



Weatherford[®]

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

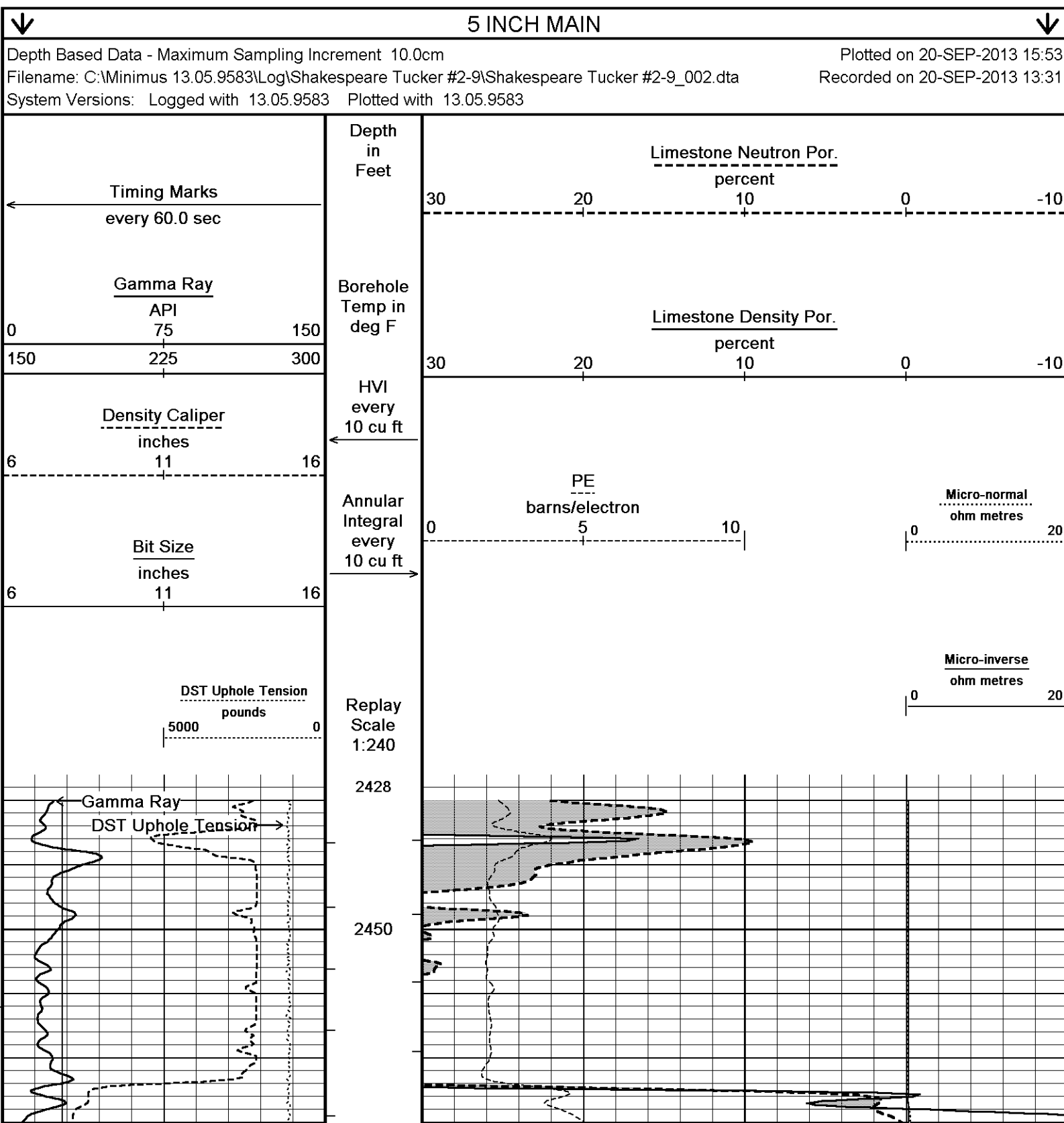
COMPANY				SHAKESPEARE OIL INC.			
WELL				TUCKER #2-9			
FIELD				WILDCAT			
PROVINCE/COUNTY				SCOTT			
COUNTRY/STATE				U.S.A. / KANSAS			
LOCATION				2216' FSL & 1695' FWL			
SEC	TWP	RGE	Other Services				
9	16S	34W	MAI/MFE				
API Number		15-171-20973		MSS			
Permit Number							
Permanent Datum G.L., Elevation 3139 feet						Elevations:	
Log Measured From KB						KB	
Drilling Measured From K.B. @ 10FEET						DF	
						GL	
Date	20-SEP-2013						
Run Number	ONE						
Service Order	3541087						
Depth Driller	4865.00					feet	
Depth Logger	4862.00					feet	
First Reading	4830.00					feet	
Last Reading	3800.00					feet	
Casing Driller	260.00					feet	
Casing Logger	264.00					feet	
Bit Size	7.875					inches	
Hole Fluid Type	CHEMICAL						
Density / Viscosity	9.30 lb/USg		52.00 CP				
PH / Fluid Loss	10.00		8.80 ml/30Min				
Sample Source	FLOWLINE						
Rm @ Measured Temp	0.72 @ 81.0					ohm-m	
Rmf @ Measured Temp	0.58 @ 81.0					ohm-m	
Rmc @ Measured Temp	0.86 @ 81.0					ohm-m	
Source Rmf / Rmc	CALC		CALC				
Rm @ BHT	0.53 @ 111.0					ohm-m	
Time Since Circulation	3 HOURS						
Max Recorded Temp	111.00					deg F	
Equipment / Base	13096		LIB				
Recorded By	ROB HOFFMAN						
Witnessed By	TIM PRIEST						
JOB #	LB13-266						

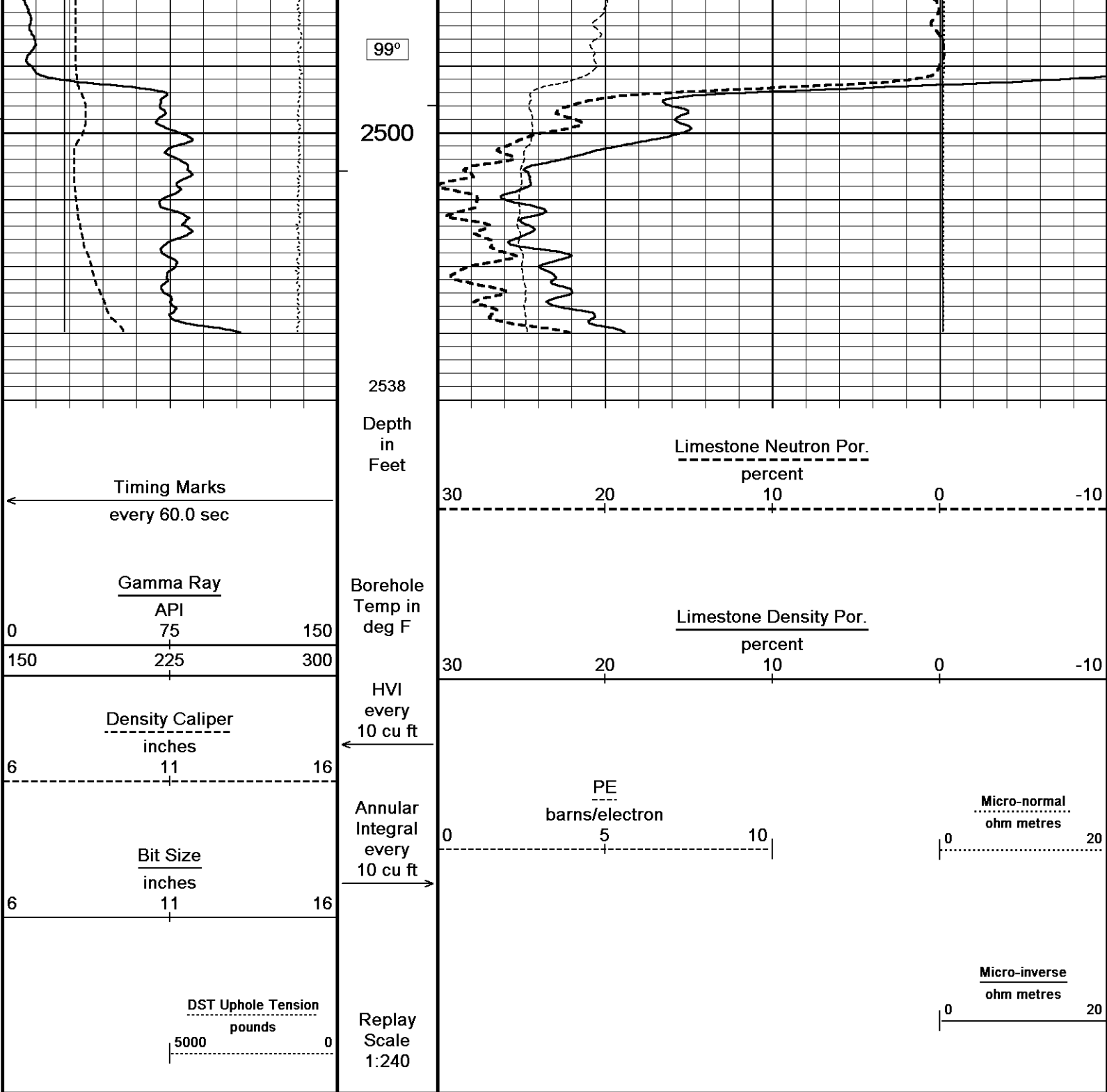
BOREHOLE RECORD					Last Edited: 20-SEP-2013 11:51
Bit Size inches		Depth From feet		Depth To feet	
7.875		260.00		4865.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	260.00	24.00	

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: 2262 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO 3800 FEET: 279 CU. FT.

- OPERATOR(S): K. RINEHART, D. CANADAY

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.



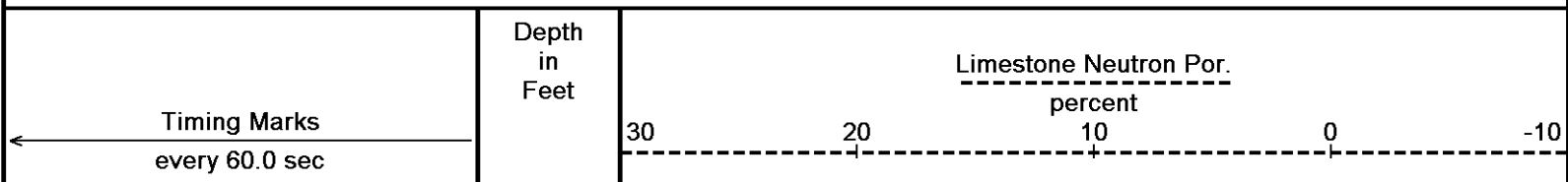


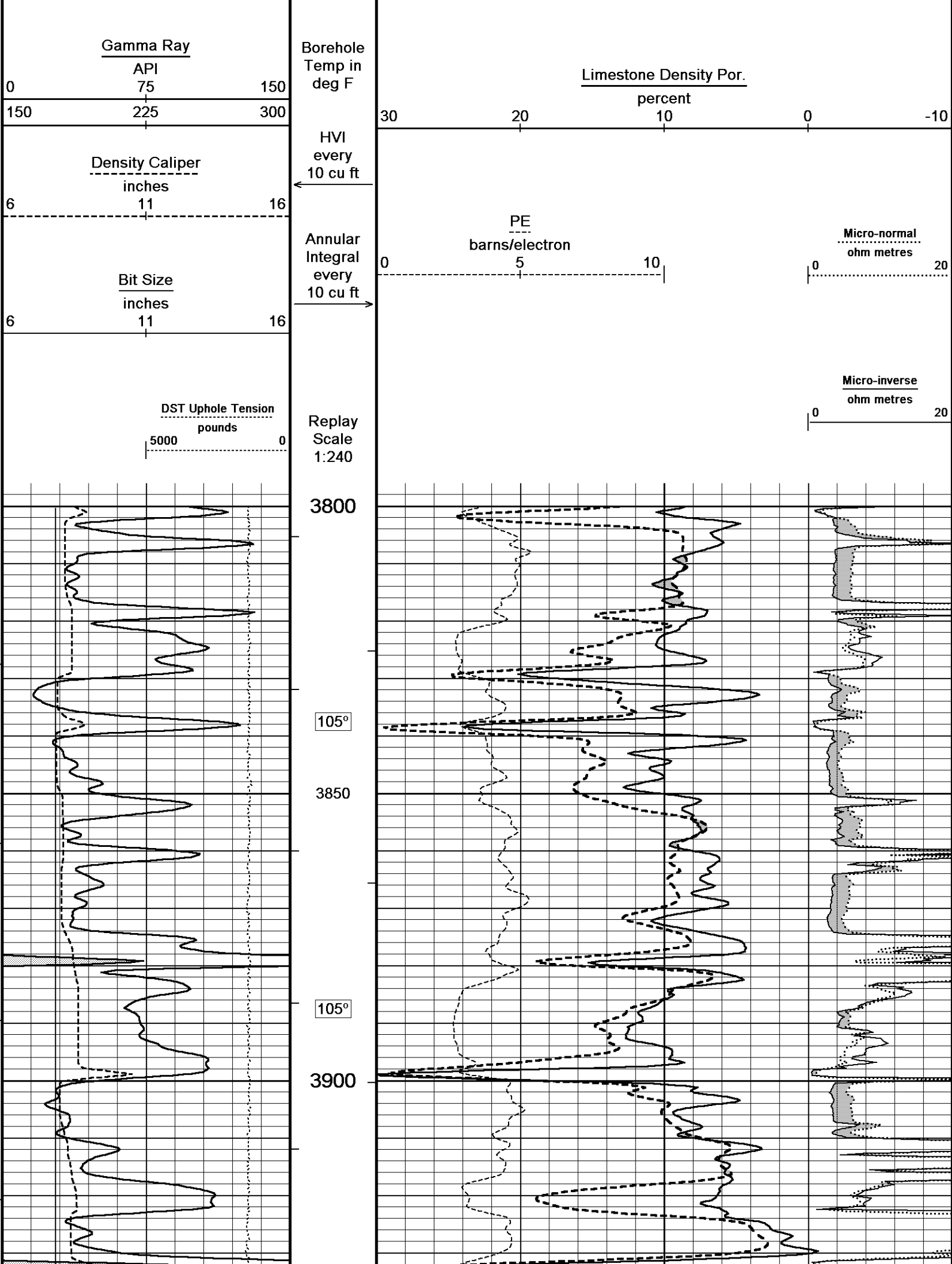
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 20-SEP-2013 15:53
Filename: C:\Minimus 13.05.9583\Log\Shakespeare Tucker #2-9\Shakespeare Tucker #2-9_002.dta Recorded on 20-SEP-2013 13:31
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

