



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY			McCOY PETROLEUM CORPORATION		
WELL			MTPRC 'A' #3-27		
FIELD			ALFORD		
PROVINCE/COUNTY			KIOWA		
COUNTRY/STATE			U.S.A. / KANSAS		
LOCATION			710' FNL & 1320' FEL		
SEC 27	TWP 30S	RGE 19W	Other Services		
Latitude		MAI/MFE			
Longitude					
API Number		15-097-21803			
Permanent Datum GL, Elevation 2238 feet					
Log Measured From KB					
Drilling Measured From KB @ 13 FEET					
Date	21-AUG-2014		Elevations:		
Run Number	ONE		KB 2251.00		
Service Order	4558-95825207		DF 2249.00		
Depth Driller	5225.00		GL 2238.00		
Depth Logger	5224.00				
First Reading	5205.00				
Last Reading	3900.00				
Casing Driller	652.00				
Casing Logger	650.00				
Bit Size	7.875				
Hole Fluid Type	CHEMICAL				
Density / Viscosity	9.50 lb/USg		66.00 CP		
PH / Fluid Loss	9.50		9.60 ml/30Min		
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.56 @ 93.0		ohm-m		
Rmf @ Measured Temp	0.45 @ 93.0		ohm-m		
Rmc @ Measured Temp	0.67 @ 93.0		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.47 @112.0		ohm-m		
Time Since Circulation	4 HOURS				
Max Recorded Temp	112.00		deg F		
Equipment / Base	13244		LIB		
Recorded By	ADAM SILL				
Witnessed By	ZACH WIELE				
JOB #	LB14-244				

BOREHOLE RECORD					Last Edited: 21-AUG-2014 16:34
Bit Size inches		Depth From feet		Depth To feet	
7.875		652.00		5225.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	652.00	24.00	

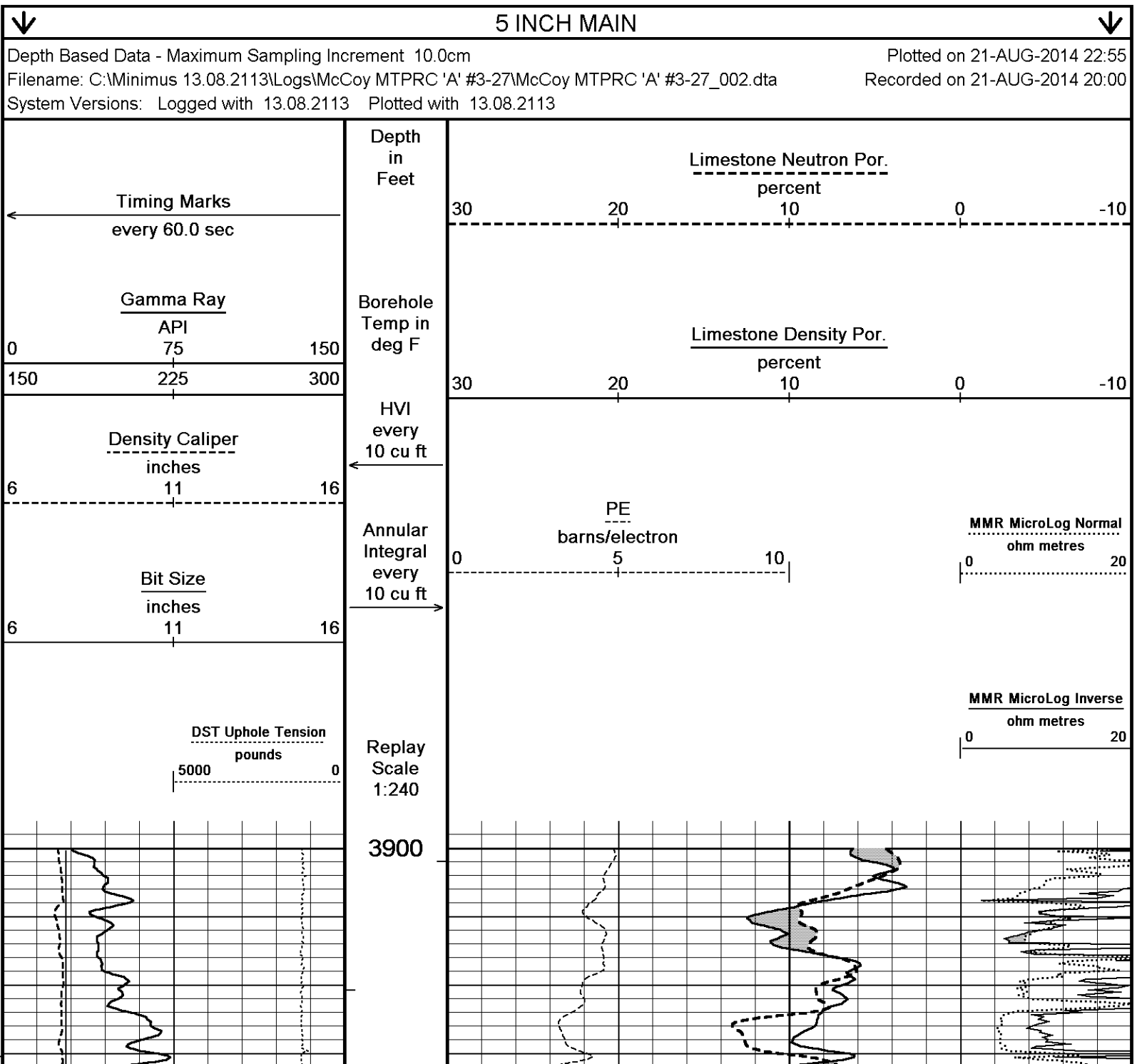
REMARKS
- SOFTWARE ISSUE: WLS 13.08.2113.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1854 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3900 FEET: 211 CU.FT.
- RIG: STERLING #5

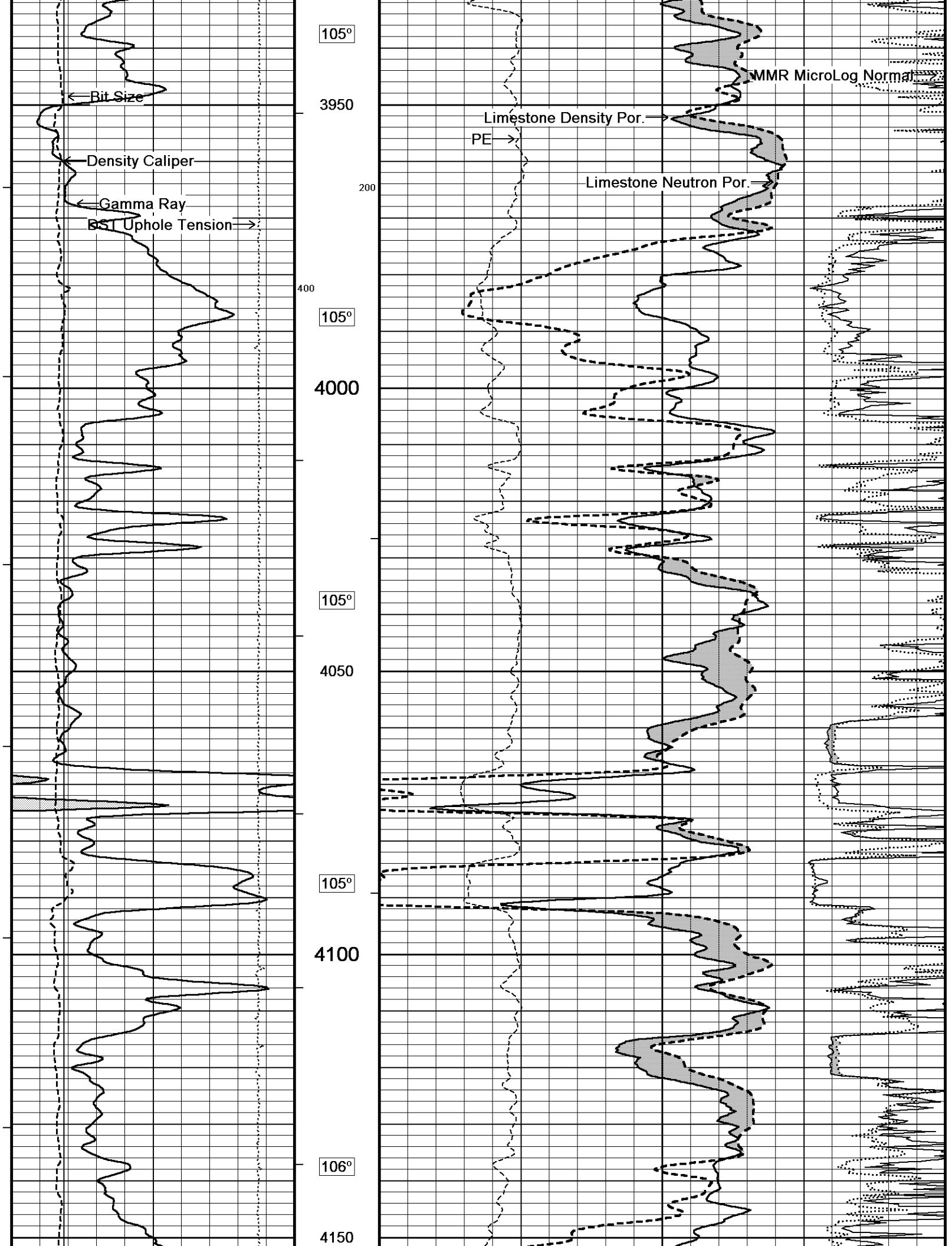
- RIG: OPERATOR: N. ADAME, J. DUNLAP.

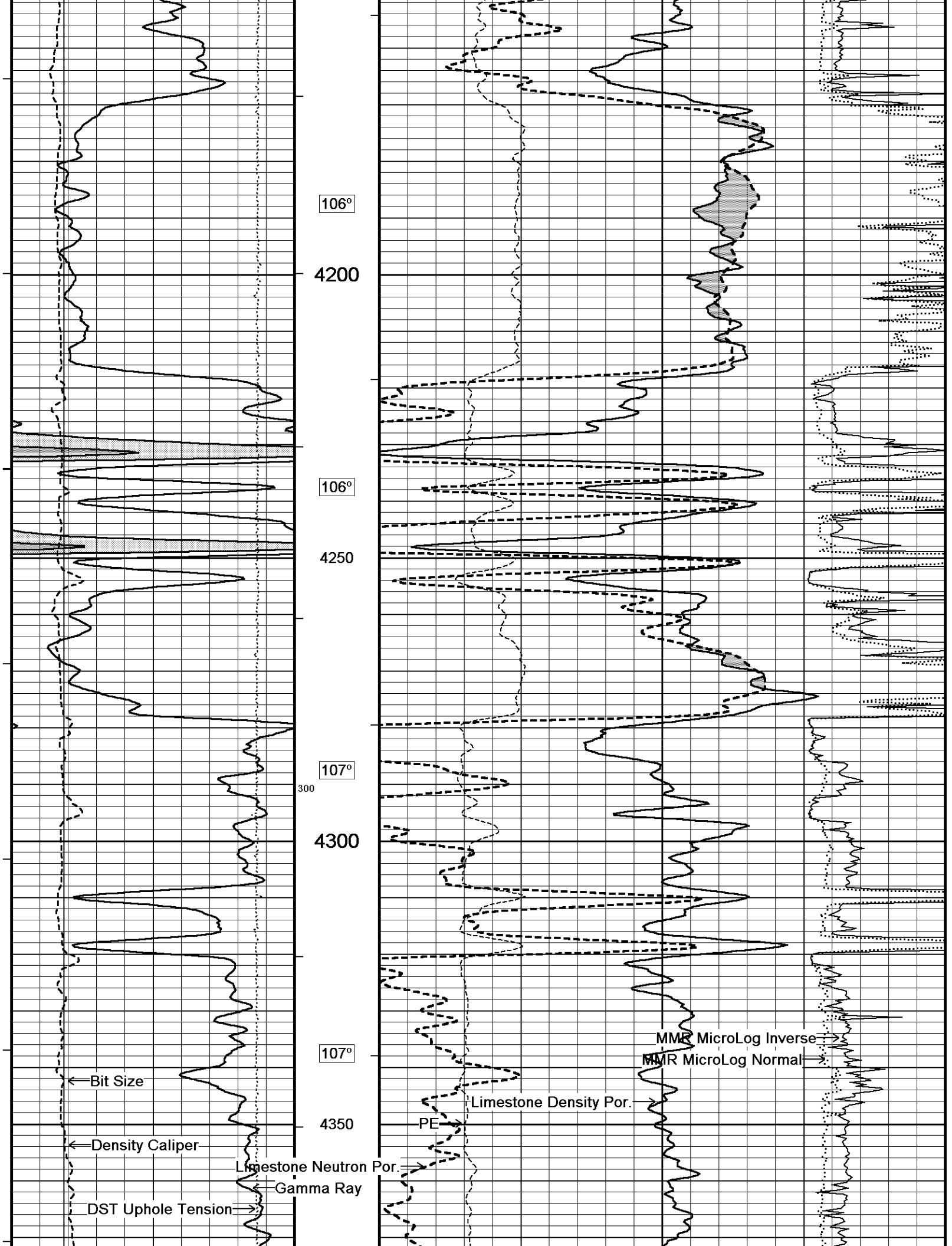
- ENGINEER: A. SILL.

