



Weatherford

**CML IMPULSE SHUTTLE
COMPENSATED PHOTO-DENSITY
COMPENSATED NEUTRON LOG**

SANDRIDGE EXPLORATION & PRODUCTION

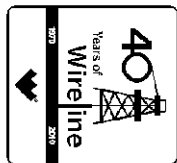
SUTTON 1825 1-3H

ALDRICH

NESS

USA / KANSAS

200' FSL & 800' FWL



SEC 03	TWP 18S	RGE 25W	Other Services MAI	
API Number		15-135-25436-01		CMI
Permit Number				
Permanent Datum G.L., Elevation 2355 feet				
Log Measured From KB				
Drilling Measured From K.B.				
Date	01-AUG-2012			Elevations: KB DF GL
Run Number	ONE			
Depth Driller	7576.00			feet
Depth Logger	7551.00			feet
First Reading	7491.00			feet
Last Reading	2000.00			feet
Casing Driller	4768.00			feet
Casing Logger	4768.00			feet
Bit Size	6.125			inches
Hole Fluid Type	WATER			
Density / Viscosity	9.40 lb/USg		58.00 CP	
PH / Fluid Loss	9.00		4.00 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.76 @ 81.0			ohm-m
Rmf @ Measured Temp	1.40 @ 81.0			ohm-m
Rmc @ Measured Temp	2.11 @ 81.0			ohm-m
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	1.07 @133.0			ohm-m
Time Since Circulation	0 HOURS			
Max Recorded Temp	133.00			deg F
Equipment Name	COMPACT			
Equipment / Base	18064		OKC	
Recorded By	C. GRIFFIN			
Witnessed By	J. BORELL			
S.O.# / AFE	3536651/DC12142			

BOREHOLE RECORD

Last Edited: 01-AUG-2012 09:51

Bit Size inches	Depth From feet	Depth To feet
6.125	4768.00	7576.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	0.00	4768.00	26.00

REMARKS

WLS SOFTWARE VERSION 13.02. USED.
TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT TECHNIQUE.

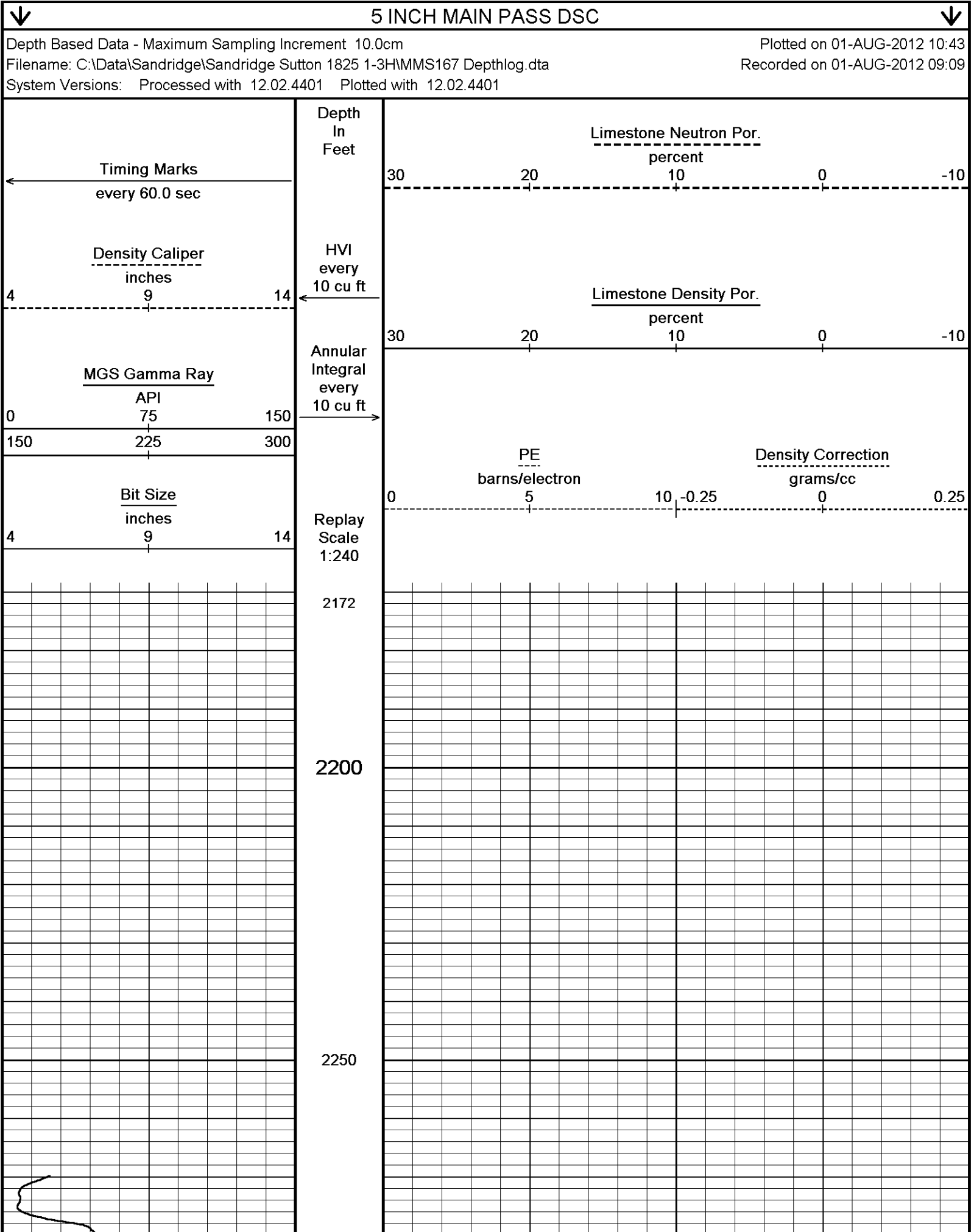
DEPTH MEASURED USING ADVANTAGE RIG DEPTH CORRECTED TO PIPE TALLY.

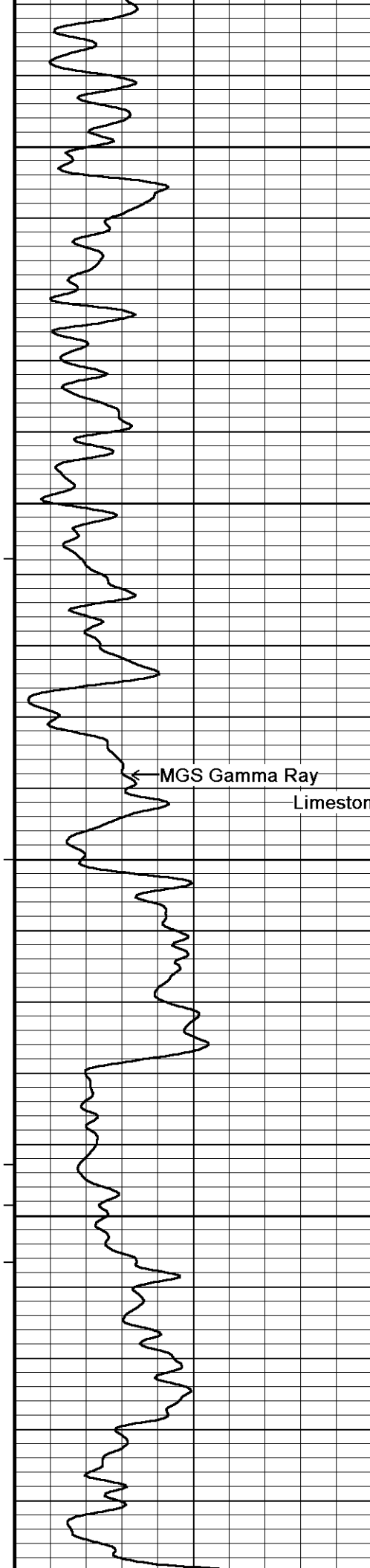
TOOLS DEPLOYED WITH MULE SHOE SITTING AT 7450 FT.
AFTER DEPLOYMENT LOGGING TOOL WAS AT 7551 FT.

4.5 " PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES.

OPERATORS: J. TURNER
S.O. # 3536651
RIG: LARIAT 19

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





← MGS Gamma Ray

Limestone Neutron Por. →

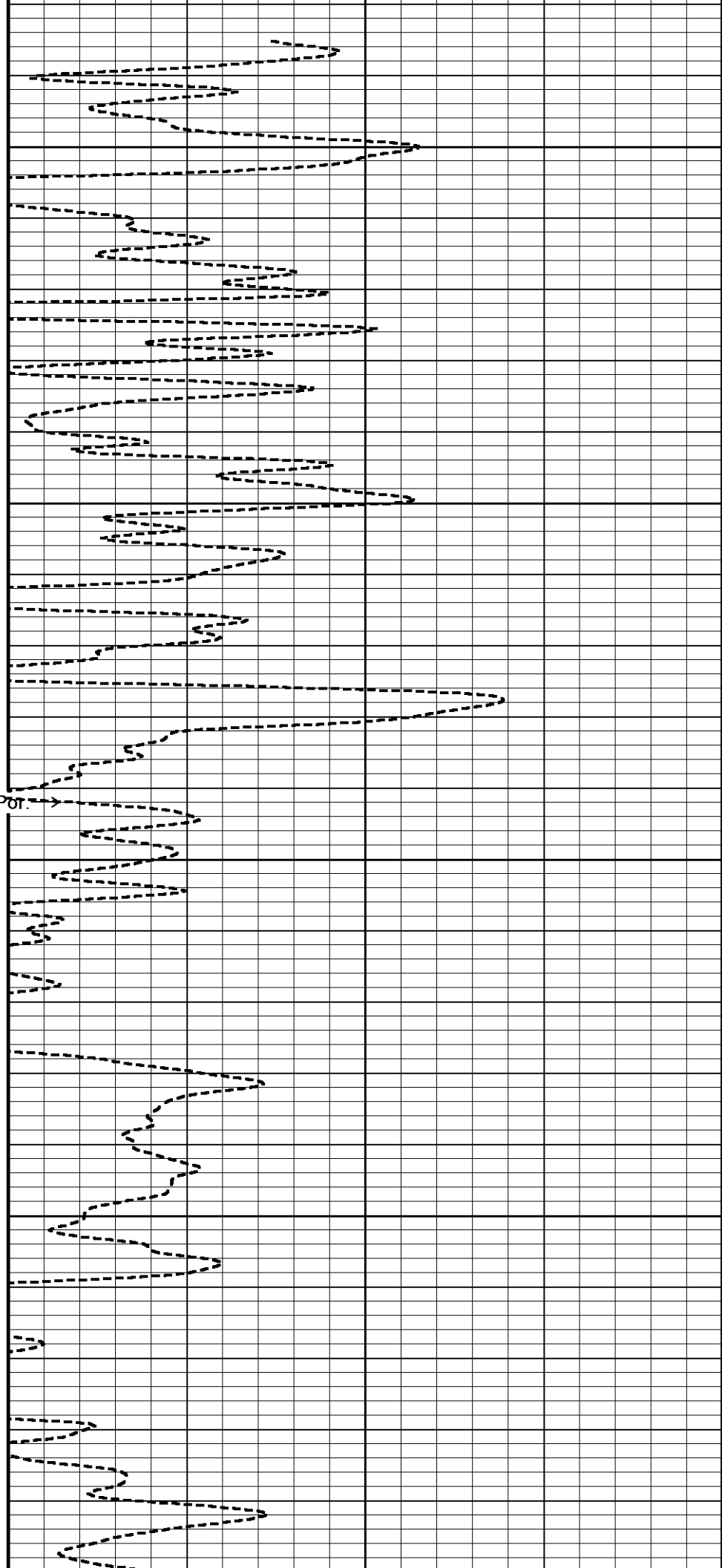
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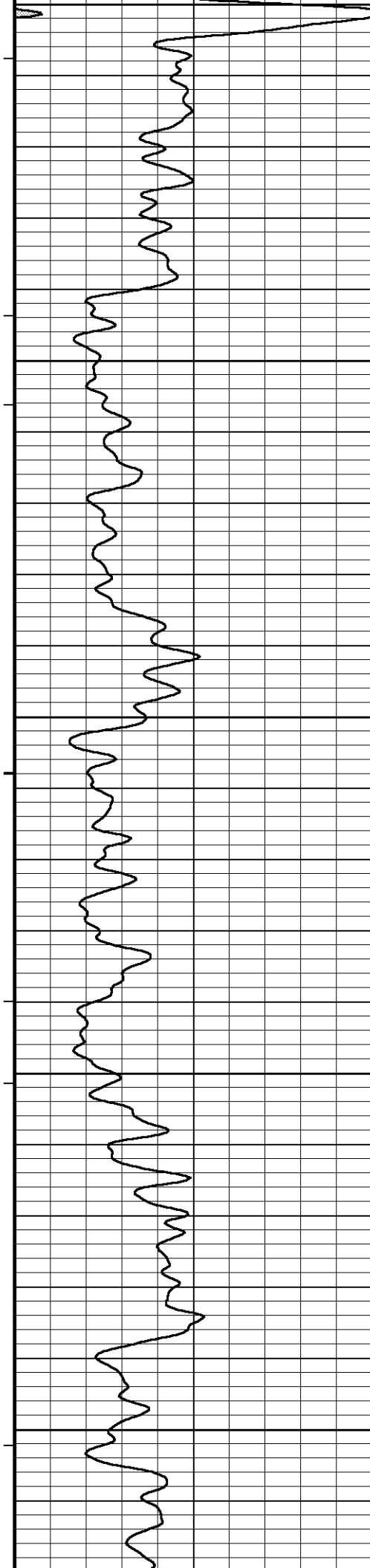
2350

2400

2450

2500





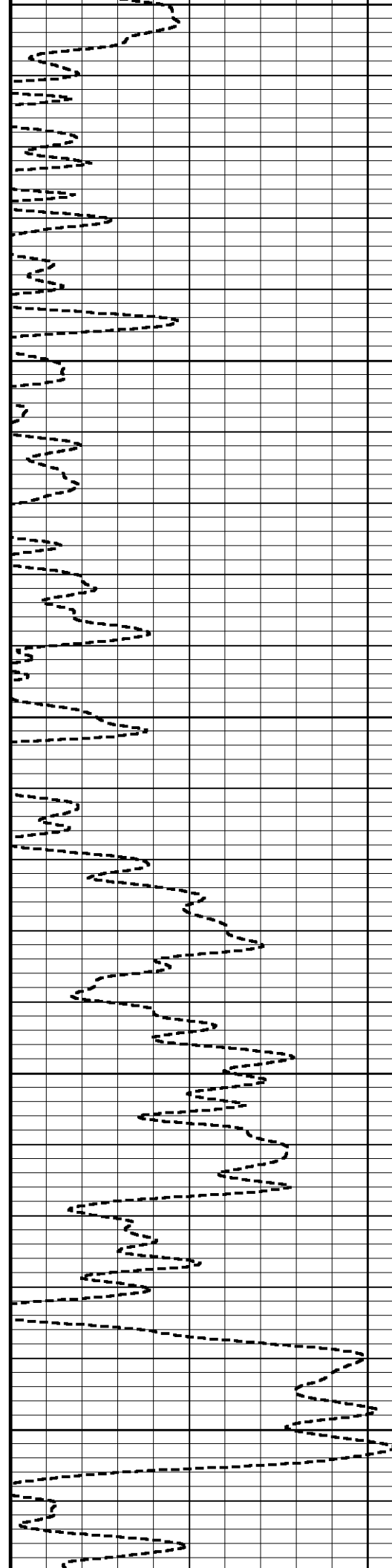
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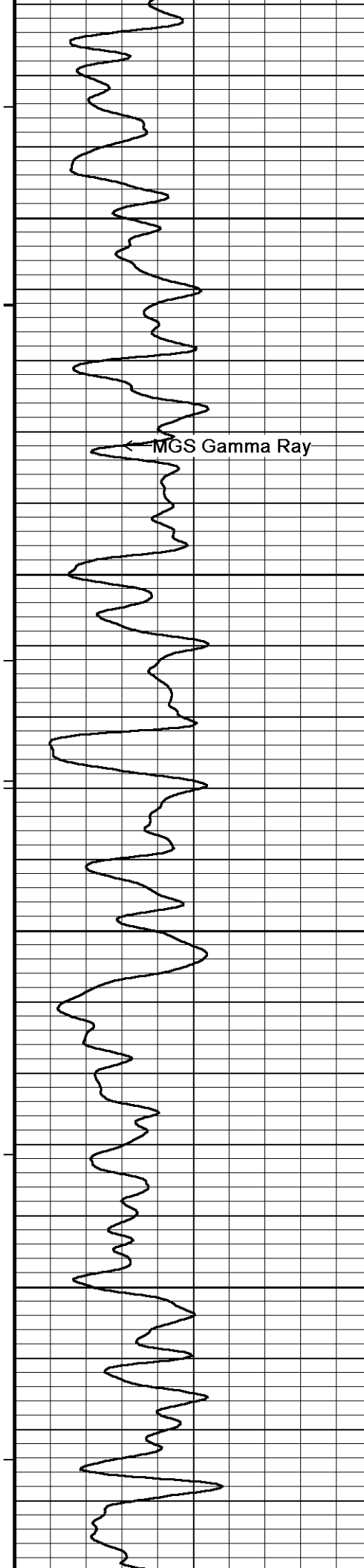
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2600

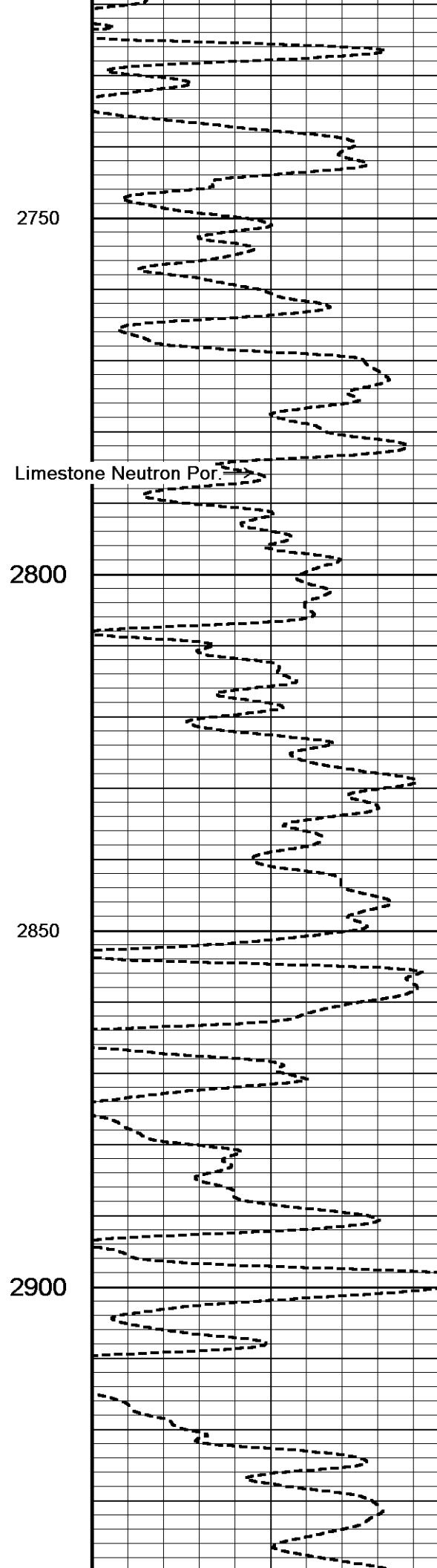
2650

2700





MGS Gamma Ray



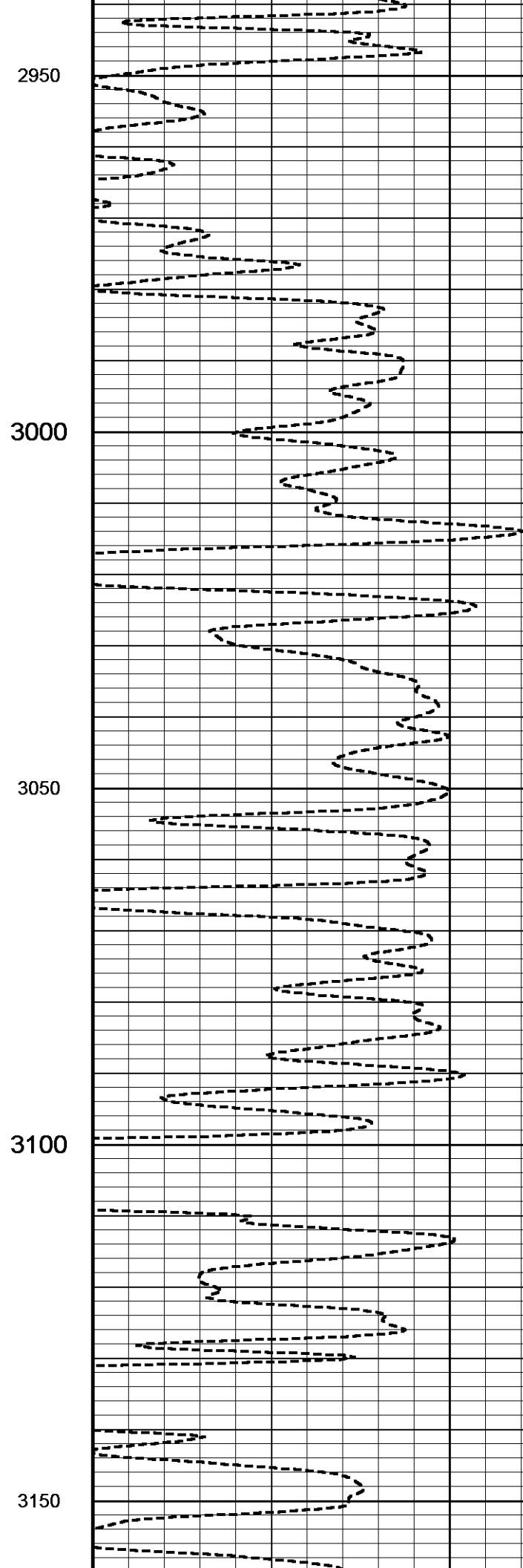
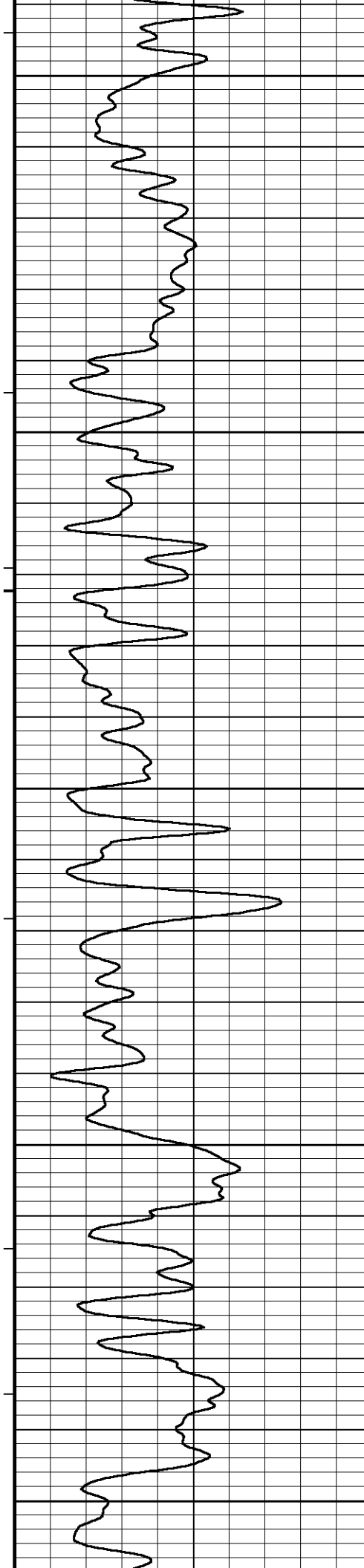
Limestone Neutron Porosity

2750

2800

2850

2900



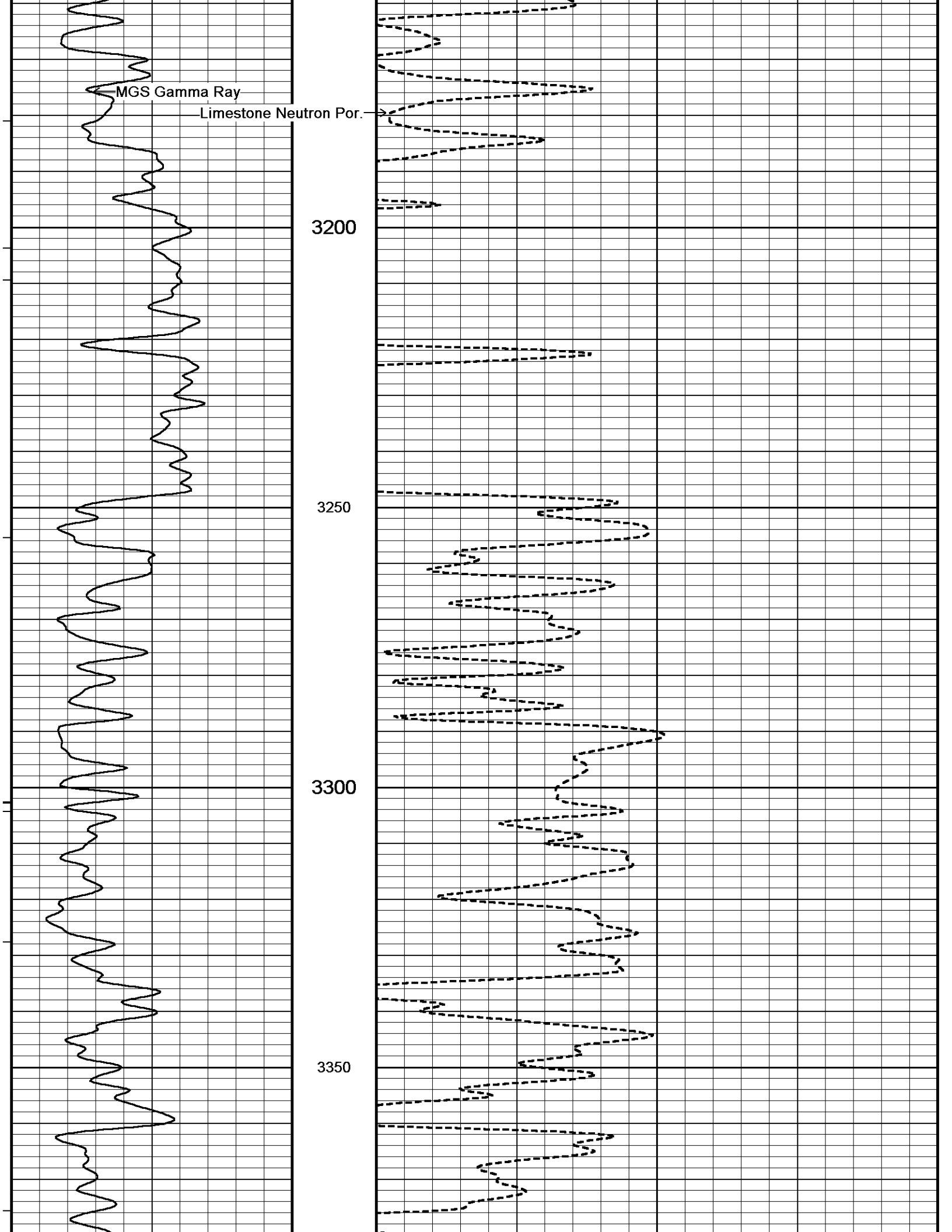
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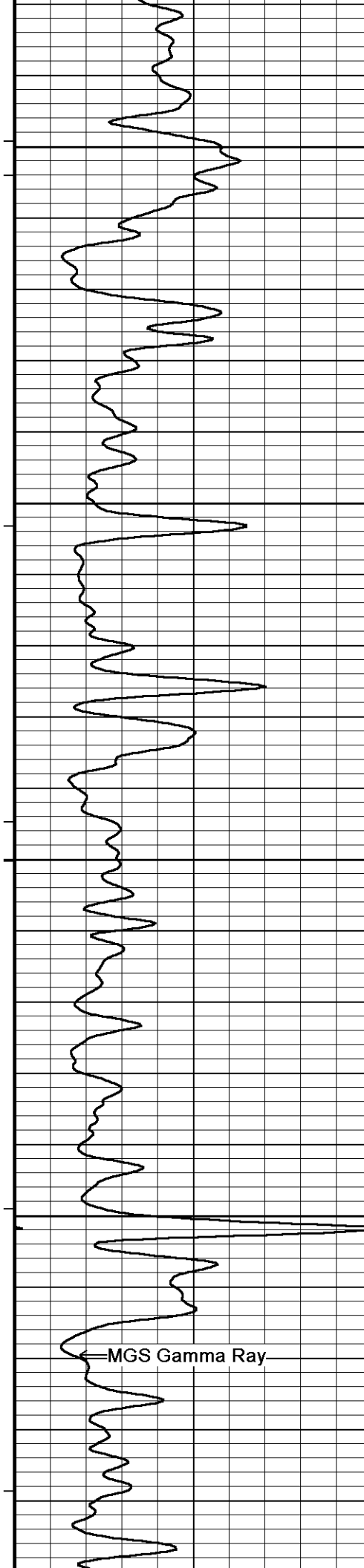
3000

3050

3100

3150





3400

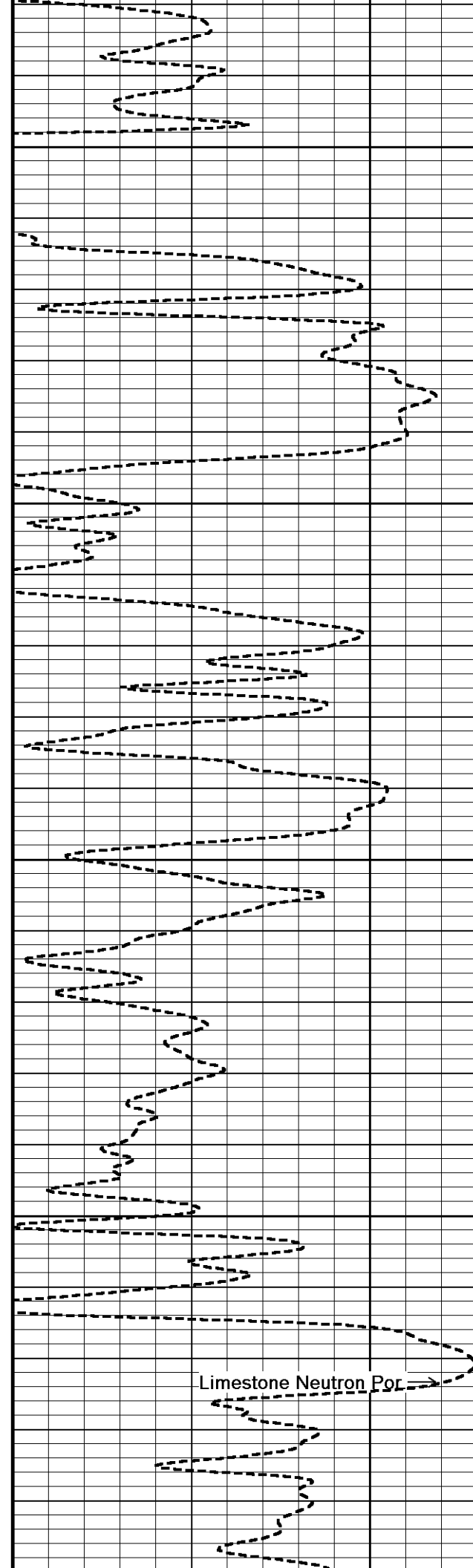
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3500

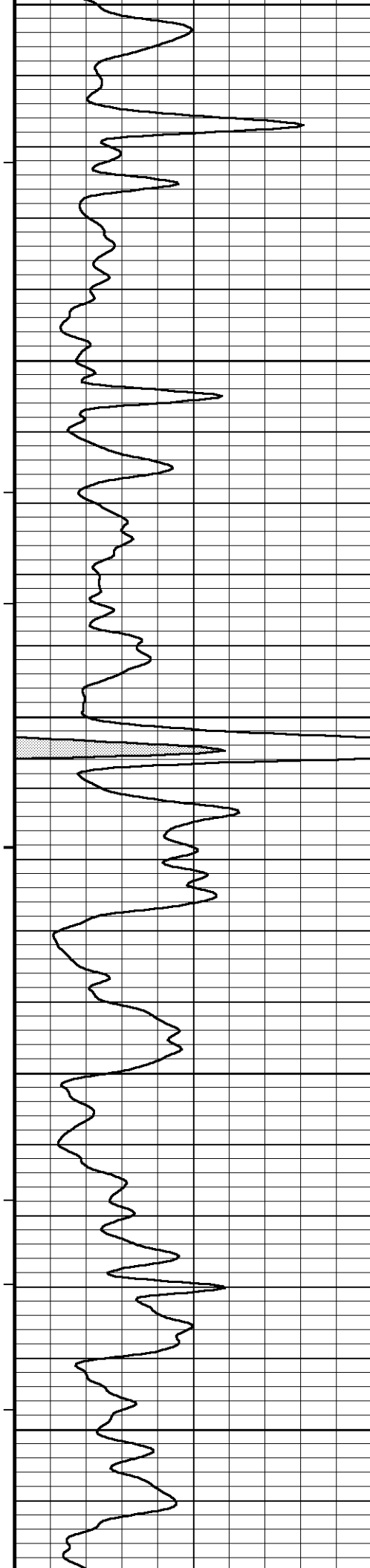
3550

MGS Gamma Ray

3600



Limestone Neutron Por.



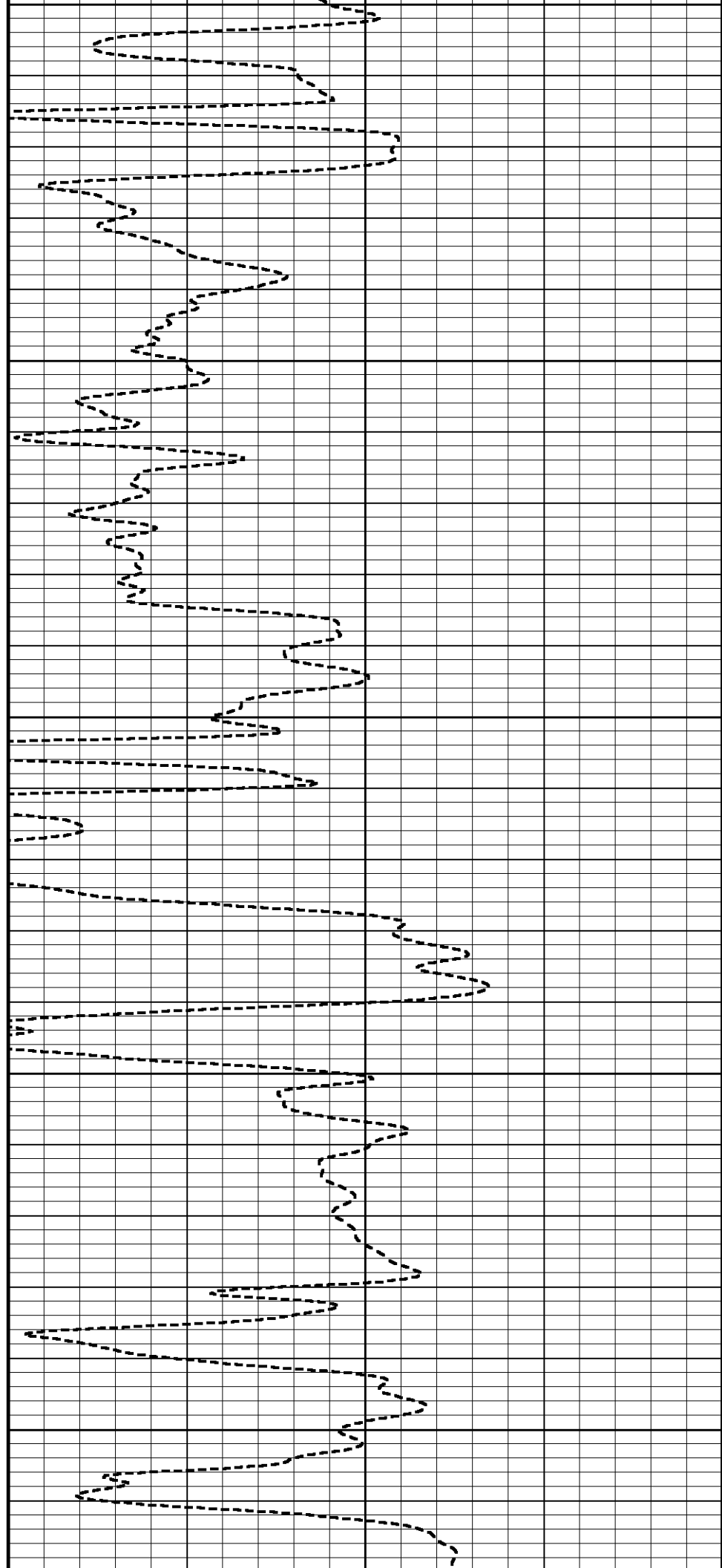
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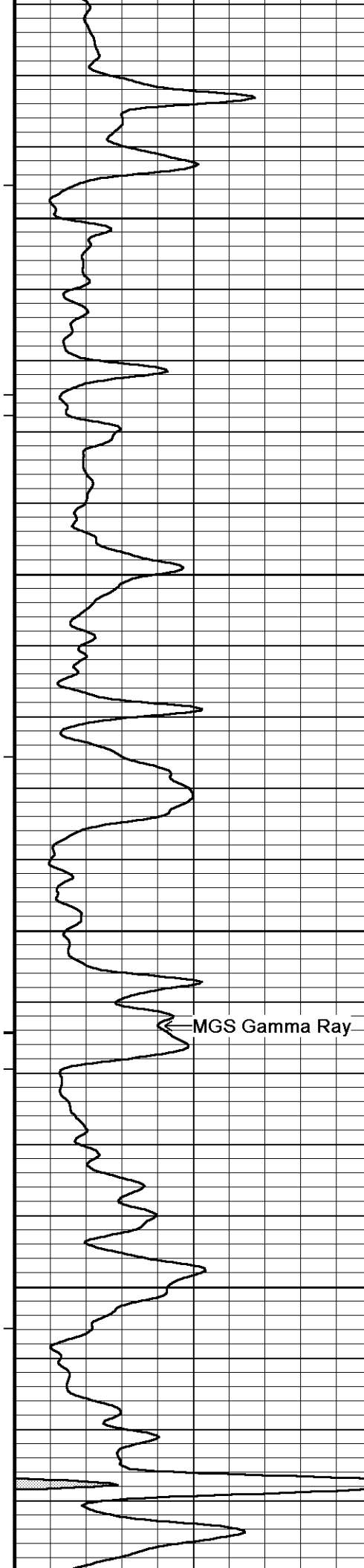
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3700

3750

3800





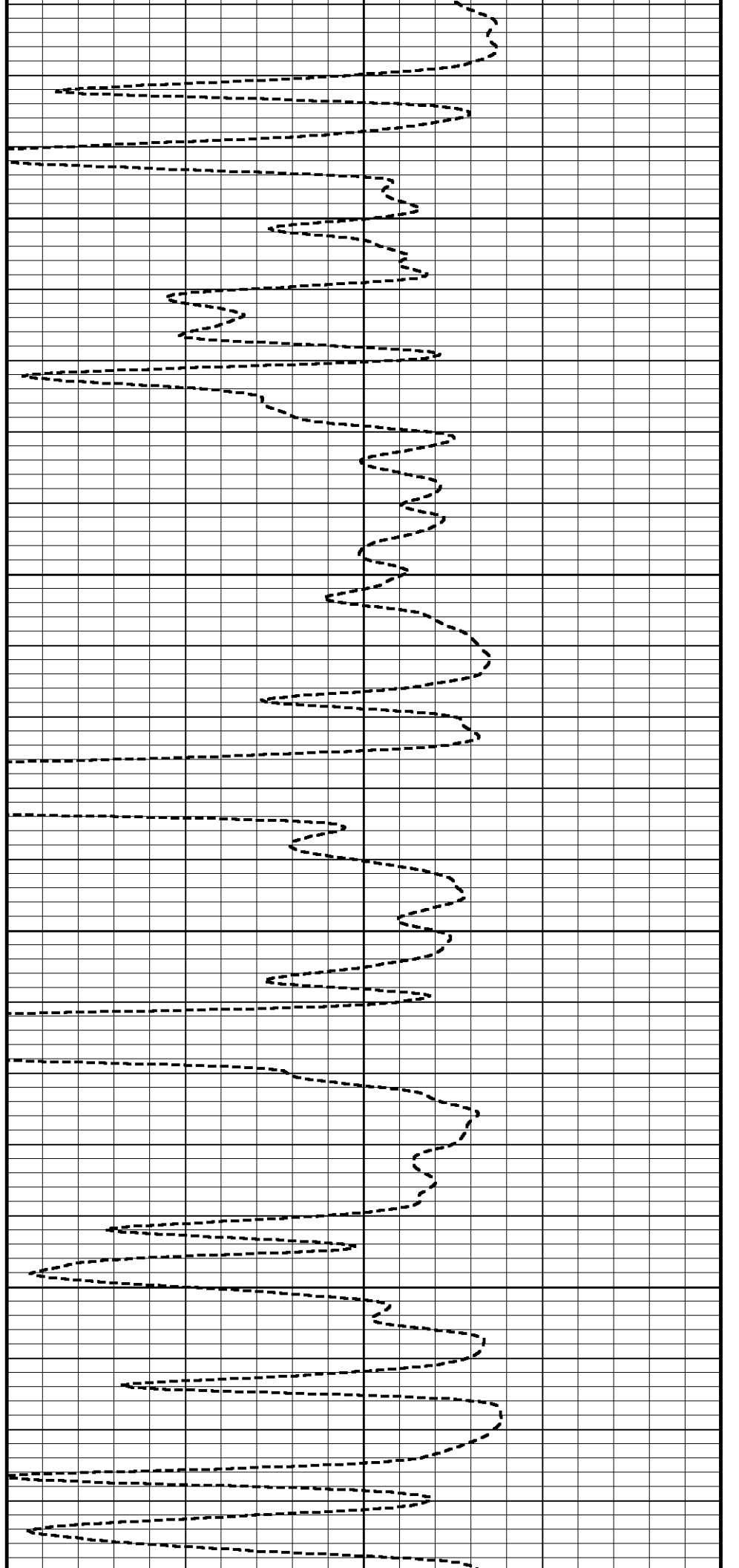
MGS Gamma Ray

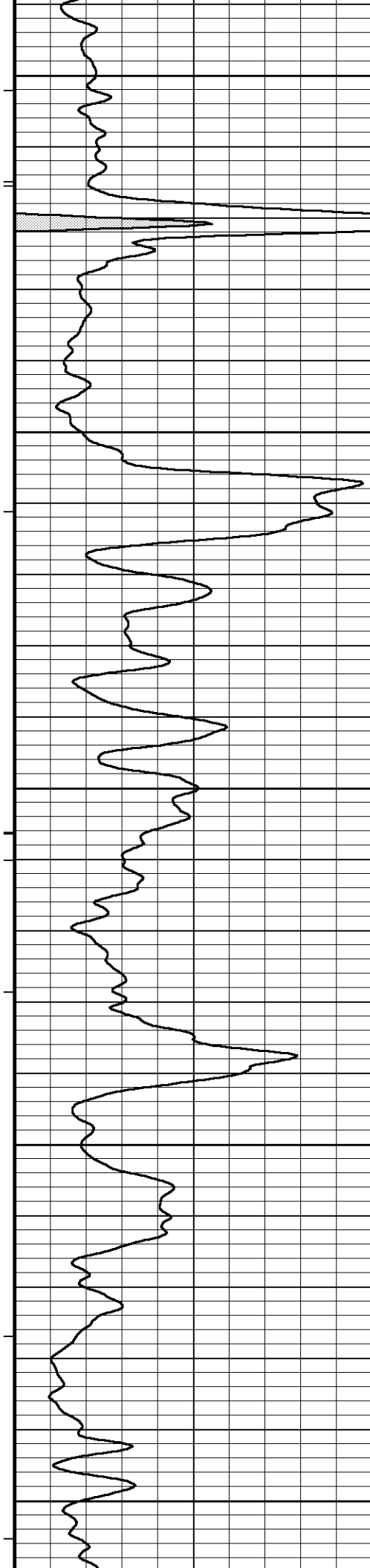
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3900

3950

4000





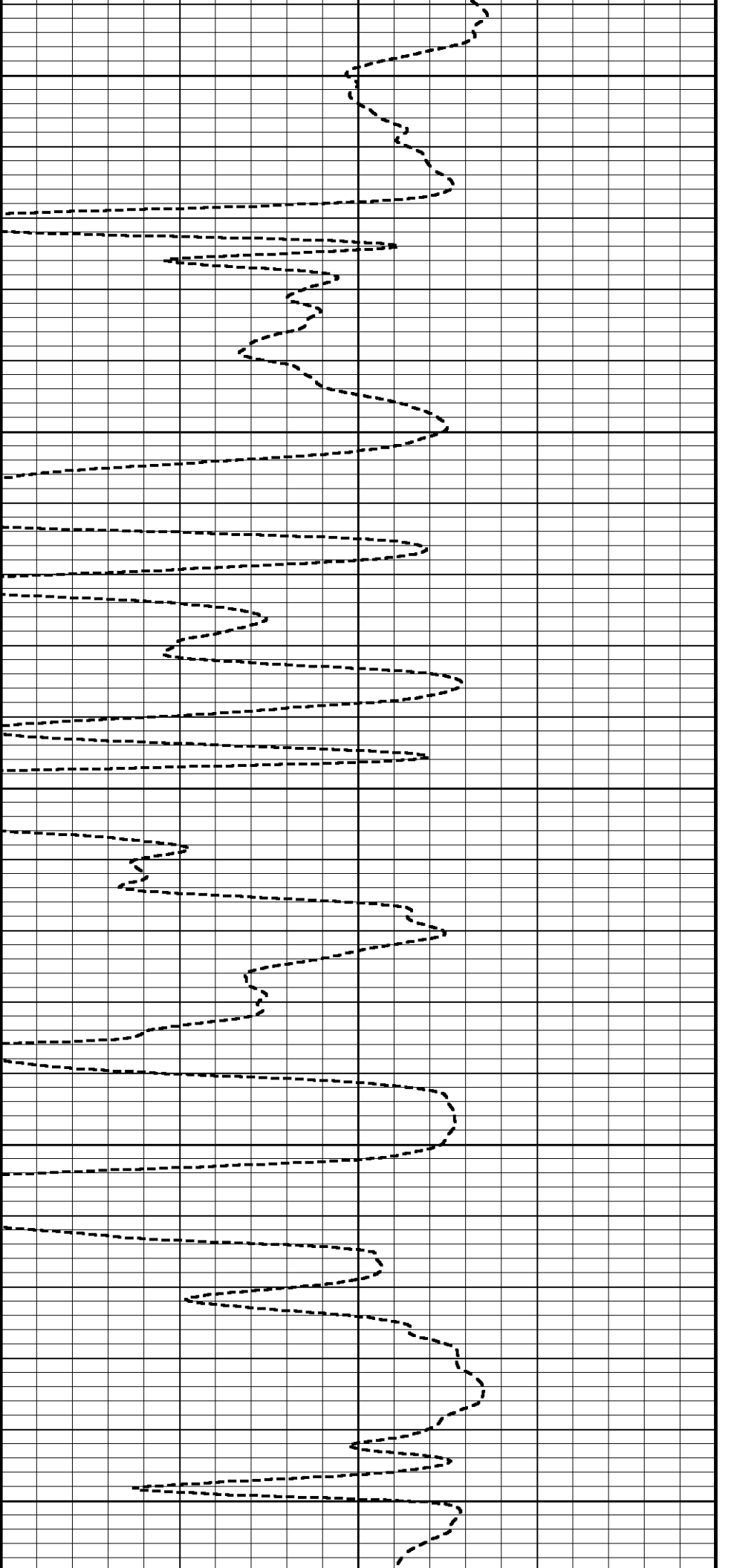
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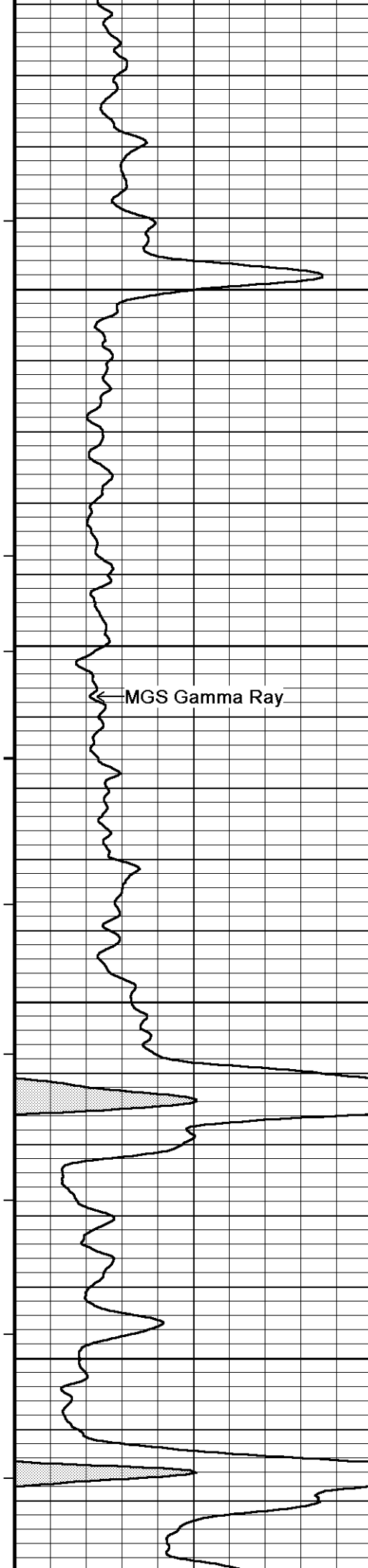
4100

4150

4200

4250





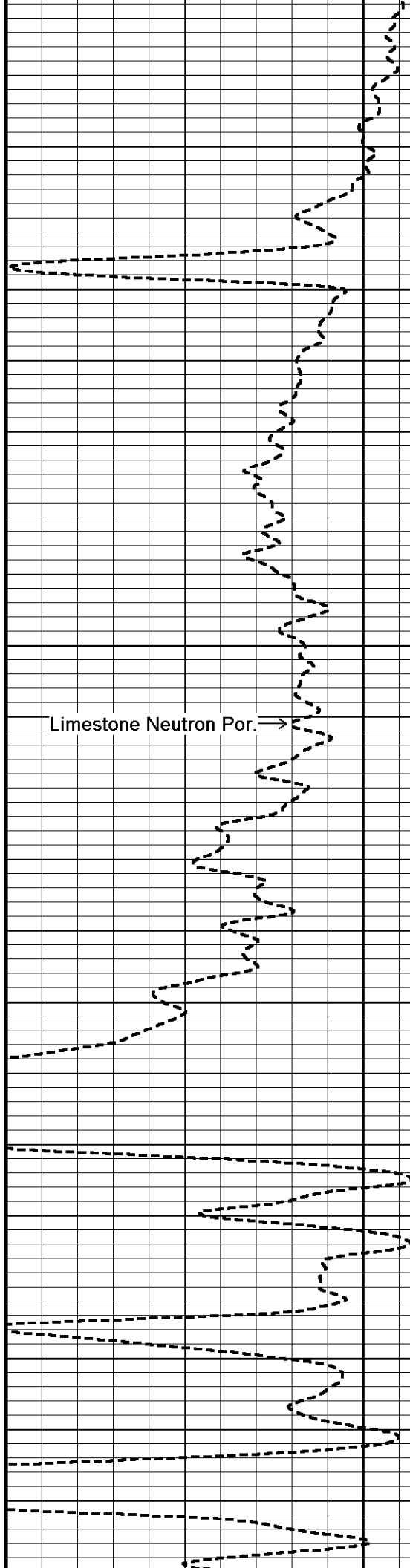
MGS Gamma Ray

4300

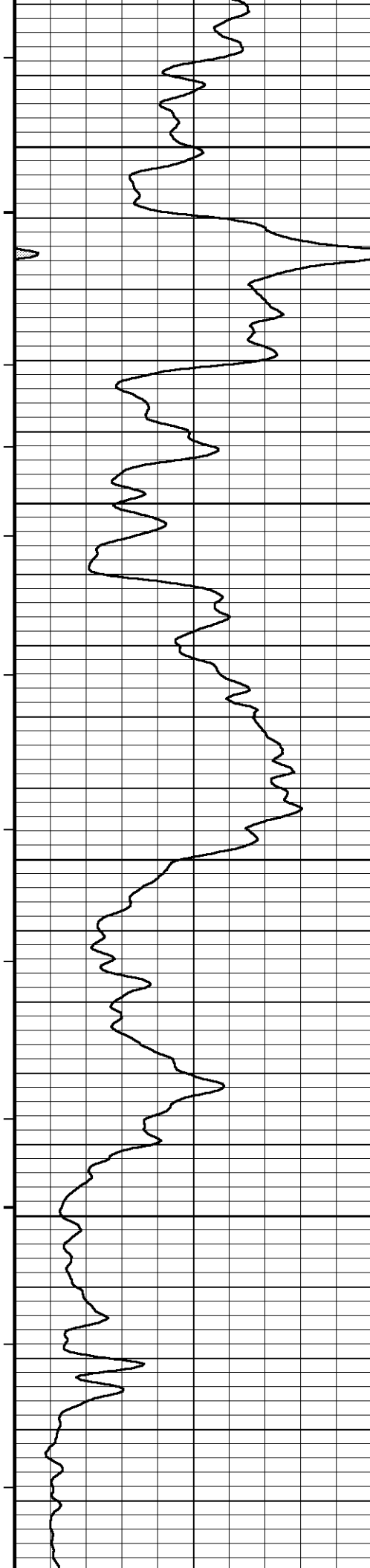
4350

4400

4450



Limestone Neutron Por.



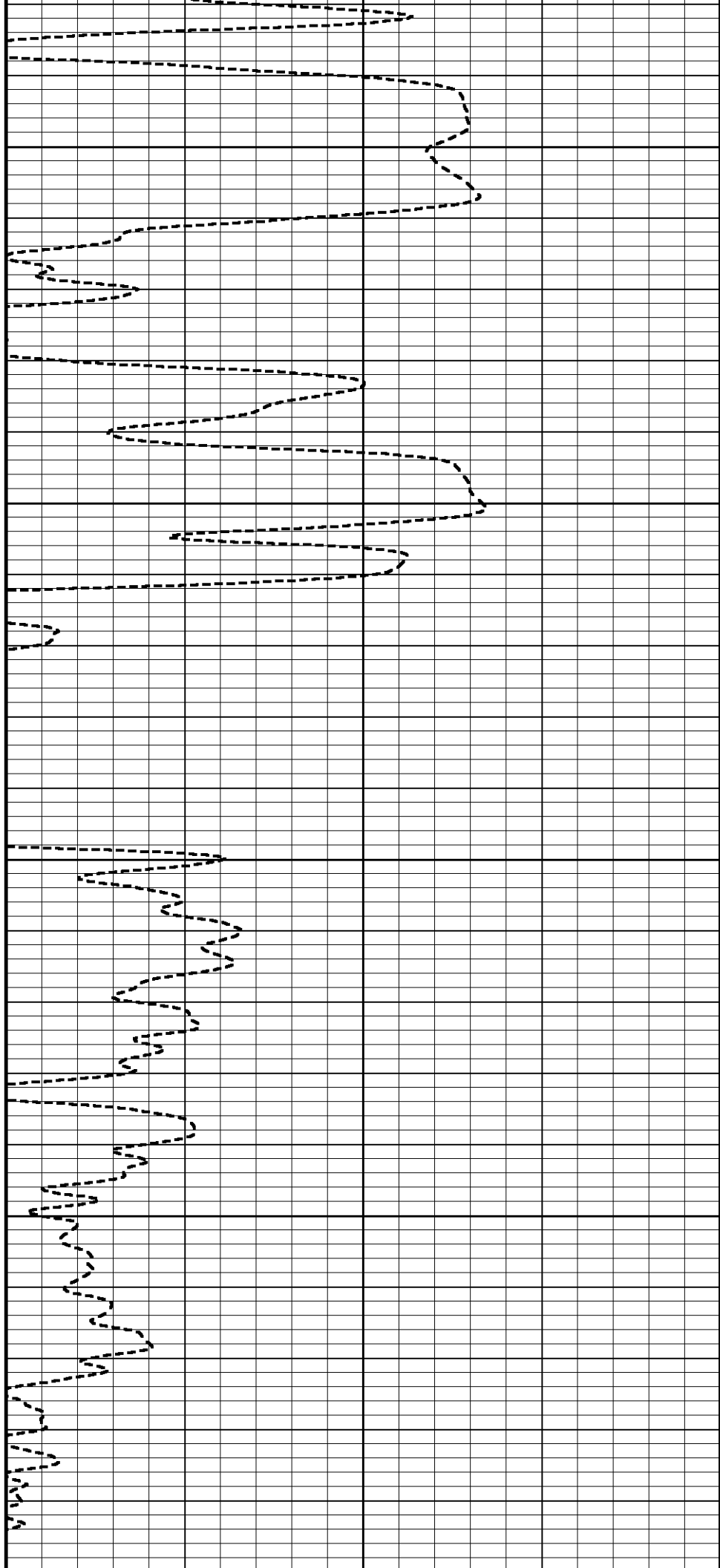
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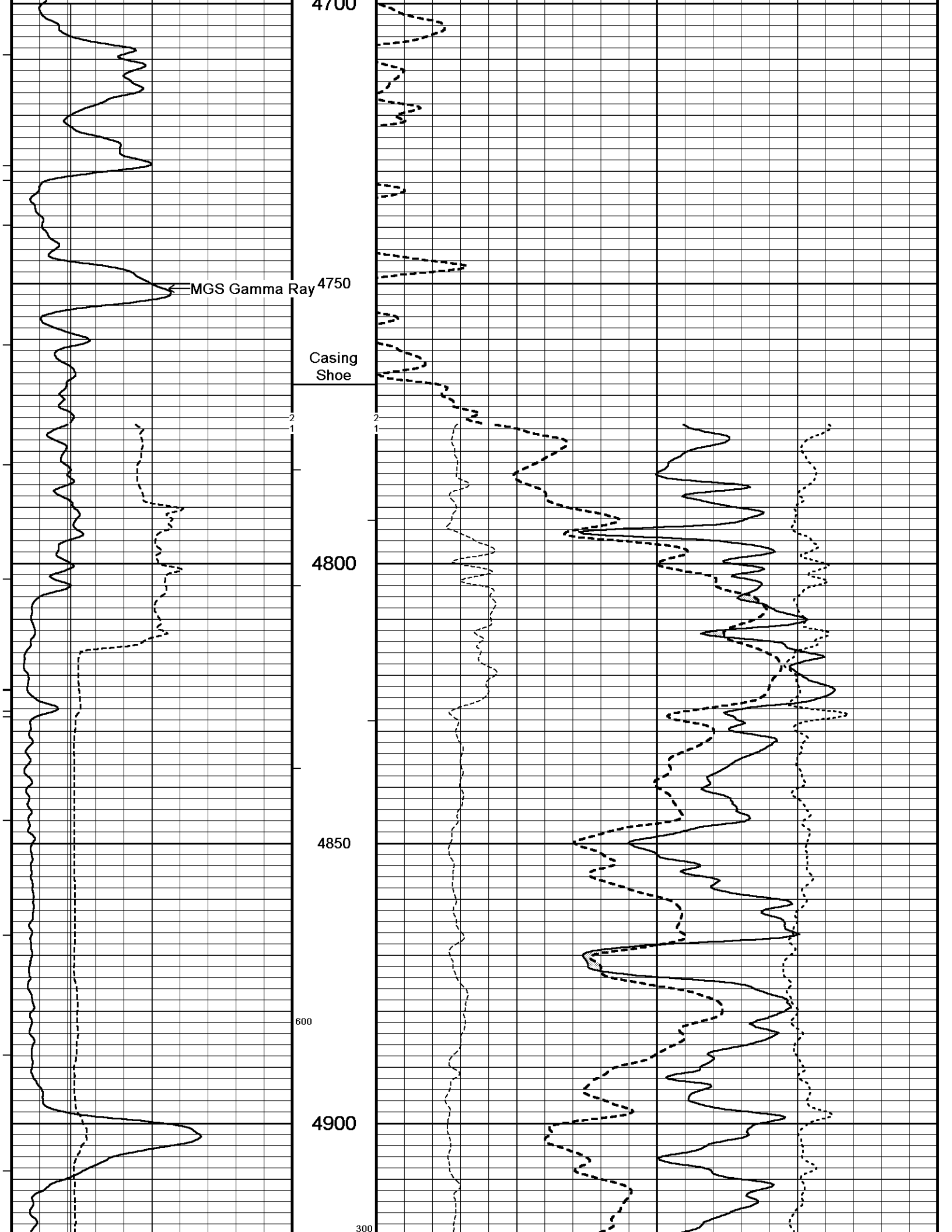
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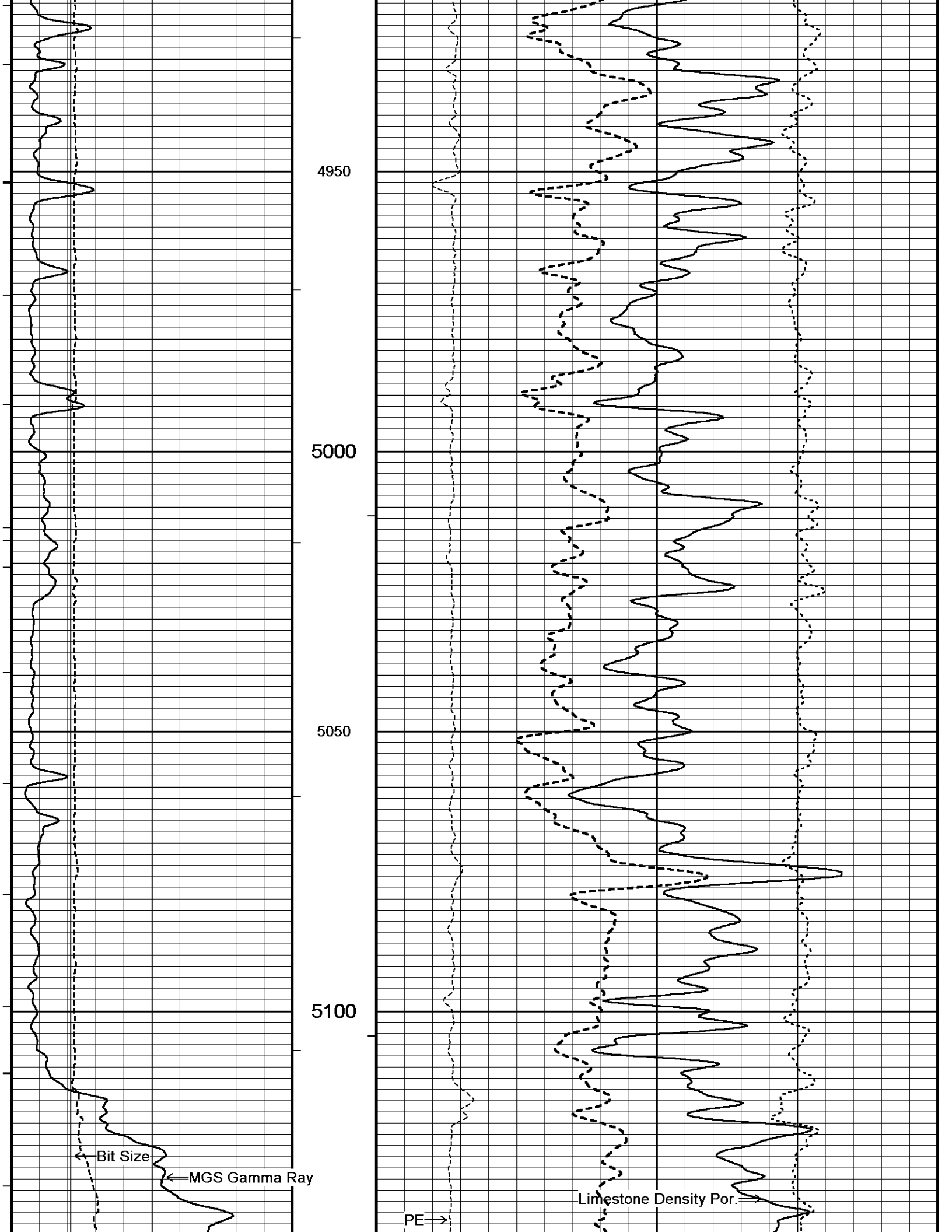
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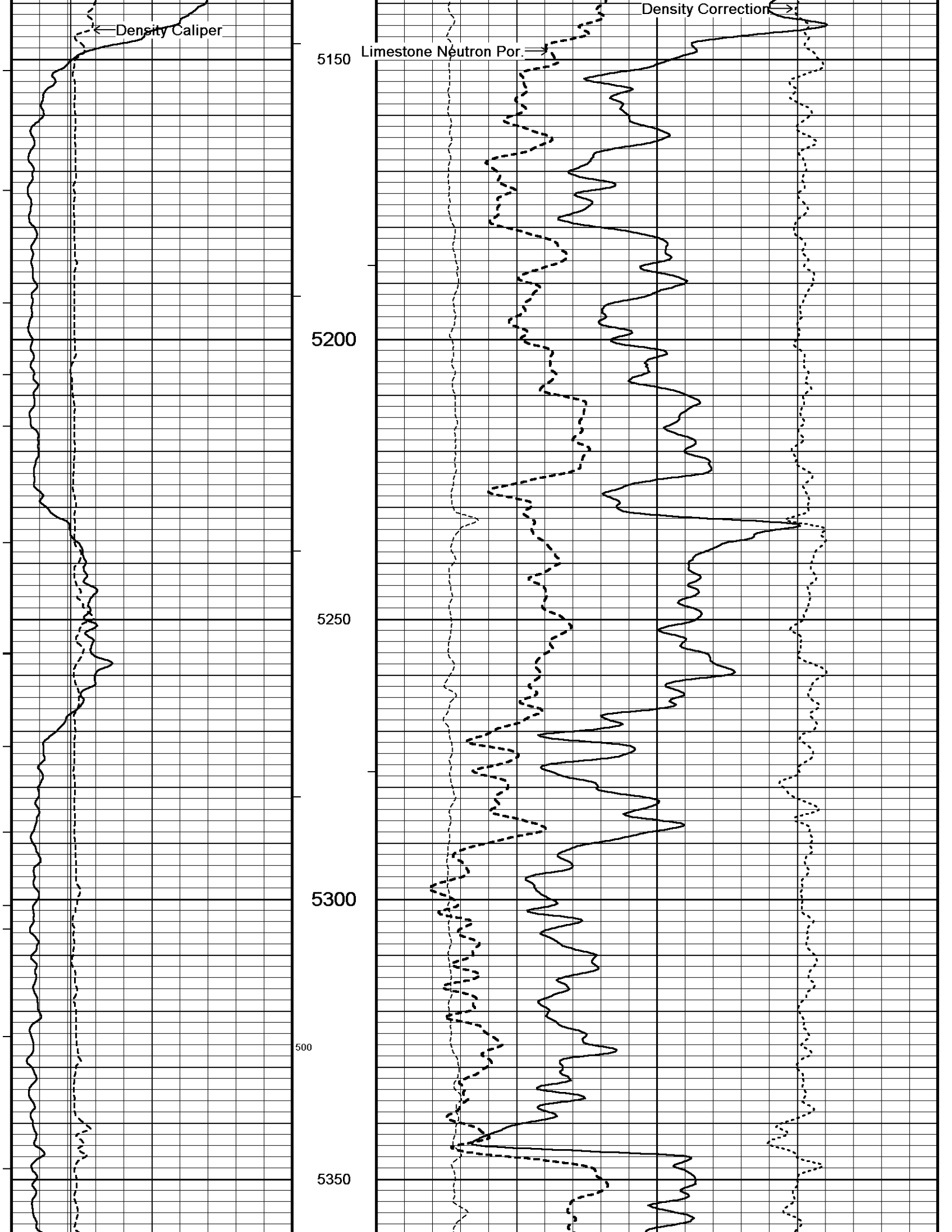
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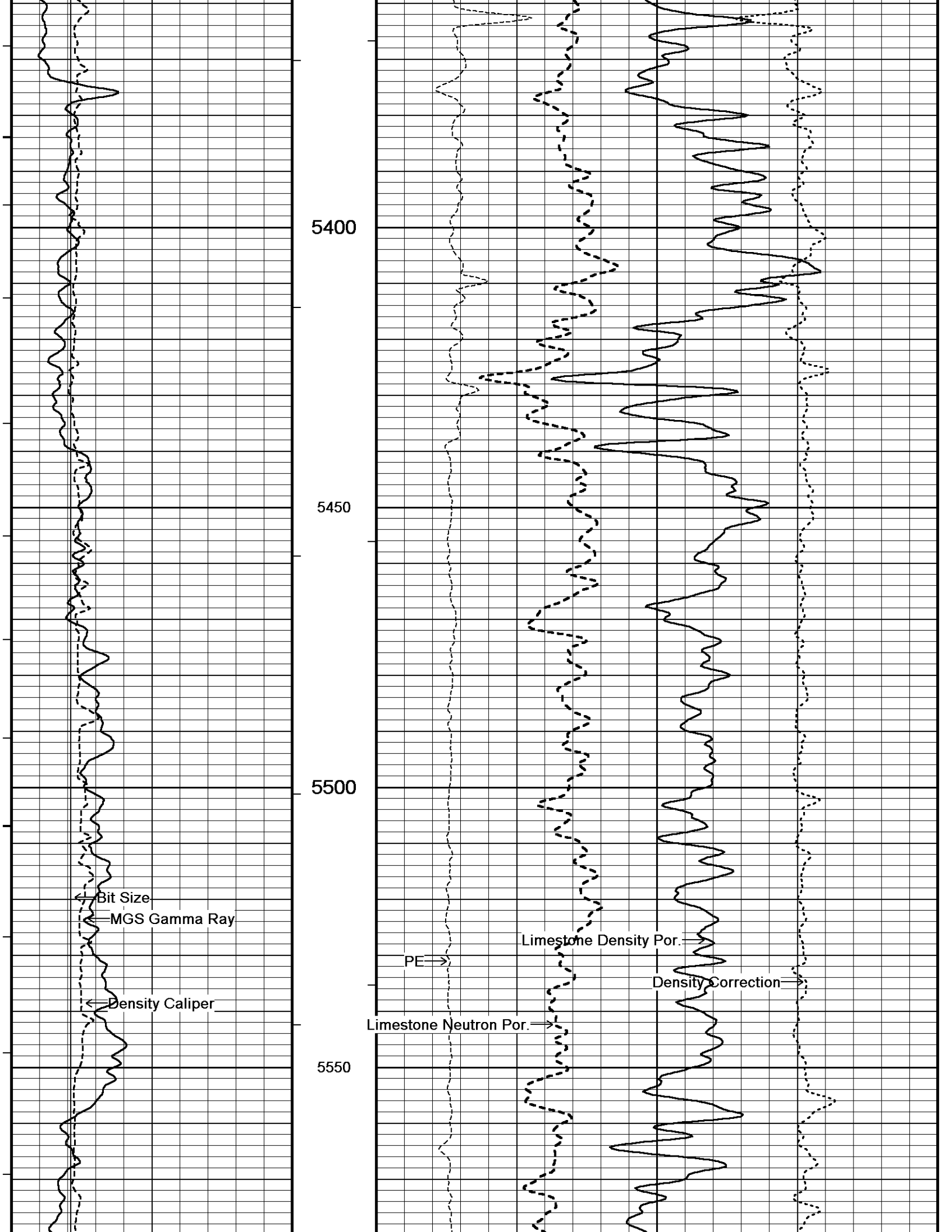
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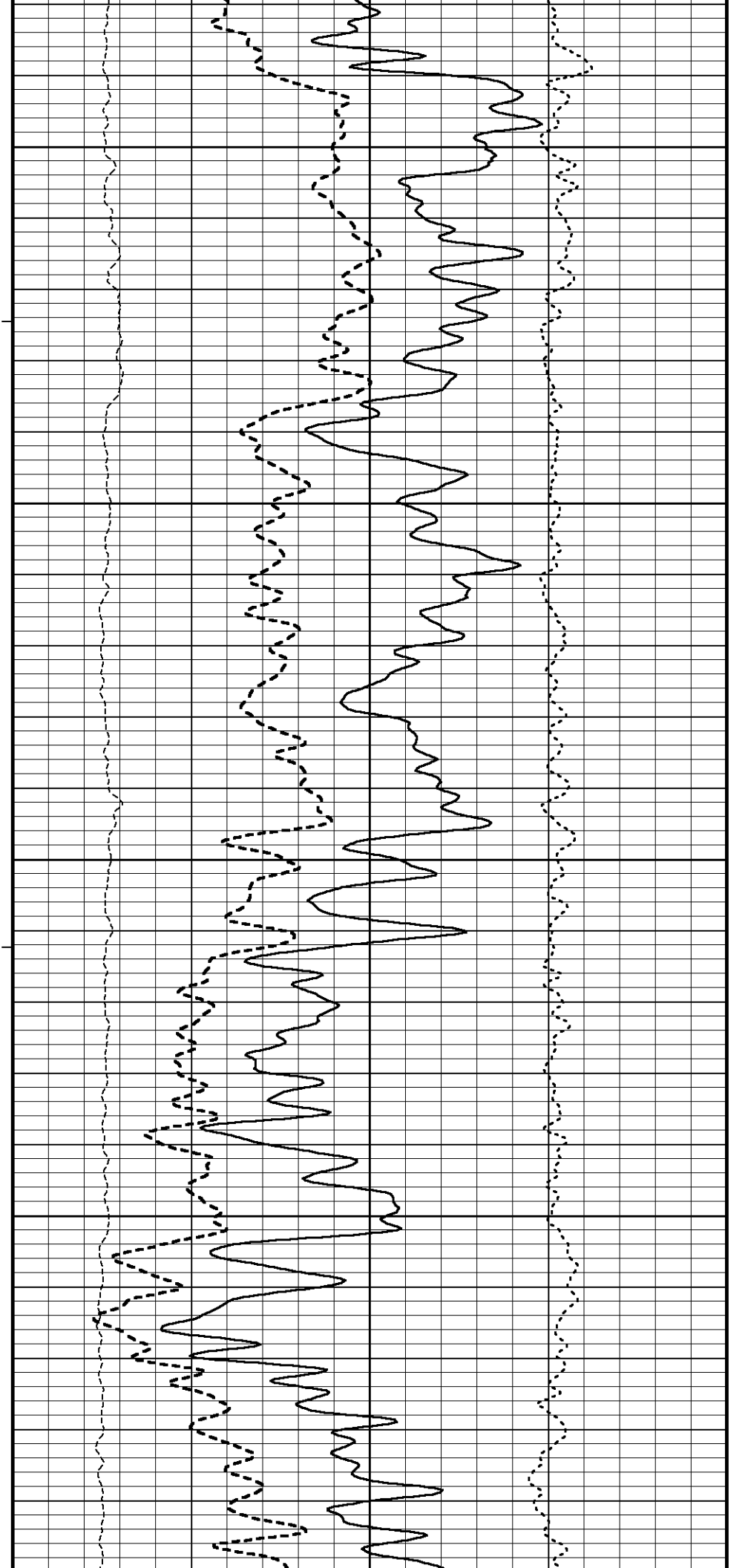
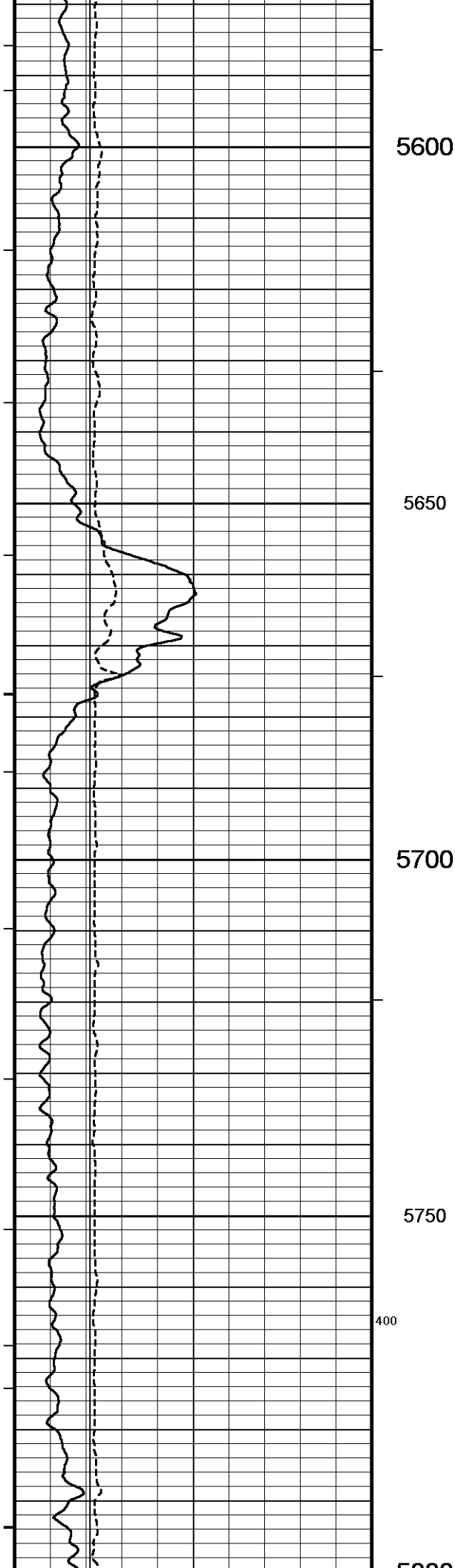


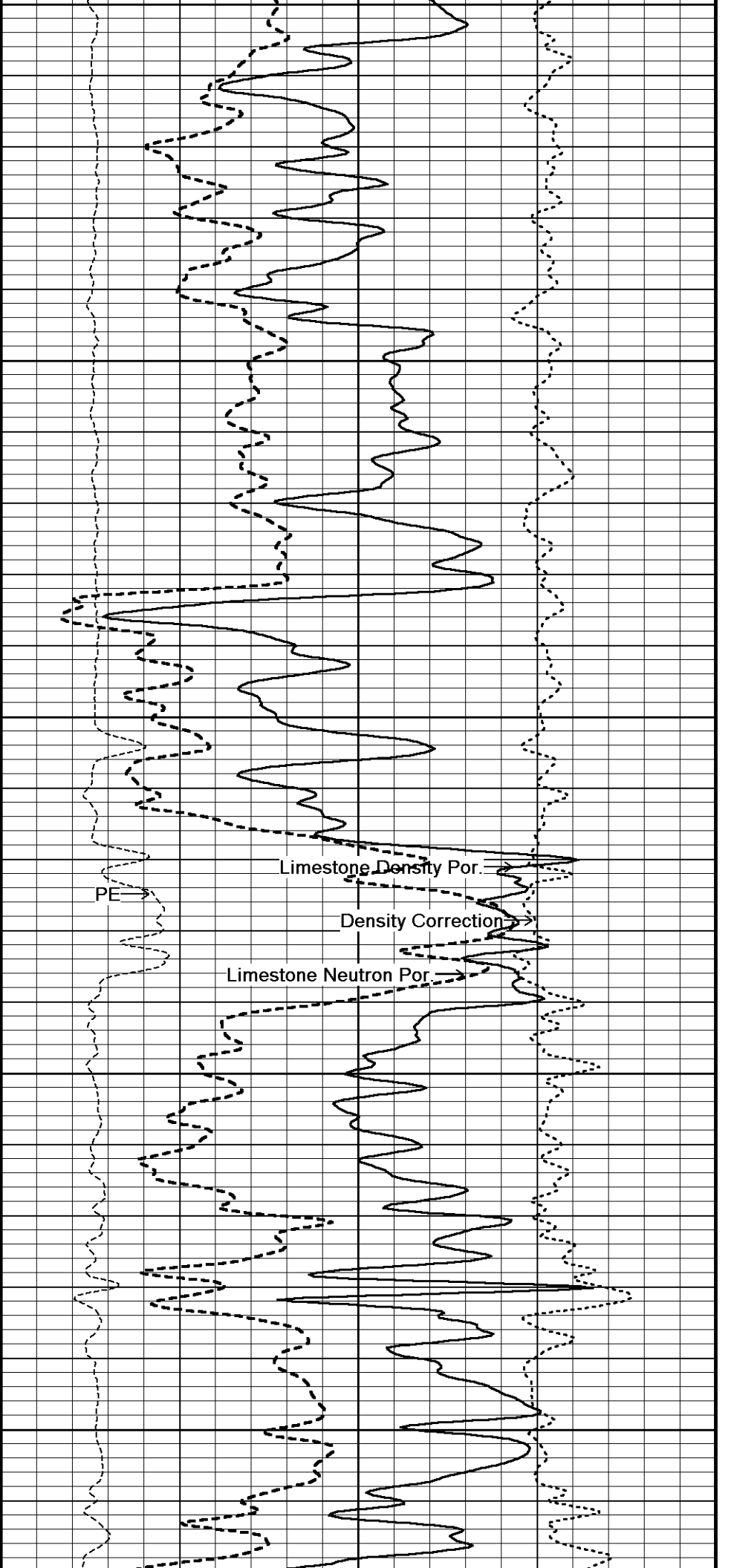
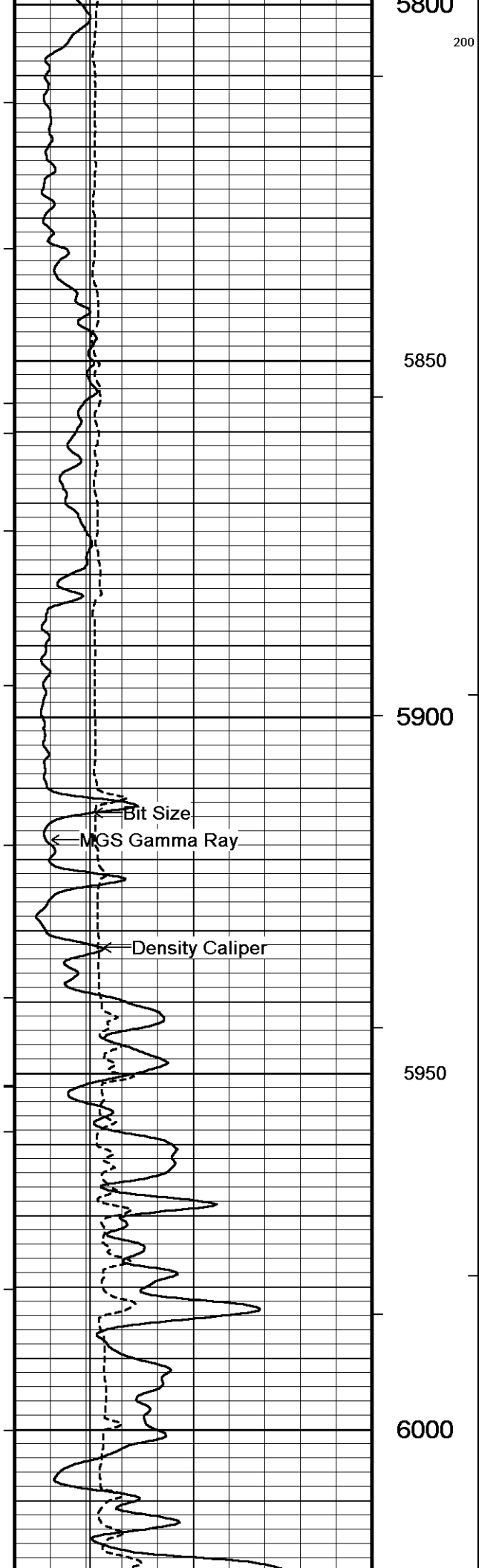


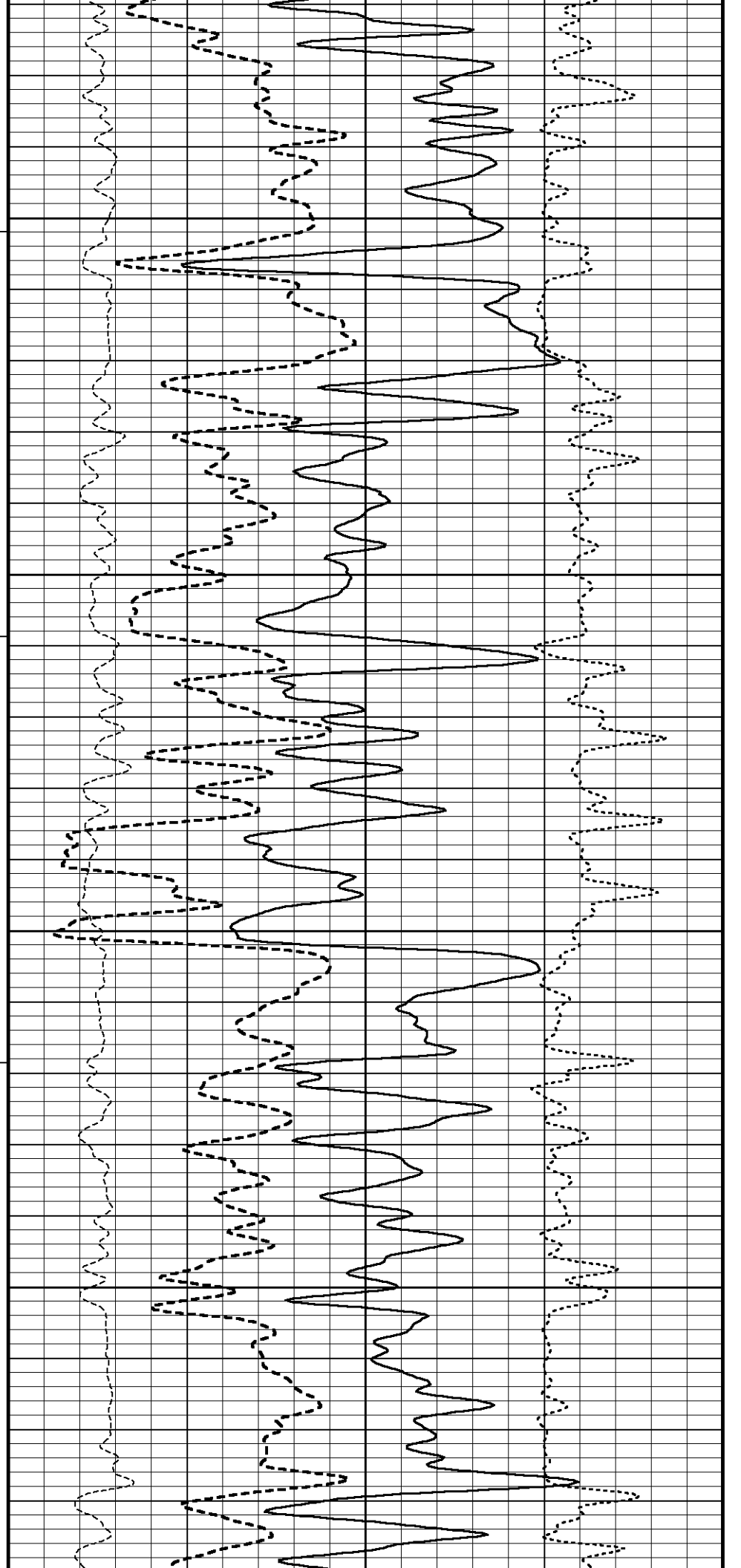
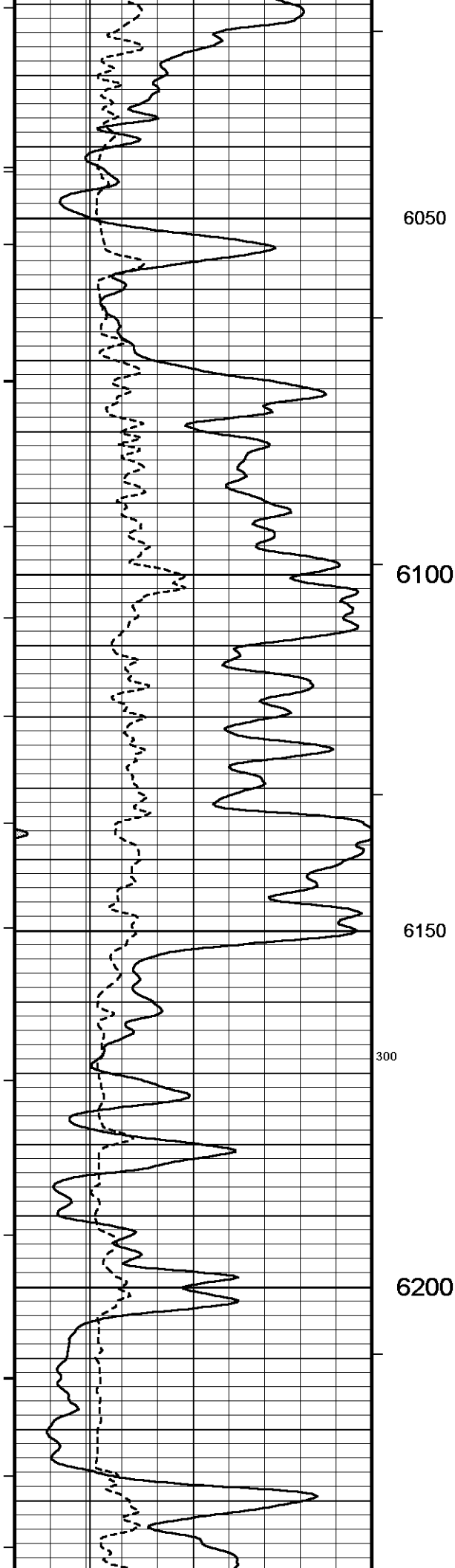


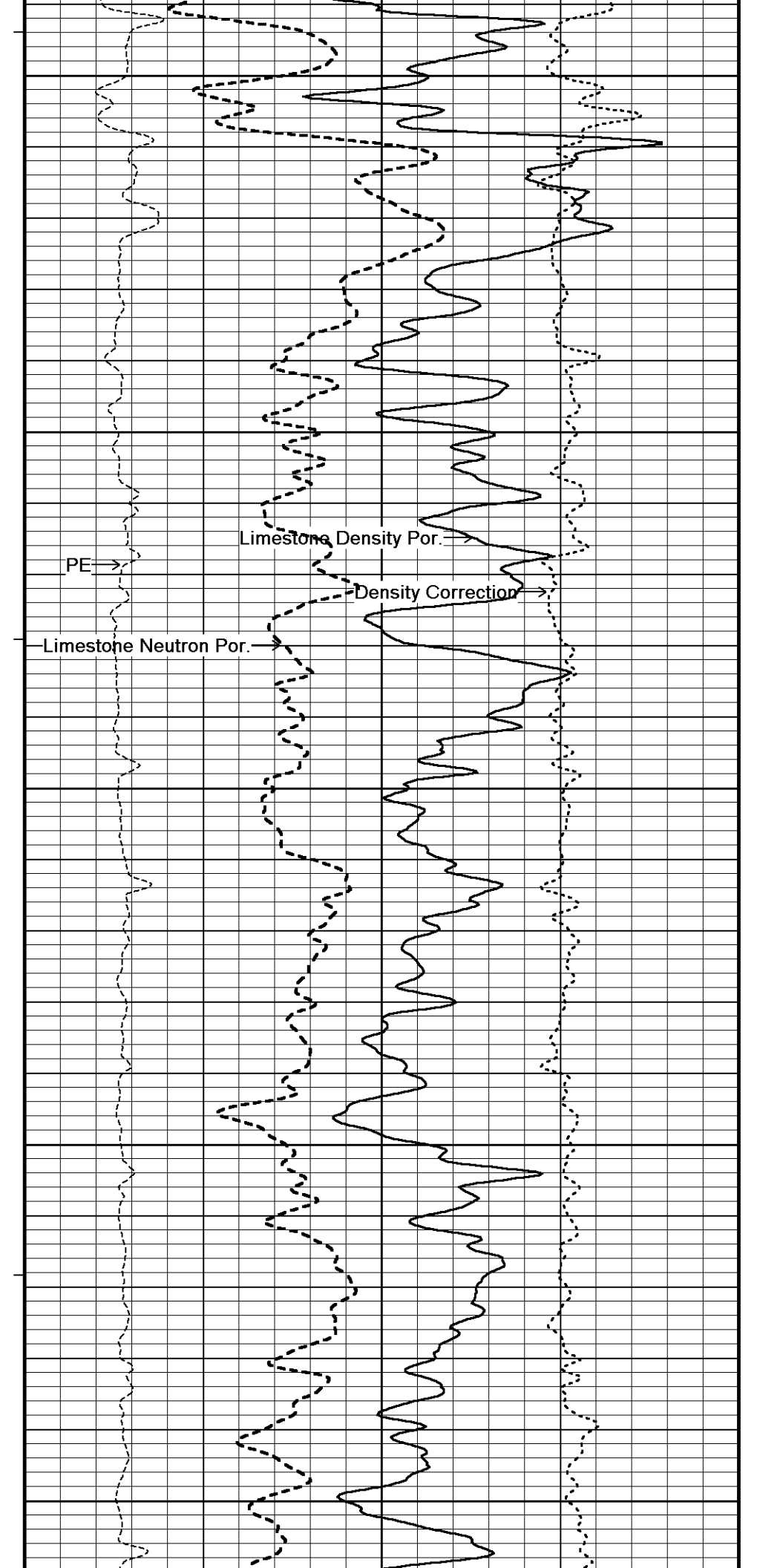
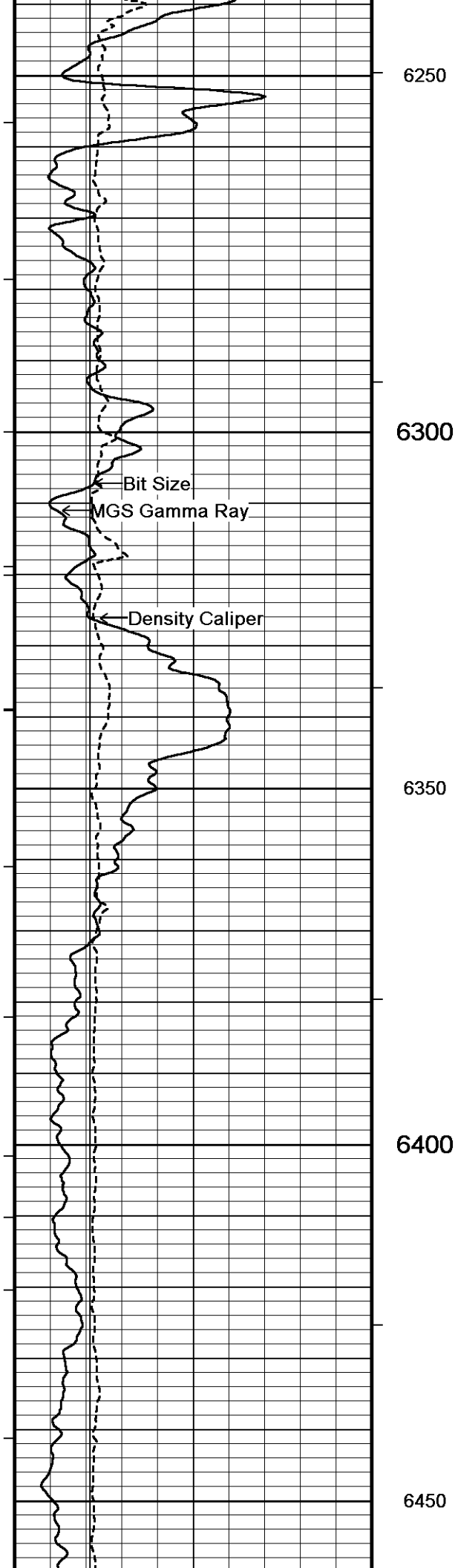


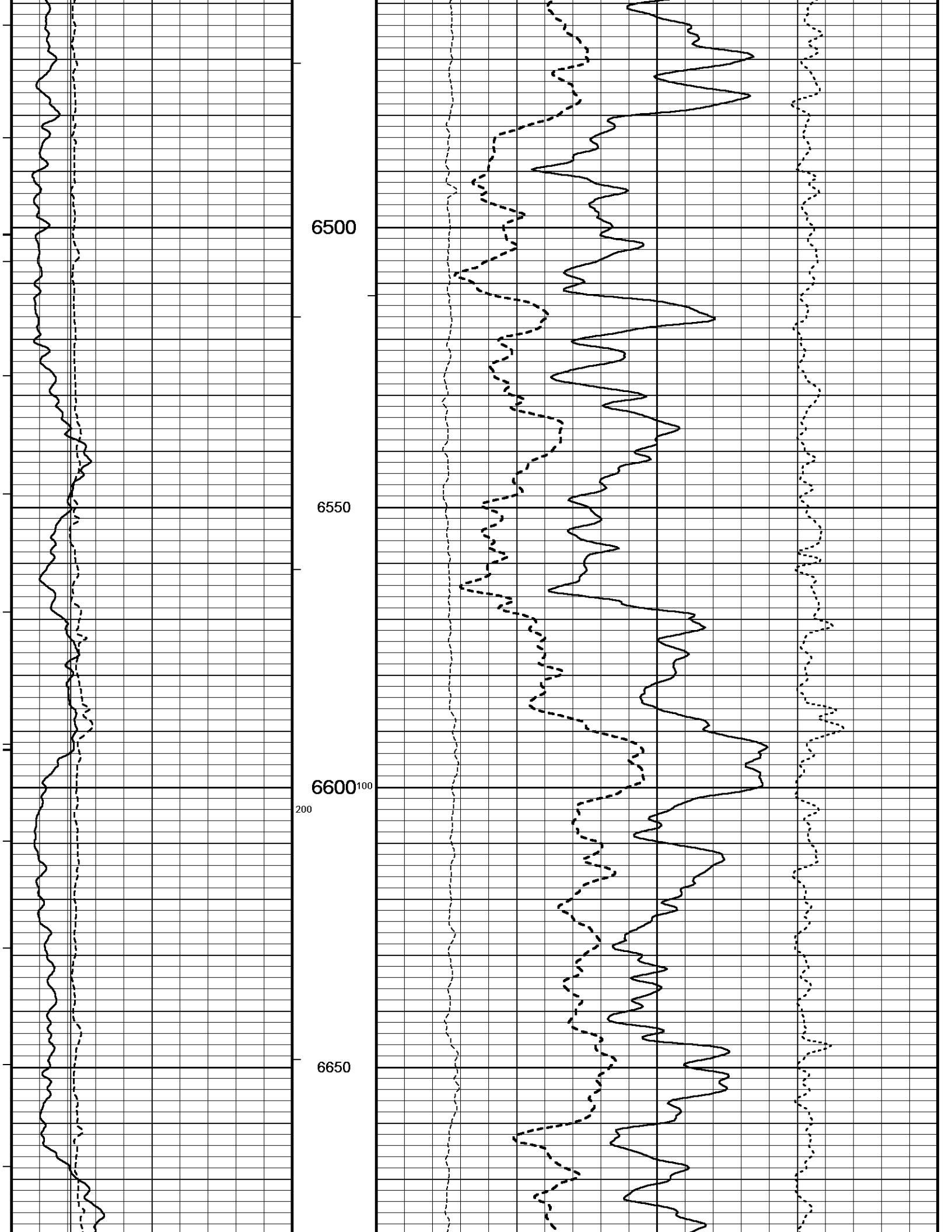


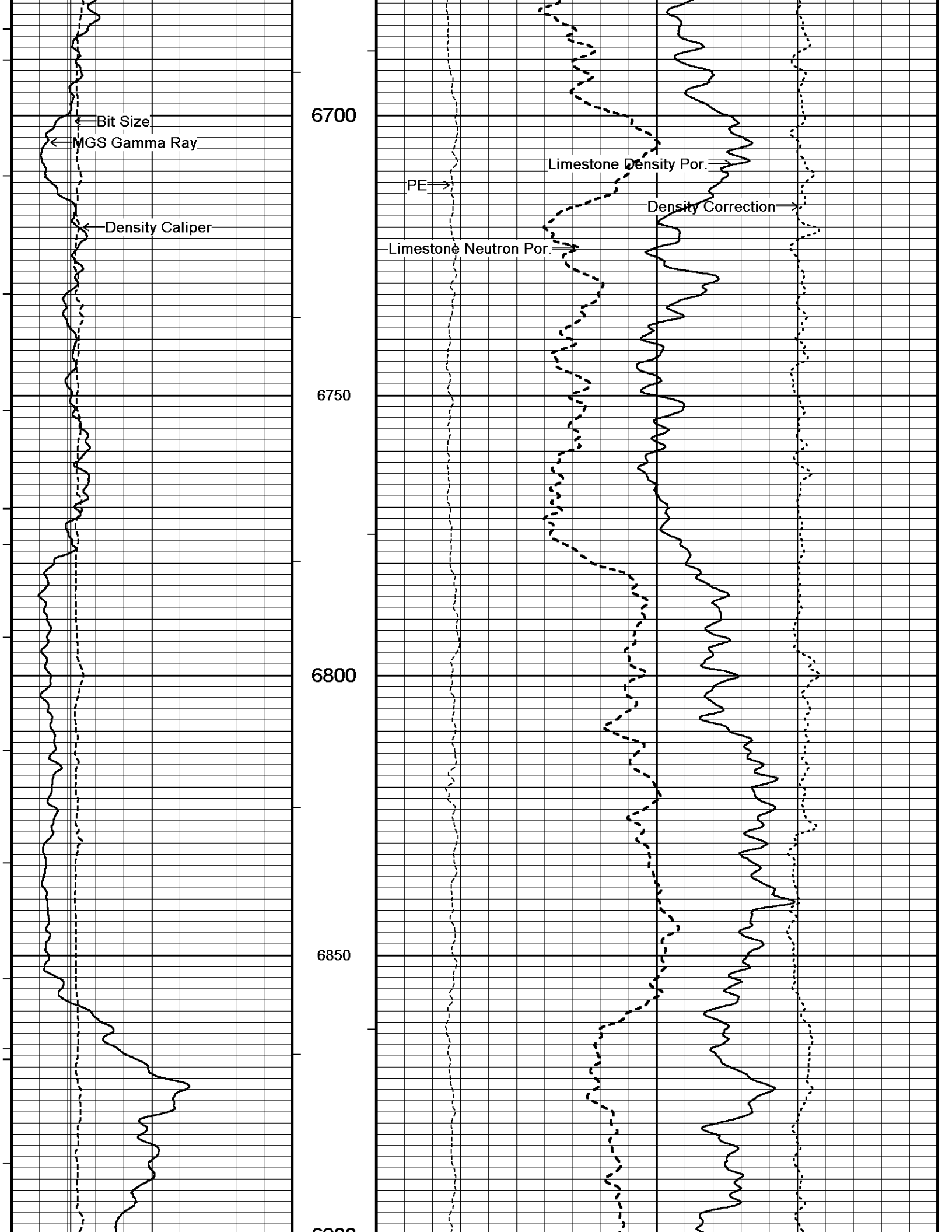


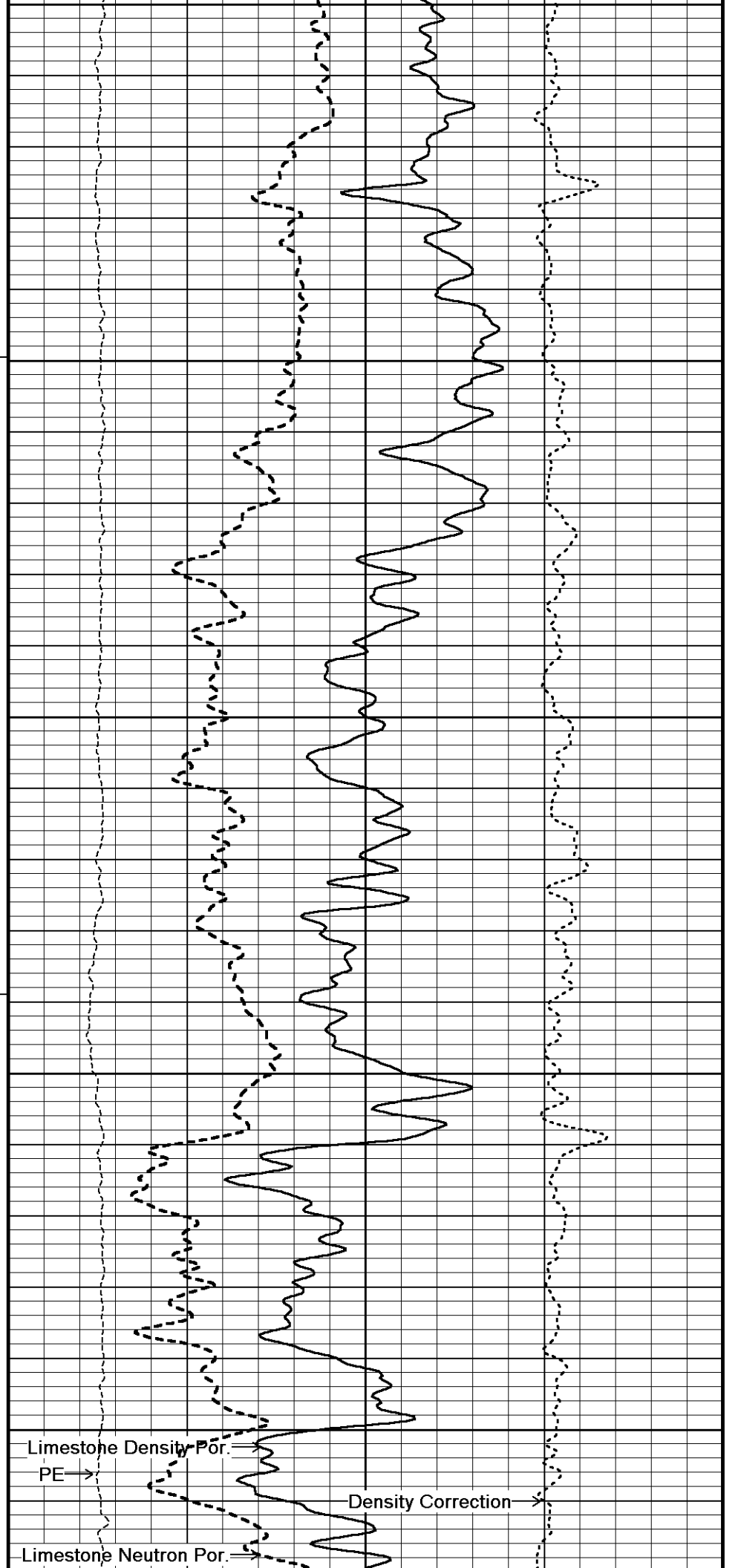
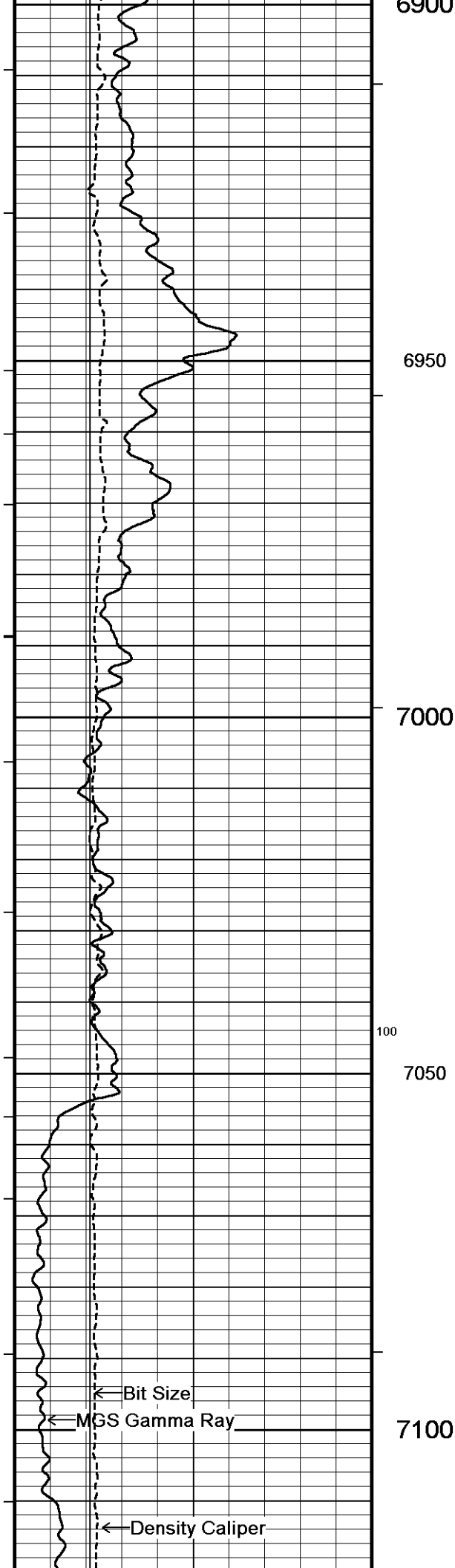


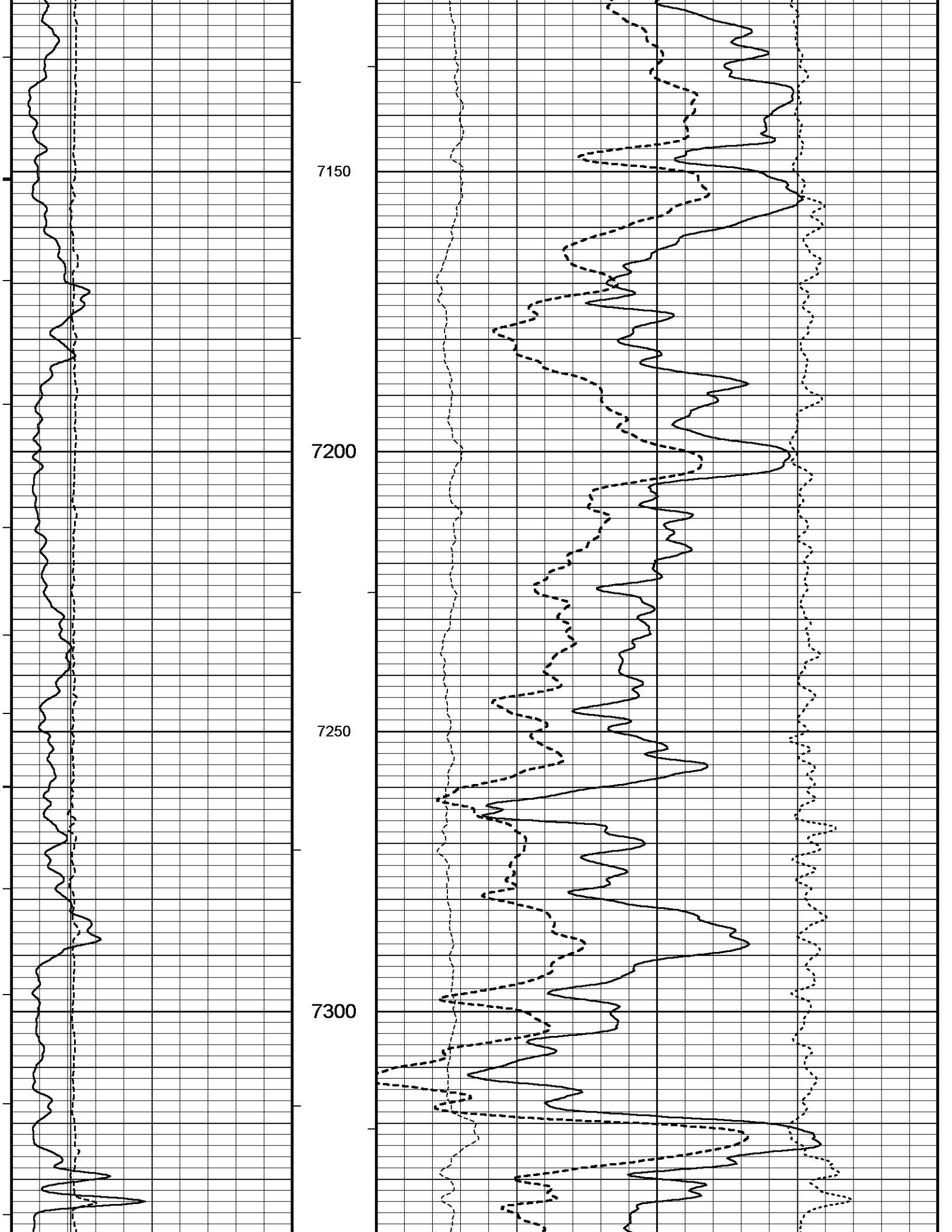


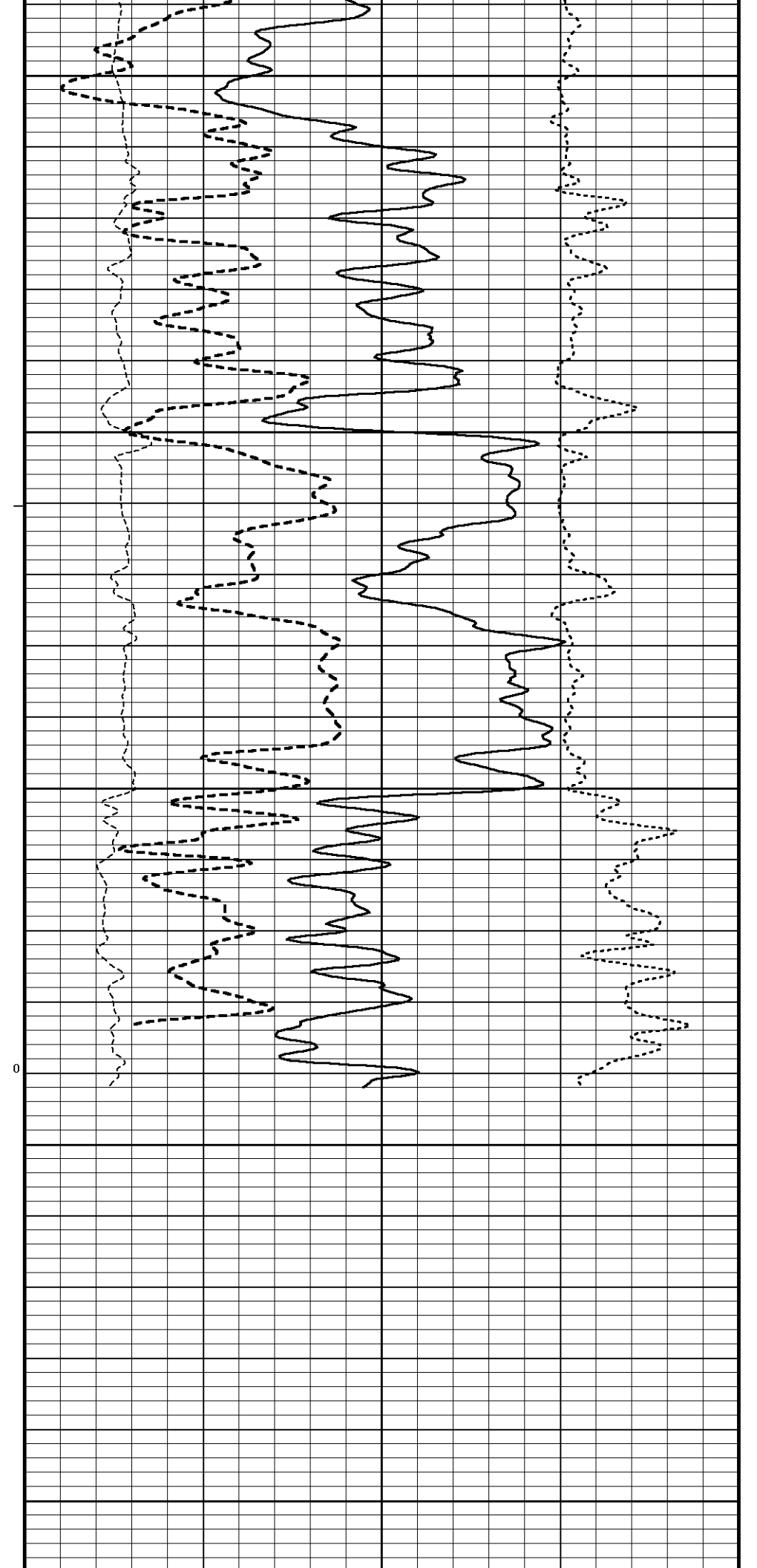
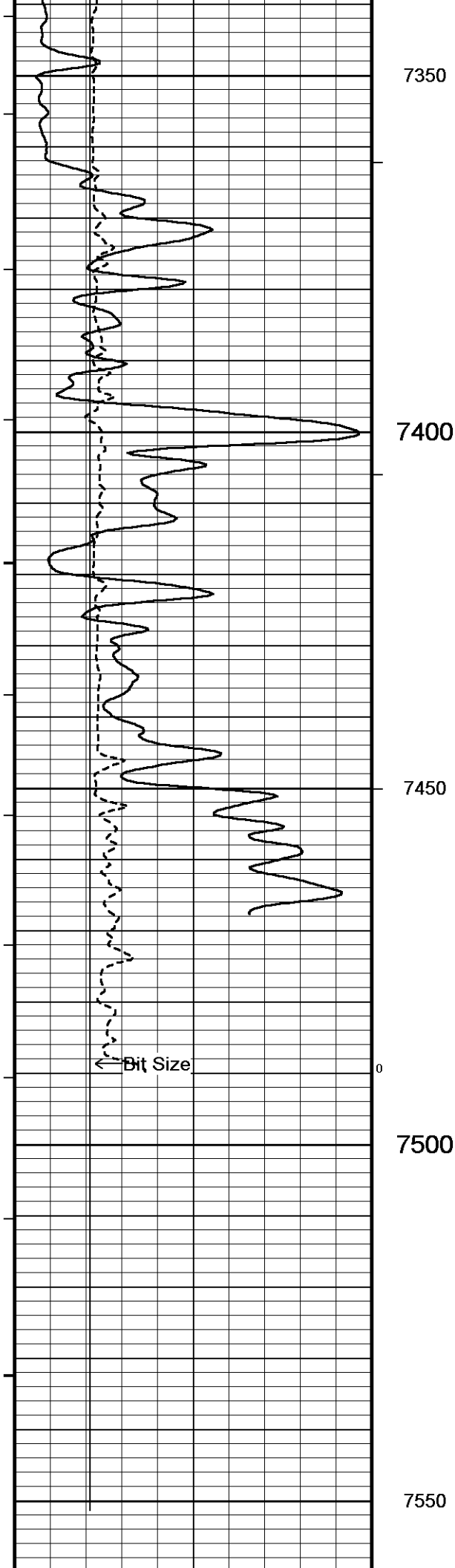


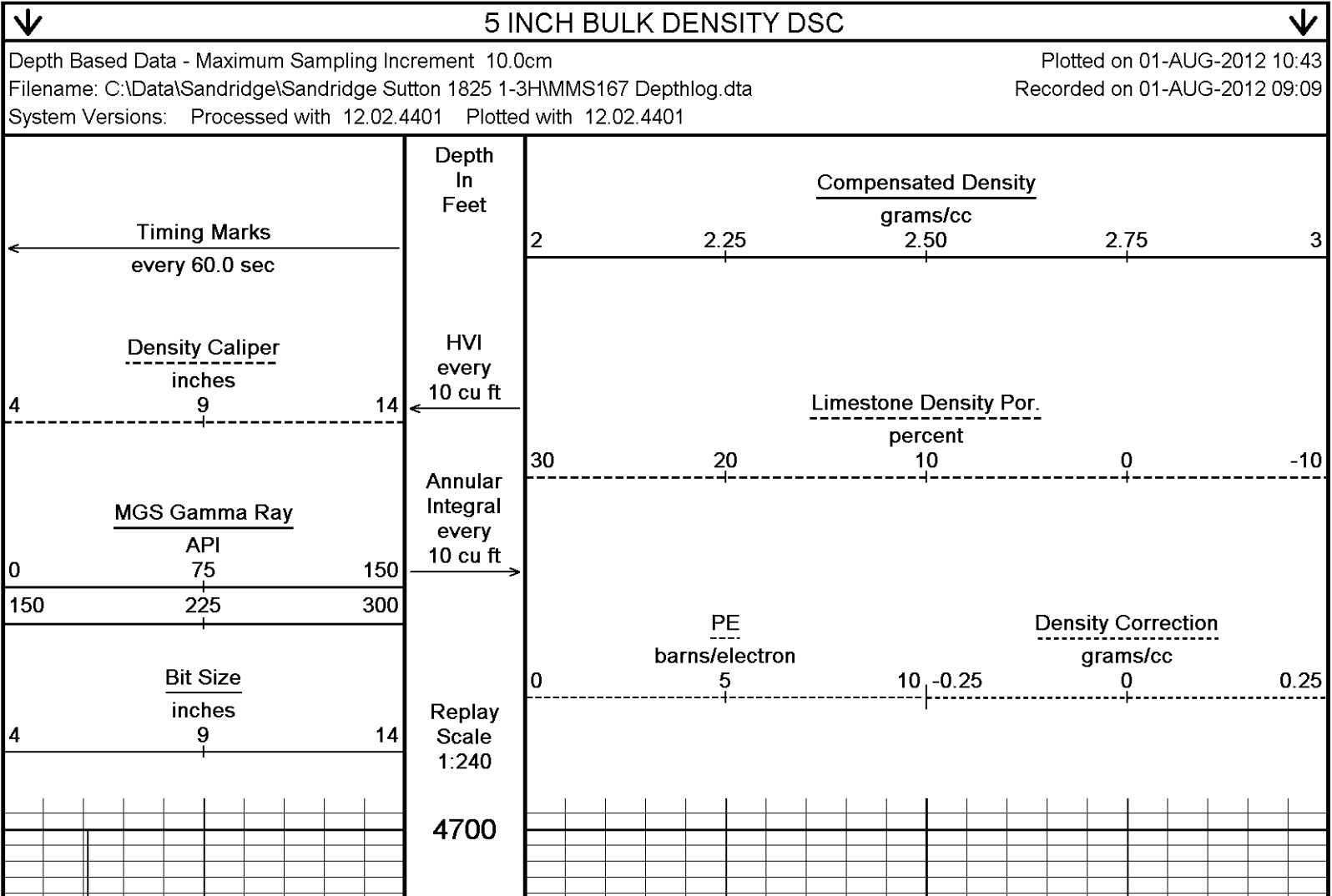
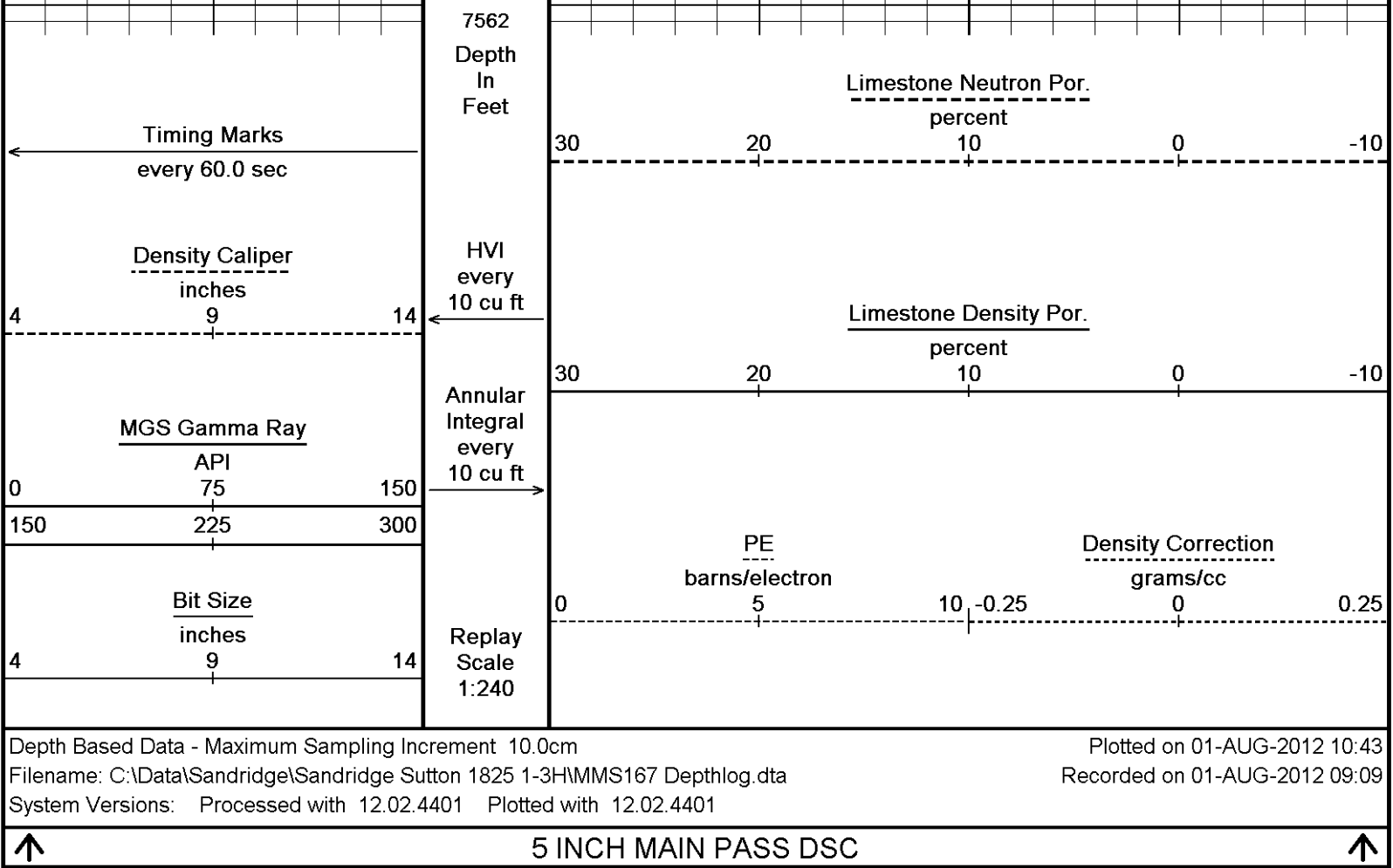


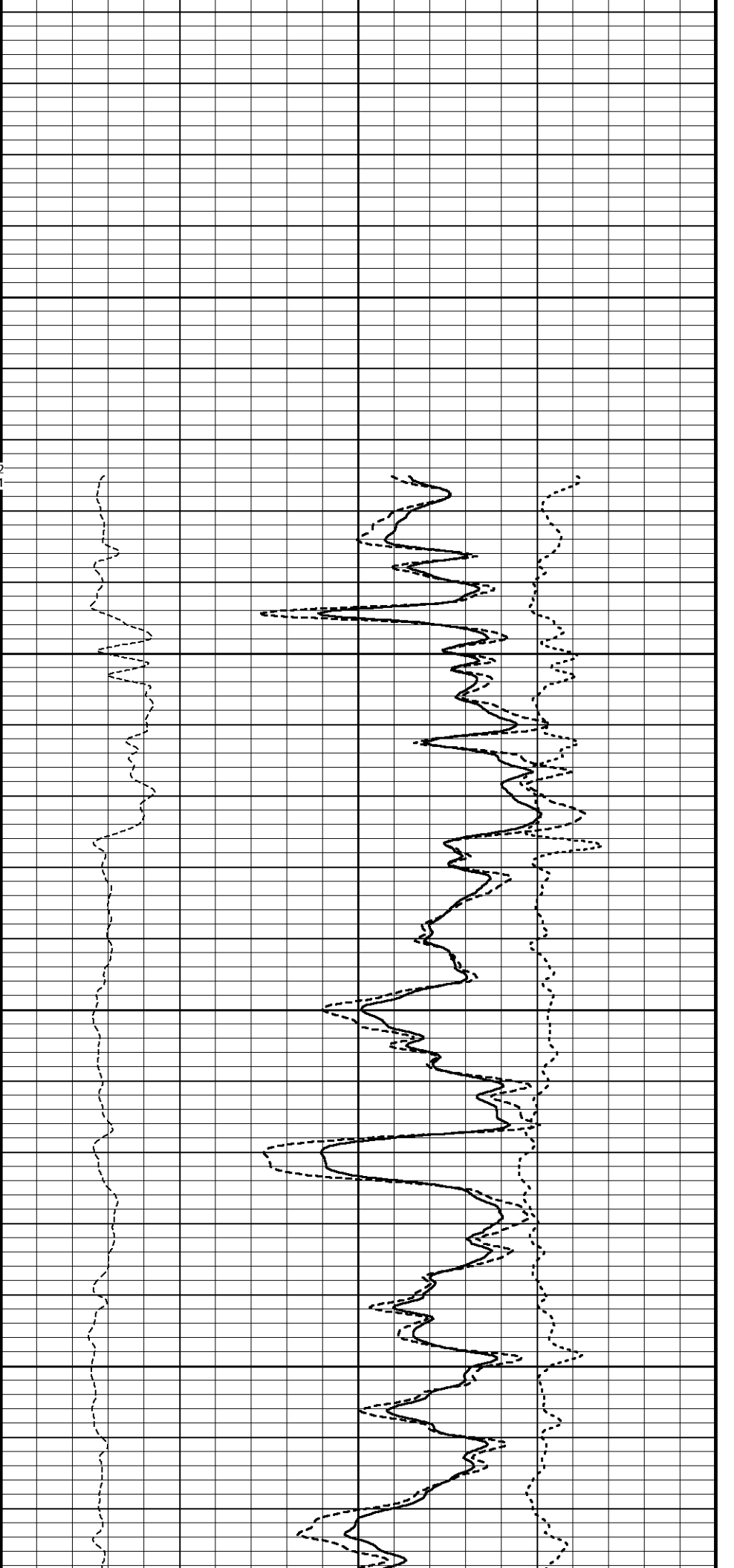
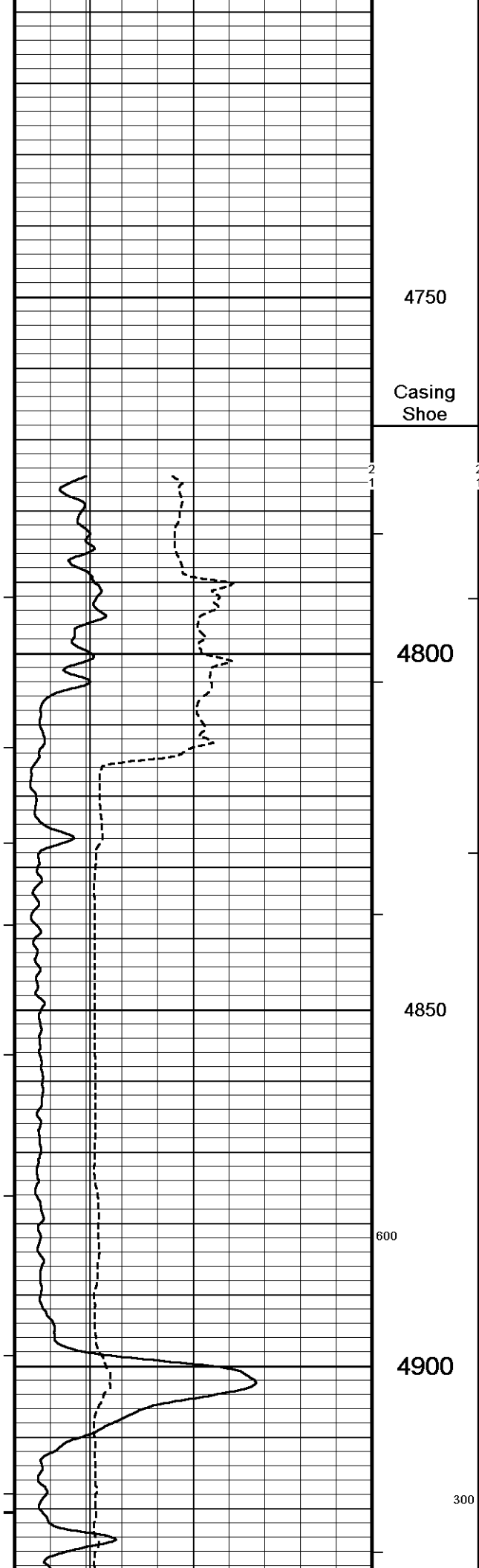


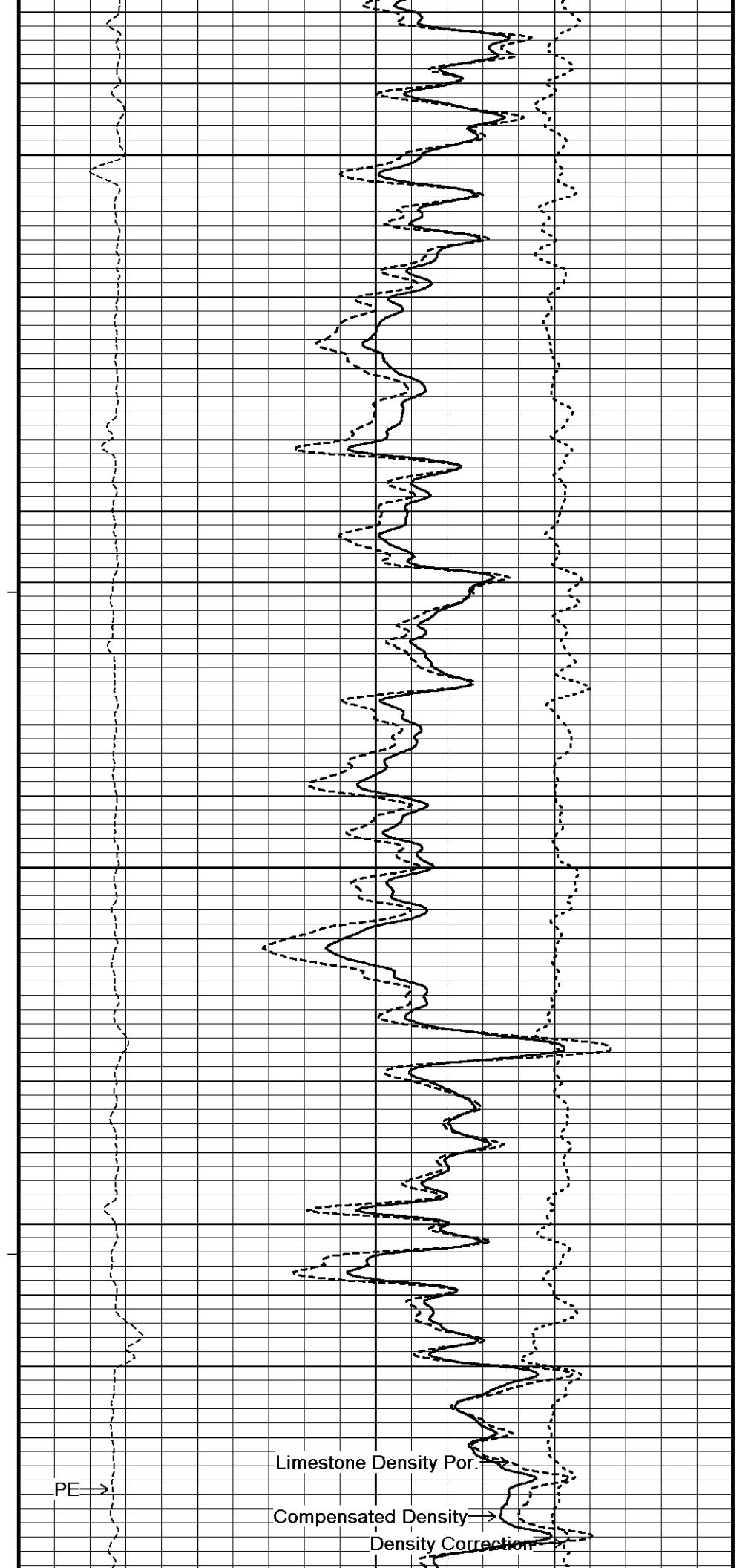
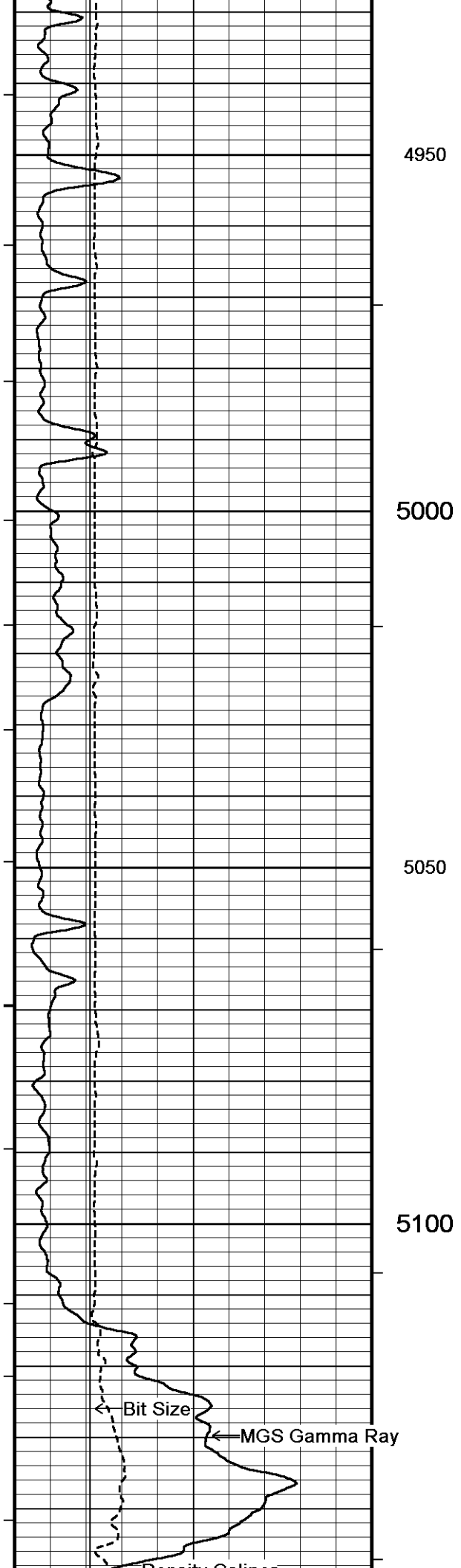


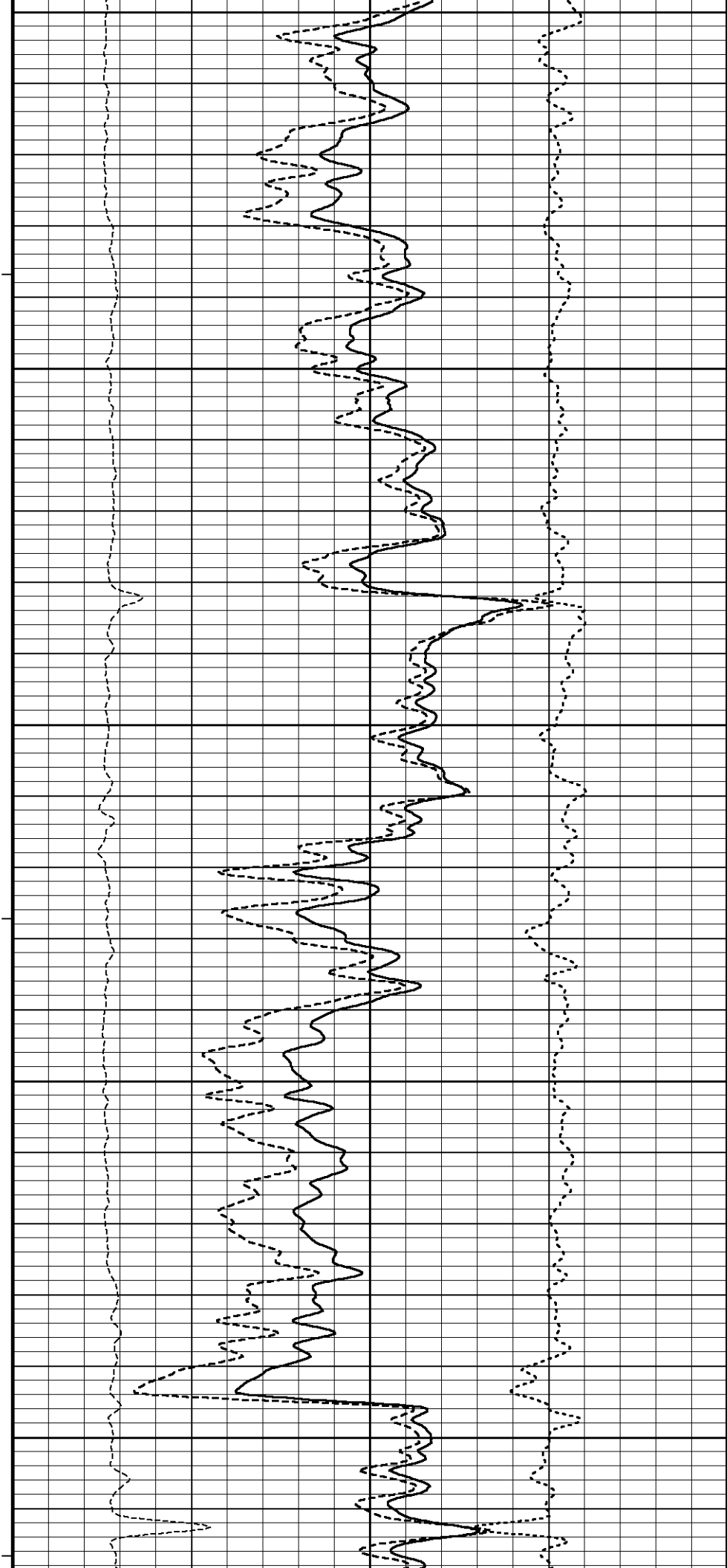
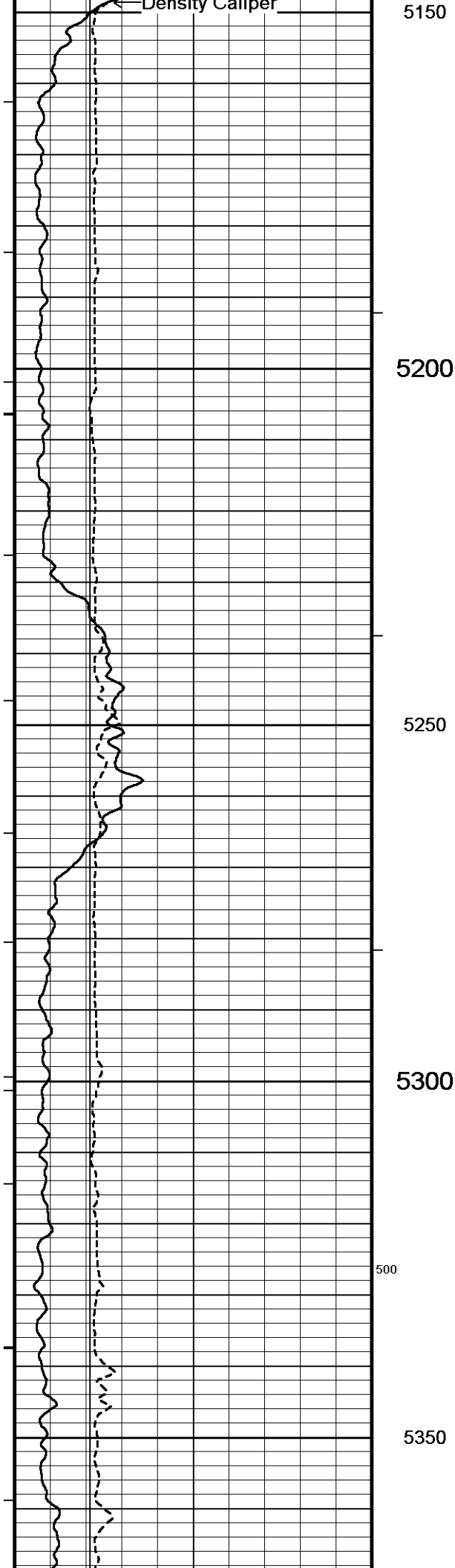


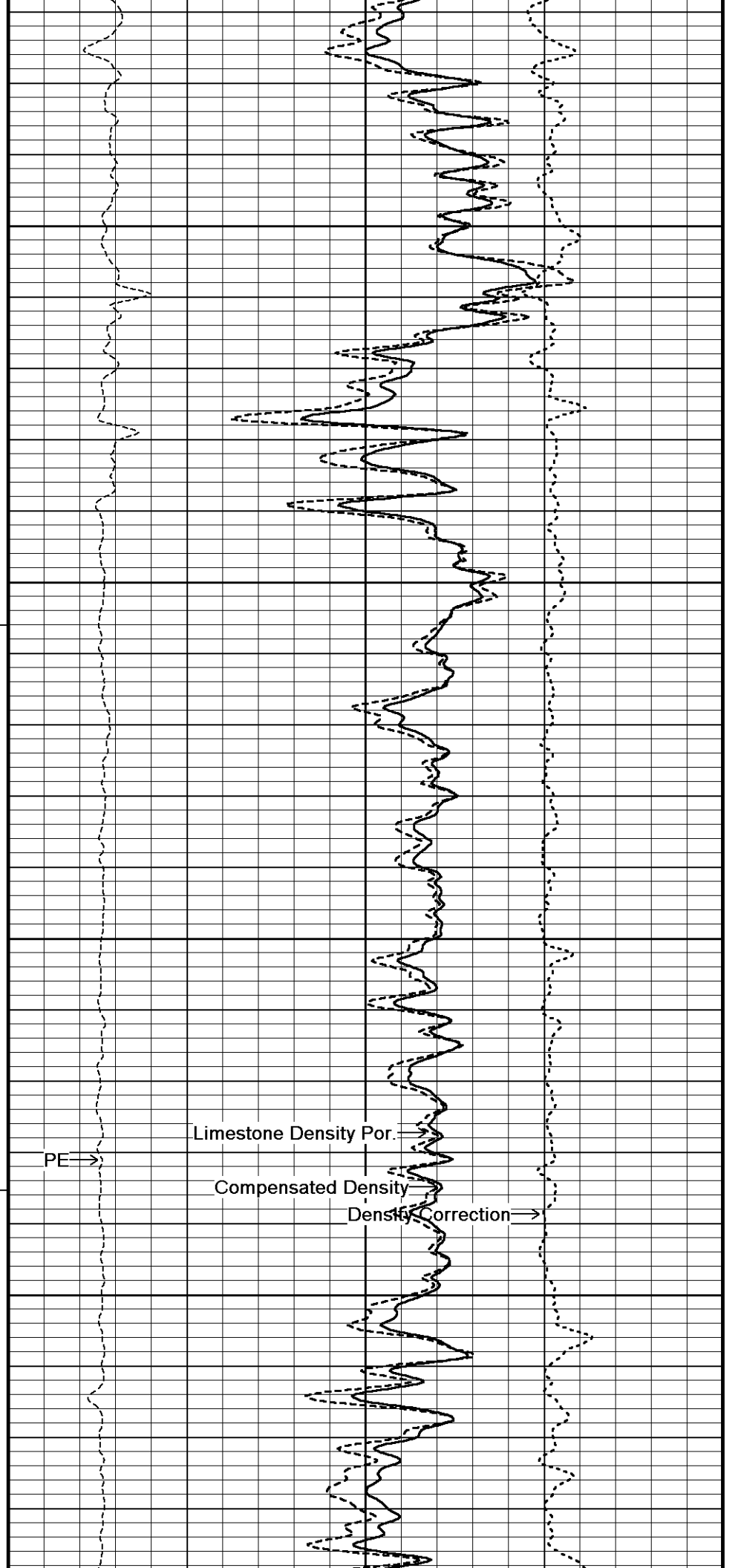
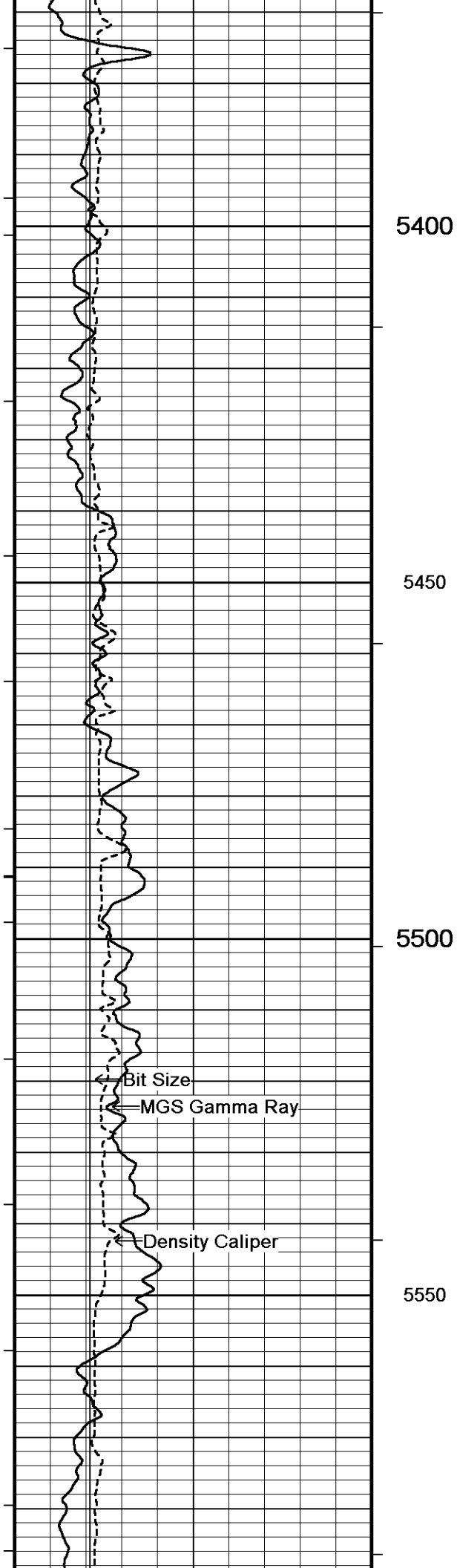


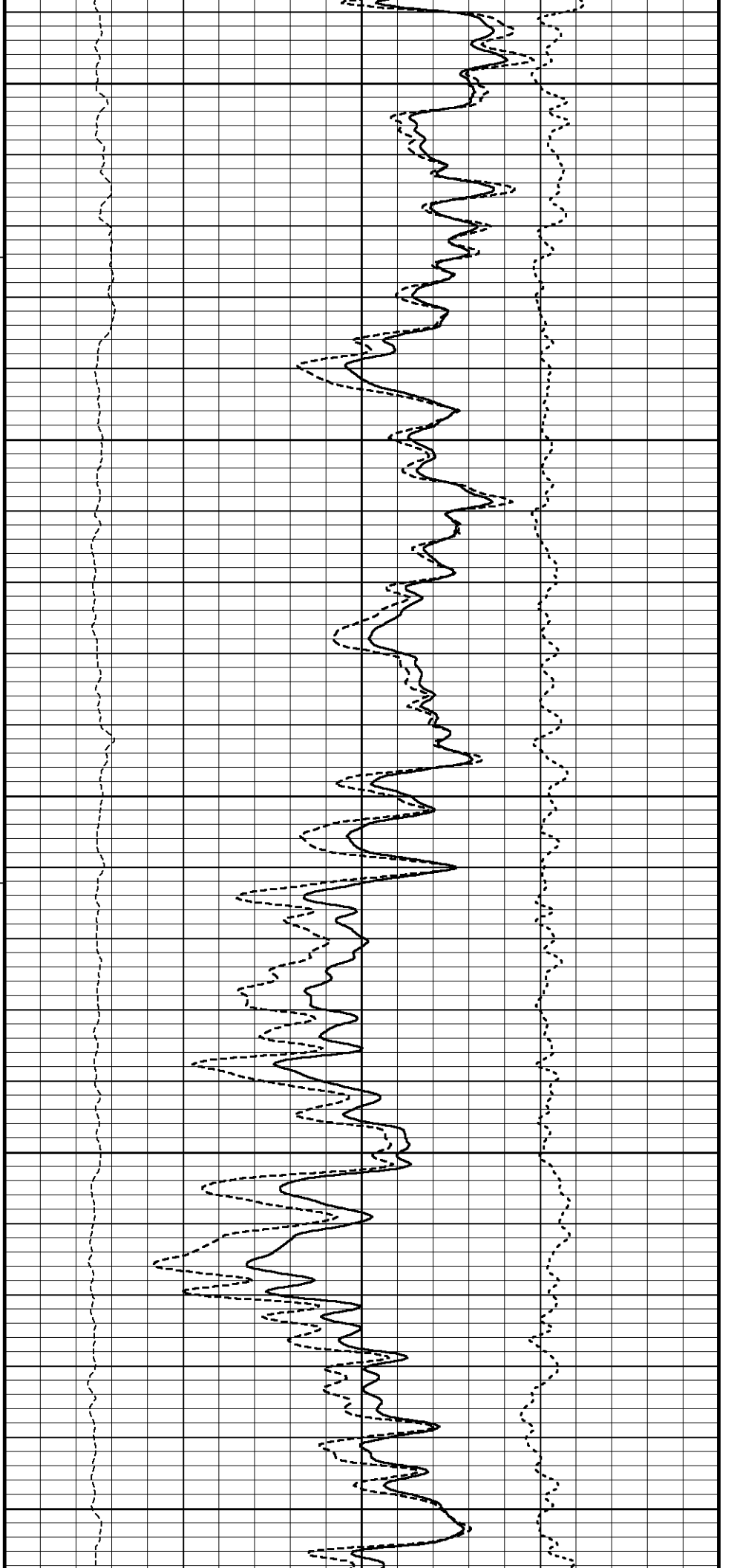
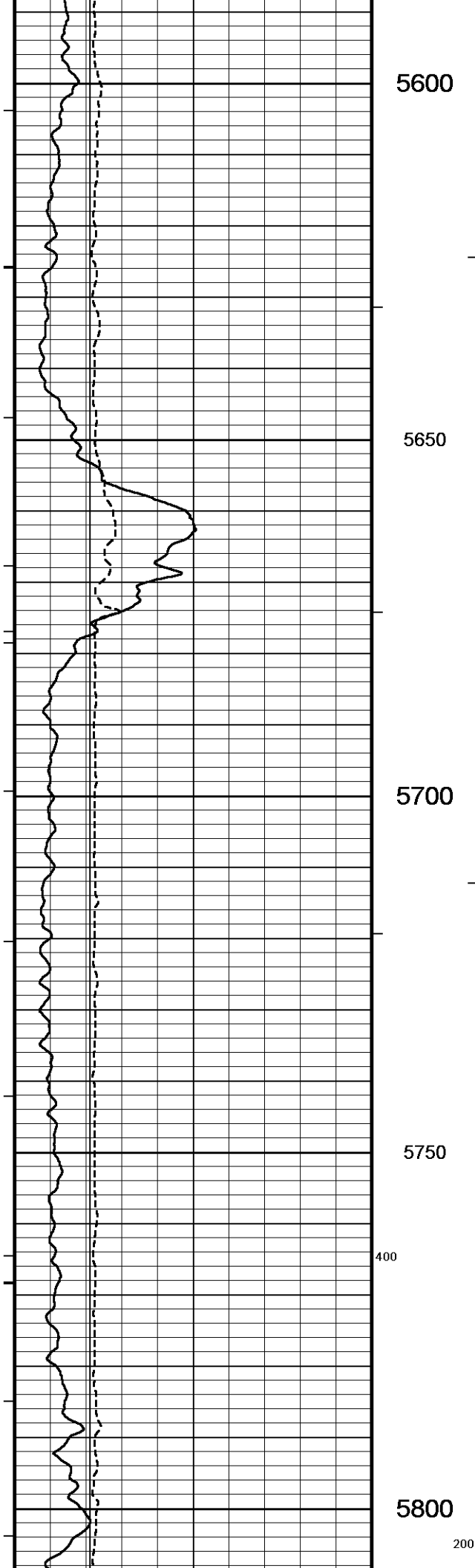


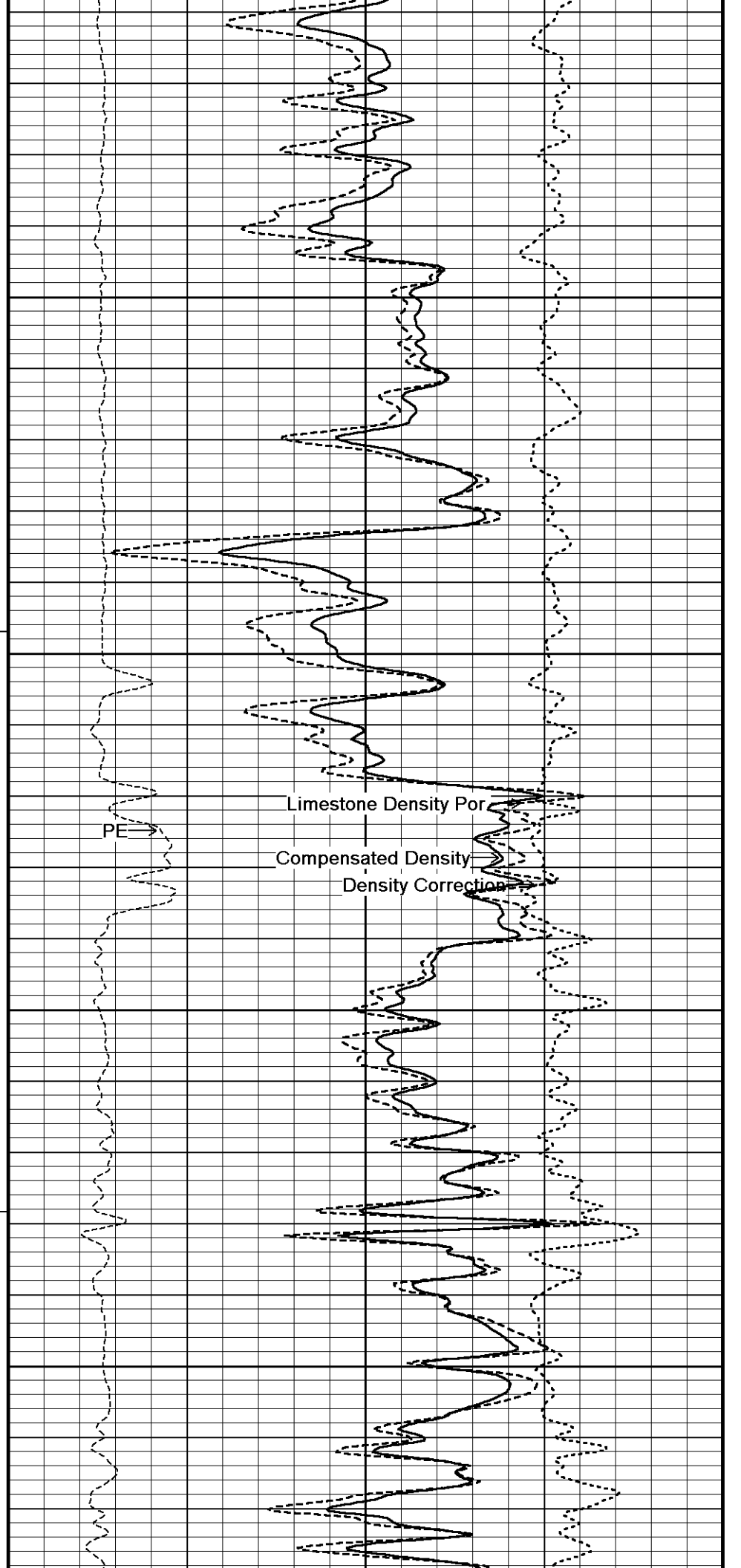
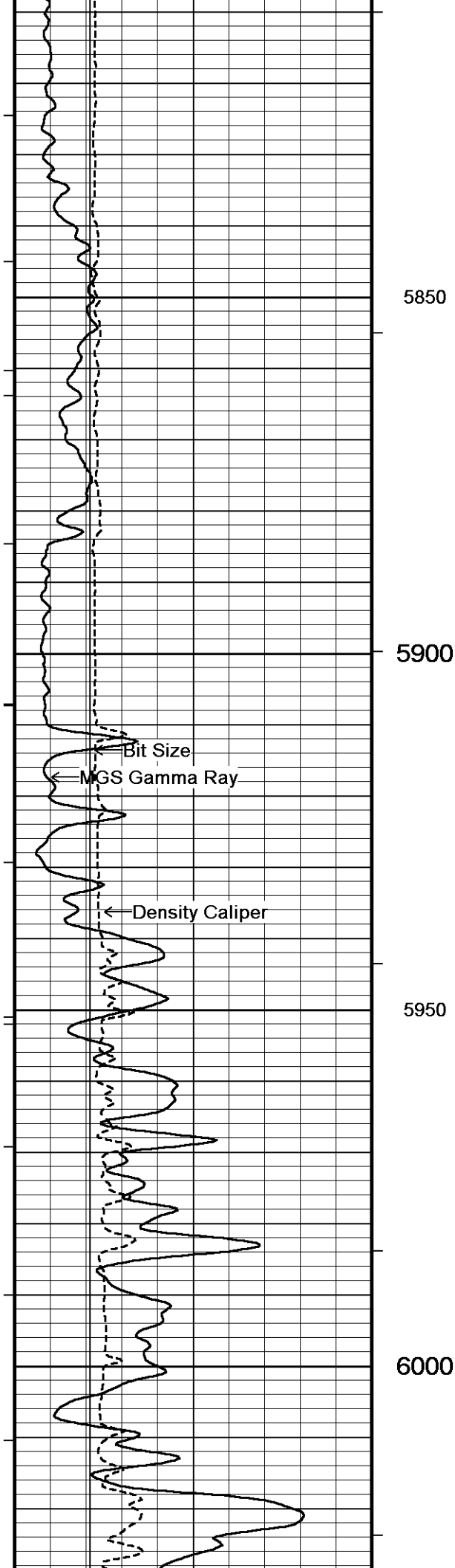


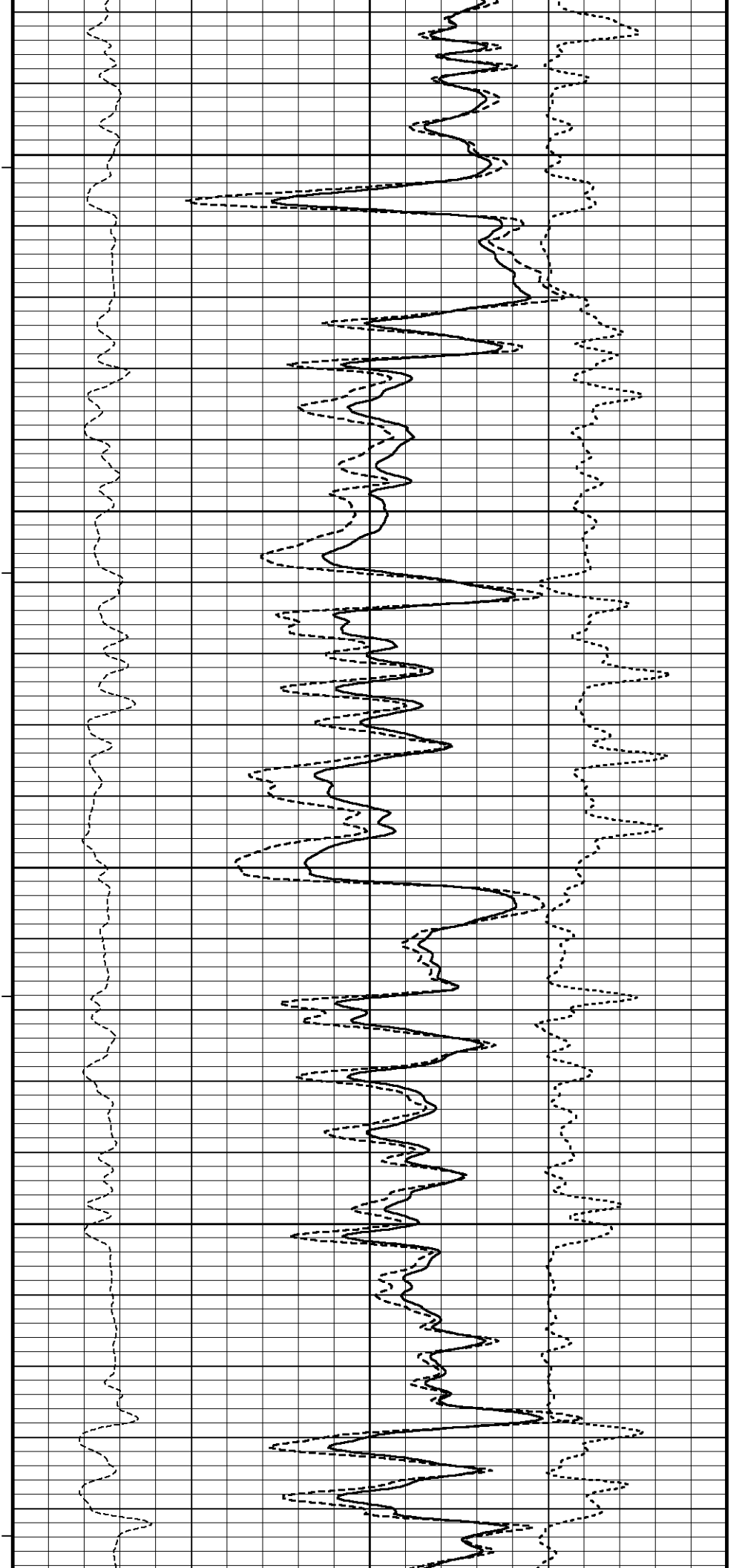
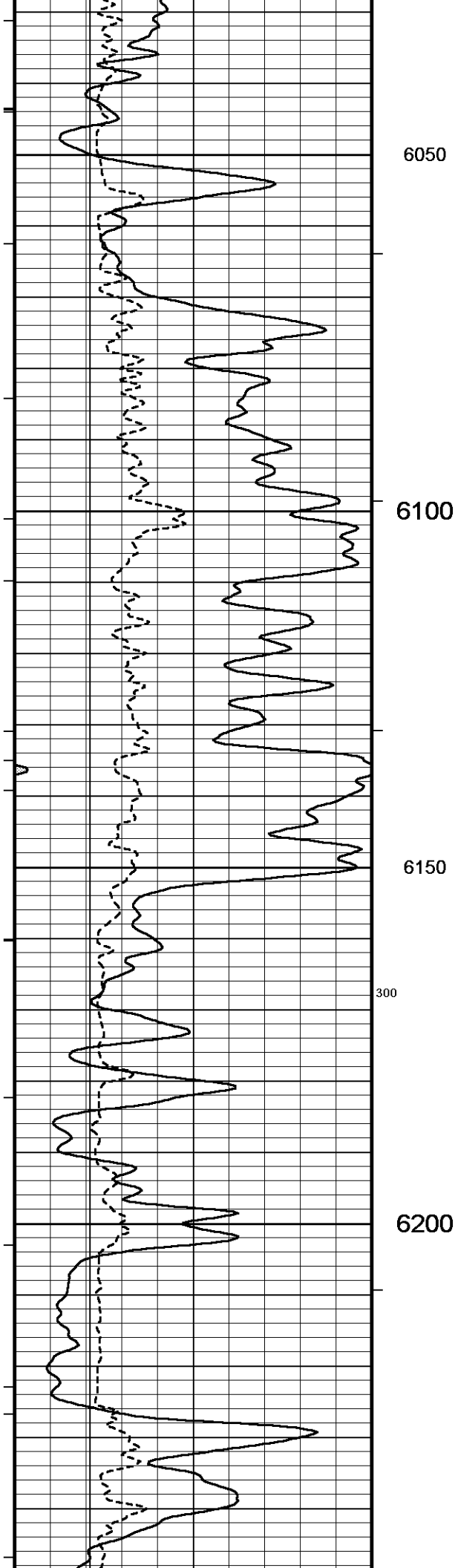


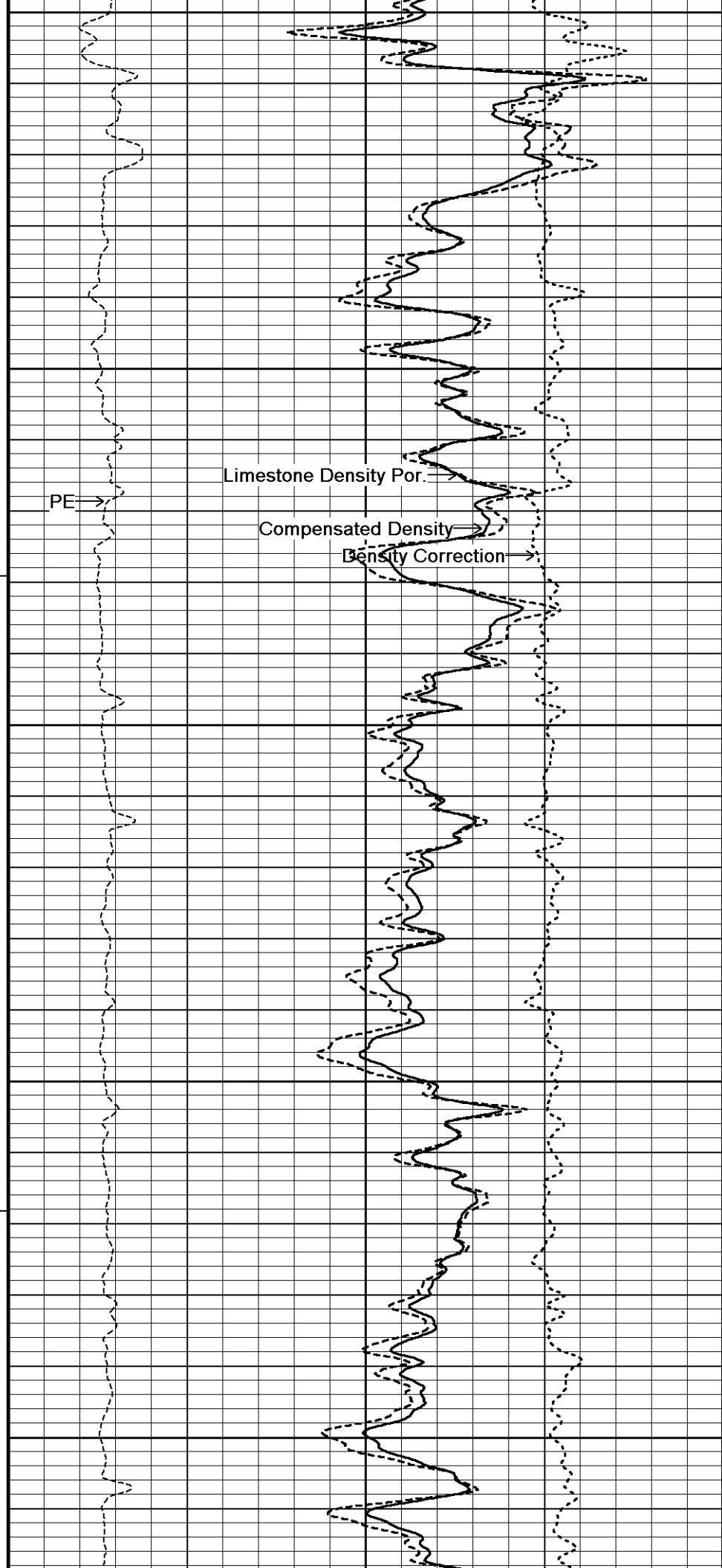
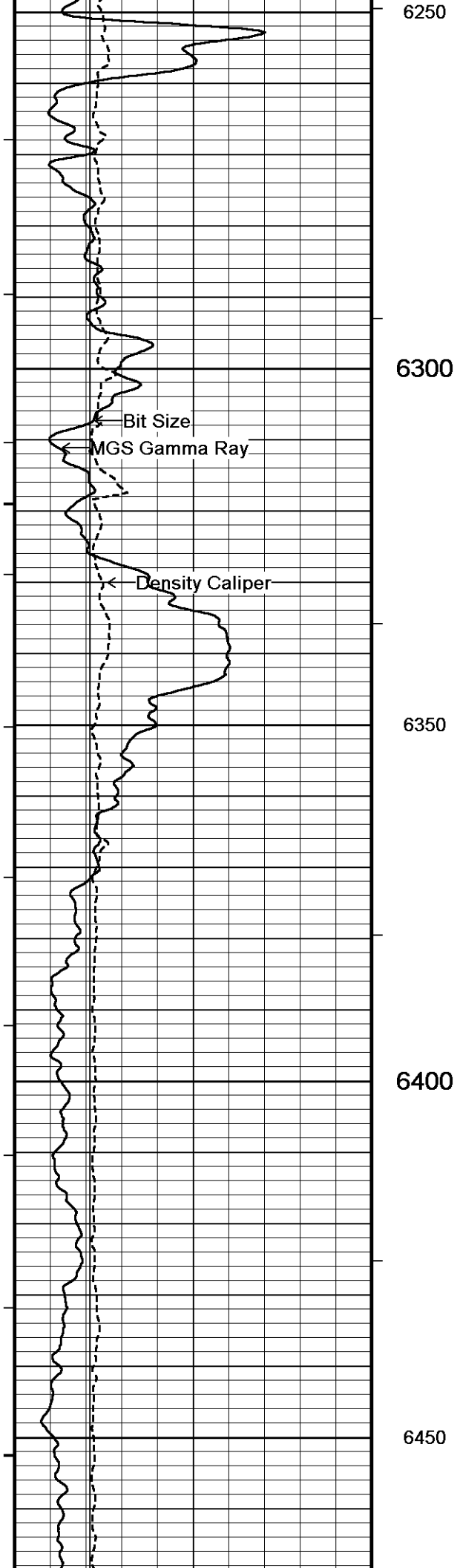


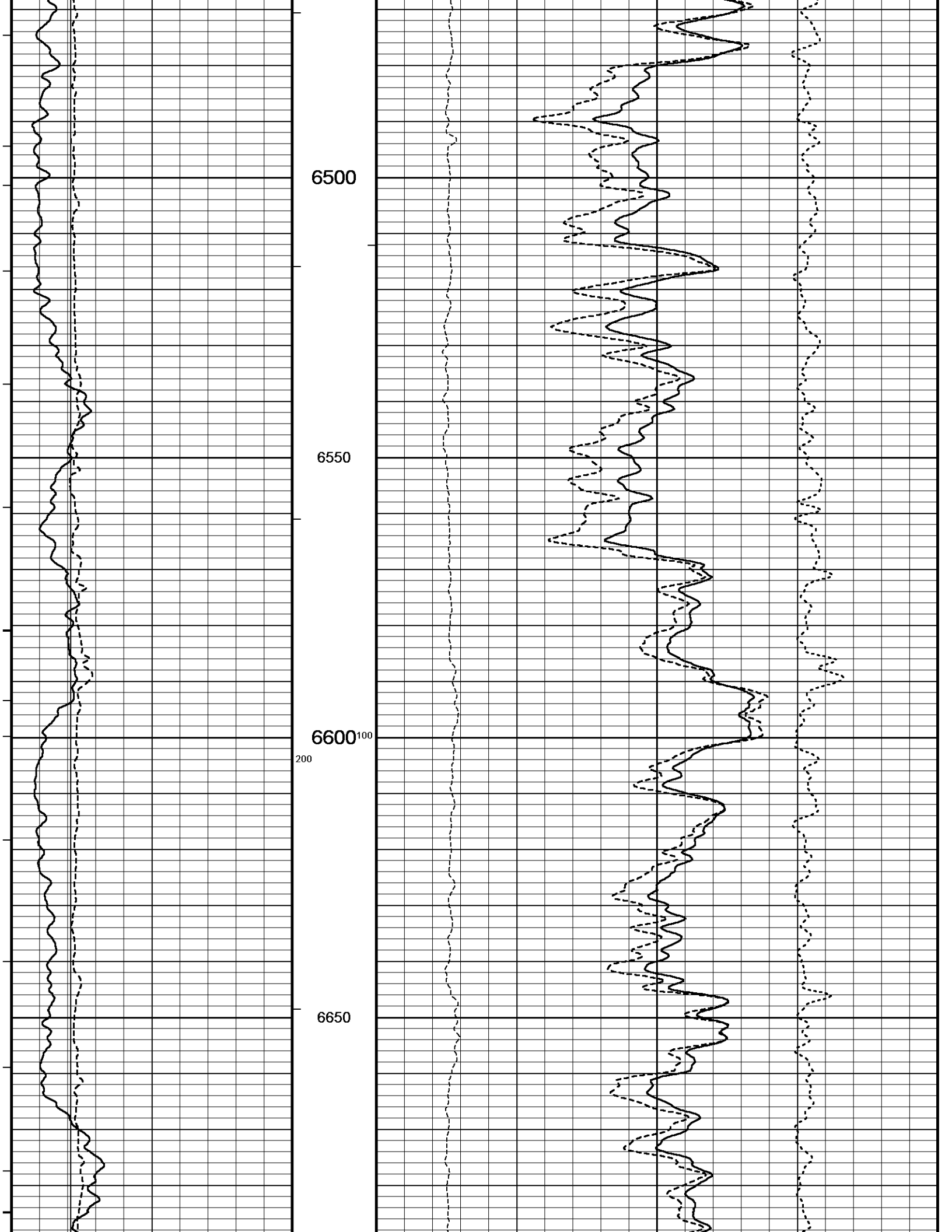


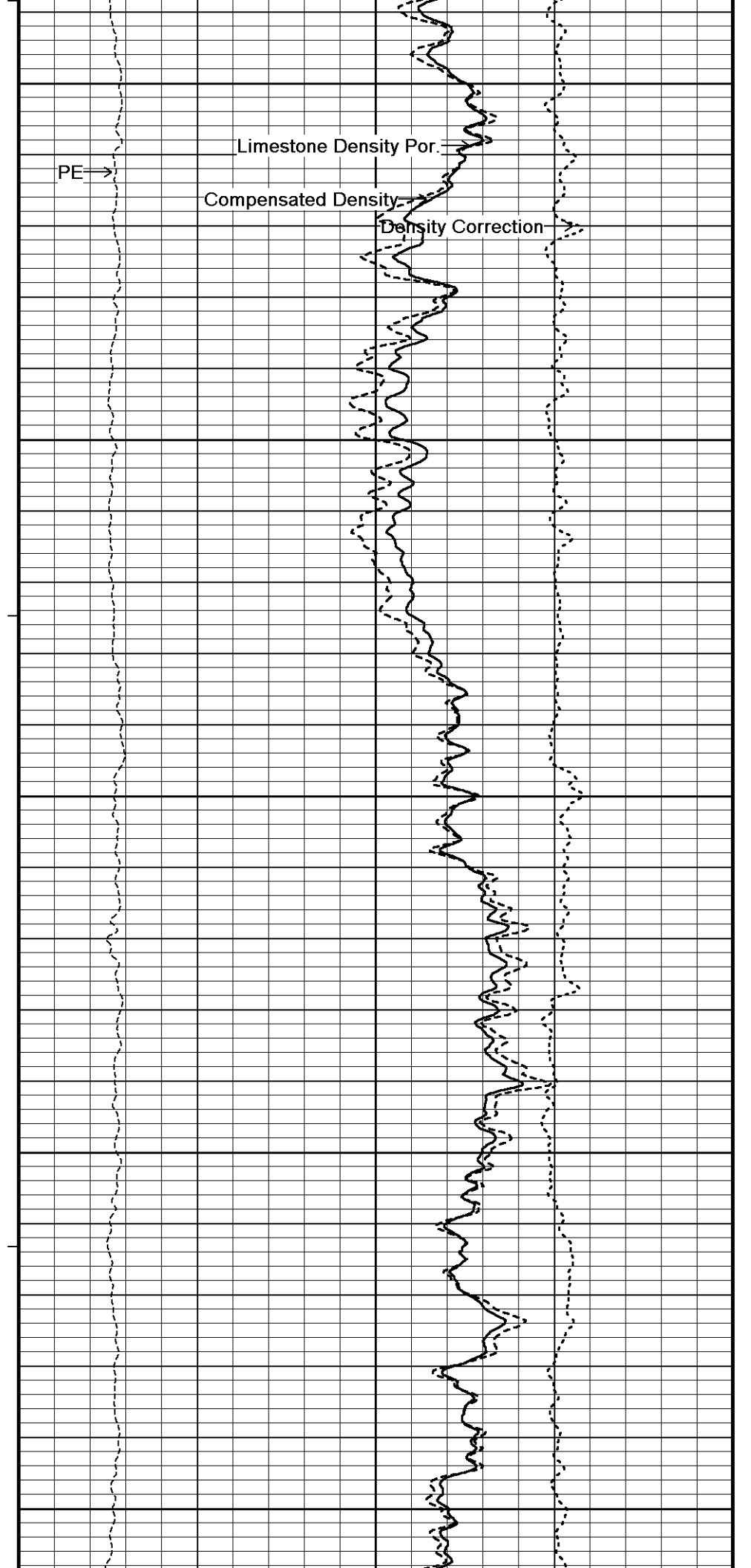
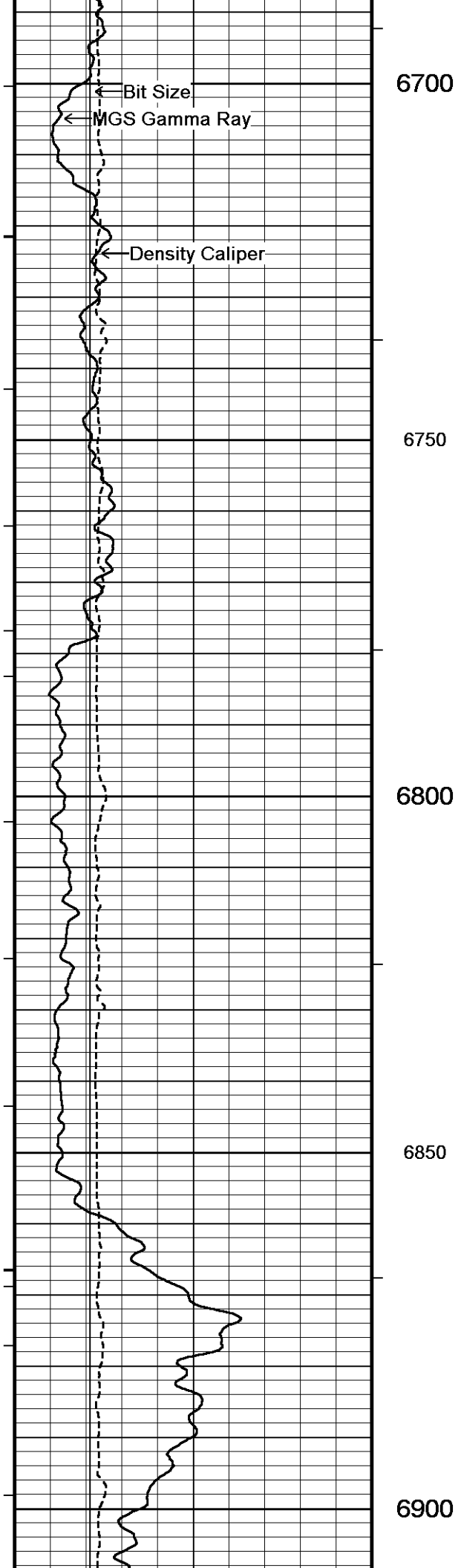


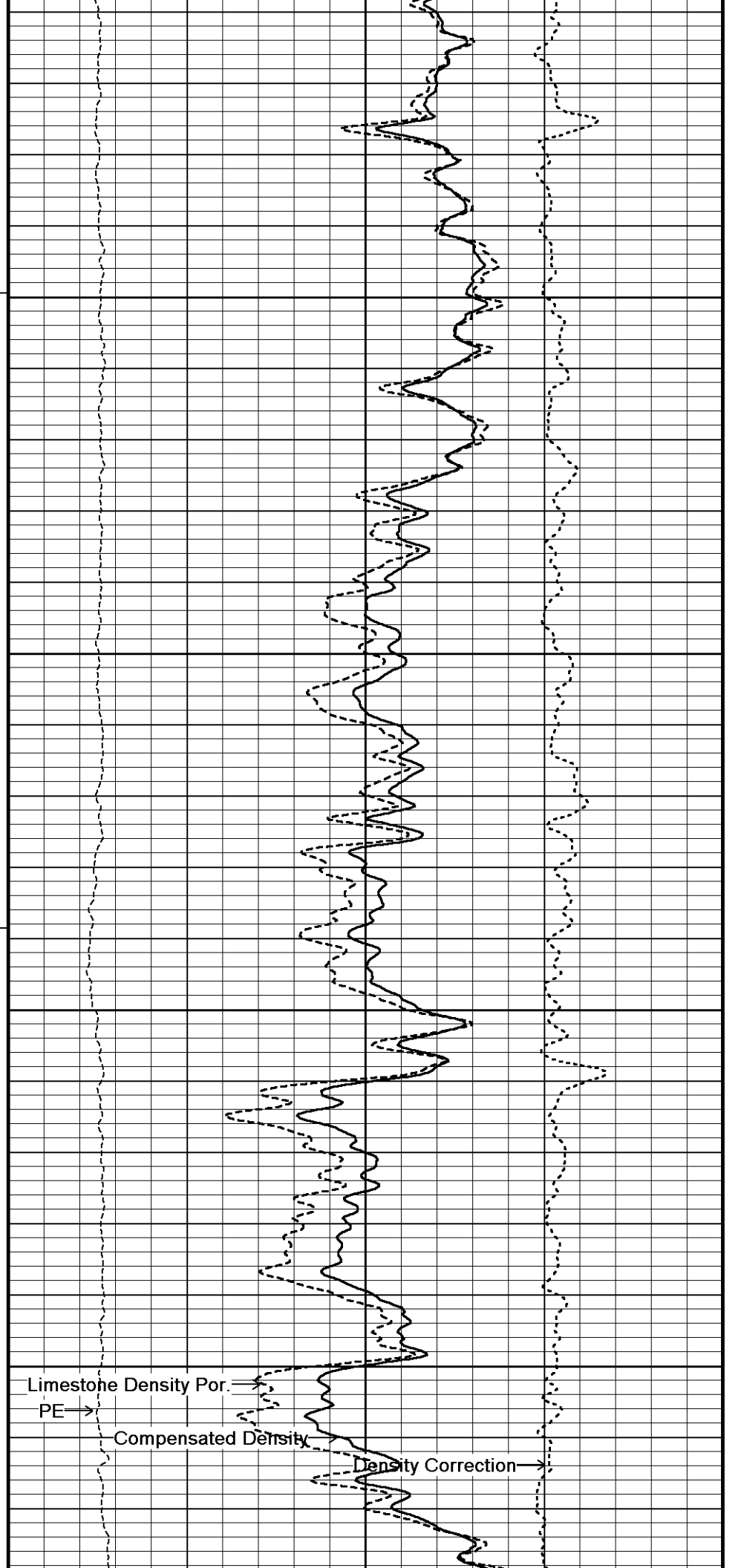
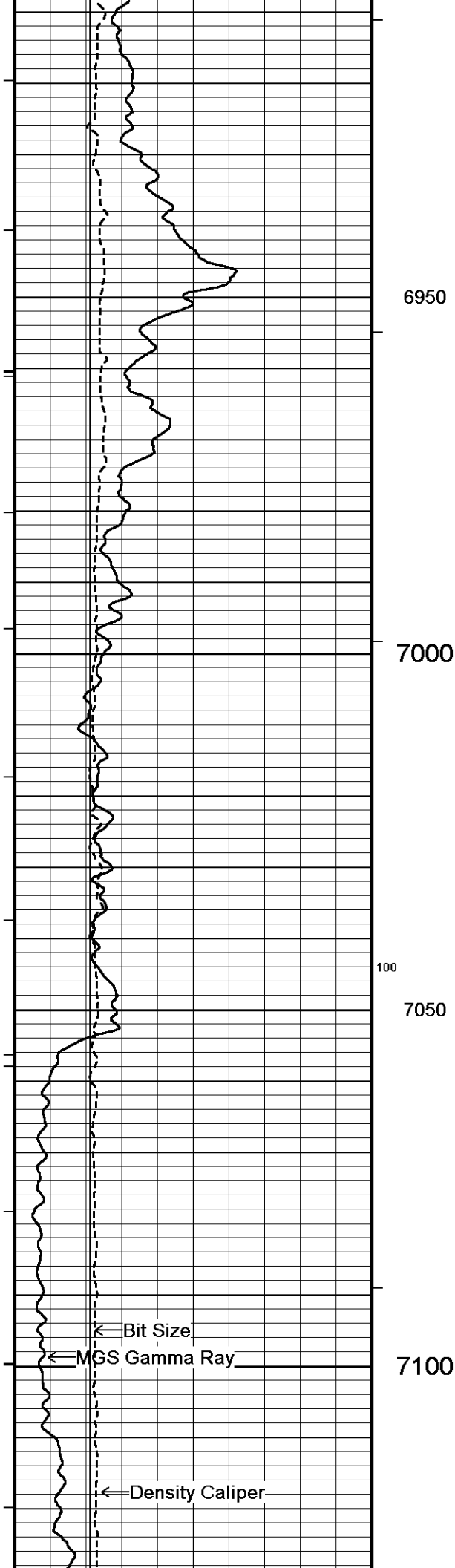


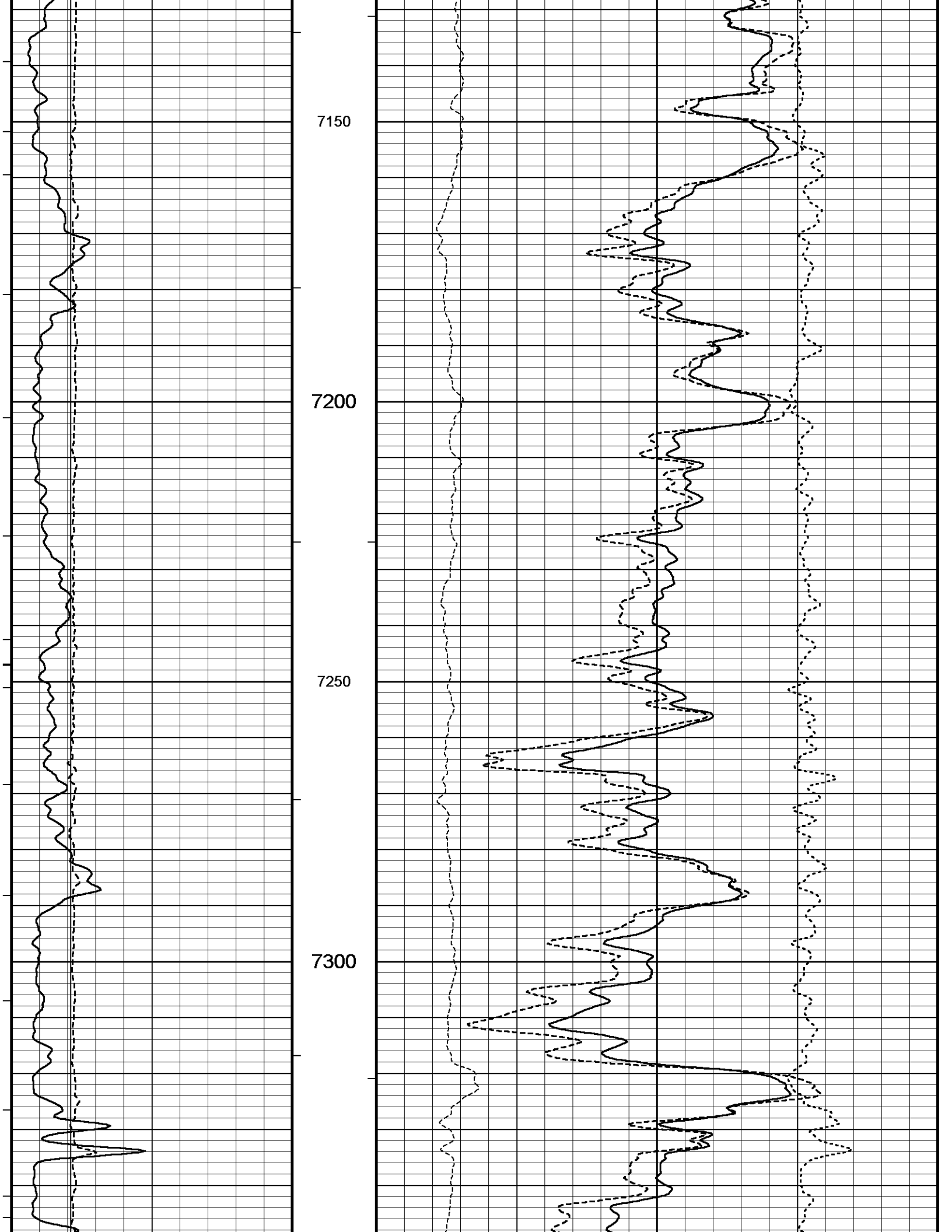


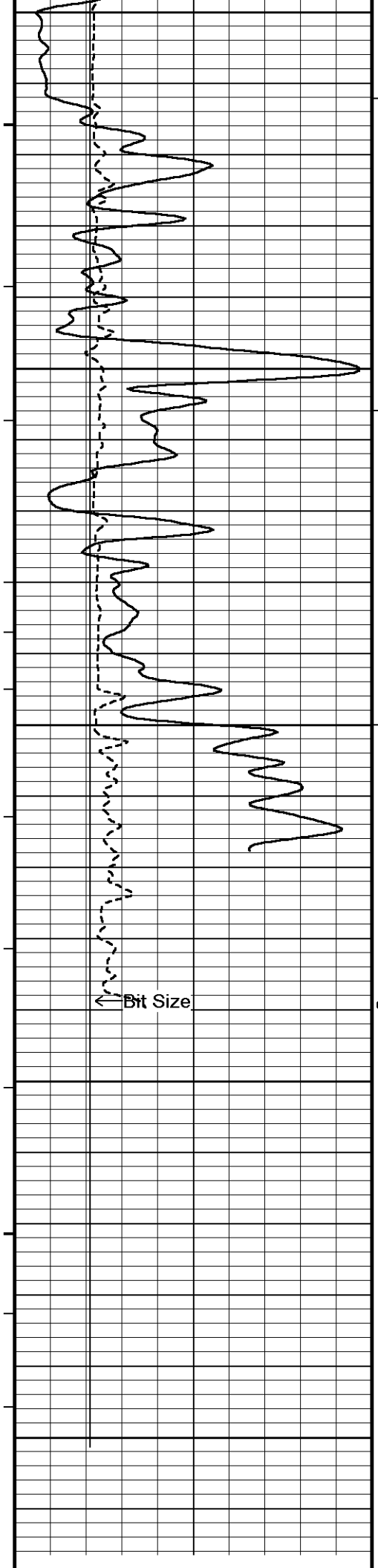












7350

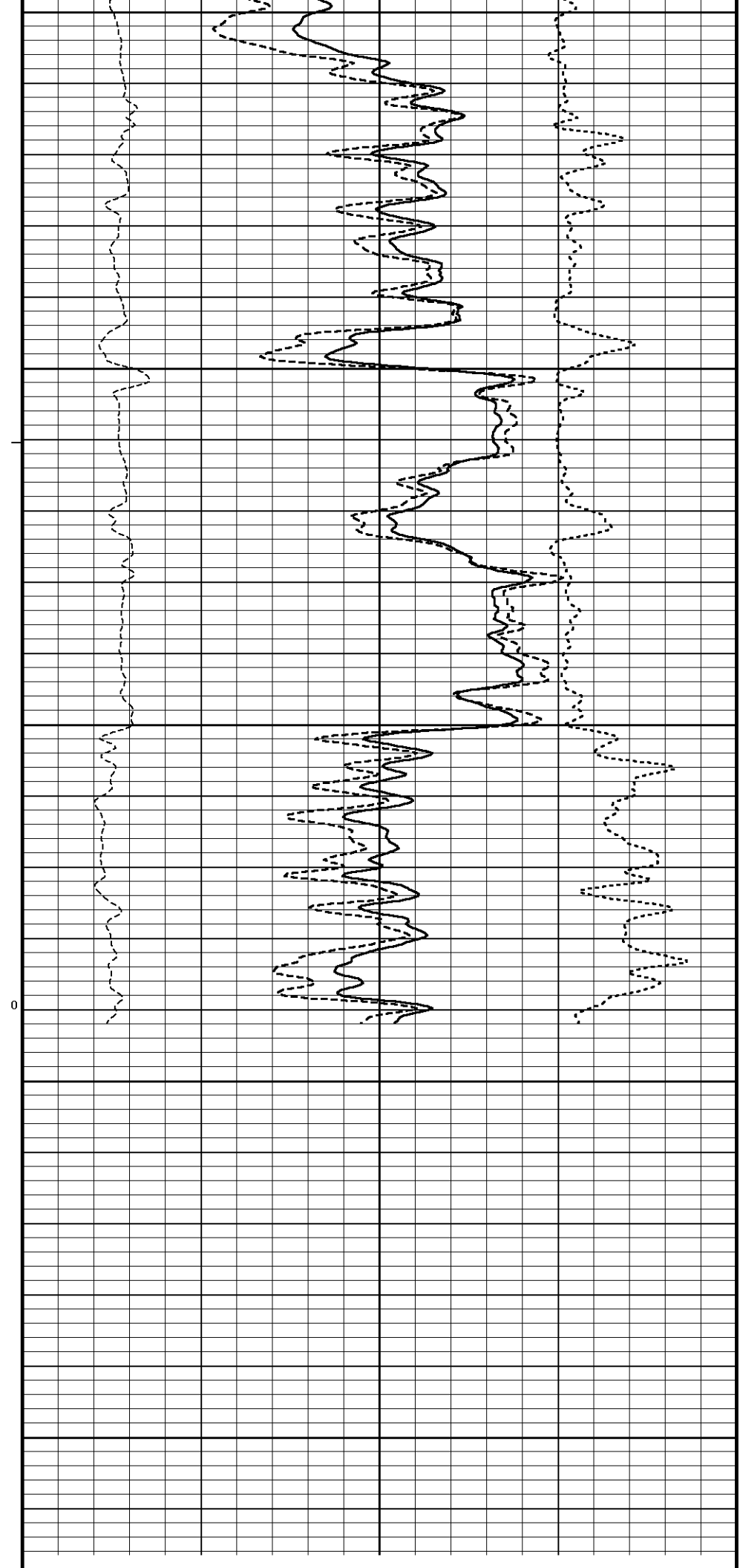
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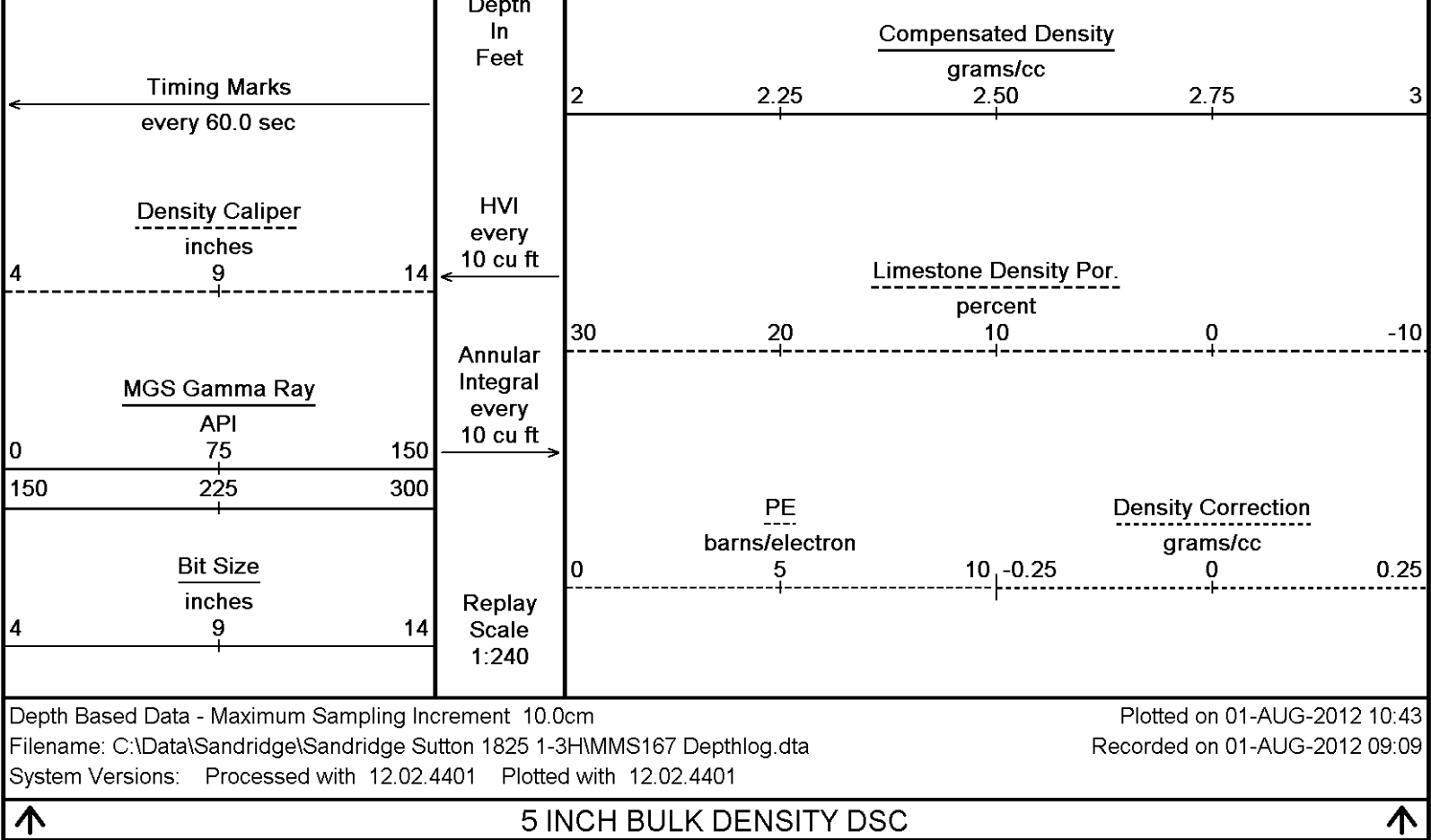
7450

7500

7550

7564





BEFORE SURVEY CALIBRATION			
C:\Data\Sandridge\Sandridge Sutton 1825 1-3H\MMMS167 Depthlog.dta			
General Constants All 000			Last Edited on 01-AUG-2012 09:15
General Parameters			
Mud Resistivity	1.760	ohm-metres	
Mud Resistivity Temperature	81.000	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	4.500	inches	
Caliper for Differential Caliper	Density Caliper		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Array Ind. Four Res Rt		
RWA Constant A	0.610		
RWA Constant M	2.150		
Down-hole Tension Calibration SMS 0			Field Calibration on 27-APR-2009 11:57
Reading No	Measured	Calibrated (lbs)	
1	15257.84	0.00	
2	16706.18	410.00	
Strain Gauge Constants SER-B.A 166			Last Edited on
Atmospheric Pressure	14.70	psi	
Serial Number	0		
Calibration Date	000000000000		
Base Check Date			
Dead Weight Serial Number	0		
Dead Weight Gravitational Correction	1.0		

Temperature	75.0		150.0		250.0		350.0		degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
10000.0	0.000		0.000		0.000		0.000		

Gamma Calibration MGS-C.J 108					Field Calibration on 30-JUL-2012 10:43				
		Measured		Calibrated (API)					
Background		38		26					
Calibrator (Gross)		1048		722					
Calibrator (Net)		1010		696					

Gamma Constants MGS-C.J 108				Last Edited on 11-JUL-2012 14:32			
Gamma Calibrator Number							
Mud Density		1.74		gm/cc			
Caliper Source for Processing		Density Caliper					
Tool Position		Eccentred					
Concentration of KCl		0.00		kppm			

High Resolution Temperature Constants MGS-C.J 108										Last Edited on									
Pre-filter Length					11														

Neutron Calibration MDN-C.A 423				Base Calibration on 03-JUN-2012 17:50 Field Check on 26-JUL-2012 04:18			
Base Calibration							
		Measured		Calibrated (cps)			
	Near		Far	Near		Far	
	3350		100	3714		110	
Ratio		33.500		33.764			
Field Calibrator at Base							
				Calibrated (cps)			
				1130		1749	
Ratio				0.646			
Field Check							
				Calibrated (cps)			
				1130		1755	
Ratio				0.644			

Neutron Constants MDN-C.A 423				Last Edited on 27-JUL-2012 08:26	
Neutron Source Id					
Neutron Jig Number					
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		Constant Value			
Formation Pressure		0.00		kpsi	
Temperature Source		MGS External Temperature			
Temperature		N/A		degrees F	
Mud Salinity		0.00		kppm	
Formation Fluid Salinity Source		Constant Value			
Formation Fluid Salinity		140.00		kppm	
Barite Mud Correction		Not Applied			
Salinity Correction		Not Applied			

Imager Pad Check MIE-A.A 113					Field Check on 12-JUN-2012 13:25				
Pad 1	16/20 Buttons Verified		Pad 5	19/20 Buttons Verified					
Pad 2	24/24 Buttons Verified		Pad 6	22/24 Buttons Verified					
Pad 3	19/20 Buttons Verified		Pad 7	20/20 Buttons Verified					
Pad 4	24/24 Buttons Verified		Pad 8	24/24 Buttons Verified					

Sonde Configuration	Imager Mode	degrees
Arm-Pad Kit	Normal Pads (12.25 in)	
Centre Pad 1 Rotational Offset	0.00	
Image/Borehole Ovality Reference	Relative Bearing	degrees
Non Active Buttons	Omit	feet
Search Angle	0.00	feet
Correlation Interval	3.28	mAmp
Correlation Step	1.64	mAmp
Current Offset	0.0000	
Squasher Start	N/A	
Image Processing	Enabled	

Navigation Constants MIE-A.A 113 Last Edited on 22-DEC-2011 12:01

Magnetic Declination	3.62	degrees	East
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Magnetometer Constants MIE-A.A 113 Last Edited on

Magnetometer Calibrator Number	000
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Accelerometer Parameters MIE-A.A 113

Date Of Last Accelerometer Calibration		01-JAN-1998	
	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.105490	-1.103970	-1.107420
Offset	0.000458	0.006135	0.003353

Accelerometer Constants MIE-A.A 113 Last Edited on 11-JUN-2009 17:18

Accelerometer Calibrator Number		000			
Accelerometer Temperature Characterisation					
X Accelerometer					
Serial Number	282				
Calibration Date	18-Jul-2007				
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	3.41234e-005	-1.69705e-008	1.28660e-010	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.70372e-004	8.31146e-007	-1.22715e-009	
Y Accelerometer					
Serial Number	284				
Calibration Date	18-Jul-2007				
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	1.41306e-005	-2.62559e-009	9.20272e-011	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.83655e-004	6.88154e-007	-5.98912e-010	
Z Accelerometer					
Serial Number	287				
Calibration Date	20-Jul-2007				
	B0	B1	B2	B3	
Bias(g)	0.00000e+000	2.30753e-005	-5.40650e-010	3.42223e-011	
	SF0	SF1	SF2	SF3	
Scale Factor(mA/g)	3.00000e+000	2.66160e-004	7.47858e-007	-1.03559e-009	

Caliper Calibration MIE-A.A 113 Base Calibration on 23-JUN-2008 12:29

Base Calibration						Field Calibration on
Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)			
1	24856	25276	5.97			
2	35545	35312	7.99			
3	44370	44687	9.86			
4	55326	56381	11.93			
5	0	0	0.00			
Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)	
1	23517	25136	25351	23970	5.97	
2	32111	33147	34289	33287	7.99	
3	39601	41110	42395	41619	9.86	
4	49214	50836	52775	51339	11.93	
5	0	0	0	0	0.00	

Field Calibration					
Measured Pads 1-5 Caliper(in) 0.00		Measured Pads 3-7 Caliper(in) 0.00		Actual Caliper(in) 0.00	
Measured Pad 2 Caliper(in) 0.00		Measured Pad 4 Caliper(in) 0.00		Measured Pad 6 Caliper(in) 0.00	
				Measured Pad 8 Caliper(in) 0.00	
				Actual Caliper(in) 0.00	
Caliper Constants MIE-A.A 113					Last Edited on
Caliper Difference for BRKT		3.000		mm	
High Resolution Temperature Calibration MAI-B.J 394					Field Calibration on 08-MAR-2012 12:02
		Measured		Calibrated(Deg F)	
Lower		10.00		50.00	
Upper		100.00		212.00	
High Resolution Temperature Constants MAI-B.J 394					Last Edited on
Pre-filter Length		11			
Induction Calibration MAI-B.J 394					Base Calibration on 08-MAR-2012 11:57 Field Check on 30-JUL-2012 10:36
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	16.7	473.5	9.3	966.2	
2	5.6	368.9	7.6	821.4	
3	3.3	256.4	5.2	566.0	
4	1.8	133.4	2.6	279.2	
Array Temperature		71.8		Deg F	
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	15.0	3832.7	
2	0.0	0.0	32.4	3650.8	
3	0.0	0.0	29.3	3083.4	
4	0.0	0.0	19.7	2068.9	
Deep	0.0	0.0	16.6	1912.3	
Medium	0.0	0.0	43.5	4143.6	
Shallow	0.0	0.0	50.5	5536.9	
Array Temperature		0.0		88.5 Deg F	
Induction Constants MAI-B.J 394					Last Edited on 01-AUG-2012 09:15
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		6.0000			
Stand-off Fin Angle		60.00		degrees	
Stand-off Fin Width		0.5000		inches	
Borehole Corr. Rm Source		Temperature Corr			
Temp. for Rm Corr.		MGS External Temperature			
Squasher Start		0.0030		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					

Calibration Site Corrections	0.00	mmhos/metre
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	

Caliper Calibration MPD-C.J 395

Base Calibration on 10-JUL-2012 00:07

Field Calibration on 20-JUL-2012 05:38

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15488	3.99
2	24960	5.97
3	34848	7.99
4	44224	9.86
5	55360	11.93
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.89	7.99

Photo Density Calibration MPD-C.J 395

Base Calibration on 08-MAR-2012 11:47

Field Check on 30-JUL-2012 10:41

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	54938	28656	60364	31945
Reference 2	22898	2647	25079	2547

Field Check at Base

1172.4 1346.5

Field Check

1244.1 1467.1

PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	218	1051		
Reference 1	24528	54744	0.453	0.399
Reference 2	6633	22766	0.295	0.273

Field Check at Base

218.2 1051.4

Field Check

228.1 1119.4

Density Constants MPD-C.J 395

Last Edited on 23-JUL-2012 22:55

Density Source Id	246	
Nylon Calibrator Number	DNCE603	
Aluminium Calibrator Number	DACA509	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.01	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
0.000.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00

DOWNHOLE EQUIPMENT

C:\Data\Sandridge\Sandridge Sutton 1825 1-3H\MMS167 Depthlog.dta

Shuttle Mechanical Release (SMR A)

SMR-A 148 LG: 8.53 ft WT: 77.2 lb OD: 2.52 in

Shuttle Electrical Release

SER-B.A 166 LG: 6.90 ft WT: 50.7 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub

MBS-F.A 65 LG: 16.66 ft WT: 119.0 lb OD: 2.24 in

Compact Memory Sub E.B

MMS-E.B 167 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub

MIS-E.B 763 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Tool Isolator sub.

MTI-B.A 72 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma

MGS-C.J 108 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 471 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 450 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 310 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron

MDN-C.A 423 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-C.J 395 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 609 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 454 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 456 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.A Compact Inline Standoff sub

MIS-E.A 336 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in



SKJ-E.A Compact Knuckle Joint
SKJ-E.A 207 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 590 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact MMI Memory Section
MIM-A.A 113 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section
MIE-A.A 113 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in

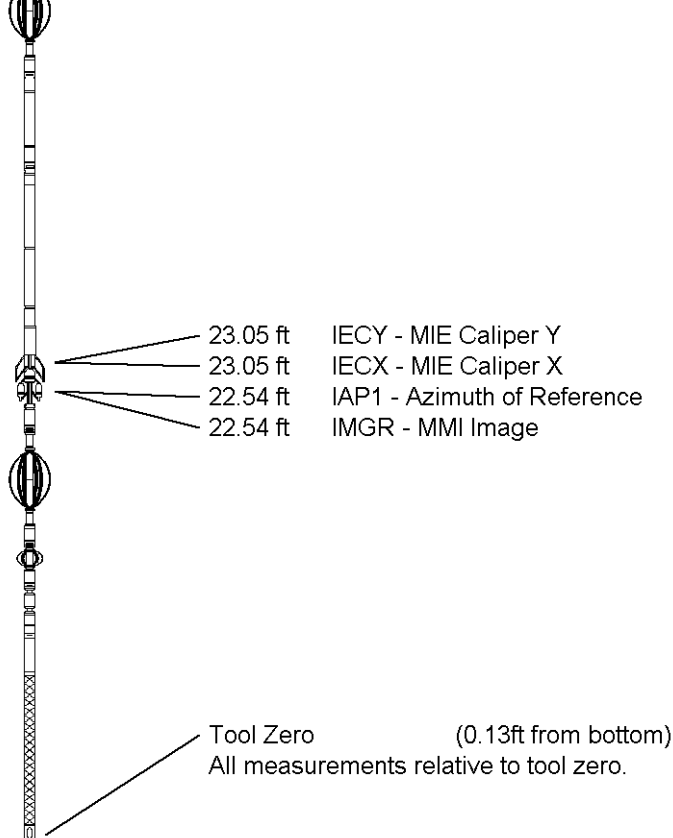
MIS-D.A Compact Inline Bowspring sub
MIS-D.A 596 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 749 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 472 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Induction
MAI-B.J 394 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 128.77 ft Weight: 956.8 lb



COMPANY	SANDRIDGE EXPLORATION & PRODUCTION
WELL	SUTTON 1825 1-3H
FIELD	ALDRICH
PROVINCE/COUNTY	NESS
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	2375.00	feet	First Reading	7491.00	feet
Elevation Drill Floor	2375.00	feet	Depth Driller	7576.00	feet
Elevation Ground Level	2355.00	feet	Depth Logger	7551.00	feet



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