



# HOLE VOLUME CALIPER LOG

**COMPANY** BILL BARRETT CORPORATION  
**WELL** MILLER FEDERAL 24D-31-691  
**FIELD** GIBSON GULCH  
**PROVINCE/COUNTY** GARFIELD  
**COUNTRY/STATE** U.S.A. / COLORADO  
**LOCATION** SHL: 2' FNL & 2437' FEL  
 BHL: 1140' FSL & 1998' FWL

**SEC** 6    **TWP** 7S    **RGE** 91W  
**API Number** 05-045-18660    **Other Services** MPD/MDN  
**Permit Number**    **MAI/MFE** MSS

**Permanent Datum G.L., Elevation 6266 feet**  
**Log Measured From K.B. @ 22 FEET above Permanent Datum**  
**Drilling Measured From K.B.**

**Elevations:**  
 KB 6288.00 feet  
 DF 6287.00 feet  
 GL 6266.00 feet

Date	12-DEC-2010	
Run Number	ONE	
Depth Driller	7626.00	feet
Depth Logger	7635.00	feet
First Reading	7600.00	
Last Reading		
Casing Driller	788.00	feet
Casing Logger	790.00	feet
Bit Size	7.875	inches
Hole Fluid Type	LSND	
Density / Viscosity	9.20 lb/USg	55.00 CP
PH / Fluid Loss	9.20	7.20 ml/30Min
Sample Source	FLOW LINE	
Rm @ Measured Temp	1.80 @ 80.0	ohm-m
Rmf @ Measured Temp	1.44 @ 80.0	ohm-m
Rmc @ Measured Temp	2.16 @ 80.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.857 @172.0	ohm-m
Time Since Circulation	4 HOURS	
Max Recorded Temp	172.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13045	GD_JCT
Recorded By	SLACKEY	
Witnessed By	JIM	

## BOREHOLE RECORD

Last Edited: 12-DEC-2010 22:00

Bit Size inches	Depth From feet	Depth To feet
8.750	768.00	4246.00
7.880	4246.00	7625.00

## CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	768.00	36.00

## REMARKS

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

**HARDWARE:**    MPD: (1) 8 INCH PROFILE PLATE  
                       MAI: (1) 0.5 INCH STANDOFF  
                       MSS: (3) 1 INCH STANDOFF  
                       MDN: (1) DUAL BOWSPRING

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.

8.75 INCH BIT USED FROM SURFACE CASING TO 4246 FEET.

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.95" (9 5/8", 36 LB/FT CASING)

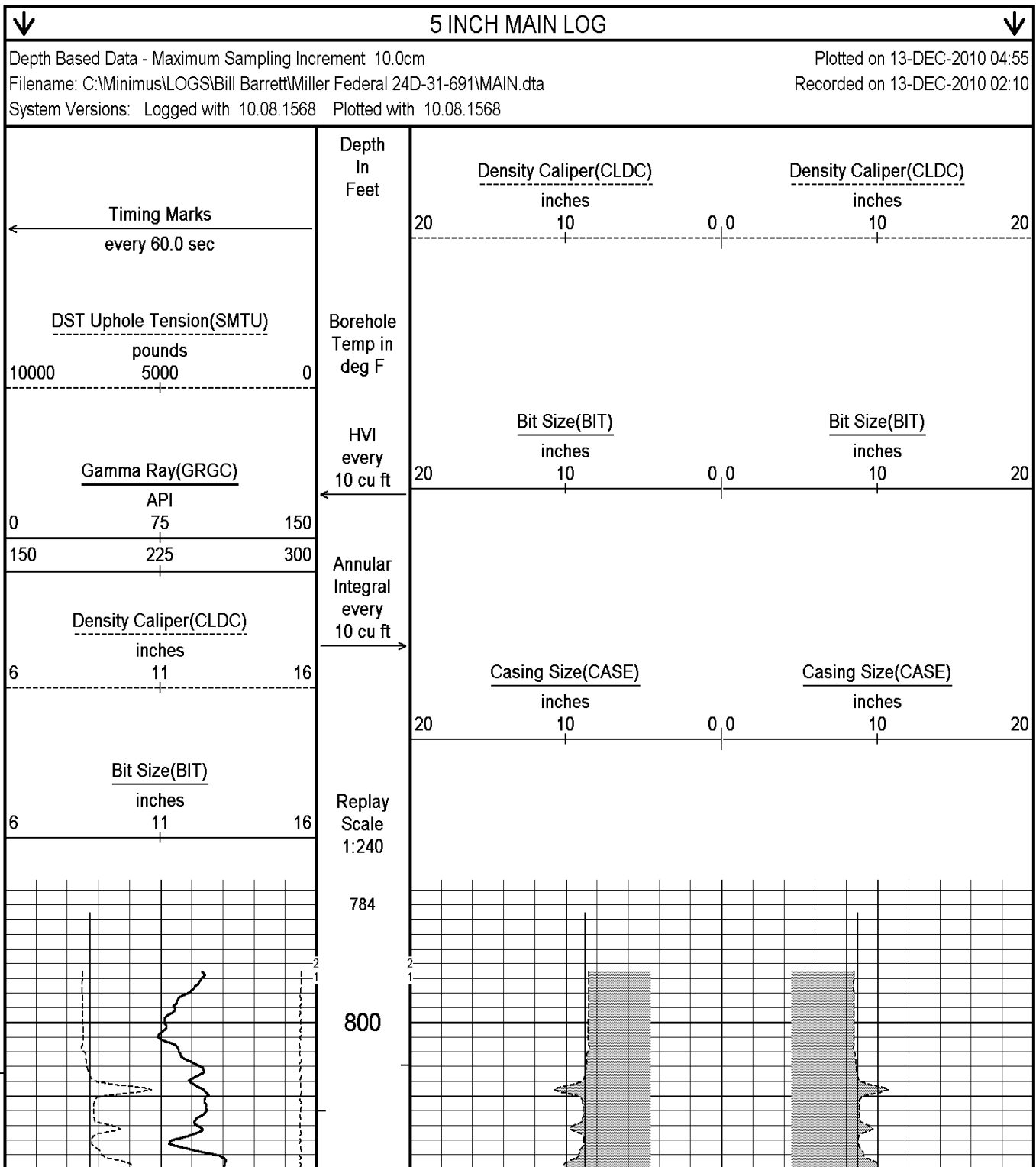
TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2695 CU.FT.

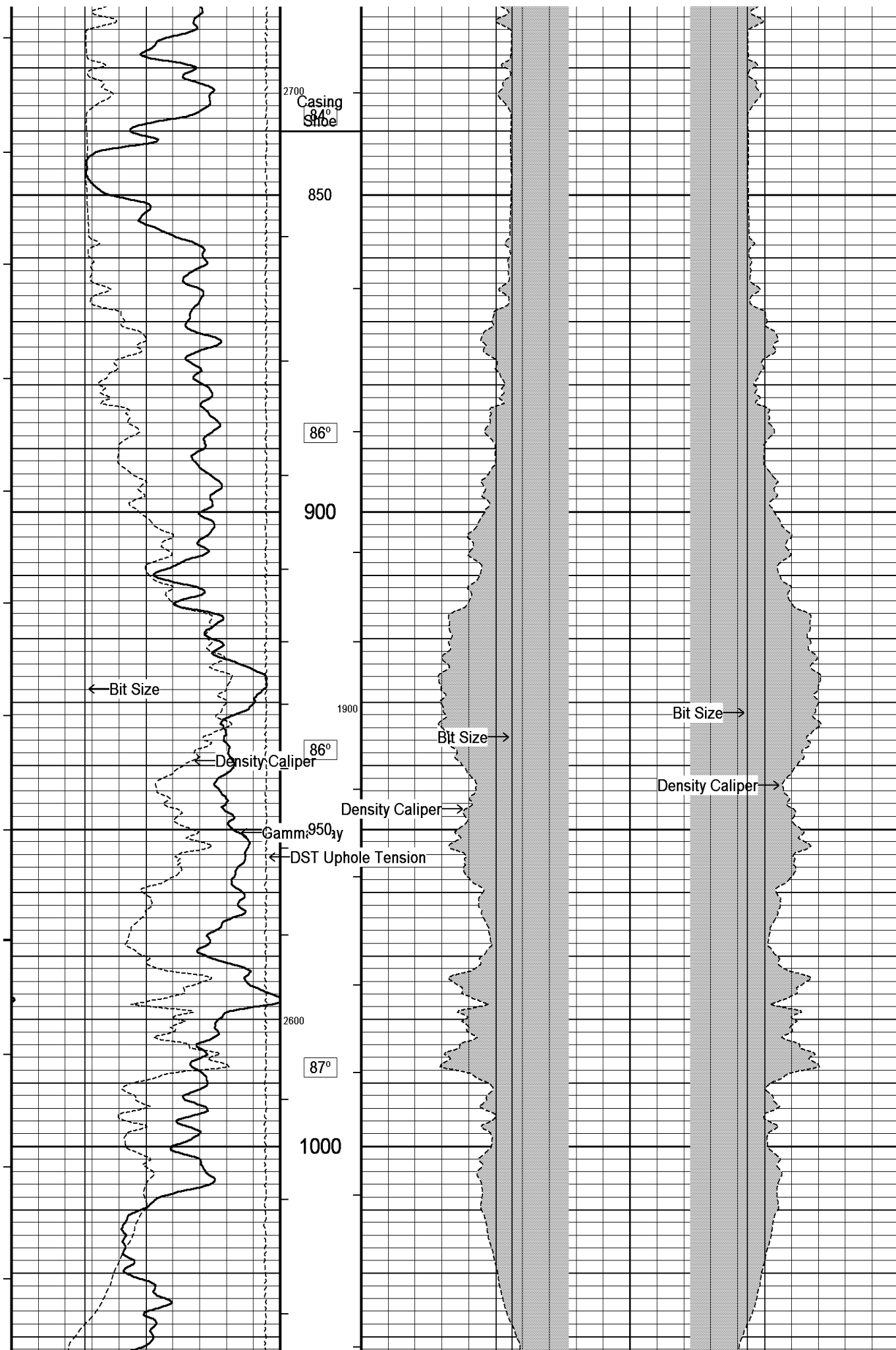
ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1950 CU.FT.