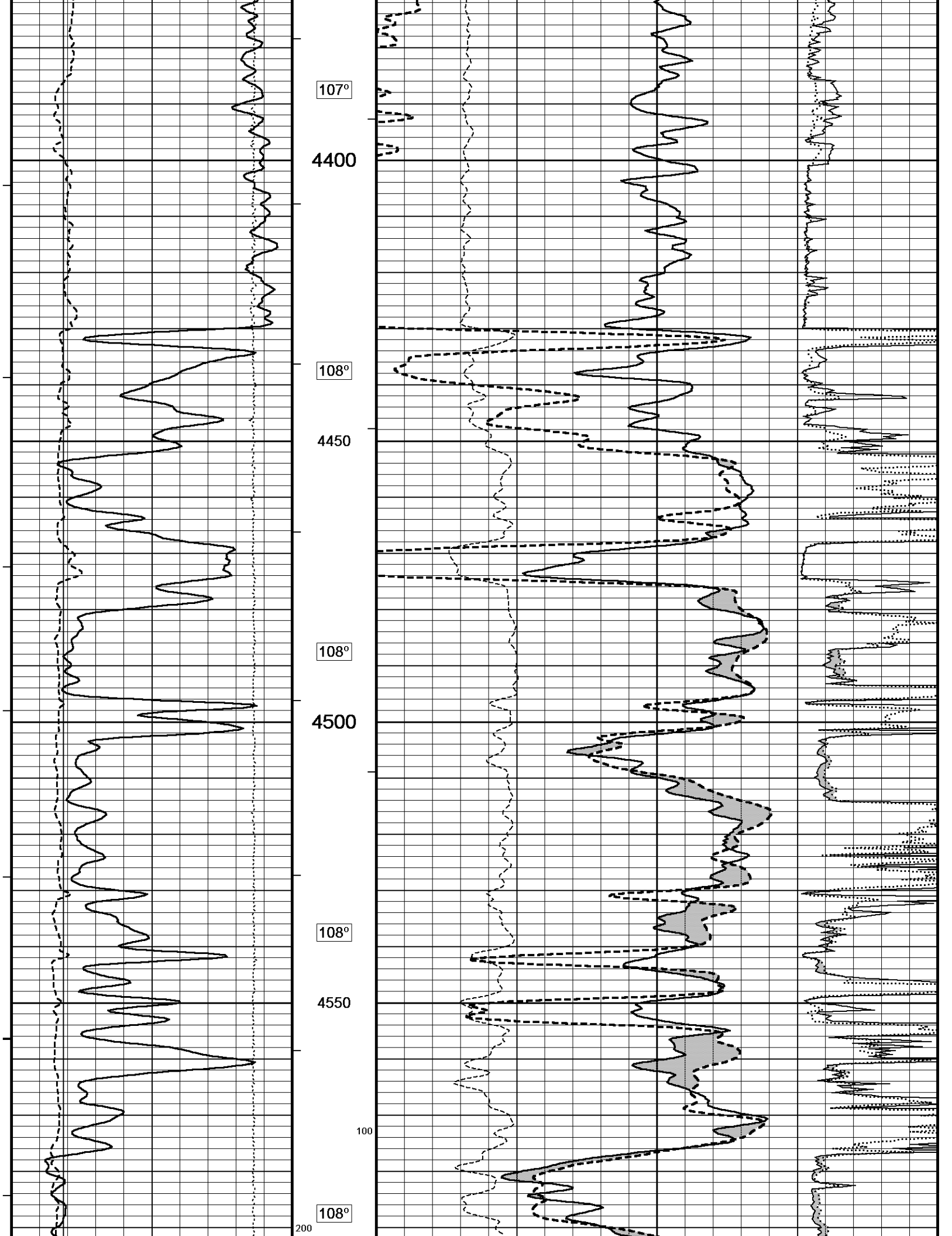
- OPERATOR: N. ADAME, J. DUNLAP.

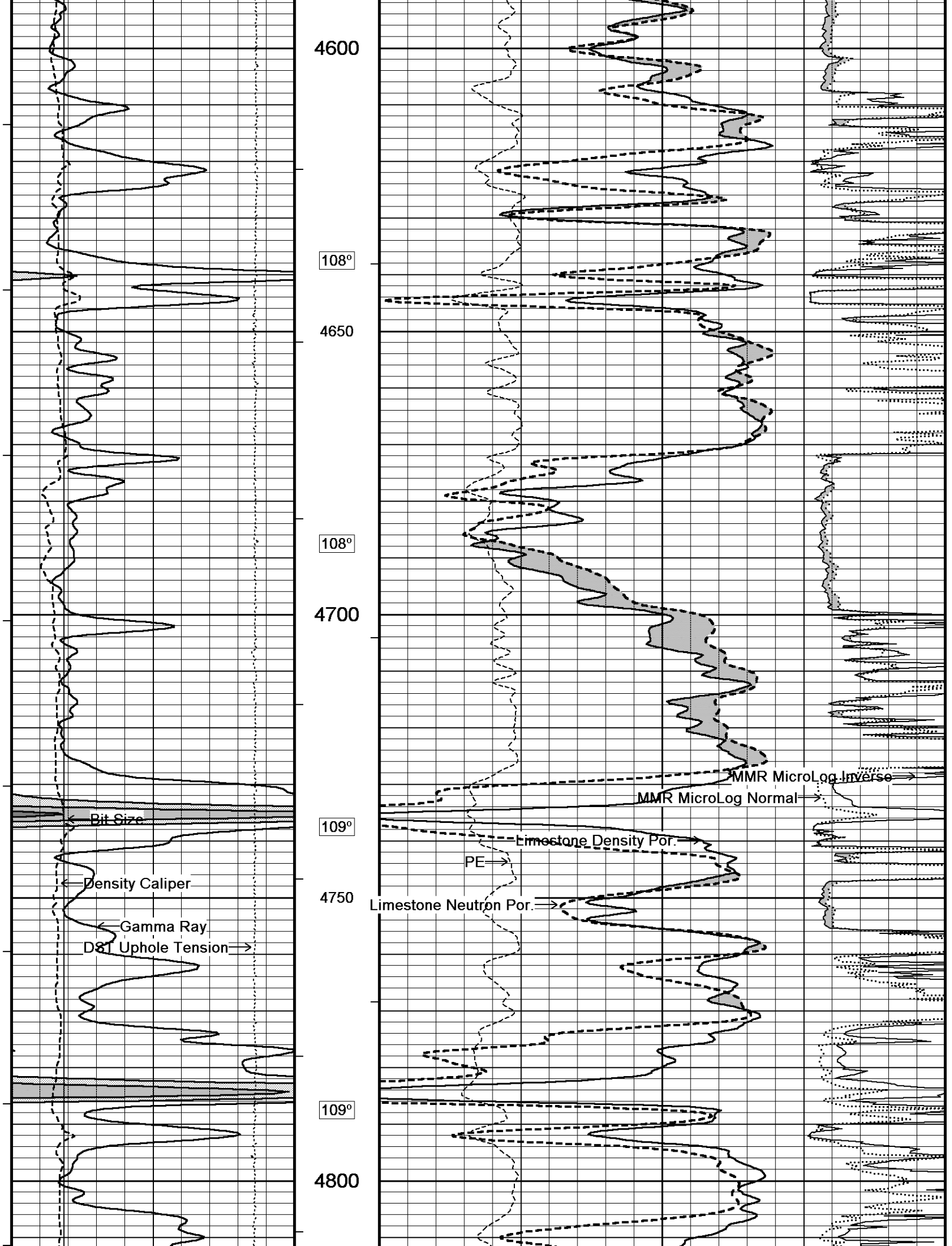
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

