



Weatherford

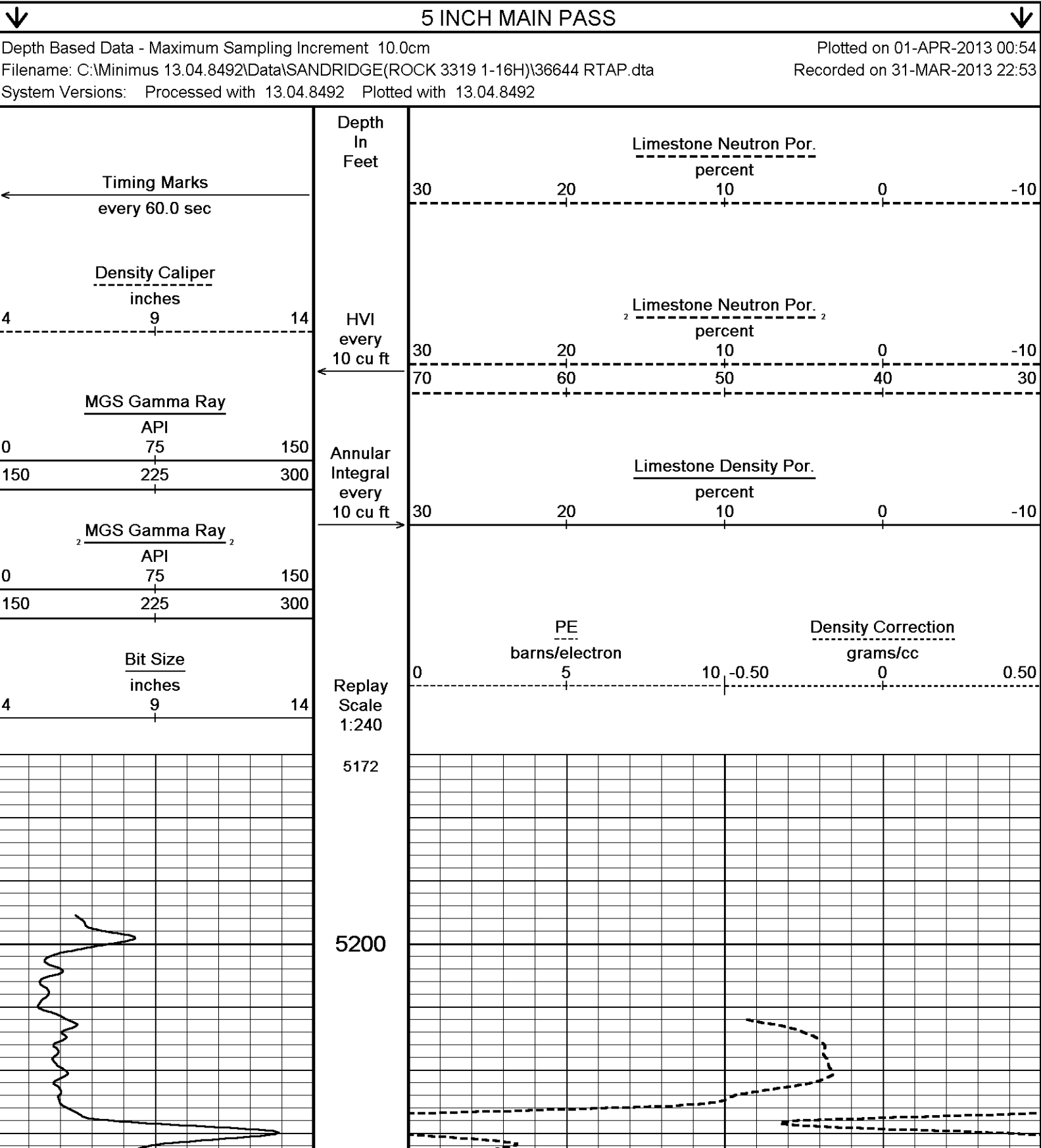
**CML MESSENGER SHUTTLE
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON LOG**

COMPANY	SANDRIDGE ENERGY		
WELL	ROCK 3319 1-16H		
FIELD	EAST COLLIER FLATS		
PROVINCE/COUNTY	COMANCHE		
COUNTRY/STATE	USA / KANSAS		
LOCATION	200' FSL & 660' FWL S2 S2 SW SW		
SEC	TWP	RGE	Other Services
6	34S	19W	MAI
API Number	15-033-21696		
Permit Number			
Permanent Datum G.L., Elevation 1983 feet			Elevations: KB 2001.00
Log Measured From DF			DF 2001.00
Drilling Measured From DF @ 1983 FEET			GL 1983.00
Date	31-MAR-2013		
Run Number	ONE		
Service Order	3539407		
Depth Driller	9615.00		
Depth Logger	9615.00		
First Reading	9480.00		
Last Reading	3900.00		
Casing Driller	5795.00		
Casing Logger	5795.00		
Bit Size	6.125		
Hole Fluid Type	WATER		
Density / Viscosity	9.10	lb/USg	34.00 CP
PH / Fluid Loss	10.20		10.20
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.0 @ 79.0		
Rmf @ Measured Temp	0.80 @ 79.0		
Rmc @ Measured Temp	1.20 @ 79.0		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.57 @138.0		
Time Since Circulation	1 HOUR		
Max Recorded Temp	138.00		
Equipment / Base	18006	OKC	
Recorded By	B.ALLEN		
Witnessed By	M.RODEN		
AFE #/S.O.	DC12155		

BOREHOLE RECORD			Last Edited: 31-MAR-2013 11:23
Bit Size inches	Depth From feet	Depth To feet	
12.250	0.00	329.00	
8.750	329.00	5795.00	
6.125	5795.00	9615.00	

REMARKS
LOGGED WITH WLS VER 13.03.7779 SOFTWARE
WELL LOGGED USING MESSENGER METHOD OF DEPLOYMENT, AND MEMORY LOGGING SYSTEM
HARDWARE: MAI: ISA STANDOFF BELOW MPD: 4"PROFILE PLATE, MIS-A SINGLE SPRING DECENTRALIZER BELOW MDN: MISD DOUBLE SPRING DECENTRALIZER RAN ABOVE
2.71 G/CC DENSITY MATRIX USED TOCALCULATE POROSITY ALL INTERVALS LOGGED AND SCALED PER CUSTOMER REQUEST
DRILL PIPE DEPTH DURING DEPLOYMENT - 9430 LOGGING TOOL DEPTH AFTER DEPLOYMENT: 9513
4.5" CASING USED TO CALCULATE AHV
THE TOTCO DEPTH SYSTEM FAILED WHILE LOGGING THE WELL AT AROUND 5000 FEET. WE WERE ABLE TO GET DATA UP TO THAT POINT FOR NOW AND WILL WORK ON THE REST OF THE LOG PUTTING IT TOGETHER FROM SCRATCH.

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





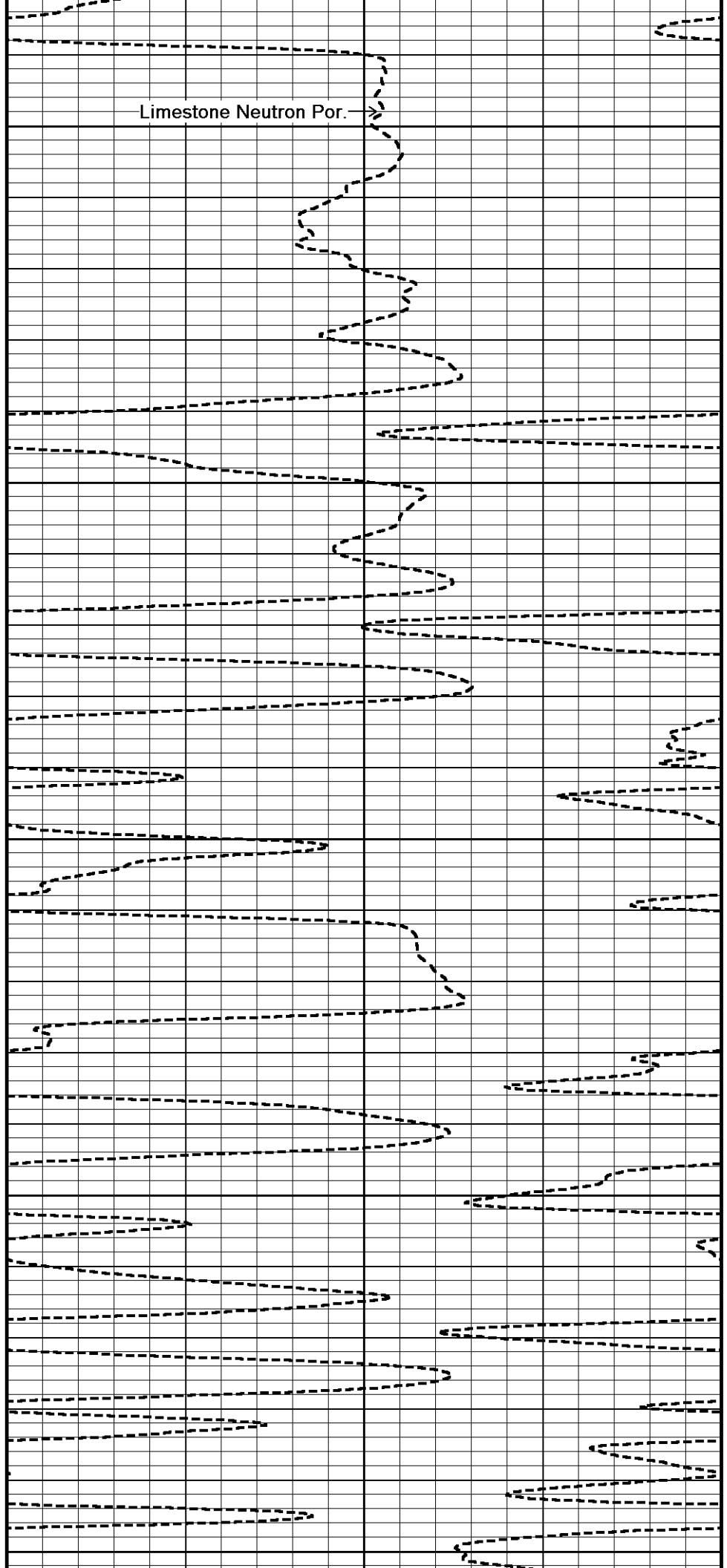
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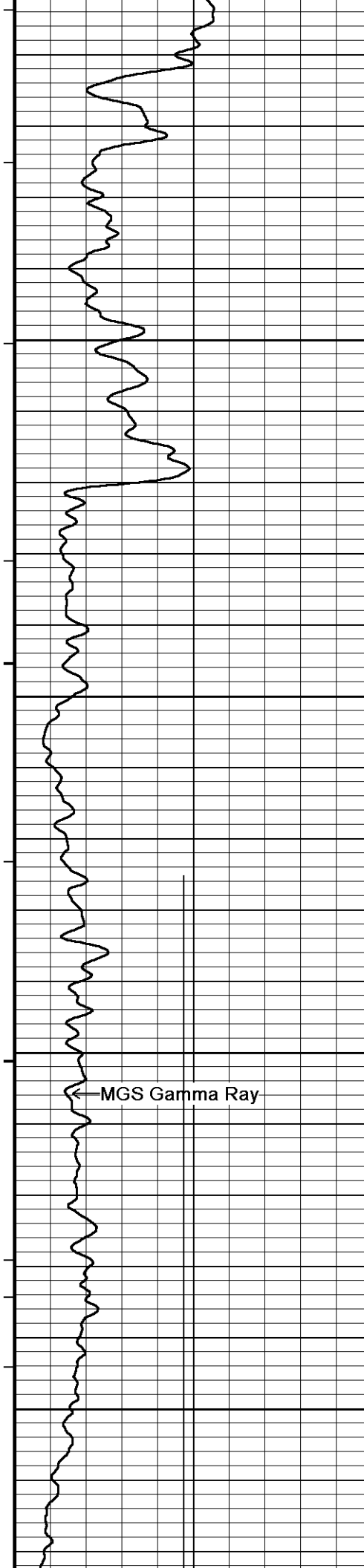
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5400

5450



Limestone Neutron Por.



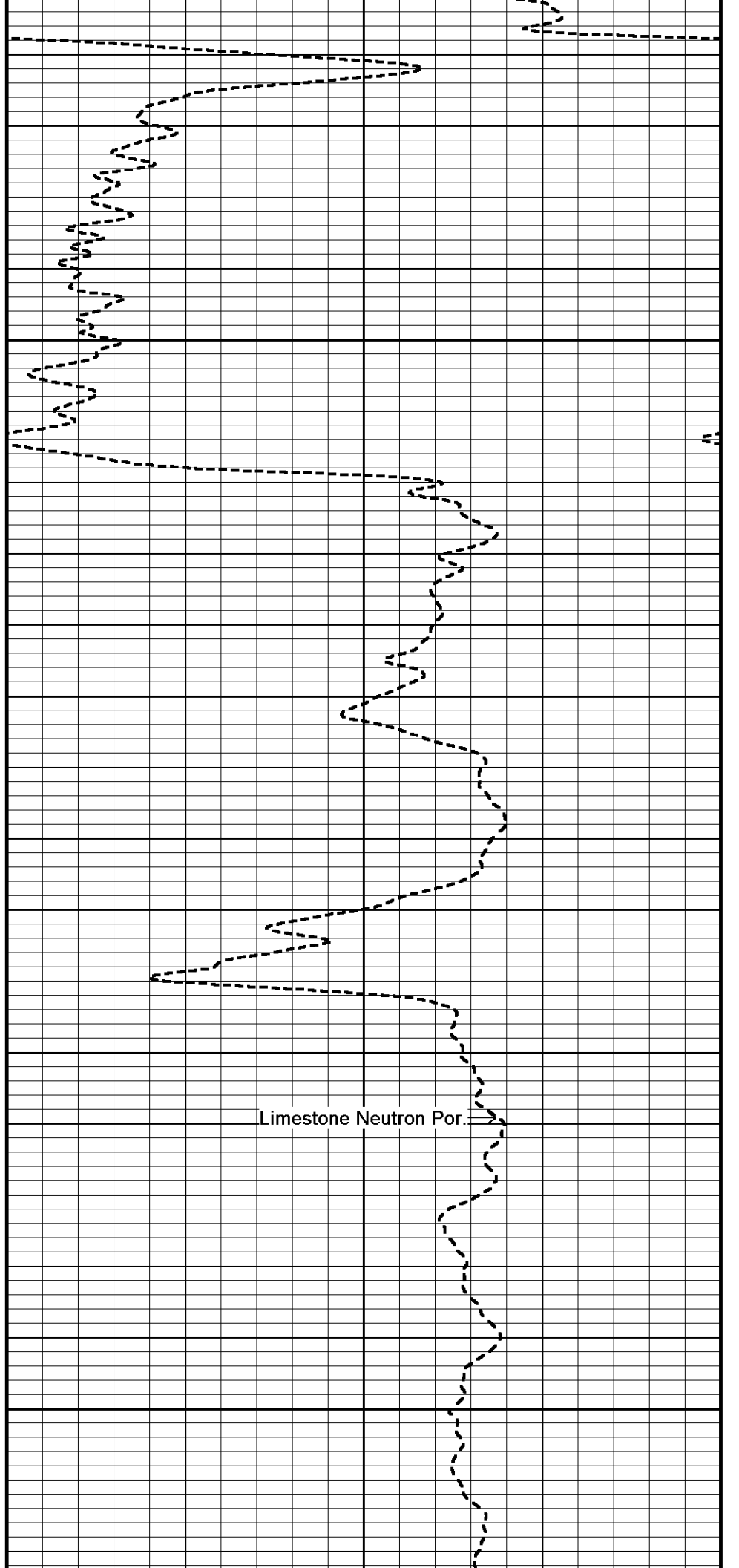
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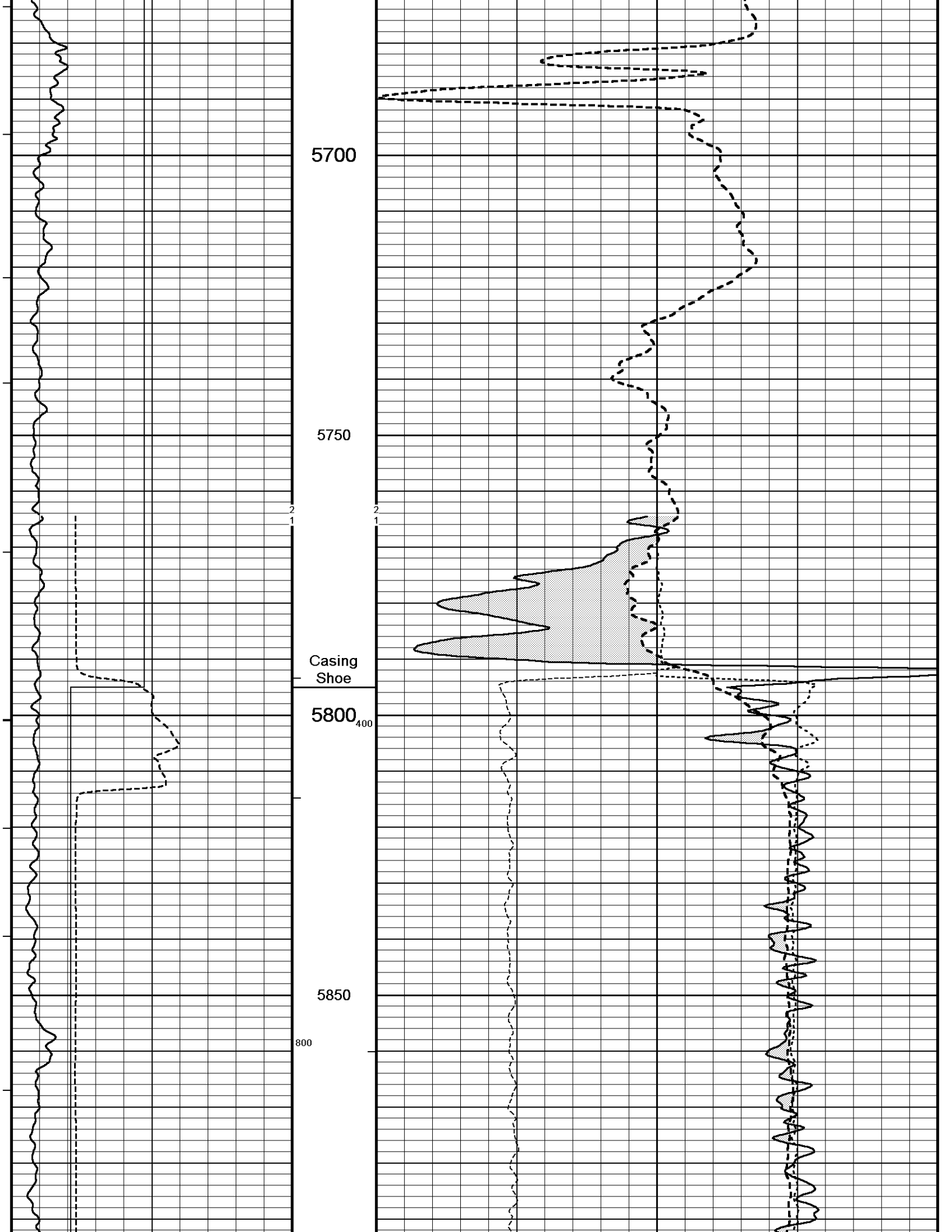
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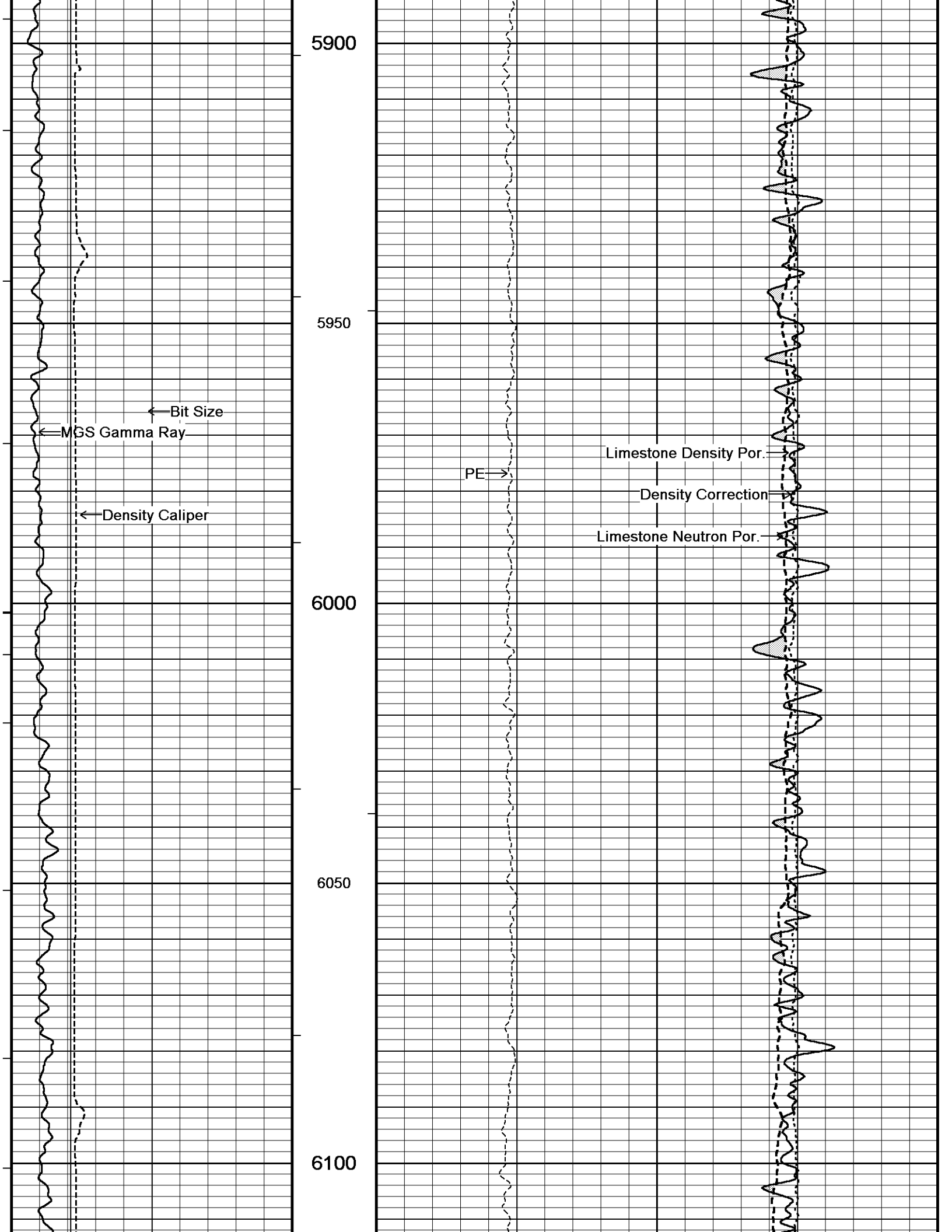
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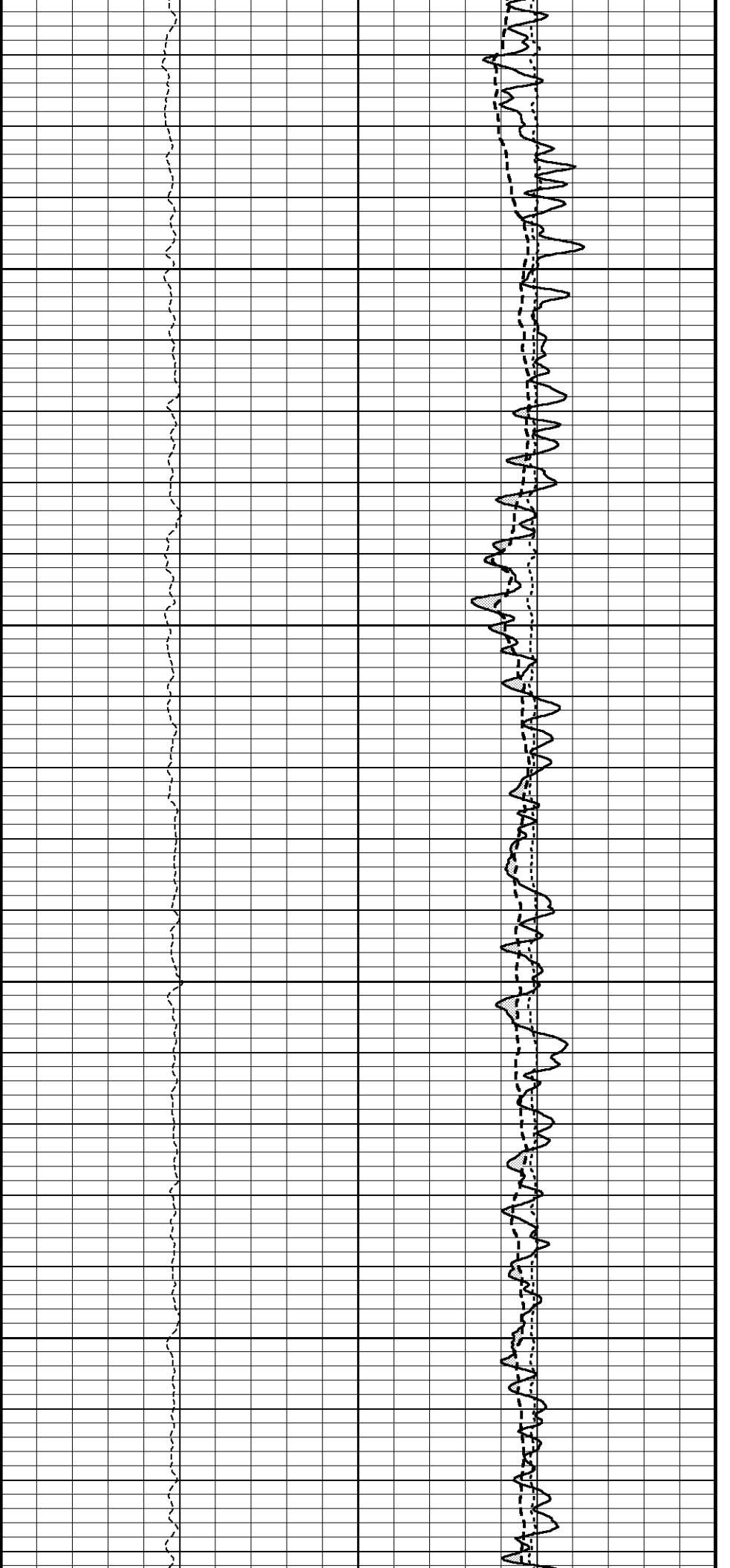
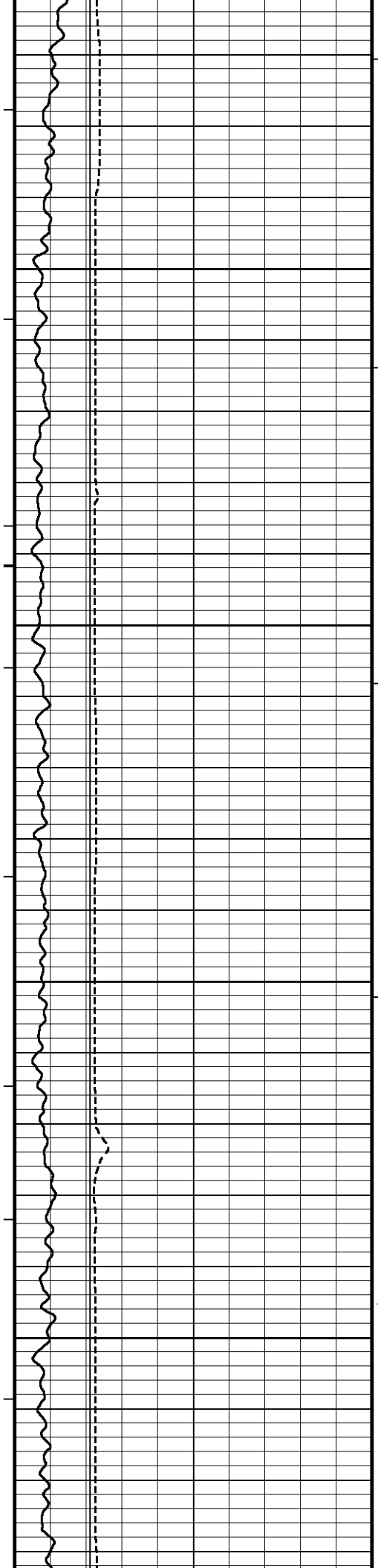
← MGS Gamma Ray

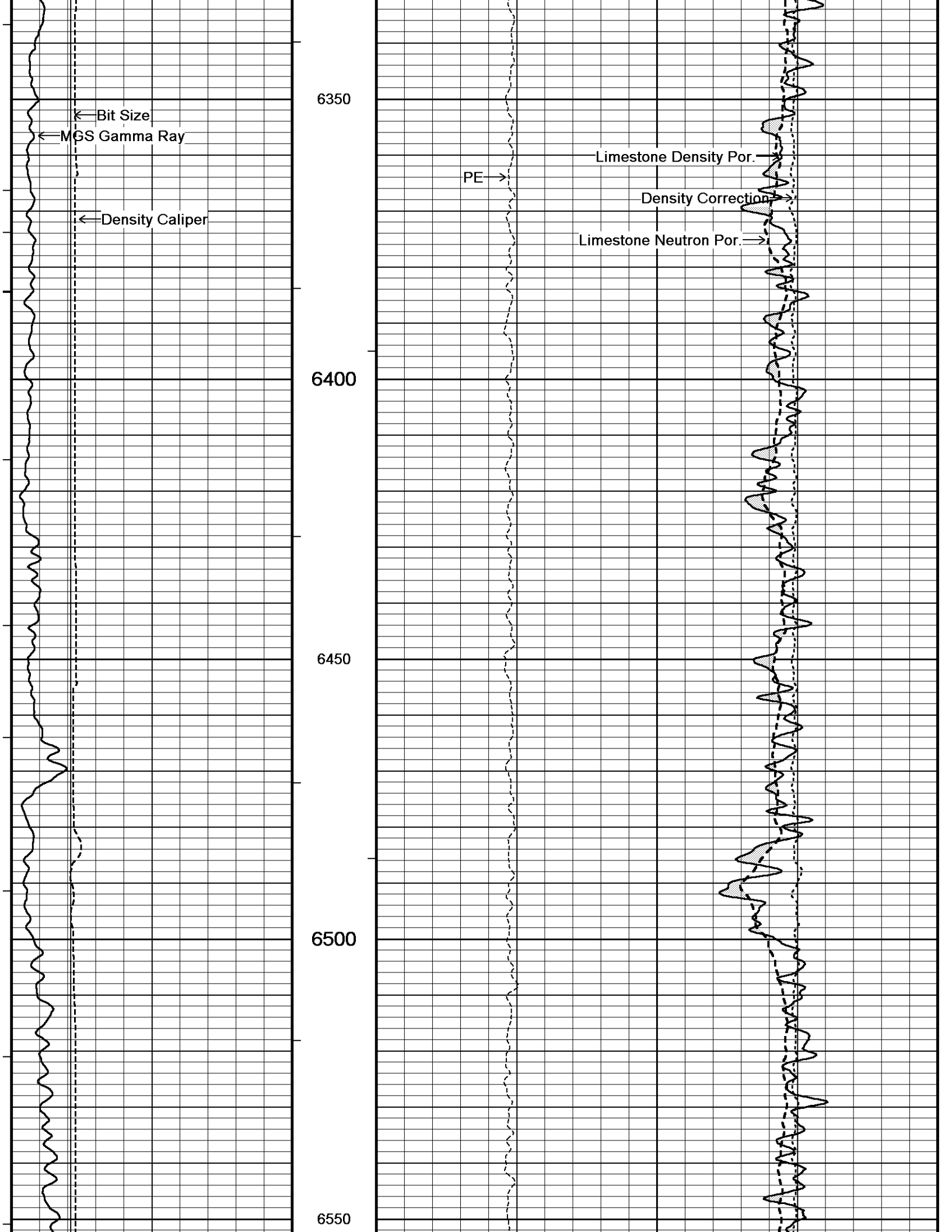


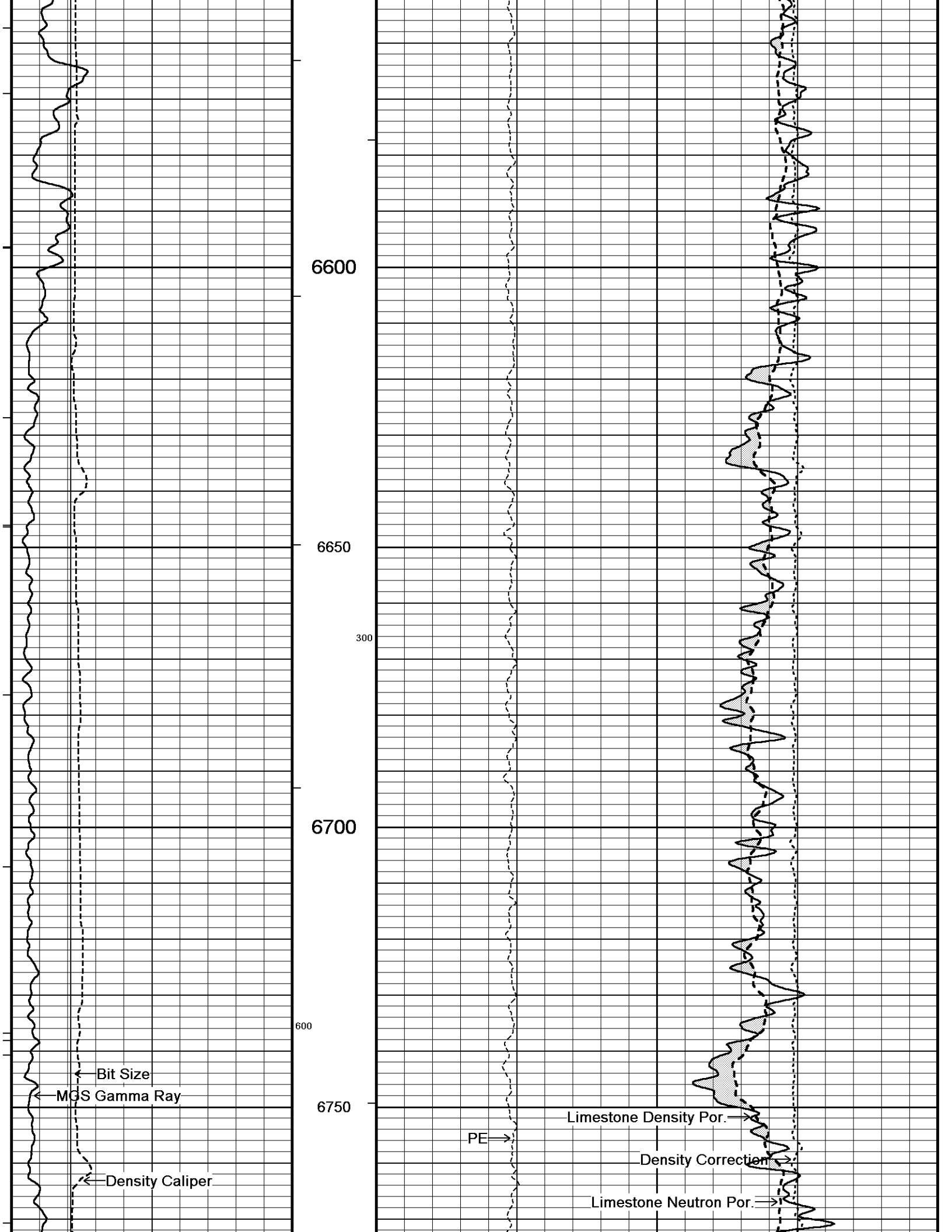
Limestone Neutron Por. →

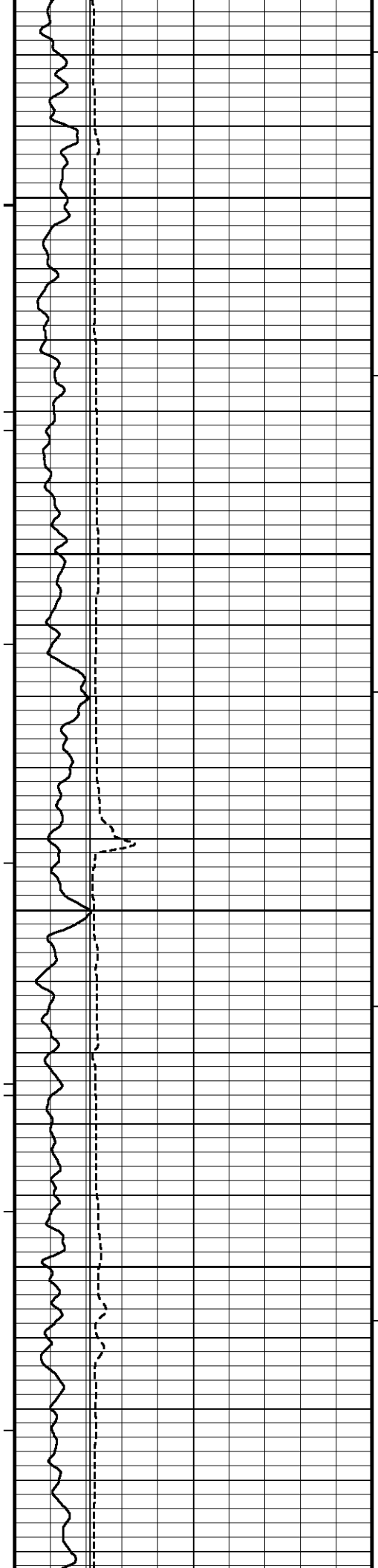










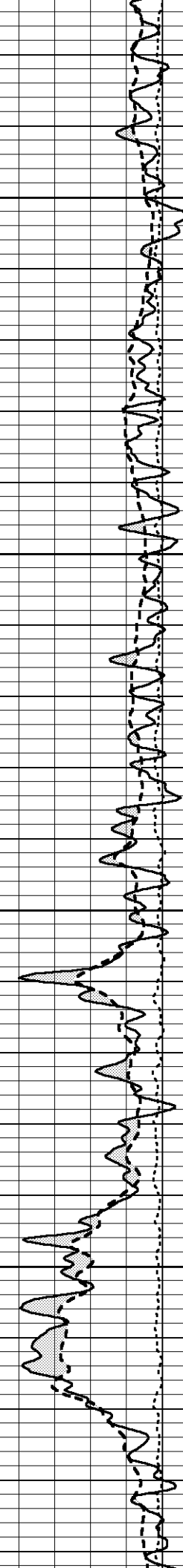
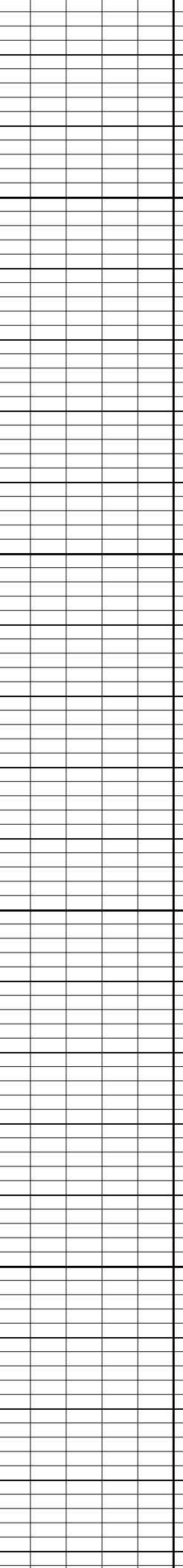
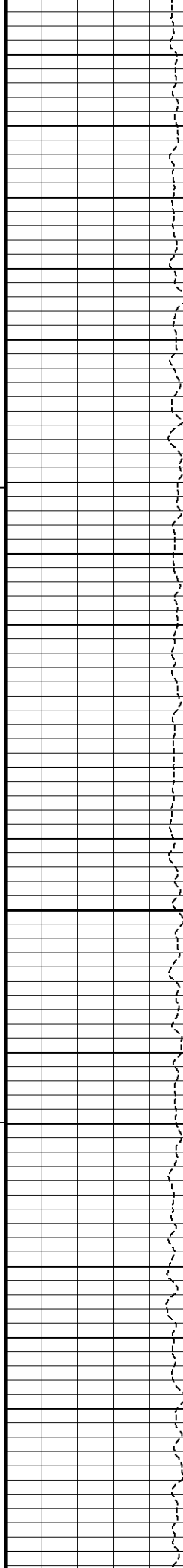


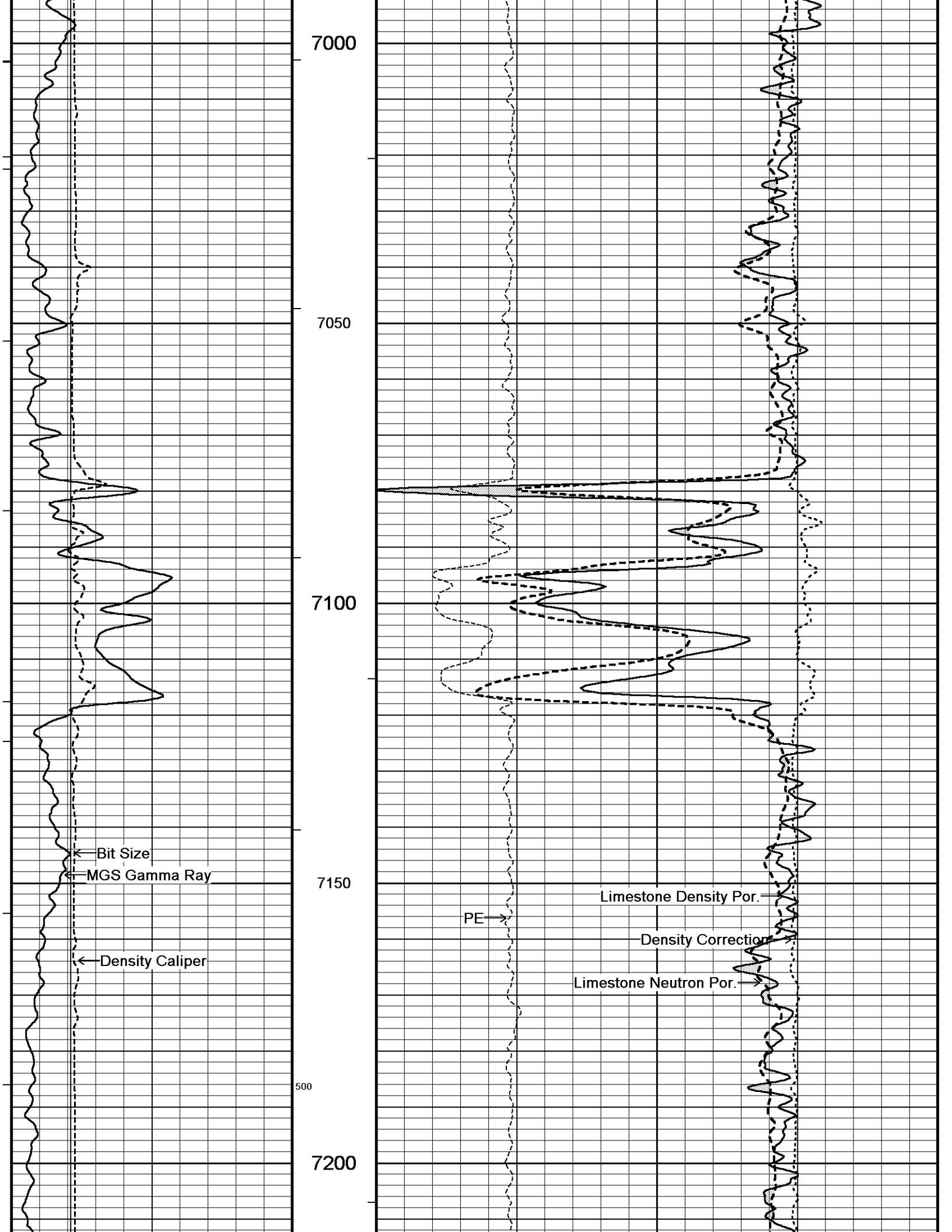
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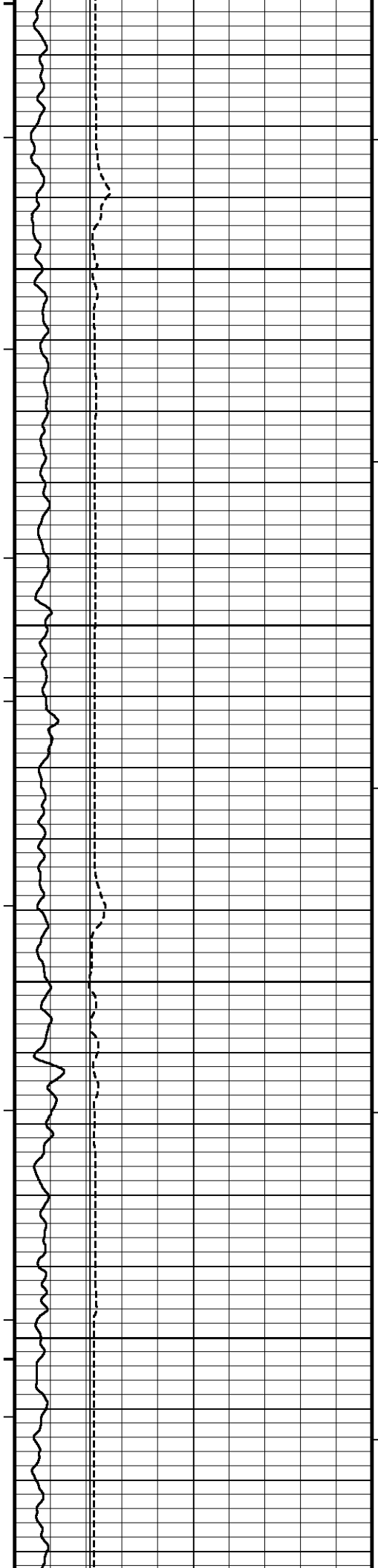
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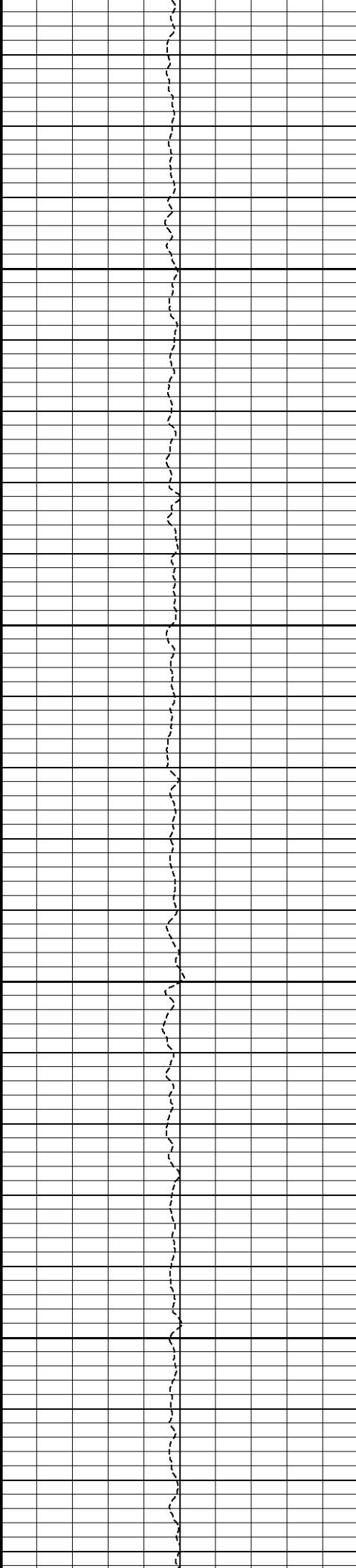


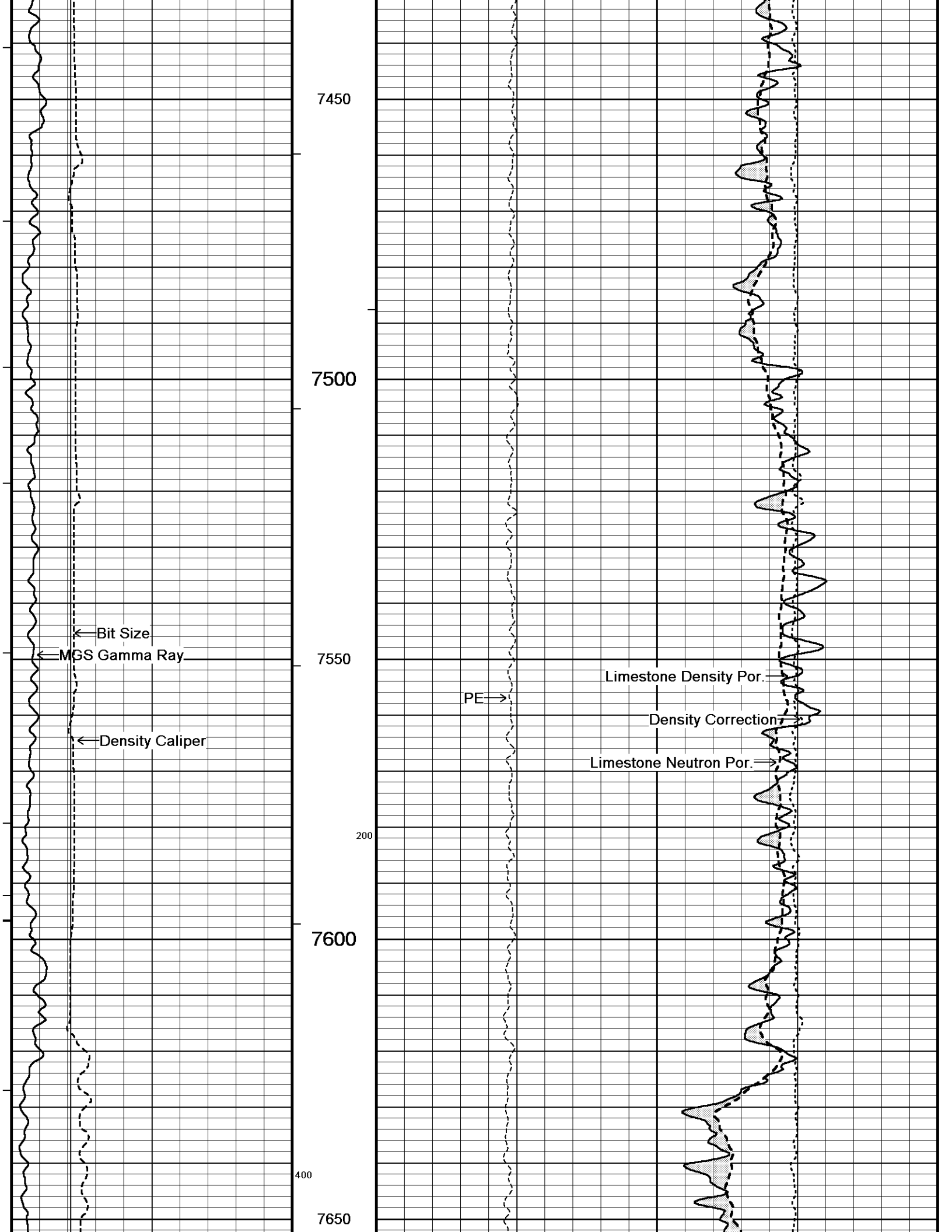
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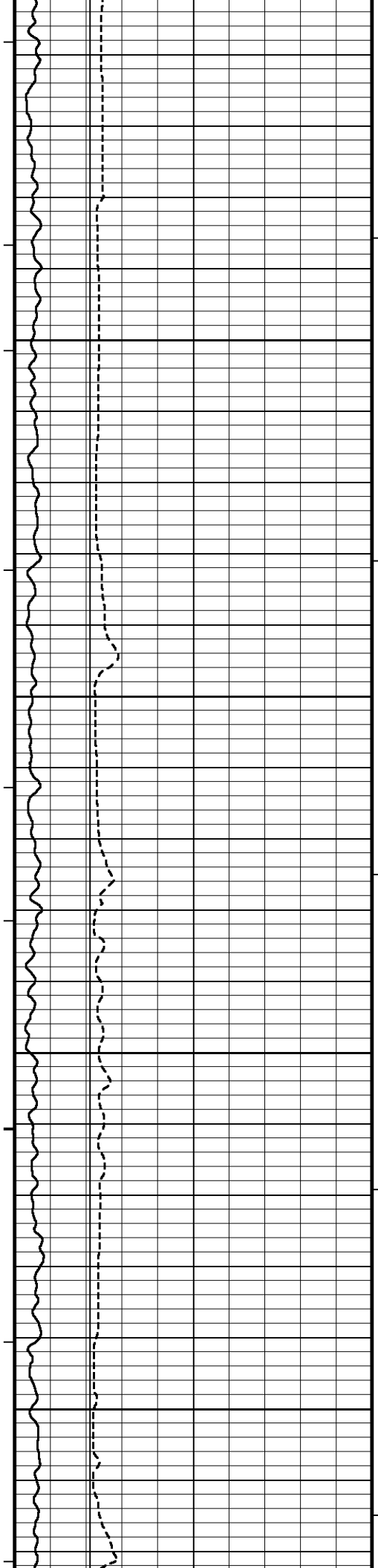
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7400





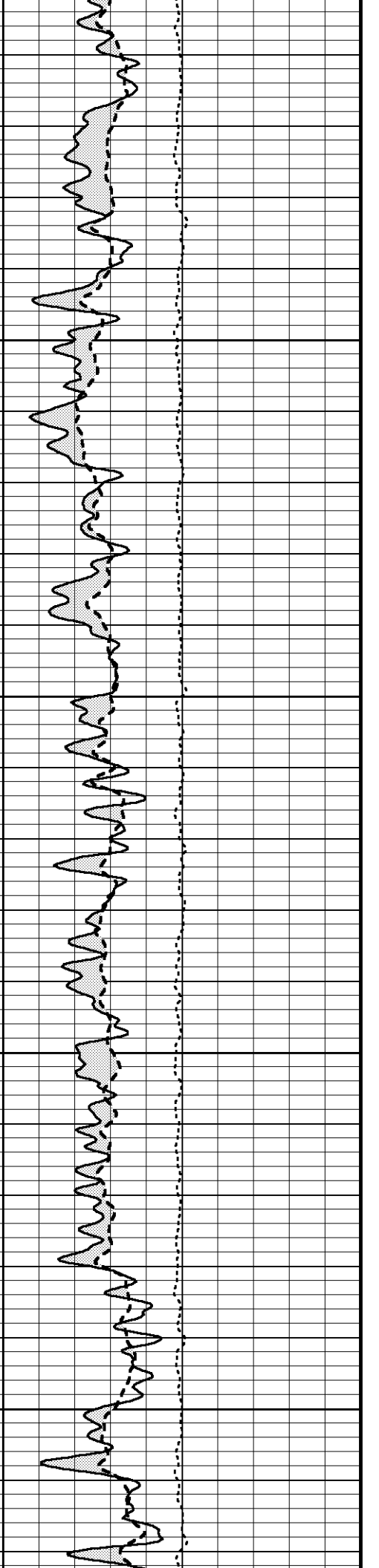
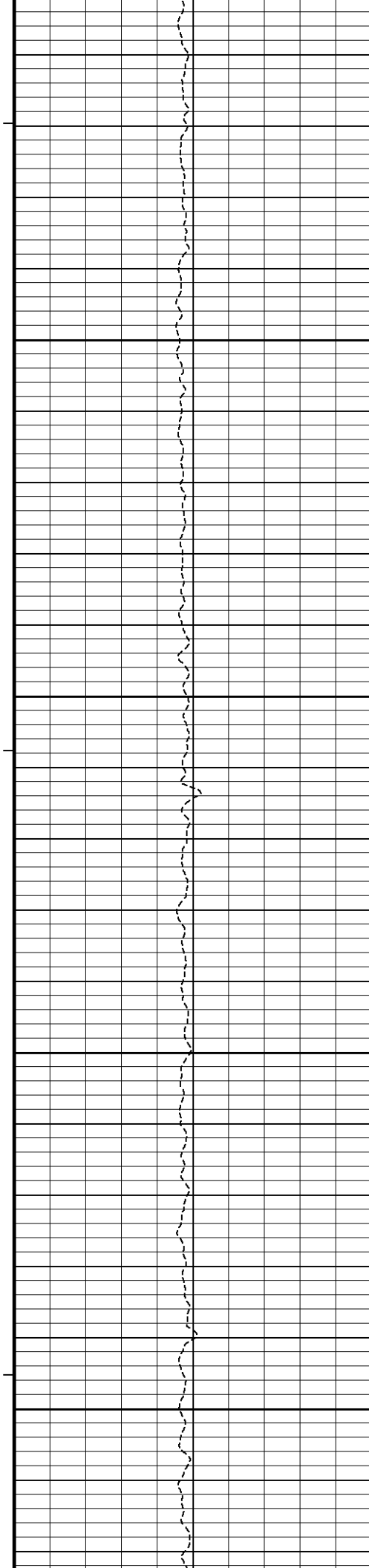


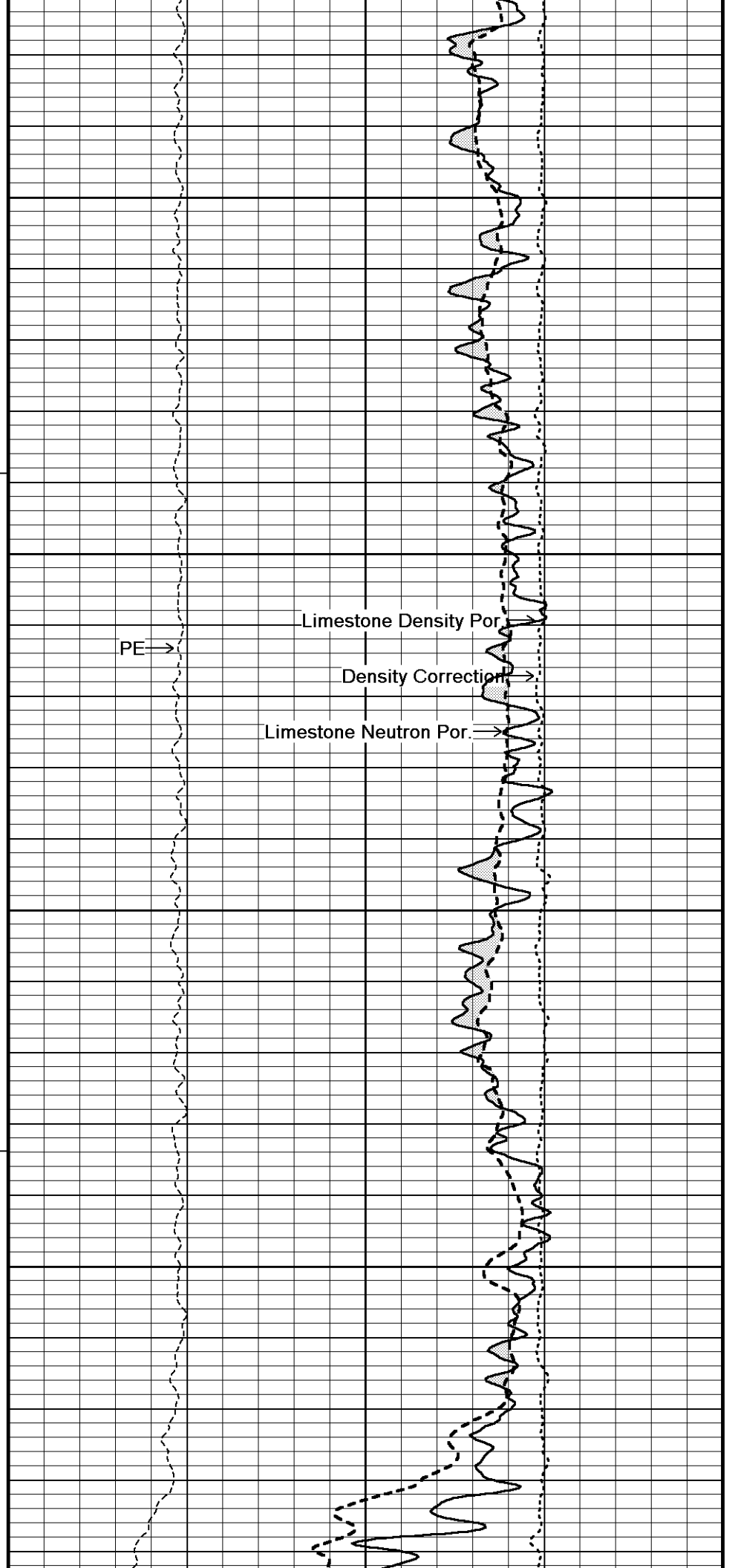
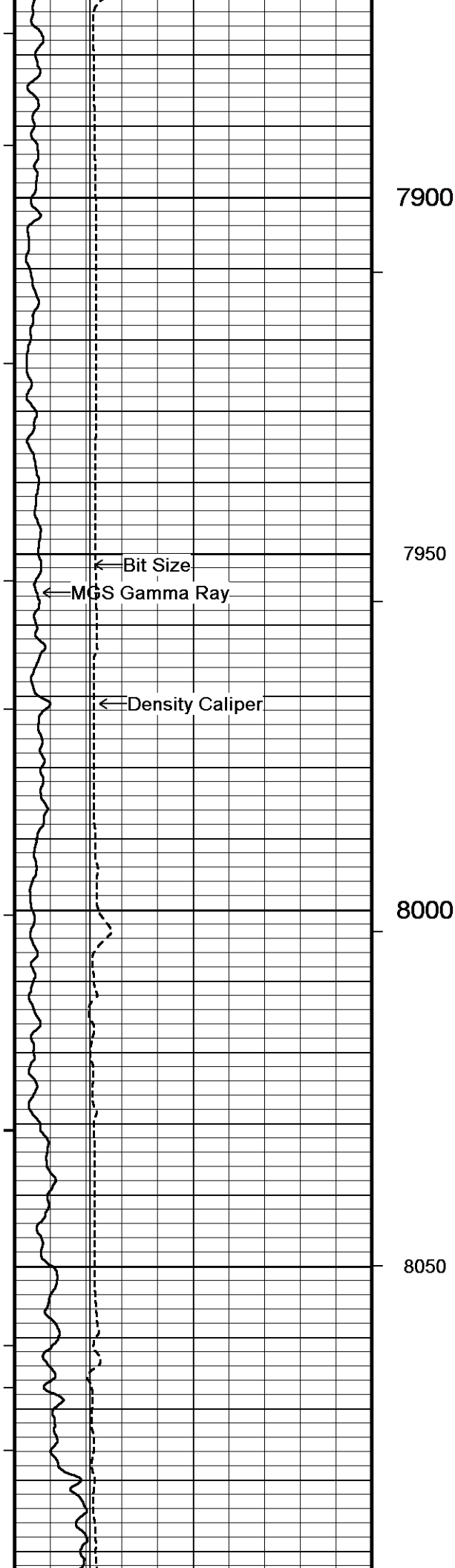
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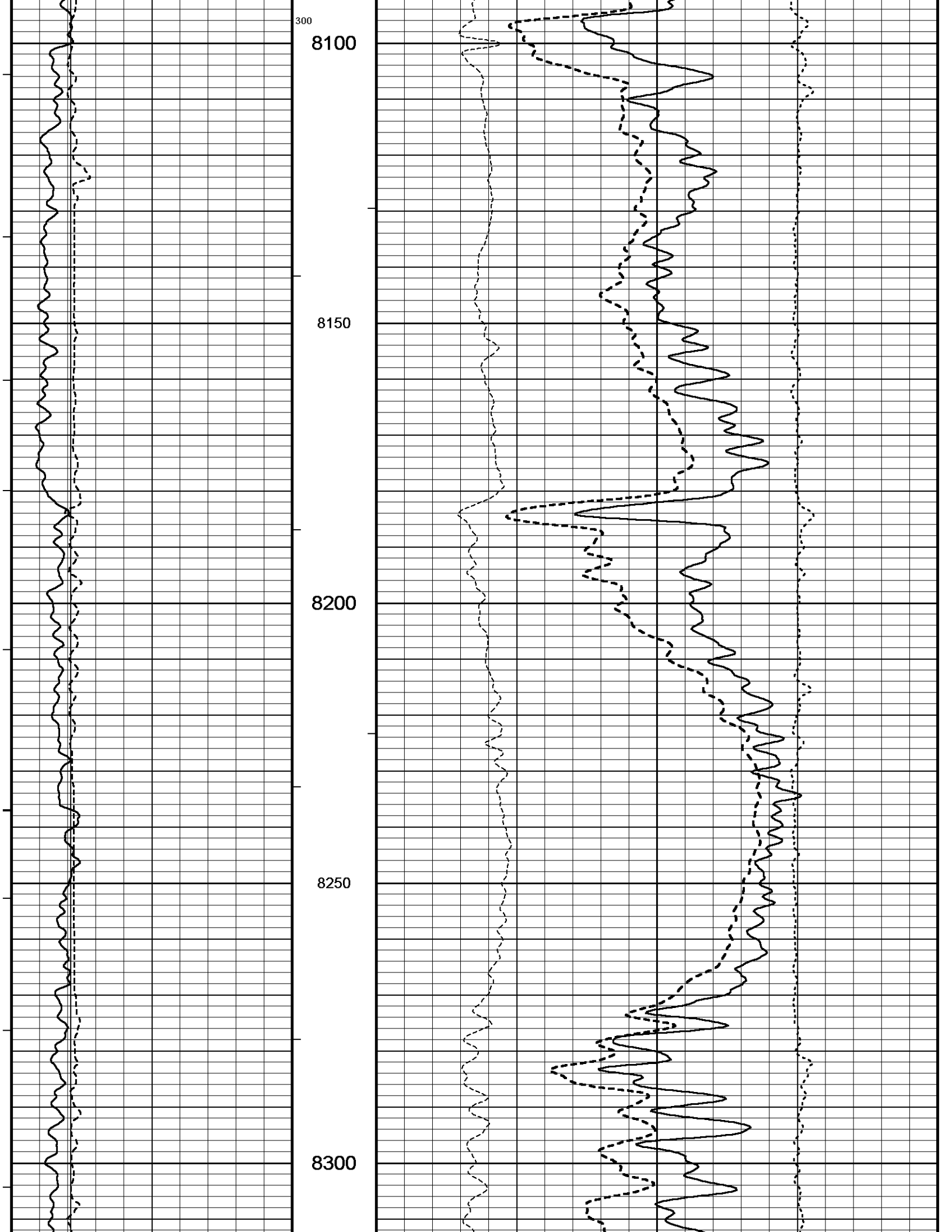
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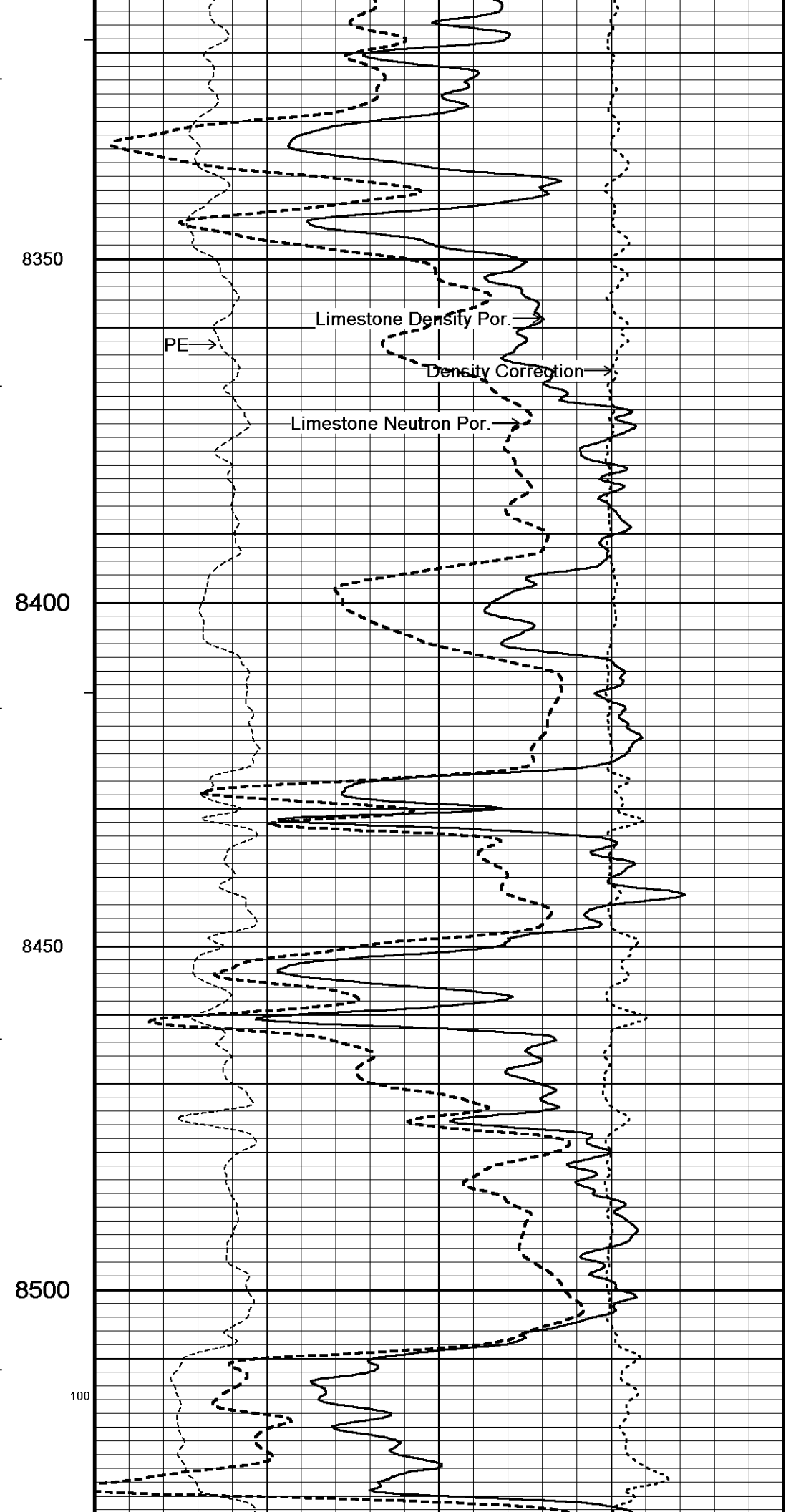
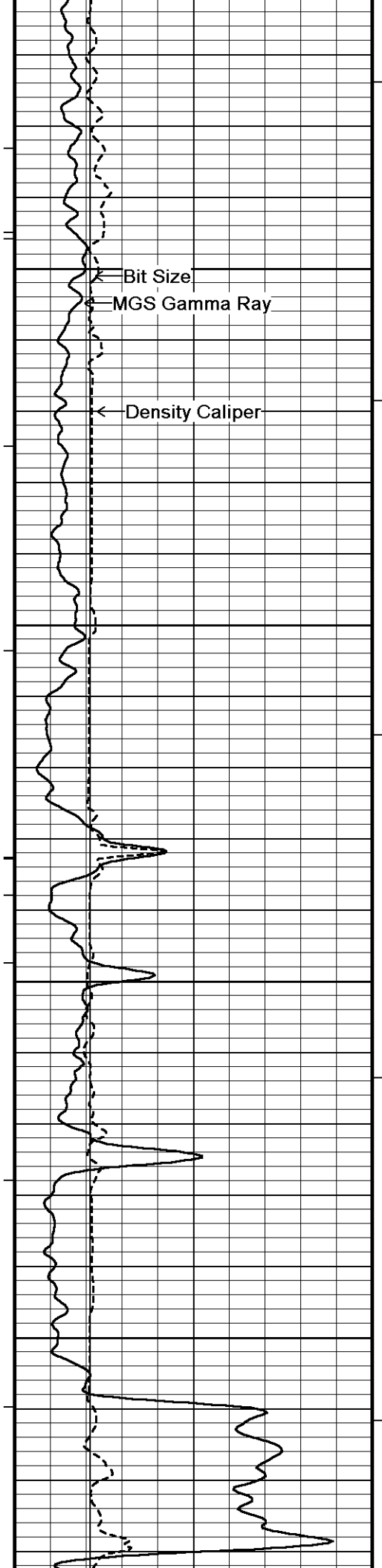
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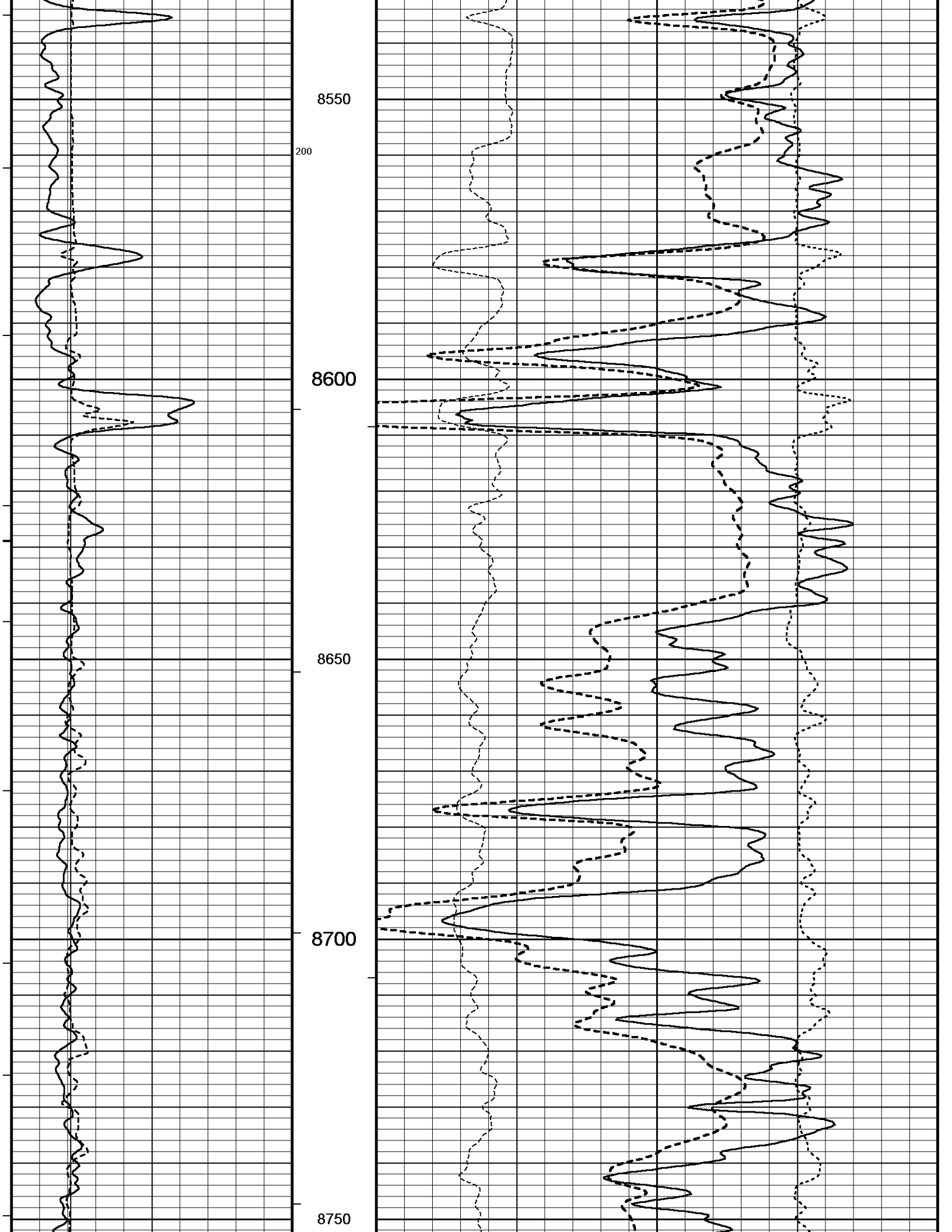
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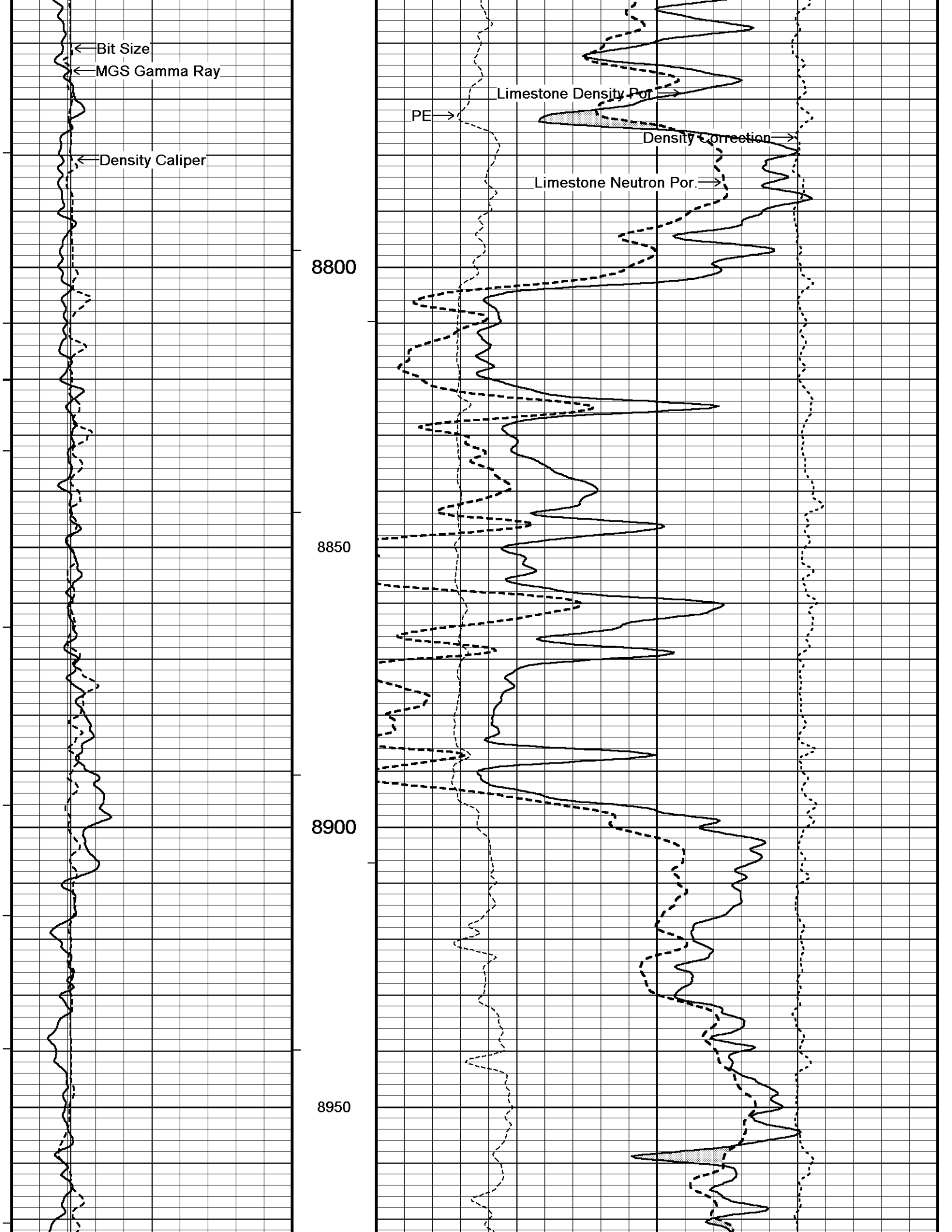
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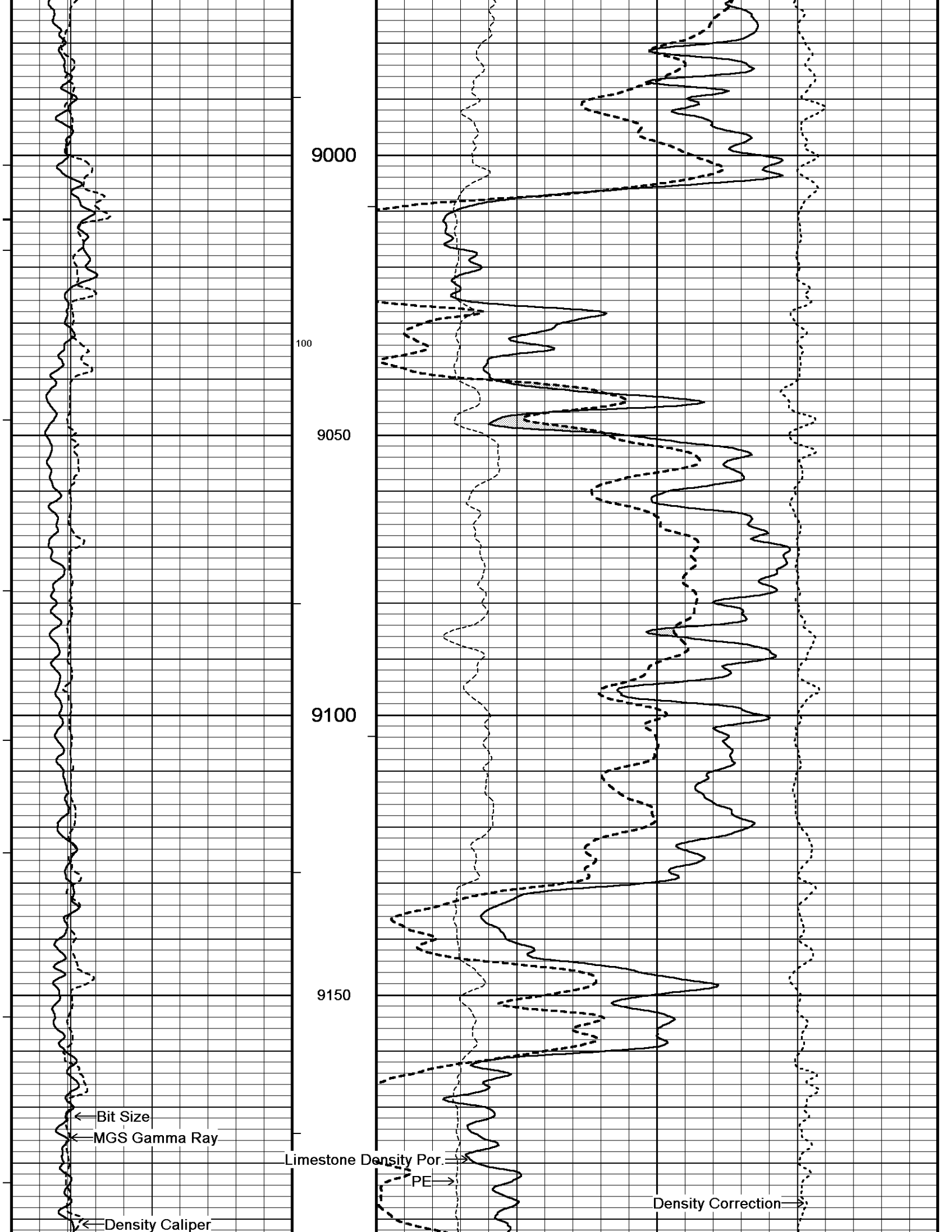
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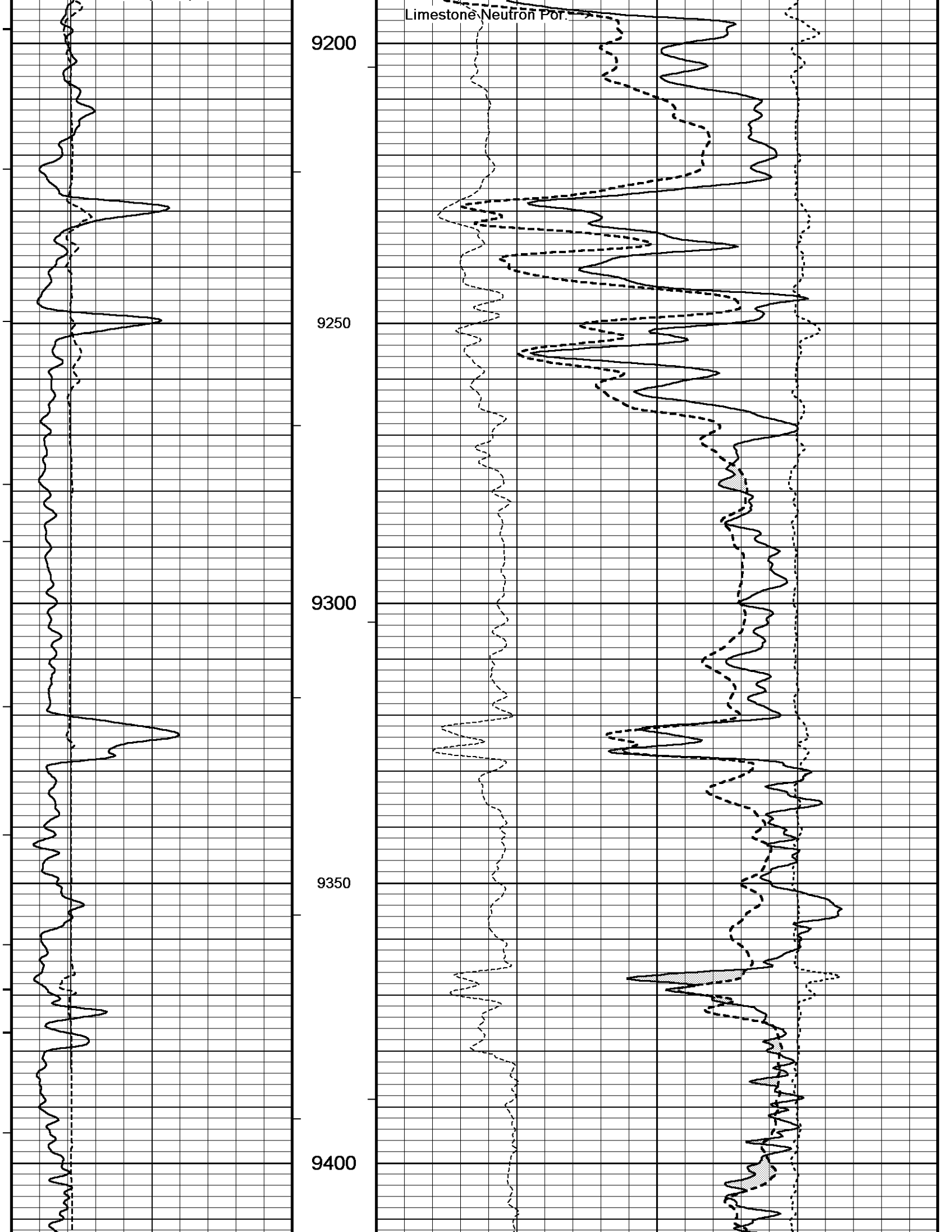
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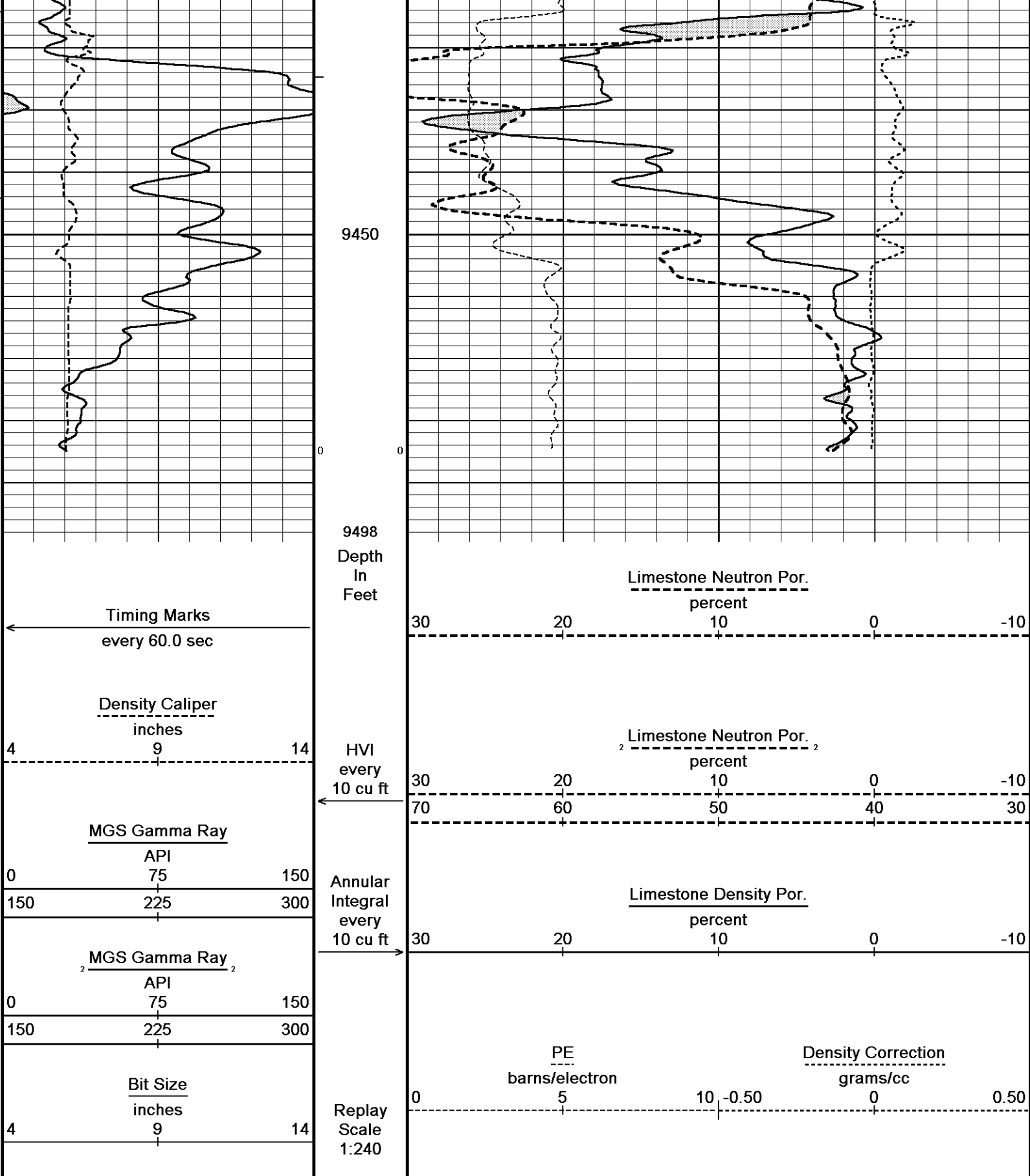
100











Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.04.8492\Data\SANDRIDGE(ROCK 3319 1-16H)\36644 RTAP.dta
System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

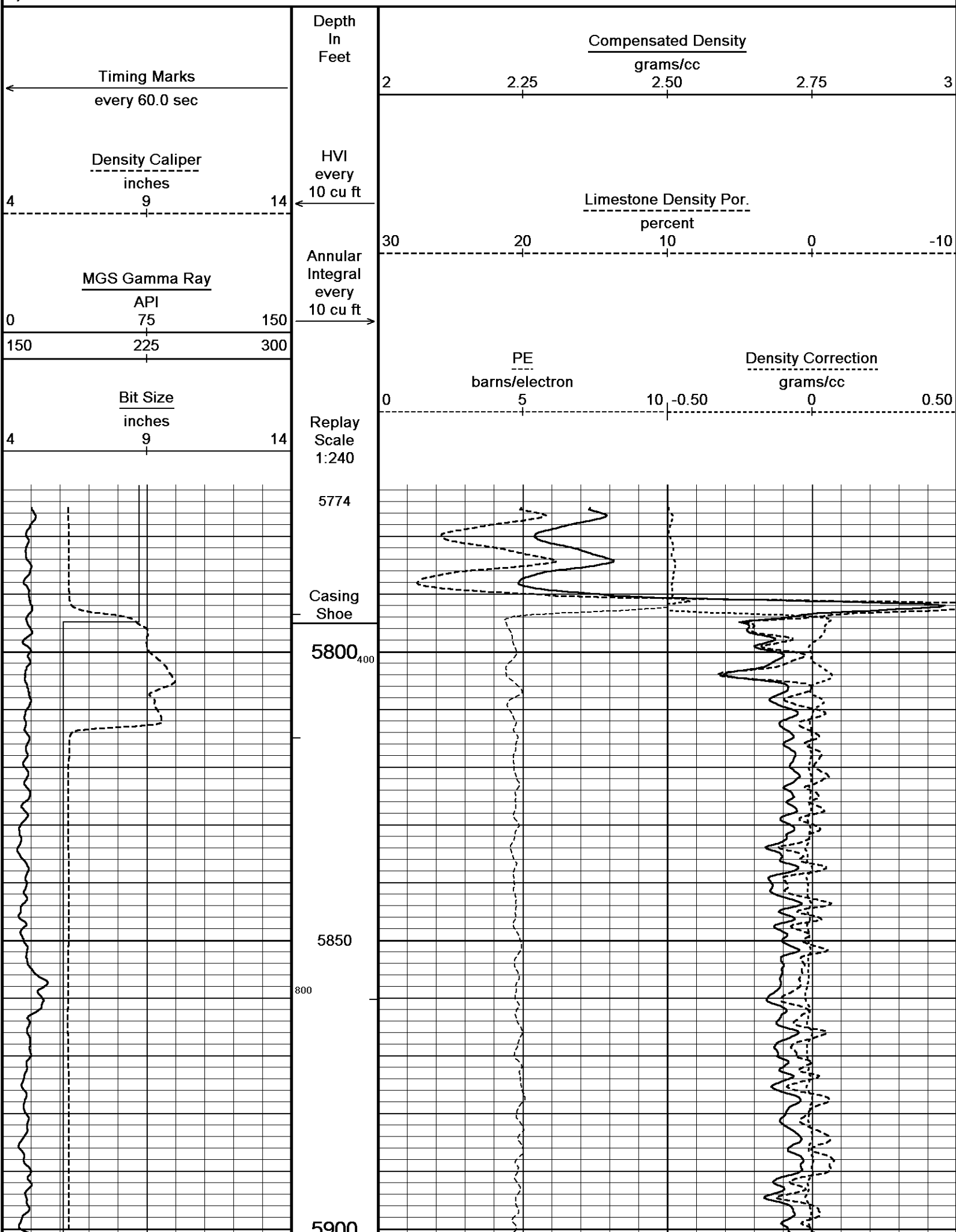
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Recorded on 31-MAR-2013 22:53