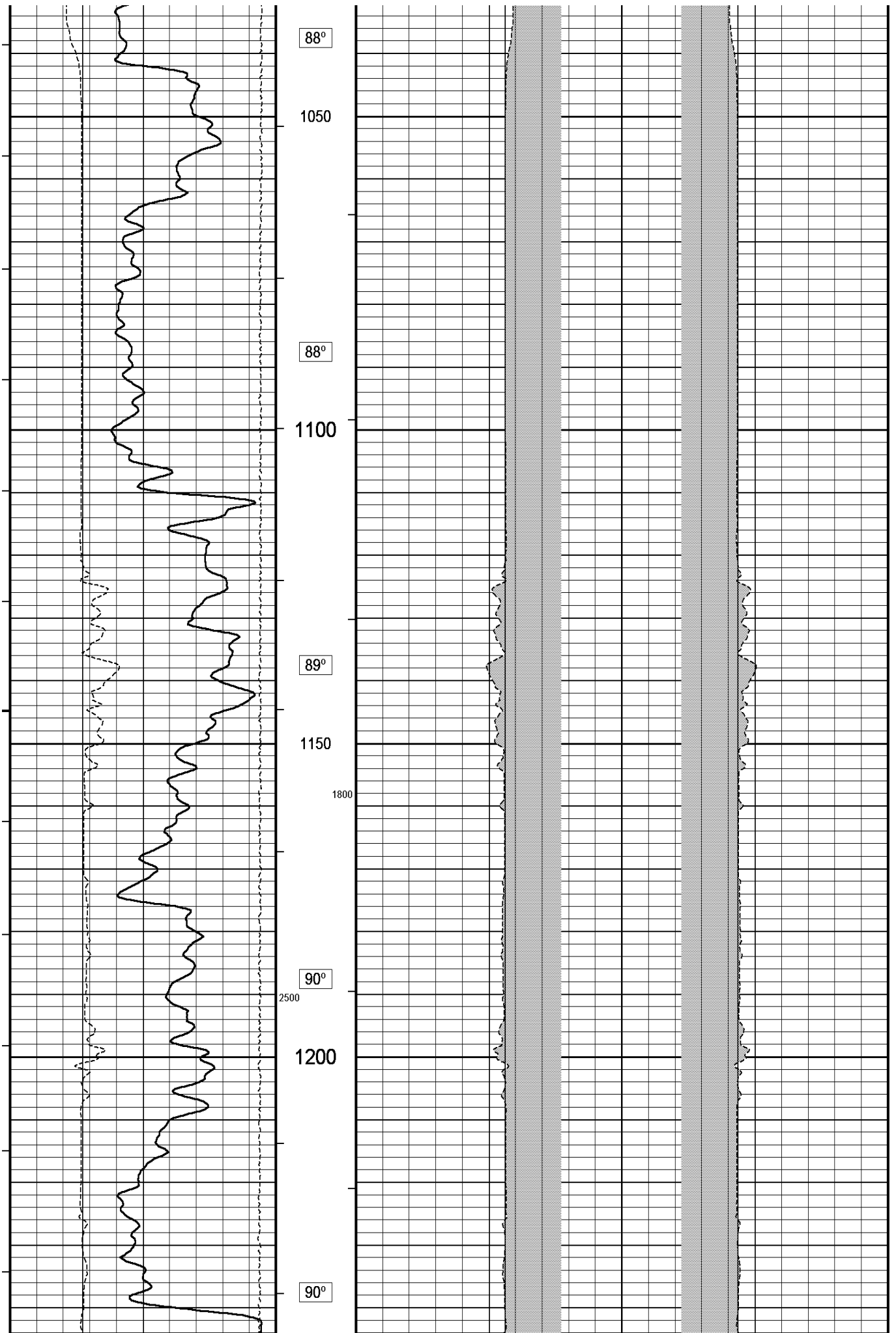
SERVICE ORDER: #3526206

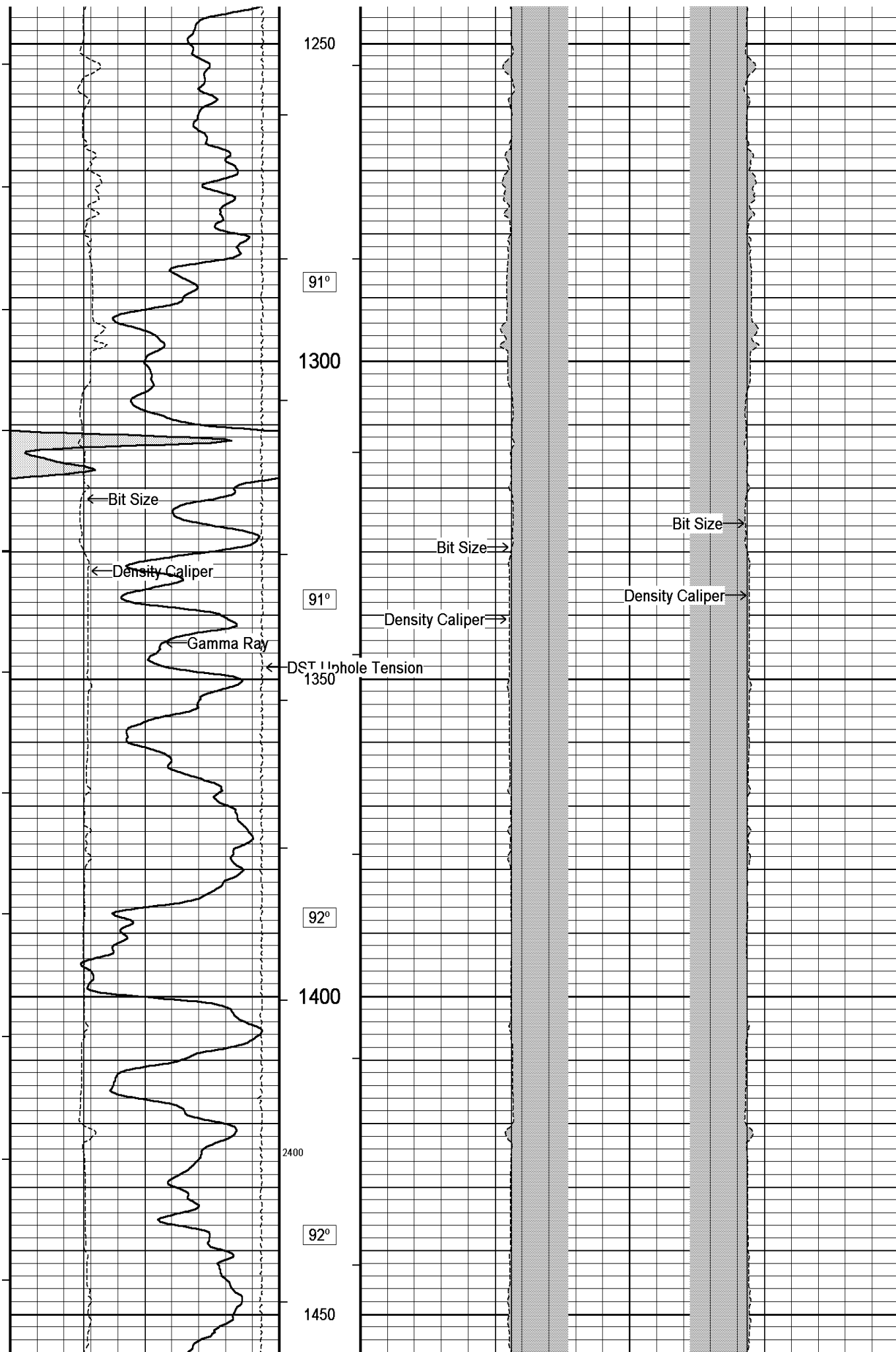
RIG: PATTERSON #313

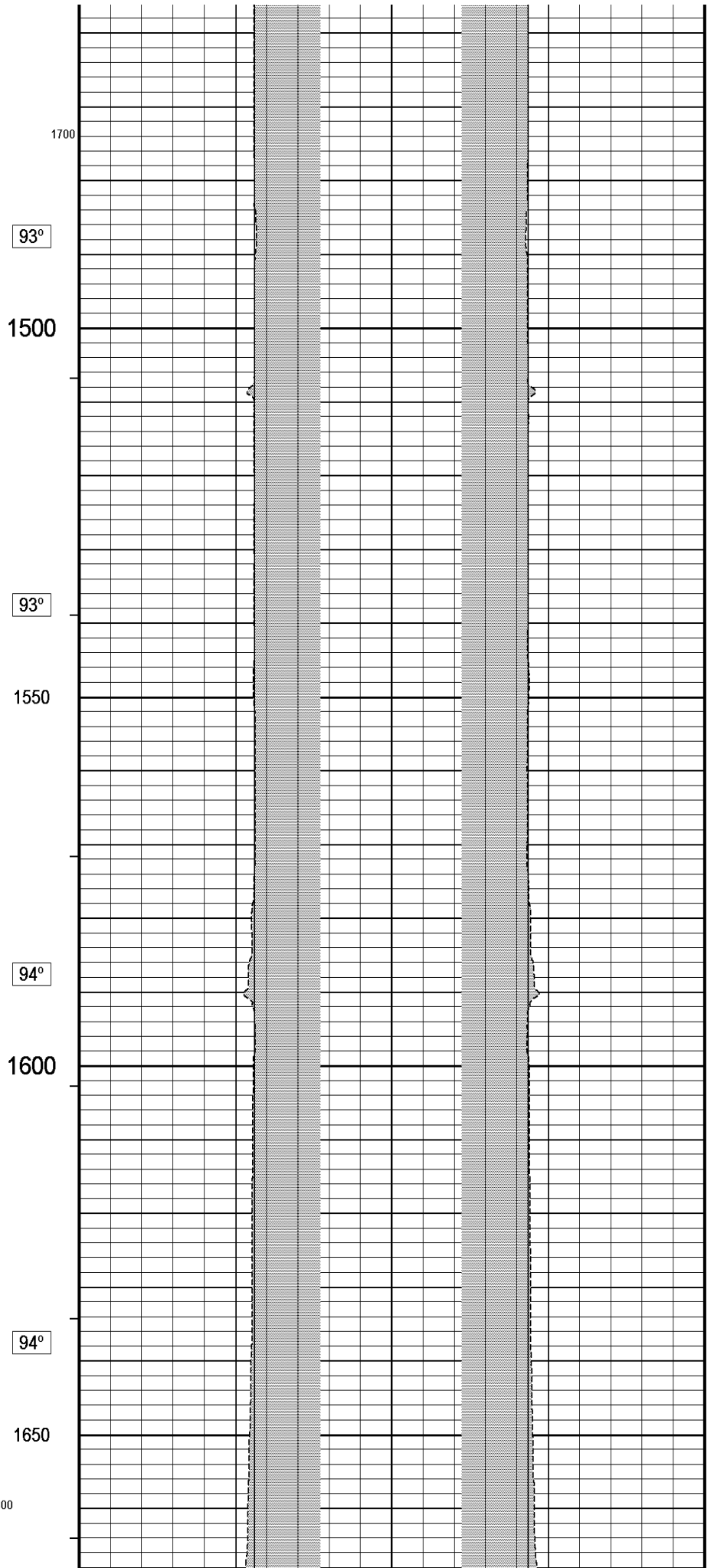
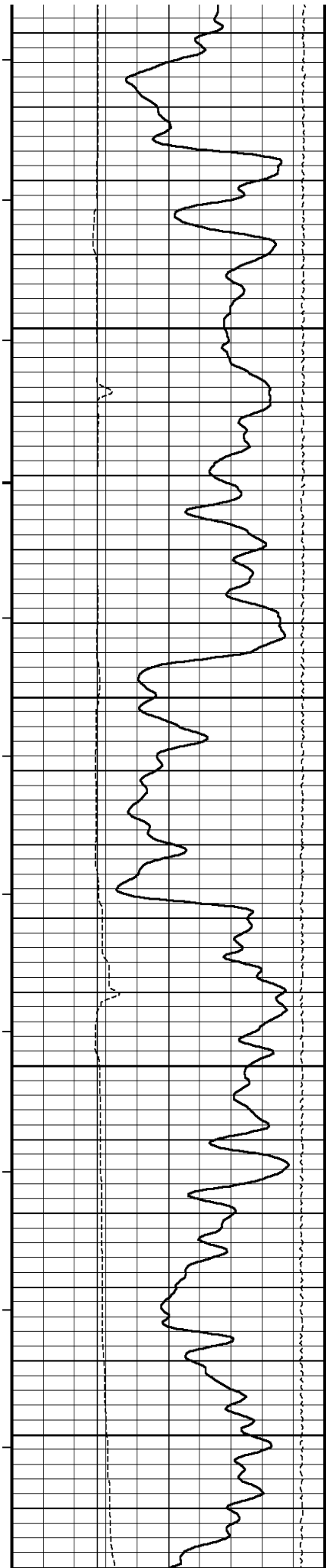
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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











93°

1500

93°

1550

94°

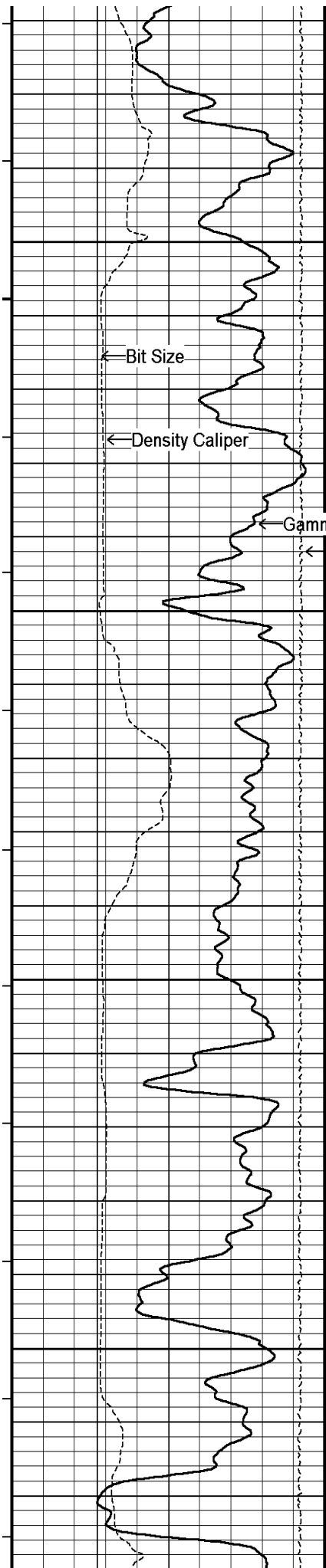
1600

94°

1650

2300

1700



95°

1700

← Bit Size

← Density Caliper

← Gamma Ray

← DST Uphole Tension

96°

1750

1600

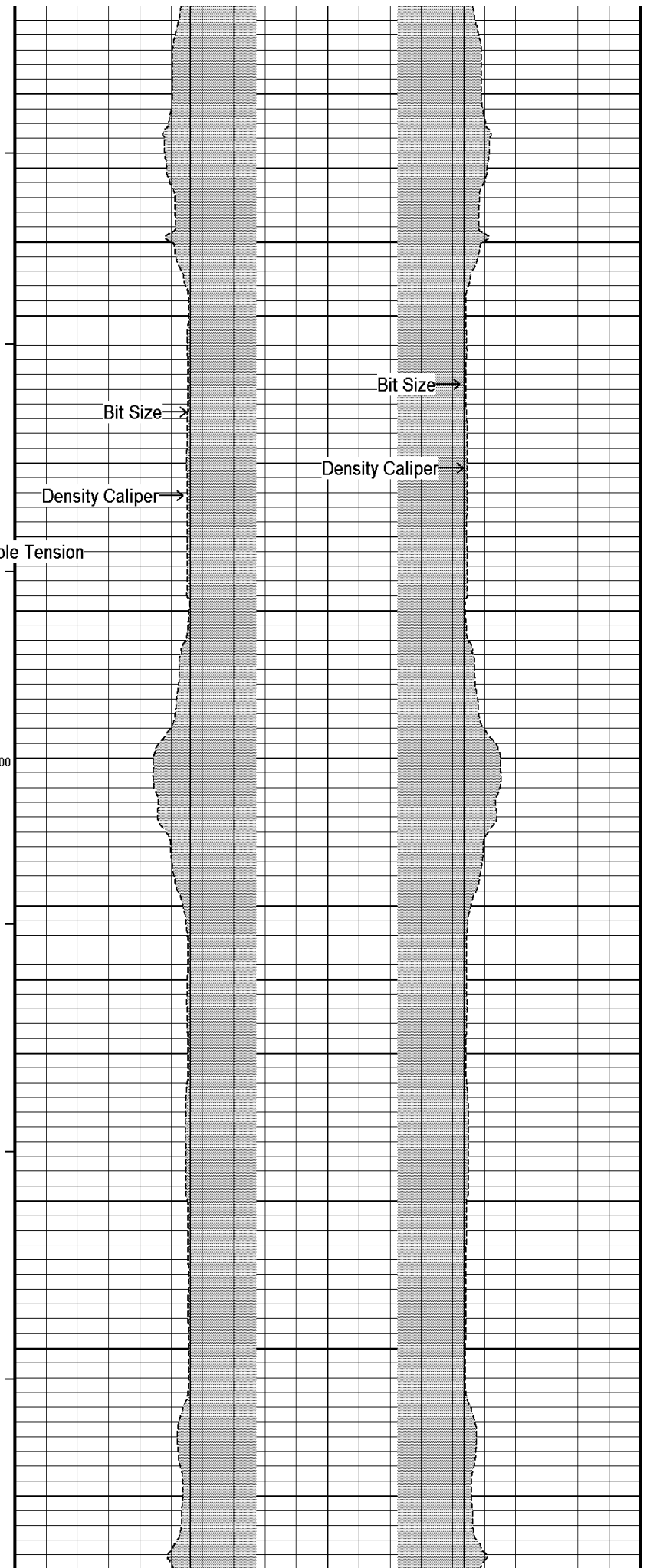
96°

1800

96°

1850

2200

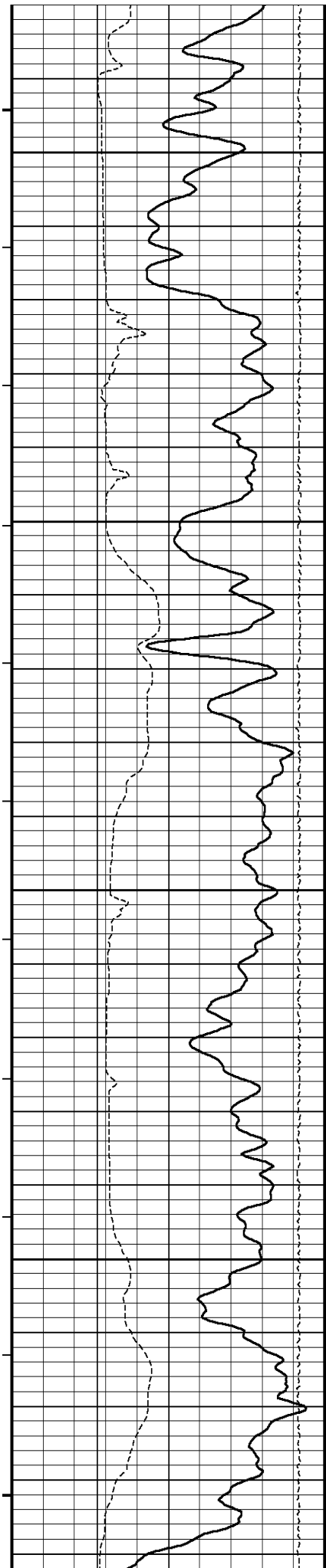


Bit Size →

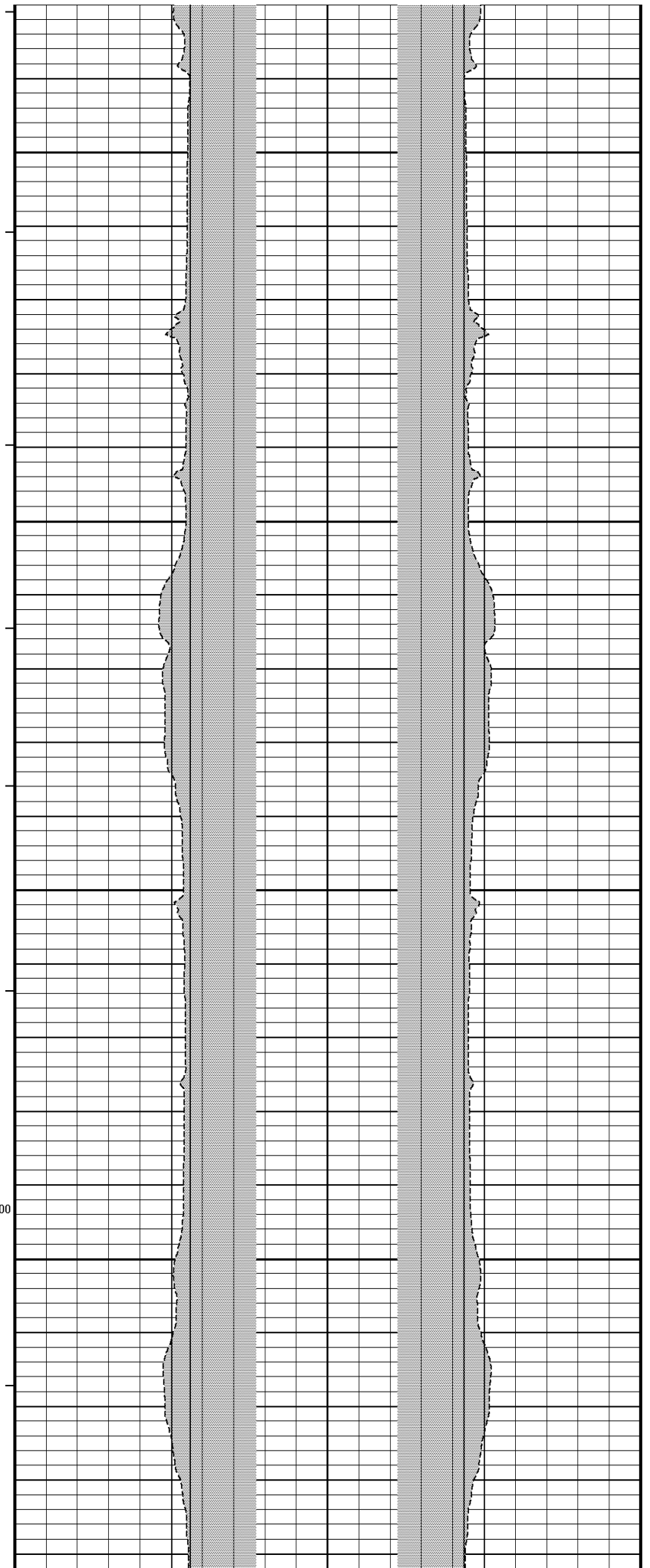
Density Caliper →

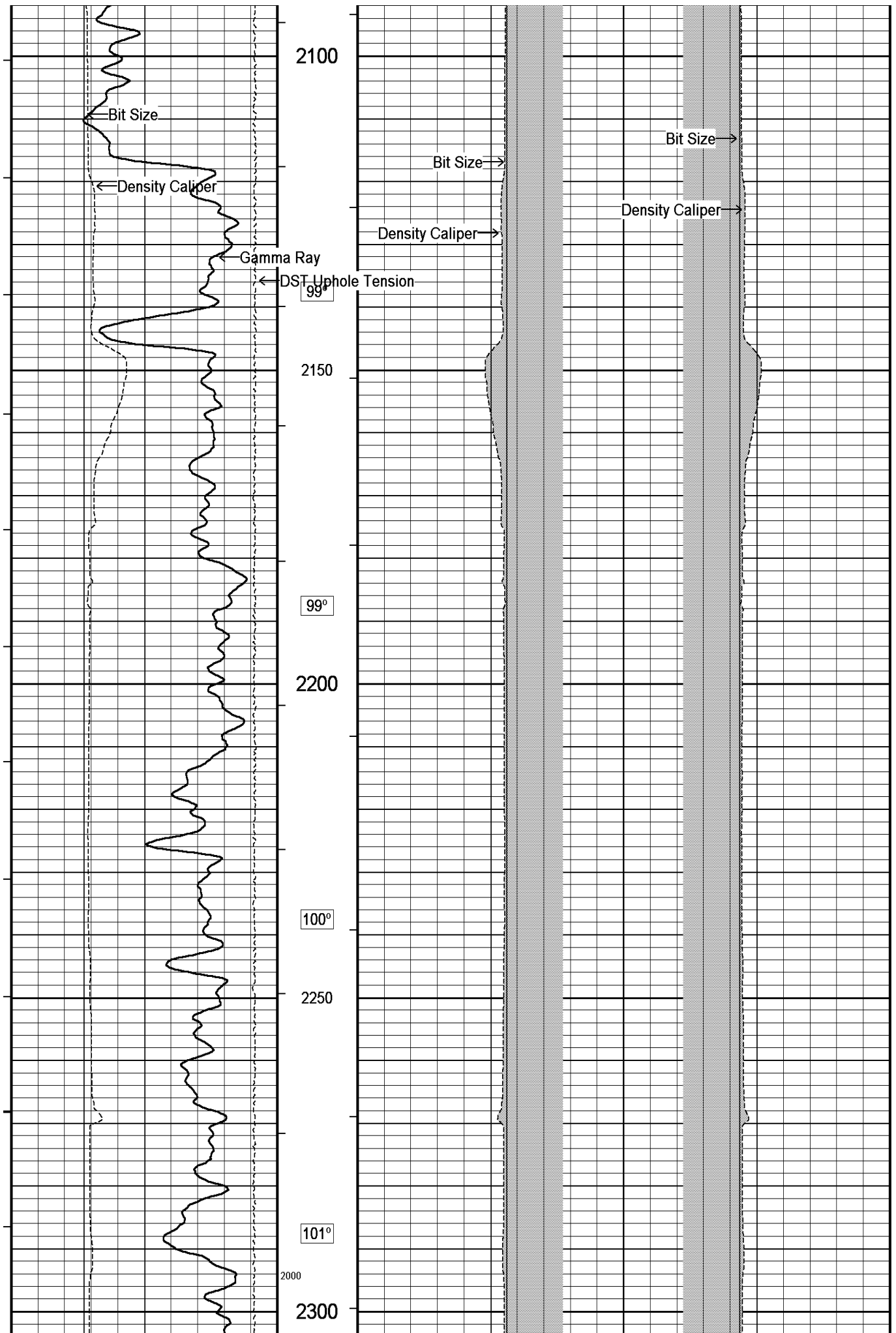
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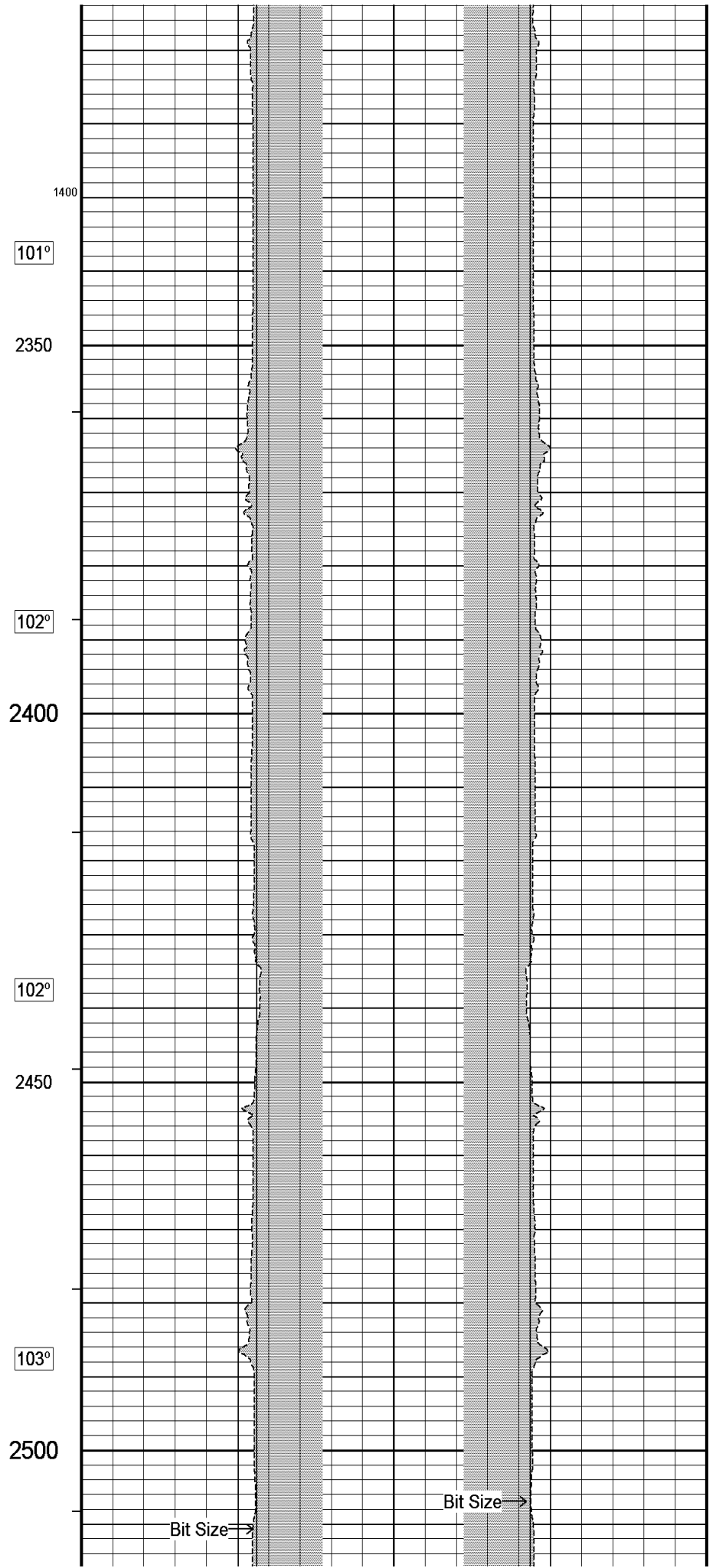
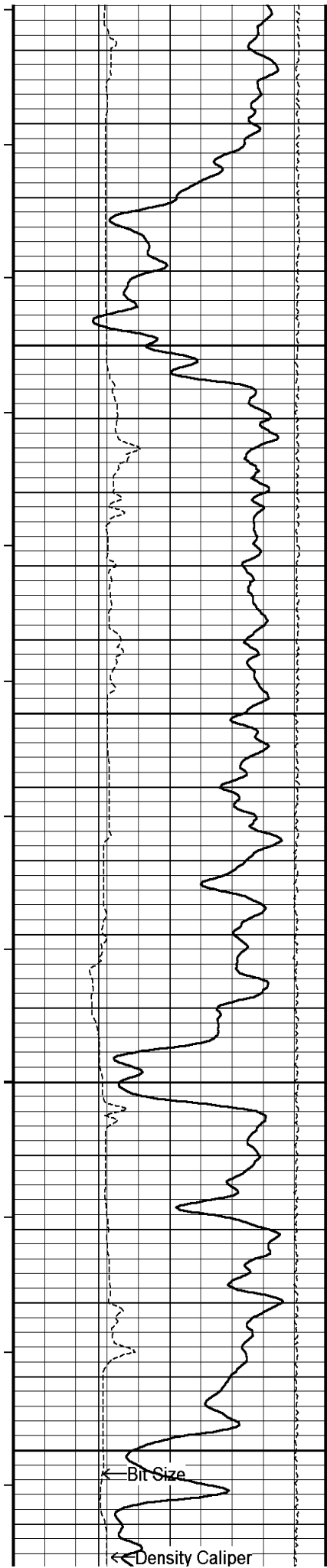
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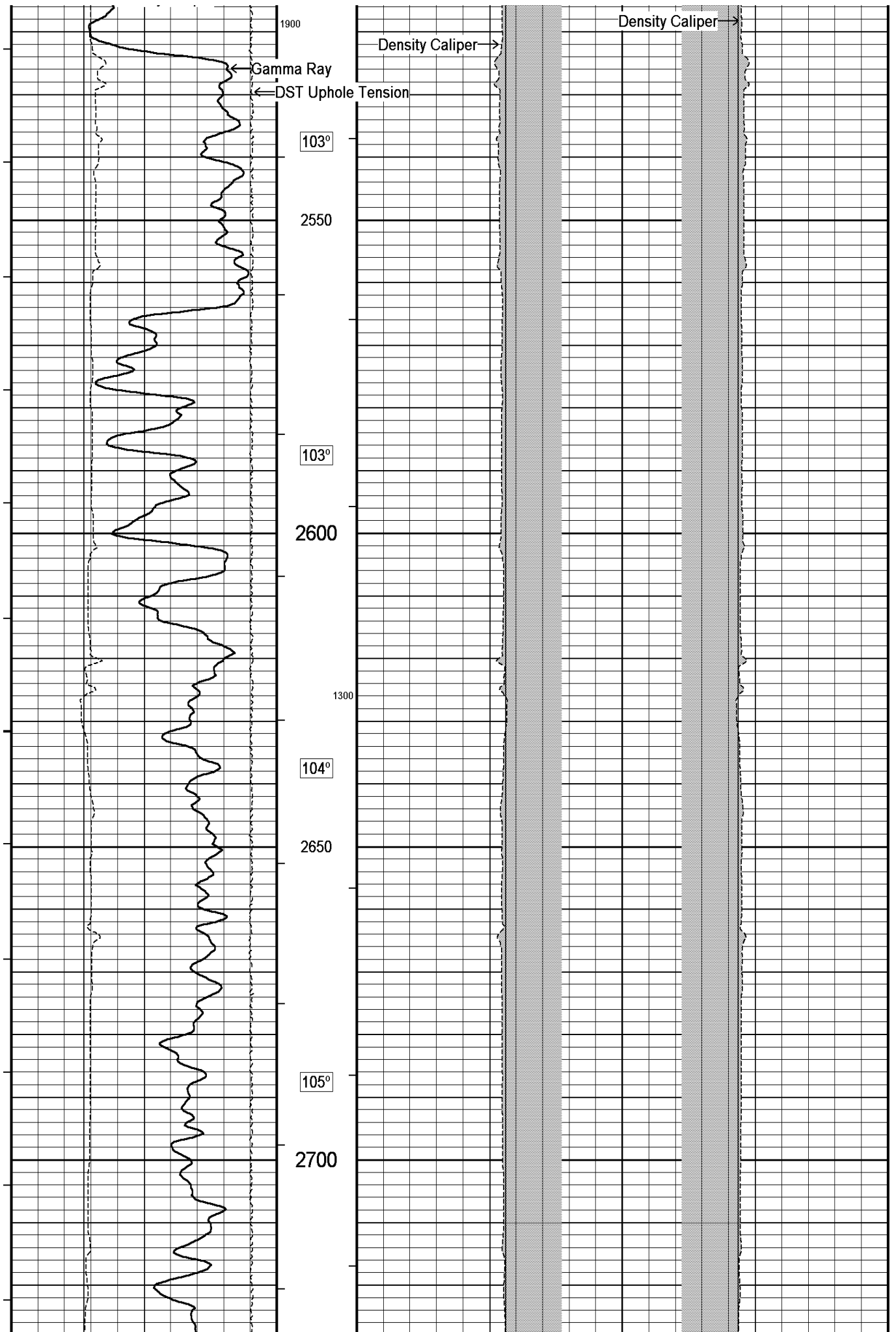


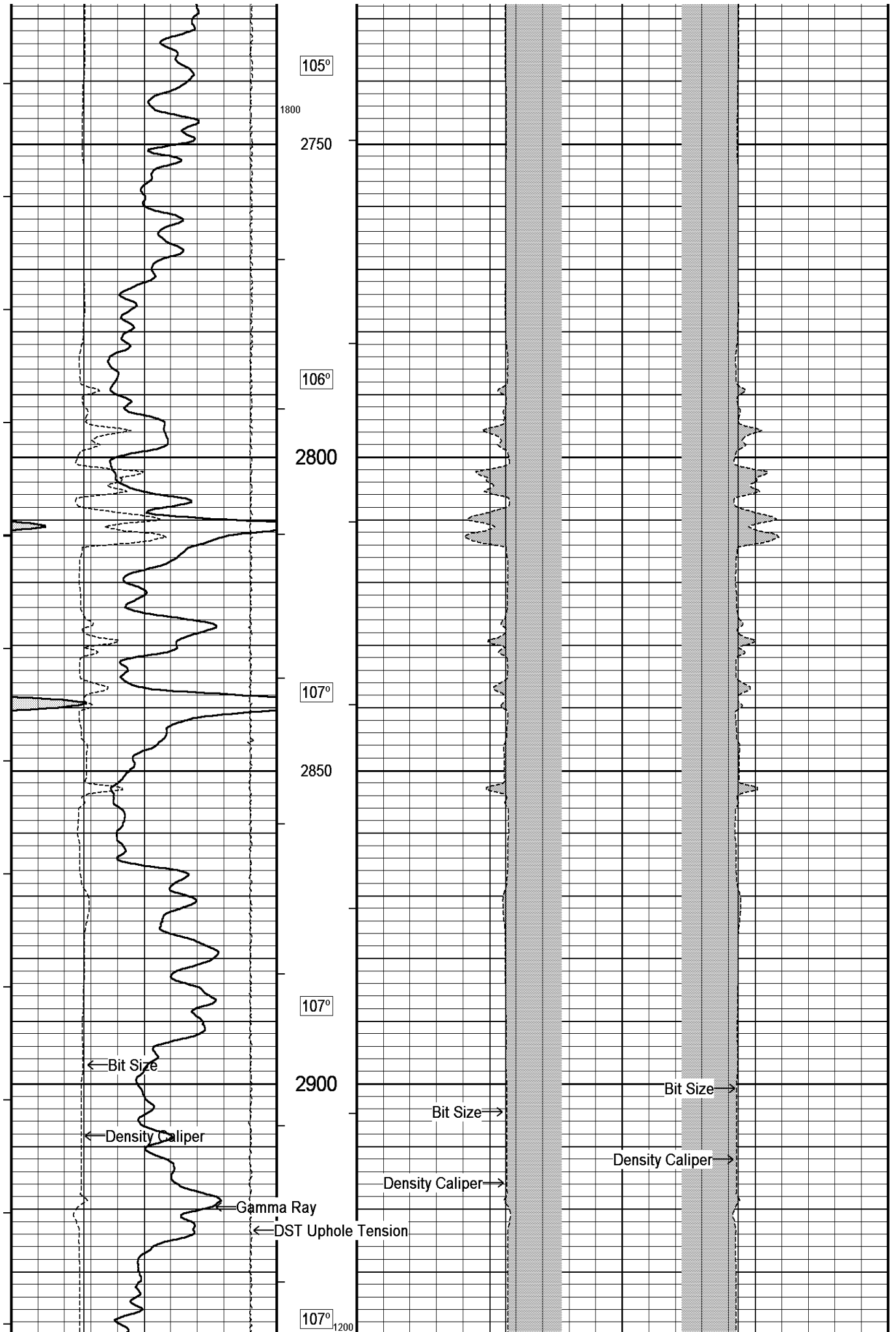
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1900  
97°  
1950  
98°  
2000  
98°  
1500  
2050  
2100  
99°

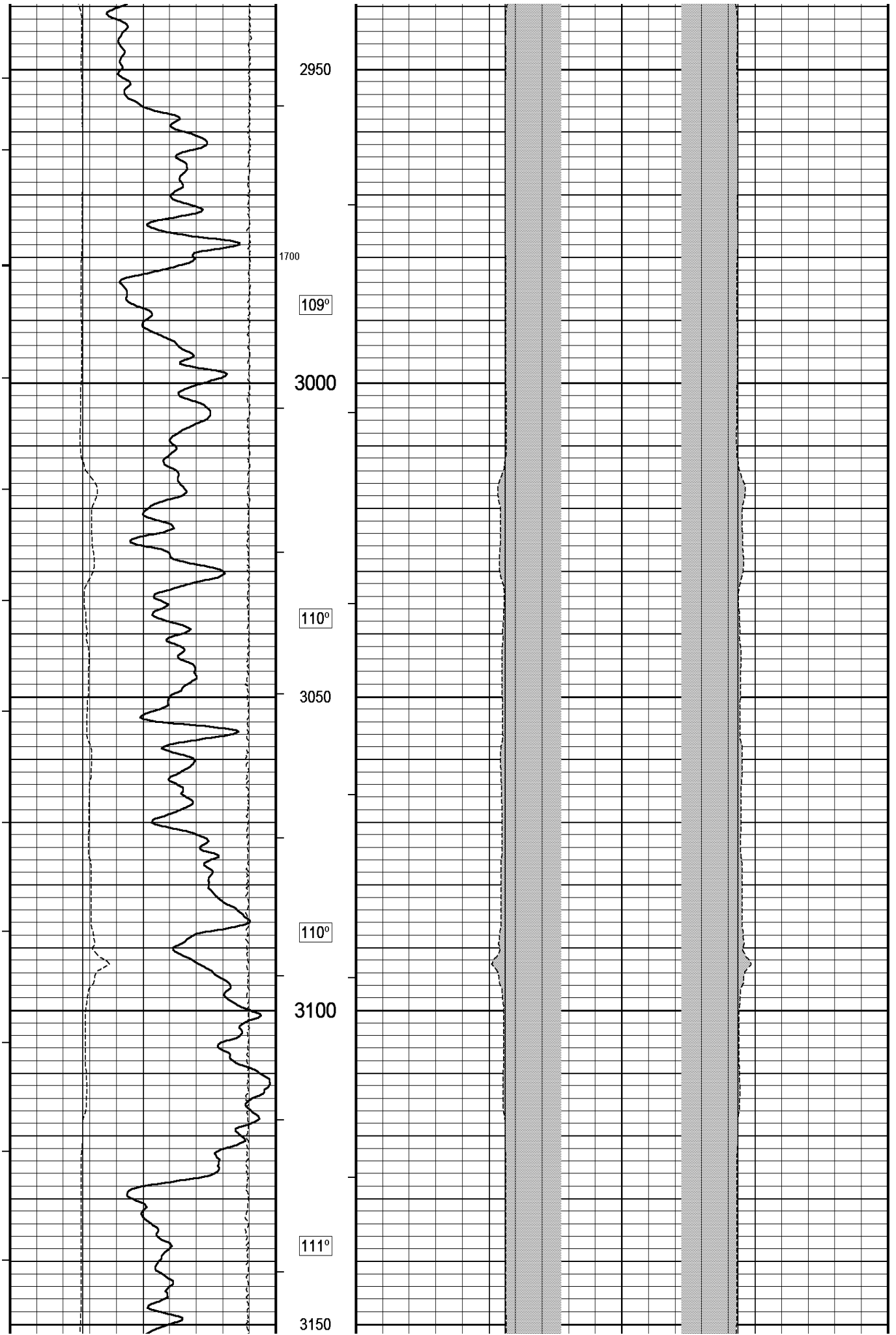


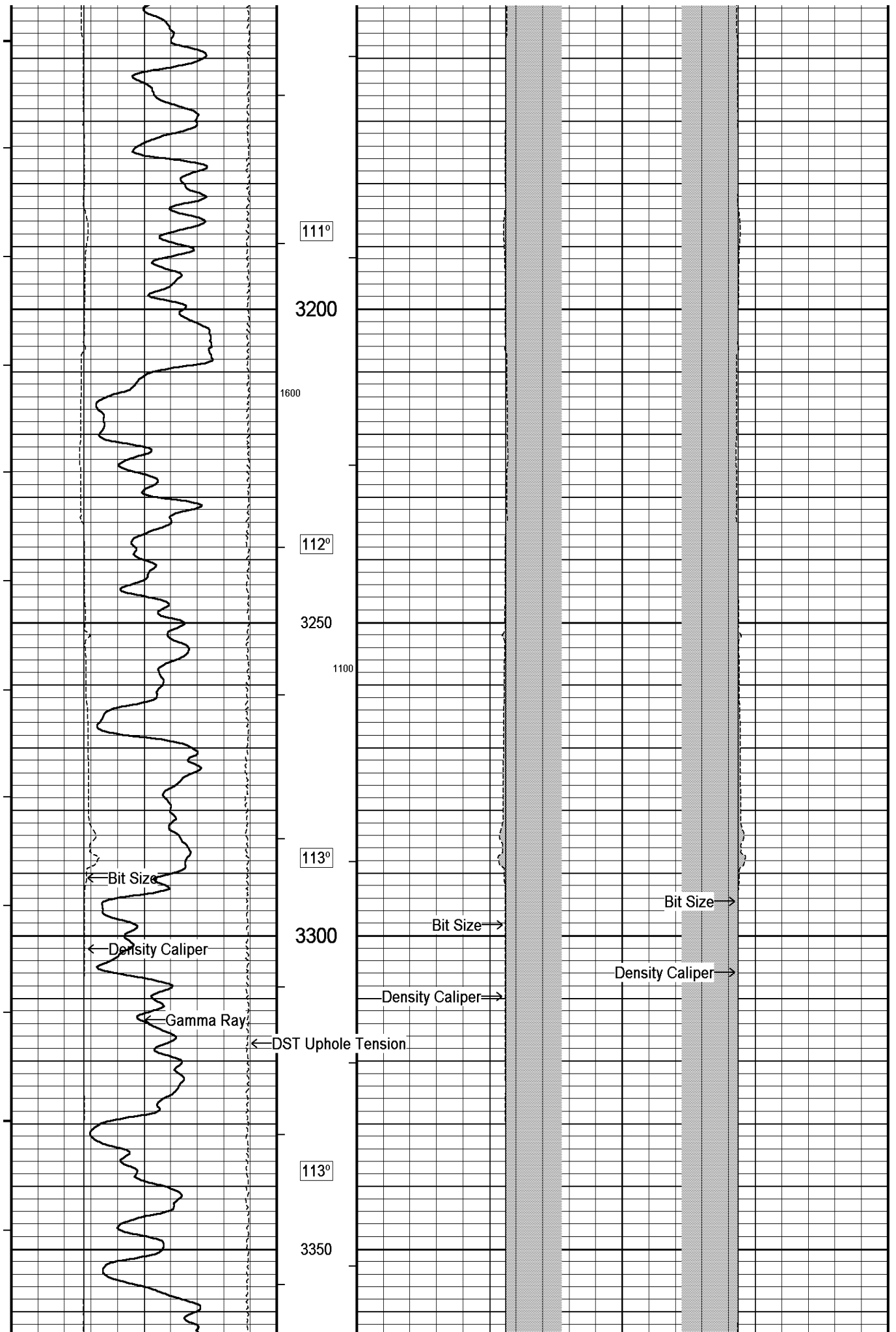


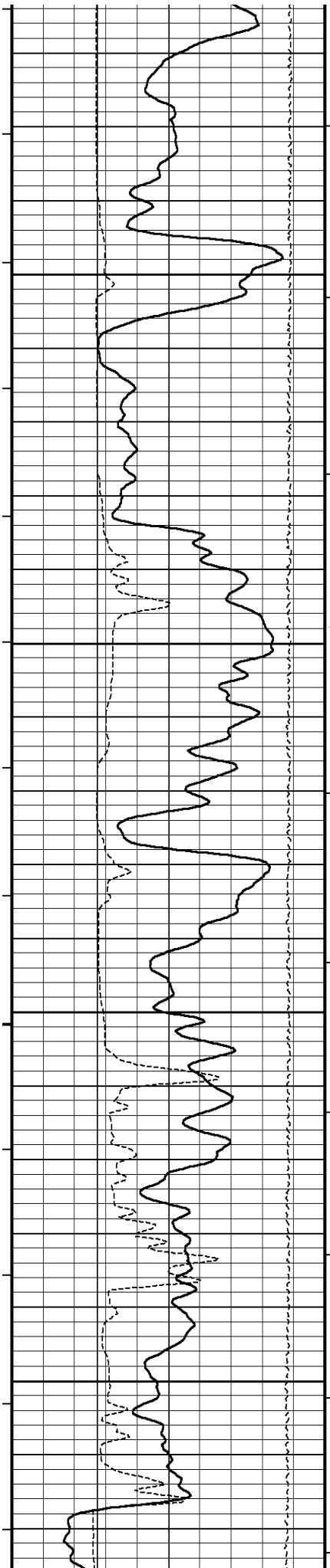












114°

3400

114°

1500  
3450

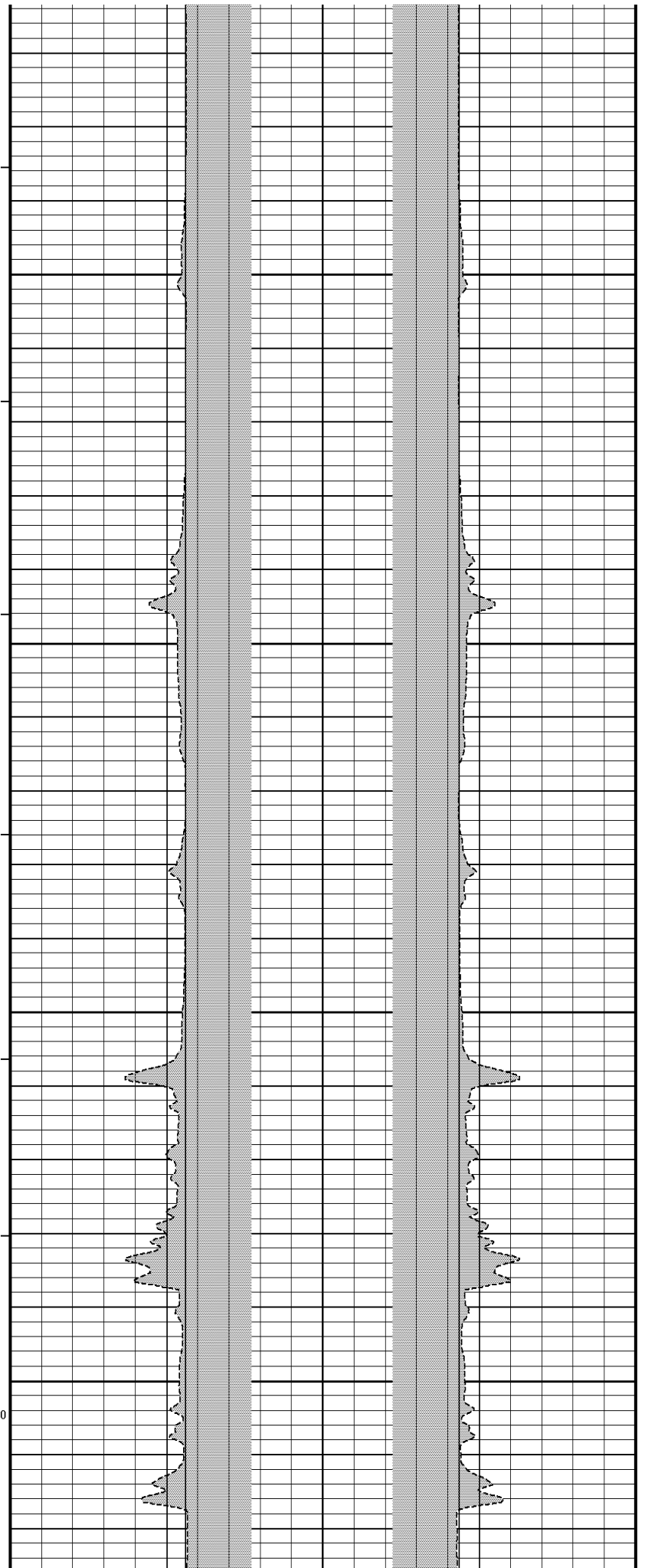
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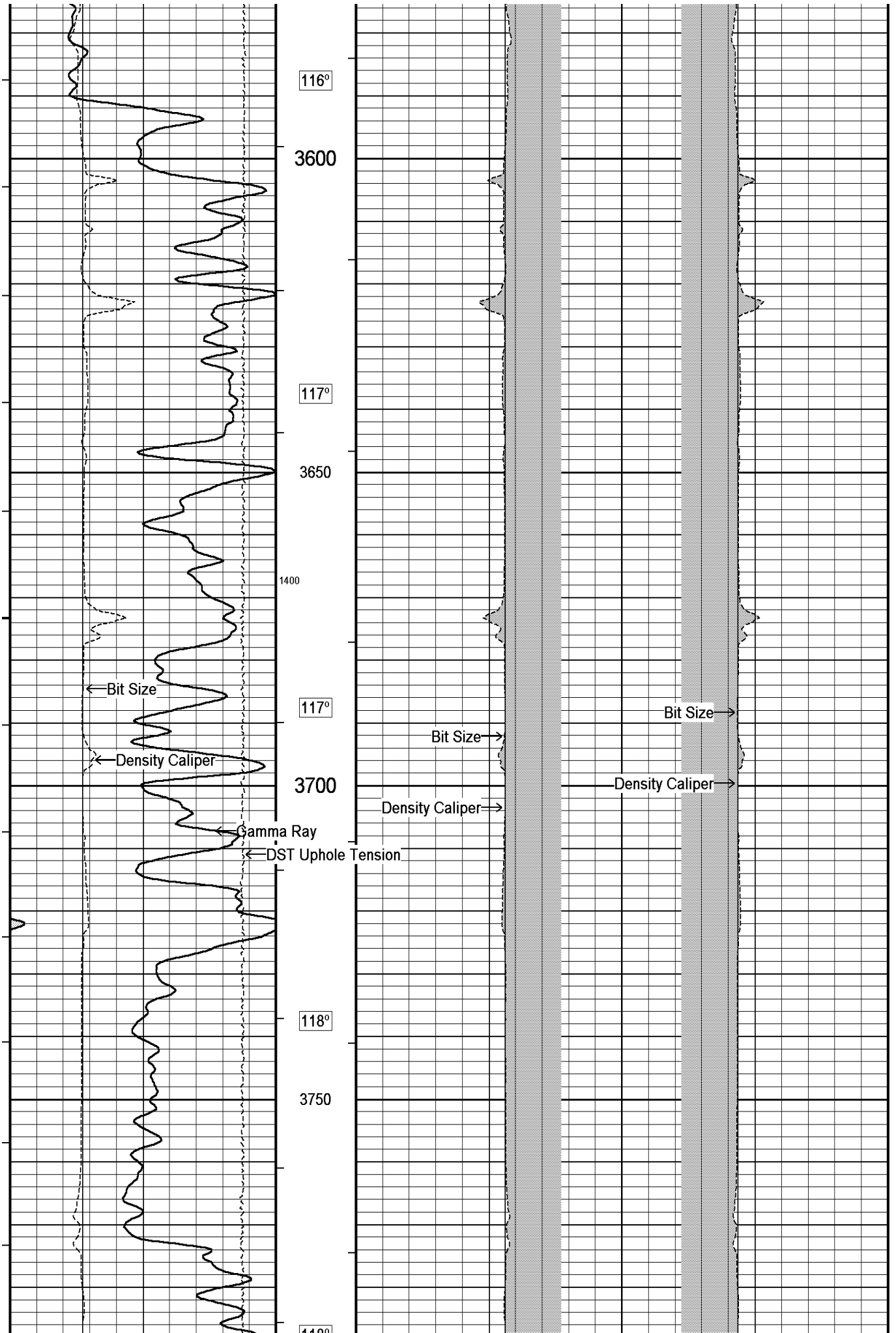
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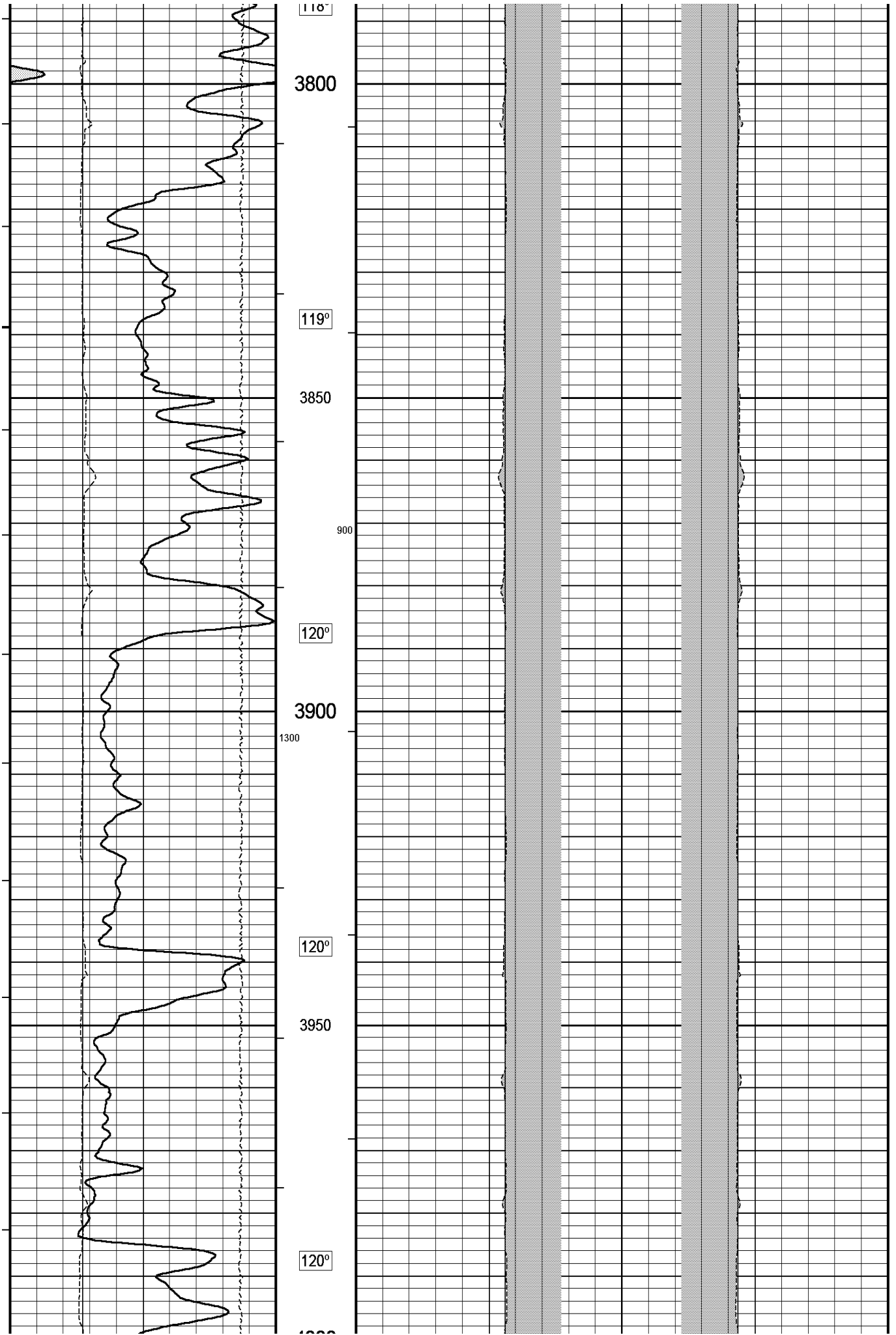
115°

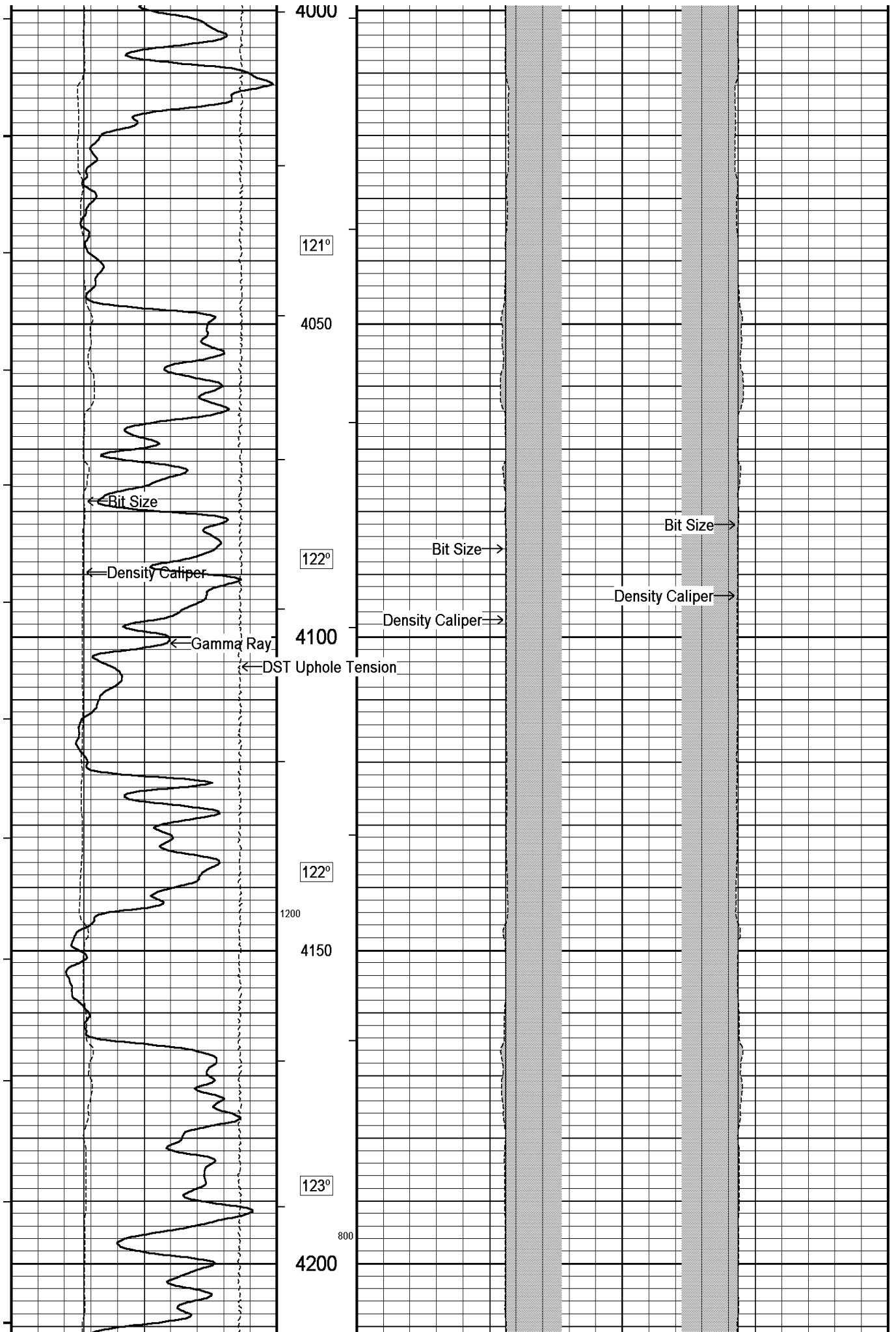
3550

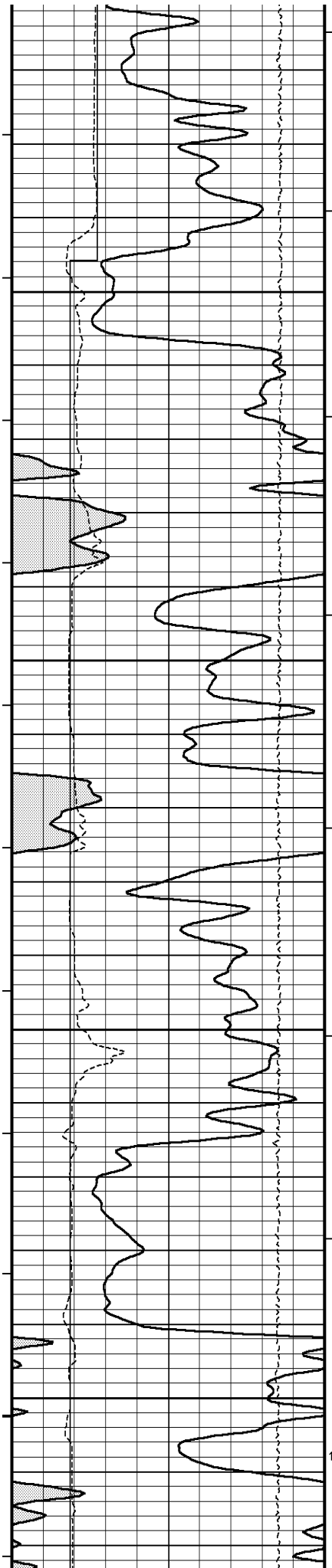
1000











124°

4250

124°

4300

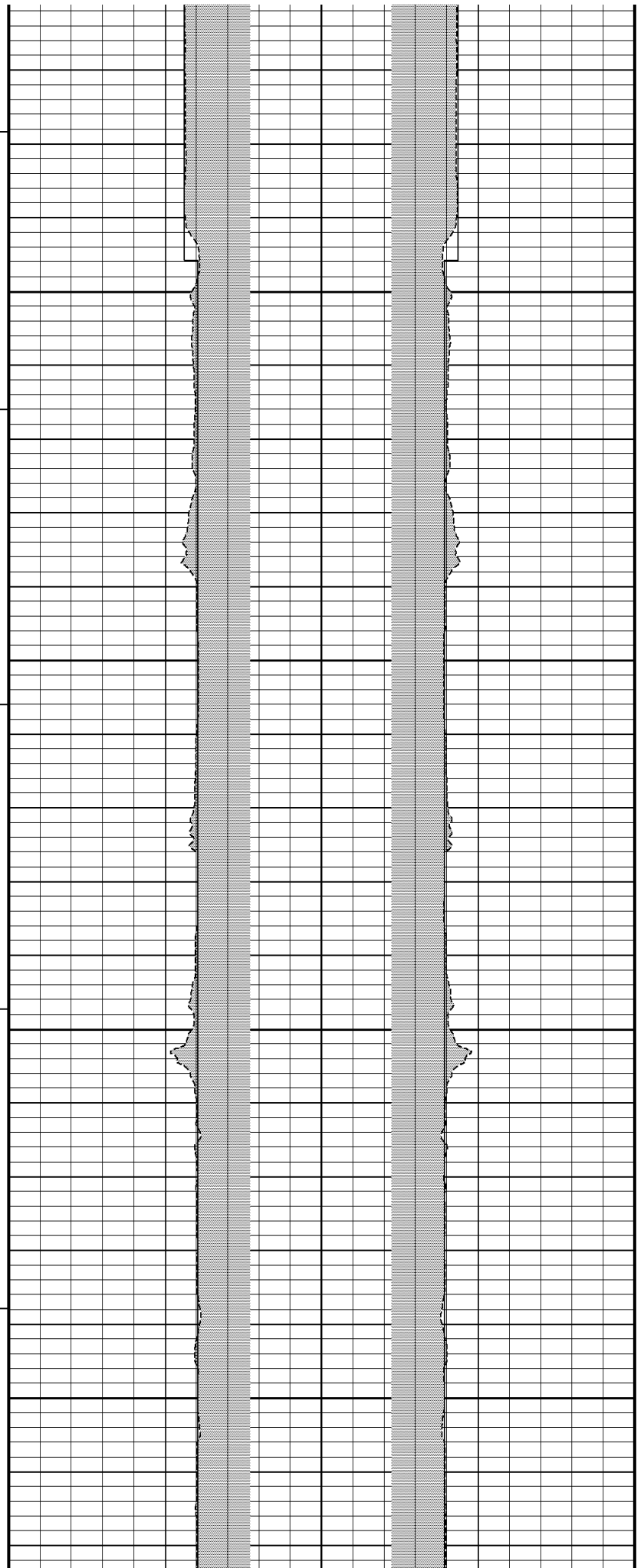
125°

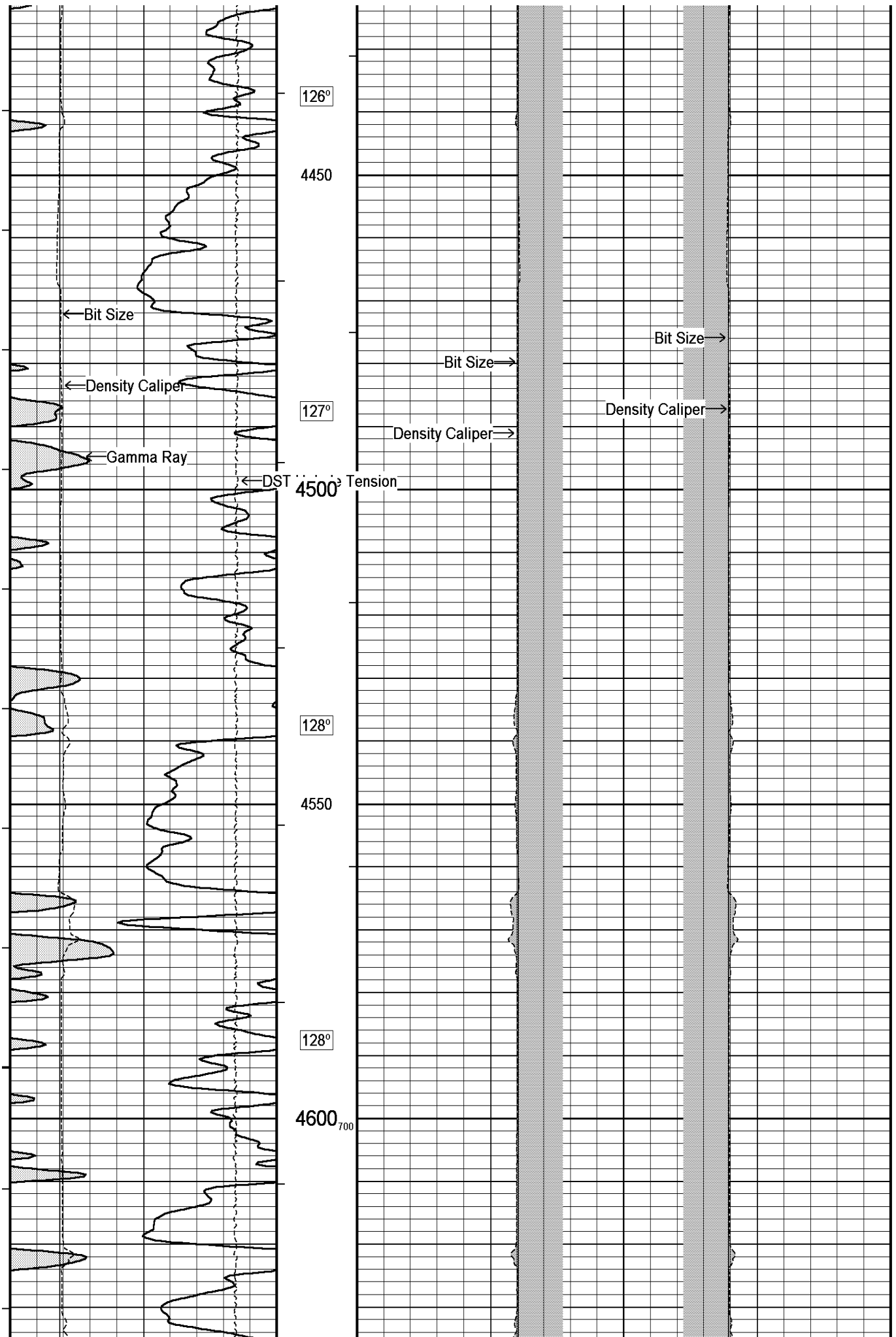
4350

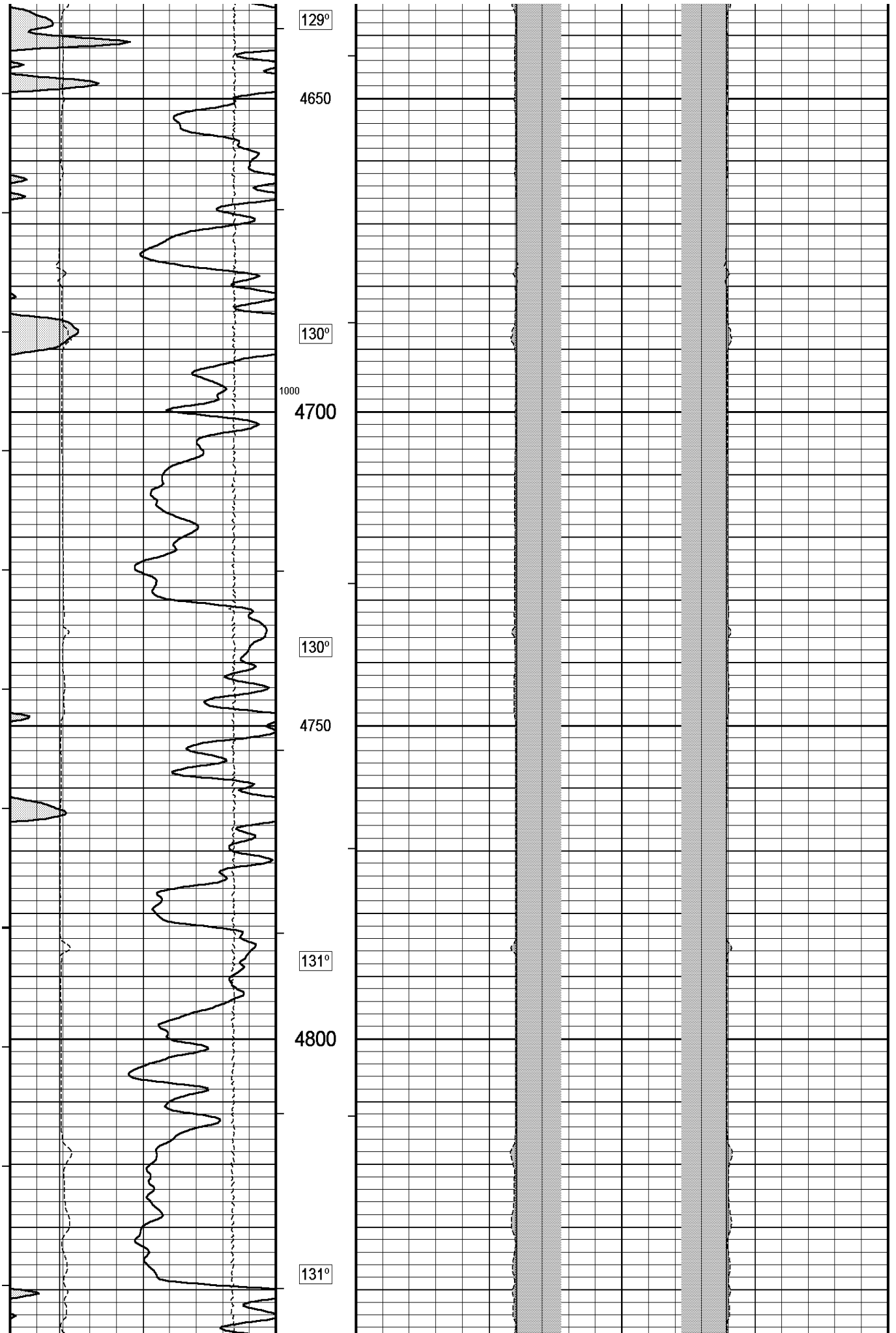
125°

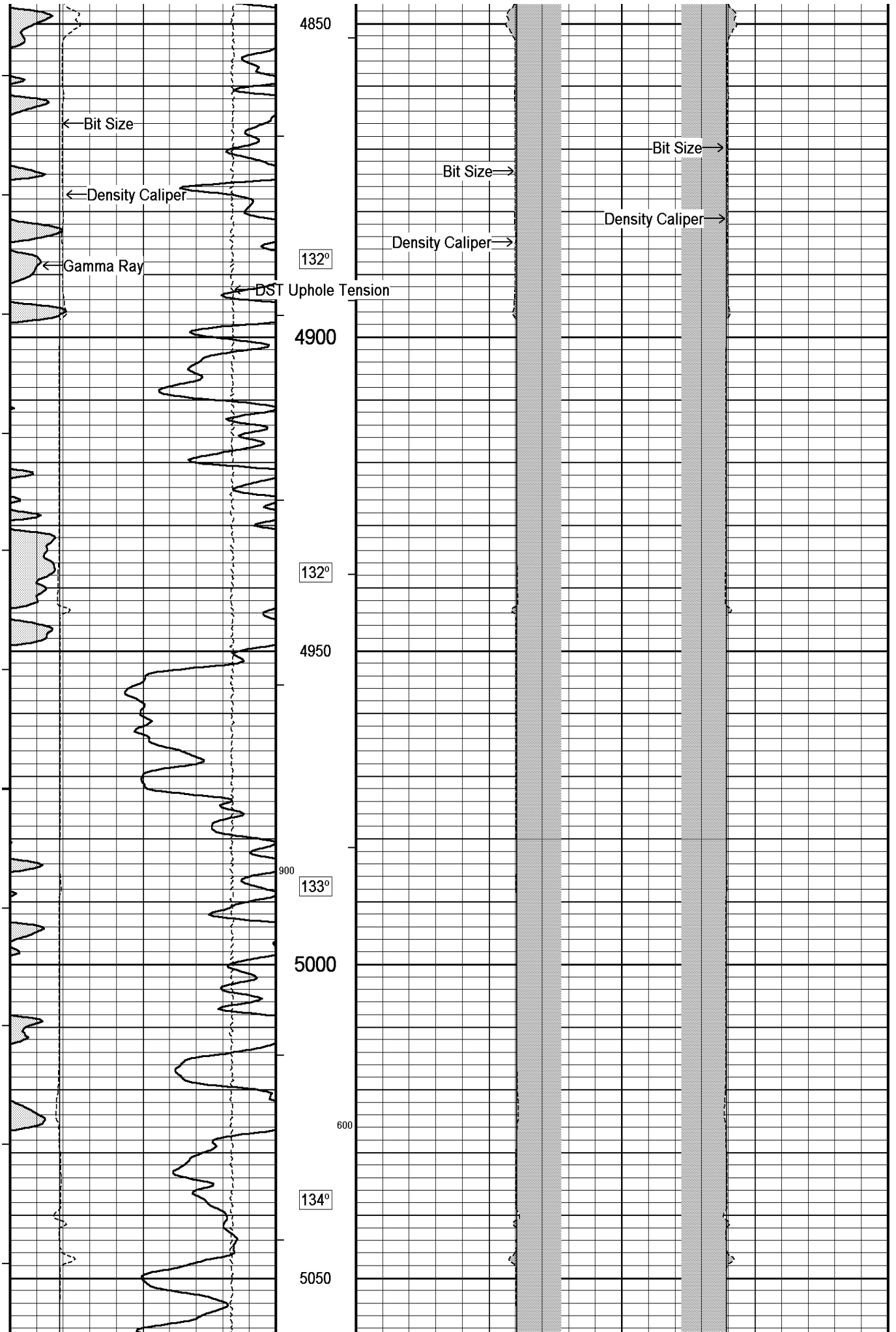
4400

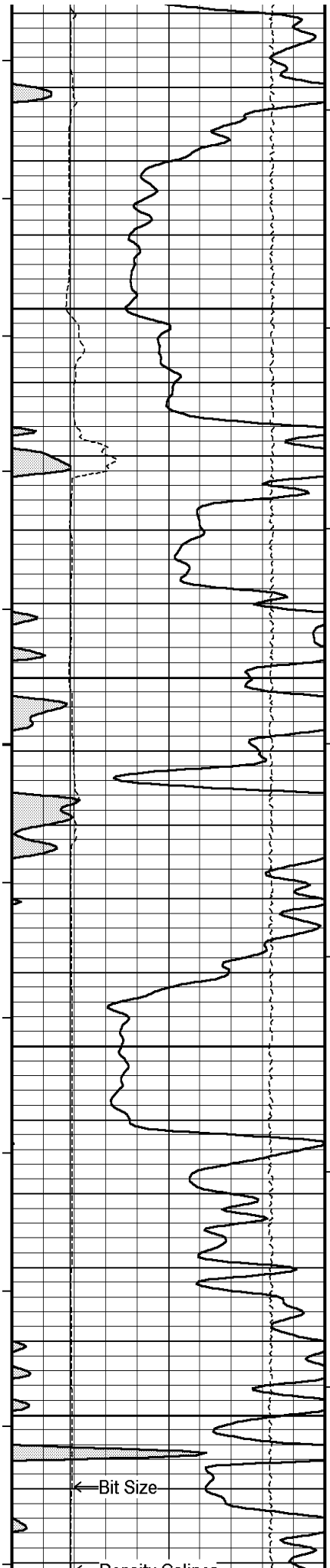
1100











135°

5100

135°

5150

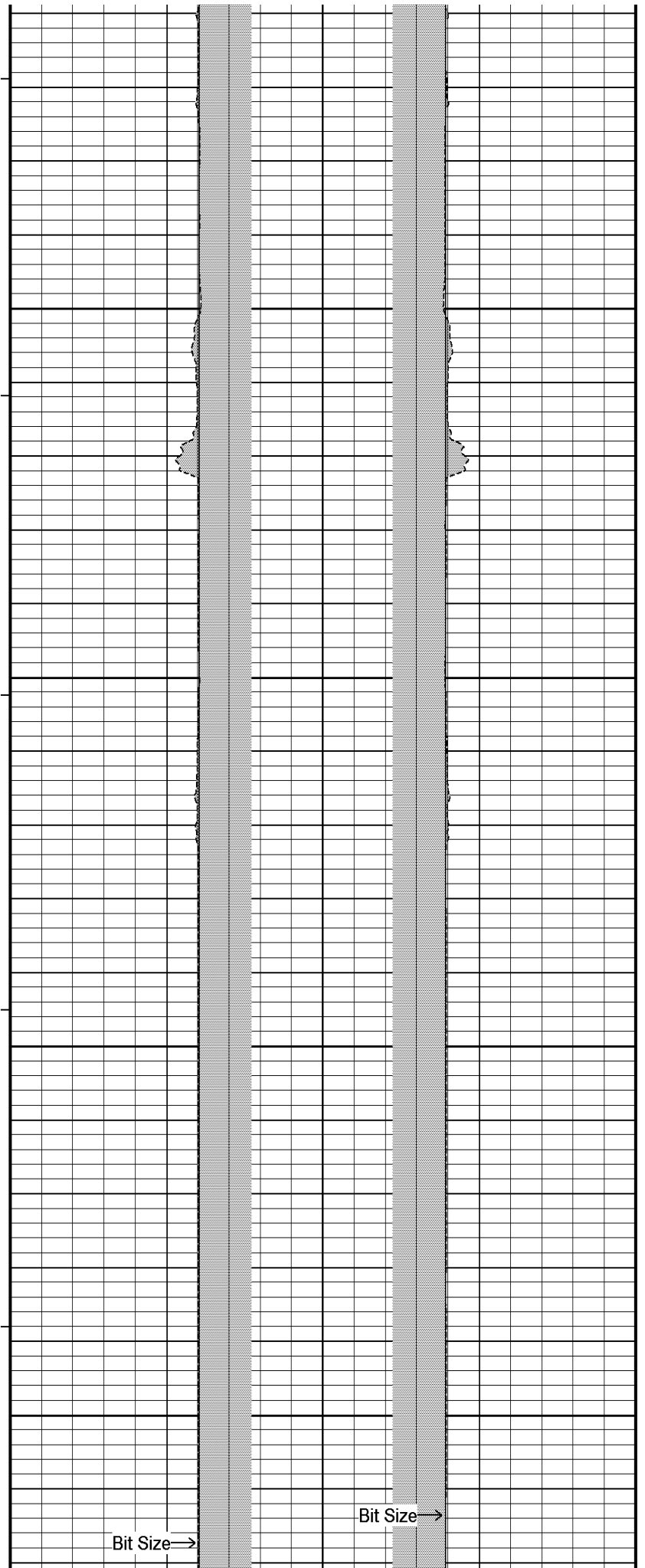
136°

5200

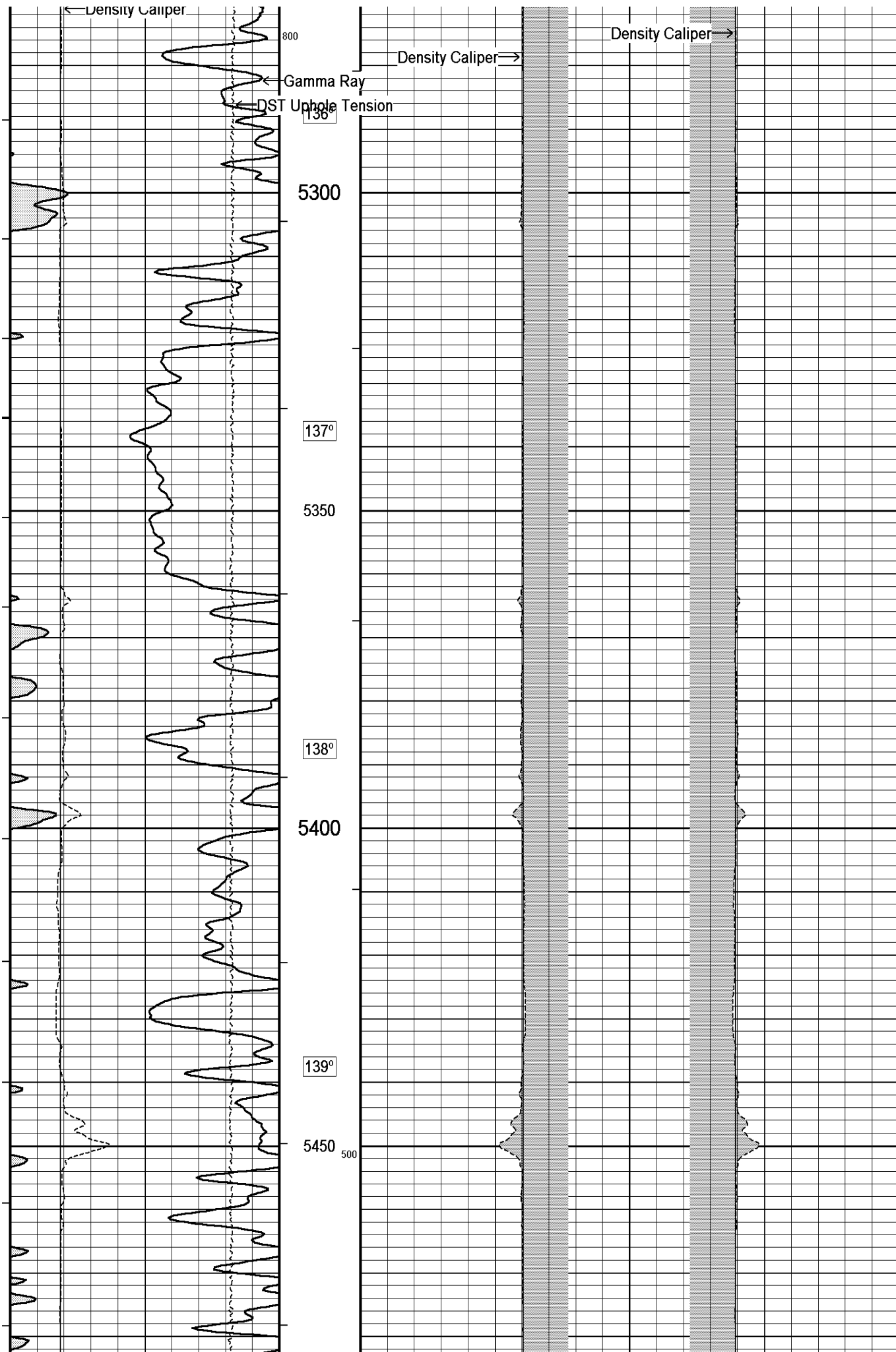
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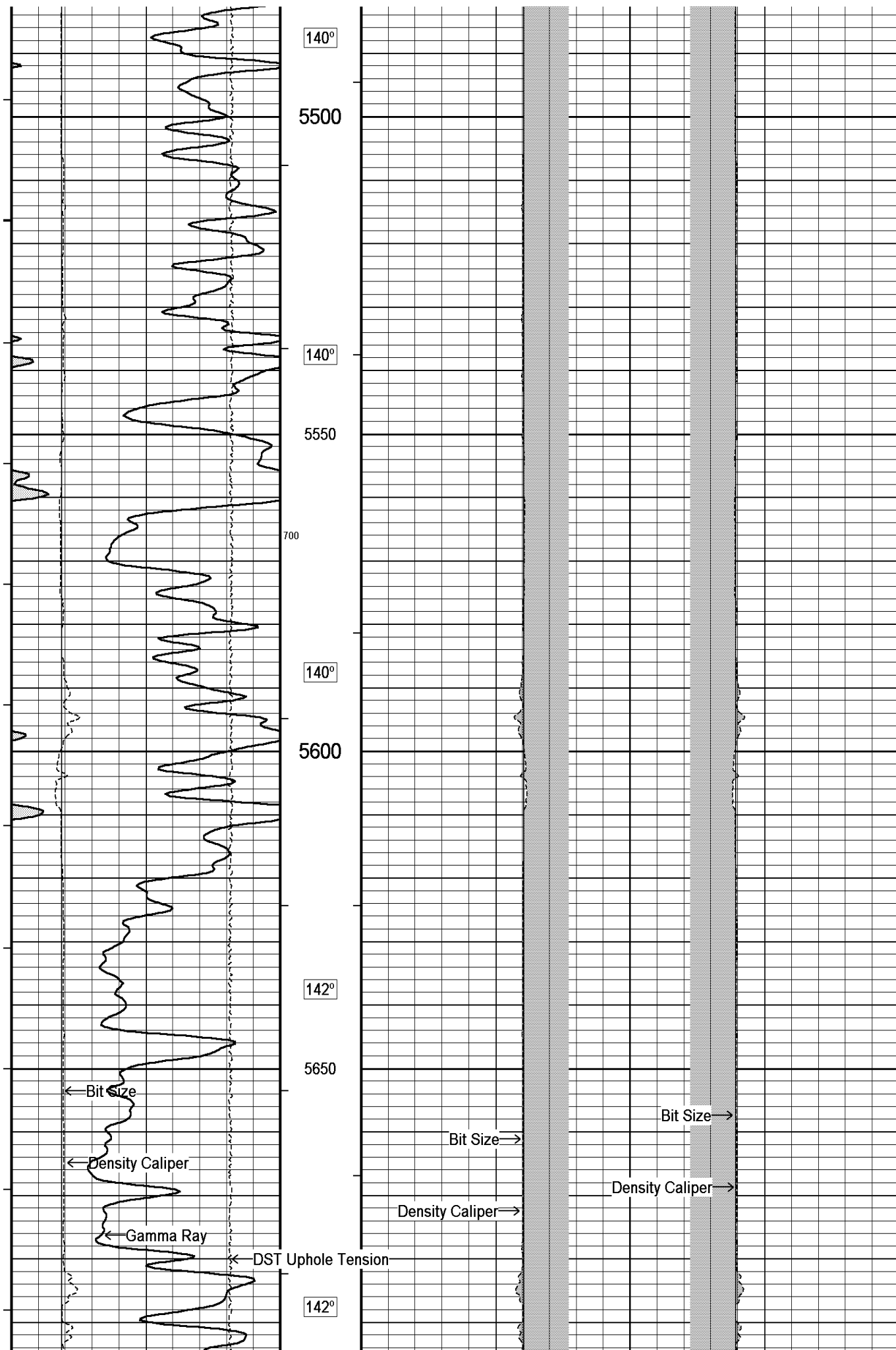
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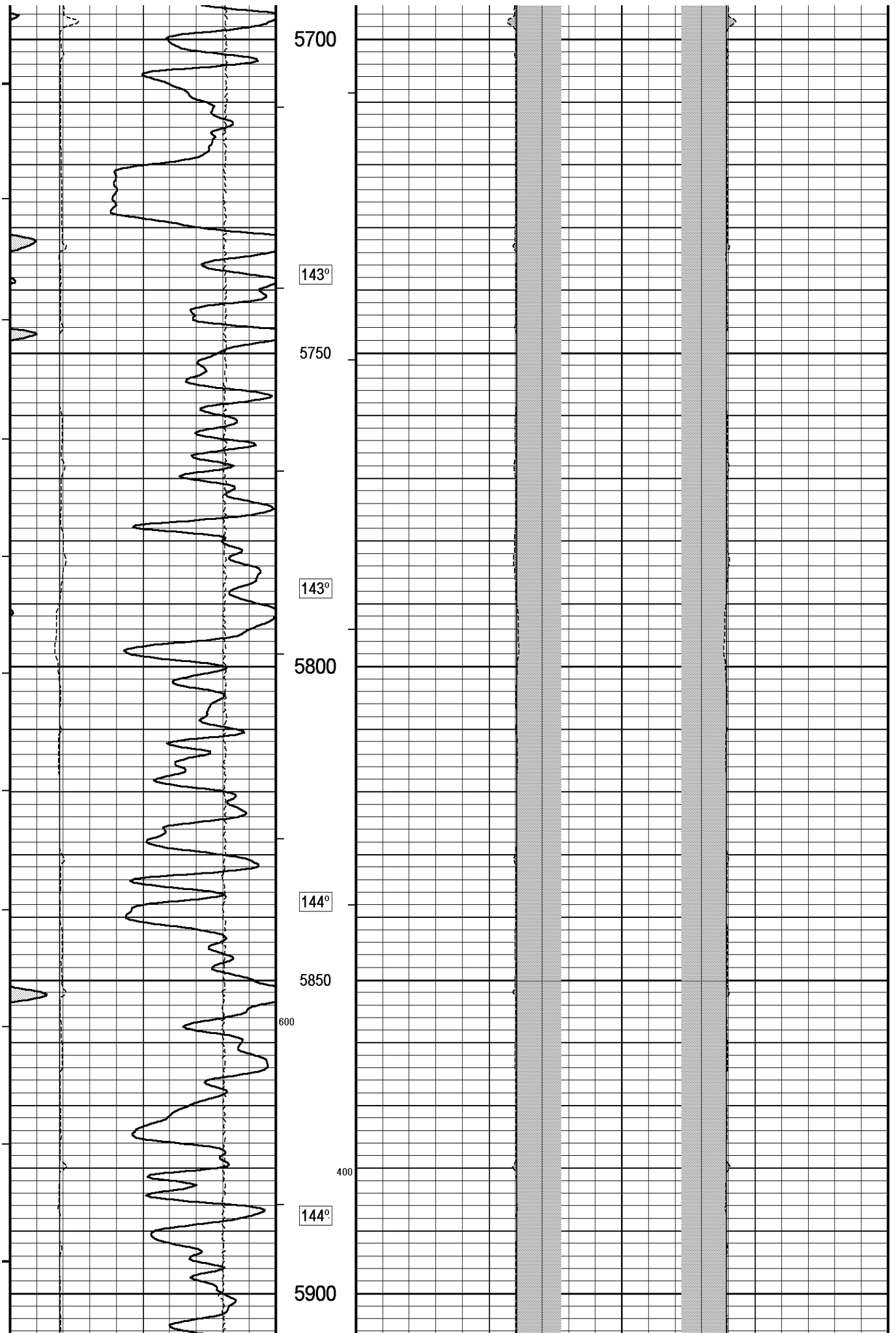
Bit Size →

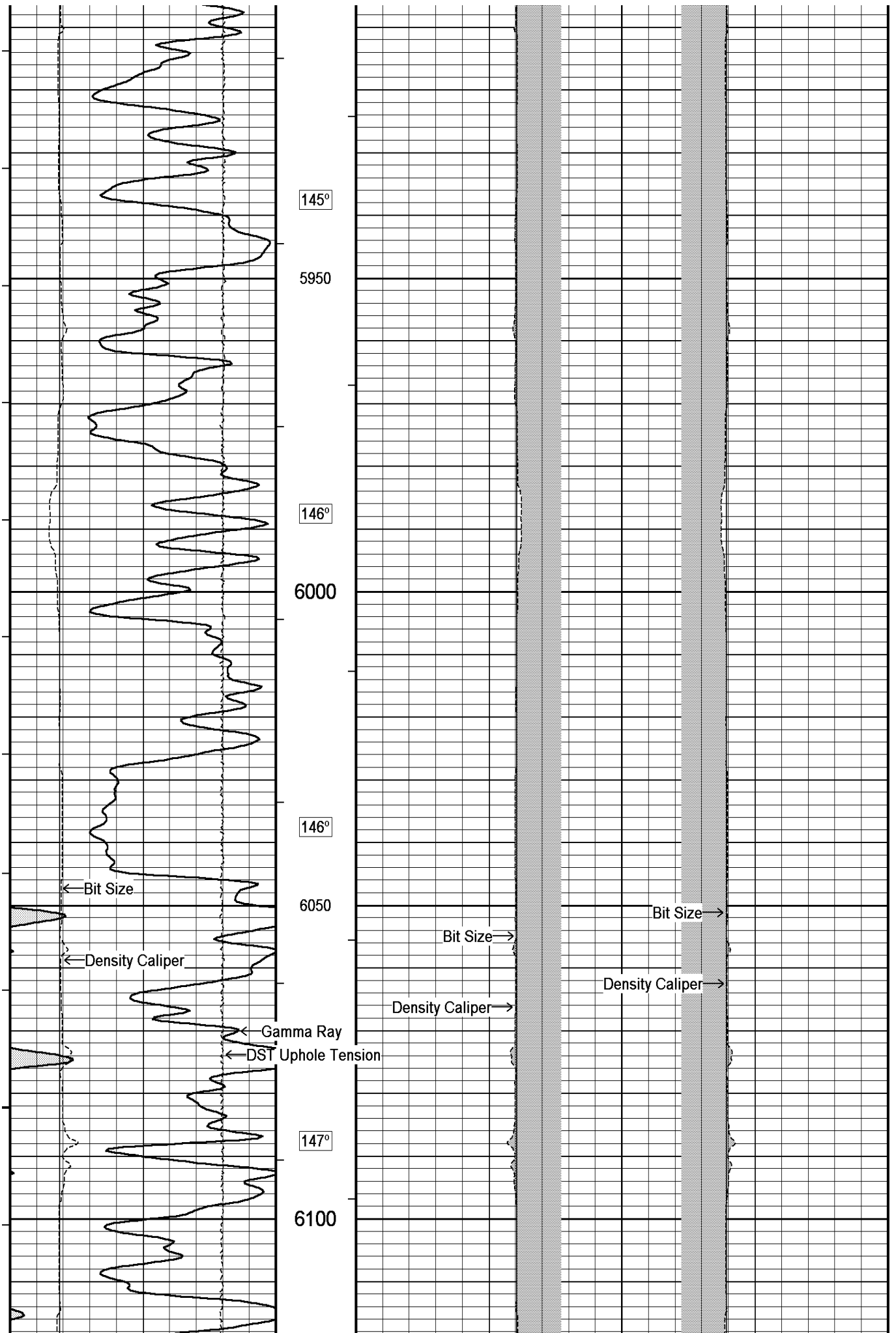


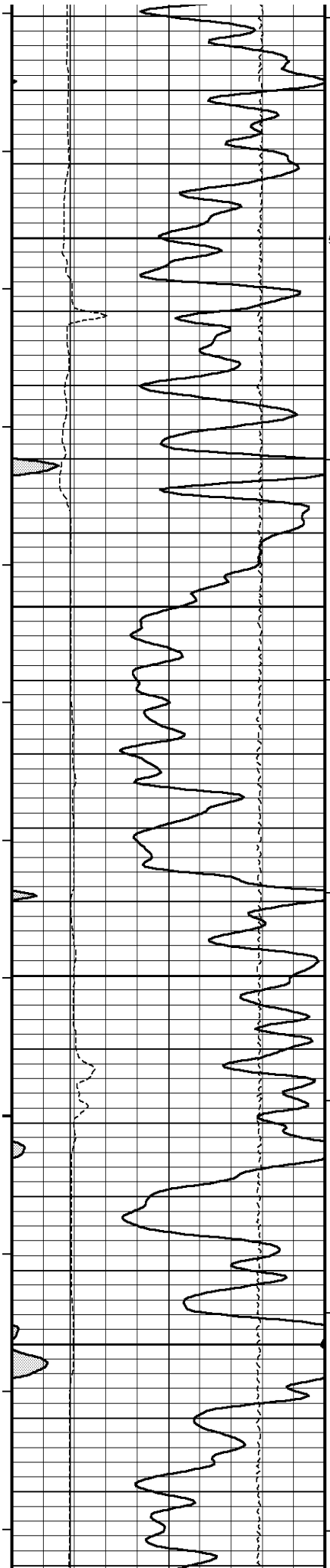
Bit Size →











148°

500 6150

149°

6200

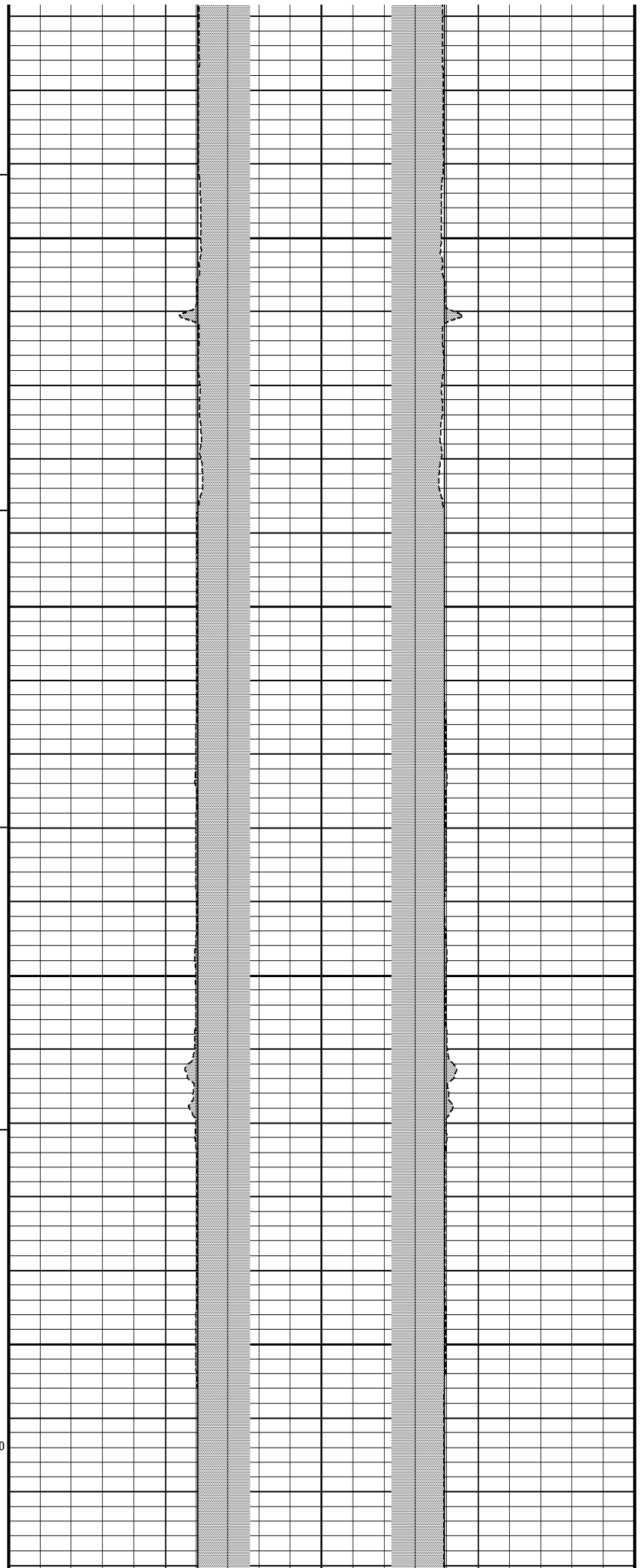
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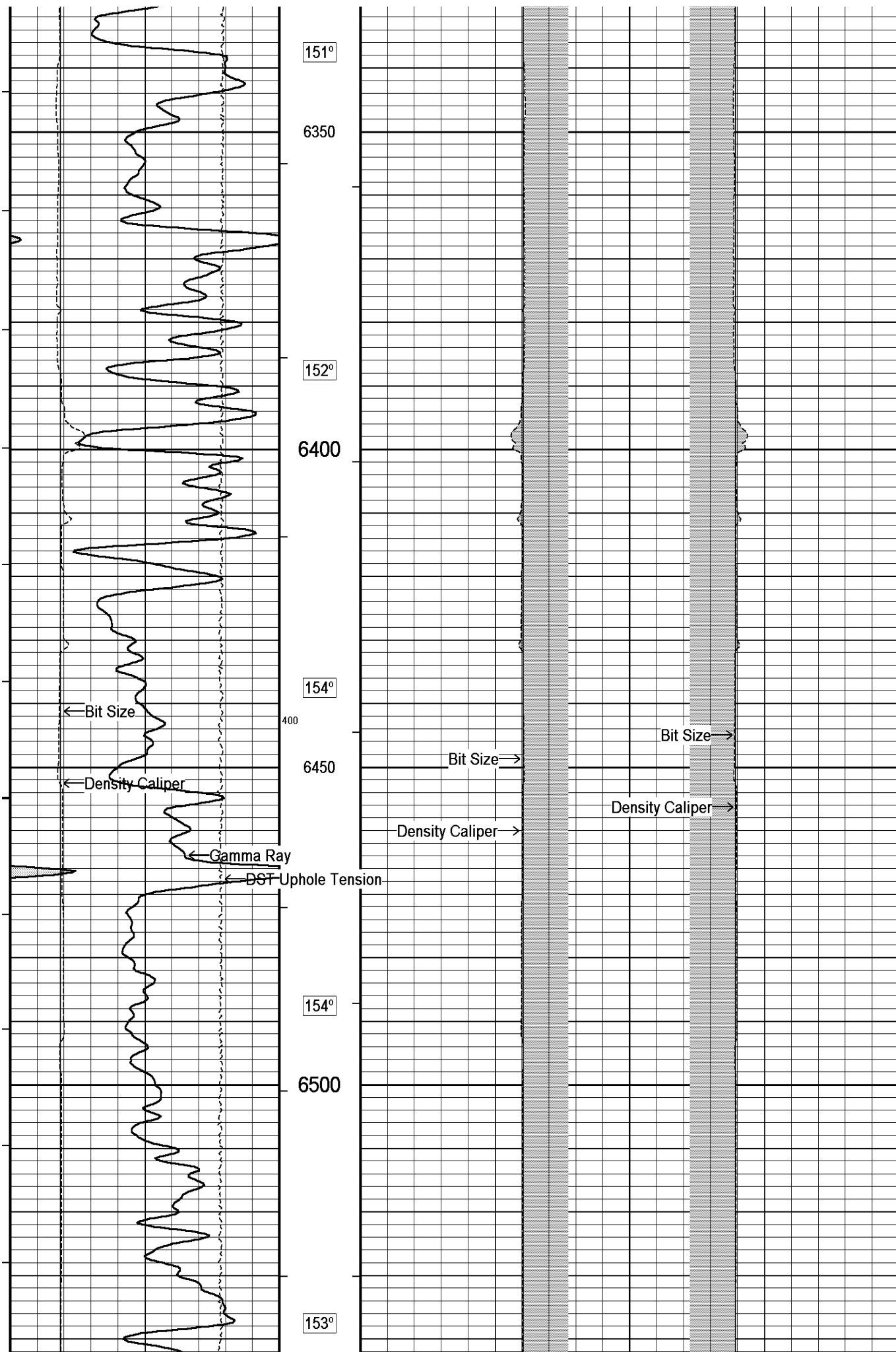
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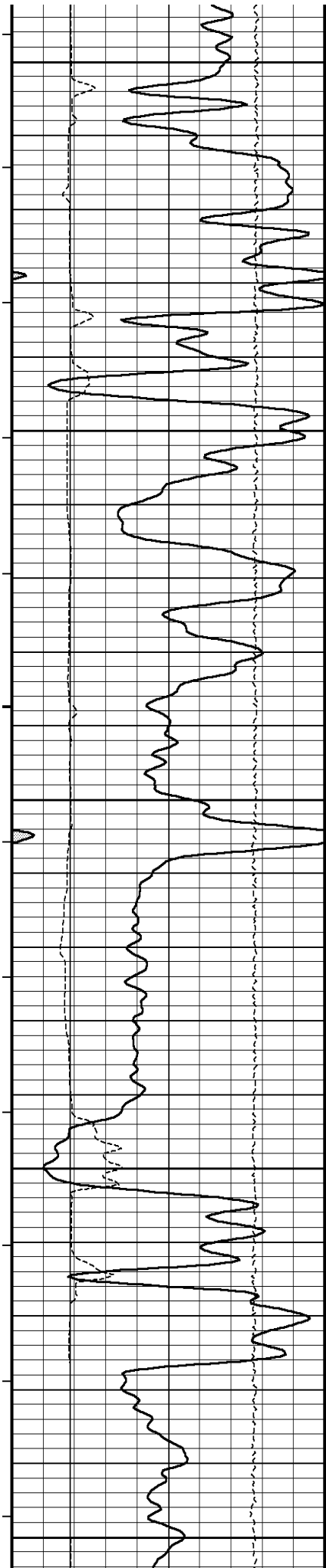
151°

6300

300







6550

153°

6600

154°

6650

156°

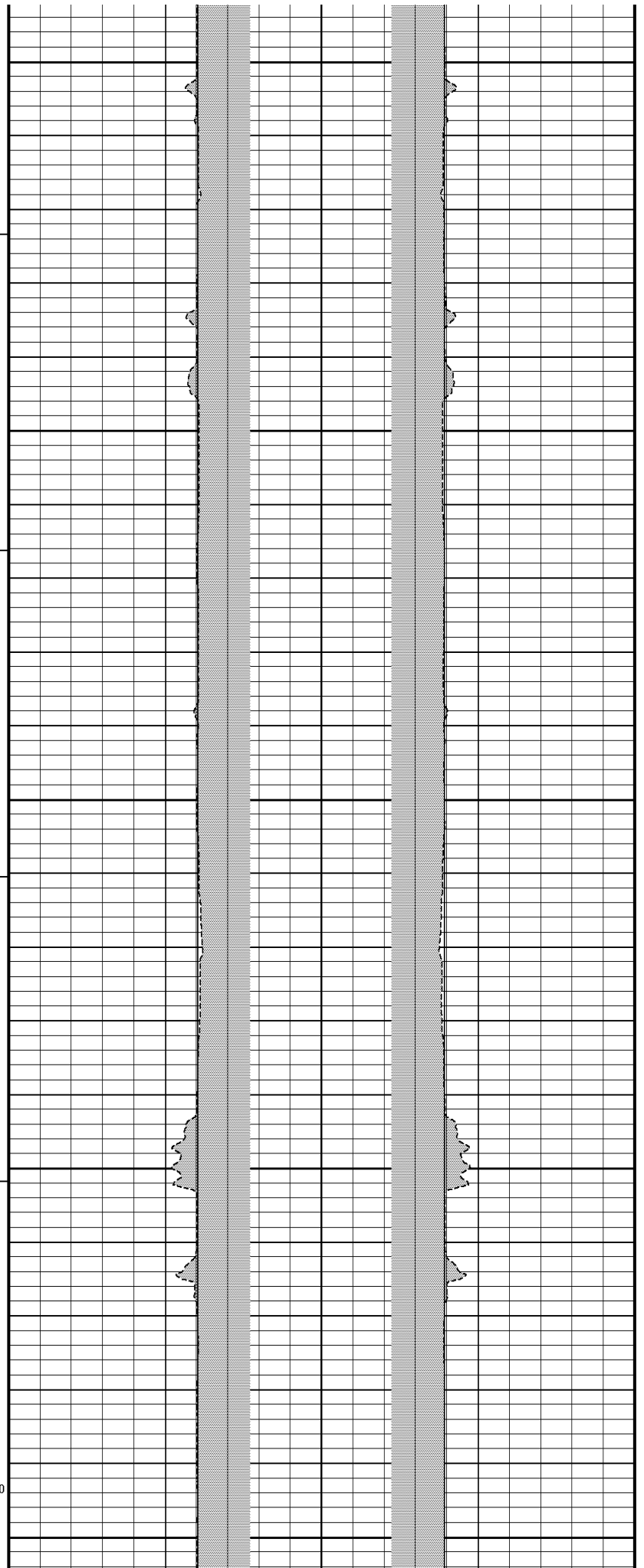
6700

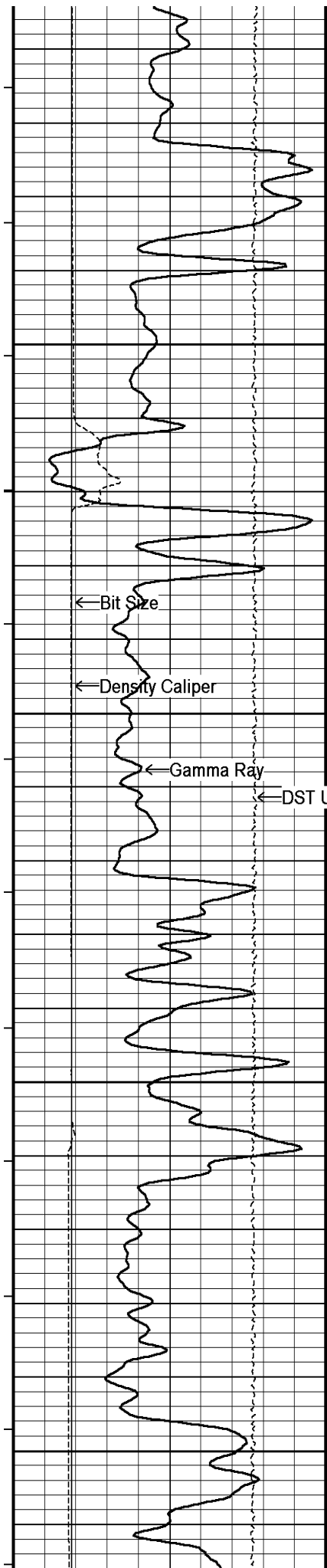
300

158°

200

6750





157°

6800

159°

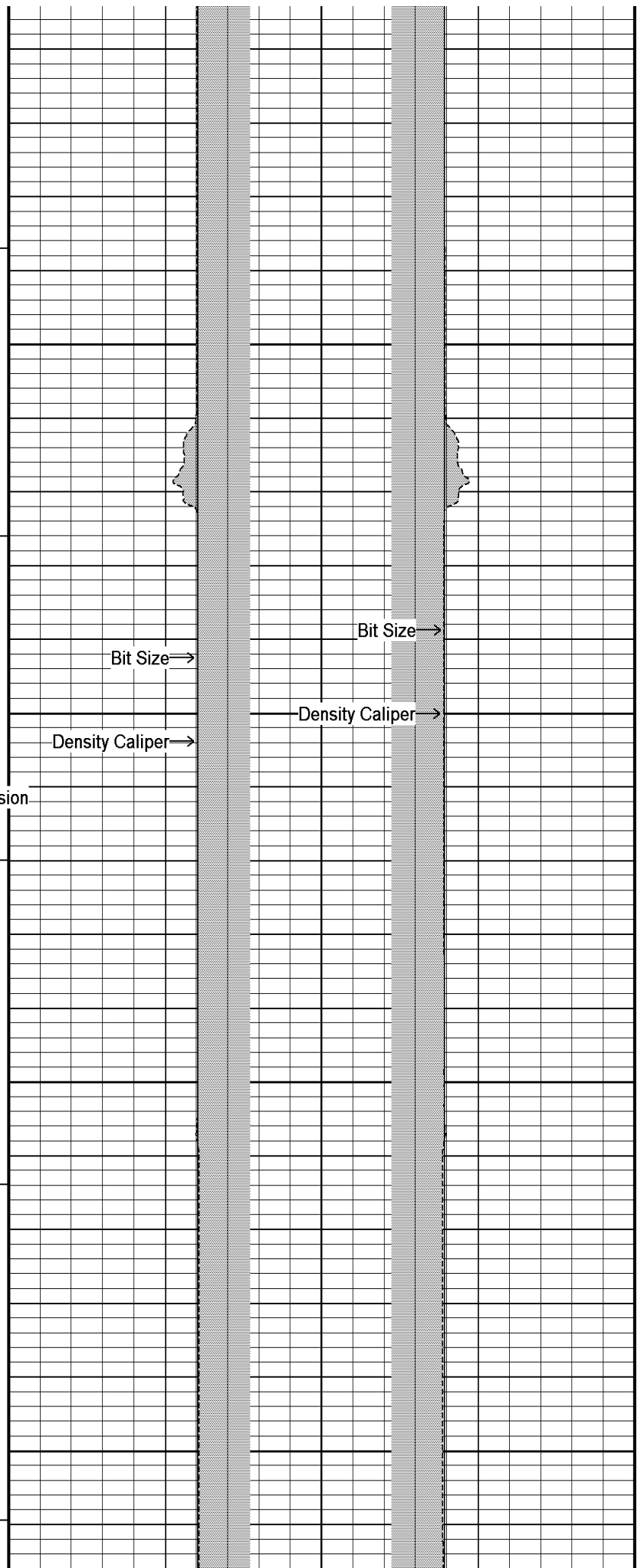
6850

157°

6900

157°

6950

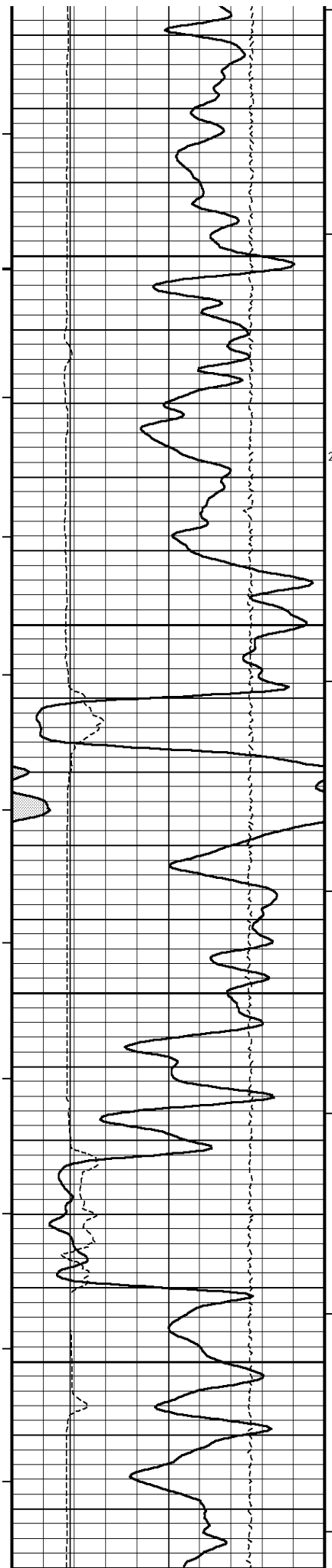


Bit Size →

Bit Size →

Density Caliper →

Density Caliper →



158°

7000

200

156°

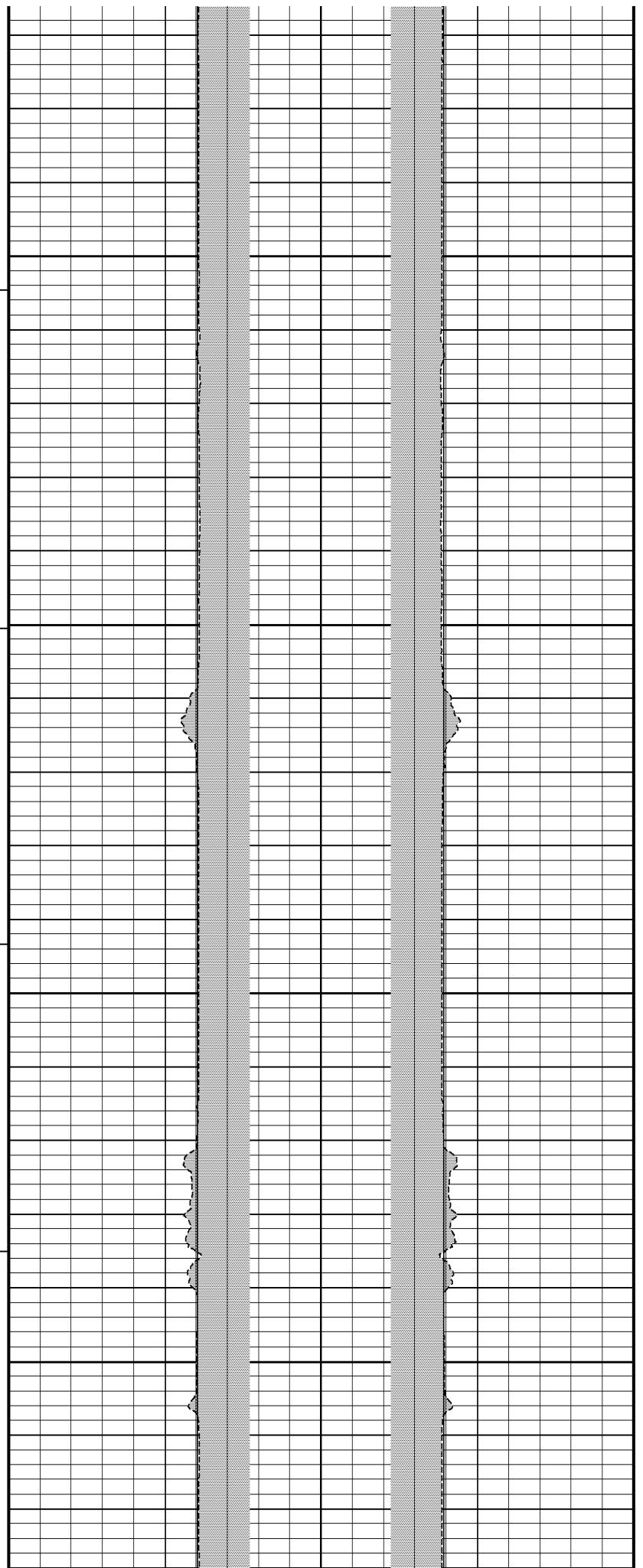
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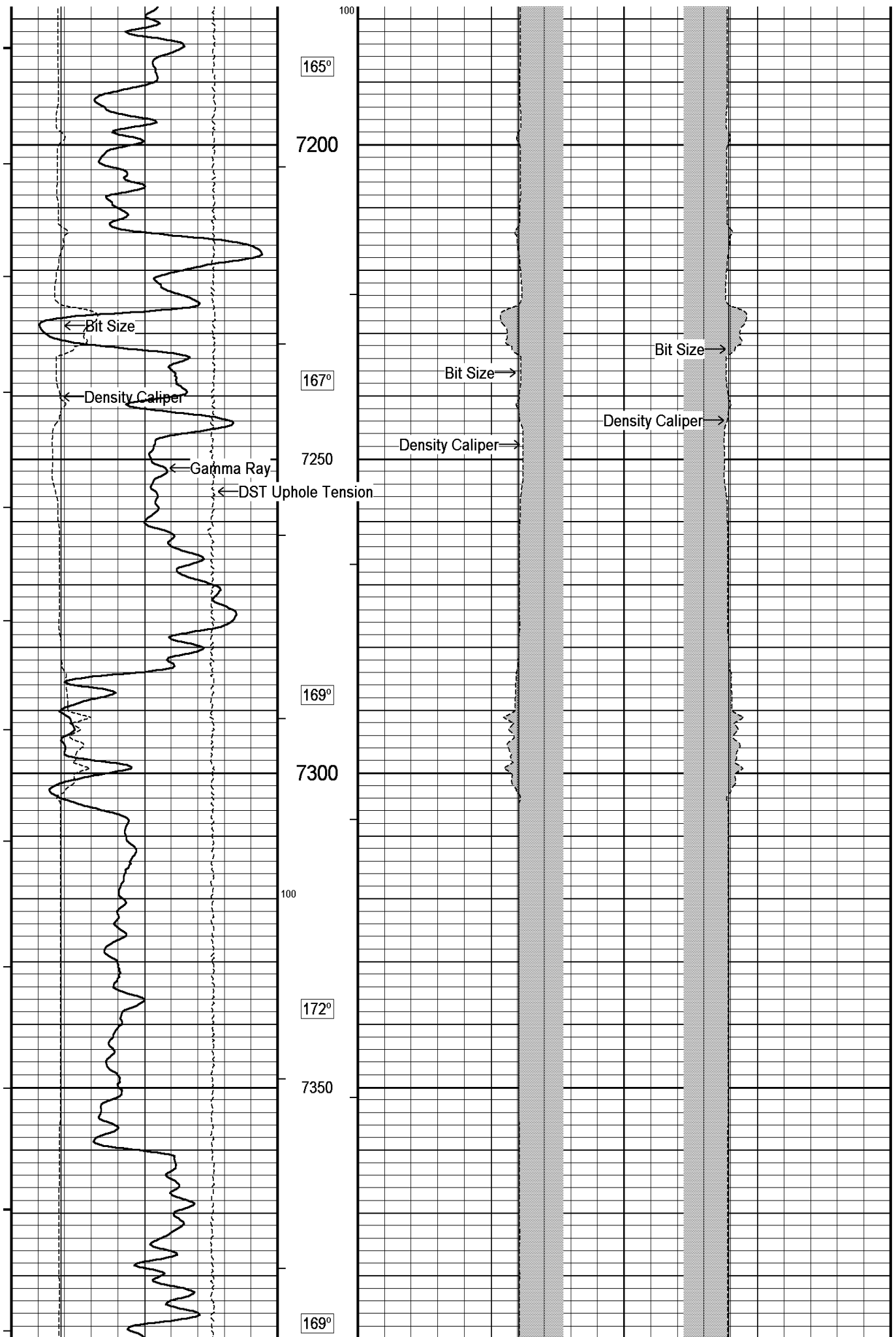
157°

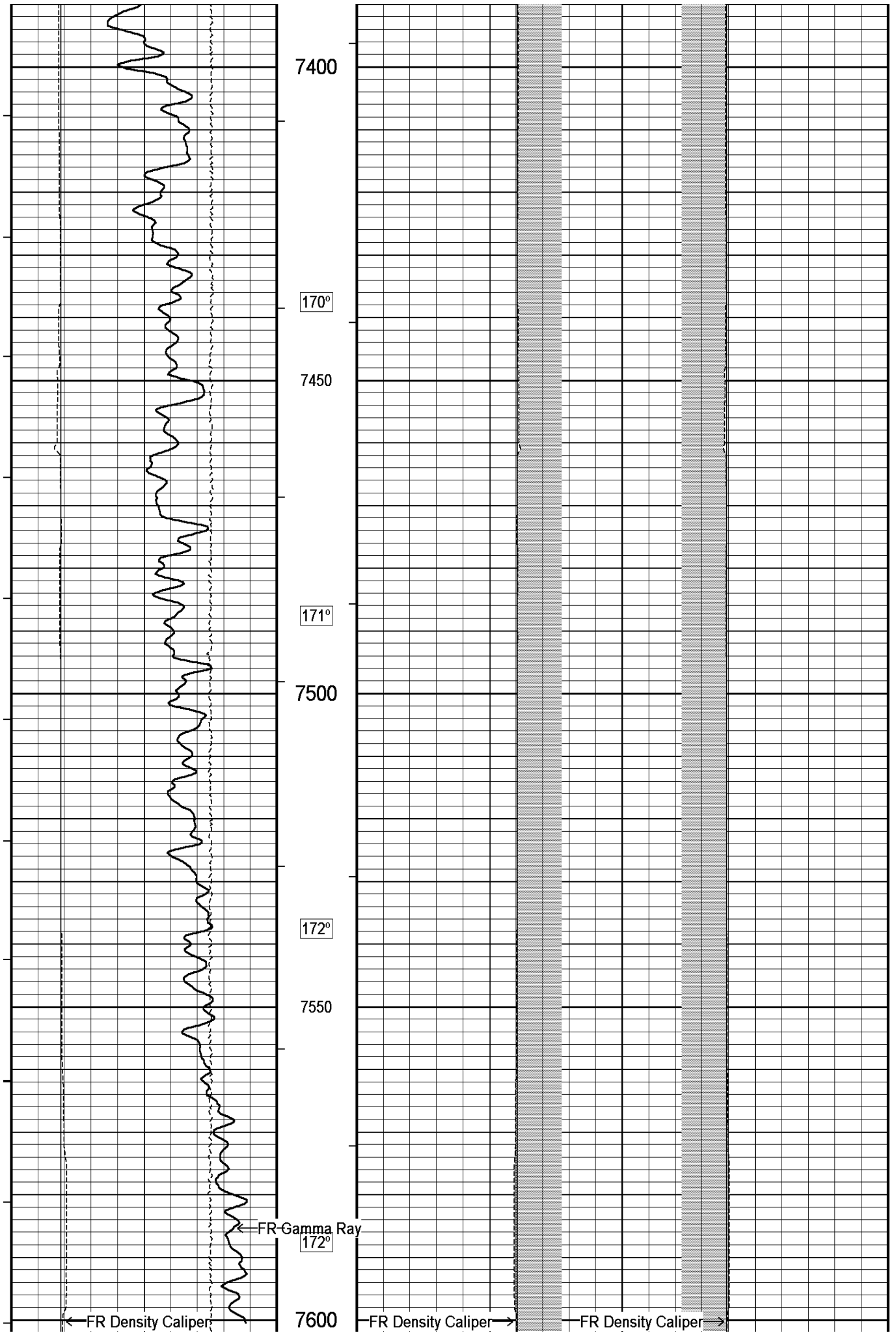
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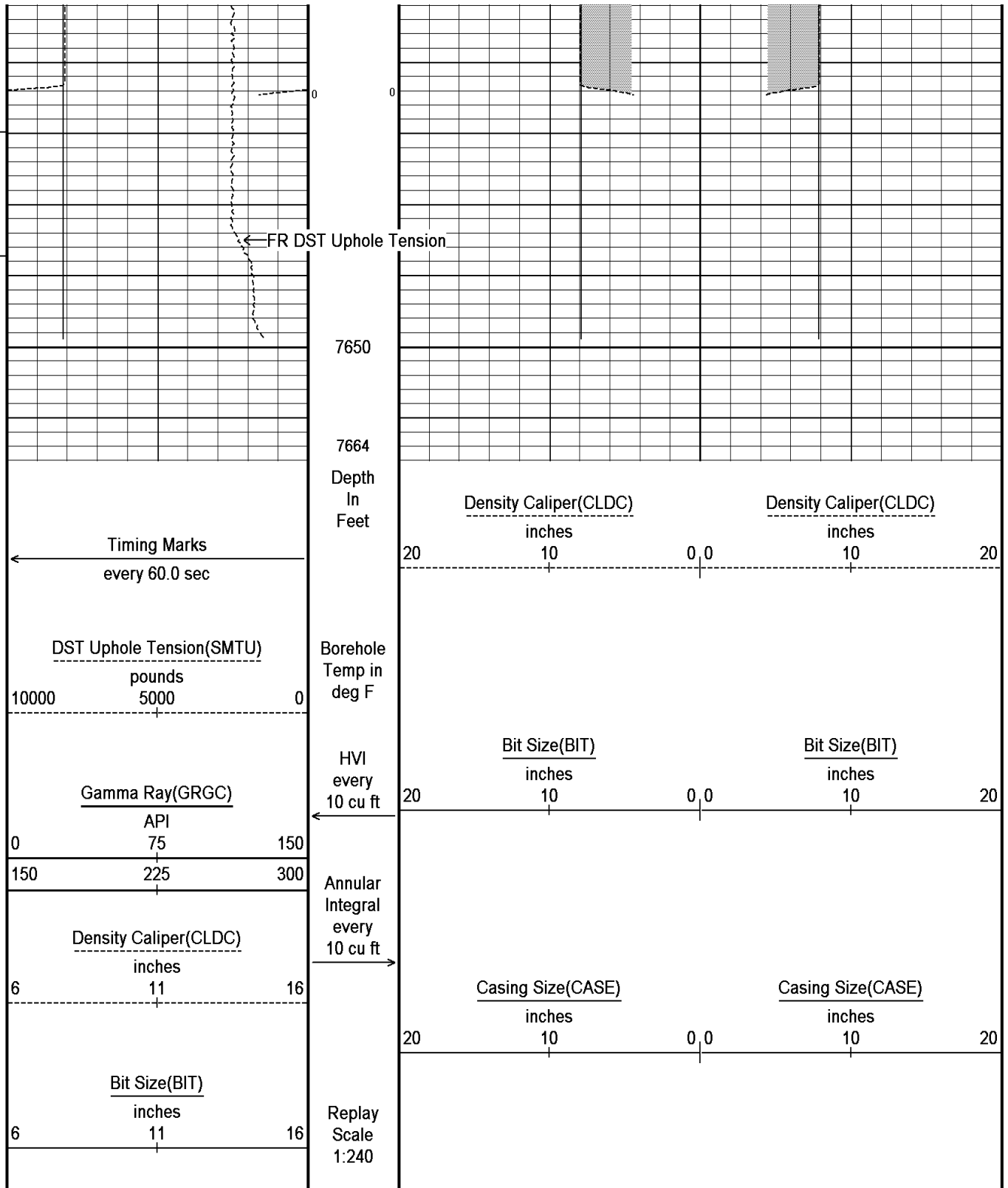
163°

7150









Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 13-DEC-2010 04:56

Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta

Recorded on 13-DEC-2010 02:10

System Versions: Logged with 10.08.1568 Plotted with 10.08.1568



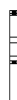
5 INCH MAIN LOG



### DOWNHOLE EQUIPMENT

C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta

SHA-J.A Compact Swivel Head Adaptor  
 SHA 314 Length: 2.30 ft Weight: 22.0 lb



Compact Gamma MCG 287	Length: 8.70 ft	Weight: 63.9 lb
Compact Neutron MDN 306	Length: 5.04 ft	Weight: 50.7 lb
Compact Density/Caliper MPD 220	Length: 9.59 ft	Weight: 90.4 lb
SKJ-D.A Compact Knuckle Joint SKJ 154	Length: 2.17 ft	Weight: 24.3 lb
Compact Focussed Electric MFE 179	Length: 6.03 ft	Weight: 48.5 lb
Compact Sonic MSS 319	Length: 12.52 ft	Weight: 72.8 lb
Compact Induction MAI 106	Length: 10.81 ft	Weight: 48.5 lb
<b>Total</b>	<b>Length: 57.16 ft</b>	<b>Weight: 421.1 lb</b>



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

COMPANY	BILL BARRETT CORPORATION
WELL	MILLER FEDERAL 24D-31-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6288.00	feet	First Reading	7600.00
Elevation Drill Floor	6287.00	feet	Depth Driller	7626.00 feet
Elevation Ground Level	6266.00	feet	Depth Logger	7635.00 feet



**Weatherford®**

HOLE VOLUME  
CALIPER  
LOG