



Weatherford

**ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG**

COMPANY	O'BRIEN ENERGY RESOURCES CORP.		
WELL	PREEDY #2-8		
FIELD	ANGELL SOUTH		
PROVINCE/COUNTY	MEADE		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	420' FNL & 335' FEL		
SEC 8	TWP 33S	RGE 29W	Other Services
Latitude			MPD/MDN
Longitude			MML
API Number	15-119-21415		
Permanent Datum GL, Elevation	2657 feet		
Log Measured From KB,	13.00 feet above Permanent Datum		
Drilling Measured From KB			
Date	18-APR-2018		
Run Number	ONE		
Service Order	4558-211257073		
Depth Driller	6350.00 feet		
Depth Logger	6350.00 feet		
First Reading	6347.00 feet		
Last Reading	1532.00 feet		
Casing Driller	1533.00 feet		
Casing Logger	1532.00 feet		
Bit Size	7.875 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.20 lb/USg	53.00 CP	
PH / Fluid Loss	10.50	6.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.96 @ 75.0	ohm-m	
Rmf @ Measured Temp	0.77 @ 75.0	ohm-m	
Rmc @ Measured Temp	1.15 @ 75.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.56 @129.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	129.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	ADAM SILL		
Witnessed By	DANA GREATHOUSE		
			PETER DEBENHAM

Elevations:	feet
KB	2670.00
DF	2668.00
GL	2657.00

BOREHOLE RECORD			Last Edited: 18-APR-2018 16:47
Bit Size inches	Depth From feet	Depth To feet	
7.875	1533.00	6350.00	
CASING RECORD			
Type	Size inches	Depth From feet	Shoe Depth feet
SURFACE	8.625	0.00	1533.00
			Weight pounds/ft
			24.00

REMARKS

- SOFTWARE ISSUE: WLS 18.01.5248.

- RUN ONE: MCG, MML, MDN, MPD, MFE, MAI RUN 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: 1836 CU.FT.

- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 4000 FEET: 534 CU.FT.

- RIG: DIJKE #9

RIS: CORE #0:

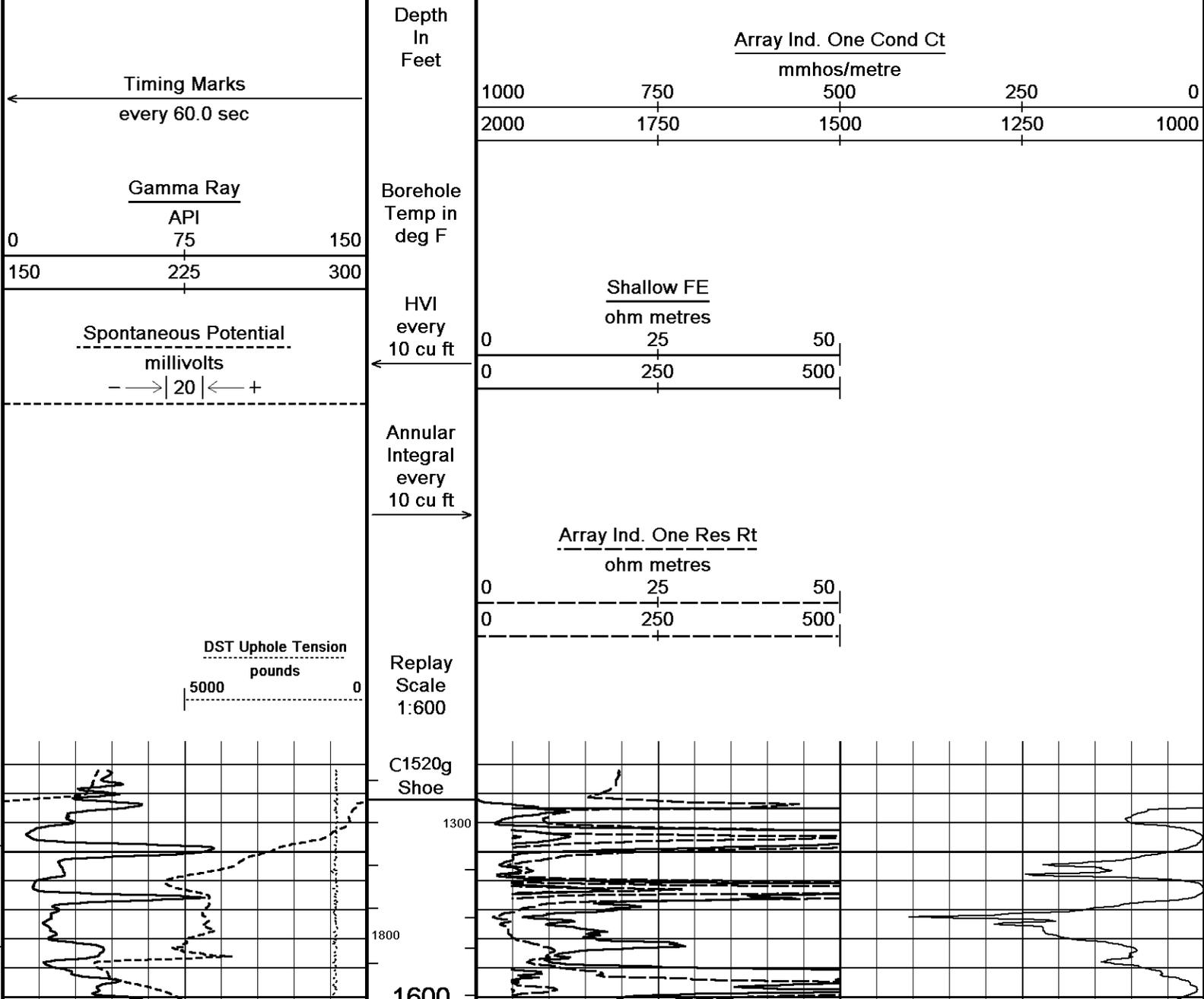
- ENGINEER: A. SILL.

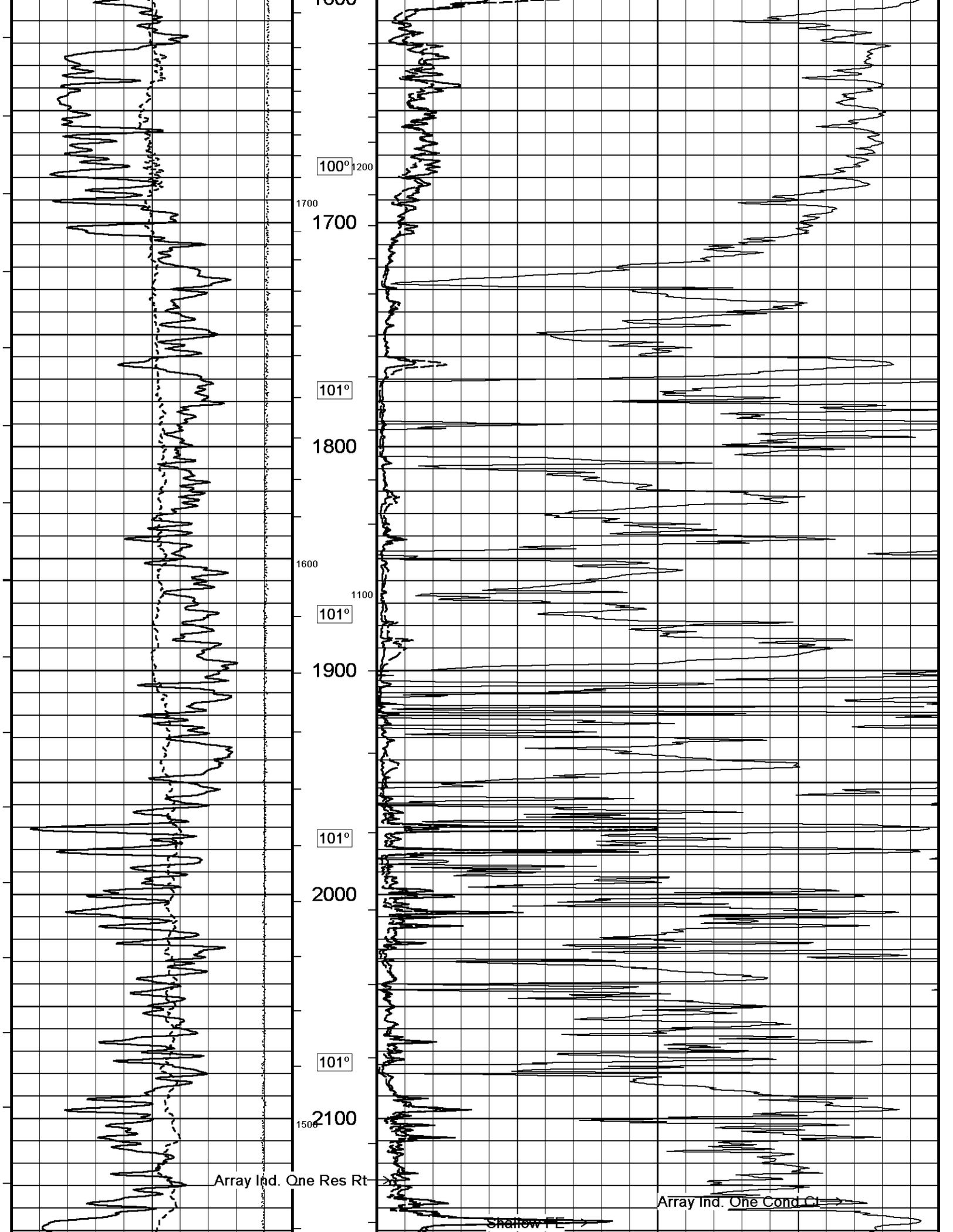
- OPERATOR: B. TOVAR.

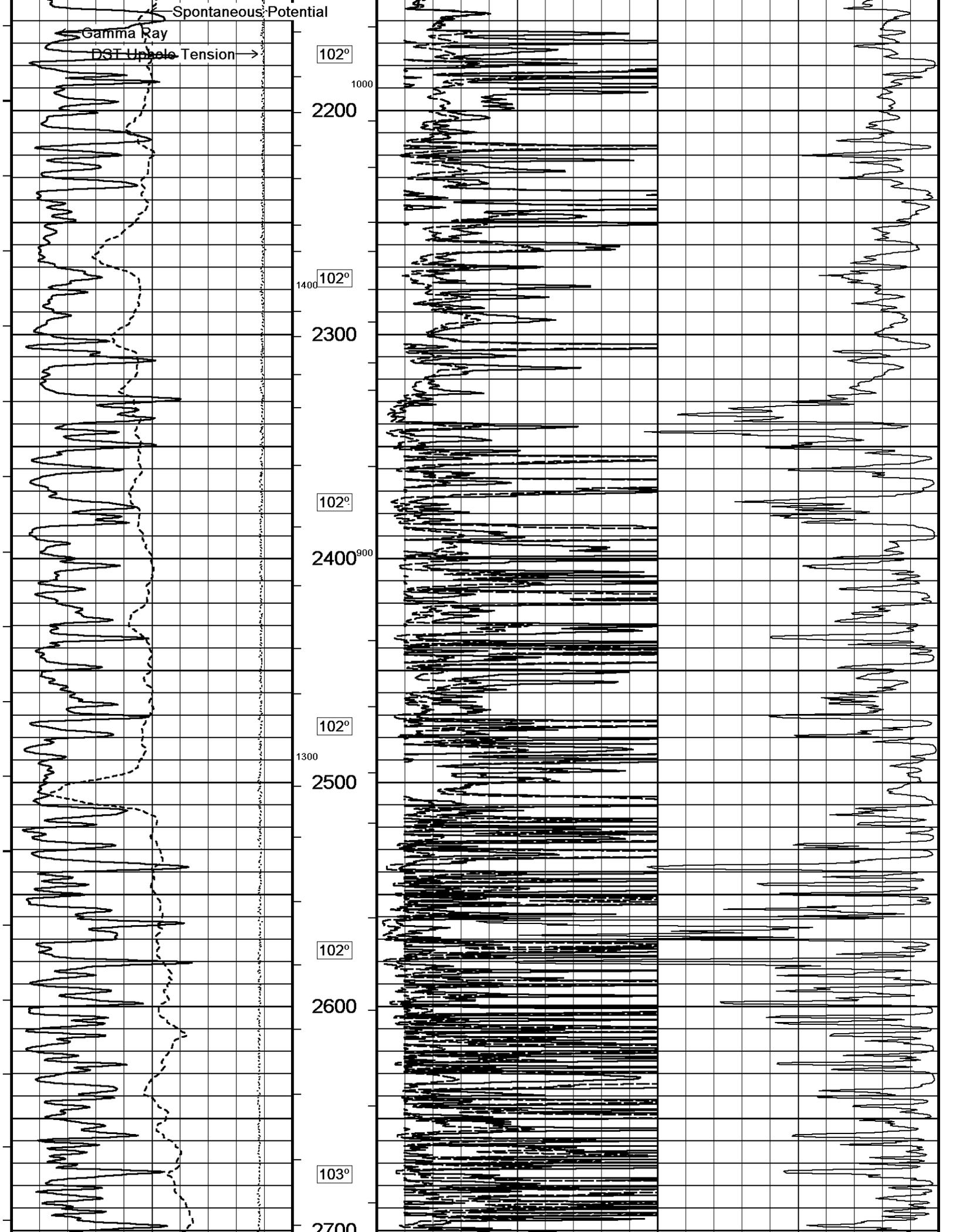
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will 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.

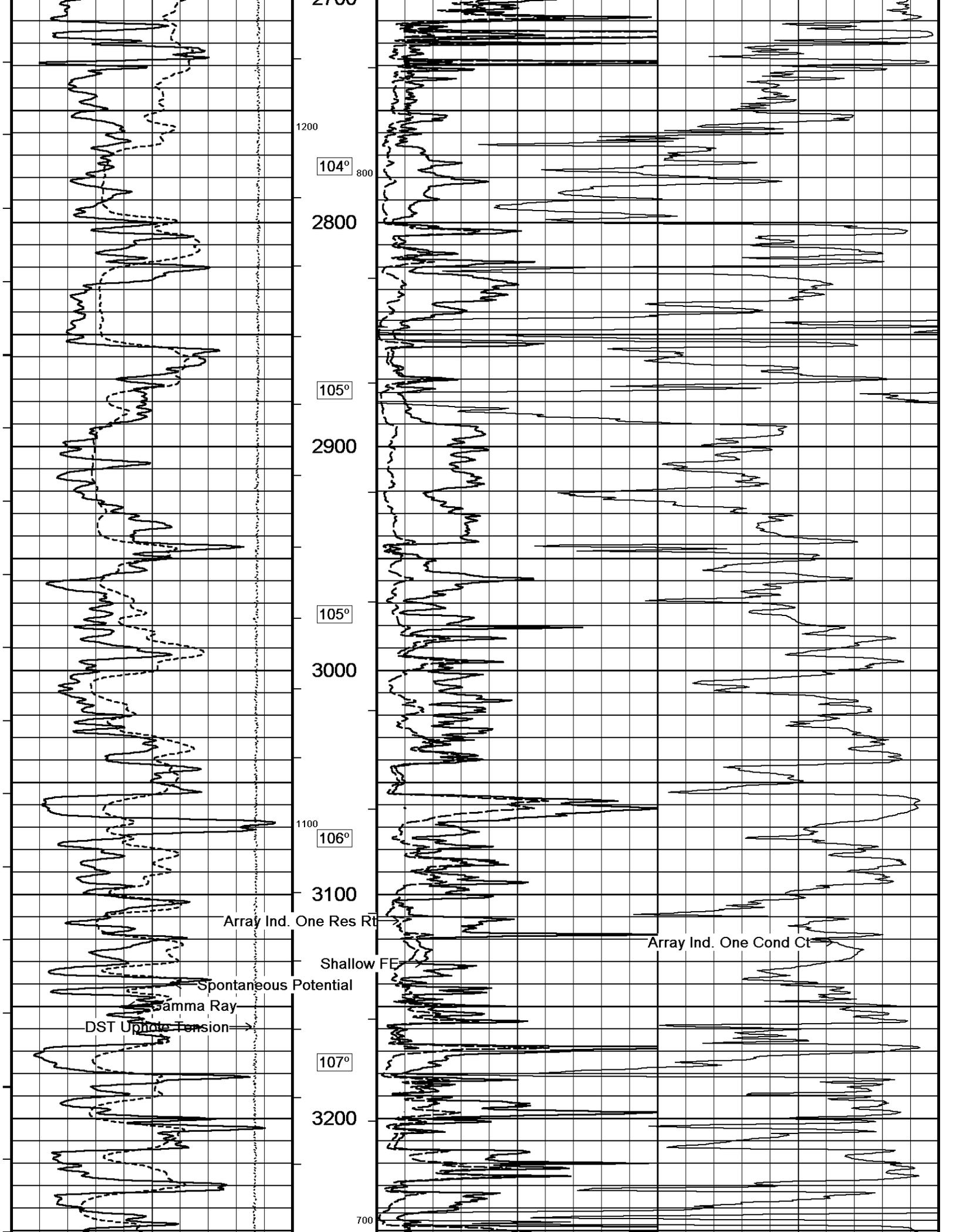
2 INCH MAIN

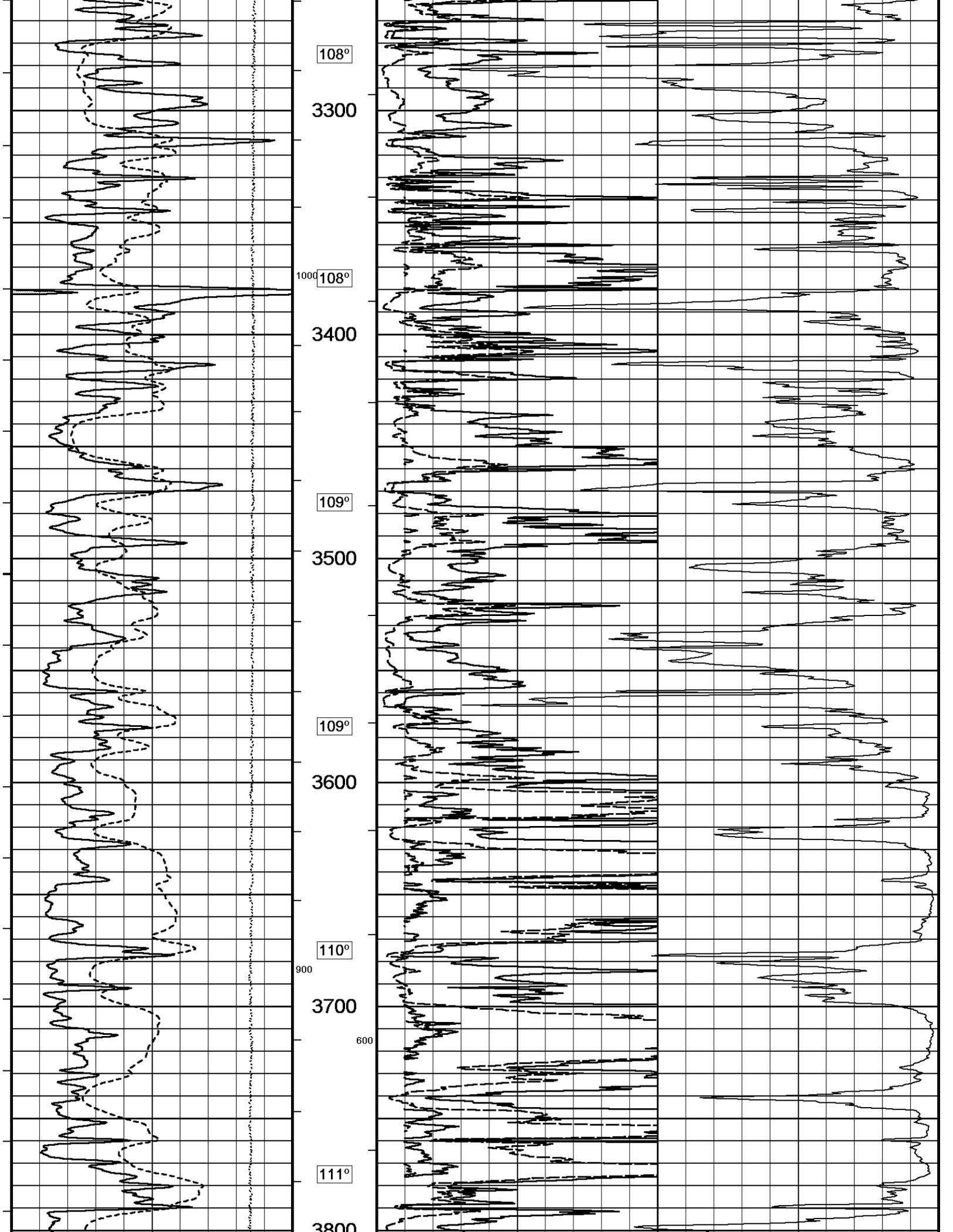
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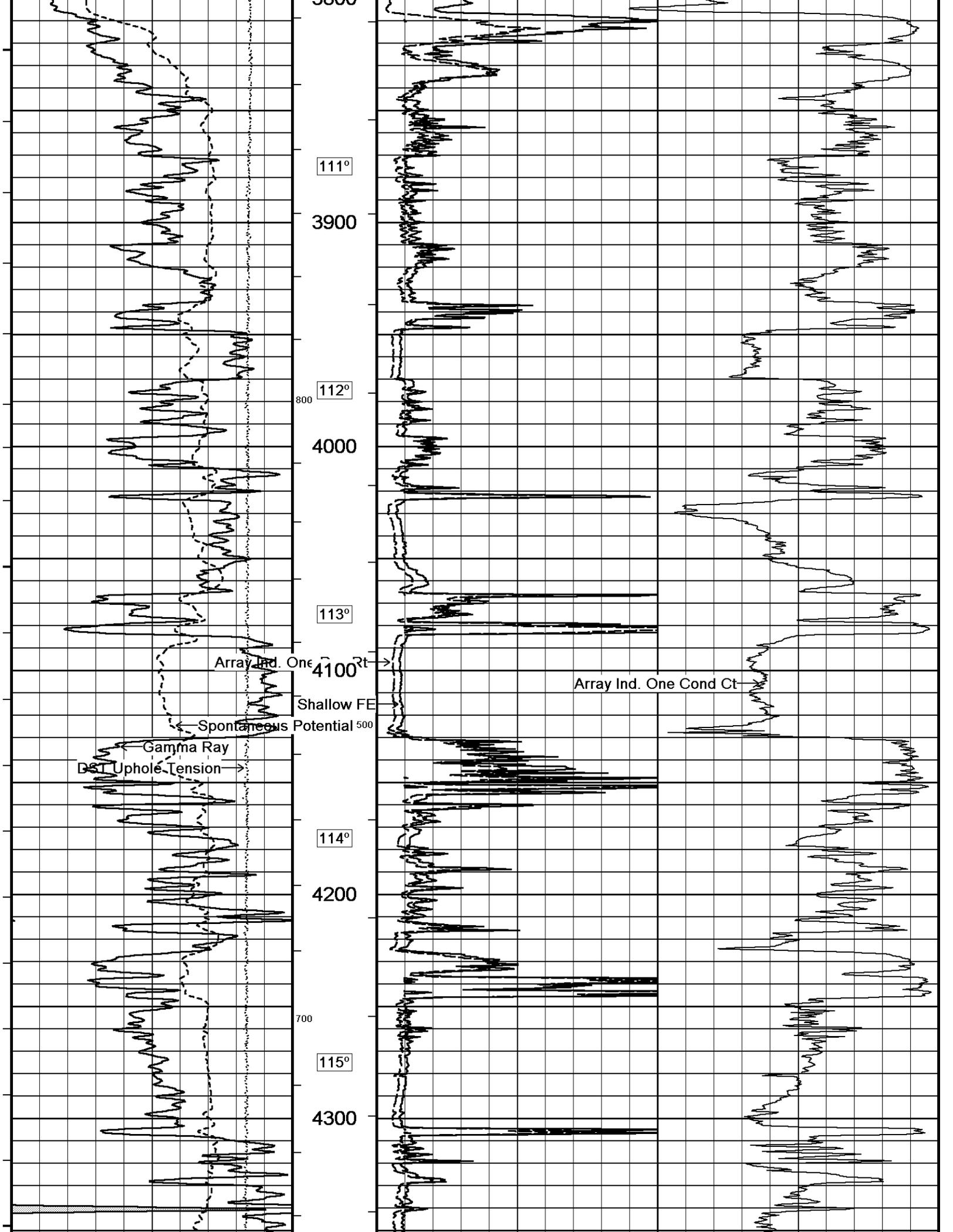


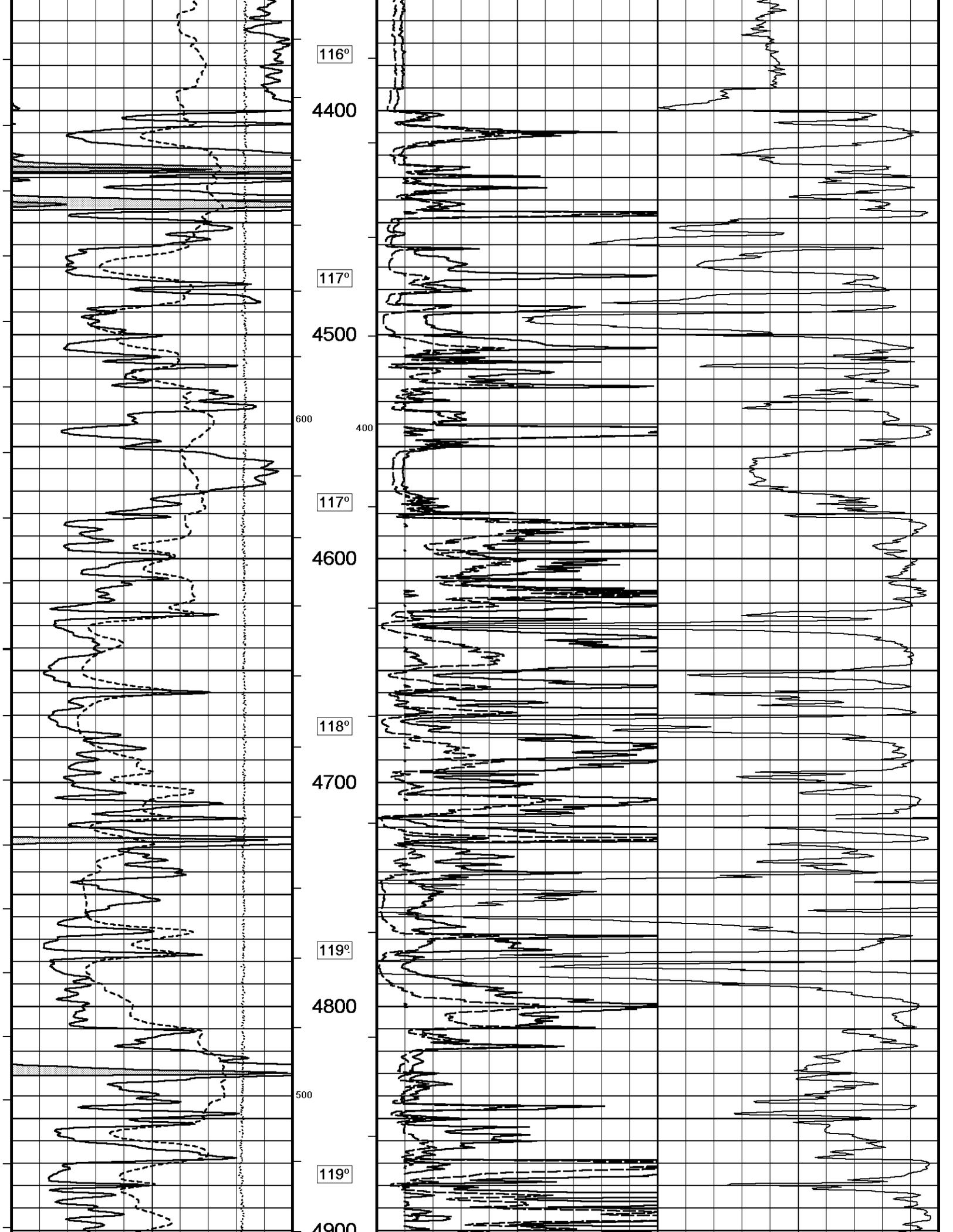


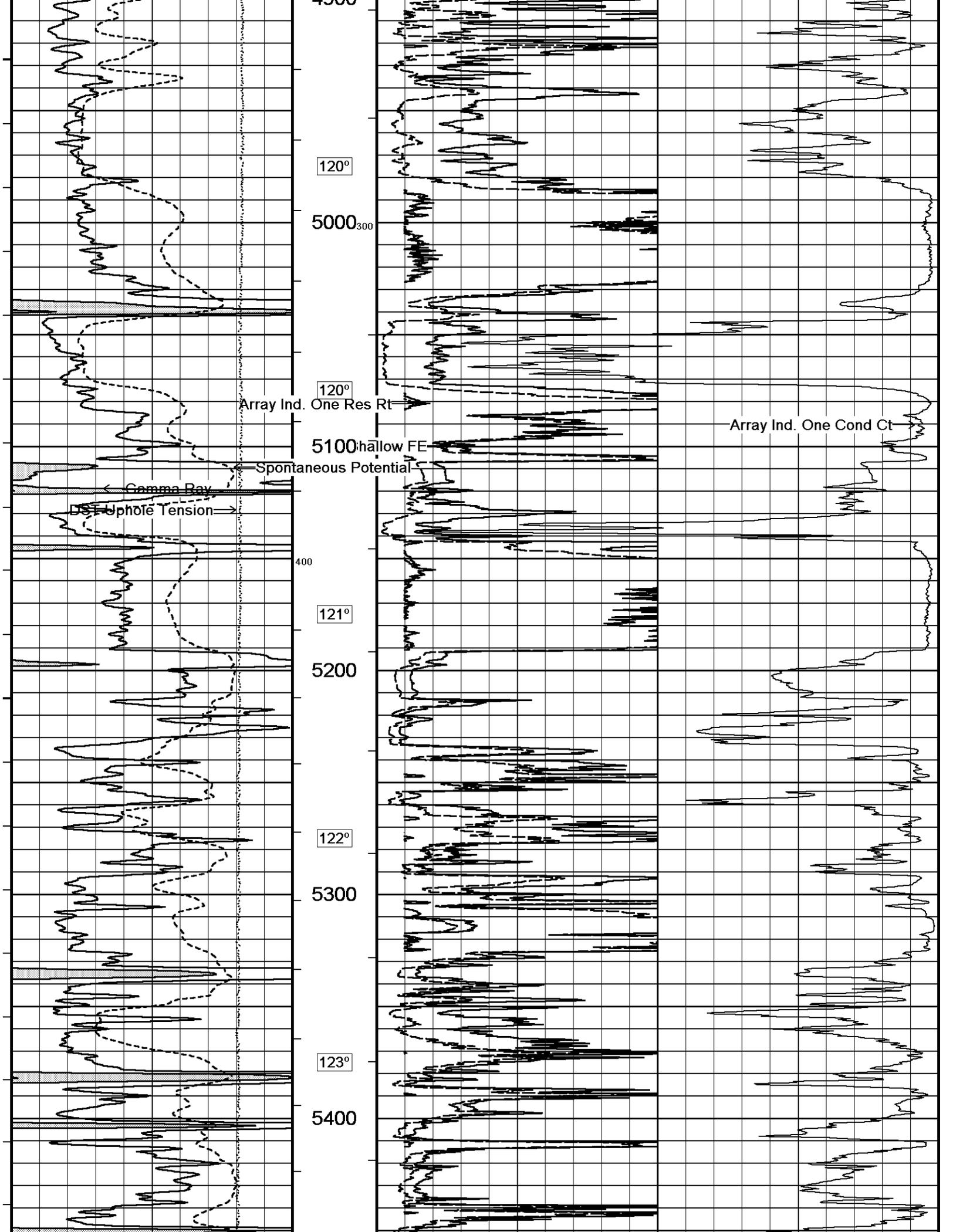


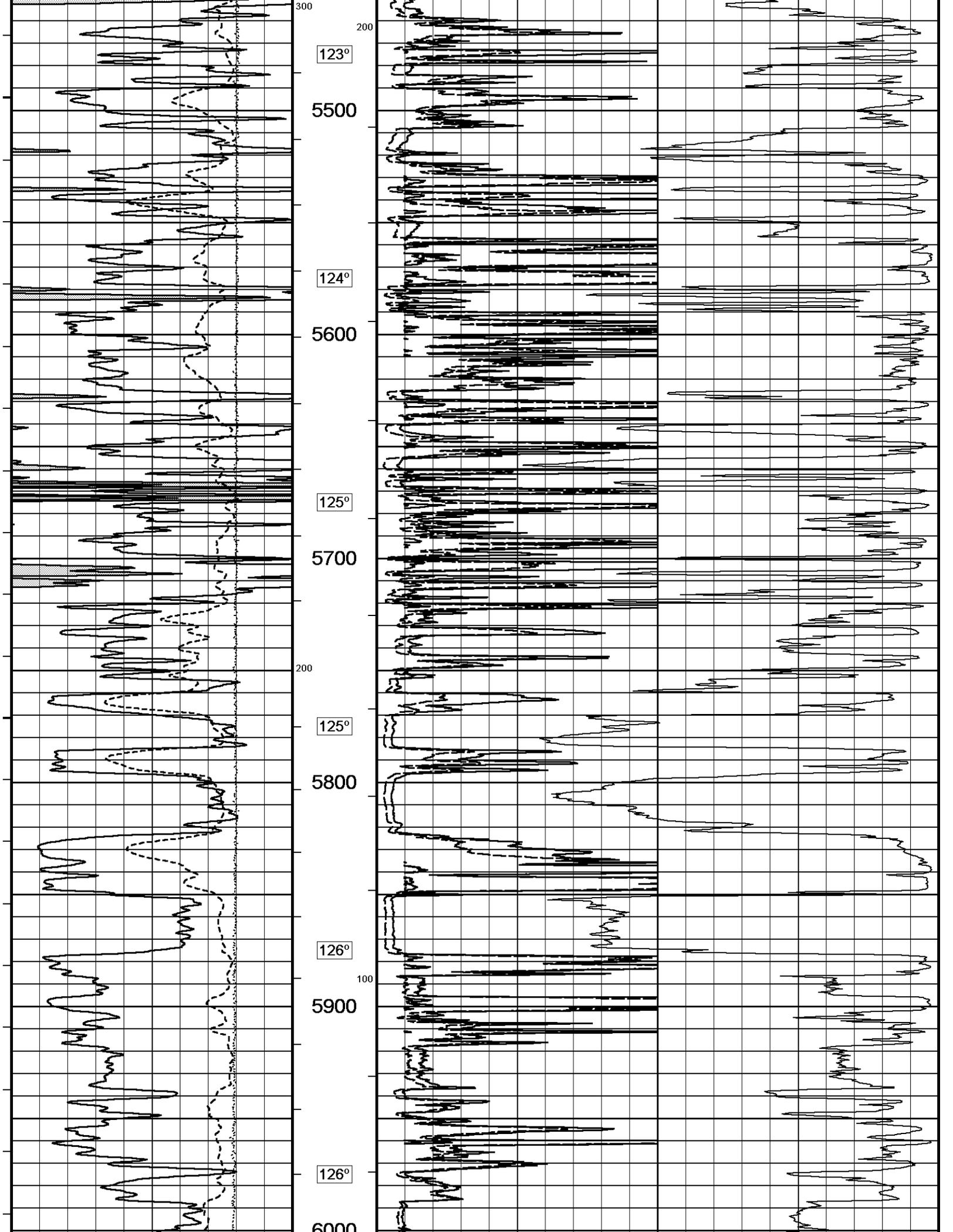


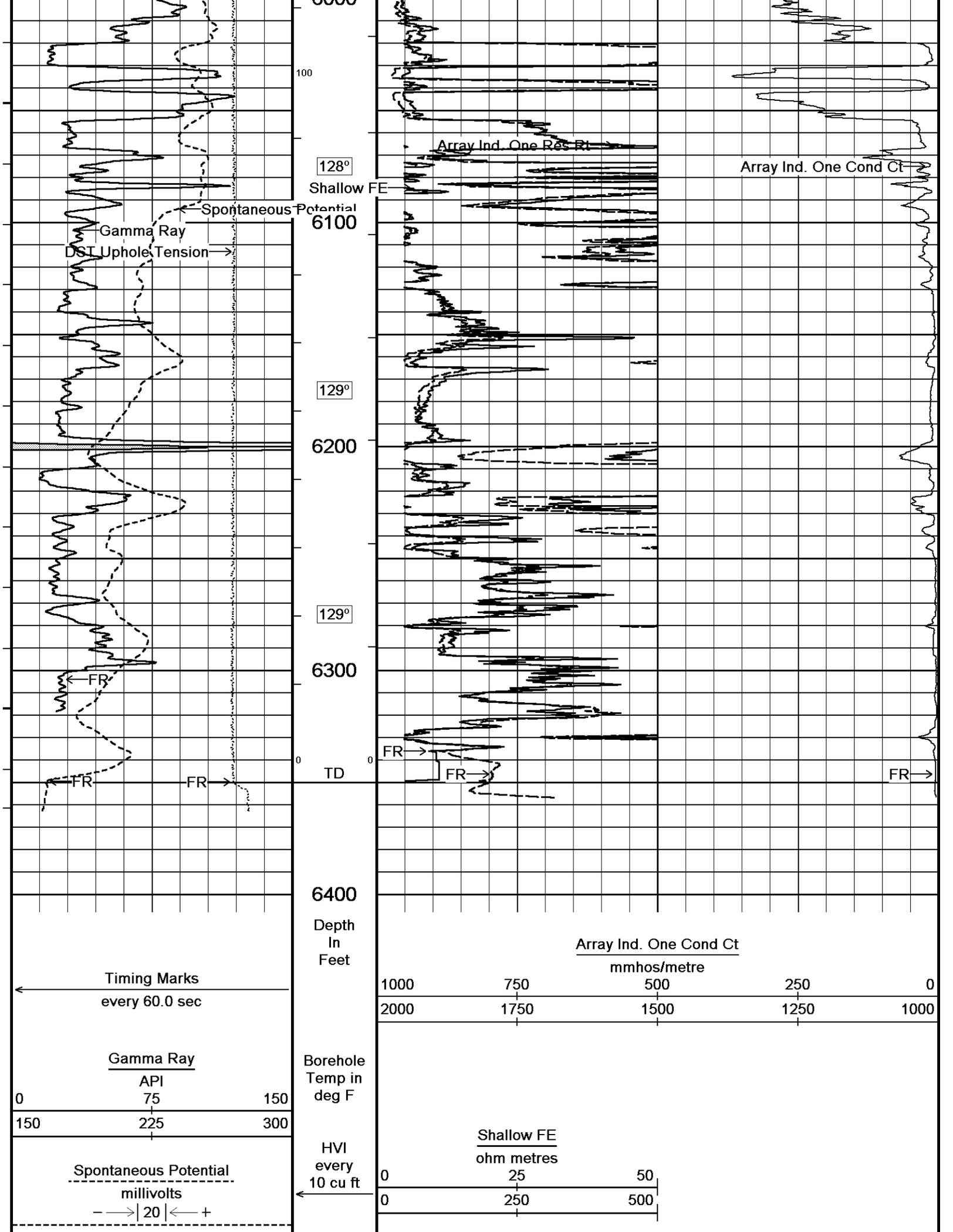












Spontaneous Potential
 Gamma Ray
 DST Uphole Tension

Array Ind. One Res Rt

Array Ind. One Cond Ct

128°

129°

129°

TD

6400

Depth In Feet

Array Ind. One Cond Ct

mmhos/metre

1000 750 500 250 0
 2000 1750 1500 1250 1000

Borehole Temp in deg F

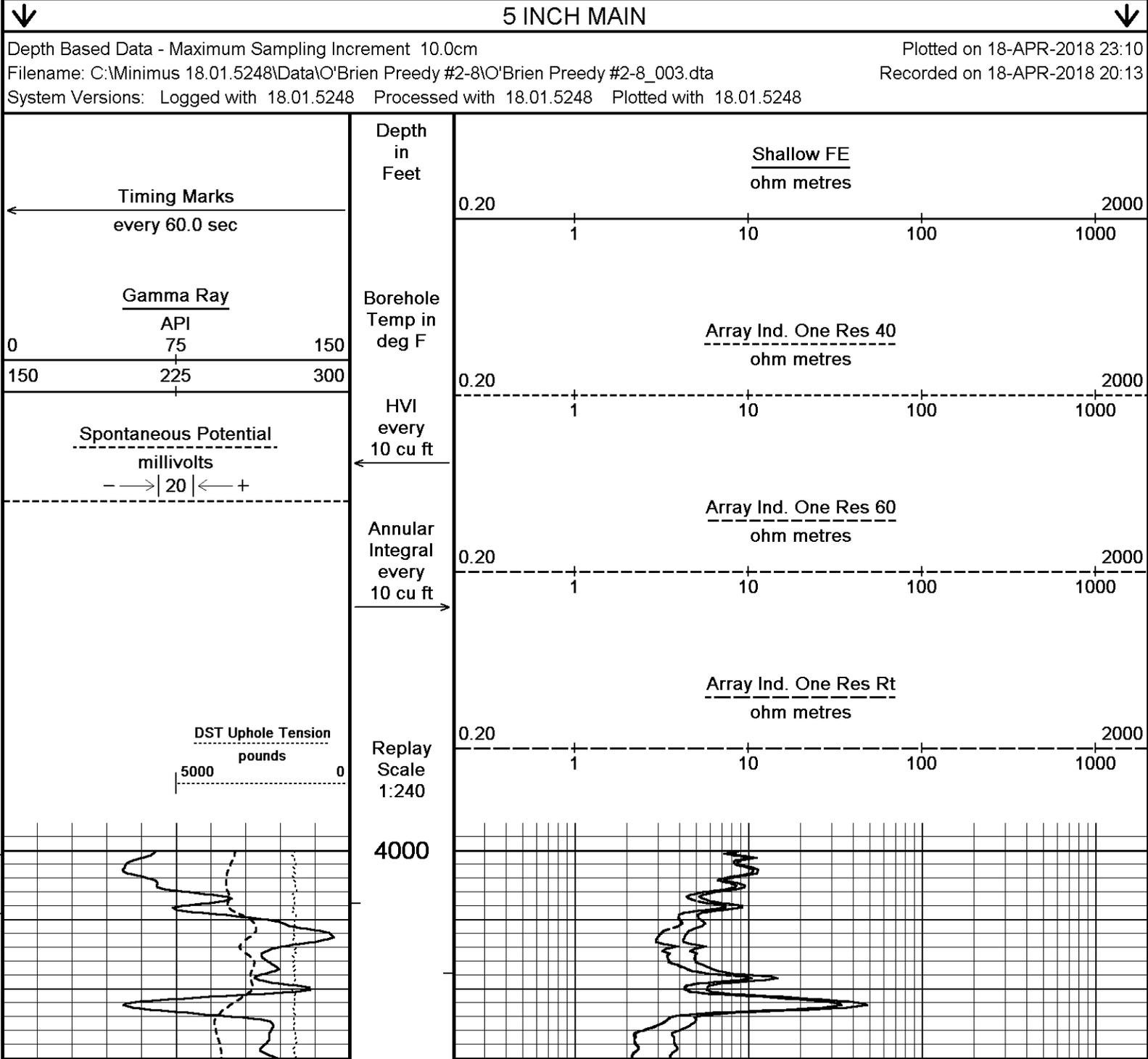
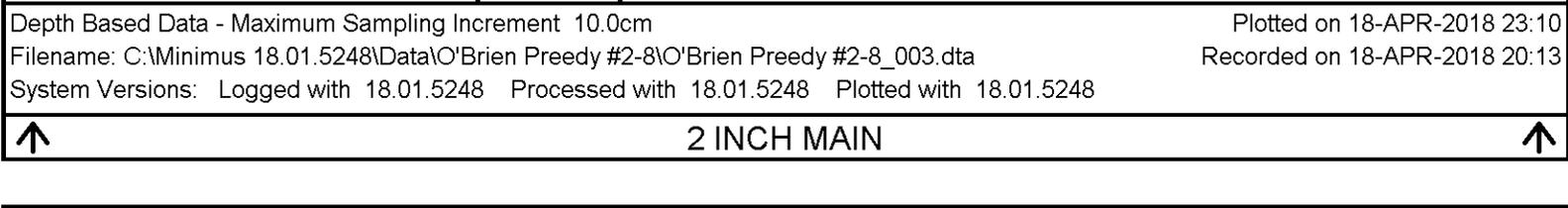
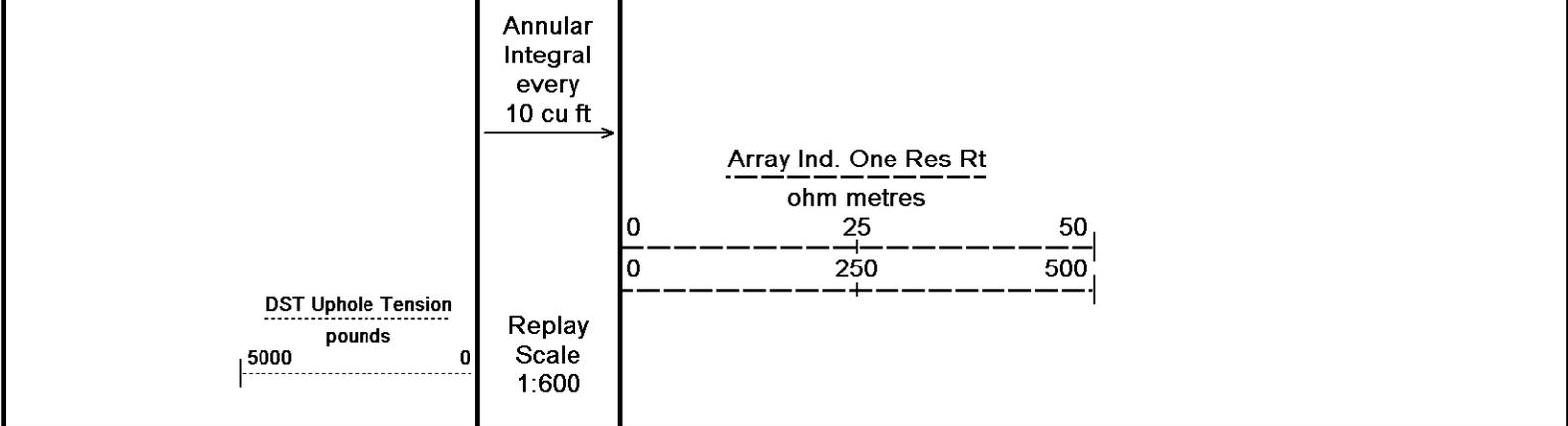
0 75 150
 150 225 300

