



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON**

COMPANY	CMX, INC.		
WELL	WOODS TRUST #2		
FIELD	UN-NAMED		
PROVINCE/COUNTY	PAWNEE		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	990' FNL & 1320' FWL		
SEC 27	TWP 21S	RGE 19W	Other Services
Latitude	MAI/MFE		
Longitude			
API Number	15-145-21770		
Permanent Datum GL, Elevation	2074 feet		
Log Measured From	KB		Elevations: KB 2087.00
Drilling Measured From	KB @ 13 feet		DF 2085.00
			GL 2074.00
Date	27-JUN-2014		
Run Number	ONE		
Service Order	7577-91017557		
Depth Driller	4340.00		feet
Depth Logger	4337.00		feet
First Reading	4316.00		feet
Last Reading	3300.00		feet
Casing Driller	1026.00		feet
Casing Logger	1029.00		feet
Bit Size	7.875		inches
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.10 lb/USg	54.00 CP	
PH / Fluid Loss	8.60	8.40 ml/30Min	
Sample Source	MUD PIT		
Rm @ Measured Temp	1.33 @ 88.0	ohm-m	
Rmf @ Measured Temp	1.06 @ 88.0	ohm-m	
Rmc @ Measured Temp	1.60 @ 88.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	1.06 @ 88.0	ohm-m	
Time Since Circulation	3 HOURS		
Max Recorded Temp	112.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	JEFFREY RANDLE		
Witnessed By	LEAH A. KASTEN		JUSTIN HICKS
JOB #	LB14-191		

BOREHOLE RECORD				Last Edited: 27-JUN-2014 01:20
Bit Size inches		Depth From feet		Depth To feet
7.875		1026.00		4340.00
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1026.00	24.00

REMARKS
- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE: MDN: DUAL BOWSPRING ECCENTRALIZER MFE: 1 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: 1492 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 3300 FT.: 169 CU. FT.

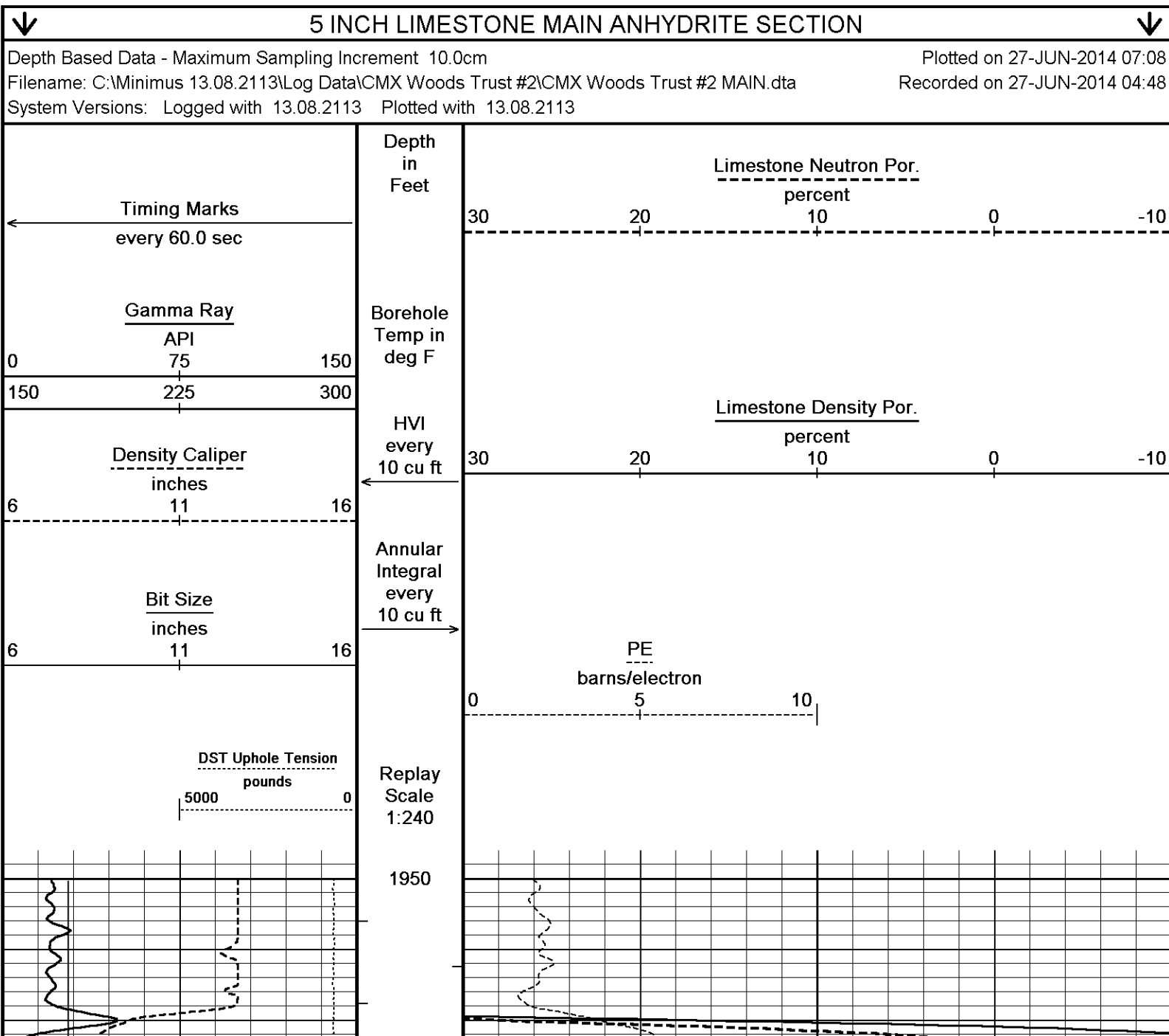
- RIG: DUKE DRILLING RIG #7.

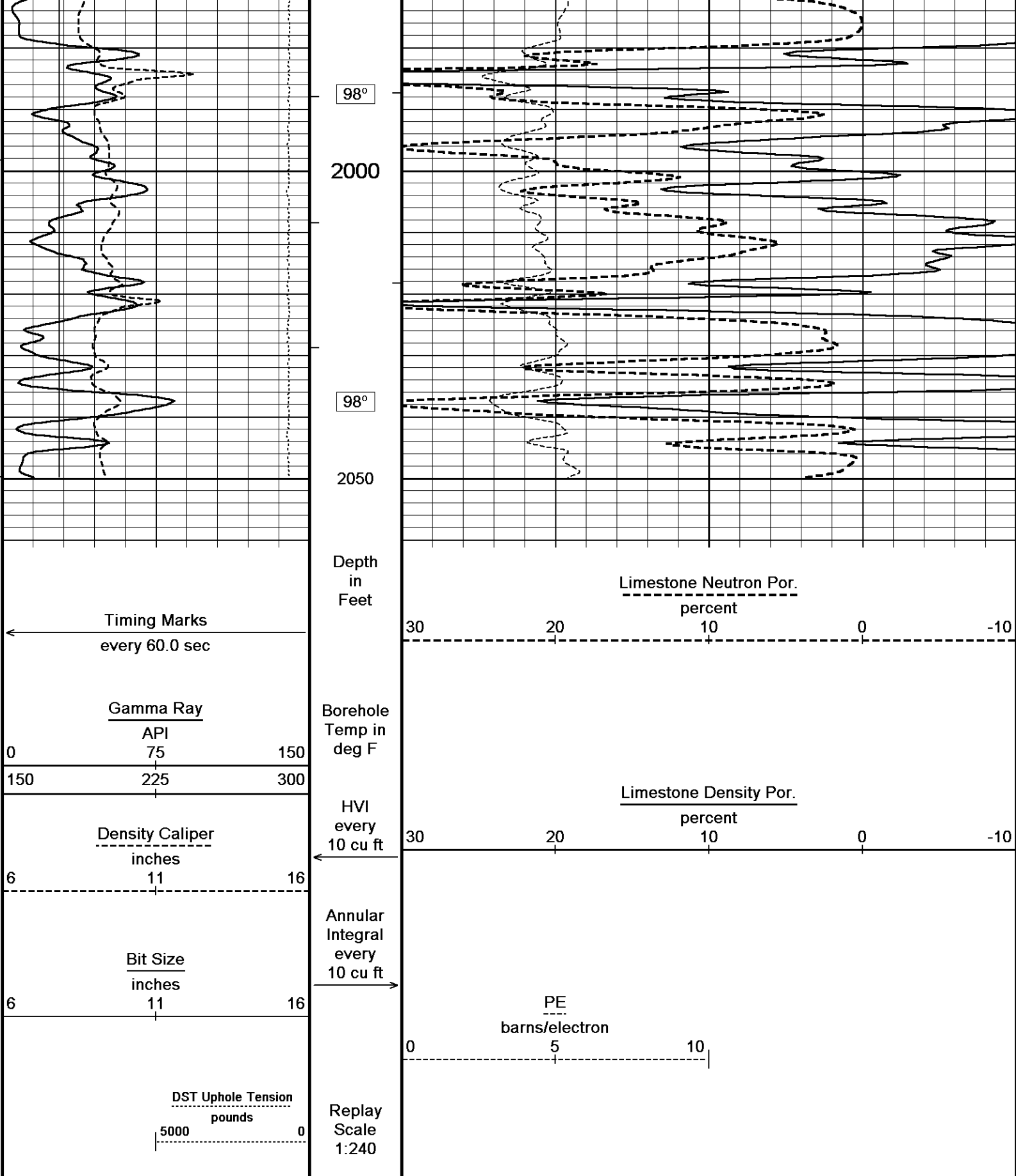
- ENGINEER: JUSTIN HICKS.

- JUNIOR FIELD ENGINEER: JEFFREY RANDLE.

- OPERATOR: KENNETH RINEHART.

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.





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 MAIN.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

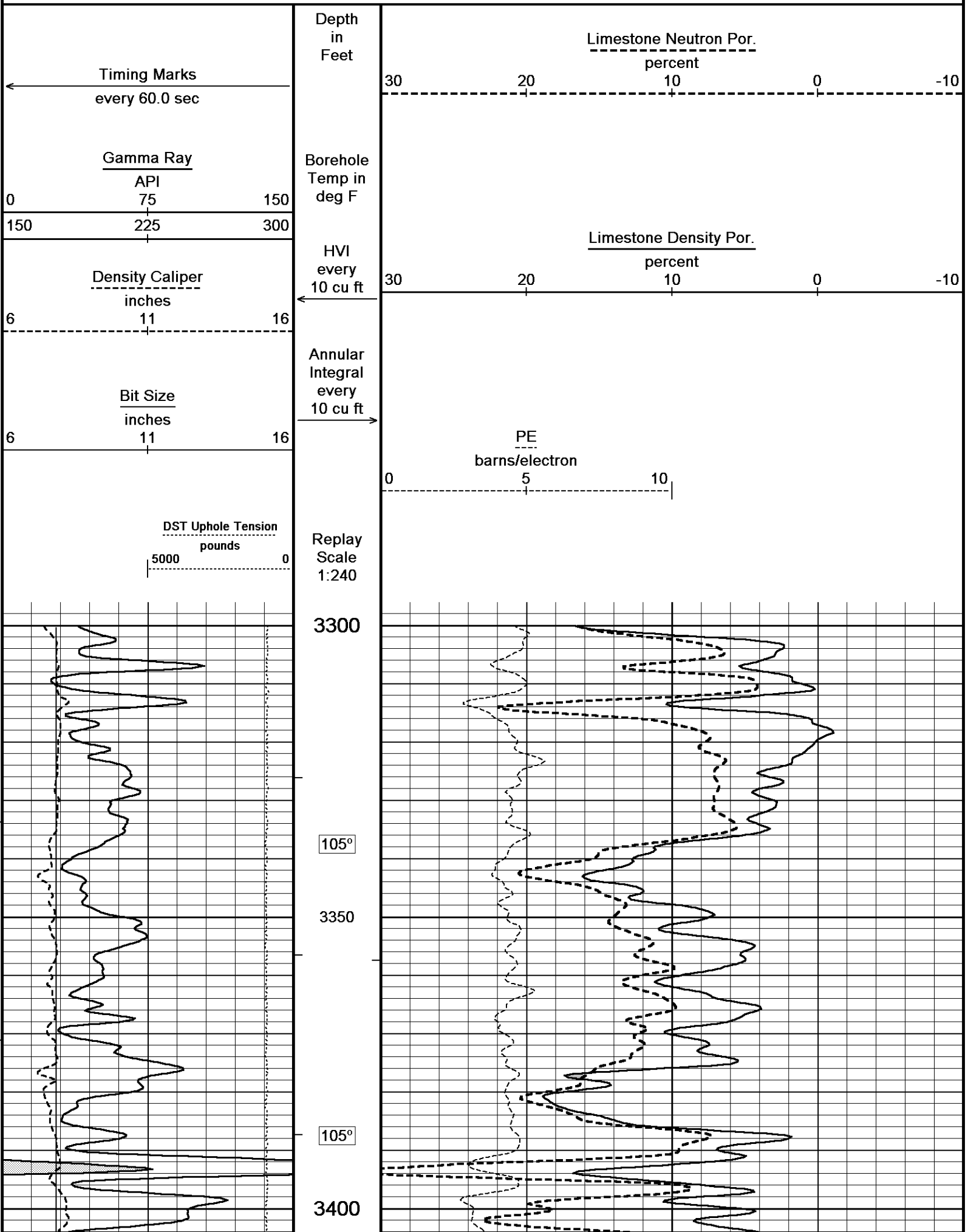
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Recorded on 27-JUN-2014 04:48

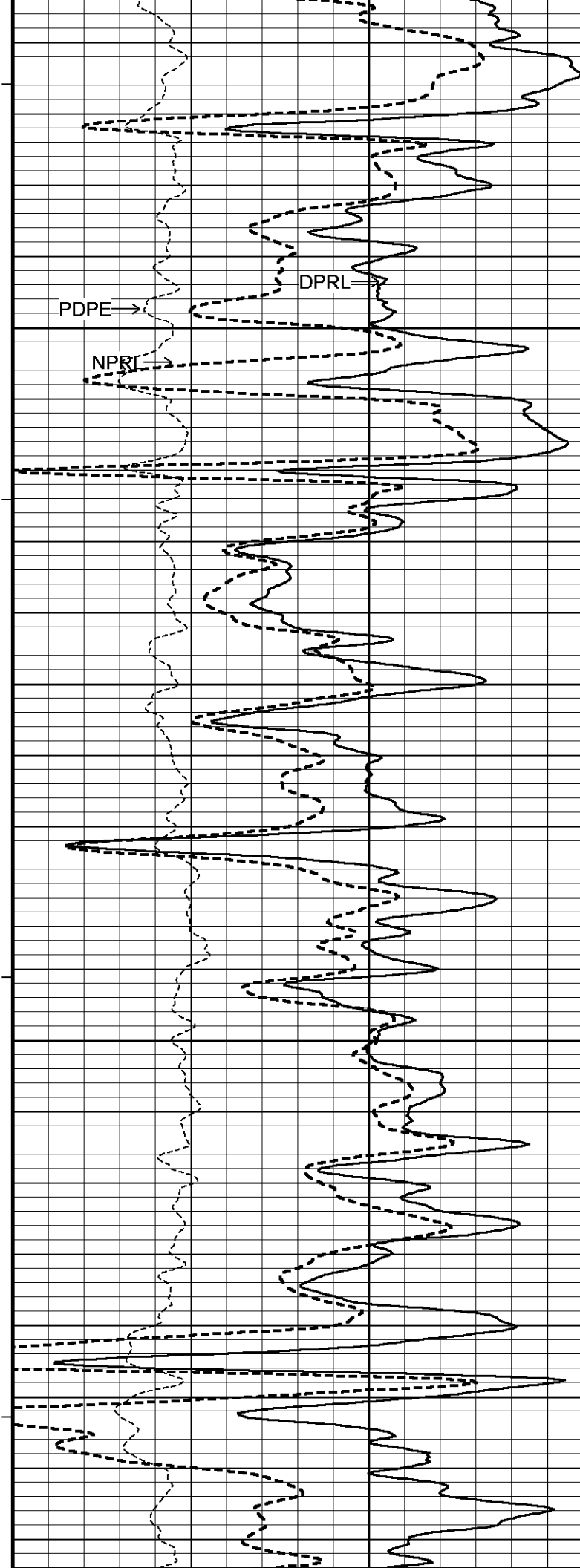
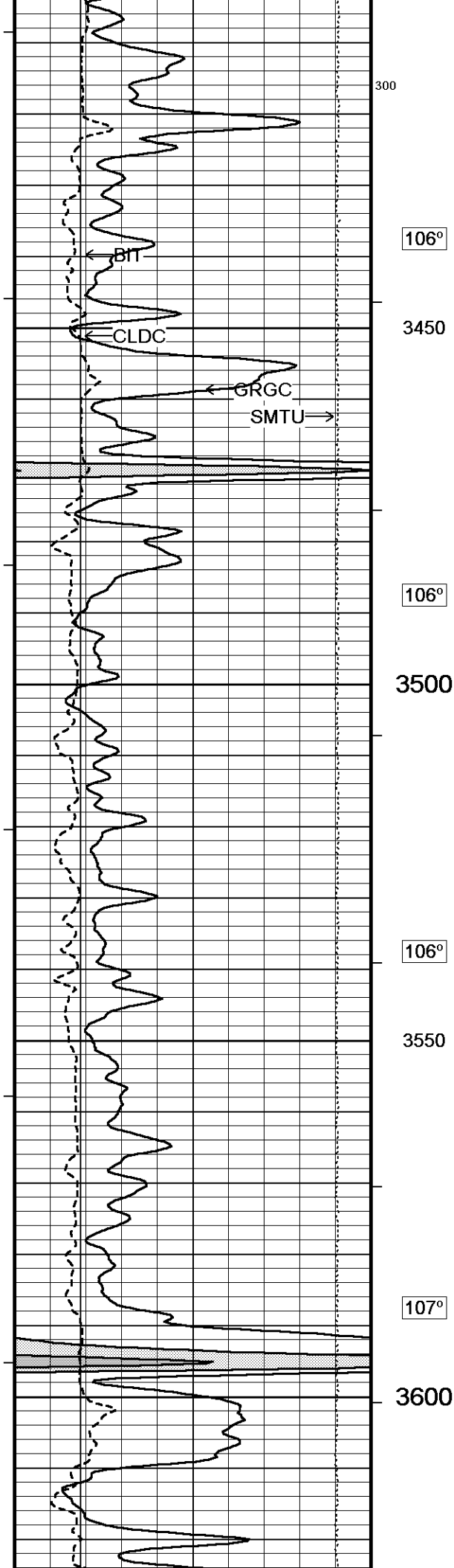
5 INCH LIMESTONE MAIN ANHYDRITE SECTION

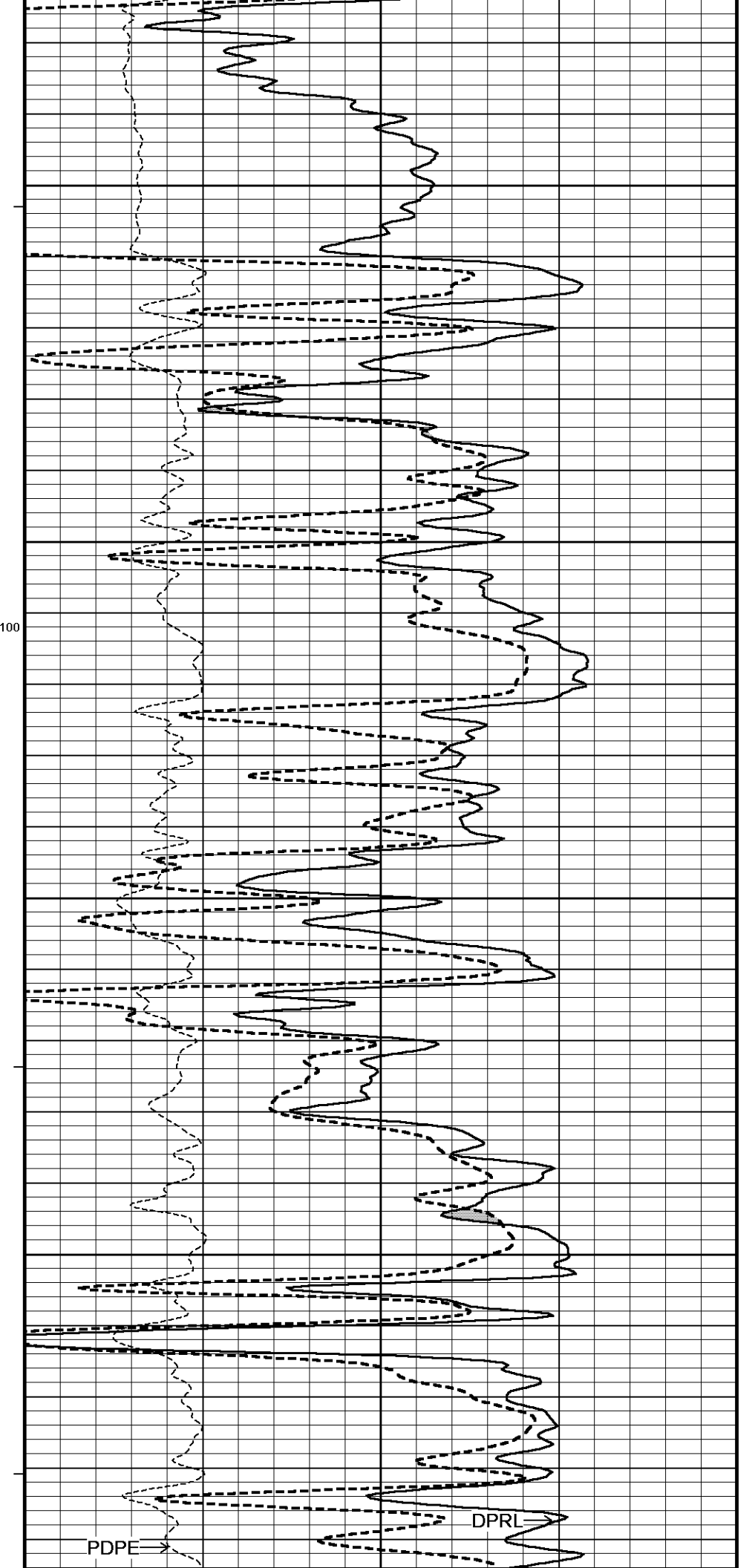
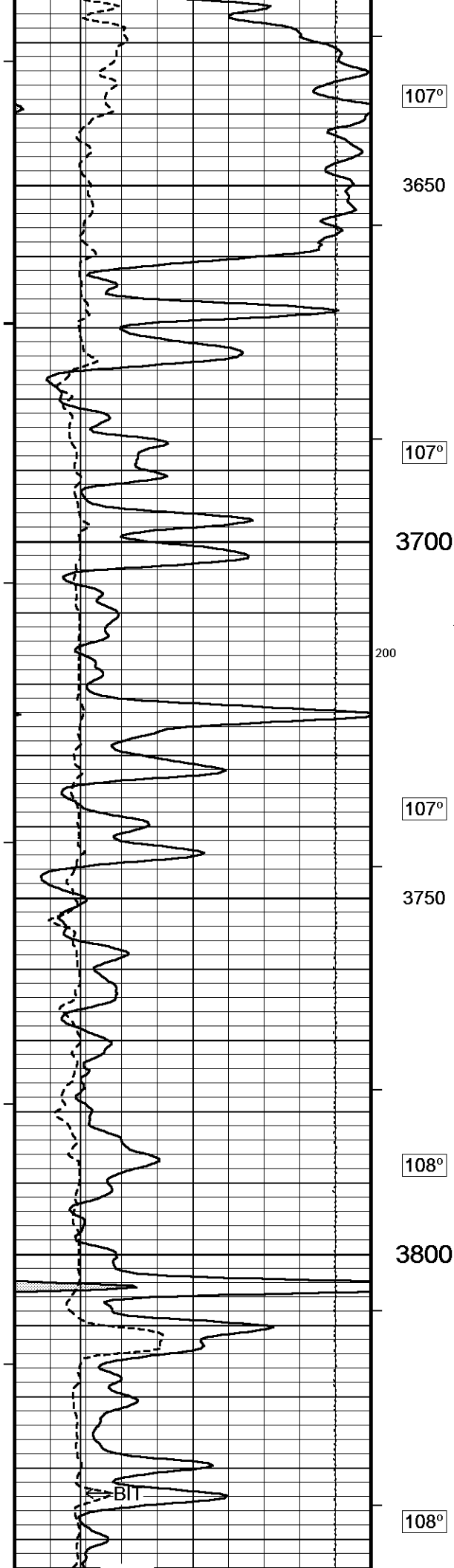
5 INCH LIMESTONE MAIN

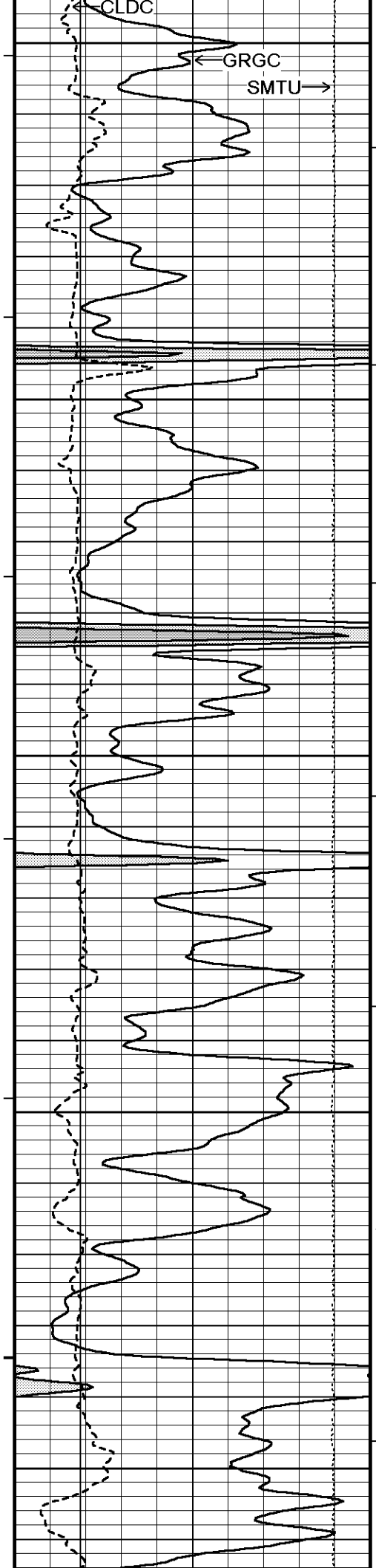
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 MAIN.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Plotted on 27-JUN-2014 07:08
Recorded on 27-JUN-2014 04:48

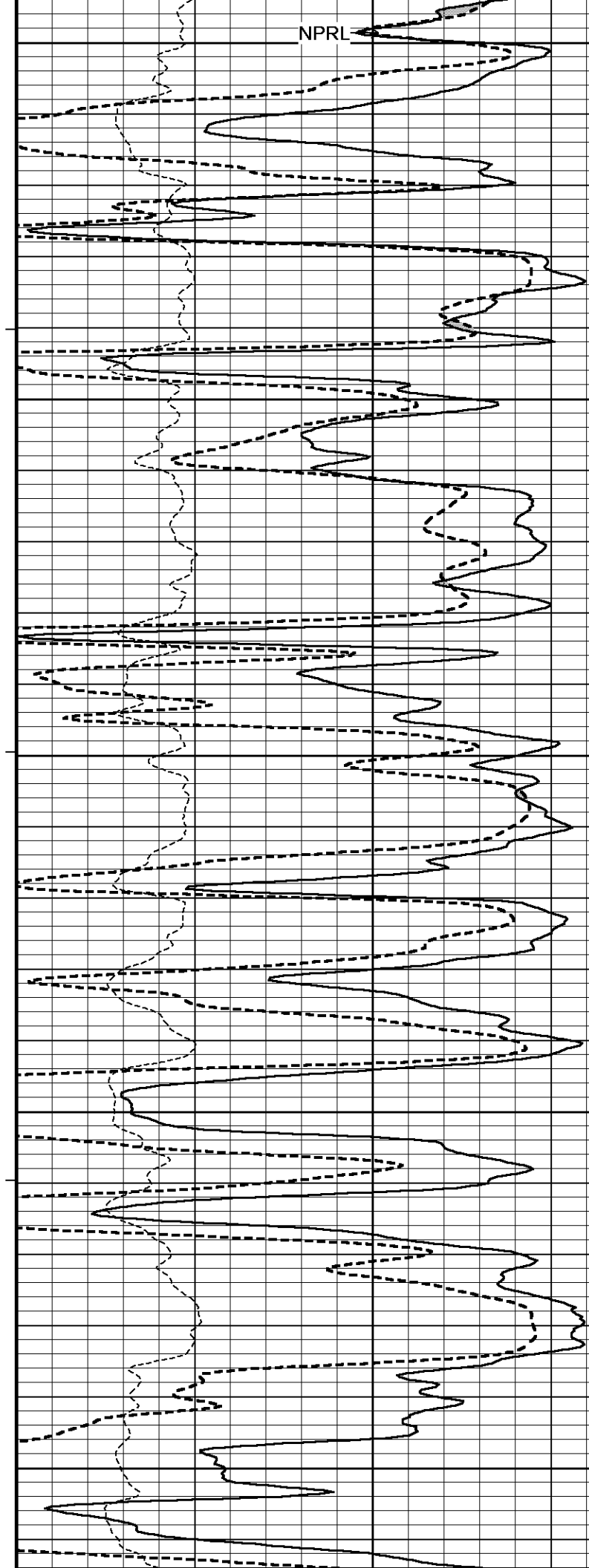


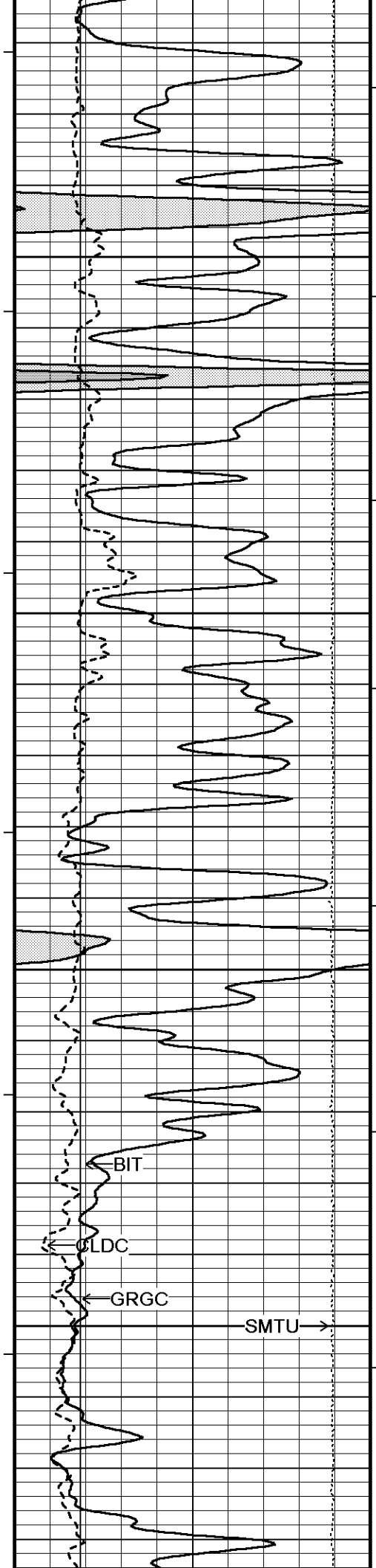






3850
109°
3900
109°
3950
109°
4000
100
110°
4050





110°

4100

111°

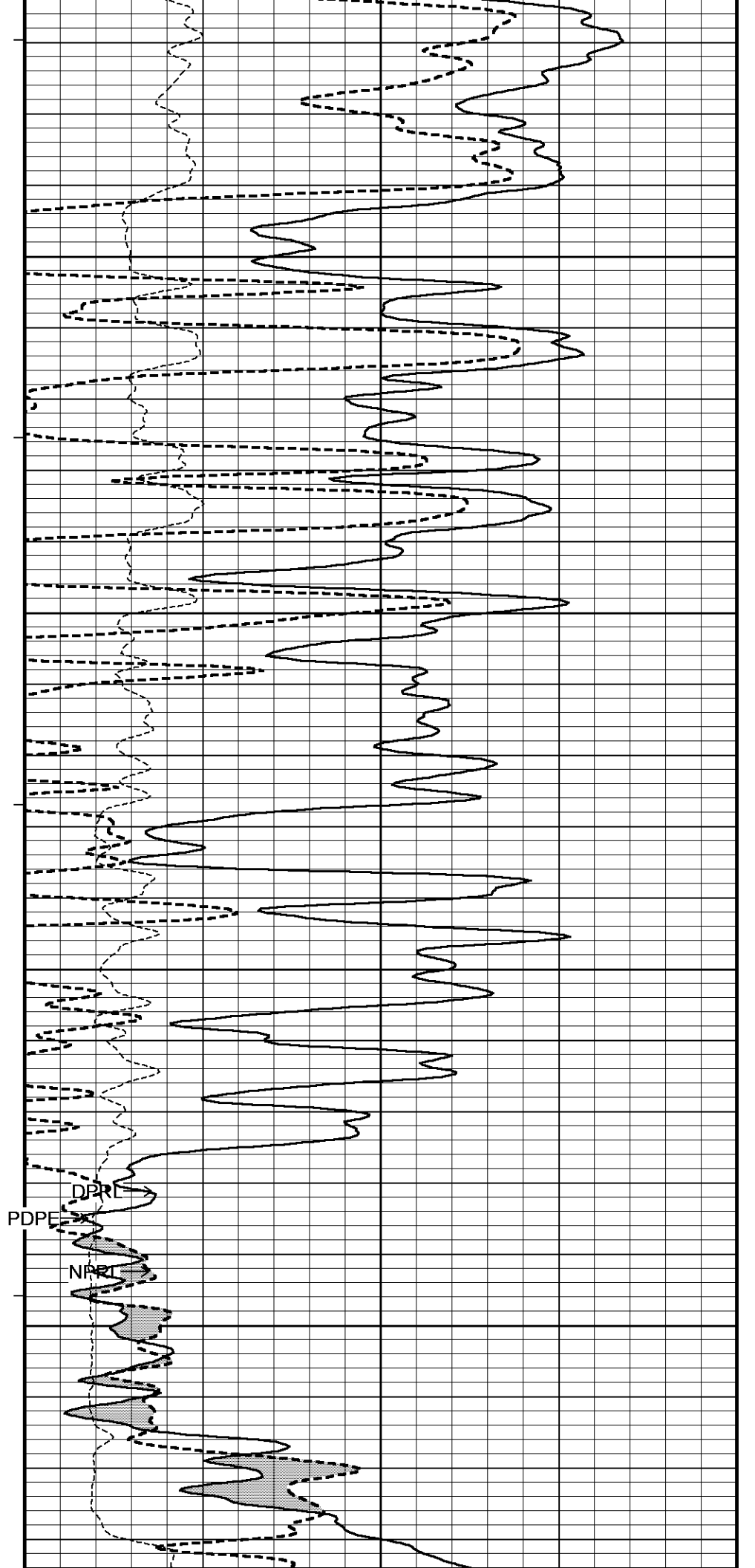
4150

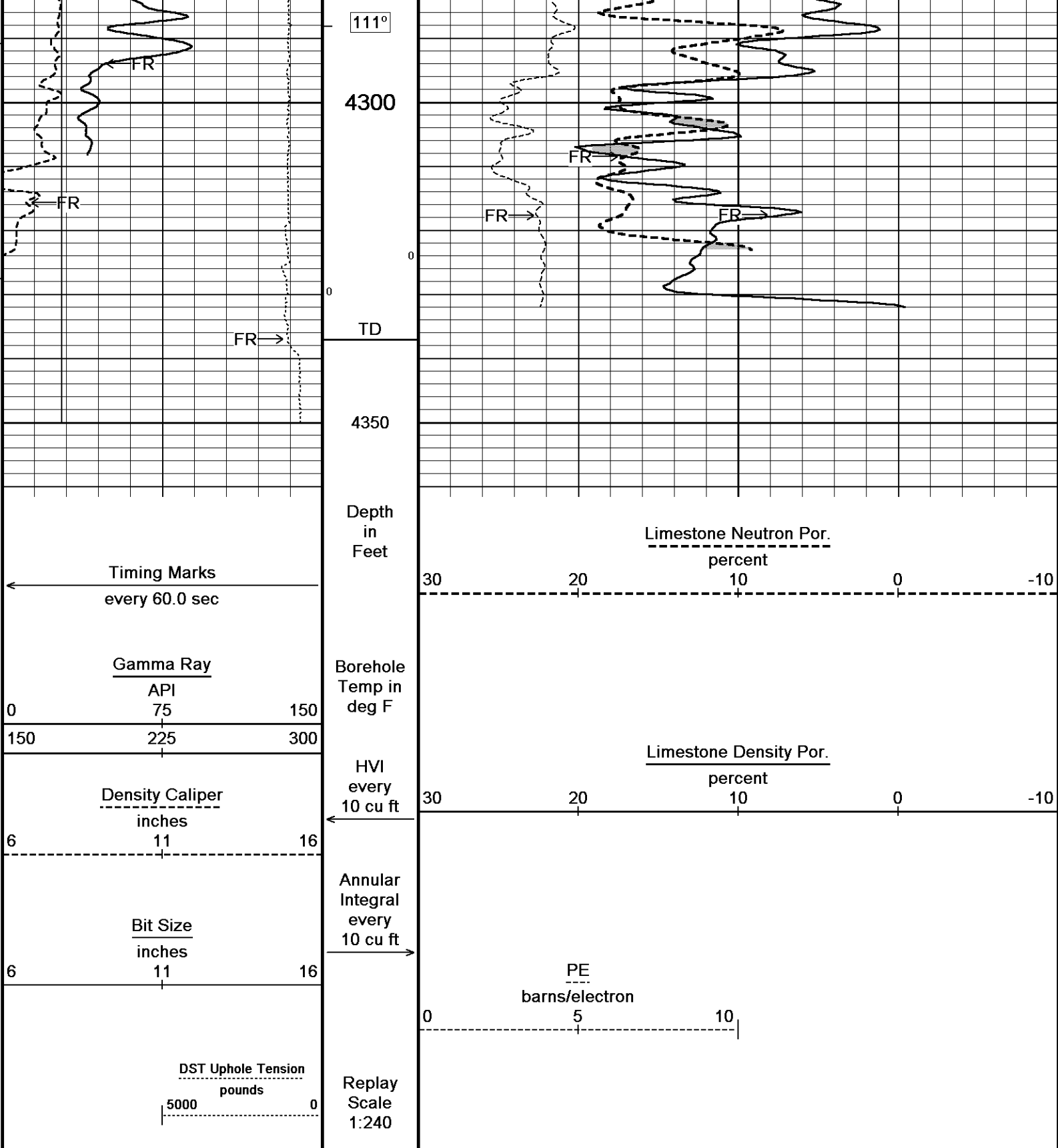
112°

4200

112°

4250



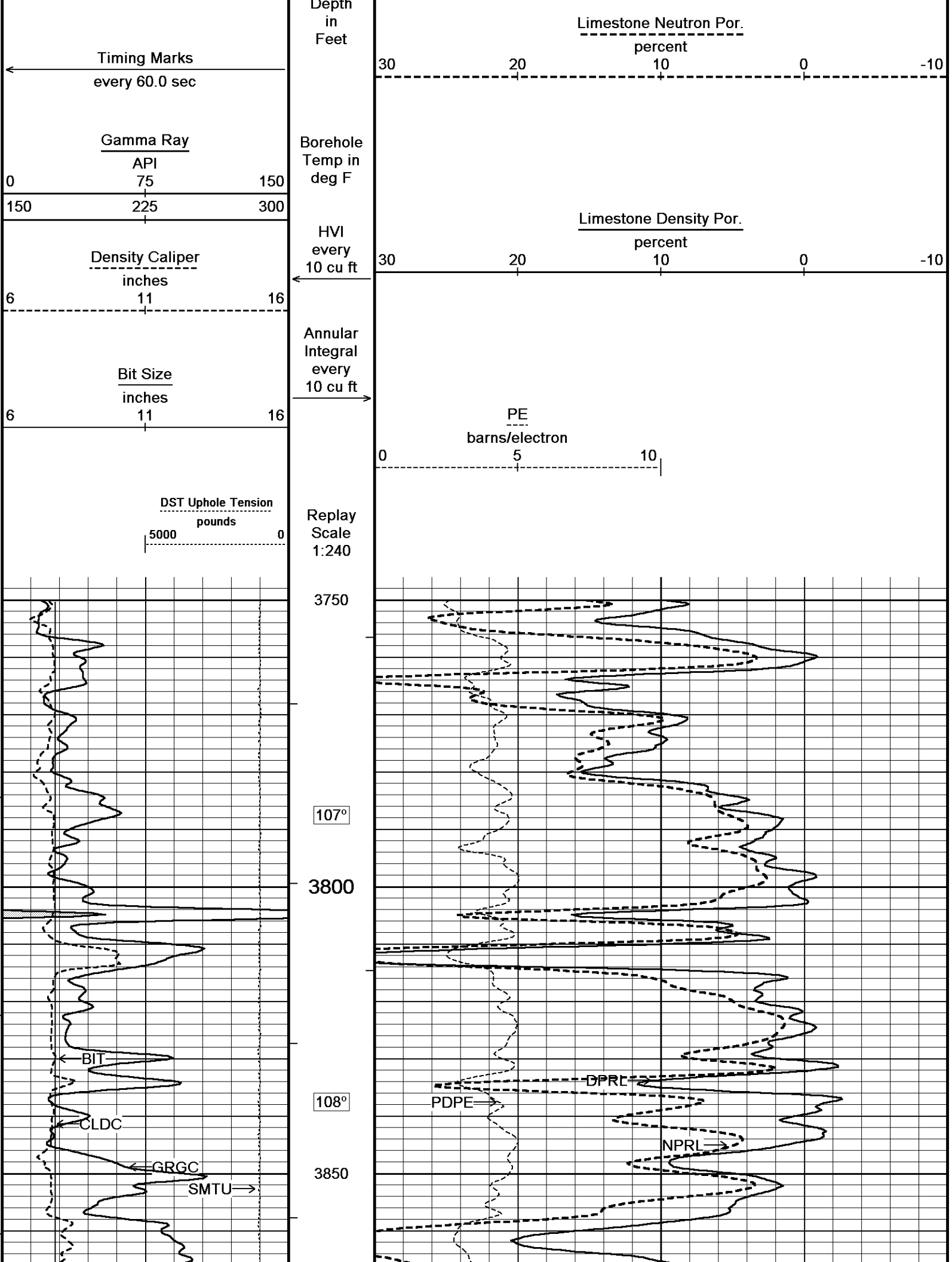


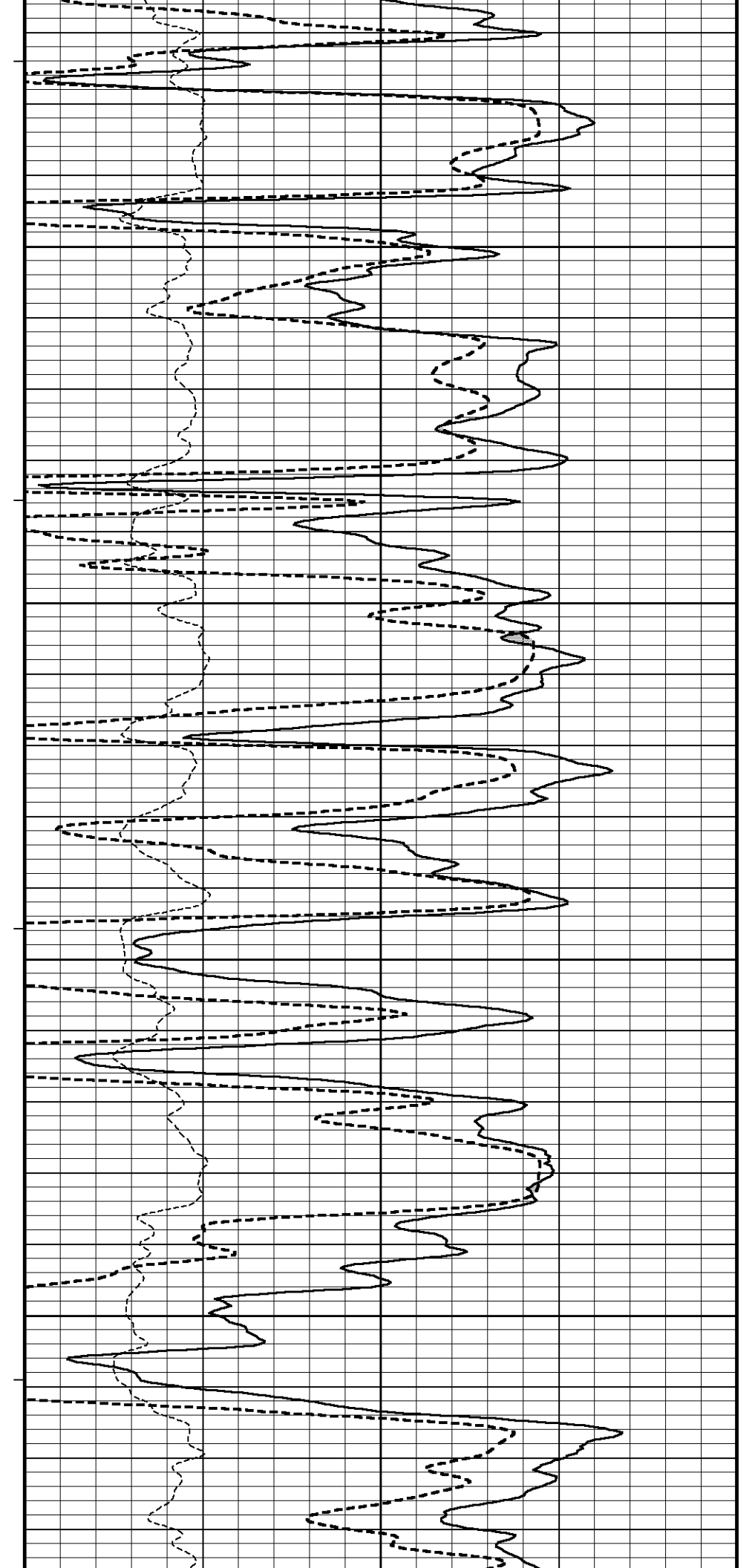
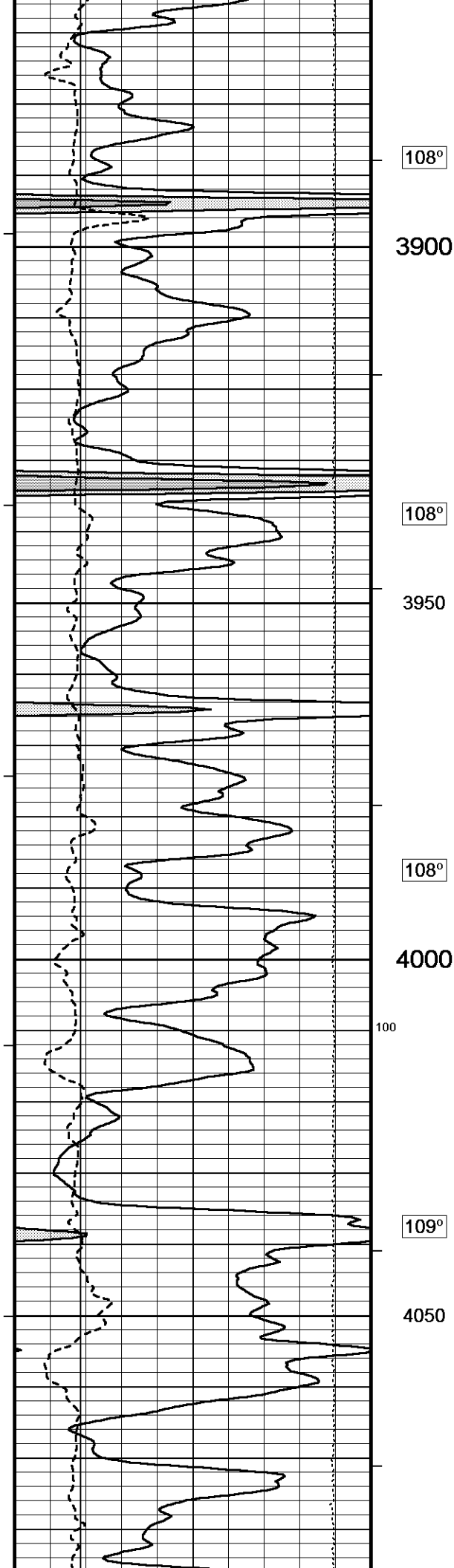
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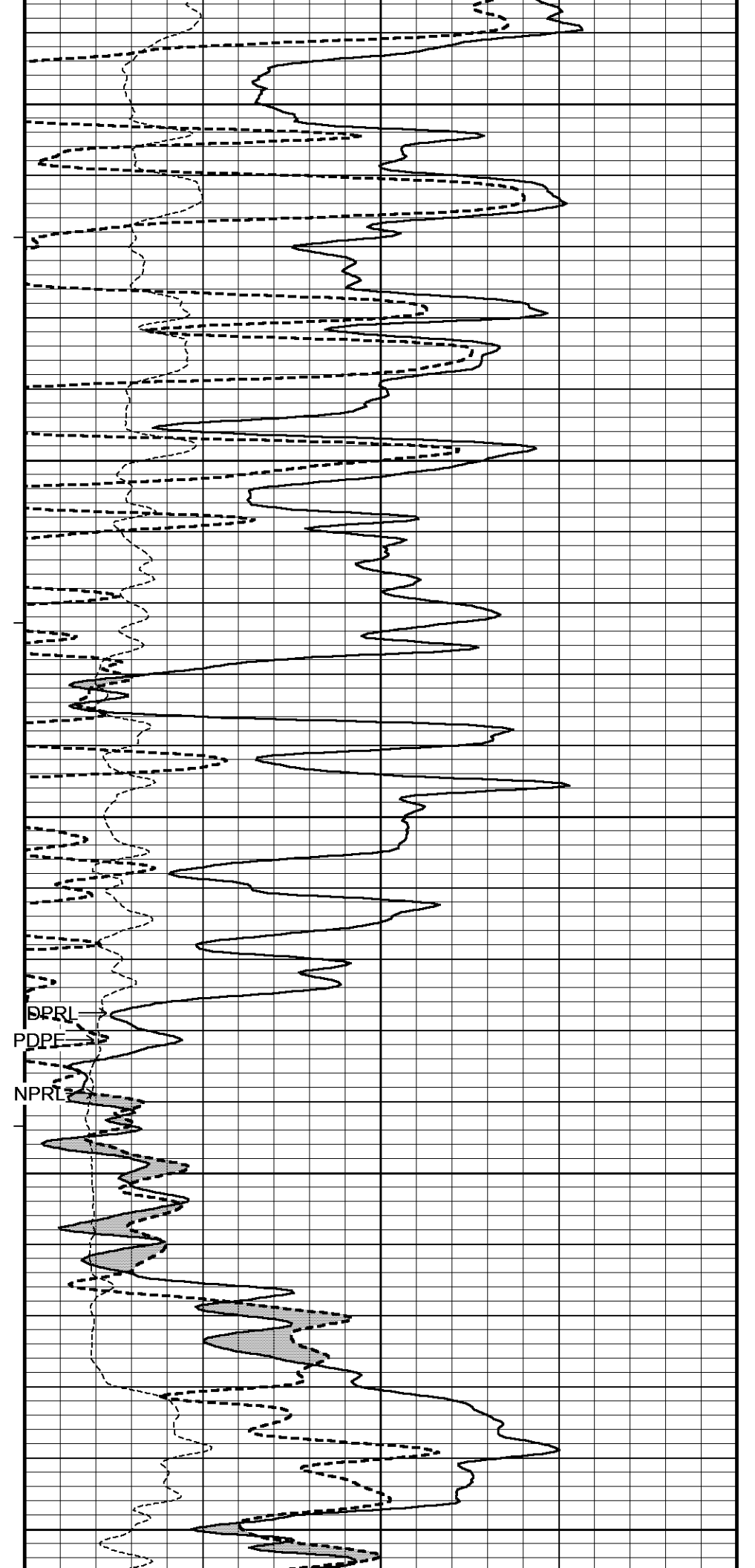
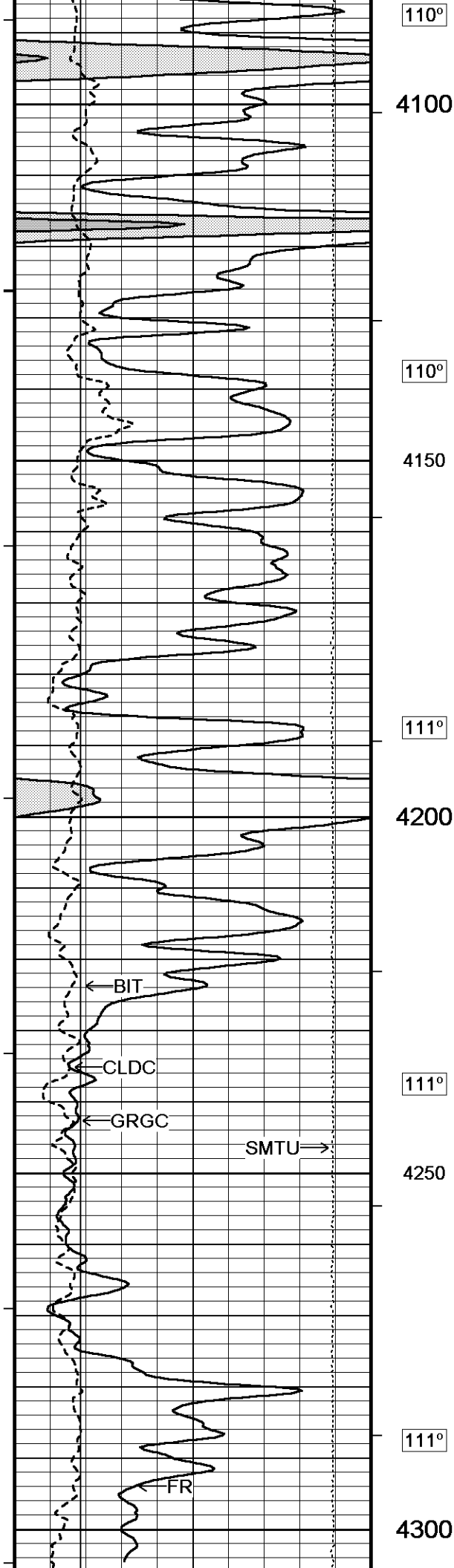
5 INCH LIMESTONE MAIN

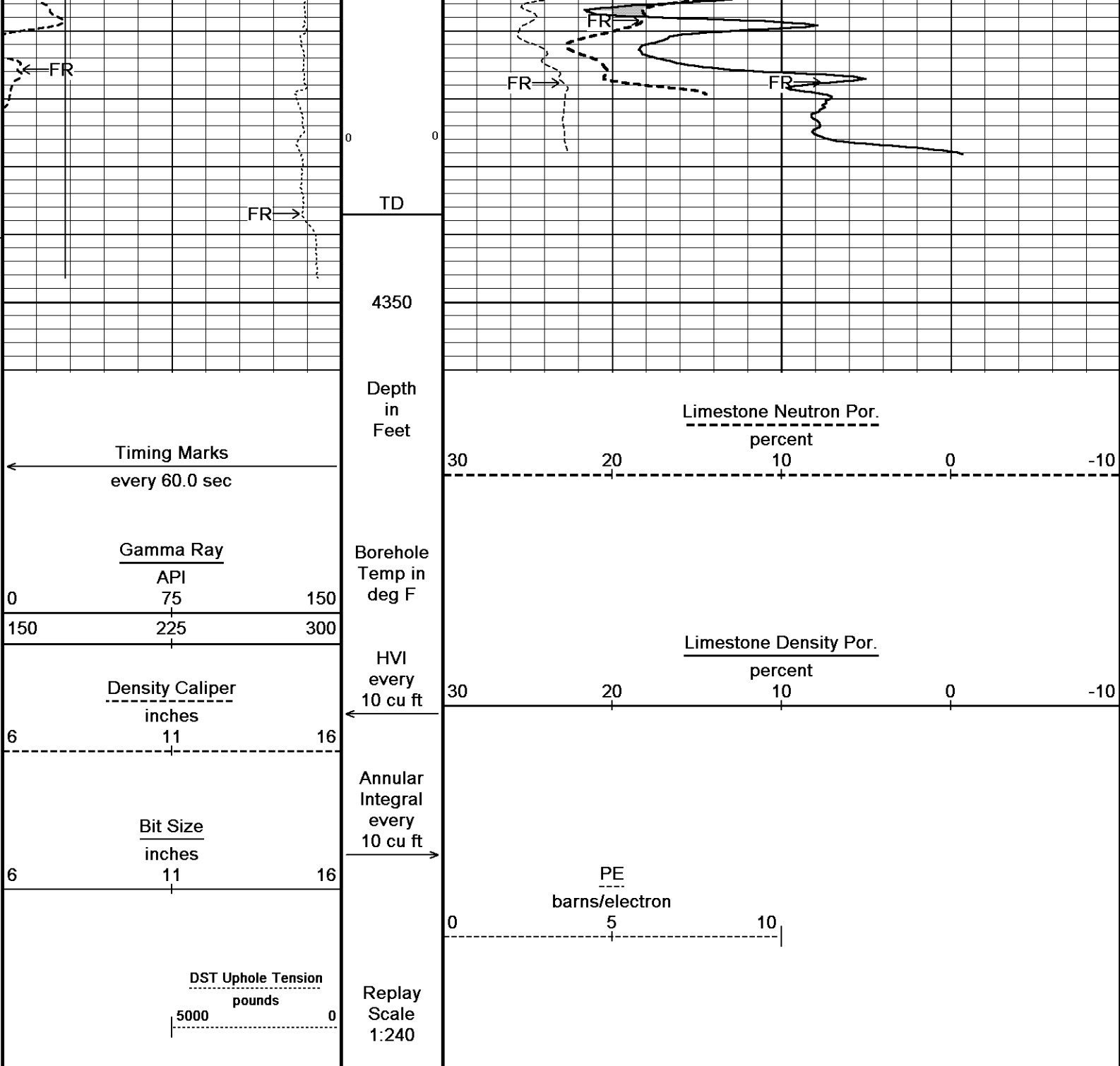
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 REPEAT.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113









Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 REPEAT.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

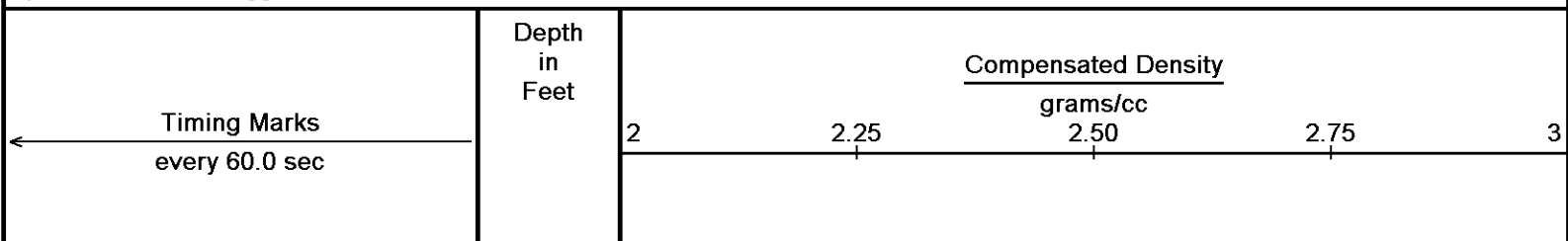
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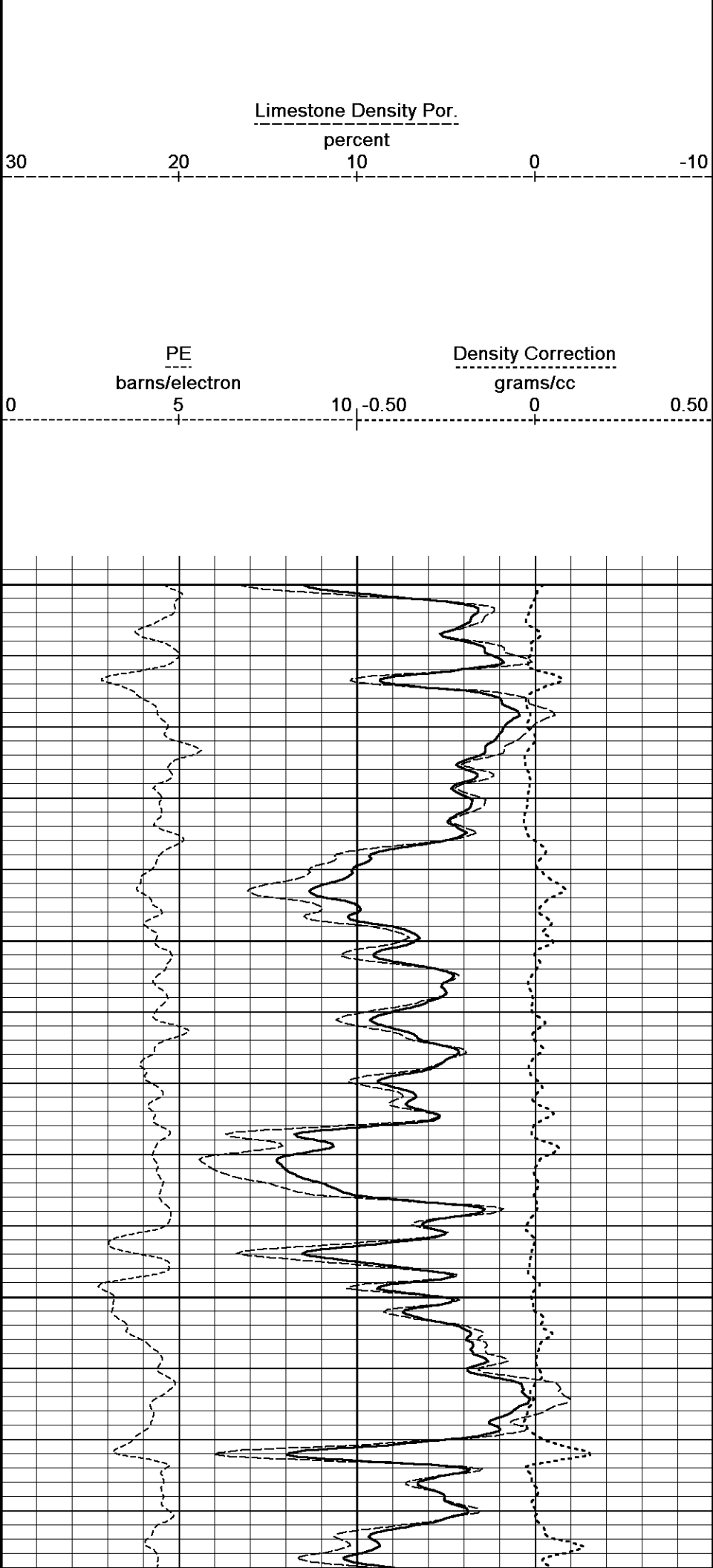
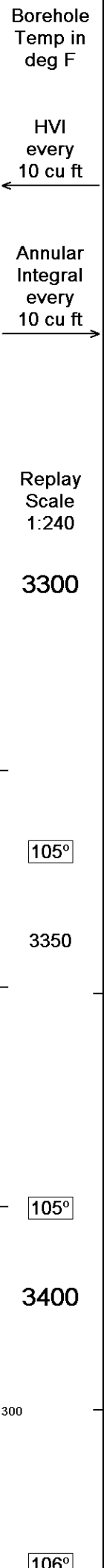
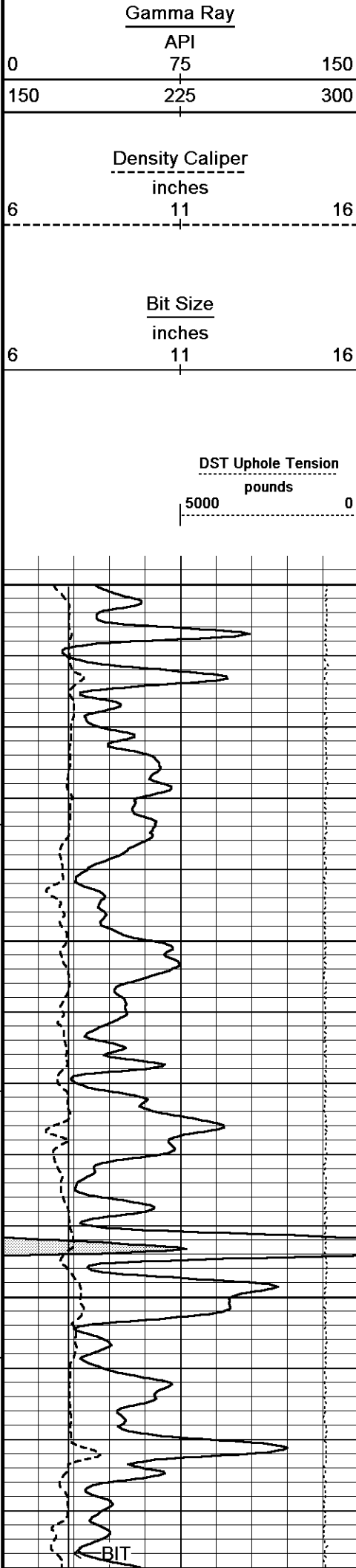
↑ REPEAT SECTION ↑

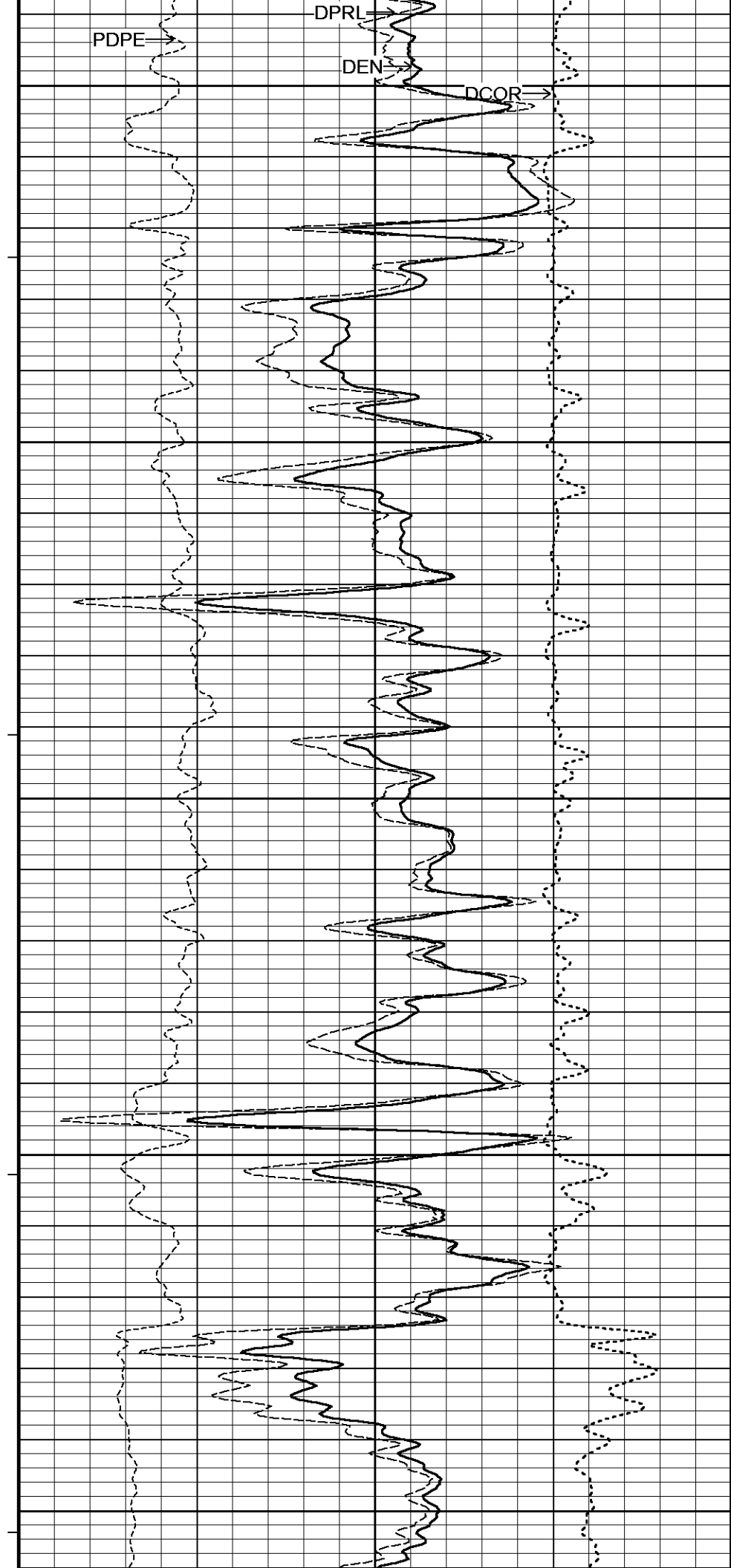
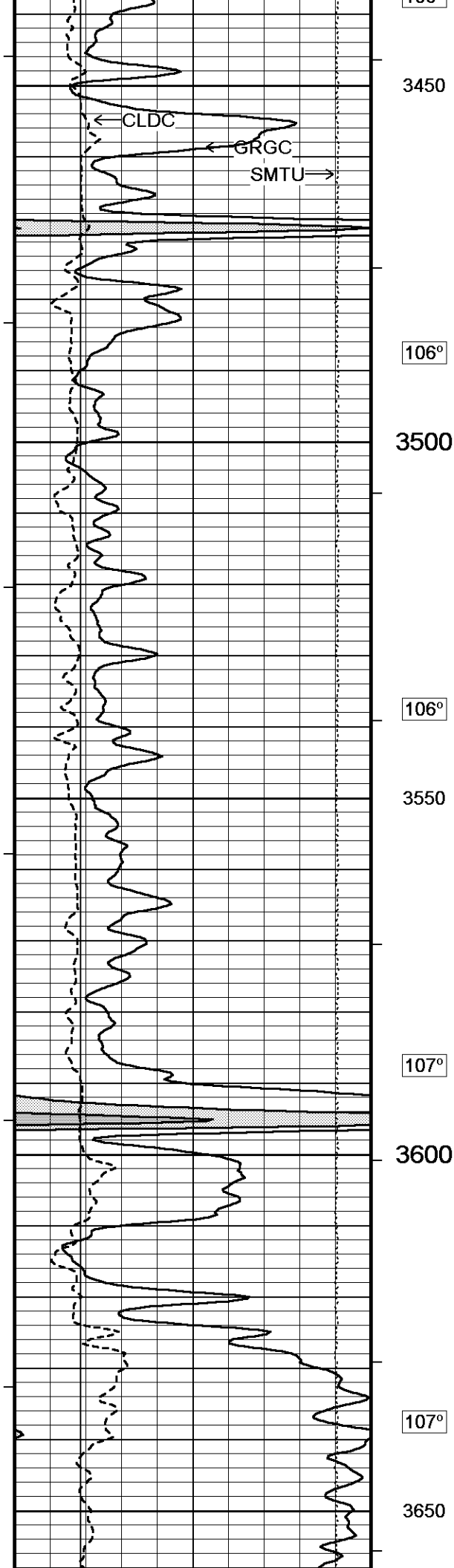
↓ 5 INCH BULK DENSITY MAIN ↓

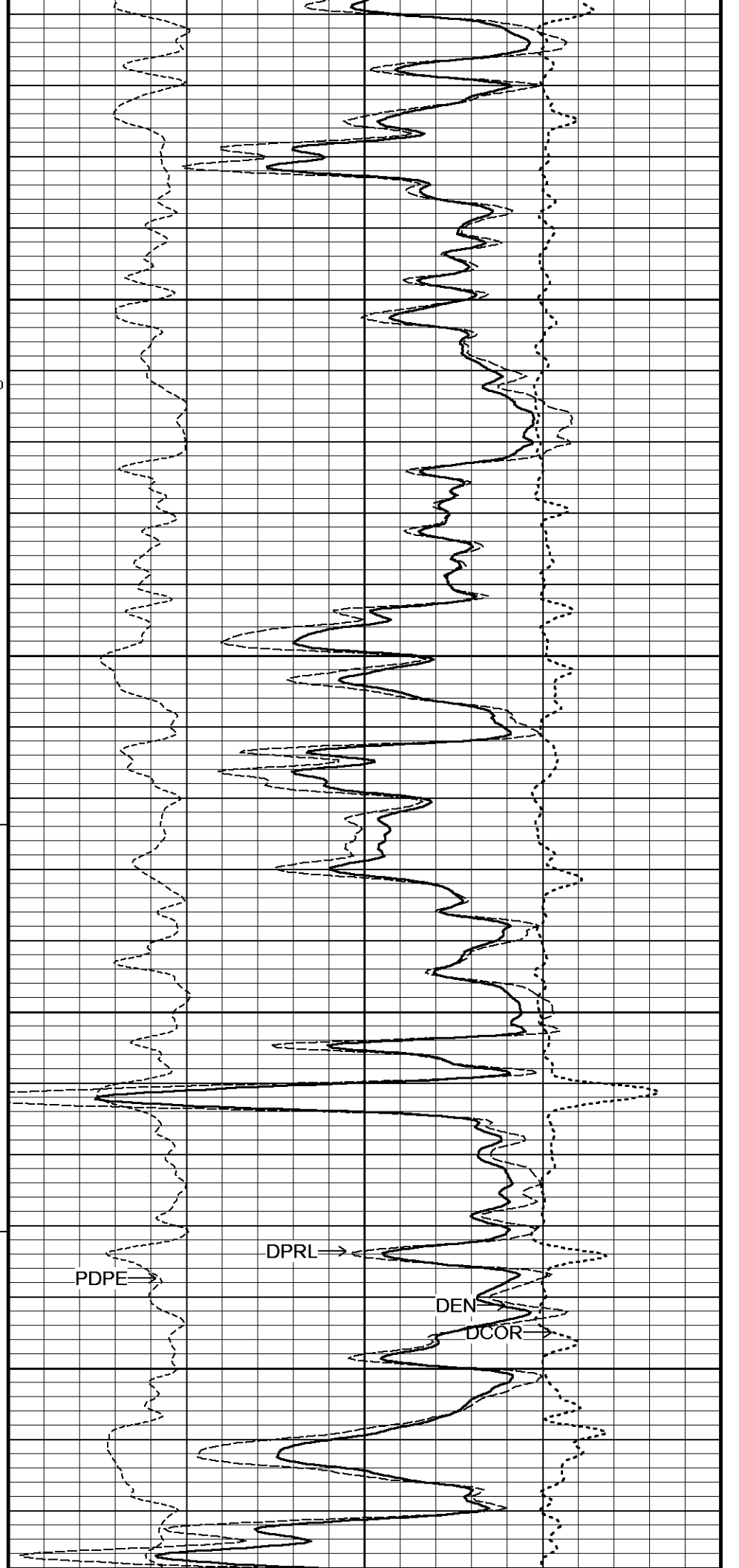
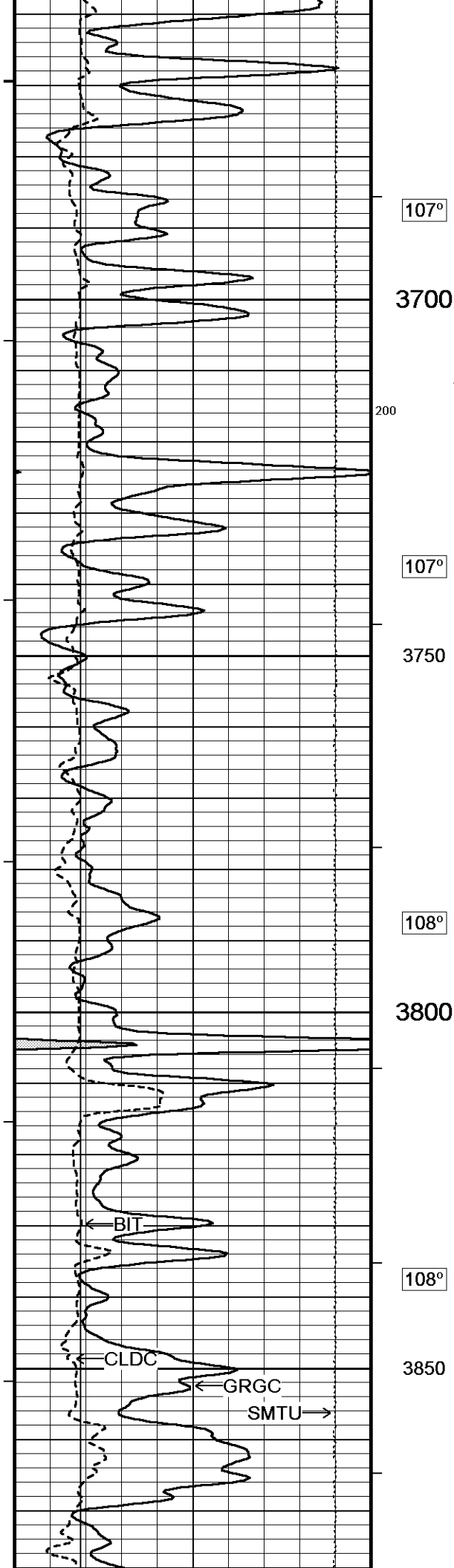
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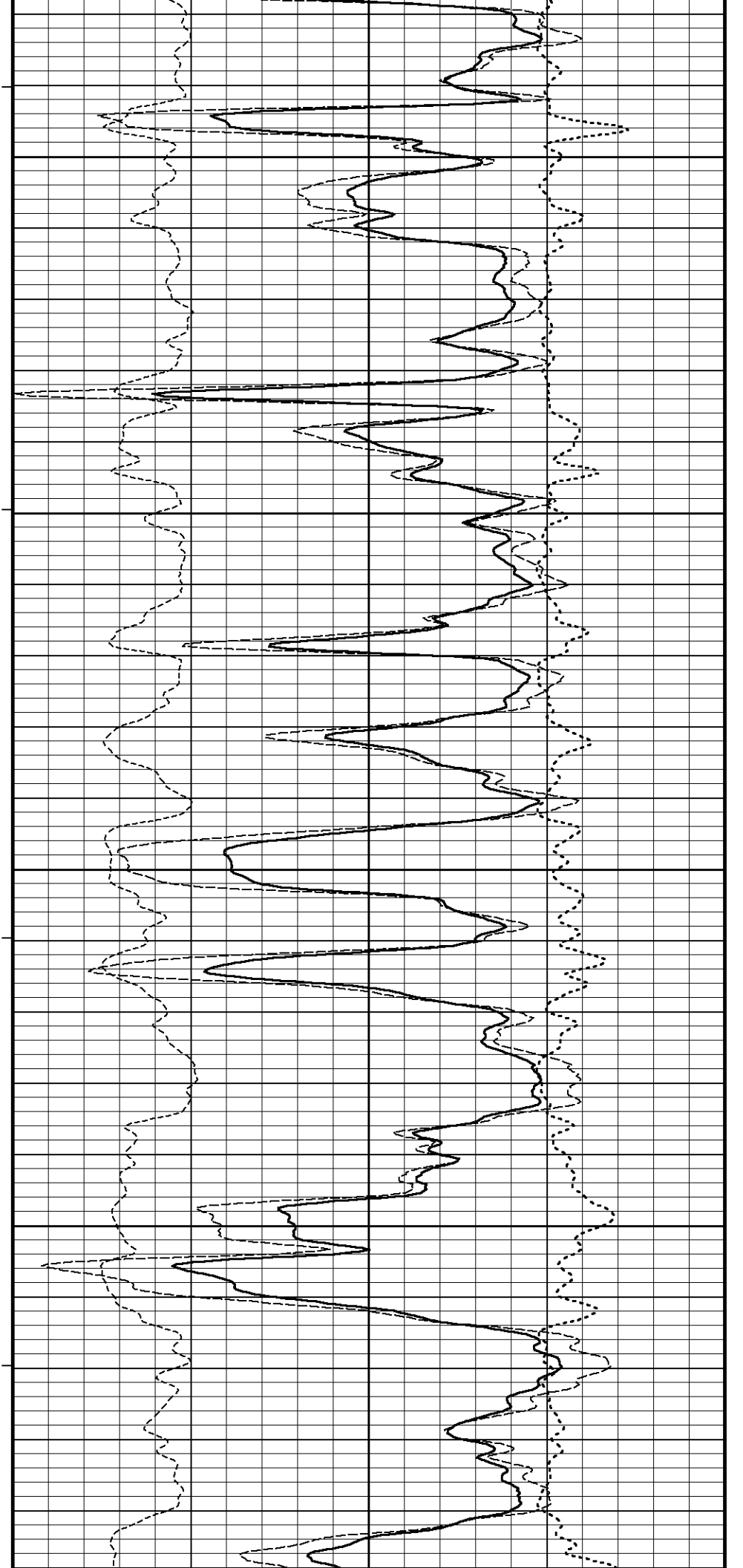
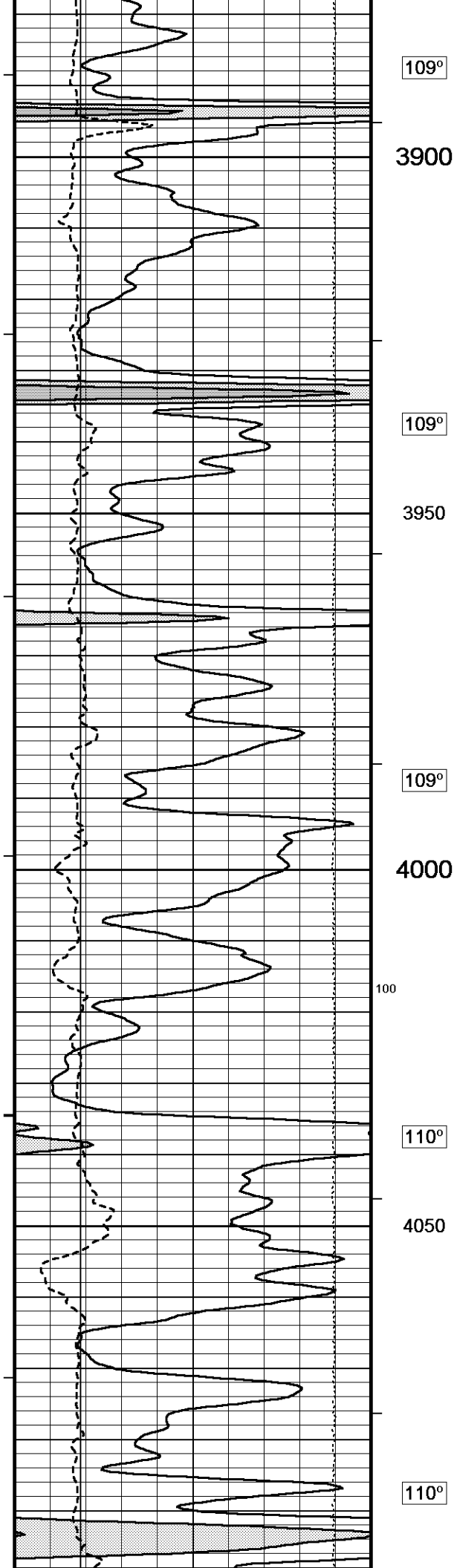
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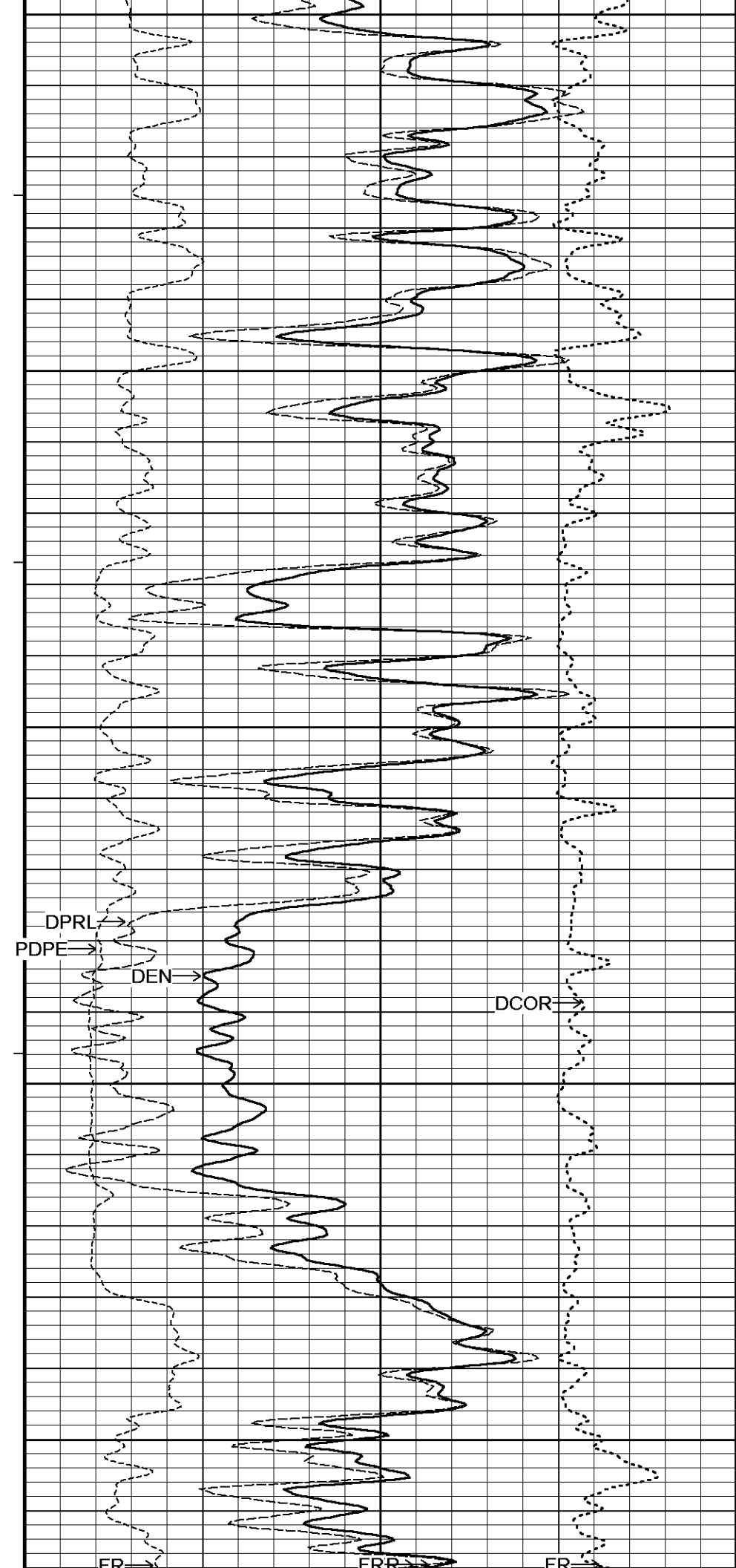
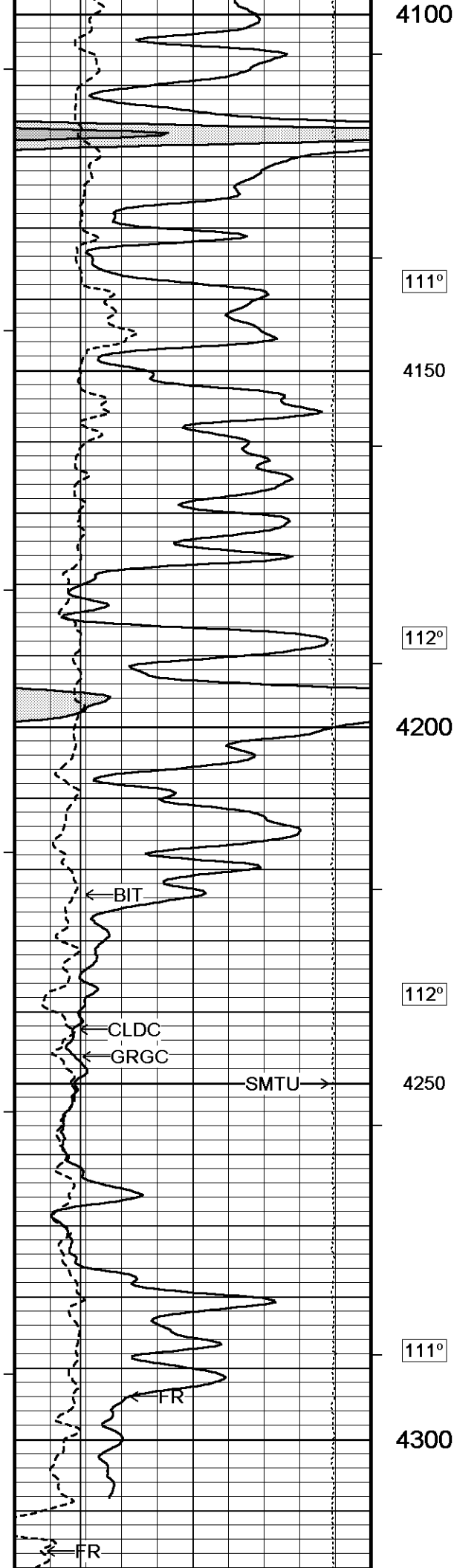


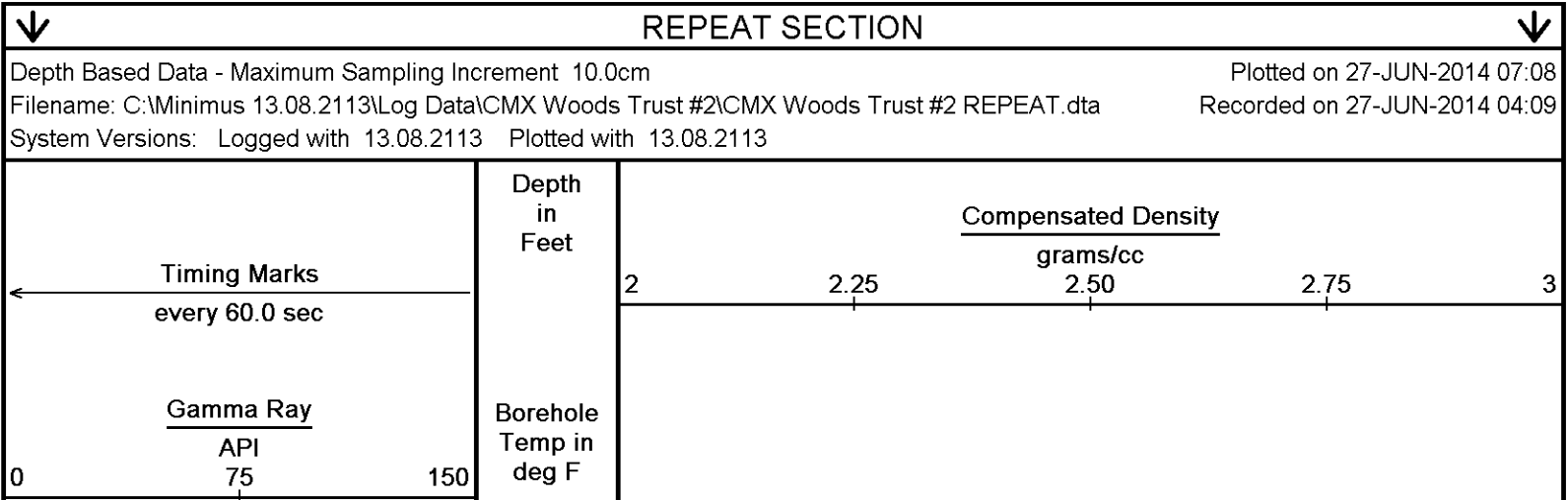
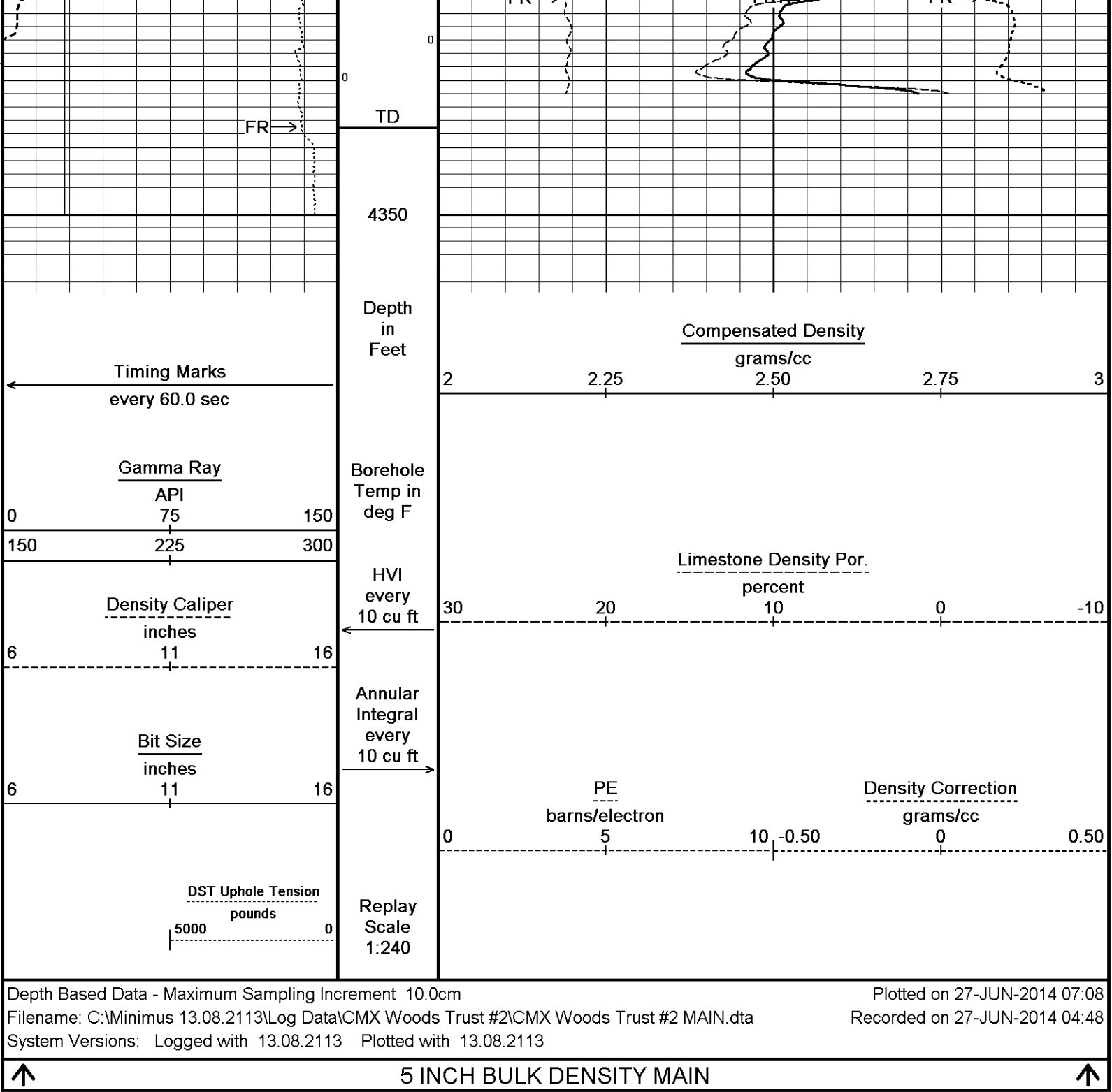


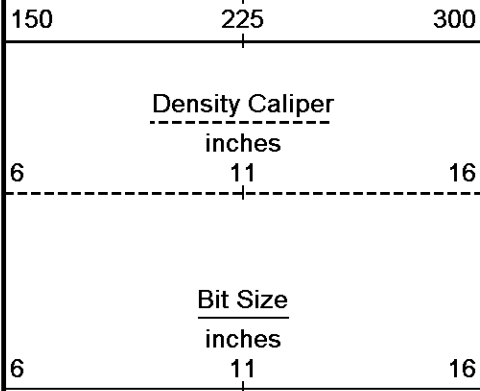






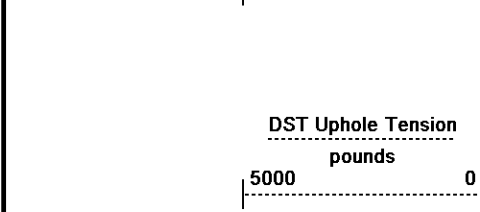




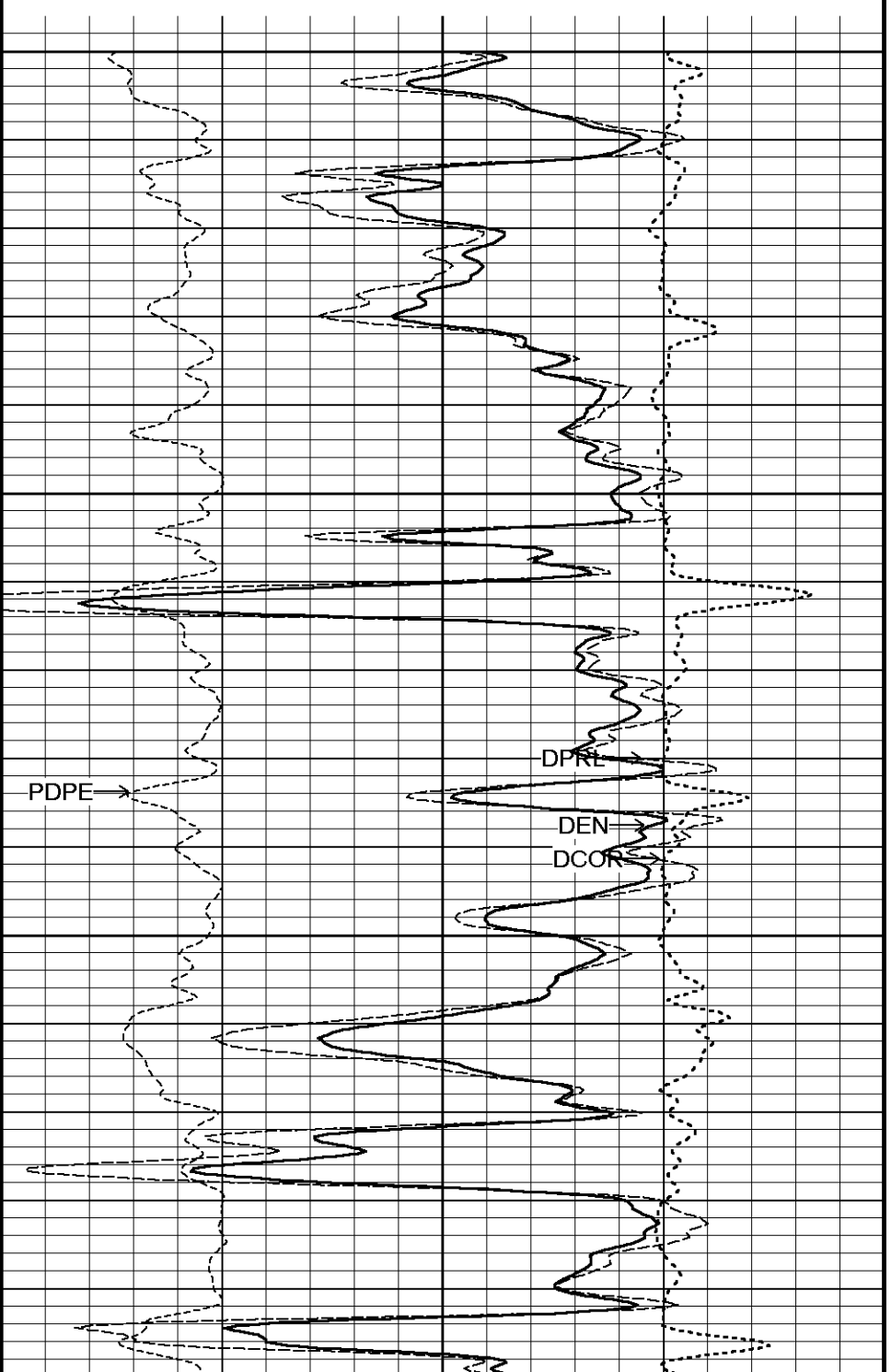
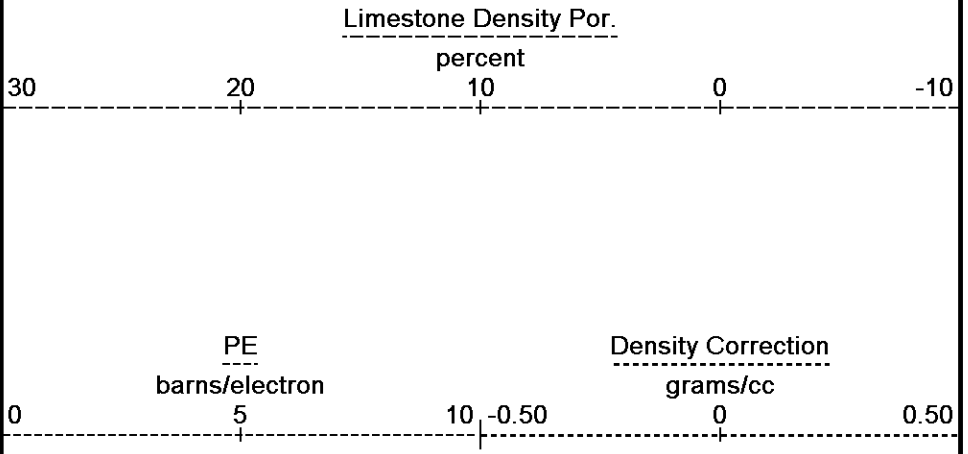
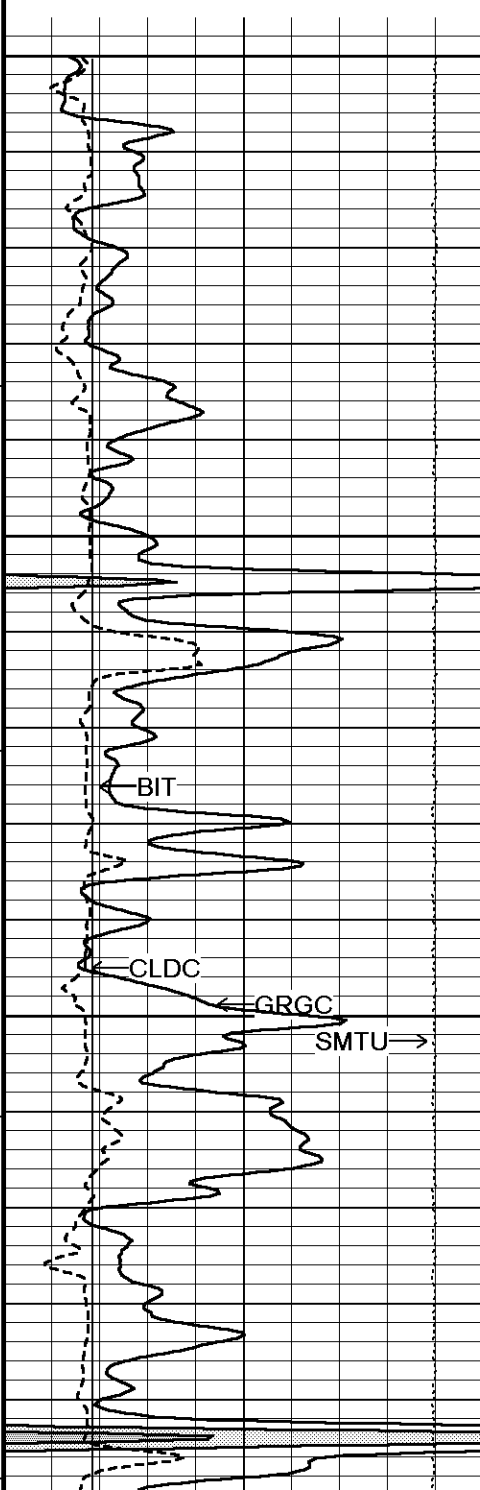


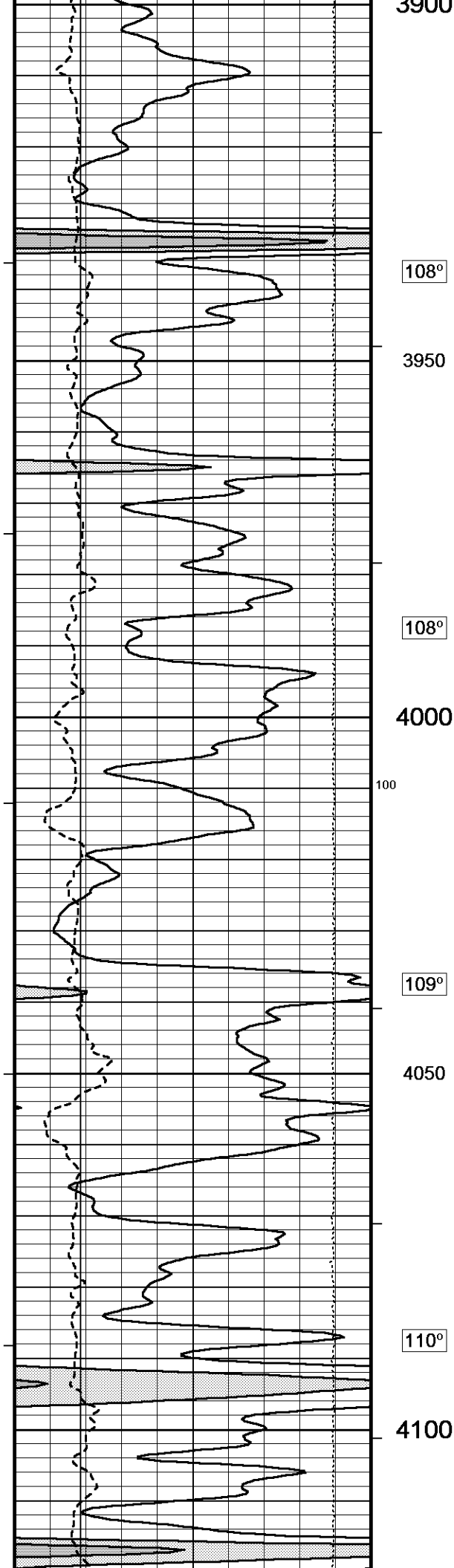
HVI
every
10 cu ft

Annular
Integral
every
10 cu ft



Replay
Scale
1:240





3900

108°

3950

108°

4000

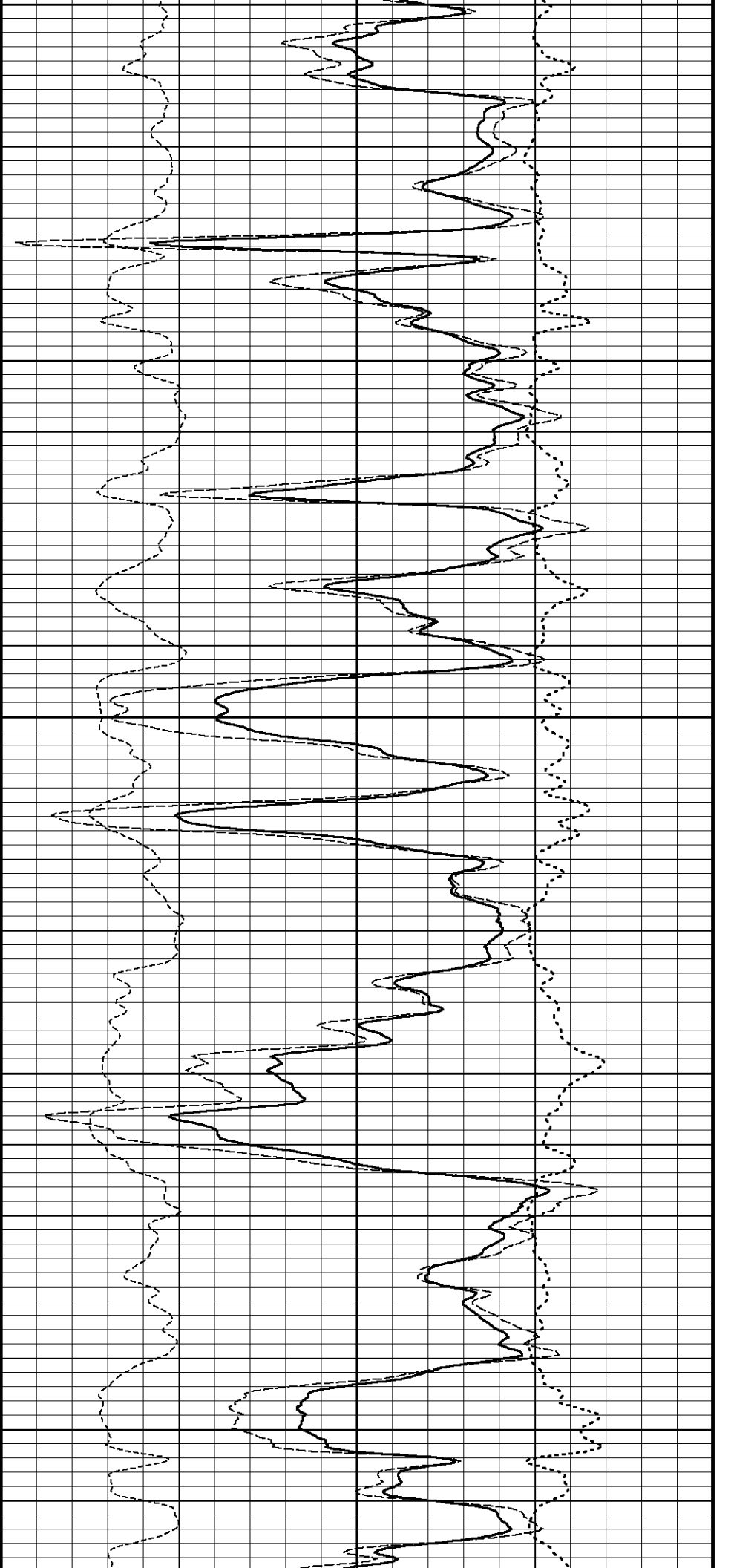
100

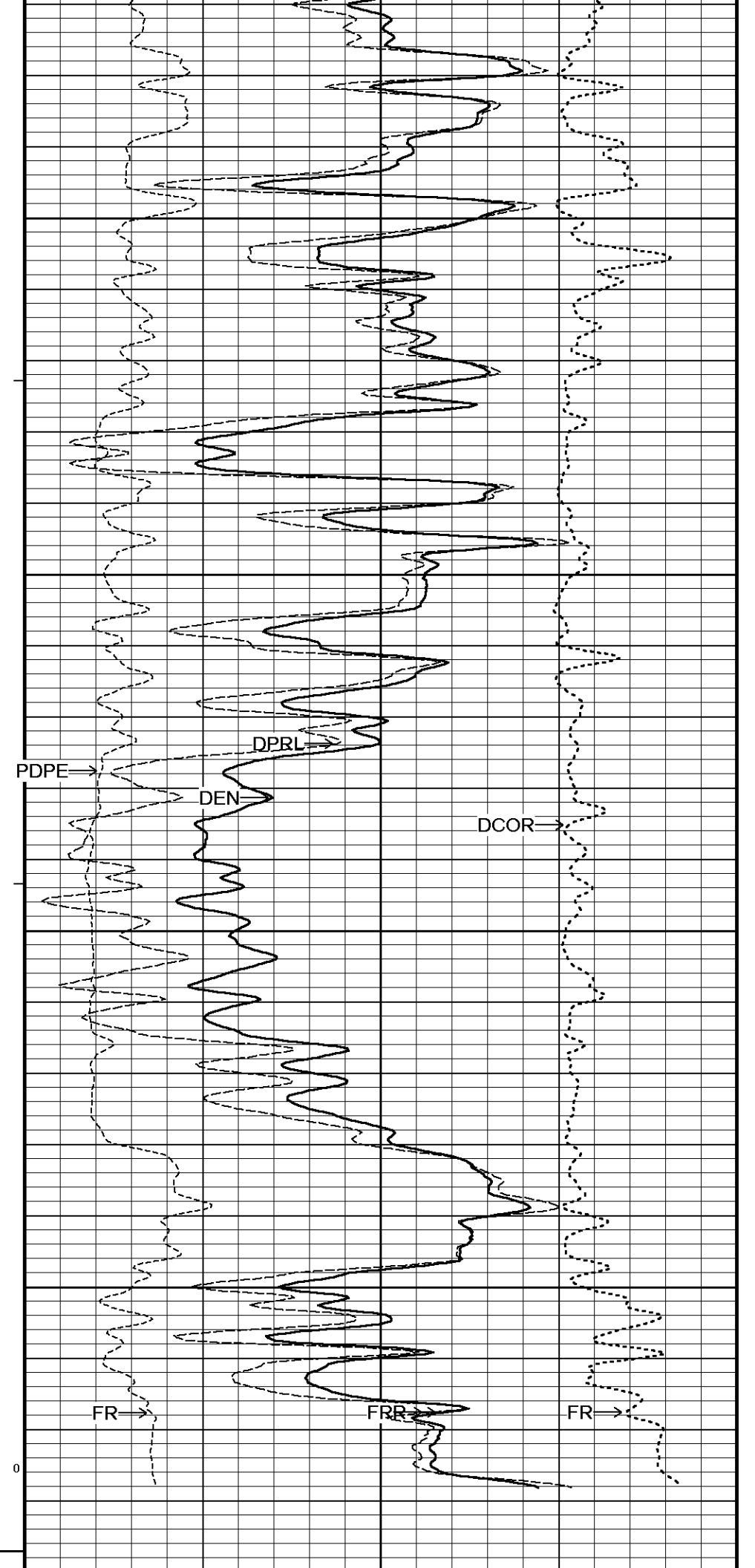
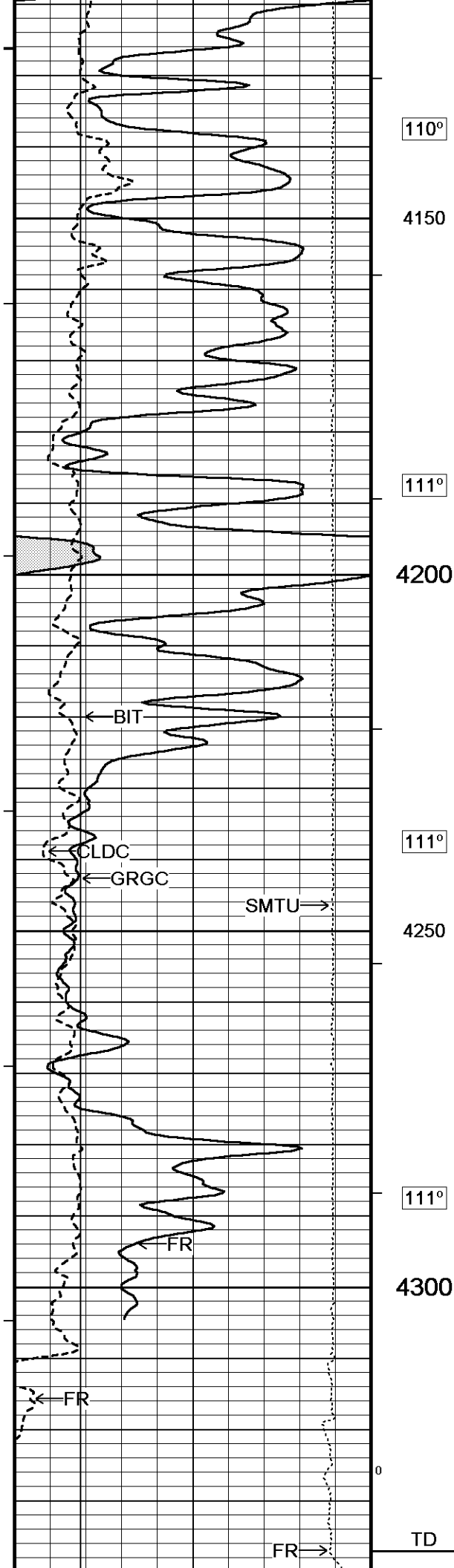
109°

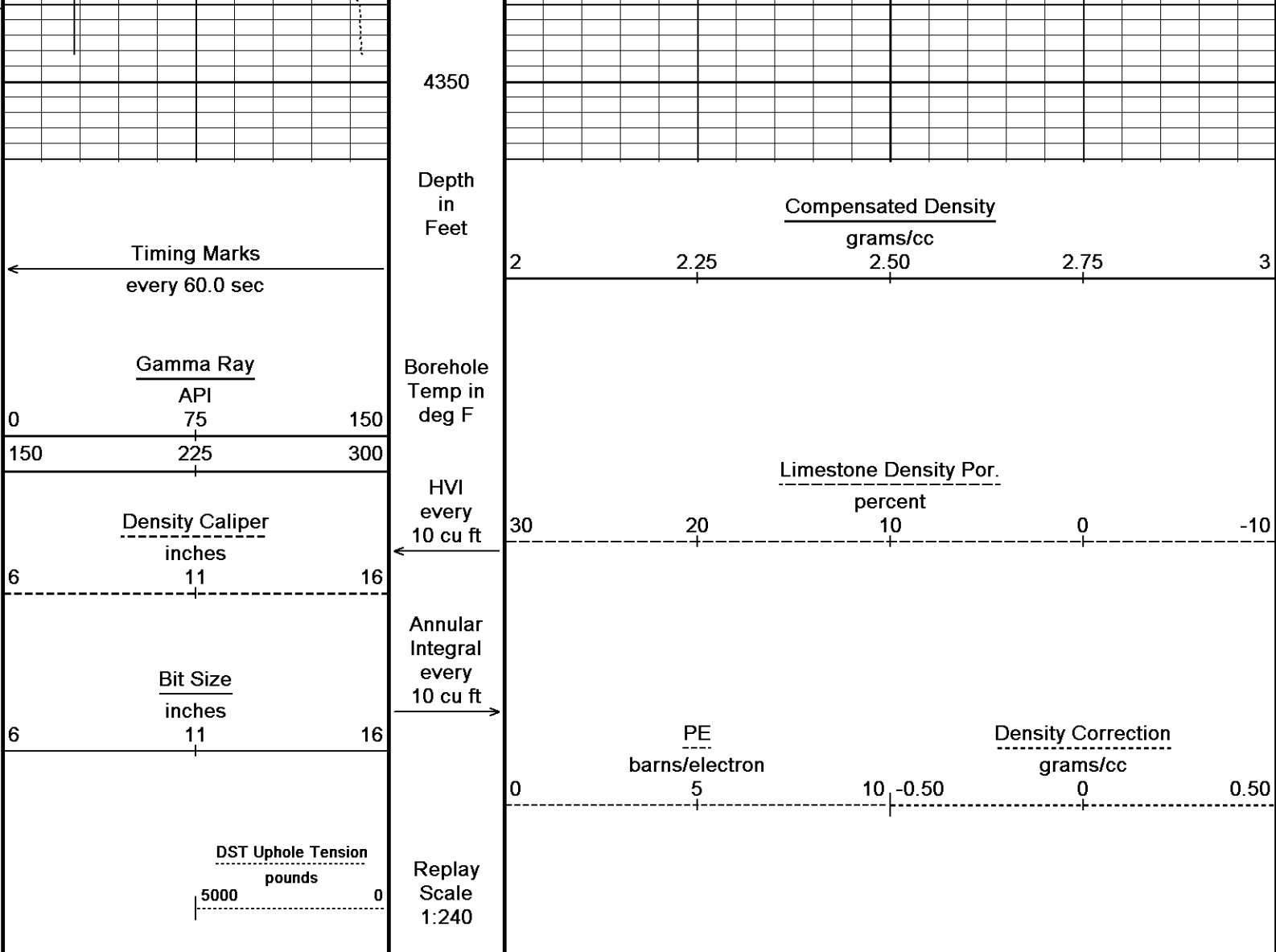
4050

110°

4100







Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 REPEAT.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION
C:\Minimus 13.08.2113\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 REPEAT.dta

General Constants All 000 Last Edited on 27-JUN-2014,01:39

General Parameters		
Mud Resistivity	1.330	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	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SWHAROP Tool Source	0.000	

Gamma Calibration MCG-D.K 469

Field Calibration on 26-JUN-2014 15:32

	Measured	Calibrated (API)
Background	68	46
Calibrator (Gross)	1141	771
Calibrator (Net)	1073	725

Gamma Constants MCG-D.K 469

Last Edited on 27-JUN-2014,01:38

Gamma Calibrator Number	GRC038	
Mud Density	1.09	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 12-MAY-2014,02:16

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 12-JUN-2014,06:51

Pre-filter Length	11
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Caliper Calibration MPD-C.A 216

Base Calibration on 18-JUN-2014 10:39

Field Calibration on 26-JUN-2014 15:03

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16948	3.99
2	27088	5.98
3	37015	7.97
4	46800	9.86
5	58001	11.92
6	N/A	N/A

Field Calibration

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

Photo Density Calibration MPD-C.A 216

Base Calibration on 18-JUN-2014 11:00

Field Check on 26-JUN-2014 15:08

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1108	1302		
Reference 1	60000	31770	59556	30836
Reference 2	24613	2738	24941	2541

Field Check at Base

1107.7	1302.5
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Field Check

1101.1	1301.3
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PE Calibration

Base Calibration

	WS	Measured		Calibrated
		WH	Ratio	Ratio
Background	200	988		
Reference 1	24654	59812	0.416	0.371
Reference 2	6993	24480	0.289	0.272

Field Check at Base

199.7	987.8
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Field Check

199.5	980.9
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Density Constants MPD-C.A 216

Last Edited on 27-JUN-2014,01:38

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	1.09	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\Log Data\CMX Woods Trust #2\CMX Woods Trust #2 REPEAT.dta

CBH-C, Cablehead, 11 pin

CBH-CA 170 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma

MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log

MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

Compact Neutron

MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

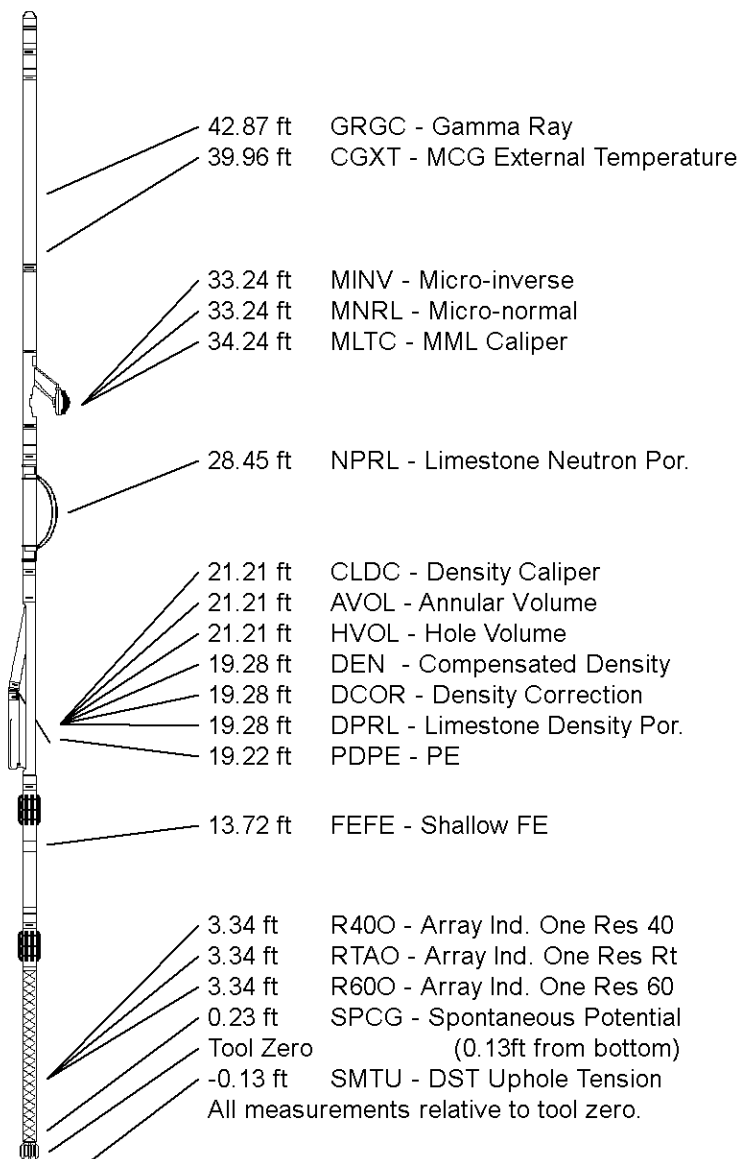
Compact Focussed Electric

MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction

MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 50.55 ft Weight: 407.9 lb



COMPANY	CMX, INC.		
WELL	WOODS TRUST #2		
FIELD	UN-NAMED		
PROVINCE/COUNTY	PAWNEE		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	2087.00	feet	First Reading	4316.00	feet
Elevation Drill Floor	2085.00	feet	Depth Driller	4340.00	feet
Elevation Ground Level	2074.00	feet	Depth Logger	4337.00	feet



COMPACT PHOTO DENSITY
COMPENSATED NEUTRON