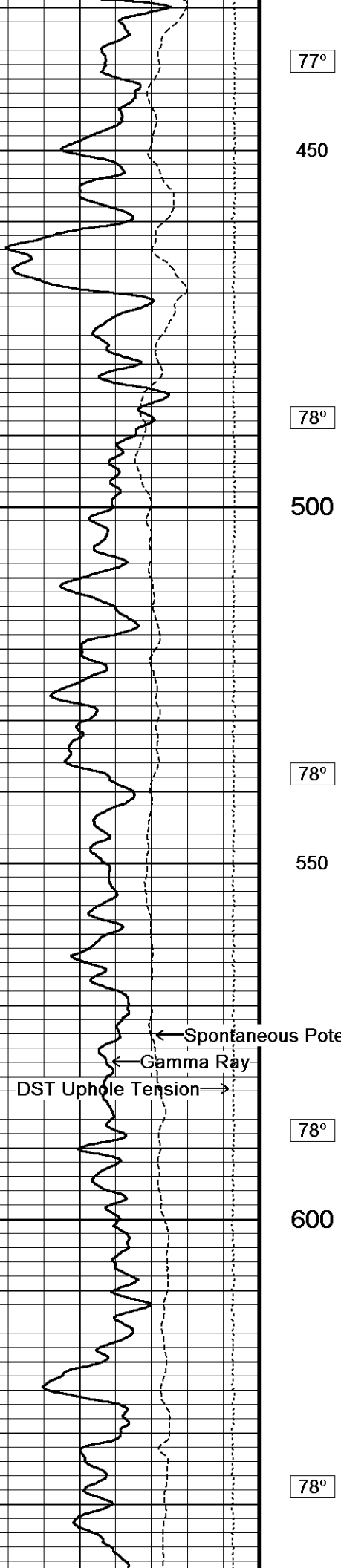
76°

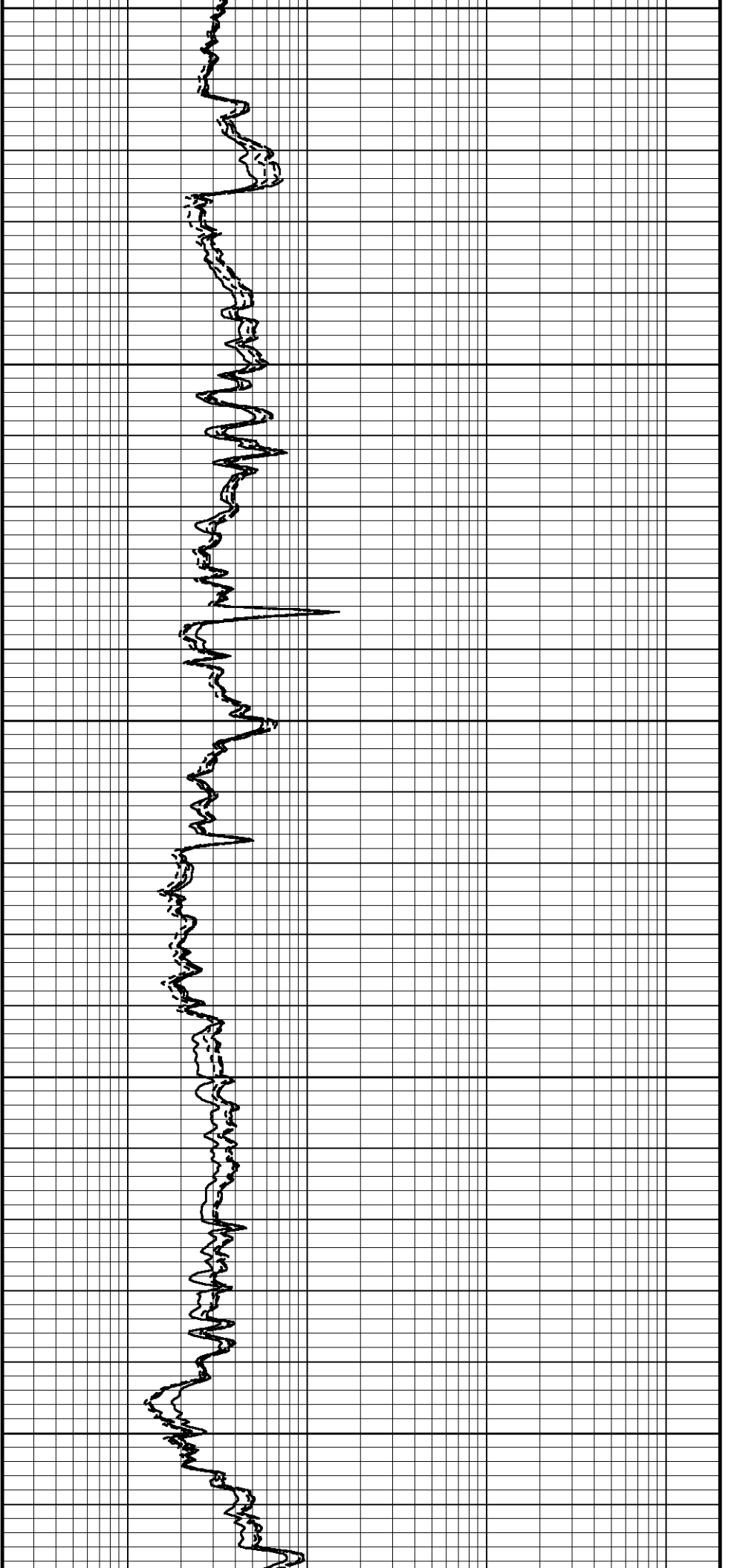
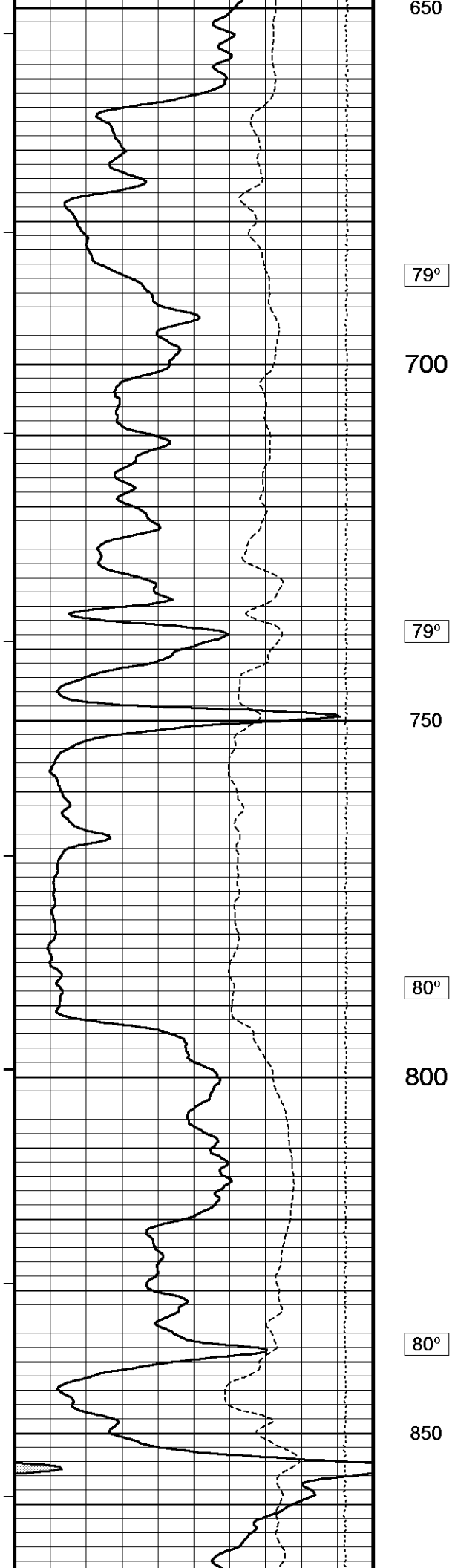
350

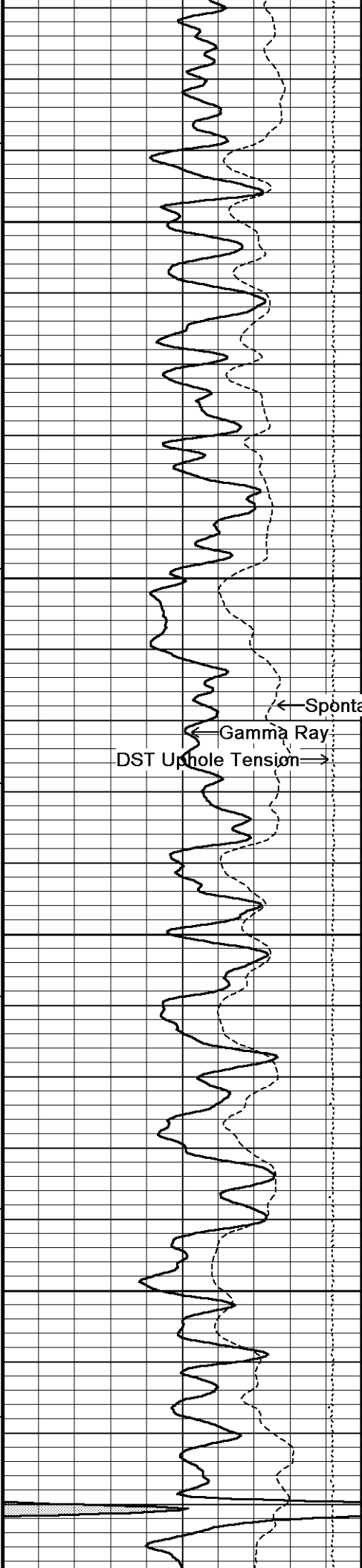
77°

400









79°

900

80°

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 →

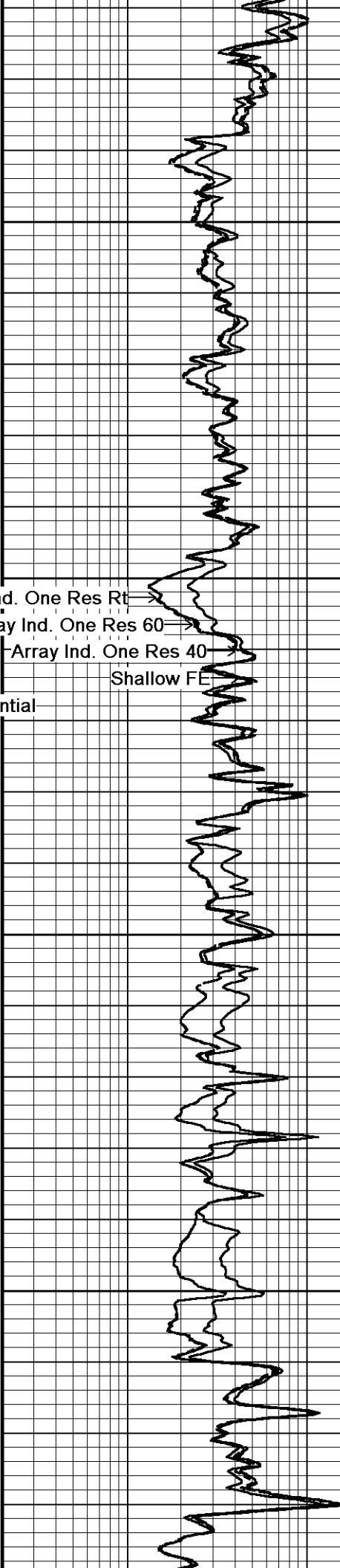
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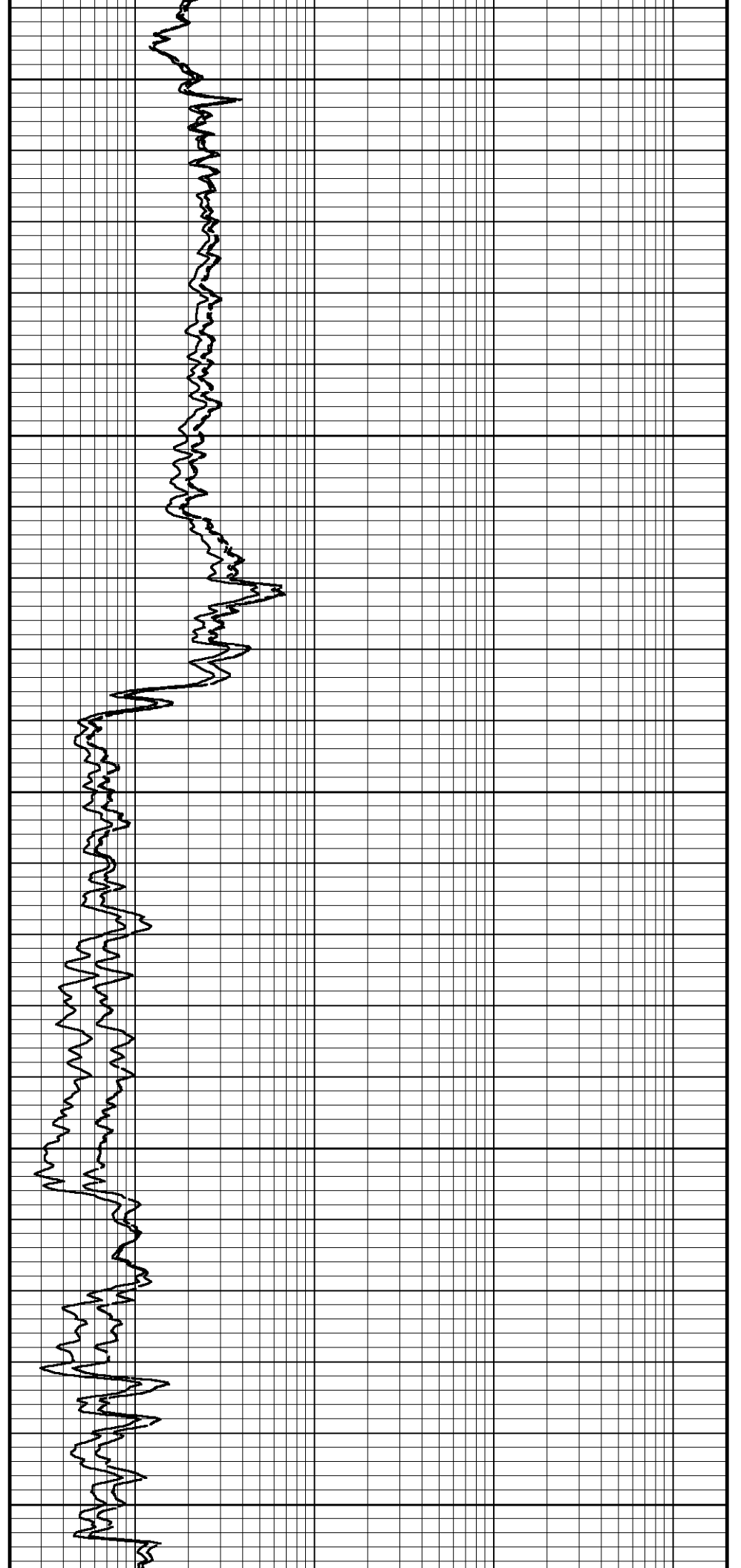
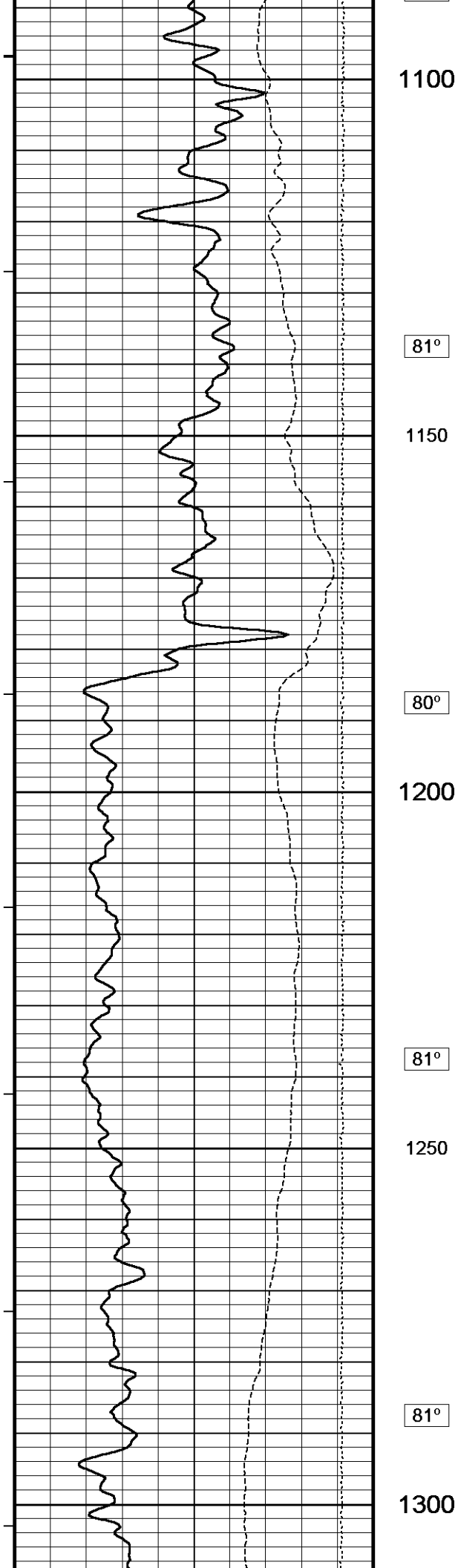
1000

