



Weatherford[®]

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

COMPANY SANDRIDGE EXPLORATION & PRODUCTION
WELL DALRYMPLE FARMS 3506 1-13H
FIELD SIX MOONS
PROVINCE/COUNTY HARPER
COUNTRY/STATE USA / KANSAS
LOCATION 250' FSL & 2170' FWL
SW SE SE SW

SEC 13 **TWP** 35S **RGE** 6W **Other Services** MAI
API Number 15-077-21900-01
Permit Number Permanent Datum G.L., Elevation 1224 feet
Log Measured From KB
Drilling Measured From K.B.

Date	01-FEB-2013	Elevations:	KB	1243.00
Run Number	ONE		DF	1243.00
Depth Driller	9199.00		GL	1224.00
Depth Logger	9179.00			
First Reading	9146.00			
Last Reading	2500.00			
Casing Driller	5220.00			
Casing Logger	5220.00			
Bit Size	6.125			
Hole Fluid Type	WATER			
Density / Viscosity	8.40 lb/USg	27.00 CP		
PH / Fluid Loss	9.50	60.00 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.35 @ 60.5	ohm-m		
Rmf @ Measured Temp	0.28 @ 60.5	ohm-m		
Rmc @ Measured Temp	0.42 @ 60.5	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.14 @149.0	ohm-m		
Time Since Circulation	2 HOURS			
Max Recorded Temp	149.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	18064	OKC		
Recorded By	C. GRIFFIN			
Witnessed By	T. ALCORN			
S.O.#/AFE	3539584/ DC12187			

BOREHOLE RECORD

Last Edited: 01-FEB-2013 08:54

Bit Size inches	Depth From feet	Depth To feet
6.125	5220.00	9199.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	0.00	5220.00	26.00
INTERMED	9.625	0.00	657.00	36.00

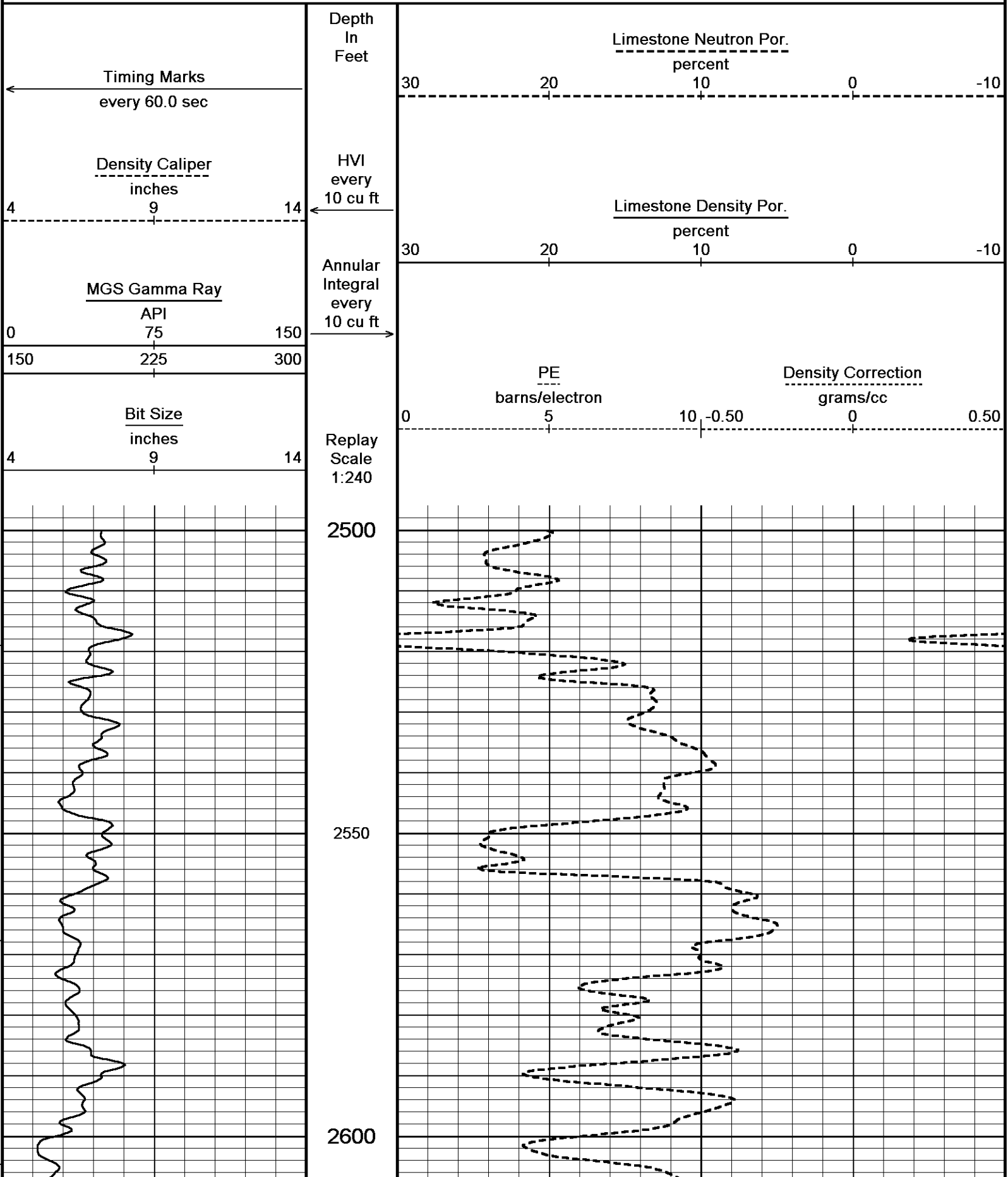
REMARKS

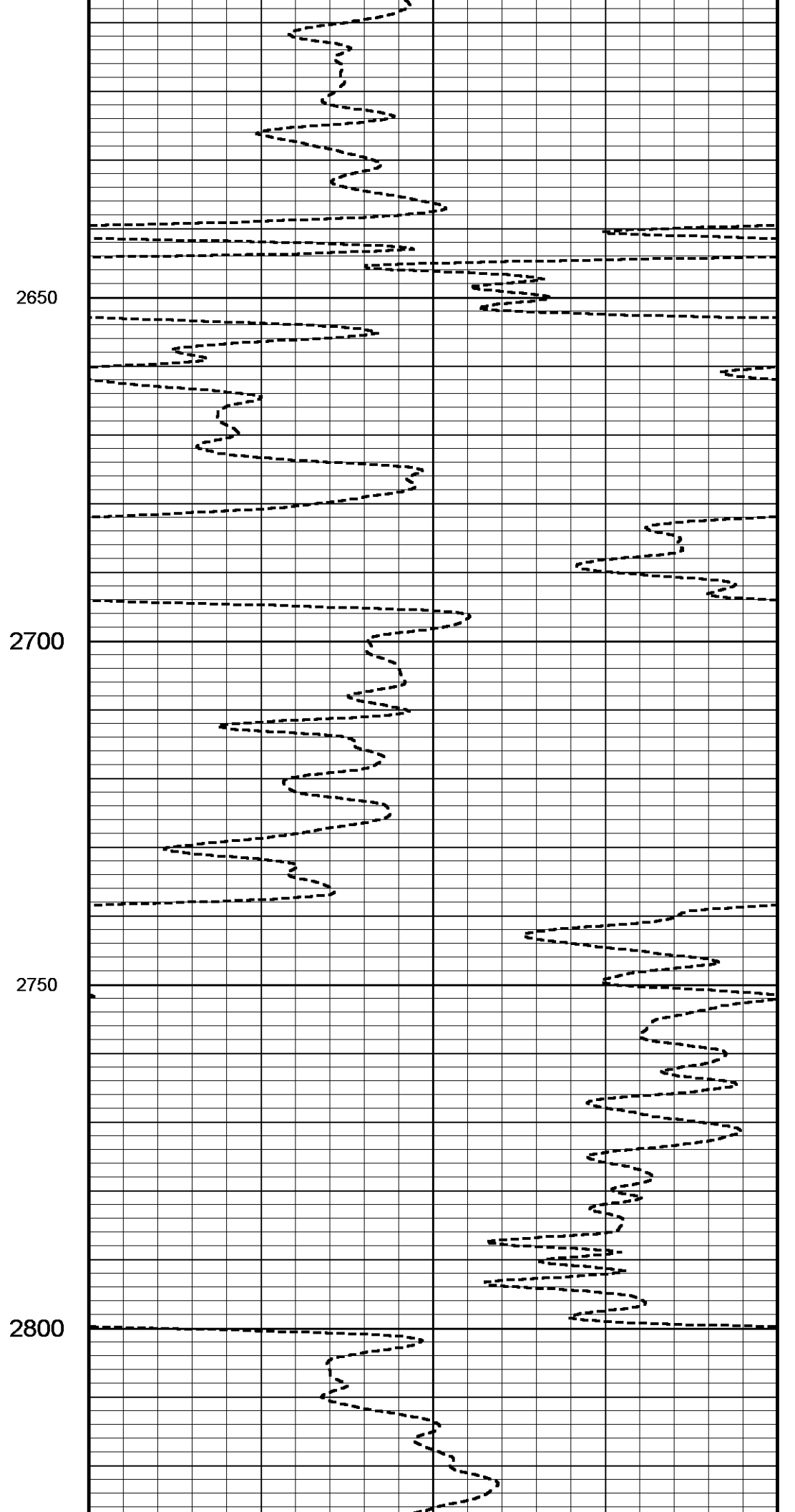
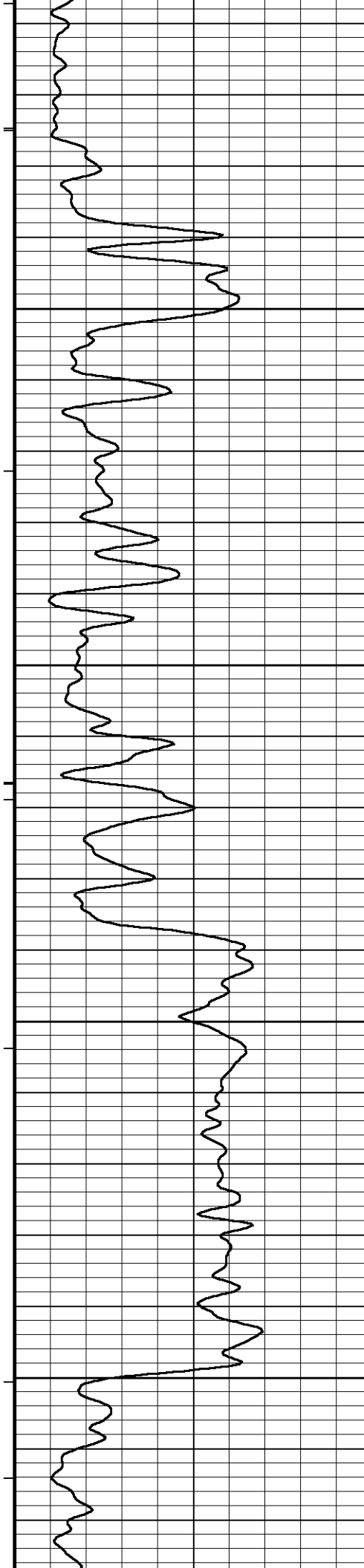
WLS SOFTWARE VERSION 13.03. USED.
 TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT TECHNIQUE.
 DEPTH MEASURED USING ADVANTAGE RIG DEPTH CORRECTED TO PIPE TALLY.
 TOOLS DEPLOYED WITH MULE SHOE SITTING AT 9098 FT.
 AFTER DEPLOYMENT LOGGING TOOL WAS AT 9172 FT.
 4.5 " PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES.
 OPERATORS: J. TURNER, S. WORLEY
 RIG: HORIZON 15

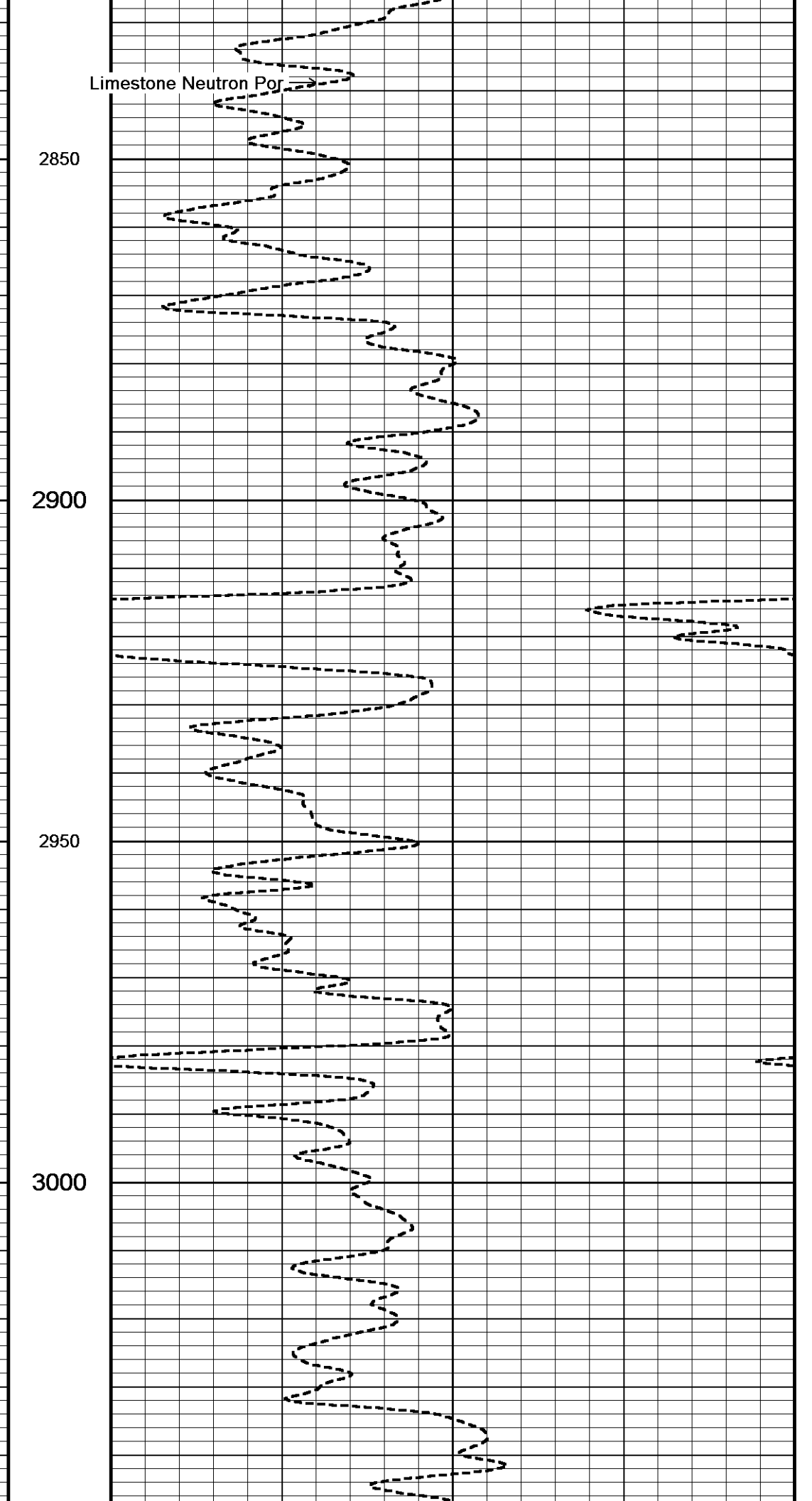
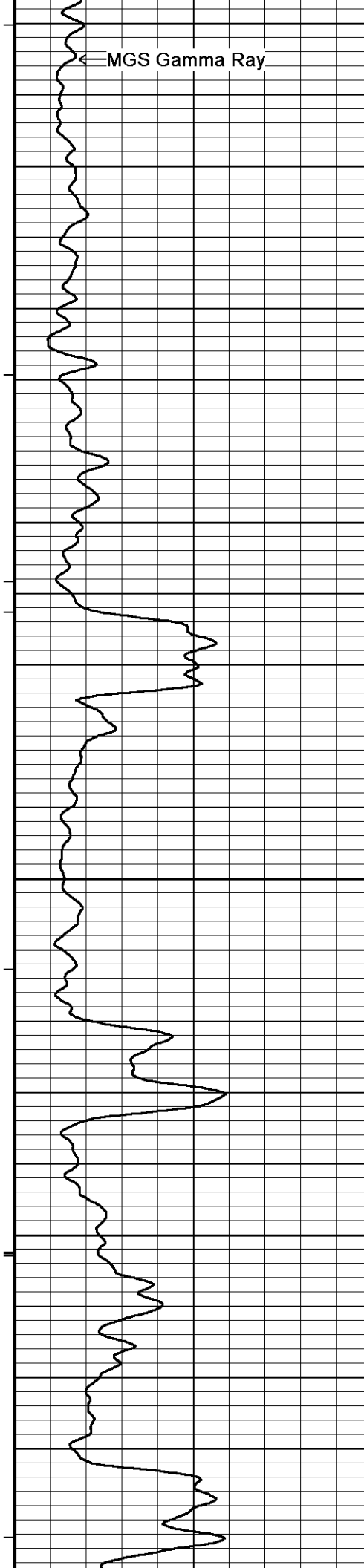
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

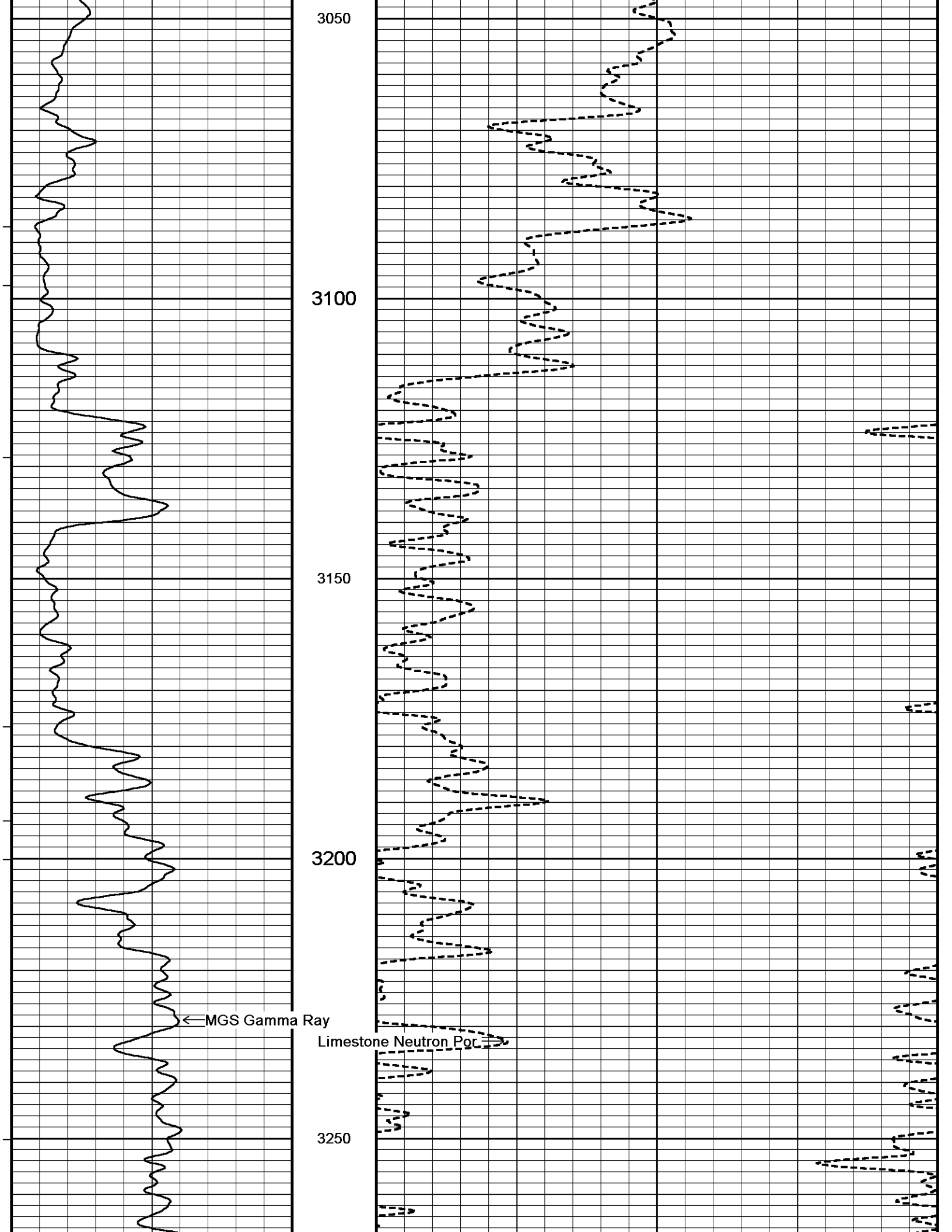
5 INCH MAIN PASS DSC

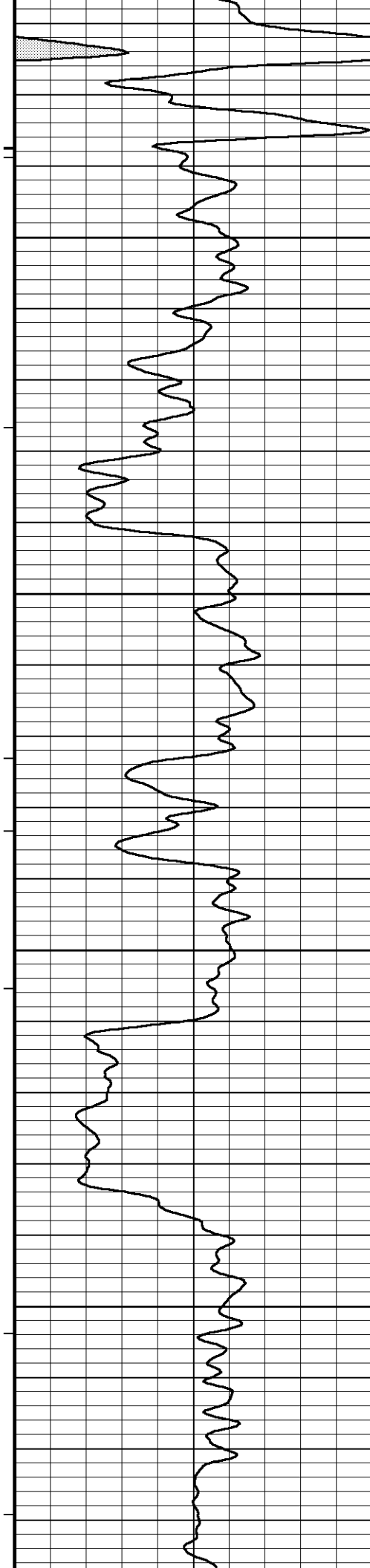
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 02-FEB-2013 05:08
 Filename: C:\Data\Sandridge\Sandridge Dalrymple\MMS166 Depthlog.dta Recorded on 02-FEB-2013 04:48
 System Versions: Processed with 13.03.7779 Plotted with 13.03.7779









