



**Weatherford**<sup>®</sup>

**COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY LOG**

COMPANY

O'BRIEN ENERGY RESOURCES CORP.

WELL RICKERS RANCH #8-17

FIELD ANGELL SOUTH

PROVINCE/COUNTY MEADE

COUNTRY/STATE U.S.A. / KANSAS

LOCATION 1980' FSL & 1780' FEL

SEC 17

TWP 33S

RGE 29W

Other Services  
MAI/MFE

API Number 15-119-21349

Permit Number

Permanent Datum GL, Elevation 2663 feet

Log Measured From KB

Drilling Measured From KB@12FEET

Elevations:  
KB 2675.00  
DF 2673.00  
GL 2663.00

Date 13-SEP-2013

Run Number ONE

Service Order 3541082

Depth Driller 6315.00 feet

Depth Logger 6315.00 feet

First Reading 6296.00 feet

Last Reading 3800.00 feet

Casing Driller 1475.00 feet

Casing Logger 1491.00 feet

Bit Size 7.875 inches

Hole Fluid Type CHEMICAL

Density / Viscosity 9.20 lb/USg 53.00 CP

PH / Fluid Loss 9.50 8.80 ml/30Min

Sample Source MUDDPIT

Rm @ Measured Temp 1.30 @ 93.0 ohm-m

Rmf @ Measured Temp 1.04 @ 93.0 ohm-m

Rmc @ Measured Temp 1.56 @ 93.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 0.97 @125.0 ohm-m

Time Since Circulation 5 HOURS

Max Recorded Temp 125.00 deg F

Equipment / Base 13096 LIB

Recorded By ROB HOFFMAN

Witnessed By PETER DEBENHAM

Job # LB13-258

ROGER PEARSON

**BOREHOLE RECORD**

Last Edited: 13-SEP-2013 21:17

Bit Size inches	Depth From feet	Depth To feet
7.875	1475.00	6315.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1475.00	24.00

**REMARKS**

- SOFTWARE ISSUE: WLS 13.05.9583.
- 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: 1865 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO 3800 FEET: 605 CU. FT.
- RIG: DUKE #6

RIG: DORE #0:

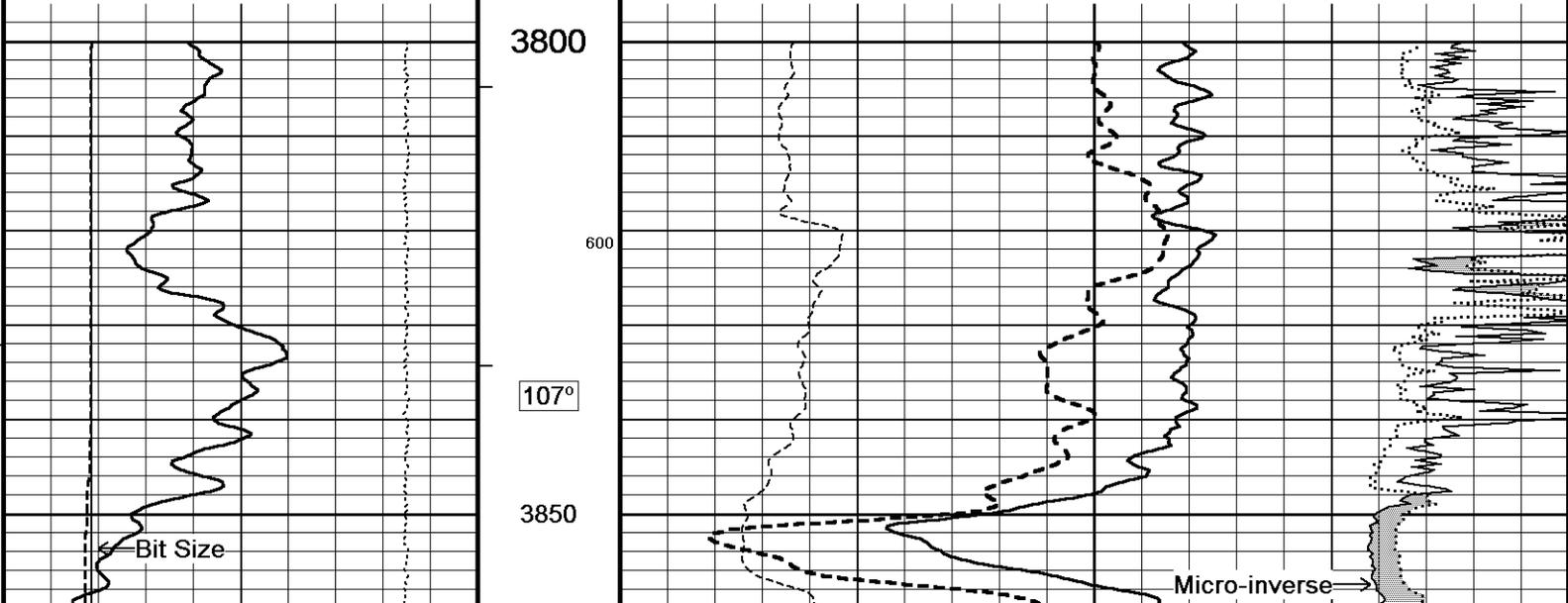
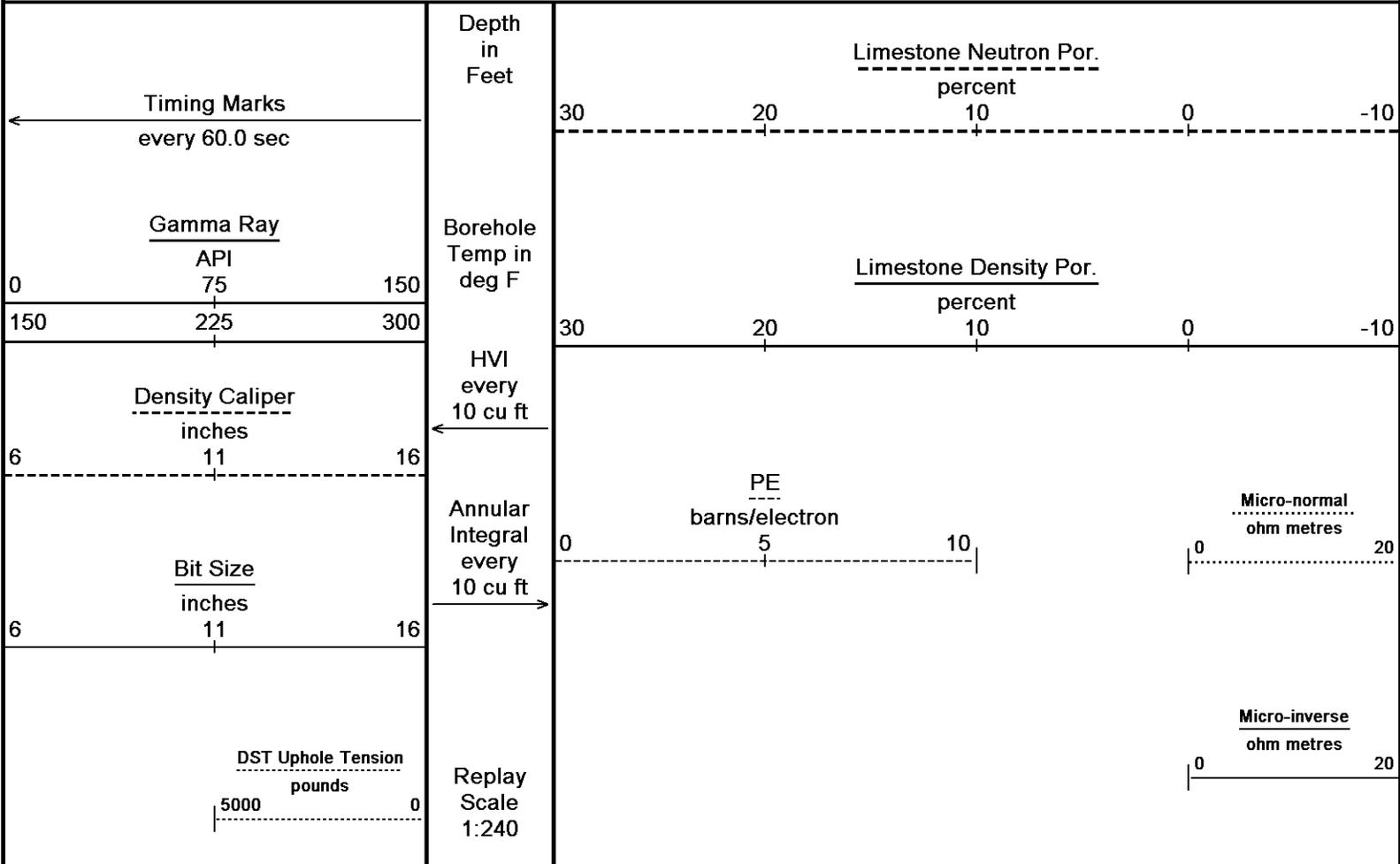
- ENGINEER: R. HOFFMAN

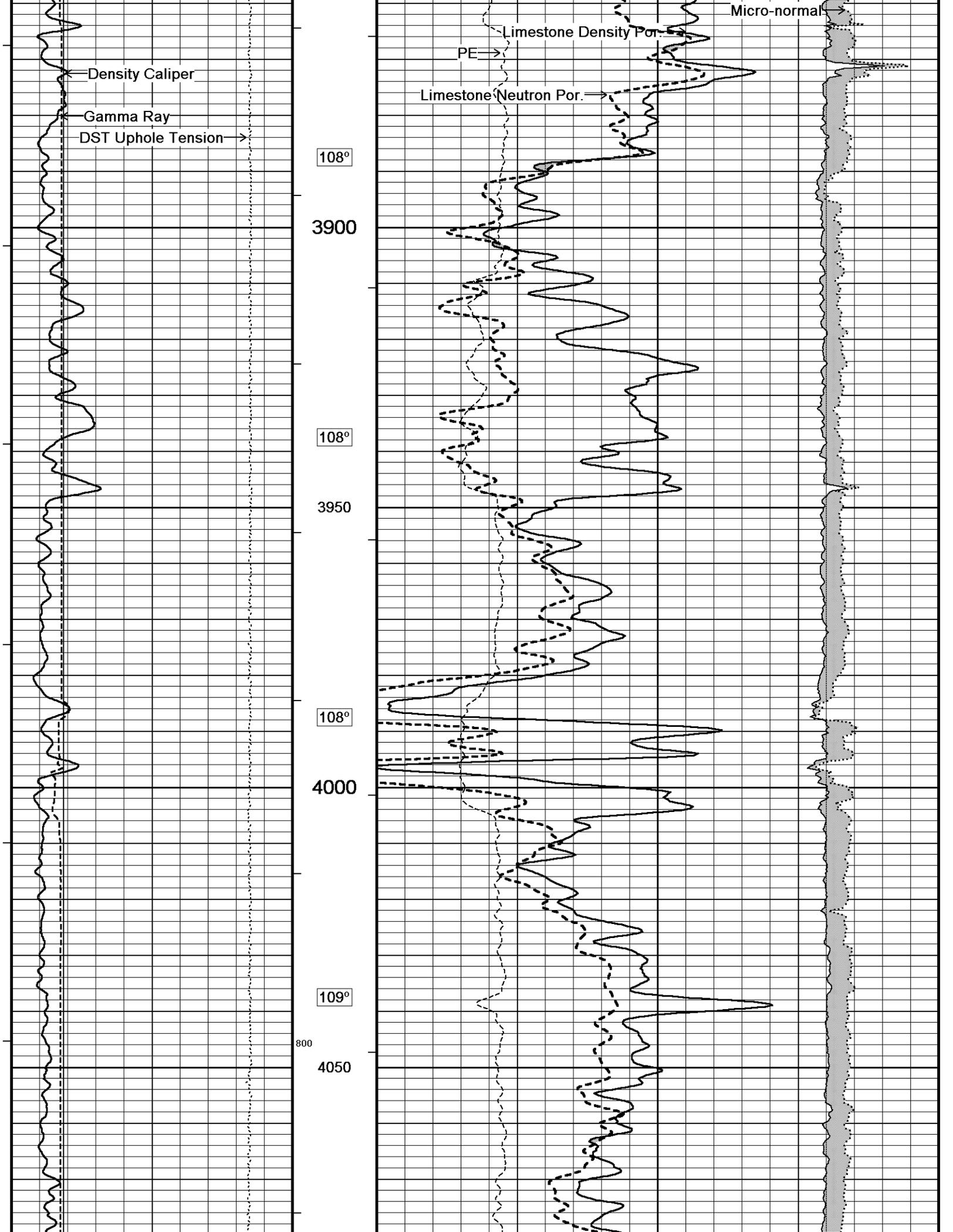
- OPERATOR(S): K. RINEHART, J. DUNLAP

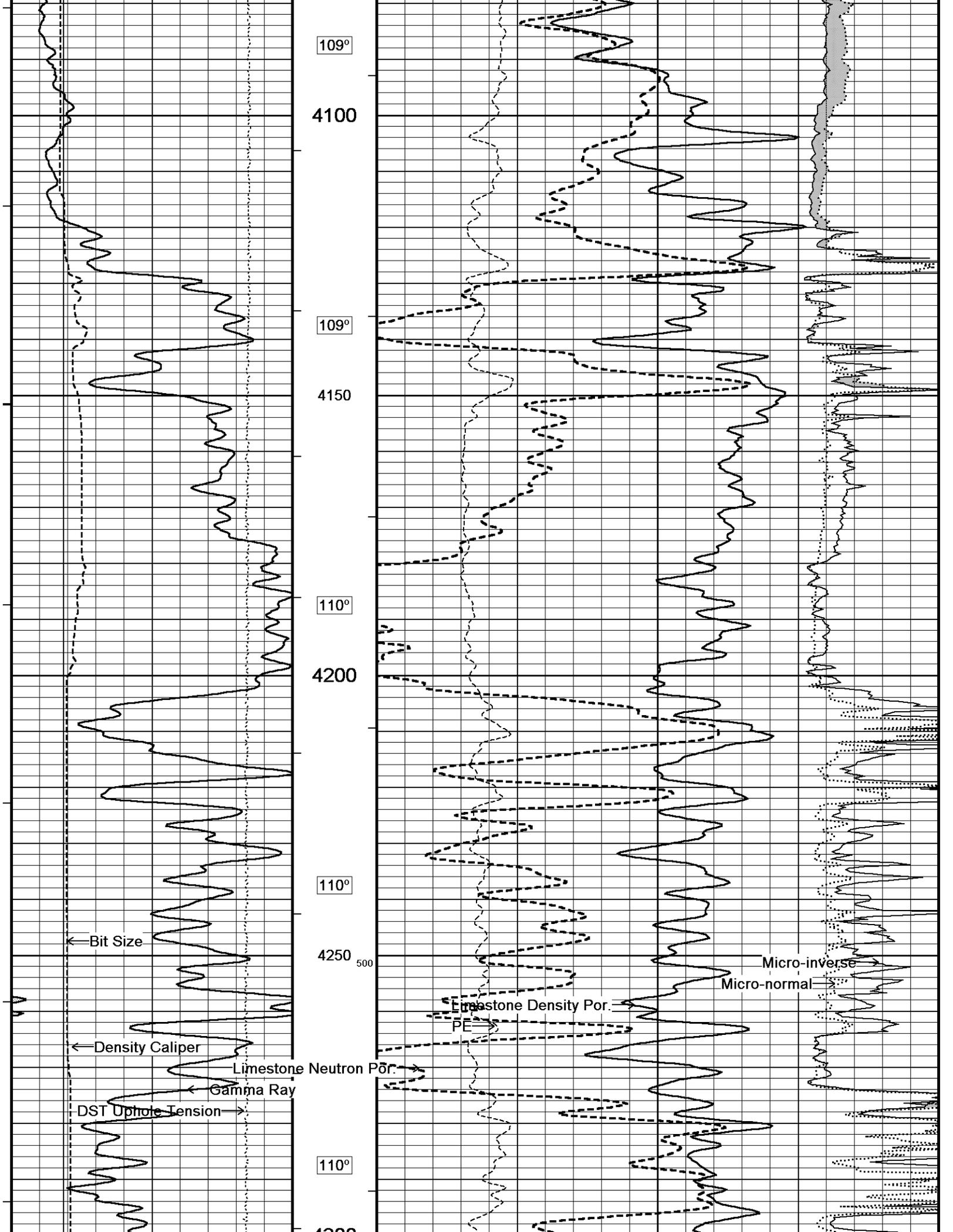
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

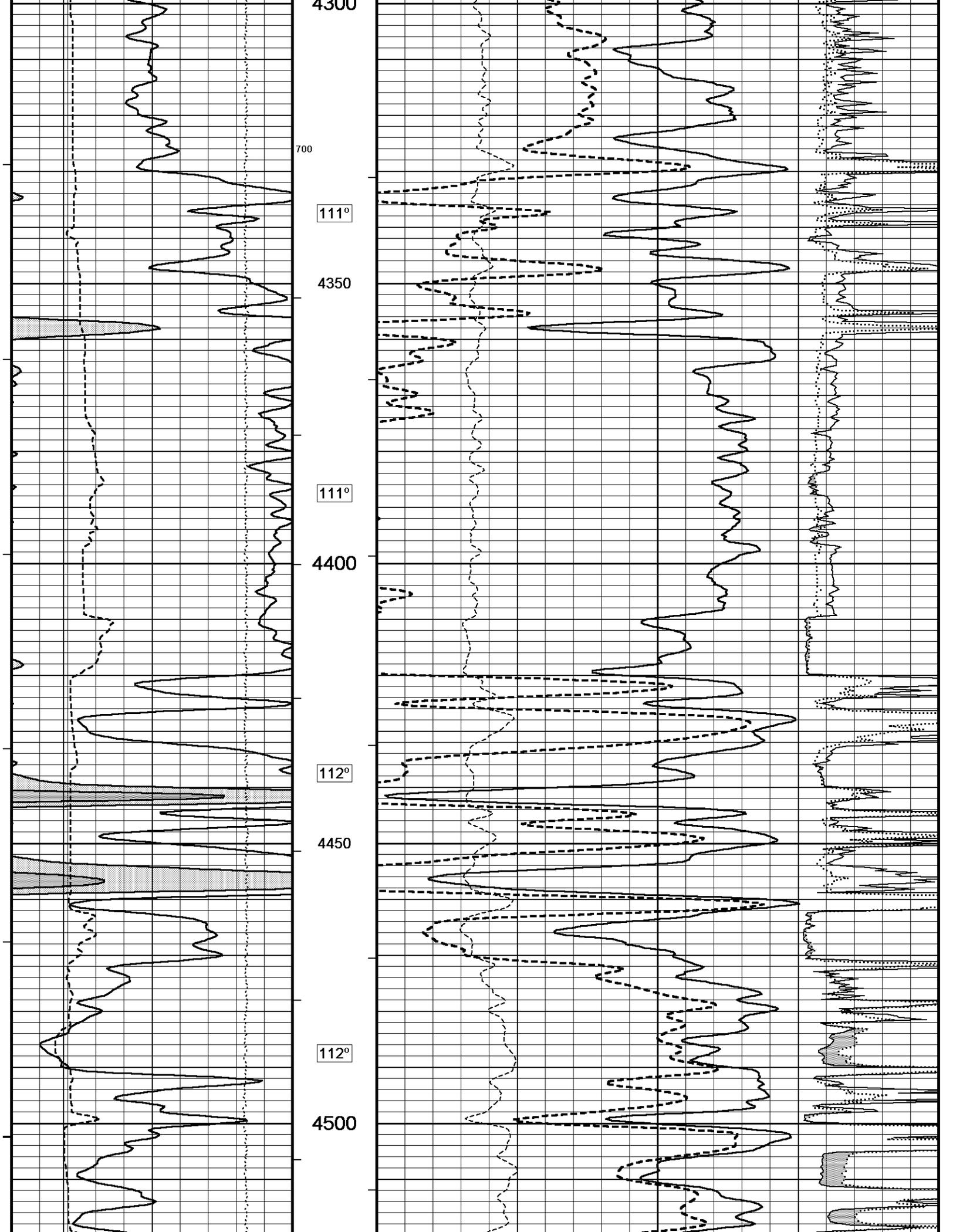
**5 INCH MAIN**

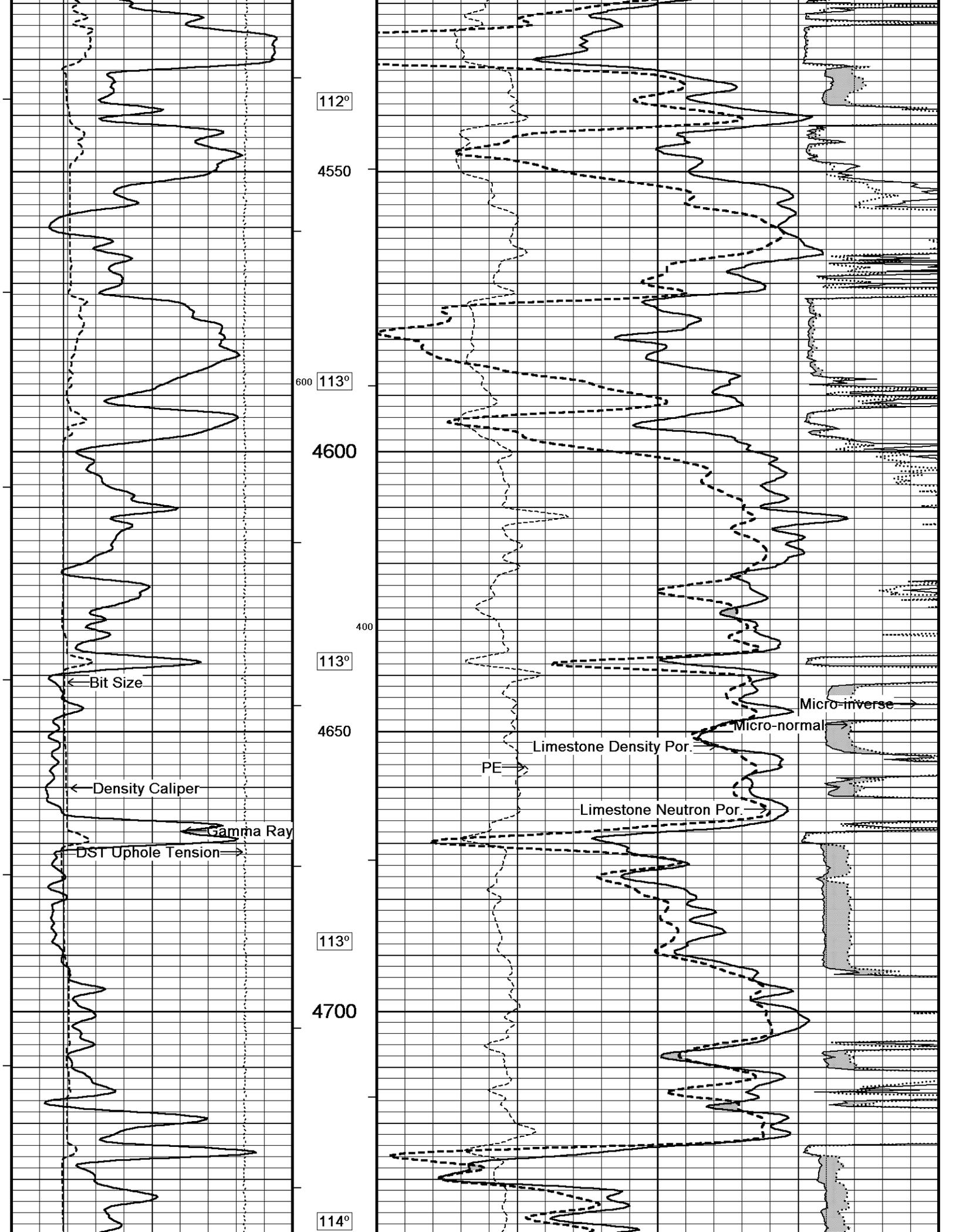
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 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

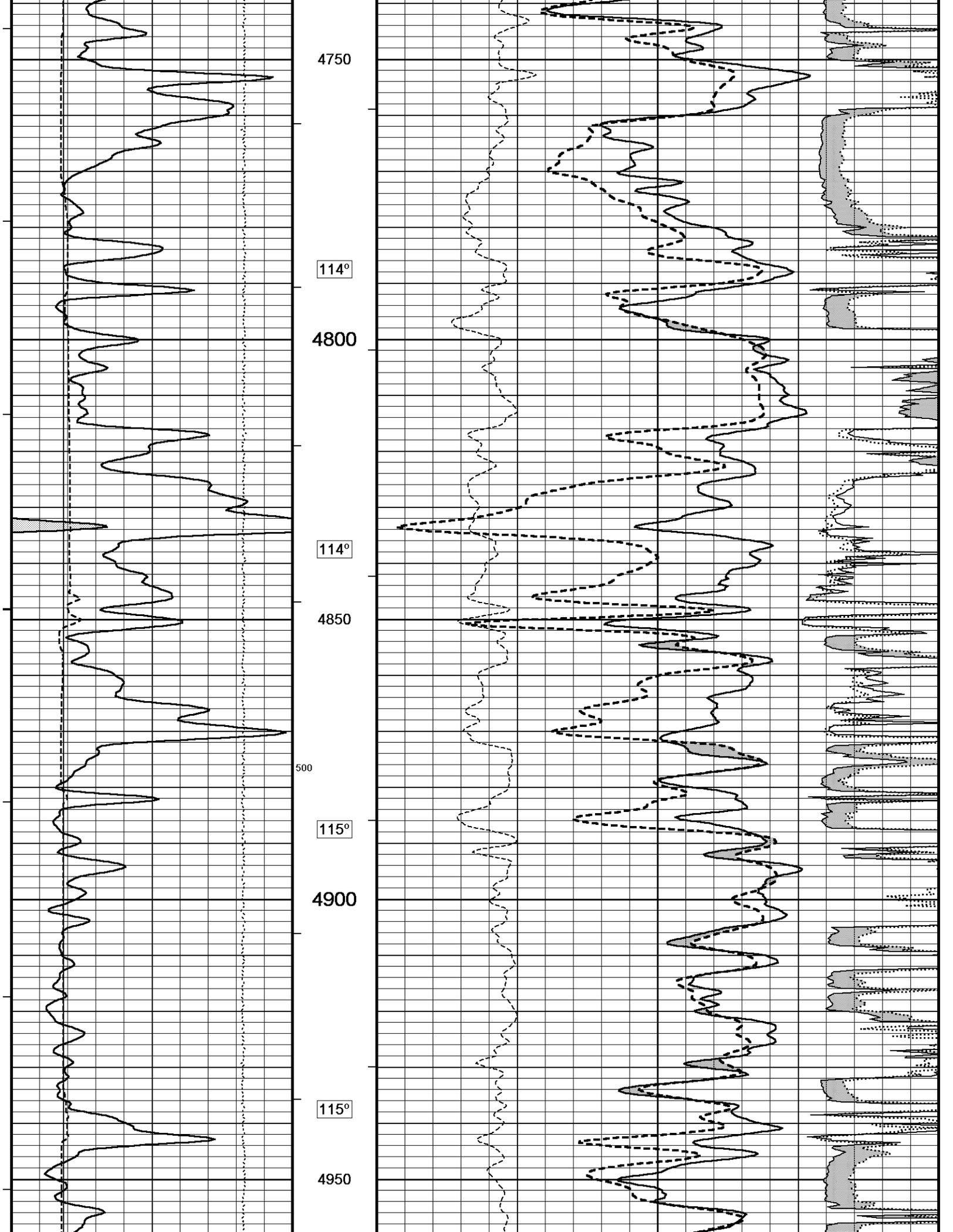


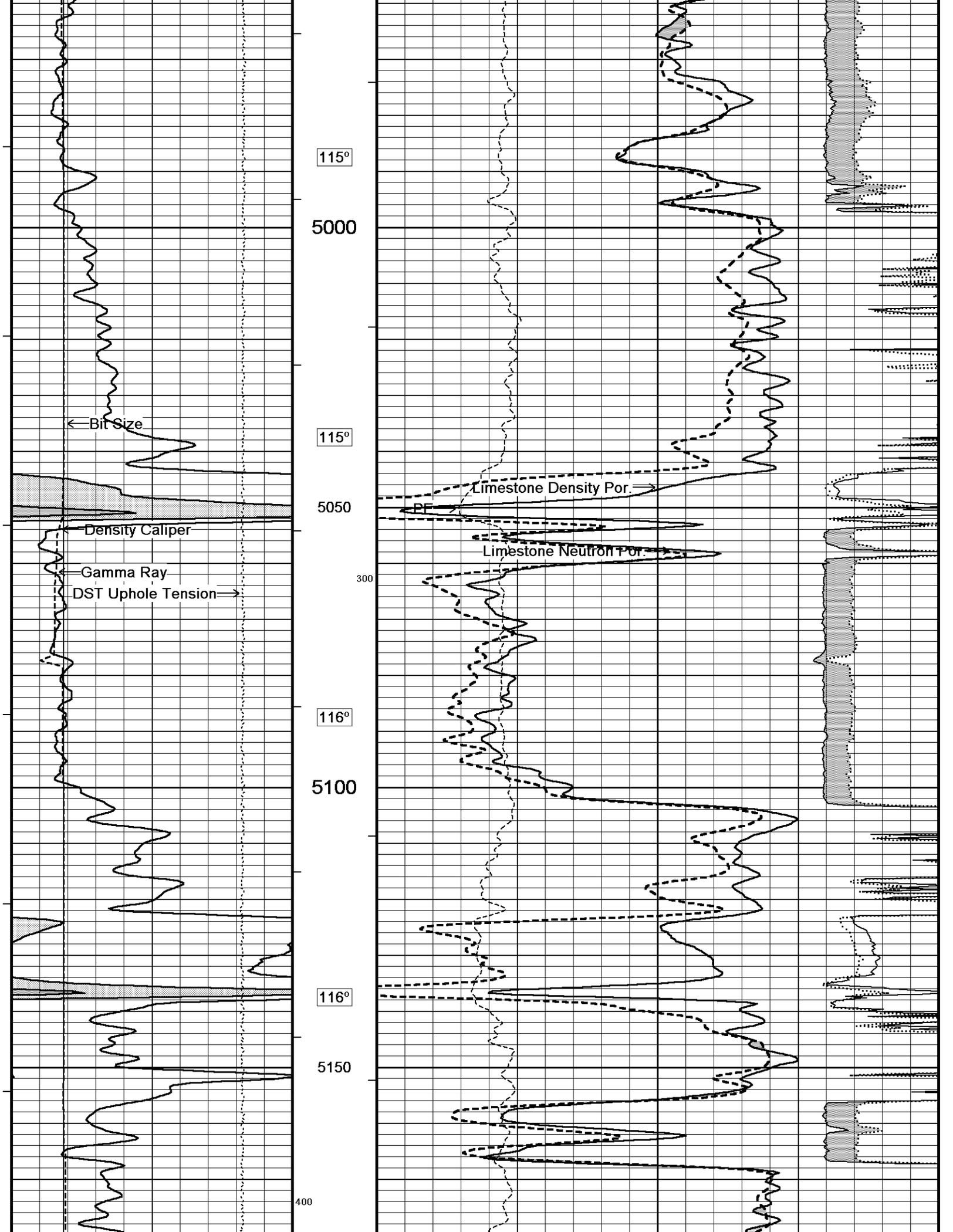


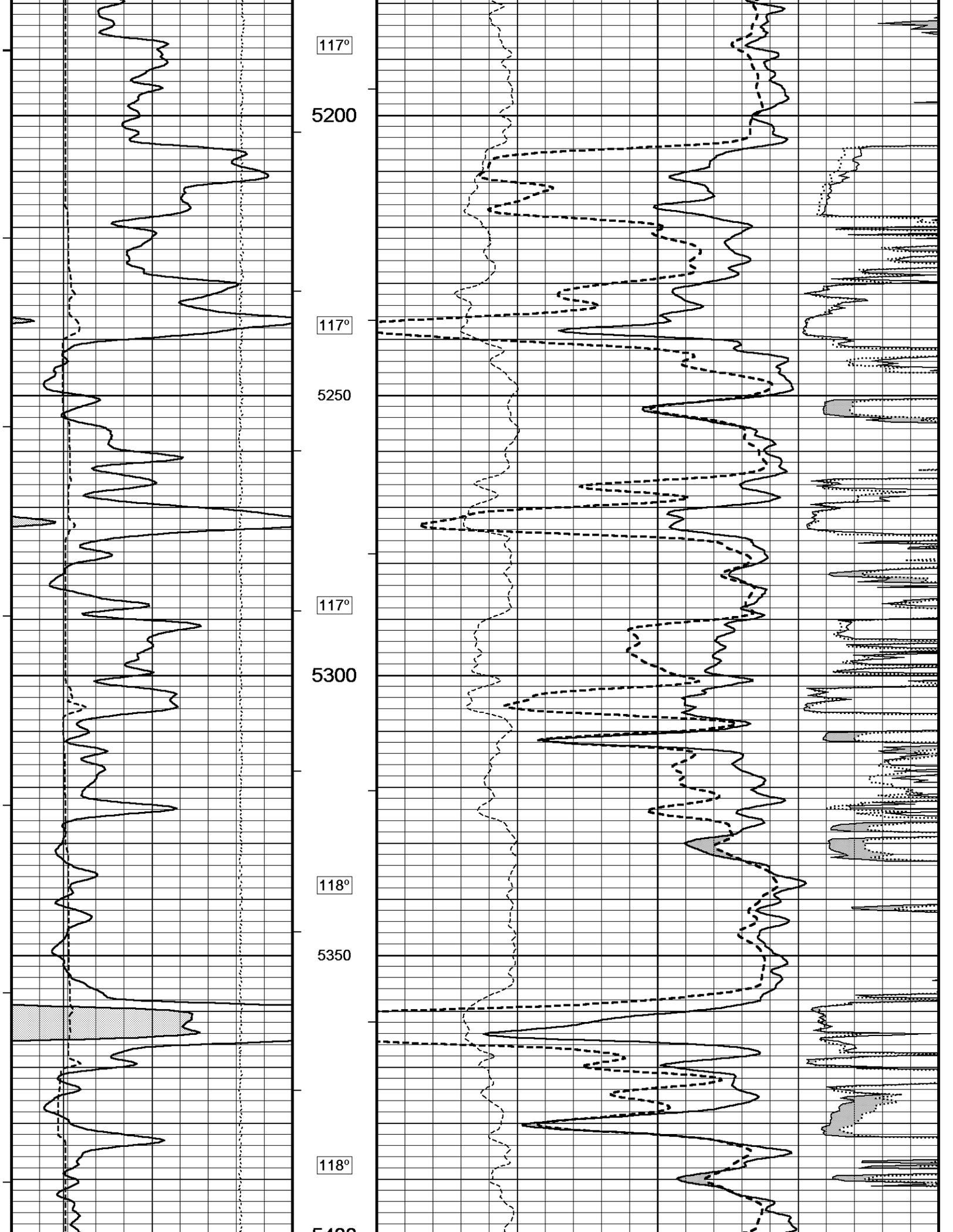


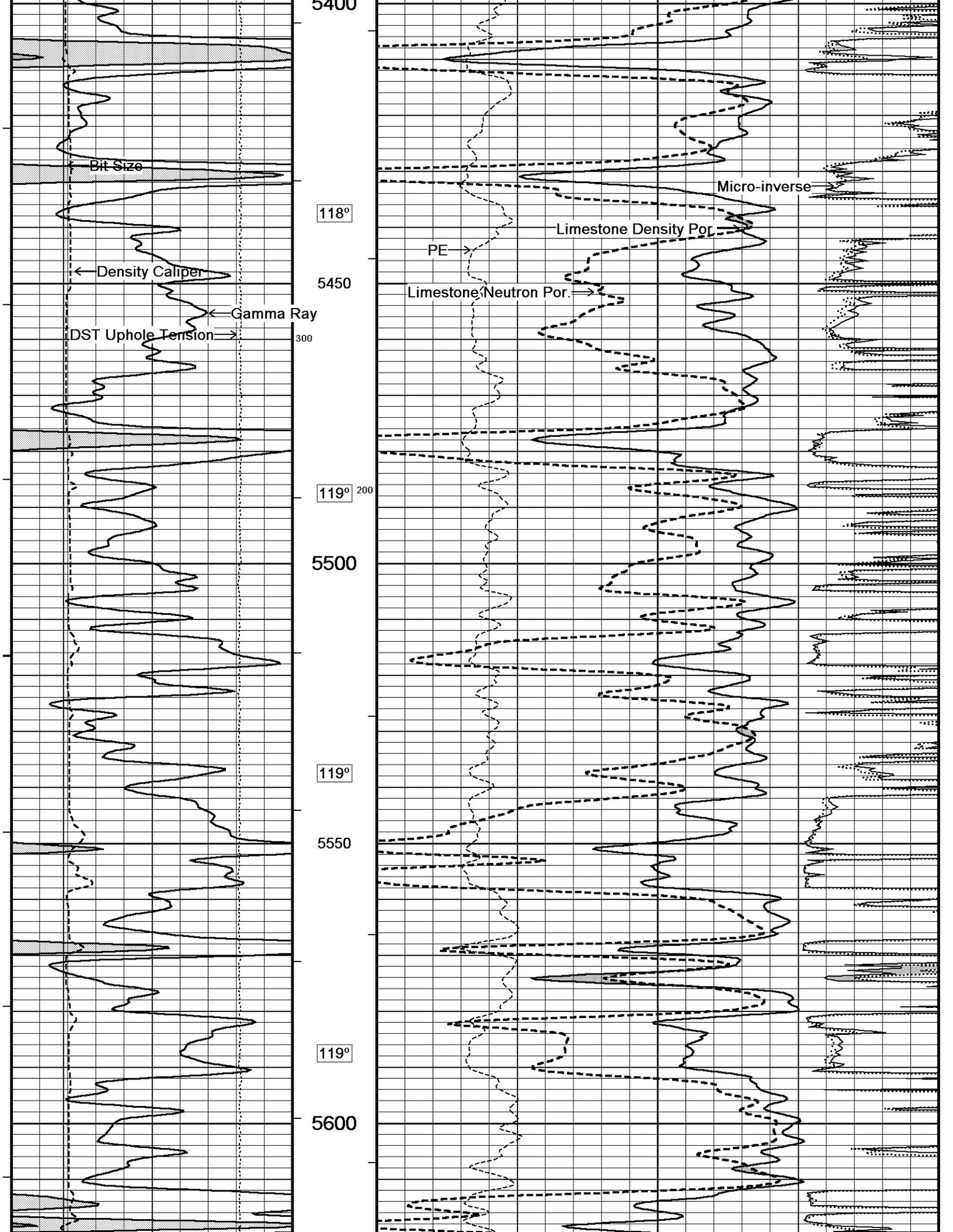


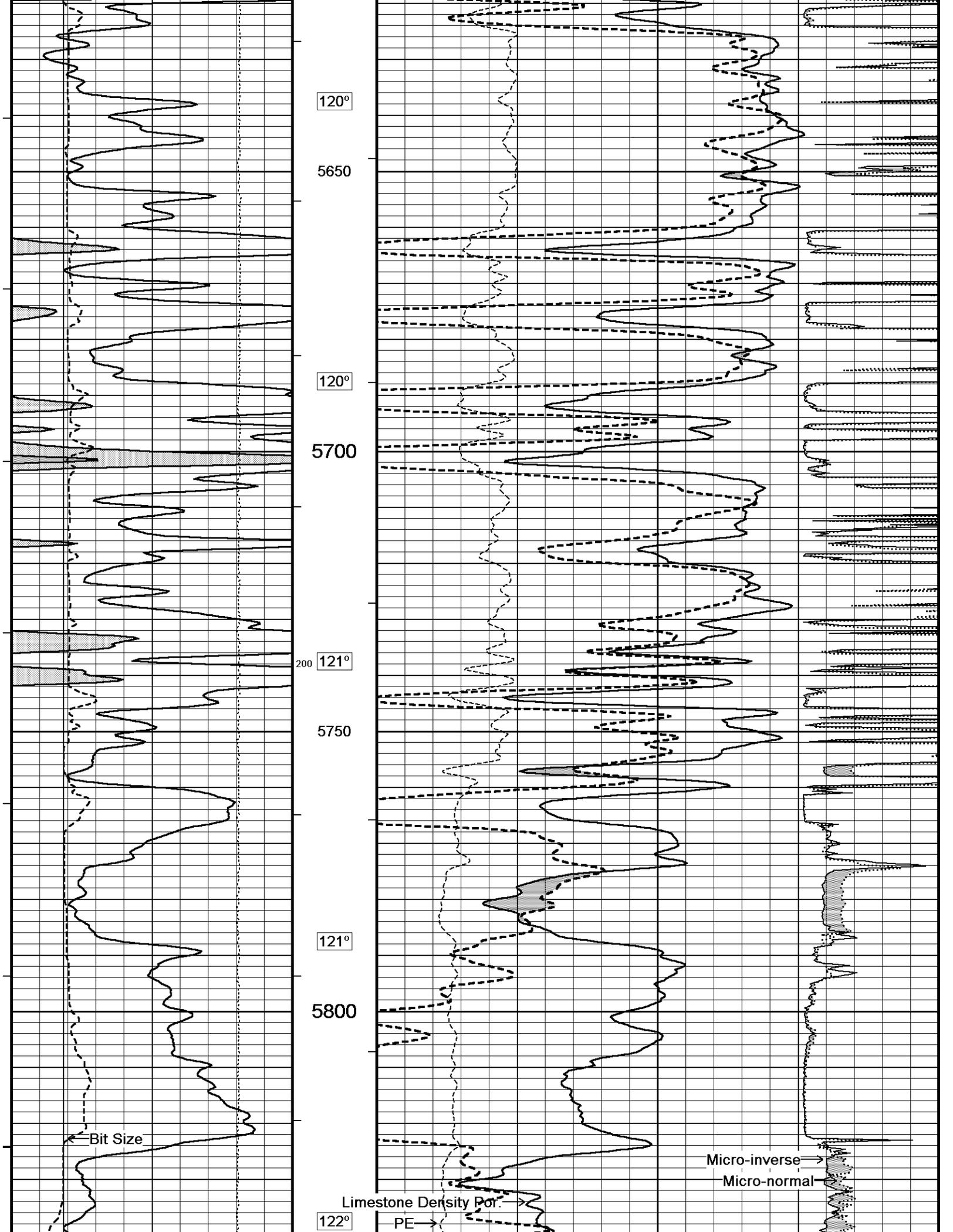


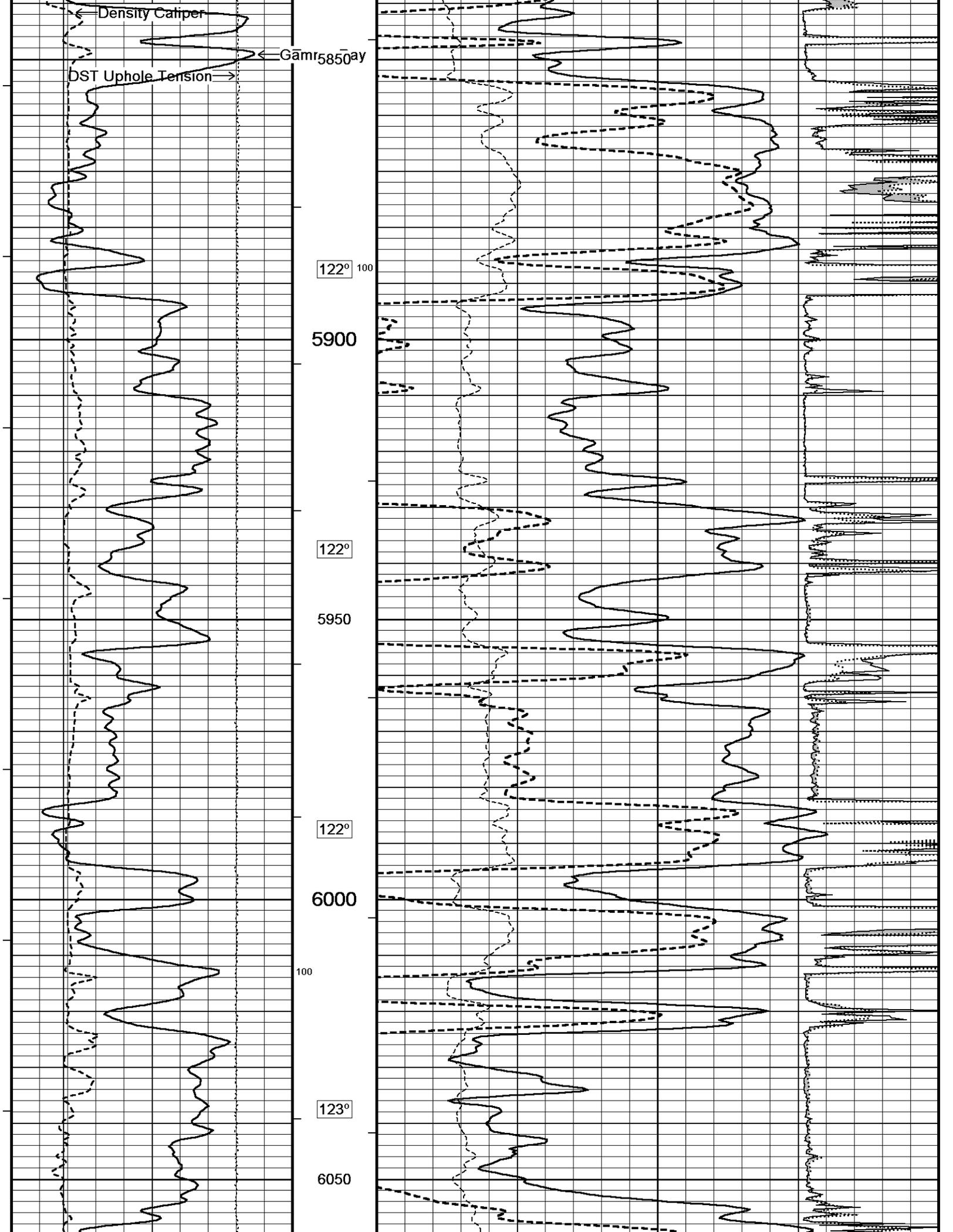


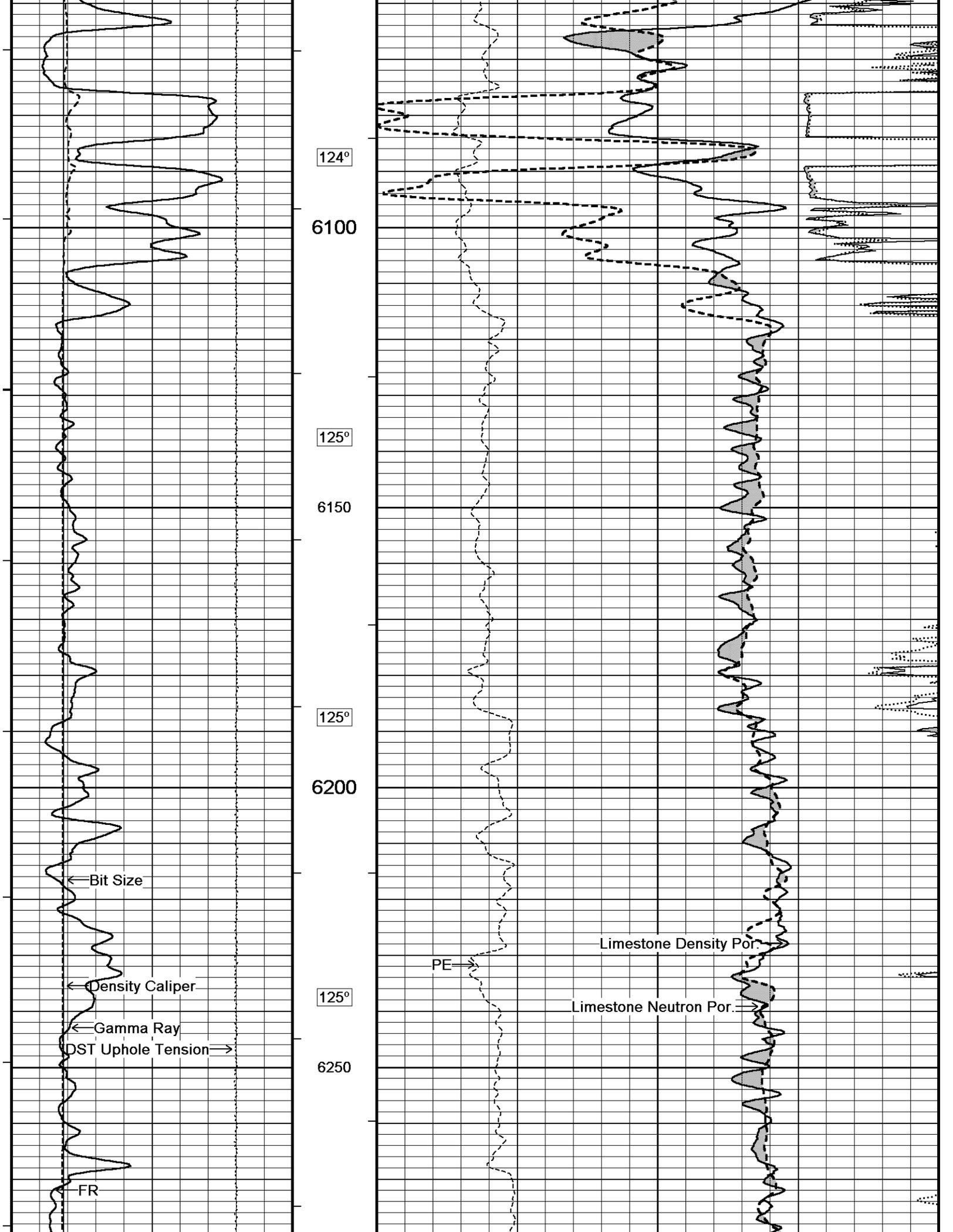


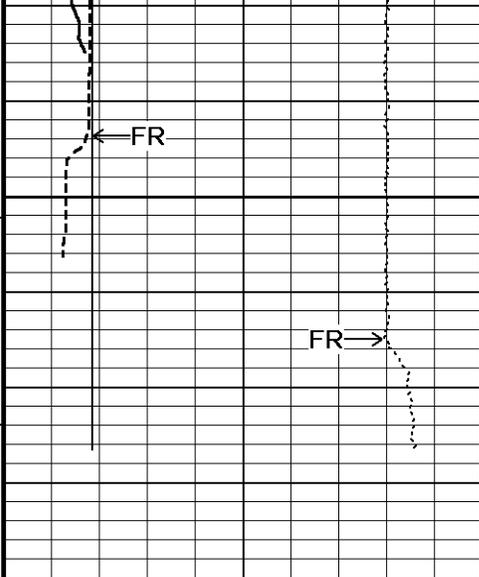












6300

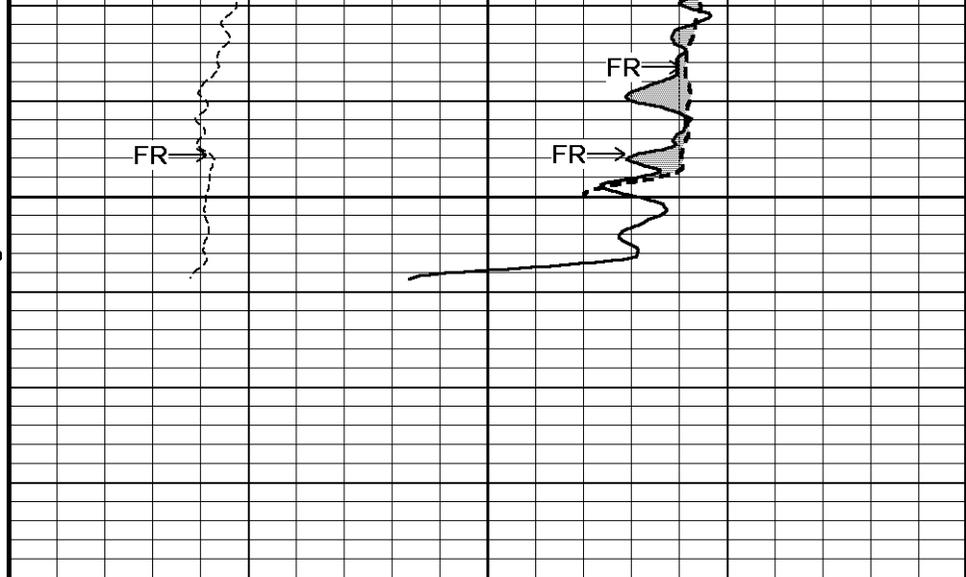
6338  
Depth  
in  
Feet

Borehole  
Temp in  
deg F

HVI  
every  
10 cu ft

Annular  
Integral  
every  
10 cu ft

Replay  
Scale  
1:240



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

Limestone Neutron Por.  
percent  
30 20 10 0 -10

Limestone Density Por.  
percent  
30 20 10 0 -10

PE  
barns/electron  
0 5 10

Micro-normal  
ohm metres  
0 20

Micro-inverse  
ohm metres  
0 20

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5 INCH MAIN

10 INCH HI-RES

Depth Based Data - Maximum Sampling Increment 2.5cm  
 Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch #... \O'Brien Rickers Ranch #8-17\_001.dta  
 Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

Timing Marks  
every 60.0 sec

Depth  
in  
Feet

Sandstone Neutron Por.  
percent  
30 20 10 0 -10

**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

**Borehole Temp in deg F**

**HVI every 10 cu ft**

**Annular Integral every 10 cu ft**

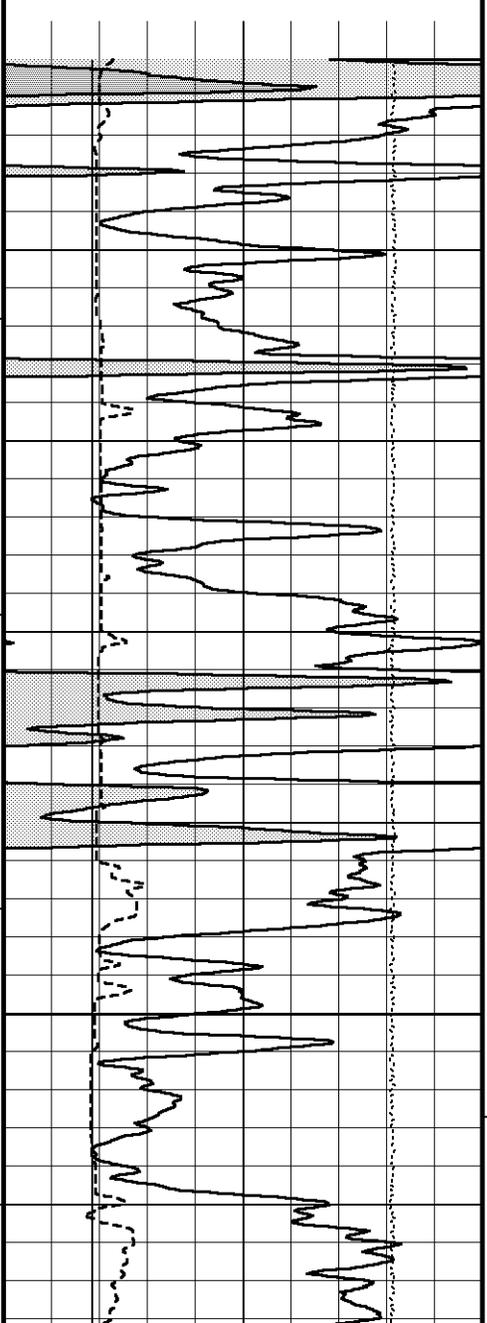
**Replay Scale 1:120**

**Sandstone Density Por.**  
 percent  
 30 20 10 0 -10

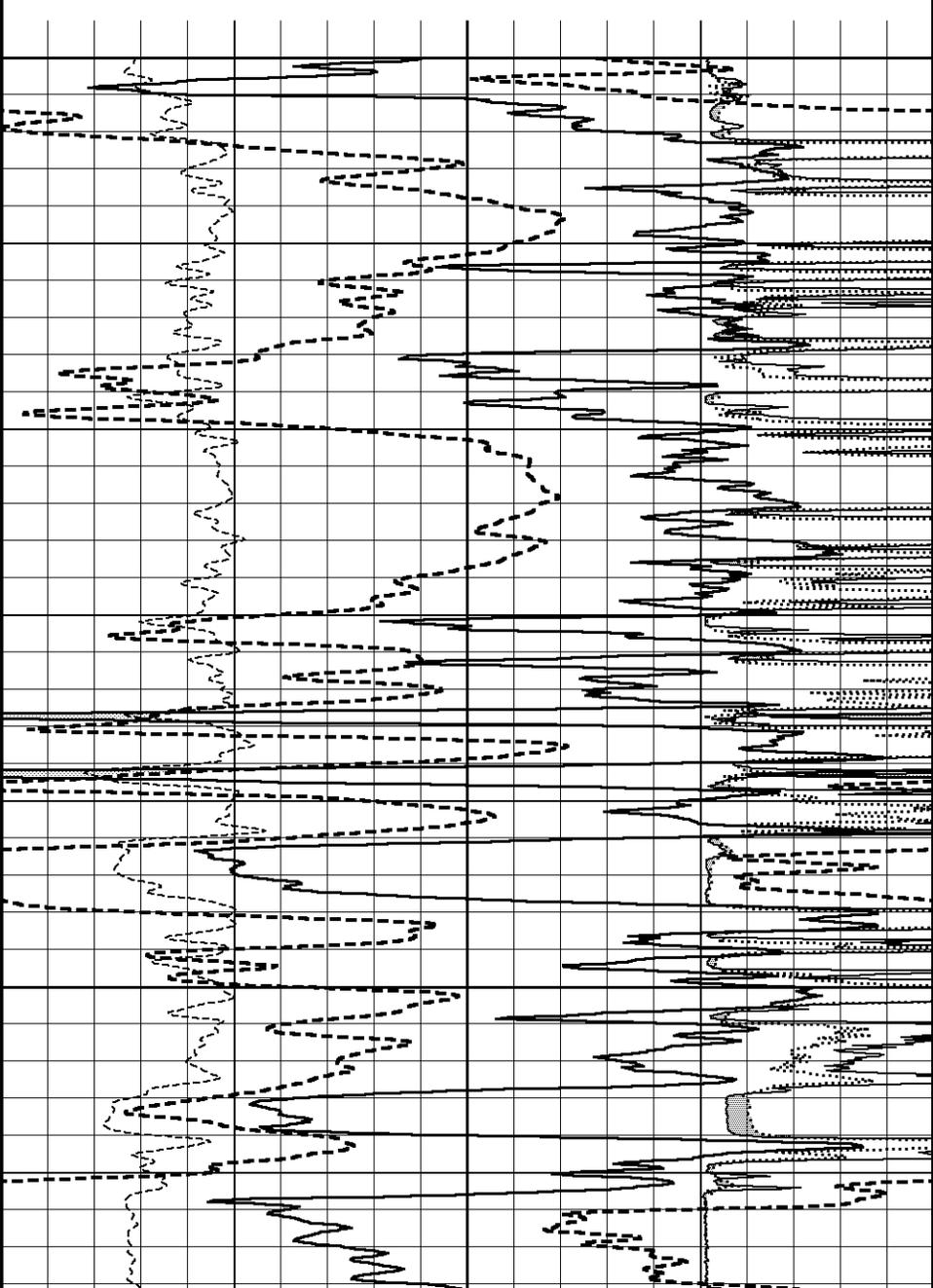
**PE barns/electron**  
 0 5 10

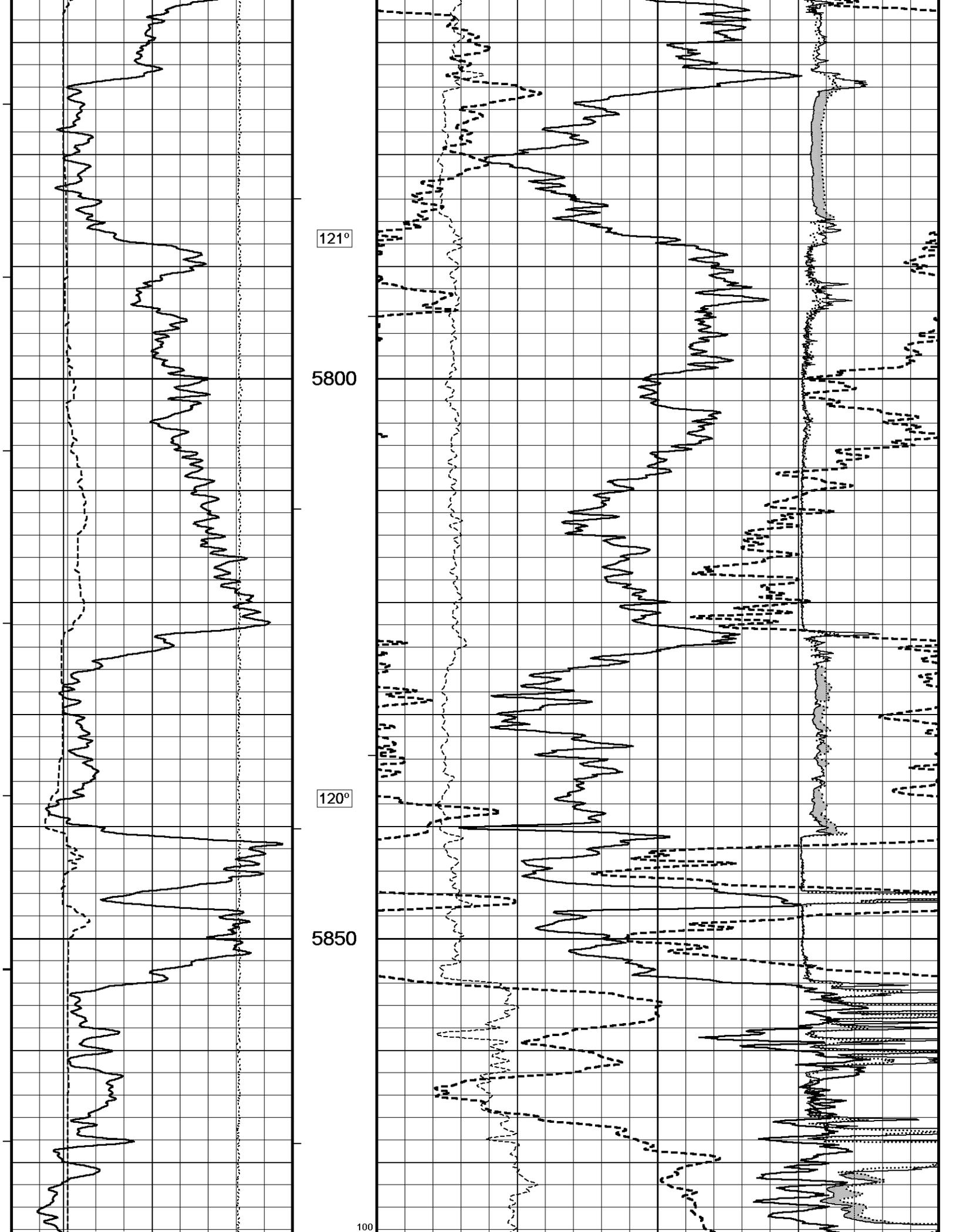
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 0 30

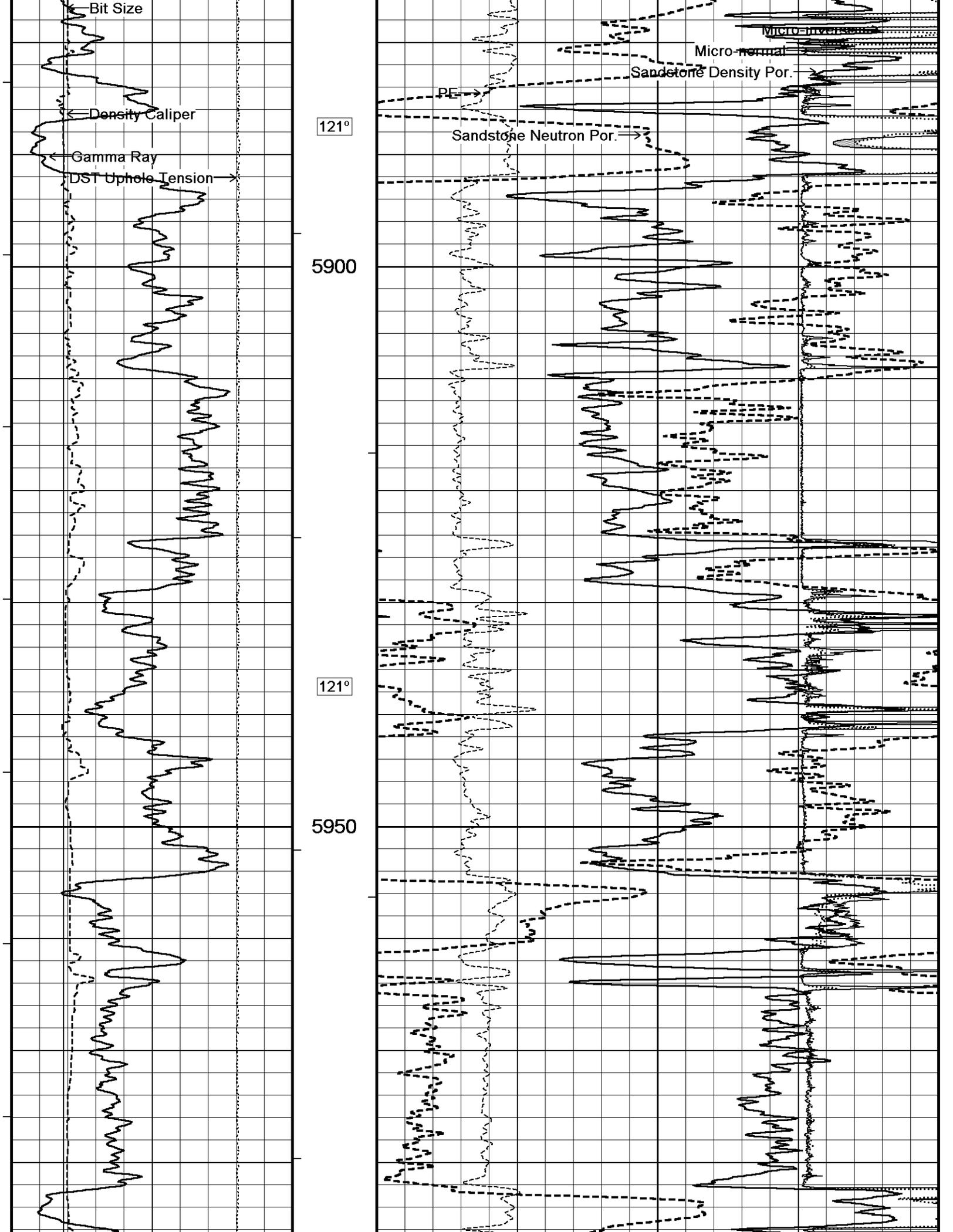
**Micro-inverse ohm metres**  
 0 30

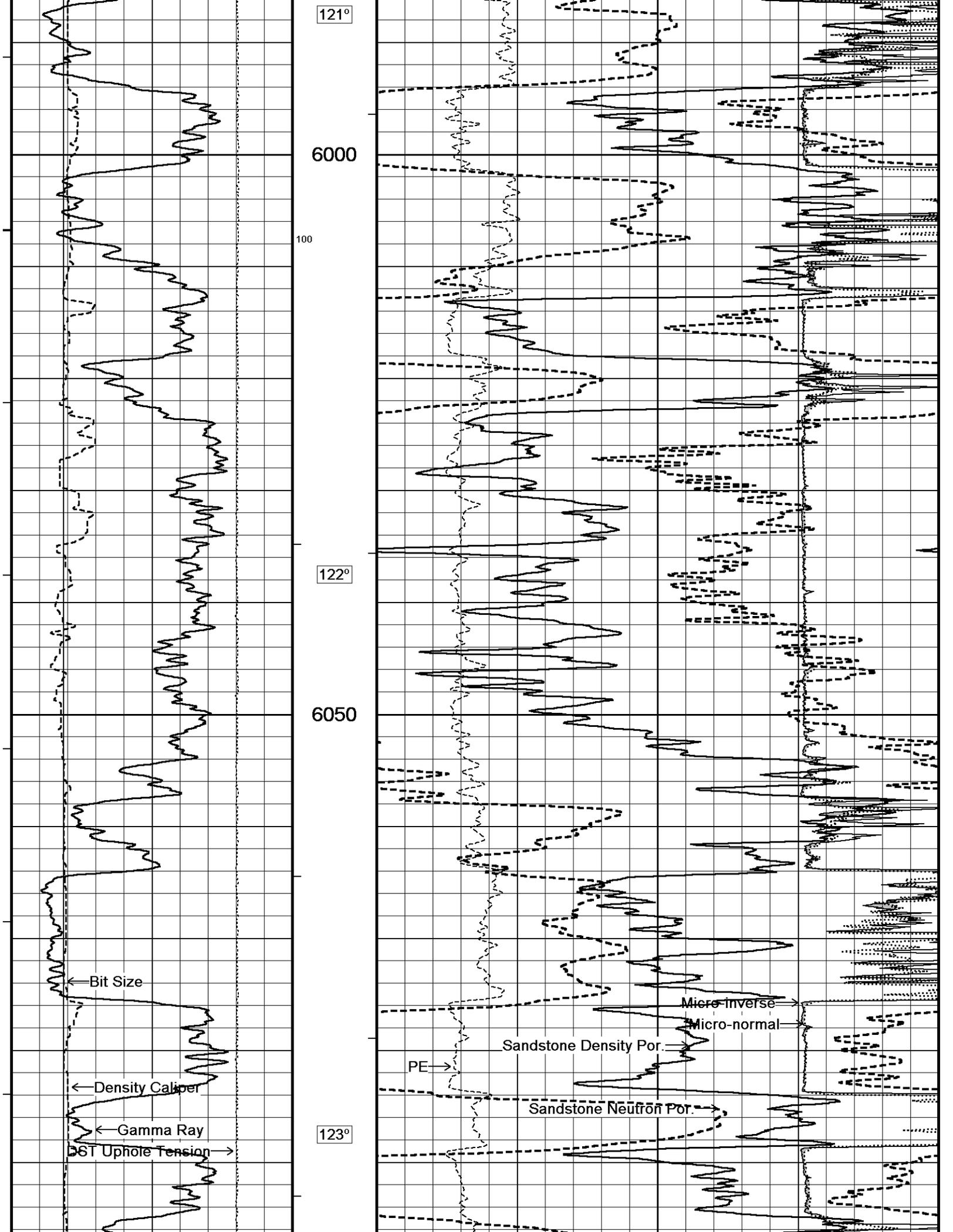


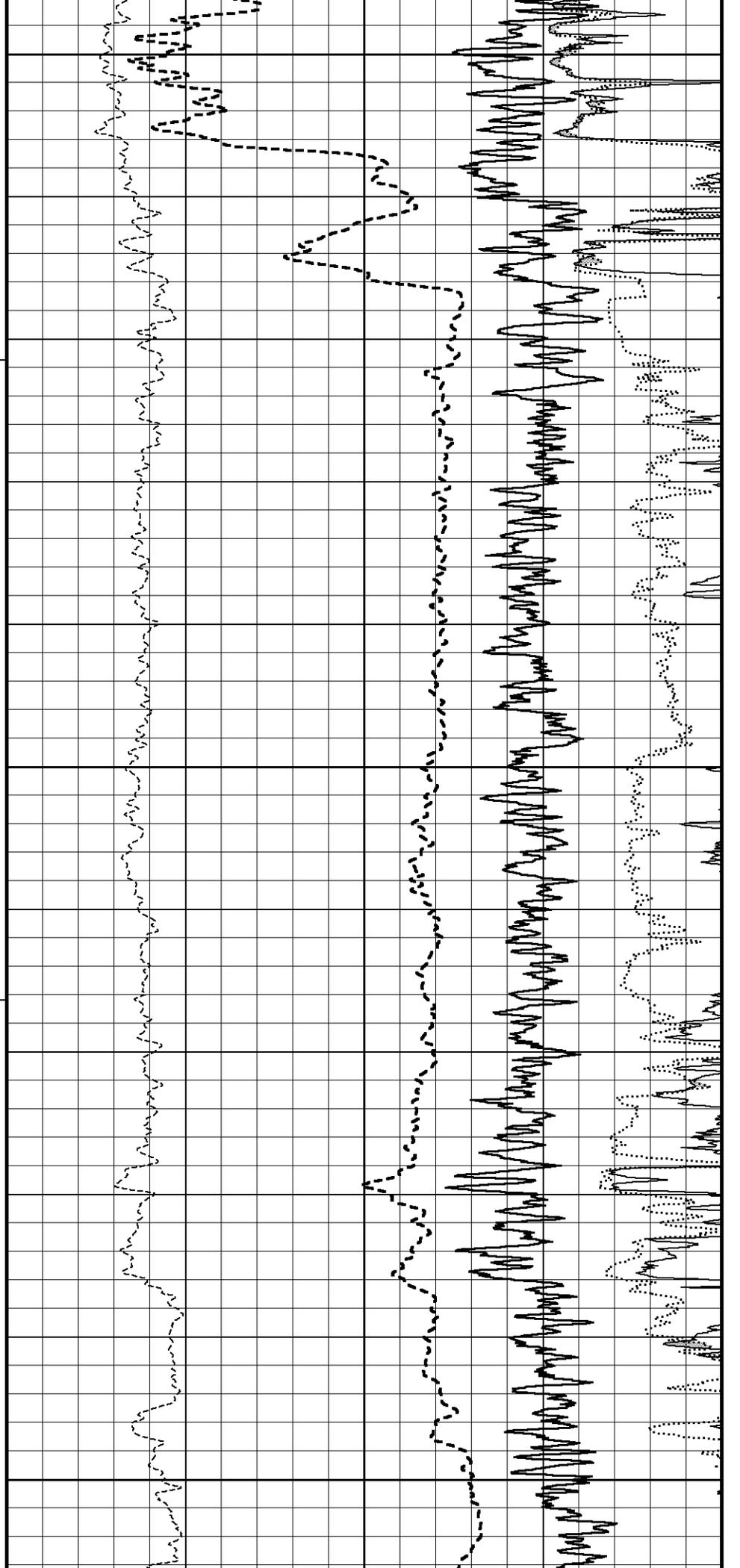
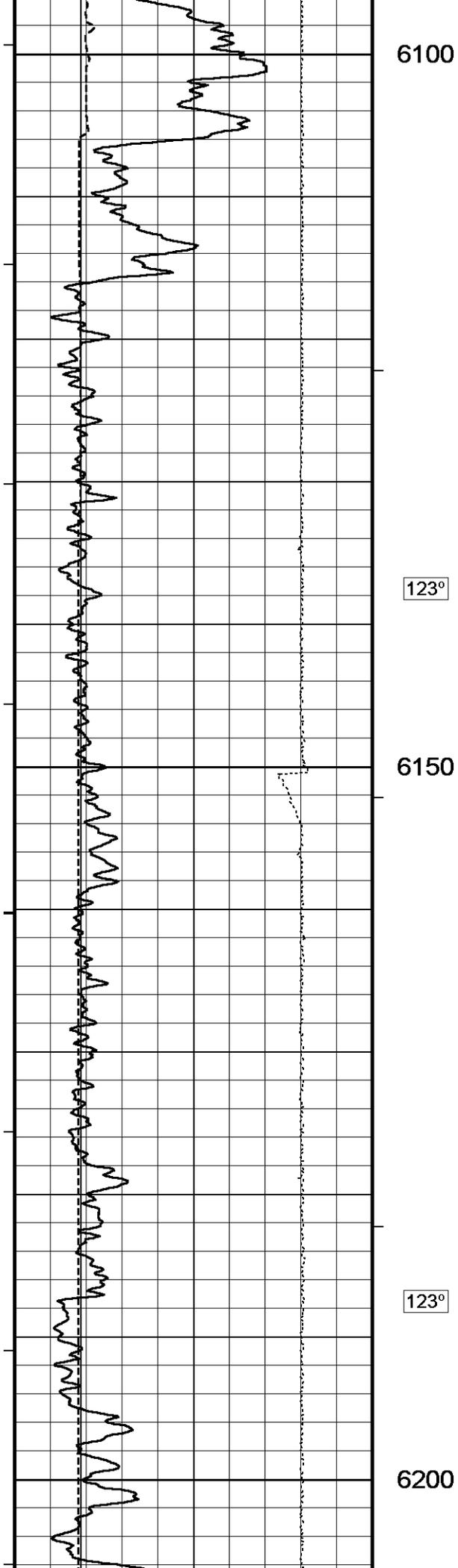
5700  
 200  
 120°  
 5750

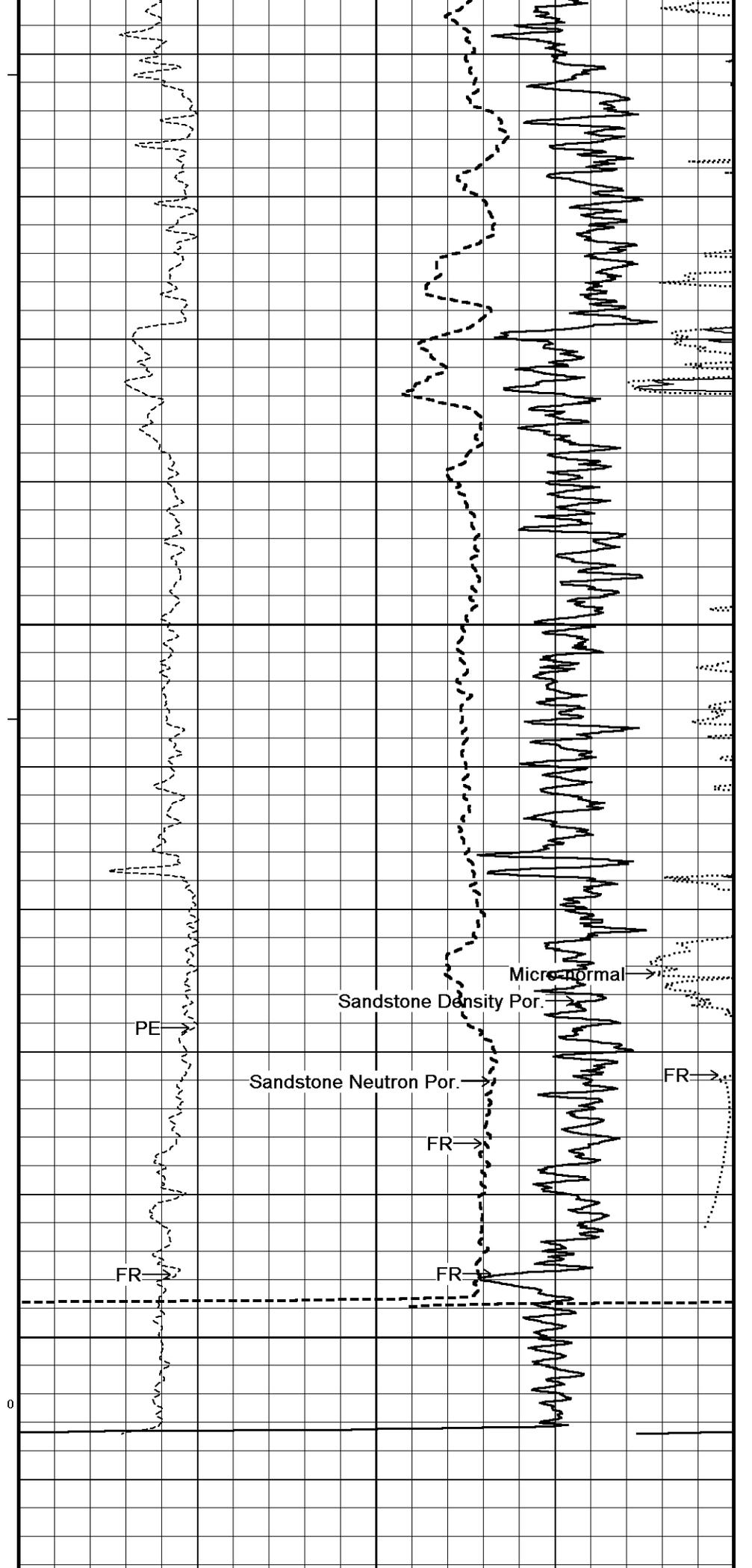
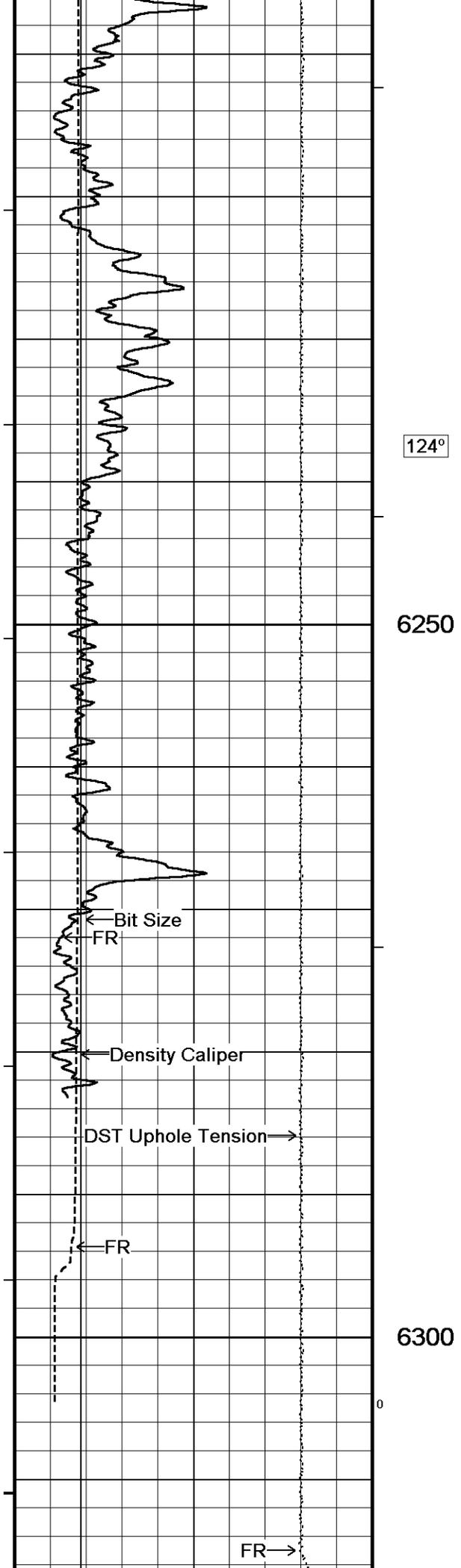












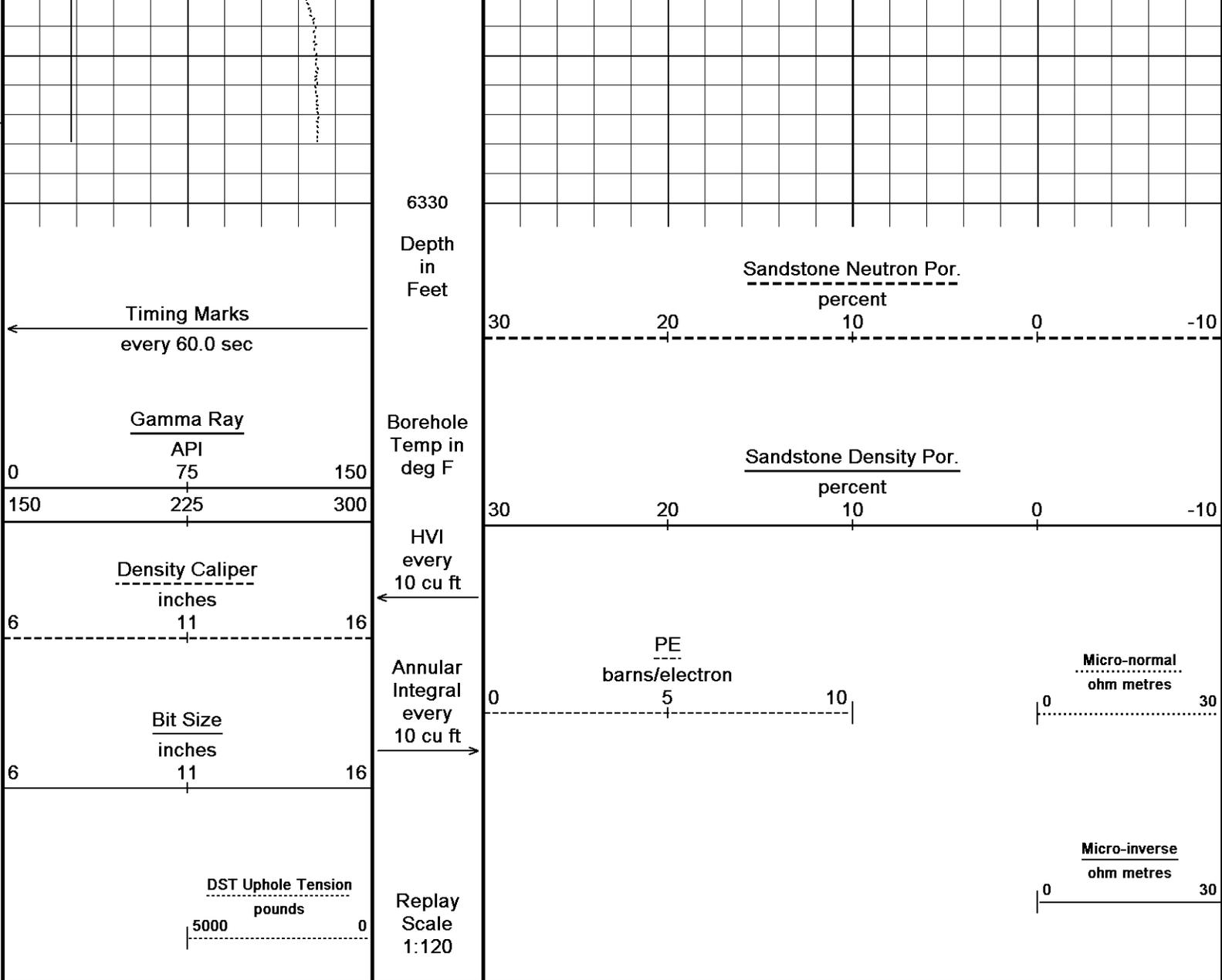
124°

6250

6300

0

0

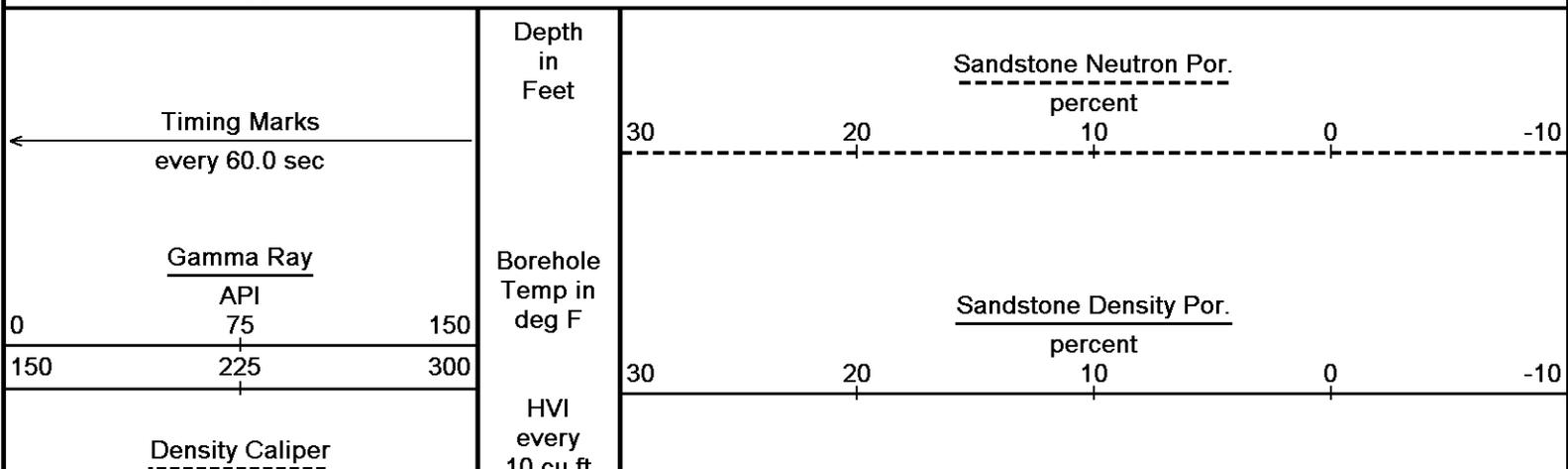


Depth Based Data - Maximum Sampling Increment 2.5cm  
 Plotted on 14-SEP-2013 03:11  
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↑ 10 INCH HI-RES ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ran...\O'Brien Rickers Ranch #8-17\_Repeat.dta  
 Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583



← 10 cu ft  
6 11 16  
inches  
Bit Size  
inches  
6 11 16

Annular  
Integral  
every  
10 cu ft  
→

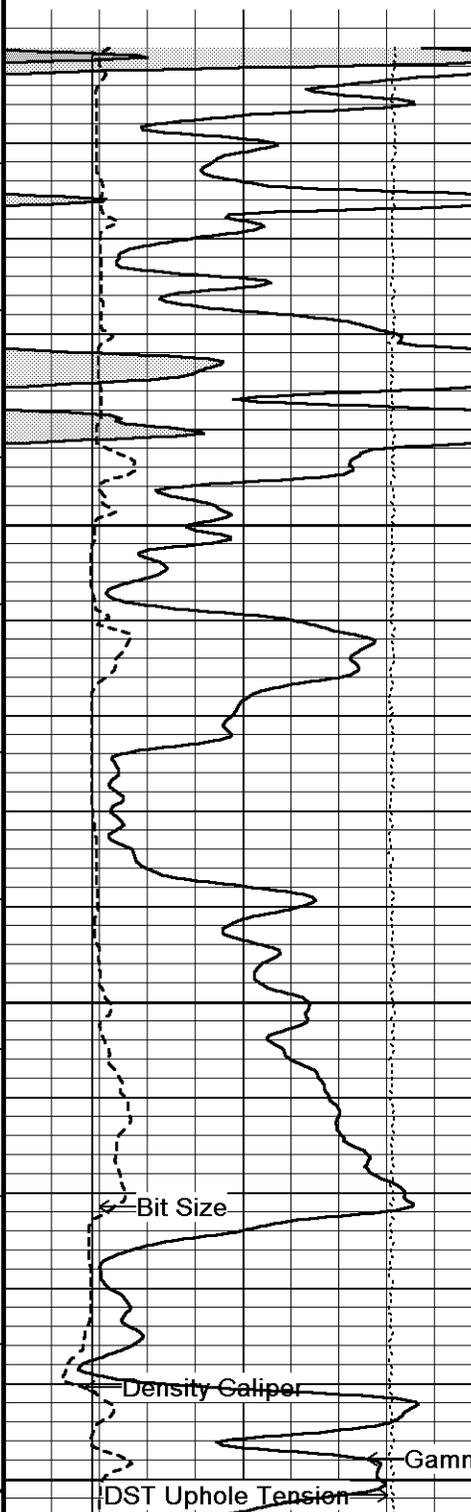
PE  
barns/electron  
0 5 10

Micro-normal  
ohm metres  
0 30

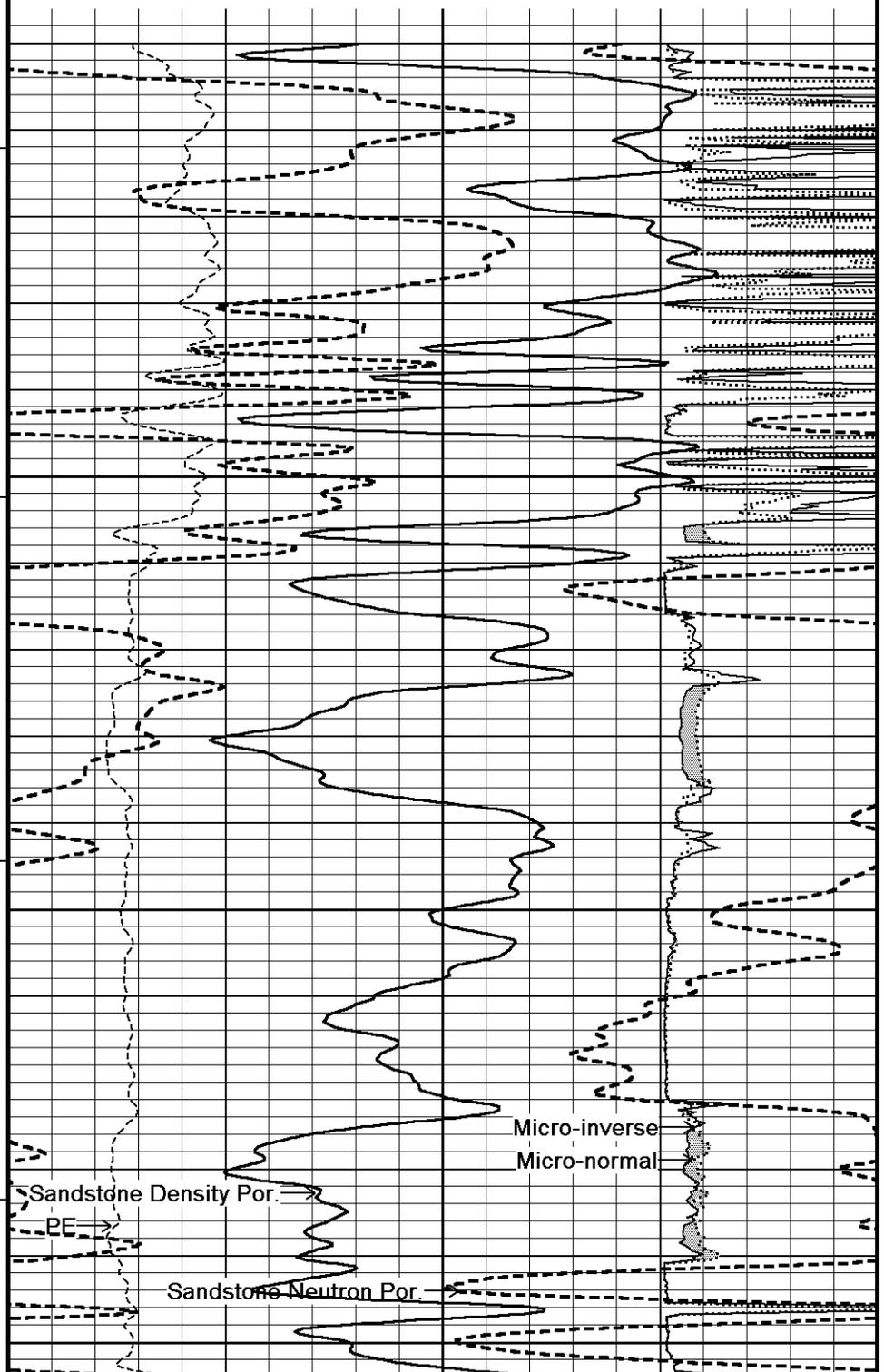
DST Uphole Tension  
pounds  
5000 0

Replay  
Scale  
1:240

Micro-inverse  
ohm metres  
0 30



5700  
200  
120°  
5750  
121°  
5800  
120°  
5850



← Bit Size

Density Caliper

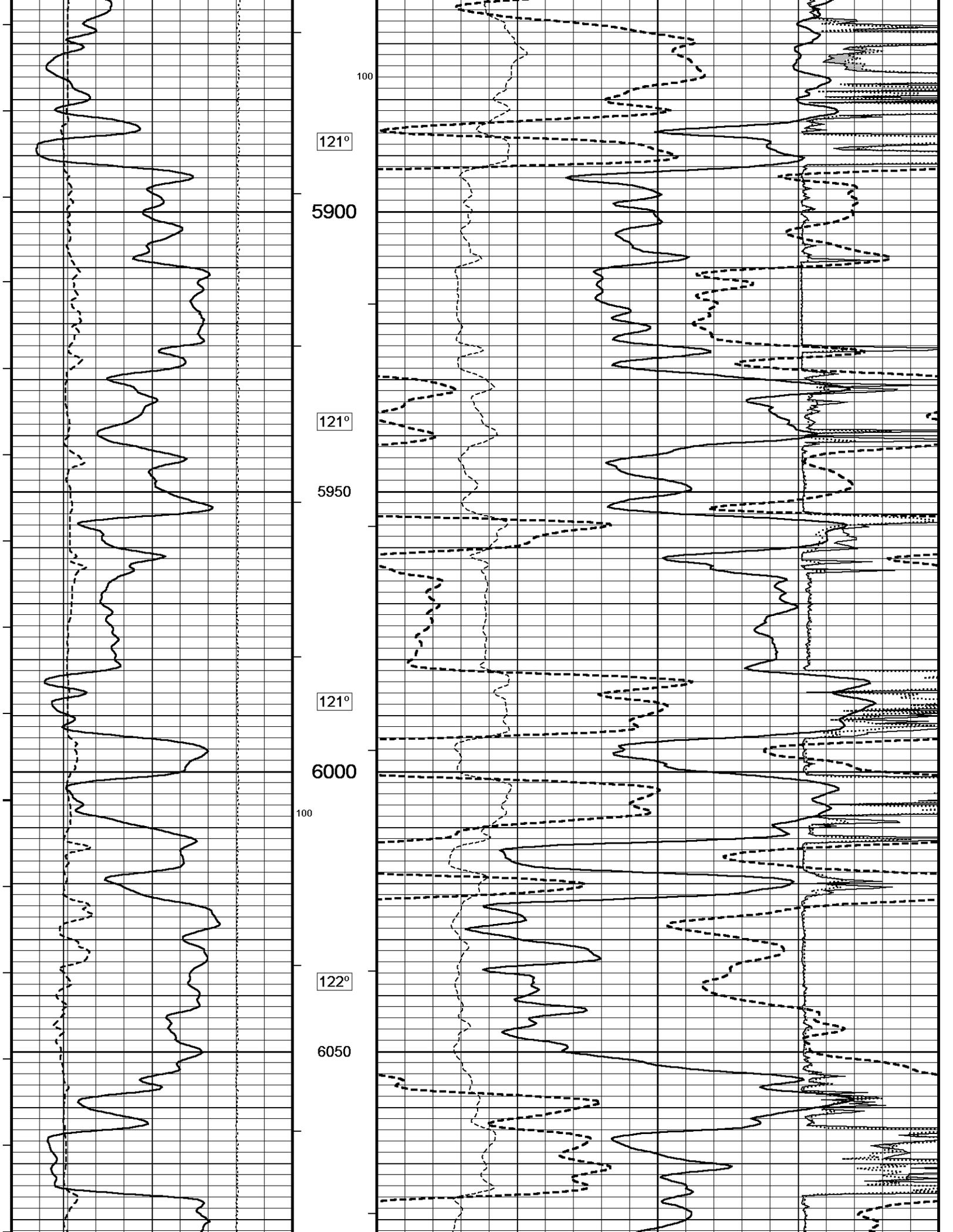
DST Uphole Tension

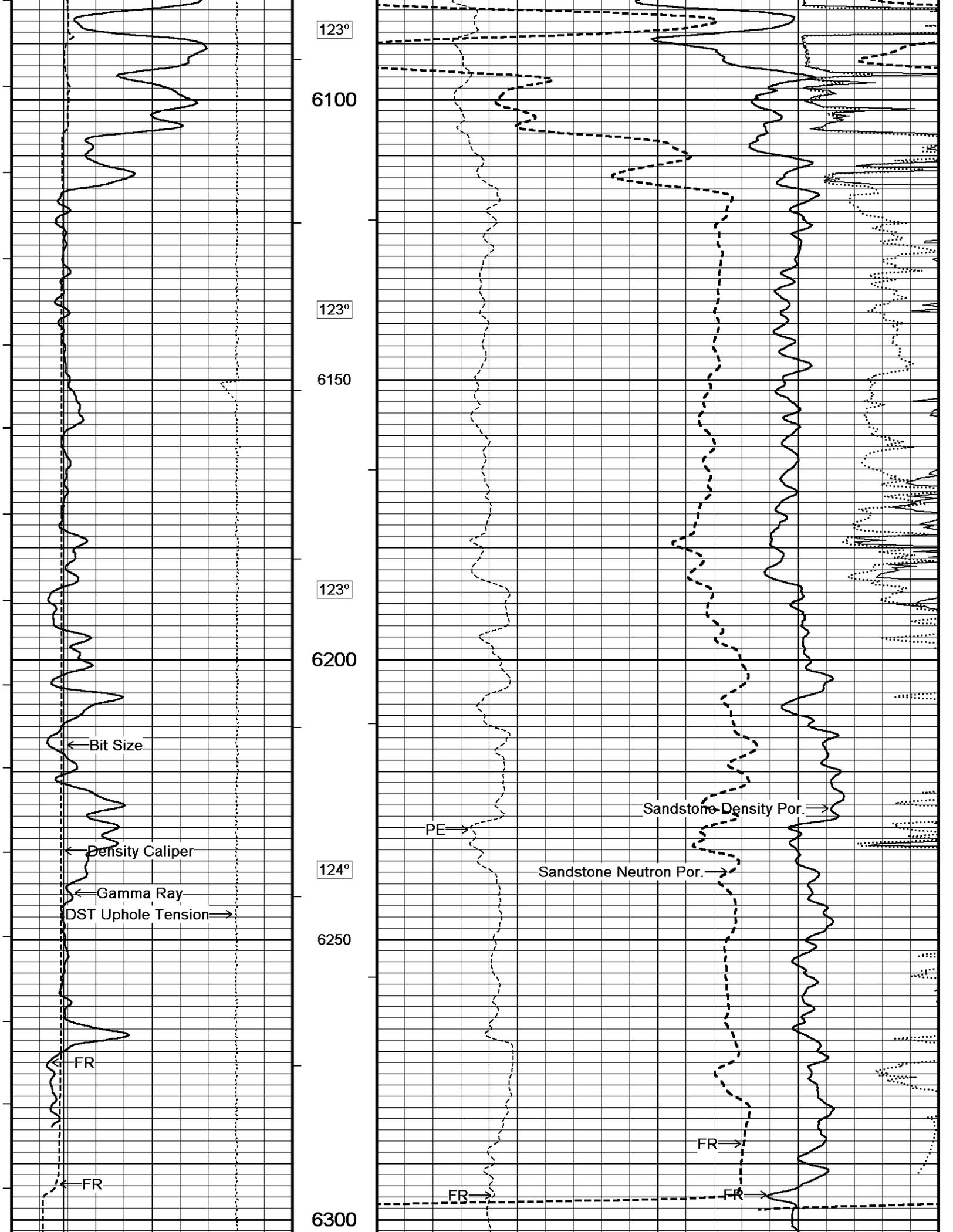
→ Sandstone Density Por.

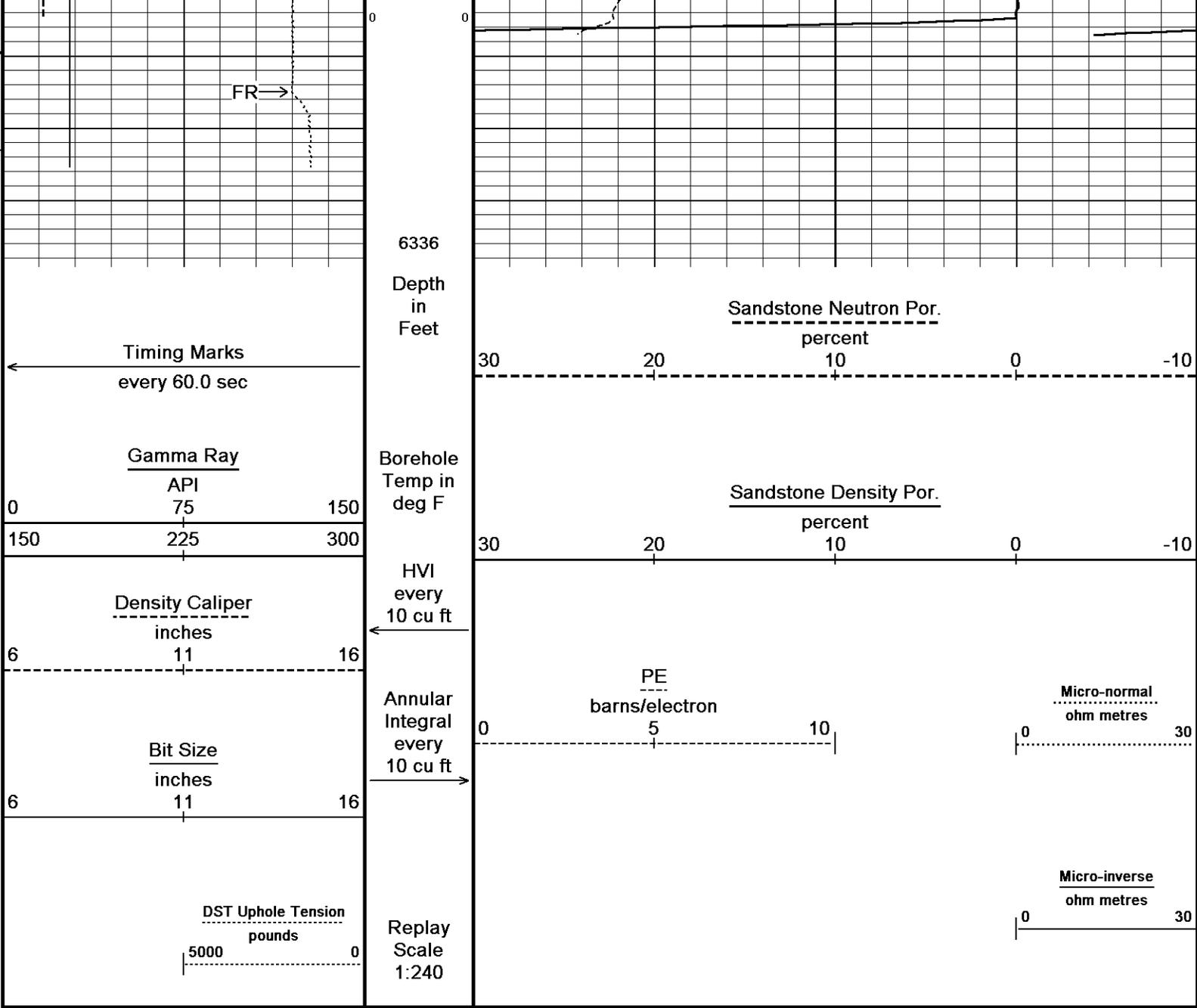
→ PE

→ Sandstone Neutron Por.

Micro-inverse  
Micro-normal





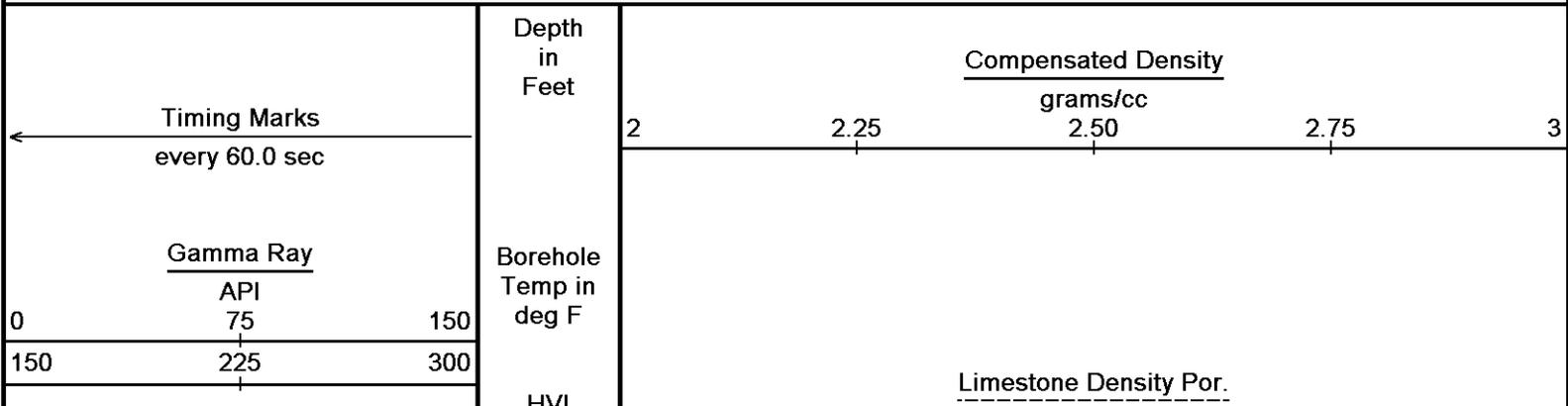


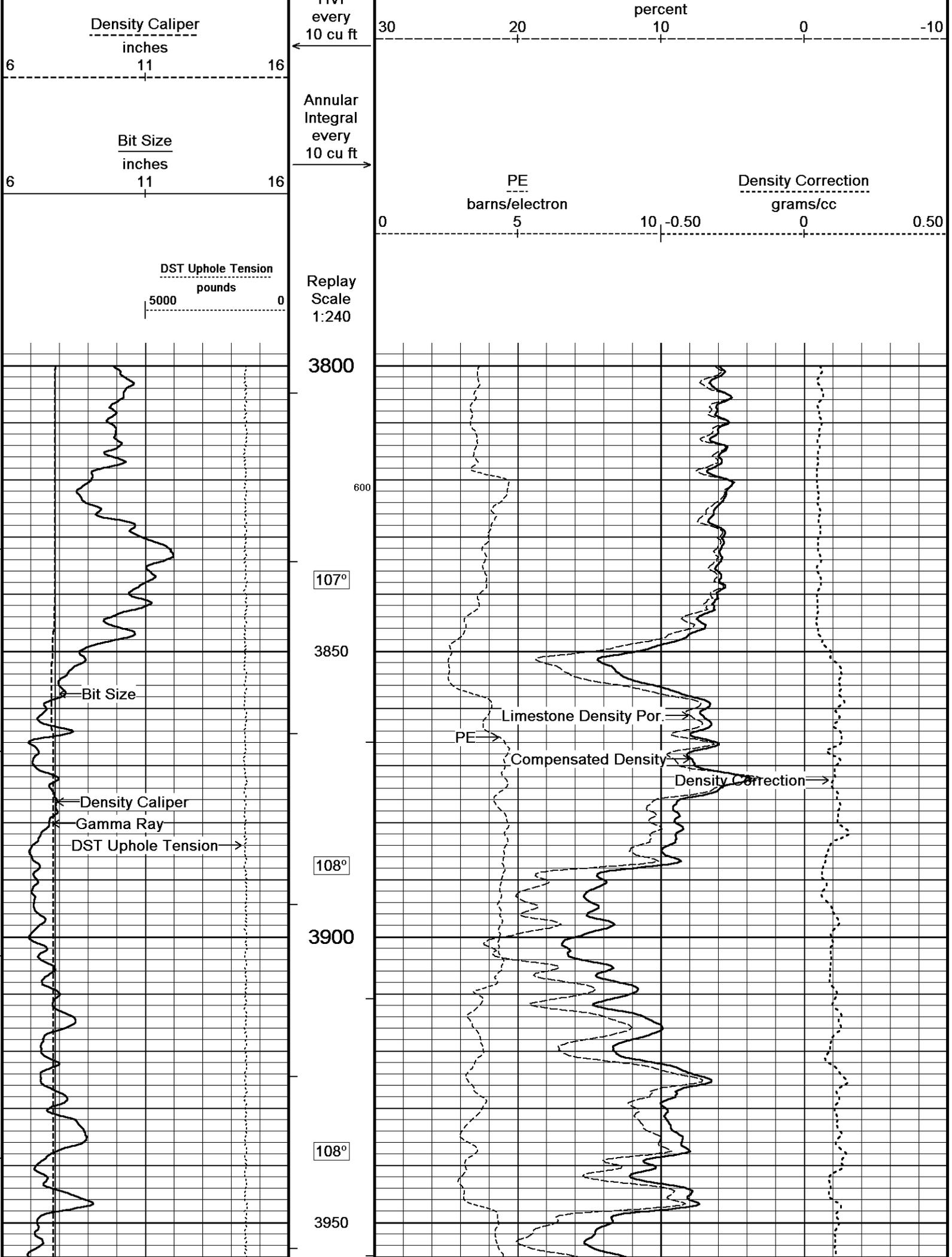
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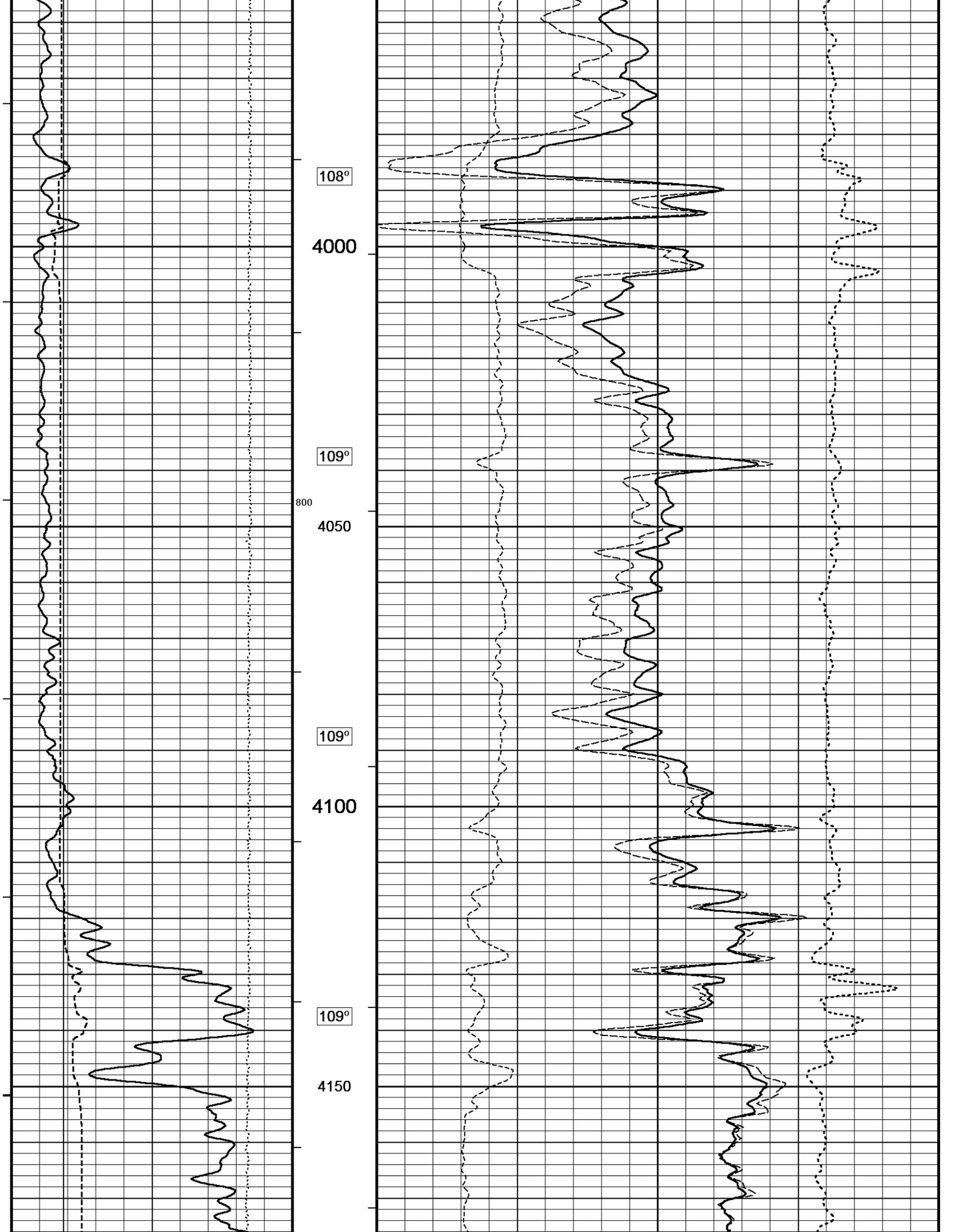
↑ REPEAT SECTION ↑

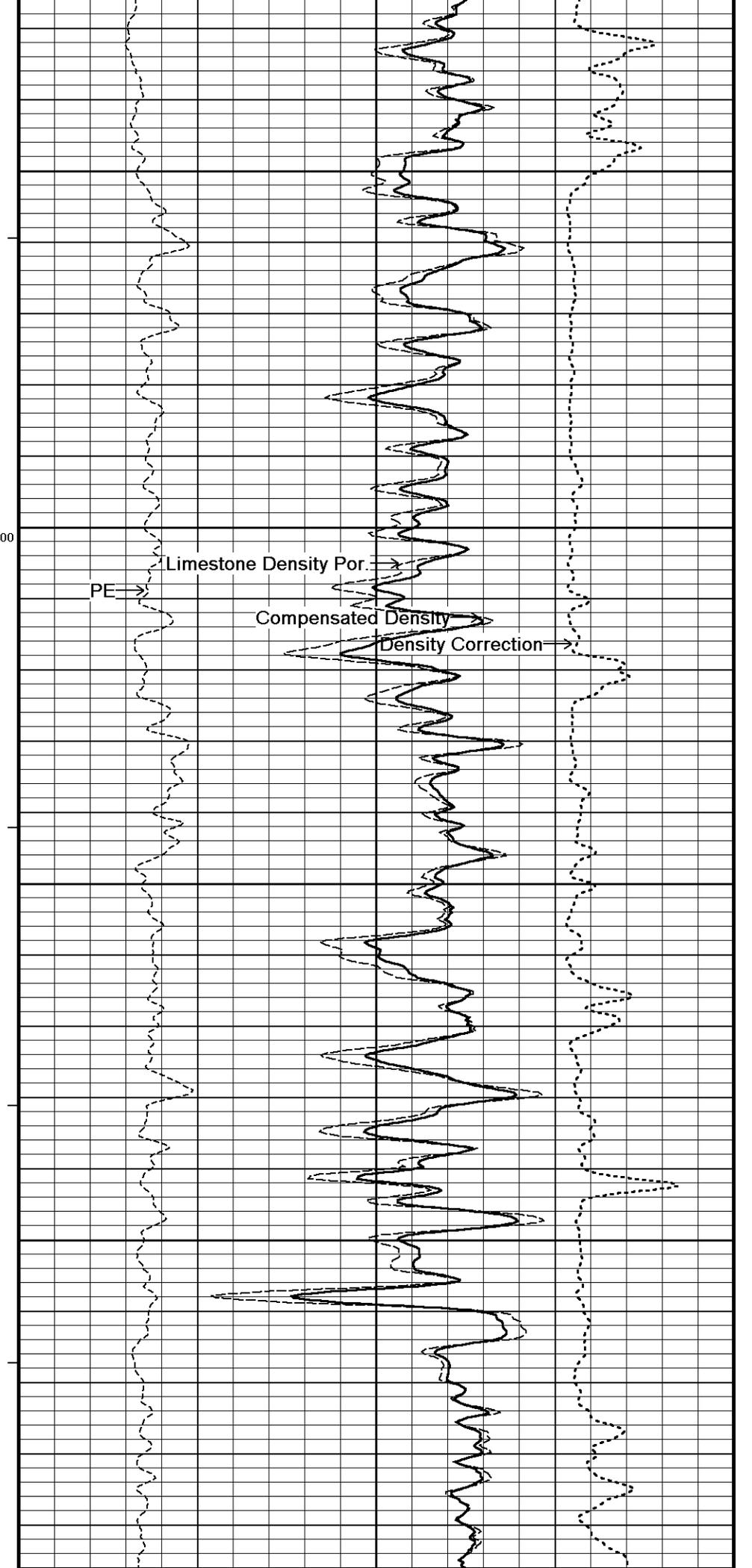
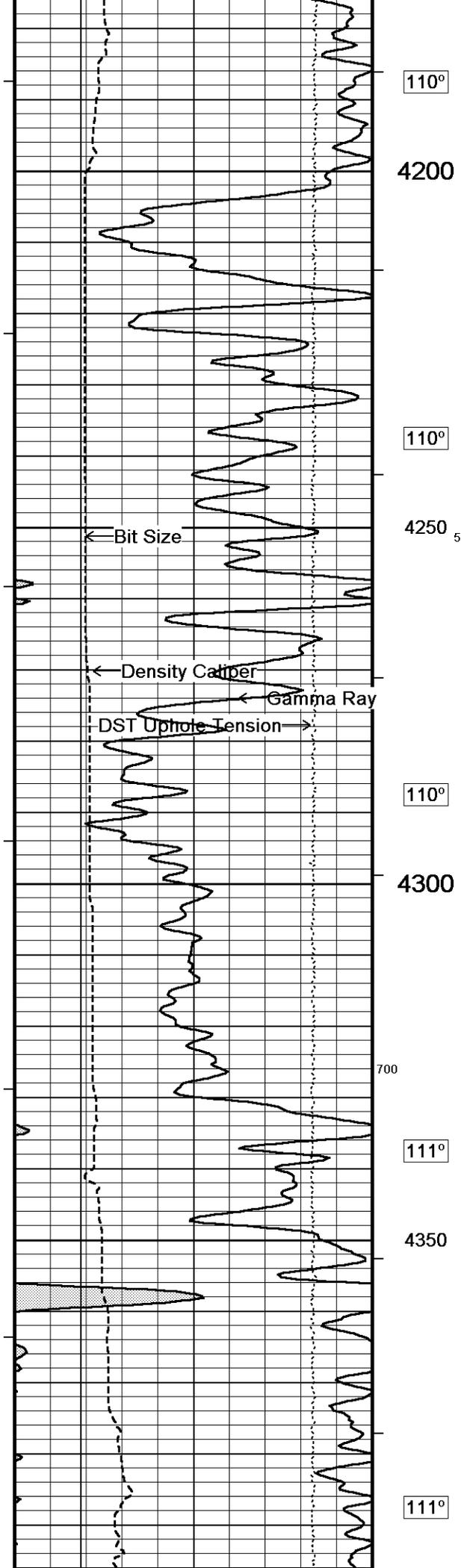
↓ 5 INCH MAIN ↓

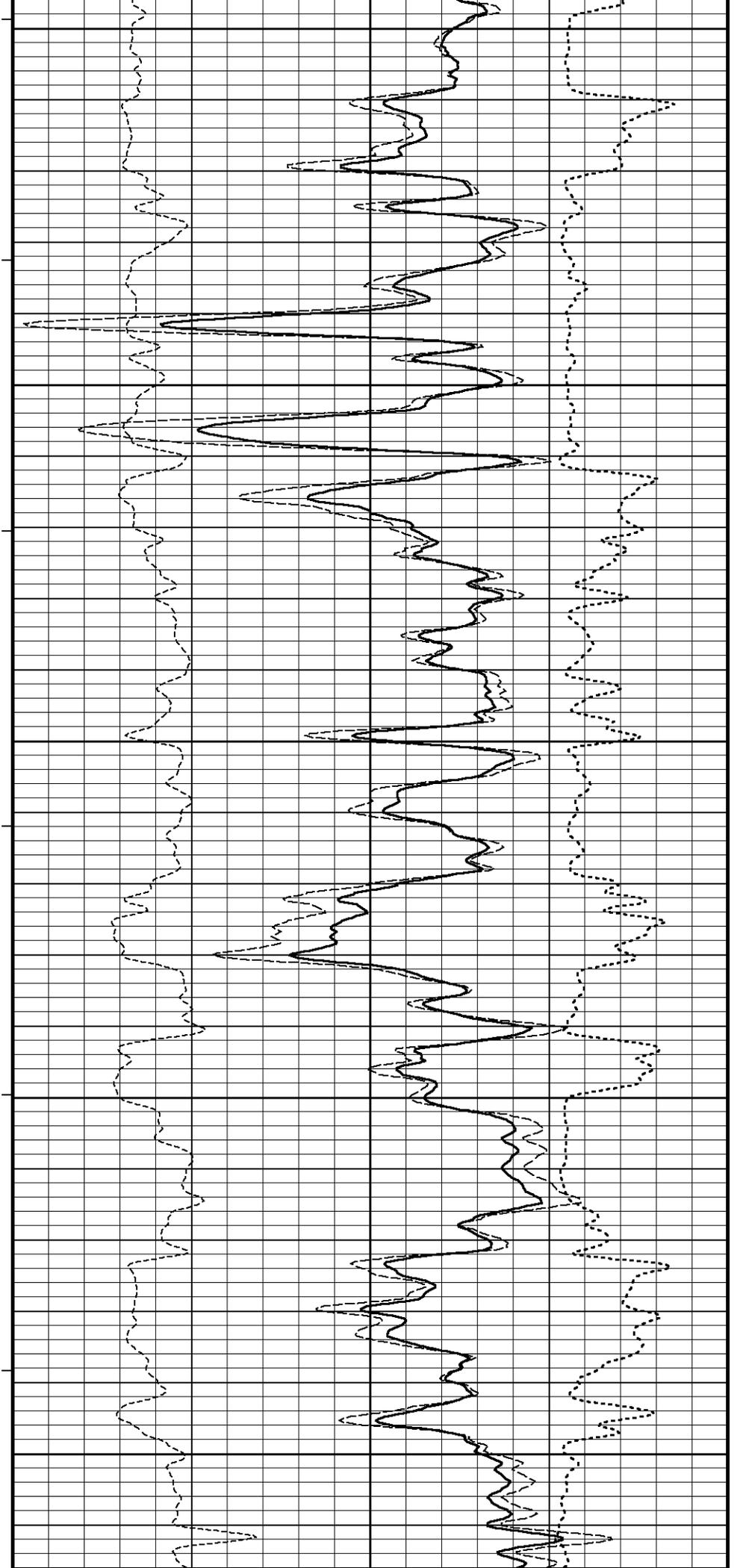
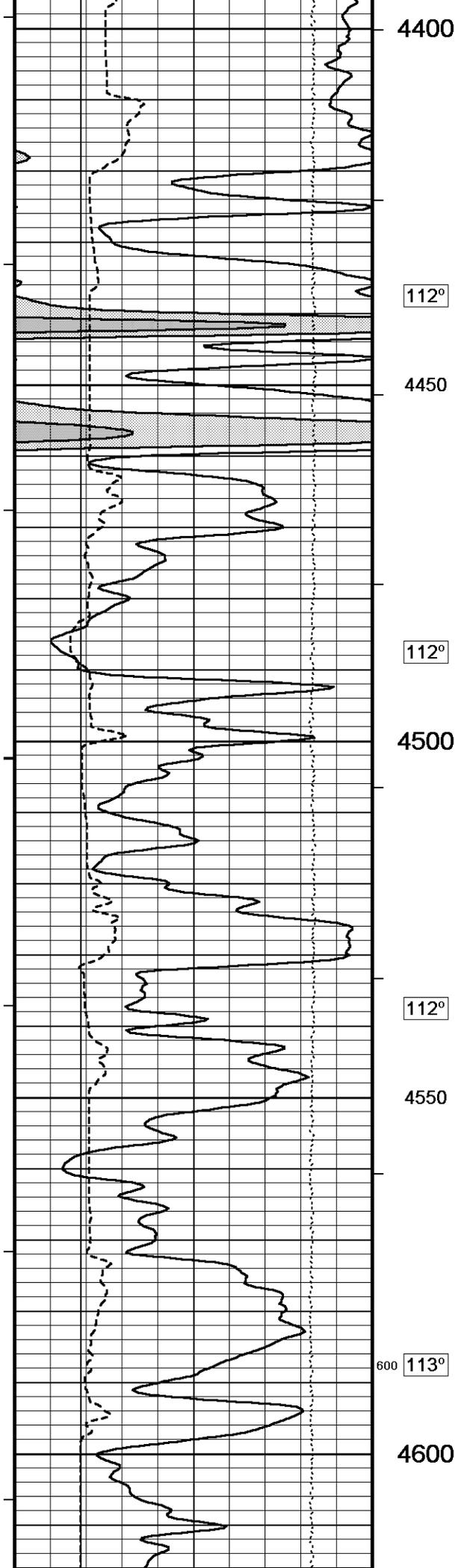
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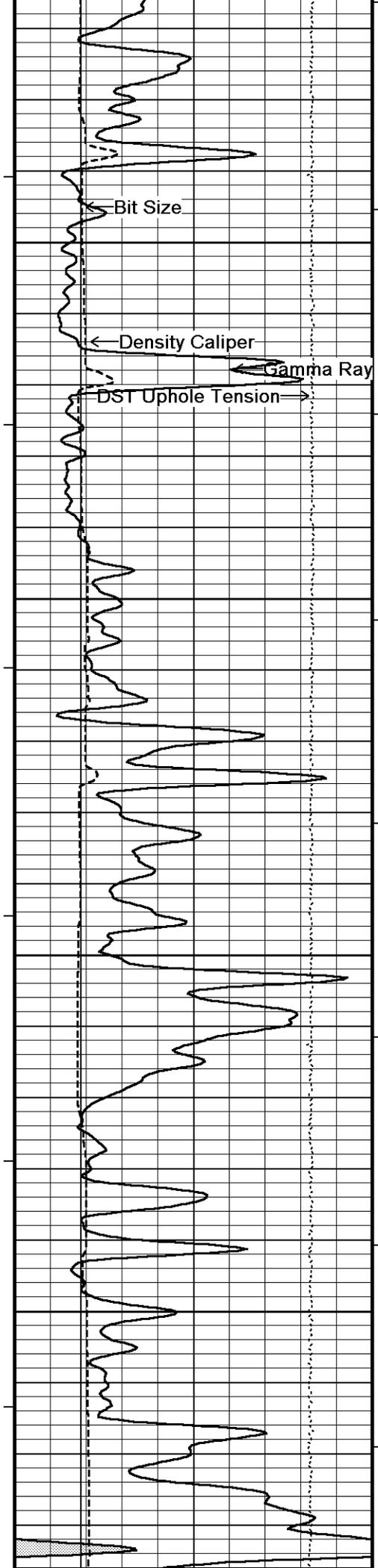












400  
113°  
4650  
113°  
4700  
114°  
4750  
114°  
4800

113°

4650

113°

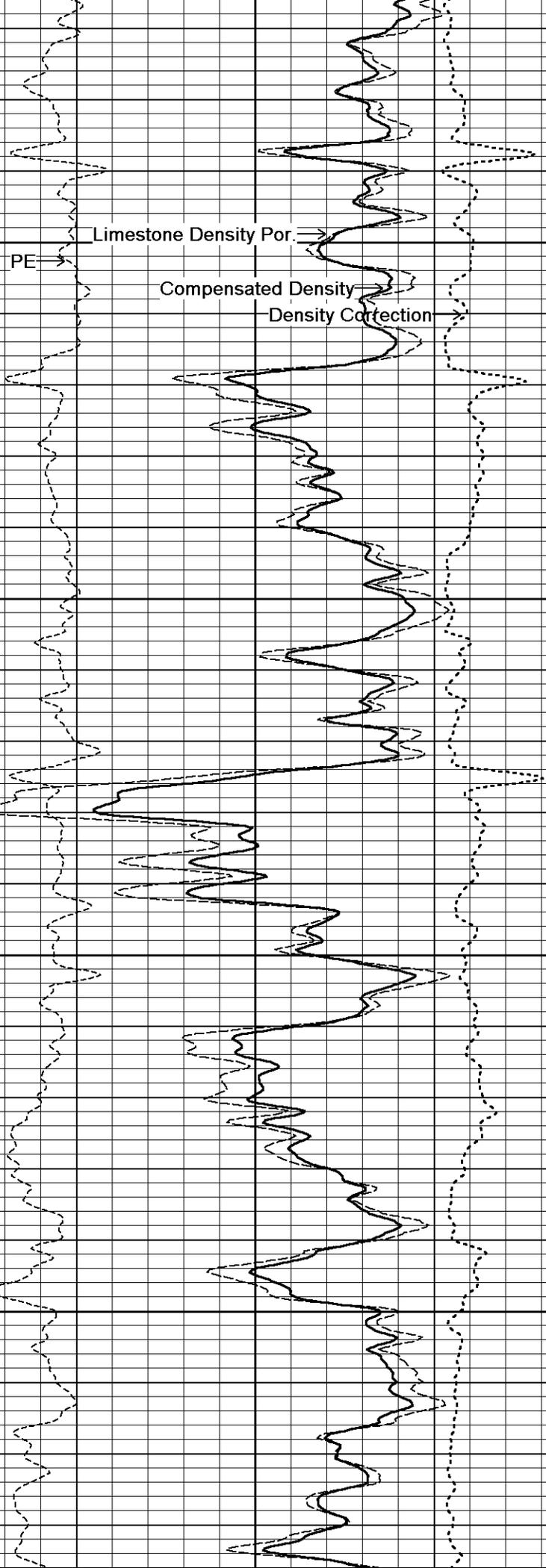
4700

114°

4750

114°

4800

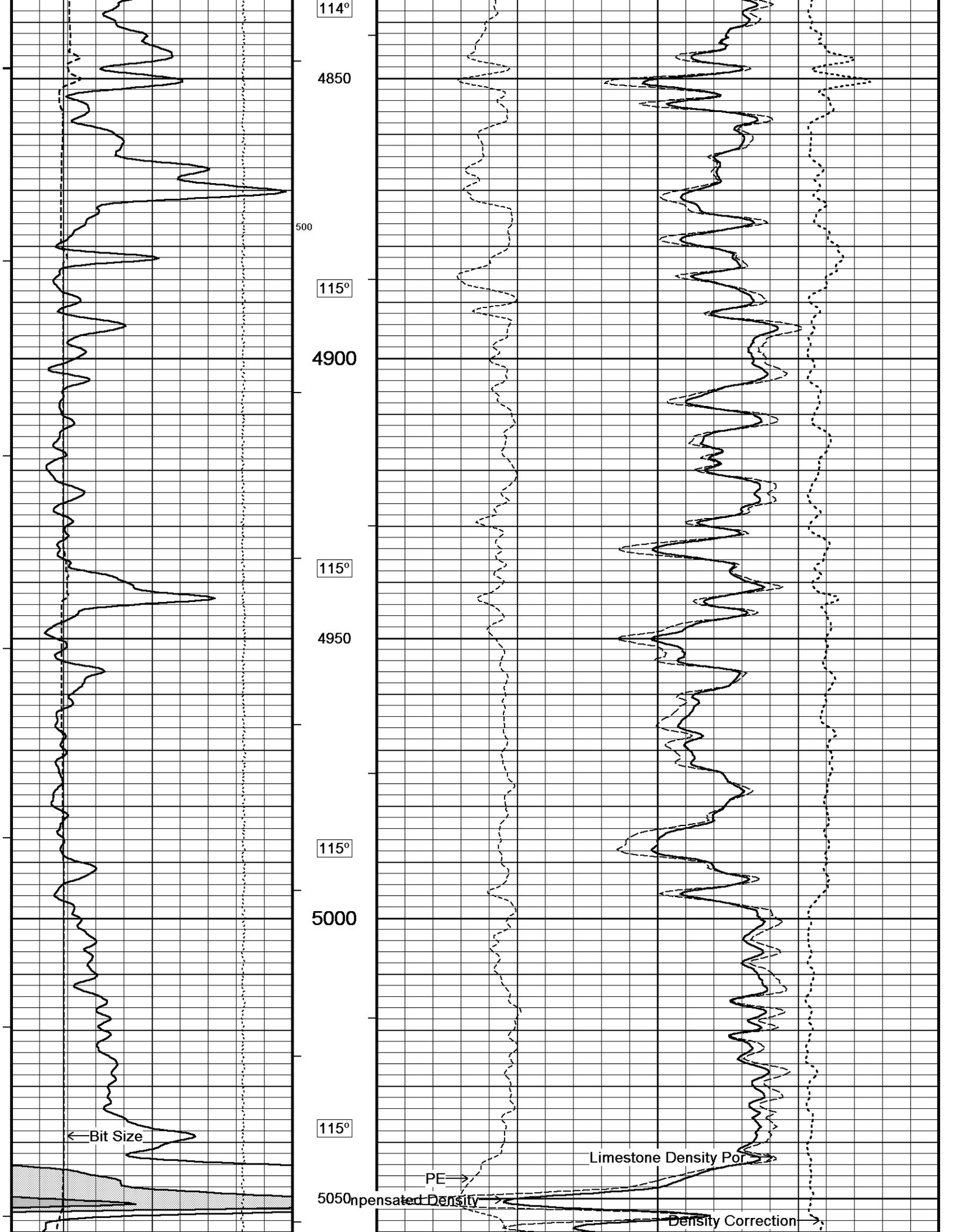


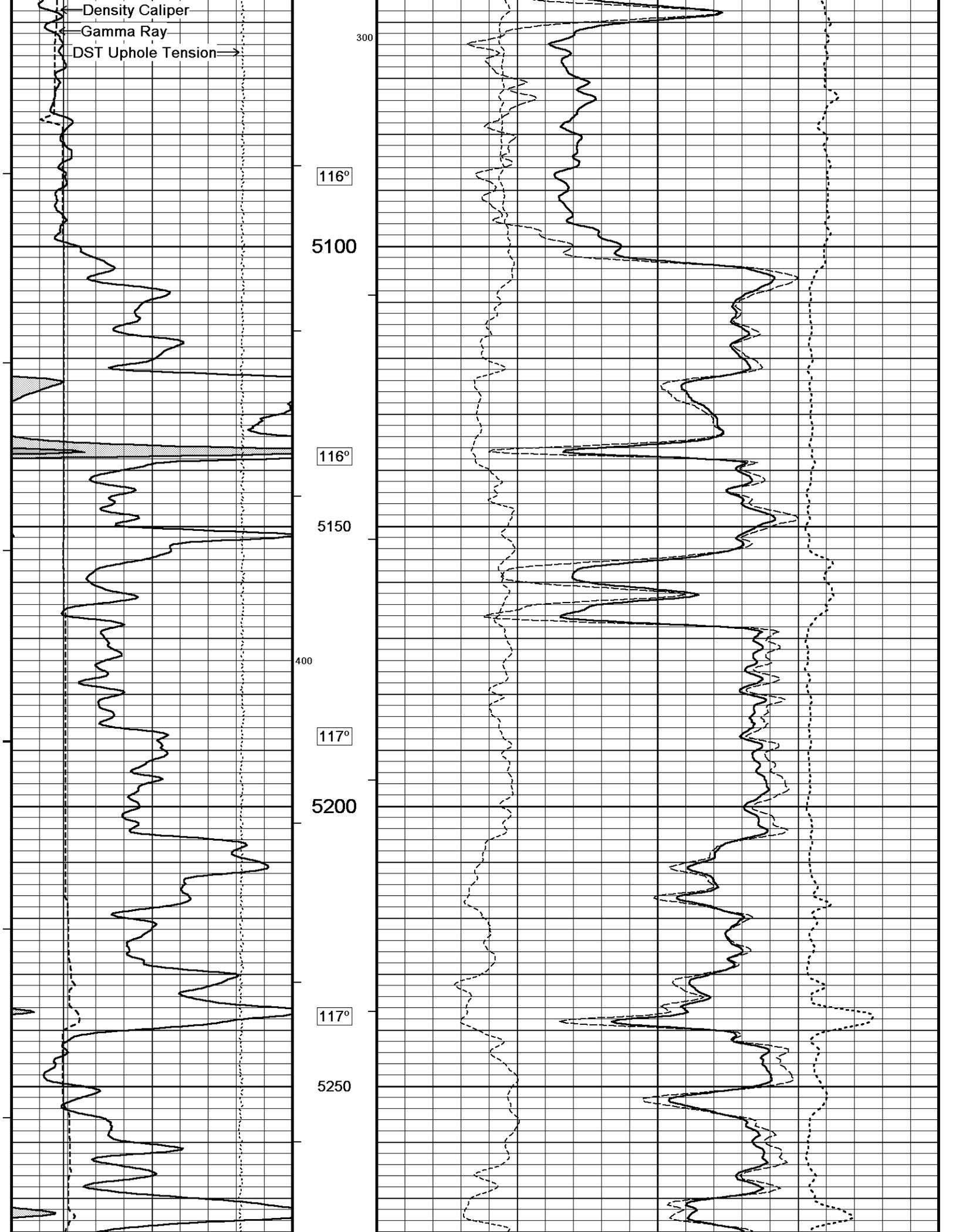
PE

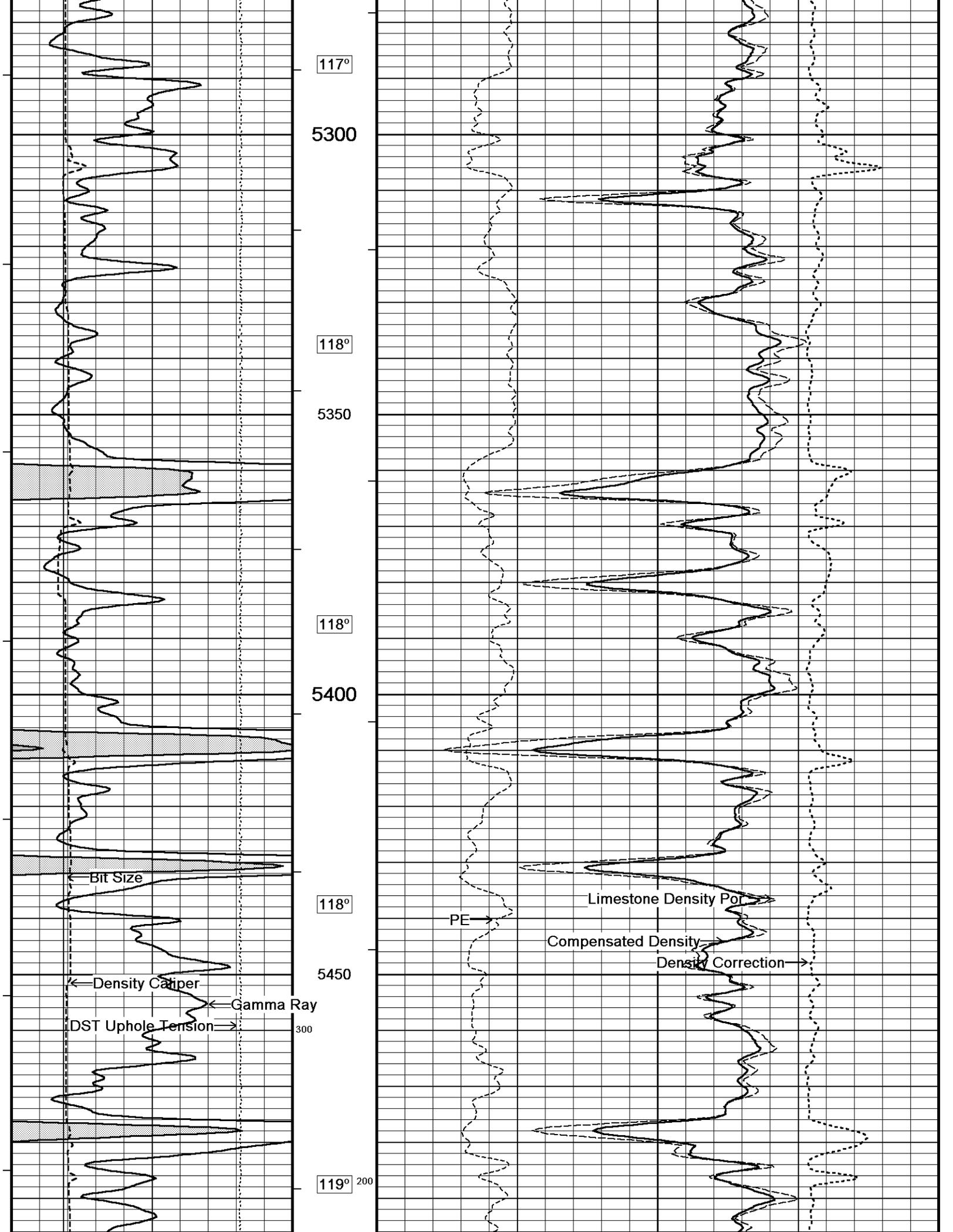
Limestone Density Por.

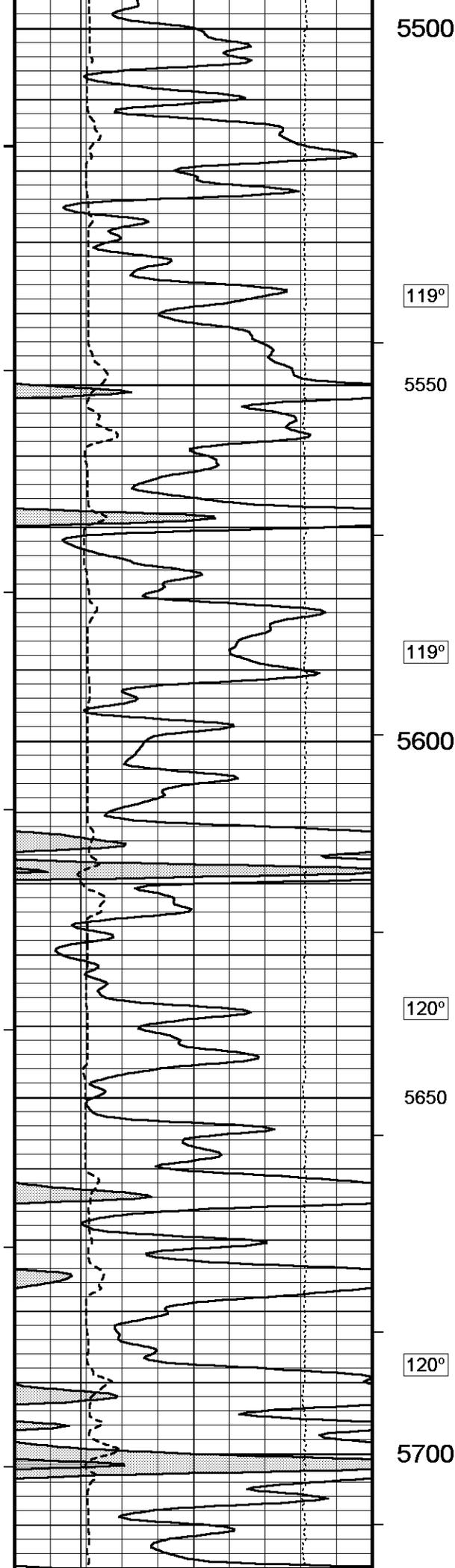
Compensated Density

Density Correction









5500

119°

5550

119°

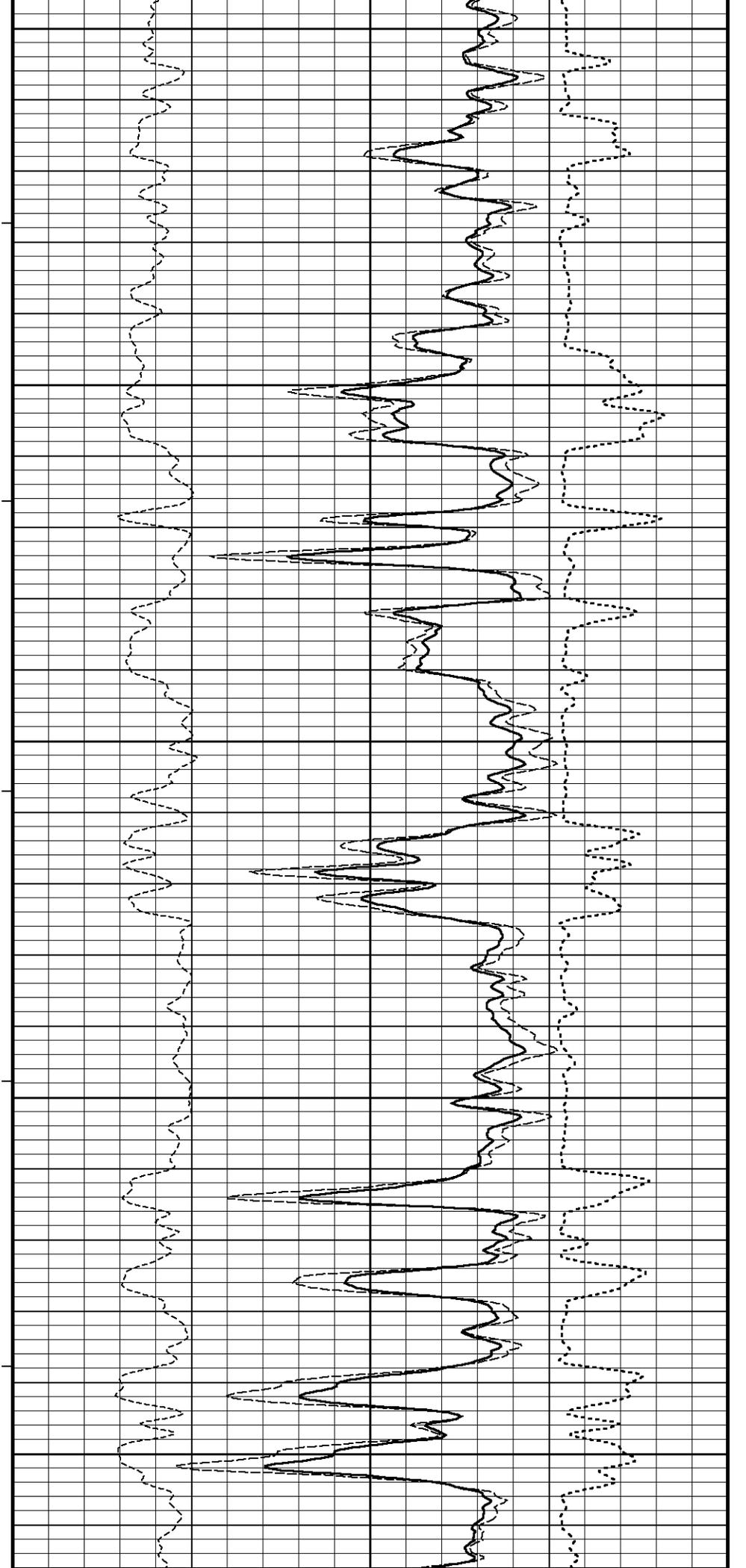
5600

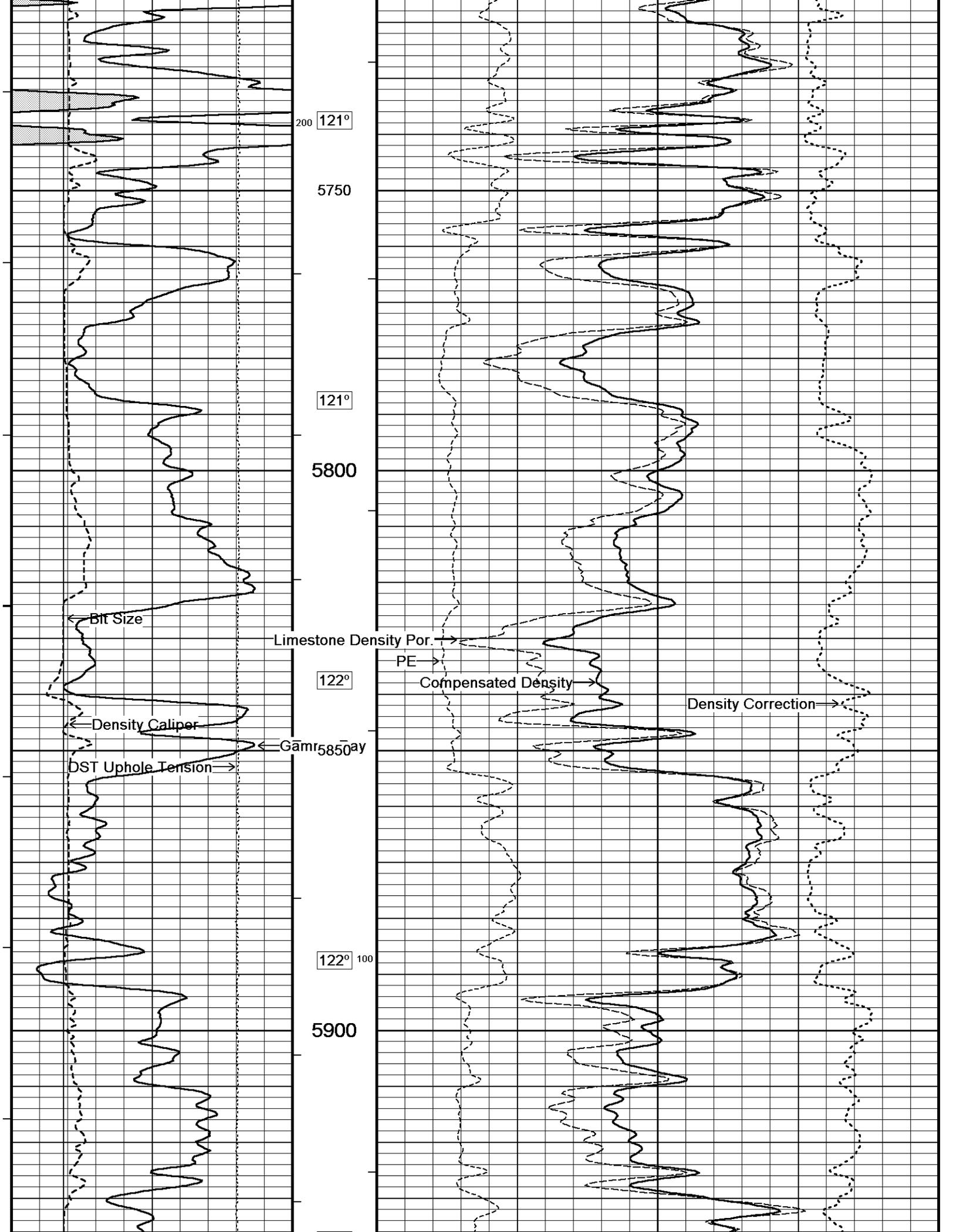
120°

5650

120°

5700





200  $121^\circ$

5750

$121^\circ$

5800

← Bit Size

Limestone Density Por. →

$122^\circ$

PE →

Compensated Density →

Density Correction →

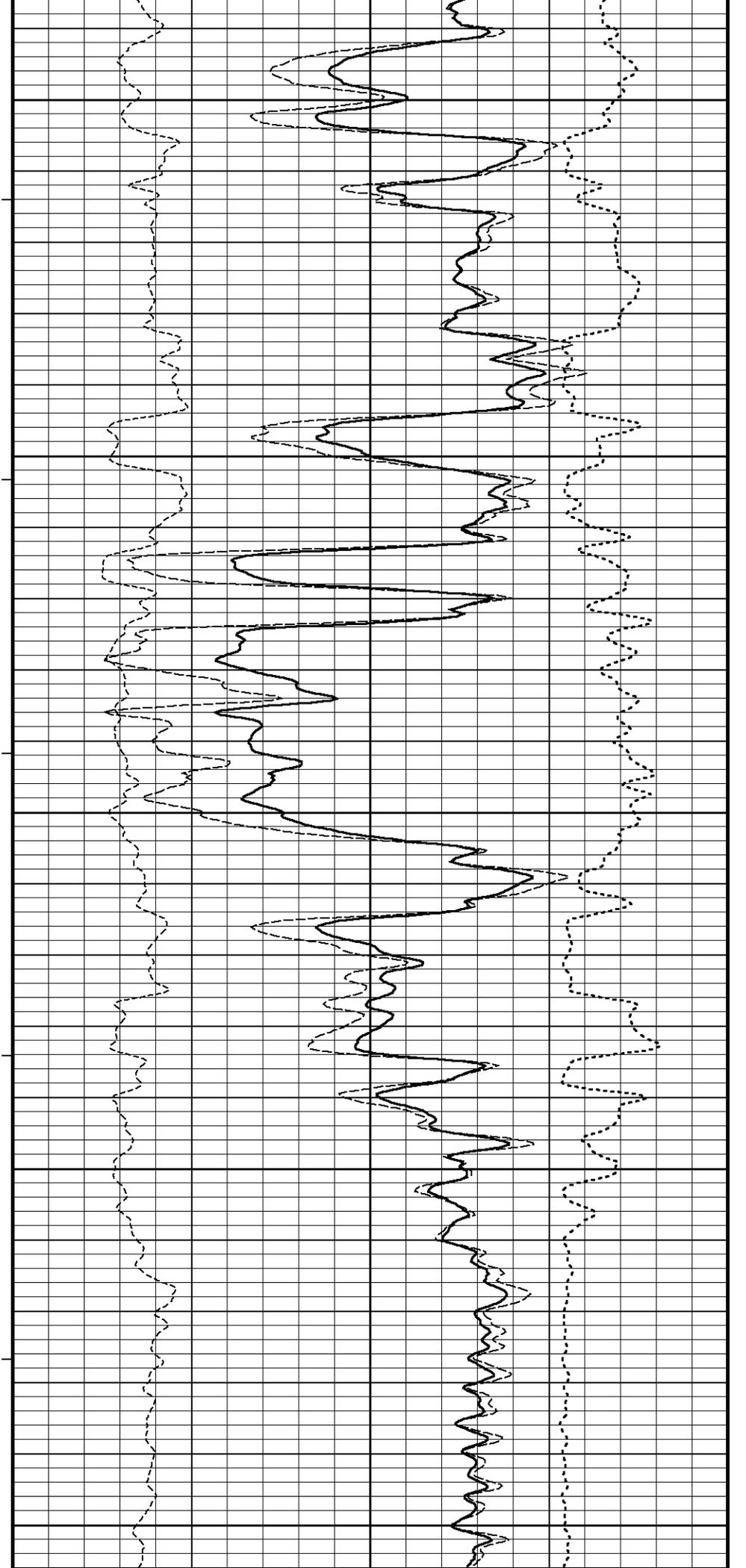
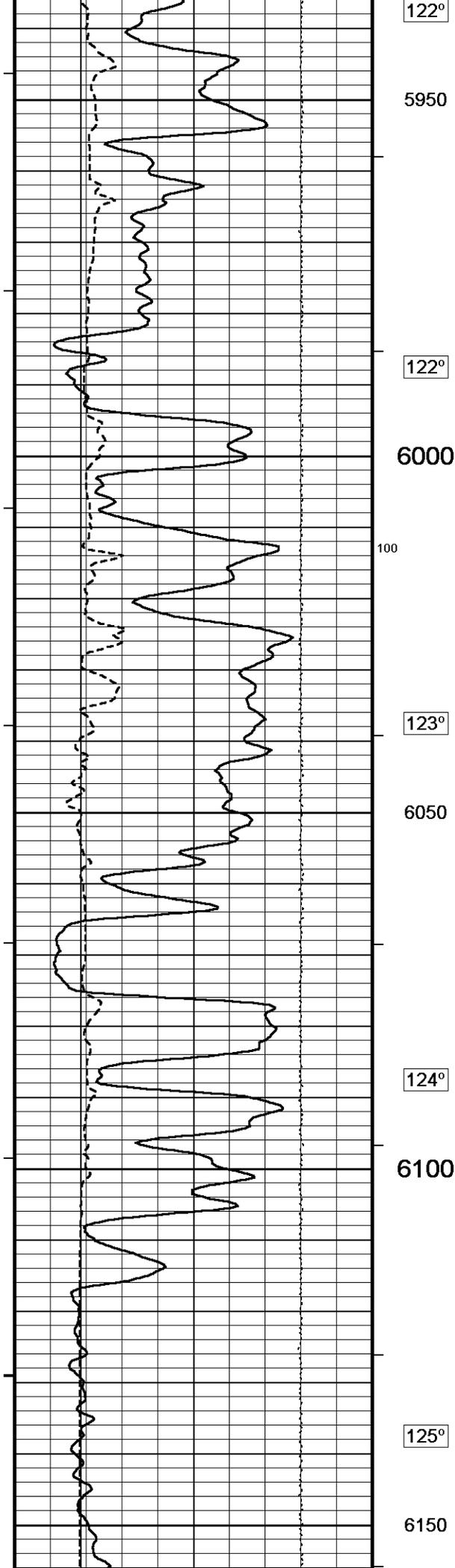
← Density Caliper

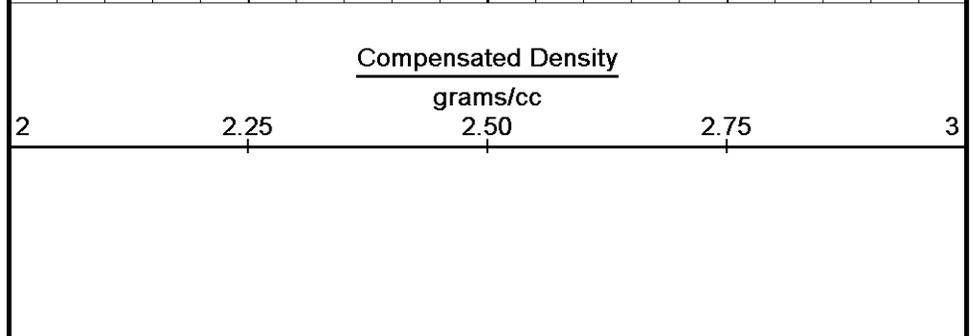
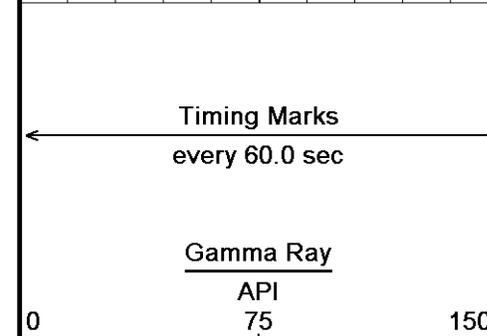
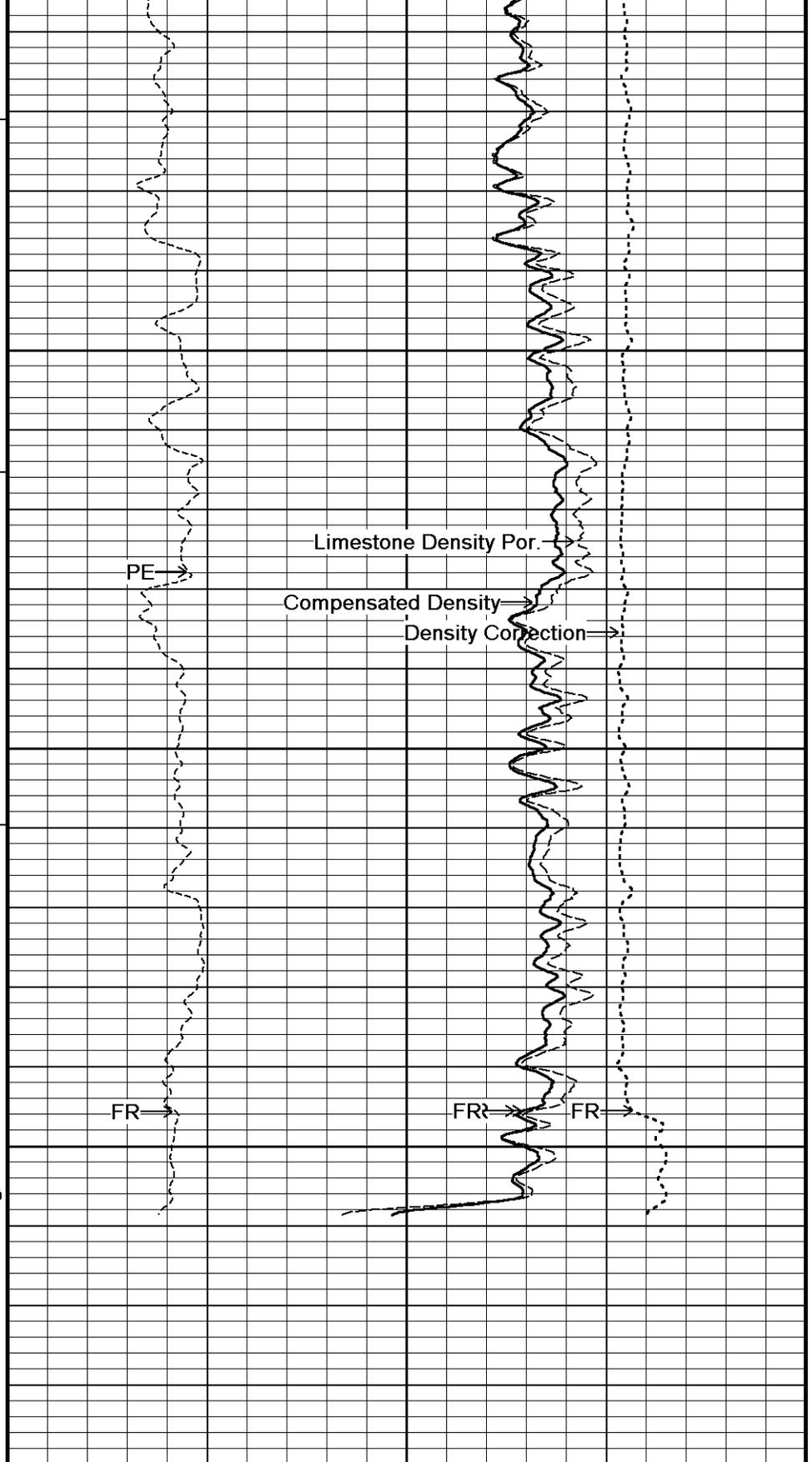
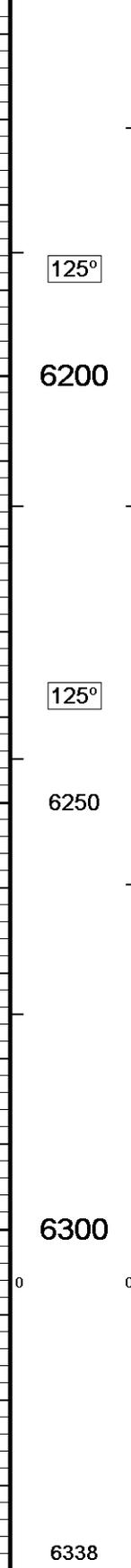
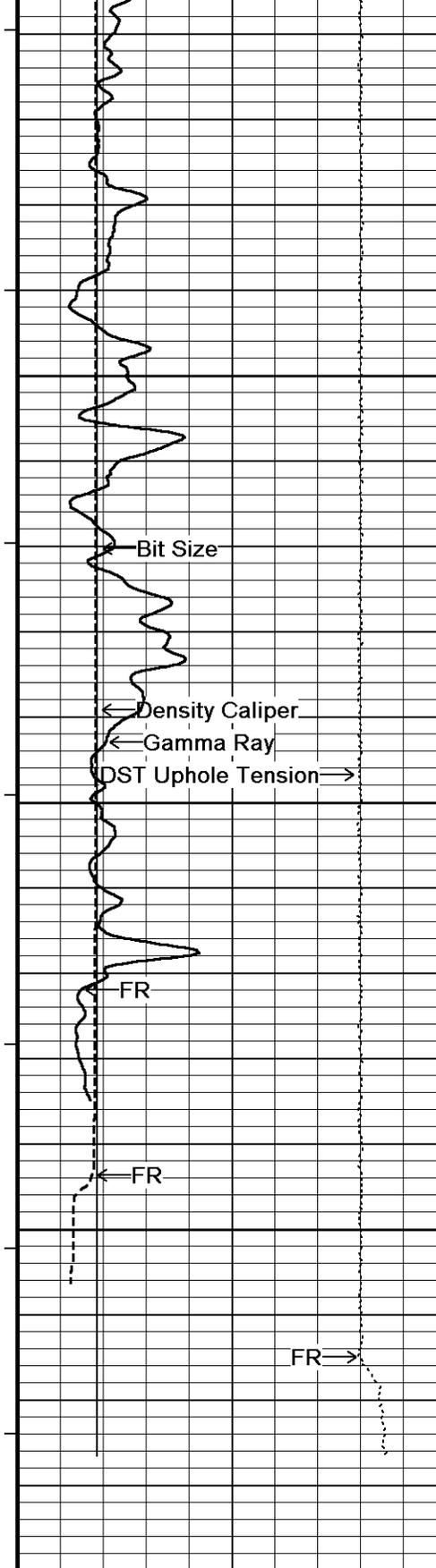
←  $\Gamma_{\text{amr}} 5850 \text{ ay}$

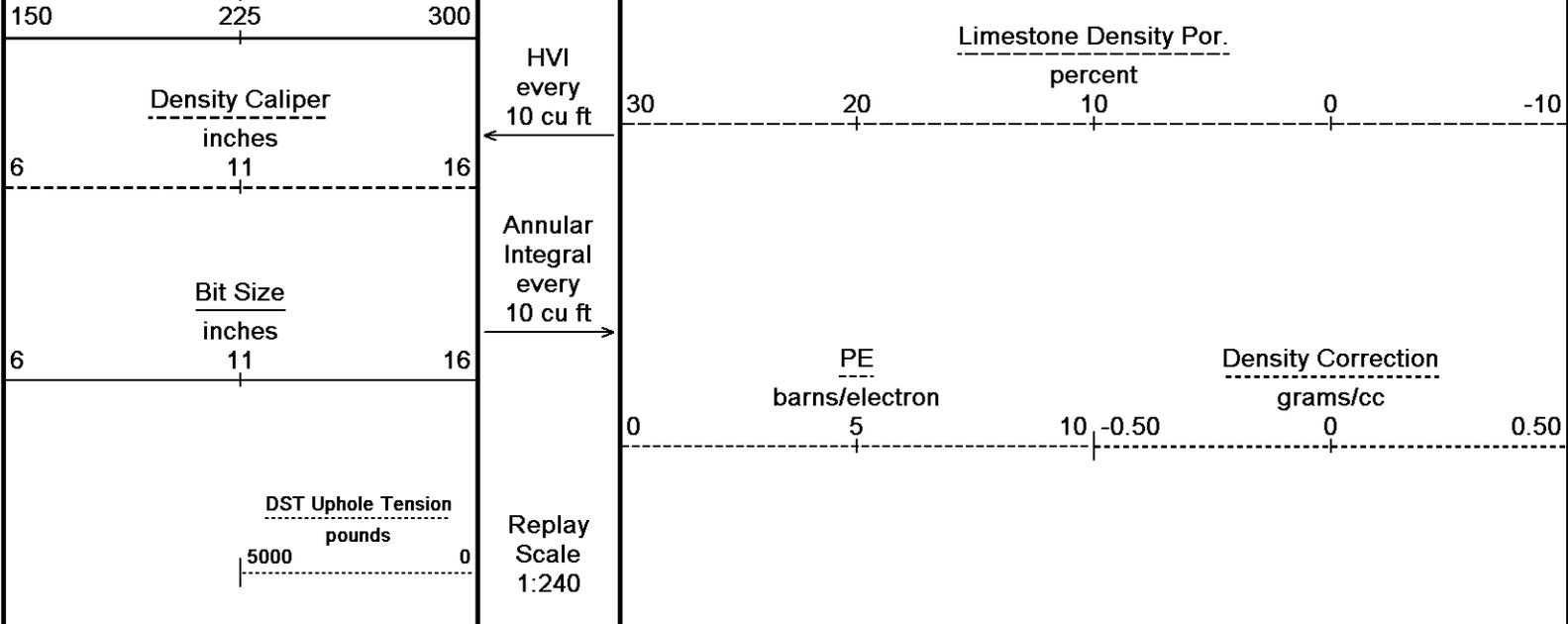
DST Uphole Tension →

$122^\circ$  100

5900





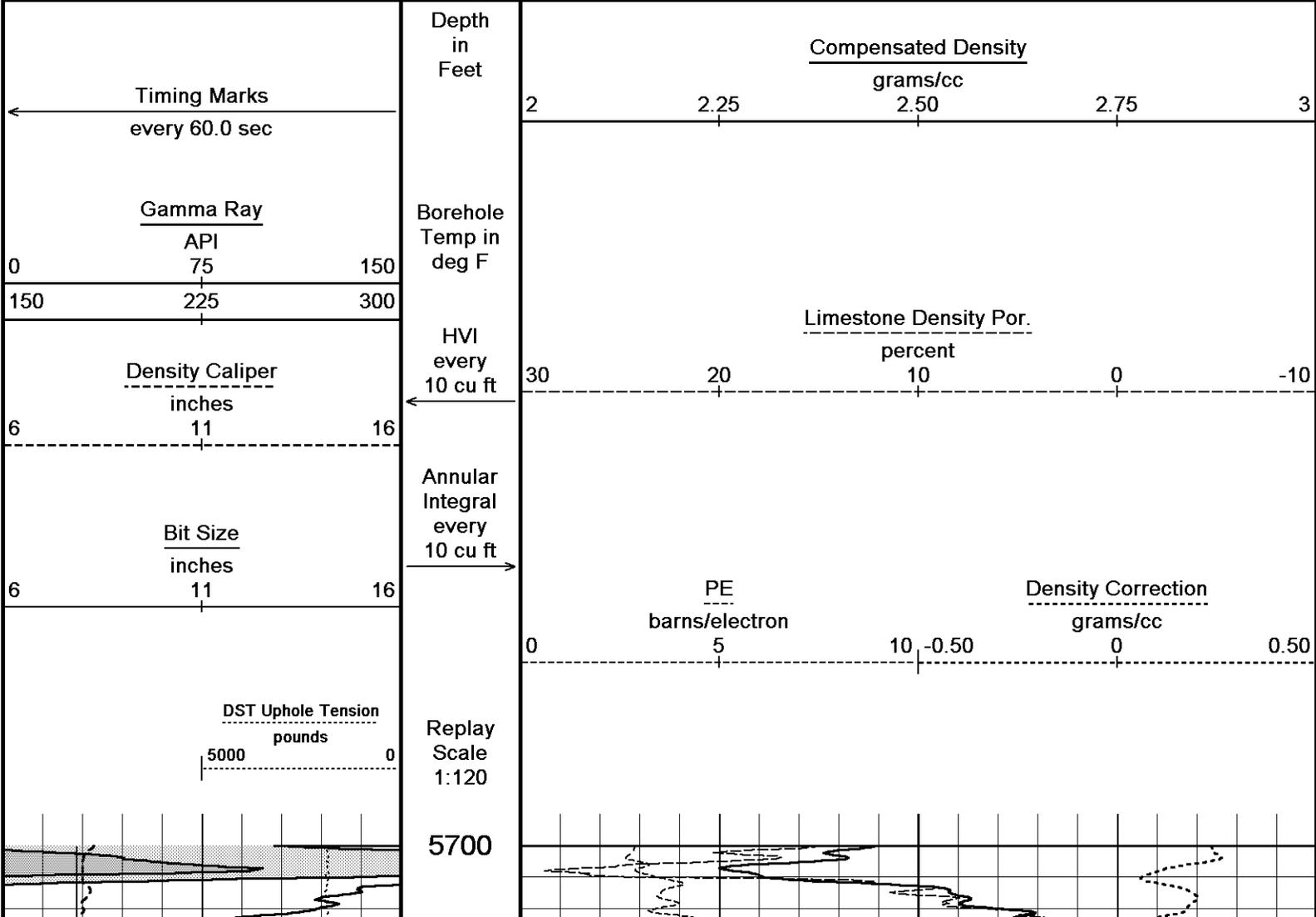


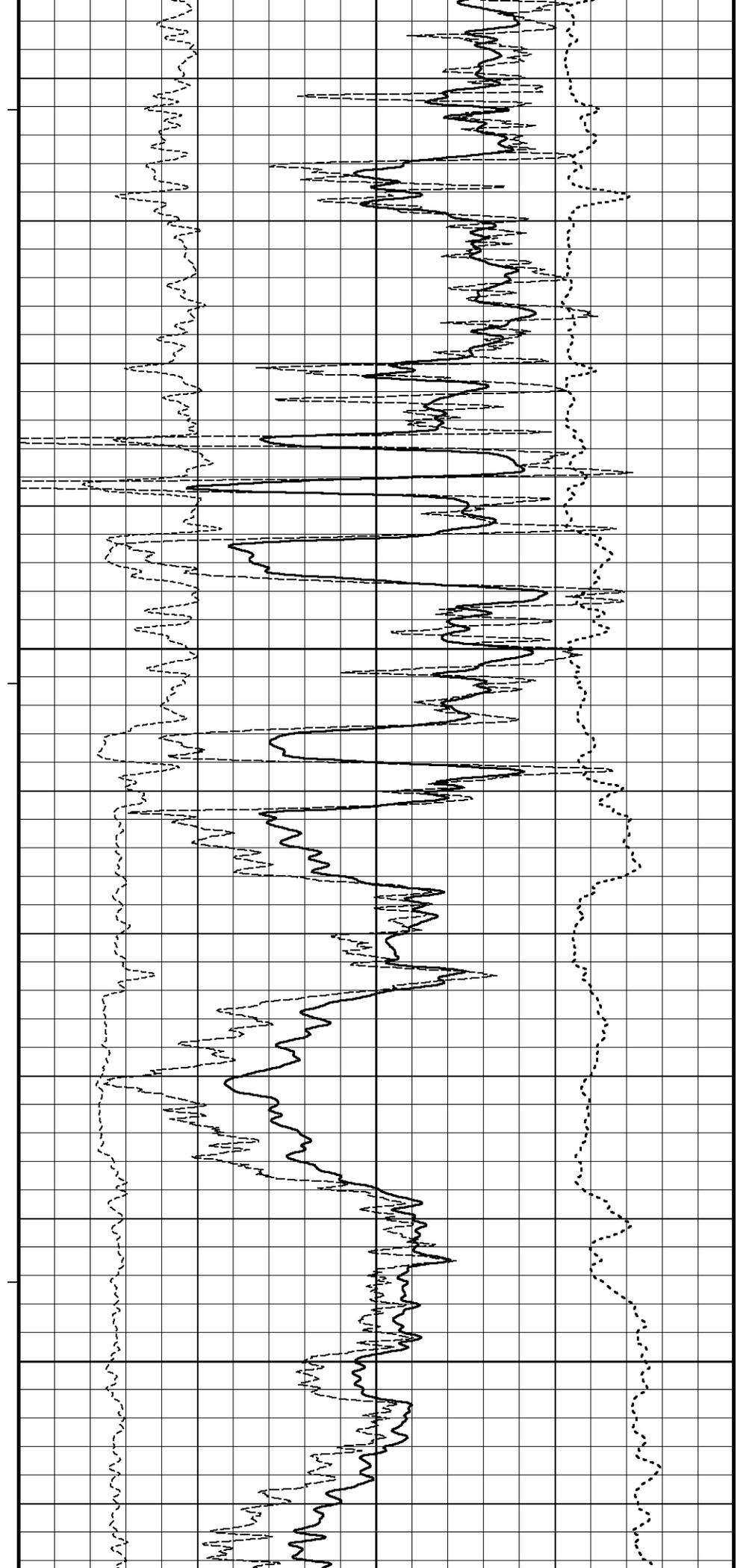
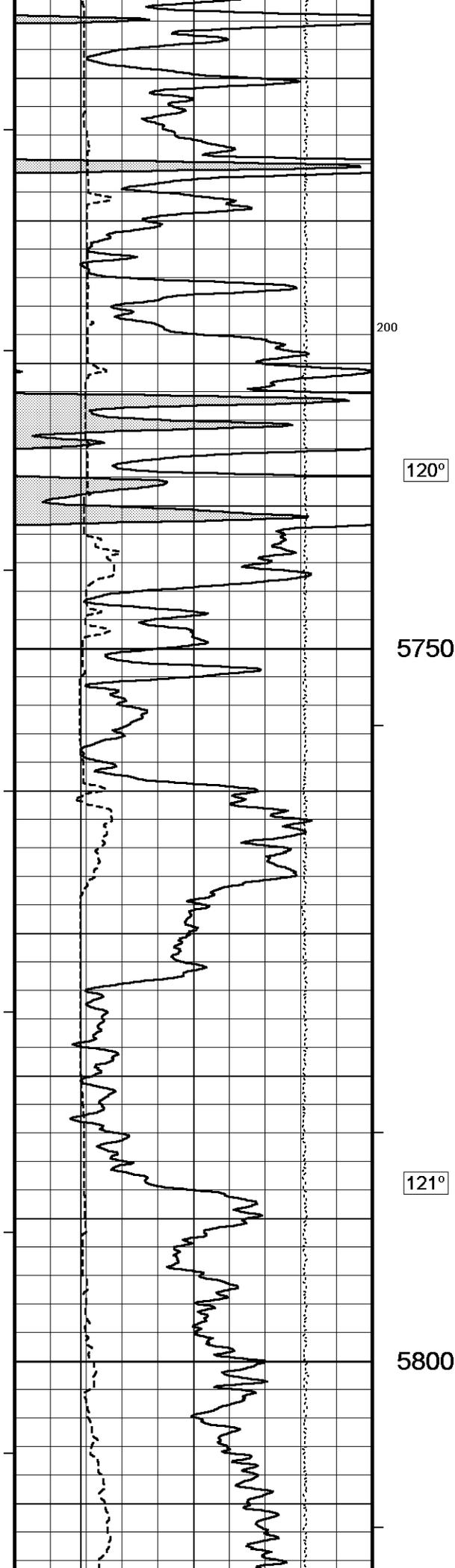
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 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch ...\O'Brien Rickers Ranch #8-17\_Main.dta Recorded on 14-SEP-2013 00:38  
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

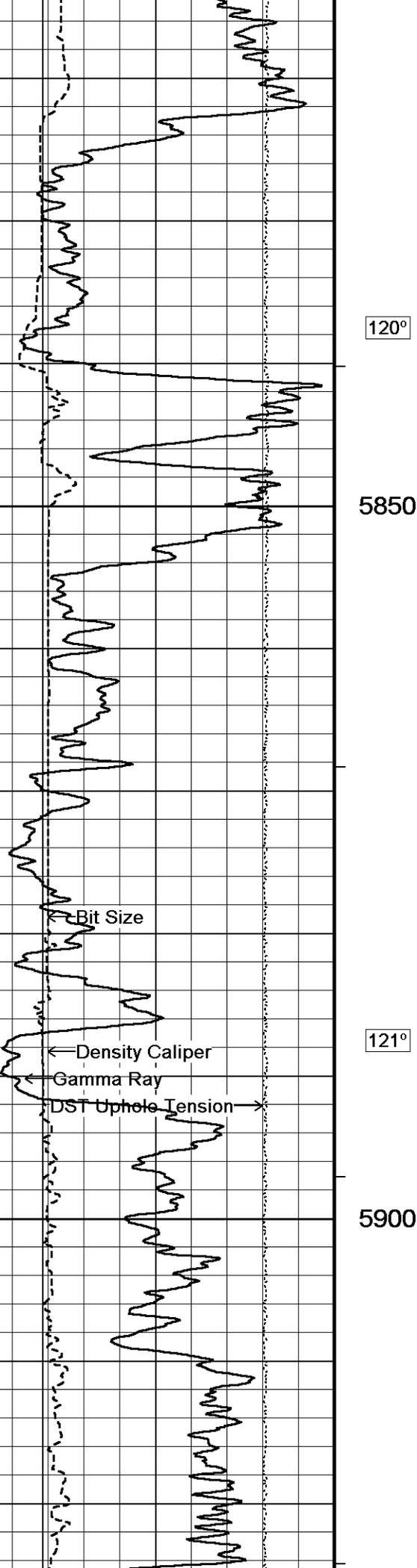
↑ **5 INCH MAIN** ↑

↓ **10 INCH HI-RES** ↓

Depth Based Data - Maximum Sampling Increment 2.5cm Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch #... \O'Brien Rickers Ranch #8-17\_001.dta Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583







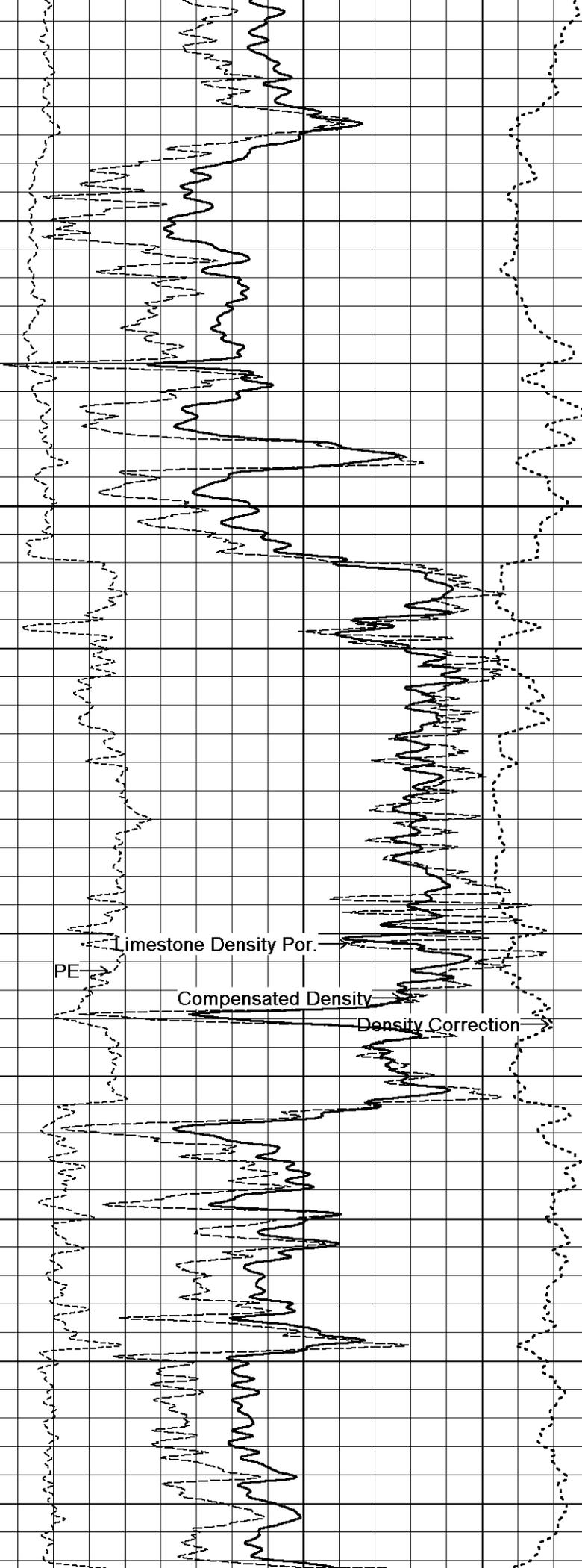
120°

5850

100

121°

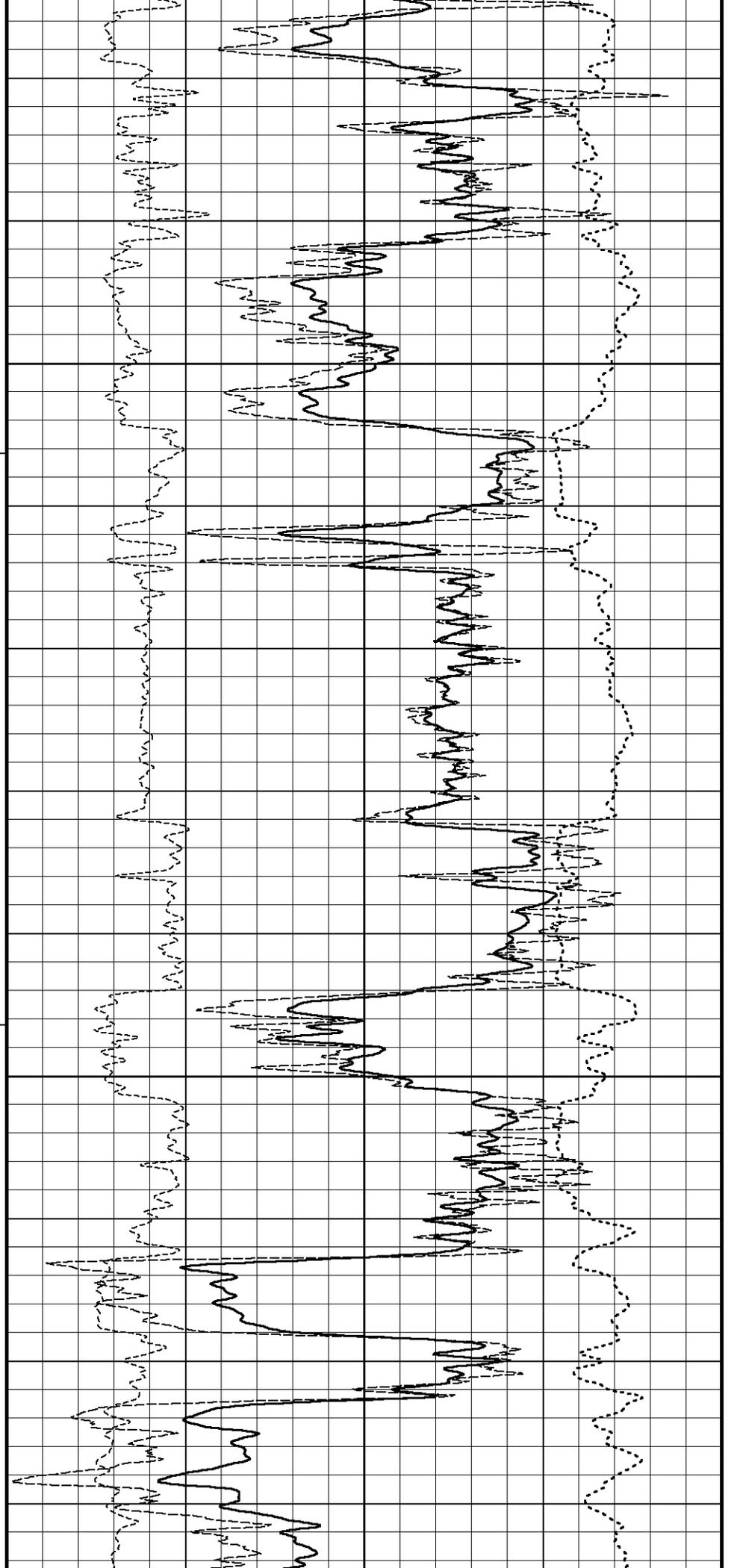
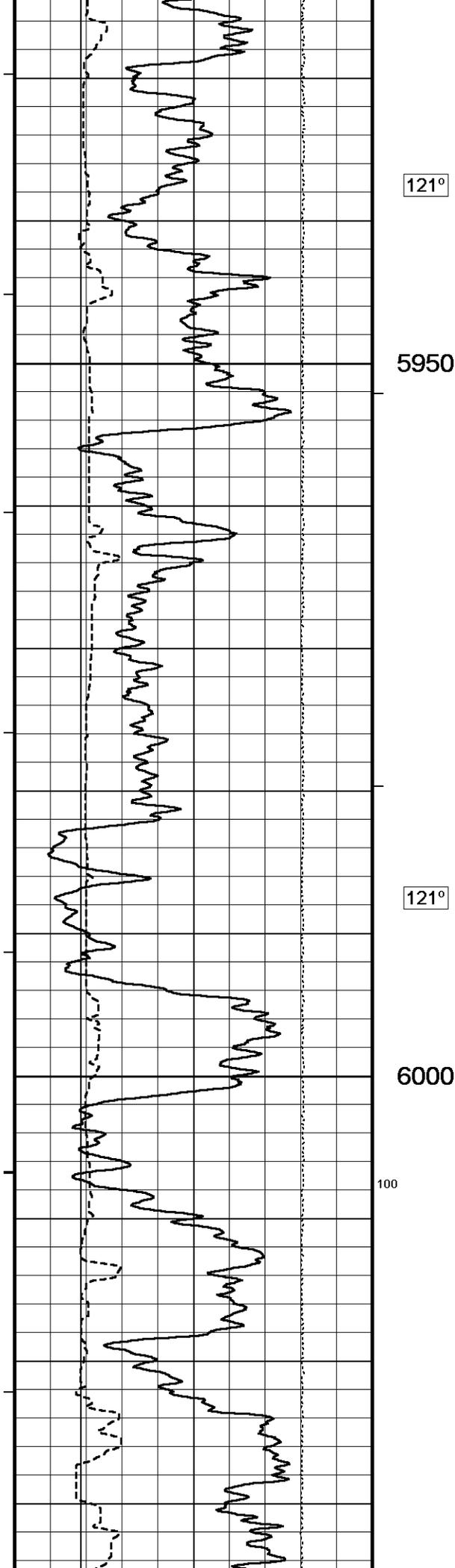
5900



PE

Compensated Density

Density Correction



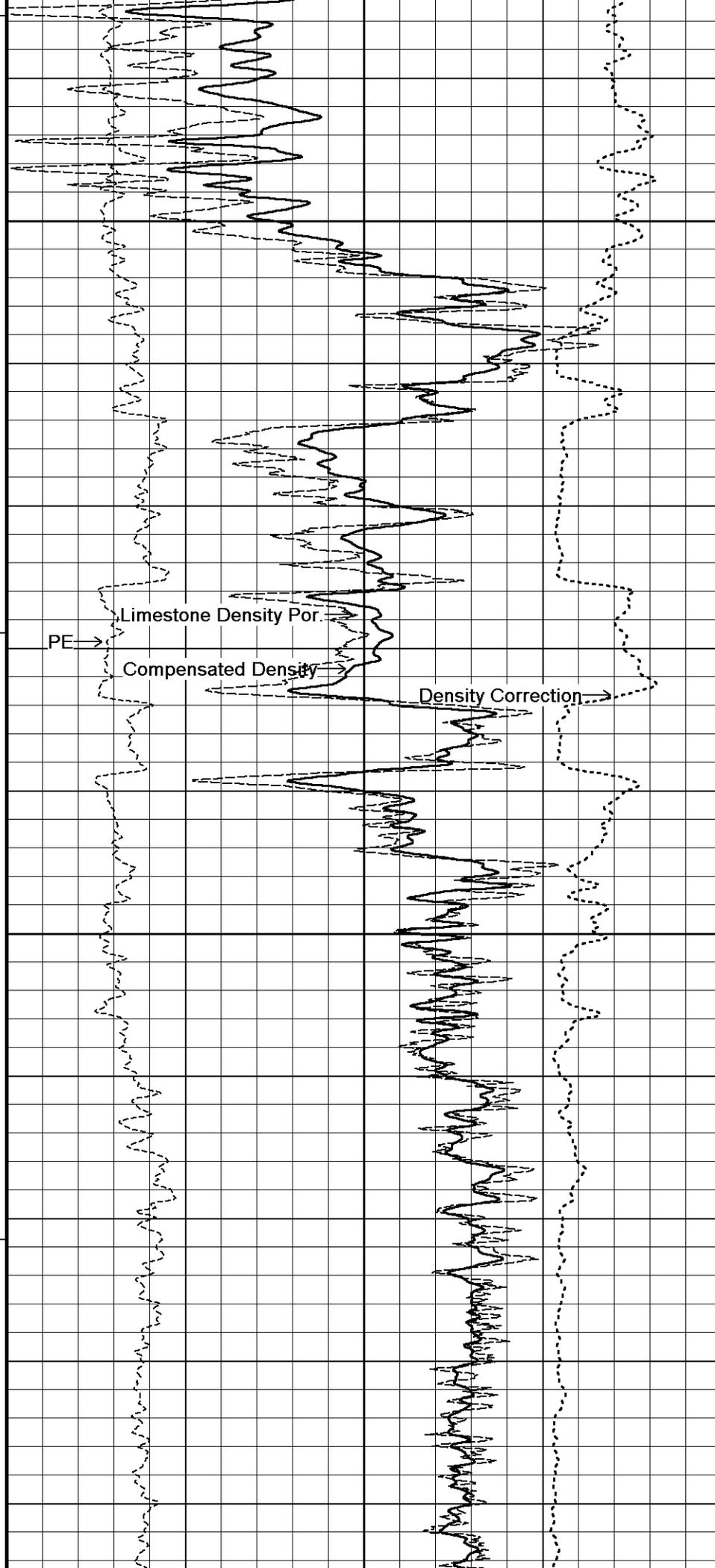
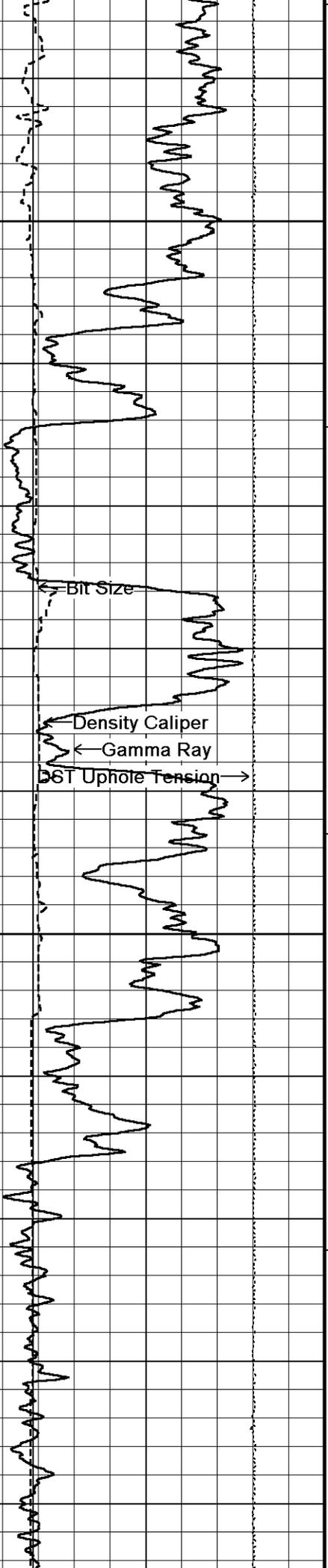
122°

6050

123°

6100

123°



Bit Size

Density Caliper

Gamma Ray

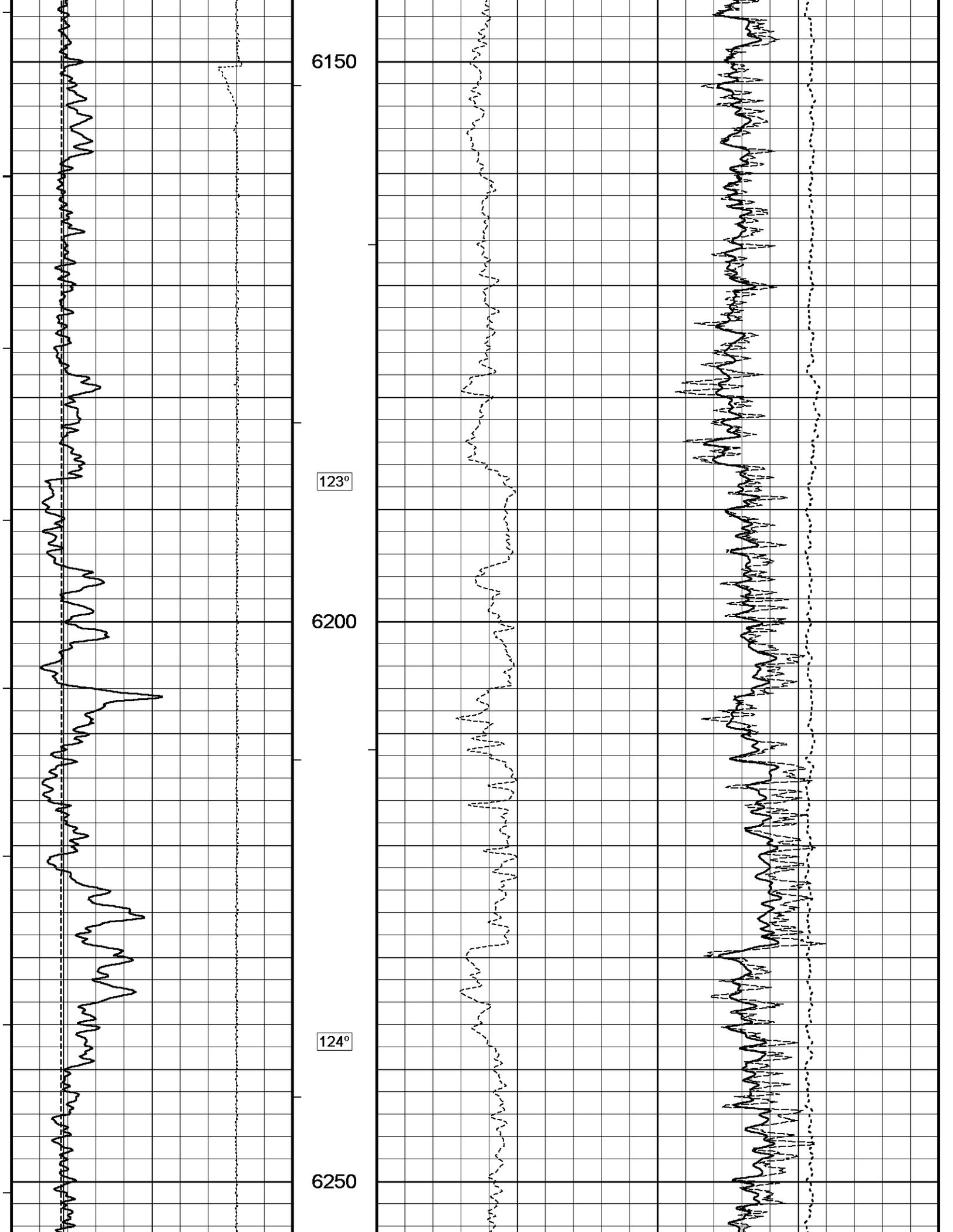
DST Uphole Tension

PE

Limestone Density Por.

Compensated Density

Density Correction



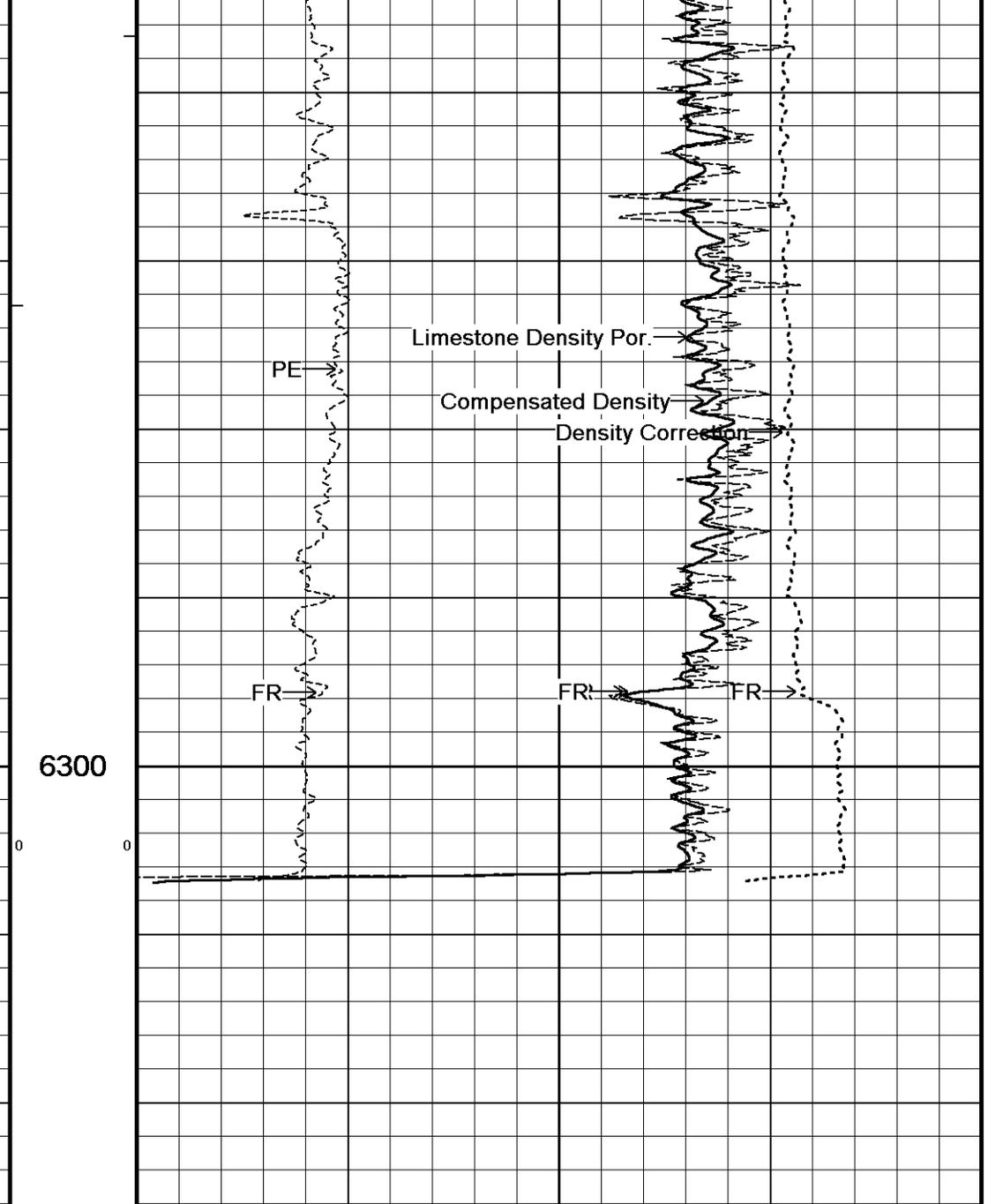
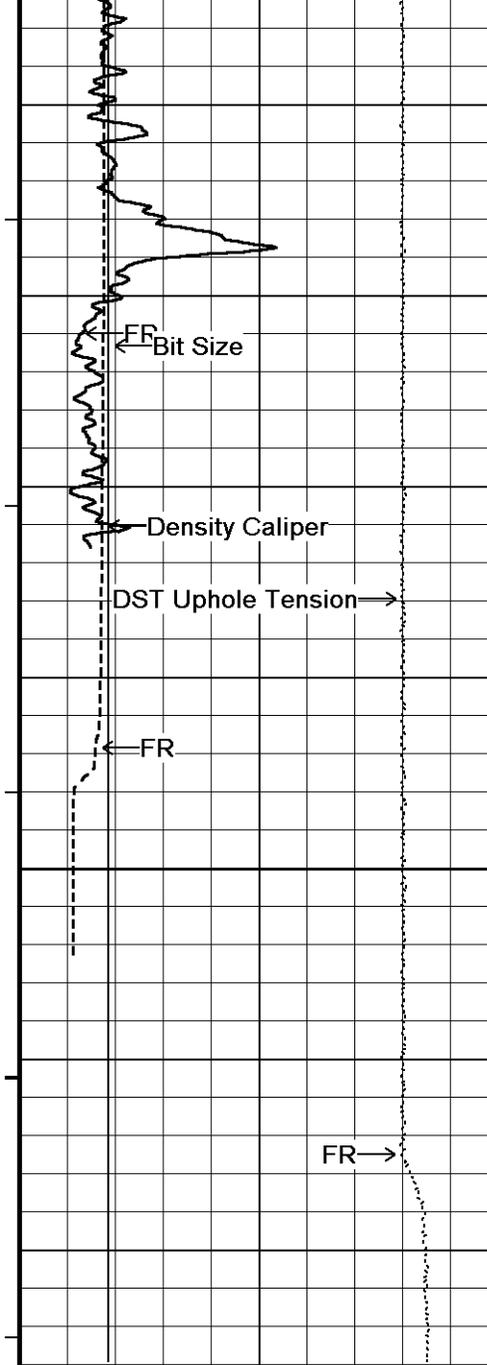
6150

123°

6200

124°

6250



6300

6330

Depth in Feet

Timing Marks every 60.0 sec

Gamma Ray

0	75	150
150	225	300

API

Borehole Temp in deg F

Density Caliper inches

6	11	16
---	----	----

HVI every 10 cu ft

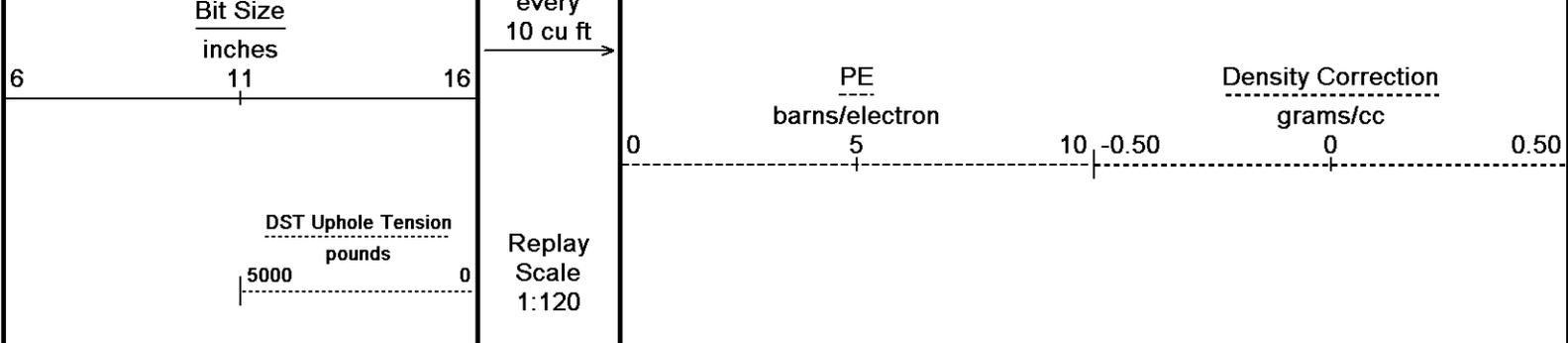
Annular Integral

Compensated Density  
grams/cc

2	2.25	2.50	2.75	3
---	------	------	------	---

Limestone Density Por.  
percent

30	20	10	0	-10
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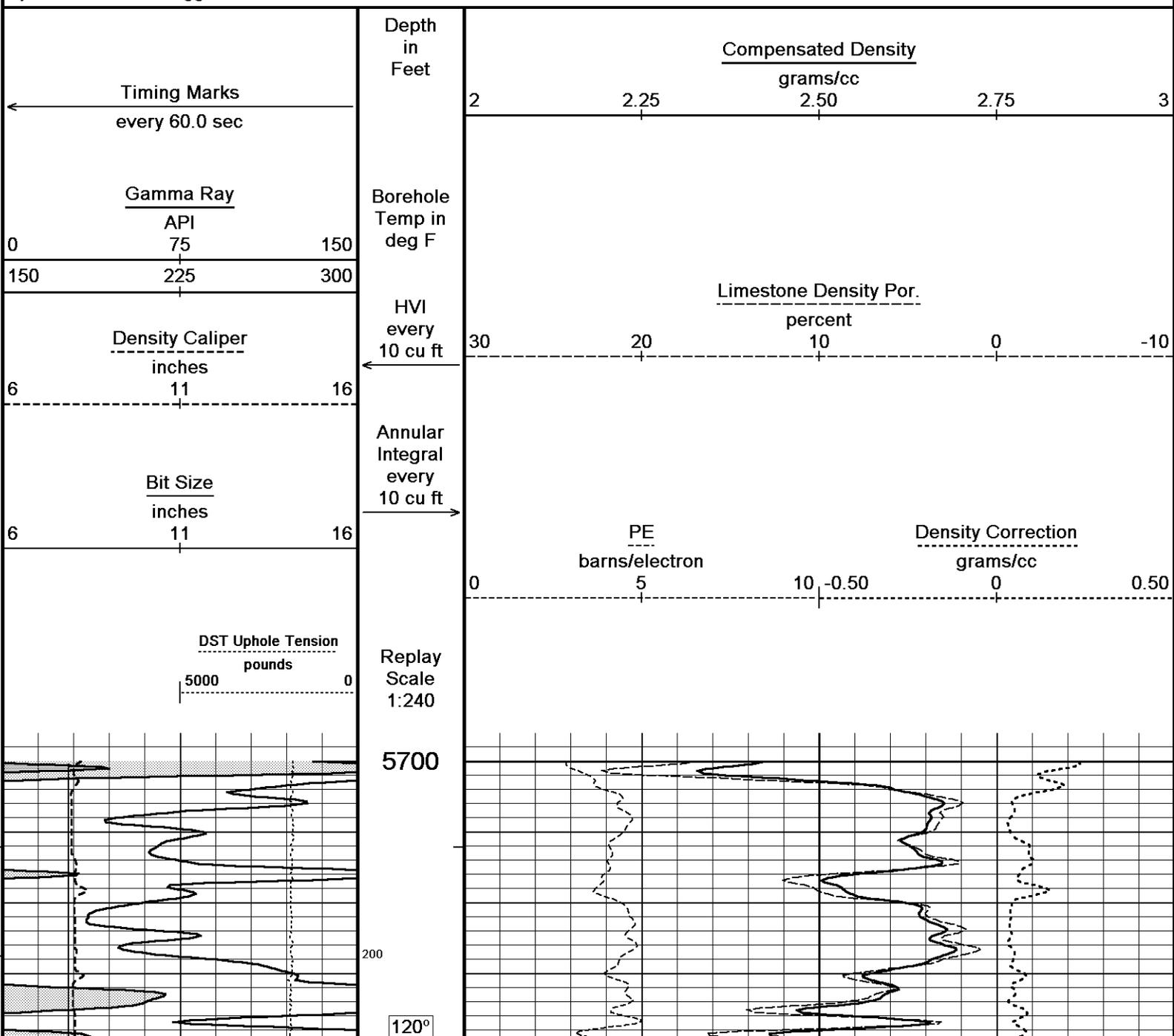


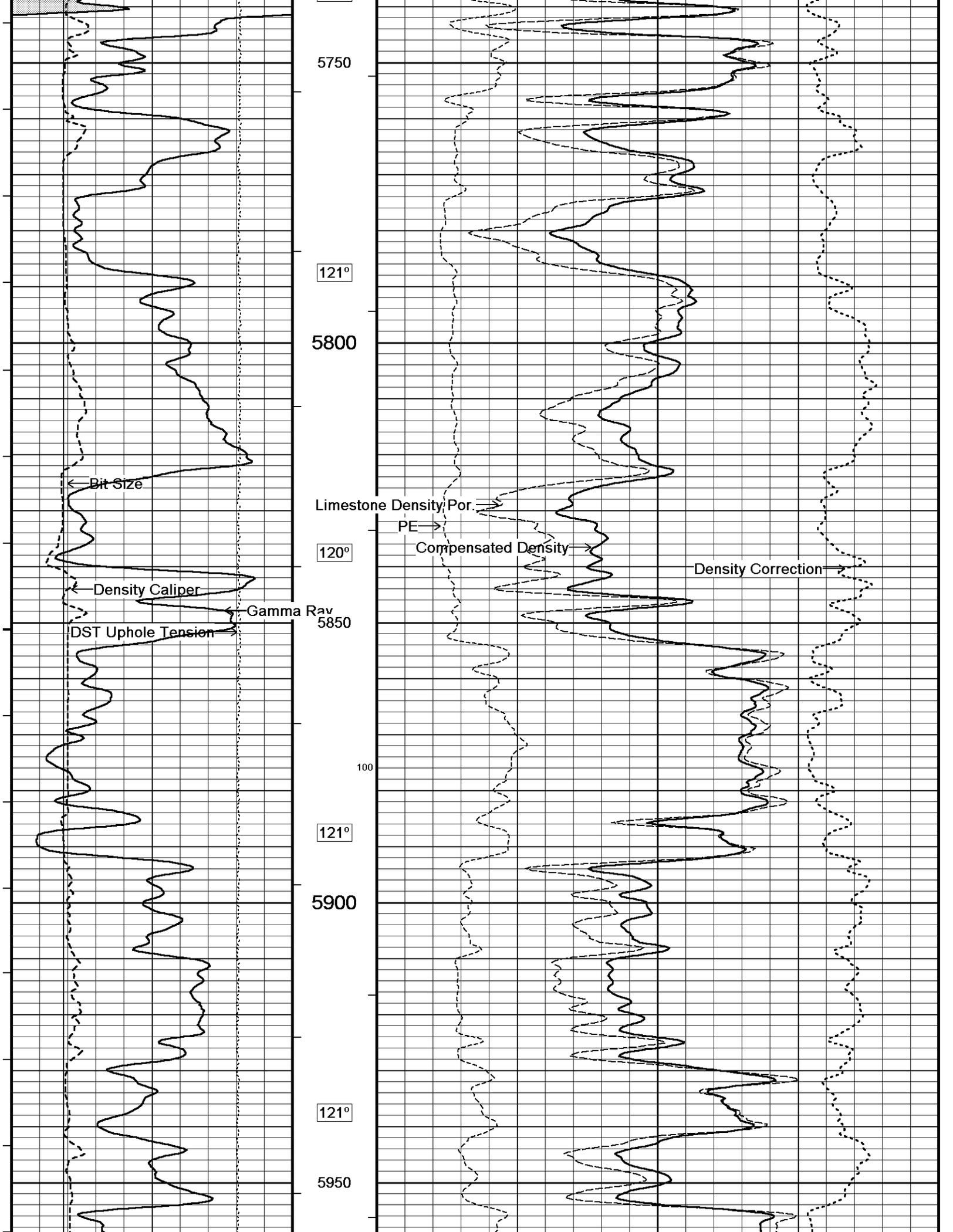
Depth Based Data - Maximum Sampling Increment 2.5cm Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch #...\O'Brien Rickers Ranch #8-17\_001.dta Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

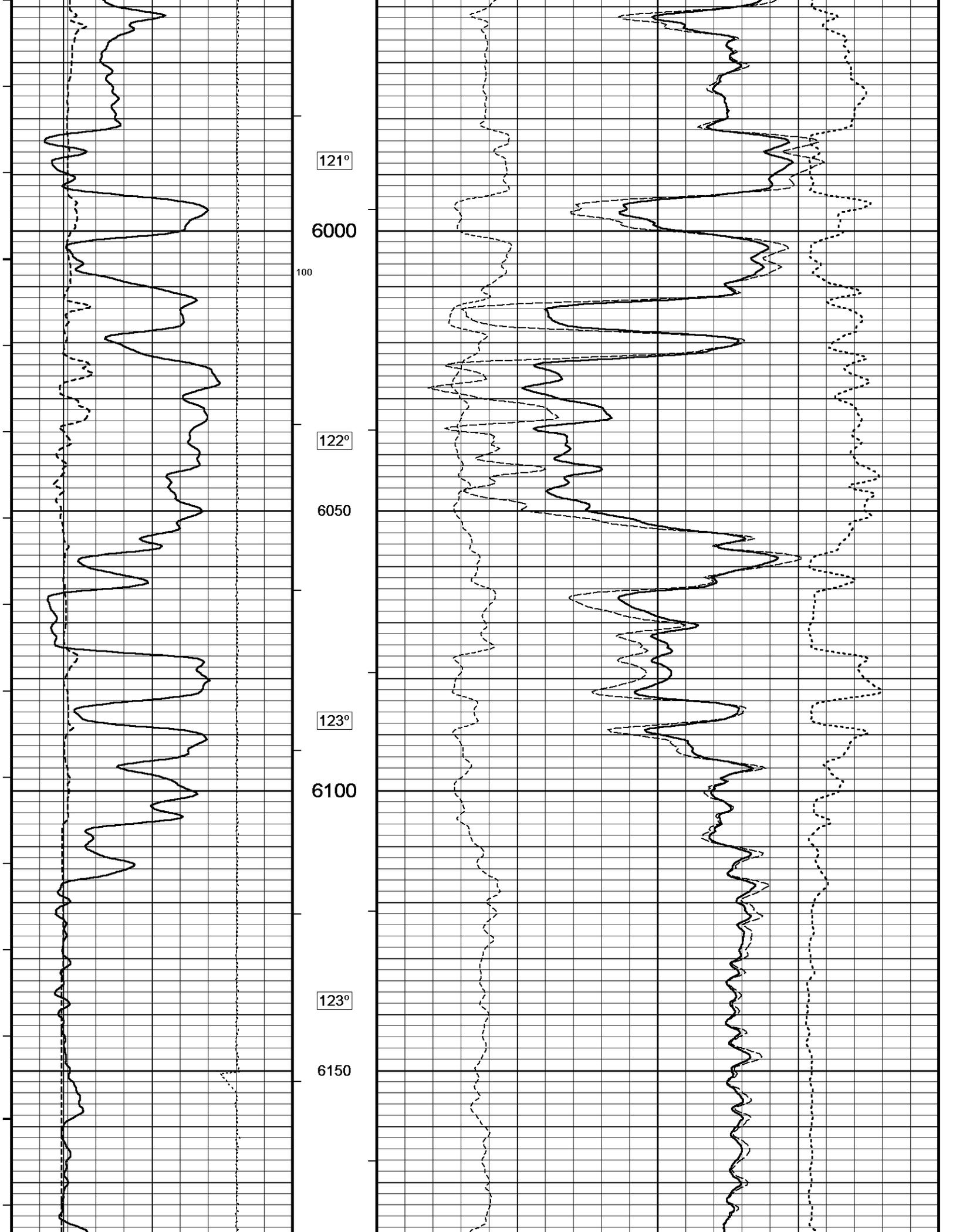
↑ 10 INCH HI-RES ↑

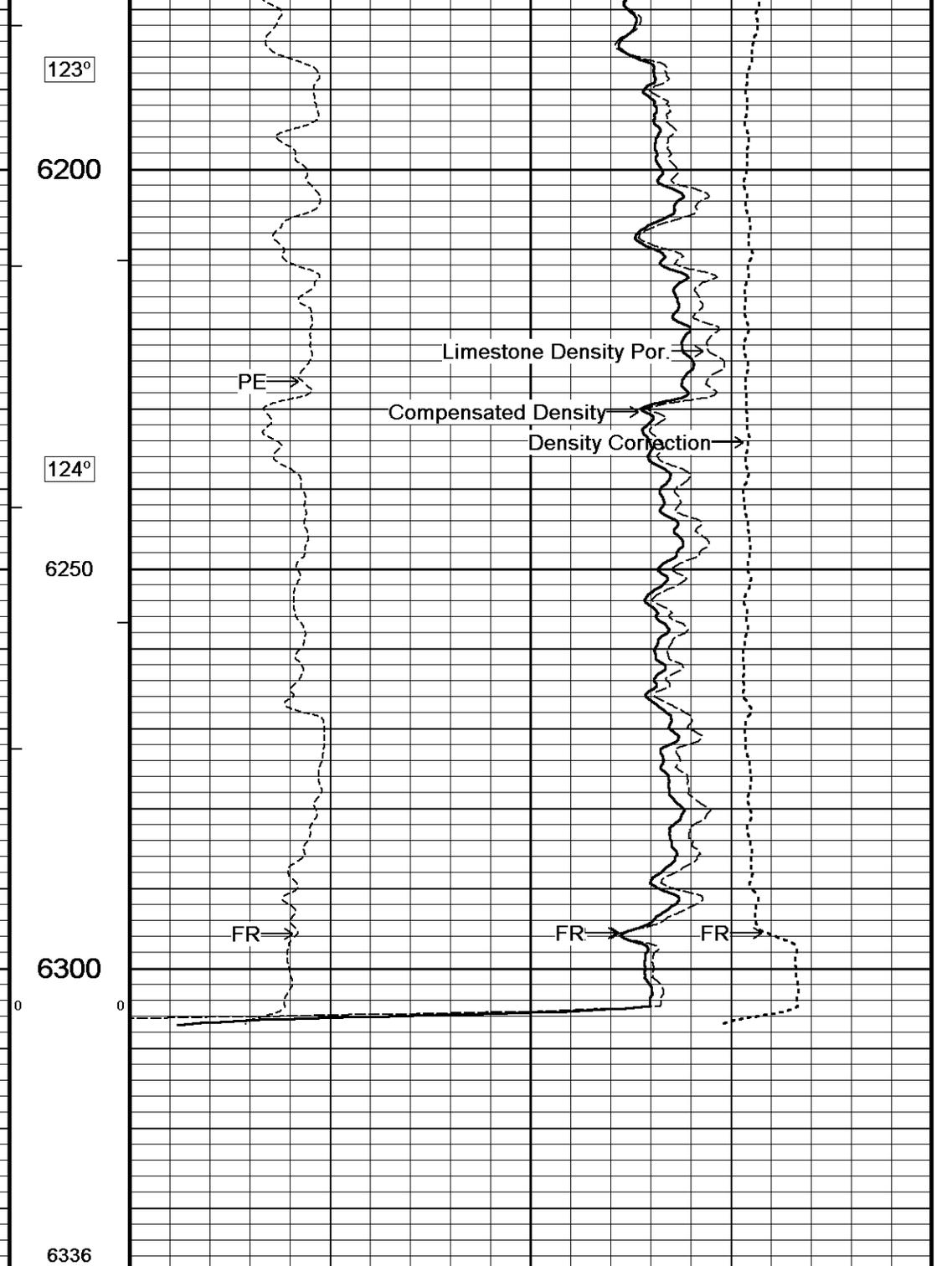
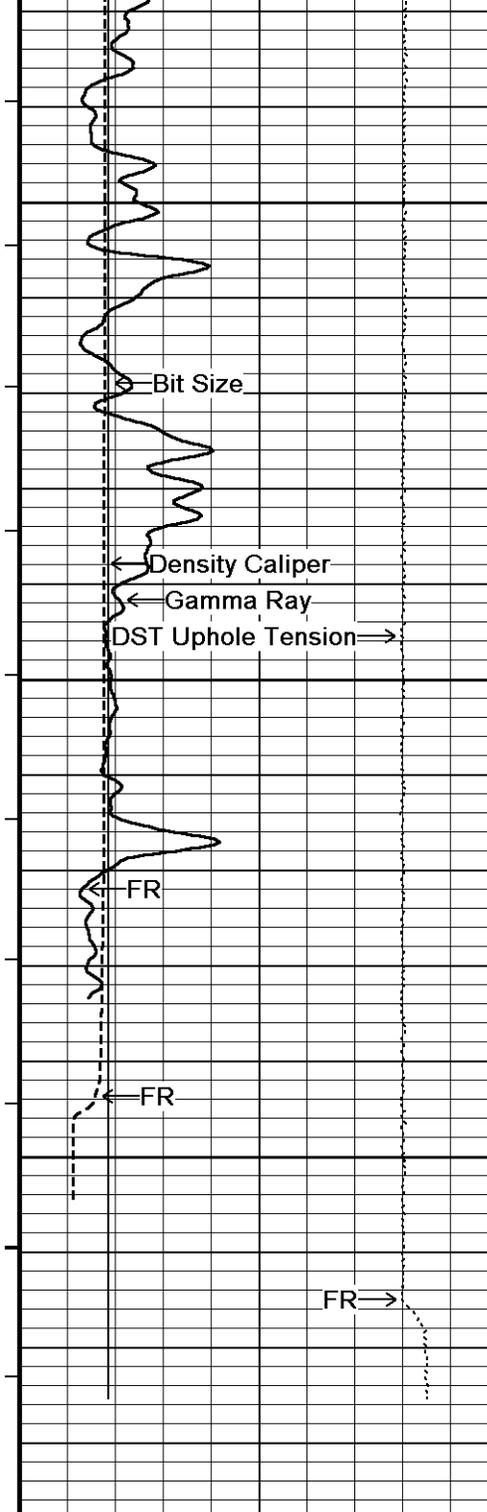
↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ran...\O'Brien Rickers Ranch #8-17\_Repeat.dta Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583









← Timing Marks every 60.0 sec

Gamma Ray  
API  
0 75 150  
150 225 300

Density Caliper  
inches  
← 6 11 16

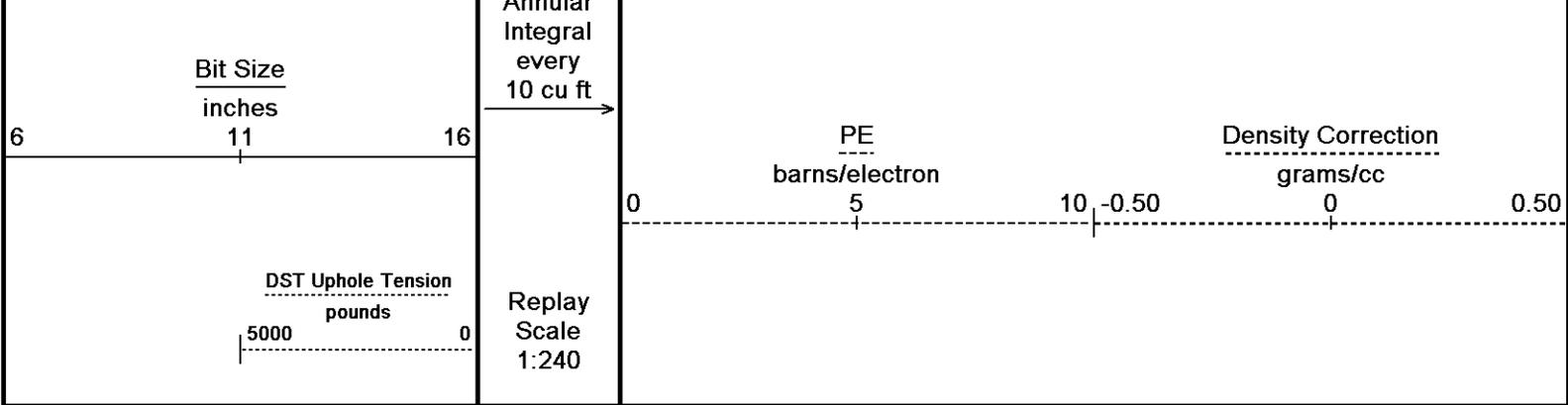
Compensated Density  
grams/cc  
2 2.25 2.50 2.75 3

Borehole Temp in deg F

HVI every 10 cu ft  
← 30 20 10 0 -10

Limestone Density Por.  
percent

Annular



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-SEP-2013 03:11  
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Rickers Ran...\O'Brien Rickers Ranch #8-17\_Repeat.dta Recorded on 13-SEP-2013 23:48  
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

↑ REPEAT SECTION ↑

**BEFORE SURVEY CALIBRATION**  
 C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch #8-17\O'Brien Rickers Ranch #8-17\_Repeat.dta

General Constants All 000 Last Edited on 13-SEP-2013,21:28

<b>General Parameters</b>		
Mud Resistivity	1.300	ohm-metres
Mud Resistivity Temperature	93.000	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	Density Caliper	
<b>Rwa Parameters</b>		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Six Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0 Field Calibration on 13-SEP-2013 23:03

Reading No	Measured	Calibrated (lbs)
1	13565.27	0.00
2	14027.40	395.00

Gamma Calibration MCG-D.K 469 Field Calibration on 11-SEP-2013 14:30

	Measured	Calibrated (API)
Background	68	47
Calibrator (Gross)	1124	772
Calibrator (Net)	1055	725

Gamma Constants MCG-D.K 469 Last Edited on 13-SEP-2013,07:33

Gamma Calibrator Number	GRC38	
Mud Density	1.10	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 469 Field Calibration on 18-AUG-2013,02:35

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

High Resolution Temperature Constants MCG-D.K 469 Last Edited on 18-AUG-2013,02:35

Pre-filter Length 11

SP Calibration MCG-D.K 469 Field Calibration on 12-SEP-2013 15:11

	Measured	Calibrated (mV)
Reference 1	100.2	100.0
Reference 2	-99.2	-100.1

Caliper Calibration MML-A 3 Base Calibration on 15-AUG-2013 08:50  
Field Calibration on 11-SEP-2013 14:21

Base Calibration	Measured	Calibrator Size (in)
Reading No		
1	14887	5.98
2	18120	7.97
3	21042	9.86
4	25322	11.92
5	0	0.00
6	N/A	N/A

Field Calibration	Measured Caliper (in)	Actual Caliper (in)
	5.99	5.98

Micro Normal and Micro Inverse Calibration MML-A 3 Base Calibration on 15-AUG-2013 09:16  
Field Check on 11-SEP-2013 14:19

Base Calibration	Channel	Resistor 1	Measured		Calibrated (ohm-m)	
			Resistor 2	Resistor 1	Resistor 2	
	Micro Normal	12.3	60.3	5.0	25.0	
	Micro Inverse	15.7	78.4	5.0	25.0	

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 3 Last Edited on 11-SEP-2013,14:18

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	N/A	inches	

Neutron Calibration MDN-A.B 66 Base Calibration on 31-JUL-2013 10:25  
Field Check on 11-SEP-2013 14:35

Base Calibration	Near	Measured		Calibrated (cps)	
		Far	Near	Far	
Ratio	3180	99	3714	110	33.764

Field Calibrator at Base	Calibrated (cps)
Ratio	1617 2323
	0.696

Field Check	Calibrated (cps)
Ratio	1626 2326
	0.693

Neutron Constants MDN-A.B 66 Last Edited on 13-SEP-2013,21:28

Neutron Source Id	P0204NN	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
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-B.J 353**

Base Calibration on 15-AUG-2013 09:33  
Field Check on 11-SEP-2013 11:33

**Base Calibration**

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.1	126.8
Base Check		280.9
Field Check		281.0

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

Last Edited on 13-SEP-2013,21:27

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

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

Base Calibration on 19-APR-2013,13:41  
Field Check on 11-SEP-2013 11:22

**Base Calibration**

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.3	474.2	9.3	966.2	
2	6.3	388.4	7.6	821.4	
3	3.3	259.4	5.2	566.0	
4	1.9	133.0	2.6	279.2	

Array Temperature 76.8 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.4	3837.8
2	0.0	0.0	29.7	3475.3
3	0.0	0.0	29.1	3051.7
4	0.0	0.0	19.8	2080.7
Deep			18.6	2048.1
Medium			42.2	3989.4
Shallow			43.1	5051.7

Array Temperature 0.0 80.9 Deg F

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

Last Edited on 13-SEP-2013,21:27

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	60.00	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 Normalization

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	

High Resolution Temperature Calibration MAI-A.A 167

Field Calibration on 18-AUG-2013,02:21

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

High Resolution Temperature Constants MAI-A.A 167

Last Edited on 18-AUG-2013,02:21

Pre-filter Length	11
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Caliper Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:54  
Field Calibration on 11-SEP-2013 11:34

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16560	3.99
2	24992	5.98
3	32880	7.97
4	41184	9.86
5	50688	11.92
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.89	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:37  
Field Check on 11-SEP-2013 14:18

Density Calibration				
Base Calibration				
	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60206	33560	59556	30836
Reference 2	25378	2915	24941	2541

Field Check at Base		
	Measured	Calibrated
	1155.1	1345.7

Field Check		
	Measured	Calibrated
	1161.0	1348.7

PE Calibration

Base Calibration				
	WS	Measured WH	Ratio	Calibrated Ratio
Background	211	1029		
Reference 1	22957	60005	0.386	0.371
Reference 2	6904	25238	0.276	0.272

Field Check at Base		
	WS	Measured WH
	211.2	1028.9

Density Constants MPD-B 64

Last Edited on 13-SEP-2013,07:33

Density Source Id	18235B	
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 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

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\O'Brien Rickers Ranch #8-17\O'Brien Rickers Ranch #8-17\_Repeat.dta

Compact Comms Gamma  
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log  
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

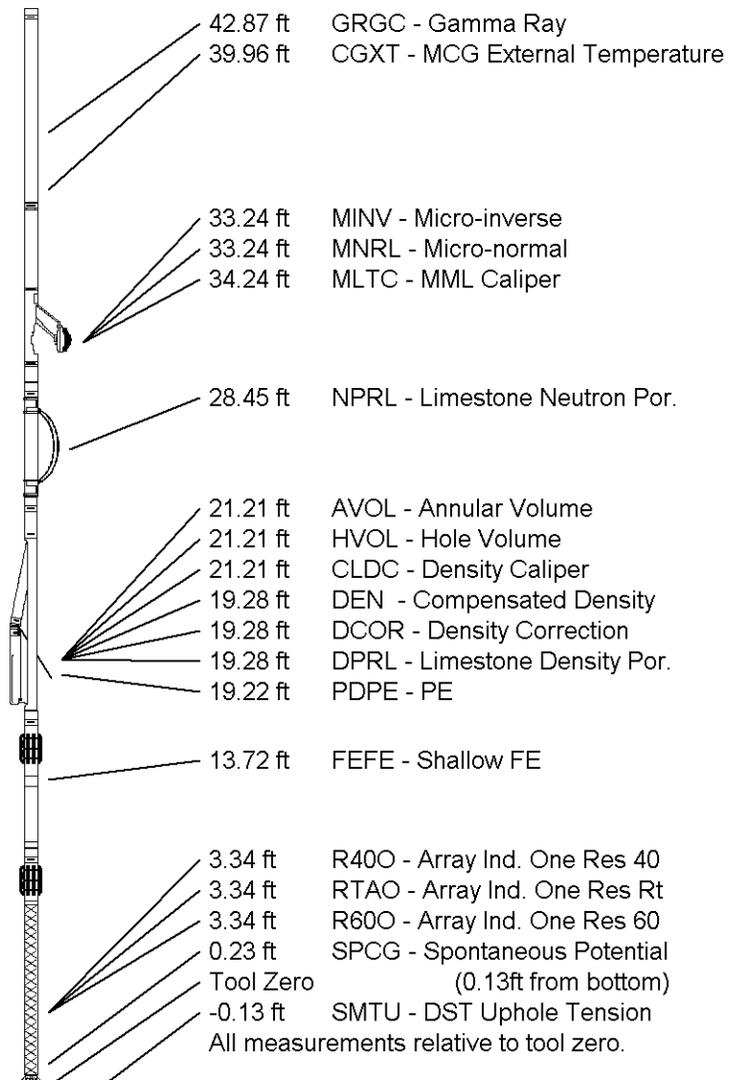
Compact Neutron  
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

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

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

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

Total Length: 48.16 ft Weight: 383.6 lb



COMPANY O'BRIEN ENERGY RESOURCES CORP.  
WELL RICKERS RANCH #8-17  
FIELD ANGELL SOUTH  
PROVINCE/COUNTY MEADE  
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2675.00	feet	First Reading	6296.00	feet
Elevation Drill Floor	2673.00	feet	Depth Driller	6315.00	feet
Elevation Ground Level	2663.00	feet	Depth Logger	6315.00	feet



**Weatherford**<sup>®</sup>

COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY LOG