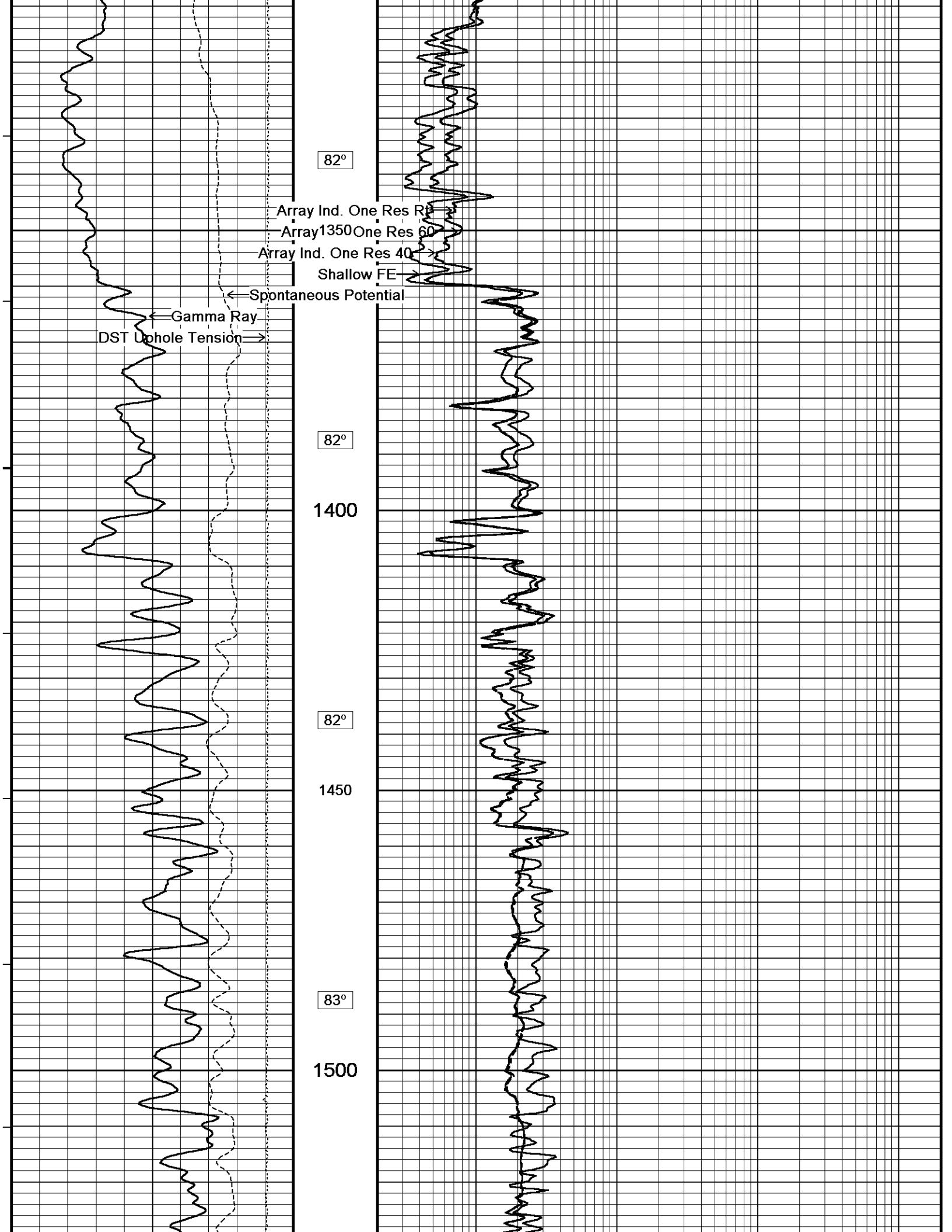
80°

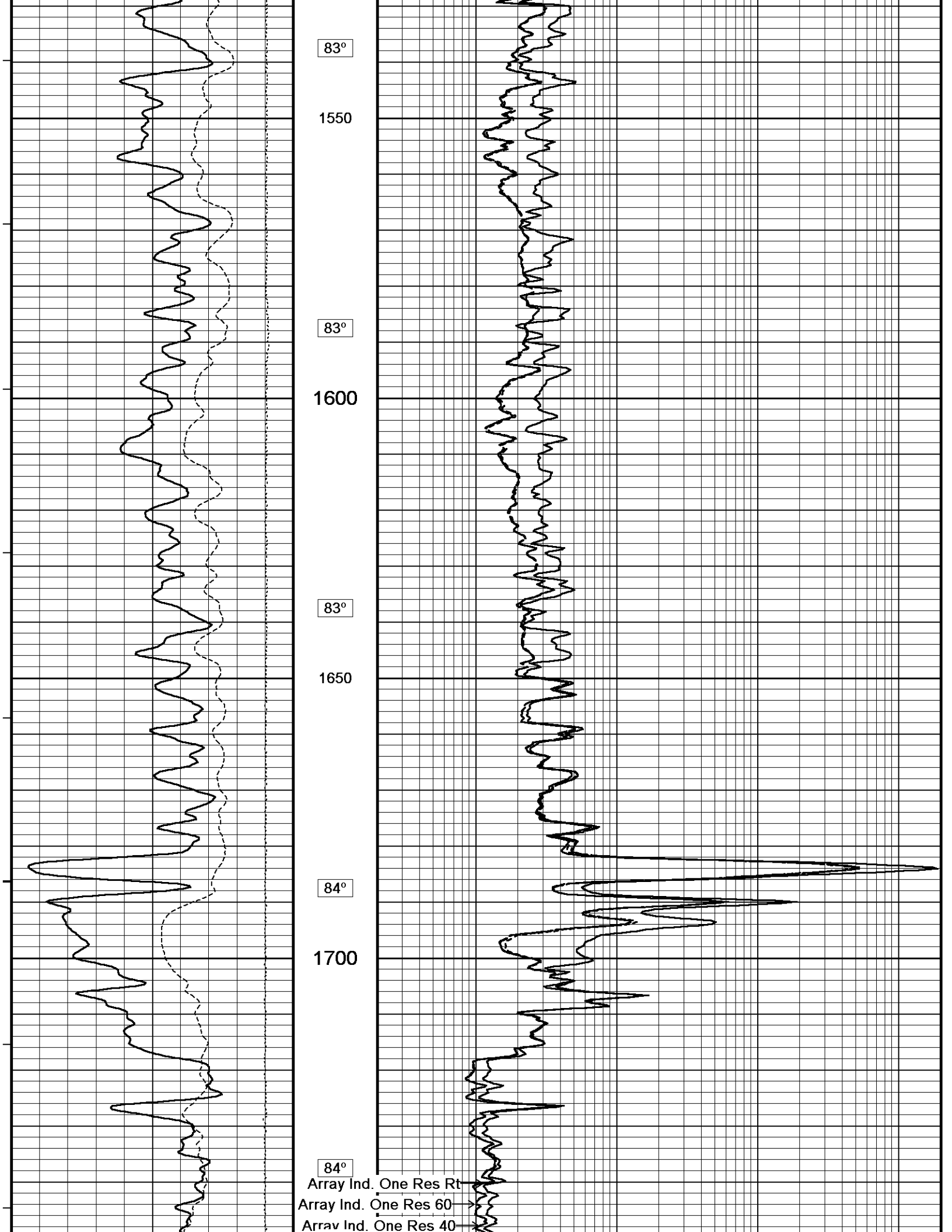
1050

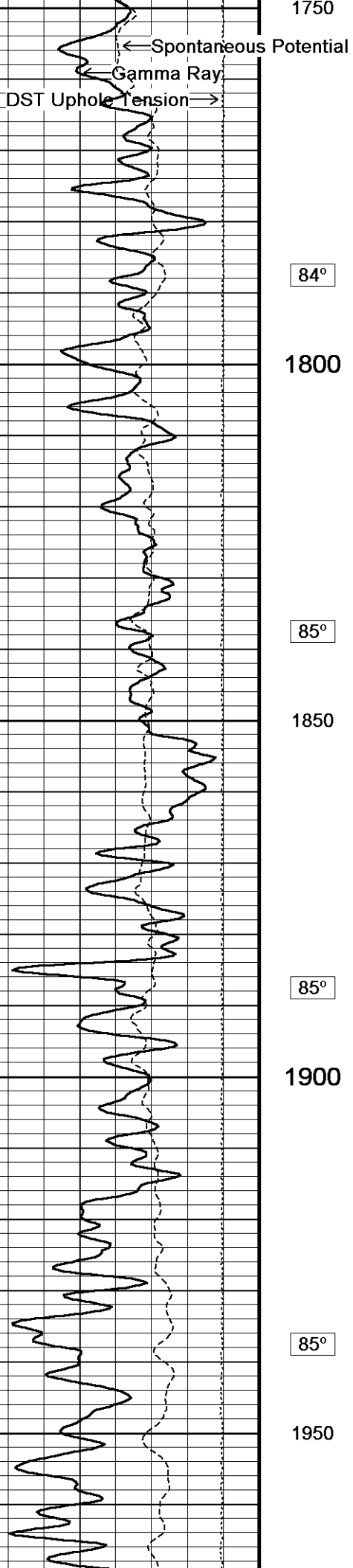
81°









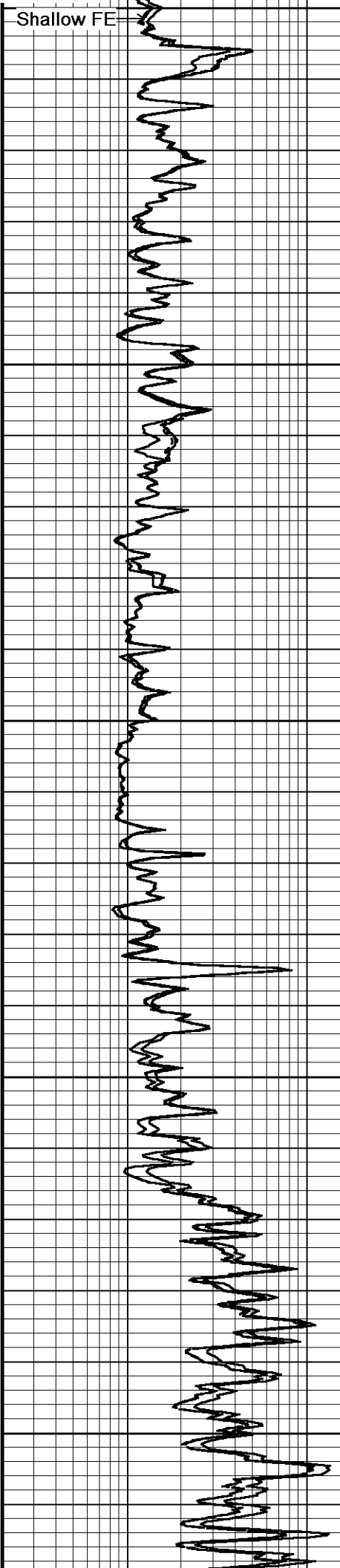


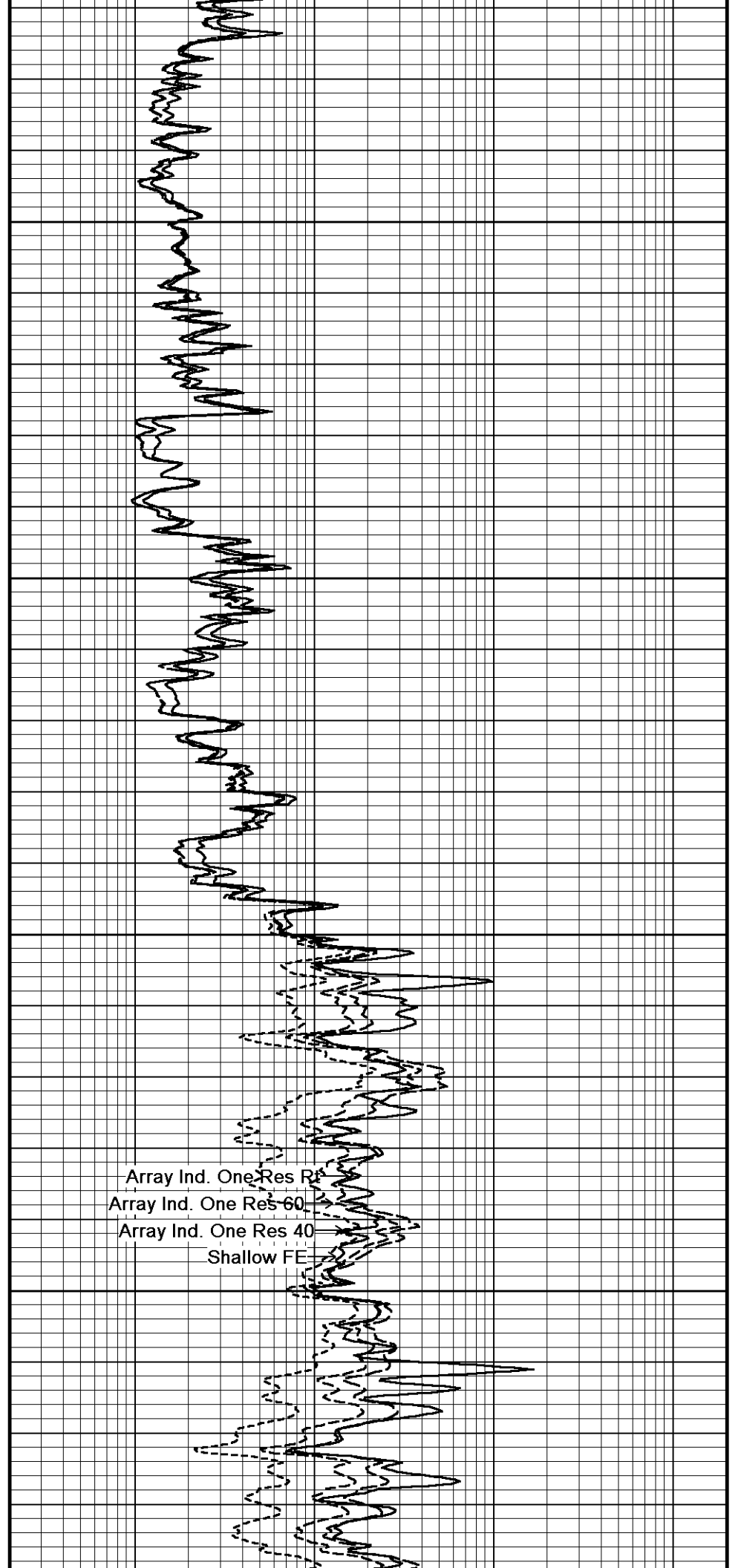
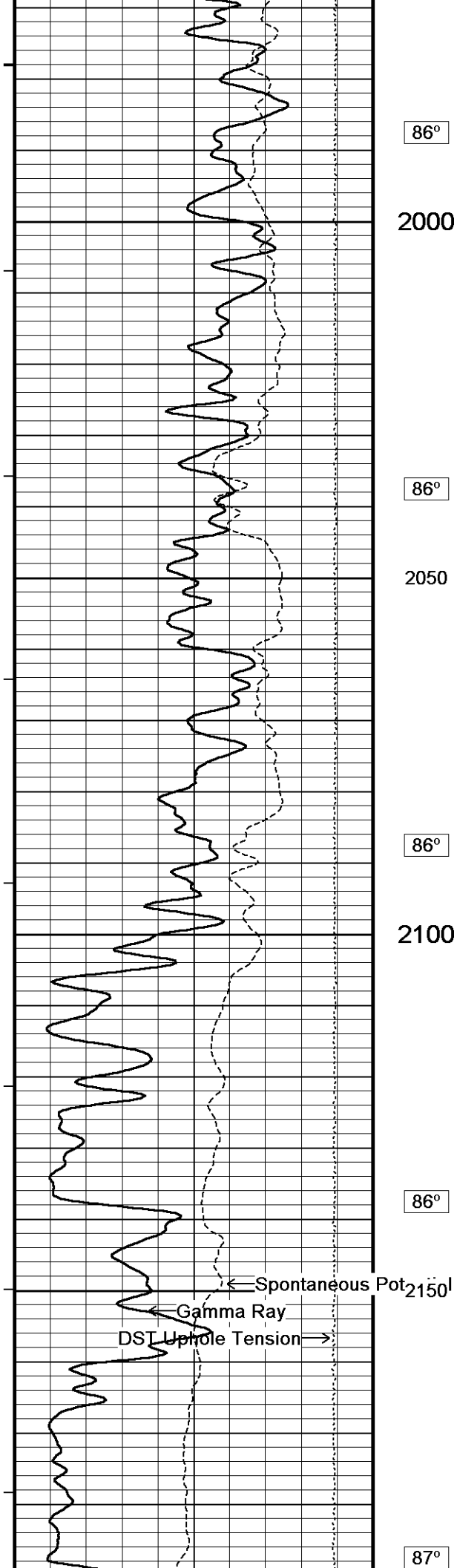
84°

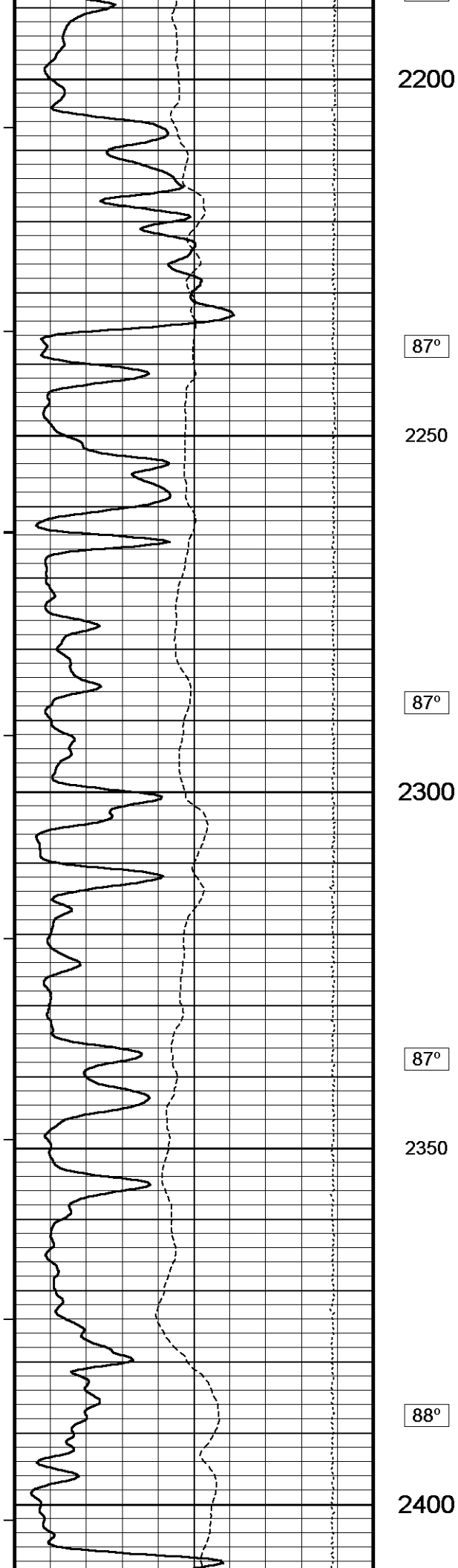
85°

85°

85°







2200

87°

2250

87°

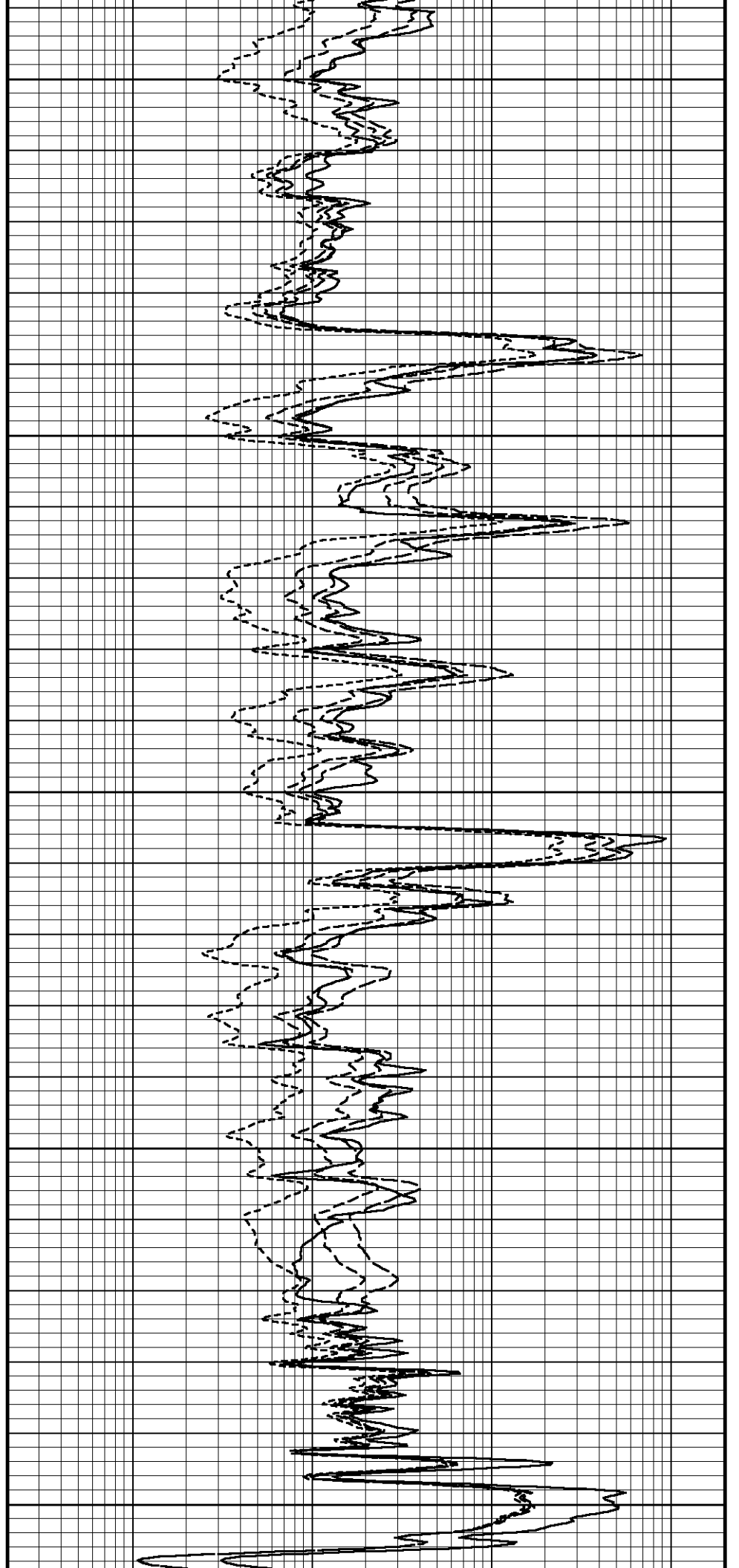
2300

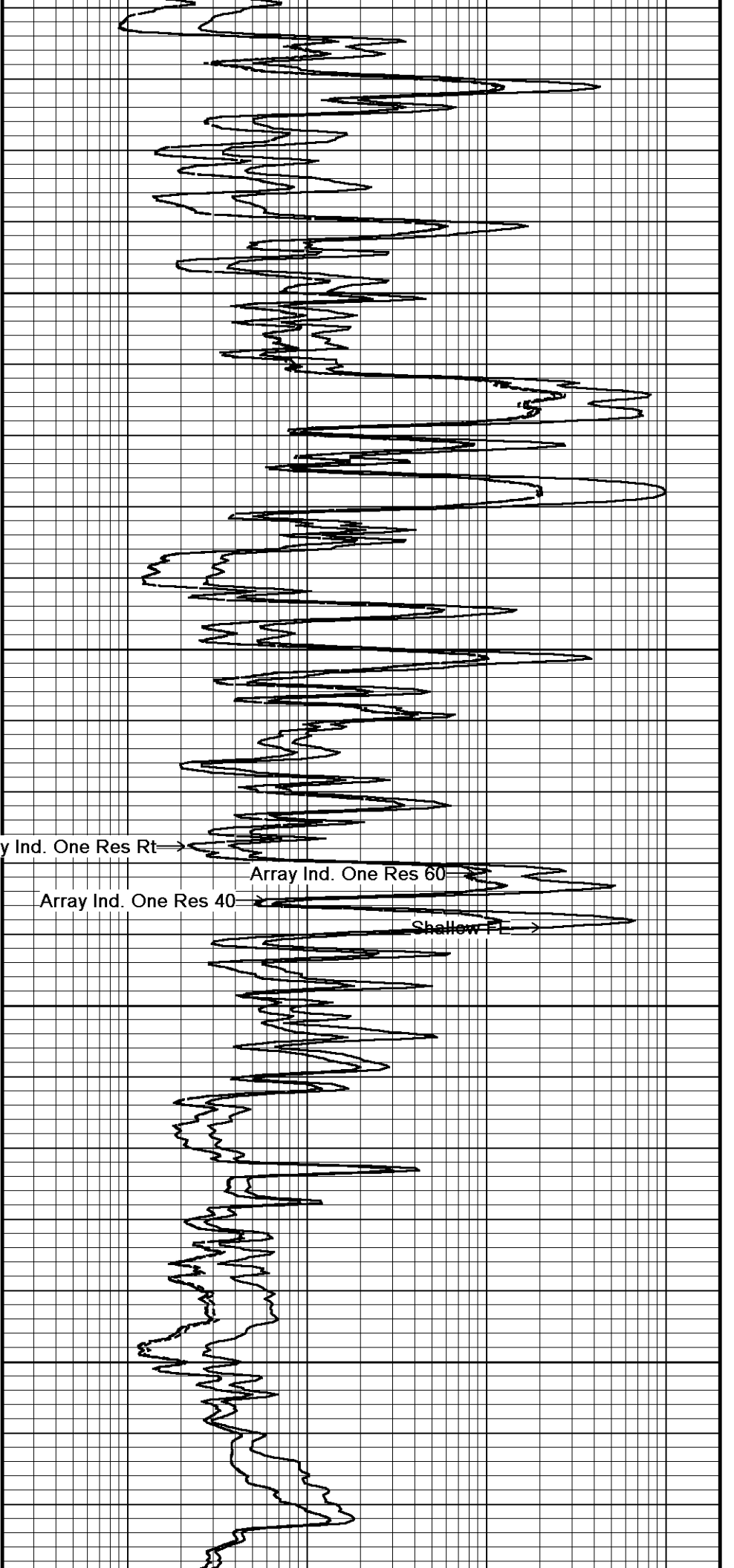
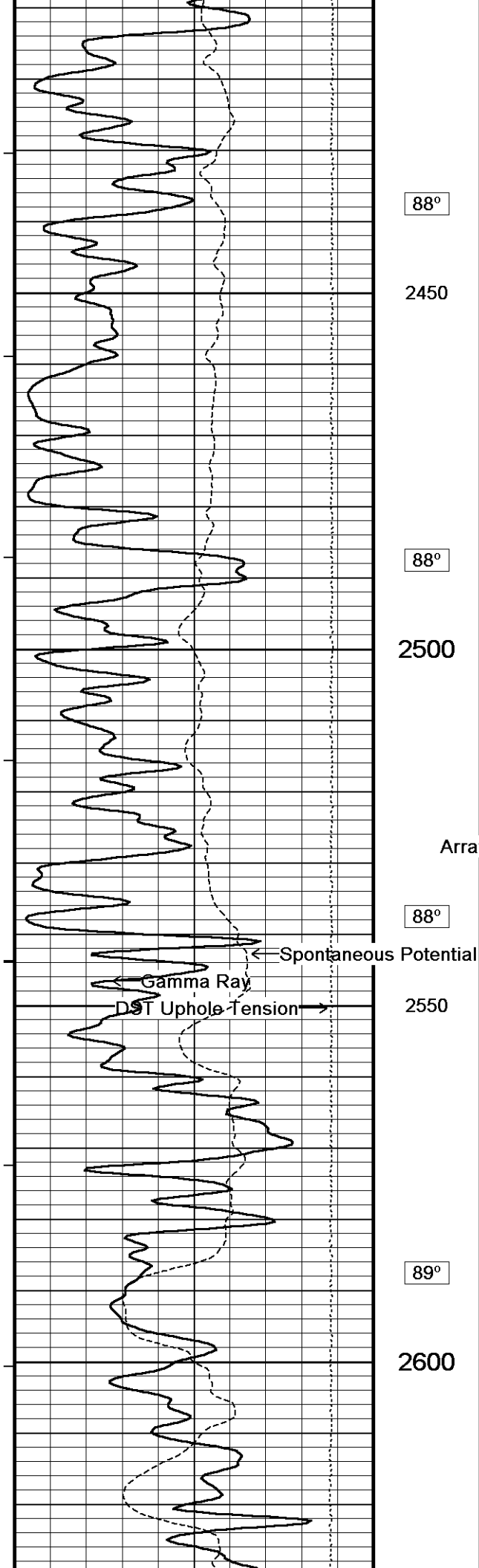
87°

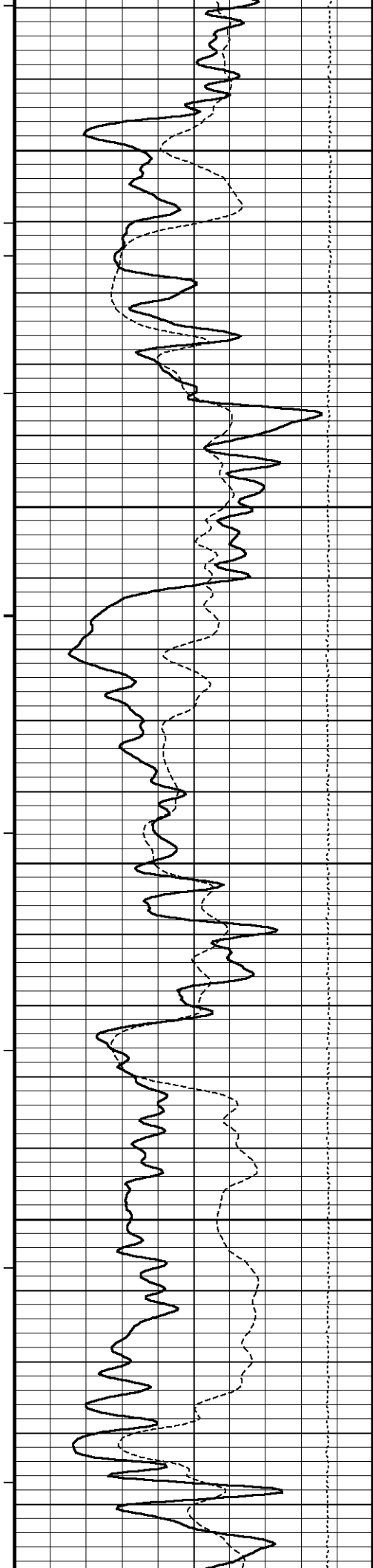
2350

88°

2400







89°

2650

89°

2700

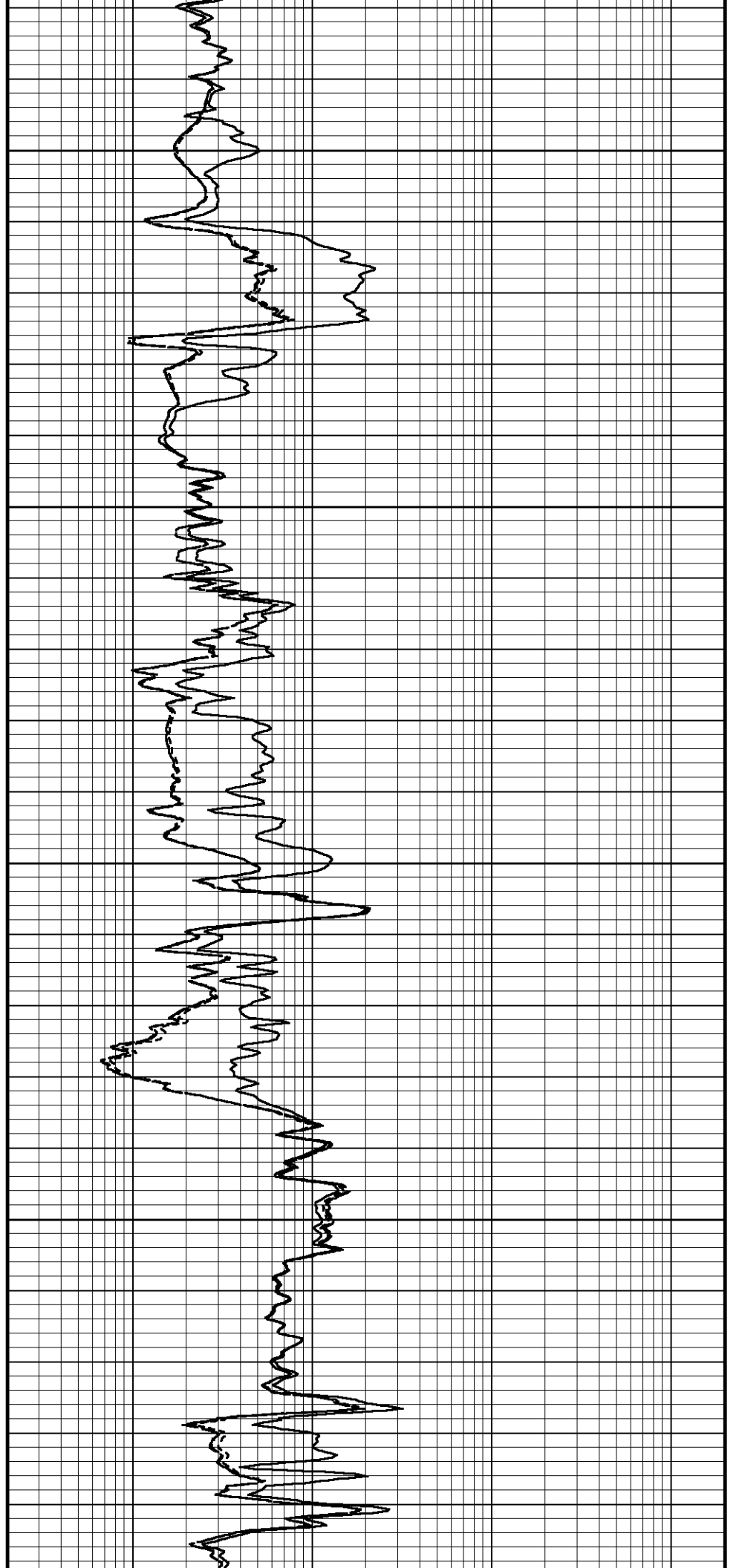
89°

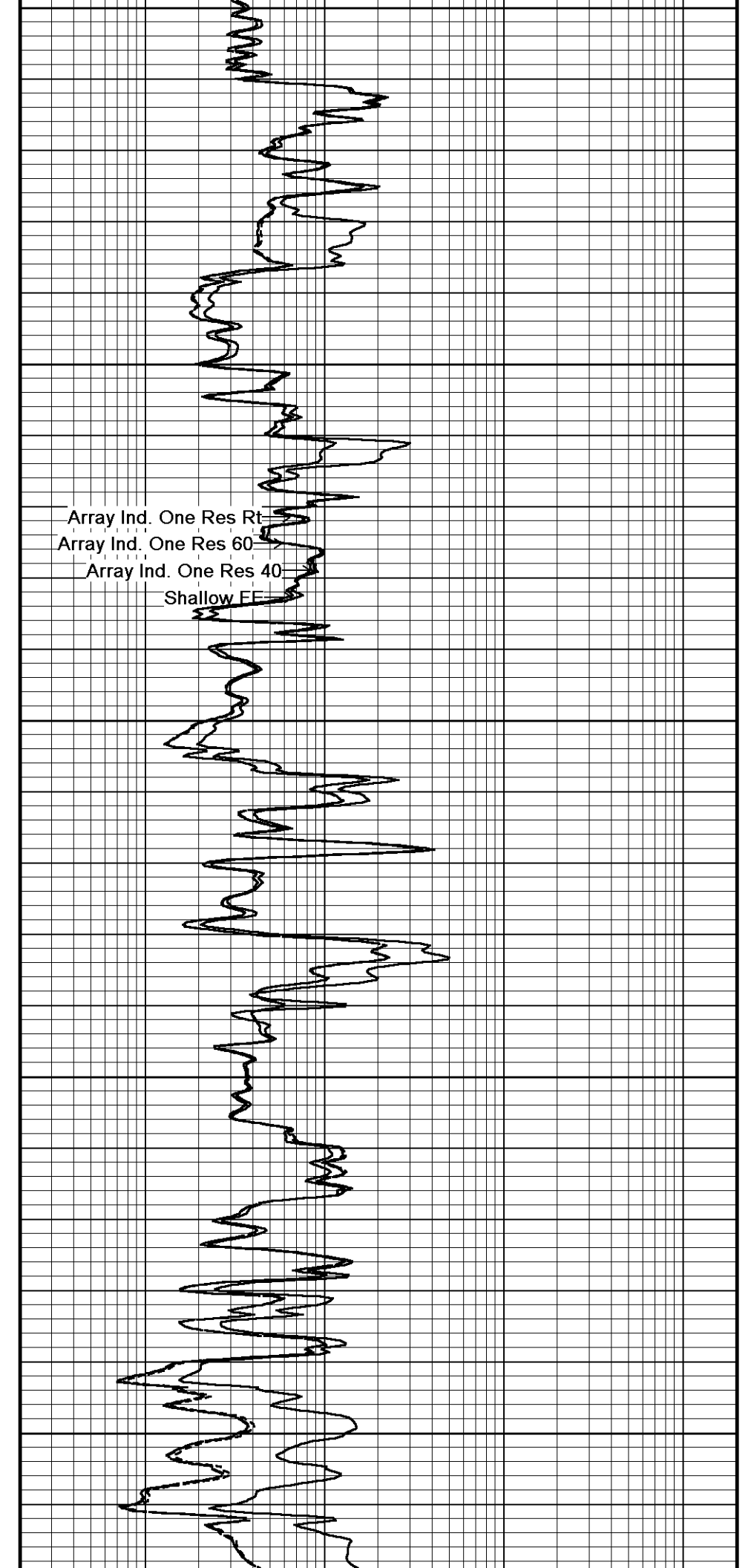
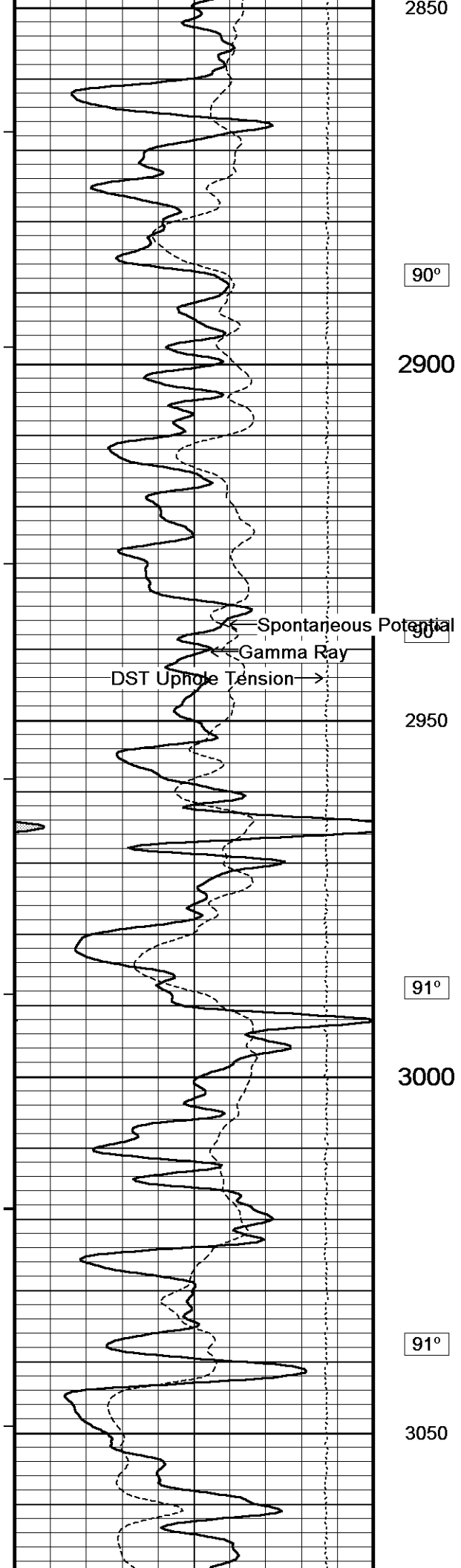
2750

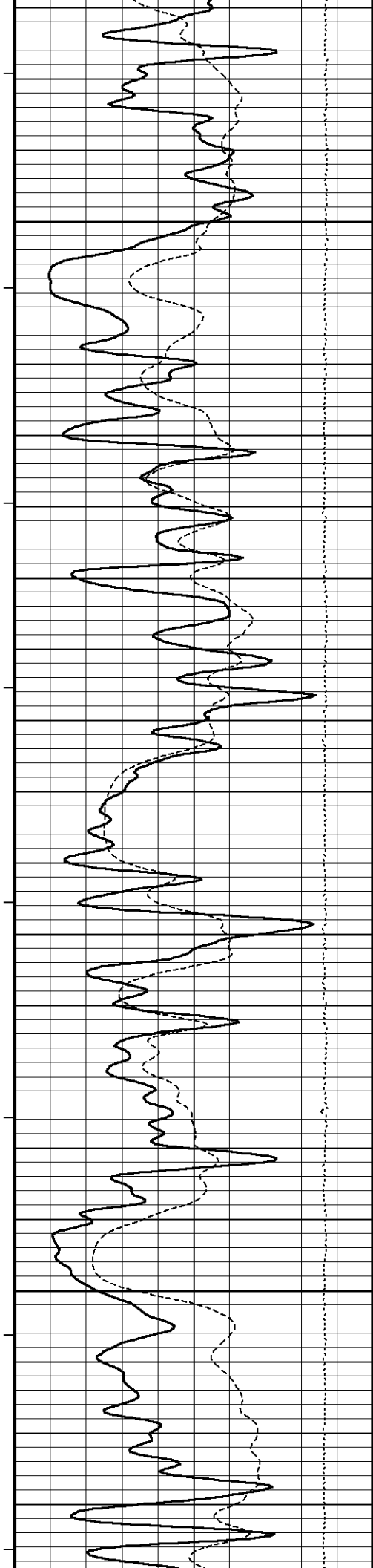
90°

2800

90°







91°

3100

92°

3150

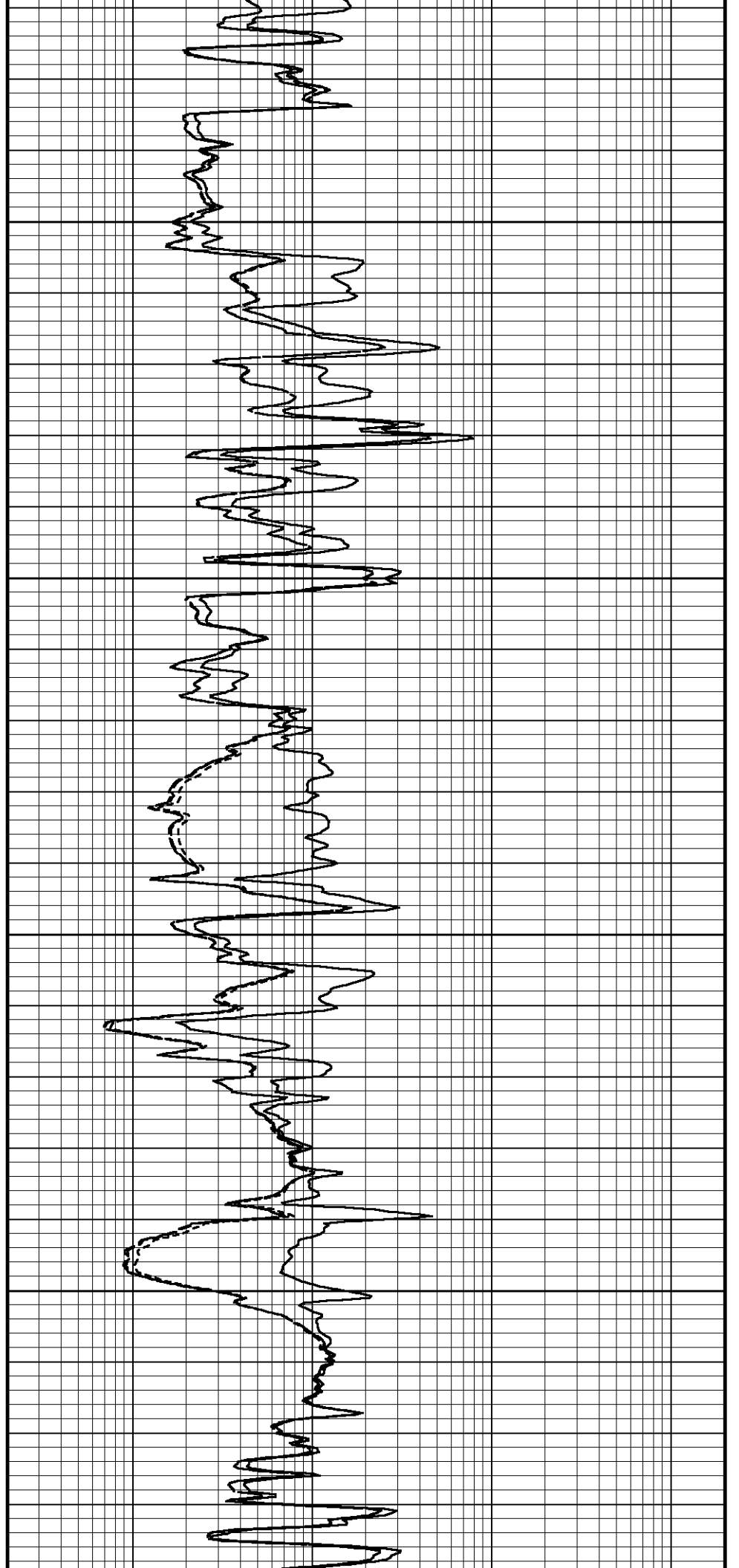
92°

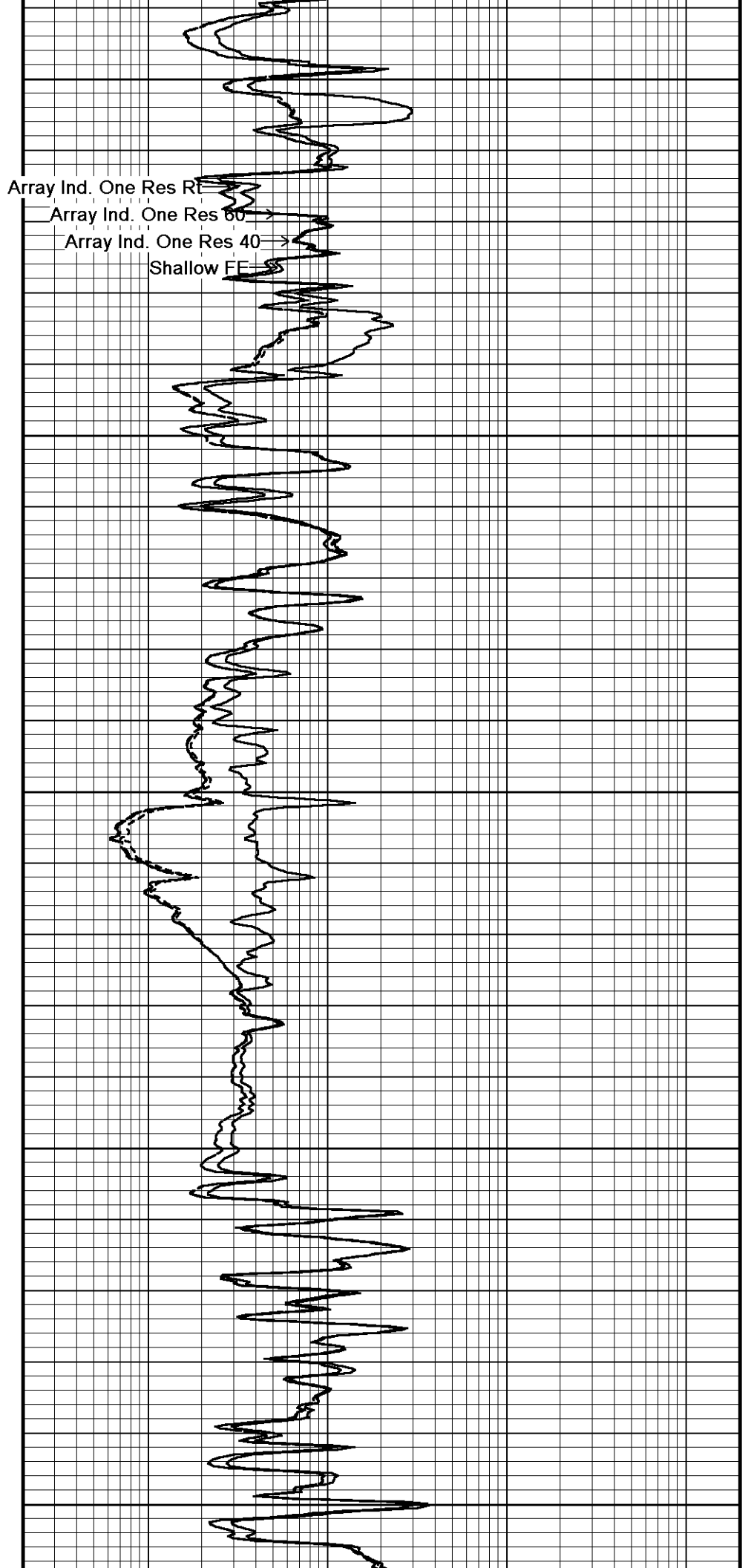
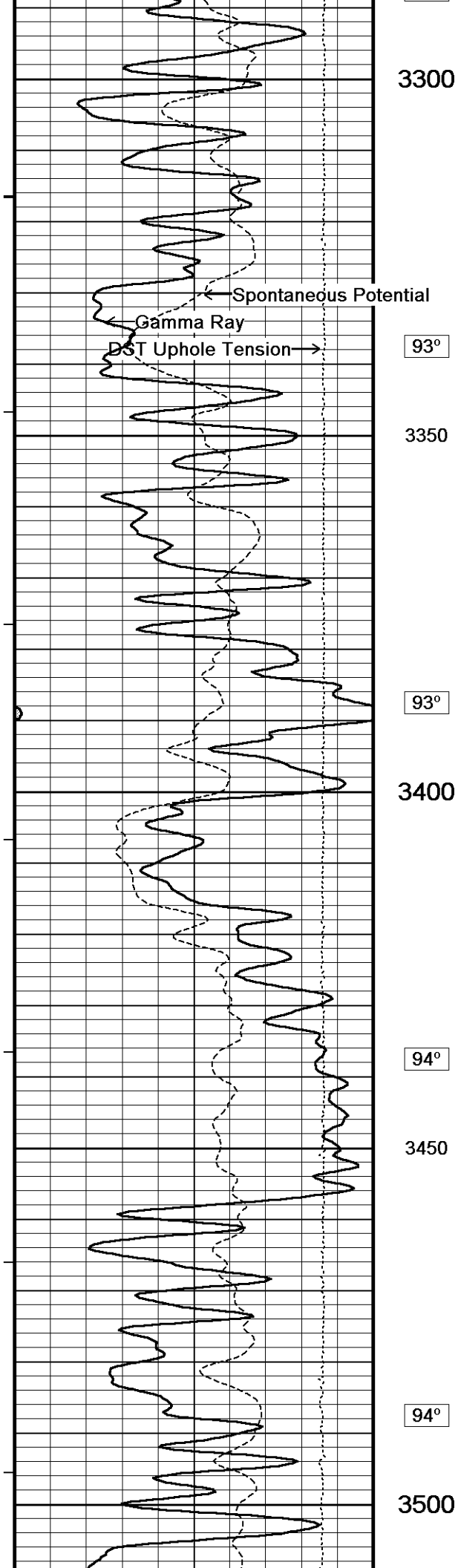
3200

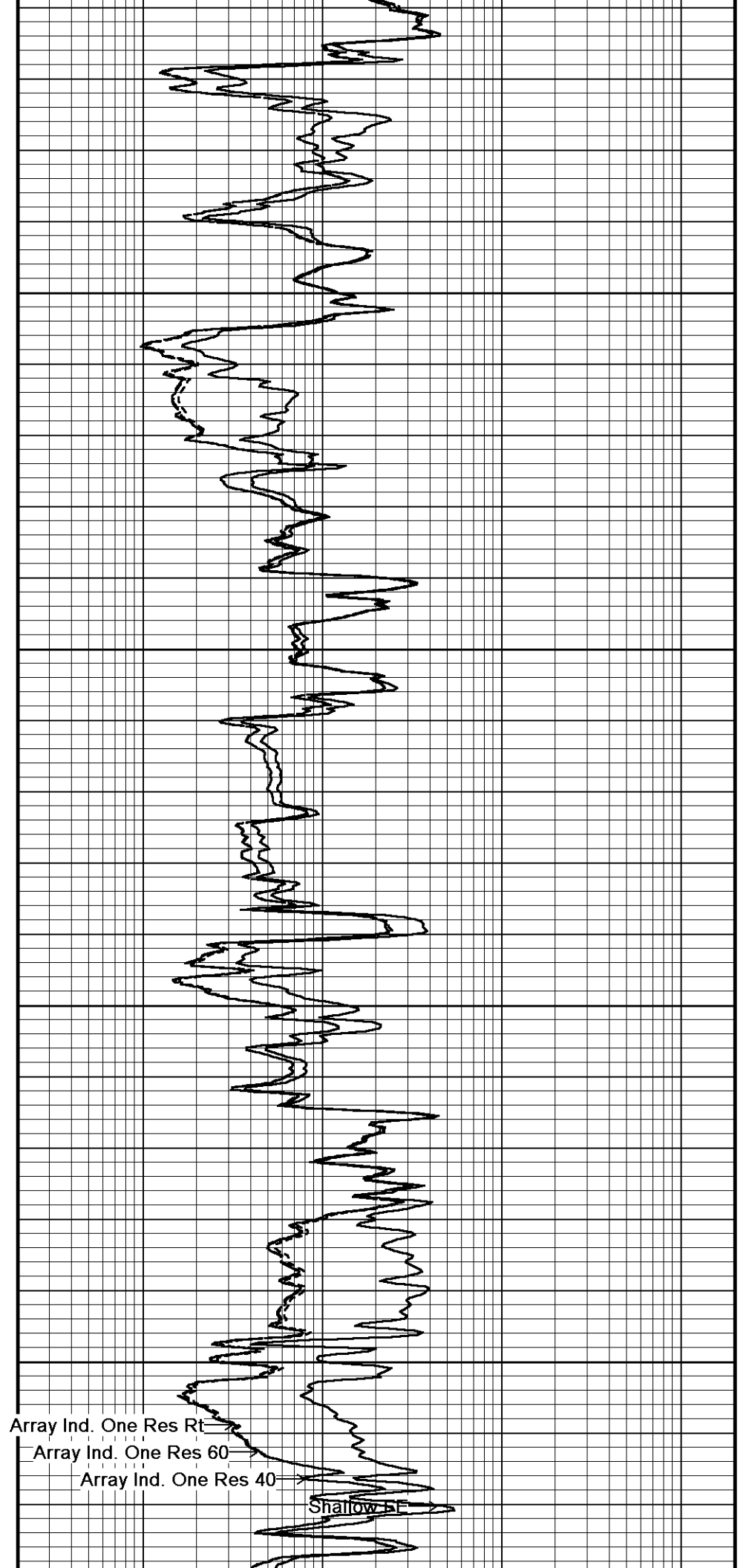
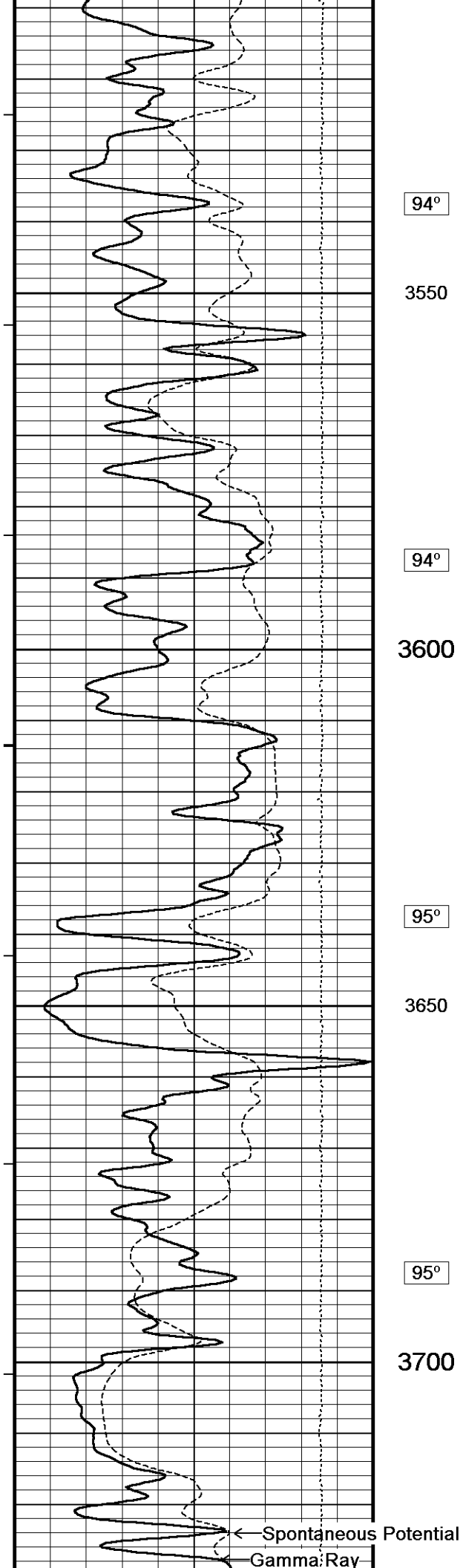
92°

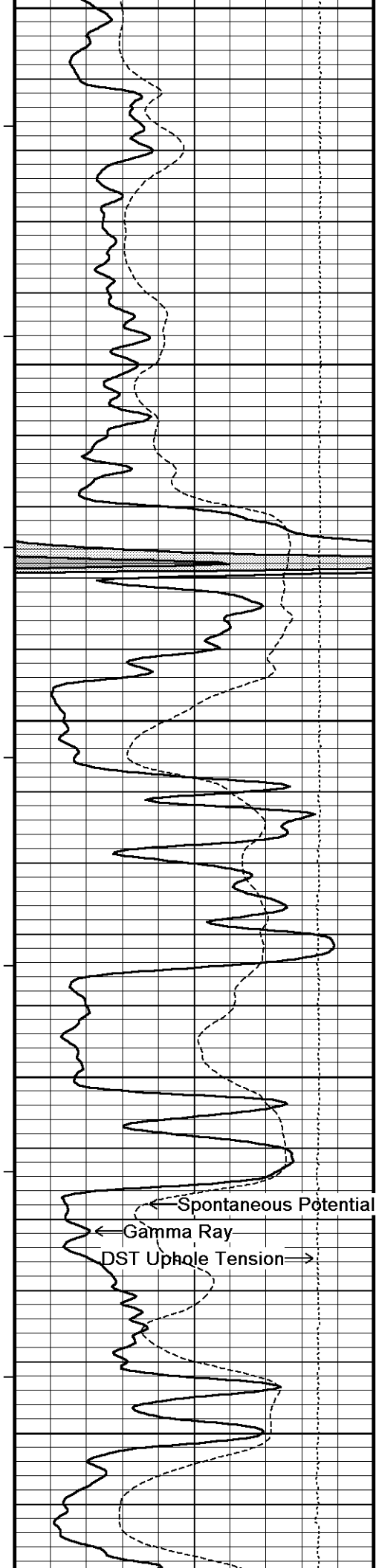
3250

93°

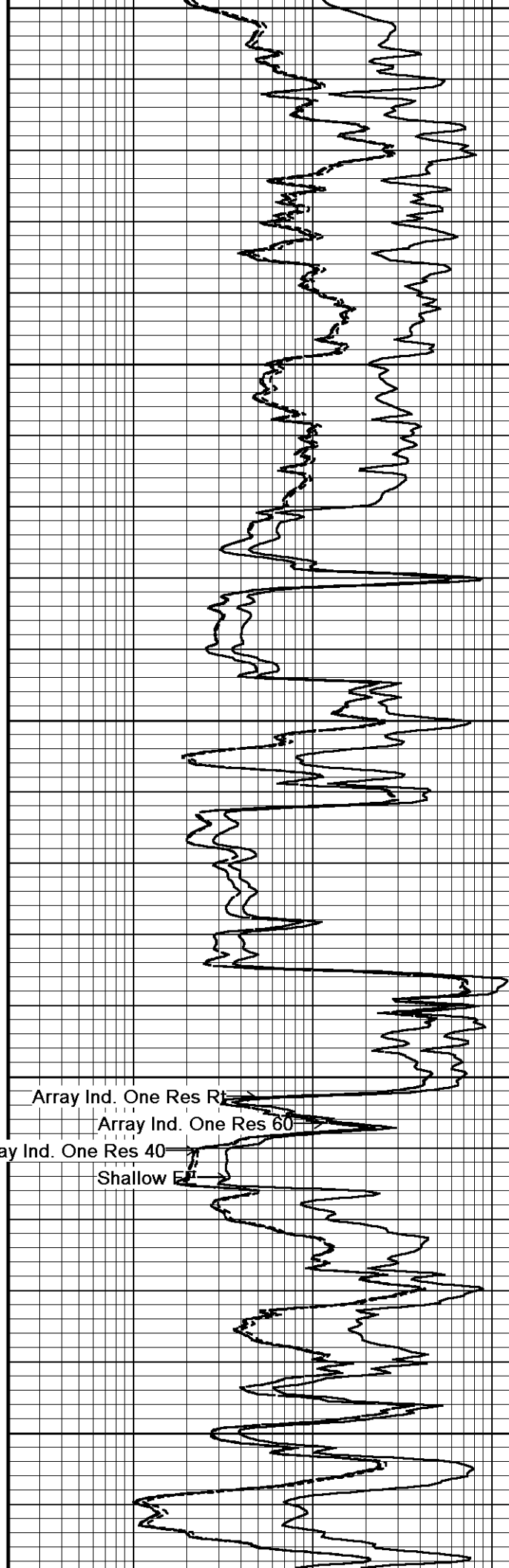


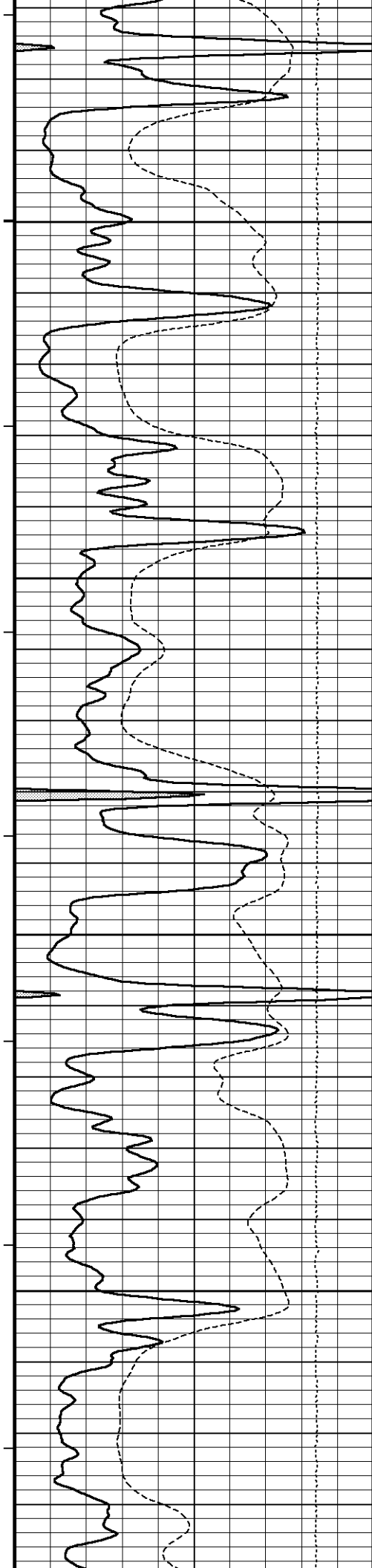






3950
96°
4000
97°
4050
97°
4100
97°
4150





97°

4200

96°

4250

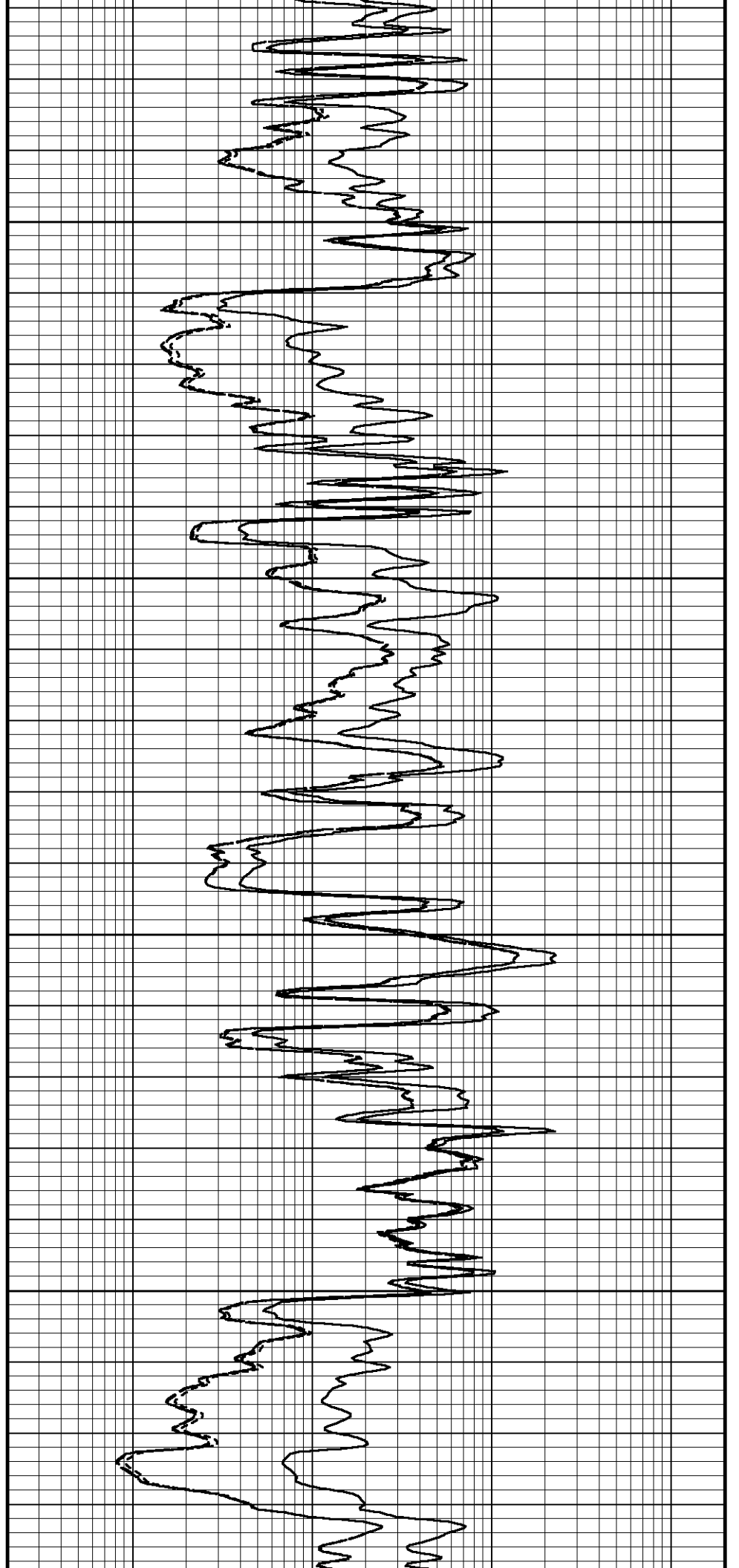
97°

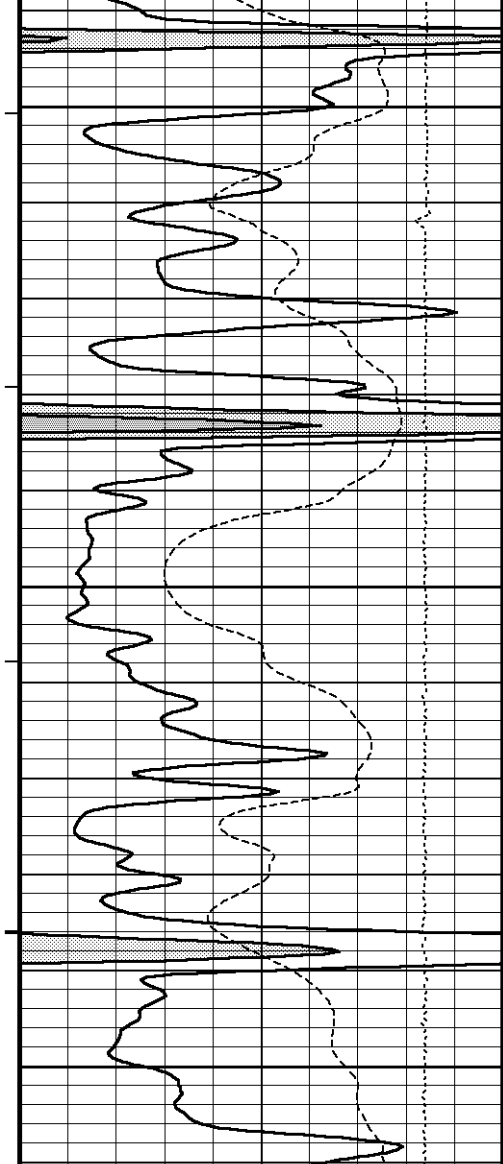
4300

97°

4350

98°





4400

98°

4450

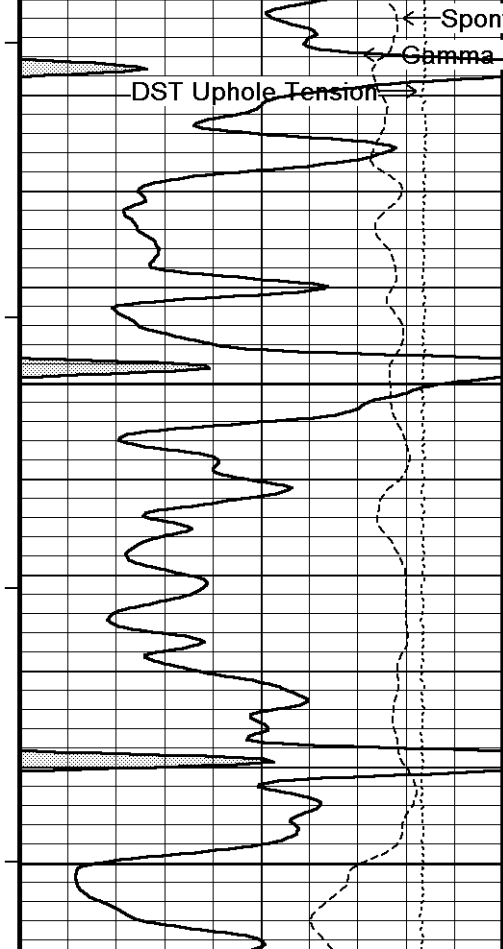
99°

4500

← Spontaneous Potential

← Gamma-Ray

DST Uphole Tension →

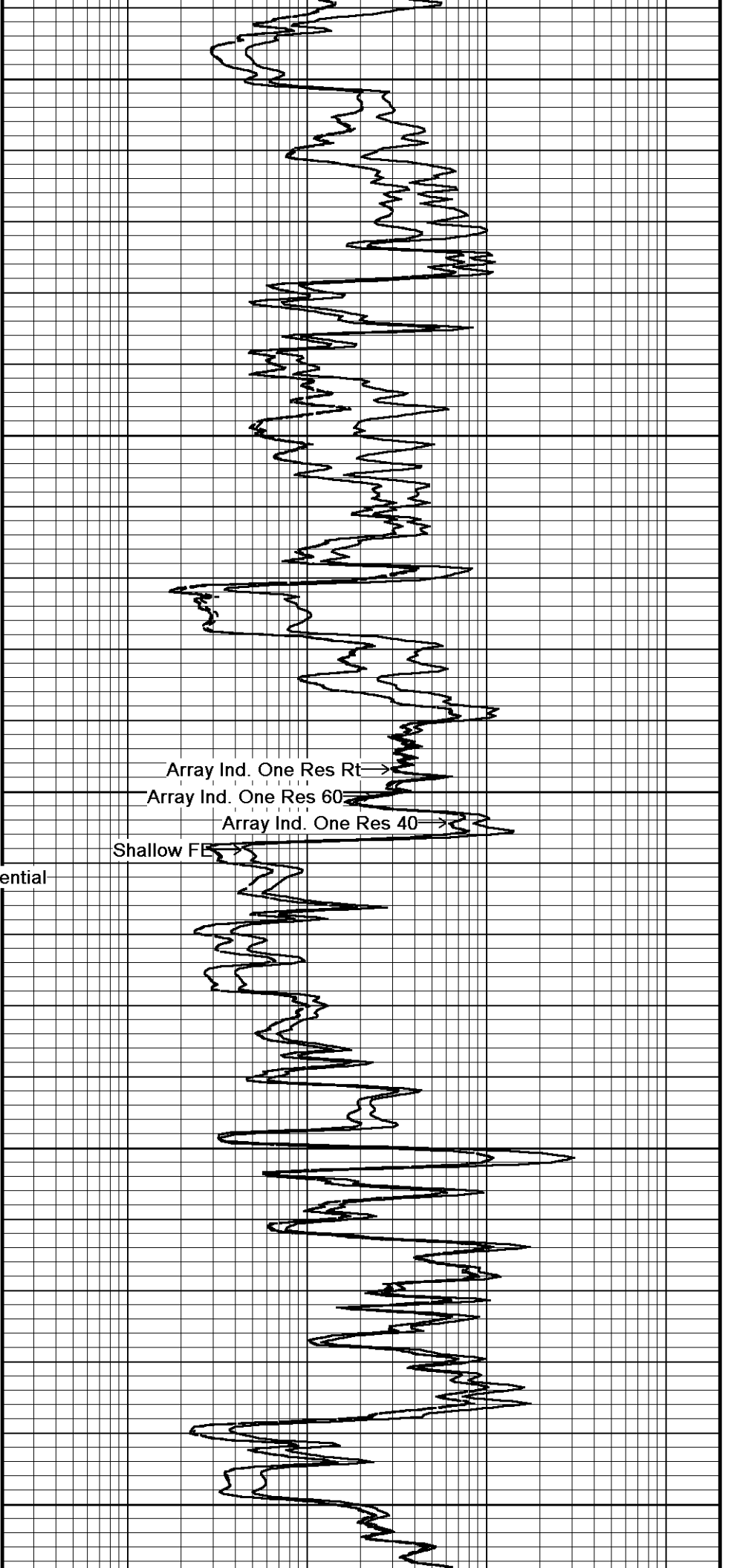


100°

4550

100°

4600

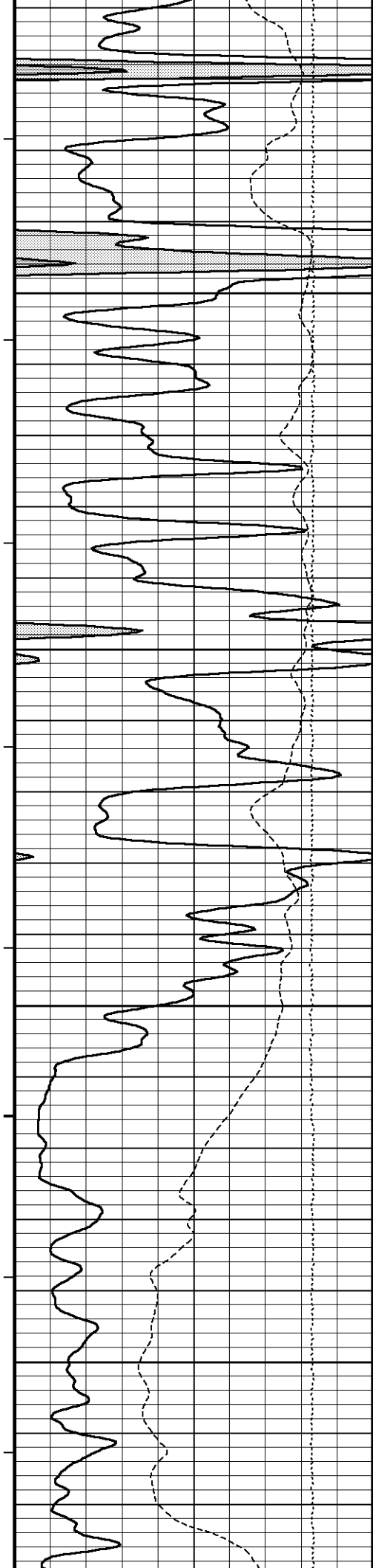


Array Ind. One Res Rt →

Array Ind. One Res 60 →

Array Ind. One Res 40 →

Shallow Fm →



100°

4650

101°

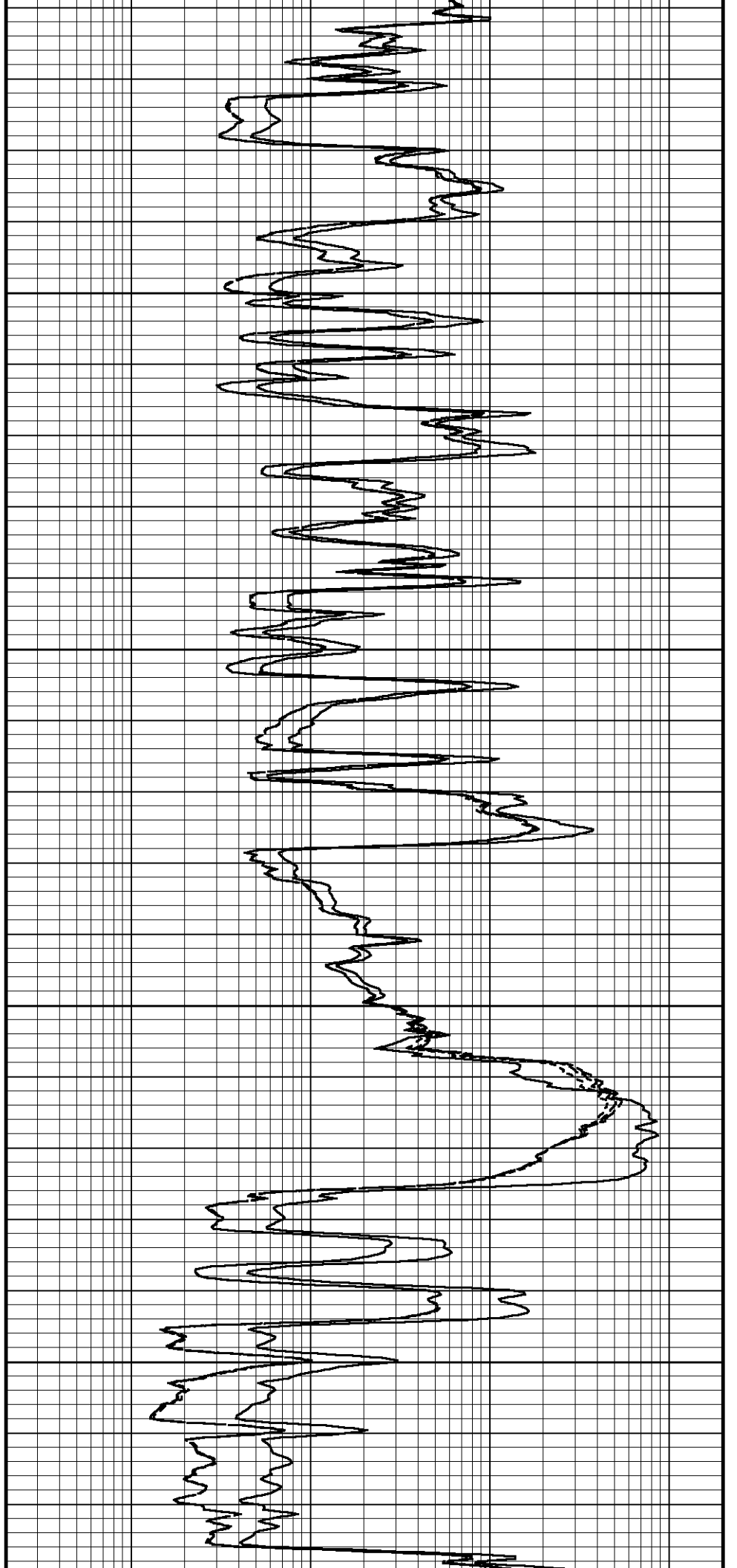
4700

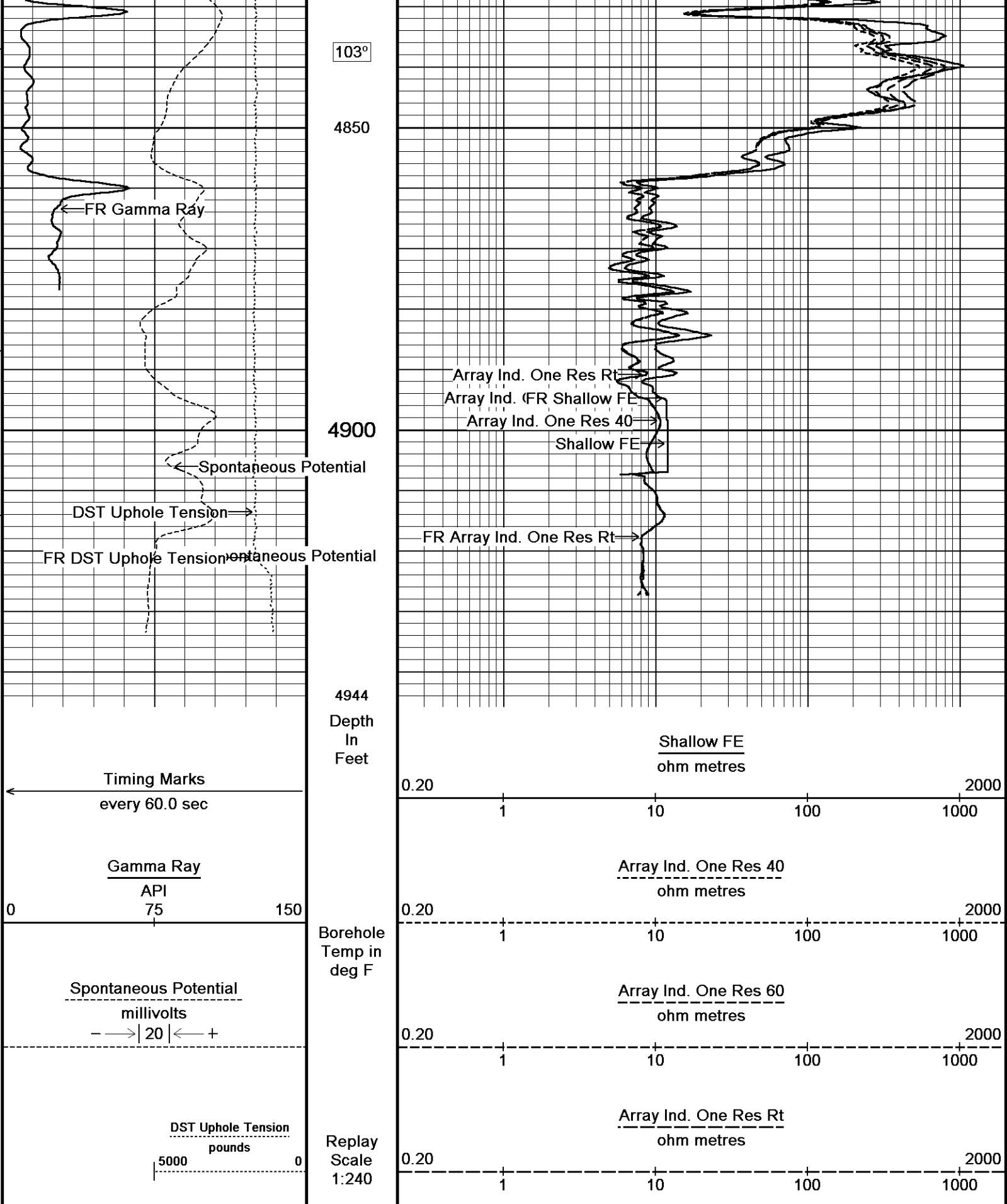
101°

4750

102°

4800





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford ... \Redland David # 25-15_003.dta
System Versions: Logged with 11.03.4044 Plotted with 12.01.3513

Plotted on 30-MAR-2012 15:13
Recorded on 12-DEC-2011 16:51

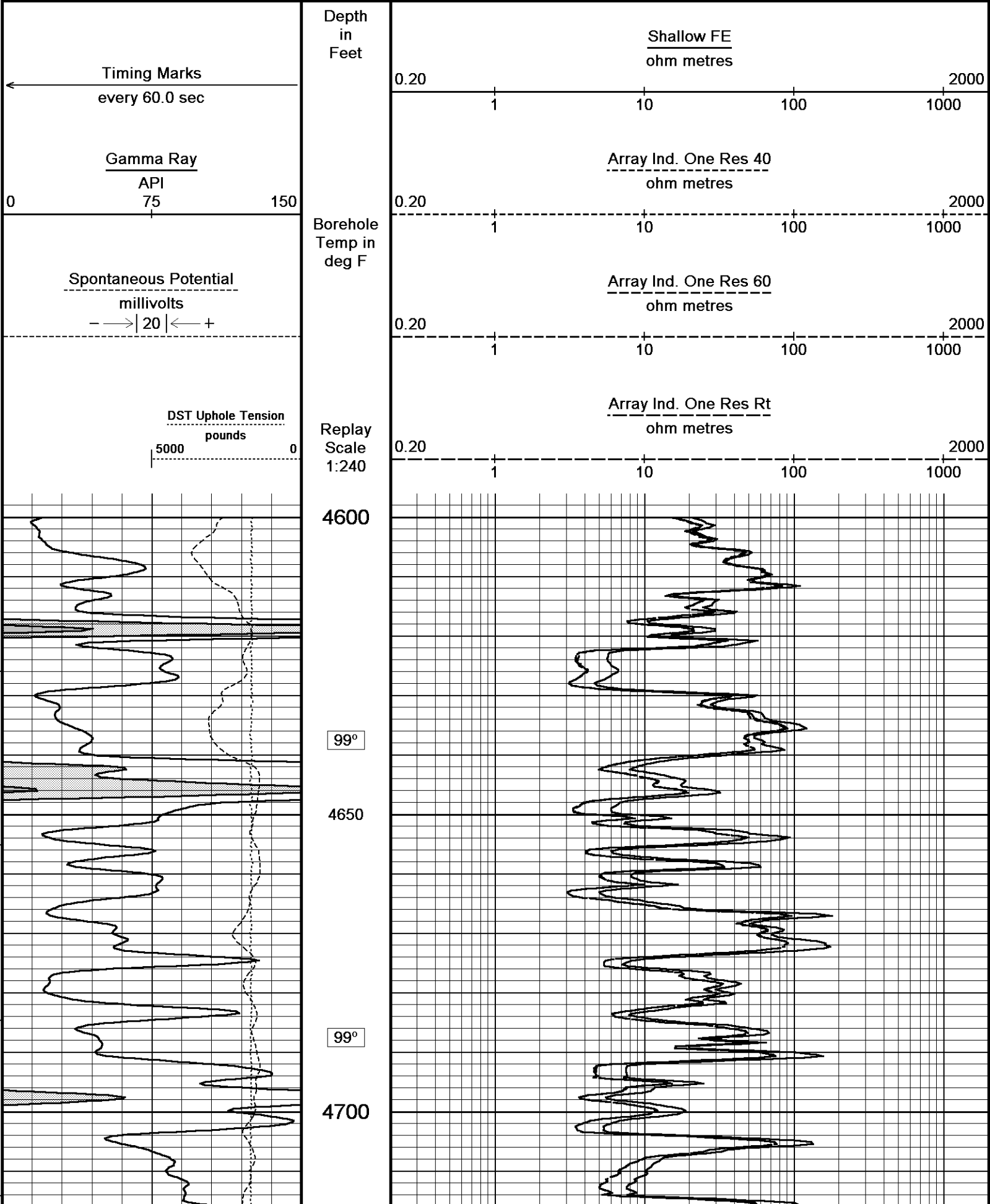
Depth Based Data - Maximum Sampling Increment 10.0cm

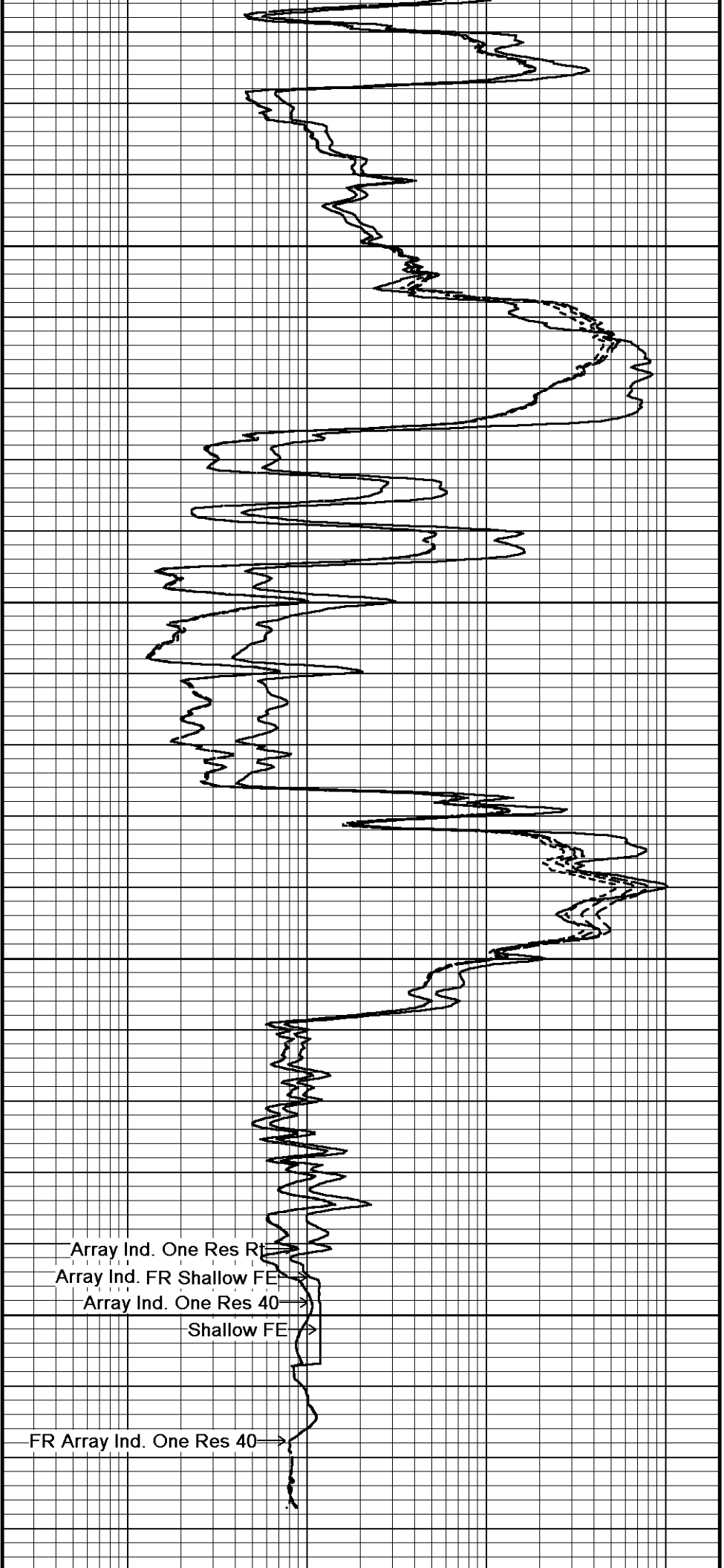
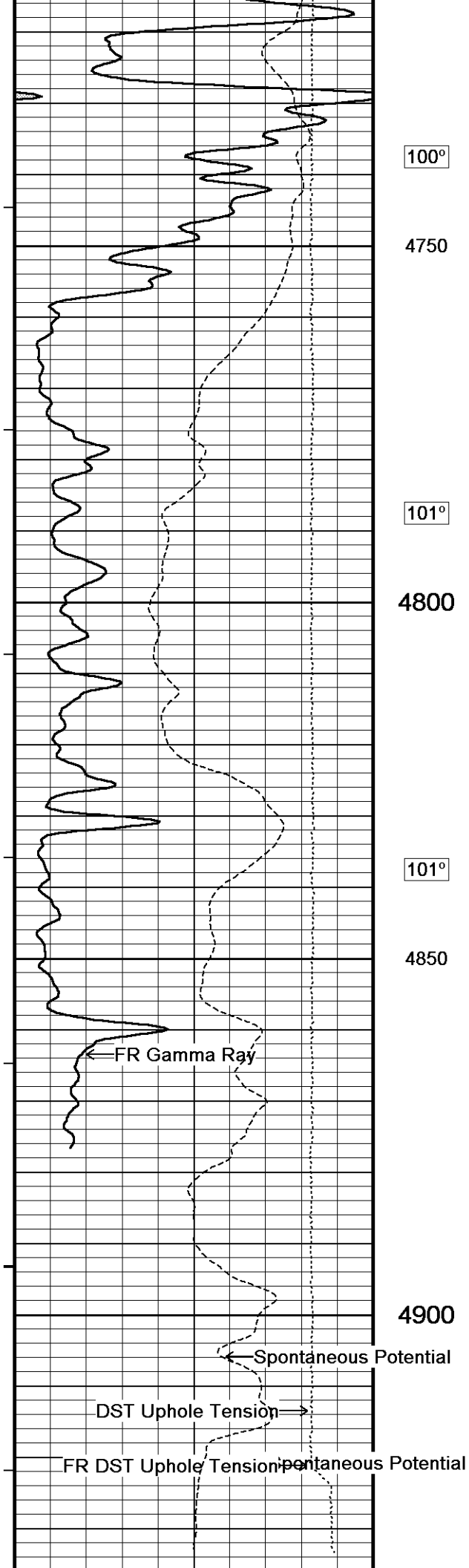
Plotted on 30-MAR-2012 15:13

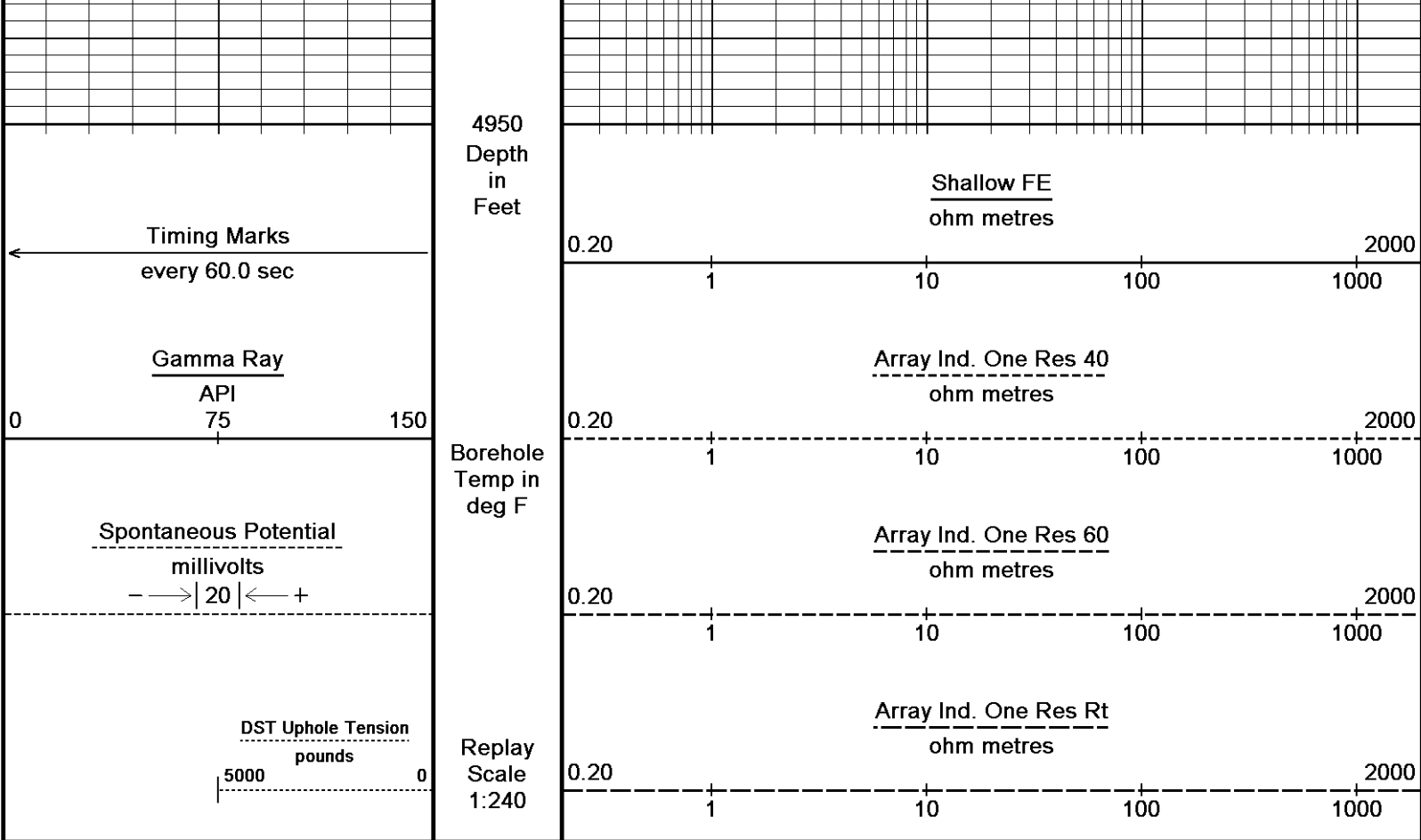
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Recorded on 12-DEC-2011 16:25

System Versions: Logged with 11.03.4044 Plotted with 12.01.3513







Depth Based Data - Maximum Sampling Increment 10.0cm
 Filename: C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford ... \Redland David # 25-15_002.dta
 System Versions: Logged with 11.03.4044 Plotted with 12.01.3513

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION

C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford PreView\0\Redland David # 25-15_003.dta

General Constants All 000			Last Edited on 12-DEC-2011 15:11	
General Parameters				
Mud Resistivity	1.680	ohm-metres		
Mud Resistivity Temperature	52.000	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	4.500	inches		
Caliper for Differential Caliper	Density Caliper			
Rwa Parameters				
Porosity used	Base Density Porosity			
Resistivity used	Array Ind. Six Res Rt			
RWA Constant A	0.610			
RWA Constant M	2.150			

Down-hole Tension Calibration SMS 0			Field Calibration on 23-OCT-2011 04:19
Reading No	Measured	Calibrated (lbs)	
1	12734.06	0.00	
2	13523.27	454.00	

High Resolution Temperature Calibration MCG-C 84		Field Calibration on 24-JUN-2010 14:02
--	--	--

Lower	Measured	Calibrated(Deg F)
Upper	50.00	50.00
	75.00	75.00
High Resolution Temperature Constants MCG-C 84		Last Edited on
Pre-filter Length	11	
SP Calibration MCG-C 84		Field Calibration on 28-DEC-2010 11:28
	Measured	Calibrated (mV)
Reference 1	100.3	100.0
Reference 2	-99.7	-100.0
Gamma Calibration MCG-C 84		Field Calibration on 12-DEC-2011 11:15
	Measured	Calibrated (API)
Background	56	37
Calibrator (Gross)	741	493
Calibrator (Net)	685	456
Gamma Constants MCG-C 84		Last Edited on 12-DEC-2011 15:11
Gamma Calibrator Number	grc141	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm
Caliper Calibration MML-A 9		Base Calibration on 17-OCT-2011 12:45 Field Calibration on 12-DEC-2011 11:02
Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	15145	5.98
2	18563	7.97
3	21887	9.86
4	25872	11.92
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.95	5.98
Micro Normal and Micro Inverse Calibration MML-A 9		Base Calibration on 17-OCT-2011 12:28 Field Check on 12-DEC-2011 10:57
Base Calibration		
Channel	Resistor 1	Measured Resistor 2
Micro Normal	12.1	59.5
Micro Inverse	15.6	77.7
Channel	Calibrated (ohm-m) Resistor 1 Resistor 2	
Micro Normal	2.6 12.8	
Micro Inverse	1.7 8.4	
Channel	Base Check (ohm-m)	
Micro Normal	32.5	
Micro Inverse	16.4	
Micro Normal and Micro Inverse Constants MML-A 9		Last Edited on 12-DEC-2011 15:10
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 39		Base Calibration on 19-OCT-2011 16:30 Field Check on 12-DEC-2011 11:21
Base Calibration		
	Measured	Calibrated (cps)
	Near Far	Near Far
	2769 86	3714 110
Ratio	32.016 33.764	
Field Calibrator at Base		
	Calibrated (cps)	
	2150 3003	
Ratio	0.716	

Field Check	Calibrated (cps)	
Ratio	2369	3373
	0.702	
Neutron Constants MDN-A.B 39		
Last Edited on 12-DEC-2011 15:10		
Neutron Source Id	N1095	
Neutron Jig Number	NECD117	
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	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	
FE Calibration MFE-A.A 67		
Base Calibration on 21-NOV-2011 10:01		
Field Check on 12-DEC-2011 10:55		
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	959.2	126.8
Base Check		281.1
Field Check		281.1
FE Constants MFE-A.A 67		
Last Edited on 12-DEC-2011 15:10		
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 18-SEP-2011 16:11		
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	
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	0.0000
Free Pipe	0.0000	0.0000
Peak Amplitude Source	0	
Waveform	Start Time (micro-sec)	Width (micro-sec)
3'	N/A	N/A
5'	N/A	N/A
Pre Gain	Start Gain	Discriminator (mV)
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
3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

High Resolution Temperature Calibration MAI-A.A 188

Field Calibration on 12-AUG-2011 22:41

	Measured	Calibrated(Deg F)
Lower	32.00	32.00
Upper	68.00	68.00

High Resolution Temperature Constants MAI-A.A 188

Last Edited on 21-JUN-2011 20:05

Pre-filter Length	11
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Induction Calibration MAI-A.A 188

Base Calibration on 19-OCT-2011 15:25

Field Check on 12-DEC-2011 10:53

Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	16.9	470.2	9.3	966.2	
2	6.4	377.1	7.6	821.4	
3	3.9	257.8	5.2	566.0	
4	1.7	135.1	2.6	279.2	

Array Temperature	66.3	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.2	3867.6
2	0.0	0.0	29.8	3585.3
3	0.0	0.0	27.8	3079.7
4	0.0	0.0	19.6	2047.6
Deep	0.0	0.0	17.1	1956.0
Medium	0.0	0.0	40.1	4116.0
Shallow	0.0	0.0	44.4	5369.9

Array Temperature	0.0	63.4	Deg F
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Induction Constants MAI-A.A 188

Last Edited on 12-DEC-2011 15:10

Induction Model	RtAP-WBM		
Caliper for Borehole Corr.	Density Caliper		
Hole Size for Borehole Correction	N/A	inches	
Tool Centred	No		

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 28-NOV-2011 10:07
			Field Calibration on 12-DEC-2011 11:04
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	13805	3.99	
2	22448	5.98	
3	31025	7.97	
4	39247	9.86	
5	48400	11.92	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	5.98	5.98	

Photo Density Calibration MPD-B 65				Base Calibration on 28-NOV-2011 10:33	
				Field Check on 12-DEC-2011 11:09	
Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
		Near	Far	Near	Far
	Reference 1	60872	28838	59556	30836
	Reference 2	24326	2449	24941	2541
Field Check at Base					
		1237.1	1179.7		
Field Check					
		1232.7	1186.3		
PE Calibration					
Base Calibration		Measured		Calibrated	
	WS	WH	Ratio	Ratio	
	Background	225	1100		
	Reference 1	22729	60656	0.378	0.371
	Reference 2	6549	24175	0.274	0.272

Field Check at Base 224.7 1100.1

Field Check 222.1 1094.8

Density Constants MPD-B 65

Last Edited on 12-DEC-2011 15:10

Density Source Id	P57072B
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	1.09 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 (m)
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:\DOCUME~1\SchefFJL\LOCALS~1\Temp\Weatherford PreView\0\Redland David # 25-15_003.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 161 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

MCB-A.A 11B Tension Cablehead
MCB-A.A 161 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

SHA-F Compact Swivel Head Adaptor
SHA-F 88 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

SHA-F Compact Swivel Head Adaptor
SHA-F 88 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

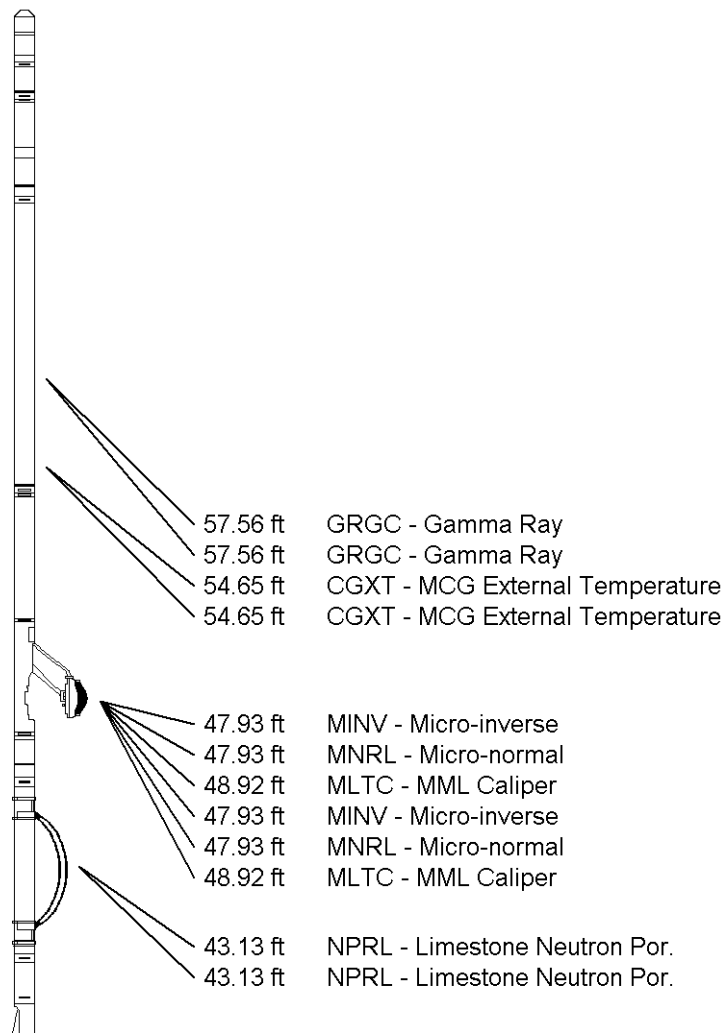
Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

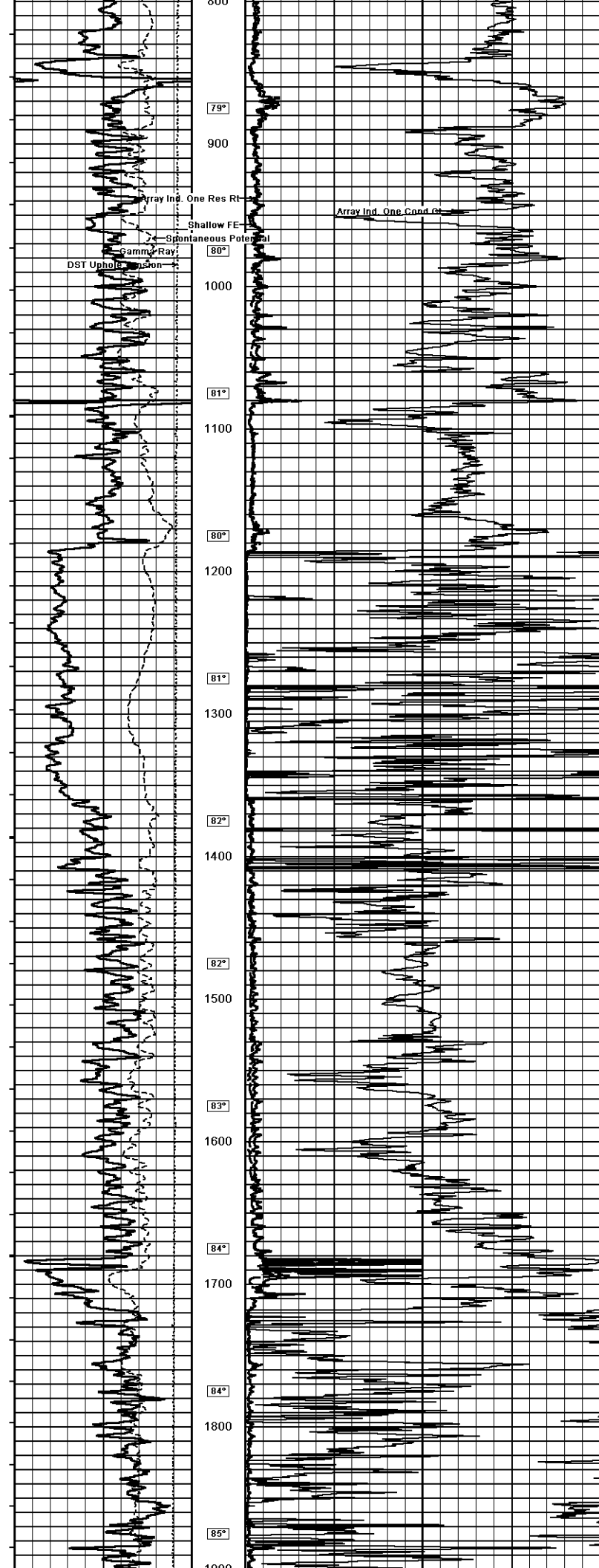
Compact Micro-log
MML-A 9 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

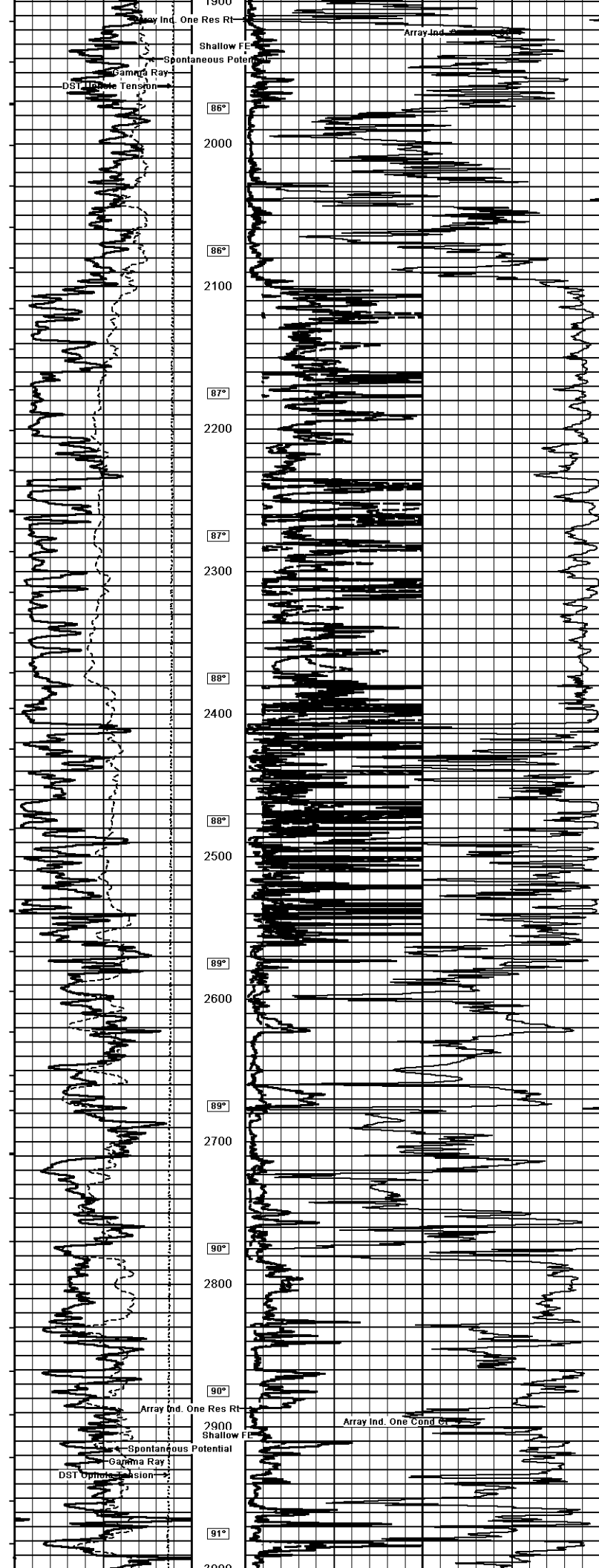
Compact Micro-log
MML-A 9 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

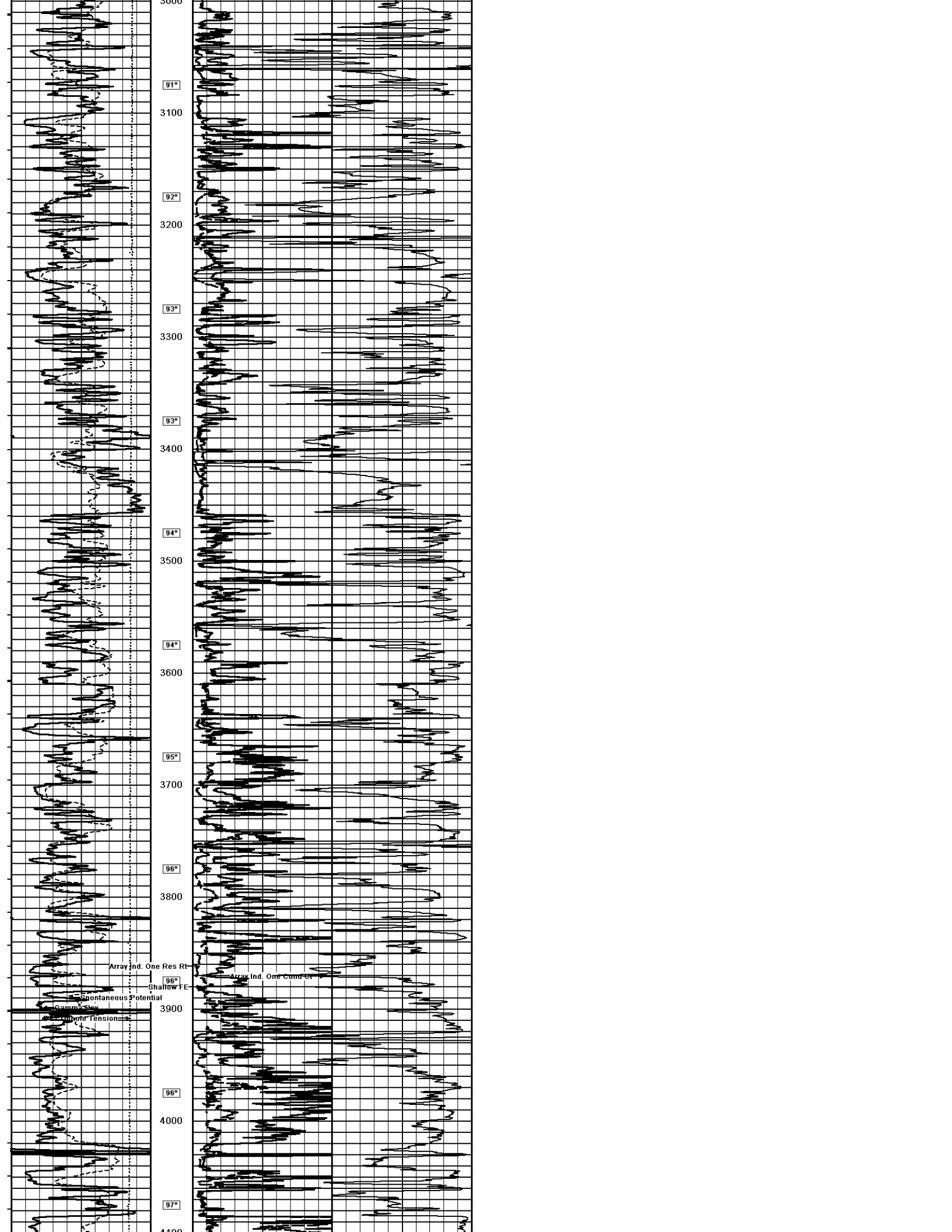
Compact Neutron
MDN-A.B 39 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

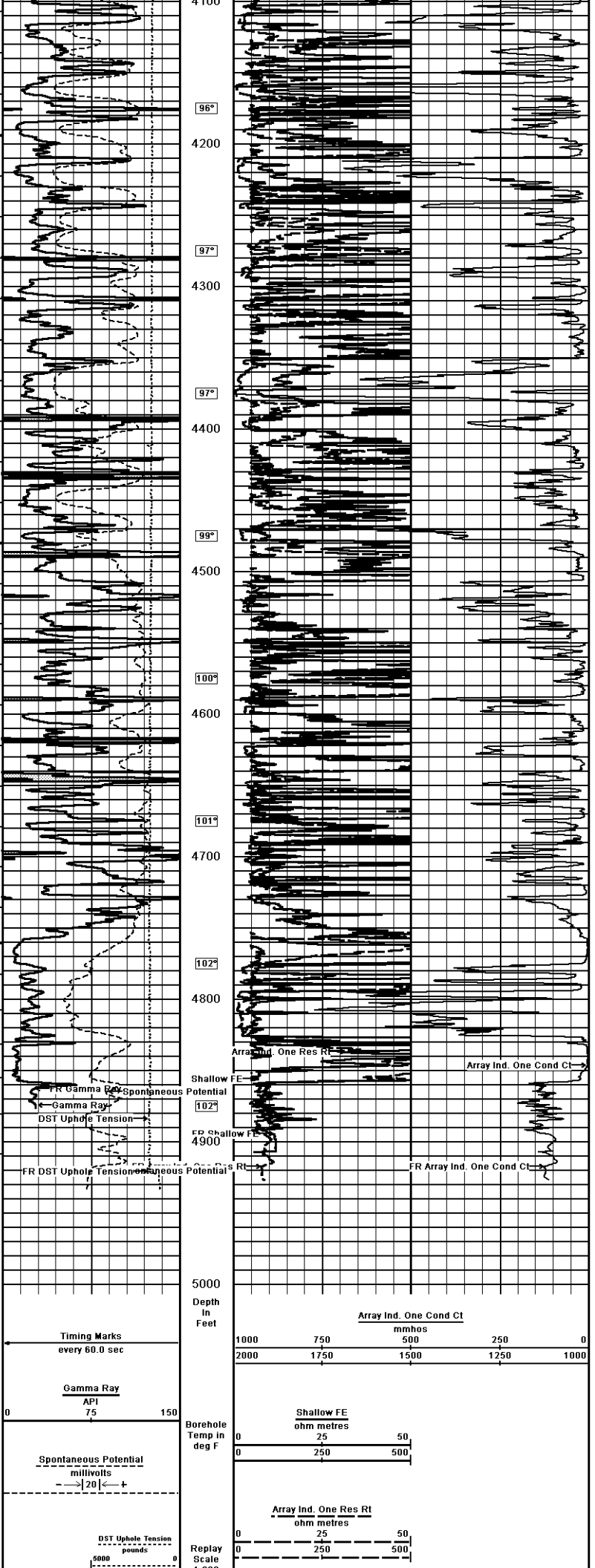
Compact Neutron
MDN-A.B 39 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in











COMPANY

WELL

FIELD

PROVINCE/COUNTY

COUNTRY/STATE

REDLAND RESOURCES

DAVID # 25-15

WILDCAT

HODGEMAN

KANSAS / U.S.A.

Elevation Kelly Bushing

2509.00

feet

Elevation Drill Floor

2507.00

feet

Elevation Ground Level

2497.00

feet

First Reading

4918.00

feet

Depth Driller

4920.00

feet

Depth Logger

4921.00

feet

Weatherford

ARRAY INDUCTION

SHALLOW FOCUSED

ELECTRIC LOG

40

WIRELINE