



**Weatherford**<sup>®</sup>

**ARRAY INDUCTION  
SHALLOW FOCUSED  
ELECTRIC LOG**

COMPANY **MCCOY PETROLEUM CORP.**  
WELL **RICHARDSON TRUST #1-15 'A'**  
FIELD **WILDCAT**  
PROVINCE/COUNTY **GRAY**  
COUNTRY/STATE **U.S.A. / KANSAS**  
LOCATION **2310' FNL & 2010' FWL**

SEC **TWP** **RGE** Other Services  
**15** **27S** **29W** **MPD/MDN** **MML**  
API Number **15-069-20414**  
Permit Number

Permanent Datum GL, Elevation 2741 feet  
Log Measured From **KB** Elevations: **KB** **2754.00**  
Drilling Measured From **KB** **DF** **2752.00**  
**GL** **2741.00**

Date	26-NOV-2012
Run Number	ONE
Service Order	3537783
Depth Driller	5150.00 feet
Depth Logger	5151.00 feet
First Reading	5148.00 feet
Last Reading	1833.00 feet
Casing Driller	1837.00 feet
Casing Logger	1833.00 inches
Bit Size	7.875
Hole Fluid Type	CHEMICAL lb/USg
Density / Viscosity	8.95 lb/USg 65.00 CP
PH / Fluid Loss	9.00 9.00
Sample Source	FLOWLINE
Rm @ Measured Temp	1.42 @ 84.0 ohm-m
Rmf @ Measured Temp	1.14 @ 84.0 ohm-m
Rmc @ Measured Temp	1.70 @ 84.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.11 @109.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	109.00 deg F
Equipment / Base	13096 LIB
Recorded By	ADAM SILL
Witnessed By	EVAN STONE
JOB #	LB12-309

**BOREHOLE RECORD** Last Edited: 26-NOV-2012 07:10

Bit Size inches	Depth From feet	Depth To feet
7.875	1837.00	5150.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1837.00	24.00

**REMARKS**

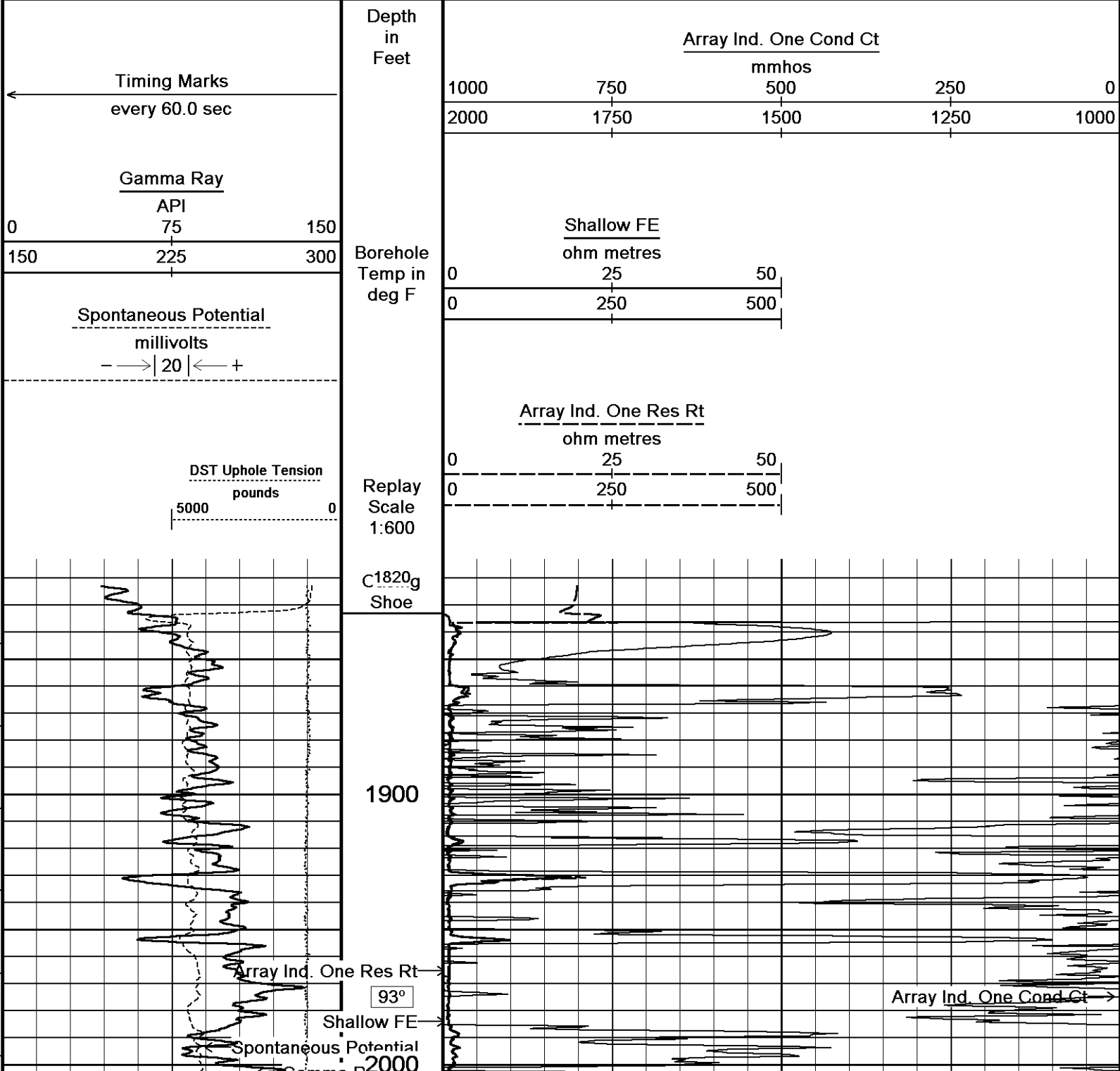
- SOFTWARE ISSUE: WLS 13.04.8492.
- MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
  - 0.5 INCH STANDOFF USED ON MFE.
  - 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1390 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO 2500 FT: 660 CU. FT.
- SERVICE ORDER # 3537783

- RIG: STERLING #5.  
 - ENGINEER: A. SILL.  
 - 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.

**2 INCH MAIN**

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 26-NOV-2012 14:42  
 Filename: C:\Minimus 13.04.8492\Data\McCoy ...\McCoy Petroleum Richardson Trust #1-15 'A'\_002.dta Recorded on 26-NOV-2012 12:29  
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492



DST Uphole Tension →

94°

2100

94°

2200

94°

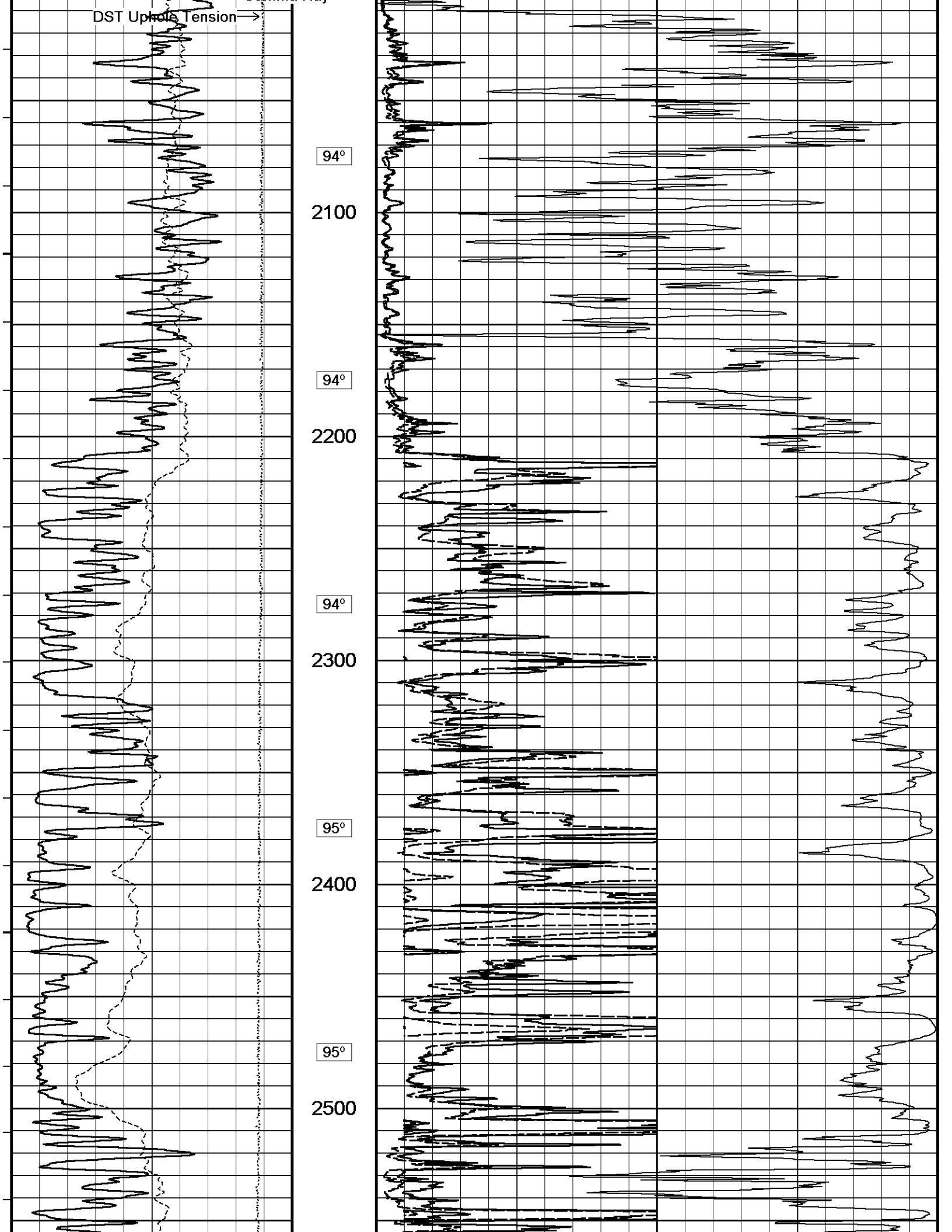
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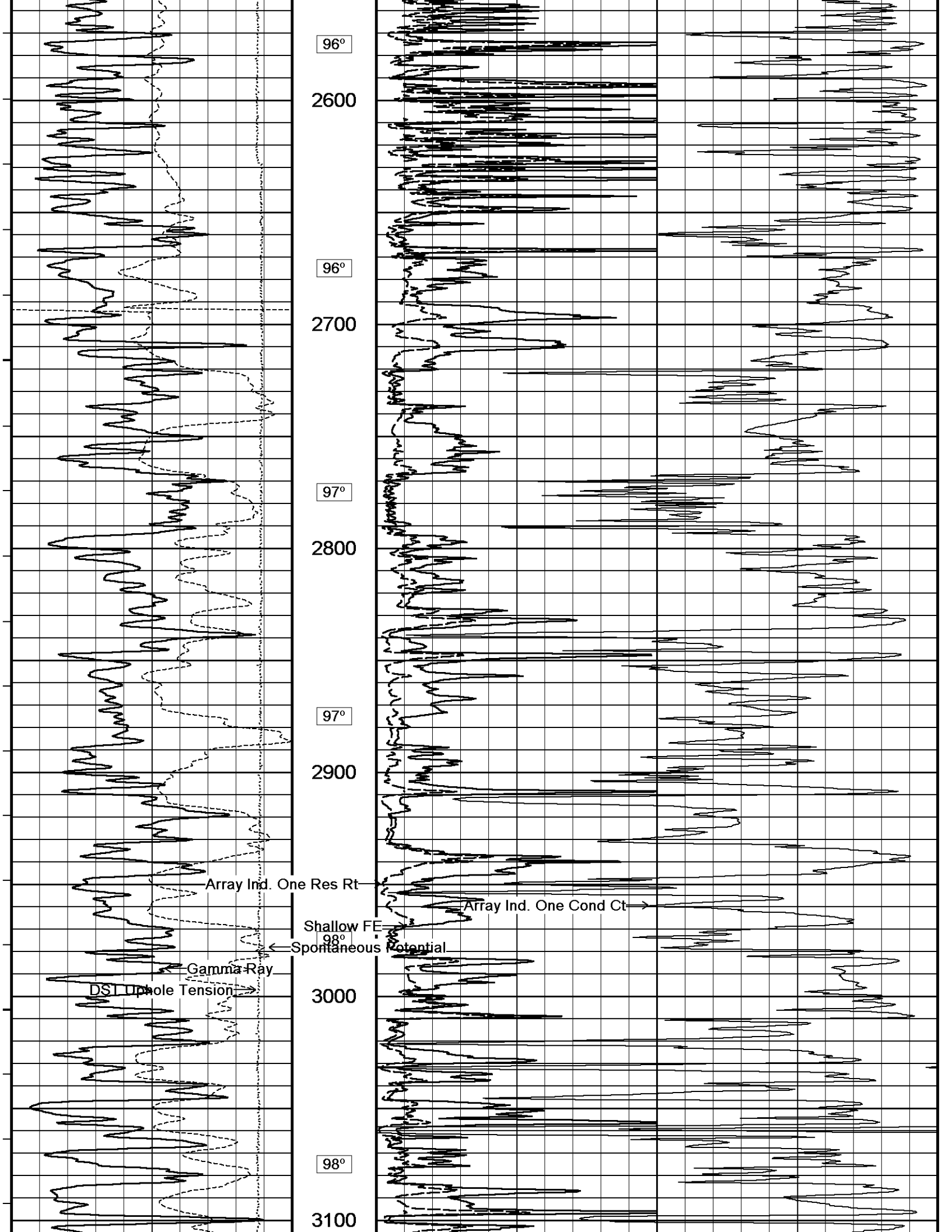
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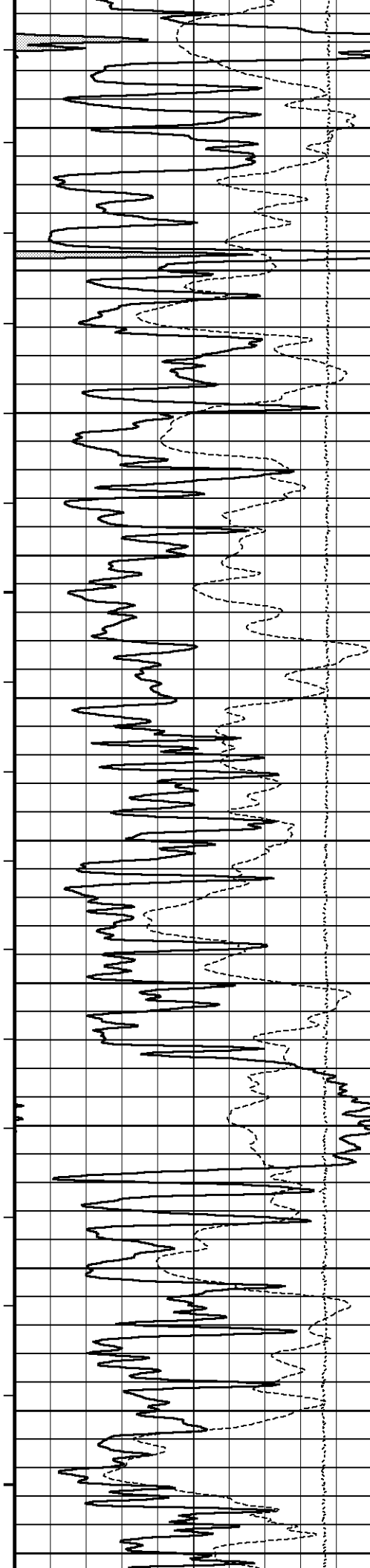
2400

