Weatherford

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FNL & 335' FWL

SEC	TWP	RGE	Other Services
34	33N	29W	MAI/MFE

Latitude
Longitude
API Number 15-119-21392

Permanent Datum GL, Elevation 2539 feet
Log Measured From KB
Drilling Measured From KB @ 13 feet

Elevations:	feet
KB	2552.00
DF	2550.00
GL	2539.00

Date	02-SEP-2015				
Run Number	ONE				
Service Order	7884-128390013				
Depth Driller	6400.00	feet			
Depth Logger	6399.00	feet			
First Reading	6380.00	feet			
Last Reading	4000.00	feet			
Casing Driller	1496.00	feet			
Casing Logger	1493.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	WBM				
Density / Viscosity	9.10	lb/USg	71.00	CP	
PH / Fluid Loss	11.50		7.40	ml/30Min	
Sample Source	MUD PIT				
Rm @ Measured Temp	1.32 @ 75.0	ohm-m			
Rmf @ Measured Temp	1.05 @ 75.0	ohm-m			
Rmc @ Measured Temp	1.58 @ 75.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.76 @132.0	ohm-m			
Time Since Circulation	3 HOURS				
Max Recorded Temp	132.00	deg F			
Equipment / Base	13096	LIB			
Recorded By	MILES WILKINS				
Witnessed By	ROGER PEARSON		PETE DEEBIHAM		
JOB # :	LB15-119				

BOREHOLE RECORD

Last Edited: 02-SEP-2015 11:13

Bit Size inches	Depth From feet	Depth To feet
7.875	1496.00	6400.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1496.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 15.01.3109.
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION.
- HARDWARE: MDN: DUAL BOWSPRING ECCENTRALIZER.
  MFE: 1 X 0.5 INCH STANDOFF.
  MAI: 2 X 0.5 INCH STANDOFF.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
  - REPEAT AND HIGH RESOLUTION SECTIONS PLOTTED ON SANDSTONE MATRIX PER CUSTOMER REQUEST.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
  - HIGH RESOLUTION LOGS REQUESTED FROM TD TO 5650 FT.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING.: 1800 CU. FT.

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE CASING: 1259 CU. FT.

- SERVICE ORDER # 7884-128390013.

- RIG: DUKE DRILLING #7.

- ENGINEER: MILES WILKINS.

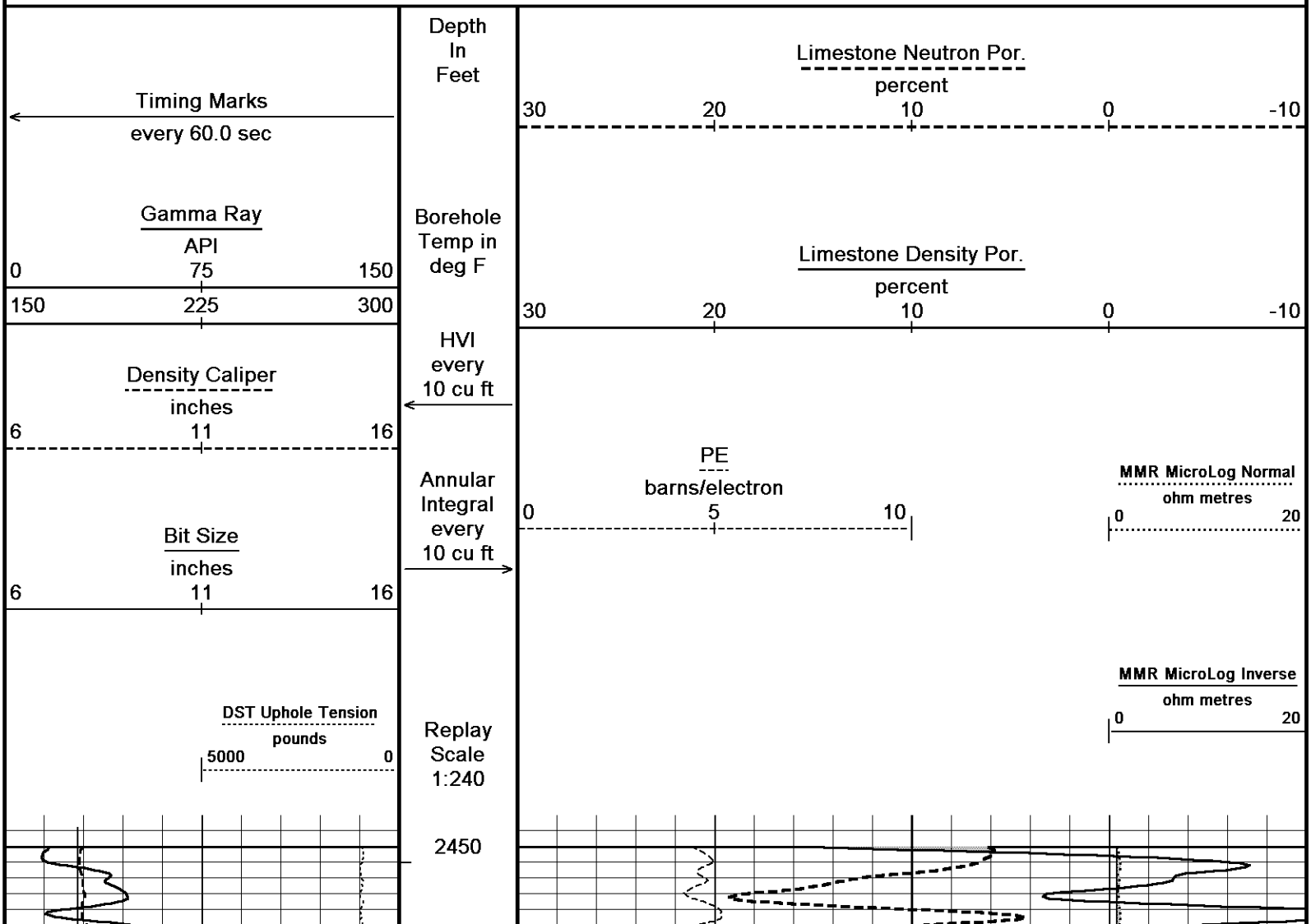
- OPERATORS: JOHN LAPOINT _NICK ADAME.

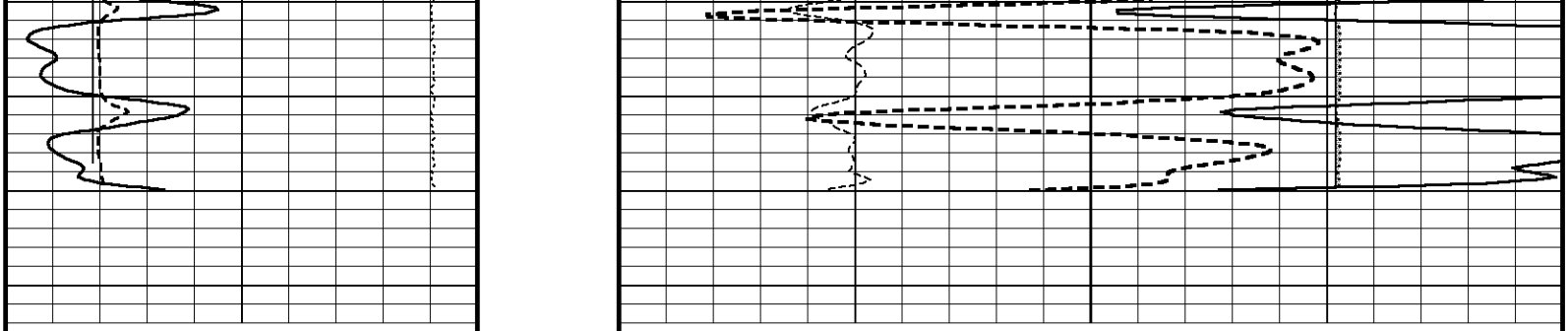
5 INCH LIMESTONE MAIN - ANHYDRITE SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:50

Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta — Recorded on 02-SEP-2015 14:55

System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109





Depth In Feet

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

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Limestone Neutron Por.
percent
30 20 10 0 -10

Limestone 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

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

Plotted on 02-SEP-2015 17:50
Recorded on 02-SEP-2015 14:55

5 INCH LIMESTONE MAIN - ANHYDRITE SECTION

5 INCH LIMESTONE MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

Plotted on 02-SEP-2015 17:50
Recorded on 02-SEP-2015 14:55

Depth In Feet

Timing Marks
every 60.0 sec

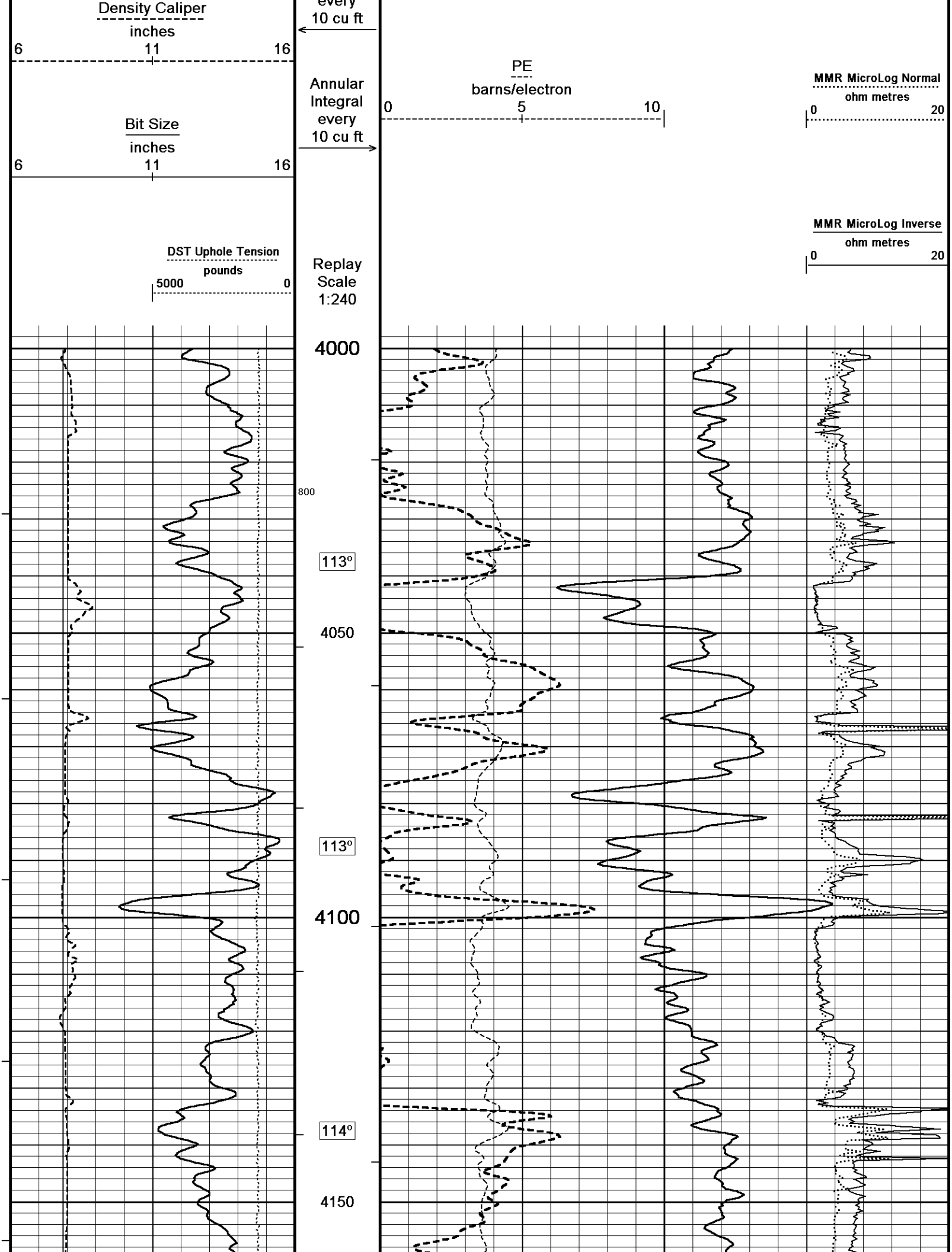
Gamma Ray
API
0 75 150
150 225 300

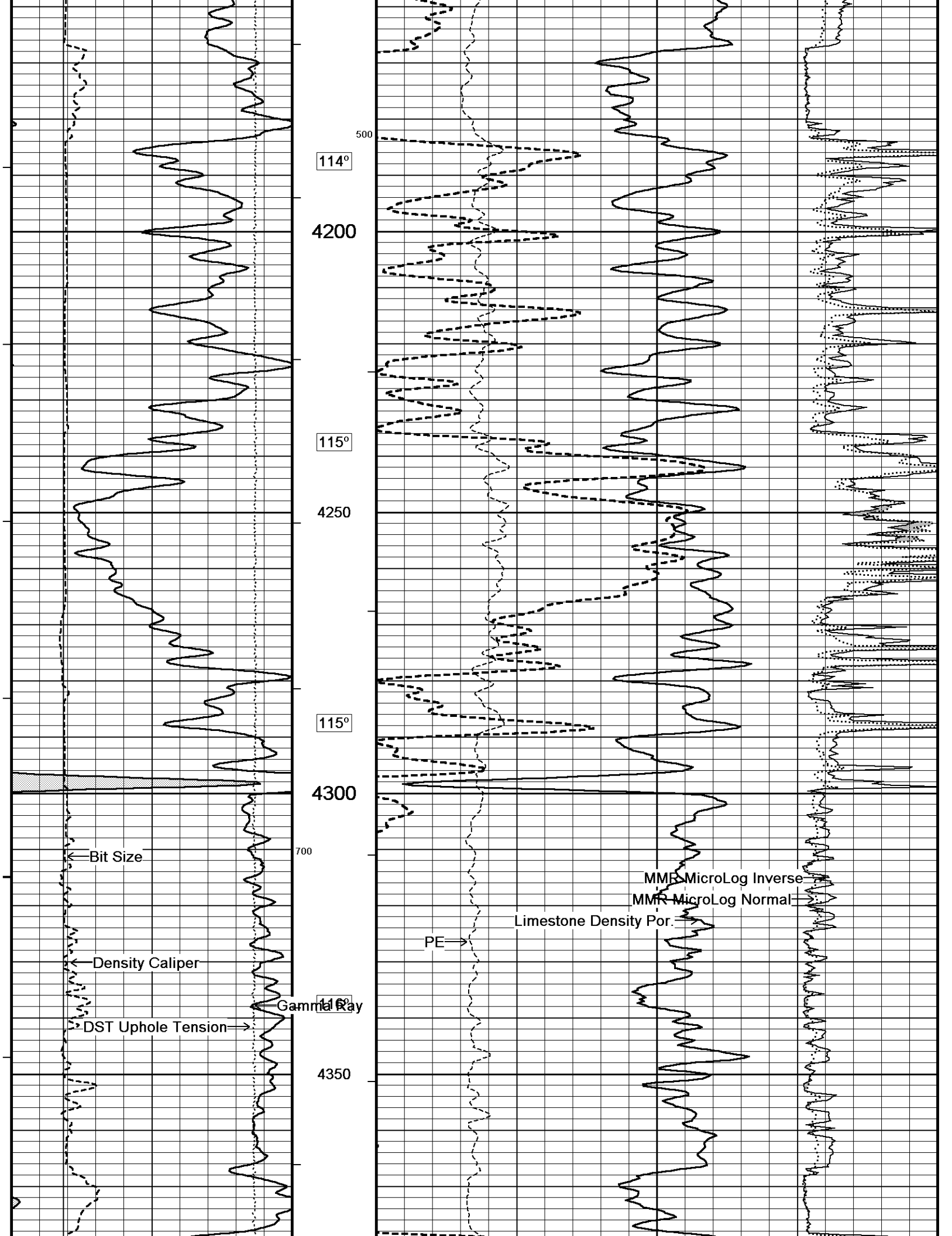
Borehole Temp in deg F

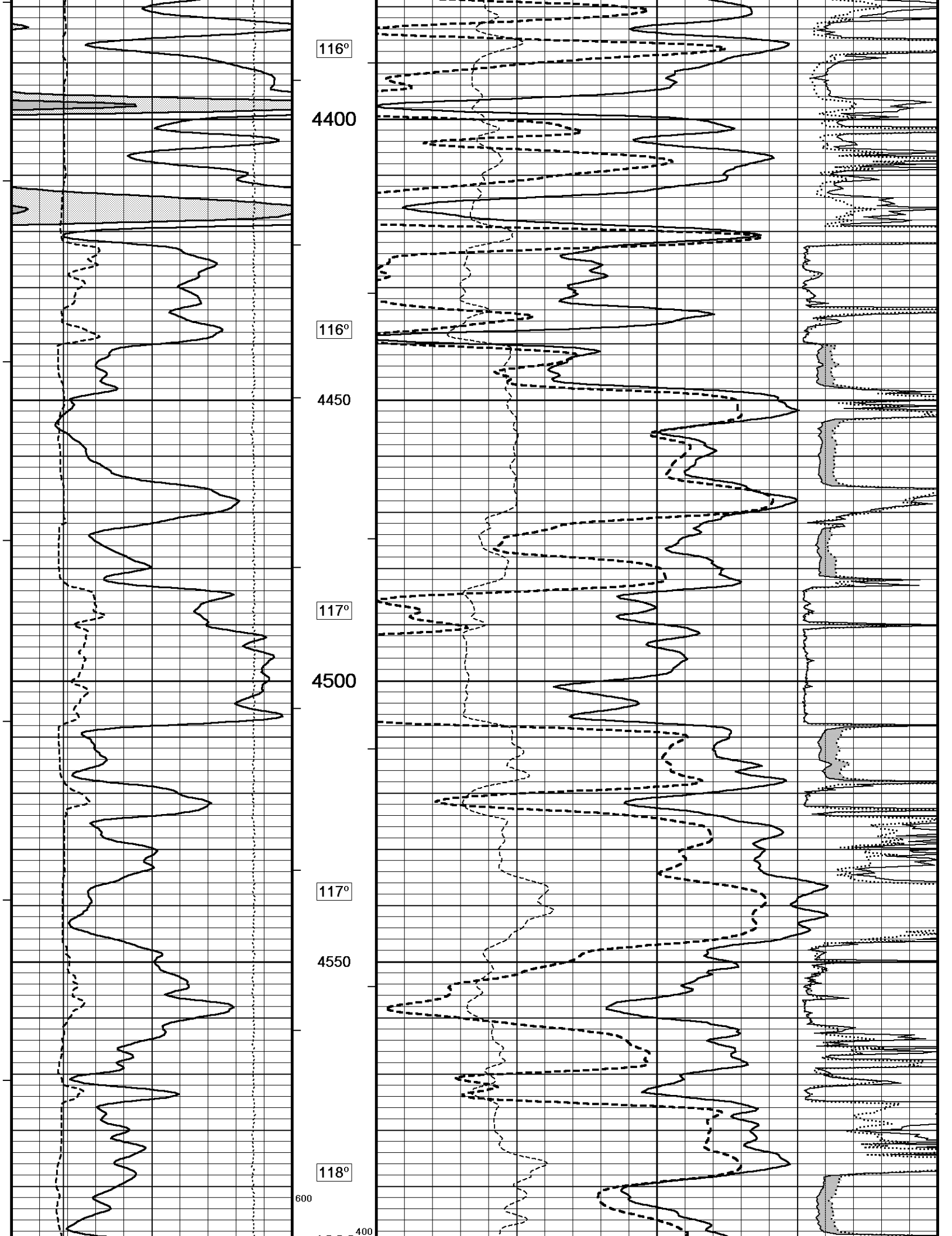
HVI

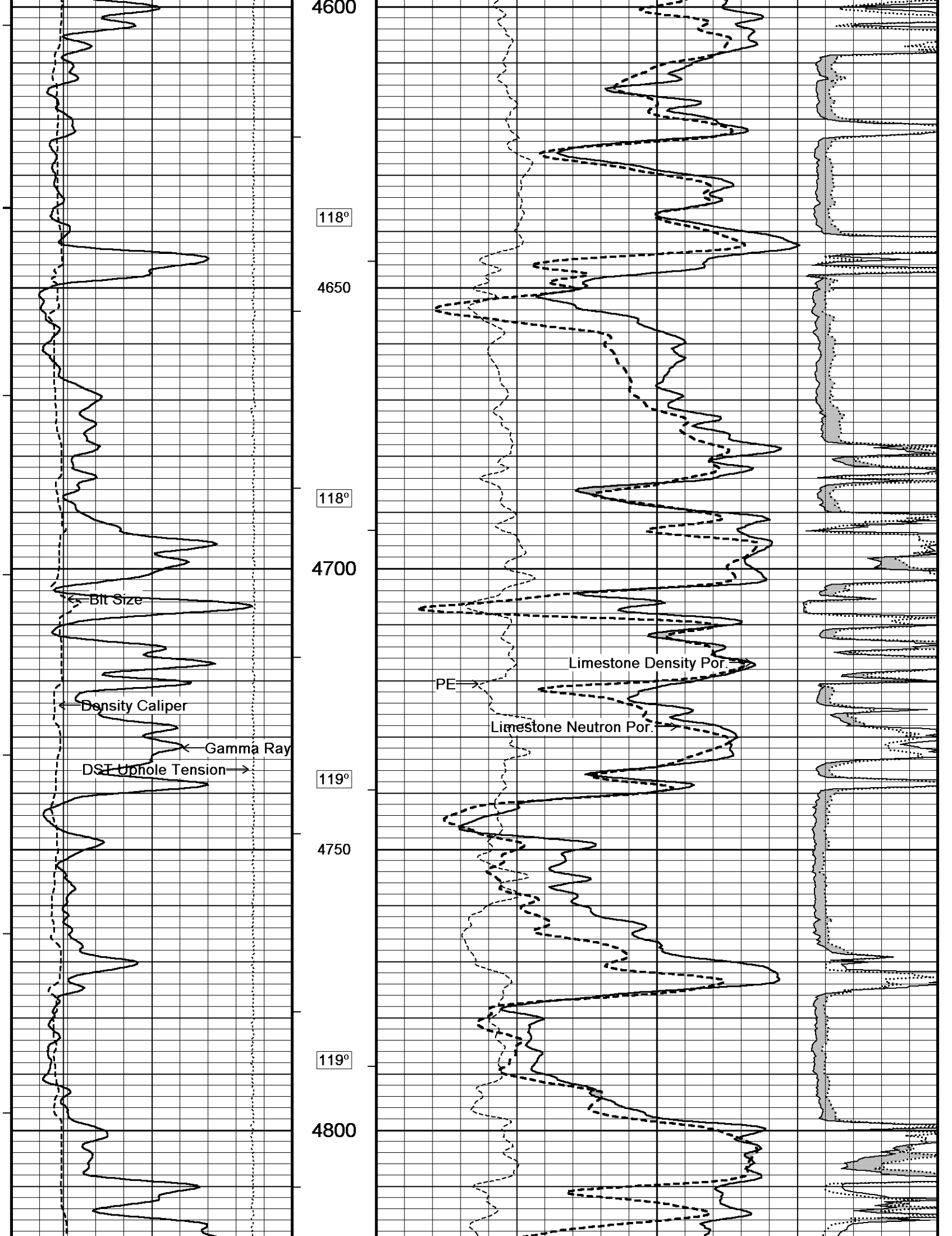
Limestone Neutron Por.
percent
30 20 10 0 -10

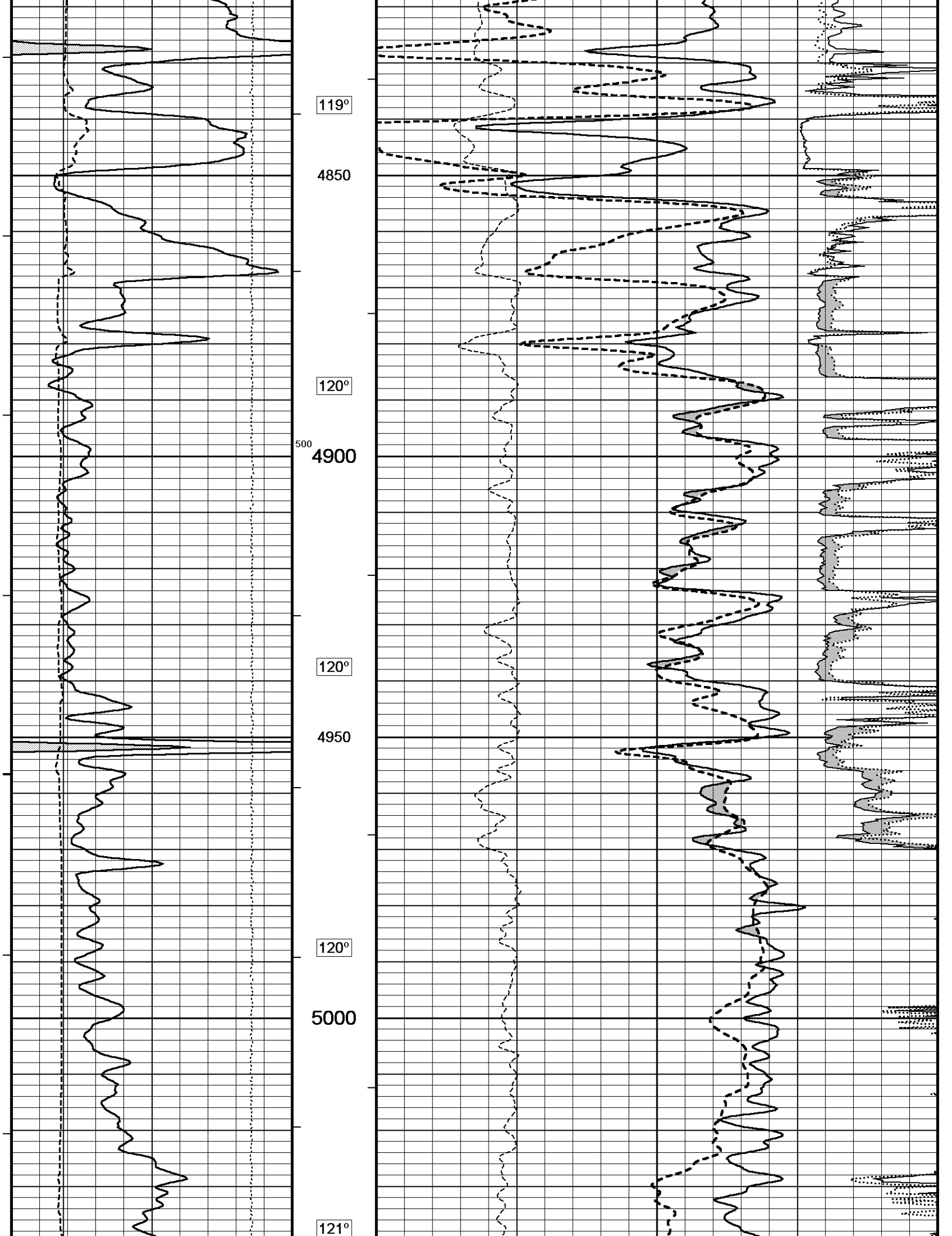
Limestone Density Por.
percent
30 20 10 0 -10

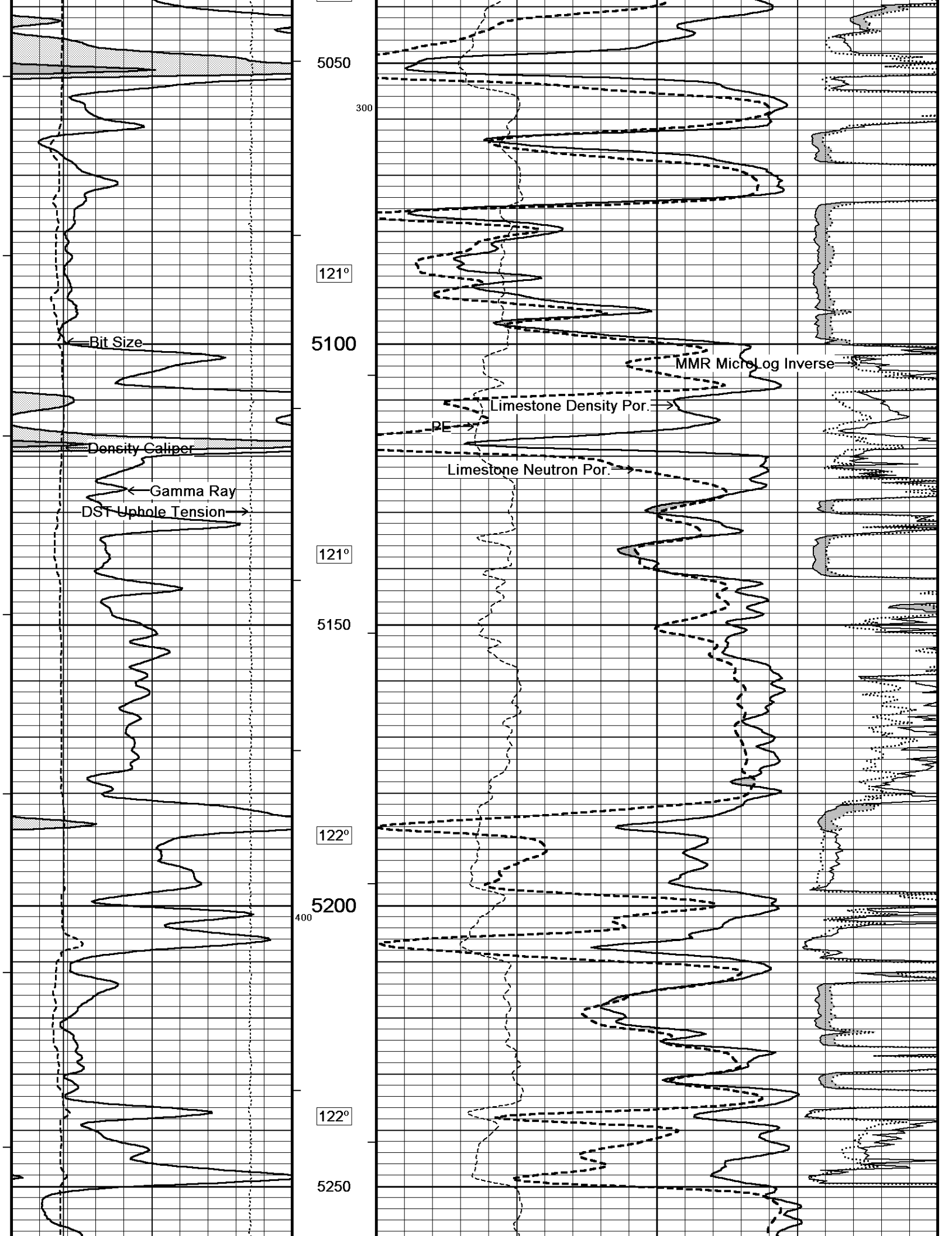

Density Caliper
inches
6
11
16
every
10 cu ft
PE
barns/electron
0
5
10
MMR MicroLog Normal
ohm metres
0
20
Annular
Integral
every
10 cu ft
Bit Size
inches
6
11
16
MMR MicroLog Inverse
ohm metres
0
20
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
4000
800
113°
4050
113°
4100
114°
4150

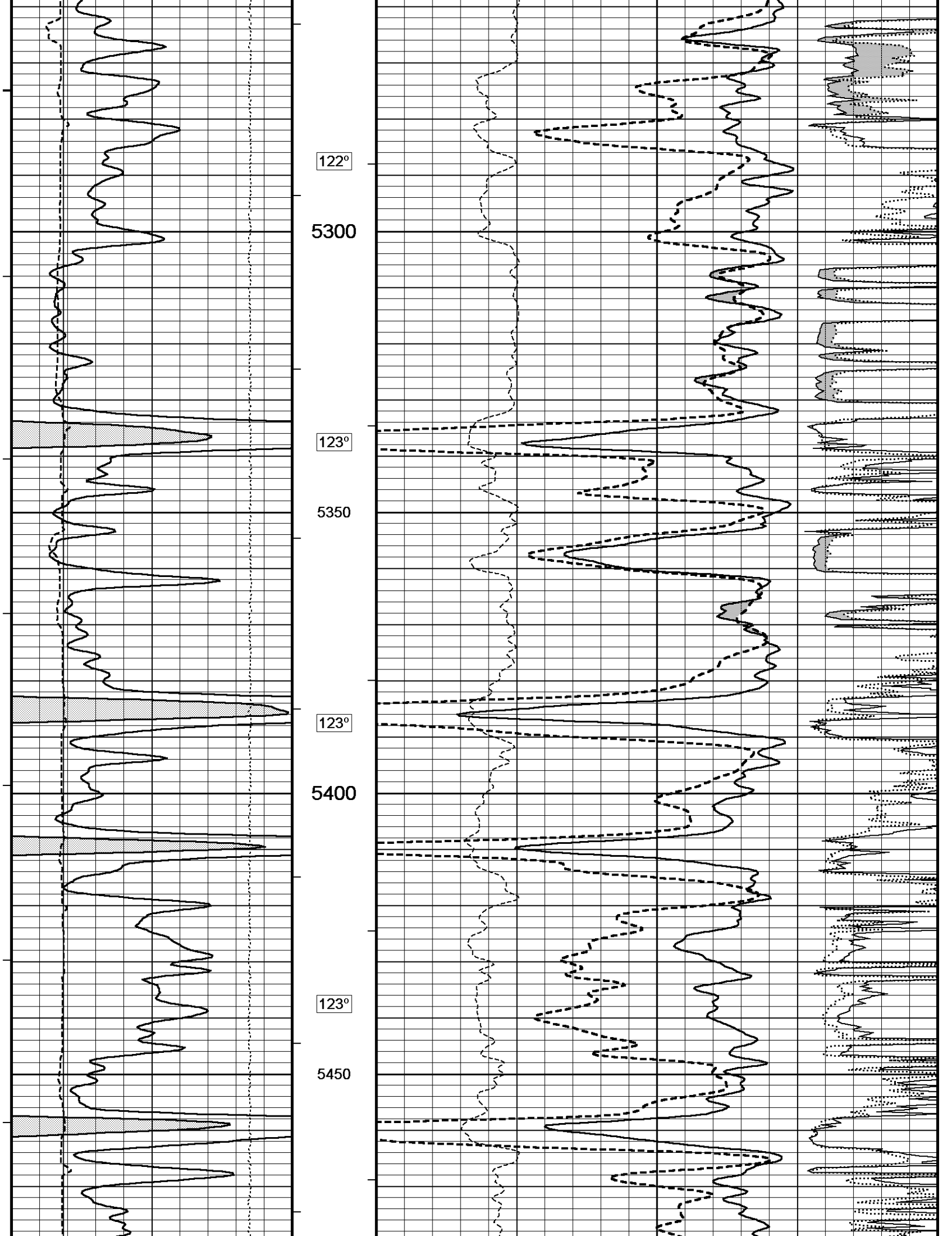

500
114°
4200
115°
4250
115°
4300
700
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
116°
4350
MMR MicroLog Inverse
MMR MicroLog Normal
Limestone Density Por.
PE

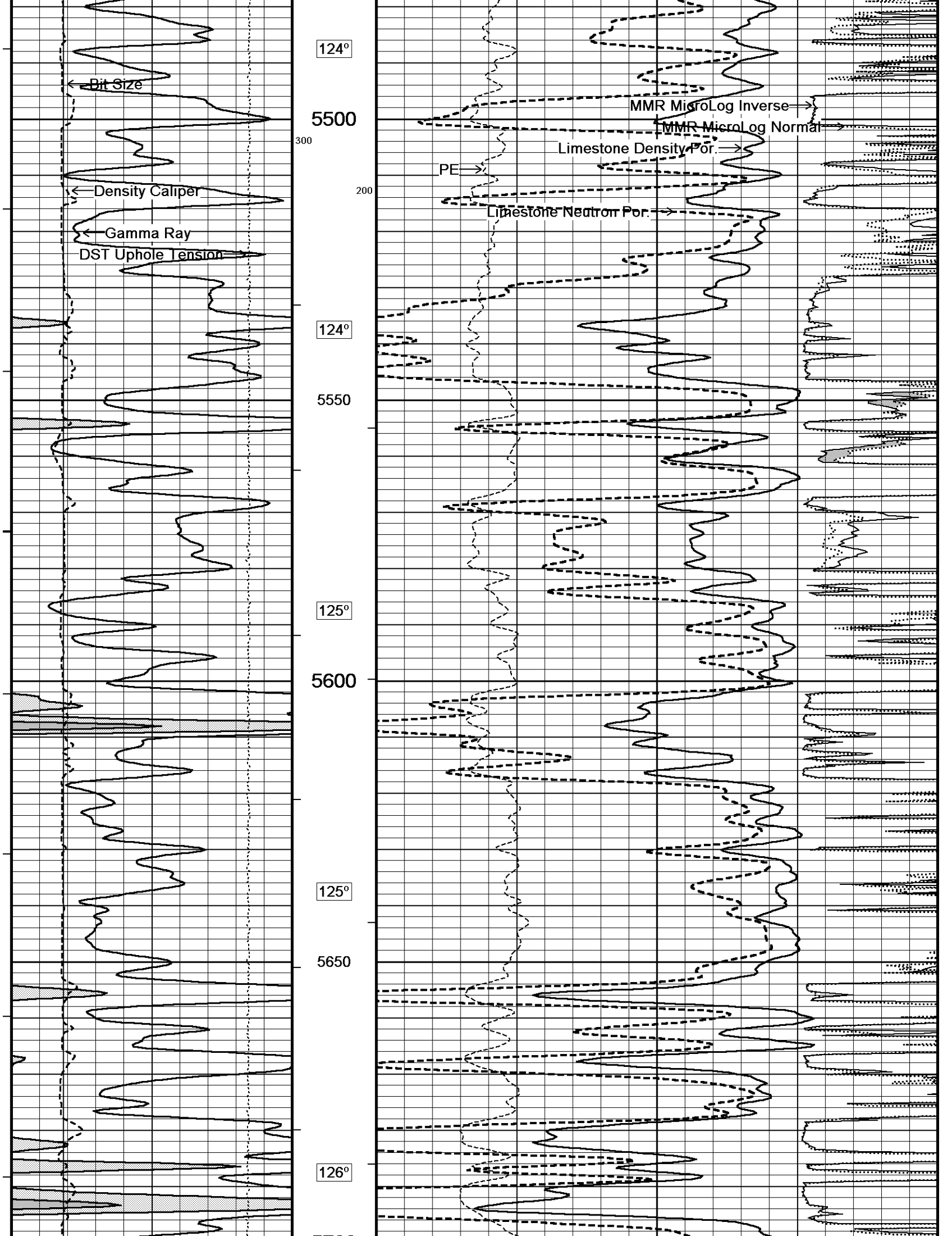

116°
4400
116°
4450
117°
4500
117°
4550
118°
600
400

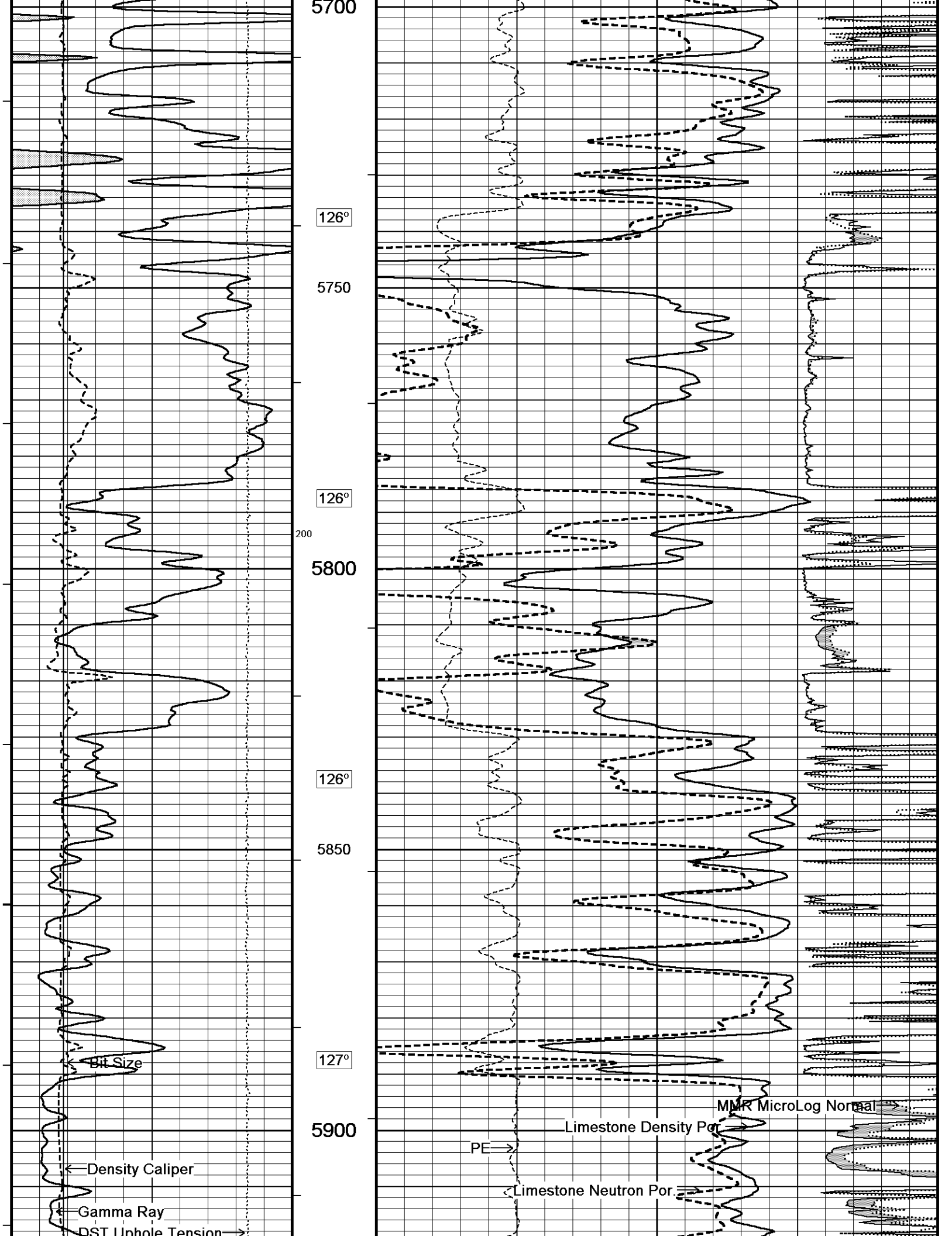

4600
118°
4650
118°
4700
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Limestone Density Por.
Limestone Neutron Por.
119°
4750
119°
4800

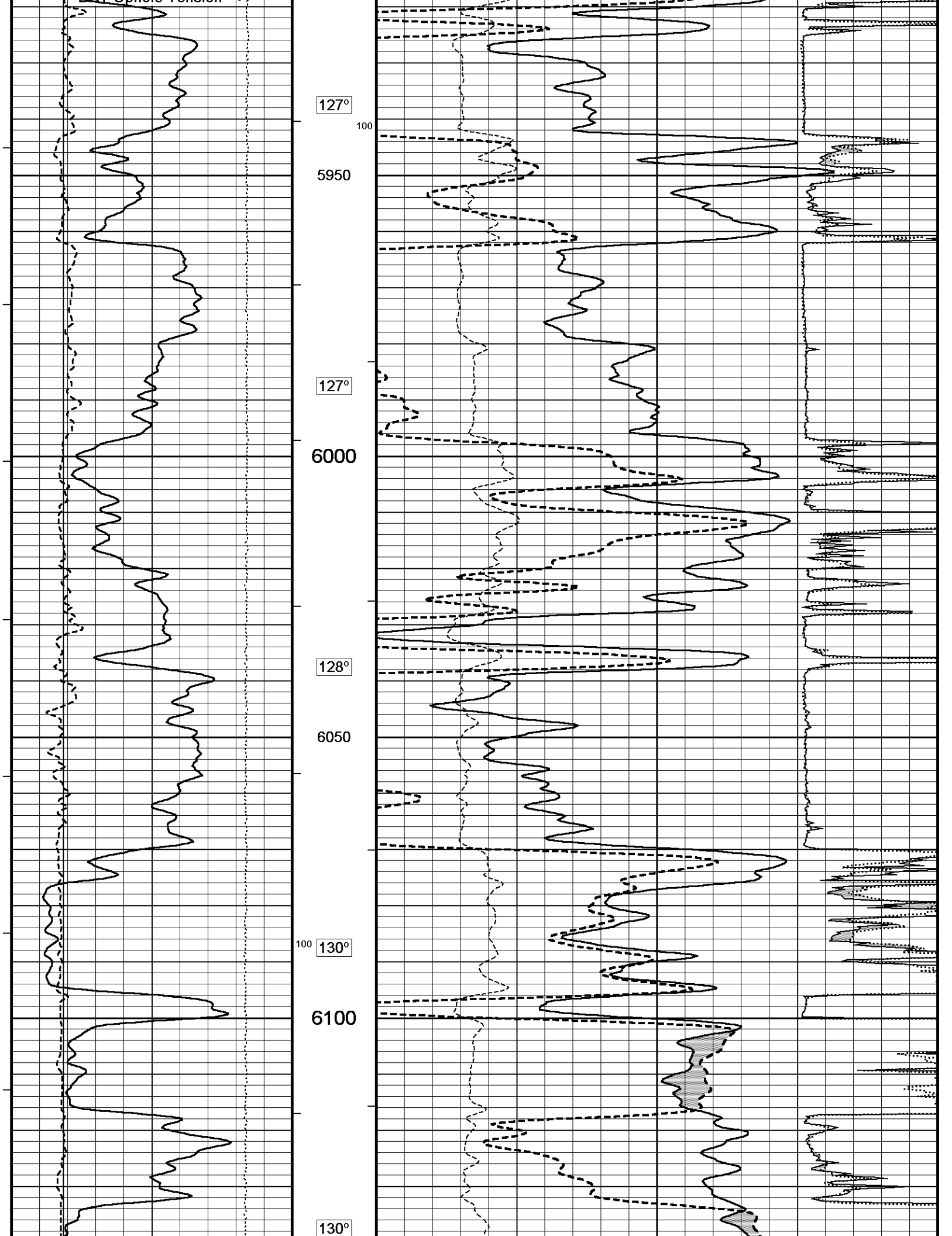

119°
4850
120°
500
4900
120°
4950
120°
5000
121°

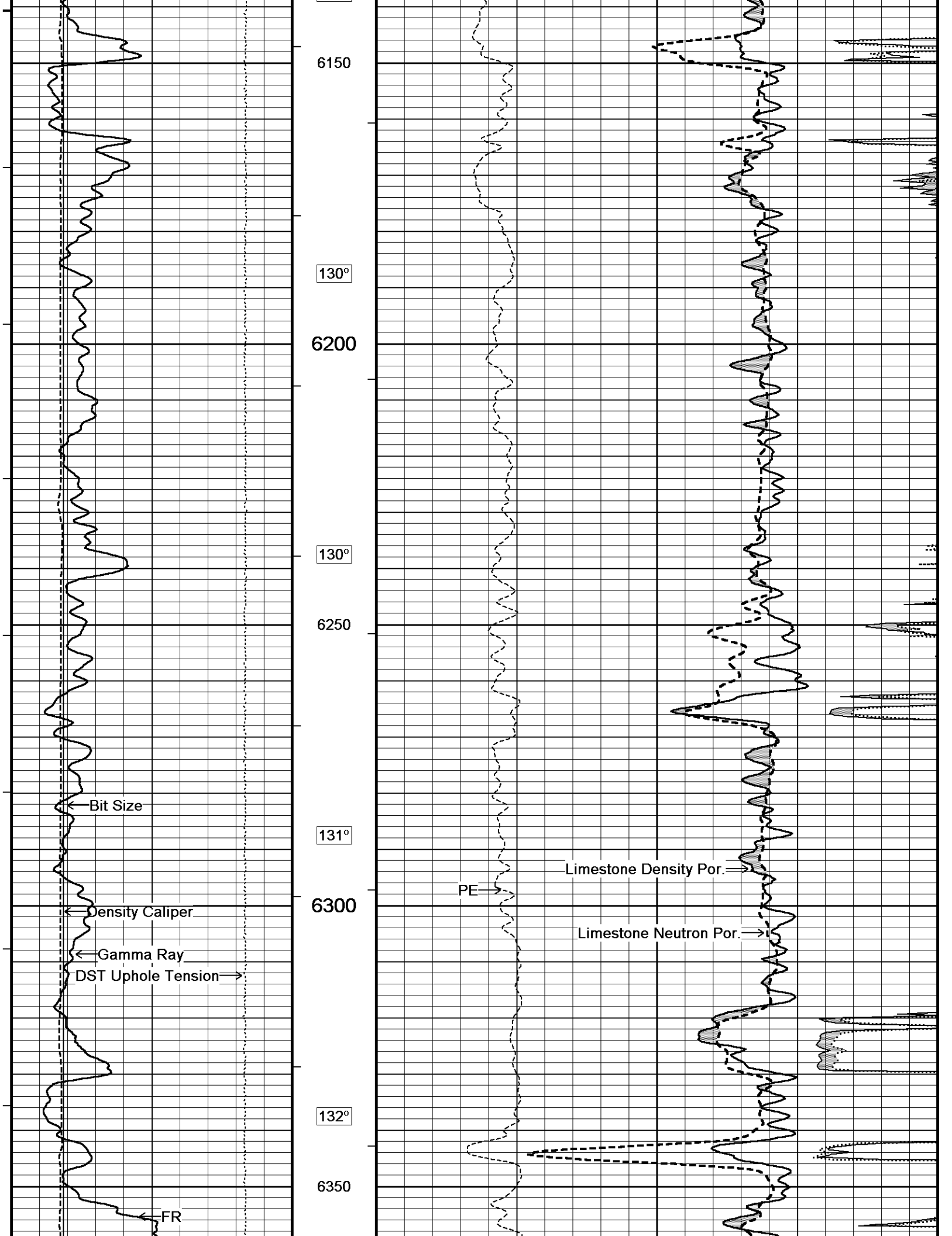

5050
300
121°
Bit Size
5100
MMR MicroLog Inverse
Limestone Density Por.
PE
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
121°
5150
122°
5200
400
122°
5250

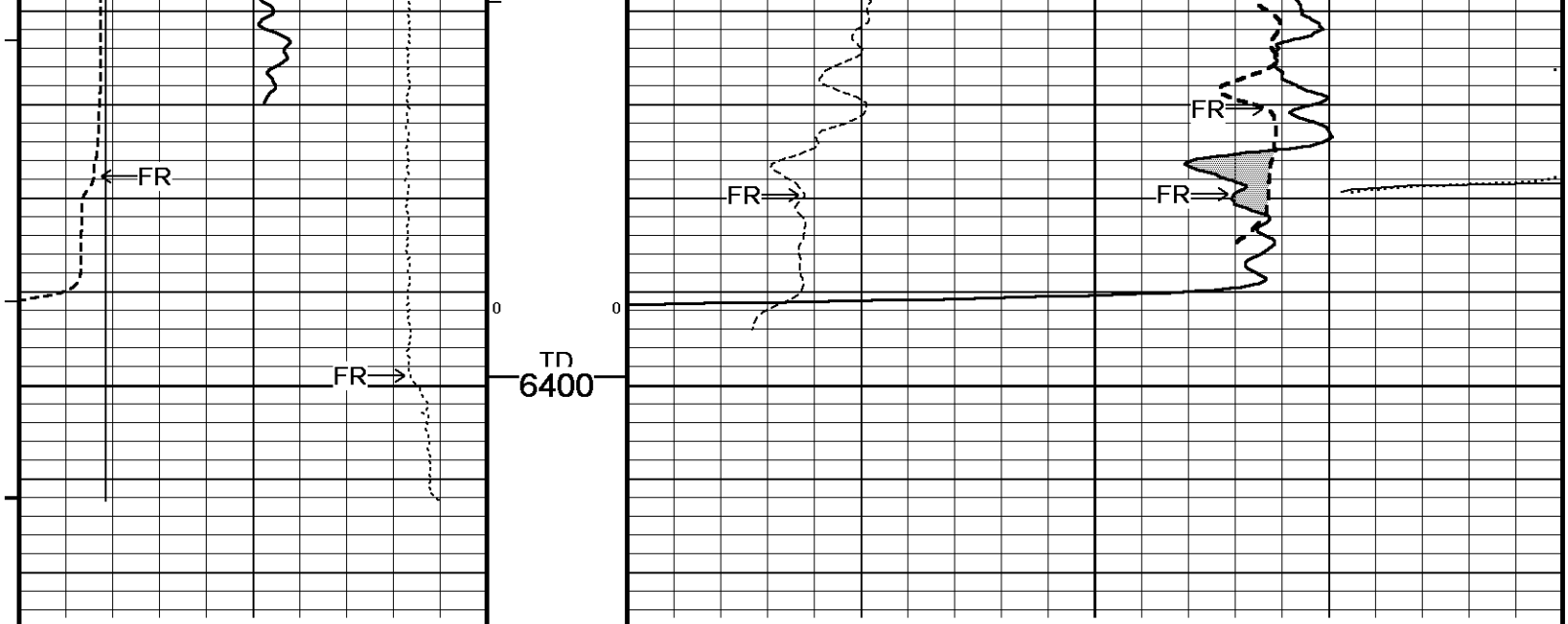

122°
5300
123°
5350
123°
5400
123°
5450


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
MMR MicroLog Inverse
MMR MicroLog Normal
Limestone Density Por.
PE
Limestone Neutron Por.
124°
5500
300
200
124°
5550
125°
5600
125°
5650
126°


5700
126°
5750
126°
200
5800
126°
5850
127°
5900
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
MMR MicroLog Normal
Limestone Density Por.
PE
Limestone Neutron Por.


Mud Sphere Tension
127°
100
5950
127°
6000
128°
6050
100
130°
6100
130°


6150
130°
6200
130°
6250
Bit Size
131°
PE
Limestone Density Por.
6300
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
132°
6350
FR



Depth In Feet

Timing Marks
every 60.0 sec

Limestone Neutron Por.
percent
30 20 10 0 -10

Gamma Ray
API
0 75 150
150 225 300

Borehole Temp in deg F

Limestone Density Por.
percent
30 20 10 0 -10

HVI
every
10 cu ft

Density Caliper
inches
6 11 16

PE
barns/electron
0 5 10

MMR MicroLog Normal
ohm metres
0 20

Annular Integral every 10 cu ft

Bit Size
inches
6 11 16

MMR MicroLog Inverse
ohm metres
0 20

DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

5 INCH LIMESTONE MAIN

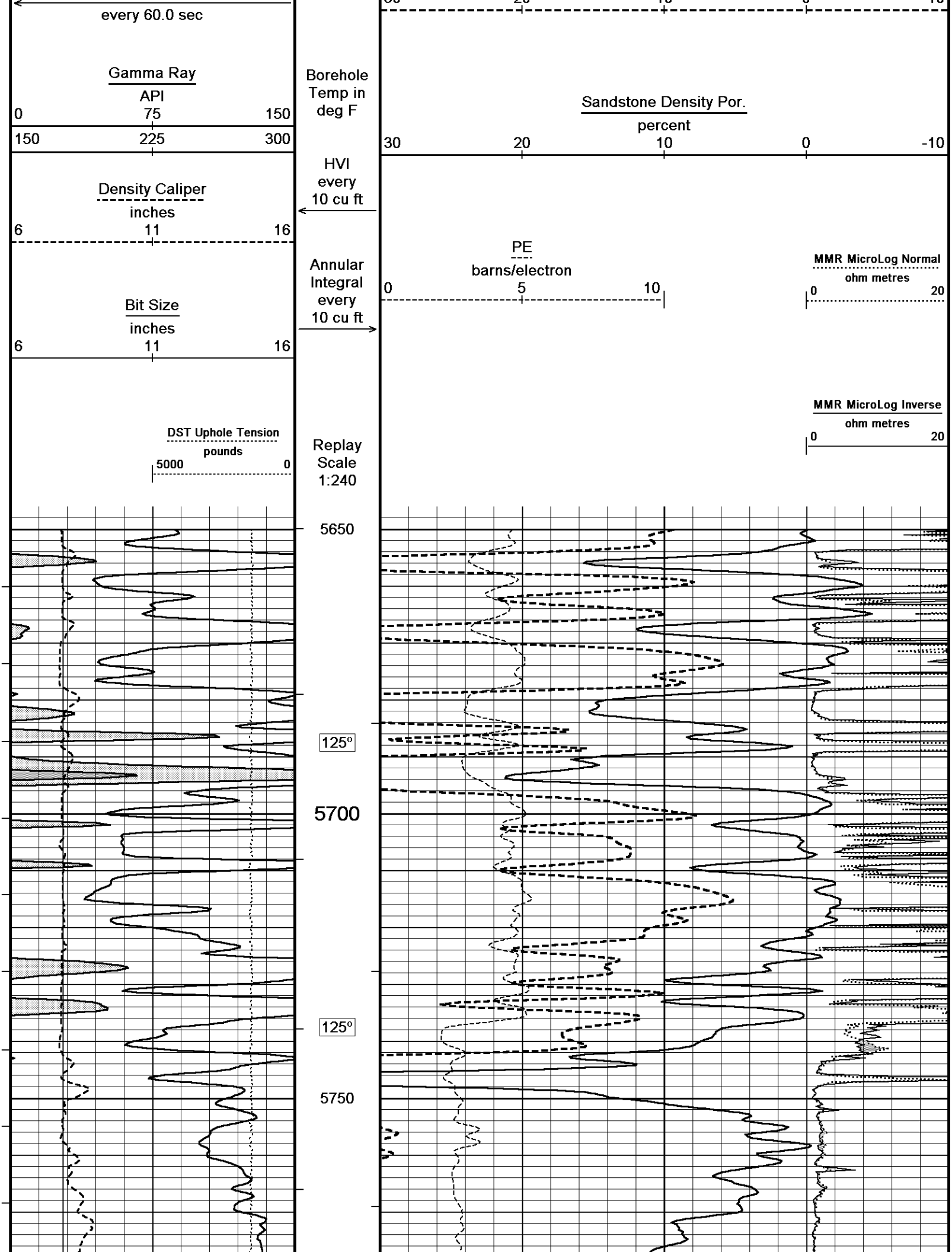
REPEAT SECTION

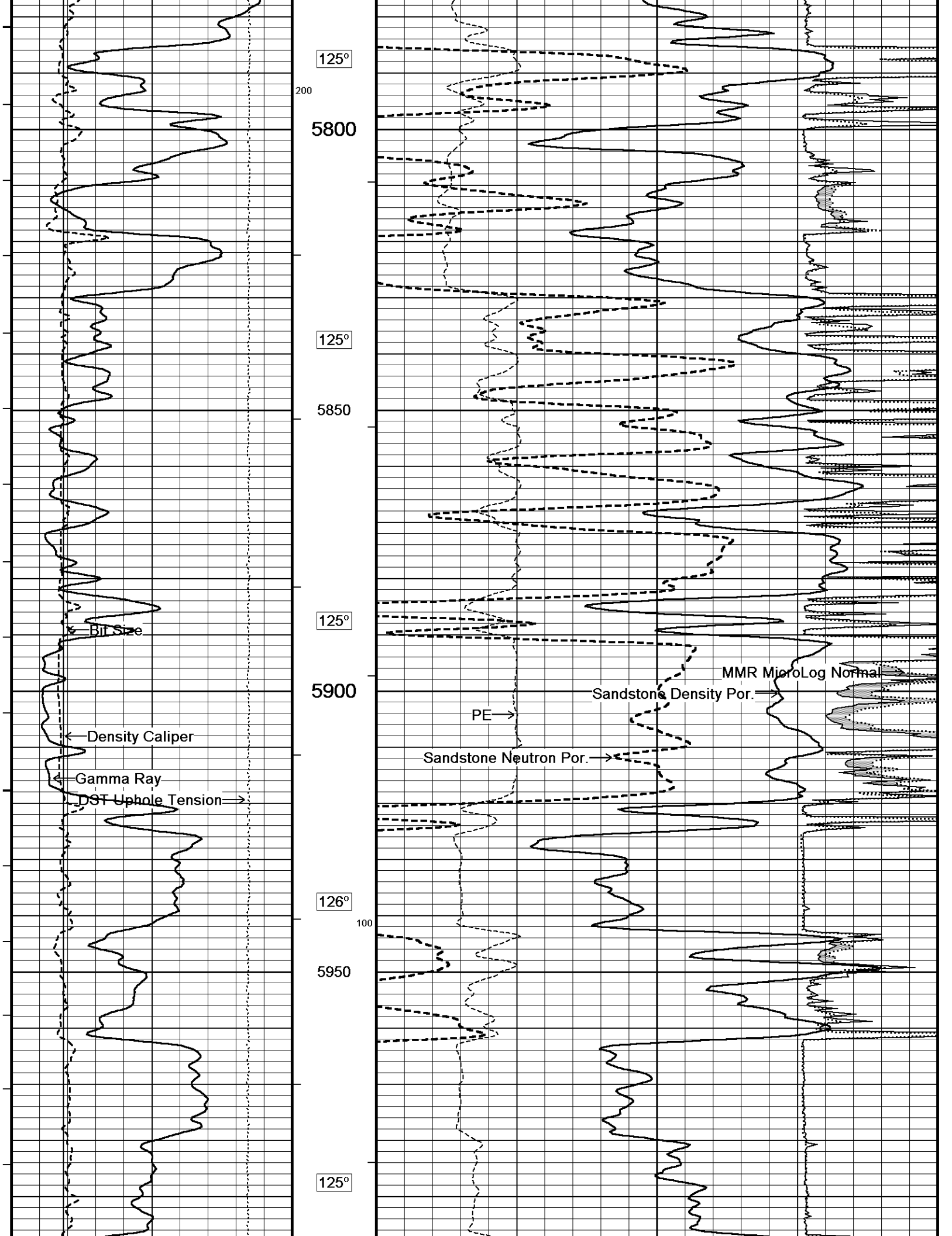
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta
Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

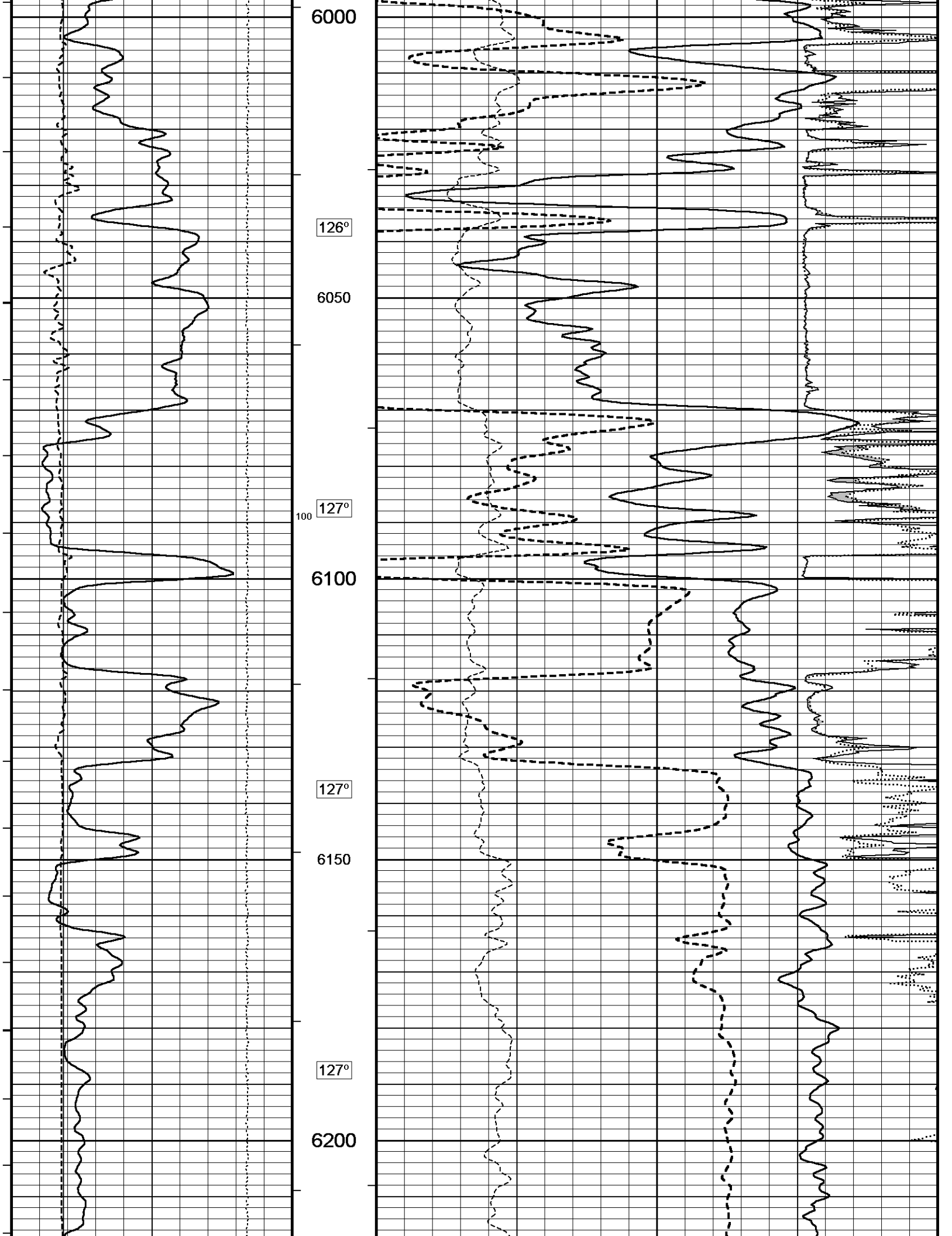
Depth in Feet

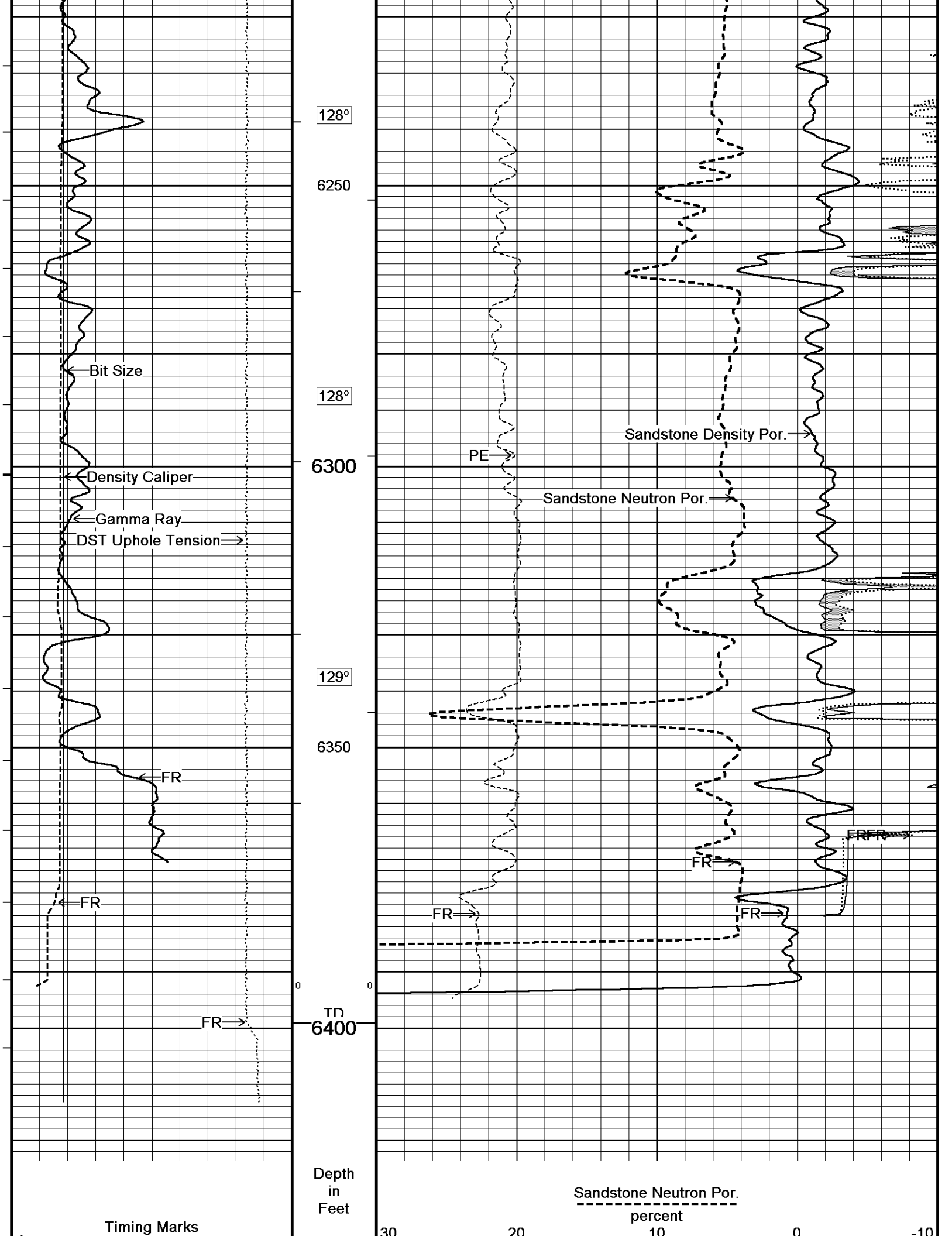
Timing Marks

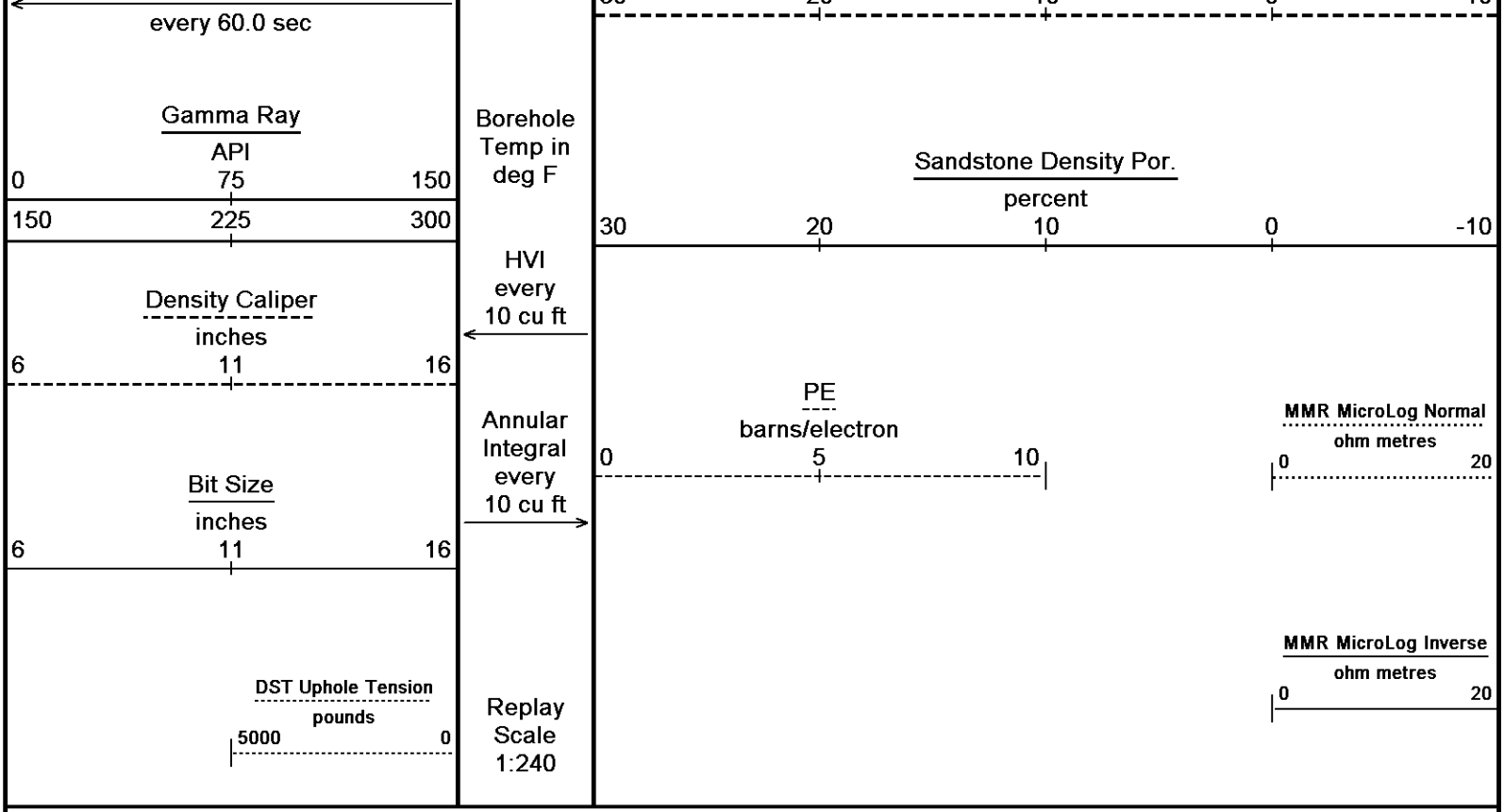
Sandstone Neutron Por.
percent
30 20 10 0 -10


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
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay Scale 1:240
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
5650
125°
5700
125°
5750


125°
200
5800
125°
5850
125°
Bit Size
5900
Density Caliper
Gamma Ray
DST Uphole Tension
126°
100
5950
125°
MMR MicroLog Normal
Sandstone Density Por.
PE
Sandstone Neutron Por.


6000
126°
6050
100
127°
6100
127°
6150
127°
6200


128°
6250
Bit Size
128°
6300
Density Caliper
Gamma Ray
DST Uphole Tension
129°
6350
FR
FR
FR
0
TD
6400
0
PE
Sandstone Density Por.
Sandstone Neutron Por.
FR
FR
FR
FR
FR
Depth
in
Feet
Timing Marks
Sandstone Neutron Por.
percent
30
20
10
0
-10

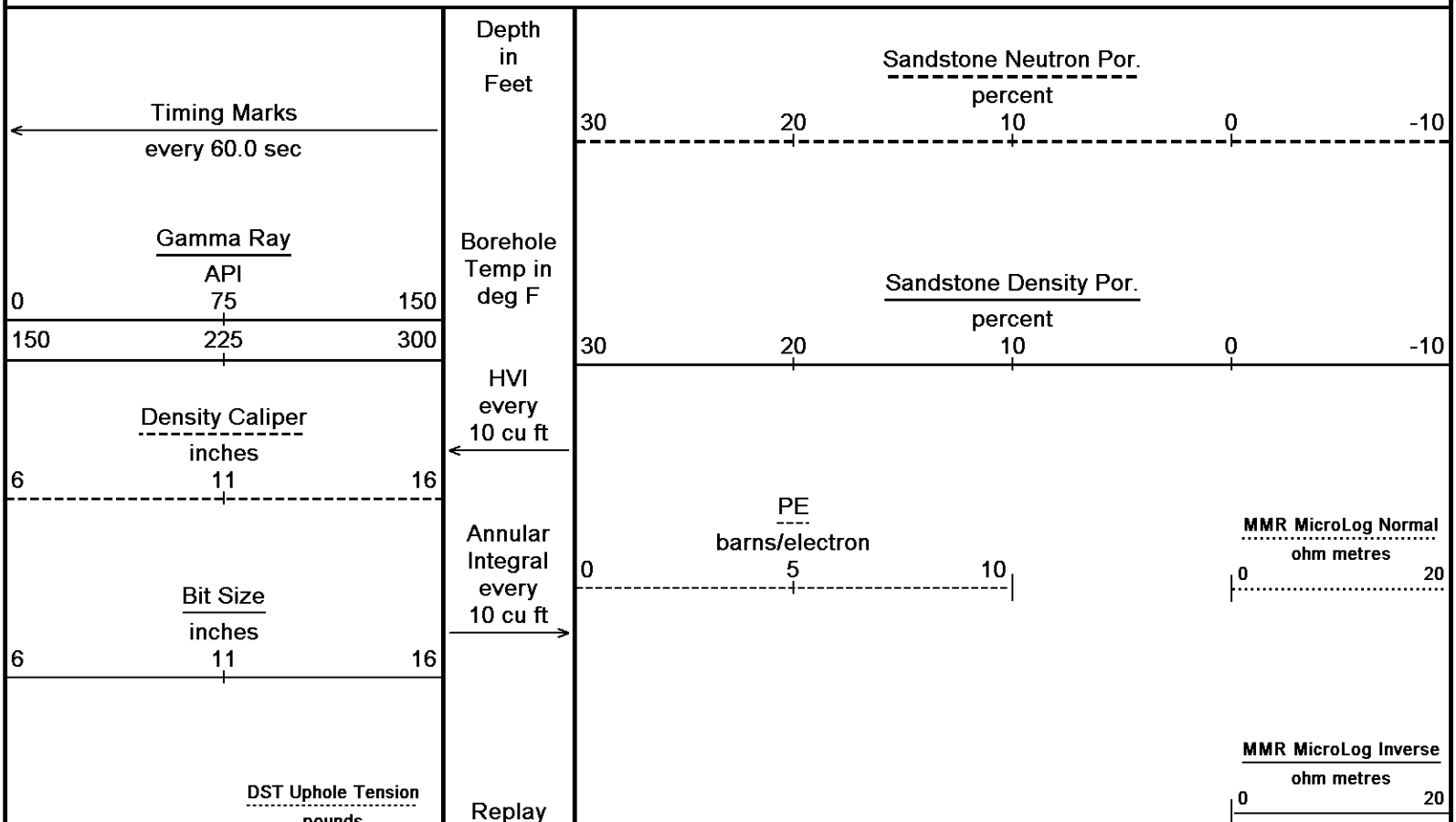


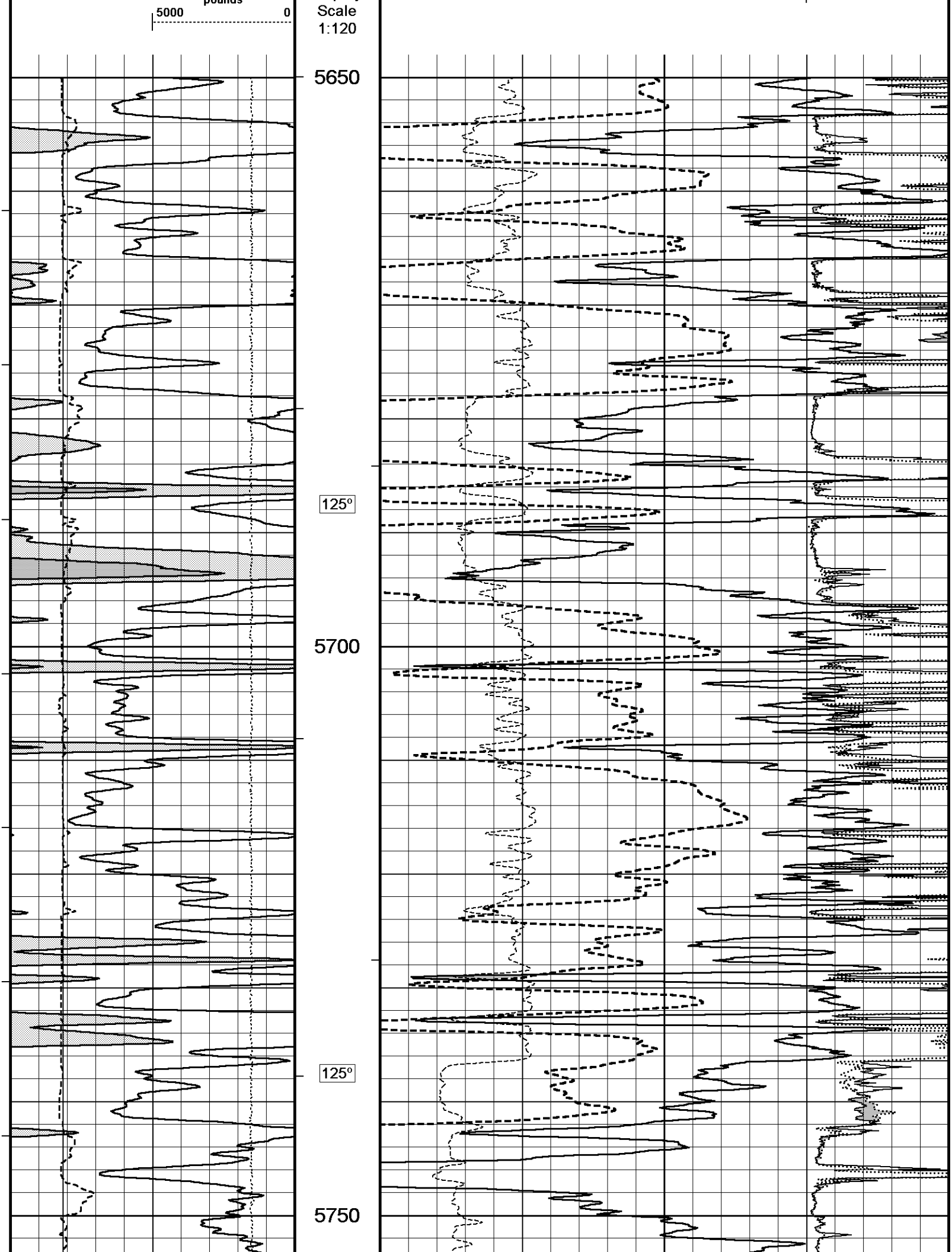
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

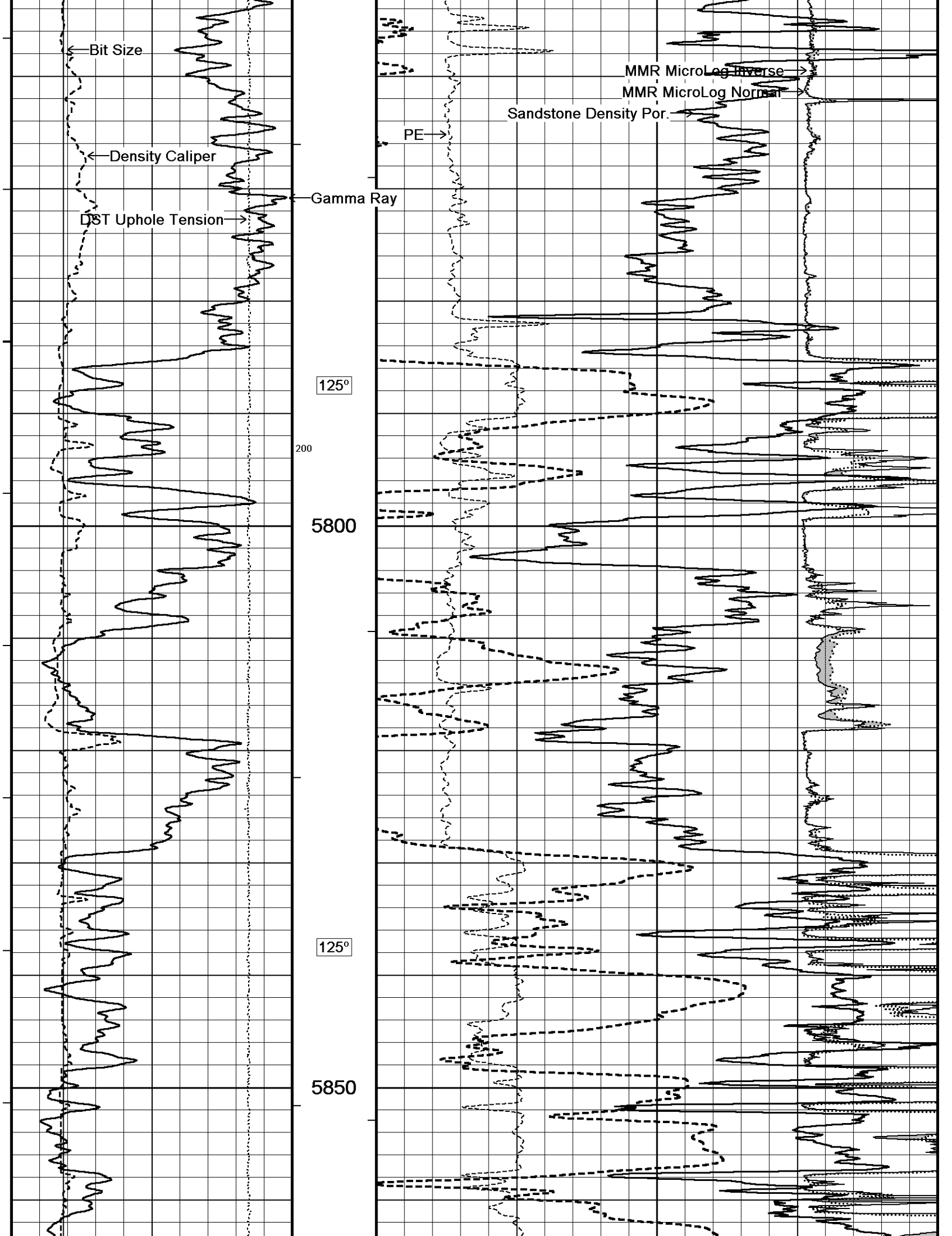
REPEAT SECTION

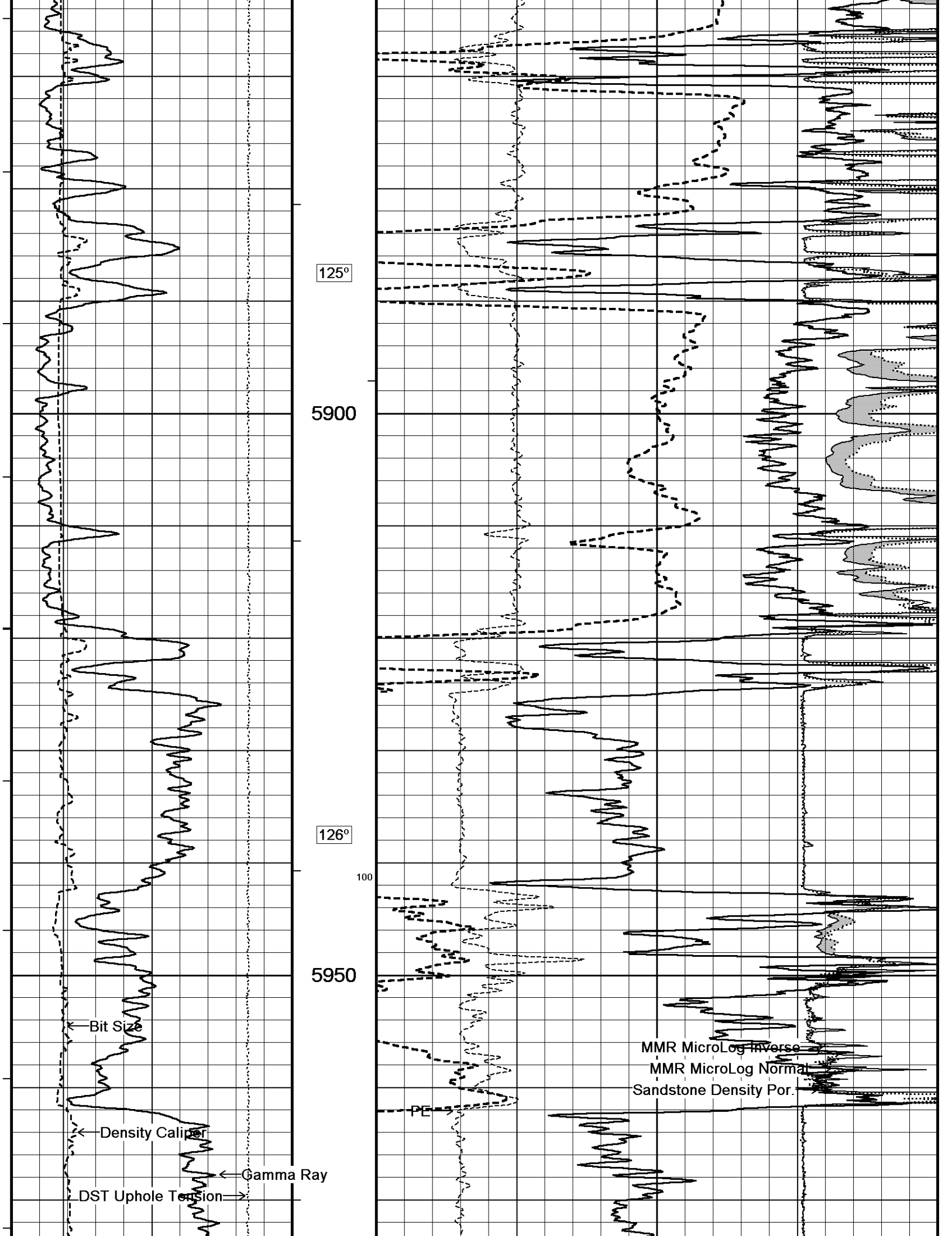
10 INCH HIGH RESOLUTION

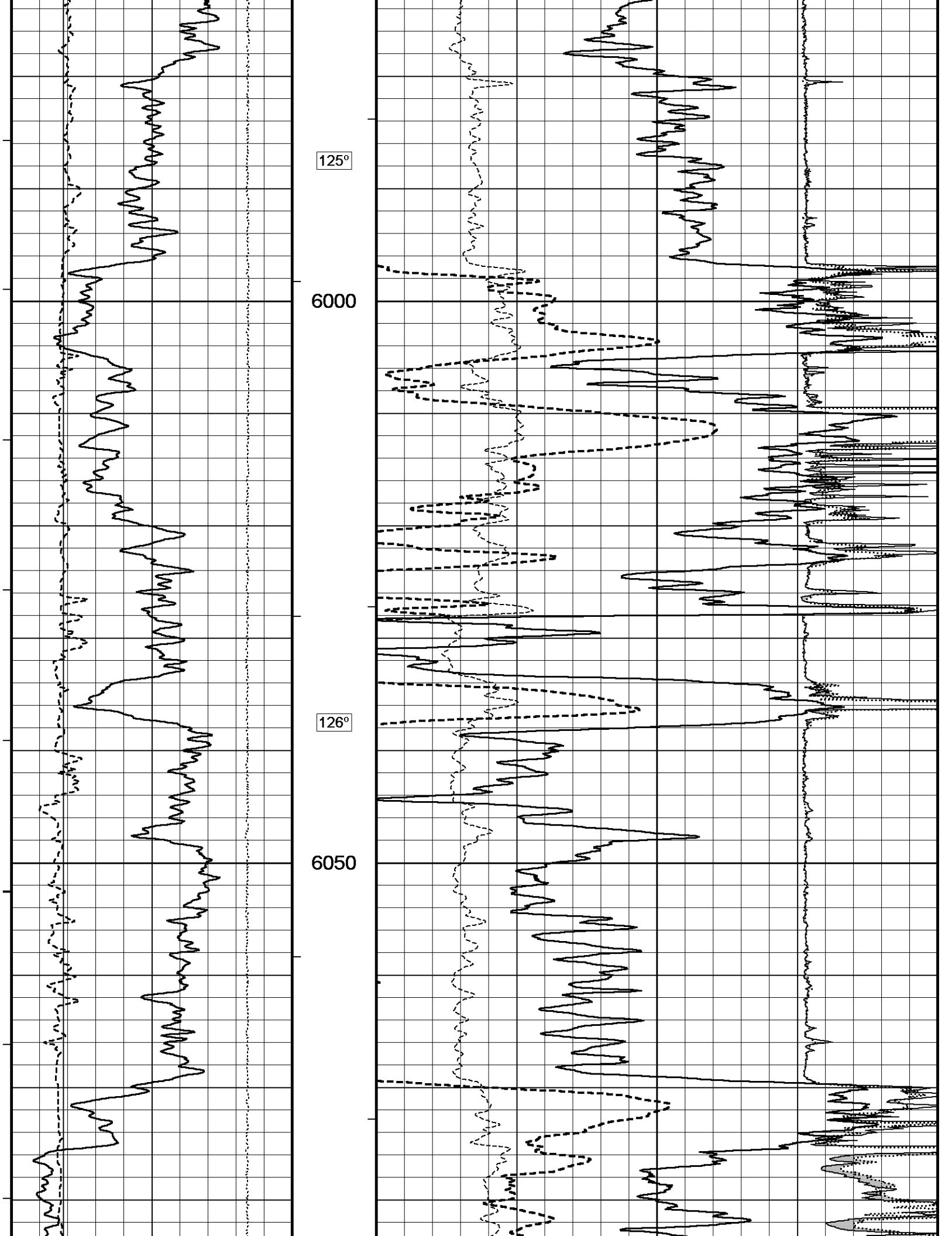
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

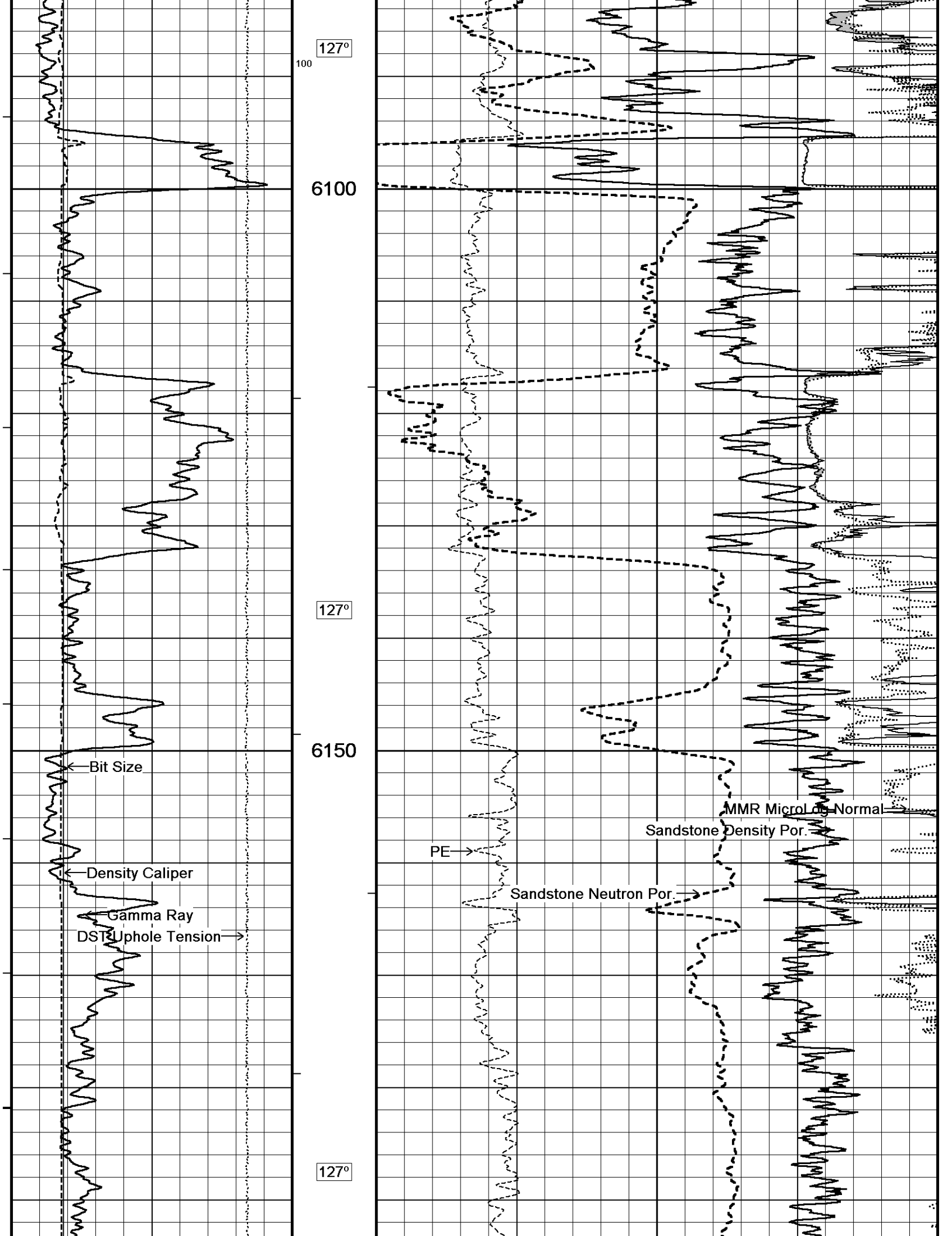


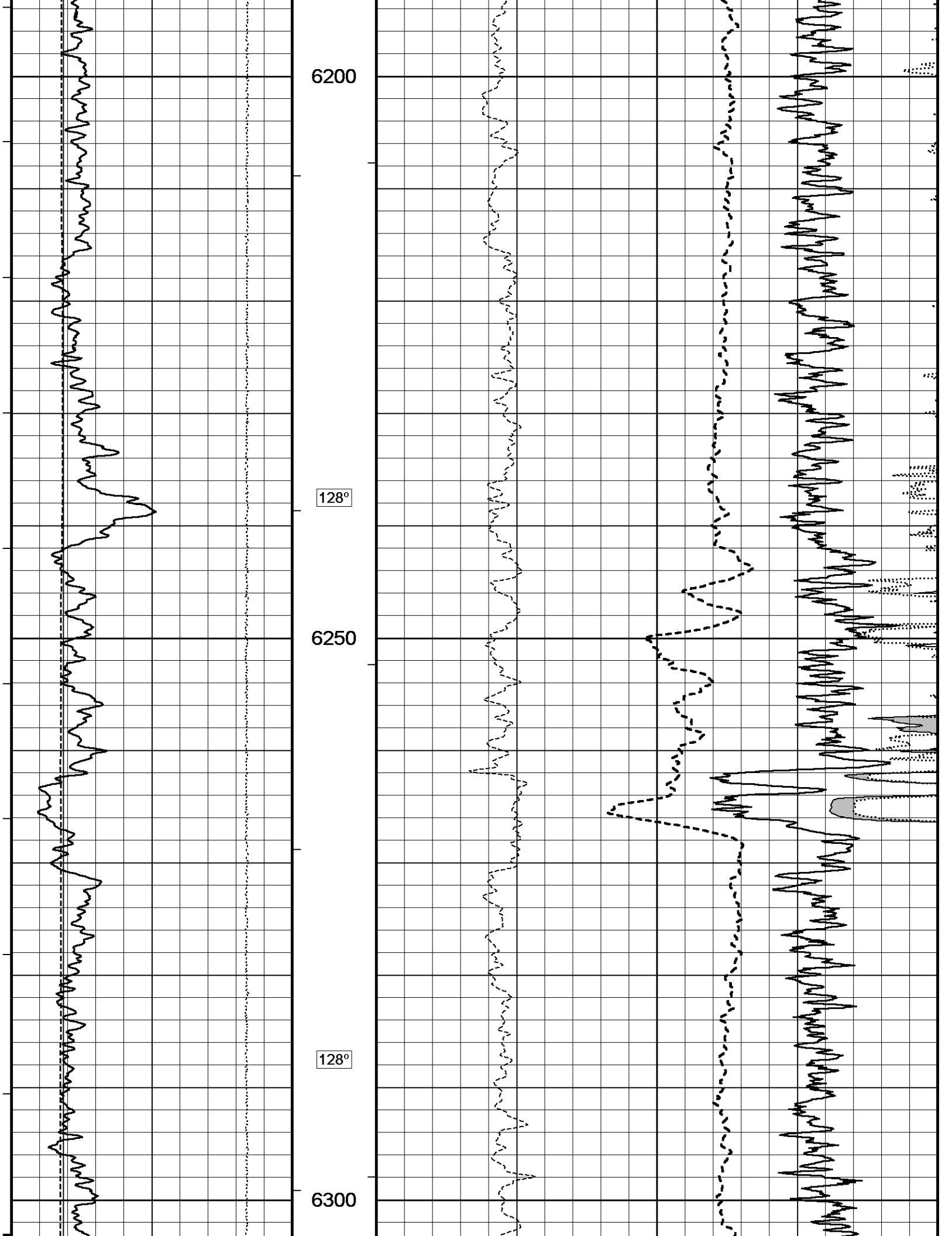

pounds
5000
0
Scale
1:120
5650
125°
5700
125°
5750

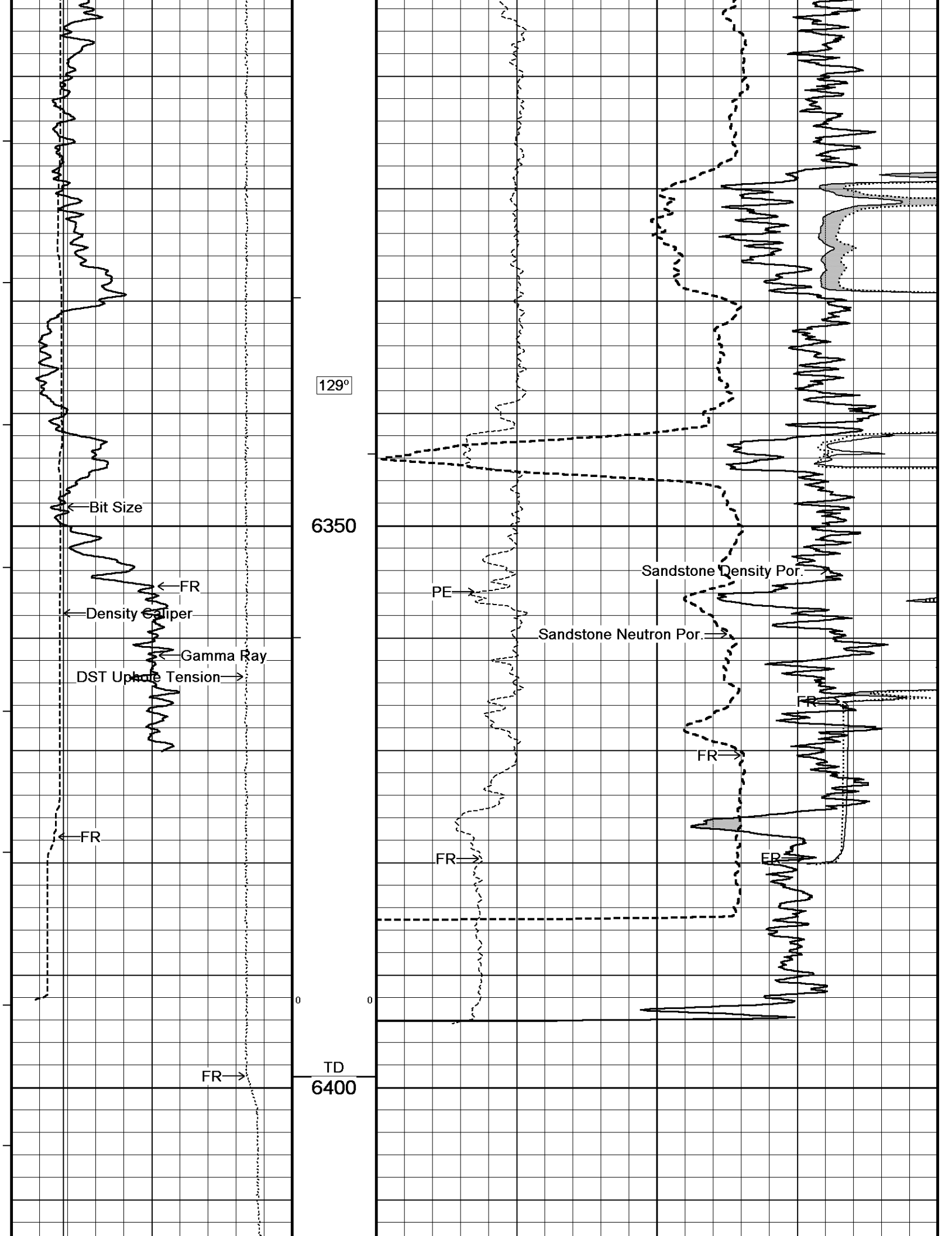

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
MMR MicroLog Inverse
MMR MicroLog Normal
Sandstone Density Por.
PE
125°
200
5800
125°
5850

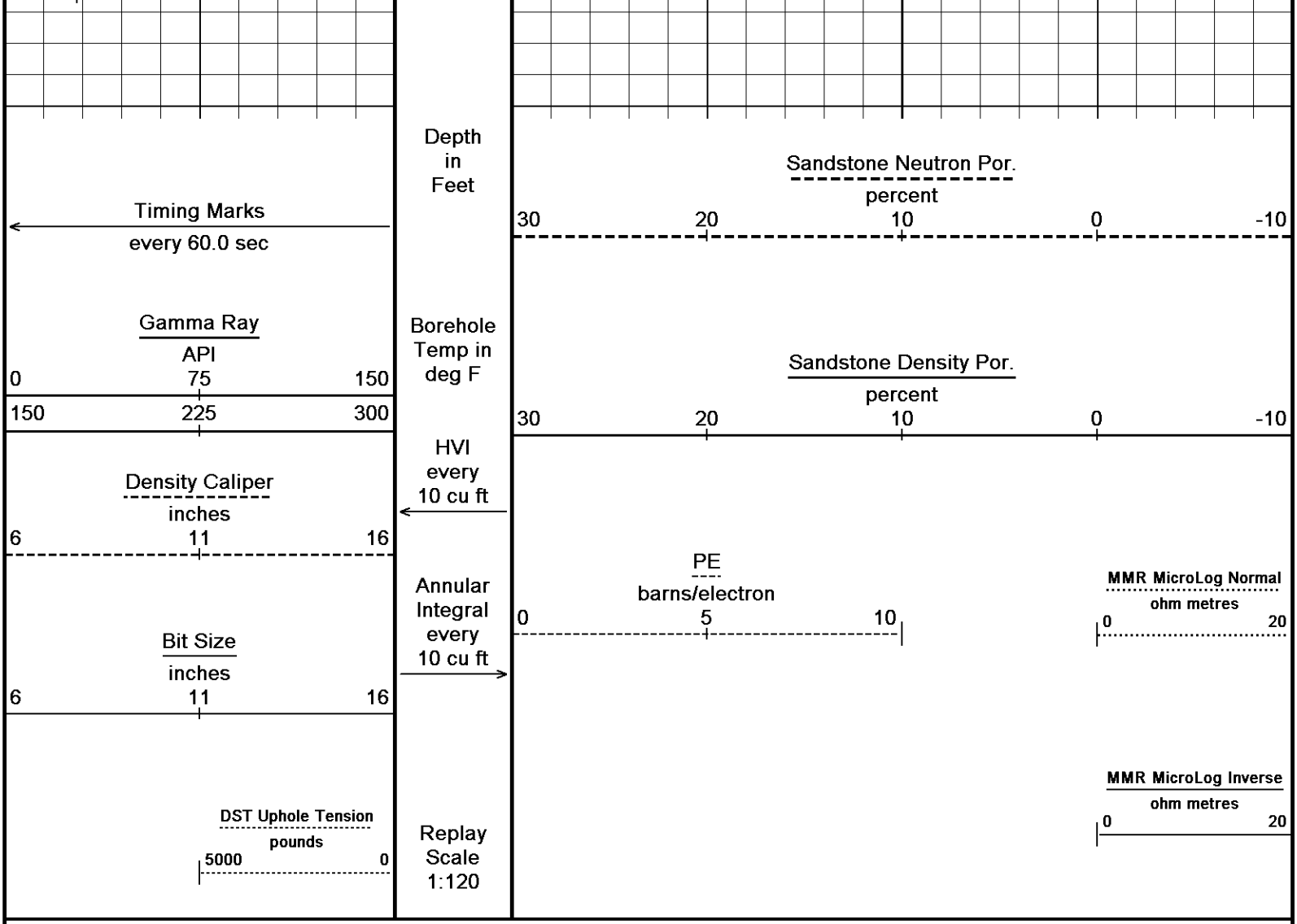

125°
5900
126°
100
5950
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
MMR MicroLog Inverse
MMR MicroLog Normal
Sandstone Density Por.
PE


125°
6000
126°
6050


127°
100
6100
127°
6150
127°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
MMR MicroLog Normal
Sandstone Density Por.
Sandstone Neutron Por.


6200
128°
6250
128°
6300


129°
Bit Size
6350
FR
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
TD
6400
PE
Sandstone Density Por.
Sandstone Neutron Por.
FR
FR
FR
FR

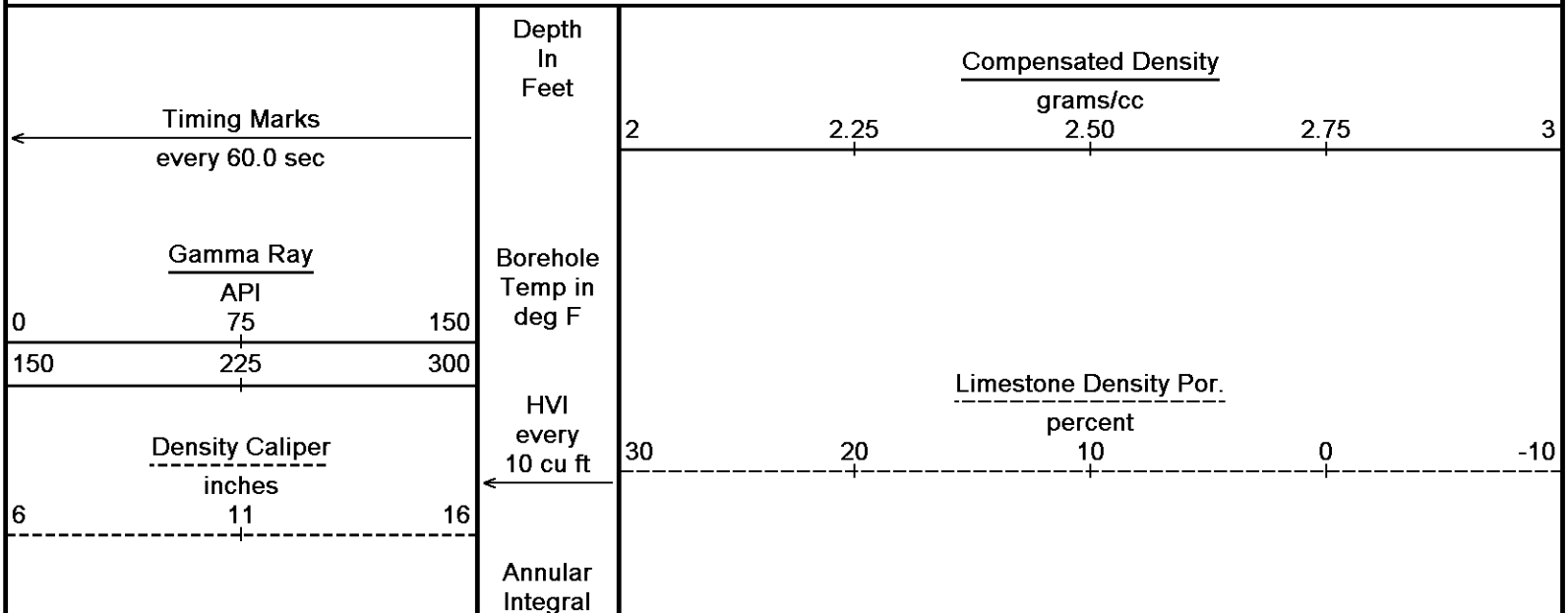


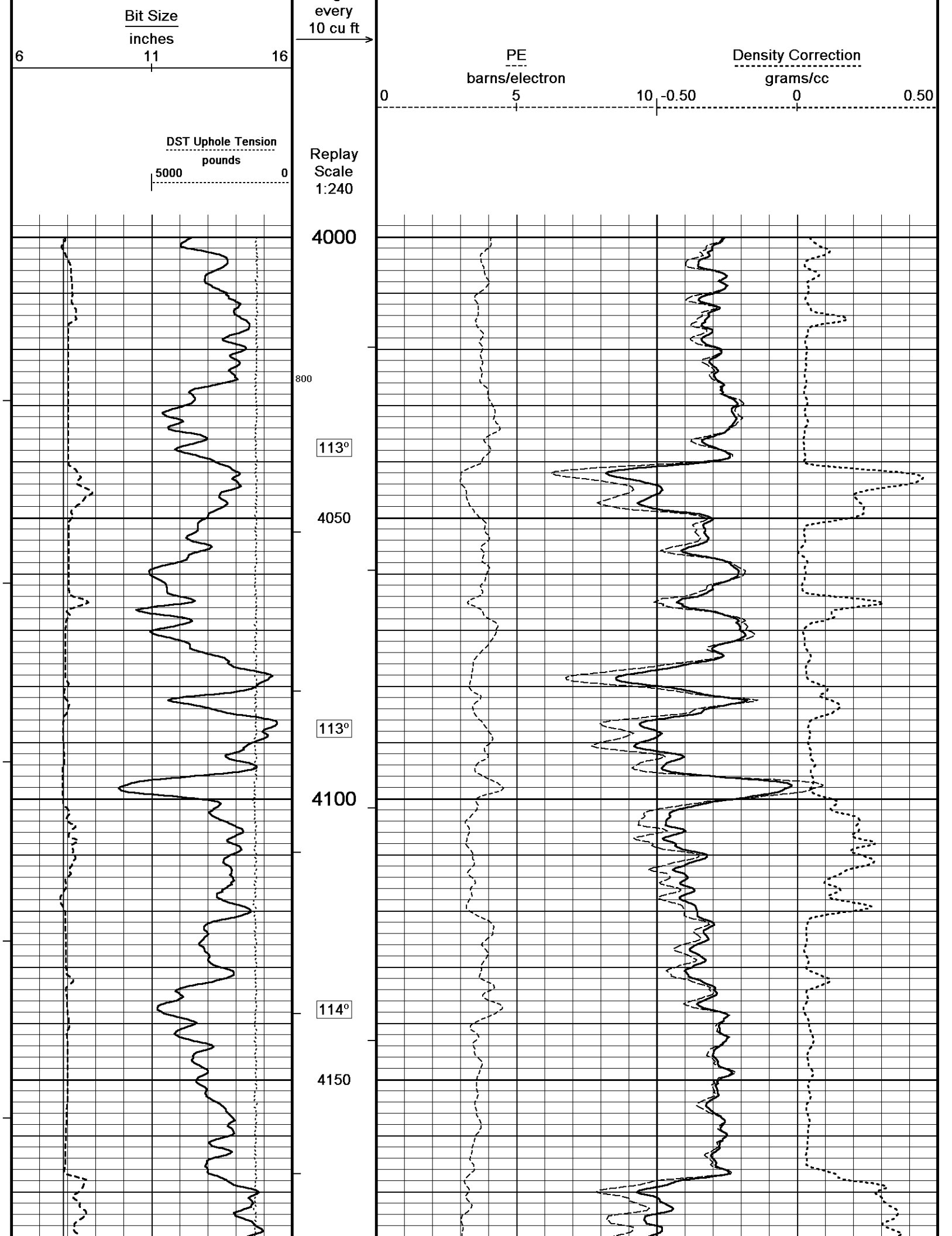
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

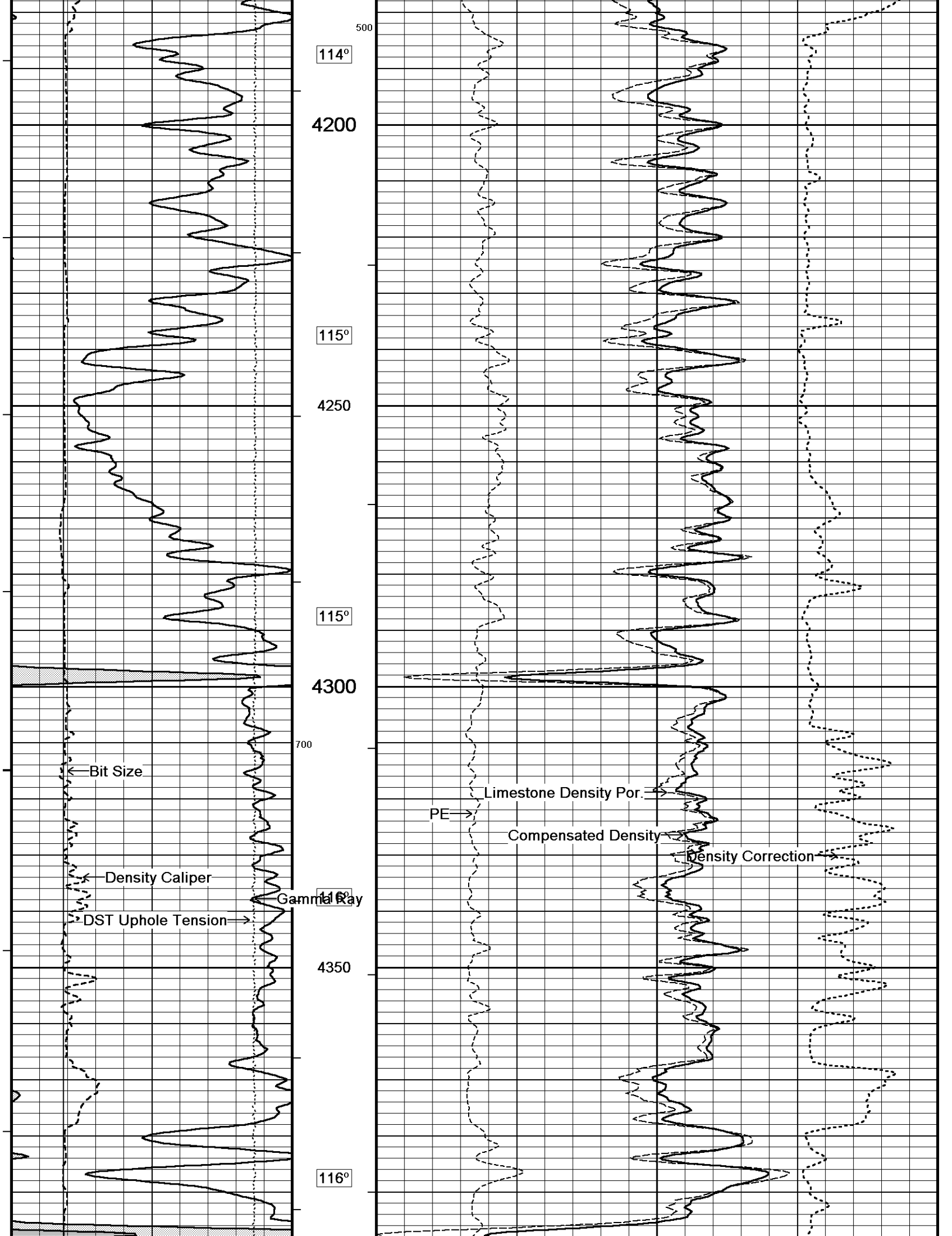
10 INCH HIGH RESOLUTION

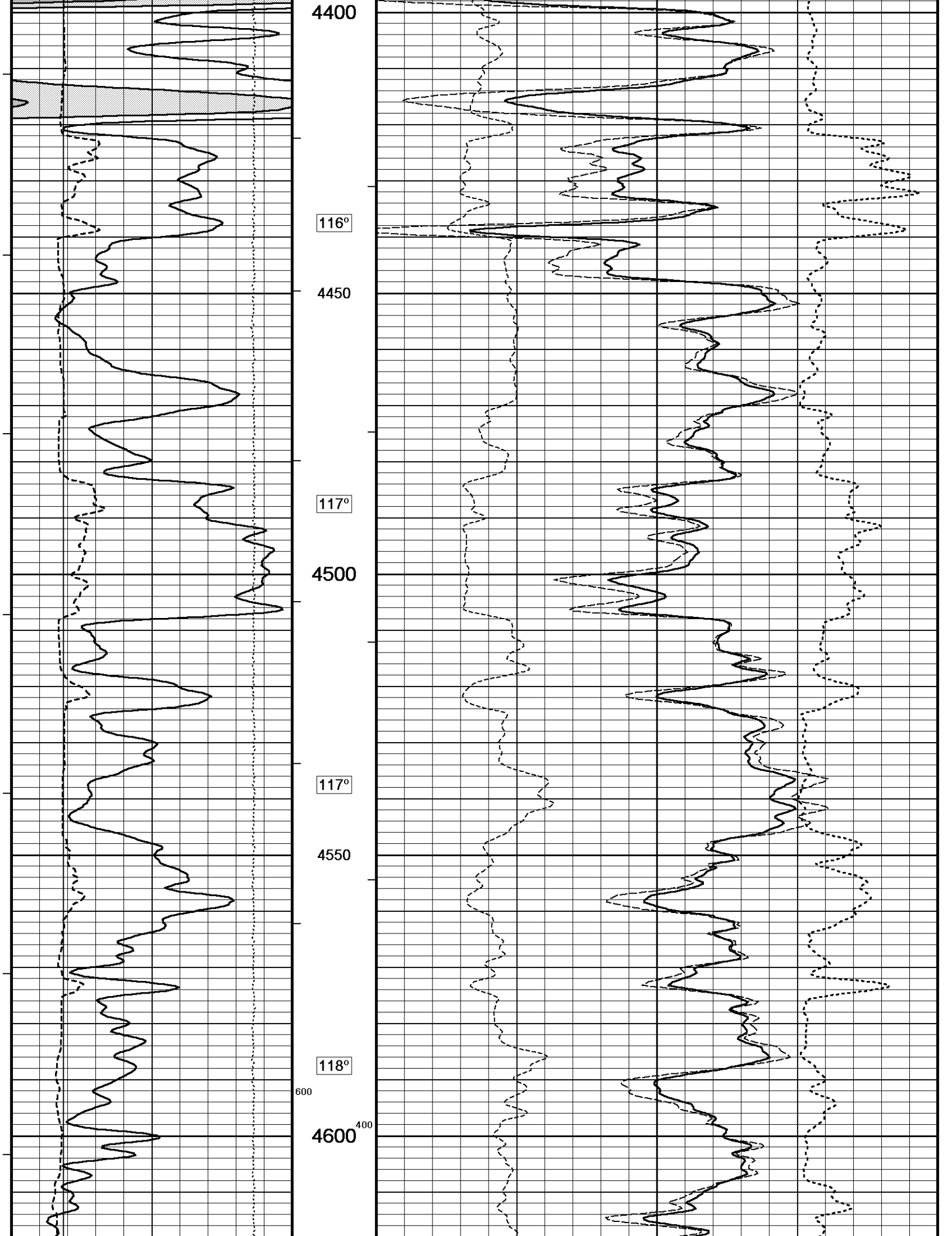
5 INCH BULK DENSITY MAIN

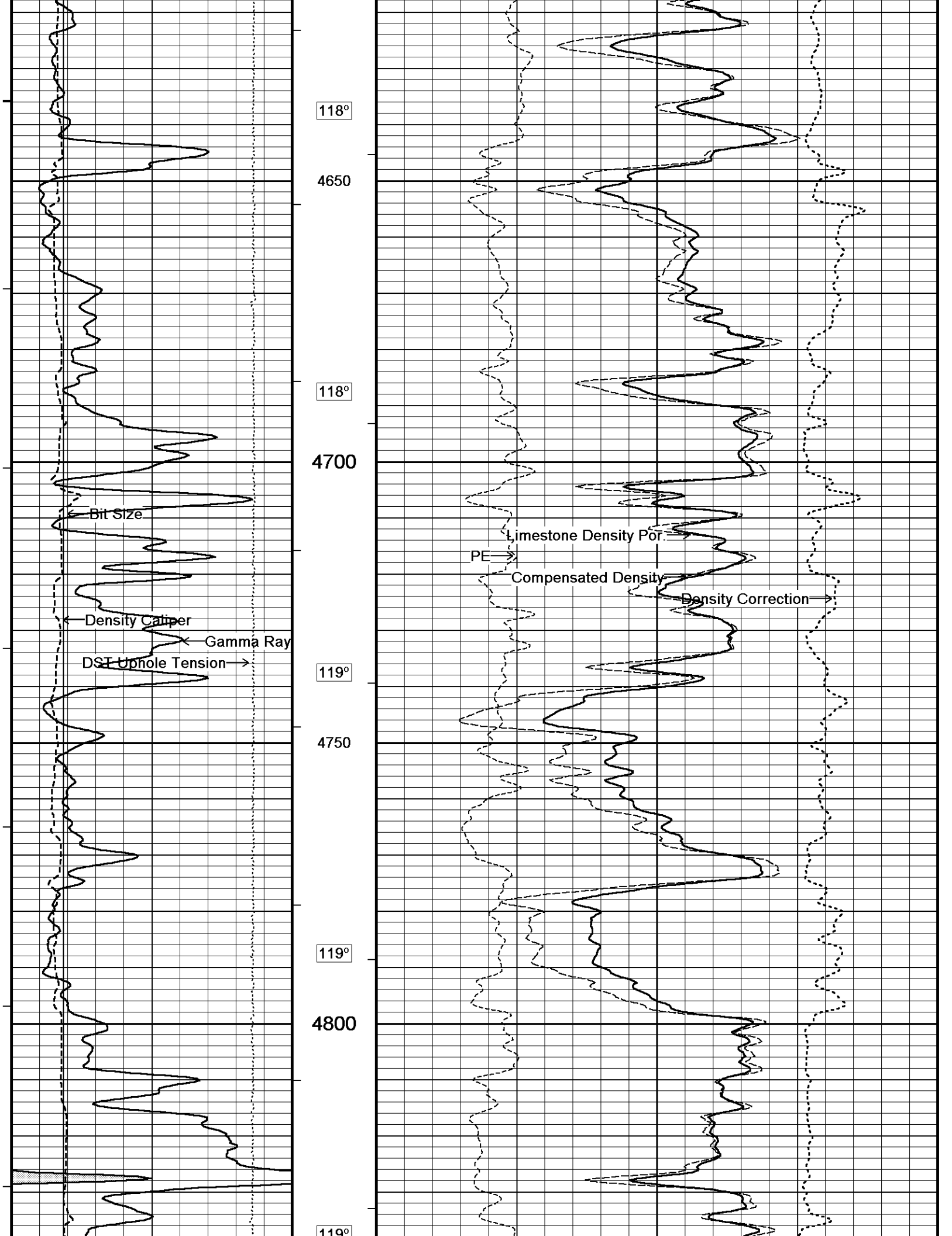
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta — Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

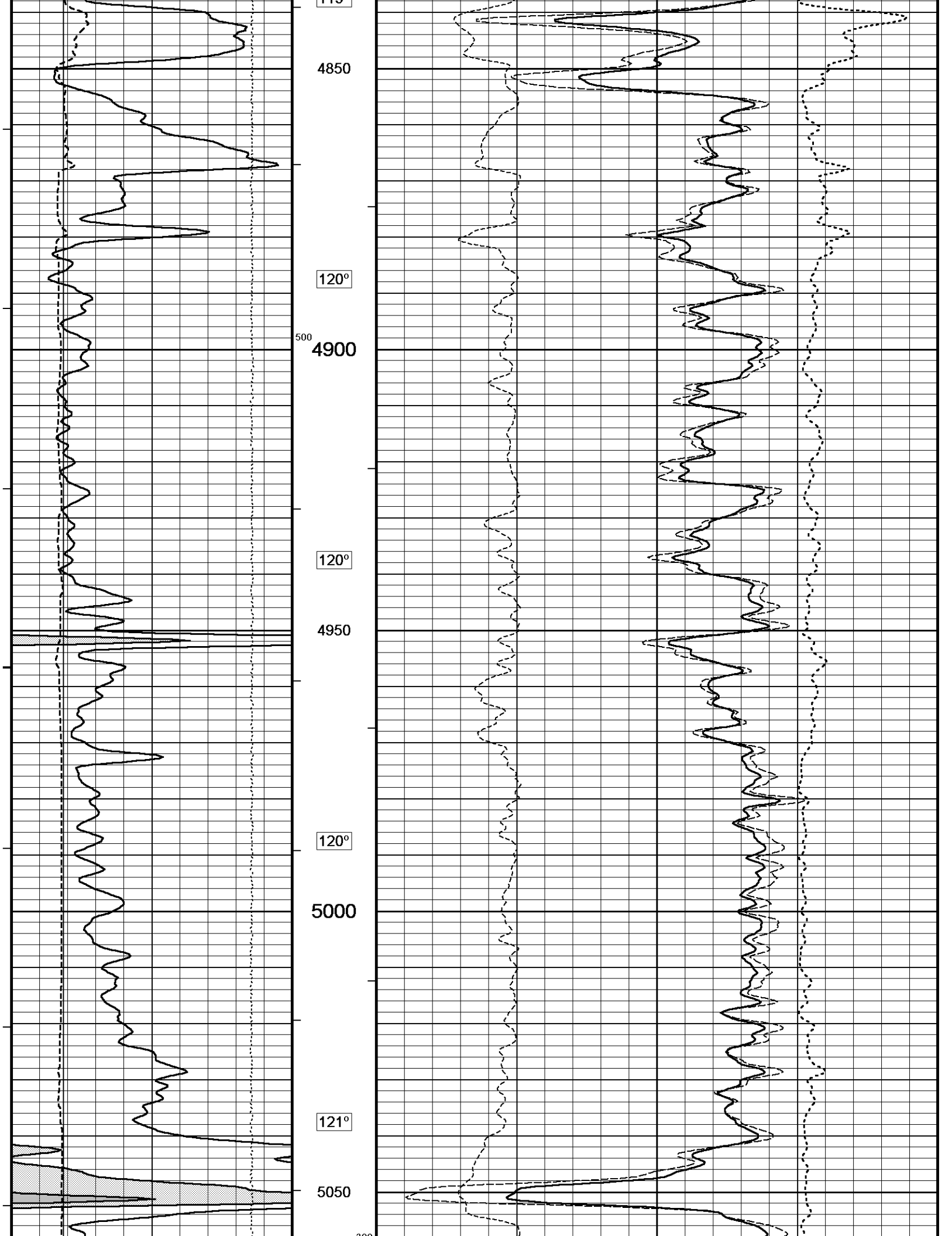


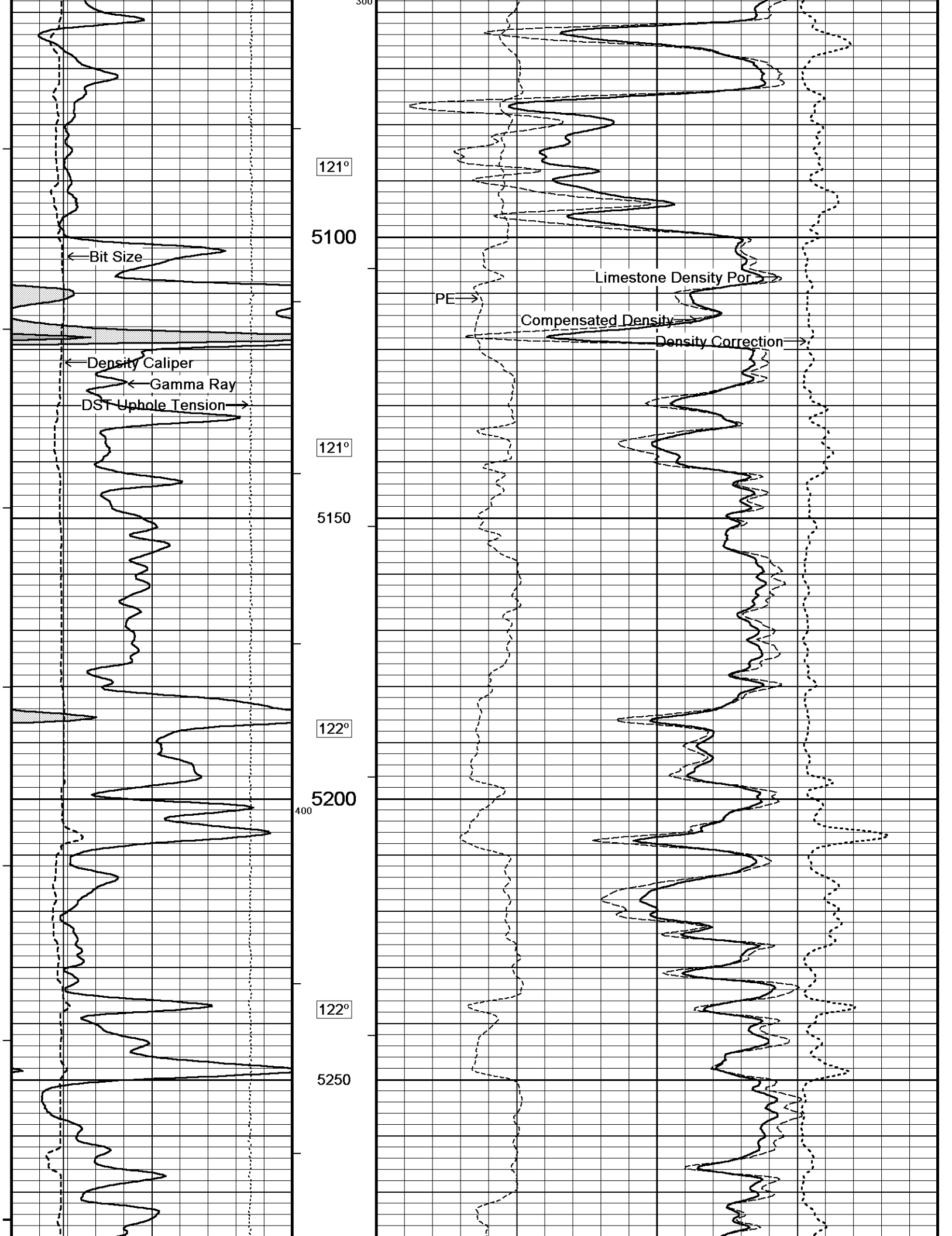

Bit Size
inches
6
11
16
every
10 cu ft
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
4000
800
113°
4050
113°
4100
114°
4150

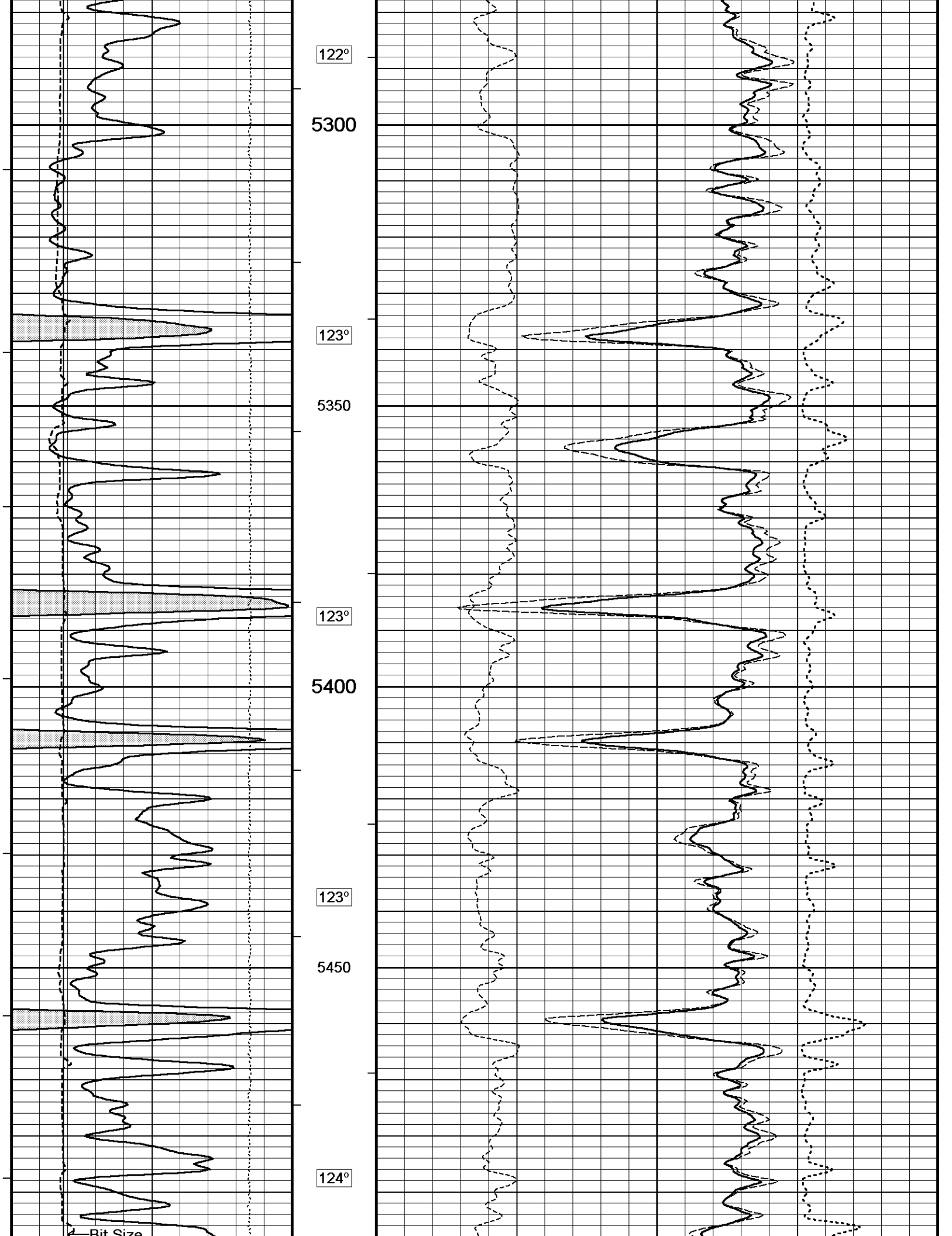

500
114°
4200
115°
4250
115°
4300
700
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
116°
DST Uphole Tension
4350
116°

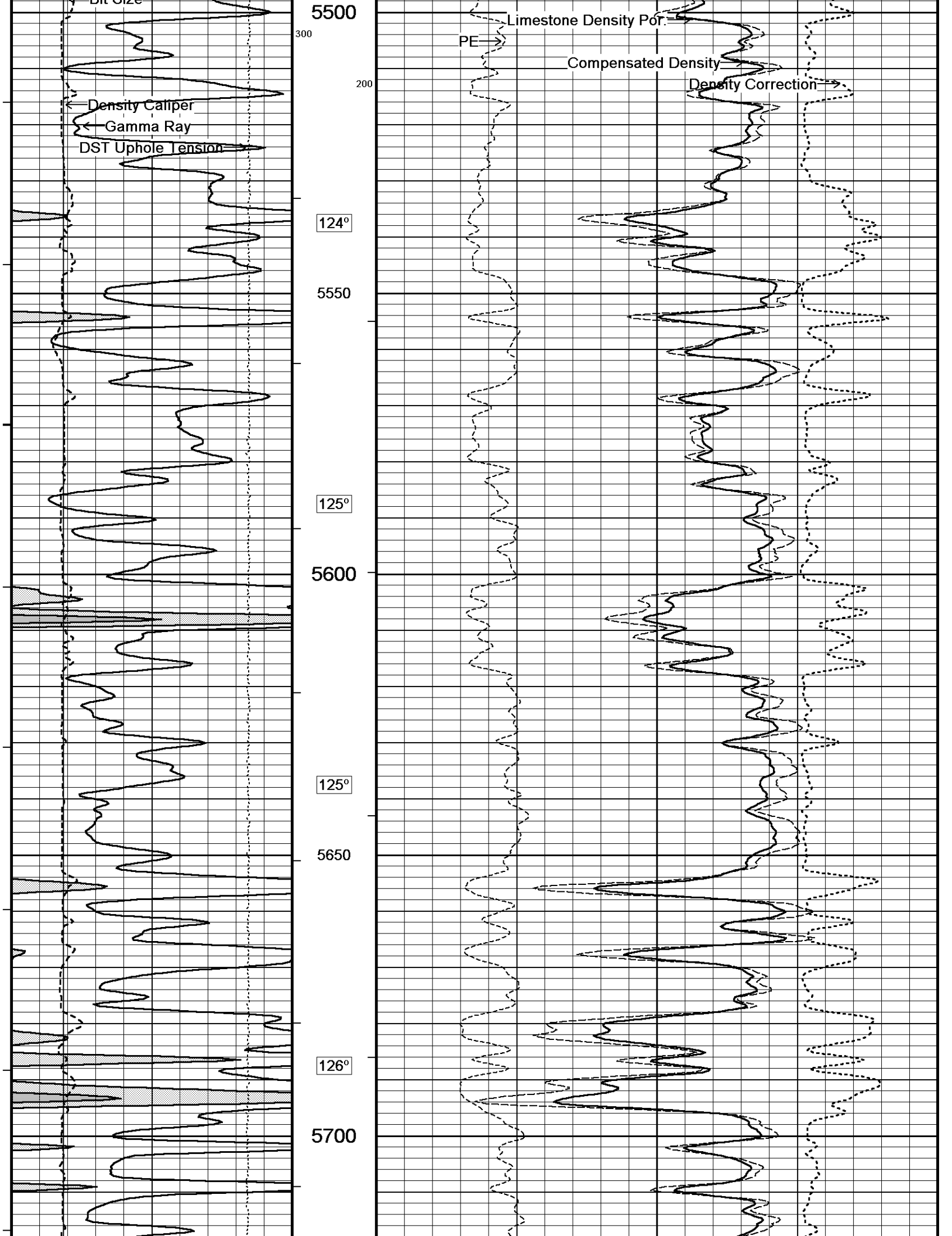

4400
116°
4450
117°
4500
117°
4550
118°
600
4600
400

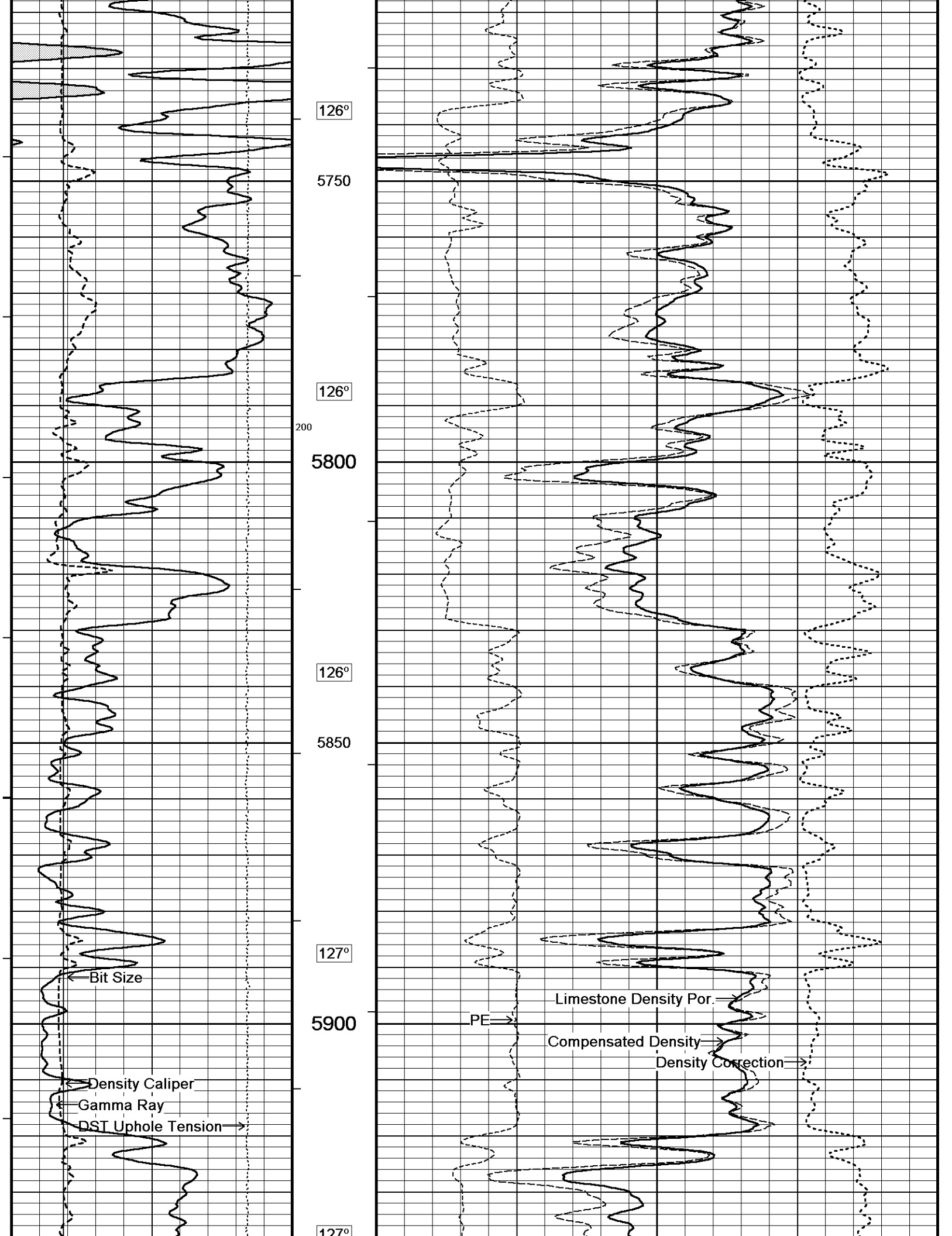

118°
4650
118°
4700
Bit Size
Limestone Density Por
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
119°
4750
119°
4800
119°

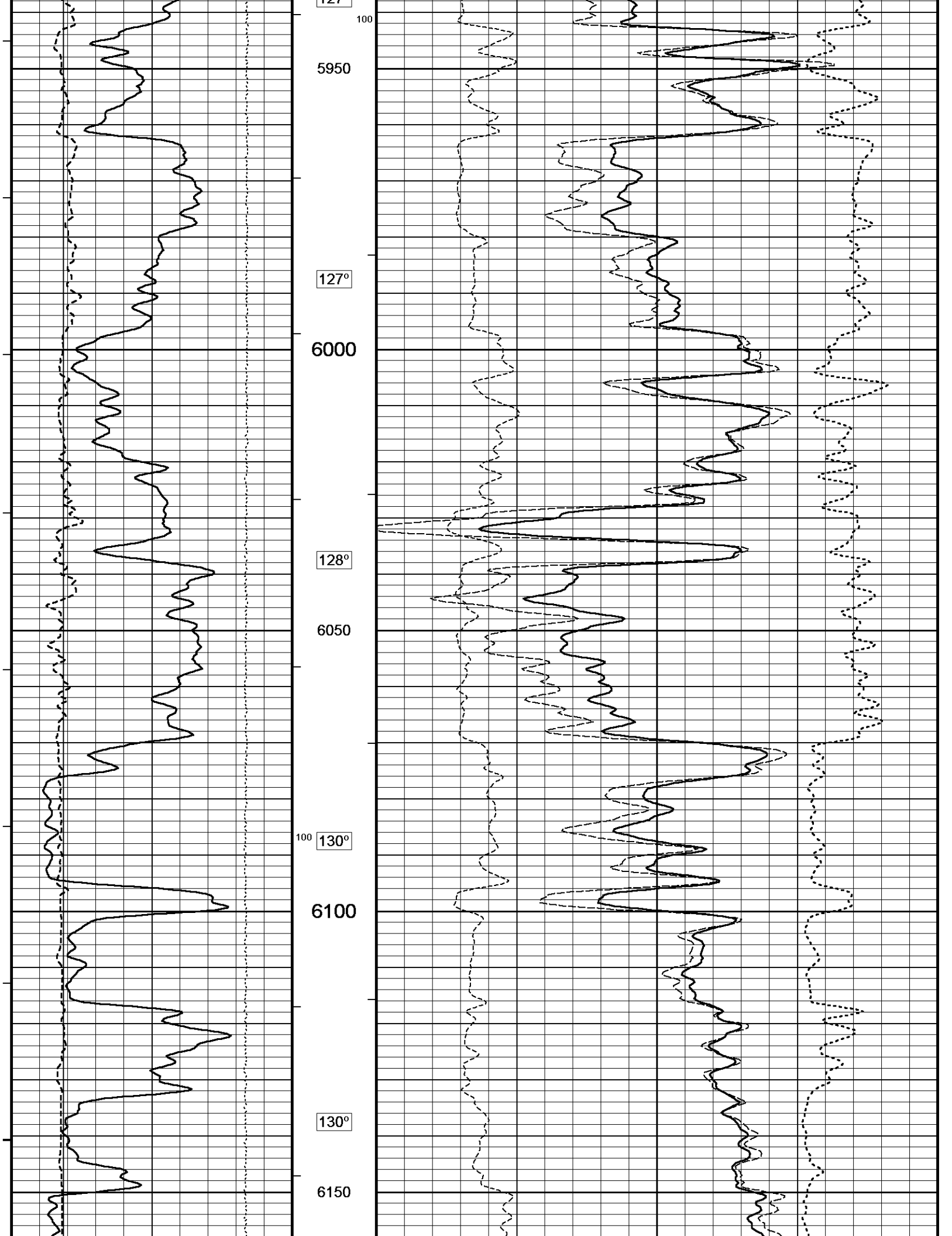

4850
120°
500
4900
120°
4950
120°
5000
121°
5050

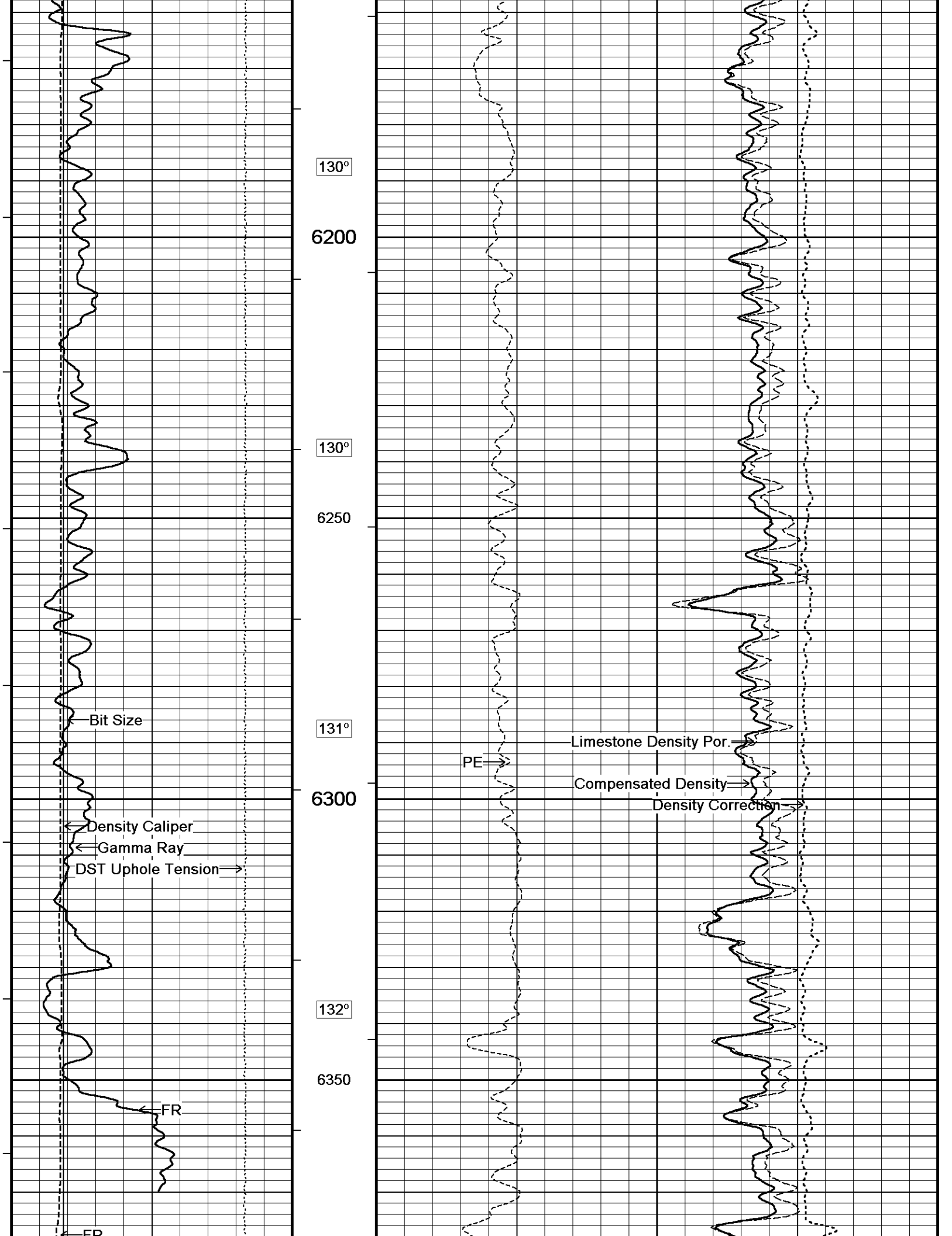

300
121°
5100
Bit Size
Limestone Density Por
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
121°
5150
122°
5200
400
122°
5250

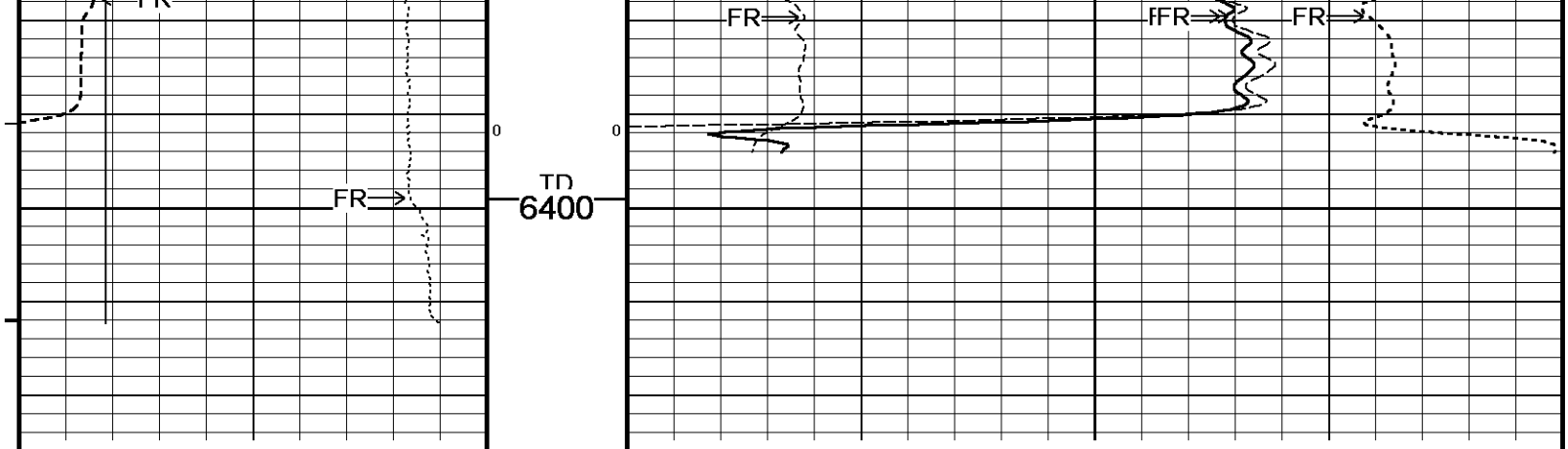

122°
5300
123°
5350
123°
5400
123°
5450
124°
Bit Size


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Compensated Density
Density Correction
300
200
5500
124°
5550
125°
5600
125°
5650
126°
5700


126°
5750
126°
200
5800
126°
5850
127°
5900
127°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Limestone Density Por.
Compensated Density
Density Correction


100
5950
127°
6000
128°
6050
100
130°
6100
130°
6150


130°
6200
130°
6250
131°
6300
132°
6350
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
PE
Limestone Density Por.
Compensated Density
Density Correction



Depth In Feet

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

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.50 0 0.50

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Main Pass.dta
Recorded on 02-SEP-2015 14:55
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

5 INCH BULK DENSITY MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta
Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

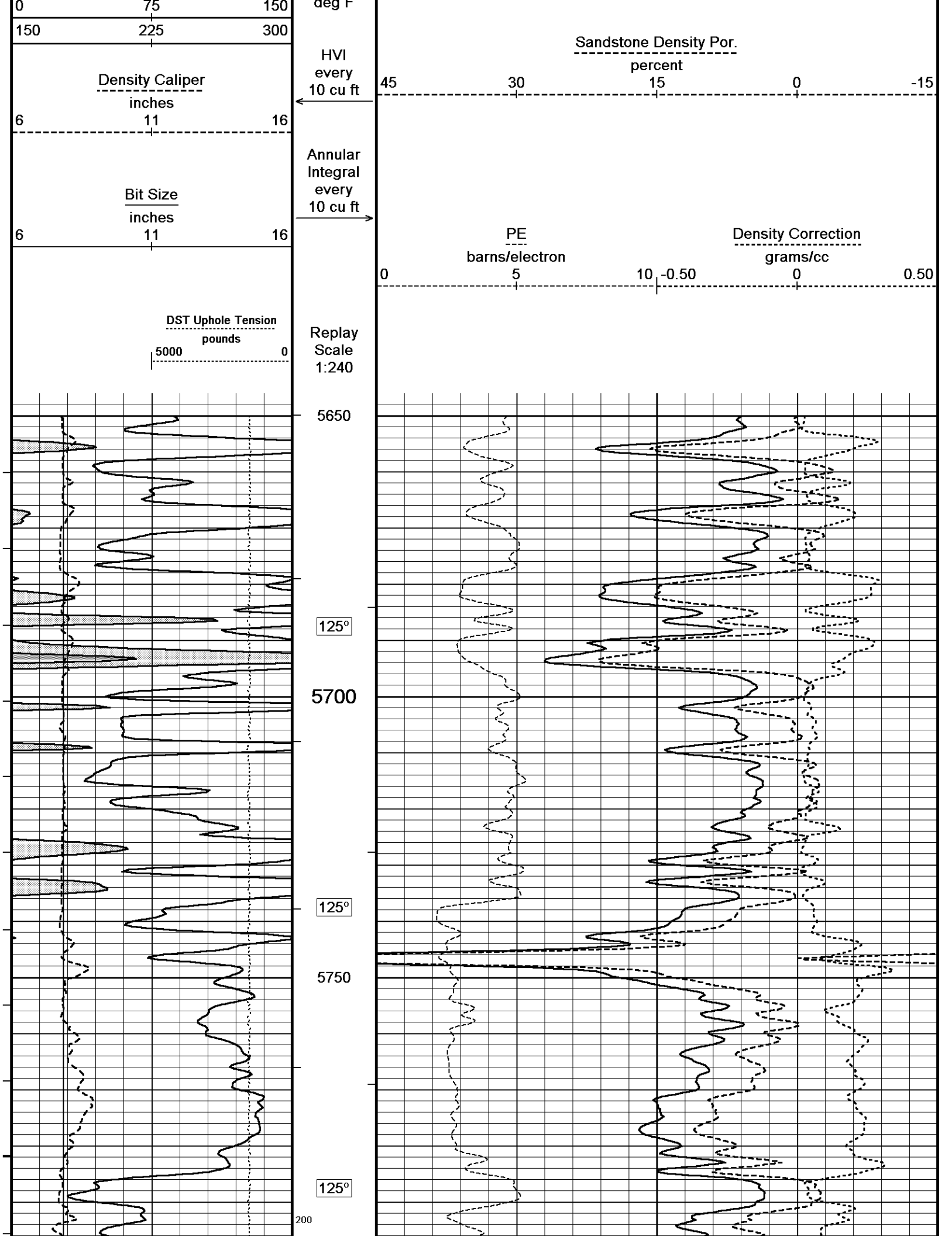
Depth in Feet

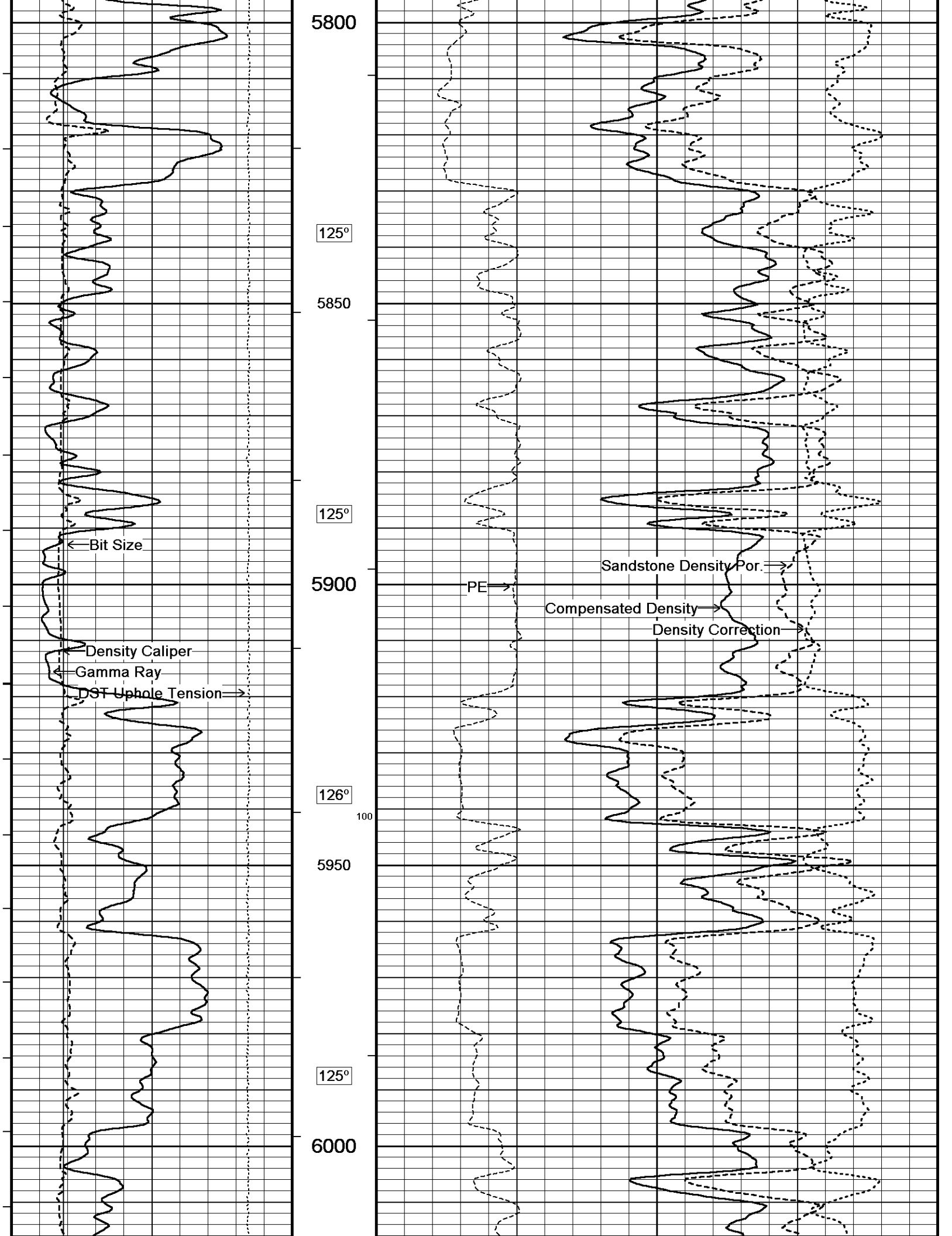
Timing Marks
every 60.0 sec

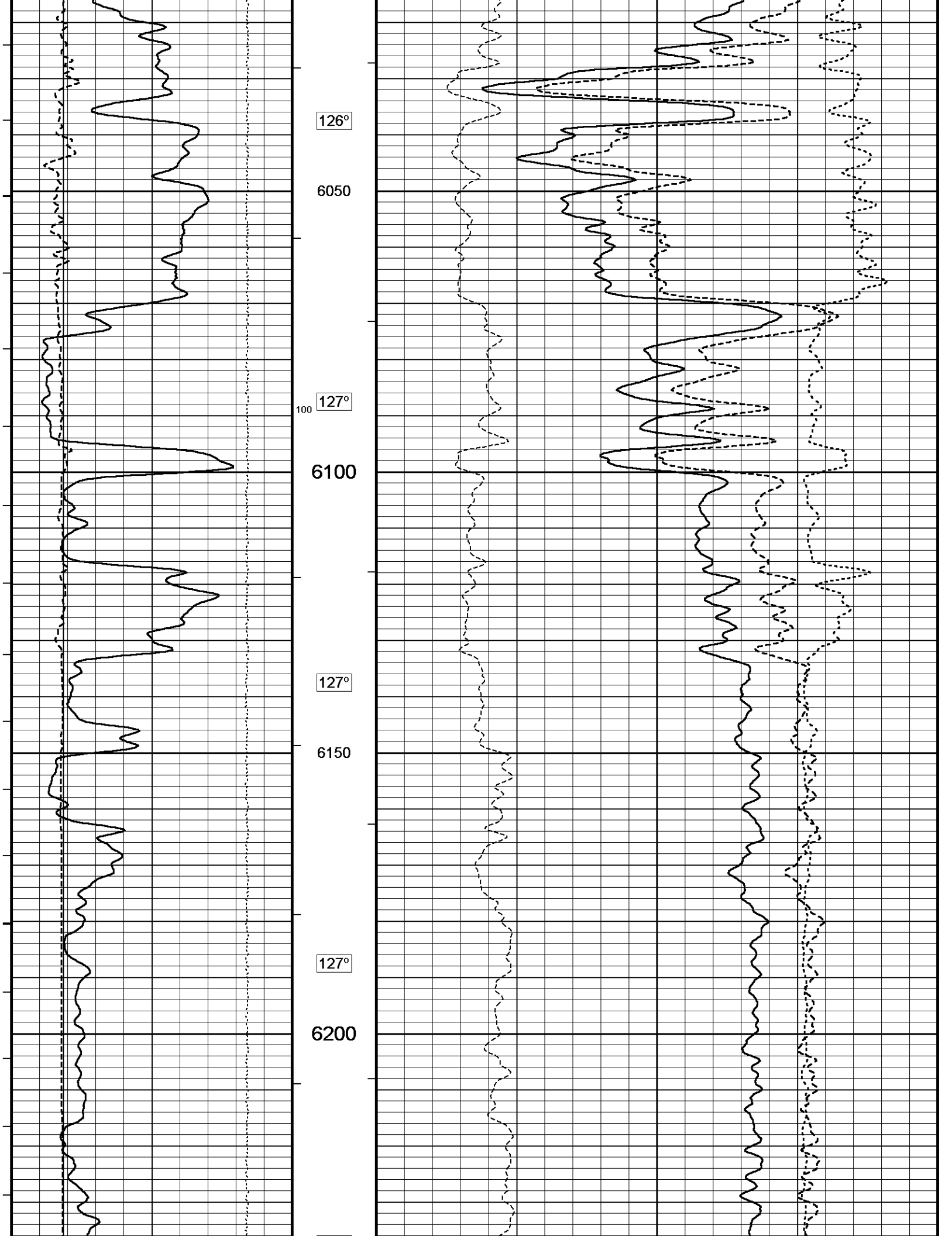
Gamma Ray
API

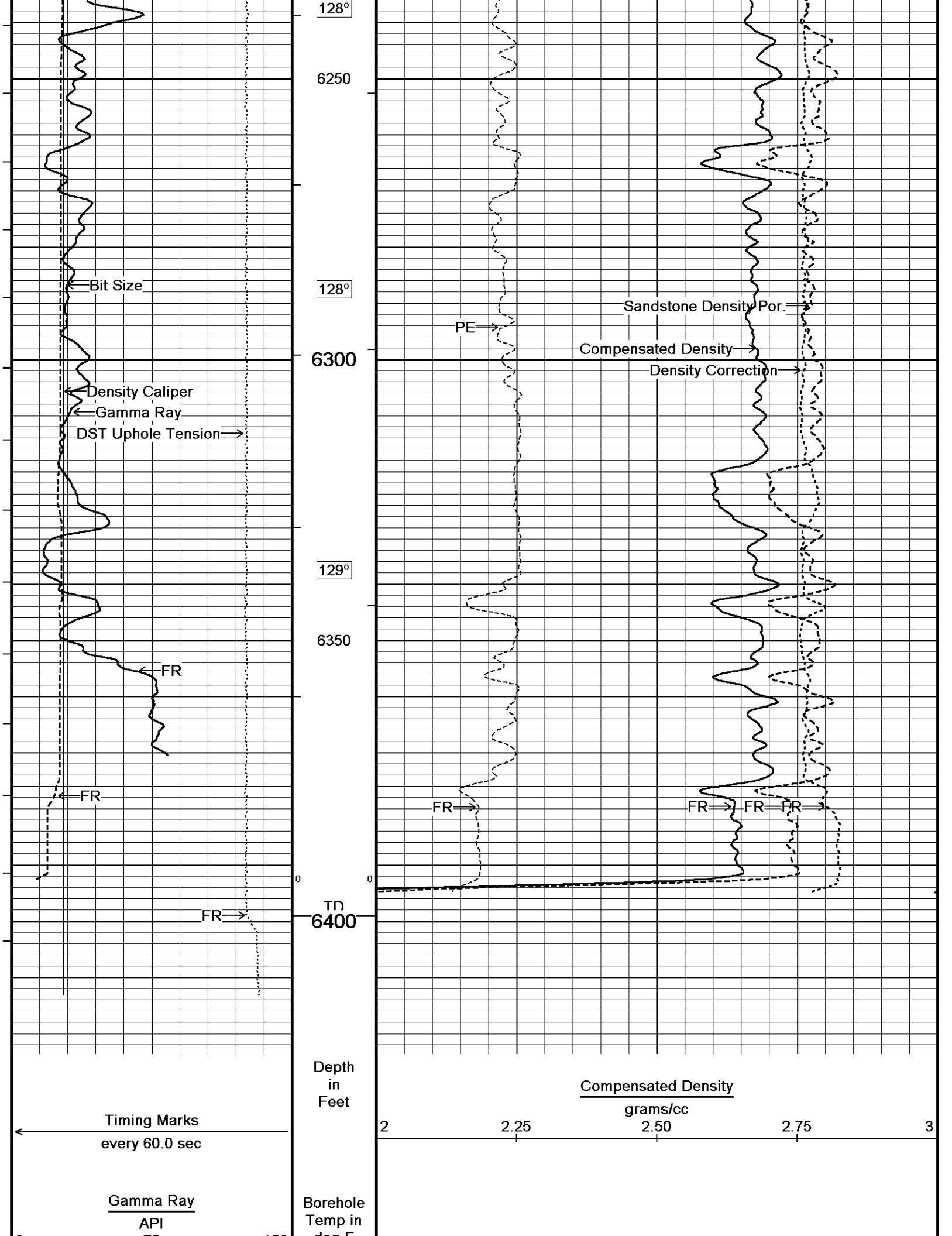
Borehole Temp in

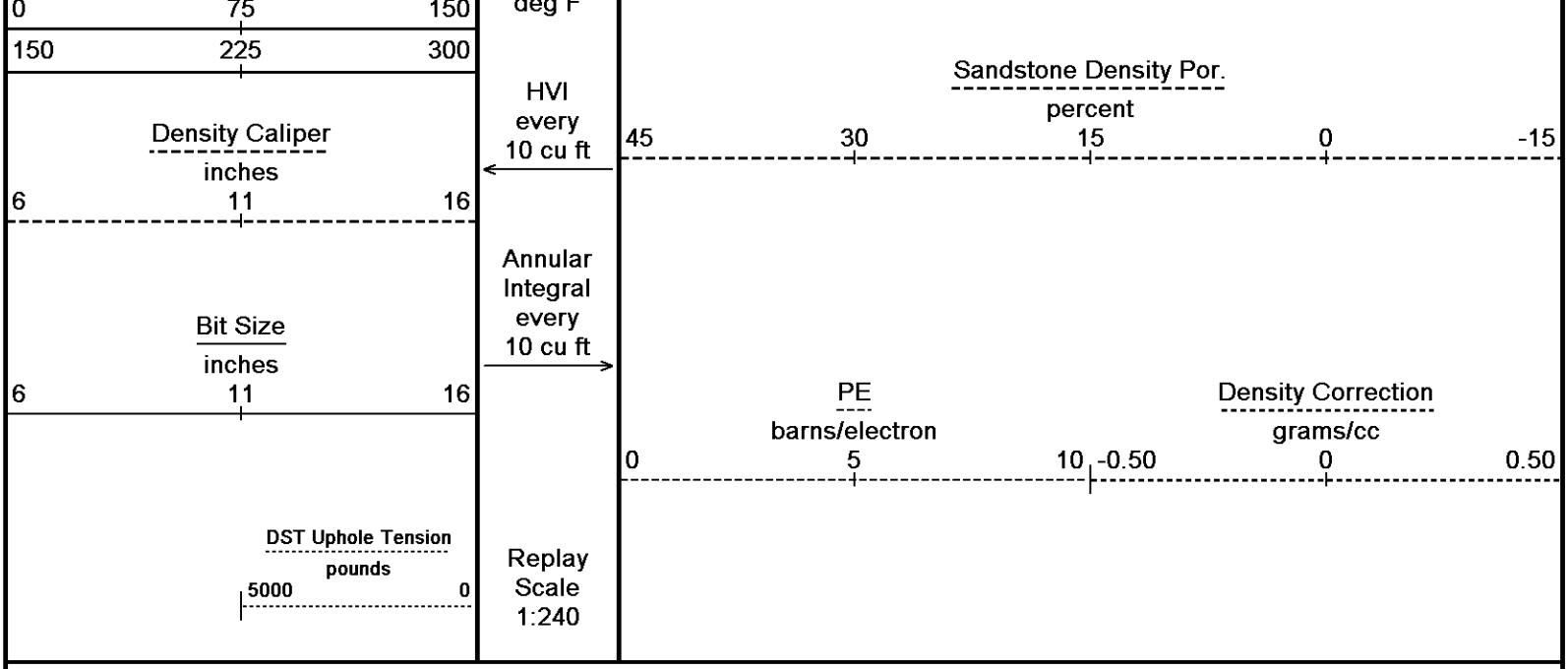
Compensated Density
grams/cc
2 2.25 2.50 2.75 3


0
75
150
deg F
150
225
300
HVI
every
10 cu ft
Sandstone Density Por.
percent
45
30
15
0
-15
Density Caliper
inches
6
11
16
Annular
Integral
every
10 cu ft
Bit Size
inches
6
11
16
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
5650
125°
5700
125°
5750
125°
200


5800
125°
5850
125°
Bit Size
5900
PE
Sandstone Density Por.
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
126°
100
5950
125°
6000


126°
6050
100
127°
6100
127°
6150
127°
6200


128°
6250
128°
6300
129°
6350
0
TD
6400
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
FR
PE
Sandstone Density Por.
Compensated Density
Density Correction
FR
FR
FR
FR
Timing Marks
every 60.0 sec
Depth
in
Feet
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Gamma Ray
API
Borehole
Temp in

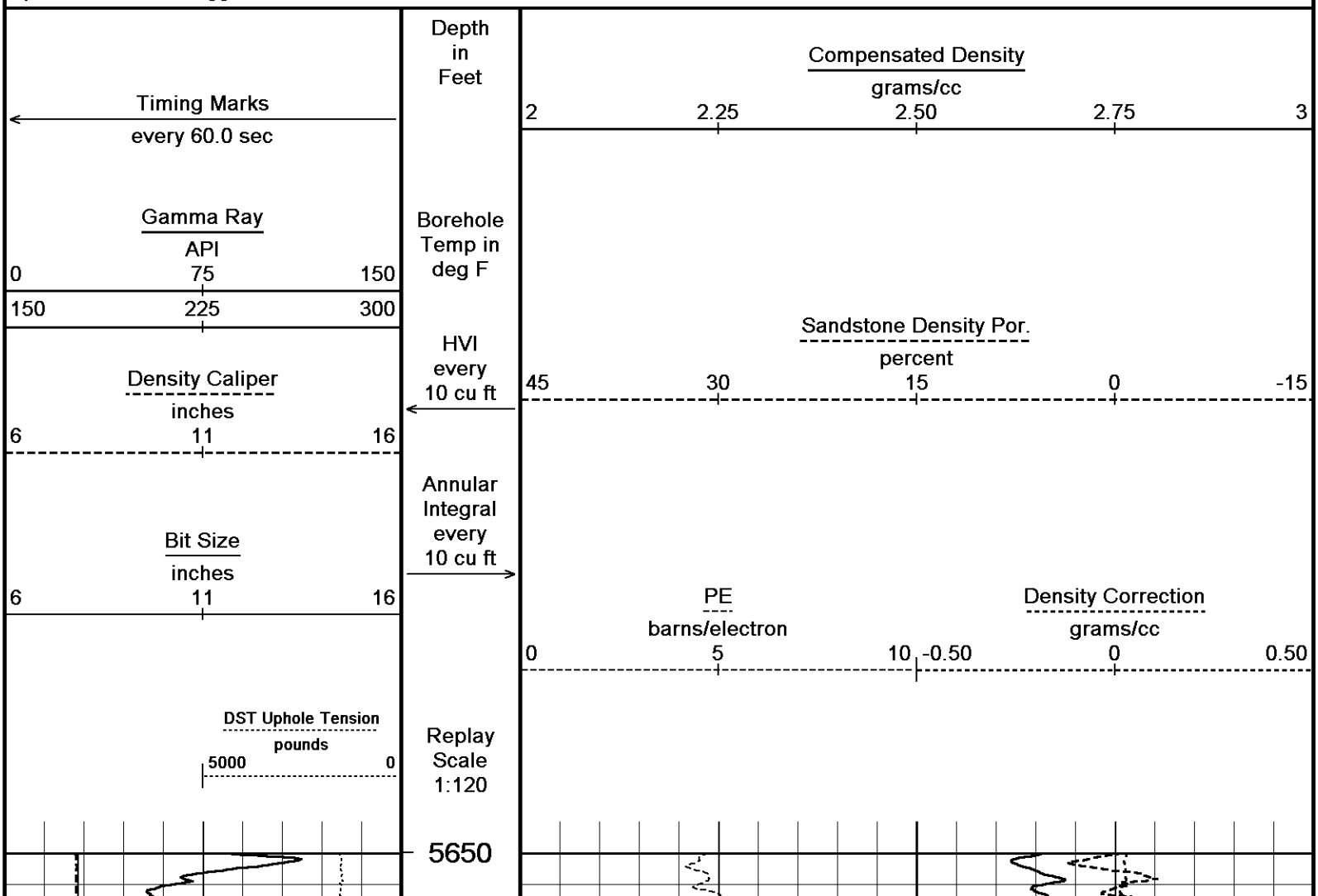


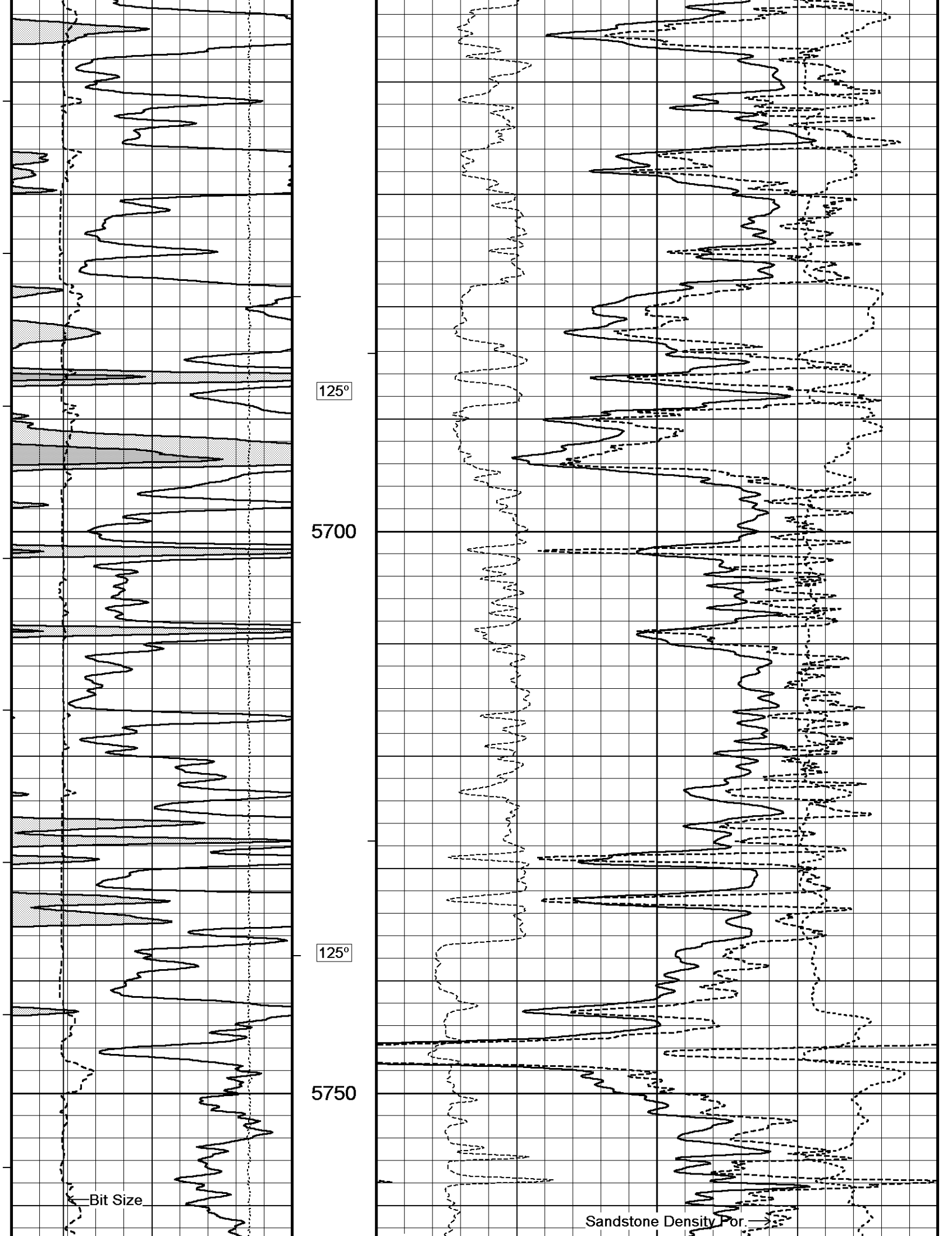
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Processed with 15.01.3109 Plotted with 15.01.3109

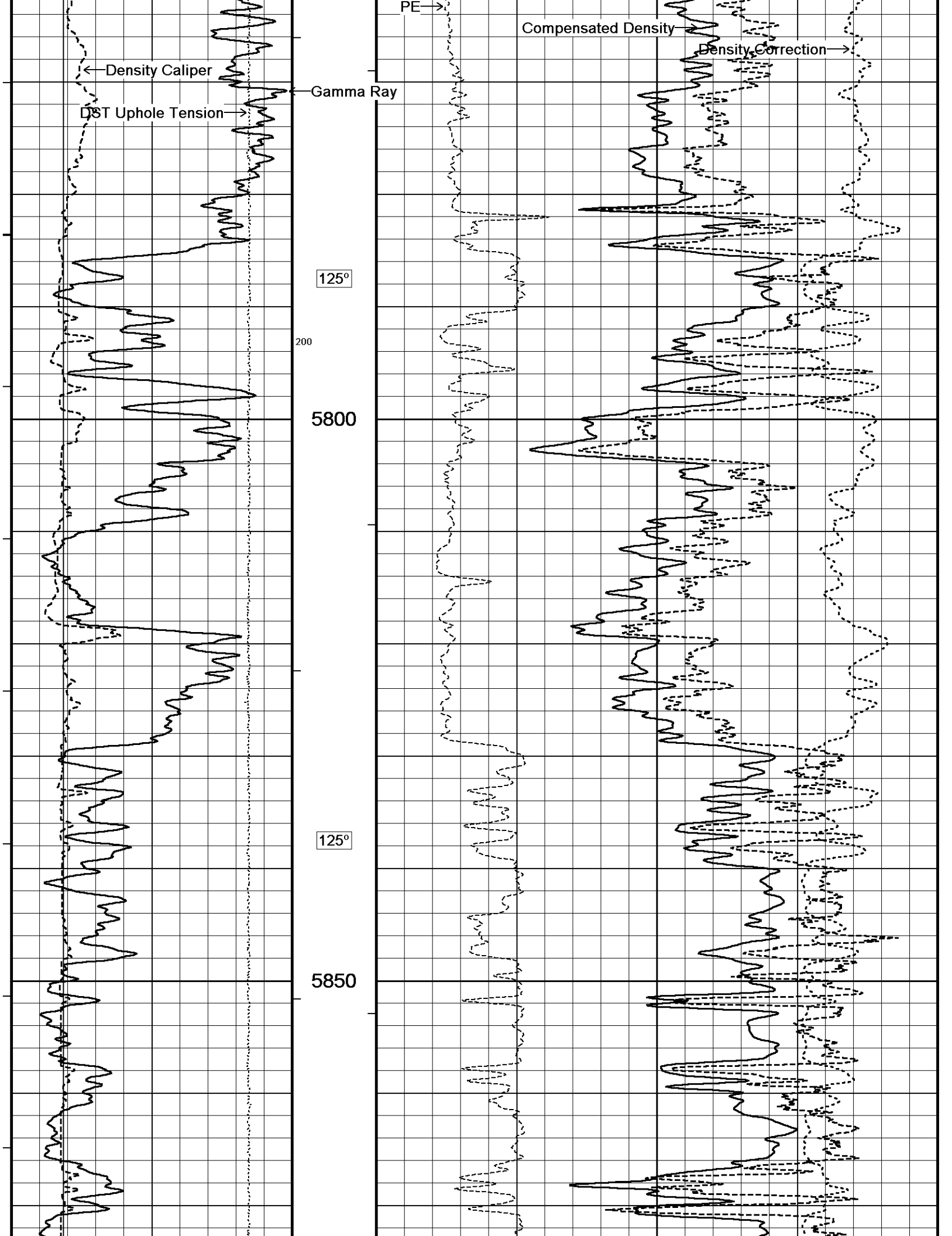
REPEAT SECTION

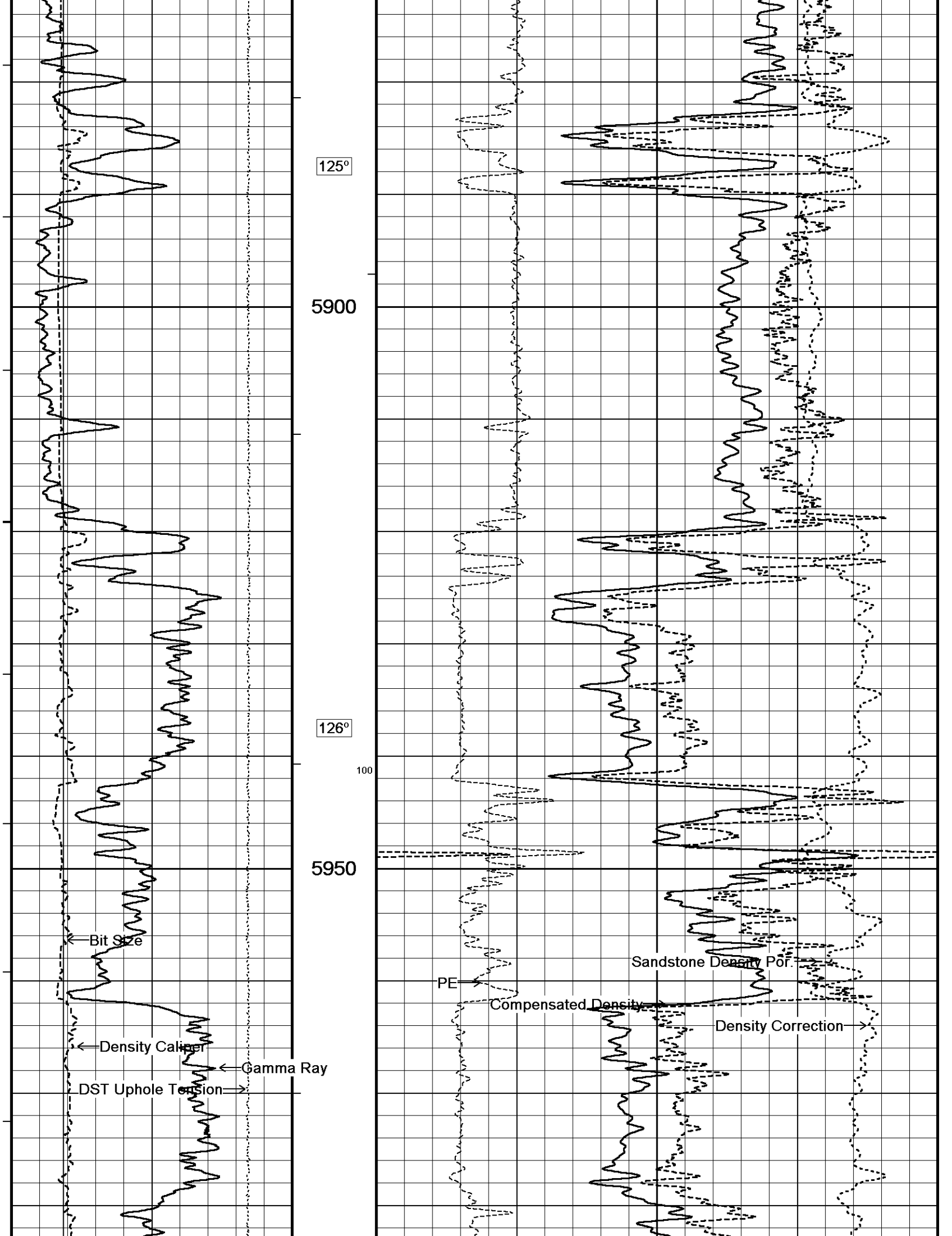
10 INCH HIGH RESOLUTION

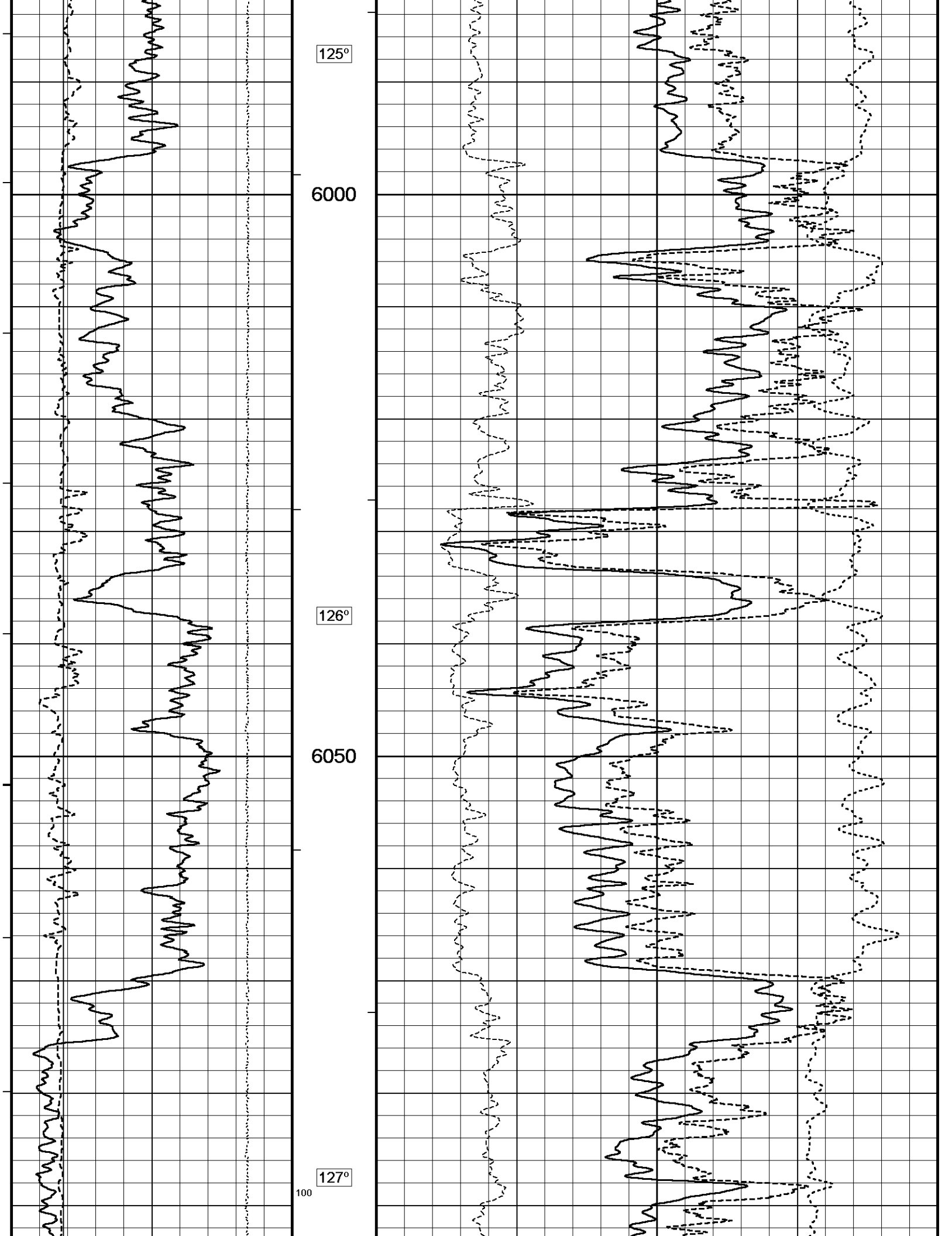
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 02-SEP-2015 17:50
Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta — Recorded on 02-SEP-2015 13:29
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

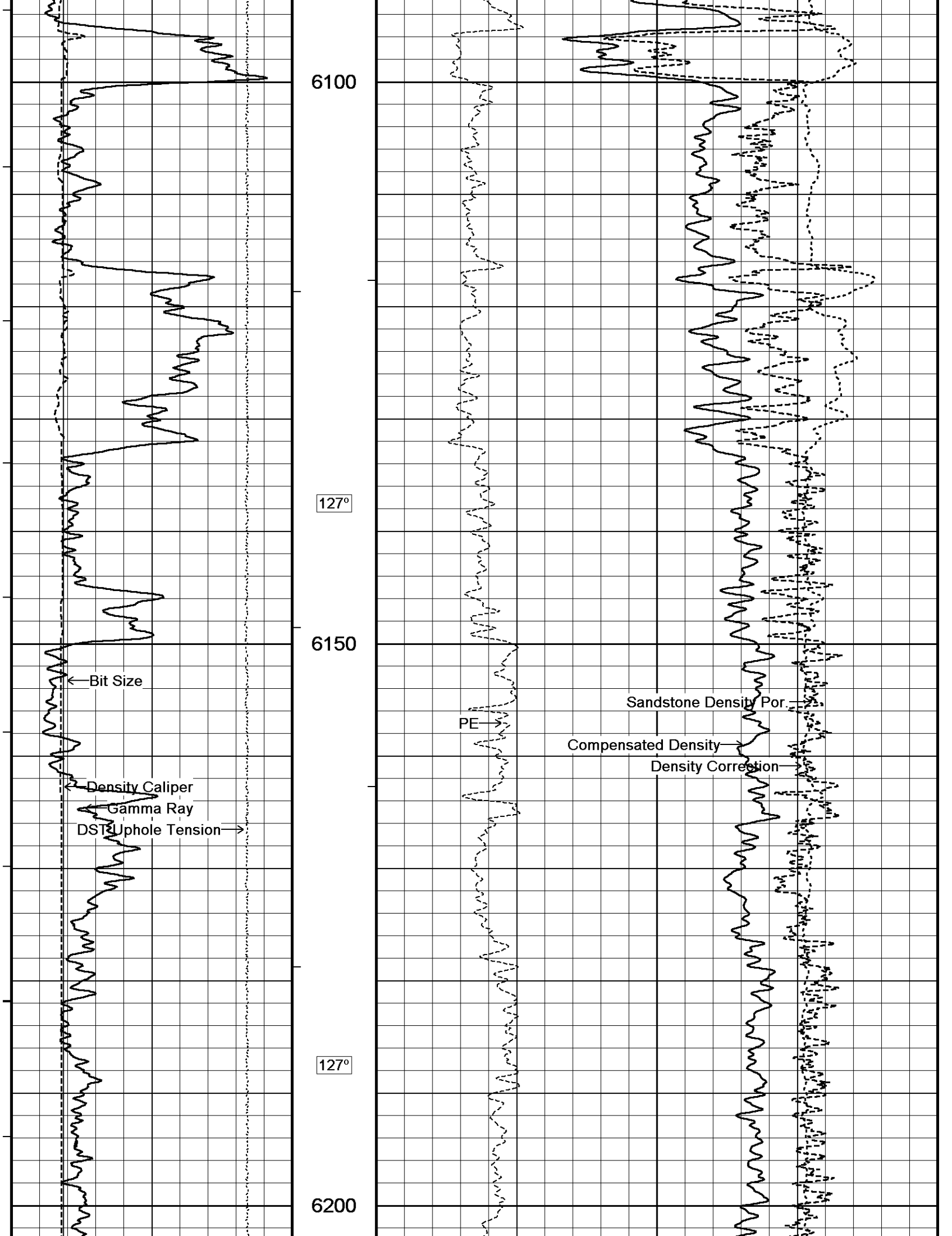


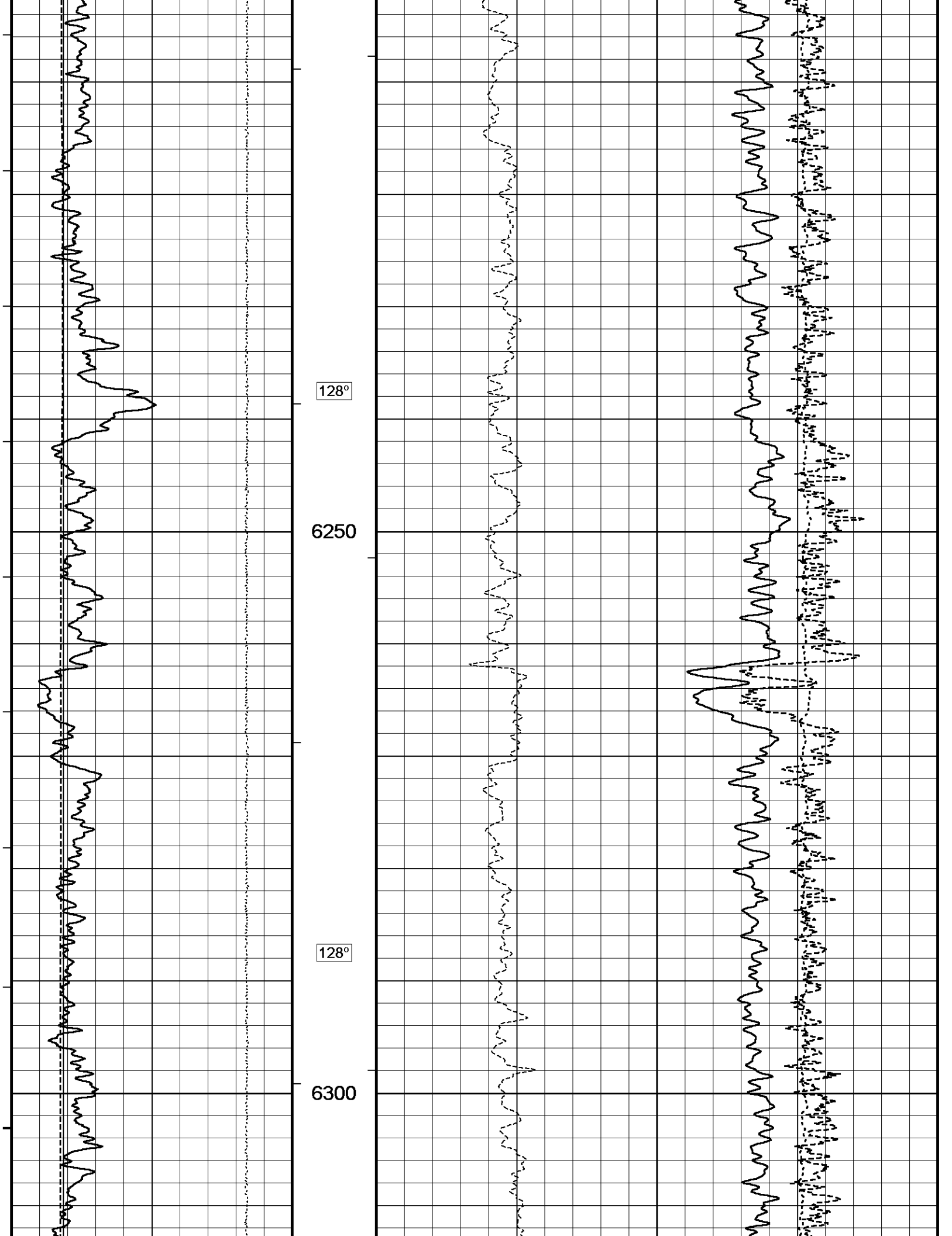

125°
5700
125°
5750
Bit Size
Sandstone Density Por.

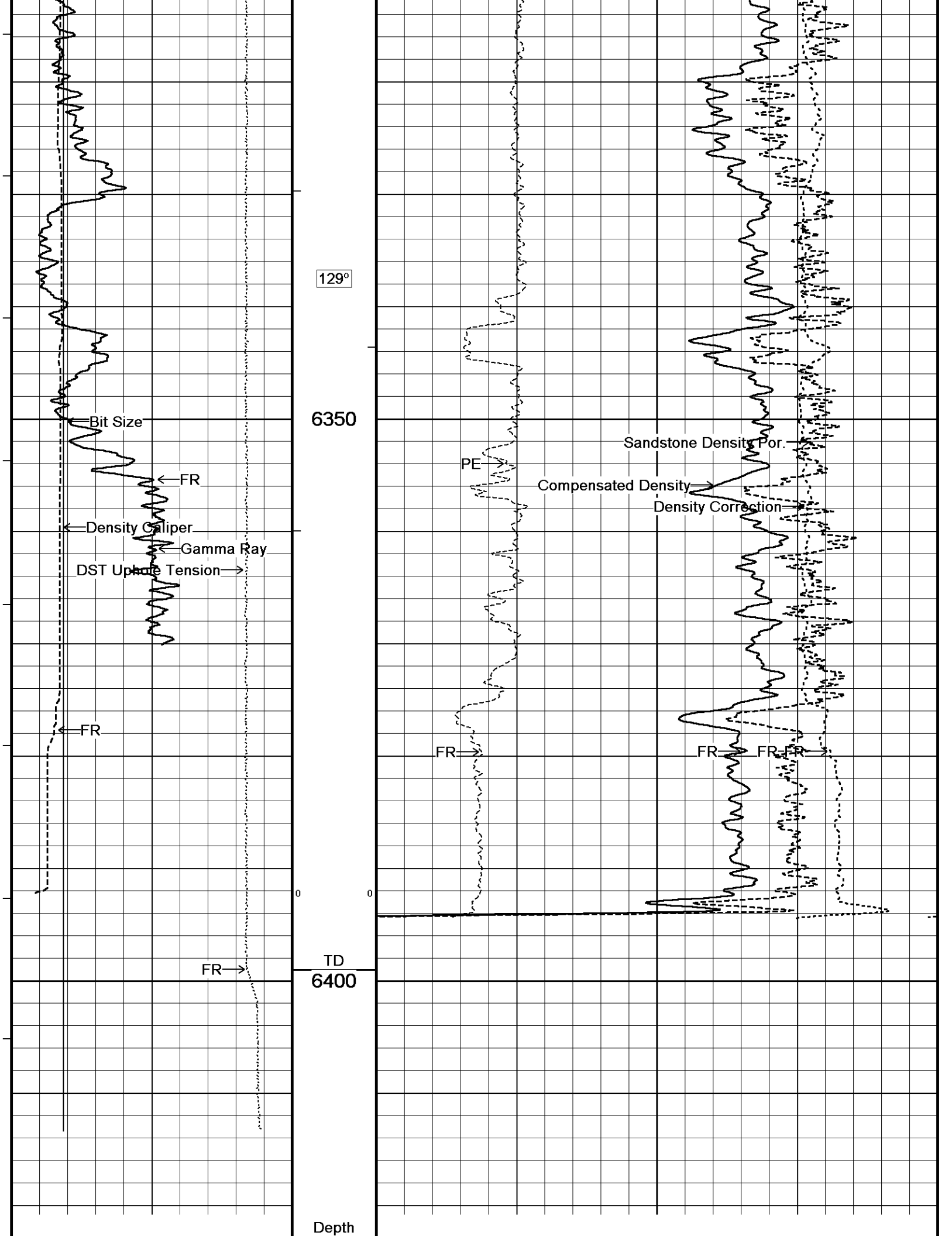

PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
125°
200
5800
125°
5850

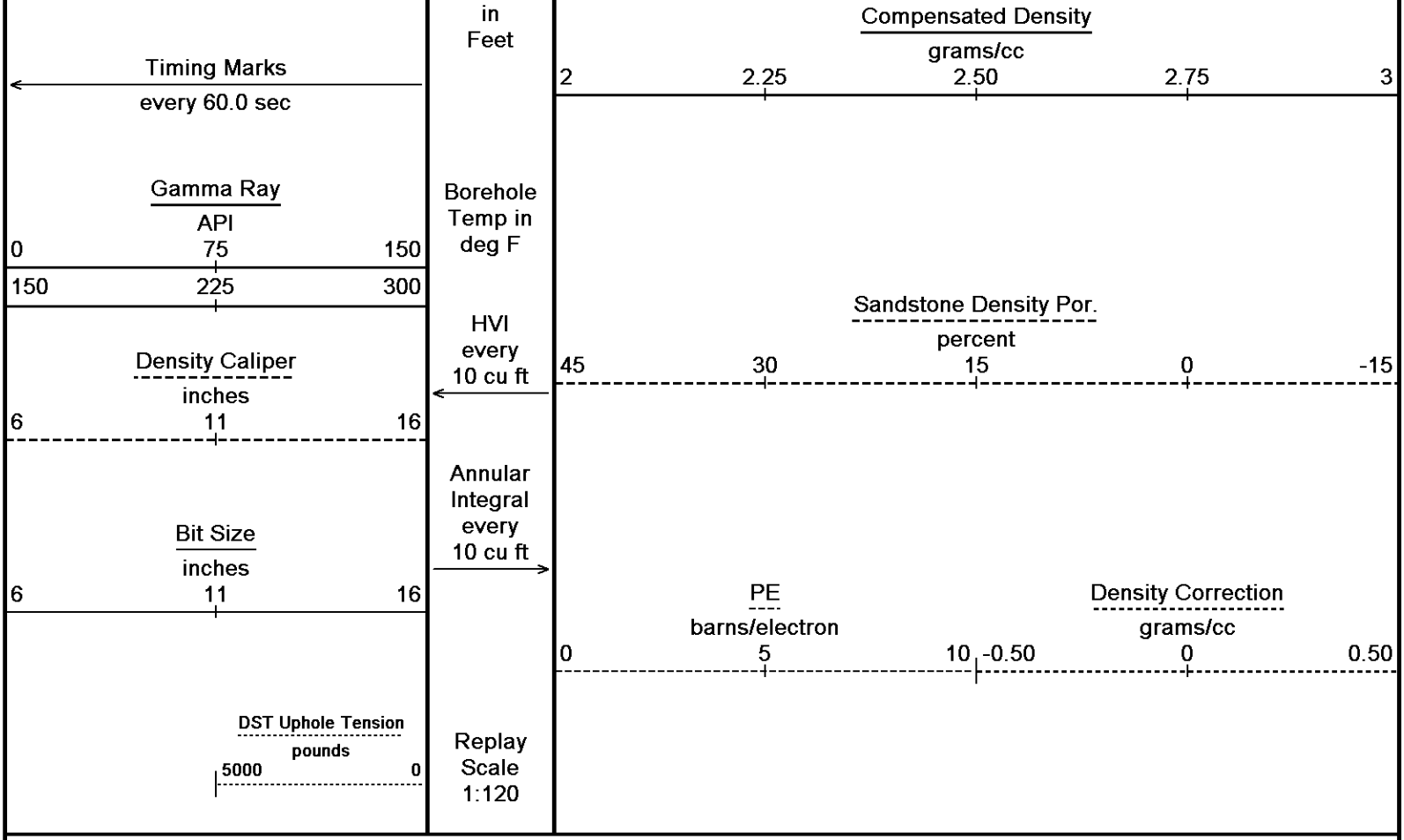

125°
5900
126°
100
5950
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Compensated Density
Sandstone Density Por.
Density Correction


125°
6000
126°
6050
127°
100


6100
127°
6150
127°
6200
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Sandstone Density Por.
Compensated Density
Density Correction


128°
6250
128°
6300


129°
6350
Bit Size
FR
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
0
TD
6400
Depth
PE
Compensated Density
Sandstone Density Por.
Density Correction
FR
FR
FR
FR
0



Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 02-SEP-2015 17:50

Filename: C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzf...\O'Brien Stoltzfus 1-34 High Resolution.dta — Recorded on 02-SEP-2015 13:29

System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

10 INCH HIGH RESOLUTION

BEFORE SURVEY CALIBRATION

C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta

General Constants All 000

Last Edited on 02-SEP-2015,11:28

General Parameters		
Mud Resistivity	1.320	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

High Resolution Temperature Calibration MCG-B 39

Field Calibration on 21-DEC-2014,10:31

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

High Resolution Temperature Constants MCG-B 39

Last Edited on 28-AUG-2014,01:02

Pre-filter Length	11

Gamma Calibration MCG-B 39

Field Calibration on 01-SEP-2015 20:56

	Measured	Calibrated (API)
Background	71	49
Calibrator (Gross)	1115	774
Calibrator (Net)	1044	725

Gamma Calibration Tolerances MCG-B 39

		1.40	1.475	1.55	
Ratio	1.441				Counts/API

Gamma Constants MCG-B 39

Last Edited on 02-SEP-2015,11:29

Gamma Calibrator Number	GRC038	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Caliper Calibration MPD-C.A 216

Base Calibration on 07-AUG-2015 11:34
Field Calibration on 01-SEP-2015 20:26

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20064	3.99
2	30304	5.98
3	40448	7.97
4	50192	9.86
5	61024	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.92	7.97

Caliper Calibration Tolerances MPD-C.A 216

		7.77	7.97	8.17	
Short Arm Field Cal.	7.92				in

Photo Density Calibration MPD-C.A 216

Base Calibration on 07-AUG-2015 11:52
Field Check on 01-SEP-2015 20:22

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1077	1269		
Reference 1	59320	31015	59556	30836
Reference 2	24920	2721	24941	2541

Field Check at Base

1077.5	1269.2

Field Check

1075.6	1263.5

PE Calibration

Base Calibration

	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	196	958		
Reference 1	24593	59132	0.419	0.371
Reference 2	7112	24787	0.290	0.272

Field Check at Base

195.7	958.2

Field Check

195.7	956.4

Photo Density Calibration Tolerances MPD-C.A 216

Near Density Ratio	2.44	-5% 2.52 +5%	Far Density Ratio	20.49	-5% 21.00 +5%
PE Calibration	0.120	0.089 0.110 0.131			
Near Den. Field Check	1075.6	-3% 1077.5 +3%	Far Den. Field Check	1263.5	-3% 1269.2 +3%
PE WS Field Check	195.7	-6% 195.7 +6%	PE WH Field Check	956.4	-6% 958.2 +6%

Density Constants MPD-C.A 216

Last Edited on 02-SEP-2015,11:29

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	1.09	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

DOWNHOLE EQUIPMENT

C:\Minimus 15.01.3109\Log Data\O'Brien Stoltzfus 1-34\O'Brien Stoltzfus 1-34 Repeat.dta

CBH-C, Cablehead, 11 pin
CBH-CA 233 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

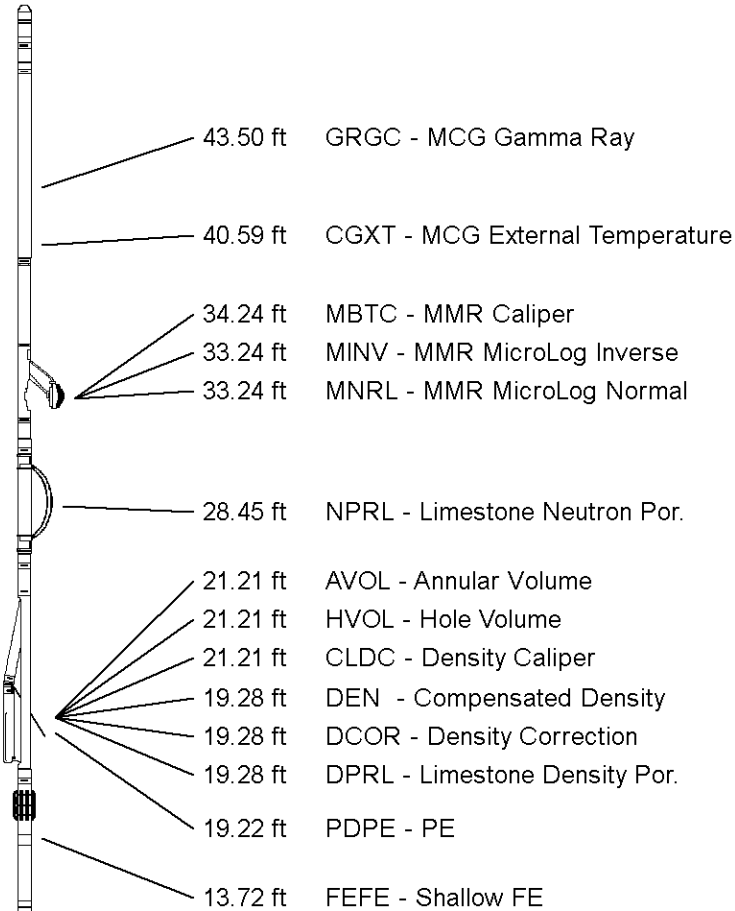
Compact Comms Gamma
MCG-B 39 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-B.A 98 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

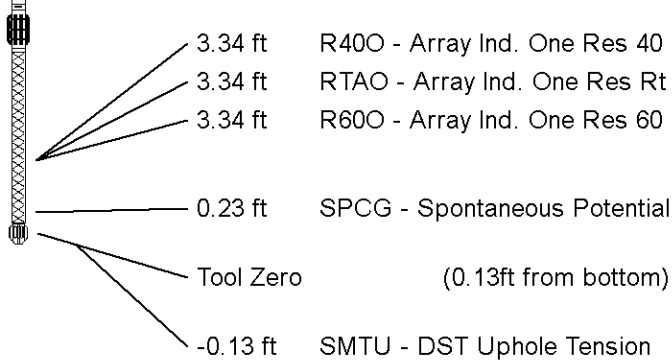
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-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: 51.18 ft Weight: 407.9 lb



All measurements relative to tool zero.

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	STOLTZFUS 1-34
FIELD	MOHLER
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2552.00	feet	First Reading	6380.00	feet
Elevation Drill Floor	2550.00	feet	Depth Driller	6400.00	feet
Elevation Ground Level	2539.00	feet	Depth Logger	6399.00	feet

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