



Weatherford

**COMPENSATED NEUTRON
SONIC POROSITY
OVERLAY**

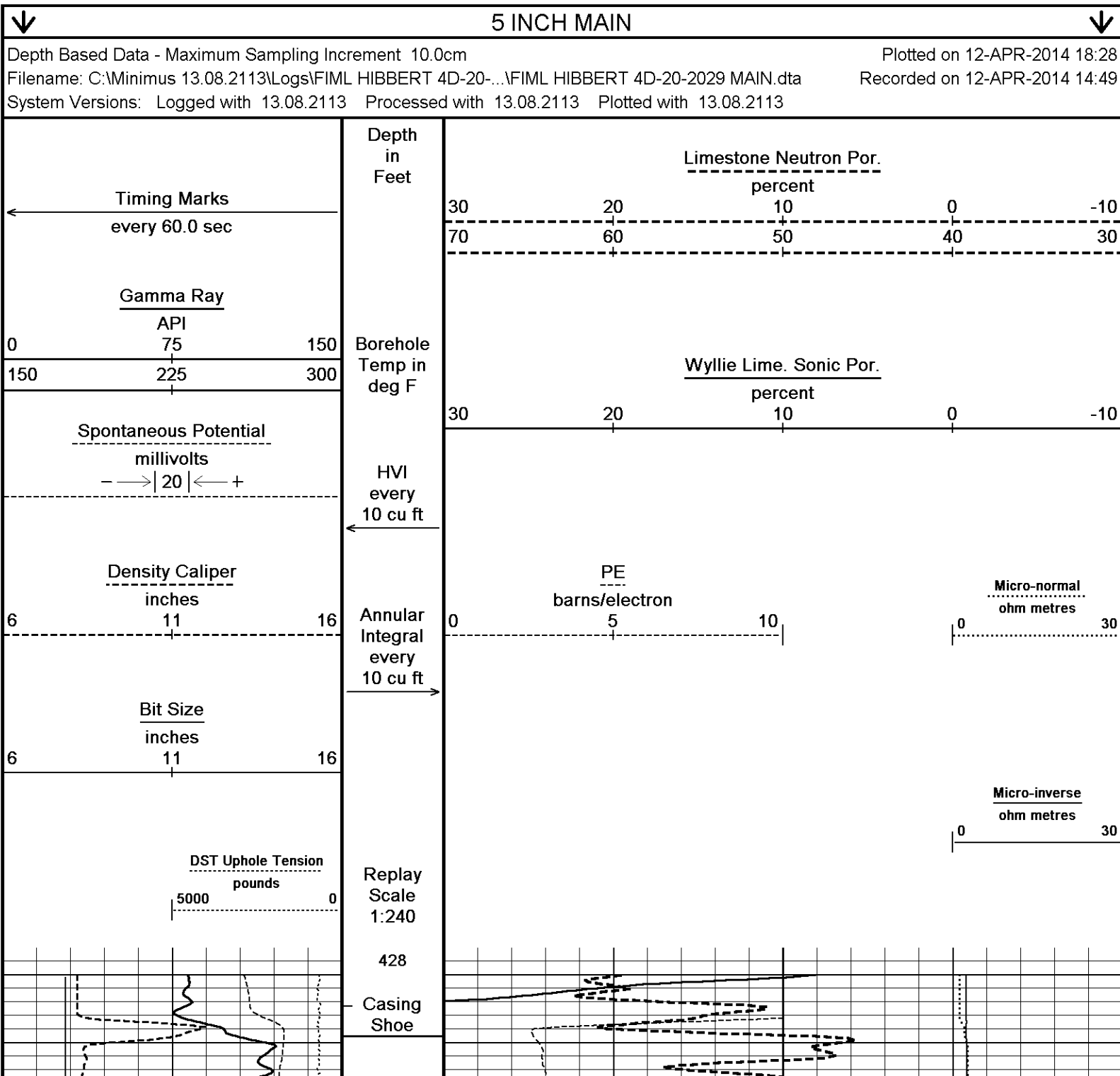
COMPANY			FIML NATURAL RESOURCES, LLC.		
WELL			HIBBERT 4D-20-2029		
FIELD			WILDCAT		
PROVINCE/COUNTY LANE			U.S.A. / KANSAS		
COUNTRY/STATE			1235' FNL & 1000' FNL		
LOCATION					
SEC 20	TWP 20S	RGE 29W	Other Services		MML
Latitude			MPD/MDN		
Longitude			MAI/MFE		
API Number	15-101-22502		MSS		
Permanent Datum GL, Elevation 2882 feet					
Log Measured From KB					
Drilling Measured From KB @ 10 FEET			Elevations: KB 2892.00 DF 2890.00 GL 2882.00		
Date	12-APR-2014				
Run Number	ONE				
Service Order	5872-84492996				
Depth Driller	4900.00		feet		
Depth Logger	4902.00		feet		
First Reading	4889.00		feet		
Last Reading	439.00		feet		
Casing Driller	437.00		feet		
Casing Logger	439.00		feet		
Bit Size	7.875		inches		
Hole Fluid Type	CHEM				
Density / Viscosity	9.30 lb/USg		55.00 CP		
PH / Fluid Loss	10.50		7.00 ml/30Min		
Sample Source	PIT				
Rm @ Measured Temp	0.80 @ 96.0		ohm-m		
Rmf @ Measured Temp	0.64 @ 96.0		ohm-m		
Rmc @ Measured Temp	0.96 @ 96.0		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.65 @ 117.0		ohm-m		
Time Since Circulation	4 HRS				
Max Recorded Temp	117.00		deg F		
Equipment / Base	13057		LIB		
Recorded By	D. COLE				
Witnessed By	G. DOKE		K. TALBOT		
JOB #	LB 14-111				

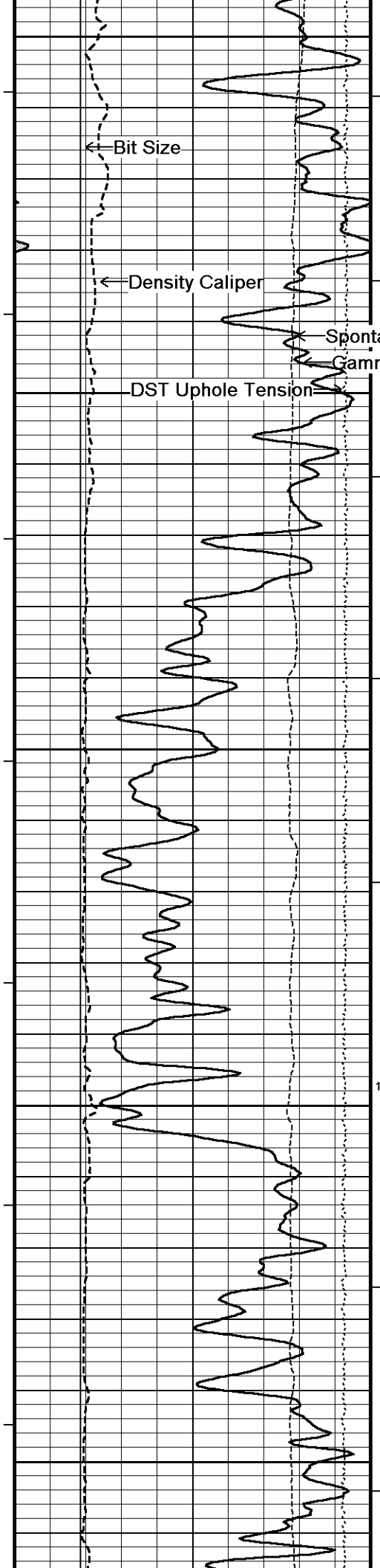
BOREHOLE RECORD			Last Edited: 12-APR-2014 11:38	
Bit Size inches	Depth From feet		Depth To feet	
7.875	437.00		4900.00	
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
CASING	8.625	0.00	437.00	24.00

REMARKS
- SOFTWARE ISSUE: WLS 13.08.211.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS AND MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1760 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING: 1025 CU.FT.

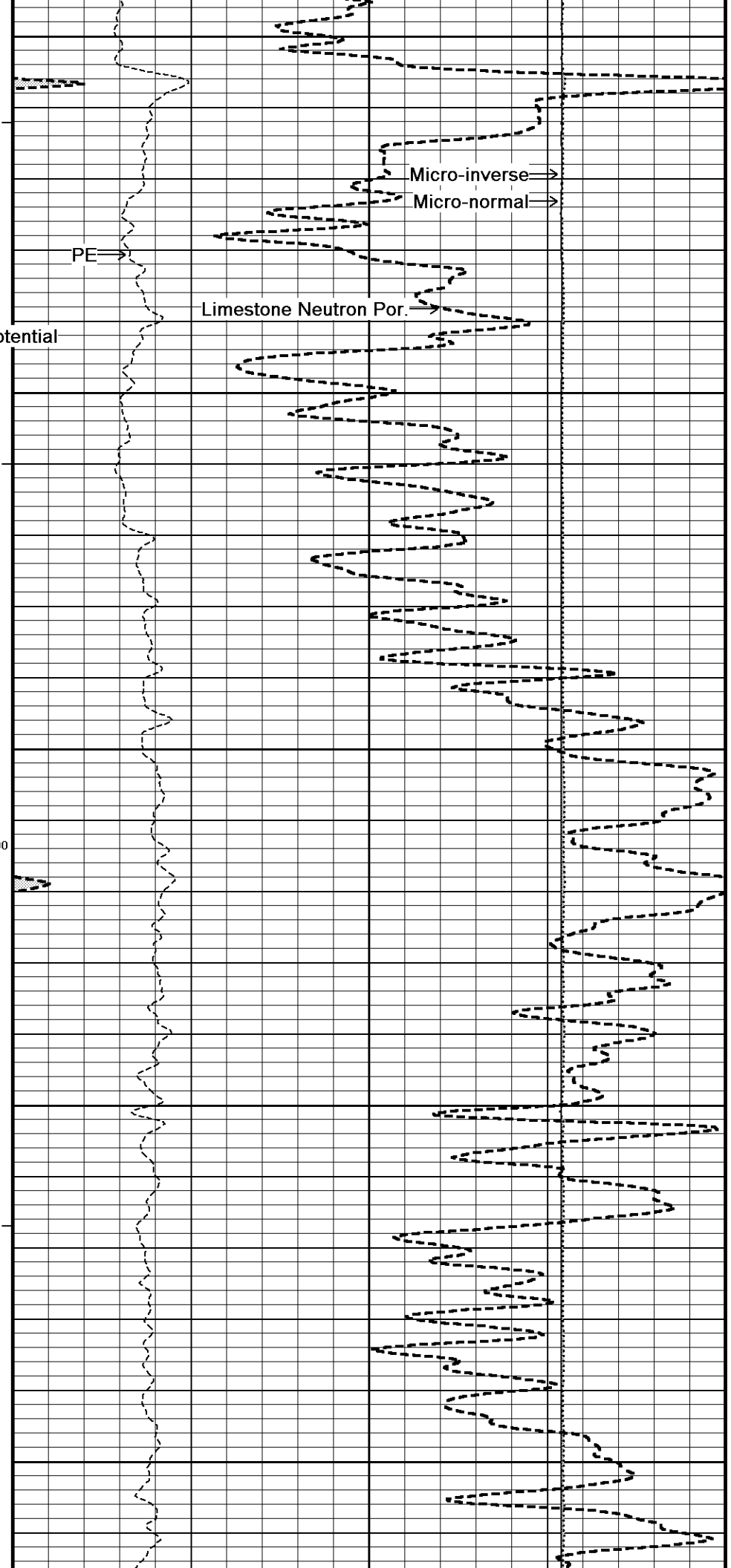
- OPERATOR: J. DUNLAP.