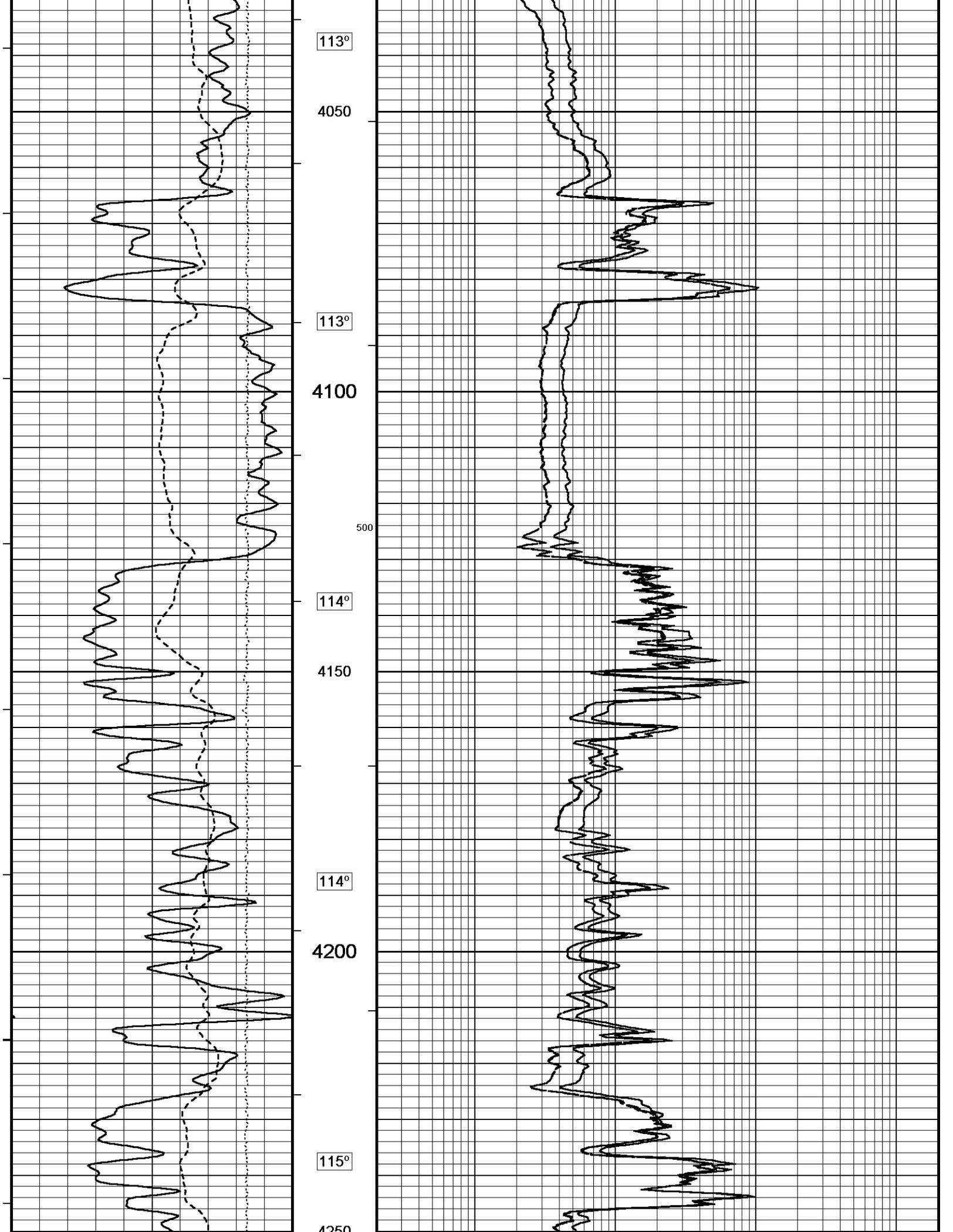
Shallow FE
ohm metres

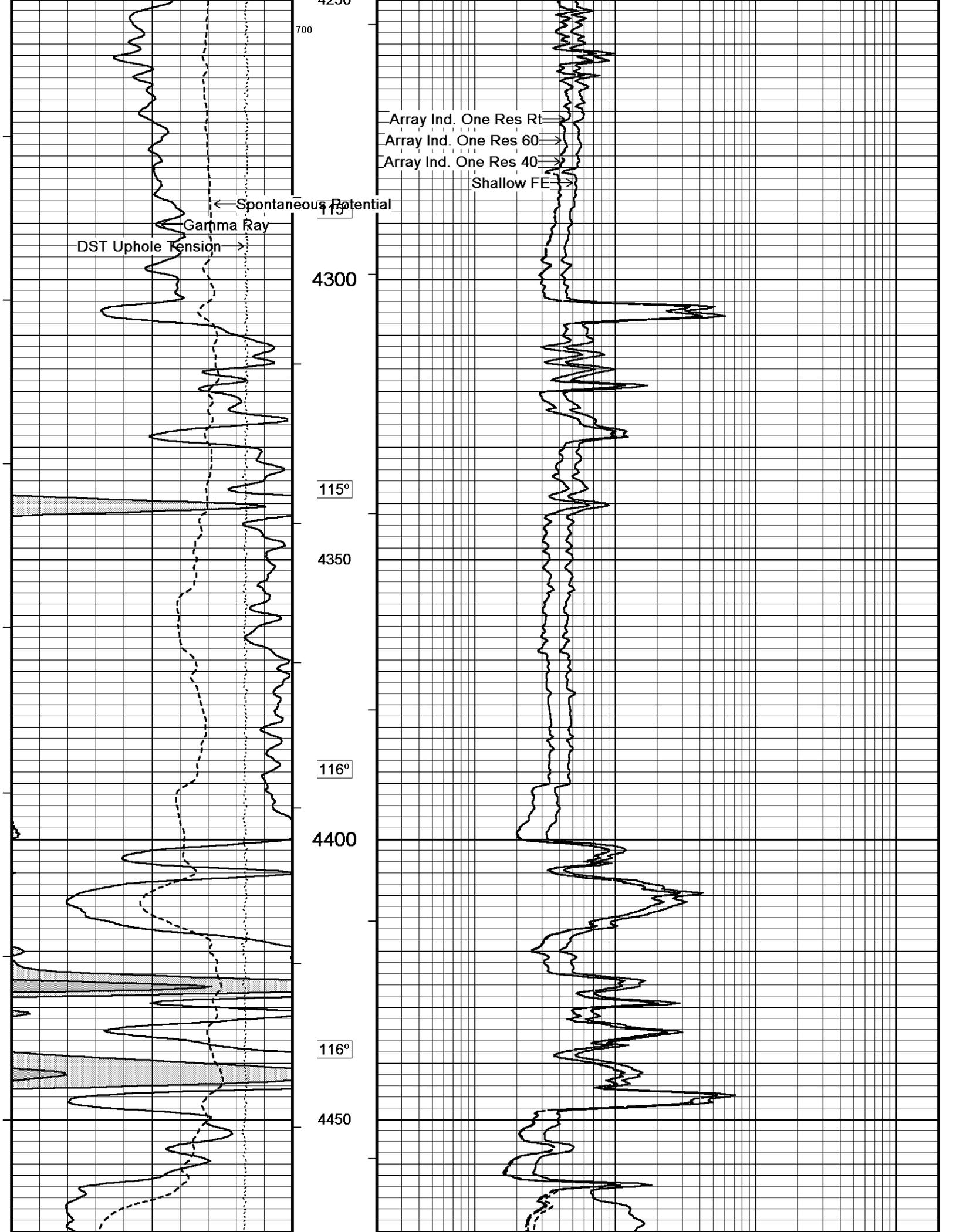
0 25 50
 0 250 500

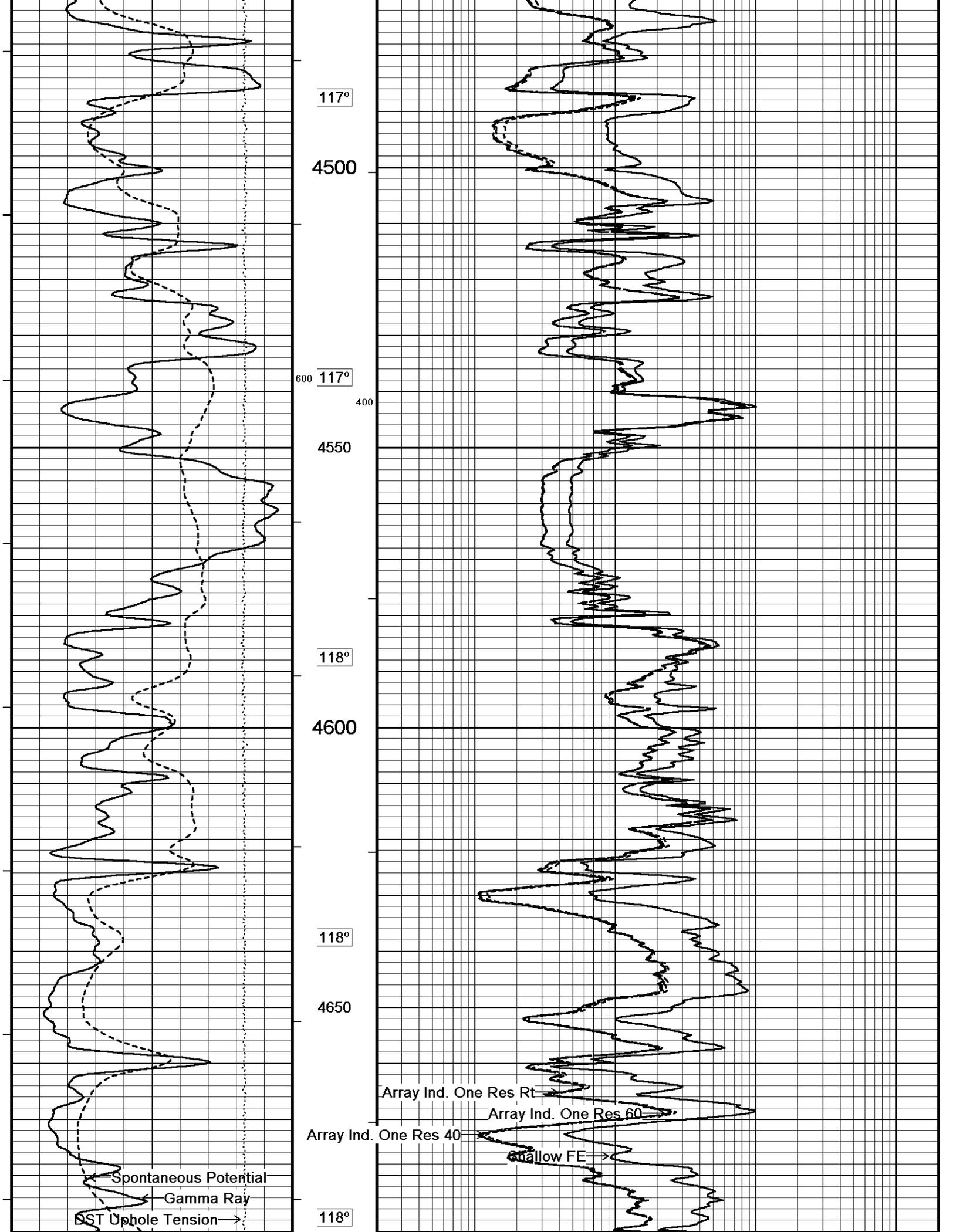
Spontaneous Potential
 millivolts
 --->|20|<---+

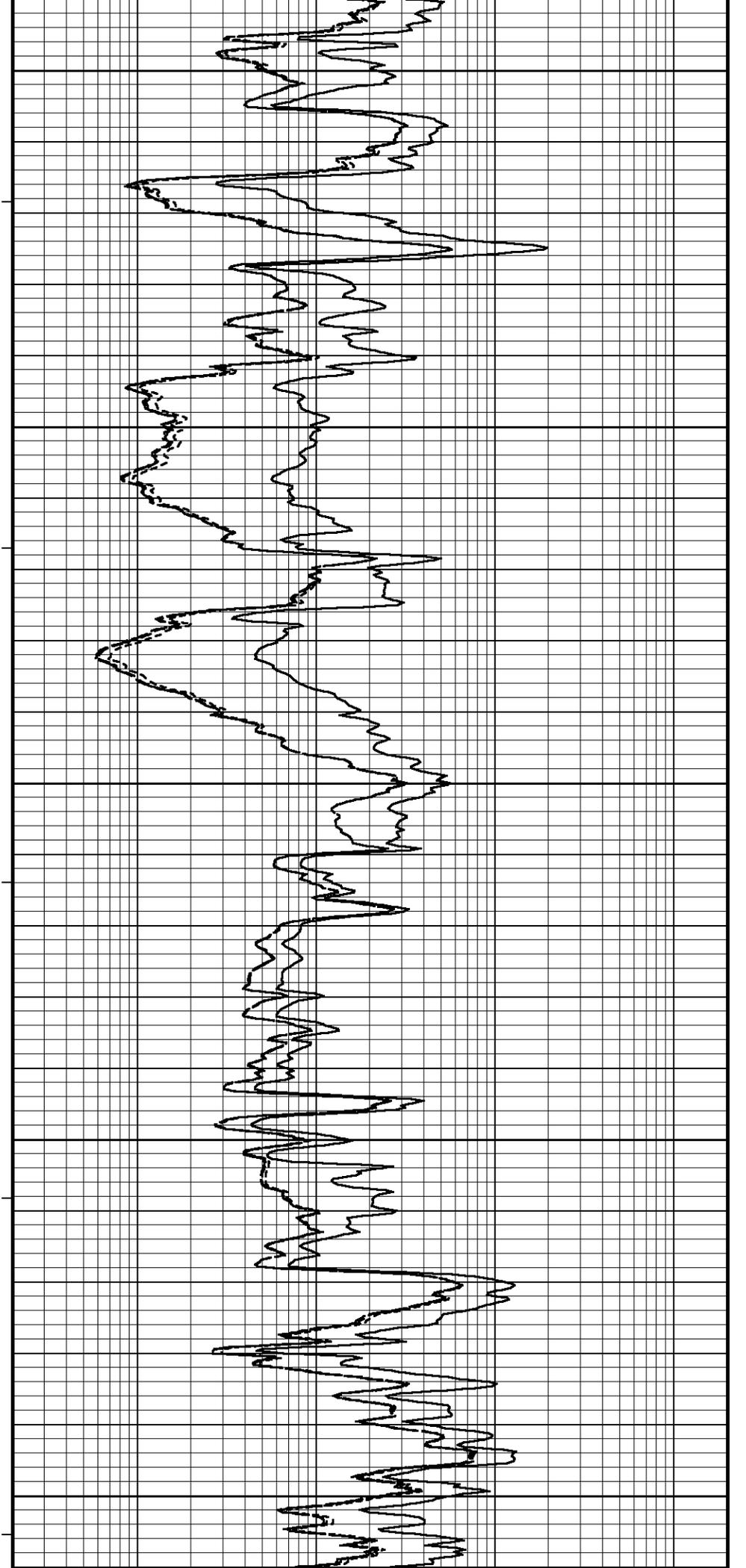
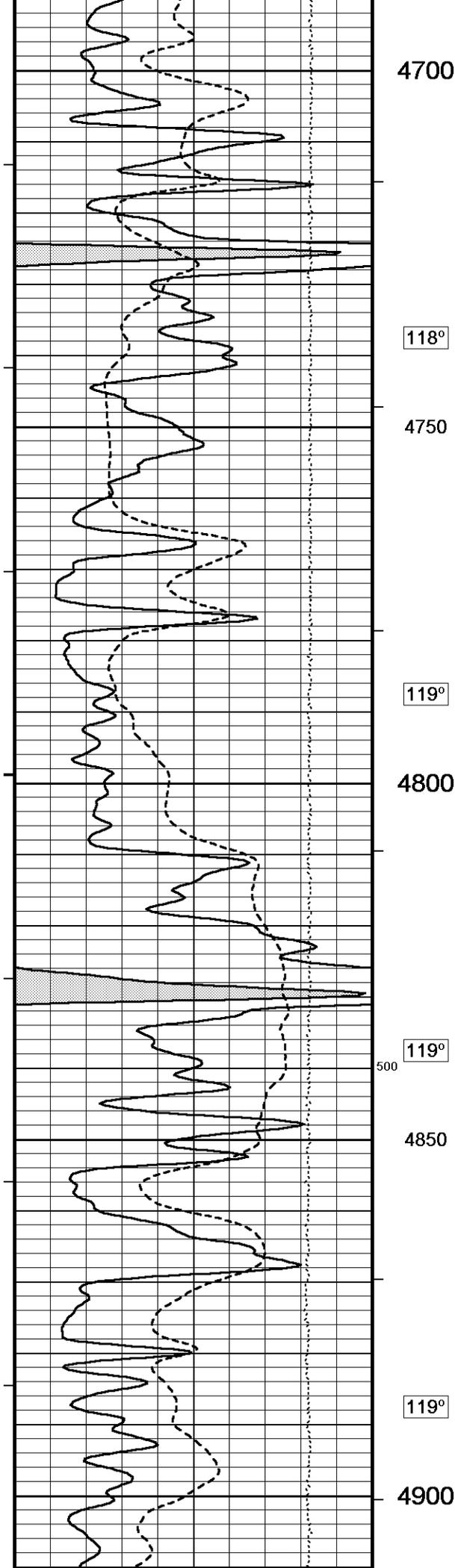
Timing Marks
 every 60.0 sec

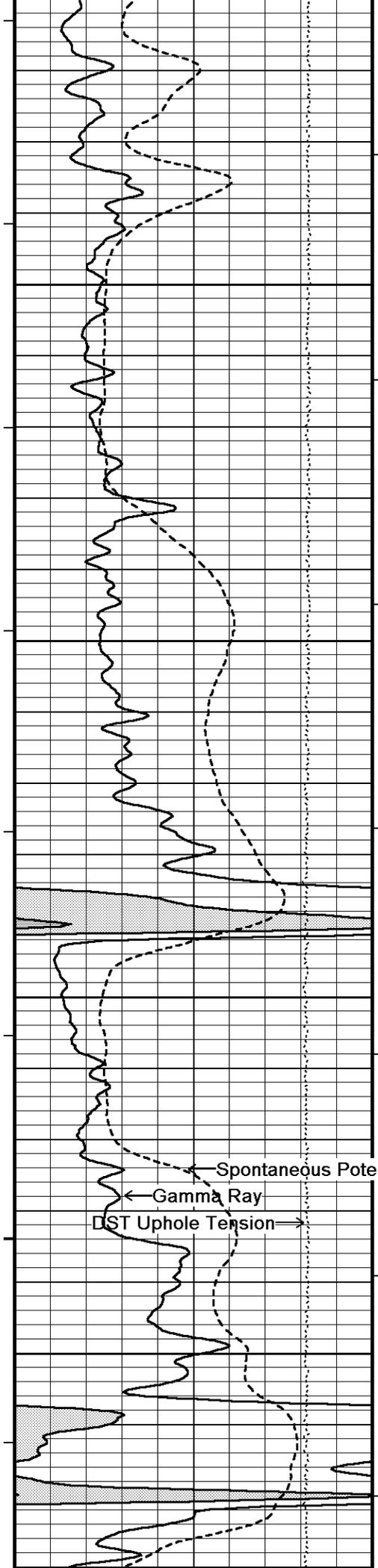












120°

4950

120°

5000₃₀₀

120°

5050

Array Ind. One Res Rt

Array Ind. One Res 60

Array Ind. One Res 40

Shallow FE

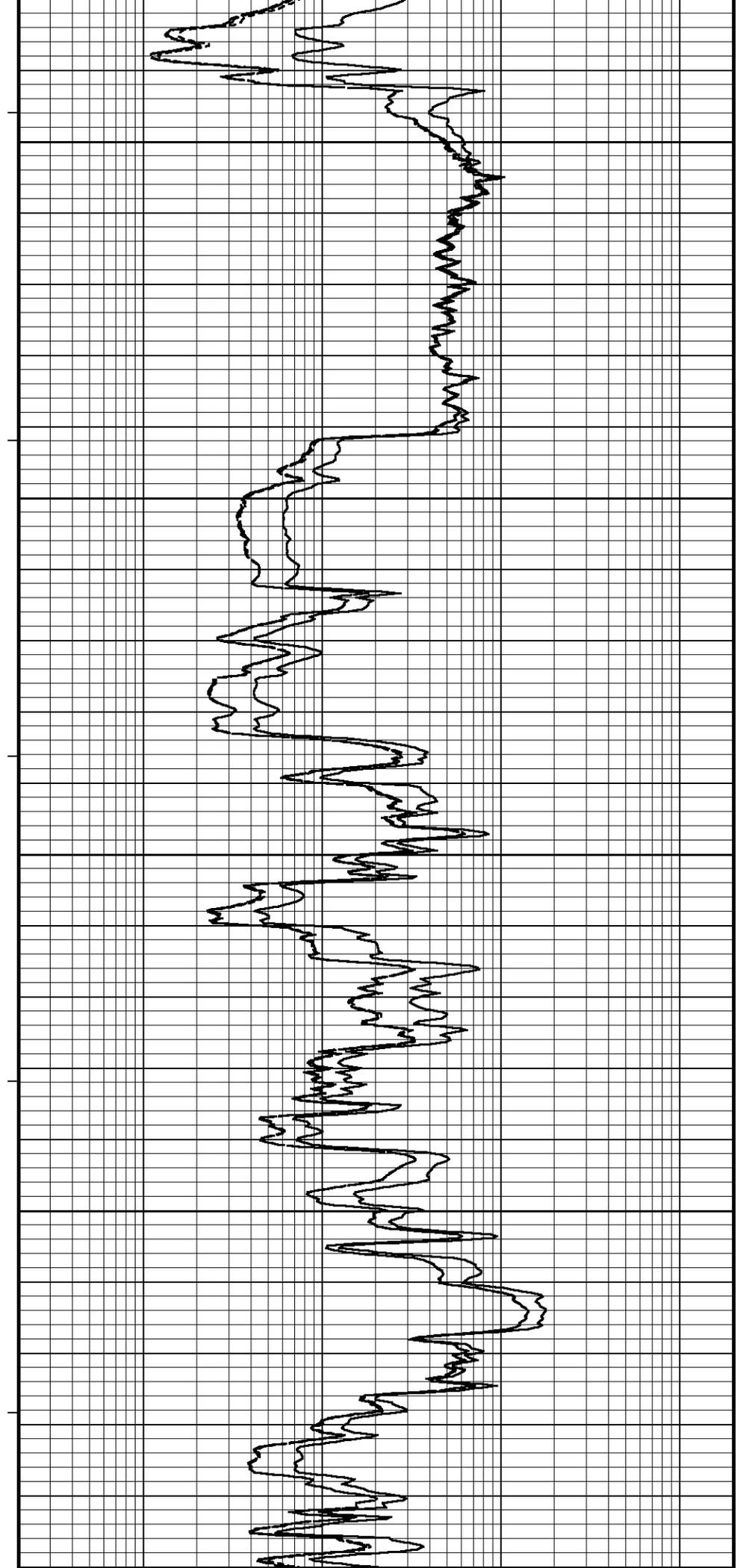
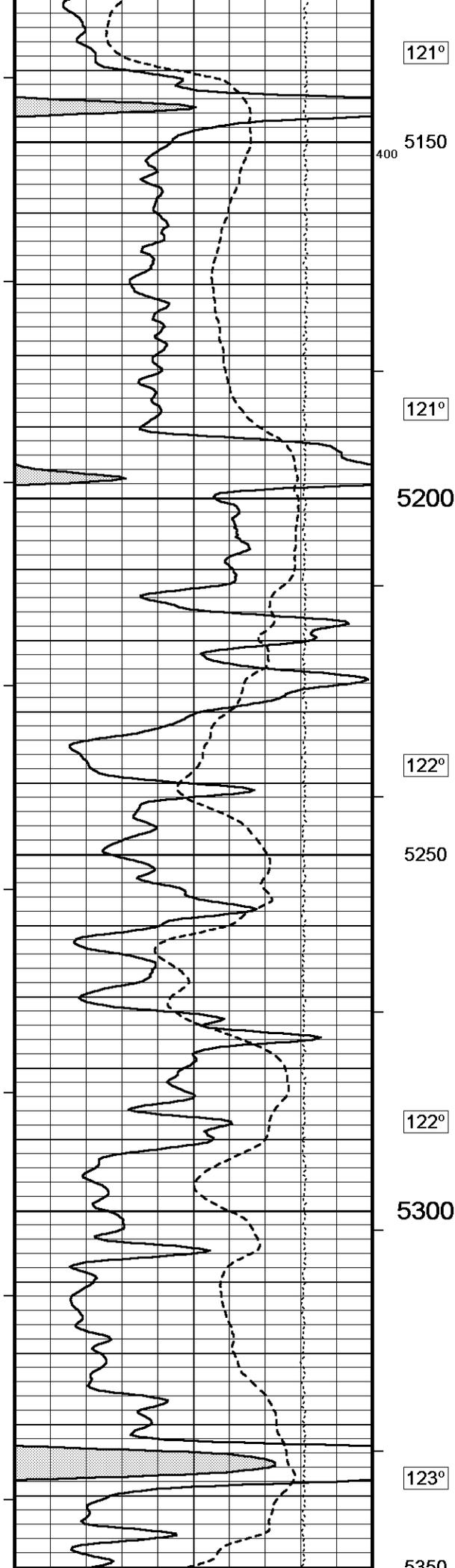
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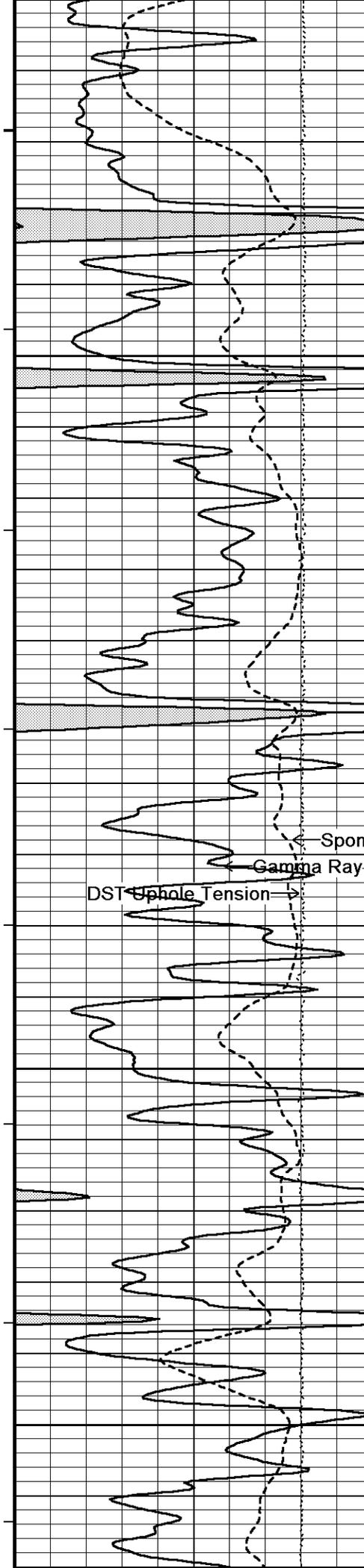
5100

← Spontaneous Potential

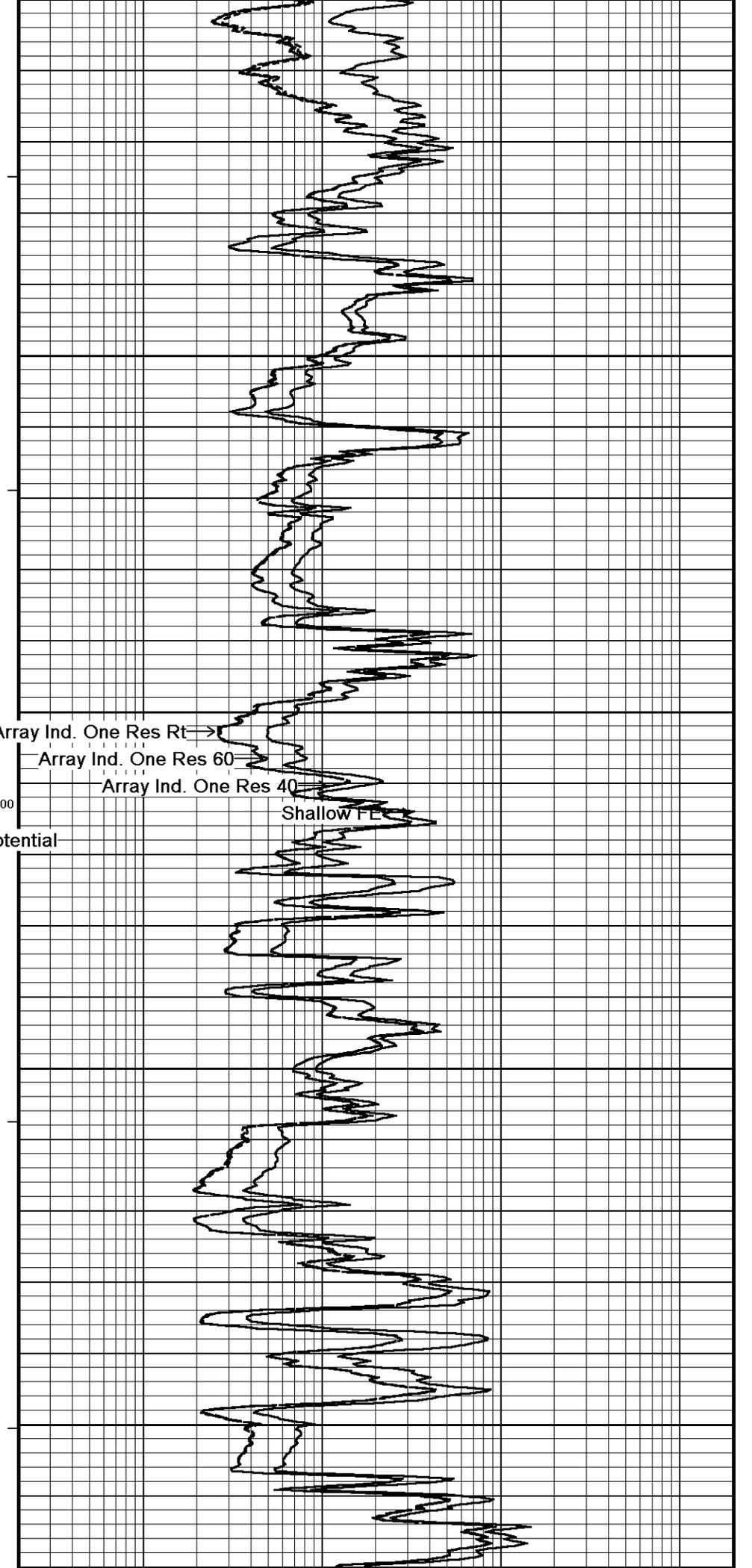
← Gamma Ray

DST Uphole Tension →

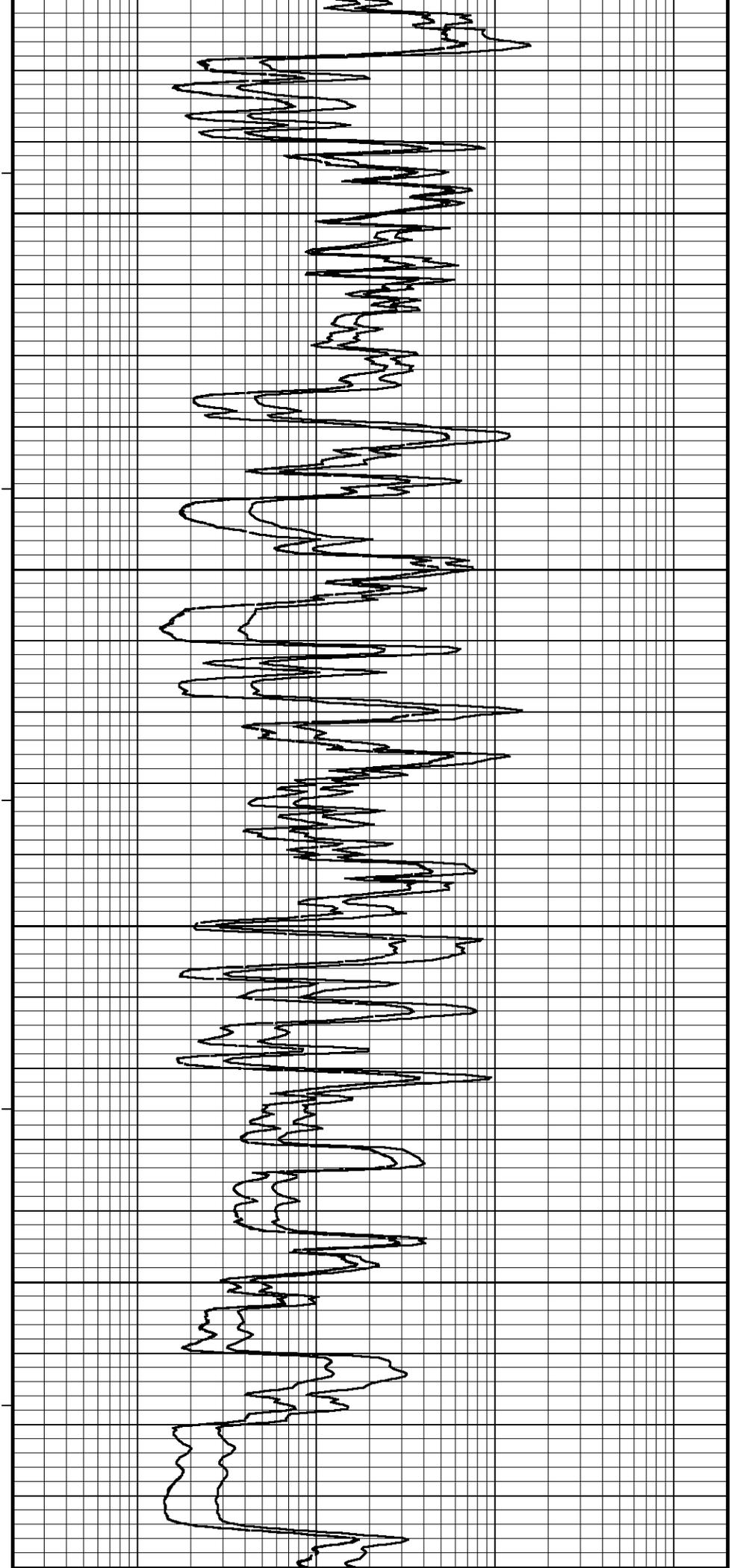
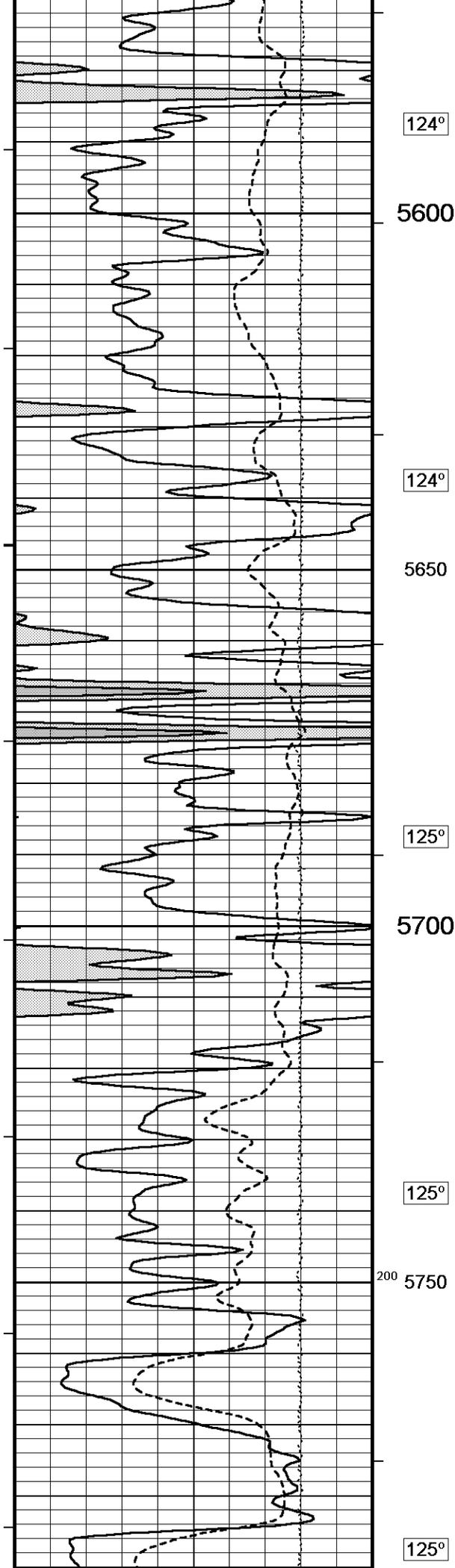


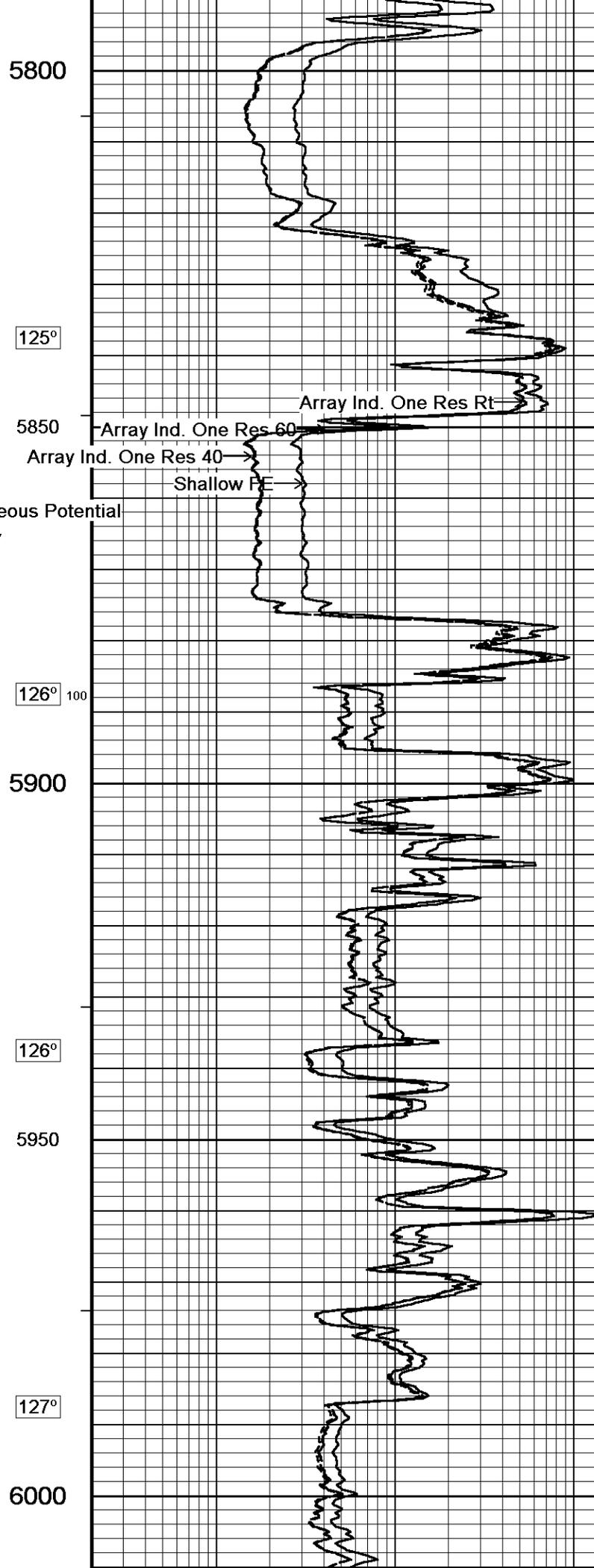
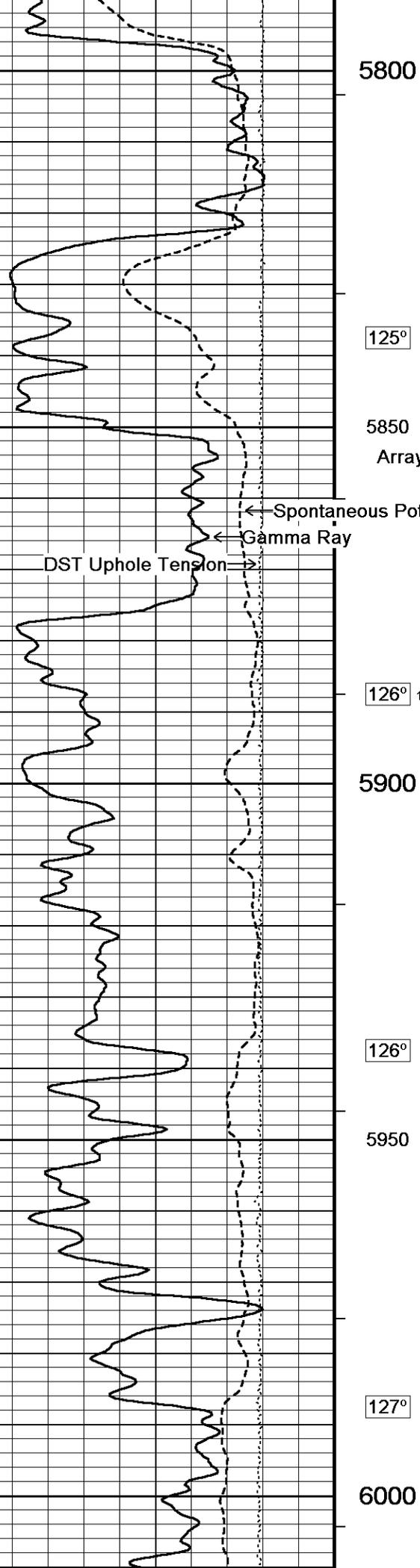


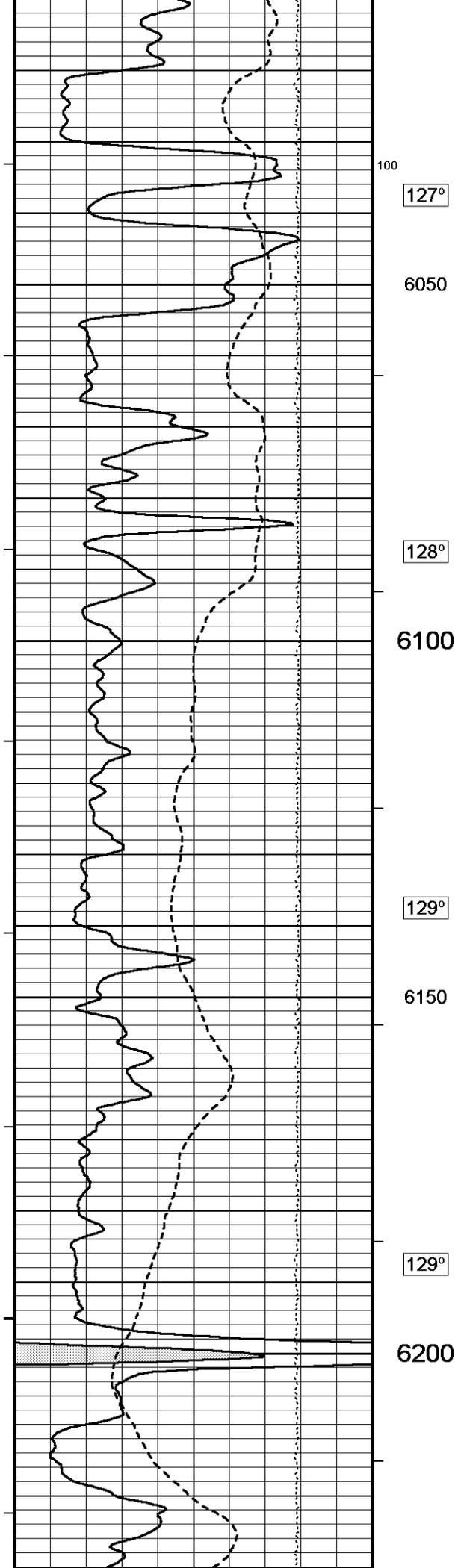
5350
123°
5400
123°
5450
300
200
123°
5500
124°
5550



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







127°

6050

128°

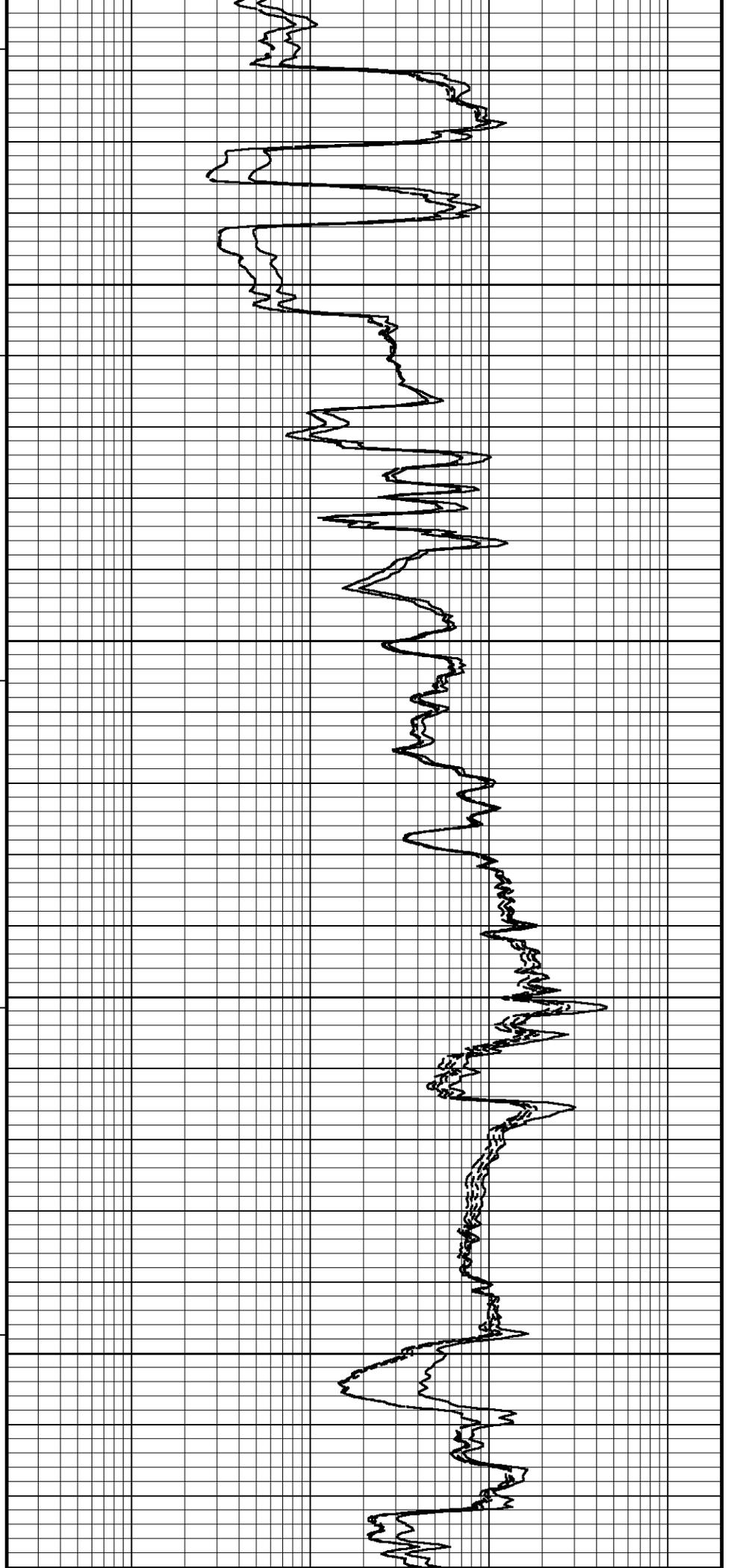
6100

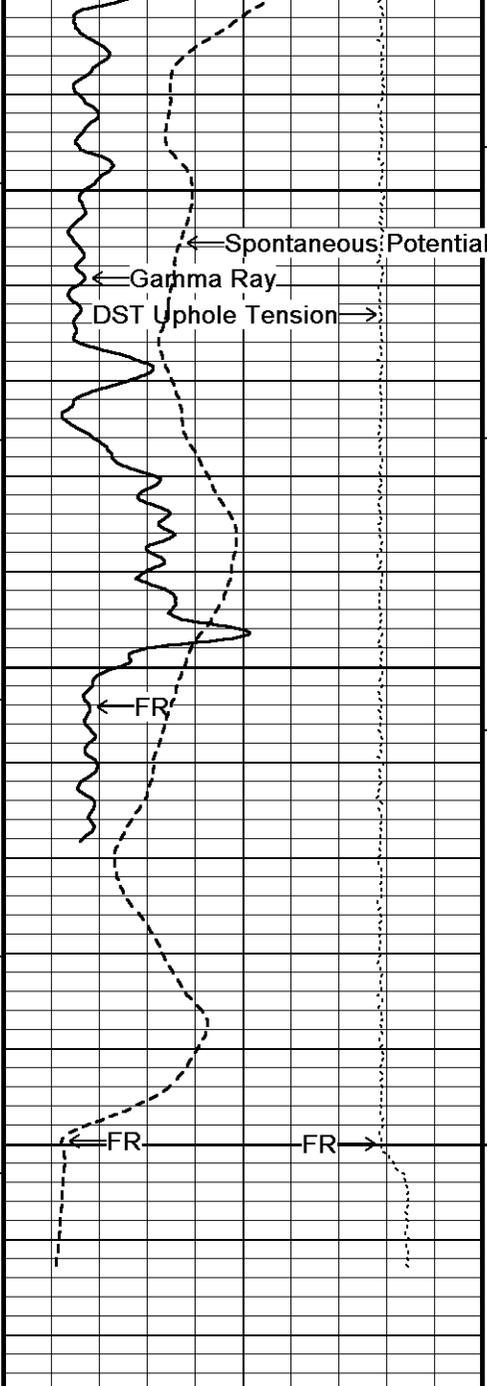
129°

6150

129°

6200





129°

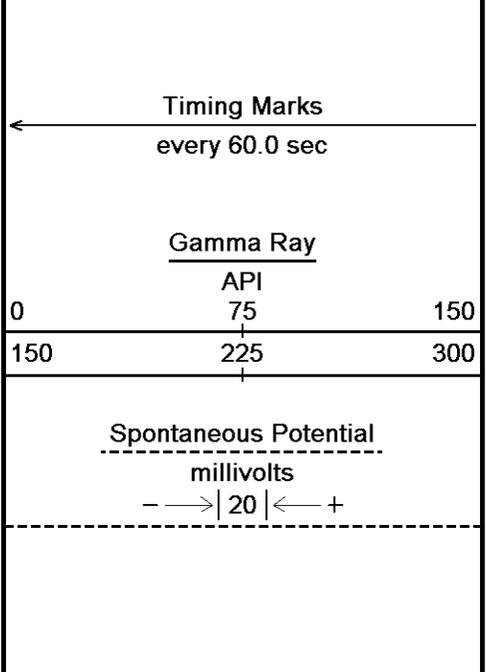
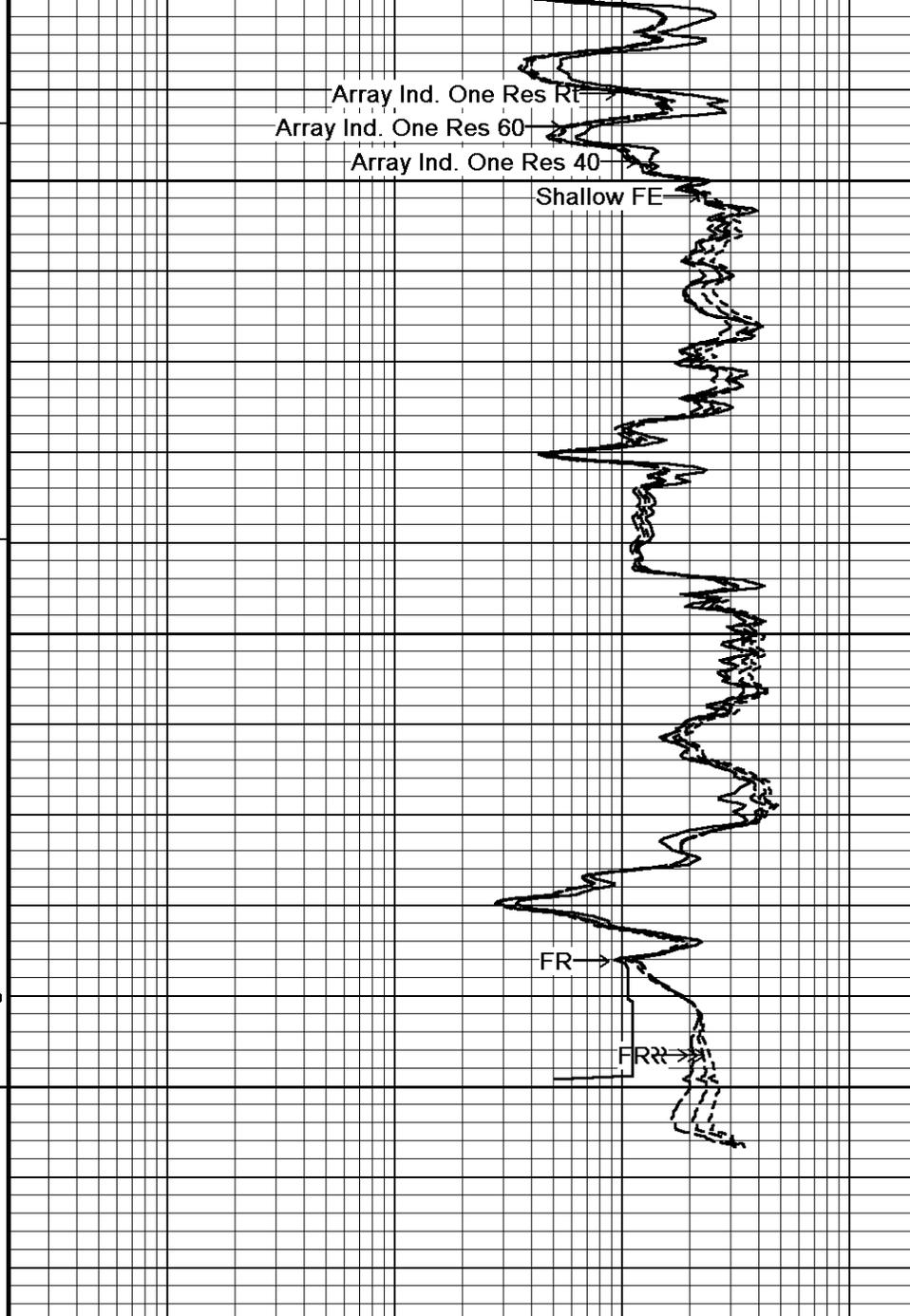
6250

129°

6300

0

TD 6350

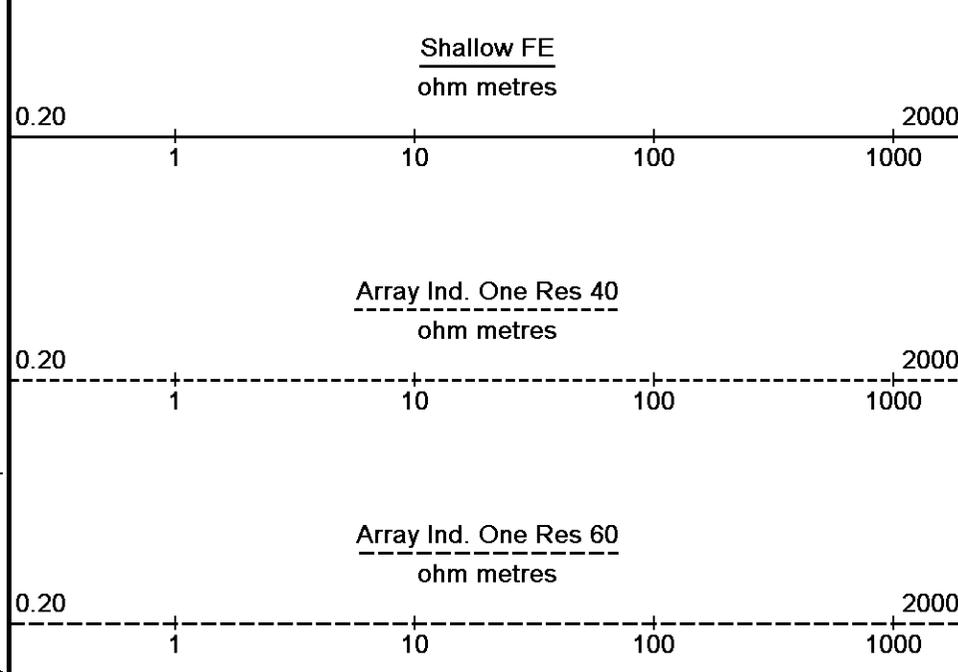


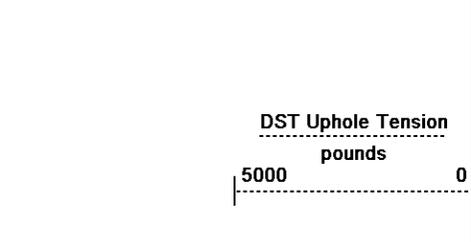
Depth
in
Feet

Borehole
Temp in
deg F

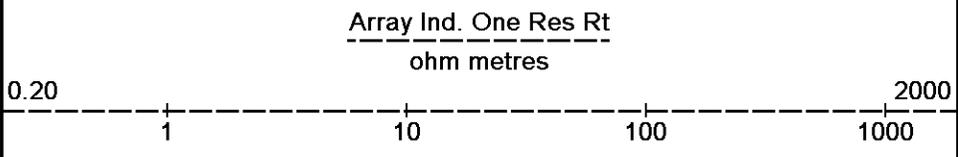
HVI
every
10 cu ft

Annular
Integral
every
10 cu ft





Replay
Scale
1:240

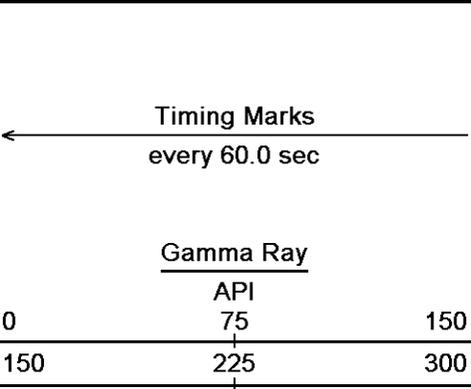


Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 18-APR-2018 23:10
 Filename: C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8\O'Brien Preedy #2-8_003.dta
 Recorded on 18-APR-2018 20:13
 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

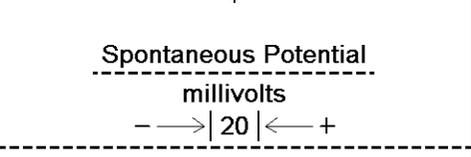
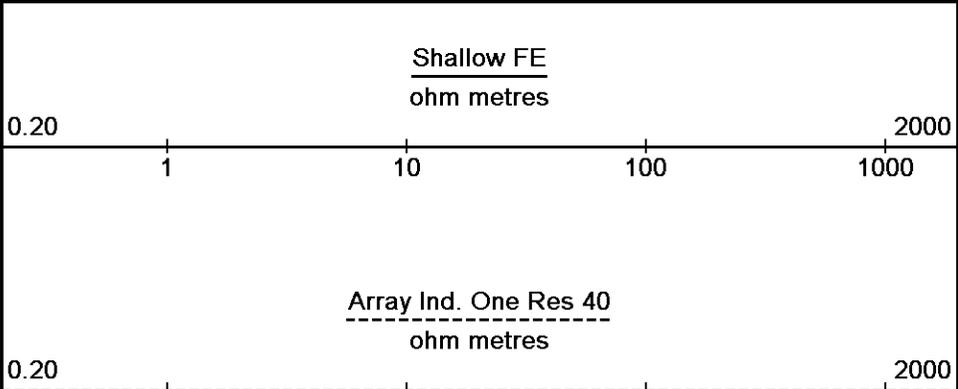
Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 18-APR-2018 23:10
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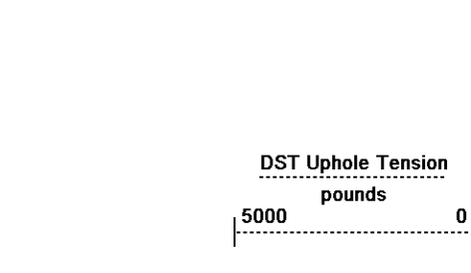
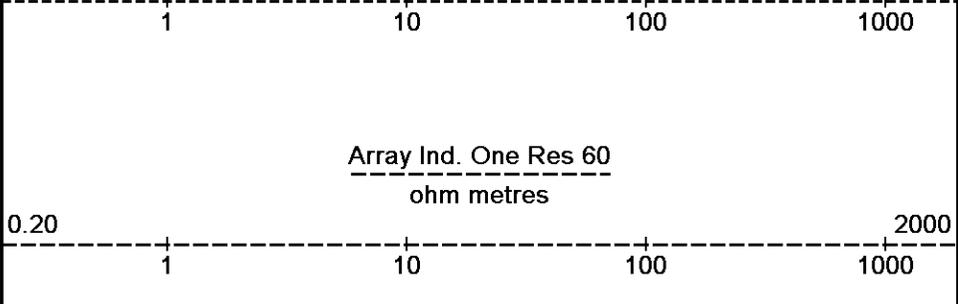
Depth
in
Feet

Borehole
Temp in
deg F

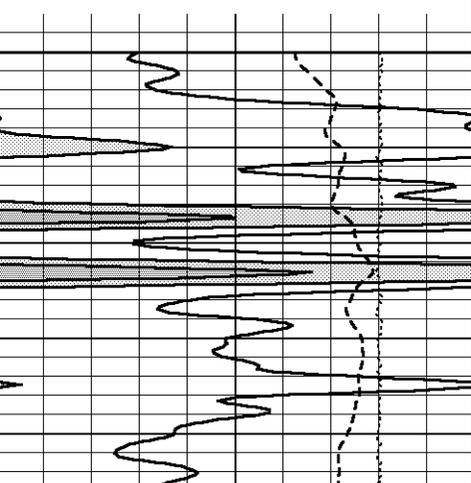
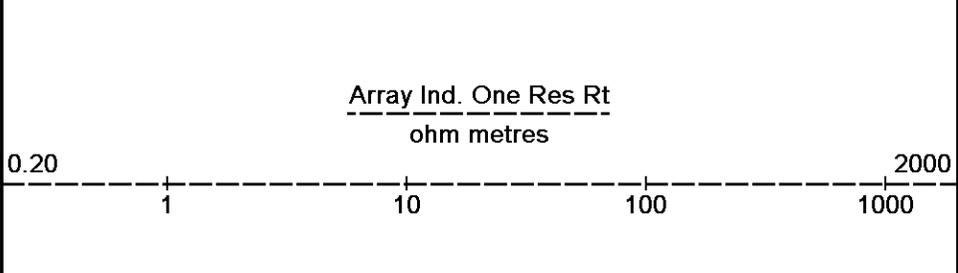
HVI
every
10 cu ft



Annular
Integral
every
10 cu ft

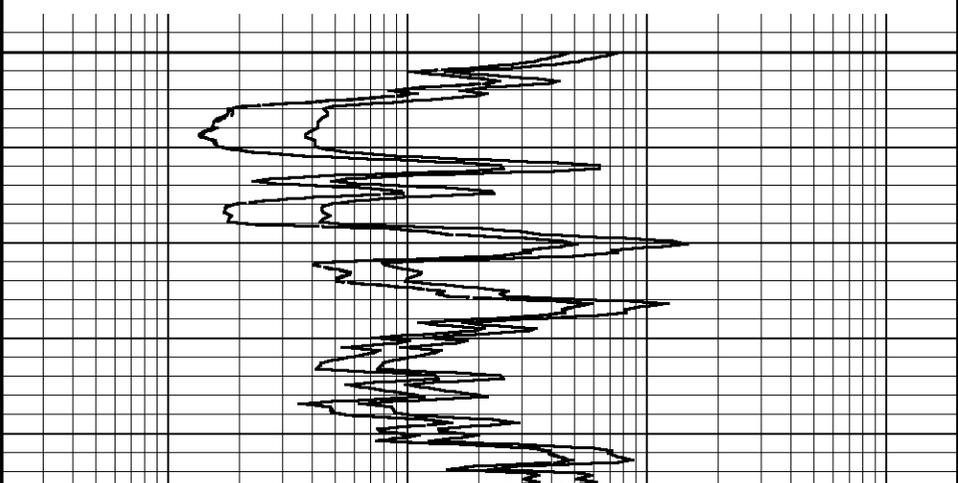


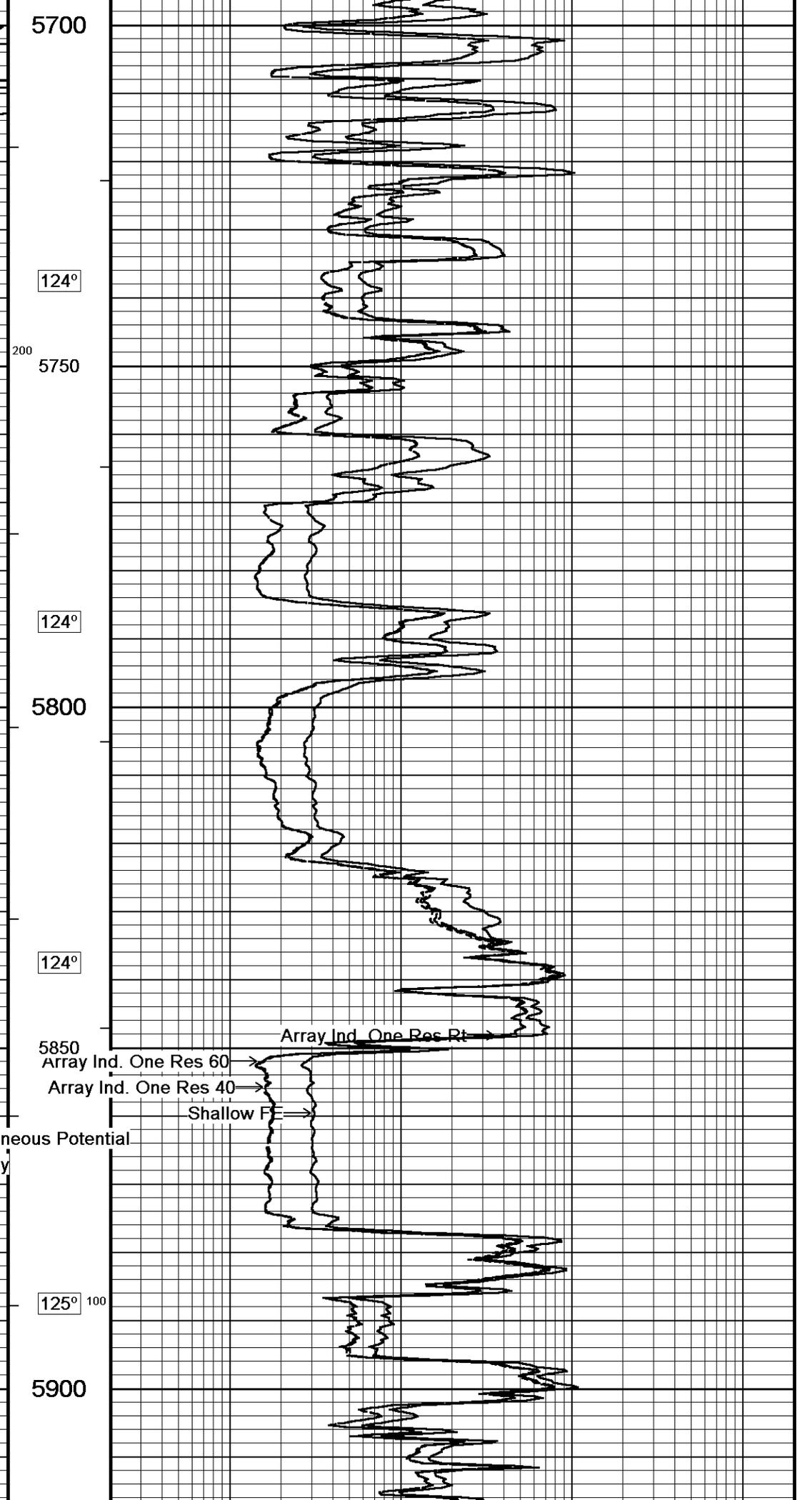
Replay
Scale
1:240

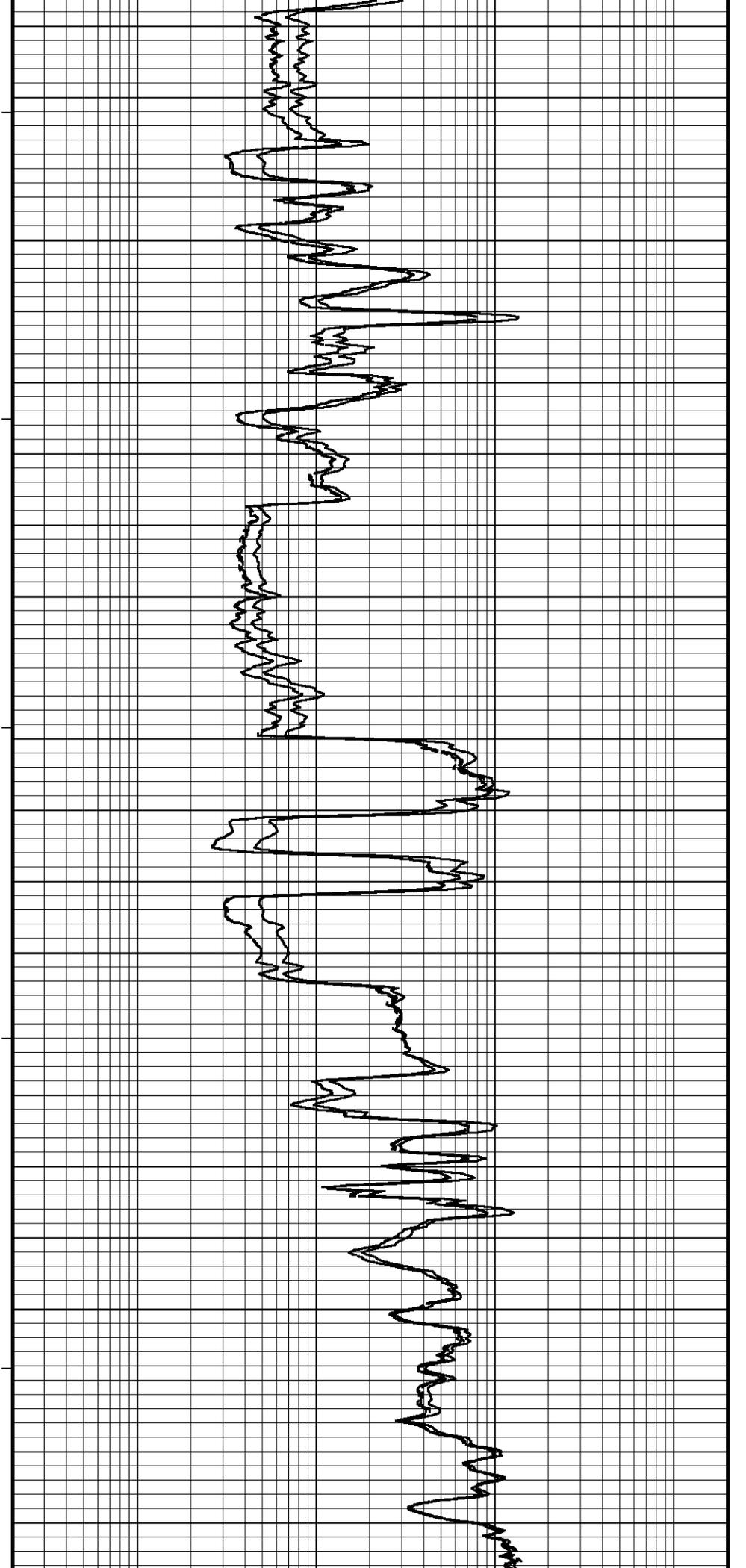
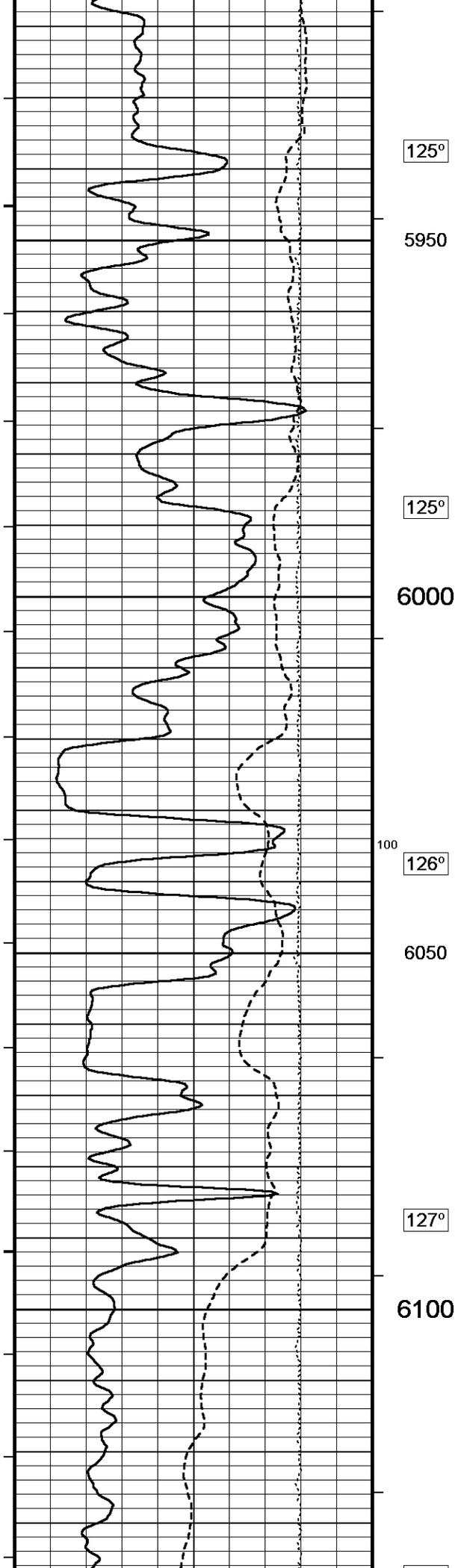


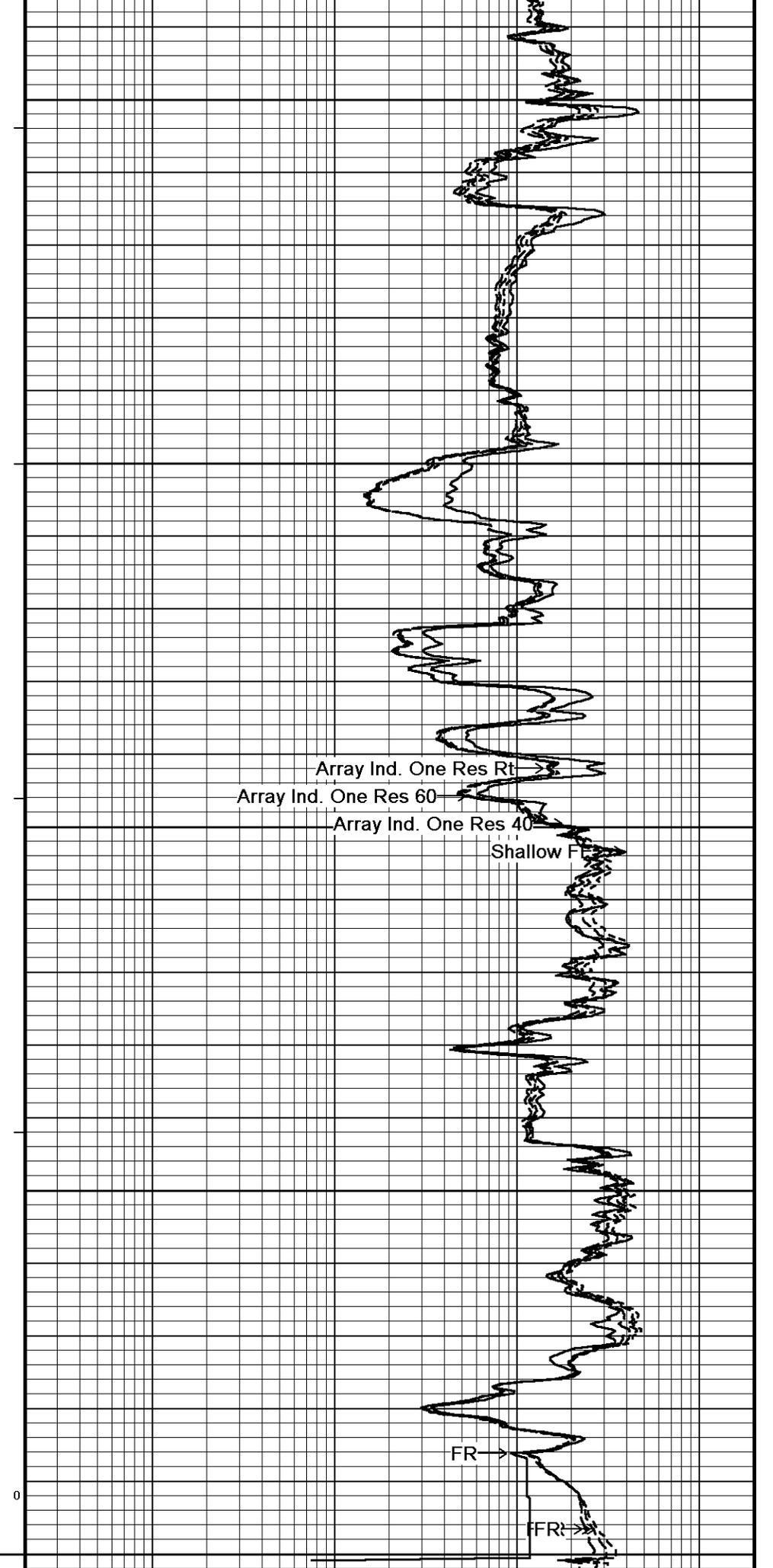
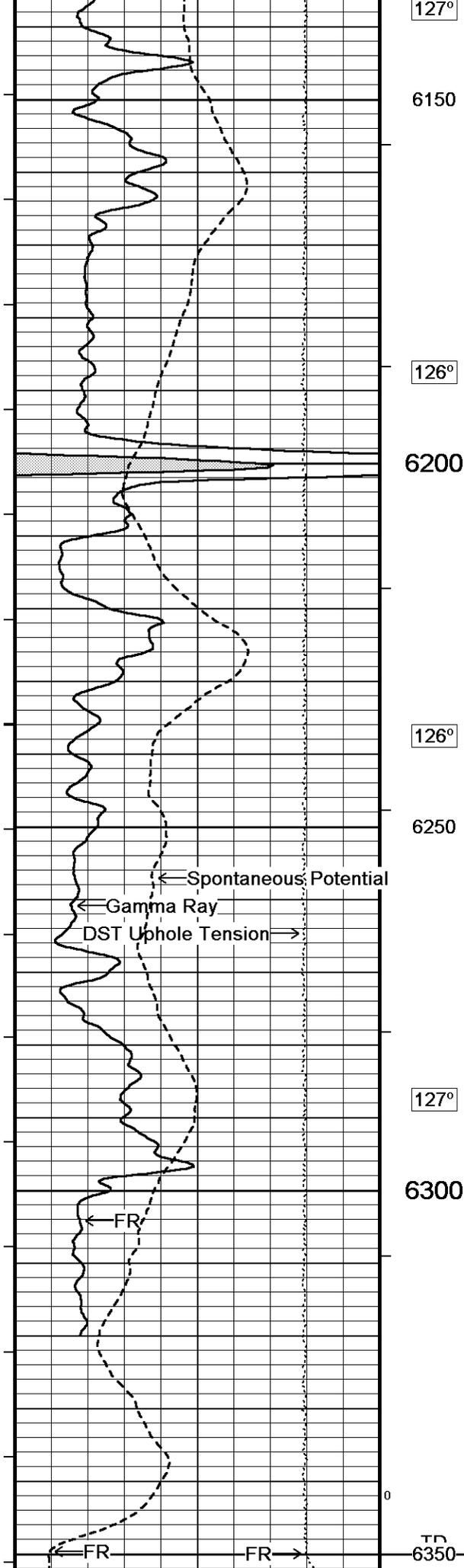
5650

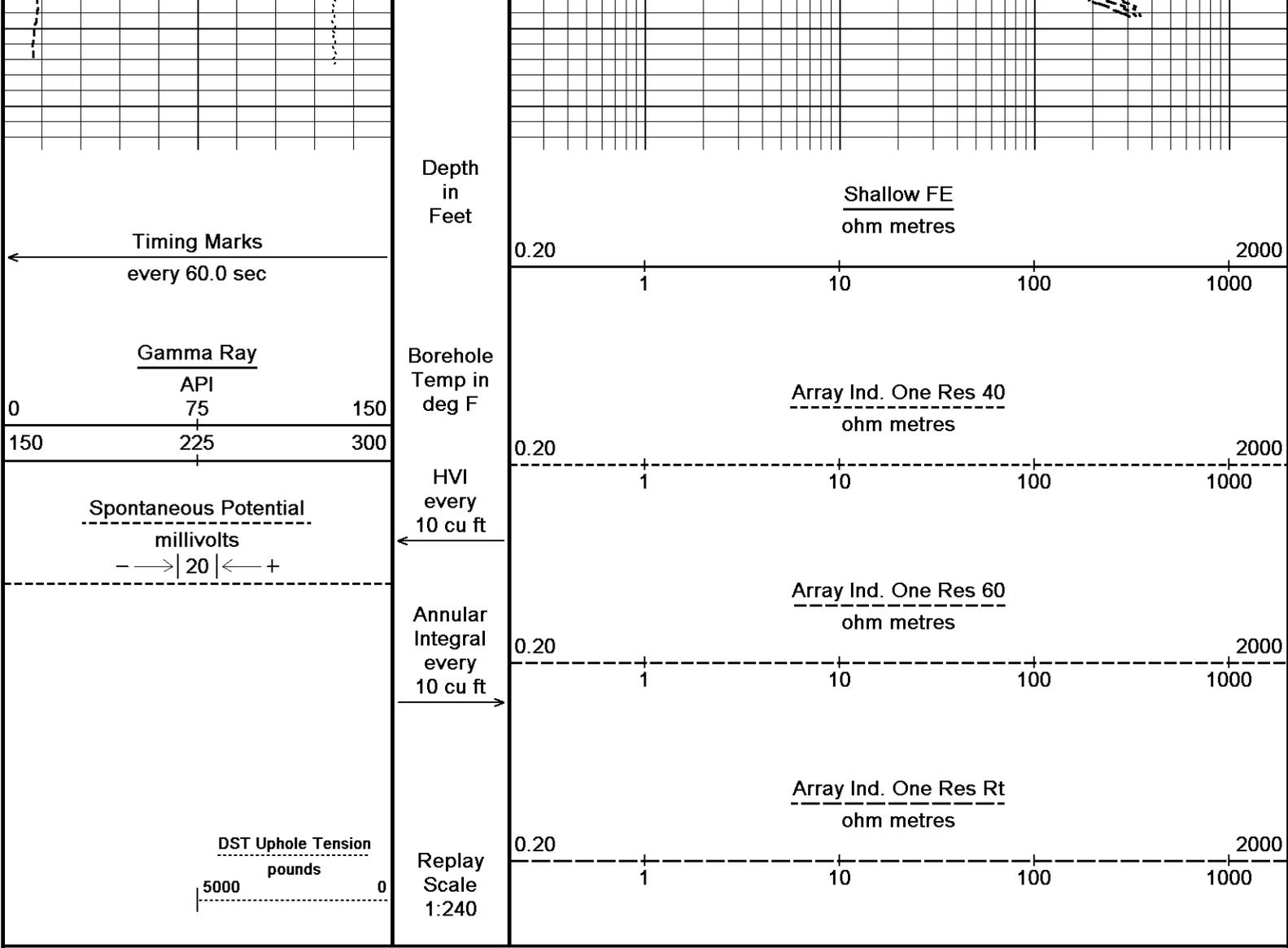
124°









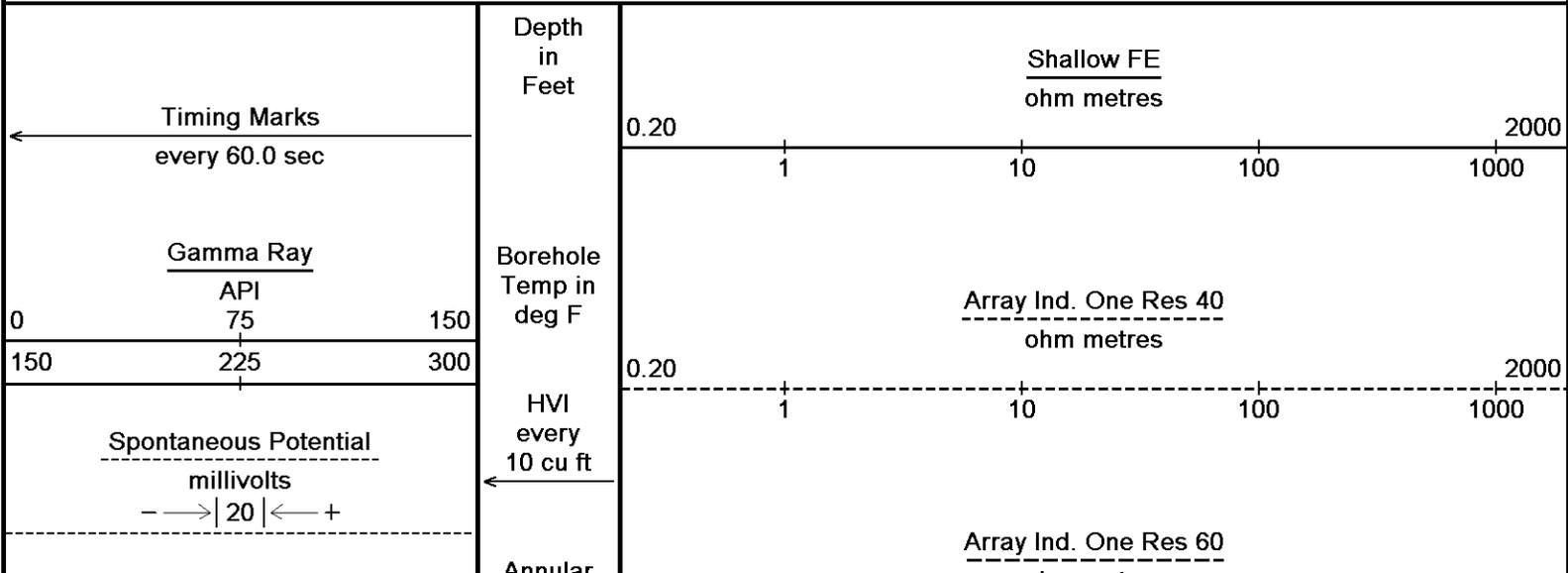


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 Recorded on 18-APR-2018 18:57
 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248

↑ REPEAT SECTION ↑

↓ 10 INCH HIGH RESOLUTION ↓

Depth Based Data - Maximum Sampling Increment 2.5cm
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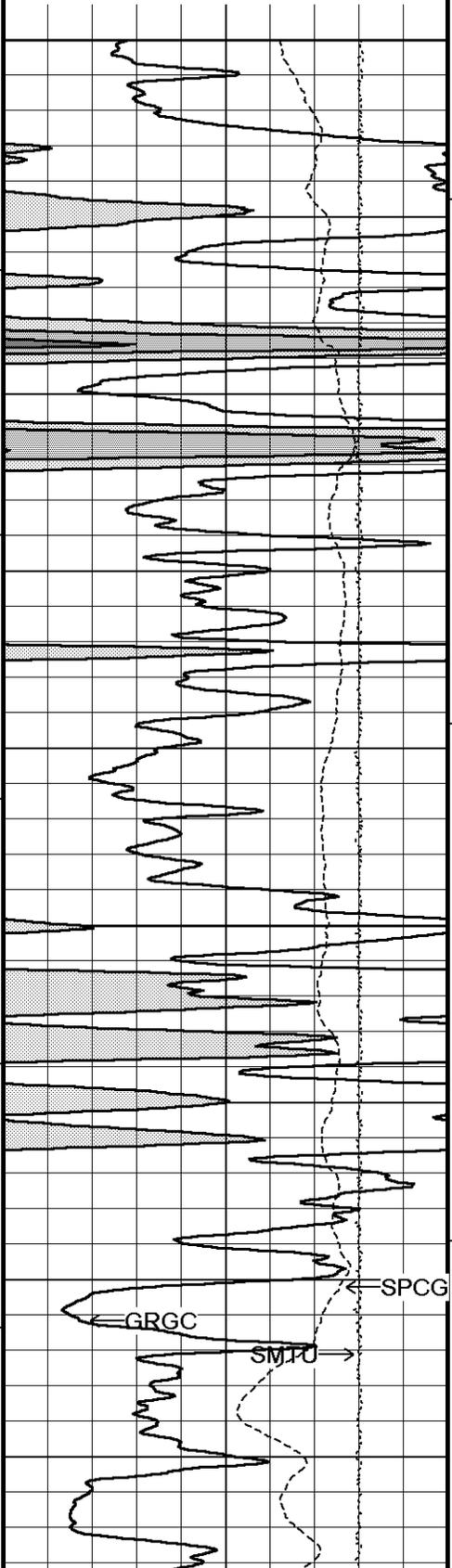
Annual
Integral
every
10 cu ft
→

ohm metres
0.20 1 10 100 1000 2000

DST Uphole Tension
pounds
5000 0

Replay
Scale
1:120

Array Ind. One Res Rt
ohm metres
0.20 1 10 100 1000 2000



5650

124°

5700

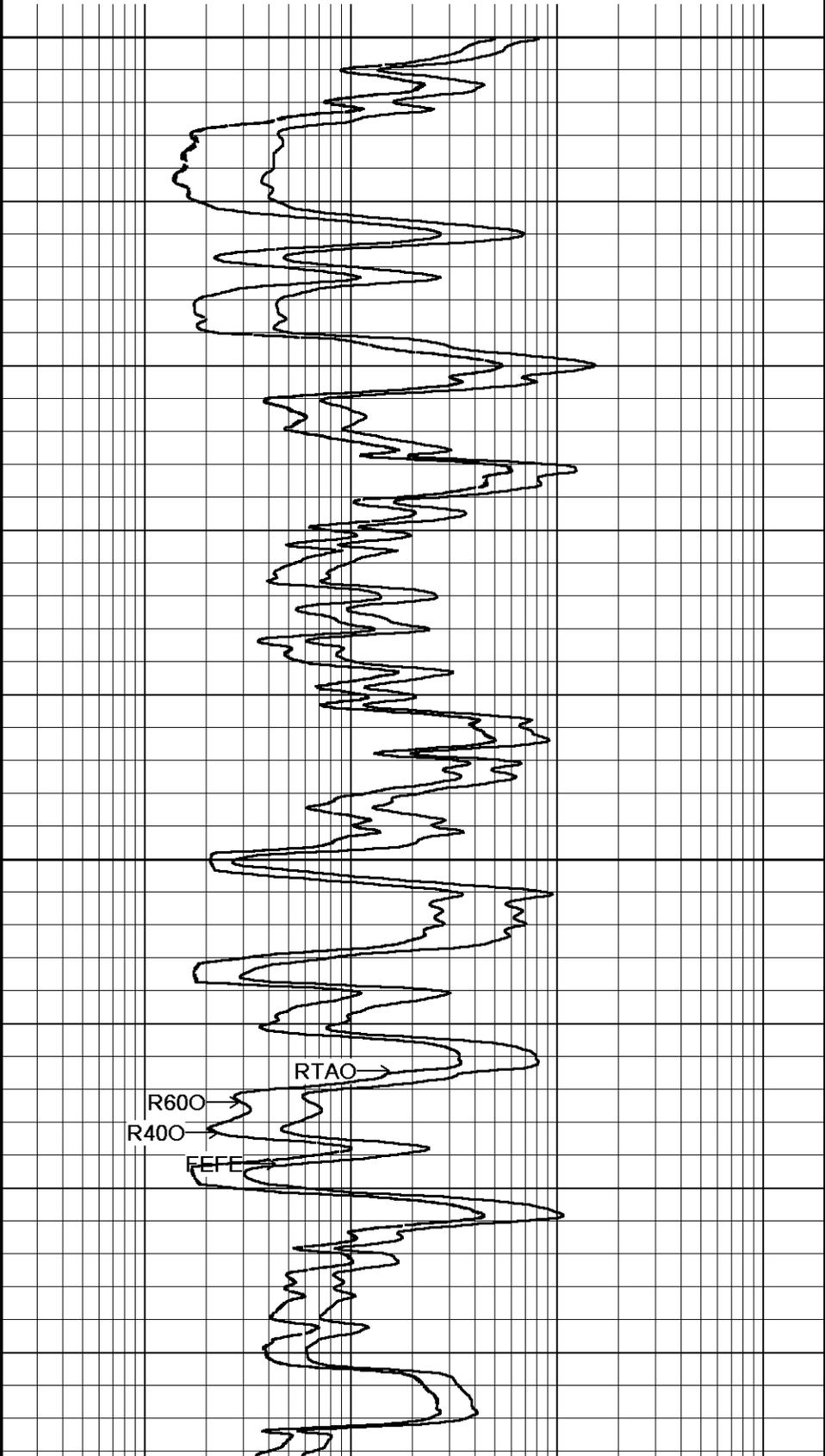
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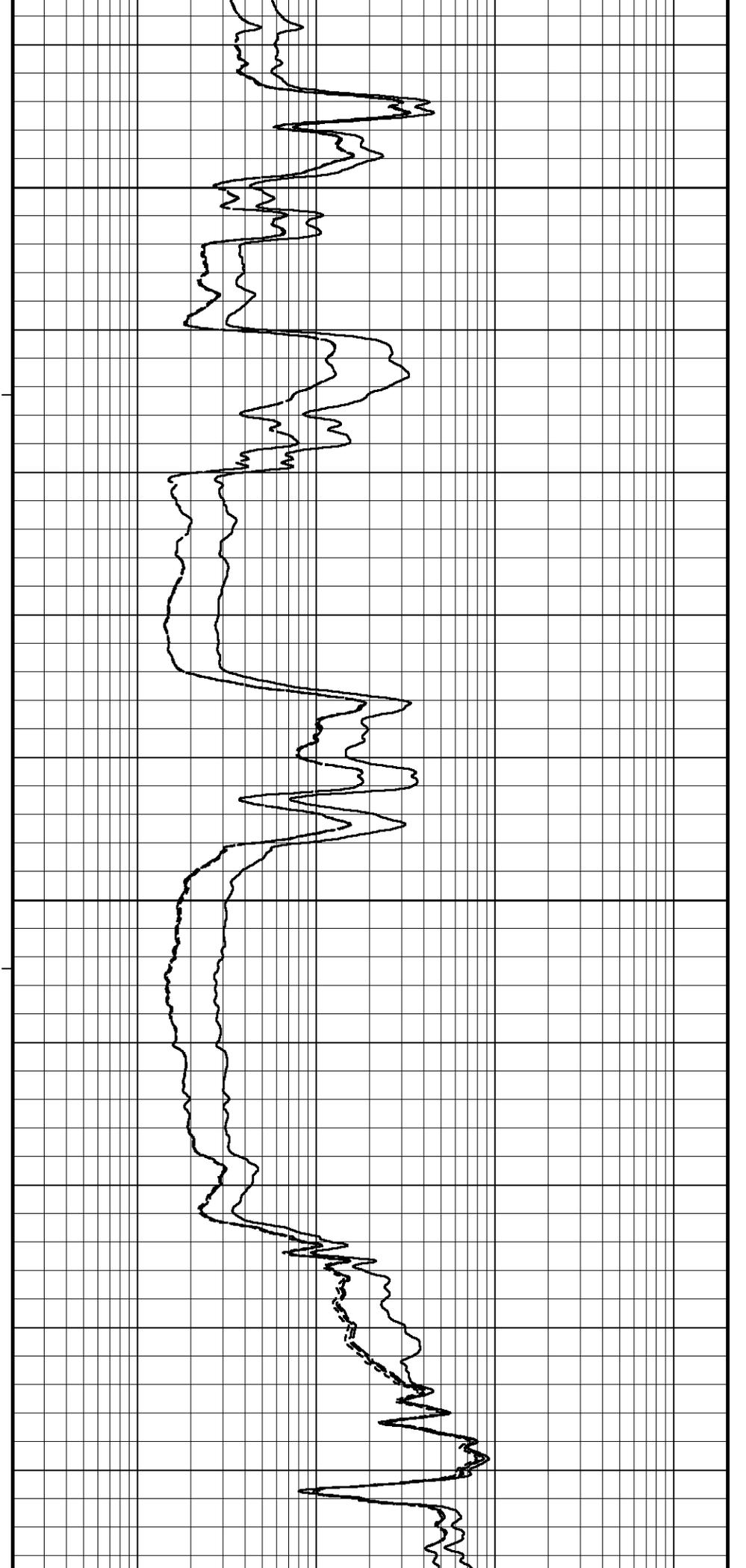
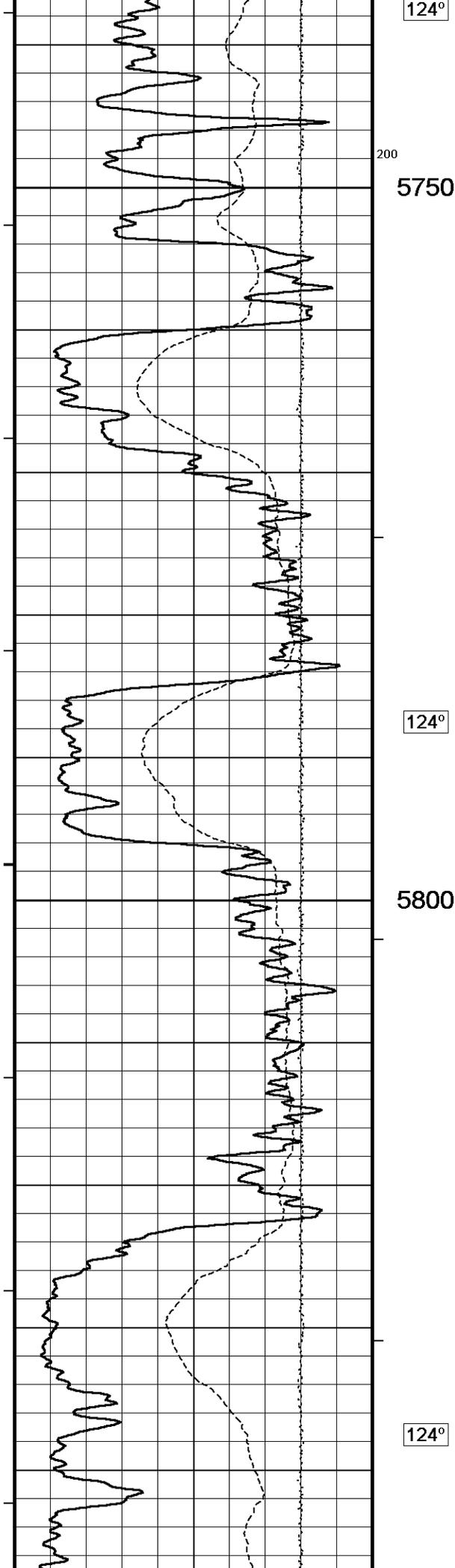
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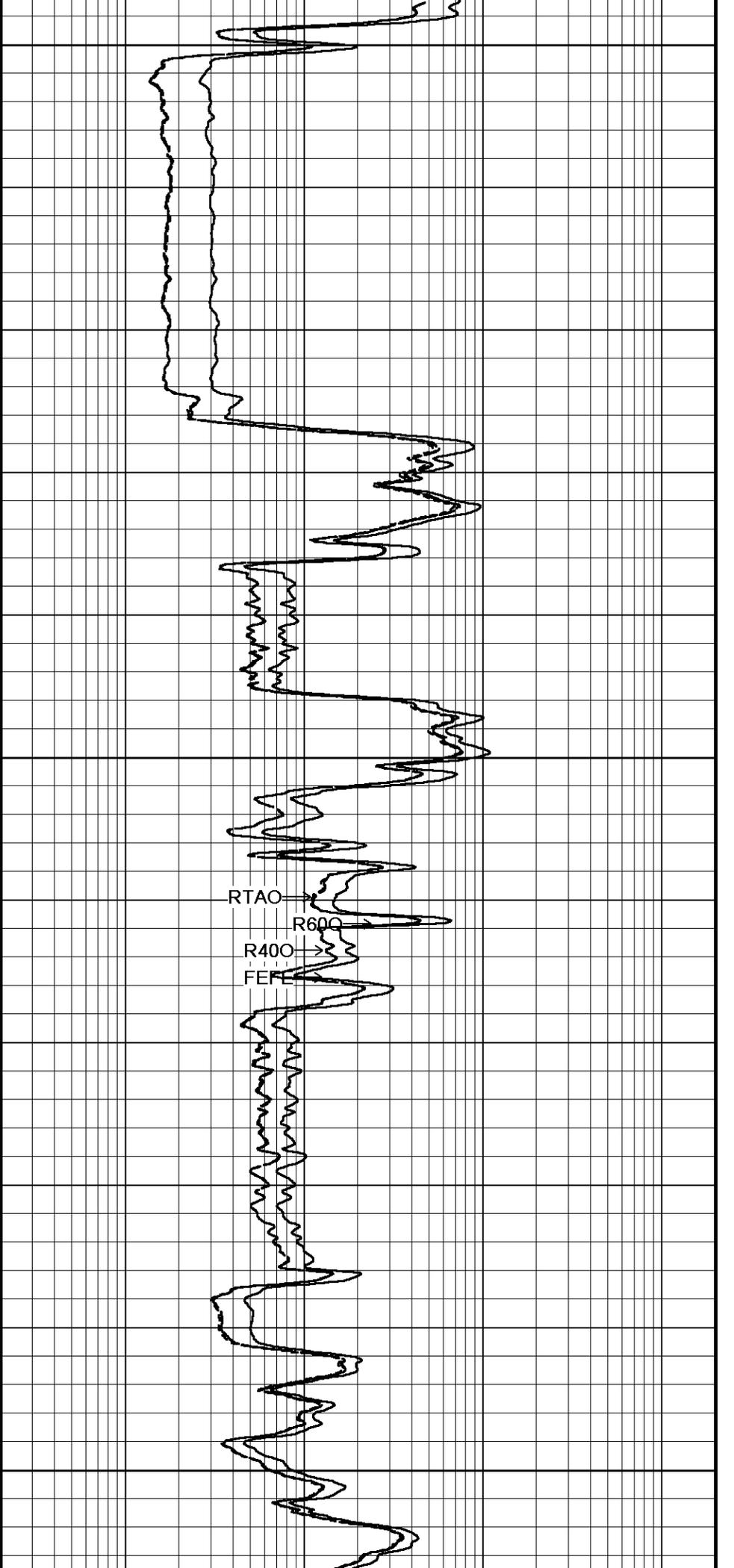
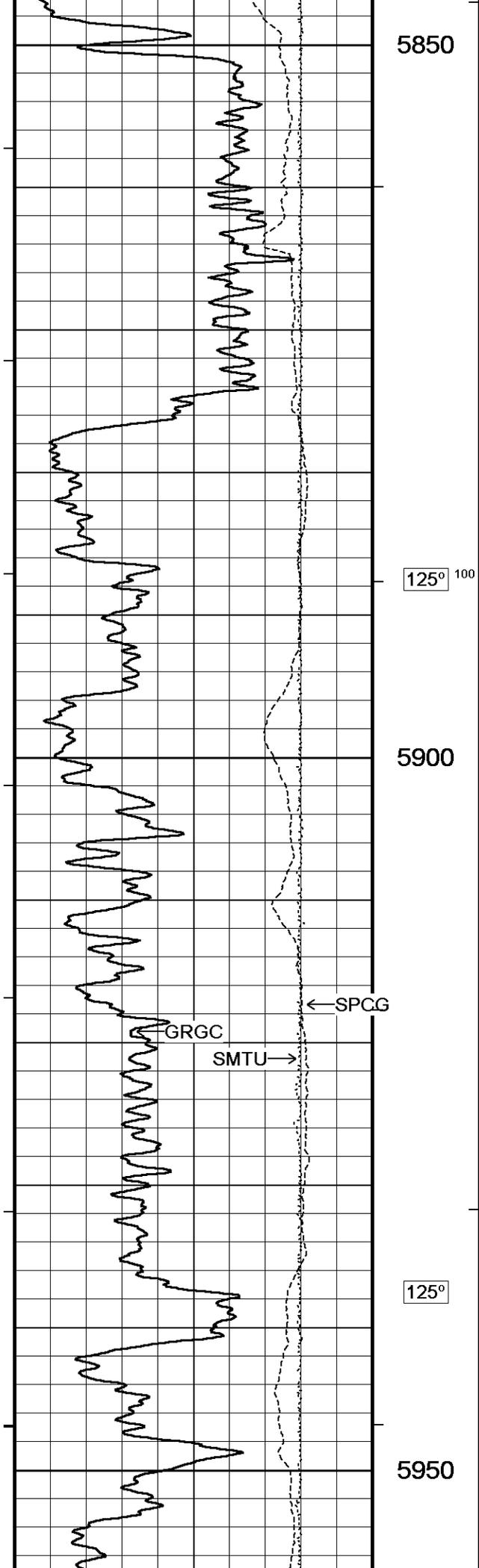
SMTU →

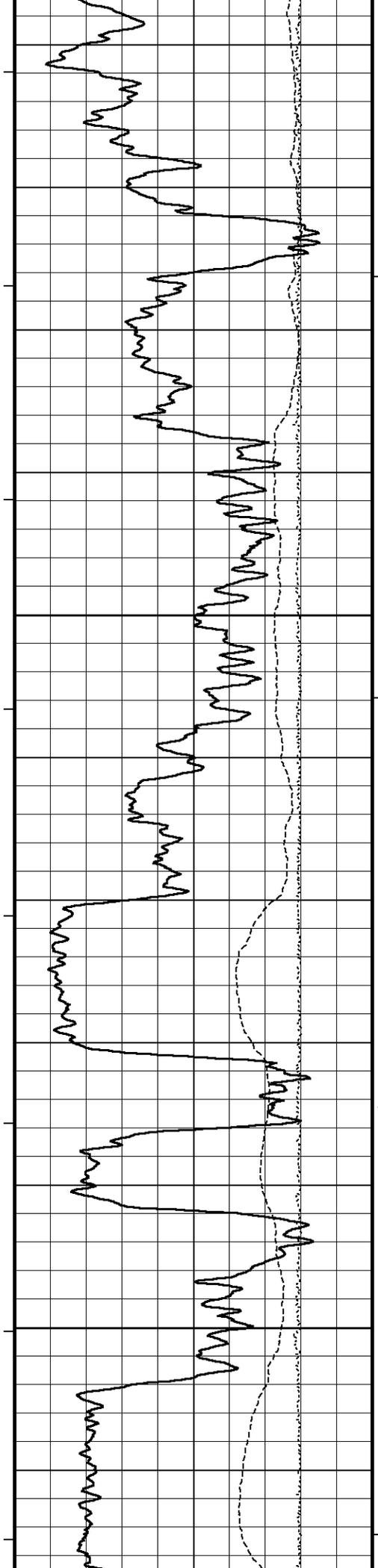
R600
R400
FEFE

RTAO →









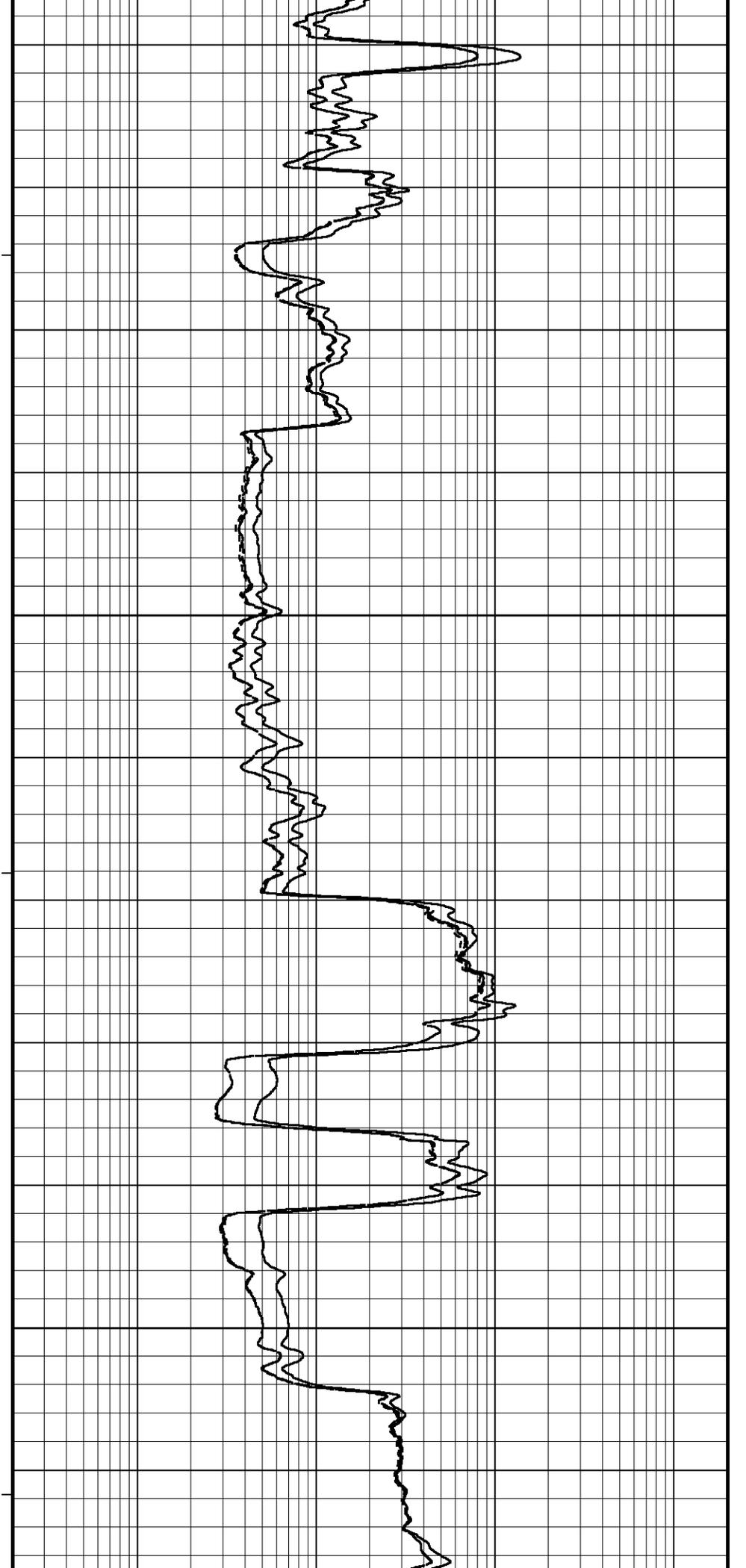
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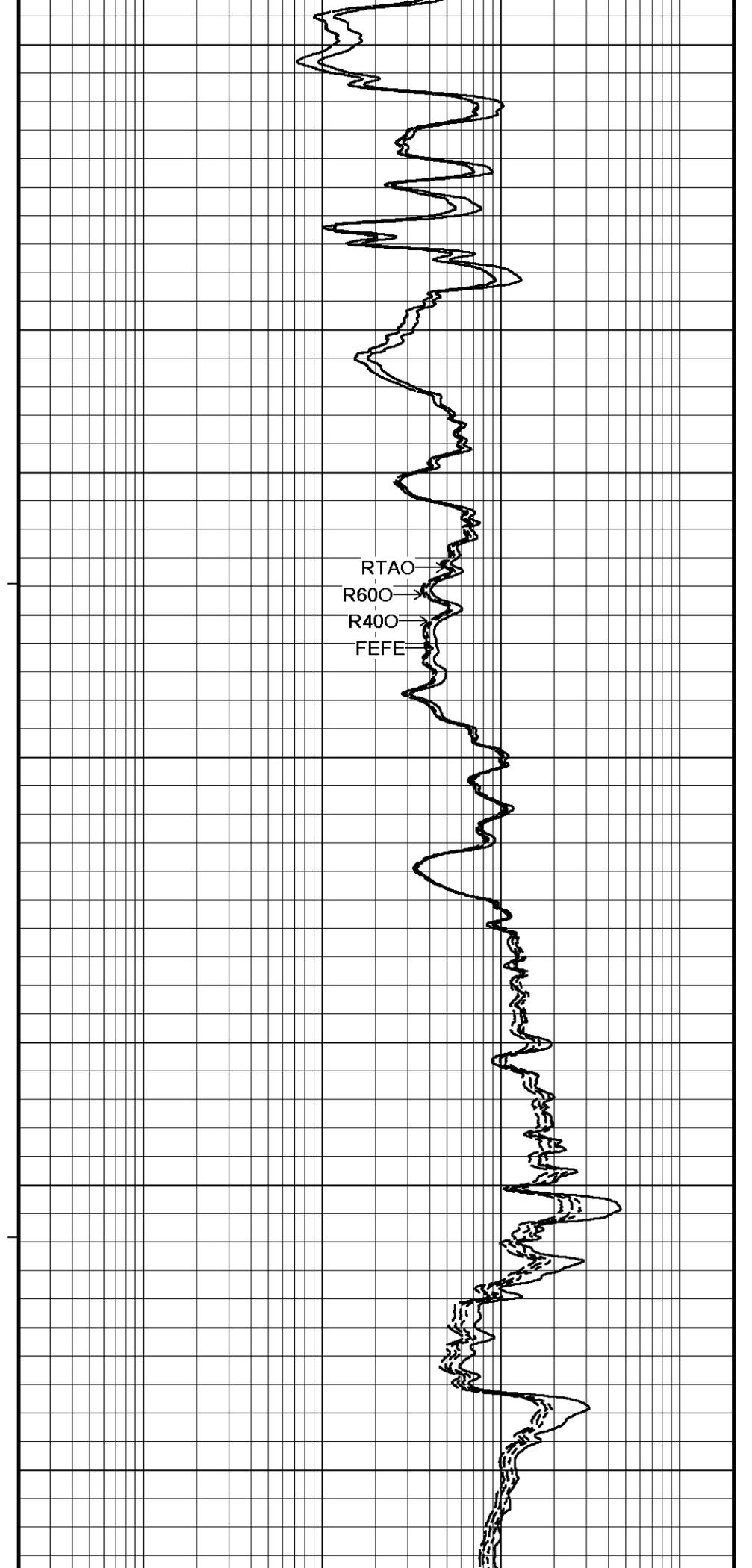
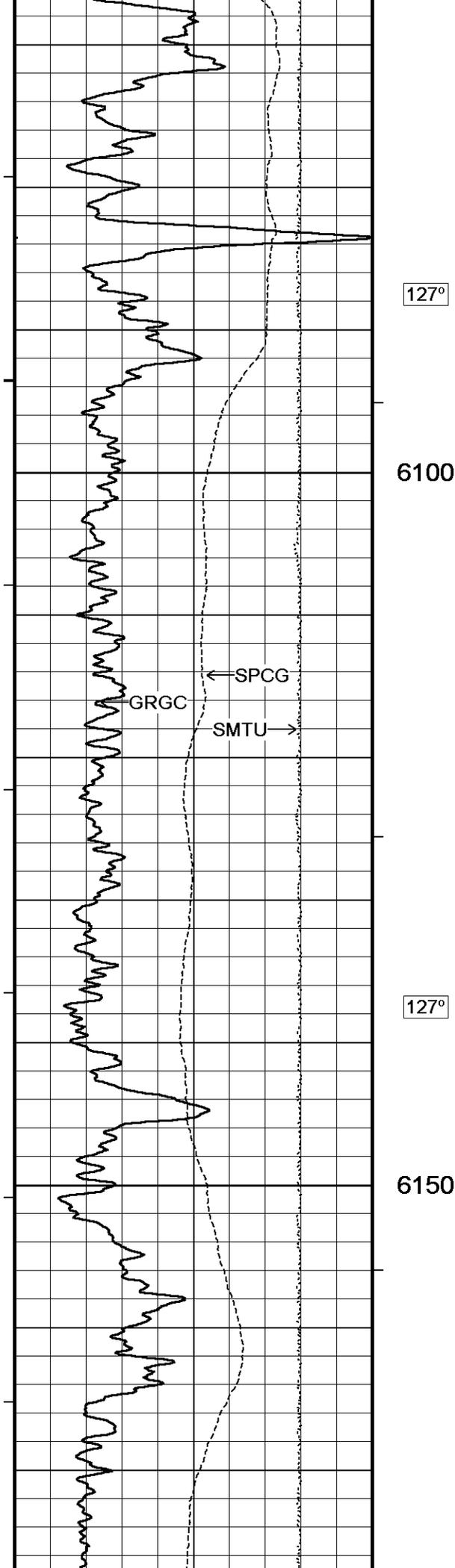
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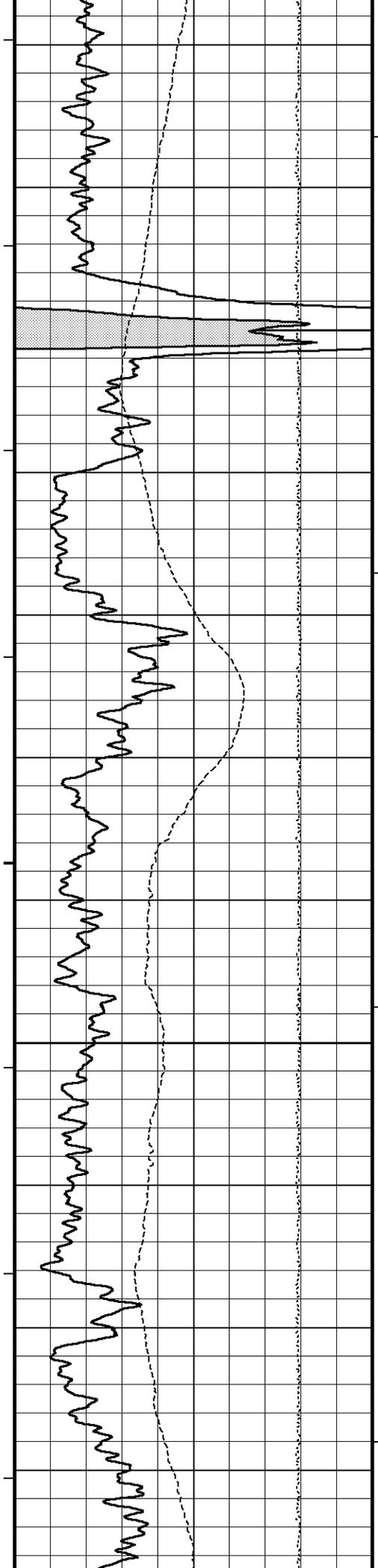
100

126°

6050





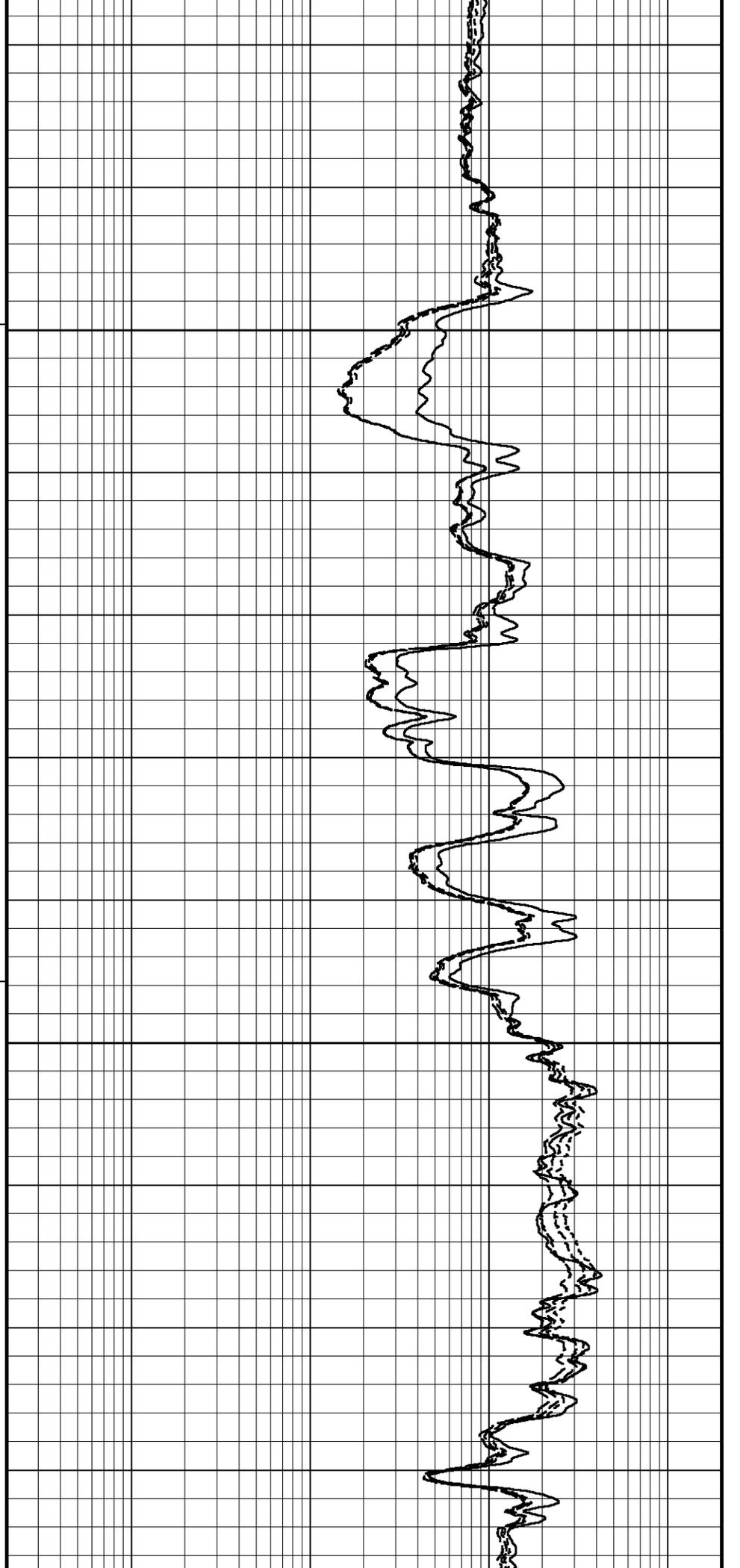


126°

6200

127°

6250



127°

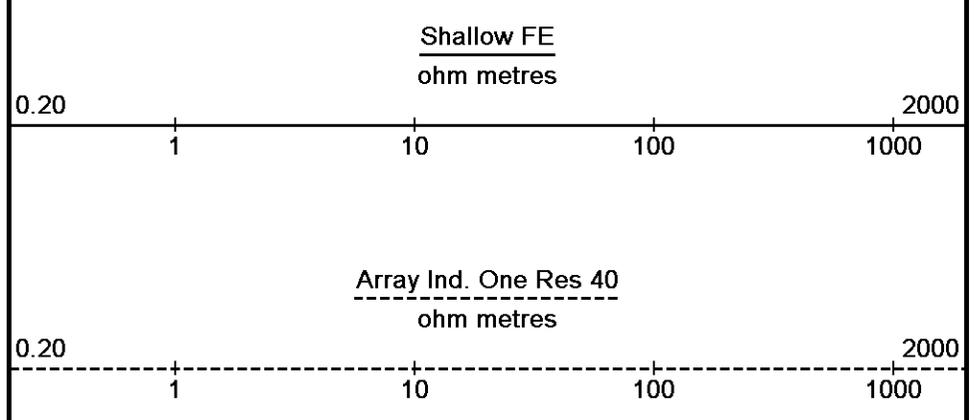
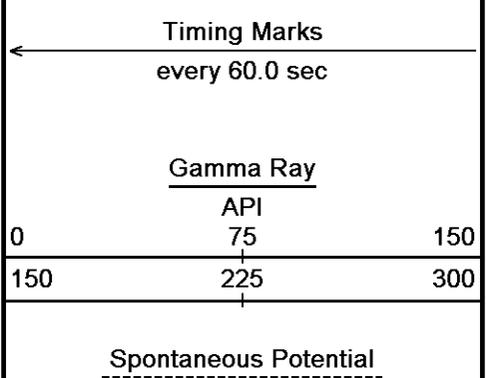
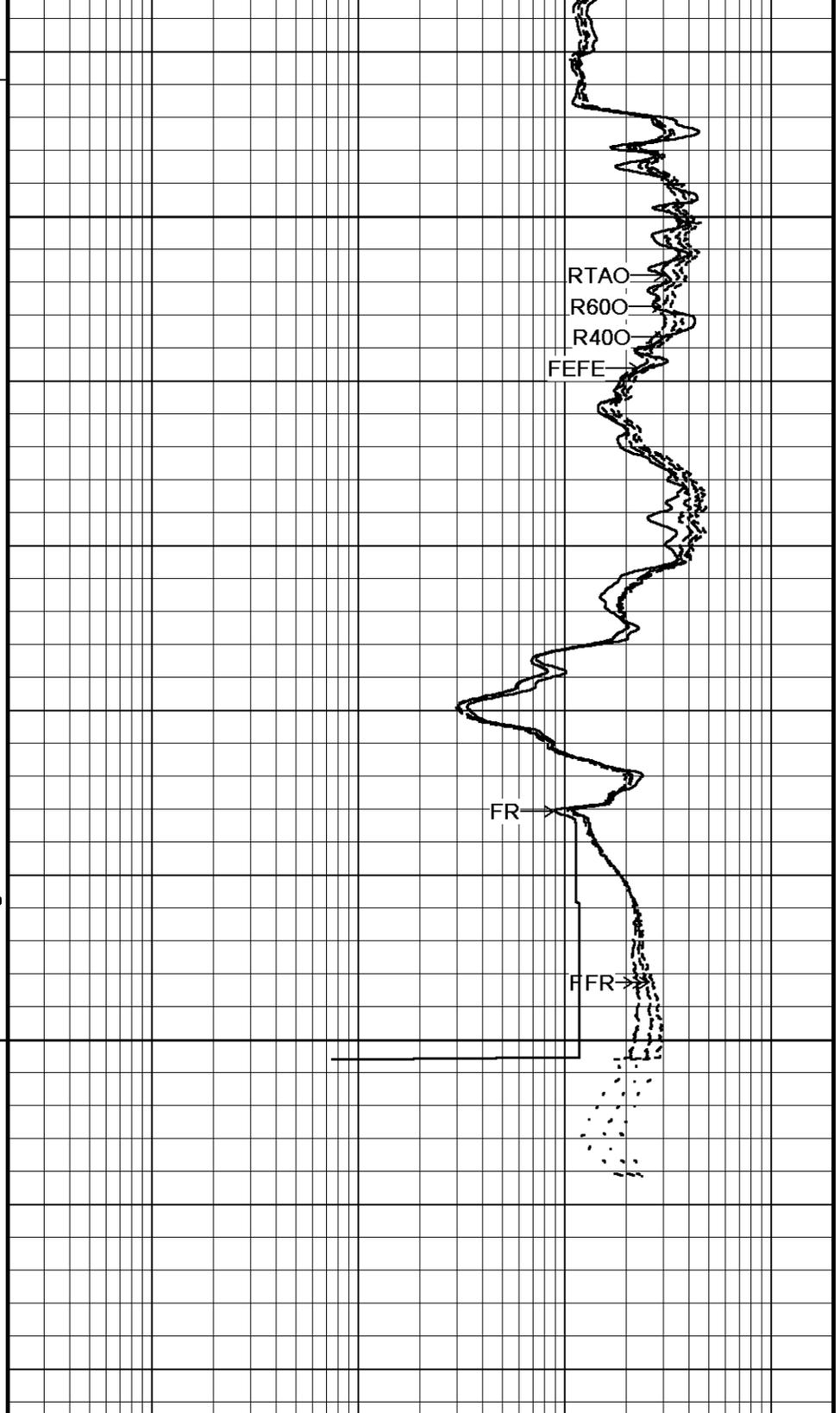
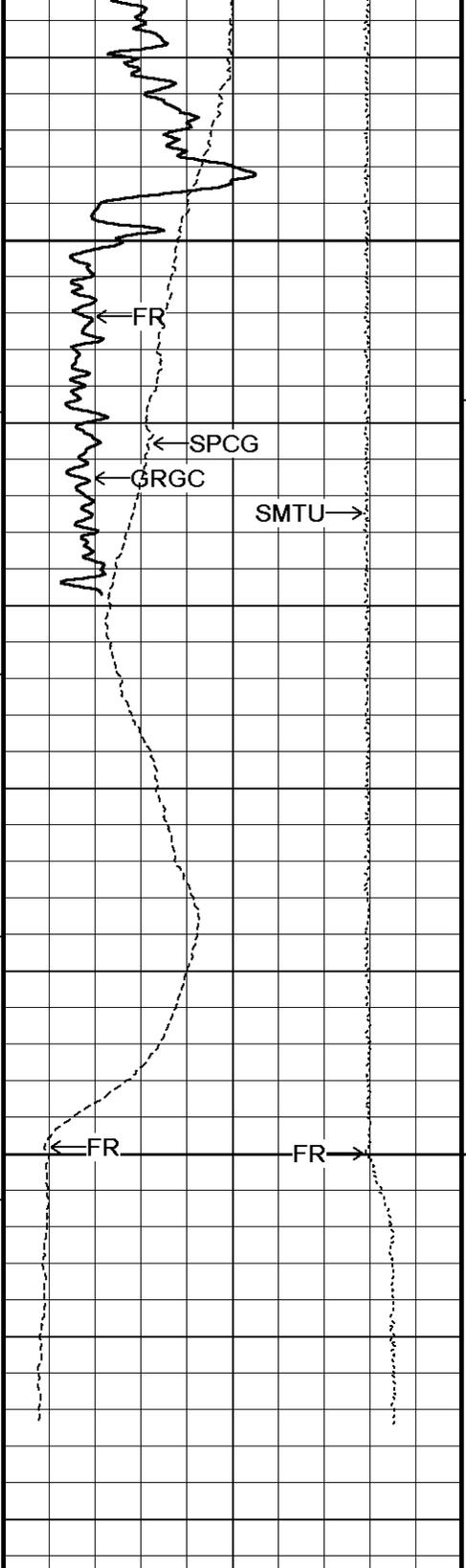
6300

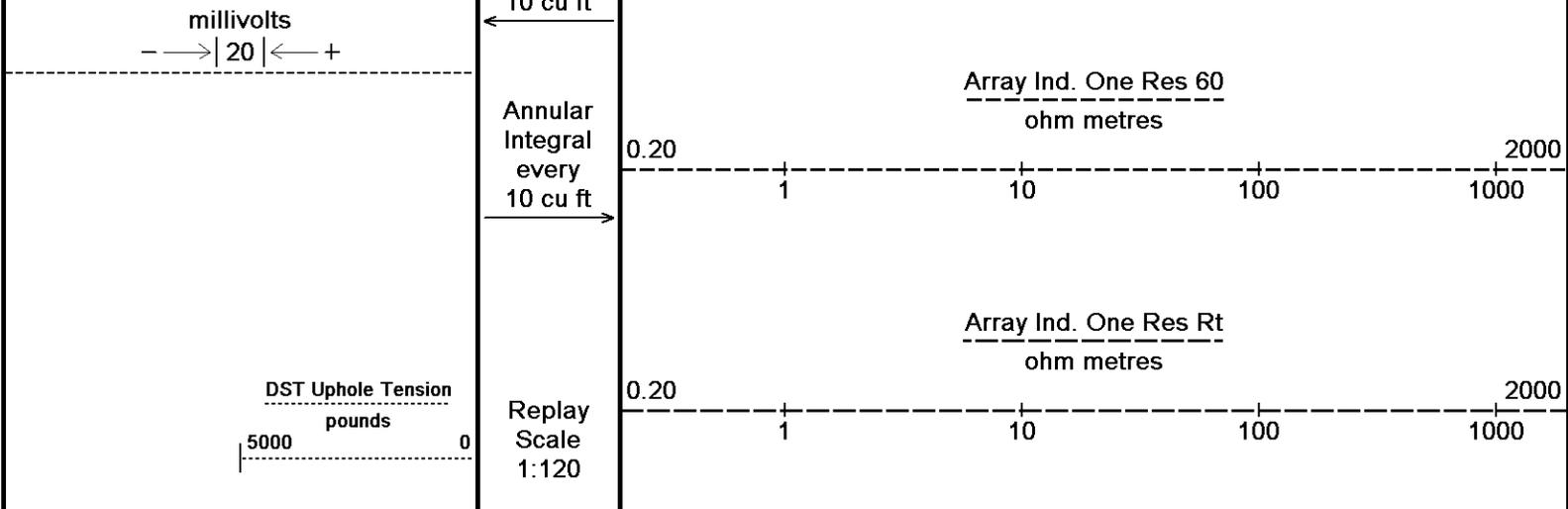
6350

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft





Depth Based Data - Maximum Sampling Increment 2.5cm
 Plotted on 18-APR-2018 23:10
 Filename: C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8\O'Brien Preedy #2-8_001.dta
 Recorded on 18-APR-2018 18:57
 System Versions: Logged with 18.01.5248 Plotted with 18.01.5248

↑ 10 INCH HIGH RESOLUTION ↑

BEFORE SURVEY CALIBRATION
 C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8\O'Brien Preedy #2-8_002.dta

General Constants All 000 Last Edited on 18-APR-2018,18:28

General Parameters		
Mud Resistivity	0.960	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	4.500	inches
Caliper for Differential Caliper	None	
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 18-APR-2018 17:48

Reading No	Measured	Calibrated (lbs)
1	15898.52	0.00
2	16872.90	454.00

Gamma Calibration MCG-D.J 422 Field Calibration on 18-APR-2018 15:02

	Measured	Calibrated (API)
Background	74	51
Calibrator (Gross)	734	507
Calibrator (Net)	661	456



Gamma Constants MCG-D.J 422 Last Edited on 18-APR-2018,16:49

Gamma Calibrator Number	MCGGRCC141
GRC-M Calibrator Jig in Use?	NO
Inactive Background Jig in Use?	NO

Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-D.J 422			Field Calibration on 13-APR-2018,06:33
	Measured	Calibrated (mV)	
Reference 1	101.2	99.9	
Reference 2	-98.1	-100.2	

High Resolution Temperature Calibration MCG-D.J 422			Field Calibration on 13-APR-2018,06:34
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	212.00	212.00	

High Resolution Temperature Constants MCG-D.J 422		Last Edited on 07-DEC-2017,17:17
Pre-filter Length	11	

Micro Normal and Micro Inverse Calibration MMR-B.A 91				Base Calibration on 13-APR-2018 05:15	Field Check on 18-APR-2018 14:49
	Resistor 1 (ohm)	Resistor 2 (ohm)			
	10.0	50.0			
Base Calibration					
	Measured	Calibrated (ohm-m)			
Micro Normal	10.3	49.8	5.1	25.6	
Micro Inverse	10.0	49.4	3.4	16.9	
Channel					
	Base Check (ohm-m)	Field Check (ohm-m)			
Micro Normal	93.9	93.9			
Micro Inverse	62.4	62.4			

Micro Normal & Micro Inverse Calibration Tolerance MMR-B.A 91							
Micro Normal Res. 1	10.3		ohm	Micro Normal Res. 2	49.8		ohm
Micro Inverse Res. 1	10.0		ohm	Micro Inverse Res. 2	49.4		ohm
Micro Normal Base Check	93.9		ohm-m				
Micro Inverse Base Check	62.4		ohm-m				
Micro Normal Field Check	93.9		ohm-m				
Micro Inverse Field Check	62.4		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 13-APR-2018 05:09	Field Calibration on 18-APR-2018 14:46
Base Calibration				
Reading No	Measured	Calibrator Size (in)		
1	13869	5.98		
2	17211	7.97		
3	20545	9.86		
4	24538	11.92		
5	0	0.00		
6	N/A	N/A		
Field Calibration				
	Measured Caliper (in)	Actual Caliper (in)		
	8.00	7.97		

Caliper Calibration Tolerances MMR-B.A 91		

Micro-Resistivity Caliper Constants MMR-B.A 91

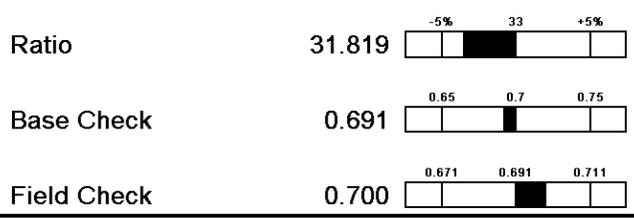
Sonde Configuration Resistivity Mode

Neutron Calibration MDN-B.A 292

Base Calibration on 26-MAR-2018 16:14
Field Check on 18-APR-2018 15:07

Base Calibration		Measured	Calibrated (cps)
	Near	Far	Near Far
	2880	91	3714 110
Ratio	31.819		33.764
Field Calibrator at Base			Calibrated (cps)
			2207 3192
Ratio			0.691
Field Check			Calibrated (cps)
			2227 3183
Ratio			0.700

Neutron Calibration Tolerances MDN-B.A 292



Neutron Constants MDN-B.A 292

Last Edited on 18-APR-2018,16:49

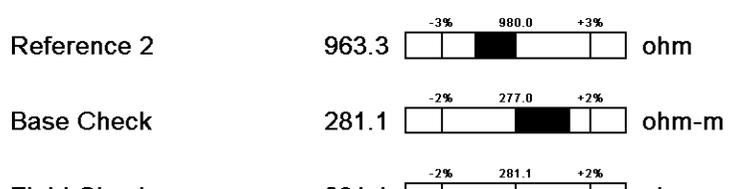
Neutron Source Id	P0204NN	
Neutron Jig Number	NJ5736	
Air Hole Processing	Modified Ratio	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	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-A.A 135

Base Calibration on 06-APR-2018 10:10
Field Check on 18-APR-2018 14:38

	Resistor 1 (ohm)	Resistor 2 (ohm)
	0.0	1000.0
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.3	126.8
Base Check		281.1
Field Check		281.1

FE Calibration Tolerances MFE-A.A 135



FE Constants MFE-A.A 135

Last Edited on 18-APR-2018,16:49

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

High Resolution Temperature Calibration MAI-A.A 111

Field Calibration on 23-FEB-2018,11:15

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

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

Pre-filter Length 11

Induction Calibration MAI-A.A 111

Factory Loop Calibration 13-APR-2018 06:16

Field Check on 18-APR-2018 14:34

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)	17.6	473.6	9.3	966.2	0.000	0.0
2	6.4	385.9	7.6	821.4	0.000	0.0
3	3.2	264.0	5.2	566.0	0.000	0.0
4 (far)	2.1	135.5	2.6	279.2	0.000	0.0
Array Temperature	23.0		Deg F			

Tool Checks

Array	Factory Reference (mmho/m)		Before Survey (mmho/m)		Deg F
	Low	High	Low	High	
1 (near)	9.4	3838.6	10.2	3839.1	67.7
2	27.5	3497.6	28.3	3498.2	
3	27.1	2995.5	27.8	2996.0	
4 (far)	17.8	2040.7	18.3	2041.1	
Array Temperature	67.7		68.9		Deg F

Induction Check Tolerances MAI-A.A 111

Low Array 1	10.2		mmho/m	High Array 1	3839.1		mmho/m
Low Array 2	28.3		mmho/m	High Array 2	3498.2		mmho/m
Low Array 3	27.8		mmho/m	High Array 3	2996.0		mmho/m
Low Array 4	18.3		mmho/m	High Array 4	2041.1		mmho/m

Induction Constants MAI-A.A 111

Last Edited on 18-APR-2018,16:49

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 Pineapple
 Stand-off 0.49 inches
 Number of Fins on Stand-off 5.0000
 Stand-off Fin Angle 72.00 degrees
 Stand-off Fin Width 1.3878 inches
 Rm Source Global Value: Temperature Corrected
 Temp. for Rm Corr. MCG External Temperature
 Borehole Correction Method Default

Borehole Correction Factors		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	

Caliper Calibration MPD-C.A 216

Base Calibration on 06-APR-2018 10:55
Field Calibration on 18-APR-2018 14:40

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13889	3.99
2	22592	5.98
3	31350	7.97
4	39584	9.86
5	48879	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.99	7.97

Caliper Calibration Tolerances MPD-C.A 216

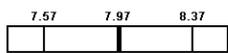
Long Arm Field Cal. 7.99  in

Photo Density Calibration MPD-C.A 216

Base Calibration on 06-APR-2018 11:13
Field Check on 18-APR-2018 14:44

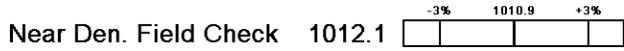
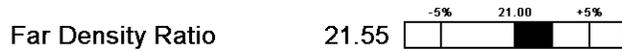
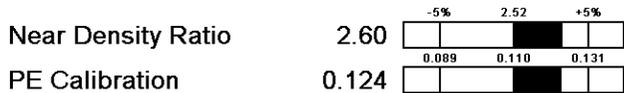
Density Calibration				
Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1011	1199		
Reference 1	49188	23851	59556	30836
Reference 2	19522	2251	24941	2541
Field Check at Base				
	1010.9	1199.5		
Field Check				
	1012.1	1190.3		
PE Calibration				
Base Calibration	Measured		Calibrated	
WS	WH	Ratio	Ratio	

	WS	WH	Ratio	Ratio
Background	185	910		
Reference 1	20854	49032	0.429	0.371
Reference 2	5685	19414	0.297	0.272

Field Check at Base
185.2 910.4

Field Check
184.8 911.7

Photo Density Calibration Tolerances MPD-C.A 216



Density Constants MPD-C.A 216

Last Edited on 18-APR-2018,16:49

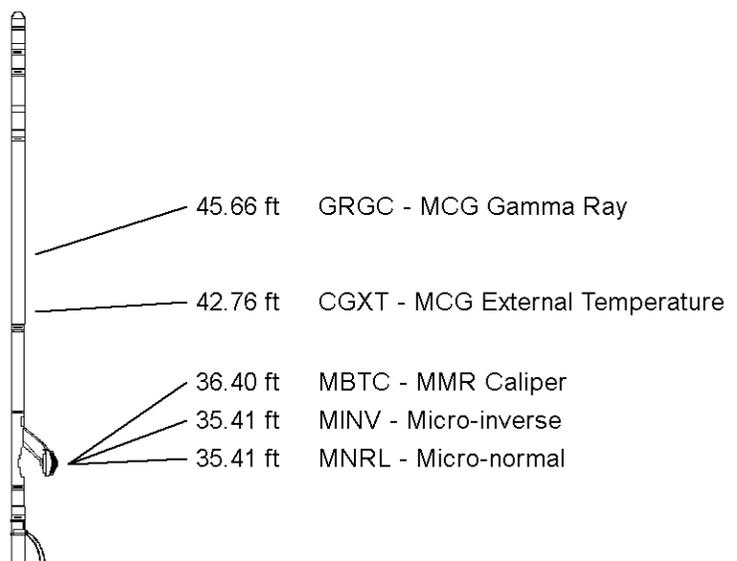
Density Source Id	P50557B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	gm/cc
Mud Density Type		
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Precision Enhanced Density Processing	Not 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
0.00	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8\O'Brien Preedy #2-8_002.dta

- Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in
- Compact Swivel Head Adaptor
SHA-J.B 724 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in
- Compact Comms Gamma
MCG-D.J 422 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



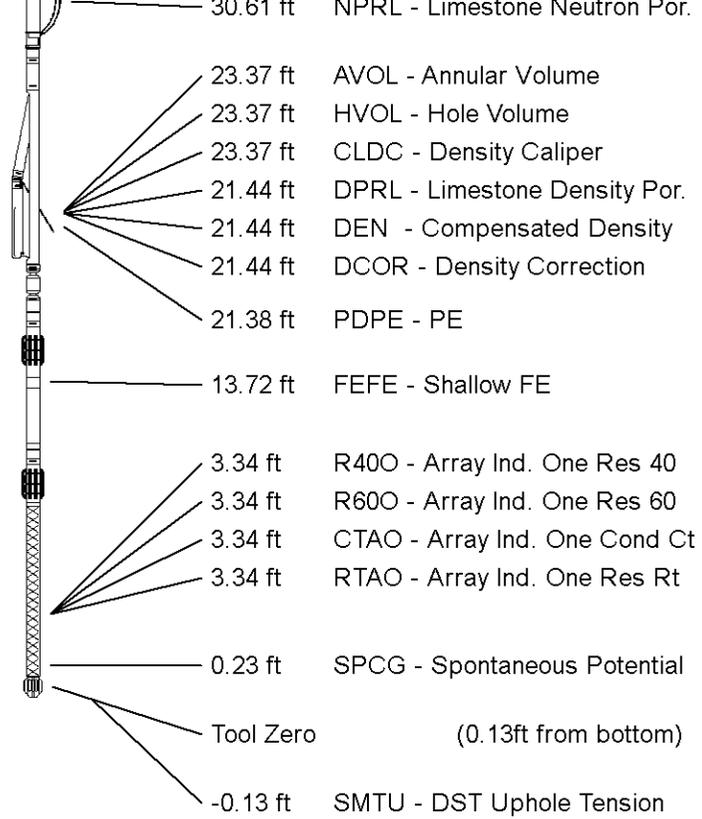
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.913 in

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

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 55.64 ft Weight: 454.2 lb



All measurements relative to tool zero.

COMPANY O'BRIEN ENERGY RESOURCES CORP.
WELL PREEDY #2-8
FIELD ANGELL SOUTH
PROVINCE/COUNTY MEADE
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2670	feet	First Reading	6347.00	feet
Elevation Drill Floor	2668	feet	Depth Driller	6350.00	feet
Elevation Ground Level	2657	feet	Depth Logger	6350.00	feet



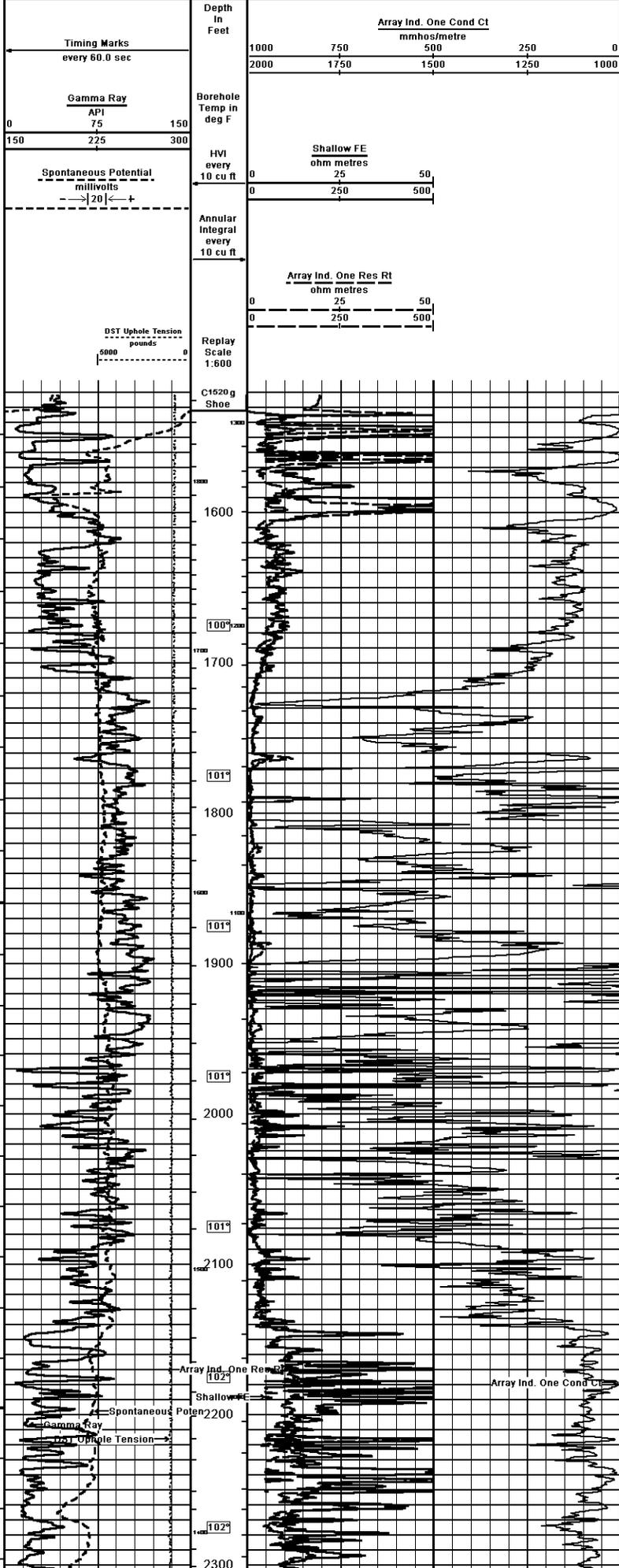
Weatherford

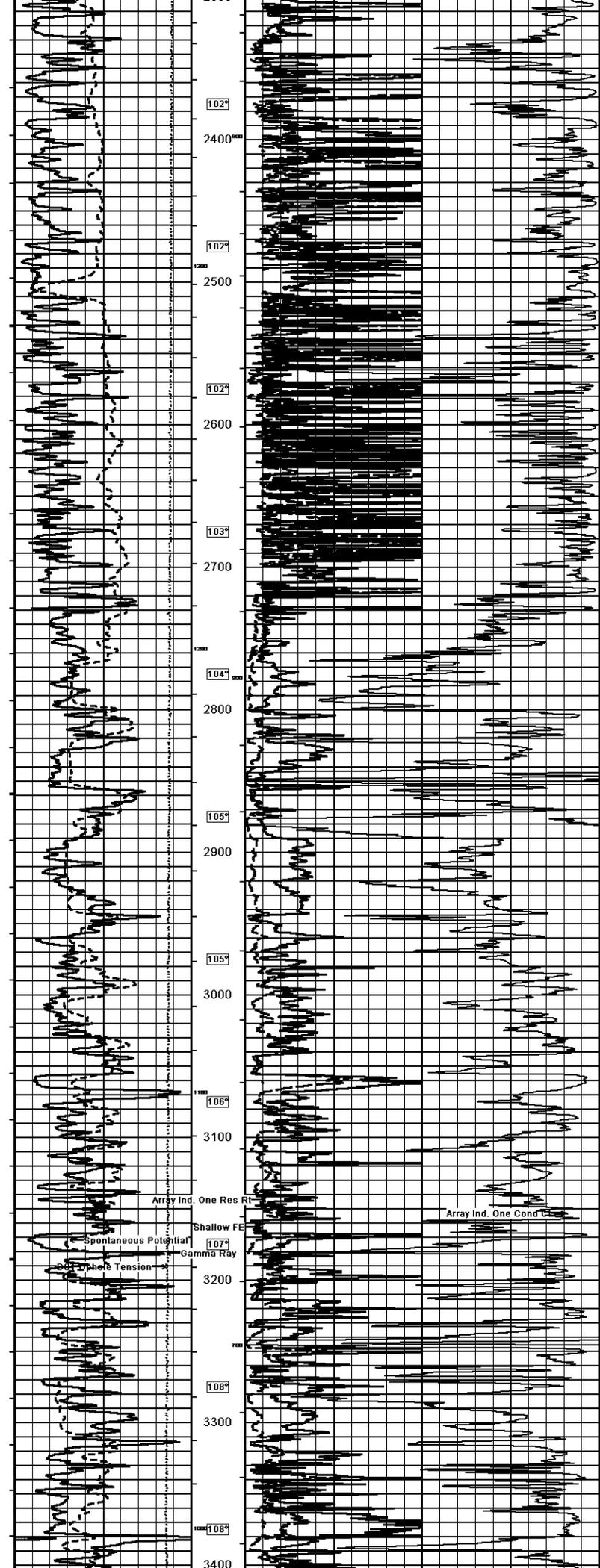
**ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG**

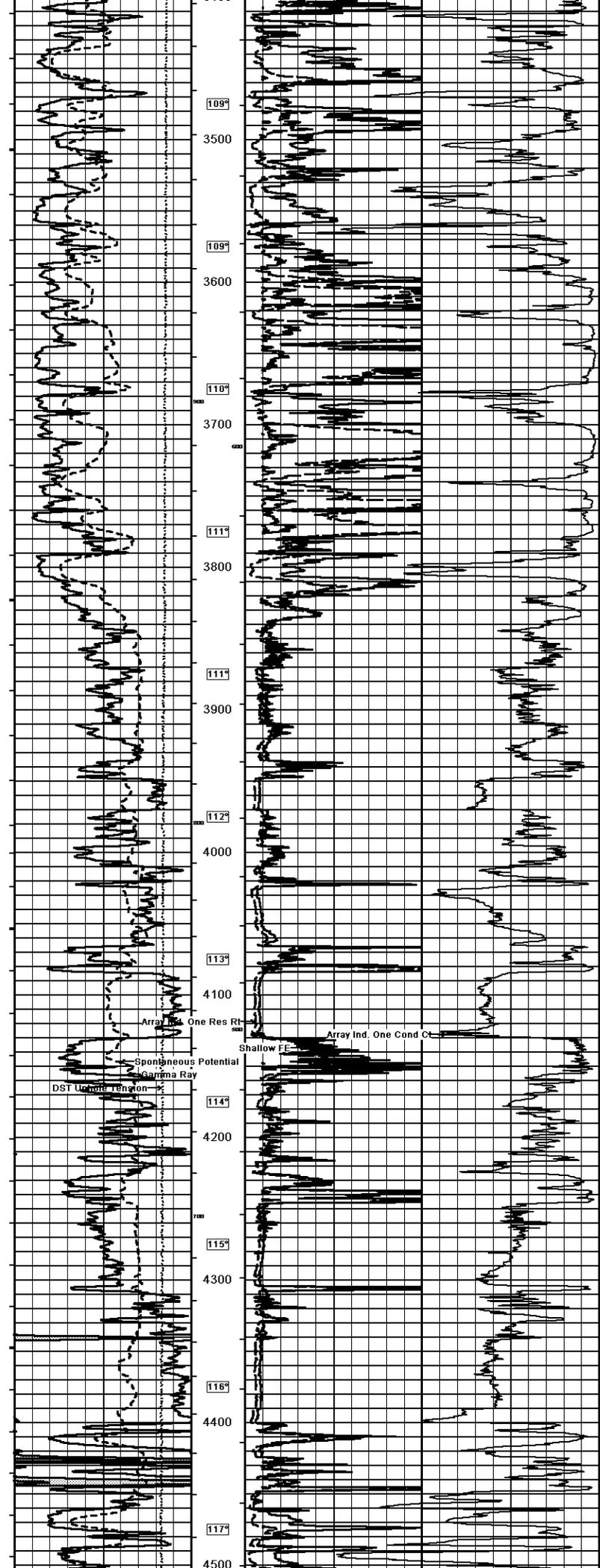
		ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG	
COMPANY O'BRIEN ENERGY RESOURCES CORP. WELL PREEDY #2-8 FIELD ANGELL SOUTH PROVINCE/COUNTY MEADE COUNTRY/STATE U.S.A. / KANSAS LOCATION 420' ENL & 335' FEL SEC 8 TWP 33S R3E 23W DATE 18-APR-2018 LOG NUMBER 15-119-21115 PERMANENT DATUM G.L. Elevation 2657 feet LOG MEASURED FROM R31, 13.00 feet above Permanent Datum DRILLING MEASURED FROM N3		Latitude MNL Longitude MNL Elevation 2670.00 feet CF 2668.00 CL 2657.00	
Run Number ONE Service Order 4586-217,297073 Depth Driller 6350.00 feet Depth Logger 6350.00 feet First Reading 6347.00 feet Last Reading 1532.00 feet Casing Driller 1533.00 feet Casing Logger 1532.00 feet Bit Size 7.875 inches Hole Fluid Type CHEMICAL Density/Viscosity 9.20 IND/Sg 53.00 CP PH/Fluid Loss 10.50 FLOWLINE 6.80 ml/30min Sample Source Rm @ Measured Temp 0.96 @ 75.0 ohm-m Rm @ Measured Temp 0.77 @ 75.0 ohm-m Rm @ Measured Temp 1.15 @ 75.0 ohm-m Source RmT/Rmc CALC Rm @ BHT 0.56 @ 23.0 ohm-m Time Since Circulation 5 HOURS Max Recorded Temp 129.00 deg F Equipment Base 13106 LIB Recorded By DONALD GRENTHOUSE Witnessed By DONALD GRENTHOUSE	Run Number ONE Service Order 4586-217,297073 Depth Driller 6350.00 feet Depth Logger 6350.00 feet First Reading 6347.00 feet Last Reading 1532.00 feet Casing Driller 1533.00 feet Casing Logger 1532.00 feet Bit Size 7.875 inches Hole Fluid Type CHEMICAL Density/Viscosity 9.20 IND/Sg 53.00 CP PH/Fluid Loss 10.50 FLOWLINE 6.80 ml/30min Sample Source Rm @ Measured Temp 0.96 @ 75.0 ohm-m Rm @ Measured Temp 0.77 @ 75.0 ohm-m Rm @ Measured Temp 1.15 @ 75.0 ohm-m Source RmT/Rmc CALC Rm @ BHT 0.56 @ 23.0 ohm-m Time Since Circulation 5 HOURS Max Recorded Temp 129.00 deg F Equipment Base 13106 LIB Recorded By DONALD GRENTHOUSE Witnessed By DONALD GRENTHOUSE		

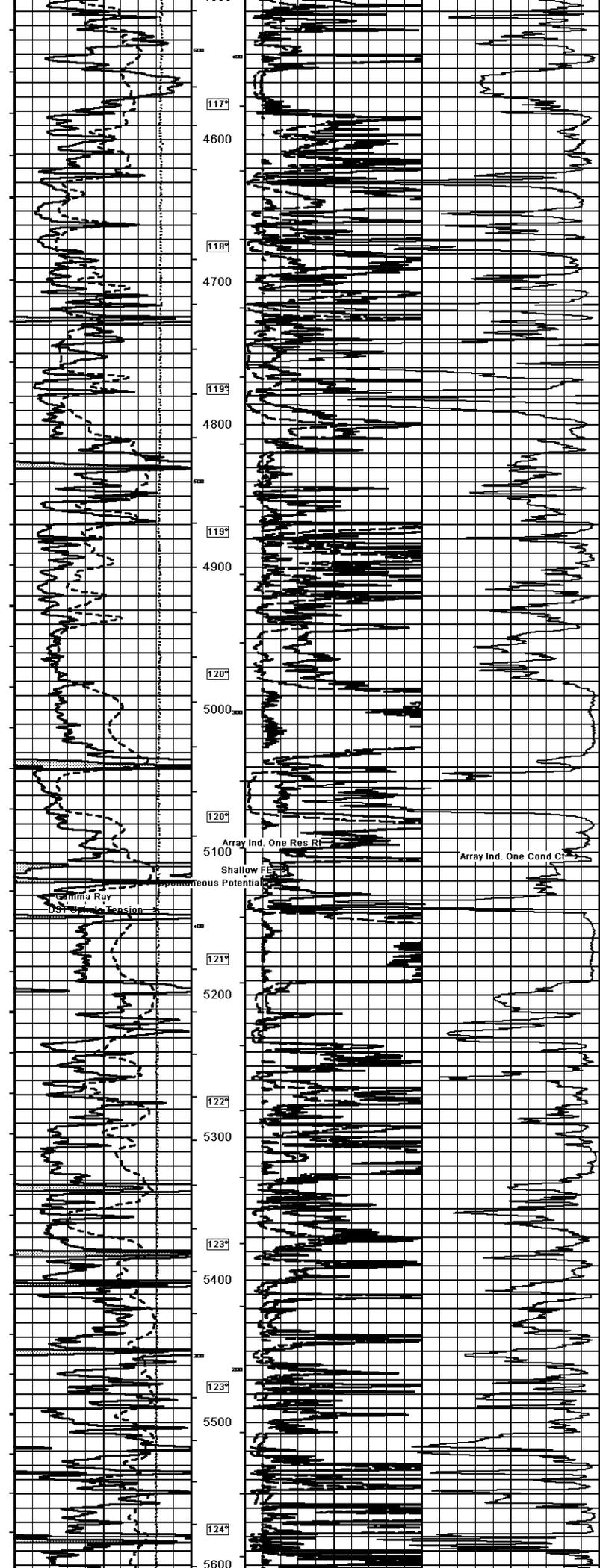
1 INCH MAIN

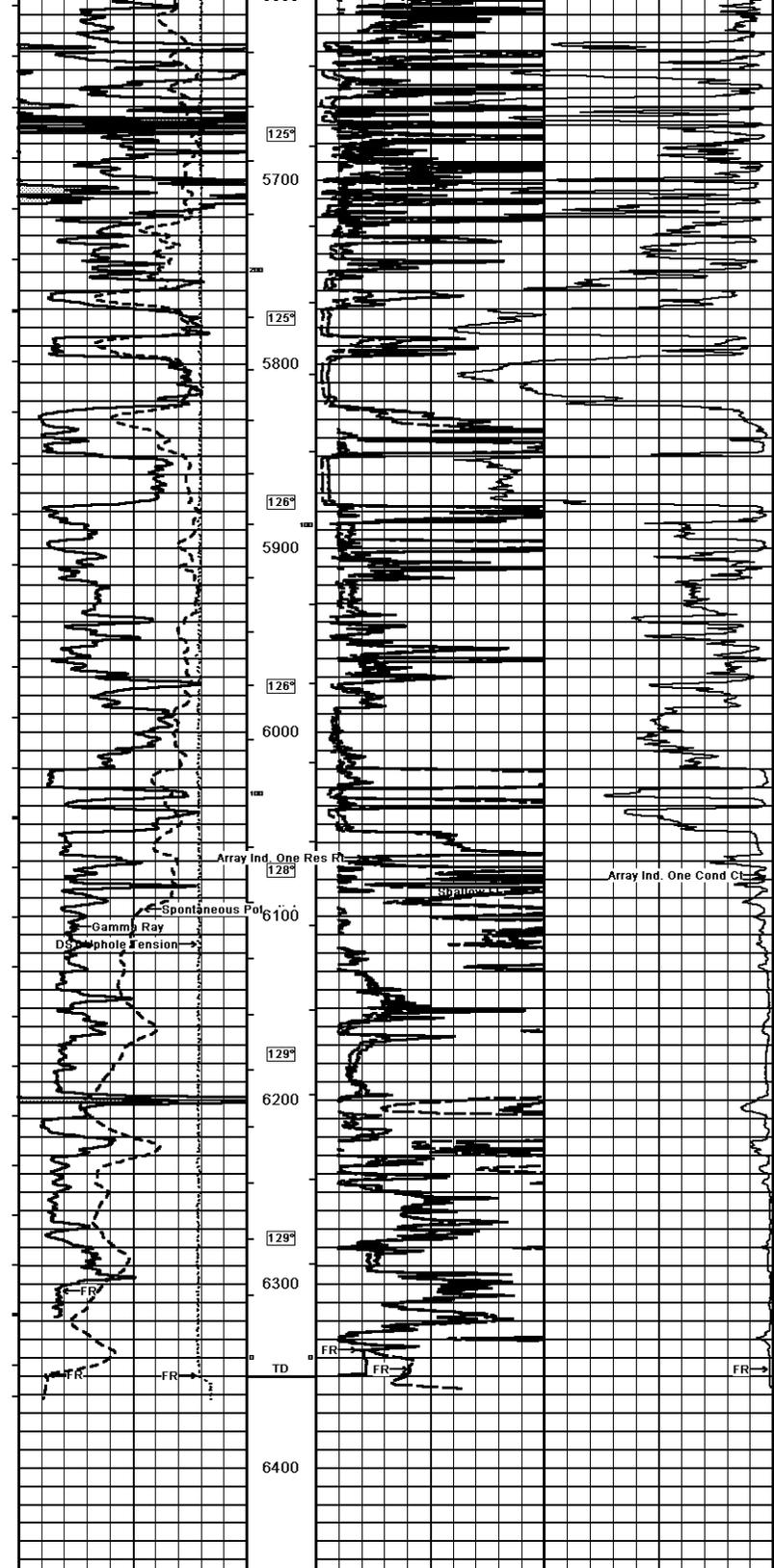
Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 18-APR-2018 23:10
 Filename: C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8_O'Brien Preedy #2-8_003.dta
 Recorded on 18-APR-2018 20:13
 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248











Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
- -> 20 | <- - +

DST Uphole Tension
pounds
5000 0

Depth
in
Feet

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:600

Array Ind. One Cond Ct
mmhos/metre
1000 750 500 250 0
2000 1750 1500 1250 1000

Shallow FE
ohm metres
0 25 50
0 250 500

Array Ind. One Res Rt
ohm metres
0 25 50
0 250 500

Array Ind. One Res Rt
128°

Array Ind. One Cond Ct
128°

Spontaneous Pot

Gamma Ray

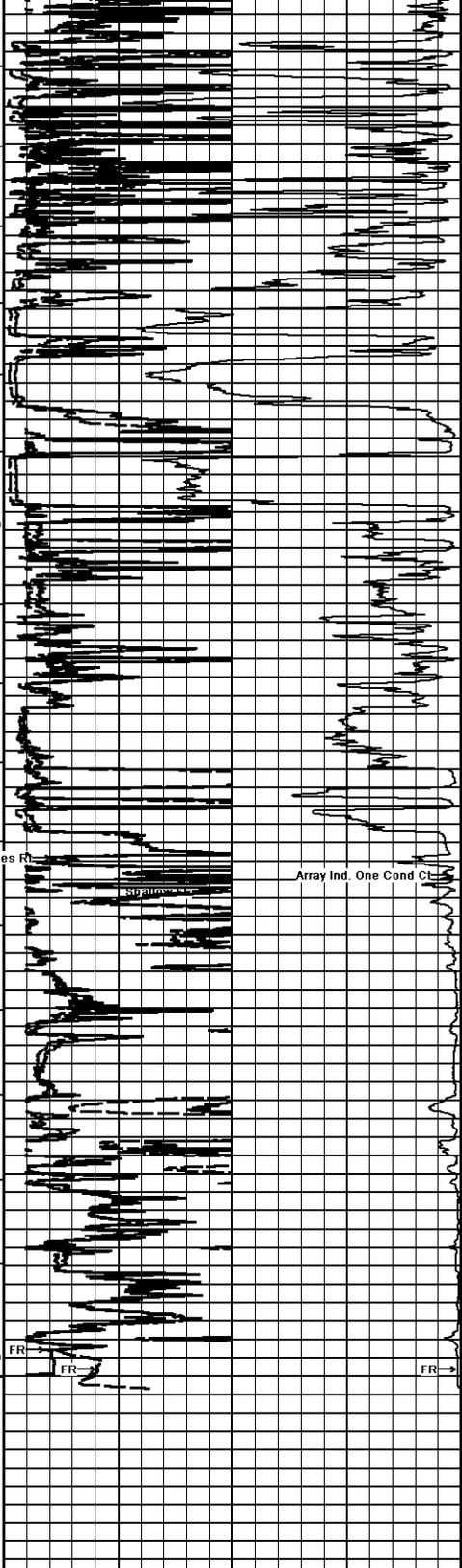
DST Uphole Tension

129°

129°

TD

FR



↑ 1 INCH MAIN ↑

COMPANY	O'BRIEN ENERGY RESOURCES CORP.		
WELL	PREEDY #2-8		
FIELD	ANGELL SOUTH		
PROVINCE/COUNTY	MEADE		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	2670	feet	First Reading	6347.00	feet
Elevation Drill Floor	2668	feet	Depth Driller	6350.00	feet
Elevation Ground Level	2657	feet	Depth Logger	6350.00	feet

	ARRAY INDUCTION
	SHALLOW FOCUSED
	ELECTRIC LOG