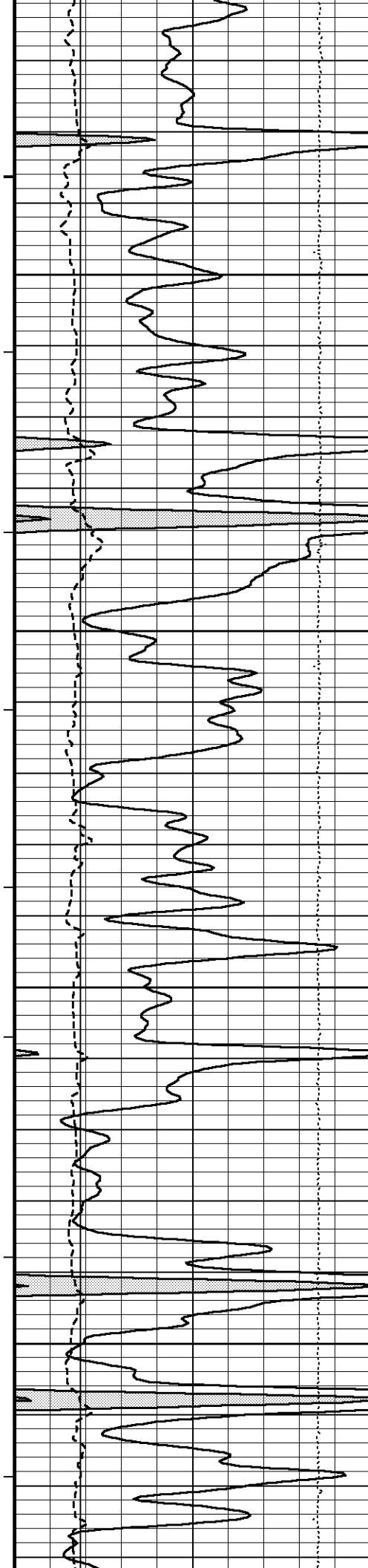












109°

4850

110°

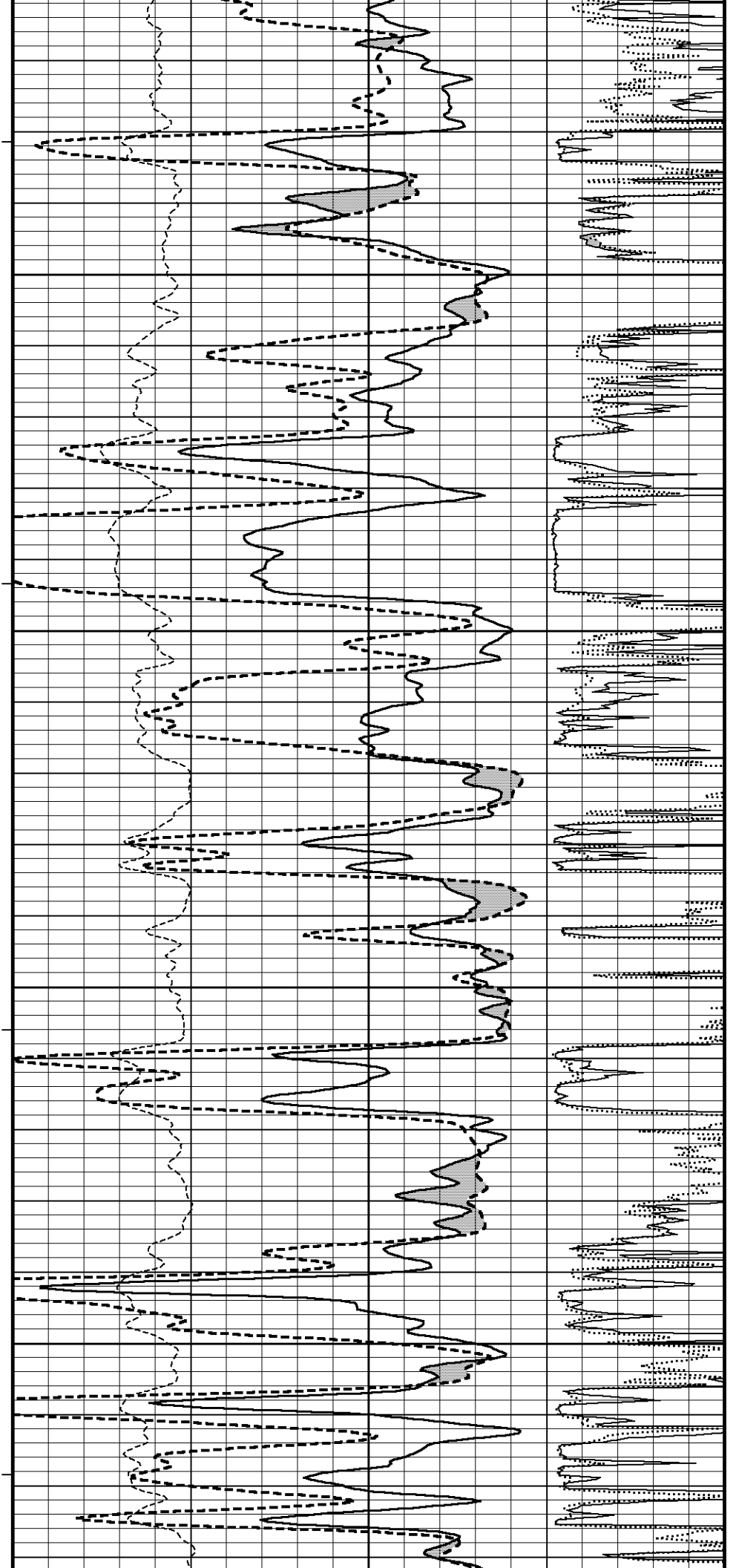
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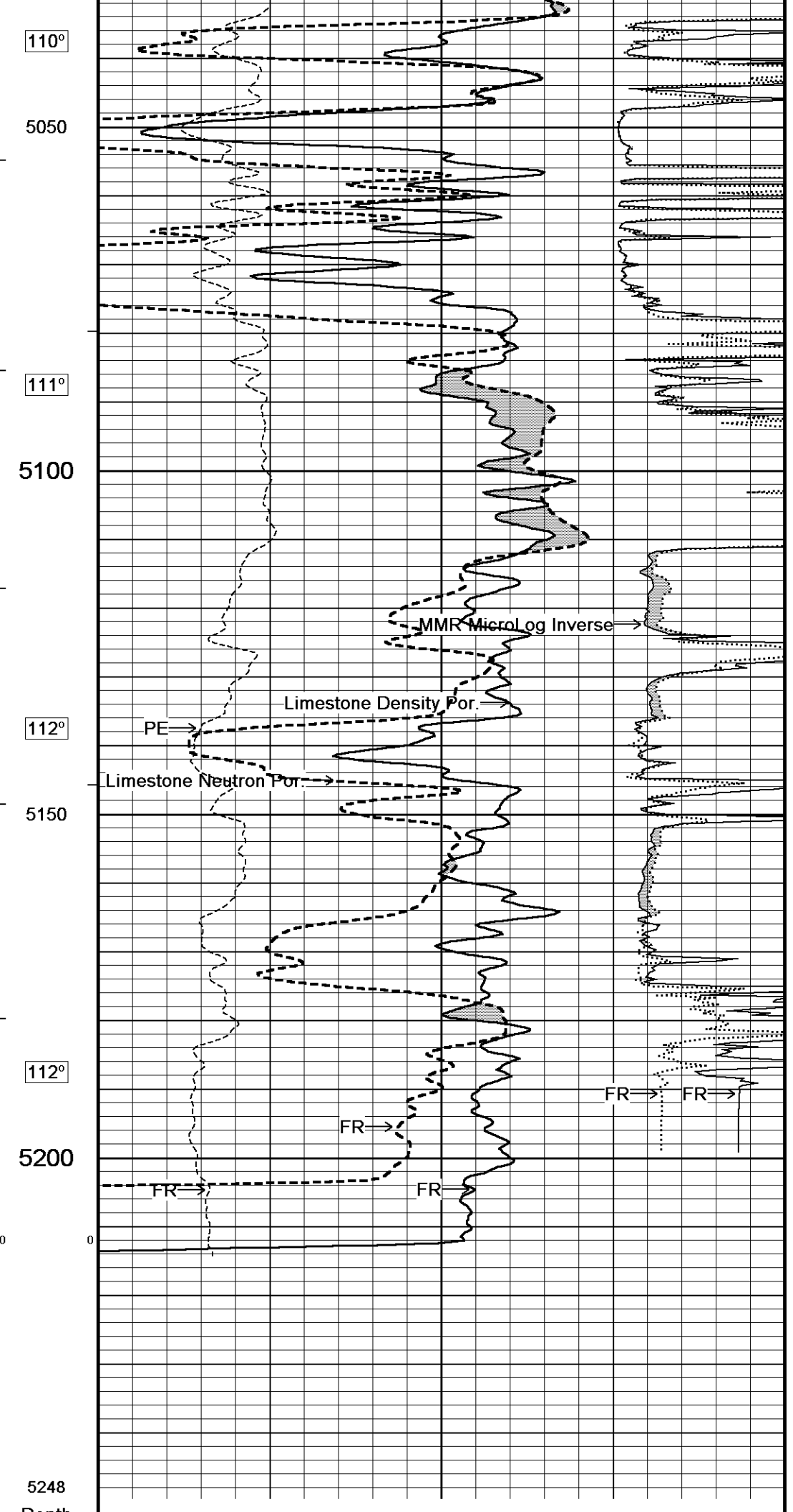
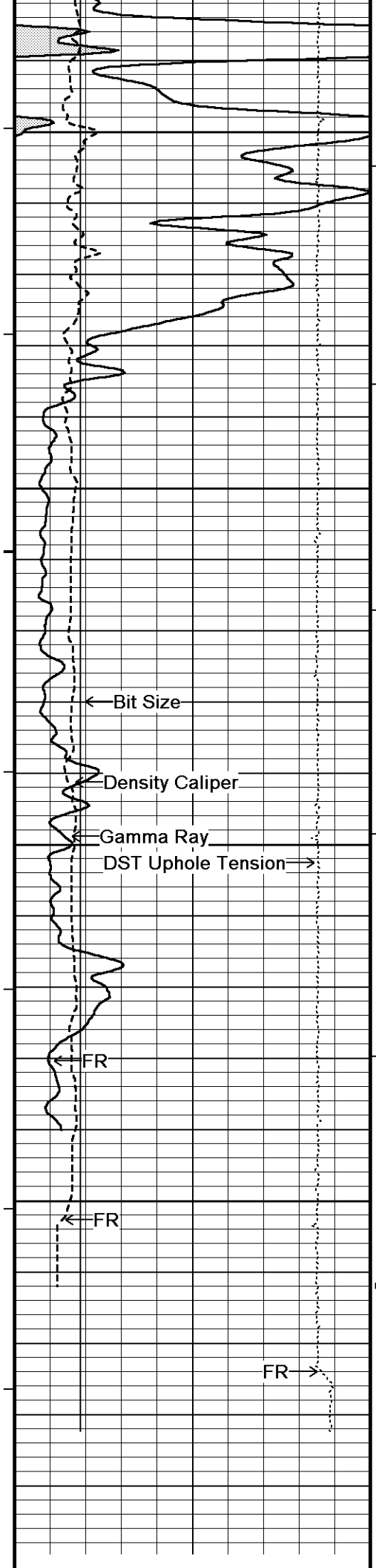
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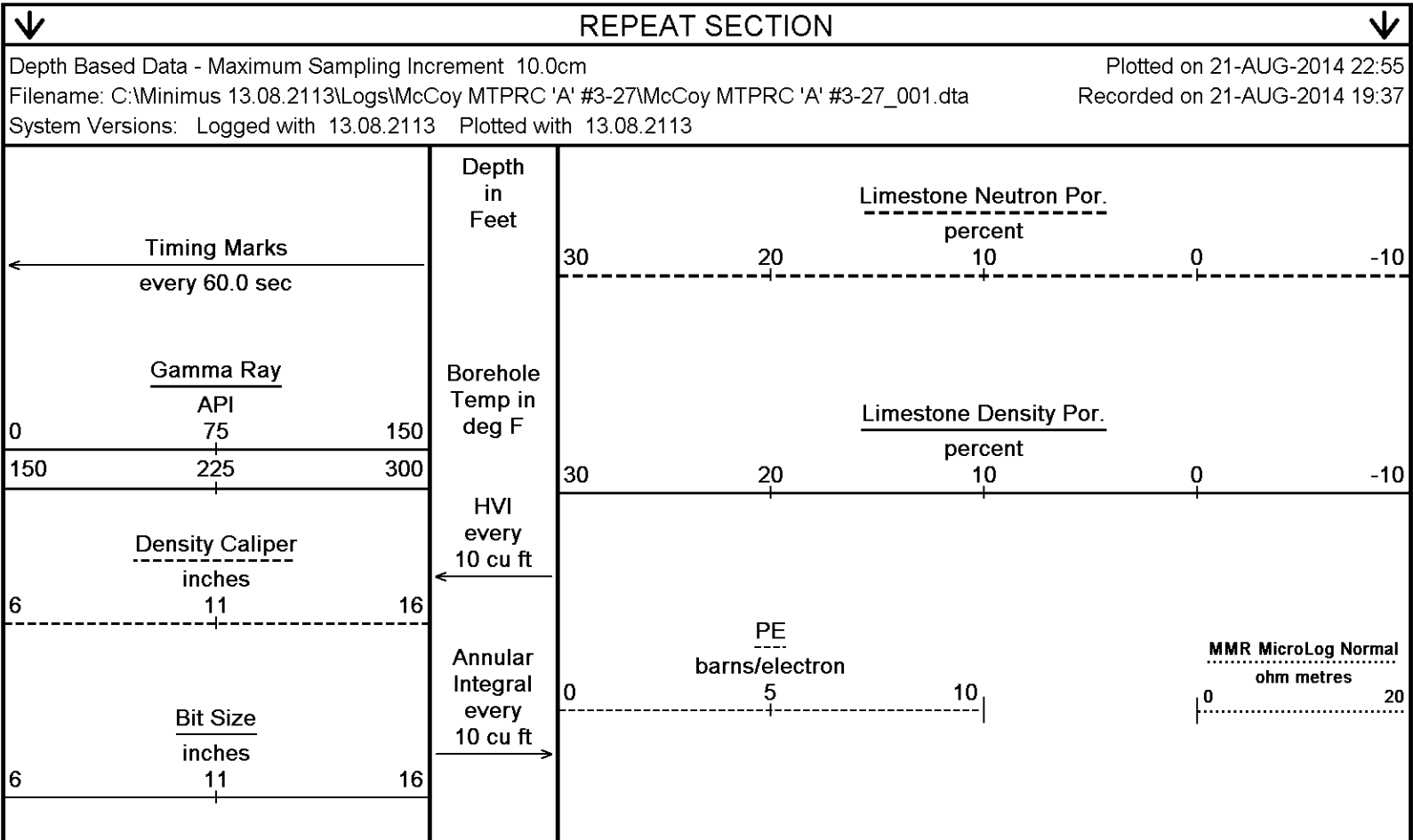
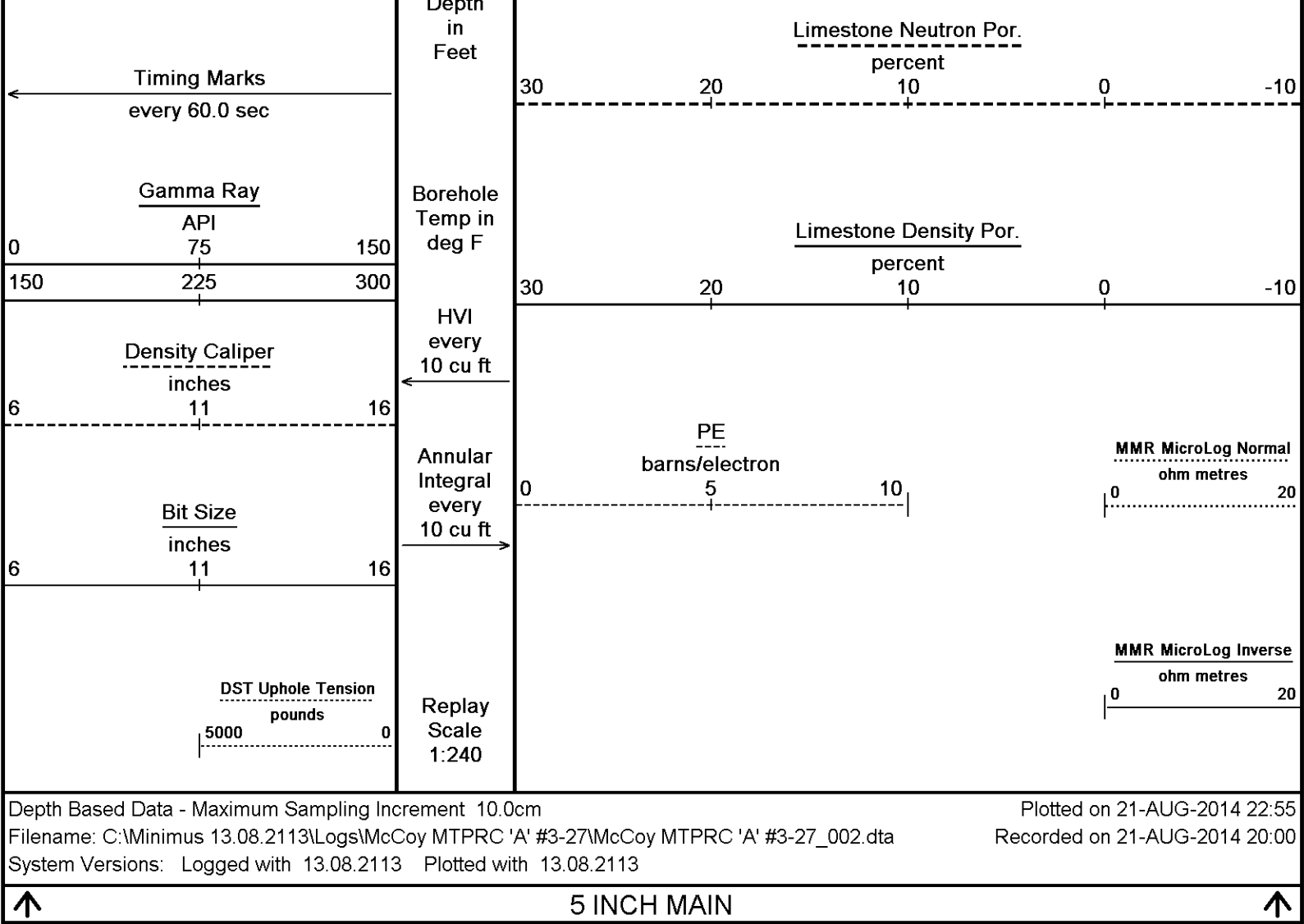
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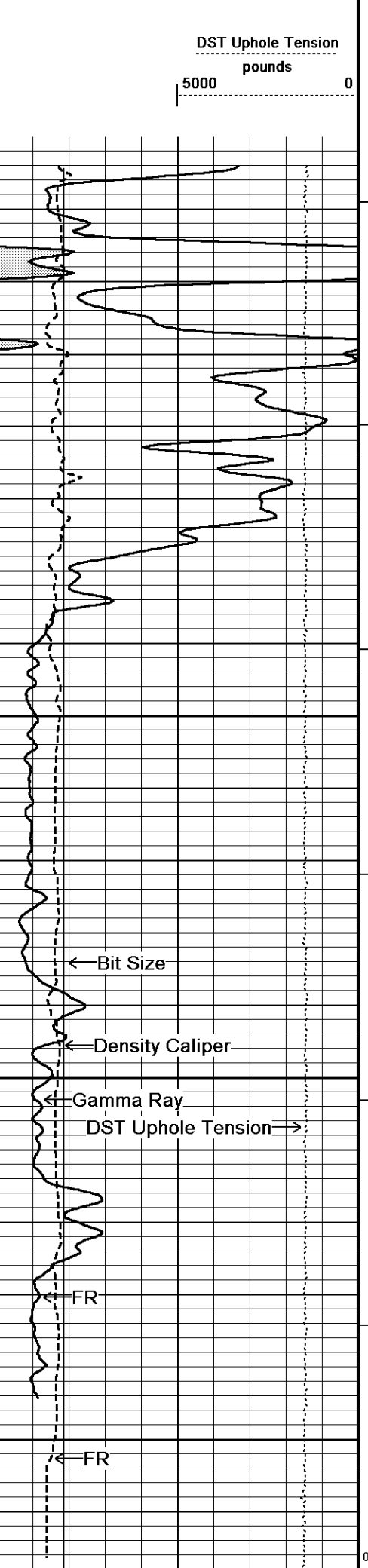
110°