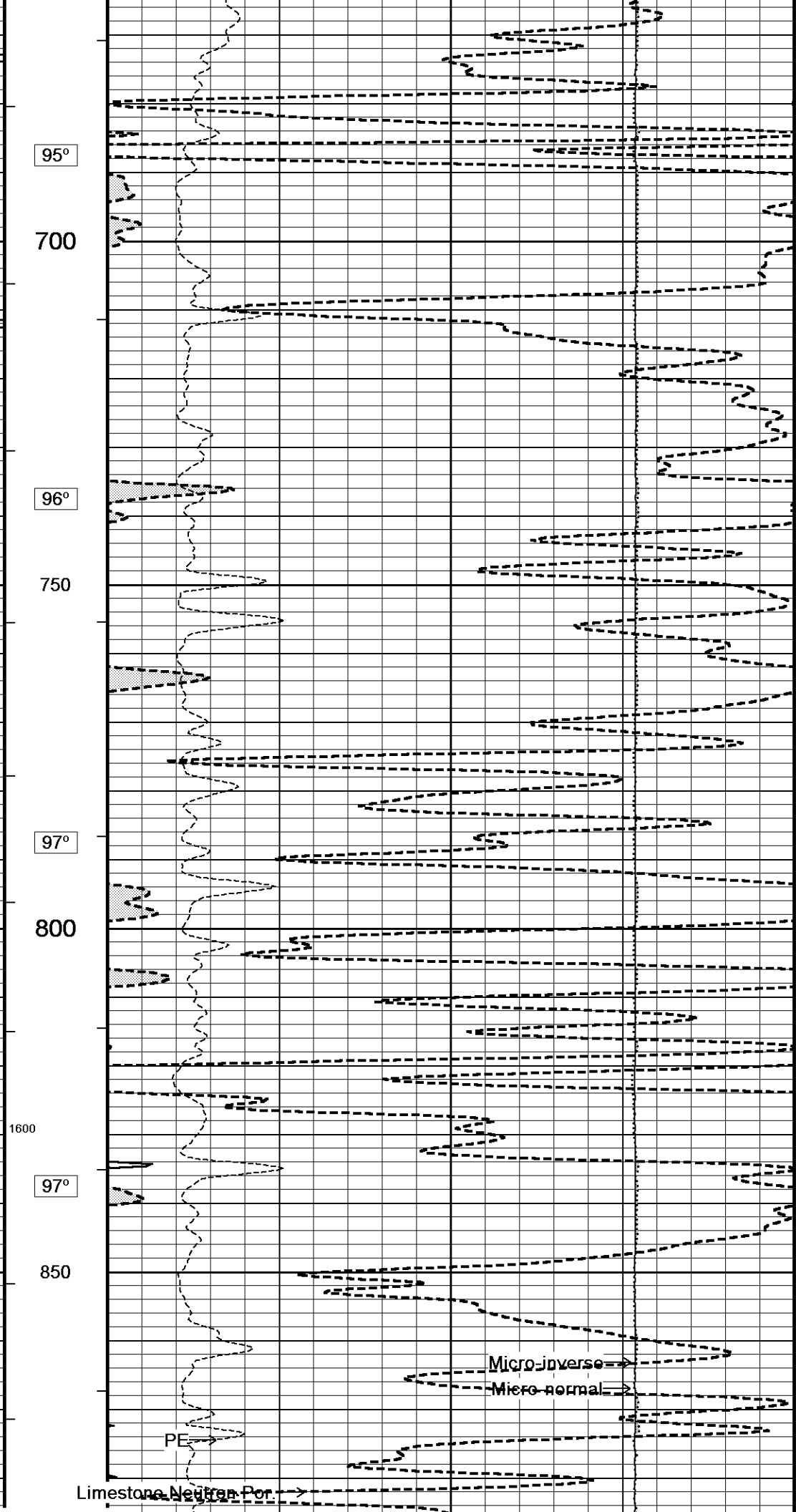
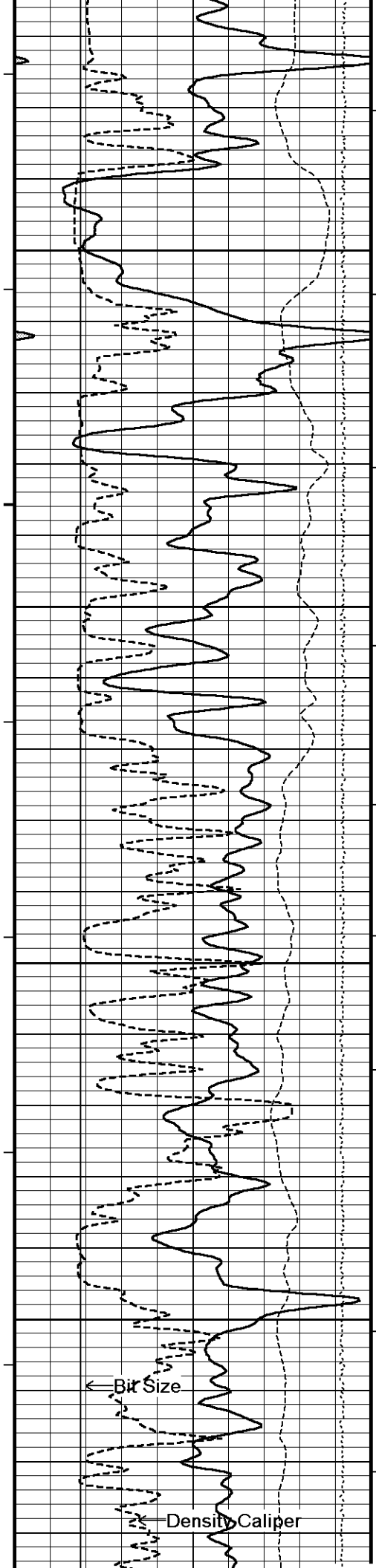
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will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

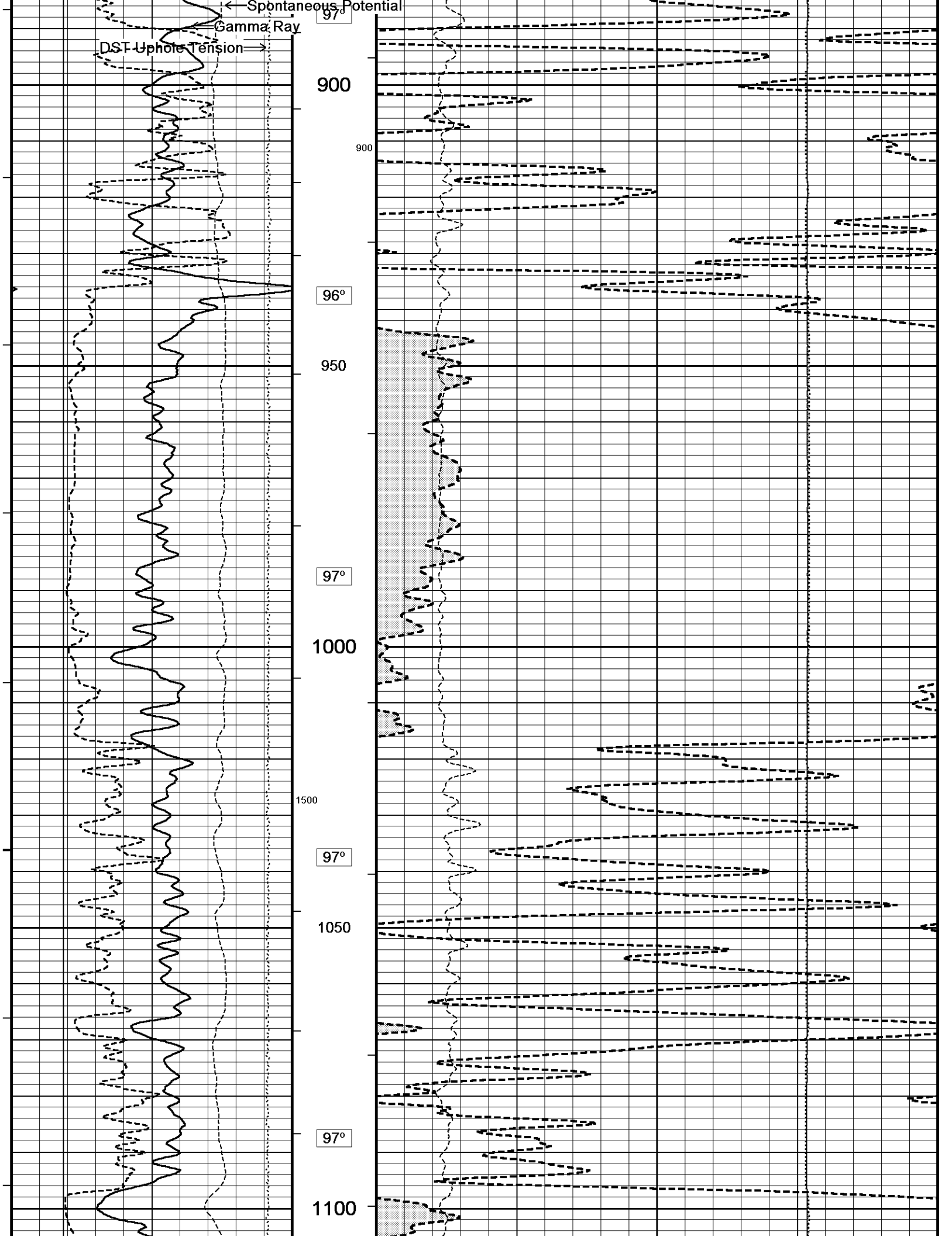


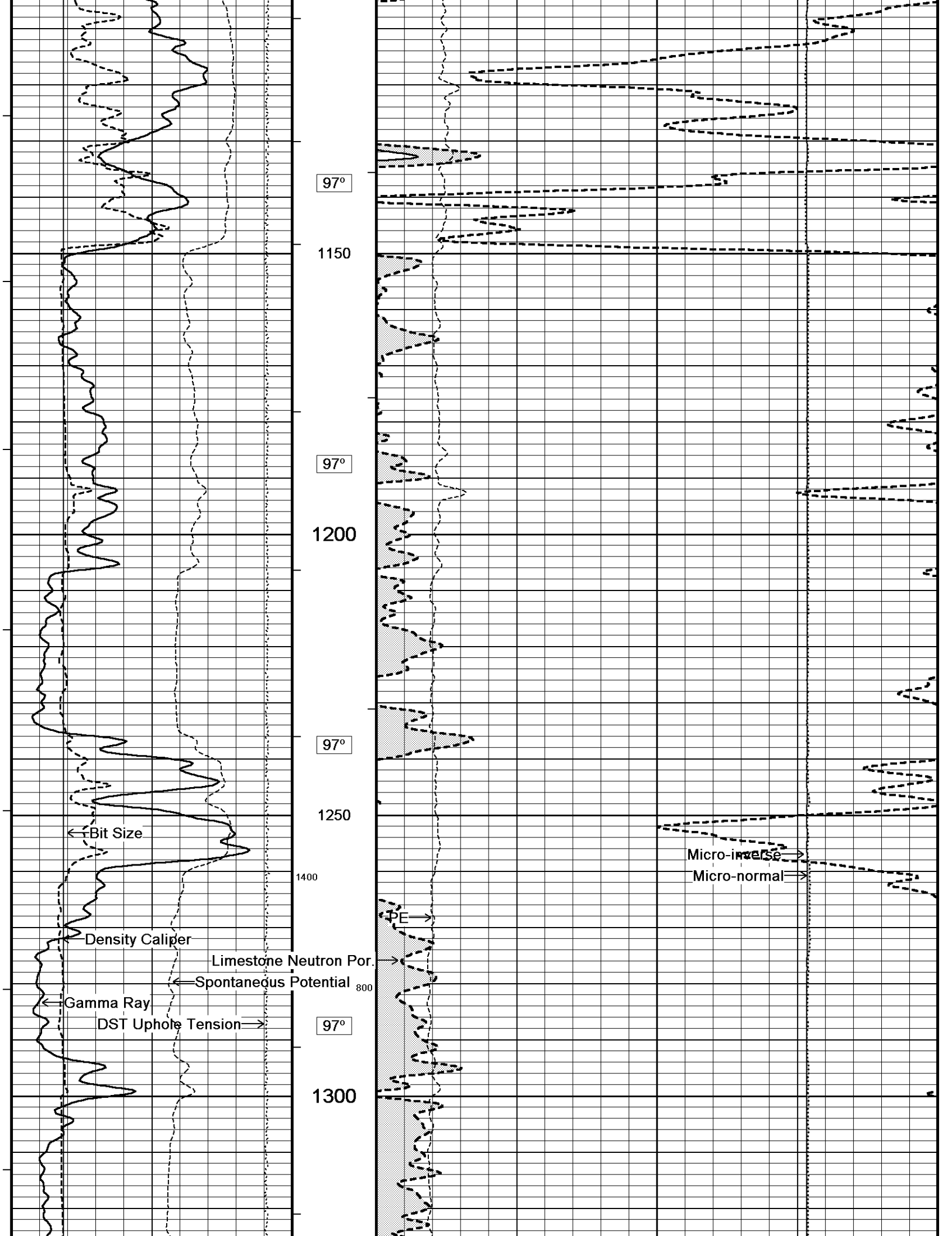


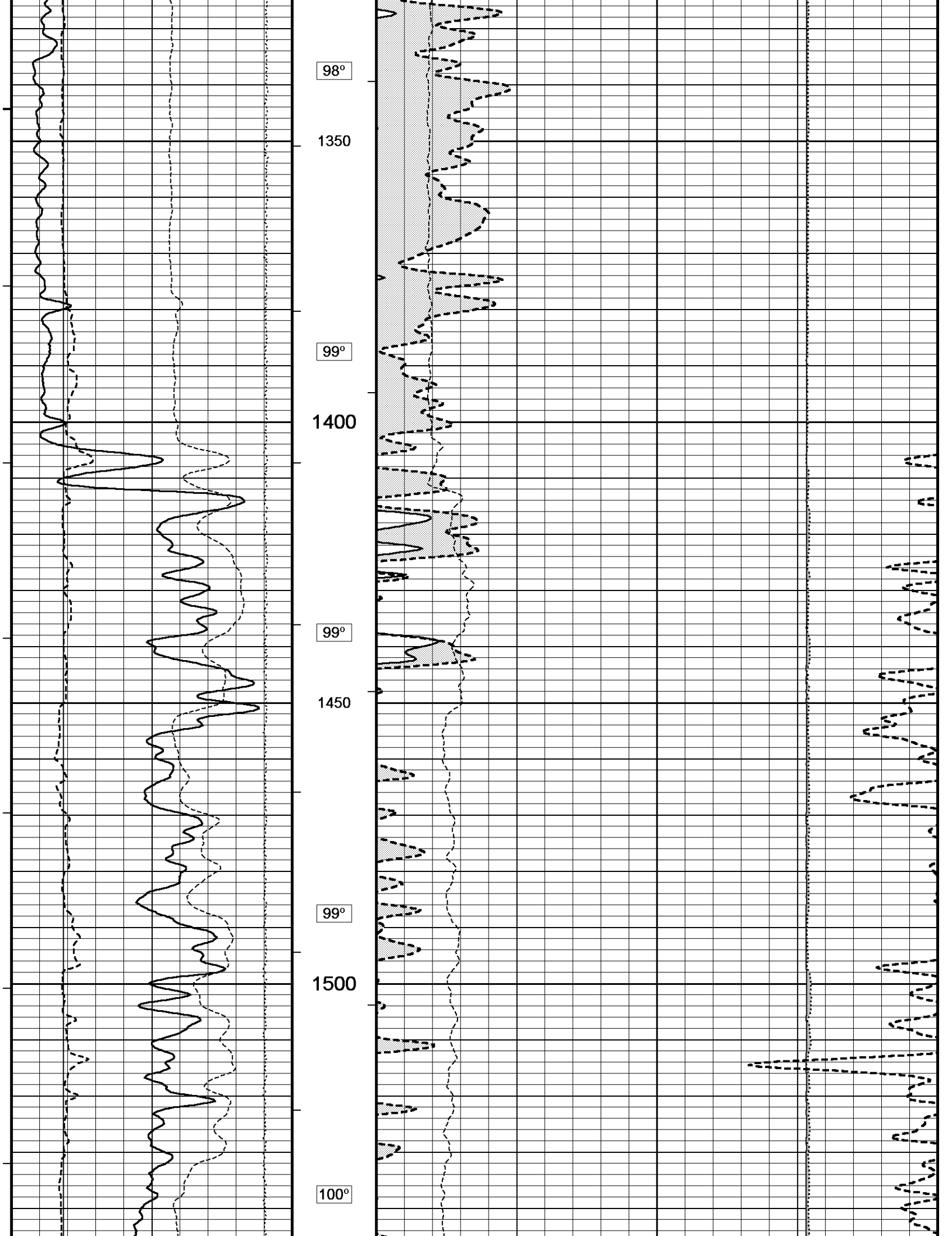
450
94°
500
94°
550
1000
95°
1700
600
95°
650

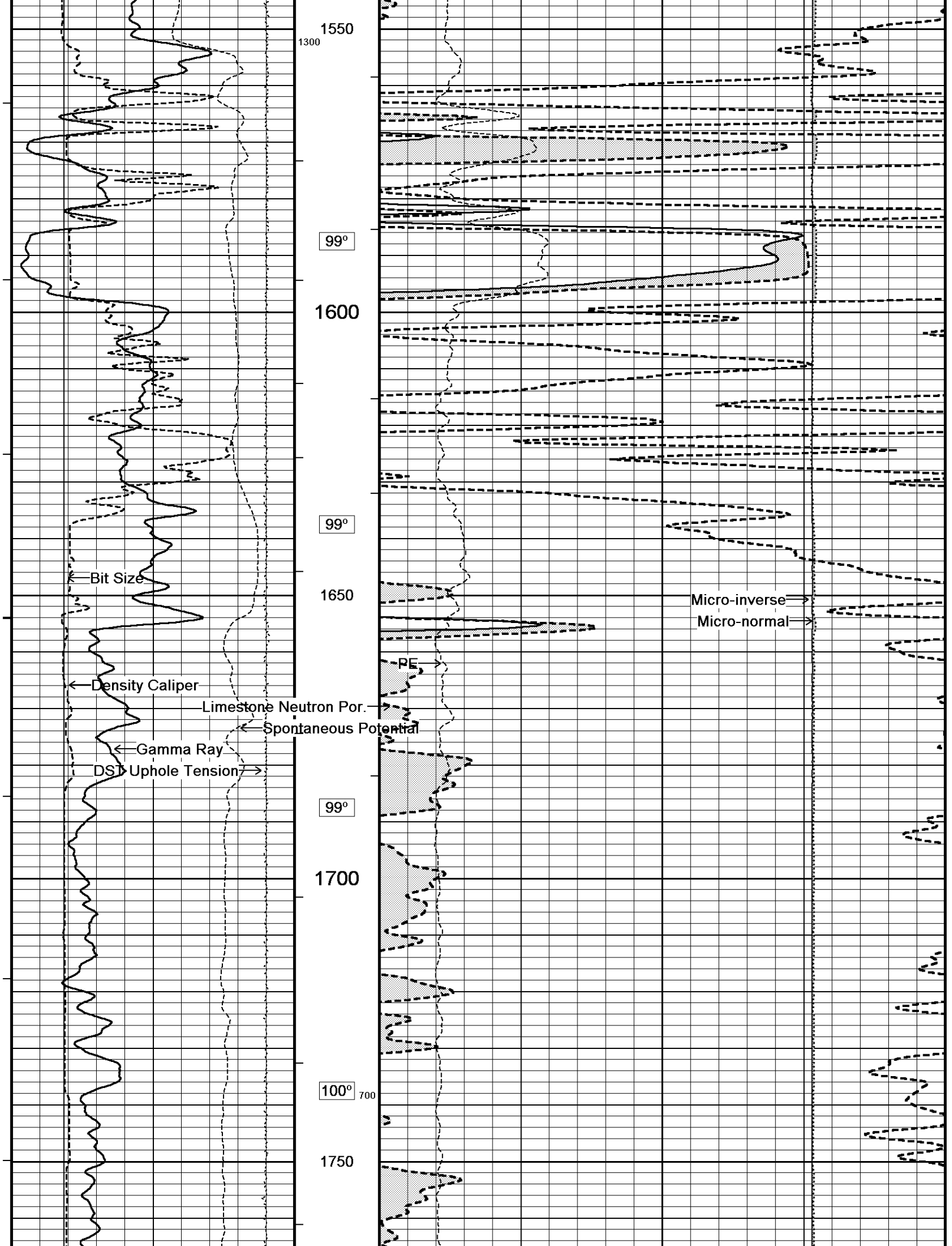


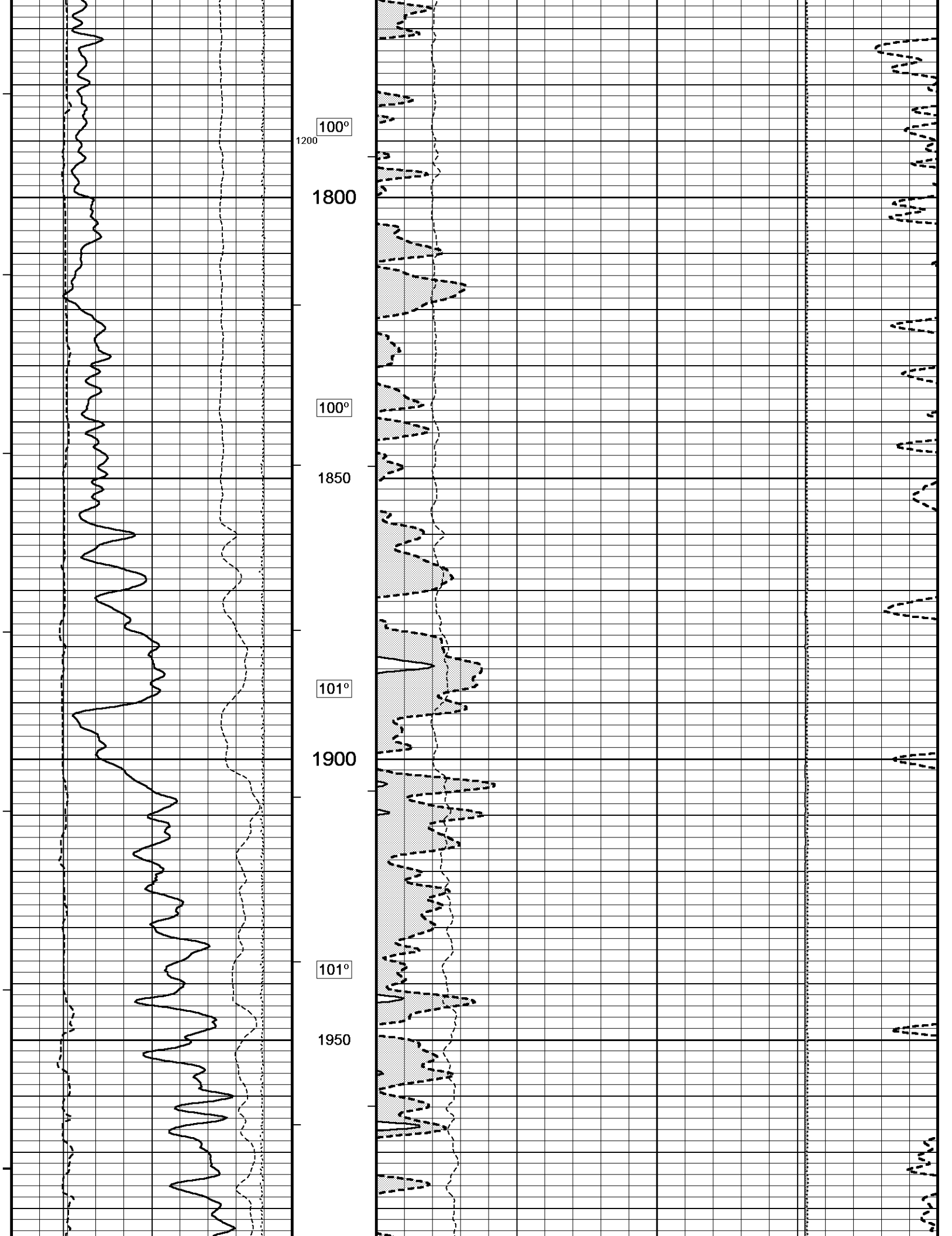


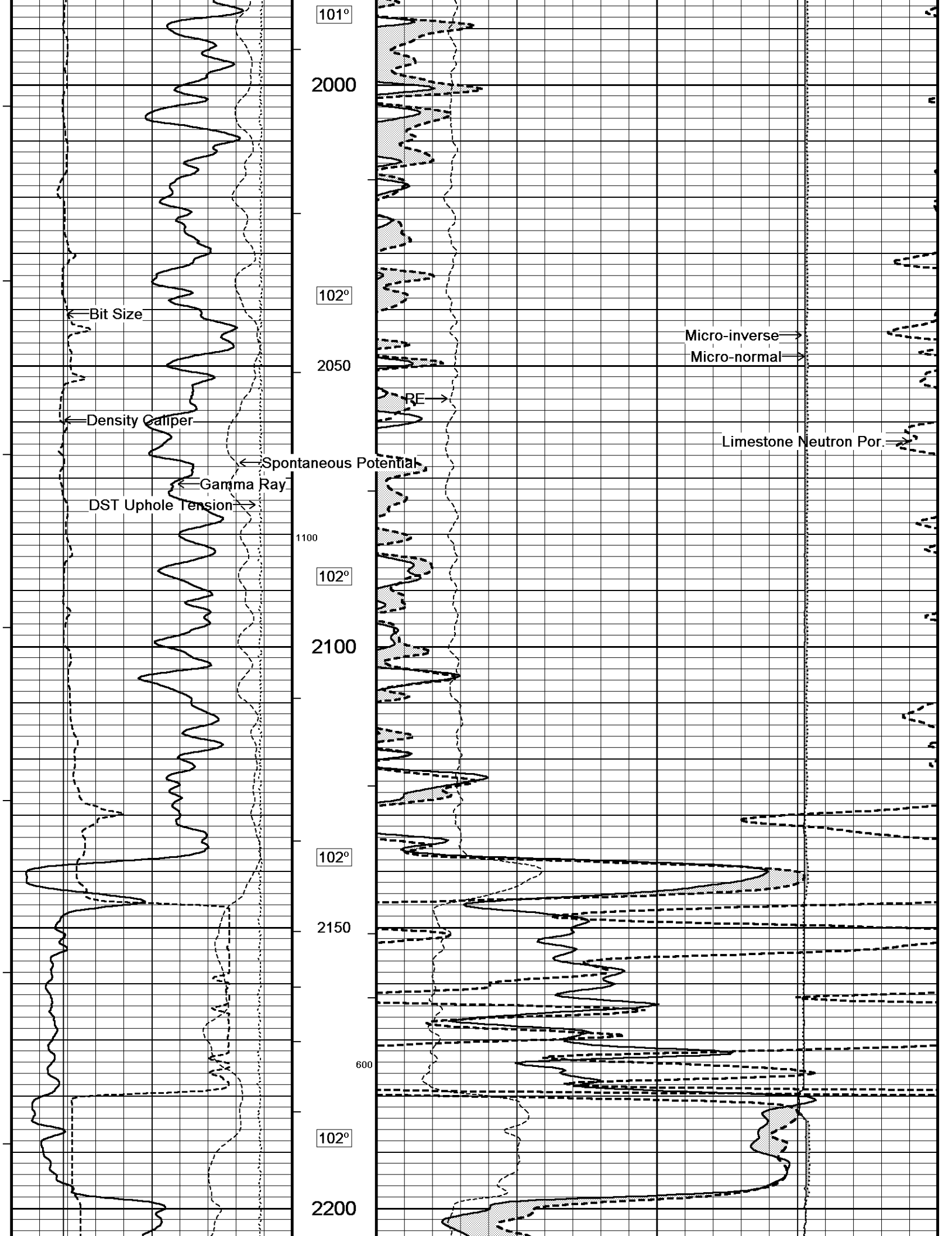


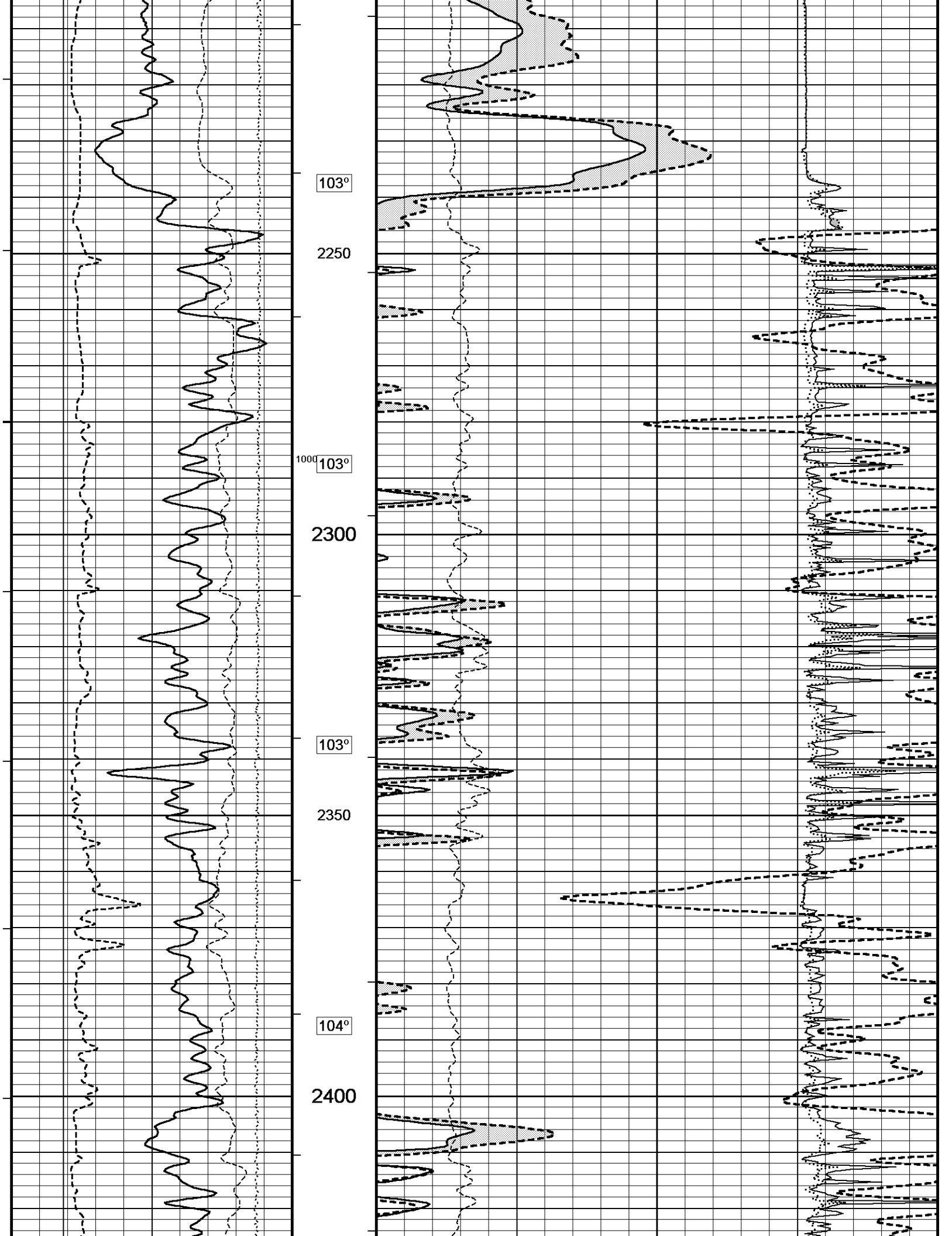


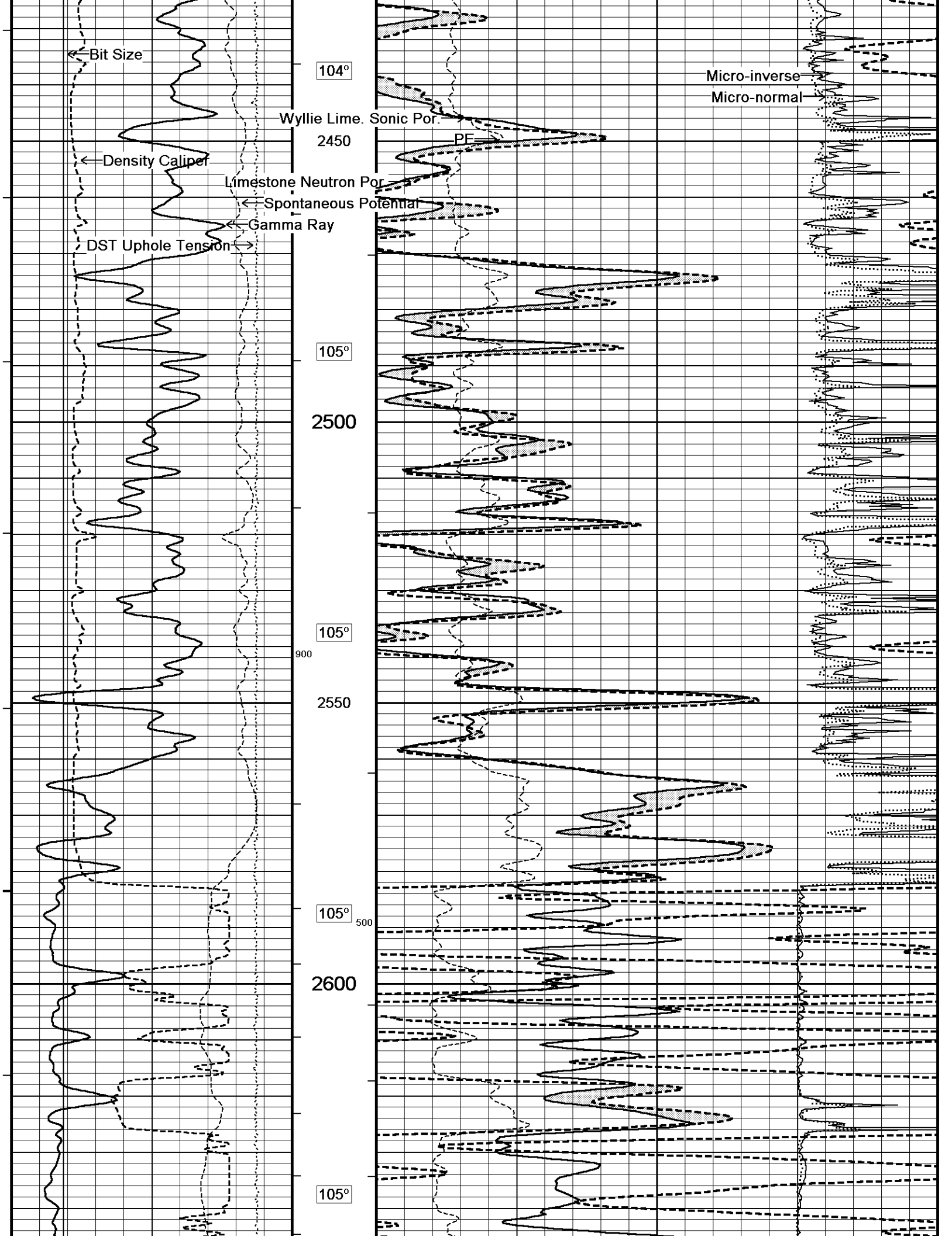


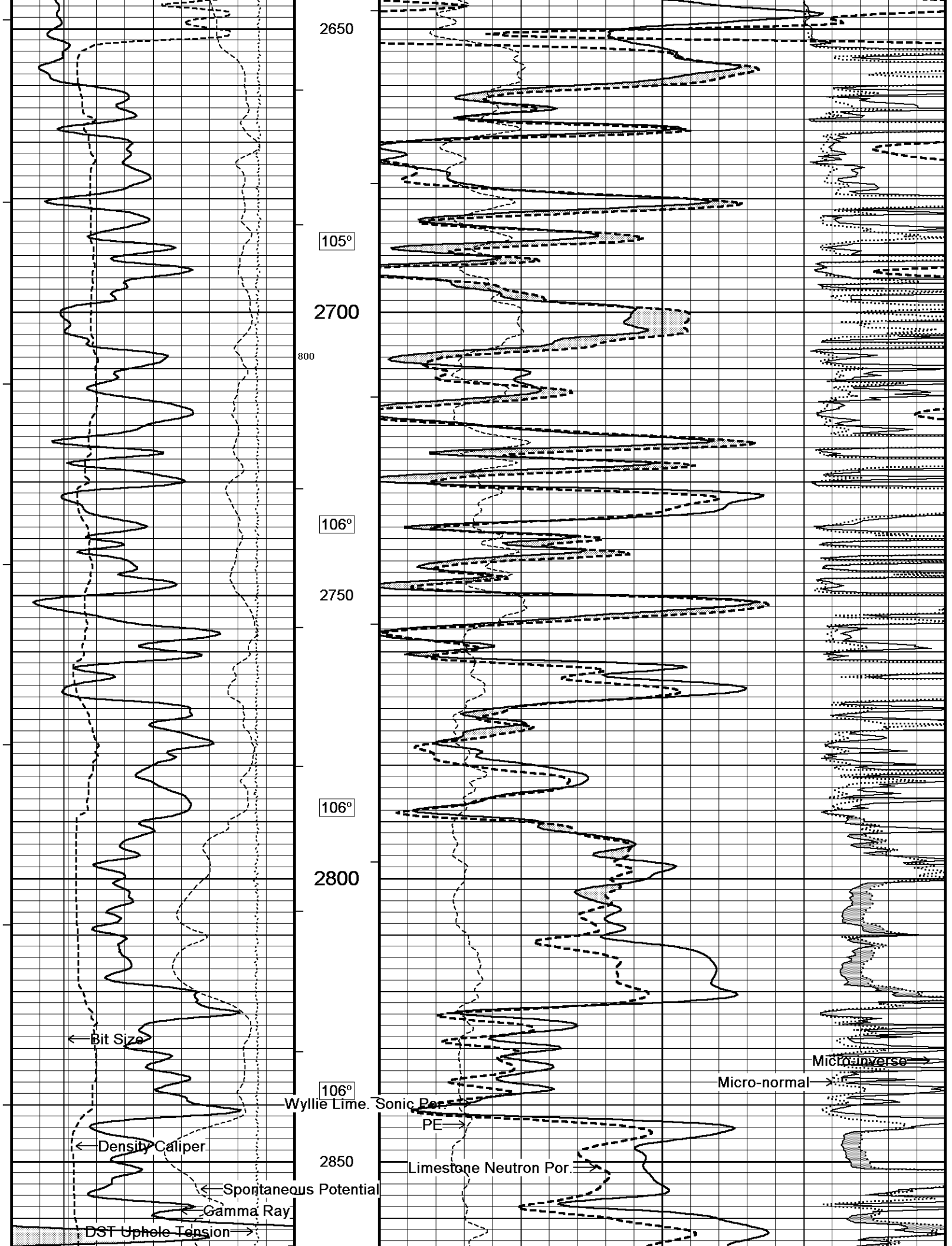


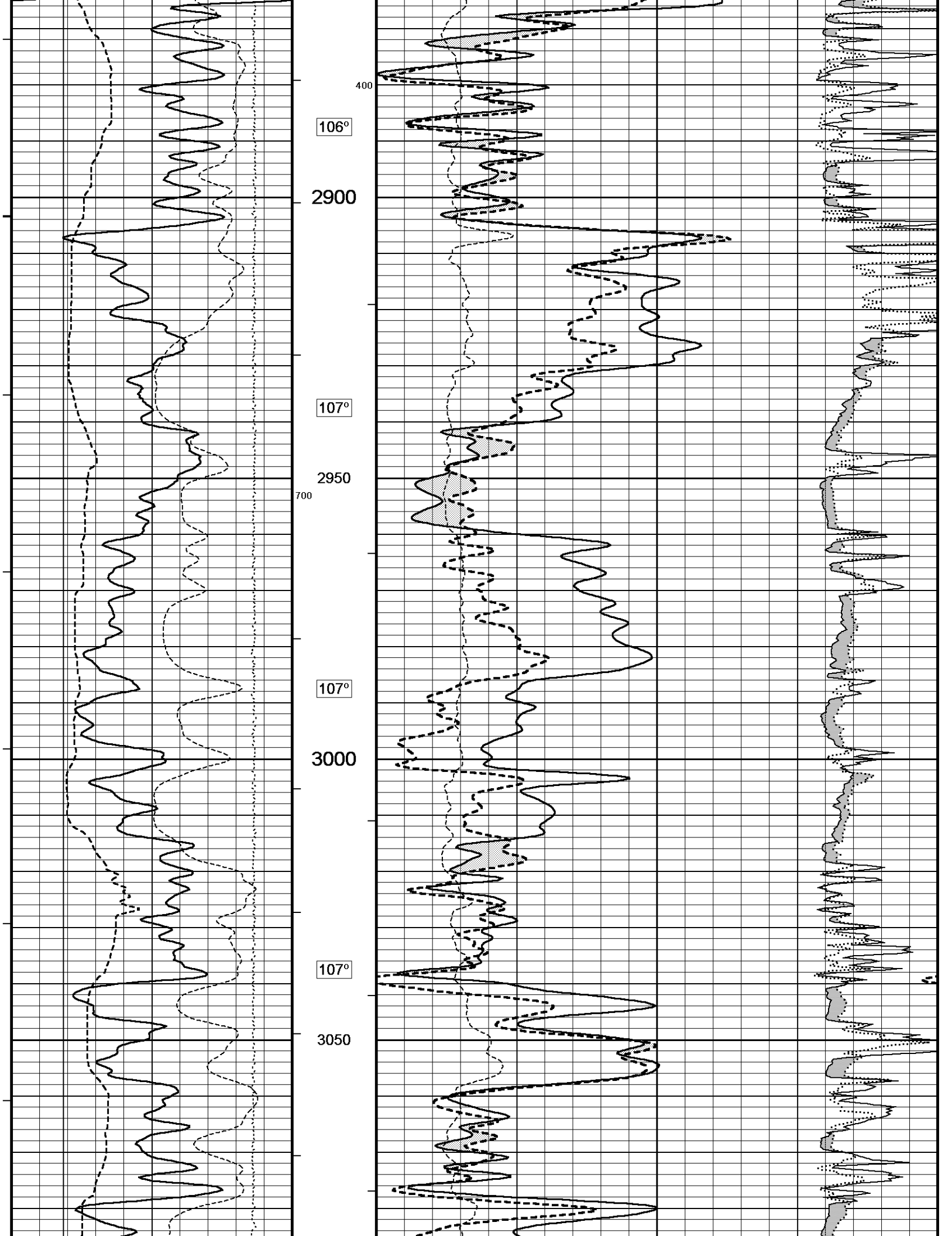


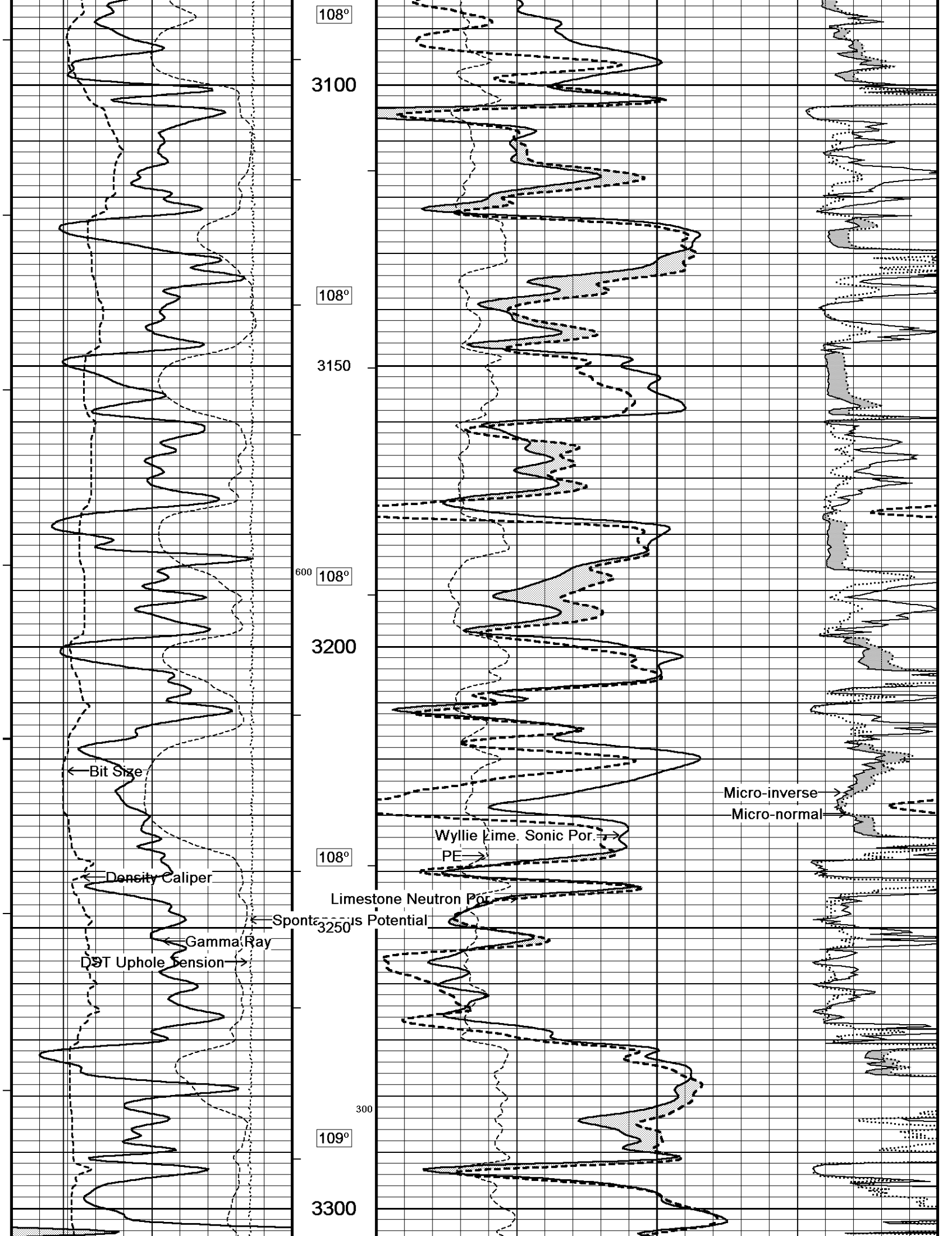


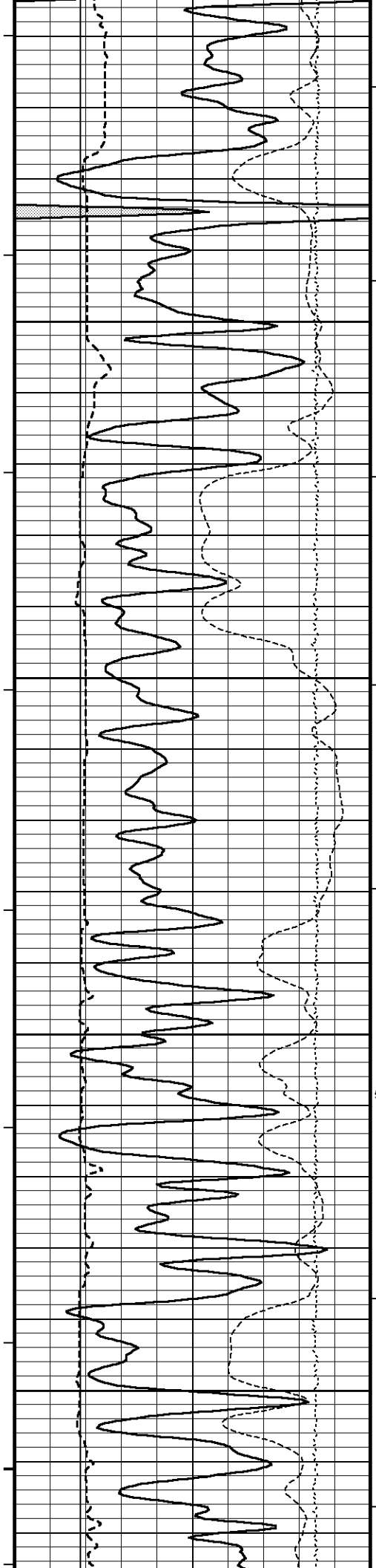












109°

3350

109°

3400

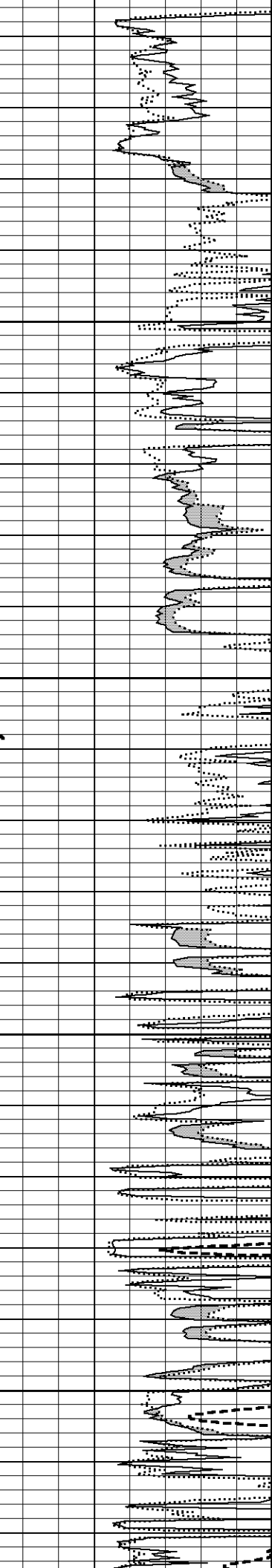
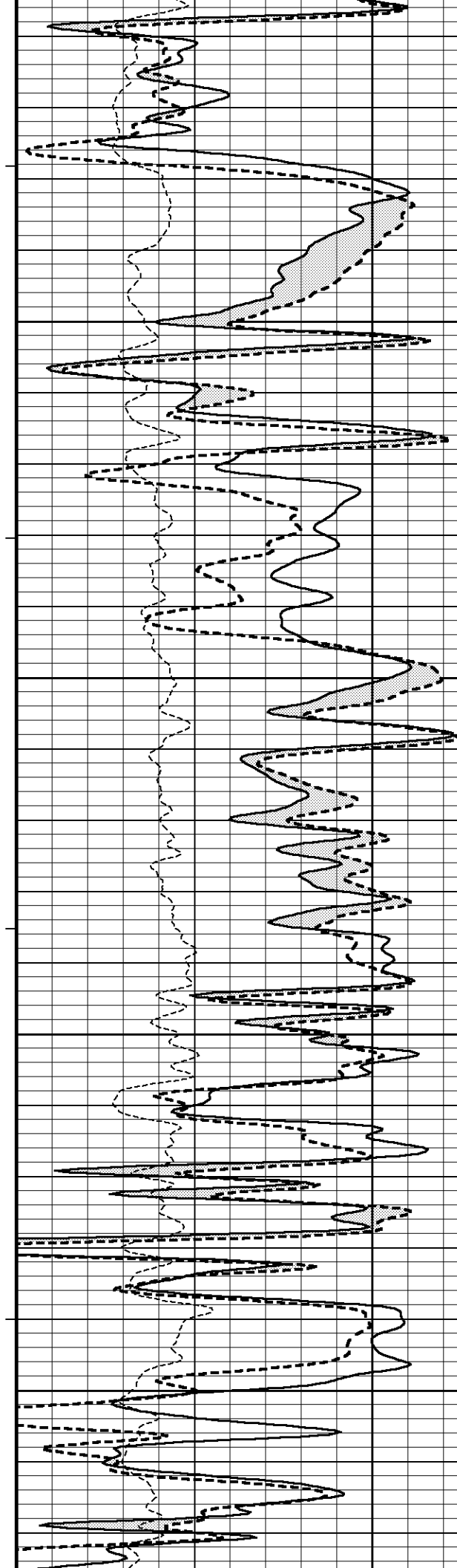
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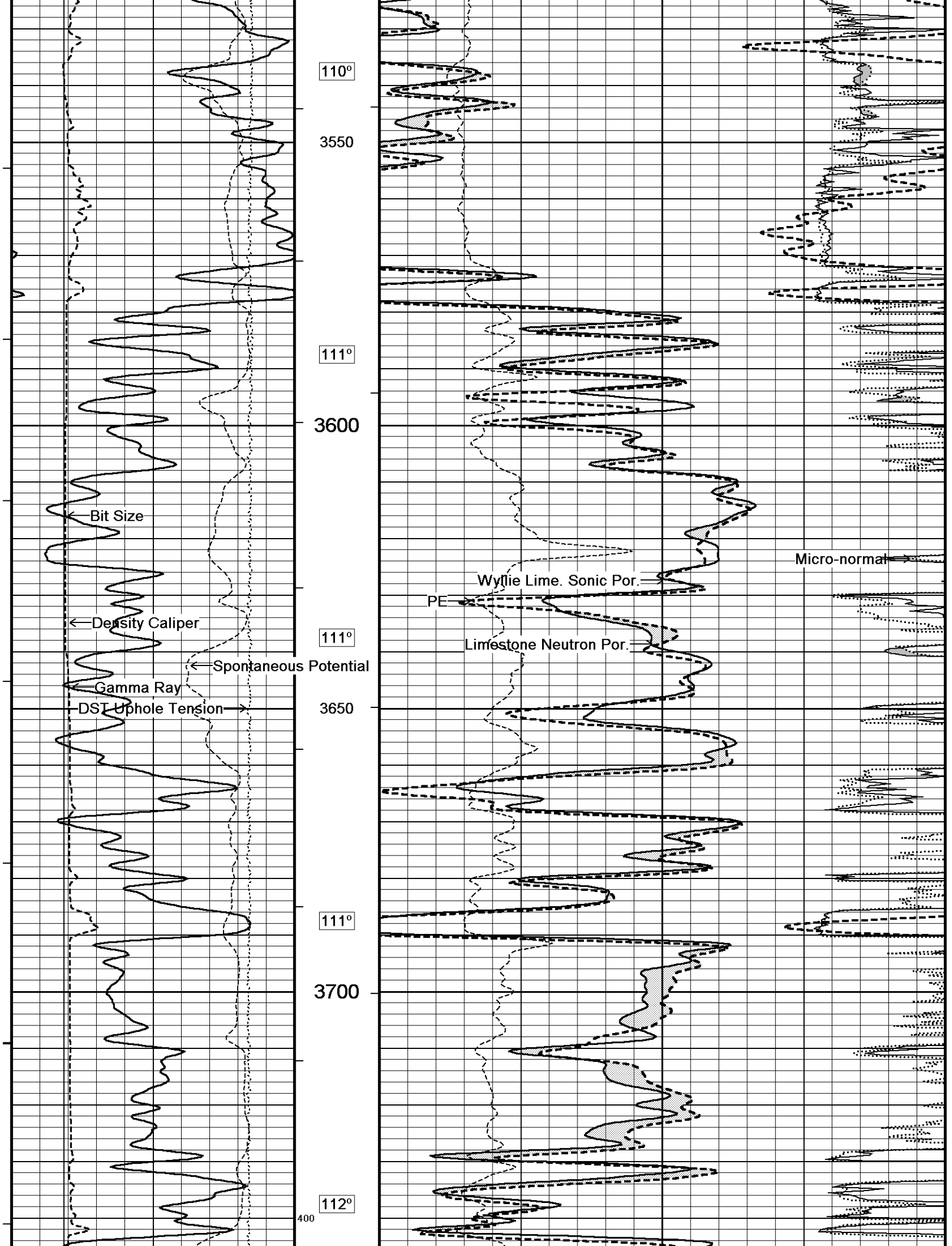
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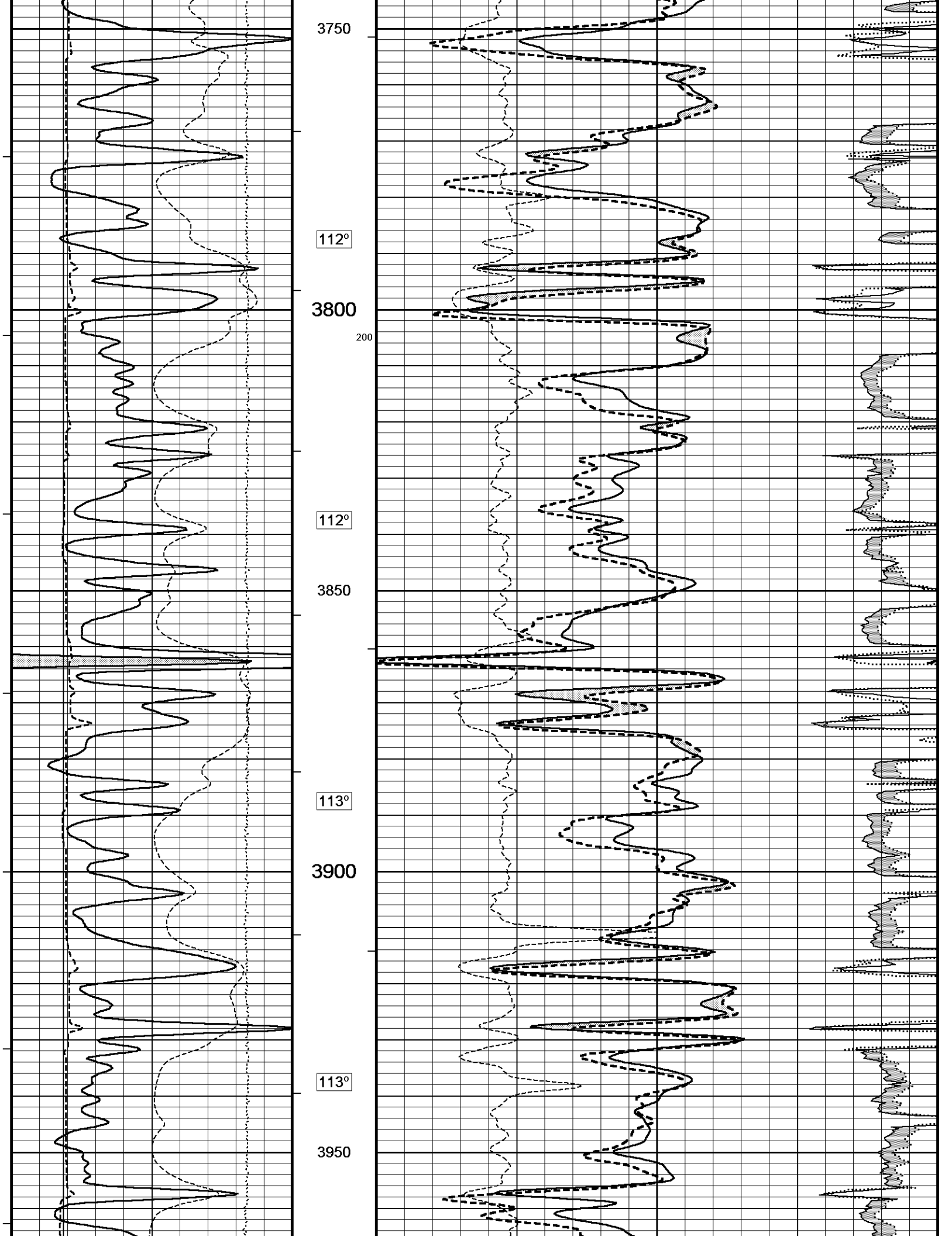
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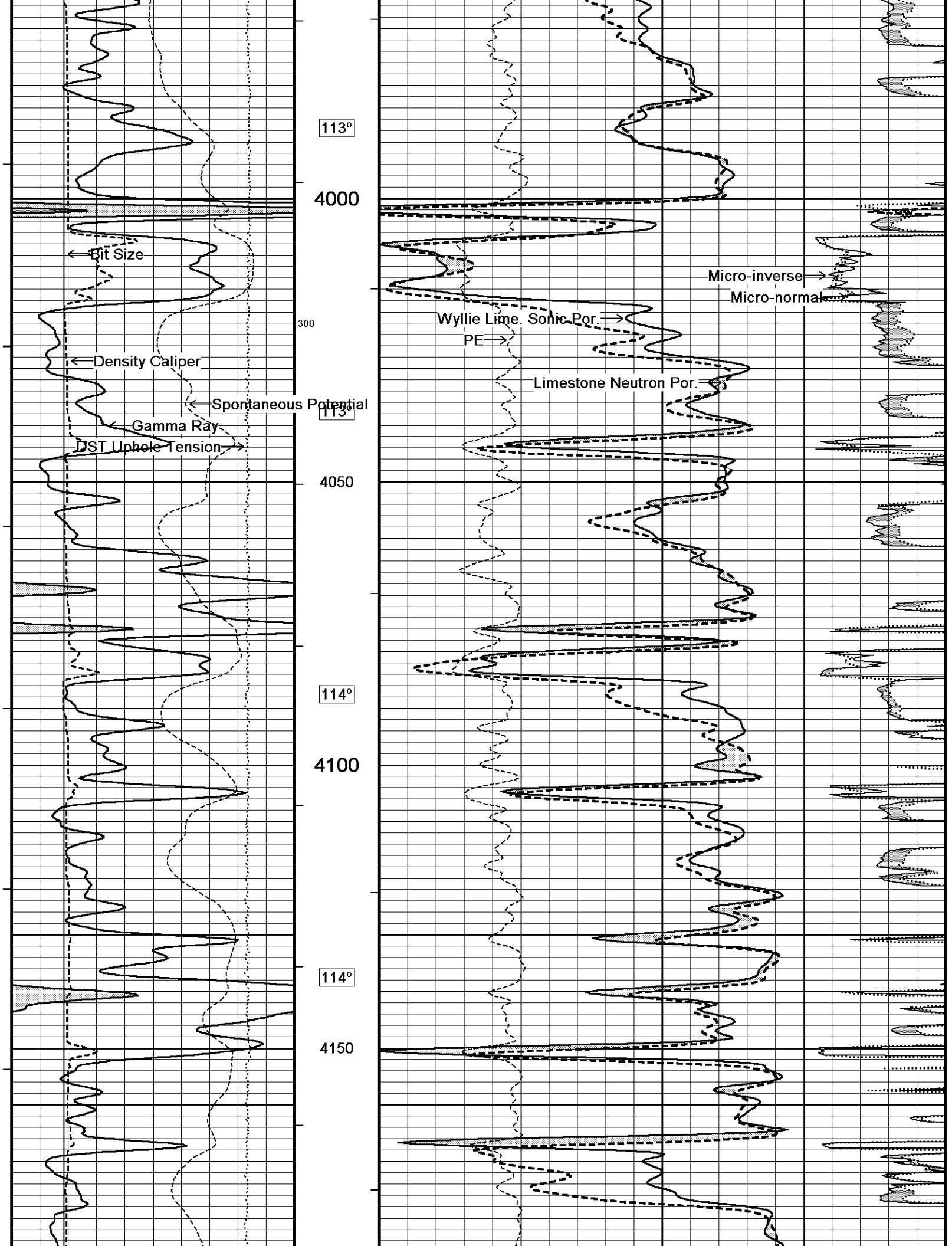
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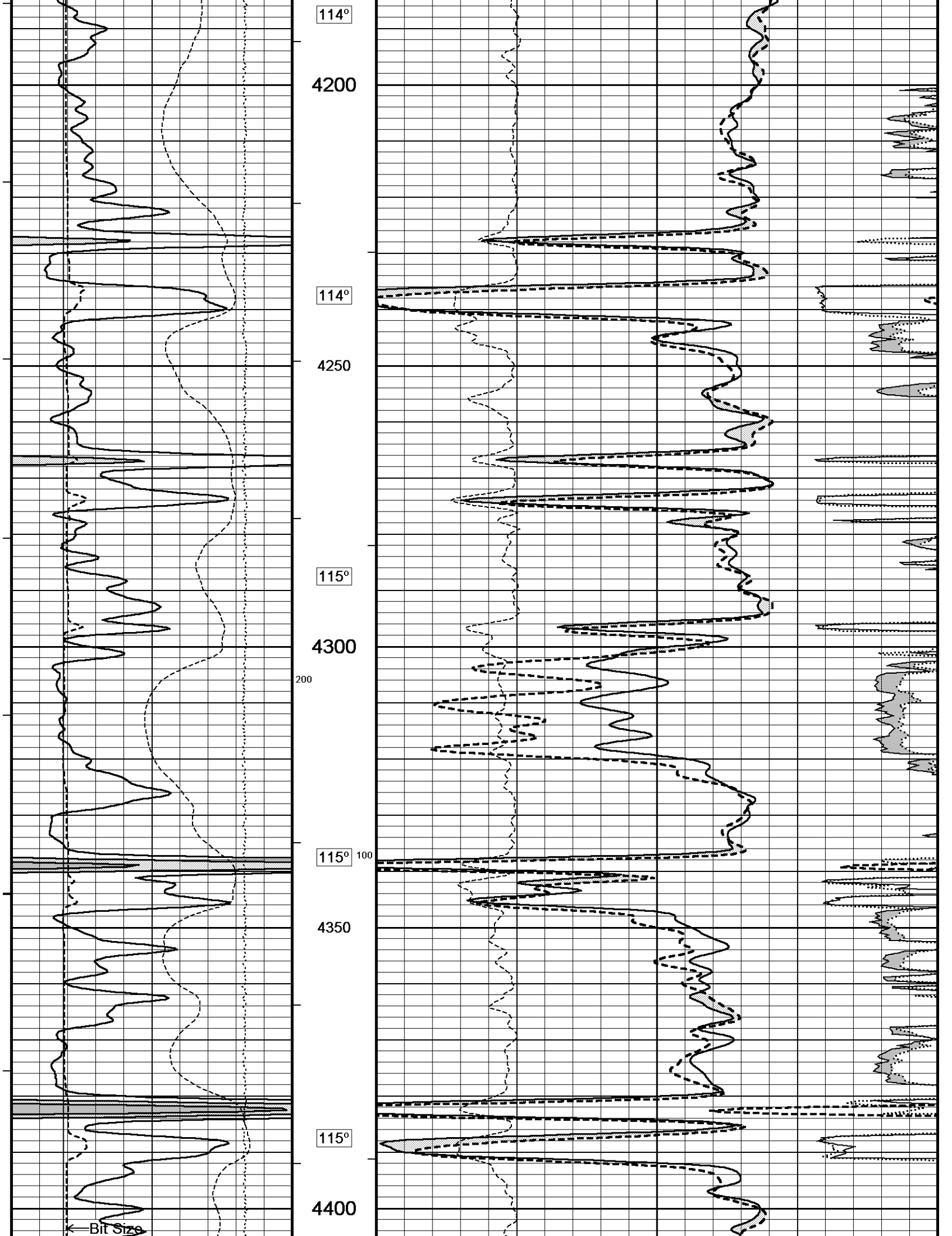
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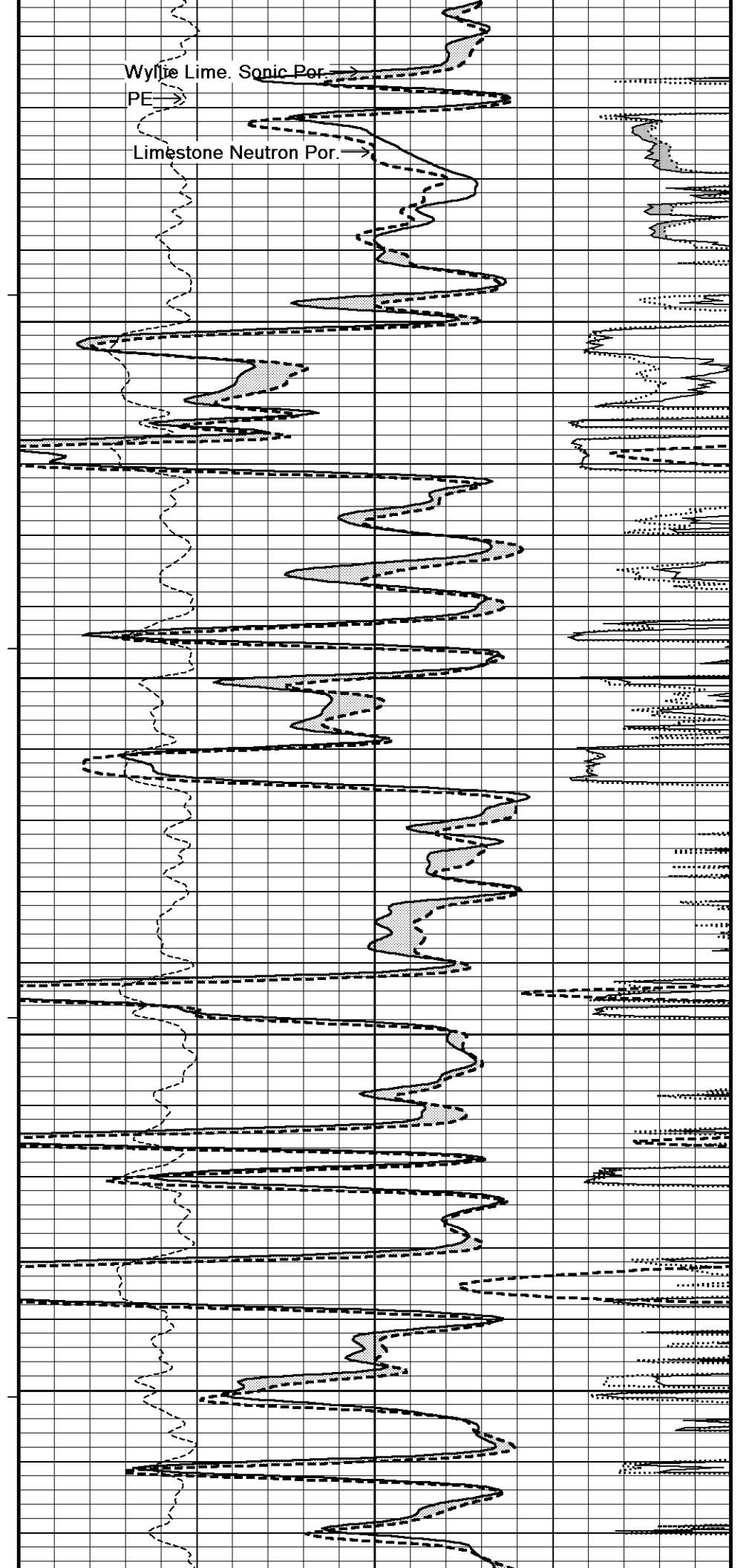
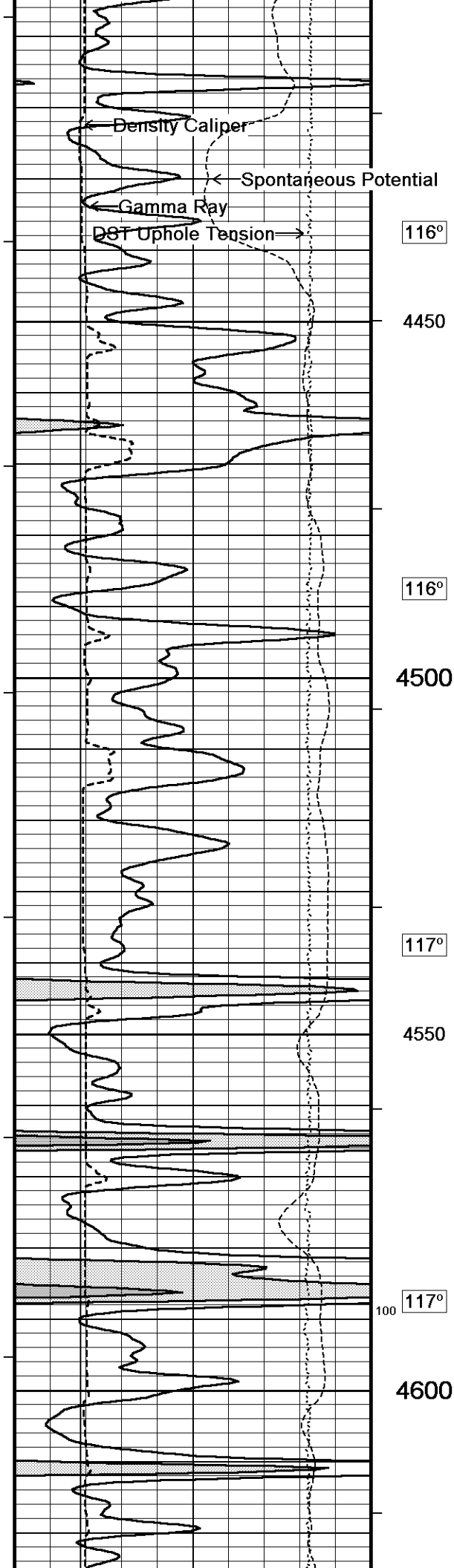


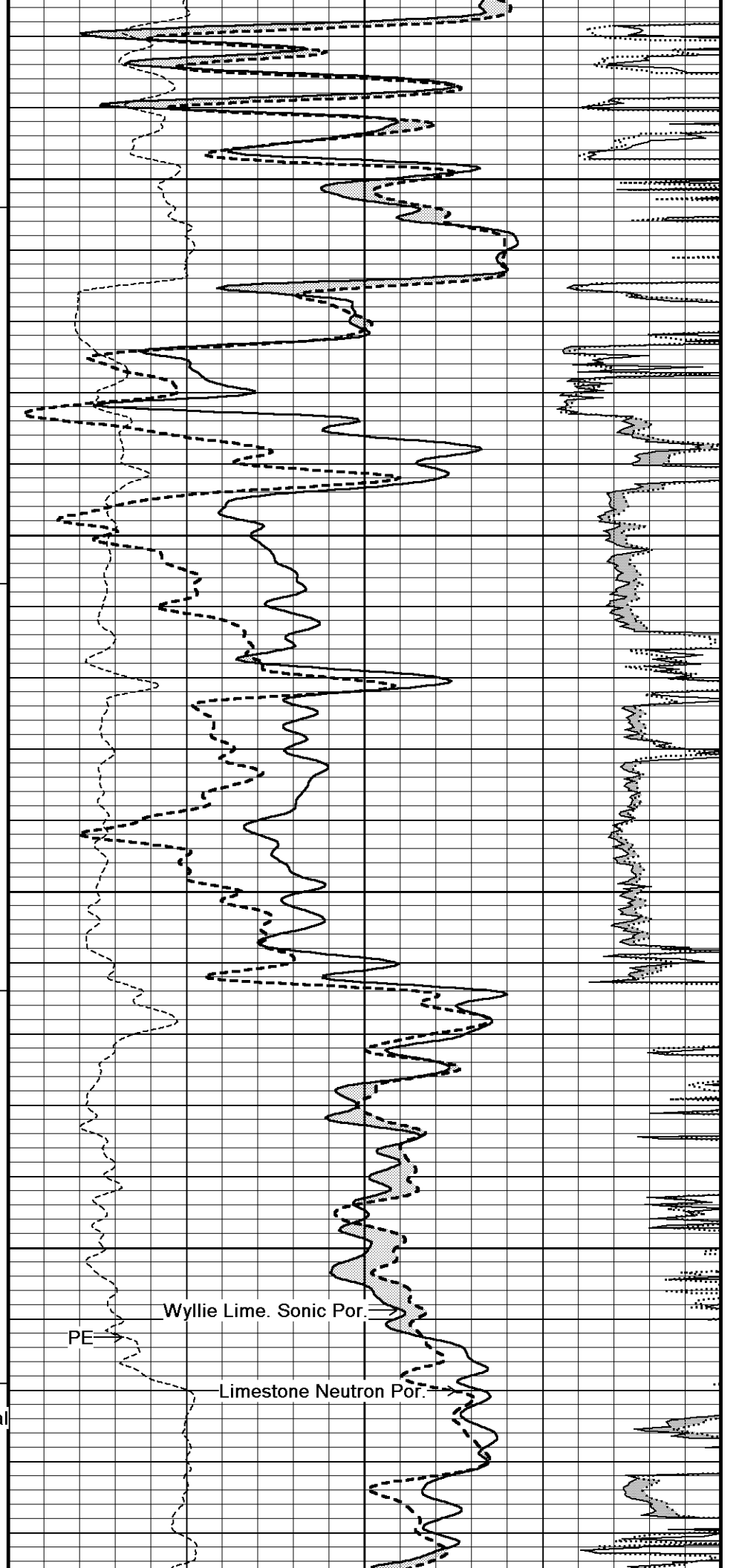
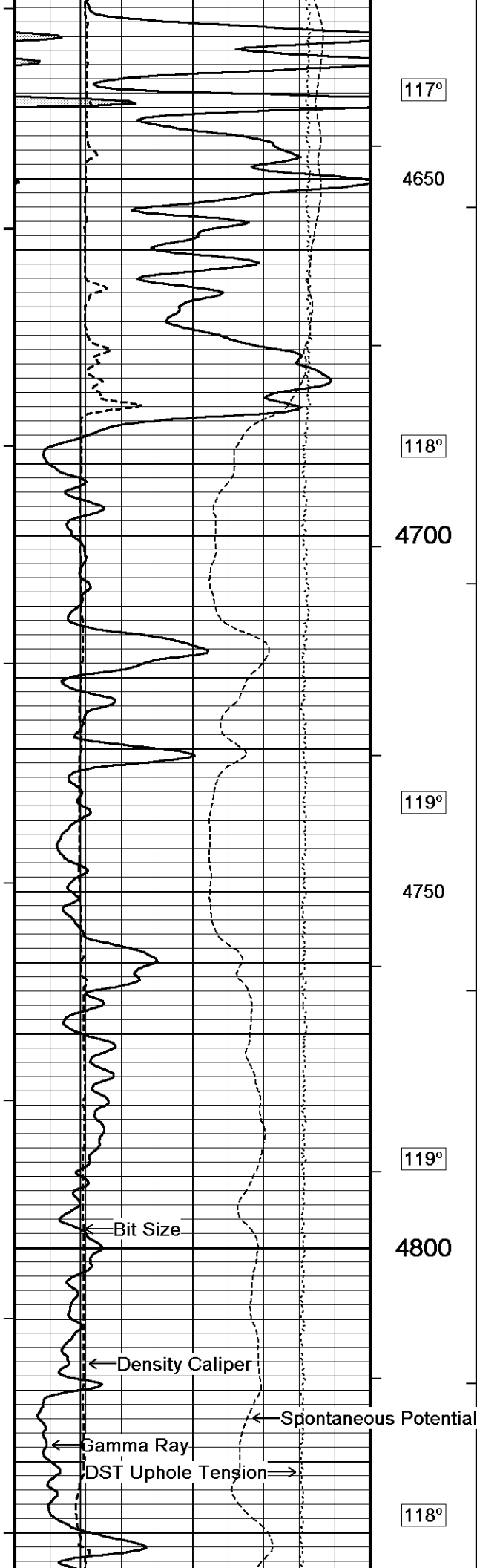


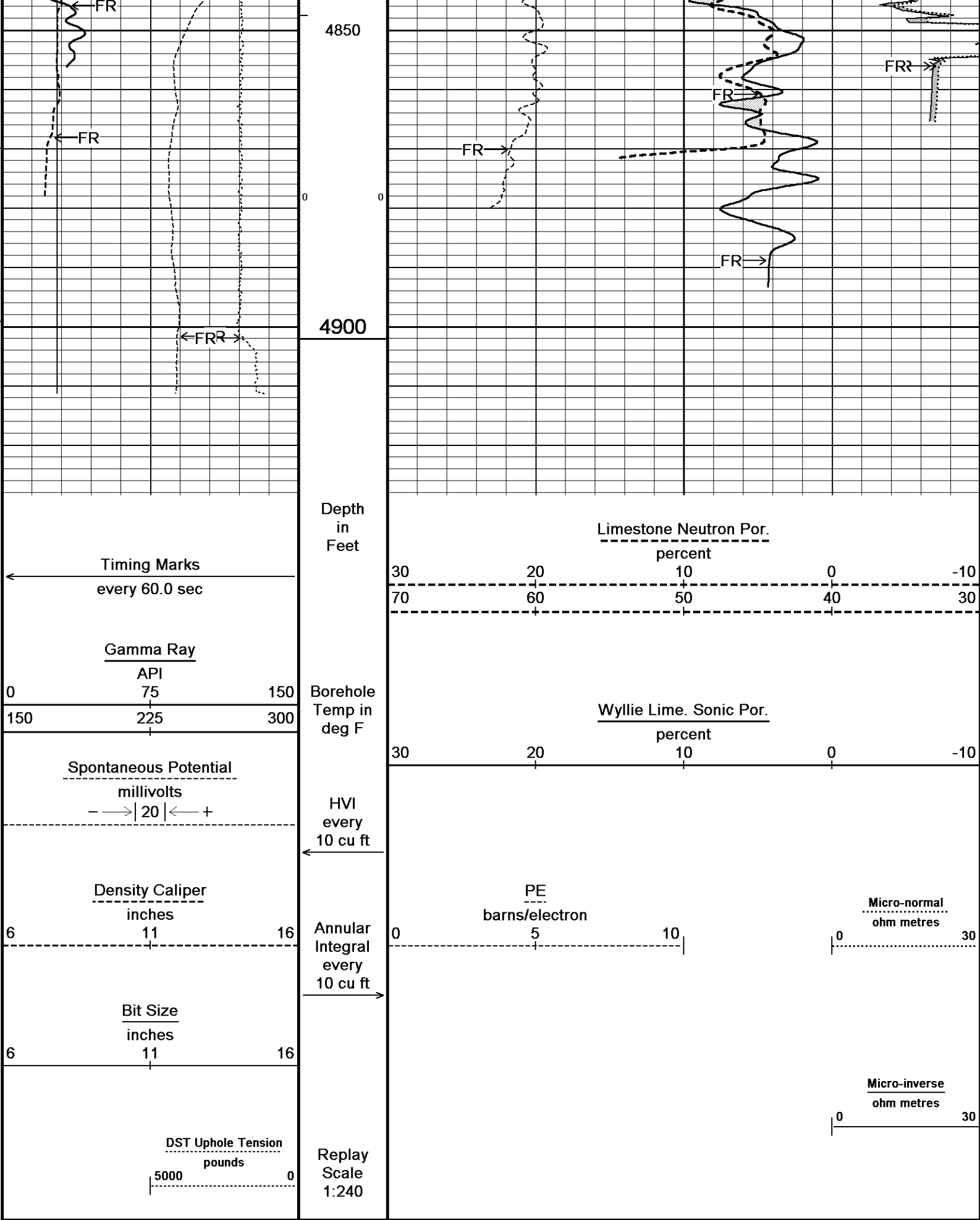












BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Logs\FIML HIBBERT 4D-20-2029\FIML HIBBERT 4D-20-2029 REPEAT.dta

General Constants All 000

Last Edited on 12-APR-2014,13:35

General Parameters

Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	96.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Water Level Switch	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	MMR Caliper	

Rwa Parameters

Porosity used	Base Density Porosity
Resistivity used	Array Ind. Four Res Rt
RWA Constant A	0.610
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Gamma Calibration MCG-D.K 443

Field Calibration on 10-APR-2014 11:55

	Measured	Calibrated (API)
Background	75	49
Calibrator (Gross)	1183	774
Calibrator (Net)	1108	725

Gamma Constants MCG-D.K 443

Last Edited on 12-APR-2014,13:35

Gamma Calibrator Number	GRC38	
Mud Density	1.11	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 443

Field Calibration on 05-MAR-2014,20:50

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-D.K 443

Last Edited on 05-MAR-2014,20:50

Pre-filter Length	11
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Micro Normal and Micro Inverse Calibration MMR-A 11

Base Calibration on 10-APR-2014 10:53

Field Check on 10-APR-2014 10:56

Base Calibration

		Measured	Calibrated (ohm-m)
Channel	Resistor 1	Resistor 2	Resistor 1 Resistor 2
Micro Normal	10.2	49.9	10.0 50.0
Micro Inverse	10.0	49.5	10.0 50.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	183.4	183.4
Micro Inverse	184.2	184.2

Micro Normal and Micro Inverse Constants MMR-A 11

Last Edited on 05-MAR-2014,08:50

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159
Micro Normal K Factor	1.0000
Micro Inverse K Factor	1.0000
Standoff Offset	0.0000 inches

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2916	94	3714	110
Ratio	30.984		33.764	

Field Calibrator at Base

	Calibrated (cps)
	1762 2457
Ratio	0.717

Field Check

	Calibrated (cps)
	1753 2453
Ratio	0.723

Neutron Constants MDN-A.B 65

Last Edited on 10-APR-2014,11:56

Neutron Source Id	PN-521
Neutron Jig Number	5824NE
Epithermal Neutron	
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	Constant Value
Formation Pressure	0.00 kpsi
Temperature Source	Constant Value
Temperature	68.00 degrees F
Mud Salinity	0.00 kppm
Salinity Correction	Not Applied
Formation Fluid Salinity Source	Constant Value
Formation Fluid Salinity	0.00 kppm
Barite Mud Correction	Not Applied

Sonic Constants MSS-A.A 126

Last Edited on 19-MAR-2014,17:48

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 Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source	N/A	

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing		N/A	
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A

N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Photo Density Calibration MPD-B 31

Base Calibration on 02-APR-2014 10:28
Field Check on 10-APR-2014 11:34

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	661	814		
Reference 1	43693	22248	59556	30836
Reference 2	17883	1854	24941	2541

Field Check at Base

661.2 814.3

Field Check

664.3 817.1

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	122	585		
Reference 1	18087	43581	0.418	0.371
Reference 2	5283	17800	0.300	0.272

Field Check at Base

122.3 585.3

Field Check

121.5 587.7

Density Constants MPD-B 31

Last Edited on 12-APR-2014,13:36

Density Source Id	254	
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	1.11	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	0.00

Caliper Calibration MPD-B 31

Base Calibration on 02-APR-2014 10:39
Field Calibration on 10-APR-2014 11:42

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18192	3.99
2	27035	5.98
3	35696	7.97
4	44016	9.86
5	53216	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.91	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Logs\FIML HIBBERT 4D-20-2029\FIML HIBBERT 4D-20-2029 REPEAT.dta

MCB-A 11B Tension Cablehead

MCB-A 170 LG: 2.18 ft WT: 19.8 lb OD: 2.240 in

Compact Comms Gamma

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

Compact Micro-Resistivity

MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron

MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric

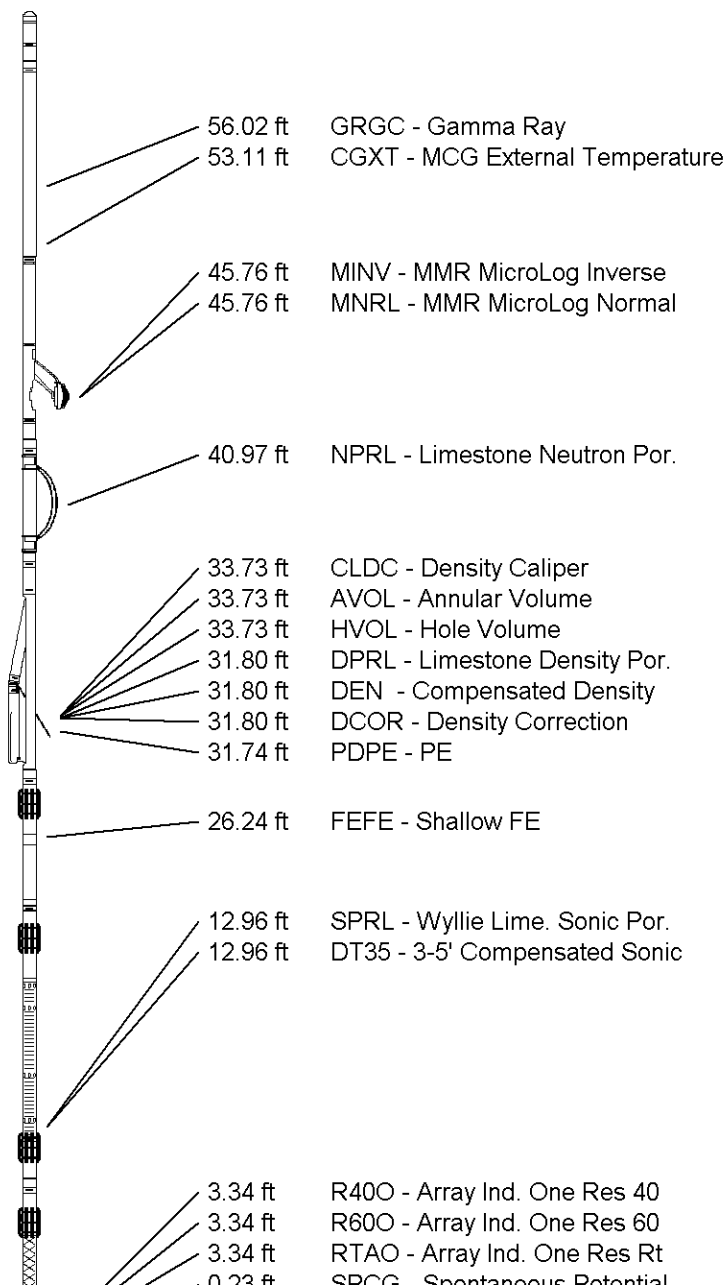
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic

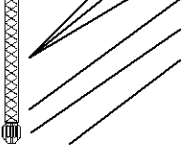
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction

MAI-A.A 158 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in



TotalLength: 63.48 ftWeight: 476.2 lb



0.23 ft
Tool Zero
-0.13 ft
SMTU - DST Uphole Tension
All measurements relative to tool zero.

COMPANY	FIML NATURAL RESOURCES, LLC.		
WELL	HIBBERT 4D-20-2029		
FIELD	WILDCAT		
PROVINCE/COUNTY	LANE		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	2892.00	feet	First Reading	4889.00	feet
Elevation Drill Floor	2890.00	feet	Depth Driller	4900.00	feet
Elevation Ground Level	2882.00	feet	Depth Logger	4902.00	feet



Weatherford[®]

COMPENSATED NEUTRON
SONIC POROSITY
OVERLAY