95°

2500







98°

3200

99°

3300

100°

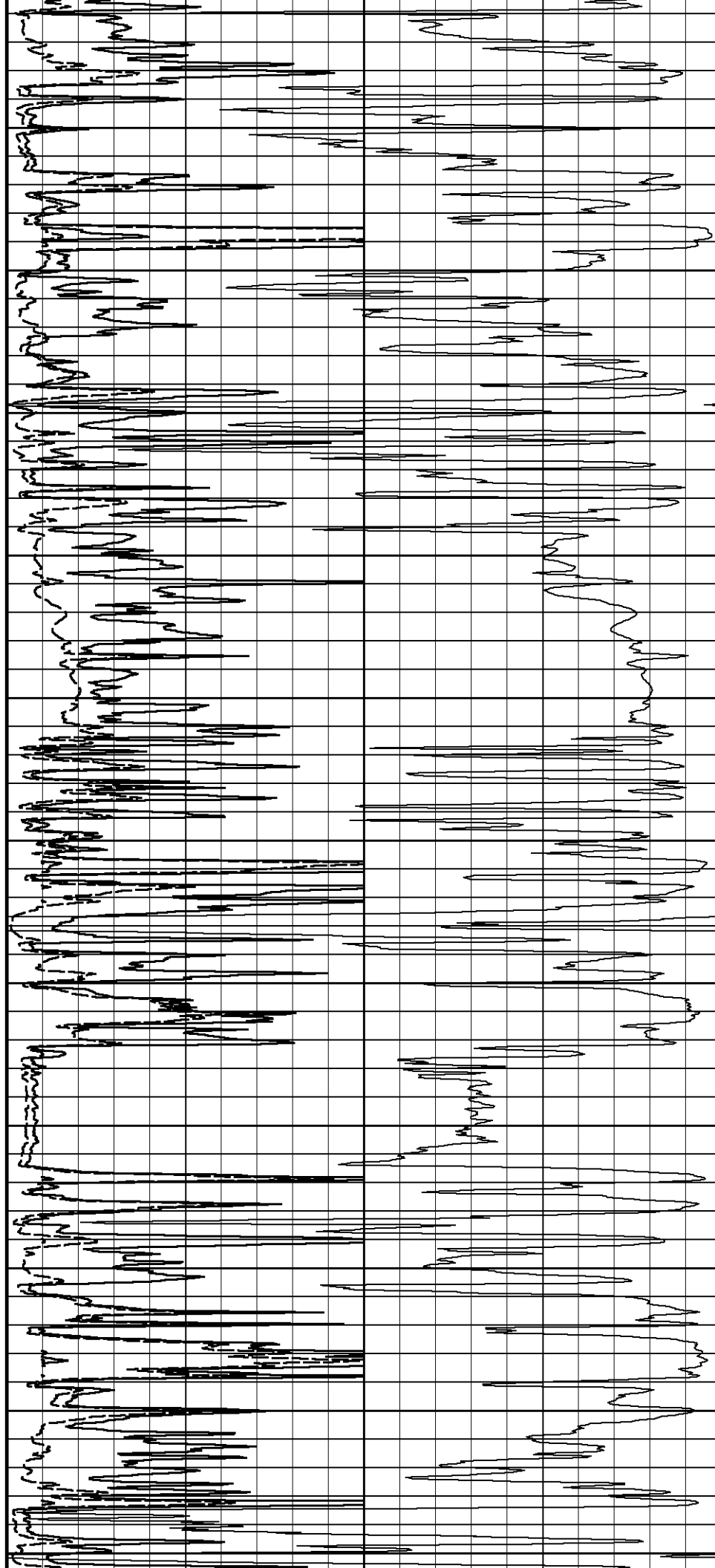
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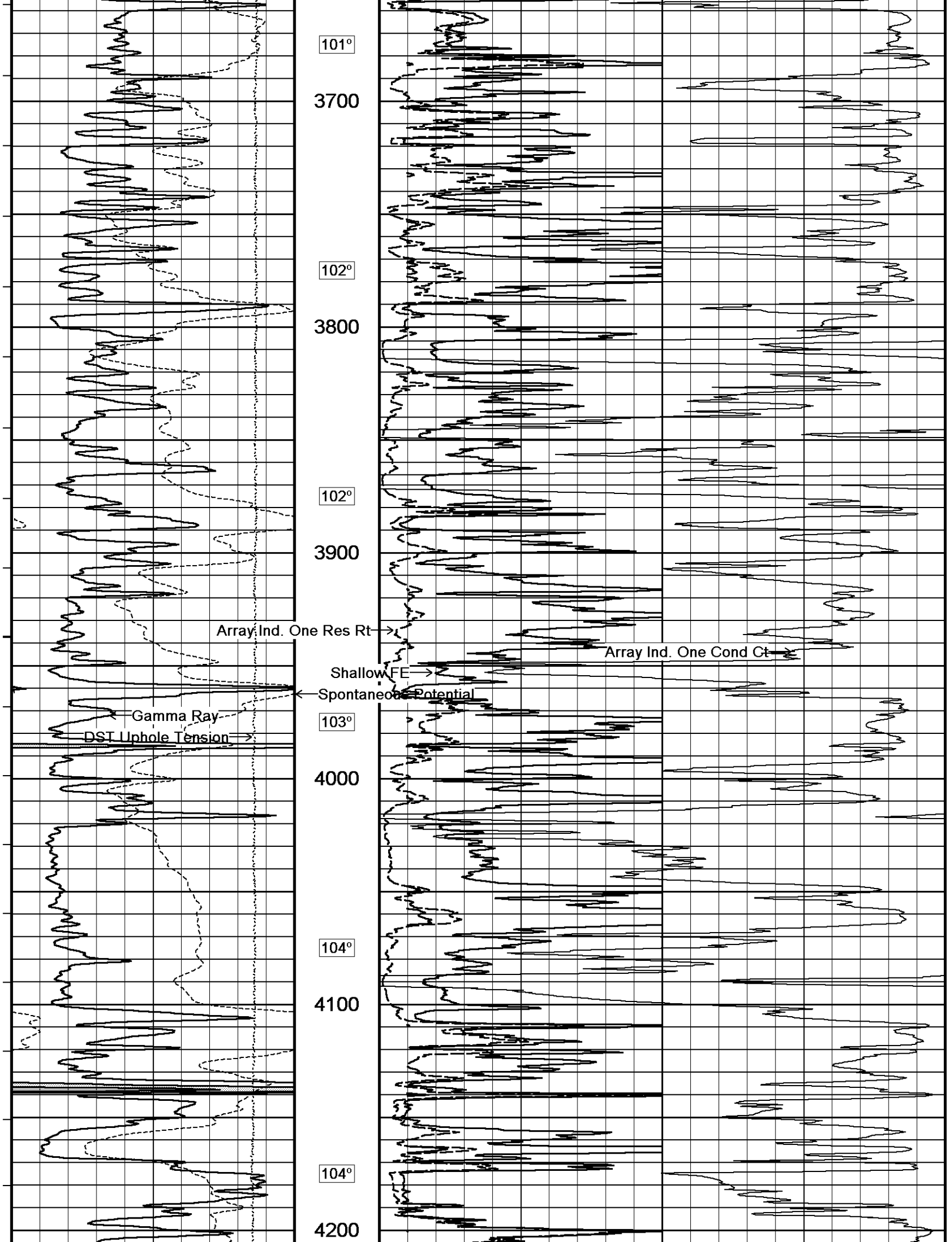
100°

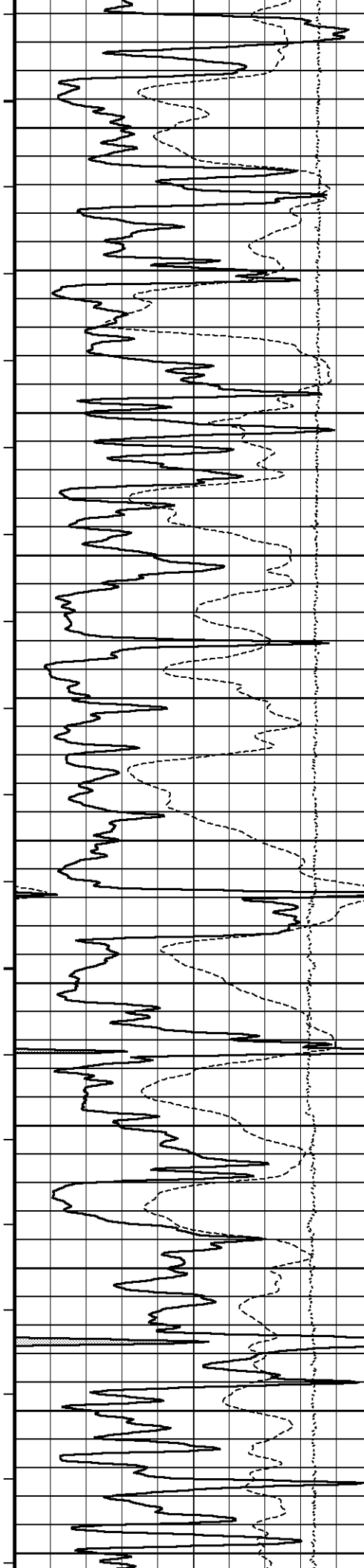
3500

101°

3600







104°

4300

105°

4400

105°

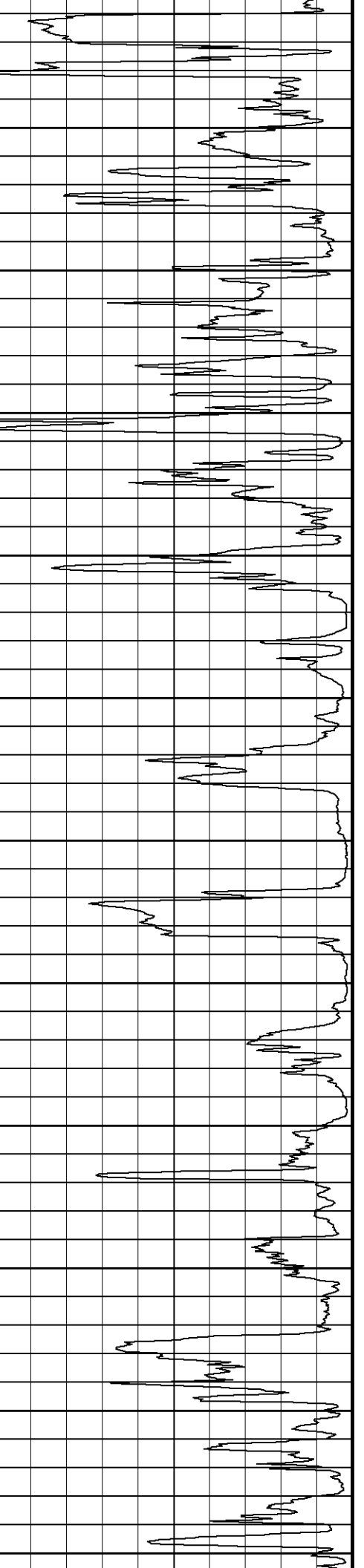
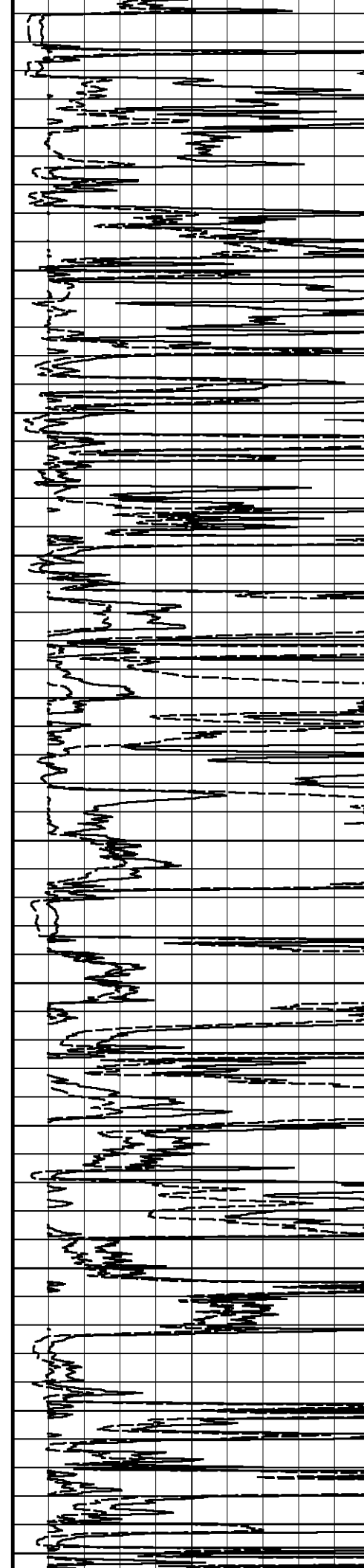
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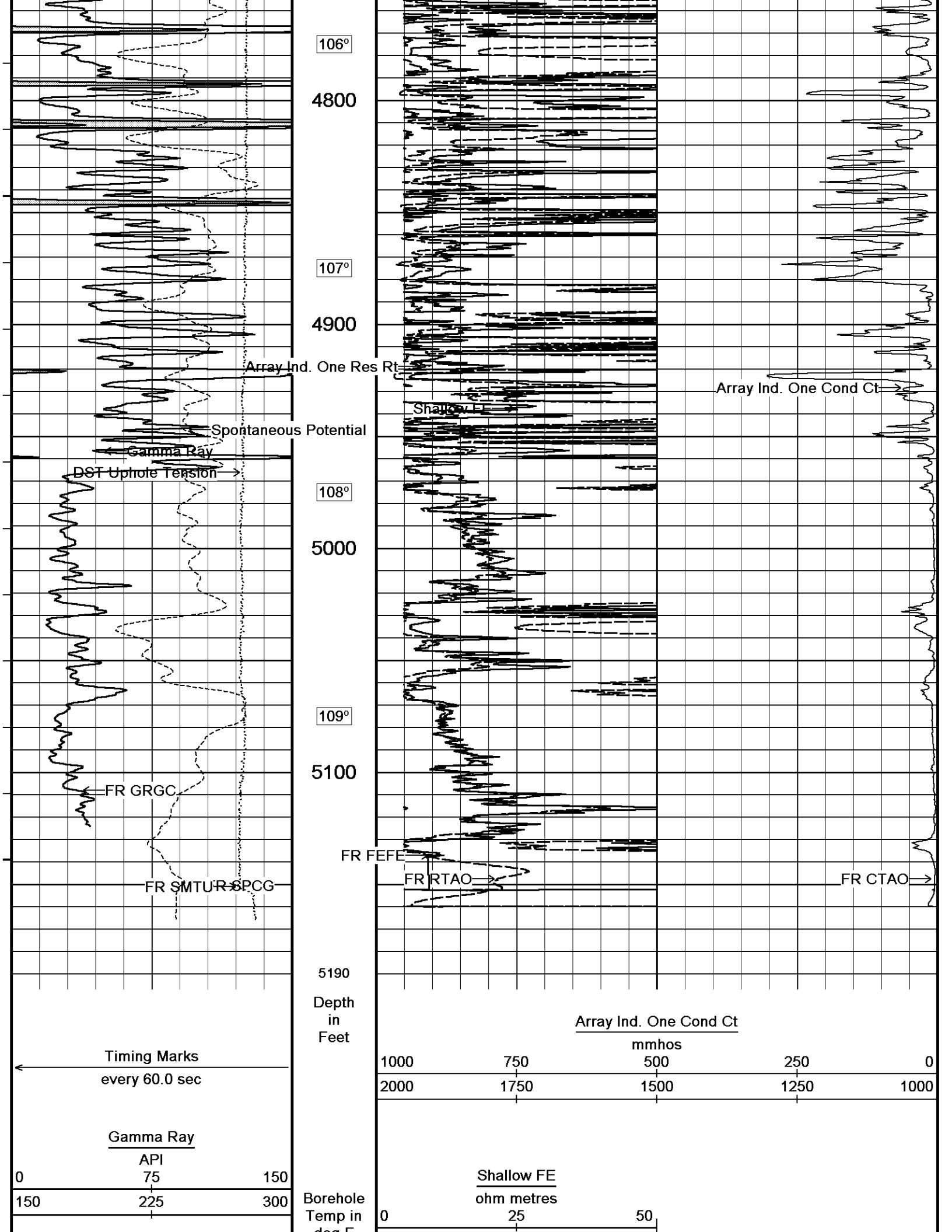
106°

4600

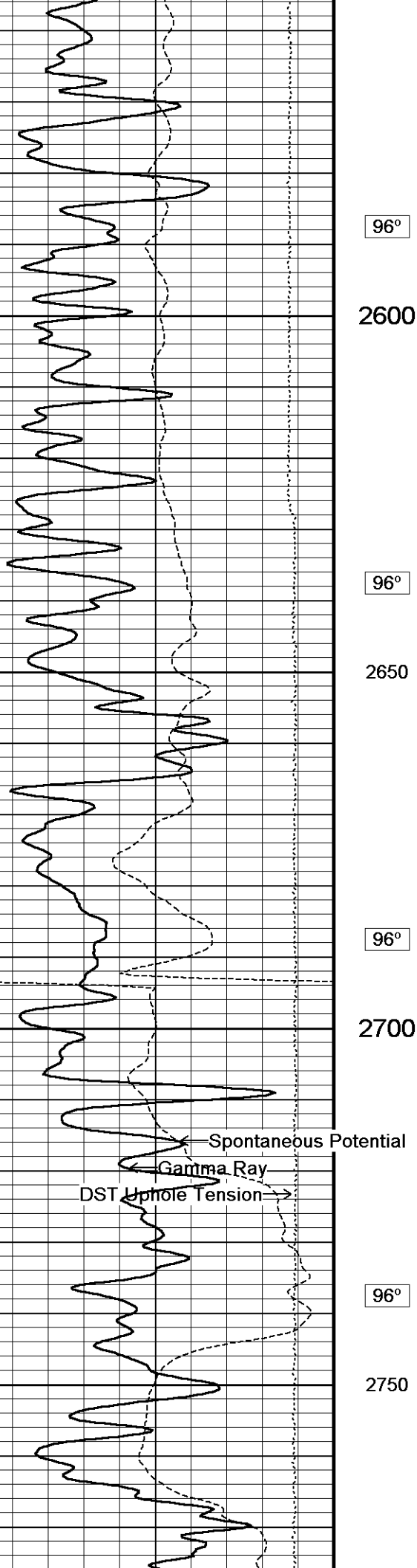
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4700









