



Weatherford

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

COMPANY			MCCOY PETROLEUM CORPORATION		
WELL			SEALEY "A" #1-15		
FIELD			ALFORD		
PROVINCE/COUNTY			SCOTT		
COUNTRY/STATE			U.S.A. / KANSAS		
LOCATION			990' FSL & 1980' FEL		
PERMIT NUMBER			N2 SW SE		
SEC 15	TWP 30S	RGE 19W	Other Services		
Latitude			Elevations: KB 2273.00 DF 2271.00 GL 2264.00		
Longitude					
API Number					
Permanent Datum GL, Elevation 2264 feet					
Log Measured From KB					
Drilling Measured From KB @ 9 FEET					
Date	18-OCT-2013				
Run Number	ONE				
Service Order	7036-100817902				
Depth Driller	5225.00	feet			
Depth Logger	5225.00	feet			
First Reading	5221.66	feet			
Last Reading	646.00	feet			
Casing Driller	644.00	feet			
Casing Logger	646.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	WBM				
Density / Viscosity	9.40 lb/USg	88.00 CP			
PH / Fluid Loss	10.50	12.00 ml/30Min			
Sample Source	MUDPIT				
Rm @ Measured Temp	0.31 @ 75.0	ohm-m			
Rmf @ Measured Temp	0.25 @ 75.0	ohm-m			
Rmc @ Measured Temp	0.37 @ 75.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.21 @113.0	ohm-m			
Time Since Circulation	4 HOURS				
Max Recorded Temp	113.00	deg F			
Equipment / Base	13096	LIB			
Recorded By	DEREK CARTER				
Witnessed By	ZACH WIELE				
IOB #	LB14-323				

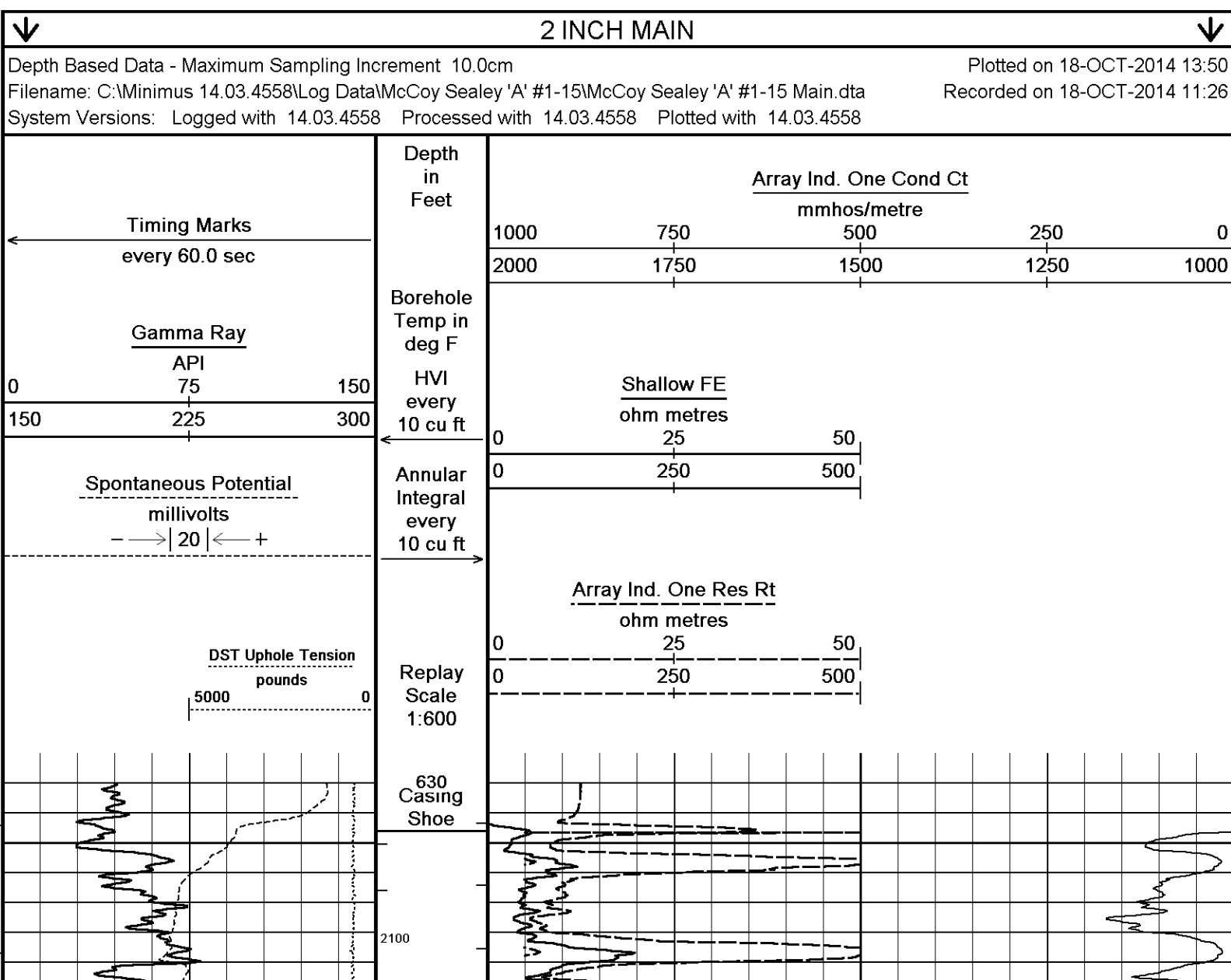
Elevations:	feet
KB	2273.00
DF	2271.00
GL	2264.00

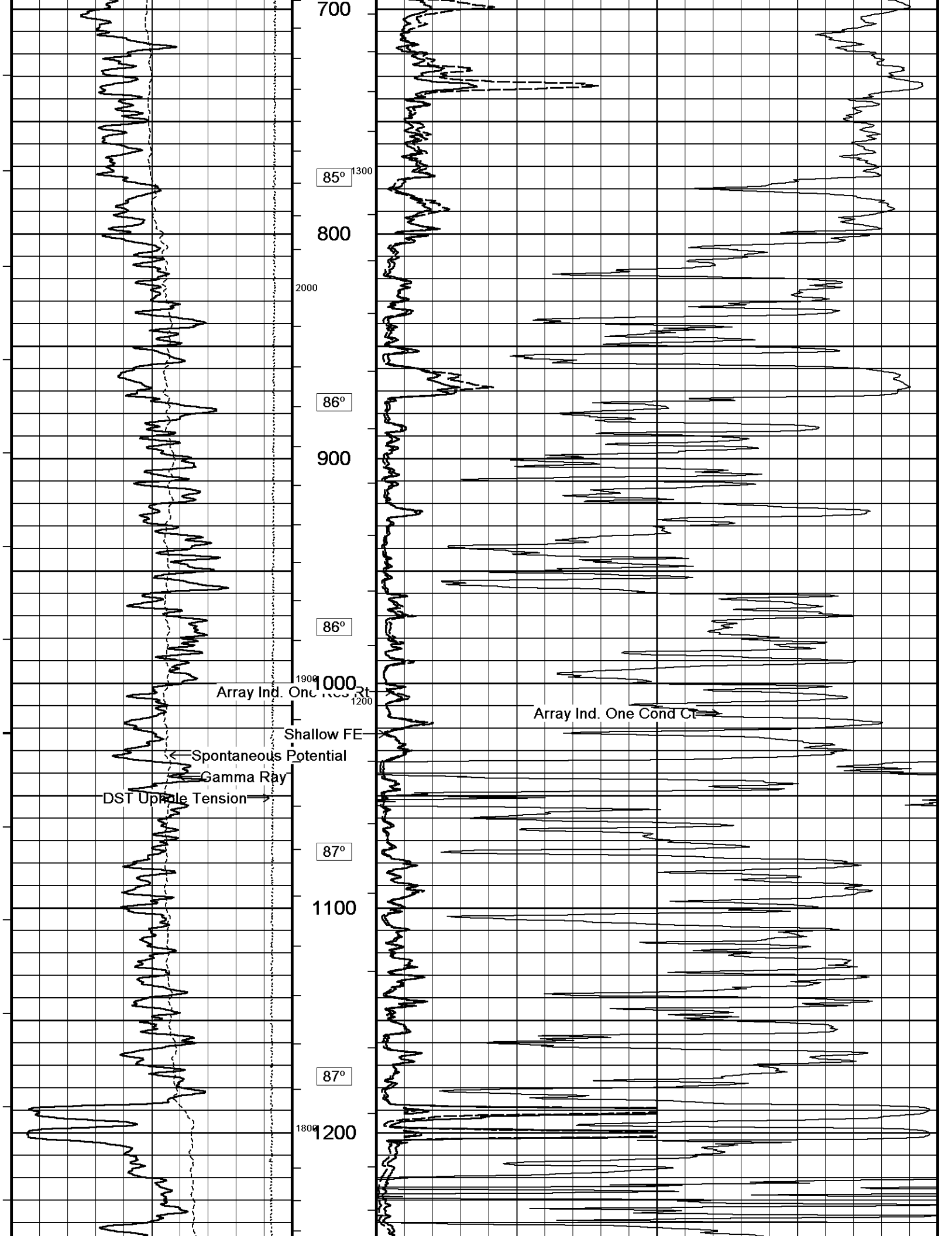
BOREHOLE RECORD			Last Edited: 18-OCT-2014 09:17	
Bit Size inches	Depth From feet		Depth To feet	
7.875	644.00		5225.00	
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	644.00	24.00

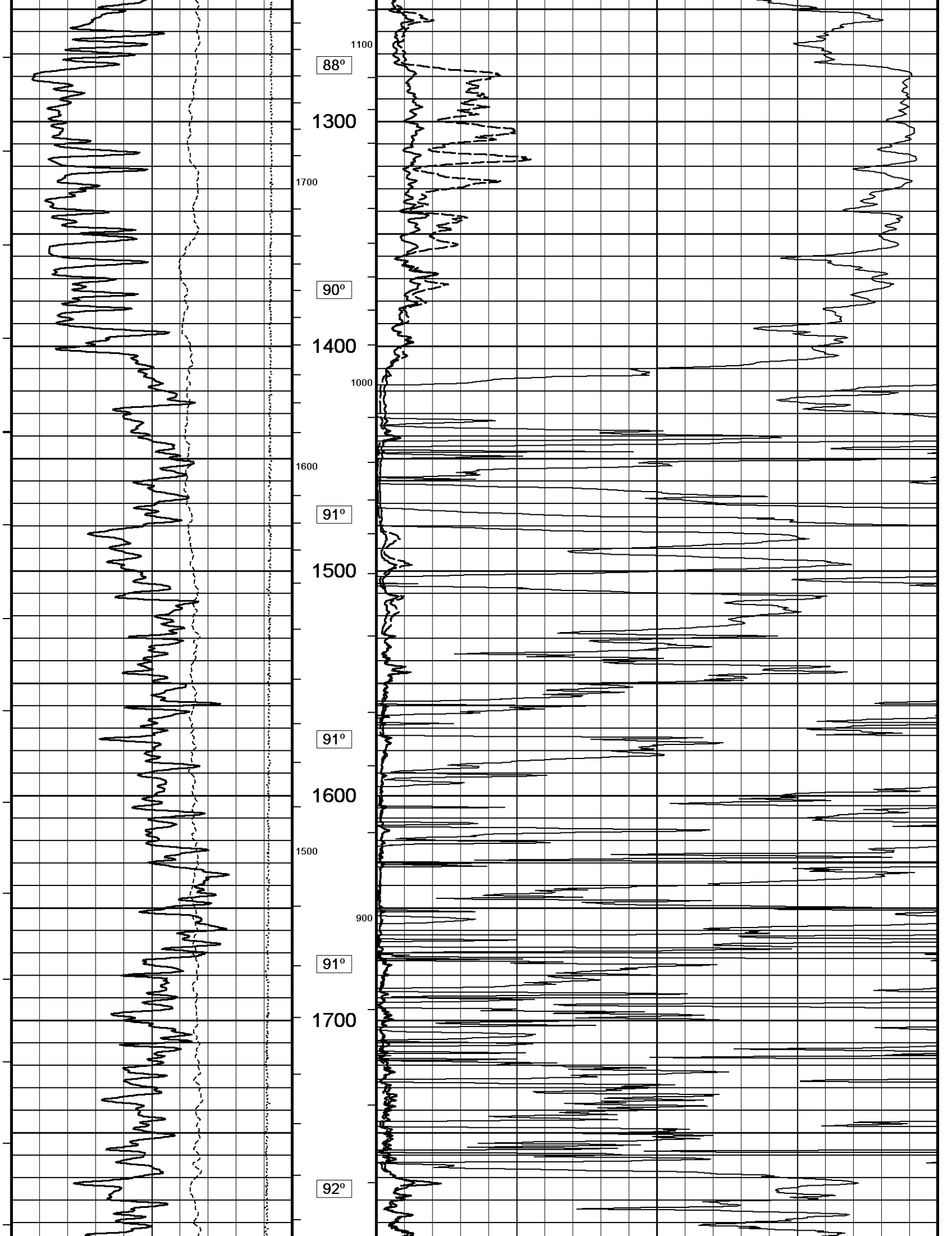
REMARKS
- SOFTWARE ISSUE: WLS 14.03.4558
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE: MDN: DUAL BOWSPRING ECCENTRALIZER MFE: 1 X 0.5 INCH STANDOFF MAI: 2 X 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- HIGH RESOLUTION LOGGED FOR CUSTOMER FROM TD TO 4975 FT.
- TOTAL HOLE VOLUME FROM TD TO 3900 FT: 450 CU FT

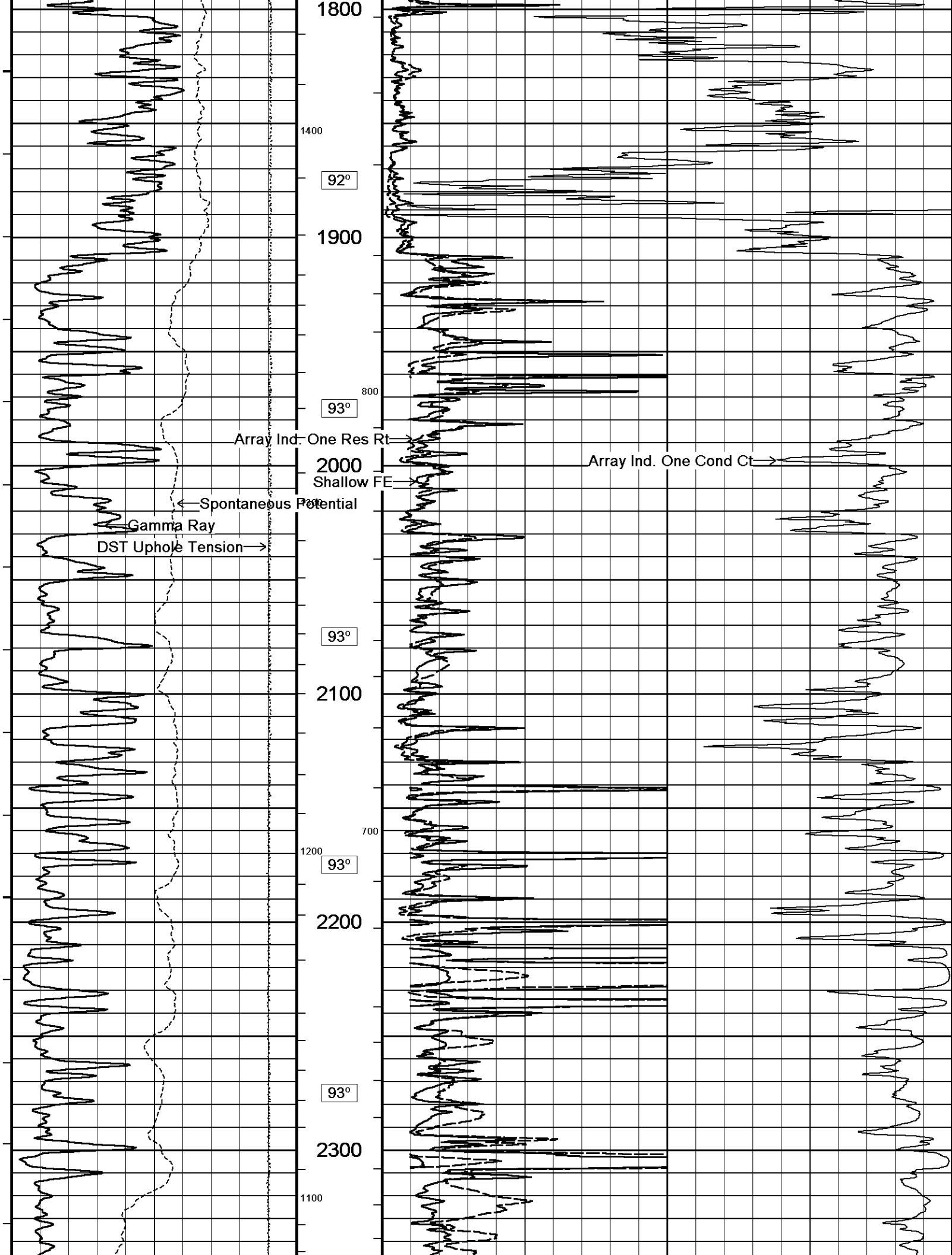
- CHLORIDE LEVEL: 12.000 PPM

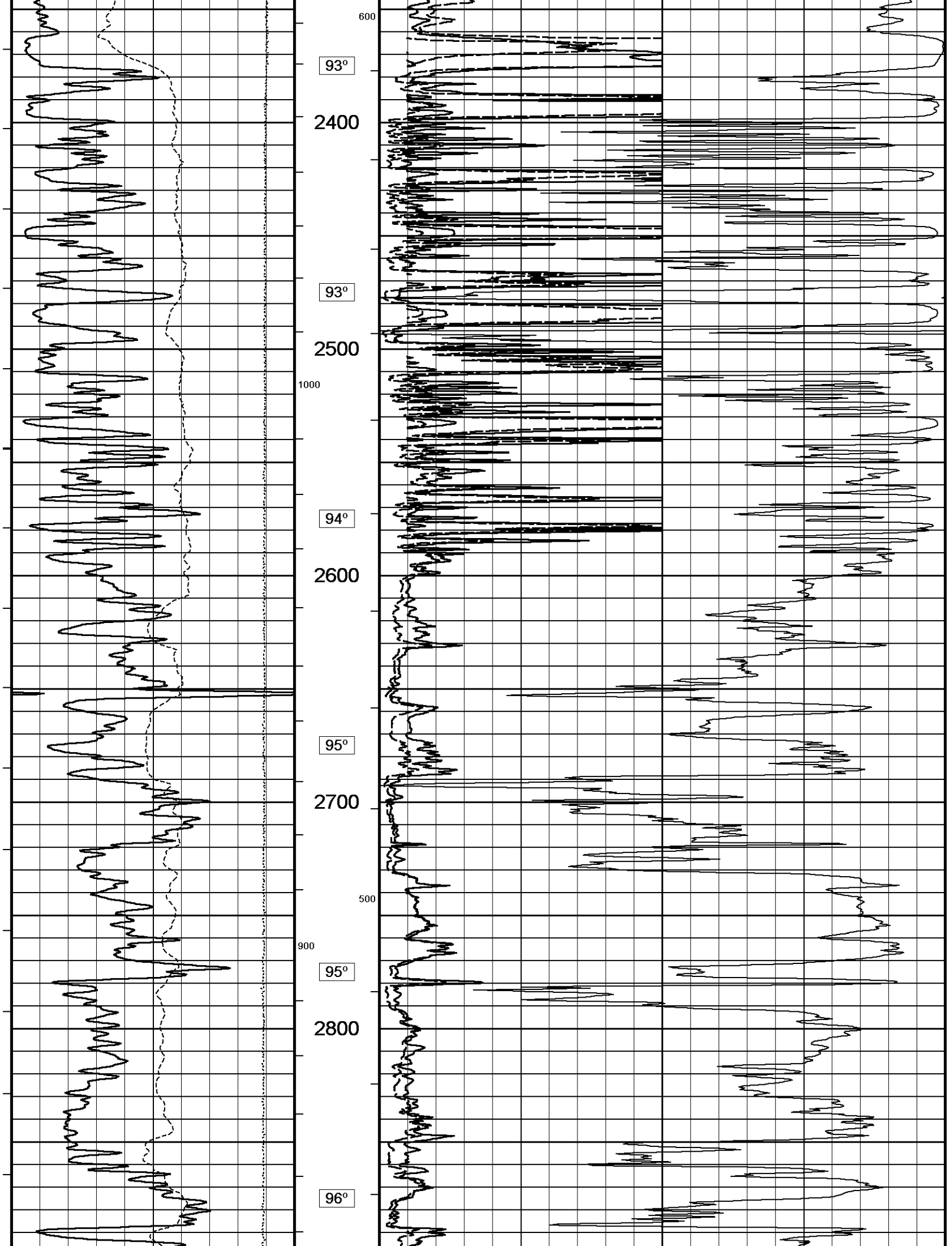
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will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

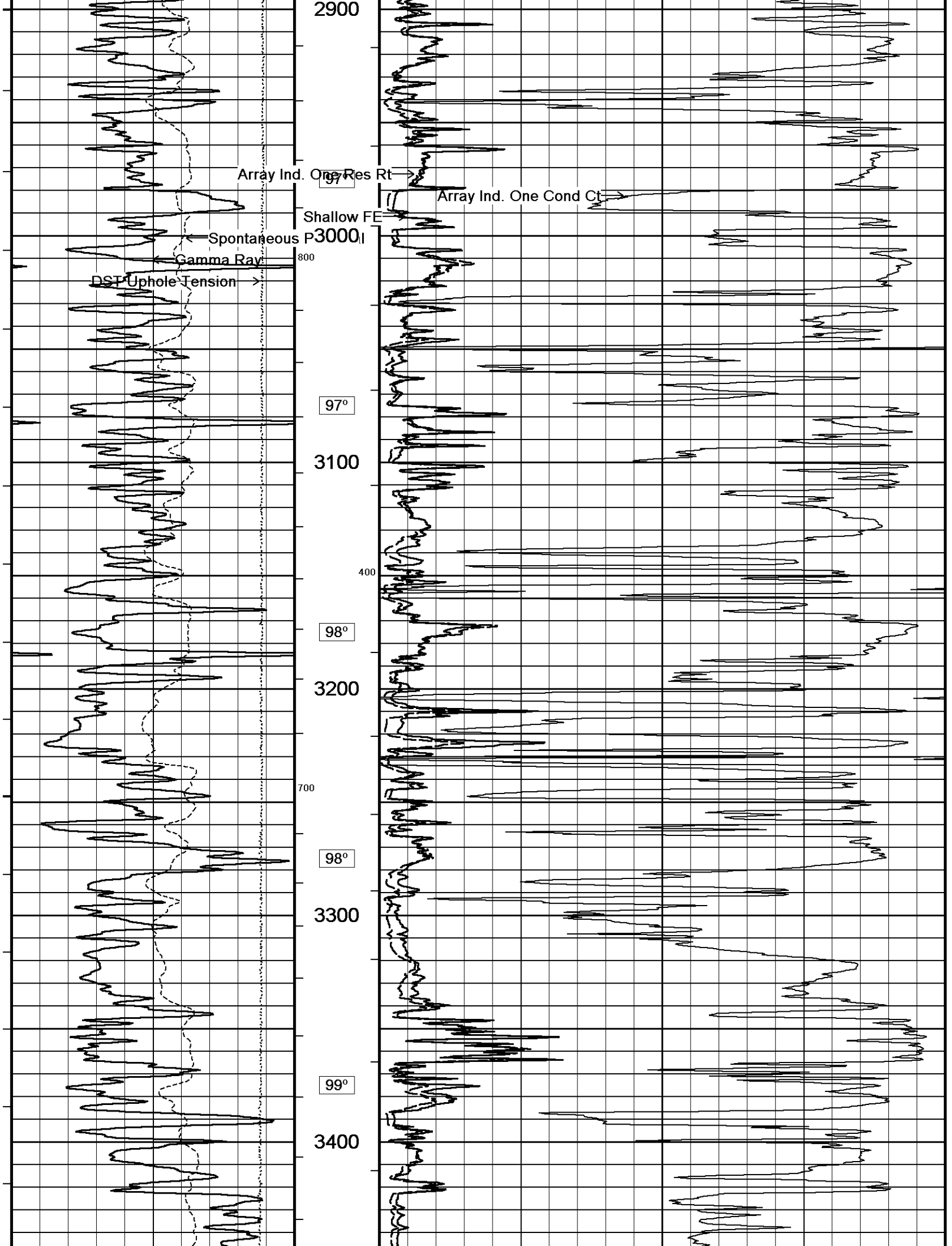


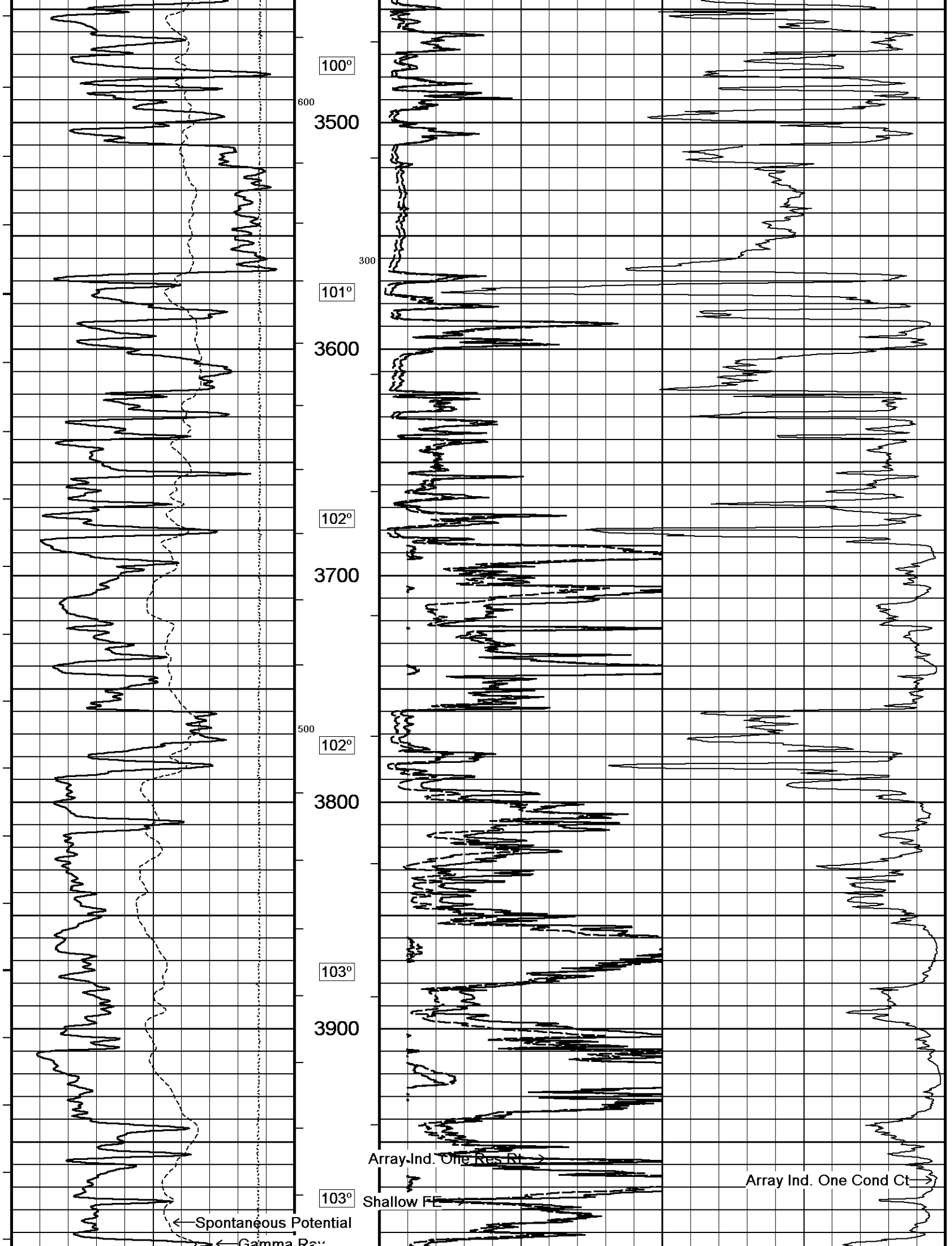


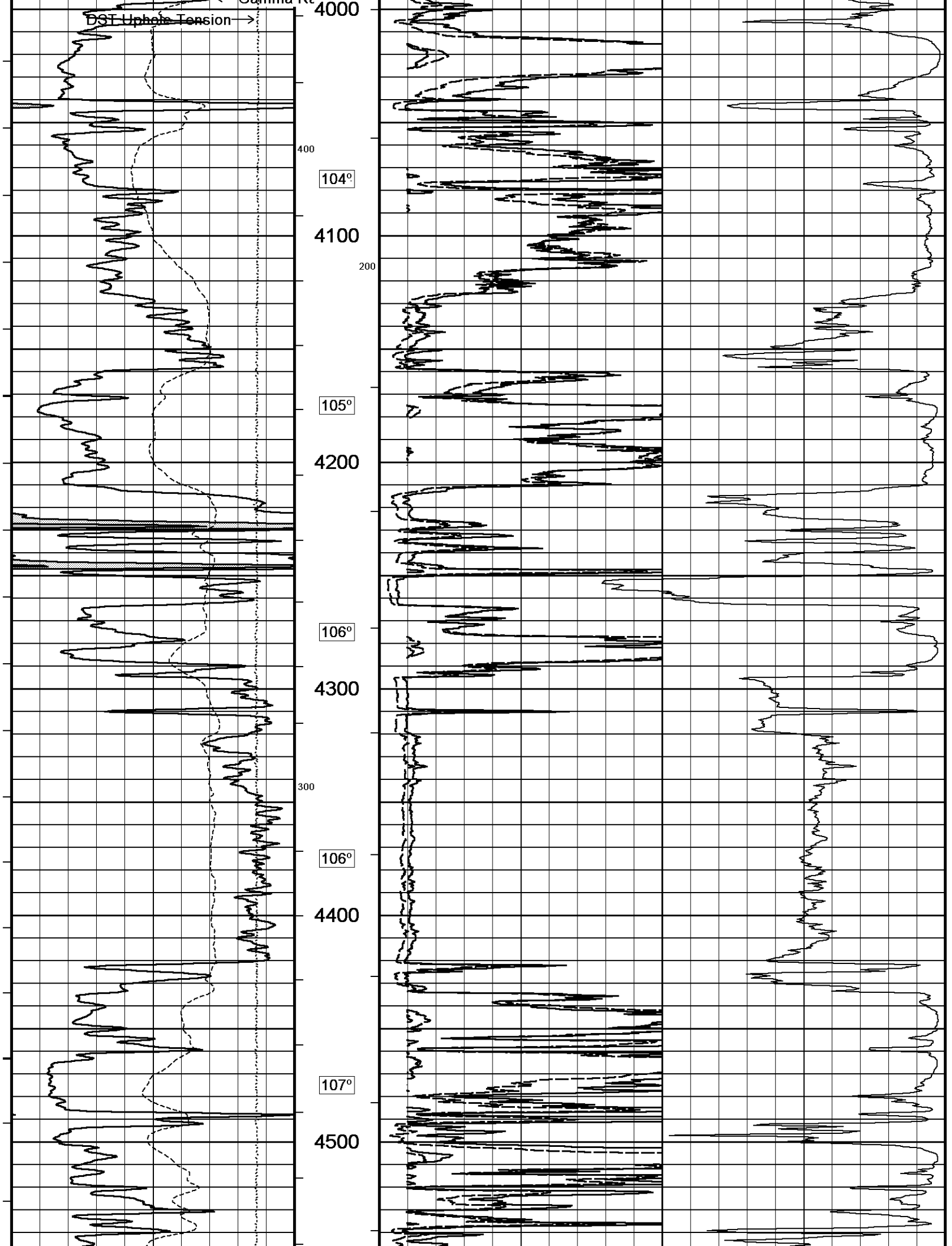


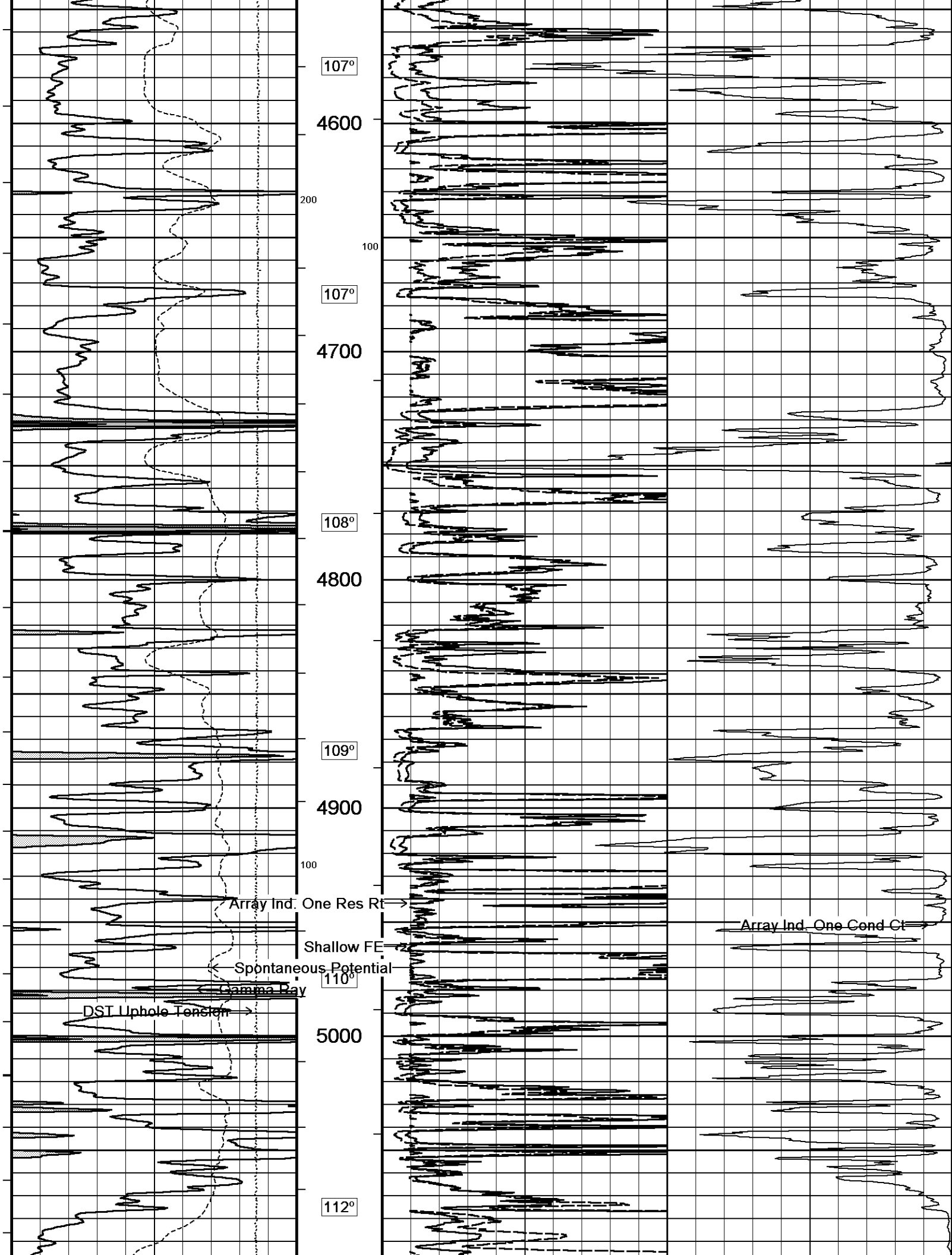


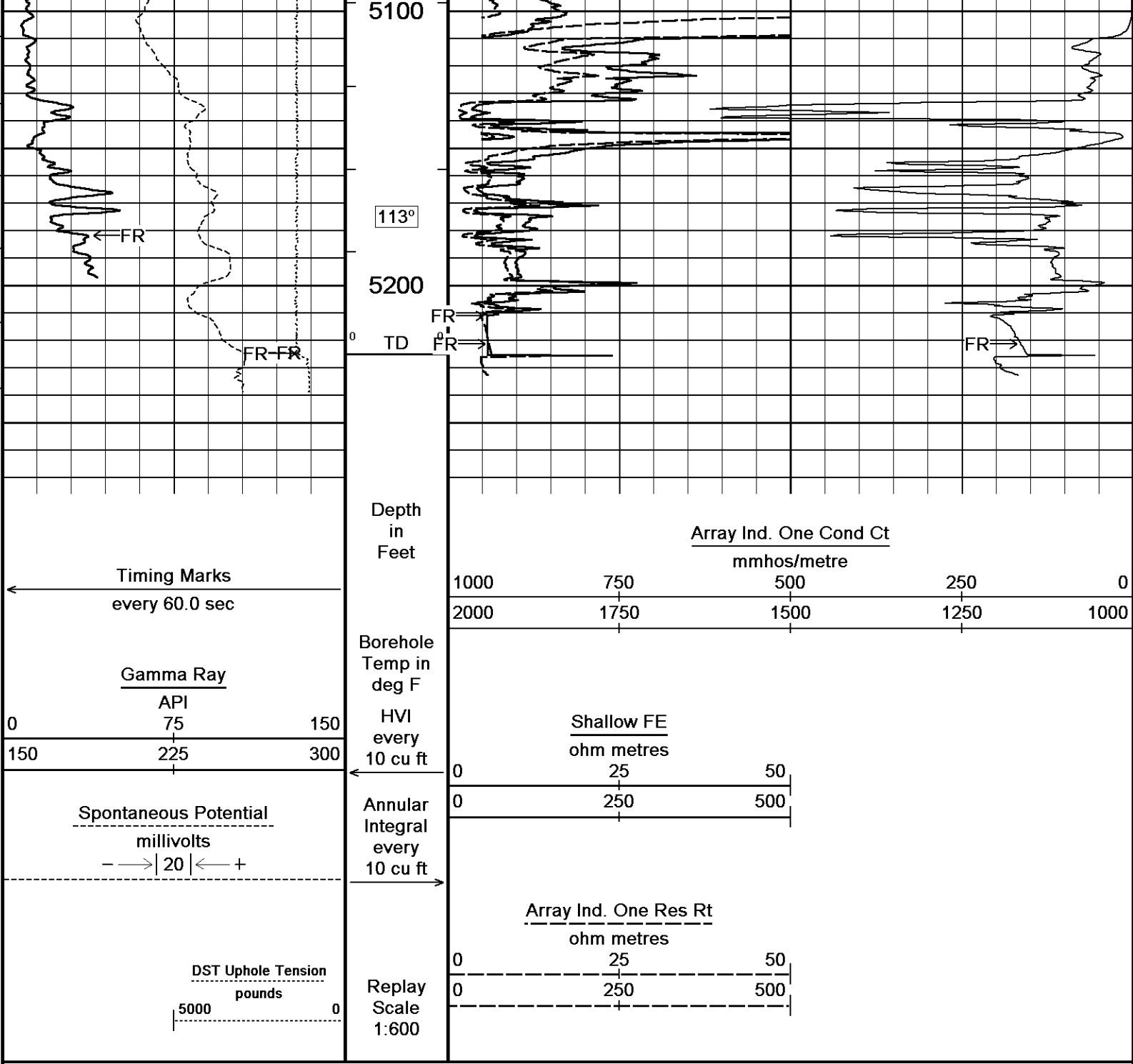












↑ 2 INCH MAIN ↑

↓ 5 INCH MAIN ↓

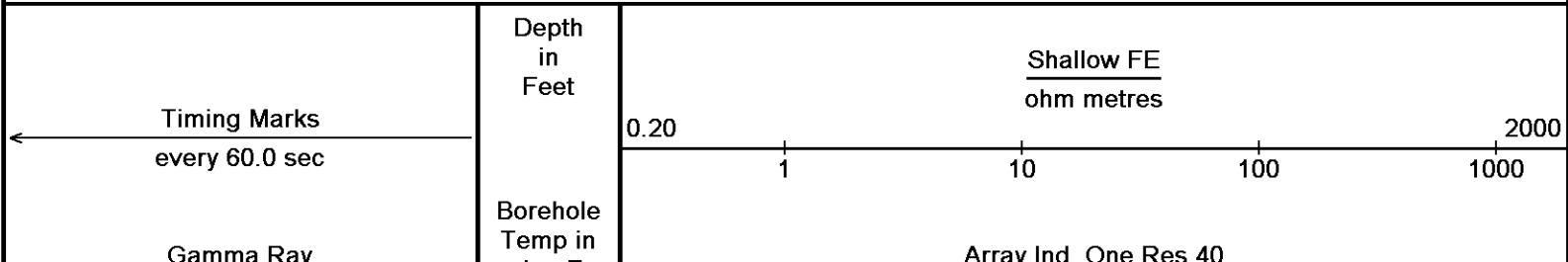
Depth Based Data - Maximum Sampling Increment 10.0cm

