



**Weatherford**

**COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY 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 MA/IMFE  
Longitude

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 6329.00 feet

Last Reading 4000.00 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

Elevations:  
KB 2670.00 feet  
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	Weight pounds/ft
SURFACE	8.625	0.00	1533.00	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:

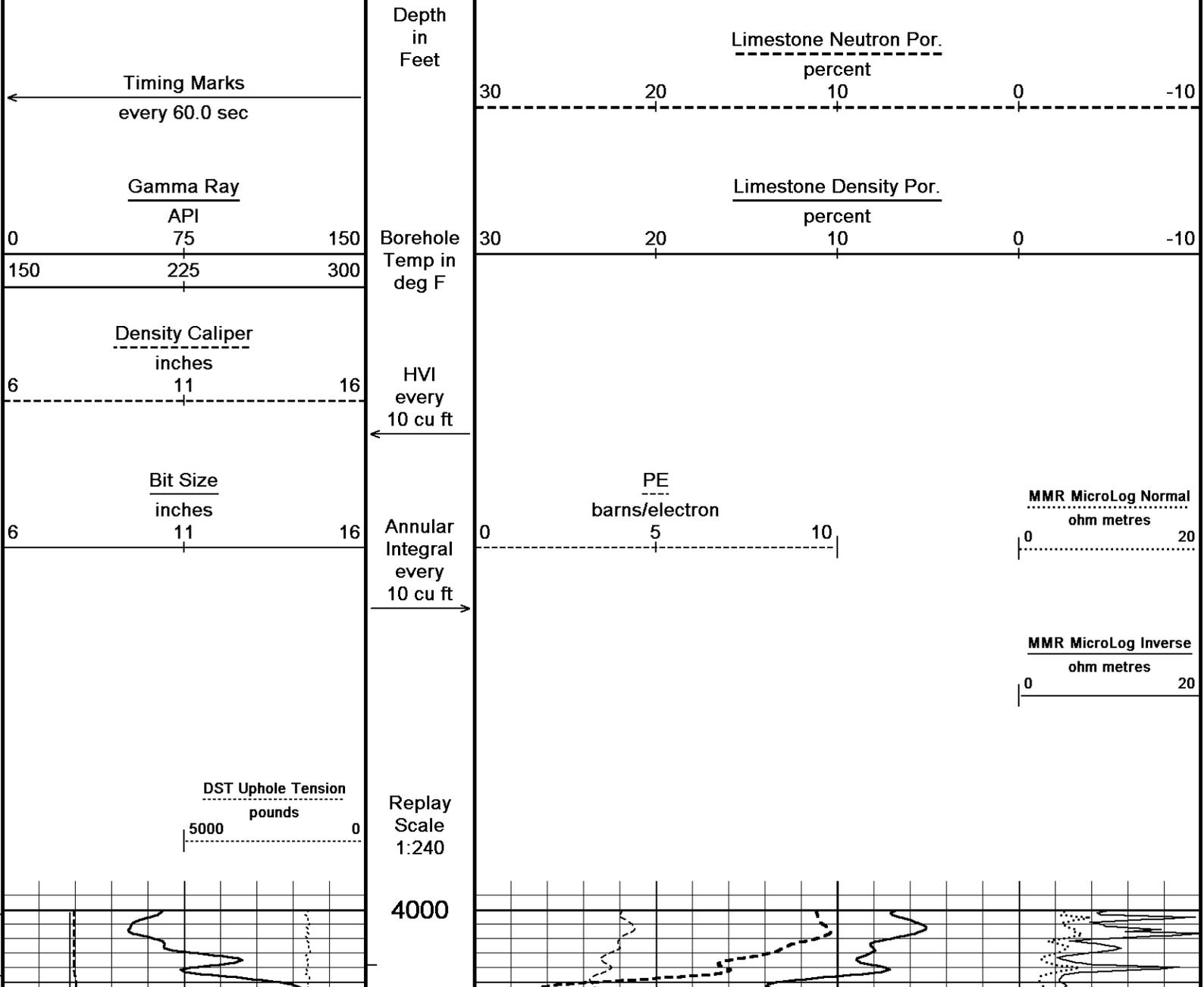
- ENGINEER: A. SILL.

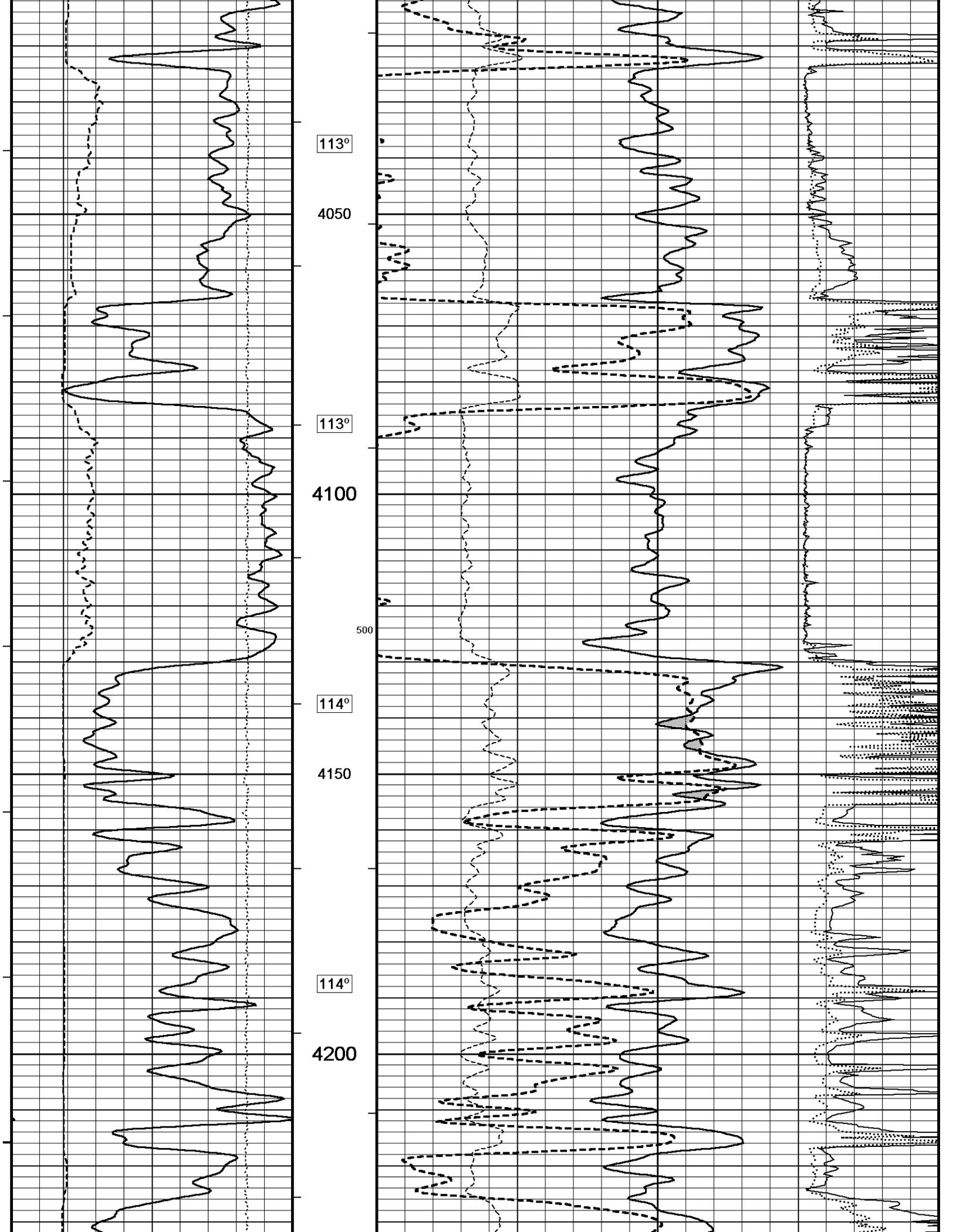
- OPERATOR: B. TOVAR.

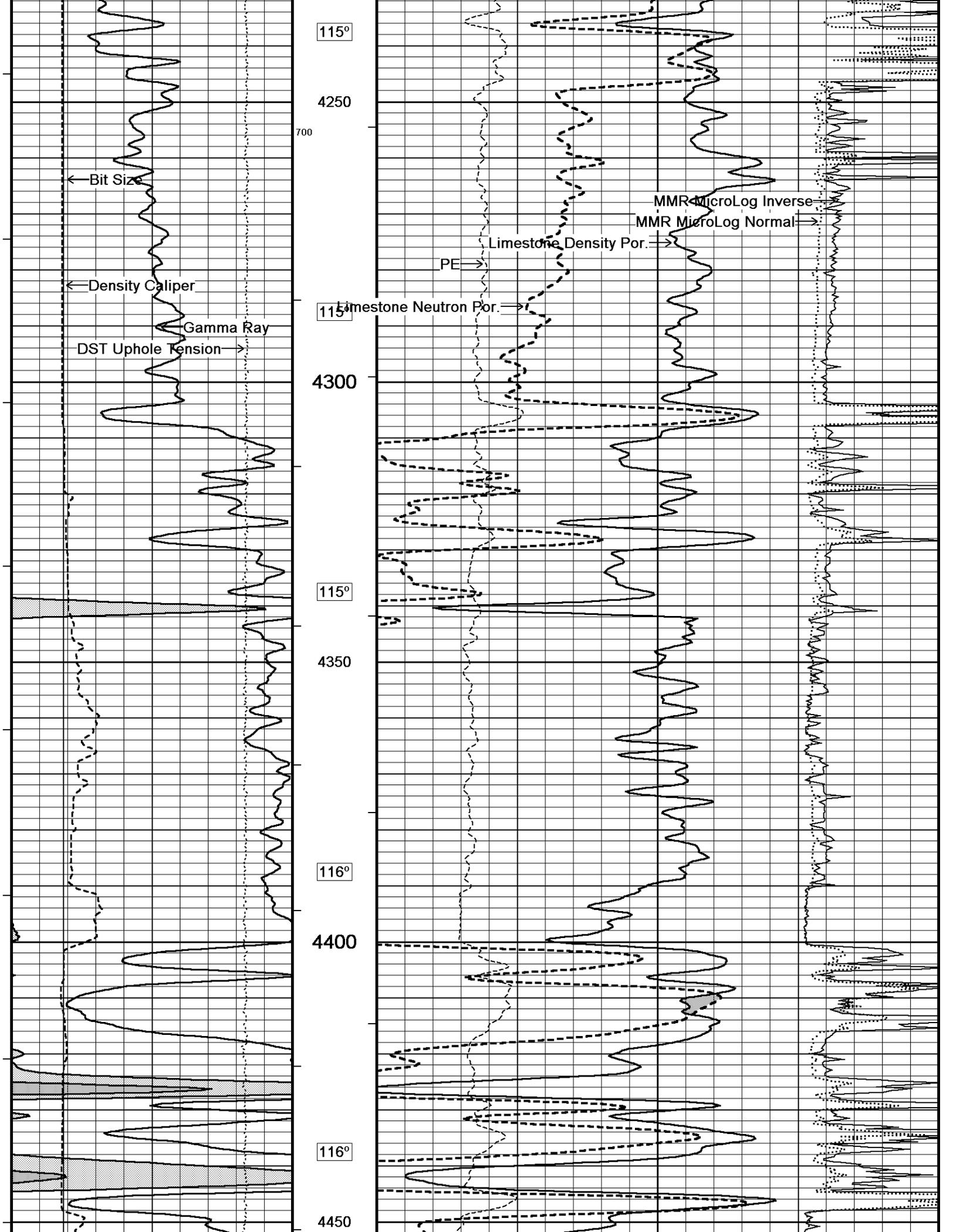
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will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

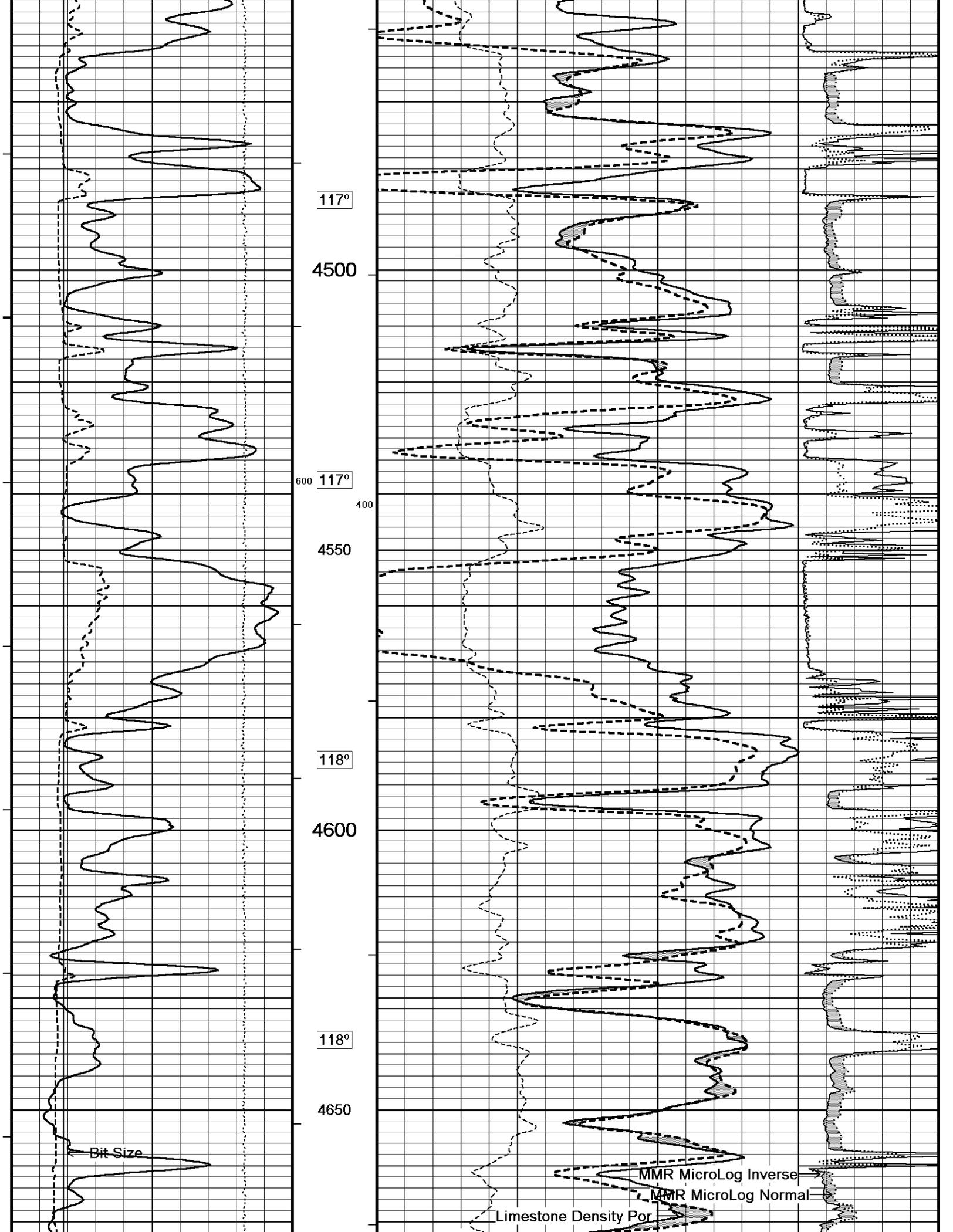
**5 INCH MAIN LIMESTONE**

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 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248









117°

4500

600 117°

400

4550

118°

4600

118°

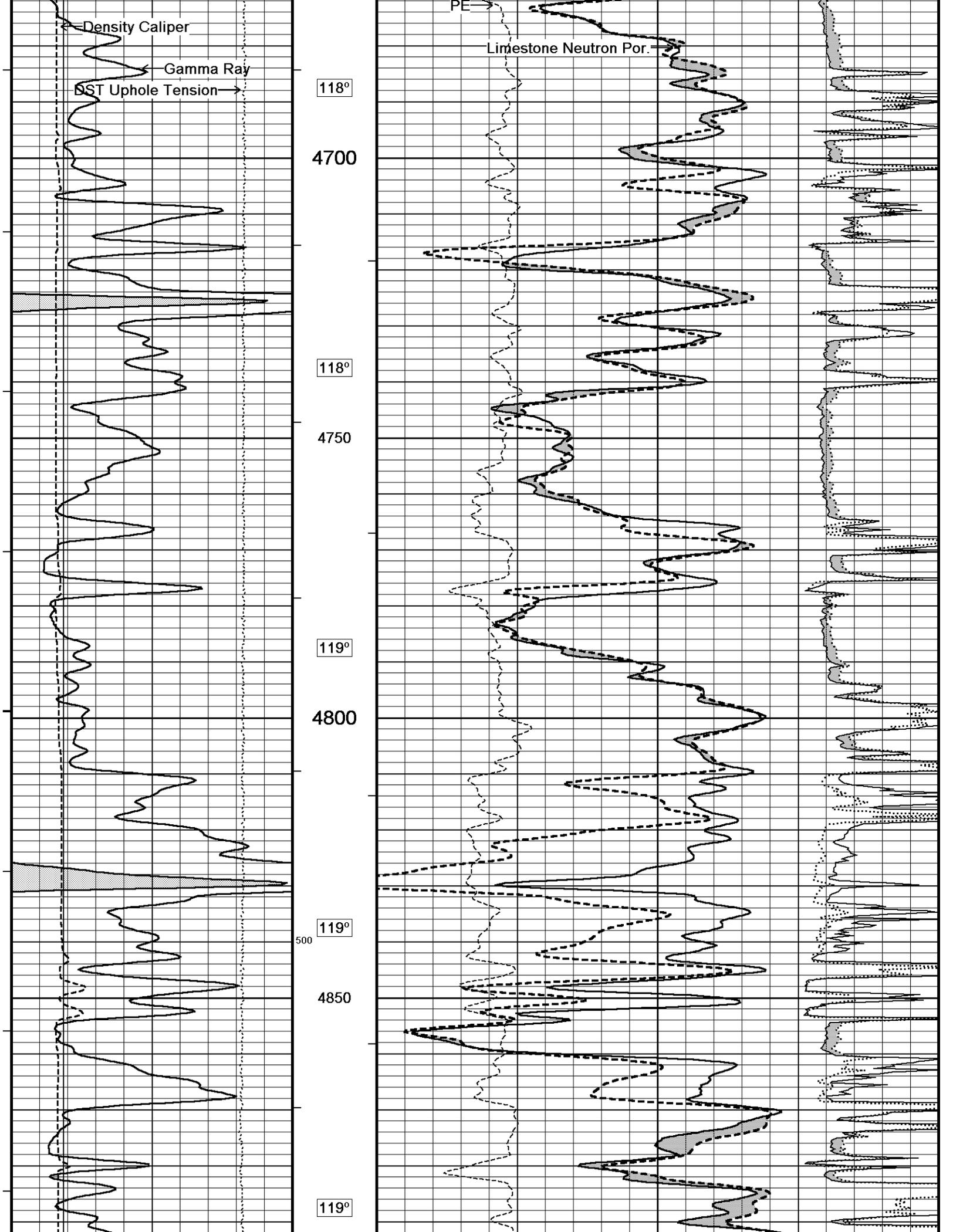
4650

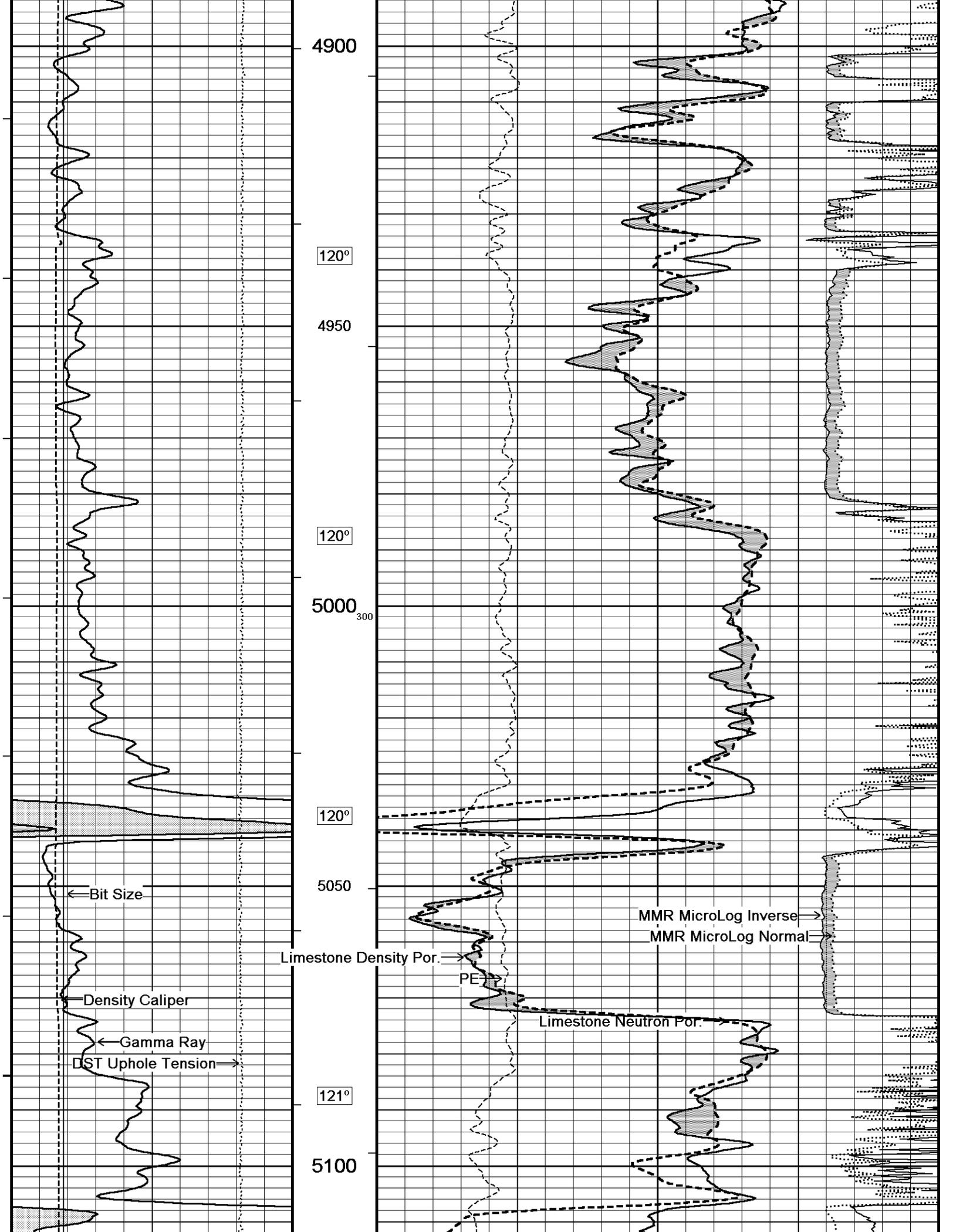
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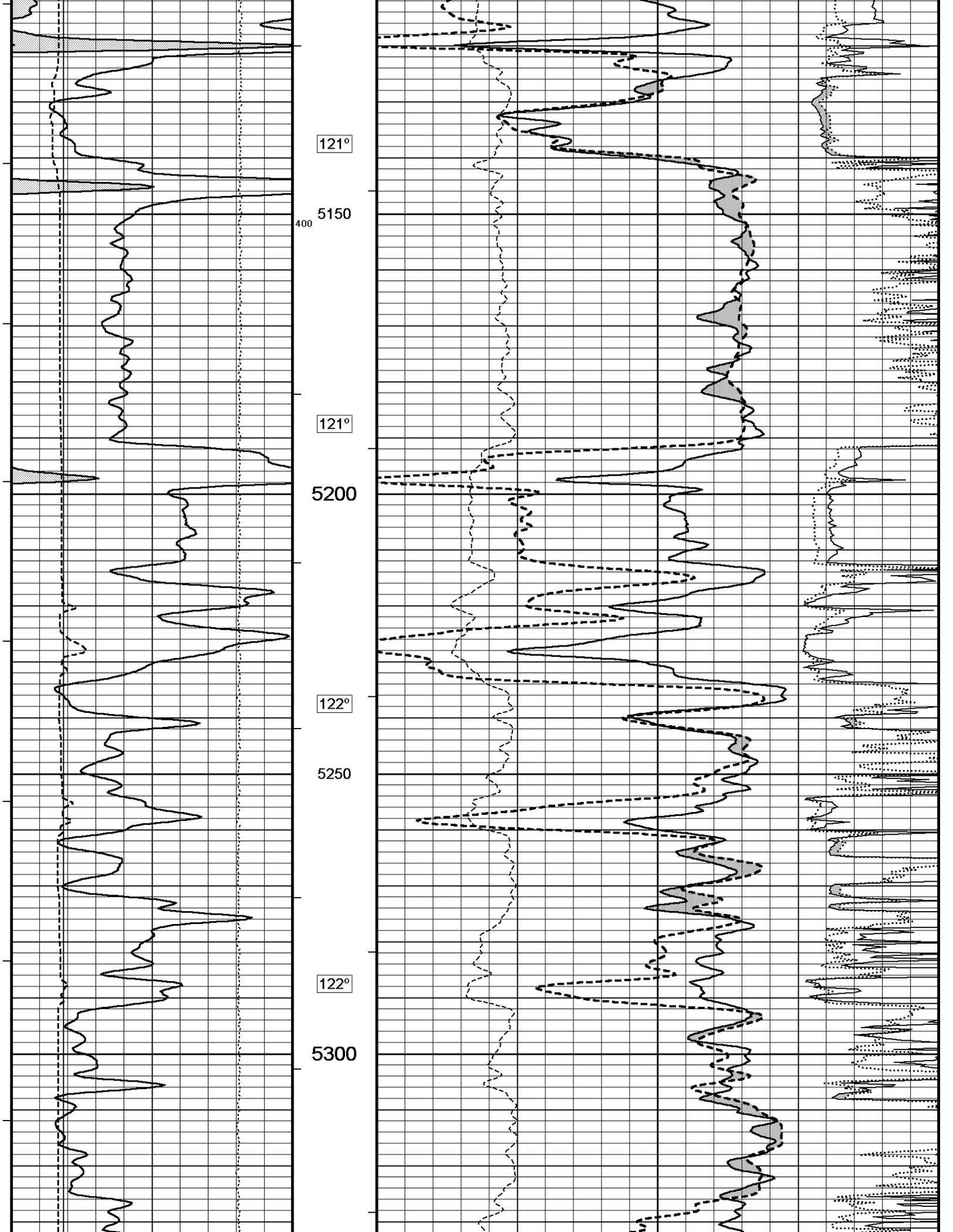
MMR MicroLog Inverse

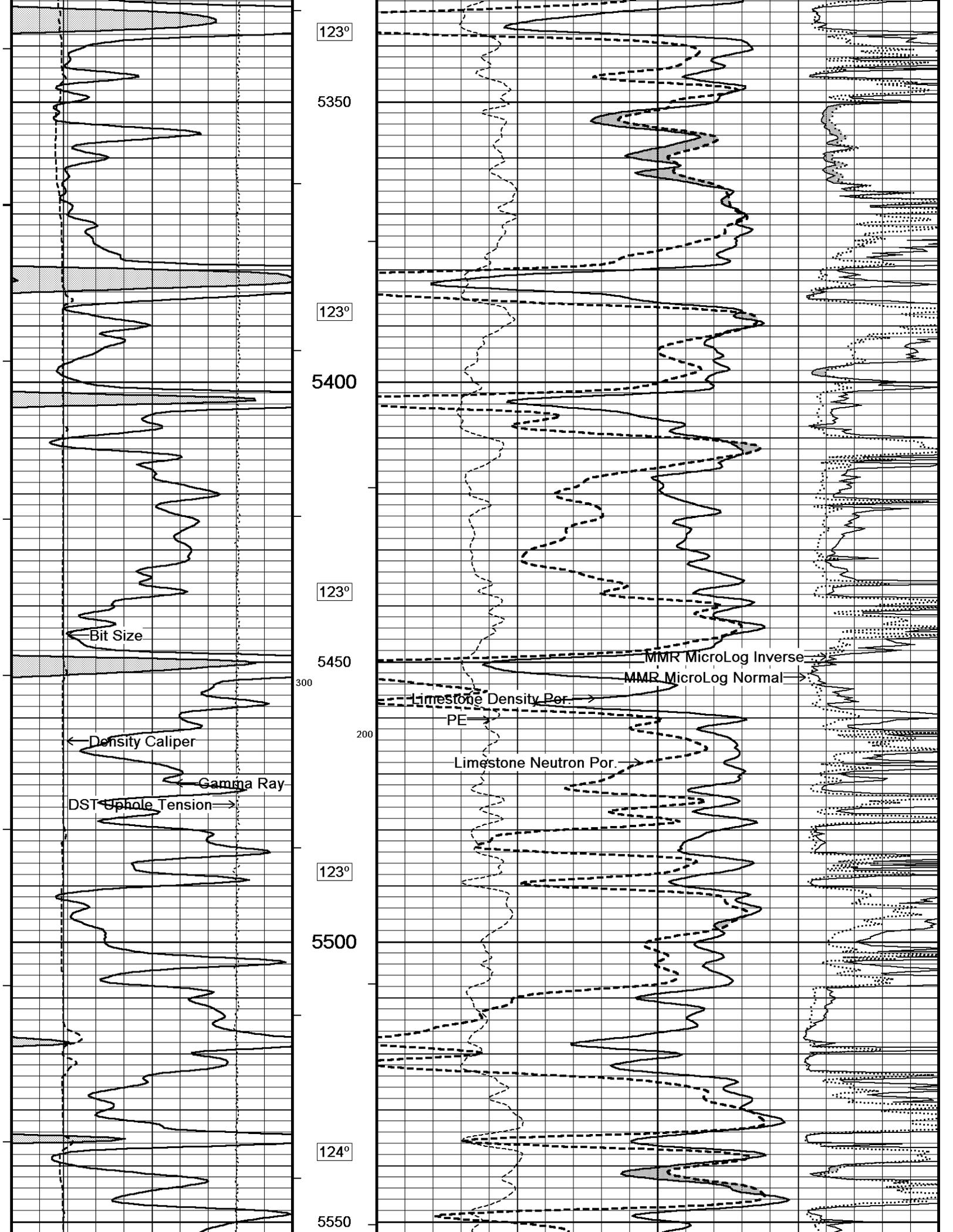
MMR MicroLog Normal

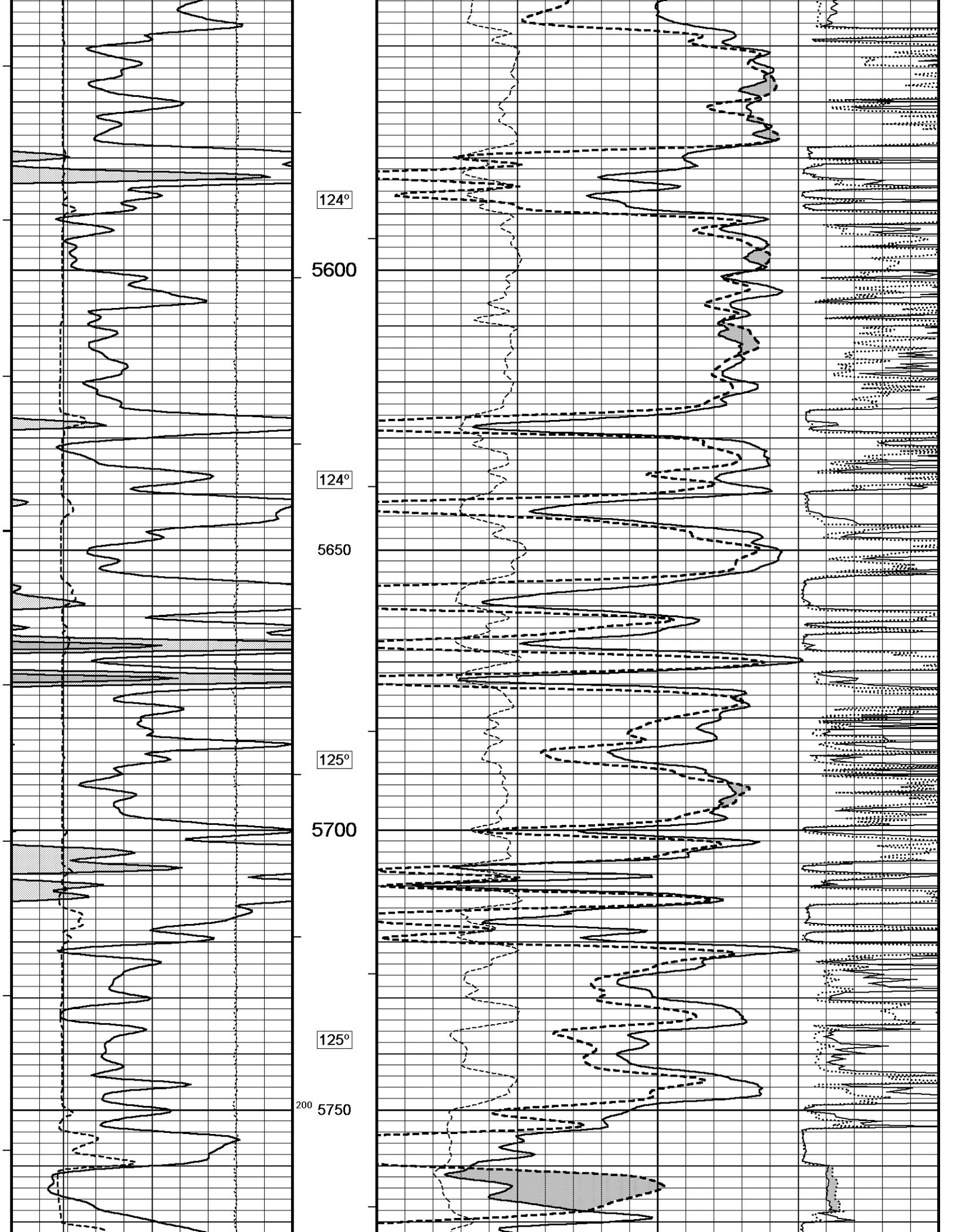
Limestone Density Por

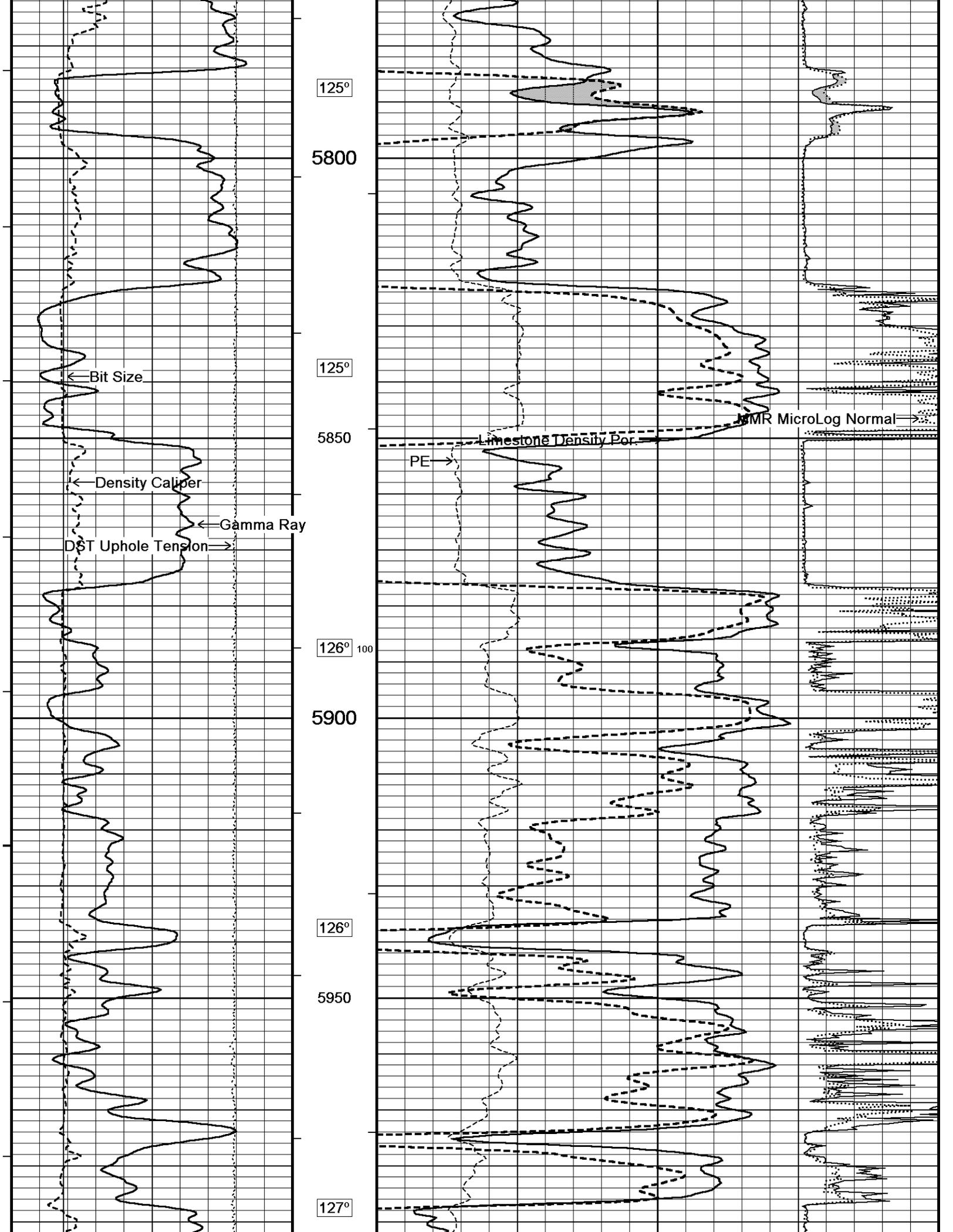


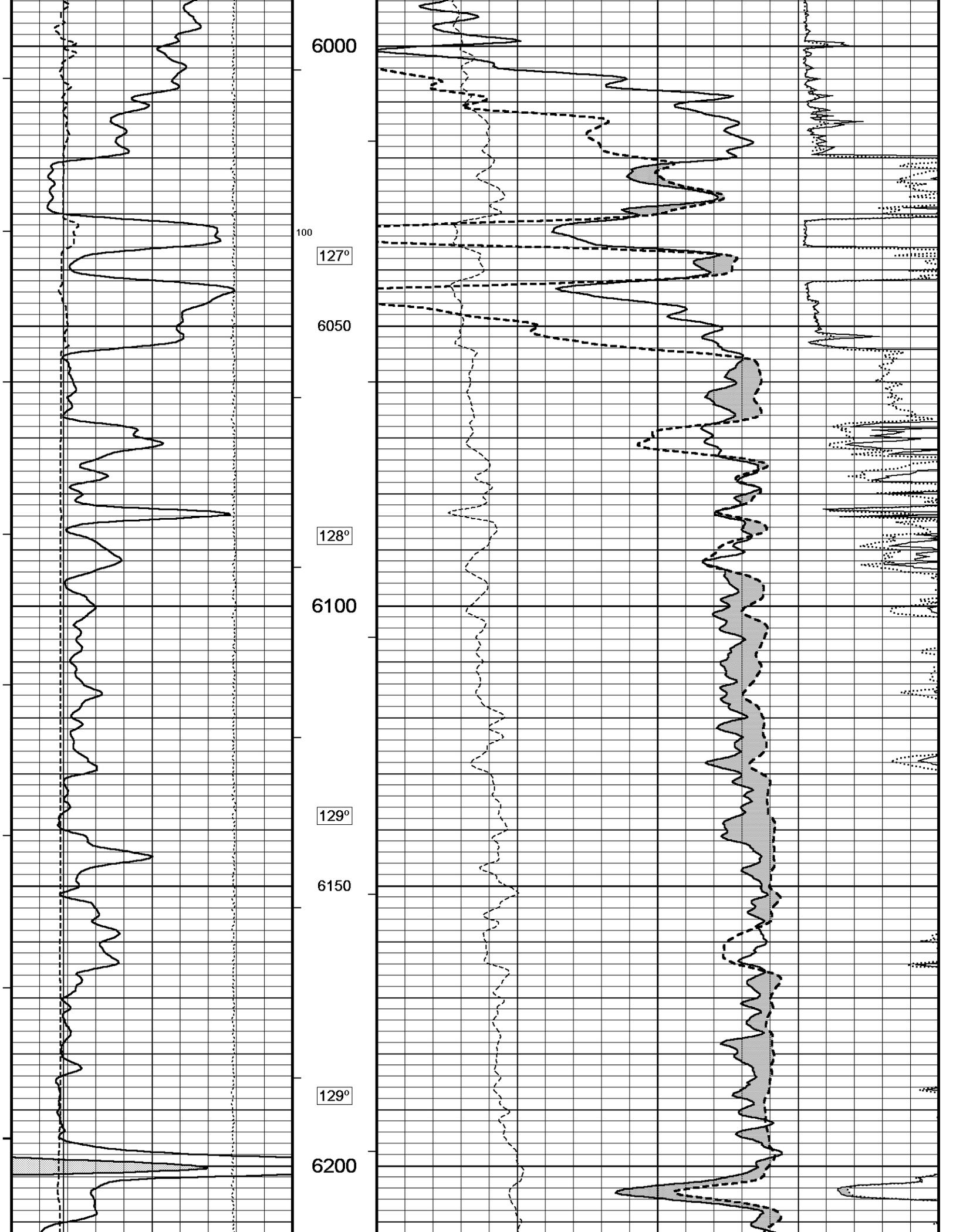


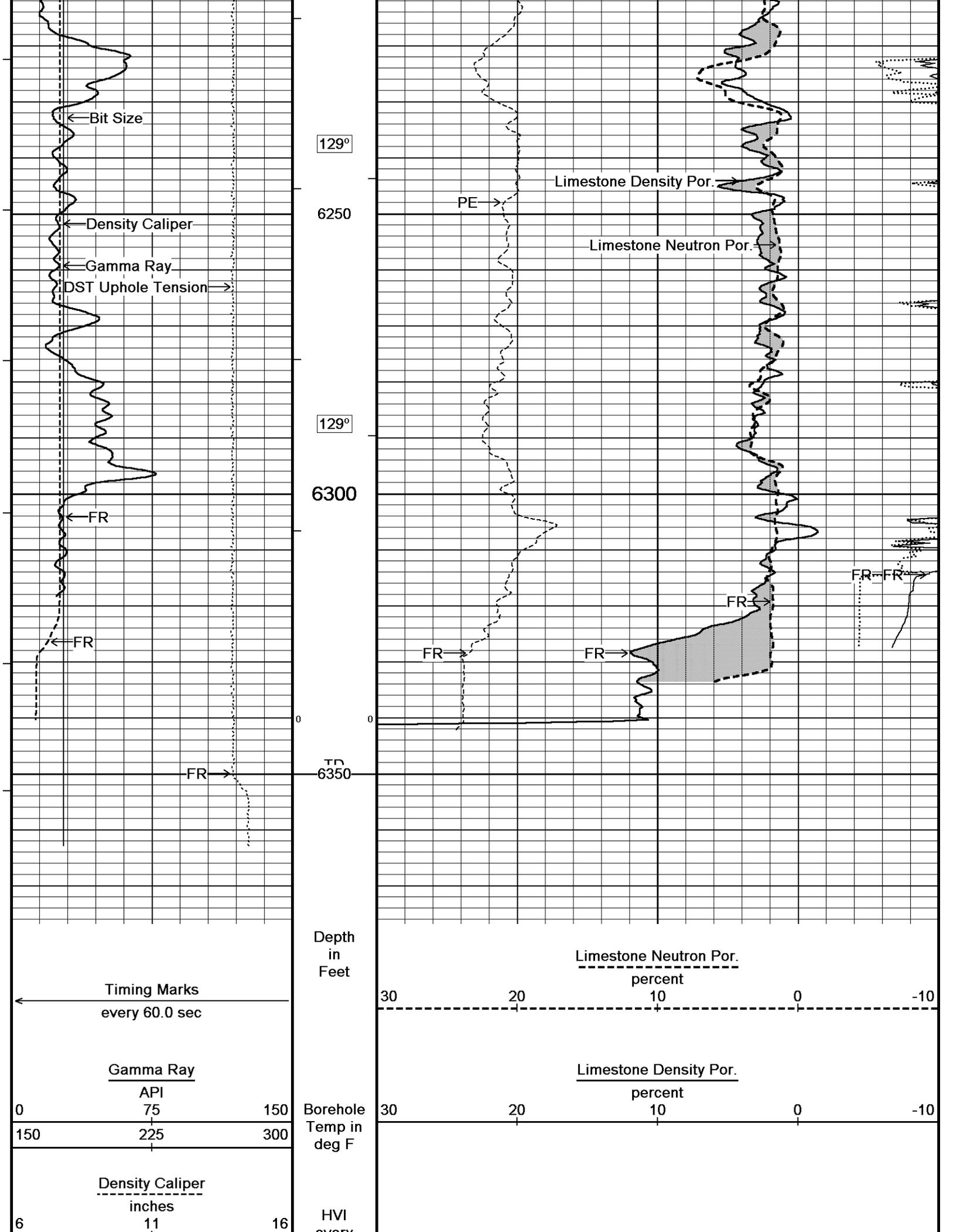


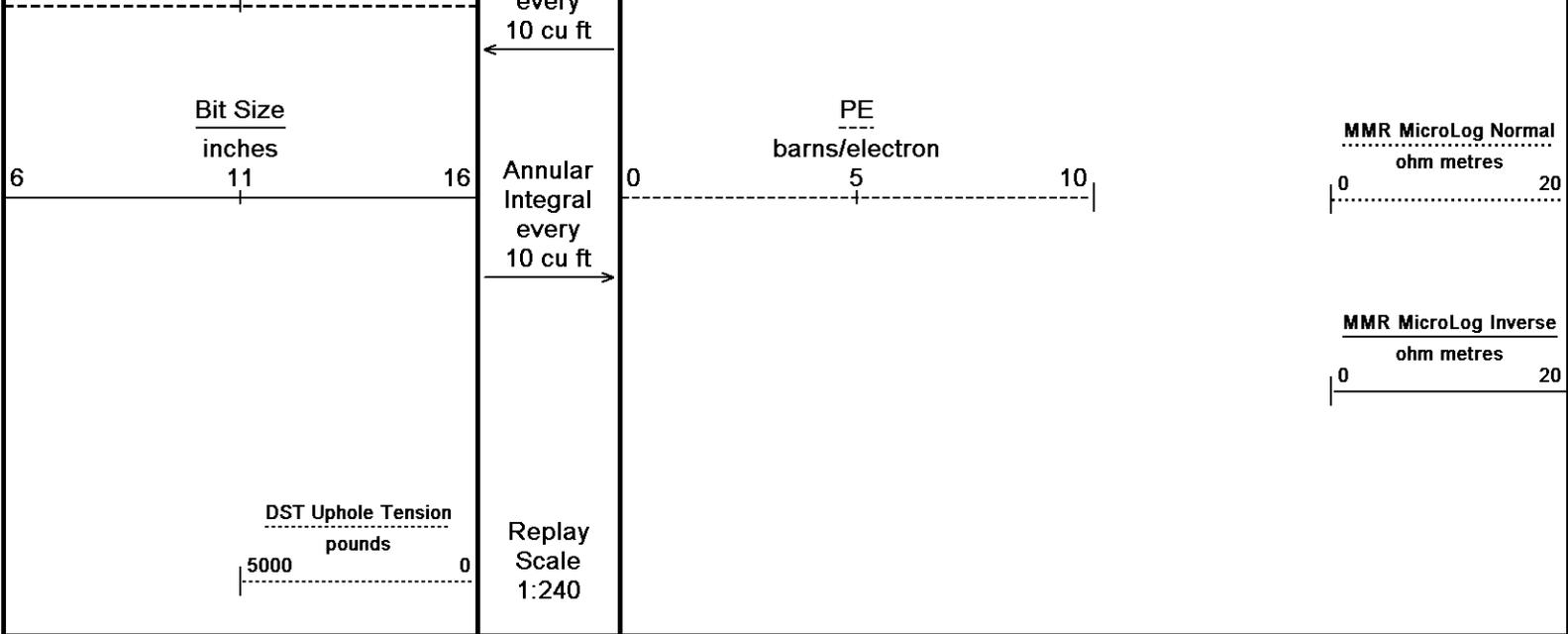










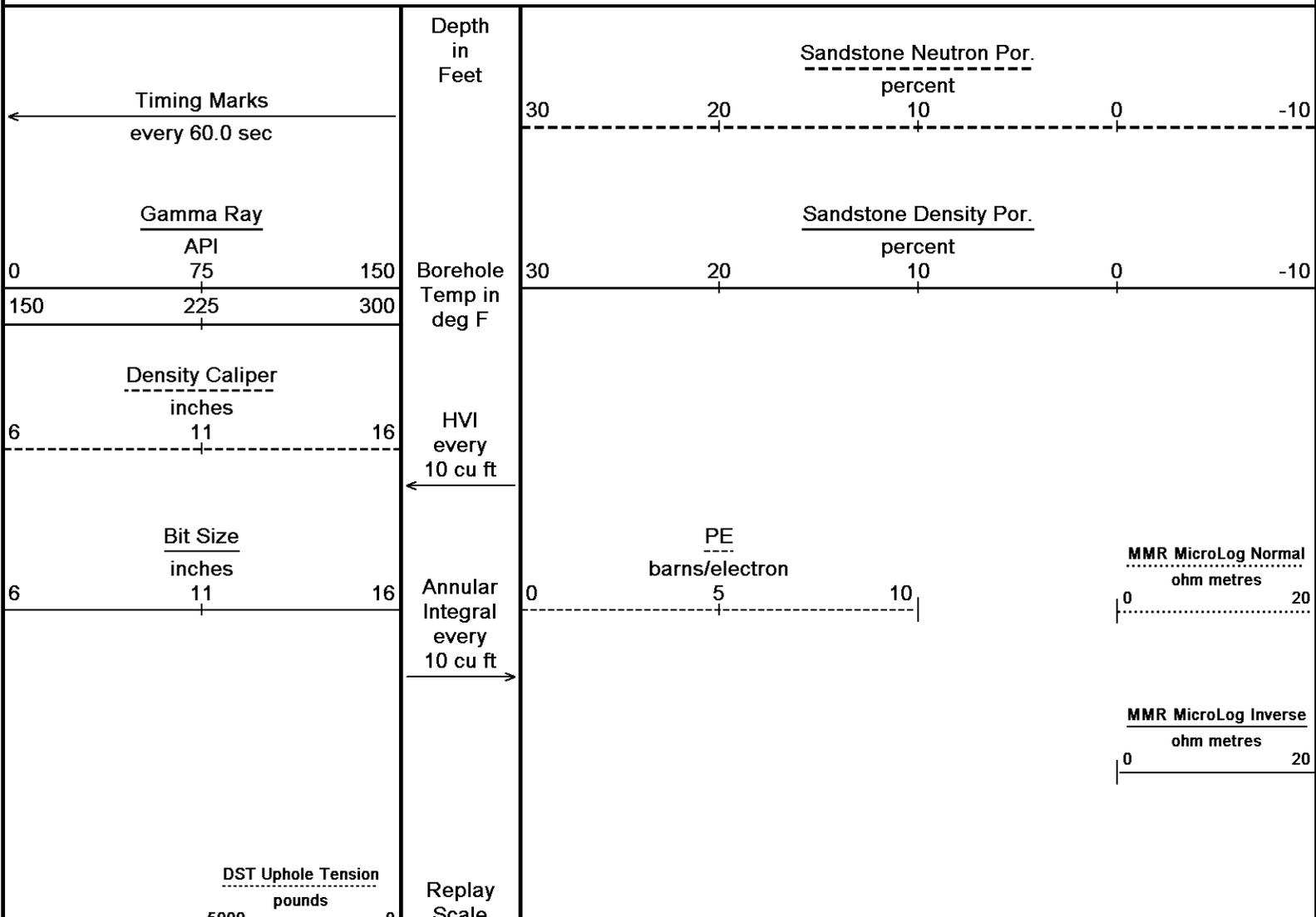


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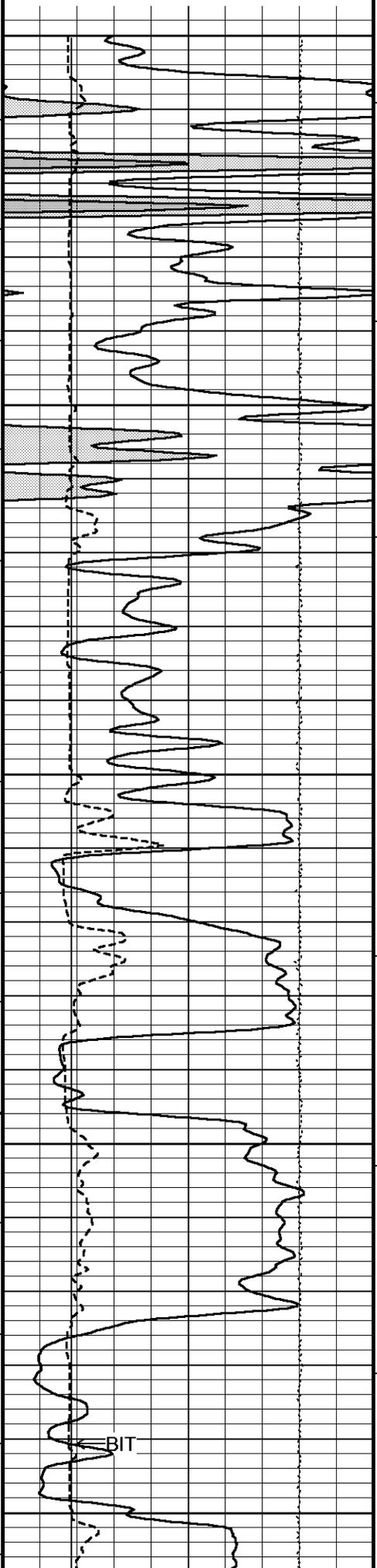
5 INCH MAIN LIMESTONE

REPEAT SECTION SANDSTONE

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-APR-2018 23:12  
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 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248



Scale  
1:240



5650

124°

5700

124°

200

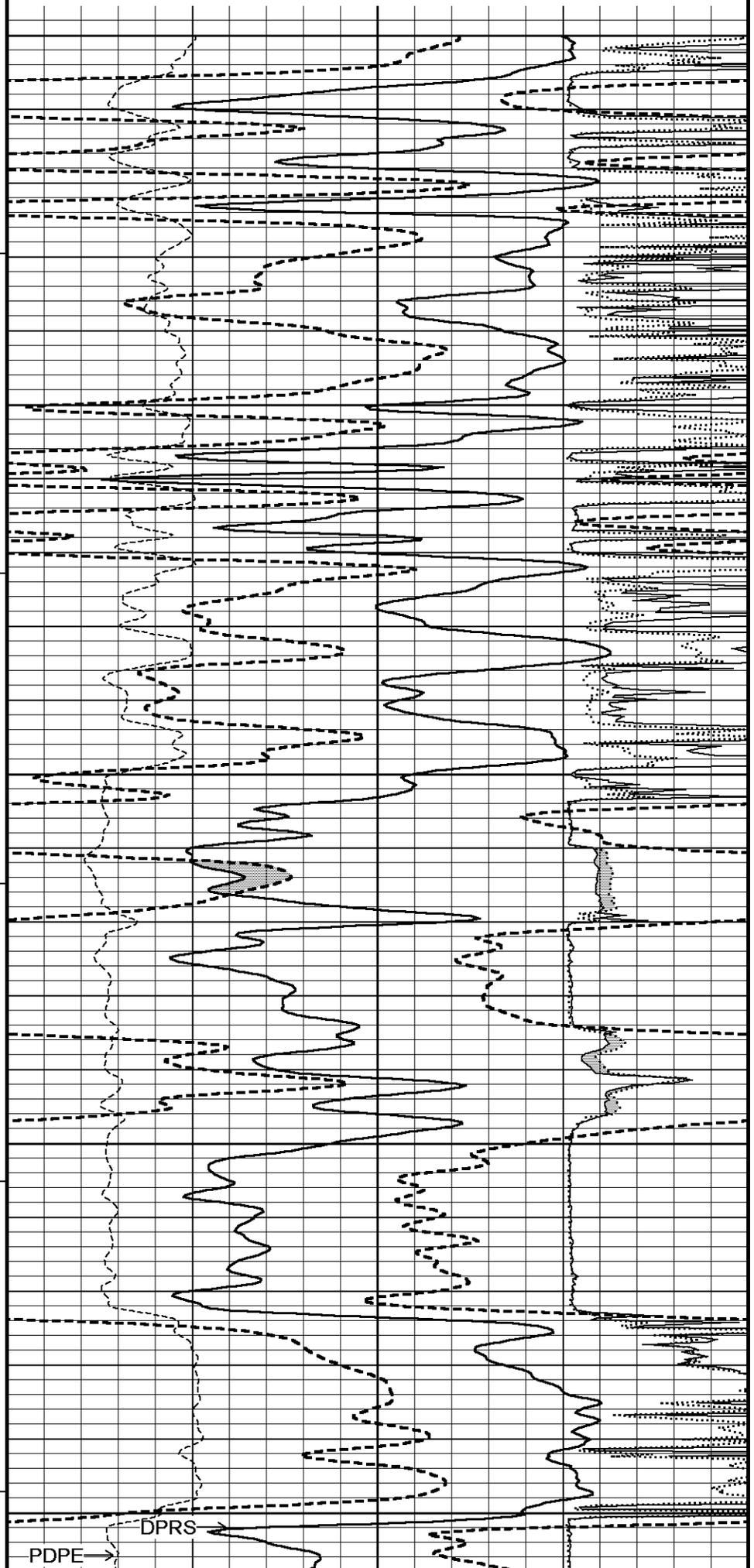
5750

124°

5800

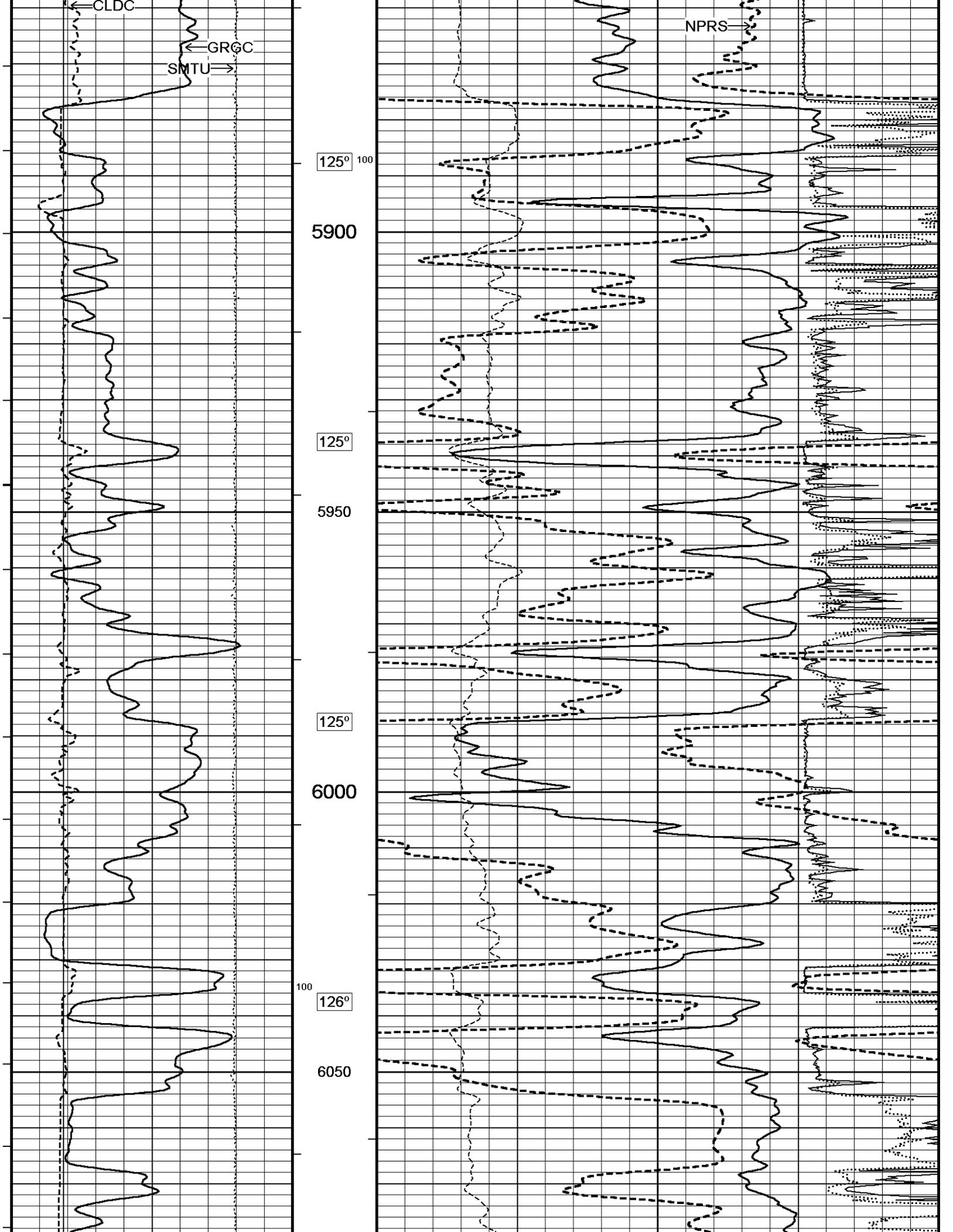
124°

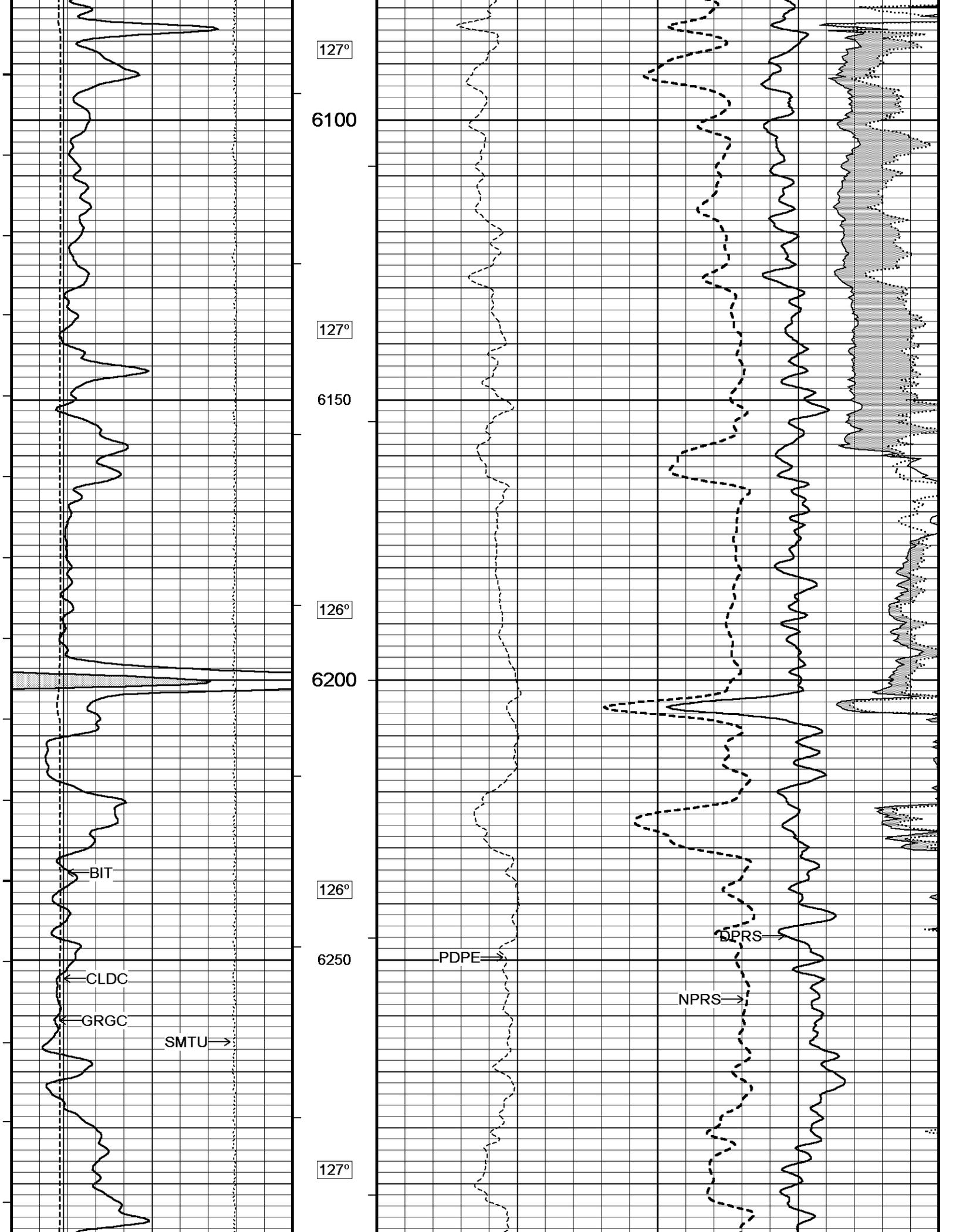
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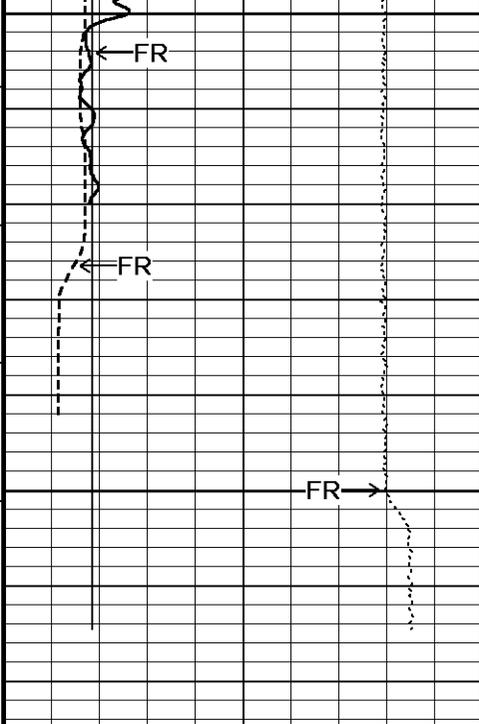


PDPE →

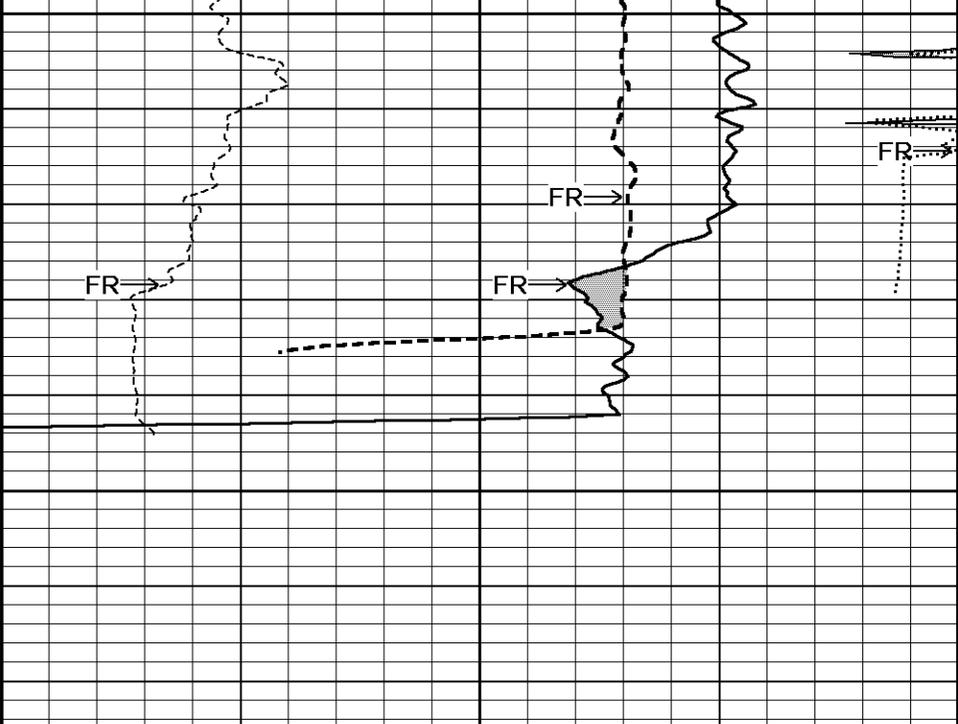
DPRS →







6300  
TD  
6350



Timing Marks  
every 60.0 sec

Gamma Ray  
API  
0 75 150  
150 225 300

Density Caliper  
inches  
6 11 16

Bit Size  
inches  
6 11 16

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  
1:240

Sandstone Neutron Por.  
percent  
30 20 10 0 -10

Sandstone Density Por.  
percent  
30 20 10 0 -10

PE  
barns/electron  
0 5 10

MMR MicroLog Normal  
ohm metres  
0 20

MMR MicroLog Inverse  
ohm metres  
0 20

# 10 INCH HIGH RESOLUTION SANDSTONE

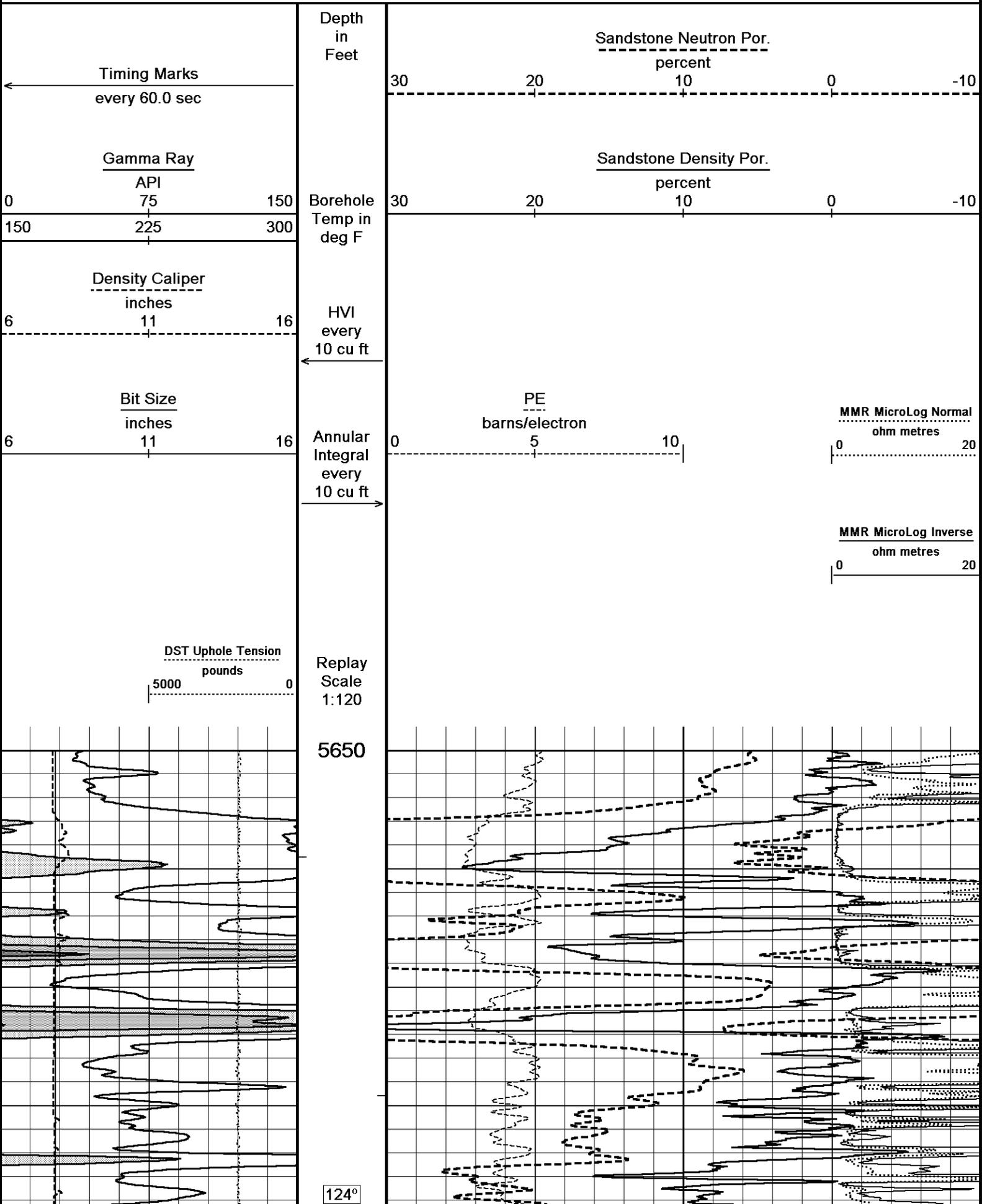
Depth Based Data - Maximum Sampling Increment 2.5cm

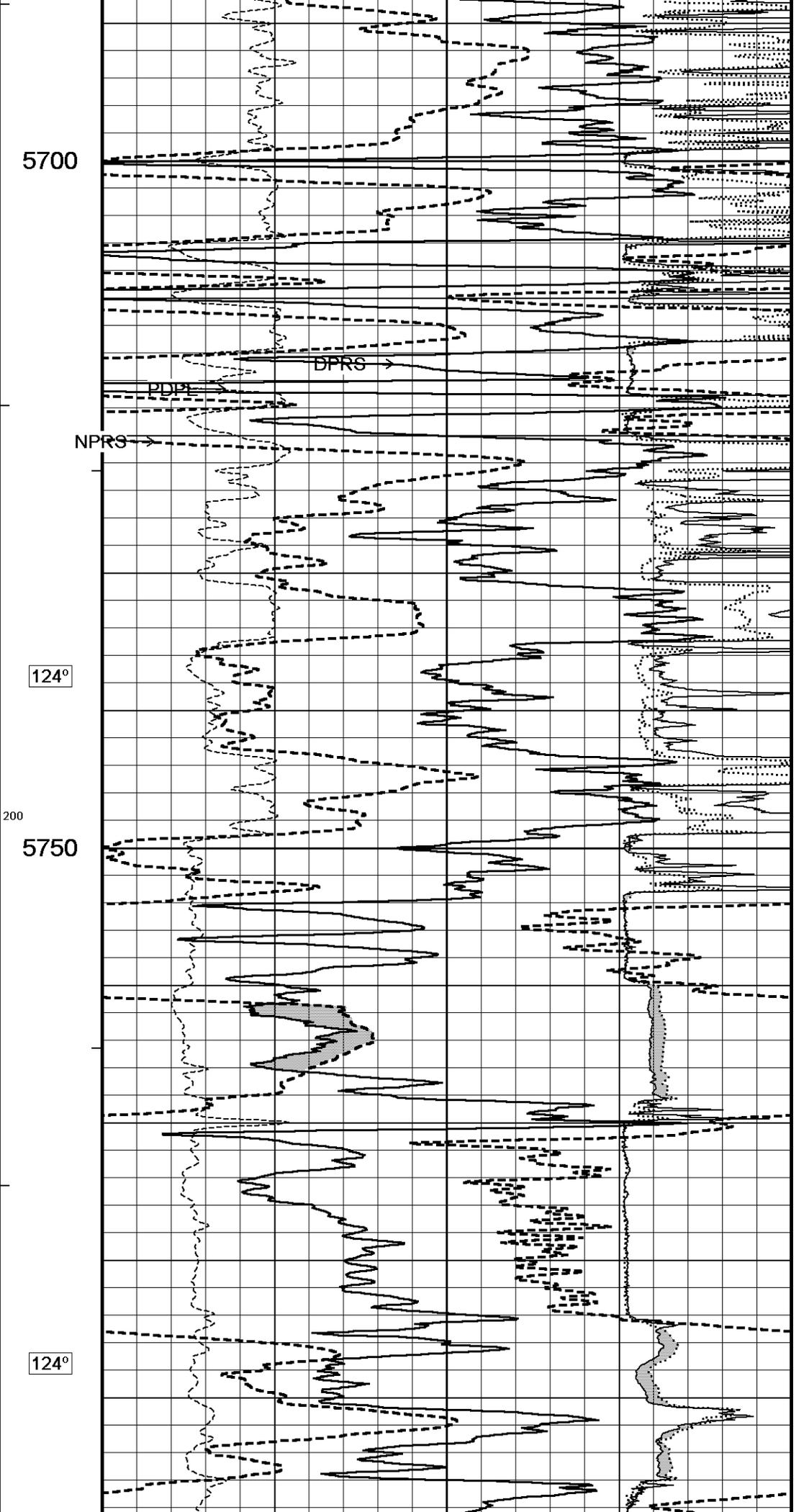
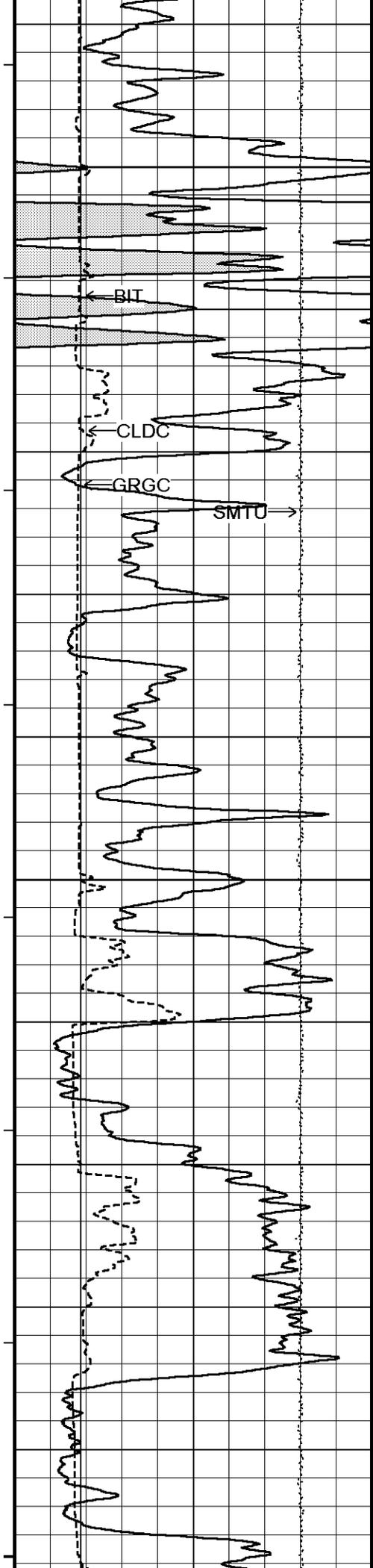
Plotted on 18-APR-2018 23:12

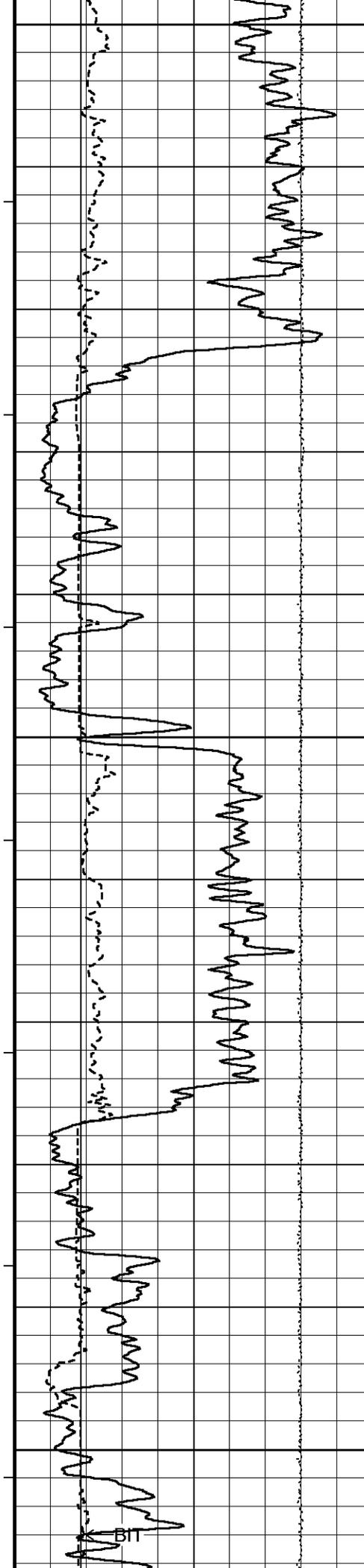
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Recorded on 18-APR-2018 18:57

System Versions: Logged with 18.01.5248 Plotted with 18.01.5248







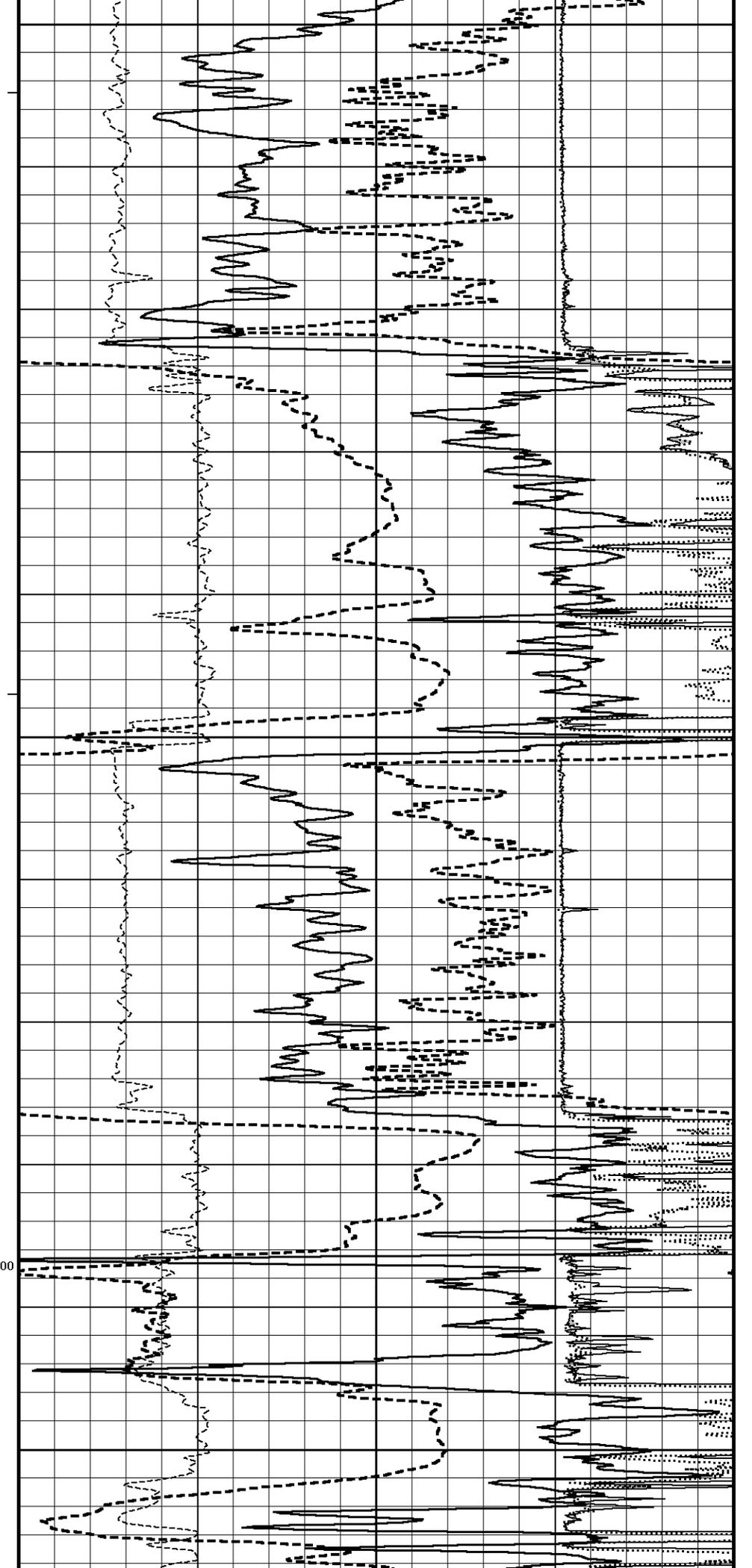
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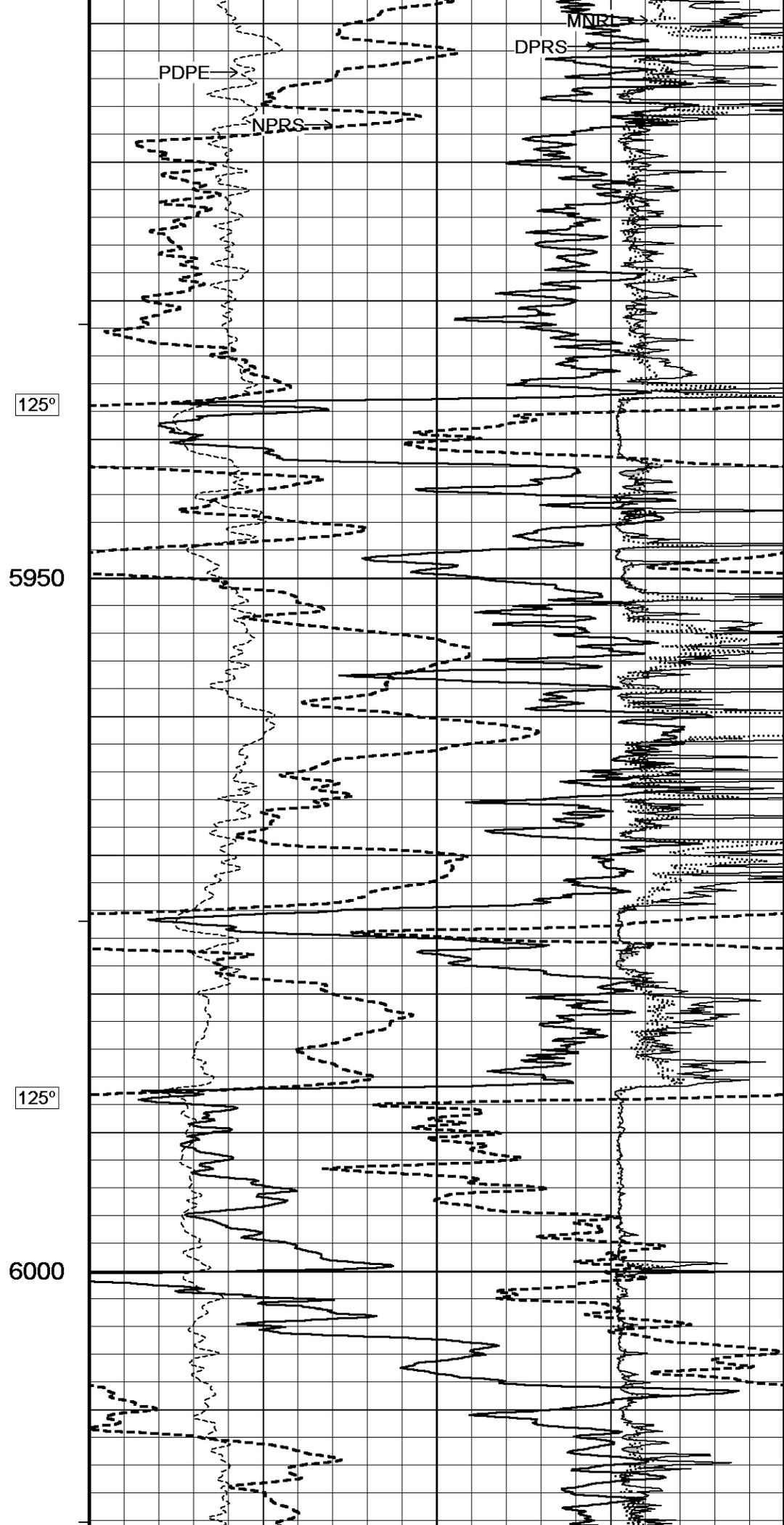
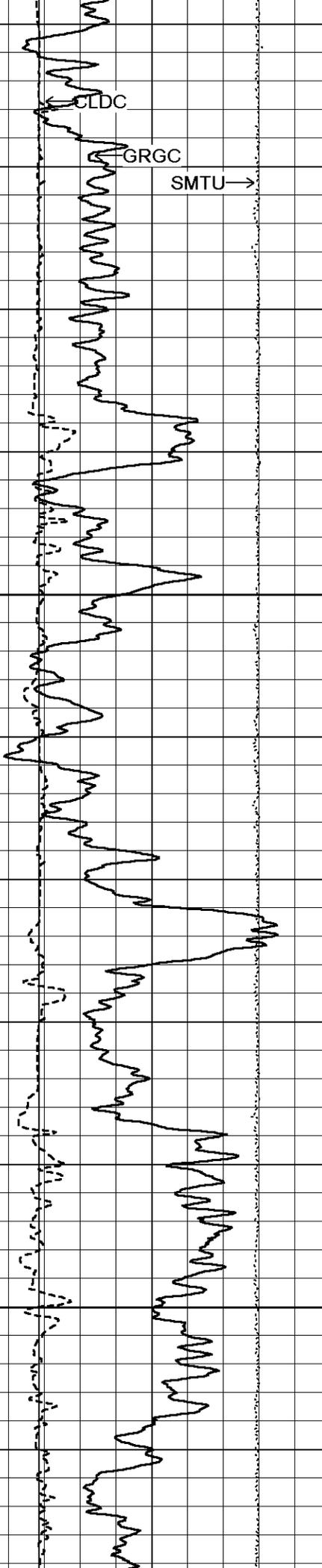
124°

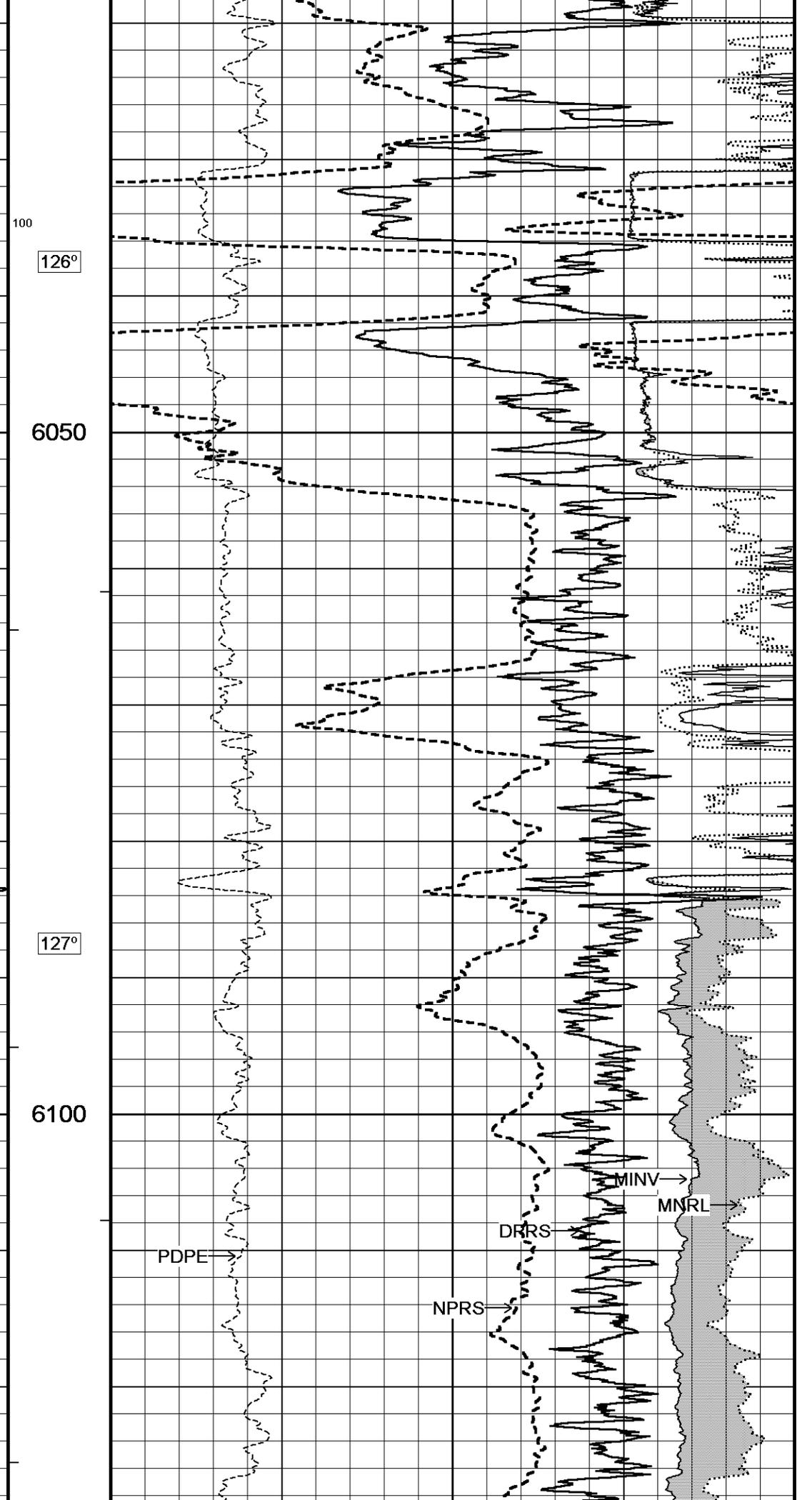
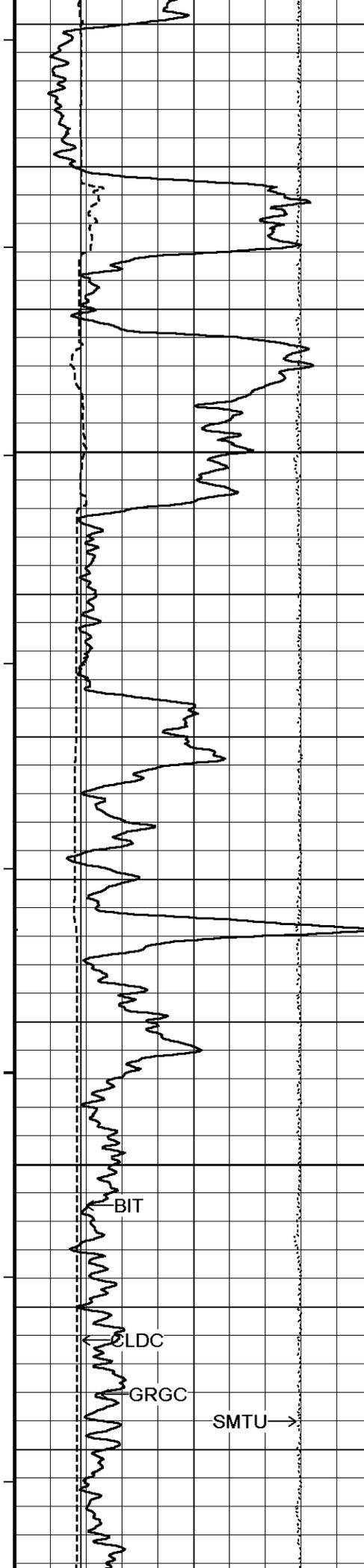
5850

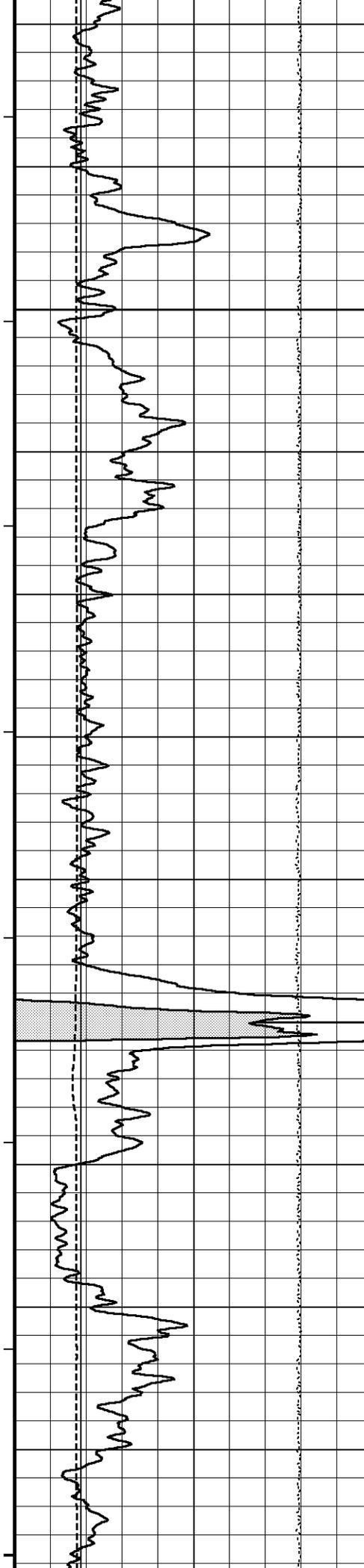
125° 100

5900









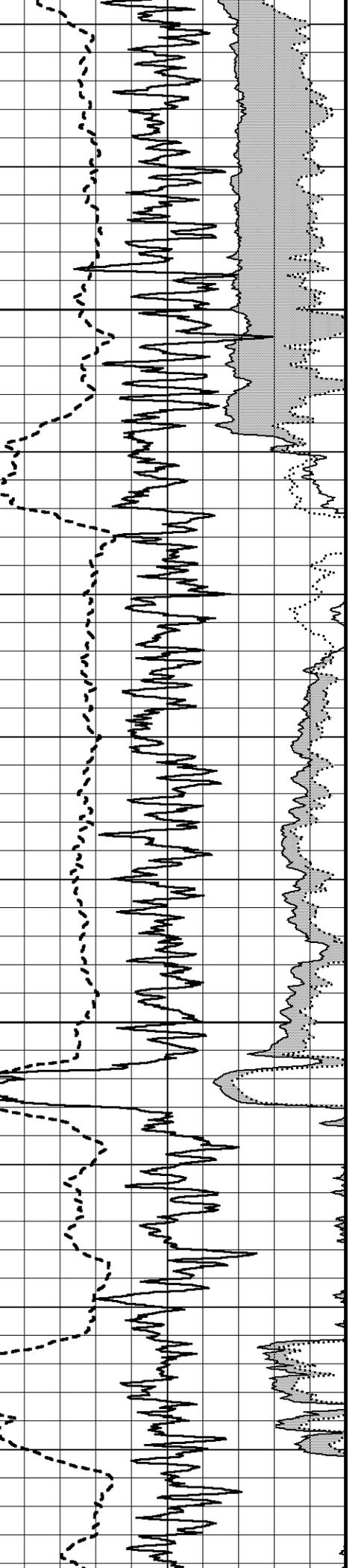
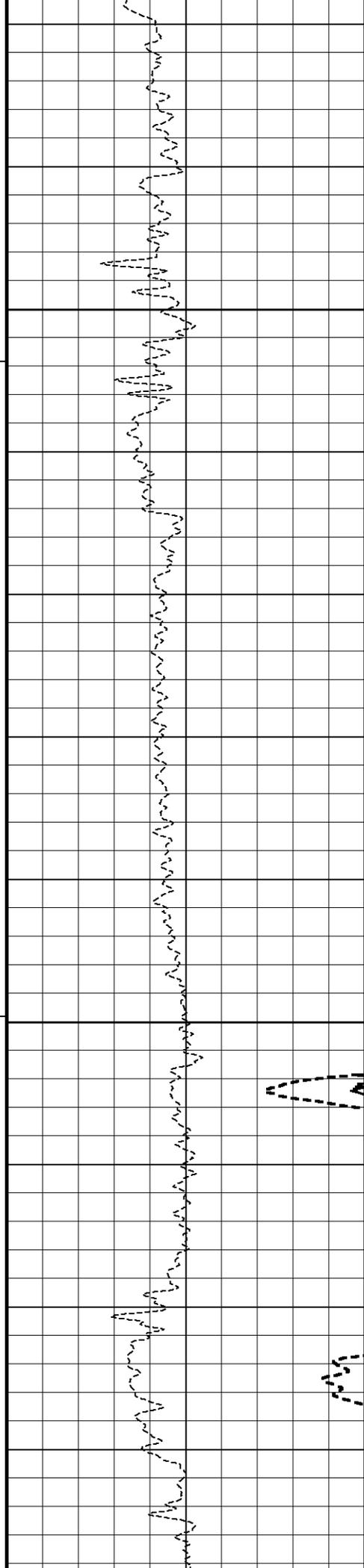
127°

6150

126°

6200

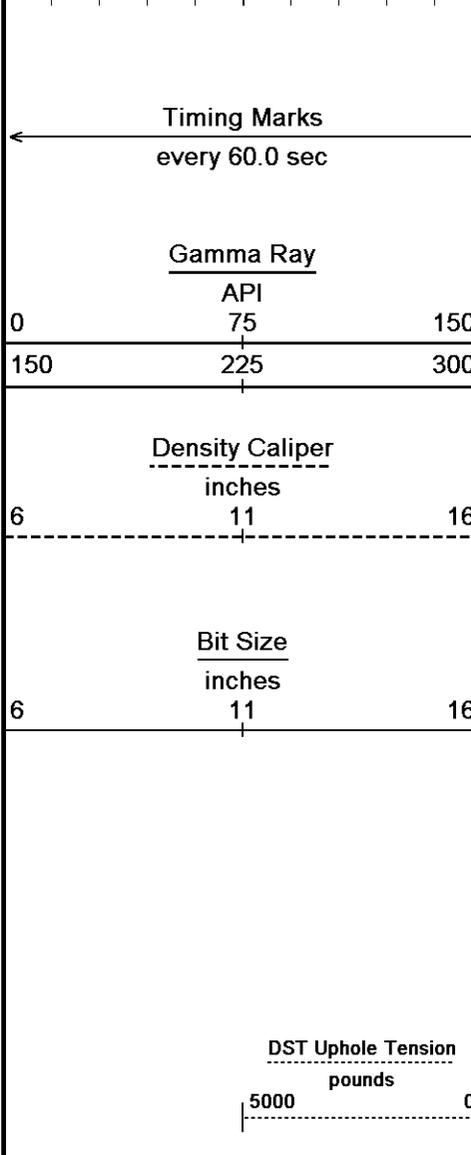
127°





FR →

TD  
6350



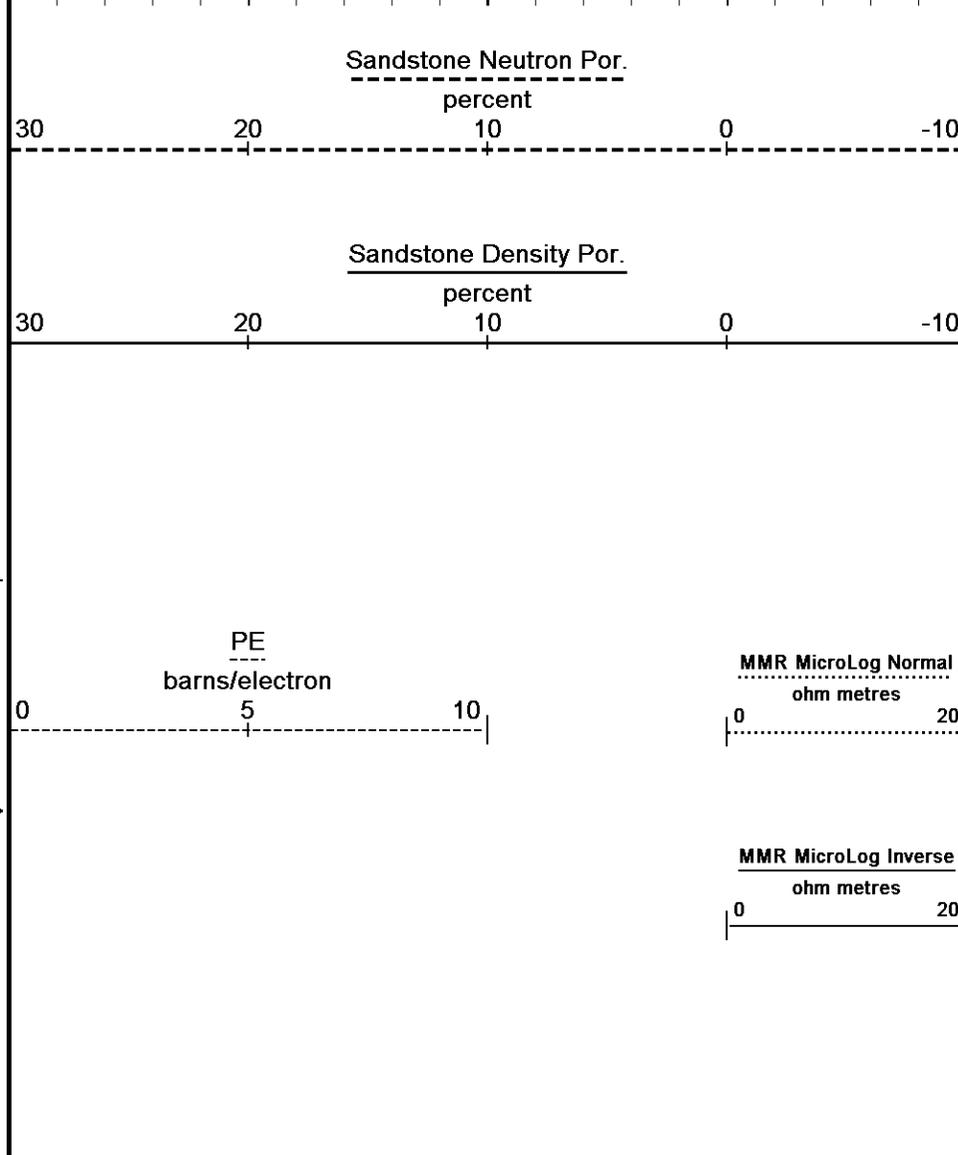
Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:120



Depth Based Data - Maximum Sampling Increment 2.5cm Plotted on 18-APR-2018 23:12  
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↑ 10 INCH HIGH RESOLUTION SANDSTONE ↑

↓ 5 INCH MAIN BULK DENSITY LIMESTONE ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-APR-2018 23:12  
 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

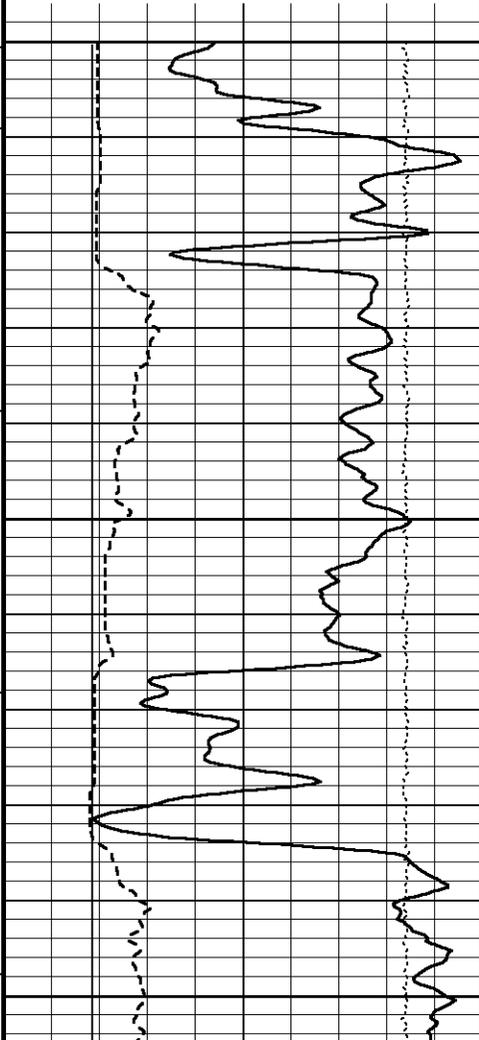
Gamma Ray  
API  
0 75 150  
150 225 300

Density Caliper  
inches  
6 11 16

Bit Size  
inches  
6 11 16

DST Uphole Tension  
pounds  
5000 0

Replay Scale  
1:240



Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

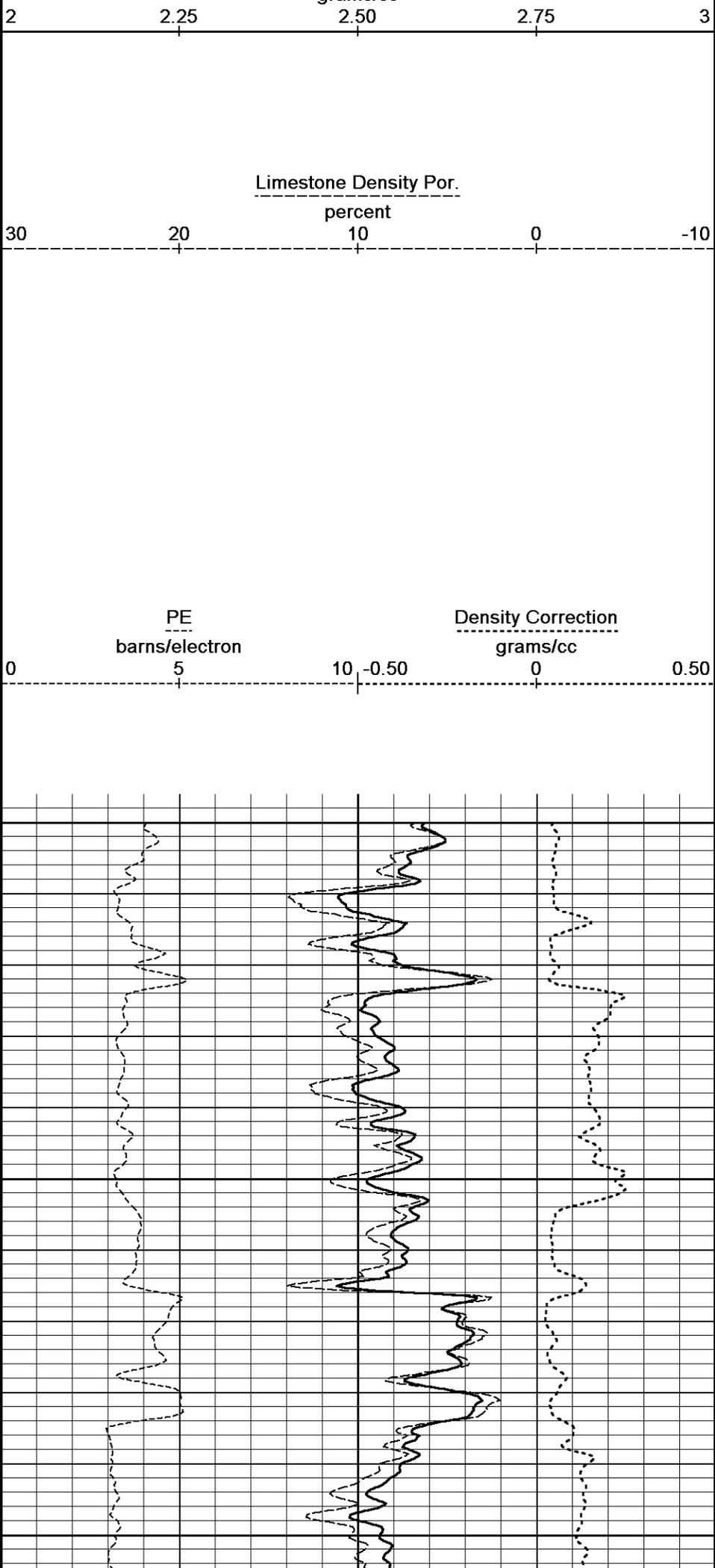
4000

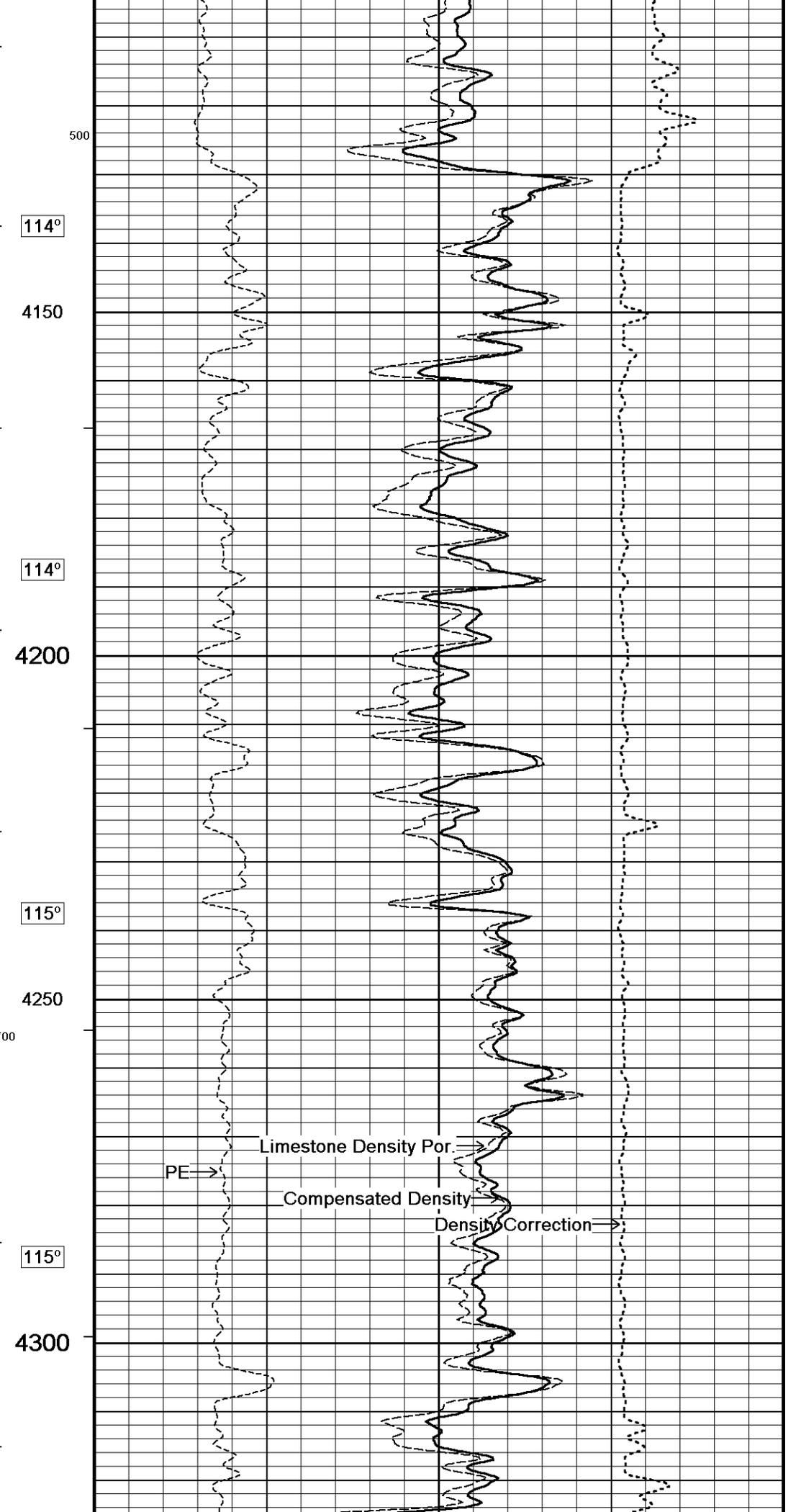
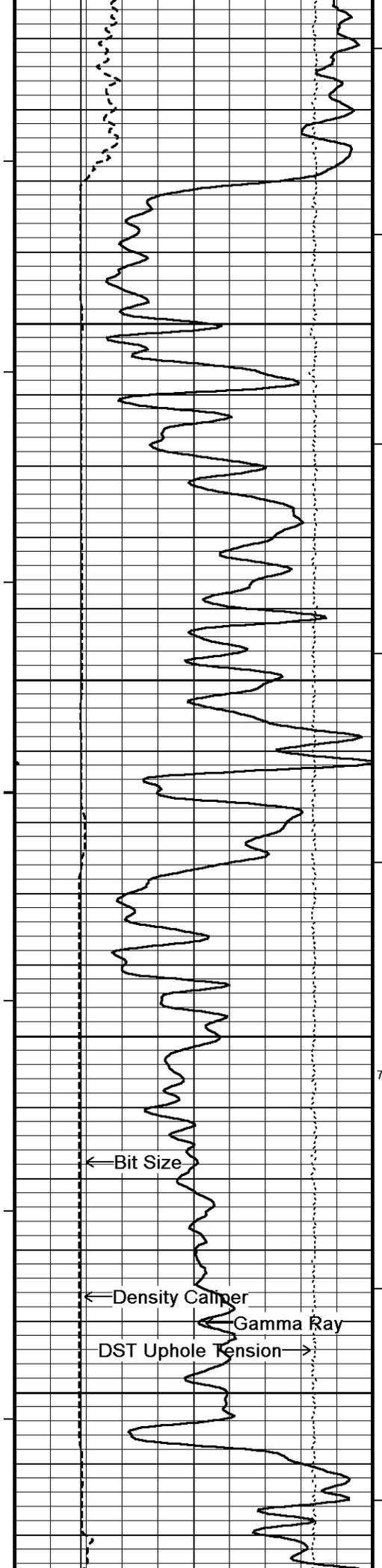
113°

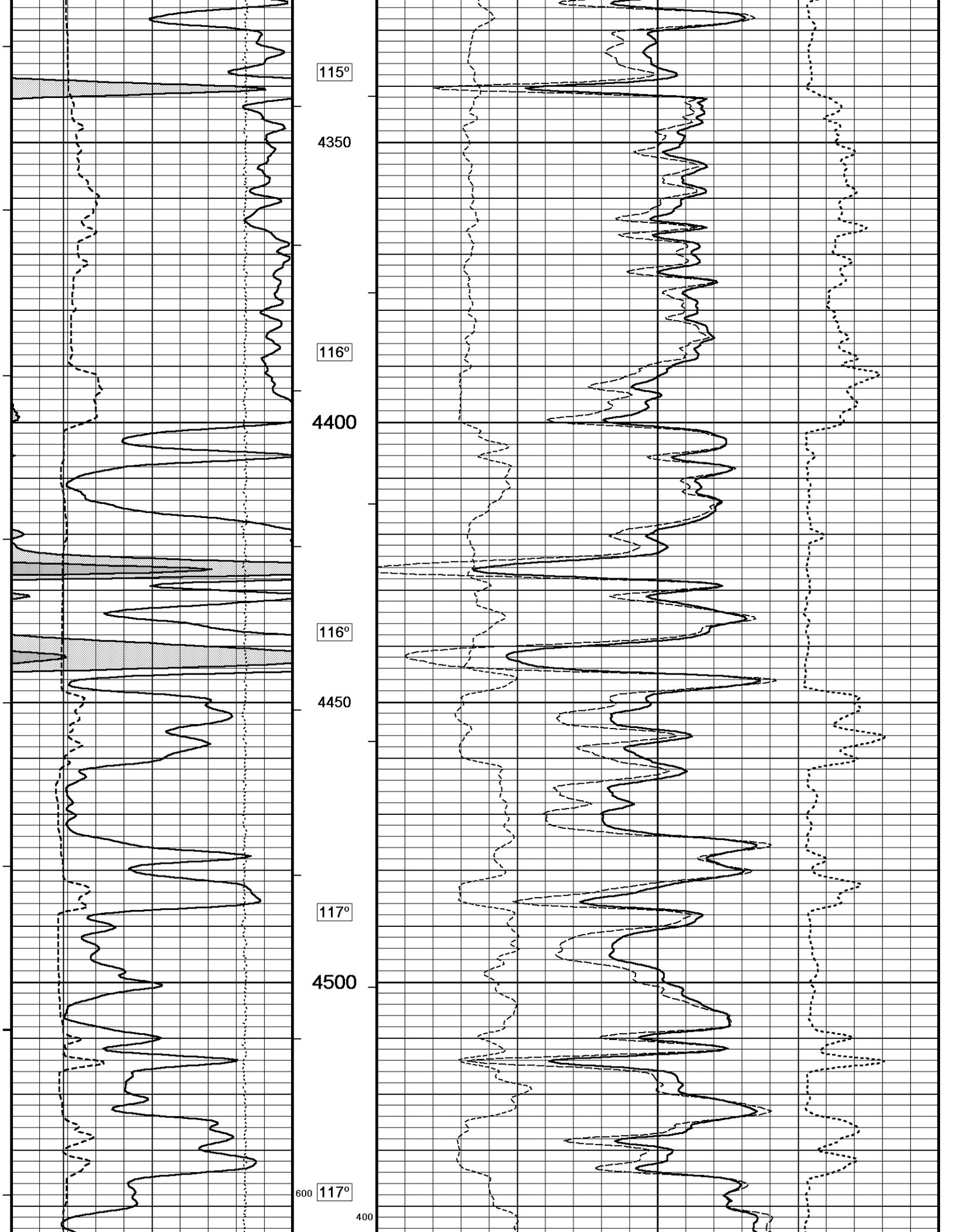
4050

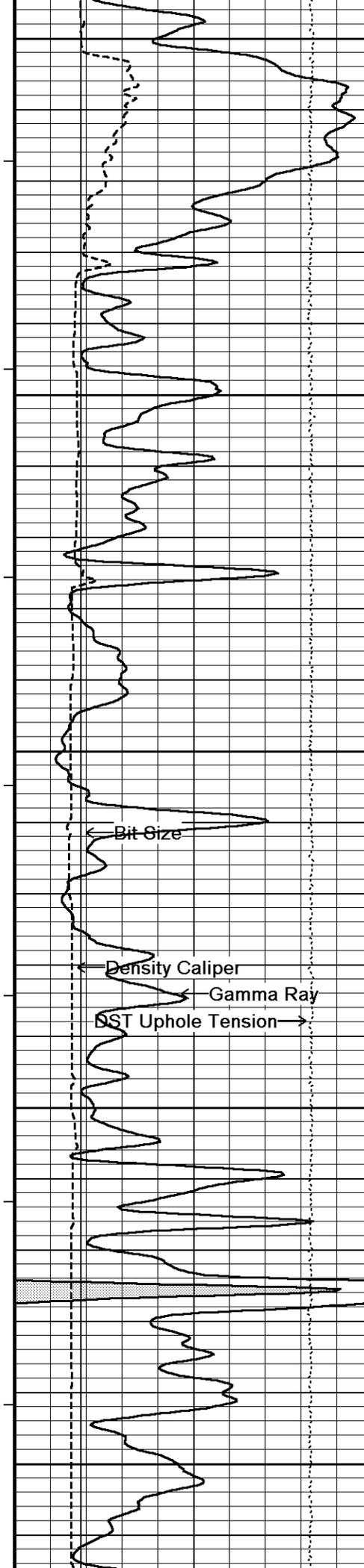
113°

4100









4550  
118°  
4600  
118°  
4650  
118°  
4700  
118°  
4750

118°

118°

118°

118°

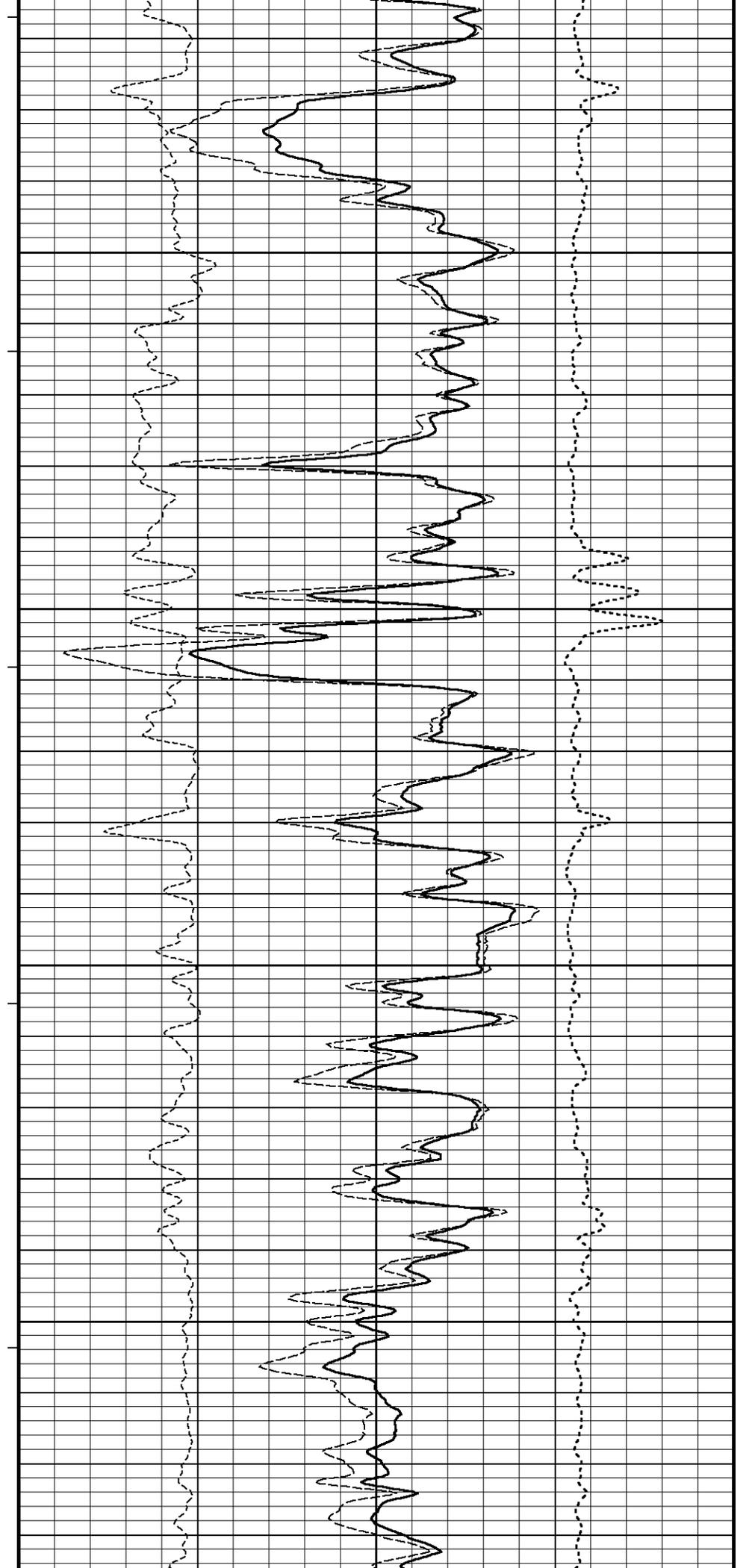
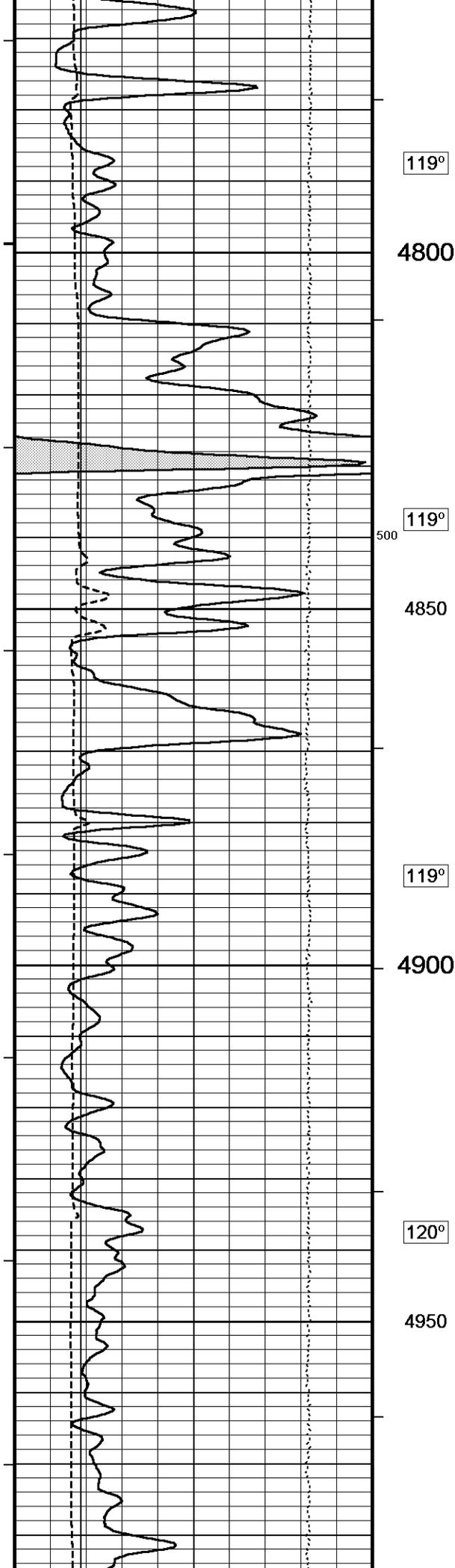
Bit Size

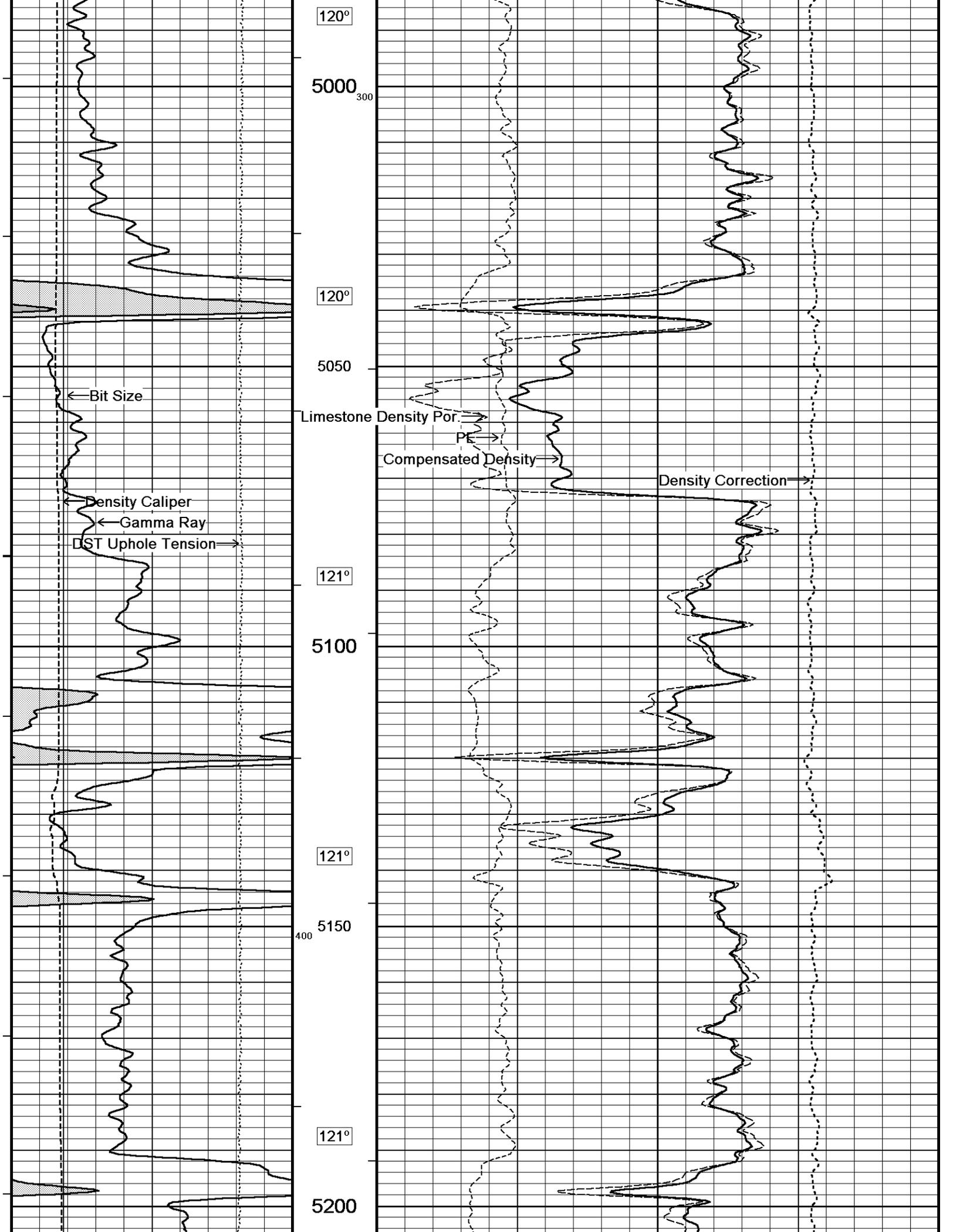
Density Caliper

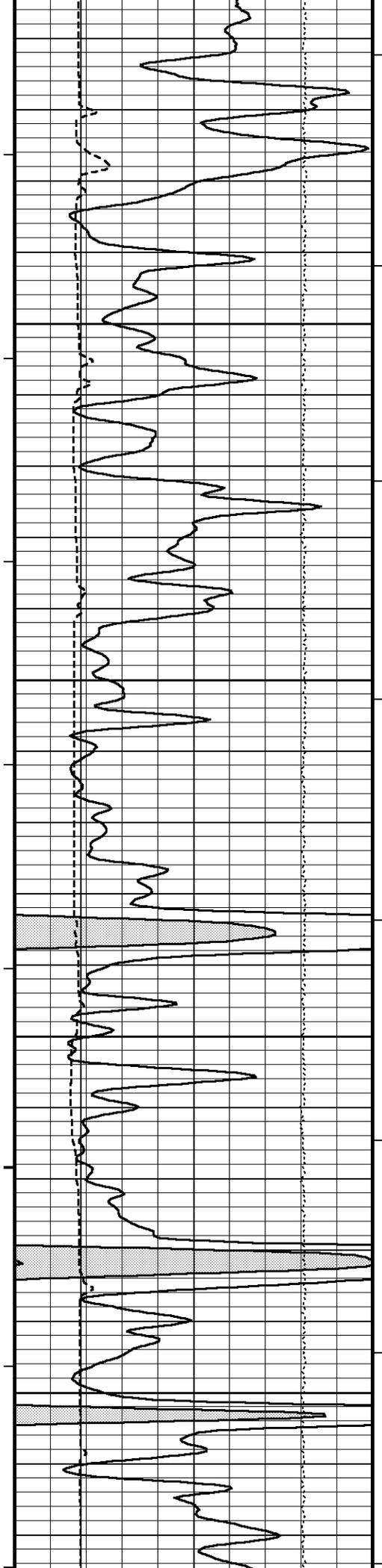
Gamma Ray

SST Uphole Tension

PE  
Compensated Density  
Limestone Density Por.  
Density Correction







122°

5250

122°

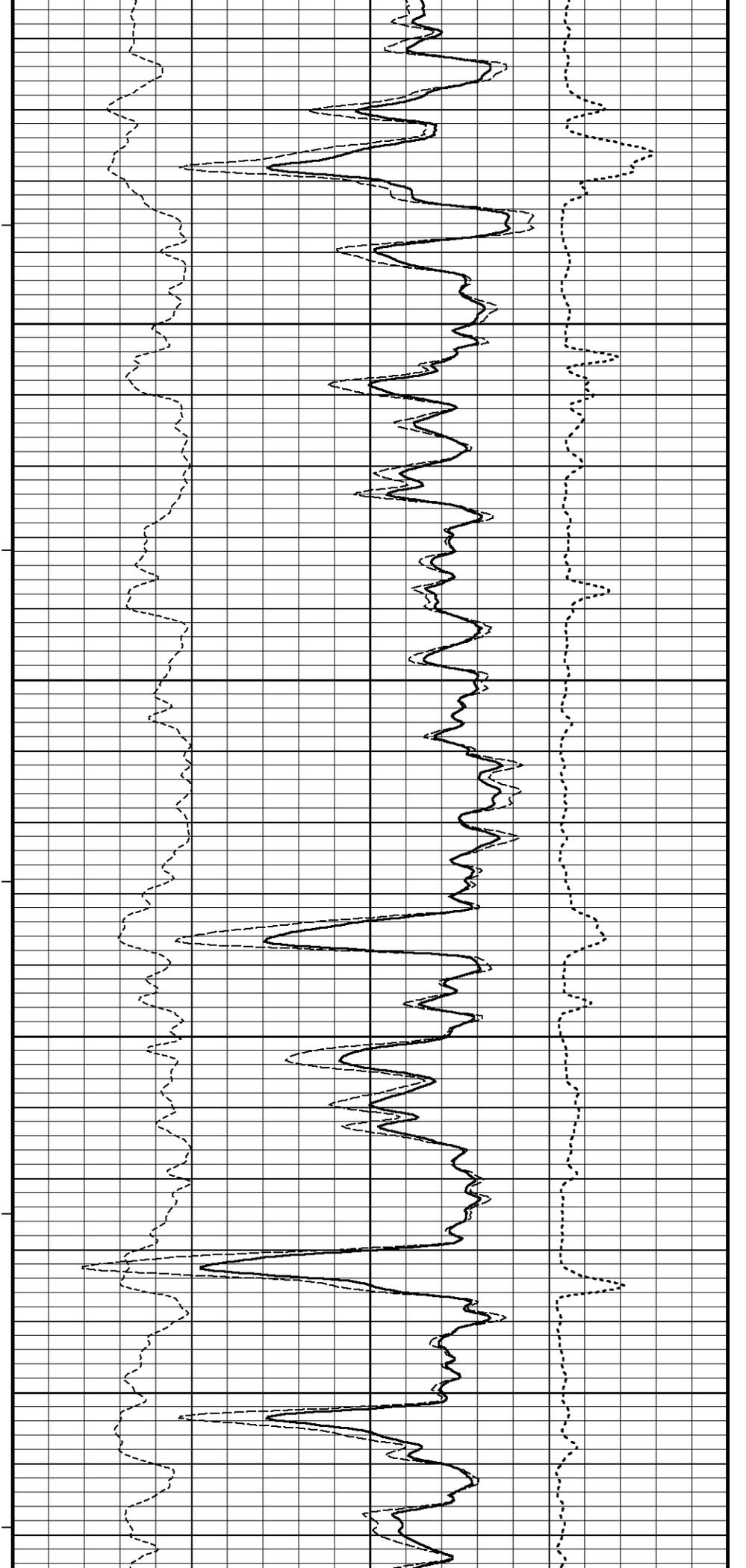
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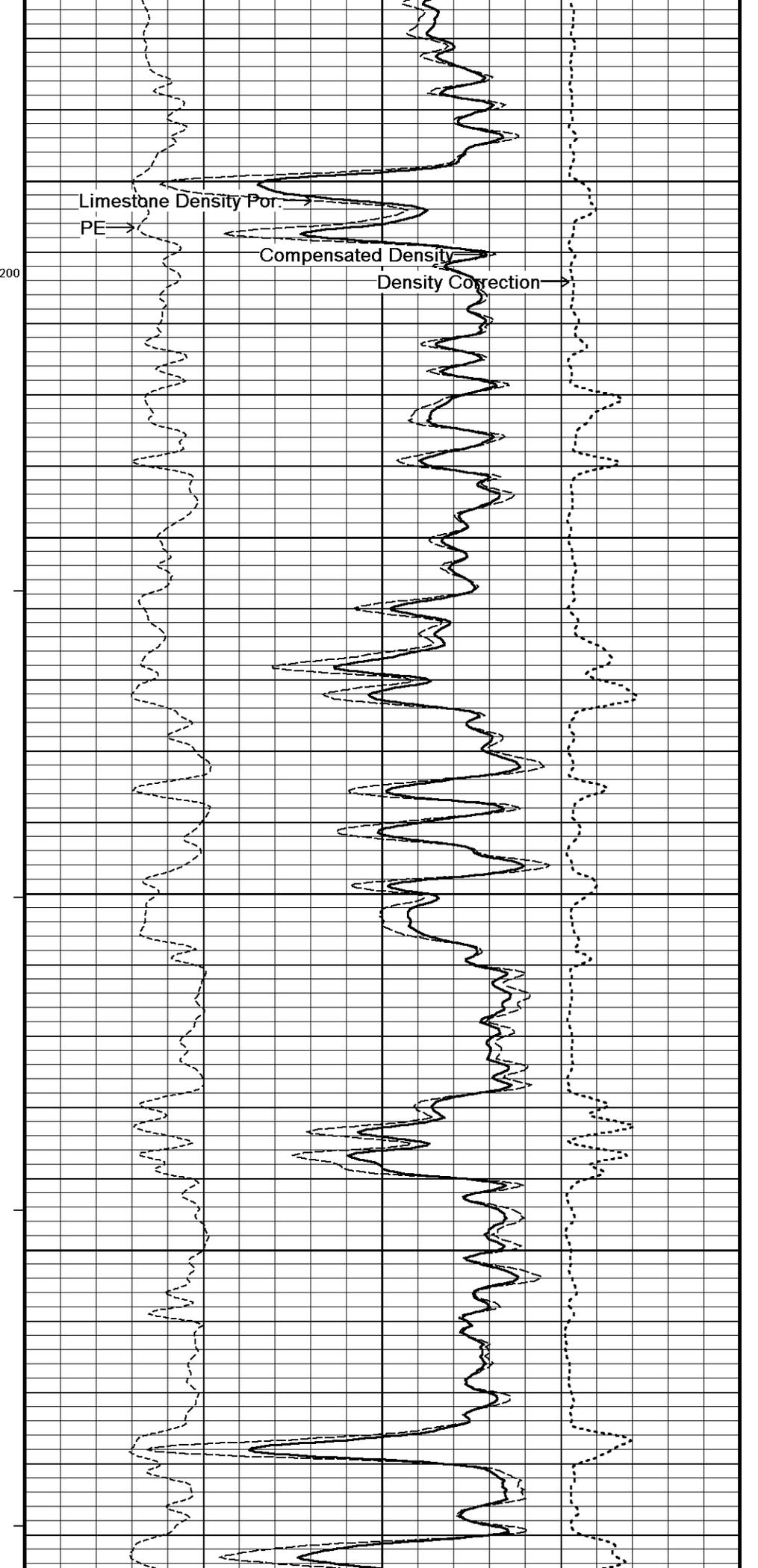
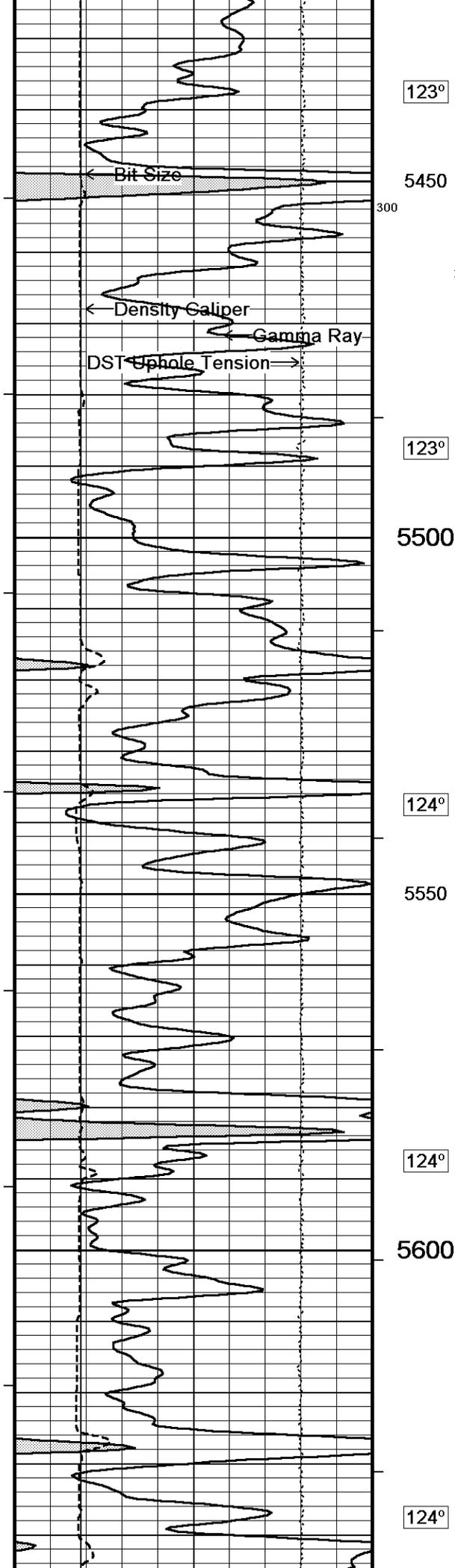
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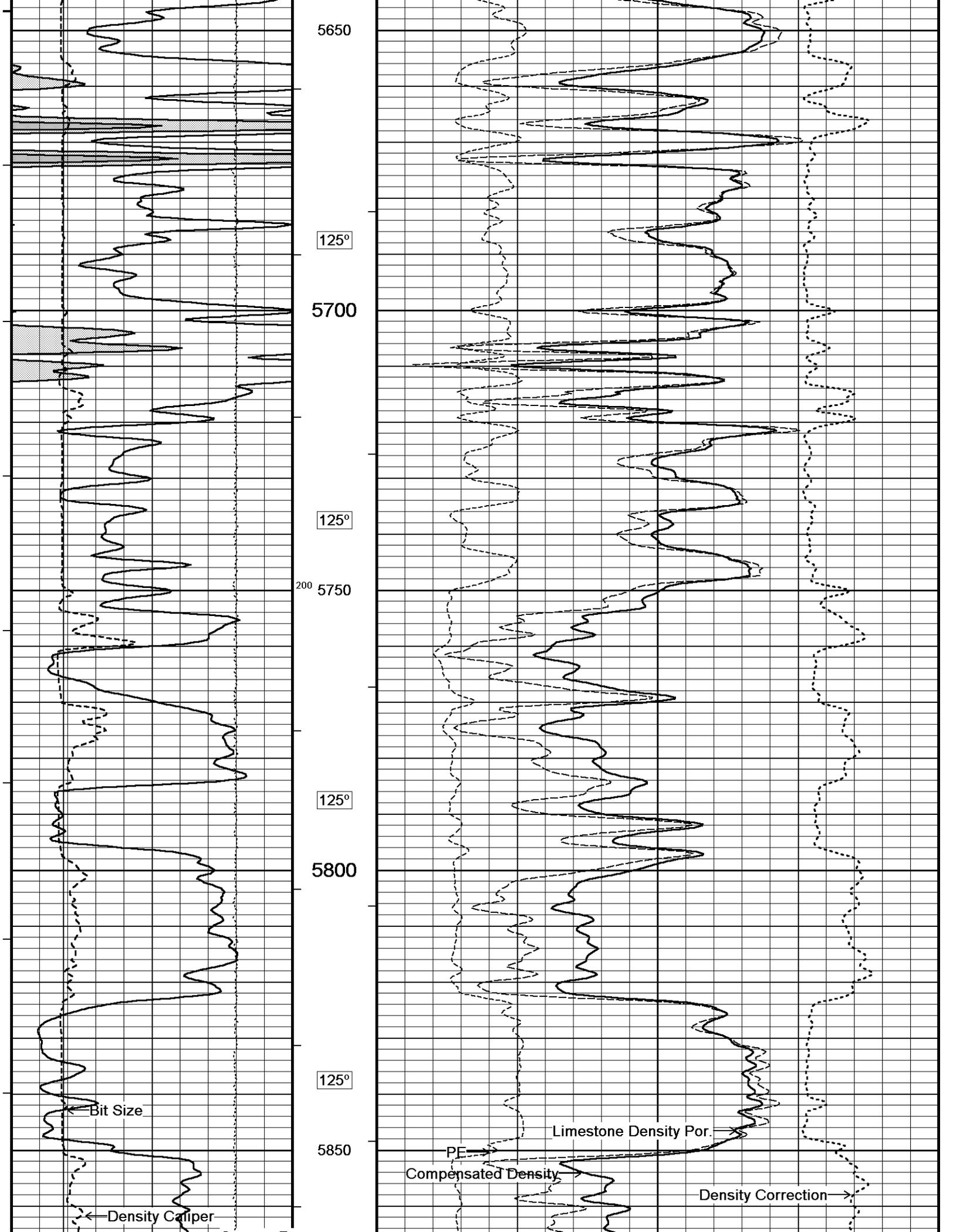
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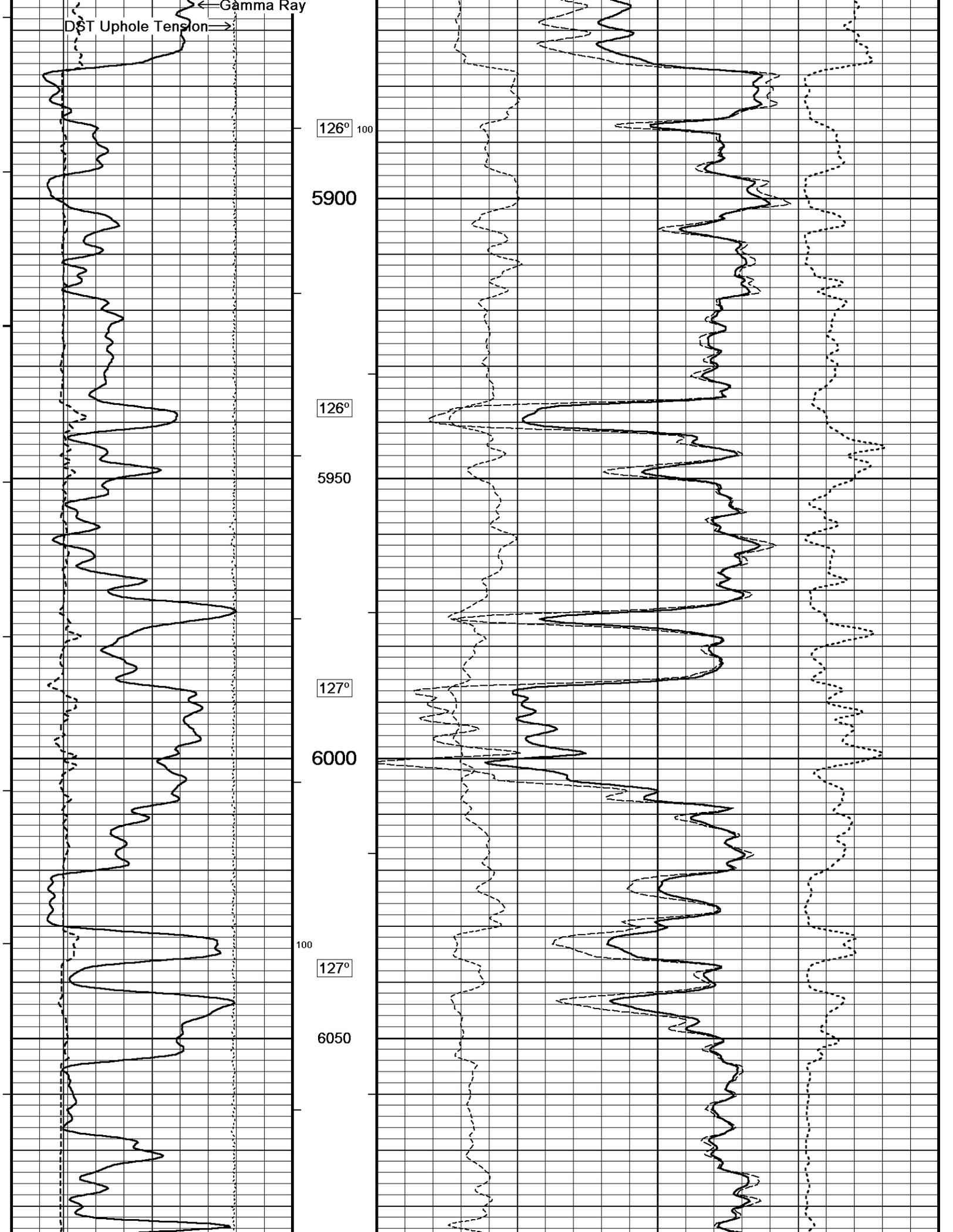
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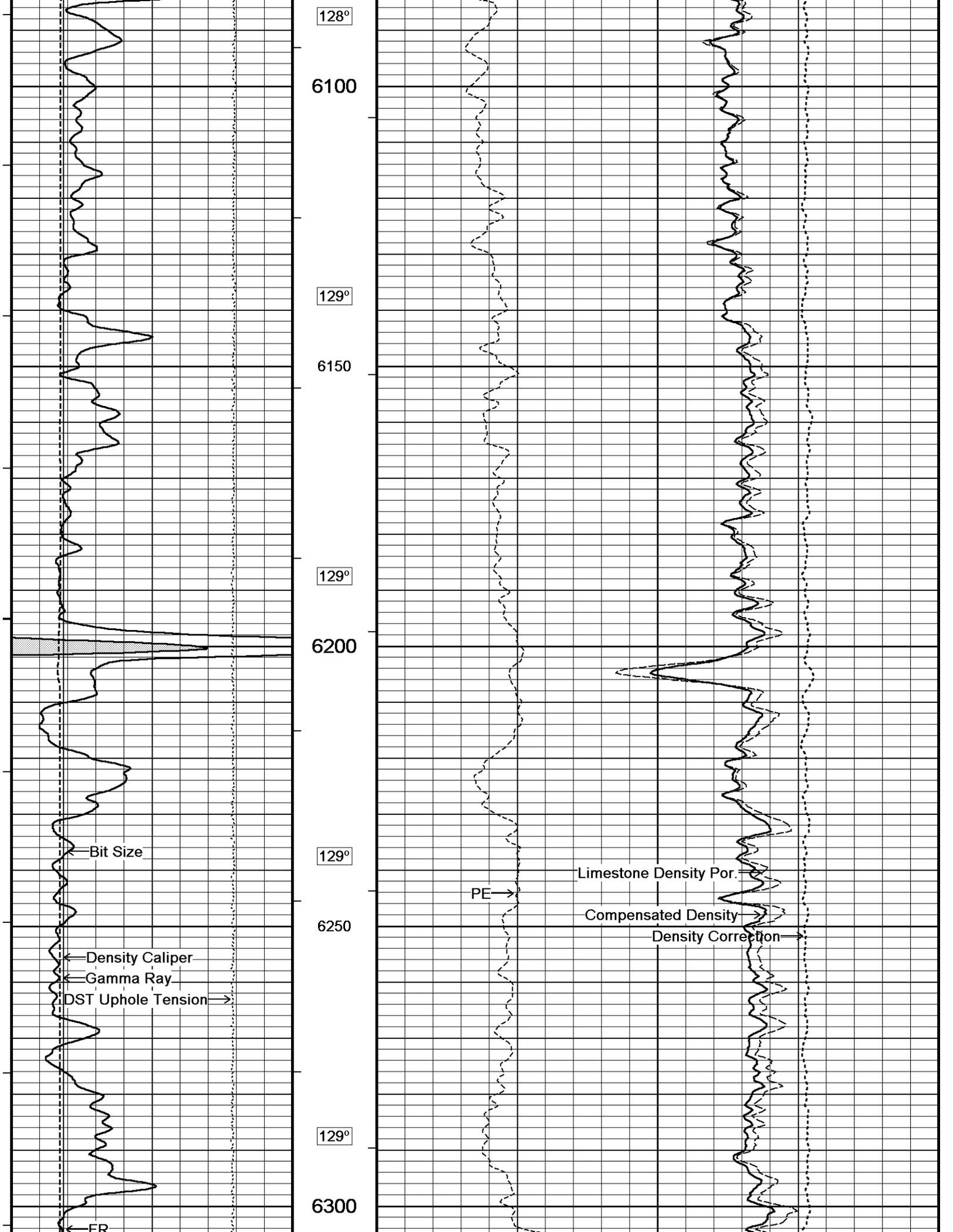
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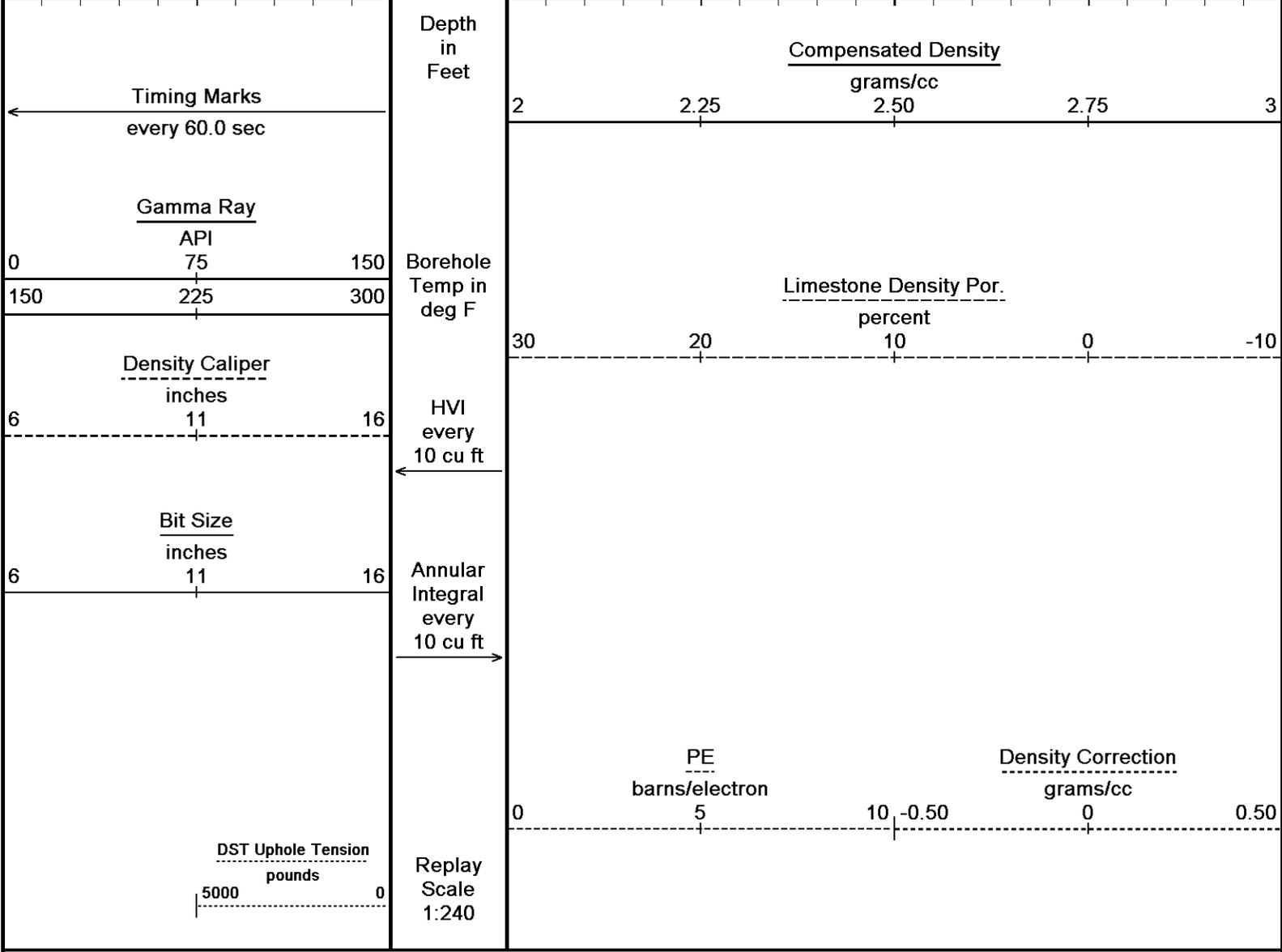
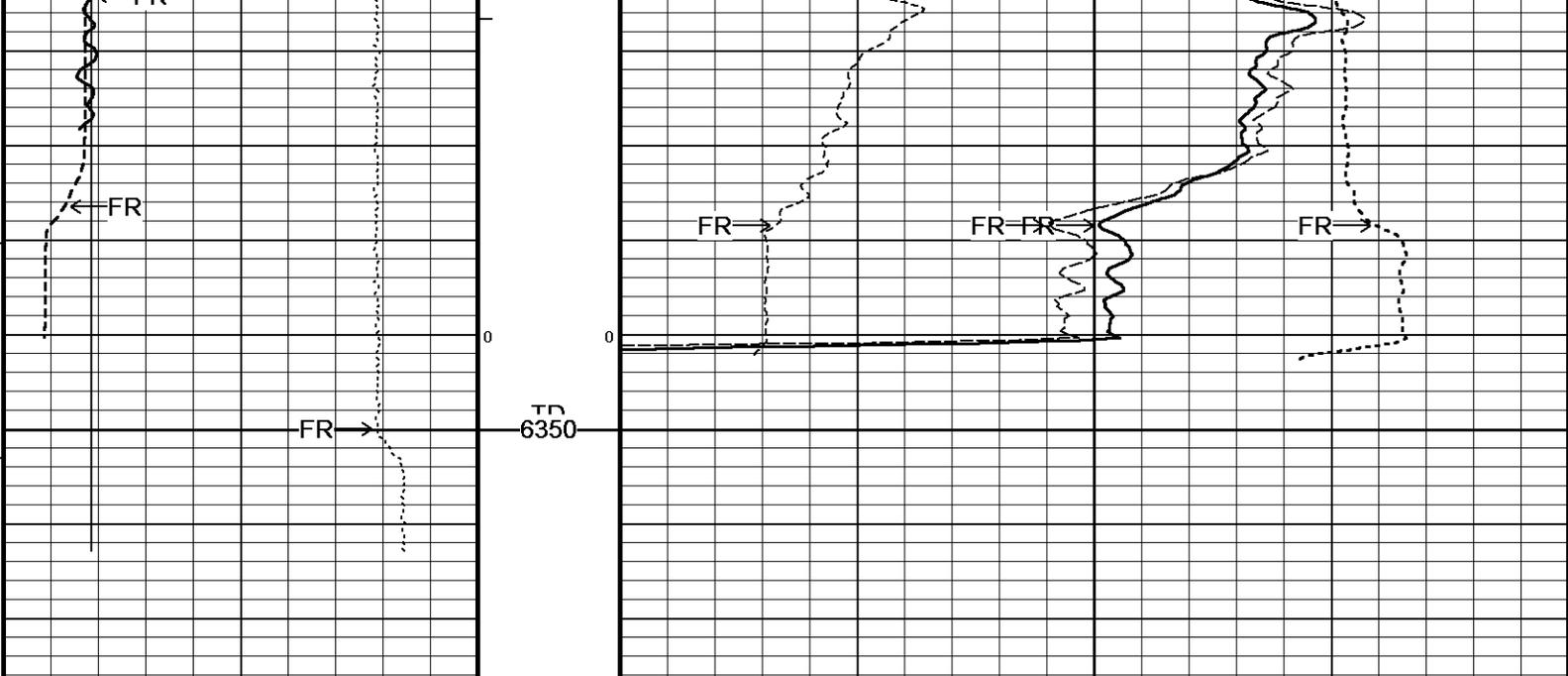








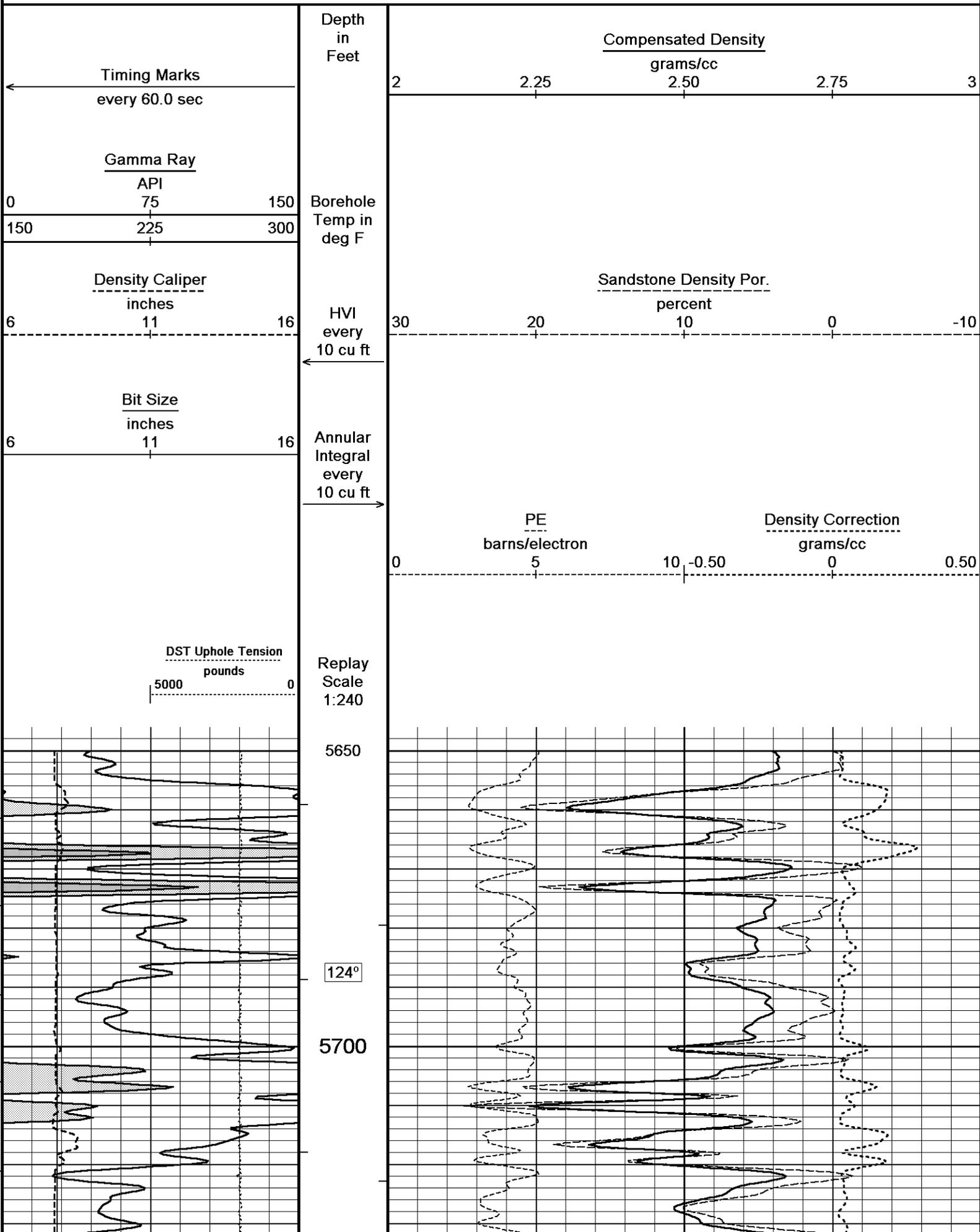


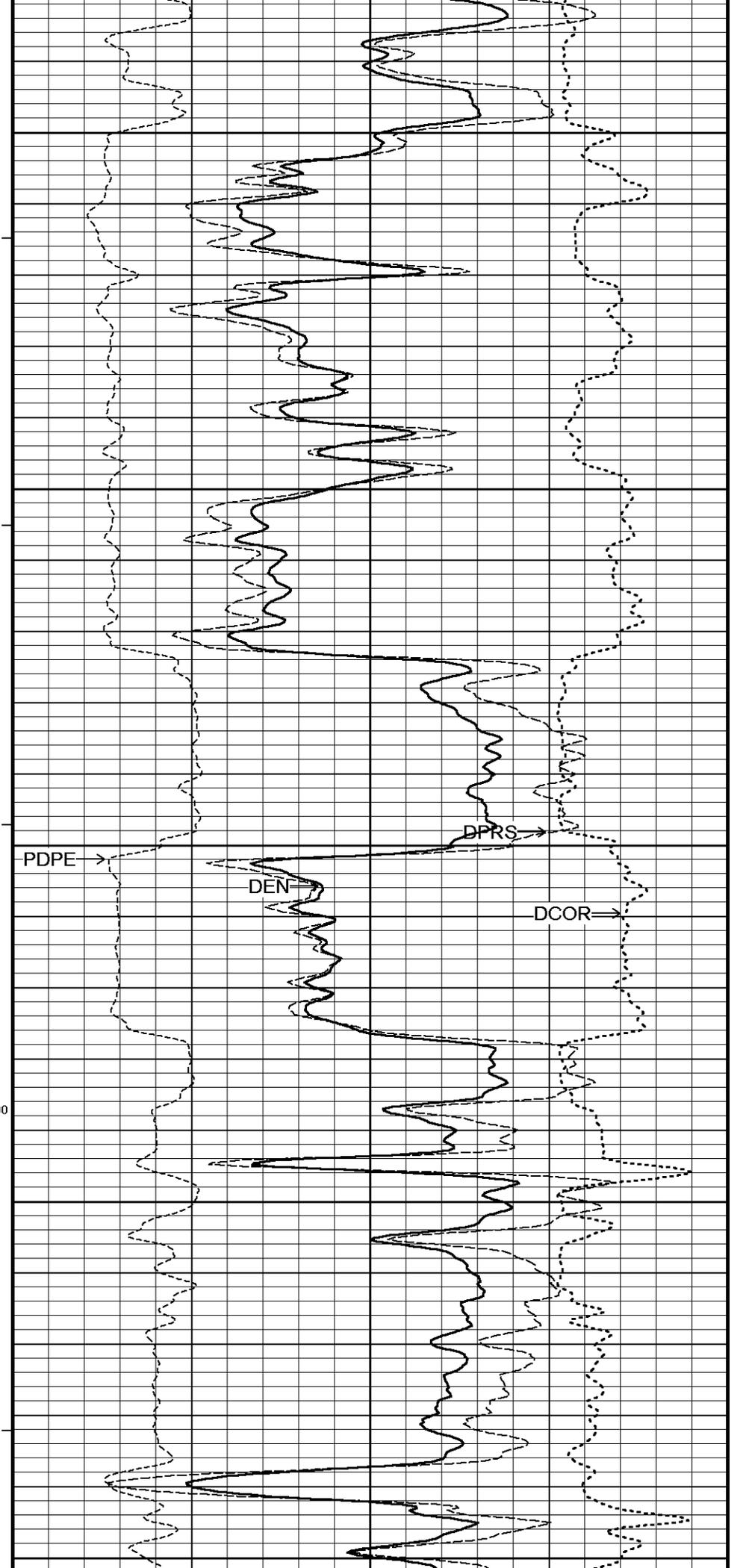
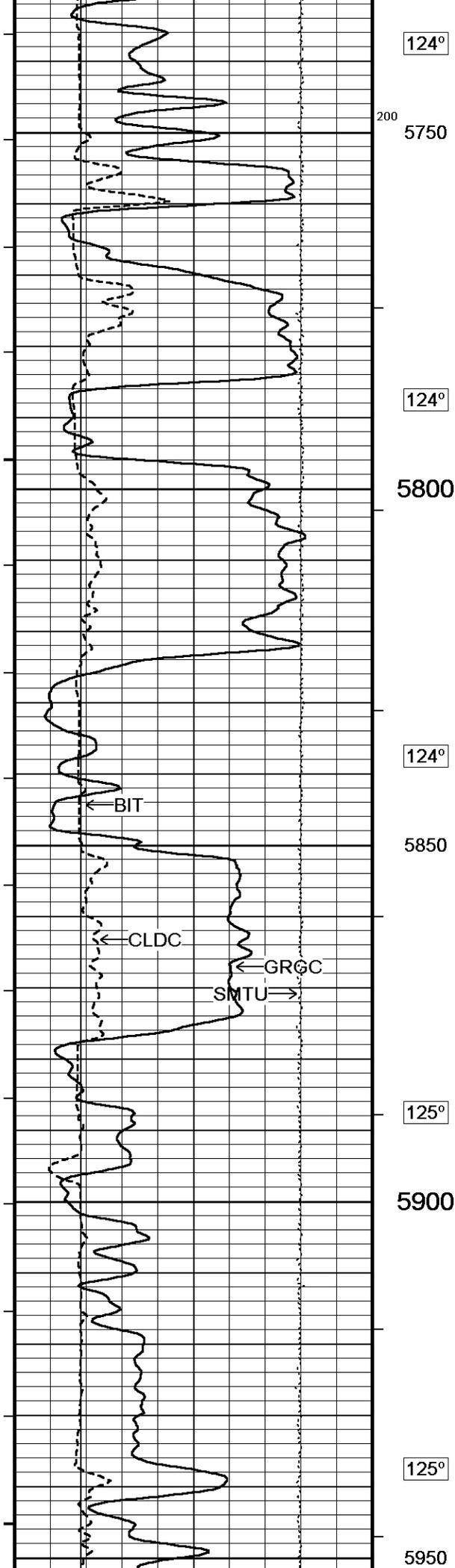


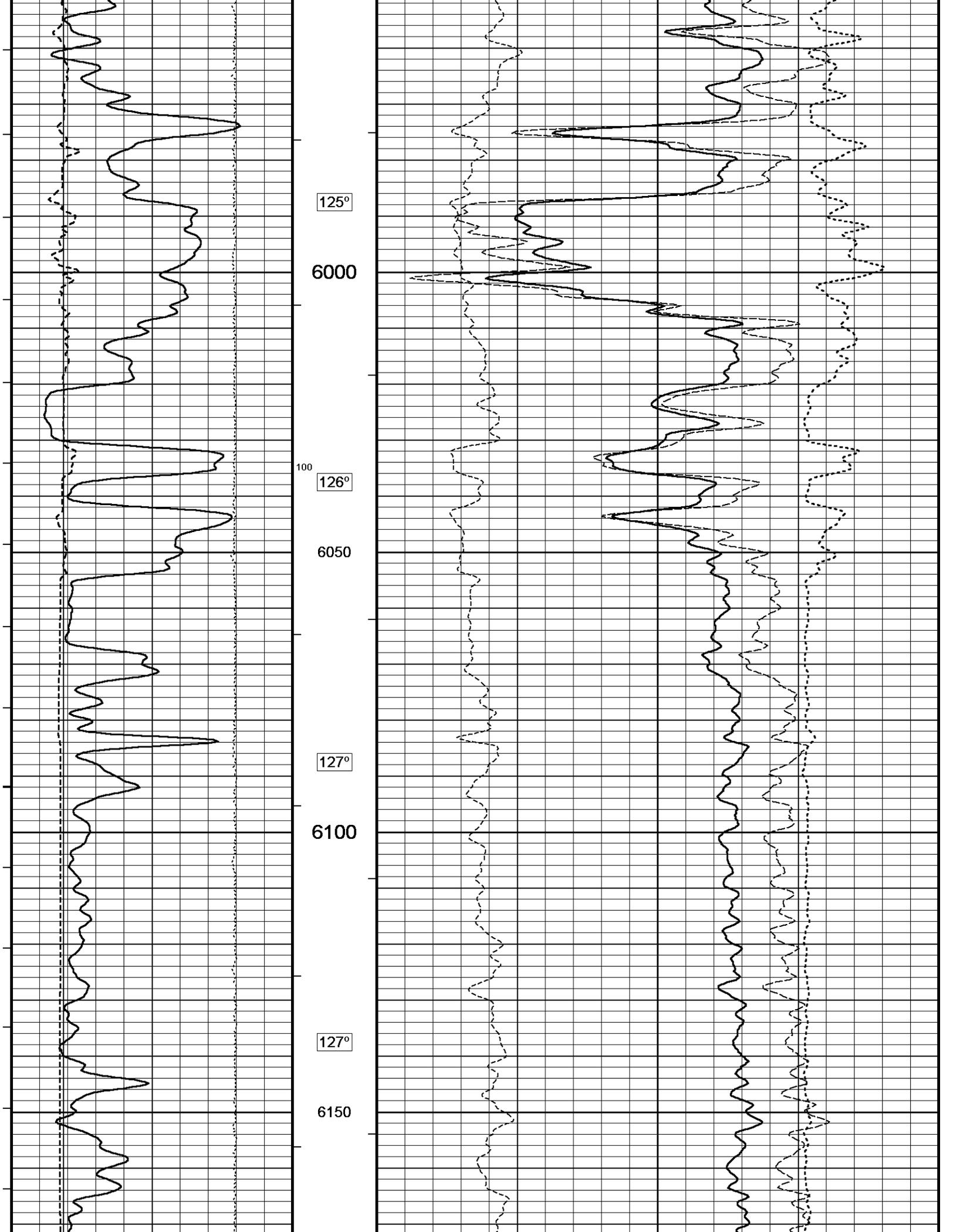
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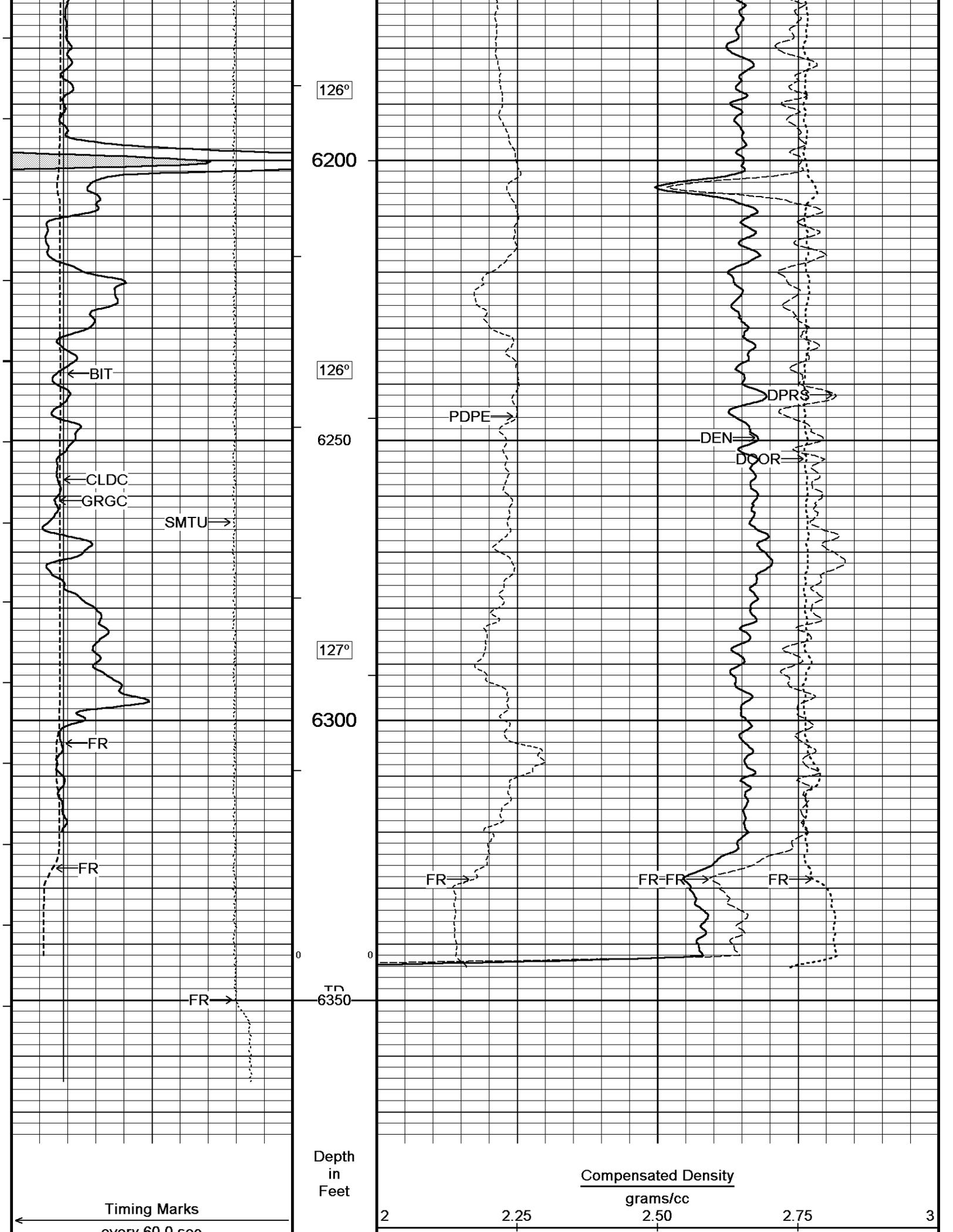
↑ 5 INCH MAIN BULK DENSITY LIMESTONE ↑

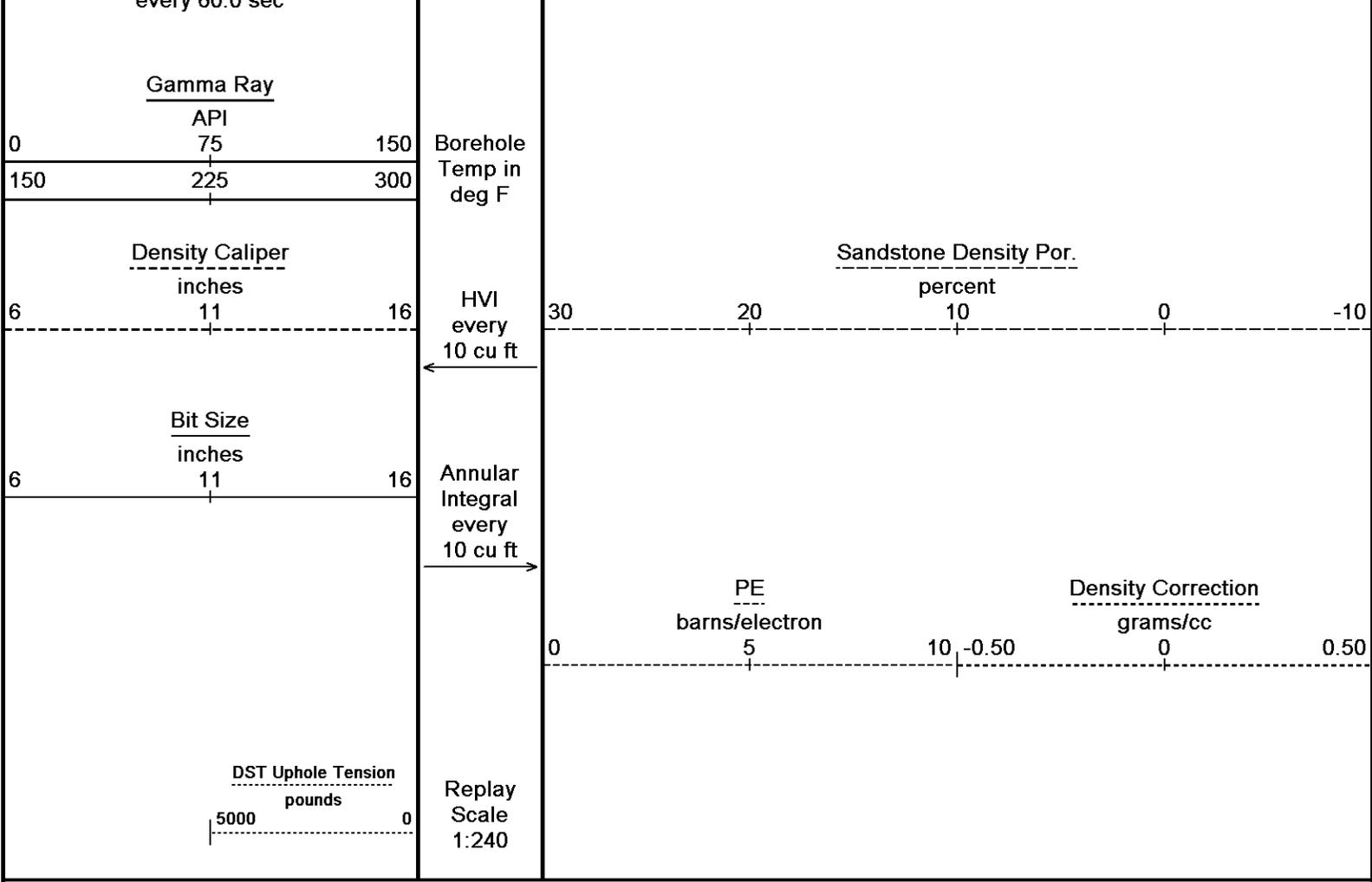
↓ REPEAT SECTION BULK DENSITY SANDSTONE ↓









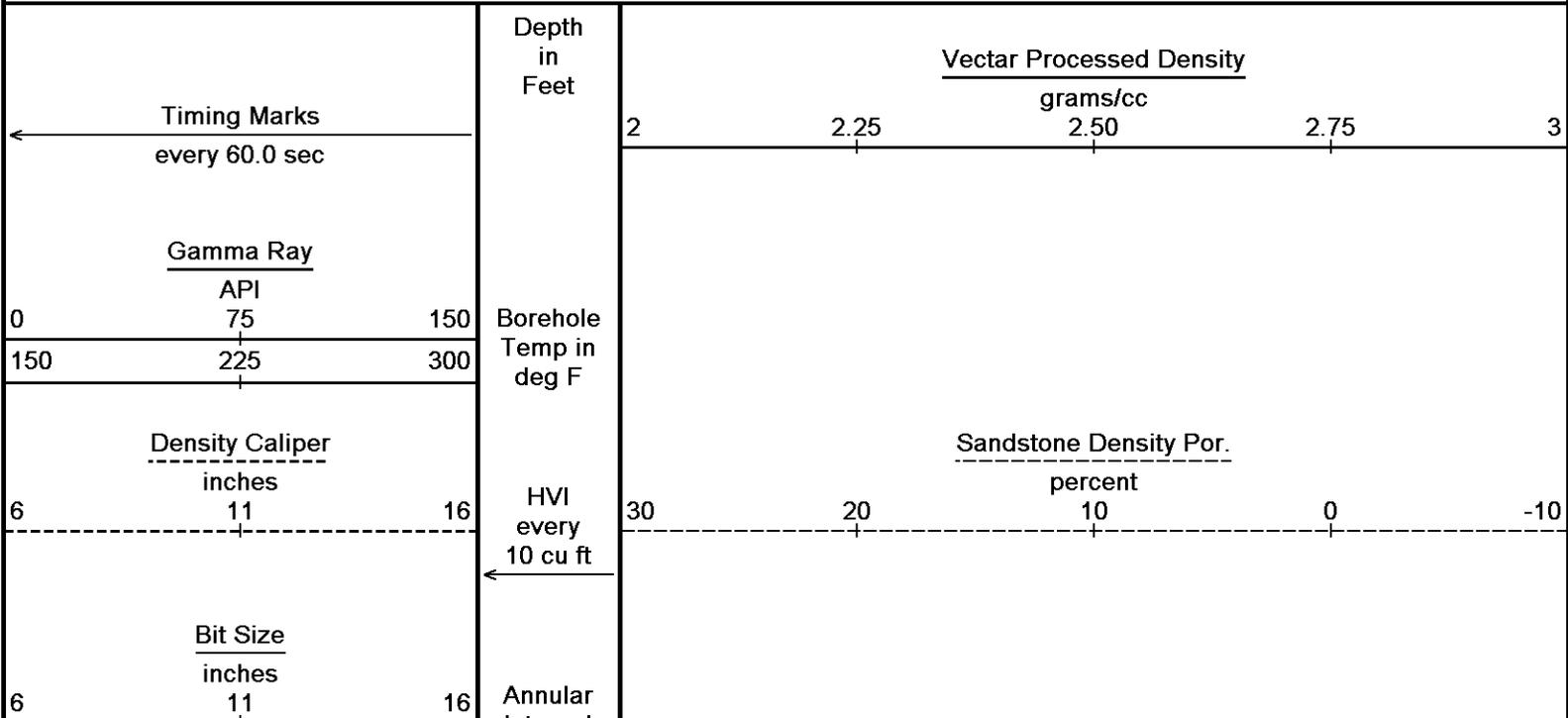


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 18-APR-2018 23:12  
 Filename: C:\Minimus 18.01.5248\Data\O'Brien Preedy #2-8\O'Brien Preedy #2-8\_002.dta  
 Recorded on 18-APR-2018 18:57  
 System Versions: Logged with 18.01.5248 Processed with 18.01.5248 Plotted with 18.01.5248

↑ REPEAT SECTION BULK DENSITY SANDSTONE ↑

↓ 10 INCH HIGH RESOLUTION BULK DENSITY SANDSTONE ↓

Depth Based Data - Maximum Sampling Increment 2.5cm  
 Plotted on 18-APR-2018 23:12  
 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



Integral  
every  
10 cu ft

PE  
barns/electron

Density Correction  
grams/cc

0 5 10 -0.50 0 0.50

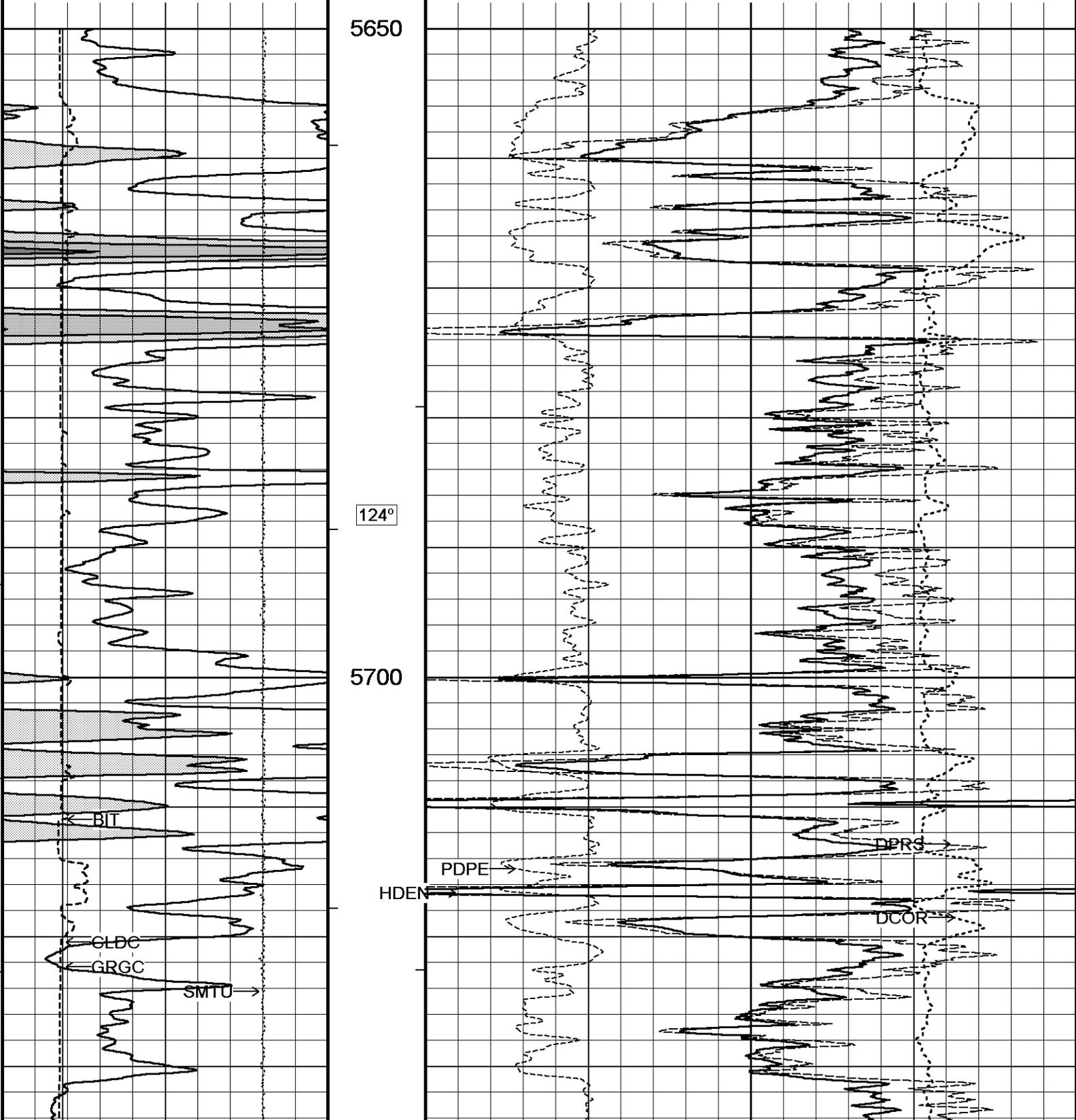
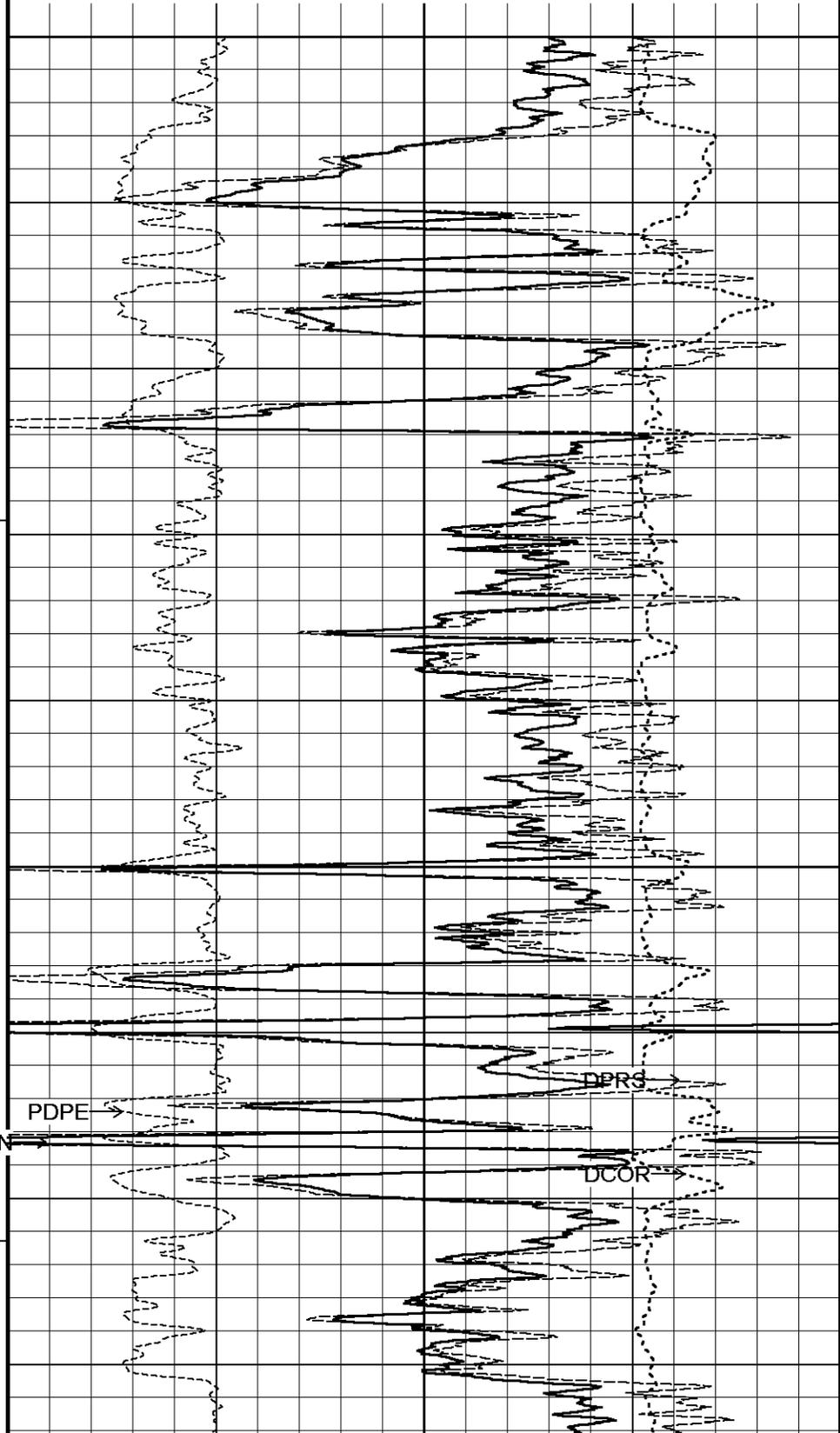
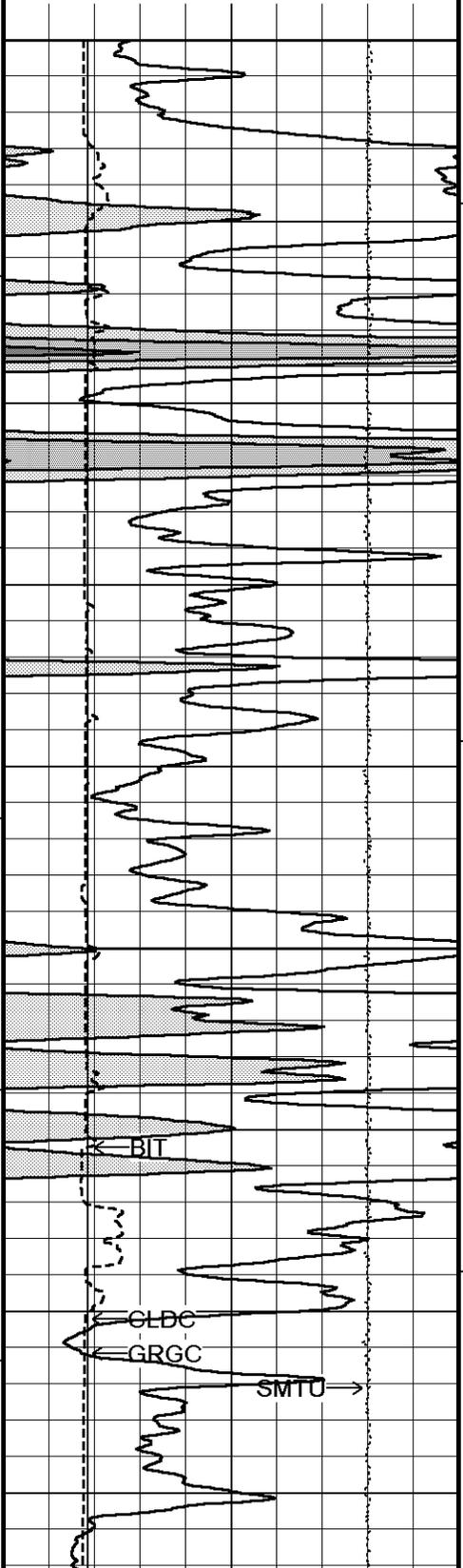
DST Uphole Tension  
pounds

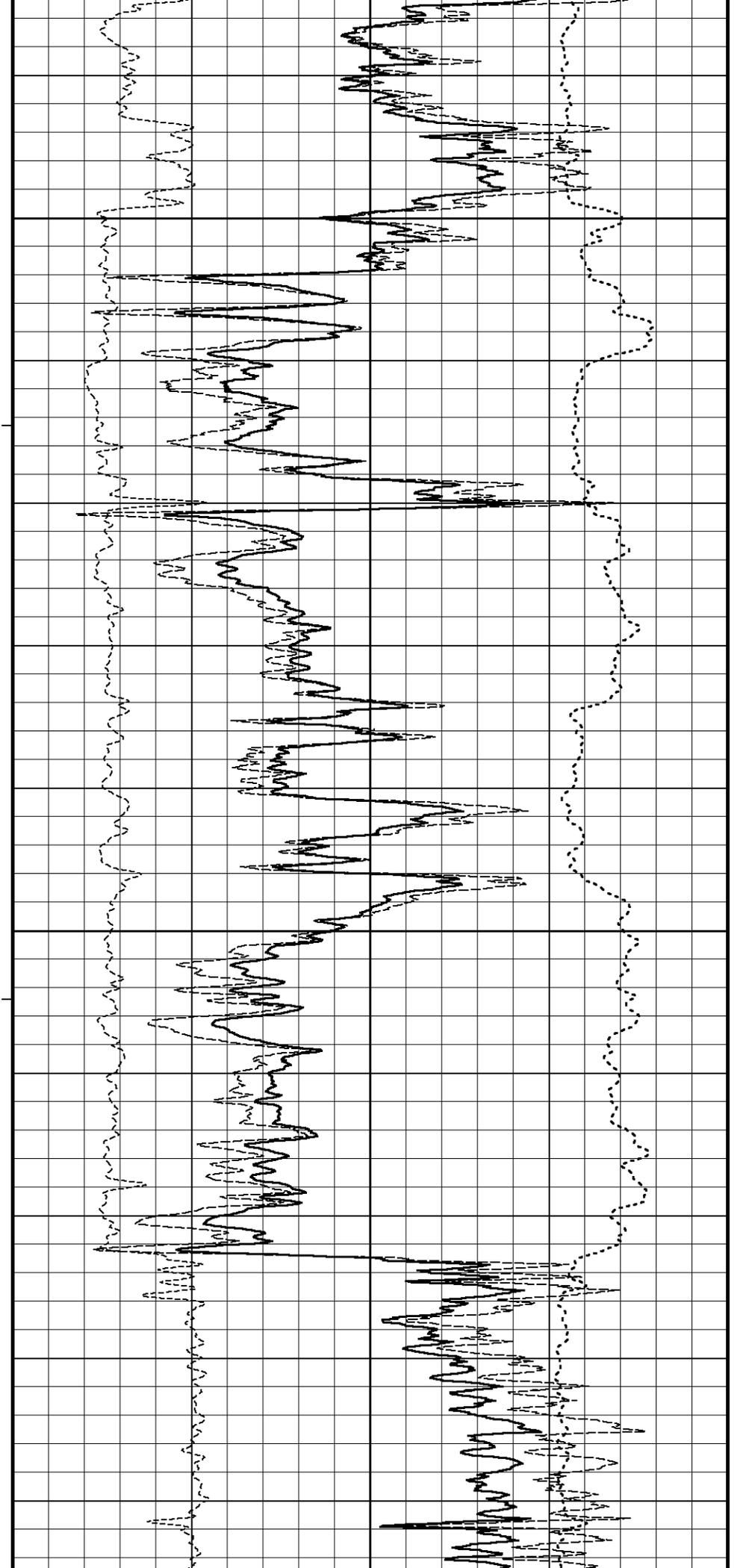
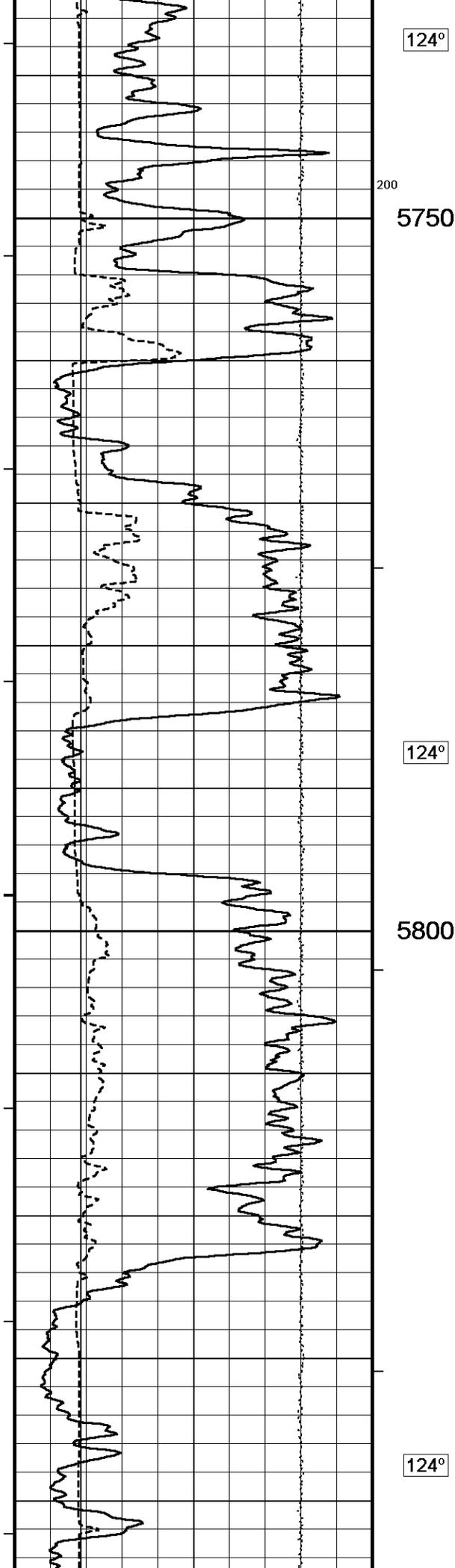
Replay  
Scale  
1:120

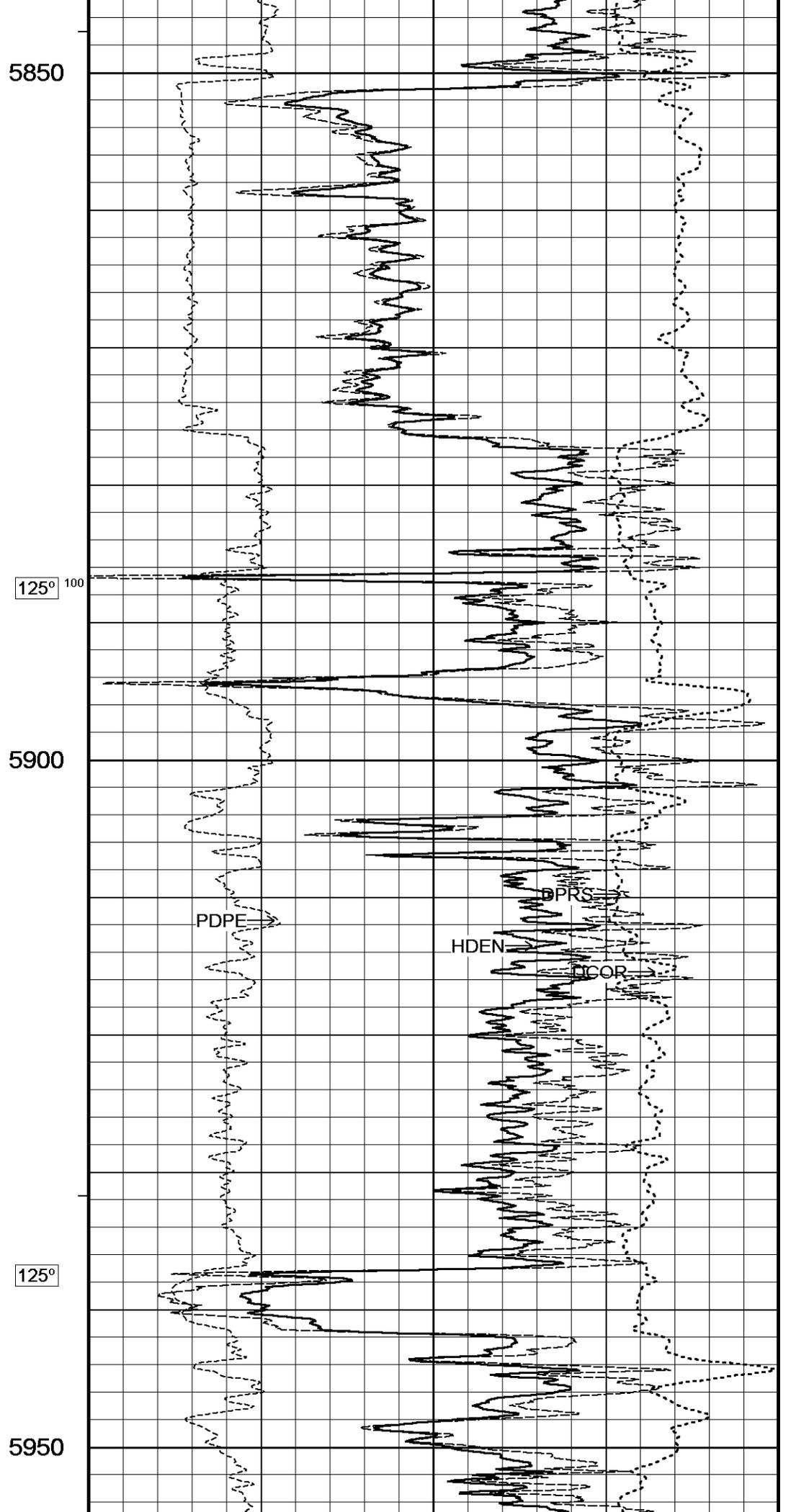
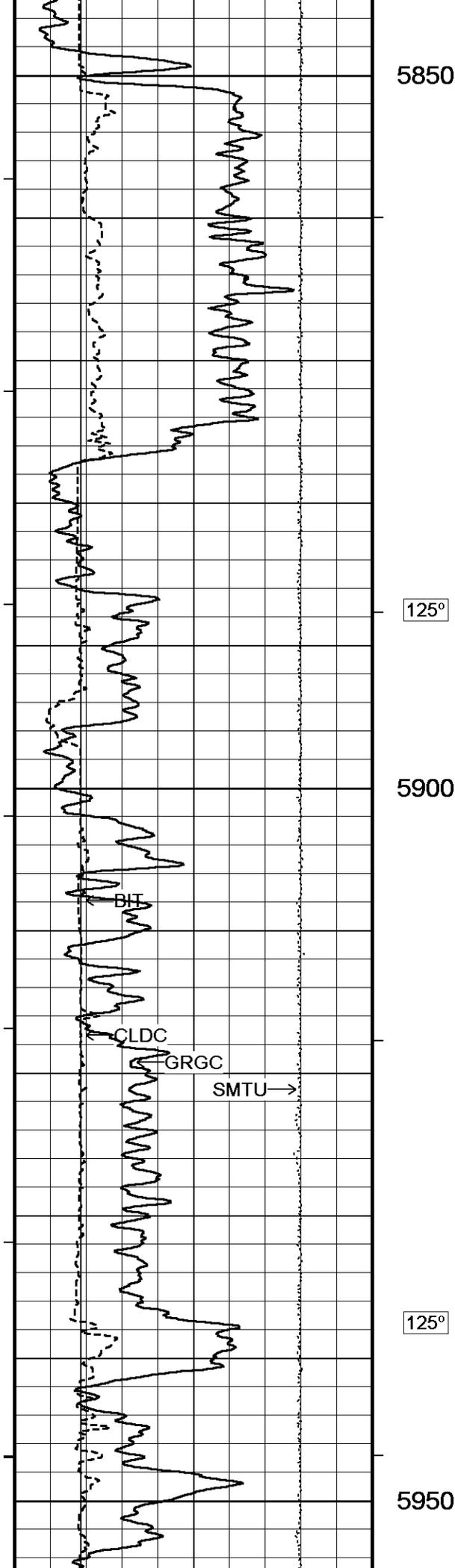
5650

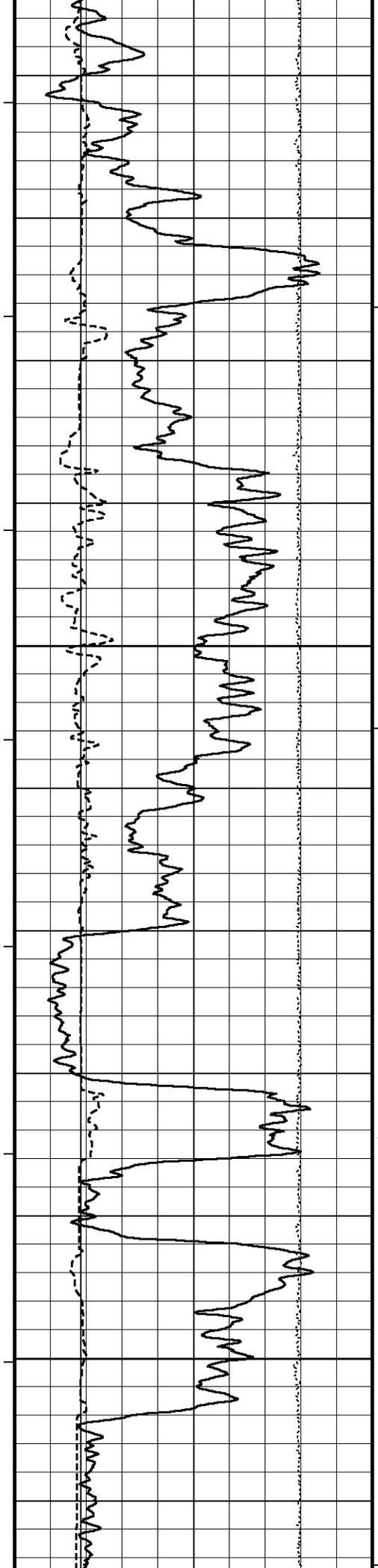
5700

124°

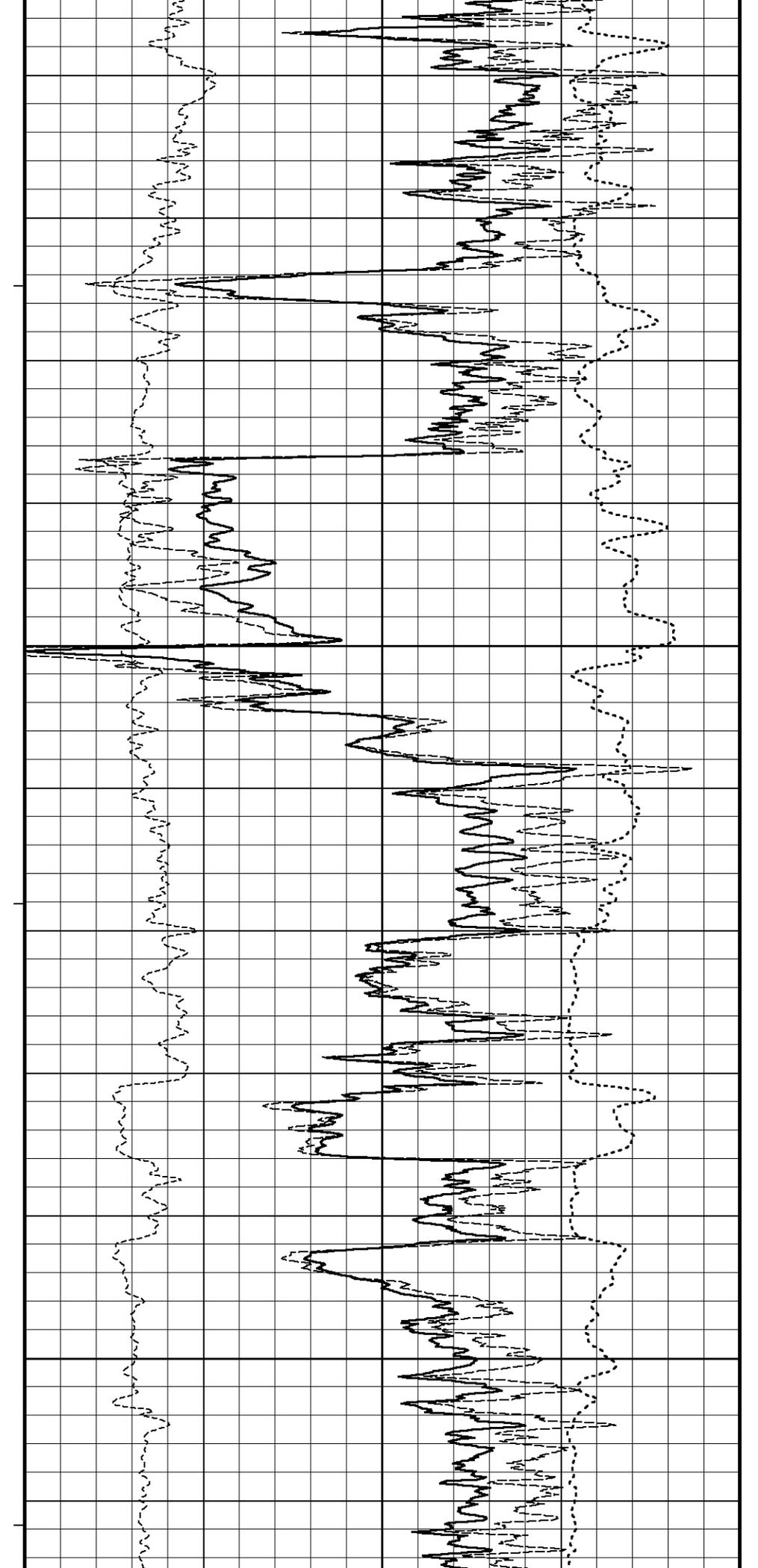


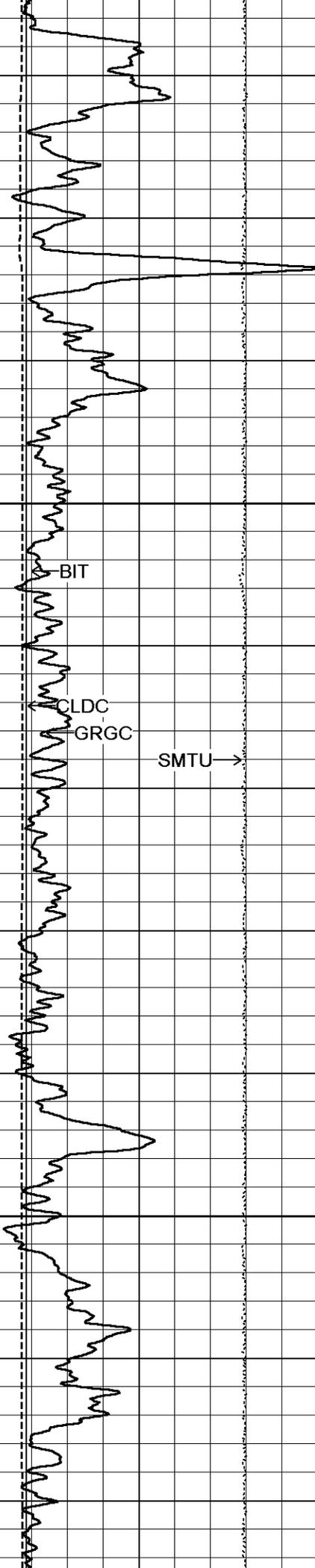






125°  
6000  
100  
6050



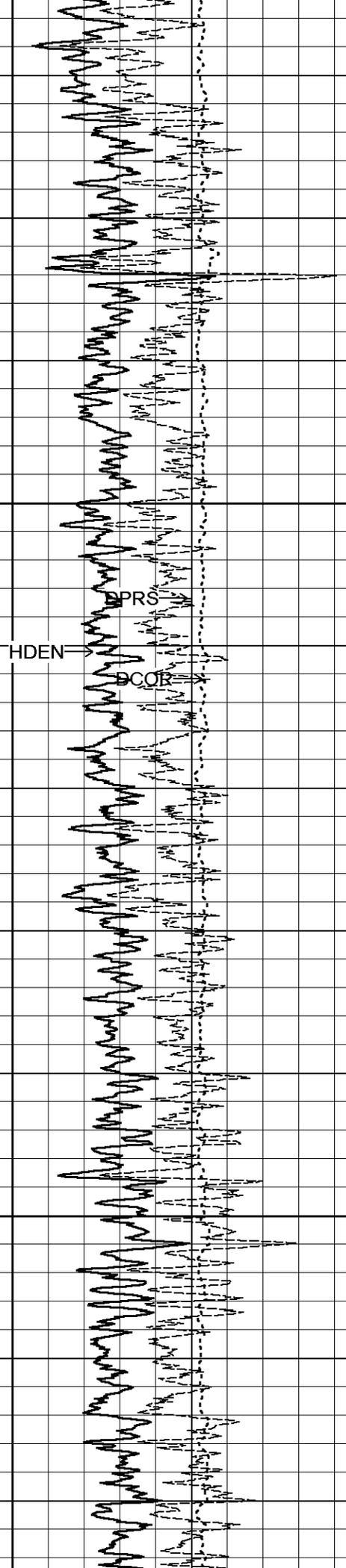
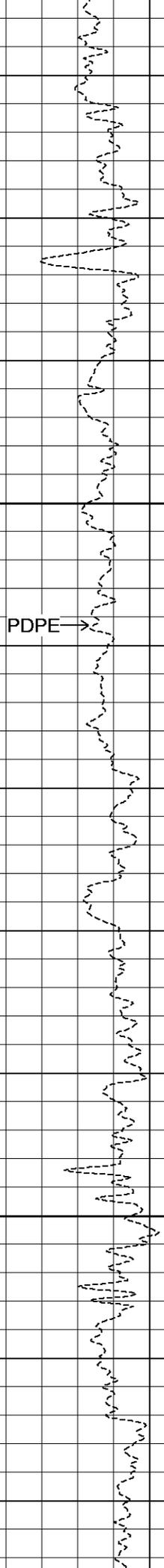


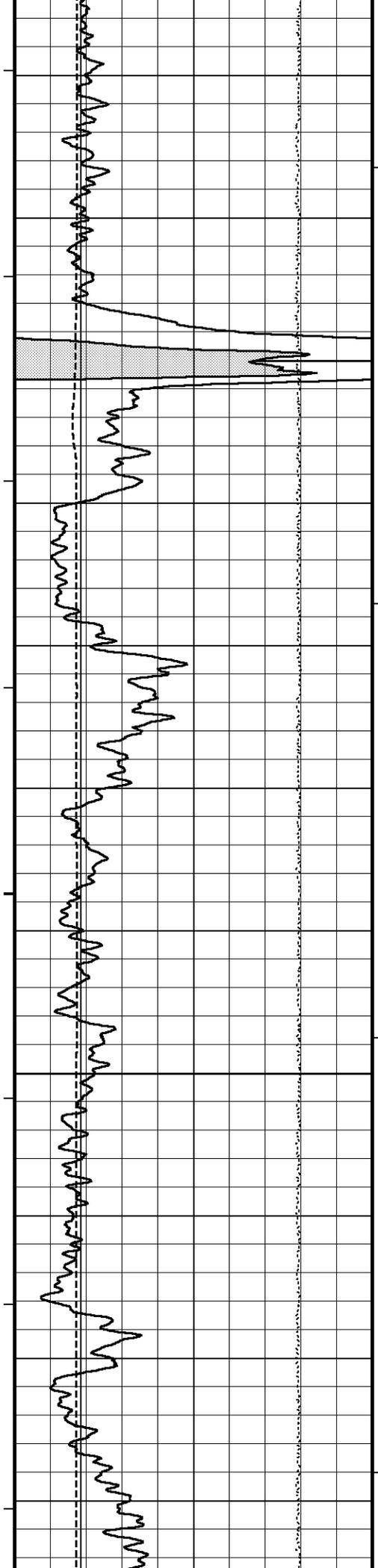
127°

6100

127°

6150



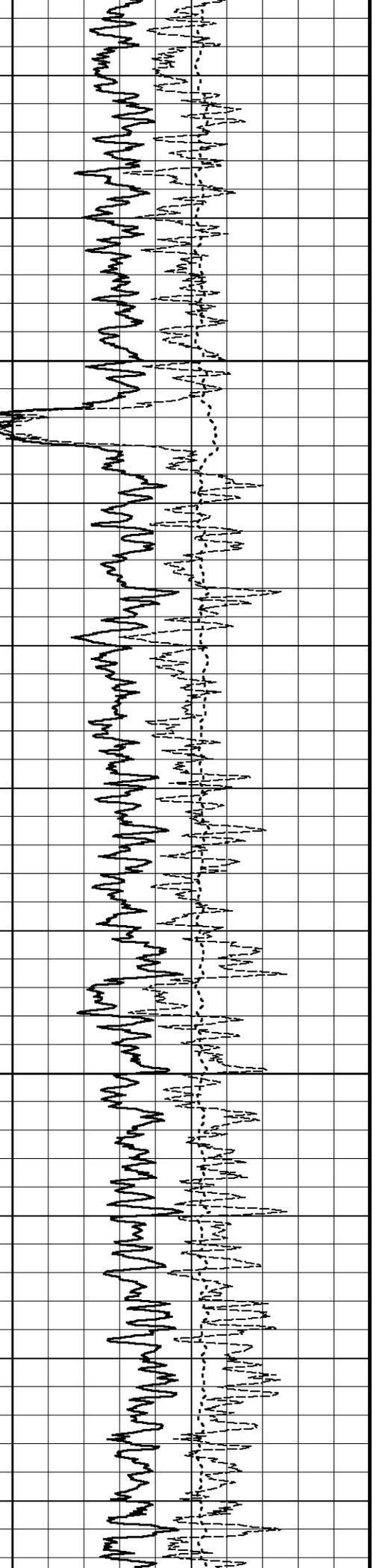
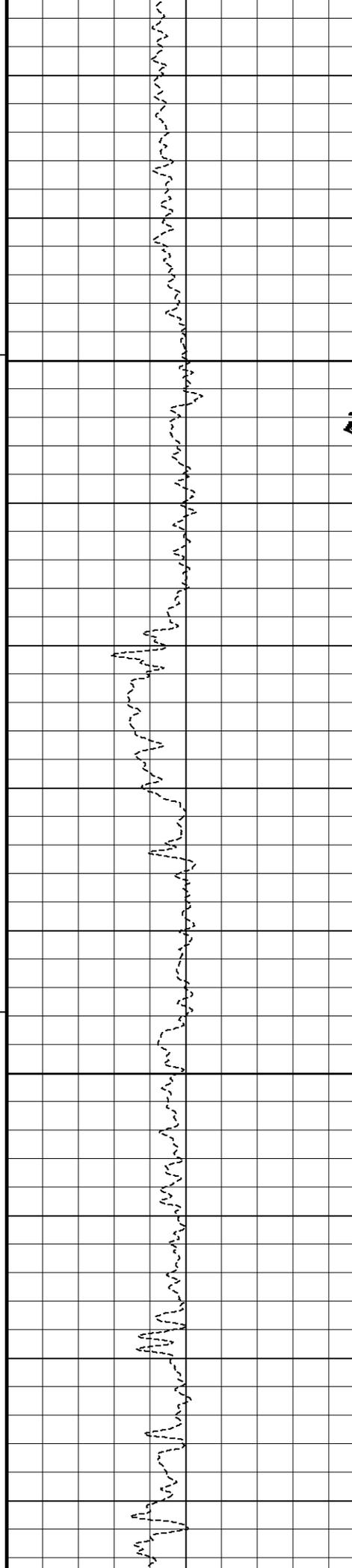


126°

6200

127°

6250



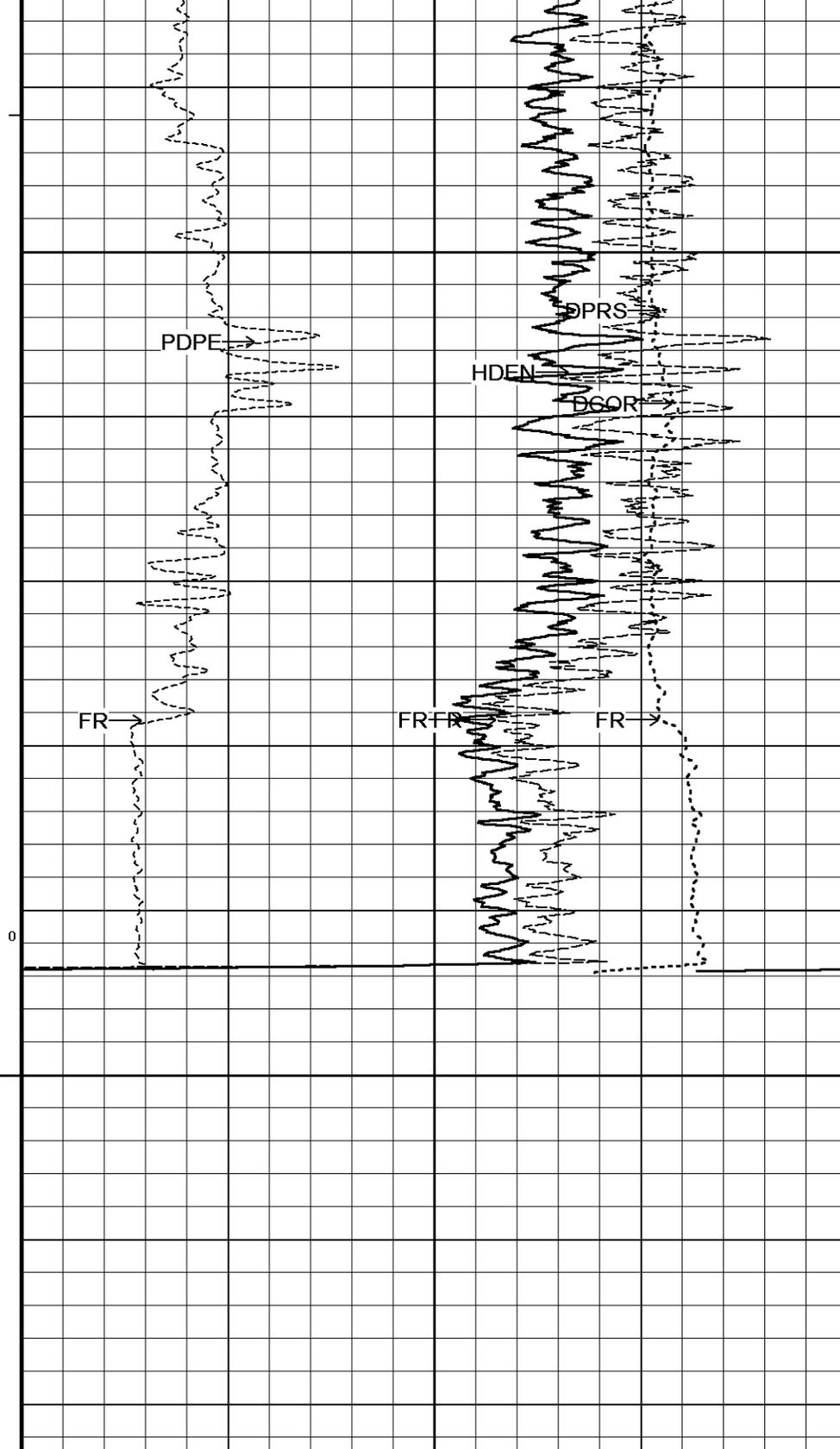
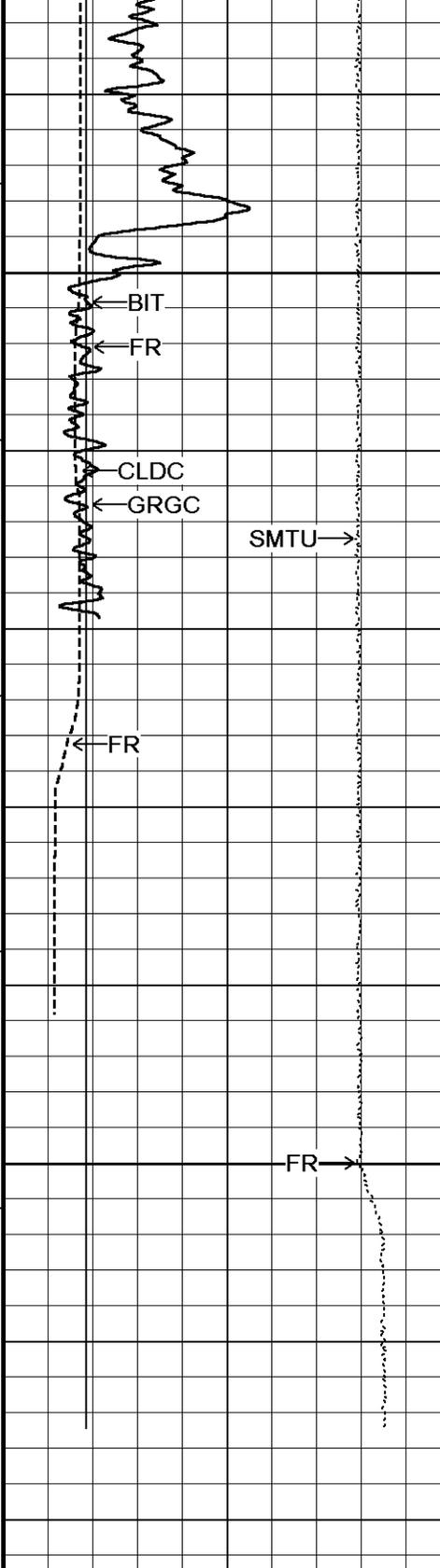
127°

6300

TD  
6350

Depth  
in  
Feet

Borehole  
Temp in  
deg F



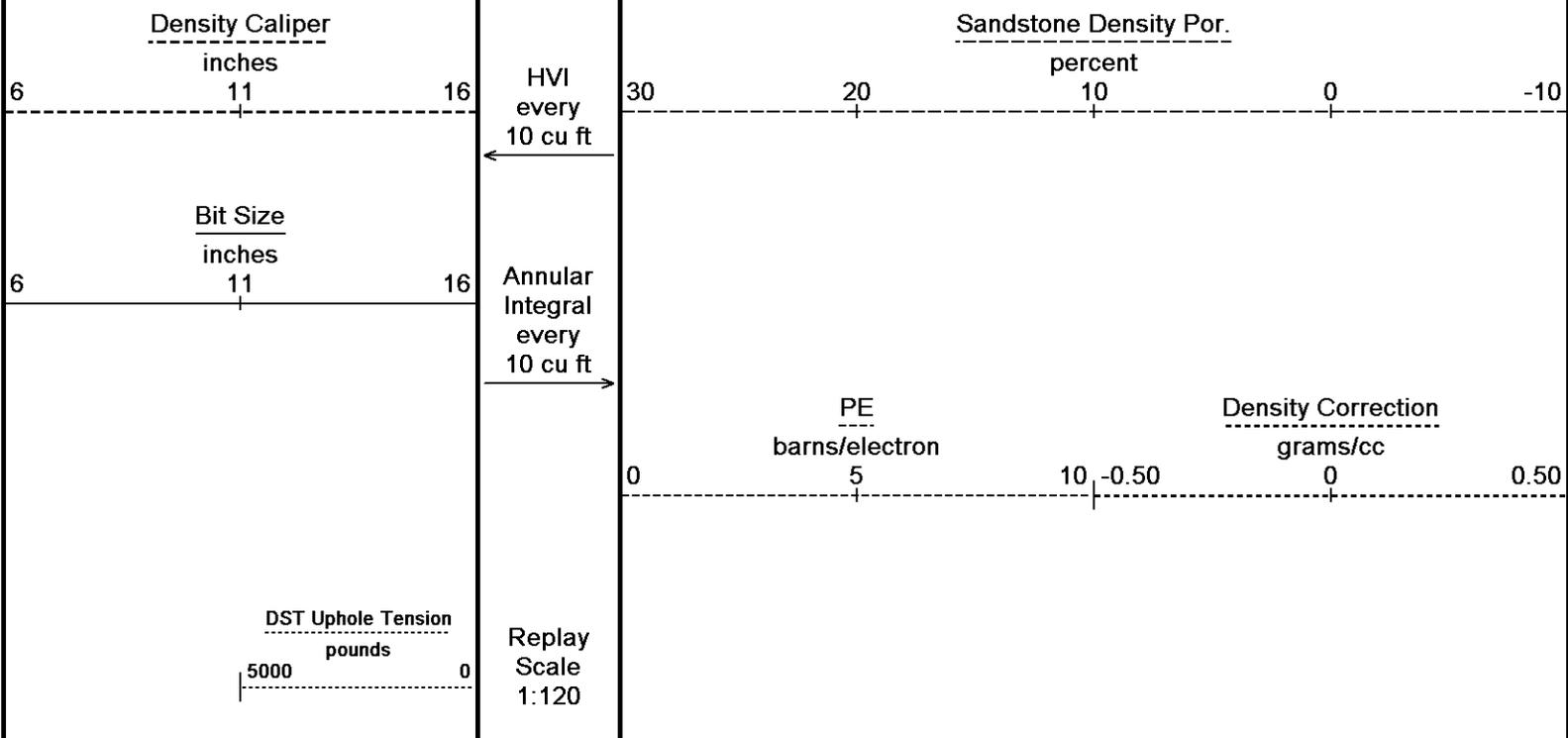
Timing Marks  
every 60.0 sec

Gamma Ray

0	API	150
	75	
150	225	300

Vector Processed Density  
grams/cc

2      2.25      2.50      2.75      3



Depth Based Data - Maximum Sampling Increment 2.5cm Plotted on 18-APR-2018 23:12  
 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 BULK DENSITY SANDSTONE ↑**

**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

<b>General Parameters</b>		
Mud Resistivity	0.960	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
<b>Hole/Annular Volume and Differential Caliper Parameters</b>		
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	
<b>Rwa Parameters</b>		
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	

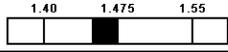
**Down-hole Tension Calibration SMS 0** Field Calibration on 18-APR-2018 17:48

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 Calibration Tolerances MCG-D.J 422**

Ratio 1.449  Counts/API

**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

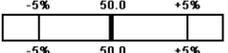
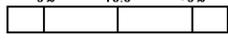
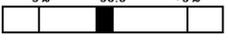
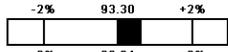
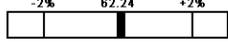
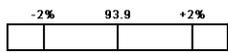
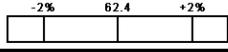
Pre-filter Length 11

**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)
Base Calibration	10.0	50.0
	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

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

Short Arm Field Cal. 8.00  in

Micro-Resistivity Caliper Constants MMR-B.A 91

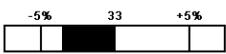
Sonde Configuration Resistivity Mode

Neutron Calibration MDN-B.A 292

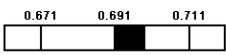
Base Calibration on 26-MAR-2018 16:14  
Field Check on 18-APR-2018 15:07

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

Ratio 31.819 

Base Check 0.691 

Field Check 0.700 

Neutron Constants MDN-B.A 292

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

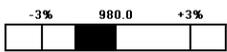
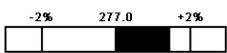
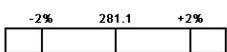
Neutron Source Id	P0204NN	
Neutron Jig Number	NJ5736	
Air Hole Processing	Modified Ratio	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure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

Reference 2	963.3		ohm
Base Check	281.1		ohm-m
Field Check	281.1		ohm-m

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
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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

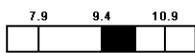
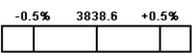
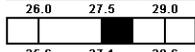
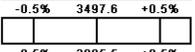
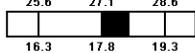
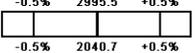
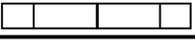
High Conductivity Reference Resistor	3.3	ohm
Low Conductivity Reference Resistor	333.3	ohm

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)		Array Temperature	Deg F
	Low	High	Low	High		
1 (near)	9.4	3838.6	10.2	3839.1		
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			

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		

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

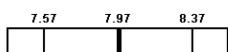
Long Arm Field Cal. 7.99  in

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
Background	185	910
Reference 1	20854	49032
Reference 2	5685	19414

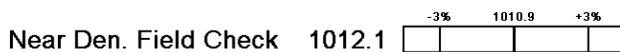
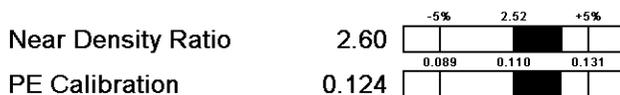
Field Check at Base

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	

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



45.66 ft GRGC - MCG Gamma Ray

42.76 ft CGXT - MCG External Temperature

Compact Micro Resistivity

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

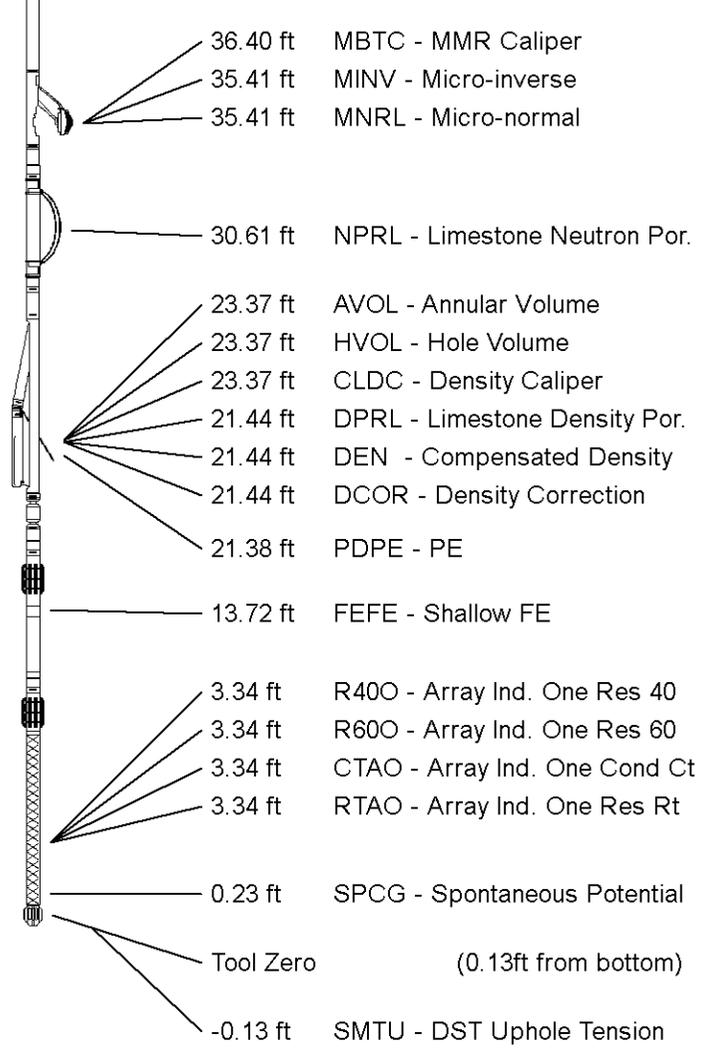
Compact Density/Caliper  
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.913 in

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.

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

Elevation Kelly Bushing	2670	feet	First Reading	6329.00	feet
Elevation Drill Floor	2668	feet	Depth Driller	6350.00	feet
Elevation Ground Level	2657	feet	Depth Logger	6350.00	feet



**Weatherford®**

**COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY LOG**