96°

2600

96°

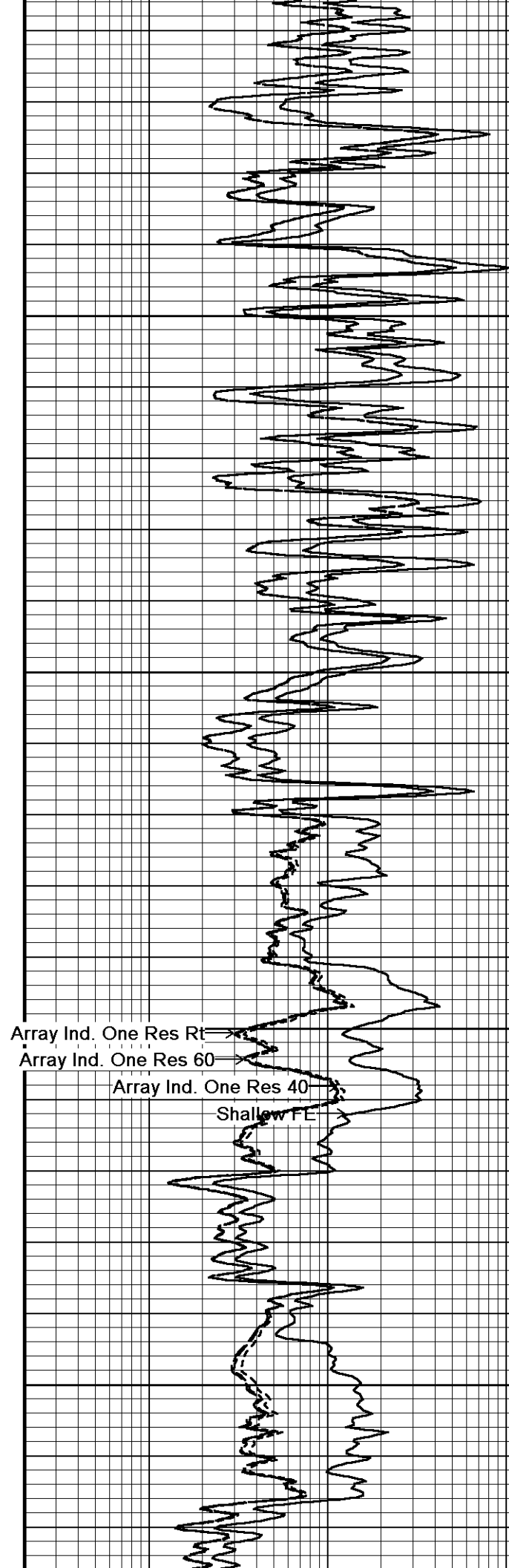
2650

96°

2700

96°

2750

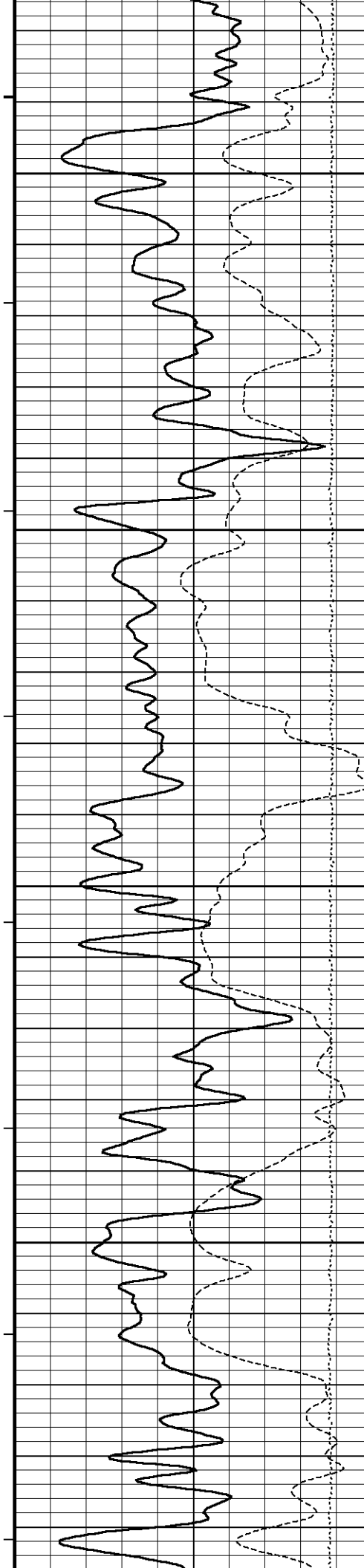


Array Ind. One Res Rt

Array Ind. One Res 60

Array Ind. One Res 40

Shallow FE



97°

2800

97°

2850

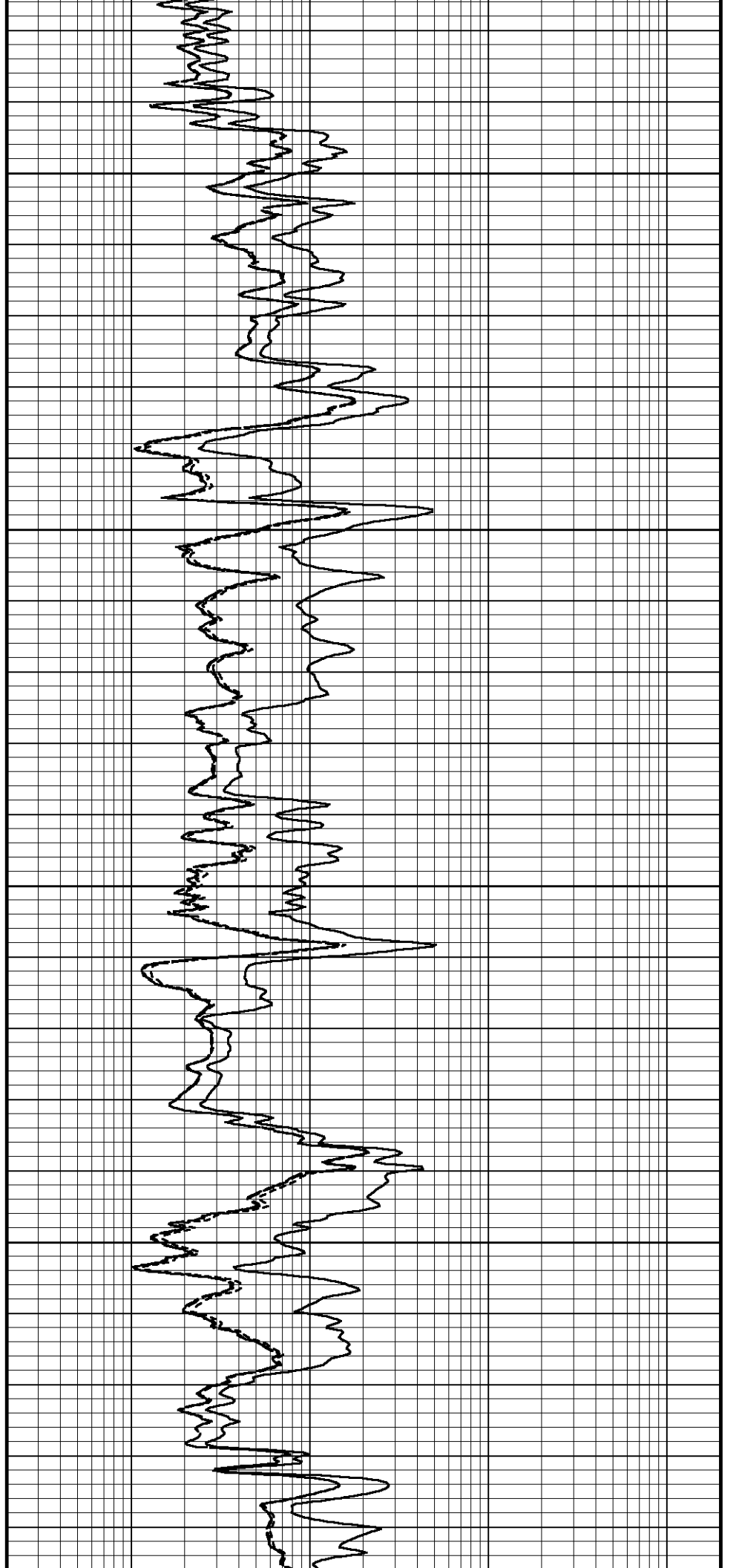
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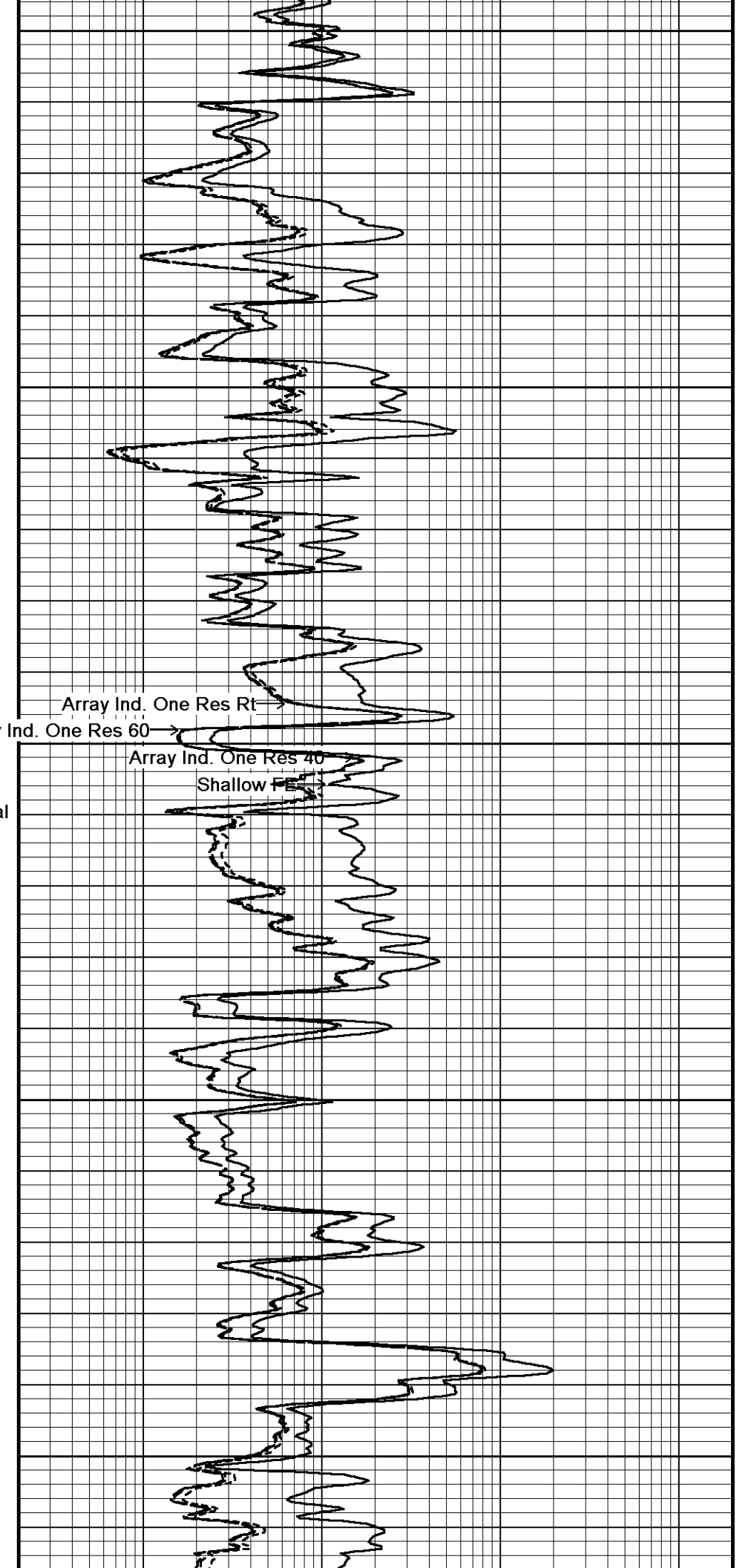
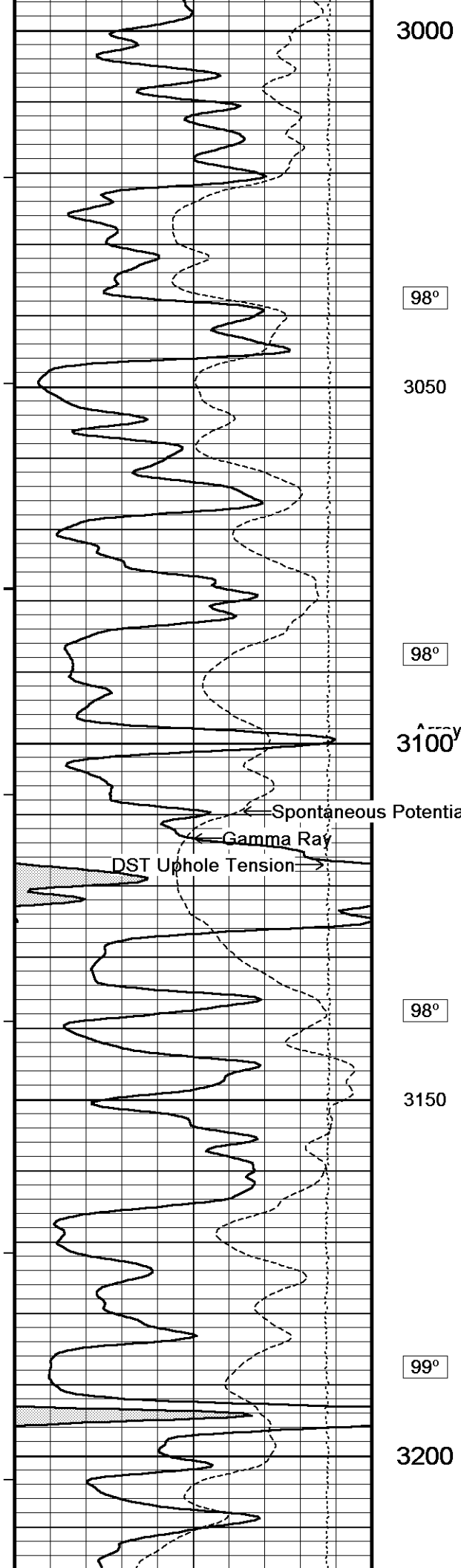
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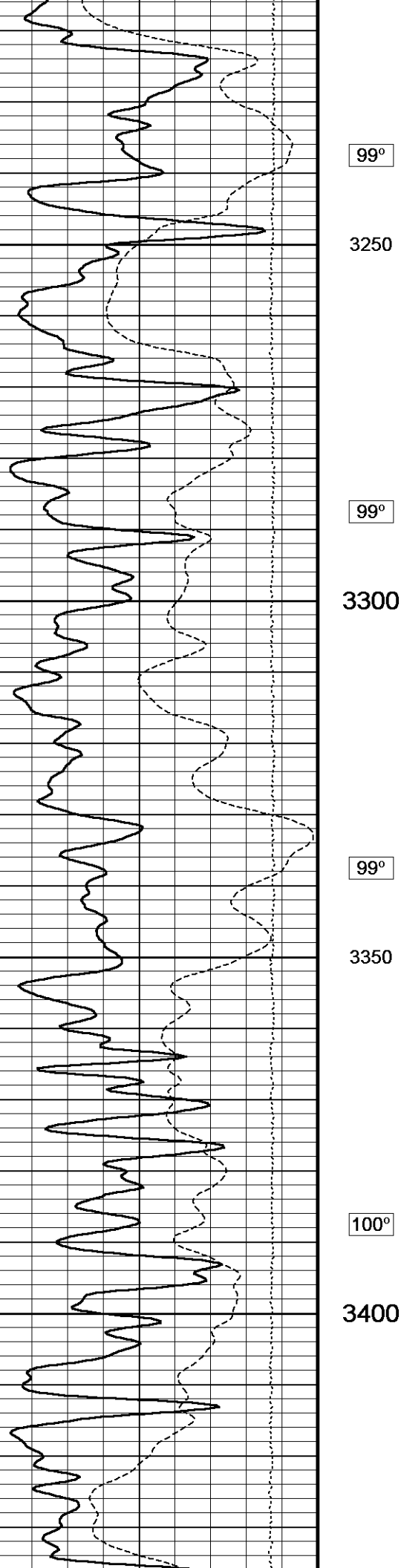
97°

2950

97°







99°

3250

99°

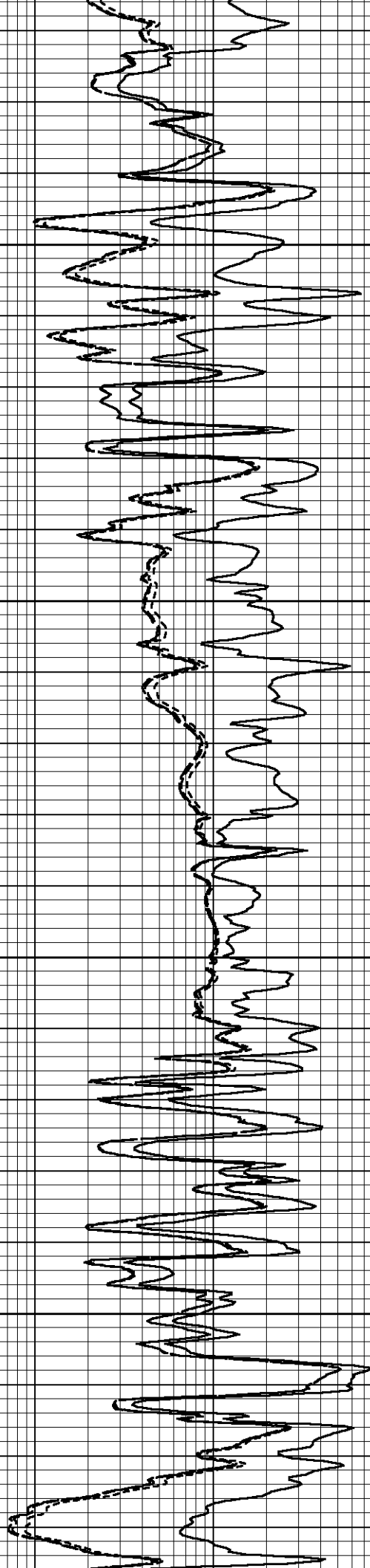
3300

99°

3350

100°

3400



99°

3250

99°

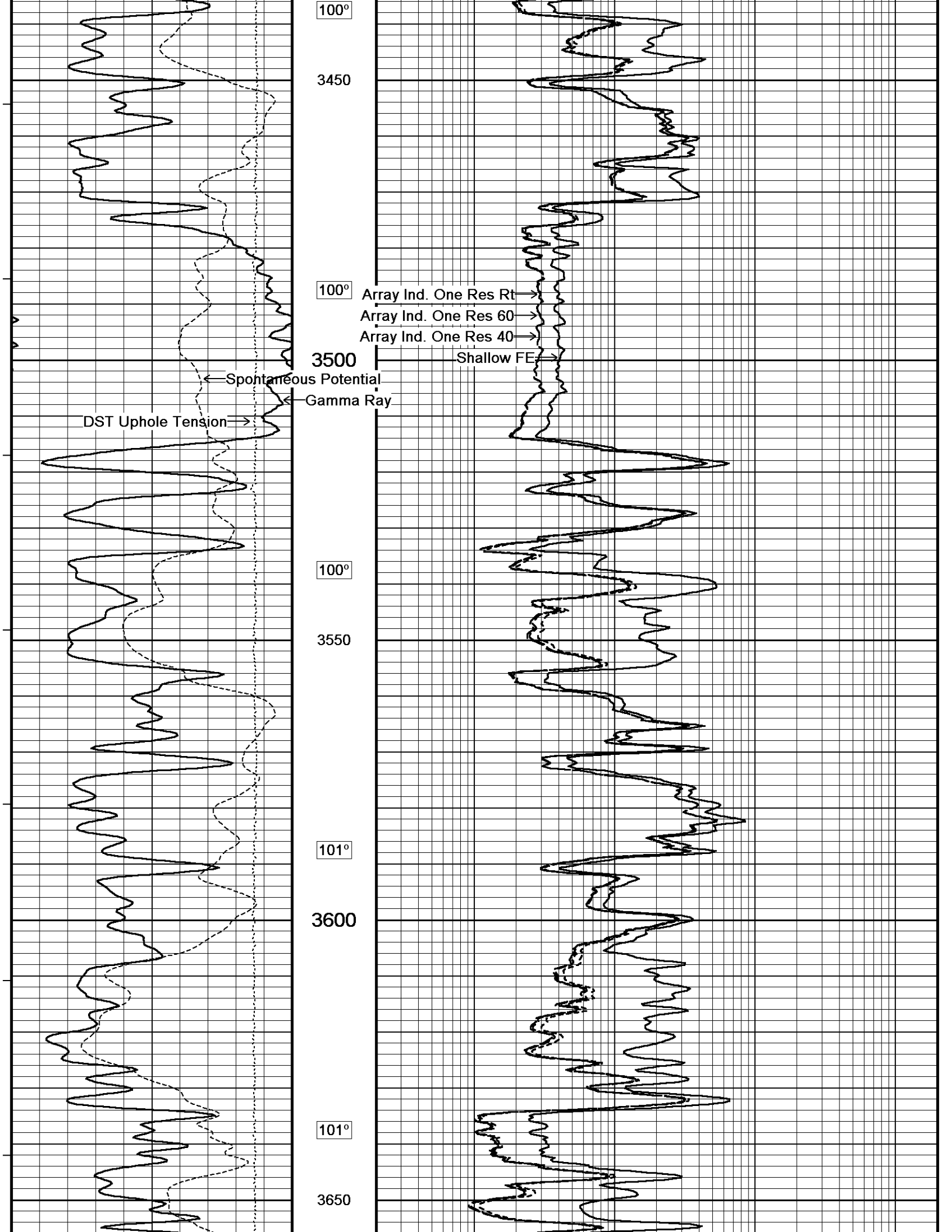
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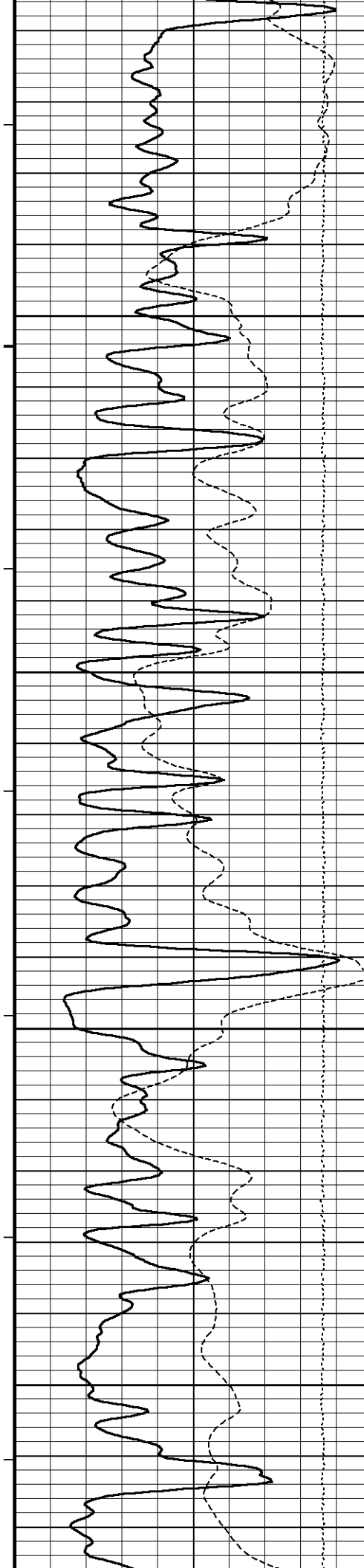
99°

3350

100°

3400



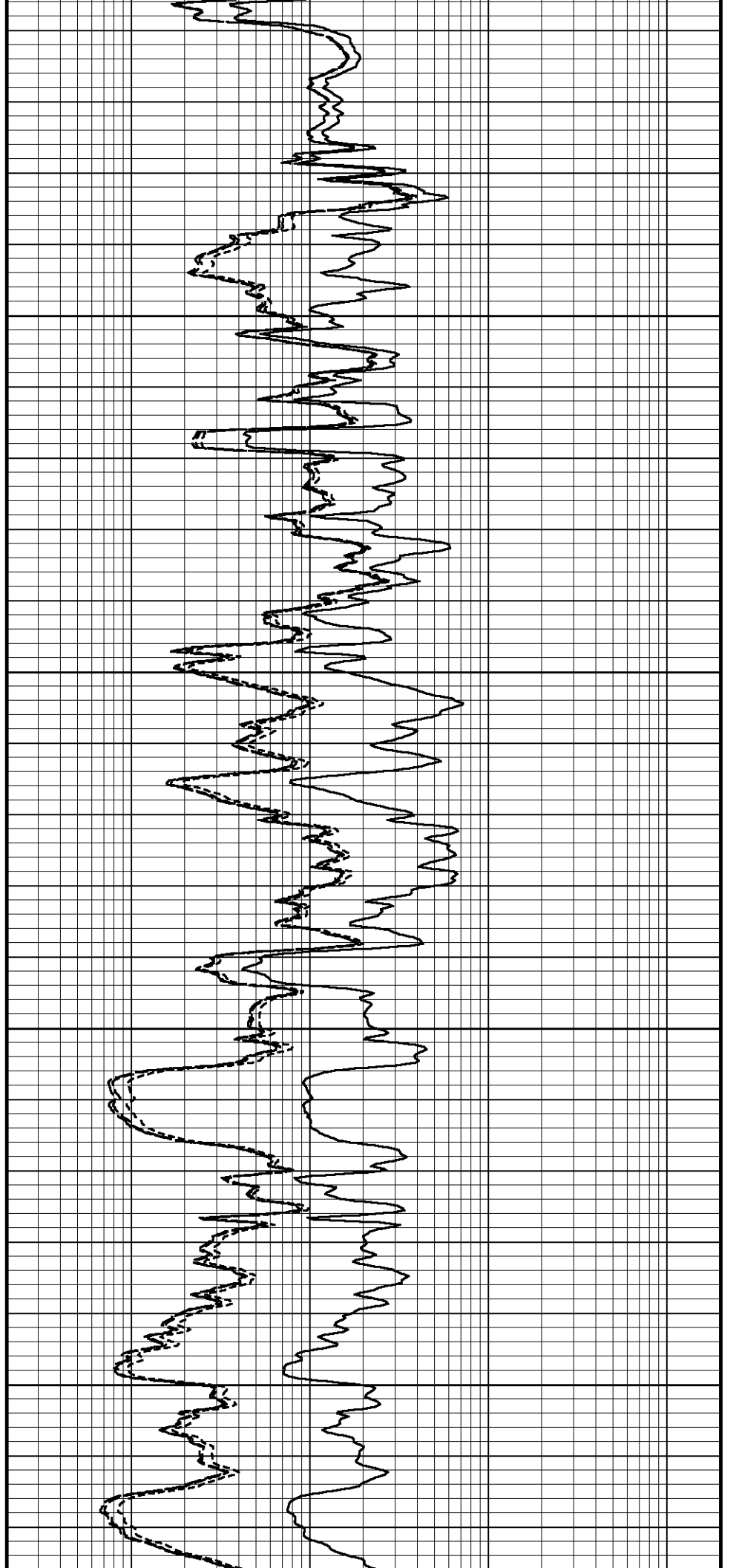


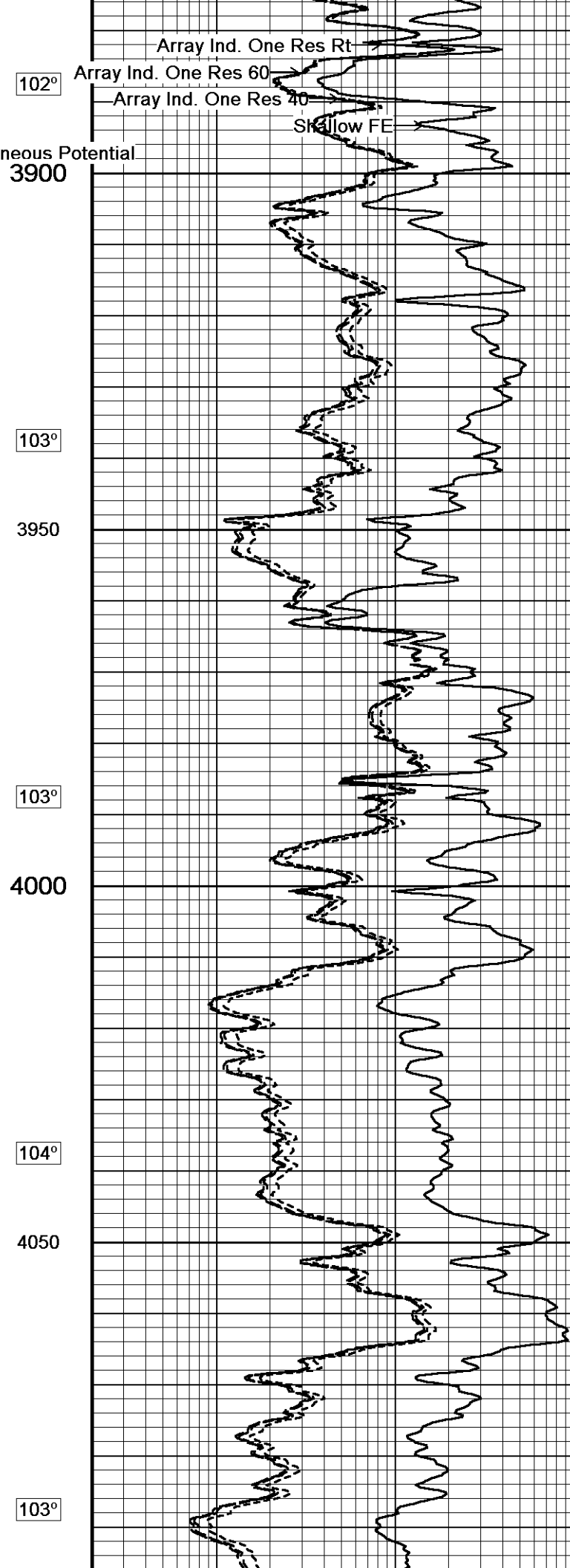
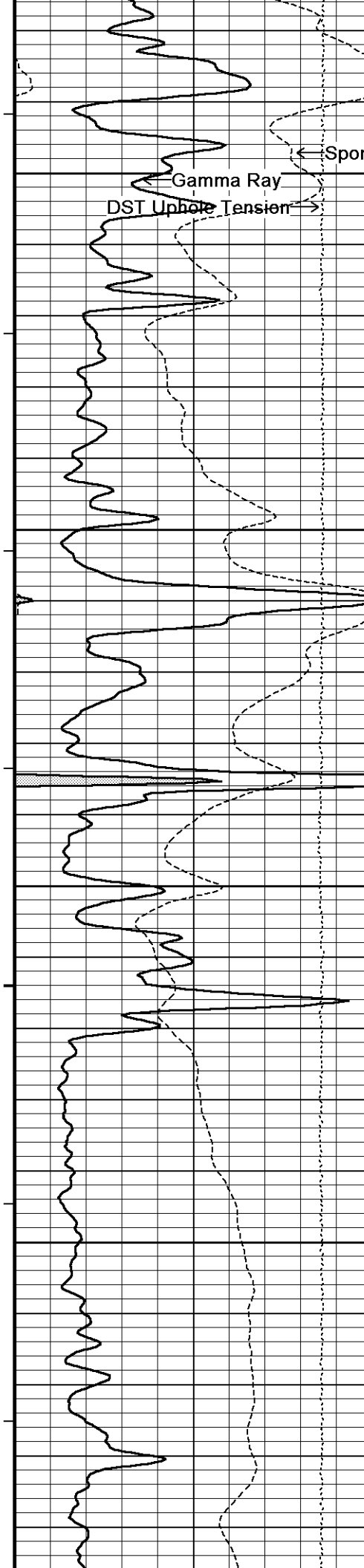
101°  
3700

101°  
3750

102°  
3800

102°  
3850





102°

103°

103°

104°

103°

3900

3950

4000

4050

Array Ind. One Res Rt

Array Ind. One Res 60

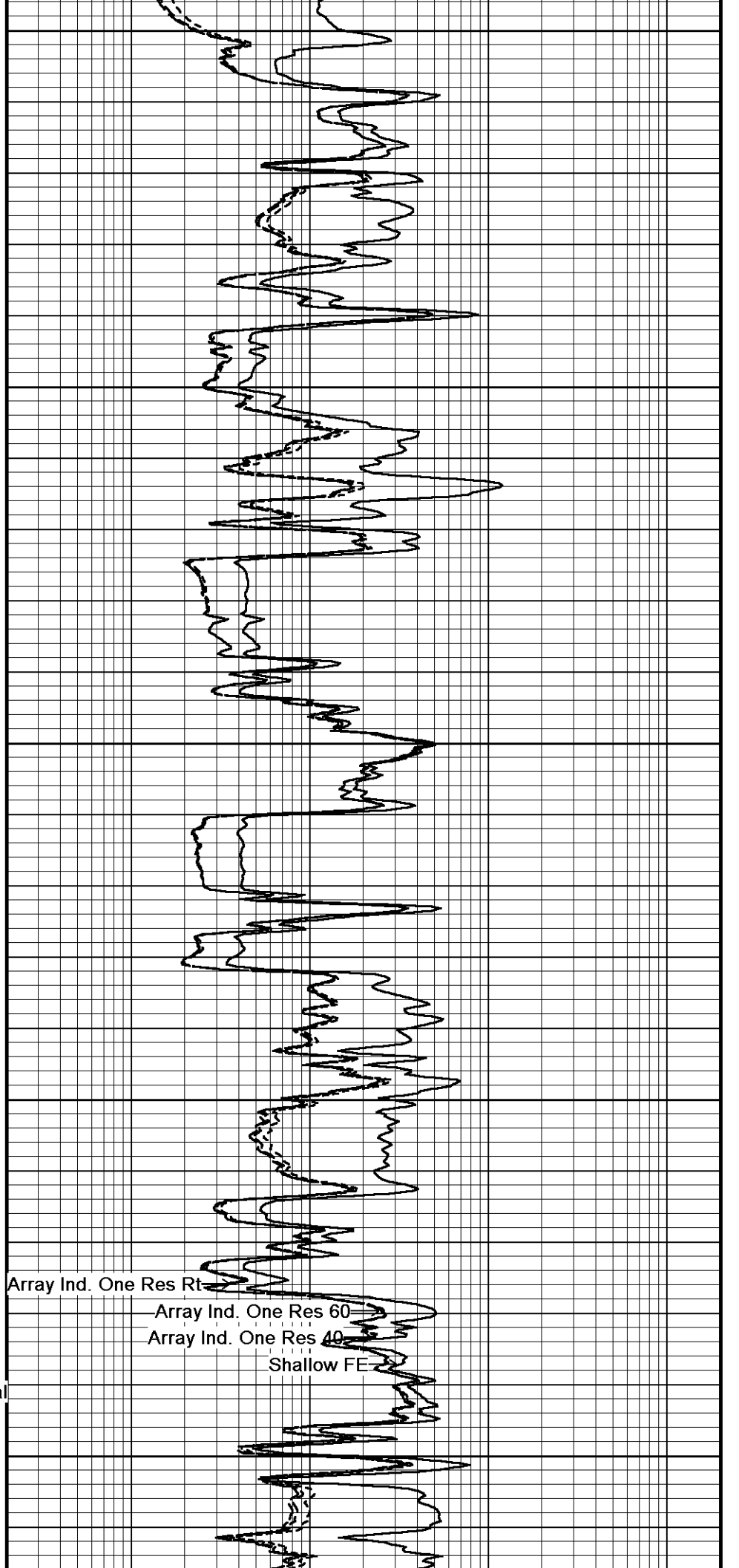
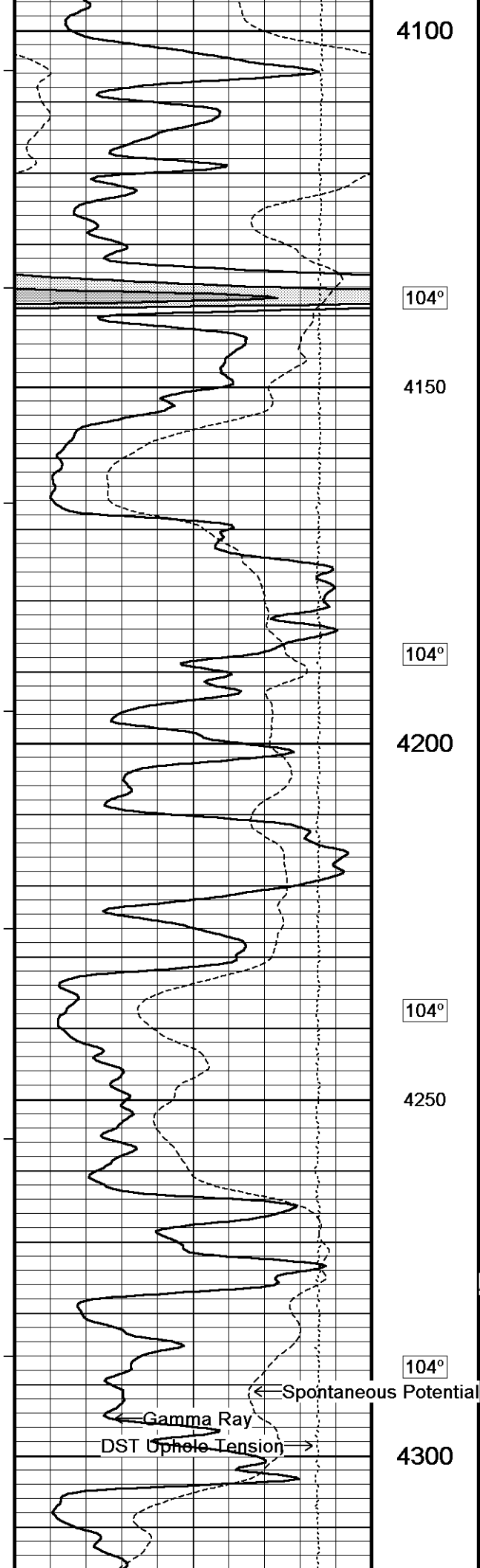
Array Ind. One Res 40

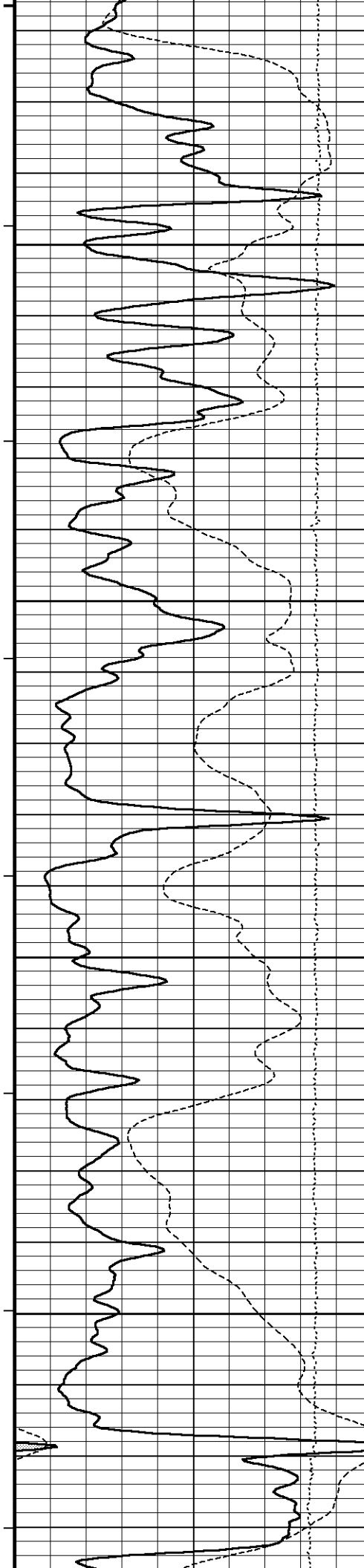
SKI low FE

Spontaneous Potential

Gamma Ray

DST Uphole Tension





105°

4350

105°

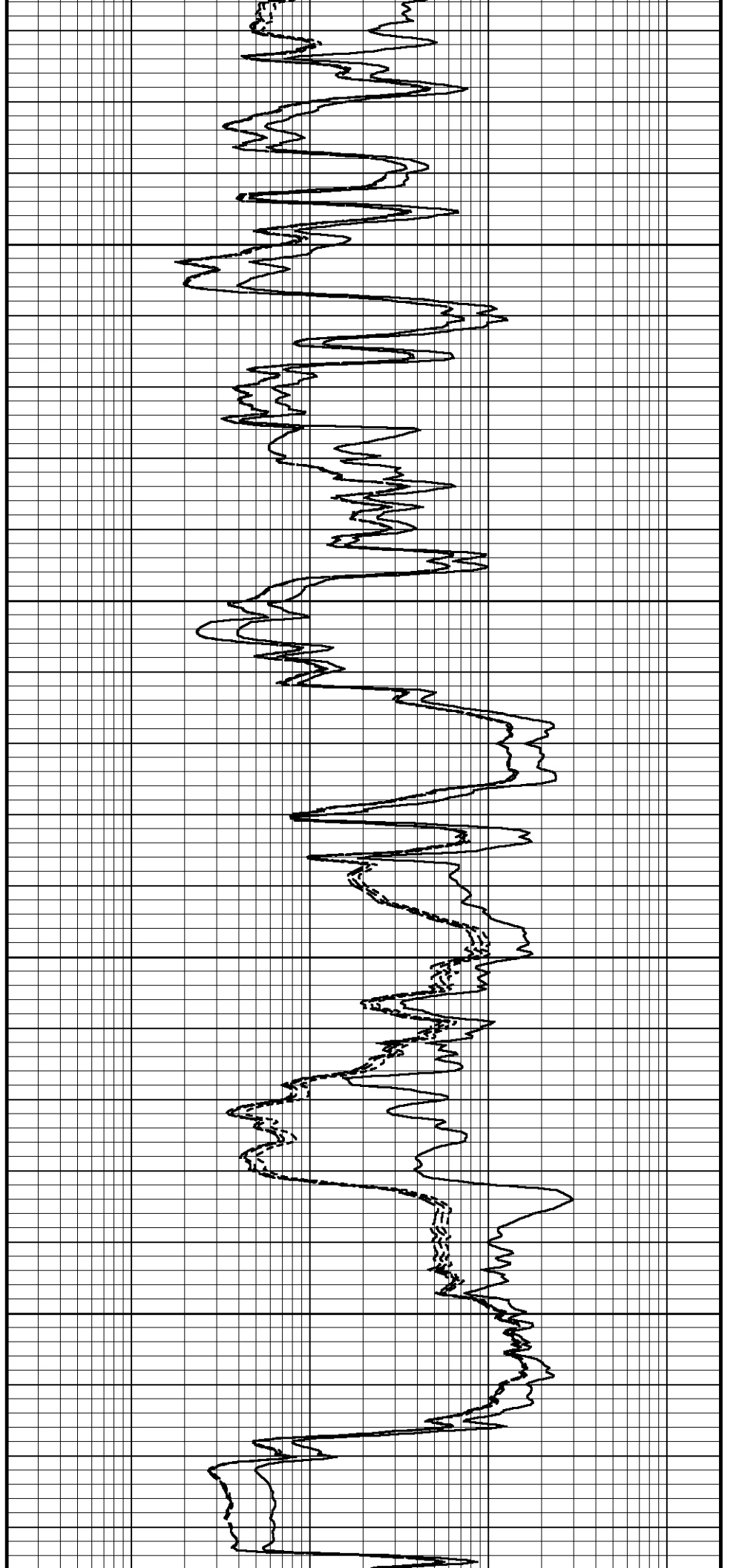
4400

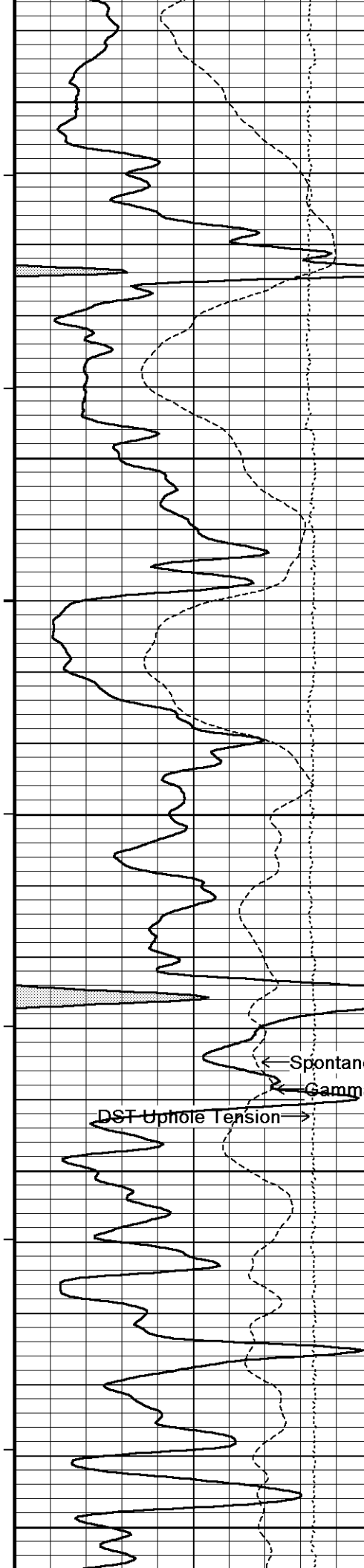
105°

4450

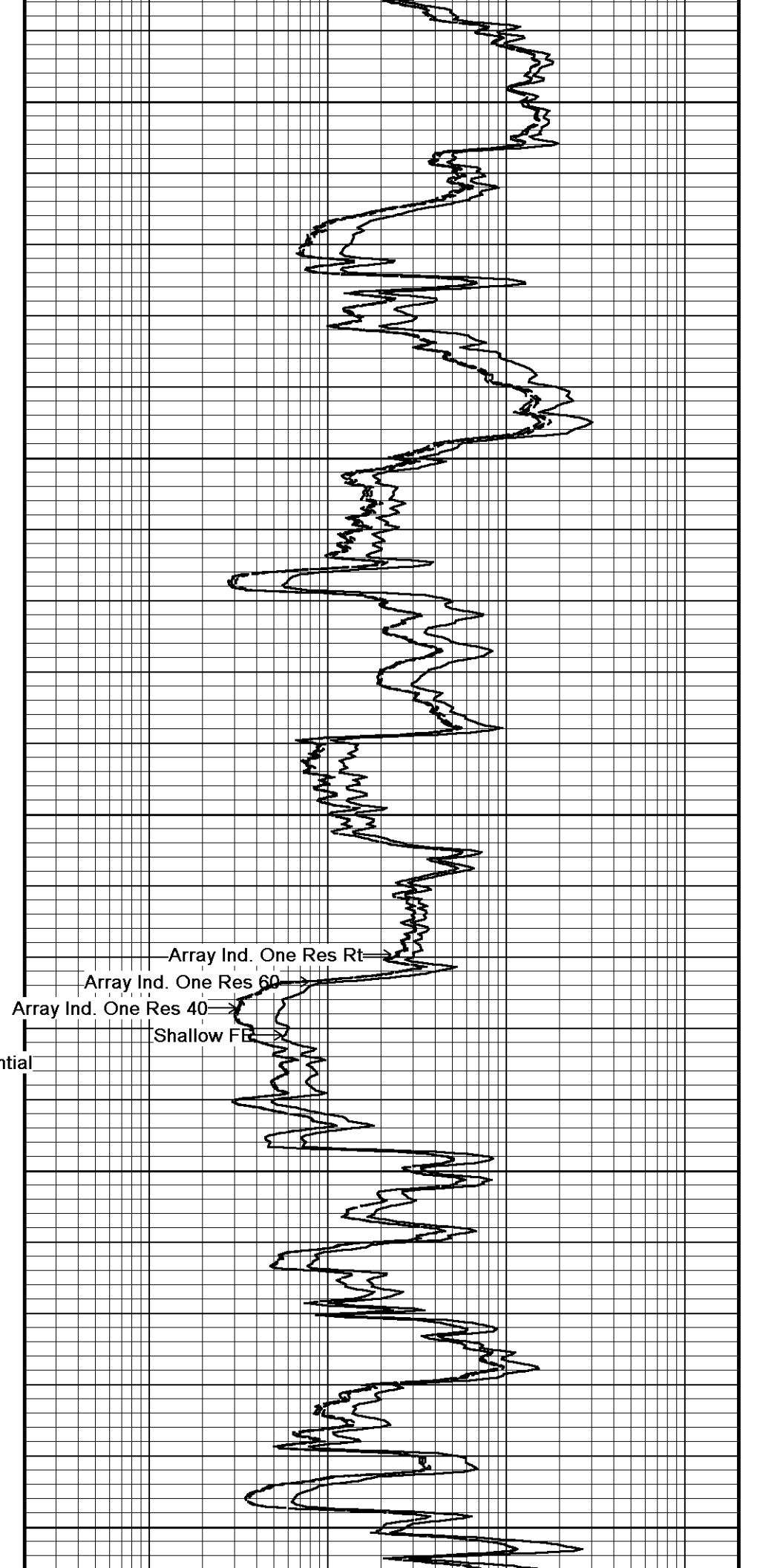
105°

4500

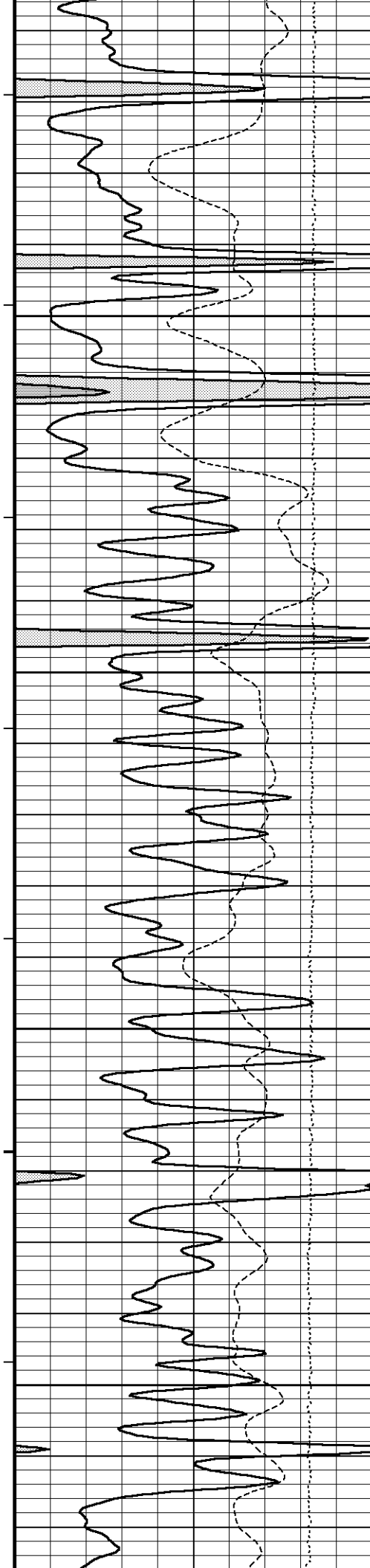




106°  
4550  
106°  
4600  
106°  
4650  
106°  
4700  
106°  
4750



Array Ind. One Res Rt  
Array Ind. One Res 60  
Array Ind. One Res 40  
Shallow FB



106°

4800

107°

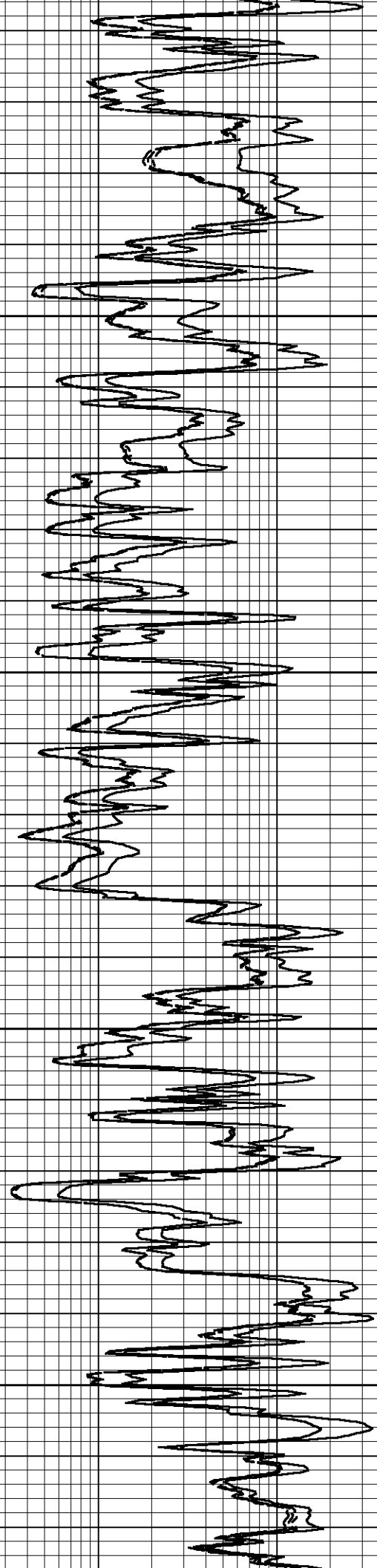
4850

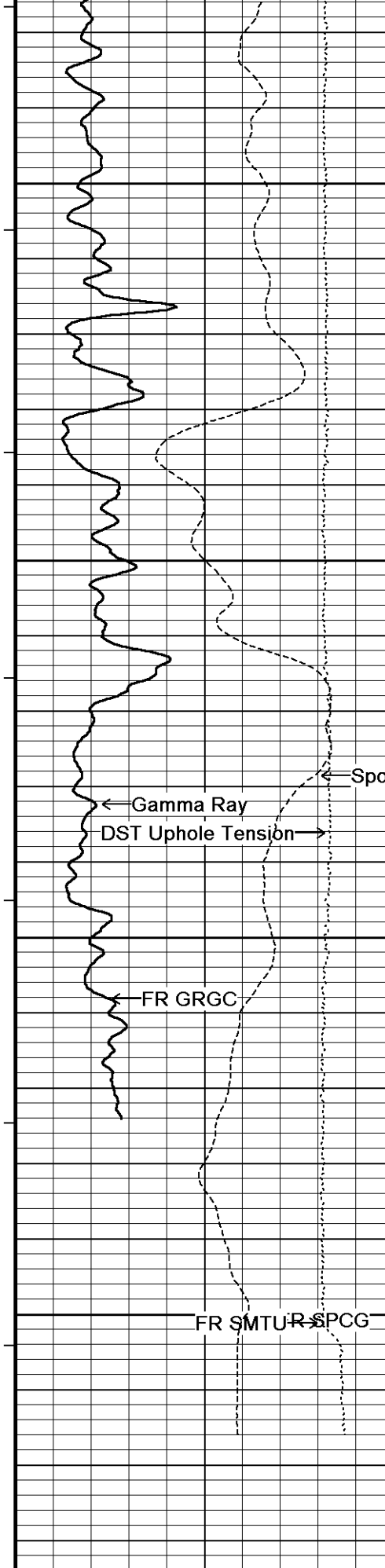
107°

4900

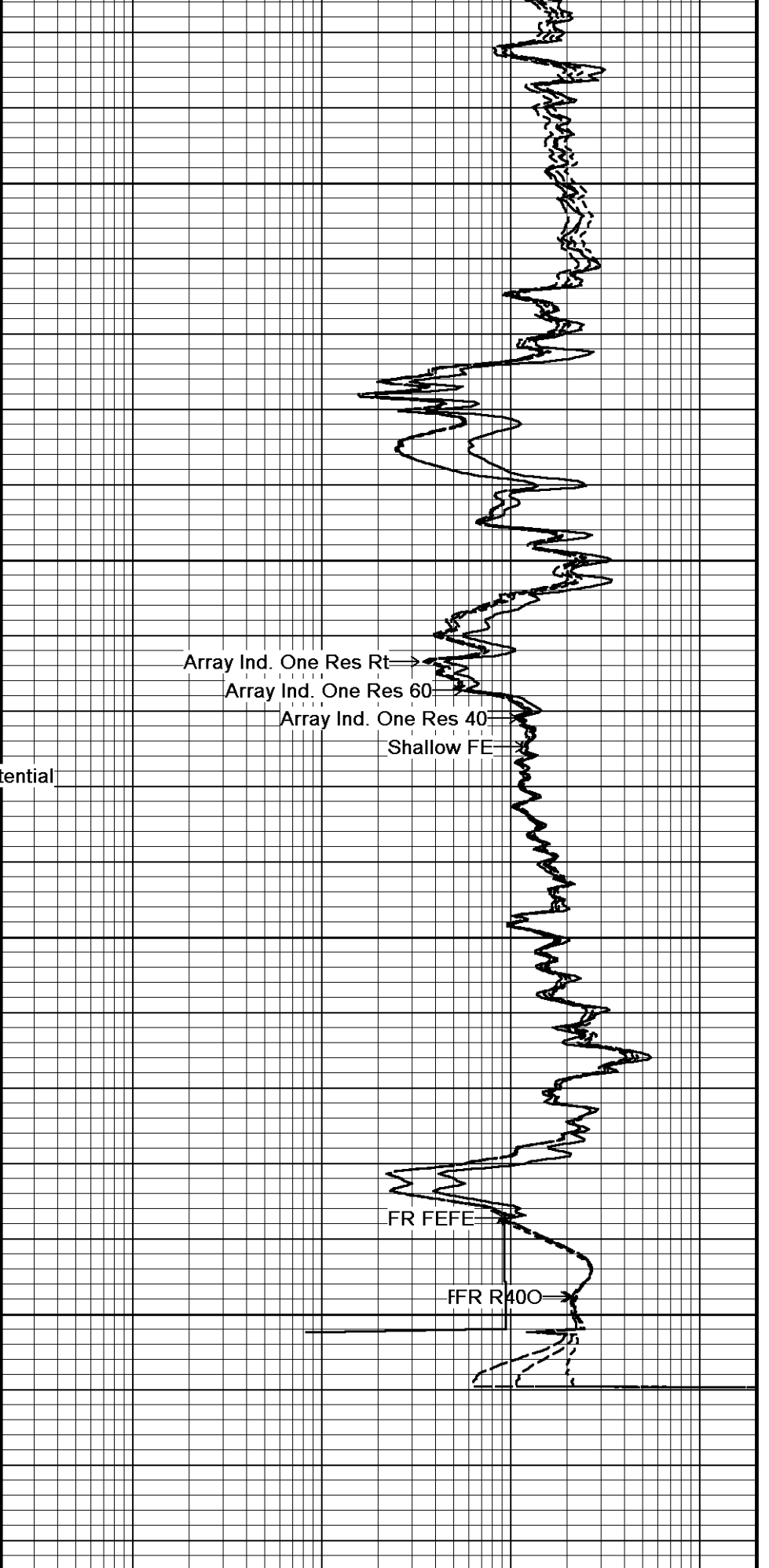
108°

4950



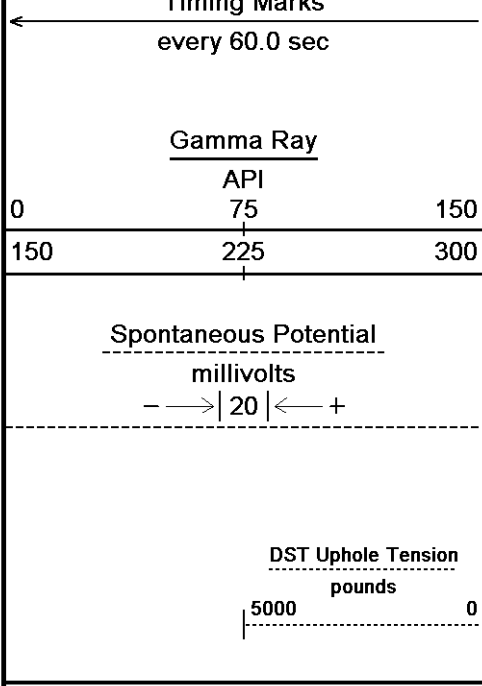


109°  
 5000  
 109°  
 5050  
 109°  
 5100  
 5150  
 5182  
 Depth  
 in  
 Feet



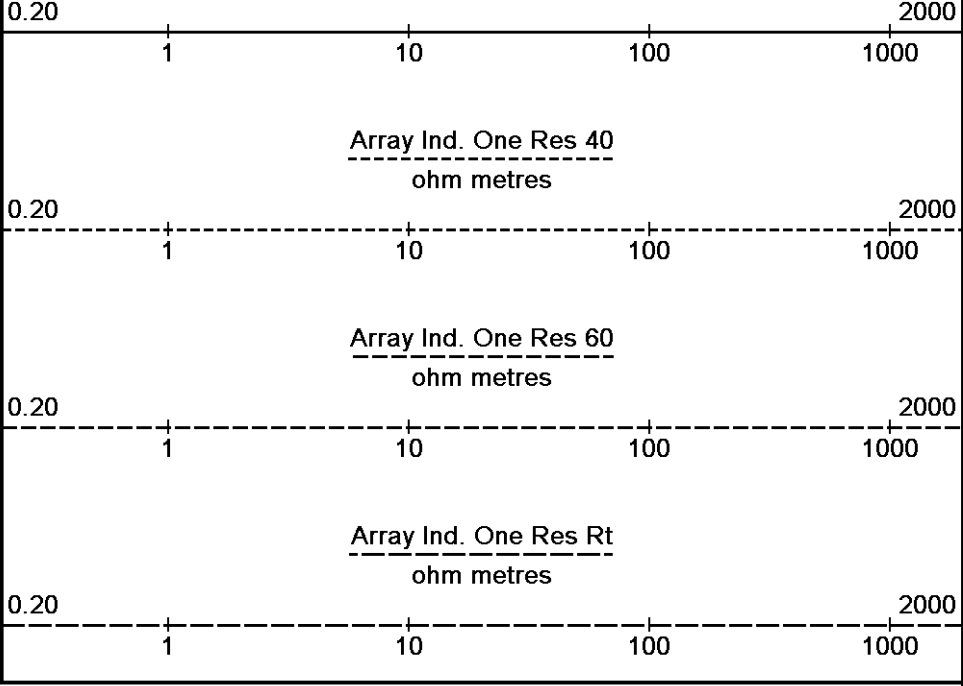
Shallow FE  
 ohm metres

Timing Marks



Borehole  
Temp in  
deg F

Replay  
Scale  
1:240

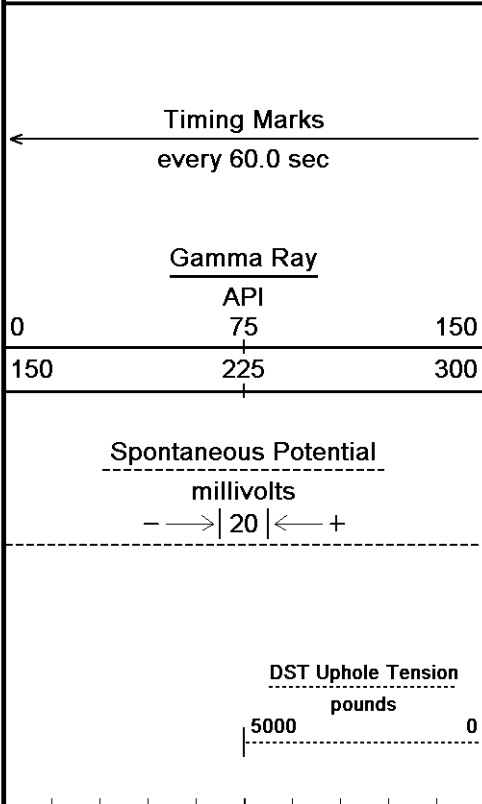


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 26-NOV-2012 14:42  
 Filename: C:\Minimus 13.04.8492\Data\McCoy ...\McCoy Petroleum Richardson Trust #1-15 'A'\_002.dta Recorded on 26-NOV-2012 12:29  
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

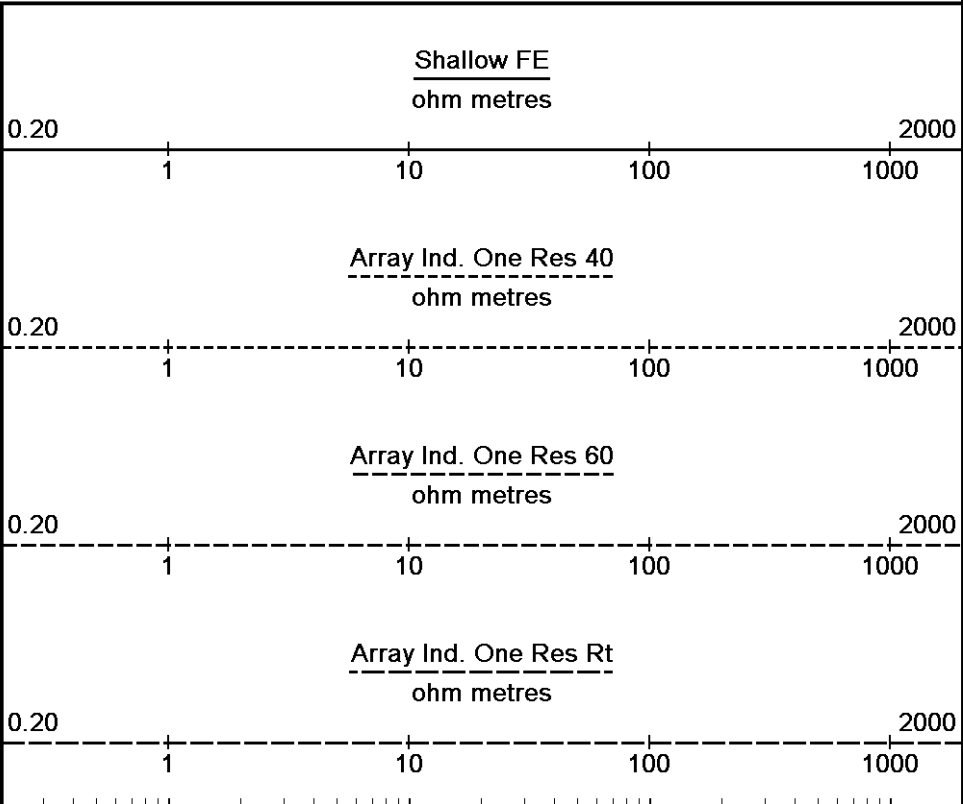
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 26-NOV-2012 14:42  
 Filename: C:\Minimus 13.04.8492\Data\McCoy ...\McCoy Petroleum Richardson Trust #1-15 'A'\_001.dta Recorded on 26-NOV-2012 11:37  
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492



Depth  
in  
Feet

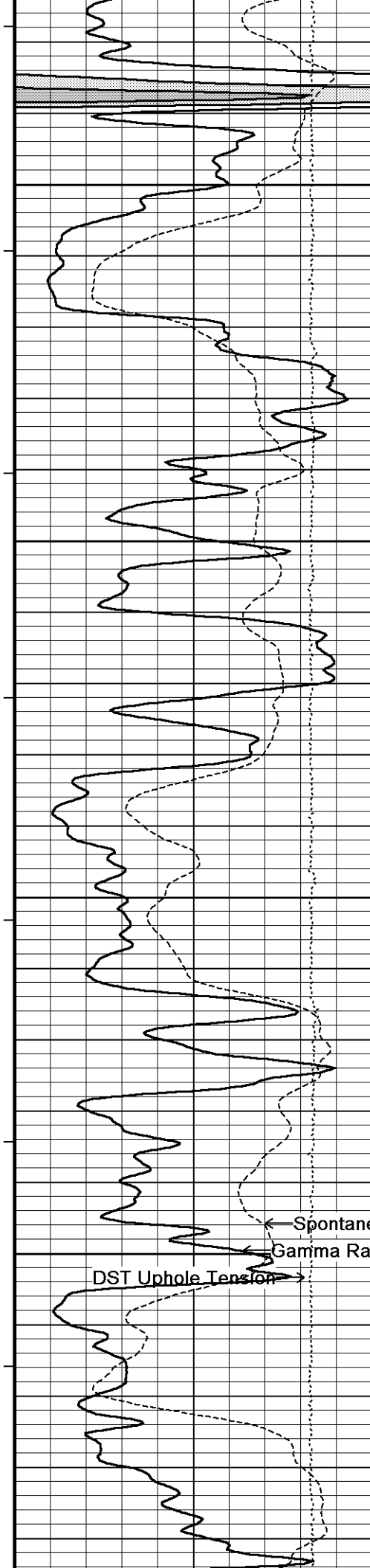
Borehole  
Temp in  
deg F

Replay  
Scale  
1:240



4100





103°

4150

103°

4200

103°

4250

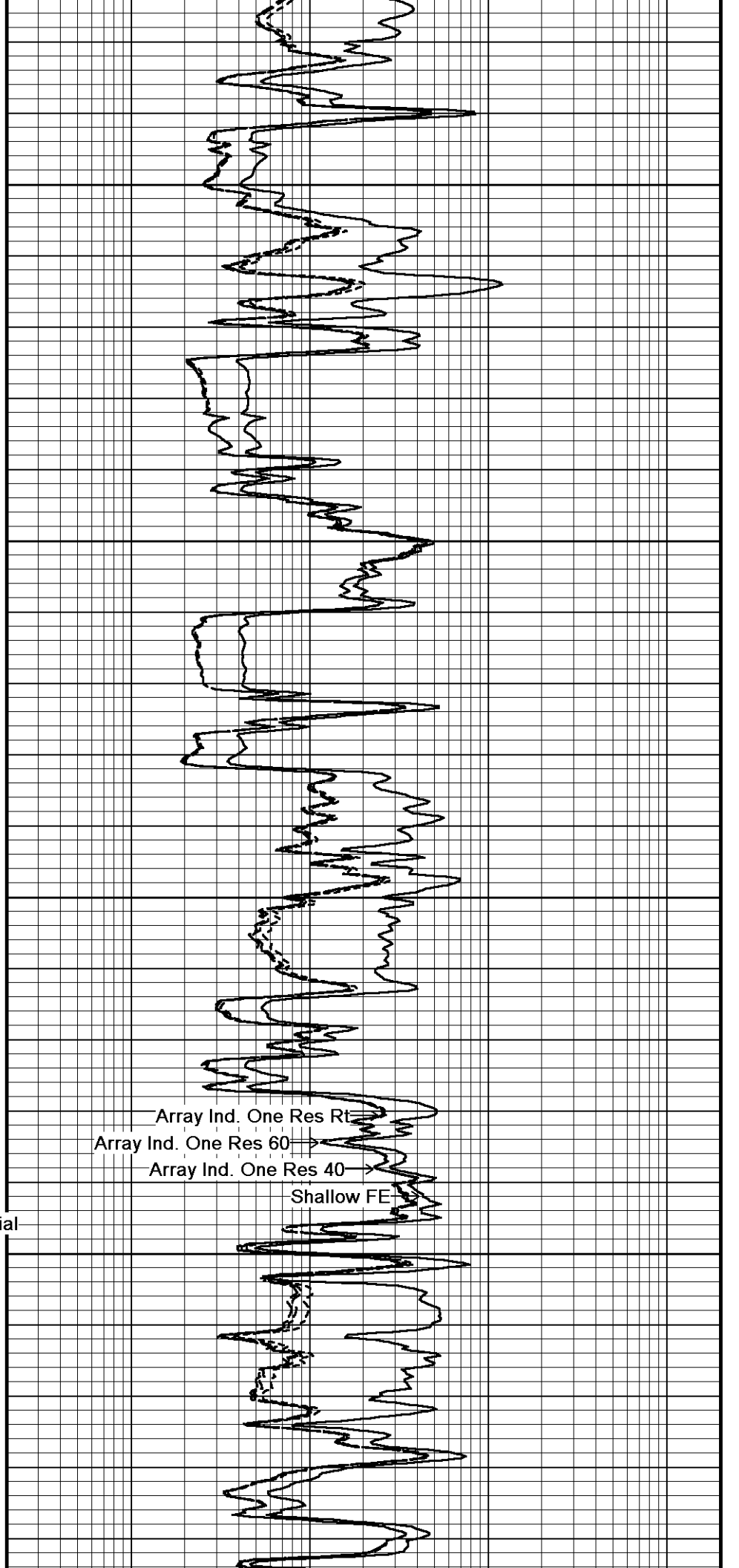
104°

4300

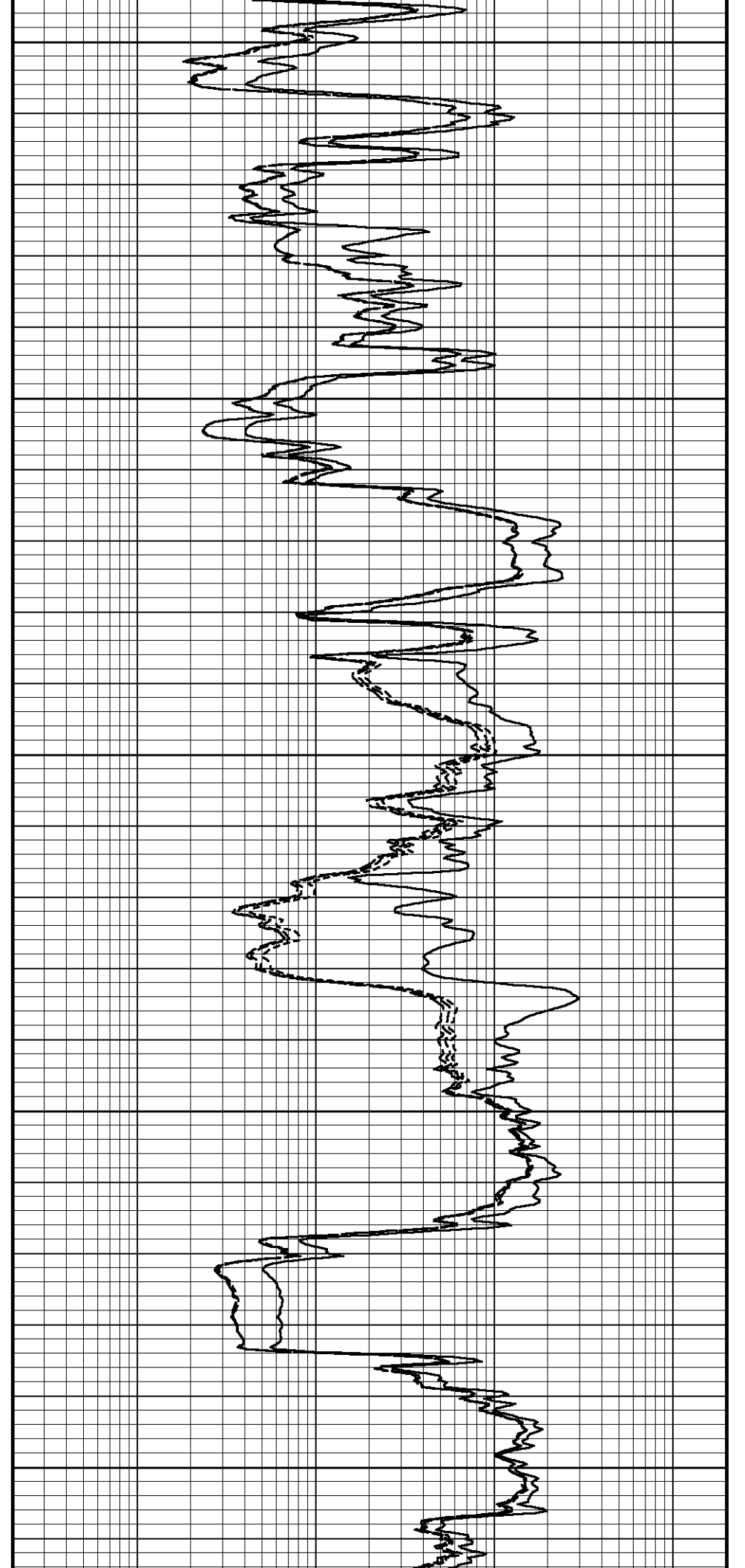
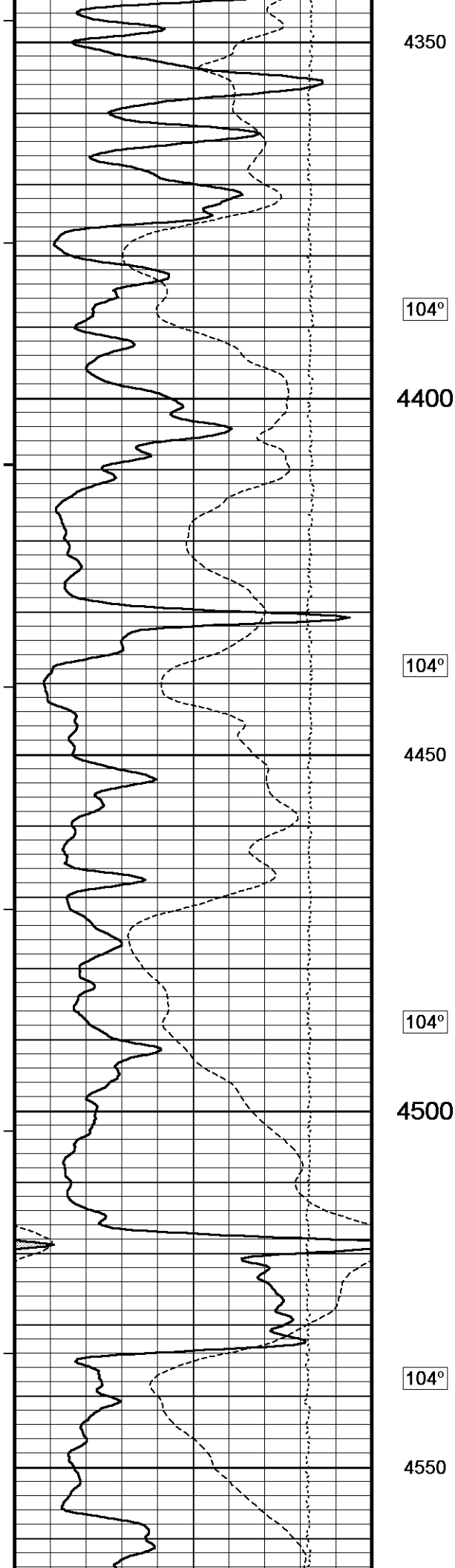
104°

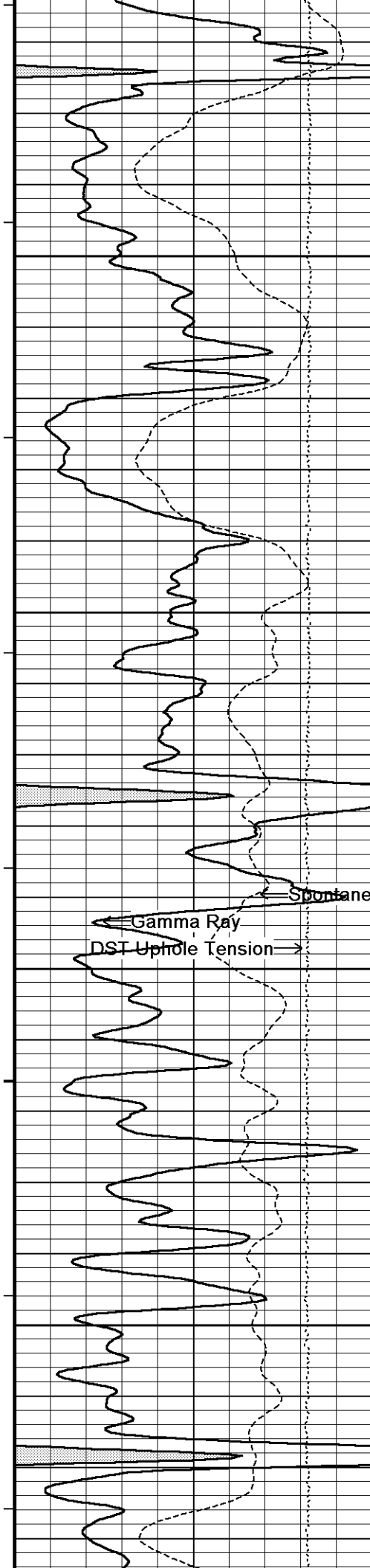
← Spontaneous Potential  
← Gamma Ray

DST Uphole Tension →



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





104°

4600

104°

4650

104°

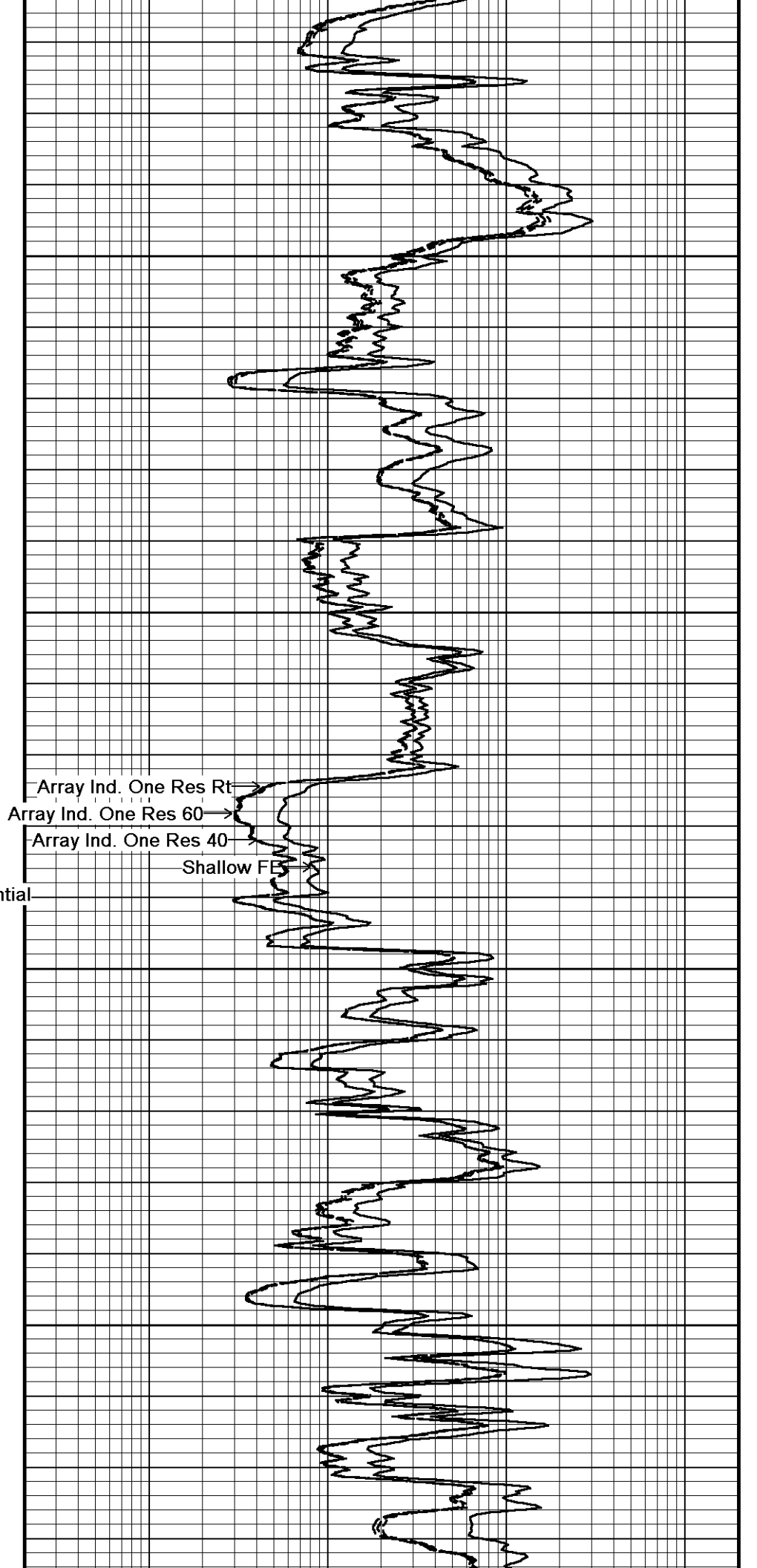
4700

105°

4750

Gamma Ray  
DST Uphole Tension

Spontaneous Potential

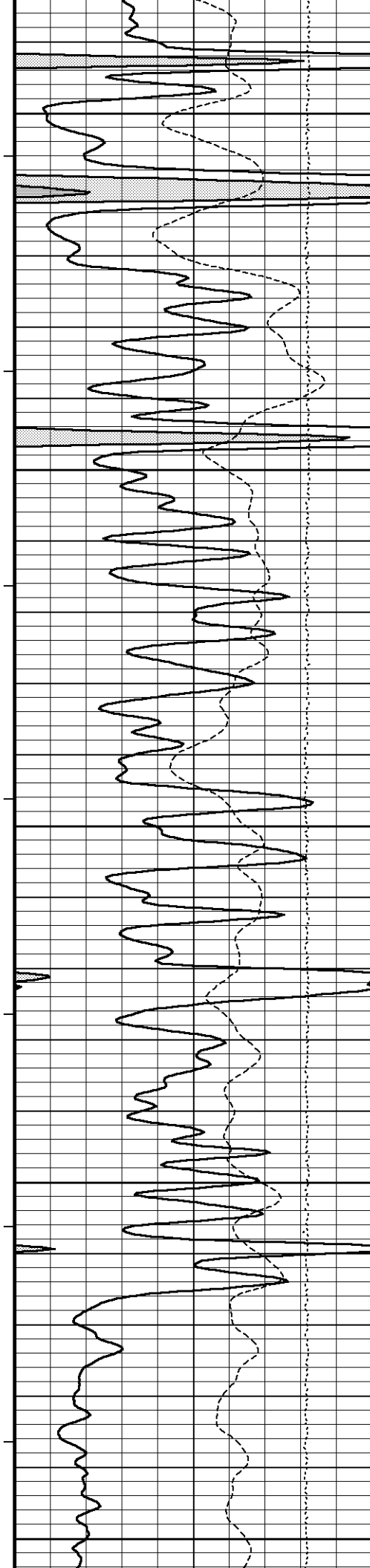


Array Ind. One Res Rt

Array Ind. One Res 60

Array Ind. One Res 40

Shallow FF



105°

4800

105°

4850

105°

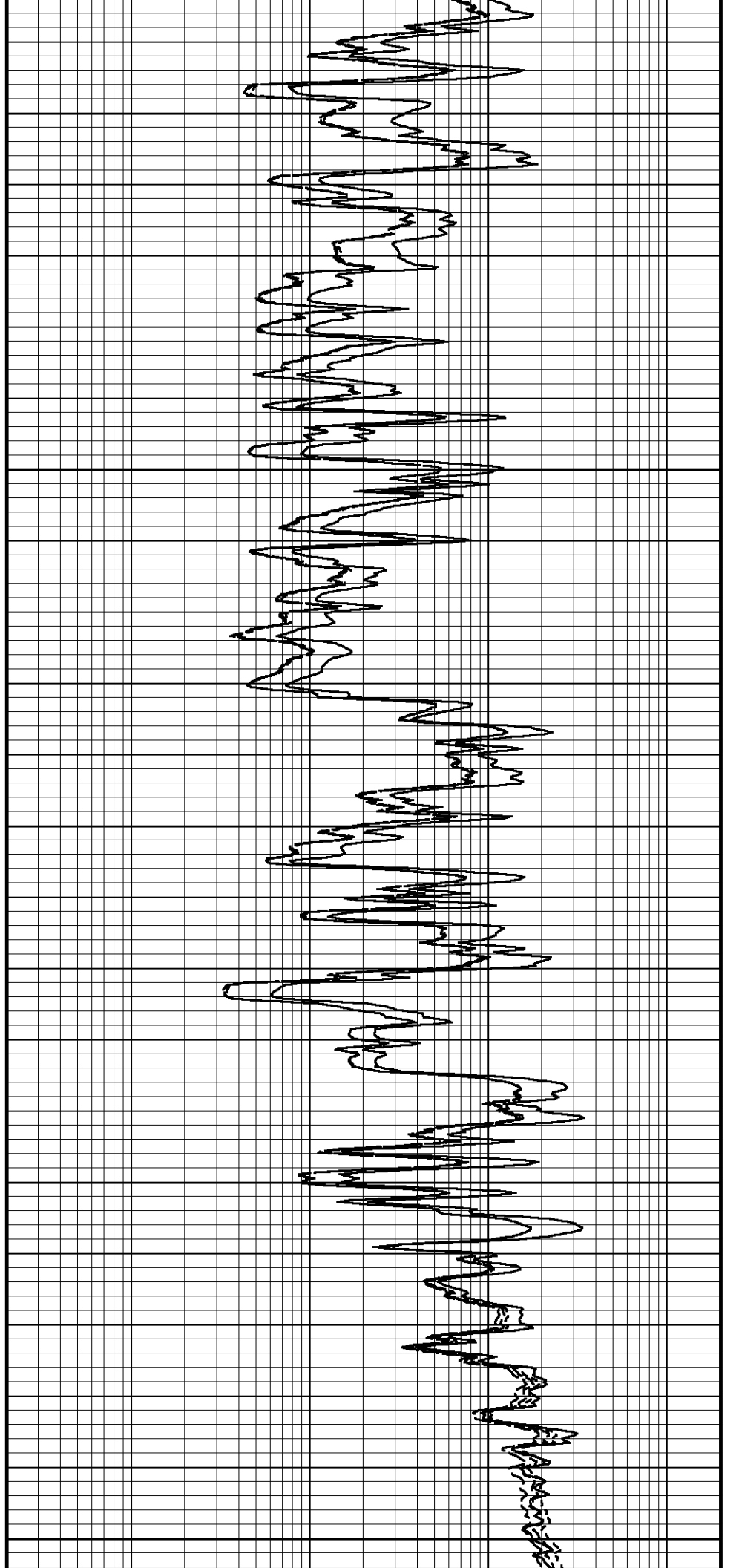
4900

106°

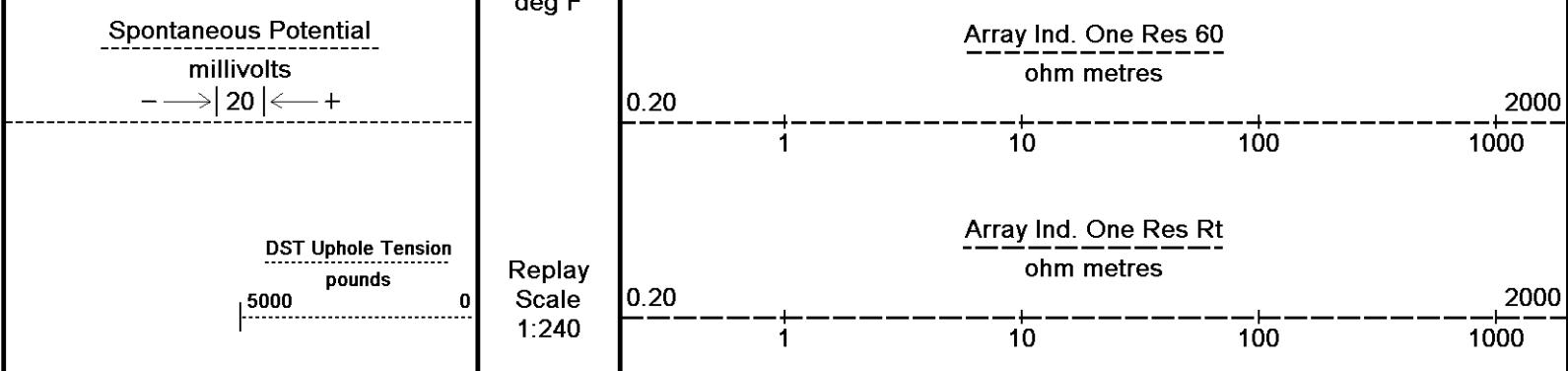
4950

106°

5000







Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 26-NOV-2012 14:42  
 Filename: C:\Minimus 13.04.8492\Data\McCoy ...\McCoy Petroleum Richardson Trust #1-15 'A'\_001.dta  
 Recorded on 26-NOV-2012 11:37  
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

↑ REPEAT SECTION ↑

**BEFORE SURVEY CALIBRATION**

C:\Minimus 13.04.8492\Data\McCoy Petroleum Richardson Trust #1-15 'A'\McCoy Petroleum Richardson Trust #1-15 'A'\_002.dta

General Constants All 000 Last Edited on 26-NOV-2012,08:21

General Parameters		
Mud Resistivity	1.420	ohm-metres
Mud Resistivity Temperature	84.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

High Resolution Temperature Calibration MCG-D.K 442 Field Calibration on 08-NOV-2012,09:48

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 442 Last Edited on 08-NOV-2012,09:48

Pre-filter Length	11
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Gamma Calibration MCG-D.K 442 Field Calibration on 21-NOV-2012 08:45

	Measured	Calibrated (API)
Background	70	47
Calibrator (Gross)	1151	772
Calibrator (Net)	1082	725

Gamma Constants MCG-D.K 442 Last Edited on 26-NOV-2012,07:12

Gamma Calibrator Number	GRC38	
Mud Density	1.07	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

FE Calibration MFE-B.J 353 Base Calibration on 08-NOV-2012 09:26  
Field Check on 21-NOV-2012 08:29

Base Calibration	Measured	Calibrated (ohm m)
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	Measured	Calibrated (mm-m)
Reference 1	0.0	0.0
Reference 2	964.6	126.8
Base Check		281.0
Field Check		281.0

**FE Constants MFE-B.J 353**

Last Edited on 26-NOV-2012,07:11

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	

**Induction Calibration MAI-A.A 167**

Base Calibration on 14-NOV-2012,09:21

Field Check on 21-NOV-2012 08:27

Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.3	474.2	9.3	966.2	
2	6.3	388.4	7.6	821.4	
3	3.3	259.4	5.2	566.0	
4	1.9	133.0	2.6	279.2	
Array Temperature	76.8		Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			12.2	3839.1	
2			29.3	3478.9	
3			28.9	3055.6	
4			19.7	2083.6	
Deep			18.5	2051.1	
Medium			42.1	3994.7	
Shallow			42.5	5056.1	
Array Temperature			62.5	Deg F	

**Induction Constants MAI-A.A 167**

Last Edited on 26-NOV-2012,07:11

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	

### DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\McCoy Petroleum Richardson Trust #1-15 'A'\McCoy Petroleum Richardson Trust #1-15 'A'\_002.dta

Compact Comms Gamma  
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log  
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

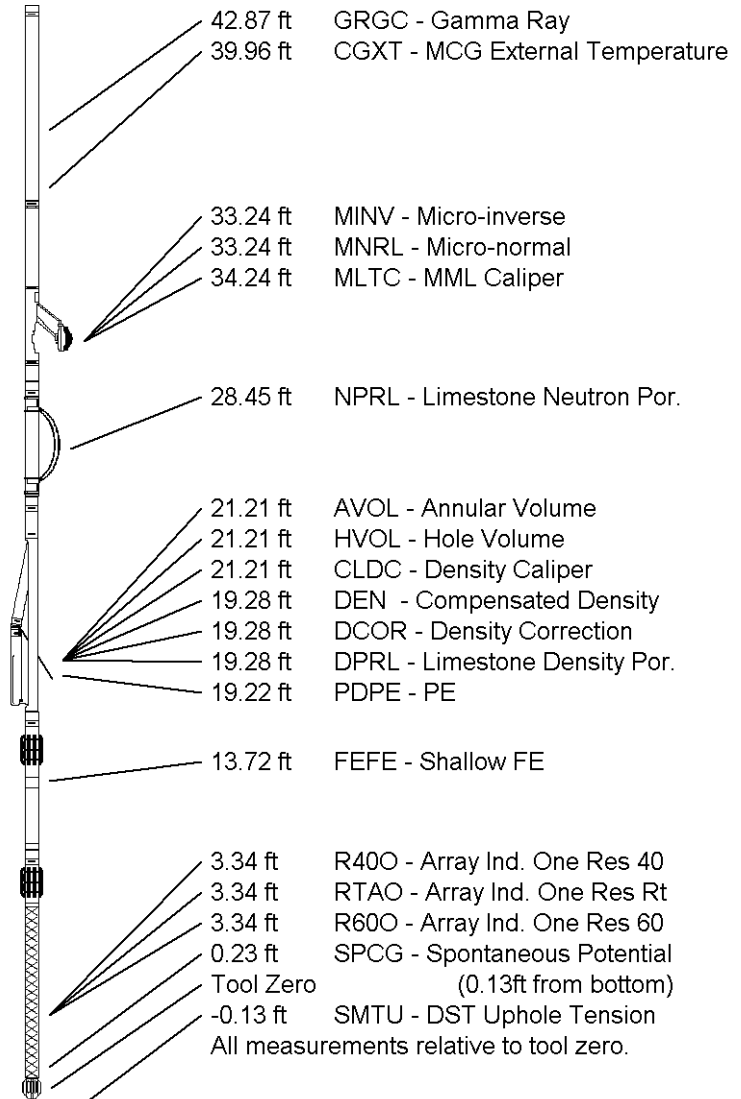
Compact Neutron  
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper  
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric  
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction  
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 48.16 ft Weight: 383.6 lb



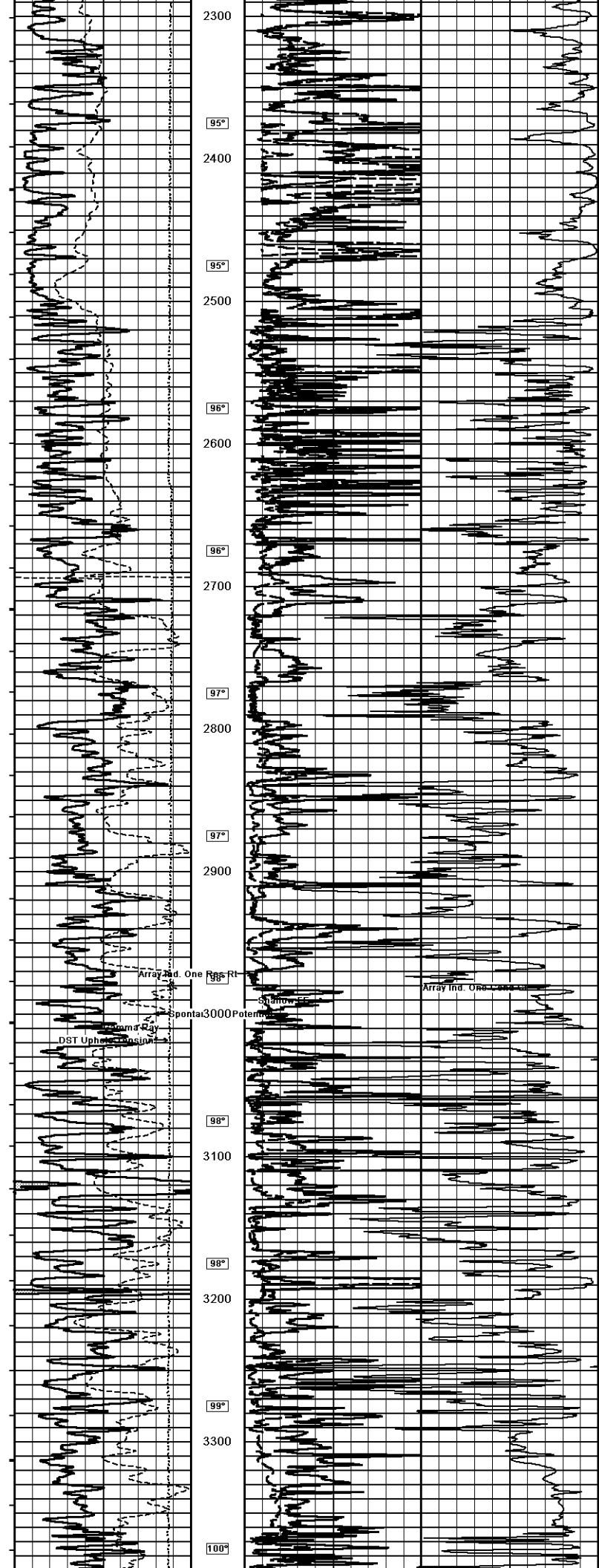
COMPANY	MCCOY PETROLEUM CORP.
WELL	RICHARDSON TRUST #1-15 'A'
FIELD	WILDCAT
PROVINCE/COUNTY	GRAY
COUNTRY/STATE	U.S.A. / KANSAS

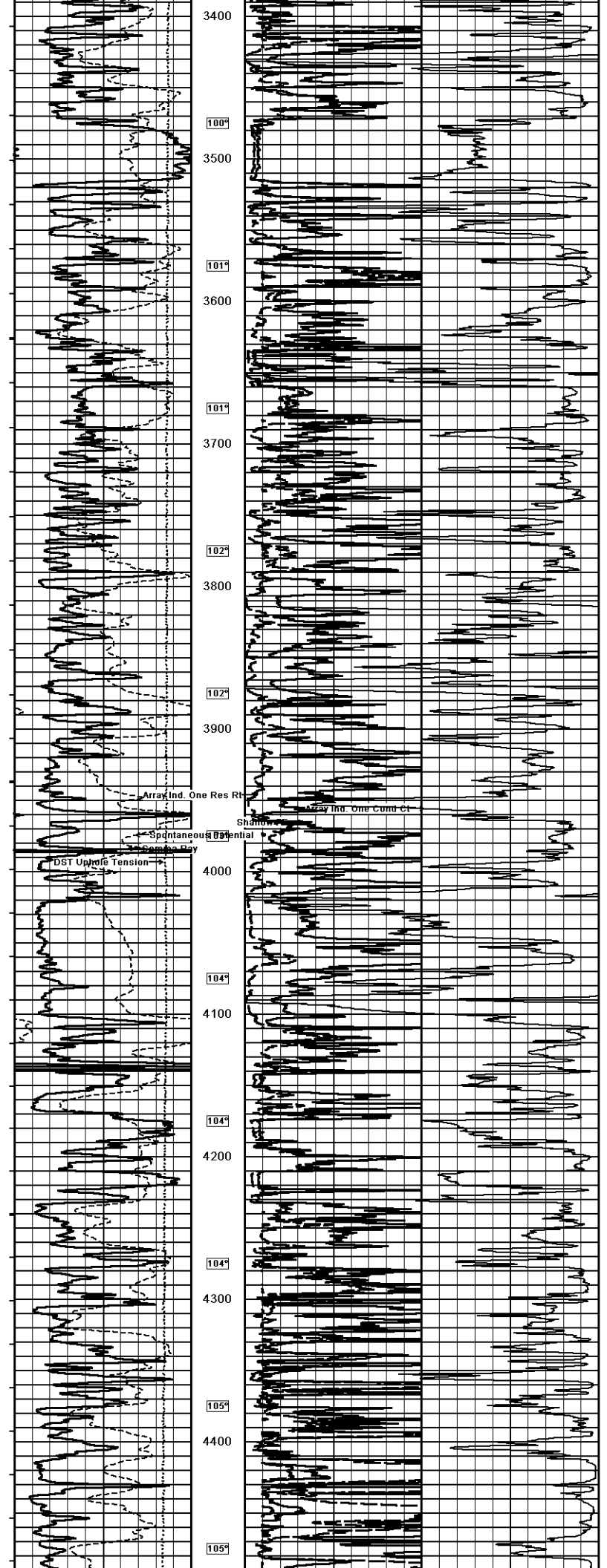
Elevation Kelly Bushing	2754.00	feet	First Reading	5148.00	feet
Elevation Drill Floor	2752.00	feet	Depth Driller	5150.00	feet
Elevation Ground Level	2741.00	feet	Depth Logger	5151.00	feet

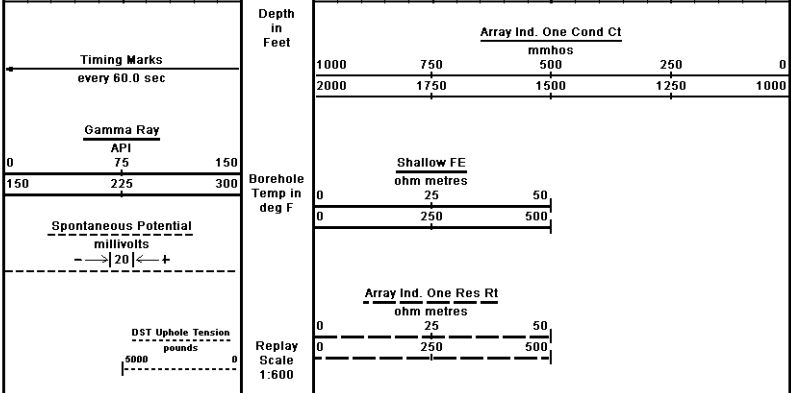
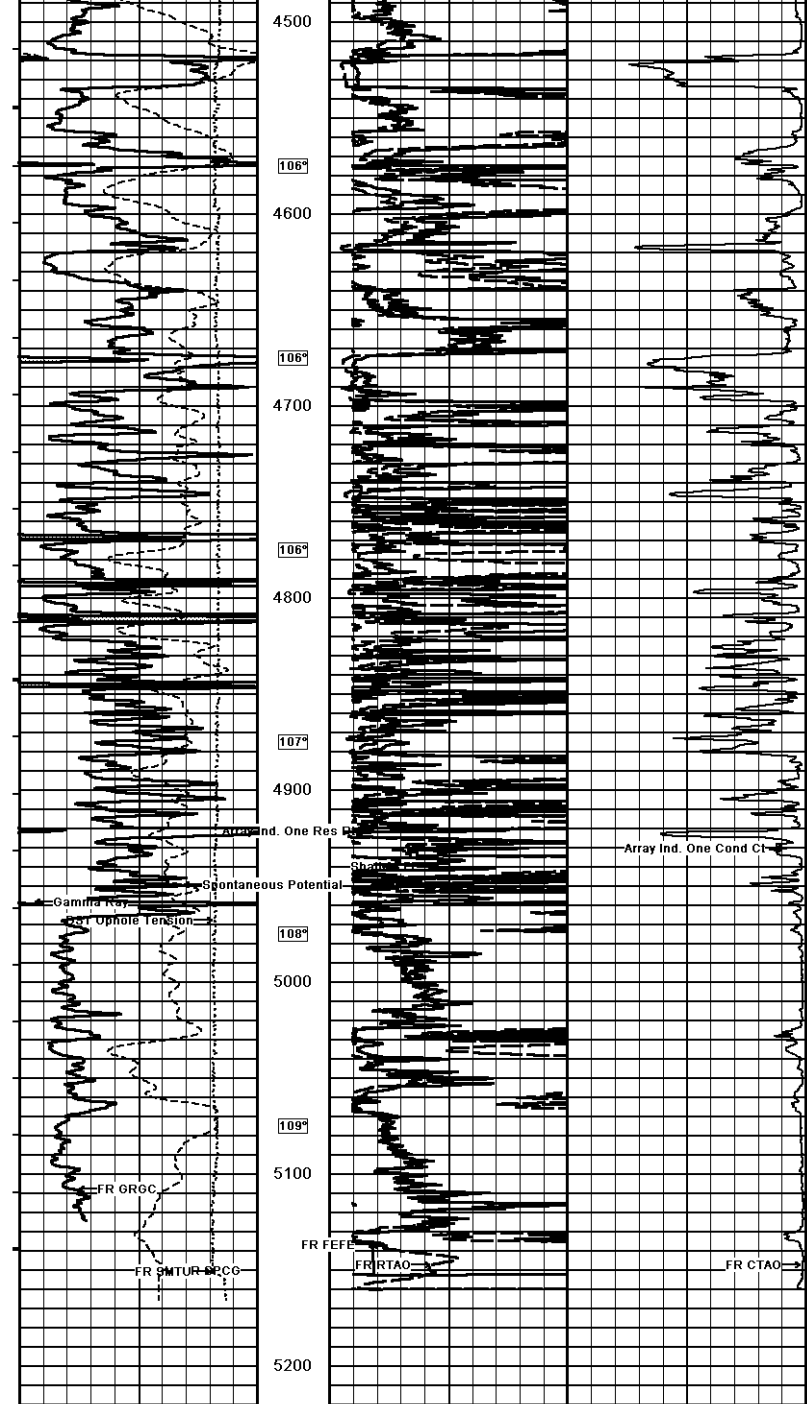


ARRAY INDUCTION  
SHALLOW FOCUSED









Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 26-NOV-2012 14:42  
 Filename: C:\Minimus 13.04.8492\Data\McCoy Petr. \McCoy Petroleum Richardson Trust #1-15 'A'\_002.dta  
 Recorded on 26-NOV-2012 12:29  
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

1 INCH MAIN

COMPANY		MCCOY PETROLEUM CORP.			
WELL		RICHARDSON TRUST #1-15 'A'			
FIELD		WILDCAT			
PROVINCE/COUNTY		GRAY			
COUNTRY/STATE		U.S.A. / KANSAS			
Elevation Kelly Bushing	2754.00	feet	First Reading	5148.00	feet
Elevation Drill Floor	2752.00	feet	Depth Driller	5150.00	feet
Elevation Ground Level	2741.00	feet	Depth Logger	5151.00	feet

ARRAY INDUCTION

