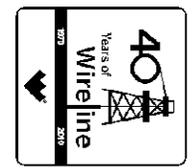




Weatherford[®]

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRO RESISTIVITY LOG**

COMPANY GRAND MESA OPERATING COMPANY, INC
 WELL SMITH #1-34
 FIELD WILDCAT
 PROVINCE/COUNTY LOGAN
 COUNTRY/STATE U.S.A. / KANSAS
 LOCATION 1896' FNL & 2374' FWL



SEC TWP RGE Other Services
 34 12S 32W MAI/MFE

API Number 15-109-20959
 Permit Number

Permanent Datum G.L., Elevation 2978 feet
 Log Measured From K.B. @ 5 FEET above Permanent Datum
 Drilling Measured From K.B.

Elevations: feet
 KB 2983.00
 DF 2982.00
 GL 2978.00

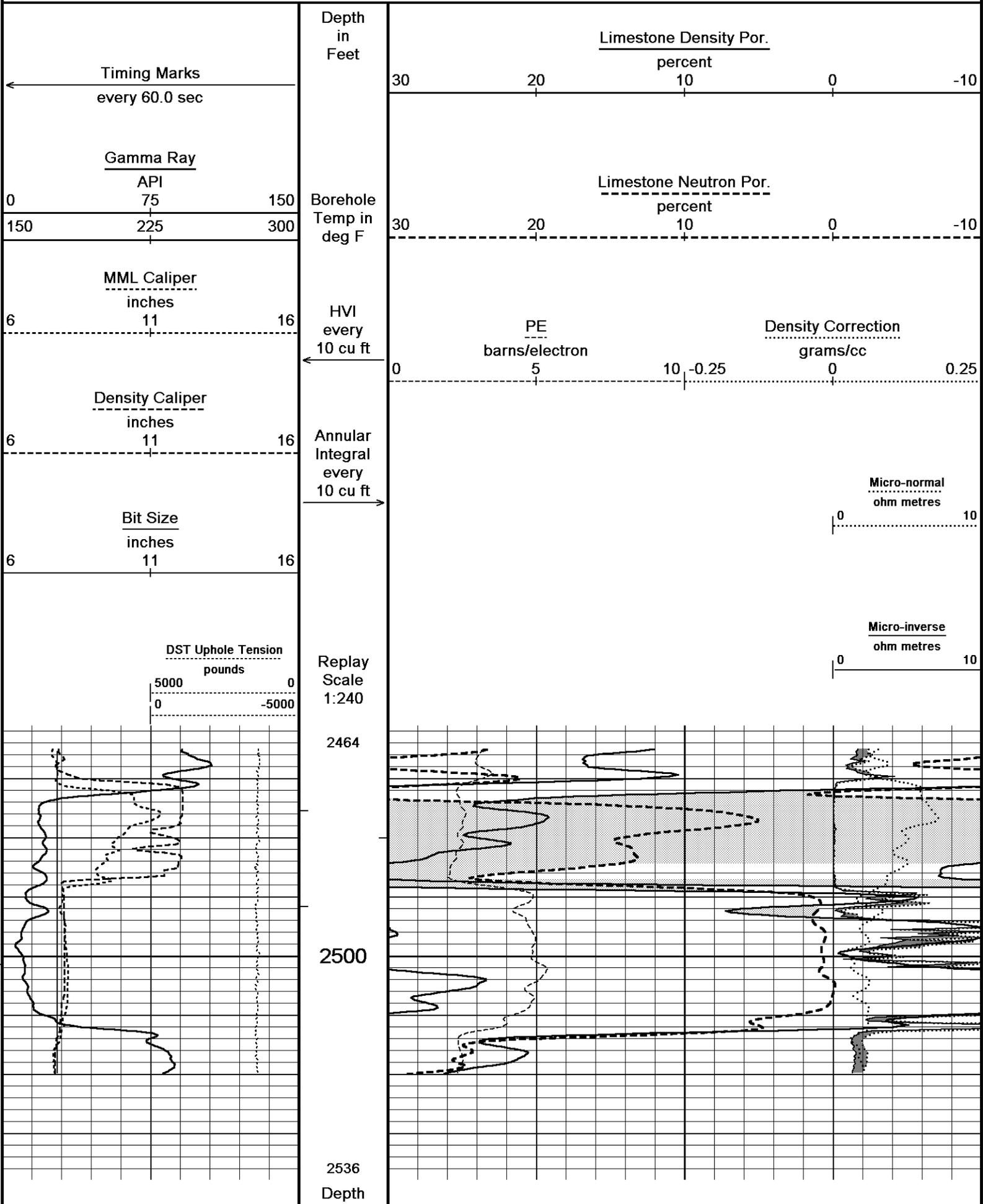
Date	18-NOV-2010
Run Number	ONE
Depth Driller	4670.00 feet
Depth Logger	4667.00 feet
First Reading	4645.00 feet
Last Reading	3650.00 feet
Casing Driller	209.00 feet
Casing Logger	209.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.30 lb/USg 62.00 CP
PH / Fluid Loss	10.00 8.00 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	1.59 @ 77.0 ohm-m
Rmf @ Measured Temp	1.27 @ 77.0 ohm-m
Rmc @ Measured Temp	1.91 @ 77.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.09 @ 112.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	112.00 deg F
Equipment Name	COMPACT
Equipment / Base	13096 LIB
Recorded By	LYNN SCOTT
Witnessed By	STEVE STRIBLING
S.O.# / JOB#	3524623 LB10-291

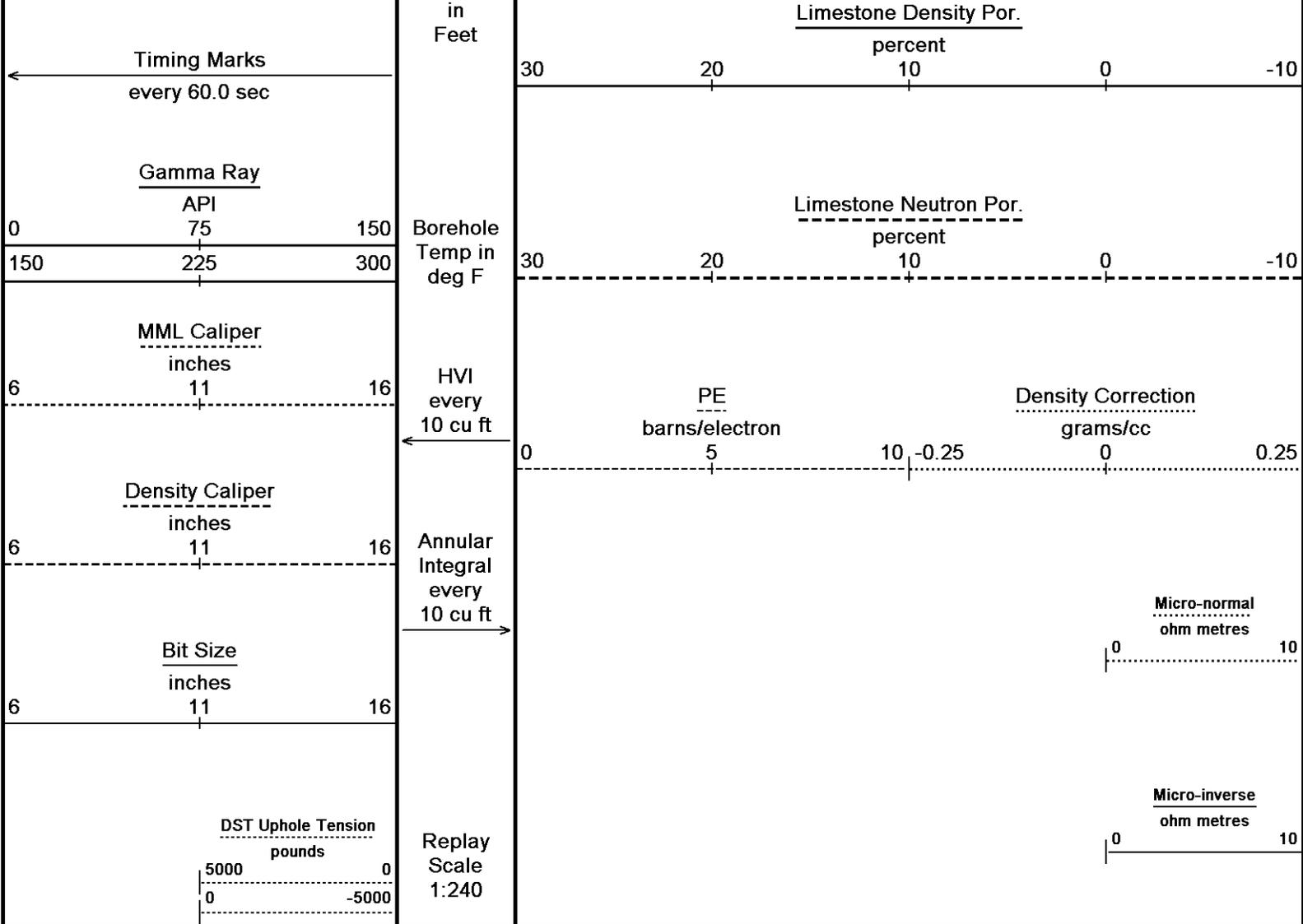
BOREHOLE RECORD			Last Edited: 18-NOV-2010 11:20	
Bit Size inches	Depth From feet	Depth To feet		
7.875	209.00	4667.00		
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	209.00	24.00

REMARKS

Tools Run: MAI, MPD, MCG, MDN, MML, MFE, SKJ
 Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Eccentraliser used.
 2.71 G/CC Limestone density matrix used to calculate porosity.
 Borhole rugosity, tight pulls, and washouts will affect data quality.
 All intervals logged and scaled per customer's request.
 Annular volume with 5.5 inch production casing=183 cu. ft.
 Service order #3524623
 Rig: Murfin #24
 Engineer: L. Scott
 Operator(s): J. LaPoint

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



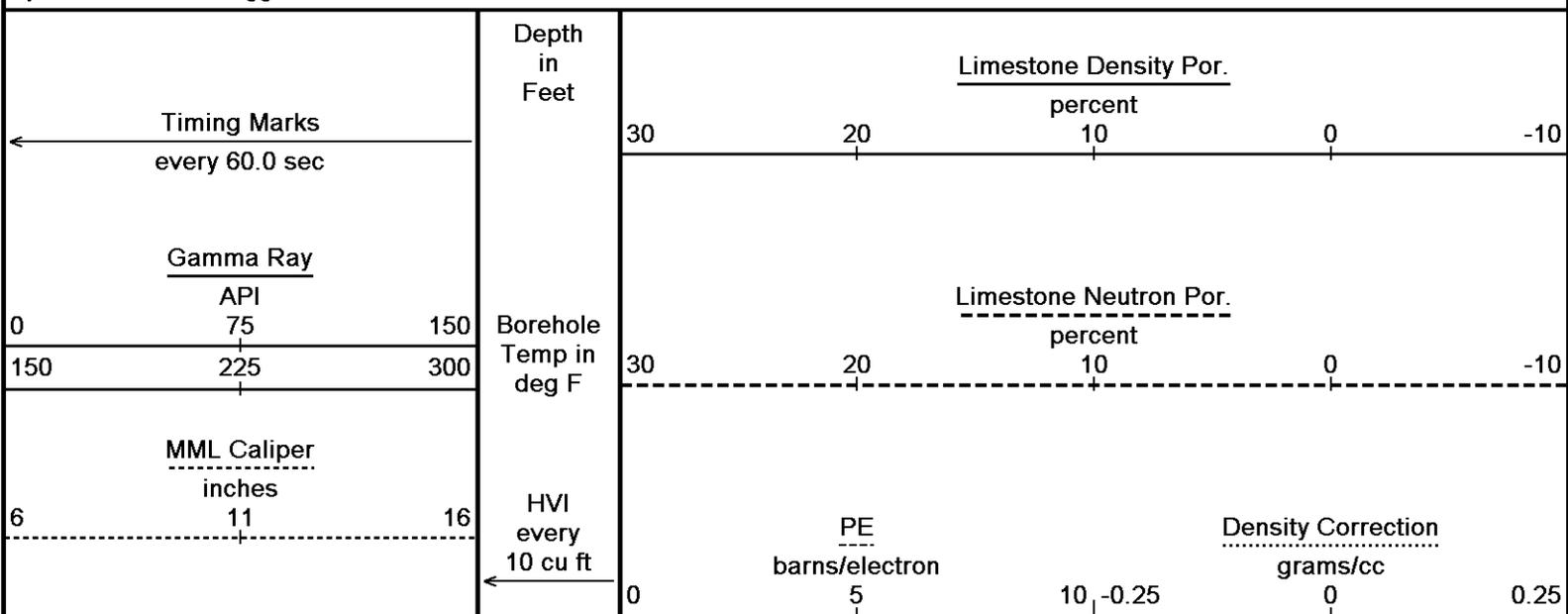


Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_002.dta
 Recorded on 18-NOV-2010 11:35
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198



5 Inch Main

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_002.dta
 Recorded on 18-NOV-2010 11:35
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198



Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

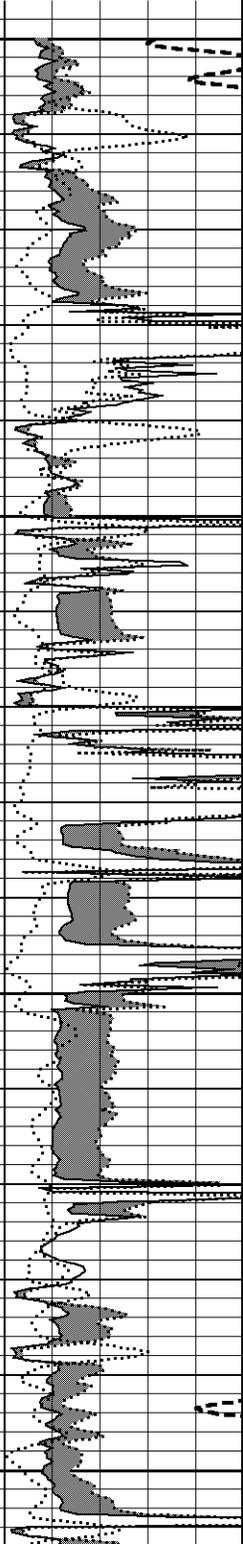
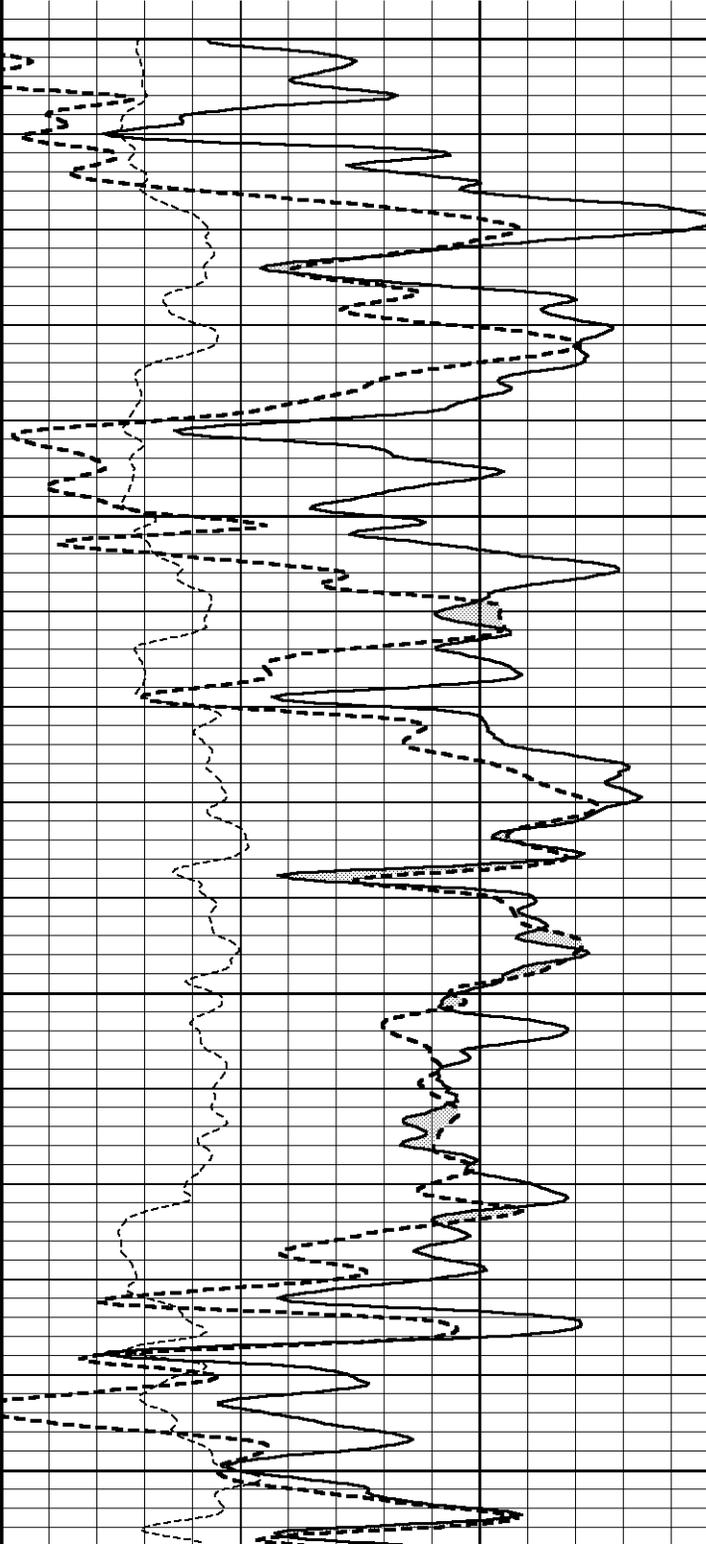
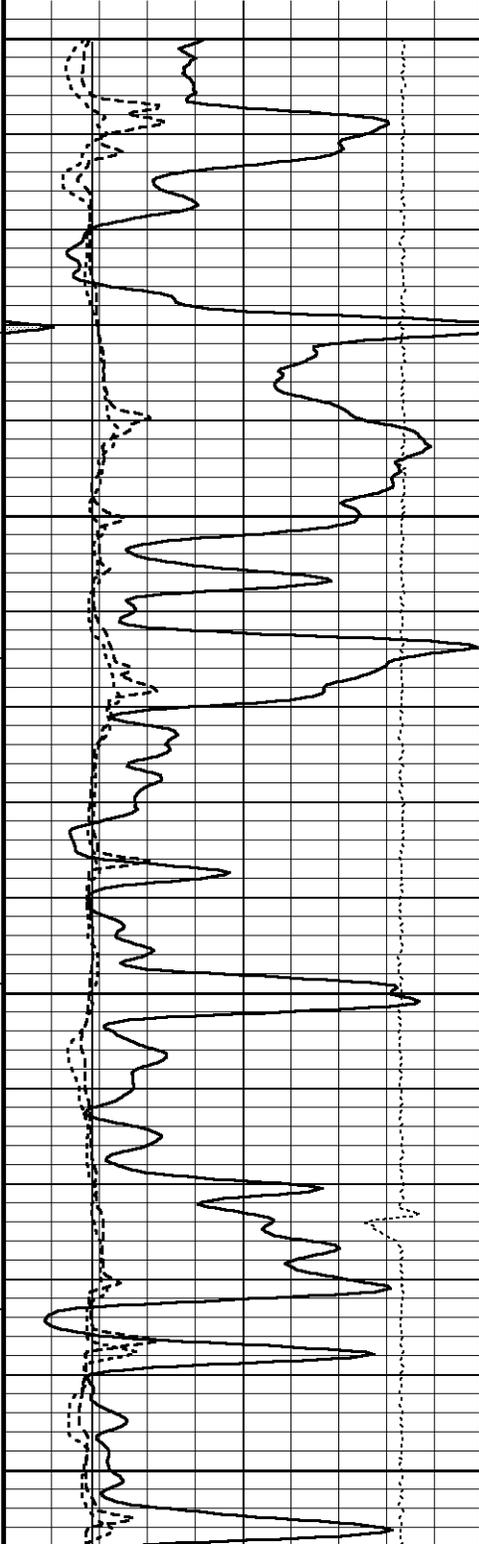
DST Uphole Tension
pounds
5000 0
0 -5000