5000

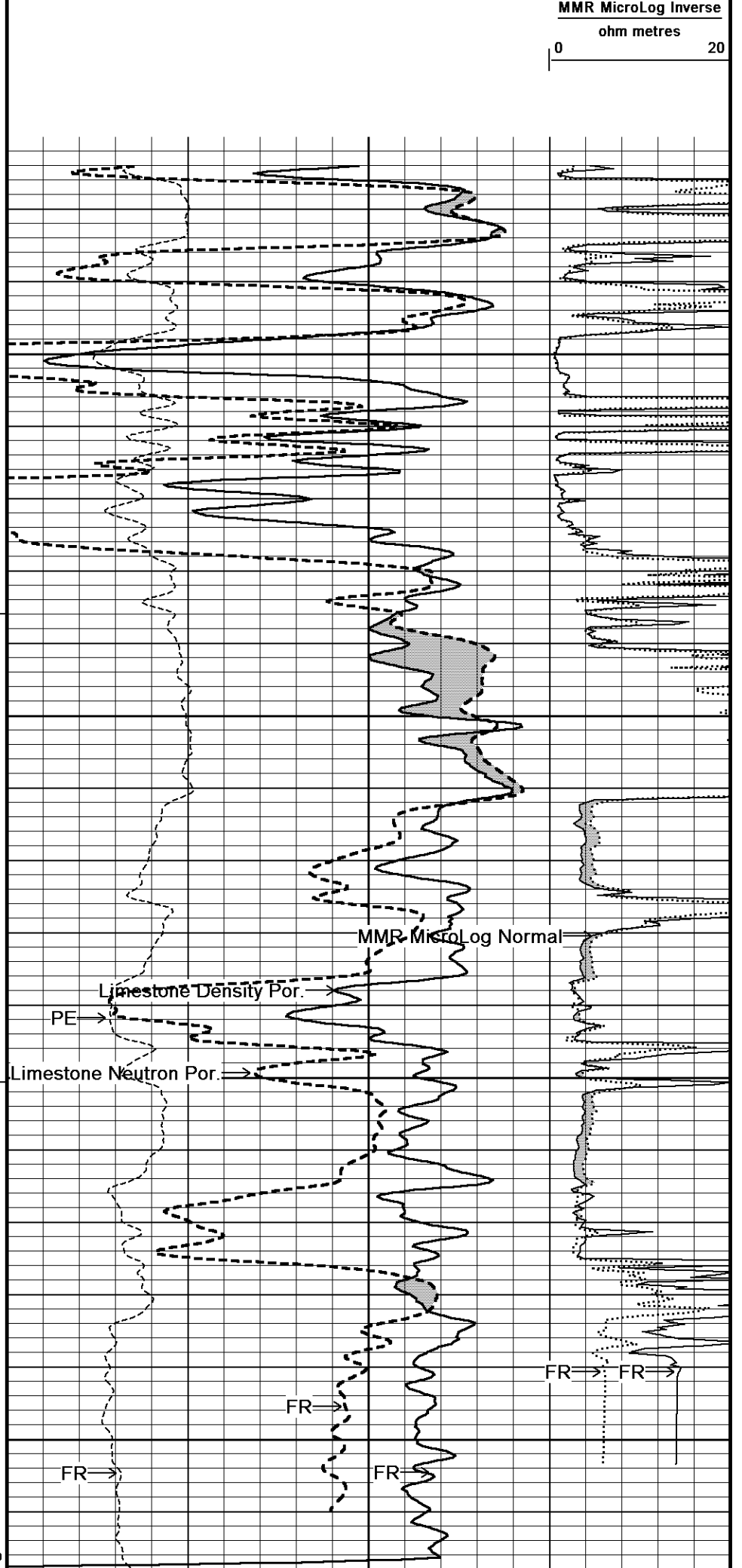


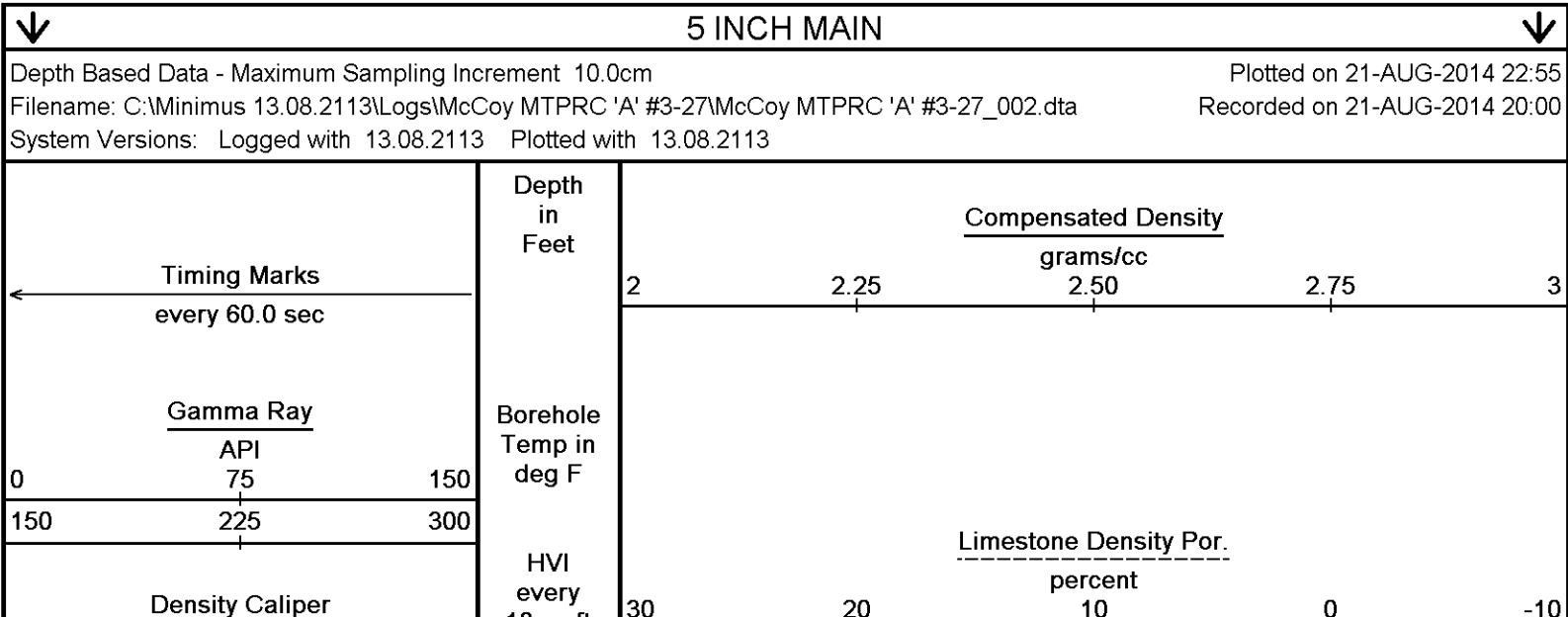
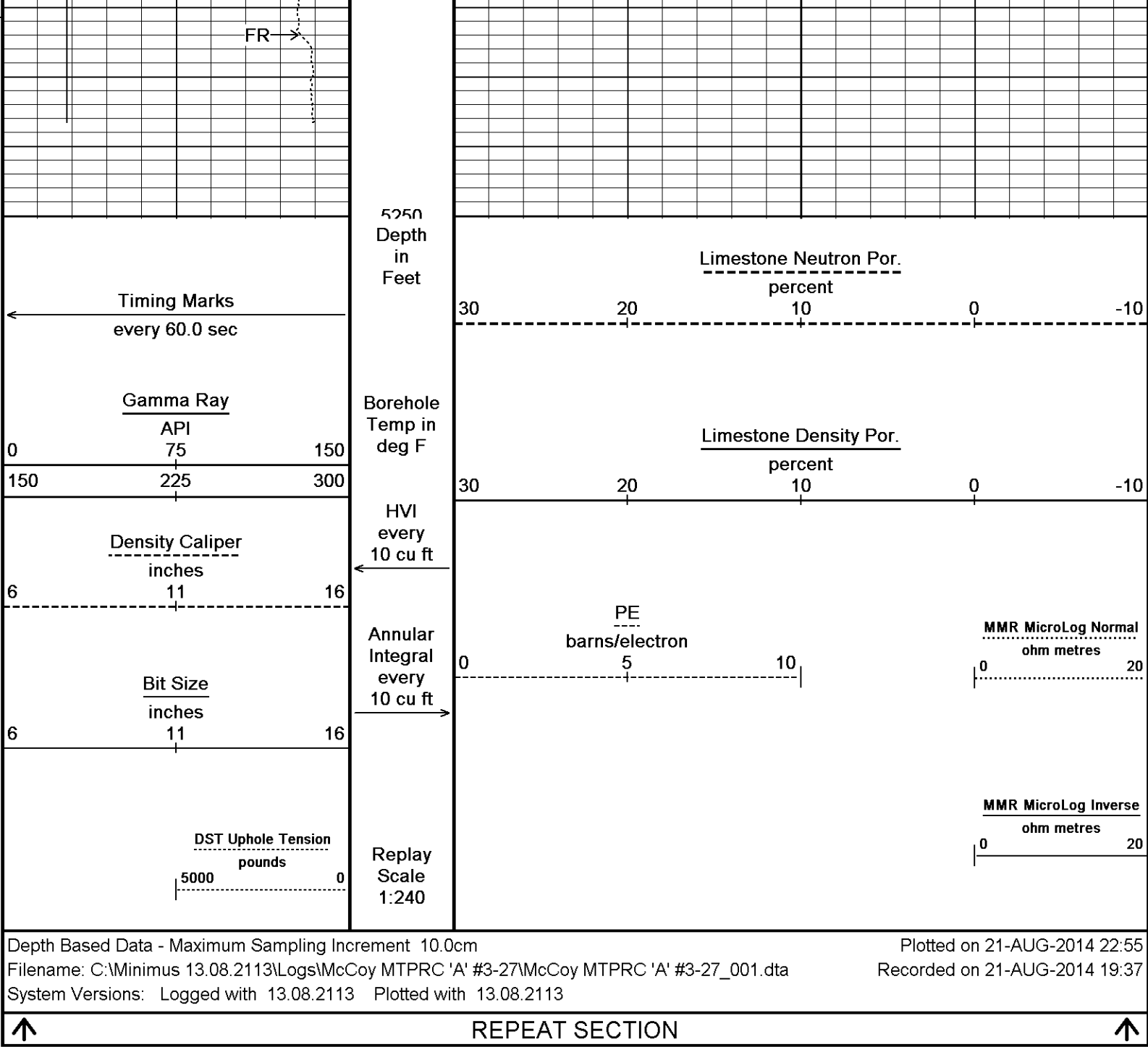


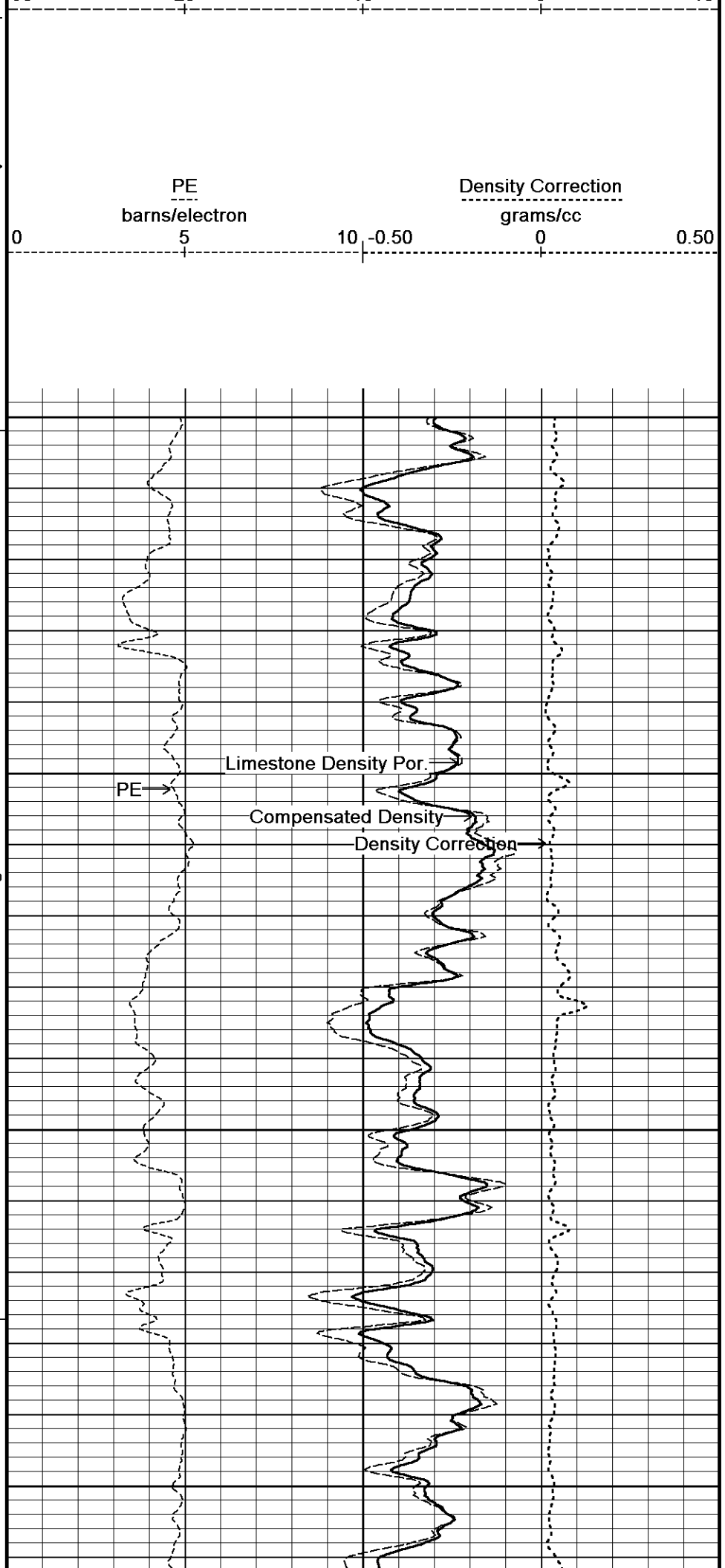
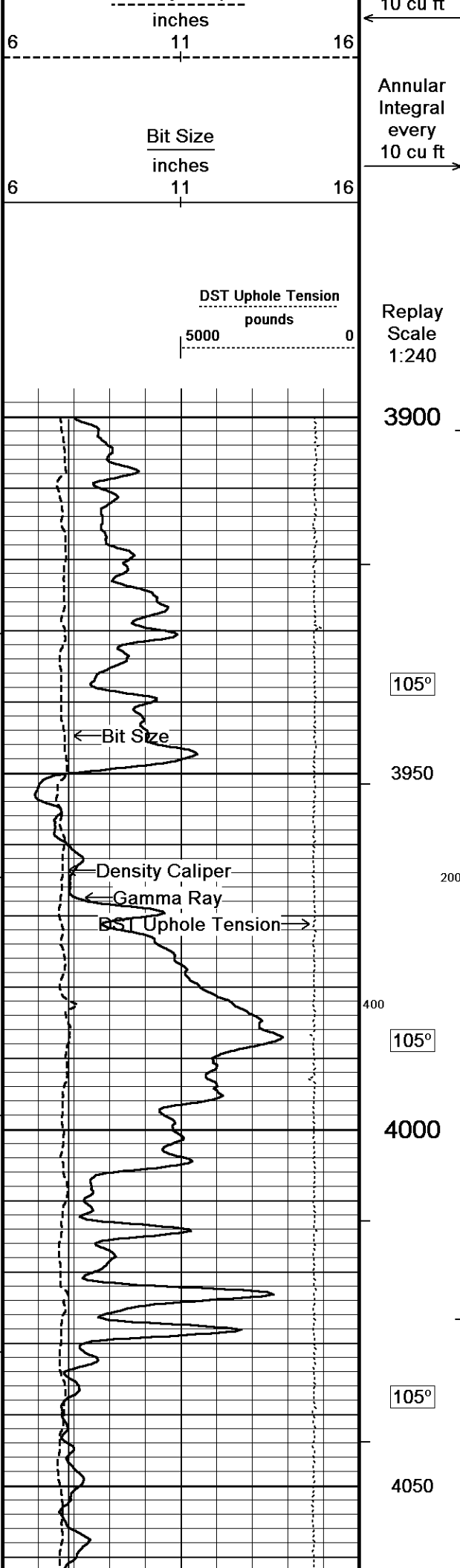