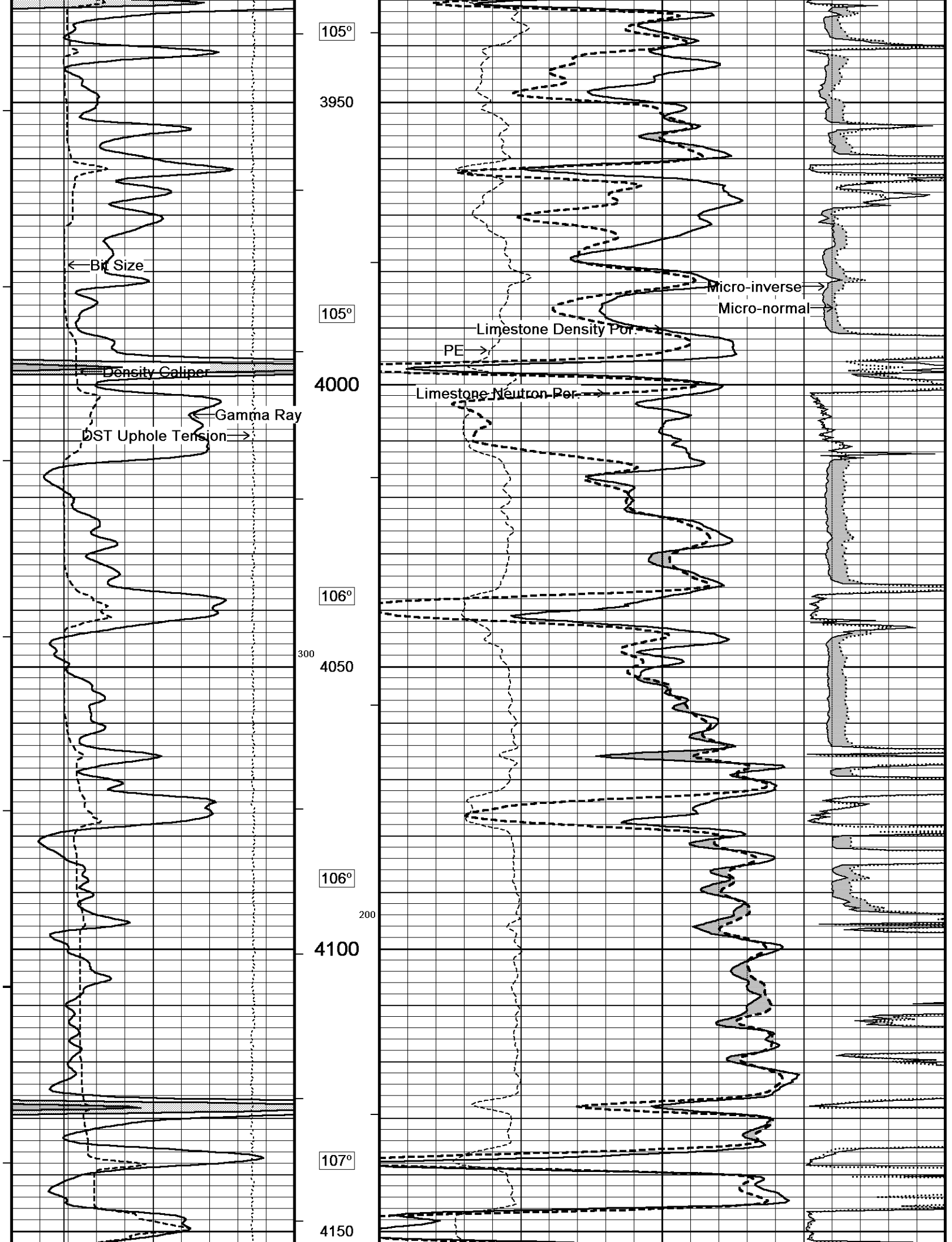
↑ 5 INCH MAIN ↑

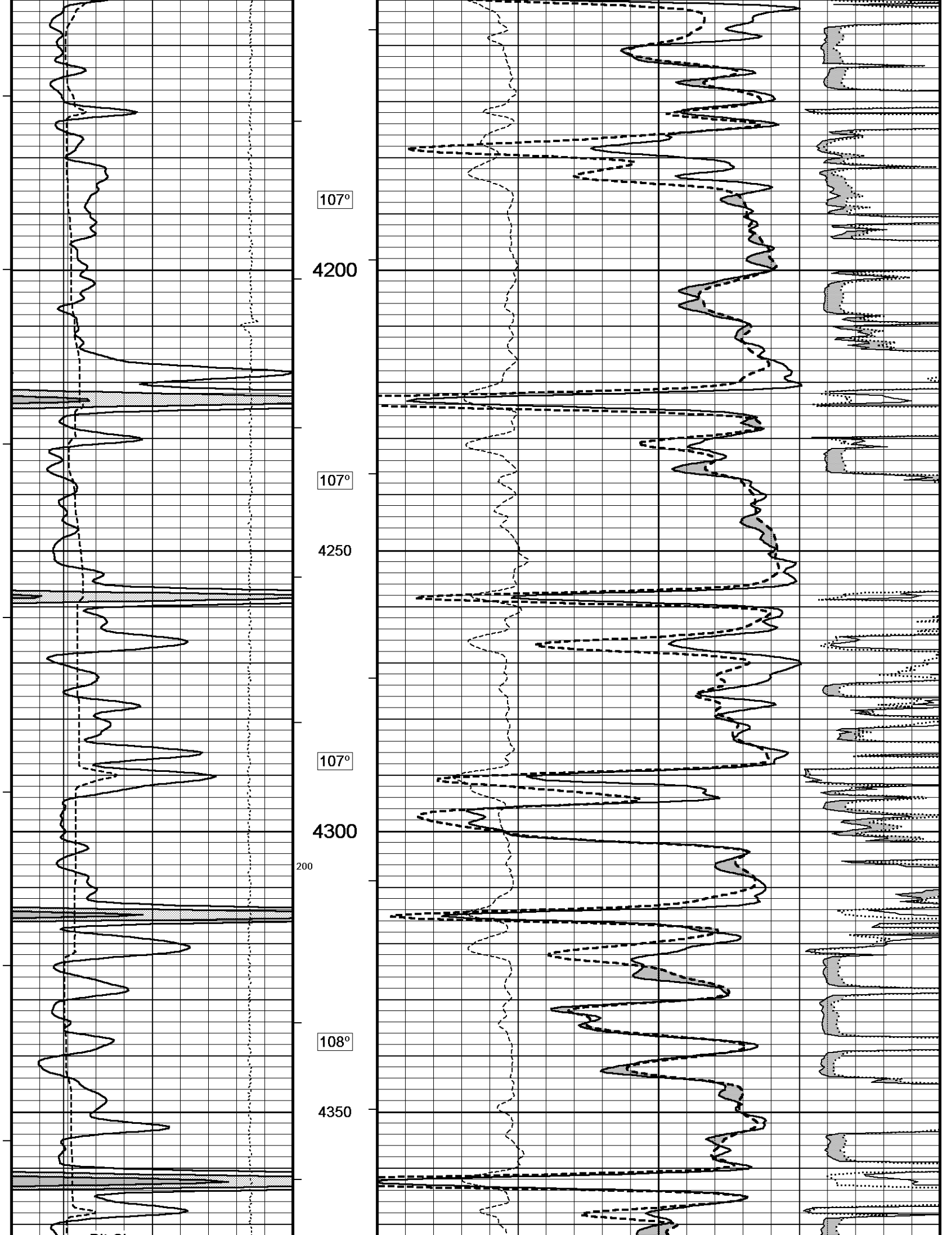
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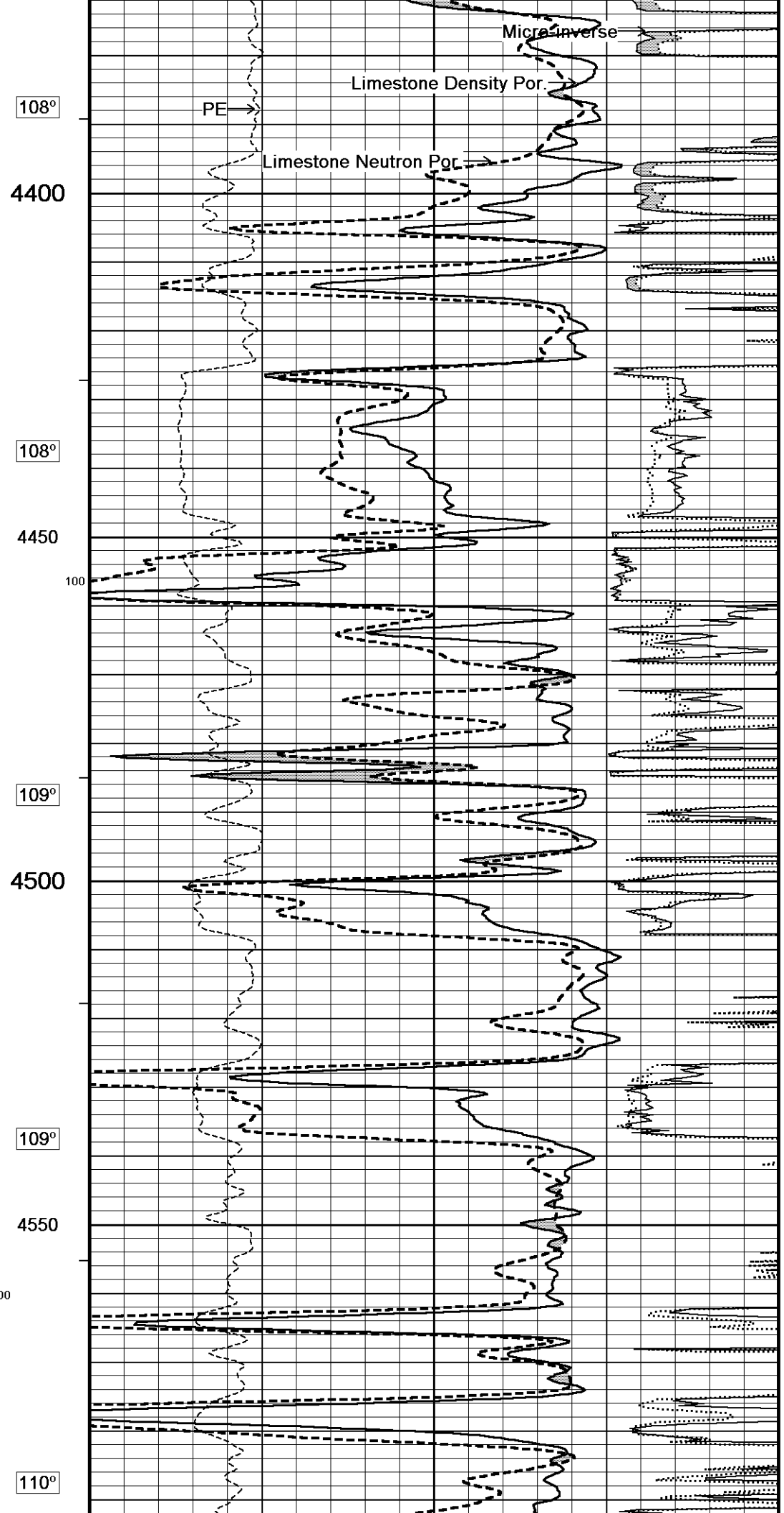
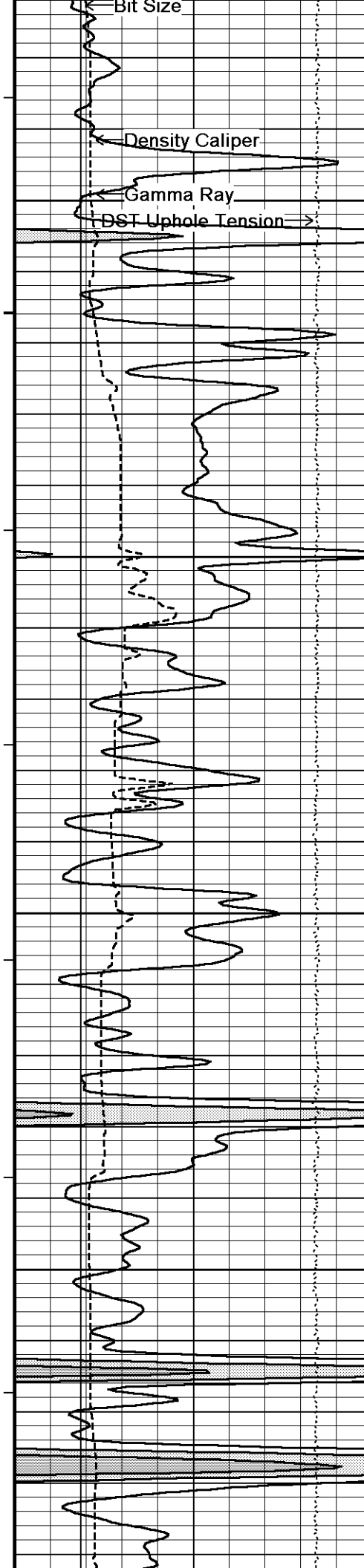
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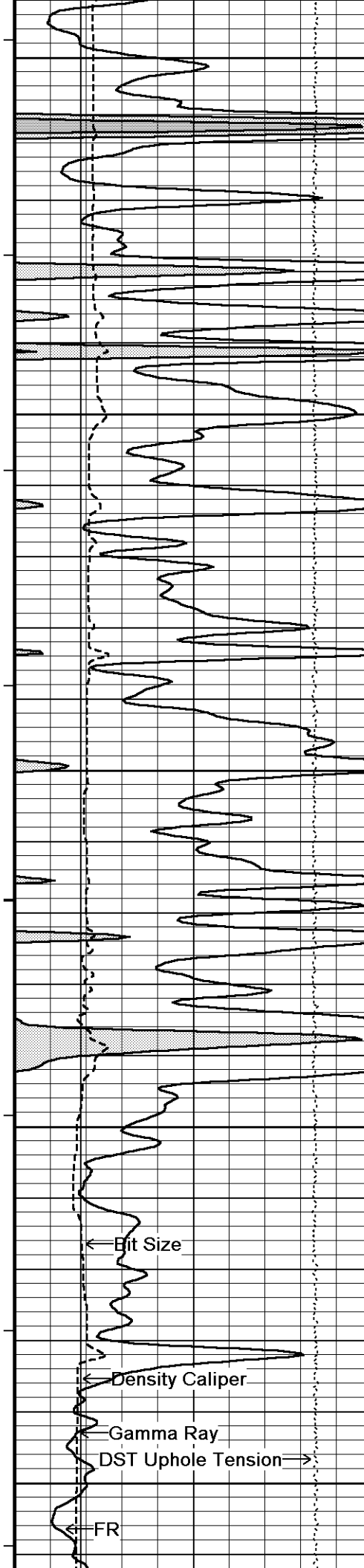