Annular
Integral
every
10 cu ft

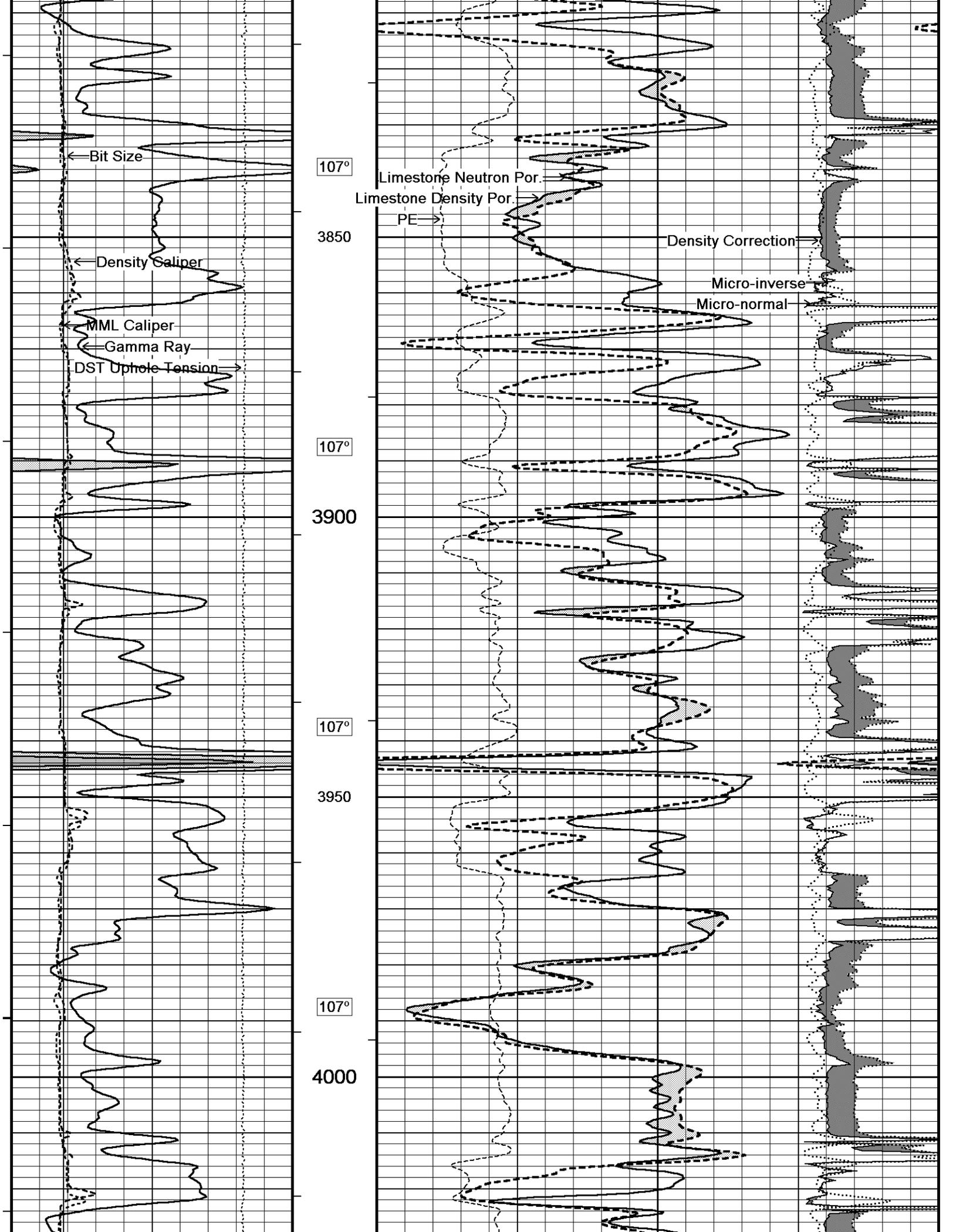
Replay
Scale
1:240

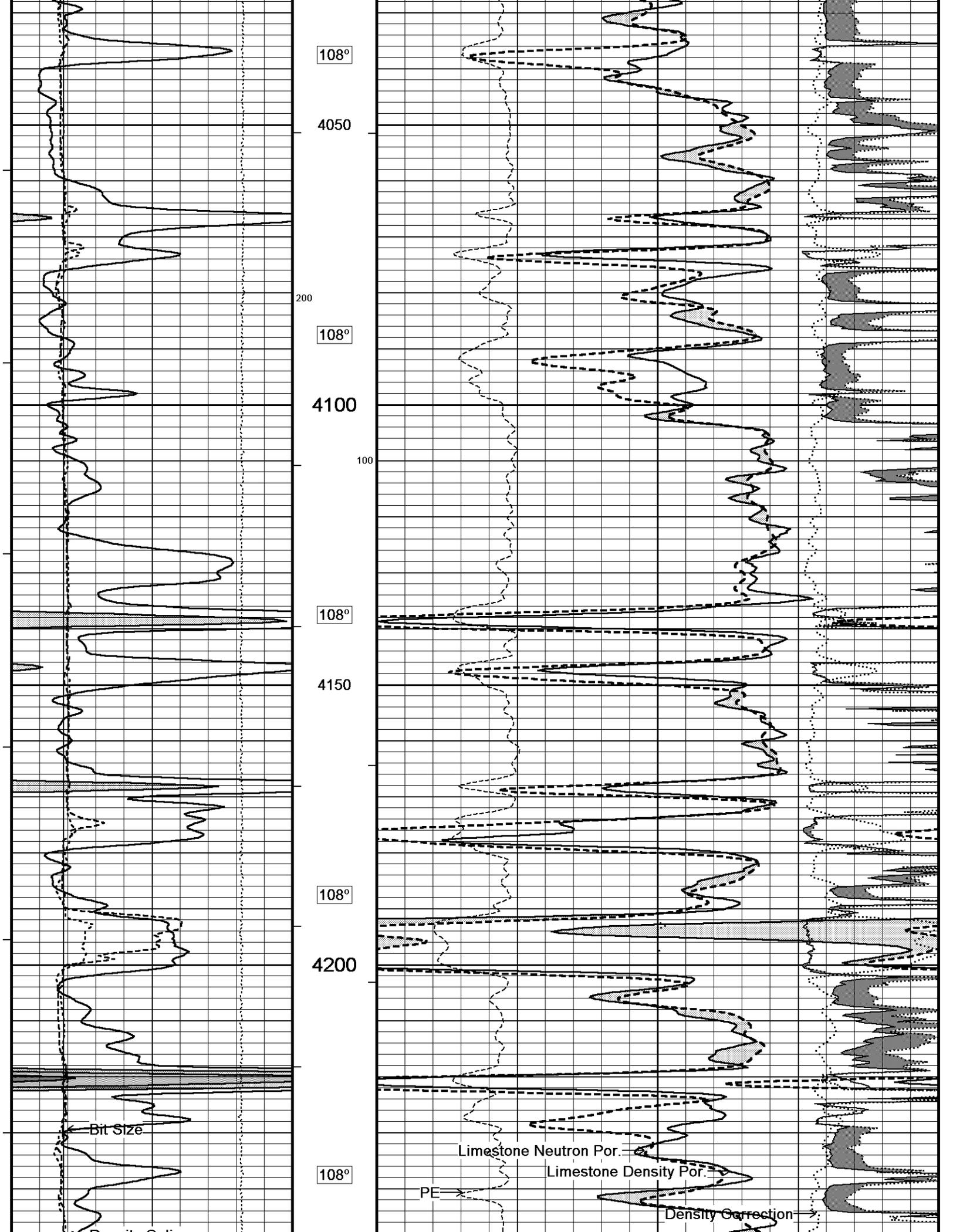
Micro-normal
ohm metres
0 10

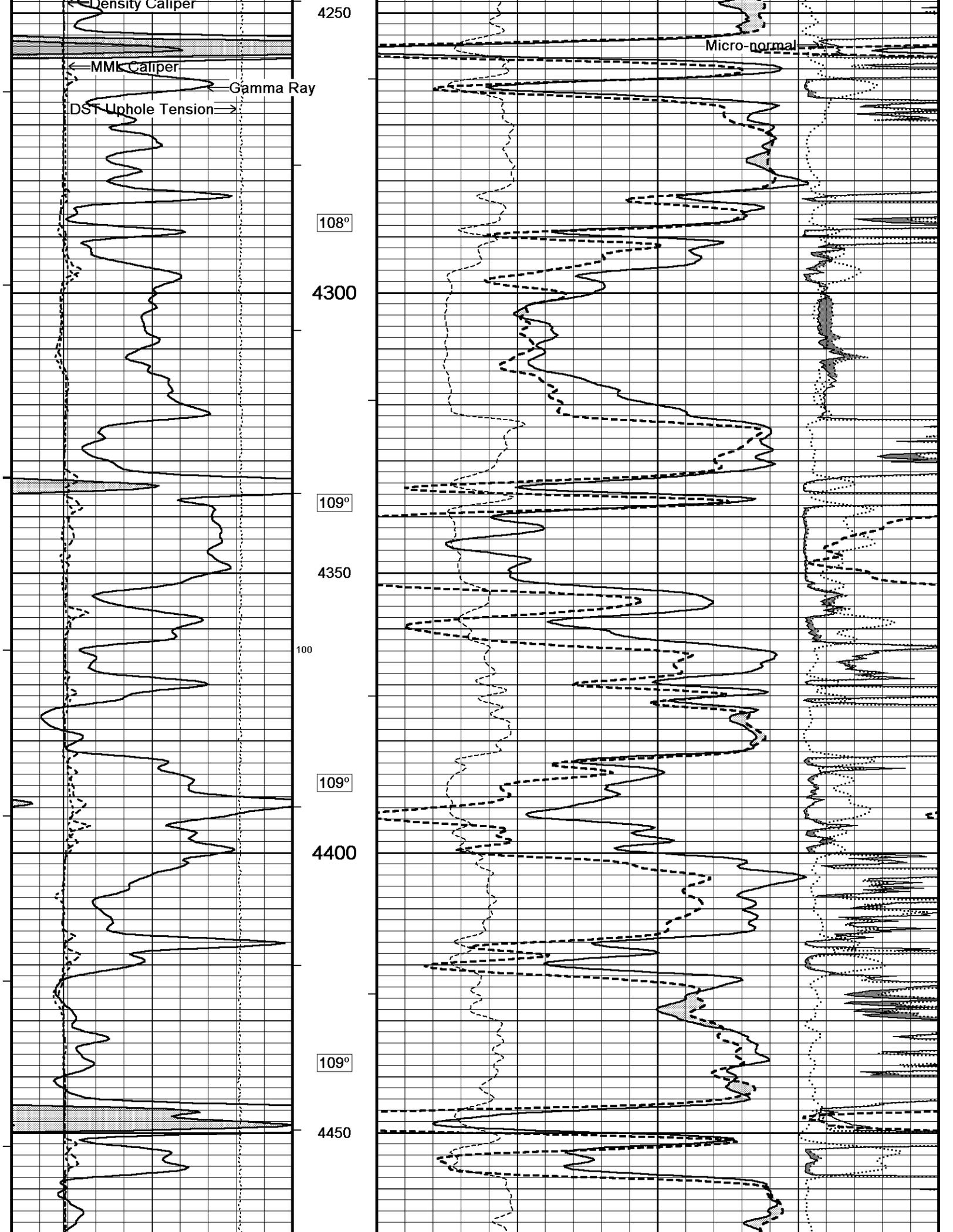
Micro-inverse
ohm metres
0 10

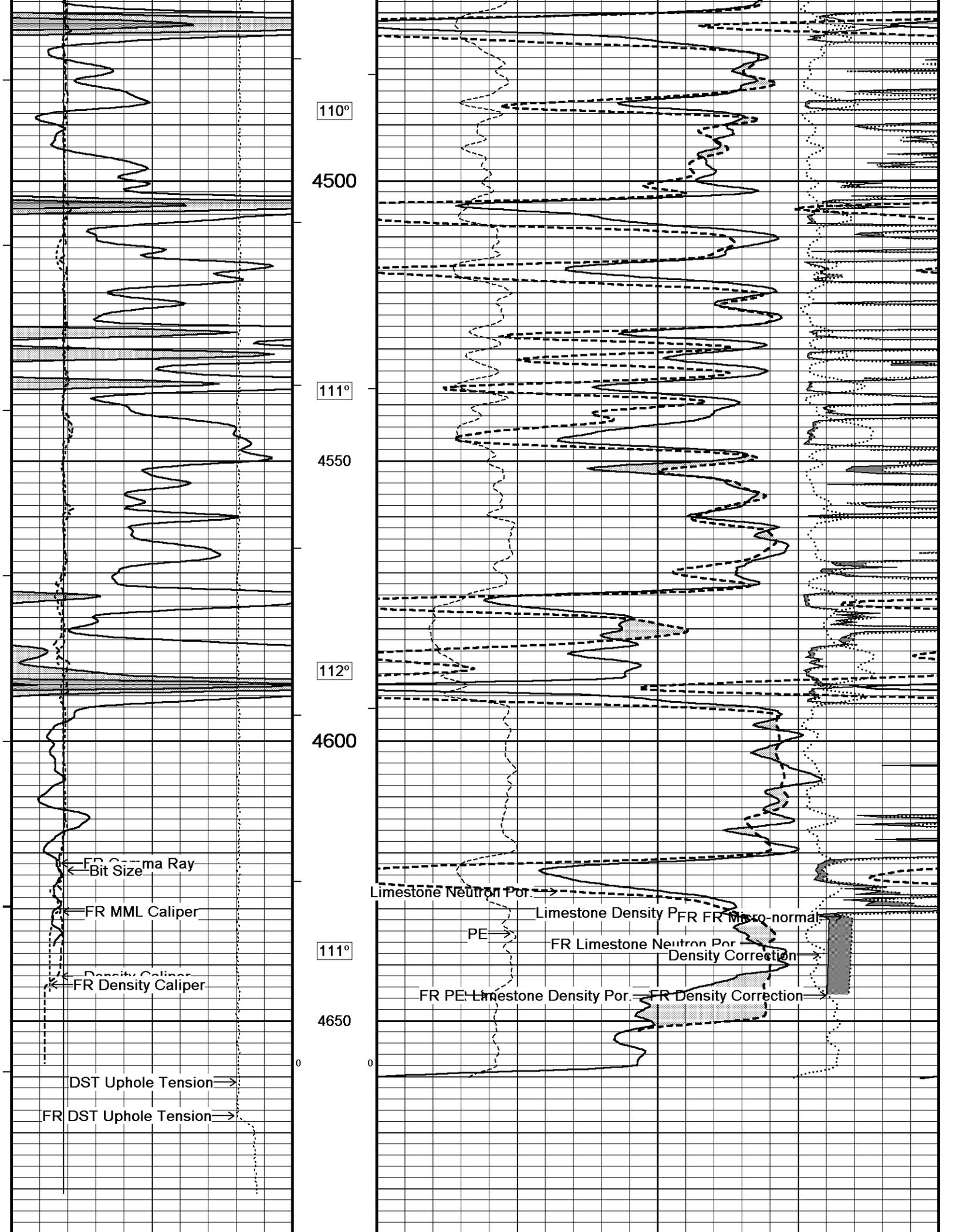


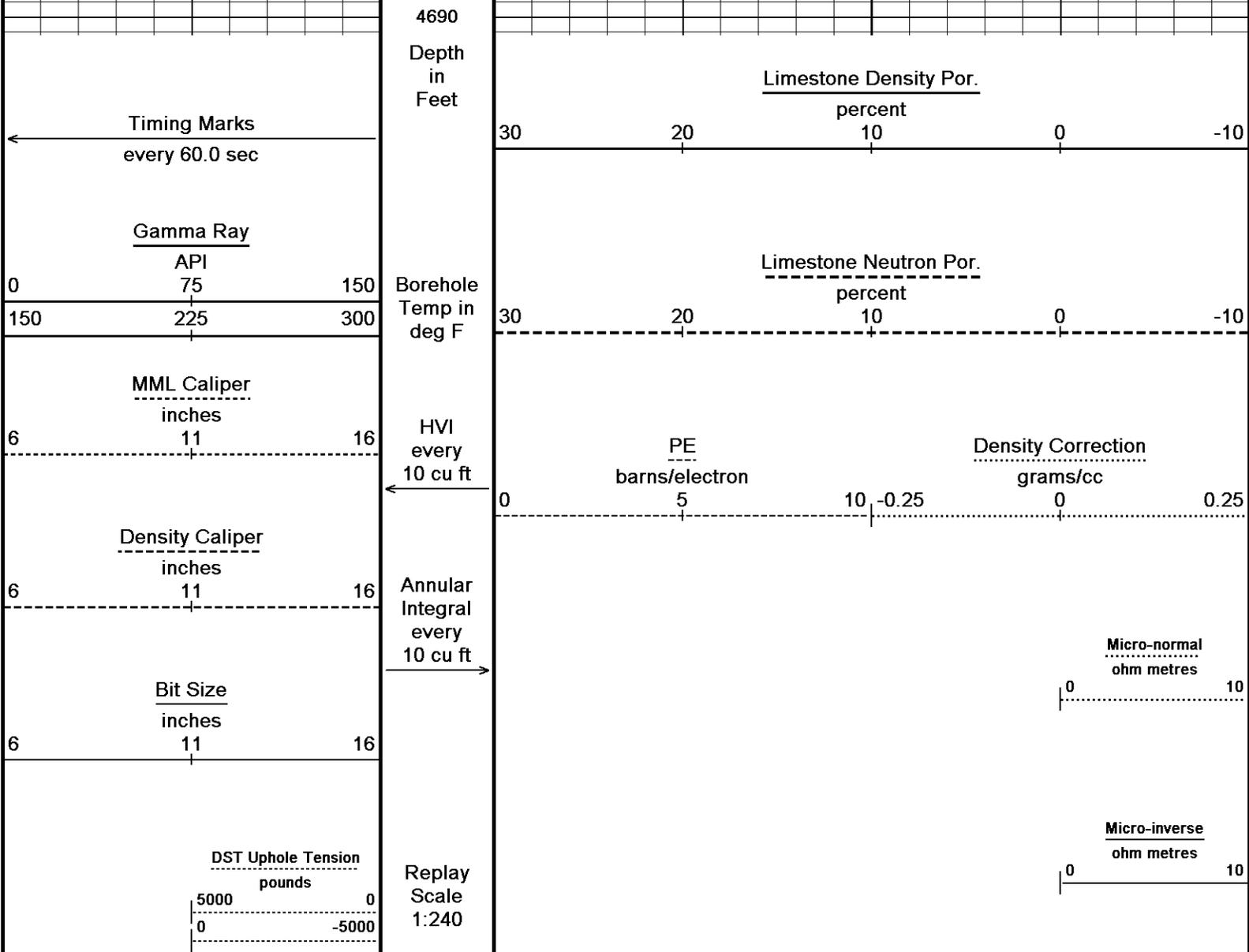
3650
106°
3700
107°
3750
300 107°
3800









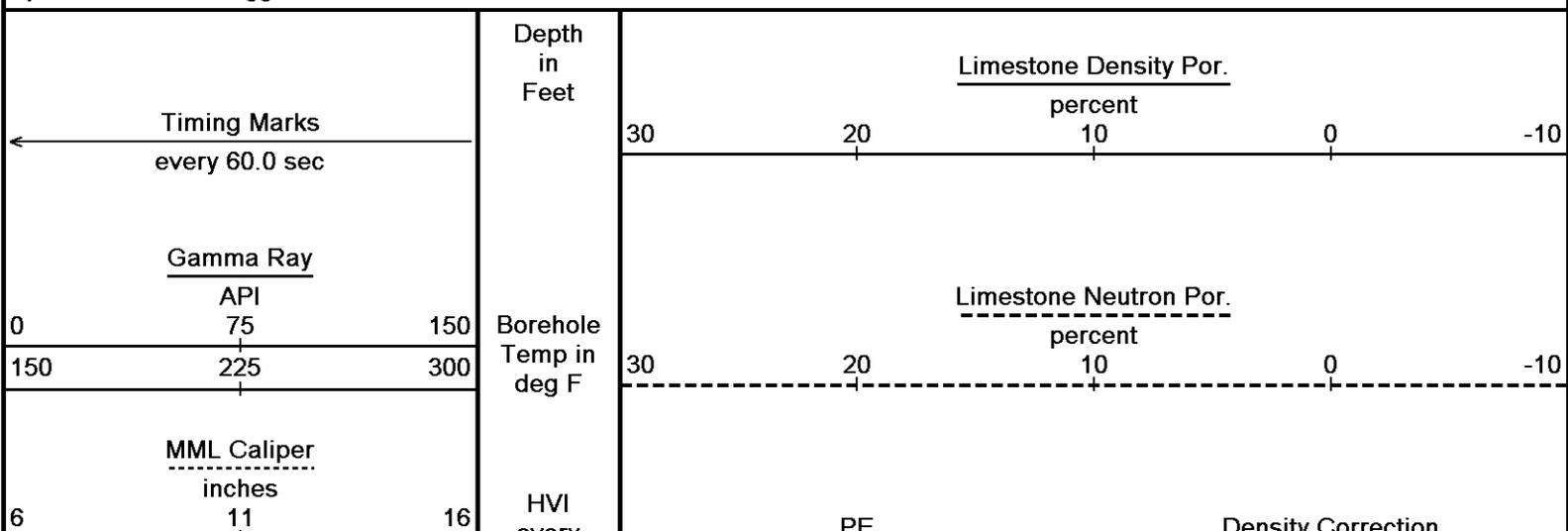


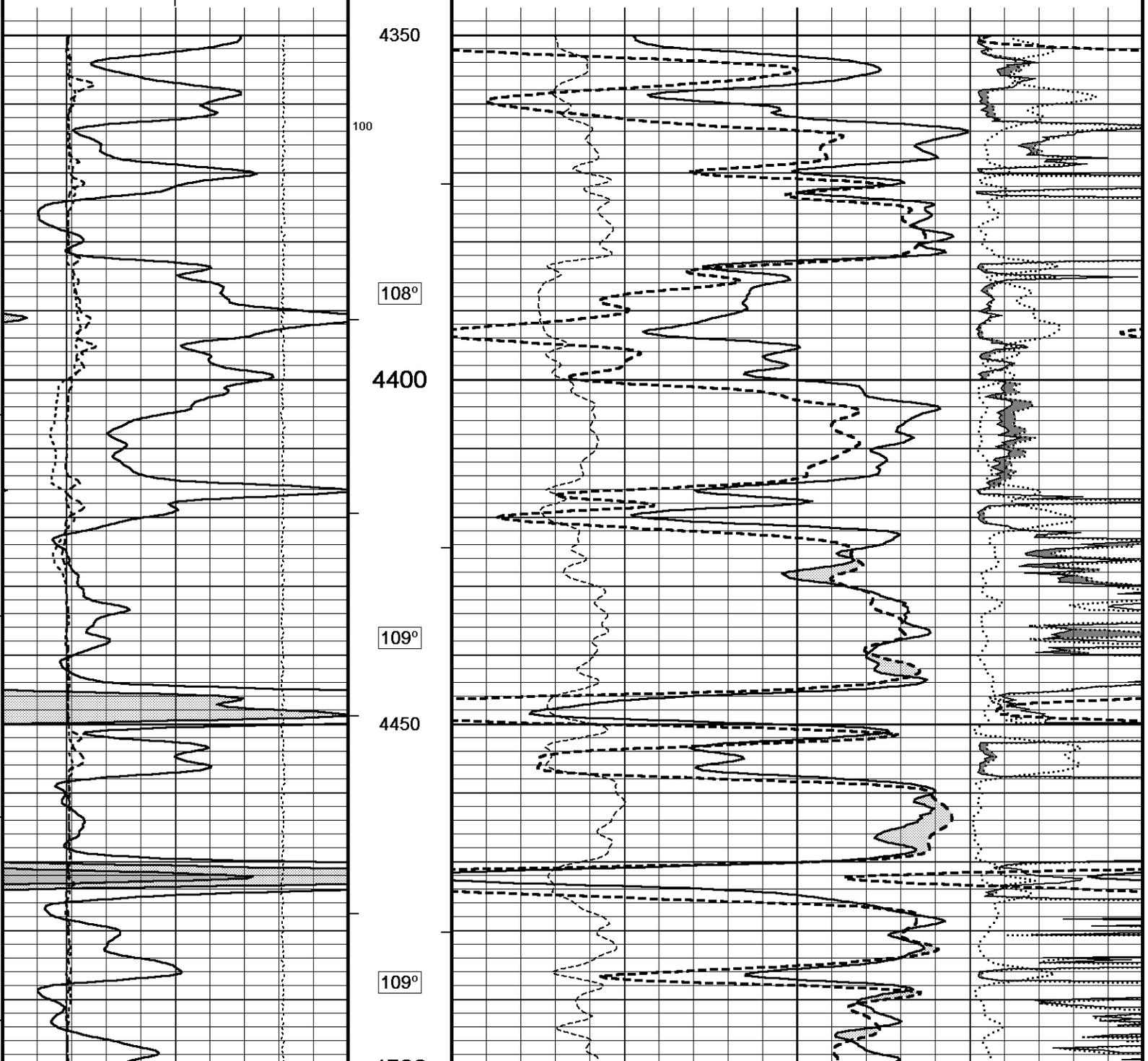
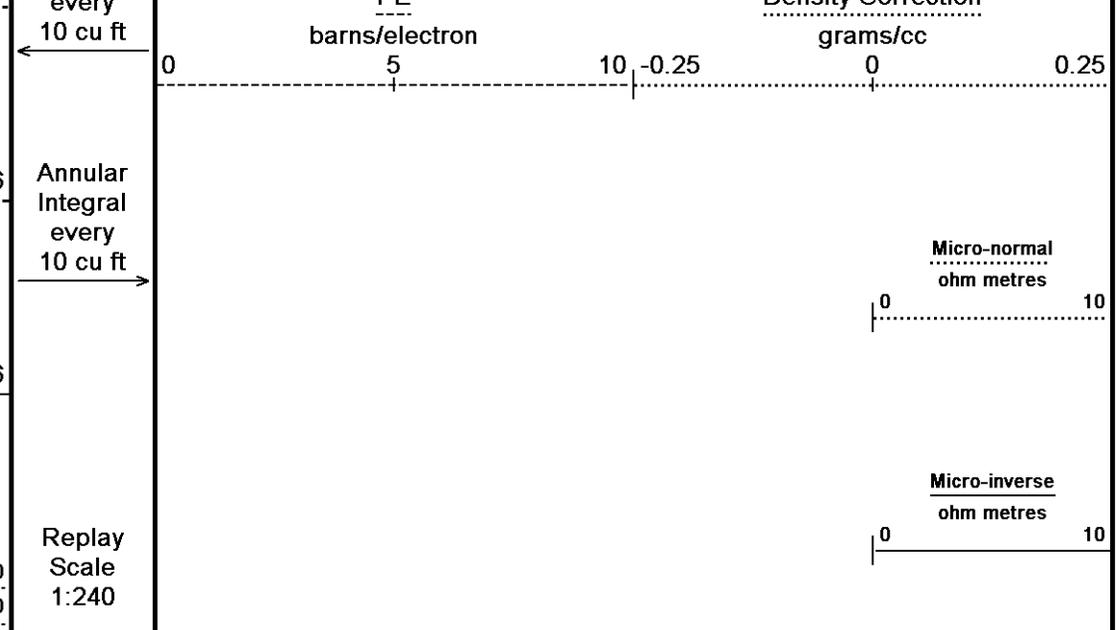
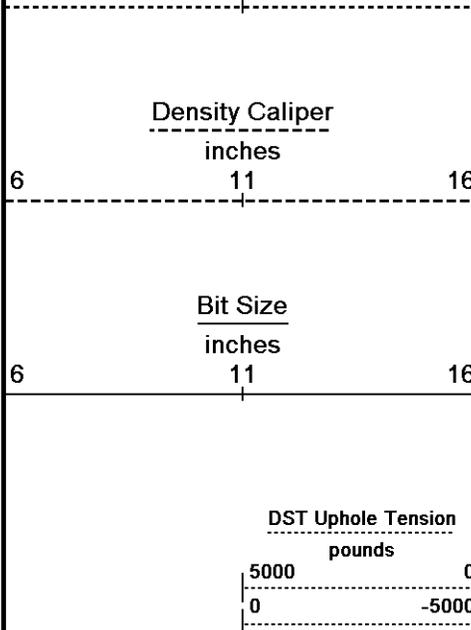
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_002.dta Recorded on 18-NOV-2010 11:35
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

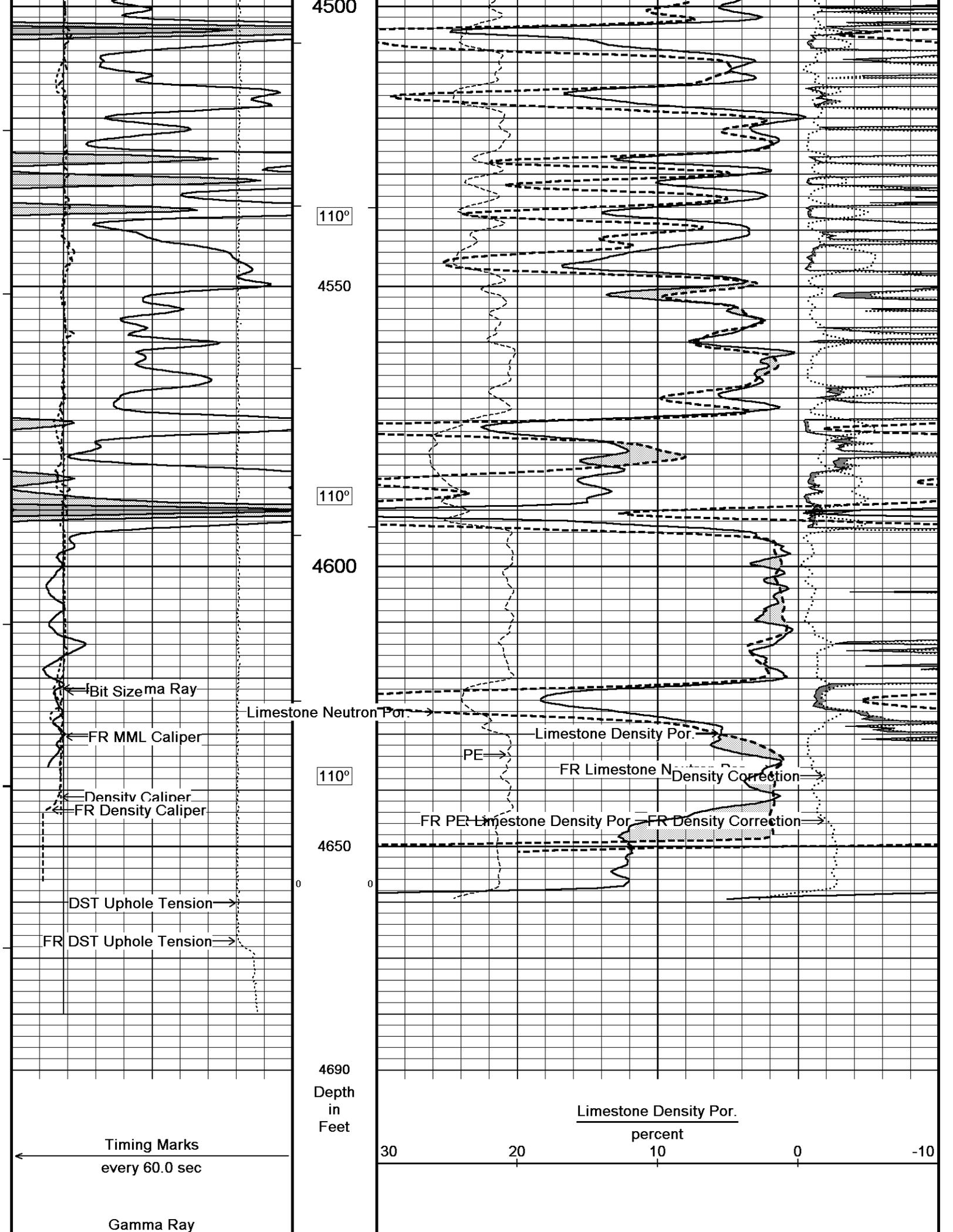
↑ 5 Inch Main ↑

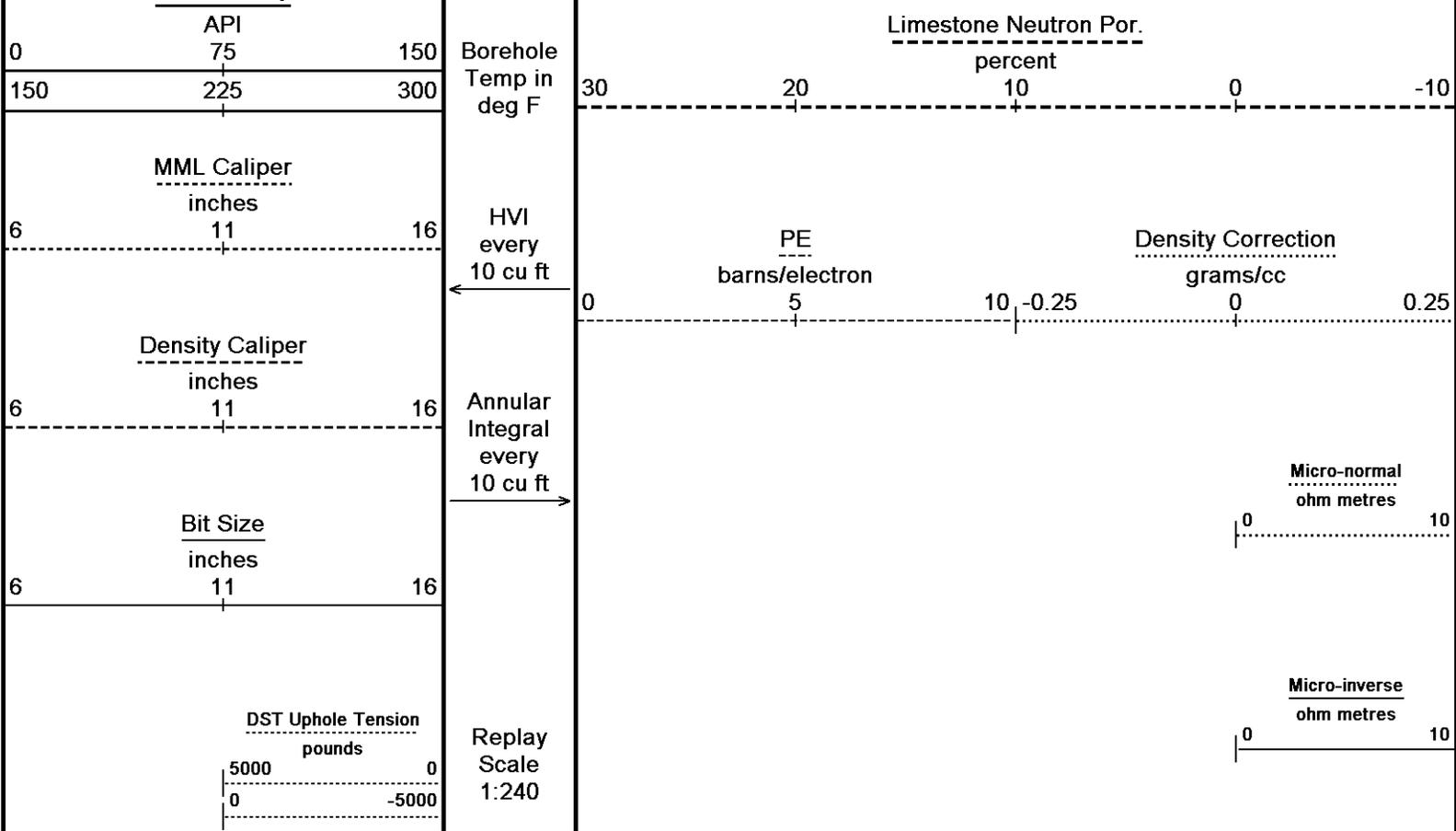
↓ Repeat Section ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_001.dta Recorded on 18-NOV-2010 11:13
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198







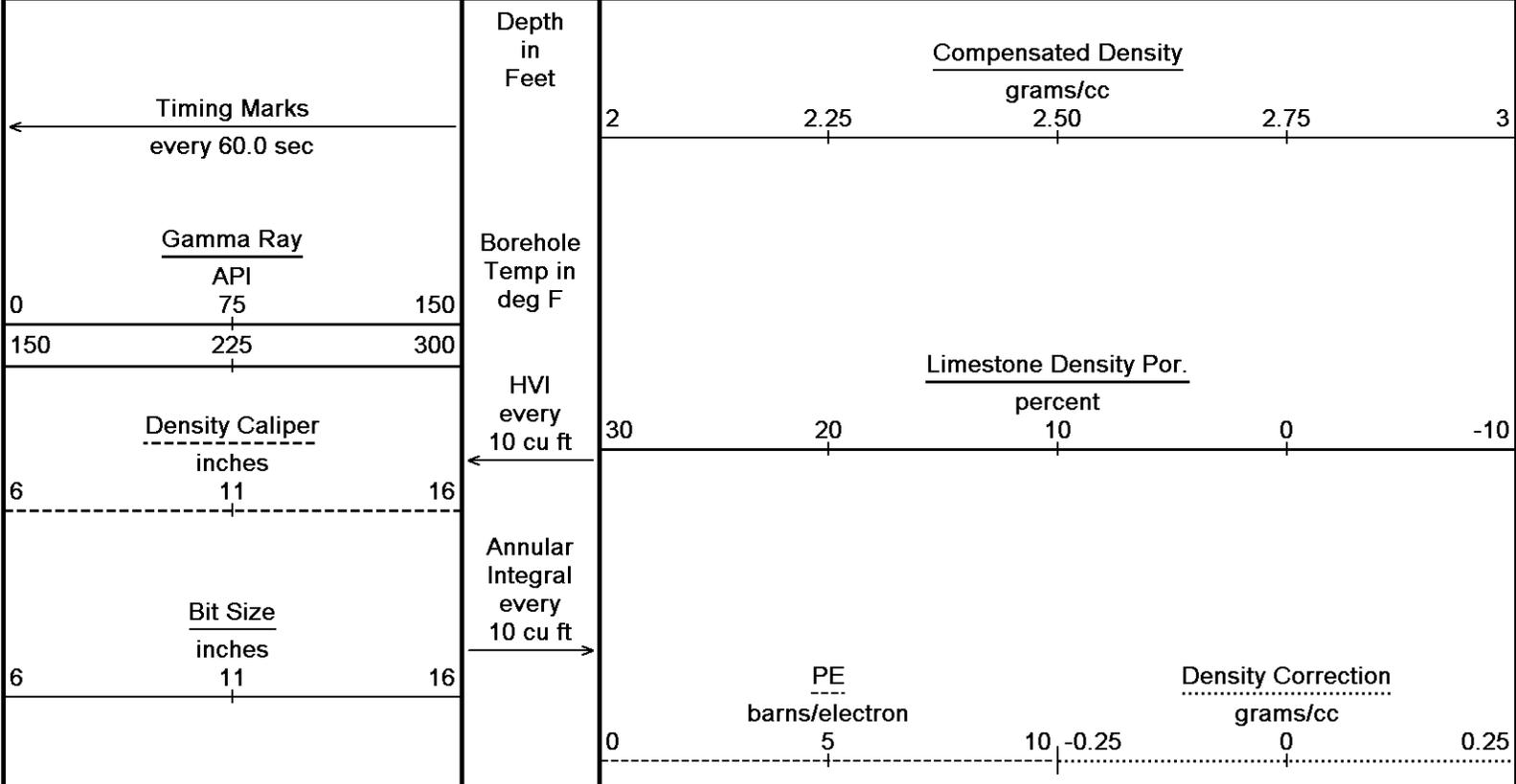


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_001.dta Recorded on 18-NOV-2010 11:13
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

Repeat Section

5 Inch Main

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 18-NOV-2010 13:37
 Filename: C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34_002.dta Recorded on 18-NOV-2010 11:35
 System Versions: Logged with 11.01.2198 Plotted with 11.01.2198



DST Uphole Tension
pounds

5000	0
0	-5000

Replay
Scale
1:240

3650

106°

3700

107°

3750

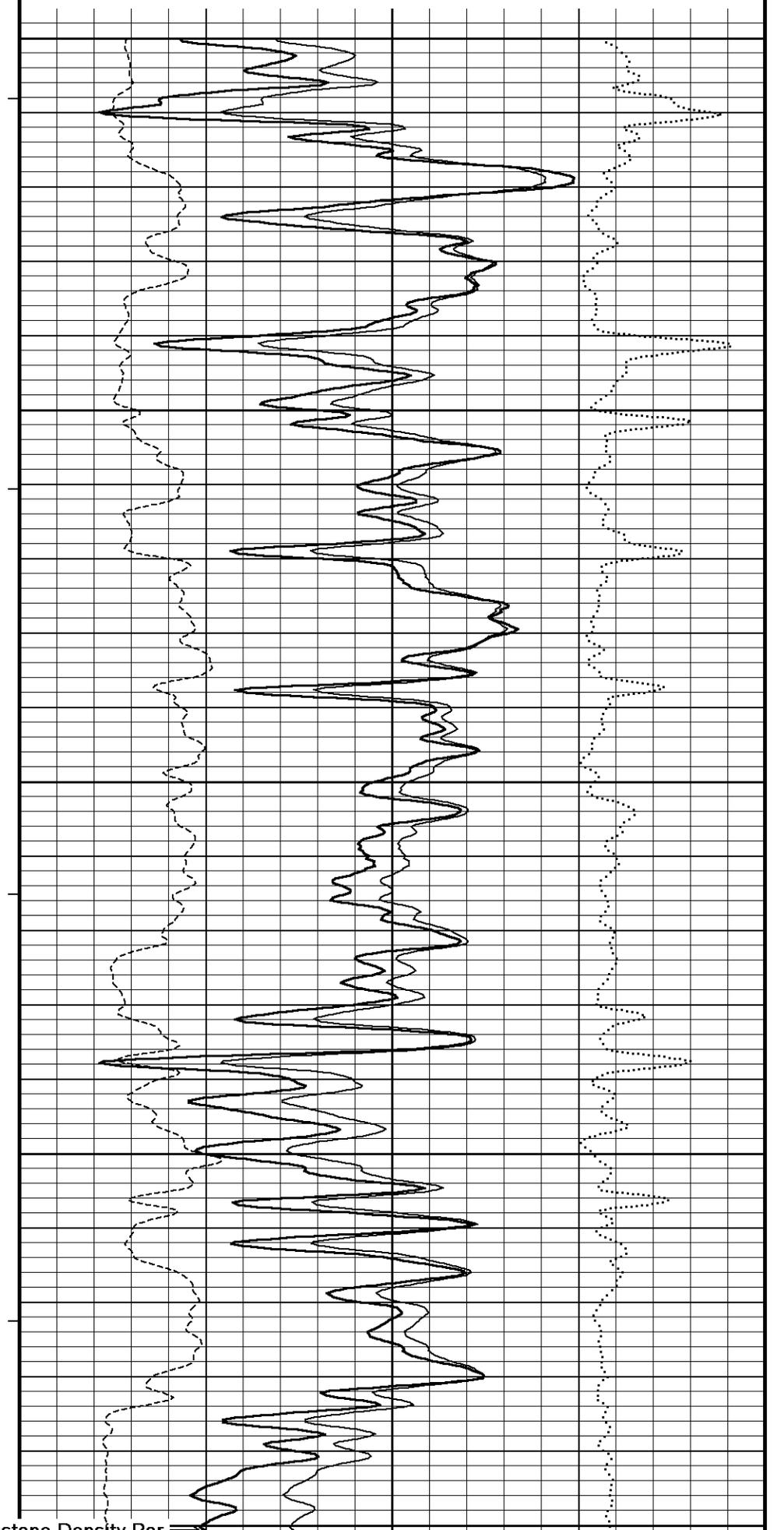
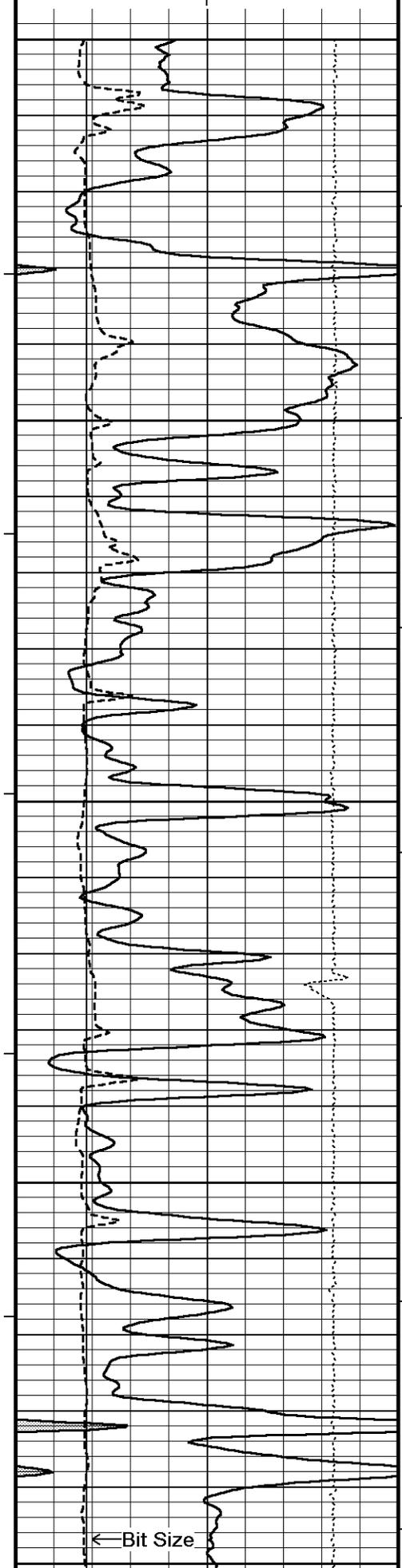
300 107°

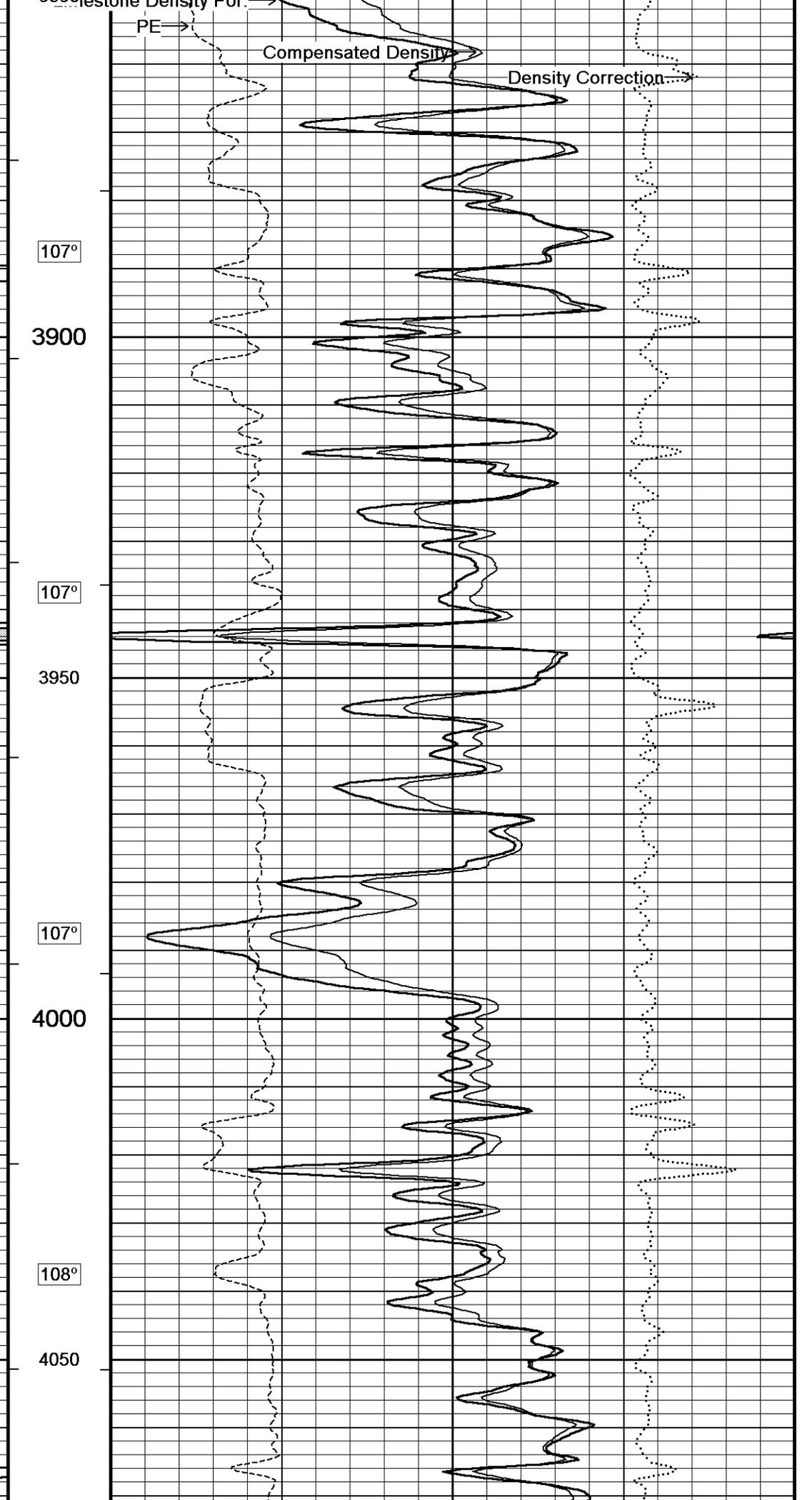
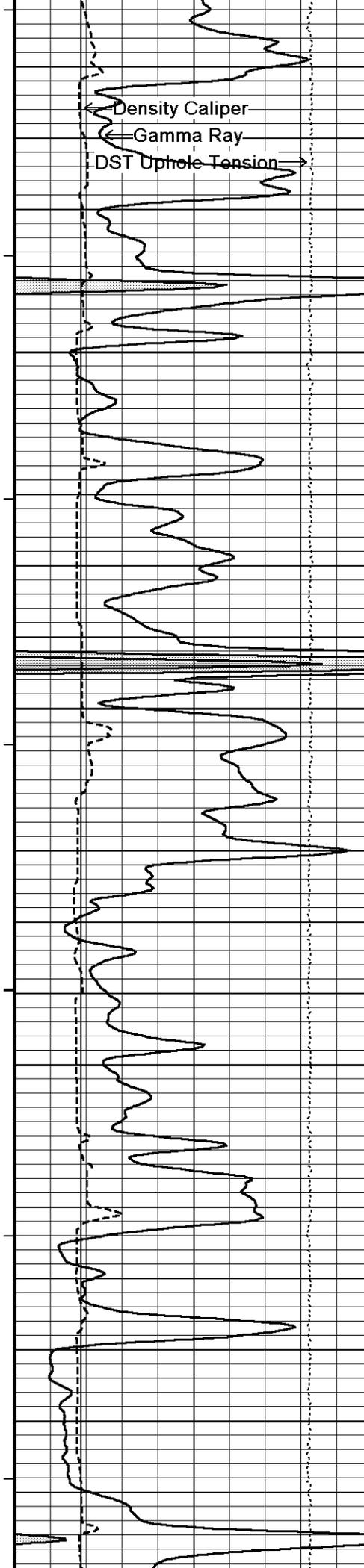
3800

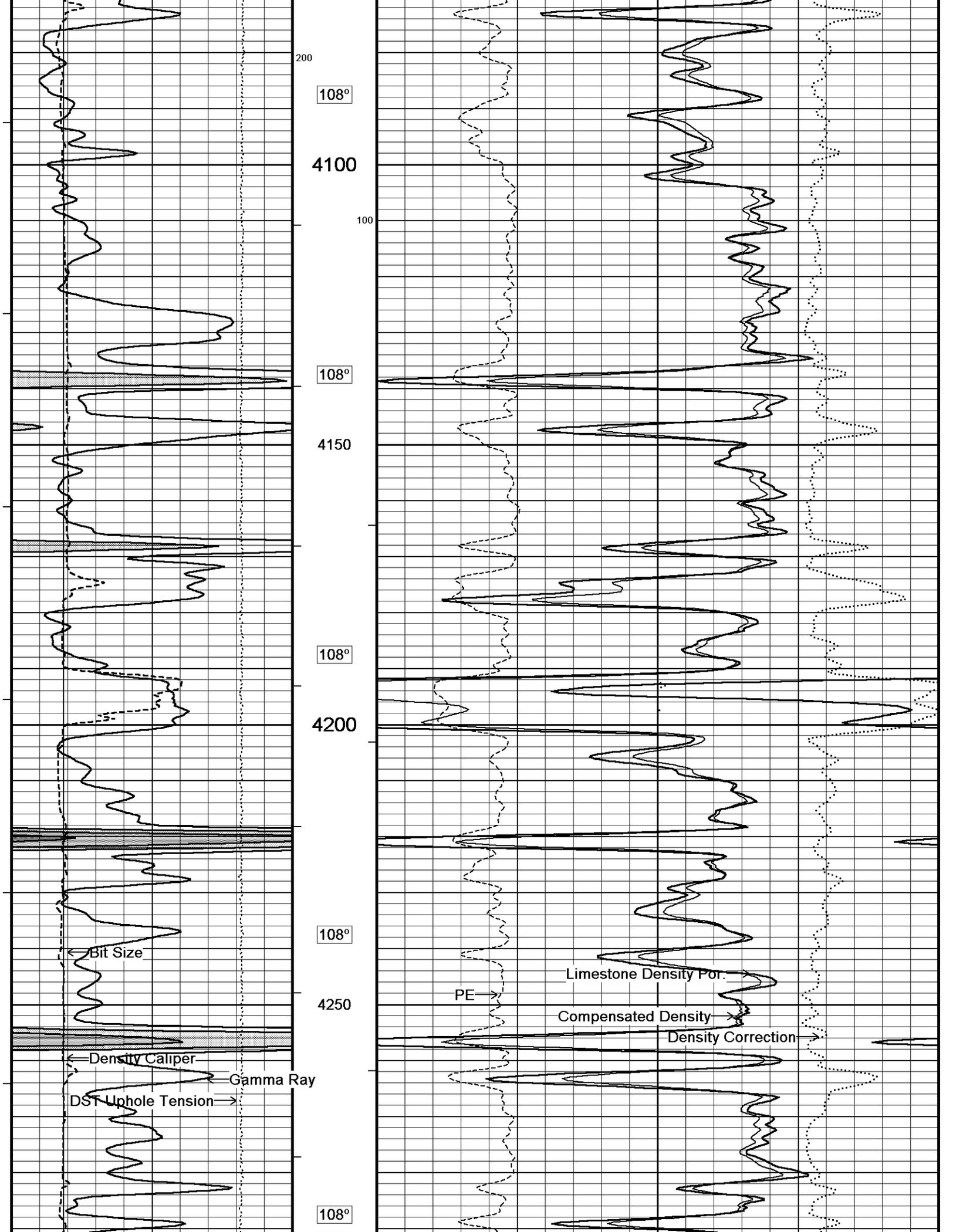
107°

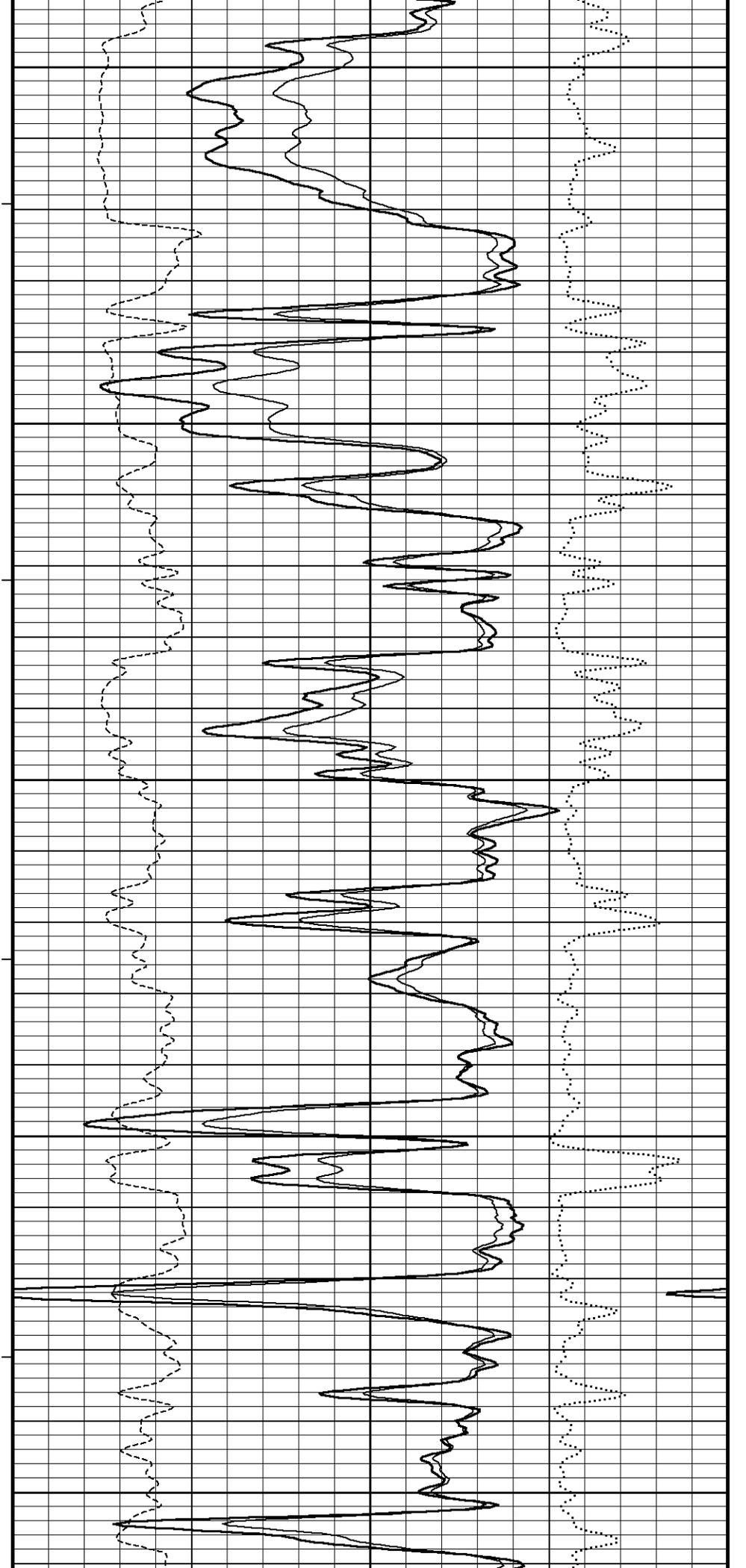
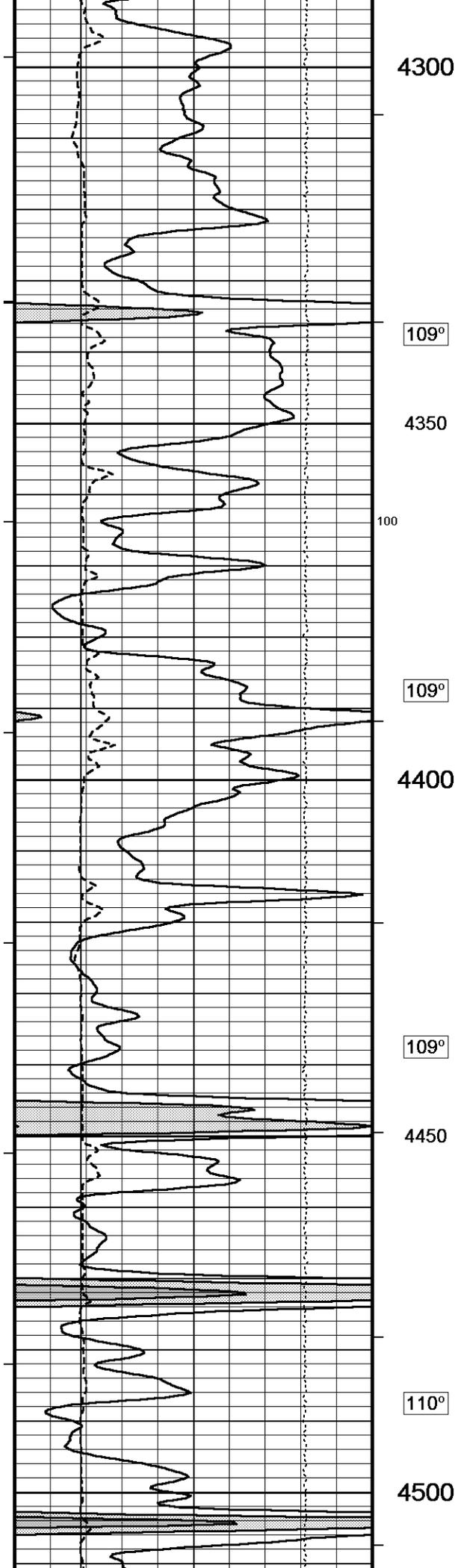
3850 sections Density Per

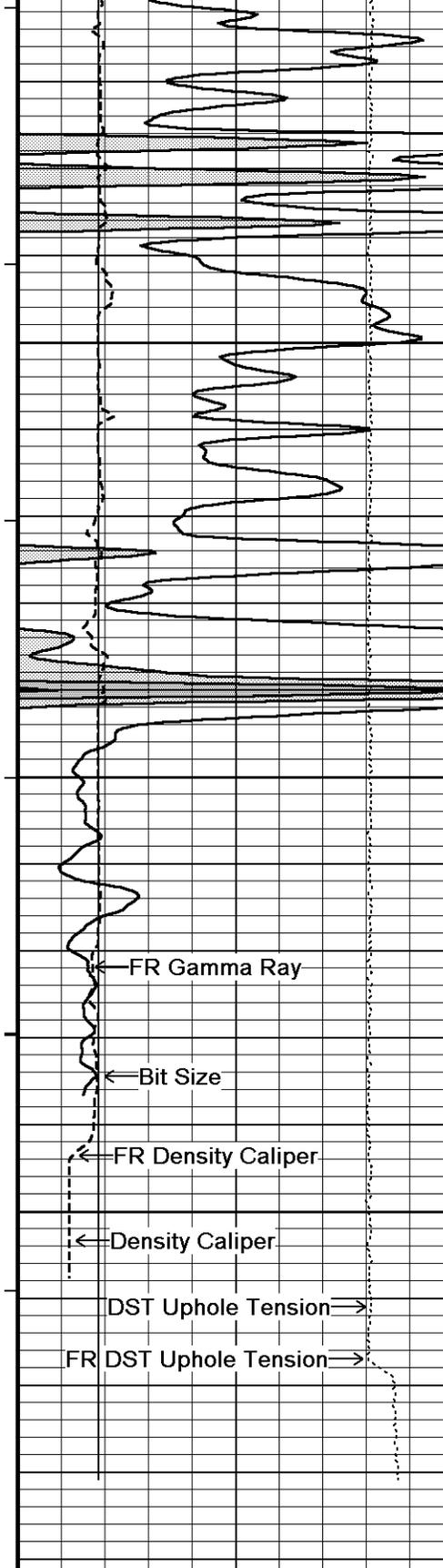
← Bit Size











111°

4550

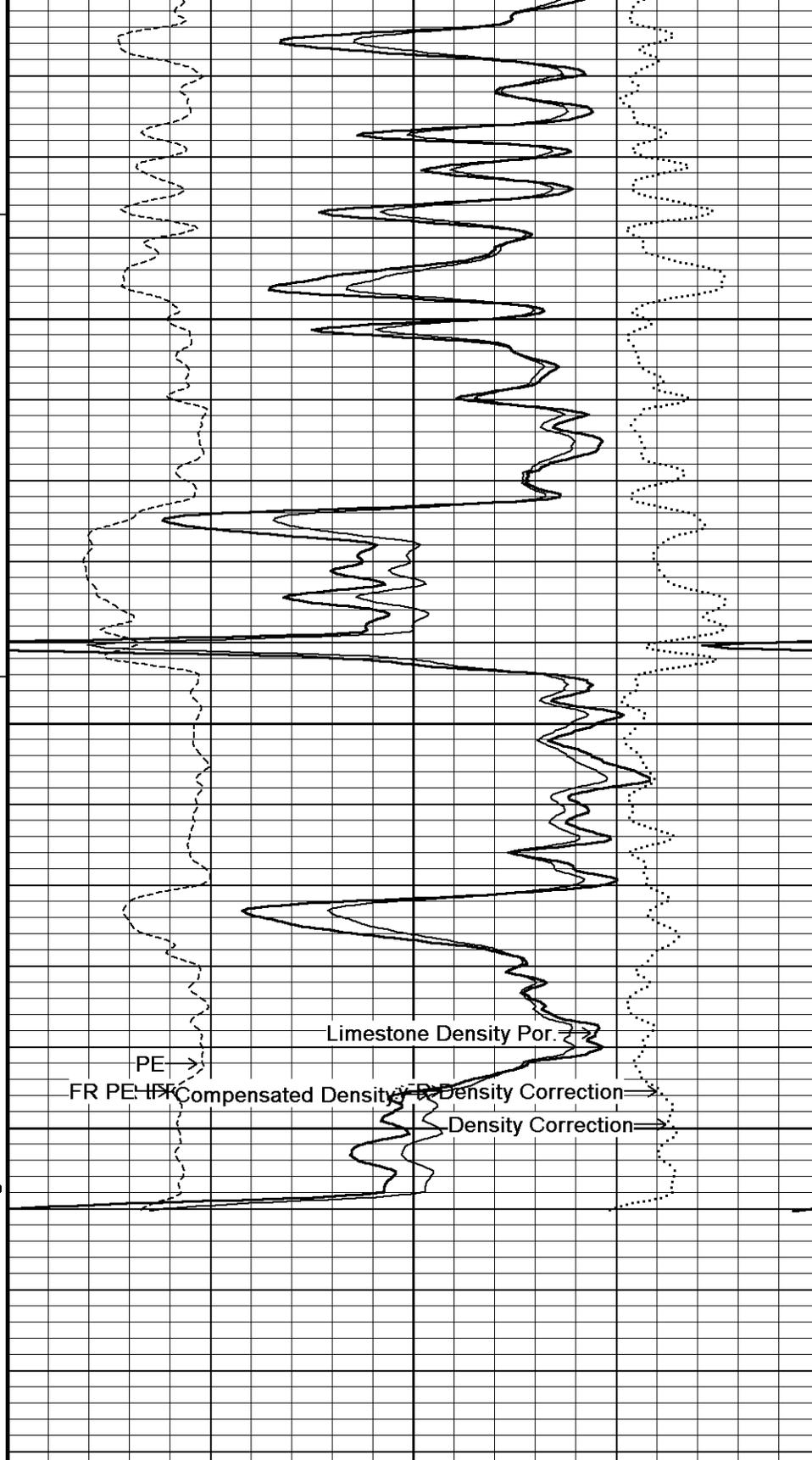
112°

4600

111°

4650

4690
Depth
in
Feet



Compensated Density
grams/cc

2 2.25 2.50 2.75 3

Timing Marks
every 60.0 sec

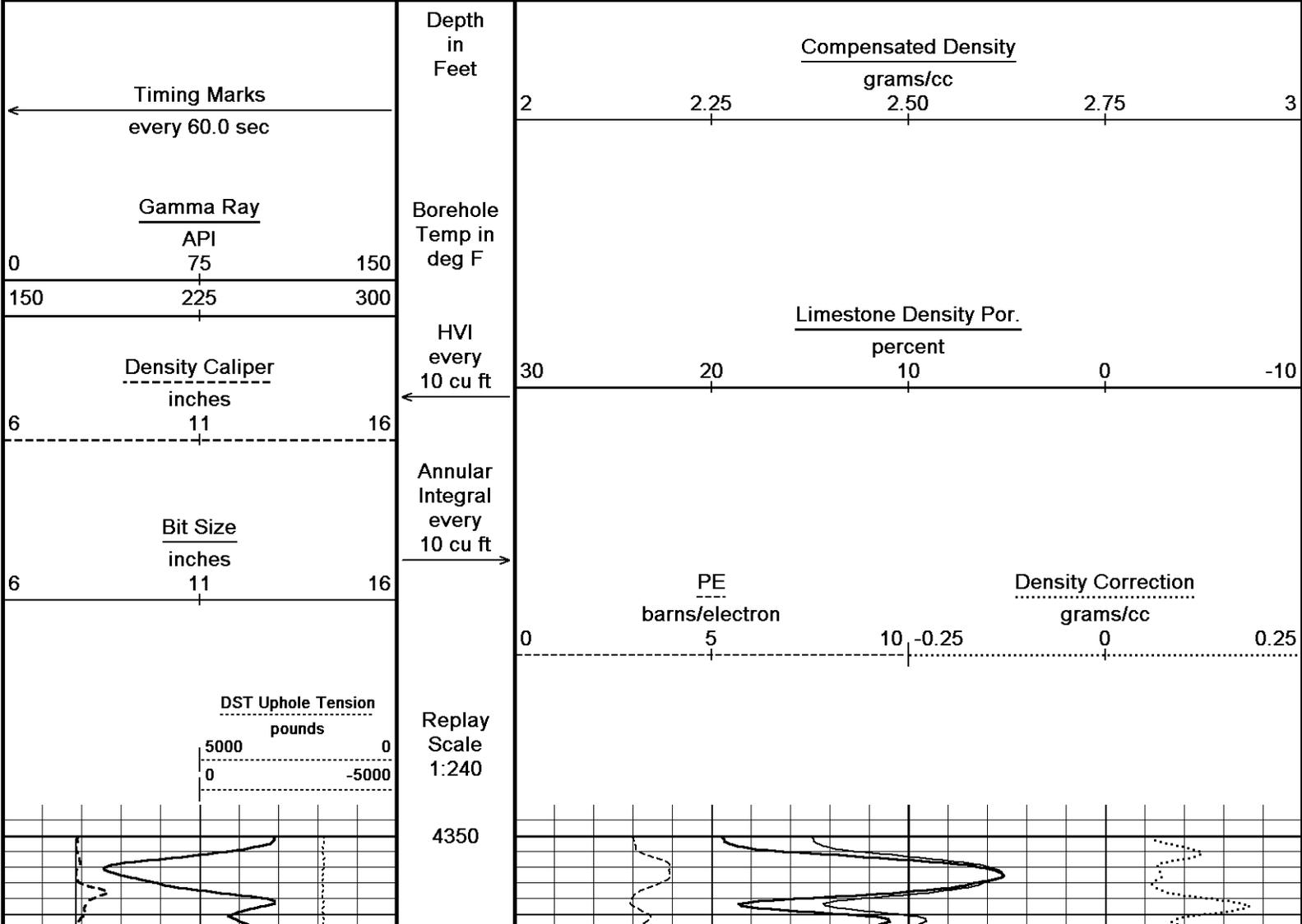
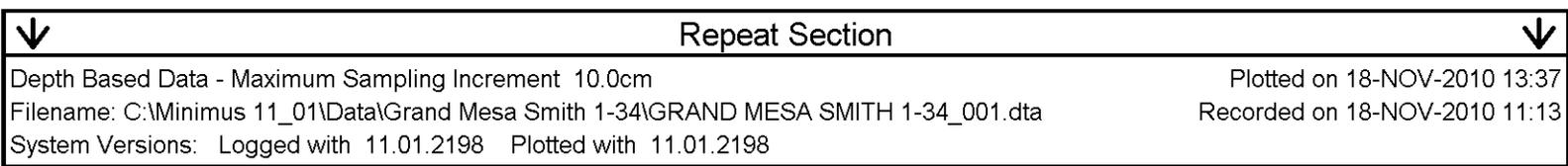
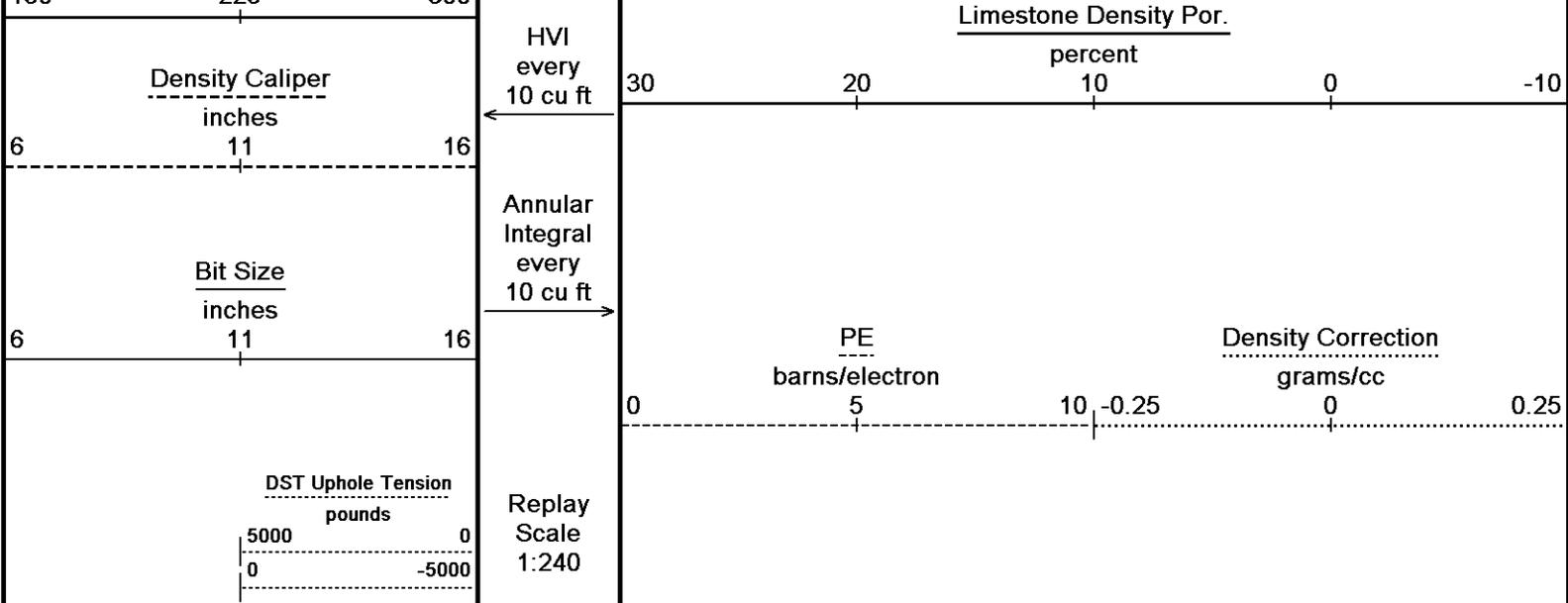
Gamma Ray

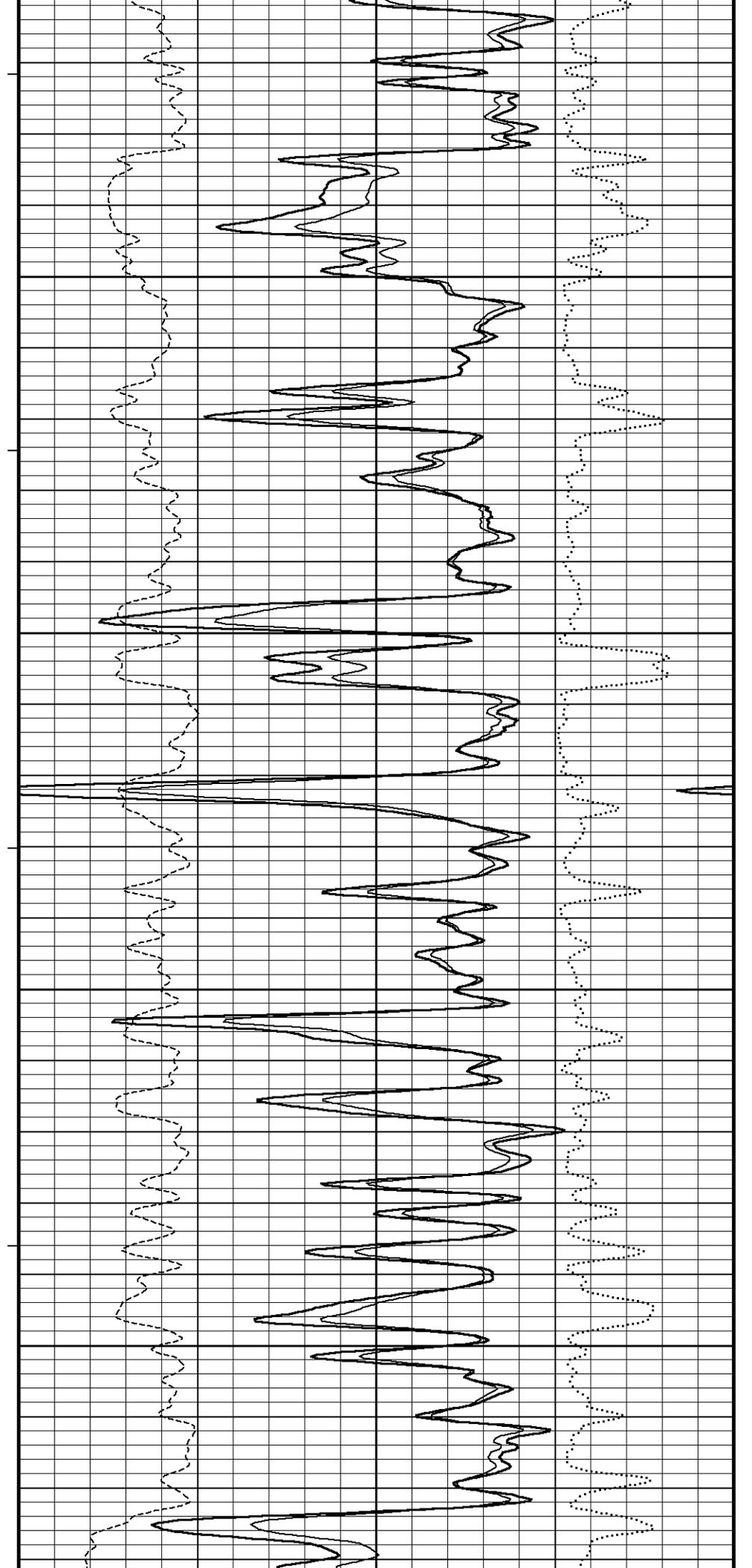
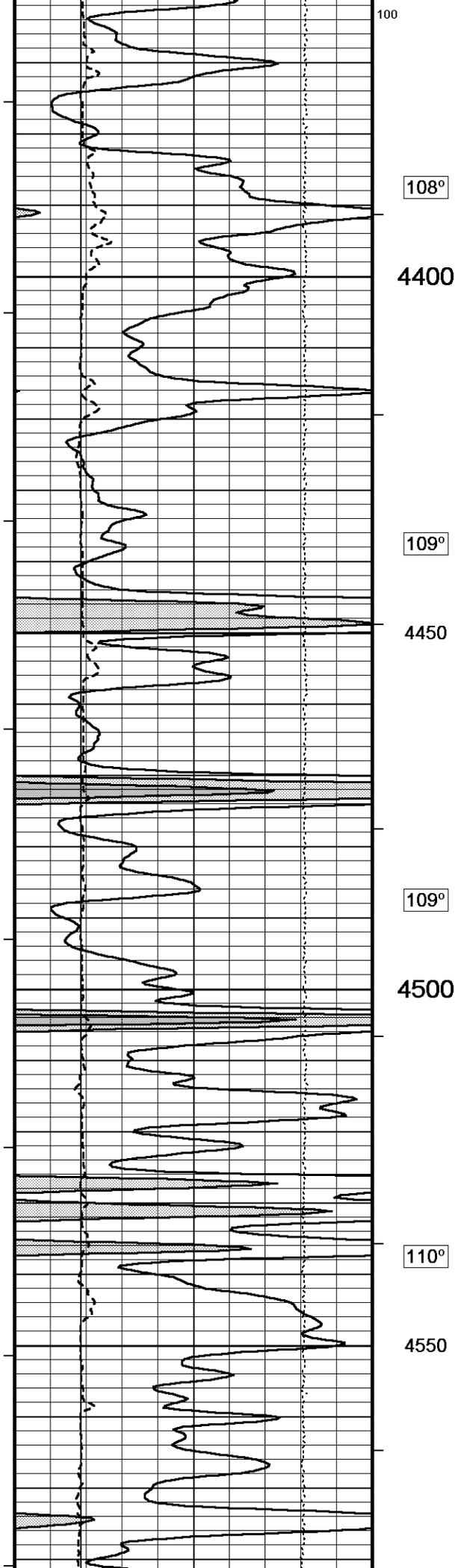
API

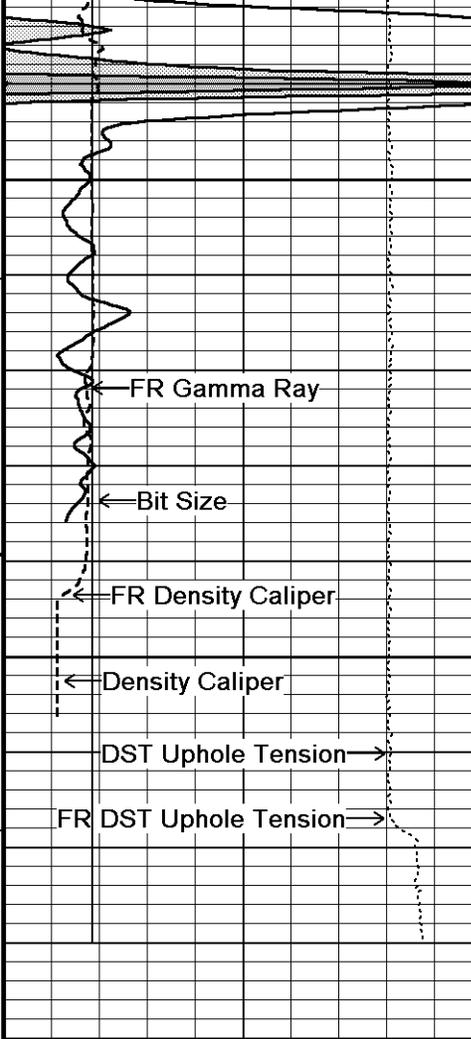
0 75 150

150 225 300

Borehole
Temp in
deg F







110°

4600

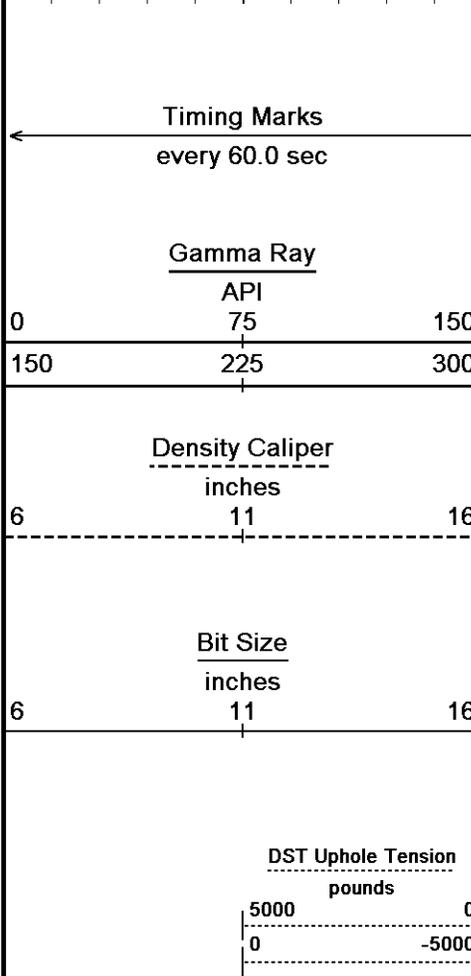
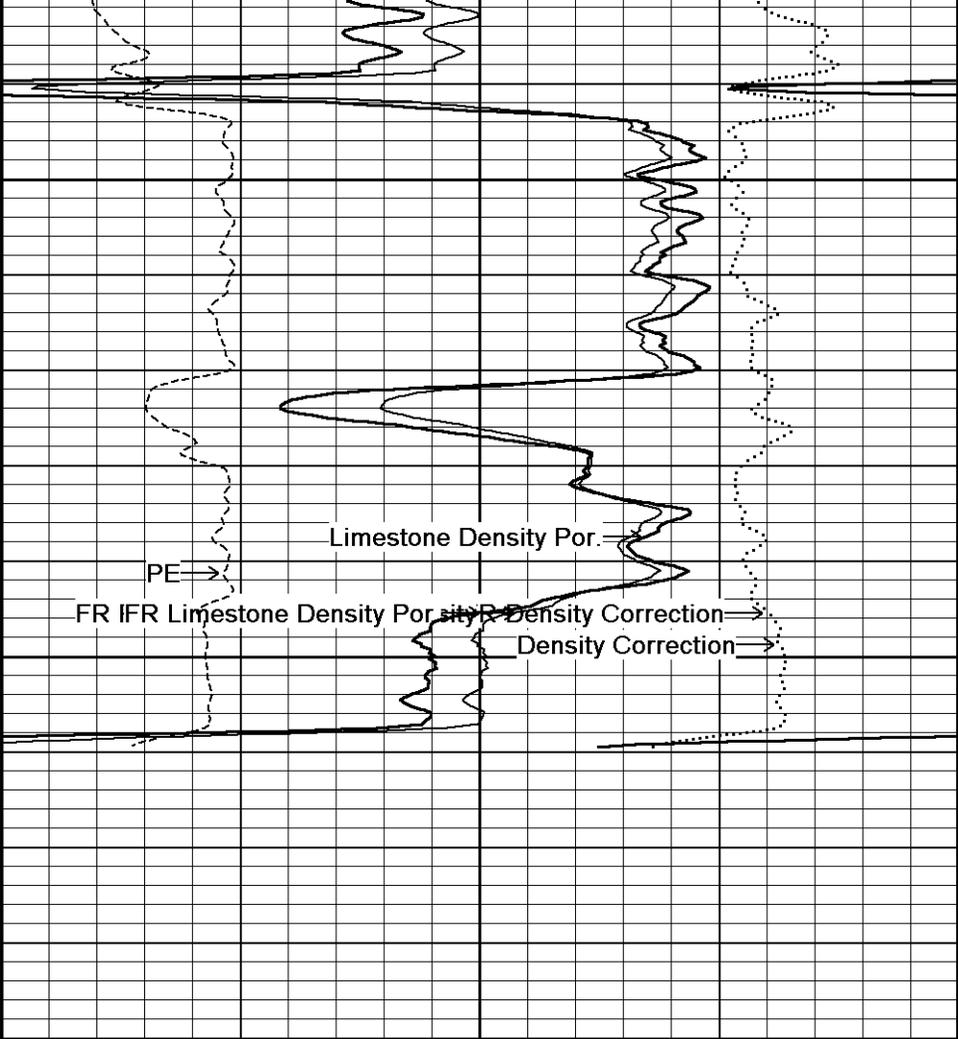
110°

4650

0

4690

Depth in Feet

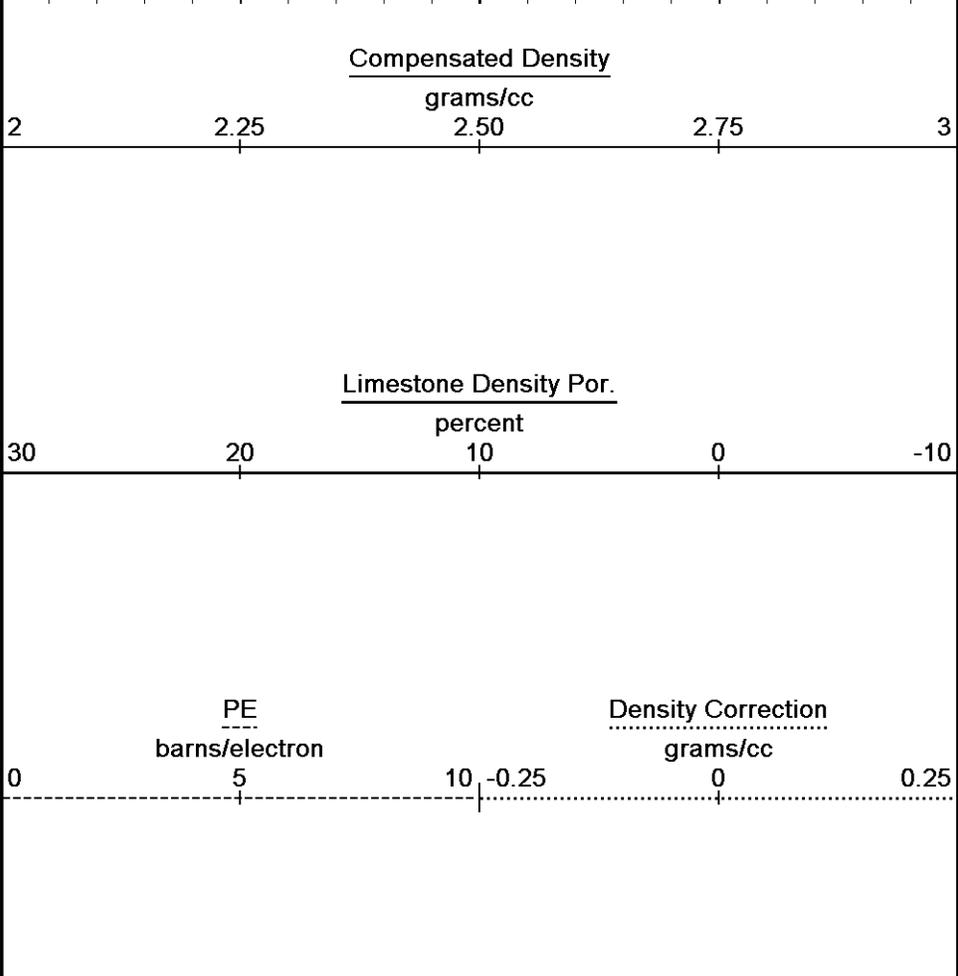


Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240





Repeat Section



BEFORE SURVEY CALIBRATION

C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34.dta

General Constants All 000

Last Edited on 18-NOV-2010,10:07

General Parameters

Mud Resistivity	1.590	ohm-metres
Mud Resistivity Temperature	77.000	degrees F
Water Level	0.000	feet
Density/Neutron 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	Limestone Density Por.
Resistivity used	Array Ind. One Res Rt
RWA Constant A	1.000
RWA Constant M	2.000

High Resolution Temperature Calibration MCG-B 67

Field Calibration on 06-AUG-2010,10:40

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

High Resolution Temperature Constants MCG-B 67

Last Edited on 06-AUG-2010,10:39

Pre-filter Length 11

SP Calibration MCG-B 67

Field Calibration on 09-SEP-2010 13:54

	Measured	Calibrated (mV)
Reference 1	104.1	100.0
Reference 2	-95.6	-100.0

Gamma Calibration MCG-B 67

Field Calibration on 17-NOV-2010 18:06

	Measured	Calibrated (API)
Background	63	43
Calibrator (Gross)	732	499
Calibrator (Net)	669	456

Gamma Constants MCG-B 67

Last Edited on 18-NOV-2010,09:55

Gamma Calibrator Number	grcc141	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 12-NOV-2010 14:02

Field Check on 17-NOV-2010 17:56

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.1	2.6	12.8
Micro Inverse	15.6	78.3	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.2	32.2
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 17-NOV-2010,17:54

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	0.5110		
Micro Inverse K Factor	0.3380		
Standoff Offset	N/A	inches	

Caliper Calibration MML-A 4

Base Calibration on 12-NOV-2010 13:52
Field Calibration on 17-NOV-2010 17:57

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14910	5.96
2	18255	7.98
3	21651	9.95
4	25473	11.91
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.95	5.96

Neutron Calibration MDN-A.B 41

Base Calibration on 13-OCT-2010 12:02
Field Check on 17-NOV-2010 18:12

Base Calibration				
	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3163	98	3714	110
Ratio	32.297		33.764	
Field Calibrator at Base				
			Calibrated (cps)	
			2080	3027
Ratio			0.687	
Field Check				
			Calibrated (cps)	
			2082	2999
Ratio			0.694	

Neutron Constants MDN-A.B 41

Last Edited on 18-NOV-2010,09:55

Neutron Source Id	p31124b		
Neutron Jig Number	nj5736		
Epithermal Neutron	No		
Caliper Source for Processing	Density Caliper		
Stand-off	0.00	inches	
Mud Density	1.12	gm/cc	
Limestone Sigma	7.10	cu	
Sandstone Sigma	4.26	cu	
Dolomite Sigma	4.70	cu	
Formation Pressure Source	Constant Value		
Formation Pressure	0.00	kpsi	
Temperature Source	MCG External Temperature		
Temperature	N/A	degrees F	
Mud Salinity	0.00	kppm	
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE-A.A 67

Base Calibration on 12-NOV-2010 13:38
Field Check on 17-NOV-2010 17:53

Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	961.4	126.8
Base Check		280.8
Field Check		280.8

FE Constants MFE-A.A 67

Last Edited on 17-NOV-2010,17:51

Running Mode	No Sleeve
MFE K Factor	0.1268
Caliper Source for FE correction	Density Caliper

Caliper Source for FE correction	Density Caliper	N/A	inches
Rm Source for FE correction	Temperature Corr		
Temp. for Rm Corr.	MCG External Temperature		
Stand-off		0.5	inches

High Resolution Temperature Calibration MAI-A.A 188

Field Calibration on 02-AUG-2010,11:00

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

High Resolution Temperature Constants MAI-A.A 188

Last Edited on

Pre-filter Length 11

Induction Calibration MAI-A.A 188

Base Calibration on 09-SEP-2010,10:03

Field Check on 17-NOV-2010 17:51

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.5	472.3	9.3	966.2
2	6.0	378.3	7.6	821.4
3	3.5	260.7	5.2	566.0
4	1.1	135.1	2.6	279.2

Array Temperature 82.2 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.3	3849.6
2	0.0	0.0	30.6	3571.8
3	0.0	0.0	28.4	3042.6
4	0.0	0.0	21.1	2040.2
Deep	0.0	0.0	18.1	1924.8
Medium	0.0	0.0	40.3	4057.8
Shallow	0.0	0.0	44.9	5365.3

Array Temperature 0.0 49.2 Deg F

Induction Constants MAI-A.A 188

Last Edited on 17-NOV-2010,17:48

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

0.00
0.00
0.00

0.00
0.00

DOWNHOLE EQUIPMENT

C:\Minimus 11_01\Data\Grand Mesa Smith 1-34\GRAND MESA SMITH 1-34.dta

Compact Comms Gamma
MCG-B 67 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 41 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

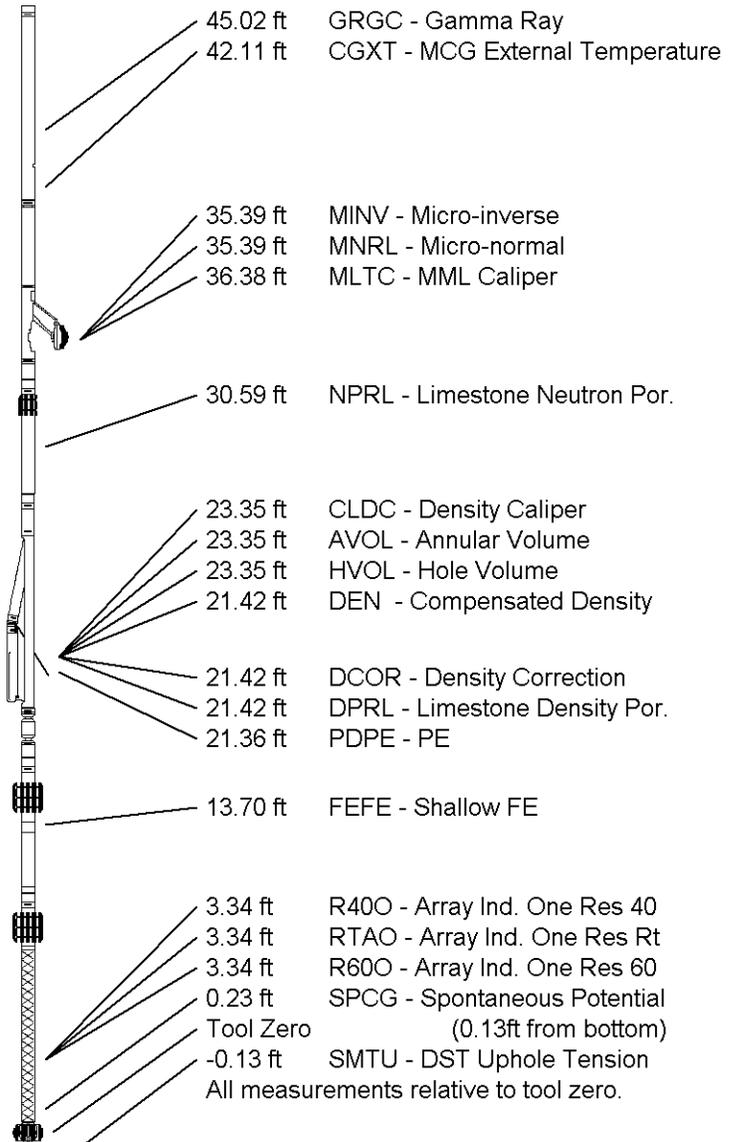
Compact Density/Caliper
MPD-B 61 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 91 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 67 LG: 6.03 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 188 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.30 ft Weight: 407.9 lb



COMPANY

GRAND MESA OPERATING COMPANY, INC.

WELL

SMITH #1-34

FIELD

WILDCAT

PROVINCE/COUNTY

LOGAN

COUNTRY/STATE

U.S.A. / KANSAS

Elevation Kelly Bushing	2983.00	feet
Elevation Drill Floor	2982.00	feet
Elevation Ground Level	2978.00	feet

First Reading	4645.00	feet
Depth Driller	4670.00	feet
Depth Logger	4667.00	feet



Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRO RESISITIVITY LOG