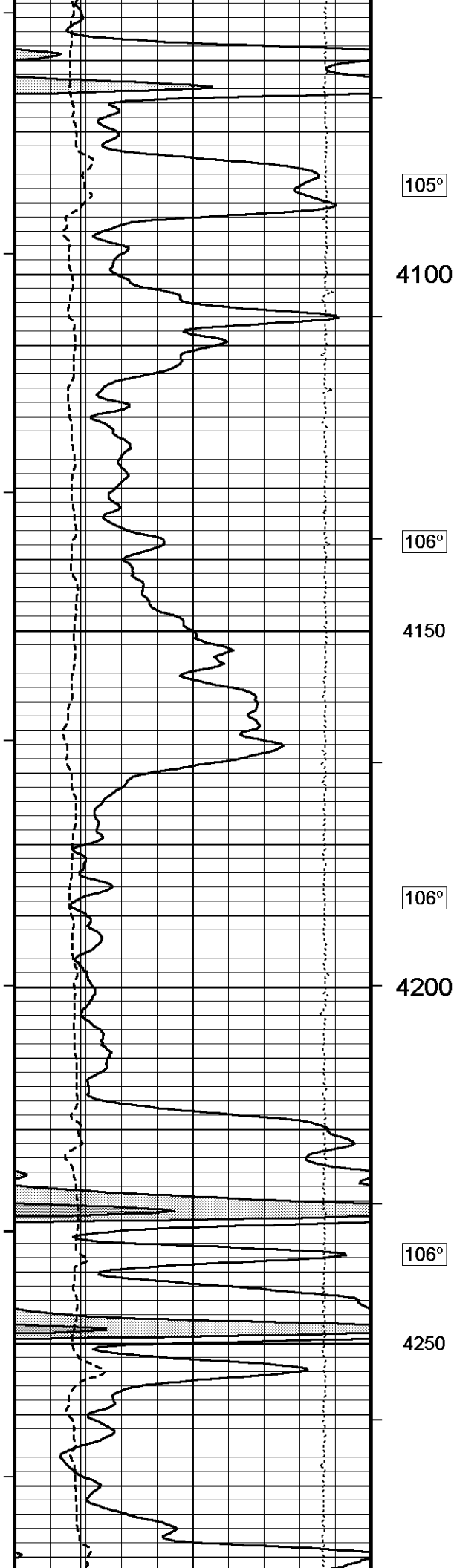


Replay
Scale
1:240









105°

4100

106°

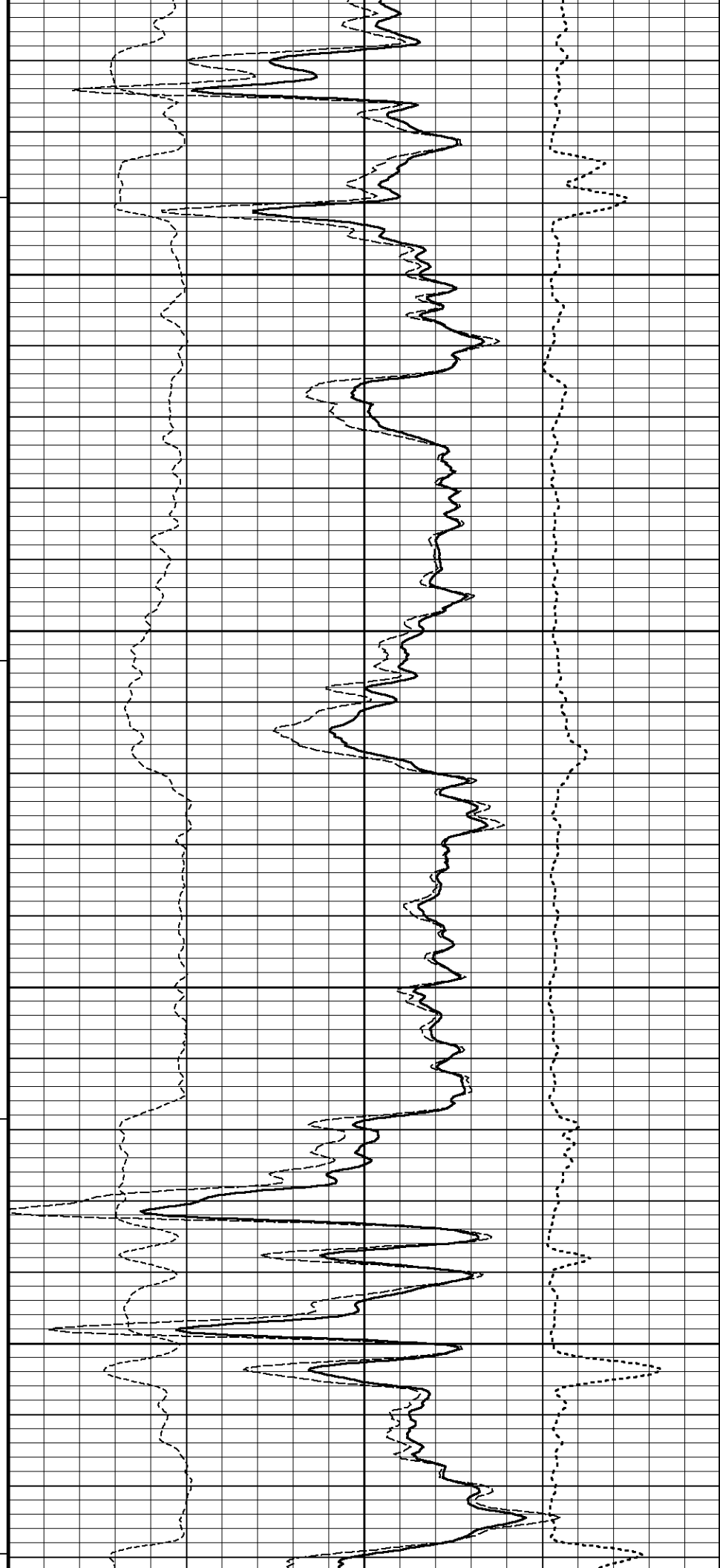
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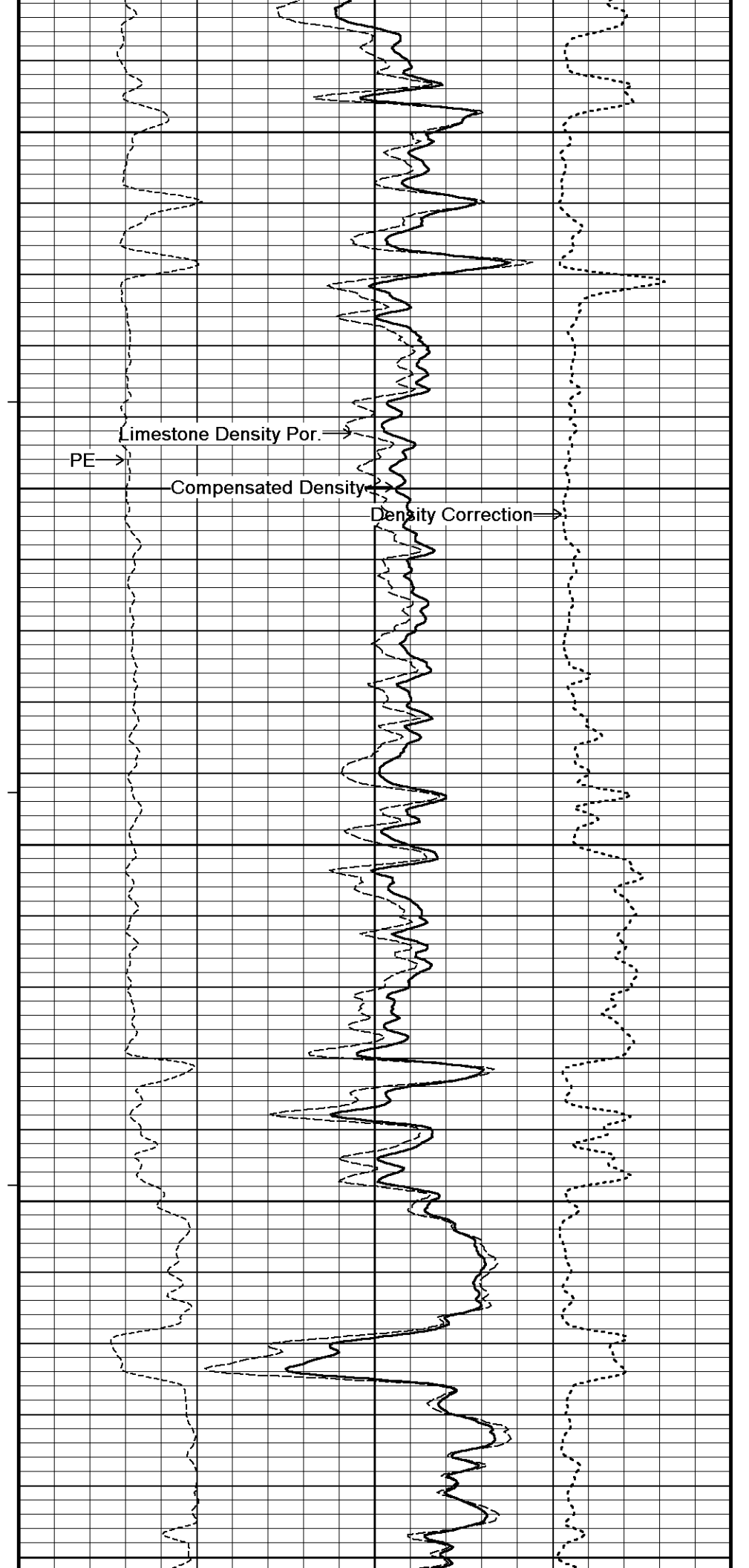
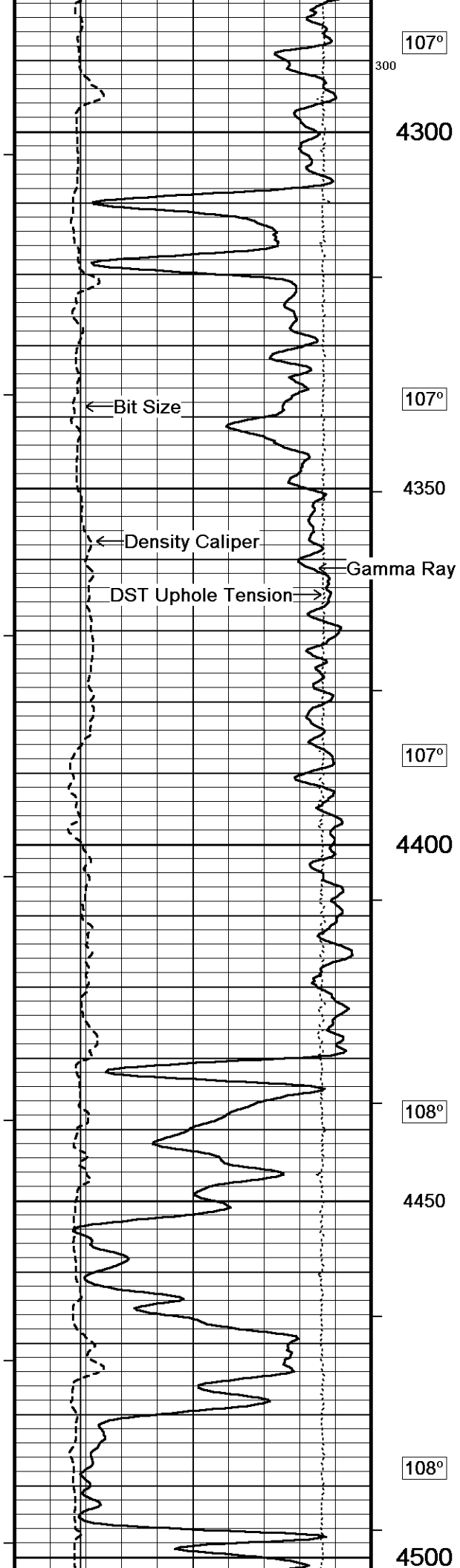
106°

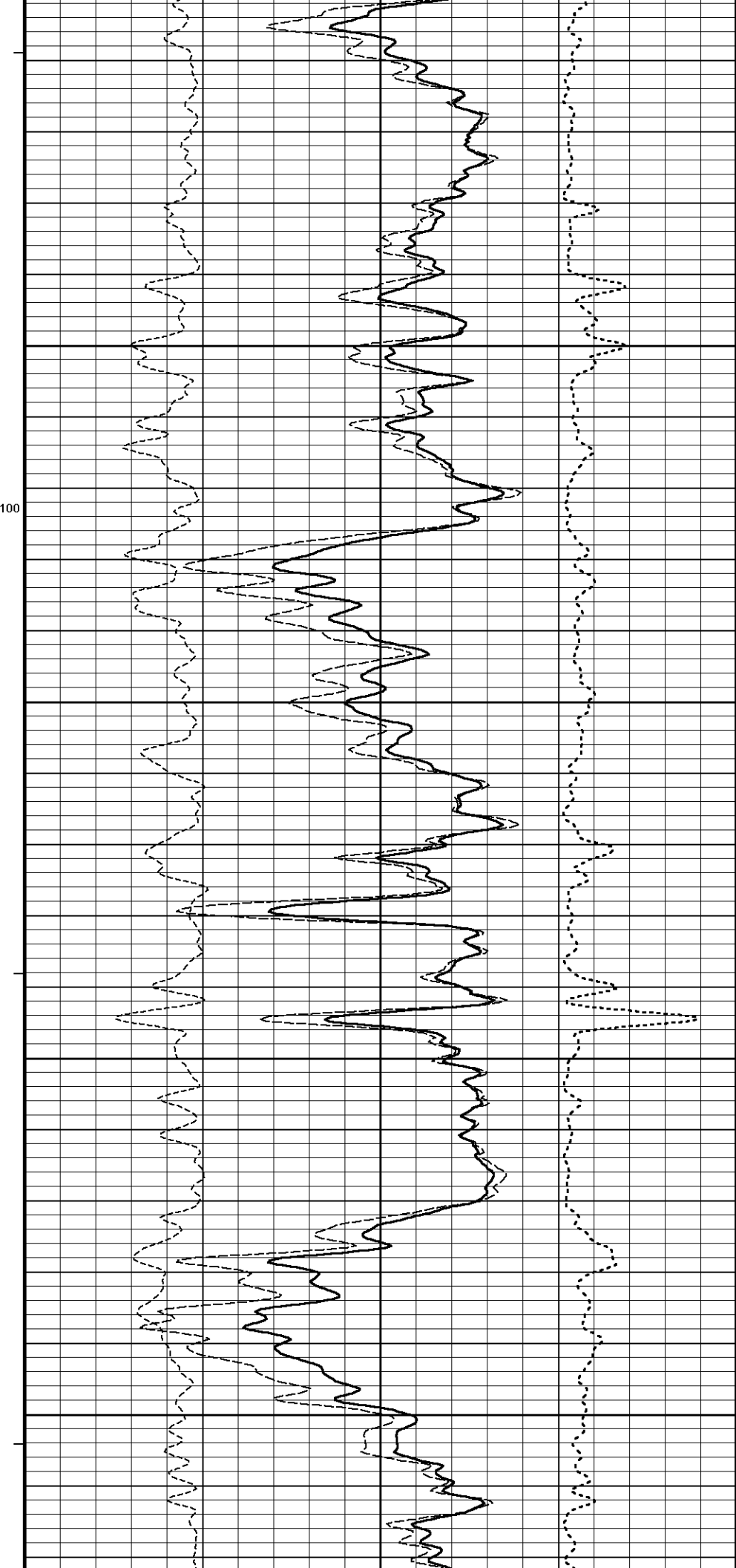
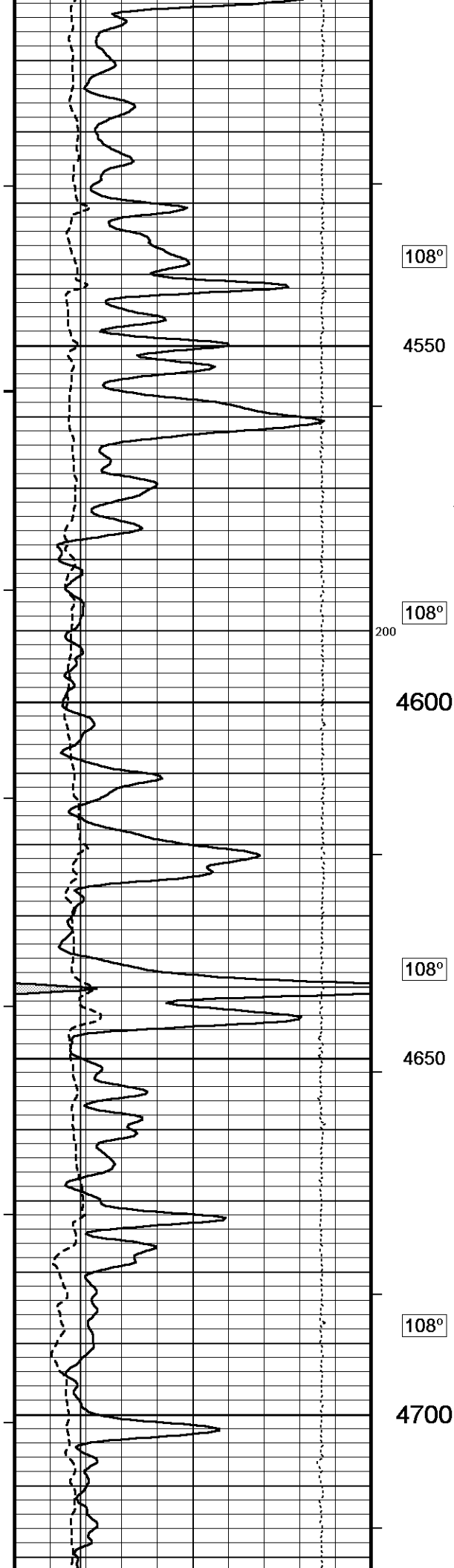
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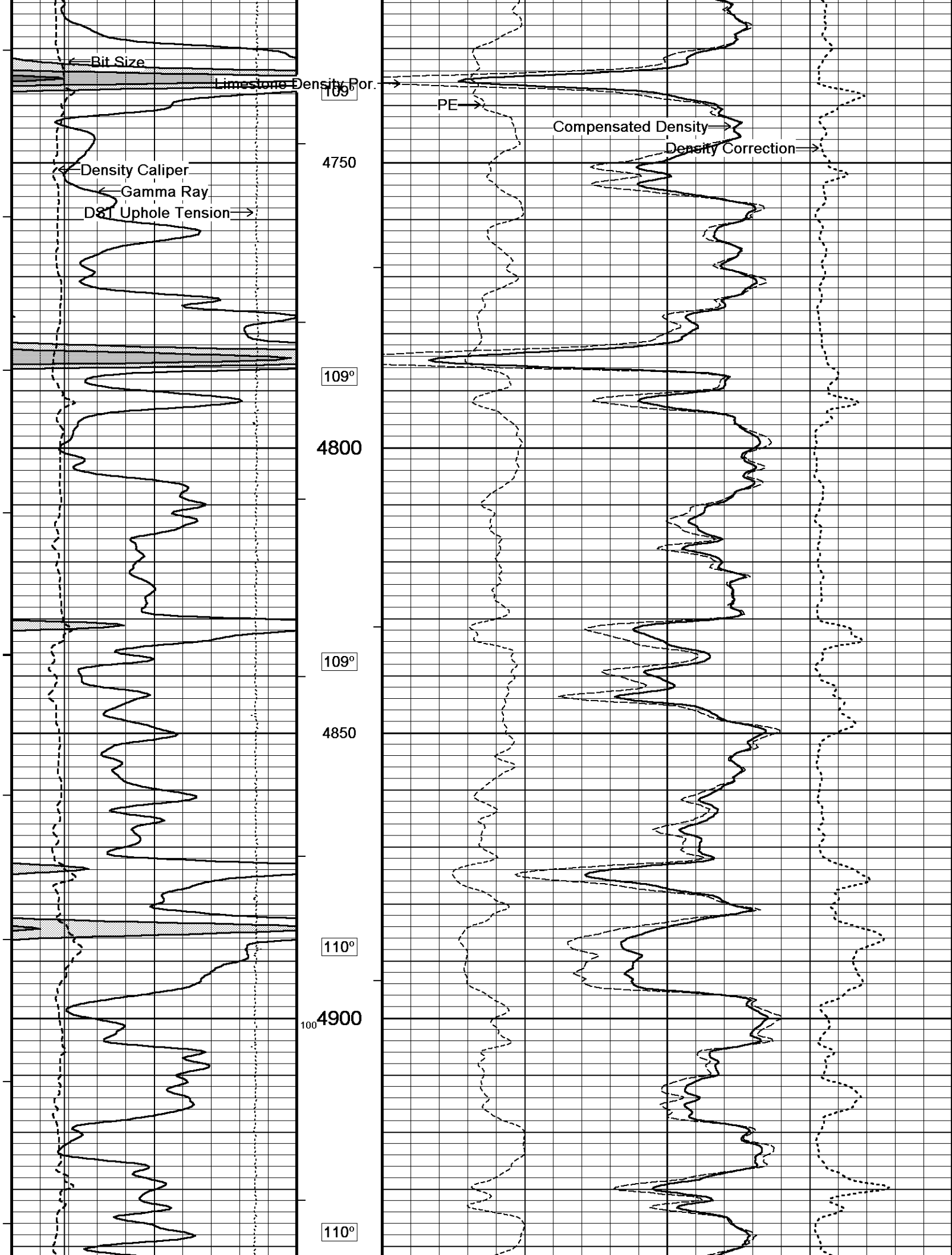
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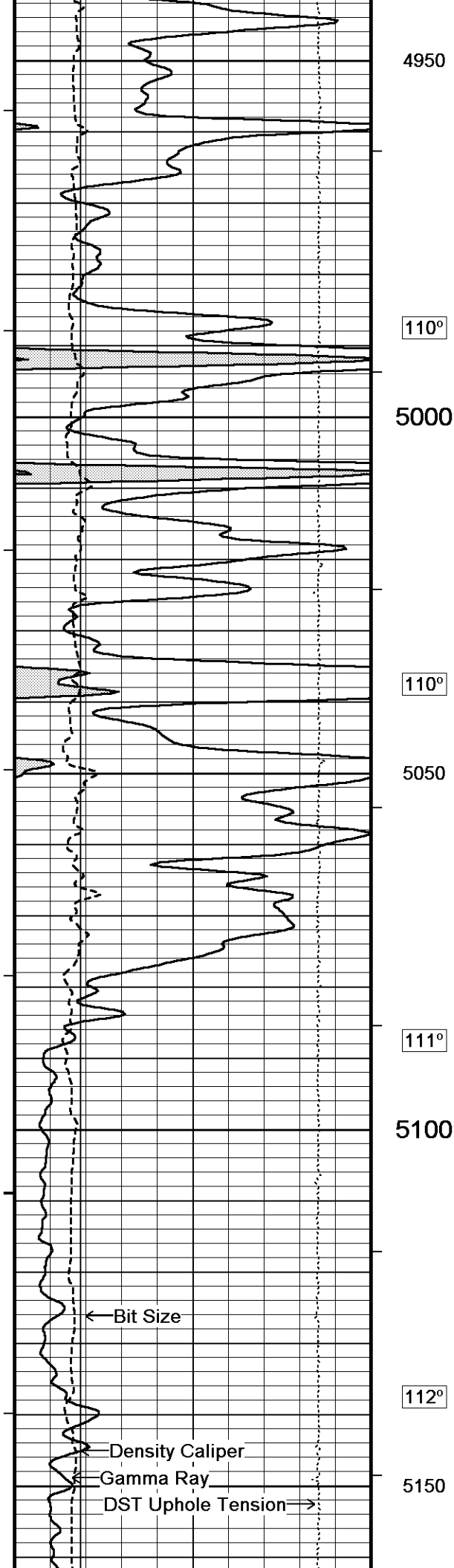
4250