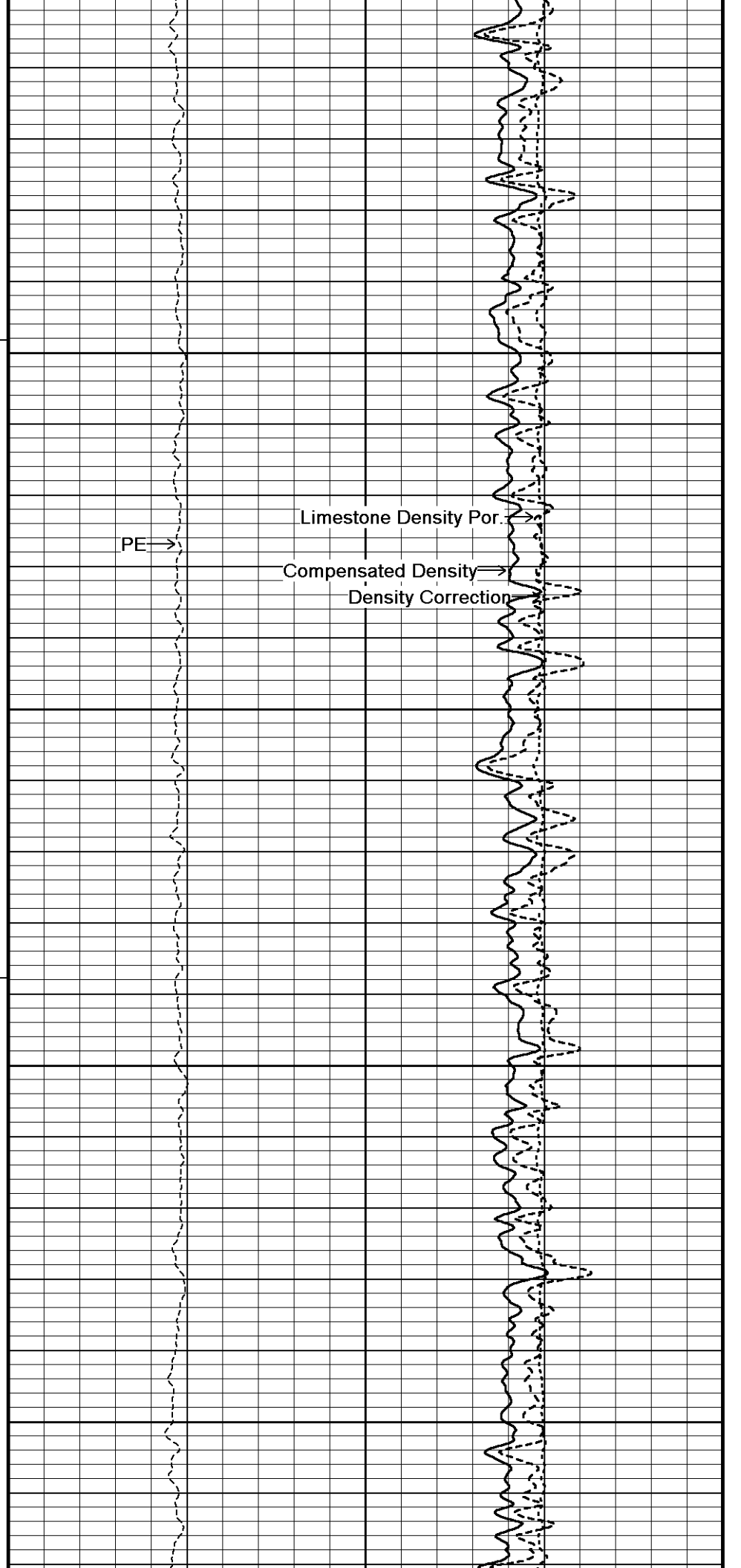
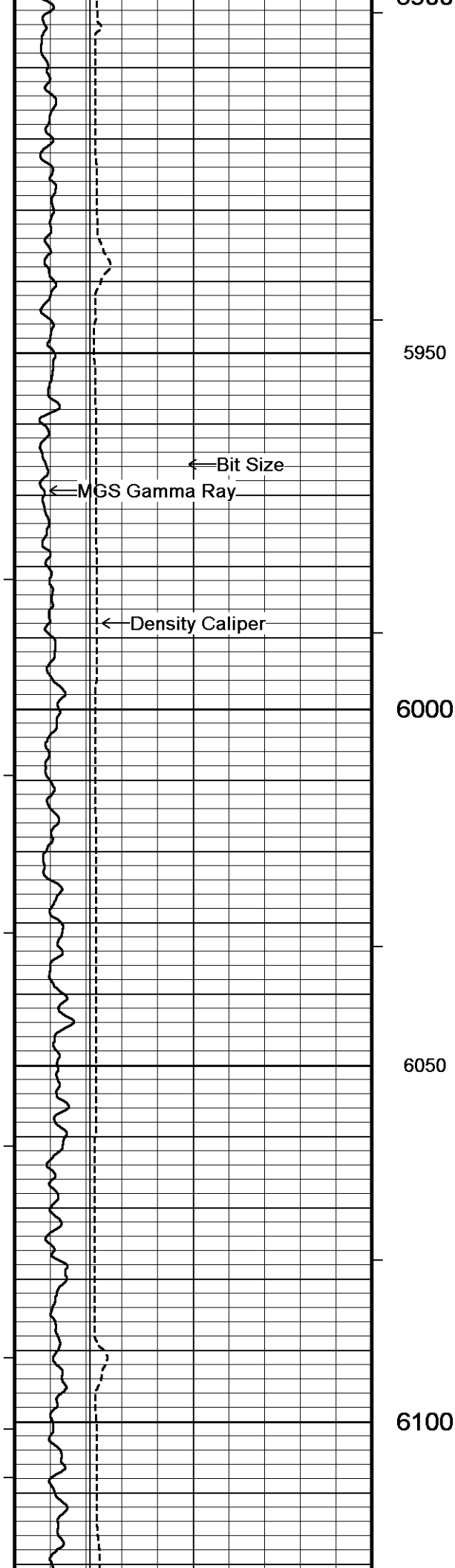
5 INCH MAIN PASS

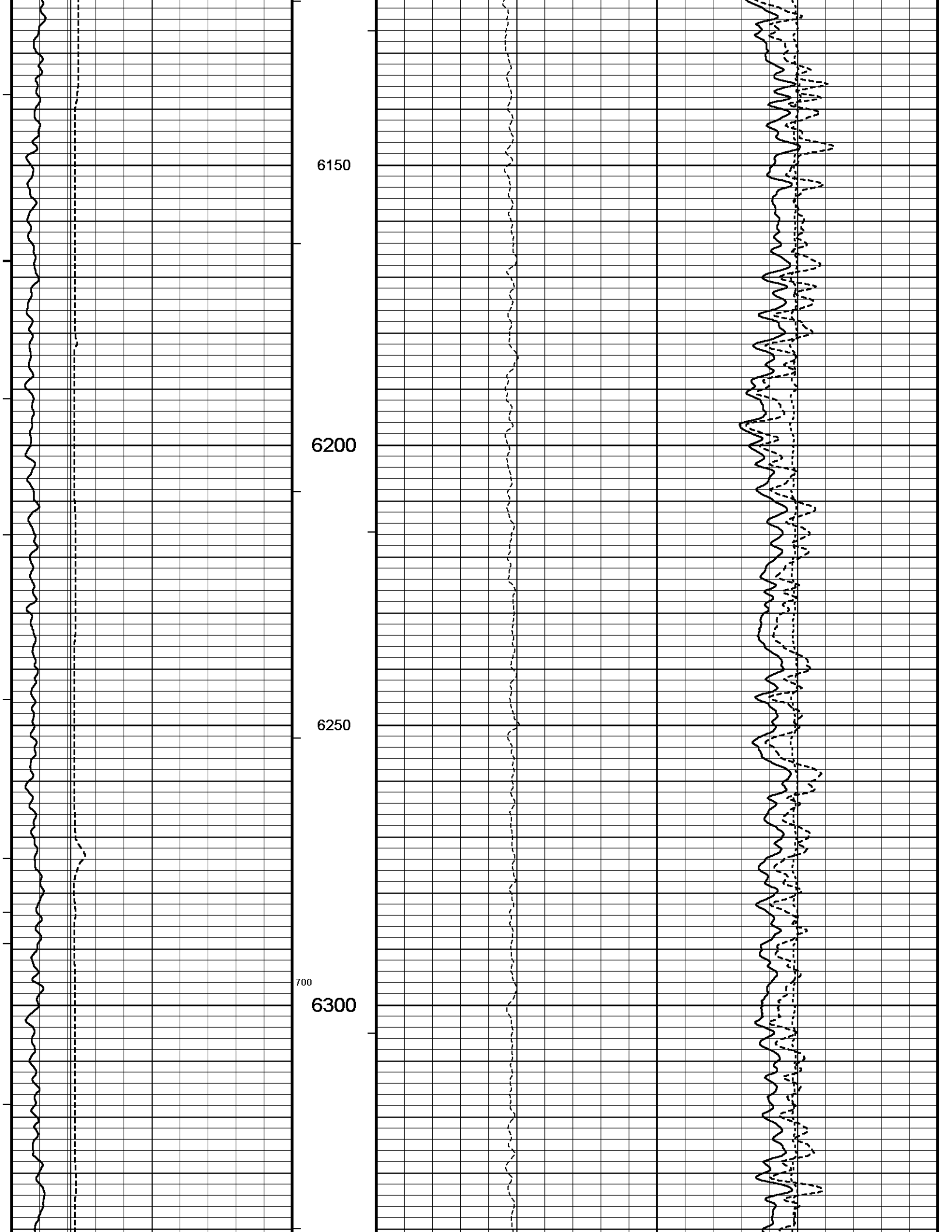
5 INCH BULK DENSITY DSC

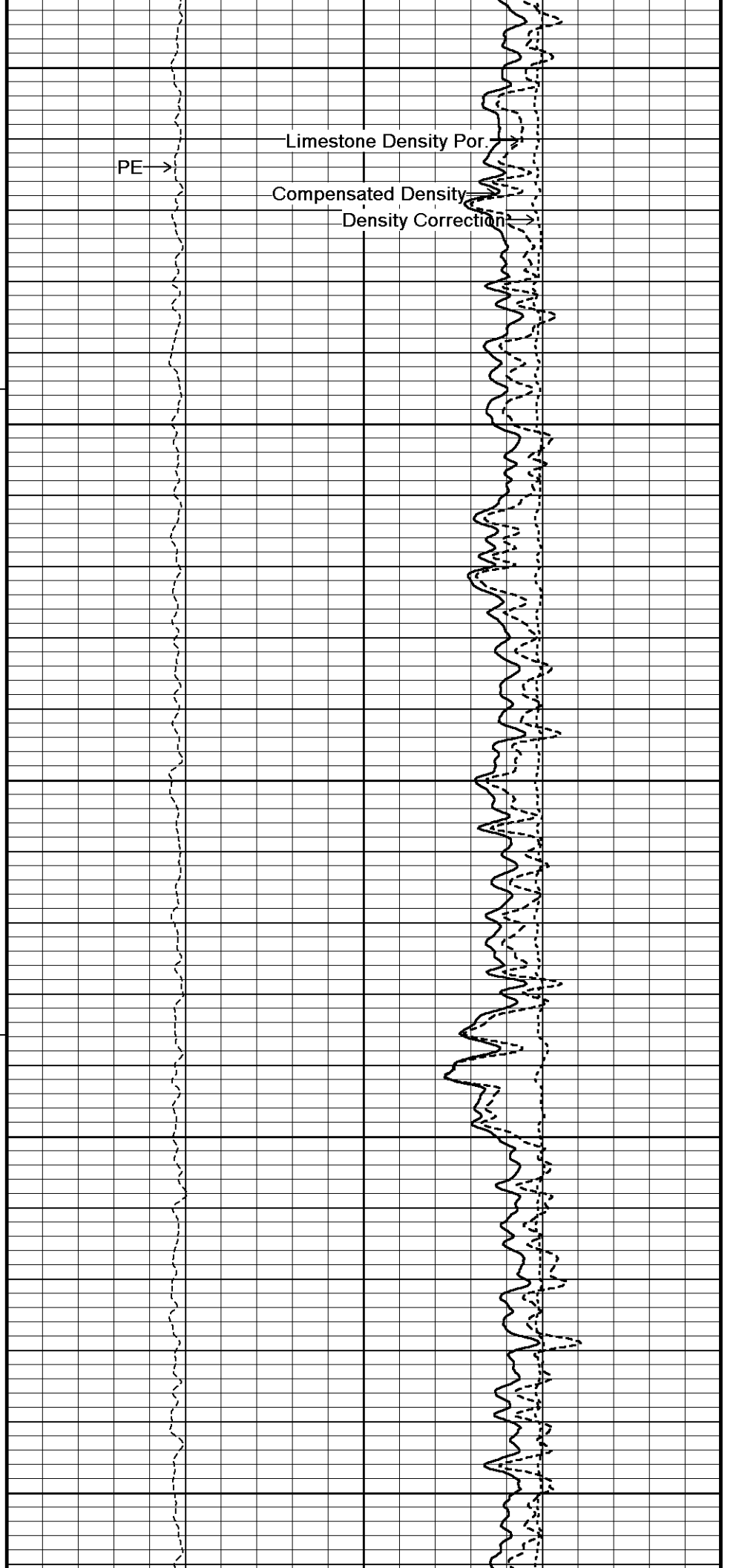
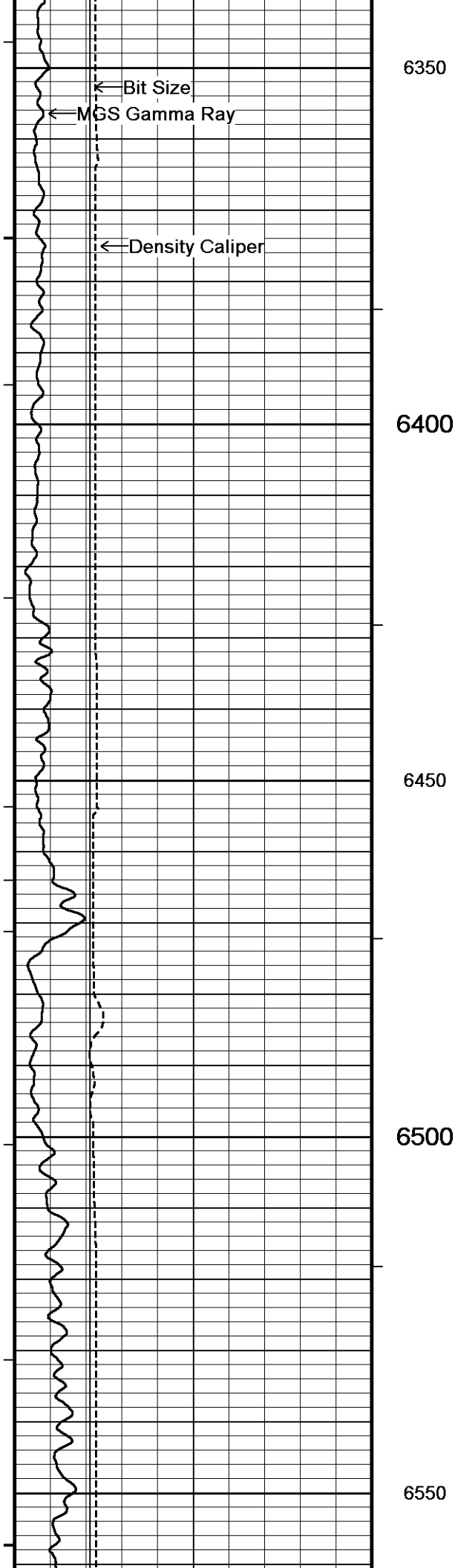
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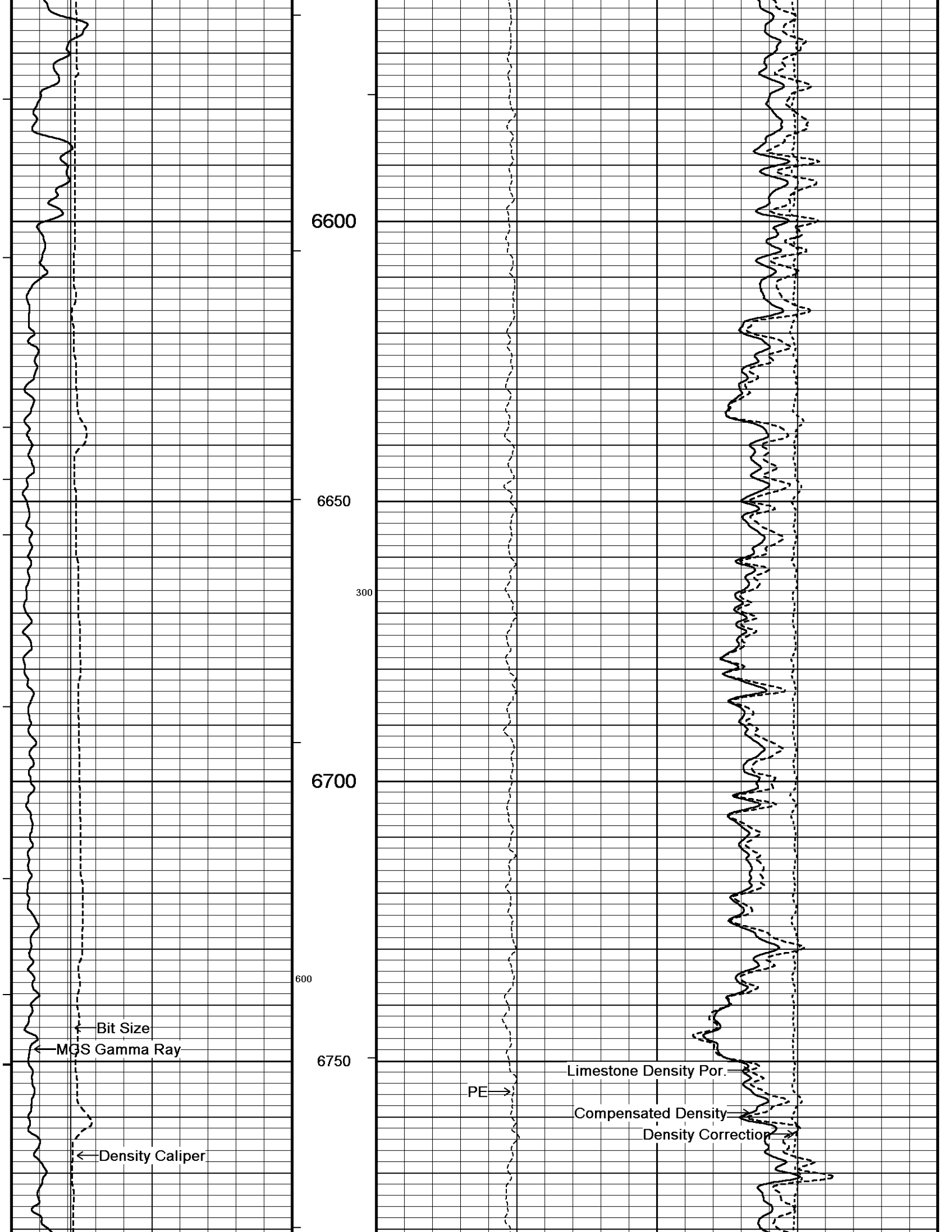
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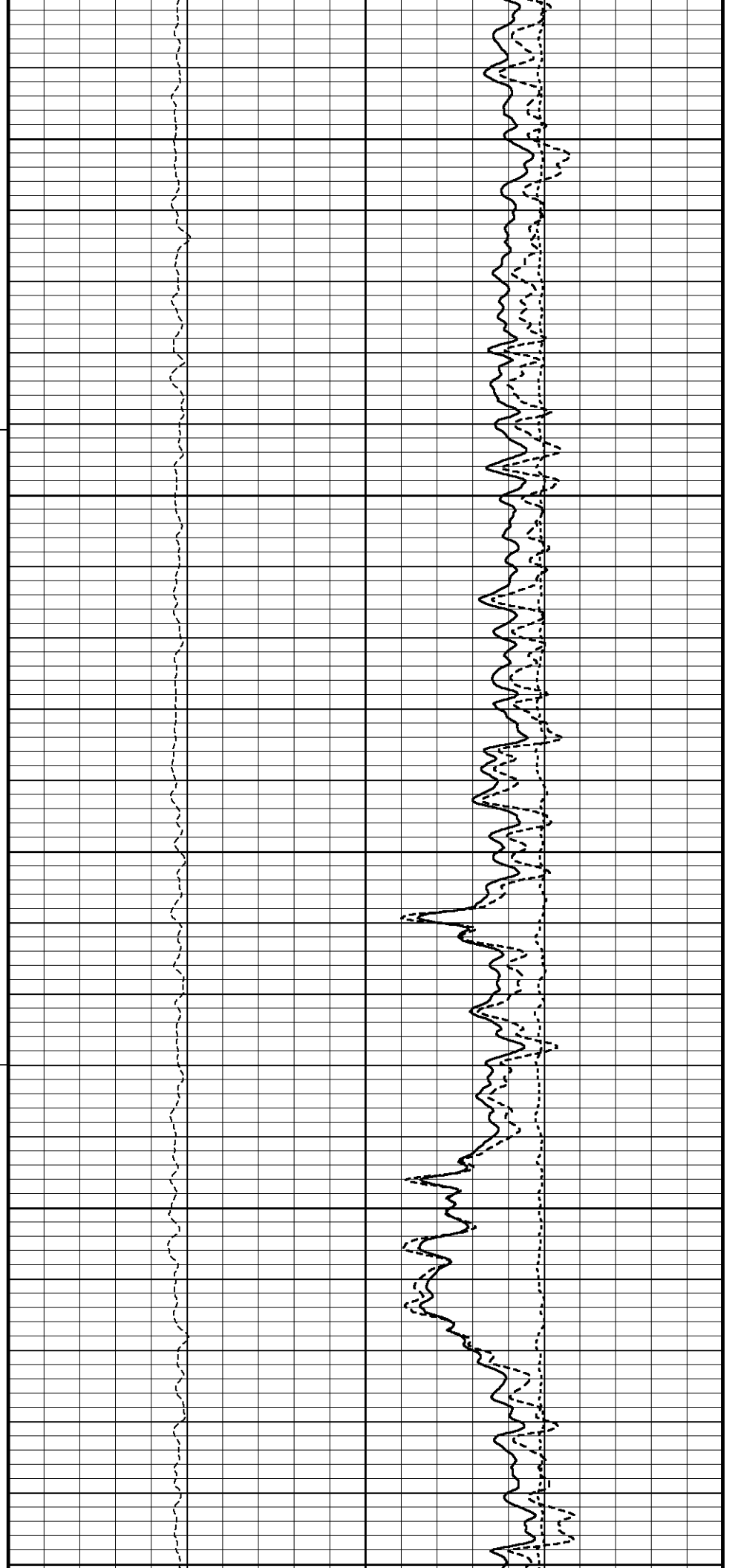
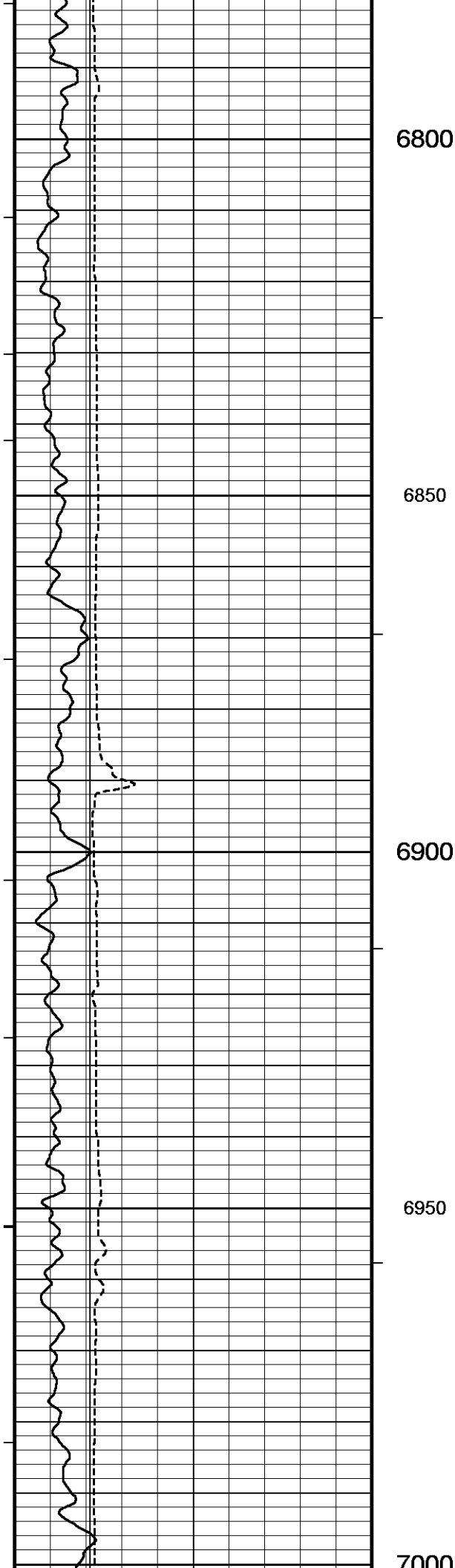


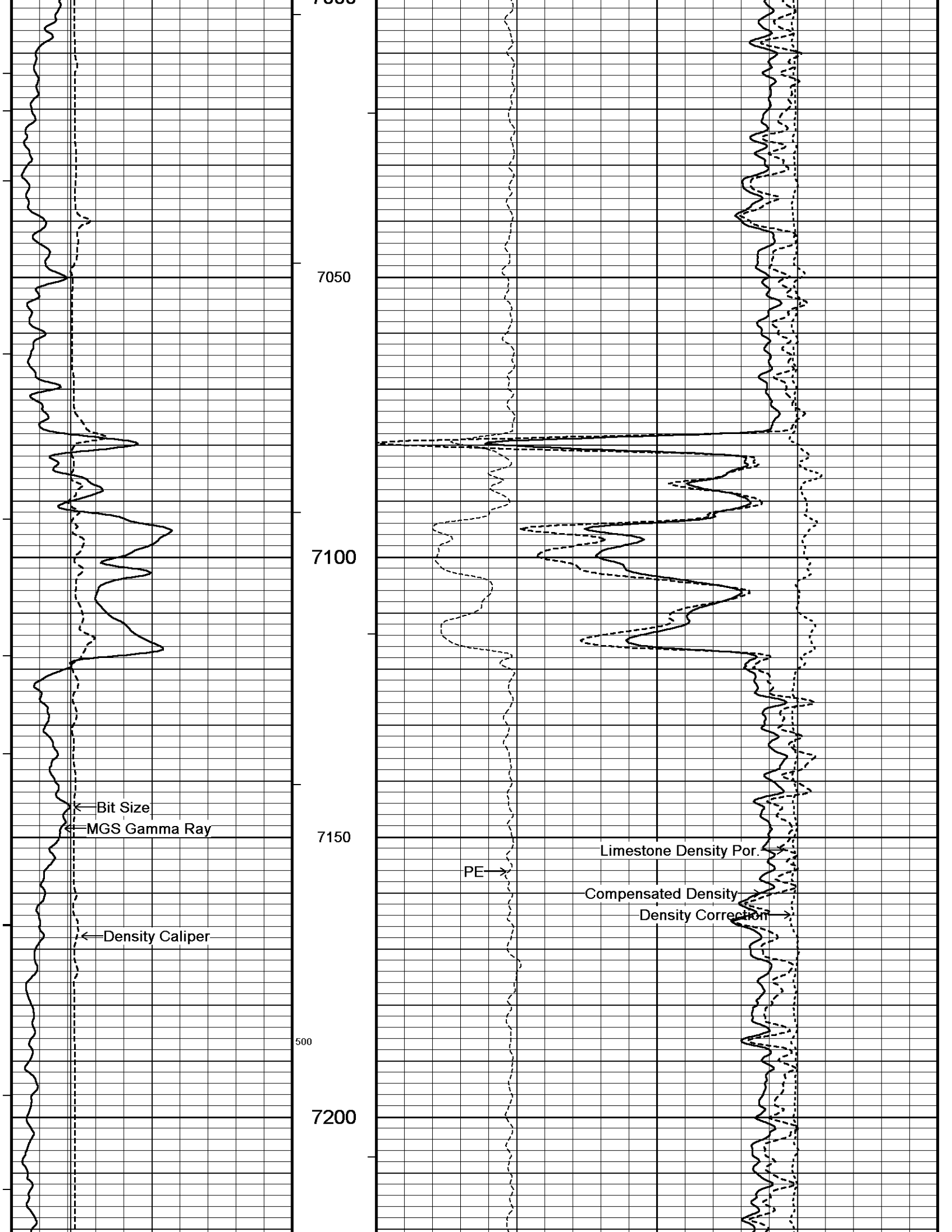


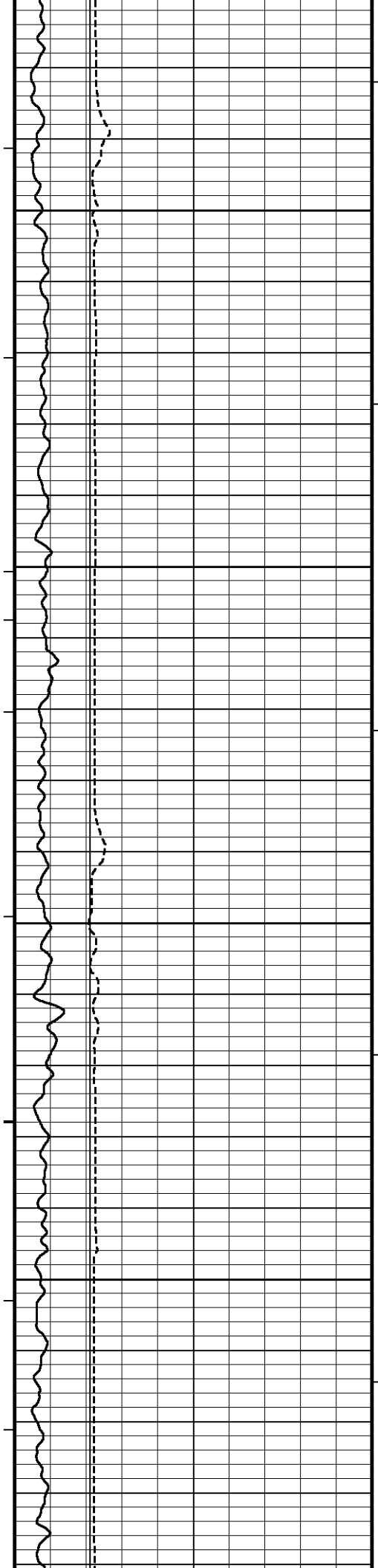










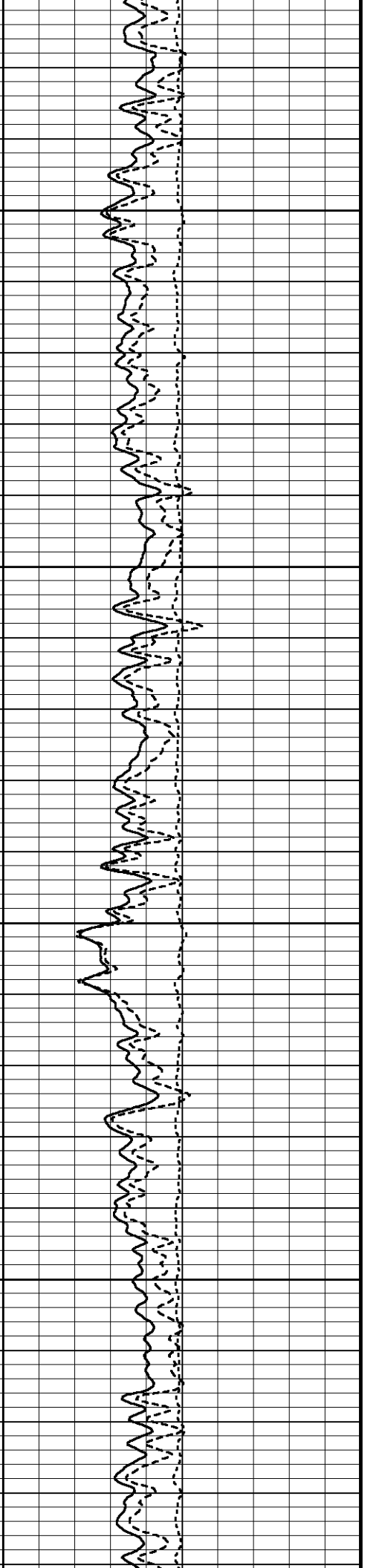
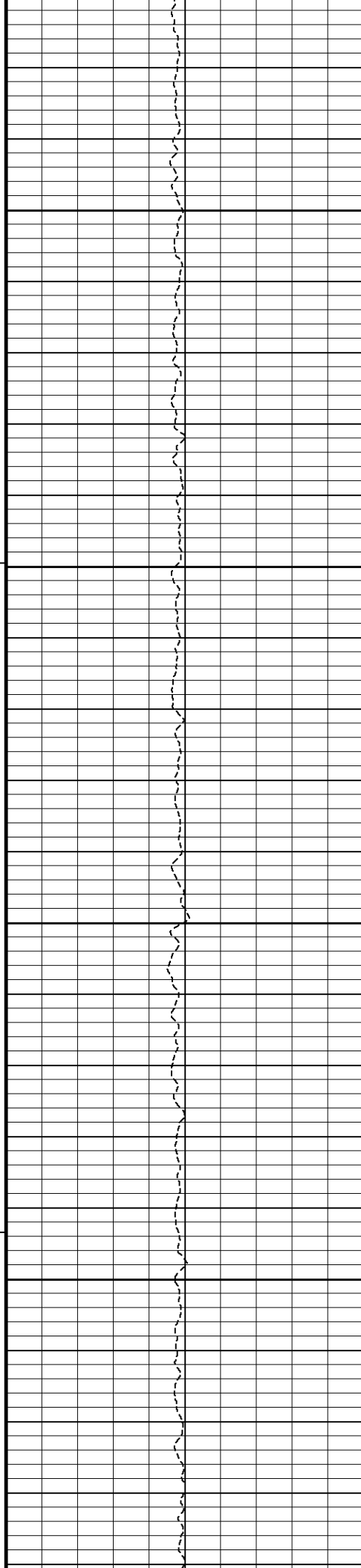


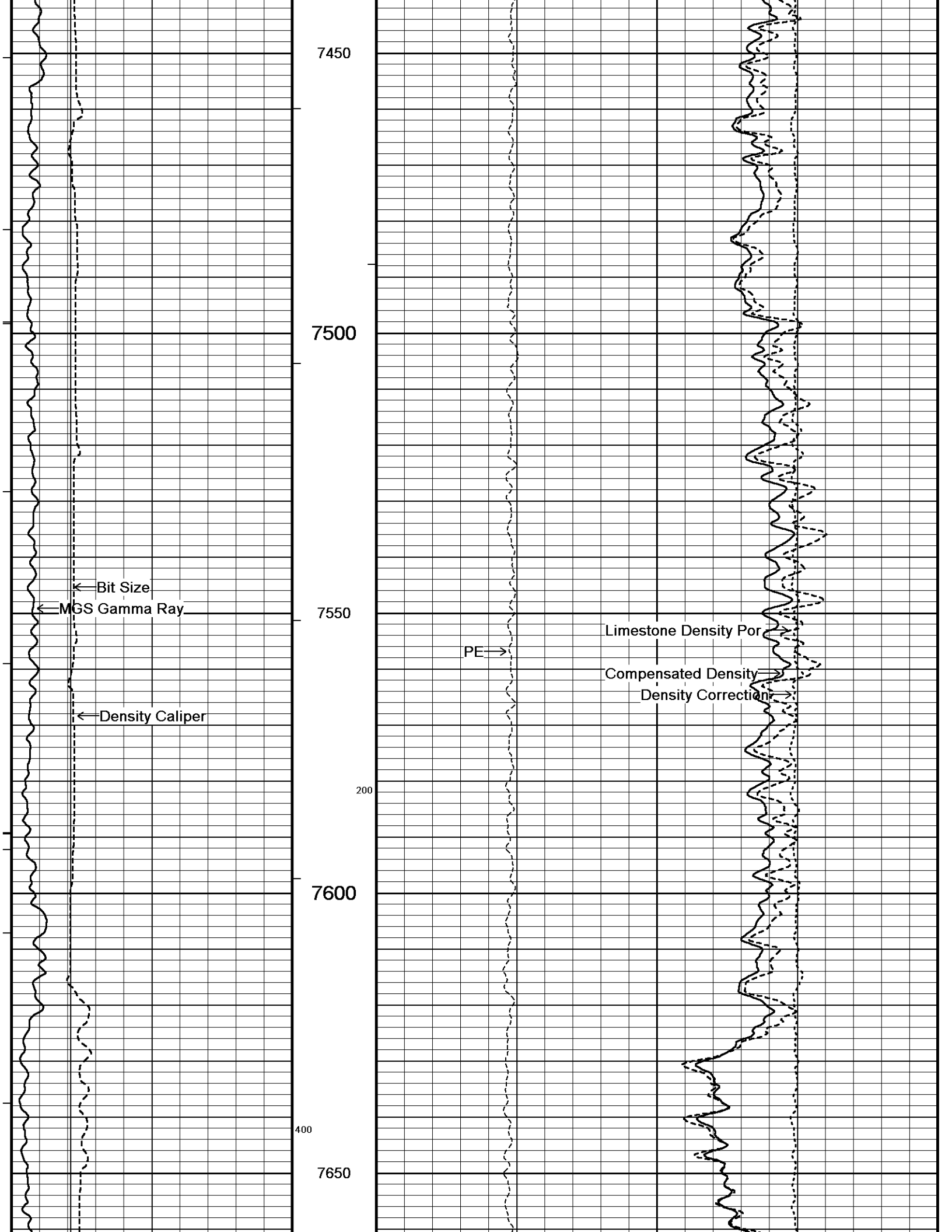
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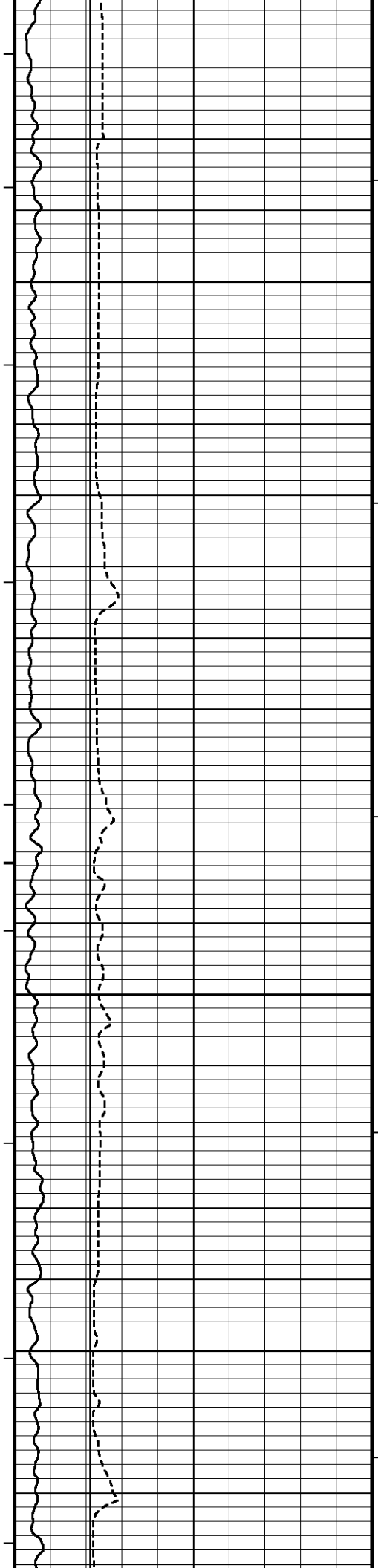
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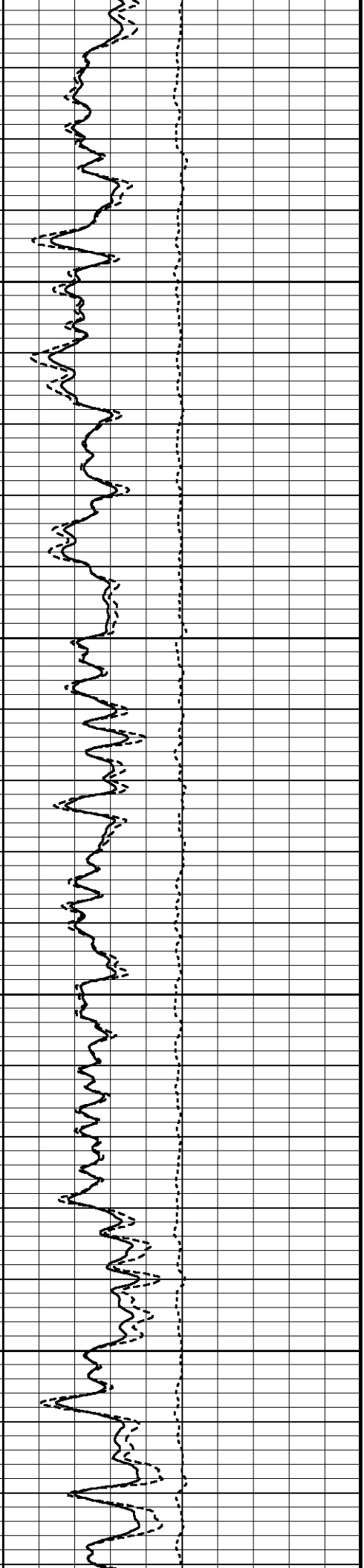
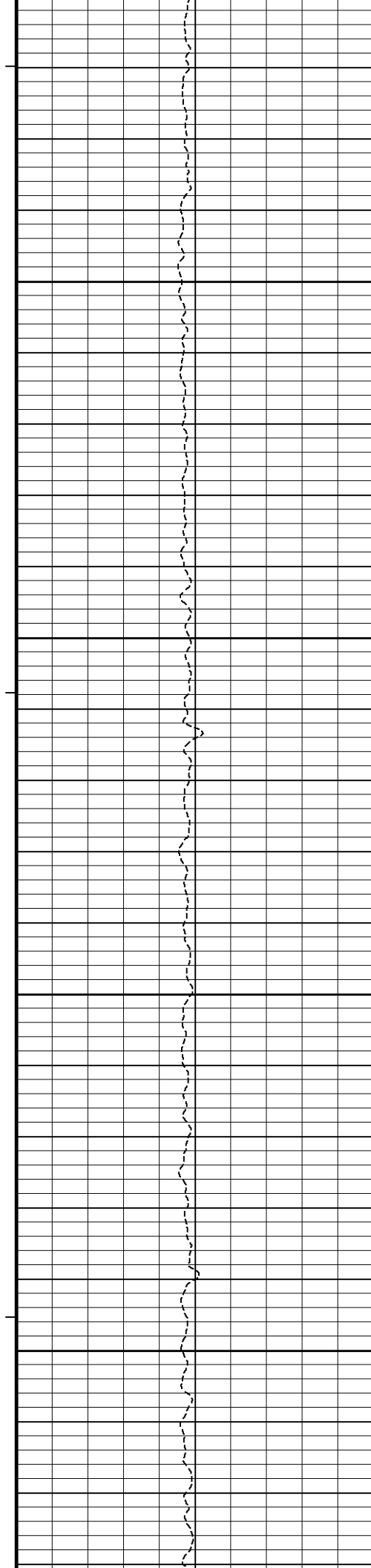


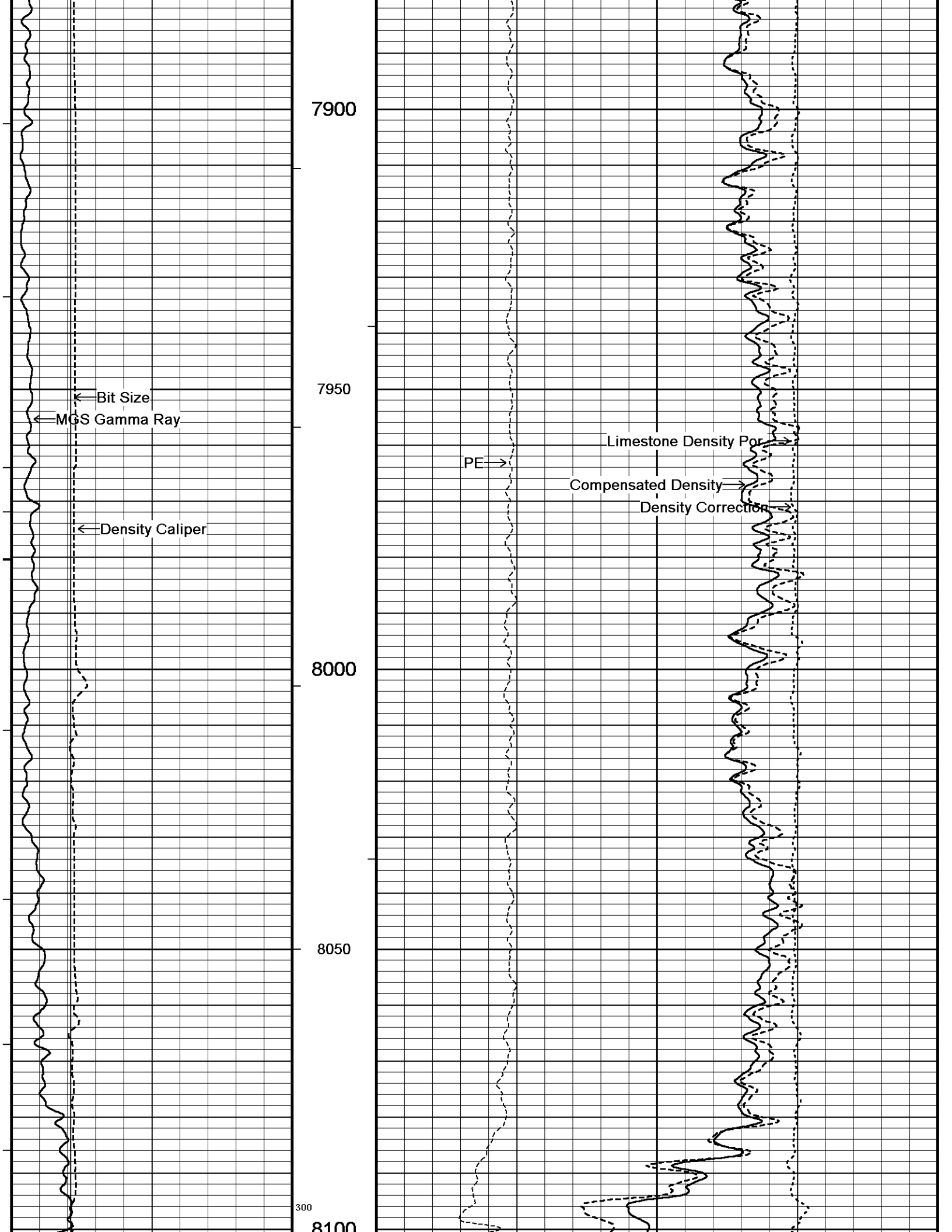
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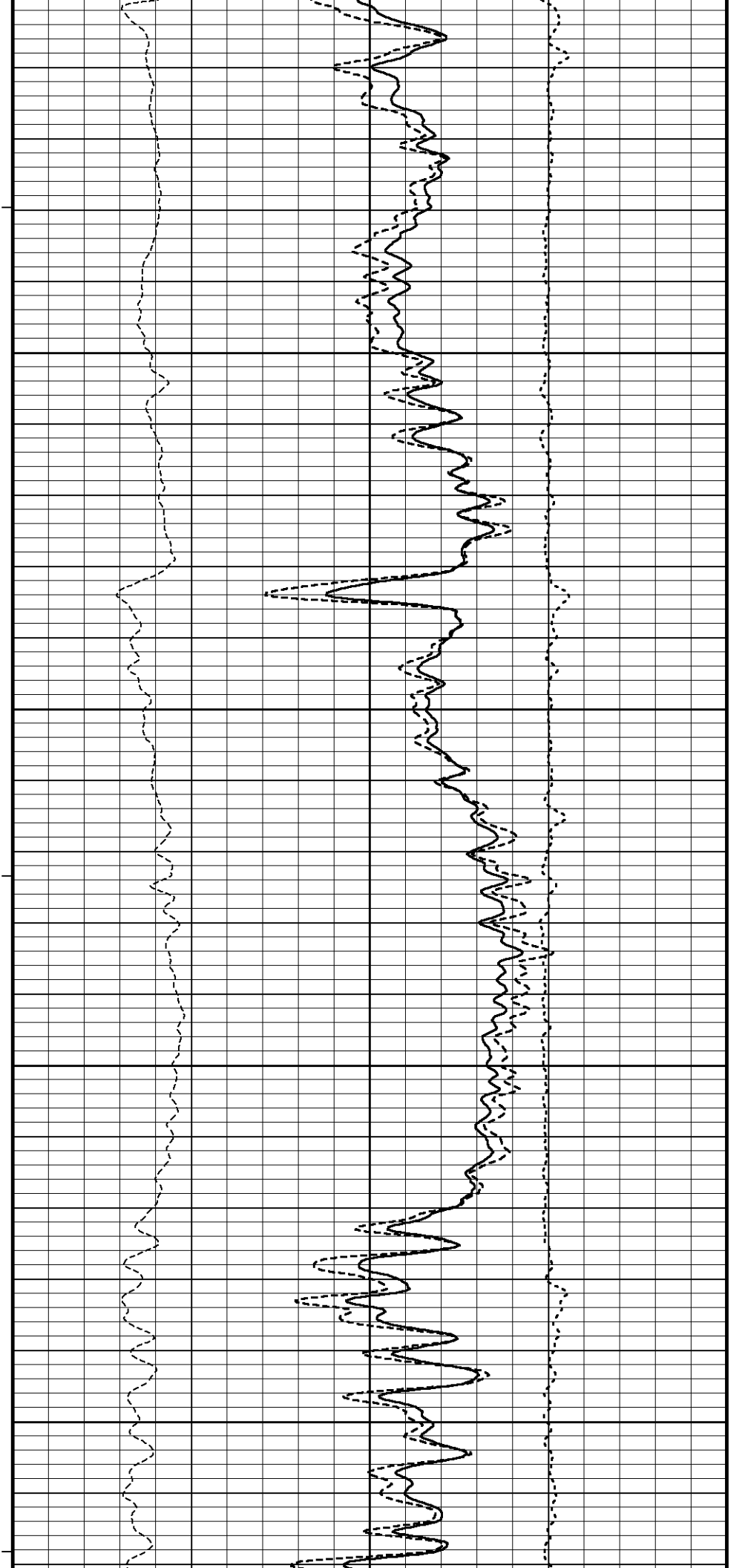
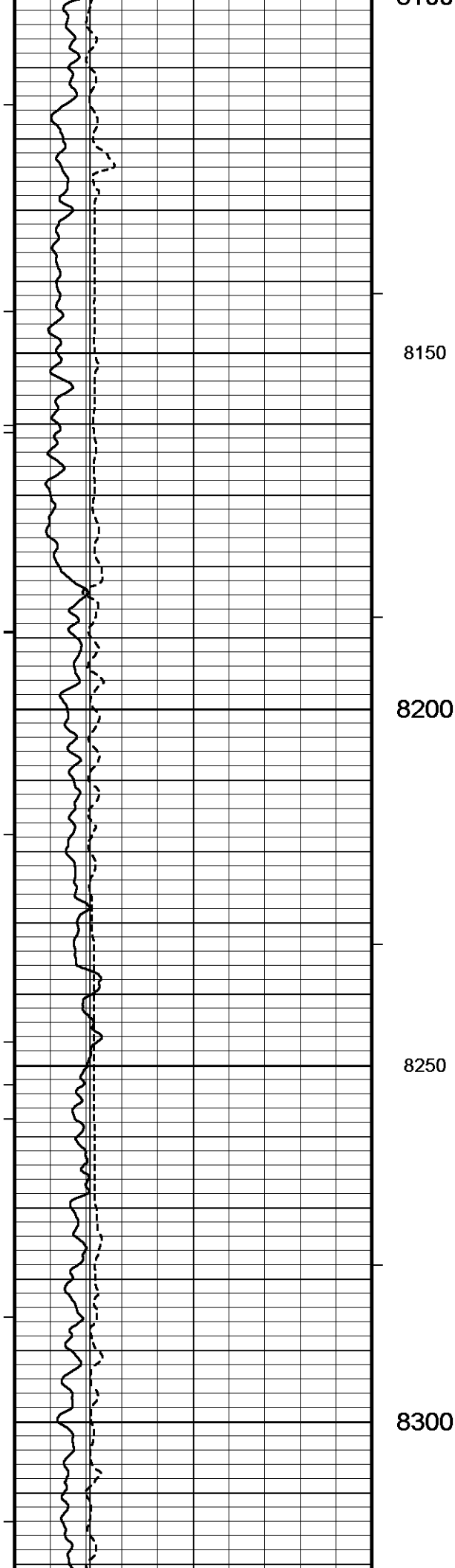
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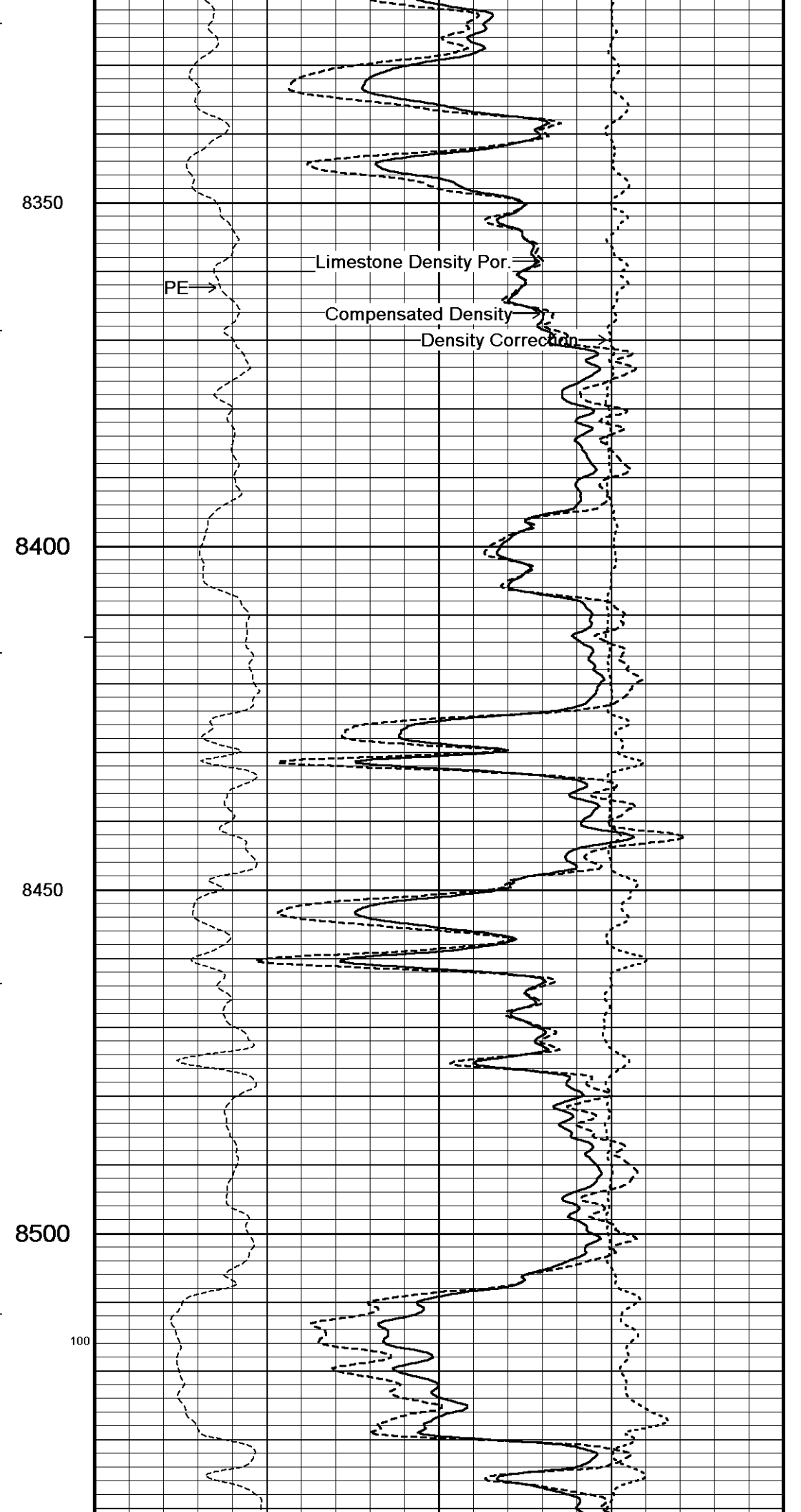
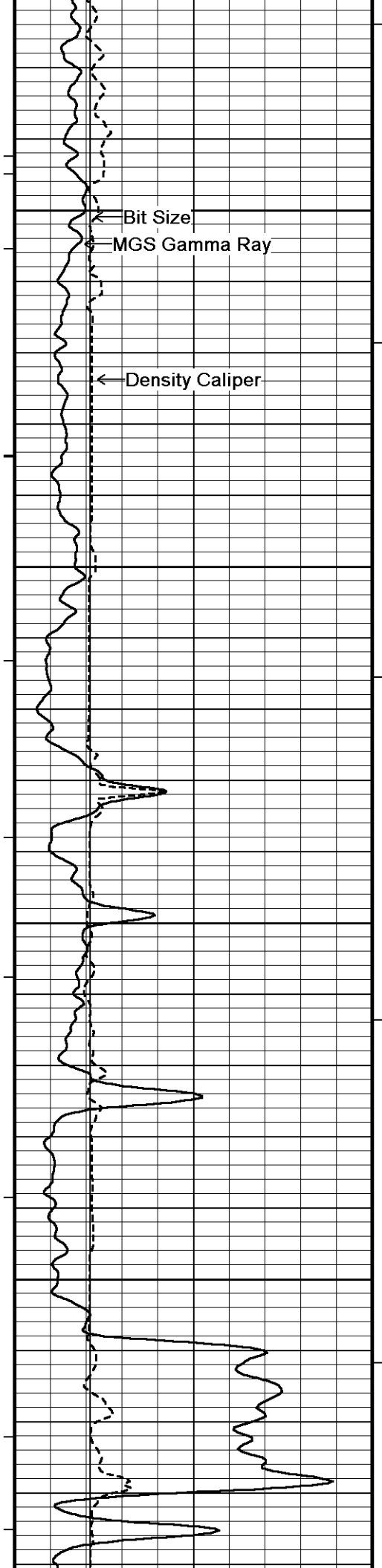
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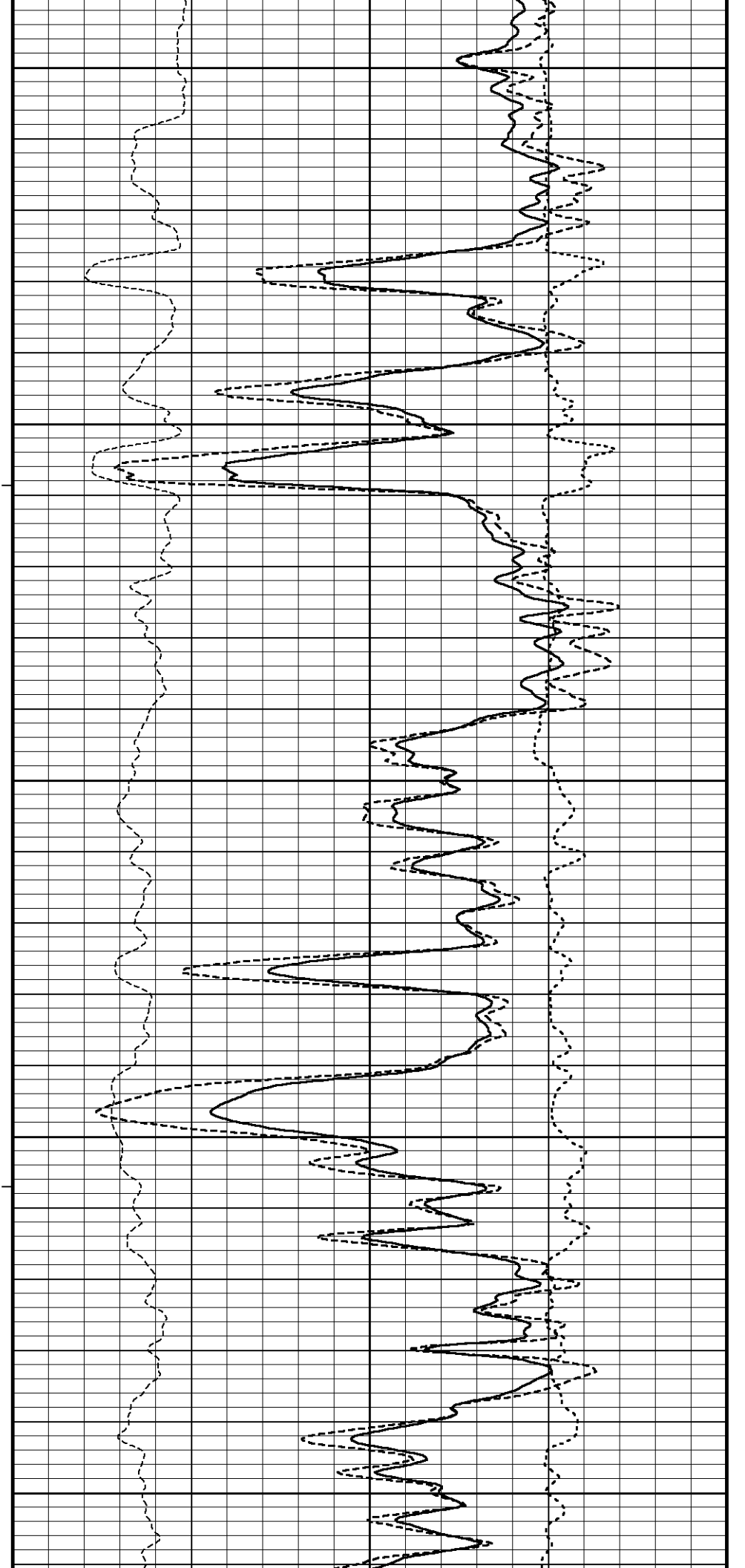
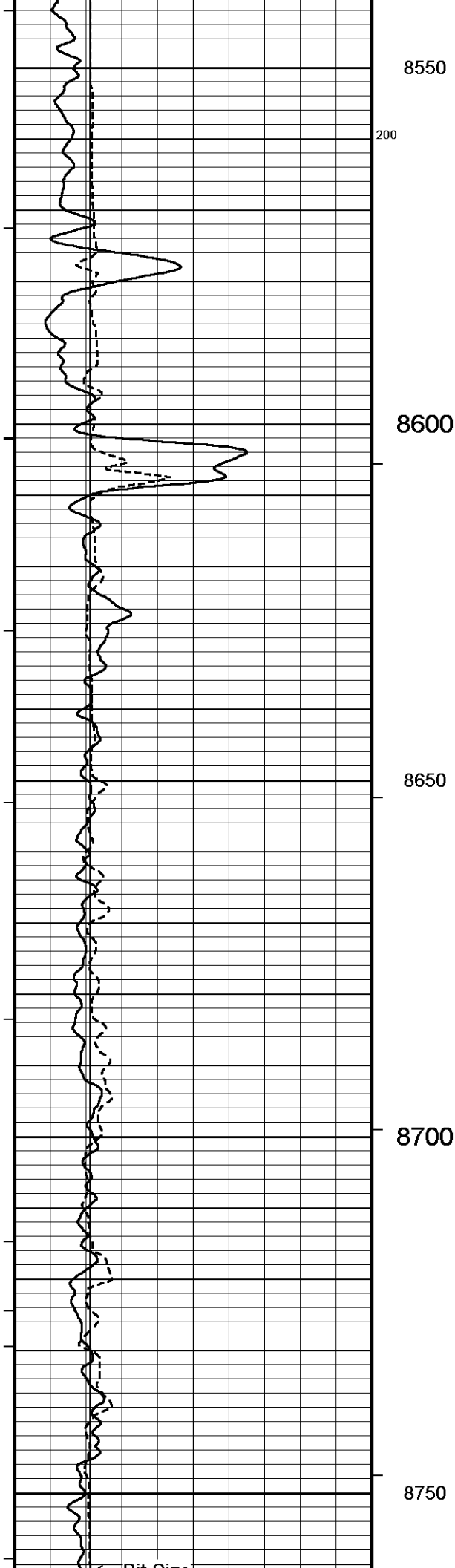
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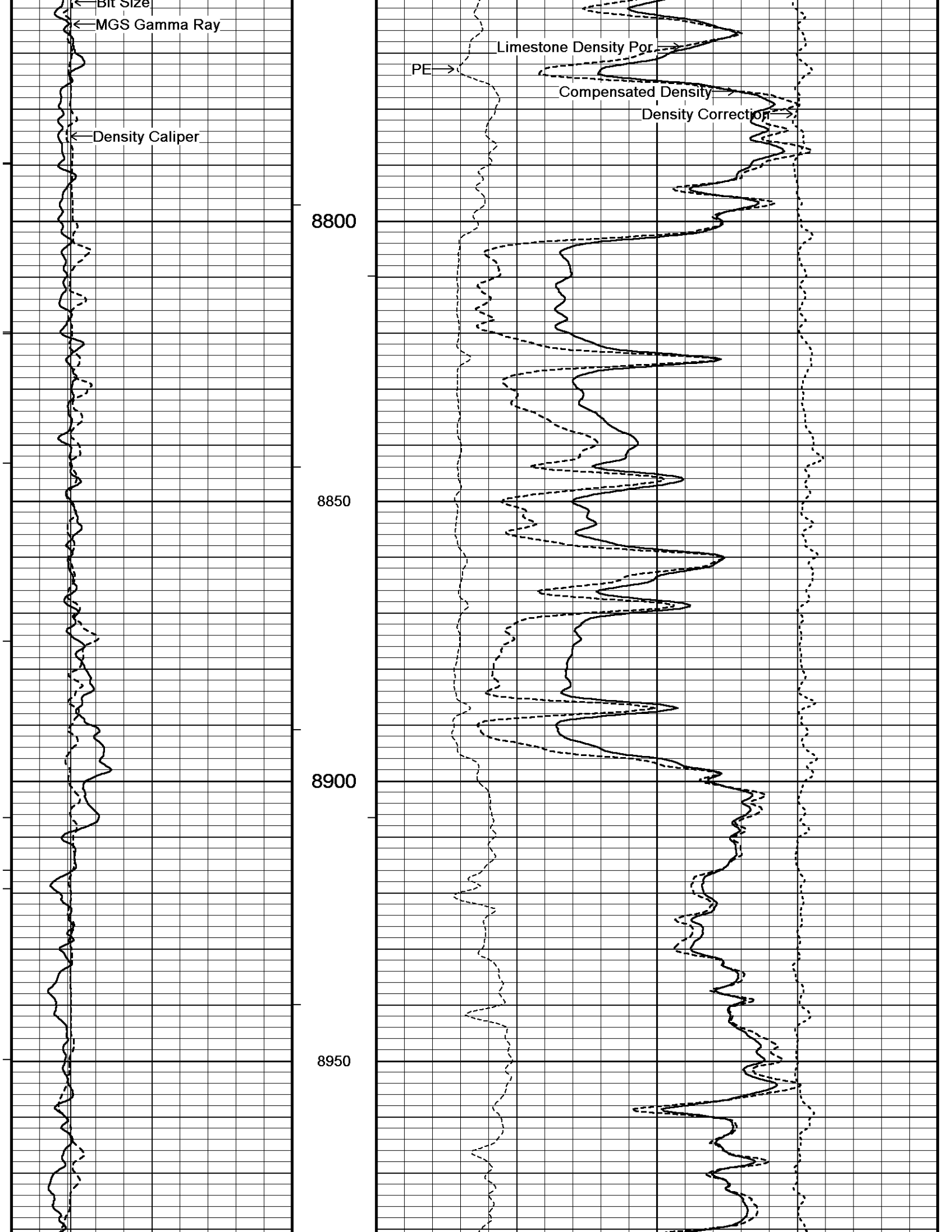


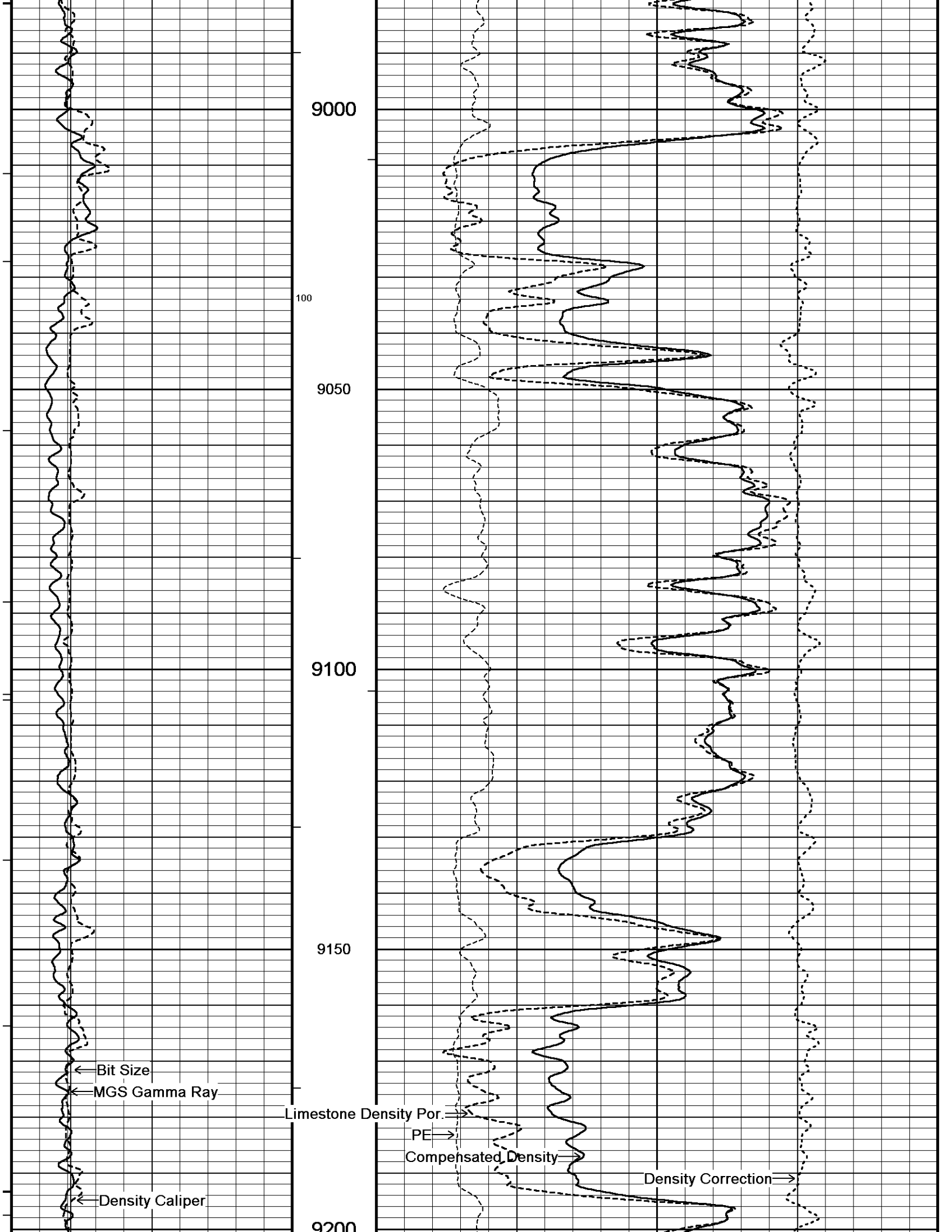


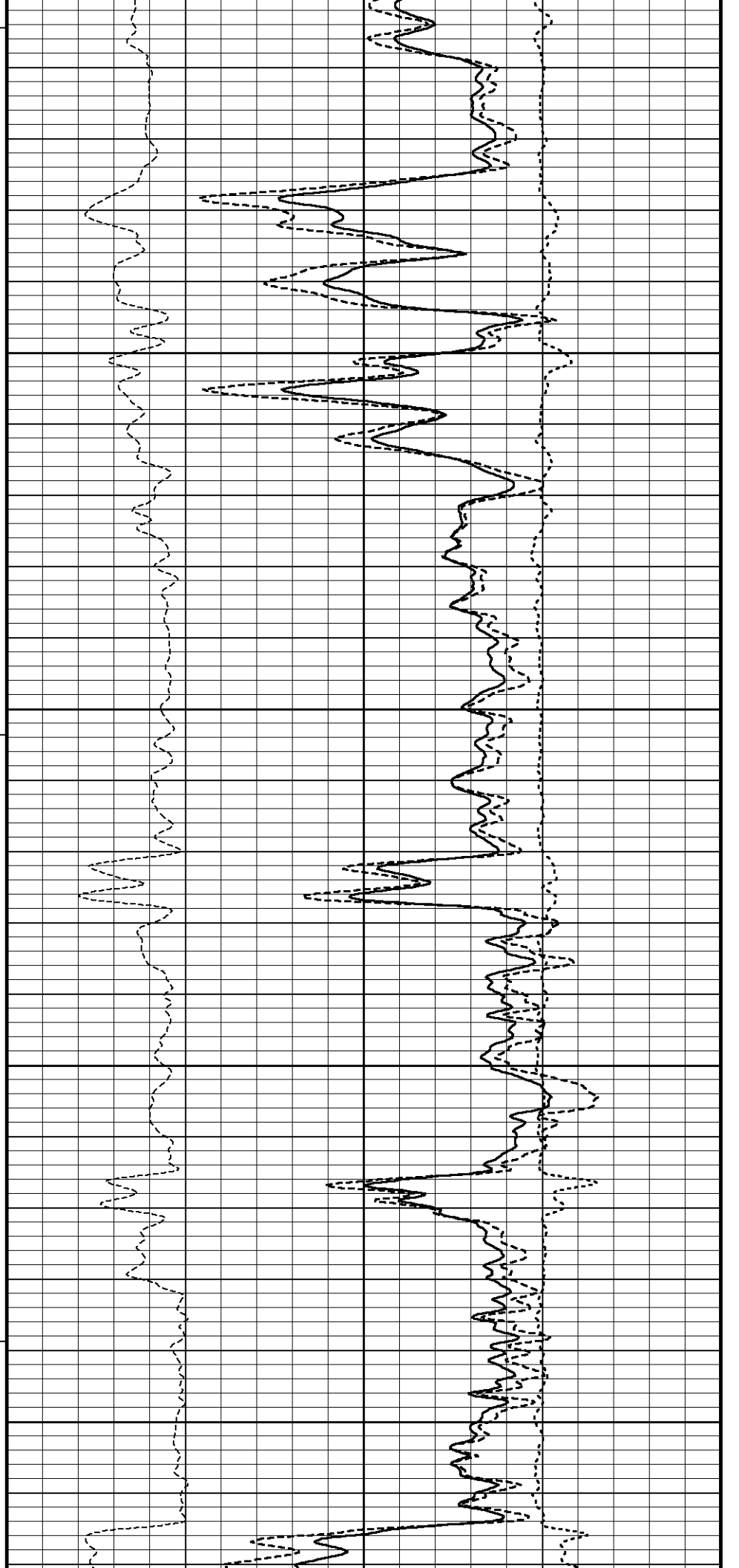
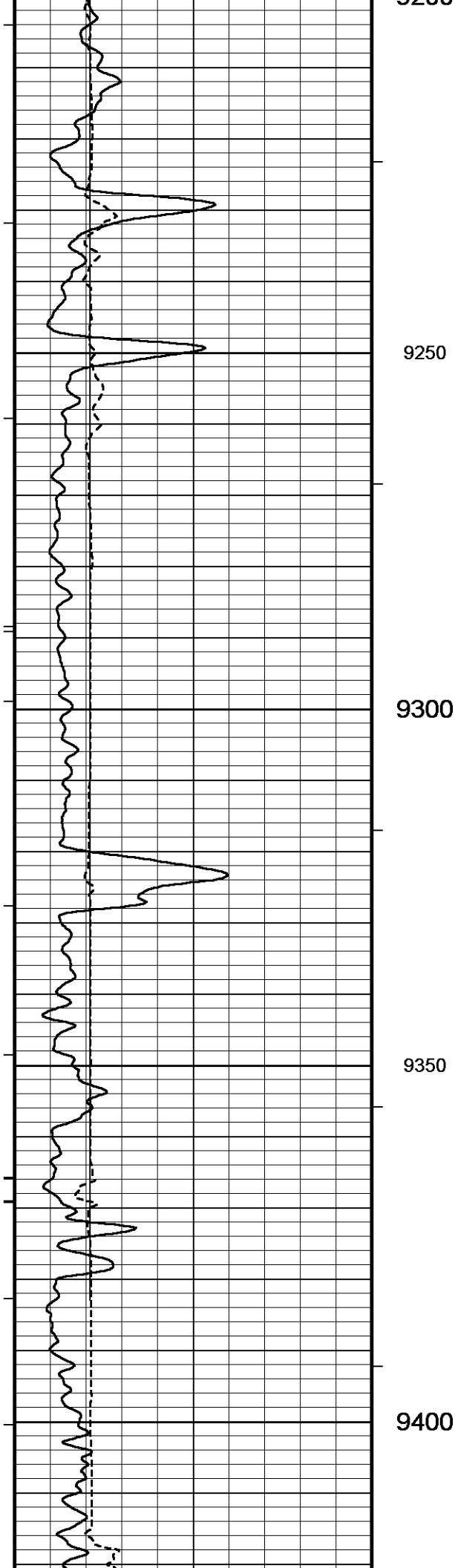


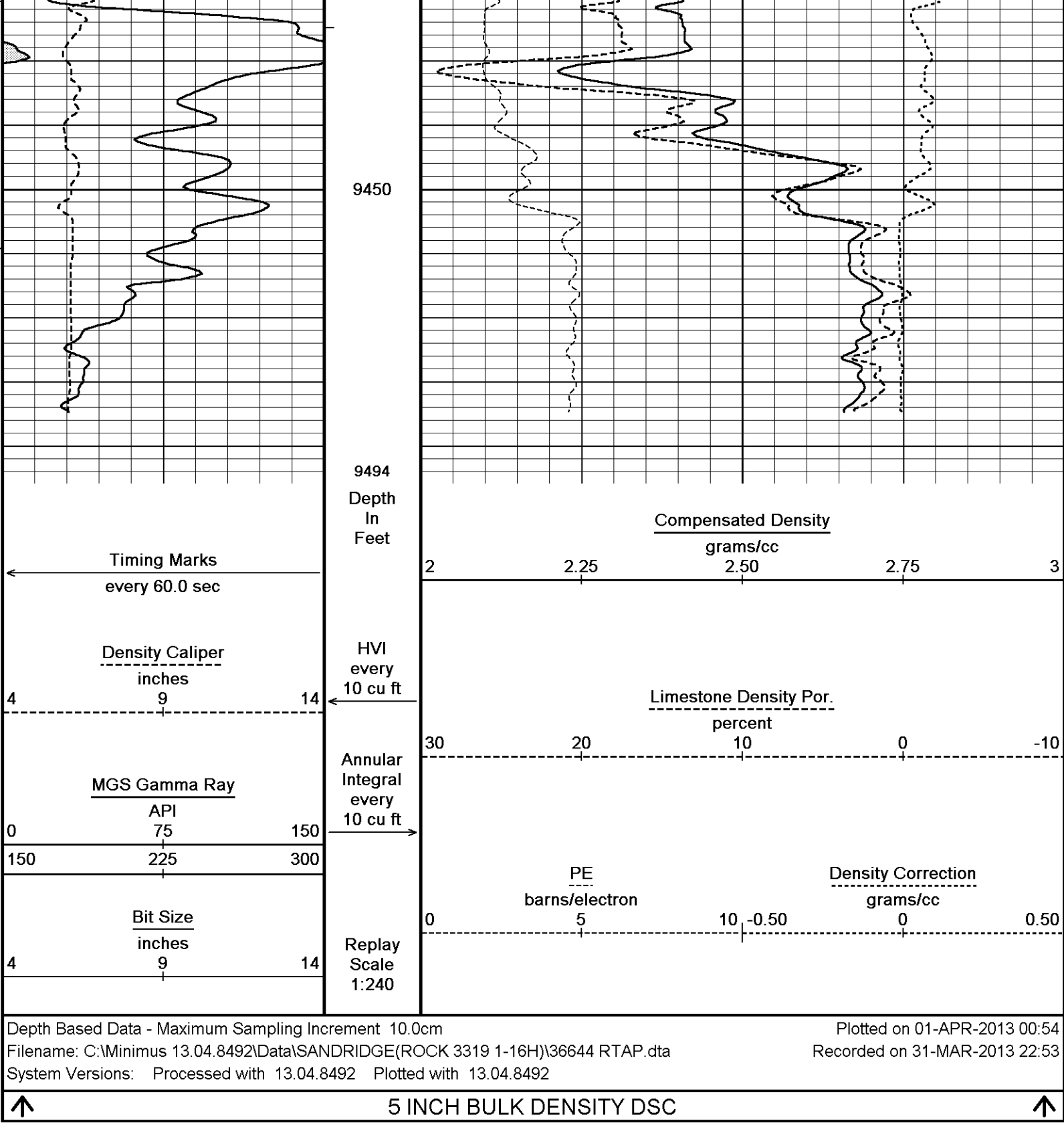












BEFORE SURVEY CALIBRATION			
C:\Minimus 13.04.8492\Data\SANDRIDGE(ROCK 3319 1-16H)\36644 RTAP.dta			
Down-hole Tension Calibration All 000			Field Calibration on 24-FEB-2009 00:00
Reading No	Measured		
1	14953.75	0.00	
2	17846.38	1500.00	
General Constants All 000			Last Edited on 31-MAR-2013,23:07
General Parameters			
Mud Resistivity	1.000	ohm-metres	

Mud Resistivity Temperature	79.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Limestone Density Por.	
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 167		
		Last Edited on 02-FEB-2013,08:19
Atmospheric Pressure	14.70	psi
Serial Number	262784	
Calibration Date	21-Jan-2011	
Base Check Date		
Dead Weight Serial Number	0	
Dead Weight Gravitational Correction	1.0	
Temperature	75.0	150.0
Pressure psia	Inc. Dec.	Inc. Dec.
0.0	0.038 0.038	0.049 0.049
3000.0	5.218 5.220	5.230 5.232
6000.0	10.409 10.412	10.422 10.425
9000.0	15.610 15.615	15.623 15.628
12000.0	20.823 20.826	20.837 20.841
15000.0	26.048	26.064
		250.0
		350.0
		degrees F
	Inc. Dec.	Inc. Dec.
	0.077 0.078	0.063 0.063
	5.257 5.259	5.244 5.246
	10.447 10.452	10.436 10.440
	15.650 15.656	15.638 15.643
	20.866 20.869	20.853 20.857
	26.093	26.081
High Resolution Temperature Calibration MGS-C.J 136		
		Field Calibration on 21-MAR-2013,03:59
	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00
High Resolution Temperature Constants MGS-C.J 136		
		Last Edited on 21-MAR-2013,03:59
Pre-filter Length	11	
SP Calibration MGS-C.J 136		
		Field Calibration on 21-MAR-2013,03:58
	Measured	Calibrated (mV)
Reference 1	102.2	98.7
Reference 2	-94.7	-98.3
Gamma Calibration MGS-C.J 136		
		Field Calibration on 29-MAR-2013 07:11
	Measured	Calibrated (API)
Background	52	37
Calibrator (Gross)	1831	1298
Calibrator (Net)	1779	1261
Gamma Constants MGS-C.J 136		
		Last Edited on 31-MAR-2013,11:24
Gamma Calibrator Number	BLUE	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm
Neutron Calibration MDN-B.J 390		
		Base Calibration on 13-MAR-2013 10:42
		Field Check on 29-MAR-2013 07:05

Base Calibration		Measured		Calibrated (cps)	
	Near	Far	Near	Far	
	2935	90	3714	110	
Ratio		32.709		33.764	
Field Calibrator at Base			Calibrated (cps)		
			1296	1890	
Ratio				0.685	
Field Check			Calibrated (cps)		
			1308	1886	
Ratio				0.682	

Neutron Constants MDN-B.J 390			Last Edited on 29-MAR-2013,06:59		
Neutron Source Id	p33312b				
Neutron Jig Number	blue				
Epithermal Neutron	No				
Caliper Source for Processing	Density Caliper				
Stand-off	0.00	inches			
Mud Density	1.08	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	None				
Temperature	N/A	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 359		Base Calibration on 13-MAR-2013 10:08 Field Check on 29-MAR-2013 06:52			
Base Calibration		Measured		Calibrated (ohm-m)	
Reference 1		0.0		0.0	
Reference 2		960.4		126.8	
Base Check				280.9	
Field Check				280.9	

FE Constants MFE-B.J 359				Last Edited on 29-MAR-2013,06:51	
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	

Induction Calibration MAI-A.A 158		Base Calibration on 13-MAR-2013,13:08 Field Check on 29-MAR-2013 06:51			
Base Calibration		Measured		Calibrated (mmho/m)	
Test Loop Calibration					
Channel	Low	High	Low	High	
1	17.2	475.3	9.3	966.2	
2	6.1	381.2	7.6	821.4	
3	3.8	265.2	5.2	566.0	
4	2.7	132.2	2.6	279.2	
Array Temperature		22.3	Deg F		
Channel		Base Check (mmho/m)		Field Check (mmho/m)	
		Low	High	Low	High
1				12.0	3815.1
2				29.7	3531.1
3				27.2	2221.2

3	27.0	2981.9
4	17.9	2097.8
Deep	14.8	1944.1
Medium	40.8	3888.1
Shallow	46.7	5237.0
Array Temperature	63.7	Deg F

Induction Constants MAI-A.A 158		Last Edited on 31-MAR-2013,23:07	
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		0.0000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.		Borehole Temp. Unfilt.	
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 158		Field Calibration on 21-MAR-2013,03:55	
	Measured	Calibrated(Deg F)	
Lower	0.00	0.00	
Upper	0.00	0.00	

High Resolution Temperature Constants MAI-A.A 158		Last Edited on 21-MAR-2013,03:55	
Pre-filter Length	11		

Caliper Calibration MPD-C.J 393			Base Calibration on 13-MAR-2013 12:04
			Field Calibration on 29-MAR-2013 06:58
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	18720	4.01	
2	26961	5.96	
3	35472	7.98	
4	43564	9.86	
5	52656	11.88	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	5.89	5.96	

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	58170	26184	59869	31110
Reference 2	23884	2608	24557	2522

Field Check at Base

1212.1 1324.7

Field Check

1202.4 1315.7

PE Calibration

Base Calibration

	WS	Measured		Calibrated	
		WH	Ratio	Ratio	
Background	223	1093			
Reference 1	25507	57978	0.444	0.369	
Reference 2	7124	23751	0.305	0.271	

Field Check at Base

222.7 1092.9

Field Check

219.9 1081.7

Density Constants MPD-C.J 393

Last Edited on 31-MAR-2013,11:24

Density Source Id	P21137B	
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	1.09	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	0.02	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	

DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\SANDRIDGE(ROCK 3319 1-16H)\36644 RTAP.dta

Shuttle Running Tool 3.5")

SRT-A.A 69 LG: 6.62 ft WT: 37.5 lb OD: 2.52 in

MBS-F.A 200v Compact Battery Sub

MBS-F.A 112 LG: 10.61 ft WT: 70.5 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

Compact Tool Isolator sub.

MTL-P.A 67 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in



Compact Short Gamma
MGS-C.J 136 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

Compact Collar Locator
MCL-B.J 60 LG: 3.17 ft WT: 26.5 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-D.A Compact Knuckle Joint
SKJ-D.A 42 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 260 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-B.J 390 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.J 393 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

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 435 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 41 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

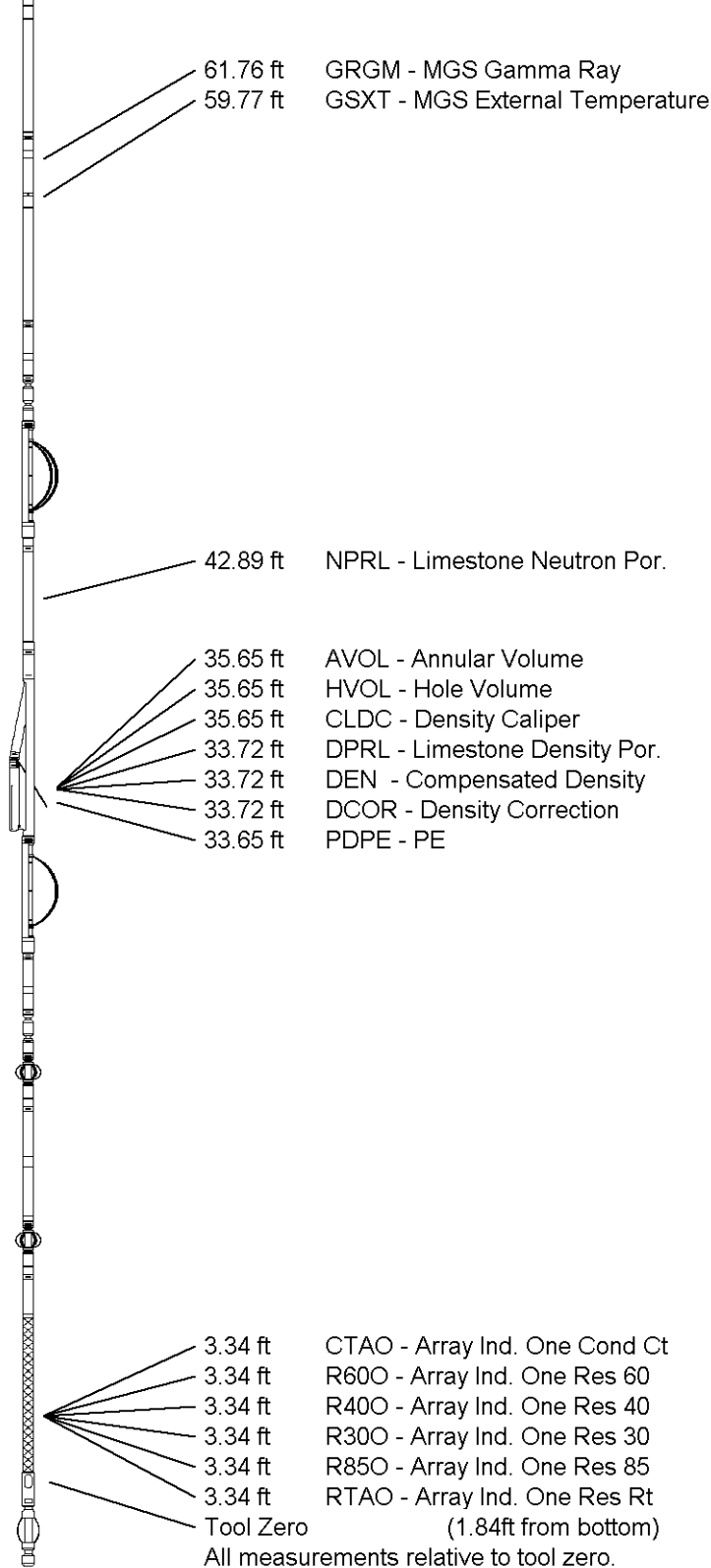
MIS-B Compact Inline Standoff sub
MIS-B 26 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Focussed Electric
MFE-B.J 359 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 27 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
MAI-A.A 158 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in

Total Length: 88.36 ft Weight: 637.1 lb



COMPANY SANDRIDGE ENERGY
WELL ROCK 3319 1-16H
FIELD EAST COLLIER FLATS
PROVINCE/COUNTY COMANCHE
COUNTRY/STATE USA / KANSAS

Elevation Kelly Bushing	2001.00	feet	First Reading	9480.00	feet
Elevation Drill Floor	2001.00	feet	Depth Driller	9615.00	feet
Elevation Ground Level	1983.00	feet	Depth Logger	9615.00	feet



CML MESSENGER SHUTTLE

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ONE MESSENGER ONE TEAM
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON LOG