4600

110°

4650

111°

4700

112°

4750

111°

4800

← Bit Size

← Density Caliper

← Gamma Ray

DST Uphole Tension →

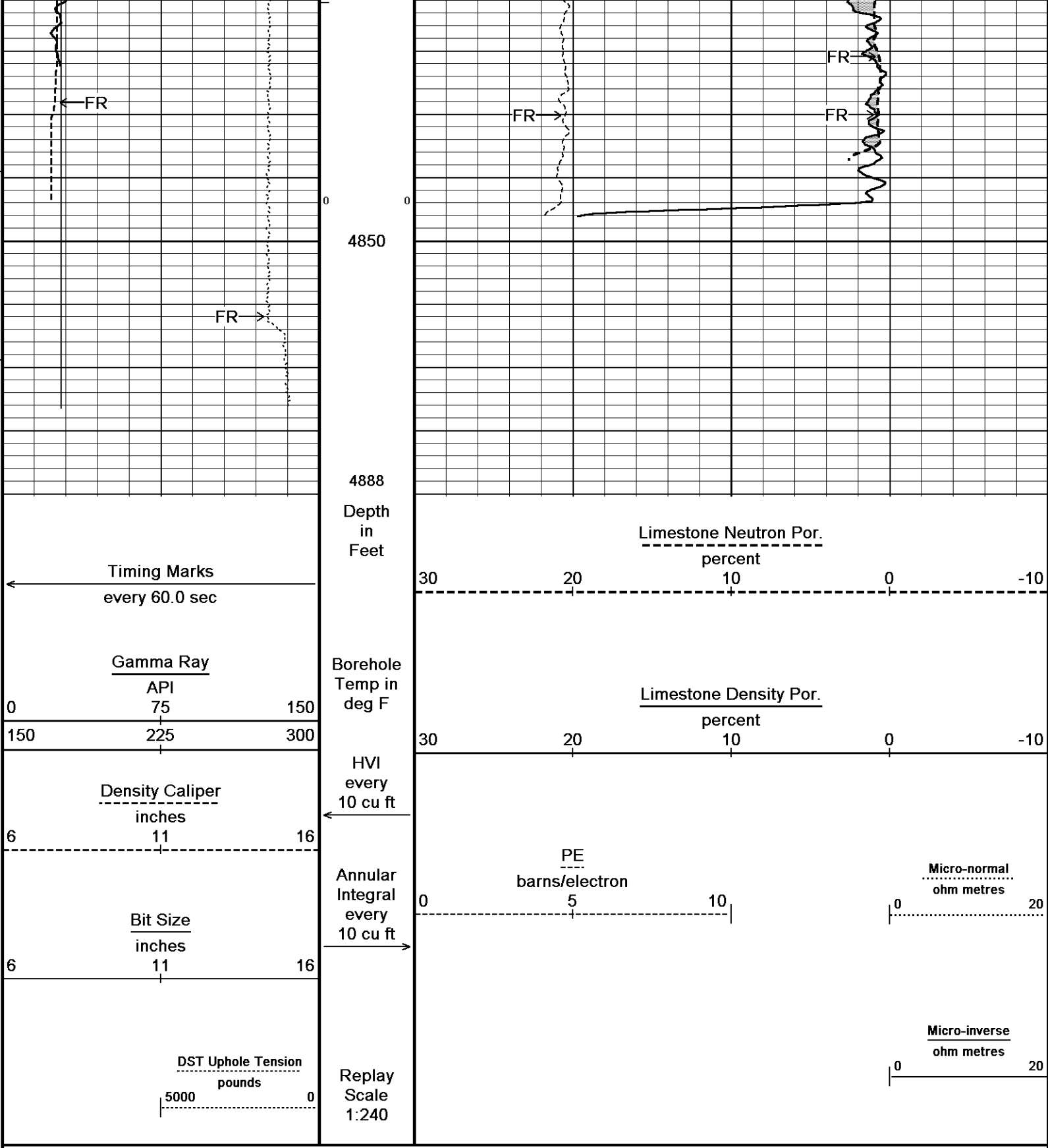
← FR

Limestone Density Por.

PE →

Limestone Neutron Por.

Micro-inverse
Micro-normal

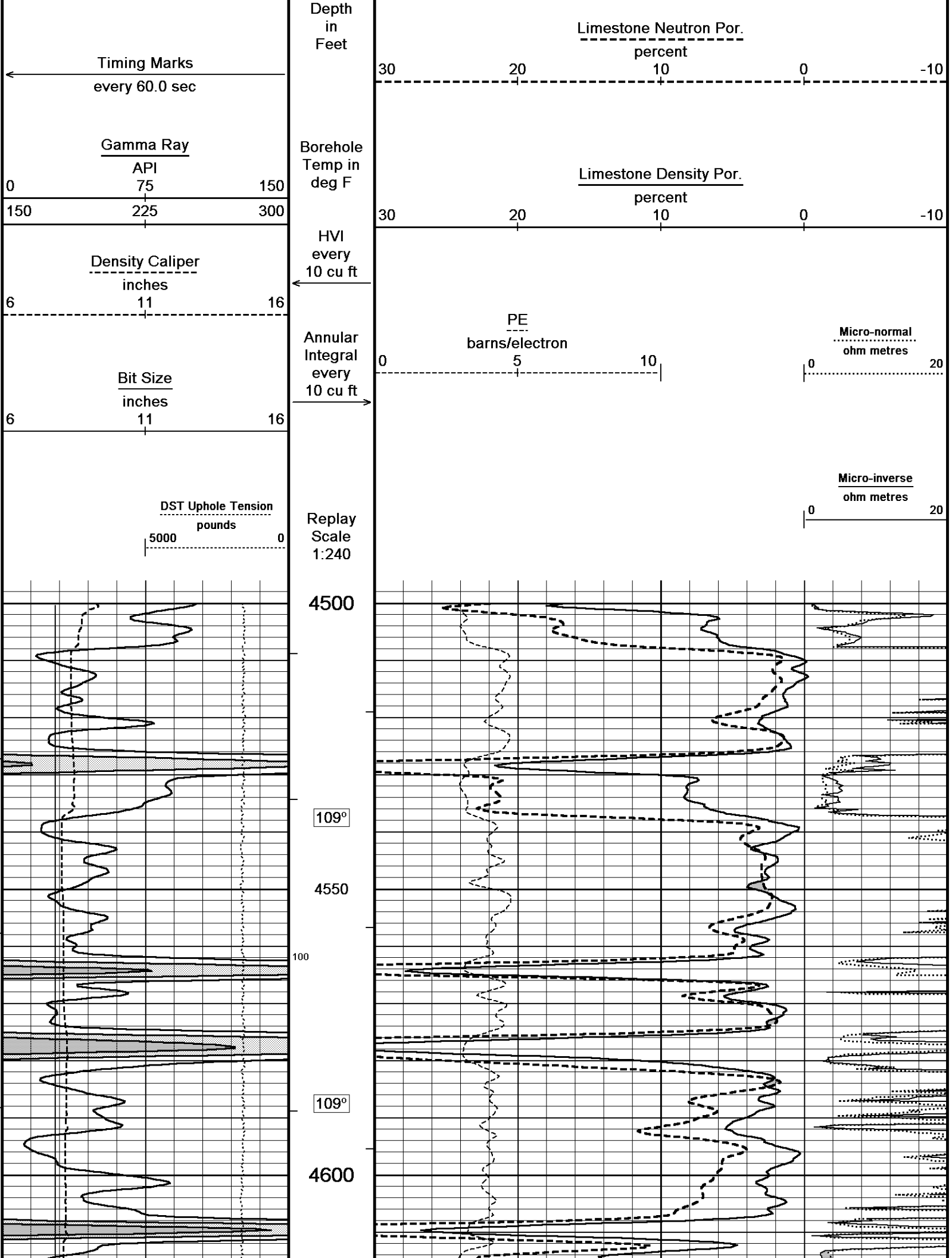


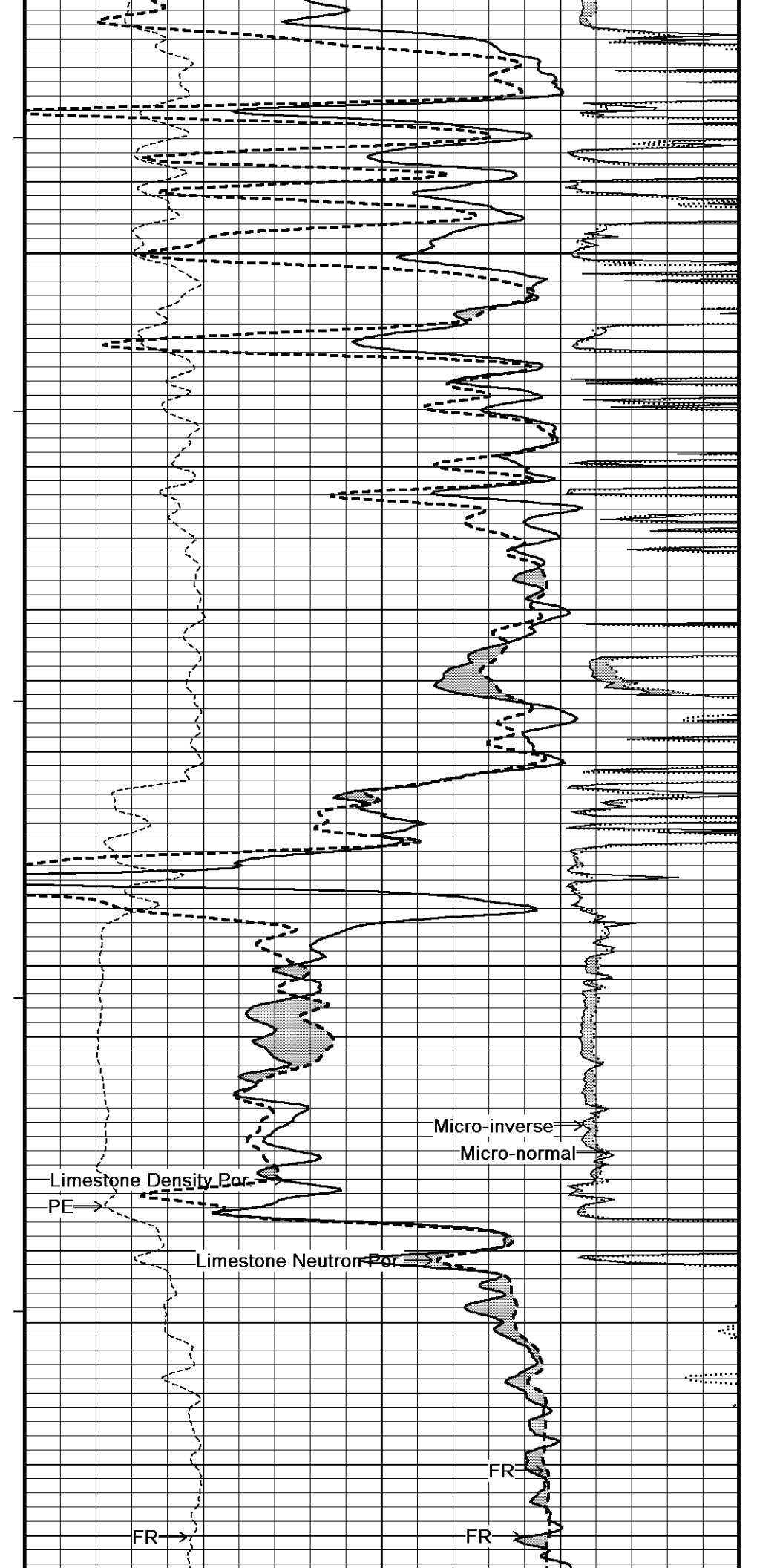
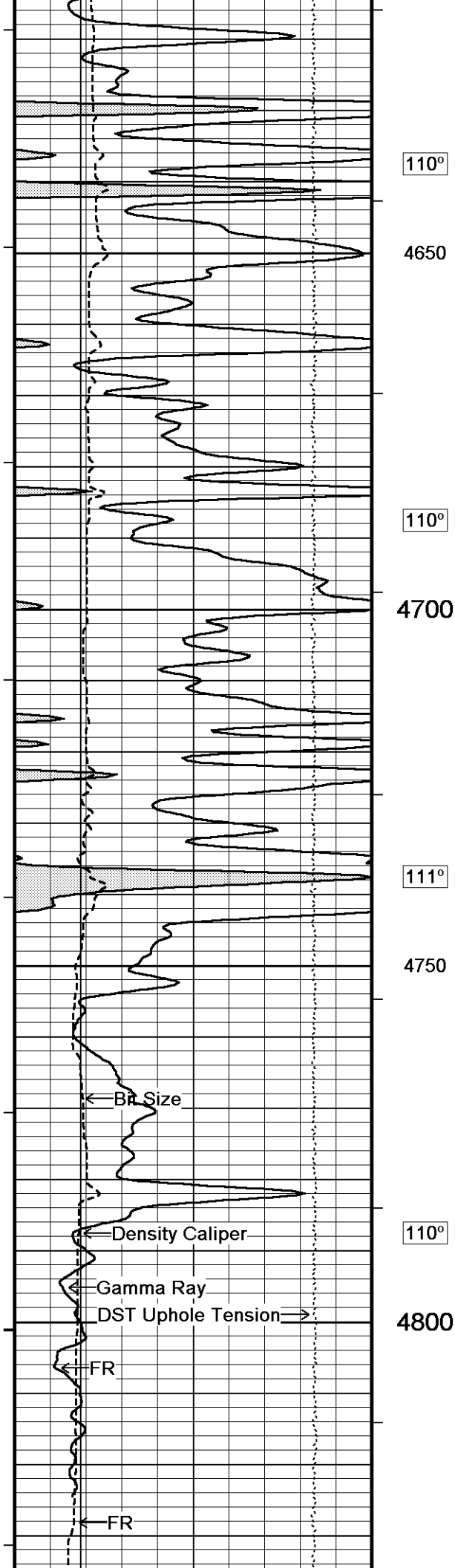
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System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

