Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	FIML NATURAL RESOURCES, LLC
WELL	GOOSSEN #8C-32-932
FIELD	WILDCAT
PROVINCE/COUNTY	THOMAS
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2060' FNL & 1118' FEL

SEC	TWP	RGE	Other Services
32	9S	32W	MAI/MFE MSS

API Number 15-193-20906
Permit Number

Permanent Datum GL, Elevation 3109 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	3119.00
DF	3117.00
GL	3109.00

Date	15-DEC-2013			
Run Number	ONE			
Service Order	3547630			
Depth Driller	4950.00	feet		
Depth Logger	4952.00	feet		
First Reading	4920.00	feet		
Last Reading	537.00	feet		
Casing Driller	536.00	feet		
Casing Logger	537.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	8.80 lb/USg	59.00 CP		
PH / Fluid Loss	11.00	6.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.31 @ 96.0	ohm-m		
Rmf @ Measured Temp	1.05 @ 96.0	ohm-m		
Rmc @ Measured Temp	1.57 @ 96.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.94 @134.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	134.00	deg F		
Equipment / Base	13096	LIB		
Recorded By	ADAM SILL			
Witnessed By	GARY DOKE		KURT TALBOTT	
JOB #	LB13-355			

BOREHOLE RECORD

Last Edited: 15-DEC-2013 06:37

Bit Size inches	Depth From feet	Depth To feet
7.875	536.00	4950.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	536.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
  0.5 INCH STANDOFF USED ON MFE.
  TWO 0.5 INCH STANDOFFS USED ON MSS.
  0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1591 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO SURFACE CASING: 865 CU. FT.

- RIG: H-2 DRILLING #1

- ENGINEER: ADAM SILL.

- OPERATOR(S): JOHN DUNLAP.

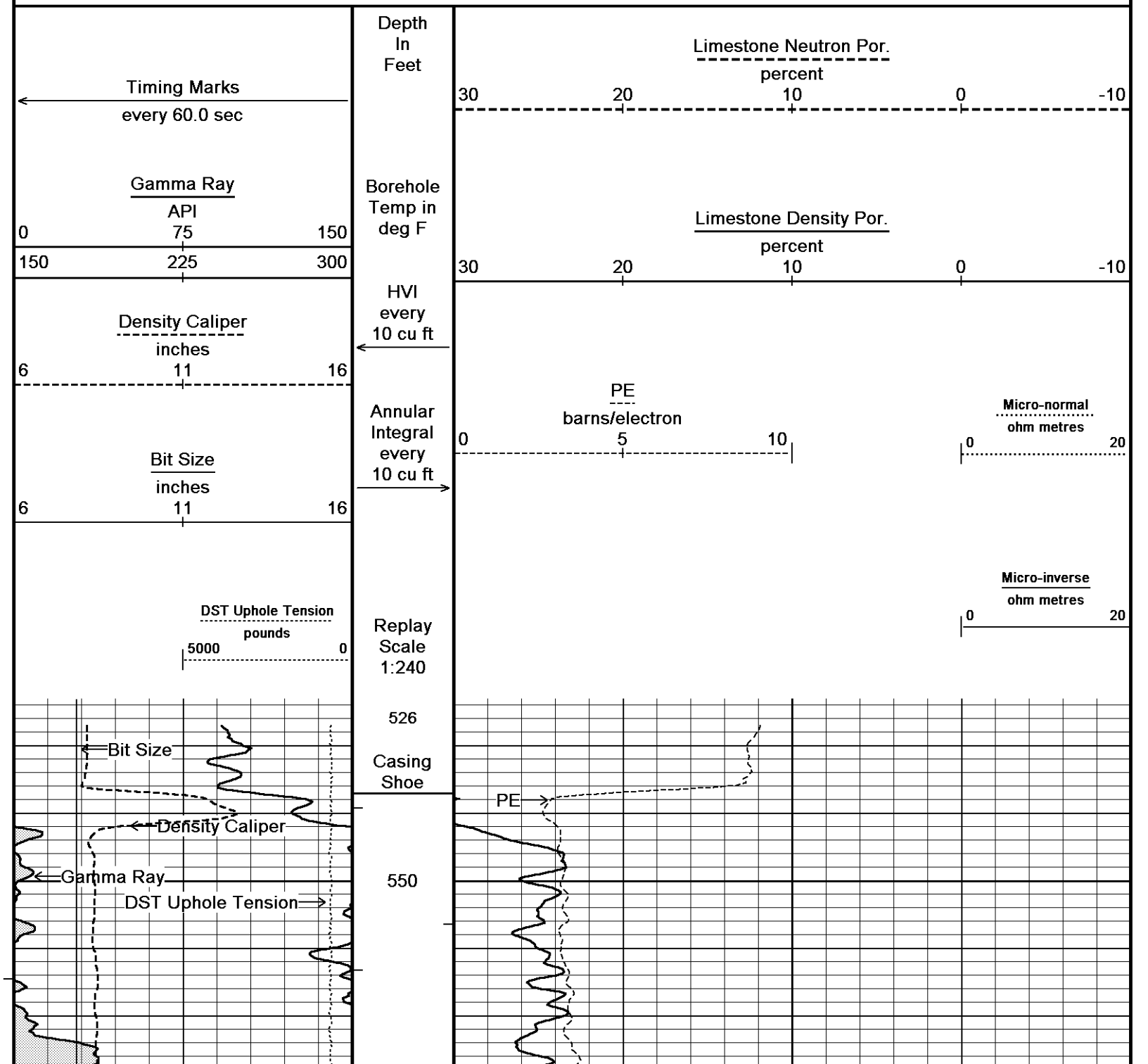
**** SP SHIFTED IN A COUPLE PLACES ON THE LOG DUE TO AN UNKNOWN CAUSE. ****

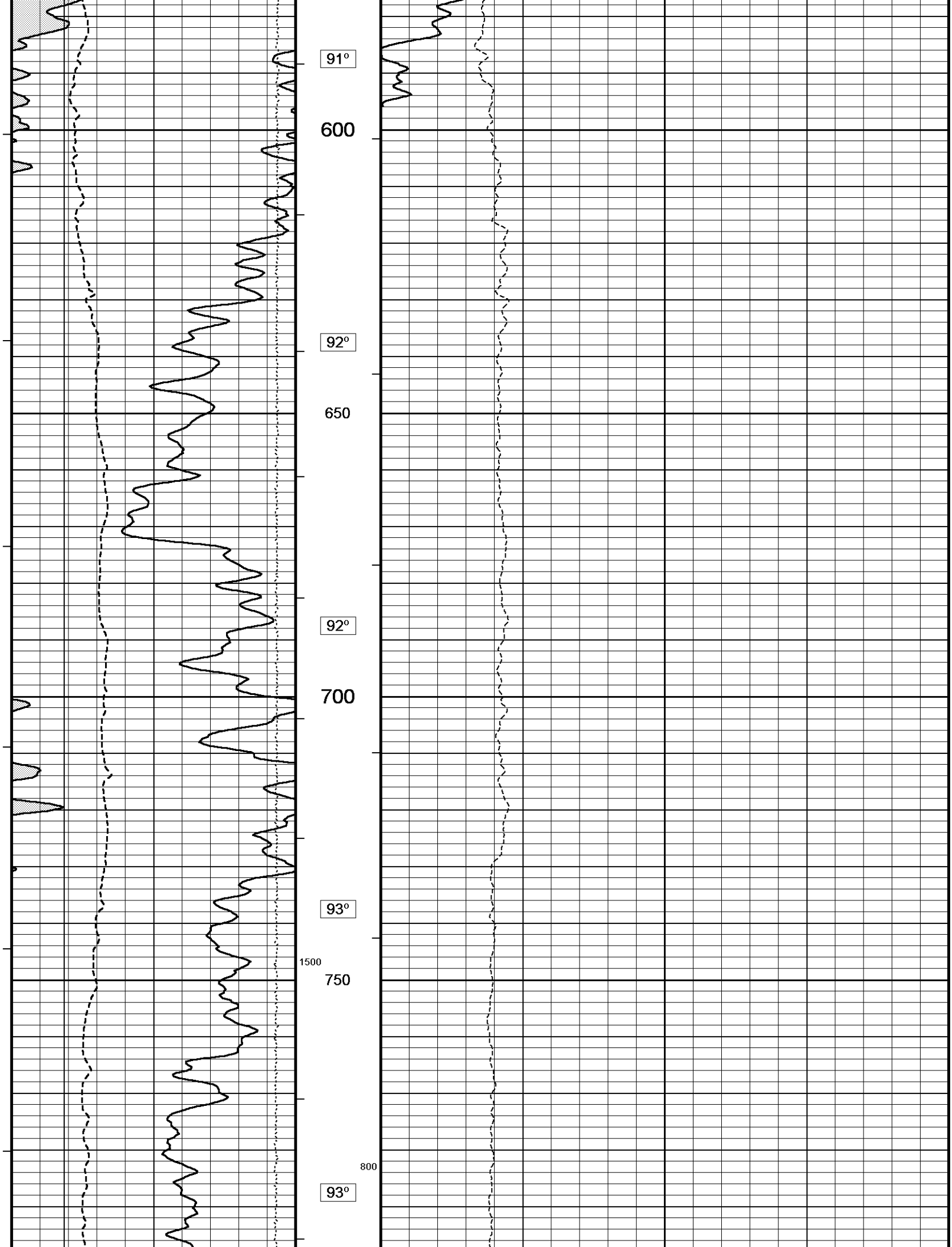
5 INCH MAIN

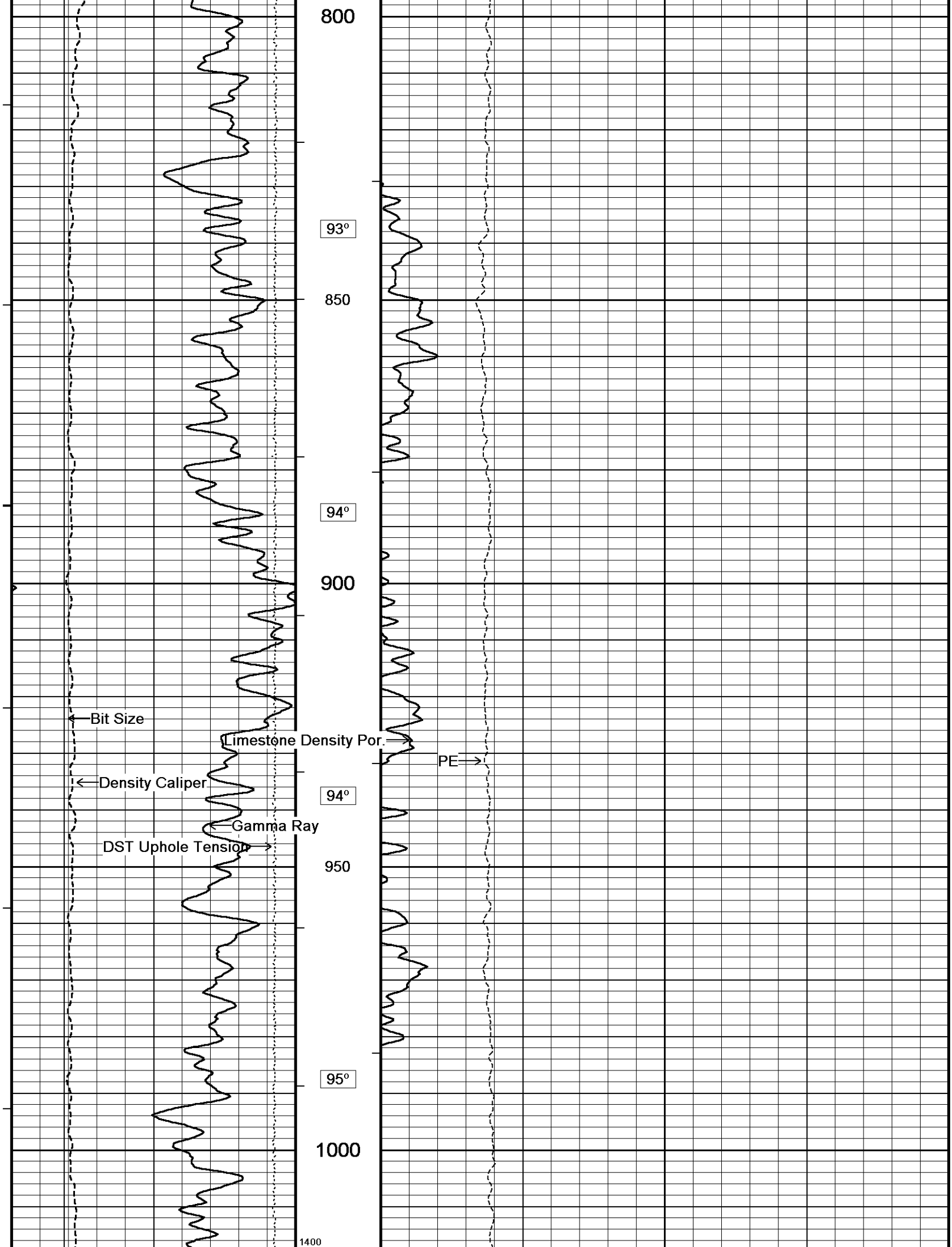
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52

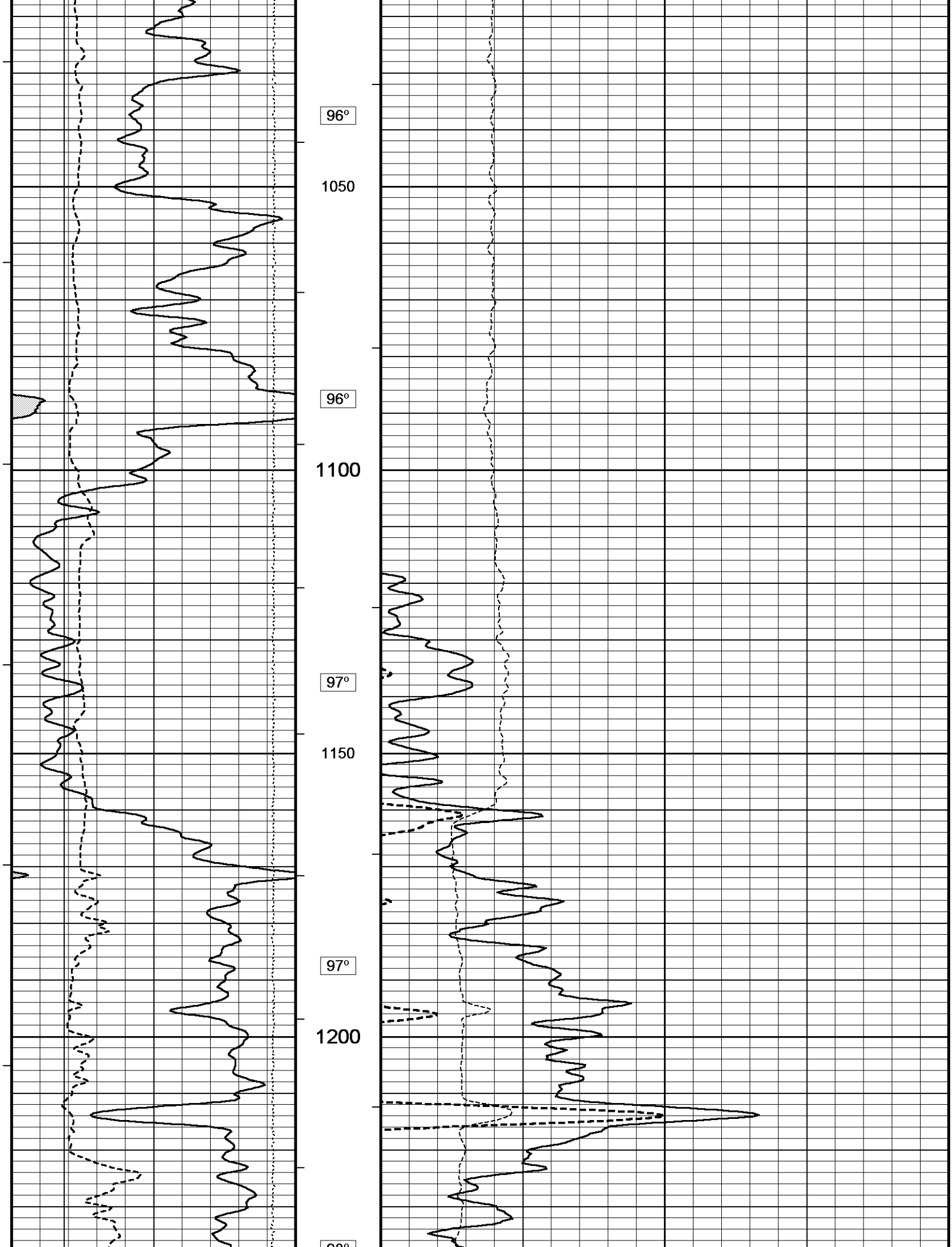
Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_003.dta — Recorded on 15-DEC-2013 16:31

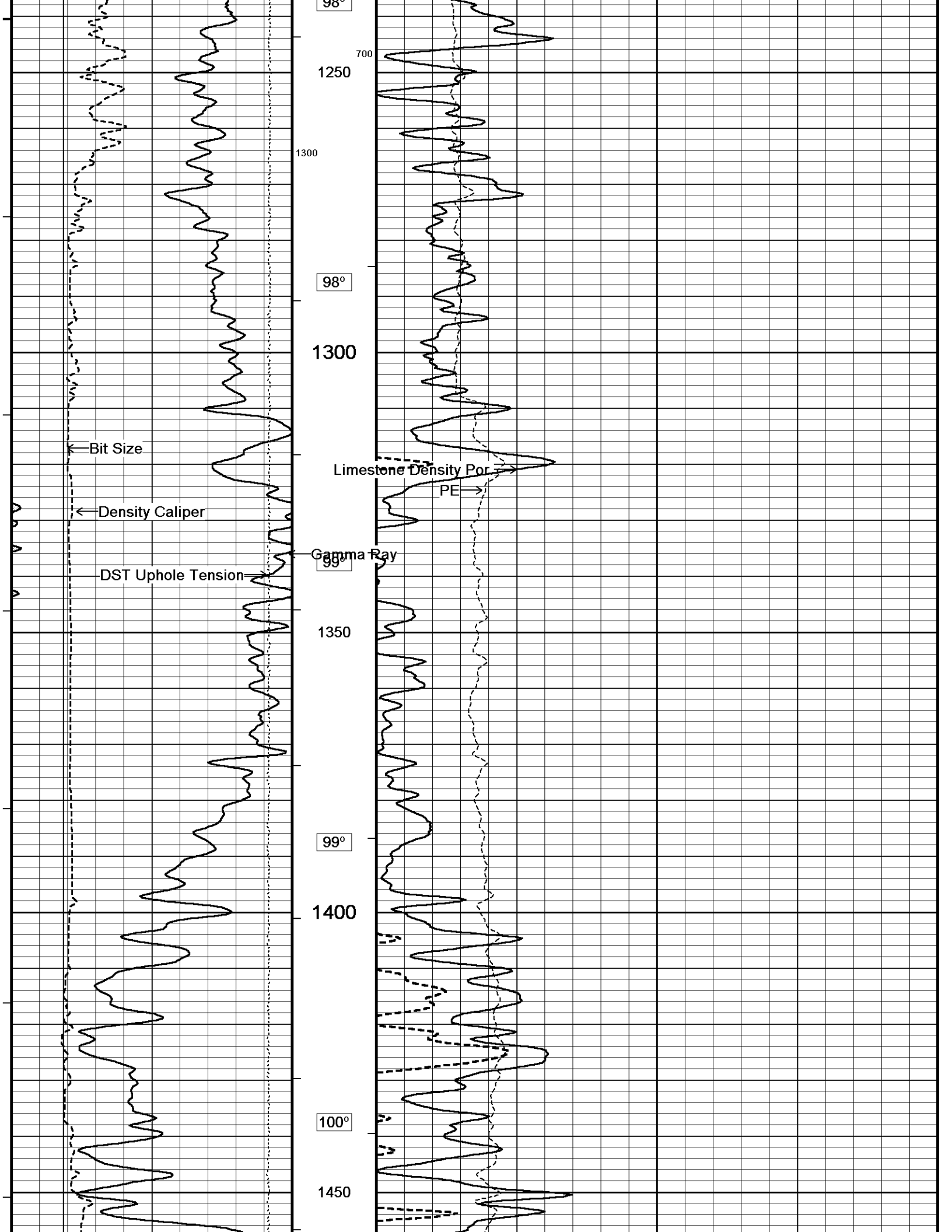
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

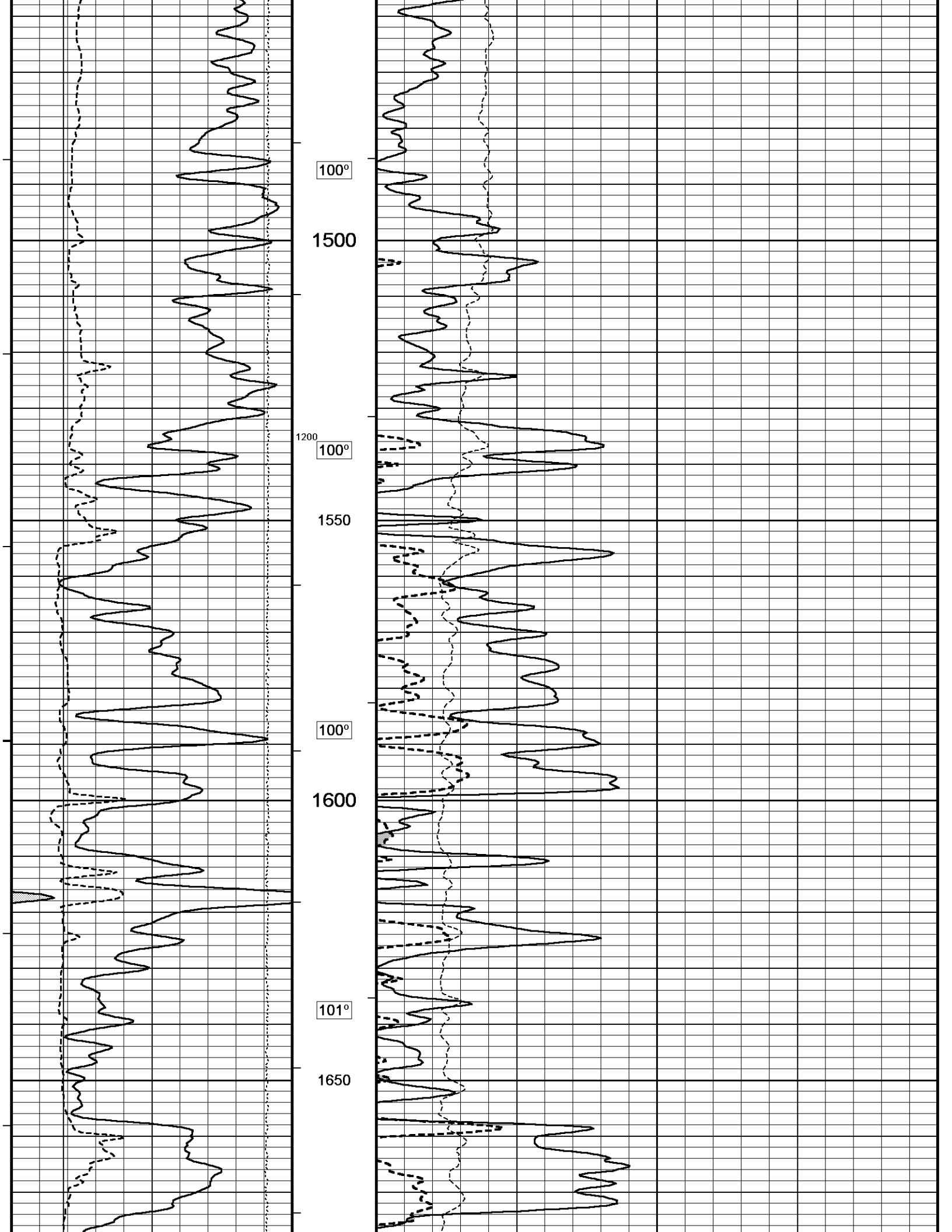



91°
600
92°
650
92°
700
93°
1500
750
800
93°


800
93°
850
94°
900
Bit Size
Limestone Density Por
PE
Density Caliper
94°
Gamma Ray
DST Uphole Tension
950
95°
1000
1400


96°
1050
96°
1100
97°
1150
97°
1200


98°
700
1250
1300
98°
1300
Bit Size
Limestone Density Por
PE
Density Caliper
Gamma Ray
99°
DST Uphole Tension
1350
99°
1400
100°
1450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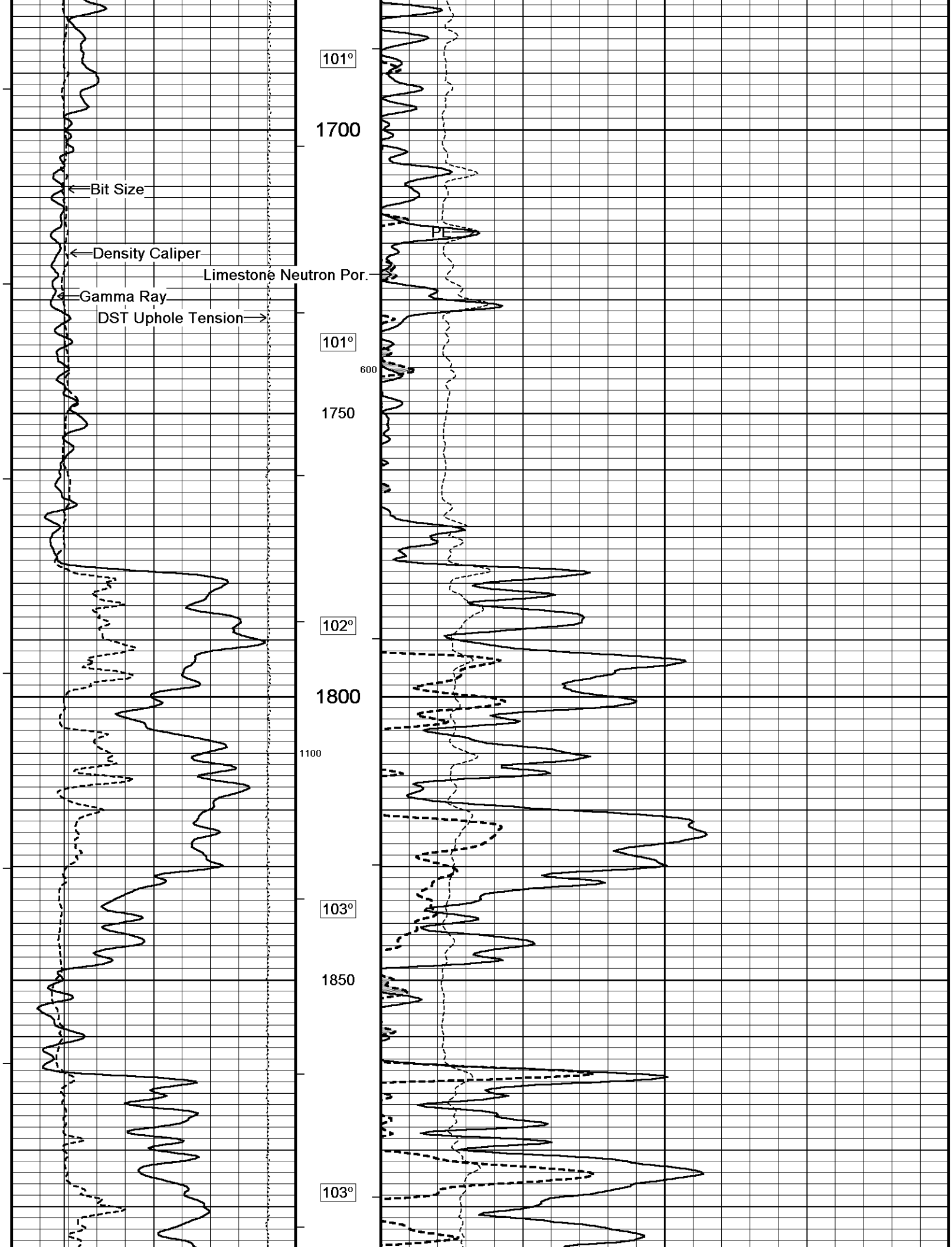
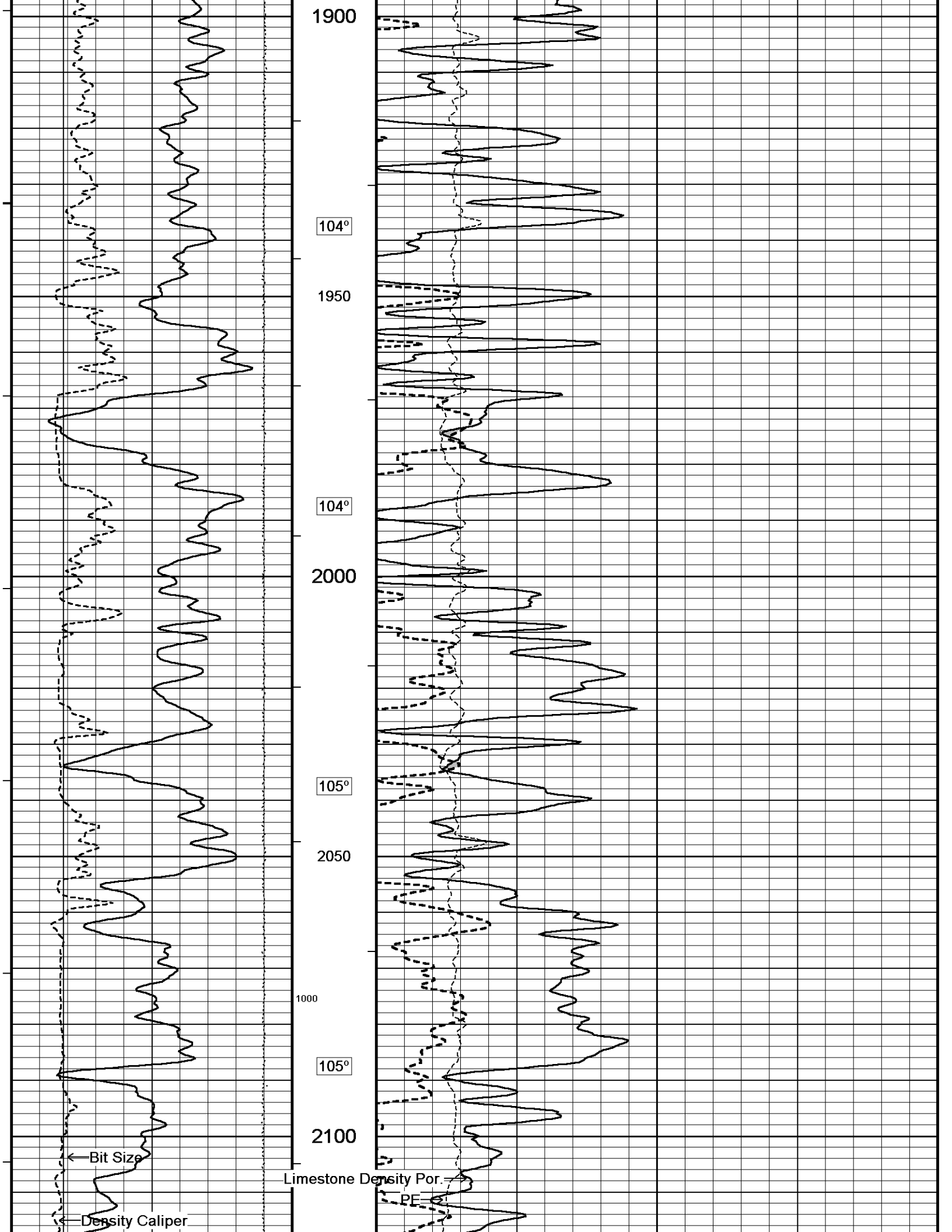
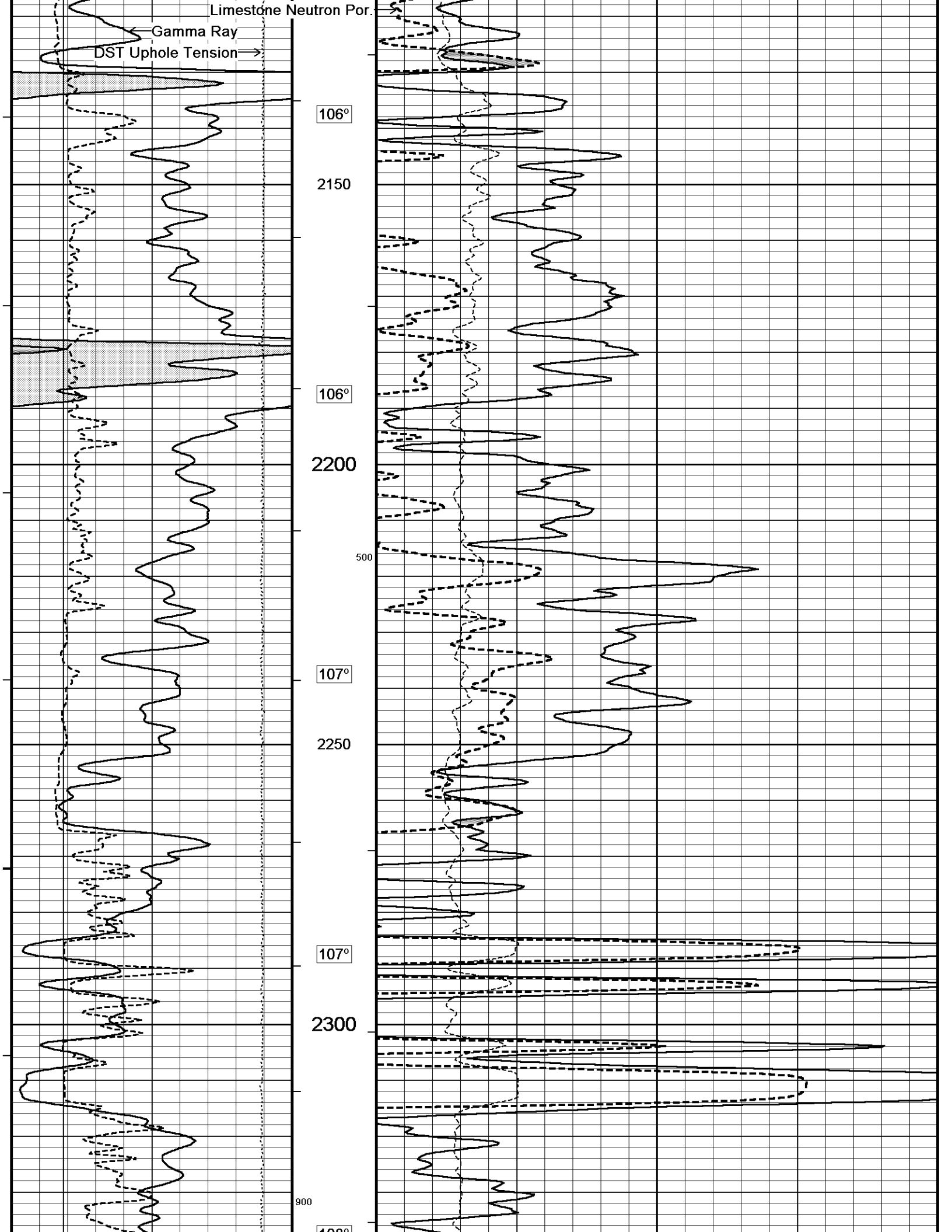
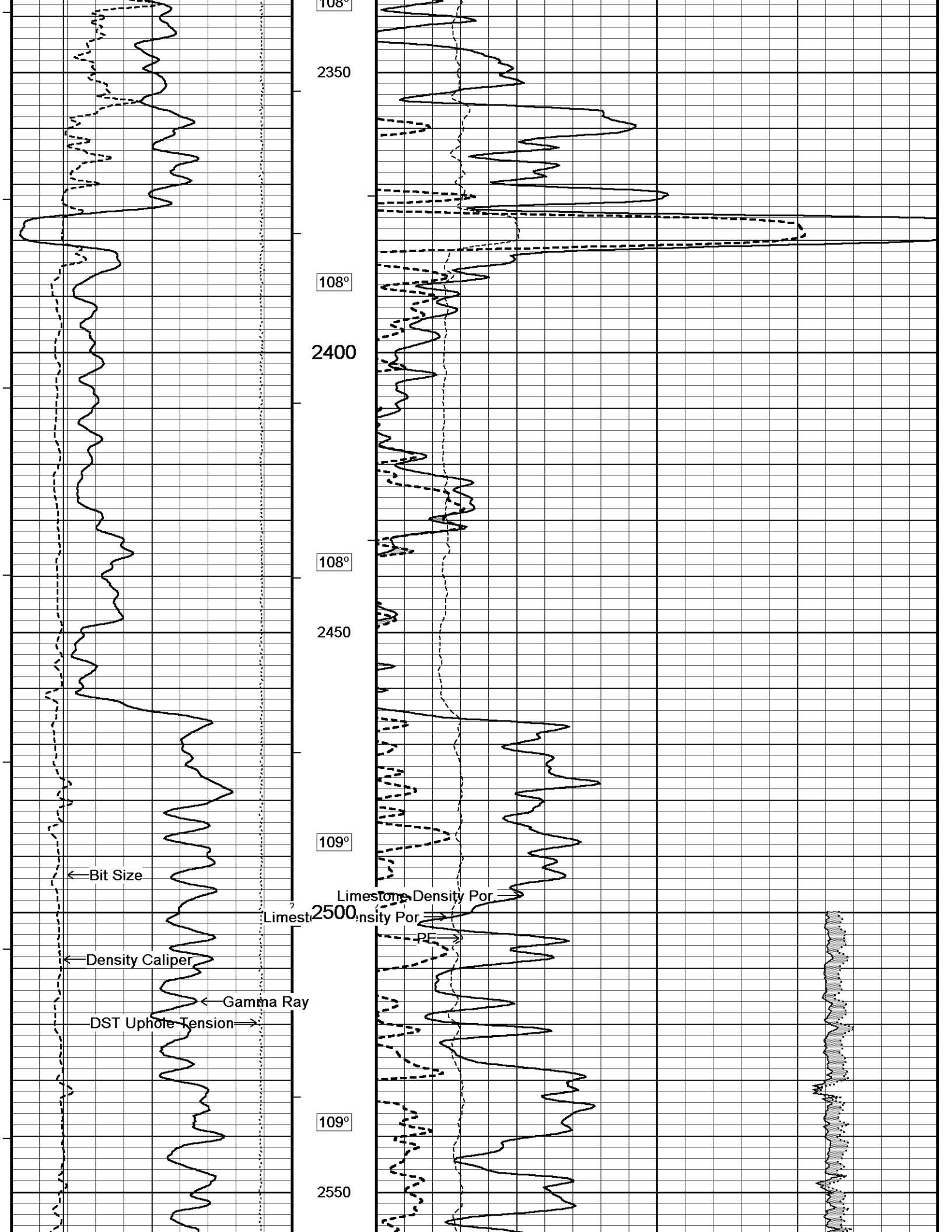
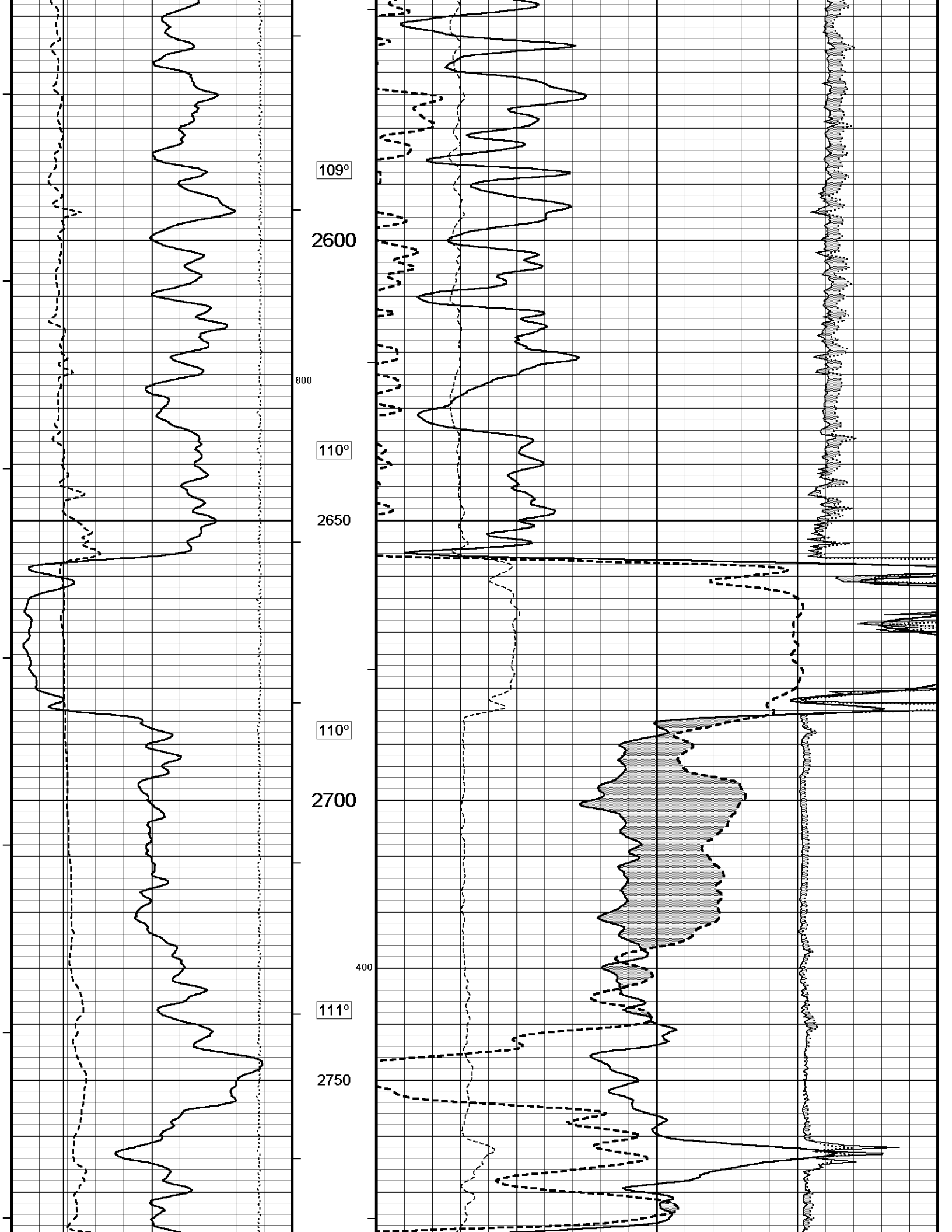
1500
1200
100°
1550
100°
1600
101°
1650

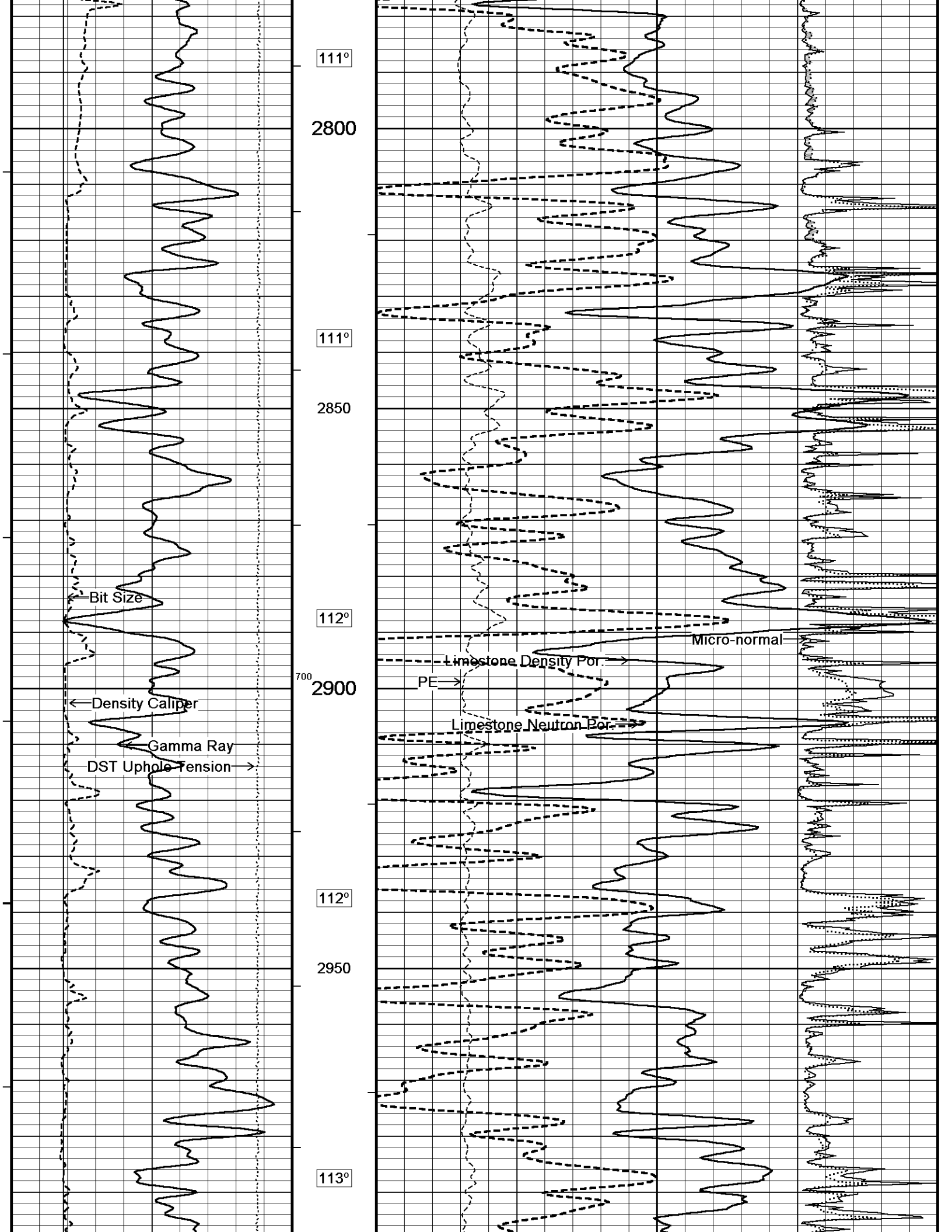

101°
1700
Bit Size
PE
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
101°
600
1750
102°
1800
1100
103°
1850
103°

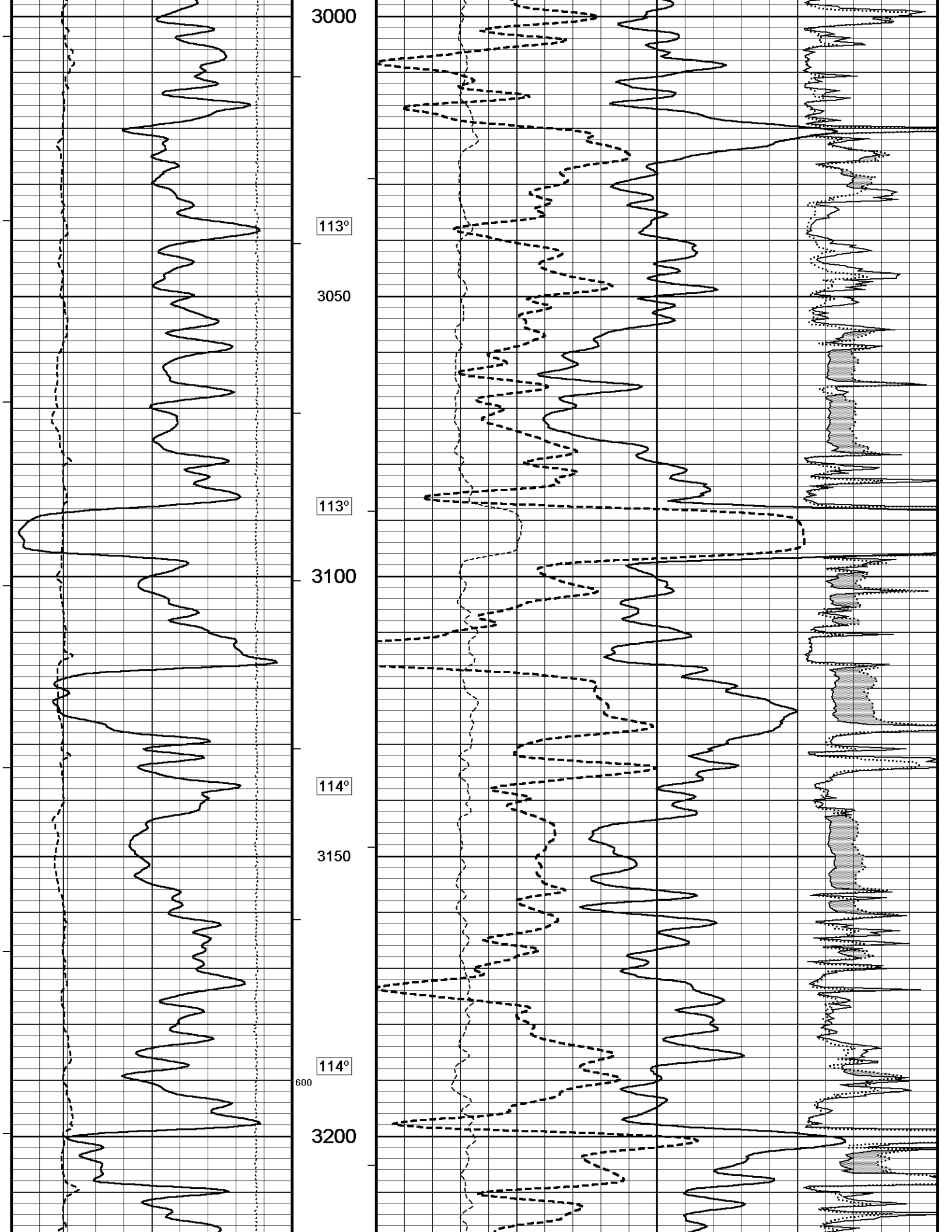

1900
104°
1950
104°
2000
105°
2050
1000
105°
2100
Bit Size
Density Caliper
Limestone Density Por
PE

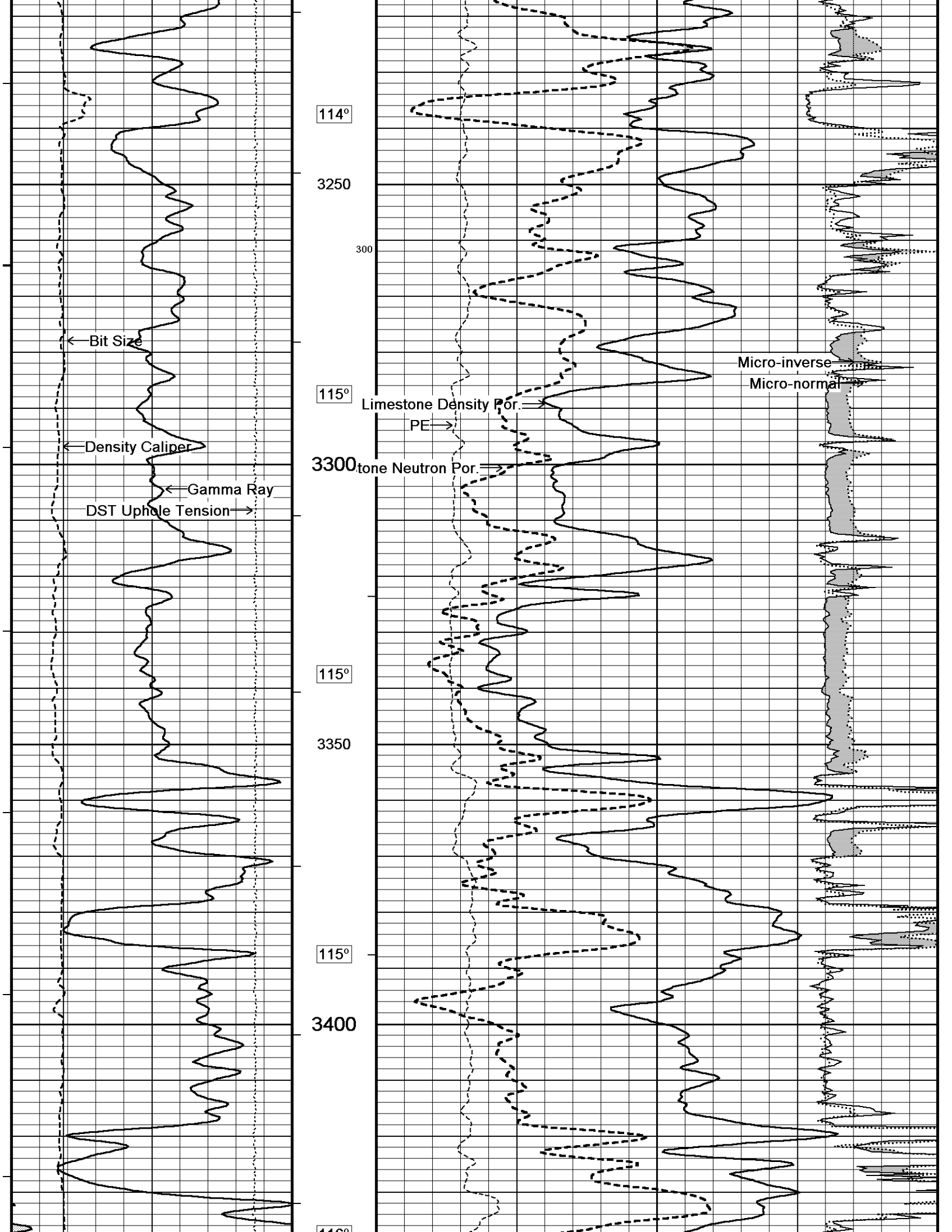

Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
106°
2150
106°
2200
500
107°
2250
107°
2300
900

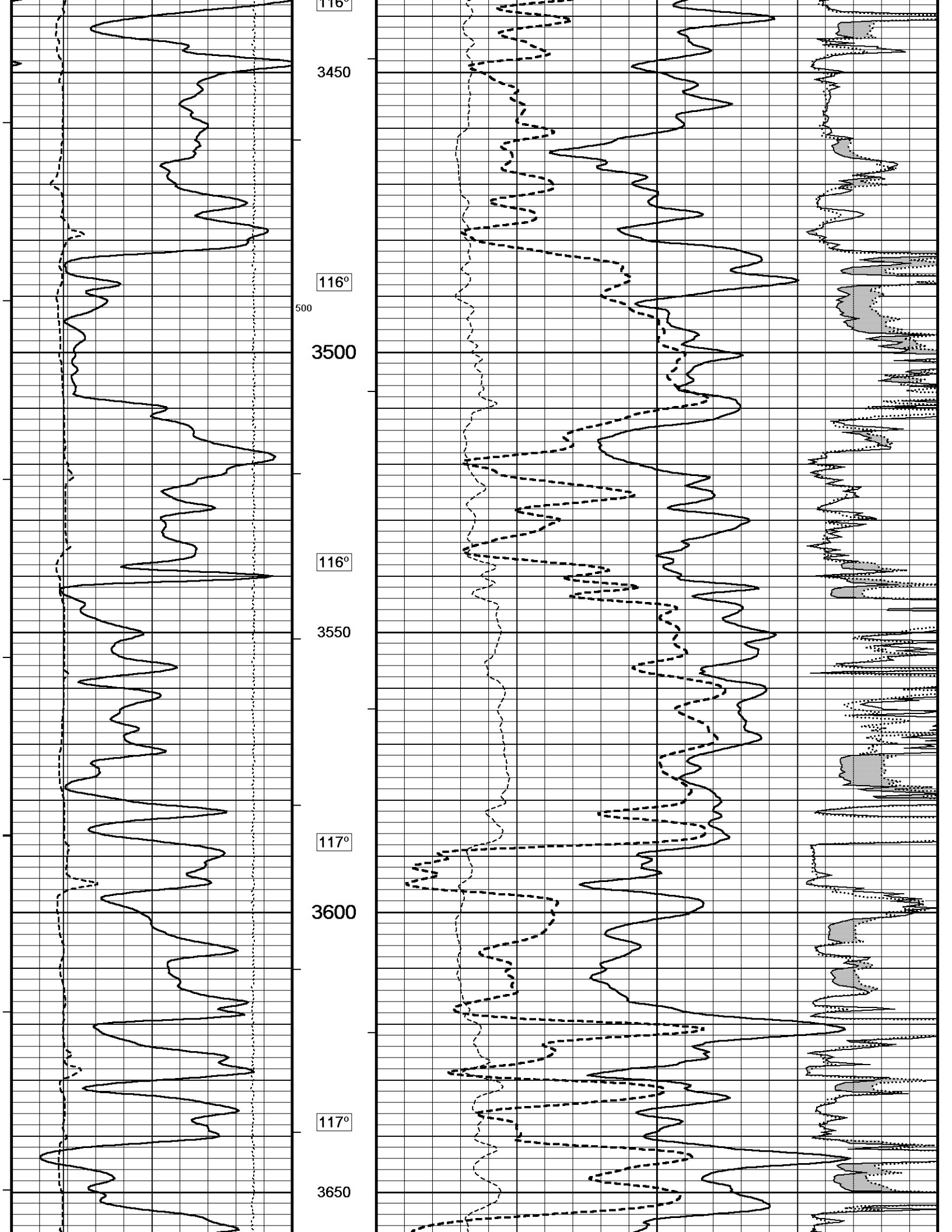

108°
2350
108°
2400
108°
2450
109°
Bit Size
Limestone Density Por
Limest nsity Por
2500
PE
Density Caliper
Gamma Ray
DST Uphole Tension
109°
2550


109°
2600
800
110°
2650
110°
2700
400
111°
2750


111°
2800
111°
2850
Bit Size
112°
Micro-normal
Limestone Density Por.
700
2900
PE
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
112°
2950
113°


3000
113°
3050
113°
3100
114°
3150
114°
600
3200


114°
3250
300
115°
3300
115°
3350
115°
3400
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
tone Neutron Por.
Micro-inverse
Micro-normal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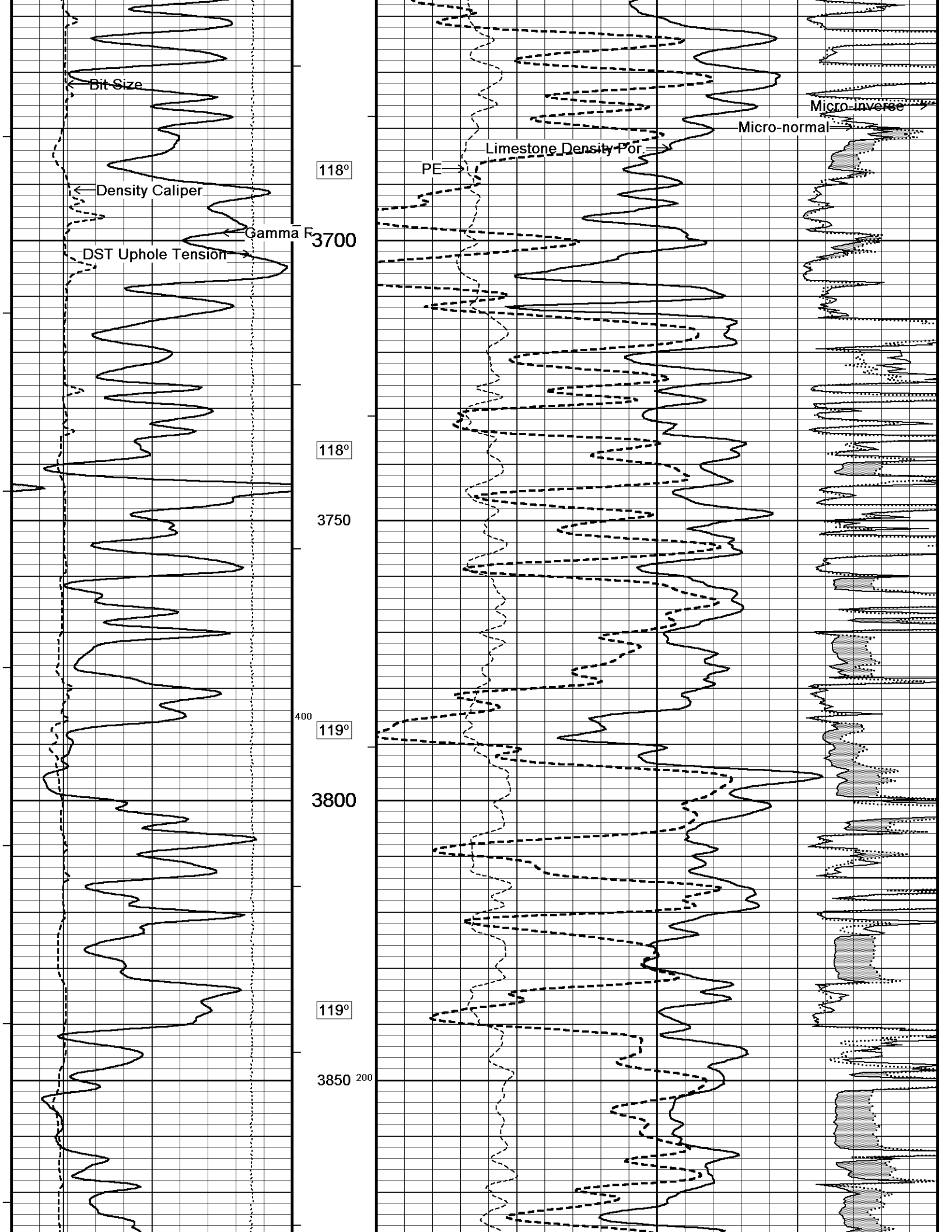
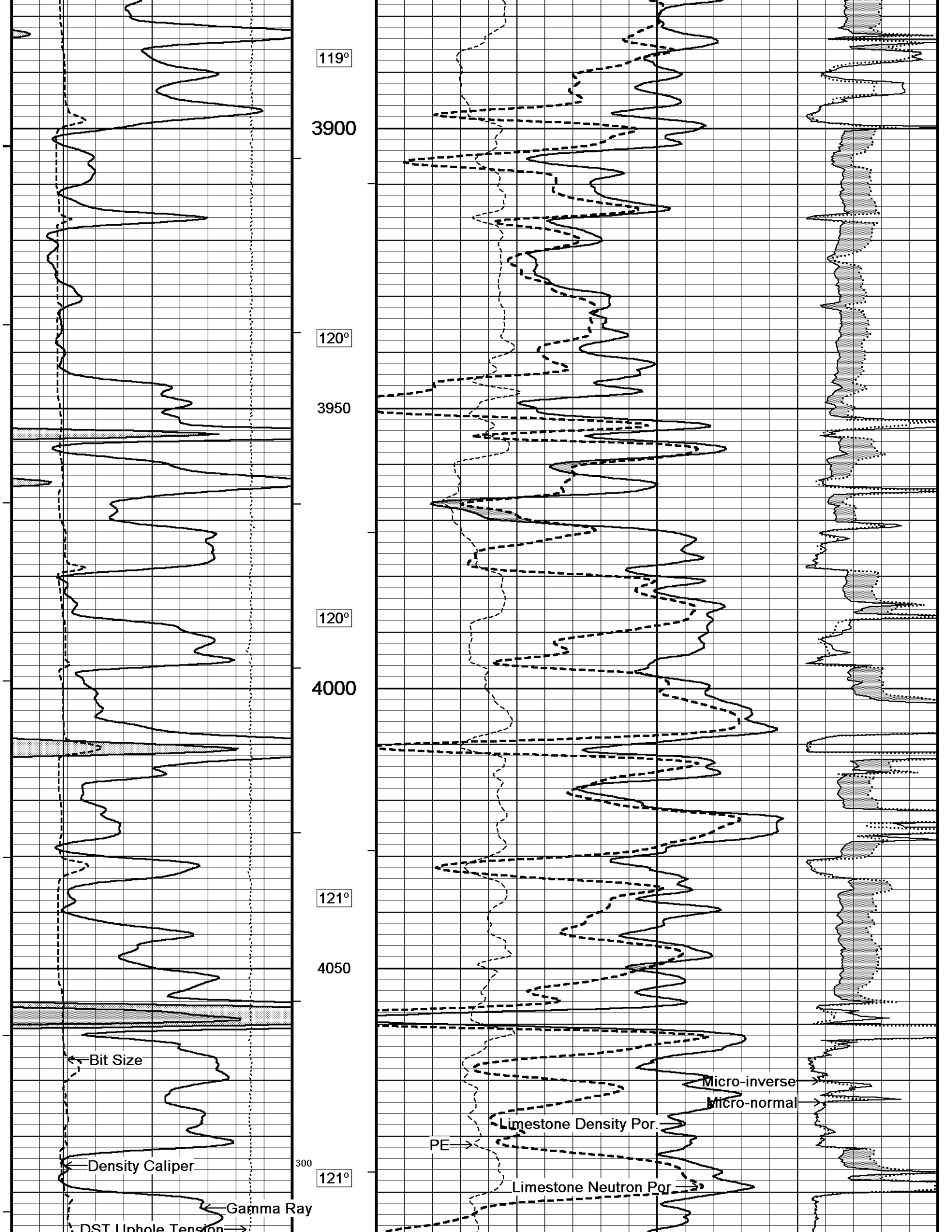
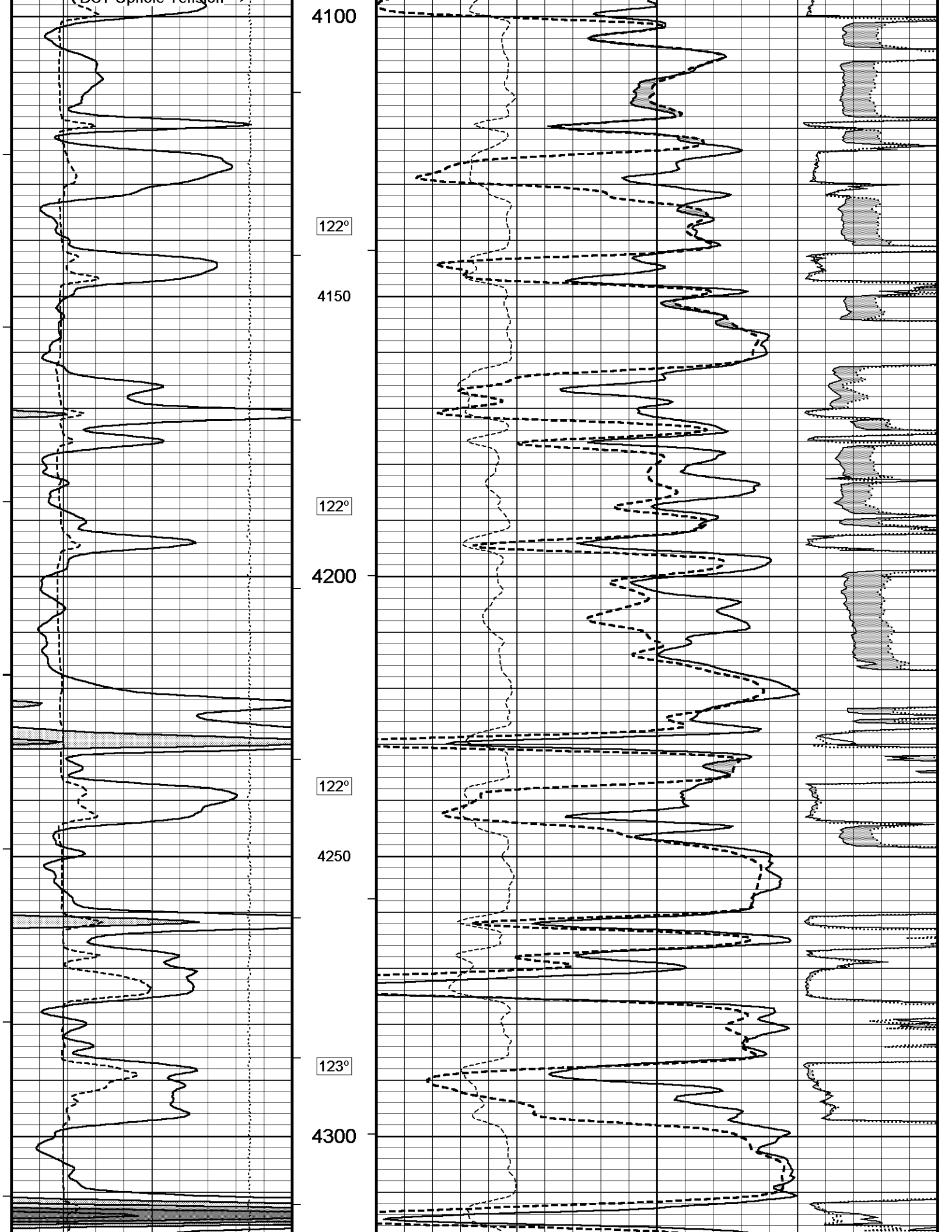
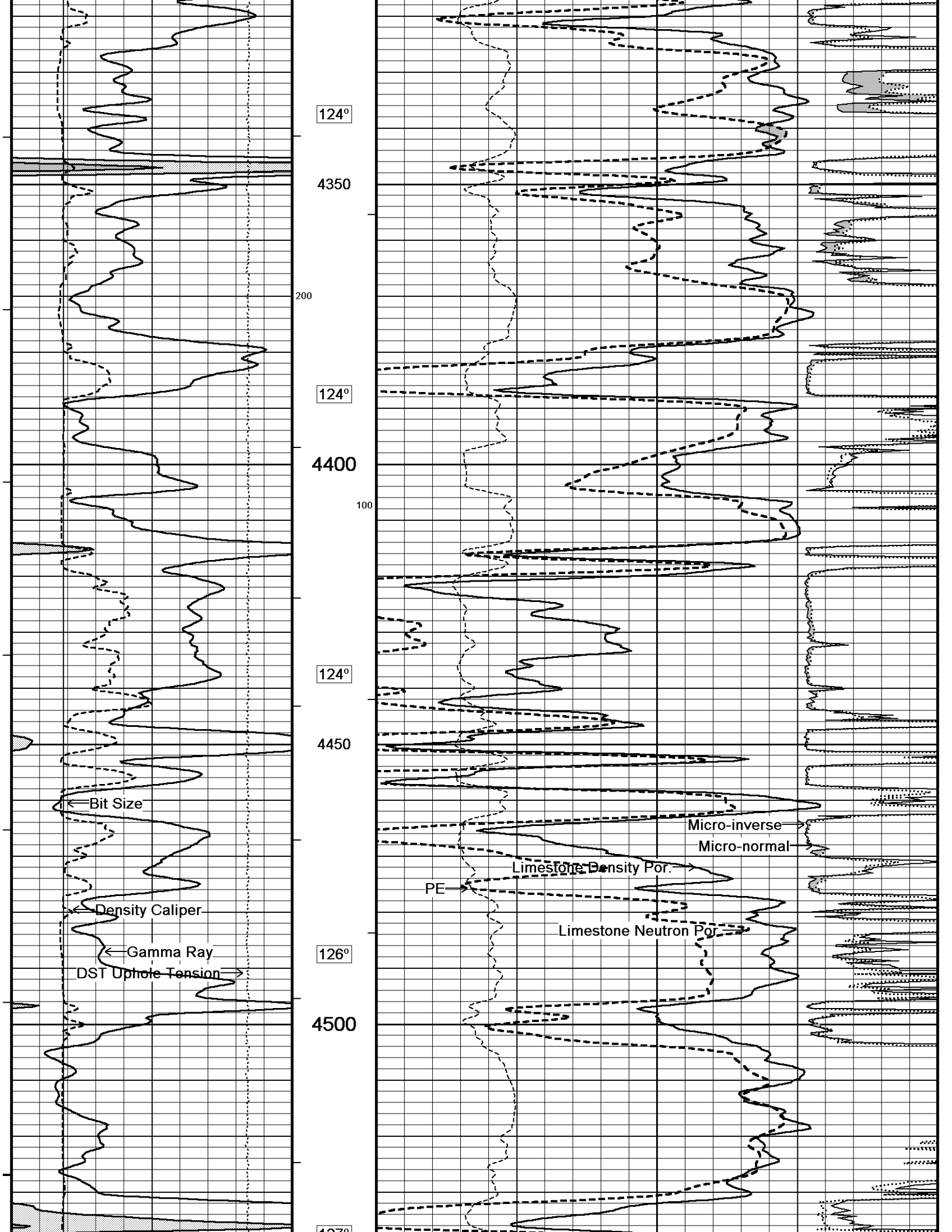
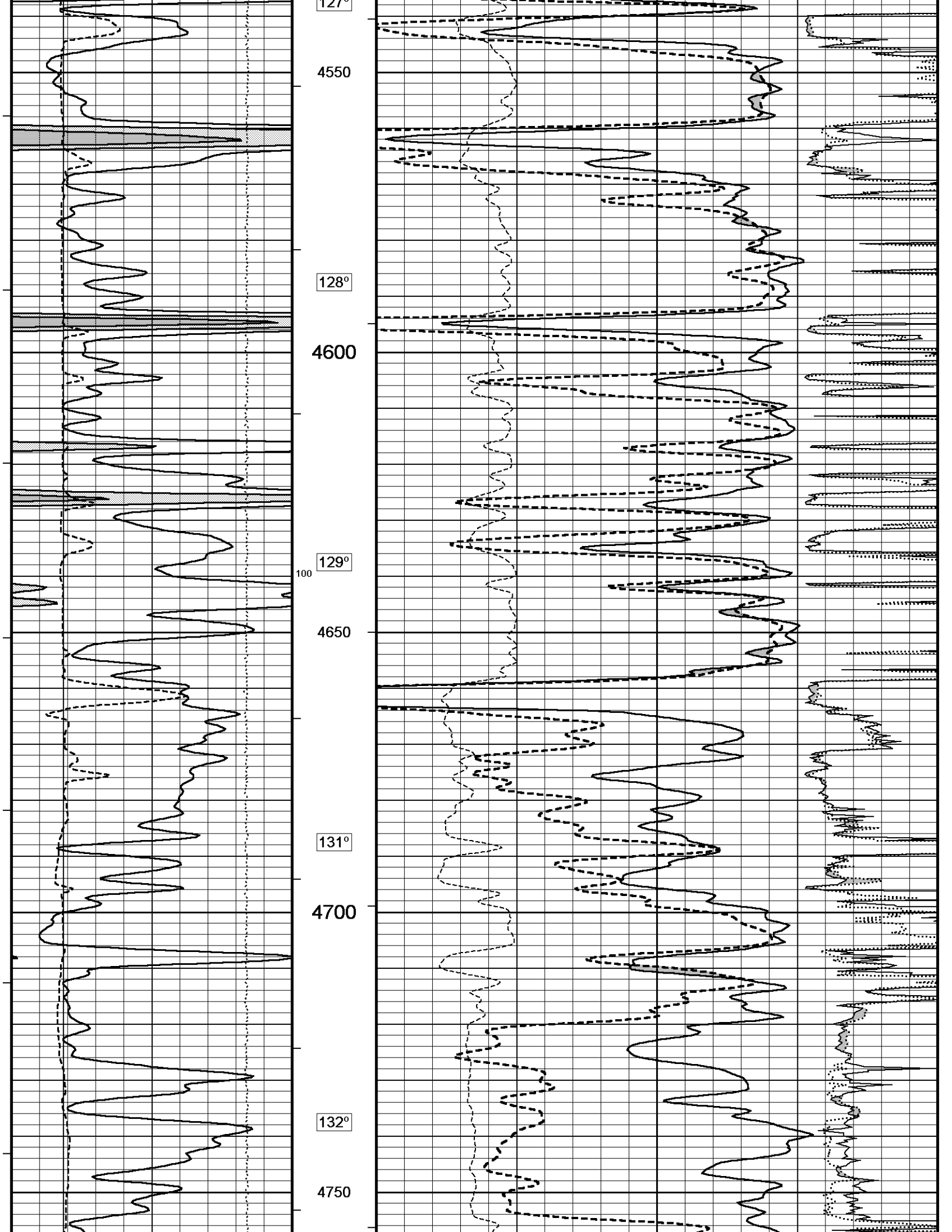
3450
116°
500
3500
116°
3550
117°
3600
117°
3650

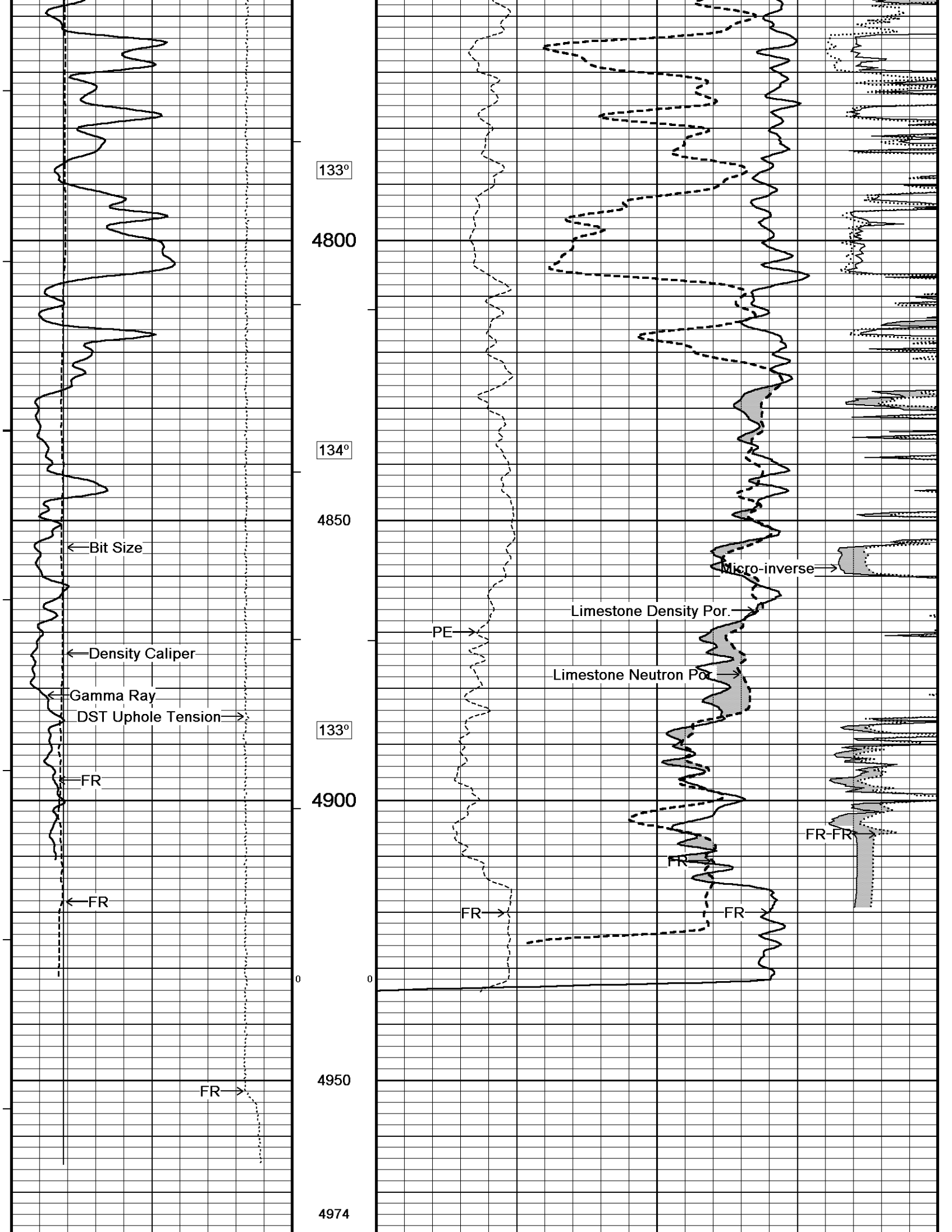

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Micro-inverse
Micro-normal
118°
118°
119°
119°
3700
3750
3800
3850
400
200

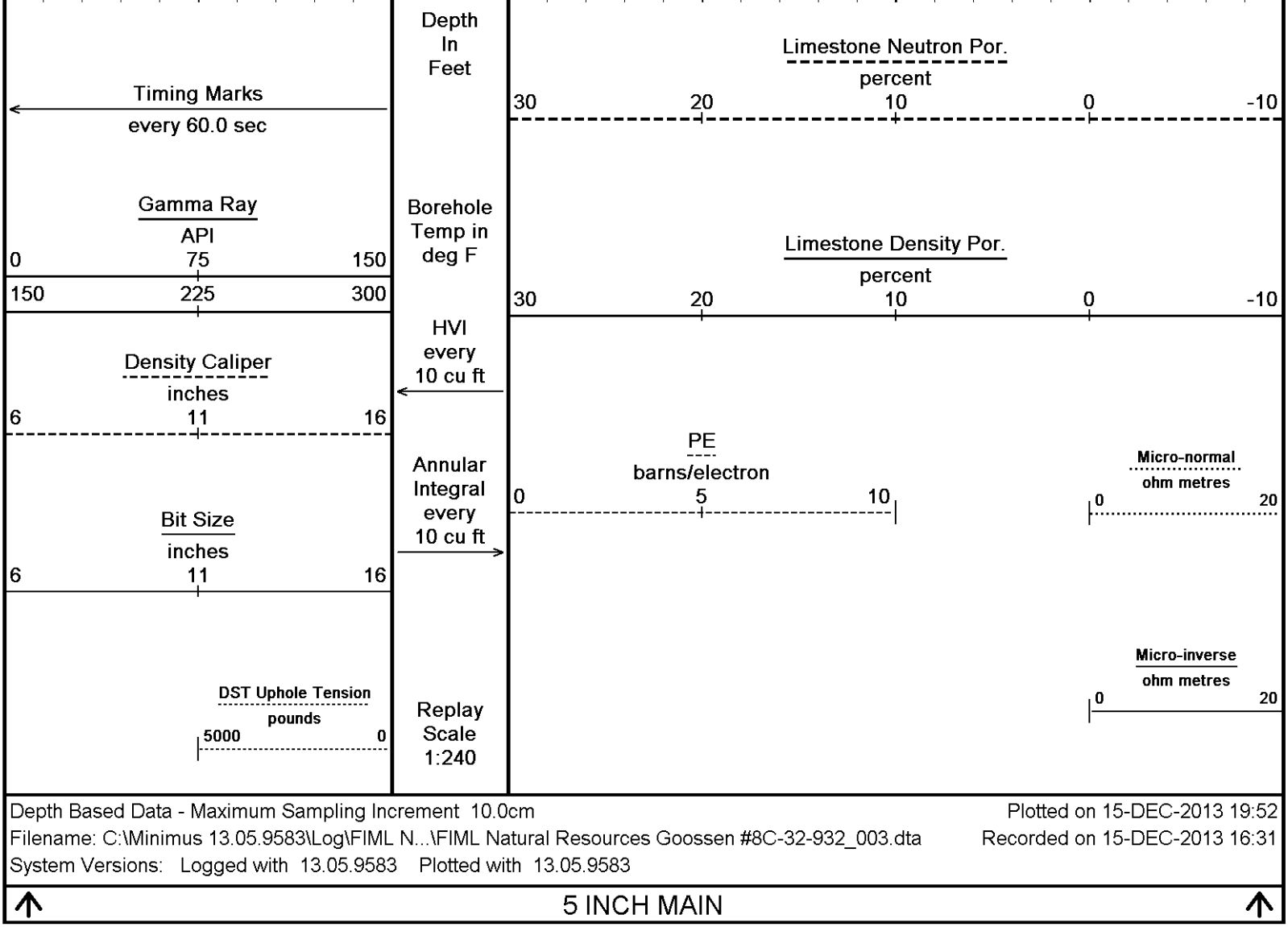

119°
3900
120°
3950
120°
4000
121°
4050
121°
Bit Size
Density Caliper
300
Gamma Ray
DST Uphole Tension
Micro-inverse
Micro-normal
Limestone Density Por
PE
Limestone Neutron Por


4100
122°
4150
122°
4200
122°
4250
123°
4300


124°
4350
200
124°
4400
100
124°
4450
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
126°
4500
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Limestone Neutron Por.


127°
4550
128°
4600
129°
100
4650
131°
4700
132°
4750


133°
4800
134°
4850
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
133°
FR
4900
FR
0
4950
FR
4974
PE
FR
0
Micro-inverse
Limestone Density Por.
Limestone Neutron Por.
FR
FR
FR-FR

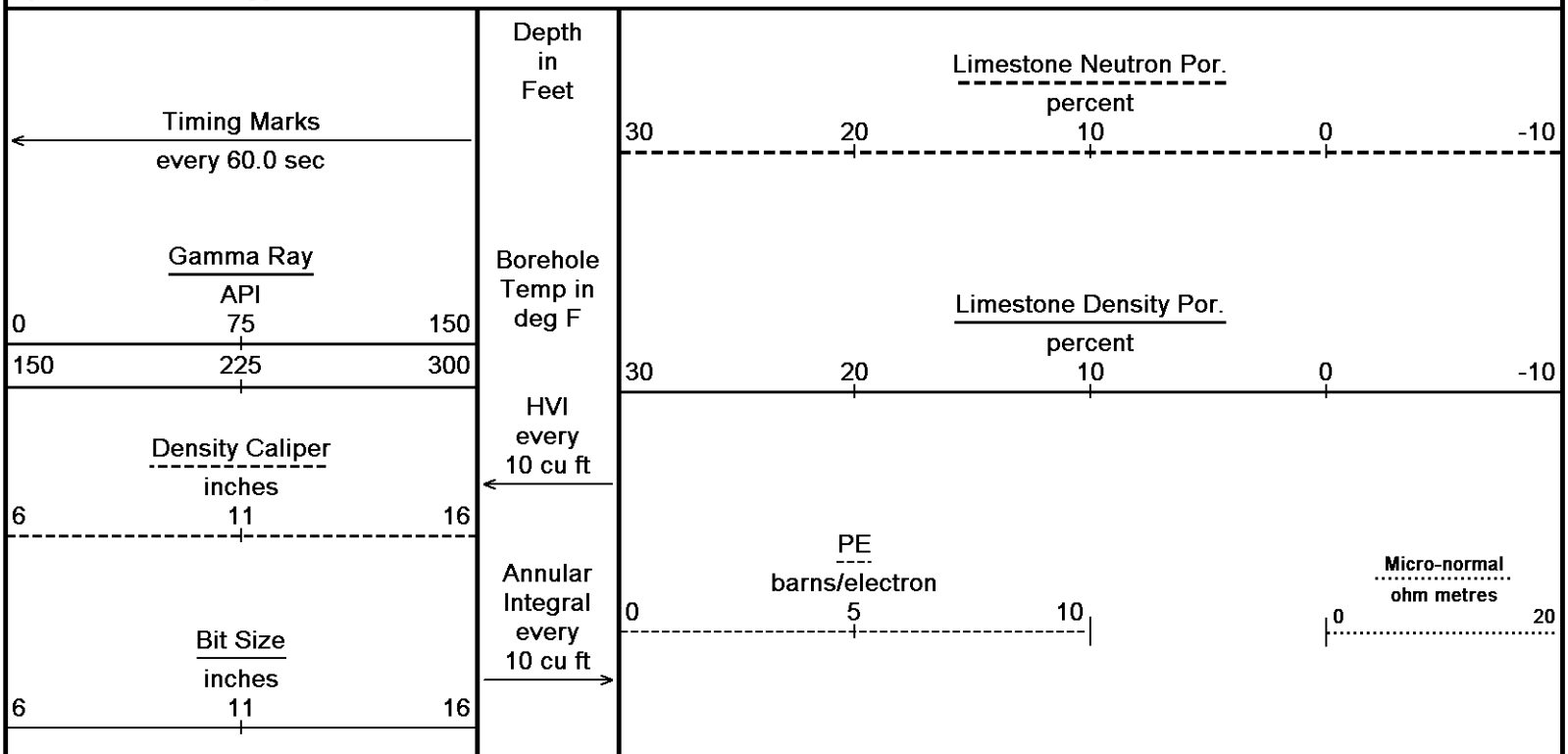


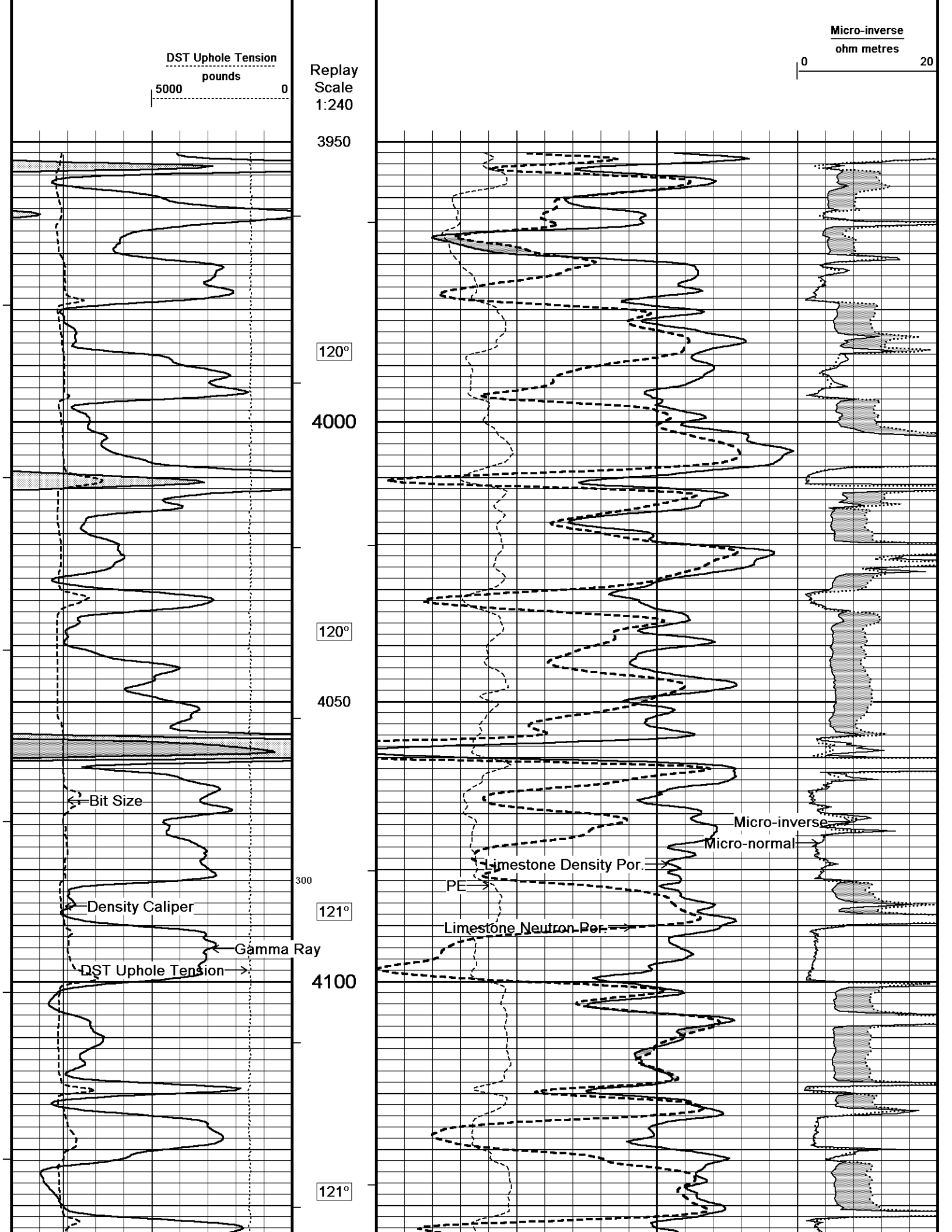
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52
Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_003.dta — Recorded on 15-DEC-2013 16:31
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

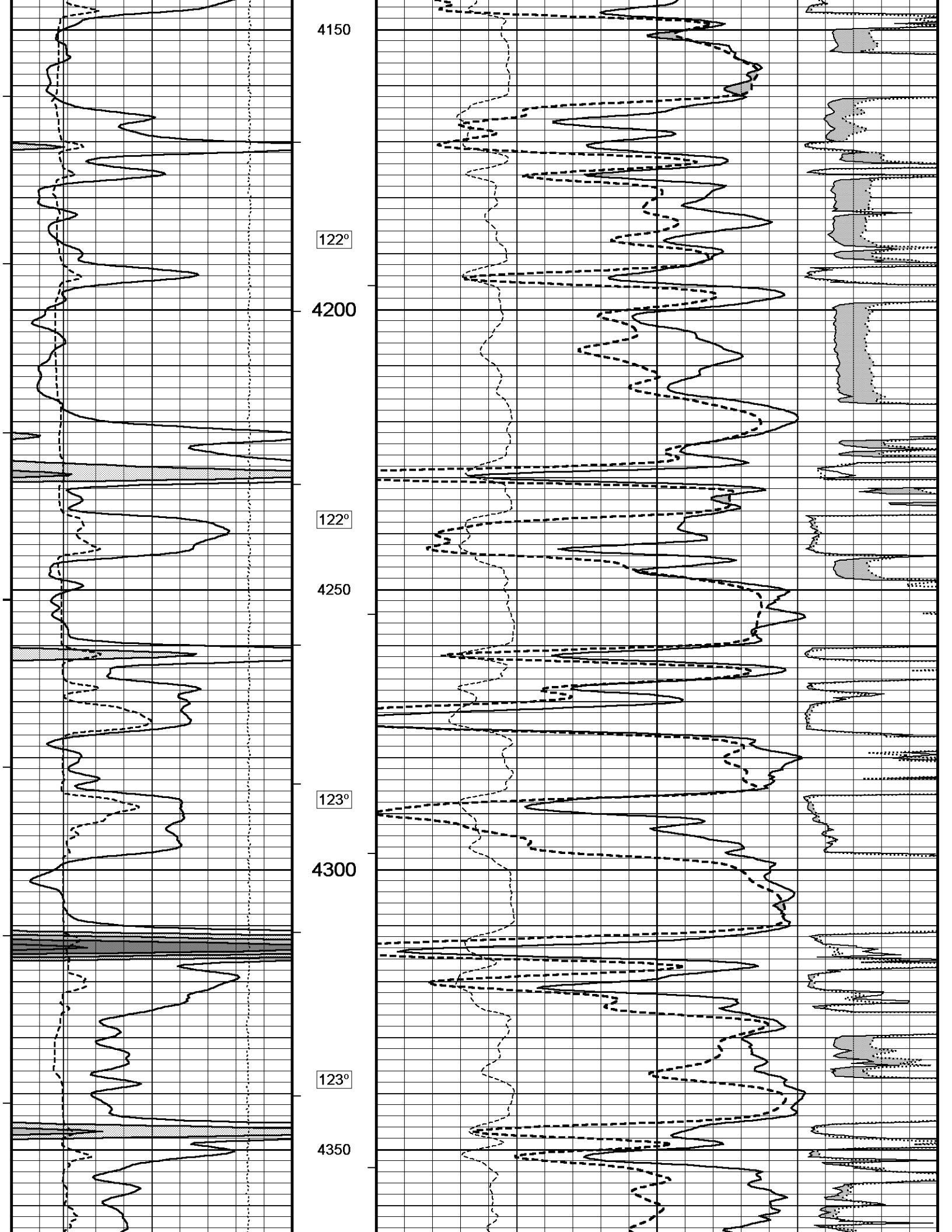
5 INCH MAIN

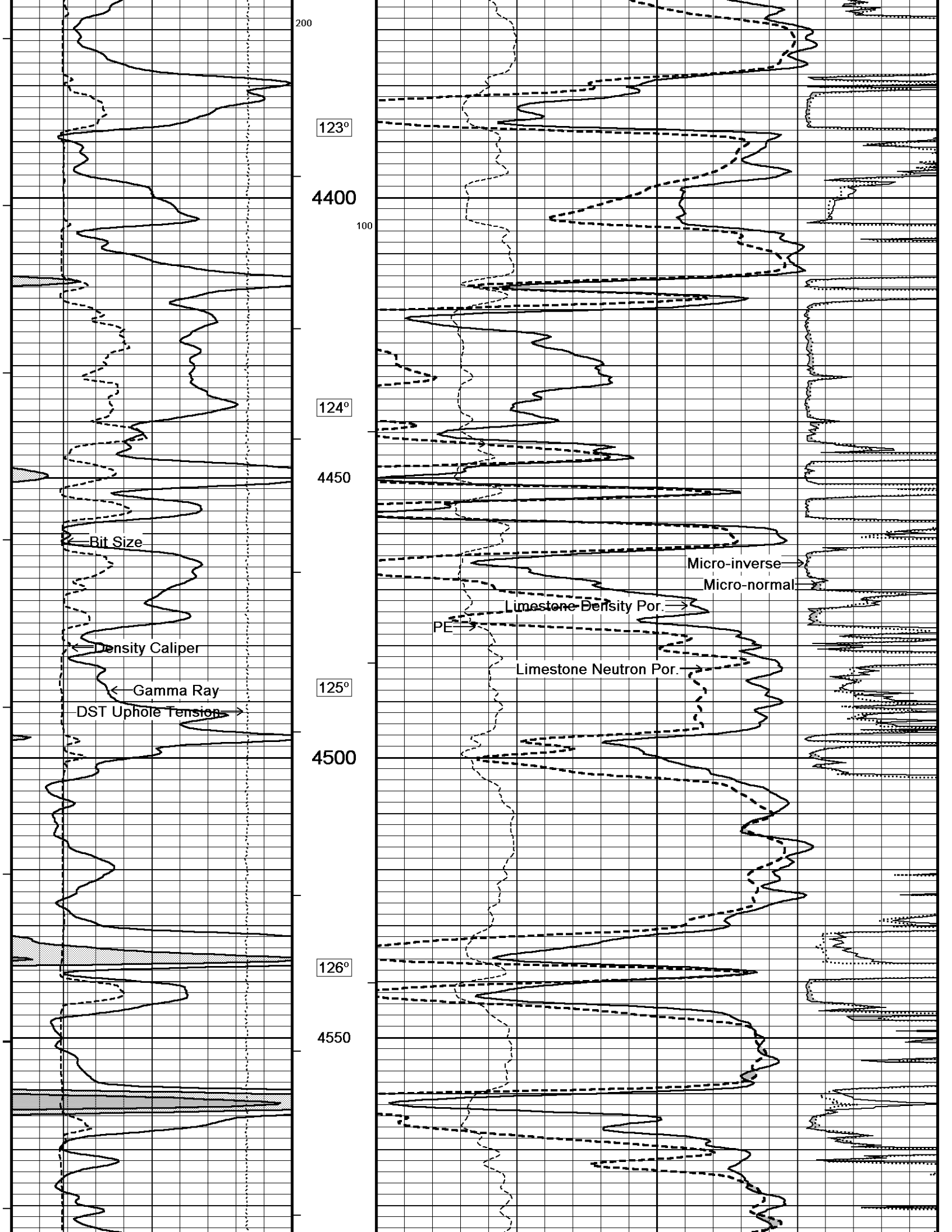
REPEAT SECTION

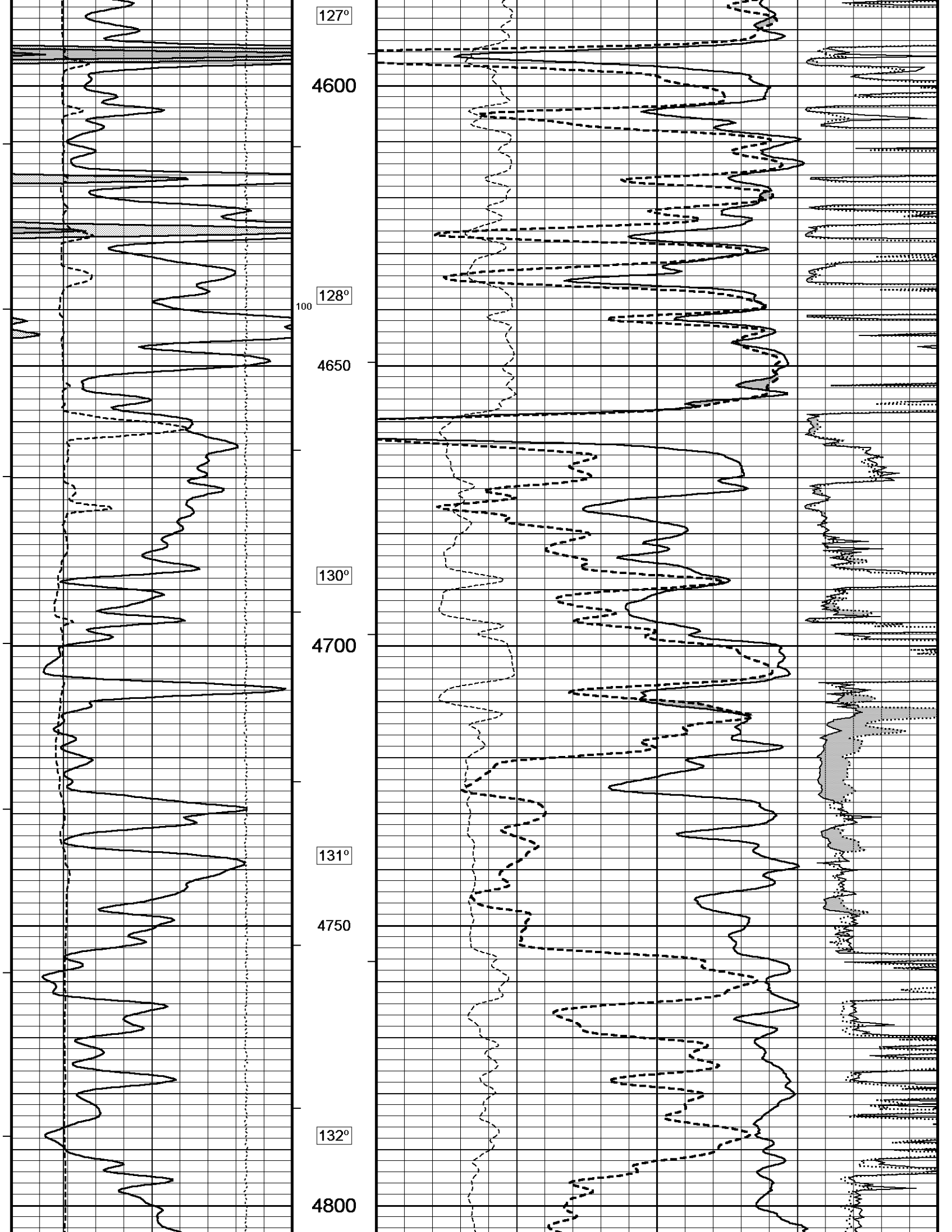
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52
Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_002.dta — Recorded on 15-DEC-2013 15:38
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

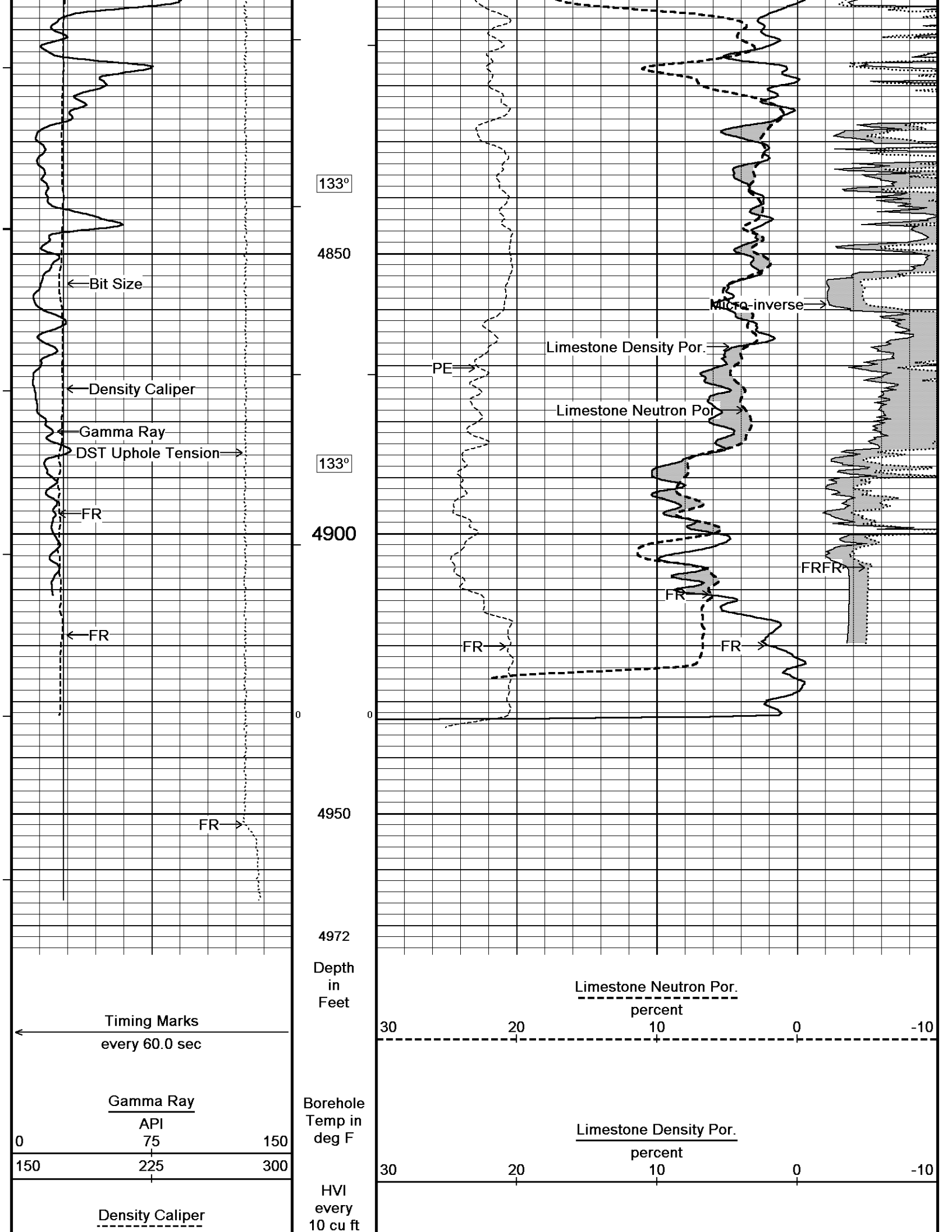


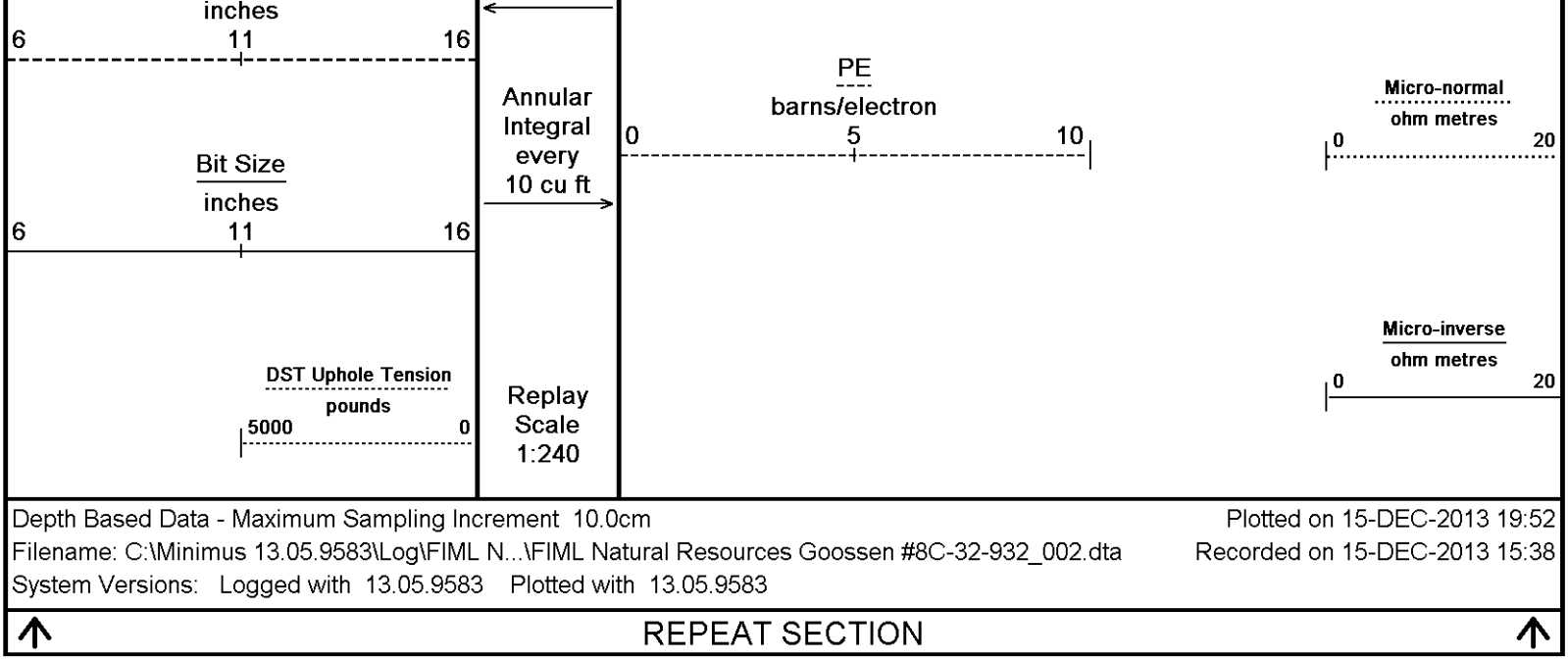

DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
3950
120°
4000
120°
4050
Bit Size
300
Density Caliper
121°
Gamma Ray
DST Uphole Tension
4100
121°
Micro-inverse
ohm metres
0
20
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Limestone Neutron Por.


4150
122°
4200
122°
4250
123°
4300
123°
4350


200
123°
4400
100
124°
4450
Bit Size
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Density Caliper
Limestone Neutron Por.
125°
Gamma Ray
DST Uphole Tension
4500
126°
4550


127°
4600
128°
100
4650
130°
4700
131°
4750
132°
4800


133°
4850
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
133°
4900
FR
0
0
4950
FR
4972
Micro-inverse
Limestone Density Por.
PE
Limestone Neutron Por.
FRFR
FR
FR
FR
Depth
in
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Density Caliper
Borehole
Temp in
deg F
HVI
every
10 cu ft
Limestone Neutron Por.
percent
30
20
10
0
-10
Limestone Density Por.
percent
30
20
10
0
-10



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REPEAT SECTION

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52
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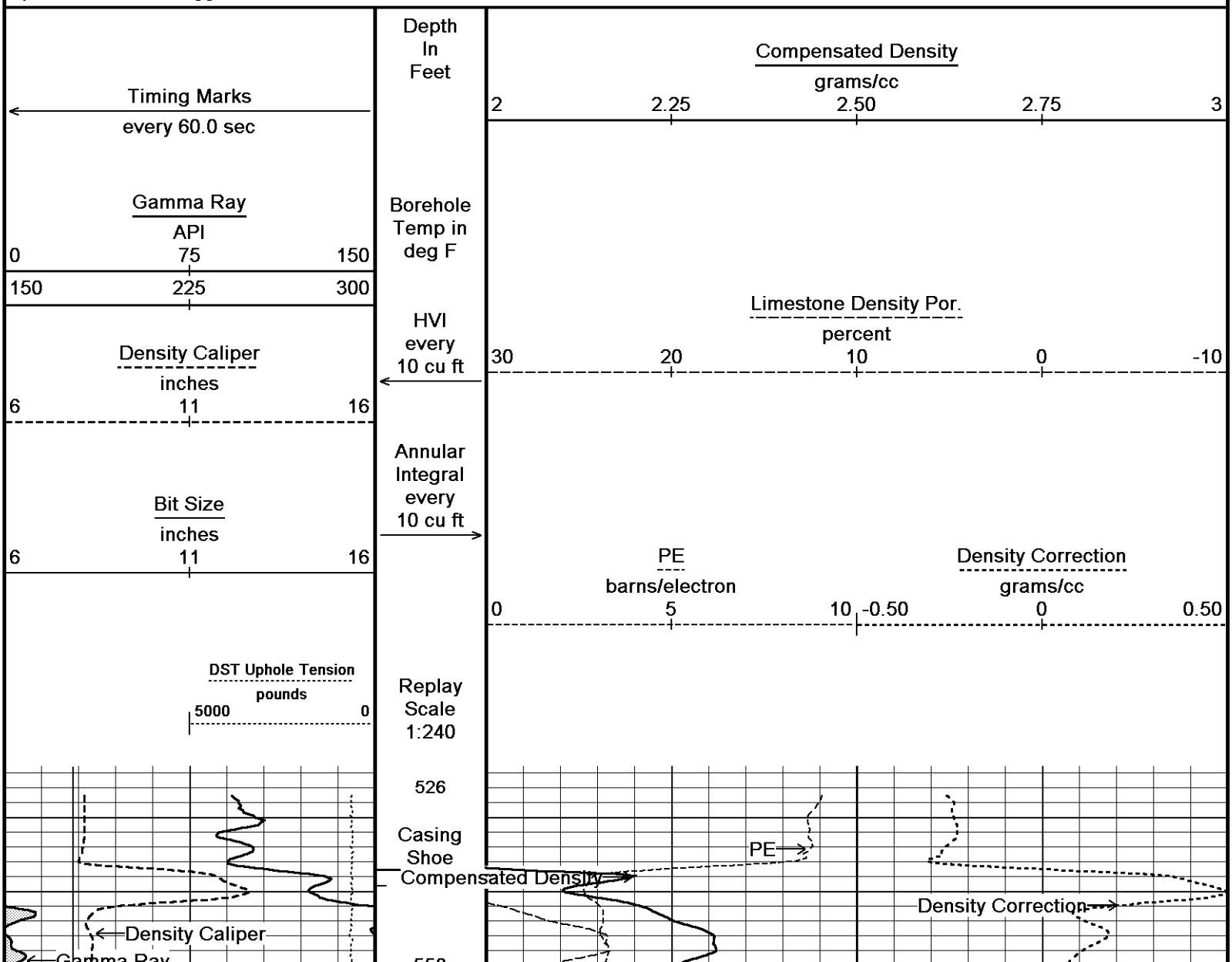
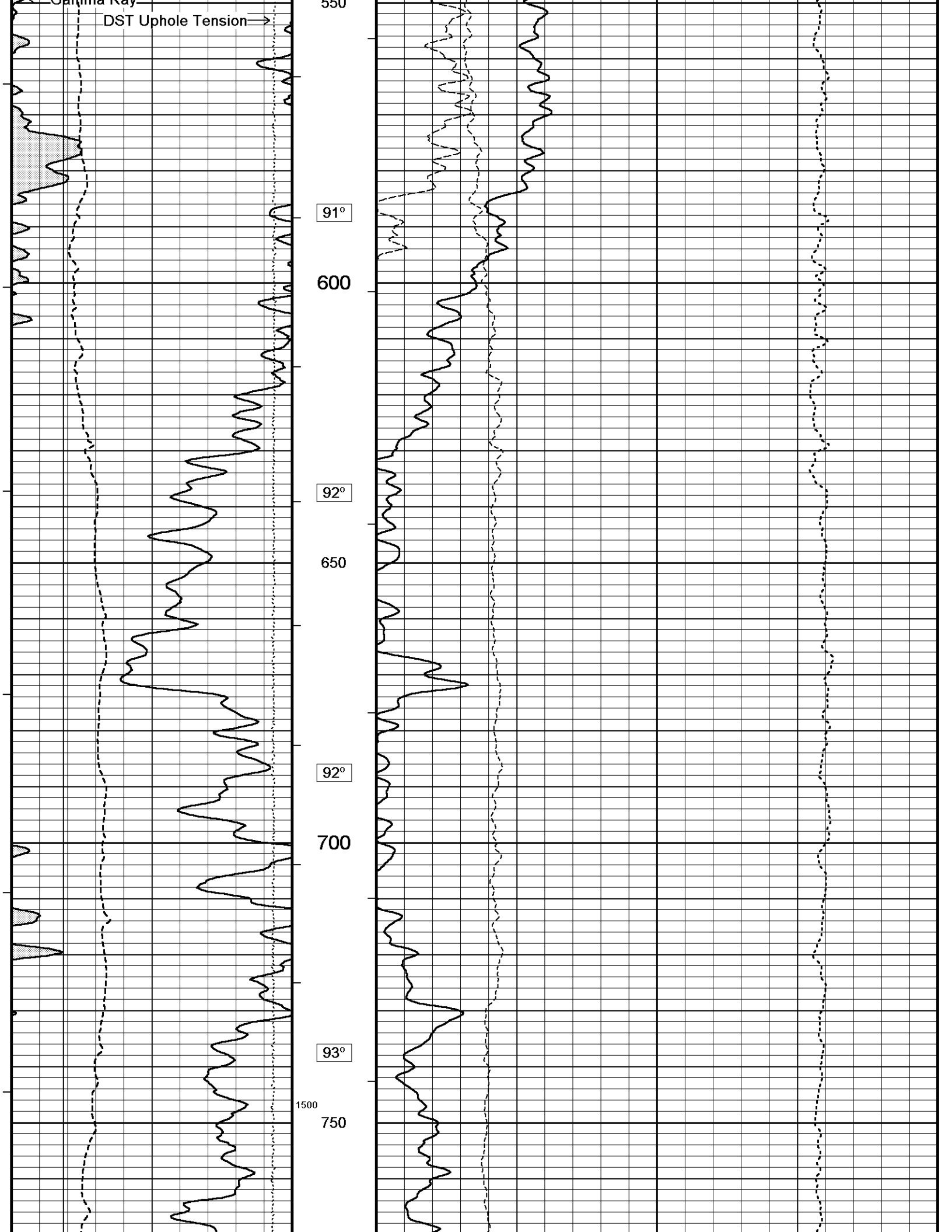
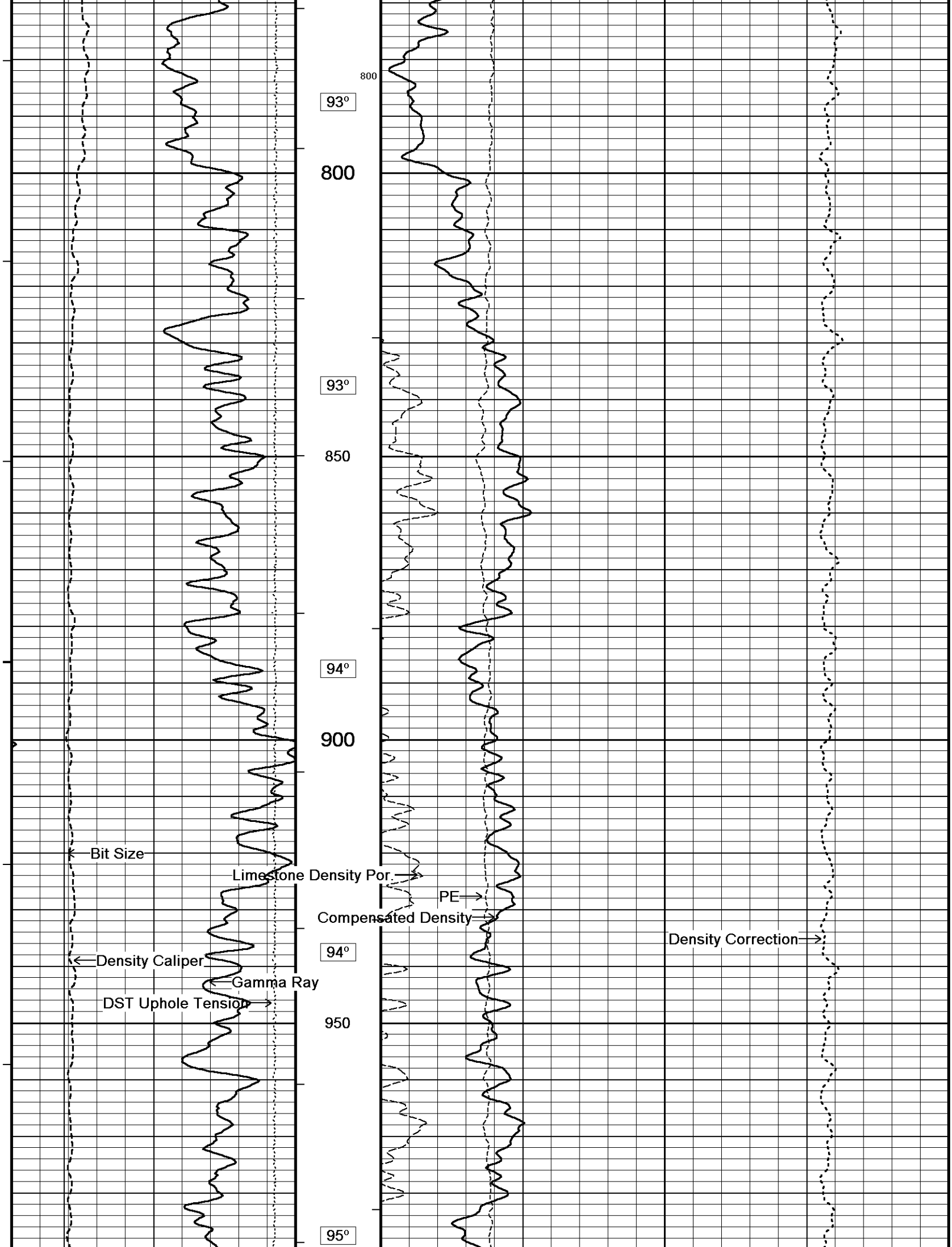
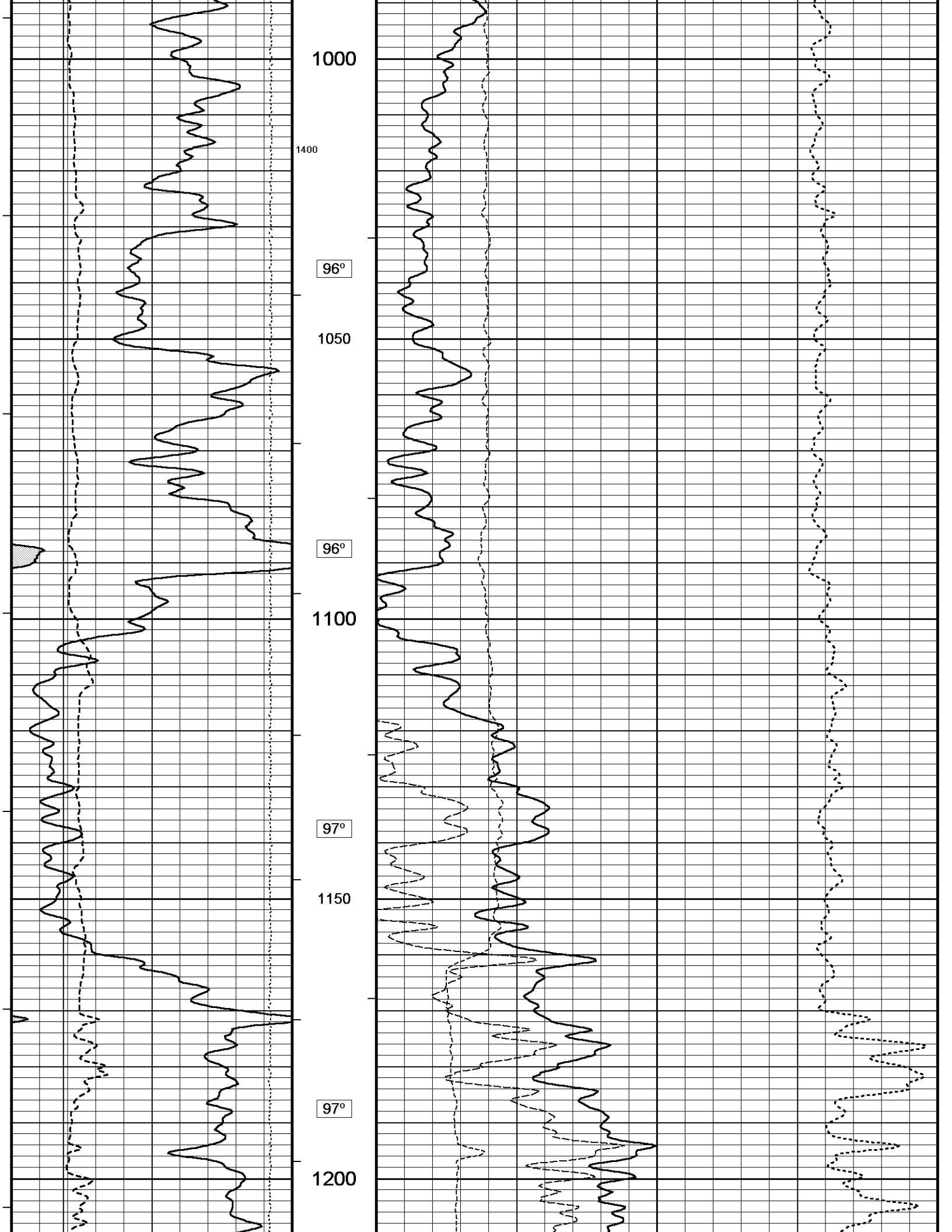
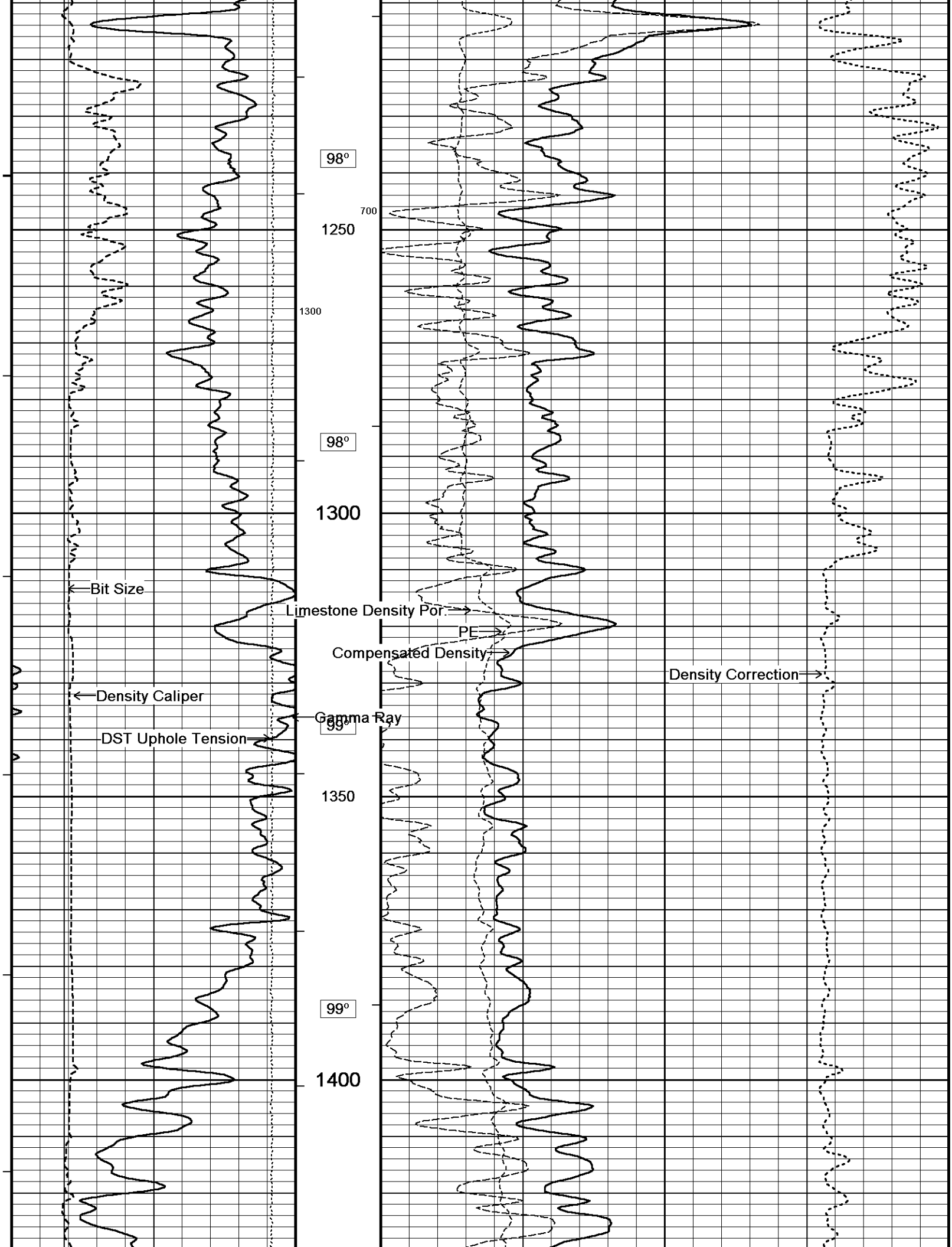
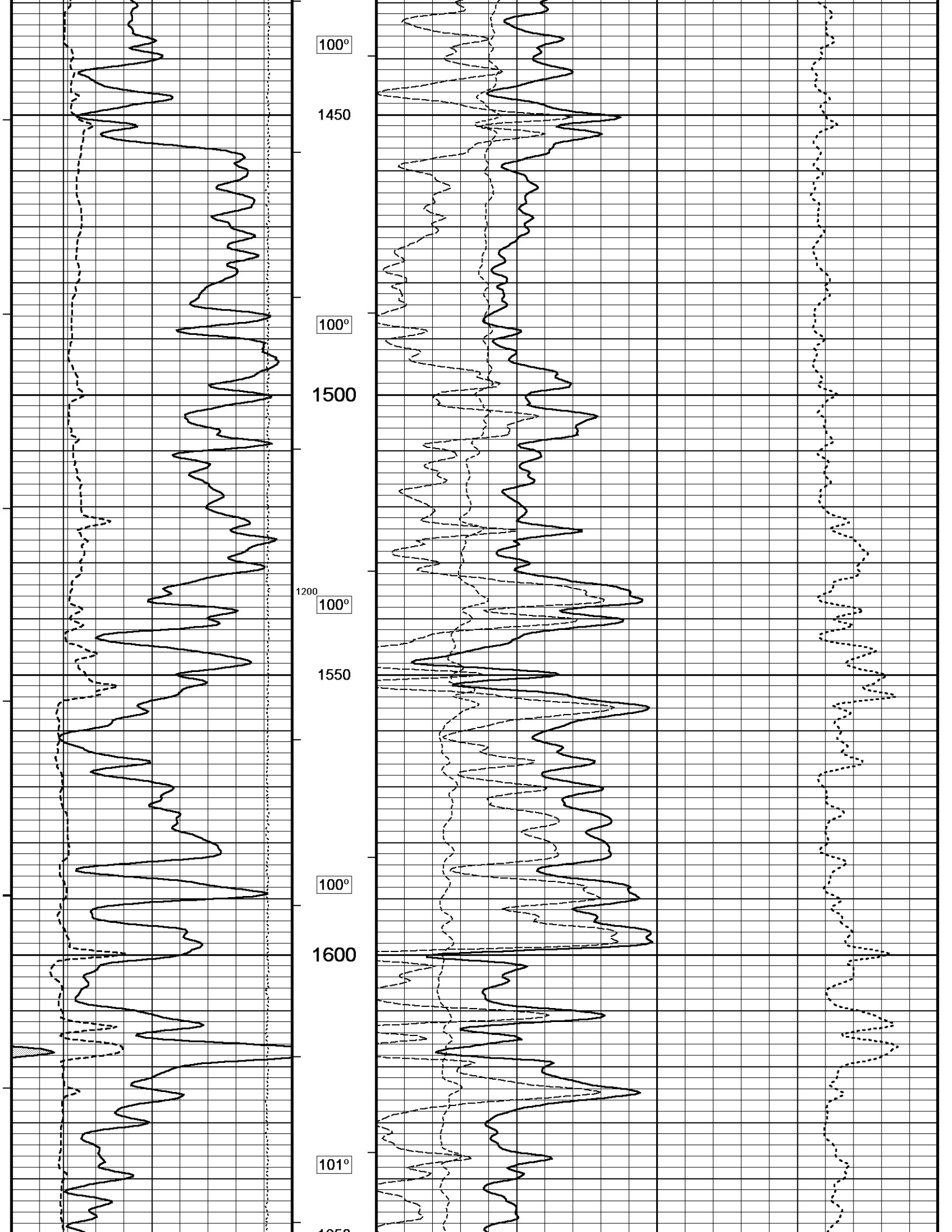


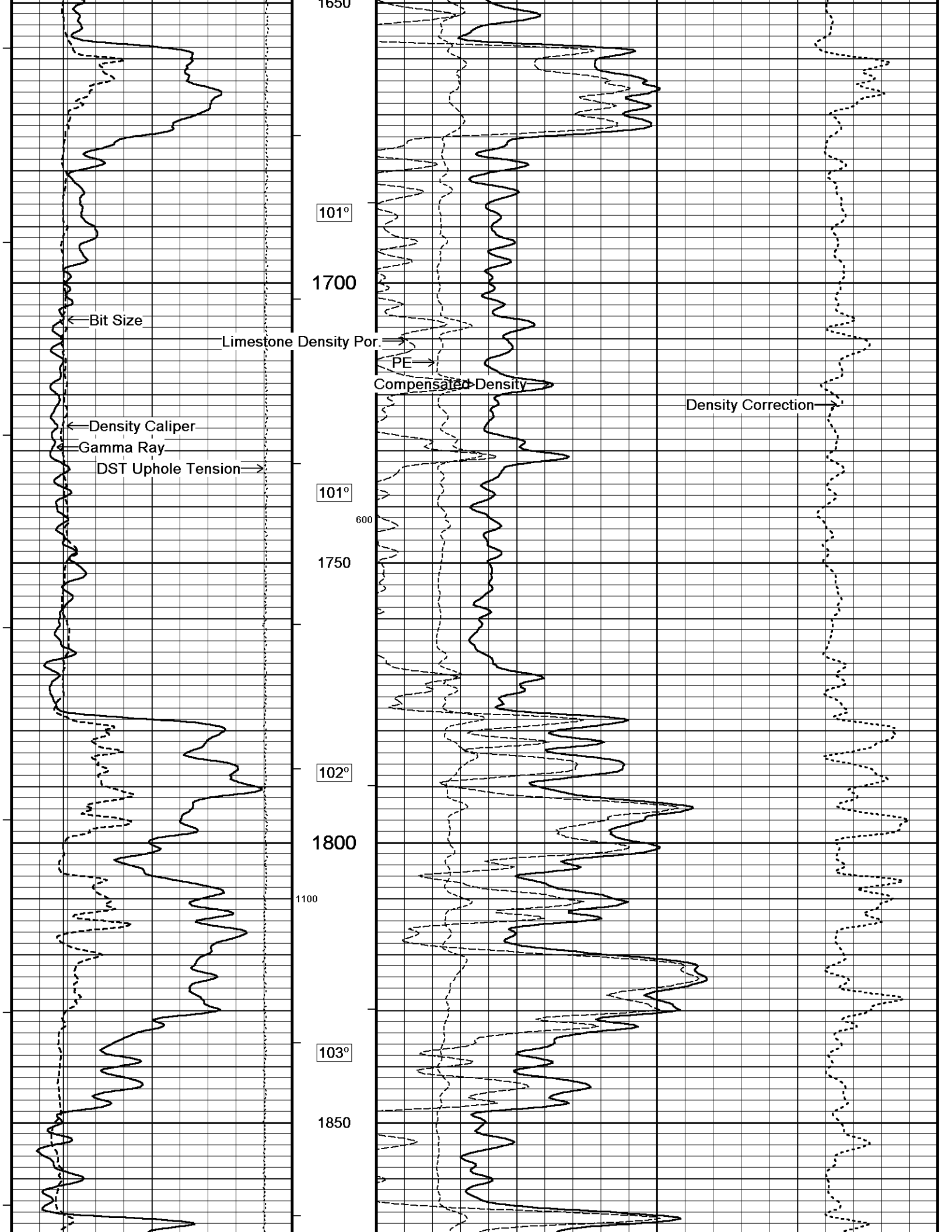

Gamma Ray
DST Uphole Tension
550
91°
600
92°
650
92°
700
93°
1500
750

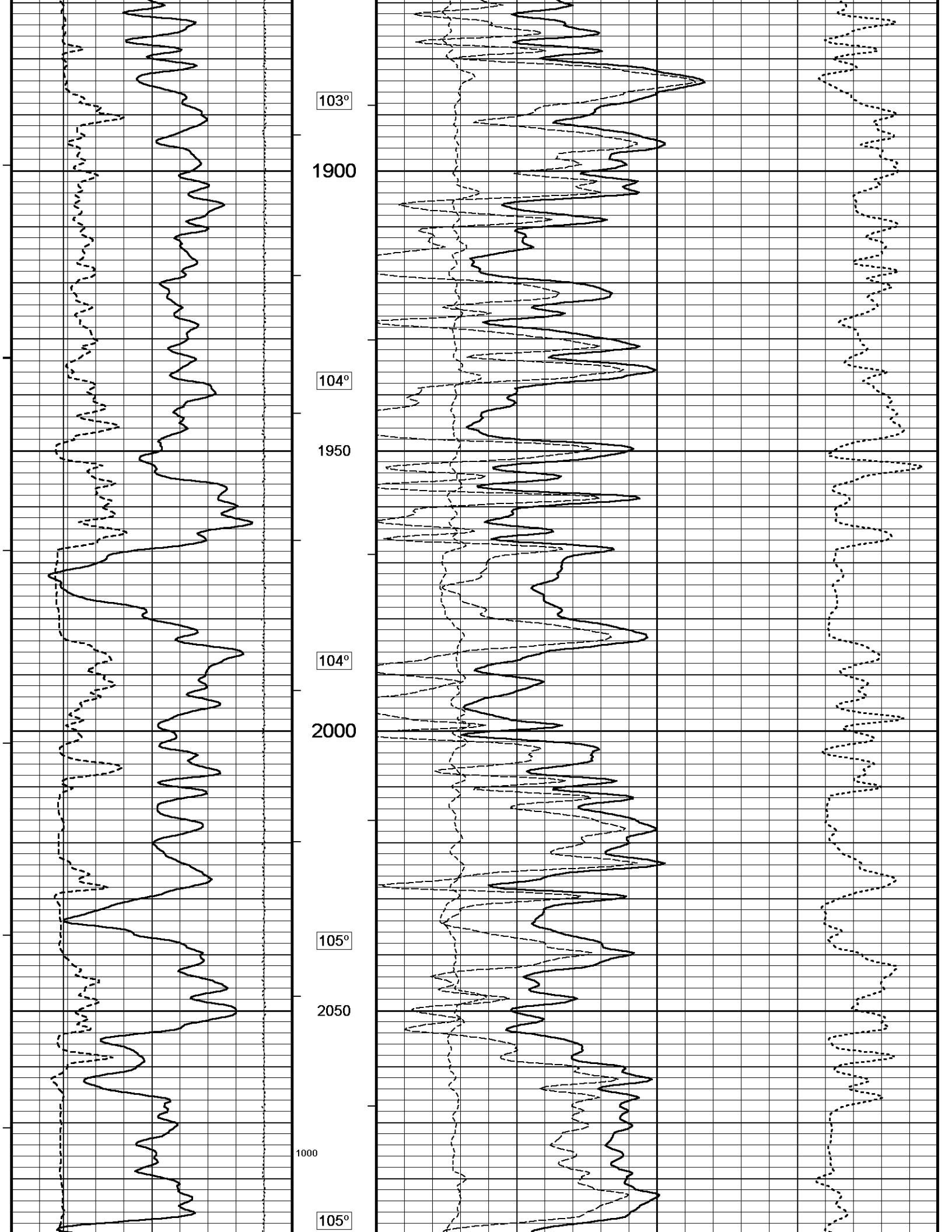

800
93°
800
93°
850
94°
900
Bit Size
Limestone Density Por
PE
Compensated Density
Density Correction
94°
Density Caliper
Gamma Ray
DST Uphole Tension
950
95°

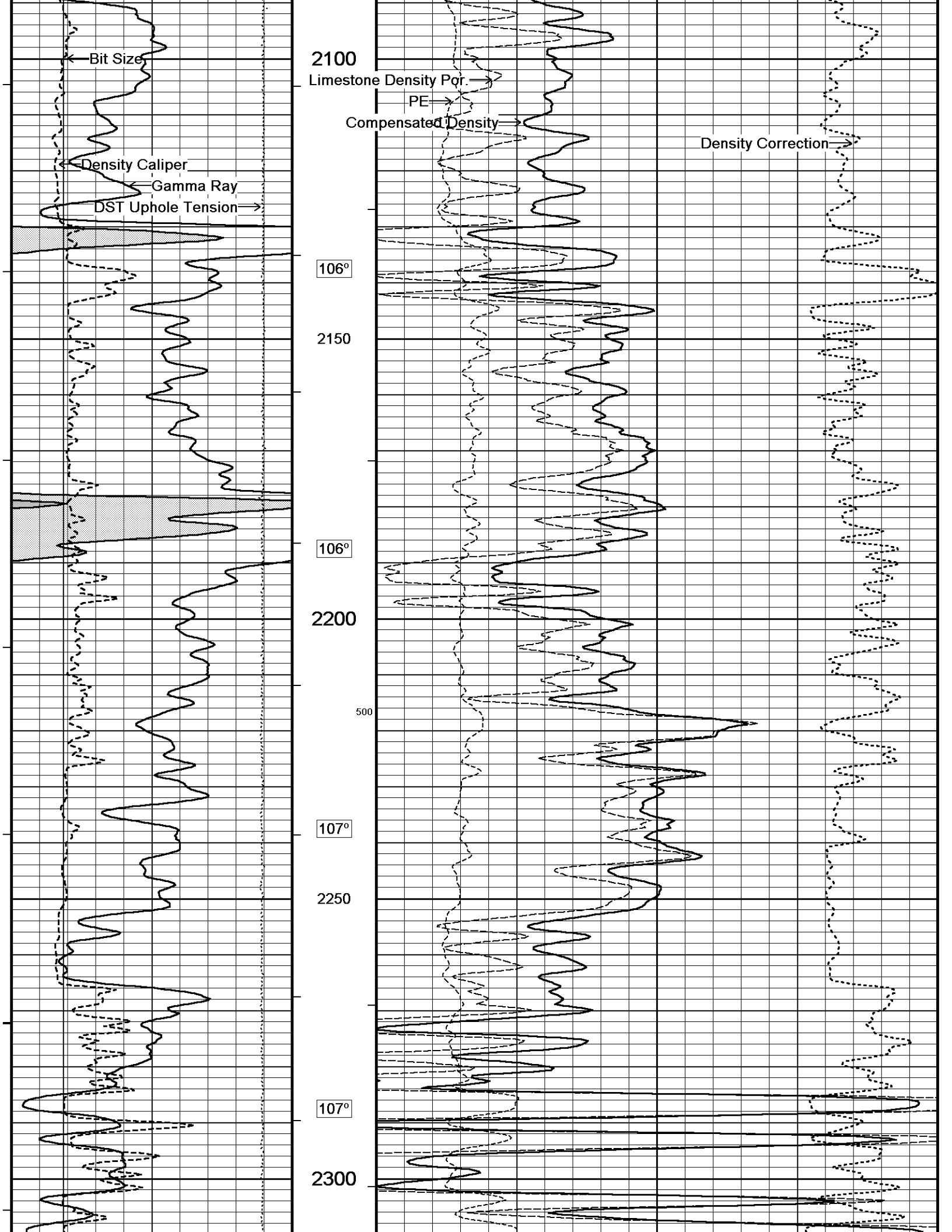

1000
1400
96°
1050
96°
1100
97°
1150
97°
1200

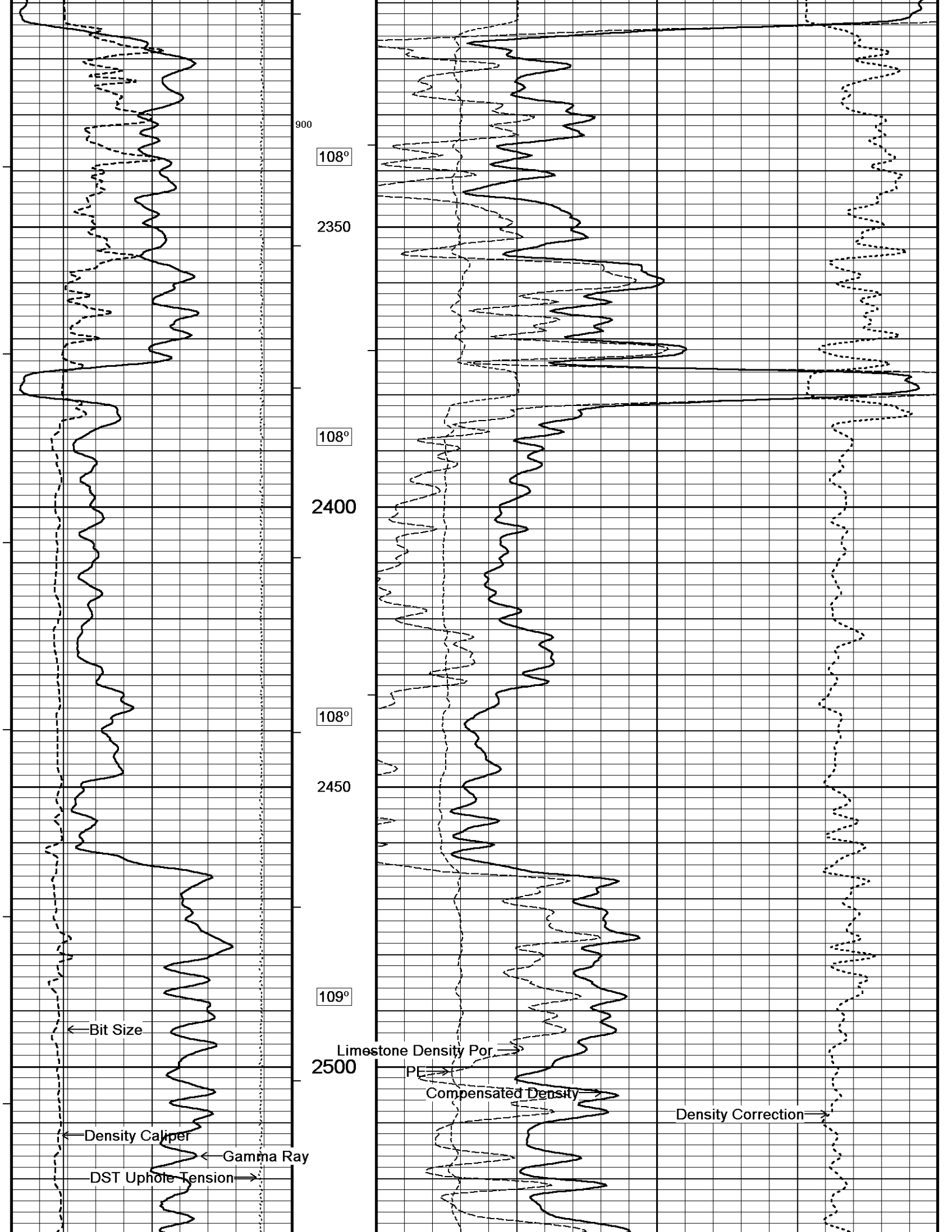

98°
700
1250
1300
98°
1300
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
99°
DST Uphole Tension
1350
99°
1400

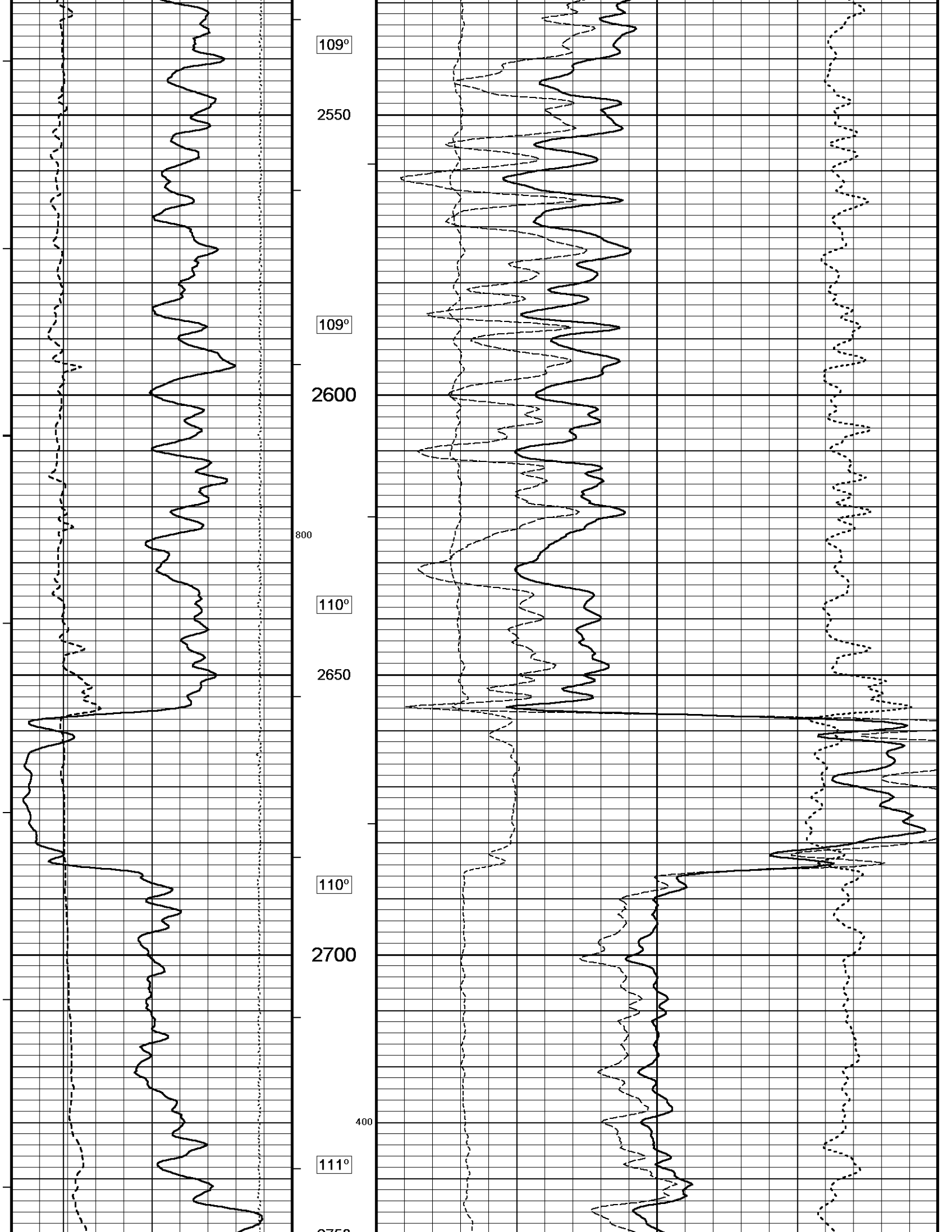

100°
1450
100°
1500
1200
100°
1550
100°
1600
101°

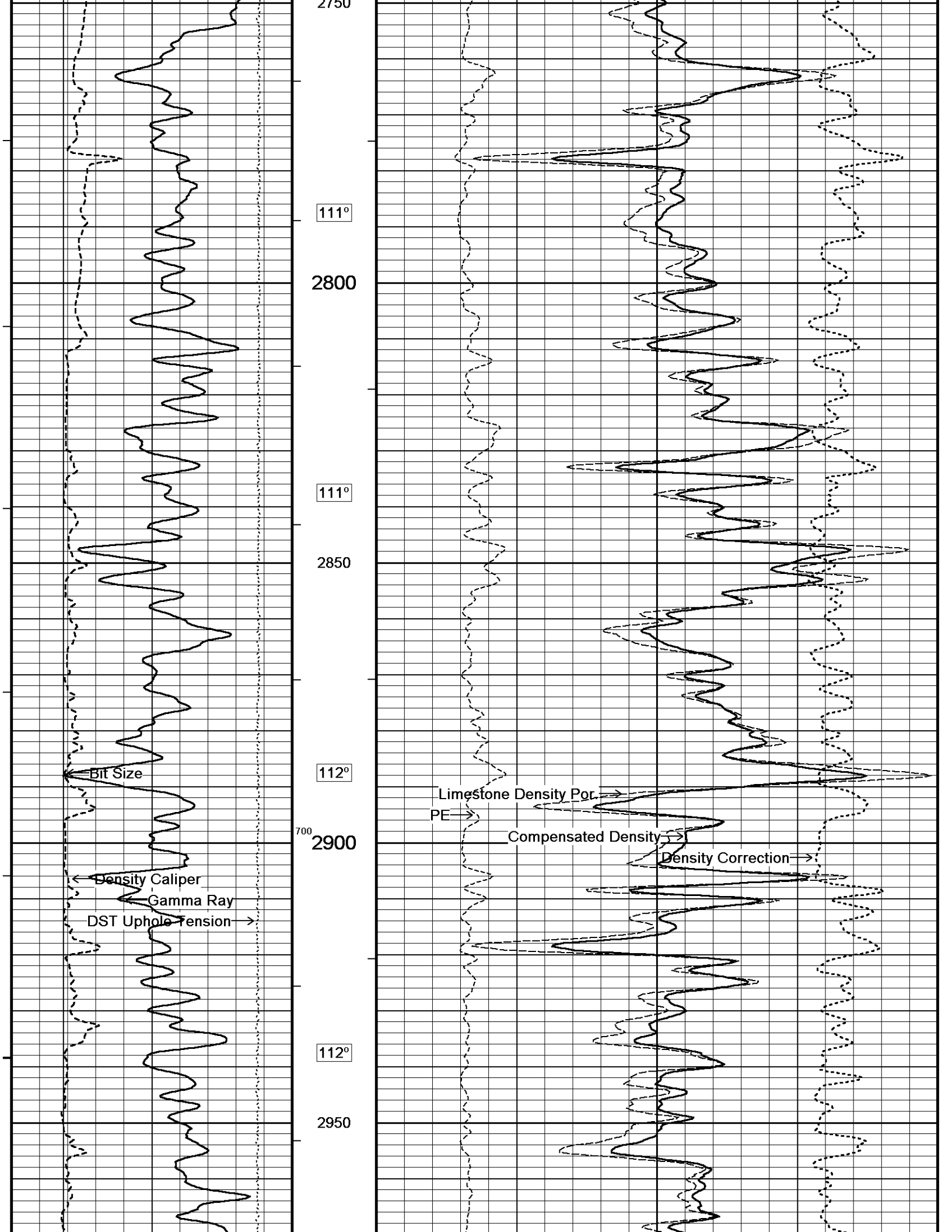

1650
101°
1700
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
101°
600
1750
102°
1800
1100
103°
1850

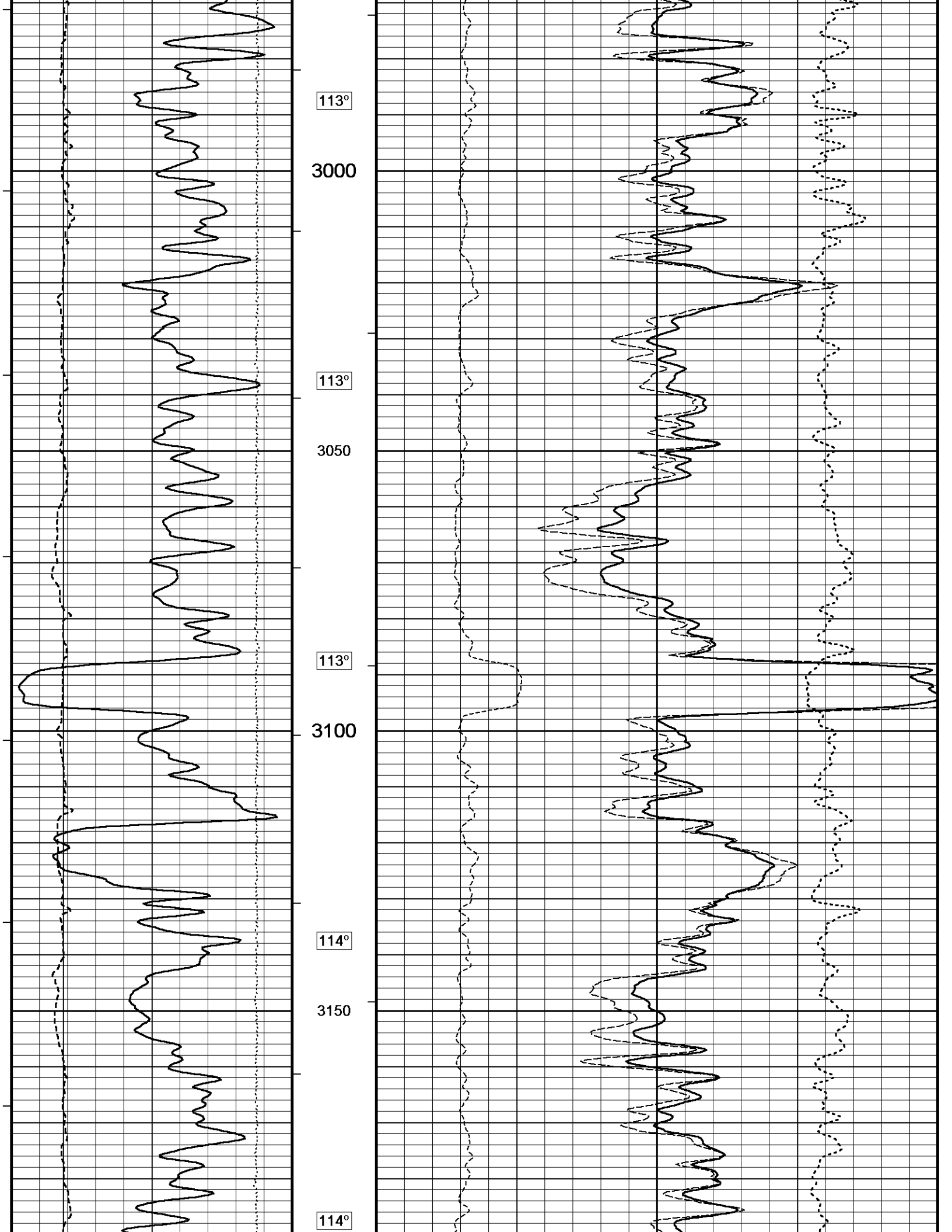

103°
1900
104°
1950
104°
2000
105°
2050
1000
105°

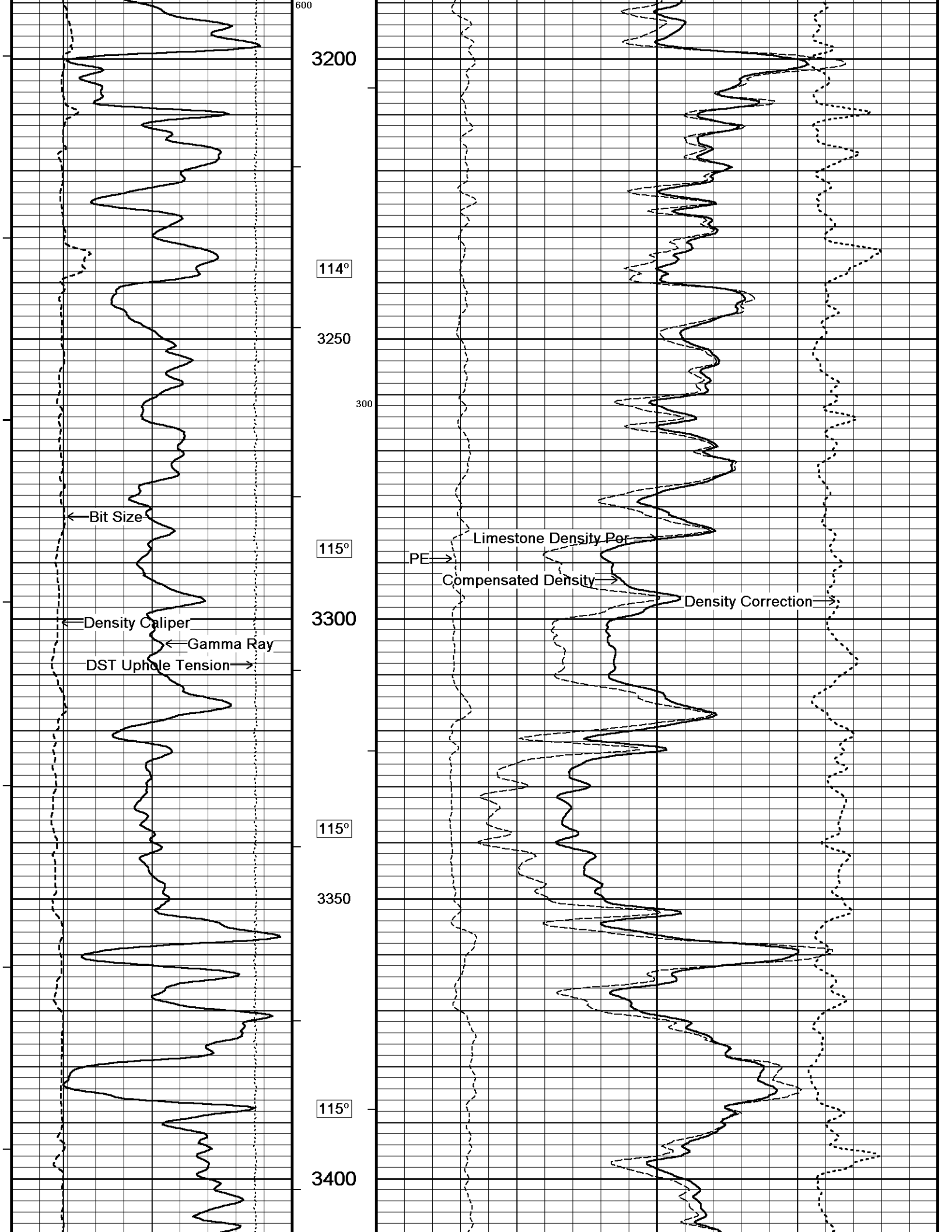

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
2100
Limestone Density Por.
PE
Compensated Density
Density Correction
106°
2150
106°
2200
500
107°
2250
107°
2300

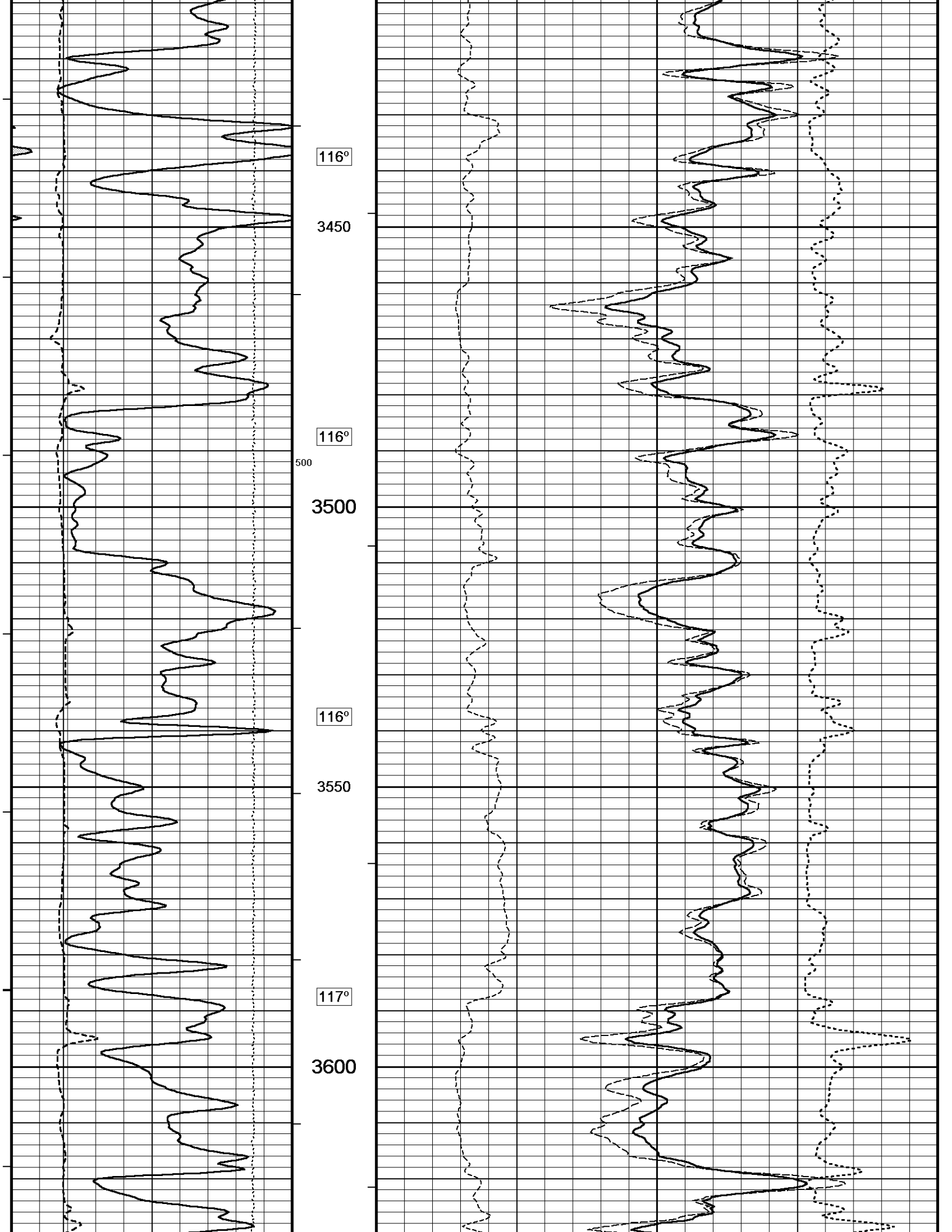

900
108°
2350
108°
2400
108°
2450
109°
2500
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Compensated Density
Density Correction

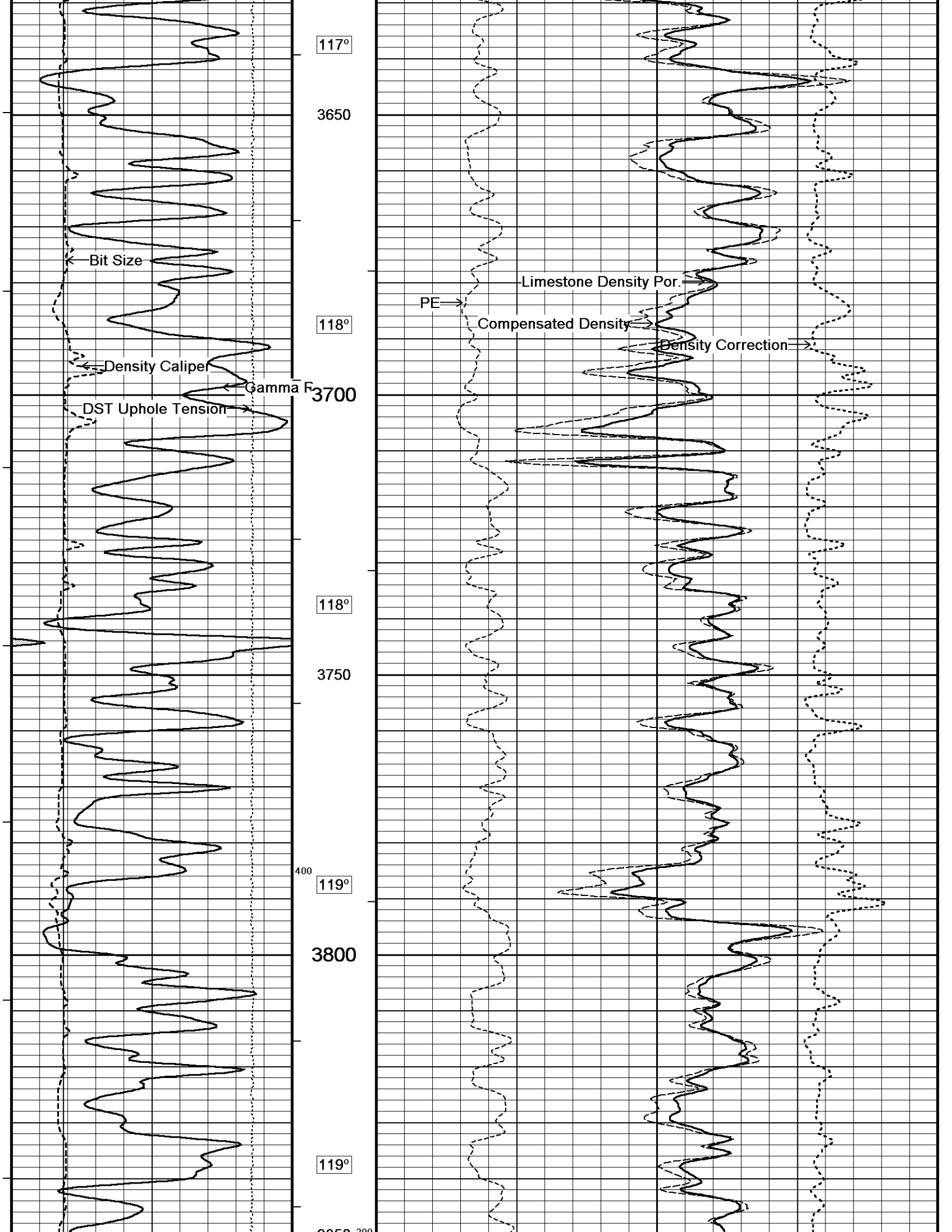

109°
2550
109°
2600
800
110°
2650
110°
2700
400
111°

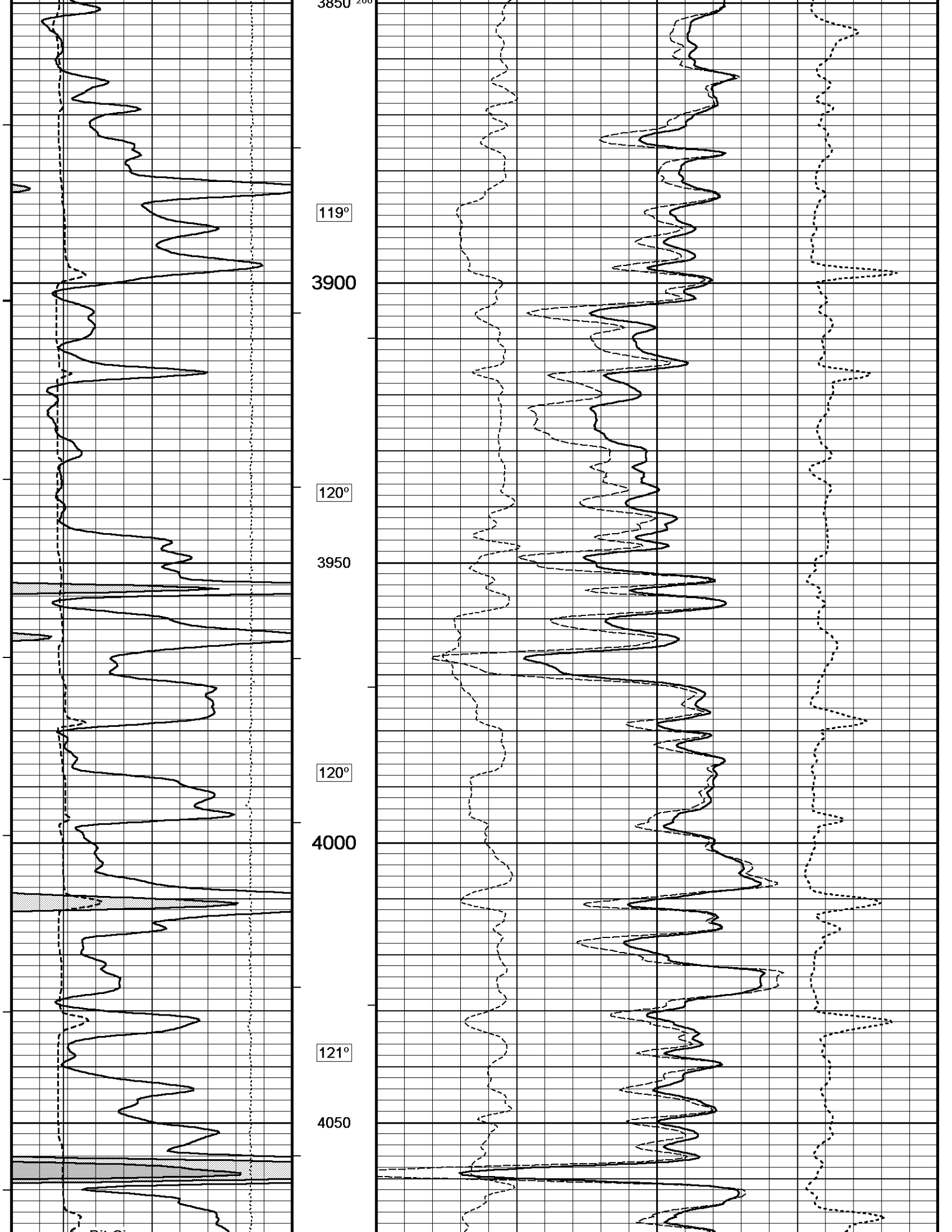

2750
111°
2800
111°
2850
112°
700
2900
112°
2950
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Compensated Density
Density Correction

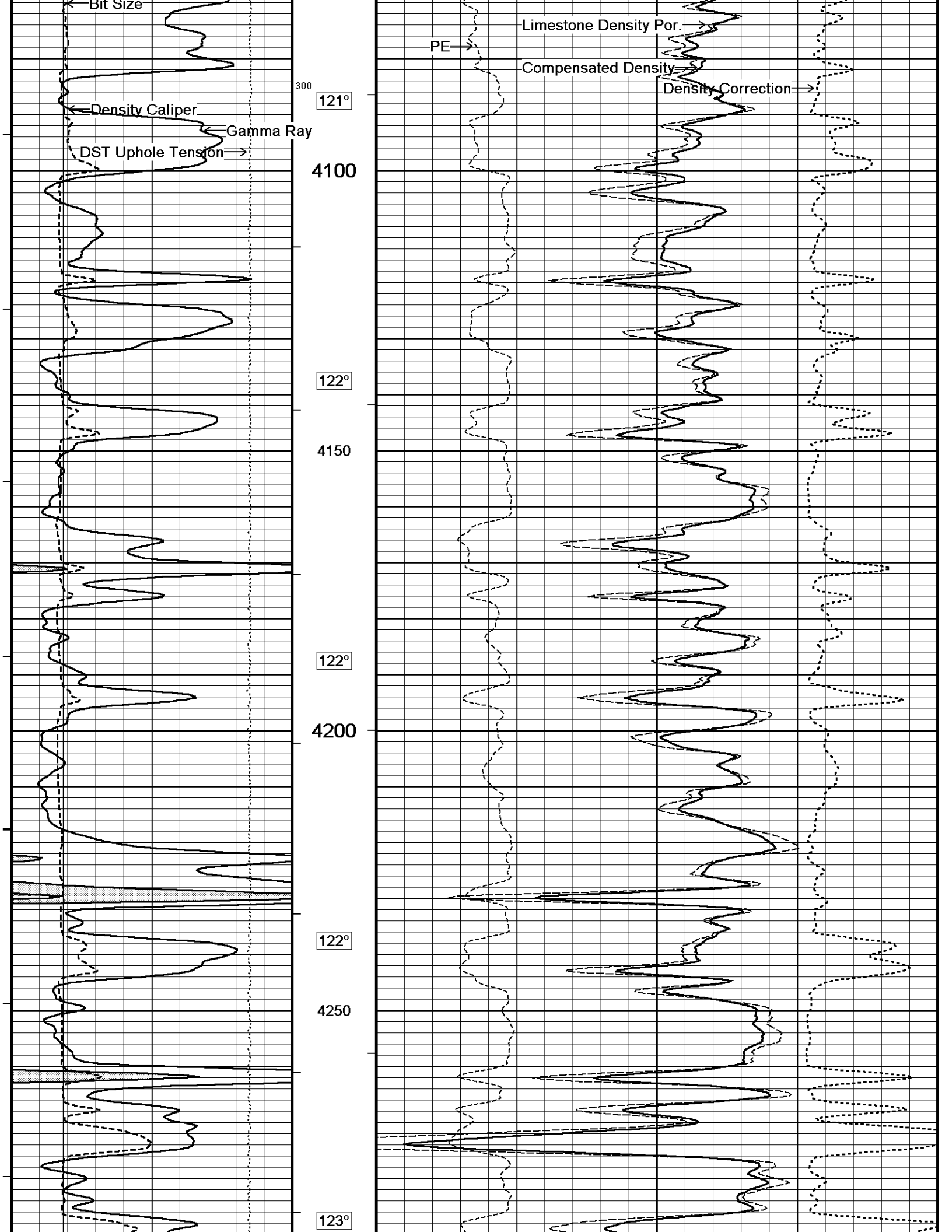

113°
3000
113°
3050
113°
3100
114°
3150
114°

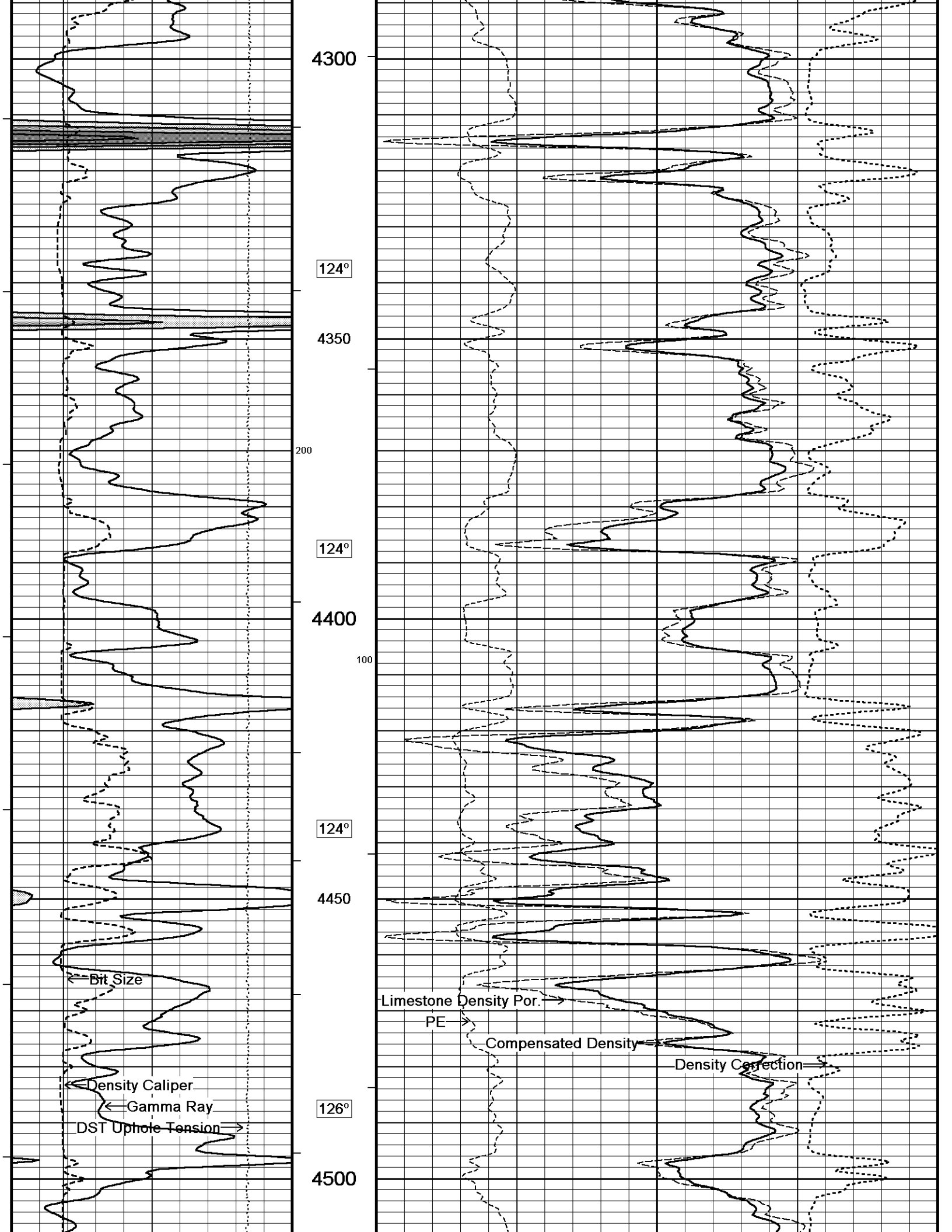

600
3200
114°
3250
300
Bit Size
115°
Limestone Density Por
PE
Compensated Density
Density Correction
3300
Density Caliper
Gamma Ray
DST Uphole Tension
115°
3350
115°
3400

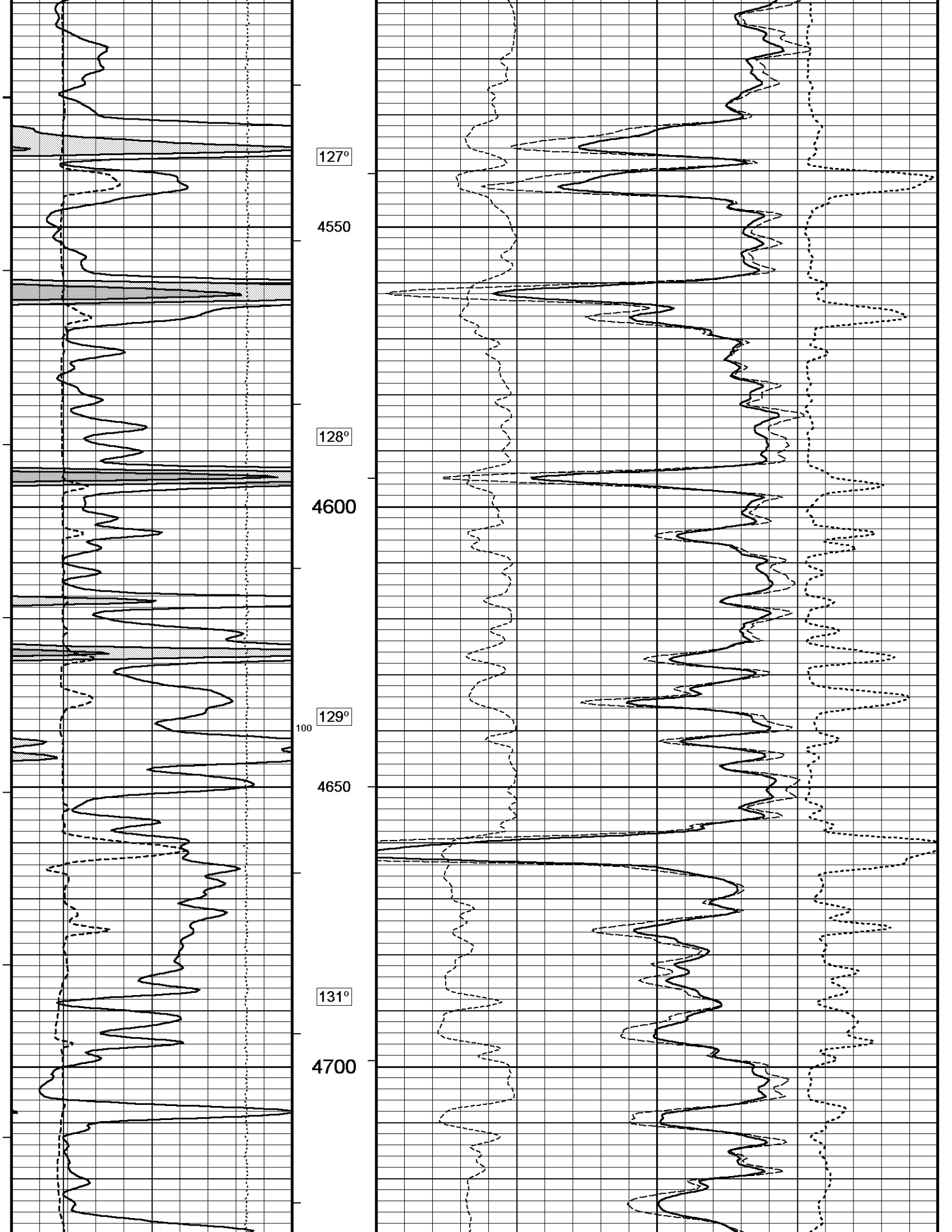

116°
3450
116°
500
3500
116°
3550
117°
3600

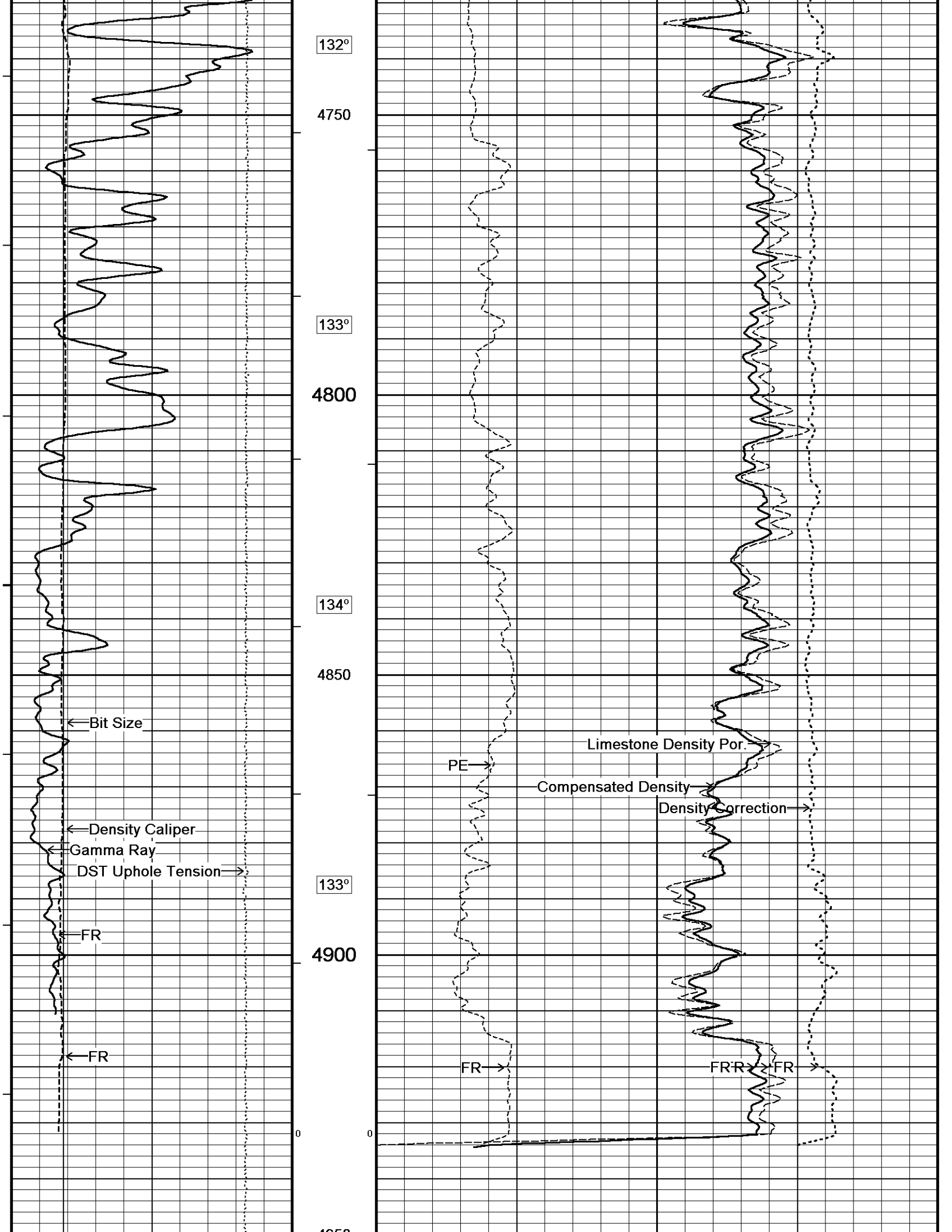

117°
3650
Bit Size
Limestone Density Por.
PE
118°
Compensated Density
Density Correction
Density Caliper
Gamma R
3700
DST Uphole Tension
118°
3750
400
119°
3800
119°

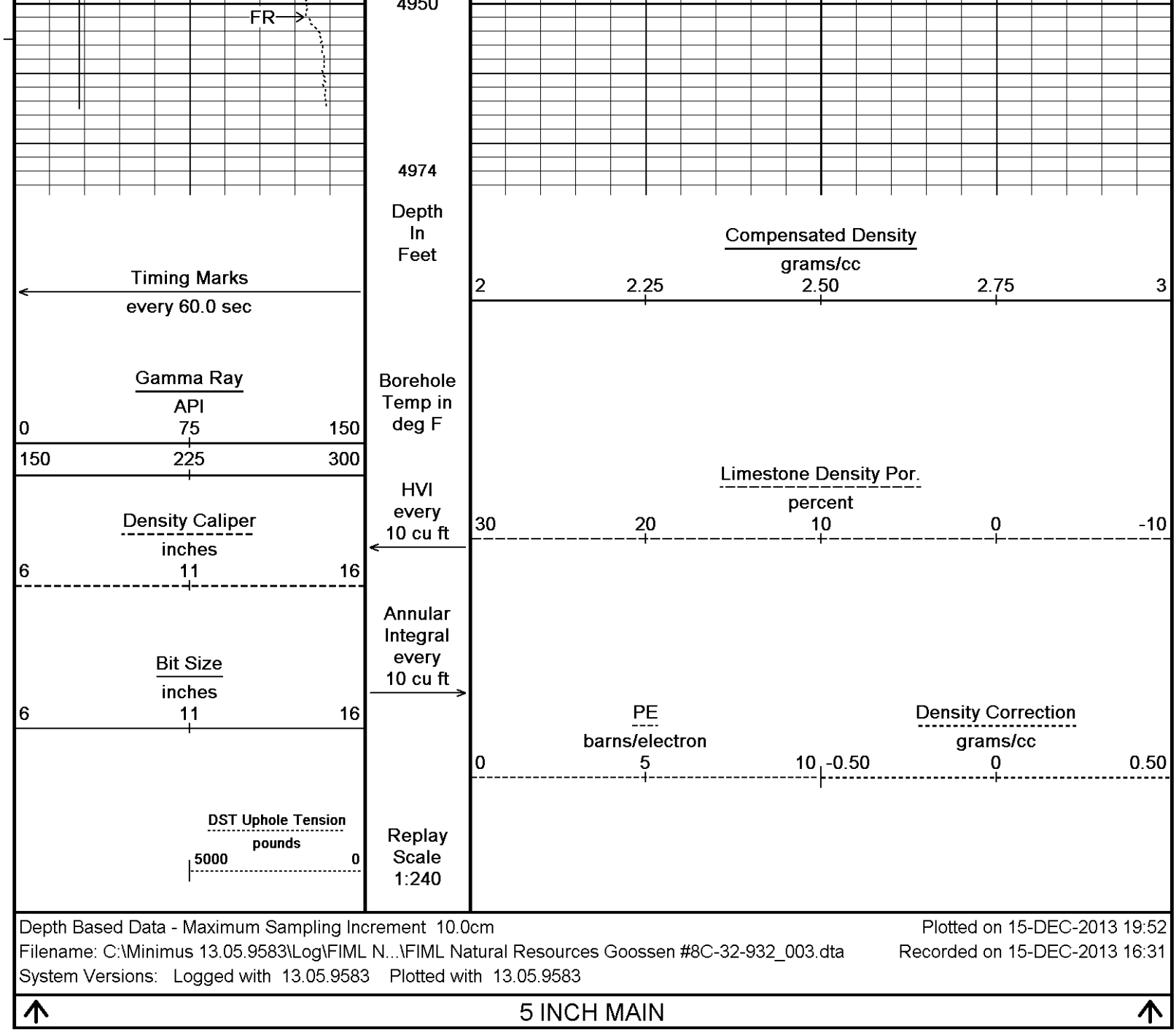

3850
119°
3900
120°
3950
120°
4000
121°
4050


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
300
121°
4100
122°
4150
122°
4200
122°
4250
123°
PE
Limestone Density Por.
Compensated Density
Density Correction


4300
124°
4350
200
124°
4400
100
124°
4450
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
126°
4500
Limestone Density Por.
PE
Compensated Density
Density Correction


127°
4550
128°
4600
129°
100
4650
131°
4700


132°
4750
133°
4800
134°
4850
133°
4900
0
0
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
PE
FR
Limestone Density Por.
Compensated Density
Density Correction
FR
FR

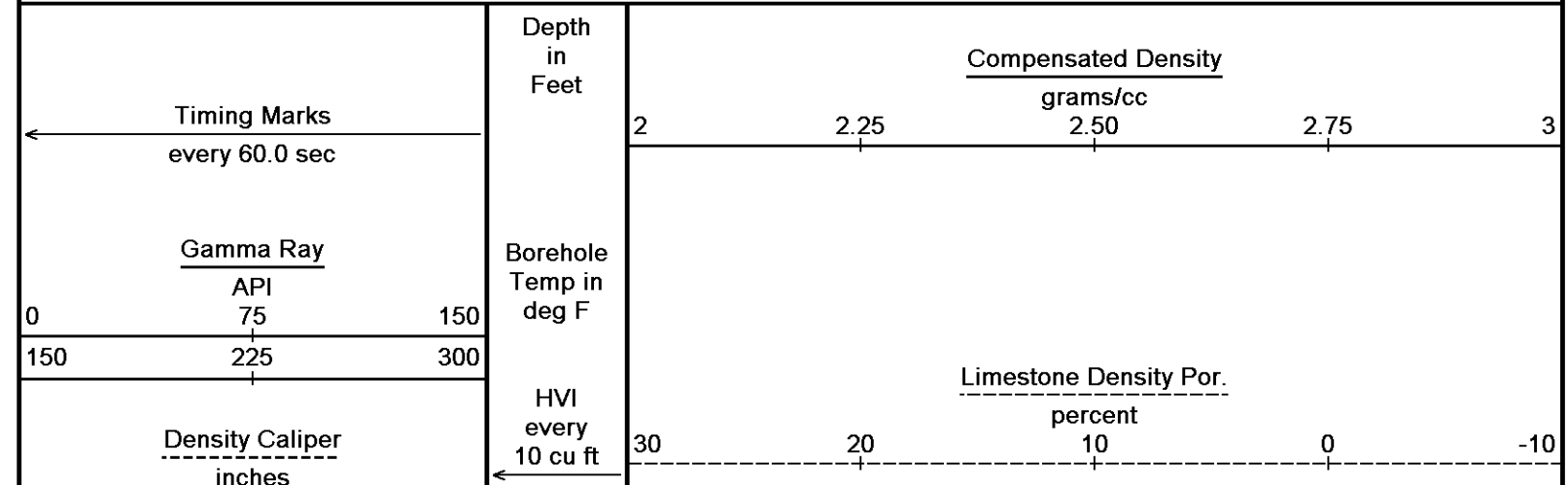


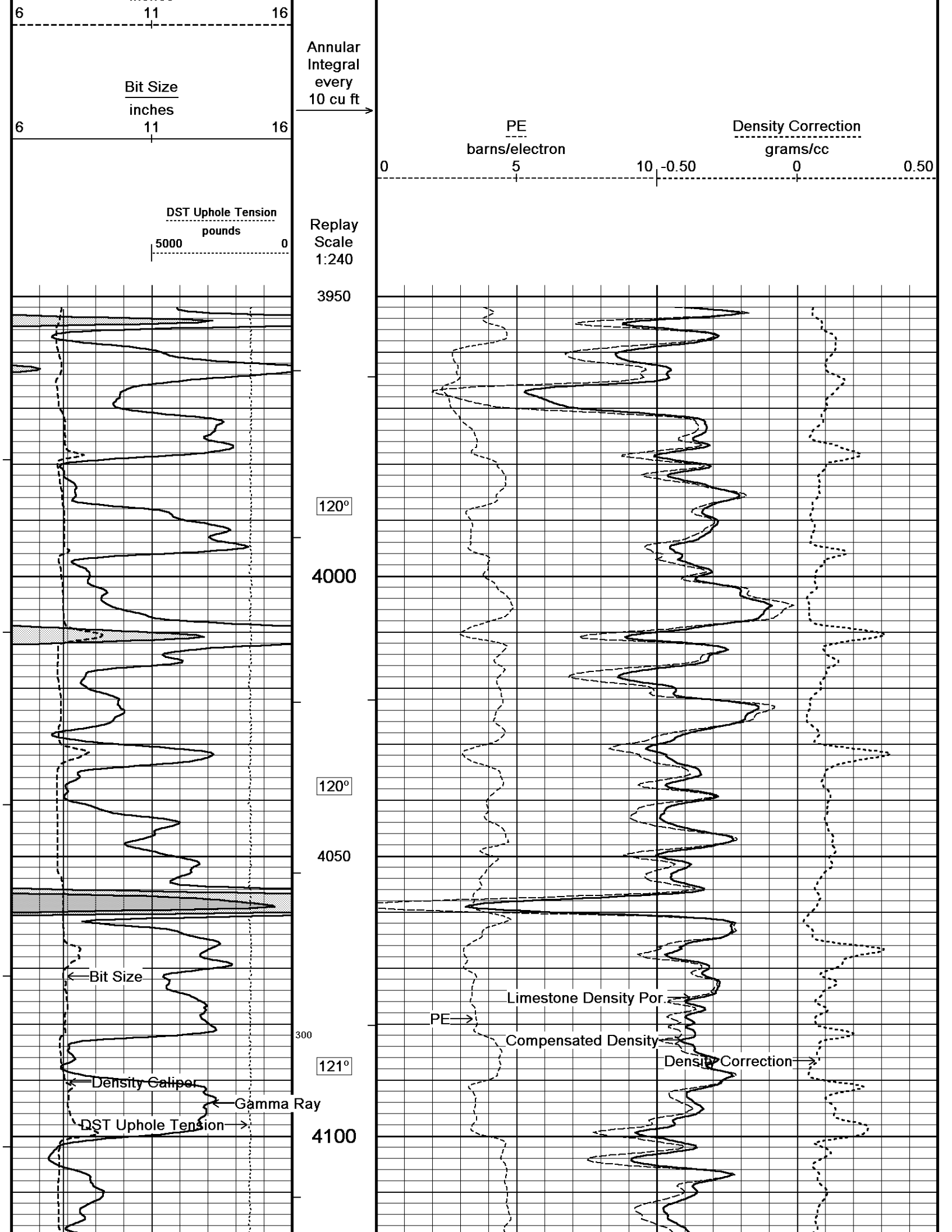
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52
Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_003.dta — Recorded on 15-DEC-2013 16:31
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

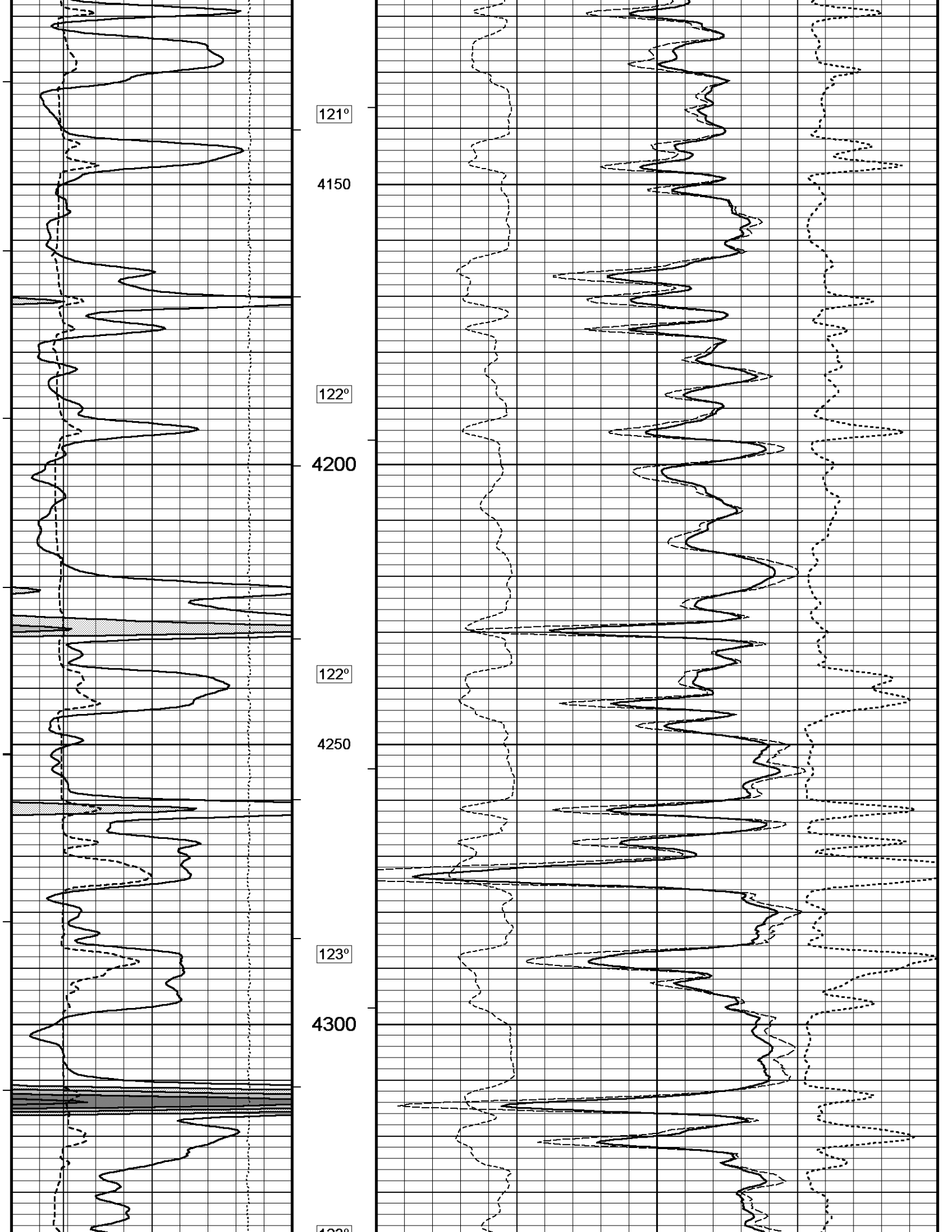
5 INCH MAIN

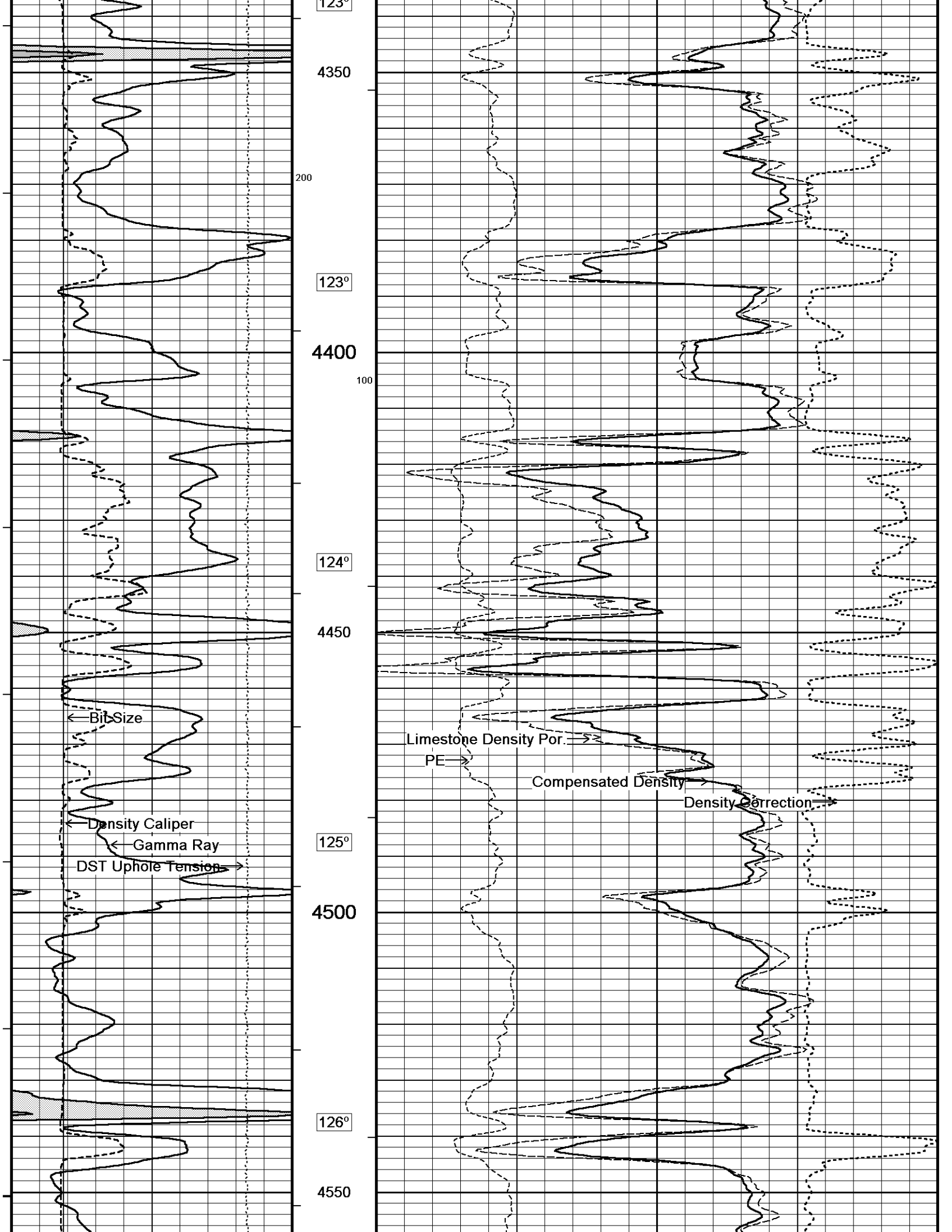
REPEAT SECTION

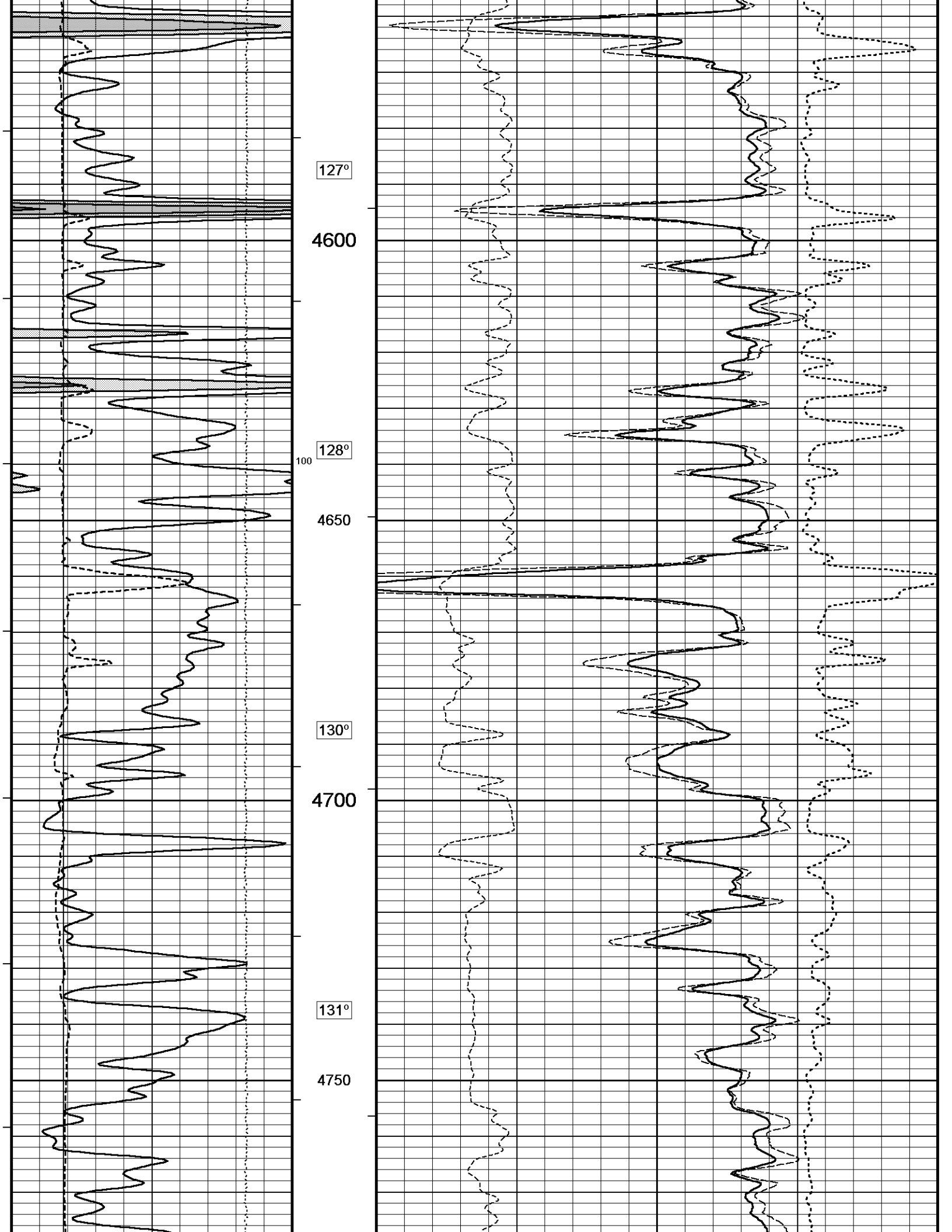
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52
Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_002.dta — Recorded on 15-DEC-2013 15:38
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

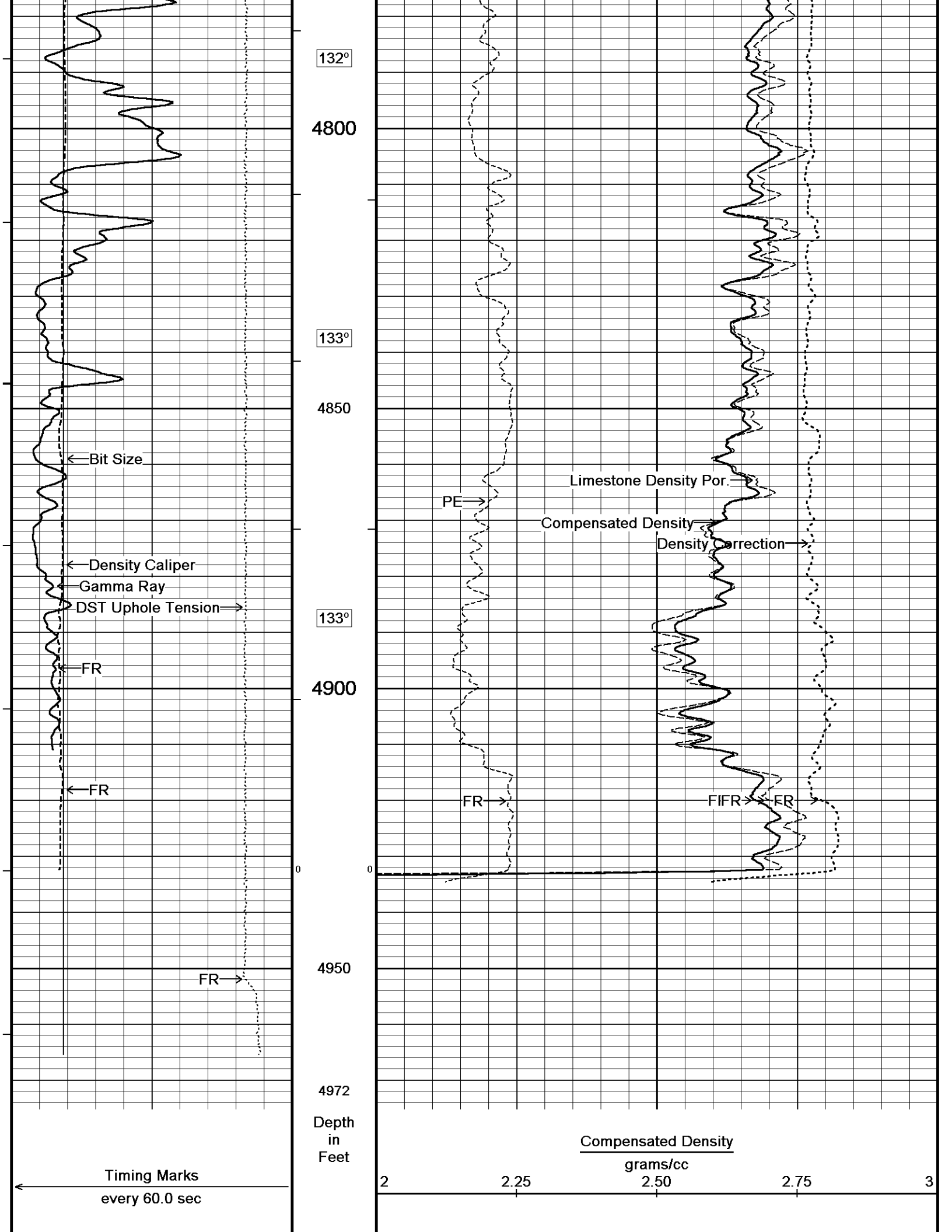


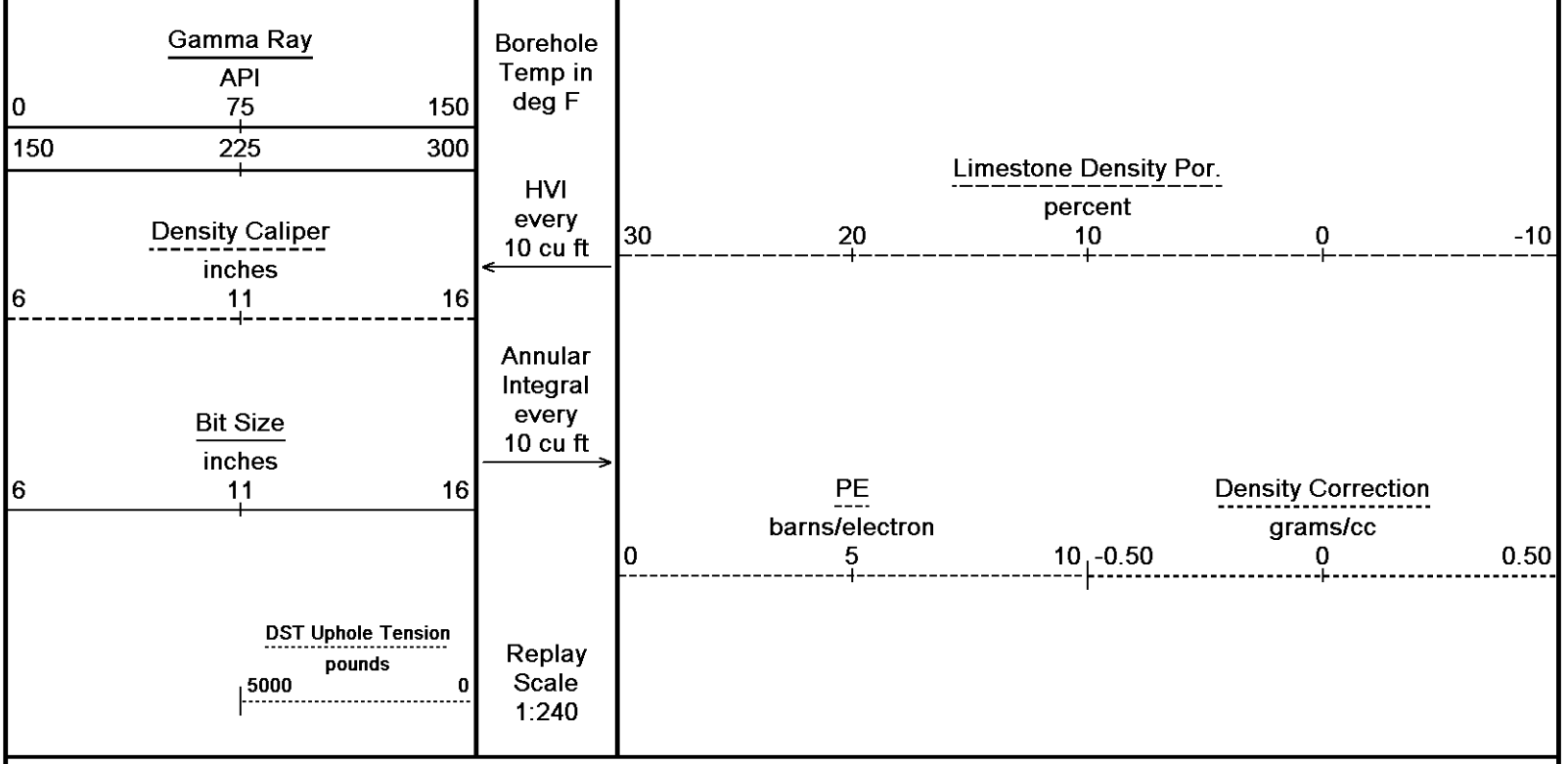

6
11
16
Bit Size
inches
6
11
16
Annular
Integral
every
10 cu ft
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
3950
120°
4000
120°
4050
Bit Size
300
121°
Density Caliper
Gamma Ray
DST Uphole Tension
4100
Limestone Density Por.
PE
Compensated Density
Density Correction


121°
4150
122°
4200
122°
4250
123°
4300


123°
4350
200
123°
4400
100
124°
4450
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
125°
4500
126°
4550


127°
4600
128°
100
4650
130°
4700
131°
4750


132°
4800
133°
4850
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
133°
FR
4900
FR
0
FR
4950
4972
Depth
in
Feet
Timing Marks
every 60.0 sec
PE
Limestone Density Por.
Compensated Density
Density Correction
FR
FIFR
FR
0
Compensated Density
grams/cc
2
2.25
2.50
2.75
3



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-DEC-2013 19:52

Filename: C:\Minimus 13.05.9583\Log\FIML N...\FIML Natural Resources Goossen #8C-32-932_002.dta — Recorded on 15-DEC-2013 15:38

System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\FIML Natural Resources Goossen #8C-32-932\FIML Natural Resources Goossen #8C-32-932_003.dta

General Constants All 000

Last Edited on 15-DEC-2013,08:27

General Parameters		
Mud Resistivity	1.310	ohm-metres
Mud Resistivity Temperature	96.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One 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 14-DEC-2013 20:34

Reading No	Measured	Calibrated (lbs)
1	15595.29	-2.00
2	16215.26	405.00

Gamma Calibration MCG-B 39

Field Calibration on 10-DEC-2013 12:25

	Measured	Calibrated (API)
Background	67	46
Calibrator (Gross)	1139	771
Calibrator (Net)	1071	725

Gamma Constants MCG-B 39

Last Edited on 15-DEC-2013,08:50

Gamma Constants MCG-B 39

Last Edited on 15-DEC-2013,06:56

Gamma Calibrator Number	GRC38	
Mud Density	1.06	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-B 39

Field Calibration on 10-DEC-2013 12:19

	Measured	Calibrated (mV)
Reference 1	102.6	99.9
Reference 2	-98.0	-100.0

High Resolution Temperature Calibration MCG-B 39

Field Calibration on 10-DEC-2013,12:16

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

High Resolution Temperature Constants MCG-B 39

Last Edited on 10-DEC-2013,12:16

Pre-filter Length	11

Caliper Calibration MML-A 3

Base Calibration on 09-DEC-2013 09:05
Field Calibration on 10-DEC-2013 12:15

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14859	5.98
2	17988	7.97
3	21262	9.86
4	25136	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 09-DEC-2013 09:20
Field Check on 10-DEC-2013 12:13

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.2	60.2	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 15-DEC-2013,06:55

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 19-NOV-2013 15:33
Field Check on 10-DEC-2013 12:29

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3066	94	3714	110
Ratio	32.484		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1680	2433
Ratio	0.691	

Field Check

	Calibrated (cps)	
	1679	2427

Ratio	0.685

Neutron Constants MDN-A.B 66

Last Edited on 15-DEC-2013,06:55

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 07-OCT-2013 09:02
Field Check on 10-DEC-2013 12:05

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.2	126.8
Base Check		281.0
Field Check		281.1

FE Constants MFE-B.J 353

Last Edited on 15-DEC-2013,06:55

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

Sonic Constants MSS-C.K 330

Last Edited on 15-DEC-2013,06:55

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.60	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-4' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A

Peak Amplitude Source N/A

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

6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing N/A

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A
N/A	N/A	N/A	
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	

Full Waveform Parameters

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

Induction Calibration MAI-A.A 167

Base Calibration on 02-OCT-2013,14:21
Field Check on 10-DEC-2013 12:01

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			12.3	3841.9
2			29.4	3478.8
3			29.1	3054.3
4			19.8	2082.7
Deep			18.6	2049.8
Medium			42.2	3992.7
Shallow			42.7	5056.9

Array Temperature 60.5 Deg F

Induction Constants MAI-A.A 167

Last Edited on 15-DEC-2013,06:55

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-A.A 167

Field Calibration on 10-DEC-2013,12:01

	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 10-DEC-2013,12:01

Pre-filter Length	11

Photo Density Calibration MPD-C.A 216

Base Calibration on 04-NOV-2013,14:26
Field Check on 10-DEC-2013 12:12

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	53102	19935	52888	19096
Reference 2	25779	2814	25270	2567
Field Check at Base	1121.7	1316.5		
Field Check	1119.1	1321.1		

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	205	1001		
Reference 1	18282	52929	0.348	0.309
Reference 2	7413	25647	0.292	0.273
Field Check at Base	204.5	1000.7		
Field Check	200.3	998.6		

Density Constants MPD-C.A 216

Last Edited on 15-DEC-2013,06:55

Density Source Id	18235B	
Nylon Calibrator Number	DNCE528	
Aluminium Calibrator Number	DACD528	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.06	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	

Caliper Calibration MPD-C.A 216

Base Calibration on 09-DEC-2013 08:48
Field Calibration on 10-DEC-2013 12:06

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15920	3.99
2	25888	5.98
3	35856	7.97
4	45671	9.86
5	56896	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\FIML Natural Resources Goossen #8C-32-932\FIML Natural Resources Goossen #8C-32-932_003.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-B 39 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

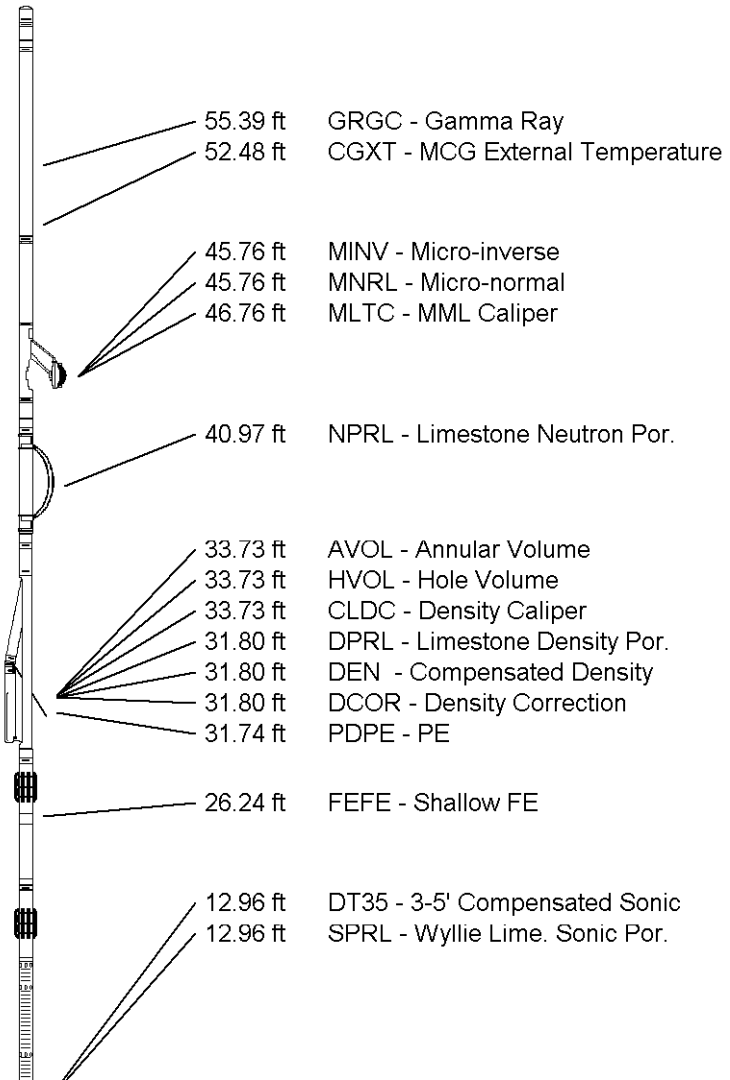
Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

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

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

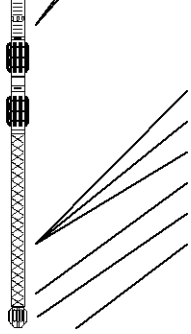
Compact Focussed Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 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: 62.25 ft Weight: 471.8 lb



3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	FIML NATURAL RESOURCES, LLC
WELL	GOOSSEN #8C-32-932
FIELD	WILDCAT
PROVINCE/COUNTY	THOMAS
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3119.00	feet	First Reading	4920.00	feet
Elevation Drill Floor	3117.00	feet	Depth Driller	4950.00	feet
Elevation Ground Level	3109.00	feet	Depth Logger	4952.00	feet

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MICRORESISTIVITY LOG