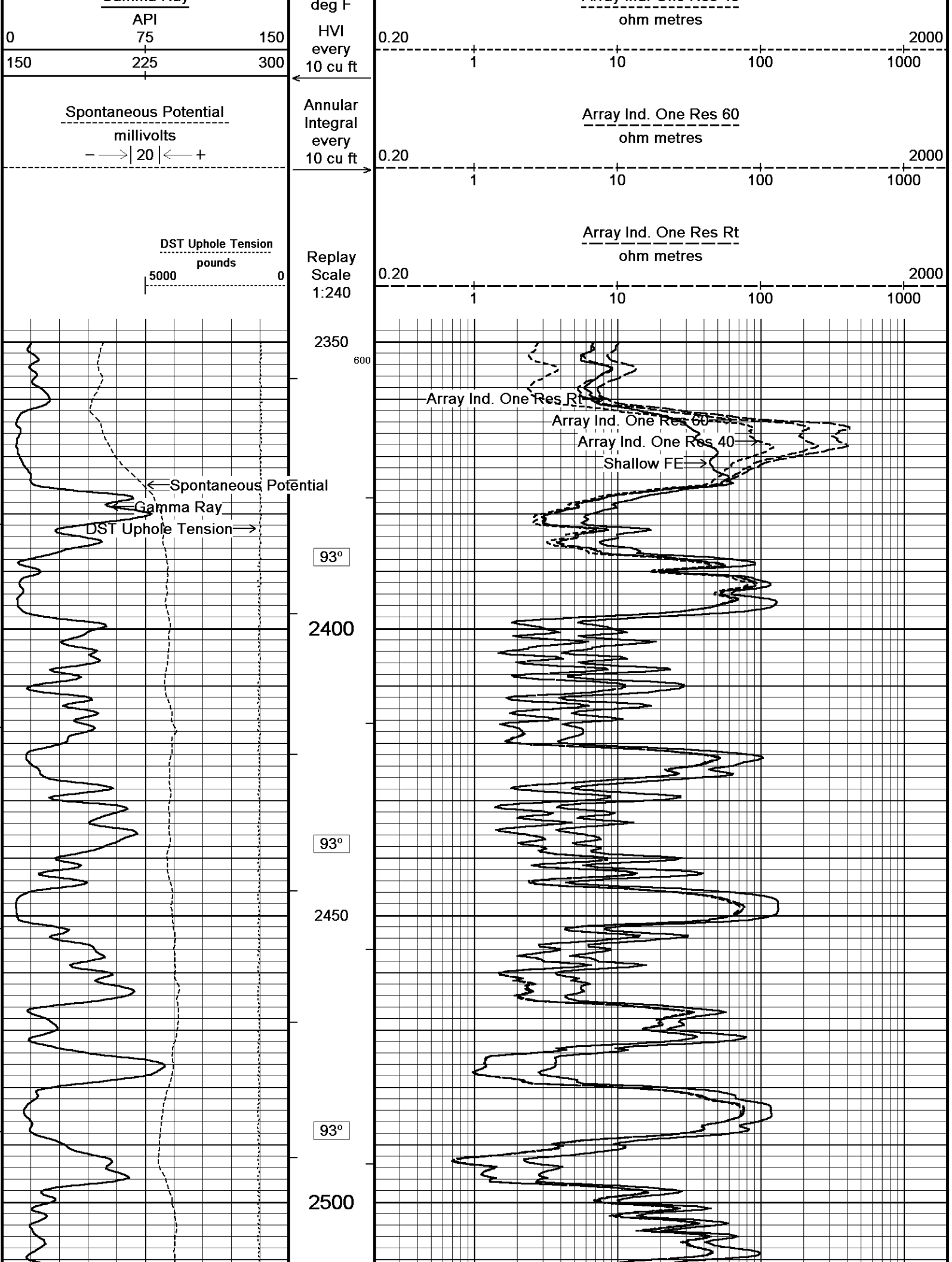
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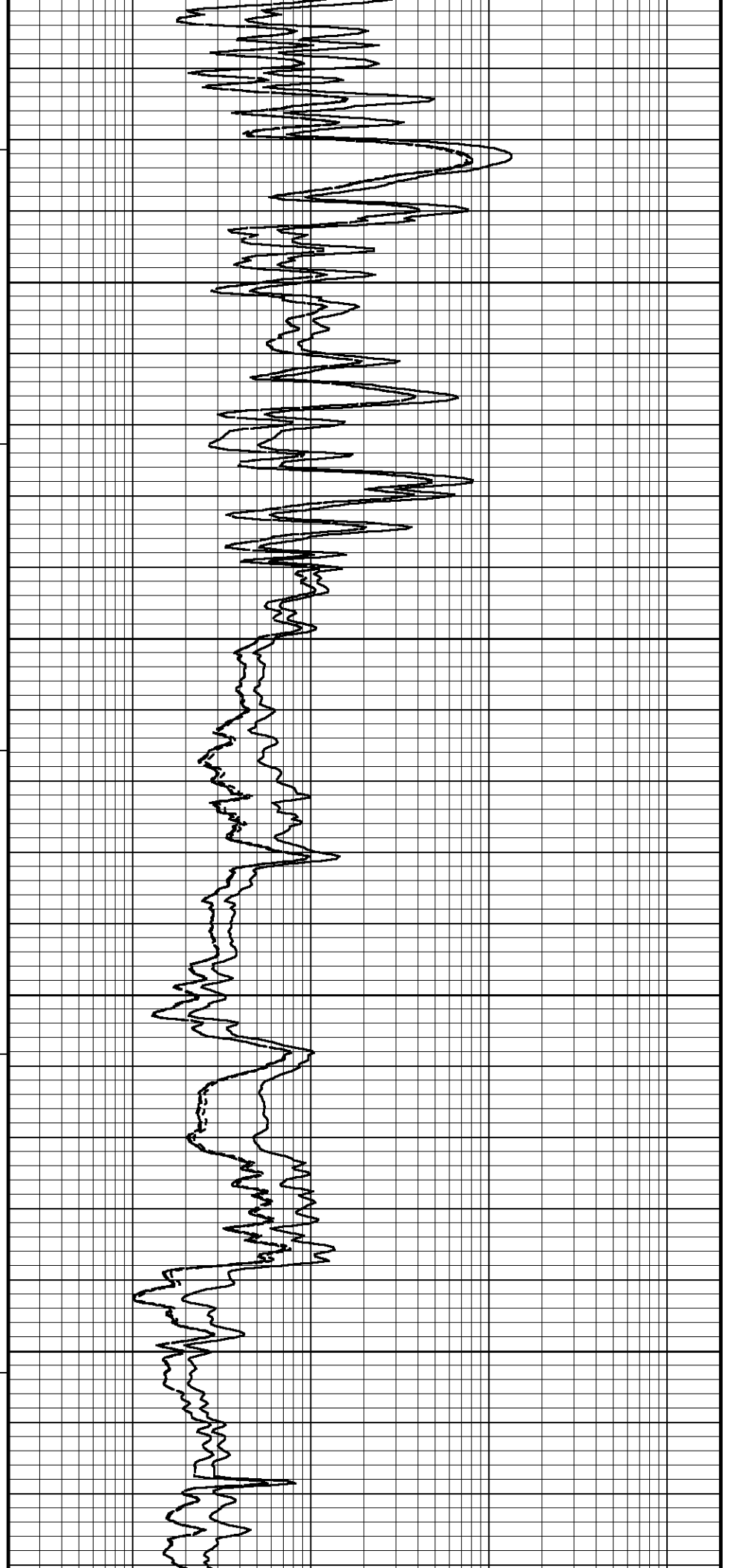
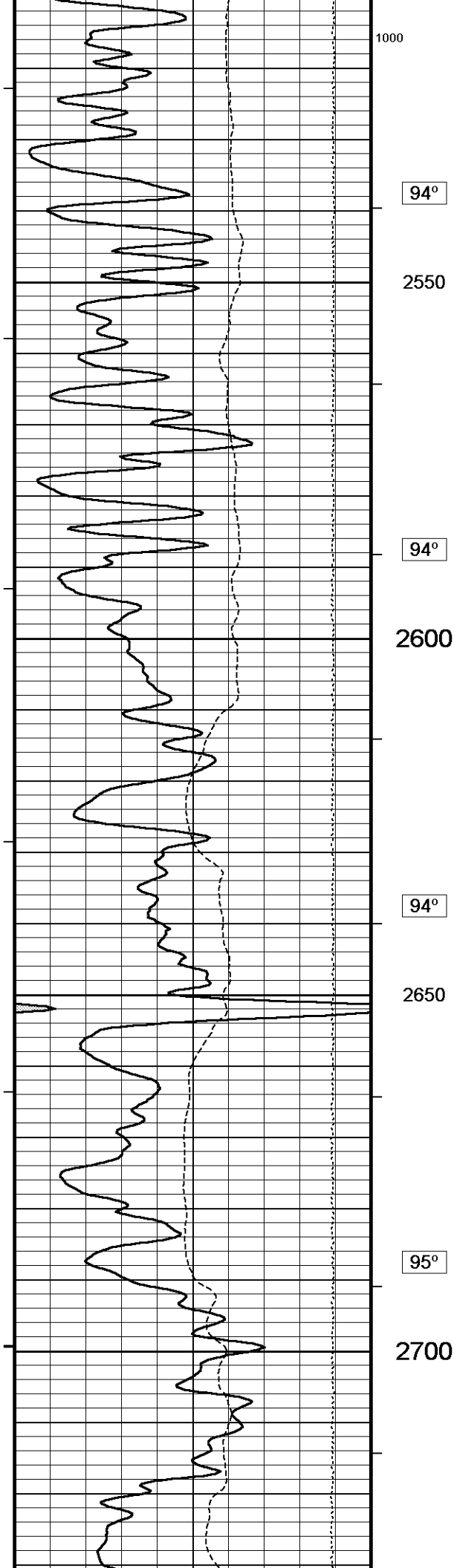
System Versions: Logged with 14.03.4558 Processed with 14.03.4558 Plotted with 14.03.4558

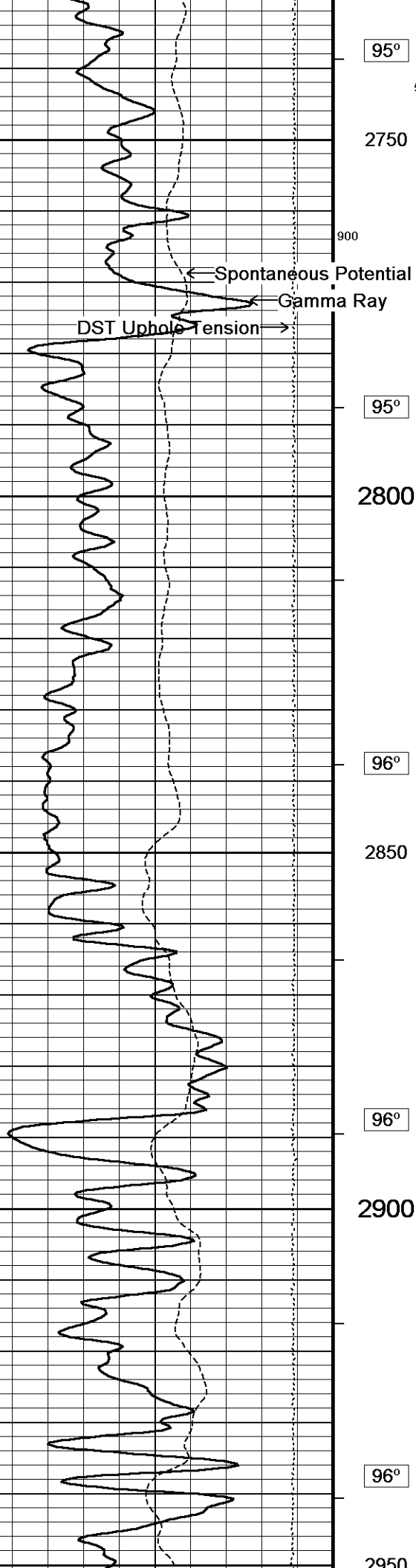
Plotted on 18-OCT-2014 13:50

Recorded on 18-OCT-2014 13:07









95°

500

2750

900

Spontaneous Potential

Gamma Ray

DST Uphole Tension

95°

2800

96°

2850

96°

2900

96°

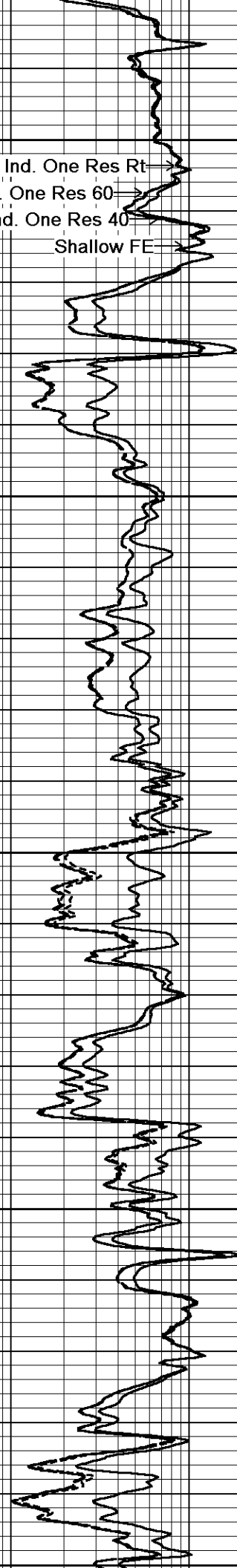
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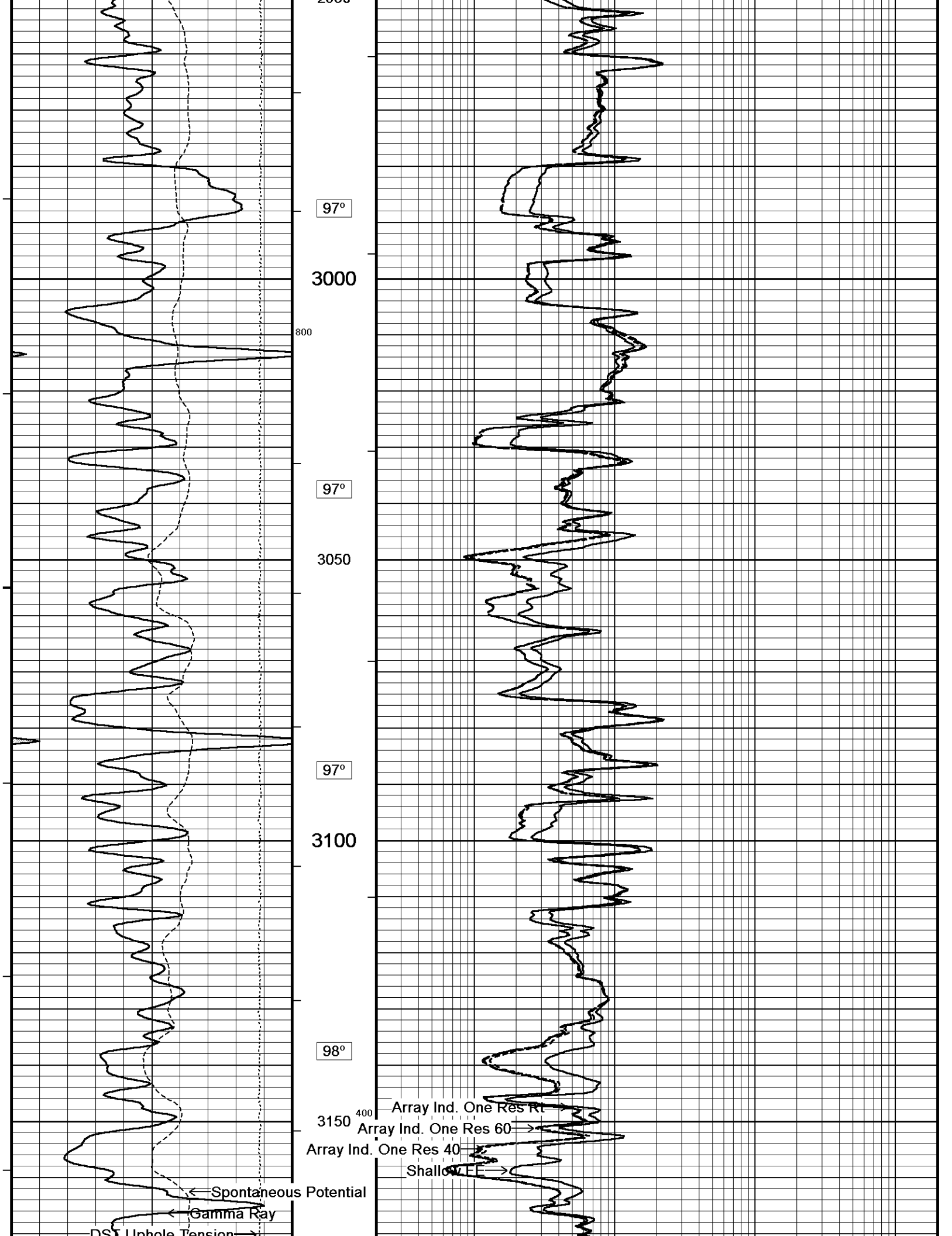
Array Ind. One Res Rt