4950

110°

5000

110°

5050

111°

5100

112°

5150

← Bit Size

← Density Caliper

← Gamma Ray

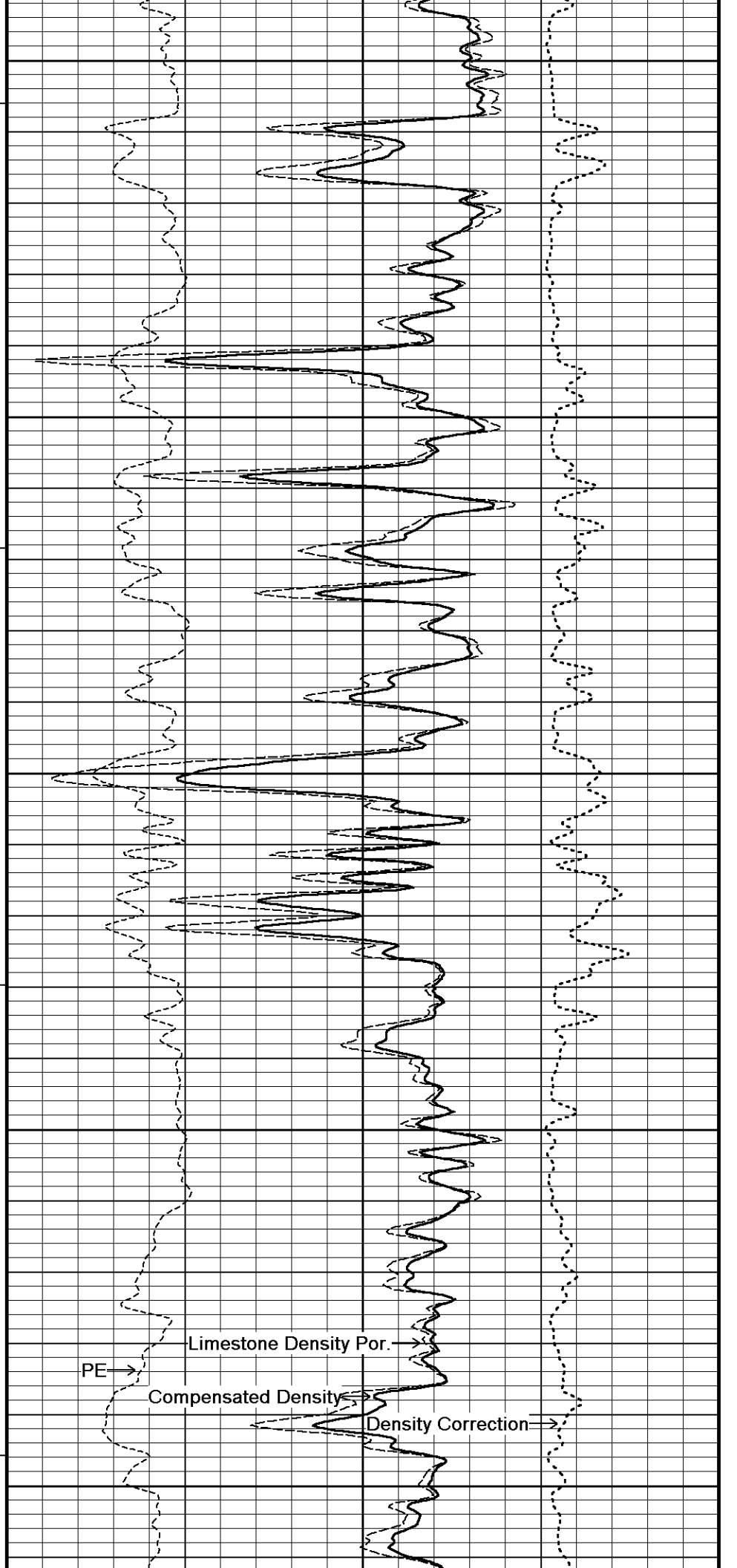
→ DST Uphole Tension

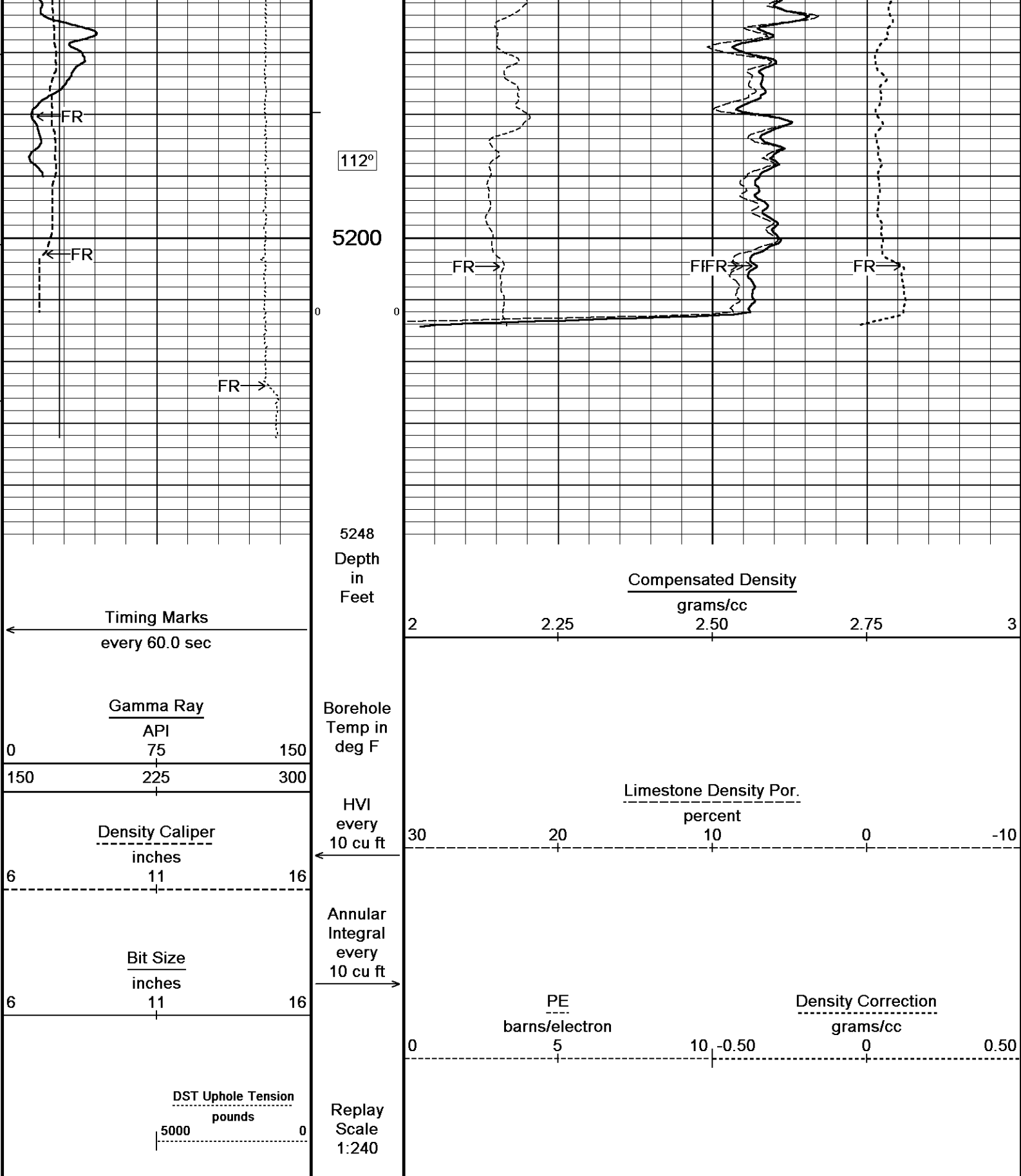
PE →

→ Limestone Density Por.

→ Compensated Density

→ Density Correction





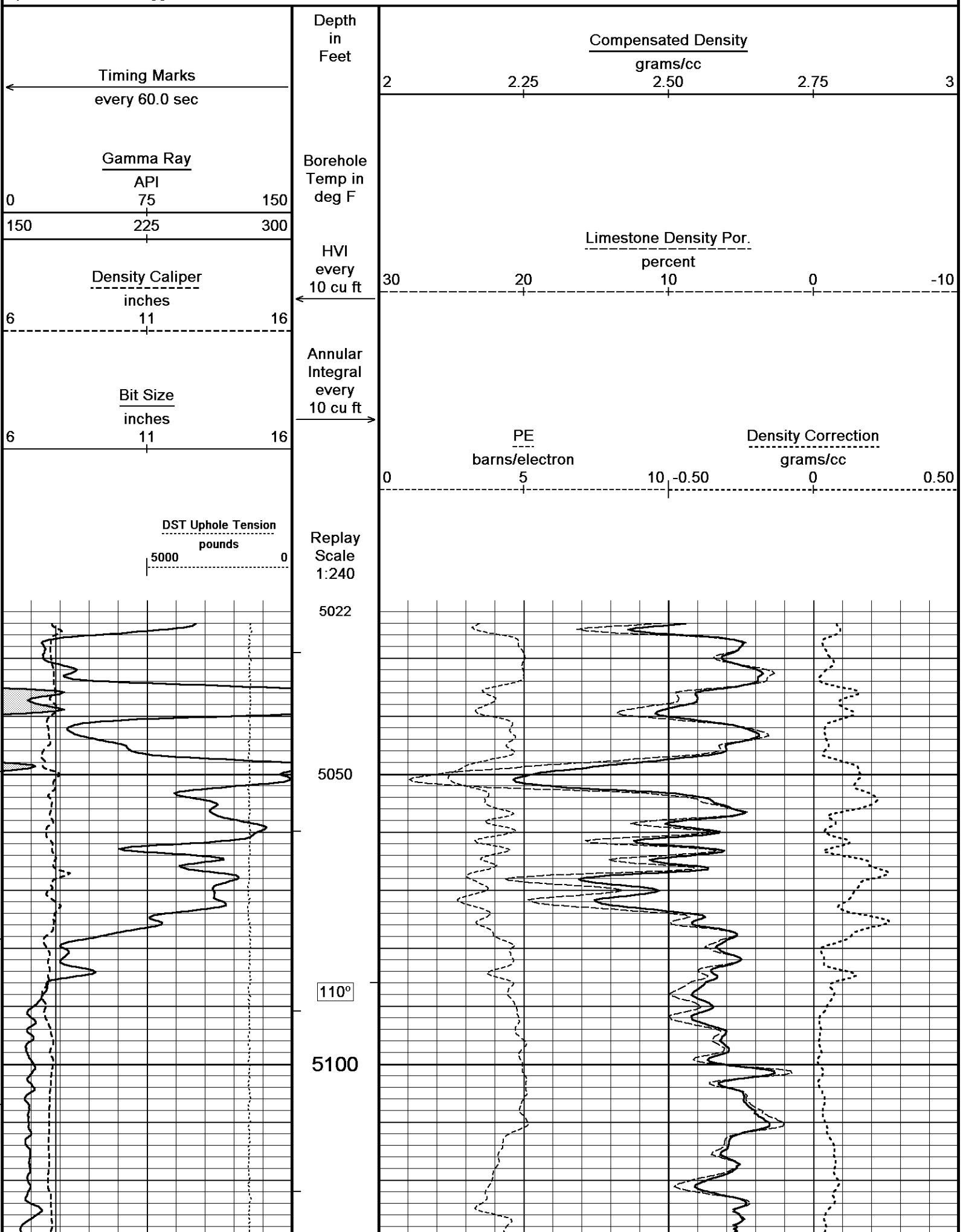
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Logs\McCoy MTPRC 'A' #3-27\McCoy MTPRC 'A' #3-27_002.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

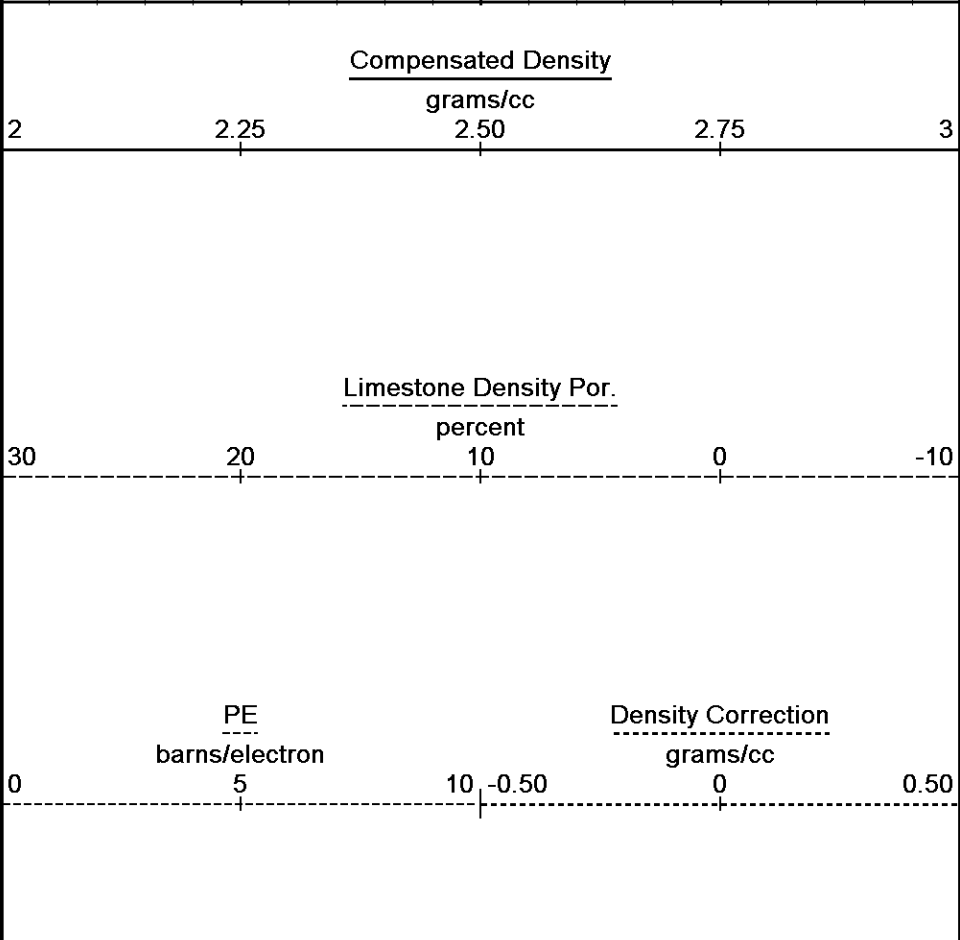
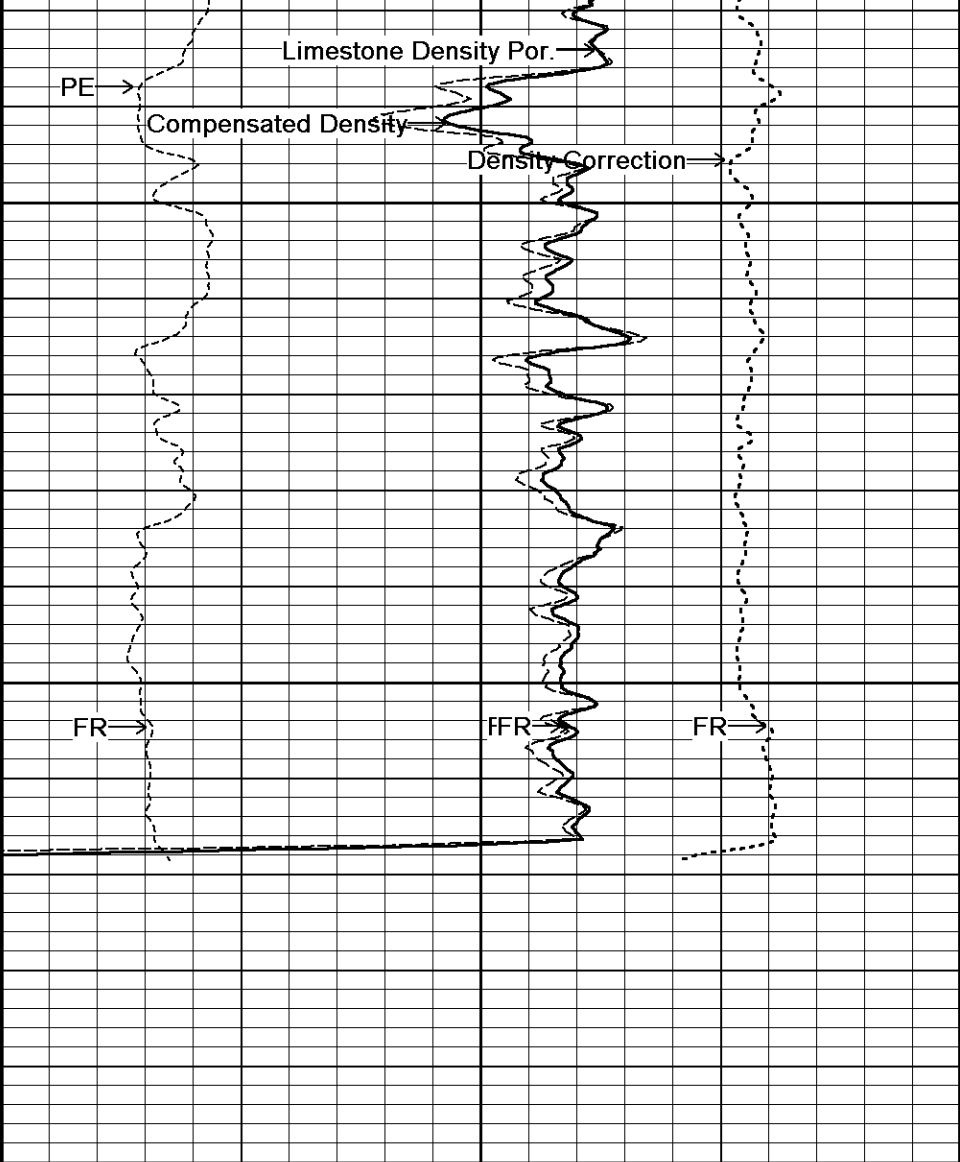
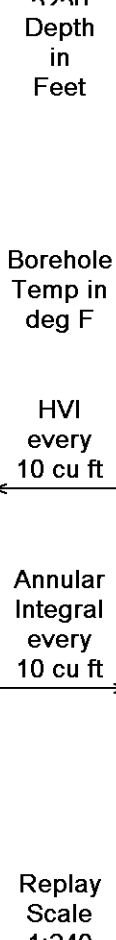
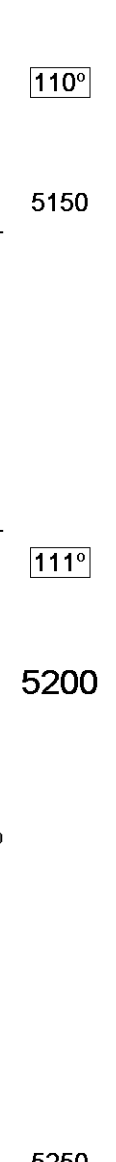
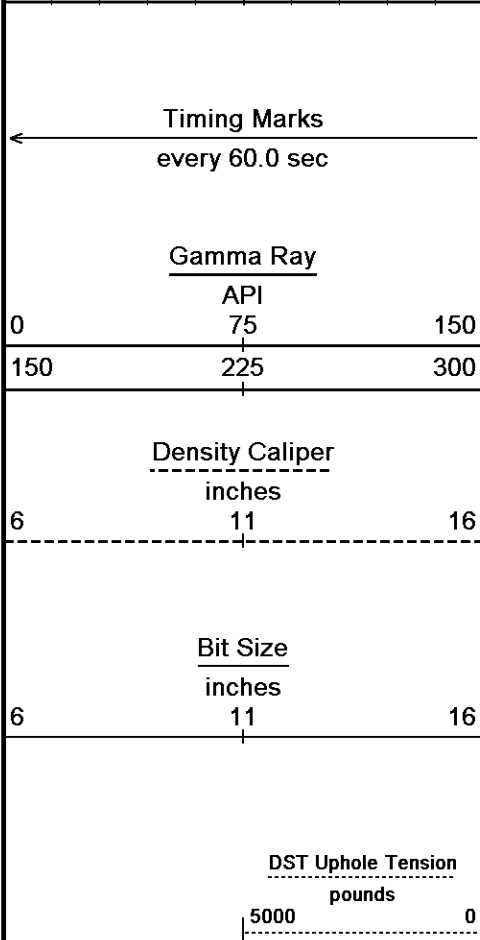
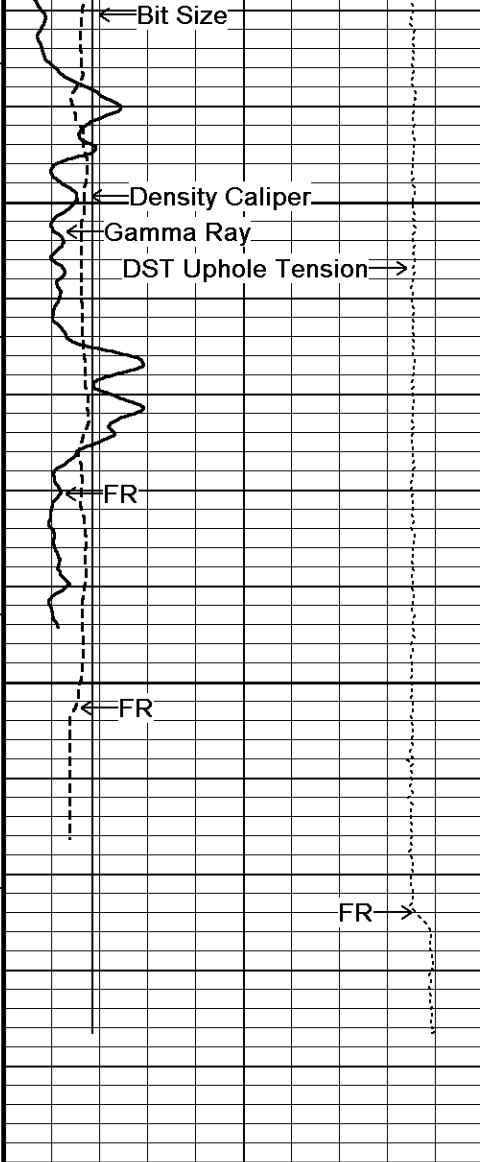
Plotted on 21-AUG-2014 22:55
Recorded on 21-AUG-2014 20:00

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-AUG-2014 22:55





↑

REPEAT SECTION

↑

BEFORE SURVEY CALIBRATION			
C:\Minimus 13.08.2113\Logs\McCoy MTPRC 'A' #3-27\McCoy MTPRC 'A' #3-27_001.dta			
General Constants All 000		Last Edited on 21-AUG-2014,18:40	
General Parameters			
Mud Resistivity	0.560	ohm-metres	
Mud Resistivity Temperature	93.000	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	0.610		
RWA Constant M	2.150		
SW/APOR Tool Source	0.000		
Down-hole Tension Calibration SMS 0		Field Calibration on 15-AUG-2014 17:39	
Reading No	Measured	Calibrated (lbs)	
1	15259.48	0.00	
2	15798.58	244.70	
Gamma Calibration MCG-C 123		Field Calibration on 21-AUG-2014 10:21	
	Measured	Calibrated (API)	
Background	69	47	
Calibrator (Gross)	1132	772	
Calibrator (Net)	1063	725	
Gamma Constants MCG-C 123		Last Edited on 21-AUG-2014,16:37	
Gamma Calibrator Number	GRC038		
Mud Density	1.14	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-C 123		Field Calibration on 21-AUG-2014 10:29	
	Measured	Calibrated (mV)	
Reference 1	99.2	98.8	
Reference 2	-98.3	-98.9	
High Resolution Temperature Calibration MCG-C 123		Field Calibration on 21-AUG-2014,10:26	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	
High Resolution Temperature Constants MCG-C 123		Last Edited on 21-AUG-2014,10:26	
Pre-filter Length	11		

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.2	49.8	5.1	25.6
Micro Inverse	10.0	49.5	3.4	16.9
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	93.7		93.7	
Micro Inverse	62.3		62.3	

Micro Normal and Micro Inverse Constants MMR-A 29

Last Edited on 13-AUG-2014,16:47

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	0.0000		inches	

Caliper Calibration MMR-A 29

Base Calibration on 13-AUG-2014 17:05

Field Calibration on 21-AUG-2014 13:11

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13833	5.96
2	17084	7.98
3	20261	9.85
4	24276	11.92
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.98	7.97

Neutron Calibration MDN-B.J 387

Base Calibration on 31-JUL-2014 11:36

Field Check on 21-AUG-2014 10:26

Base Calibration		Measured		Calibrated (cps)	
	Near	Far	Near	Far	
	2985	92	3714	110	
Ratio	32.470		33.764		
Field Calibrator at Base			Calibrated (cps)		
			1675	2460	
Ratio			0.681		
Field Check			Calibrated (cps)		
			1690	2481	
Ratio			0.681		

Neutron Constants MDN-B.J 387

Last Edited on 21-AUG-2014,16:37

Neutron Source Id	P58125B		
Neutron Jig Number	5824NE		
Epithermal Neutron			
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 30-JUL-2014 09:41

Field Check on 21-AUG-2014 09:52

Base Calibration		Measured	Calibrated (ohm-m)
Reference 1		0.0	0.0
Reference 2		951.6	126.8
Base Check			281.4
Field Check			281.4

FE Constants MFE-A.A 55

Last Edited on 21-AUG-2014,16:36

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

Induction Calibration MAI-A.A 5

Base Calibration on 21-JAN-2014,09:50

Field Check on 21-AUG-2014 09:51

Base Calibration		Measured		Calibrated (mmho/m)	
Test Loop Calibration					
Channel	Low	High	Low	High	
1	16.3	470.8	9.3	966.2	
2	5.6	376.1	7.6	821.4	
3	2.6	266.1	5.2	566.0	
4	1.6	130.0	2.6	279.2	
Array Temperature		71.1	Deg F		
Channel		Base Check (mmho/m)		Field Check (mmho/m)	
		Low	High	Low	High
1				15.8	3862.3
2				31.9	3590.2
3				29.8	2970.8
4				20.8	2125.7
Deep				18.5	1911.7
Medium				43.0	3860.4
Shallow				47.5	5372.0
Array Temperature				85.0	Deg F

Induction Constants MAI-A.A 5

Last Edited on 21-AUG-2014,16:36

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 5

Field Calibration on 21-JAN-2014,15:43

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

High Resolution Temperature Constants MAI-A.A 5

Last Edited on 27-JUN-2014,14:12

Pre-filter Length 11

Caliper Calibration MPD-D.A 481

Base Calibration on 15-JUL-2014 21:58

Field Calibration on 21-AUG-2014 09:54

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	17157	3.99
2	27203	5.98
3	37251	7.97
4	47048	9.86
5	58065	11.92
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.98	7.97

Photo Density Calibration MPD-D.A 481

Base Calibration on 15-JUL-2014 22:16

Field Check on 21-AUG-2014 09:59

Density Calibration				
Base Calibration				
		Measured	Calibrated (sdu)	
		Near	Far	
		Near	Far	
Background	1220	1433		
Reference 1	55282	26261	59556	30836
Reference 2	22309	2604	24941	2541

Field Check at Base	1220.2	1433.1
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Field Check	1217.1	1436.1
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PE Calibration				
Base Calibration				
		Measured	Calibrated	
		WH	Ratio	
	WS	WH	Ratio	
Background	231	1089		
Reference 1	24198	55085	0.444	0.371
Reference 2	6814	22169	0.312	0.272

Field Check at Base	231.4	1089.2
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Field Check	232.7	1088.4
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Density Constants MPD-D.A 481

Last Edited on 21-AUG-2014,16:37

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	1.14	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 (ft)
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	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Logs\McCoy MTPRC 'A' #3-27\McCoy MTPRC 'A' #3-27_001.dta

CBH-C, Cablehead, 11 pin
CBH-C 265 LG: 2.40 ft WT: 24.3 lb OD: 2.240 in

Compact Comms Gamma
MCG-C 123 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-A 29 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

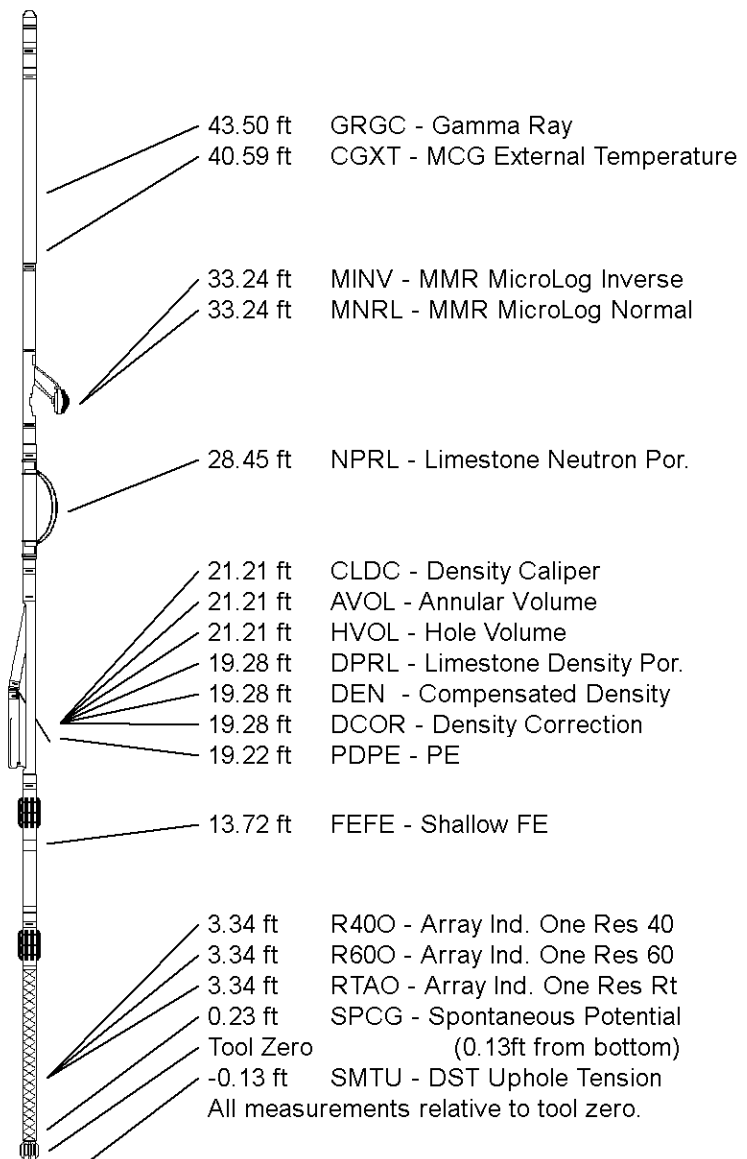
Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-D.A 481 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 5 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 51.18 ft Weight: 407.9 lb



COMPANY	McCOY PETROLEUM CORPORATION
WELL	MTPRC 'A' #3-27
FIELD	ALFORD
PROVINCE/COUNTY	KIOWA

PROVINCE/COUNTY IOWA
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2251.00	feet	First Reading	5205.00	feet
Elevation Drill Floor	2249.00	feet	Depth Driller	5225.00	feet
Elevation Ground Level	2238.00	feet	Depth Logger	5224.00	feet



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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG