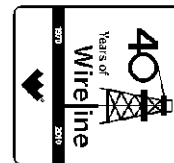




**Weatherford**

**COMPENSATED PHOTO DENSITY  
COMPENSATED DUAL NEUTRON  
LOG**

COMPANY **BILL BARRETT CORPORATION**  
WELL **GGU FEDERAL 42C-29-691**  
FIELD **GIBSON GULCH**  
PROVINCE/COUNTY **GARFIELD**  
COUNTRY/STATE **U.S.A. / COLORADO**  
LOCATION **SHL: 1234' FNL & 1312' FEL**  
**BHL: 1800' FNL & 664' FEL**



SEC	TWP	RGE	Other Services	
29	6S	91W	MAI/MFE	
API Number		05-045-19800		
Permit Number				
Permanent Datum G.L., Elevation 6104 feet				
Log Measured From K.B. @ 23 FEET above Permanent Datum				
Drilling Measured From K.B.				
Date	31-JAN-2011		Elevations: feet	
Run Number	ONE		KB	6127.00
Depth Driller	7435.00	feet	DF	6126.00
Depth Logger	7433.00	feet	GL	6104.00
First Reading	7411.00			
Last Reading	844.00			
Casing Driller	844.00	feet		
Casing Logger	848.00	feet		
Bit Size	7.880	inches		
Hole Fluid Type	LSND			
Density / Viscosity	10.60 lb/USg	60.00 CP		
PH / Fluid Loss	9.30	6.80 ml/30Min		
Sample Source	FLOW LINE			
Rm @ Measured Temp	4.60 @ 71.0	ohm-m		
Rmf @ Measured Temp	3.68 @ 71.0	ohm-m		
Rmc @ Measured Temp	5.52 @ 71.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	1.81 @184.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	184.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13173	GD JCT		
Recorded By	SLACKEY			
Witnessed By	C. CROW			

**BOREHOLE RECORD**

Last Edited: 31-JAN-2011 20:43

Bit Size inches	Depth From feet	Depth To feet
8.750	844.00	3900.00
7.880	3900.00	7435.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	844.00	36.00

**REMARKS**

TOOLS: SHA, MCG, MDN, MPD, SKJ, MFE AND MAI RAN IN COMBINATION.

HARDWARE: MPD: 8 INCH PROFILE PLATE USED.  
ONE 0.5 INCH STANDOFFS USED ON INDUCTION.  
ONE 0.5 INCH STANDOFFS USED ON MFE.  
DUAL BOWSPRING USED ON NEUTRON.

2.68 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY WILL AFFECT REPEATABILITY AND DATA QUALITY.

DENSITY POROSITY IS READING HIGH, NEUTRON POROSITY AND DCOR ARE READING LOW DUE TO 5 TO 8% LCM USED IN THE MUD SYSTEM.

CALIPER CHECK IN CASING PRESENTED. REFERENCE I.D. = 8.94" / 9.5/8" 36 LB/FT CASING)

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 6.94 (5.916 , 5.9 LBMT CASING)

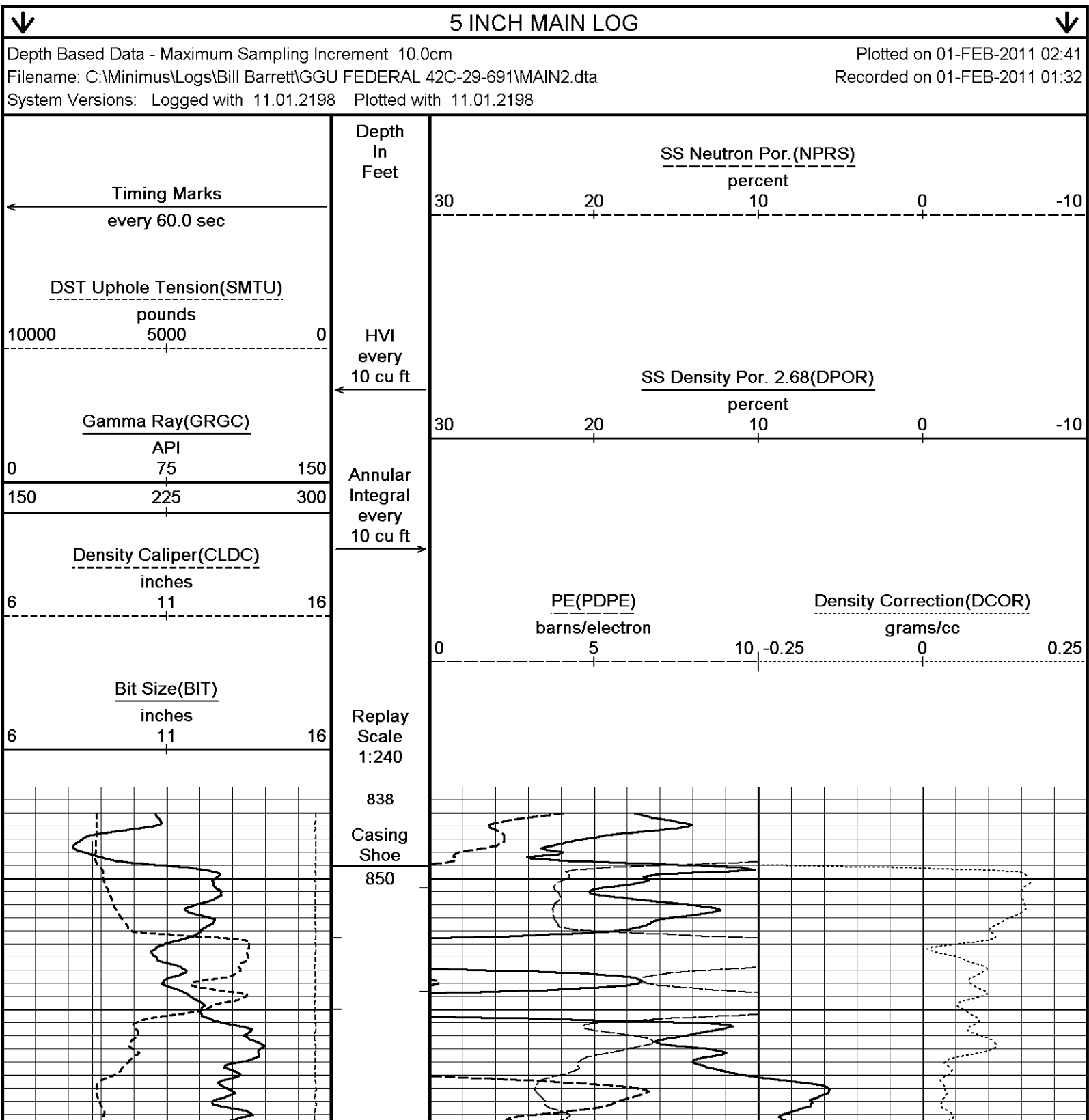
TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2540 CU.FT.

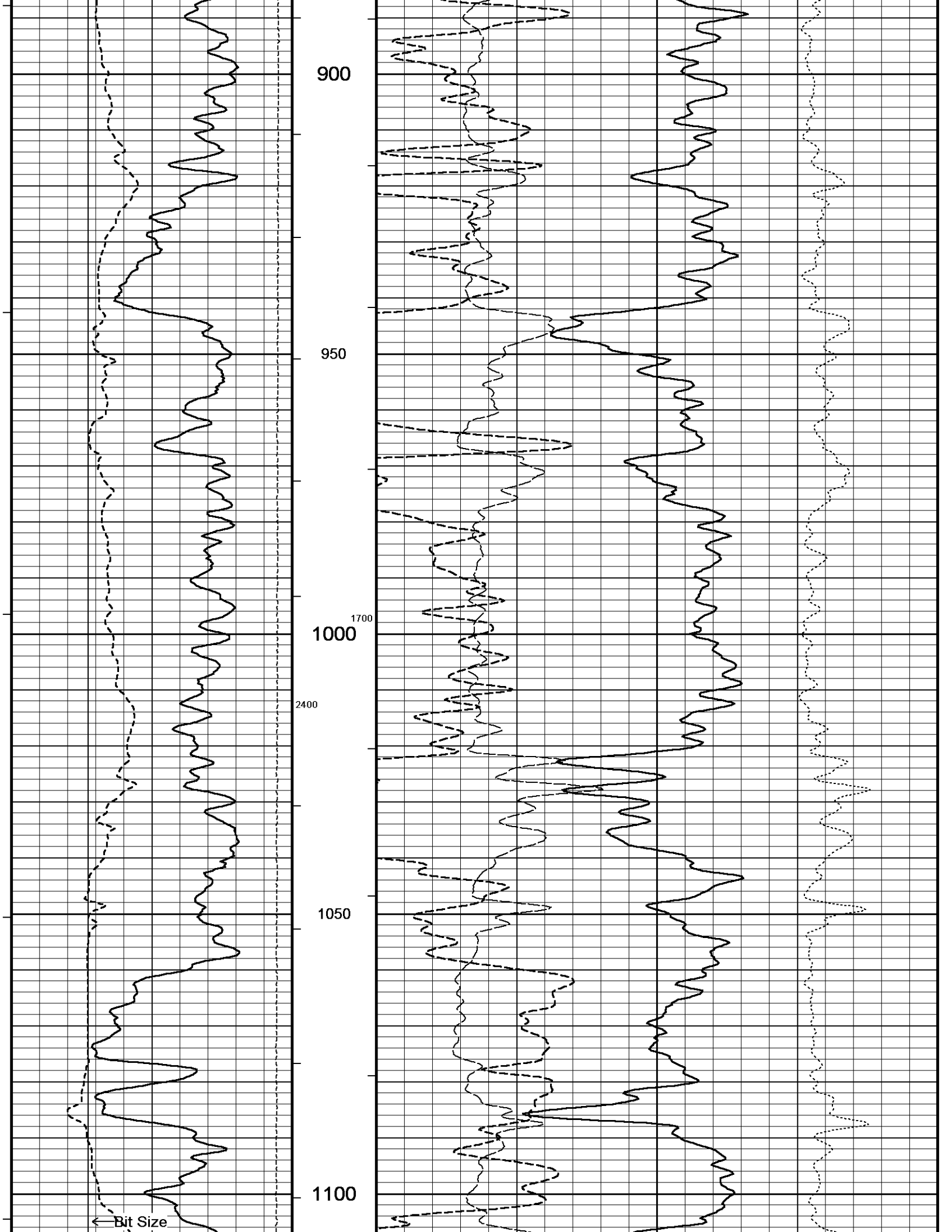
ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1760 CU.FT.

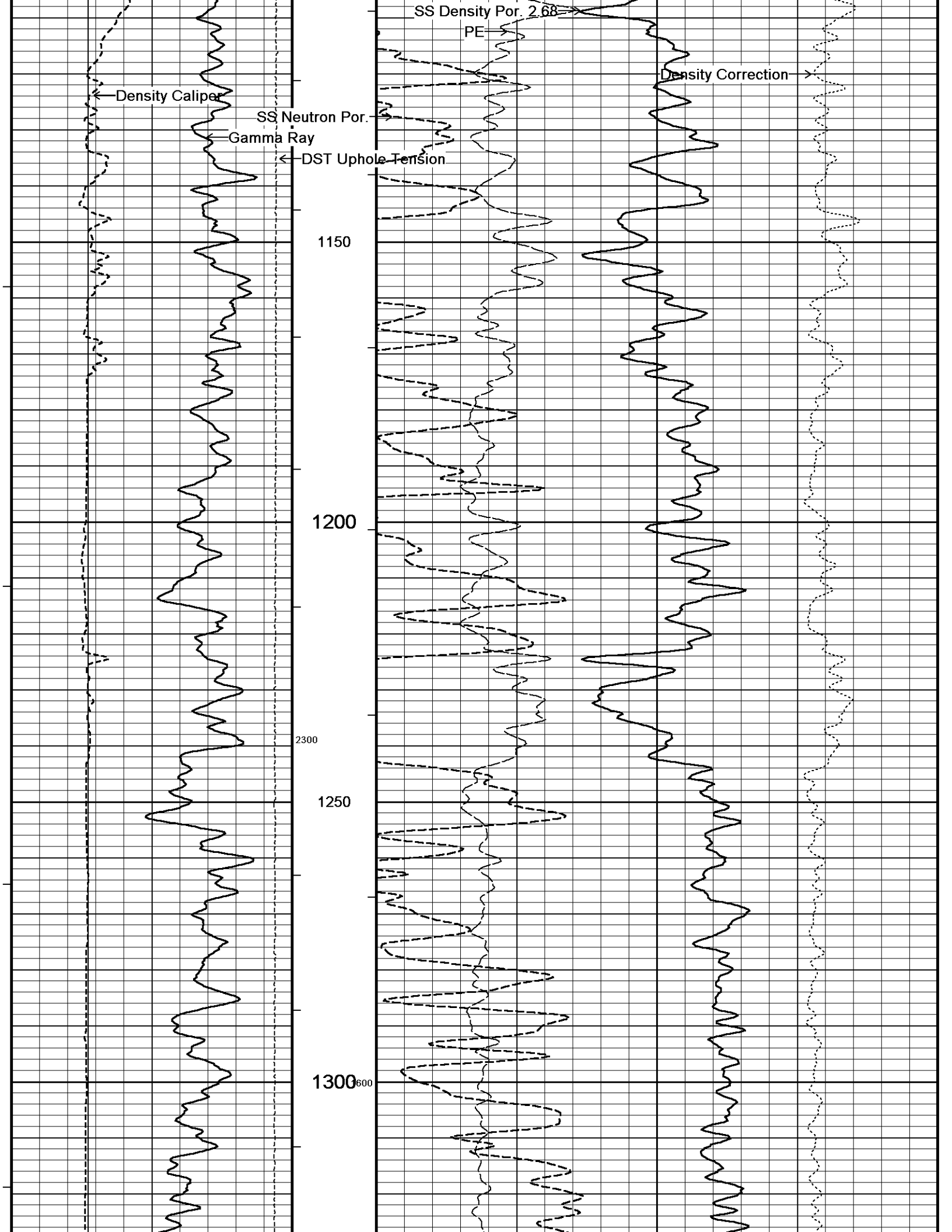
SERVICE ORDER: # 3524978

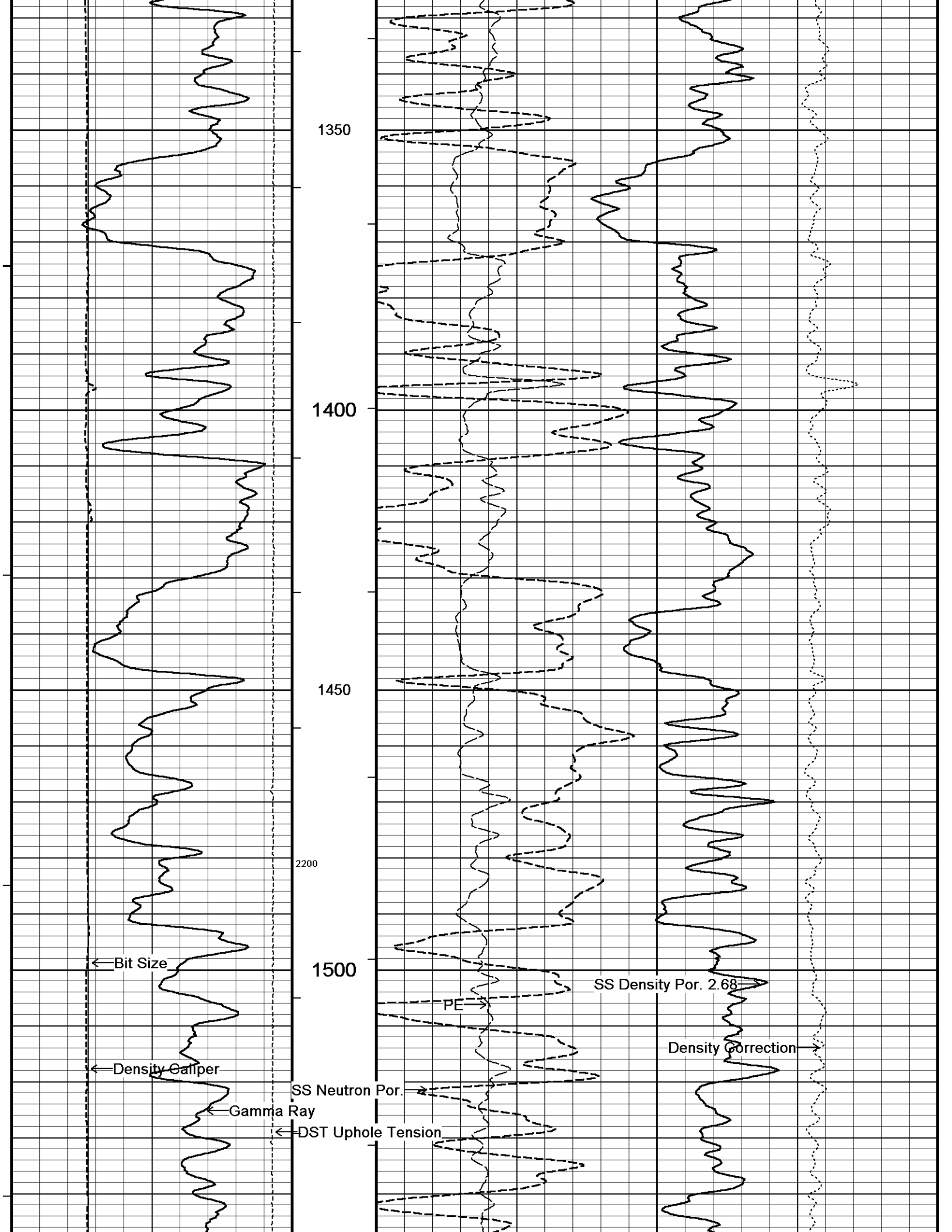
RIG: PATTERSON #307

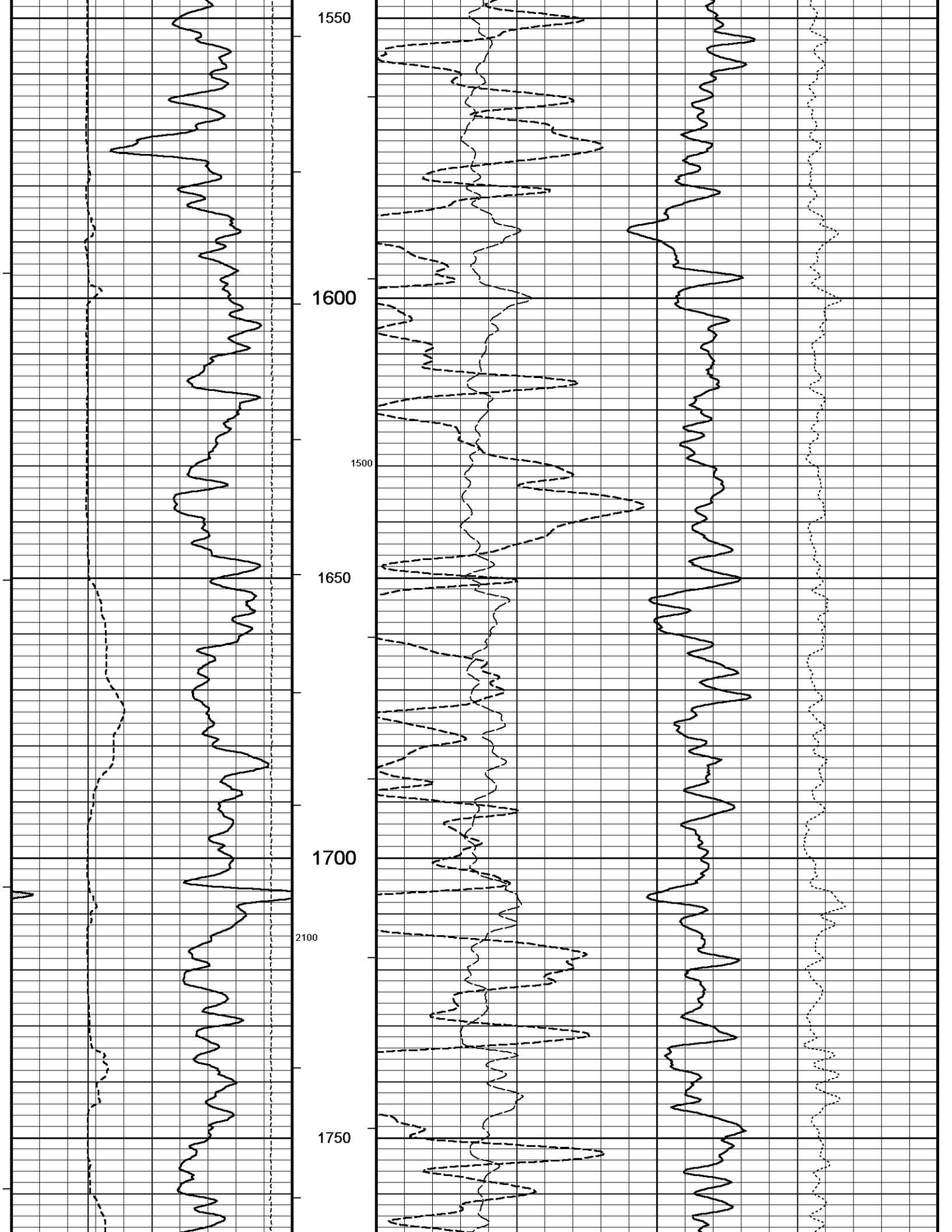
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

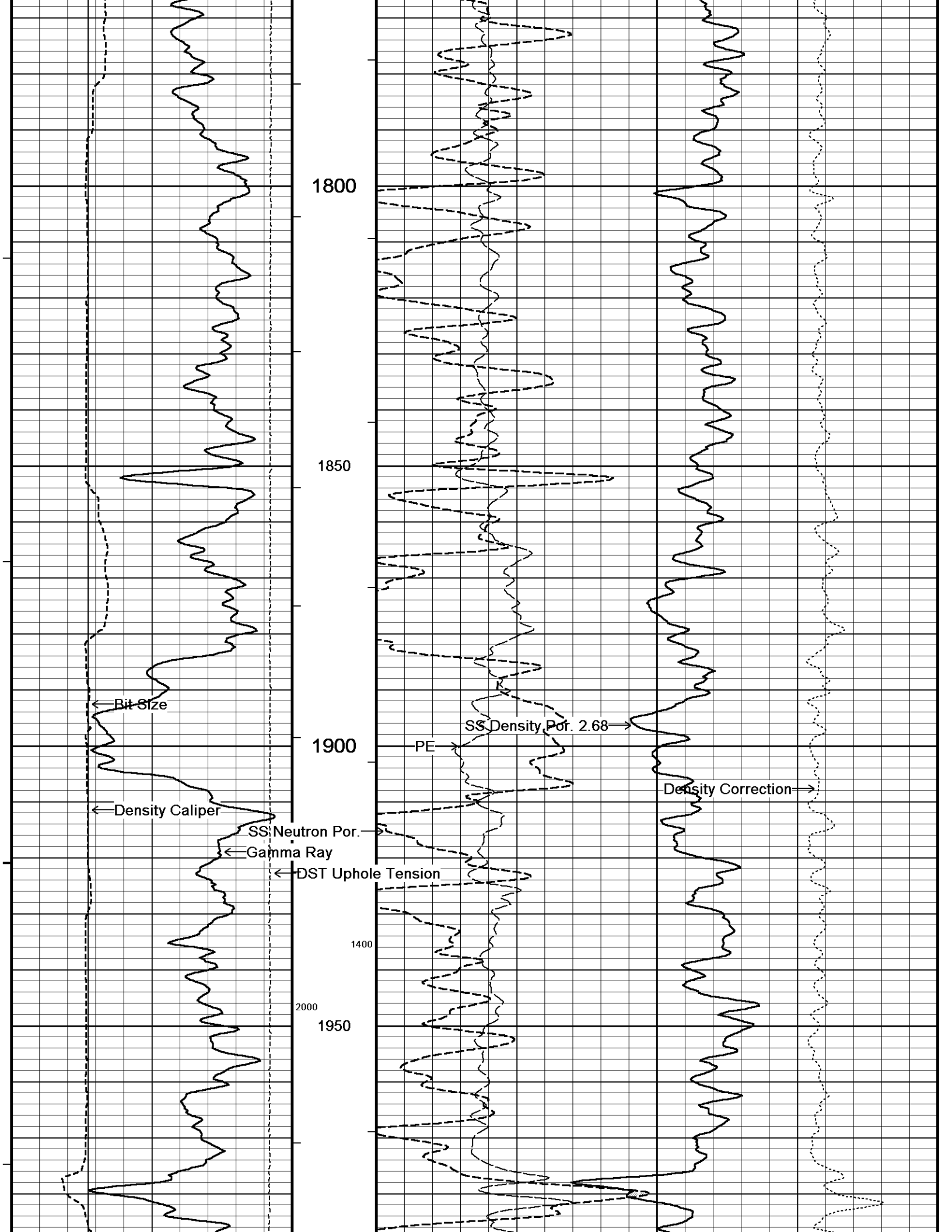


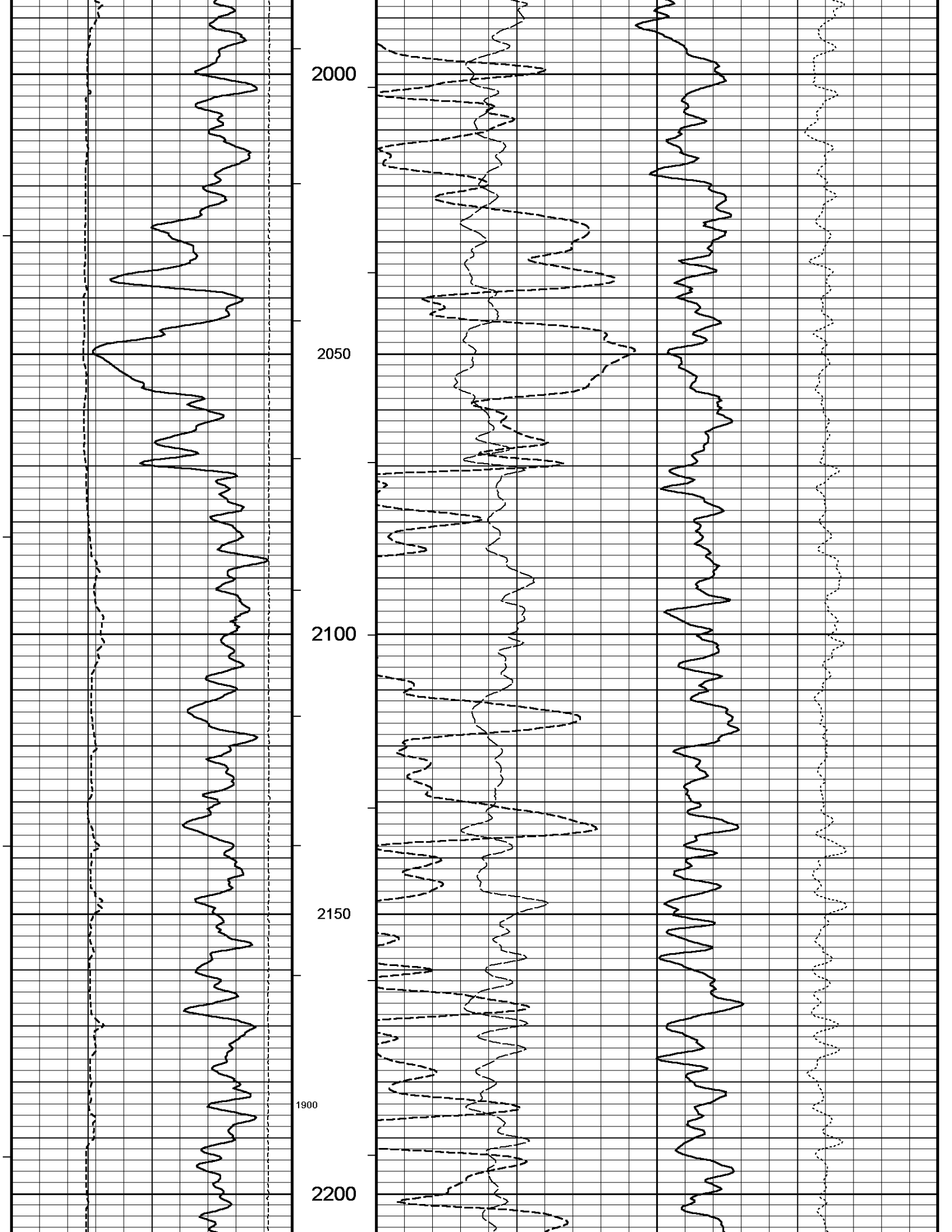




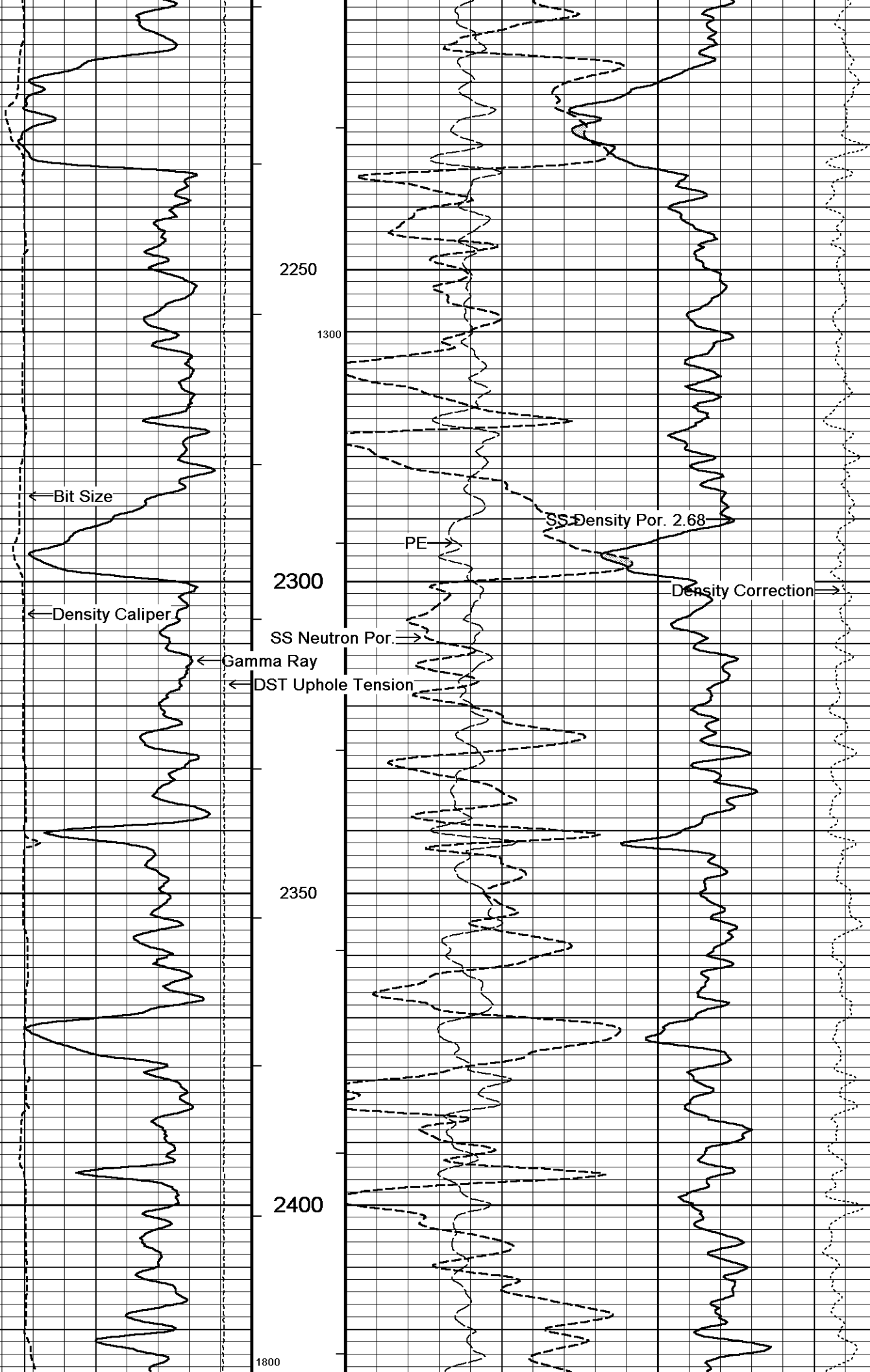


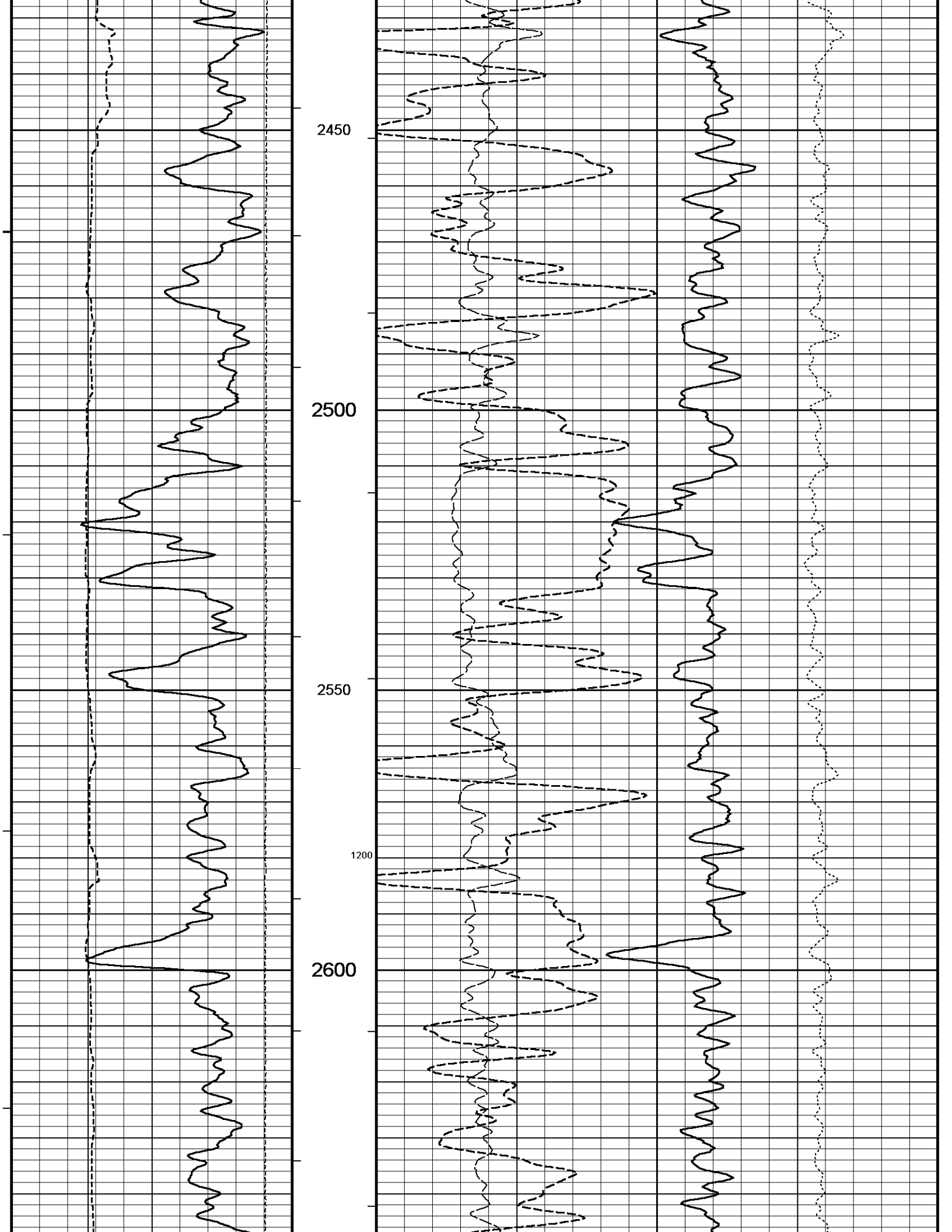


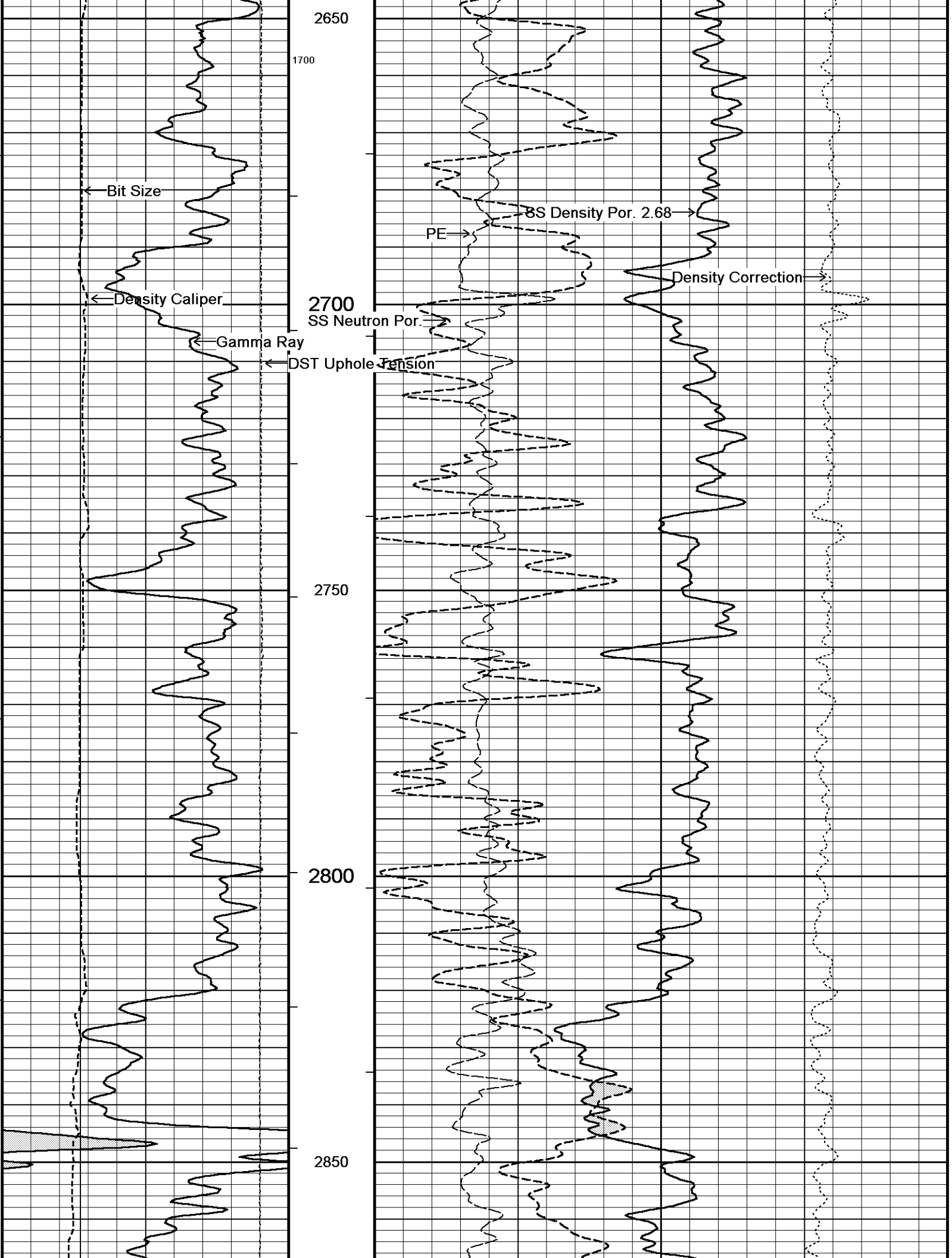


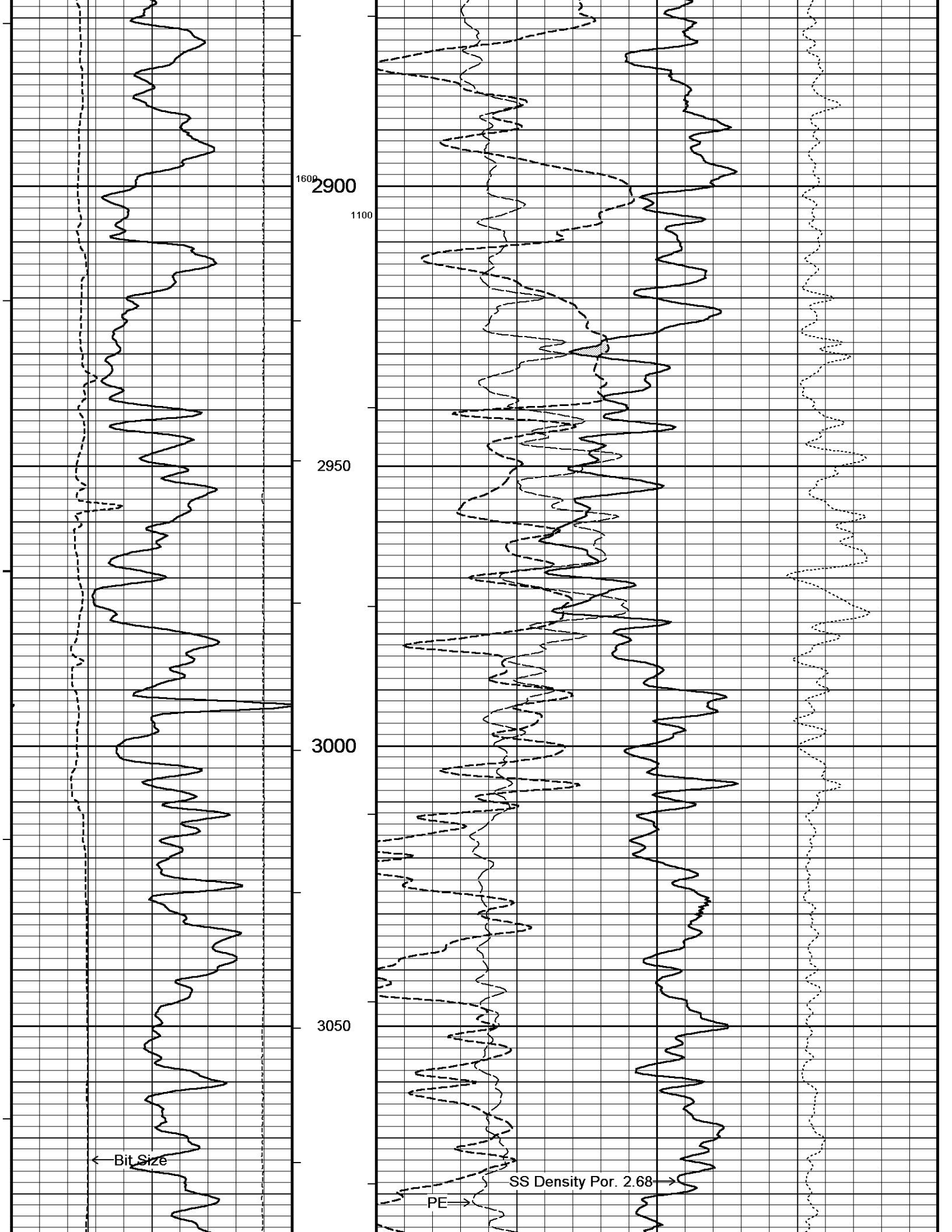


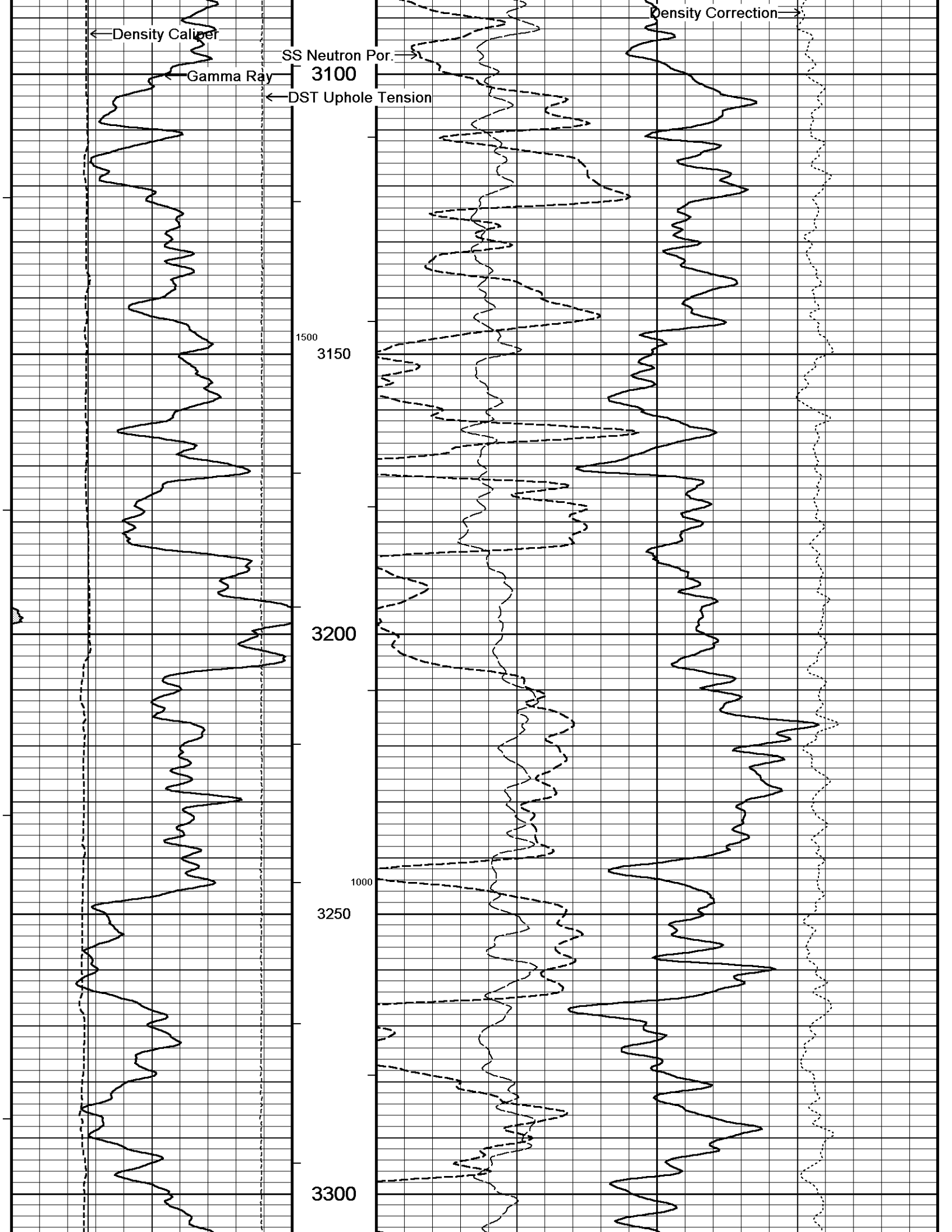


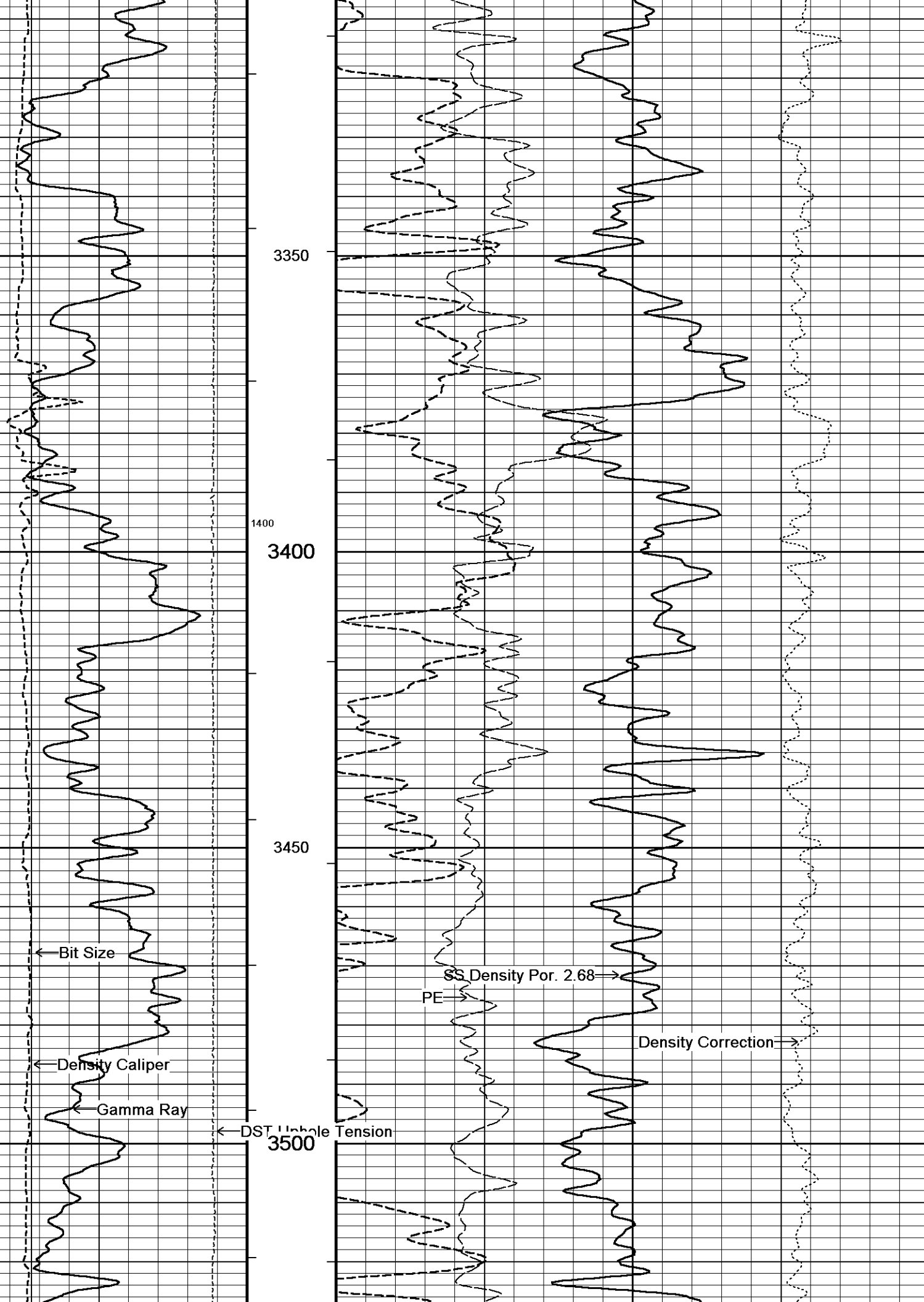


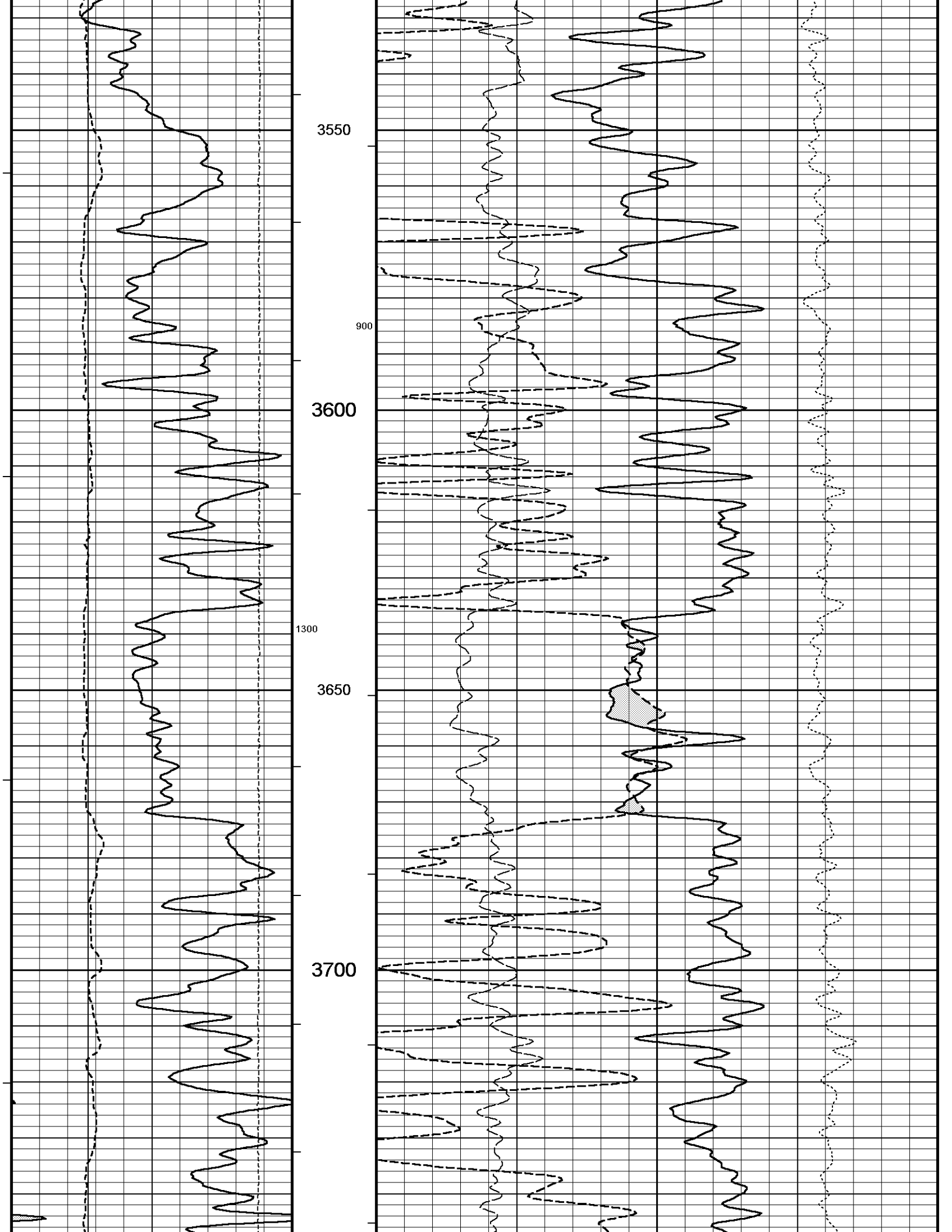


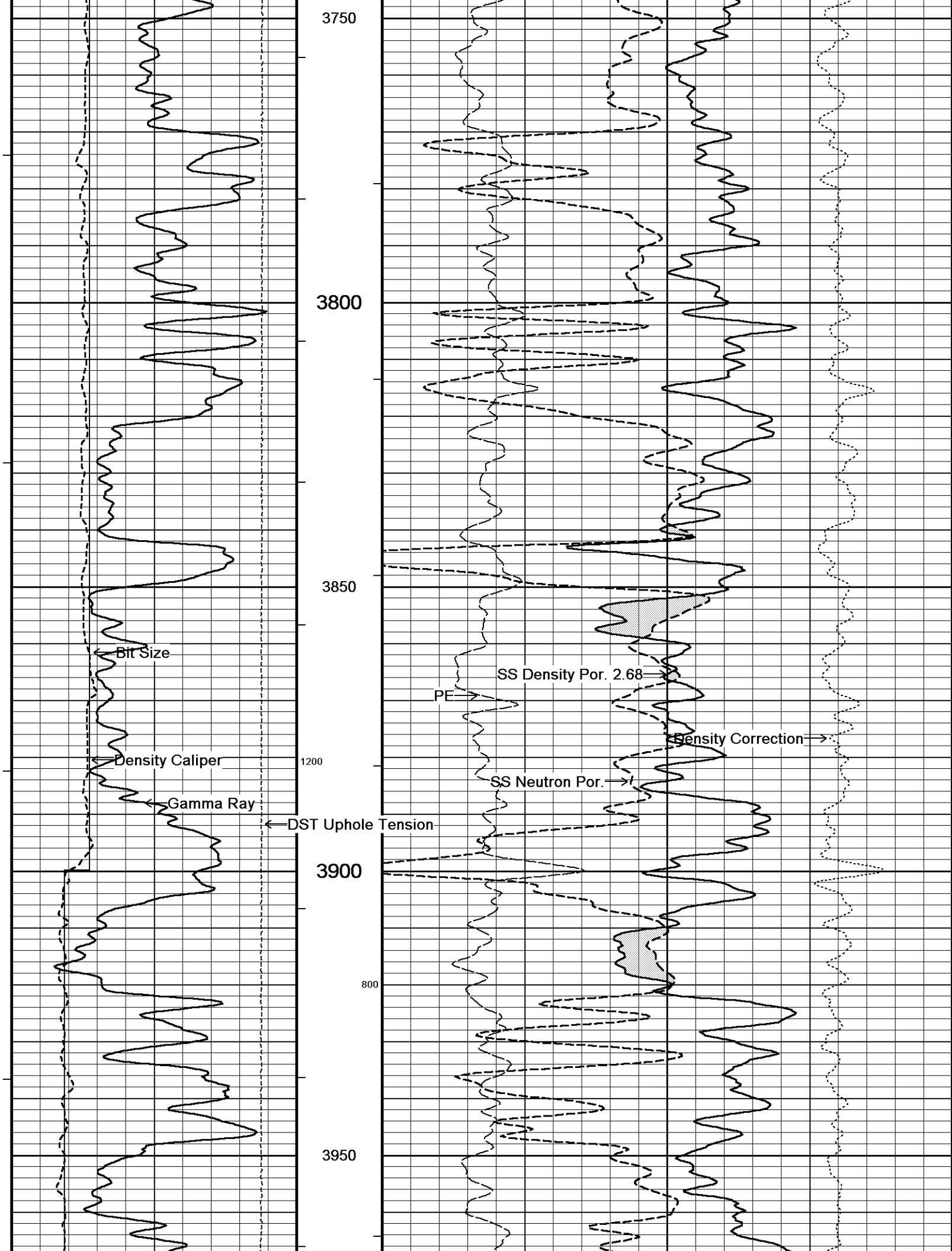




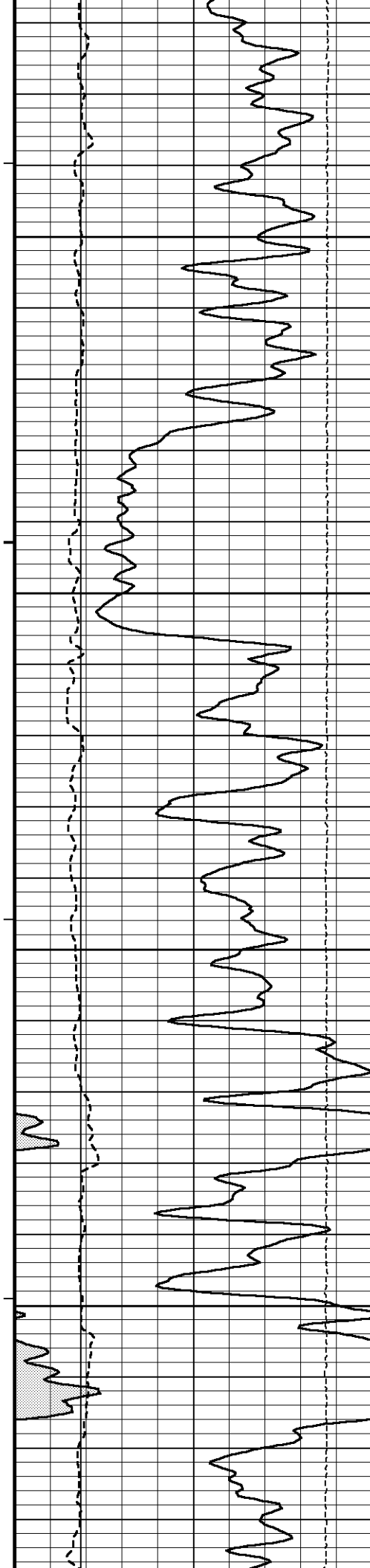












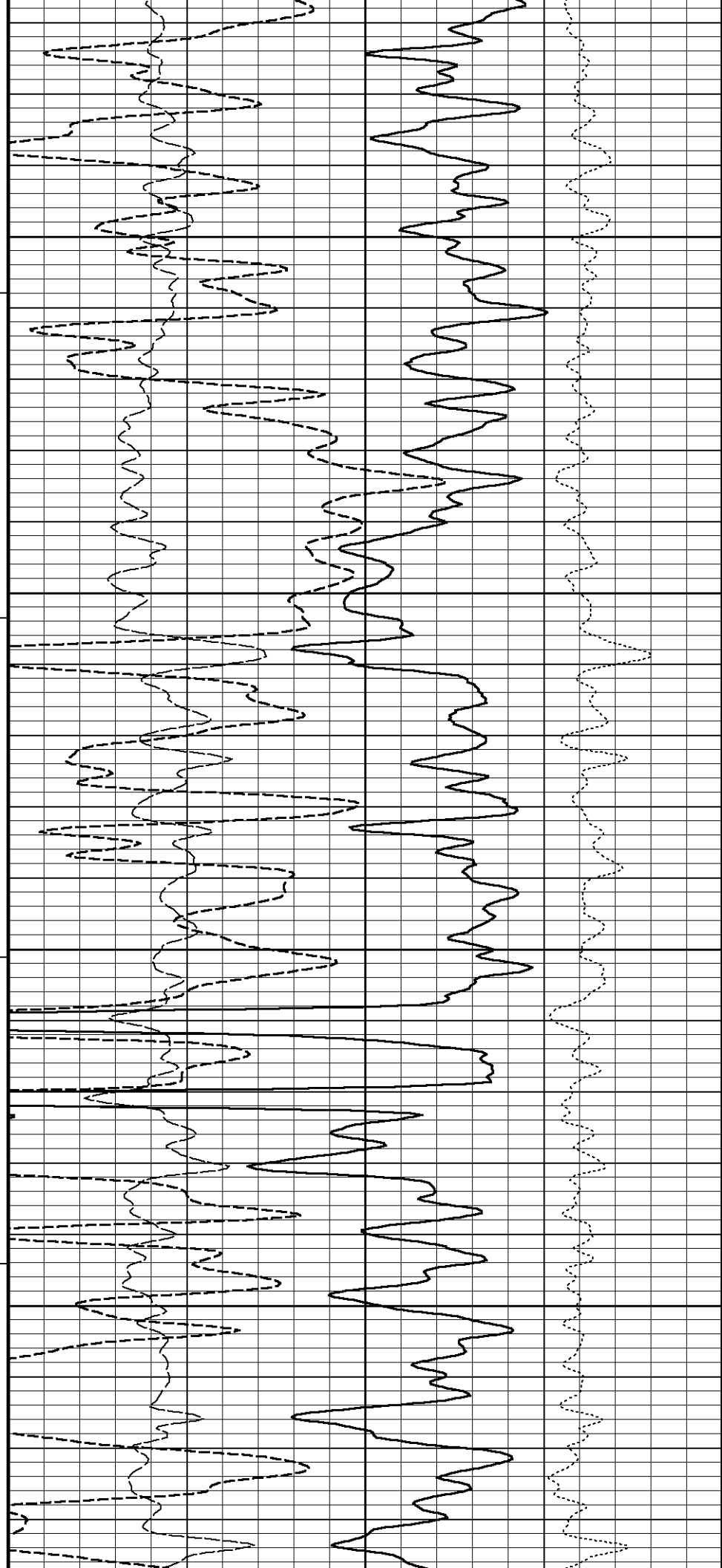
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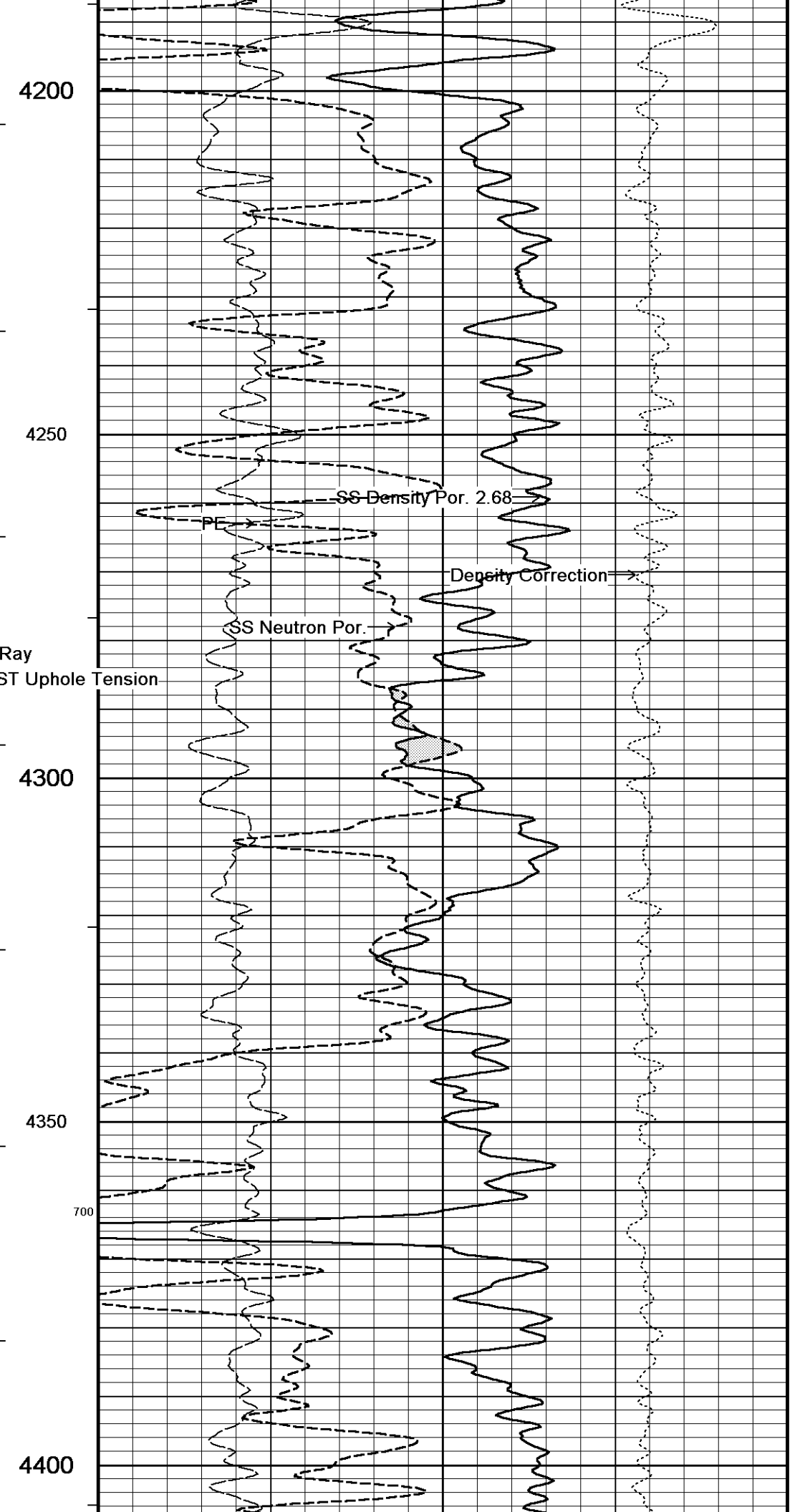
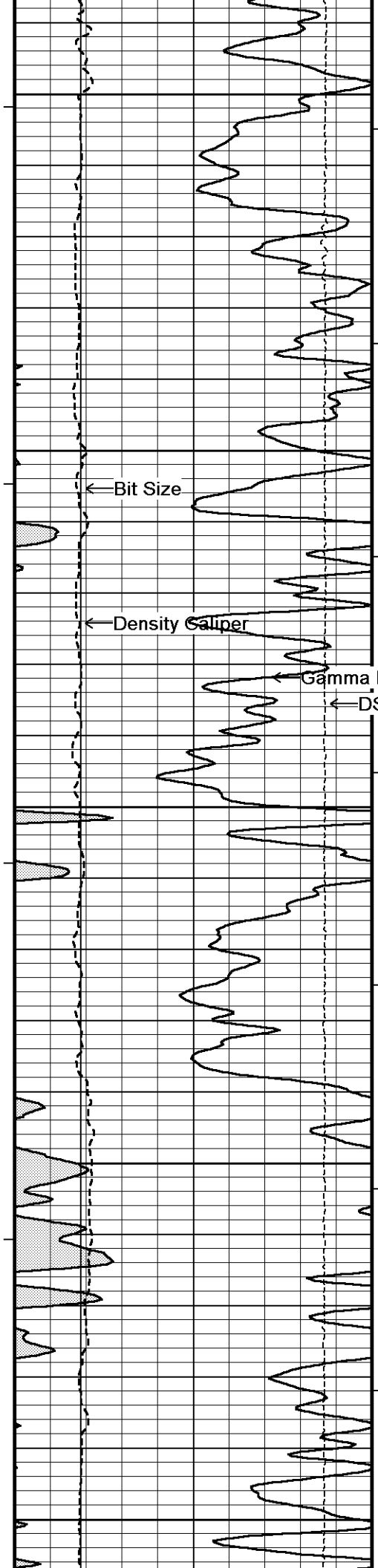
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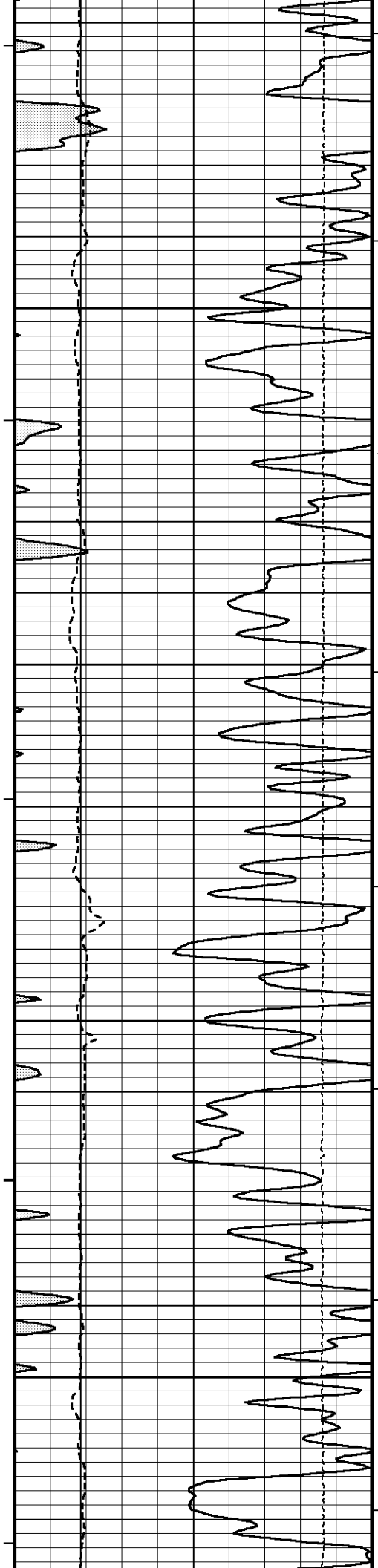
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4050

4000







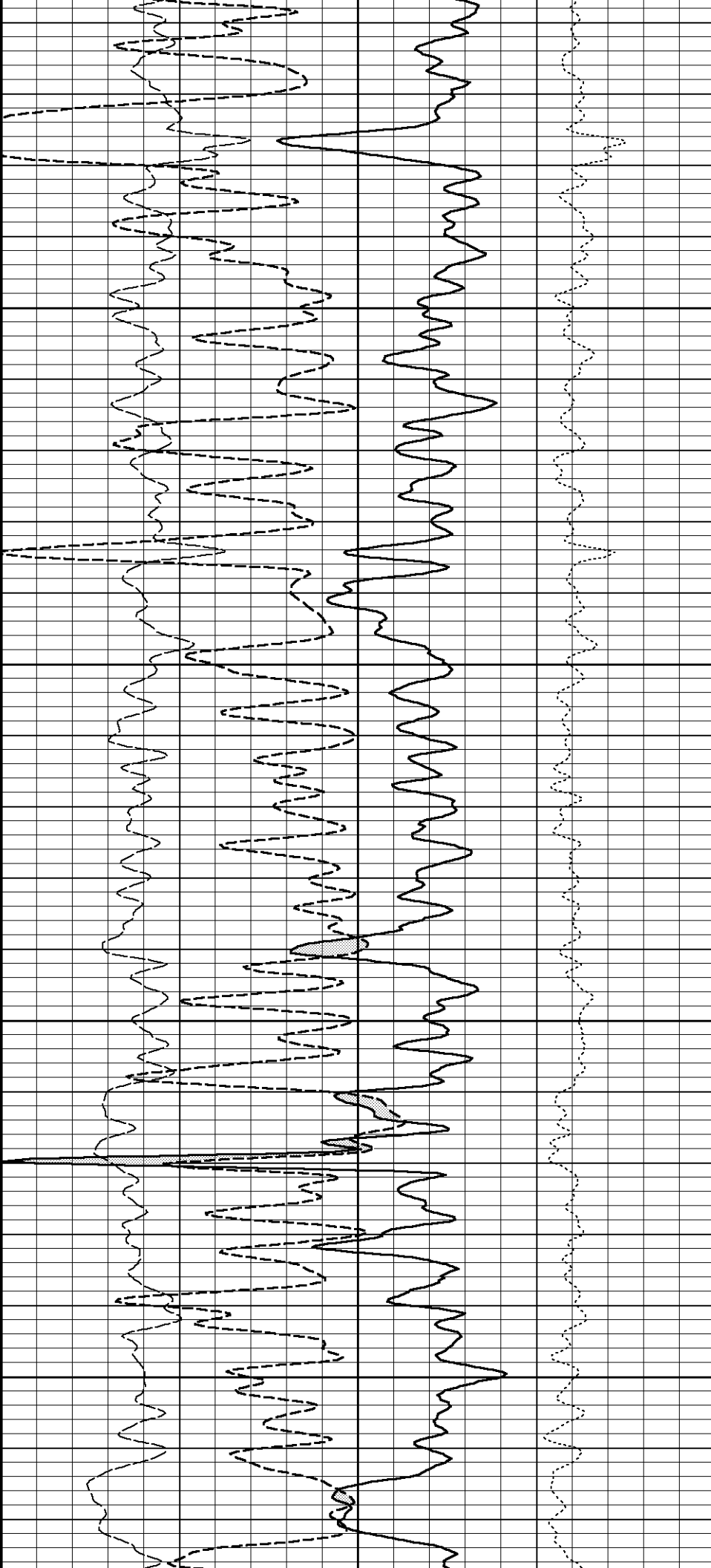
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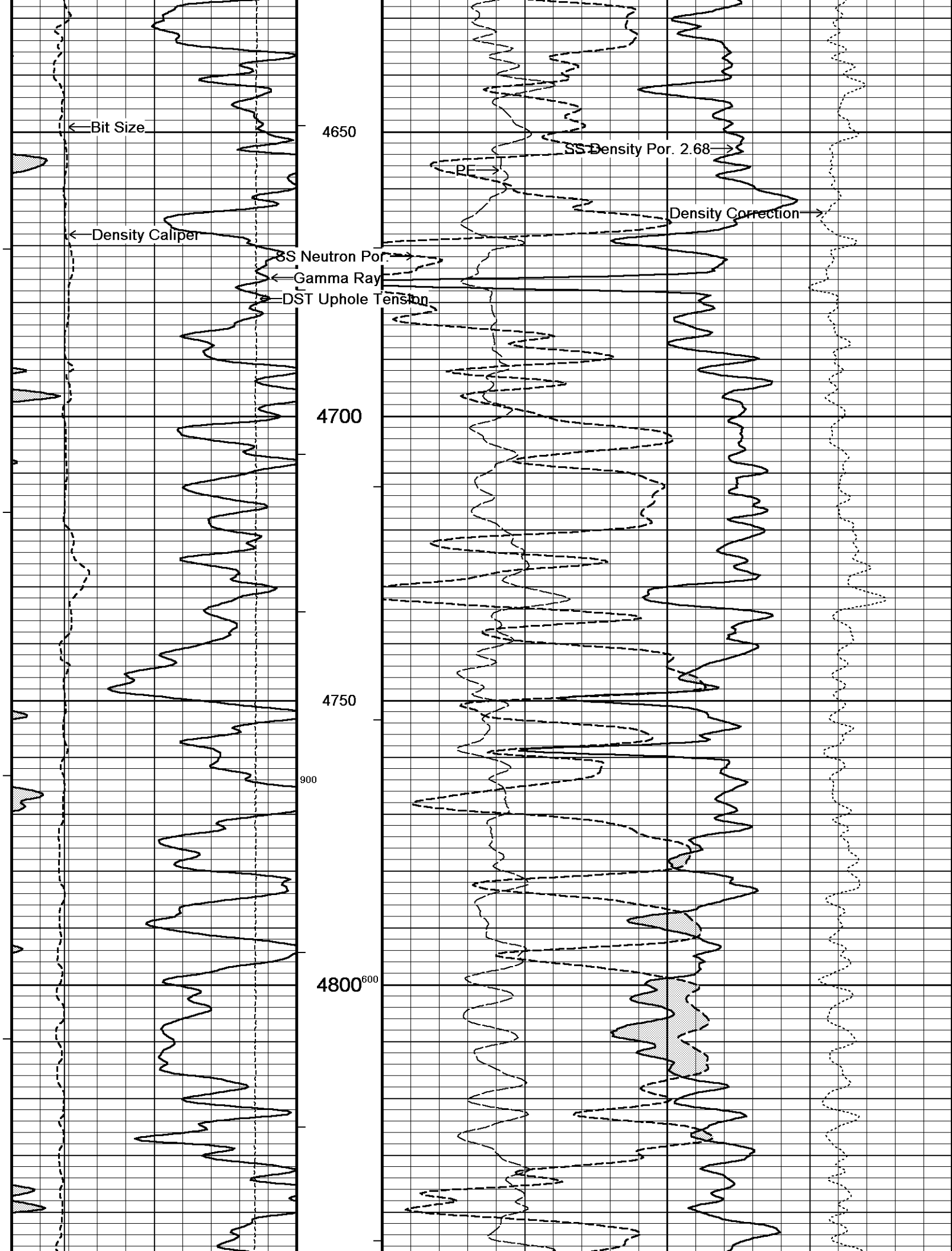
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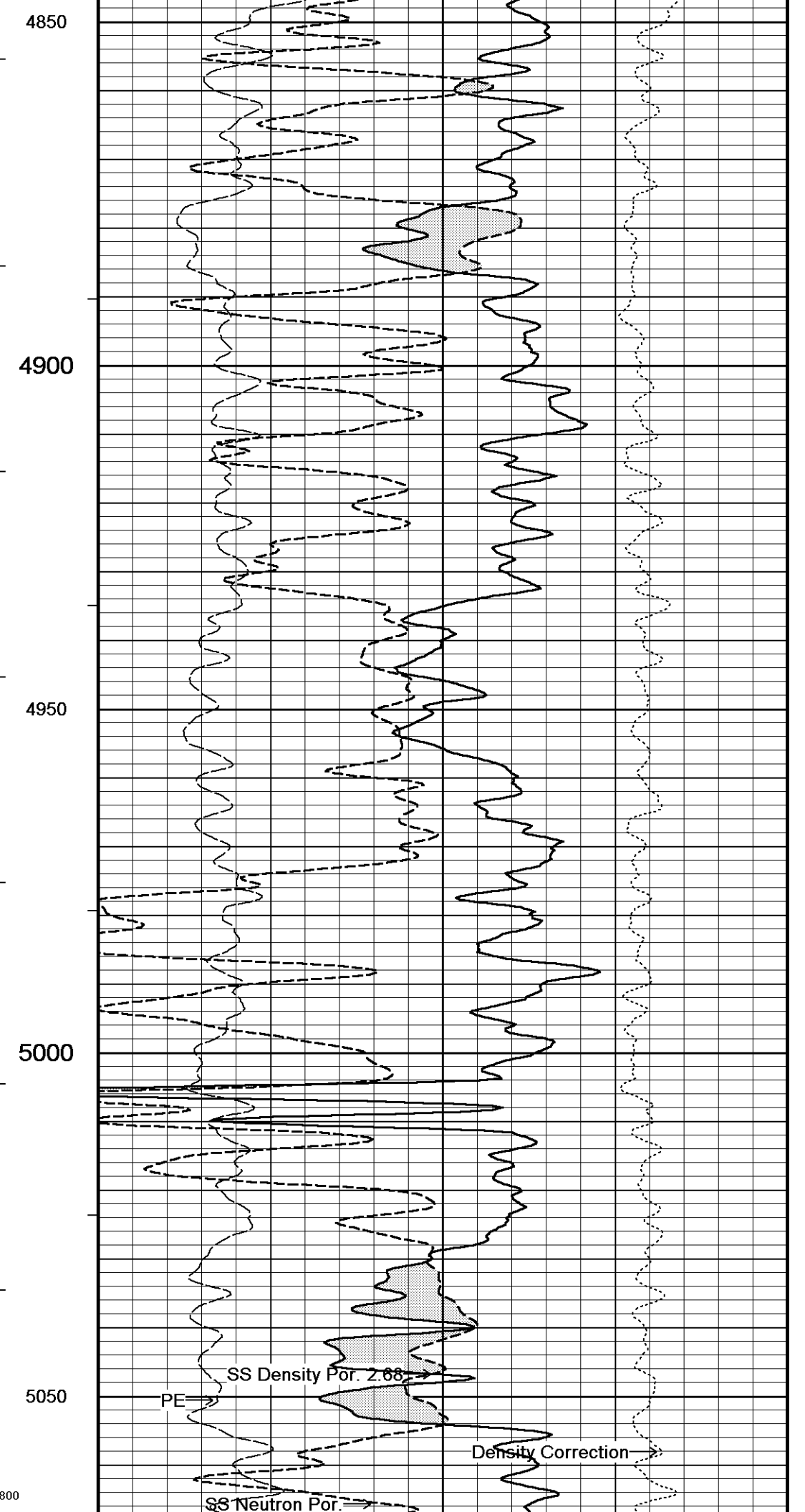
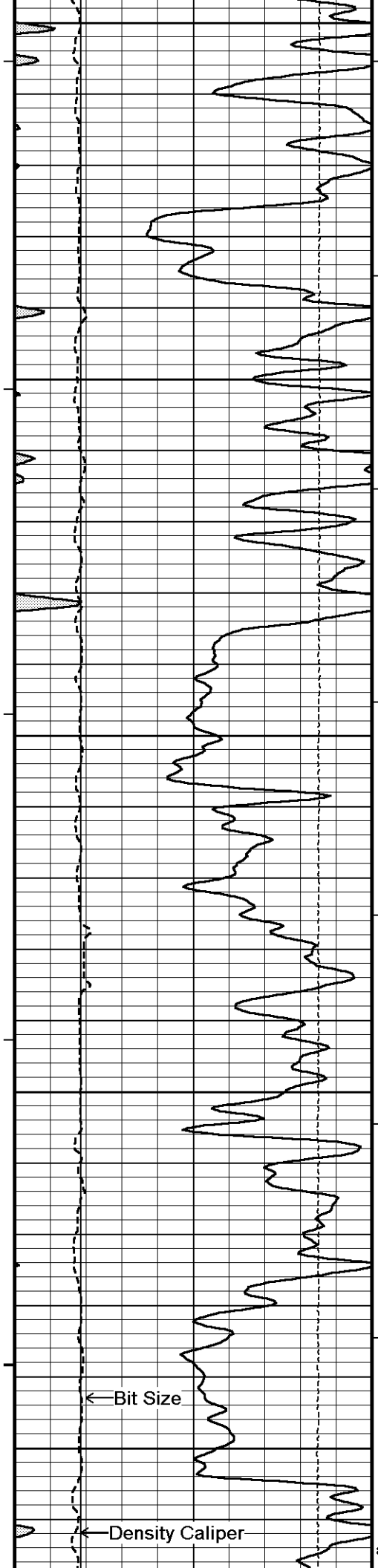
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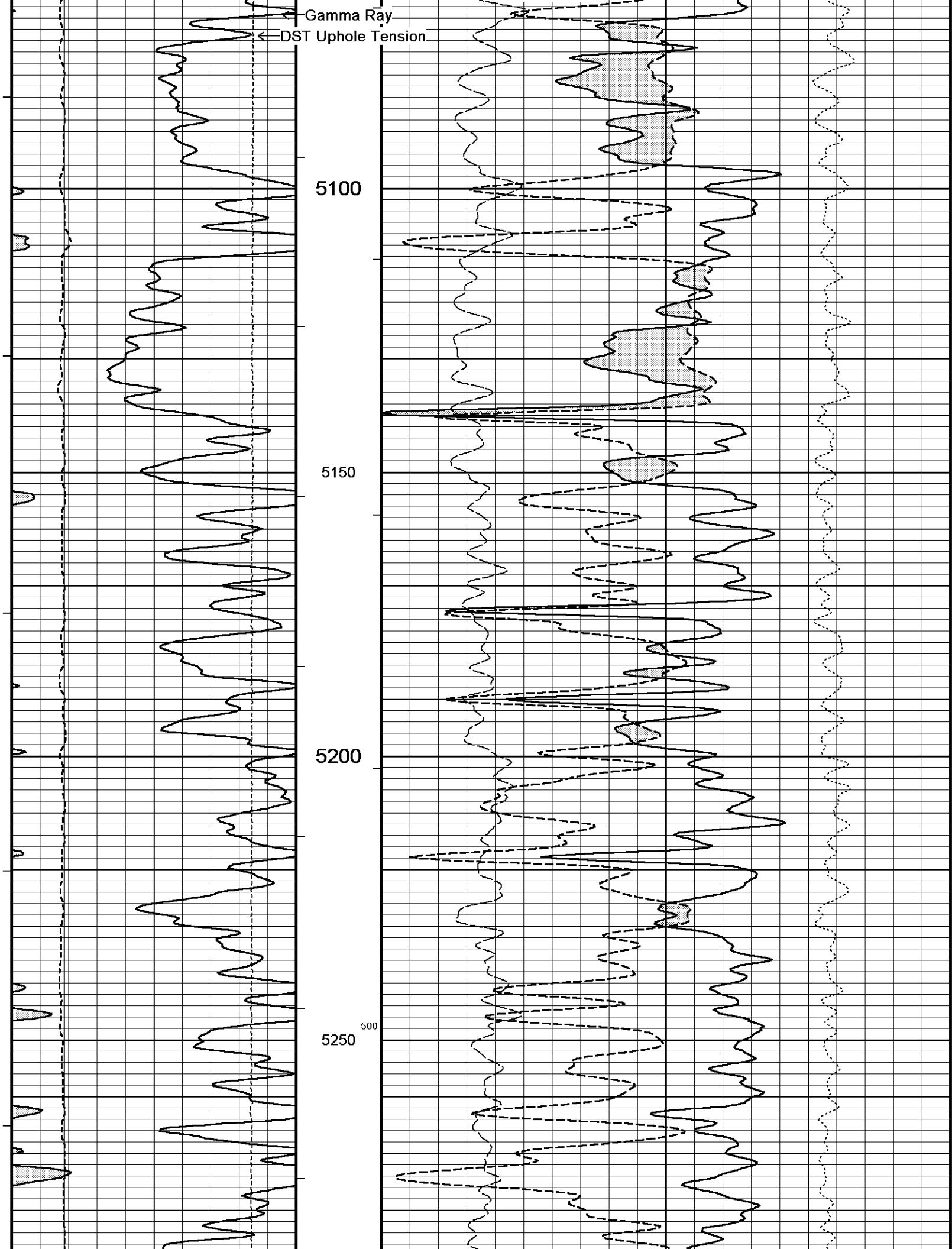
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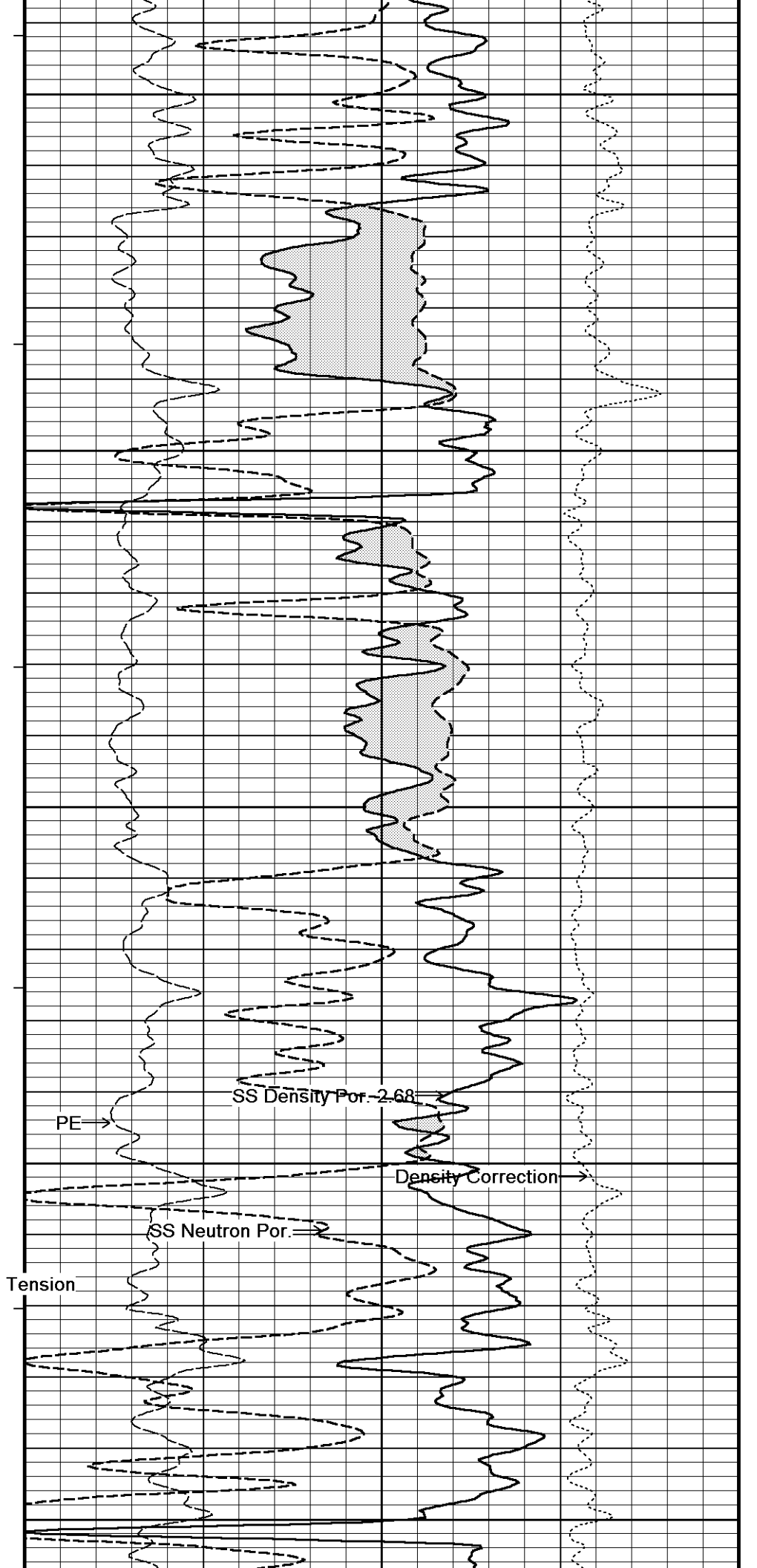
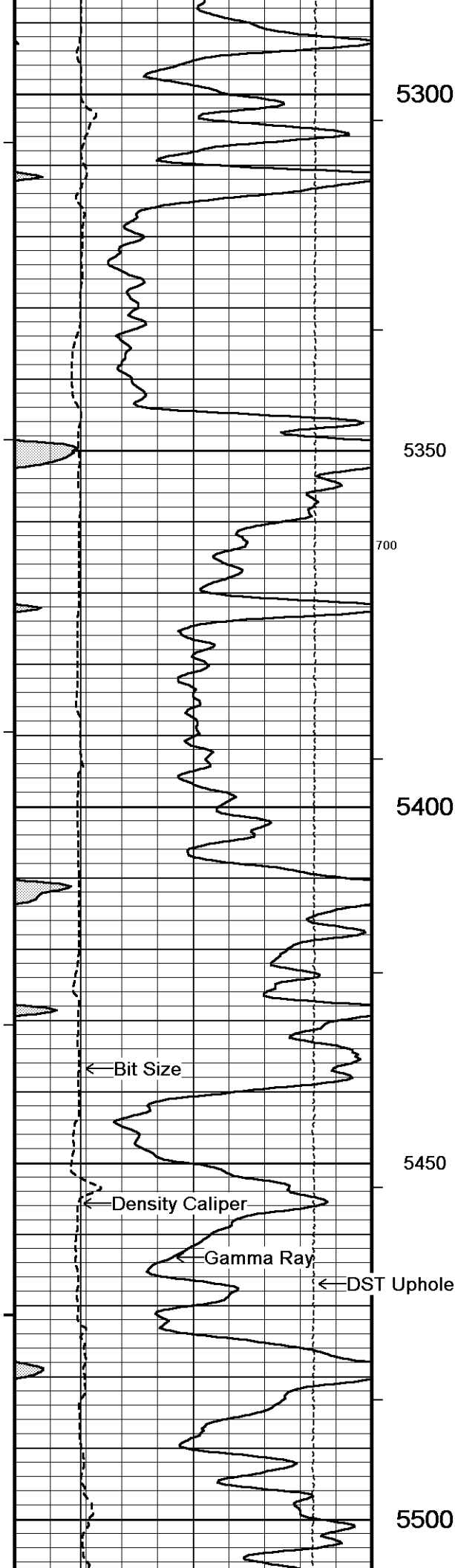
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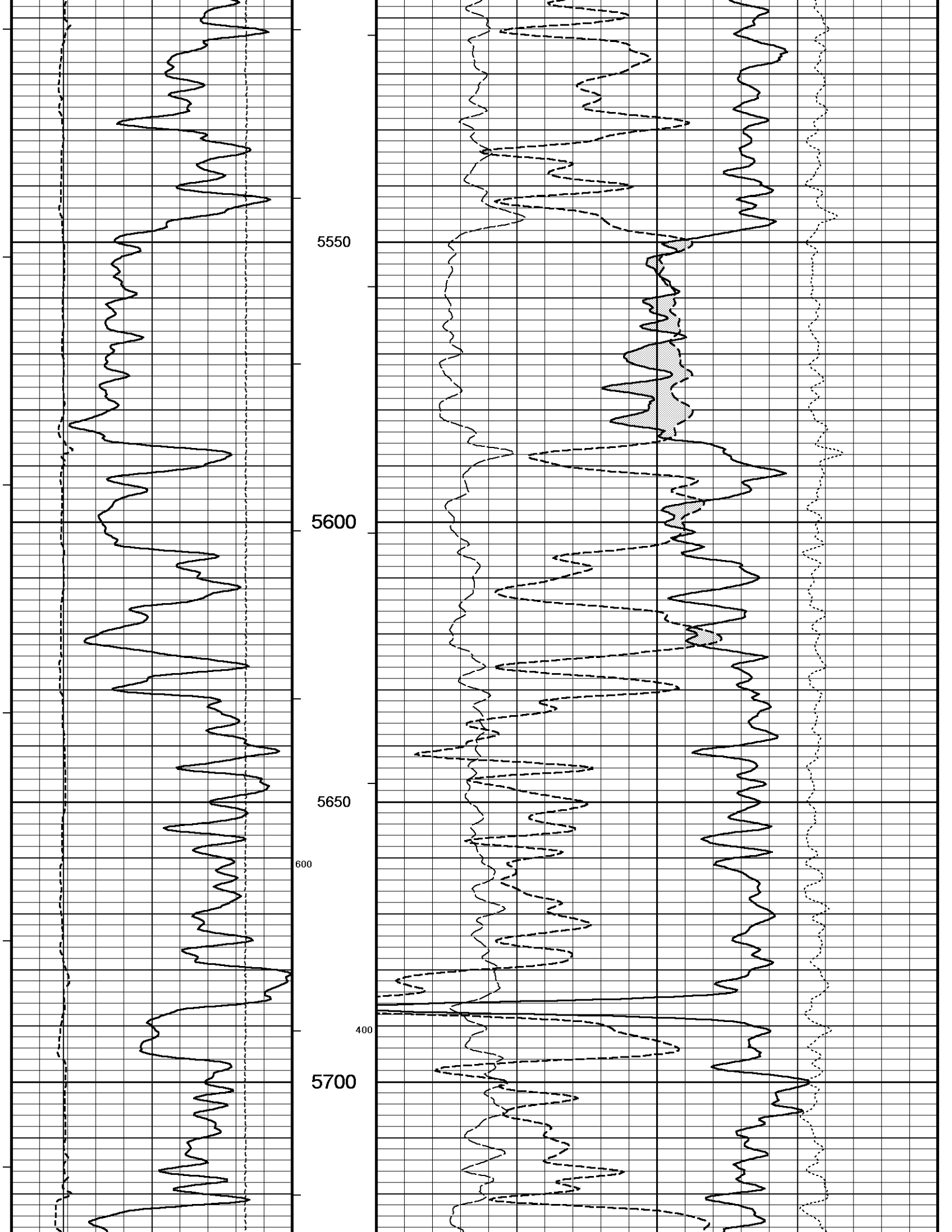




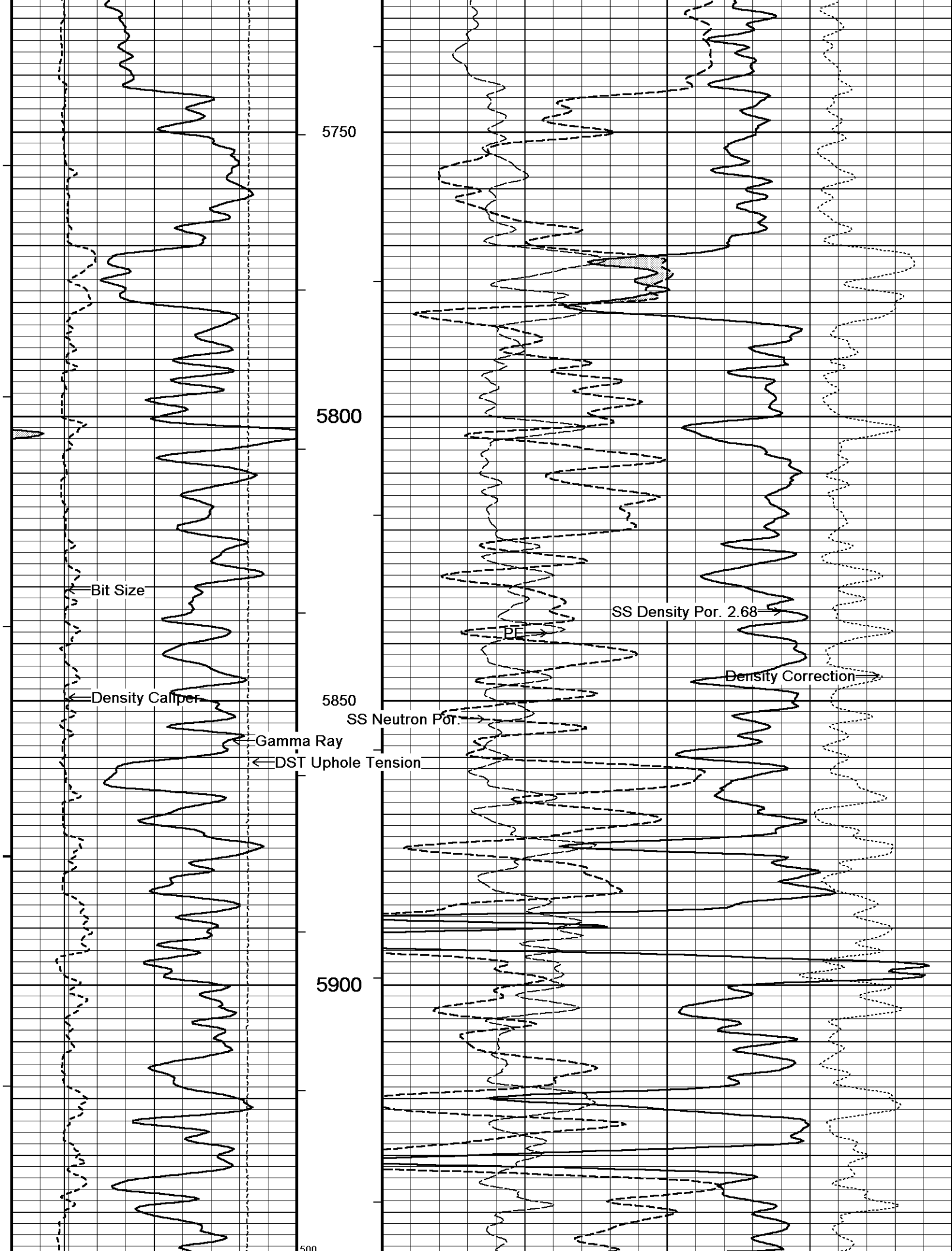


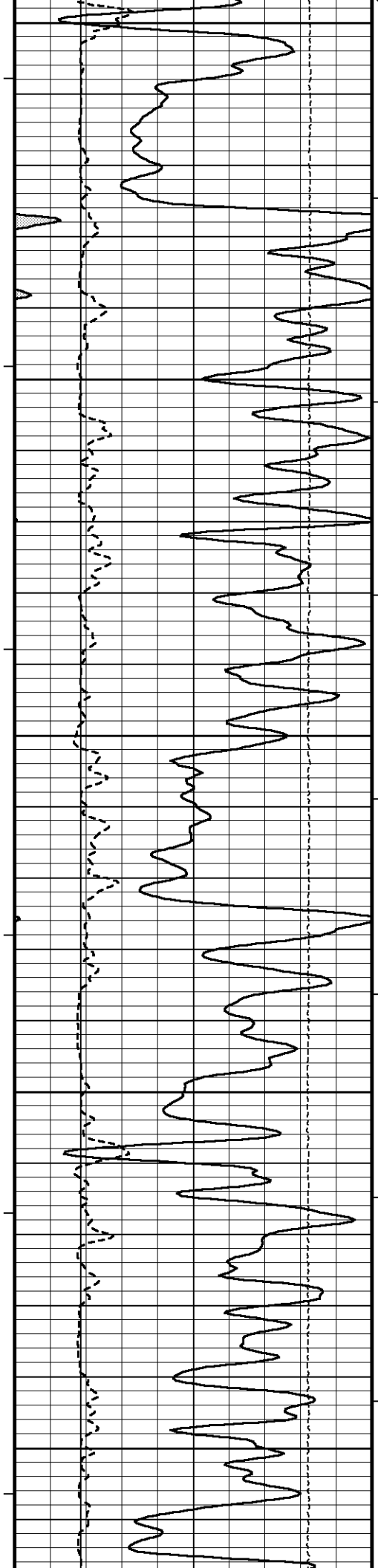












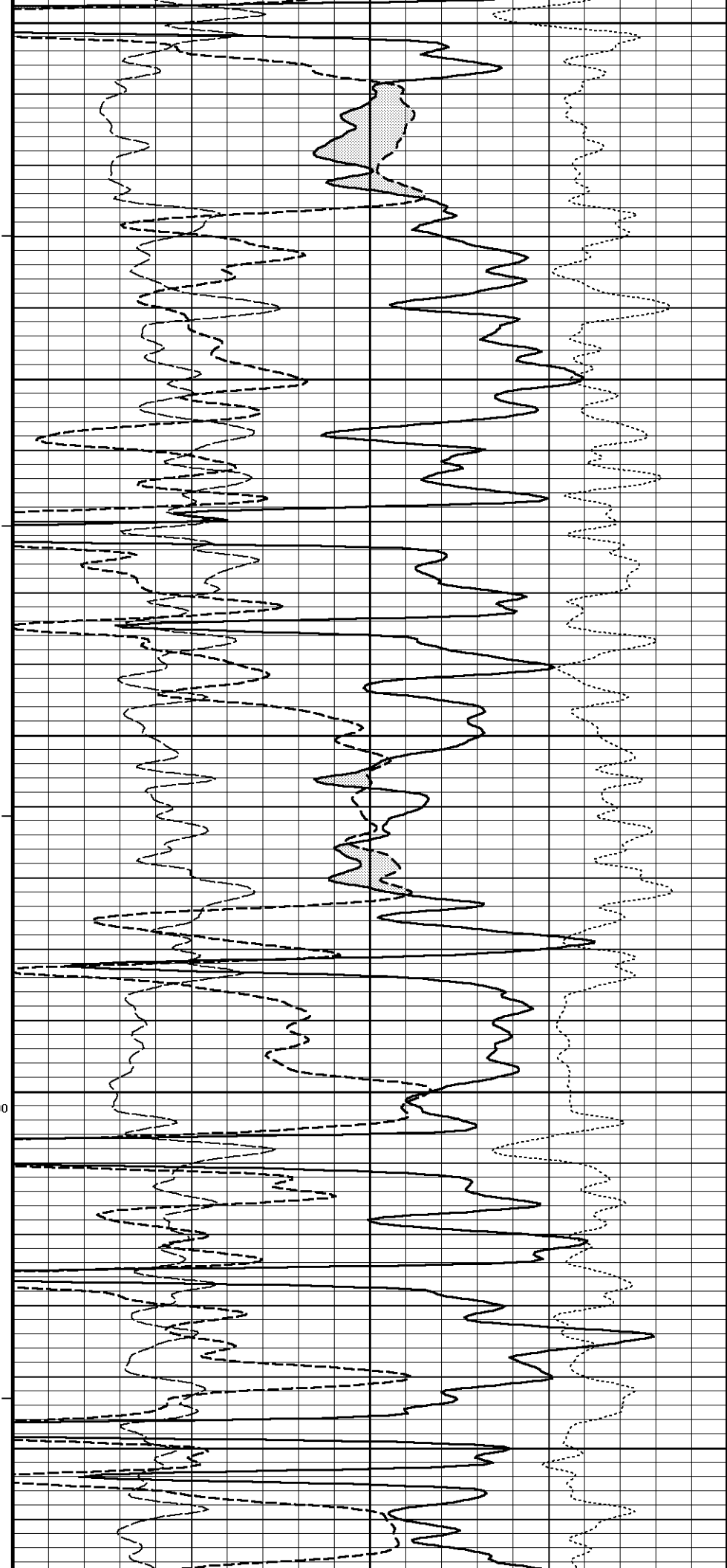
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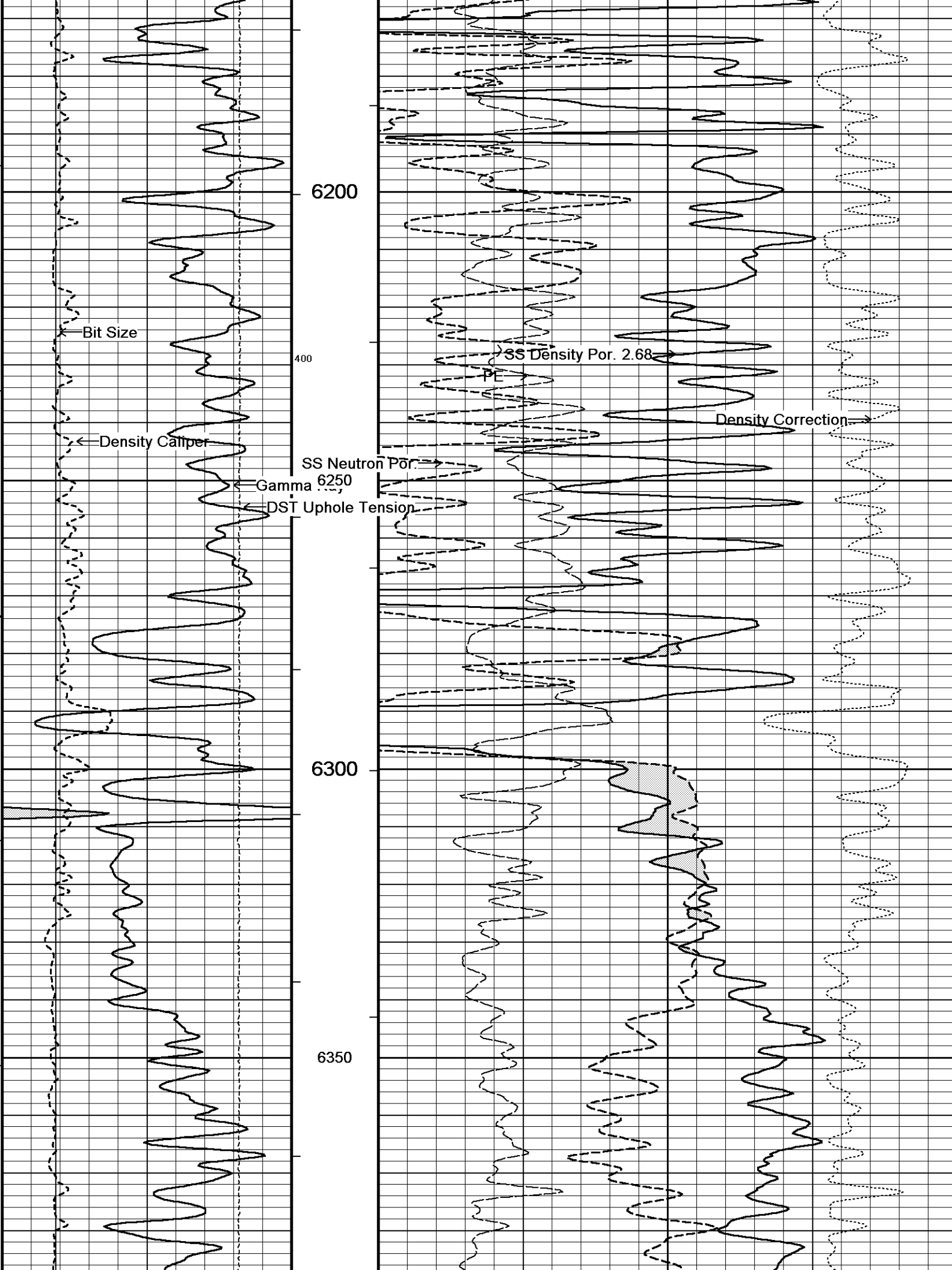
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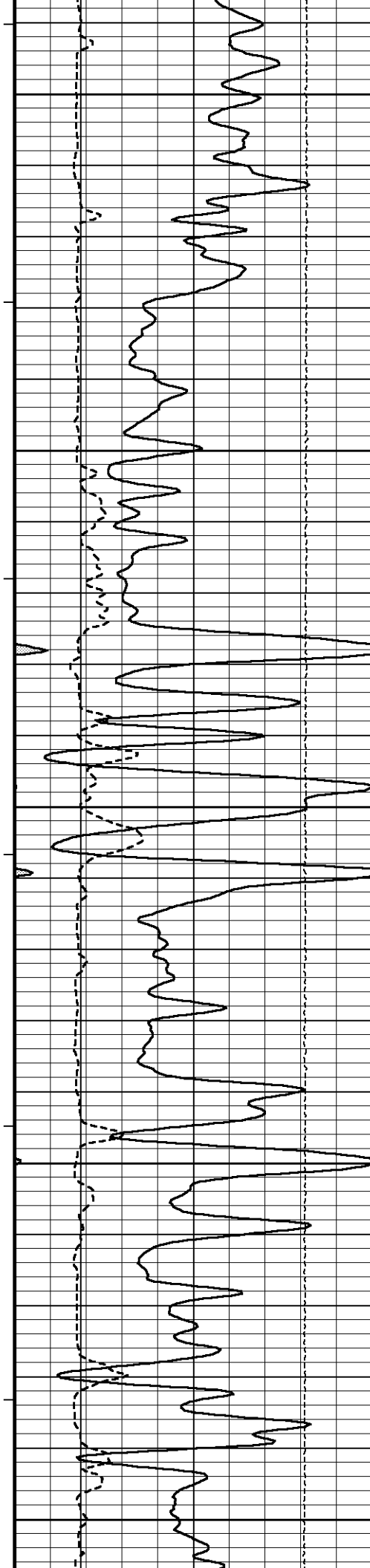
6050

6100<sub>300</sub>

6150







6400

6450

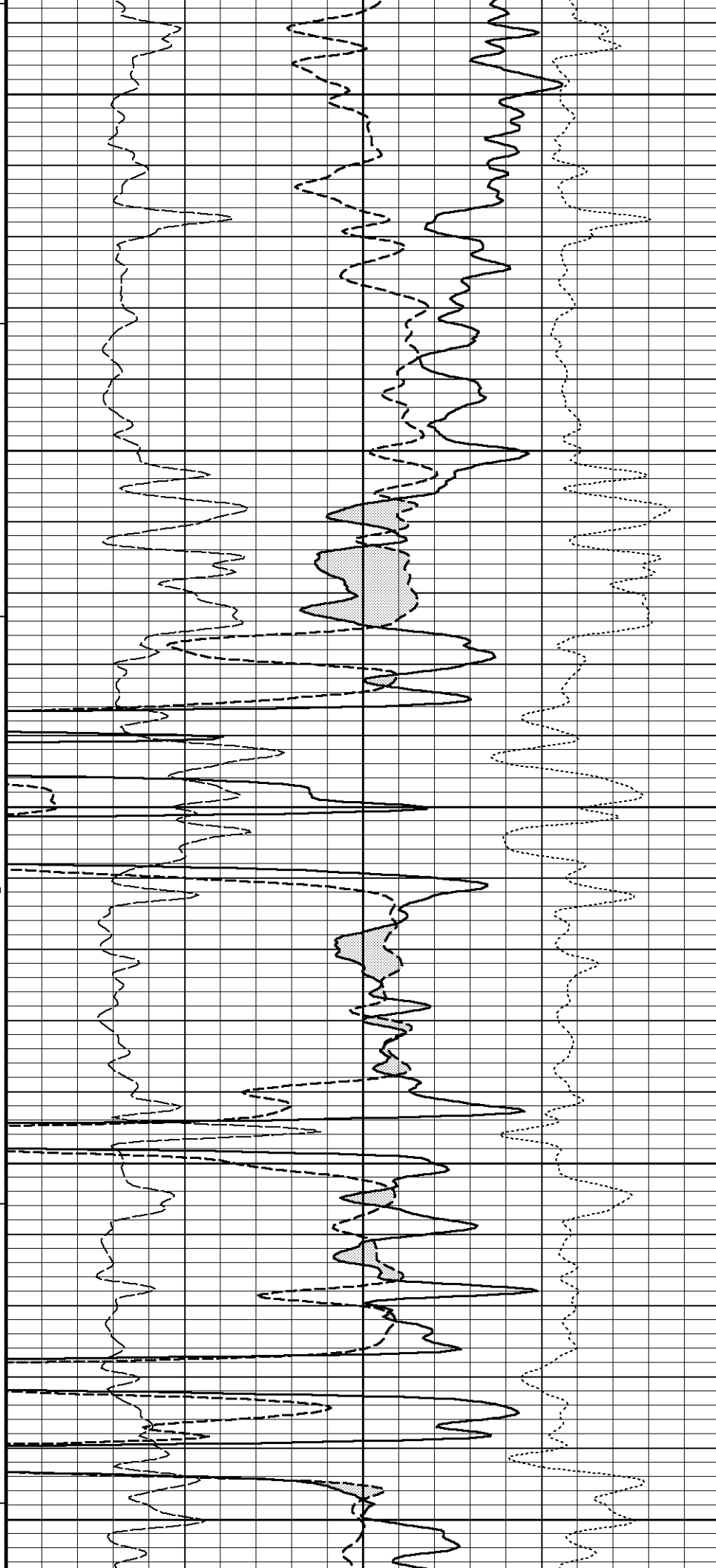
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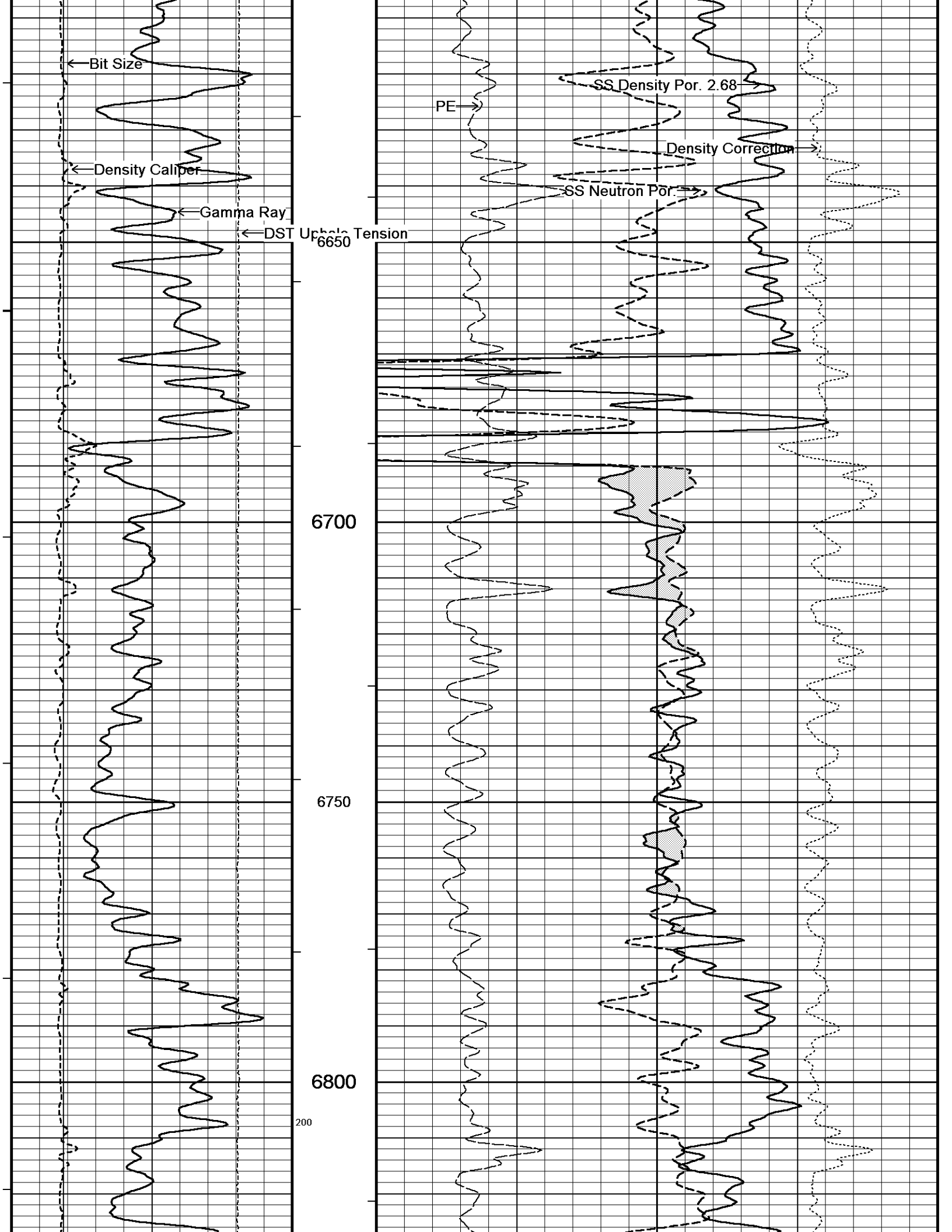
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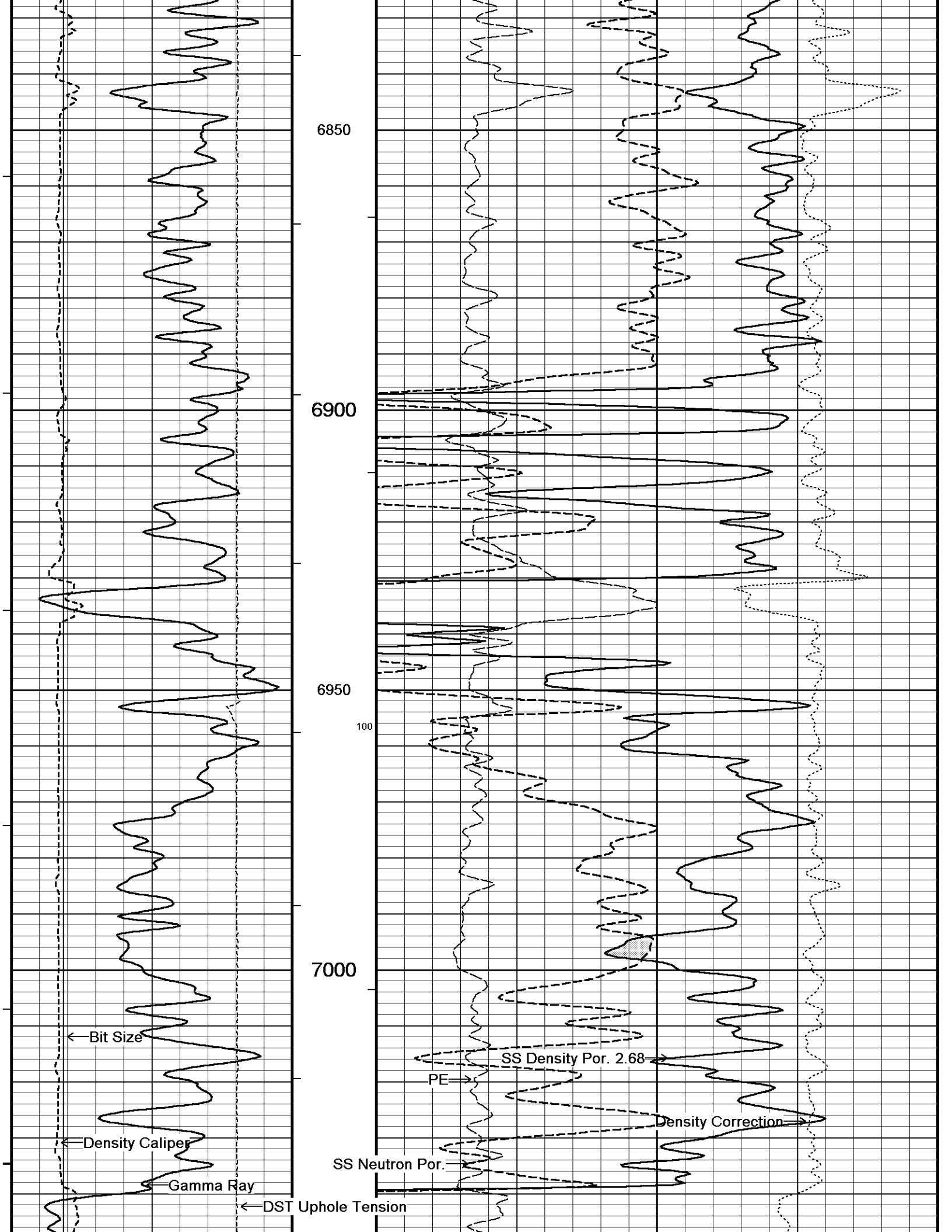
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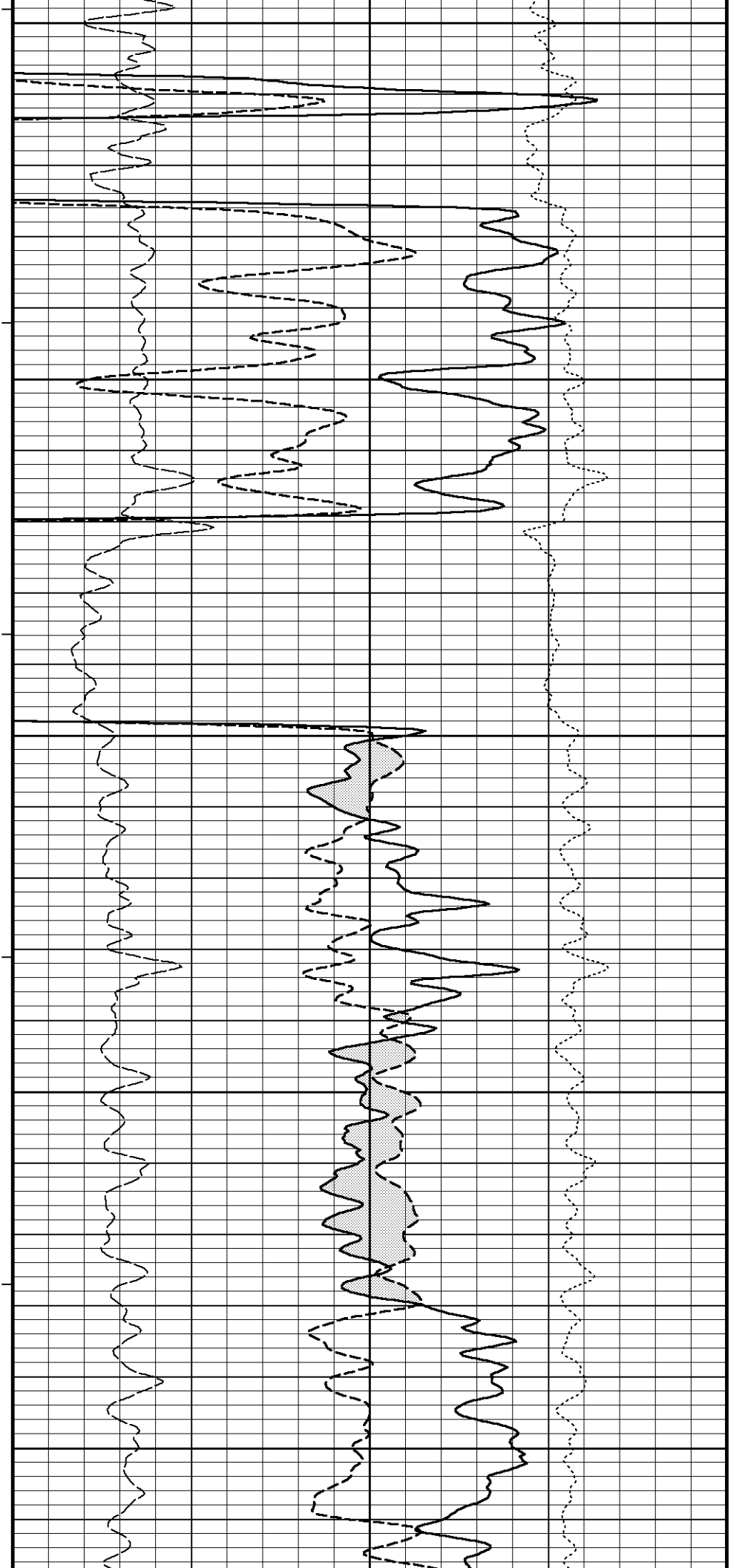
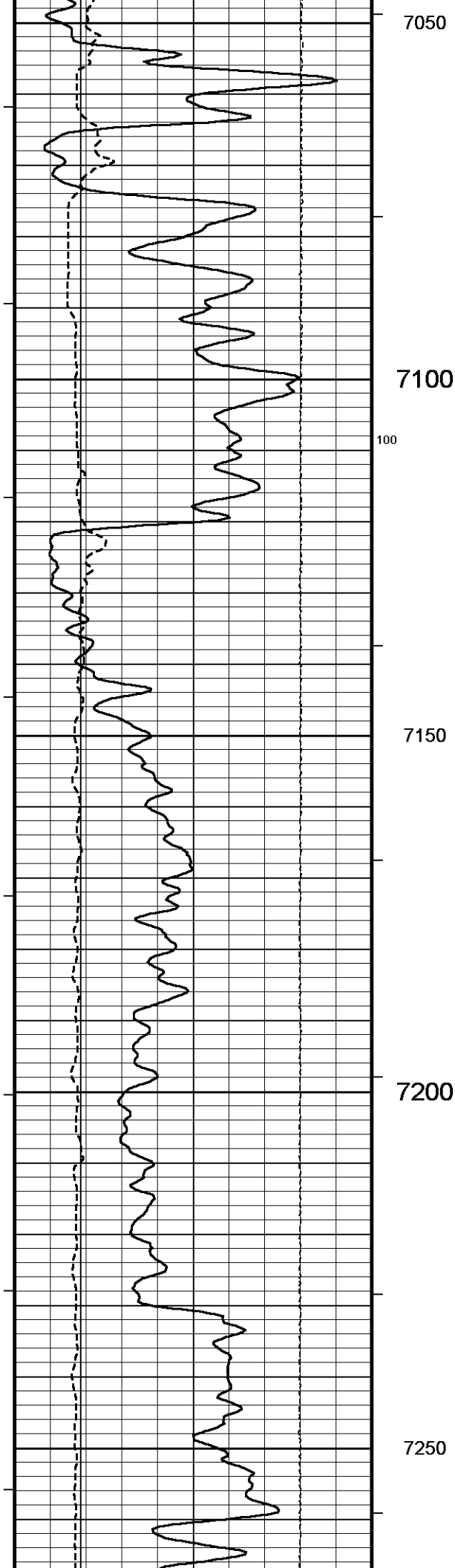
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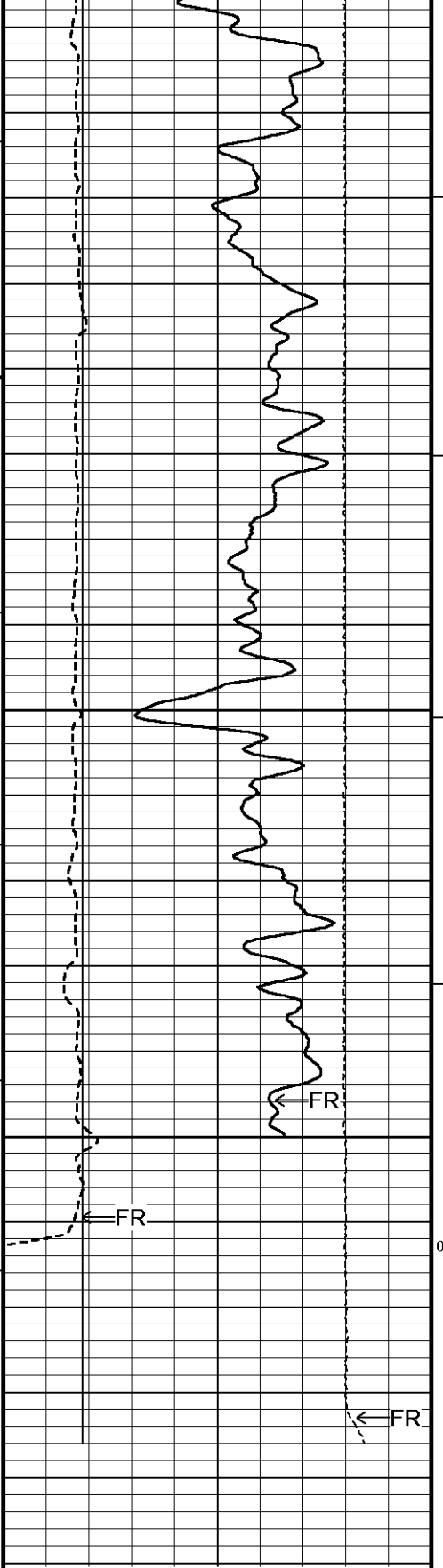
200











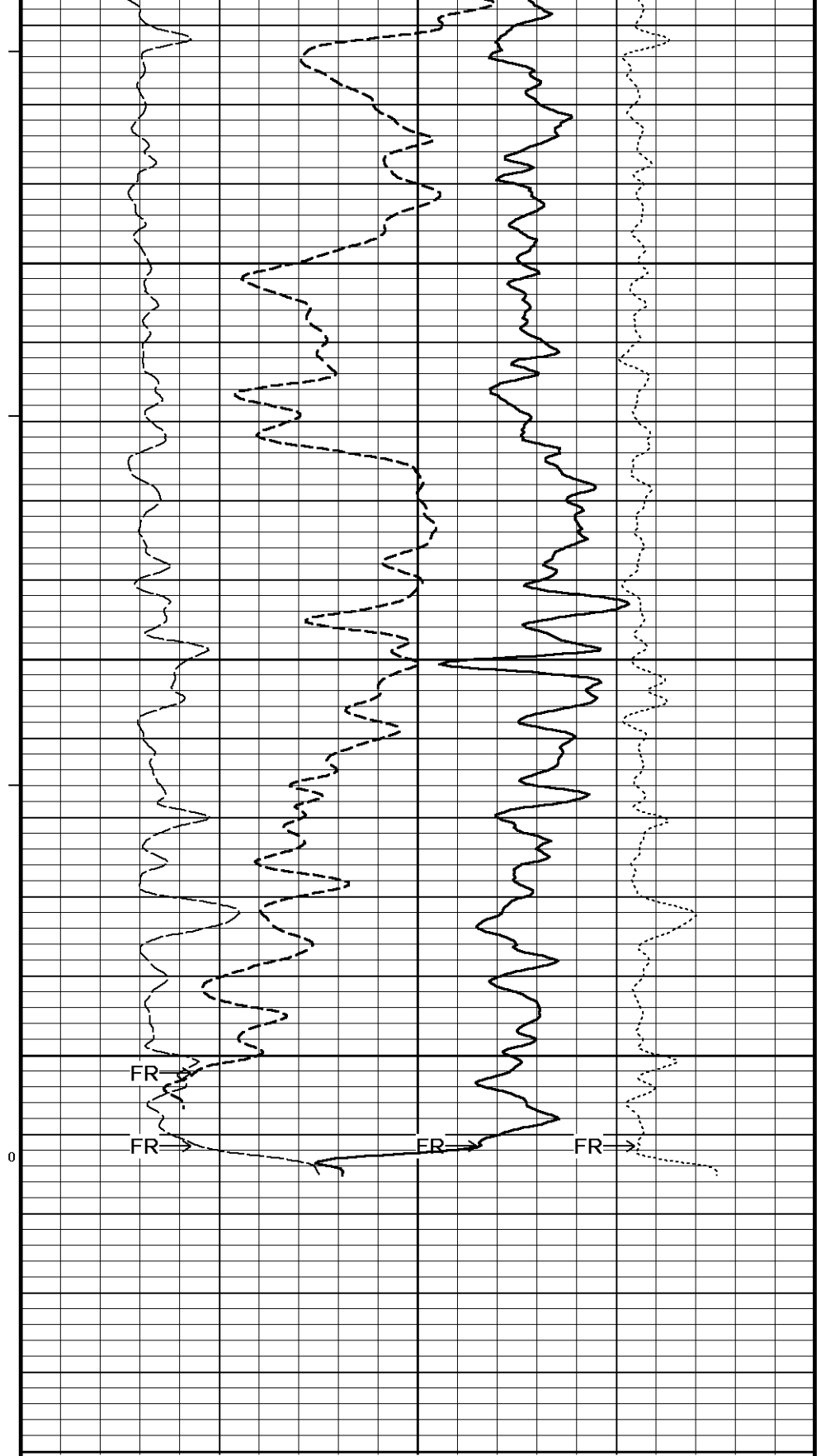
Timing Marks  
every 60.0 sec

DST Uphole Tension(SMTU)  
pounds

10000 5000 0

7450  
Depth  
In  
Feet

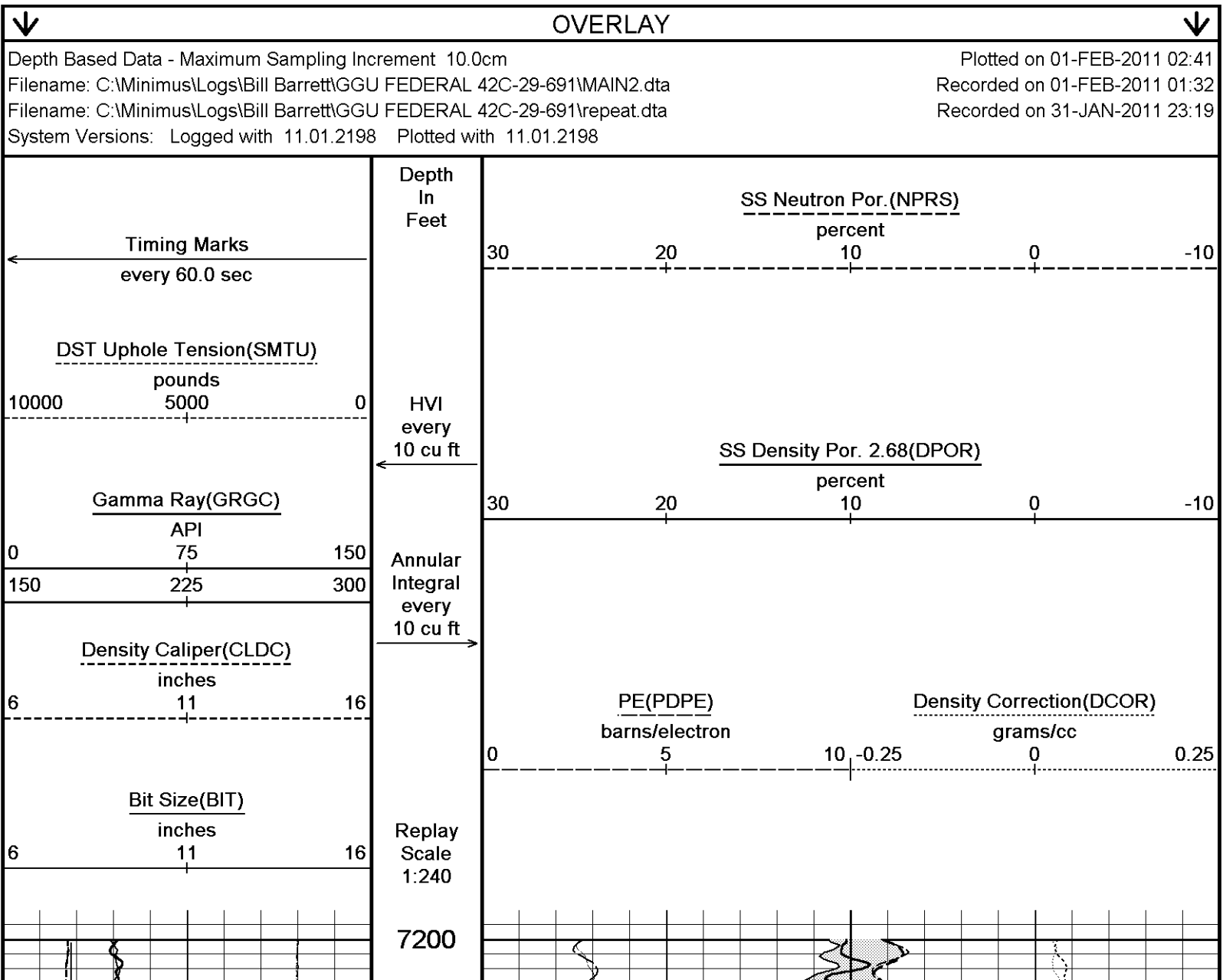
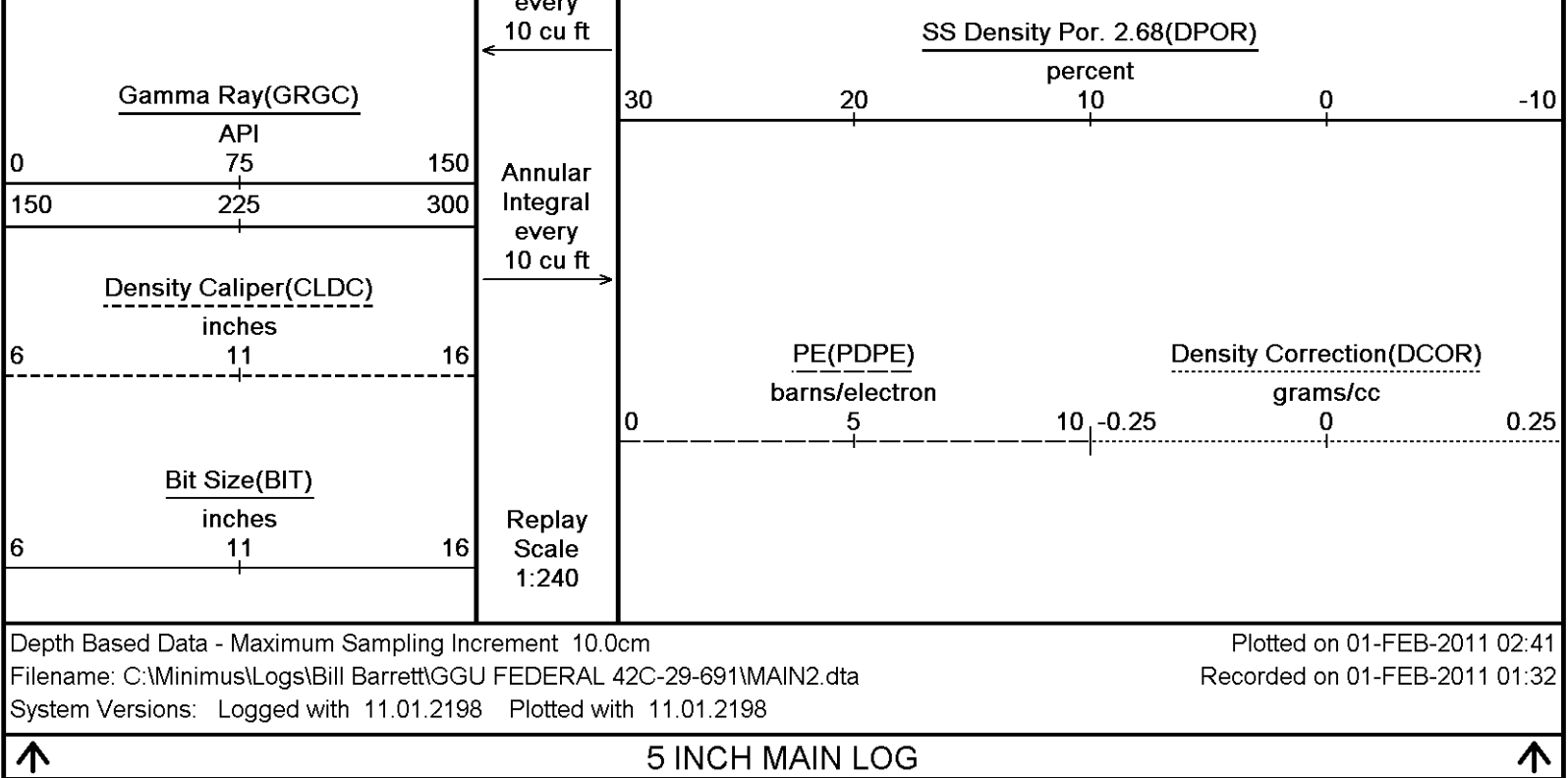
HVI

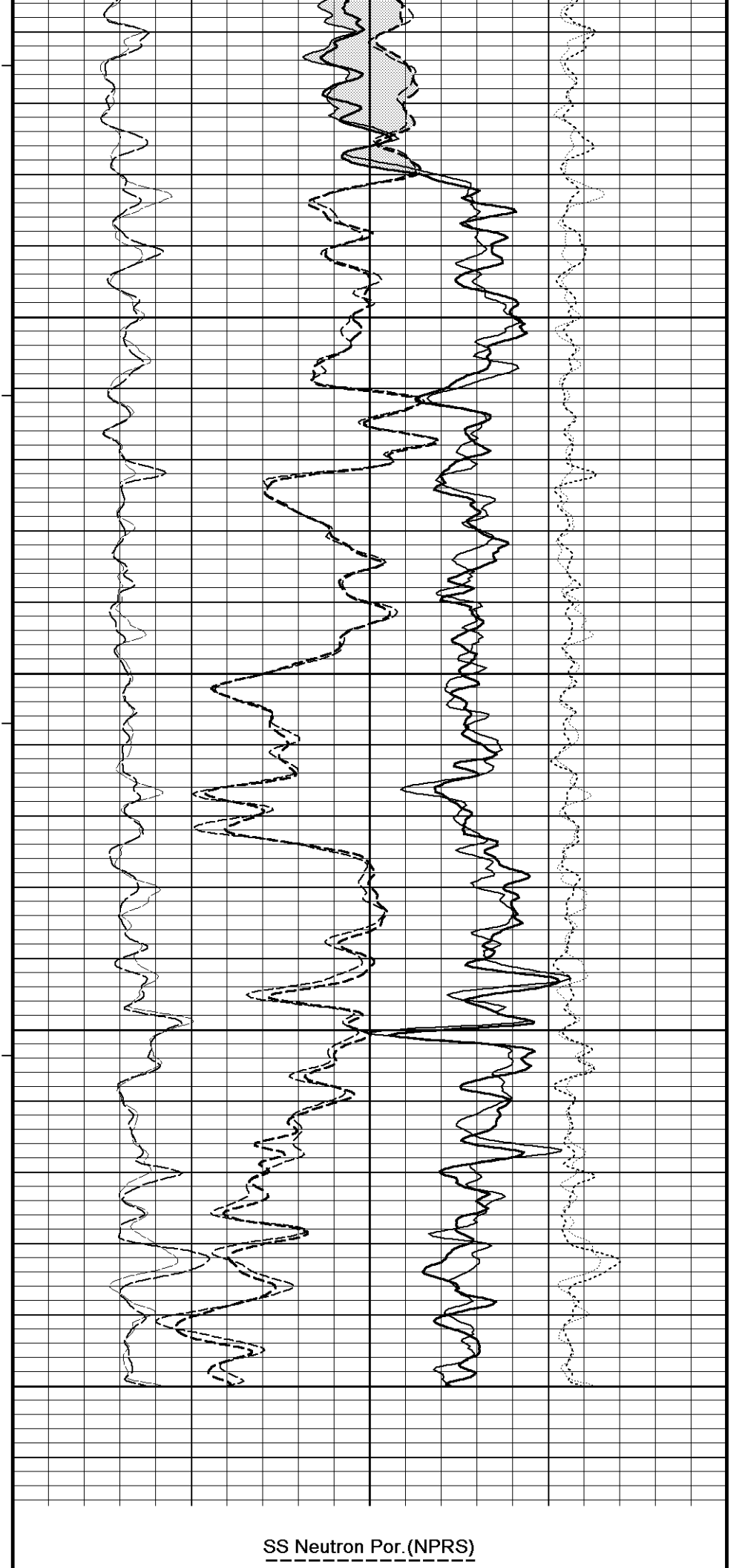
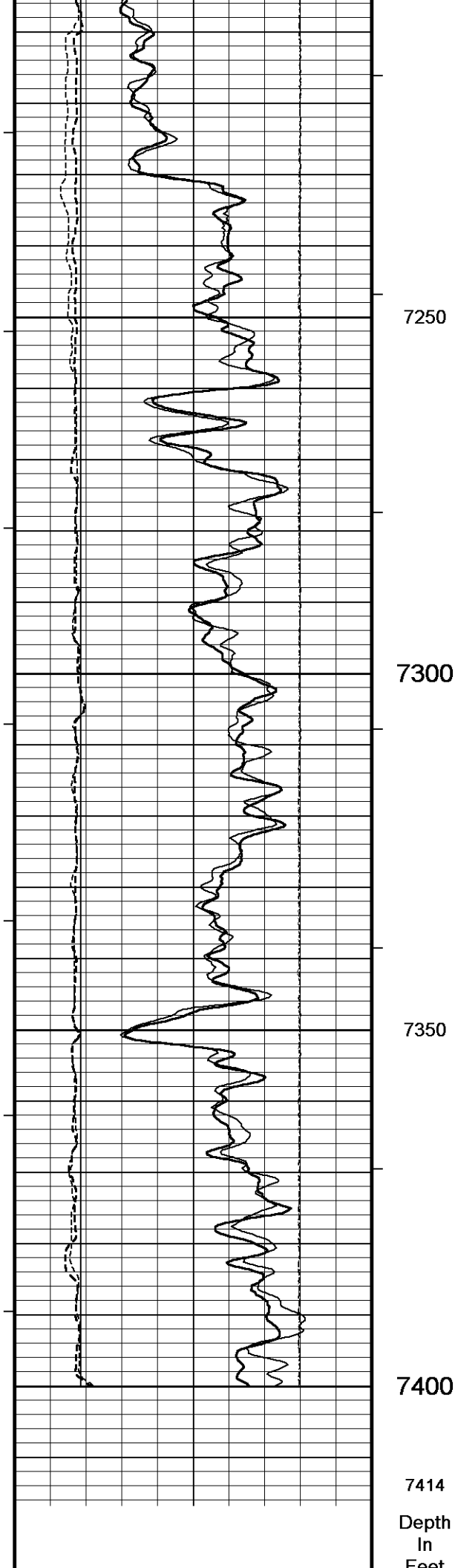


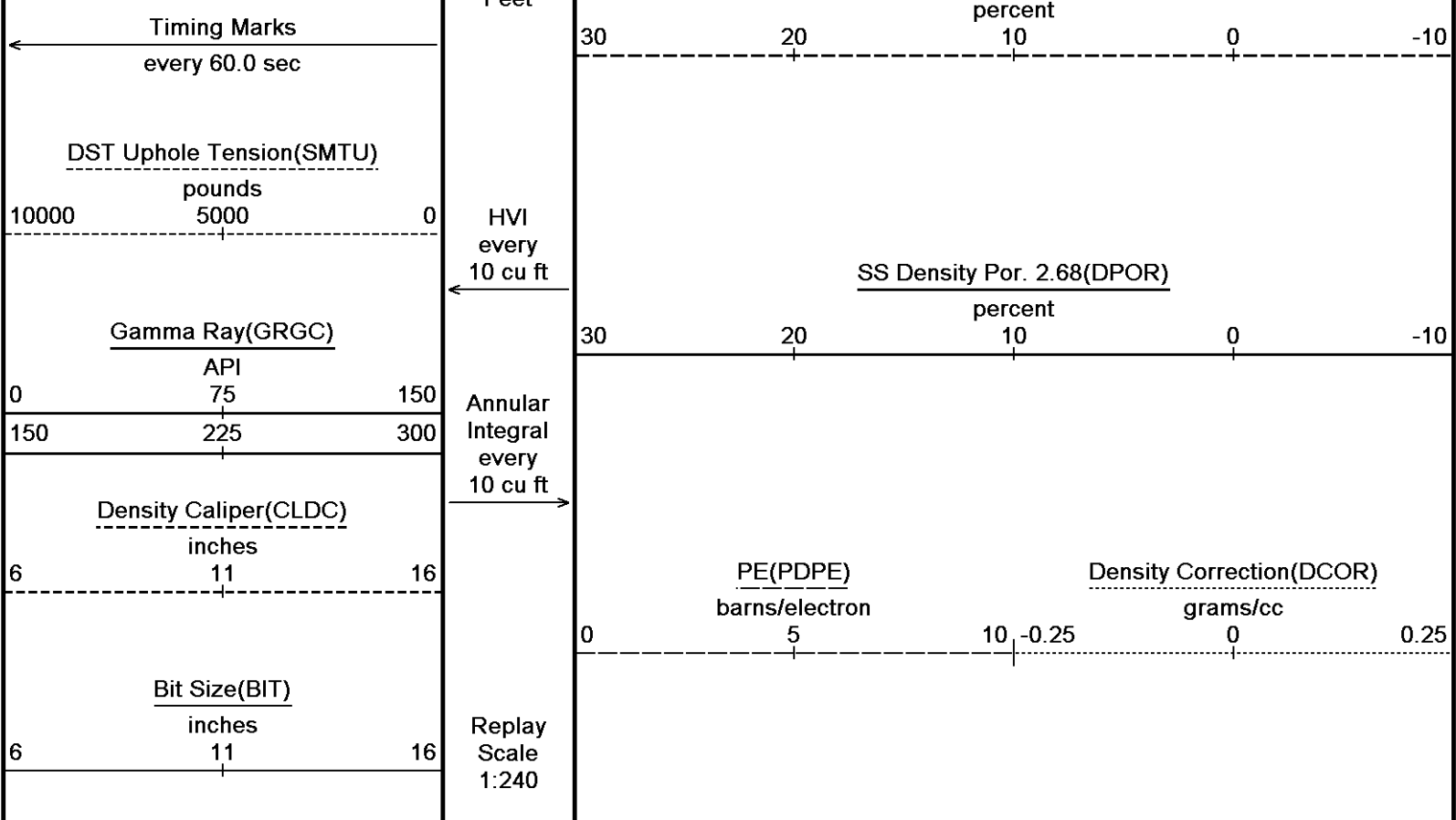
SS Neutron Por.(NPRS)  
percent

30 20 10 0 -10









Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 01-FEB-2011 02:41

Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

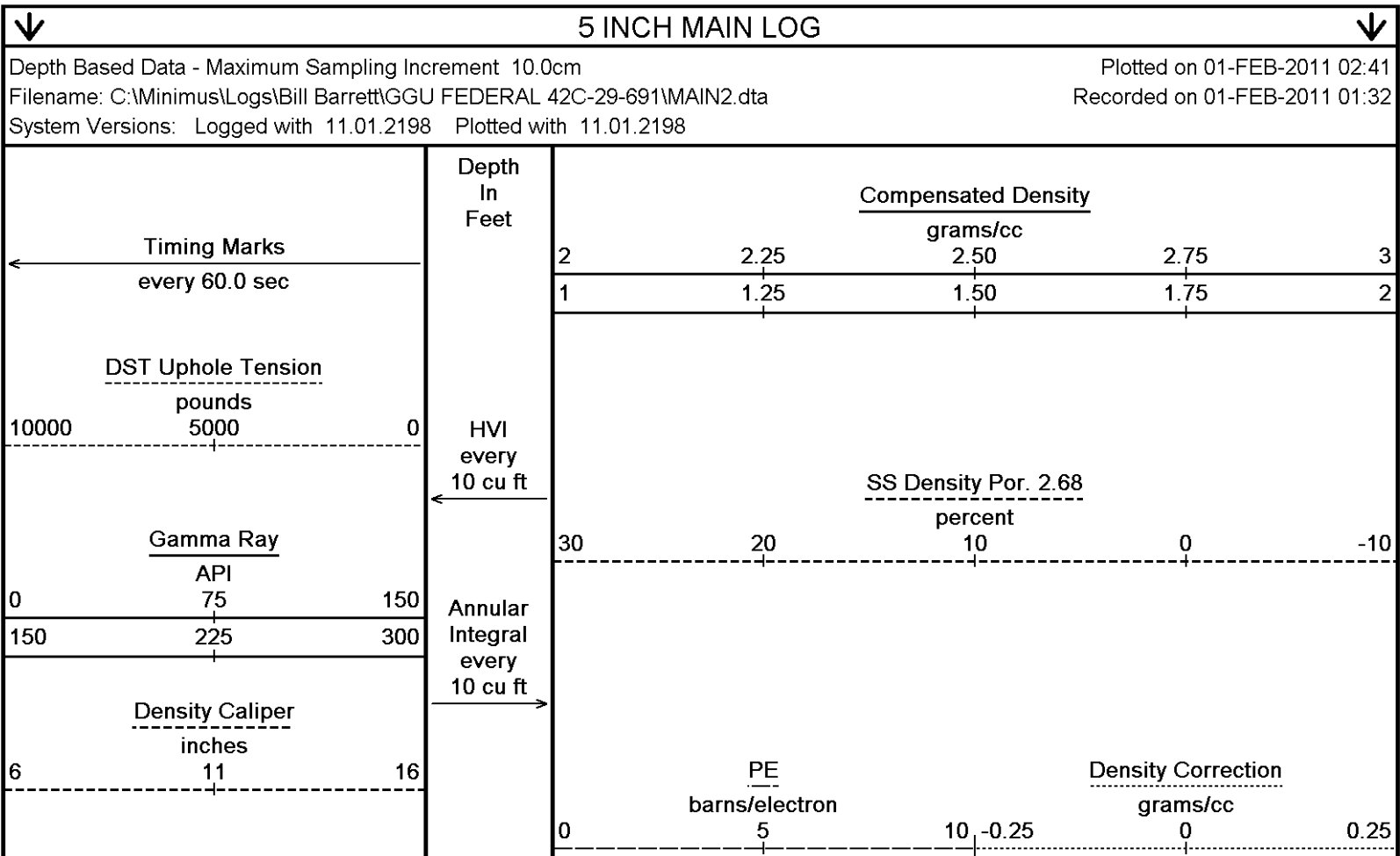
Recorded on 01-FEB-2011 01:32

Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\repeat.dta

Recorded on 31-JAN-2011 23:19

System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

↑ OVERLAY ↑



Bit Size

inches

6

11

16

Replay  
Scale  
1:240

838

Casing  
Shoe

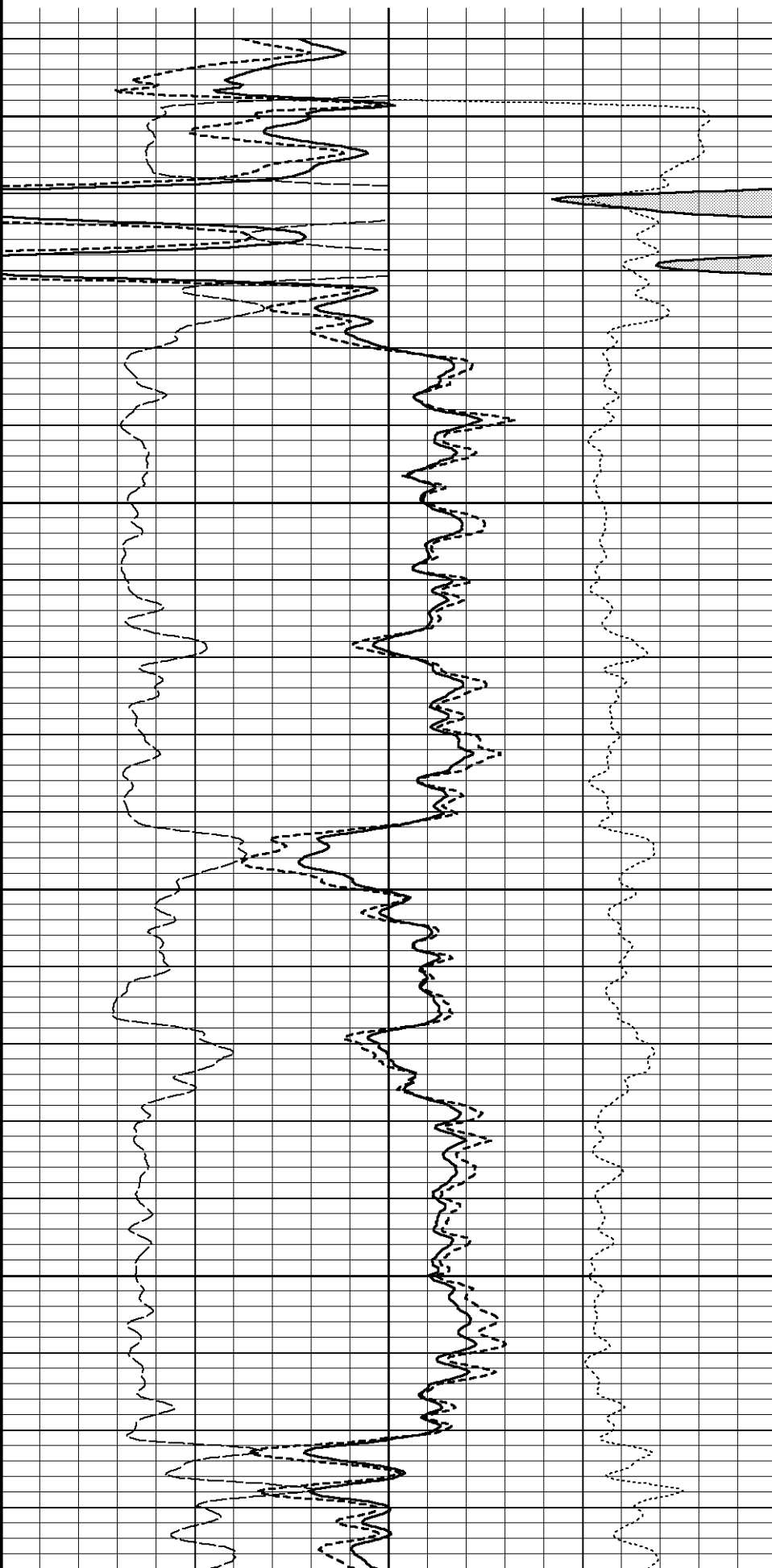
850

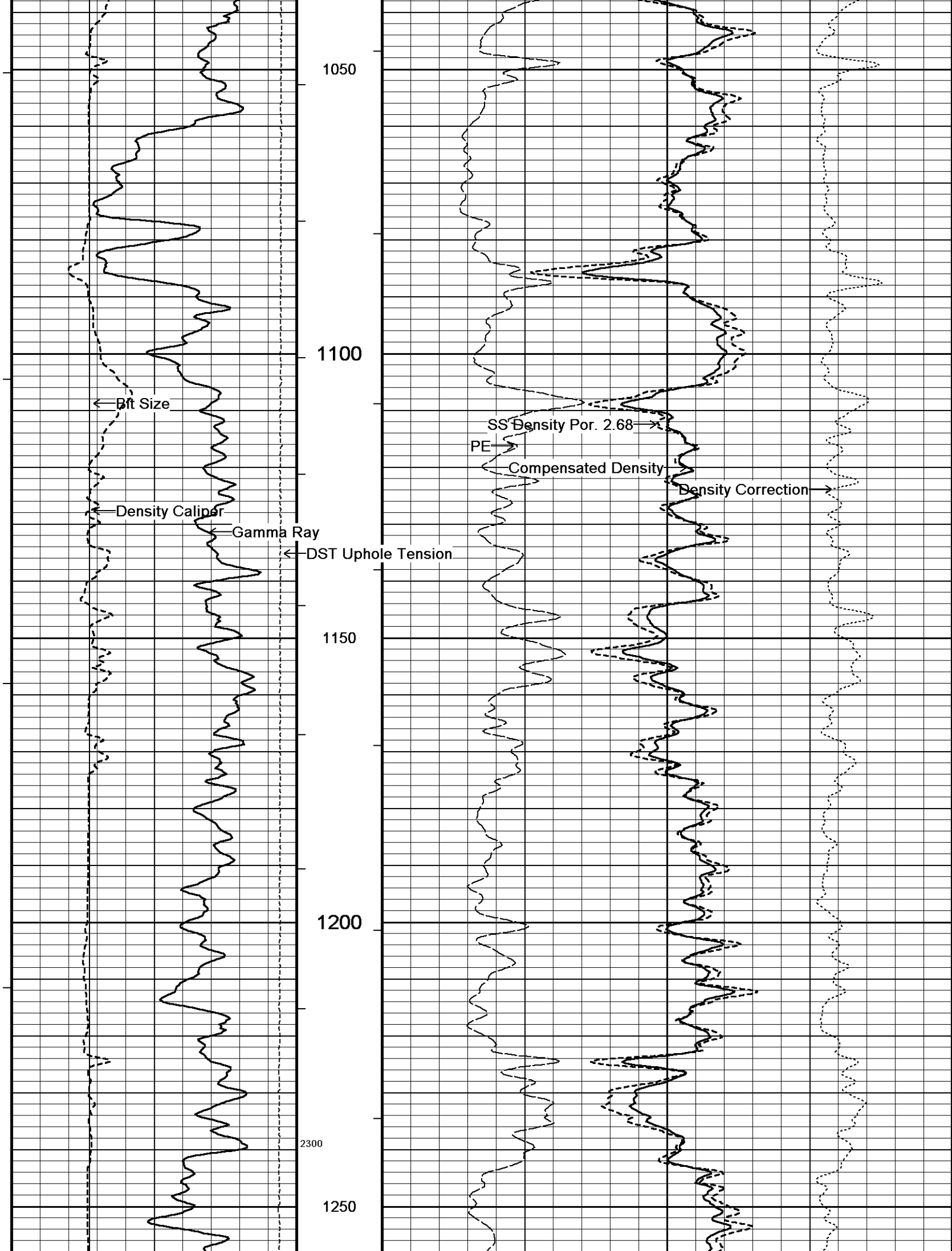
900

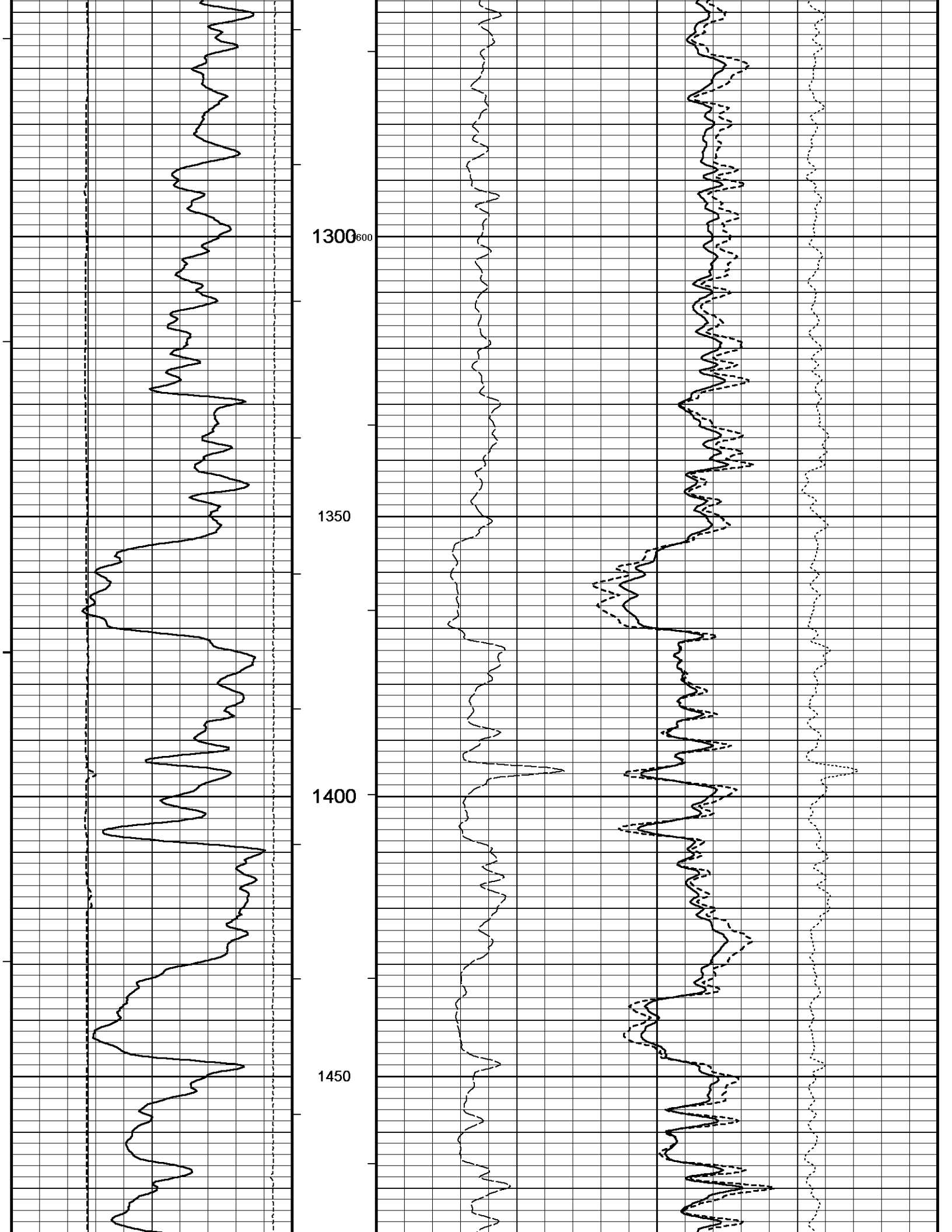
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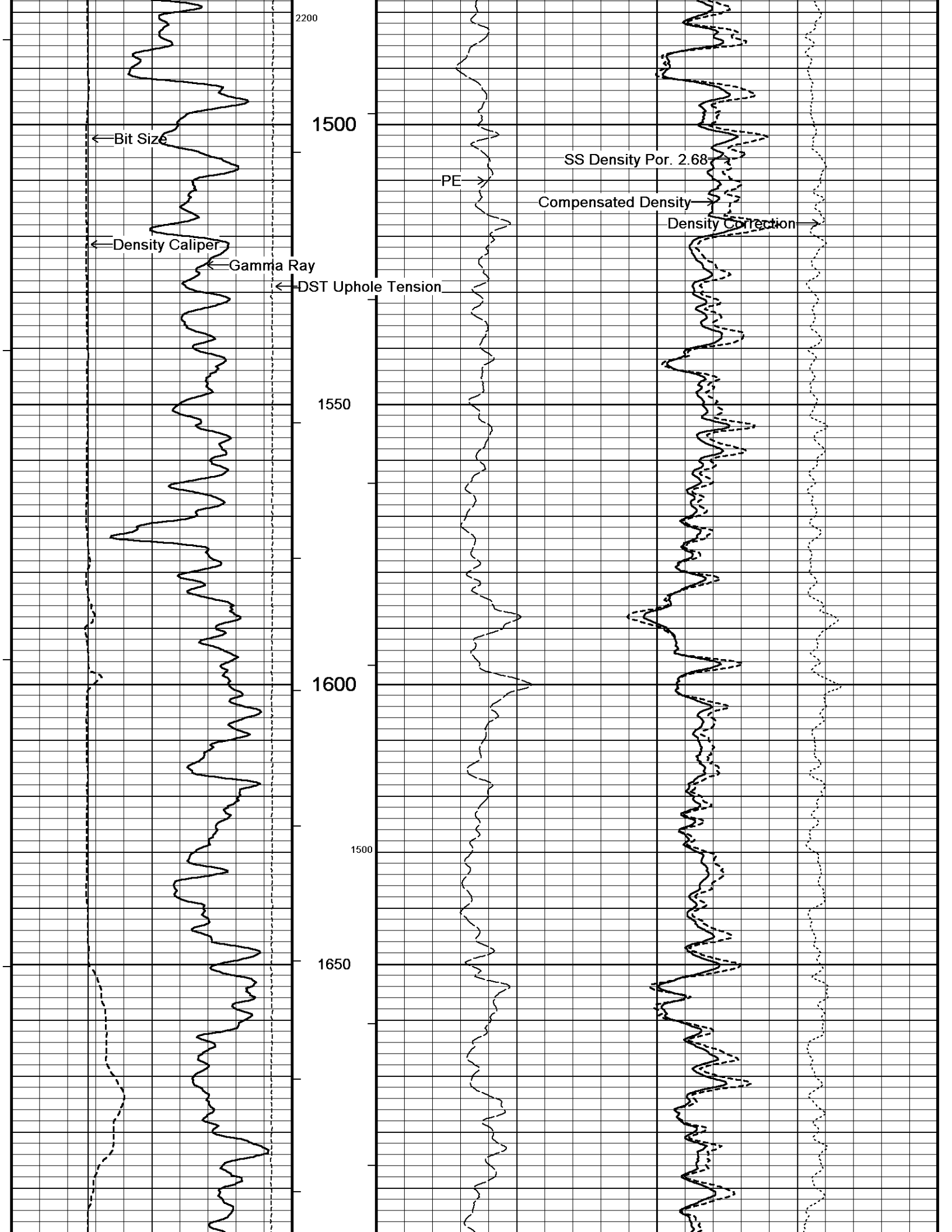
1000<sup>1700</sup>

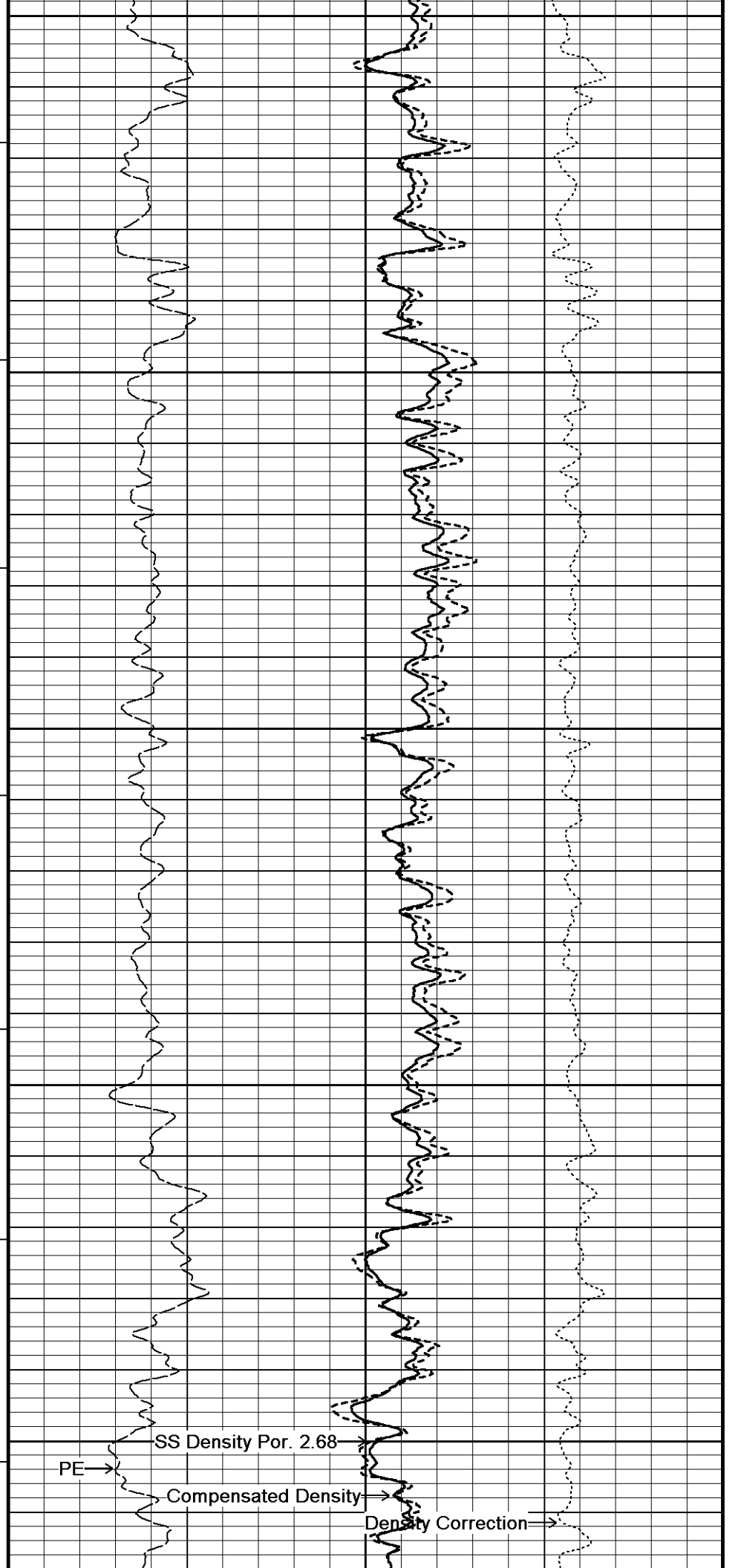
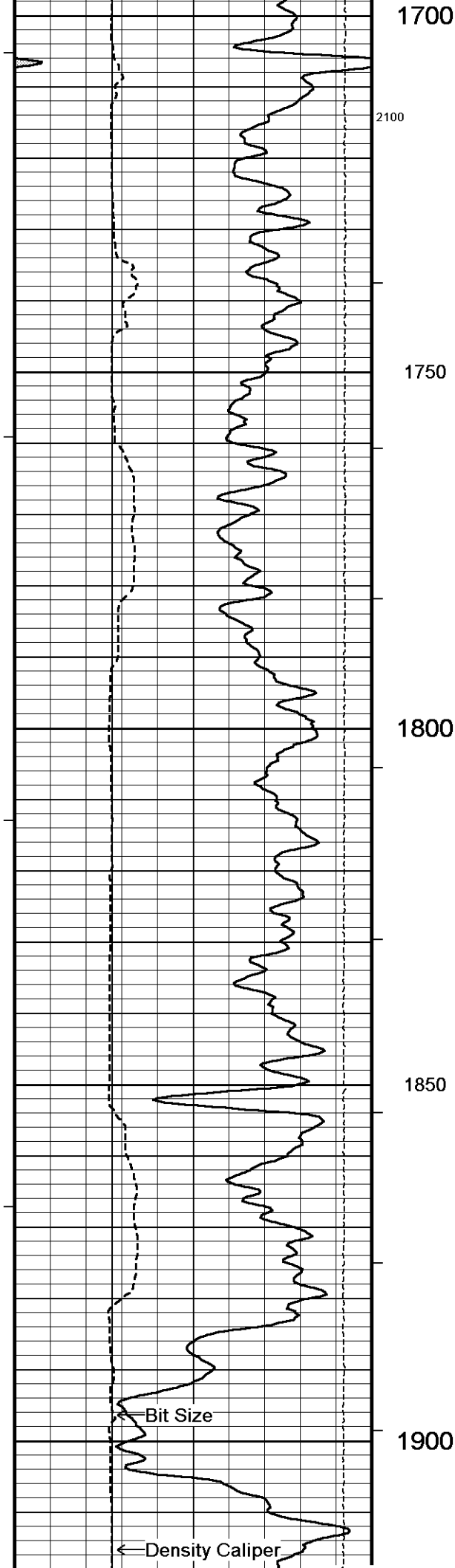
2400



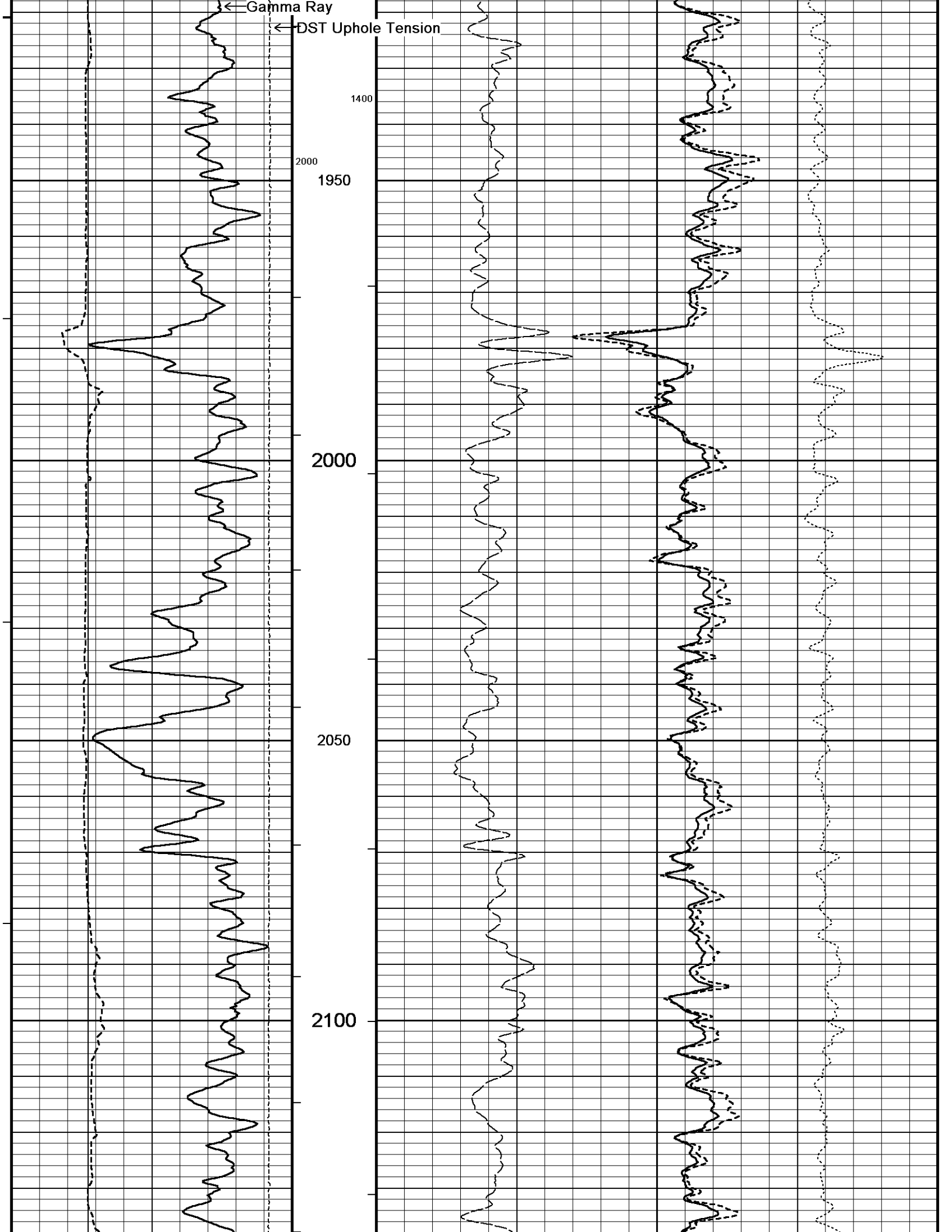


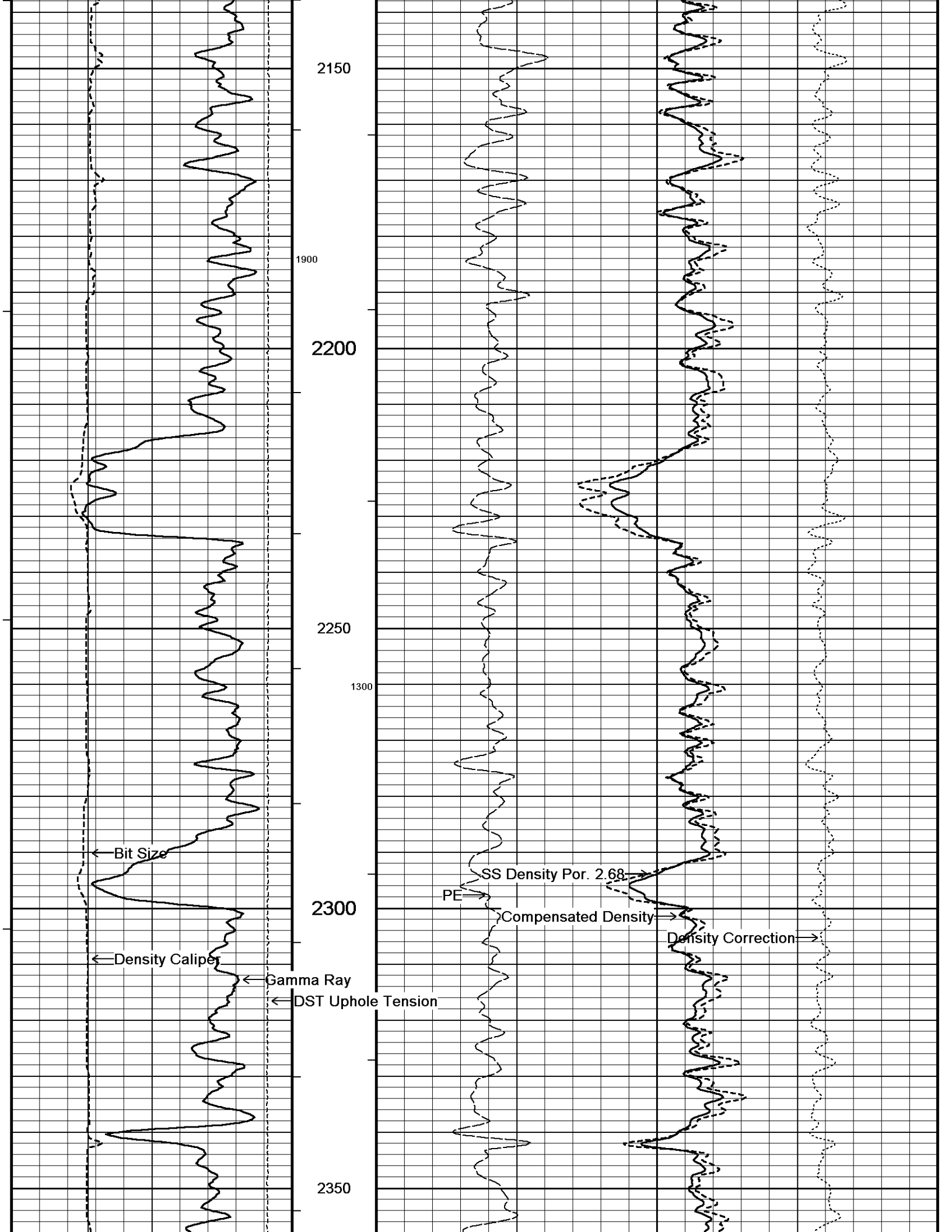


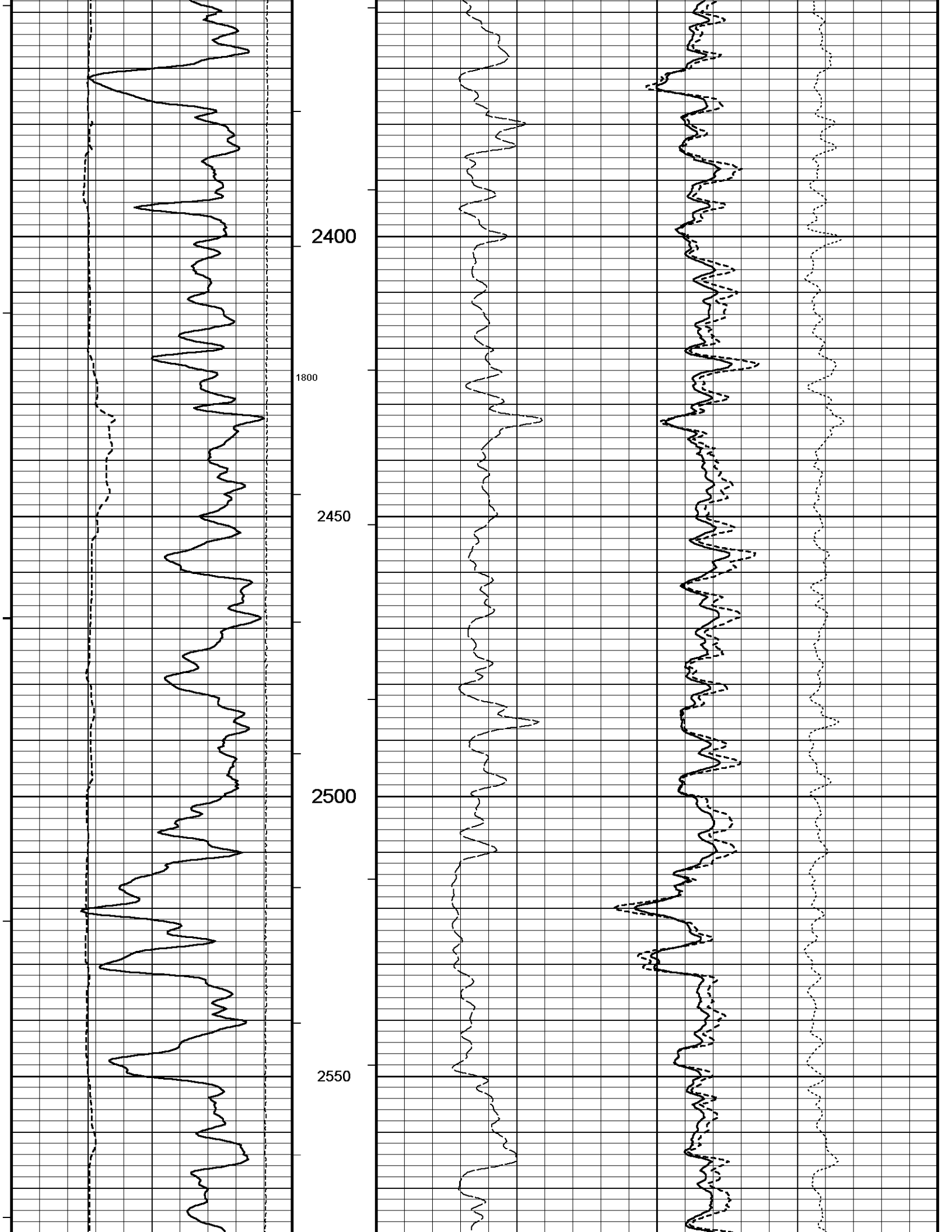


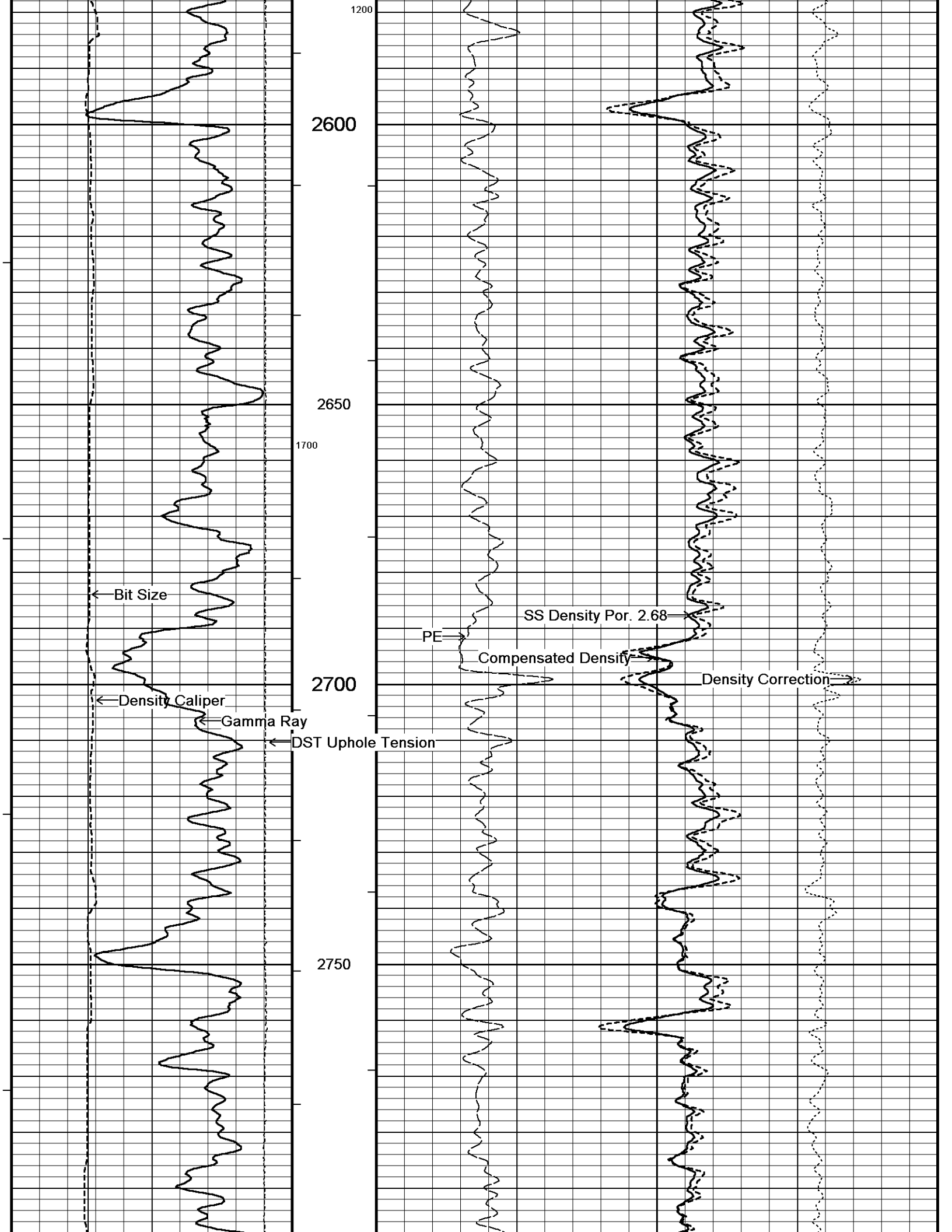


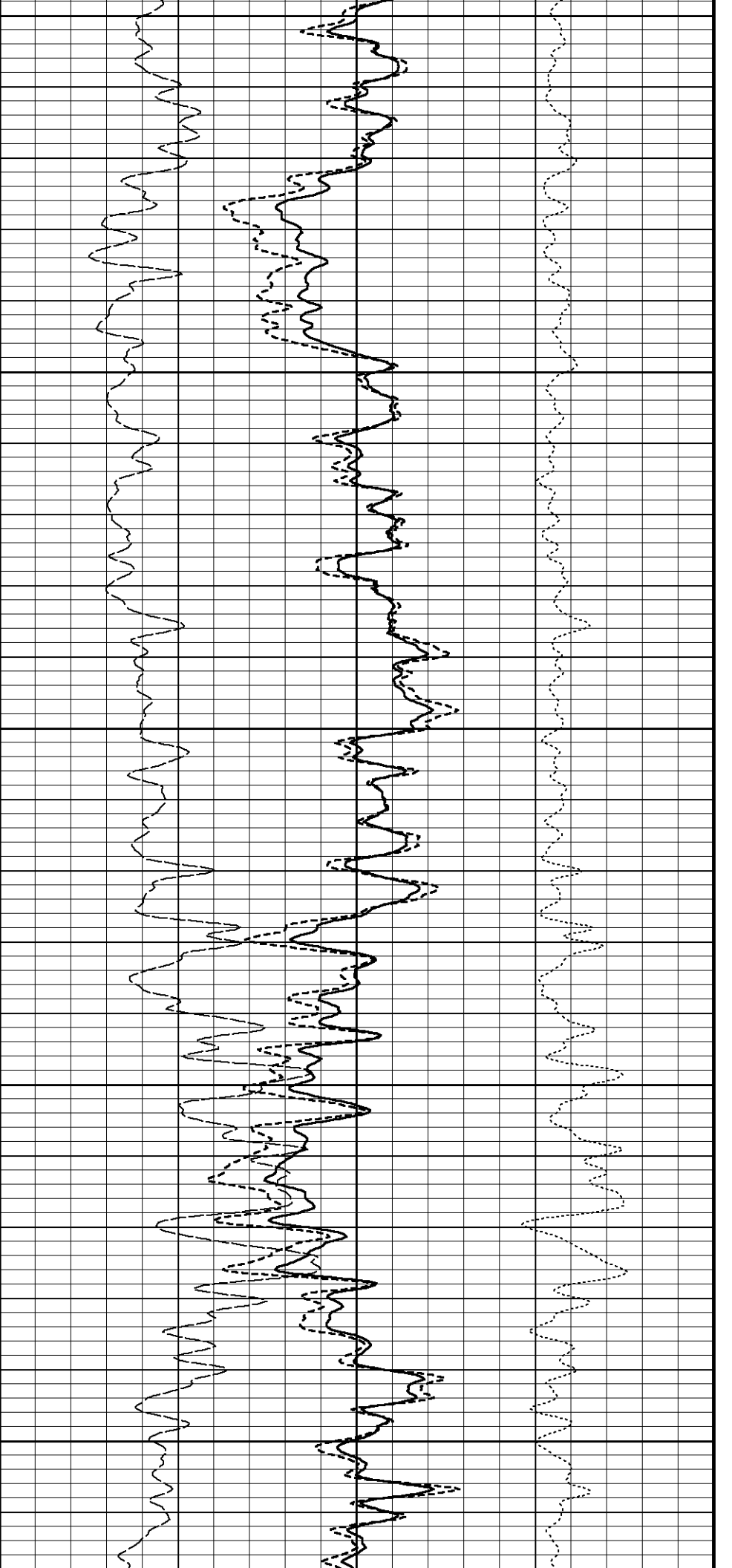
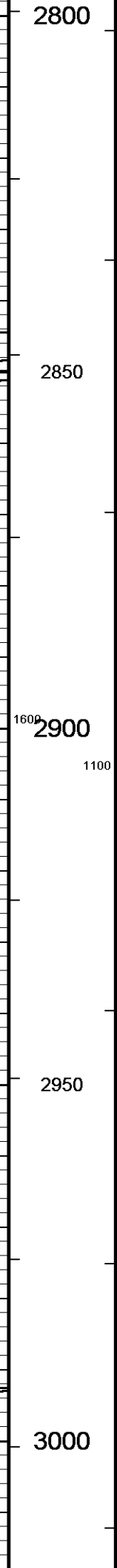
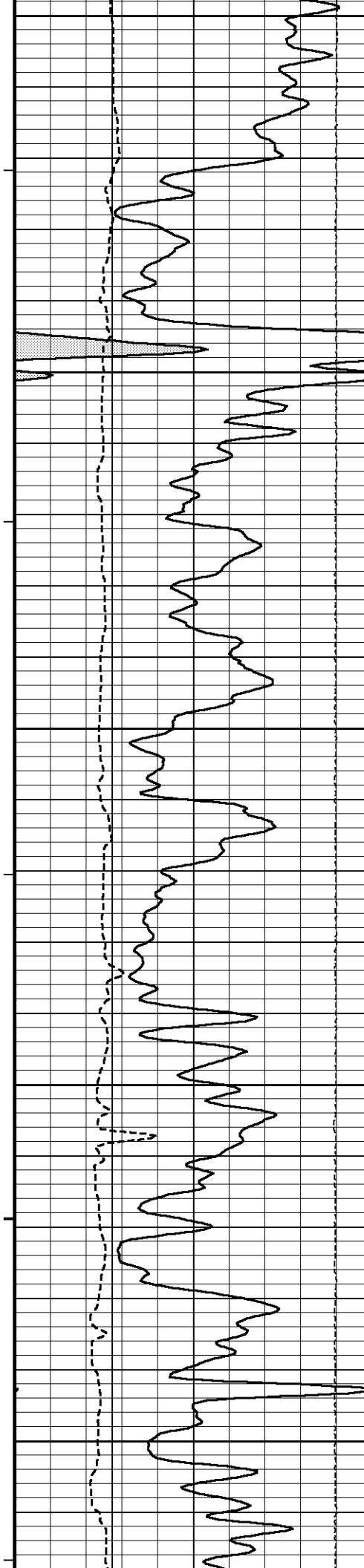


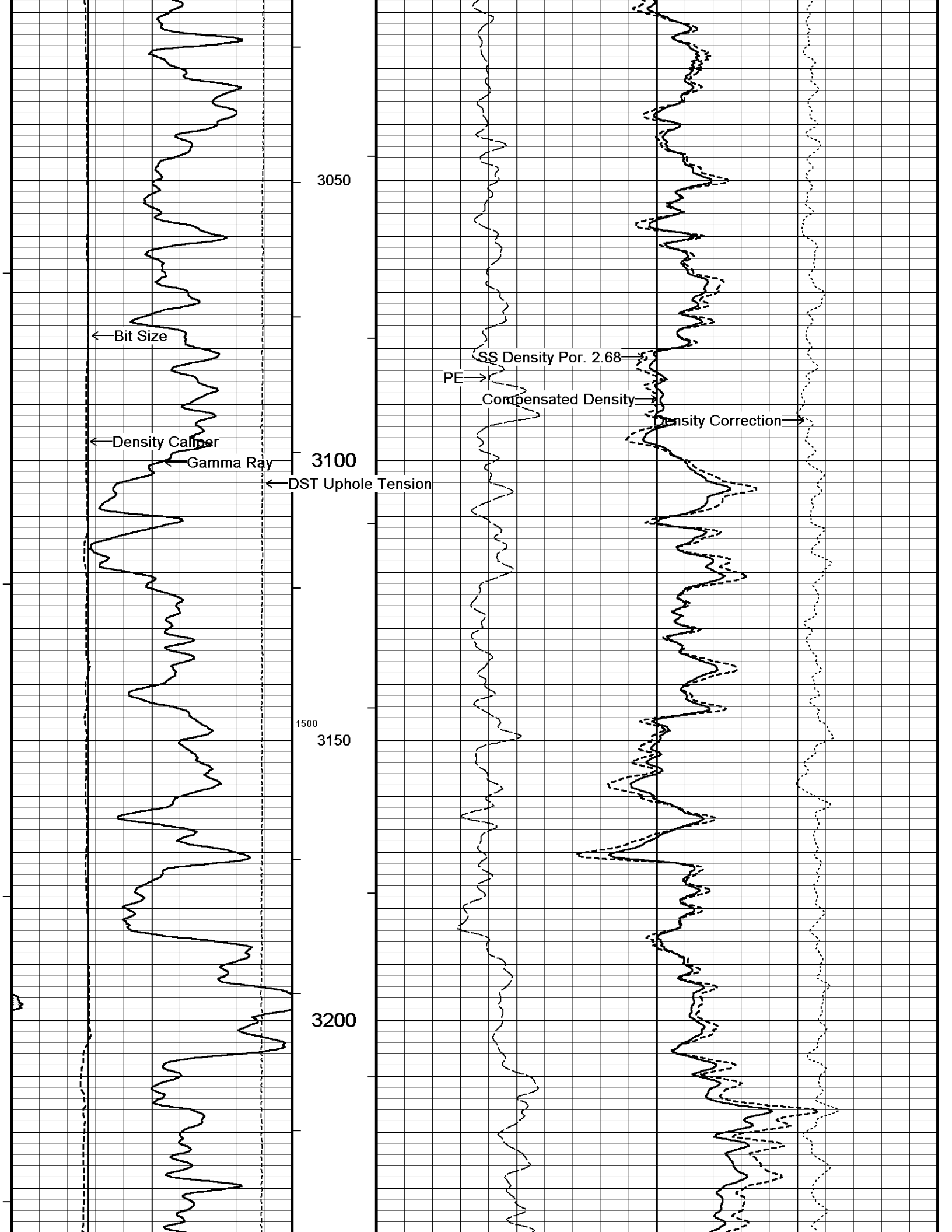


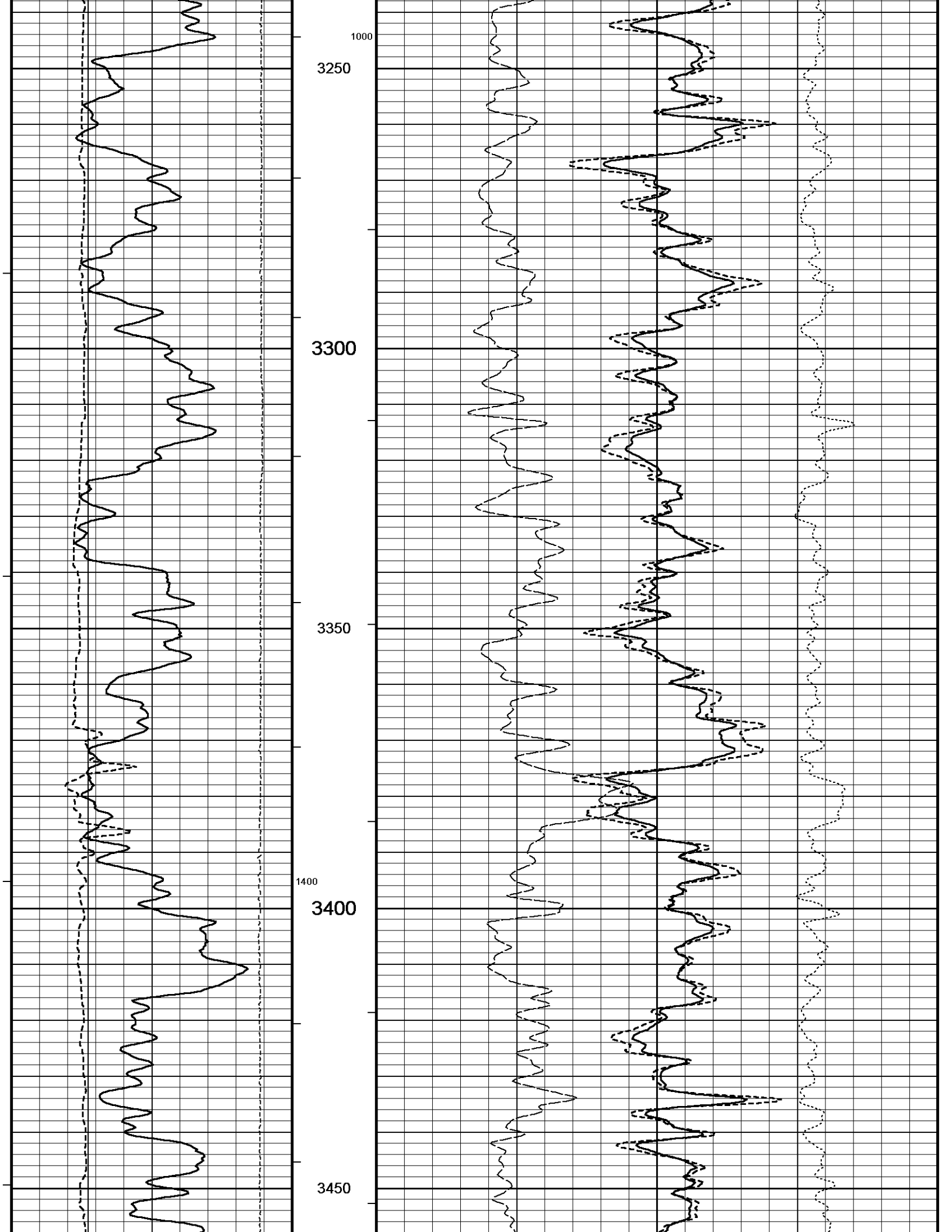


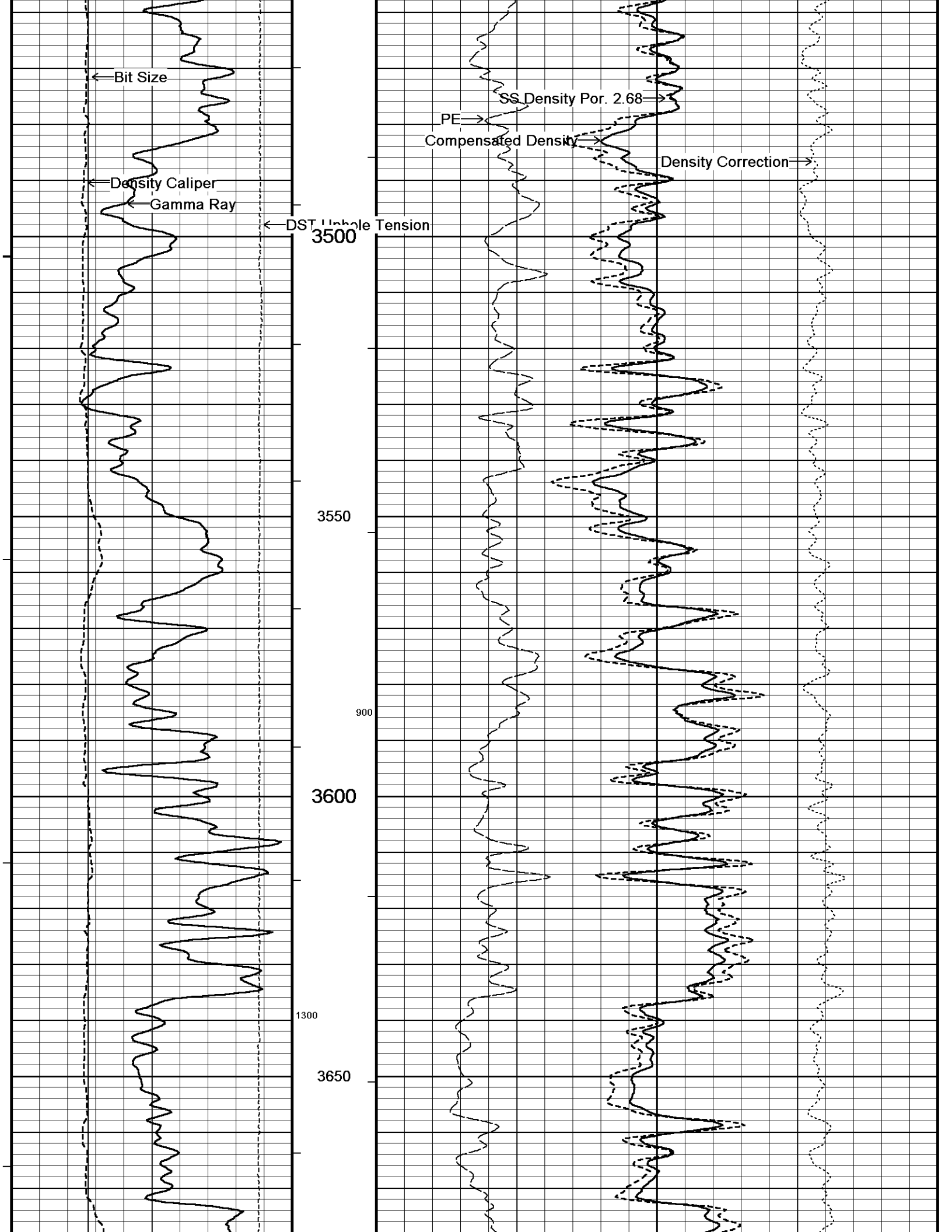




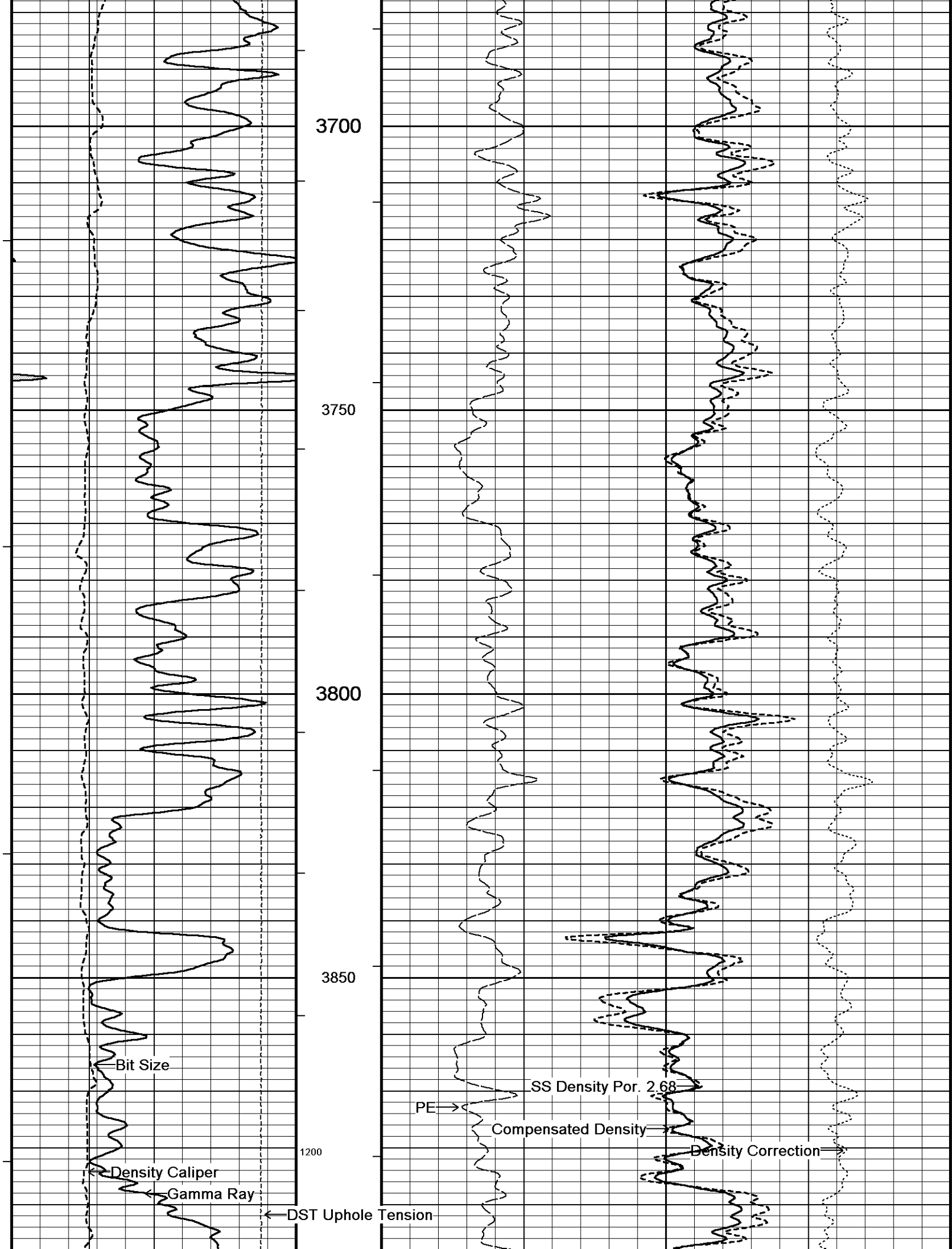


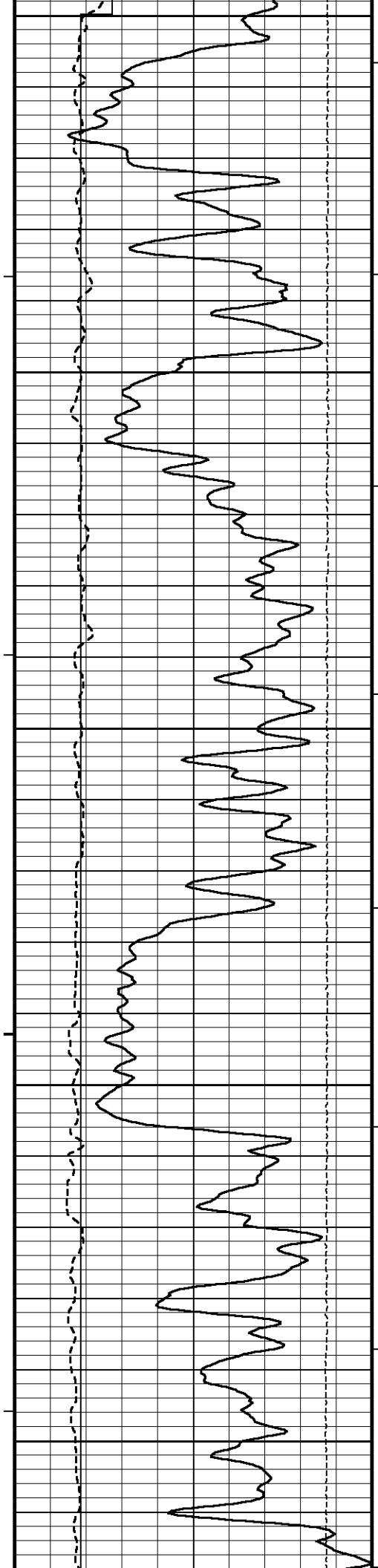












3900

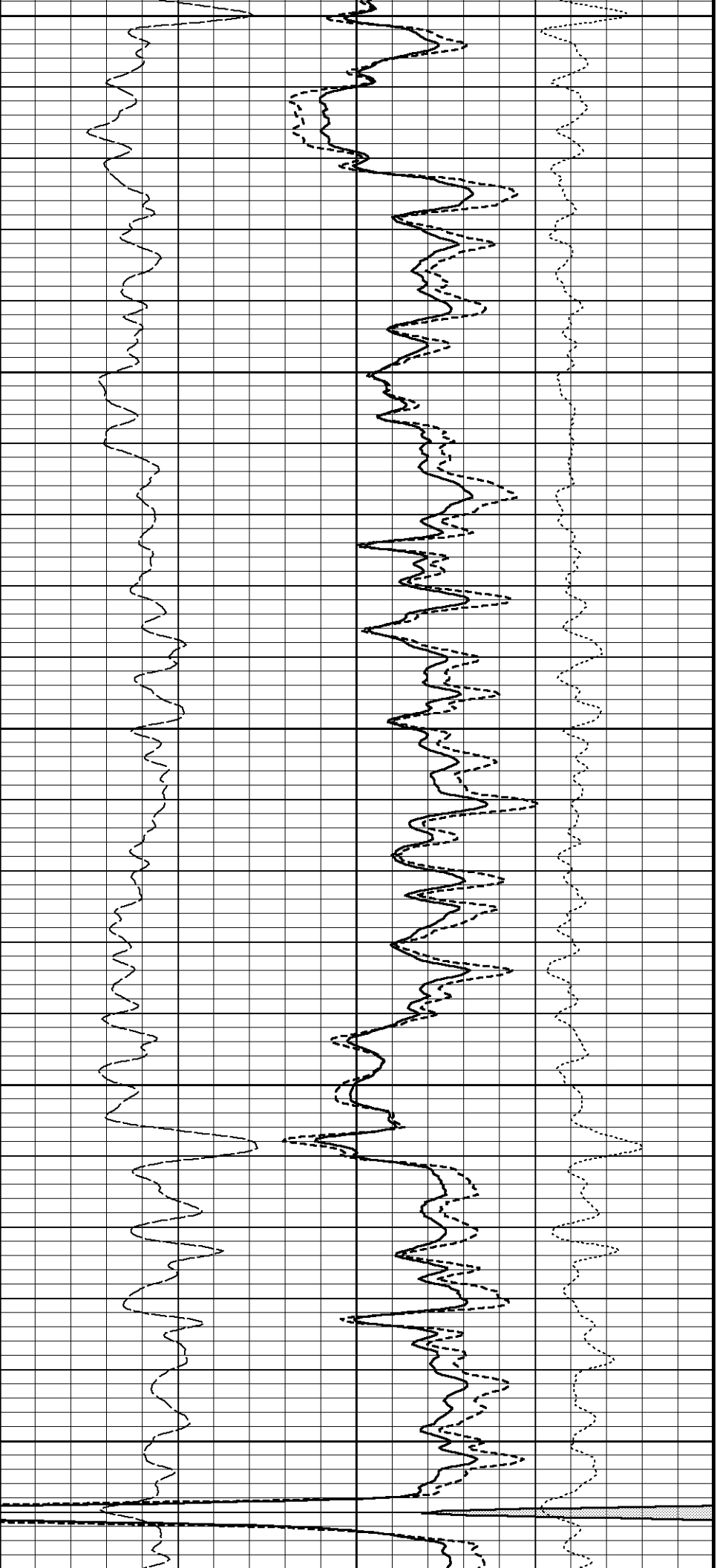
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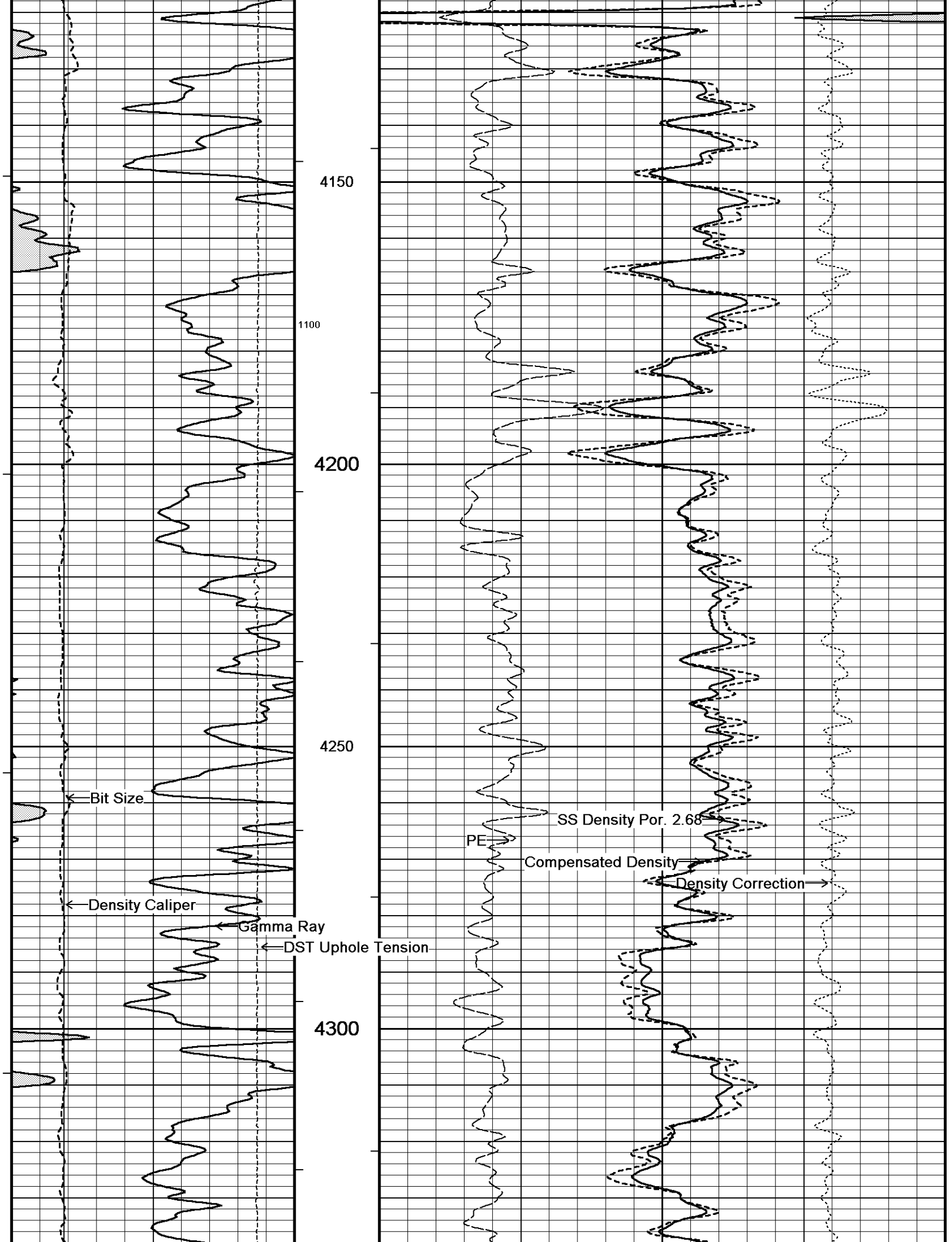
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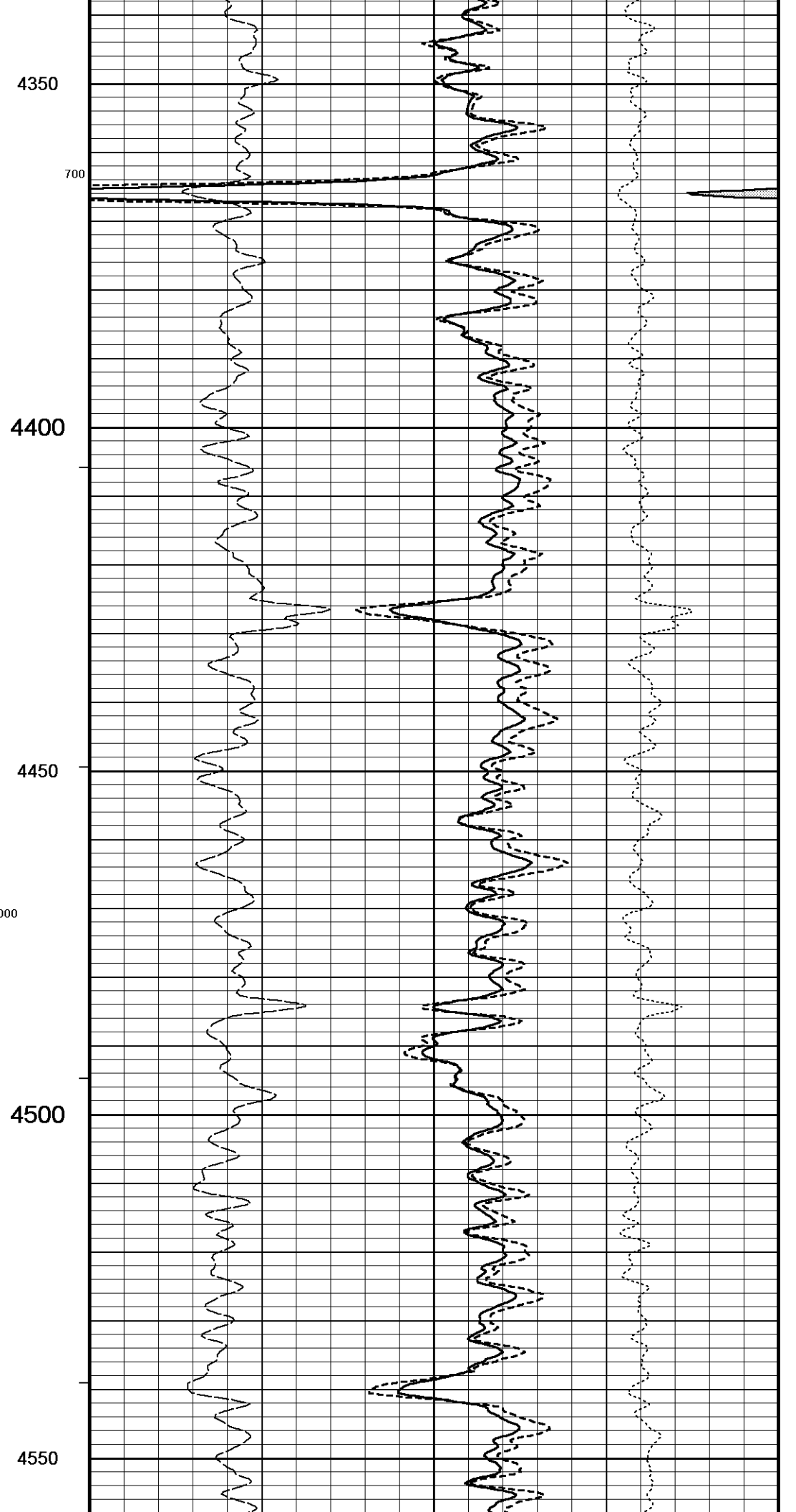
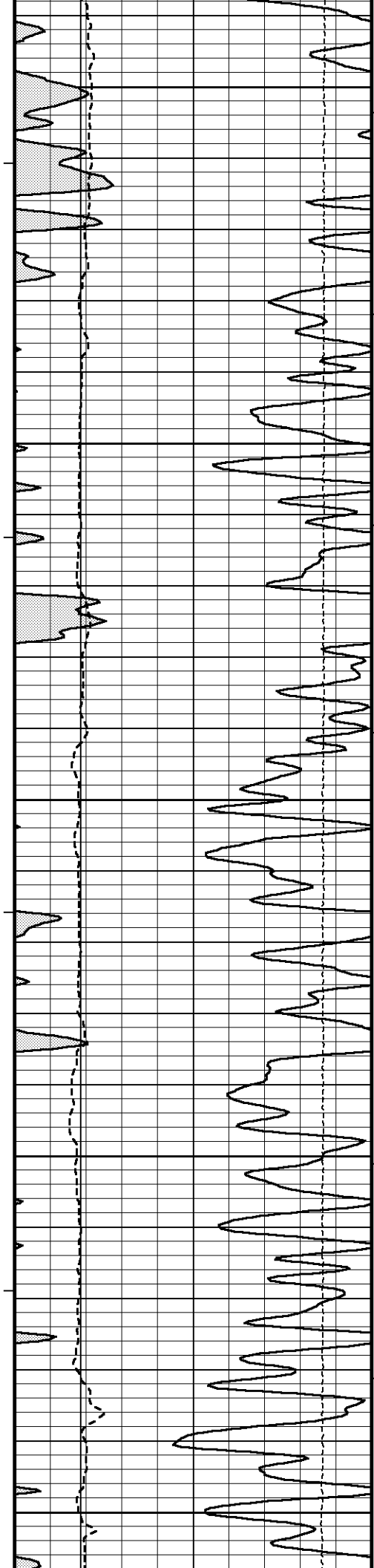
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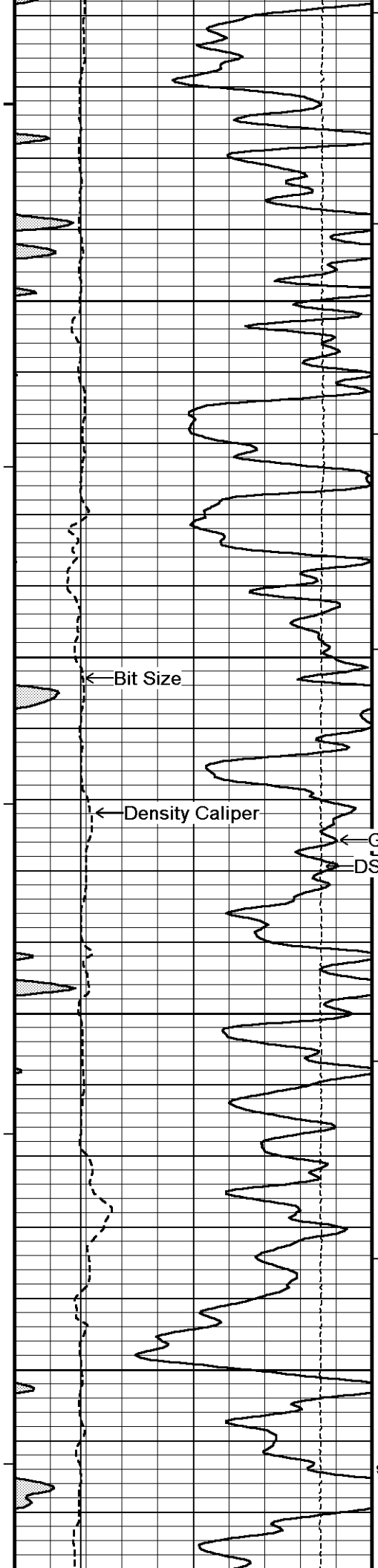
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800









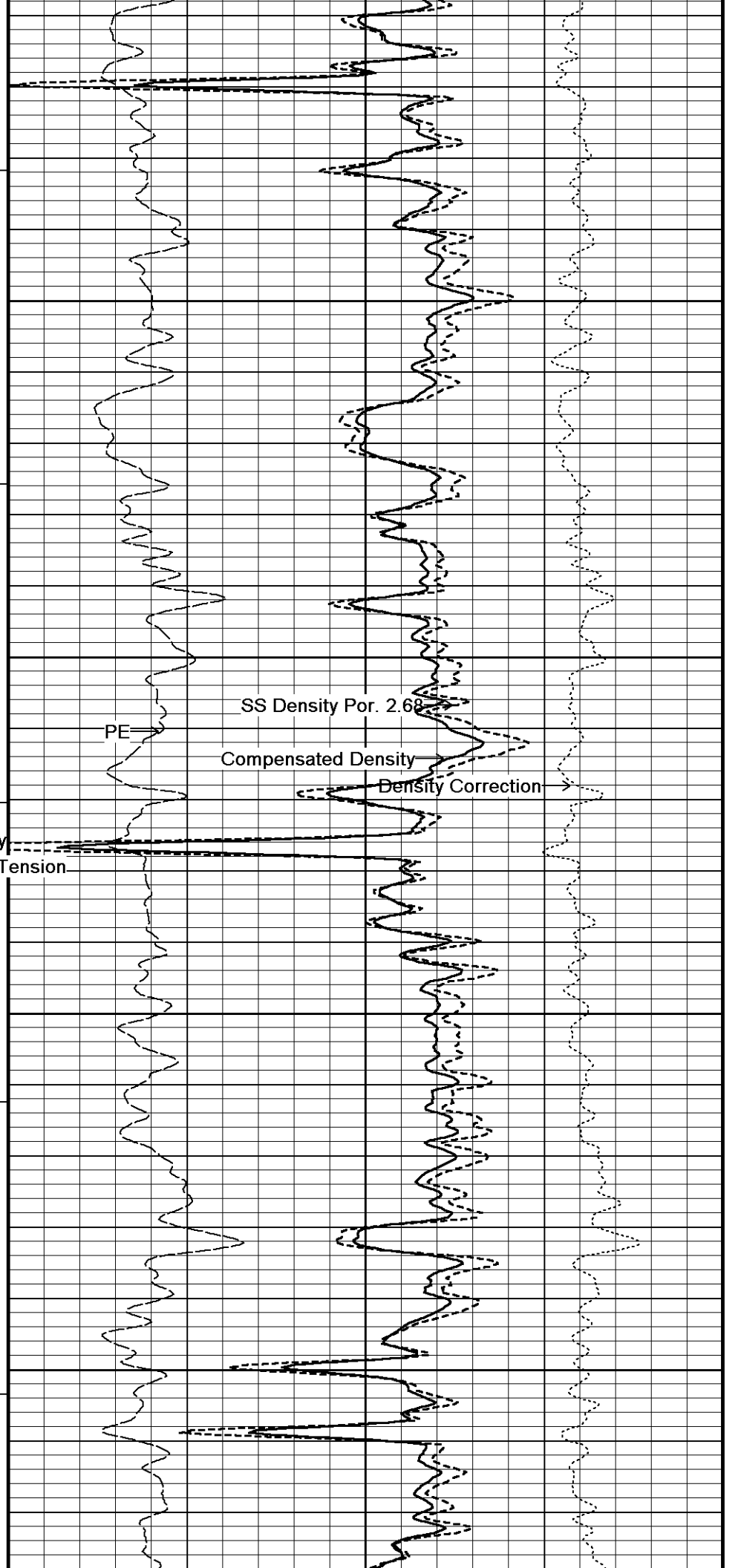
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4650

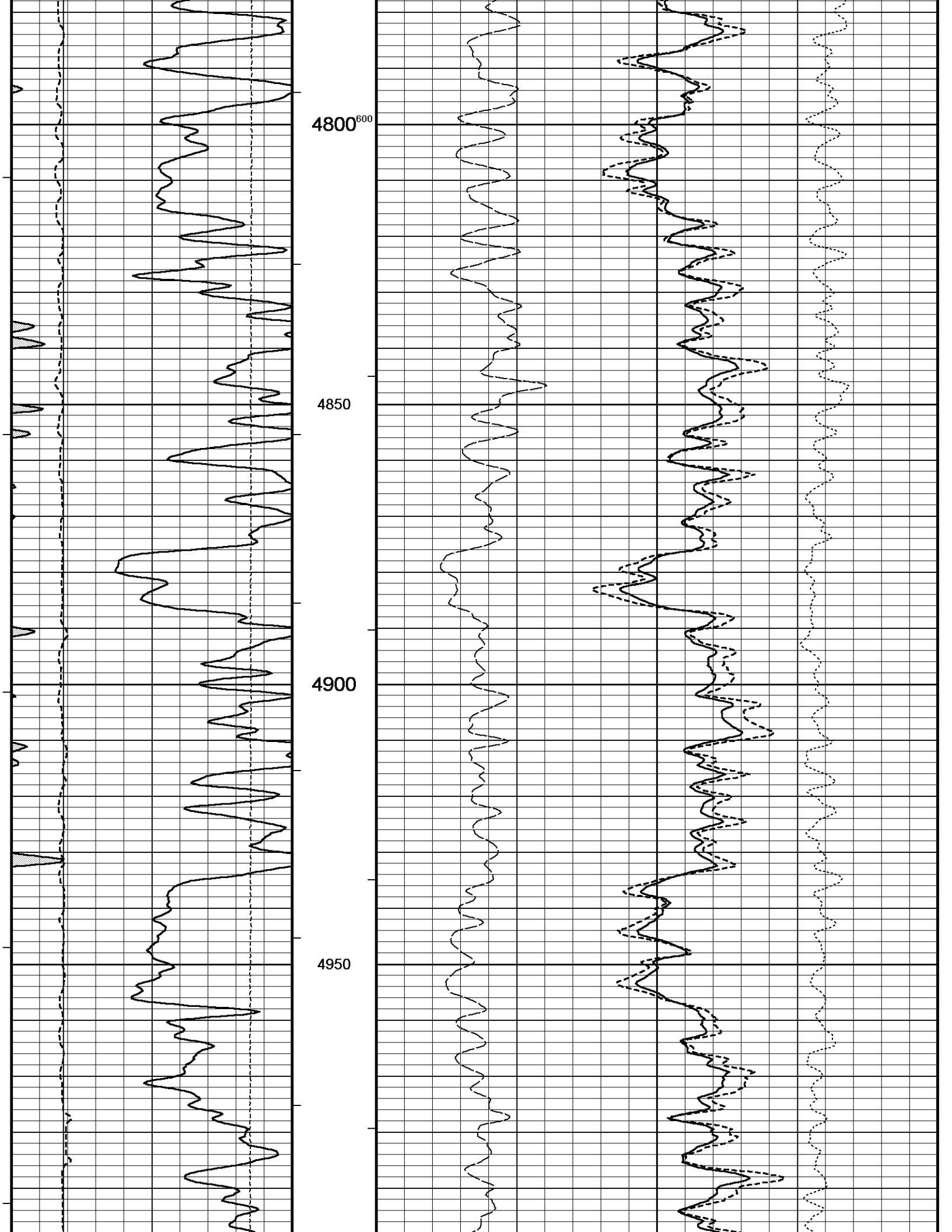
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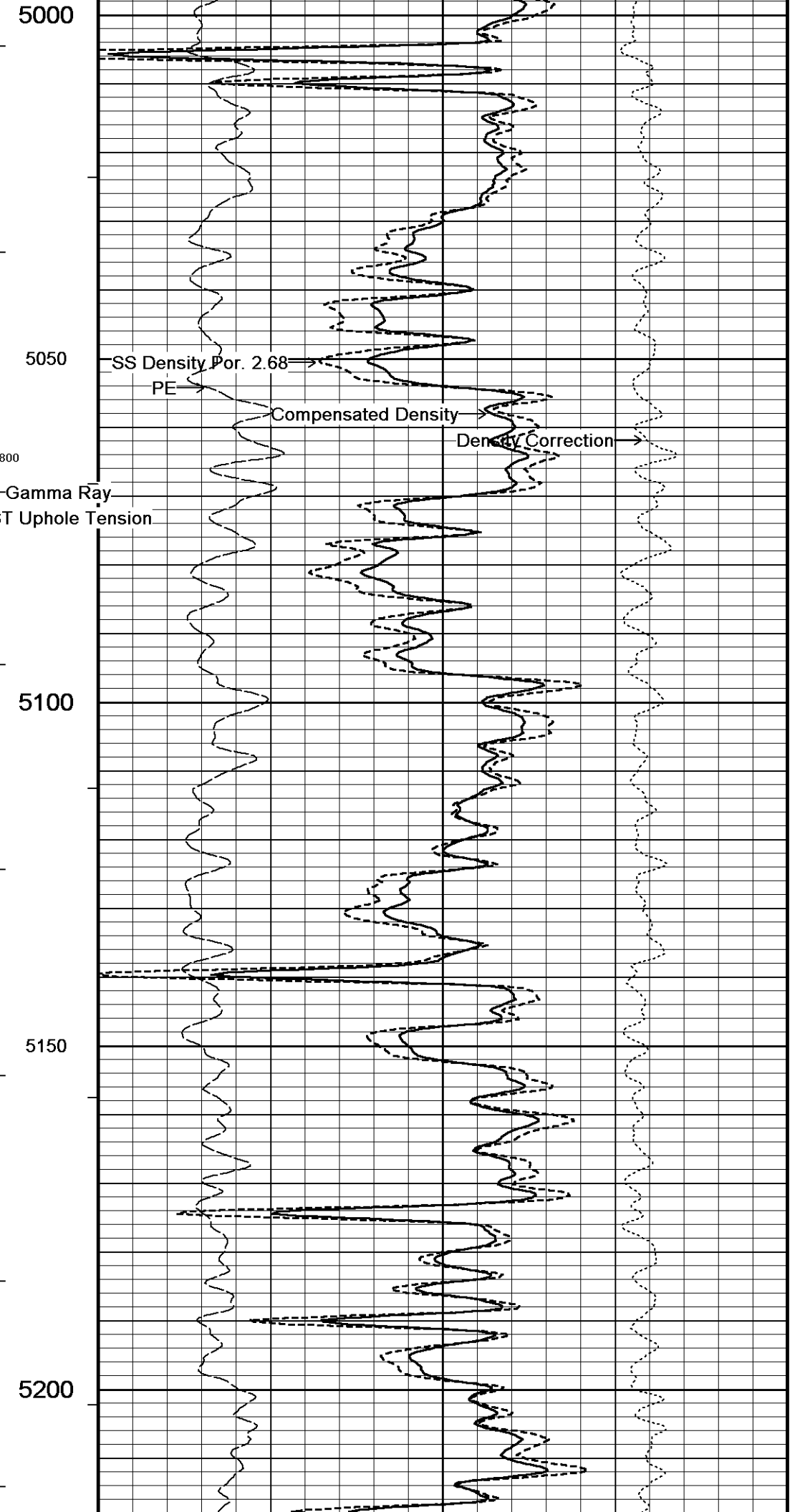
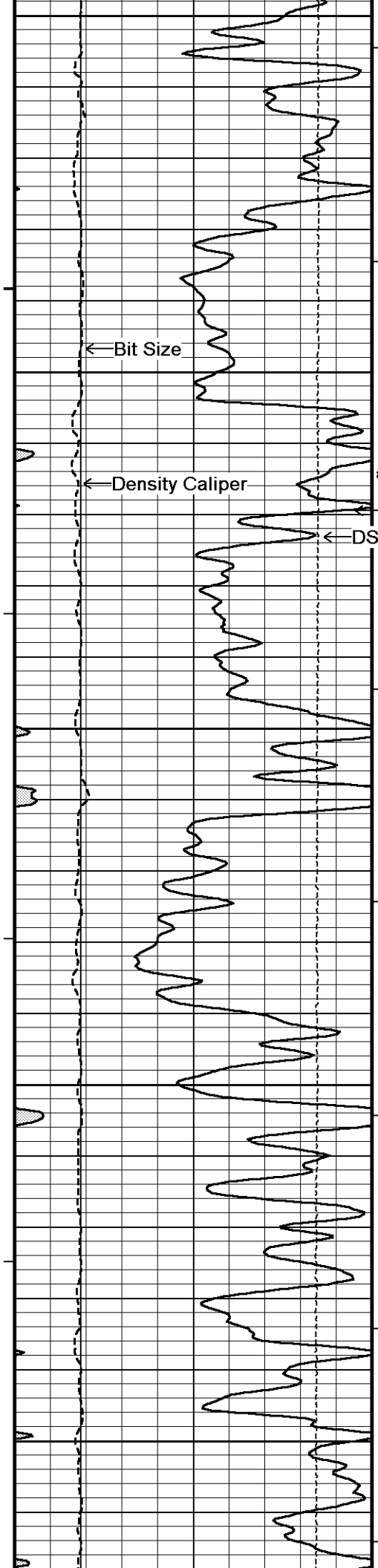
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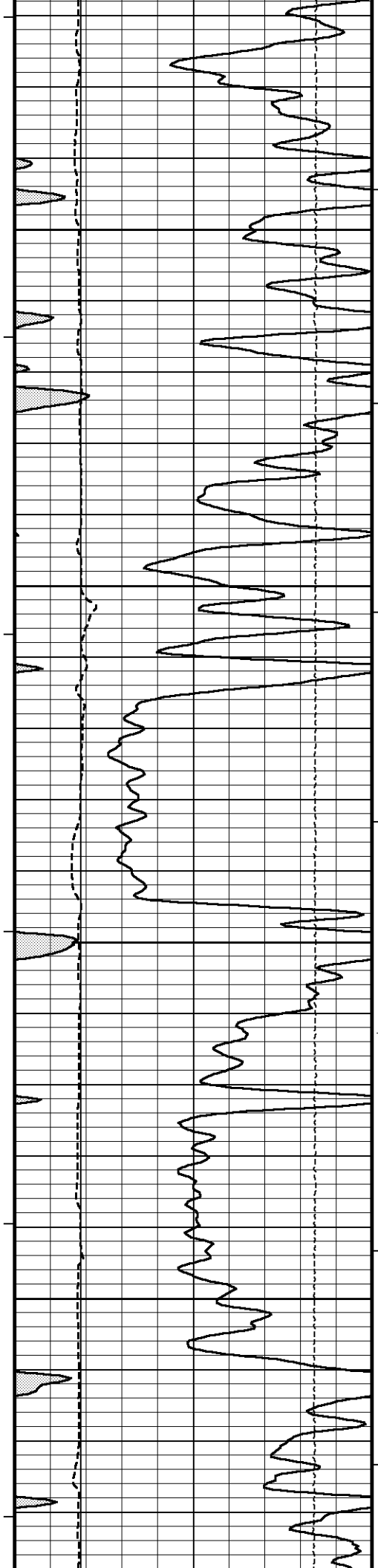
900



PE







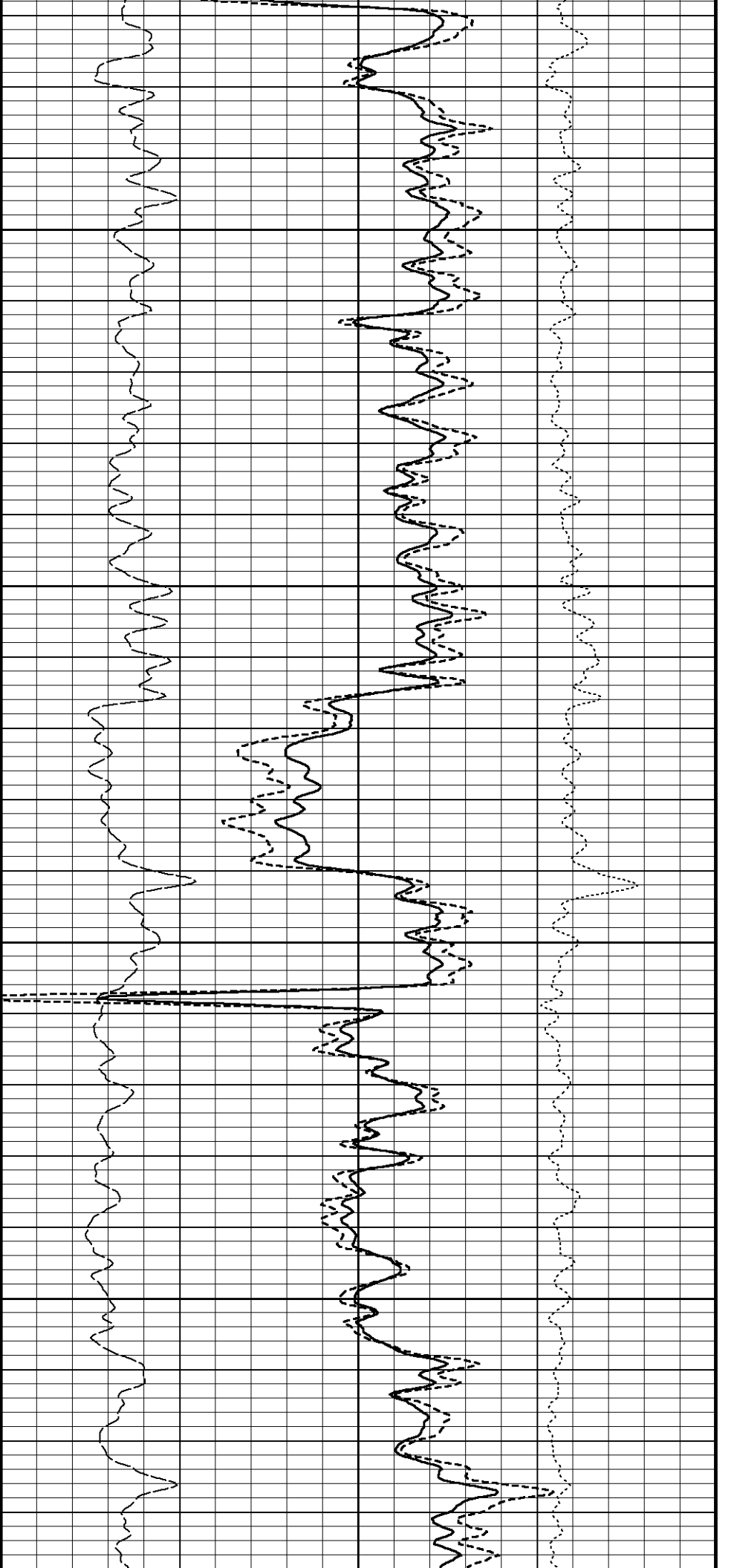
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5300

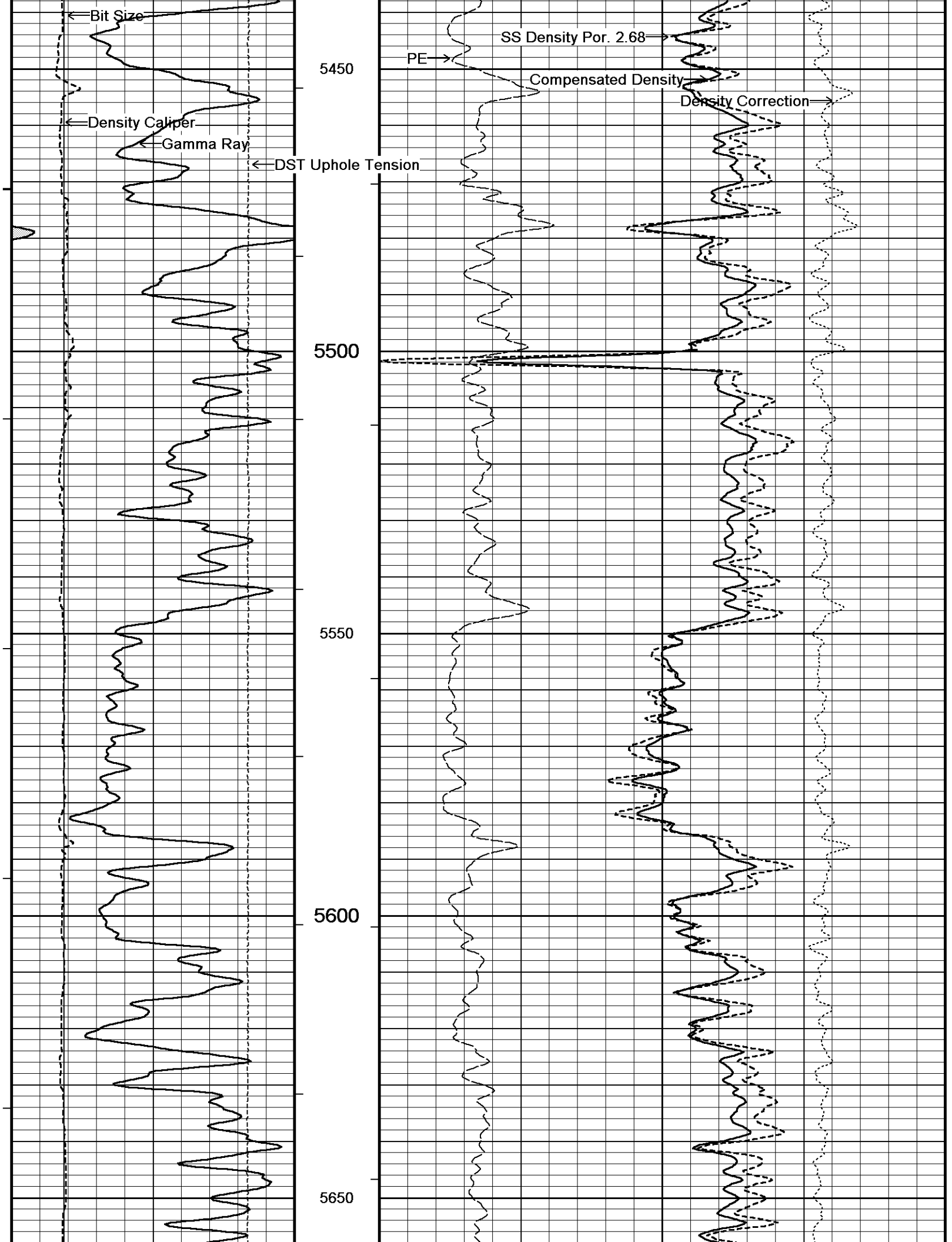
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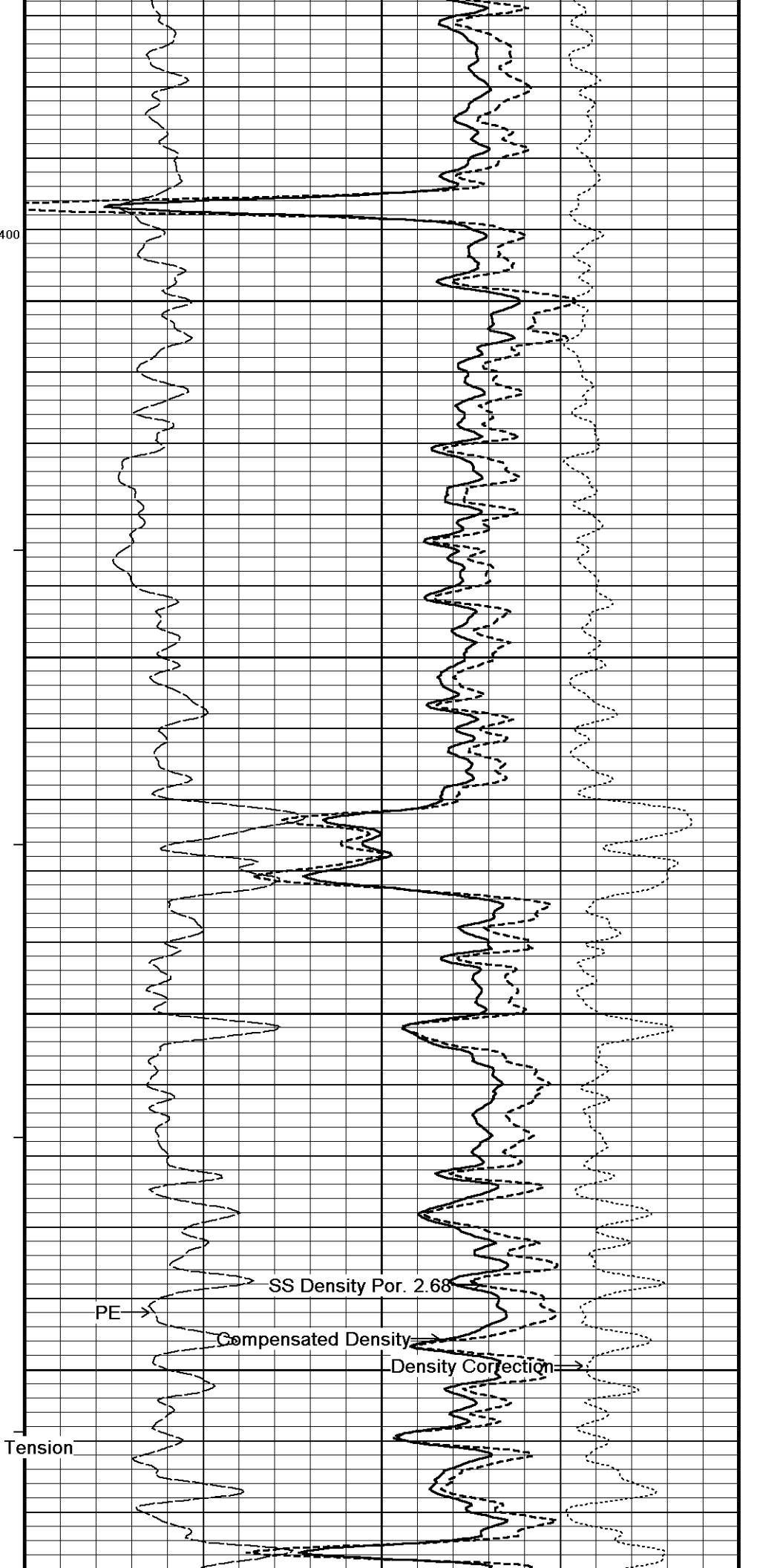
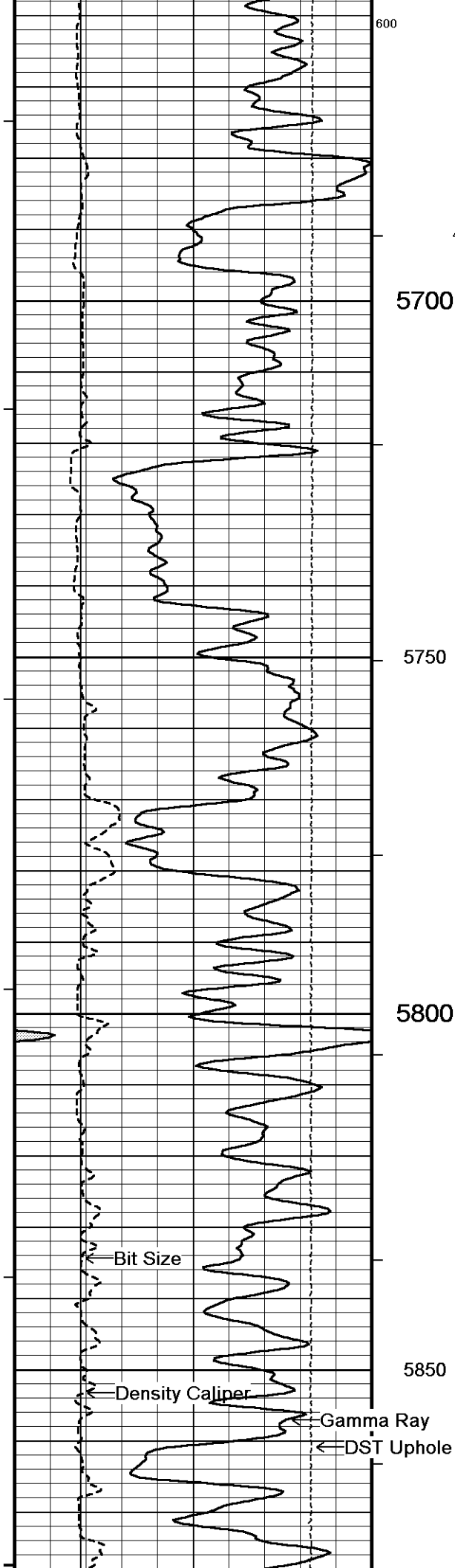
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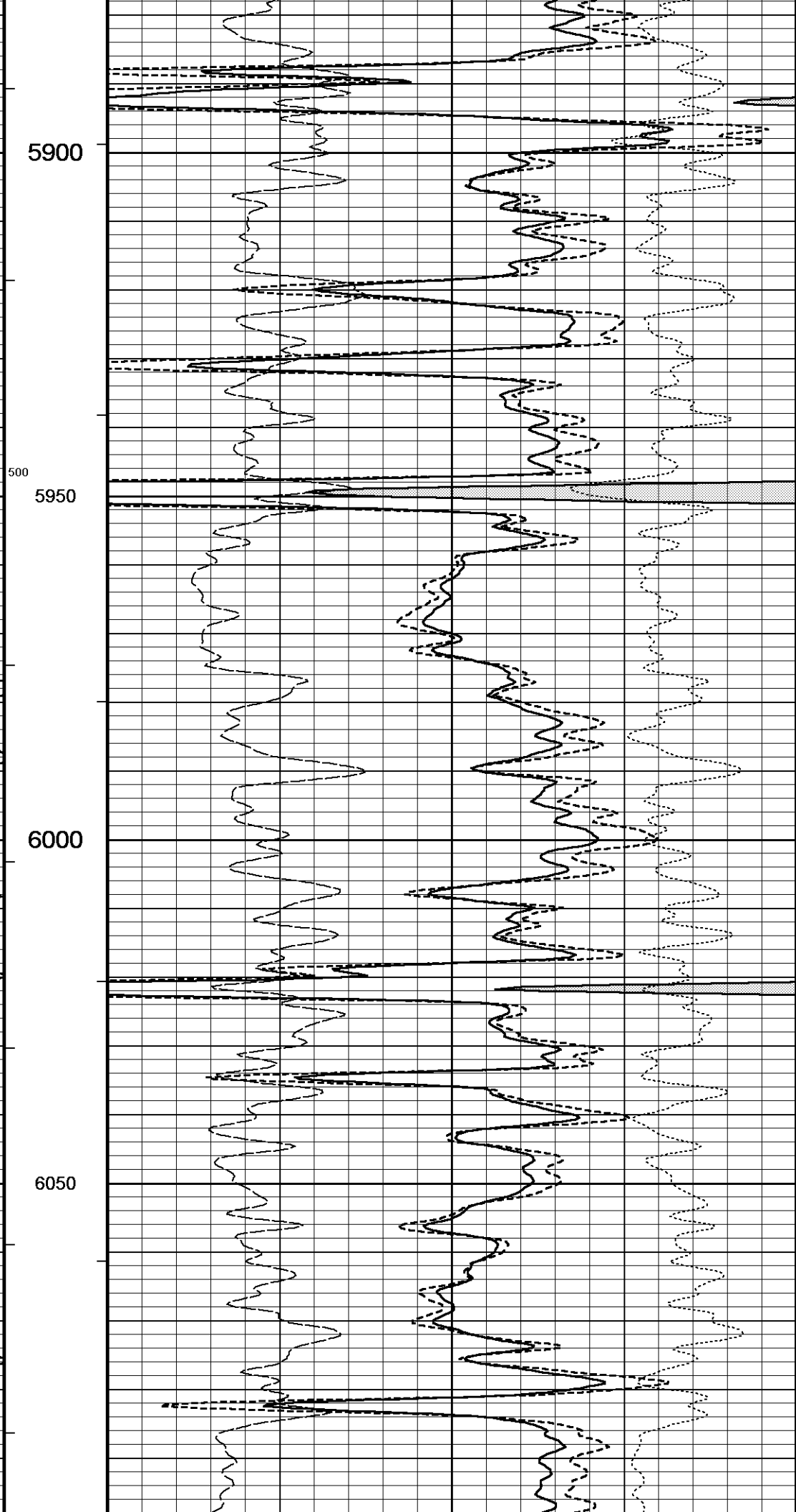
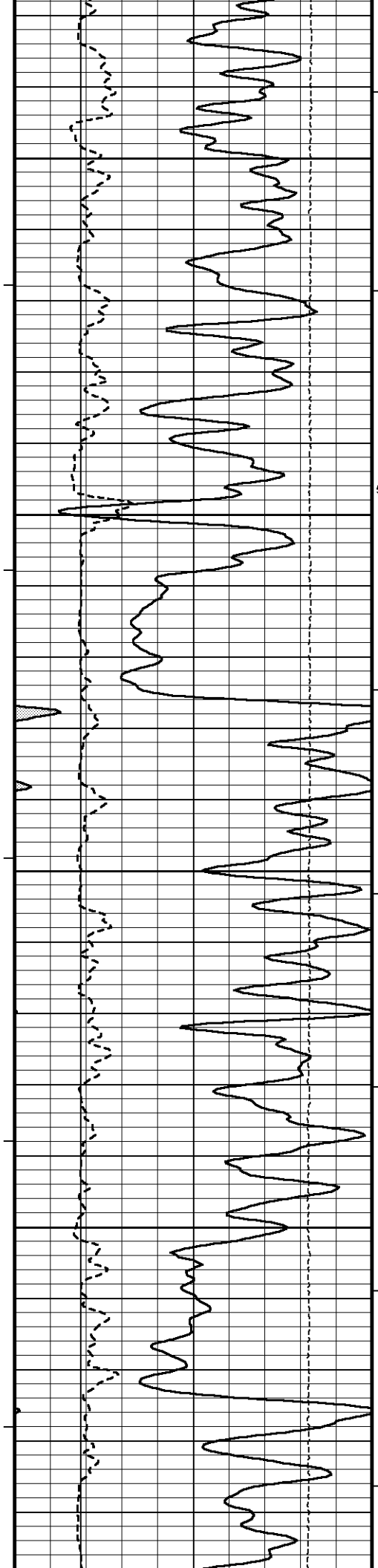
5400

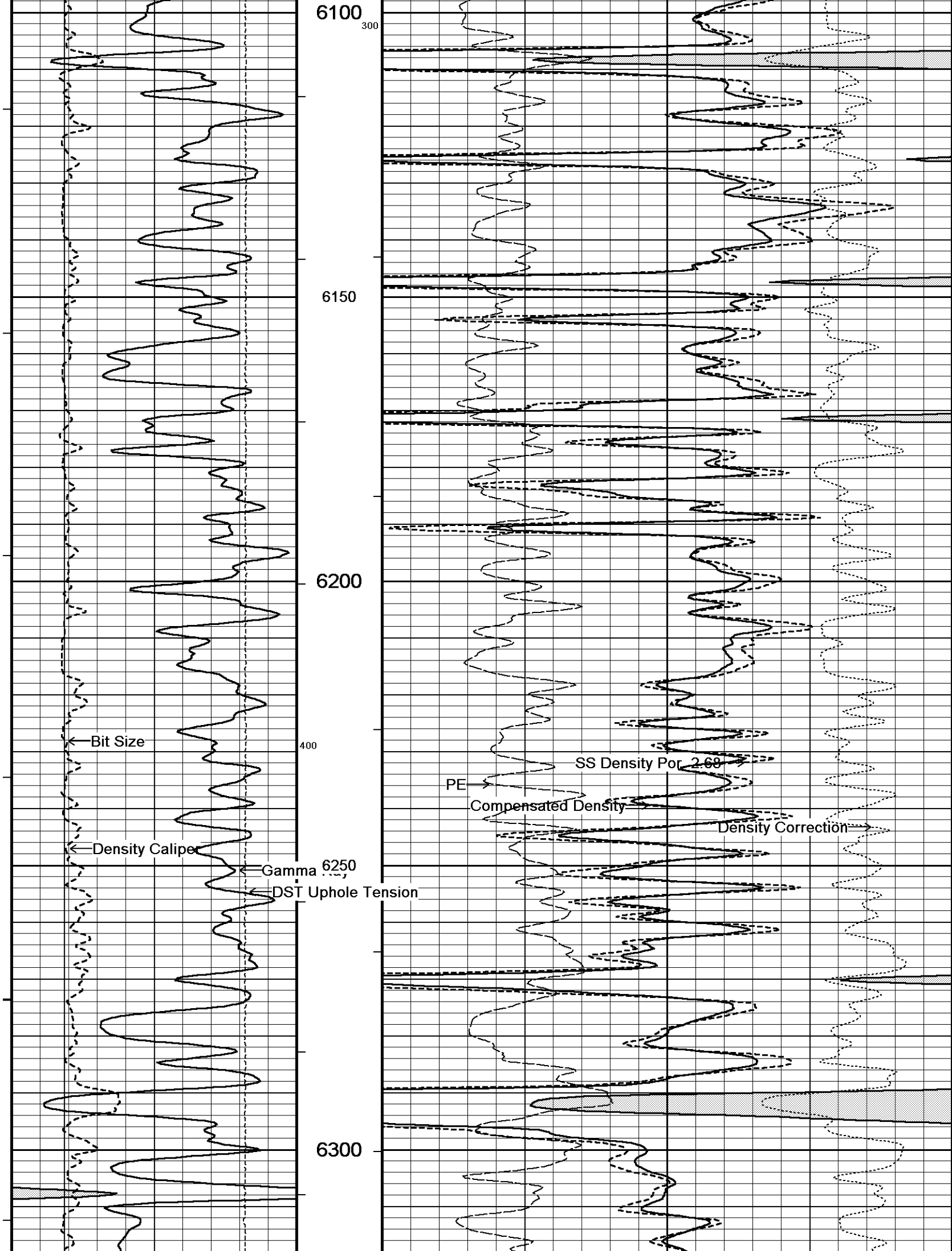


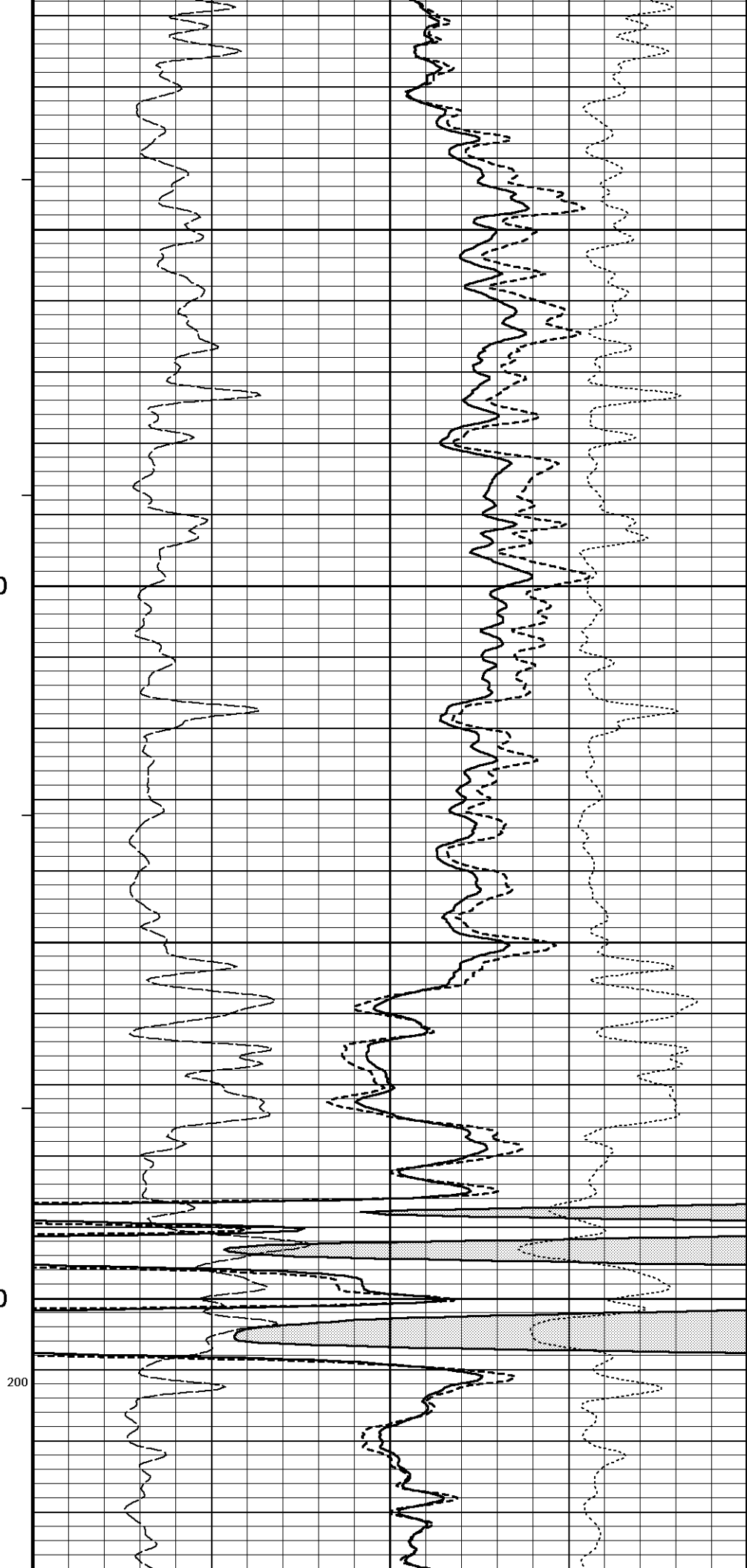
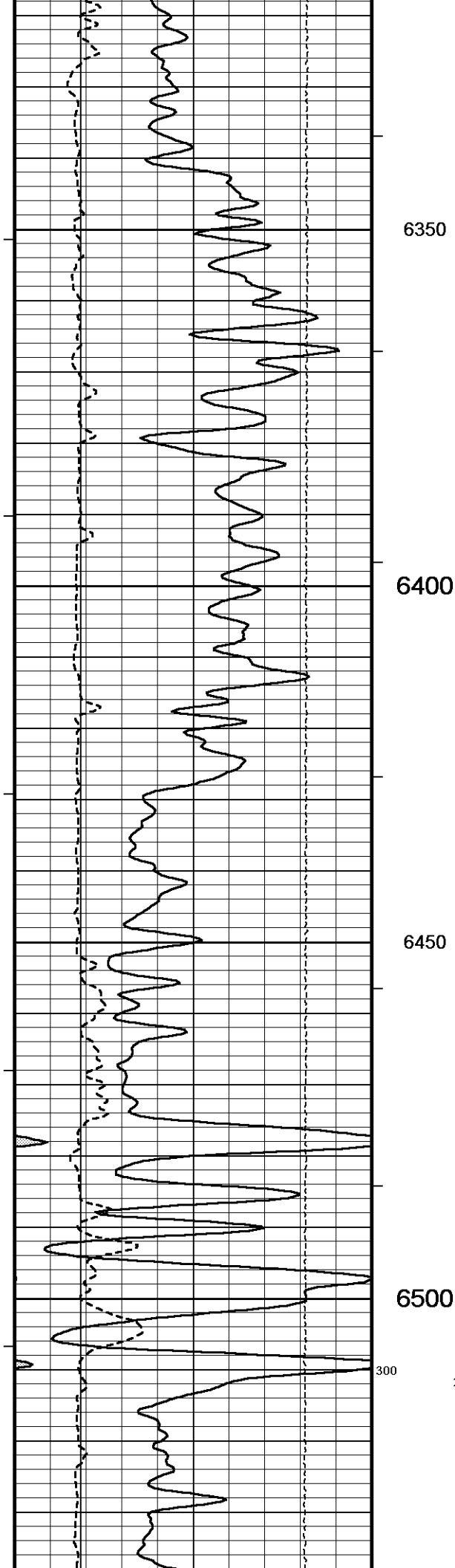


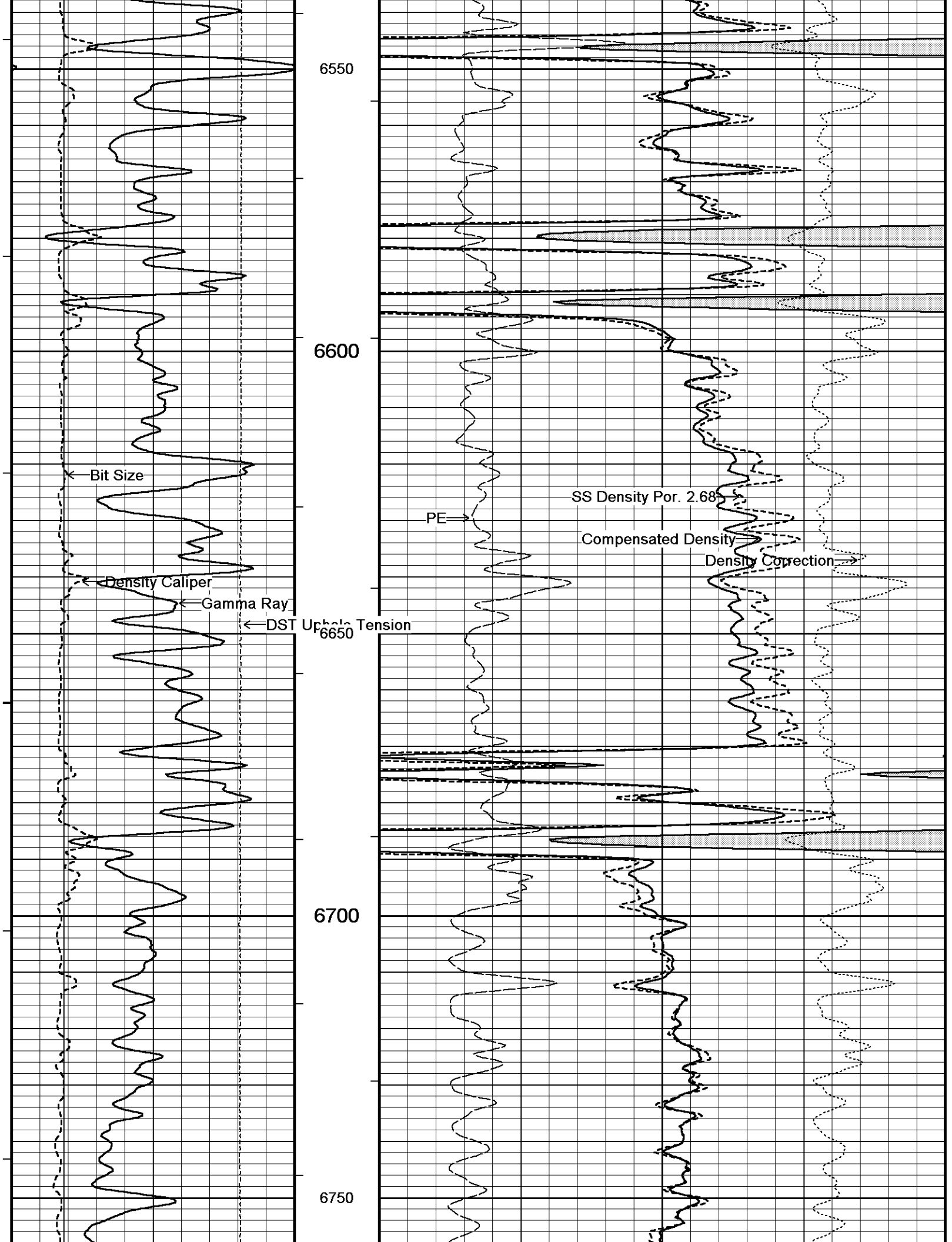


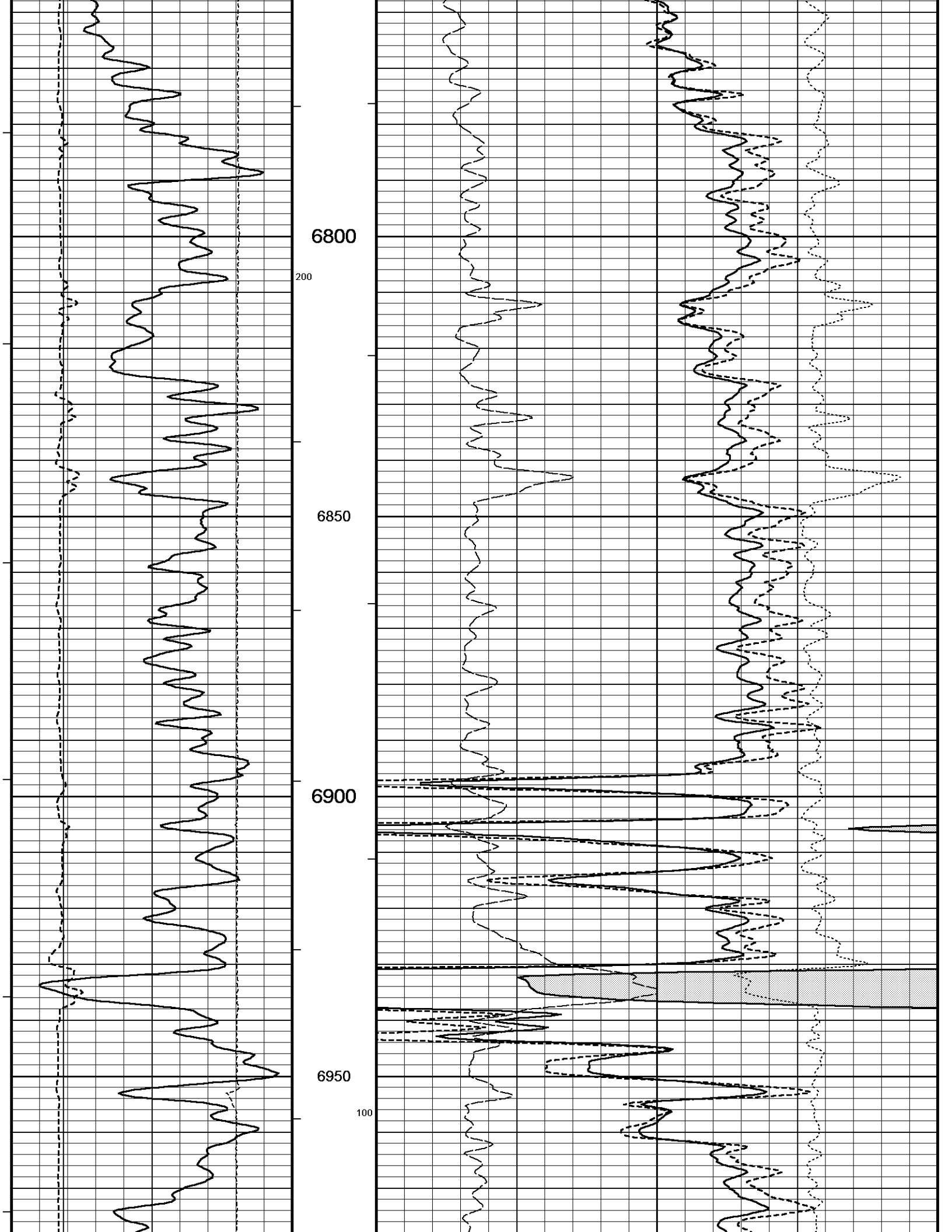


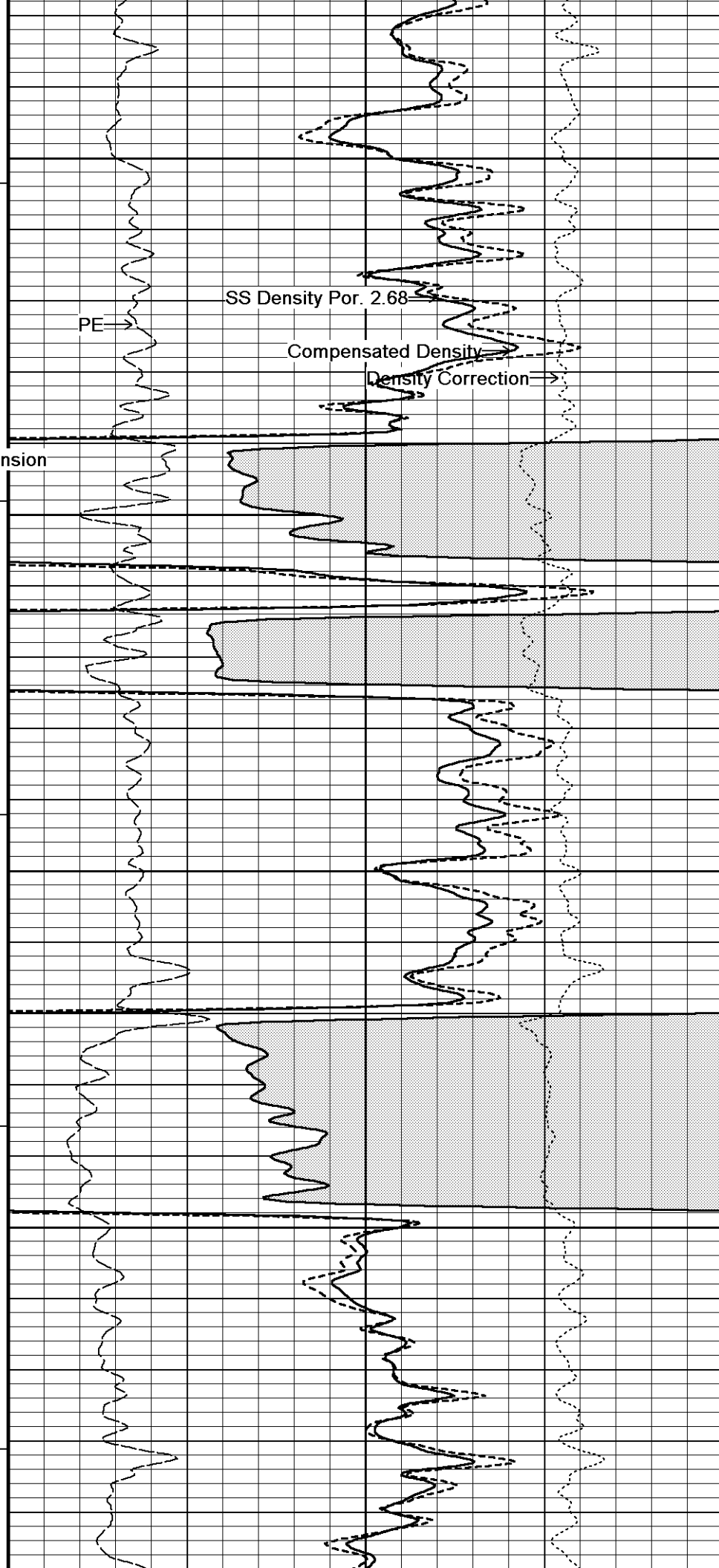
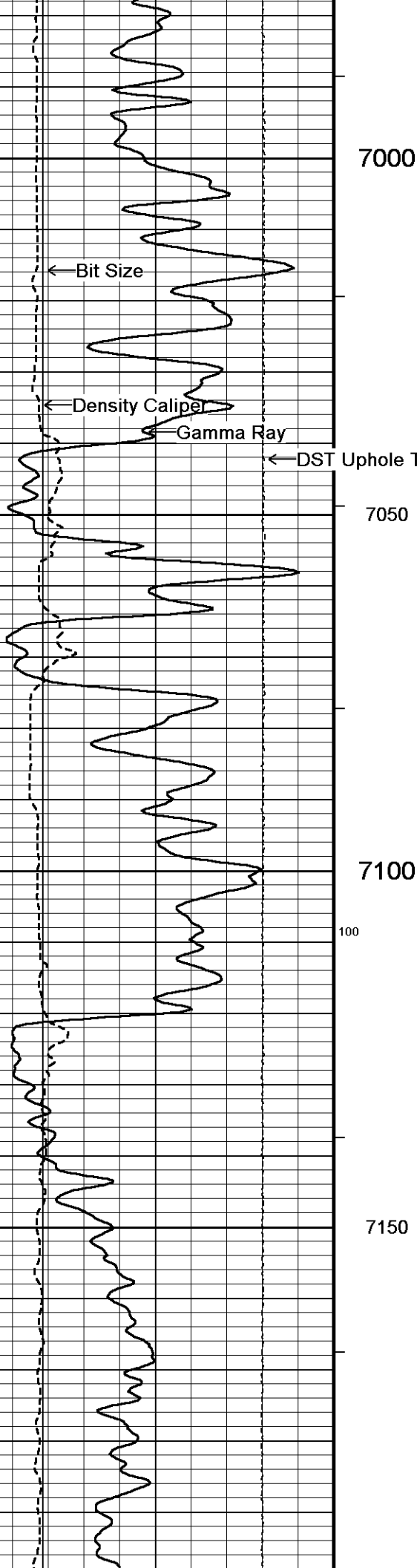




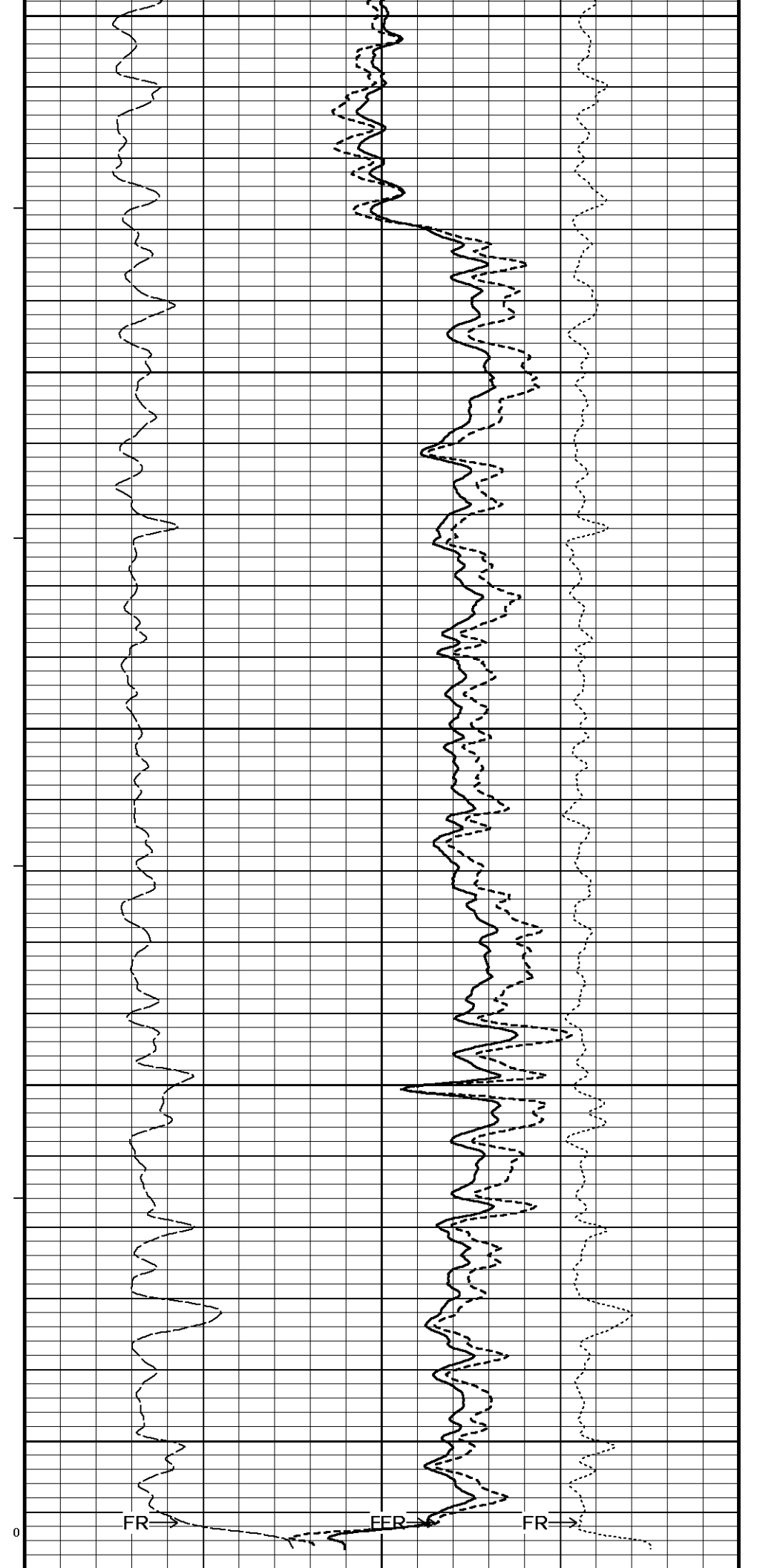
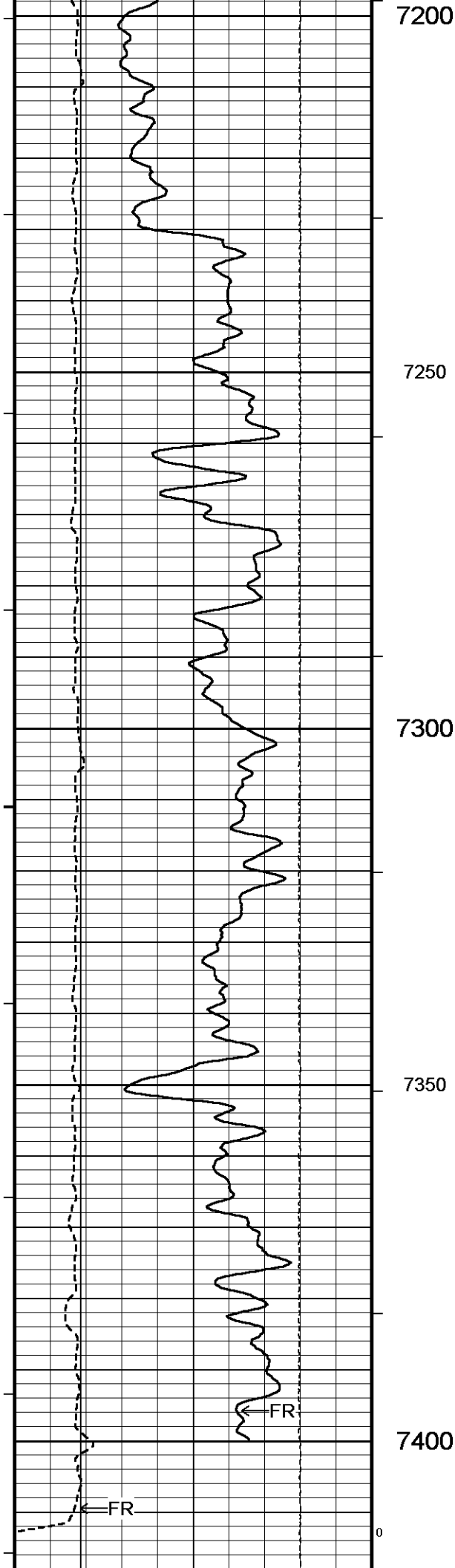


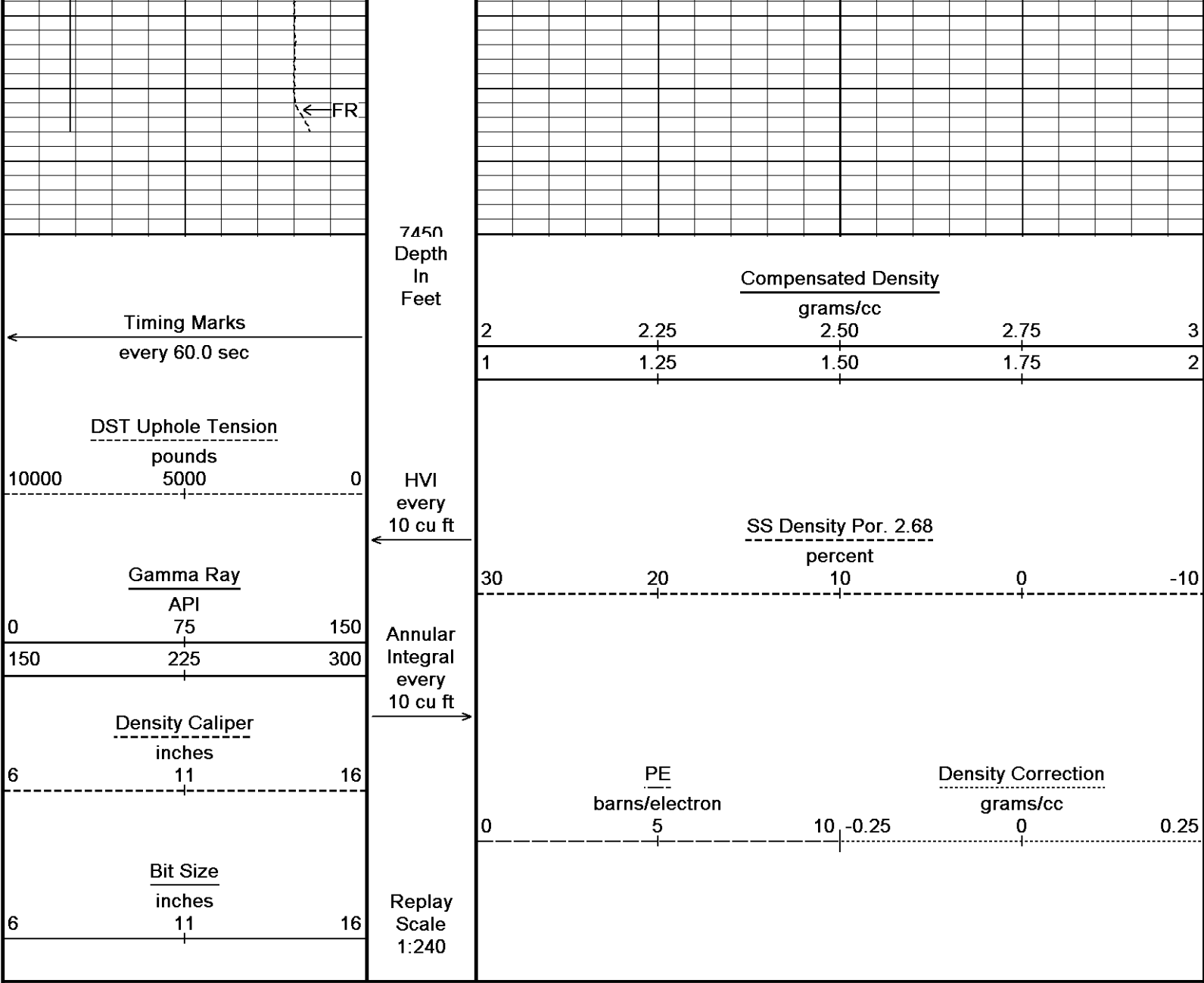












Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 01-FEB-2011 02:41

Filename: C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

Recorded on 01-FEB-2011 01:32

System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

↑

5 INCH MAIN LOG

↑

BEFORE SURVEY CALIBRATION

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

General Constants All 000

Last Edited on 31-JAN-2011,22:51

General Parameters		
Mud Resistivity	4.600	ohm-metres
Mud Resistivity Temperature	70.000	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	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 31-JAN-2011
Reading No	Measured	Calibrated (lbs)	
1	16500.00	250.00	
2	17700.00	350.00	
High Resolution Temperature Calibration MCG-C 192			
			Field Calibration on 31-JAN-2011,20:29
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	
High Resolution Temperature Constants MCG-C 192			
			Last Edited on 13-DEC-2010,09:50
Pre-filter Length	11		
SP Calibration MCG-C 192			
			Field Calibration on 31-JAN-2011,19:52
	Measured	Calibrated (mV)	
Reference 1	102.5	101.0	
Reference 2	-98.8	-101.0	
Gamma Calibration MCG-C 192			
			Field Calibration on 31-JAN-2011 19:52
	Measured	Calibrated (API)	
Background	89	61	
Calibrator (Gross)	1425	973	
Calibrator (Net)	1336	912	
Gamma Constants MCG-C 192			
			Last Edited on 31-JAN-2011,20:29
Gamma Calibrator Number	GRC-072		
Mud Density	1.00	gm/cc	
Caliper Source for Processing	Bit Size		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	
Neutron Calibration MDN-A.B 160			
			Base Calibration on 25-DEC-2010,03:47
			Field Check on 31-JAN-2011 20:01
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near Far	
	3208 98	3714 110	
Ratio	32.812	33.764	
Field Calibrator at Base			
		Calibrated (cps)	
		1323 1983	
Ratio		0.667	
Field Check			
		Calibrated (cps)	
		1290 1990	
Ratio		0.648	
Neutron Constants MDN-A.B 160			
			Last Edited on 26-JAN-2011,15:55
Neutron Source Id	1056		
Neutron Jig Number	5922		
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	7.00	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	
Formation Fluid Salinity Source	None		

Formation Fluid Salinity Source	None				
Formation Fluid Salinity	N/A			kppm	
Barite Mud Correction	Not Applied				
FE Calibration MFE-A.A 85				Base Calibration on 04-JAN-2011 14:22 Field Check on 31-JAN-2011 22:14	
Base Calibration					
	Measured	Calibrated (ohm-m)			
Reference 1	0.0	0.0			
Reference 2	968.2	126.8			
Base Check		280.9			
Field Check		281.2			
FE Constants MFE-A.A 85				Last Edited on 31-JAN-2011,20:28	
Running Mode	No Sleeve				
MFE K Factor	0.1268				
Caliper Source for FE correction	Density Caliper				
Caliper Value for FE correction	N/A	inches			
Rm Source for FE correction	Temperature Corr				
Temp. for Rm Corr.	MCG External Temperature				
Stand-off	0.5	inches			
High Resolution Temperature Calibration MAI-B.A 212				Field Calibration on 25-JAN-2011,16:12	
	Measured	Calibrated(Deg F)			
Lower	10.00	50.00			
Upper	100.00	212.00			
High Resolution Temperature Constants MAI-B.A 212				Last Edited on 03-JAN-2011,01:08	
Pre-filter Length	11				
Induction Calibration MAI-B.A 212				Base Calibration on 12-NOV-2010,10:48 Field Check on 31-JAN-2011 22:16	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	16.6	473.9	9.3	966.2	
2	6.2	387.5	7.6	821.4	
3	3.9	263.1	5.2	566.0	
4	2.0	132.9	2.6	279.2	
Array Temperature		71.2	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	13.6	3846.3	
2	0.0	0.0	29.7	3492.1	
3	0.0	0.0	27.6	3024.0	
4	0.0	0.0	19.6	2088.5	
Deep	0.0	0.0	17.0	2015.3	
Medium	0.0	0.0	39.6	3941.2	
Shallow	0.0	0.0	44.2	5105.8	
Array Temperature		0.0	57.0	Deg F	
Induction Constants MAI-B.A 212				Last Edited on 31-JAN-2011,20:28	
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.	MCG External Temperature				
Squasher Start	0.0020	mhos/metre			
Squasher Offset	N/A	mhos/metre			

### Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

### Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

### Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

### Caliper Calibration MPD-B 167

Base Calibration on 21-JAN-2011 16:11  
Field Calibration on 25-JAN-2011,16:15

#### Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18525	4.00
2	27040	5.96
3	34832	7.98
4	43072	9.86
5	52544	11.88
6	N/A	N/A

#### Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.05	5.96

### Photo Density Calibration MPD-B 167

Base Calibration on 21-JAN-2011 15:55  
Field Check on 31-JAN-2011 22:12

#### Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	48339	18513	53115	19186
Reference 2	22777	3049	25020	2536

#### Field Check at Base

1168.2	1745.6
--------	--------

#### Field Check

1174.5	1744.2
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#### PE Calibration

Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	216	1046		
Reference 1	14699	48168	0.307	0.320
Reference 2	5890	22643	0.263	0.272

#### Field Check at Base

216.3	1045.7
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#### Field Check

212.6	1046.1
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### Density Constants MPD-B 167

Last Edited on 31-JAN-2011,20:25

Aluminium Calibrator Number	507	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.27	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)	
2.68	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	

## AFTER SURVEY CALIBRATION

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

FE Check MFE-A.A 85

Before Survey Check 31-JAN-2011 22:14

After Survey Check on 01-FEB-2011 02:40

Before (ohm-m)  
281.2

After (ohm-m)  
280.8

Photo Density Check MPD-B 167

Before Survey Check on 31-JAN-2011 22:12

After Survey Check on 01-FEB-2011 02:38

Density Check

	Near		Far	
	Before	After	Before	After
	1174.5	1172.5	1744.2	1747.9

PE Check

	Before	After
WS	212.6	213.1
WH	1046.1	1045.3

## DOWNHOLE EQUIPMENT

C:\Minimus\Logs\Bill Barrett\GGU FEDERAL 42C-29-691\MAIN2.dta

SHA-F Compact Swivel Head Adaptor

SHA-F 82 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma

MCG-C 192 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Neutron

MDN-A.B 160 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-B 167 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

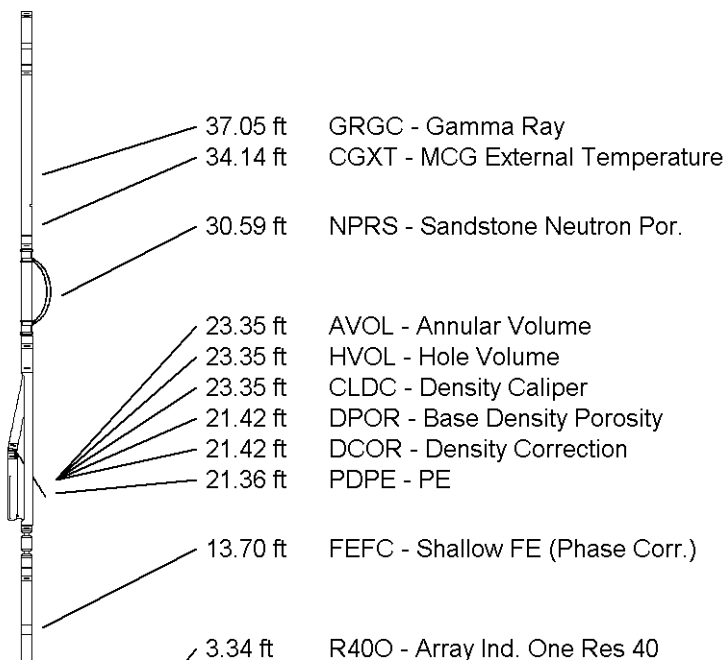
SKJ-E.A Compact Knuckle Joint

SKJ-E.A 114 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric

MFE-A.A 85 LG: 6.03 ft WT: 48.5 lb OD: 2.24 in

Compact Induction



MAI-B.A 212 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 45.08 ft Weight: 352.7 lb



3.34 ft R300 - Array Ind. One Res 30  
3.34 ft RTAO - Array Ind. One Res Rt  
3.34 ft R850 - Array Ind. One Res 85  
3.34 ft R600 - Array Ind. One Res 60  
0.23 ft SPCG - Spontaneous Potential  
Tool Zero (0.13ft from bottom)  
-0.13 ft SMTU - DST Uphole Tension  
All measurements relative to tool zero.

COMPANY	BILL BARRETT CORPORATION
WELL	GGU FEDERAL 42C-29-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6127.00	feet	First Reading	7411.00	
Elevation Drill Floor	6126.00	feet	Depth Driller	7435.00	feet
Elevation Ground Level	6104.00	feet	Depth Logger	7433.00	feet



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COMPENSATED DUAL NEUTRON  
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