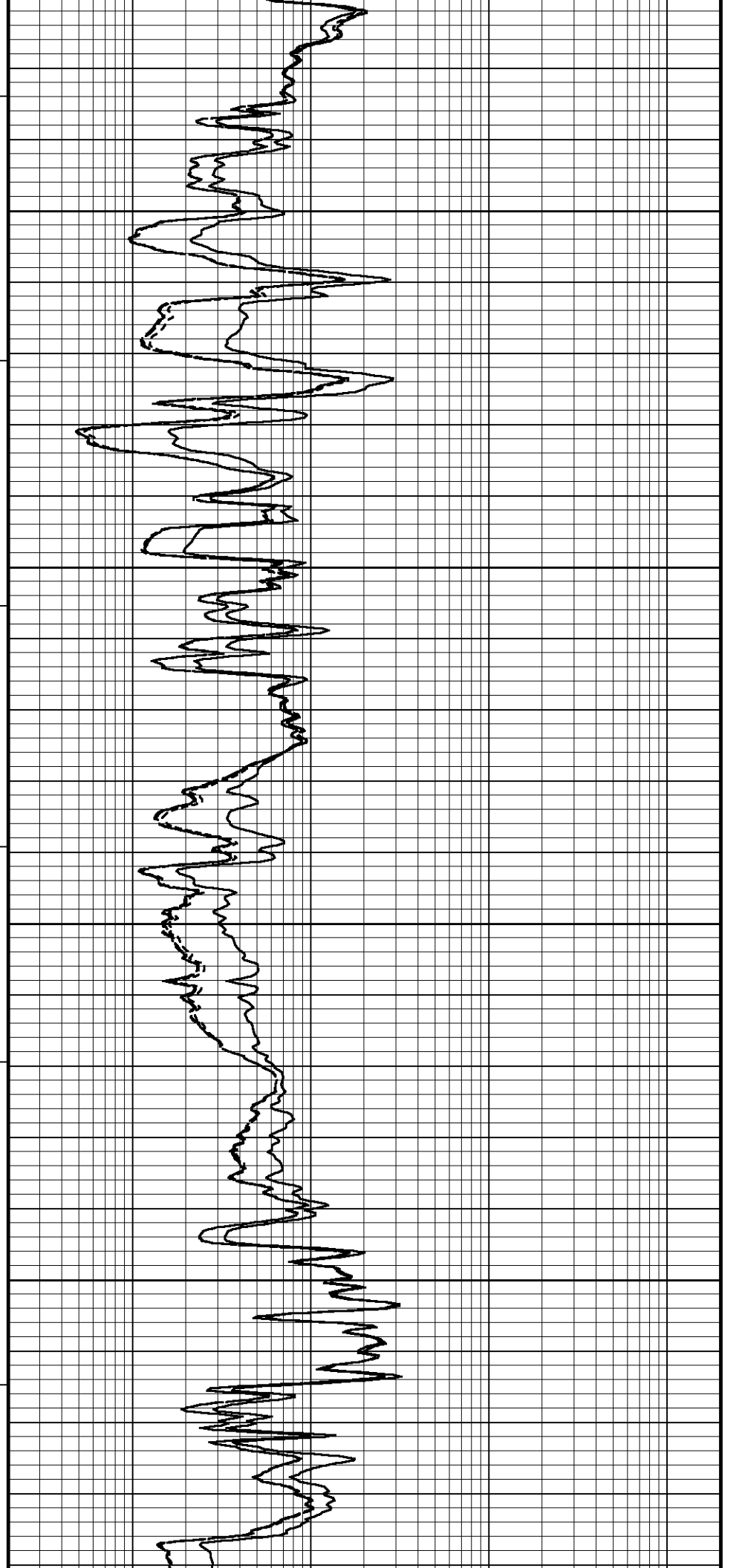
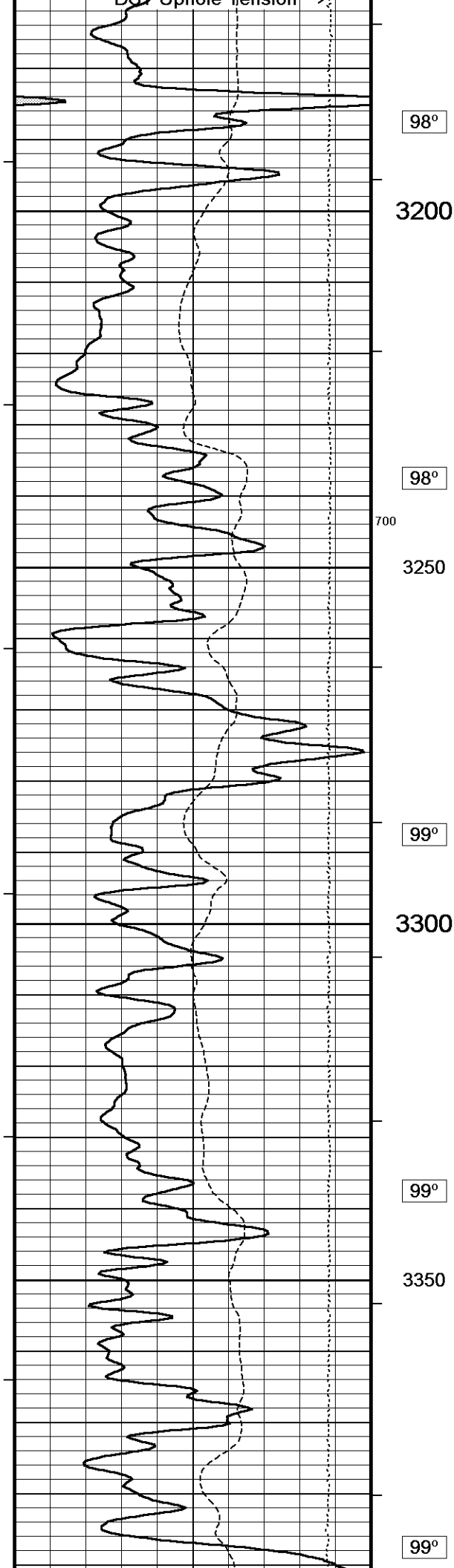
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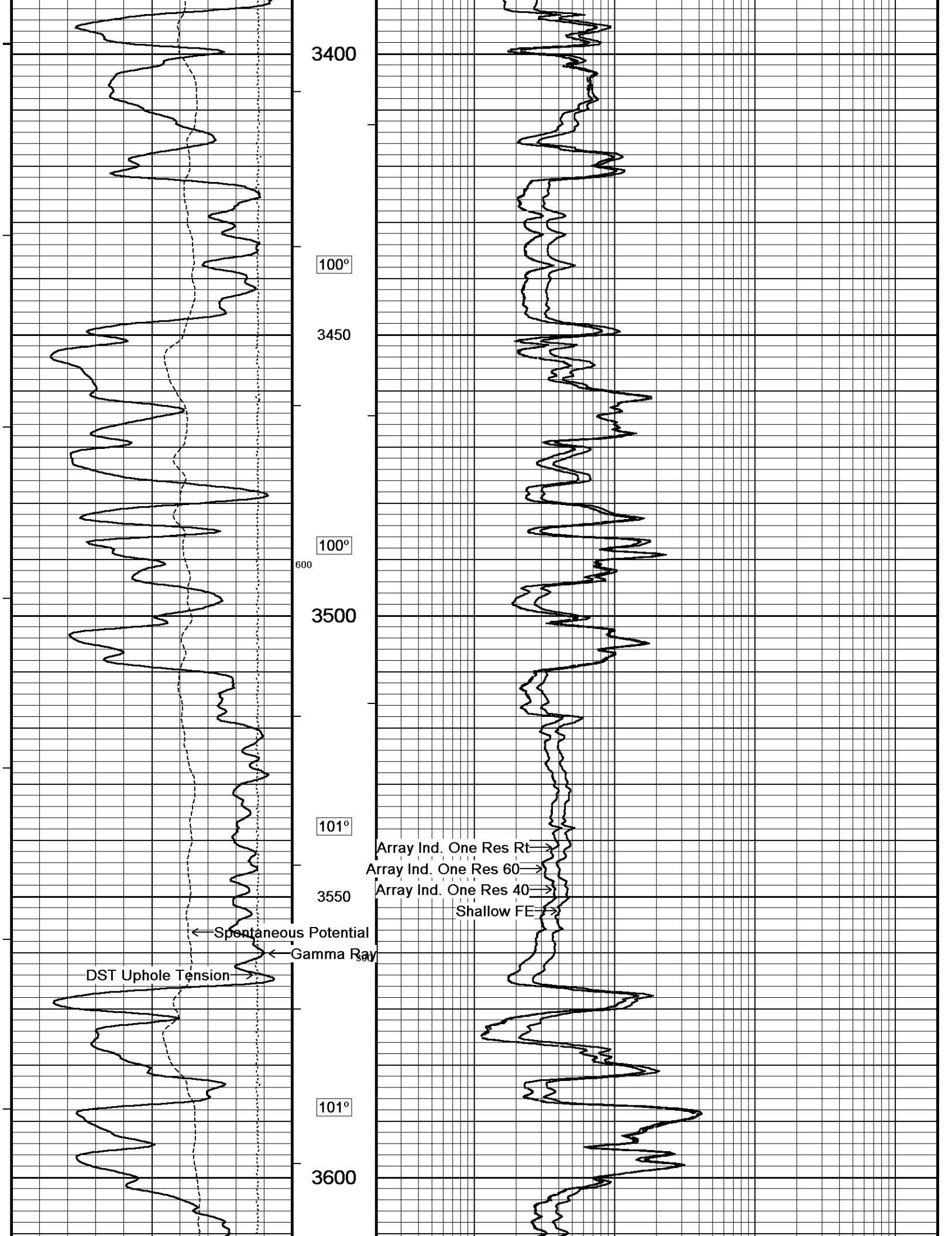
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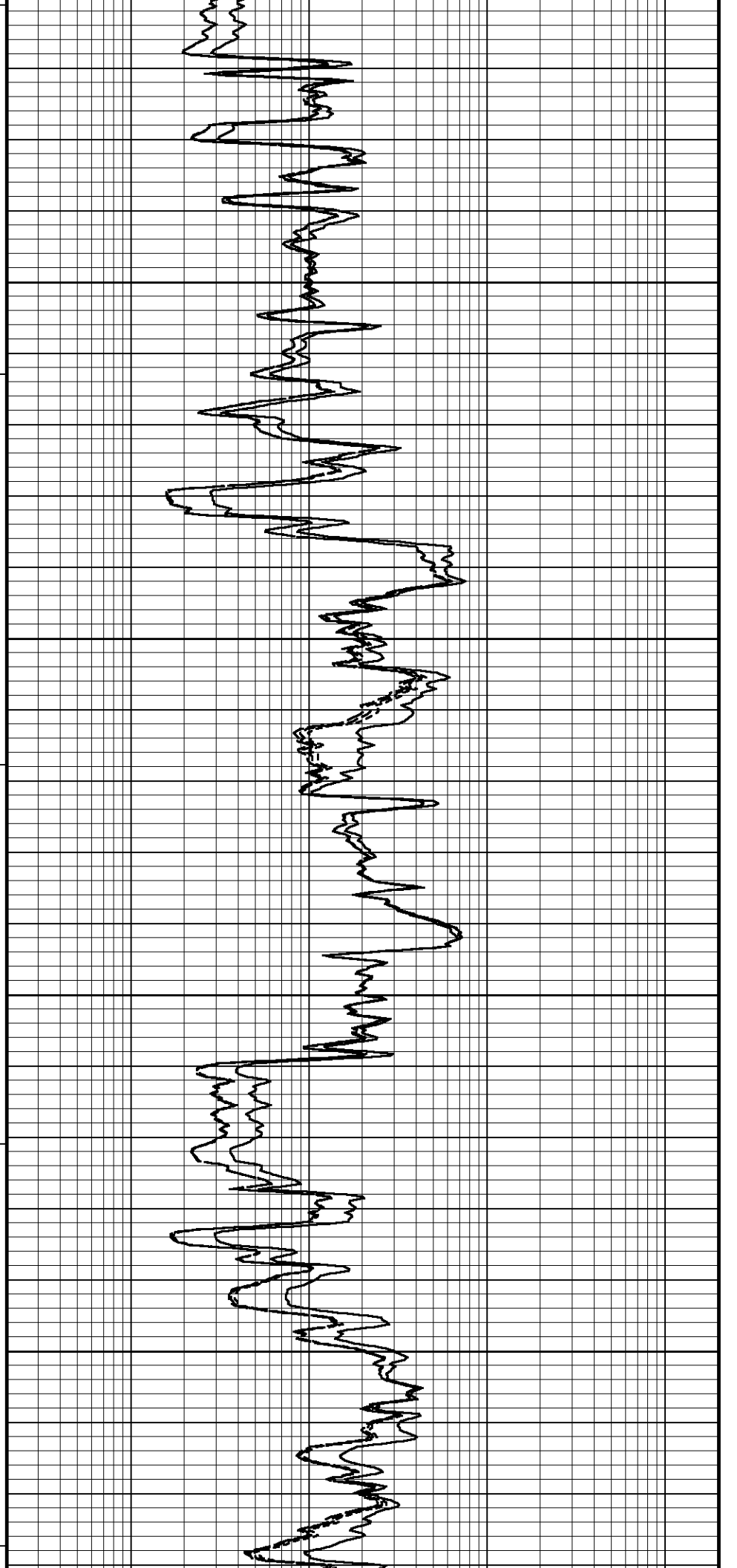
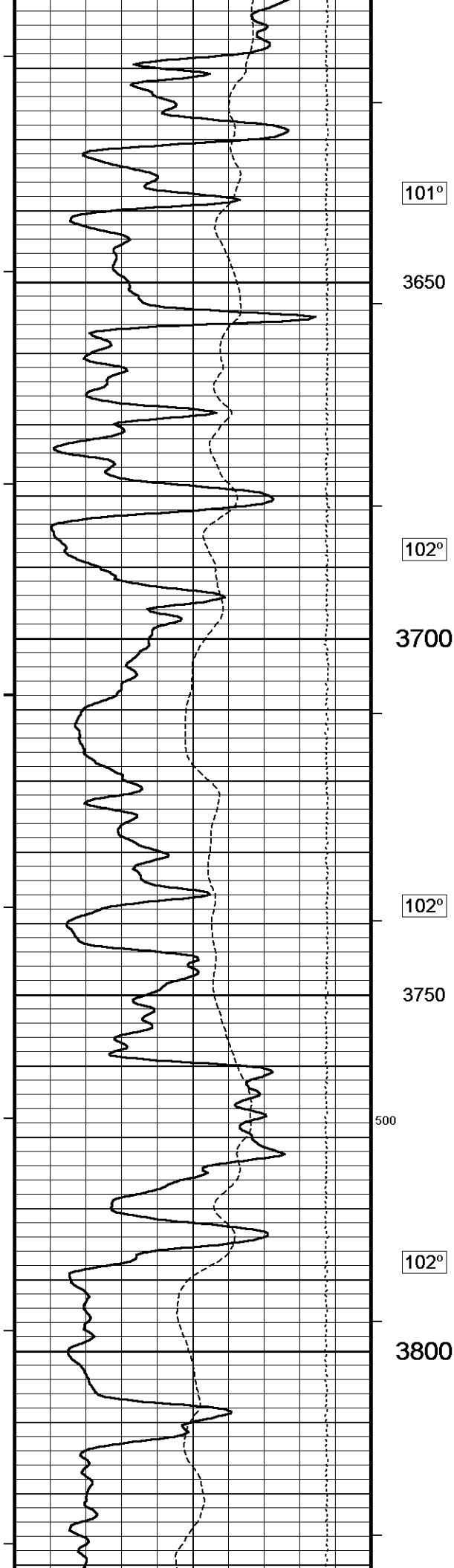
Shallow FE

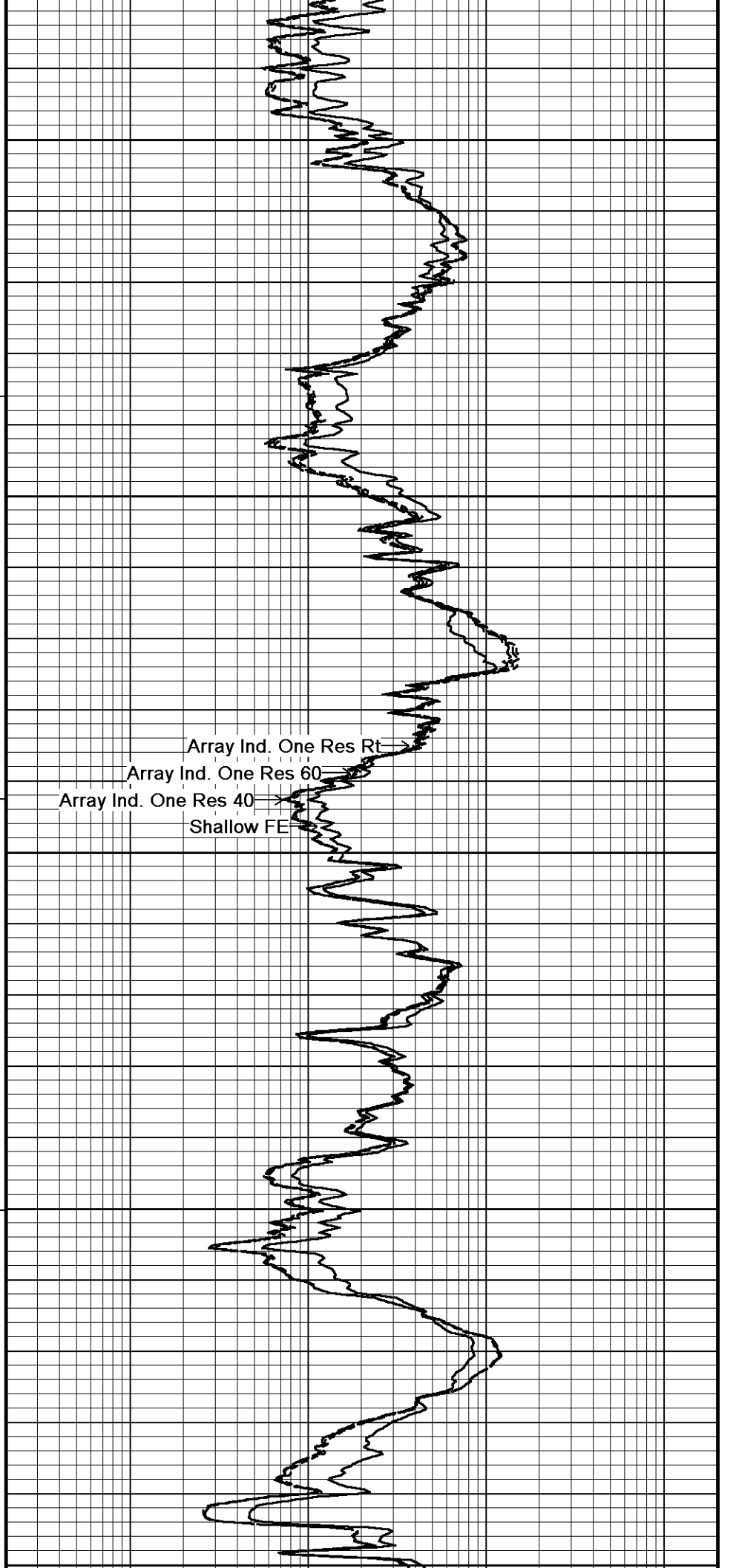
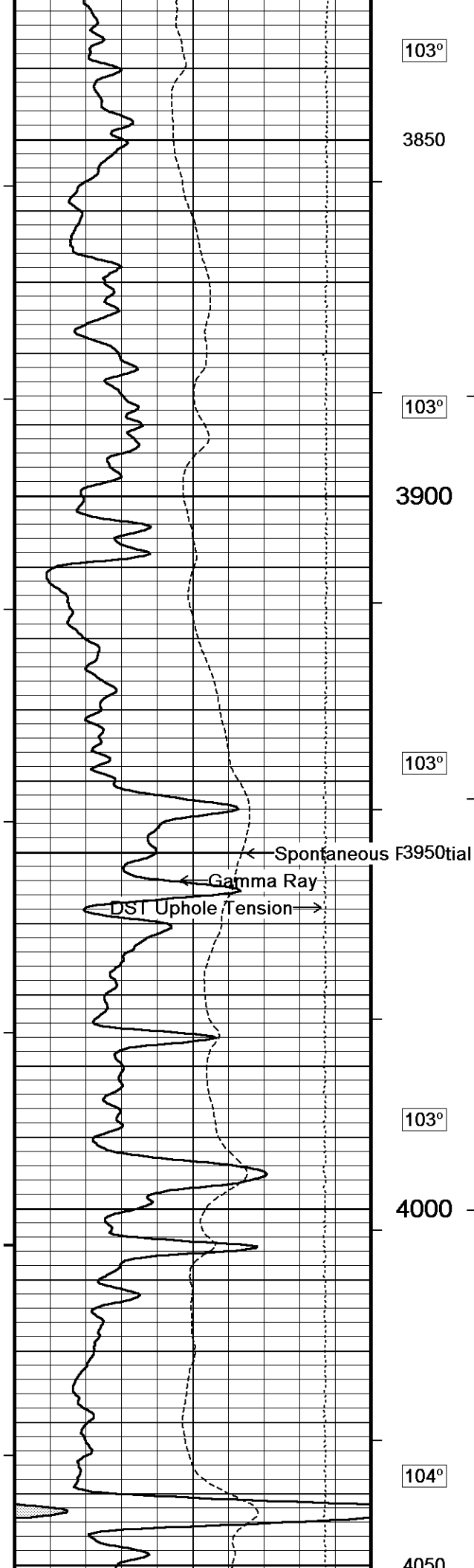


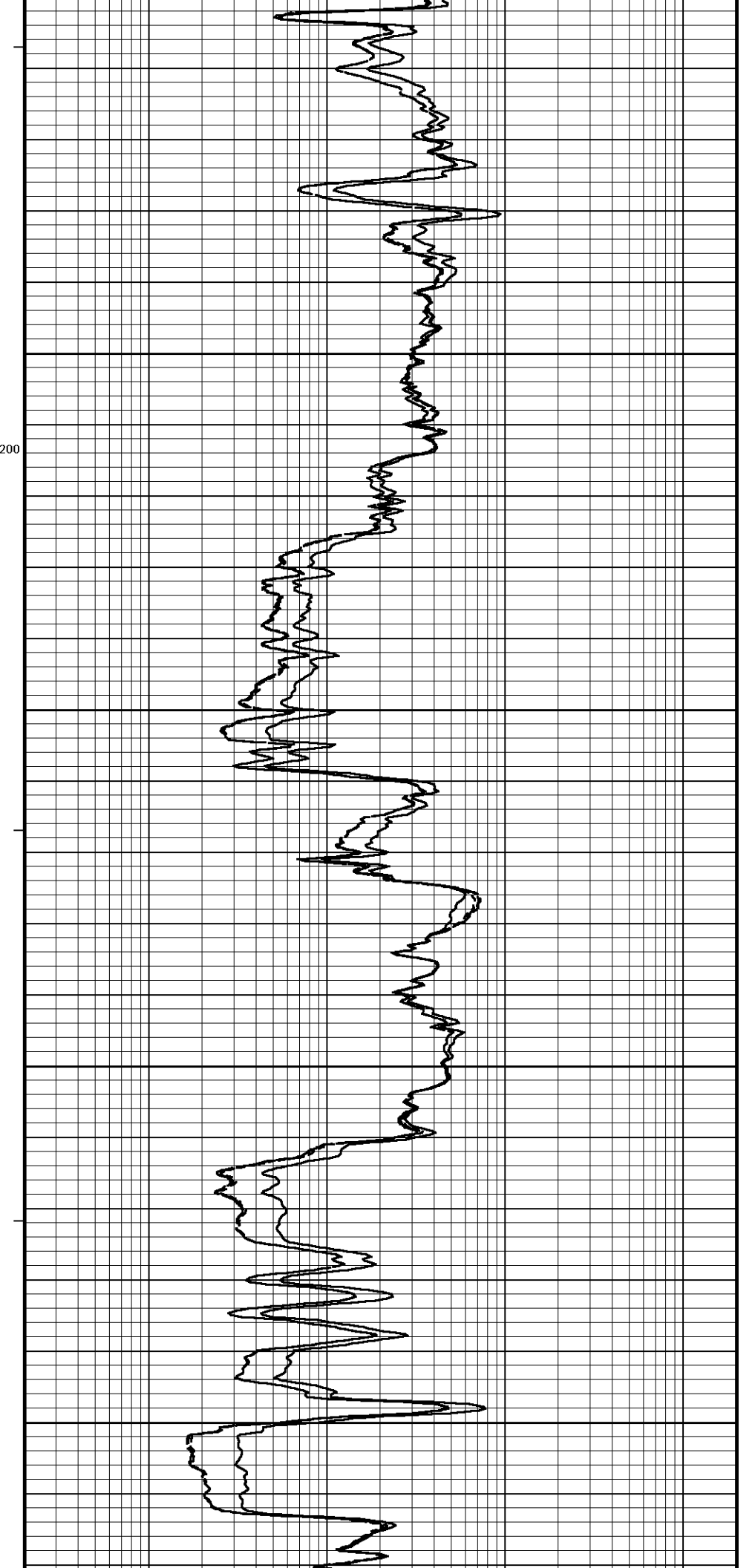
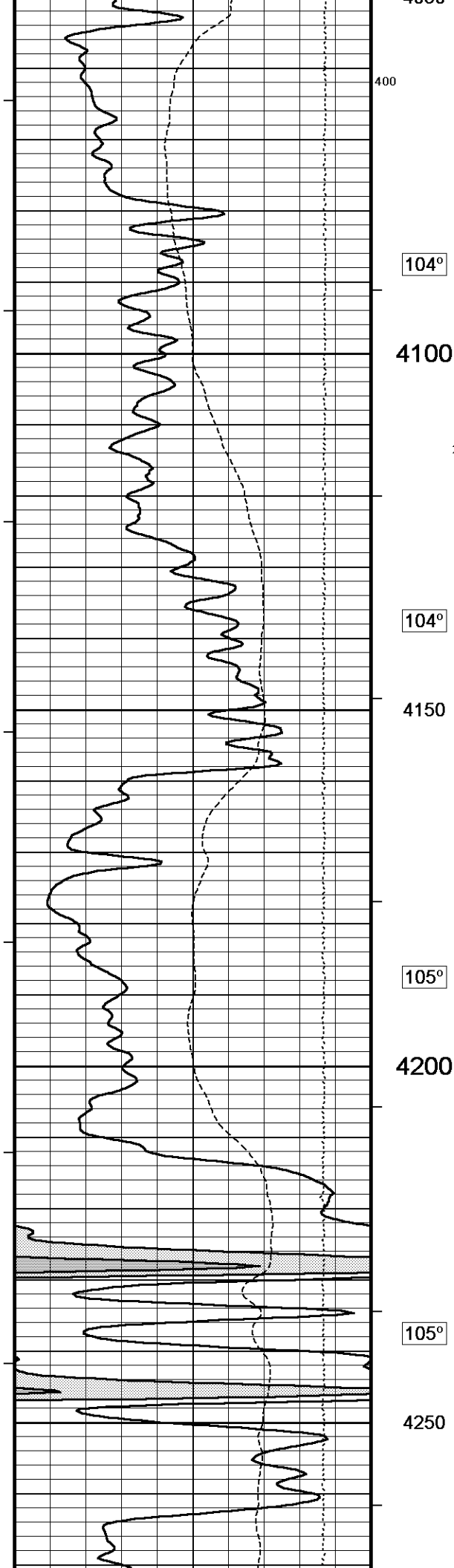


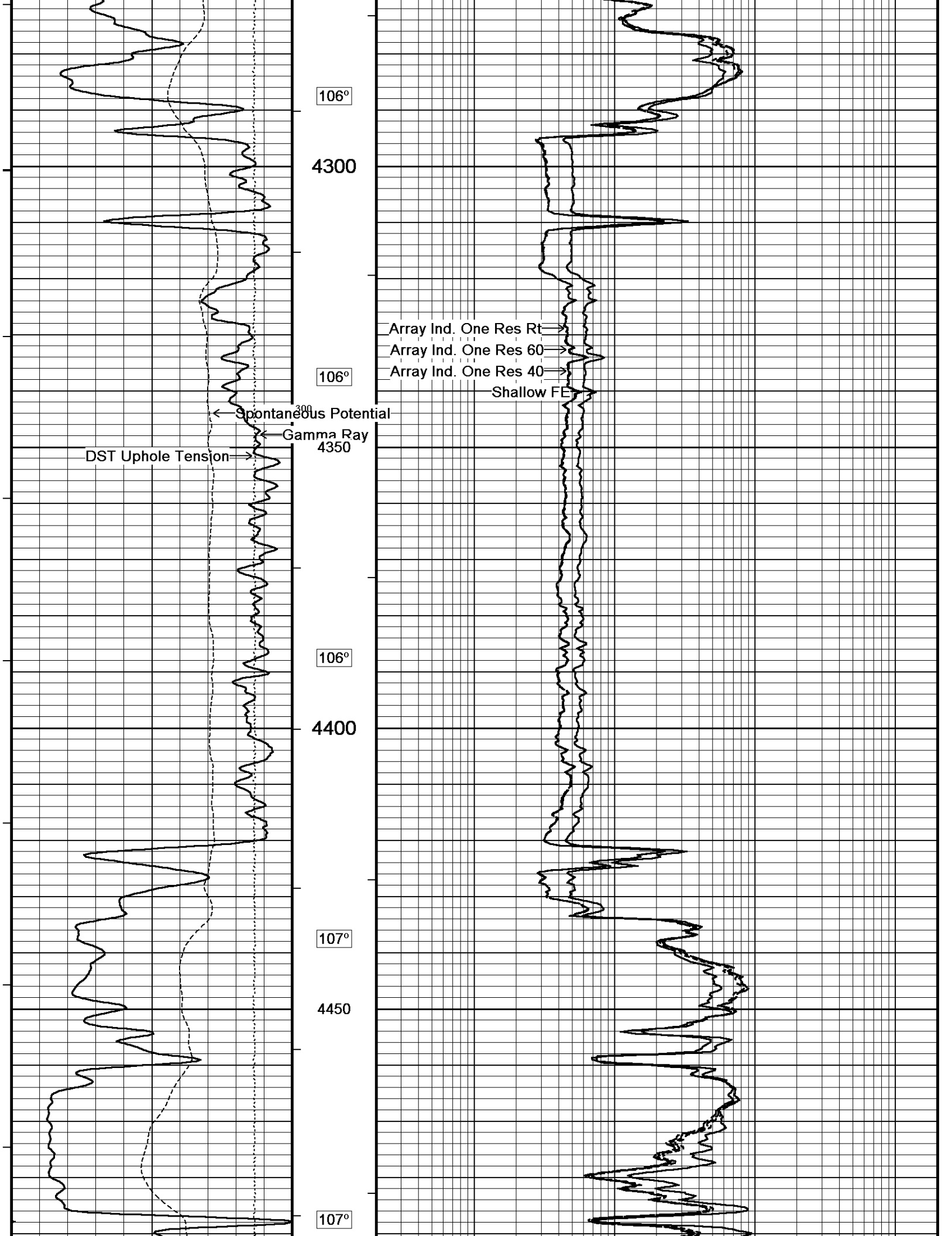


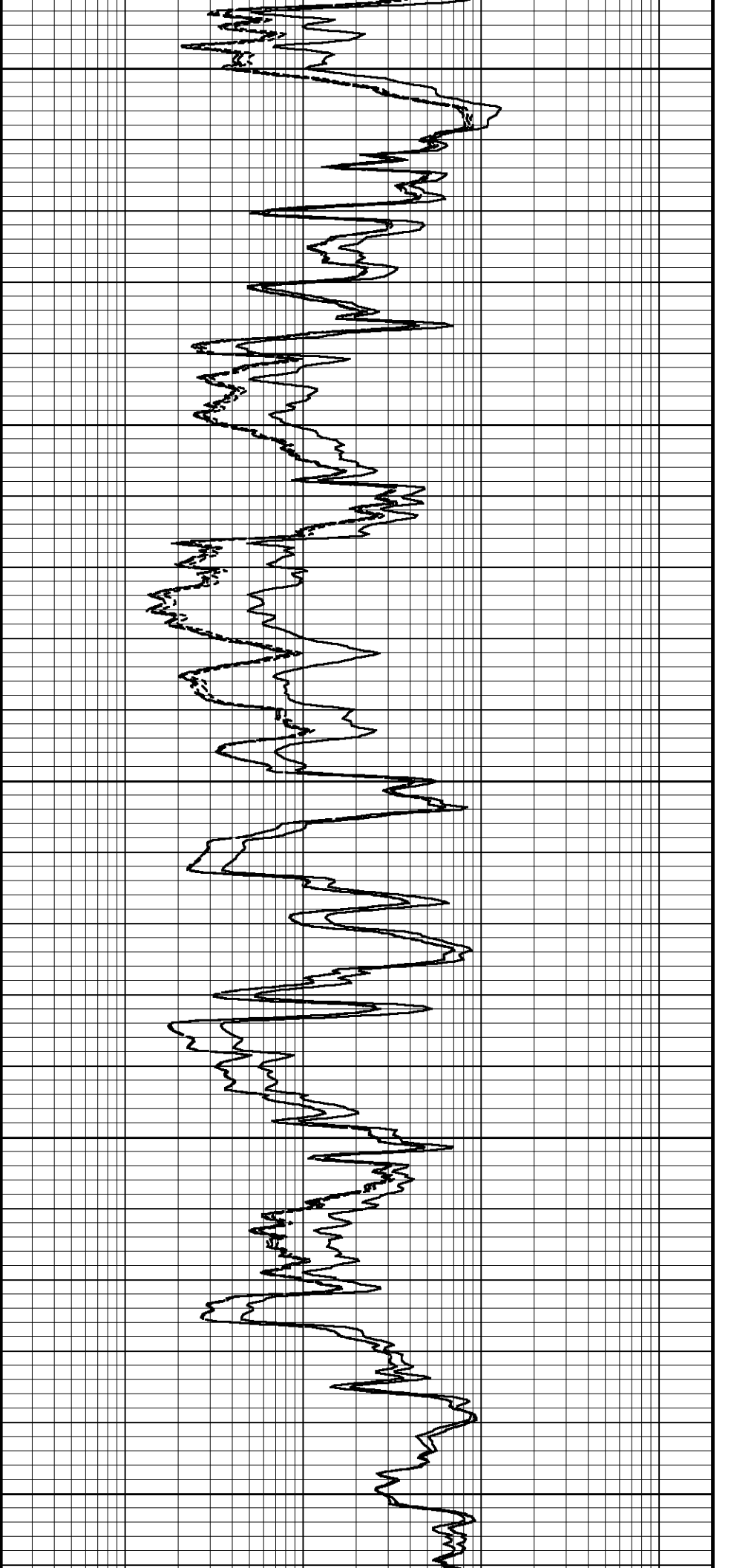
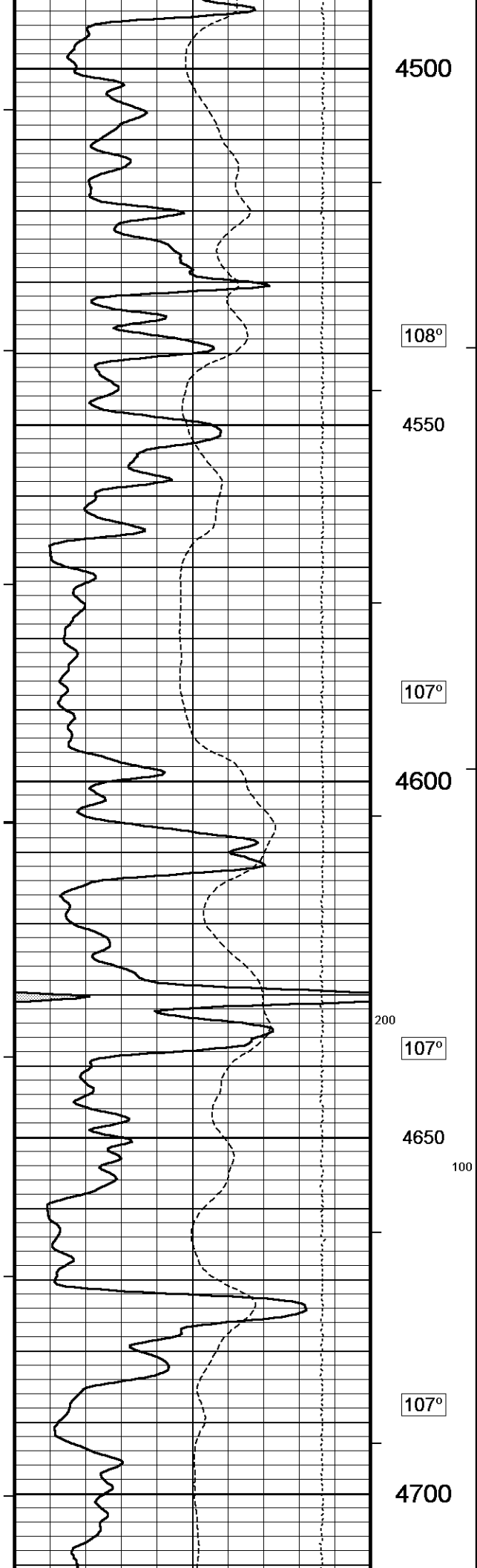


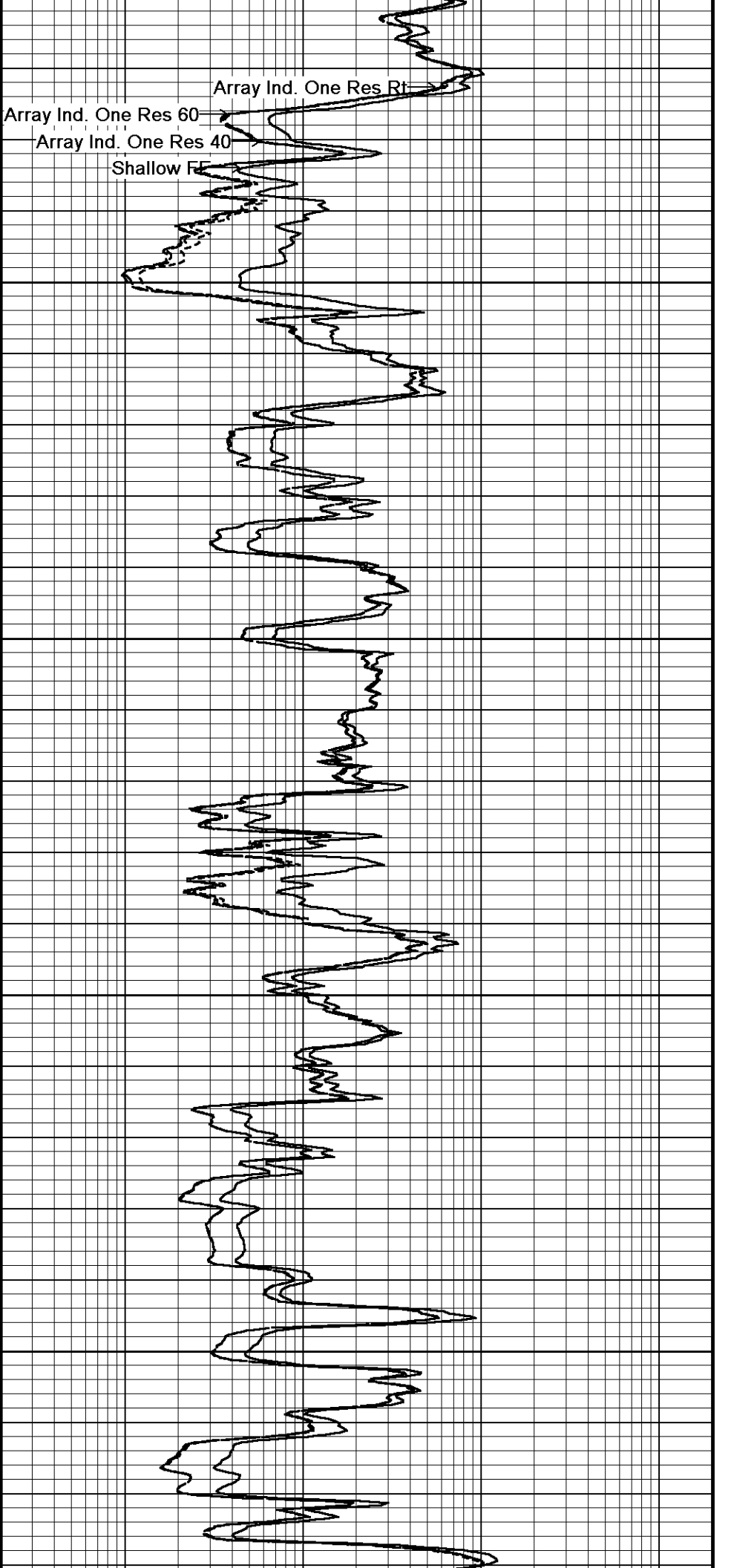
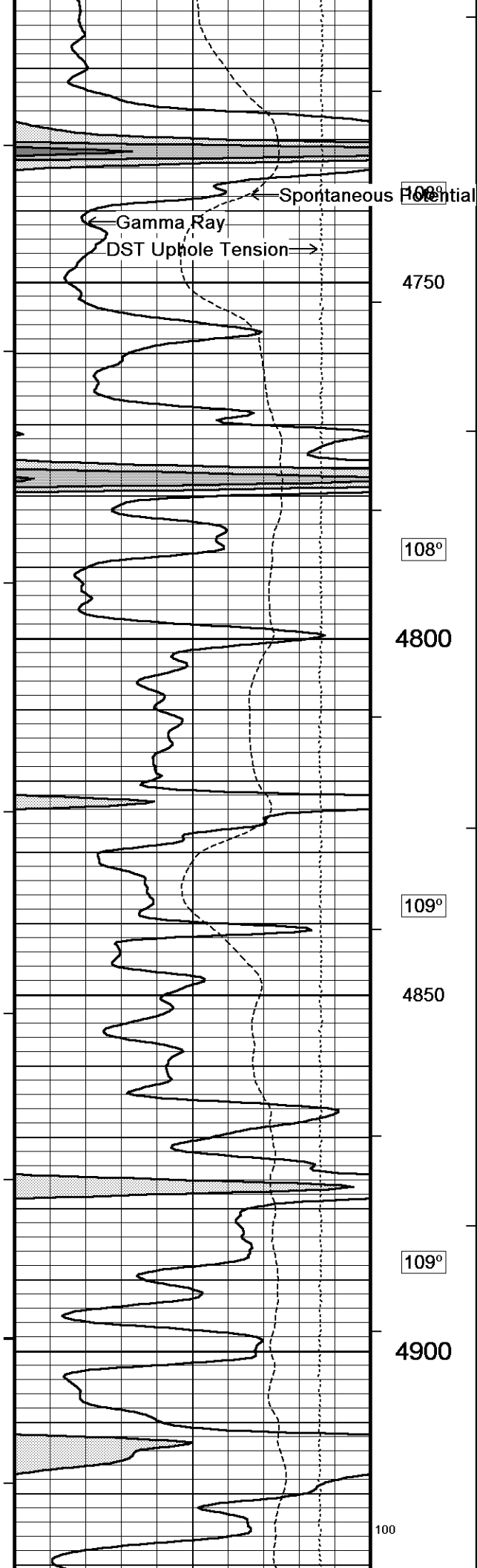


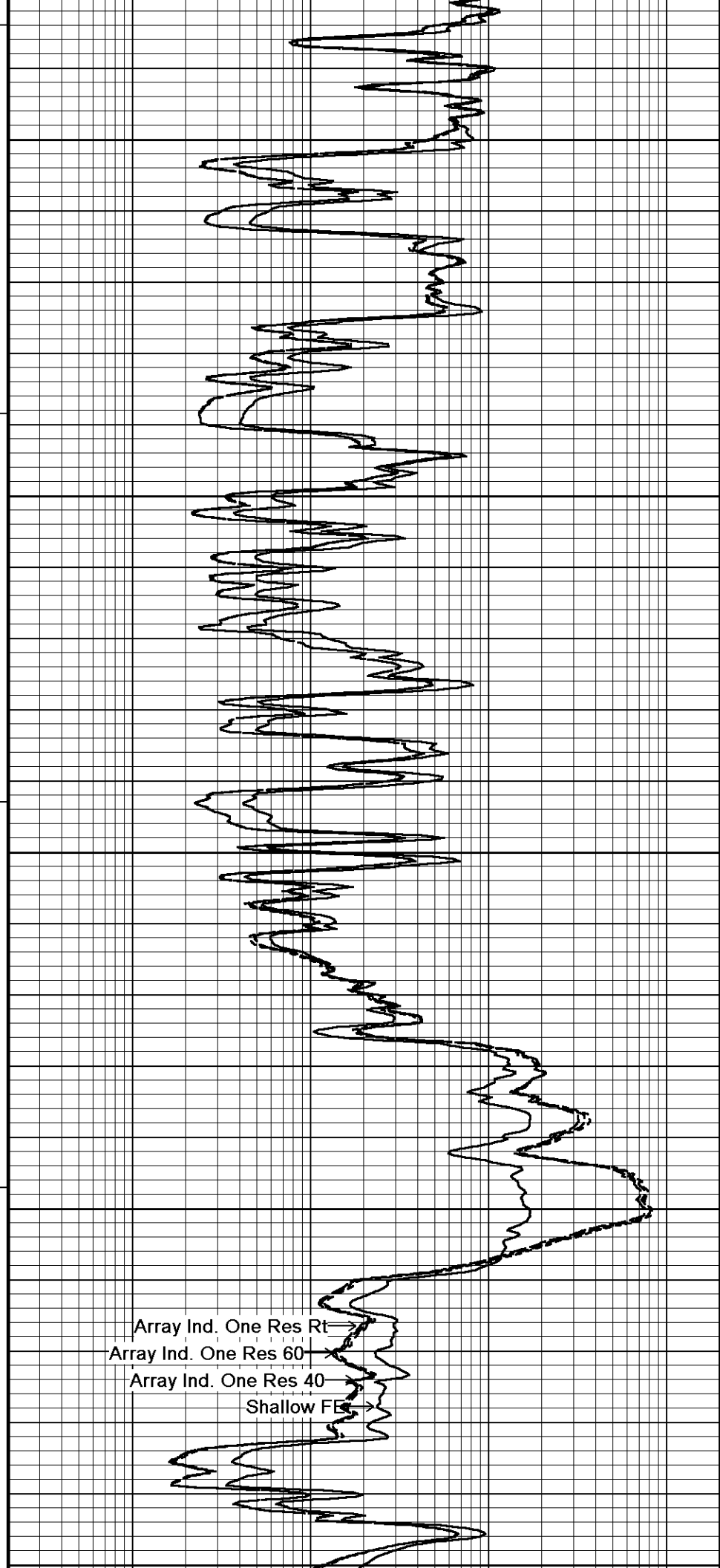
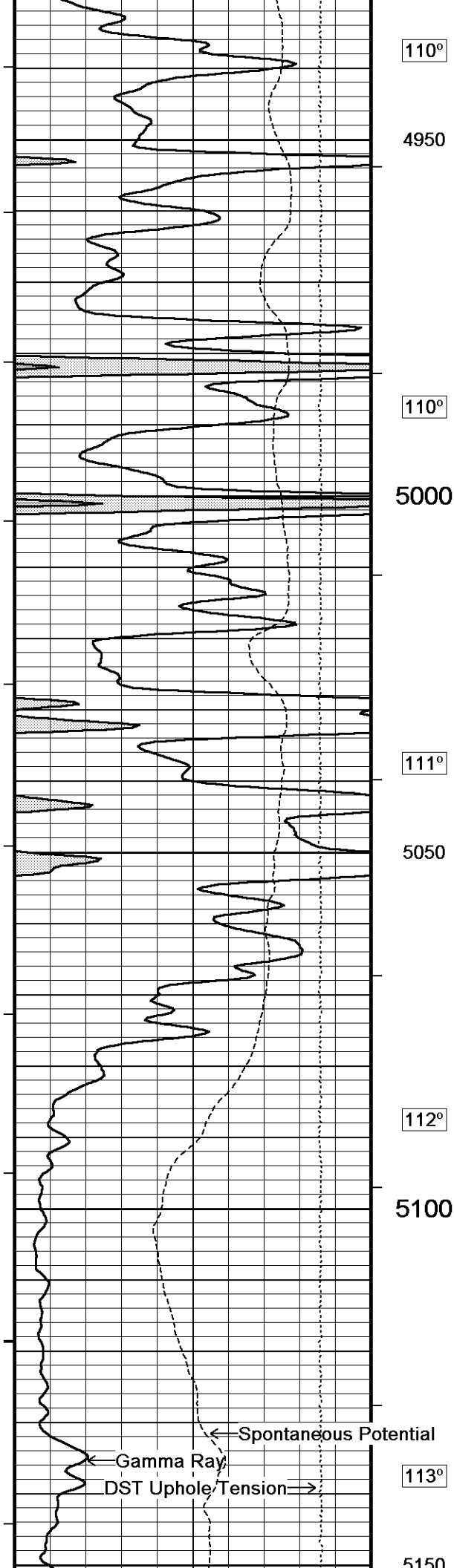


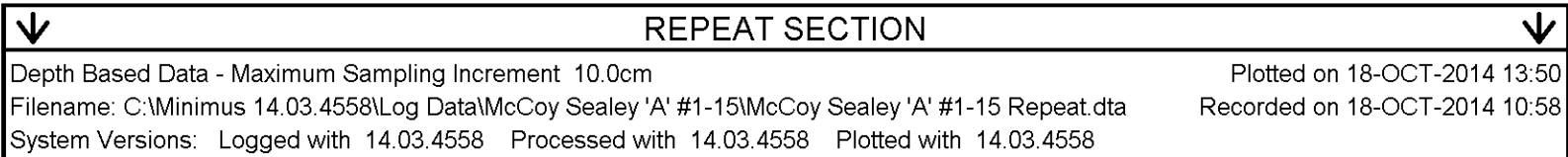
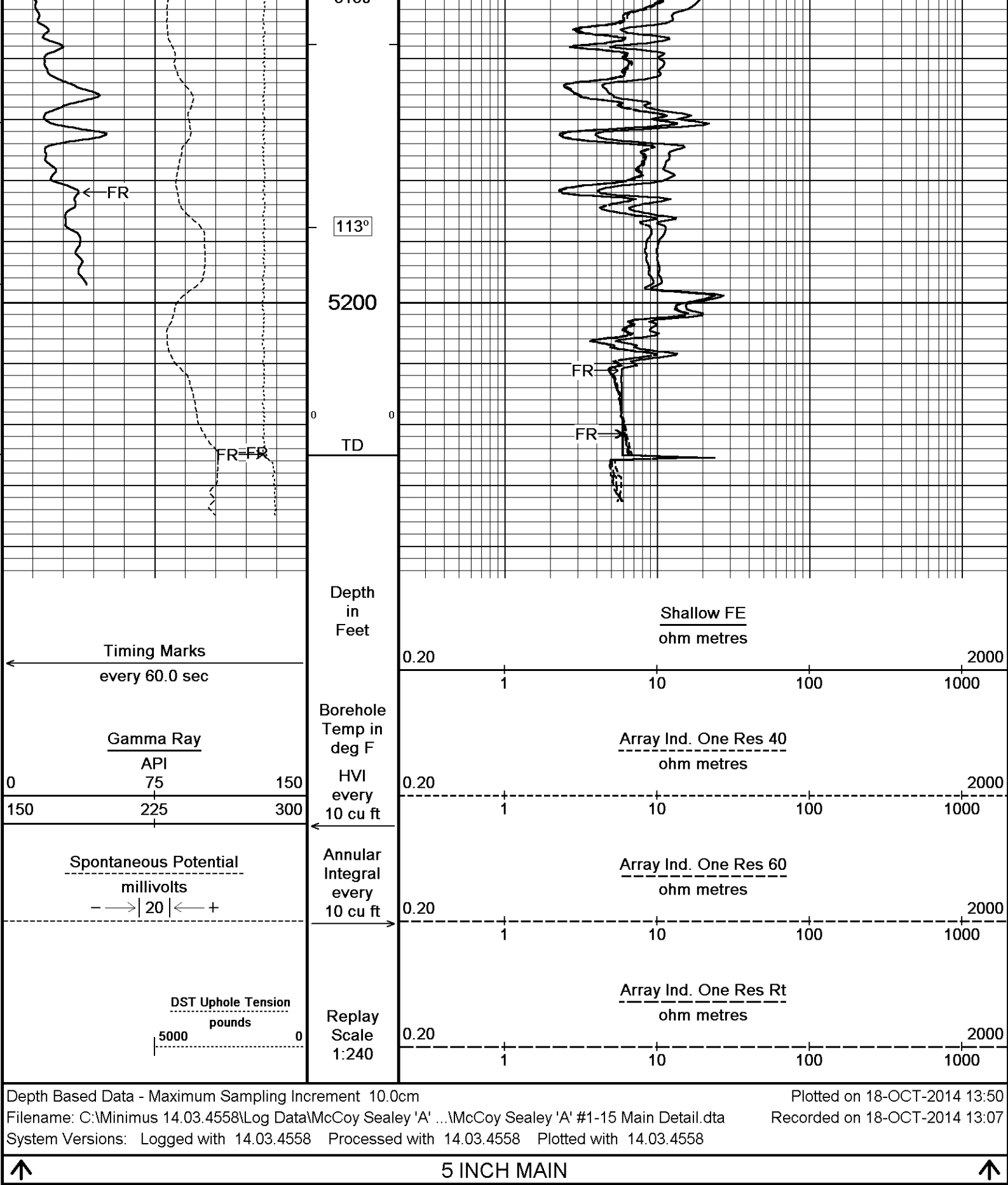




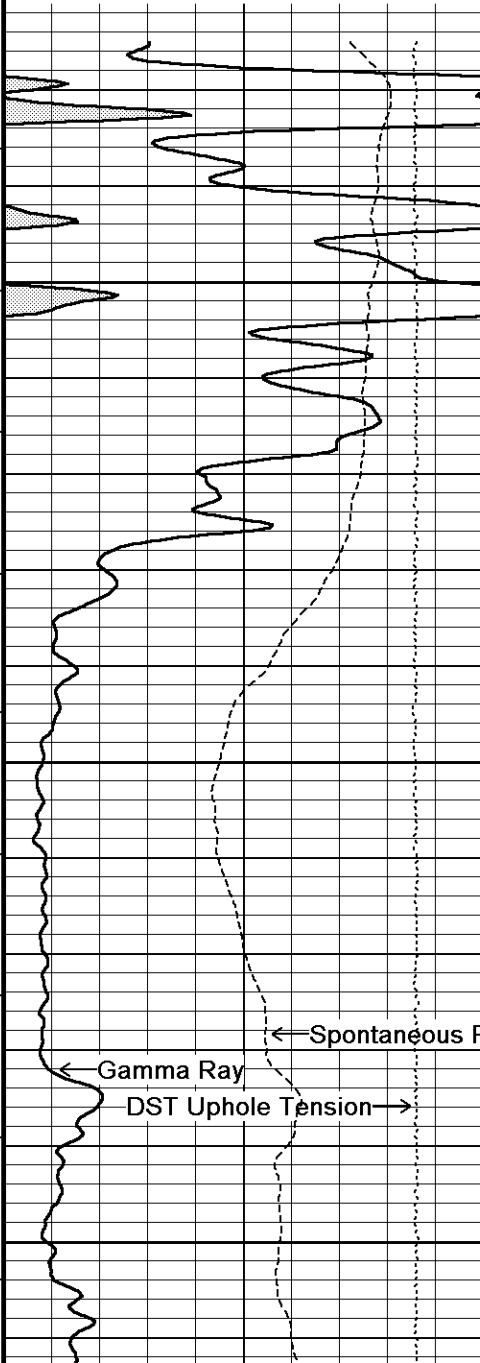
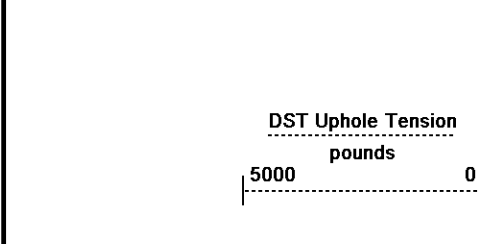
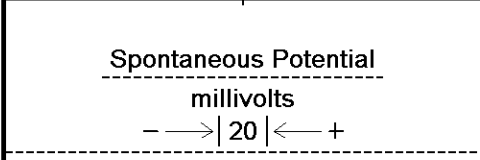
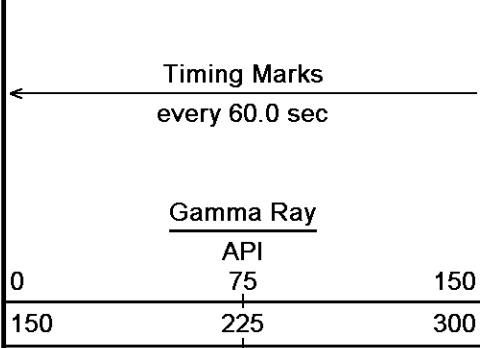








Depth



in
Feet

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240

5024

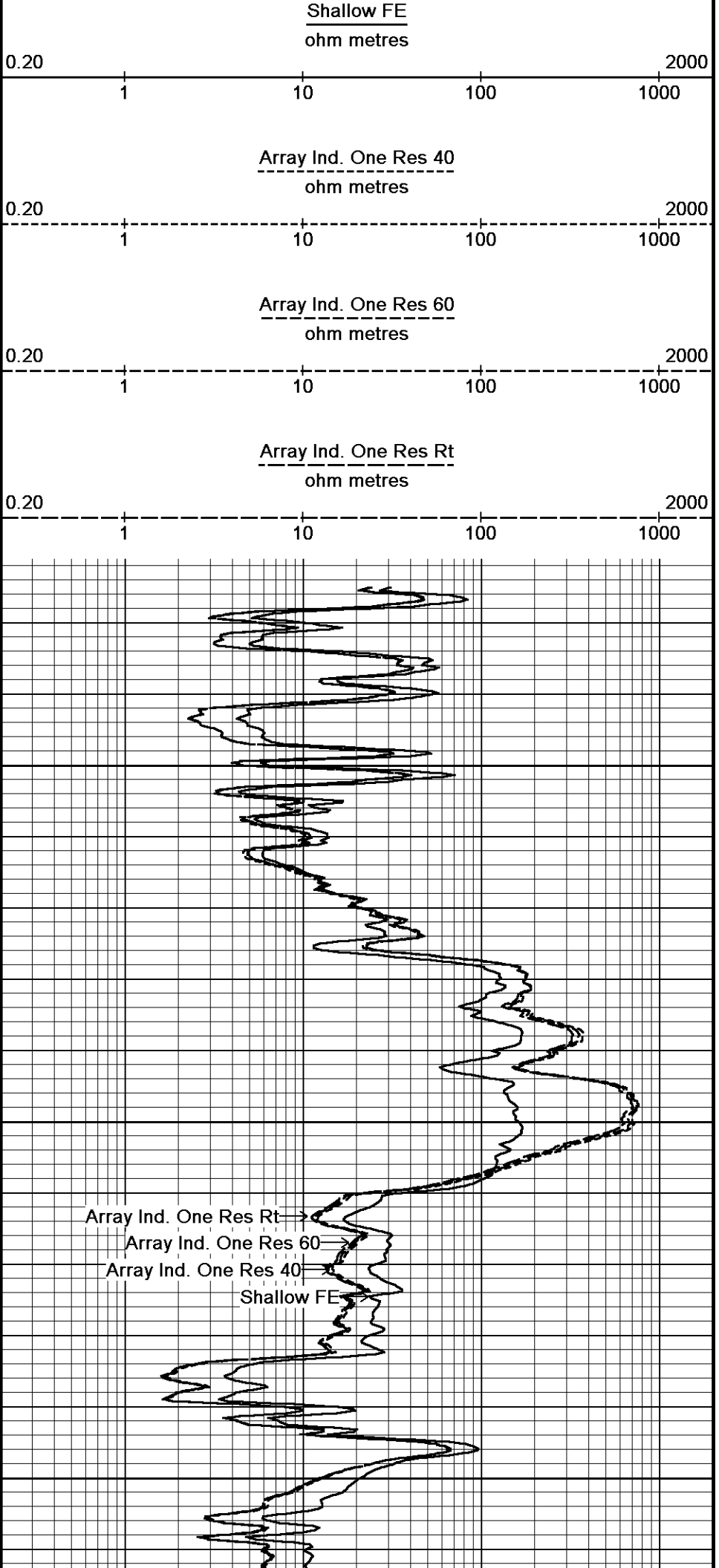
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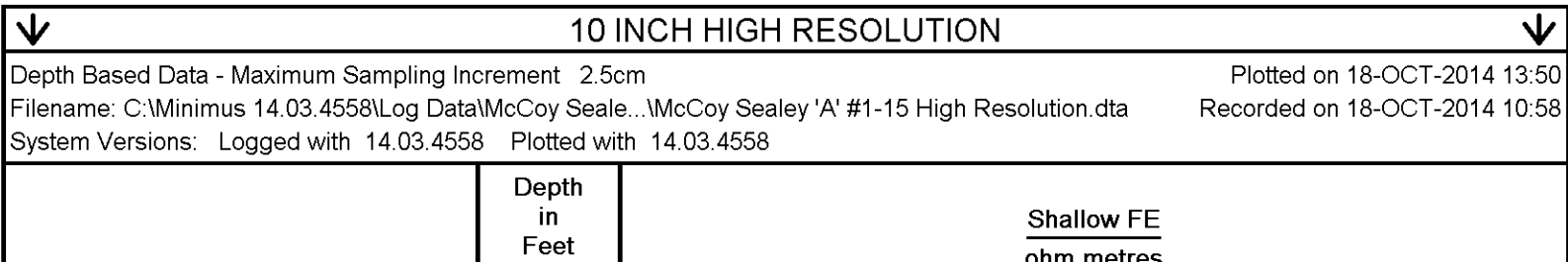
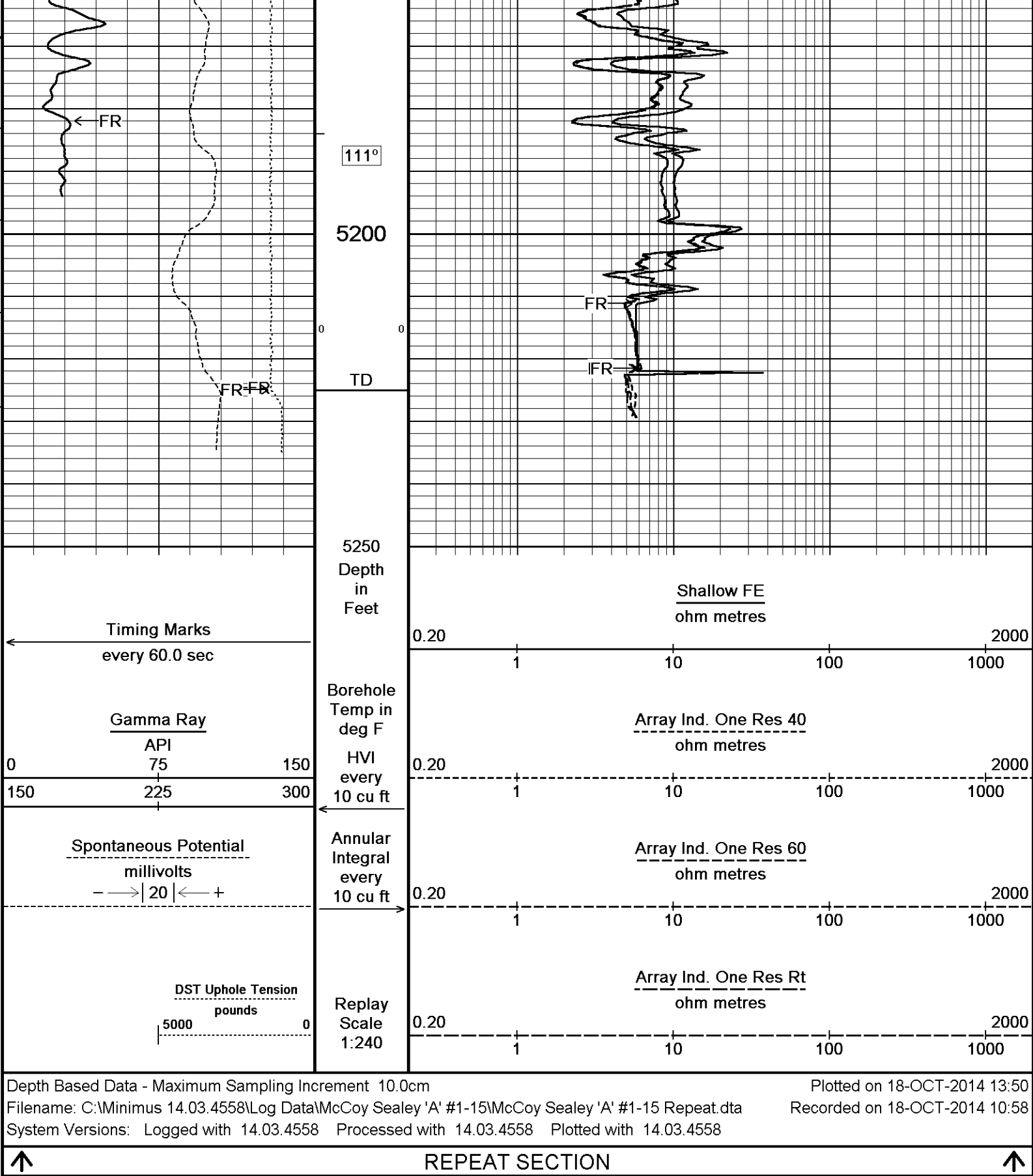
110°

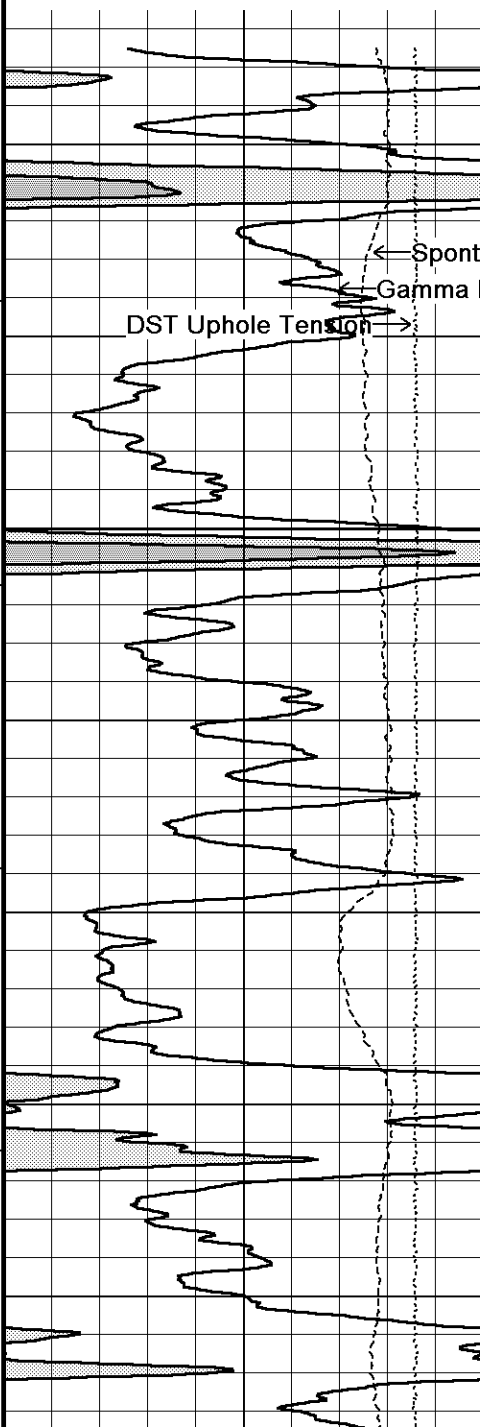
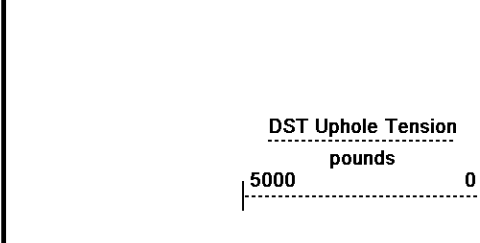
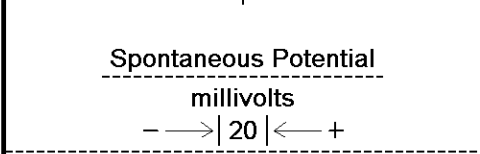
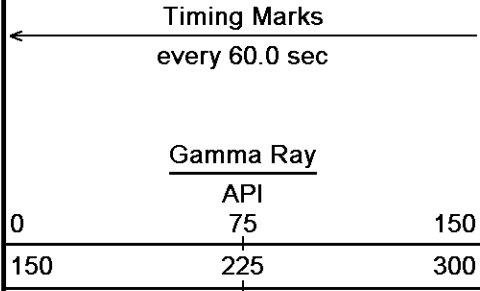
5100

112°

5150







Borehole
Temp in
deg F
HVI
every
10 cu ft

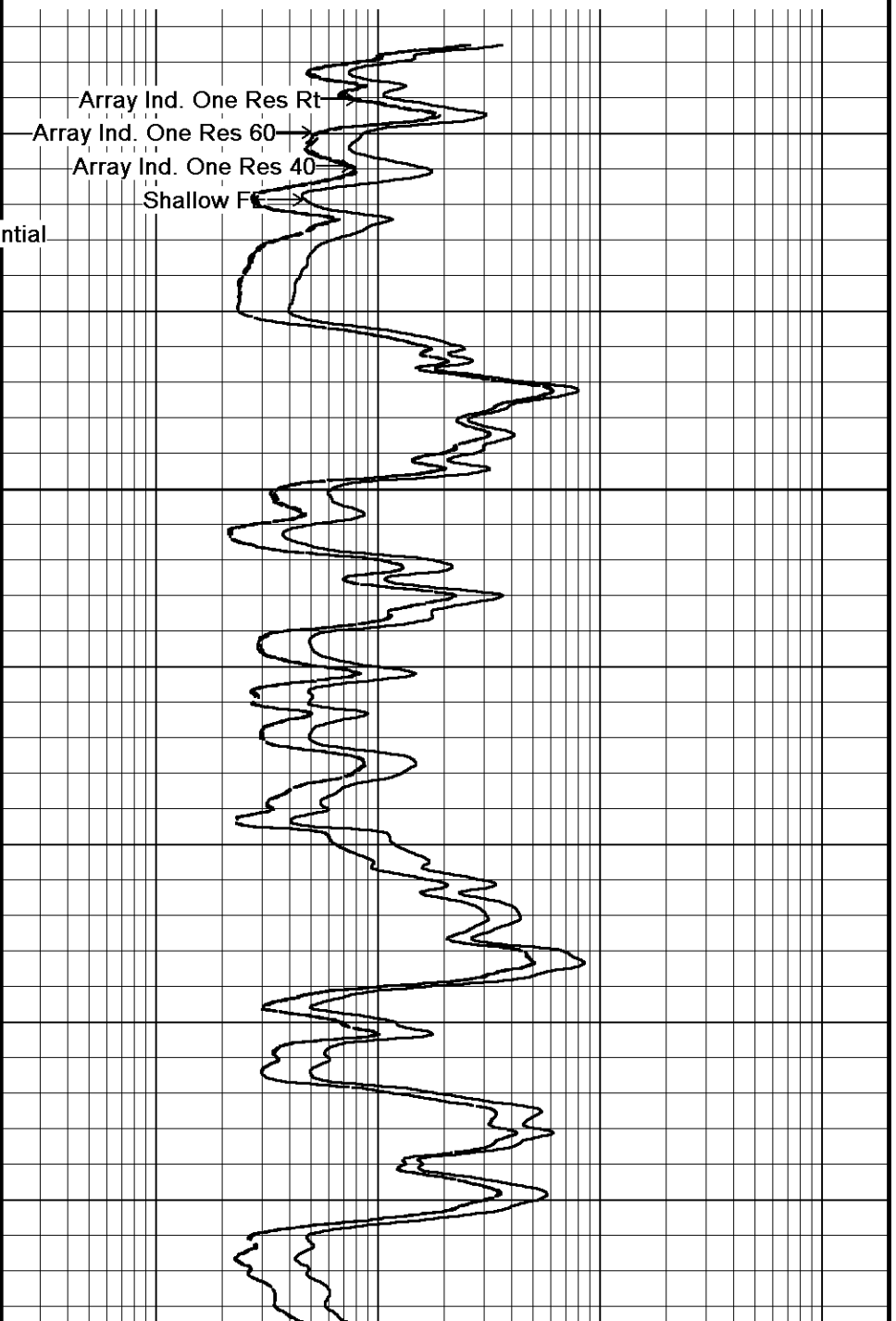
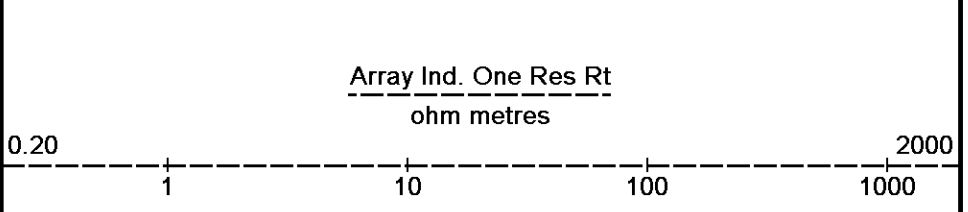
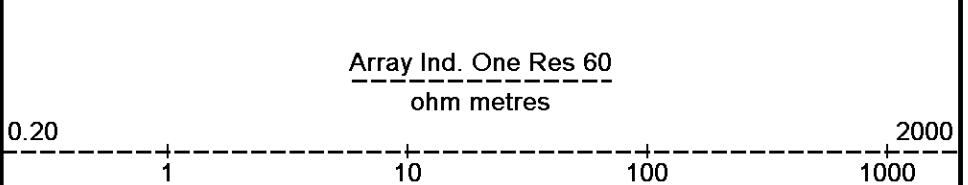
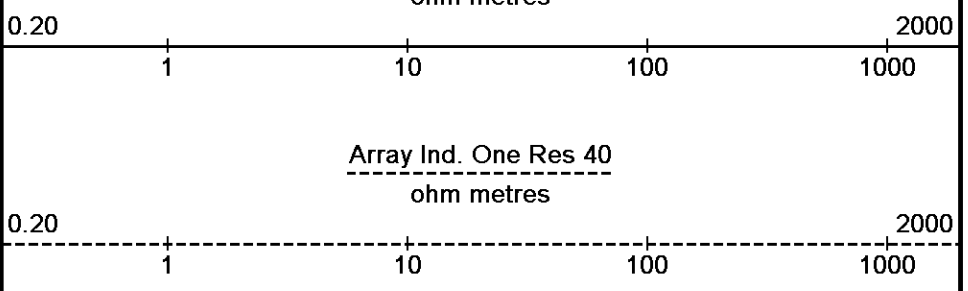
Annular
Integral
every
10 cu ft

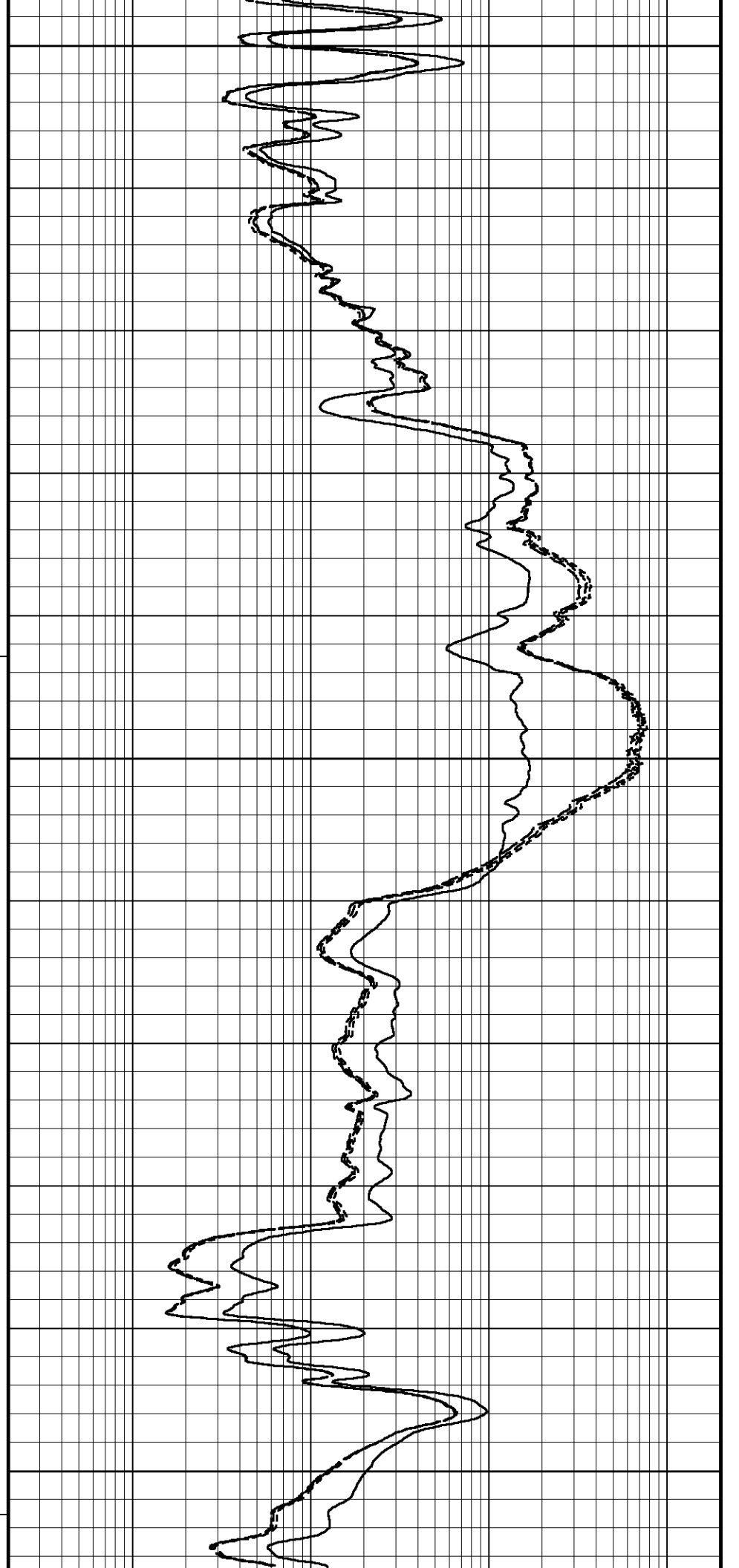
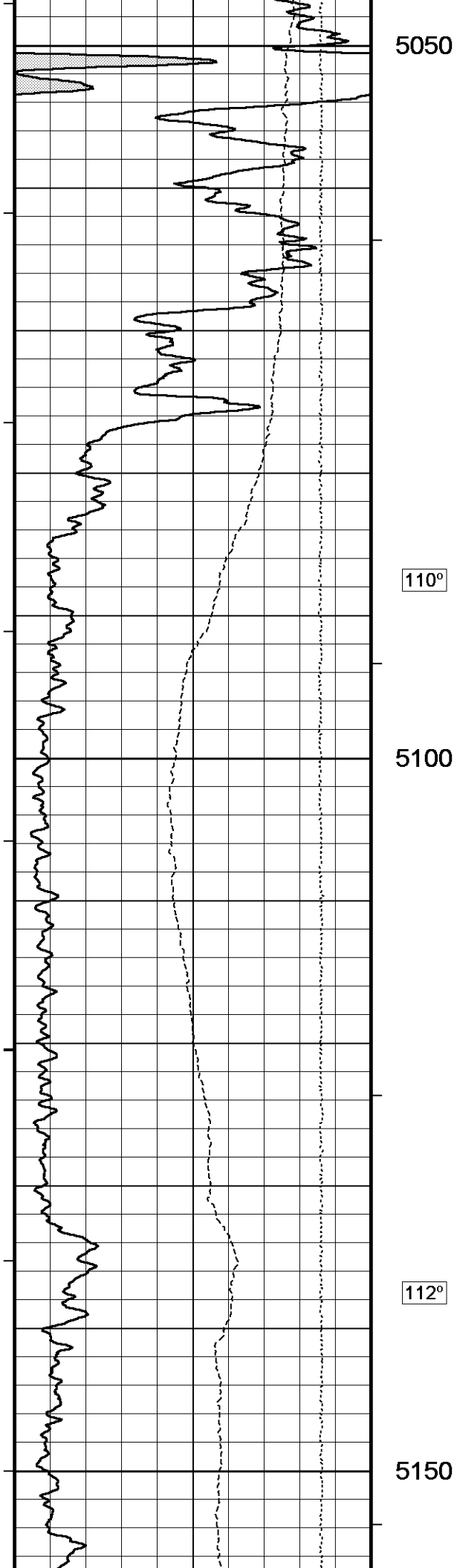
Replay
Scale
1:120

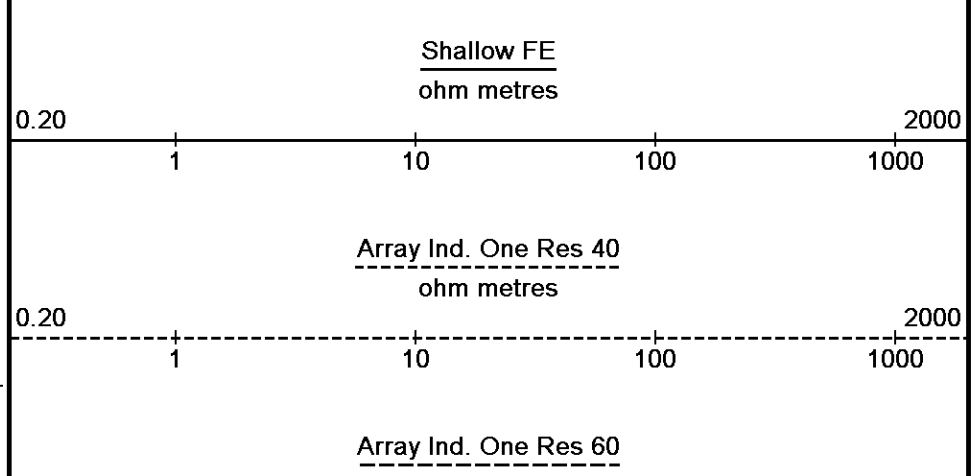
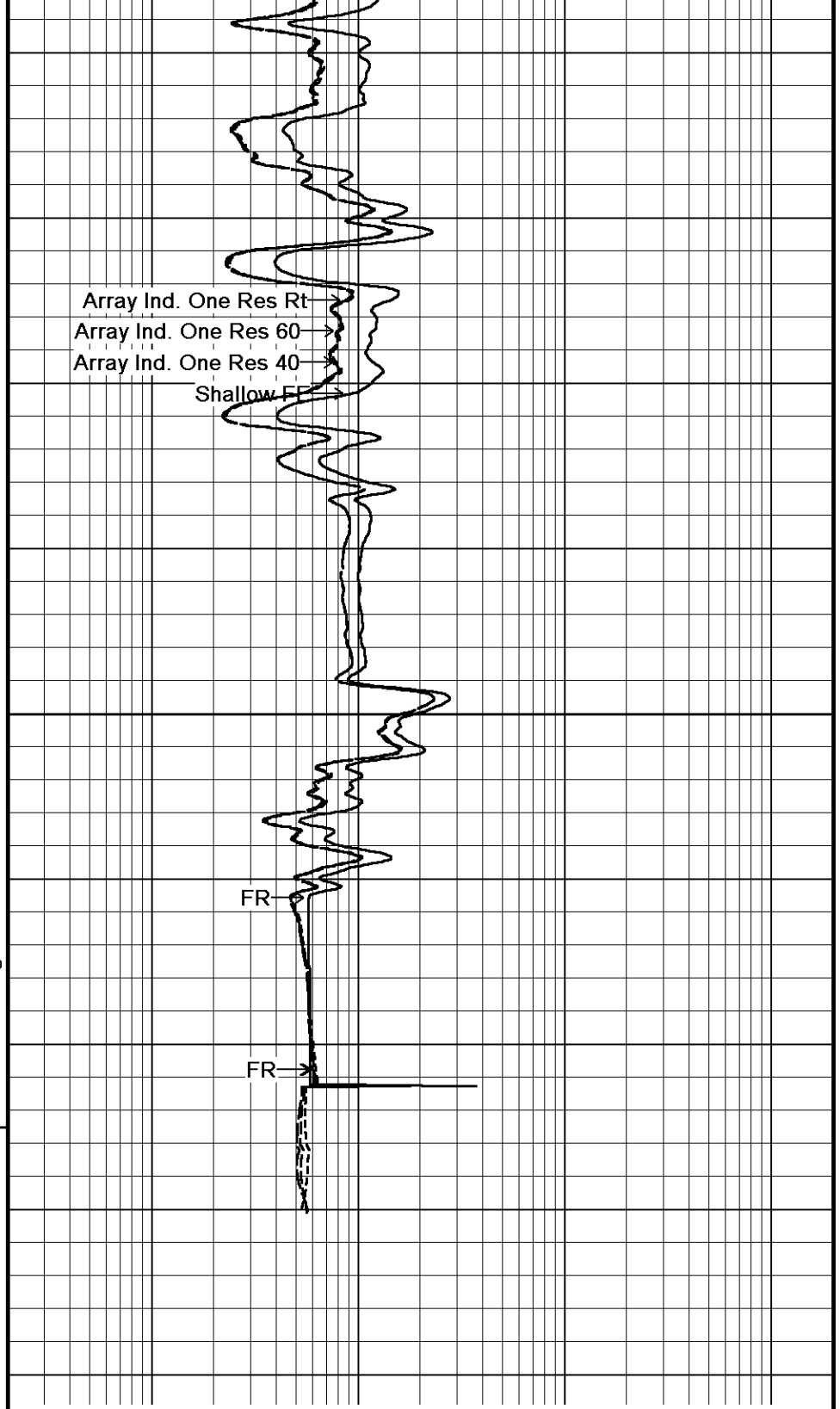
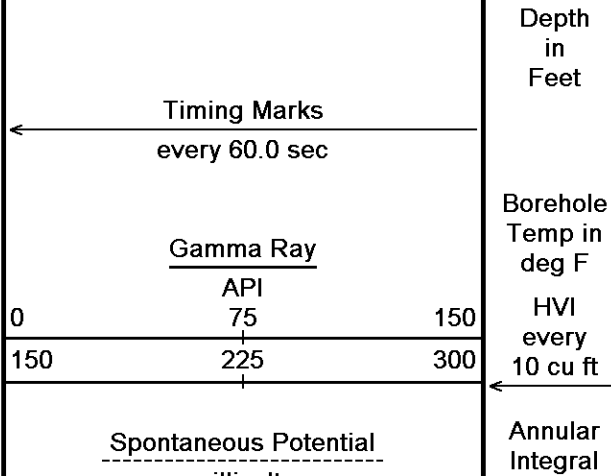
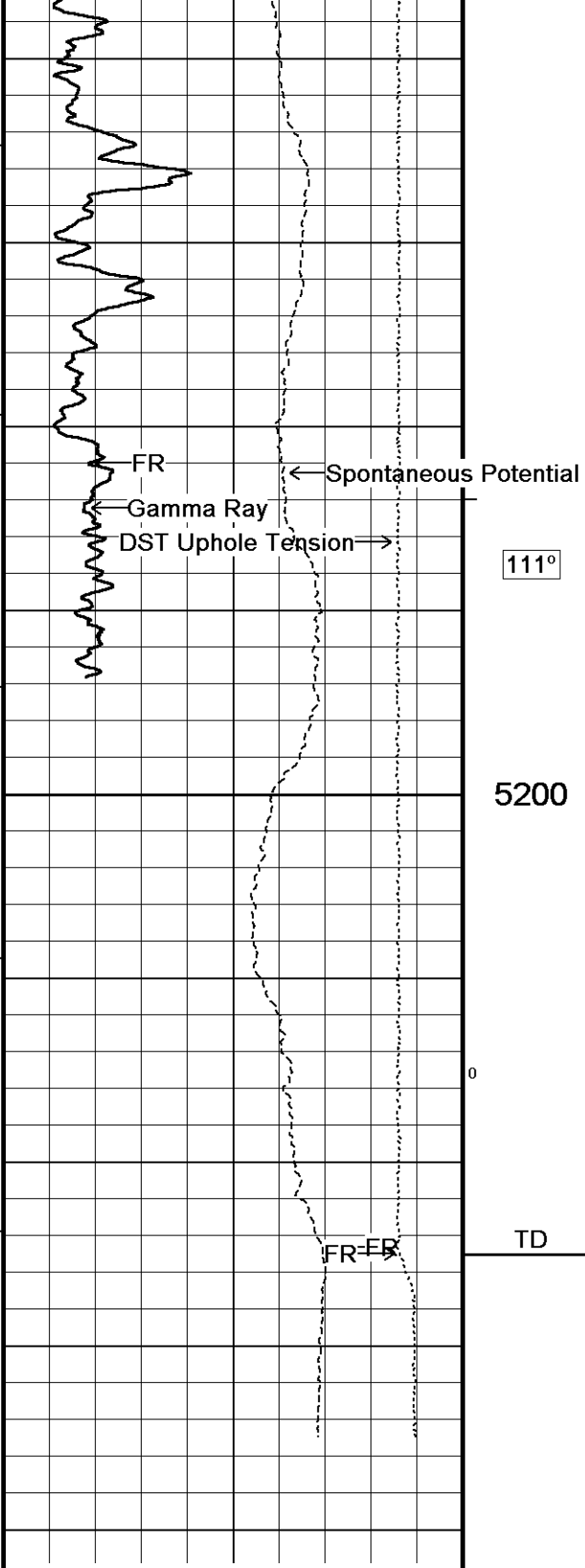
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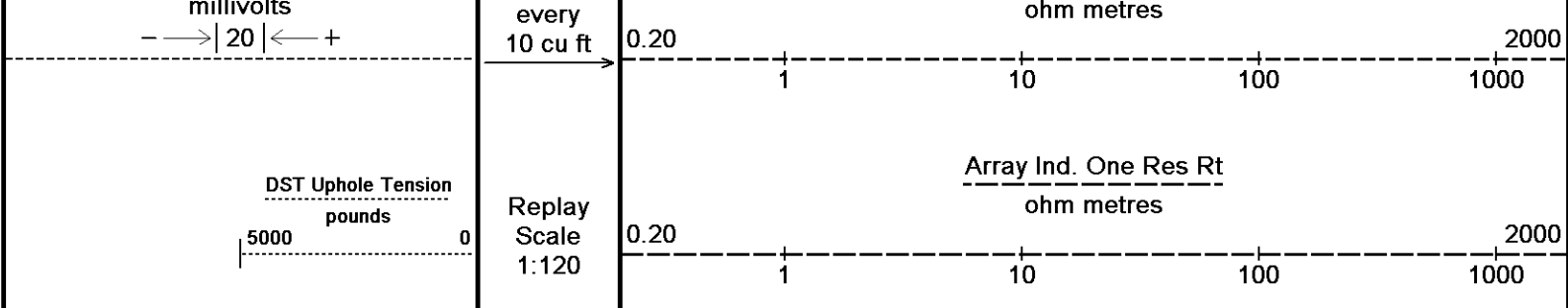
5000

109°









Pre-filter Length 11

FE Calibration MFE-B.J 353

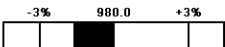
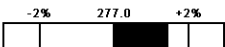
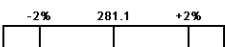
Base Calibration on 16-SEP-2014 15:43

Field Check on 15-OCT-2014 23:58

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.8	126.8
Base Check		281.1
Field Check		281.2

FE Calibration Tolerances MFE-B.J 353

Reference 2	963.8		ohm
Base Check	281.1		ohm-m
Field Check	281.2		ohm-m

FE Constants MFE-B.J 353

Last Edited on 16-OCT-2014,02:04

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 111

Base Calibration on 05-AUG-2014,09:34

Field Check on 15-OCT-2014 23:56

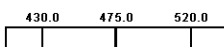
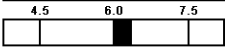
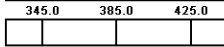
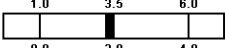
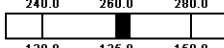
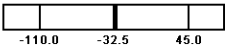
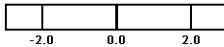
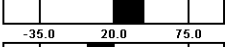
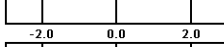
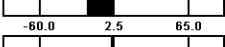
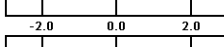
Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		Low	High	Low	High
1		17.6	473.6	9.3	966.2
2		6.4	385.9	7.6	821.4
3		3.2	264.0	5.2	566.0
4		2.1	135.5	2.6	279.2
Array Temperature		23.0			Deg F

Test Loop Calibration Verified

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	12.3	3871.5
2	0.0	0.0	29.8	3526.6
3	0.0	0.0	29.1	3020.0
4	0.0	0.0	19.1	2057.4
Deep			17.7	1961.1
Medium			43.1	3974.8
Shallow			44.4	5230.6
Array Temperature		0.0	68.7	Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6		mmho/m	High Conductivity 1	473.6		mmho/m
Low Conductivity 2	6.4		mmho/m	High Conductivity 2	385.9		mmho/m
Low Conductivity 3	3.2		mmho/m	High Conductivity 3	264.0		mmho/m
Low Conductivity 4	2.1		mmho/m	High Conductivity 4	135.5		mmho/m
Background Vx 1	0.0		mmho/m	Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m	Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m	Phase Check Loop 3	0.0		%

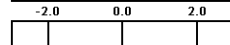
Background Vx 4

0.0



mmho/m Phase Check Loop 4

0.0



%

Induction Constants MAI-A.A 111

Last Edited on 18-OCT-2014,09:17

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	

Caliper Calibration MPD-C.A 216

Base Calibration on 02-OCT-2014 09:56

Field Calibration on 16-OCT-2014 00:00

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18336	3.99
2	28304	5.98
3	38368	7.97
4	48128	9.86
5	59280	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.94	7.97

Caliper Calibration Tolerances MPD-C.A 216

Short Arm Field Cal.	7.94		in
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DOWNHOLE EQUIPMENT

C:\Minimus 14.03.4558\Log Data\McCoy Sealey 'A' #1-15\McCoy Sealey 'A' #1-15 Main.dta

3/8" Triple Cone Cable Head (MCB C A)
 MCB-C.A 234 LG: 1.58 ft WT: 15.4 lb OD: 2.240 in

Compact Comms Gamma



Compact Collins Gamma
MCG-B 39 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-log

MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

Compact Neutron

MDN-A.B 66 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: 2.449 in

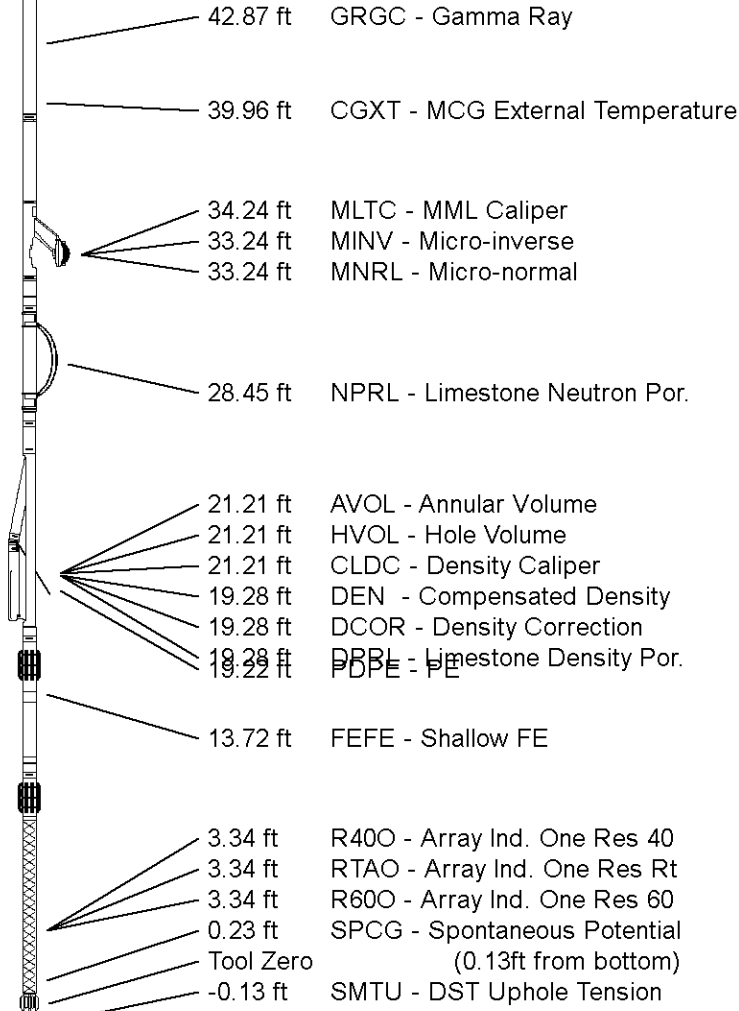
Compact Focussed Electric

MFE-B.J 353 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: 49.73 ft Weight: 399.0 lb



COMPANY MCCOY PETROLEUM CORPORATION
WELL SEALEY "A" #1-15
FIELD ALFORD
PROVINCE/COUNTY SCOTT
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2273.00	feet	First Reading	5221.66	feet
Elevation Drill Floor	2271.00	feet	Depth Driller	5225.00	feet
Elevation Ground Level	2264.00	feet	Depth Logger	5225.00	feet



ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

Weatherford®

Weatherford		ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG
COMPANY	MCCOY PETROLEUM CORPORATION	
WELL	SEALEY "A" #1-15	
FIELD	ALFORD	
PROVINCE/COUNTY	SCOTT	
COUNTRY/STATE	U.S.A. / KANSAS	
LOCATION	990' FSL & 1980' FEL	
PERMIT NUMBER	NZ SW SE	
SEC - 15	T19W R30E T19N	Other Services
Latitude	35.507721693	
Longitude	-97.150000000	
Log Number	15-007-21693	
Permanent Datum GL Elevation	2264 feet	
Log Measured From KB	9 FEET	
Drilling Measured From KB	9 FEET	
Date	18-OCT-2013	
Run Number	ONE	
Service Order	7036-10087902	
Depth Driller	5225.00	feet
Depth Logger	5225.00	feet
First Reading	5221.66	feet
Last Reading	646.00	feet
Casing Driller	644.00	feet
Casing Logger	646.00	feet
Bit Size	7.875	inches
Hole Fluid Type	WBEM	
Density/Viscosity	9.40 100/50	88.00 cP
PH / Fluid Loss	10.50	12.00 ml/30min
Sample Source	MUD/PT	
Rim @ Measured Temp	0.31 @ 75.0	ohm-m
Rim @ Measured Temp	0.25 @ 75.0	ohm-m
Rim @ Measured Temp	0.37 @ 75.0	ohm-m
Source Rmt / Rmc	CALC	CALC
Rim @ BHT	0.21 @ 13.0	ohm-m
Time Since Circulation	4 HOURS	deg F
Max Recorded Temp	113.00	
Equipment Base	13008	LIB
Recorded By	DEREK CARTER	
Witnessed By	ZACH WIELE	
DOB #	1814-323	

1 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
 Filename: C:\Minimus 14.03.4558\Log Data\McCoy Sealey 'A' #1-15 Main.dta
 System Versions: Logged with 14.03.4558 Processed with 14.03.4558 Plotted with 14.03.4558

Plotted on 18-OCT-2014 13:50
 Recorded on 18-OCT-2014 11:26

Timing Marks
every 60.0 sec

Gamma Ray
API 75

Spontaneous Potential
millivolts
-20|+20

DST Uphole Tension
pounds
5000

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Shallow FE
ohm metres

Array Ind. One Cond Ct
mmhos/metre

Array Ind. One Res Rt
ohm metres

Replay Scale 1:600

630 Casing Shoe

85°

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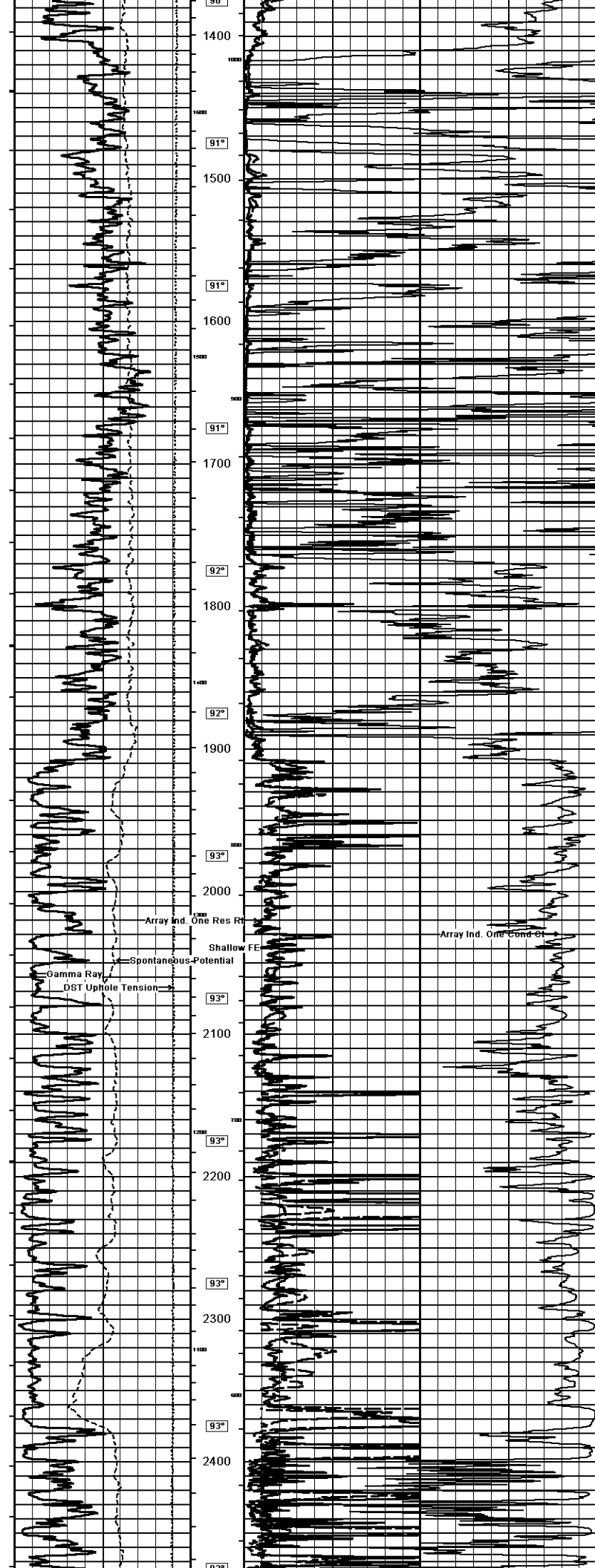
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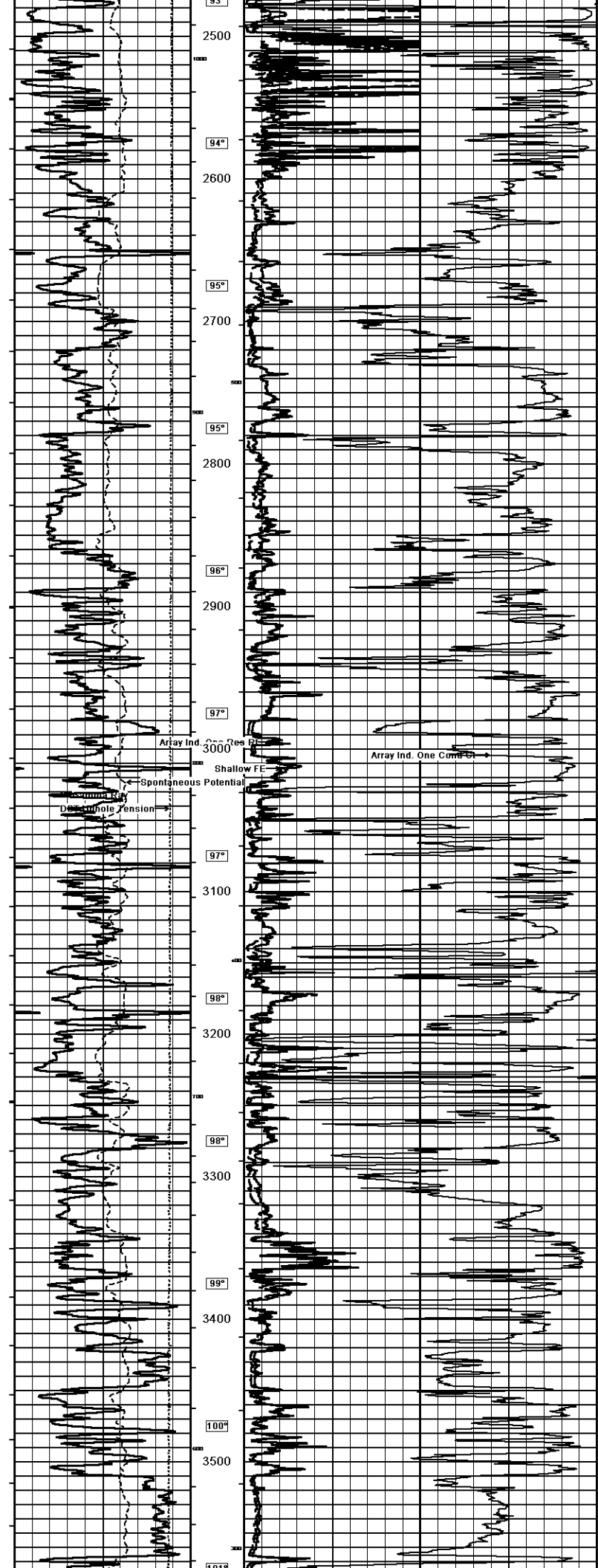
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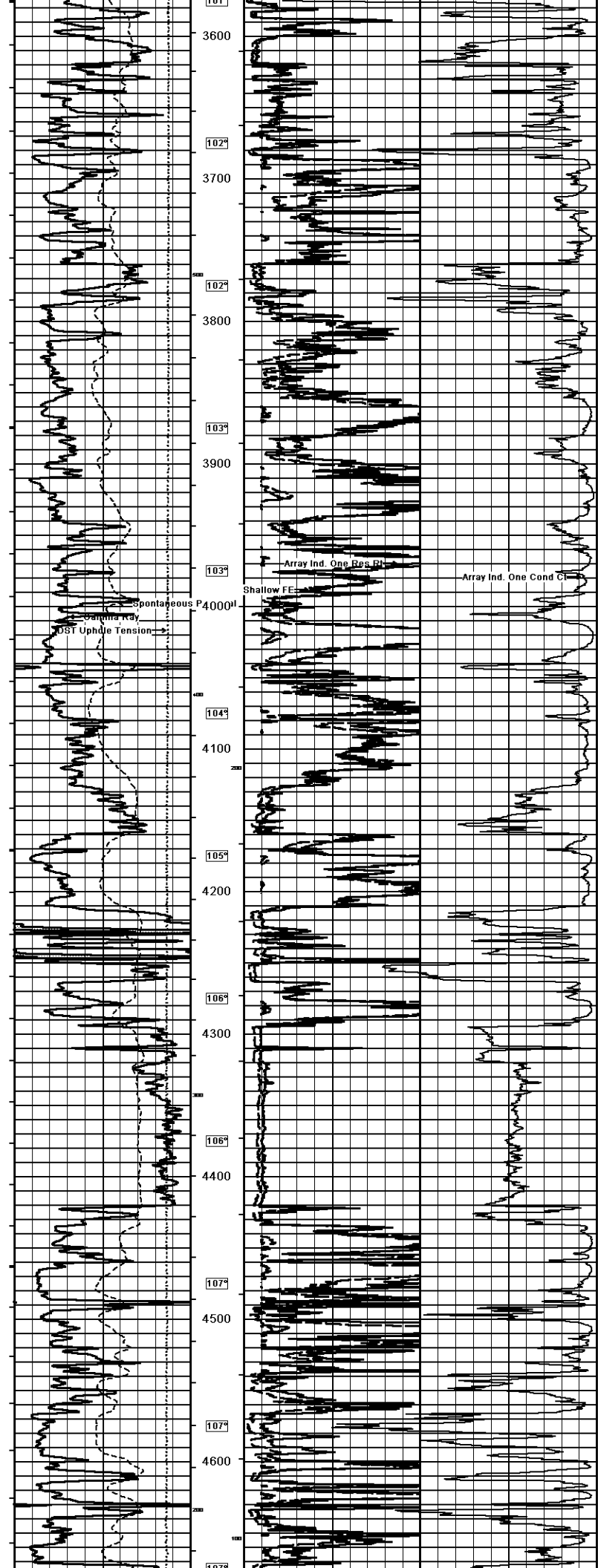
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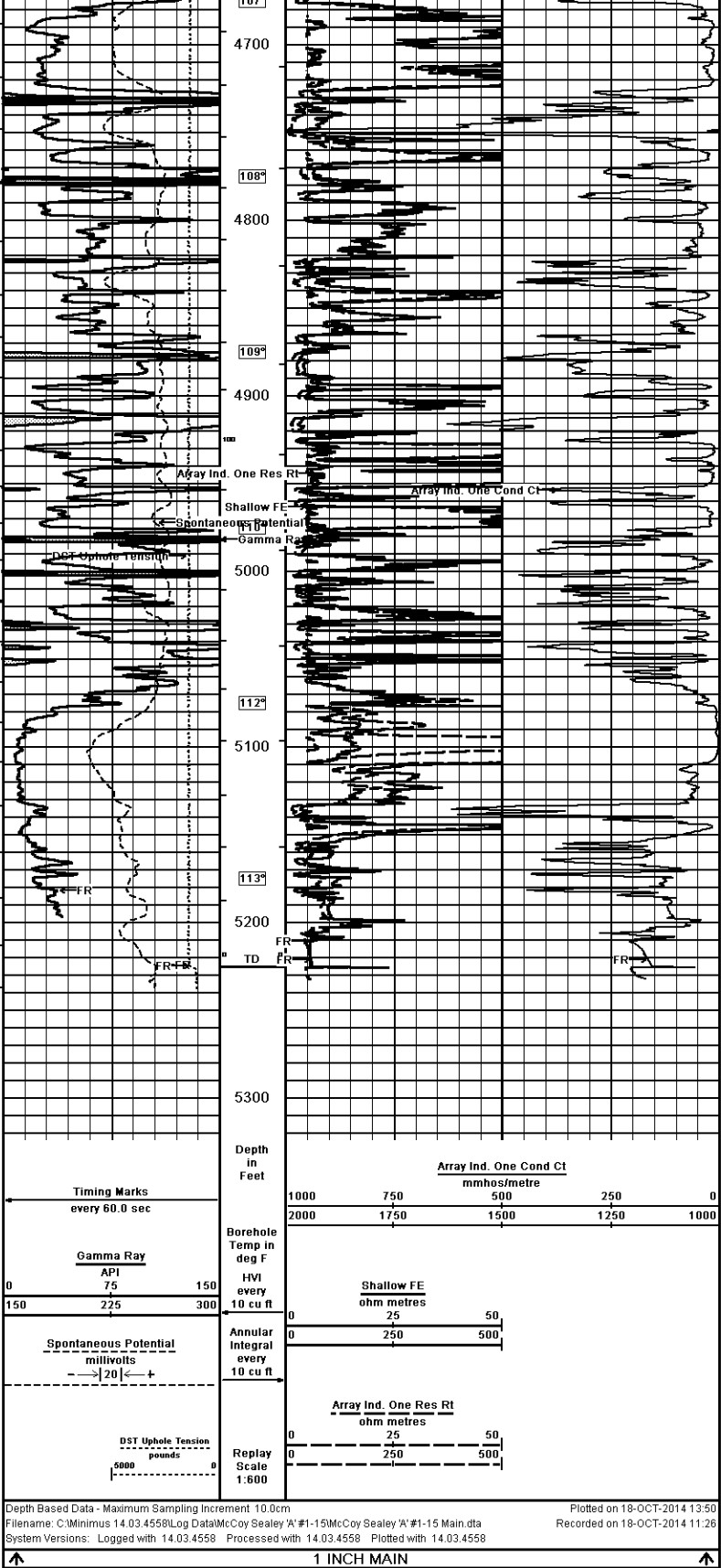
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COMPANY		MCCOY PETROLEUM CORPORATION			
WELL		SEALEY "A" #1-15			
FIELD		ALFORD			
PROVINCE/COUNTY		SCOTT			
COUNTRY/STATE		U.S.A. / KANSAS			
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 Weatherford		ARRAY INDUCTION			
		SHALLOW FOCUSED			
		ELECTRIC LOG			