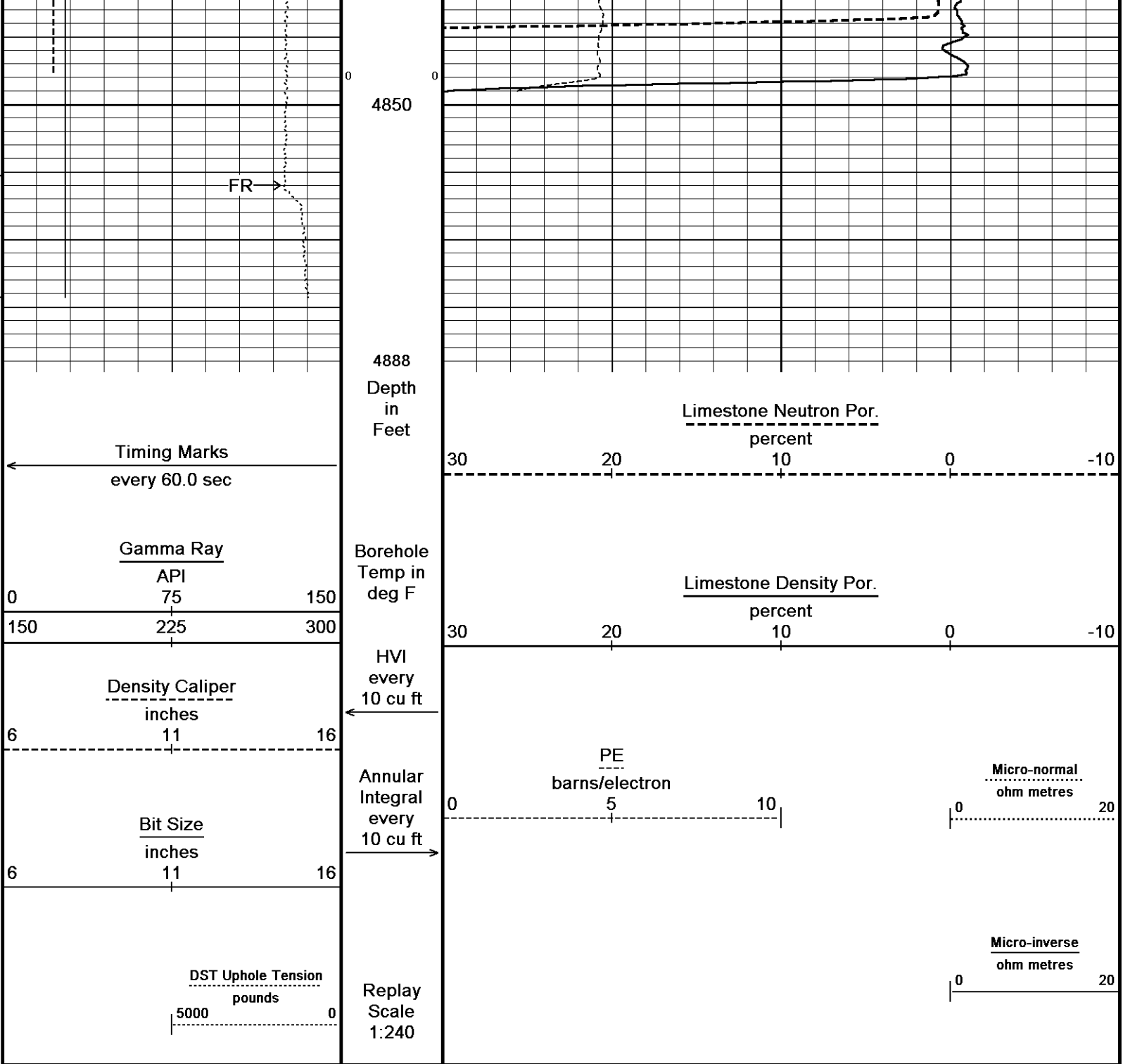
5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.05.9583\Log\Shakespeare Tucker #2-9\Shakespeare Tucker #2-9_001.dta
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





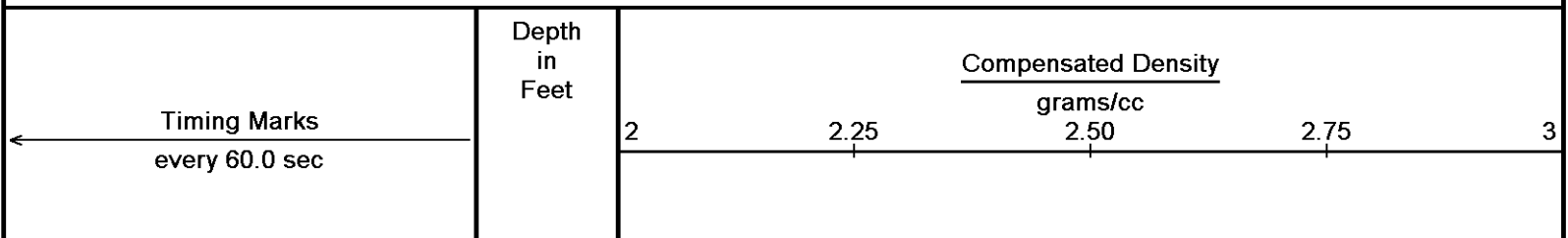


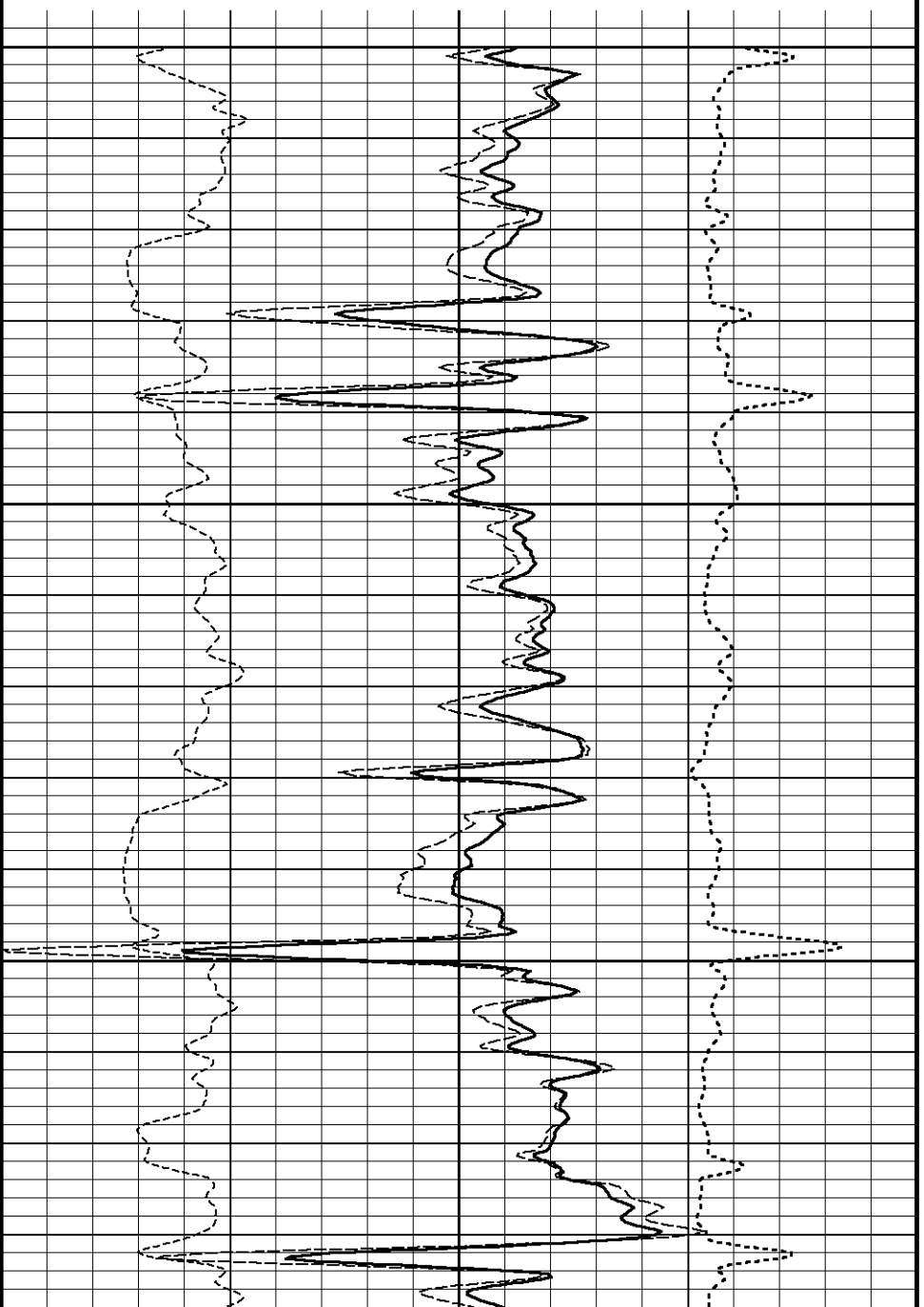
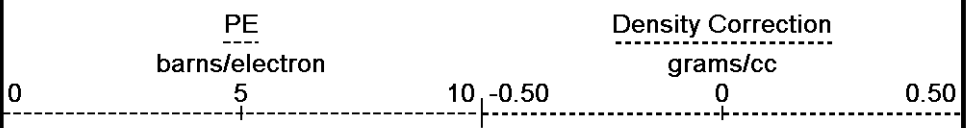
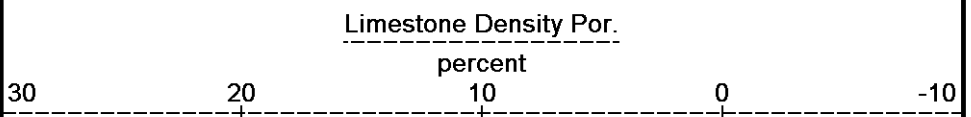
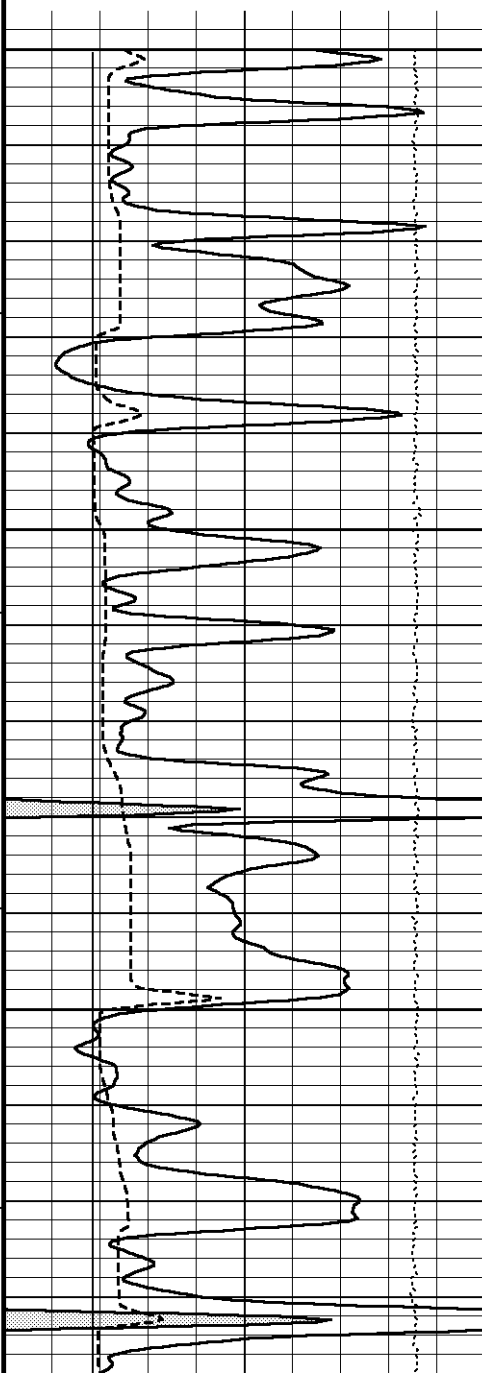
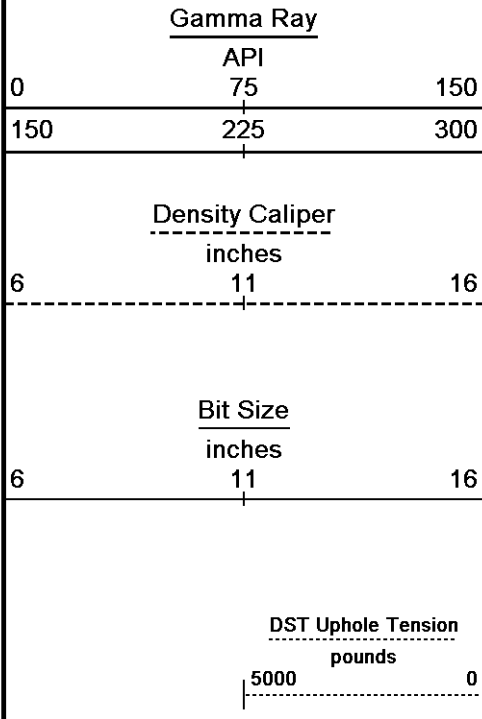
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System Versions: Logged with 13.05.9583 Plotted with 13.05.9583	

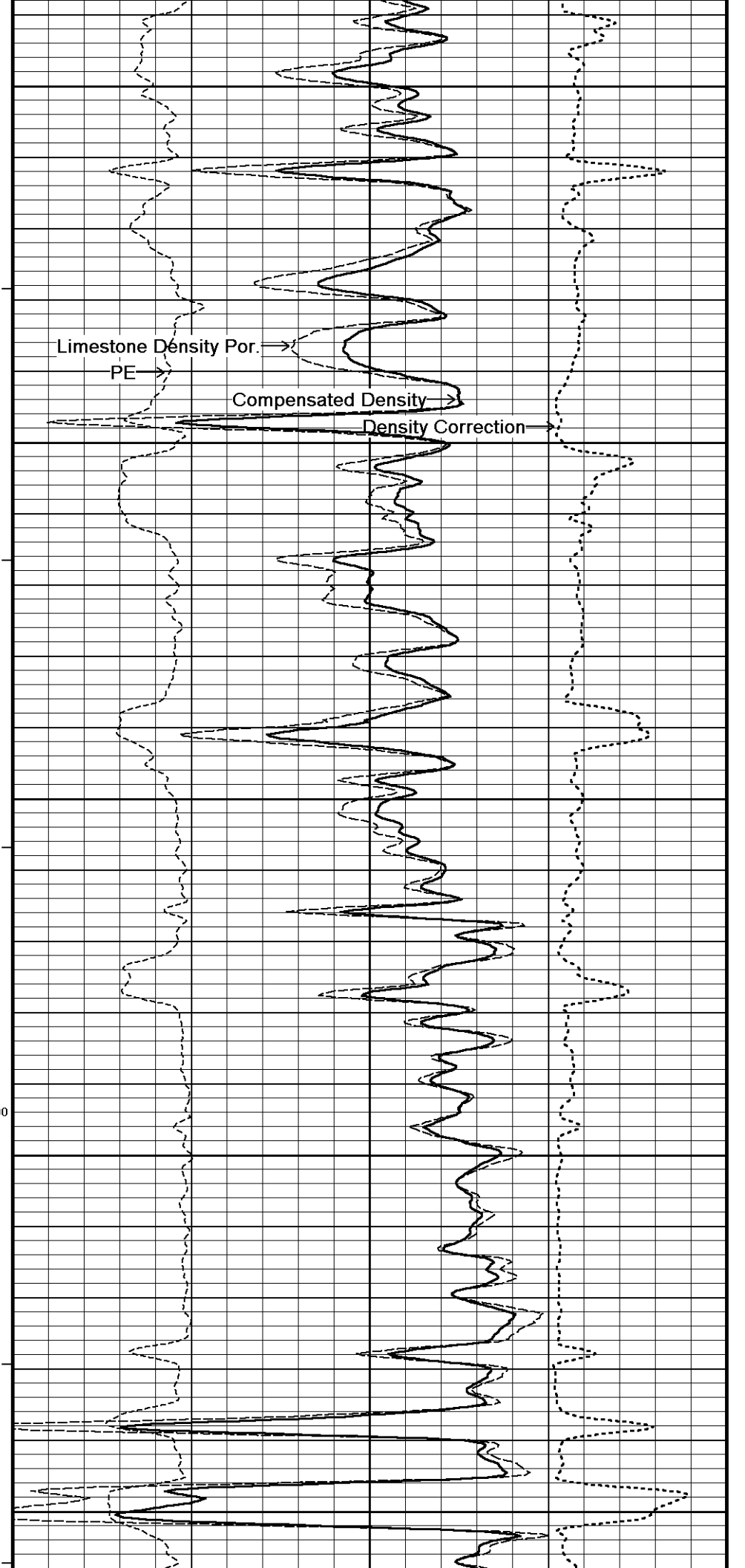
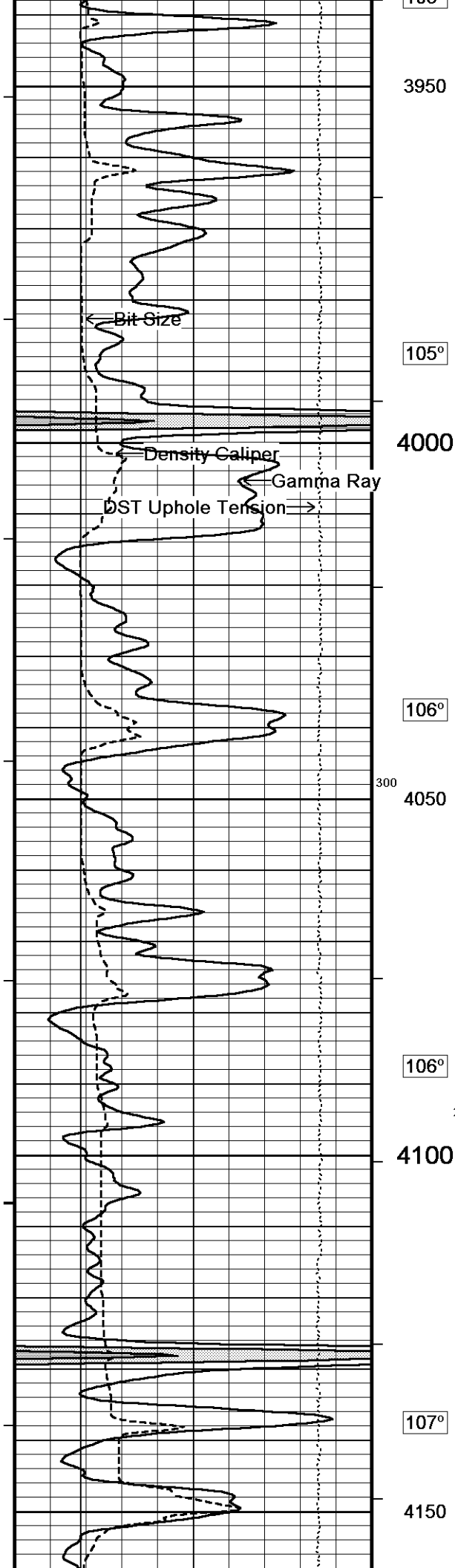
↑	REPEAT SECTION	↑
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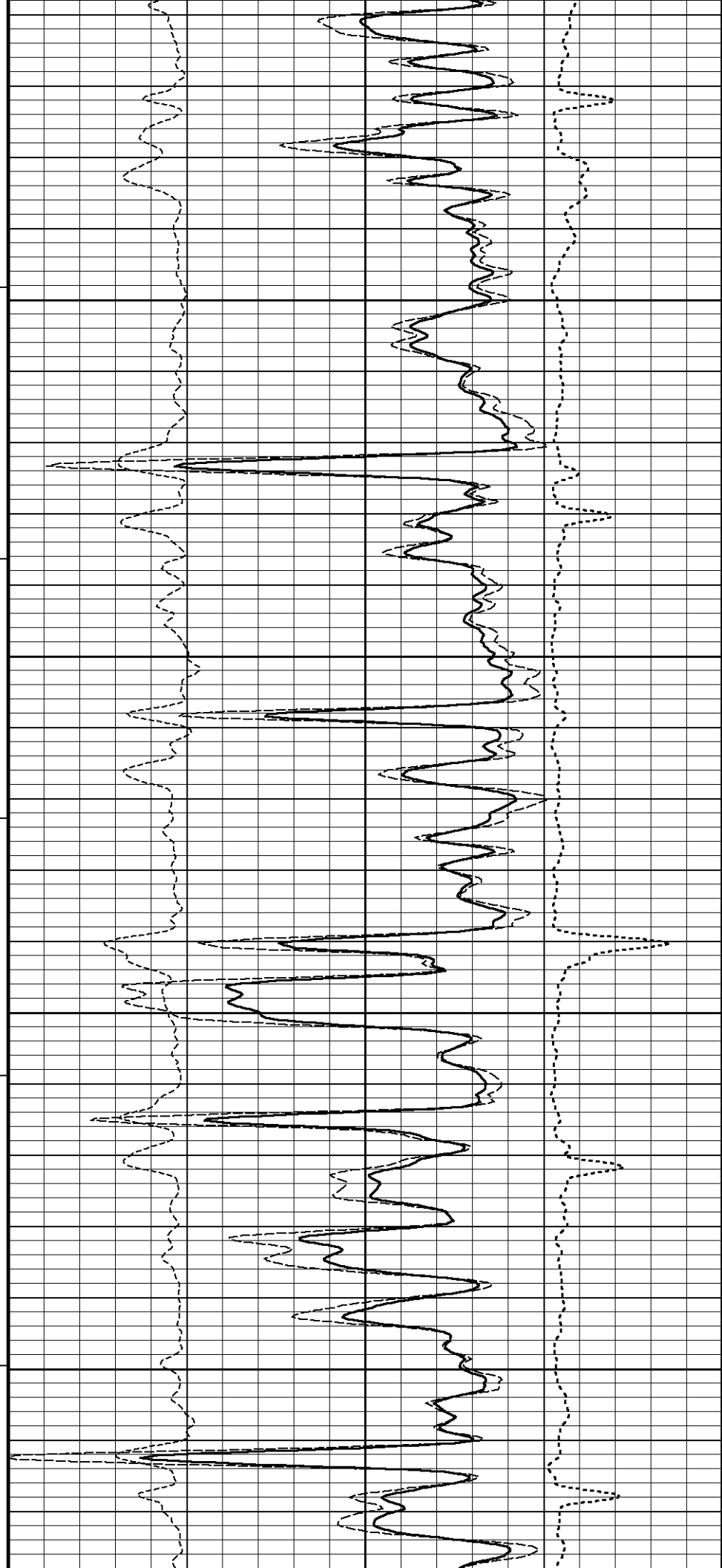
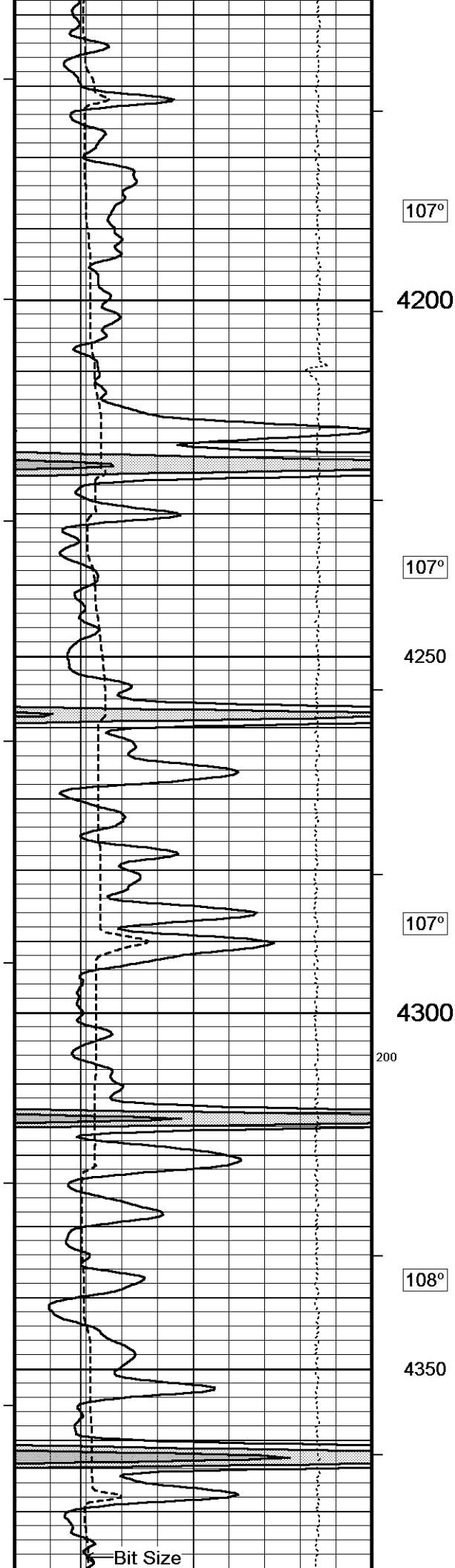
↓	5 INCH MAIN	↓
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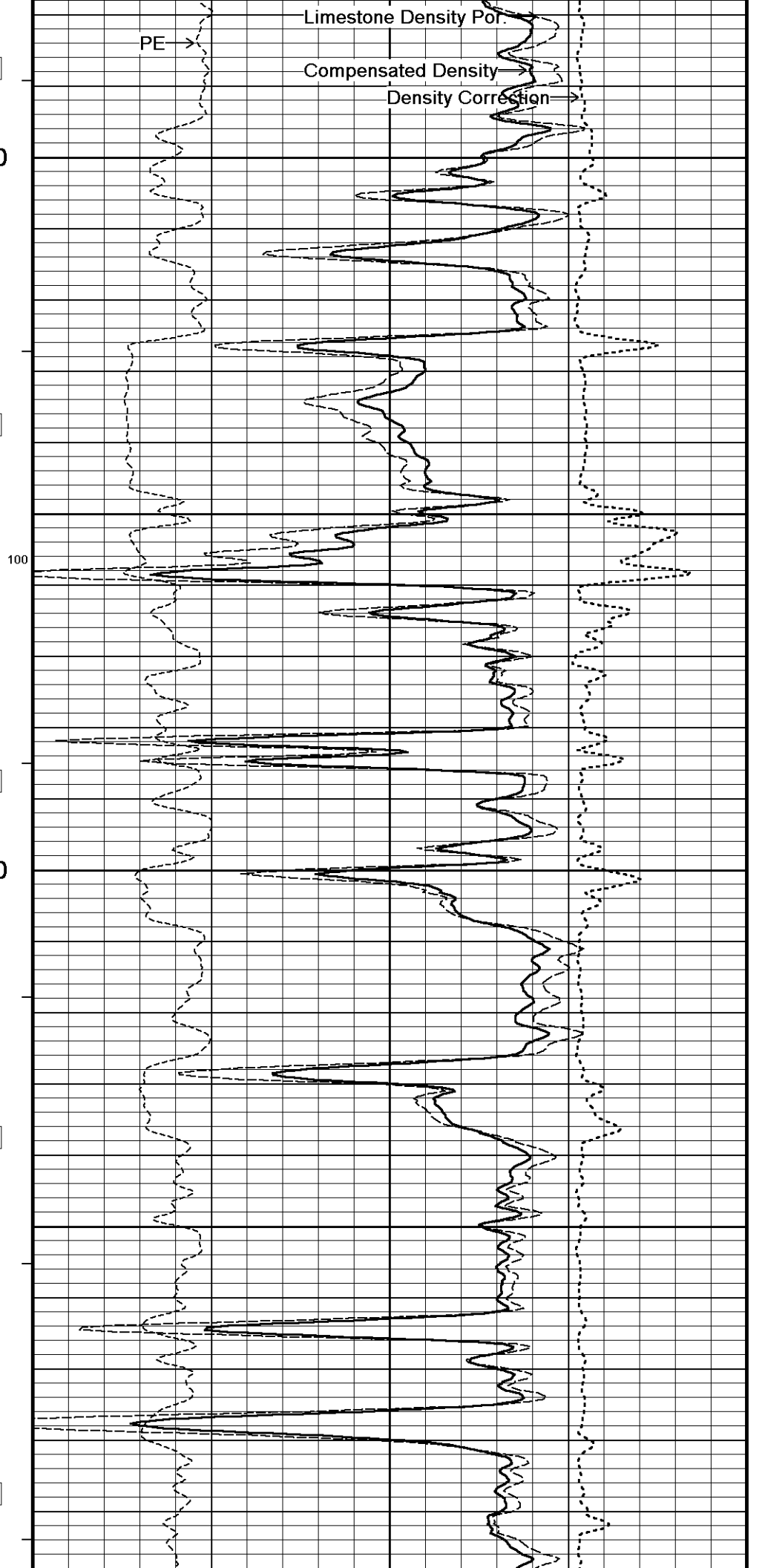
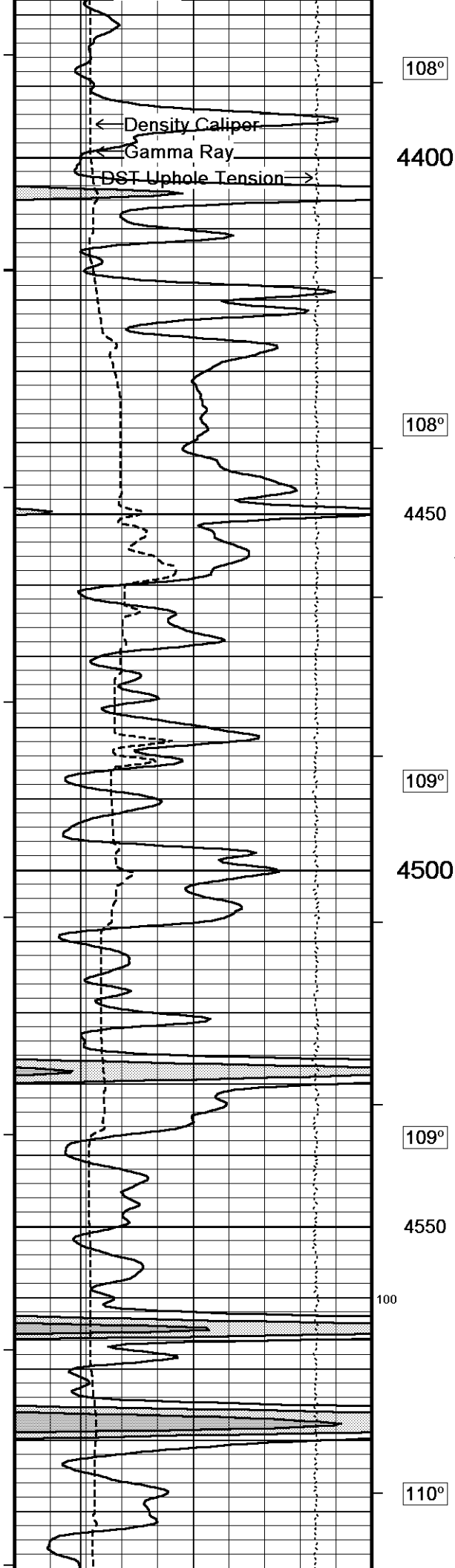
Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 20-SEP-2013 15:53
Filename: C:\Minimus 13.05.9583\Log\Shakespea...Shakespeare Tucker #2-9_002 spooled section.dta	Recorded on 20-SEP-2013 14:10
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583	

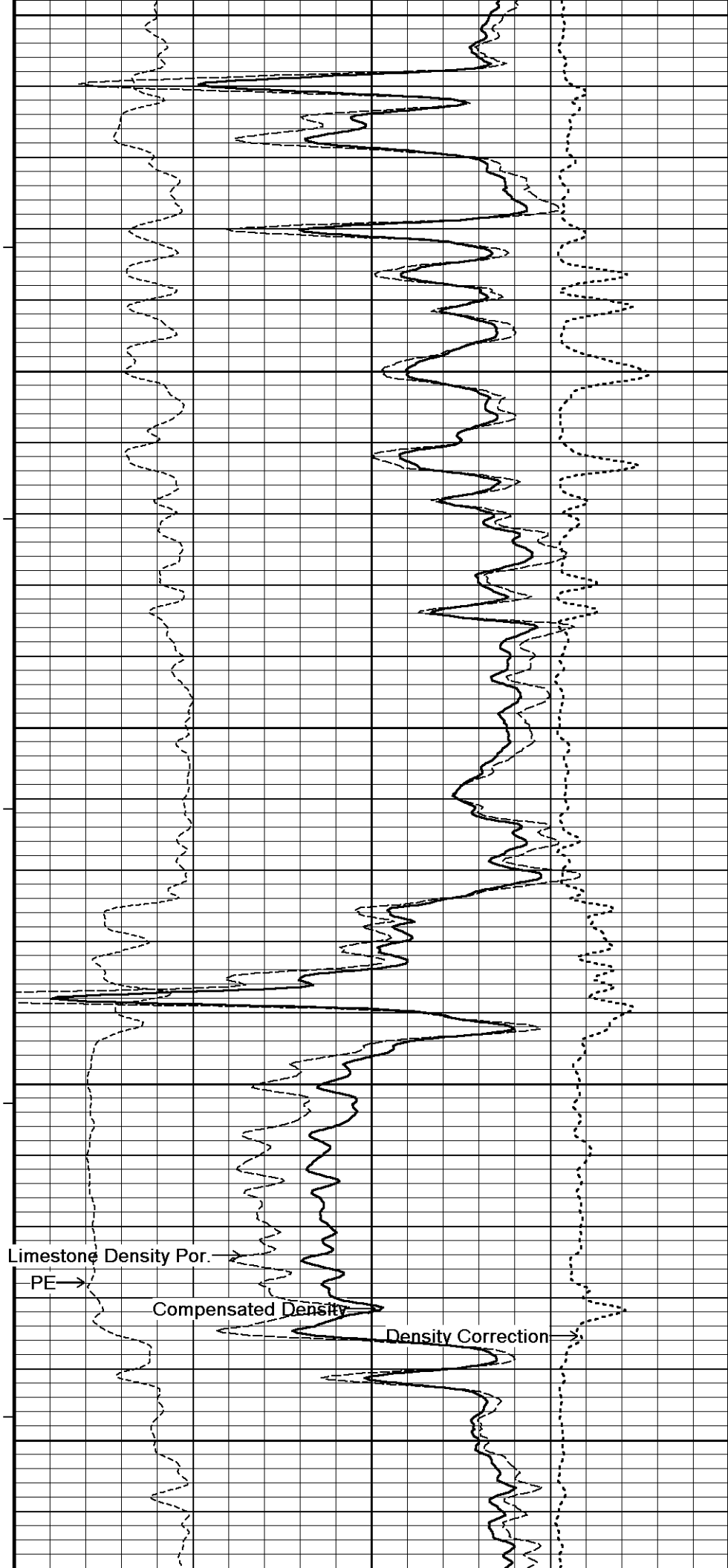
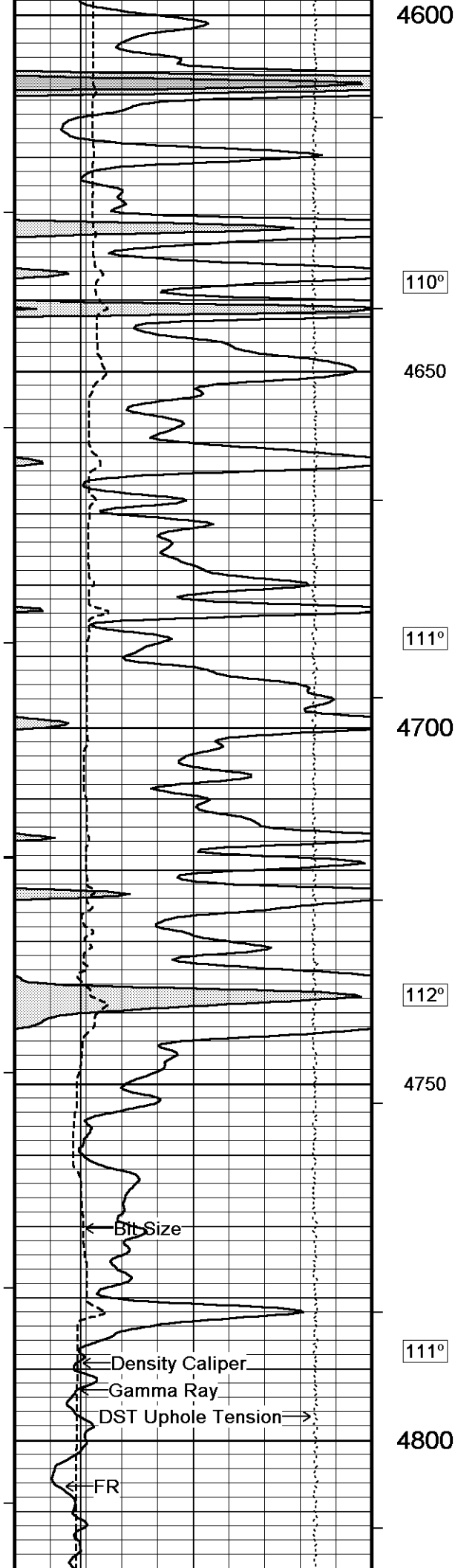


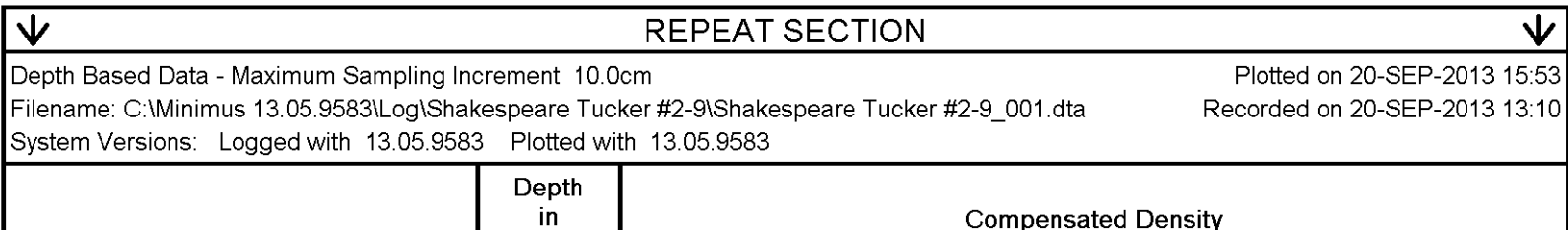
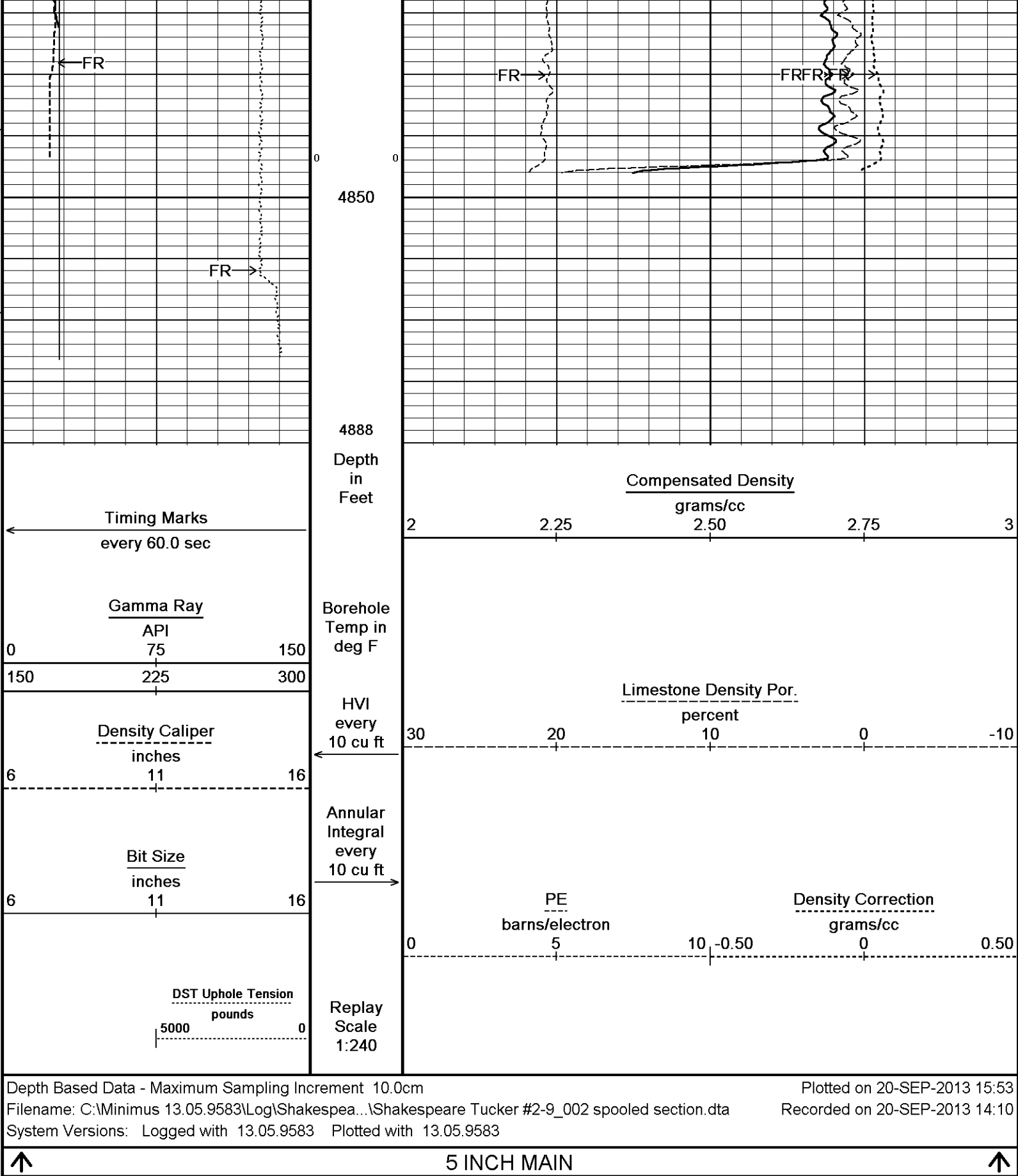


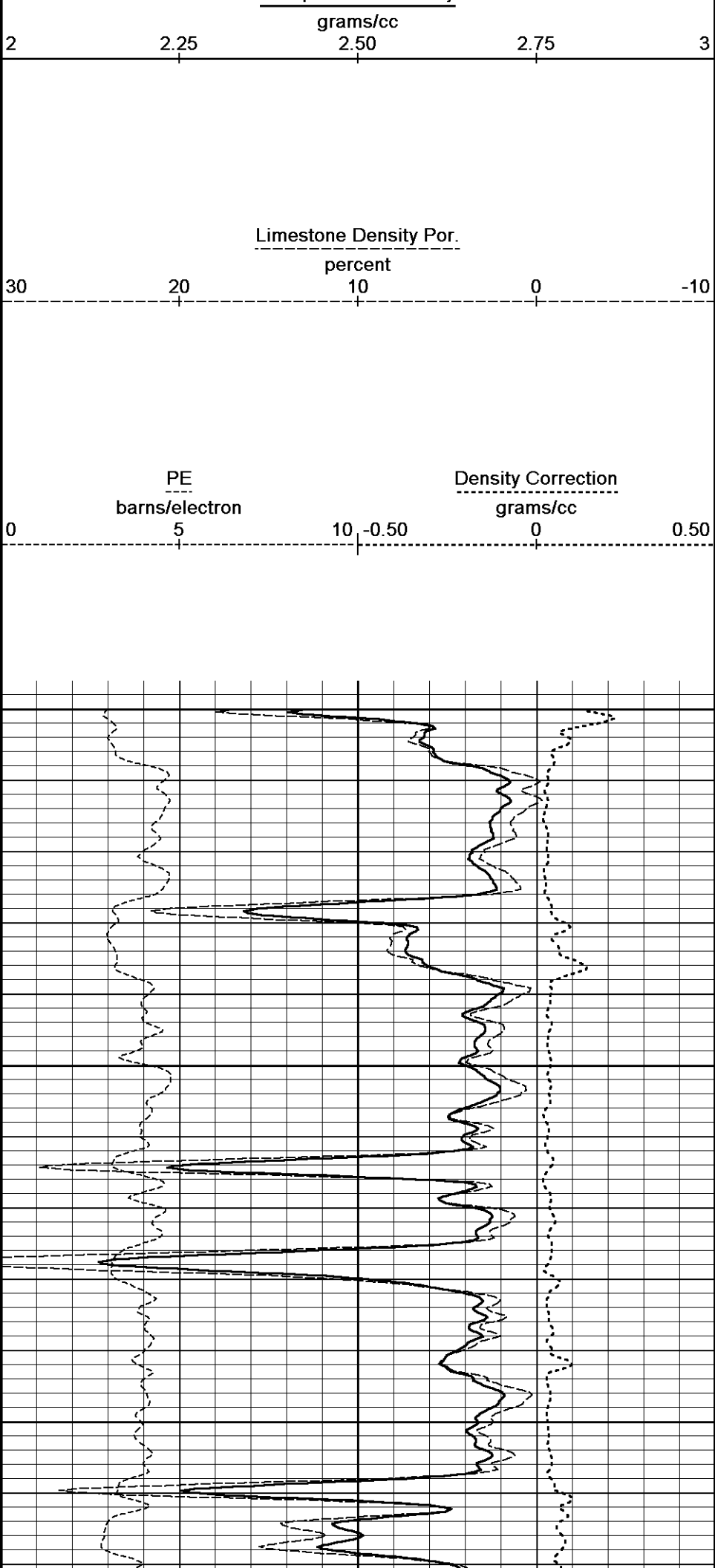
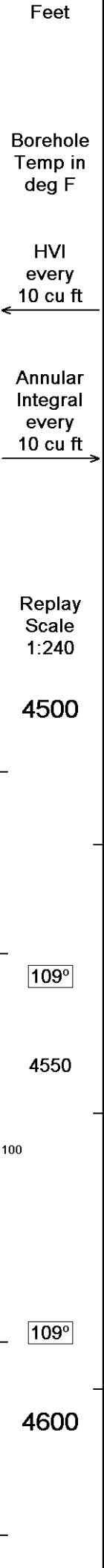
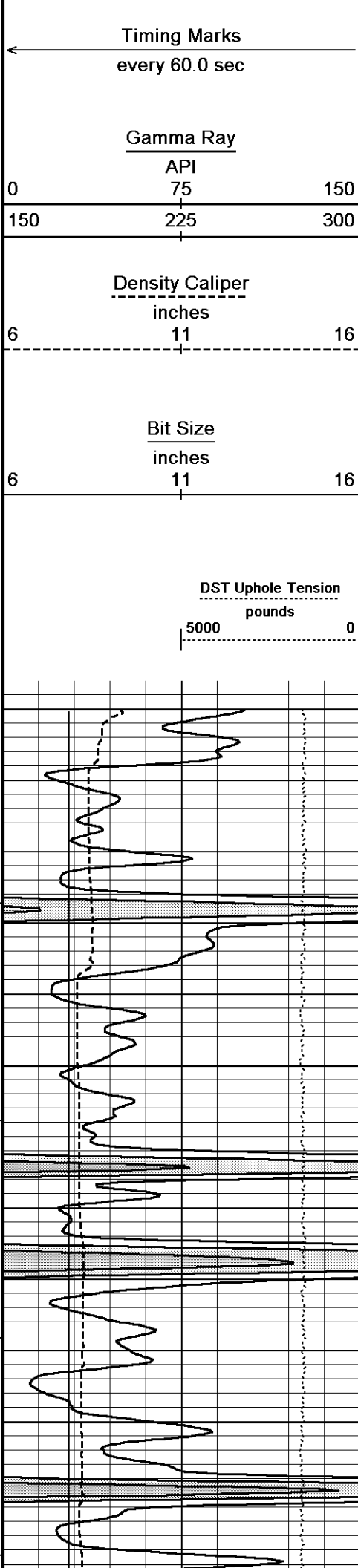


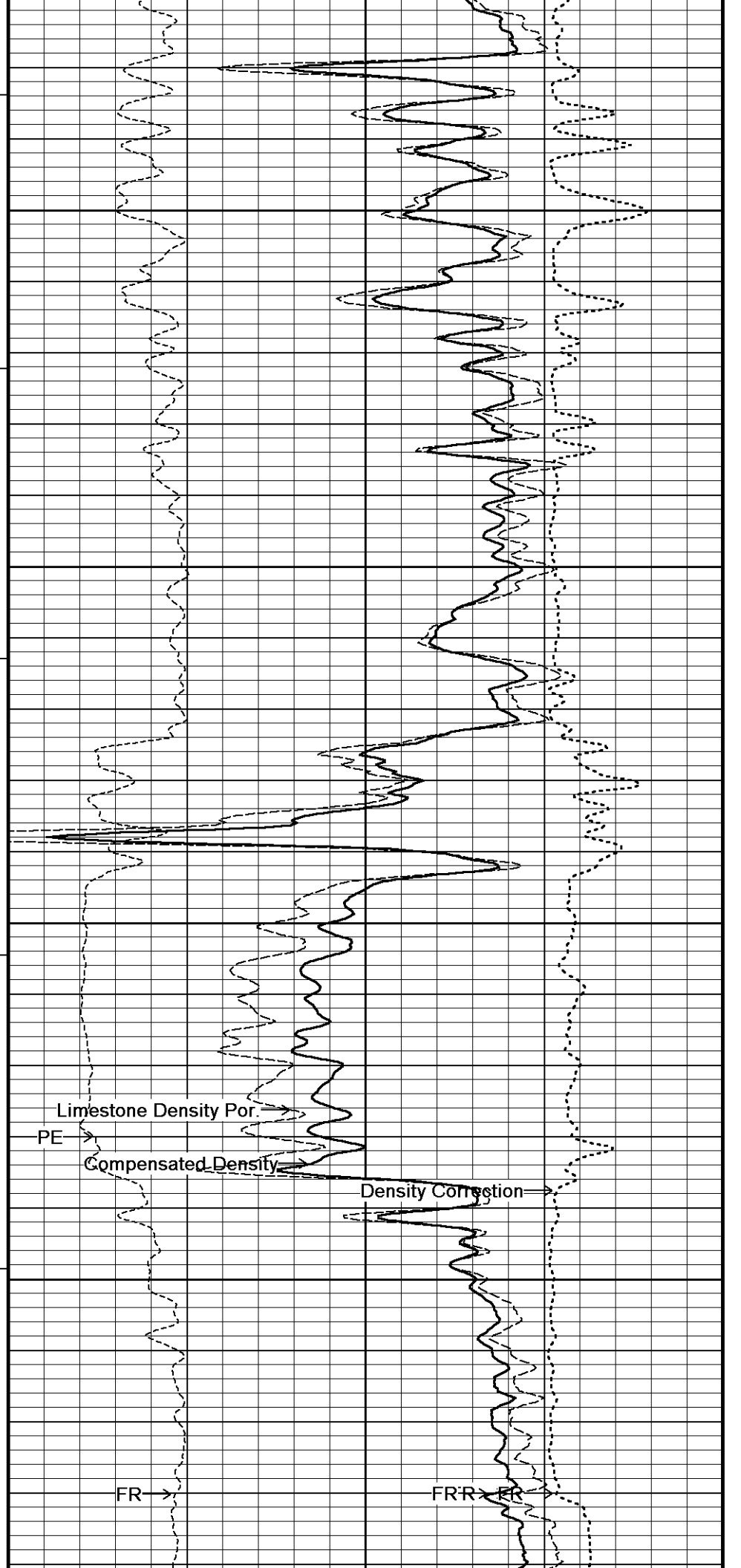
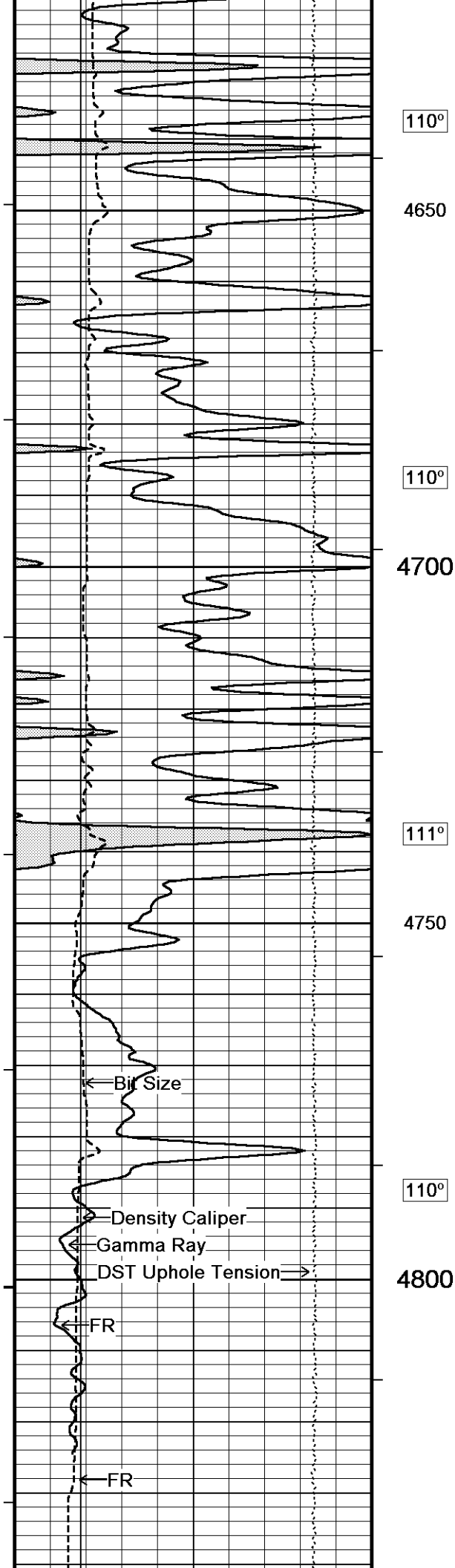


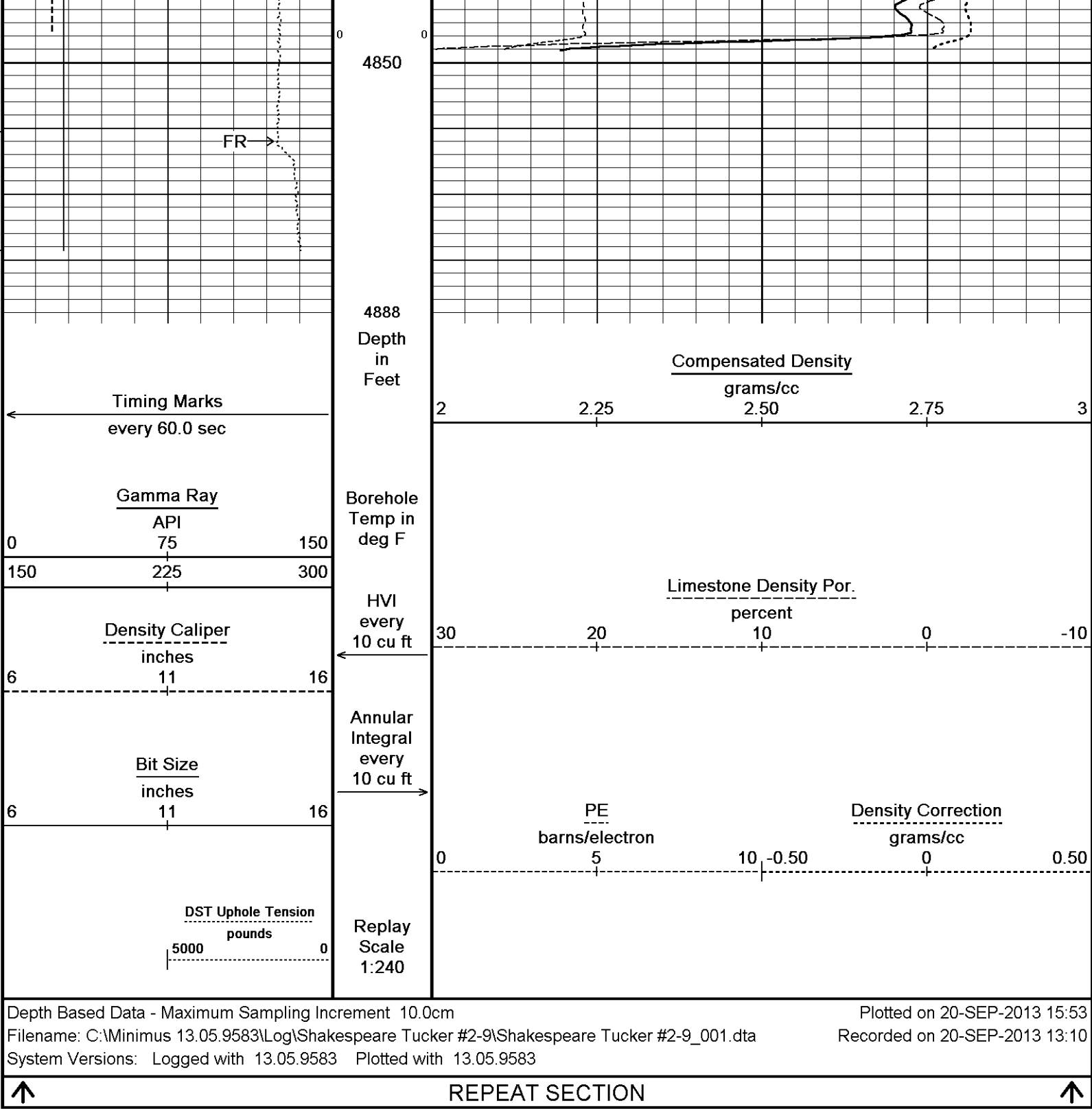












BEFORE SURVEY CALIBRATION		
C:\Minimus 13.05.9583\Log\Shakespeare Tucker #2-9\Shakespeare Tucker #2-9.dta		
General Constants All 000		Last Edited on 20-SEP-2013,11:53
General Parameters		
Mud Resistivity	0.720	ohm-metres
Mud Resistivity Temperature	81.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	

HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Six Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0			Field Calibration on 20-SEP-2013 12:33
Reading No	Measured	Calibrated (lbs)	
1	13525.61	0.00	
2	14214.48	470.00	

Gamma Calibration MCG-D.K 469			Field Calibration on 18-SEP-2013 10:56
	Measured	Calibrated (API)	
Background	67	46	
Calibrator (Gross)	1127	771	
Calibrator (Net)	1061	725	

Gamma Constants MCG-D.K 469			Last Edited on 20-SEP-2013,11:53
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	%	

High Resolution Temperature Calibration MCG-D.K 469			Field Calibration on 18-AUG-2013,02:35
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.K 469			Last Edited on 18-AUG-2013,02:35
Pre-filter Length	11		

SP Calibration MCG-D.K 469			Field Calibration on 12-SEP-2013 15:11
	Measured	Calibrated (mV)	
Reference 1	100.2	100.0	
Reference 2	-99.2	-100.1	

Neutron Calibration MDN-A.B 66			Base Calibration on 31-JUL-2013 10:25 Field Check on 18-SEP-2013 11:03
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near Far	
	3180 99	3714 110	
Ratio	32.180	33.764	
Field Calibrator at Base			
		Calibrated (cps)	
		1617 2323	
Ratio		0.696	
Field Check			
		Calibrated (cps)	
		1626 2326	
Ratio		0.690	

Neutron Constants MDN-A.B 66			Last Edited on 18-SEP-2013,10:57
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	

Field Check on 18-SEP-2013 10:37

Field Check	281.1
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Last Edited on 18-SEP-2013,10:32

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

Last Edited on 29-JUN-2013,19:32

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	3-4' 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									
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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
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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 19-APR-2013,13:41	
					Field Check on 18-SEP-2013 10:27	
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			13.2	3838.7		
2			29.6	3476.3		
3			29.2	3052.4		
4			19.8	2081.2		
Deep			18.7	2048.5		
Medium			42.3	3990.4		
Shallow			43.0	5053.3		
Array Temperature			75.7	Deg F		

Induction Constants MAI-A.A 167			Last Edited on 18-SEP-2013,10:24	
Induction Model		RtAP-WBM		
Caliper for Borehole Corr.		Density Caliper		
Hole Size for Borehole Correction		N/A	inches	
Tool Centred		No		
Stand-off Type		Fins		
Stand-off		0.50	inches	
Number of Fins on Stand-off		8.0000		
Stand-off Fin Angle		60.00	degrees	
Stand-off Fin Width		0.5000	inches	
Borehole Corr. Rm Source		Temperature Corr		
Temp. for Rm Corr.		MCG External Temperature		
Squasher Start		0.0020	mhos/metre	
Squasher Offset		N/A	mhos/metre	
Borehole 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 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre
Apparent Porosity and Water Saturation Constants		
Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-A.A 167			Field Calibration on 18-AUG-2013,02:21
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MAI-A.A 167		Last Edited on 15-SEP-2013,16:14
Pre-filter Length	11	

Caliper Calibration MML-A 3			Base Calibration on 15-AUG-2013 08:50
			Field Calibration on 18-SEP-2013 10:50
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	14887	5.98	
2	18120	7.97	
3	21042	9.86	
4	25322	11.92	
5	0	0.00	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	6.08	5.98	

Micro Normal and Micro Inverse Calibration MML-A 3					Base Calibration on 15-AUG-2013 09:16	
					Field Check on 18-SEP-2013 10:45	
Base Calibration						
		Measured		Calibrated (ohm-m)		
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2		
Micro Normal	12.3	60.3	5.0	25.0		
Micro Inverse	15.7	78.4	5.0	25.0		
Channel		Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal		62.9		62.9		
Micro Inverse		48.2		48.2		

Micro Normal and Micro Inverse Constants MML-A 3			Last Edited on 18-SEP-2013,10:44
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		

Caliper Calibration MPD-B 64			Base Calibration on 15-AUG-2013 14:54
			Field Calibration on 18-SEP-2013 10:44
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	16560	3.99	
2	24992	5.98	
3	32880	7.97	
4	41184	9.86	
5	50688	11.92	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	6.04	5.96	

Blank Pad Calibration MPD-B 64			Base Calibration on 15-AUG-2013 14:27
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Density Calibration

Base Calibration

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

Field Check at Base

1155.1	1345.7
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Field Check

1158.4	1339.4
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PE Calibration

Base Calibration

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

Field Check at Base

211.2	1028.9
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Field Check

209.9	1029.8
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Density Constants MPD-B 64

Last Edited on 20-SEP-2013,11:53

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	1.12 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
0.00	0.00

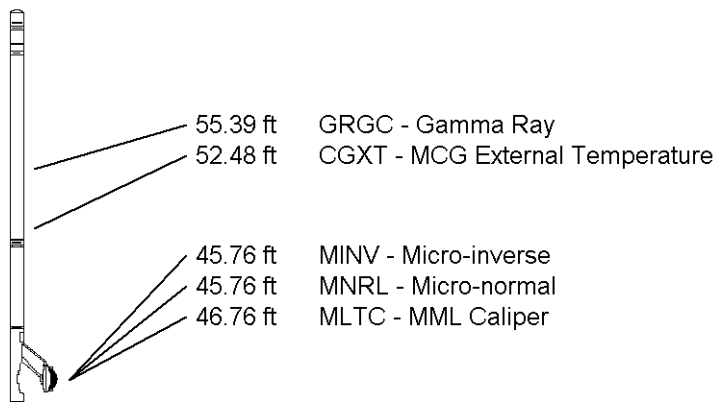
DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\Shakespeare Tucker #2-9\Shakespeare Tucker #2-9.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 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

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



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

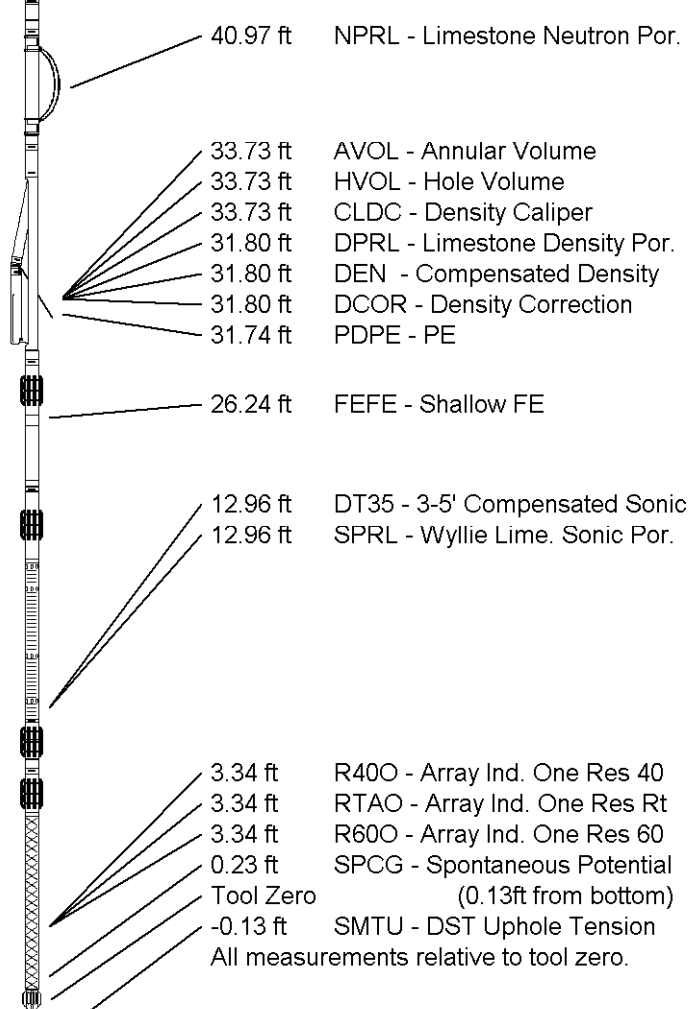
Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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

Compact 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



COMPANY SHAKESPEARE OIL INC.
WELL TUCKER #2-9
FIELD WILDCAT
PROVINCE/COUNTY SCOTT
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	3149.00	feet	First Reading	4830.00	feet
Elevation Drill Floor	3147.00	feet	Depth Driller	4865.00	feet
Elevation Ground Level	3139.00	feet	Depth Logger	4862.00	feet



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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG