



**COMPENSATED PHOTO DENSITY
COMPENSATED DUAL NEUTRON
CORRECTED EXPO LOG**

COMPANY **BILL BARRETT CORPORATION**
 WELL **GGU MILLER 24C-32-691**
 FIELD **MAMM CREEK**
 PROVINCE/COUNTY **GARFIELD**
 COUNTRY/STATE **U.S.A. / COLORADO**
 LOCATION **SHL: 1220' FSL & 2284' FWL**
BHL: 857' FNL & 1990' FWL

SEC 32 TWP 6S RGE 91W Other Services
 MAI/MFE
 API Number 05-045-19429
 Permit Number

Permanent Datum G.L., Elevation 6120 feet
 Log Measured From K.B. @ 22 FEET above Permanent Datum
 Drilling Measured From K.B.

Elevations:
 KB 6142.00
 DF
 GL 6120.00

Date	05-NOV-2010
Run Number	ONE
Depth Driller	7162.00 feet
Depth Logger	7164.00 feet
First Reading	7142.00
Last Reading	789.00
Casing Driller	789.00 feet
Casing Logger	789.00 feet
Bit Size	7.875 inches
Hole Fluid Type	LSND
Density / Viscosity	10.50 lb/USg 60.00 CP
PH / Fluid Loss	9.30 6.20 ml/30Min
Sample Source	FLOW LINE
Rm @ Measured Temp	1.95 @ 86.5 ohm-m
Rmf @ Measured Temp	1.56 @ 86.5 ohm-m
Rmc @ Measured Temp	2.34 @ 86.5 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.926 @186.0 ohm-m
Time Since Circulation	8.5 HOURS
Max Recorded Temp	186.00 deg F
Equipment Name	COMPACT
Equipment / Base	13038 GD_JCT
Recorded By	S.LACKEY
Witnessed By	C.CROW

BOREHOLE RECORD

Last Edited: 06-NOV-2010 01:51

Bit Size inches	Depth From feet	Depth To feet
8.750	789.00	5109.00
7.880	5109.00	7162.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	789.00	36.00

REMARKS

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

HARDWARE: MPD: (1) 8 INCH PROFILE PLATE
 MAI: (1) 0.5 INCH STANDOFF
 MDN: (1) DUAL BOWSPRING

GAMMA NORMALIZED TO OFF SET WELL

DENSITY PROCESSED USING RIB EXPO SCRIPT FOR CORRECTION OF TOOL ROLL OVER AND SONDE SKEW AT 5310-5320, 5928-6020, 6330-6320 AND 6520-6660.

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.

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.92" (9 5/8", 36 LB/FT CASING)

UNDERGAUGED SECTIONS FROM 6800 FT TO 6400 FT REPEATED TO VERIFY.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2430 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1727 CU.FT.

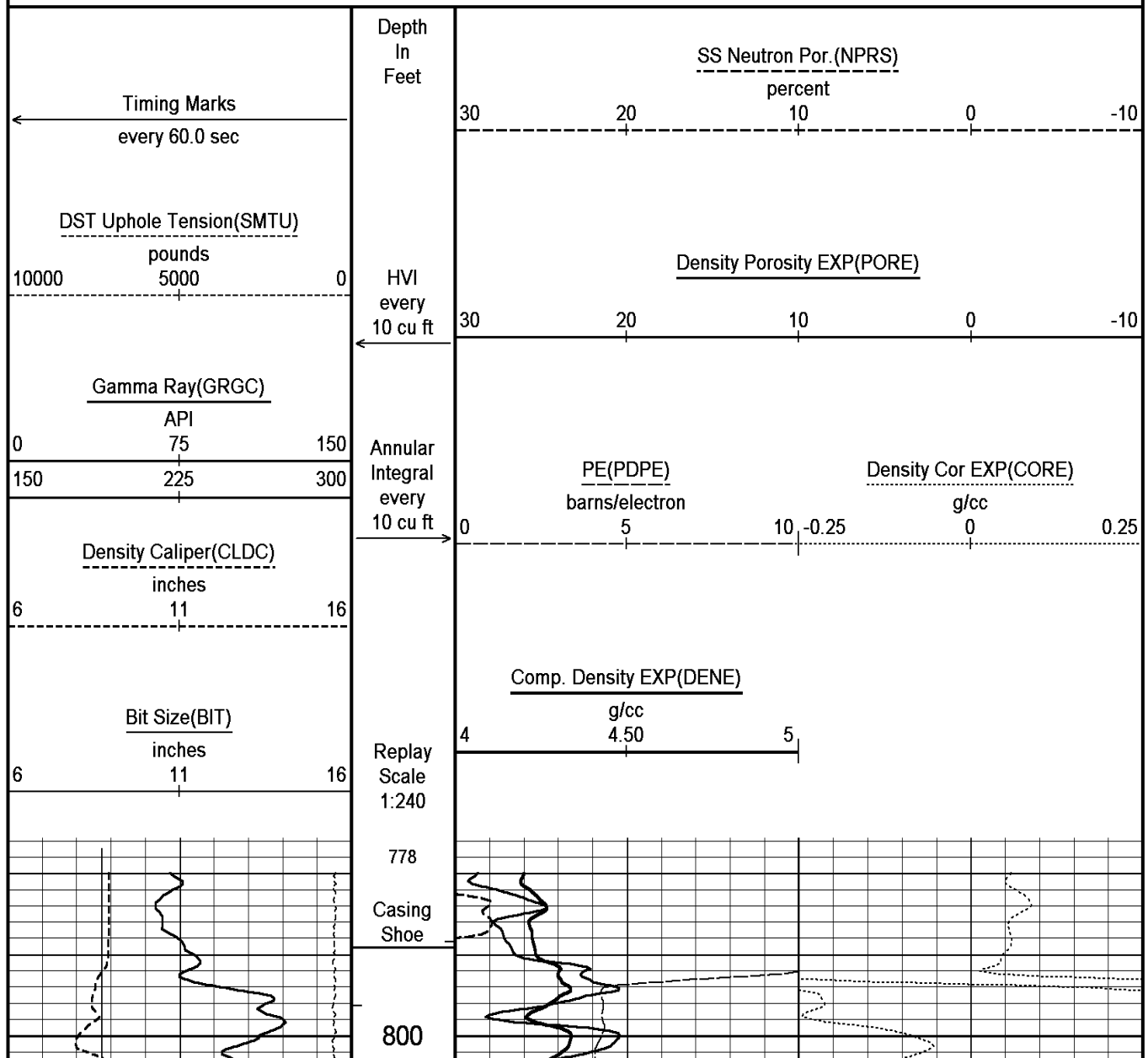
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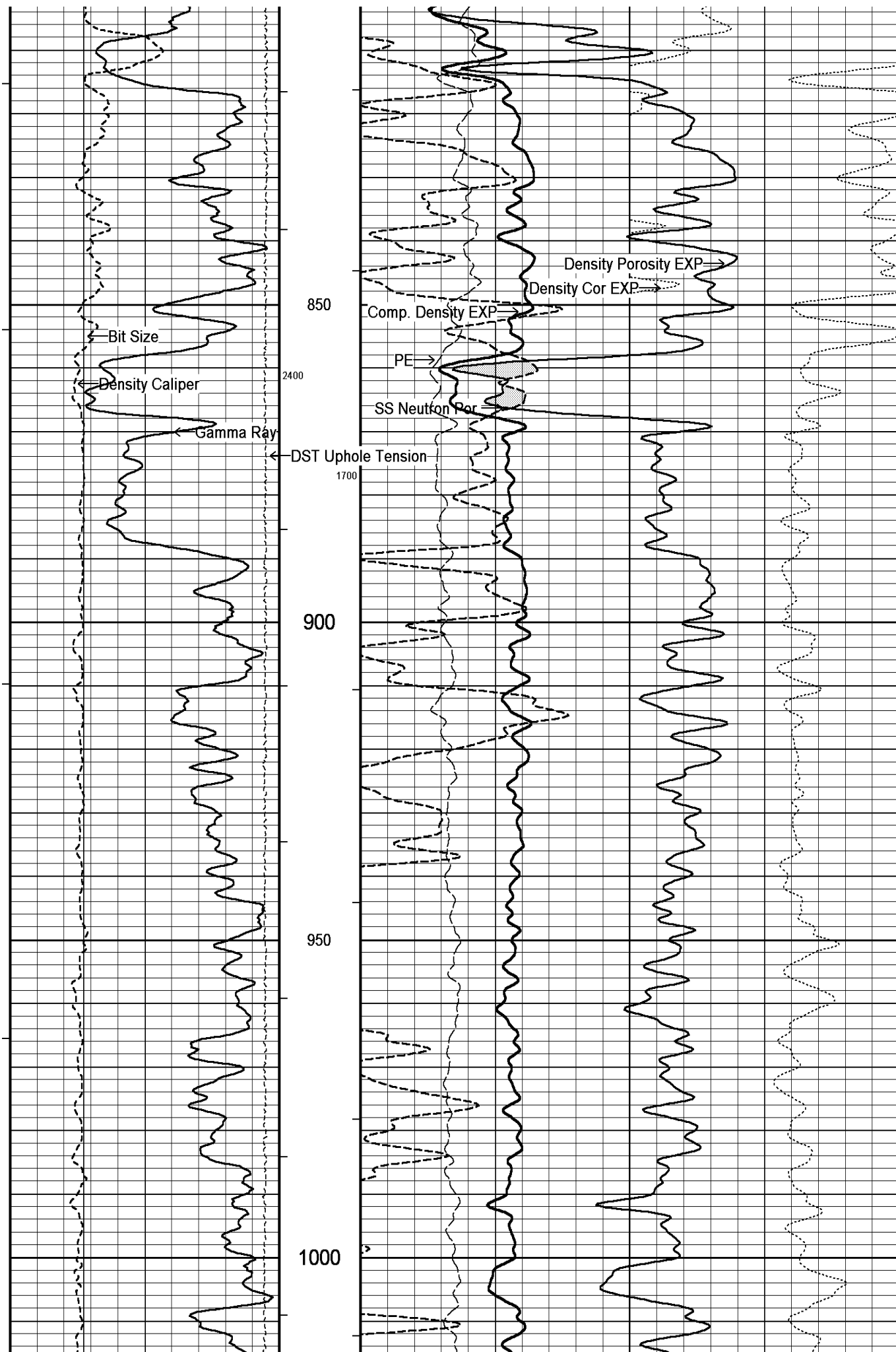
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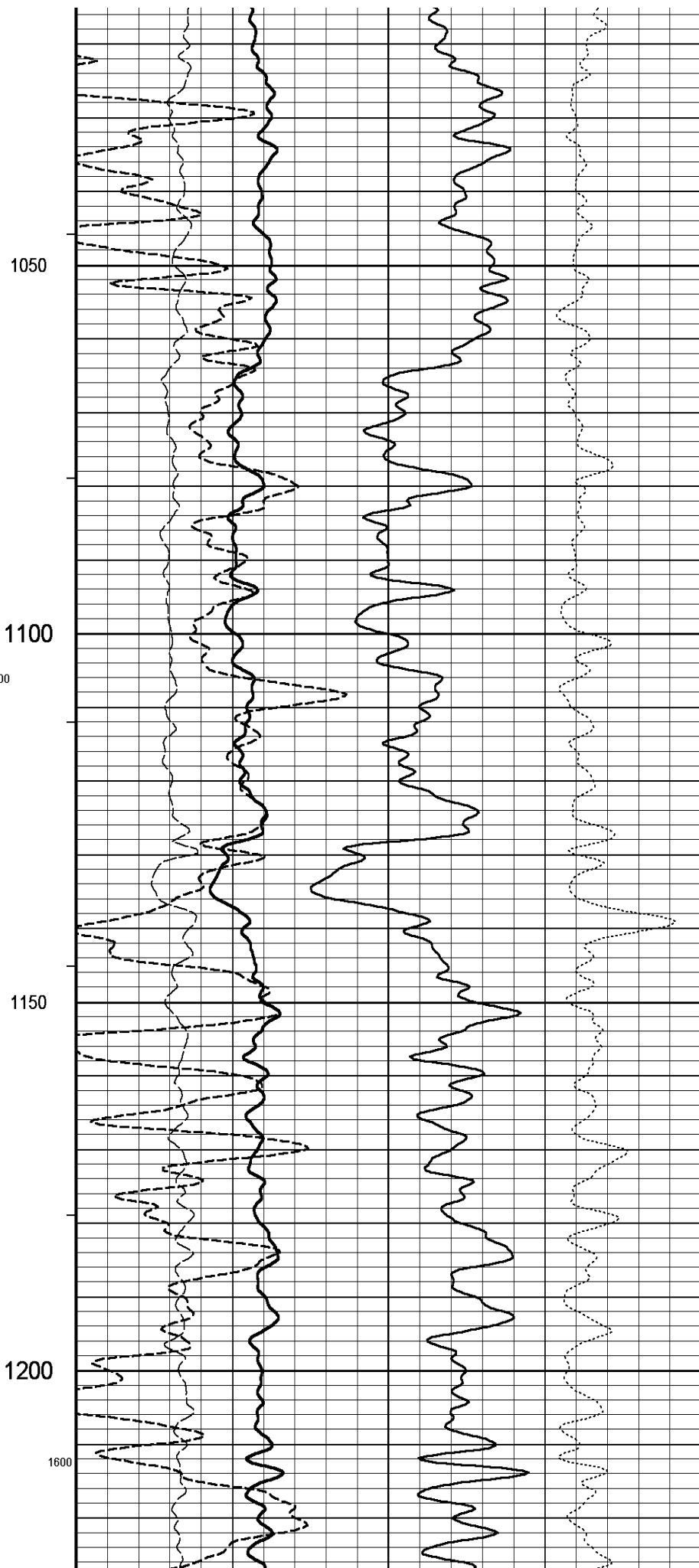
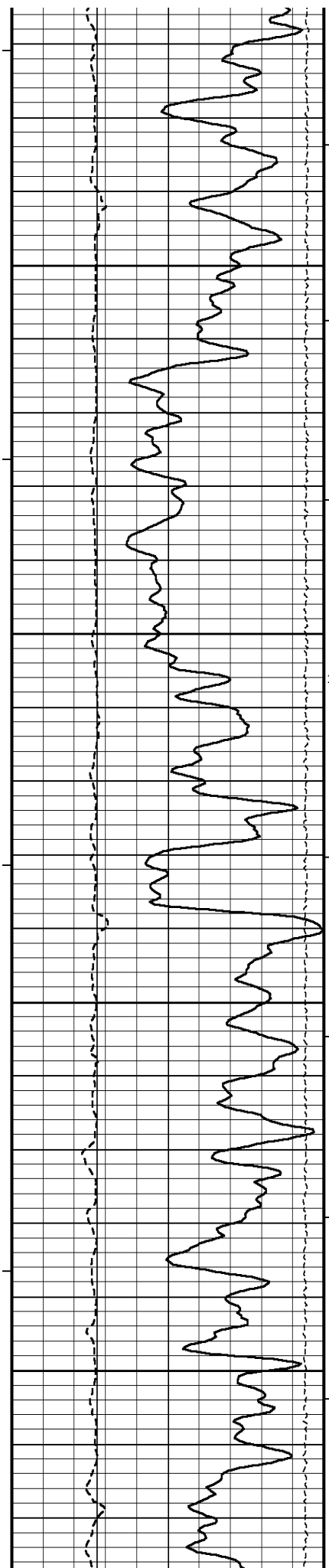
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

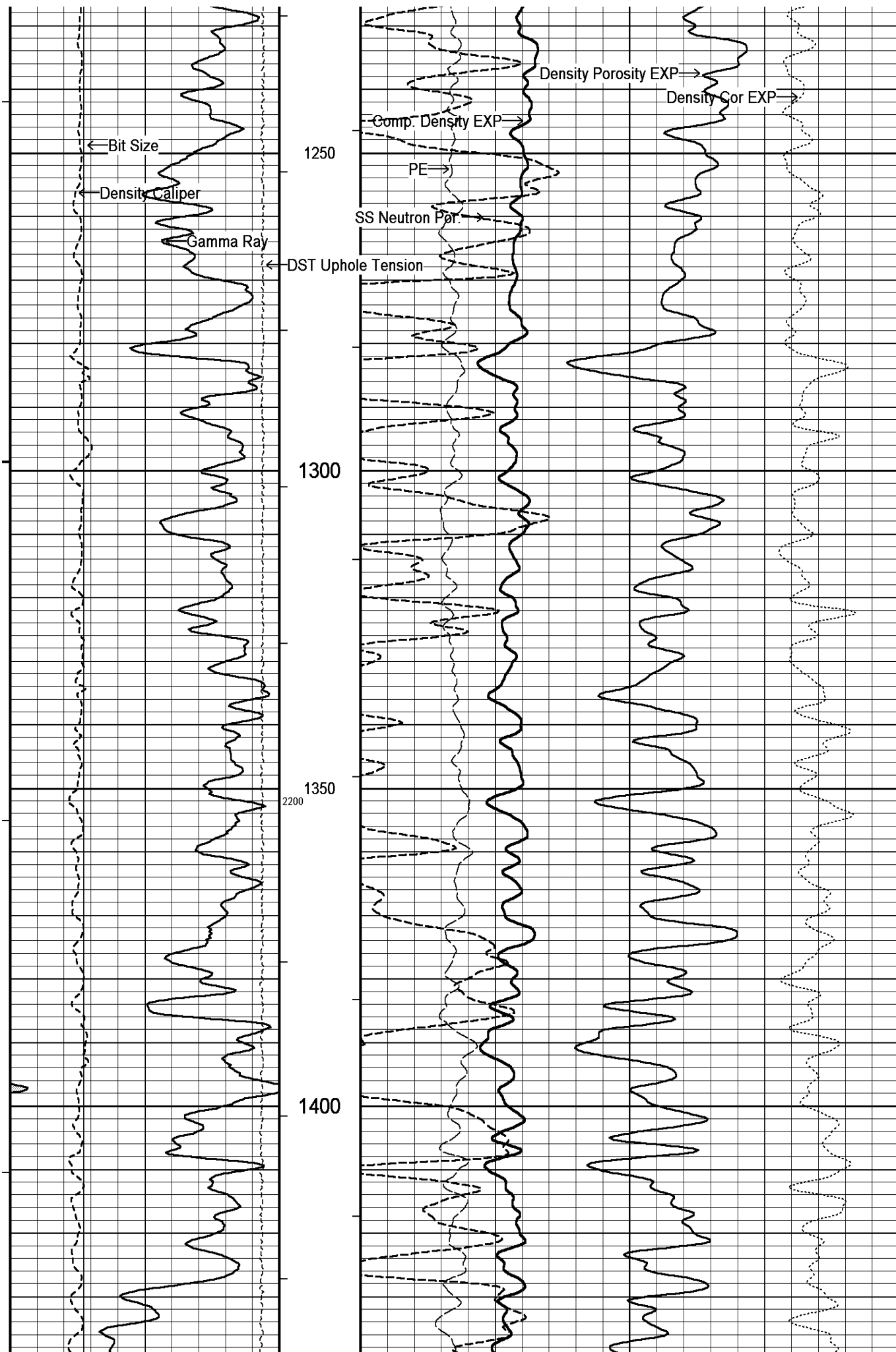
5 INCH MAIN LOG

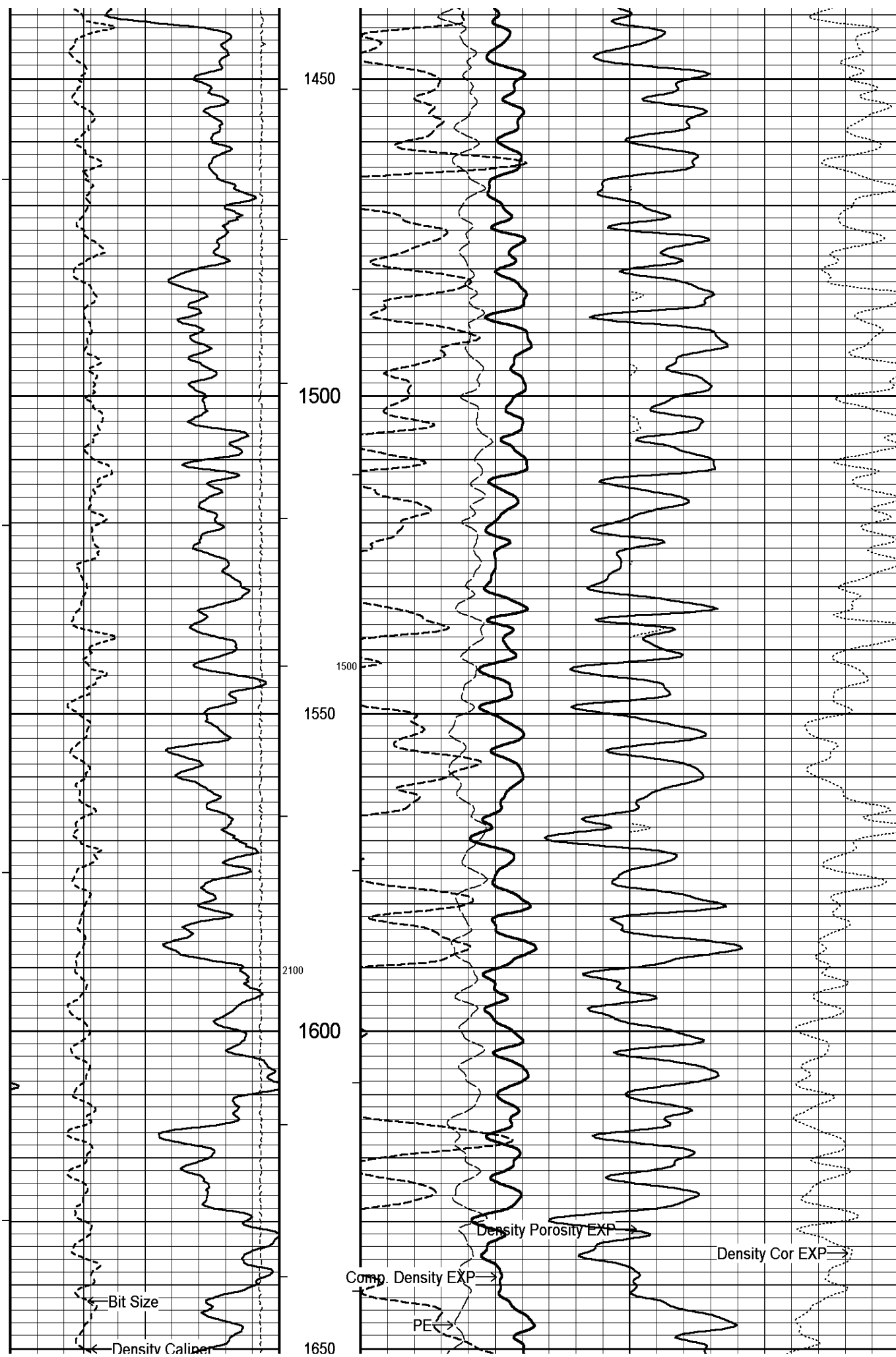
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 System Versions: Plotted with 10.08.1568

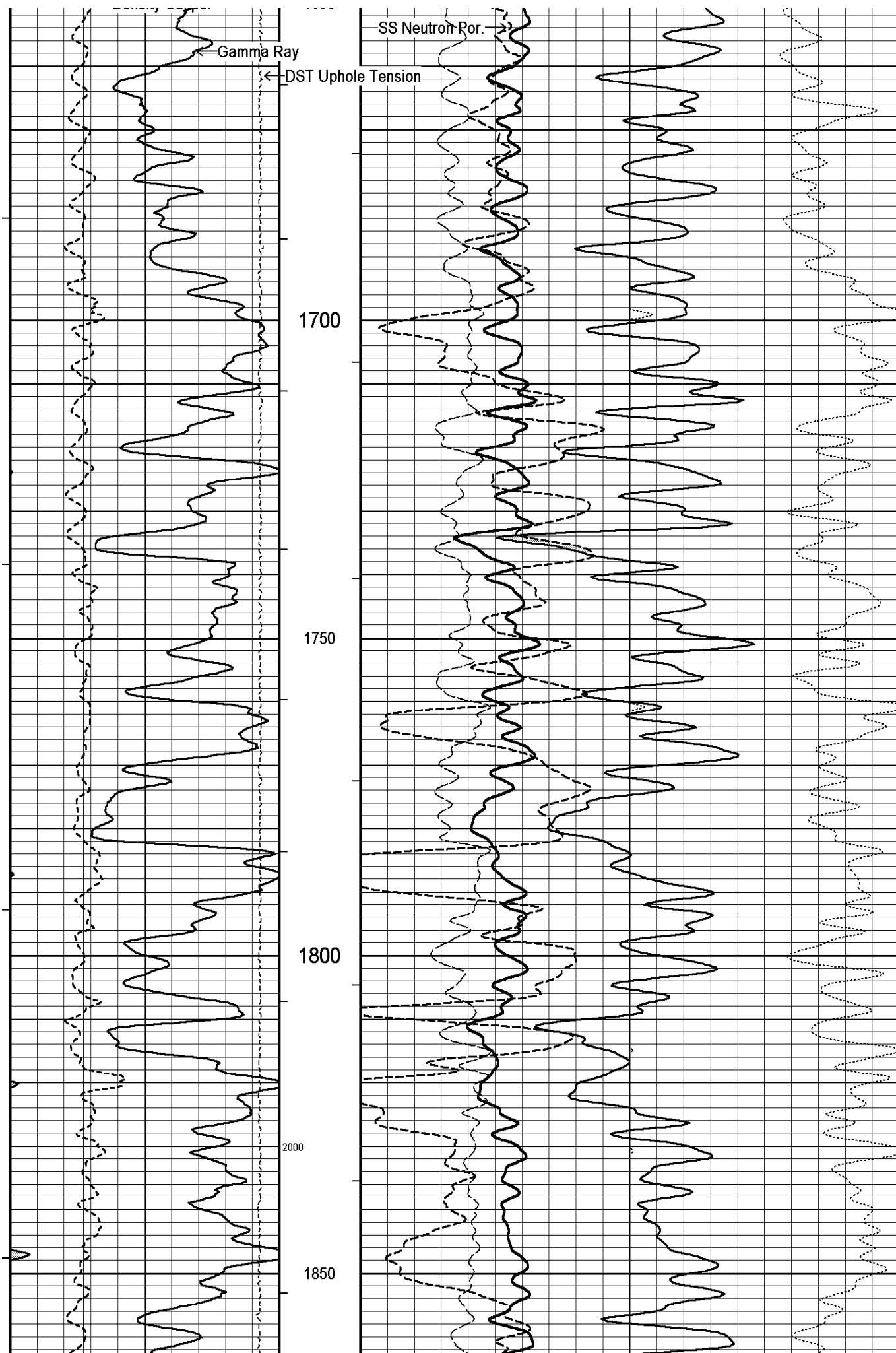


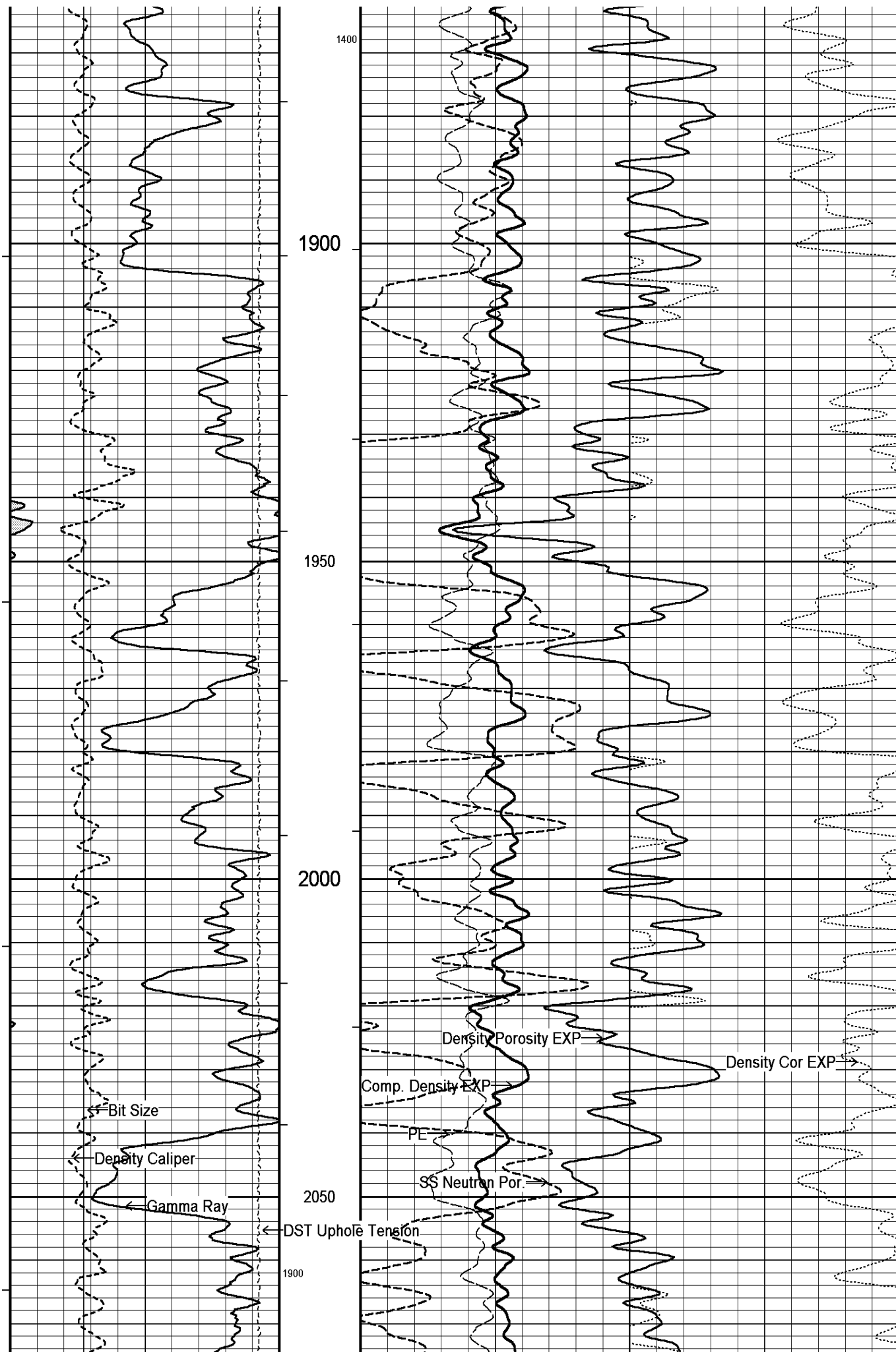


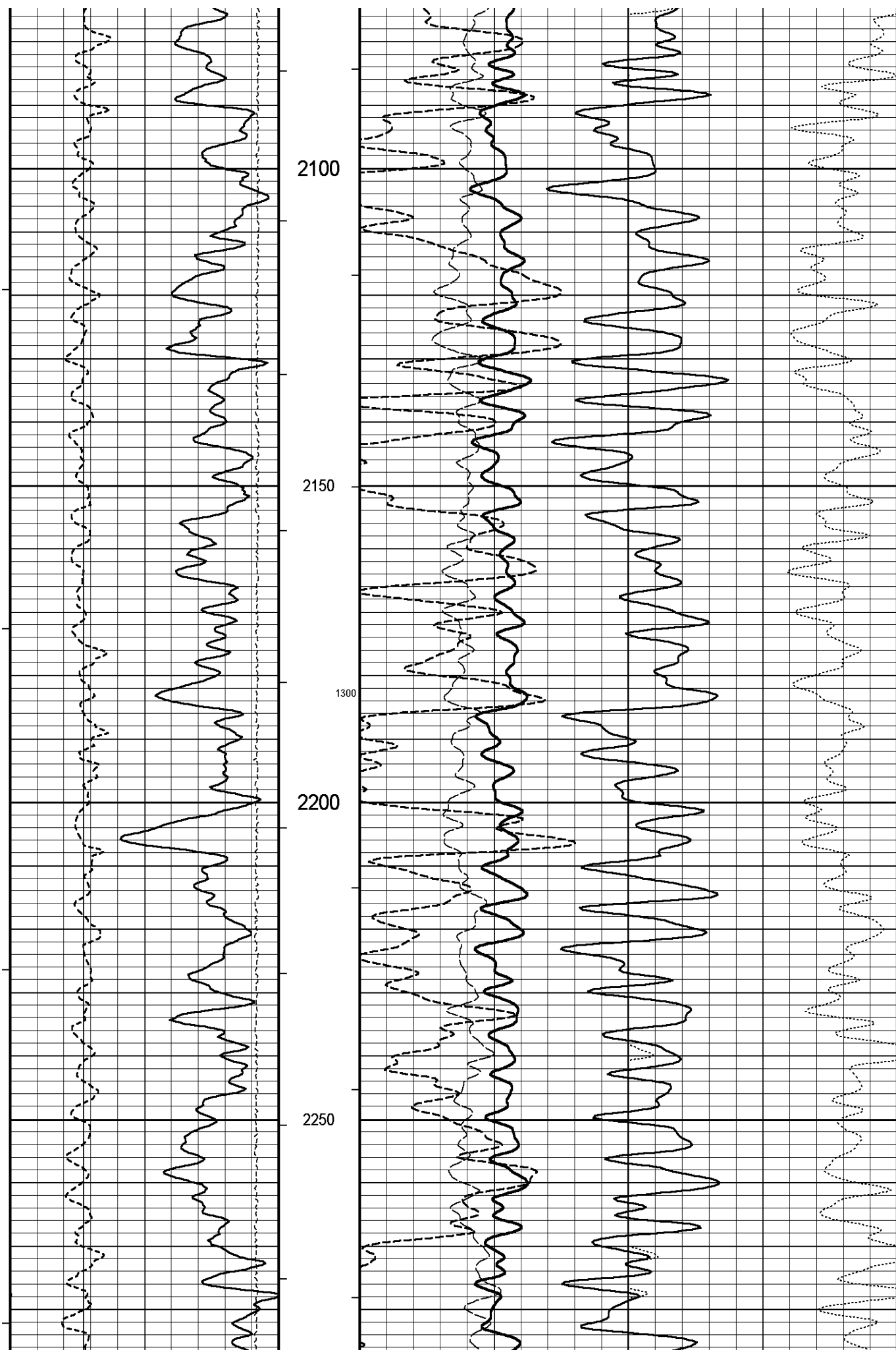


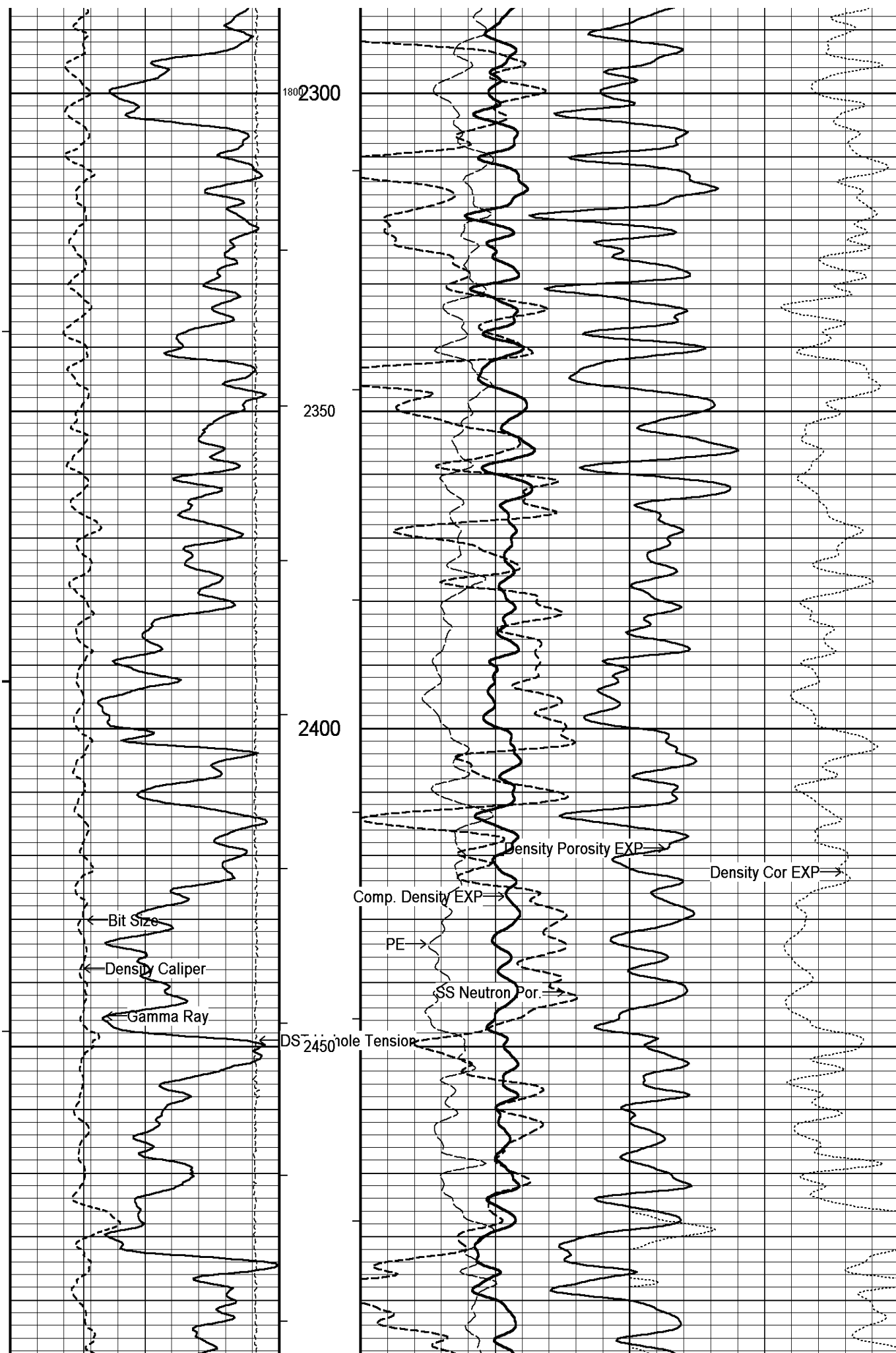


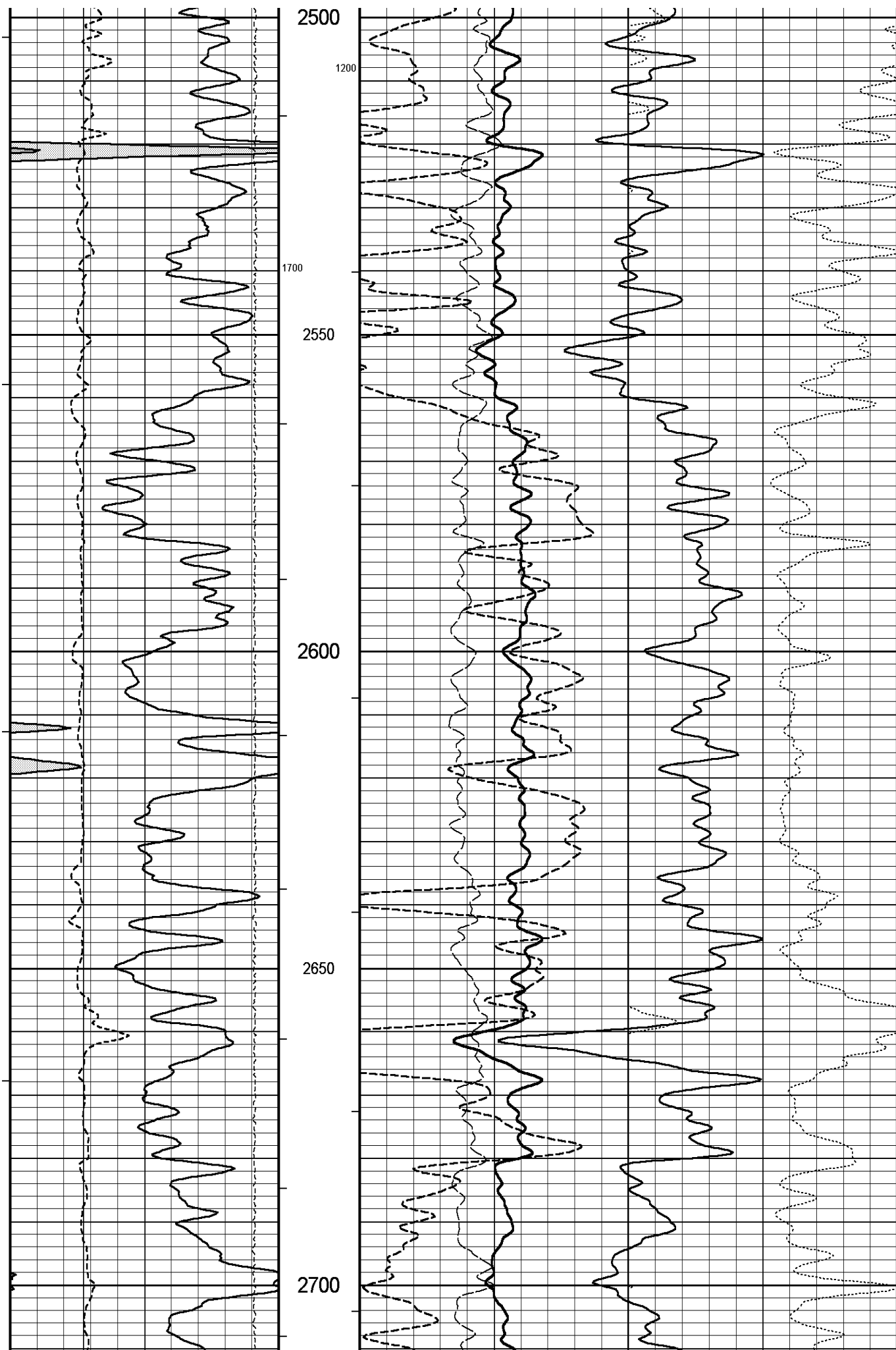


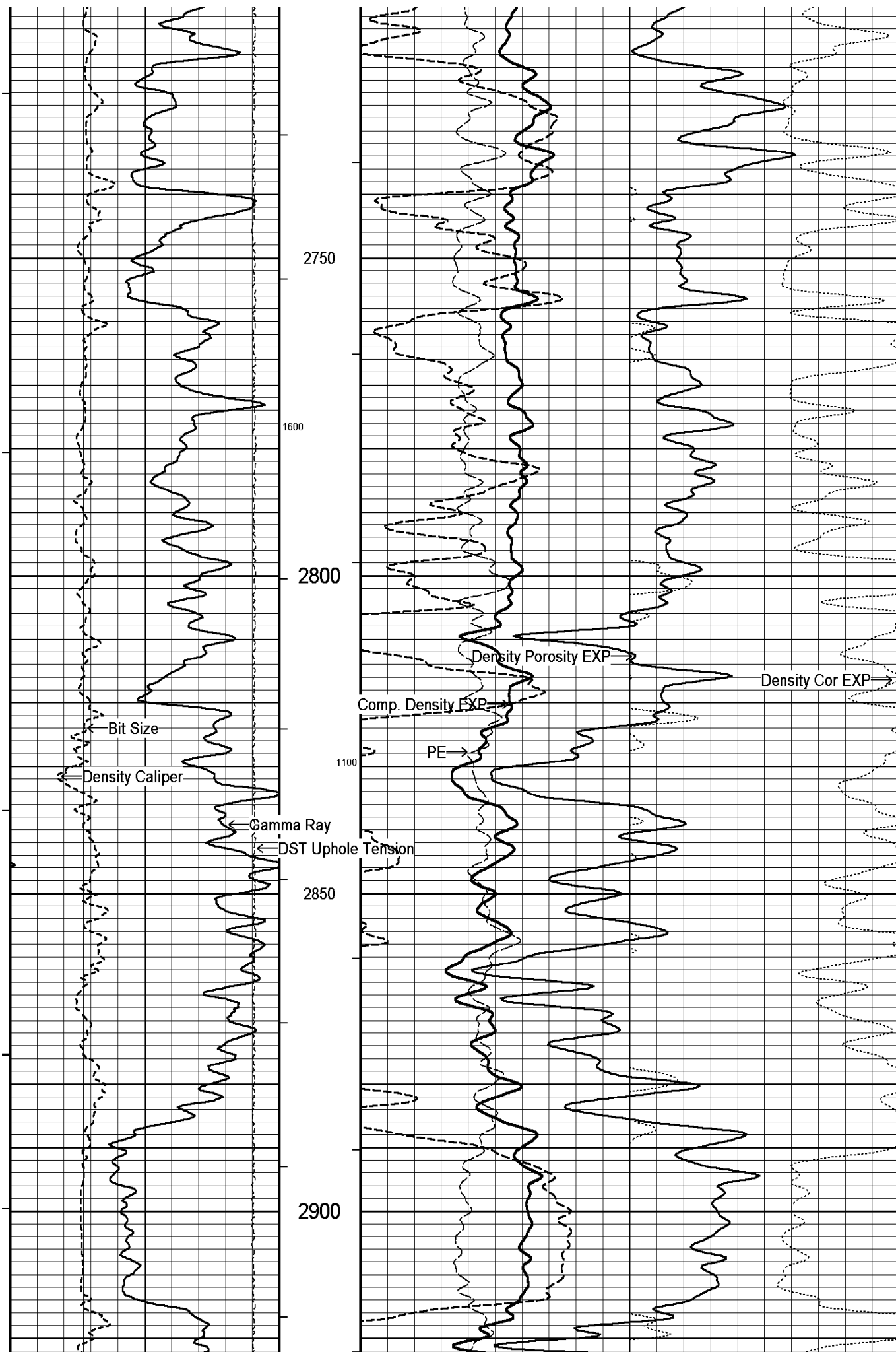


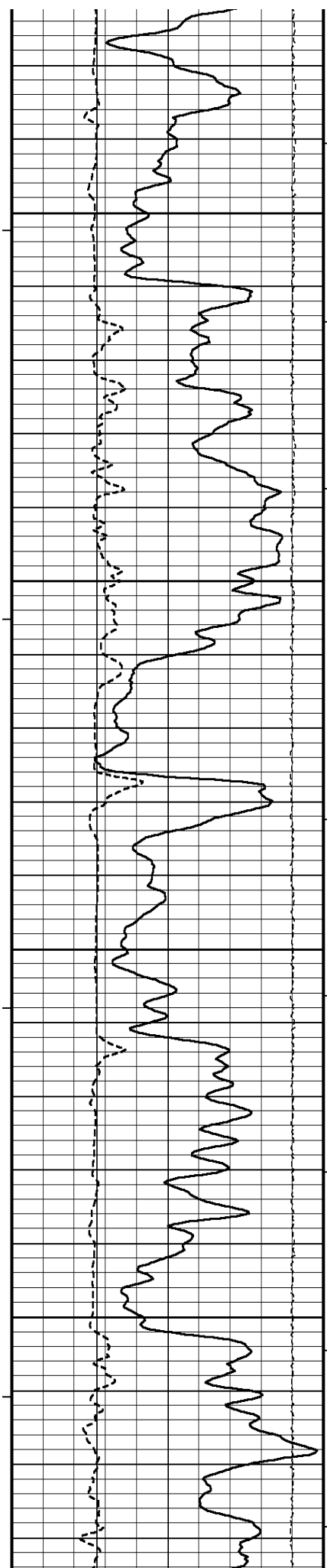












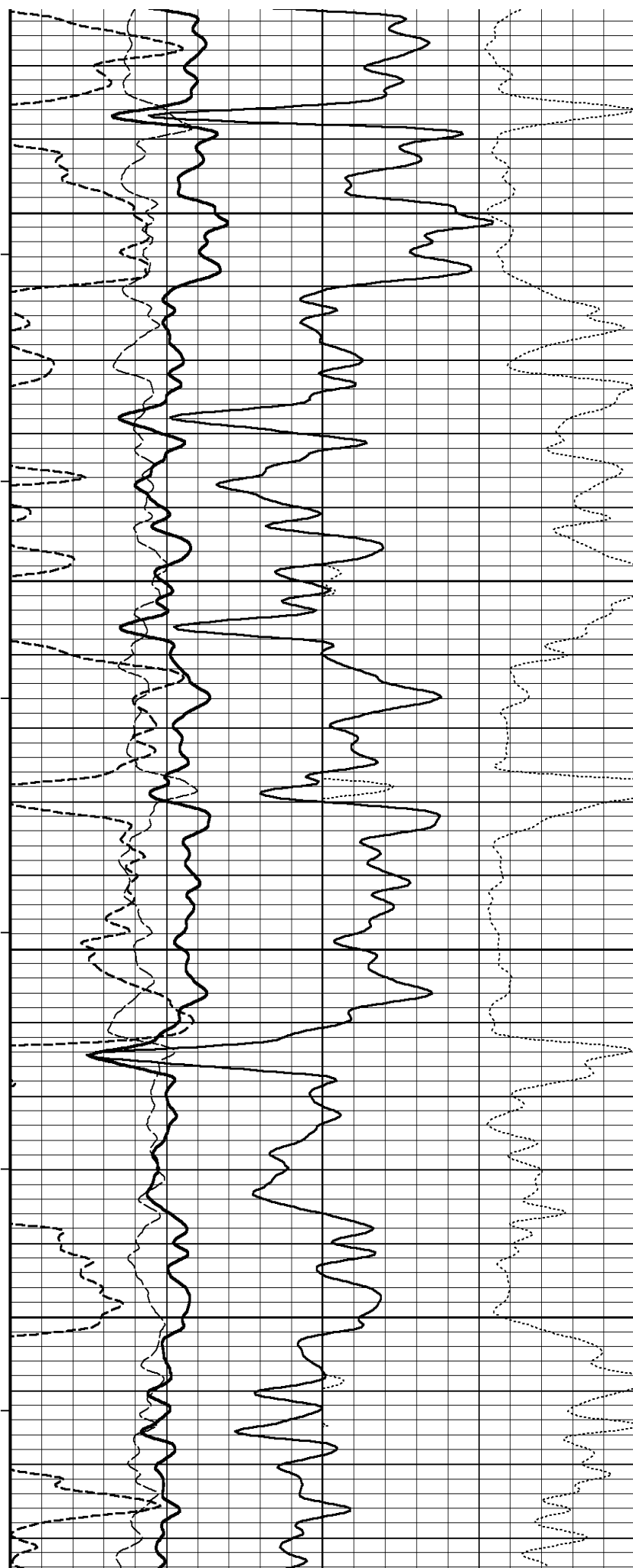
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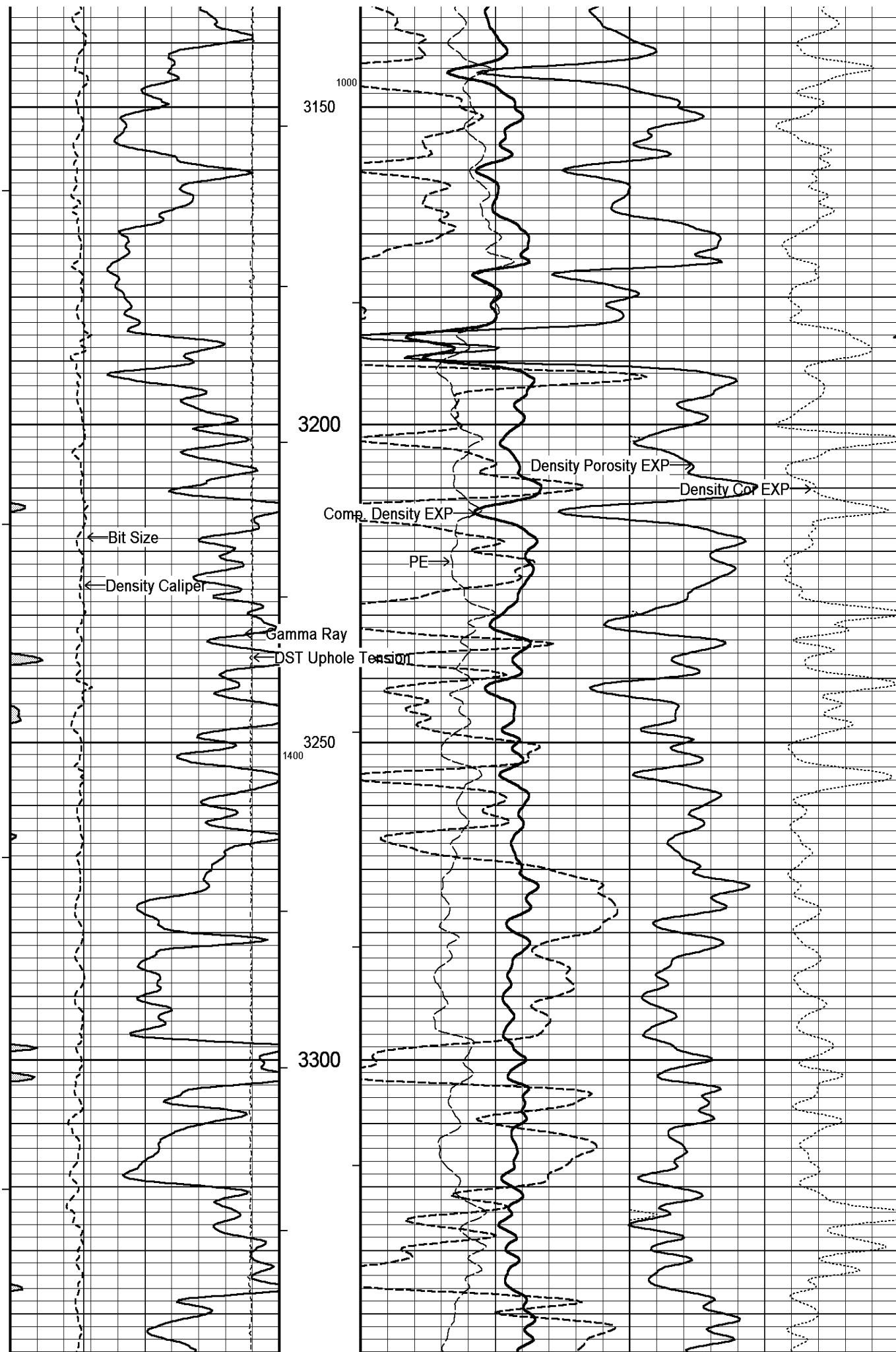
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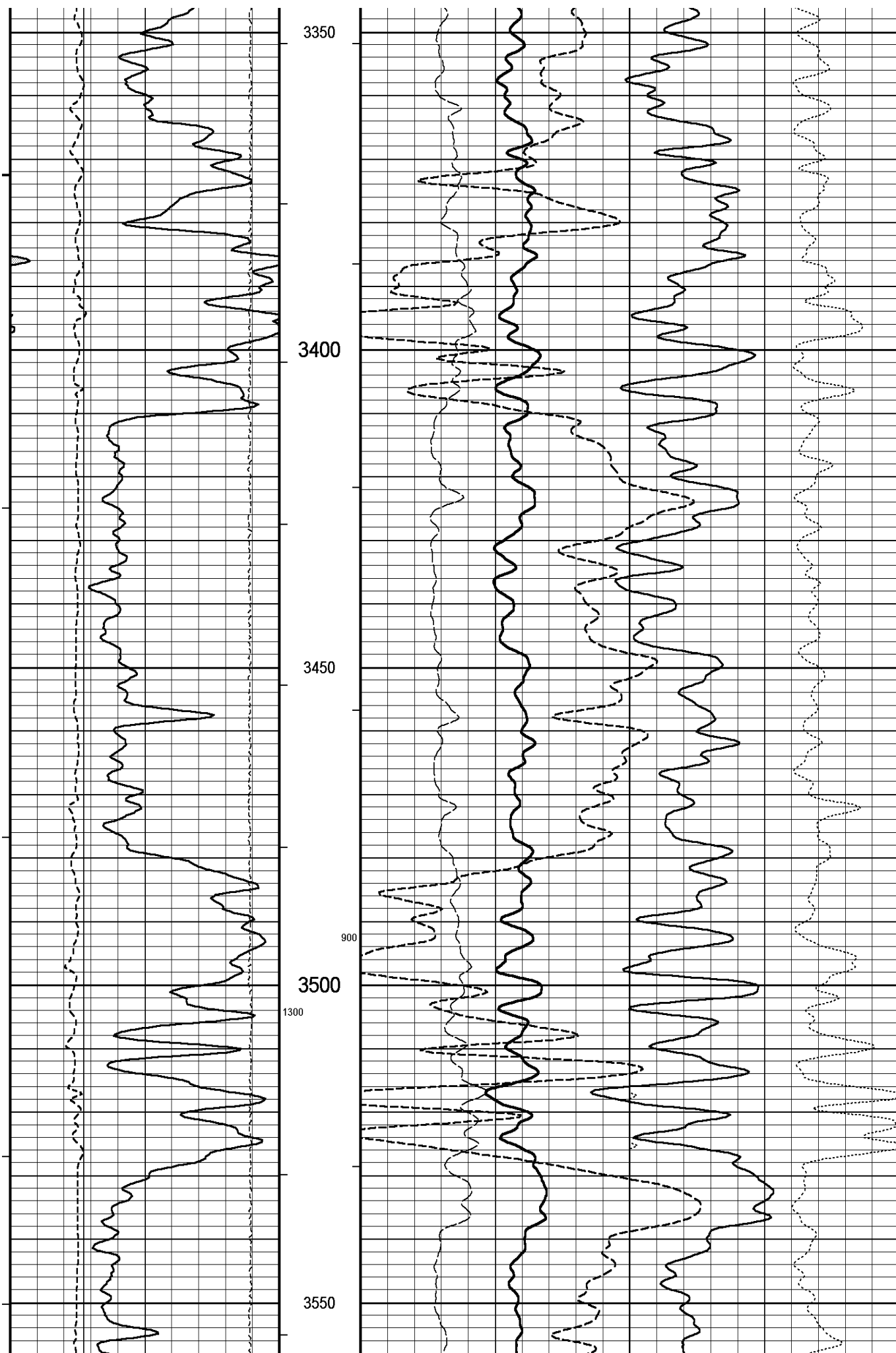
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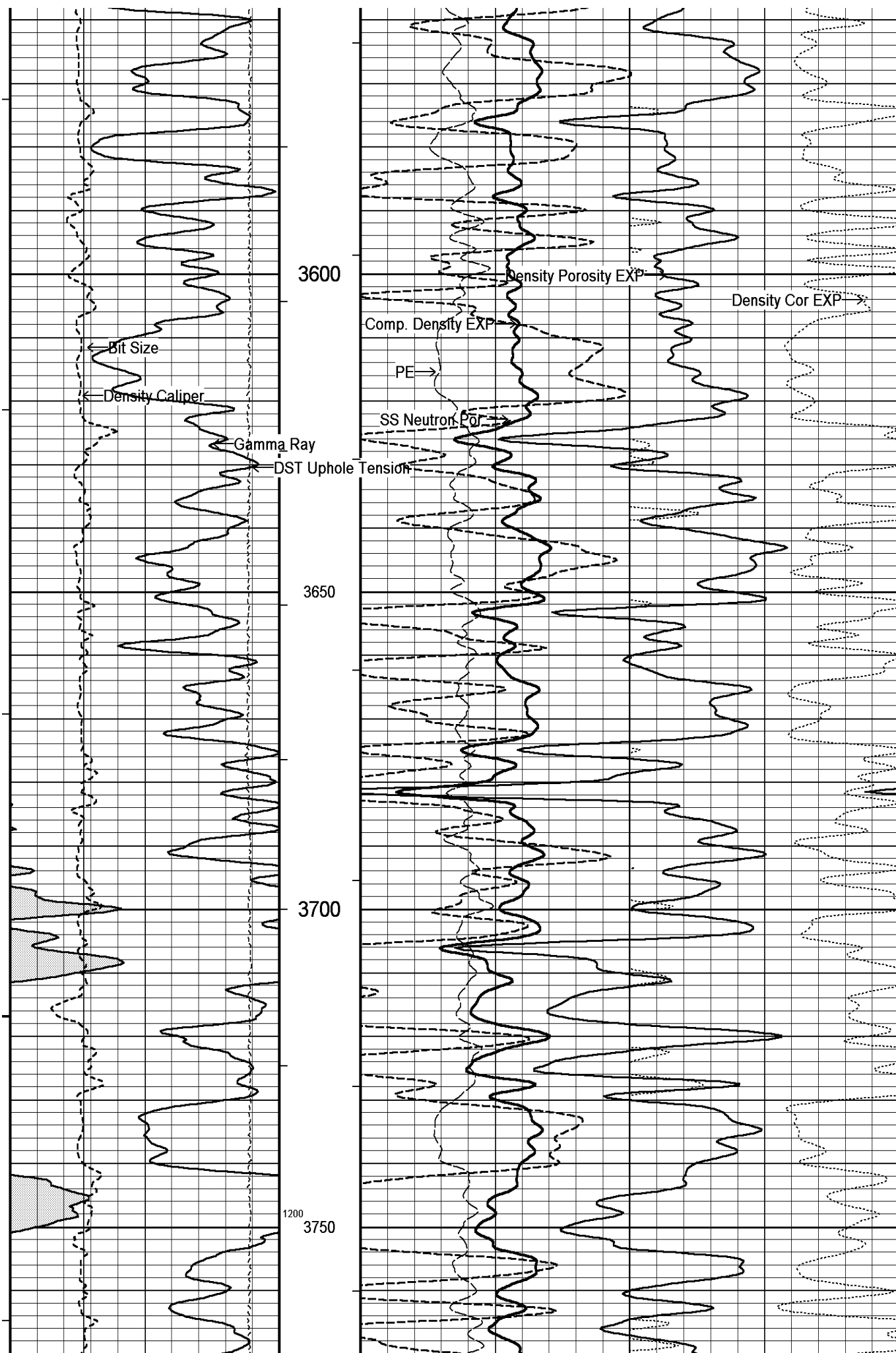
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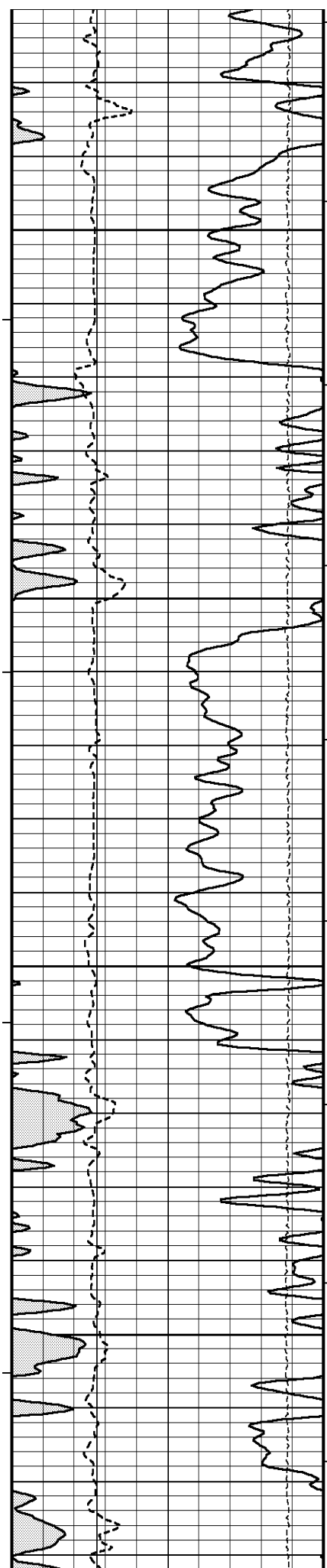
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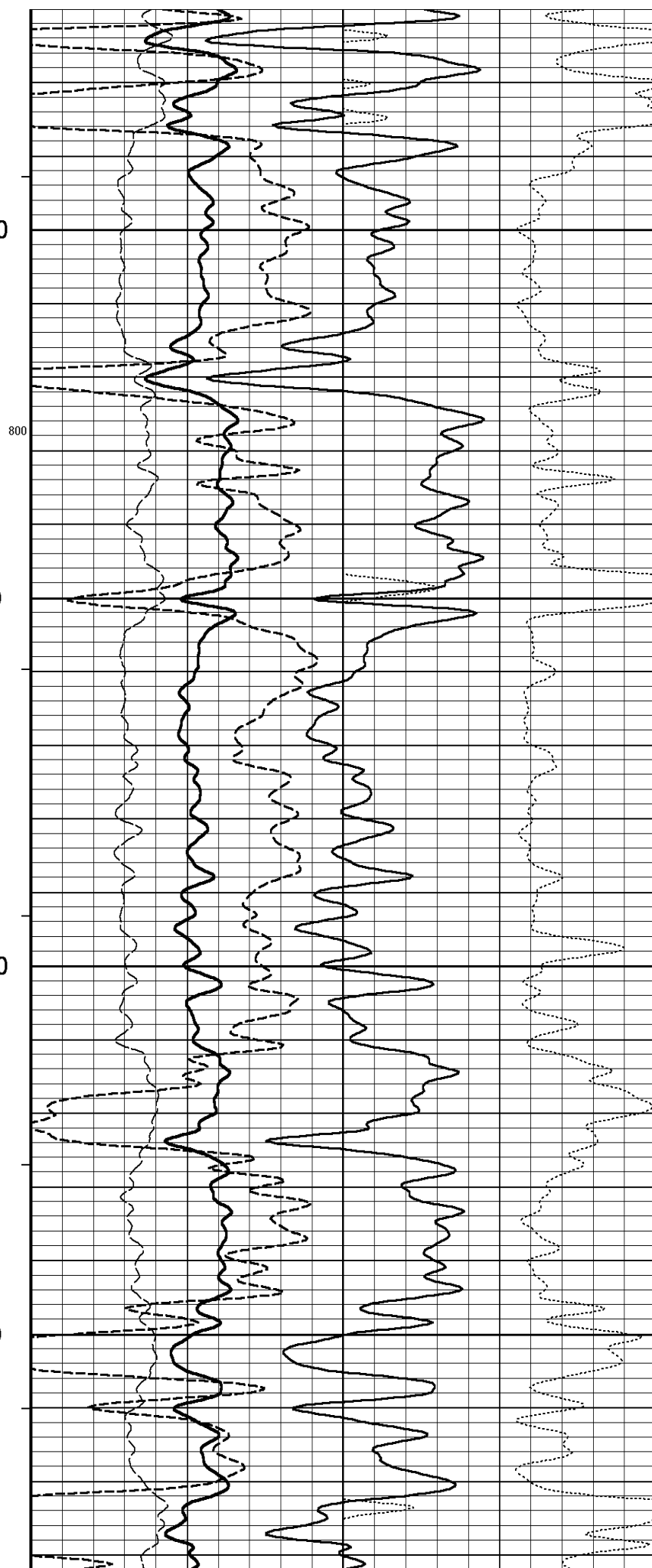


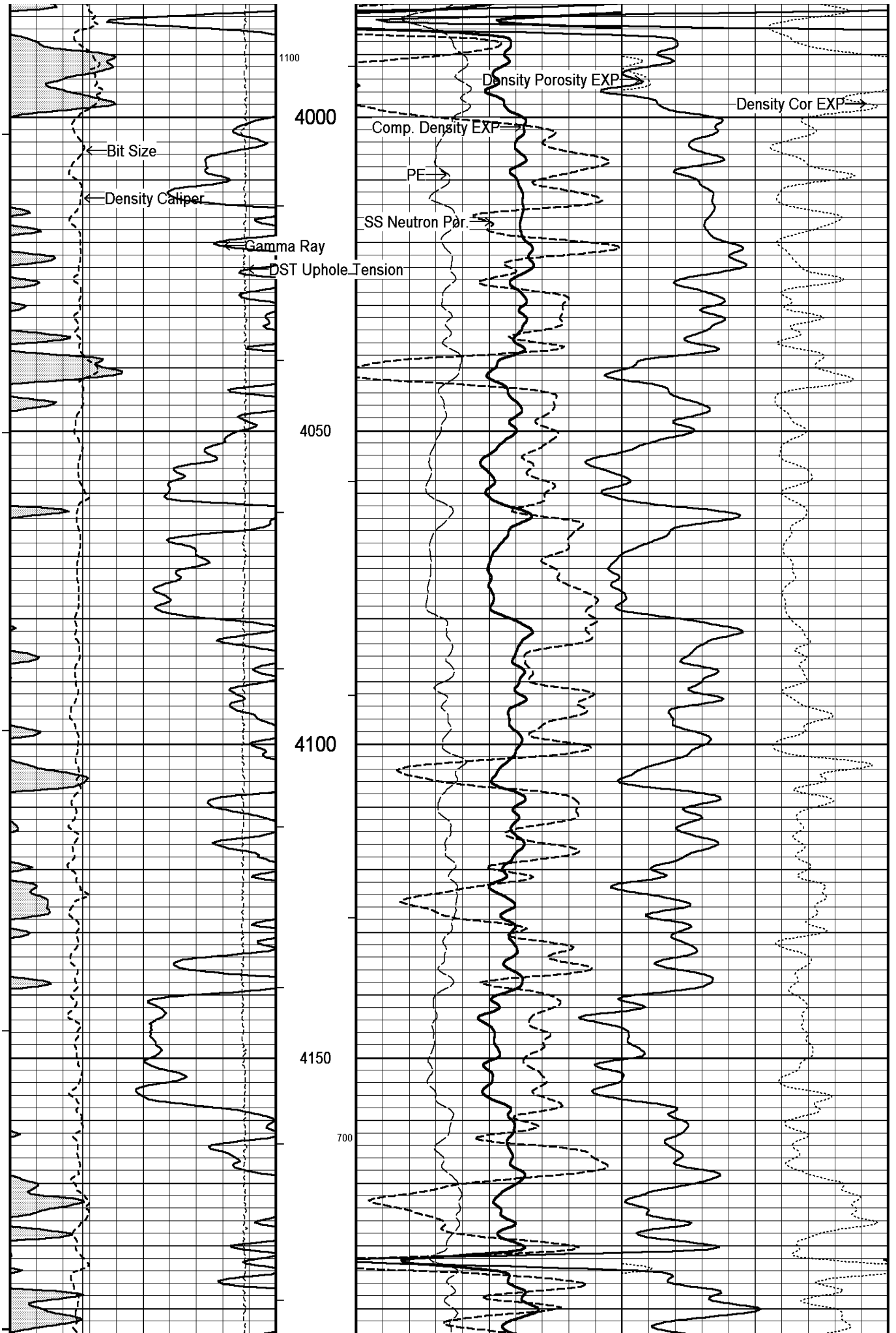
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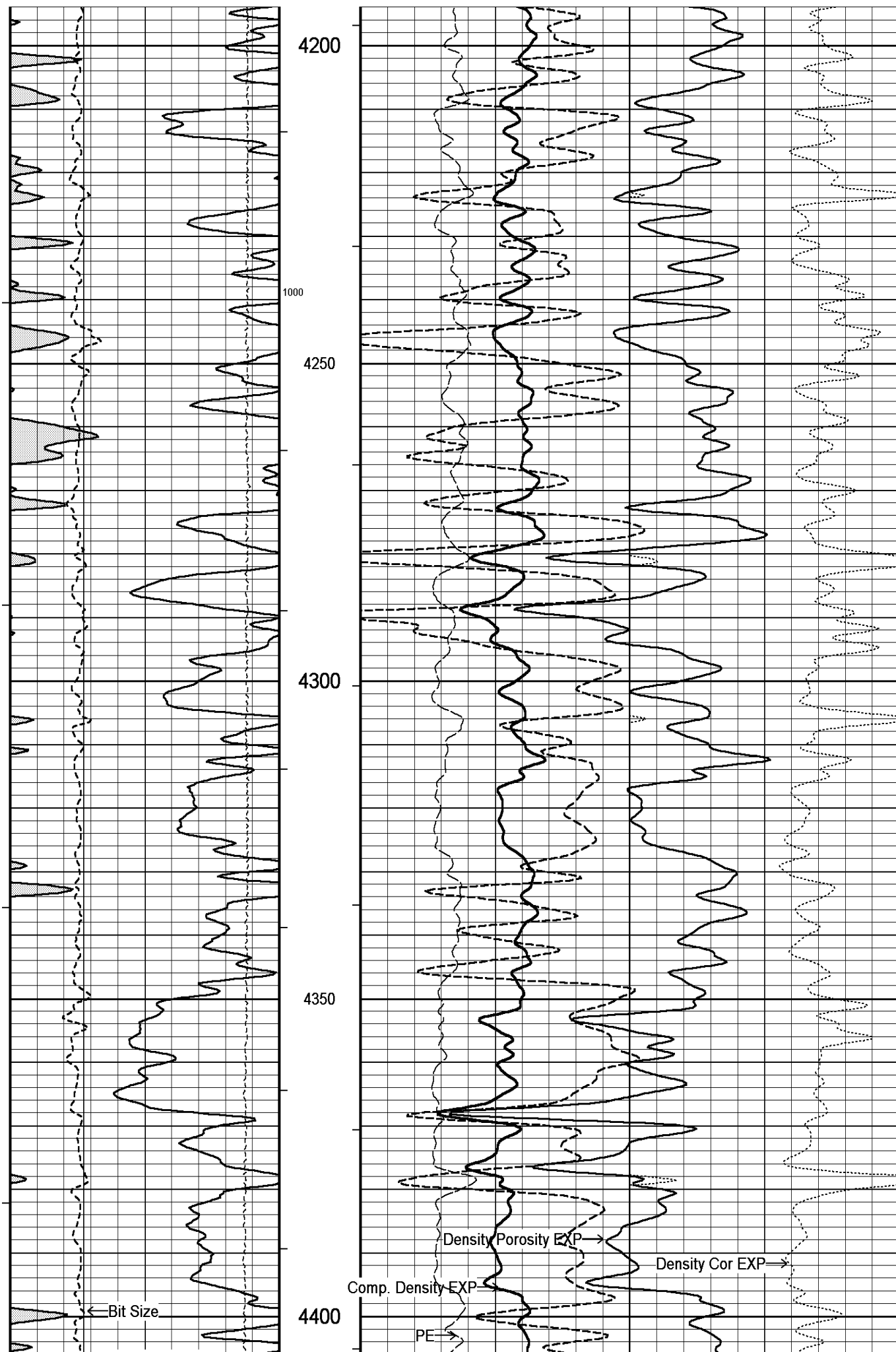
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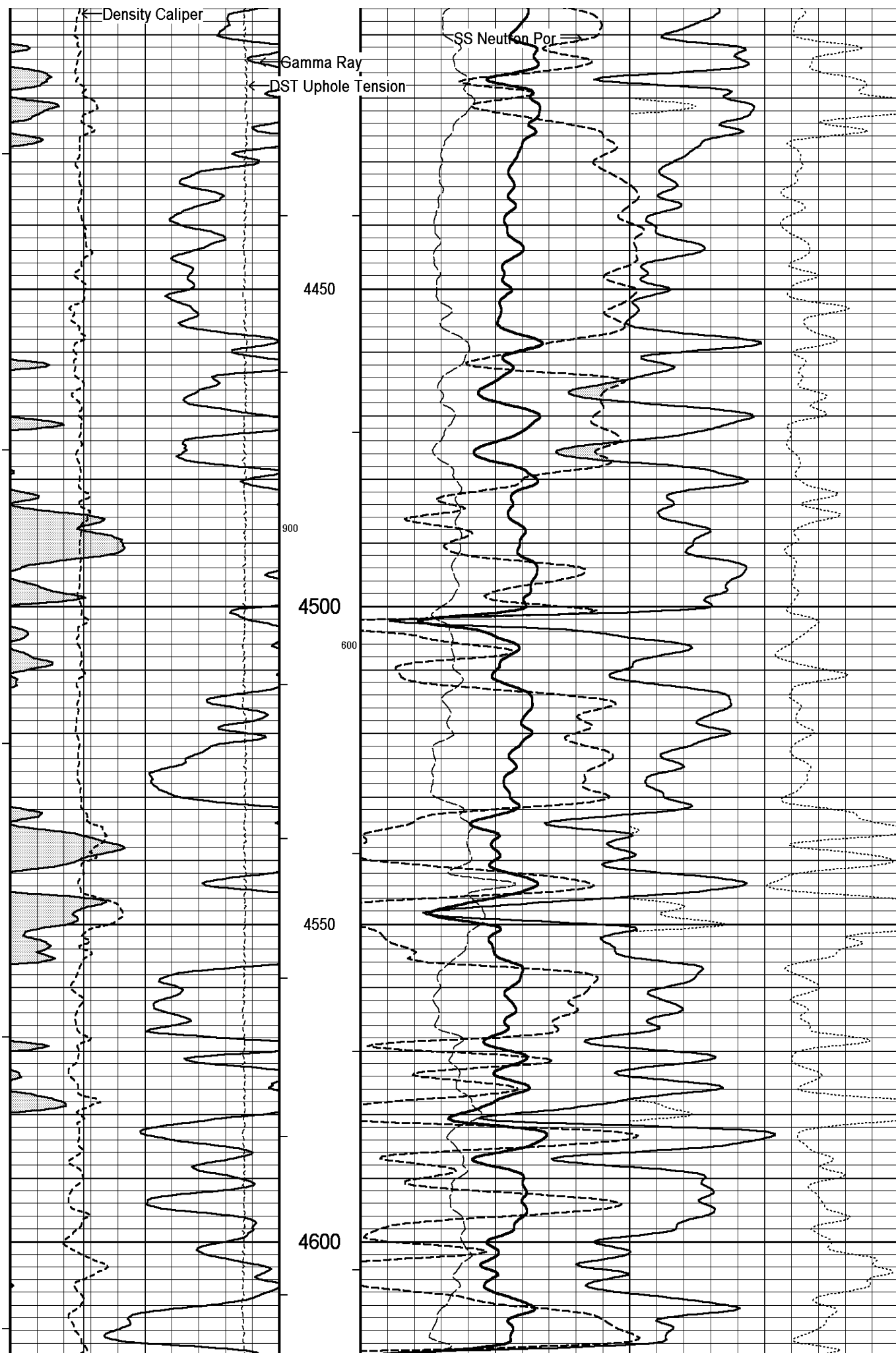
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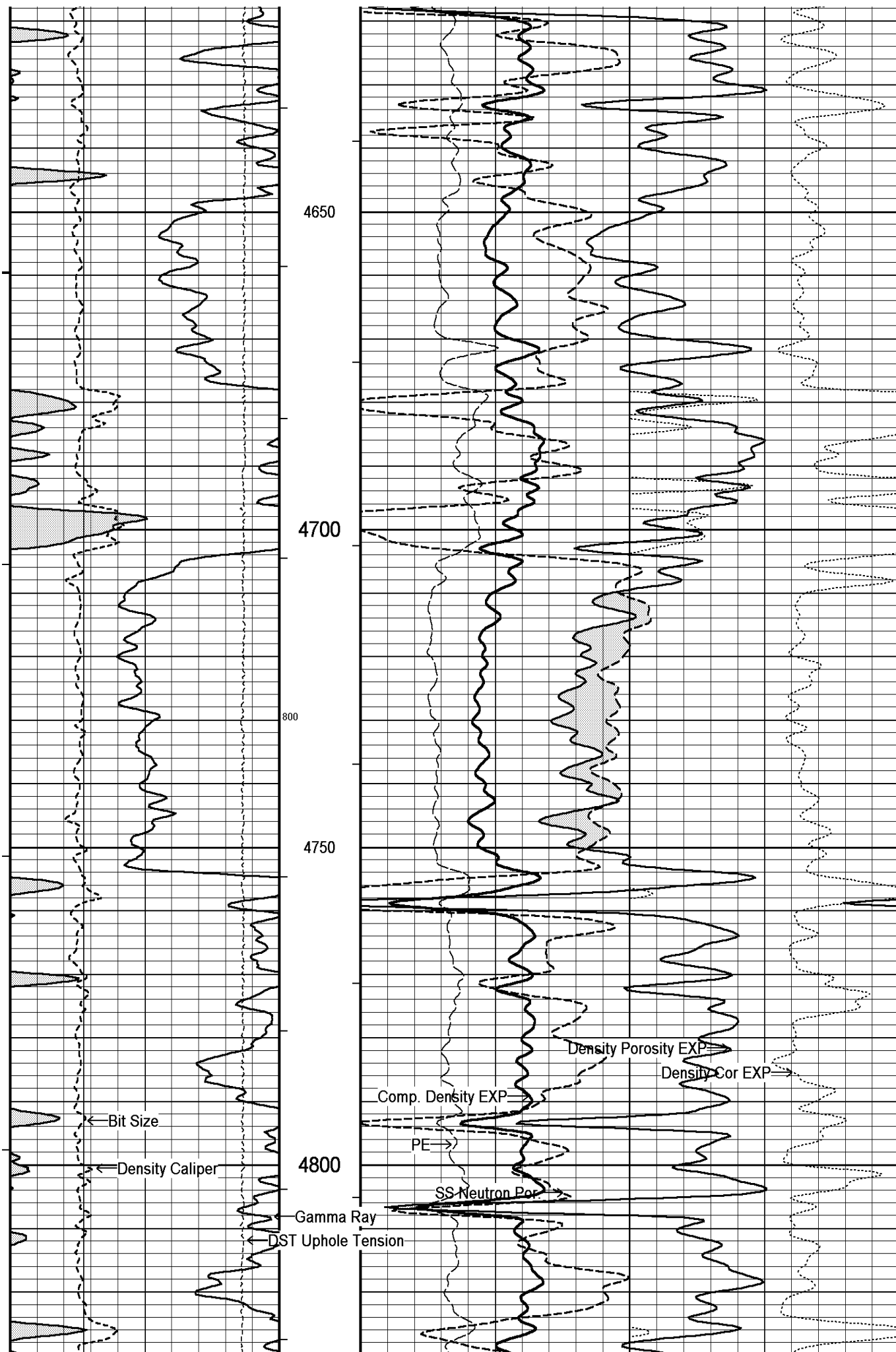
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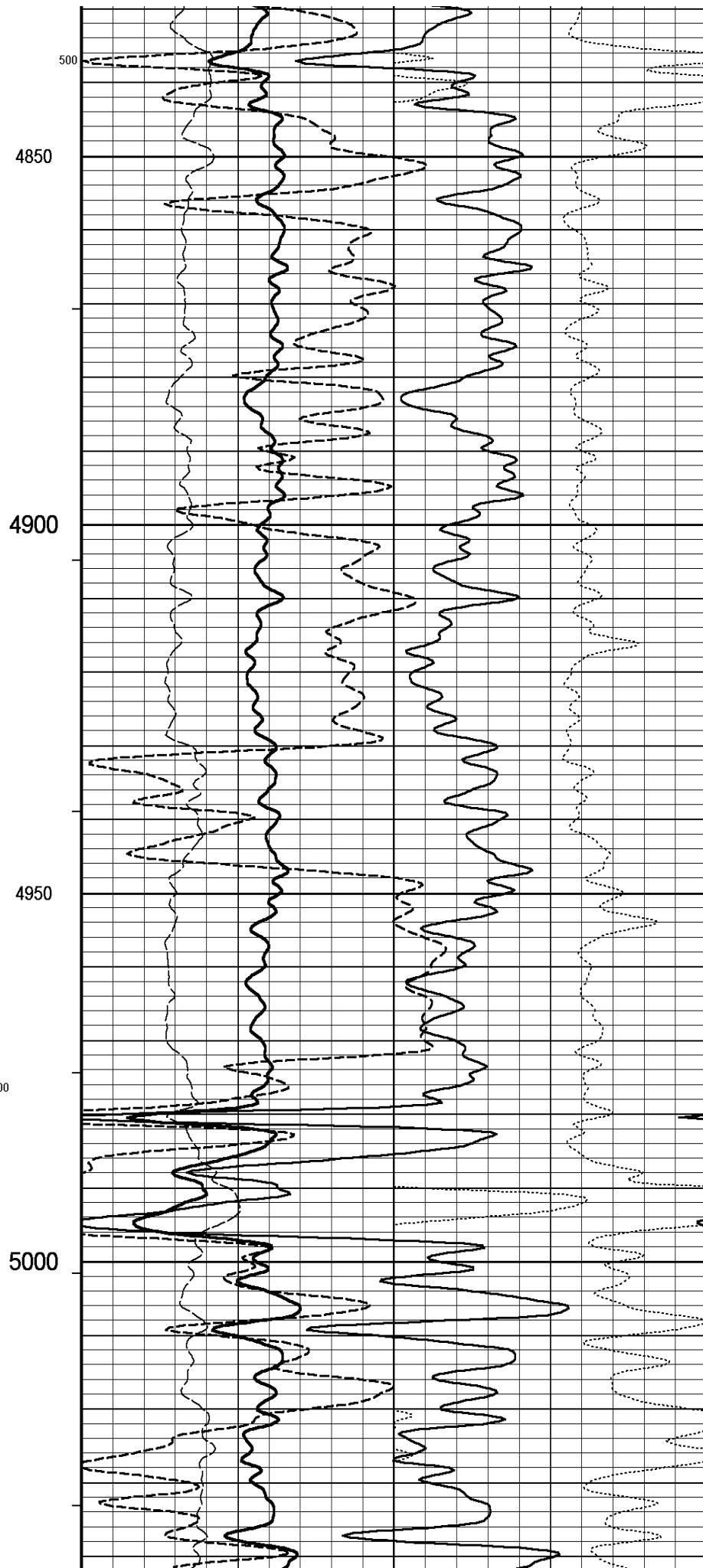
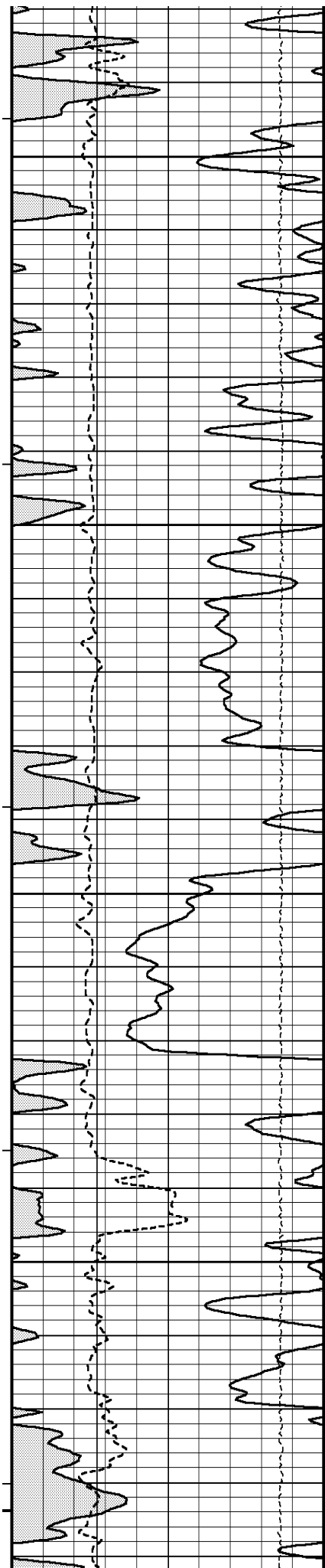


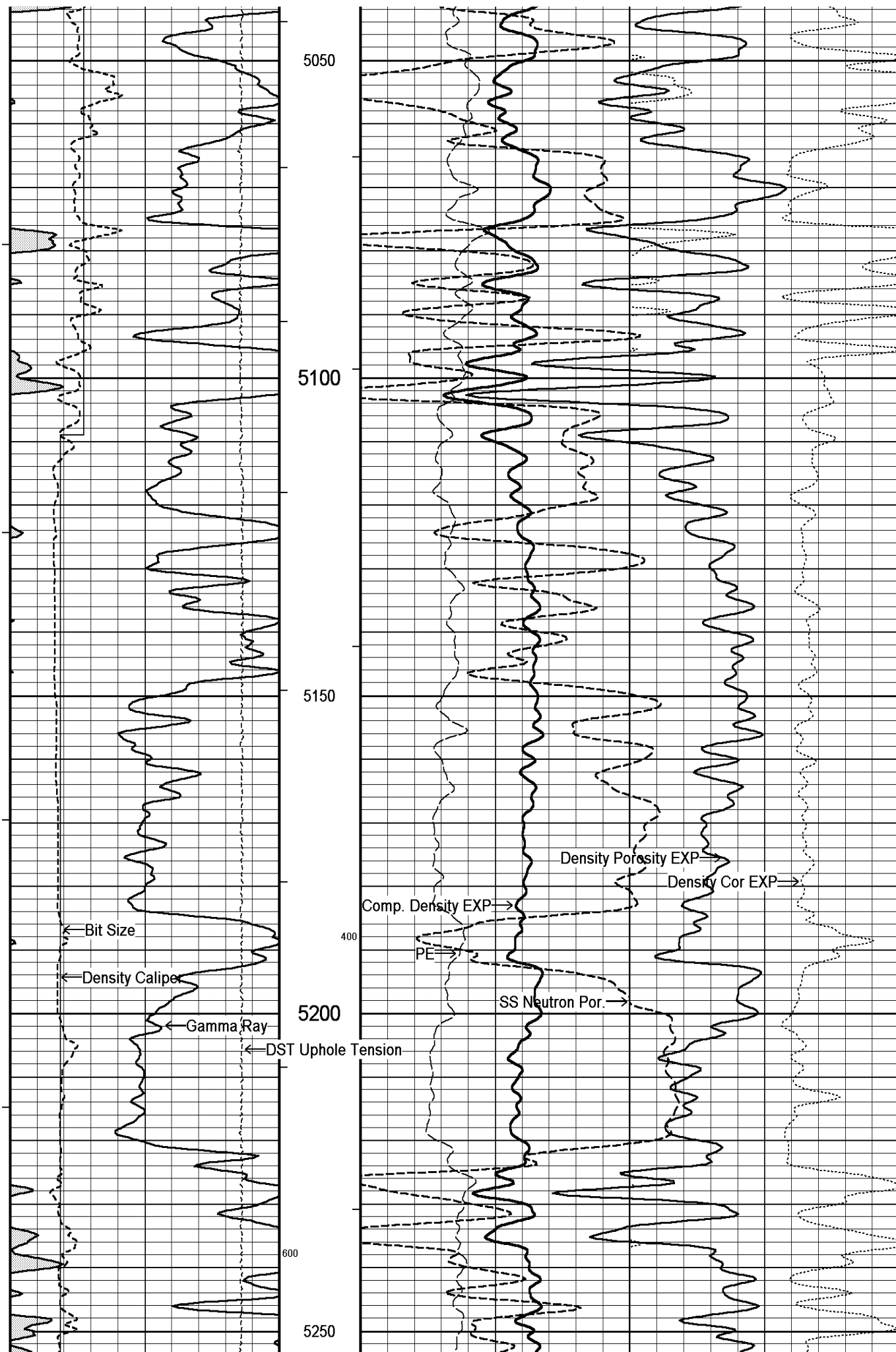


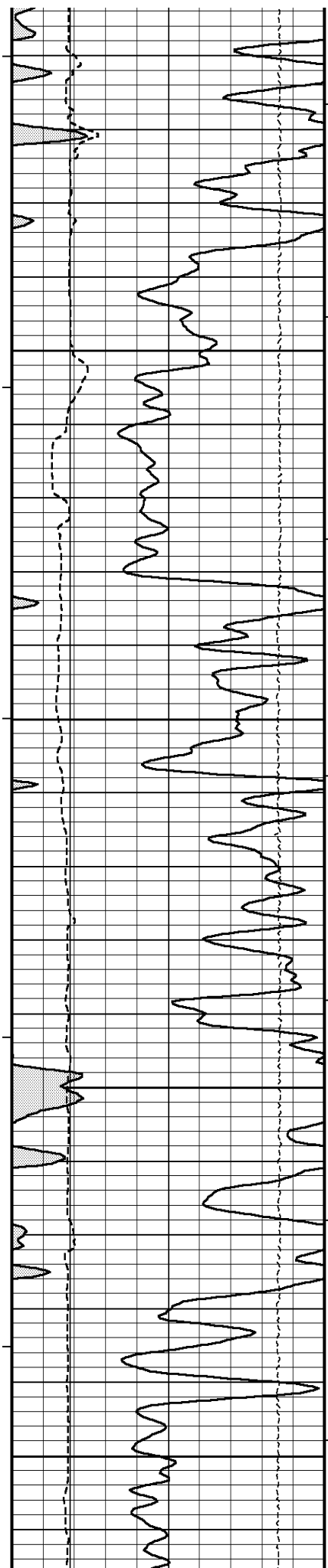










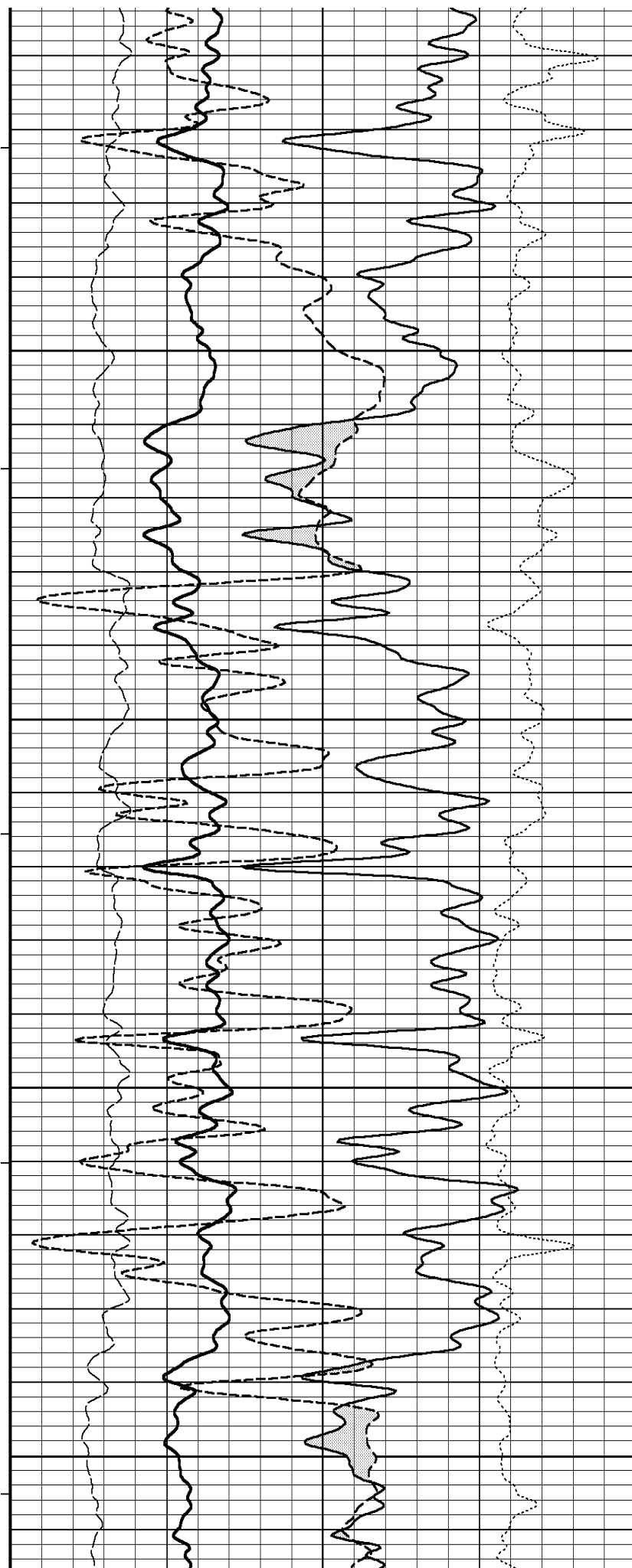


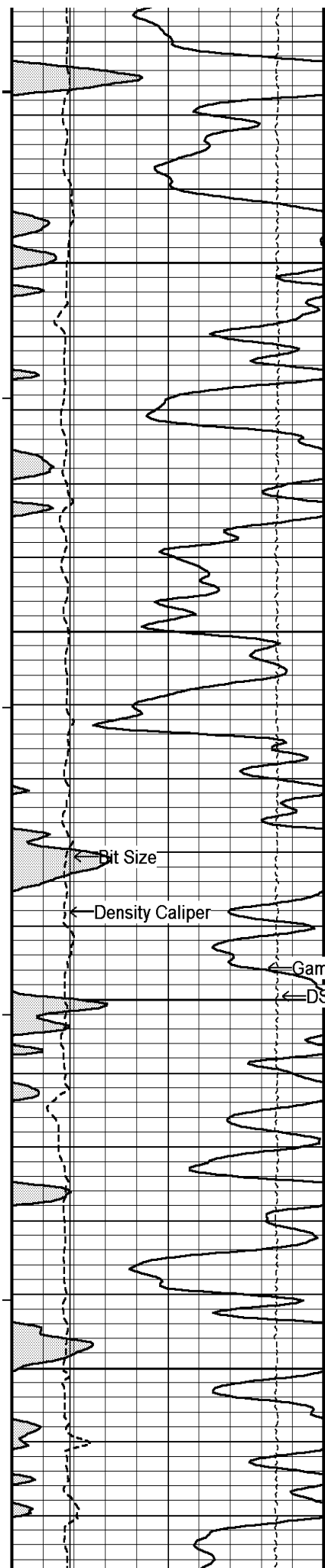
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5350

5400

5450





5500

500

5550

5600

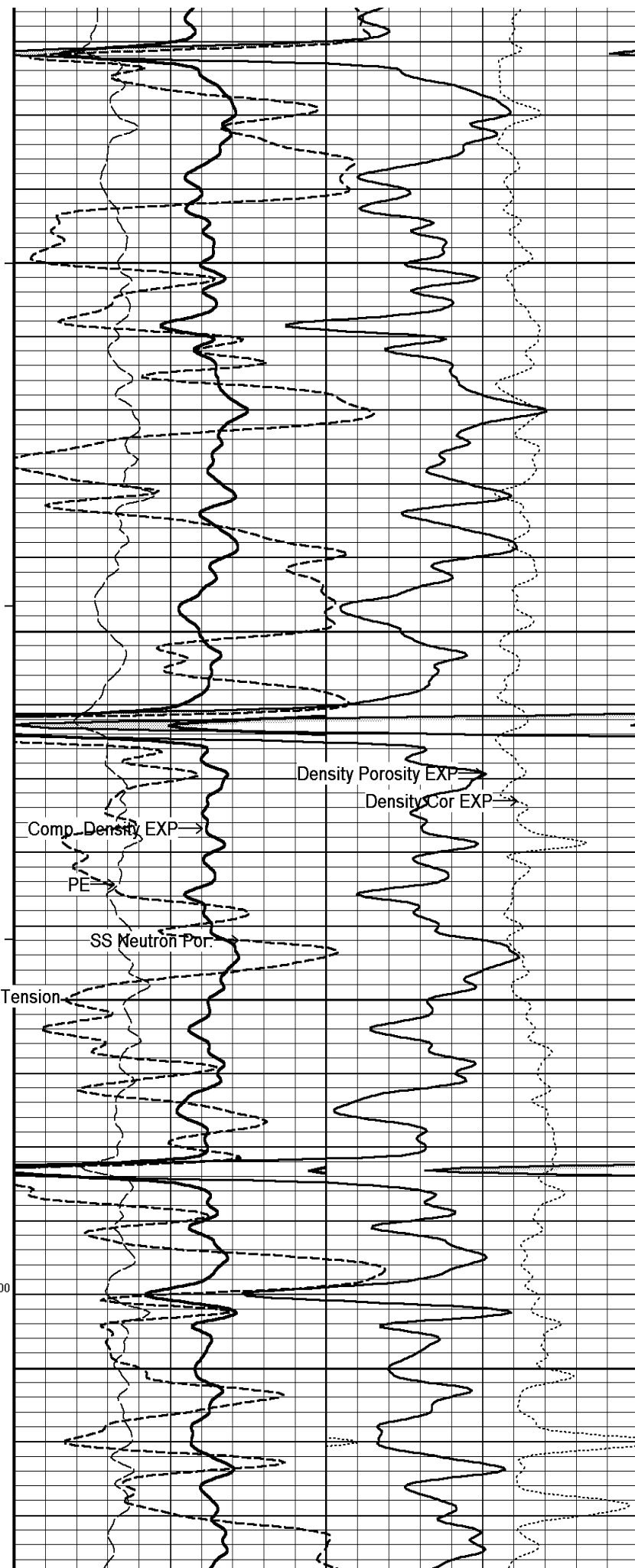
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Bit Size

Density Caliper

Gamma Ray

DST 5600 Tension



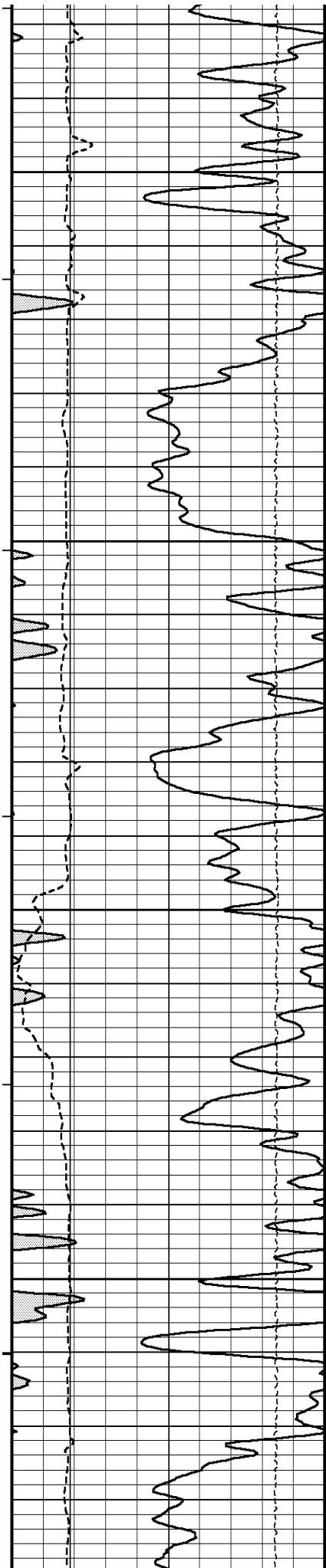
Comp. Density EXP

PE

SS Neutron Por.

Density Porosity EXP

Density Cor EXP

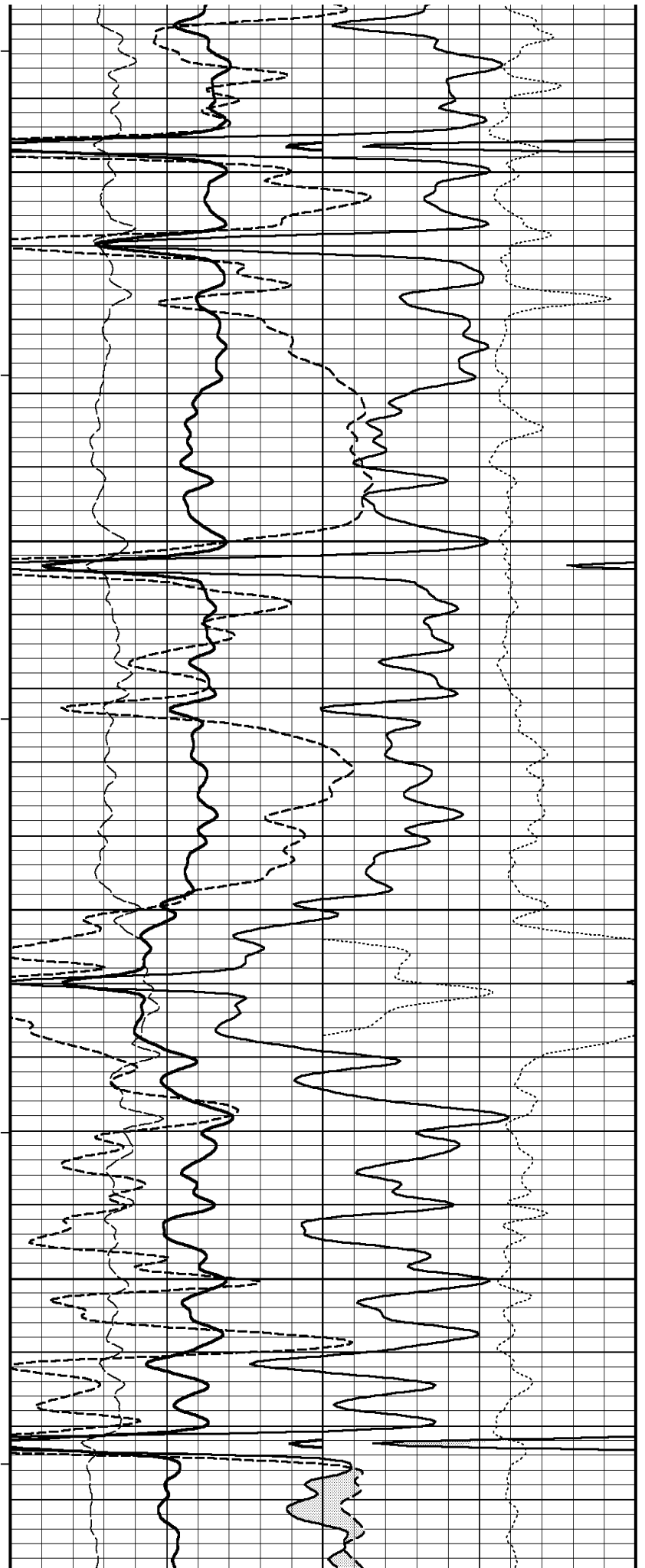


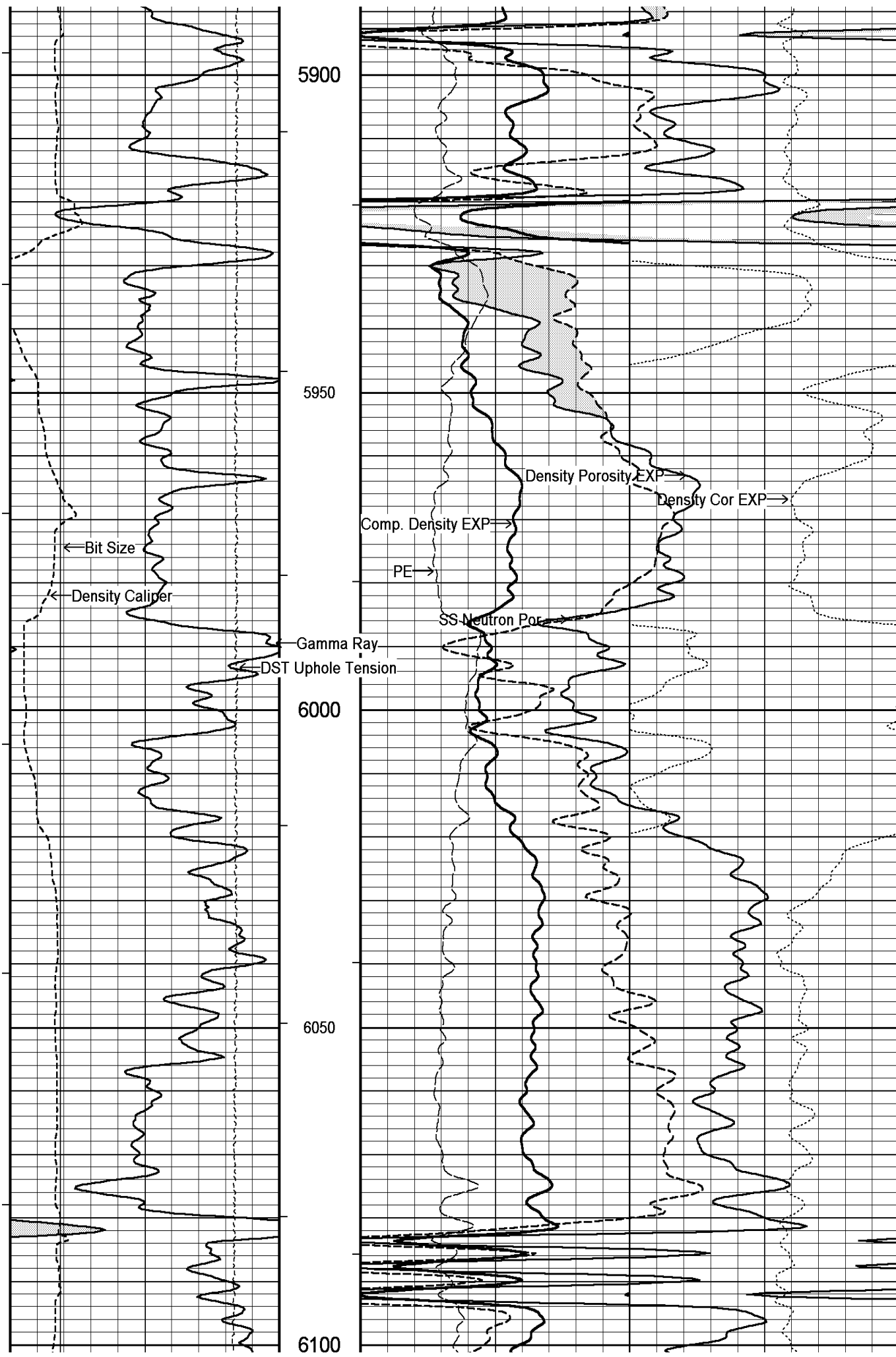
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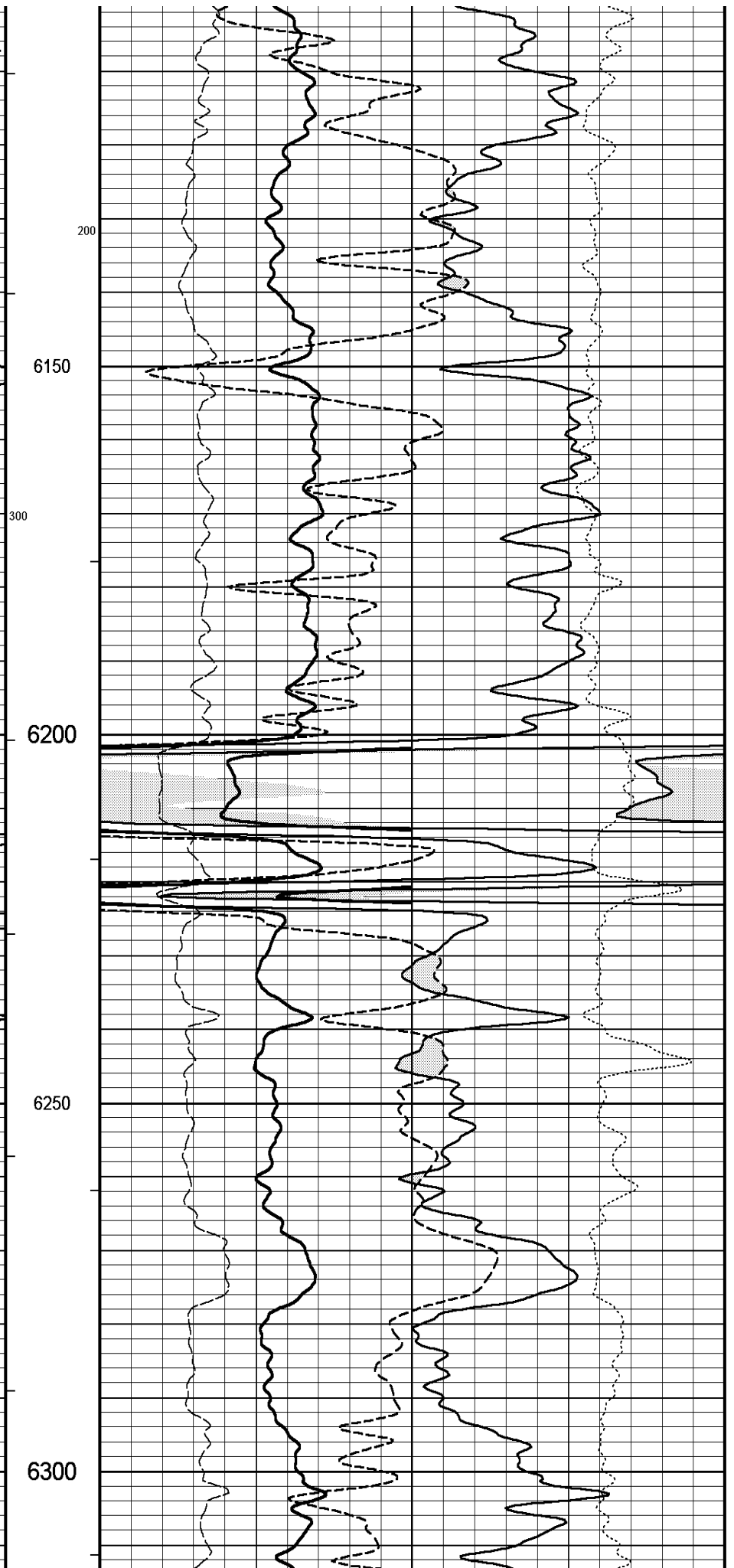
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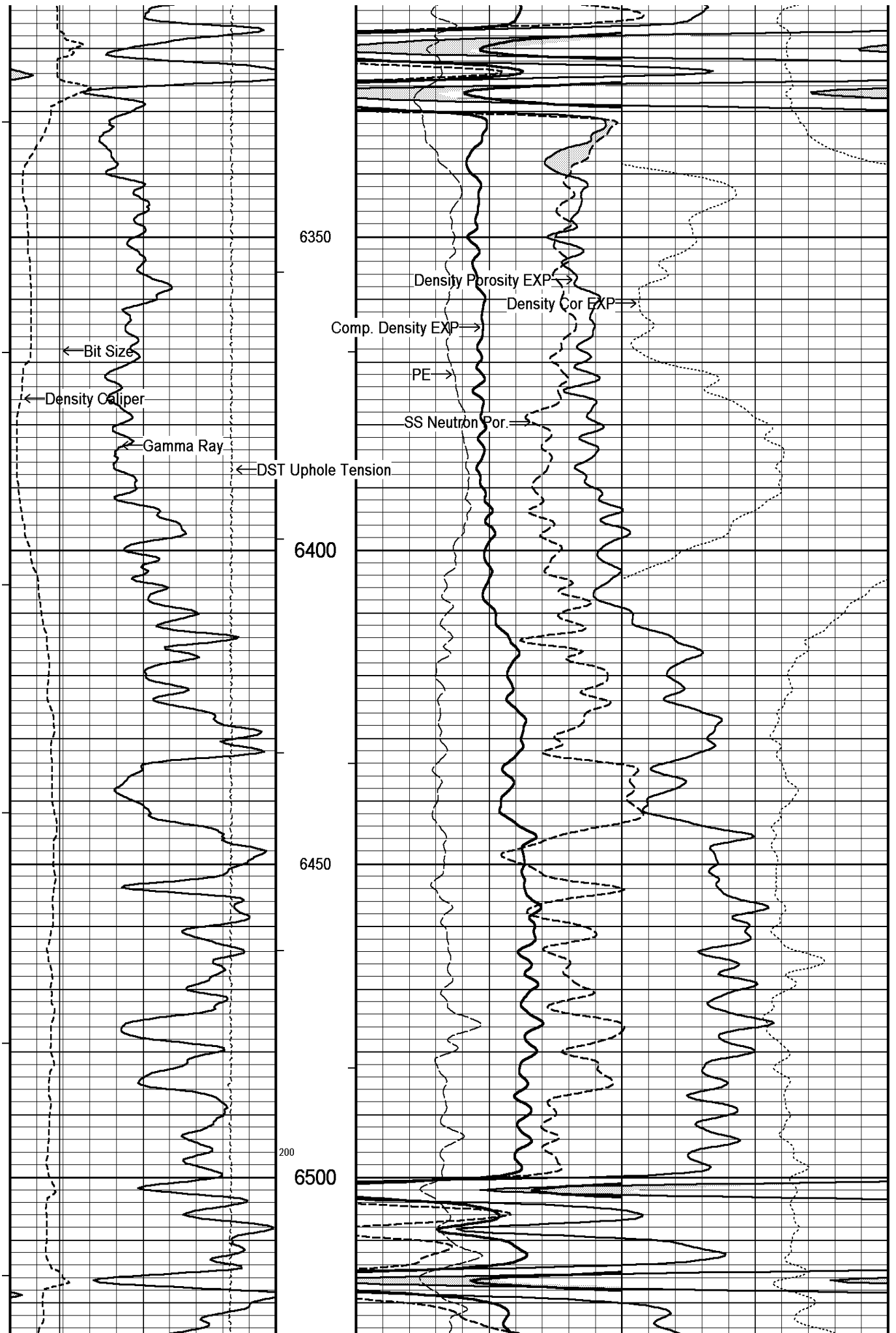
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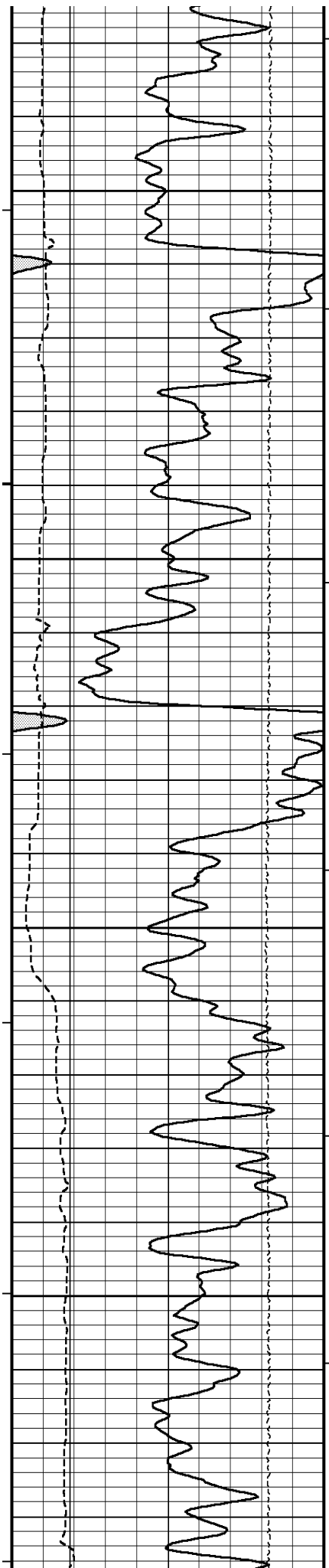
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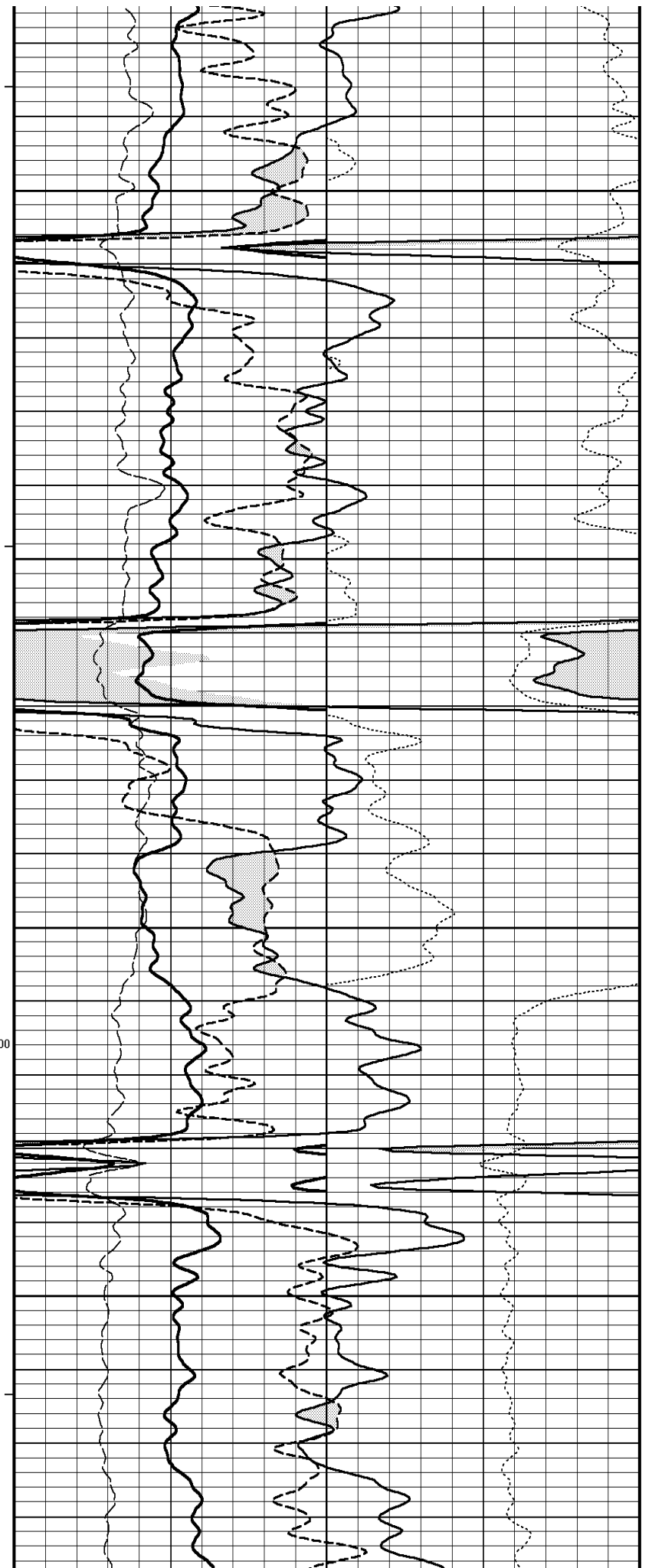
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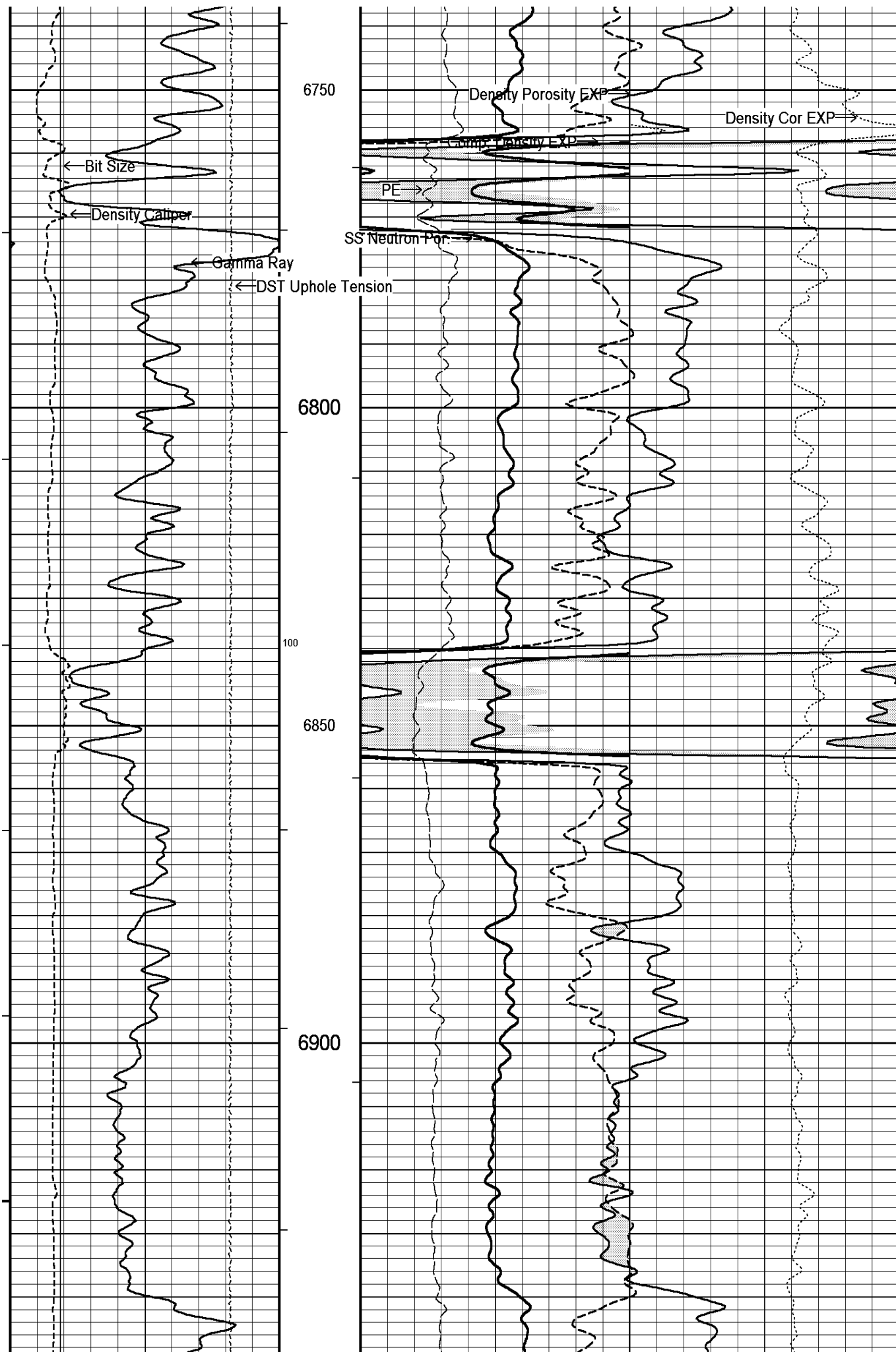
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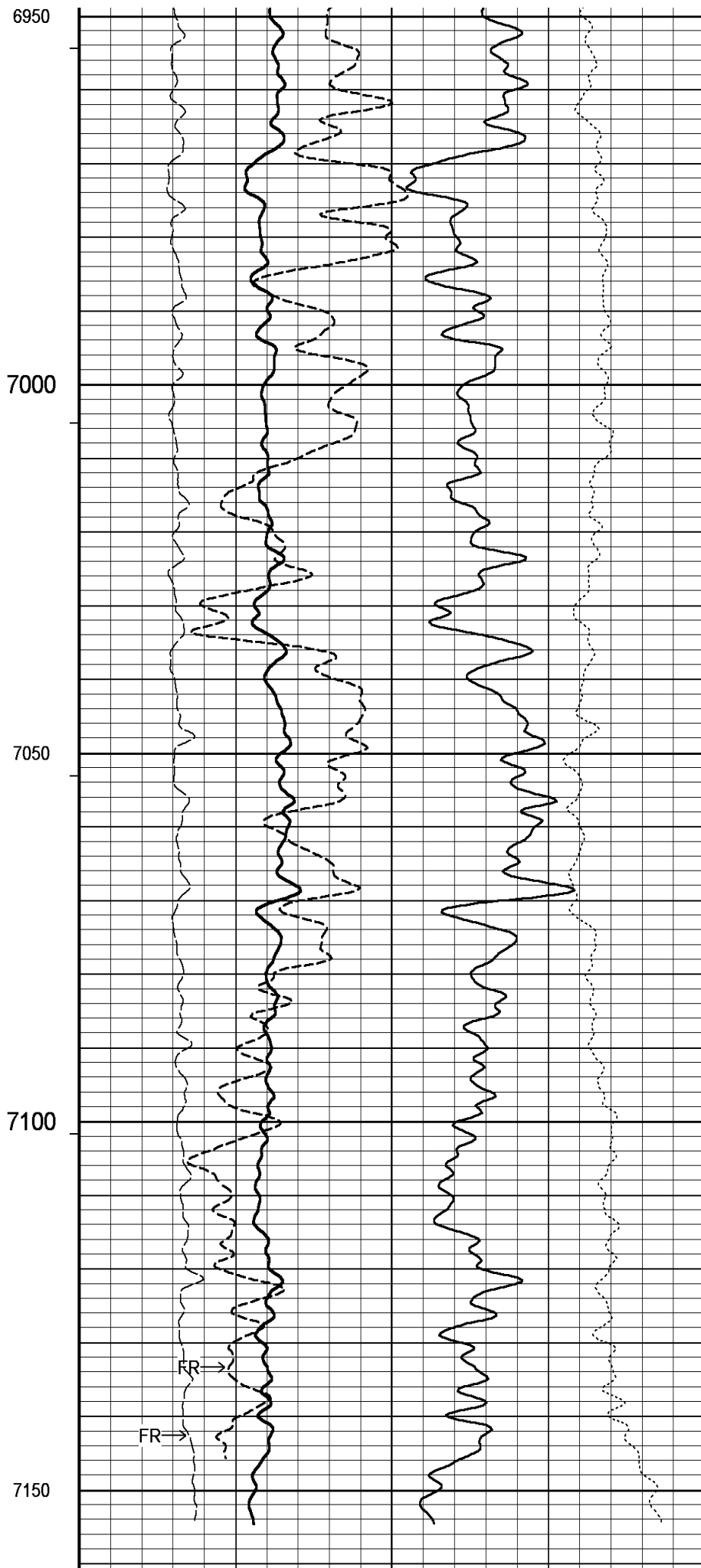
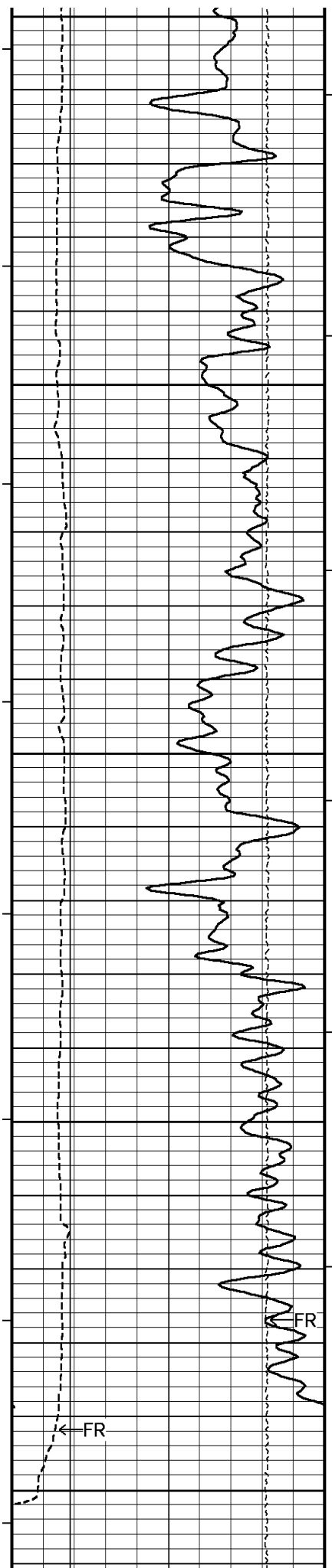
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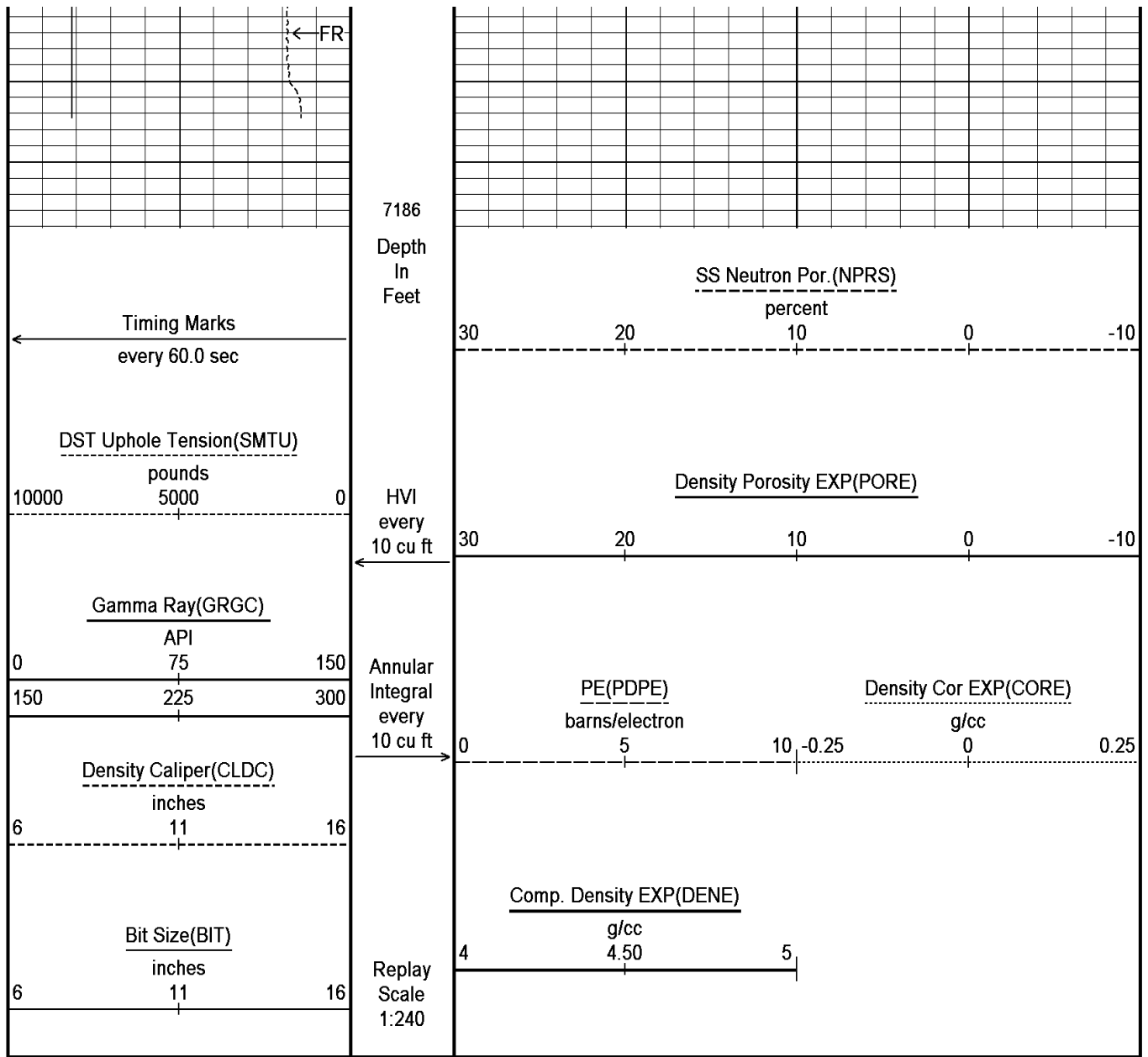
100

6700









Depth Based Data - Maximum Sampling Increment 10.0cm

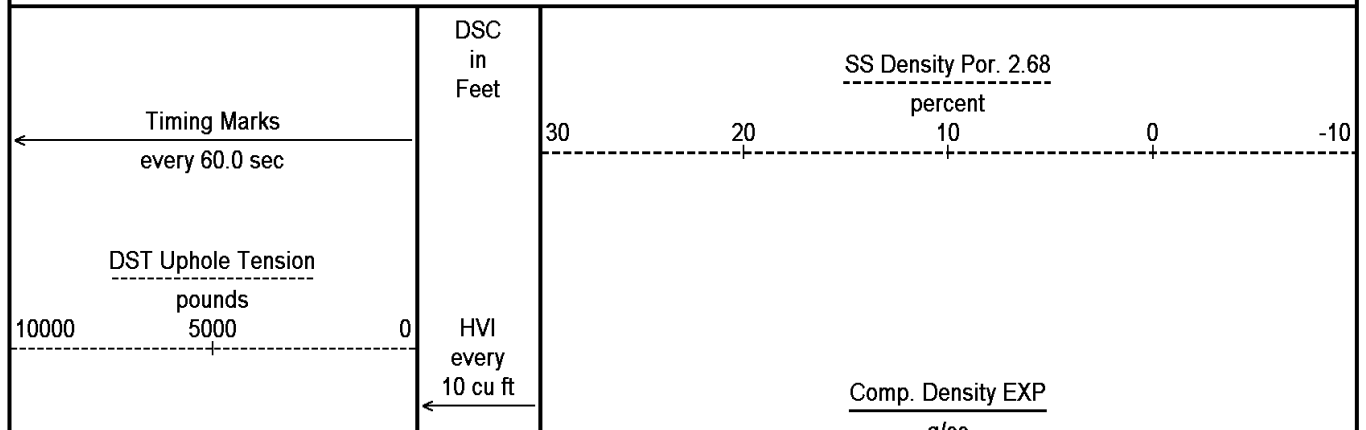
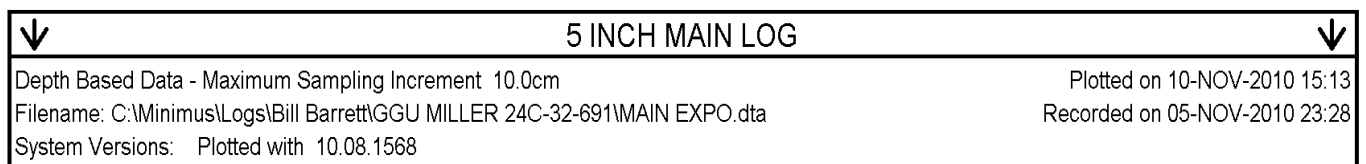
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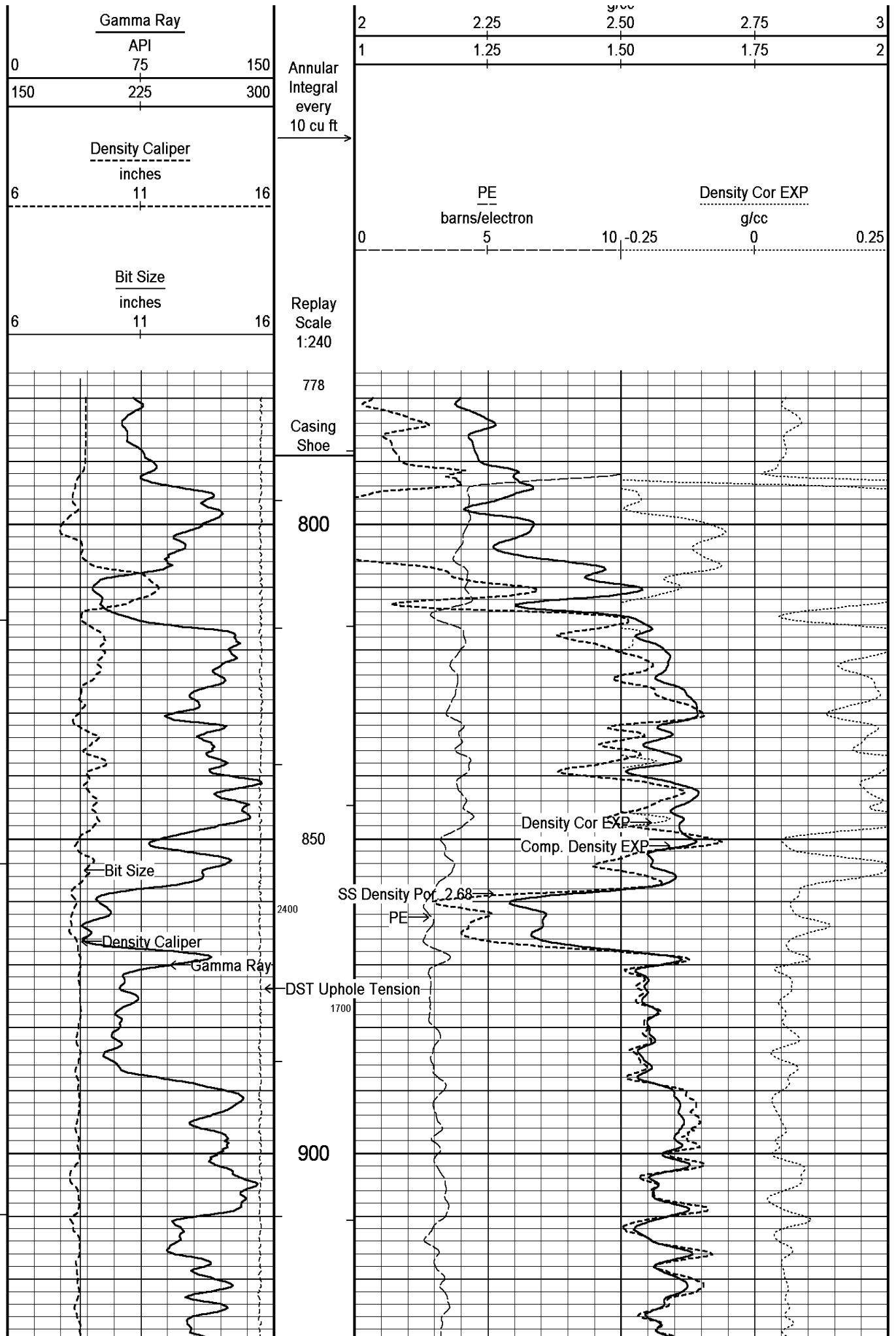
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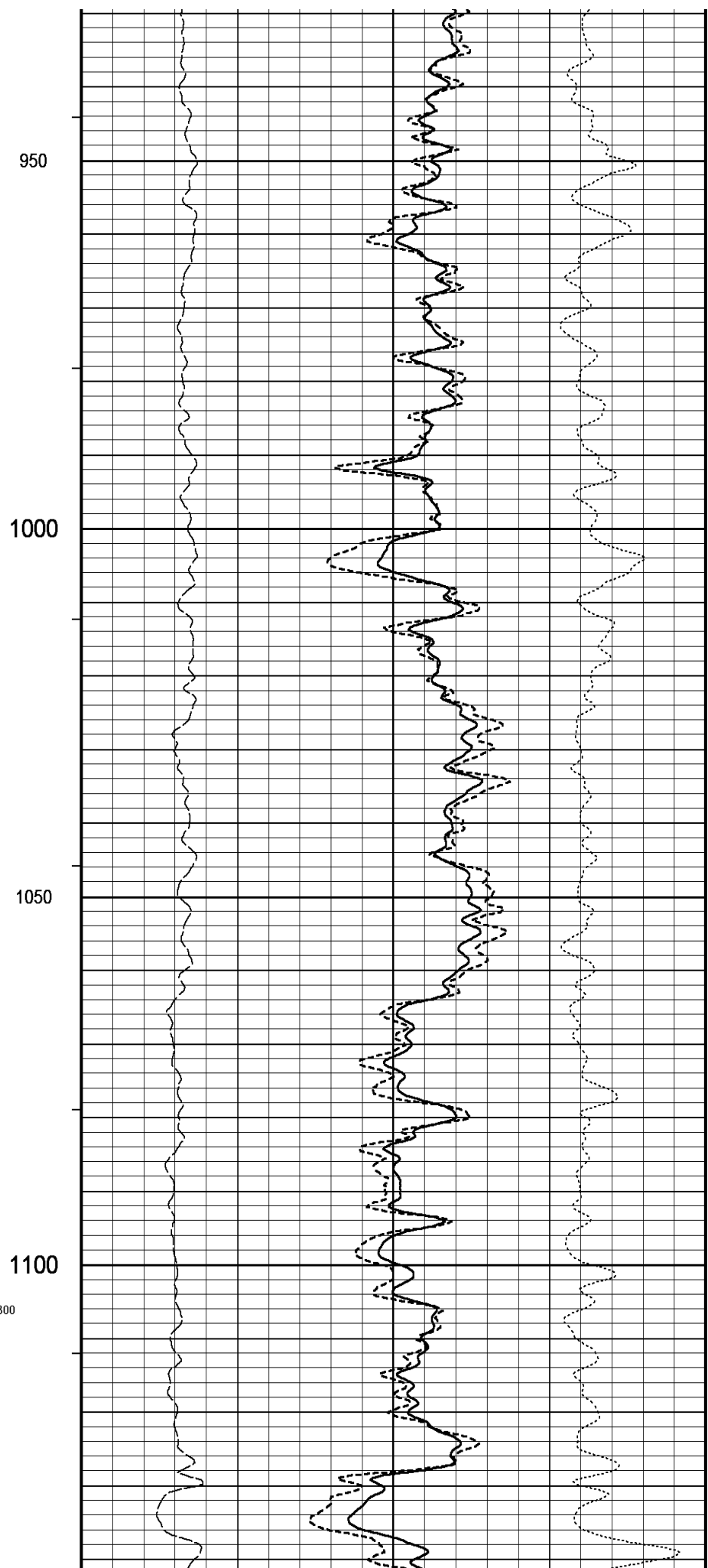
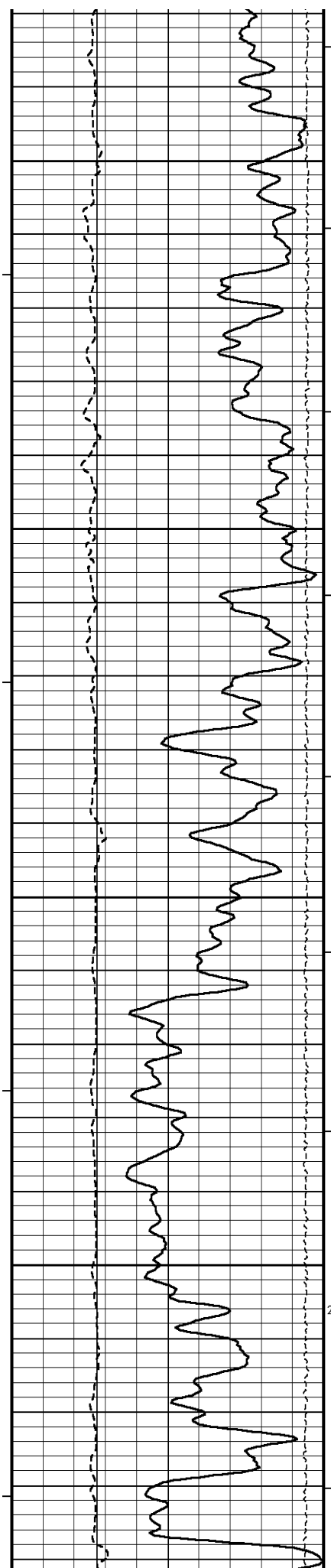
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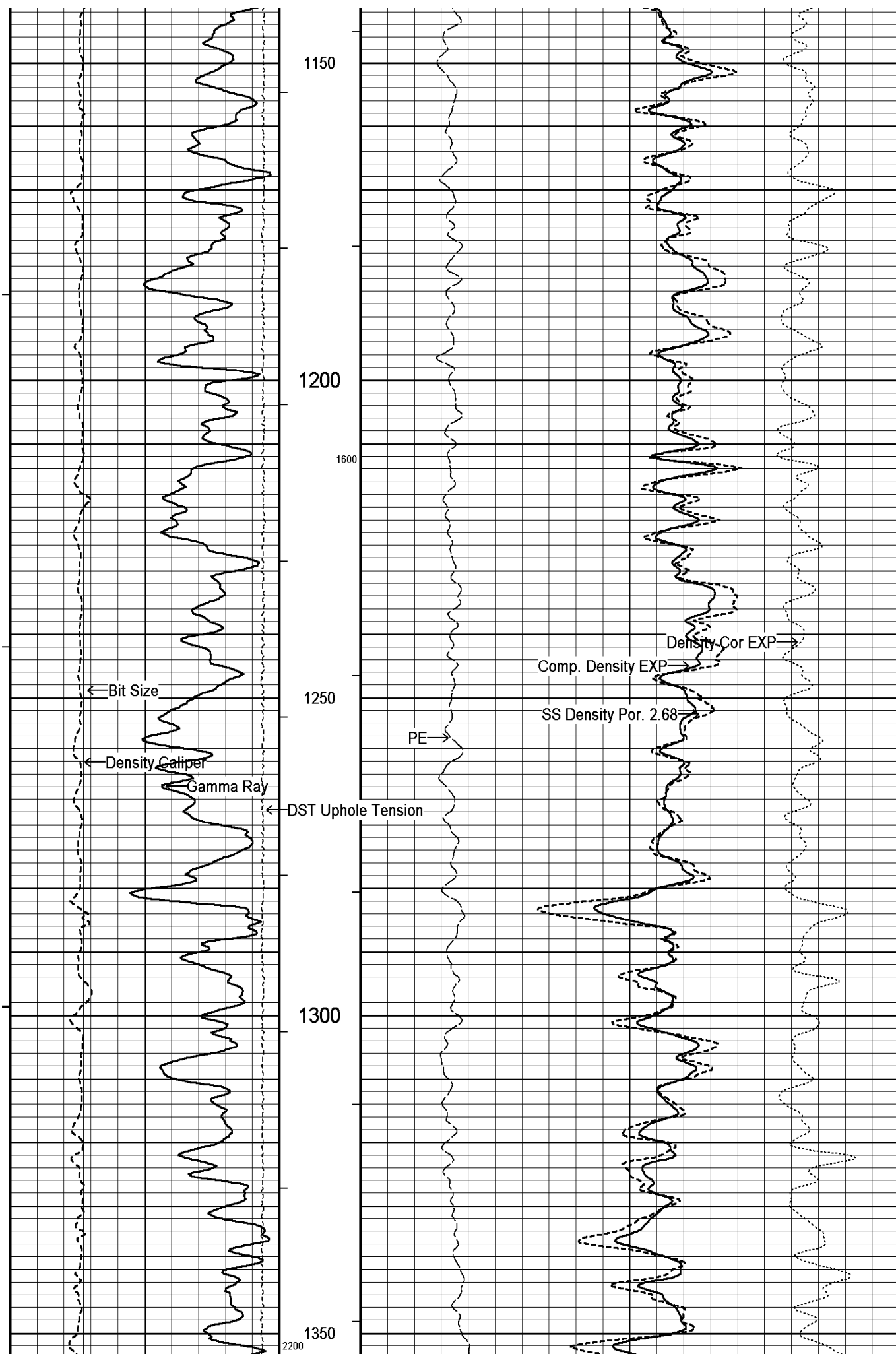
System Versions: Plotted with 10.08.1568

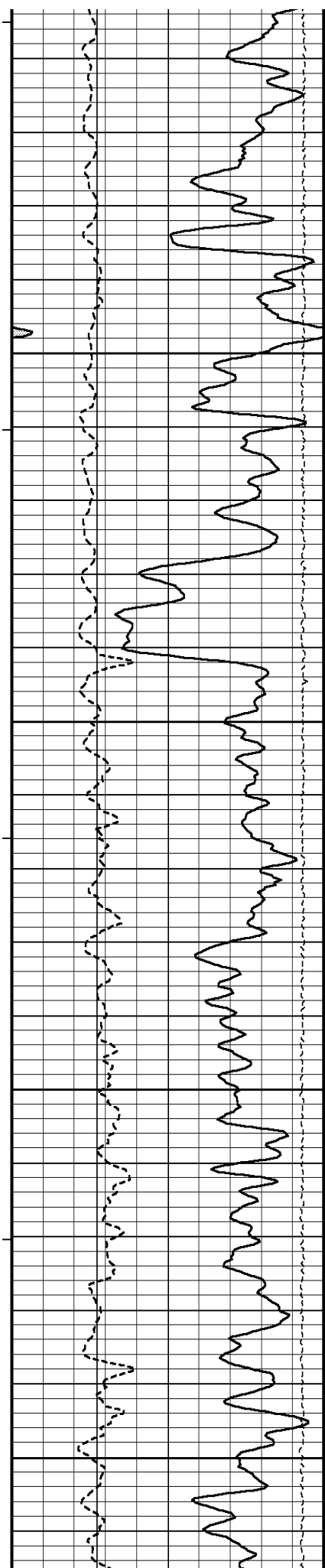
5 INCH MAIN LOG











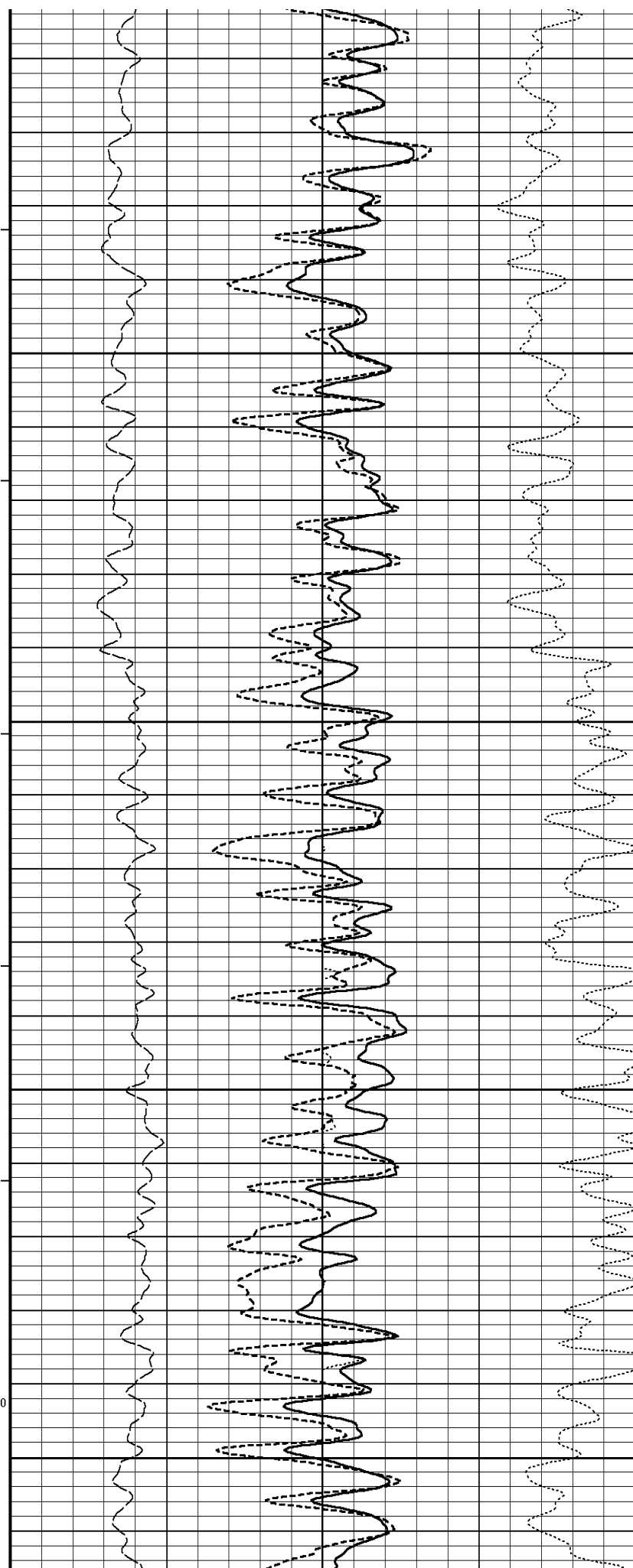
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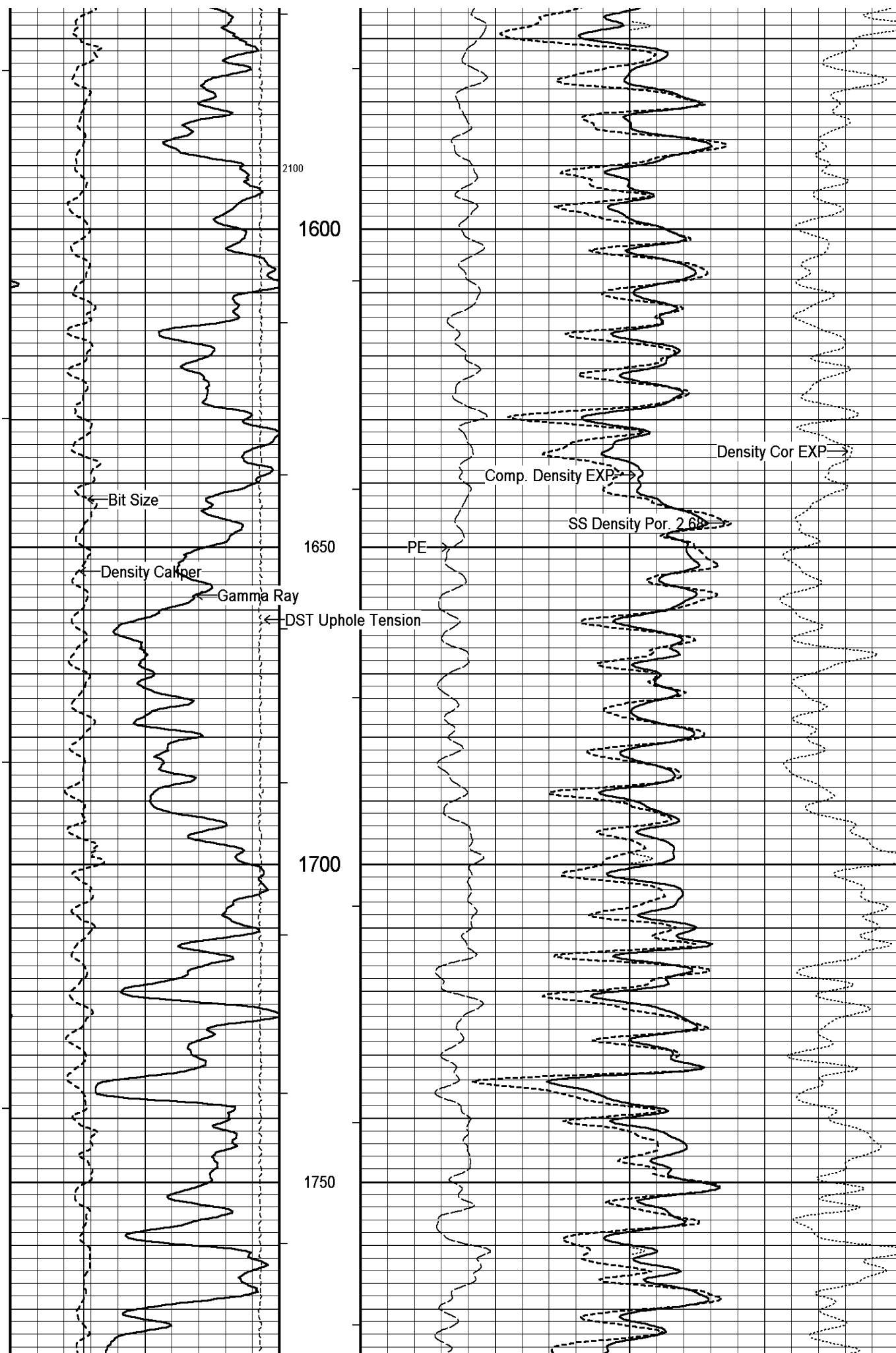
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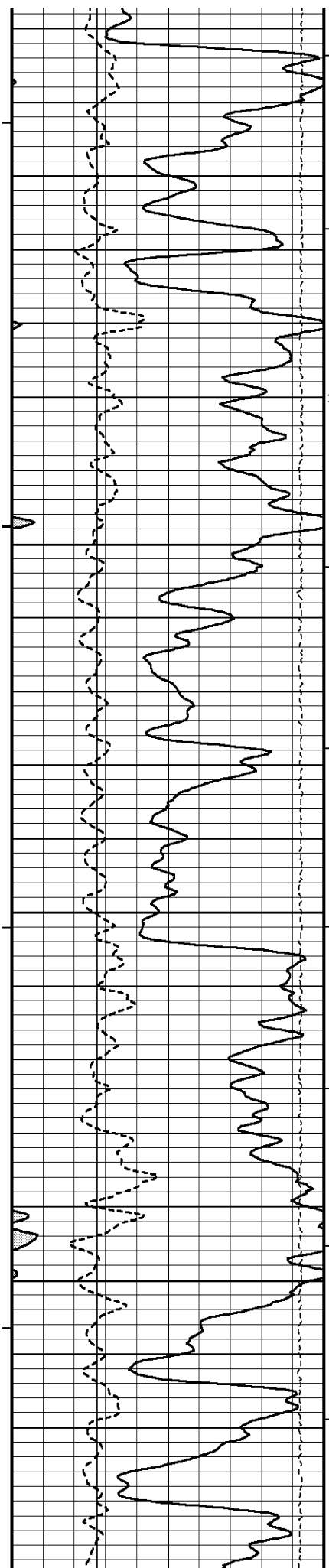
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1500

1550







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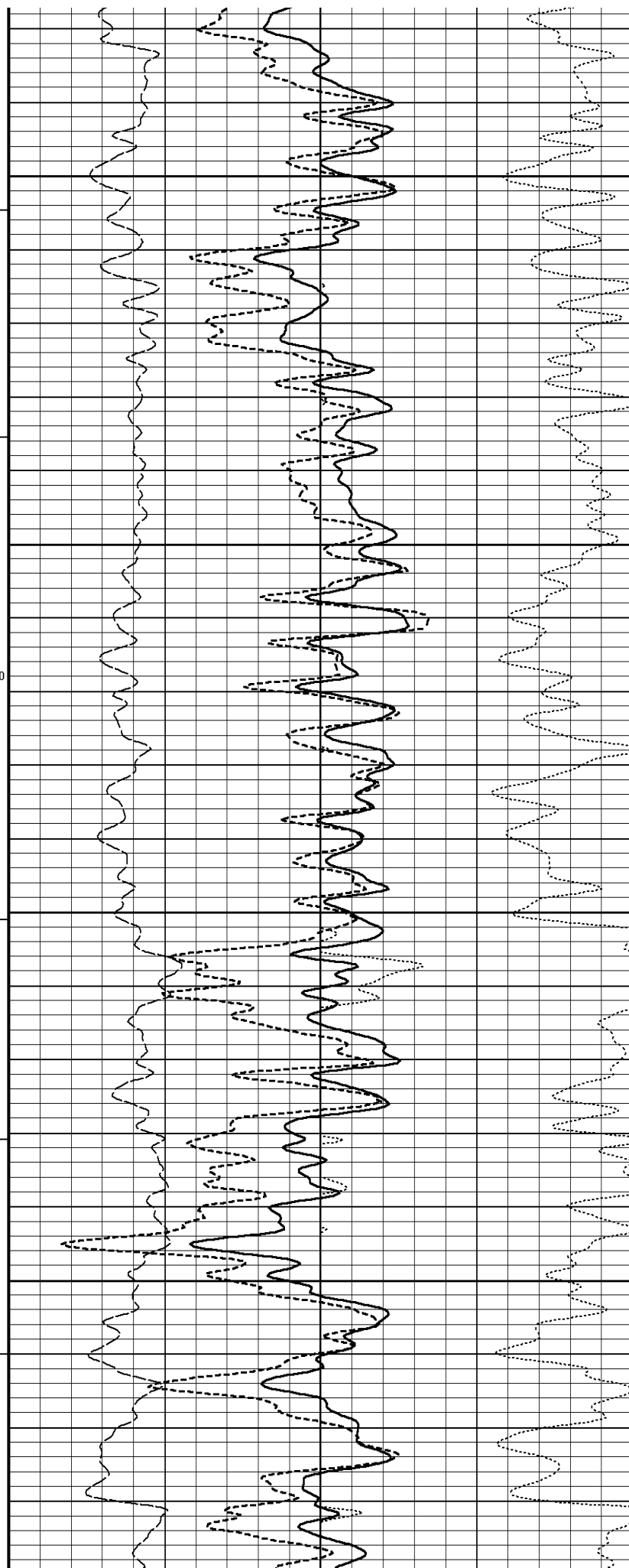
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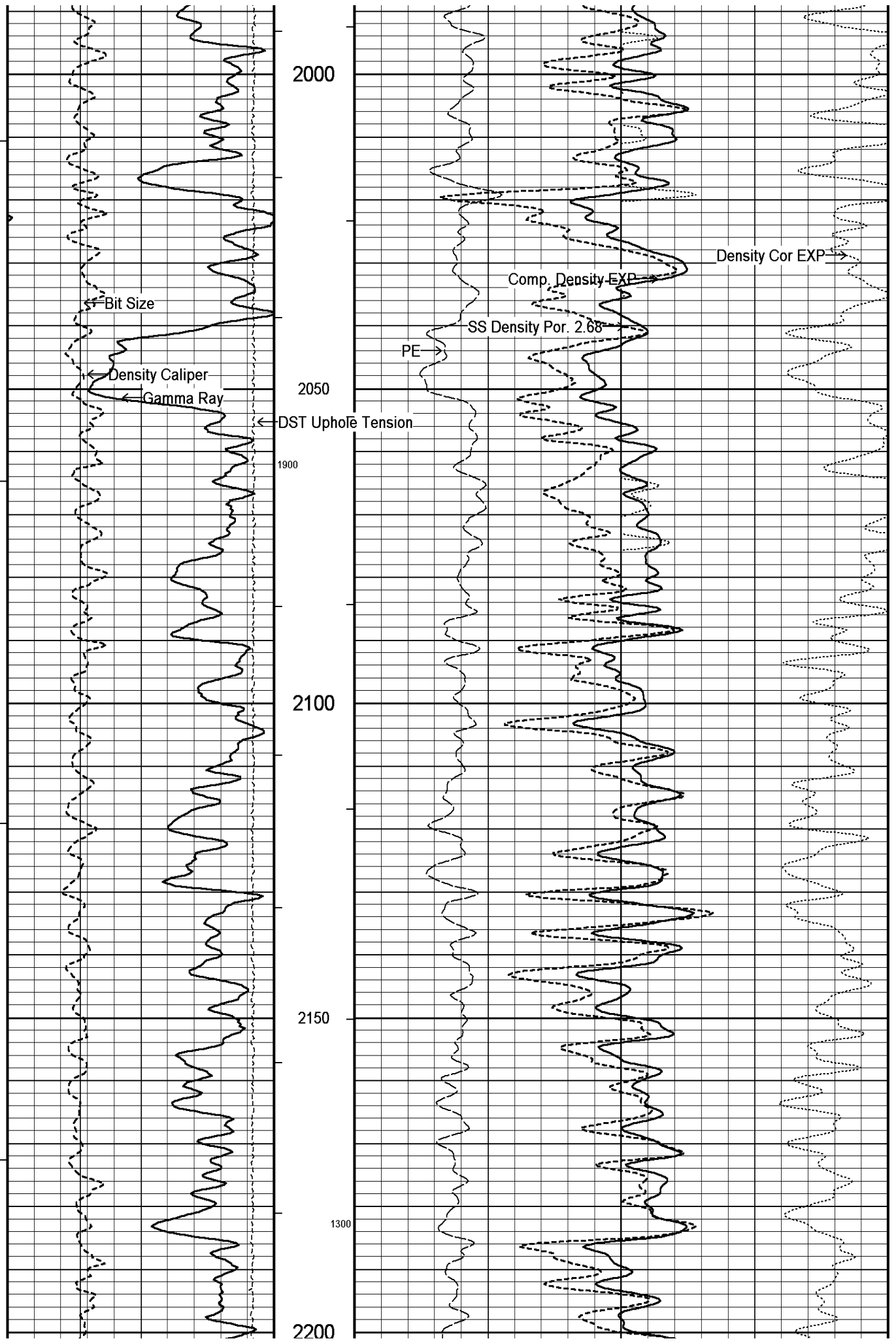
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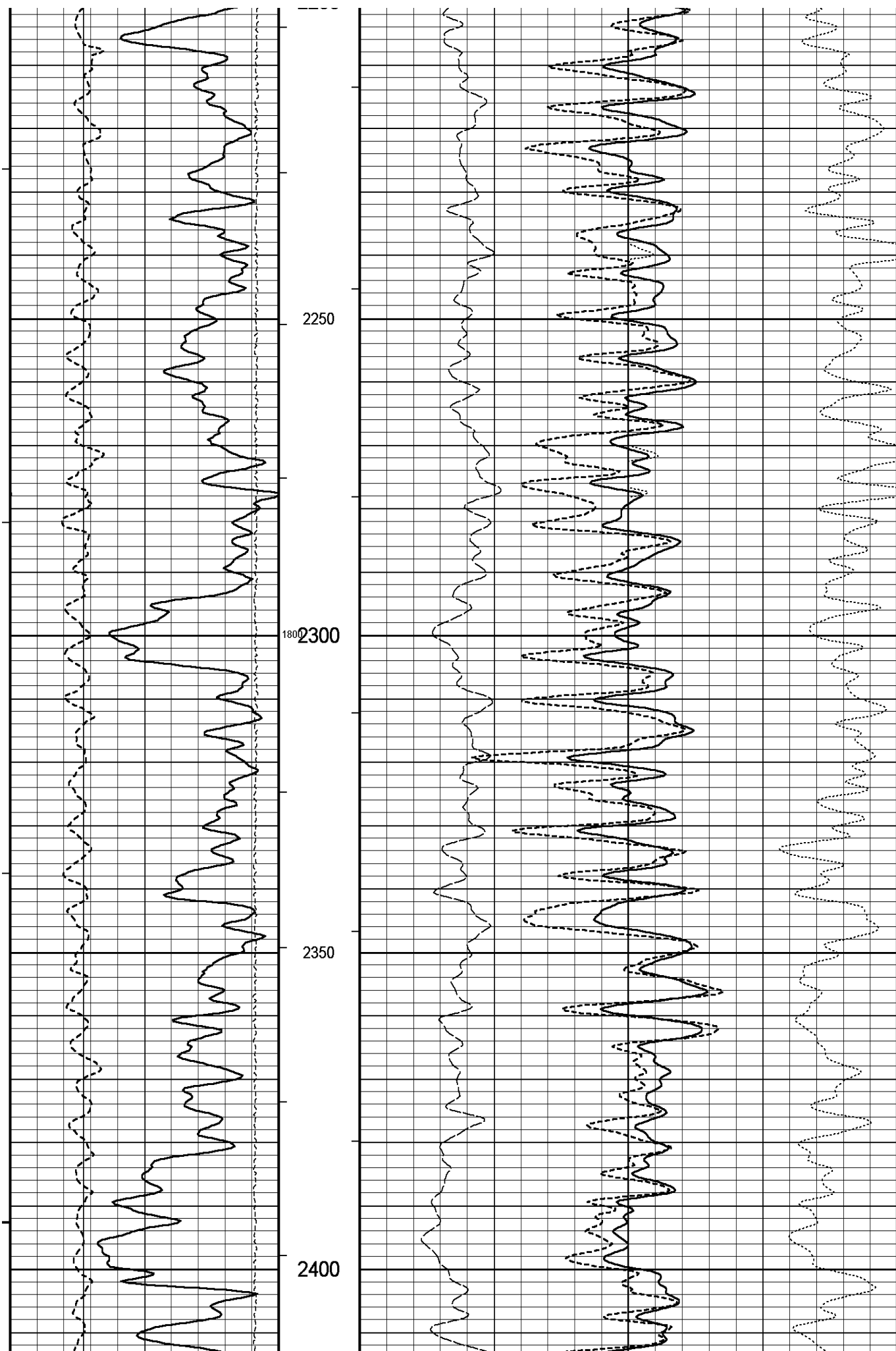
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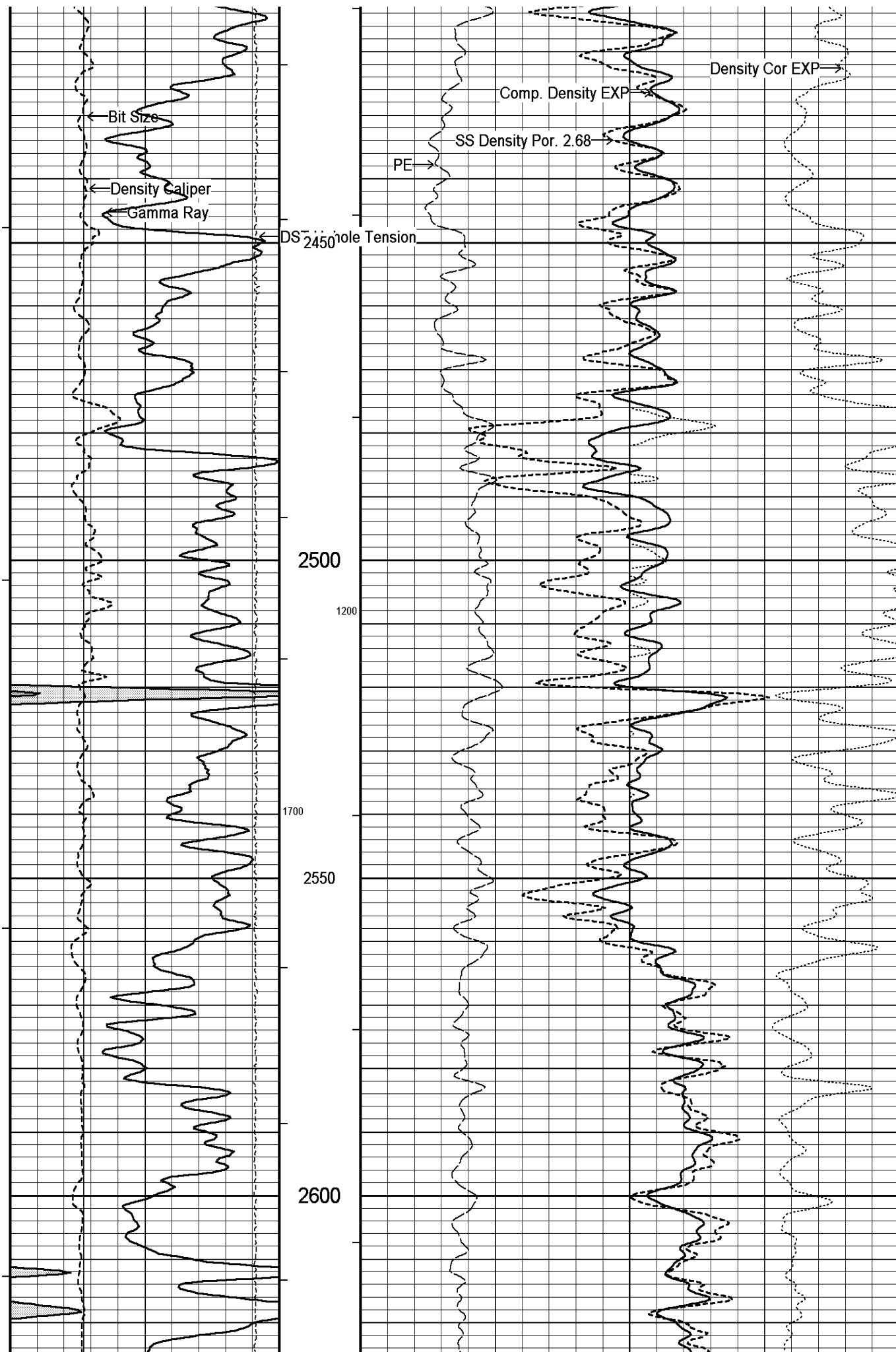
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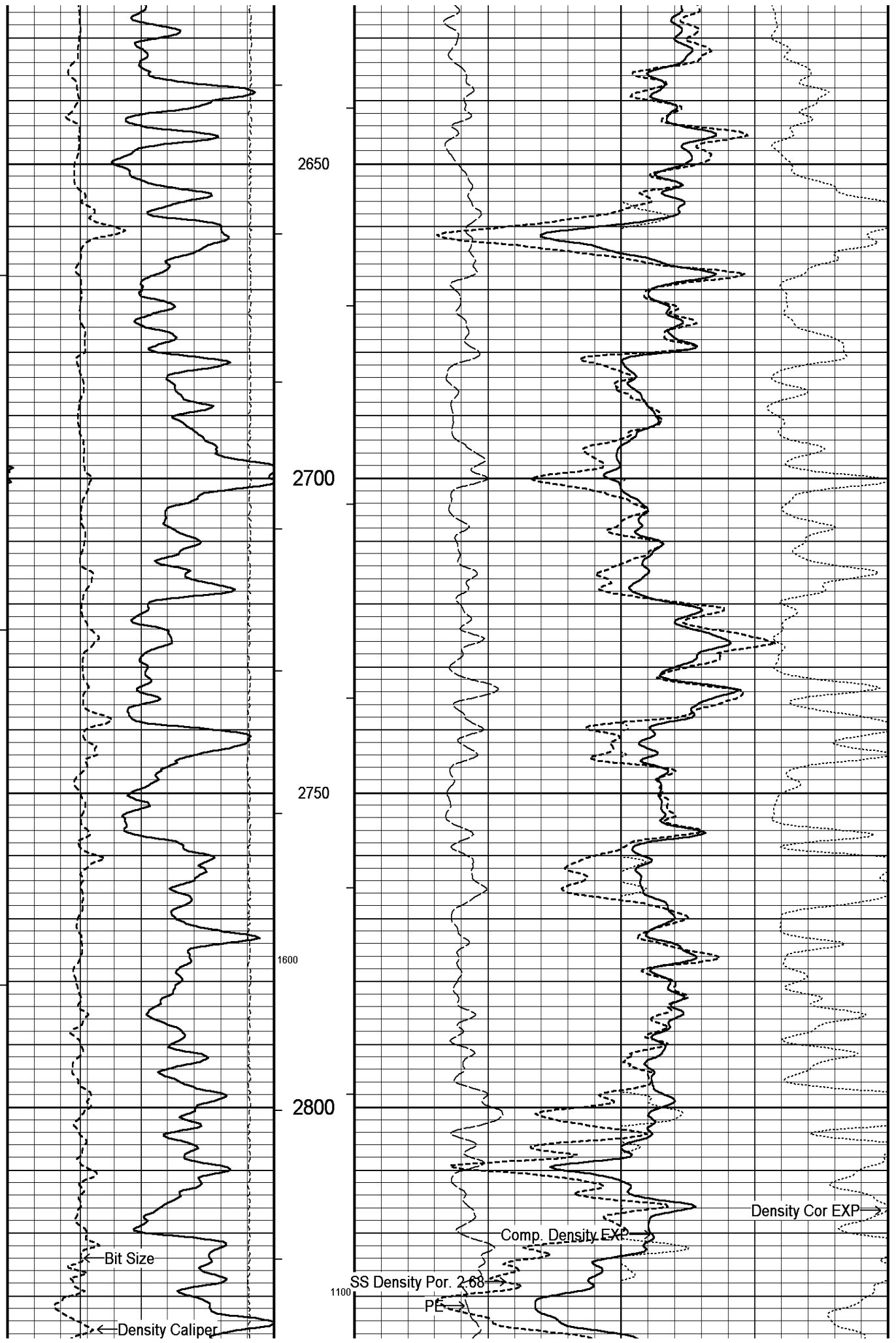
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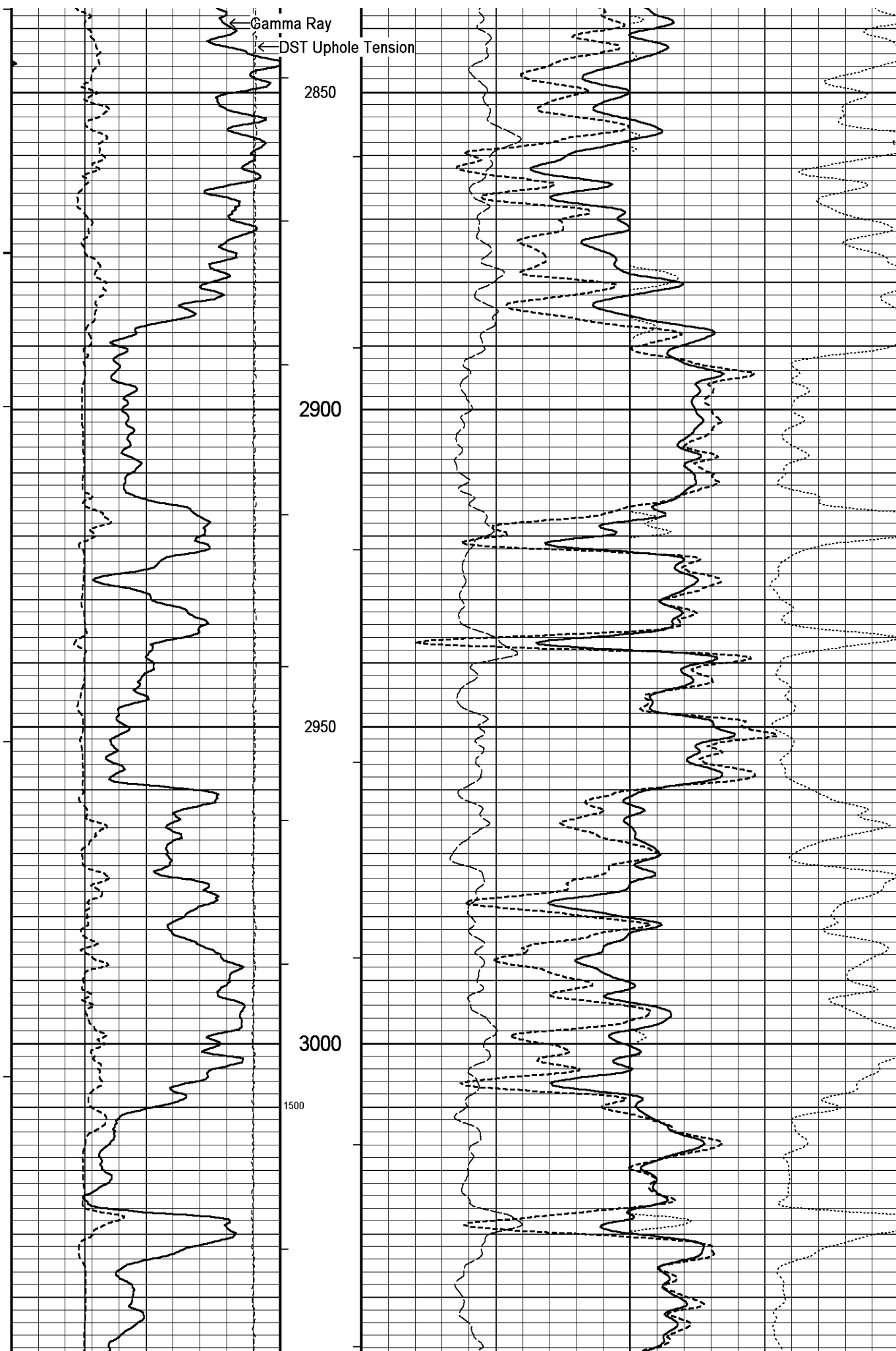


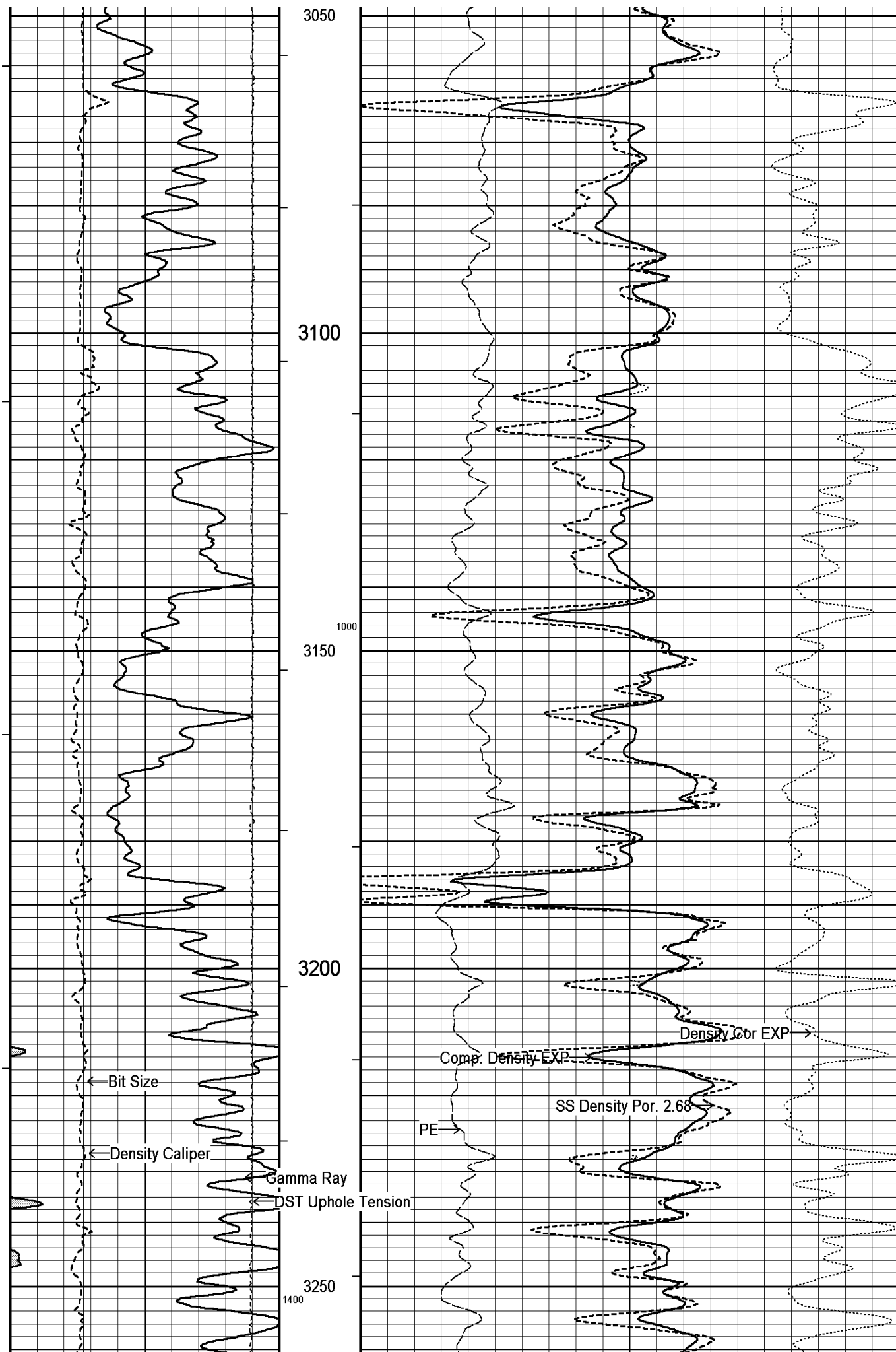


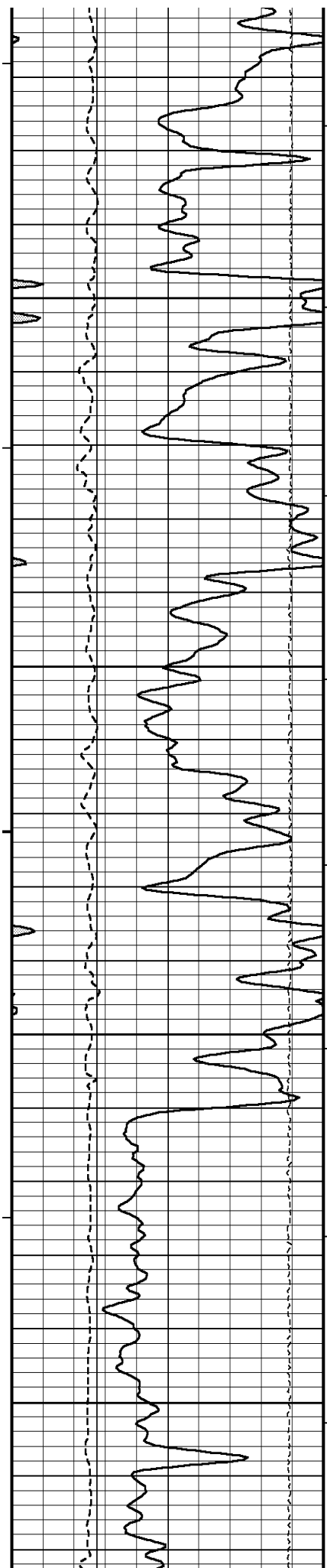










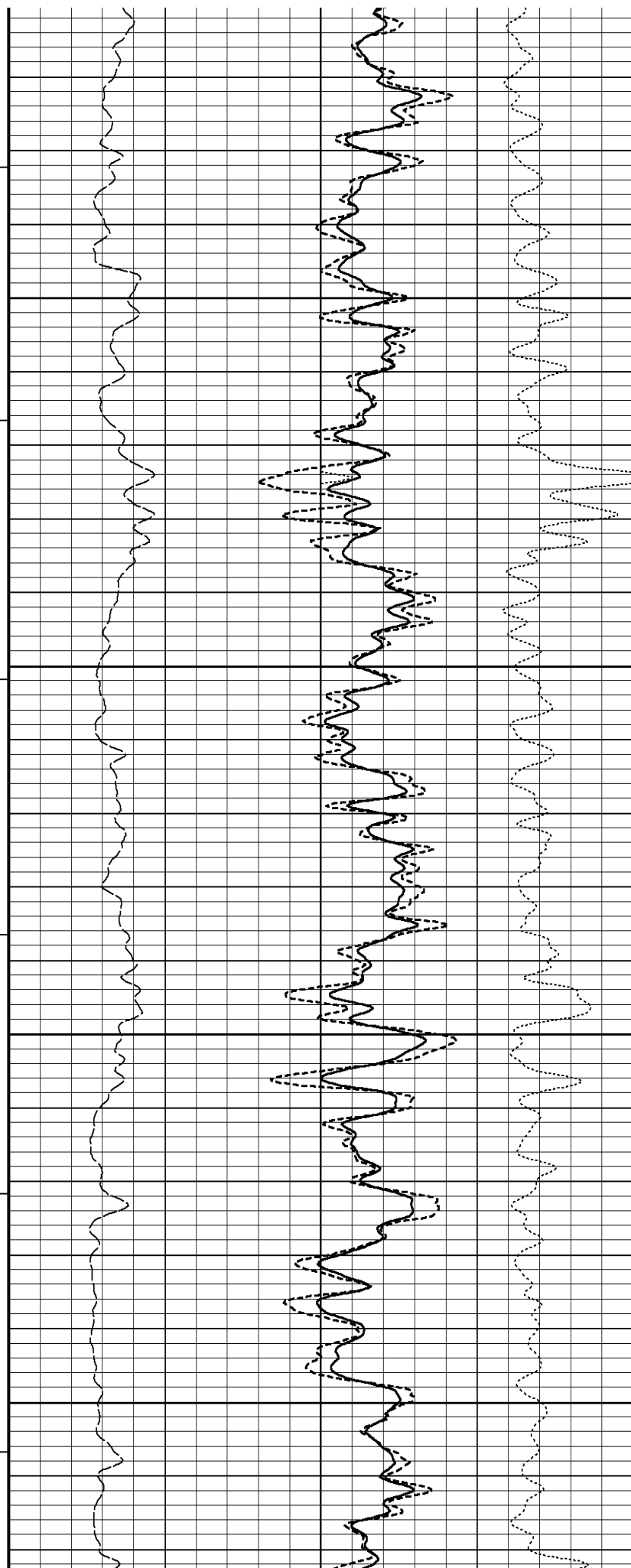


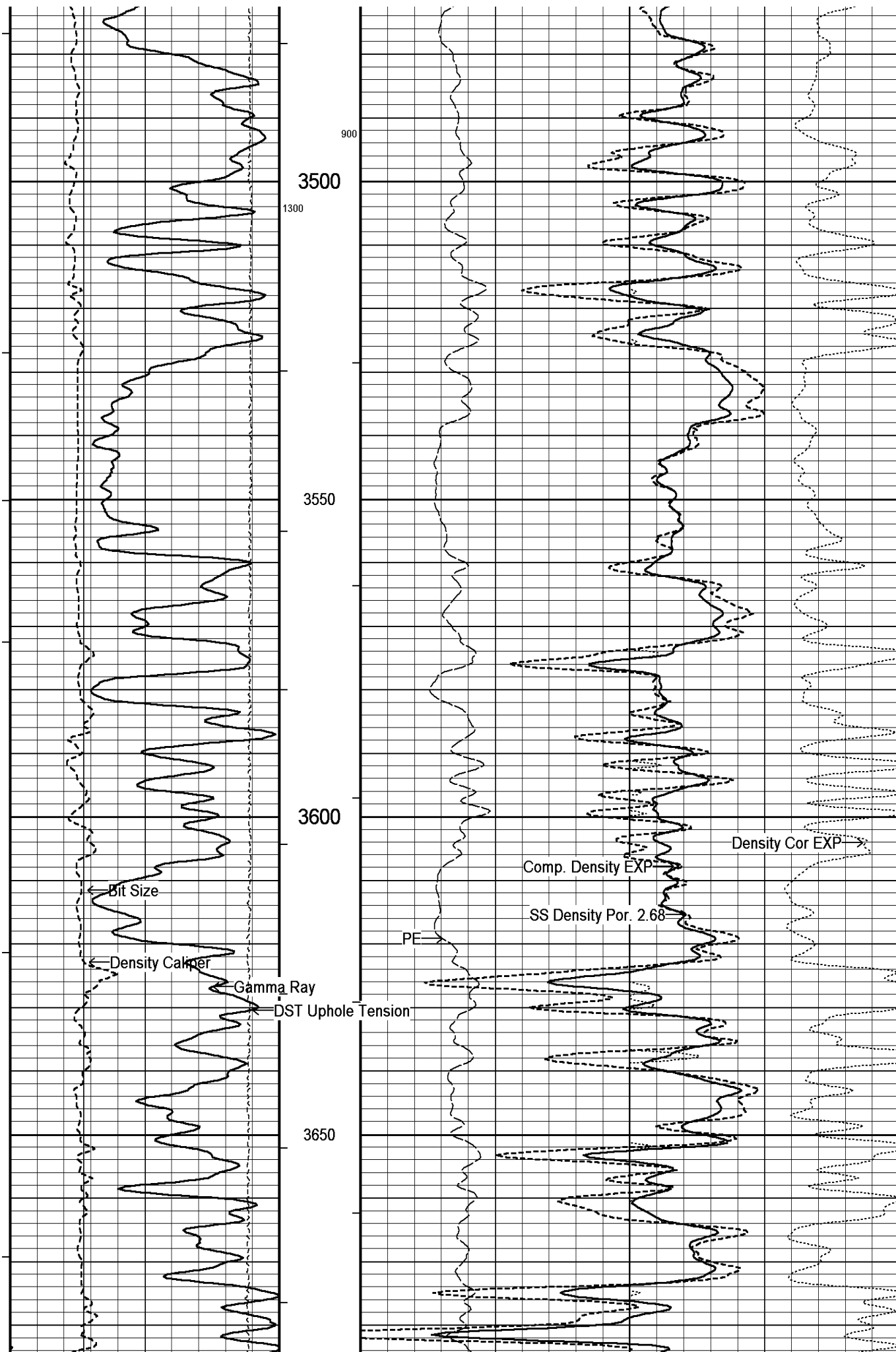
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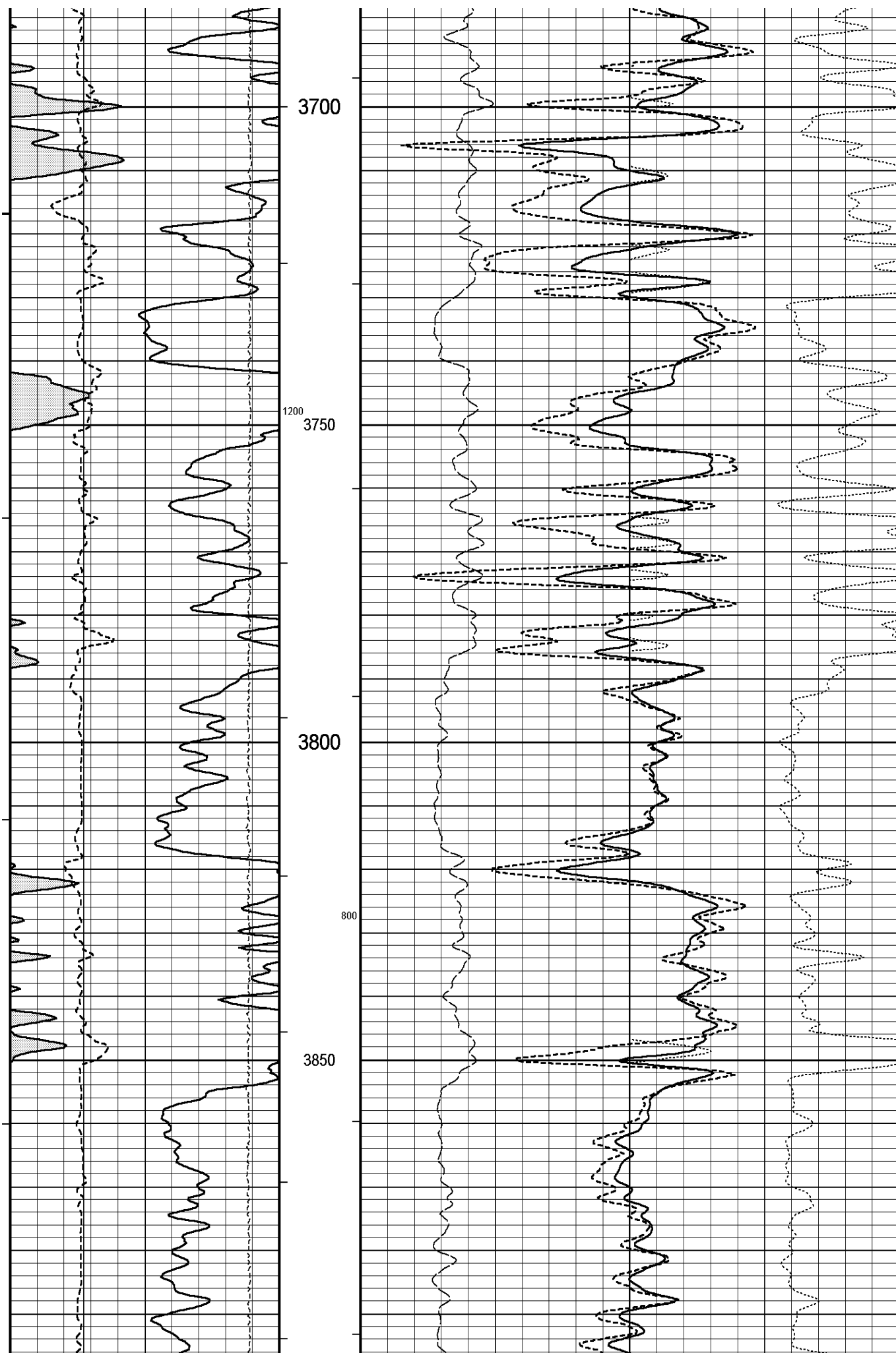
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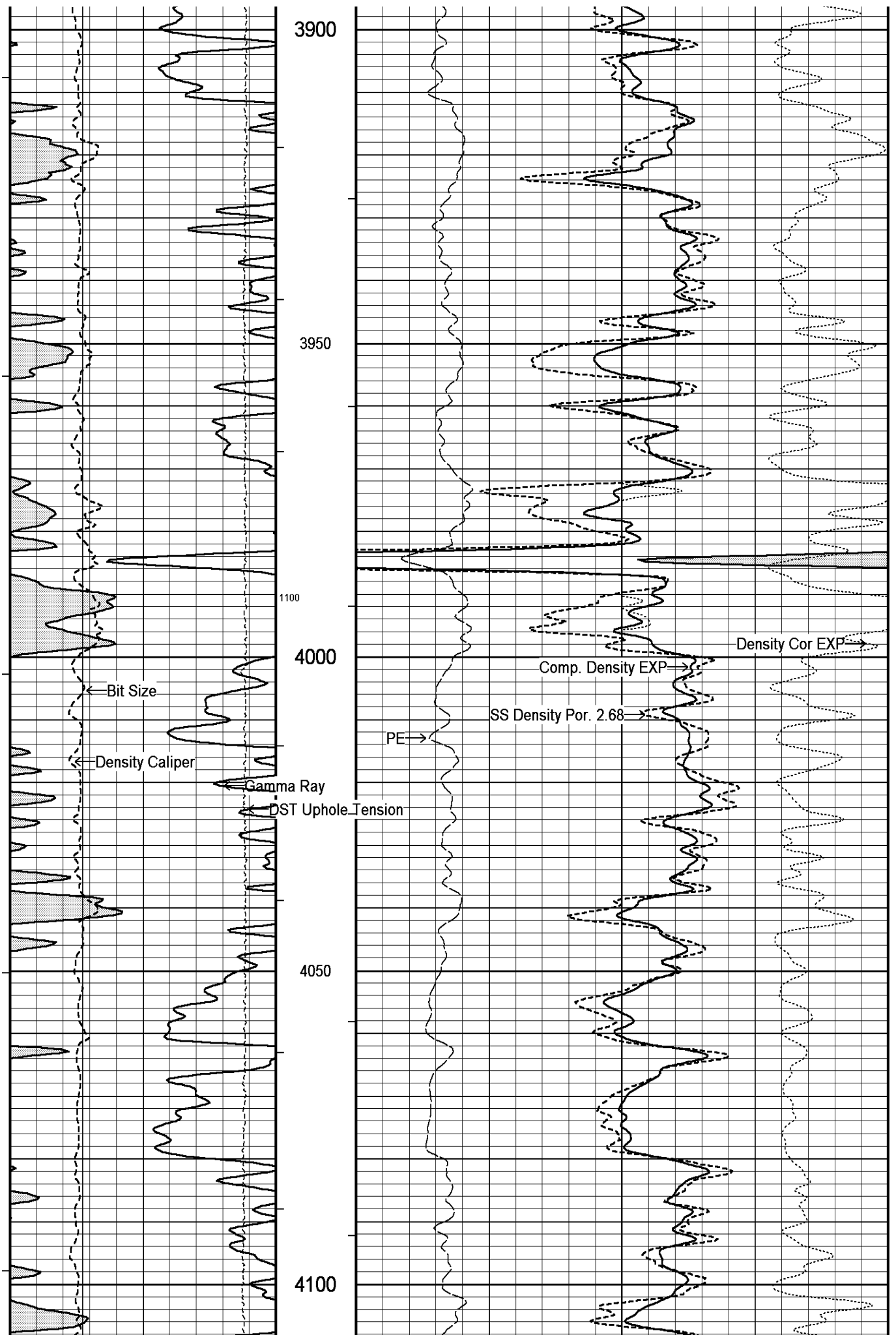
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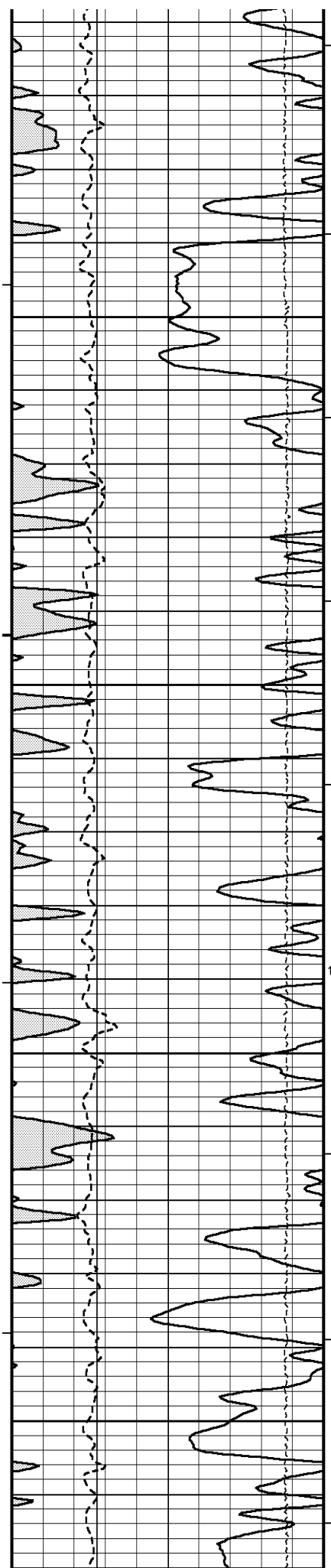
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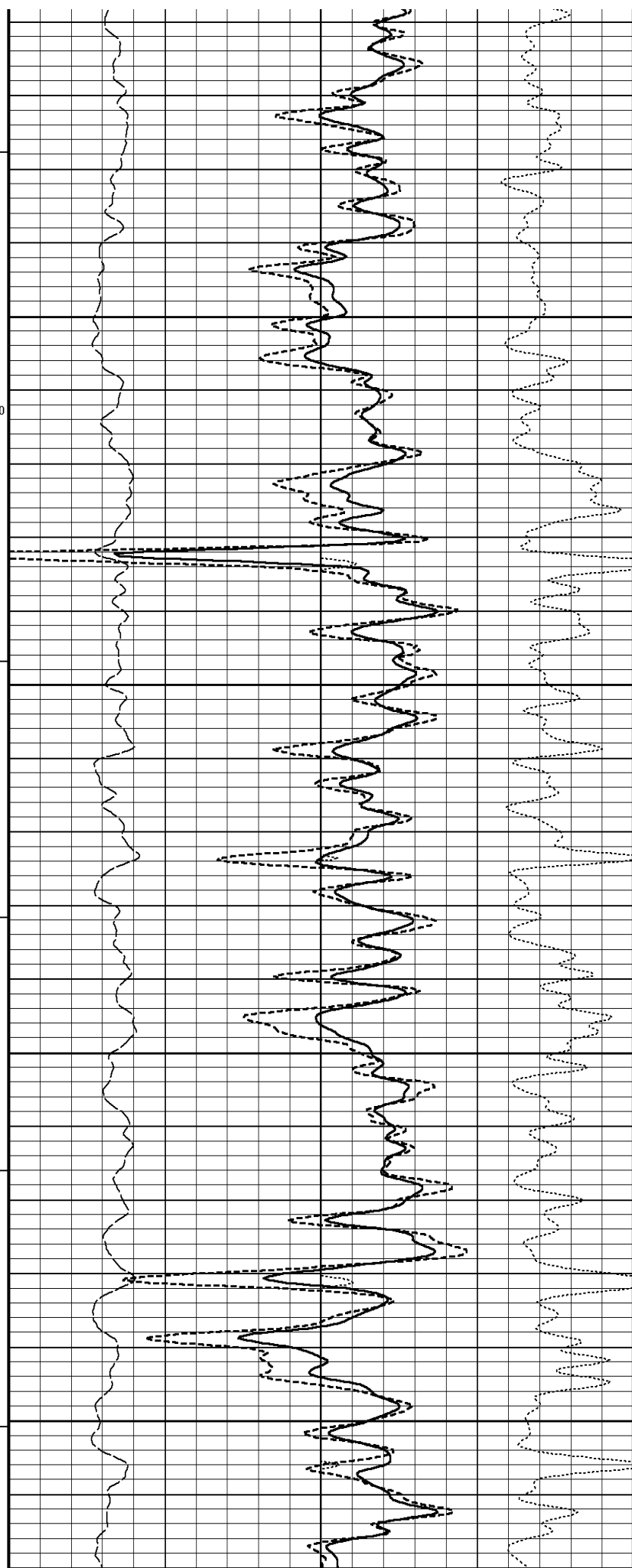
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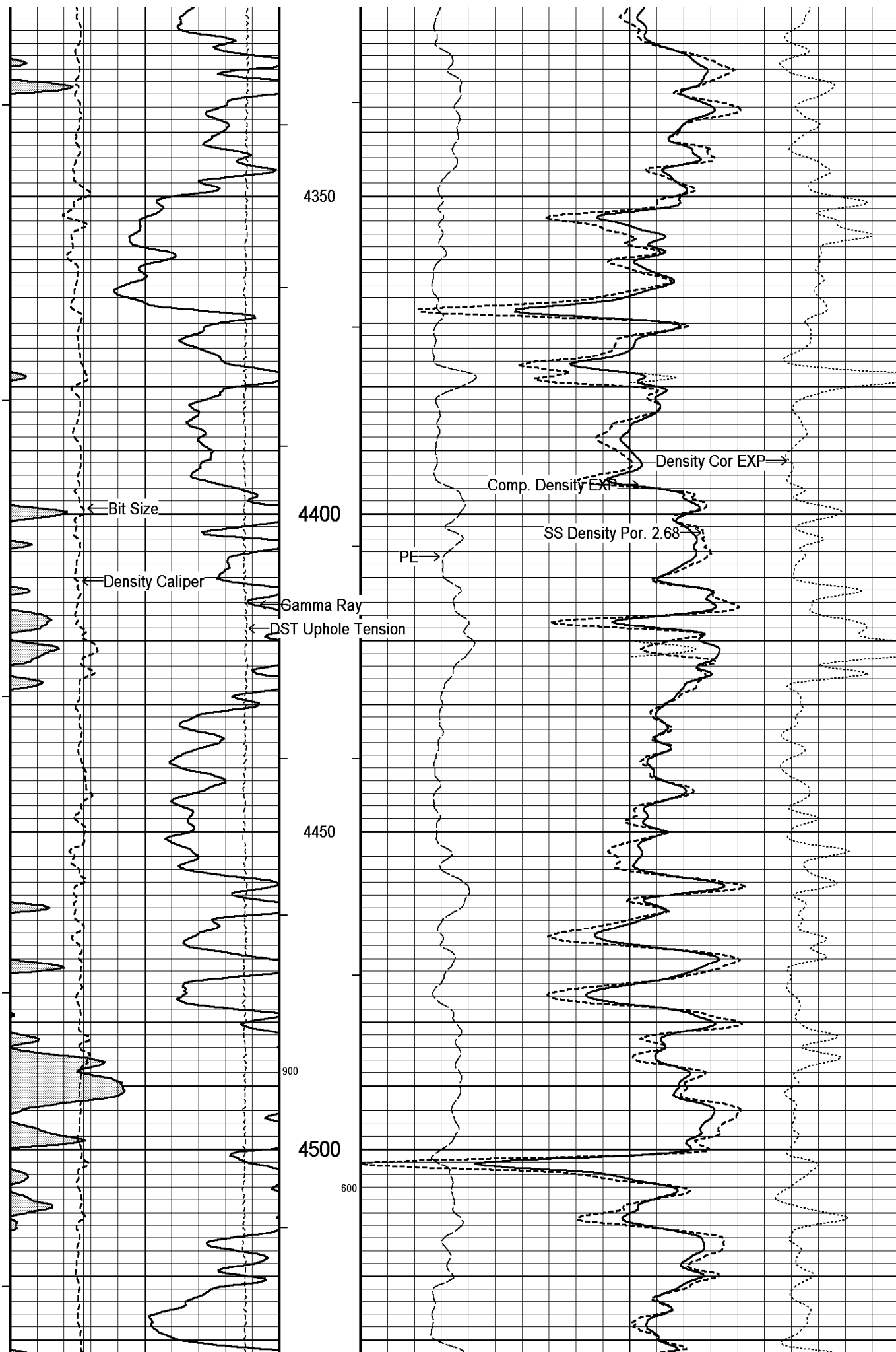
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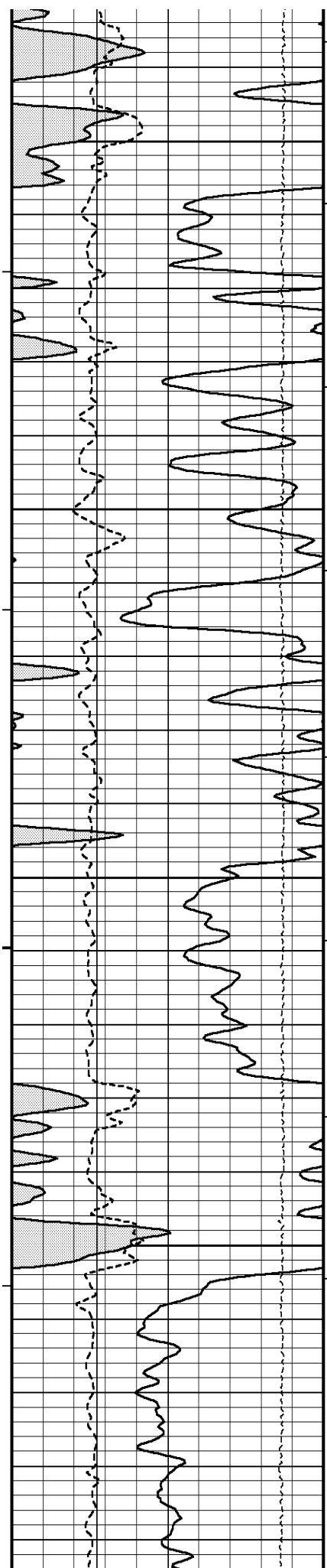
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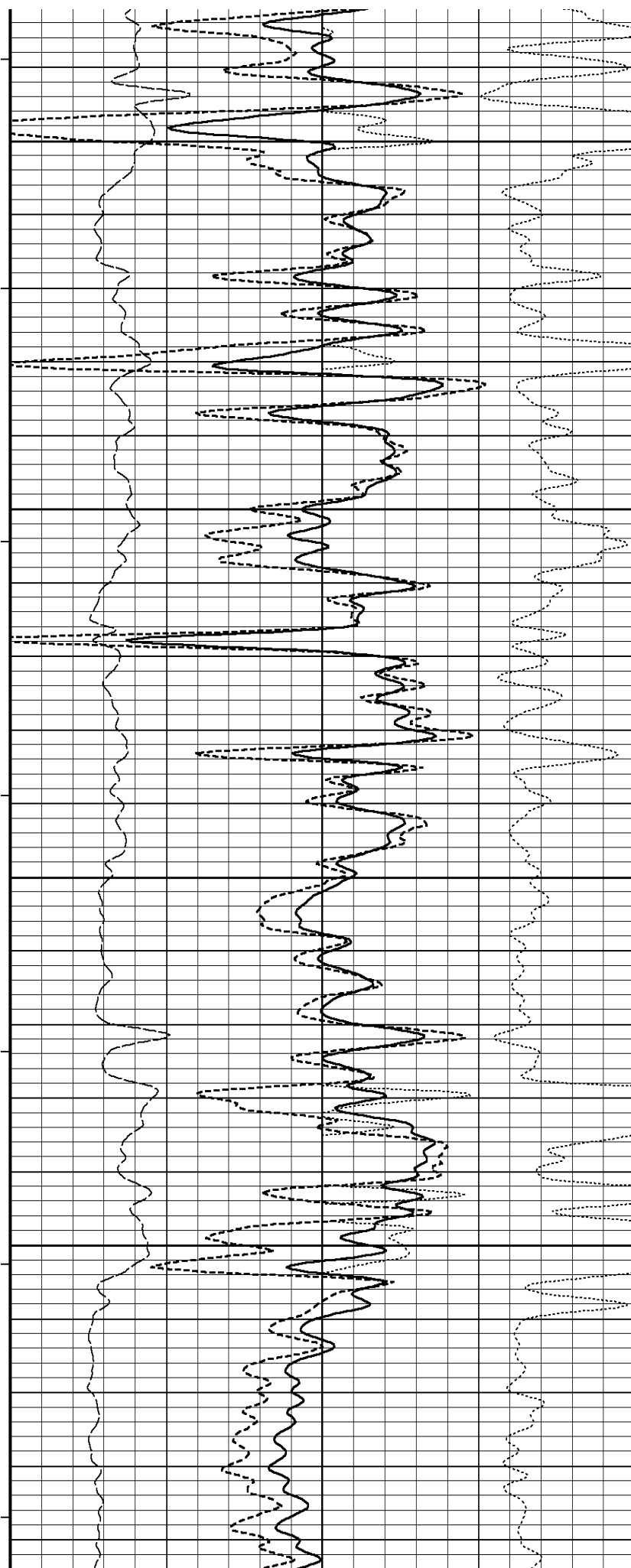
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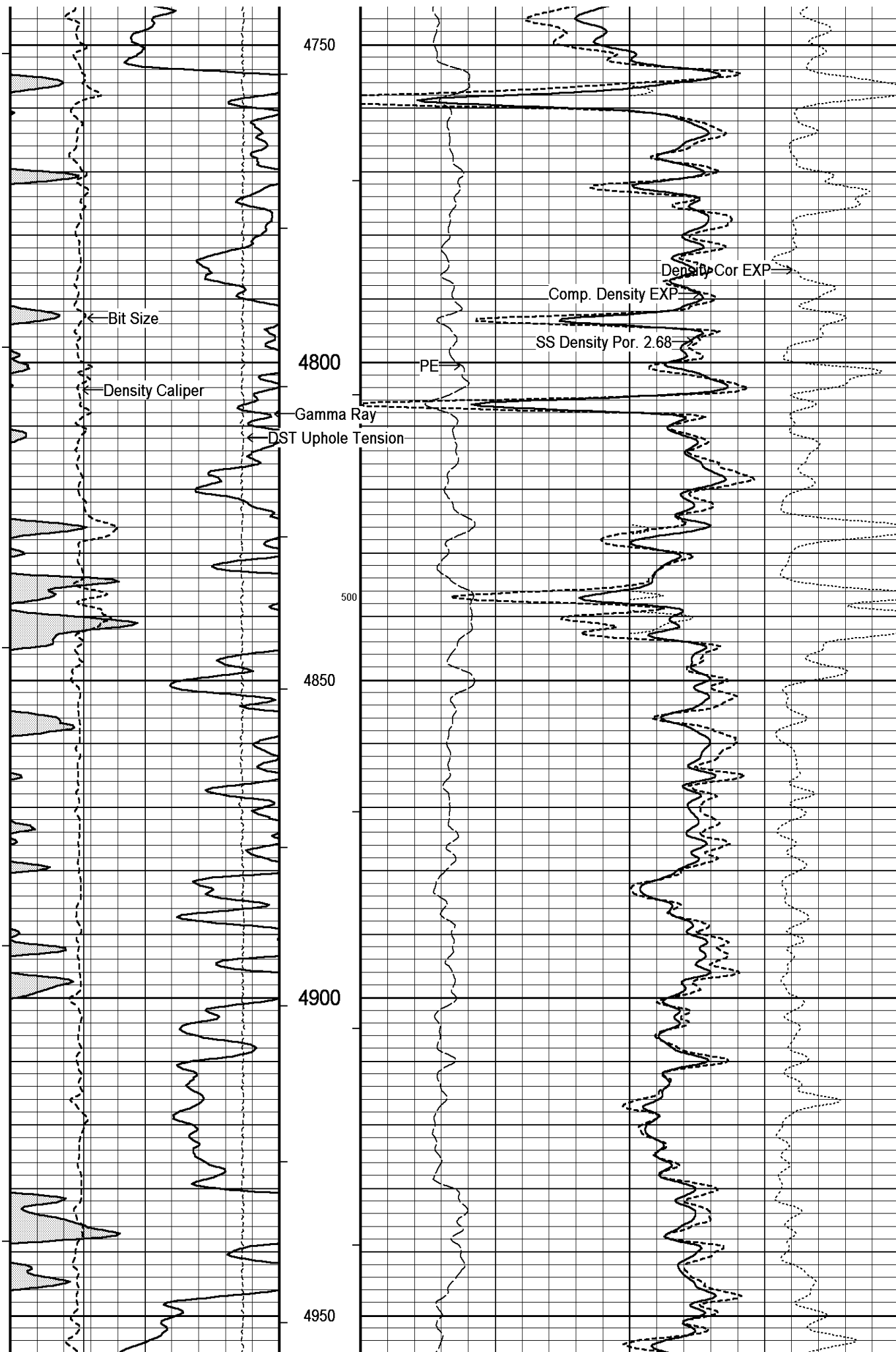
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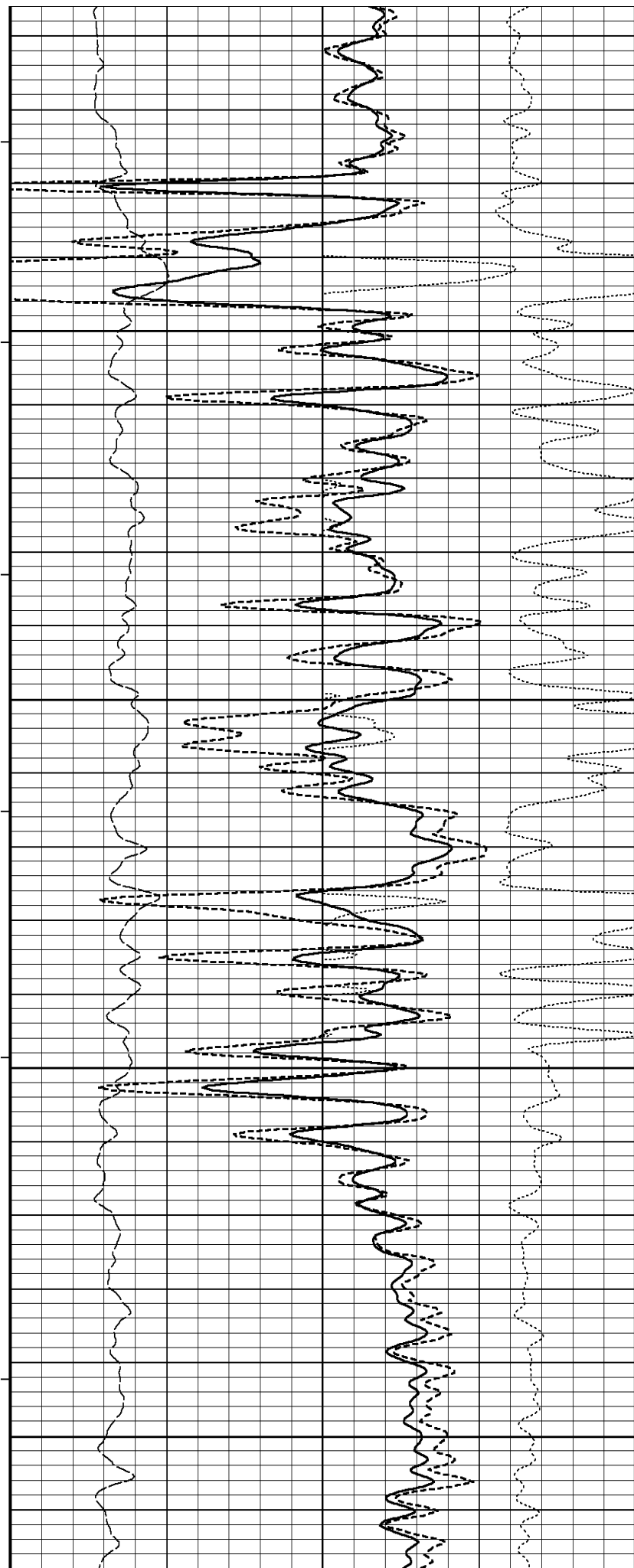
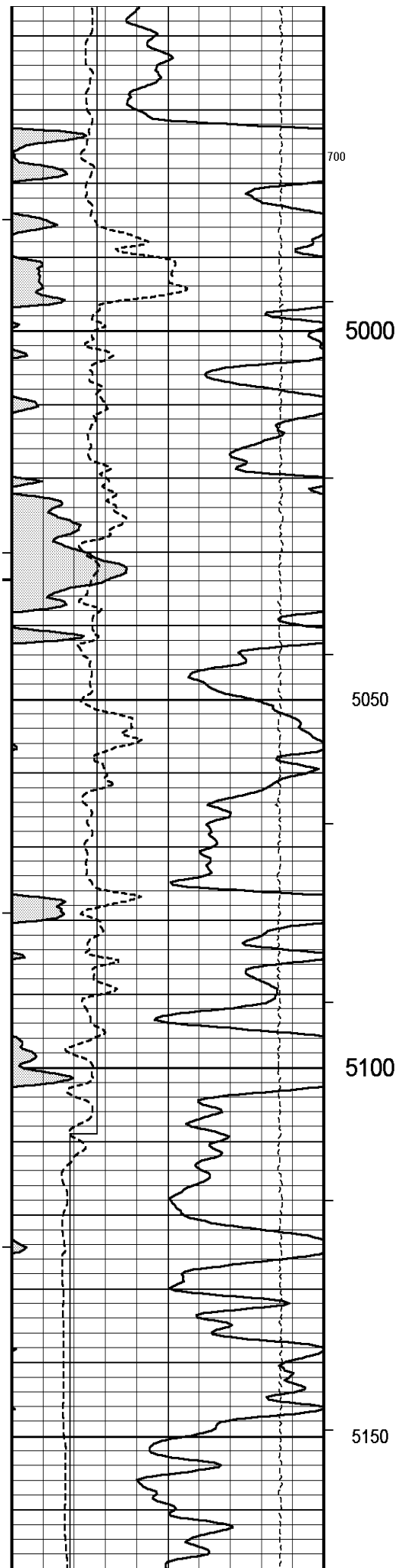
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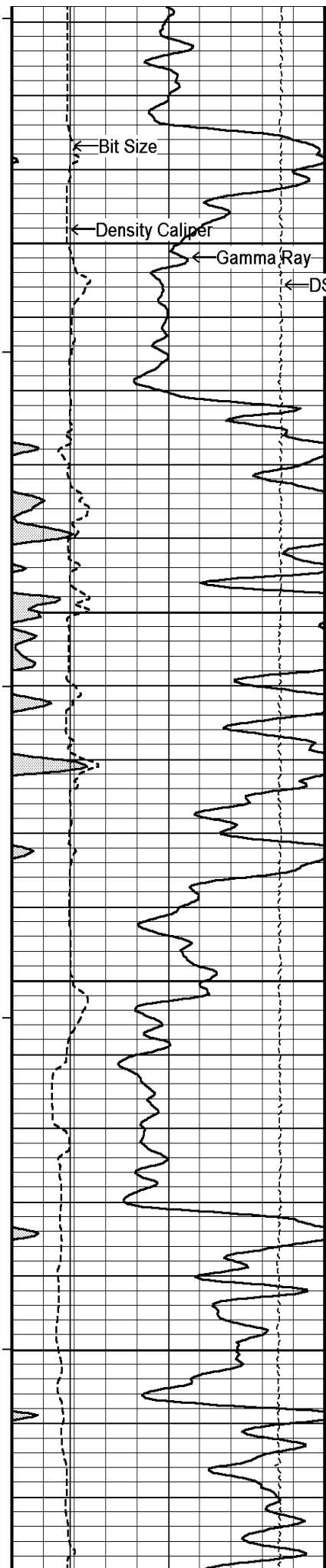
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5200

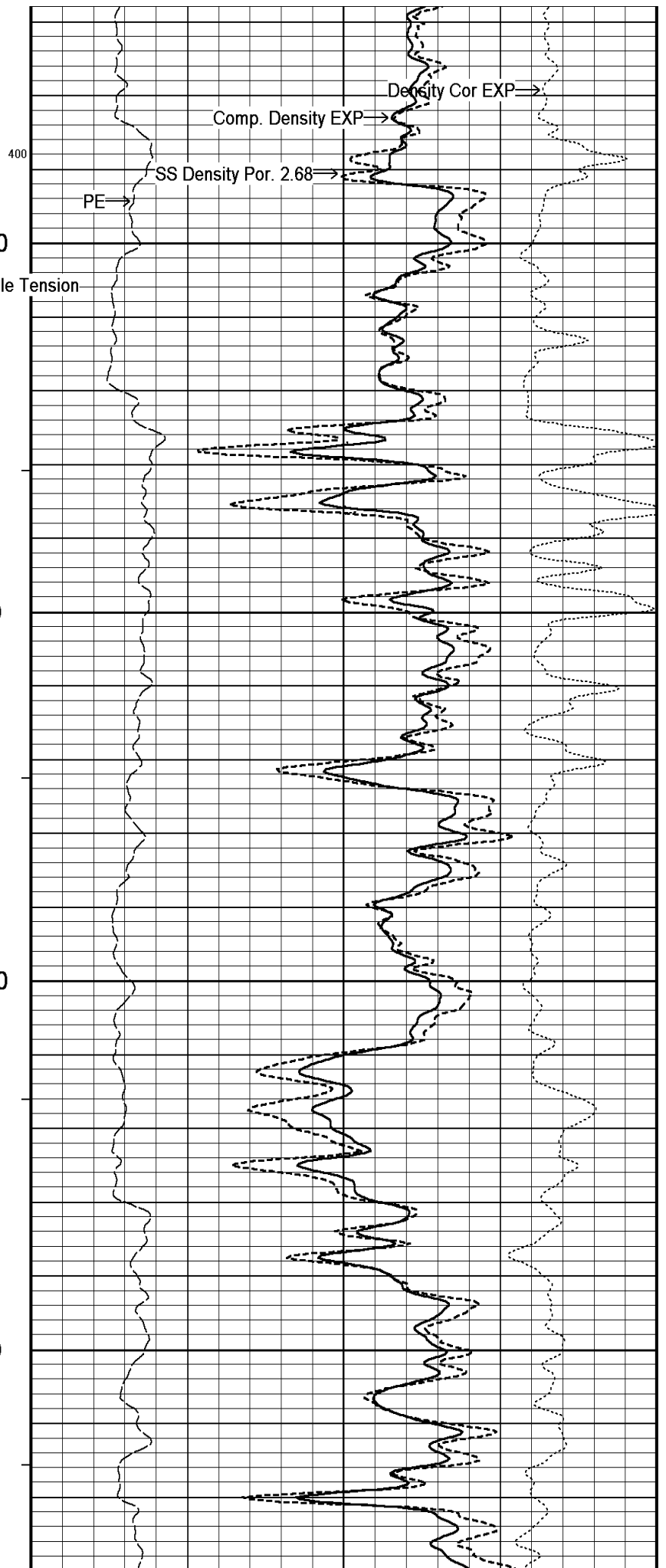
DST Uphole Tension

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5250

5300

5350



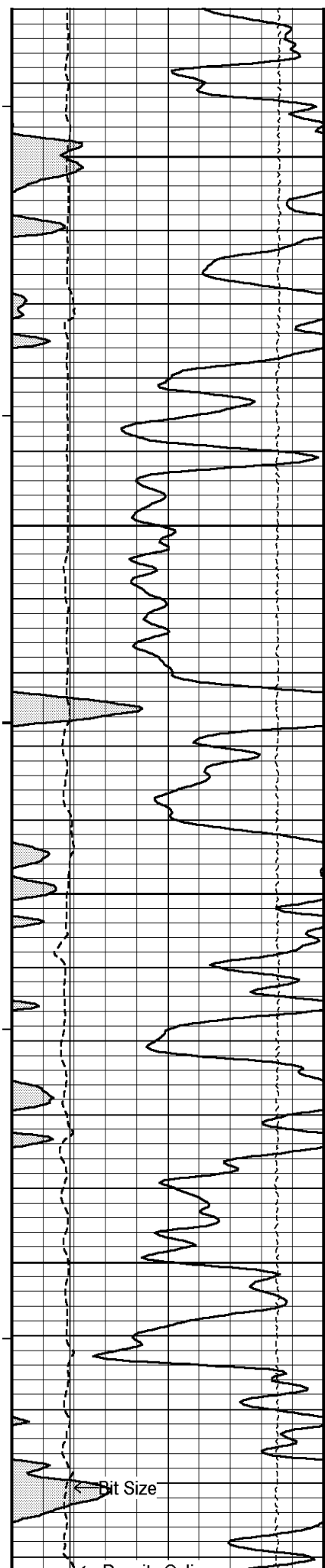
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Comp. Density EXP

Density Cor EXP

PE

SS Density Por. 2.68



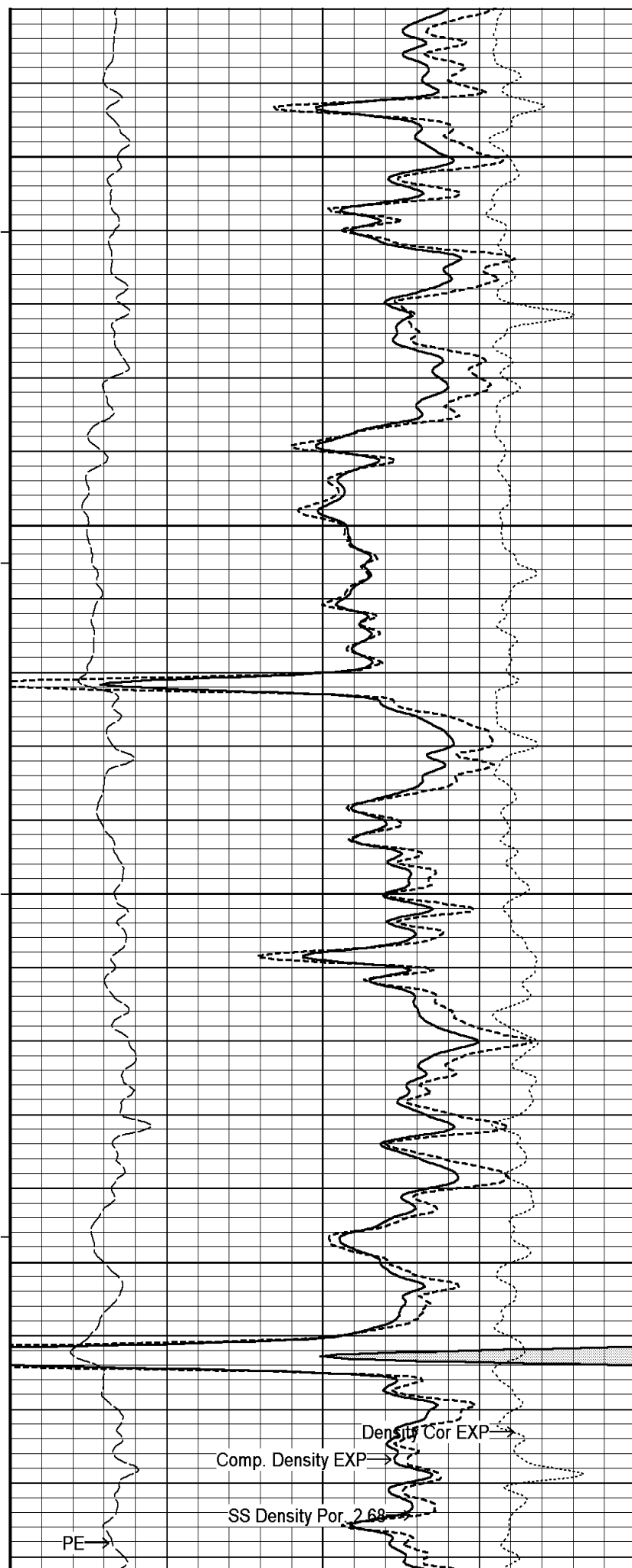
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5500

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5550



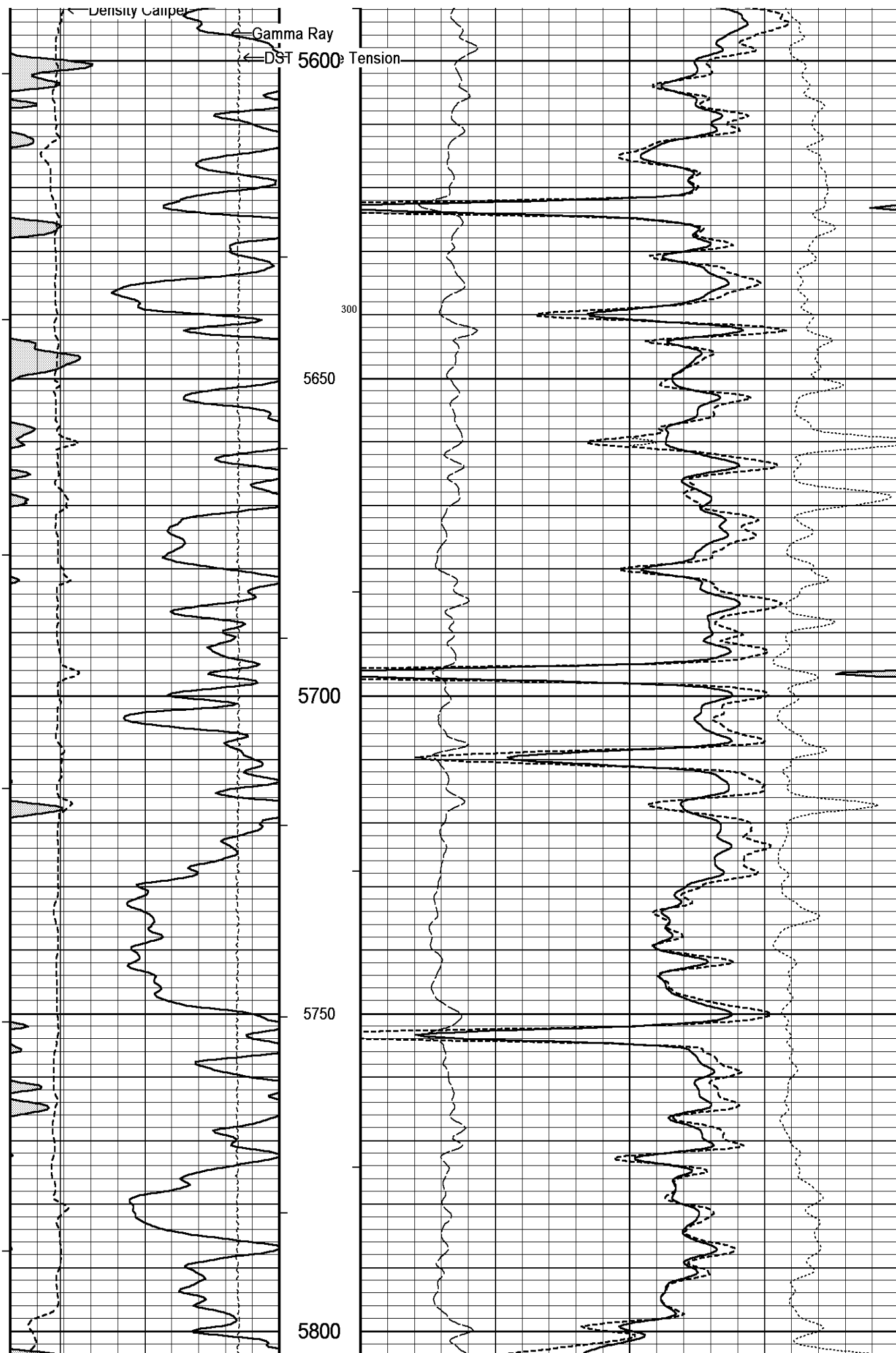
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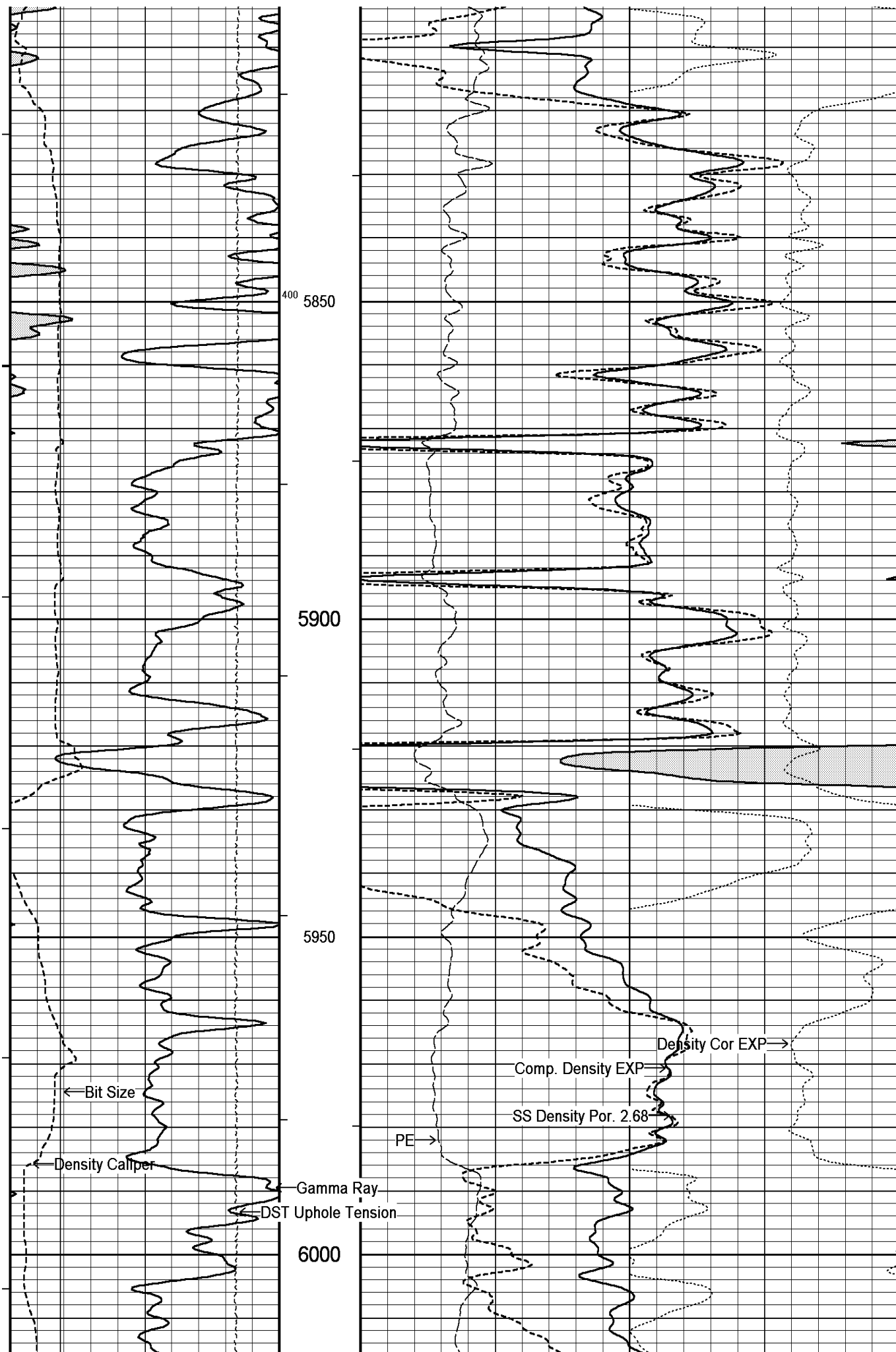
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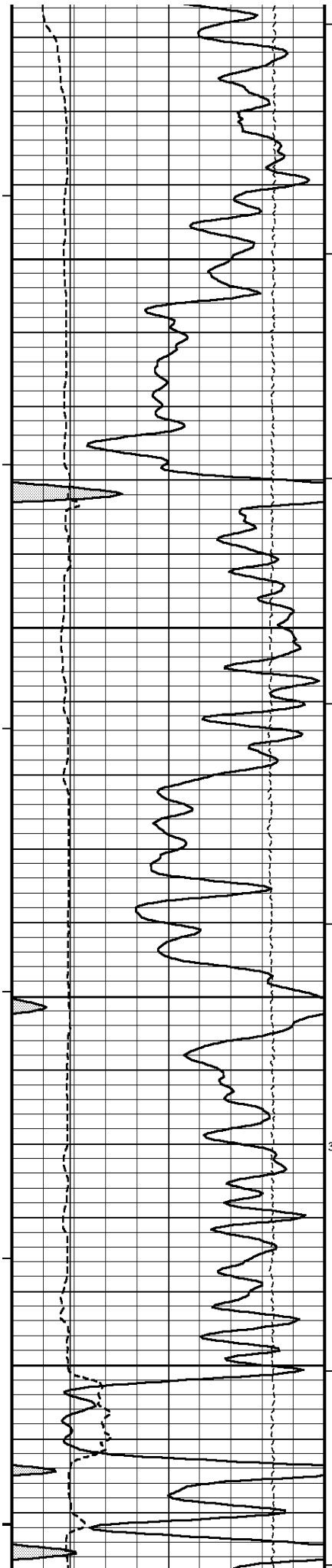
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500

5550







6050

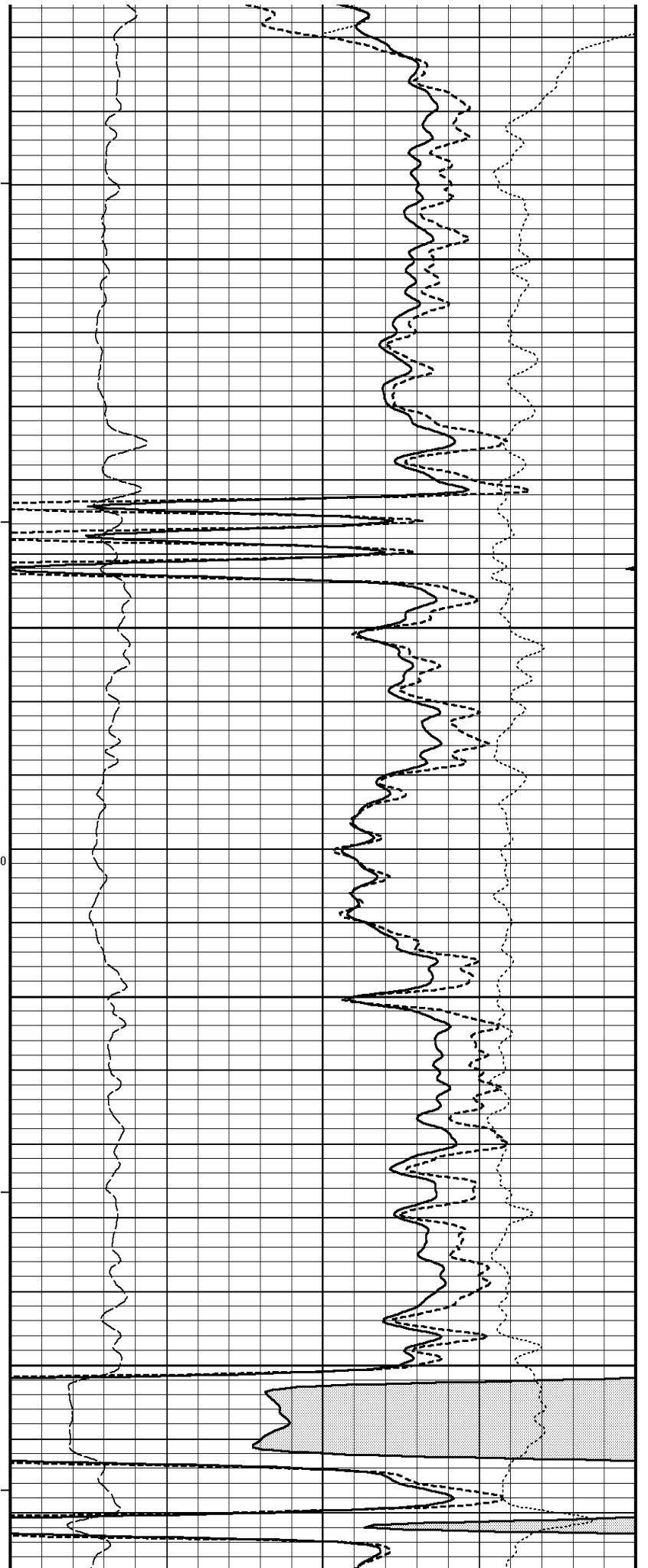
6100

200

6150

300

6200



6050

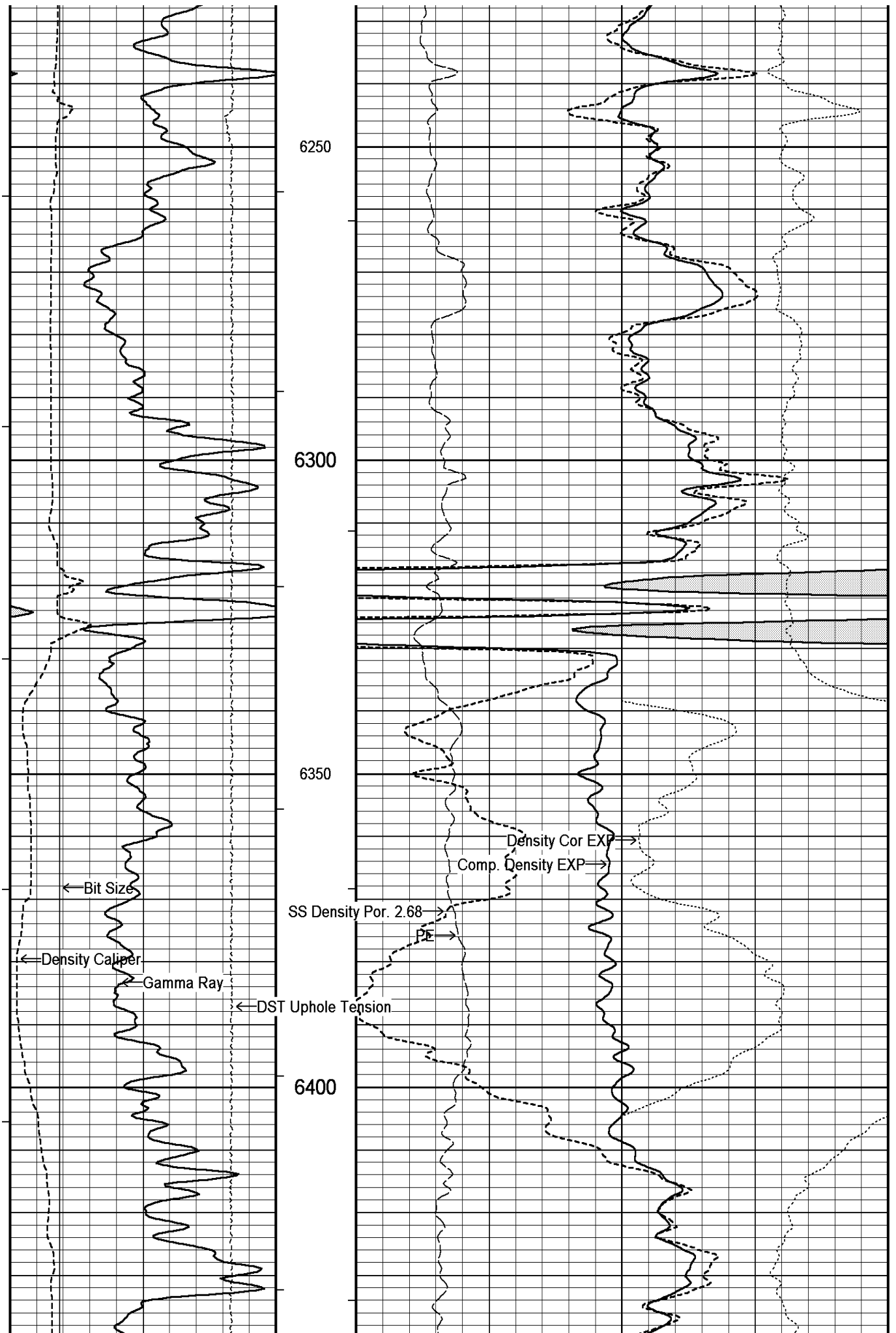
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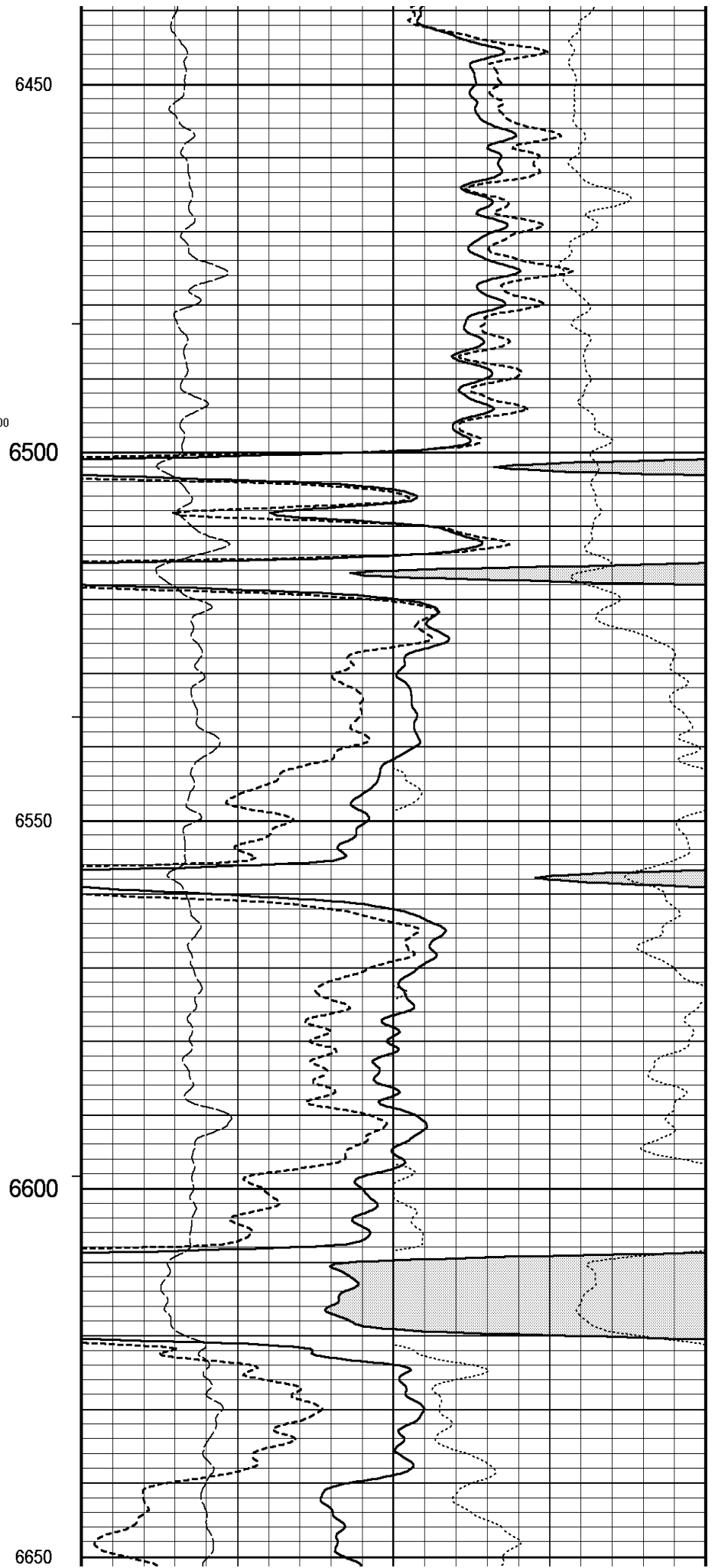
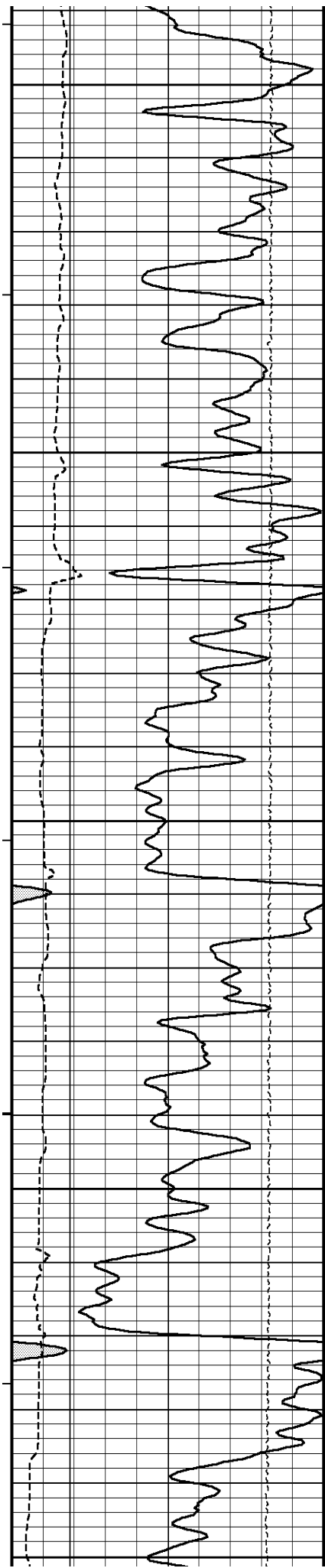
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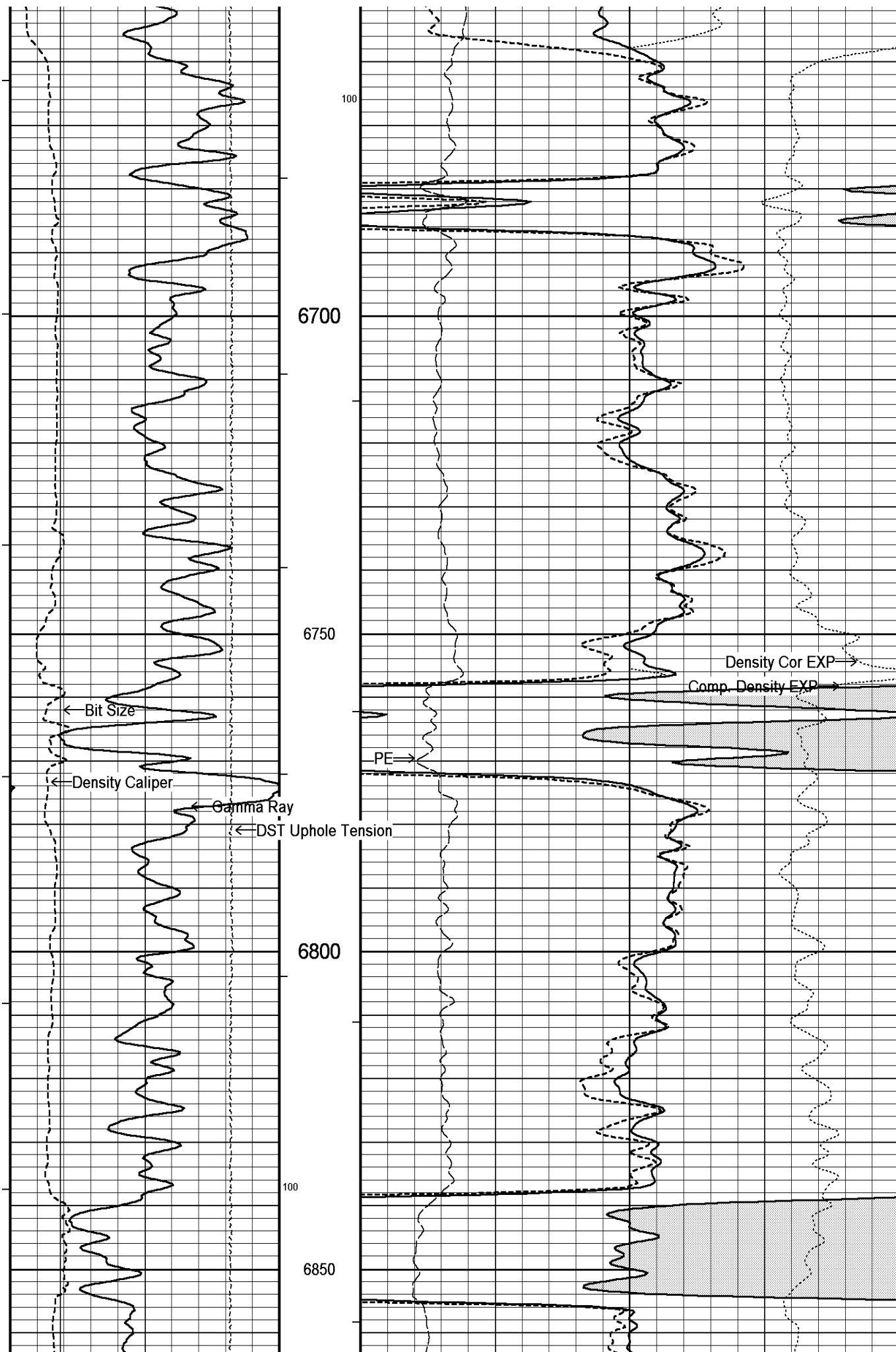
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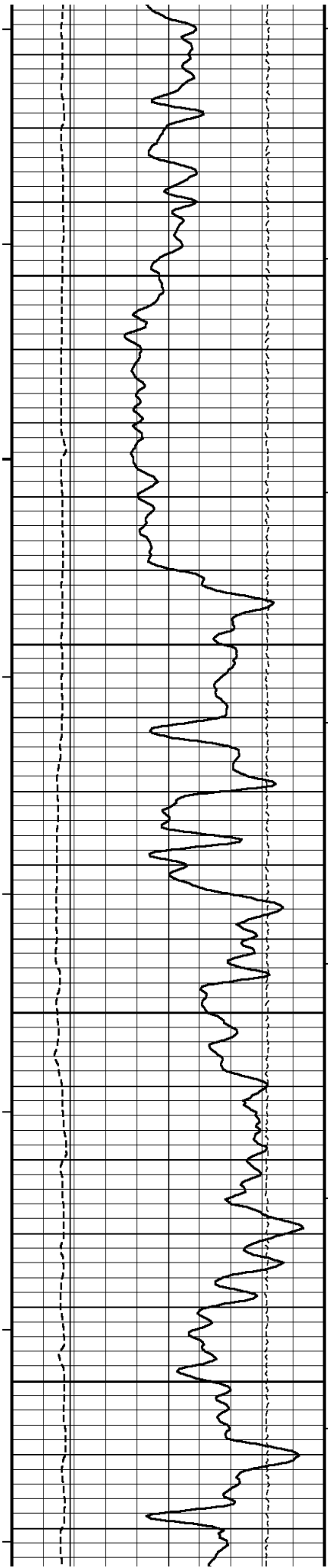
300

6200







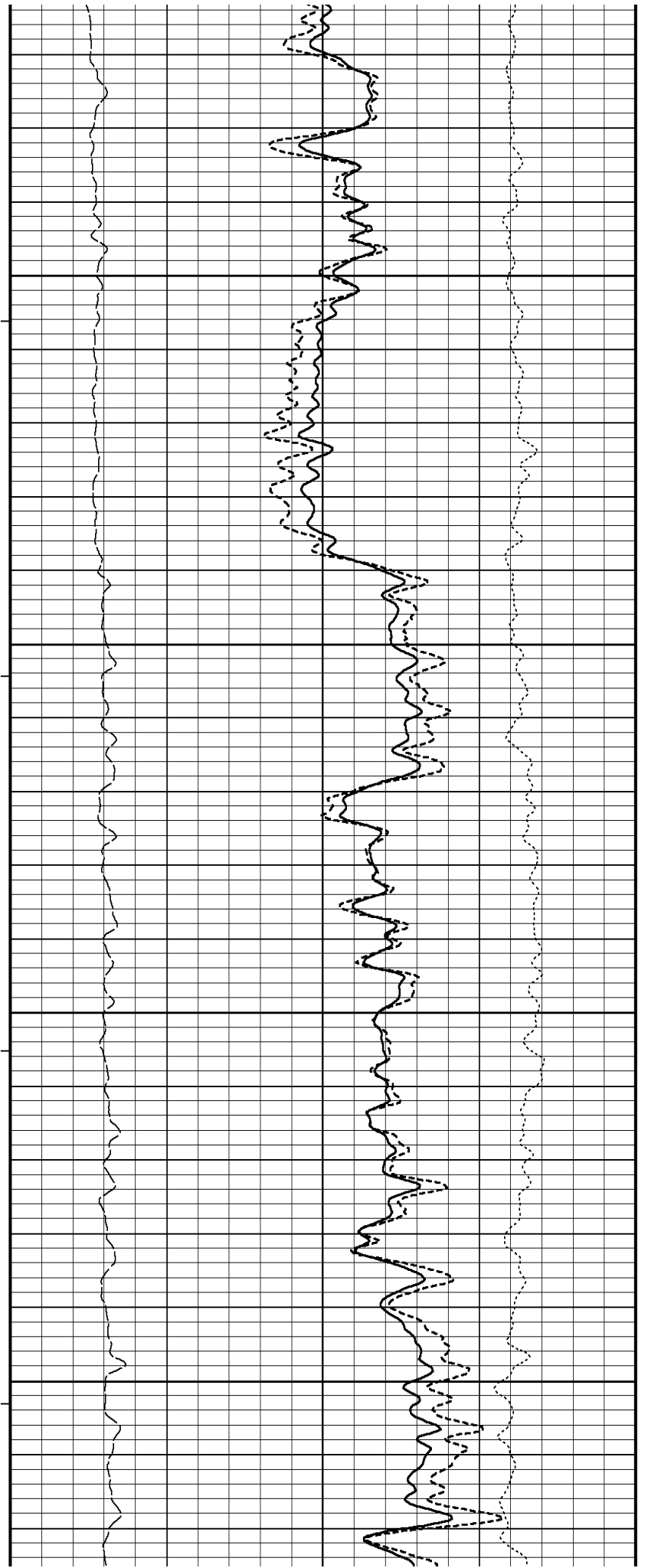


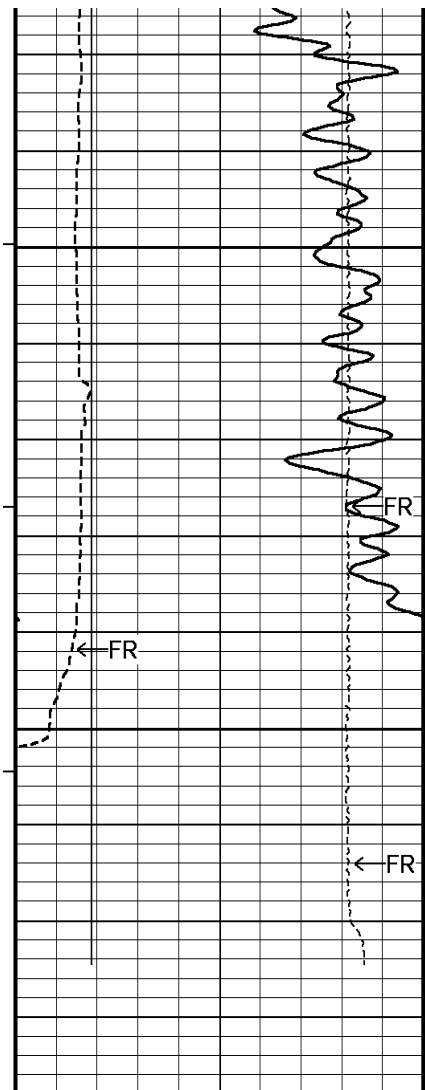
6900

6950

7000

7050





7100

7150

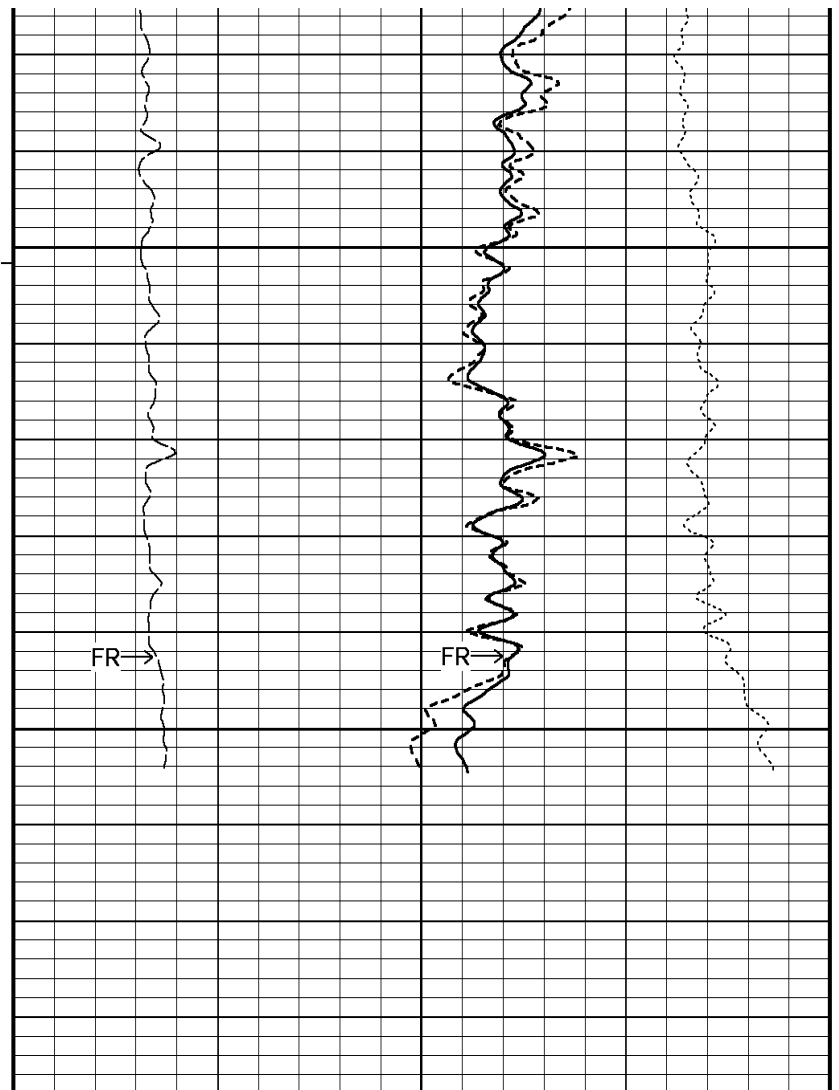
7186

DSC
in
Feet

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240



SS Density Por. 2.68
percent

Comp. Density EXP

g/cc

PE
barns/electron

Density Cor EXP

g/cc

Timing Marks
every 60.0 sec

DST Uphole Tension

pounds

10000 5000 0

Gamma Ray

API

0 75 150

150 225 300

Density Caliper

inches

6 11 16

Bit Size

inches

6 11 16

30

20

10

0

-10

2

2.25

2.50

2.75

3

1

1.25

1.50

1.75

2

0

5

10 -0.25

0

0.25

Depth Based Data - Maximum Sampling Increment 10.0cm
 Filename: C:\Minimus\Logs\Bill Barrett\GGU MILLER 24C-32-691\MAIN EXPO.dta
 System Versions: Plotted with 10.08.1568

Plotted on 10-NOV-2010 15:13
 Recorded on 05-NOV-2010 23:28

↑ **5 INCH MAIN LOG** ↑

BEFORE SURVEY CALIBRATION

C:\Minimus\Logs\Bill Barrett\GGU MILLER 24C-32-691\MAIN.dta

General Constants All 000 Last Edited on 05-NOV-2010,21:42

General Parameters
 Mud Resistivity 1.950 ohm-metres
 Mud Resistivity Temperature 86.500 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 Neutron Porosity
 Resistivity used Array Ind. One Res Rt
 RWA Constant A 0.610
 RWA Constant M 2.150

Down-hole Tension Calibration SMS 000 Field Calibration on 05-NOV-2010 21:10

Reading No	Measured	Calibrated (lbs)
1	15678.98	0.00
2	16338.55	350.00

Gamma Calibration MCG 342 Field Calibration on 05-NOV-2010,21:12

	Measured	Calibrated (API)
Background	150	101
Calibrator (Gross)	1080	727
Calibrator (Net)	930	626

Gamma Constants MCG 342 Last Edited on 30-OCT-2010,15:36

Gamma Calibrator Number GRC-005
 Mud Density 1.00 gm/cc
 Caliper Source for Processing Density Caliper
 Tool Position Eccentred
 Concentration of KCl 0.00 kppm

SP Calibration MCG 342 Field Calibration on 05-NOV-2010,21:12

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

High Resolution Temperature Calibration MCG 342 Field Calibration on 04-NOV-2010,21:21

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG 342 Last Edited on 13-SEP-2010,08:11

Pre-filter Length 11

Neutron Calibration MDN 250 Base Calibration on 03-SEP-2010 16:24

Base Calibration				
	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3043	93	3714	110
Ratio	32.551		33.764	
Field Calibrator at Base			Calibrated (cps)	
			1588	2313
Ratio	0.687			
Field Check			Calibrated (cps)	
			1592	2298
Ratio	0.693			

Neutron Constants MDN 250 Last Edited on 21-SEP-2010,09:21

Neutron Source Id	755		
Neutron Jig Number	6532		
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	Constant Value		
Formation Pressure	0.00	kpsi	
Temperature Source	Constant Value		
Temperature	68.00	degrees F	
Mud Salinity	0.00	kppm	
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE 136 Base Calibration on 03-SEP-2010 14:00
Field Check on 05-NOV-2010 21:19

Base Calibration			
	Measured		Calibrated (ohm-m)
Reference 1	0.0		0.0
Reference 2	963.5		126.8
Base Check			281.4
Field Check			281.8

FE Constants MFE 136 Last Edited on 04-NOV-2010,23:57

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 191 Field Calibration on 04-NOV-2010,21:22

	Measured		Calibrated(Deg F)
Lower	10.00		50.00
Upper	100.00		212.00

High Resolution Temperature Constants MAI 191

Pre-filter Length	11		
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Induction Calibration MAI 191 Base Calibration on 17-JAN-2008,10:10
Field Check on 05-NOV-2010 21:21

Base Calibration			
Test Loop Calibration	Measured		Calibrated (mmho/m)

Channel	Low	High	Low	High
1	17.1	473.4	9.3	966.2
2	6.1	387.6	7.6	821.4
3	3.5	261.8	5.2	566.0
4	1.9	137.8	2.6	279.2

Array Temperature 75.2 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.6	3827.5
2	0.0	0.0	30.1	3469.5
3	0.0	0.0	28.4	3016.4
4	0.0	0.0	19.1	2000.0
Deep	0.0	0.0	17.0	1955.3
Medium	0.0	0.0	41.8	4005.8
Shallow	0.0	0.0	45.5	5139.3
Array Temperature	0.0		75.7	Deg F

Induction Constants MAI 191

Last Edited on 04-NOV-2010,21:22

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.	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	

Photo Density Calibration MPD 253

Base Calibration on 19-OCT-2010 17:52

Field Check on 05-NOV-2010 21:17

Density Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Base Calibration				
Reference 1	47980	16201	53115	19186
Reference 2	22881	2514	25020	2536

Field Check at Base

	1339.7	1319.6		
Field Check				
	1333.3	1312.9		
PE Calibration				
Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	243	1176		
Reference 1	17257	47769	0.365	0.320
Reference 2	6510	22703	0.291	0.272
Field Check at Base				
	242.5	1175.6		
Field Check				
	240.6	1169.6		

Density Constants MPD 253

Last Edited on 04-NOV-2010,21:22

Density Source Id	271	
Nylon Calibrator Number	507	
Aluminium Calibrator Number	507	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.13	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	

Caliper Calibration MPD 253

Base Calibration on 19-OCT-2010 17:58
Field Calibration on 04-NOV-2010,21:22

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16838	4.00
2	25472	5.96
3	33213	7.98
4	41408	9.86
5	50509	11.88
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.98	7.98

DOWNHOLE EQUIPMENT

C:\Minimus\Log\Bill Barrett\GGU MILLER 24C-32-691\MAIN.dta

SHA-J.A Compact Swivel Head Adaptor
SHA 286 Length: 2.30 ft Weight: 22.0 lb



Compact Gamma

MCG 342	Length: 8.70 ft	Weight: 63.9 lb
Compact Neutron		
MDN 250	Length: 5.04 ft	Weight: 50.7 lb
Compact Density/Caliper		
MPD 253	Length: 9.59 ft	Weight: 90.4 lb
SKJ-E.A Compact Knuckle Joint		
SKJ 143	Length: 2.17 ft	Weight: 24.3 lb
Compact Focussed Electric		
MFE 136	Length: 6.03 ft	Weight: 48.5 lb
Compact Induction		
MAI 191	Length: 10.81 ft	Weight: 48.5 lb
Total	Length: 44.64 ft	Weight: 348.3 lb



Tool Zero (0.13ft from bottom)
All measurements relative to tool zero.

COMPANY	BILL BARRETT CORPORATION
WELL	GGU MILLER 24C-32-691
FIELD	MAMM CREEK
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6142.00	feet	First Reading	7142.00	
Elevation Drill Floor		feet	Depth Driller	7162.00	feet
Elevation Ground Level	6120.00	feet	Depth Logger	7164.00	feet



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COMPENSATED PHOTO DENSITY
COMPENSATED DUAL NEUTRON
CORRECTED EXPO LOG