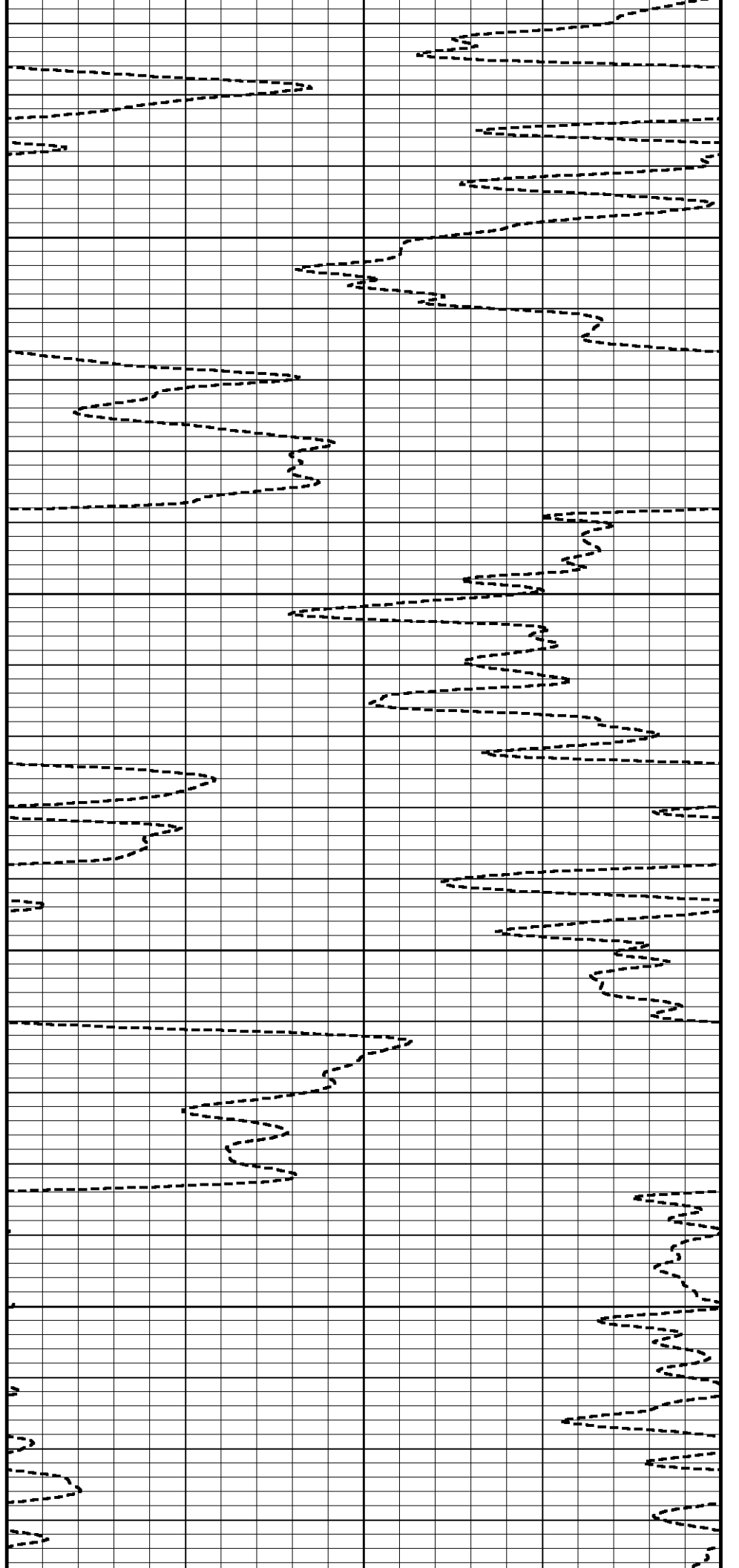


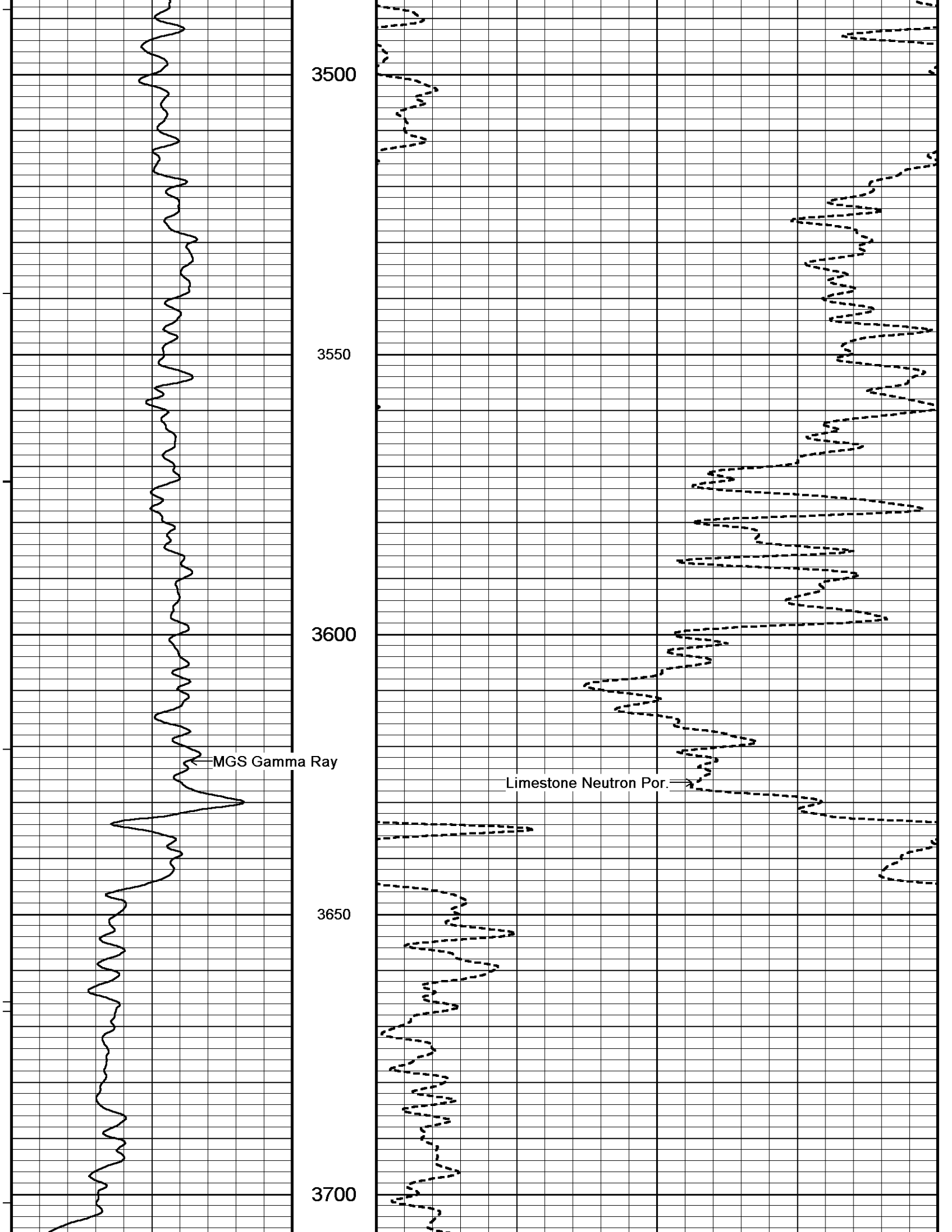
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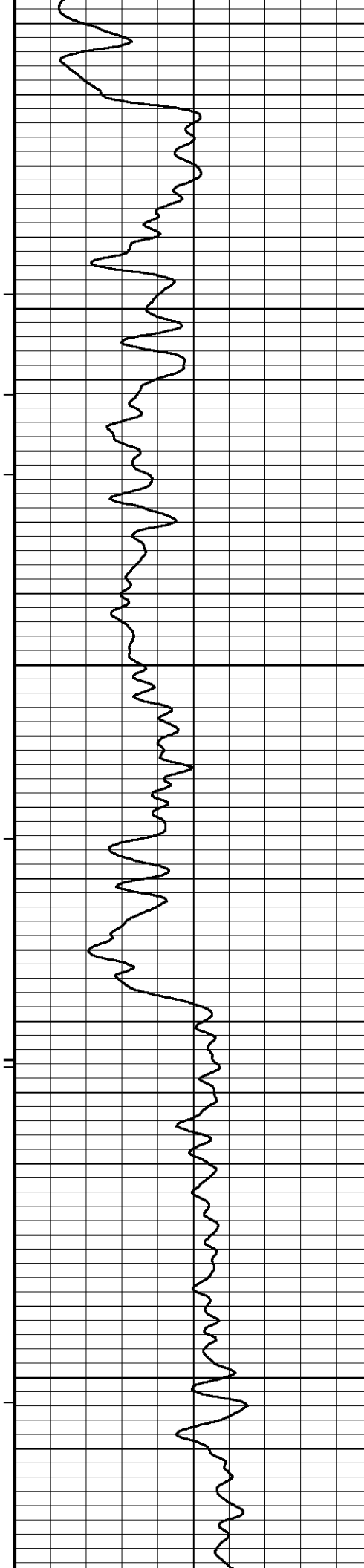
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3400

3450





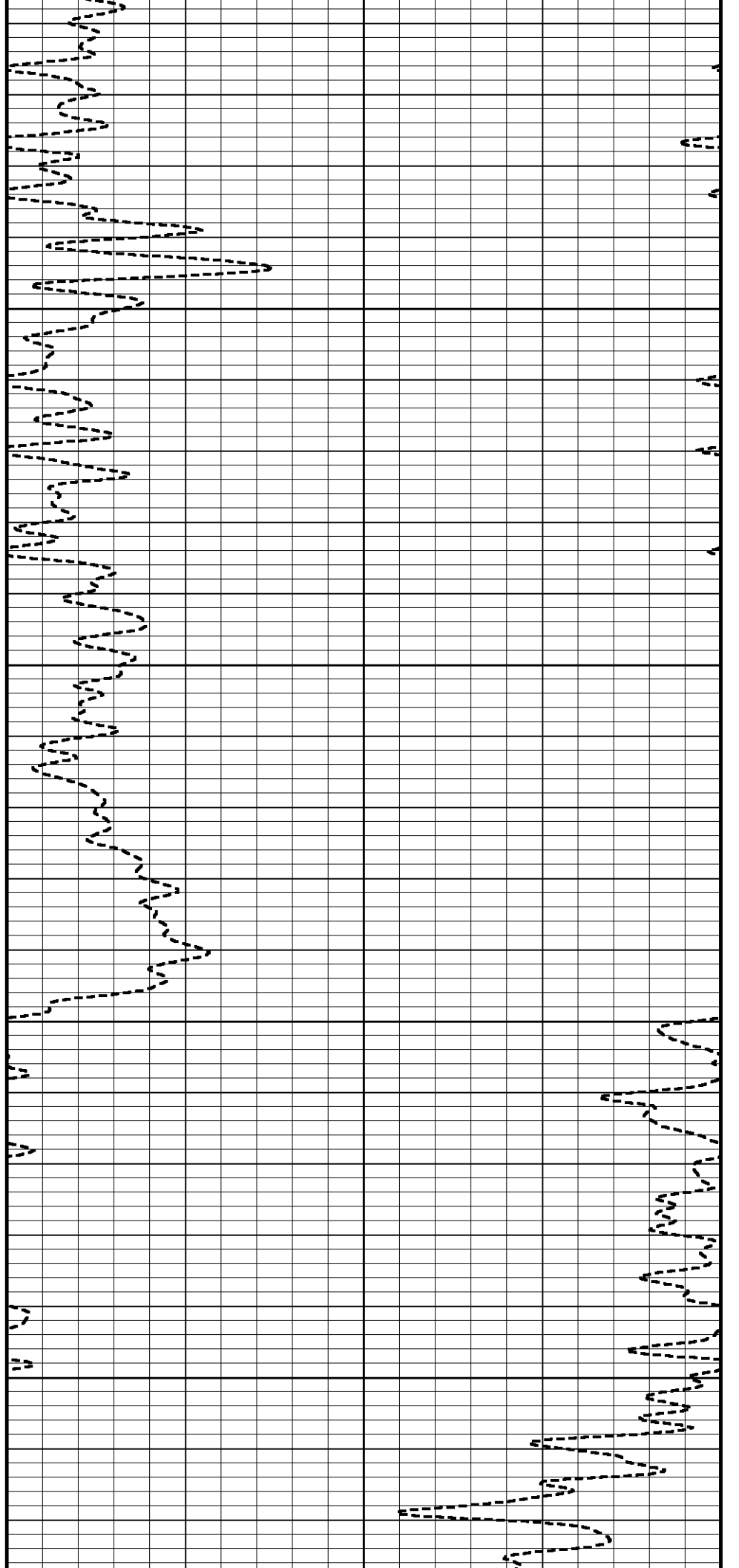


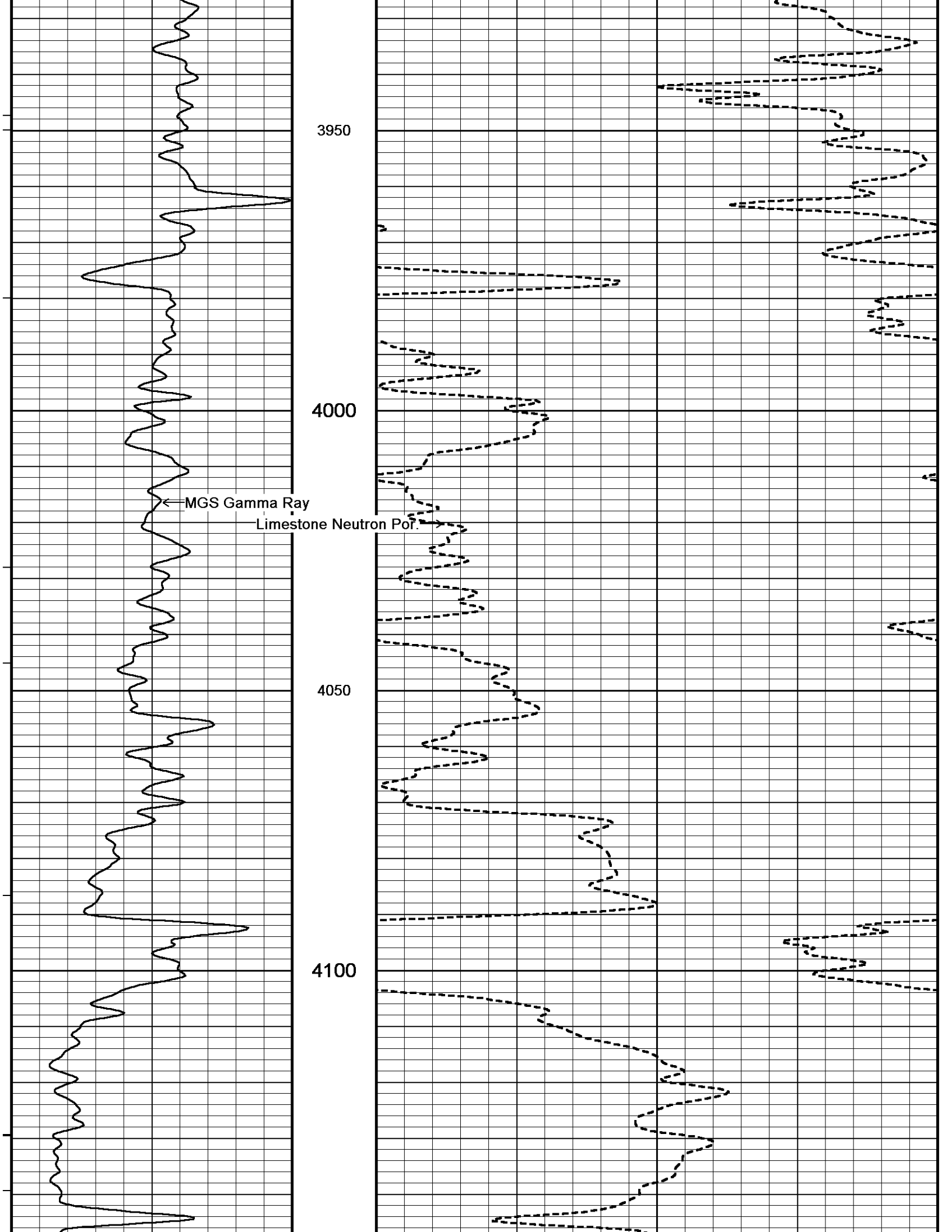
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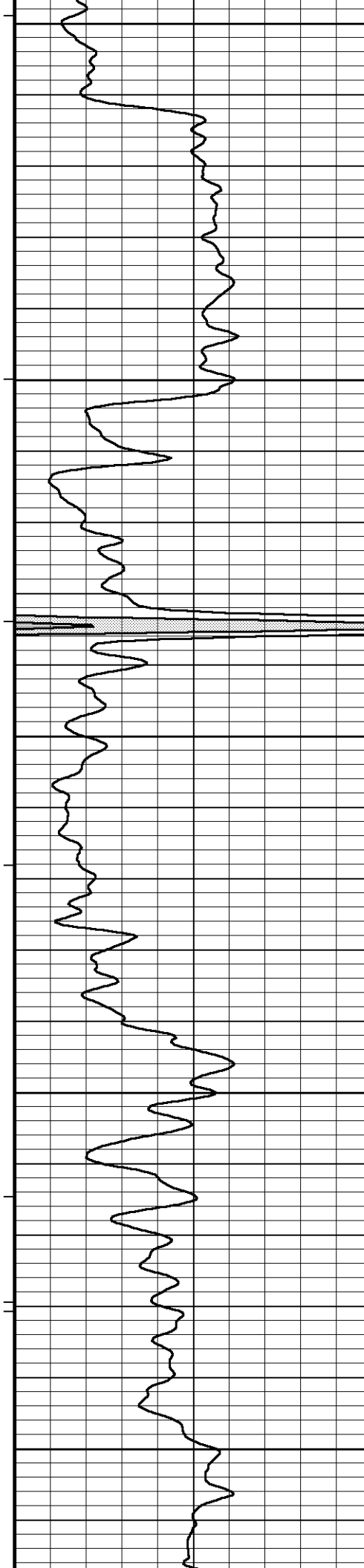
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← MGS Gamma Ray

Limestone Neutron Por. →



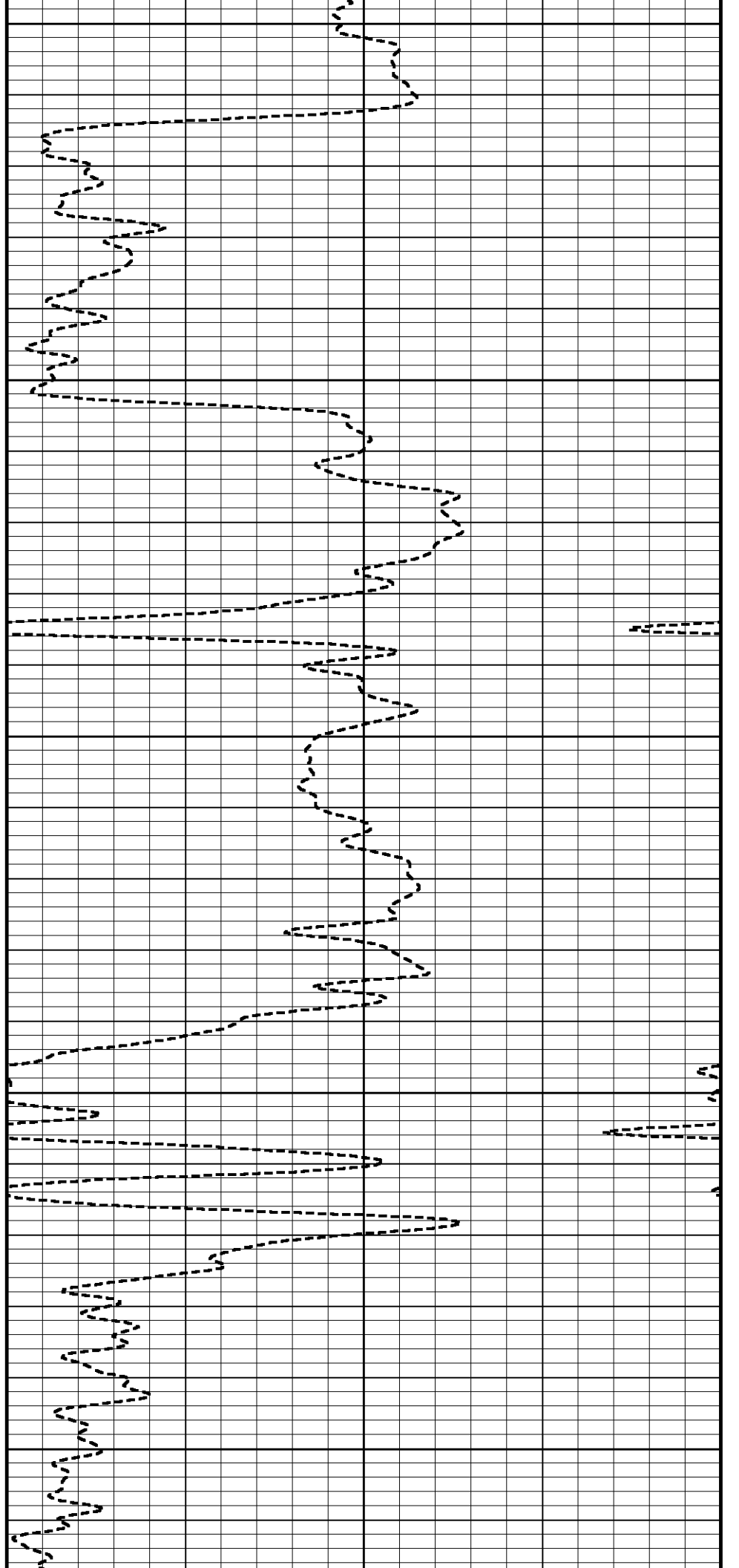
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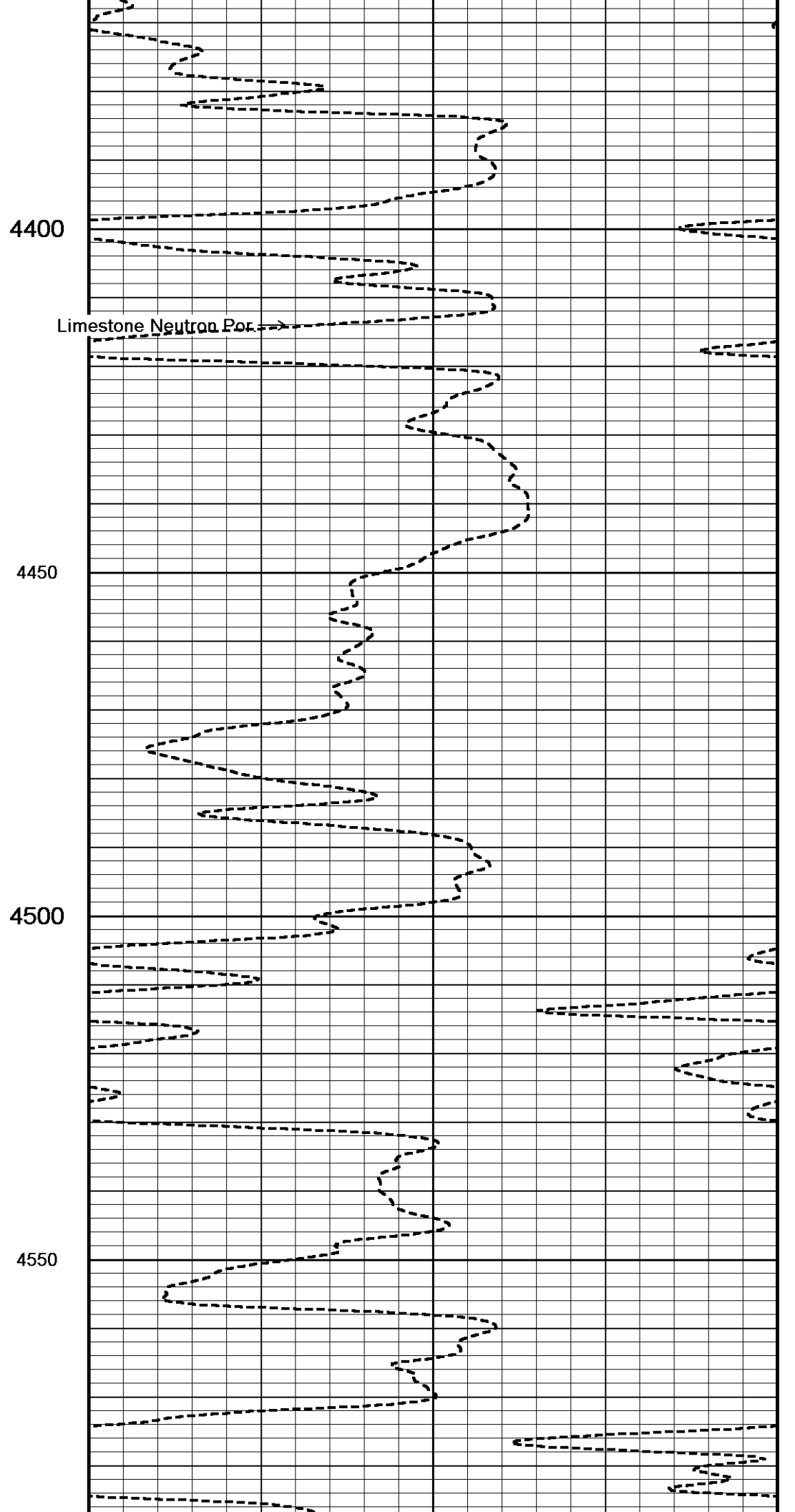
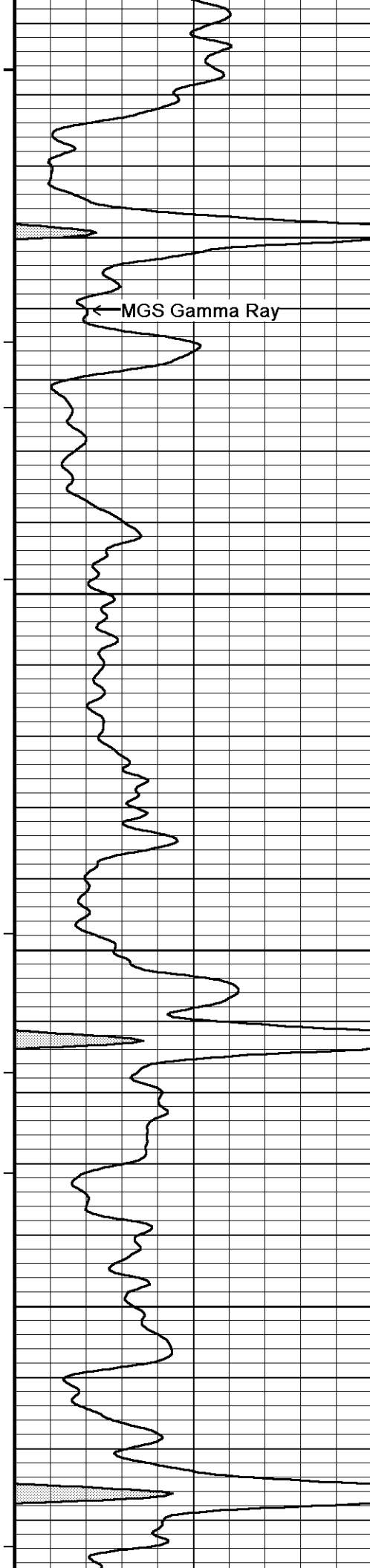
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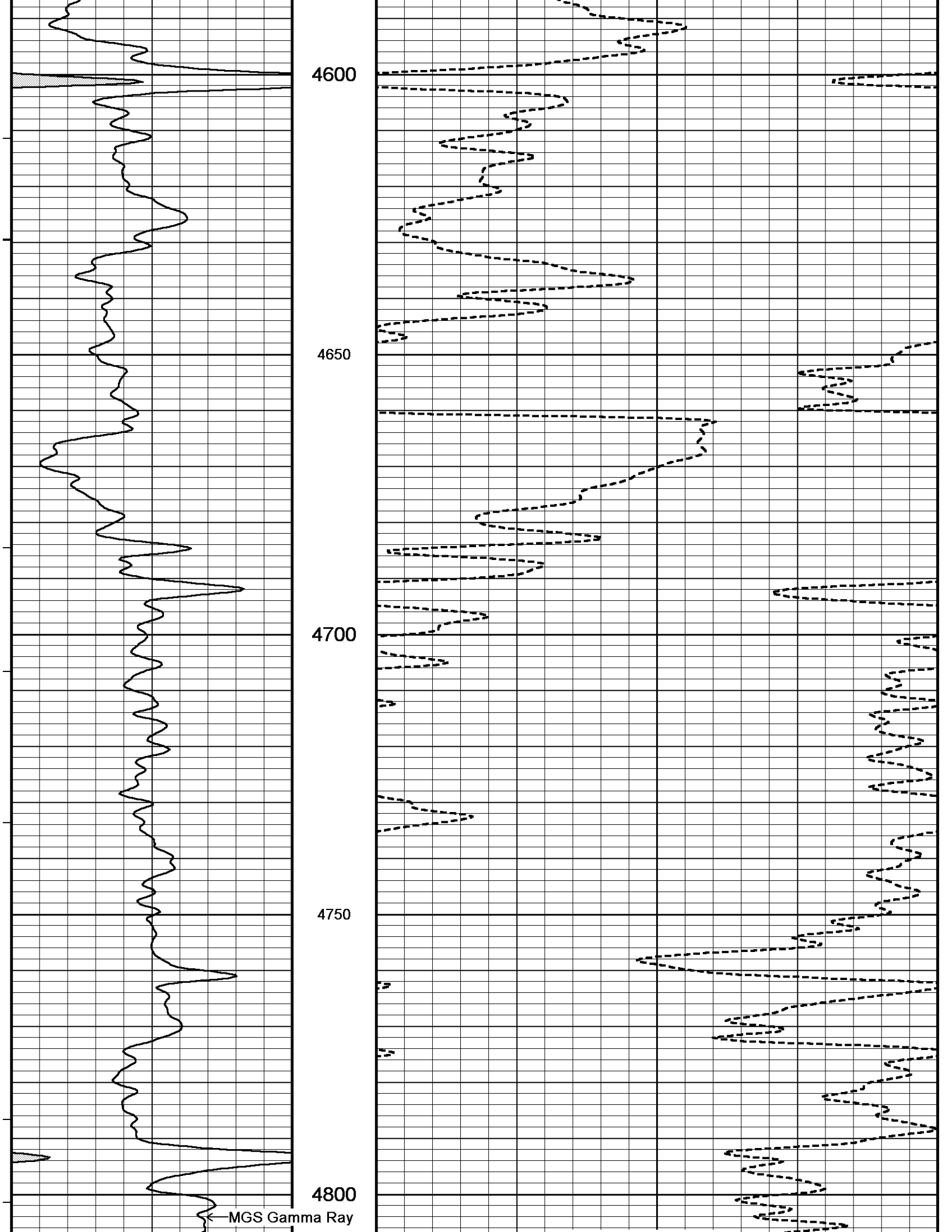
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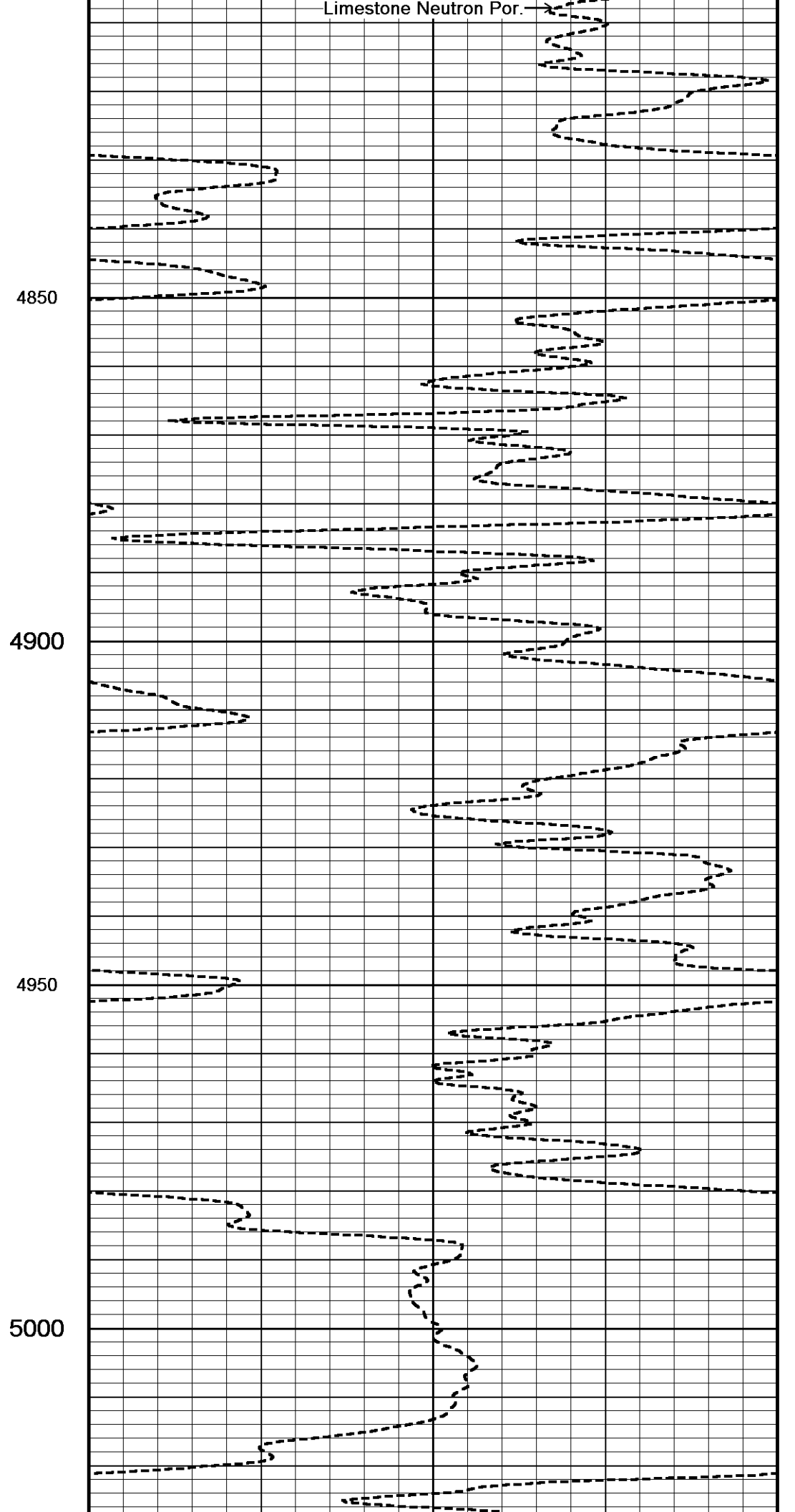
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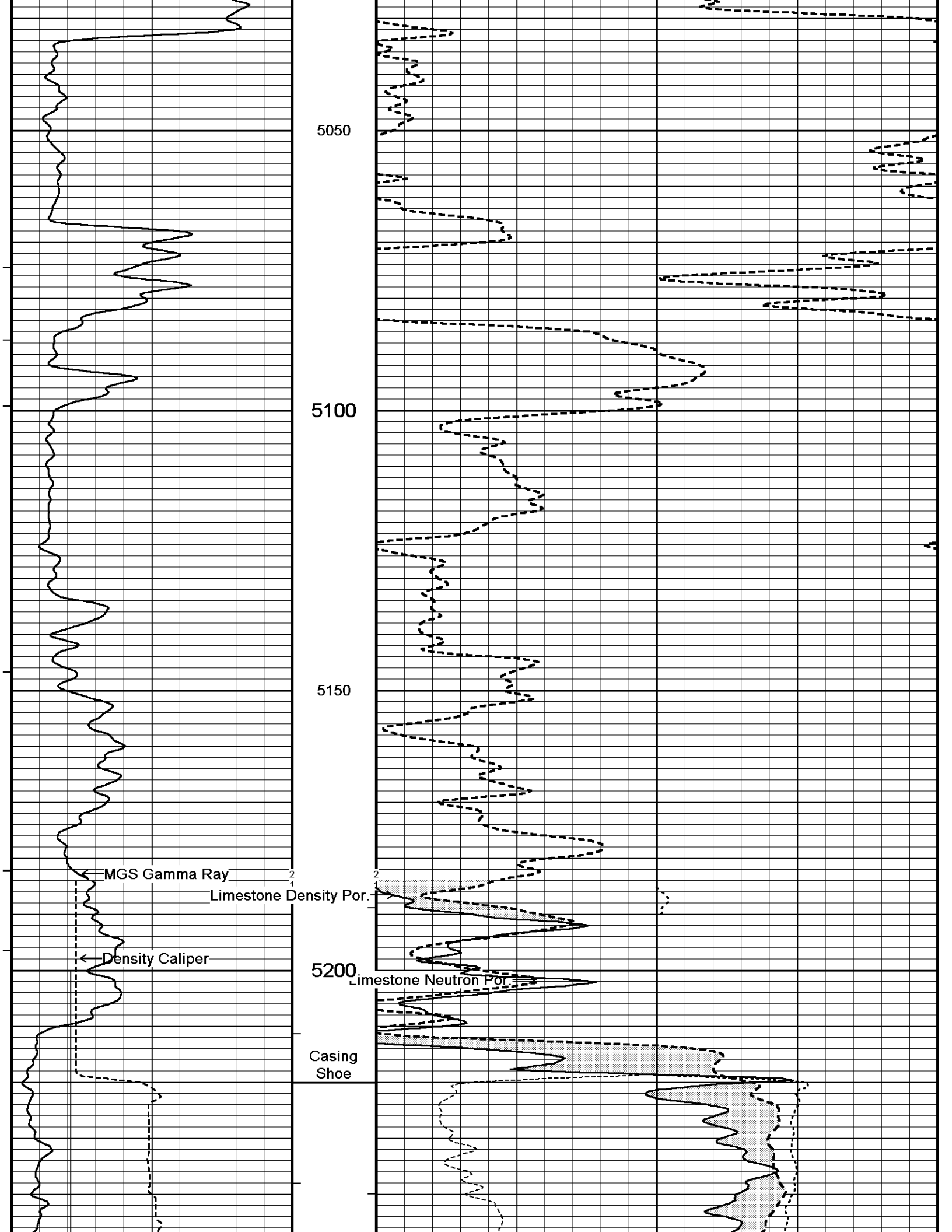
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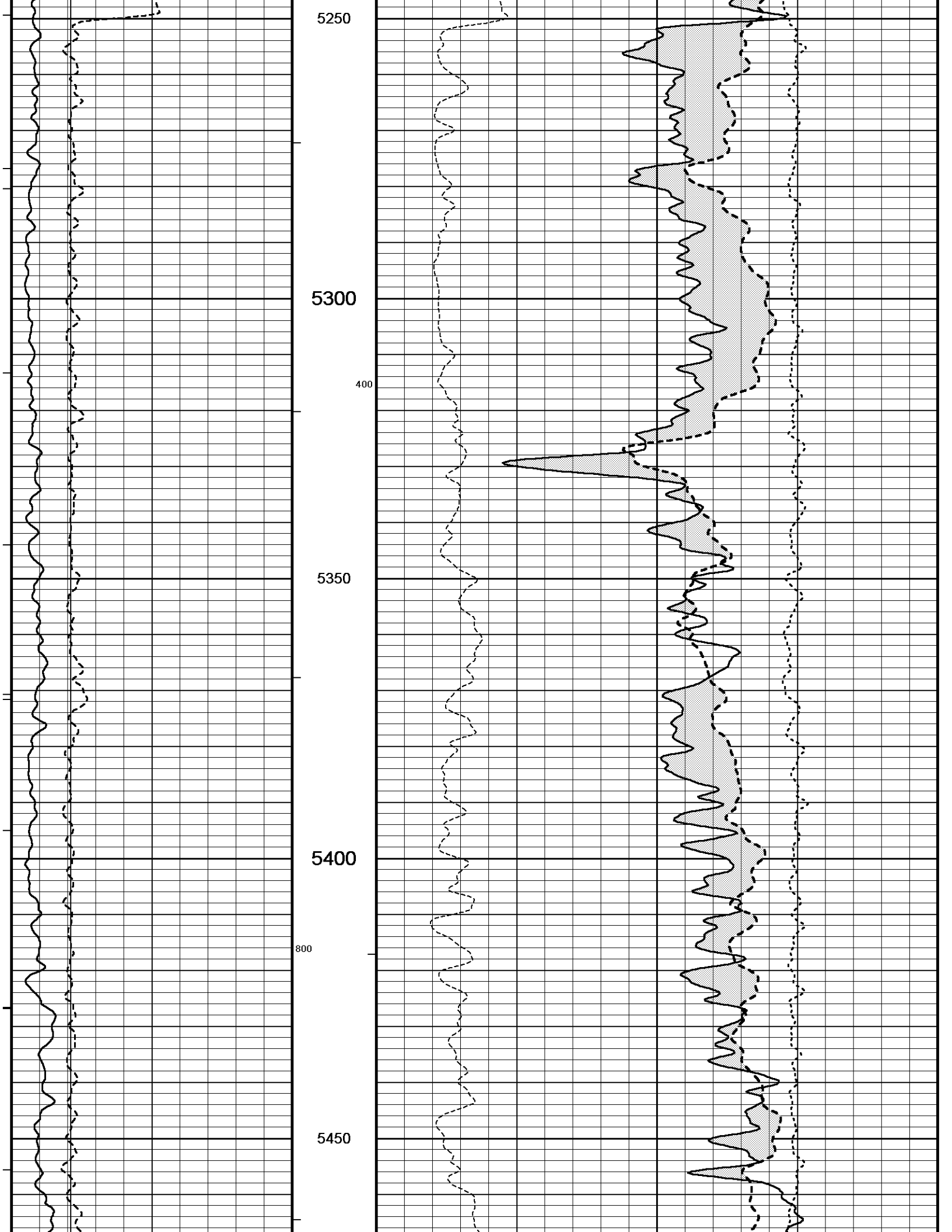


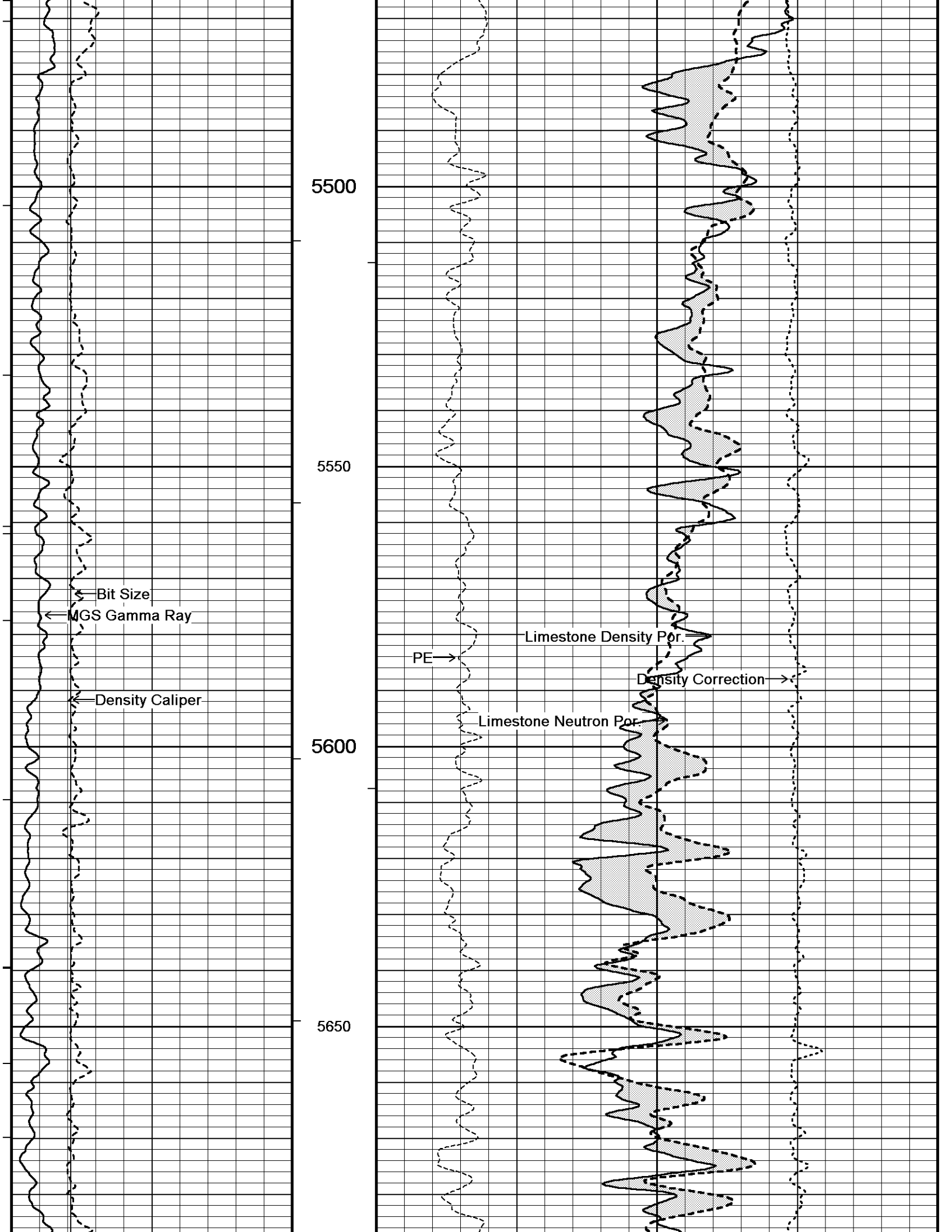


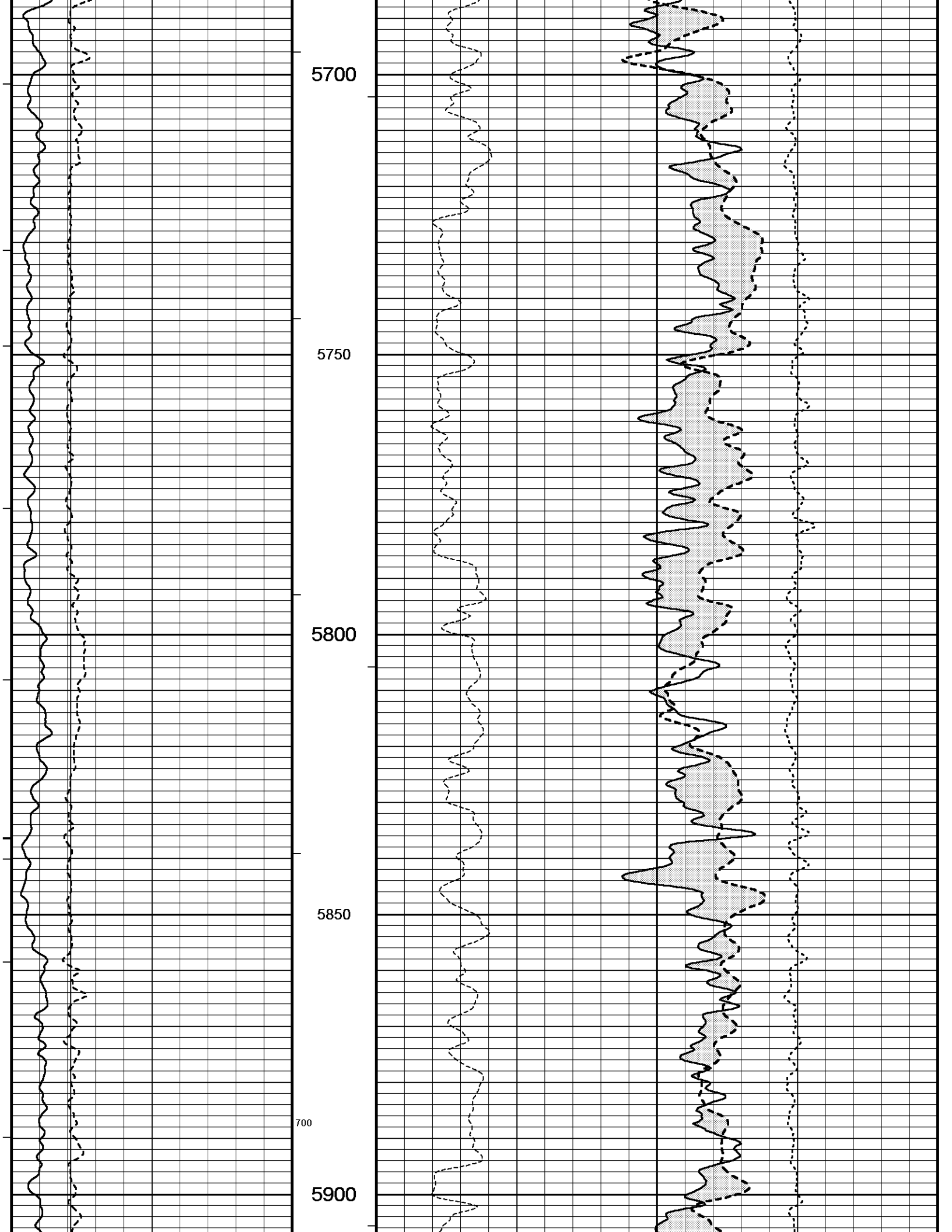


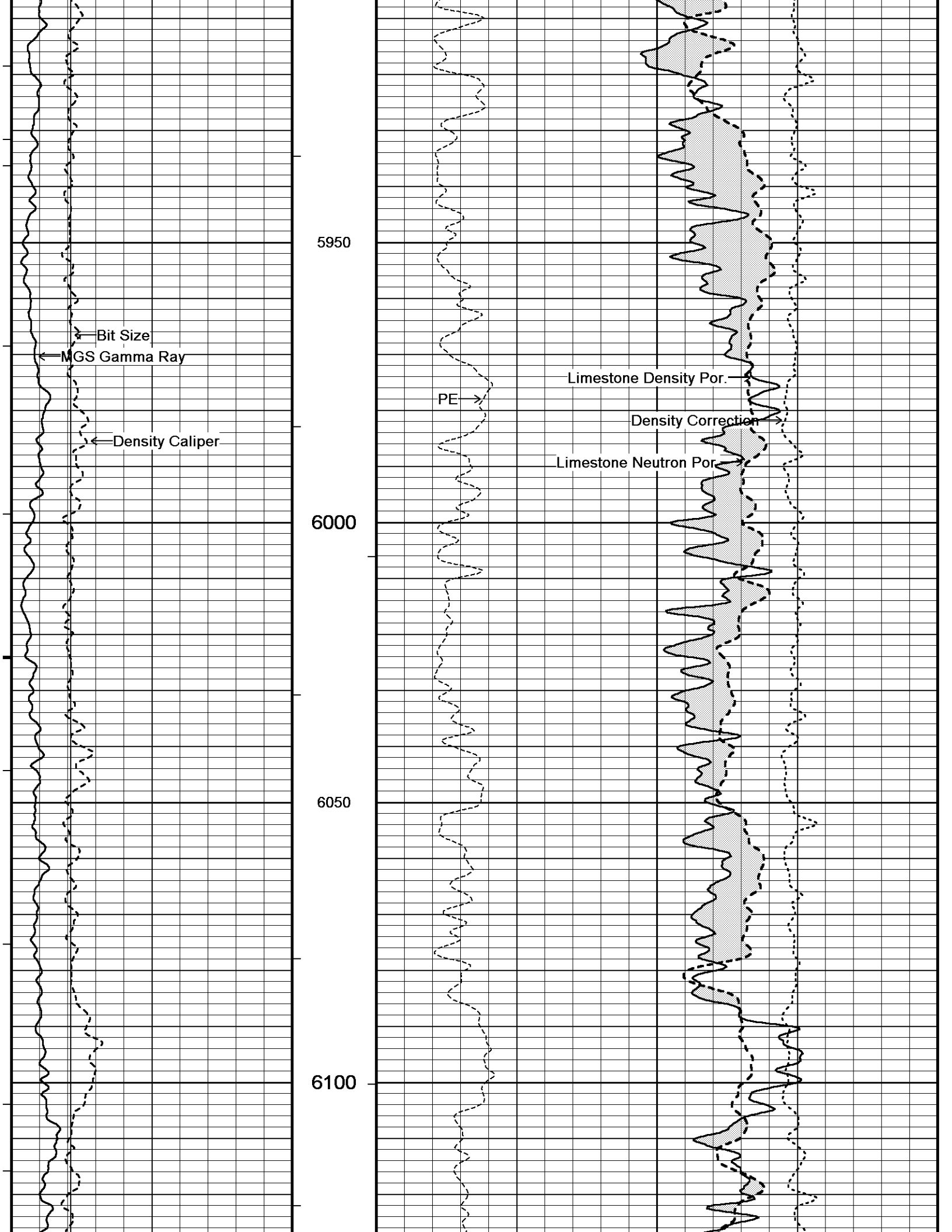


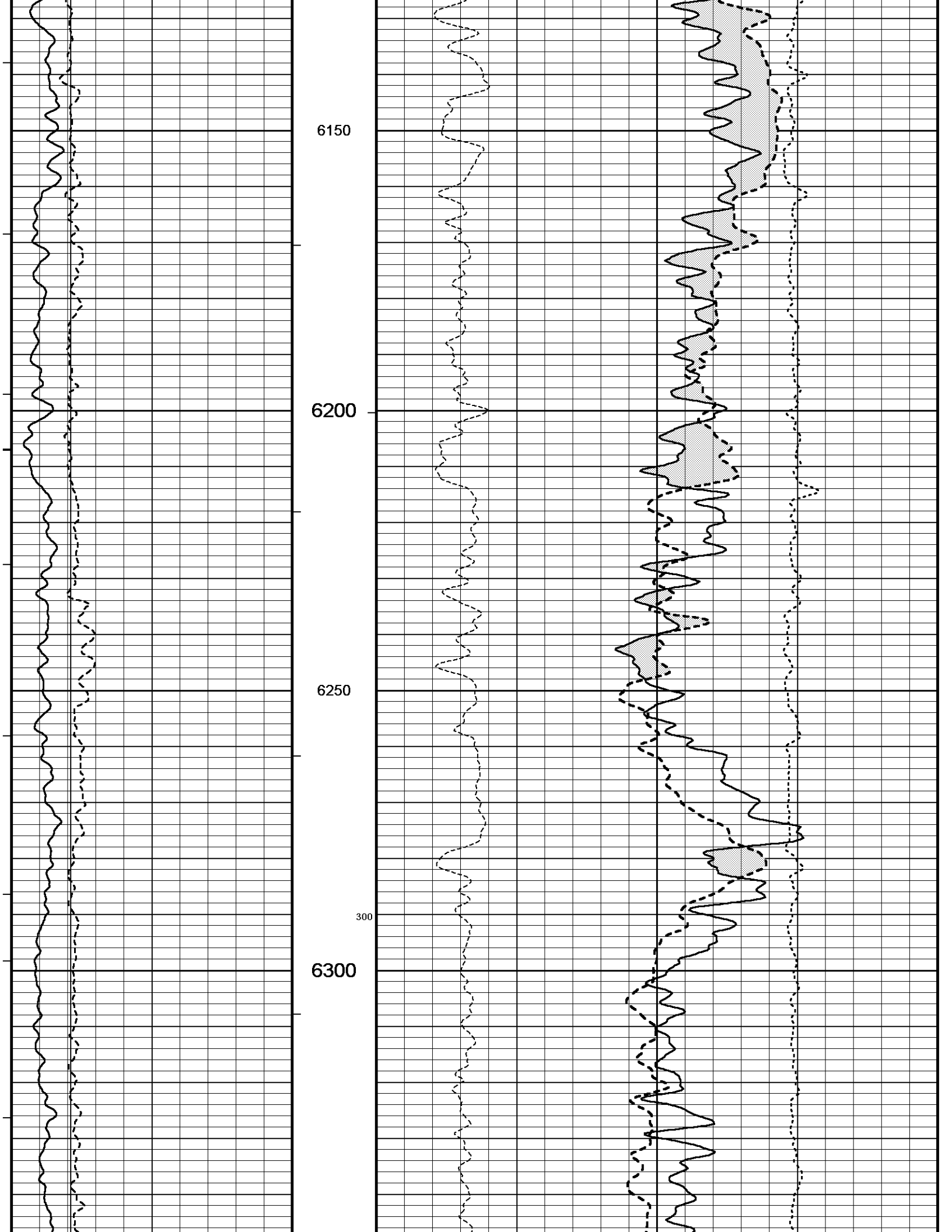


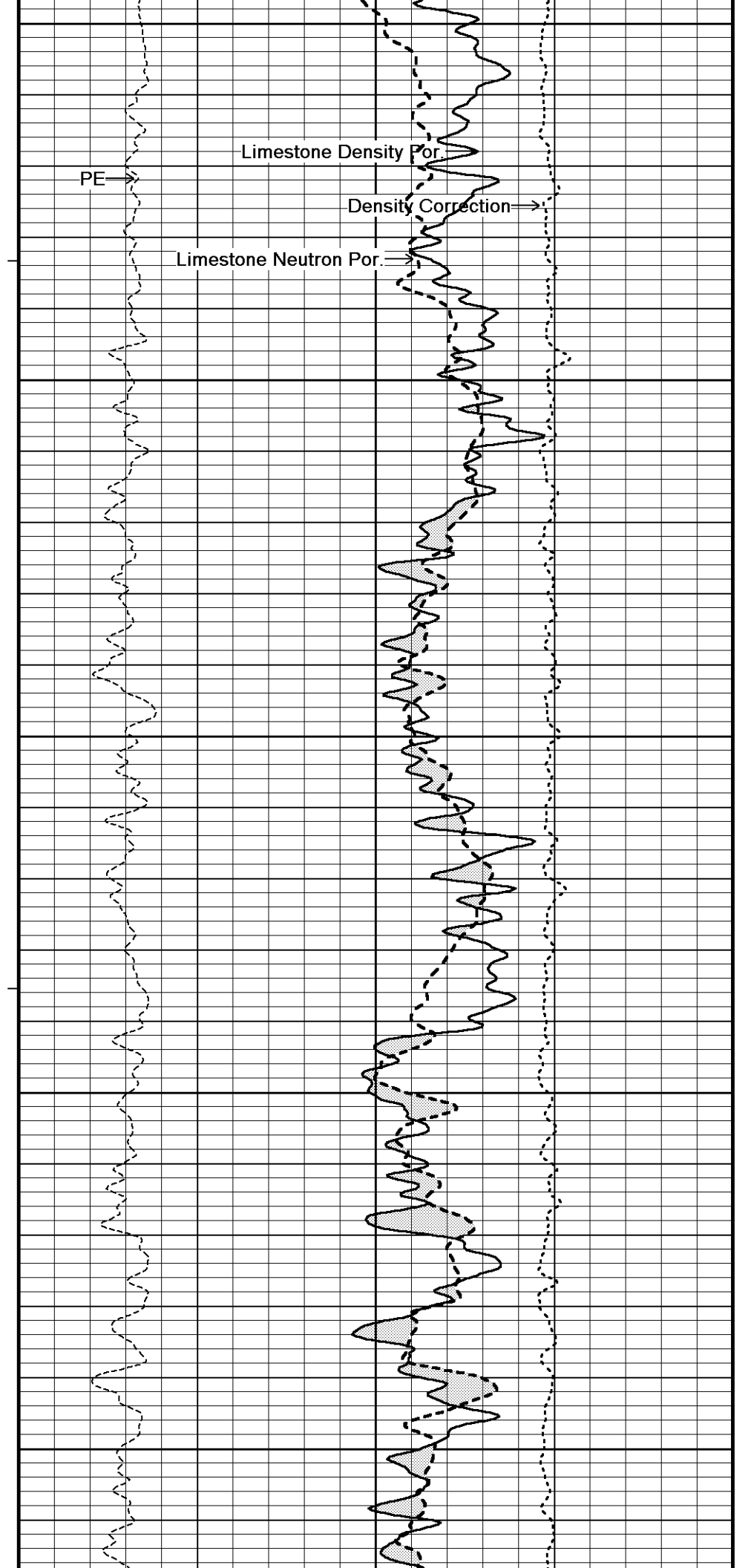
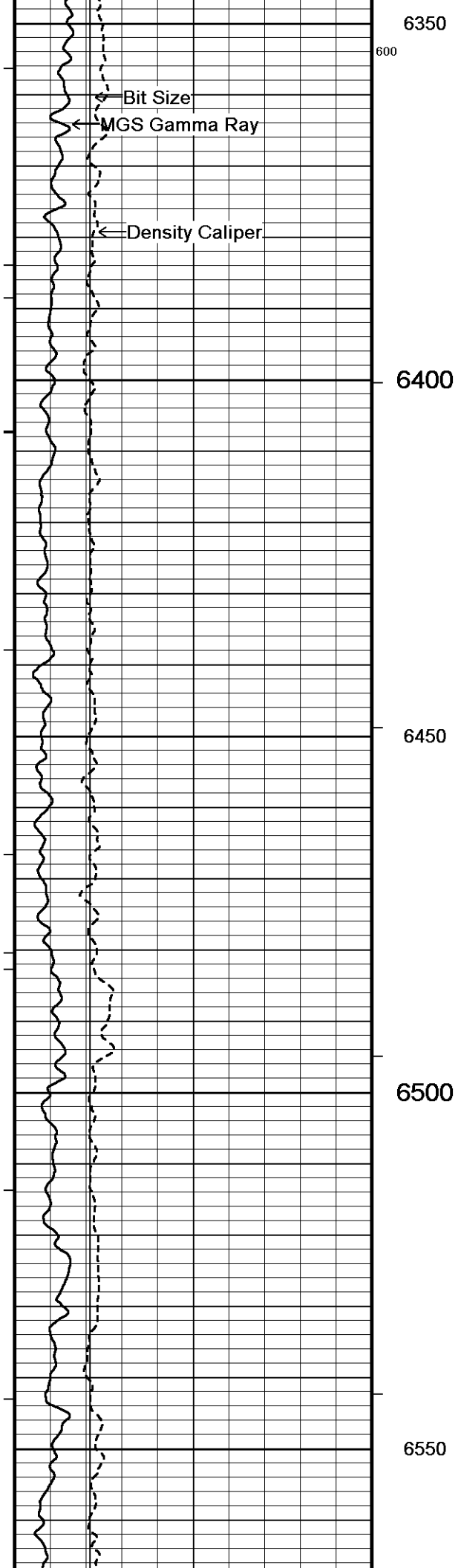


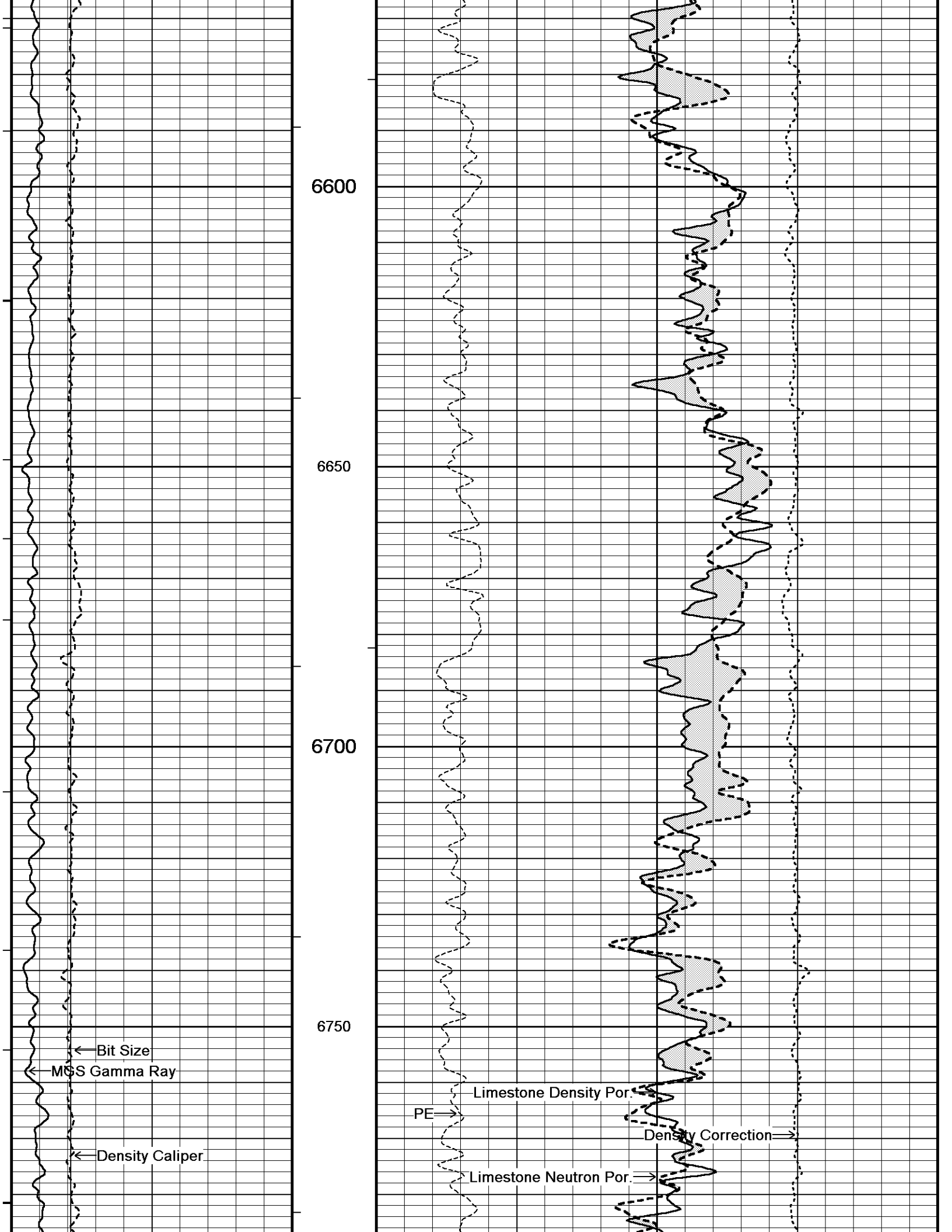


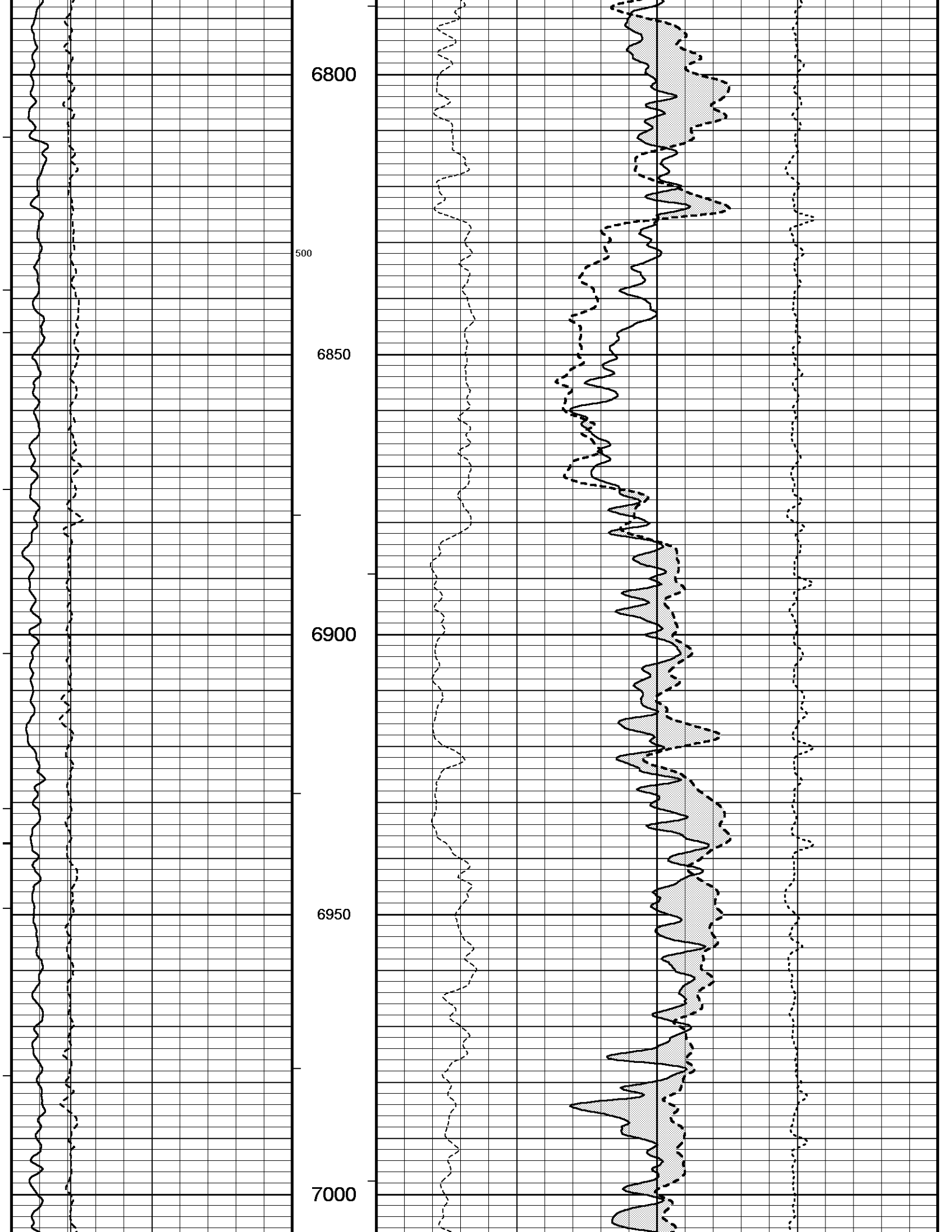


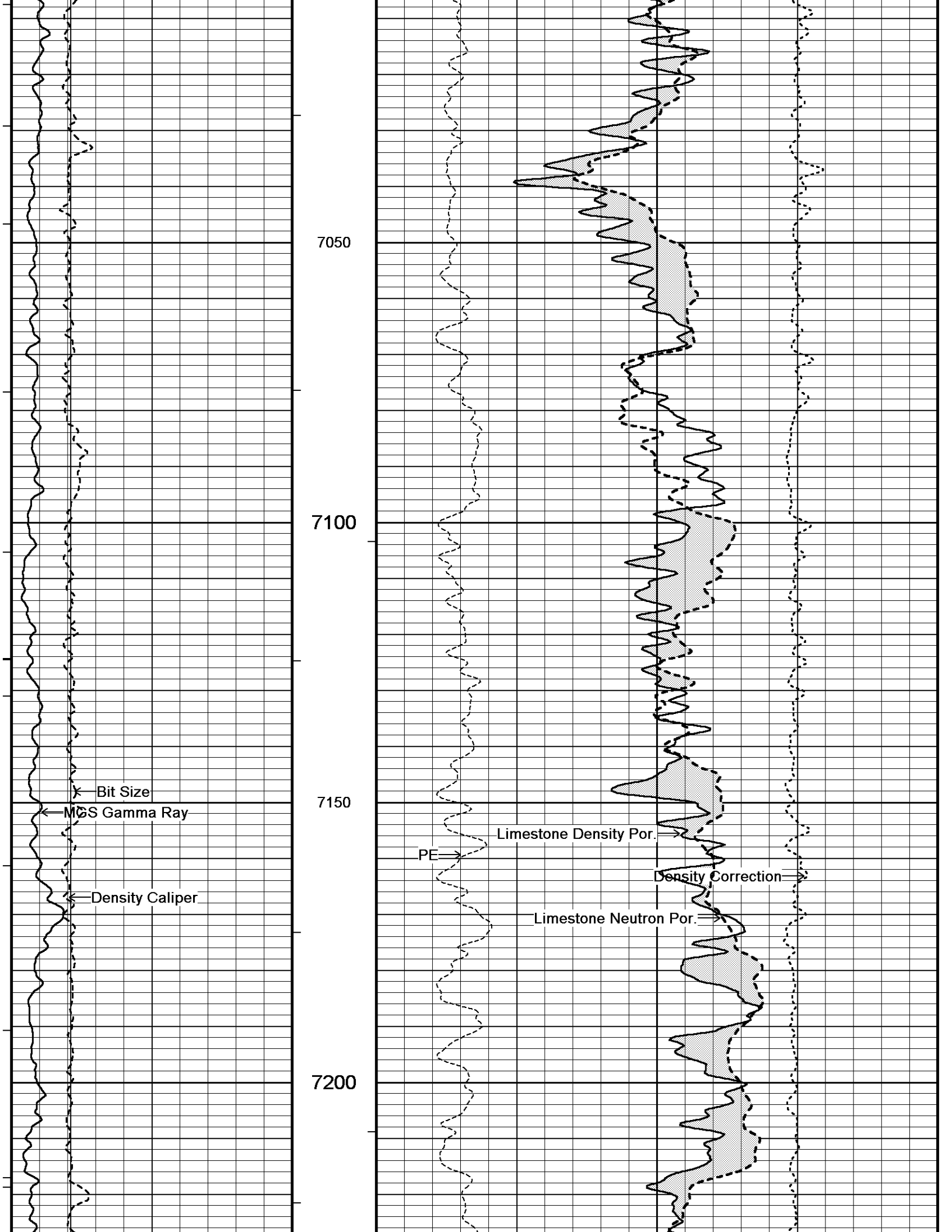


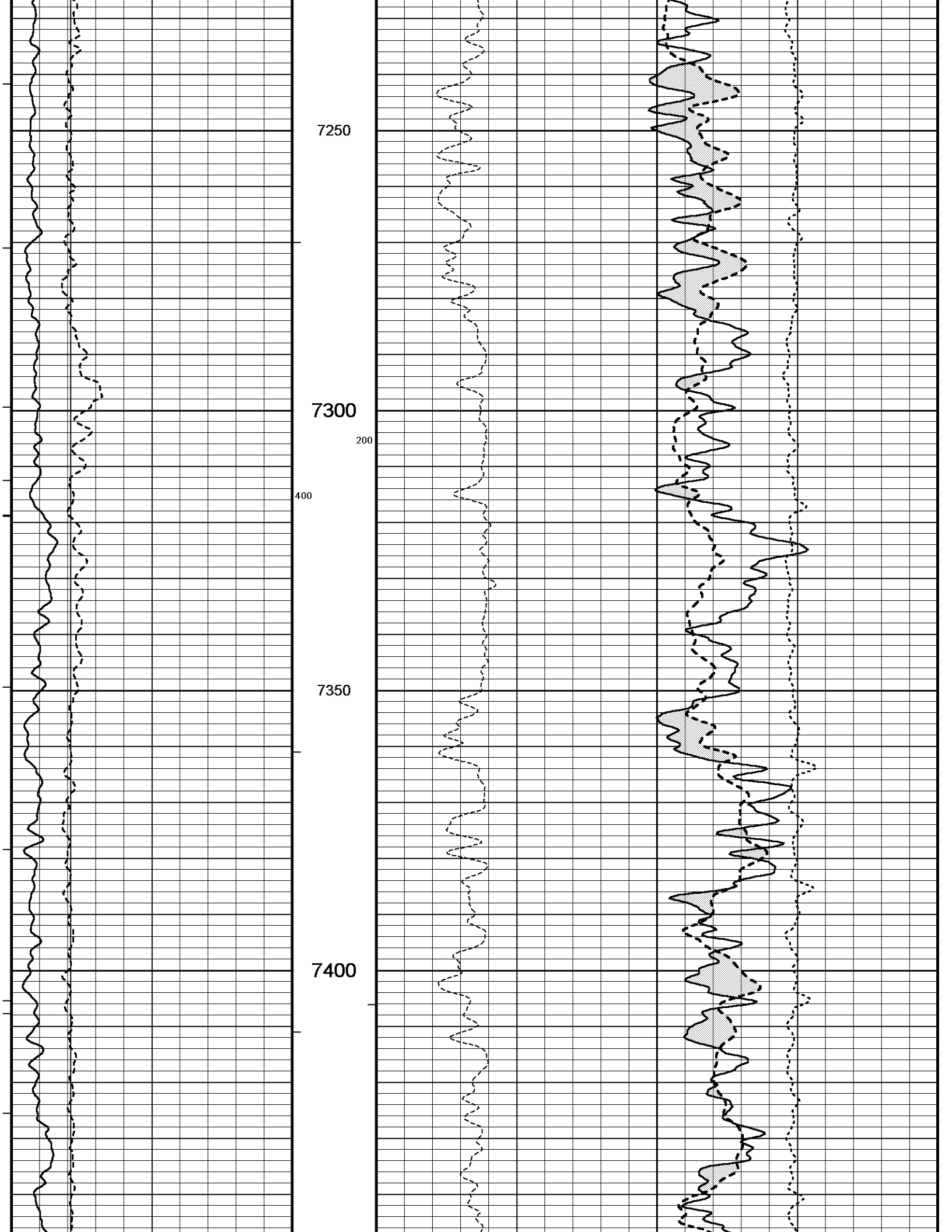


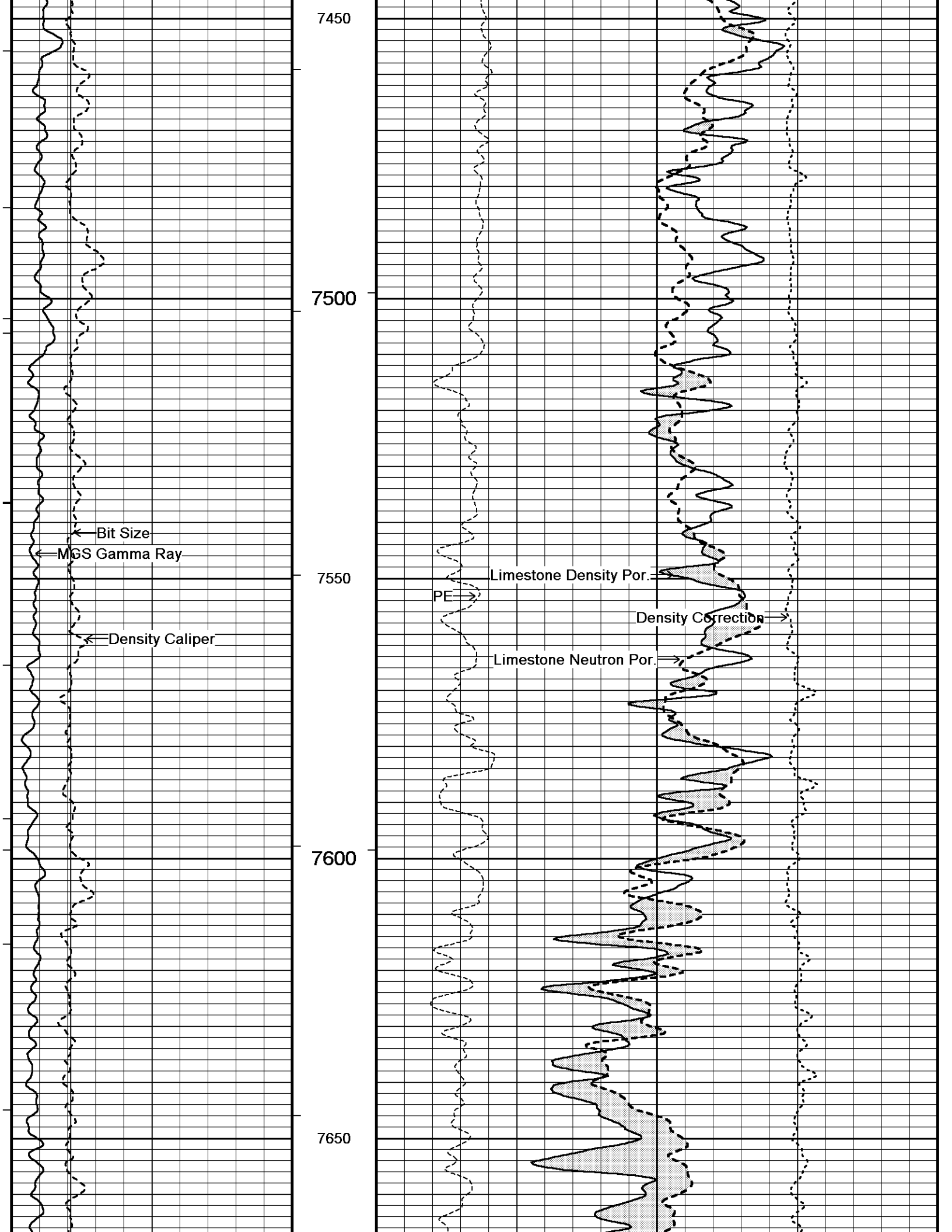


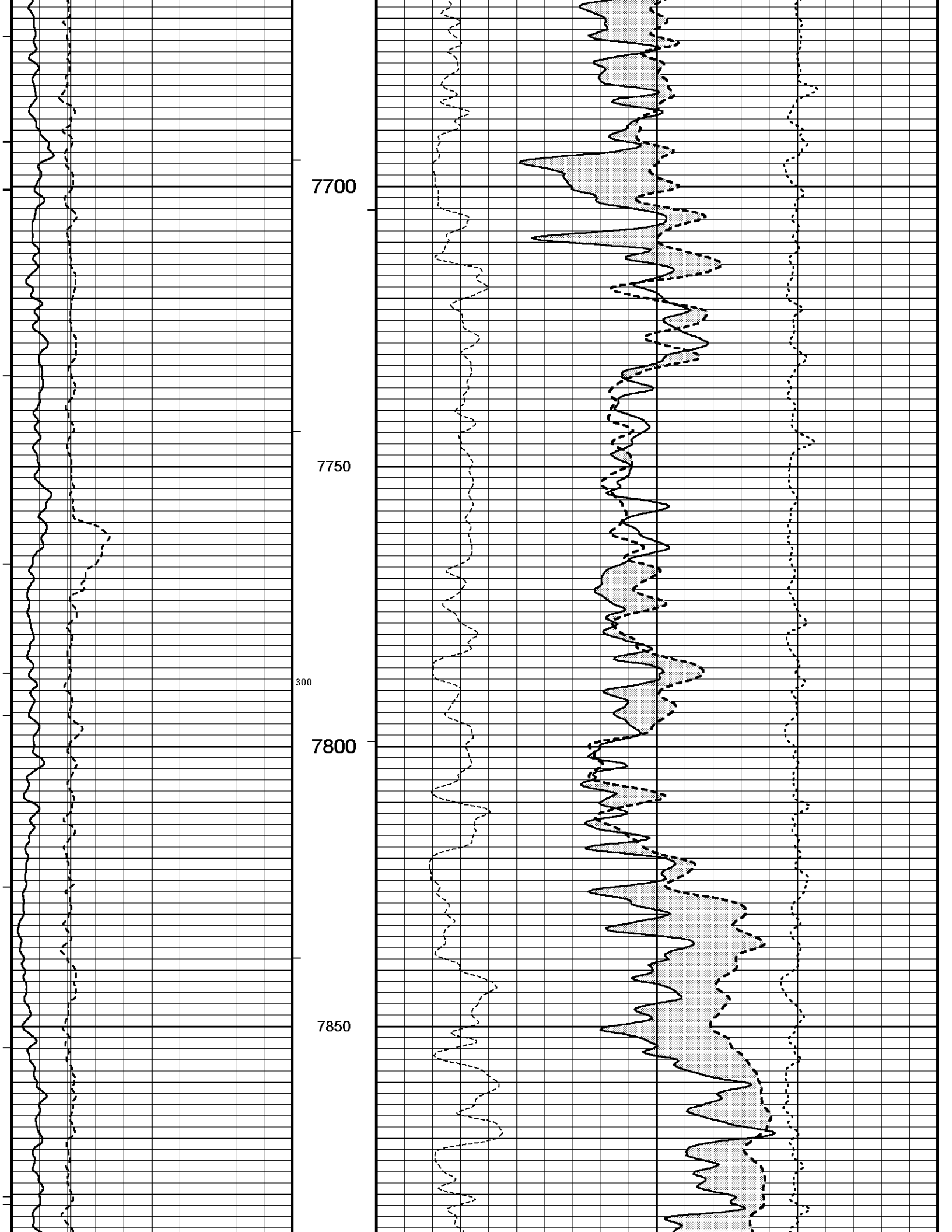


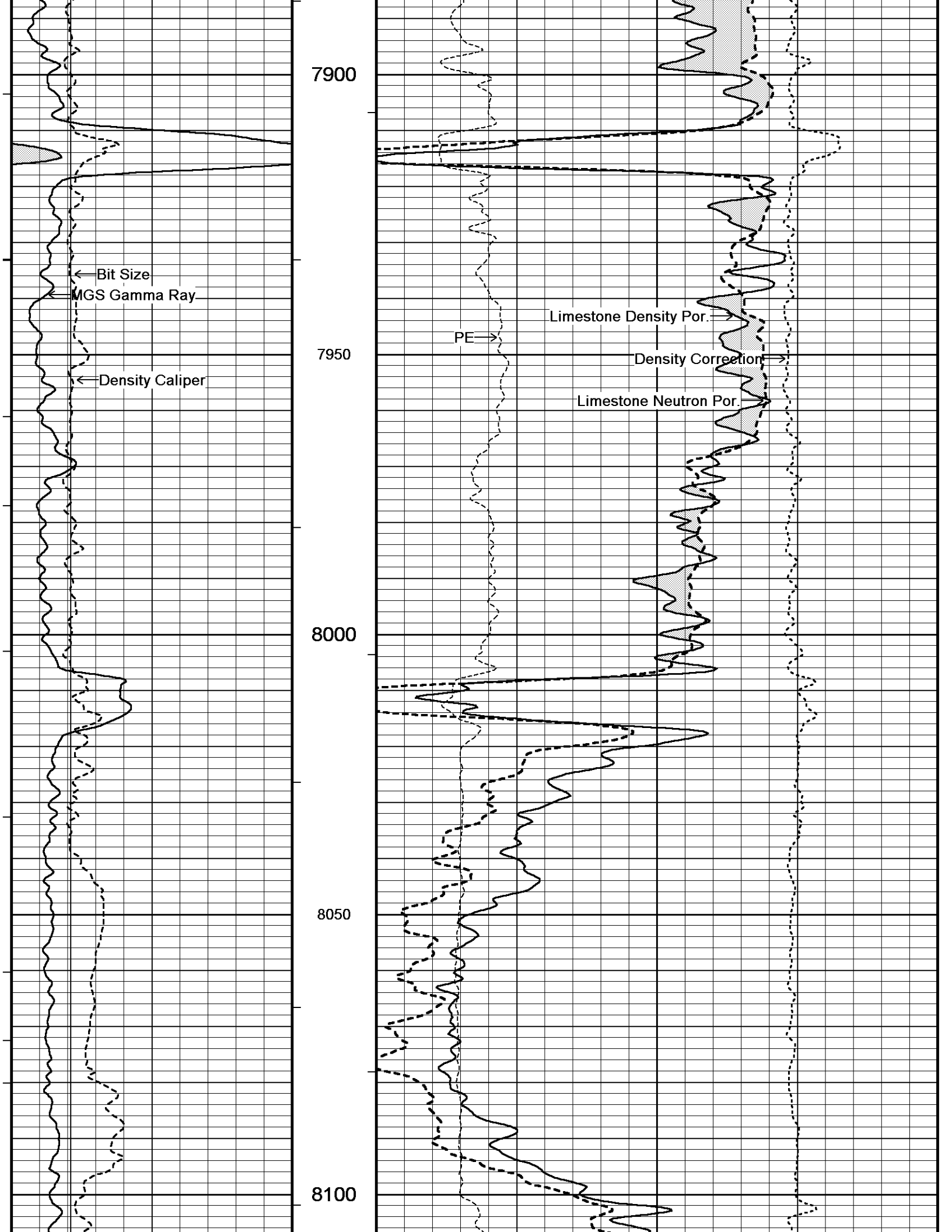


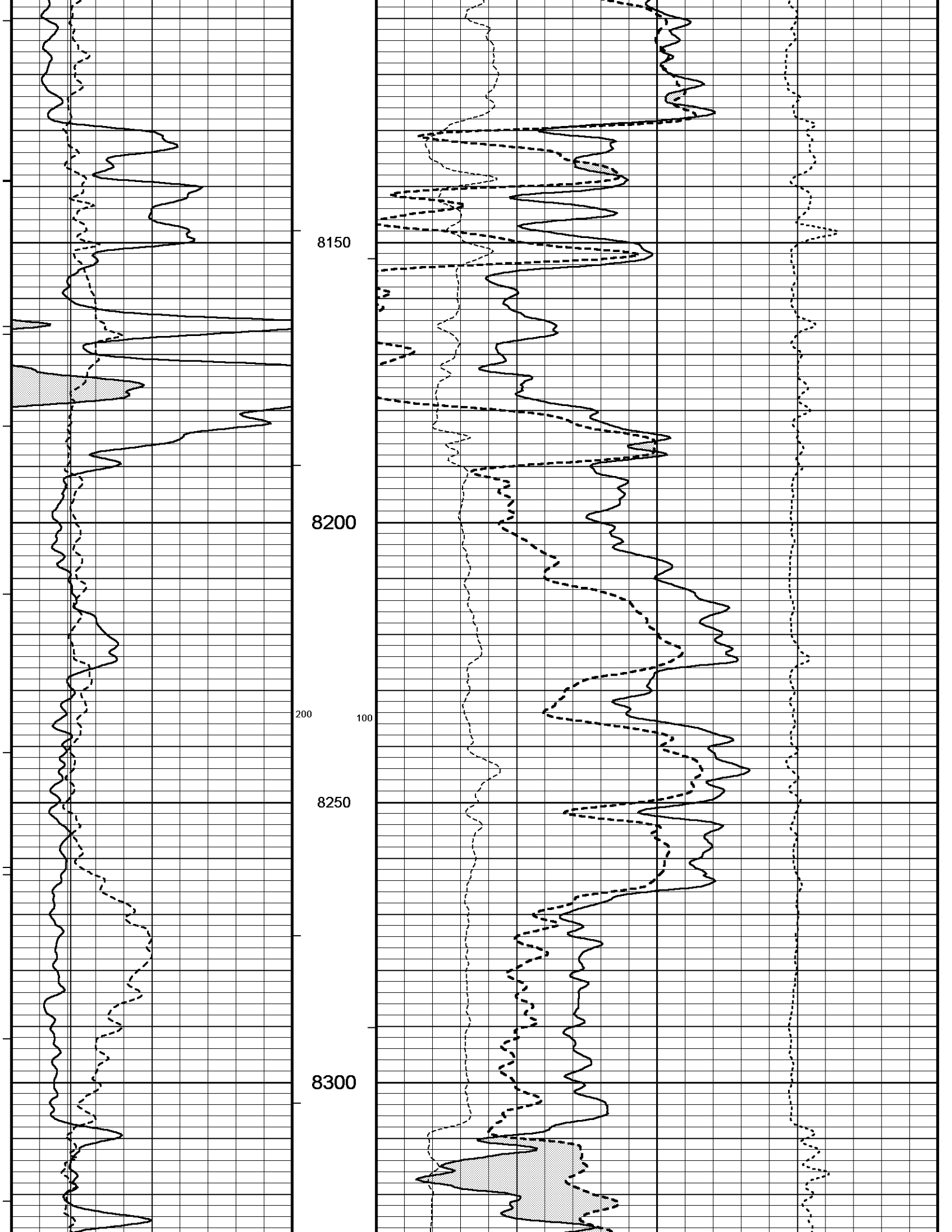


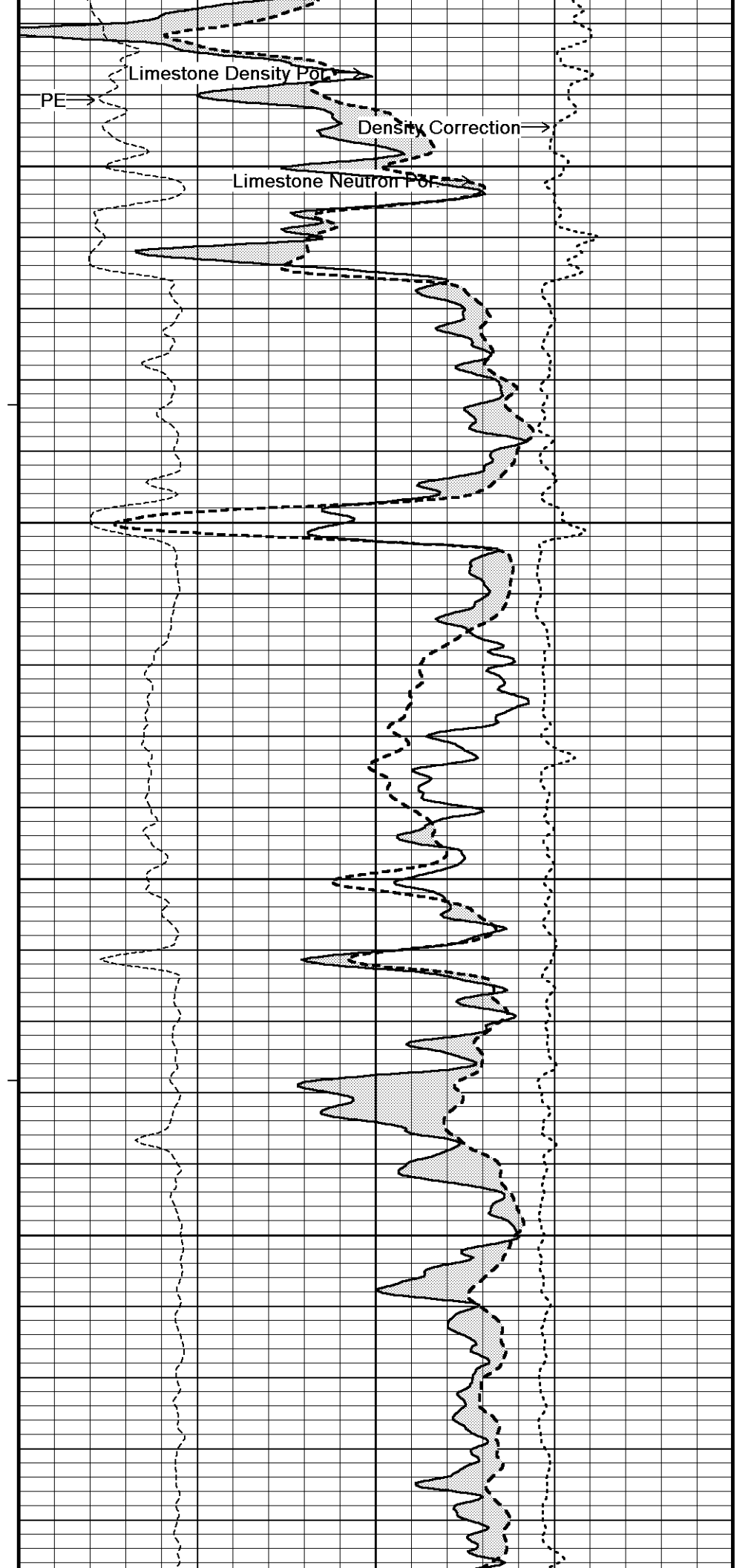
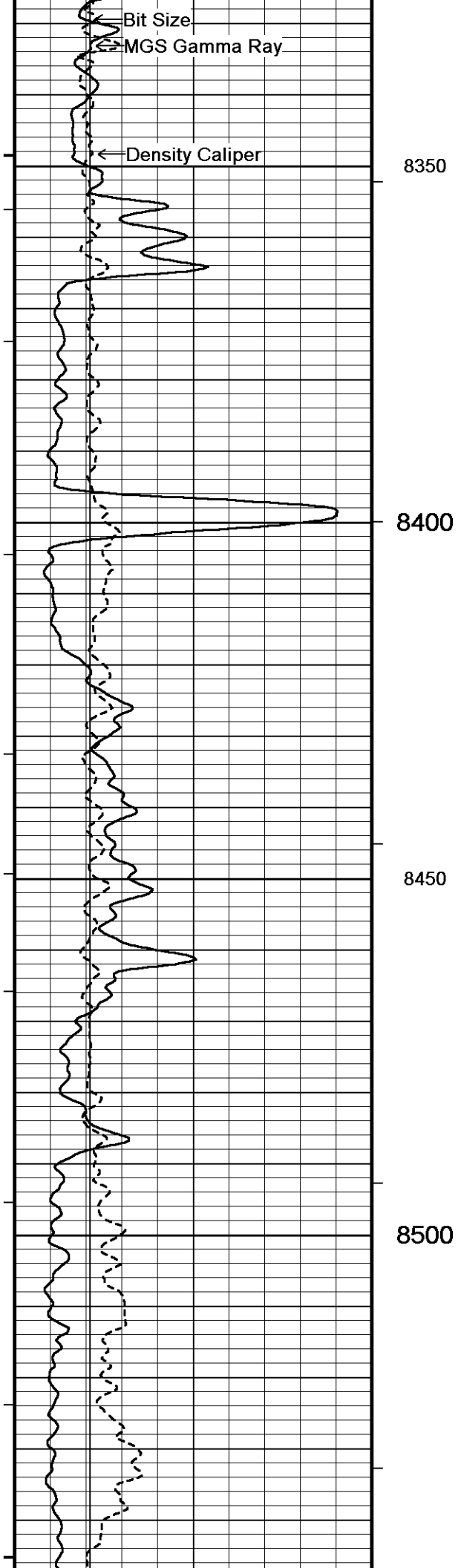


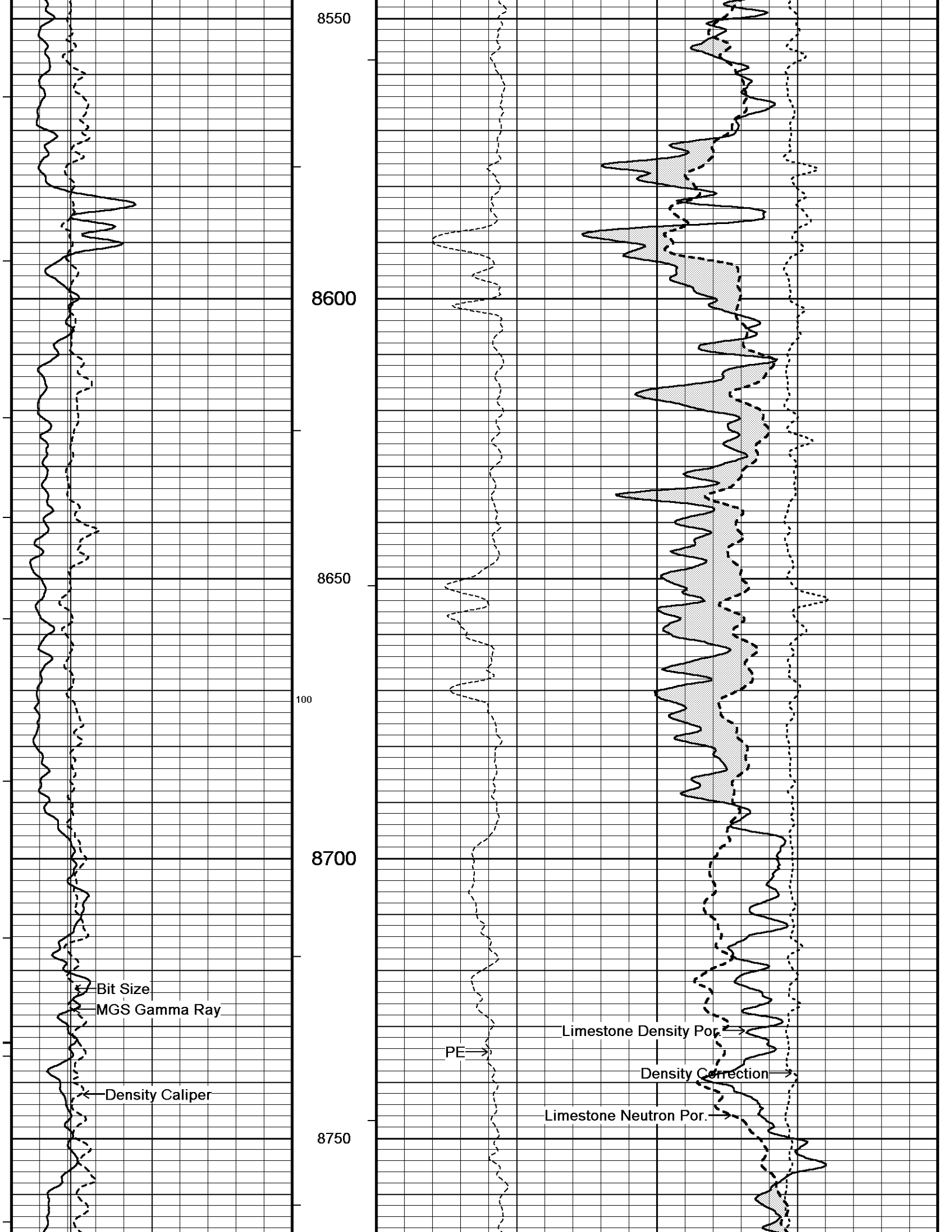


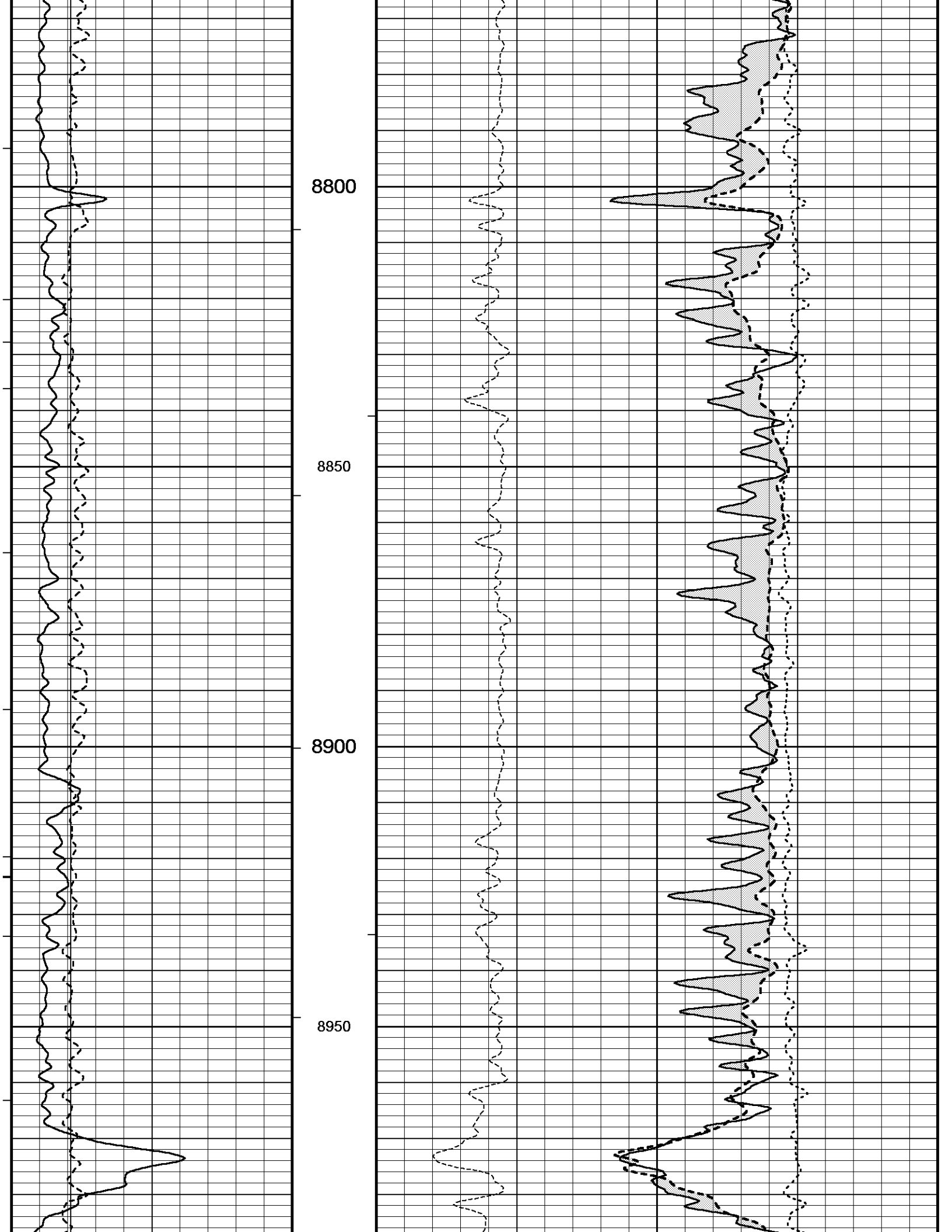


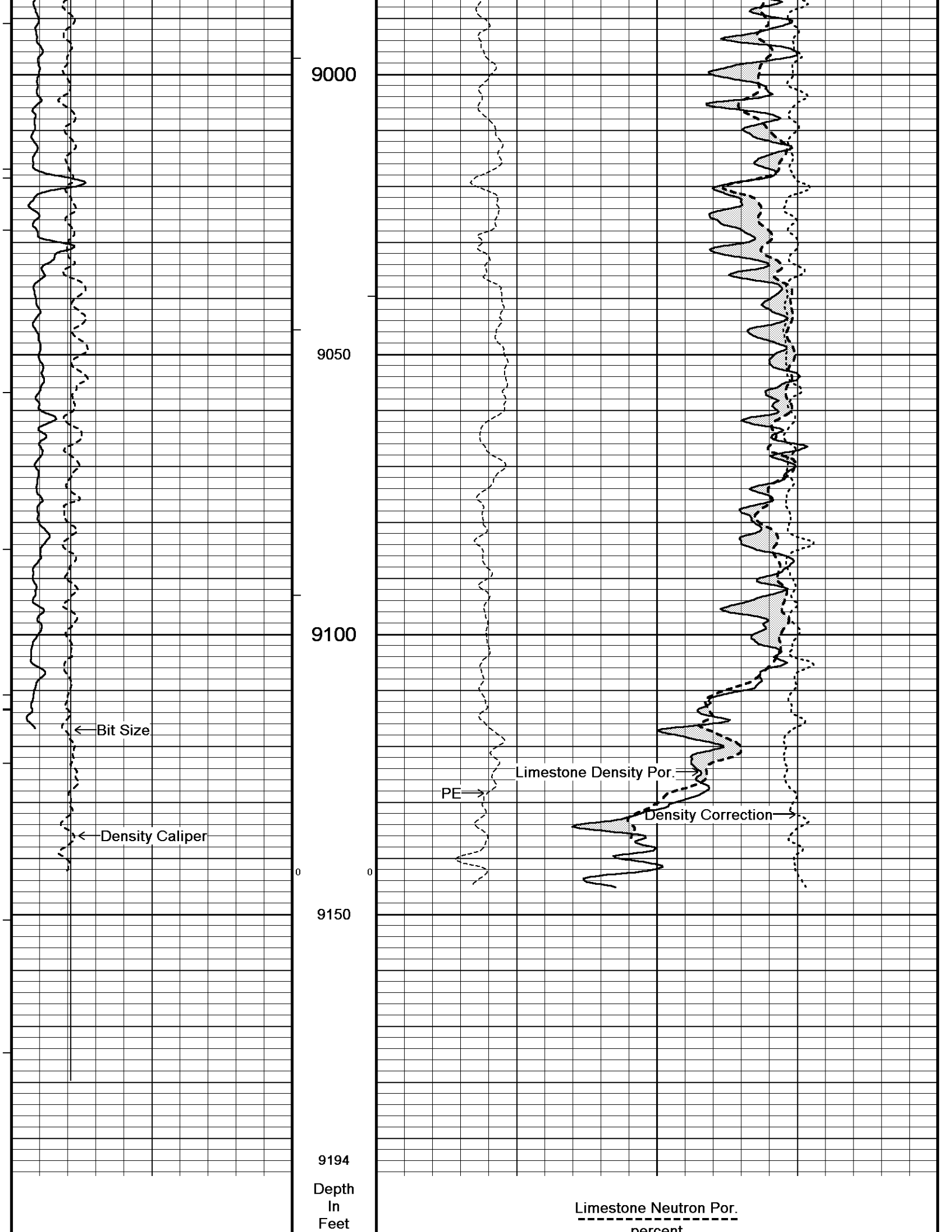


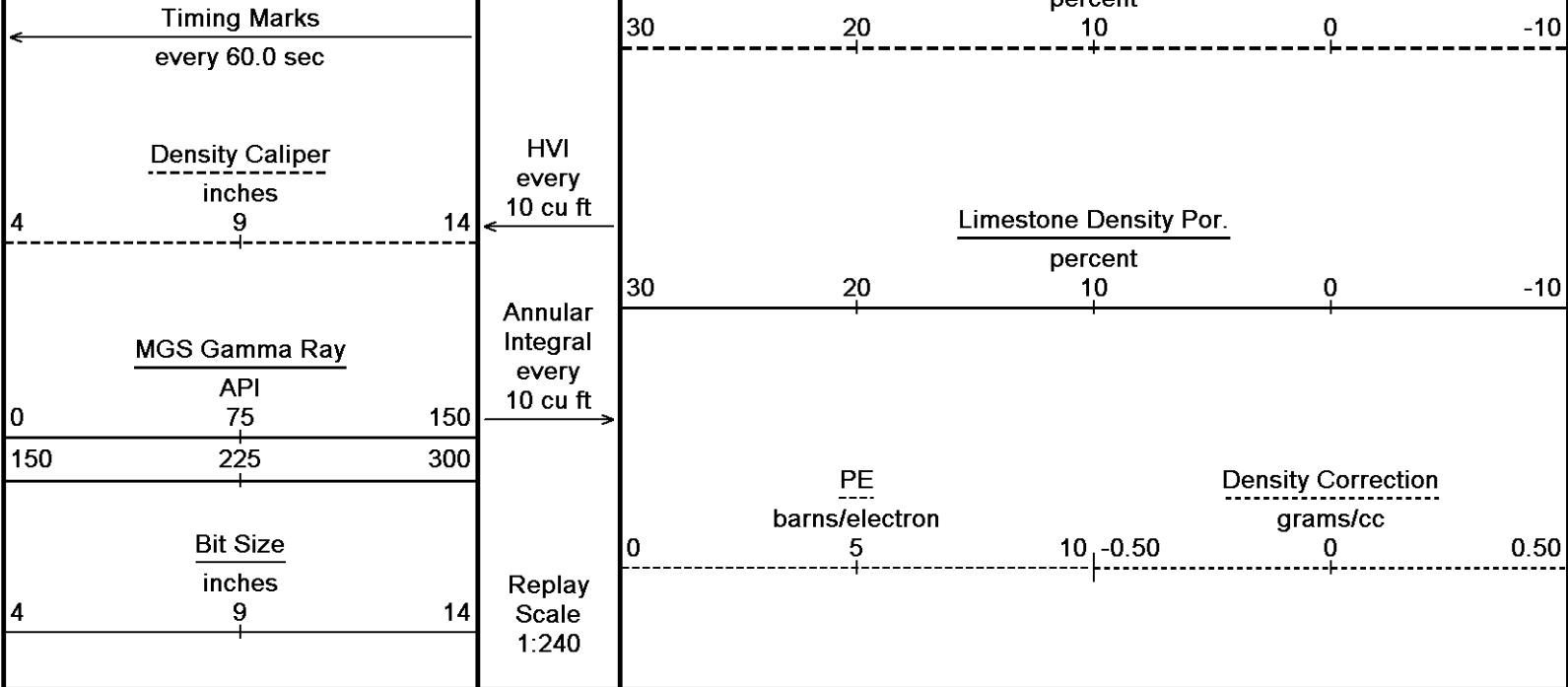










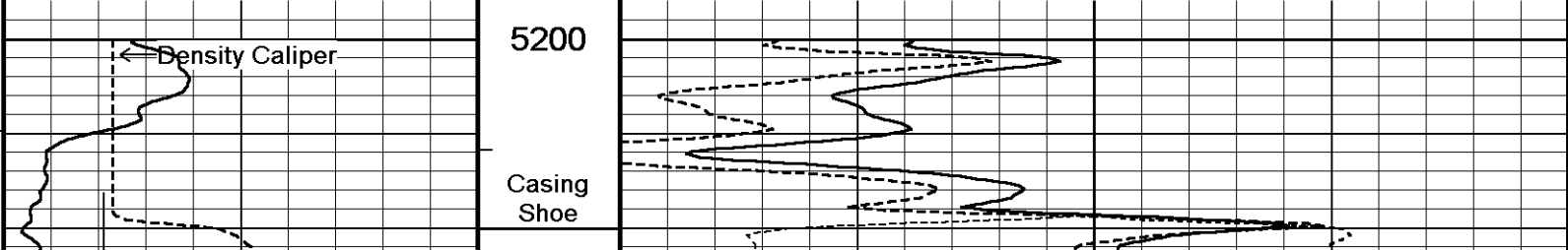
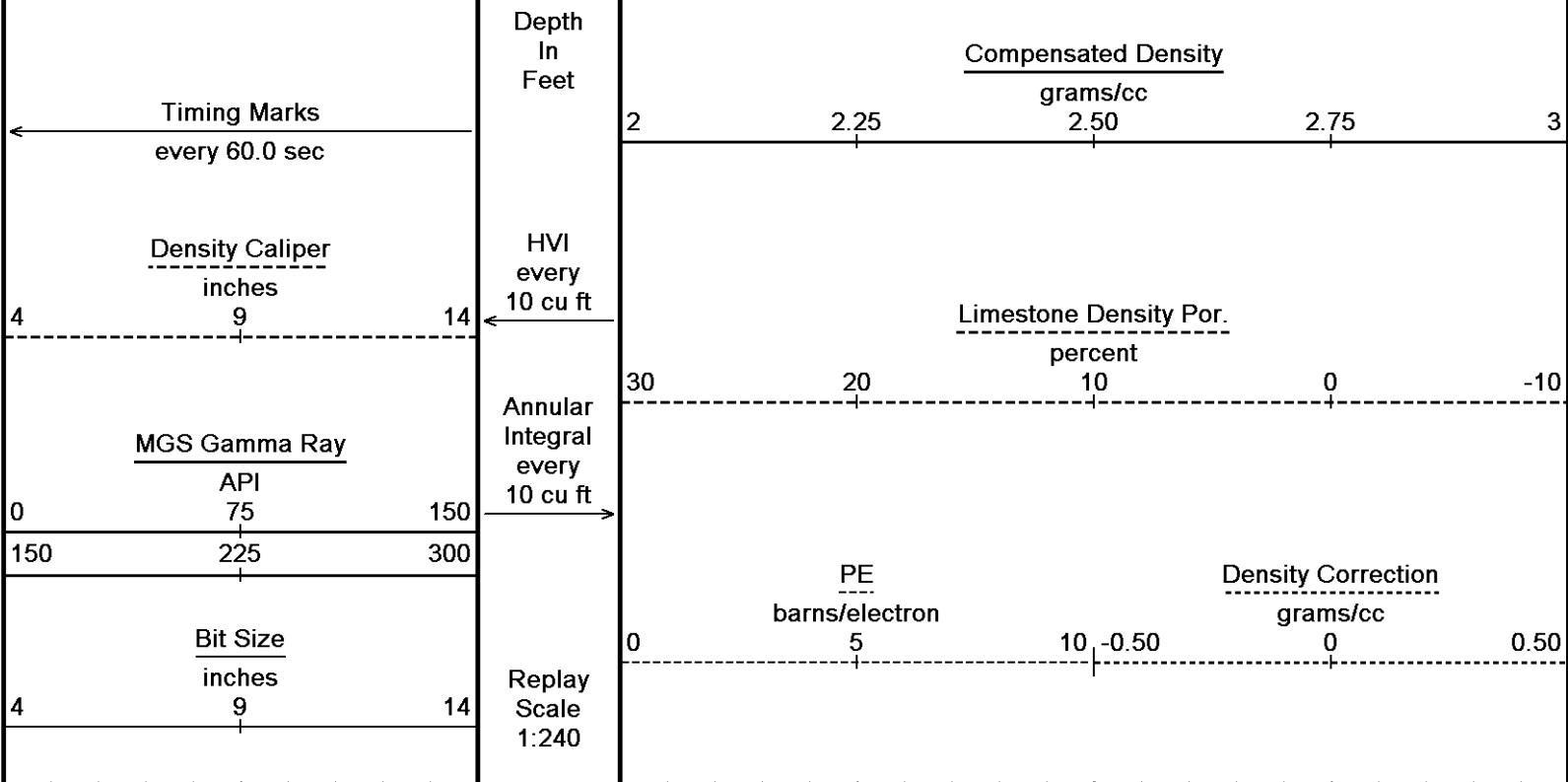


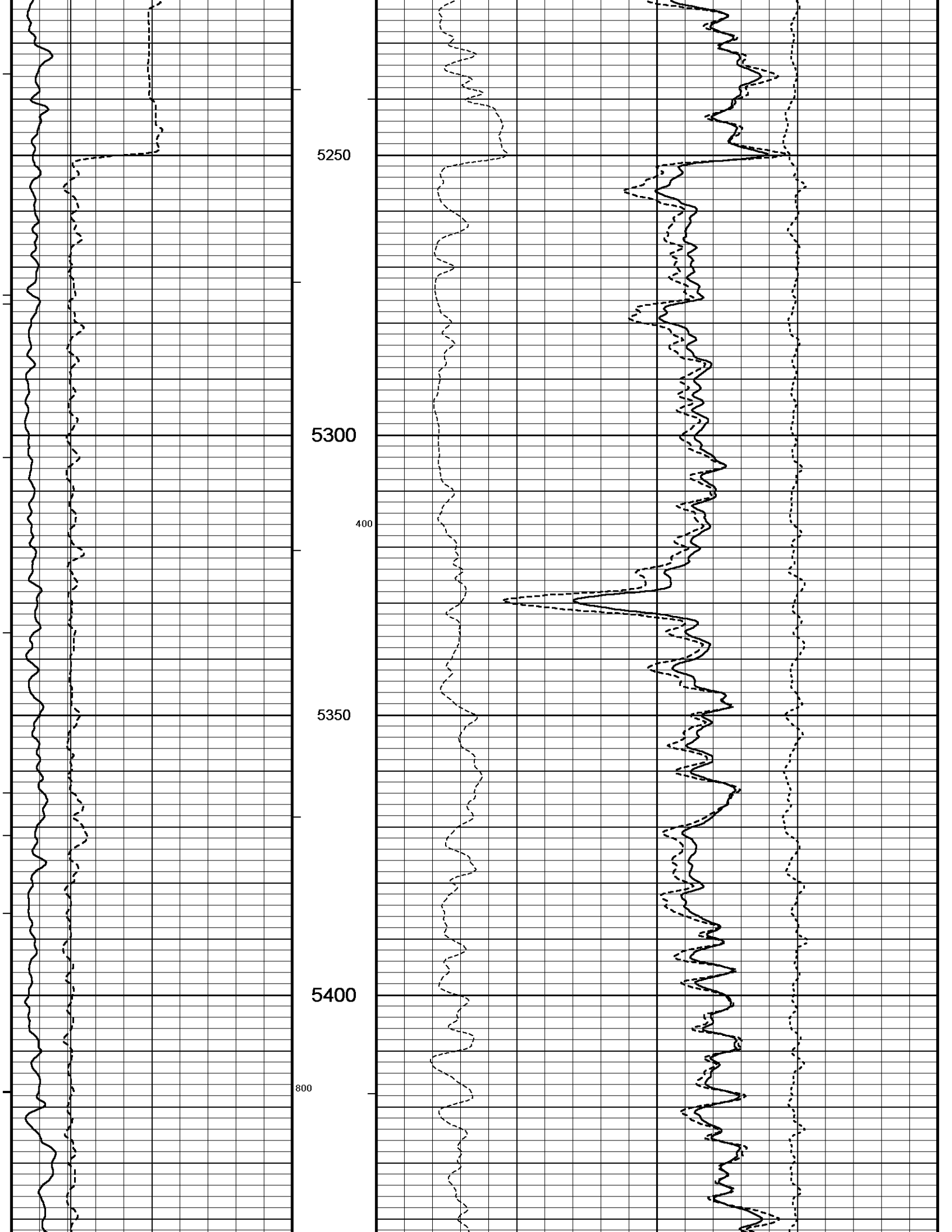
Depth Based Data - Maximum Sampling Increment 10.0cm
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 Recorded on 02-FEB-2013 04:48
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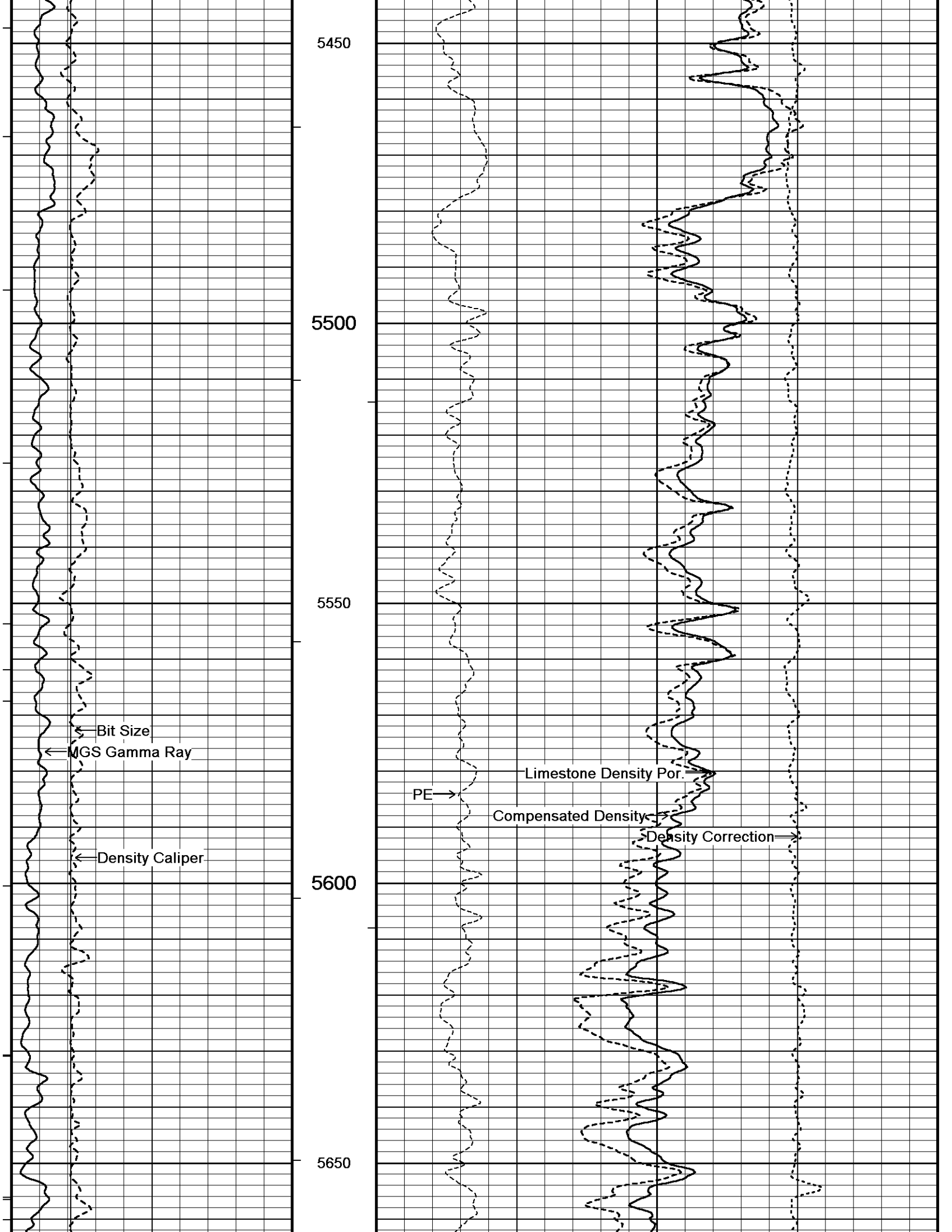
5 INCH MAIN PASS DSC

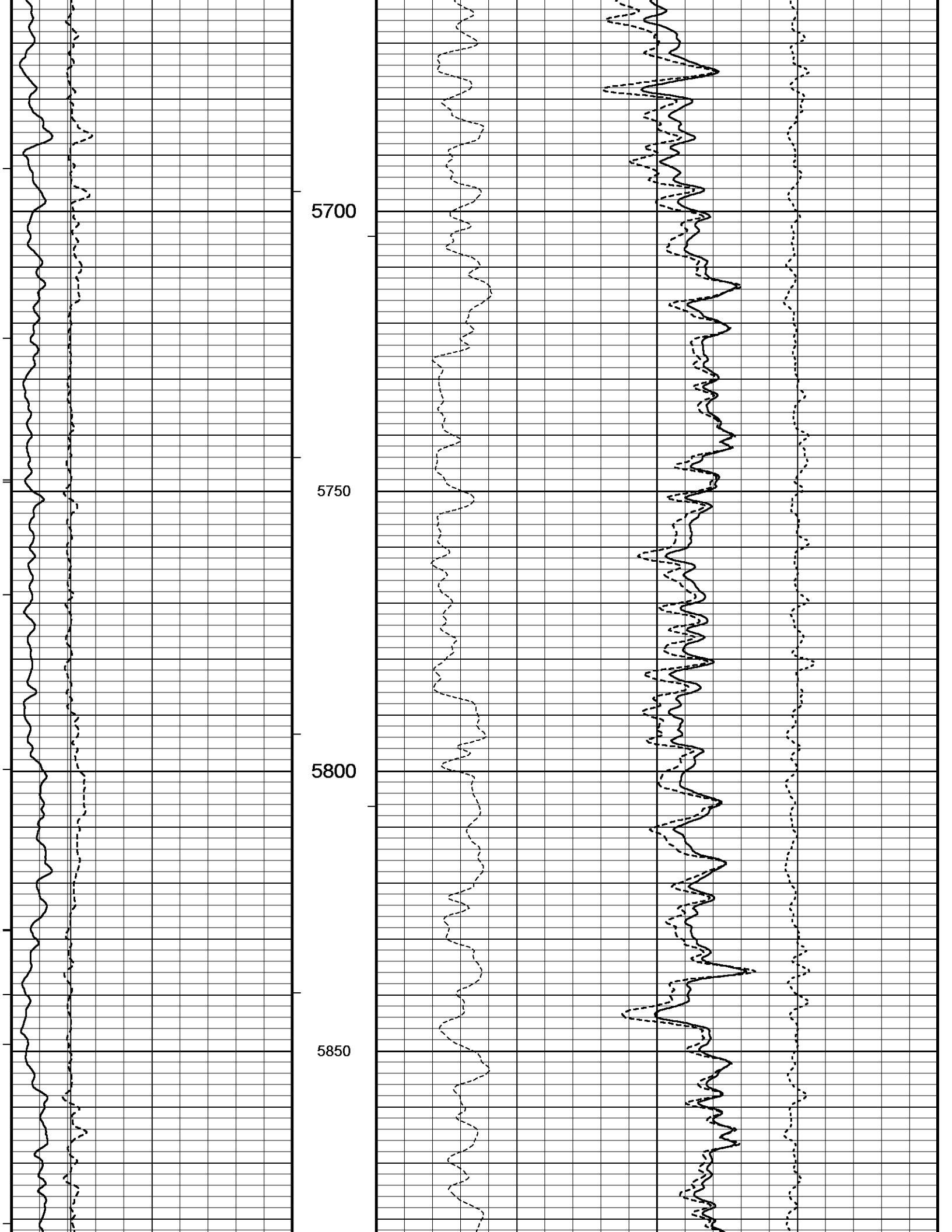
5 INCH BULK DENSITY DSC

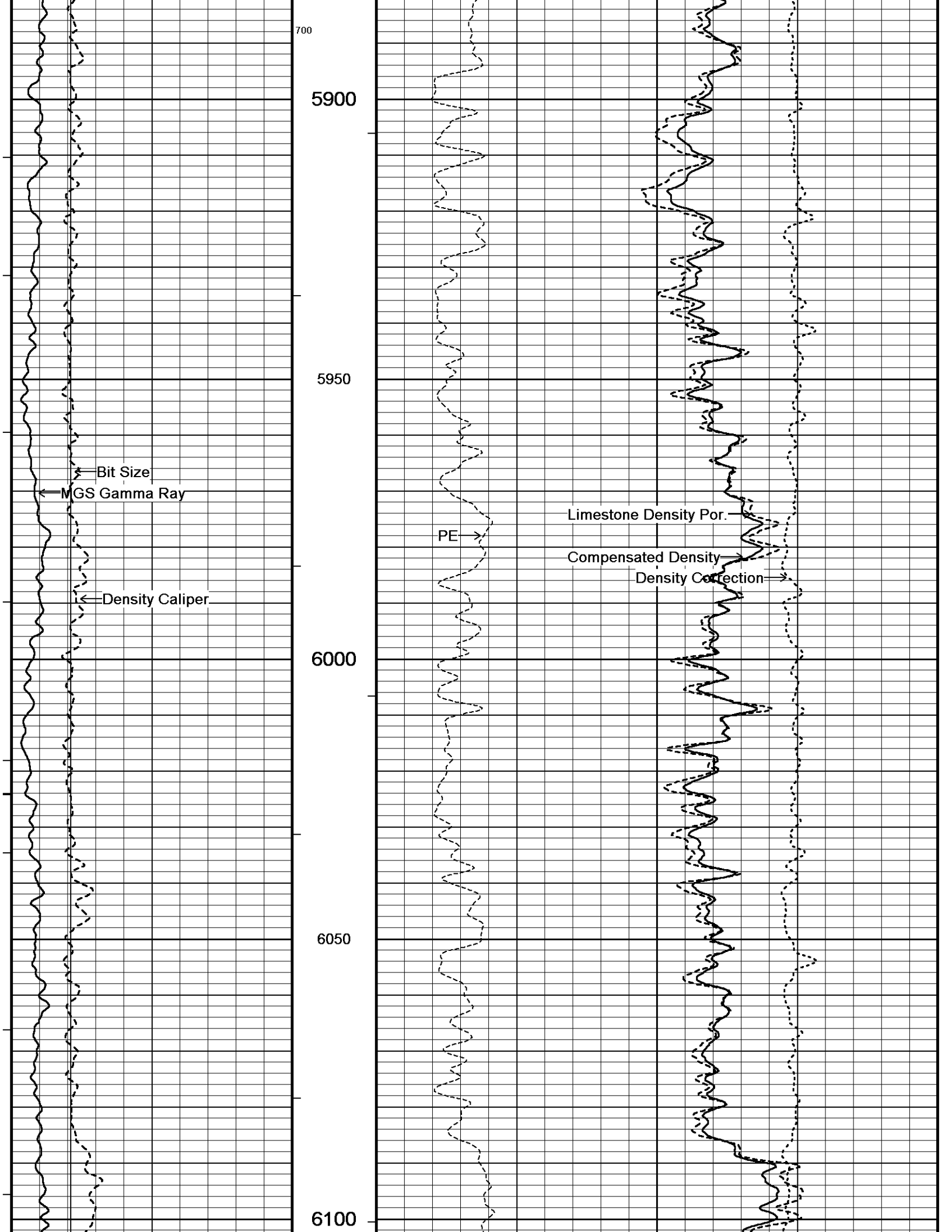
Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 02-FEB-2013 05:08
 Filename: C:\Data\Sandridge\Sandridge Dalrymple\MMS166 Depthlog.dta
 Recorded on 02-FEB-2013 04:48
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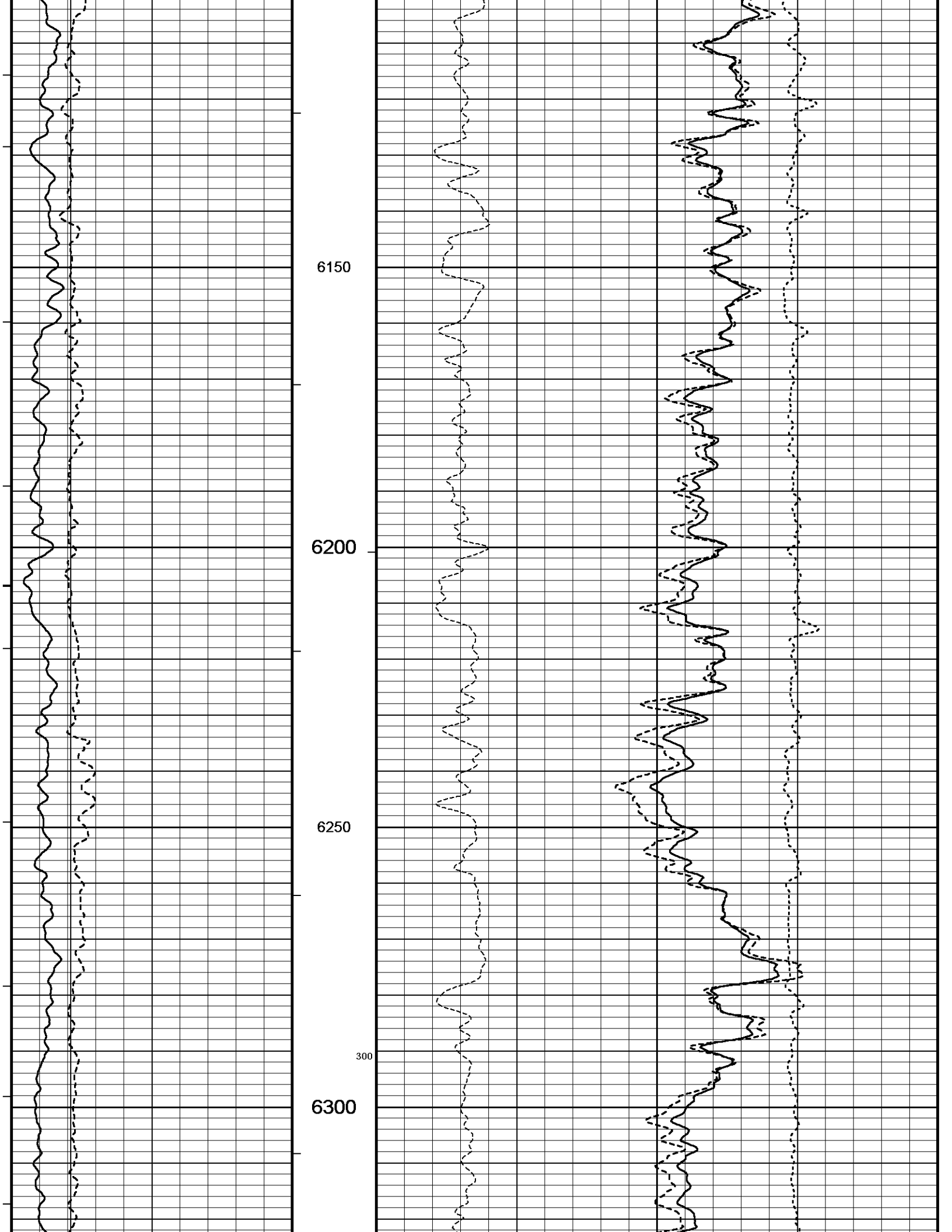


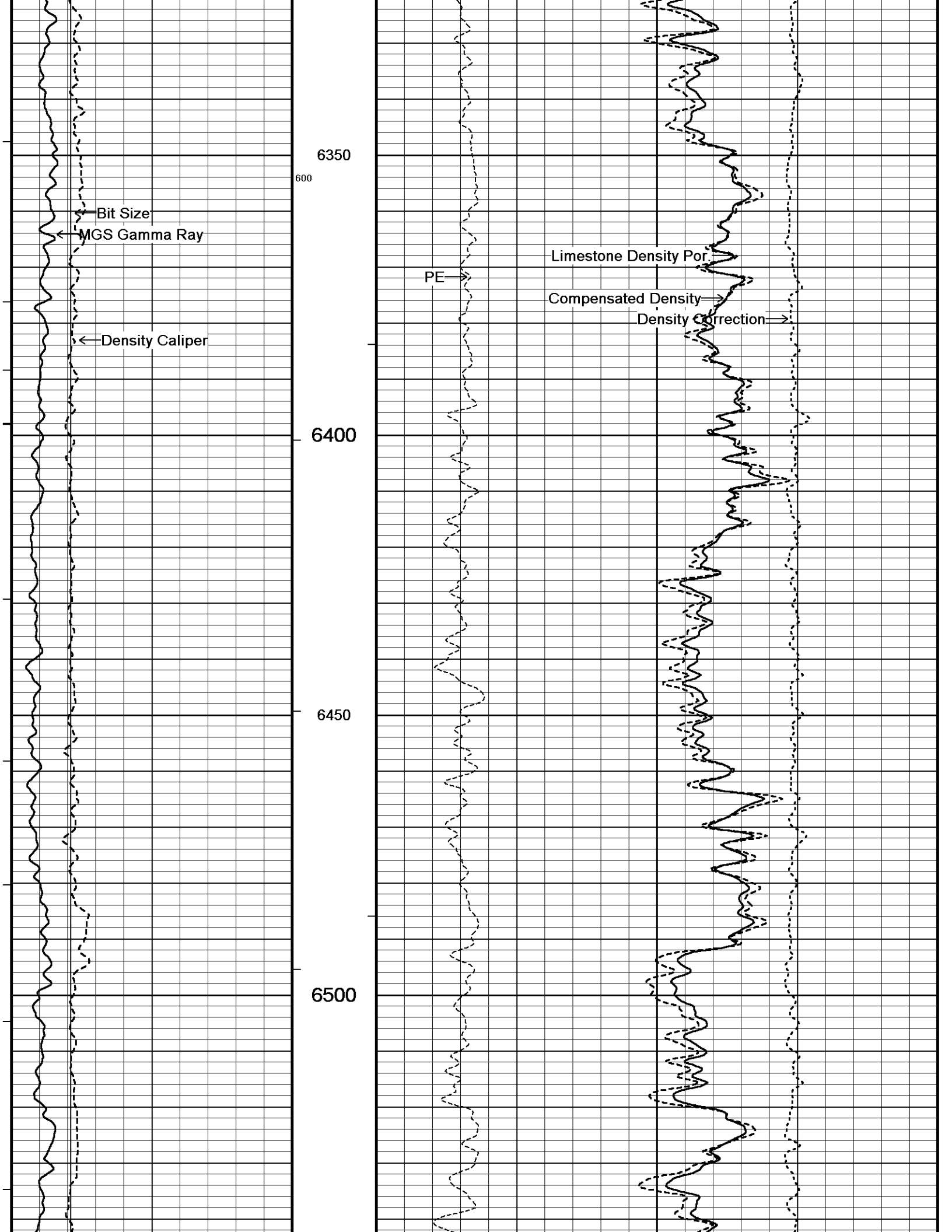


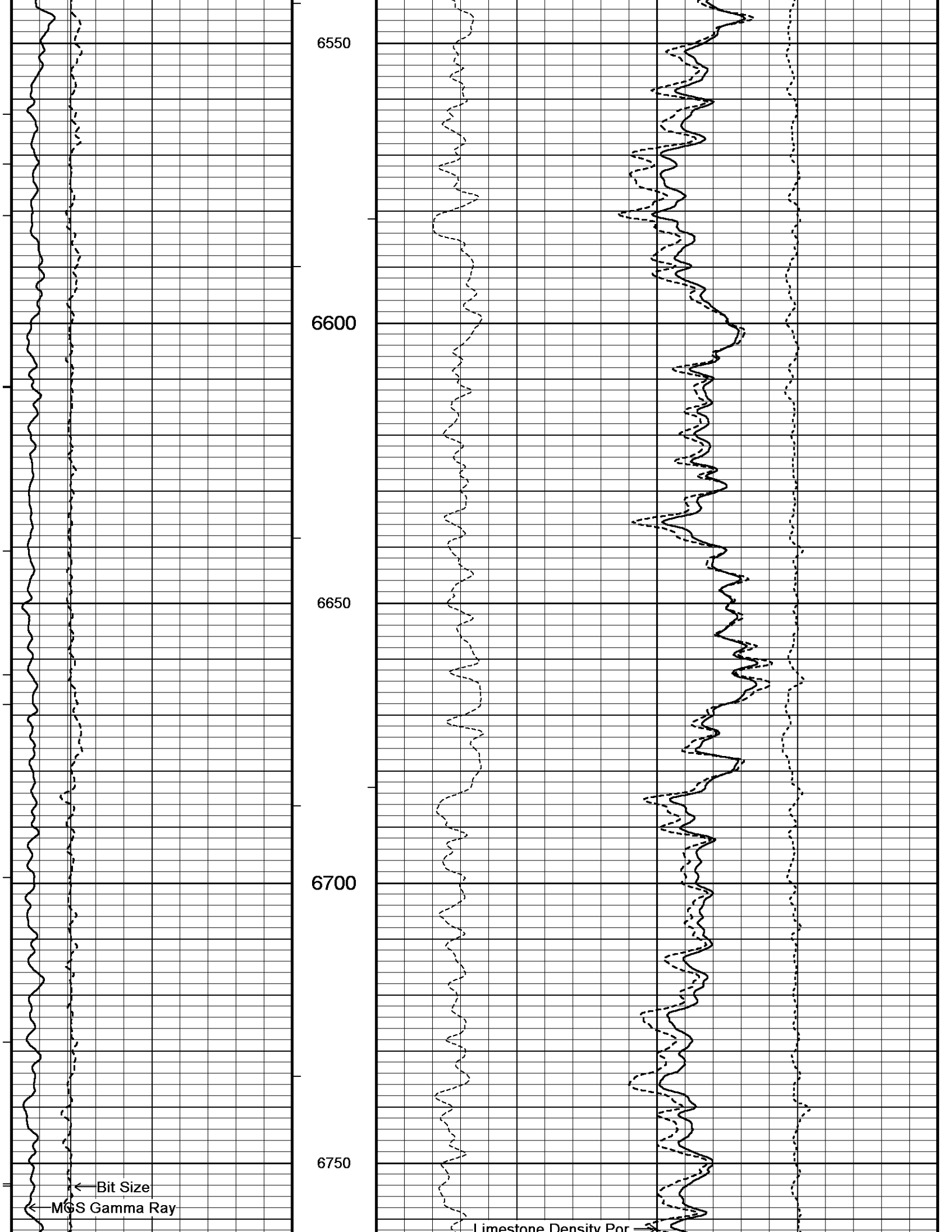


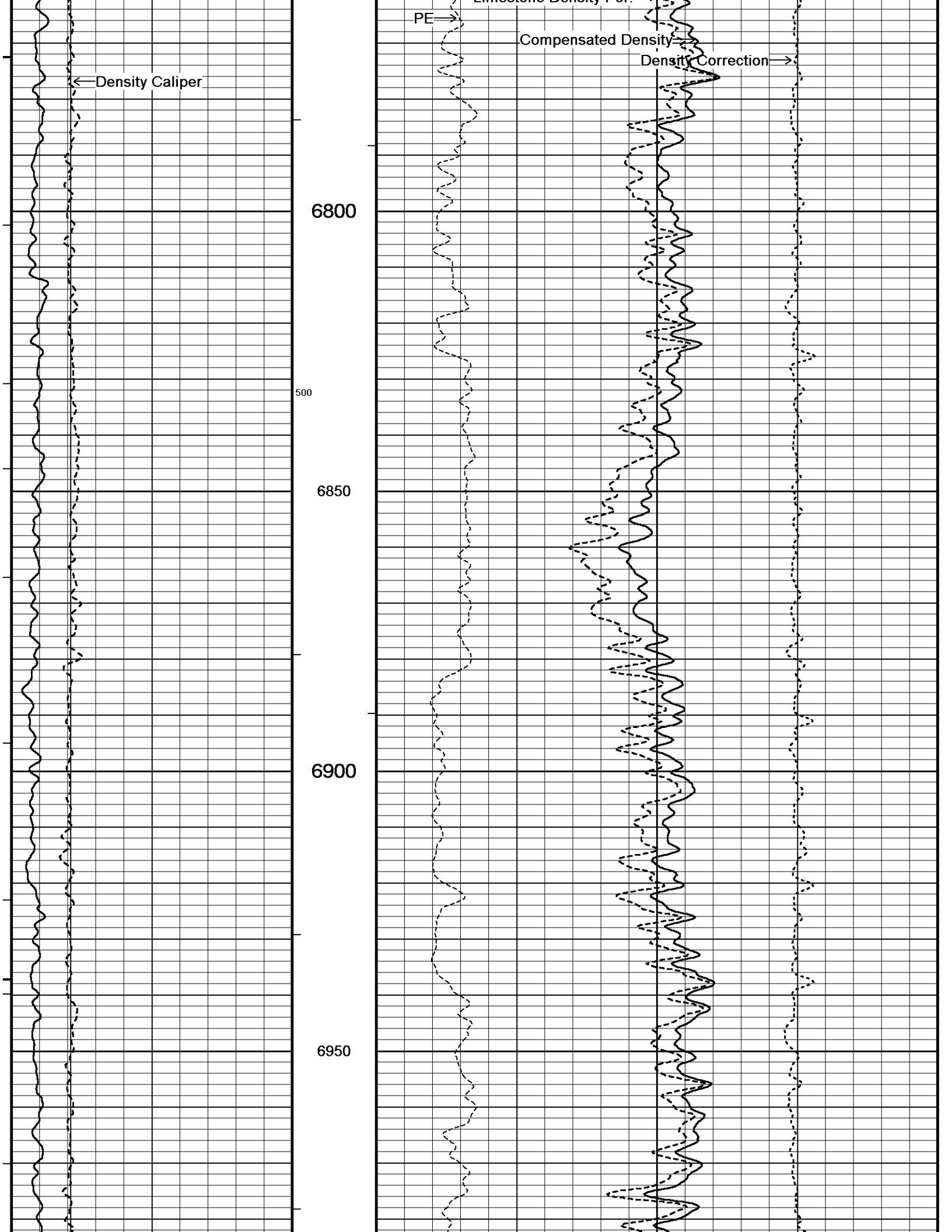


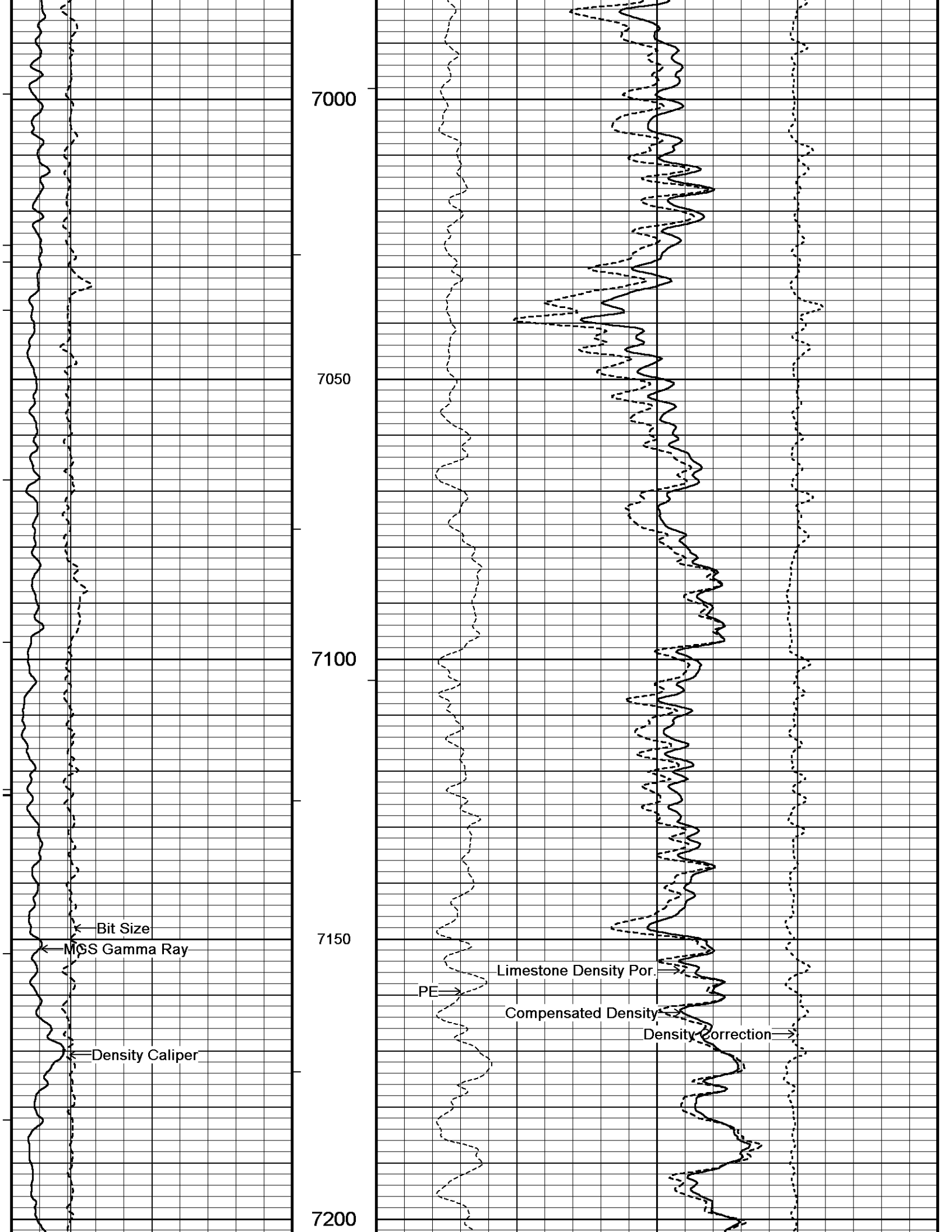


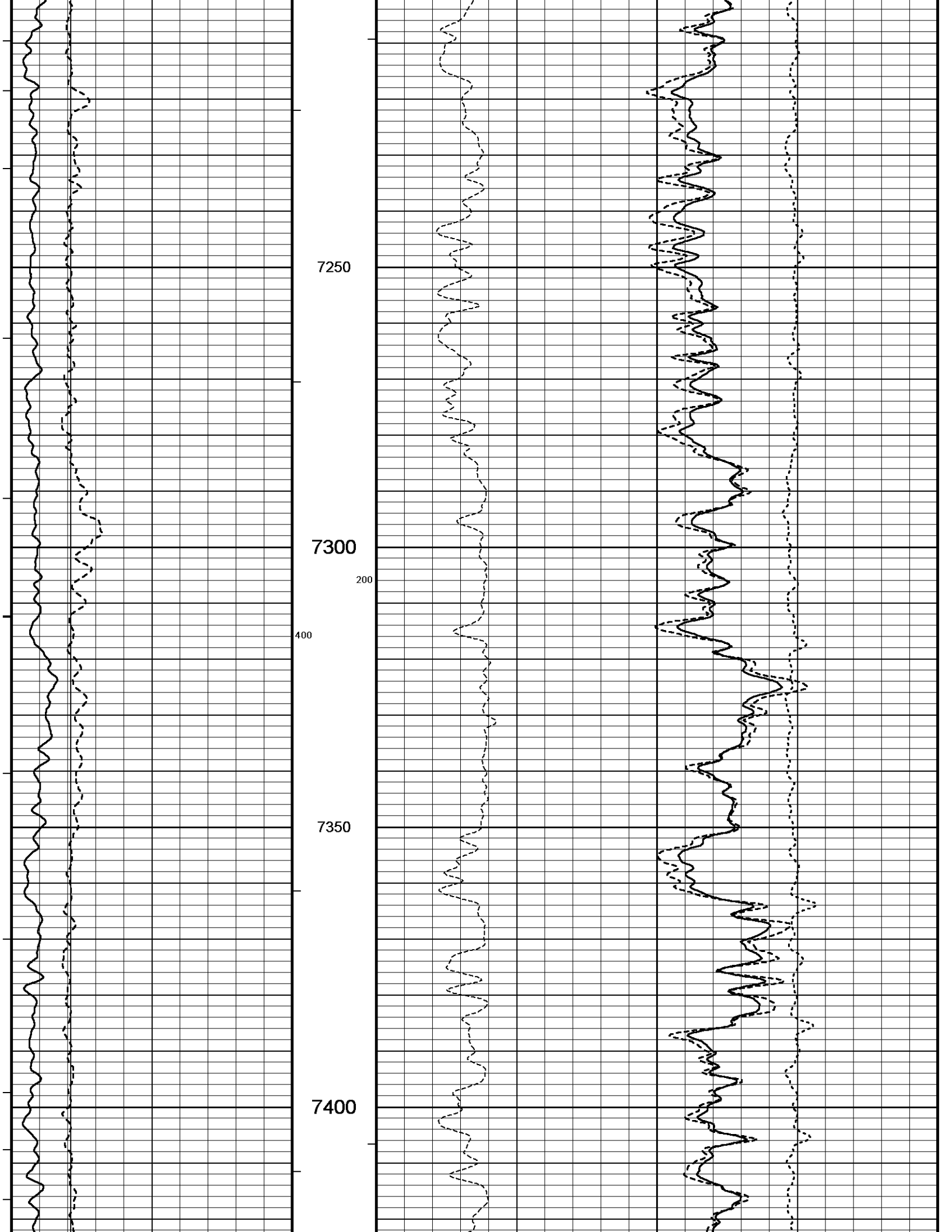


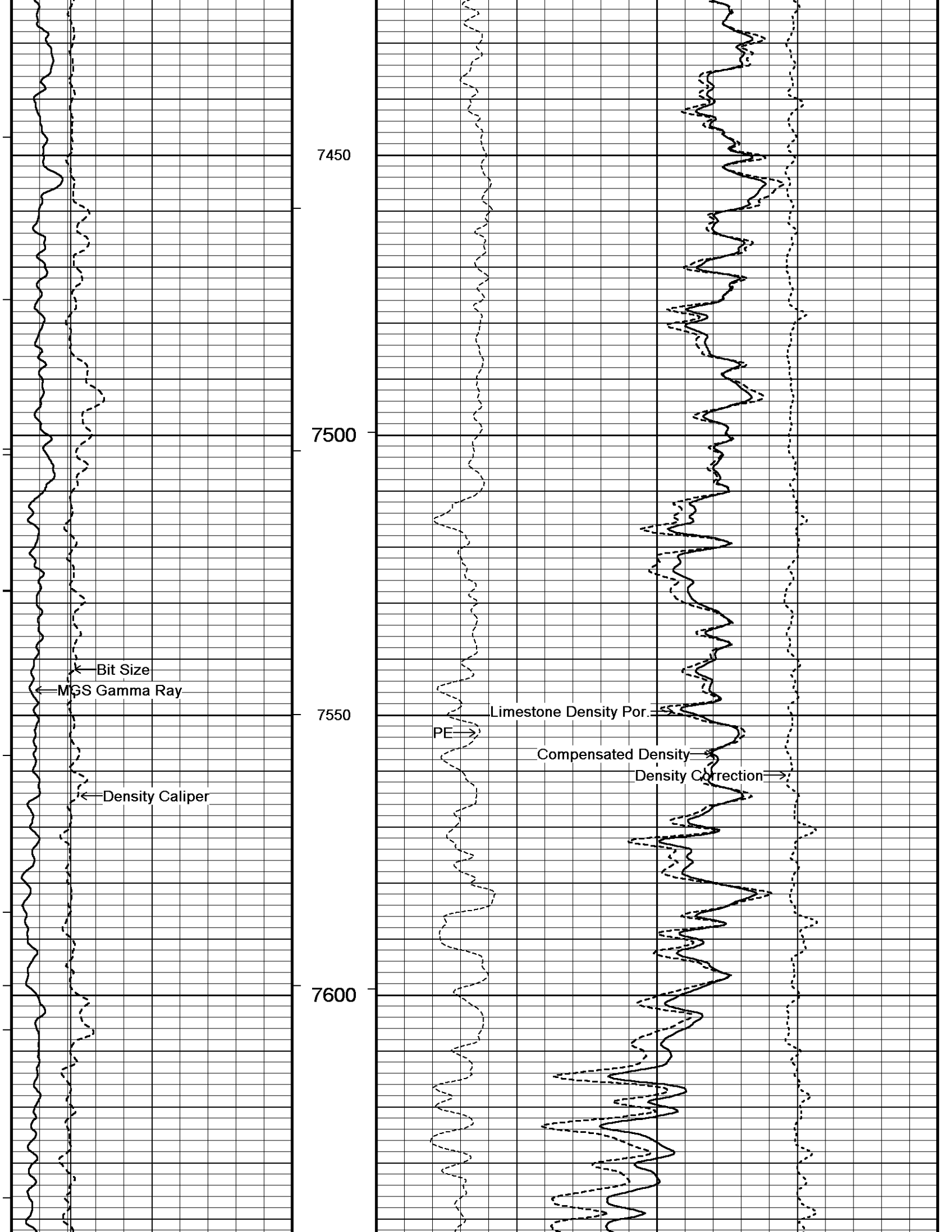


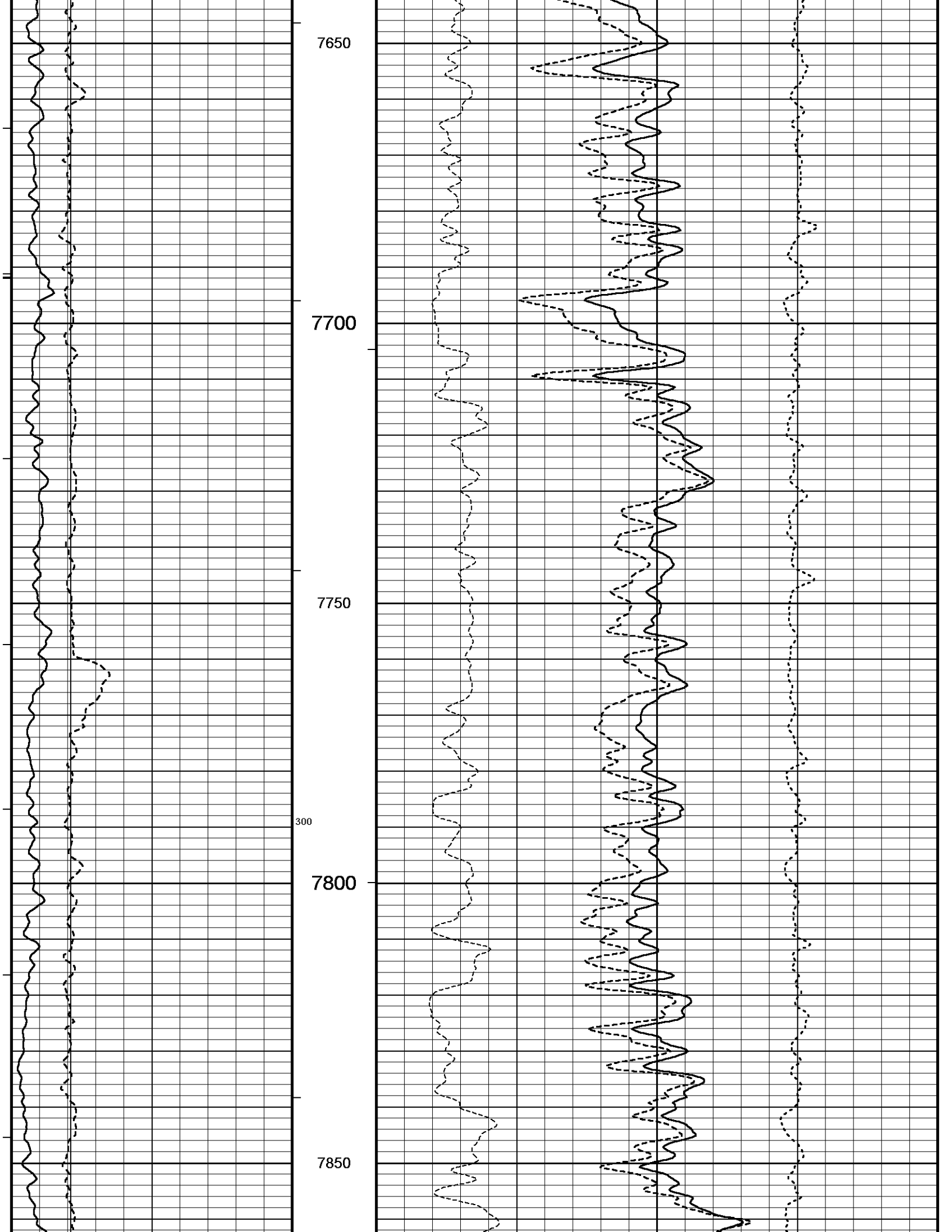


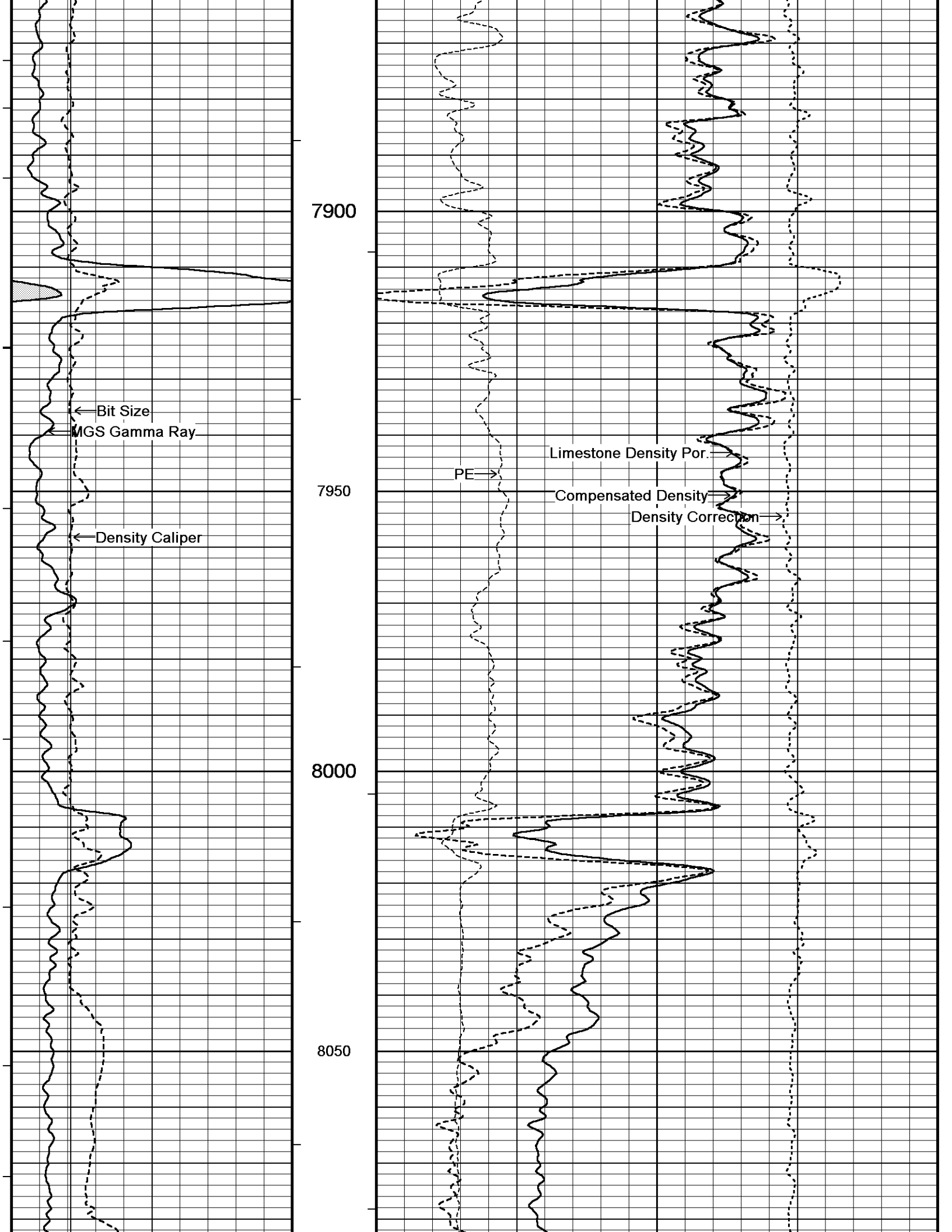


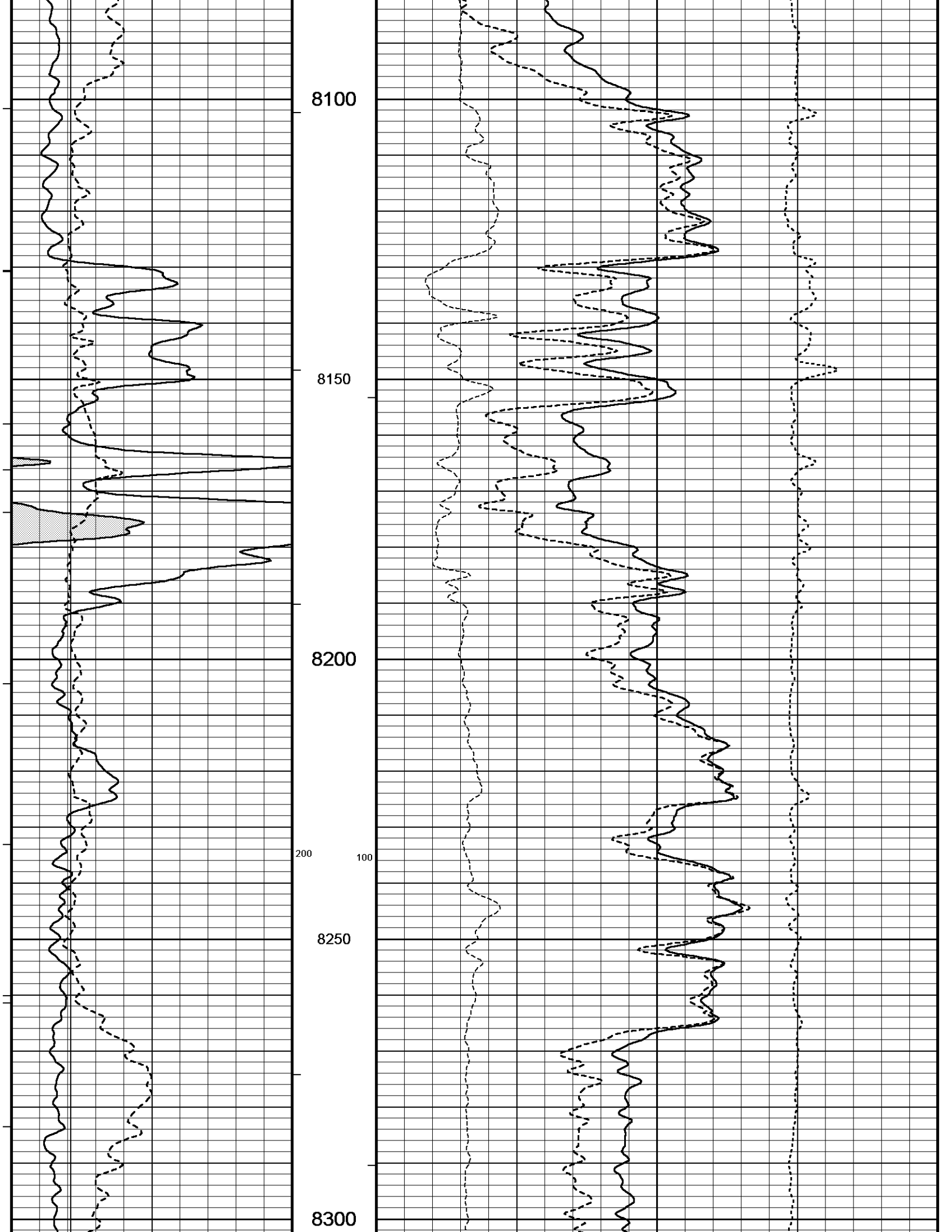


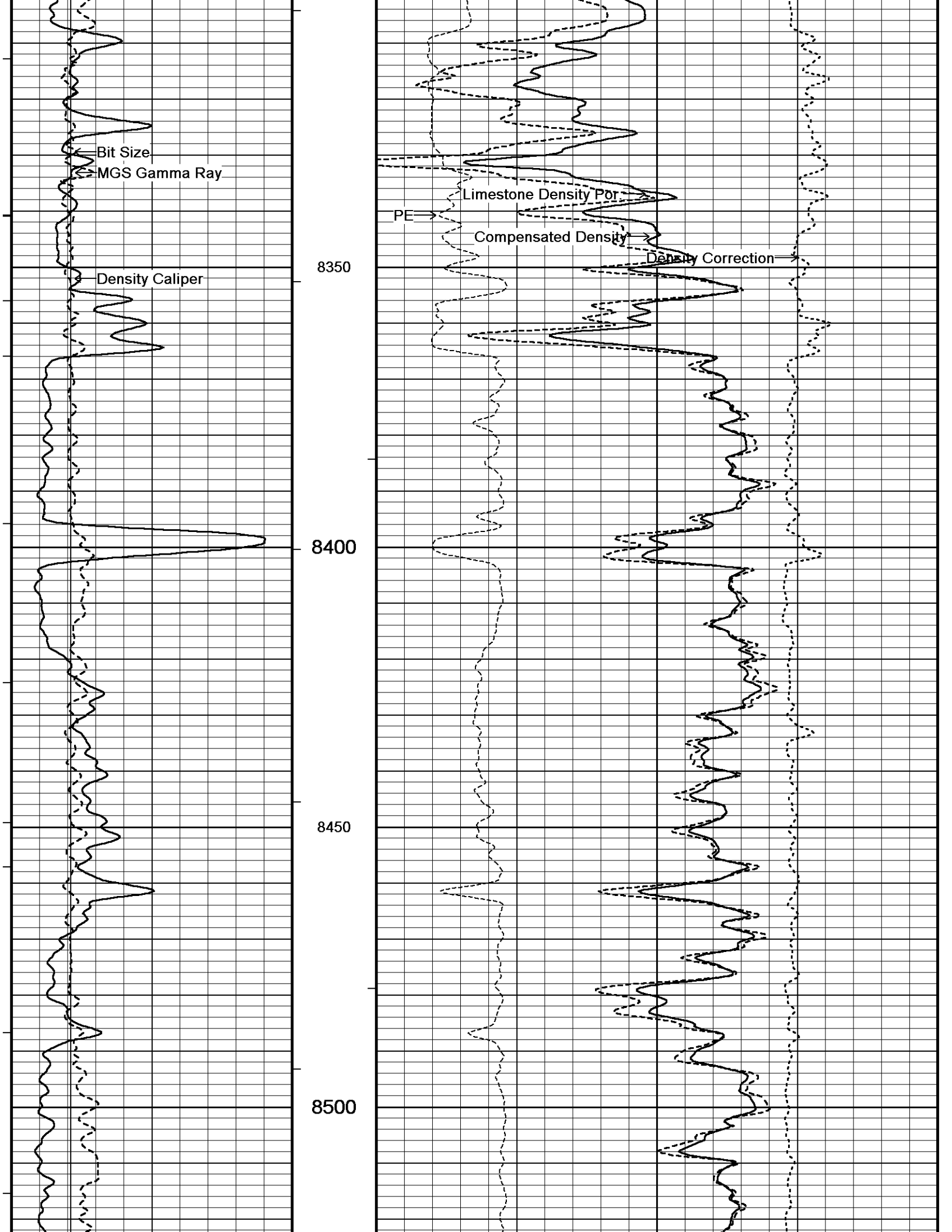


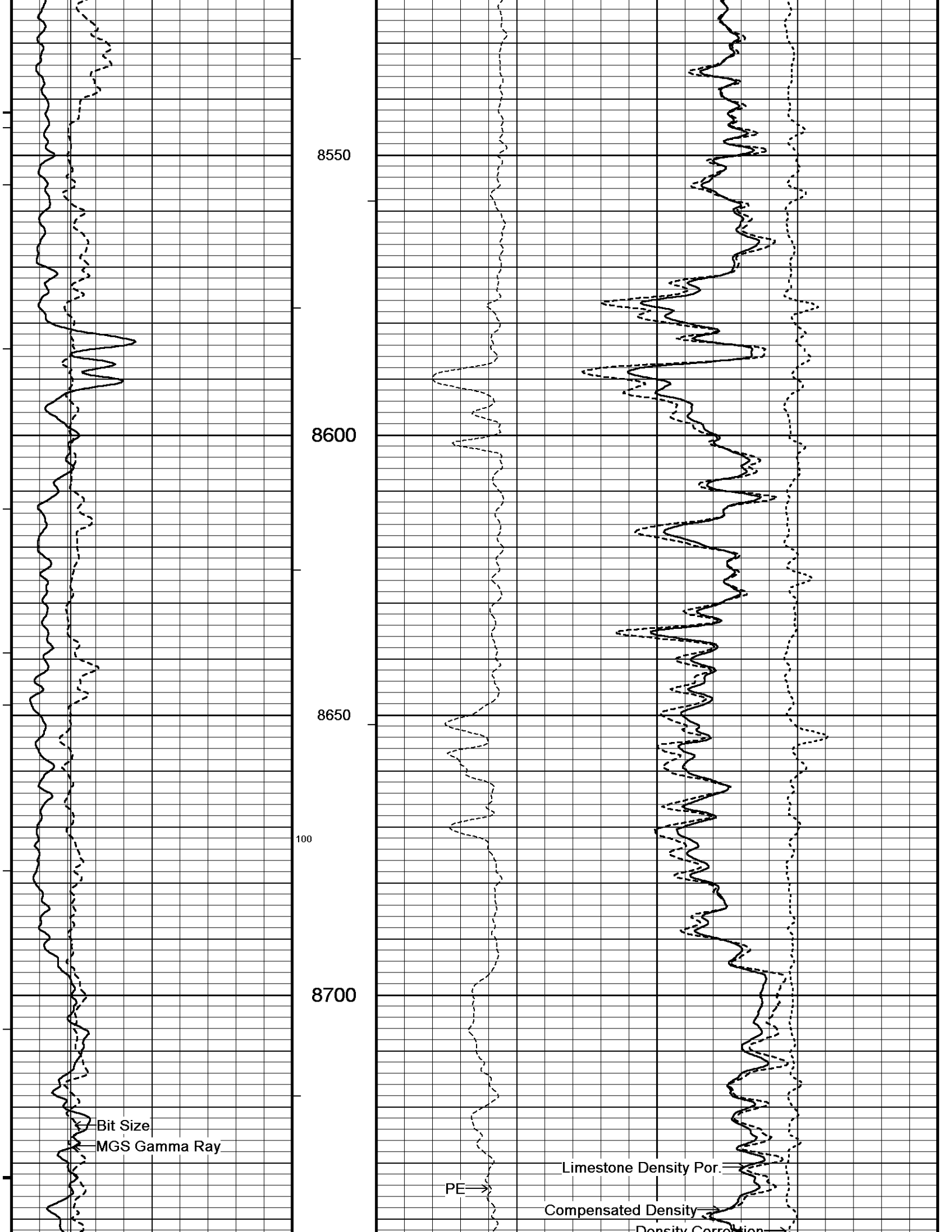












8550

8600

8650

100

8700

Bit Size

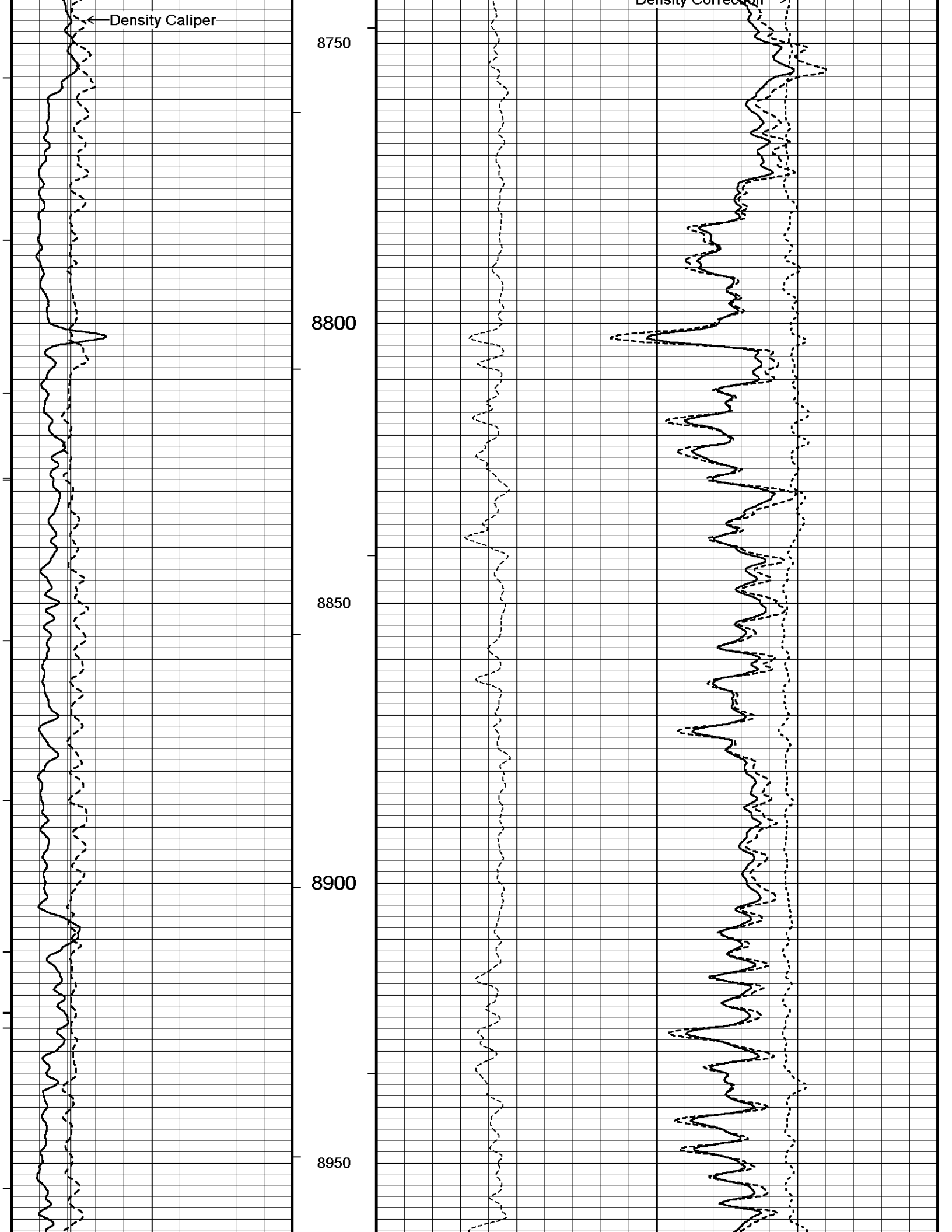
MGS Gamma Ray

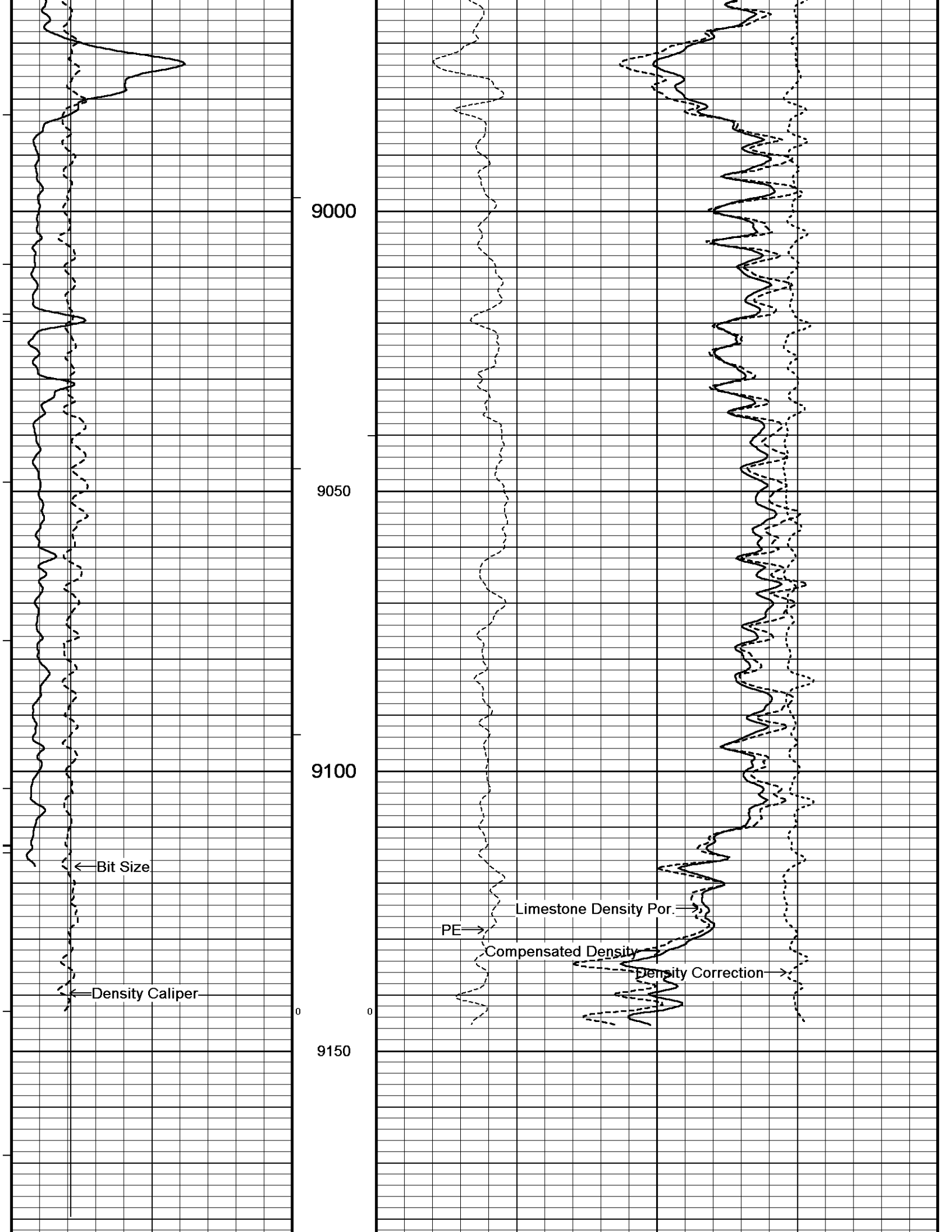
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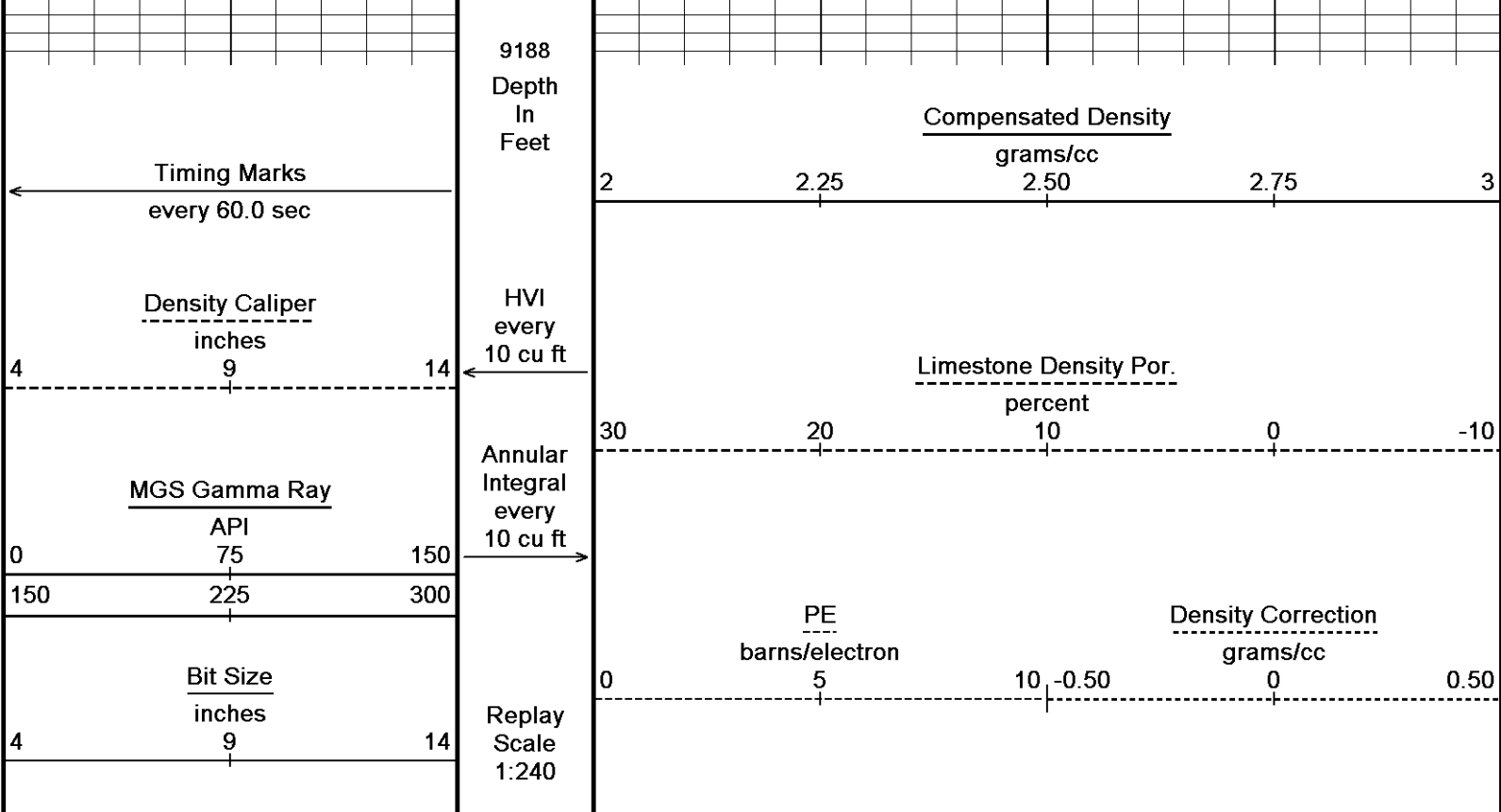
Limestone Density Por.

Compensated Density

Density Correction







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 02-FEB-2013 05:08
 Filename: C:\Data\Sandridge\Sandridge Dalrymple\MMS166 Depthlog.dta
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5 INCH BULK DENSITY DSC

BEFORE SURVEY CALIBRATION
 C:\Data\Sandridge\Sandridge Dalrymple\MMS166 Depthlog.dta

General Constants All 000 Last Edited on 02-FEB-2013,04:51

General Parameters		
Mud Resistivity	0.350	ohm-metres
Mud Resistivity Temperature	60.500	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	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0 Field Calibration on 05-SEP-2012,13:01

Reading No	Measured	Calibrated (lbs)
1	15152.07	0.00
2	18386.74	2000.00

Strain Gauge Constants MMS-E.B 166 Last Edited on 30-JAN-2013,09:56

Atmospheric Pressure	14.70	psi
Serial Number	262005	
Calibration Date	04-Jan-2011	

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	0.096	0.097	0.113	0.113	0.129	0.129	0.138	0.139
3000.0	5.275	5.280	5.290	5.294	5.303	5.306	5.307	5.310
6000.0	10.464	10.472	10.478	10.485	10.488	10.494	10.487	10.494
9000.0	15.664	15.672	15.676	15.684	15.683	15.691	15.679	15.687
12000.0	20.876	20.882	20.888	20.893	20.892	20.898	20.885	20.890
15000.0	26.101		26.111		26.114		26.103	

Gamma Calibration MGS-C.J 133

Field Calibration on 30-JAN-2013 09:17

	Measured	Calibrated (API)
Background	146	106
Calibrator (Gross)	1106	802
Calibrator (Net)	959	696

Gamma Constants MGS-C.J 133

Last Edited on 30-JAN-2013,21:43

Gamma Calibrator Number	036	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MGS-C.J 133

Field Calibration on 30-JAN-2013,09:12

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

High Resolution Temperature Calibration MGS-C.J 133

Field Calibration on 30-JAN-2013,09:11

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MGS-C.J 133

Last Edited on 30-JAN-2013,09:11

Pre-filter Length	11
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Neutron Calibration MDN-B.J 423

Base Calibration on 21-JAN-2013 09:28

Field Check on 30-JAN-2013 09:25

Base Calibration					
	Measured		Calibrated (cps)		
	Near	Far	Near	Far	
Ratio	2797	85	3714	110	
	32.949		33.764		
Field Calibrator at Base					
			Calibrated (cps)		
Ratio			2242	3339	
			0.671		
Field Check					
			Calibrated (cps)		
Ratio			2206	3107	
			0.710		

Neutron Constants MDN-B.J 423

Last Edited on 01-FEB-2013,04:21

Neutron Source Id	000	
Neutron Jig Number	000	
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 Source	Constant Value	20.00	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-B.J 328			Base Calibration on 27-JAN-2013,14:37 Field Check on 30-JAN-2013 09:00
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	981.4	126.8	
Base Check		274.7	
Field Check		274.8	

FE Constants MFE-B.J 328			Last Edited on 30-JAN-2013,08:59
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.	MGS External Temperature		
Stand-off	0.5	inches	

High Resolution Temperature Calibration MAI-C.A 427			Field Calibration on 27-JAN-2013,14:35
	Measured	Calibrated(Deg F)	
Lower	10.00	10.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MAI-C.A 427			Last Edited on 30-JAN-2013,08:54
Pre-filter Length	11		

Induction Calibration MAI-C.A 427			Base Calibration on 27-JAN-2013,14:35 Field Check on 01-FEB-2013 04:16		
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	14.4	434.9	9.3	966.2	
2	5.8	355.4	7.6	821.4	
3	2.7	244.4	5.2	566.0	
4	1.8	129.3	2.6	279.2	
Array Temperature	22.9		Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			15.6	4140.9	
2			31.1	3770.9	
3			30.8	3209.9	
4			19.7	2124.5	
Deep			19.1	2019.9	
Medium			45.2	4288.9	
Shallow			45.8	5679.9	
Array Temperature			24.9	Deg F	

Induction Constants MAI-C.A 427			Last Edited on 02-FEB-2013,04:51
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		0.0020	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	

Photo Density Calibration MPD-D.A 471

Base Calibration on 26-DEC-2012 09:33
Field Check on 01-FEB-2013 04:21

Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
	Near	Far	Near	Far	
Reference 1	54132	27447	59869	31110	
Reference 2	22673	2730	24557	2522	
Field Check at Base					
	1281.3	1476.8			
Field Check					
	1284.8	1477.5			

PE Calibration					
Base Calibration		Measured		Calibrated	
	WS	WH	Ratio	Ratio	
Background	246	1128			
Reference 1	23825	53911	0.447	0.369	
Reference 2	6960	22516	0.314	0.271	
Field Check at Base					
	245.7	1128.4			
Field Check					
	244.4	1137.5			

Density Constants MPD-D.A 471

Last Edited on 17-JAN-2013,10:31

Density Source Id	243	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.04	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)
 2.71
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00

Depth (ft)
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00

Caliper Calibration MPD-D.A 471

Base Calibration on 14-DEC-2012,07:31
 Field Calibration on 11-JAN-2013 09:46

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19410	3.99
2	29147	5.97
3	38815	7.99
4	48375	9.86
5	59610	11.93
6	N/A	N/A

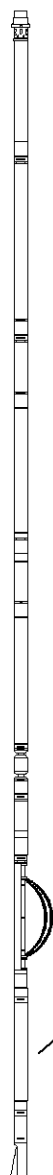
Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.87	5.97

DOWNHOLE EQUIPMENT

C:\Data\Sandridge\Sandridge Dalrymple\MMS166 Depthlog.dta

- Shuttle Running Tool 3.5")
 SRT-A.A 40 LG: 6.62 ft WT: 37.5 lb OD: 2.52 in
- MBS-G.A 200v Compact Battery Sub
 MBS-G.A 115 LG: 10.61 ft WT: 70.5 lb OD: 2.24 in
- Compact Memory Sub E.B
 MMS-E.B 166 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in
- Compact Tool Isolator sub.
 MTI-B.A 63 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in
- Compact Short Gamma
 MGS-C.J 133 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in
- Compact Collar Locator
 MCL-B.J 72 LG: 3.17 ft WT: 26.5 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
- SHA-J.A Compact Swivel Head Adaptor
 SHA-J.A 432 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in
- MIS-A.A Compact Inline Bowspring sub
 MIS-A.A 275 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in
- Compact Neutron
 MDN-B.J 423 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in
- Compact Density/Caliper
 MPD-D.A 471 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in
- MIS-D.B Compact Inline Bowspring sub
 MIS-D.B 591 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in



42.89 ft NPRL - Limestone Neutron Por.

- 35.65 ft AVOL - Annular Volume
- 35.65 ft HVOL - Hole Volume
- 35.65 ft CLDC - Density Caliper
- 33.72 ft DPRL - Limestone Density Por.
- 33.72 ft DEN - Compensated Density
- 33.72 ft DCCP - Density Correction

SHA-J.A Compact Swivel Head Adaptor
 SHA-J.A 205 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
 SKJ-E.B 477 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

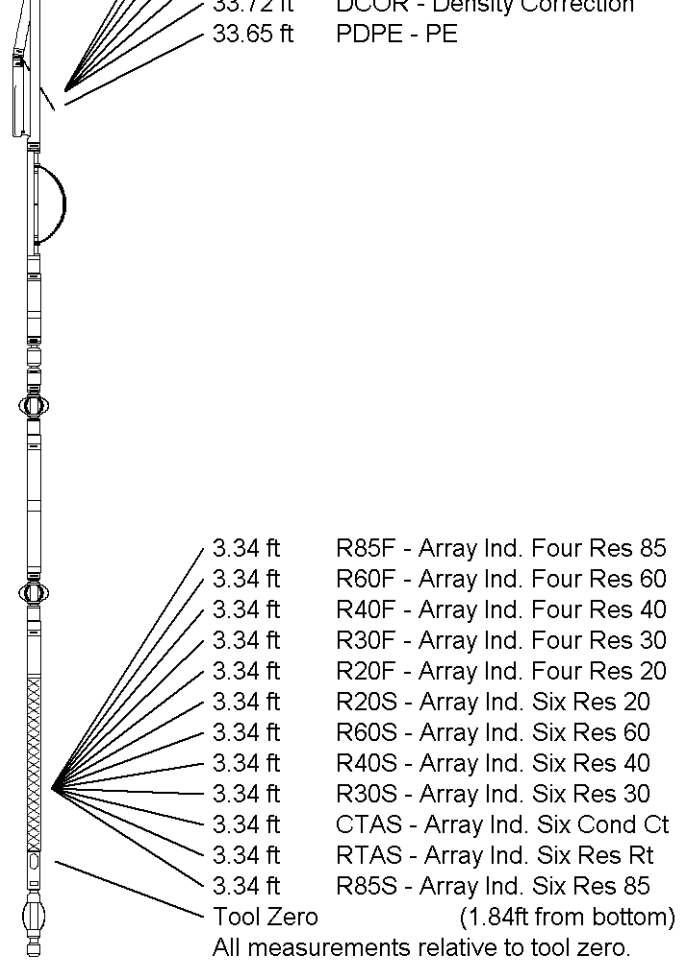
MIS-E.B Compact Inline Standoff sub
 MIS-E.B 565 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Focussed Electric
 MFE-B.J 328 LG: 6.05 ft WT: 48.5 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

Compact Induction
 MAI-C.A 427 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in

Total Length: 88.36 ft Weight: 637.1 lb



COMPANY	SANDRIDGE EXPLORATION & PRODUCTION
WELL	DALRYMPLE FARMS 3506 1-13H
FIELD	SIX MOONS
PROVINCE/COUNTY	HARPER
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	1243.00	feet	First Reading	9146.00	feet
Elevation Drill Floor	1243.00	feet	Depth Driller	9199.00	feet
Elevation Ground Level	1224.00	feet	Depth Logger	9179.00	feet



Weatherford®

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