Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	CMX, INC.
WELL	BARTENDER #1
FIELD	STRANATHAN
PROVINCE/COUNTY	BARBER
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	330' FNL & 330' FWL

SEC	TWP	RGE	Other Services
18	35S	11W	MAI/MFE
			MSS

API Number 15-007-24088
Permit Number

Permanent Datum GL, Elevation 1369 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	1377.00
DF	1375.00
GL	1369.00

Date	17-OCT-2013			
Run Number	ONE			
Service Order	3539937			
Depth Driller	5250.00	feet		
Depth Logger	5250.00	feet		
First Reading	5218.26	feet		
Last Reading	3800.00	feet		
Casing Driller	1012.00	feet		
Casing Logger	1015.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.30 lb/USg	48.00 CP		
PH / Fluid Loss	9.80	16.00 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.72 @ 88.0	ohm-m		
Rmf @ Measured Temp	0.58 @ 88.0	ohm-m		
Rmc @ Measured Temp	0.86 @ 88.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.56 @115.0	ohm-m		
Time Since Circulation	4.5 HOURS			
Max Recorded Temp	115.00	deg F		
Equipment / Base	13244	LIB		
Recorded By	ADAM SILL		DEREK CARTER	
Witnessed By	LEAH KASTEN			
JOB #	LB13-293			

BOREHOLE RECORD

Last Edited: 17-OCT-2013 20:53

Bit Size inches	Depth From feet	Depth To feet
7.875	1012.00	5250.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1012.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MSS, MAI
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 X 0.5 INCH STANDOFF
  - MSS: 2 X 0.5 INCH STANDOFF
  - MAI: 2 X 0.5 INCH STANDOFF
- 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: 2120 CU.FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3800: 310CU.FT.

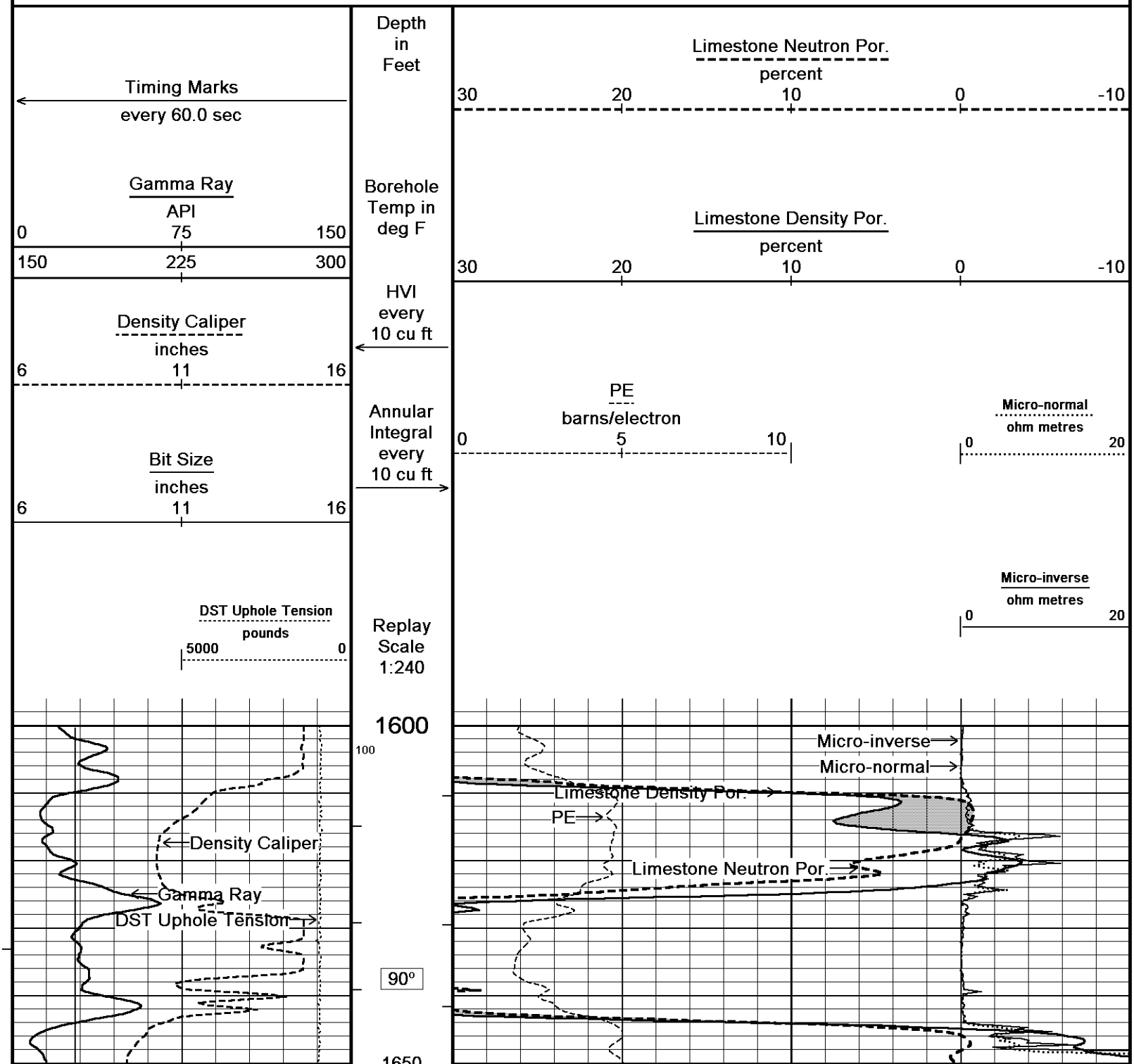
- RIG: DUKE DRILLING #2

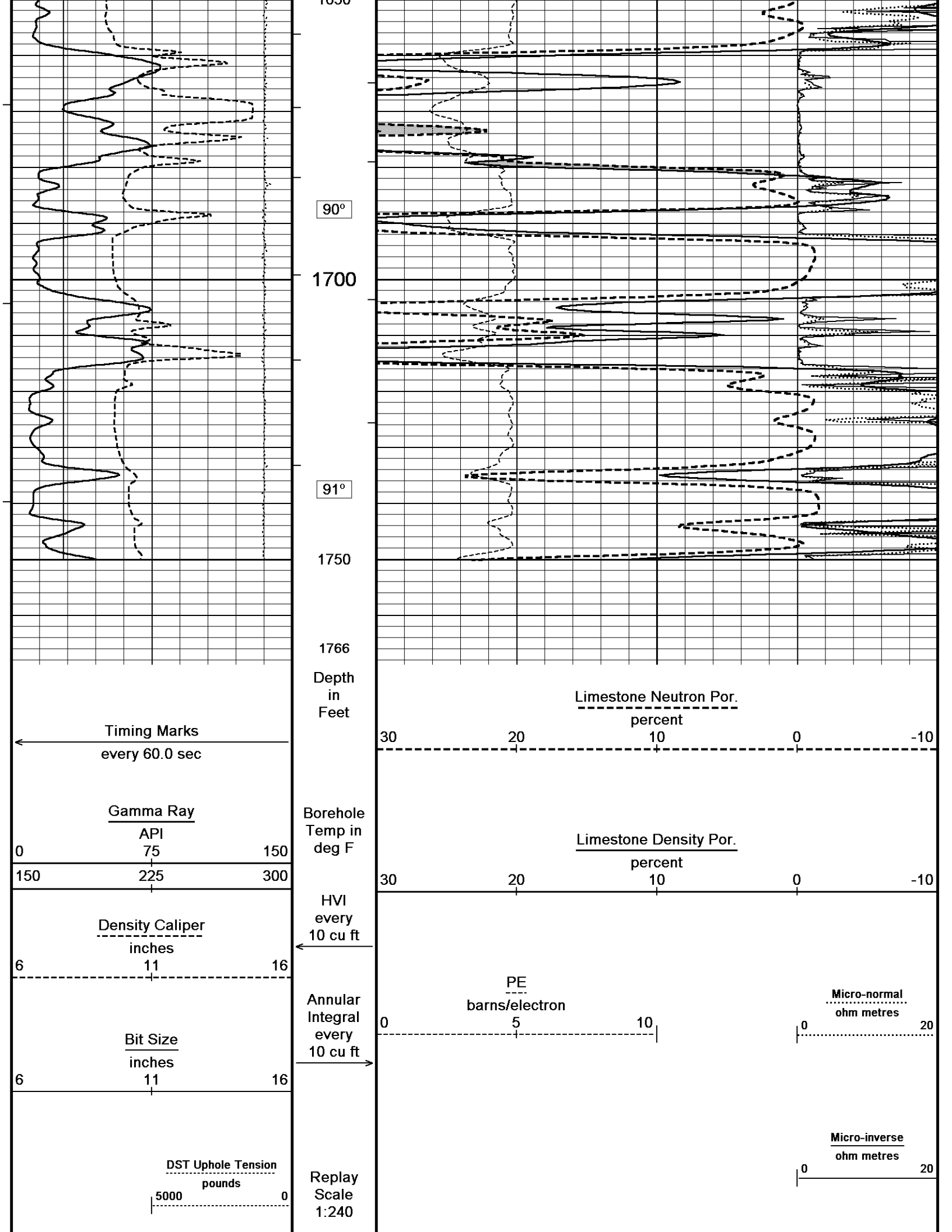
- ENGINEER: ADAM SILL, DEREK CARTER

- OPERATOR: NICOLAS ADAME, OSCAR CRUZ

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 18-OCT-2013 06:14
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
Recorded on 18-OCT-2013 02:50
System Versions: Plotted with 13.05.9583




90°
1700
91°
1750
1766
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
Micro-normal
ohm metres
0
20
Micro-inverse
ohm metres
0
20

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
System Versions: Plotted with 13.05.9583

Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:50

5 INCH MAIN

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
System Versions: Plotted with 13.05.9583

Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:50

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

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

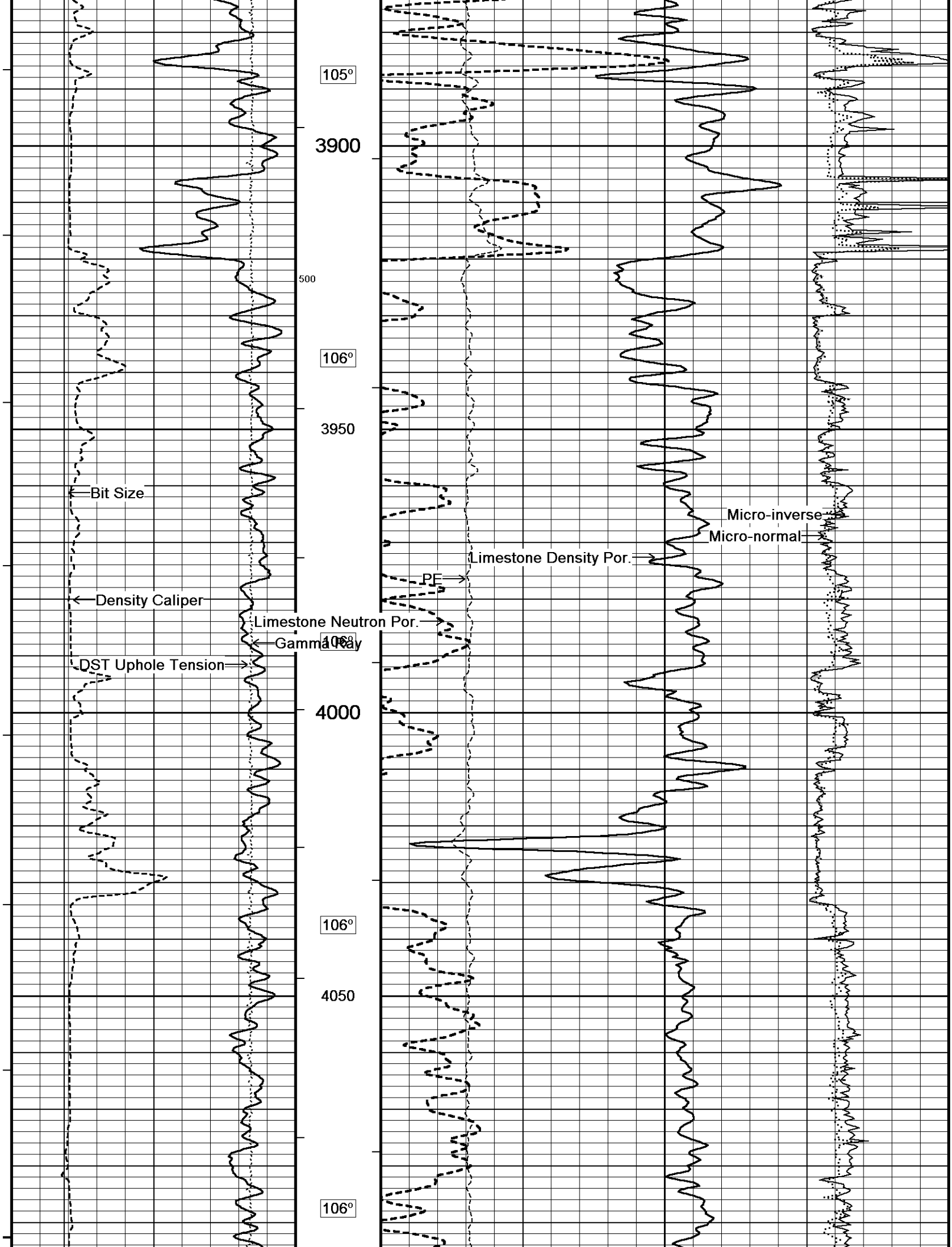
Micro-inverse
ohm metres
0 20

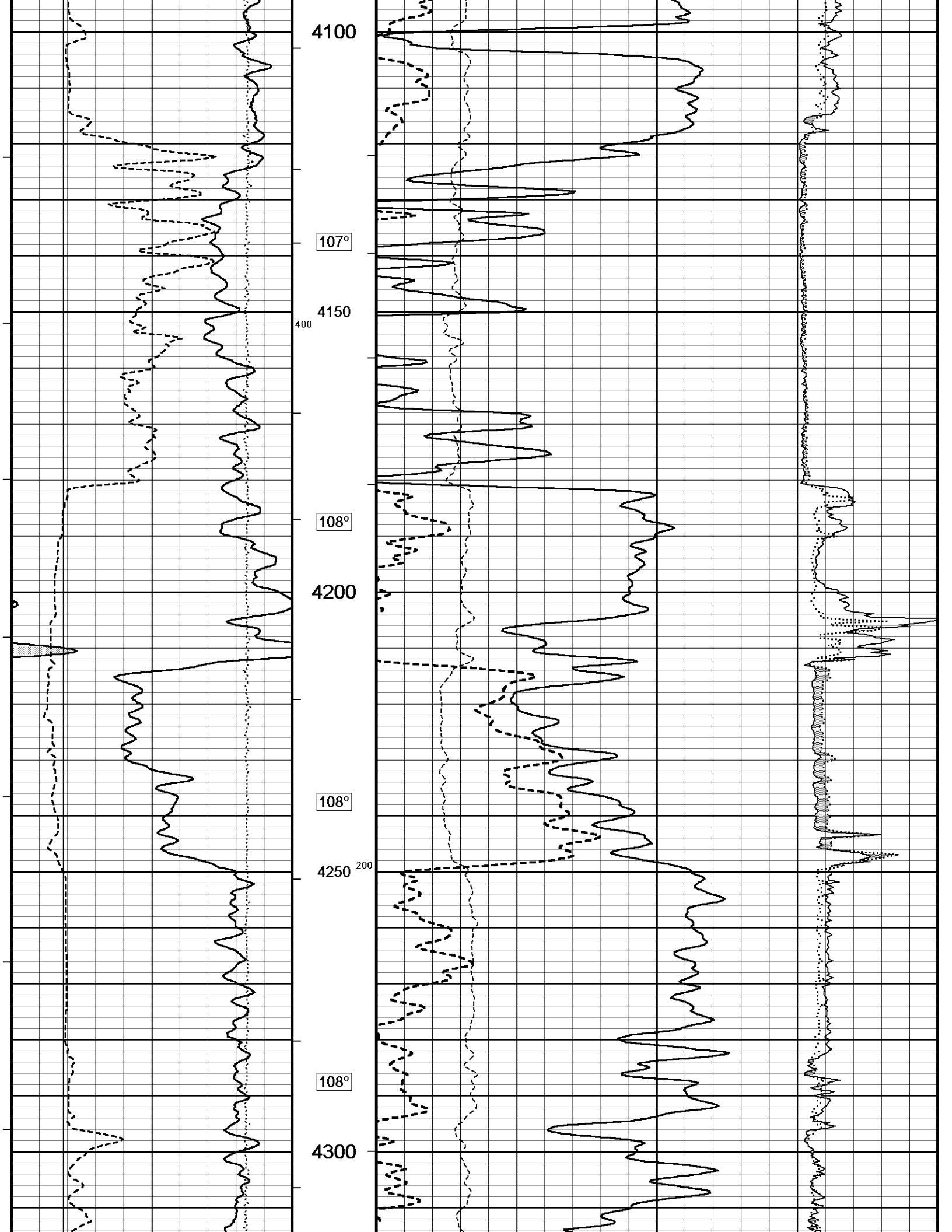
3800

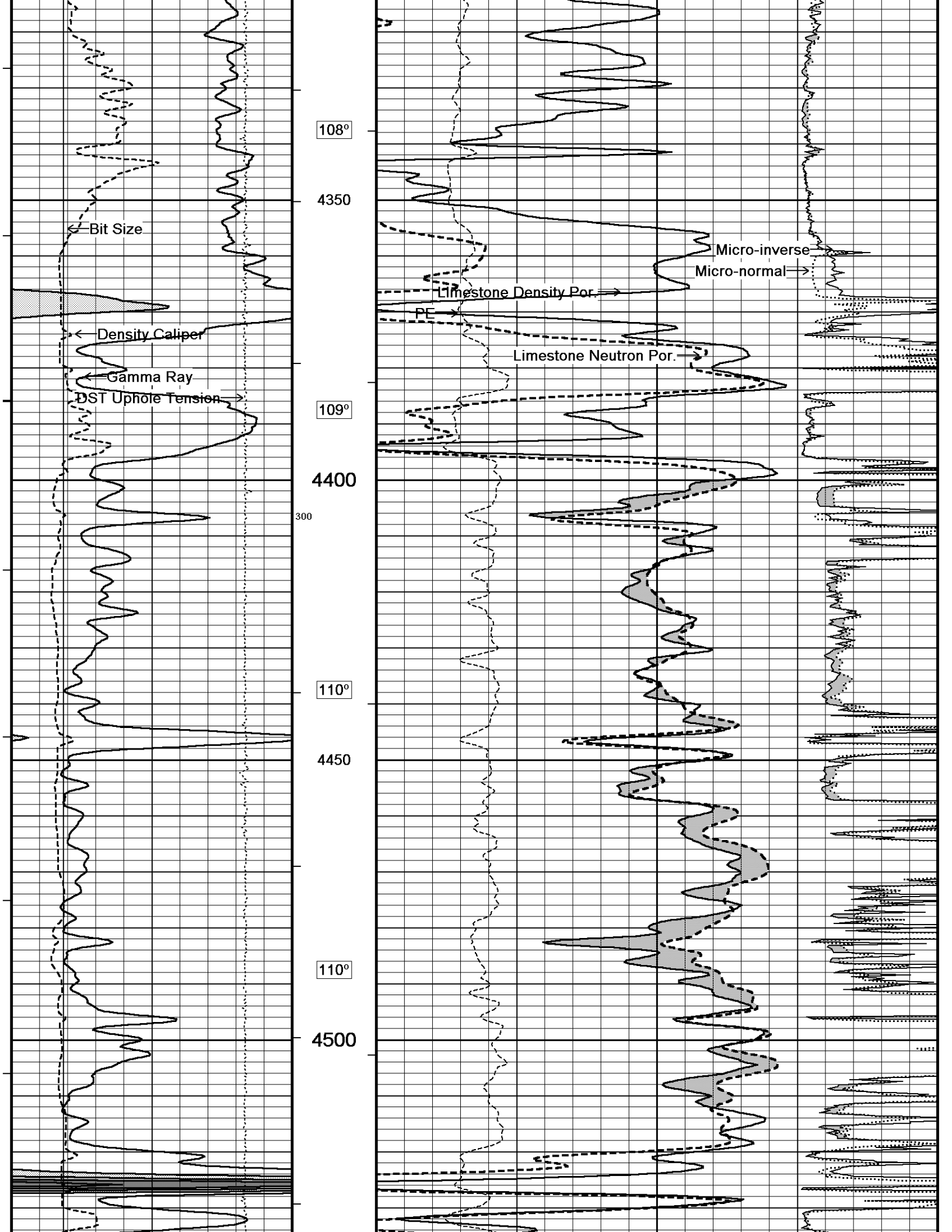
105°

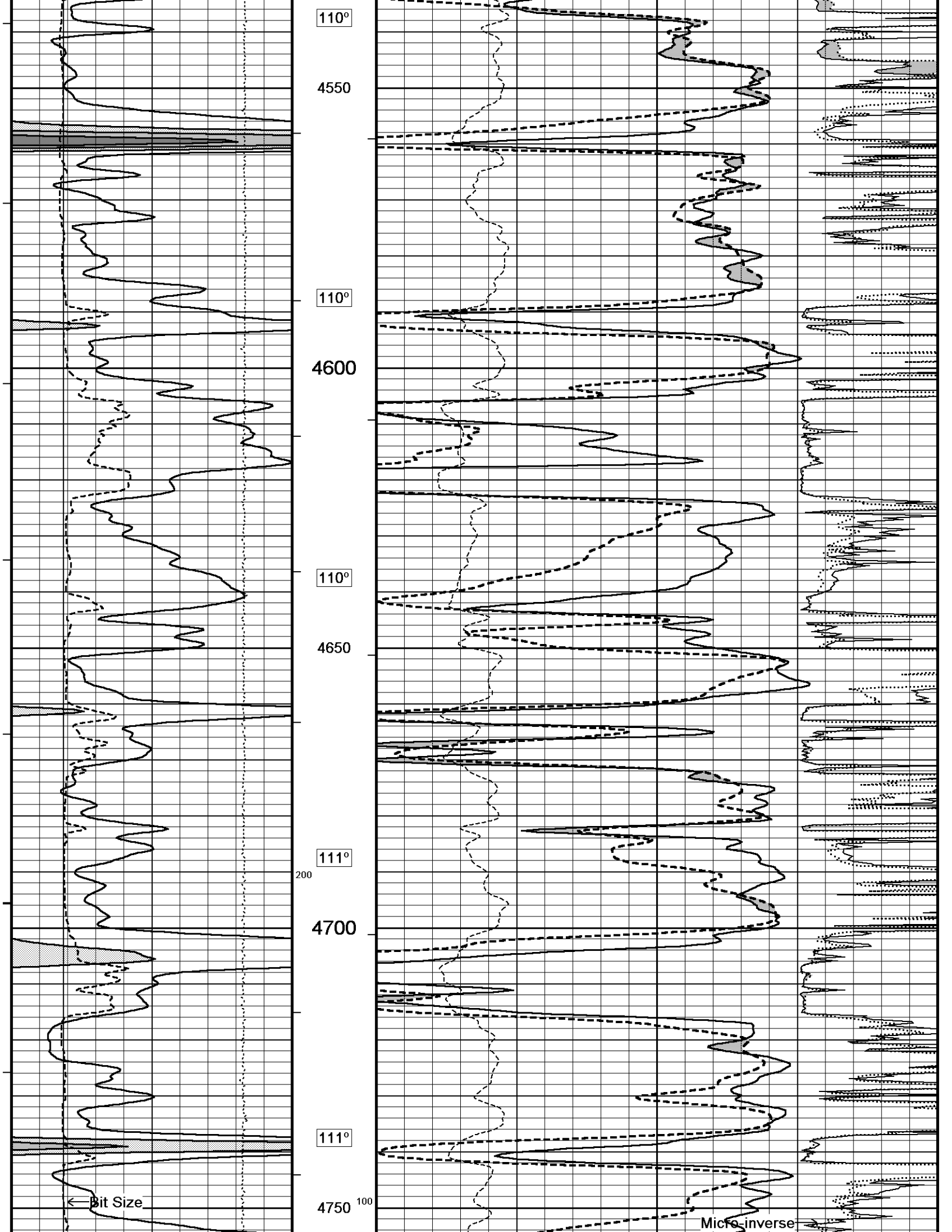
3850

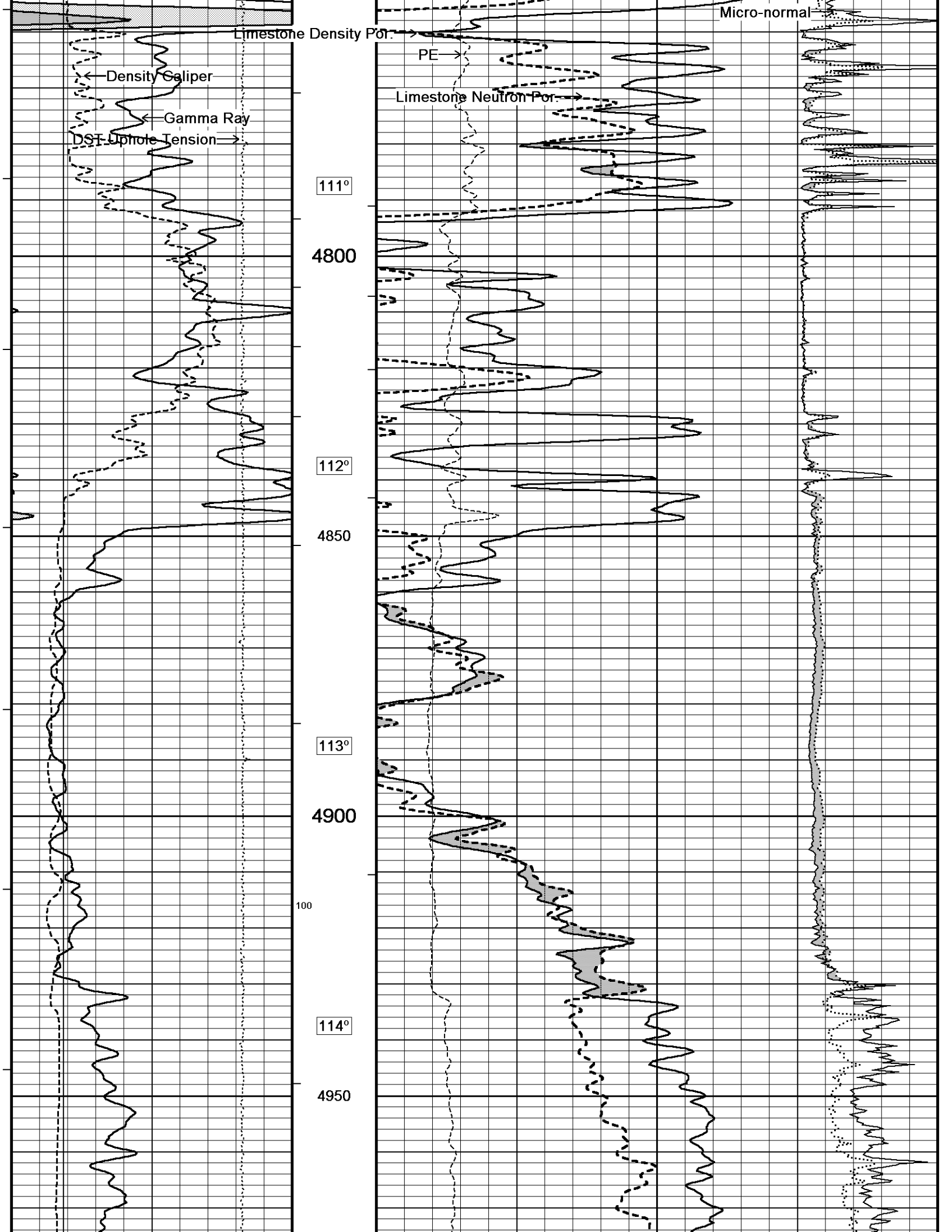
300

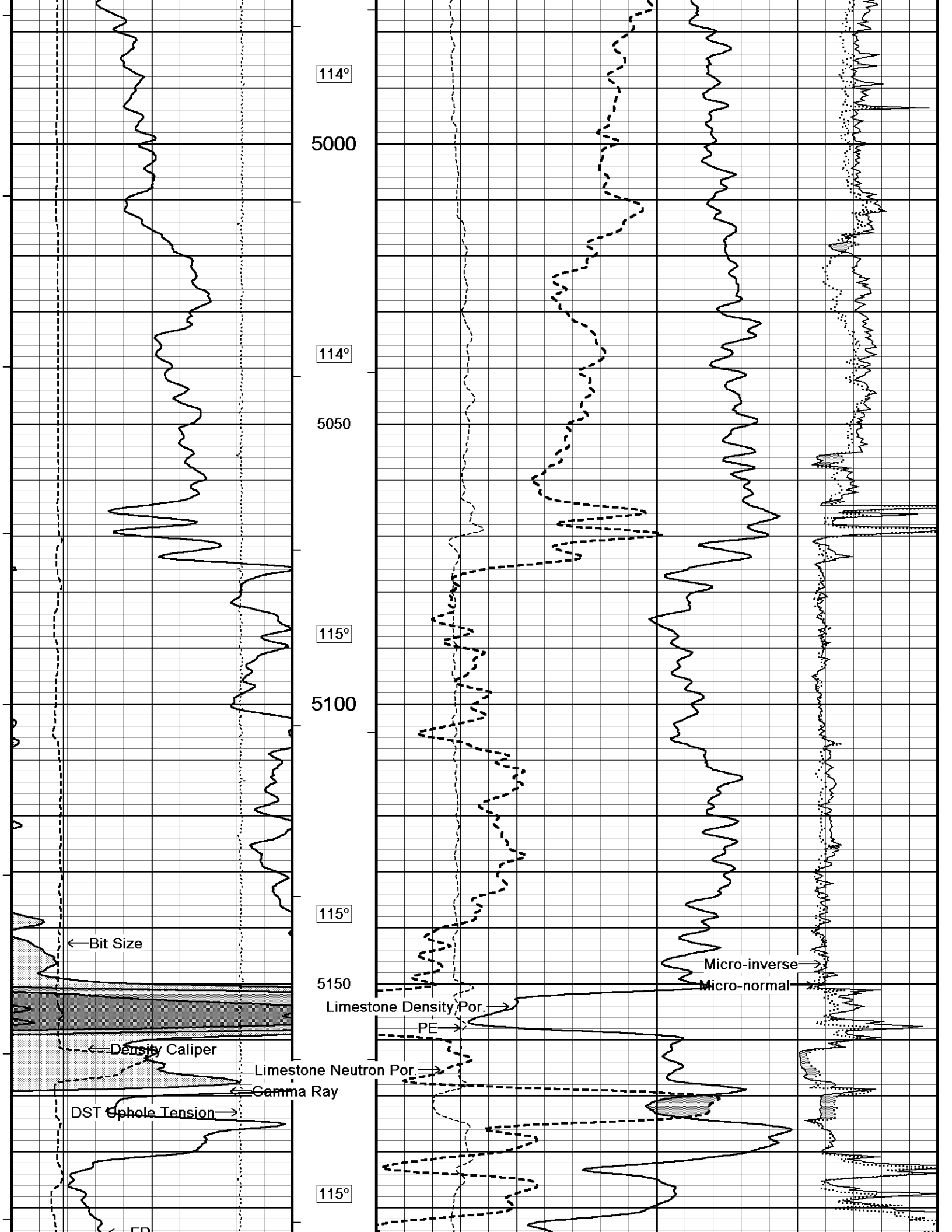

105°
3900
500
106°
3950
Bit Size
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Density Caliper
Limestone Neutron Por.
106°
Gamma Ray
DST Uphole Tension
4000
106°
4050
106°

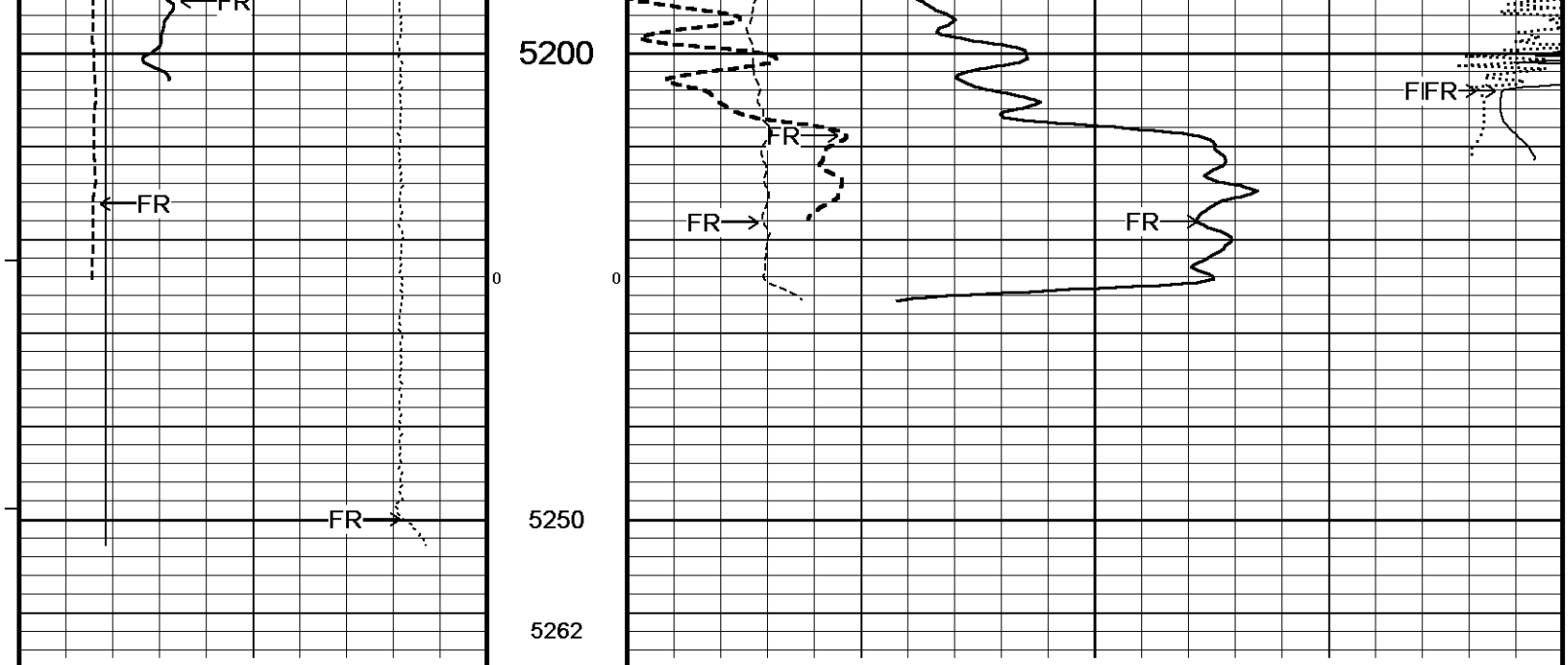

4100
107°
4150
400
108°
4200
108°
4250
200
108°
4300


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Limestone Neutron Por.
108°
4350
109°
4400
300
110°
4450
110°
4500


110°
4550
110°
4600
110°
4650
111°
200
4700
111°
← Bit Size
4750
100
Micro-inverse


Limestone Density Por.
PE
Micro-normal
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
111°
4800
112°
4850
113°
4900
100
114°
4950


114°
5000
114°
5050
115°
5100
115°
5150
115°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Limestone Neutron Por.
Micro-inverse
Micro-normal



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

Micro-normal
ohm metres
0 20

Micro-inverse
ohm metres
0 20

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
System Versions: Plotted with 13.05.9583

Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:50

5 INCH MAIN

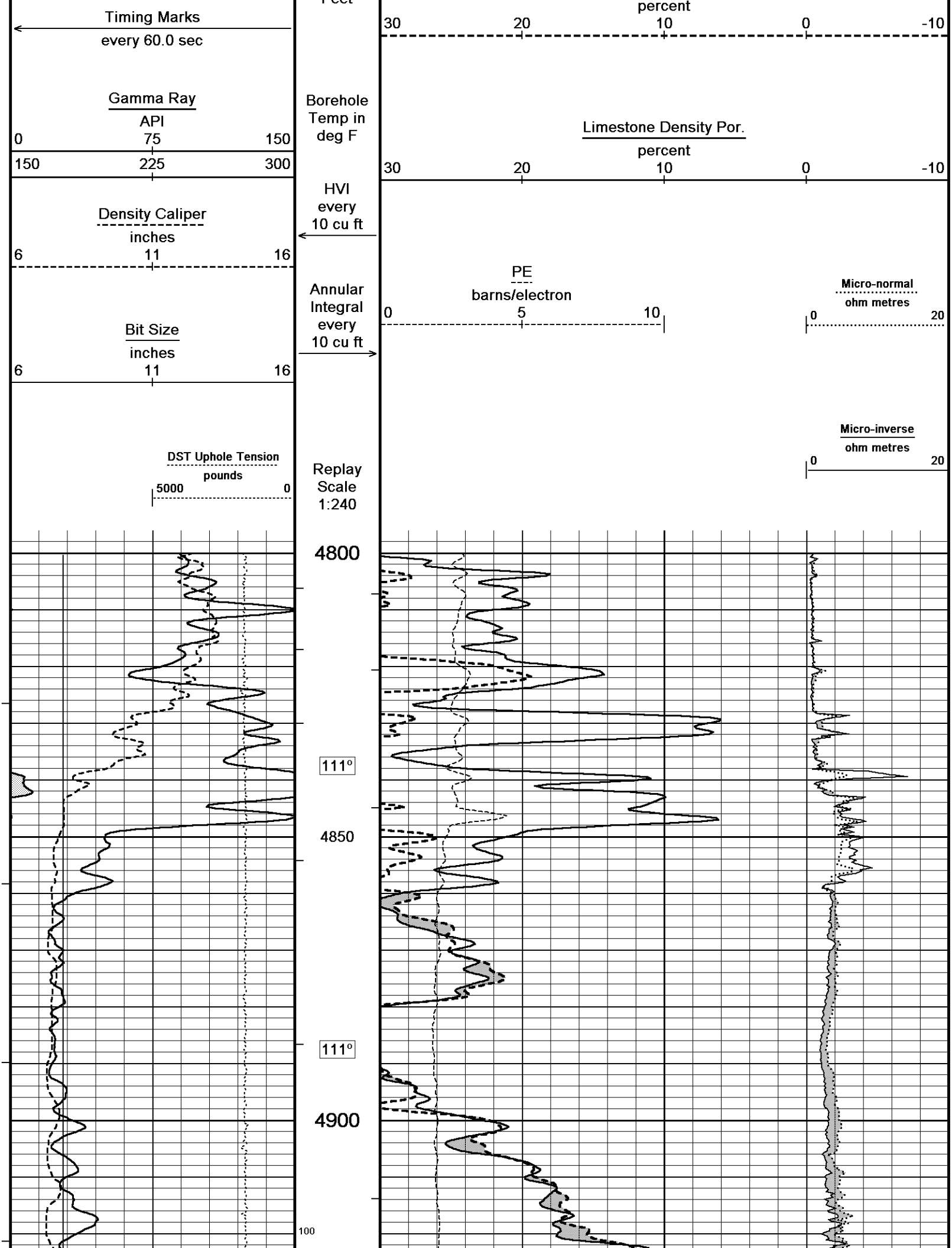
REPEAT SECTION

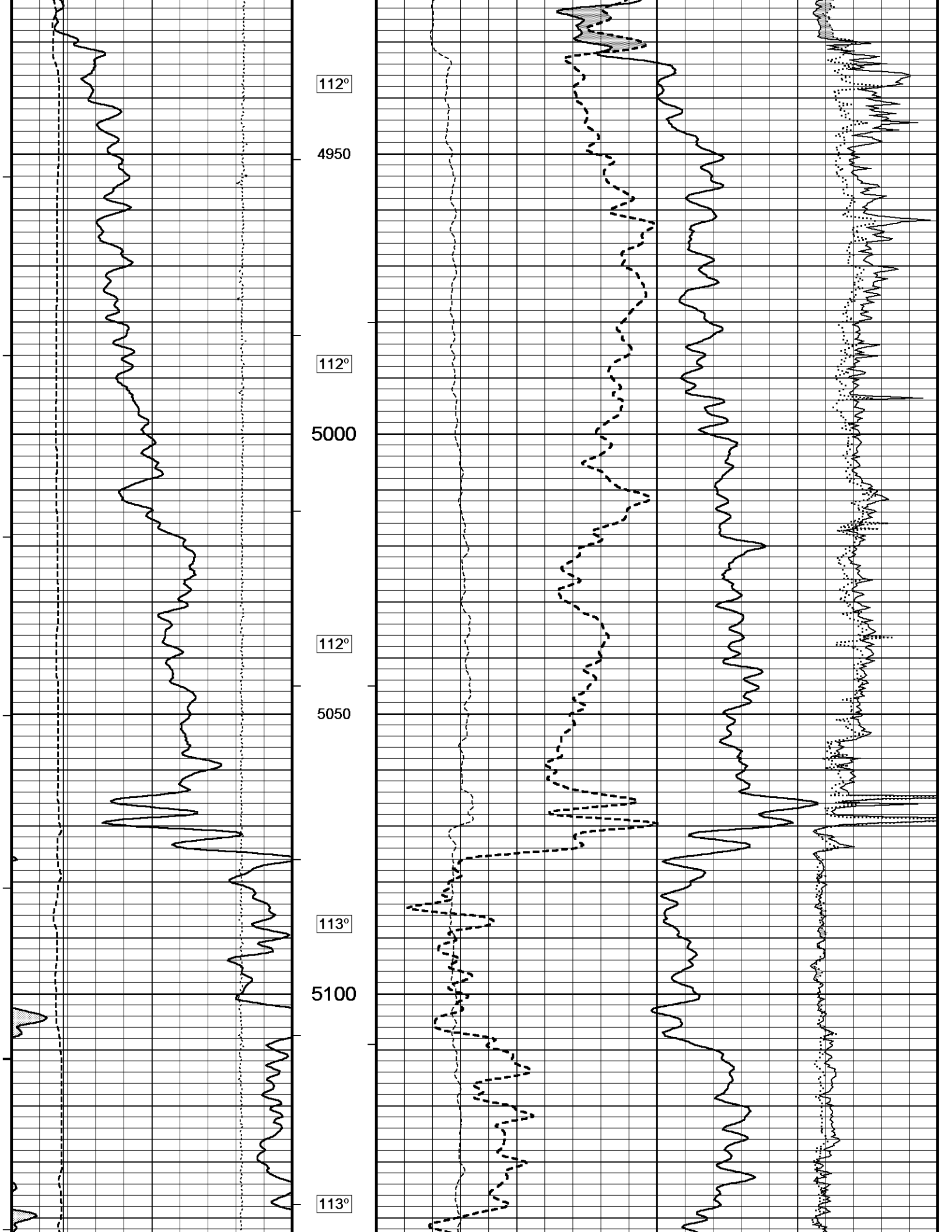
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Repeat.dta
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

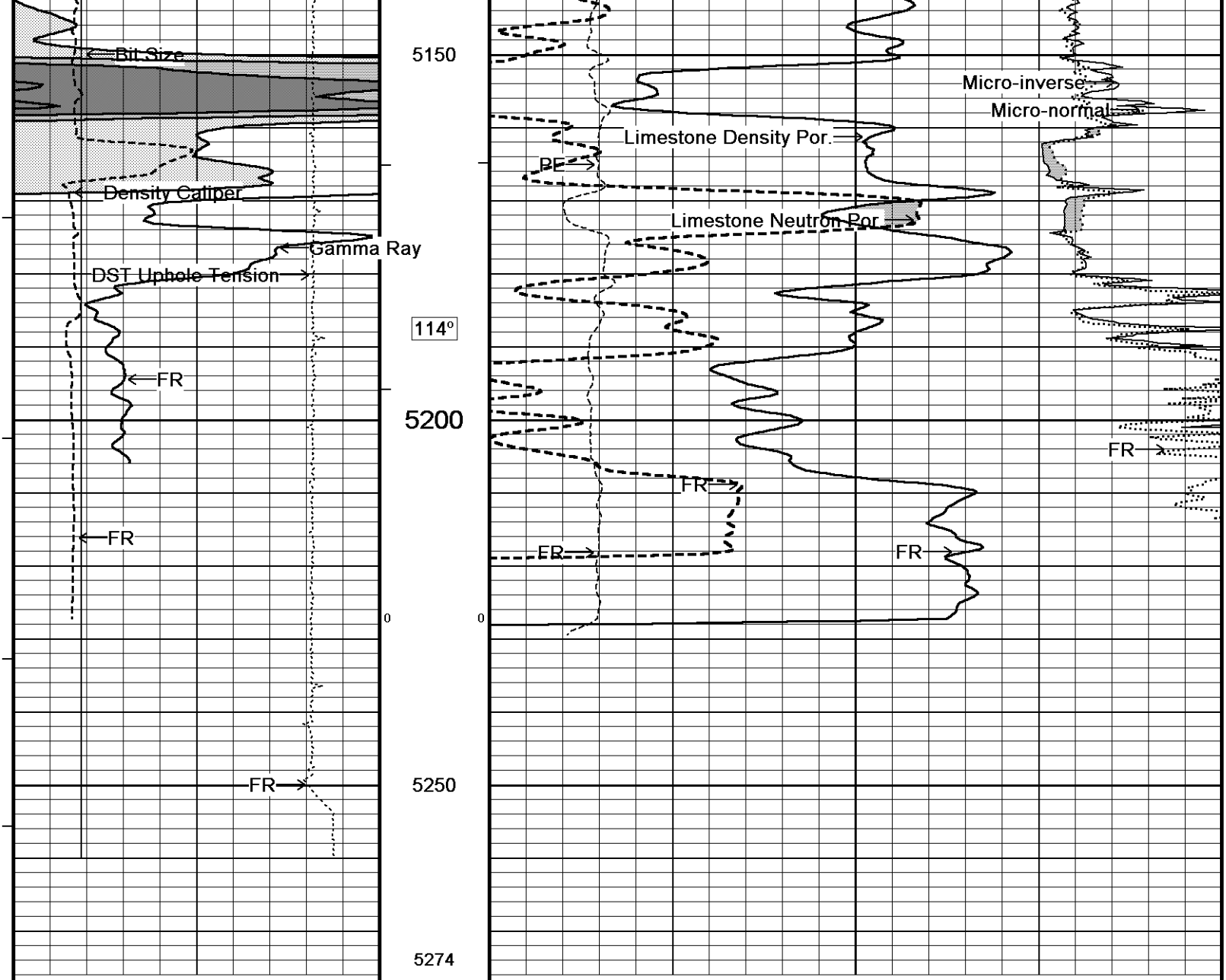
Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:10

Depth in Feet

Limestone Neutron Por.


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
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
4800
111°
4850
111°
4900
100


112°
4950
112°
5000
112°
5050
113°
5100
113°



5274

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

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

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

DST Uphole Tension
pounds
5000 0

Replay
Scale
1:240

ohm metres
0 20

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Repeat.dta
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:10

REPEAT SECTION

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
System Versions: Plotted with 13.05.9583

Plotted on 18-OCT-2013 06:14
Recorded on 18-OCT-2013 02:50

Timing Marks
every 60.0 sec

Depth
in
Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

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

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

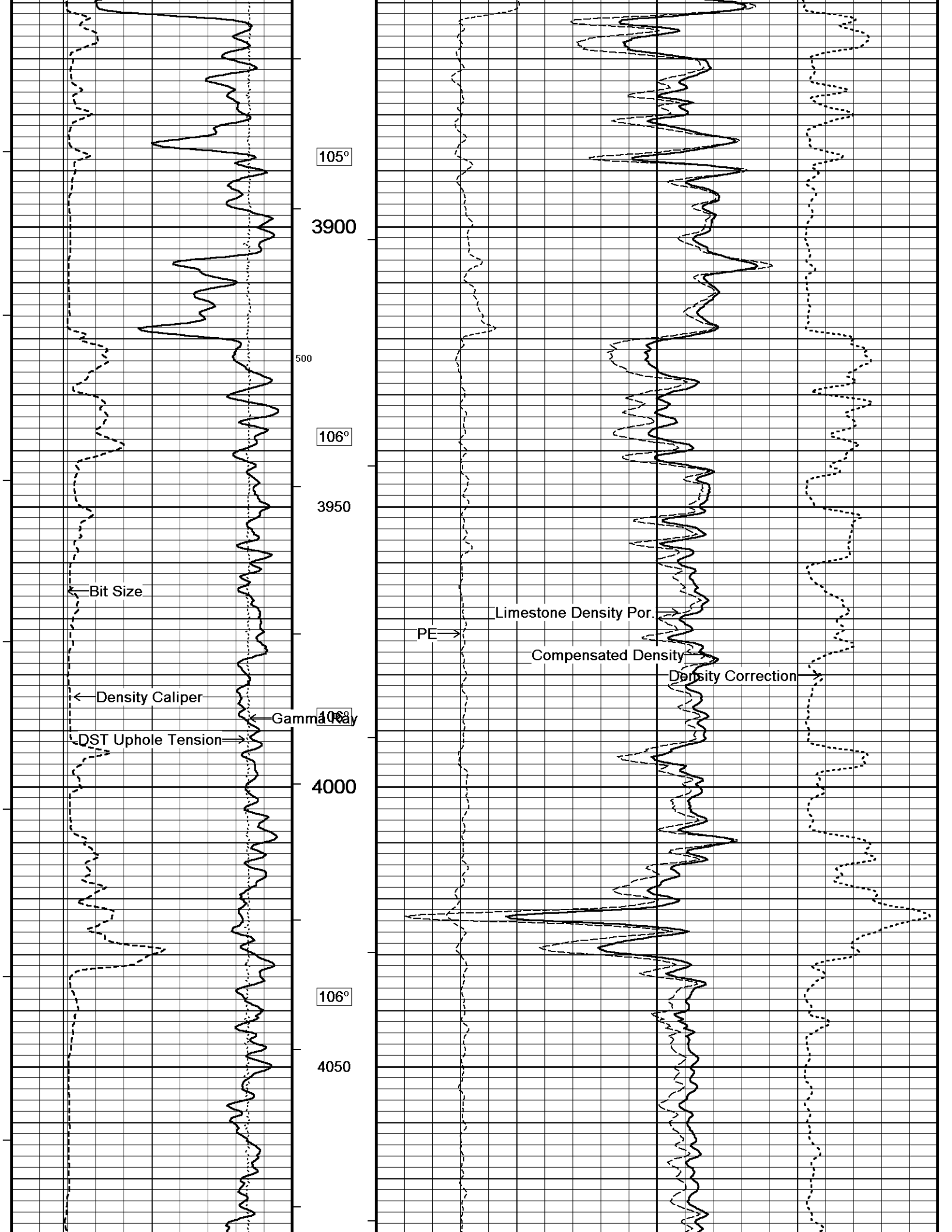
Replay
Scale
1:240

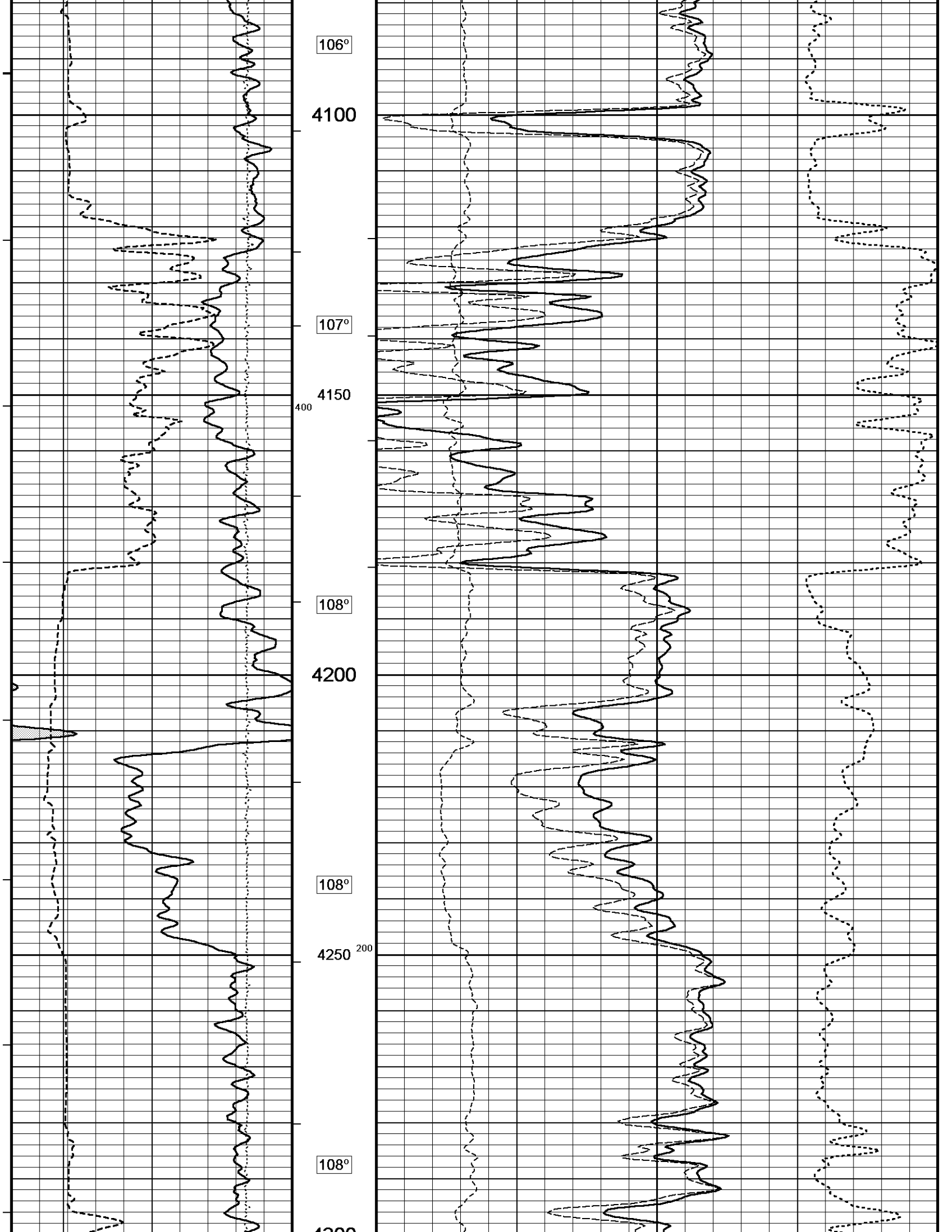
3800

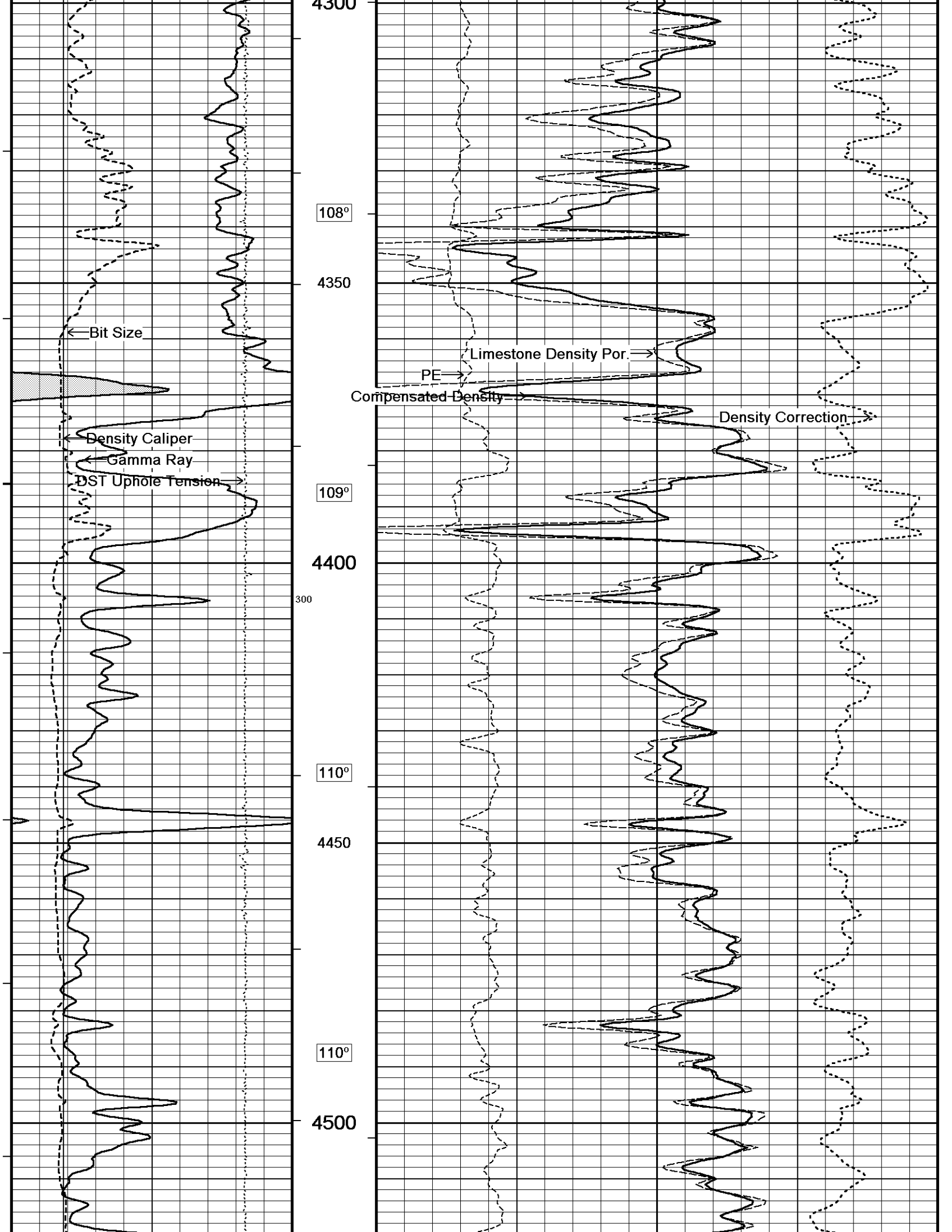
105°

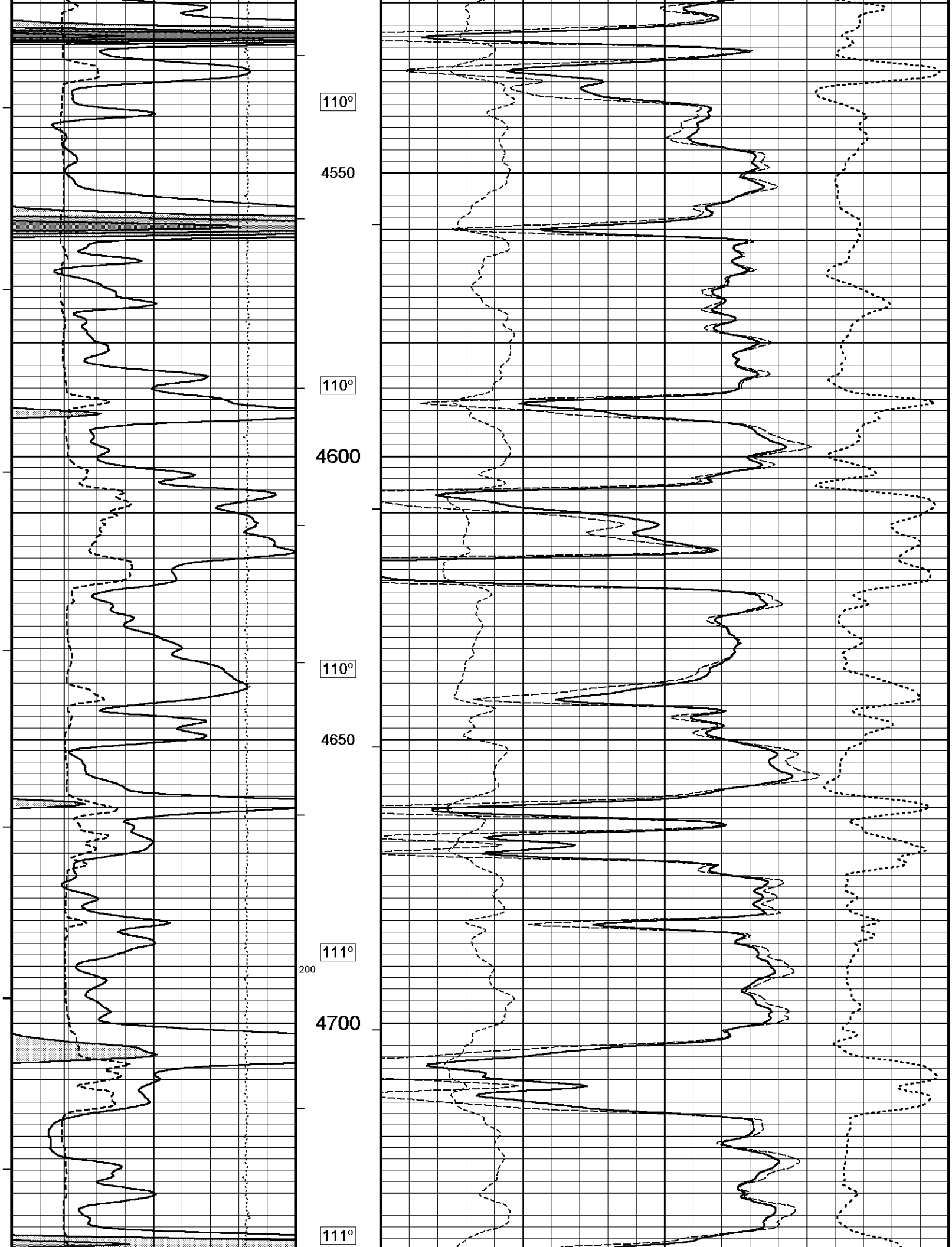
3850

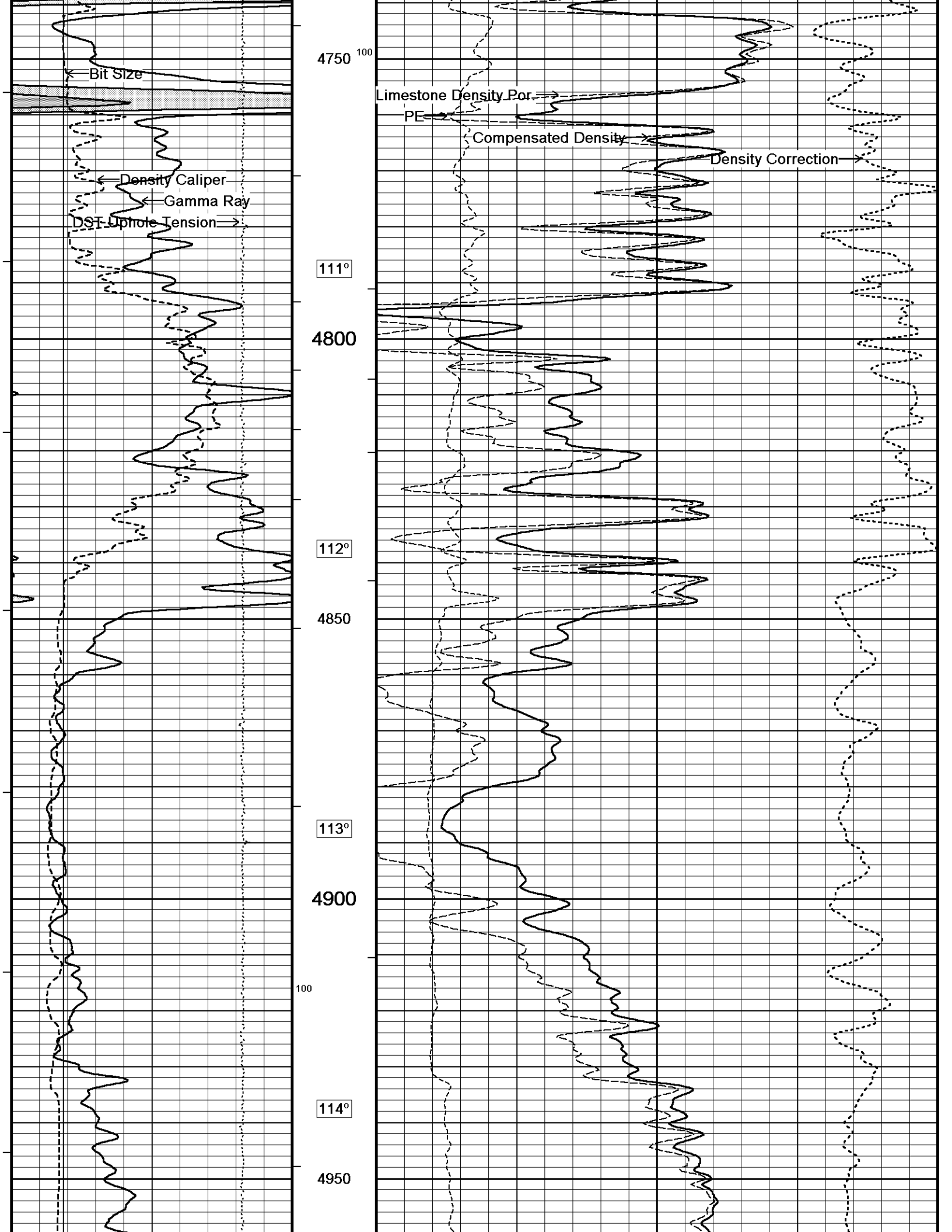
300

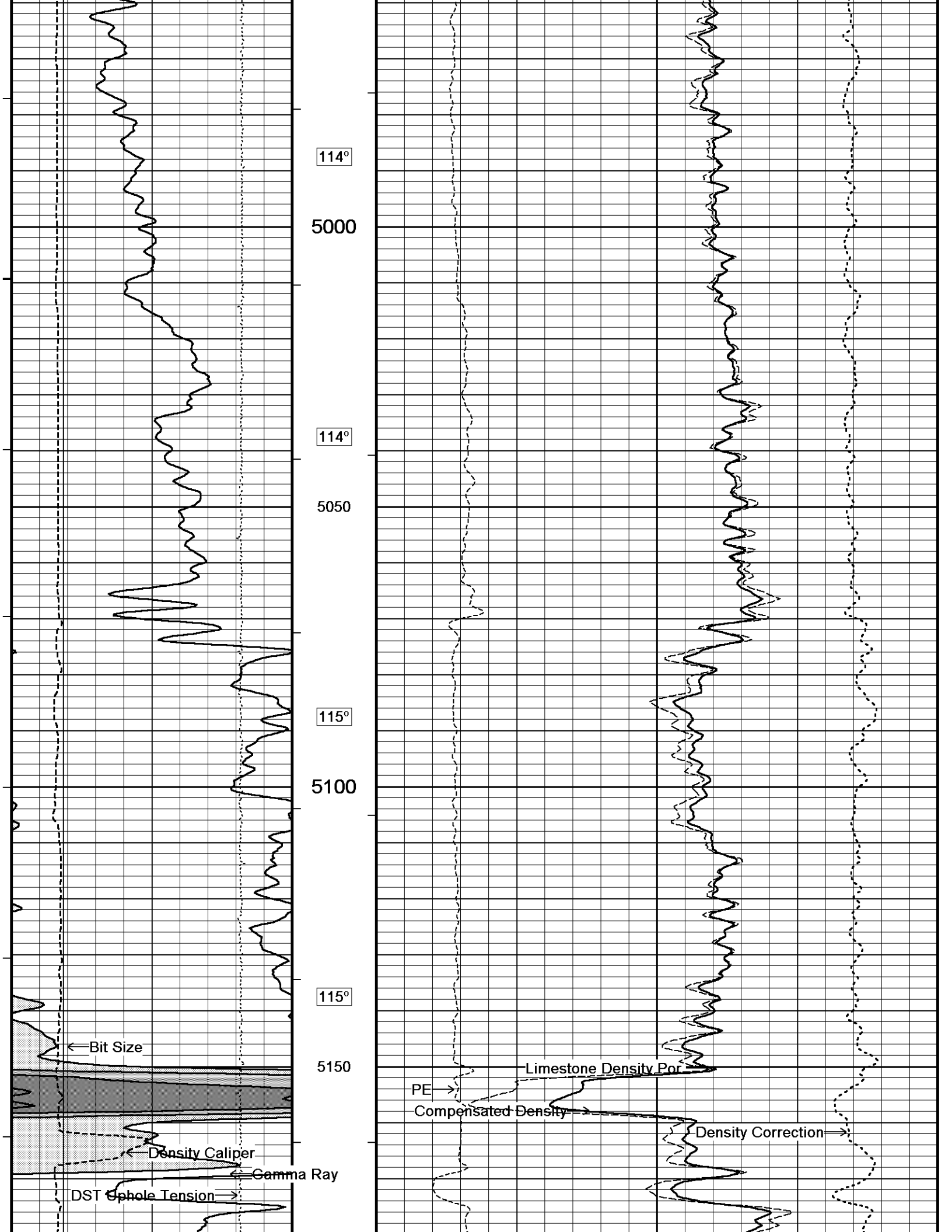

105°
3900
500
106°
3950
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
4000
106°
4050

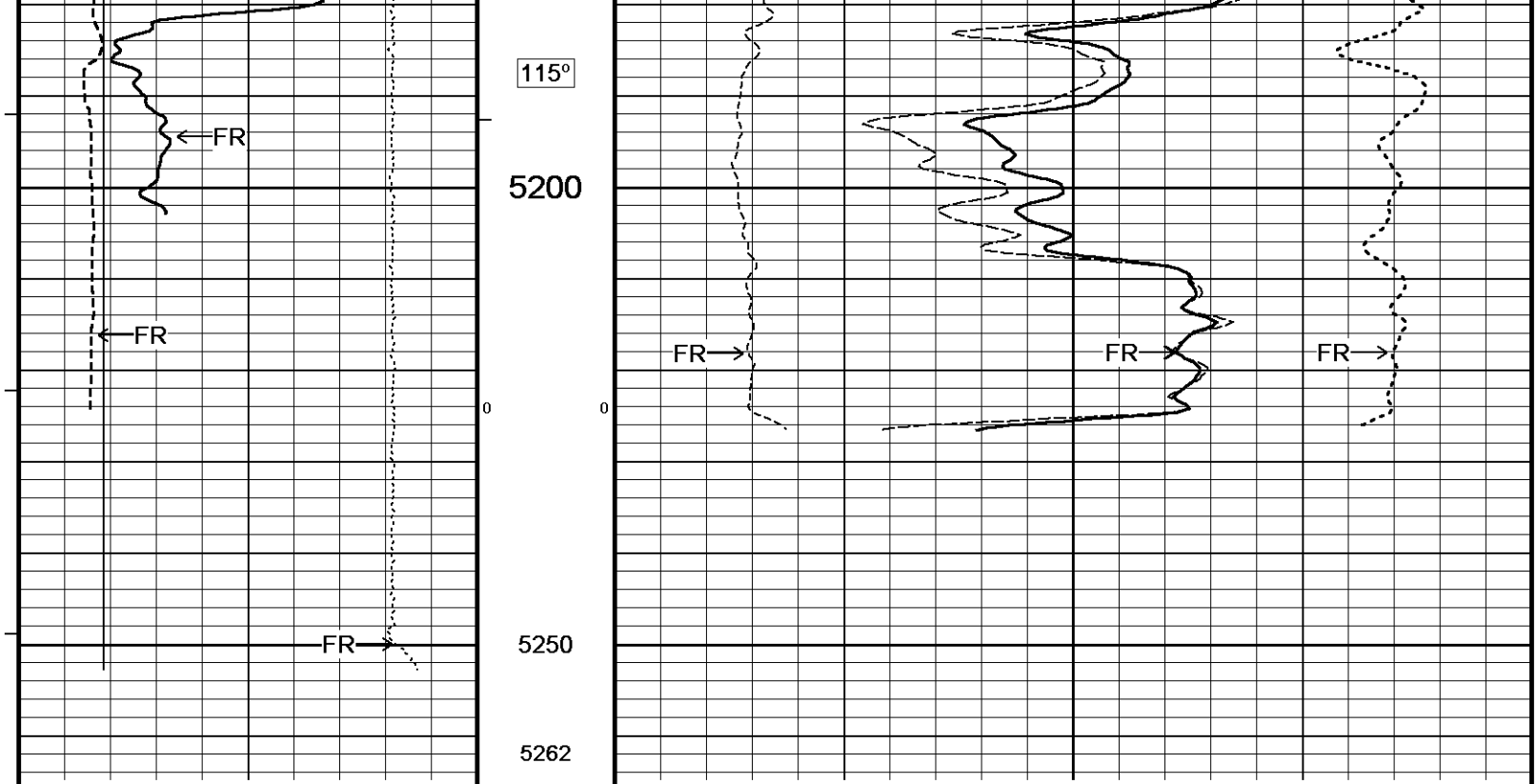

106°
4100
107°
4150
400
108°
4200
108°
4250
200
108°


4300
108°
4350
Bit Size
Limestone Density Por
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
109°
4400
300
110°
4450
110°
4500


110°
4550
110°
4600
110°
4650
111°
200
4700
111°


Bit Size
Density Caliper
Gamma Ray
DST - Uphole Tension
4750
100
Limestone Density Por
PE
Compensated Density
Density Correction
111°
4800
112°
4850
113°
4900
100
114°
4950


114°
5000
114°
5050
115°
5100
115°
5150
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
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 18-OCT-2013 06:14
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta
Recorded on 18-OCT-2013 02:50
System Versions: Plotted with 13.05.9583

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 18-OCT-2013 06:14
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Repeat.dta
Recorded on 18-OCT-2013 02:10

Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #R\CMX Bartender #1 Repeat.dta Recorded on 18-OCT-2013 02:10

System Versions: Logged 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

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

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

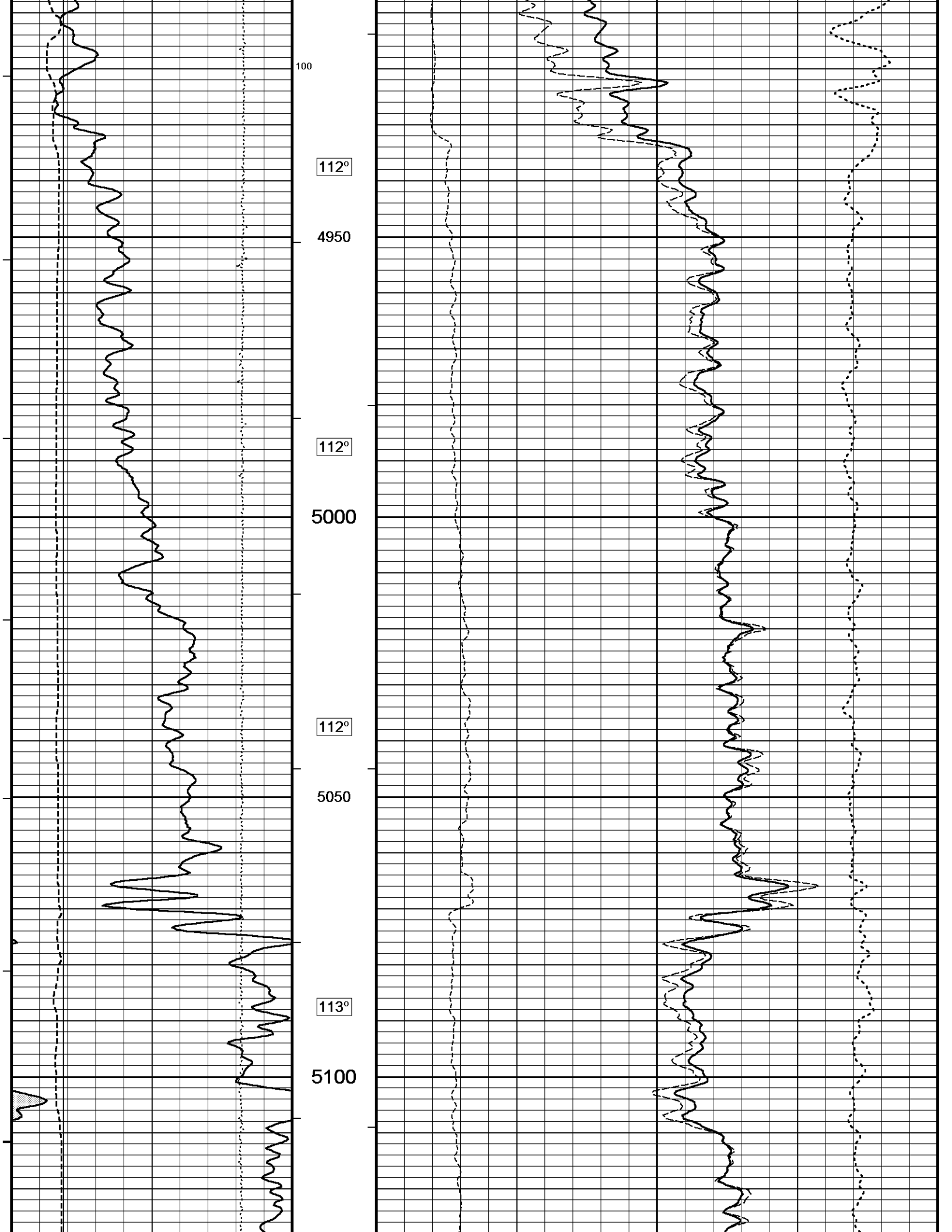
4800

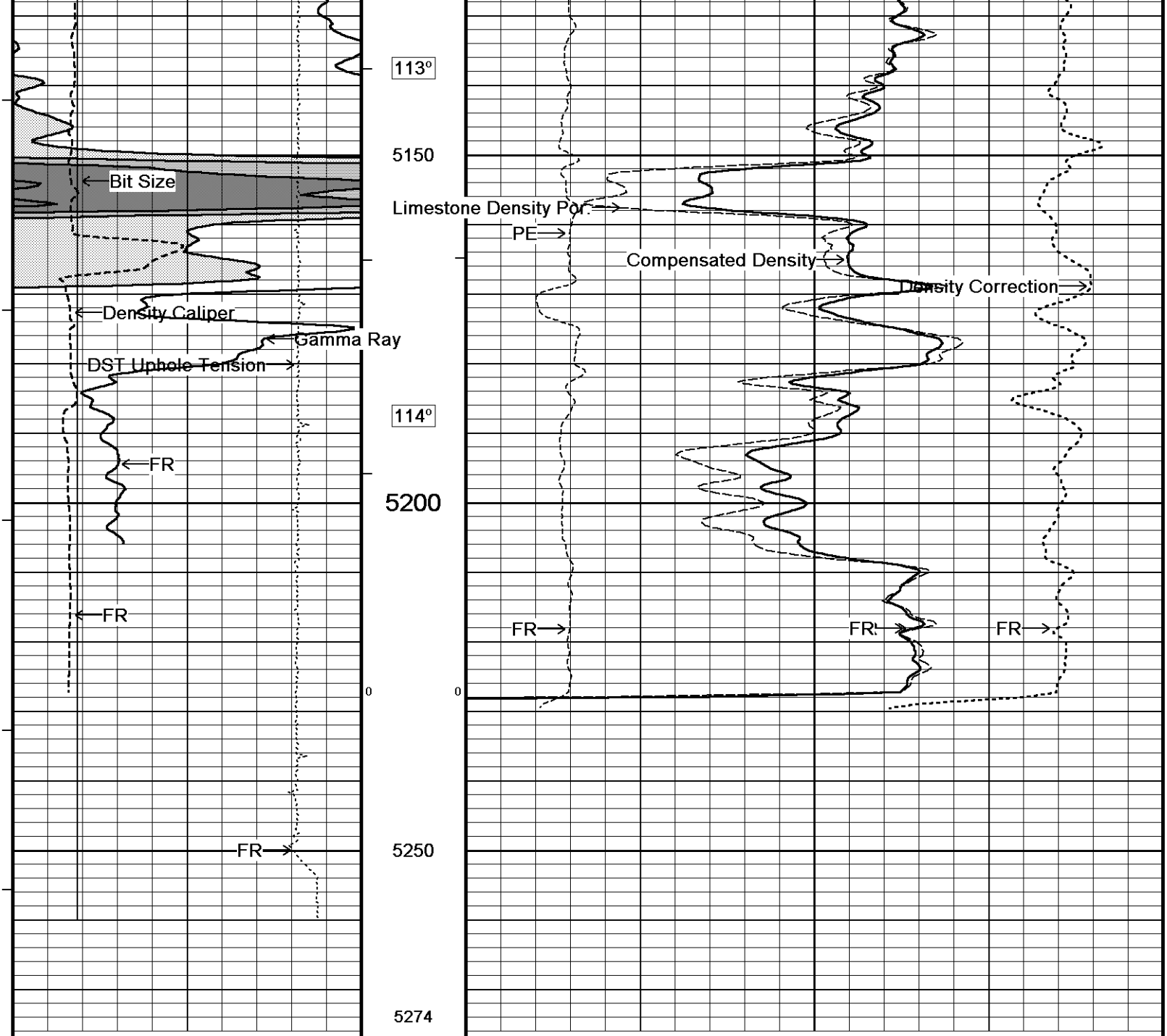
111°

4850

111°

4900


100
112°
4950
112°
5000
112°
5050
113°
5100



5274

Depth in Feet

Timing Marks
every 60.0 sec

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Gamma Ray
API
0 75 150
150 225 300

Borehole Temp in deg F

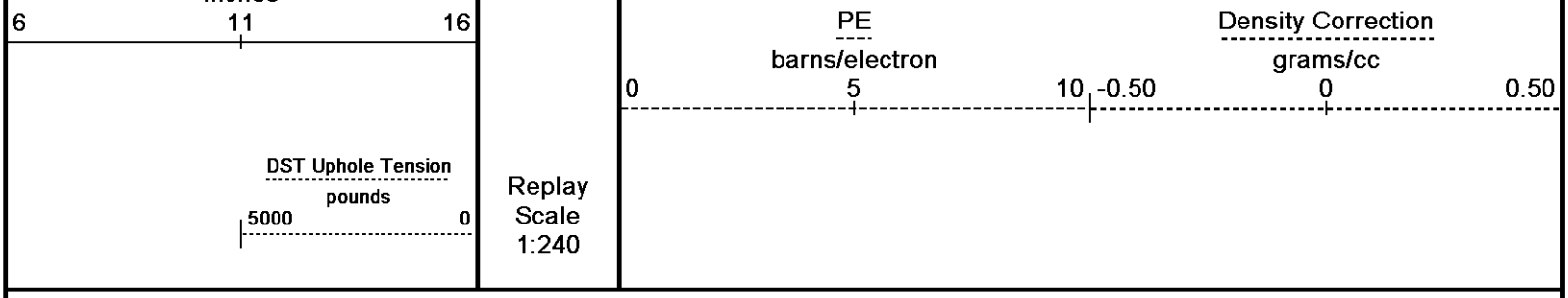
HVI every 10 cu ft

Limestone Density Por.
percent
30 20 10 0 -10

Density Caliper
inches
6 11 16

Annular Integral every 10 cu ft

Bit Size
inches



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 18-OCT-2013 06:14
Filename: C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Repeat.dta — Recorded on 18-OCT-2013 02:10
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.dta

General Constants All 000

Last Edited on 17-OCT-2013,21:03

General Parameters		
Mud Resistivity	0.720	ohm-metres
Mud Resistivity Temperature	88.000	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 18-OCT-2013 01:09

Reading No	Measured	Calibrated (lbs)
1	15067.27	-1.00
2	15825.18	480.00

Gamma Calibration MCG-D.K 443

Field Calibration on 11-OCT-2013 14:38

	Measured	Calibrated (API)
Background	71	48
Calibrator (Gross)	1136	773
Calibrator (Net)	1066	725

Gamma Constants MCG-D.K 443

Last Edited on 17-OCT-2013,21:03

Gamma Calibrator Number	GRC38	
Mud Density	1.12	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-D.K 443

Field Calibration on 08-OCT-2013 02:27

	Measured	Calibrated (mV)
Reference 1	99.3	99.0
Reference 2	-96.6	-99.0

High Resolution Temperature Calibration MCG-D.K 443

Field Calibration on 08-OCT-2013,02:22

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

High Resolution Temperature Constants MCG-D.K 443

Last Edited on 08-OCT-2013,02:22

Pre-filter Length	11

Caliper Calibration MML-A 16

Base Calibration on 11-OCT-2013 14:20
Field Calibration on 11-OCT-2013 14:21

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13890	5.98
2	17012	7.97
3	20232	9.86
4	24164	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 16

Base Calibration on 11-OCT-2013 14:03
Field Check on 11-OCT-2013 14:05

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	15.6	78.3	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.3	48.3

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 17-OCT-2013,21:03

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-B.J 387

Base Calibration on 11-OCT-2013 11:56
Field Check on 11-OCT-2013 12:13

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2939	89	3714	110
Ratio	32.951		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1693	2506
Ratio	0.676	

Field Check	Calibrated (cps)
Ratio	0.670

Neutron Constants MDN-B.J 387

Last Edited on 17-OCT-2013,21:03

Neutron Source Id	P58125B	
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-A.A 55

Base Calibration on 11-OCT-2013 14:27
Field Check on 11-OCT-2013 14:32

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	954.0	126.8
Base Check		280.9
Field Check		280.8

FE Constants MFE-A.A 55

Last Edited on 17-OCT-2013,21:02

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

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	

Peak Amplitude Source

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)	Depth (m)
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	No
Use 4' Waveform to derive TR	No
Use 5' Waveform to derive TR	No

Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter		
4' Waveform Filter		
5' Waveform Filter		
6' Waveform Filter		
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

Induction Calibration MAI-A.A 178

Base Calibration on 28-AUG-2013,08:48
Field Check on 11-OCT-2013 10:39

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.6	484.7	9.3	966.2
2	6.2	391.4	7.6	821.4
3	4.0	264.5	5.2	566.0
4	2.3	135.1	2.6	279.2

Array Temperature 77.0 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	12.0	3763.6	12.0	3763.7
2	29.6	3468.2	29.6	3468.1
3	27.2	3014.9	27.2	3014.7
4	18.8	2065.5	18.8	2065.4
Deep	15.9	1995.7	15.9	1995.6
Medium	40.3	3956.3	40.3	3955.9
Shallow	45.4	5083.8	45.3	5083.6
Array Temperature	66.9		67.3	Deg F

Induction Constants MAI-A.A 178

Last Edited on 17-OCT-2013,21:02

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 178

Field Calibration on 08-OCT-2013,02:22

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

High Resolution Temperature Constants MAI-A.A 178

Last Edited on 08-OCT-2013,02:22

Pre-filter Length	11

Photo Density Calibration MPD-B 59

Base Calibration on 11-OCT-2013 11:07
Field Check on 11-OCT-2013 11:17

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	56267	27692	59556	30836
Reference 2	22857	2469	24941	2541
Field Check at Base	1197.2	1246.8		
Field Check	1189.0	1248.3		

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	216	1075		
Reference 1	20854	56084	0.375	0.371
Reference 2	5994	22721	0.267	0.272
Field Check at Base	216.2	1074.8		
Field Check	215.3	1063.1		

Density Constants MPD-B 59

Last Edited on 17-OCT-2013,21:03

Density Source Id	P50557B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.12	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-B 59

Base Calibration on 11-OCT-2013 10:50
Field Calibration on 11-OCT-2013 10:51

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15529	3.99
2	24192	5.98
3	32738	7.97
4	40962	9.86
5	50171	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.95	5.98

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\CMX Bartender #1\CMX Bartender #1 Main Pass.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-D.K 443 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

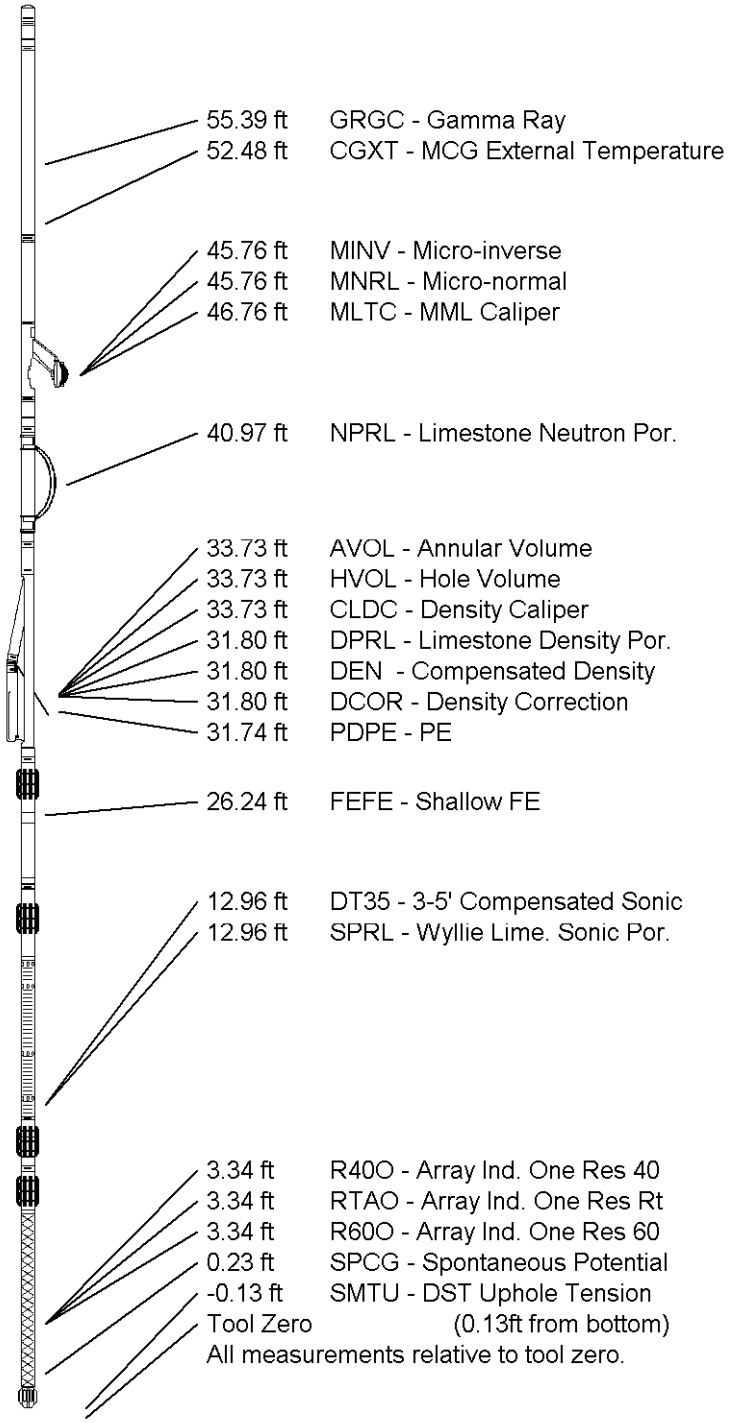
Compact Density/Caliper
MPD-B 59 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 55 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 178 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.25 ft Weight: 471.8 lb



COMPANY CMX, INC.

WELL	BARTENDER #1
FIELD	STRANATHAN
PROVINCE/COUNTY	BARBER
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1377.00	feet	First Reading	5218.26	feet
Elevation Drill Floor	1375.00	feet	Depth Driller	5250.00	feet
Elevation Ground Level	1369.00	feet	Depth Logger	5250.00	feet

Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG