



Weatherford

CALIPER LOG

COMPANY				MURFIN DRILLING COMPANY INC.			
WELL				ROGUE #10-25			
FIELD				WILDCAT			
PROVINCE/COUNTY				LINCOLN			
COUNTRY/STATE				U.S.A. / COLORADO			
LOCATION				2299' FSL & 1647' FEL			
SEC 25	TWP 9S	RGE 56W	Other Services				
Latitude		05-073-06736			Elevations: feet KB 5316.00 DF 5314.00 GL 5303.00		
Longitude							
API Number							
Permanent Datum GL, Elevation 5303 feet							
Log Measured From KB, 13.00 feet above Permanent Datum							
Drilling Measured From KB							
Date	07-FEB-2018						
Run Number	ONE						
Service Order	4558-205041941						
Depth Driller	8187.00				feet		
Depth Logger	7776.00				feet		
First Reading	7742.00				feet		
Last Reading	478.00				feet		
Casing Driller	475.00				feet		
Casing Logger	478.00				feet		
Bit Size	7.875				inches		
Hole Fluid Type	CHEMICAL						
Density / Viscosity	9.20 lb/USg		80.00 CP				
PH / Fluid Loss	8.50		8.50 ml/30Min				
Sample Source	FLOWLINE						
Rm @ Measured Temp	1.39 @ 75.0		ohm-m				
Rmf @ Measured Temp	1.11 @ 75.0		ohm-m				
Rmc @ Measured Temp	1.67 @ 75.0		ohm-m				
Source Rmf / Rmc	CALC		CALC				
Rm @ BHT	0.62 @168.0		ohm-m				
Time Since Circulation	6 HOURS						
Max Recorded Temp	168.00		deg F				
Equipment / Base	13244		LIB				
Recorded By	ADAM SILL						
Witnessed By	GREGG SMITH						

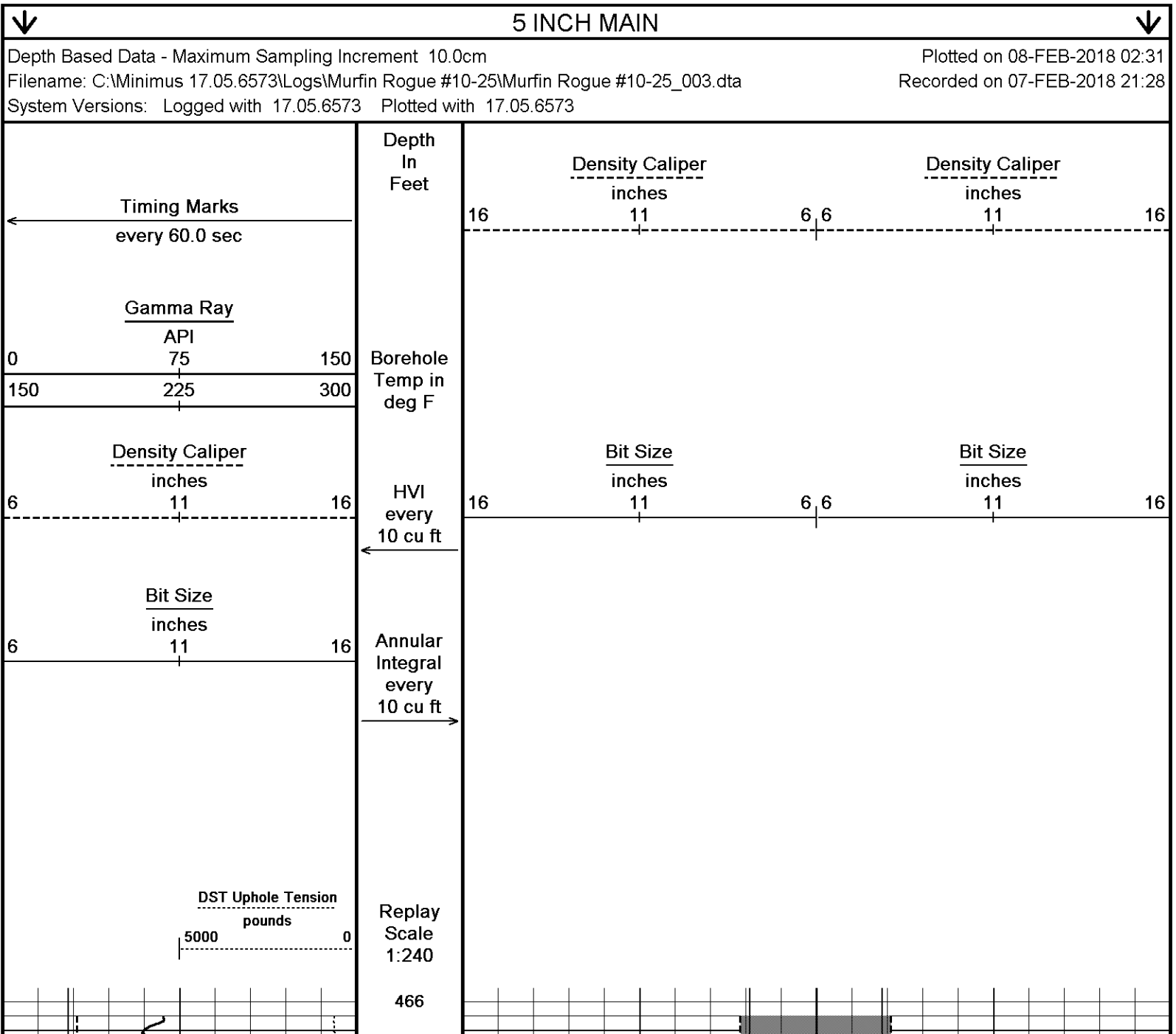
BOREHOLE RECORD					Last Edited: 07-FEB-2018 12:40
Bit Size inches		Depth From feet		Depth To feet	
7.875		475.00		8187.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	475.00	24.00	

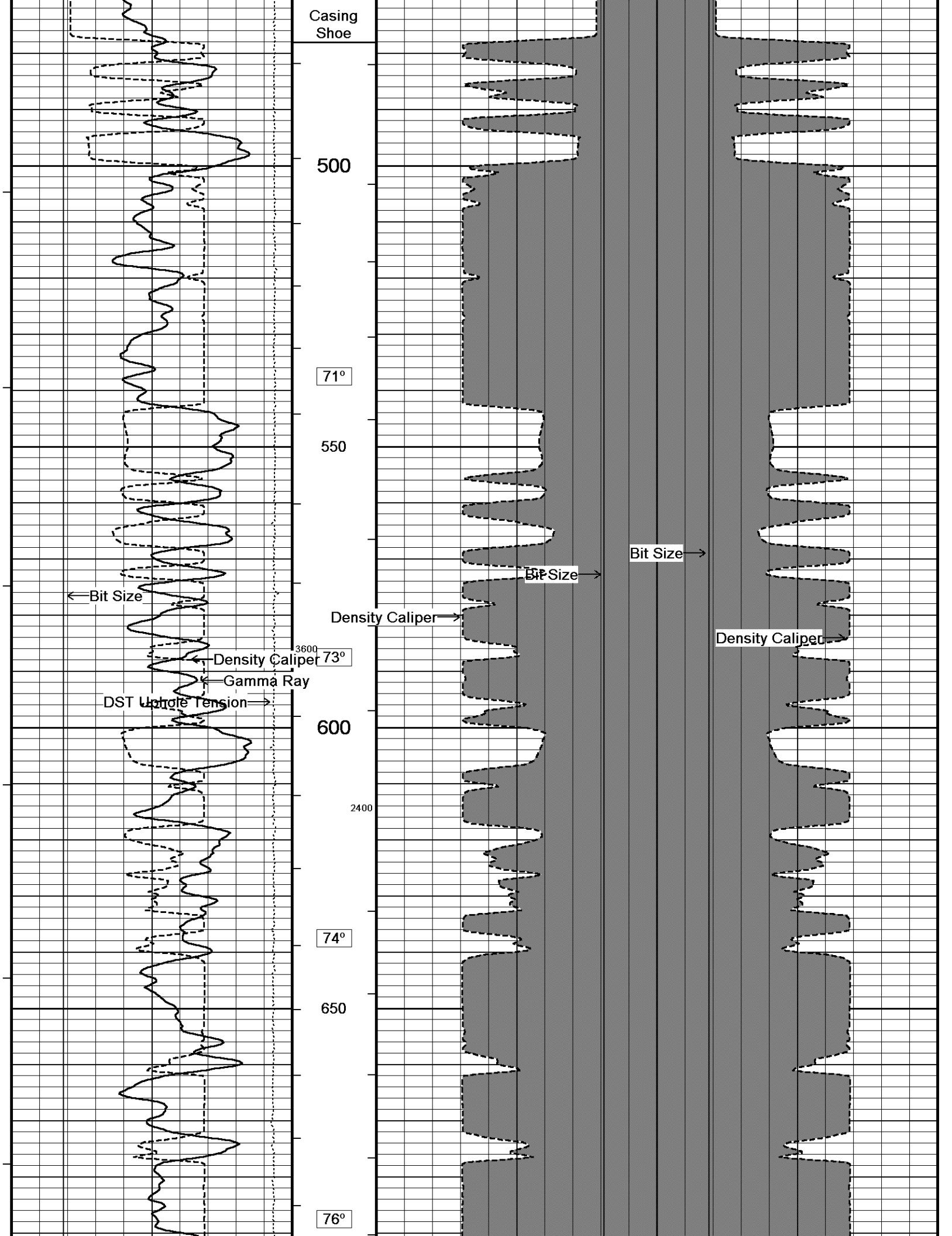
REMARKS
- SOFTWARE ISSUE: WLS 17.05.6573.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 3682 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 4200 FEET: 685 CU.FT.

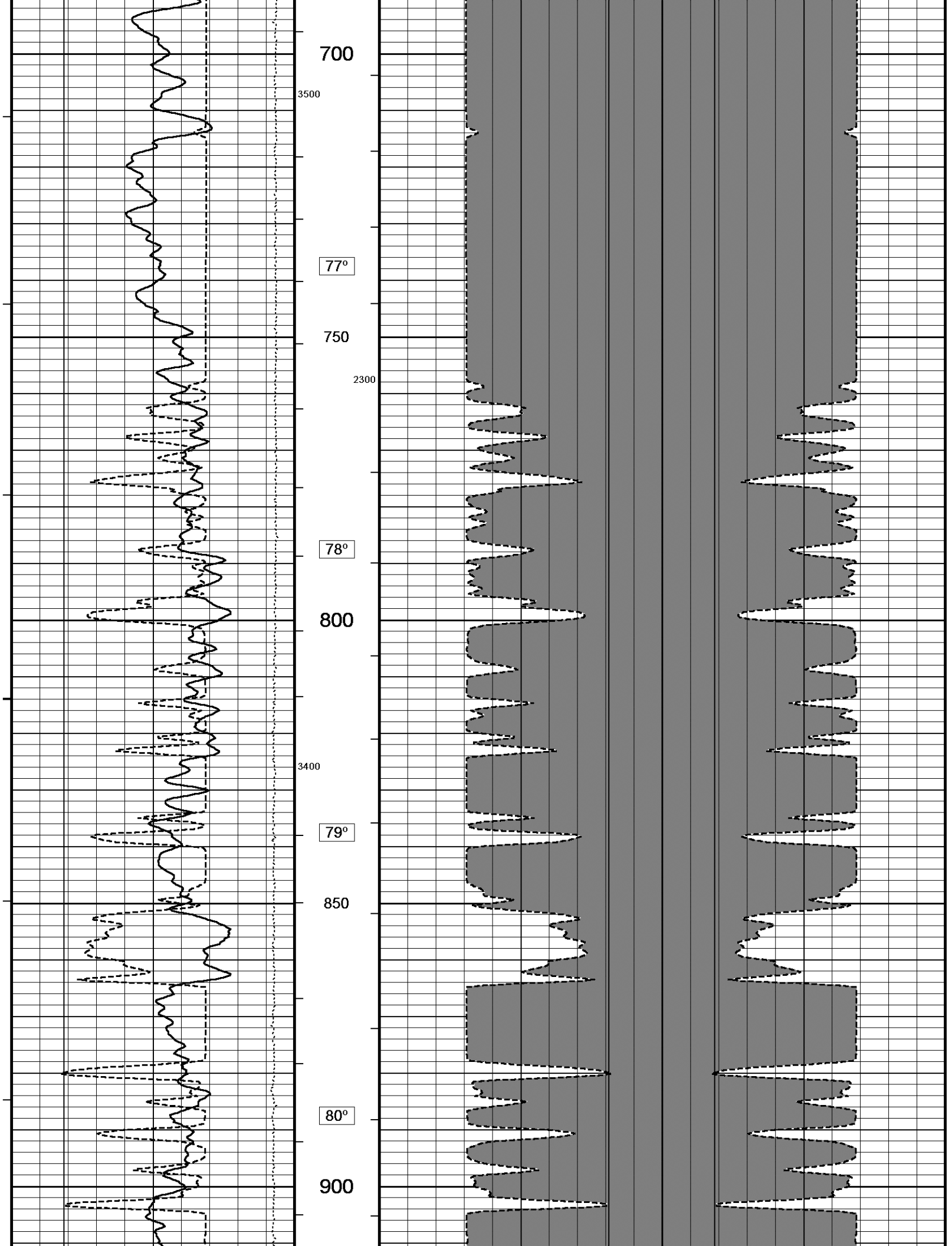
- RIG: MURFIN #25.
- ENGINEER: A. SILL.
- OPERATOR: B. TOVAR.

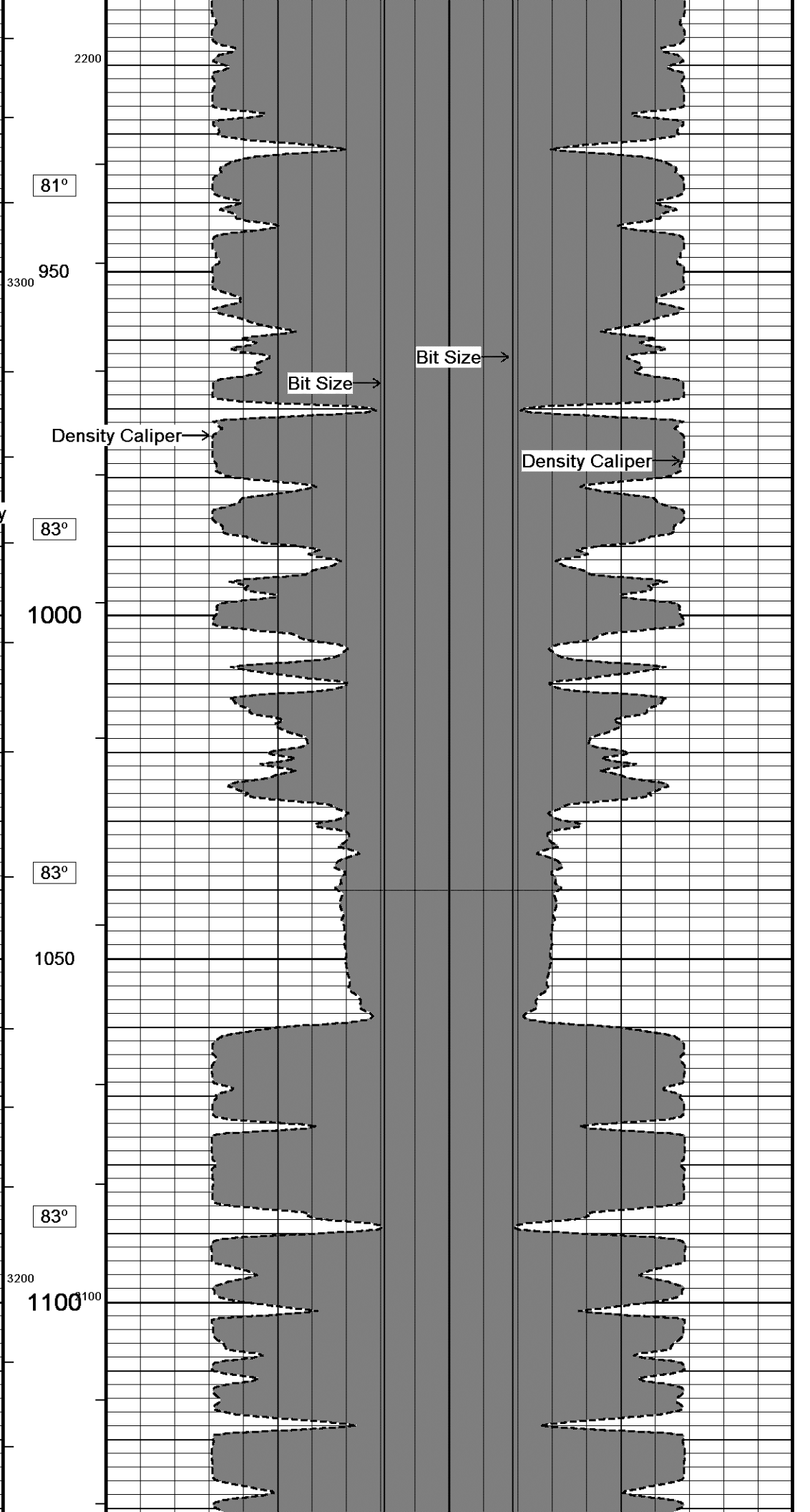
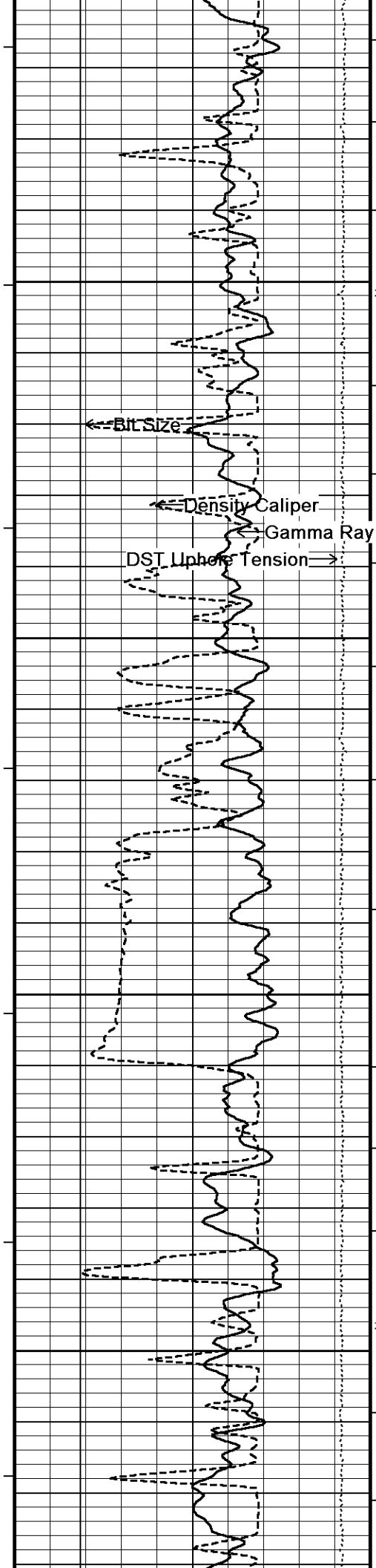
**** BRIDGED OFF AT 7776 FEET AND WAS INSTRUCTED TO LOG OUT FROM THERE WITHOUT A REPEAT SECTION. ****

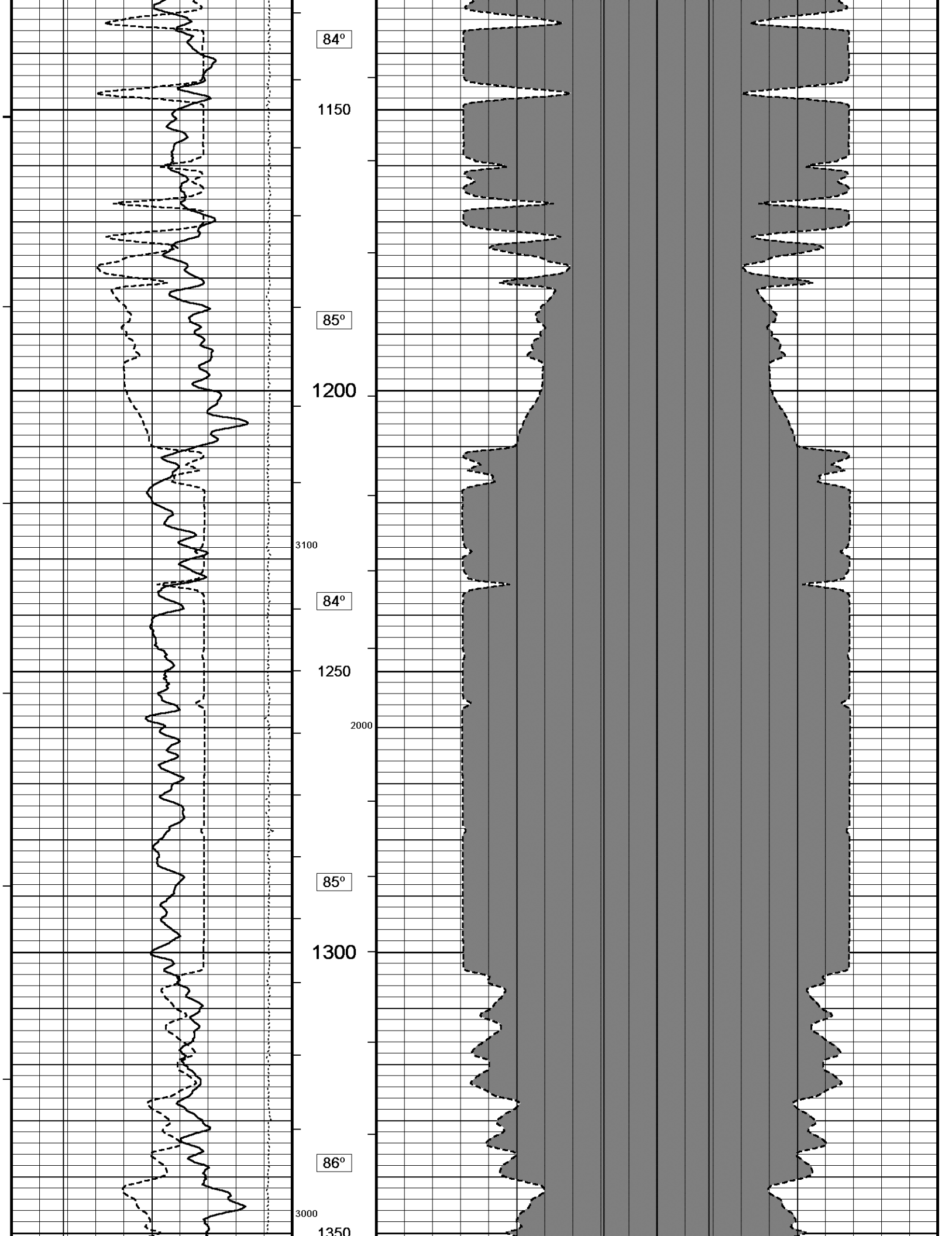
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

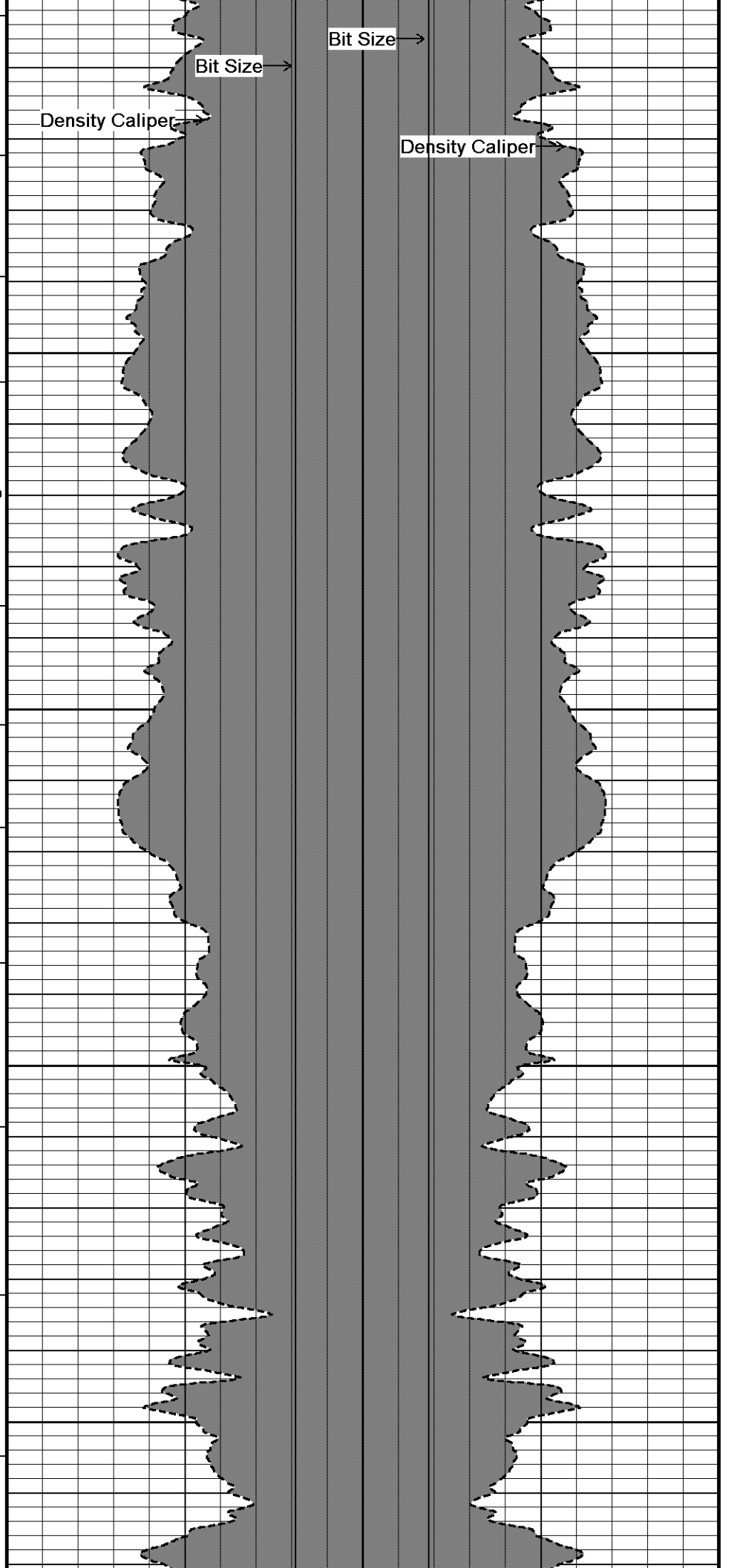
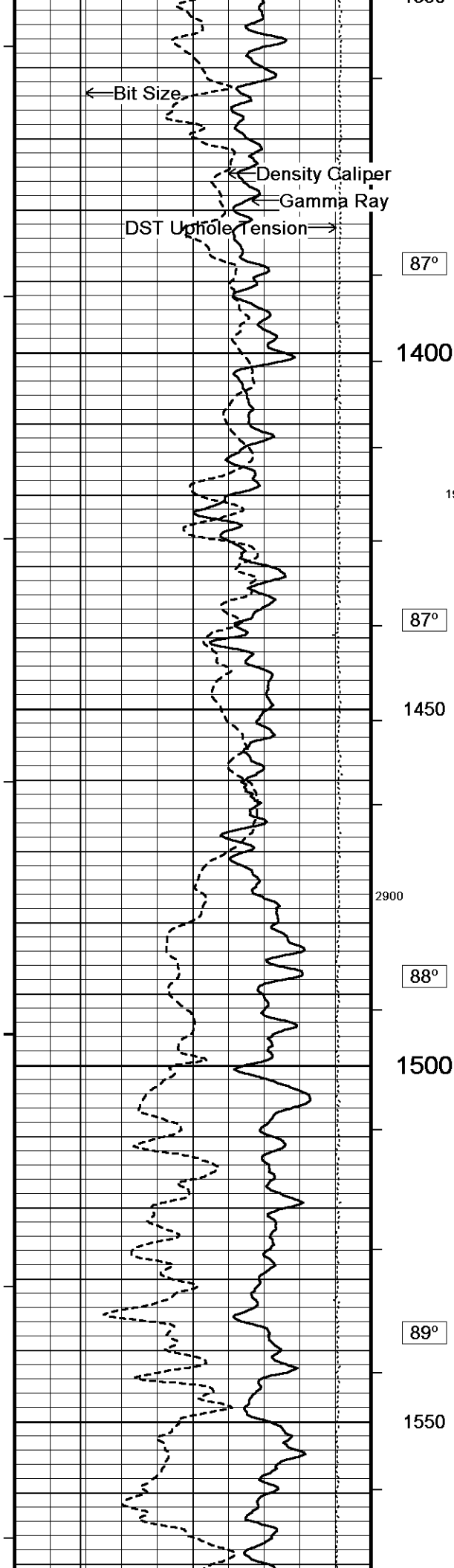


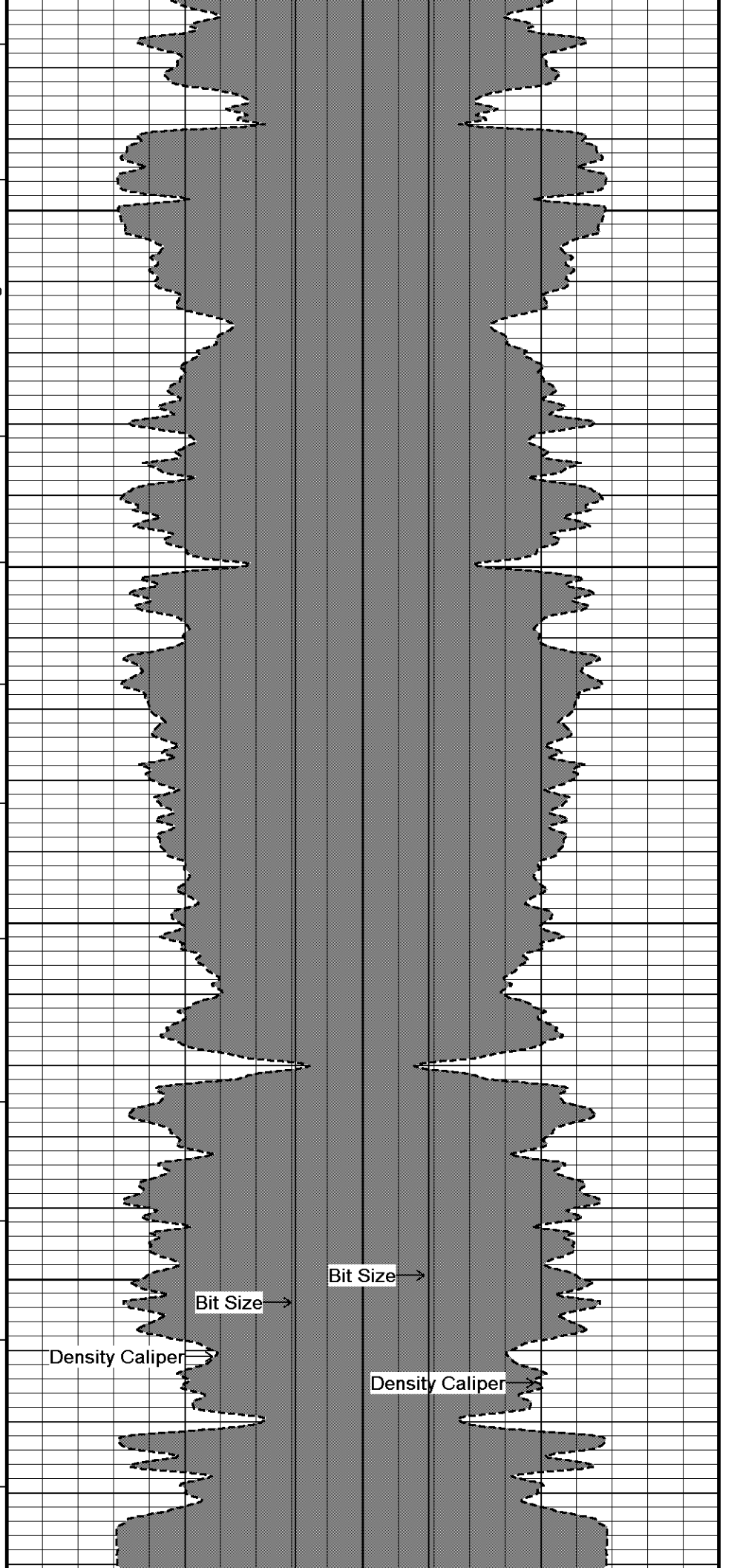
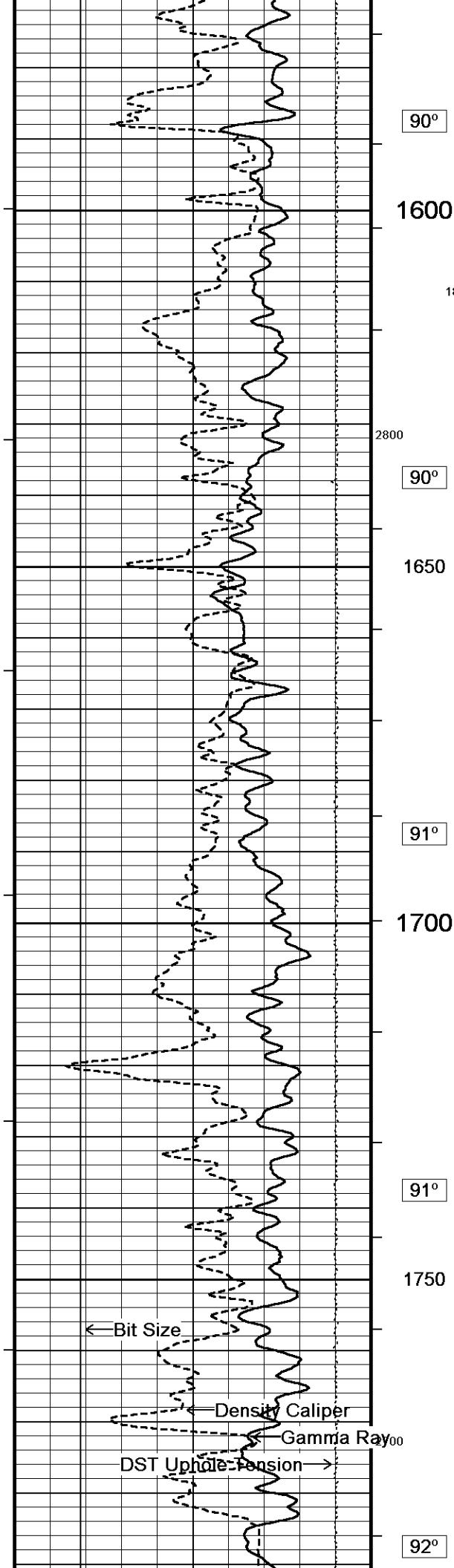


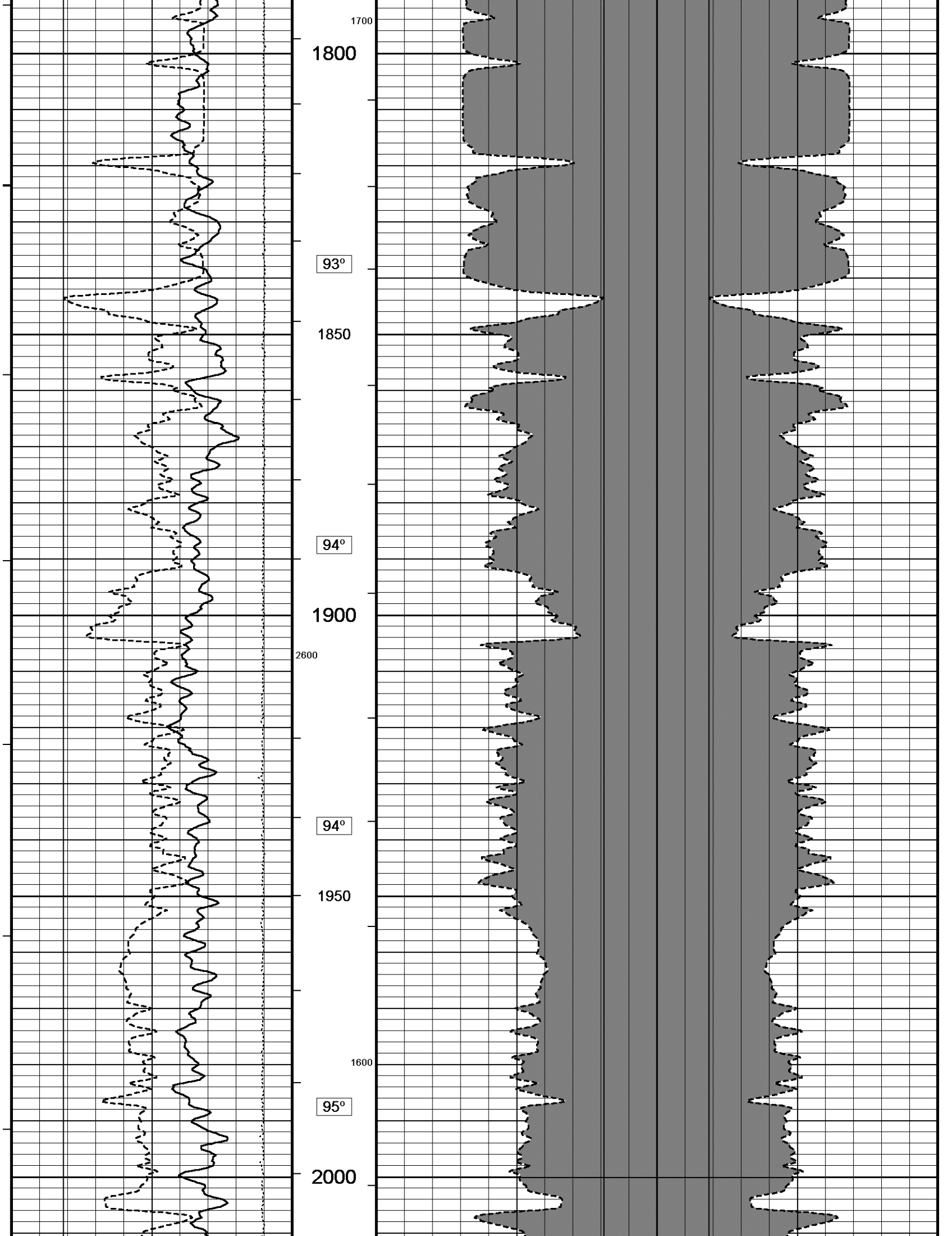


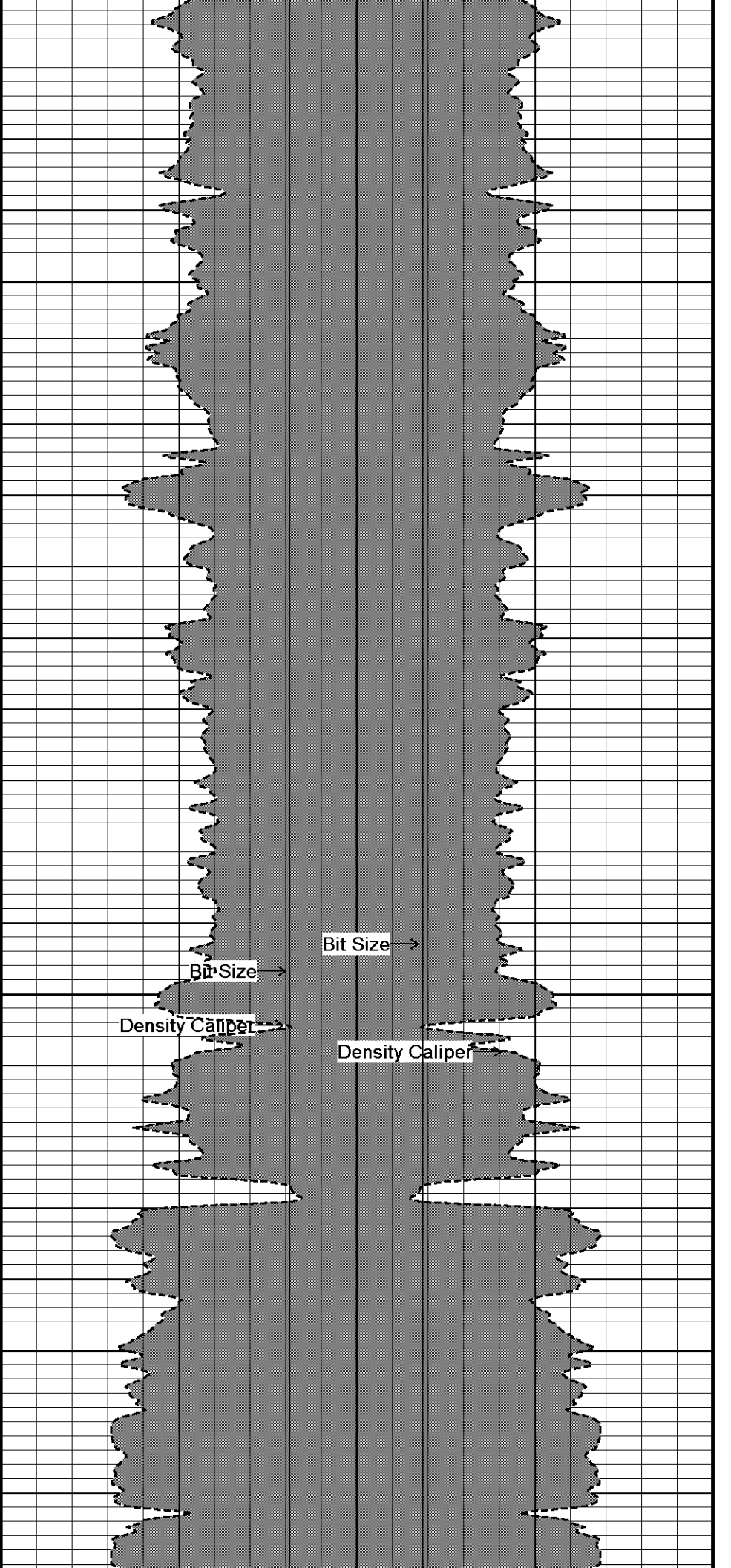
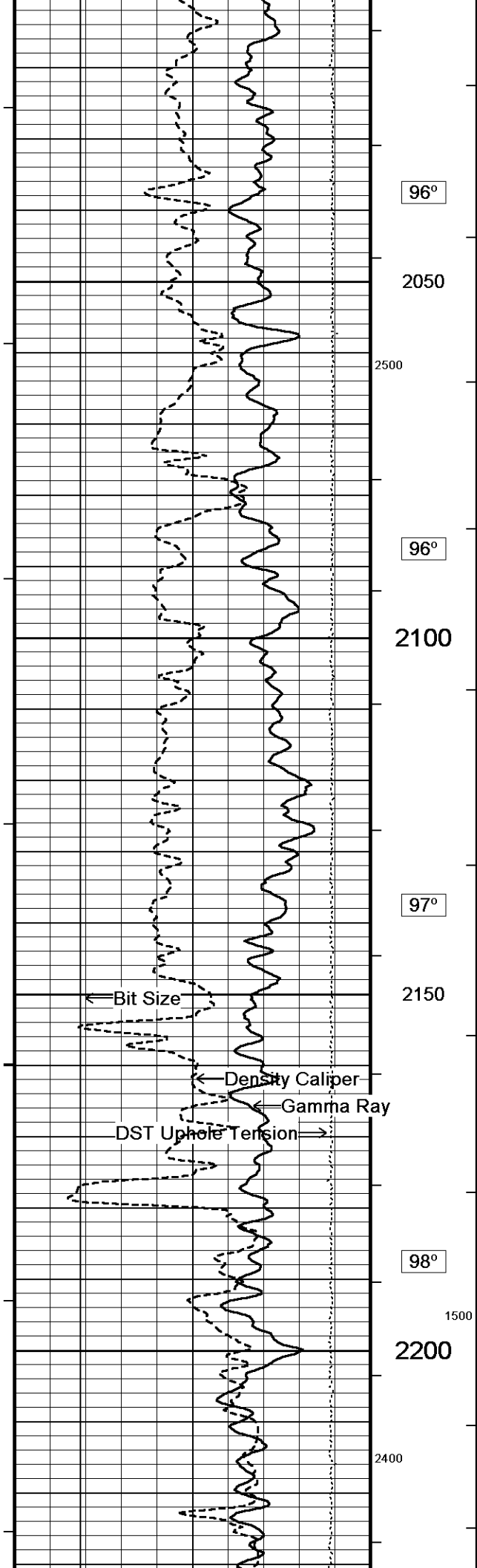


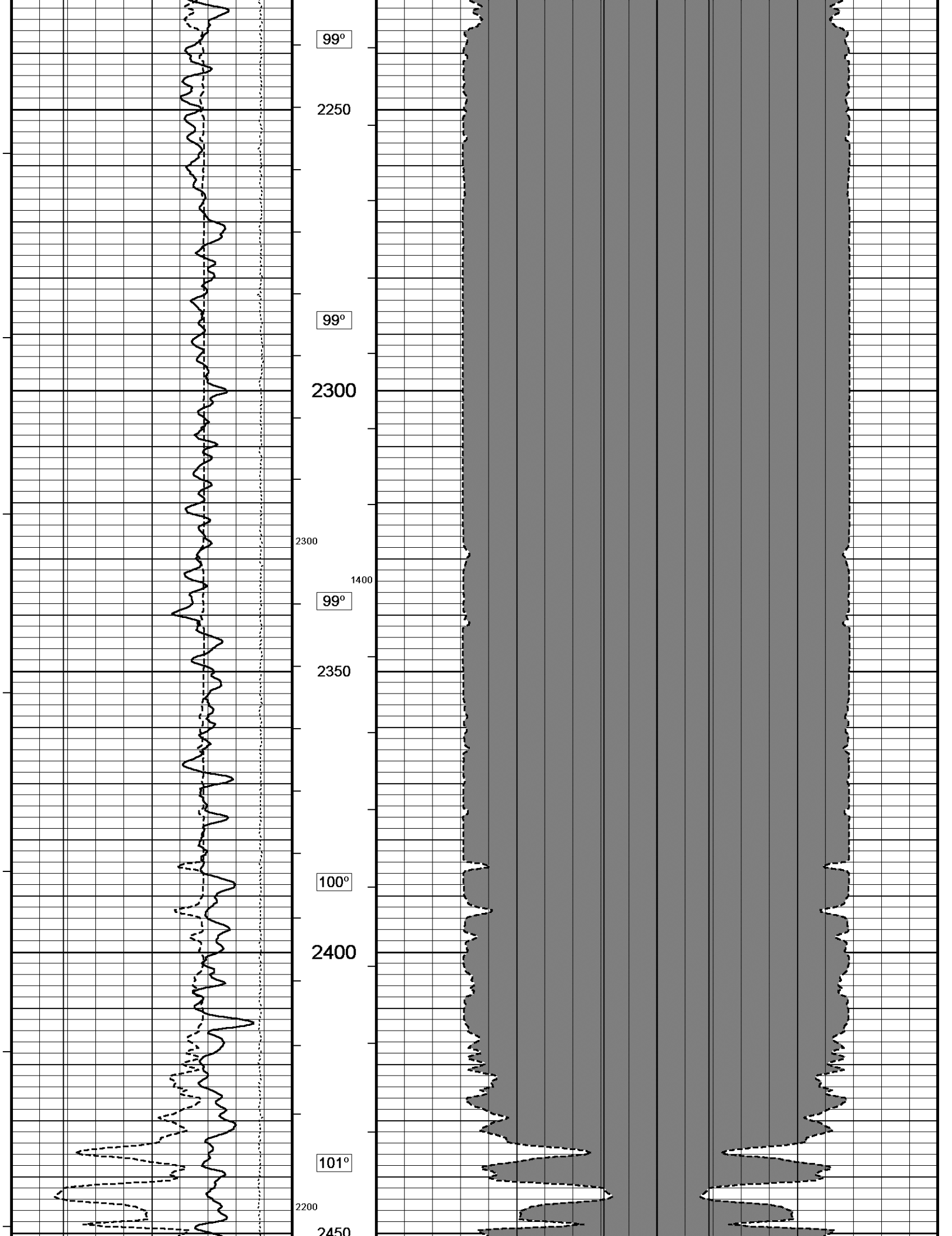


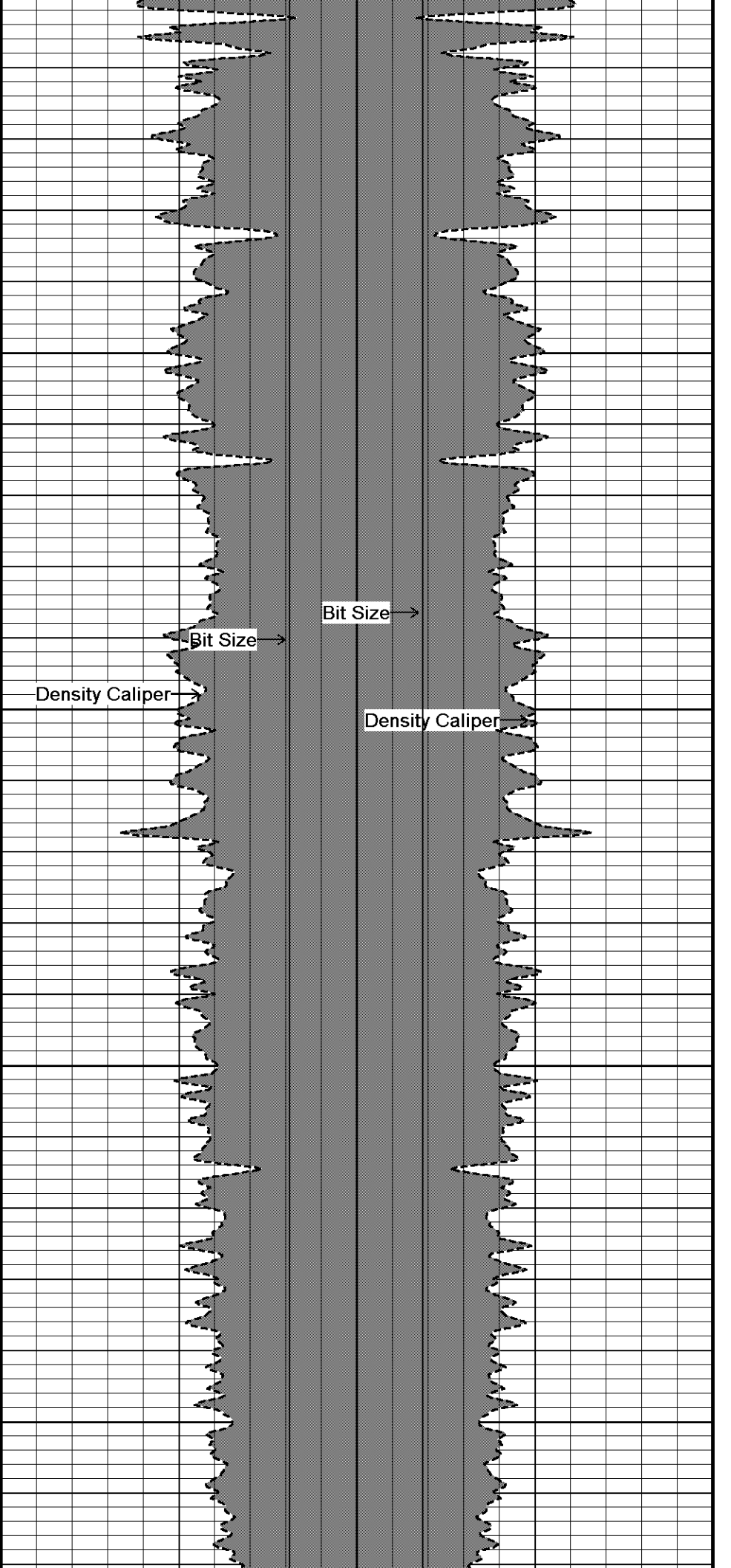
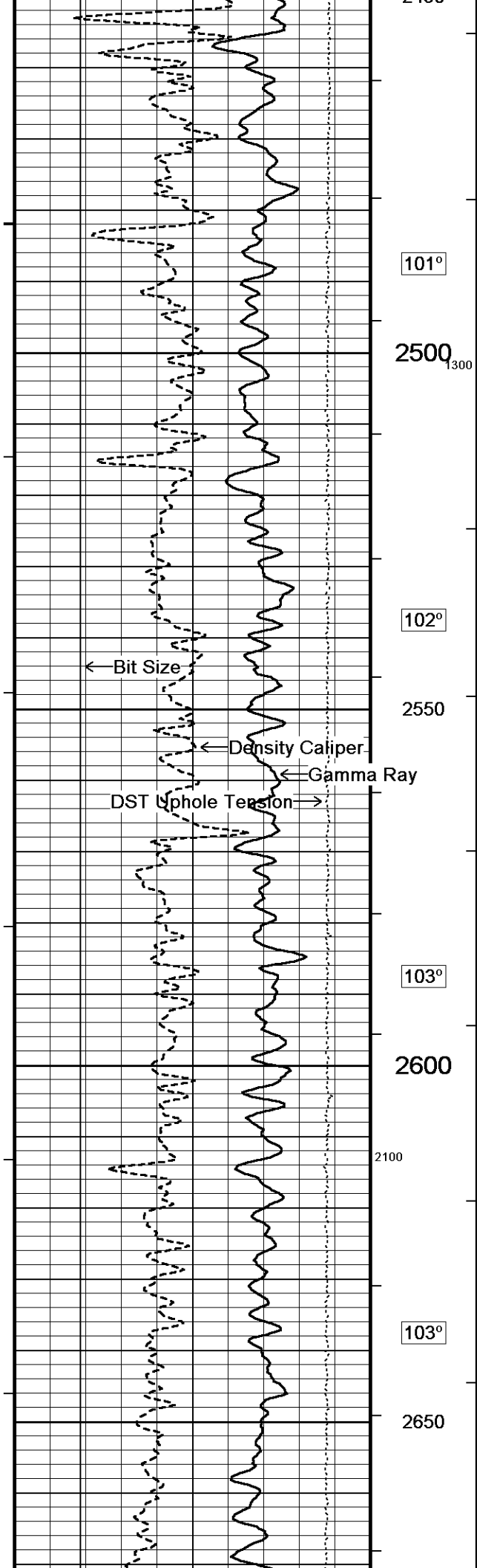


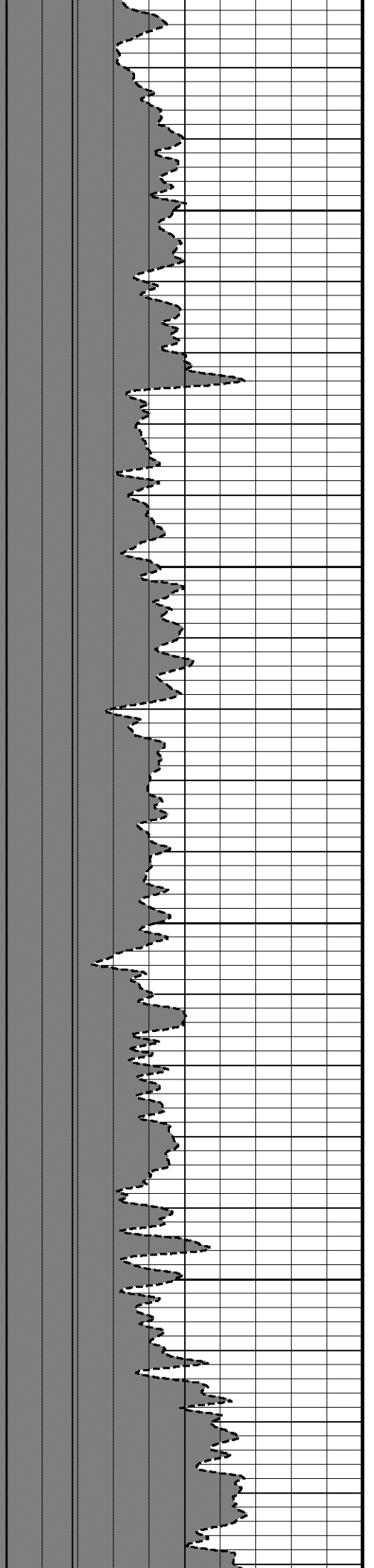
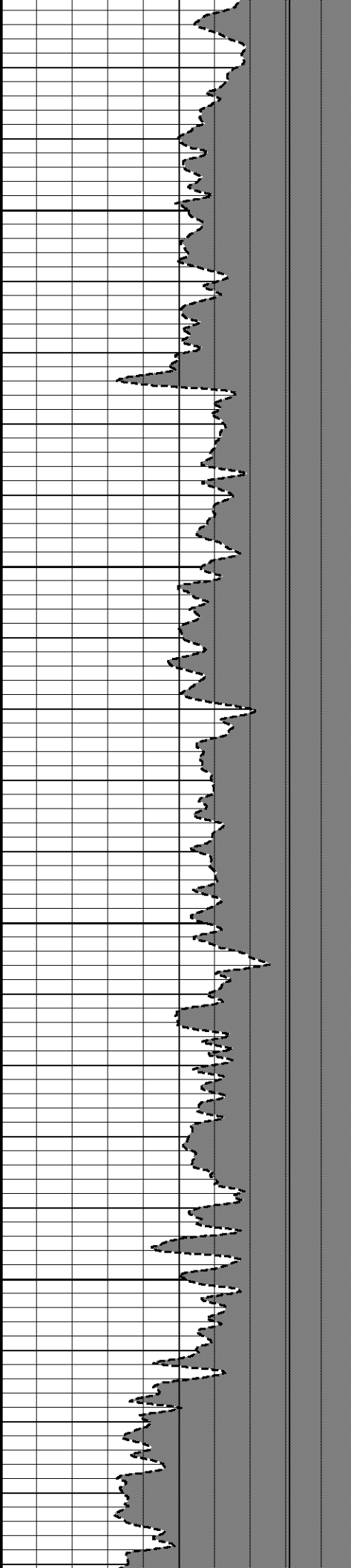
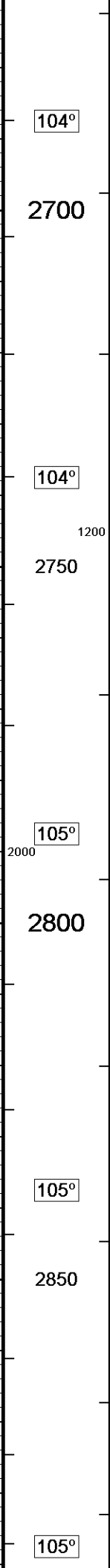
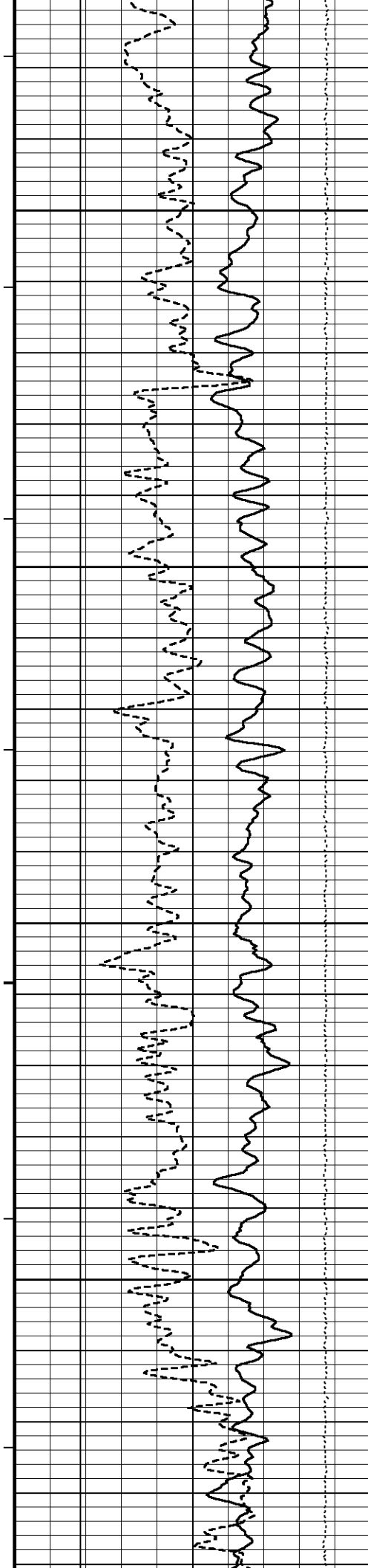


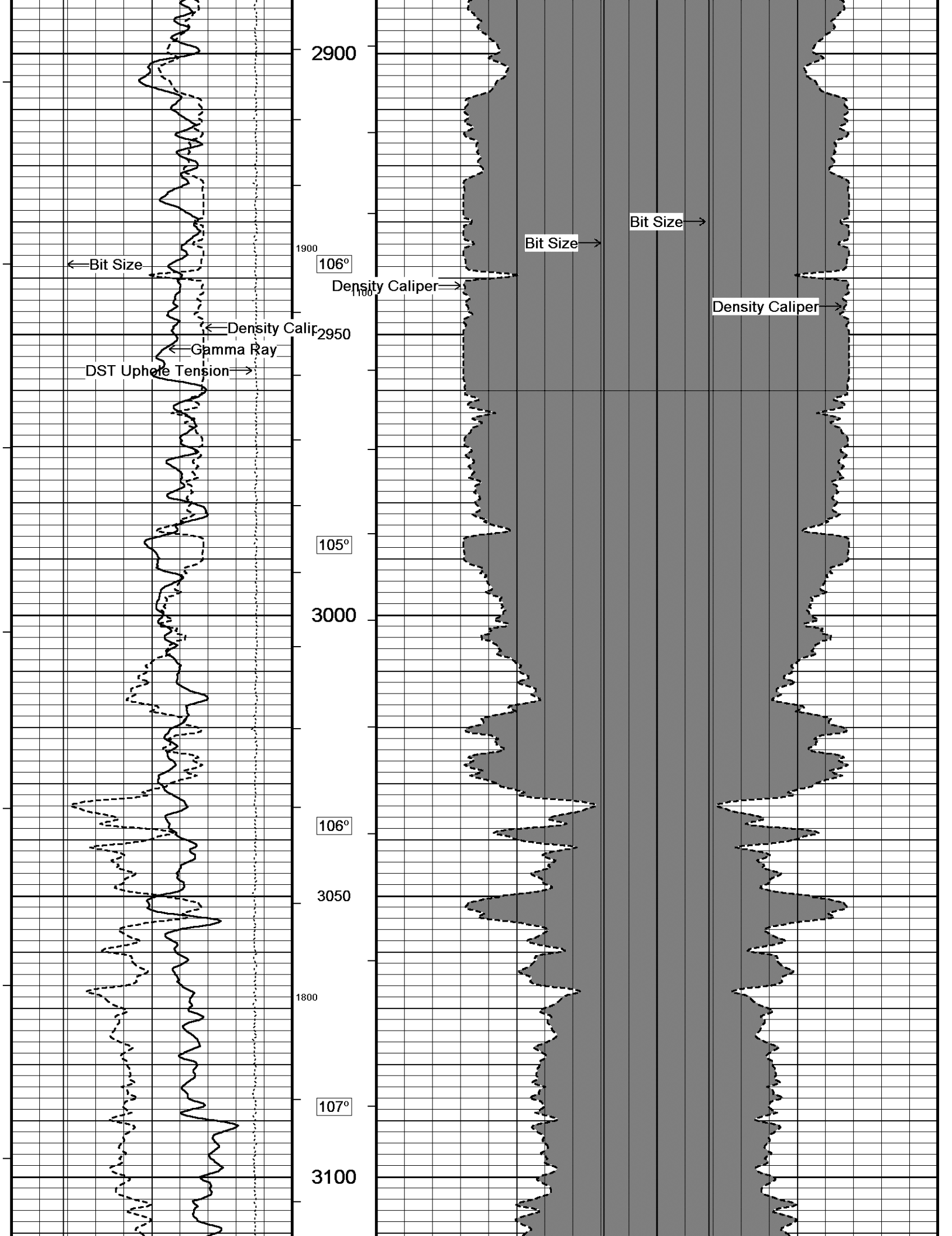


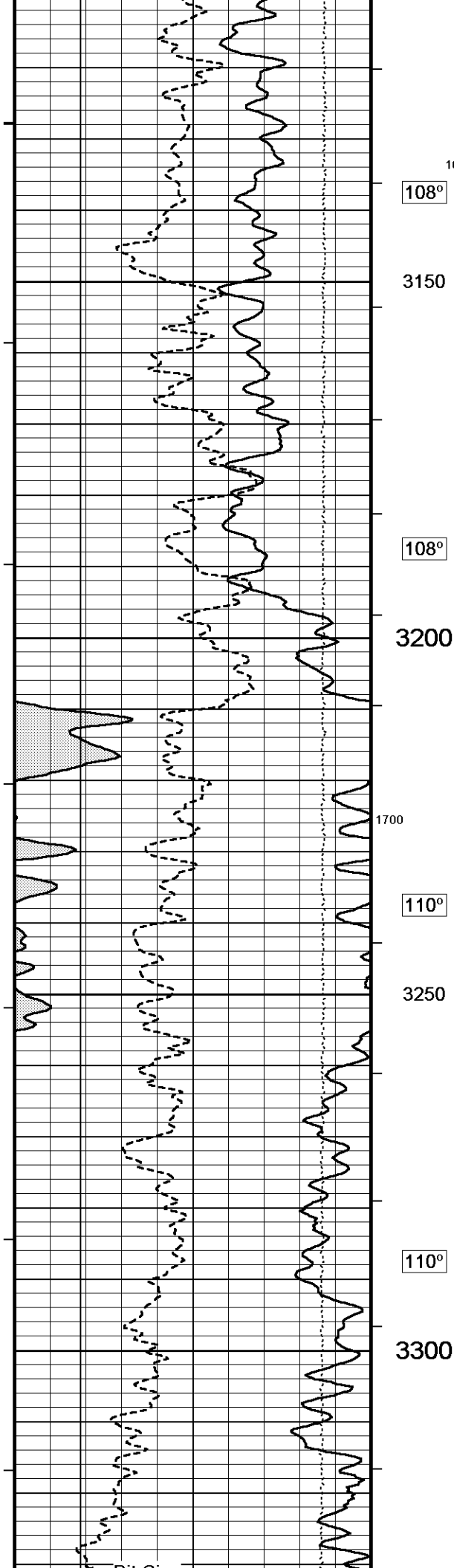












108°

3150

108°

3200

1700

110°

3250

110°

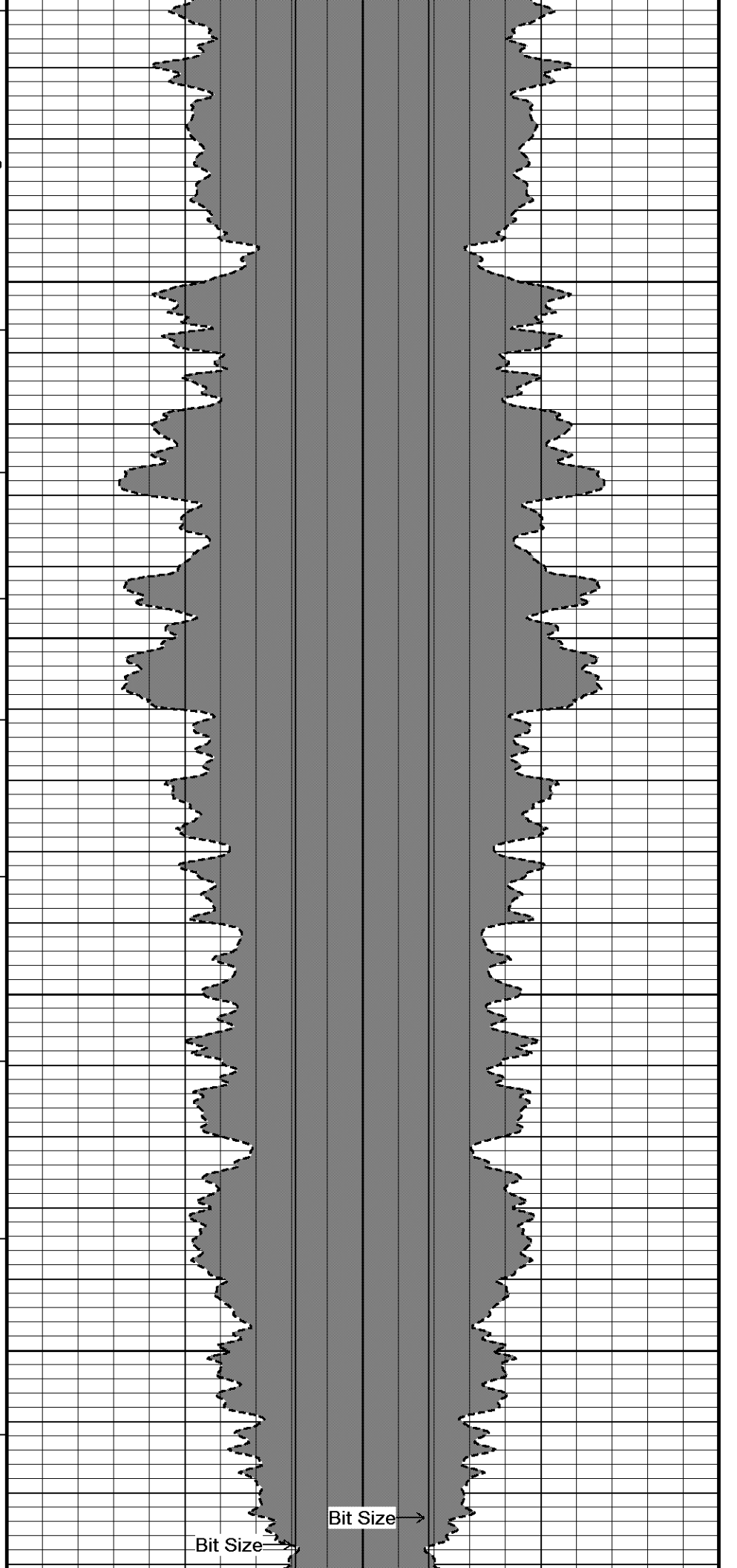
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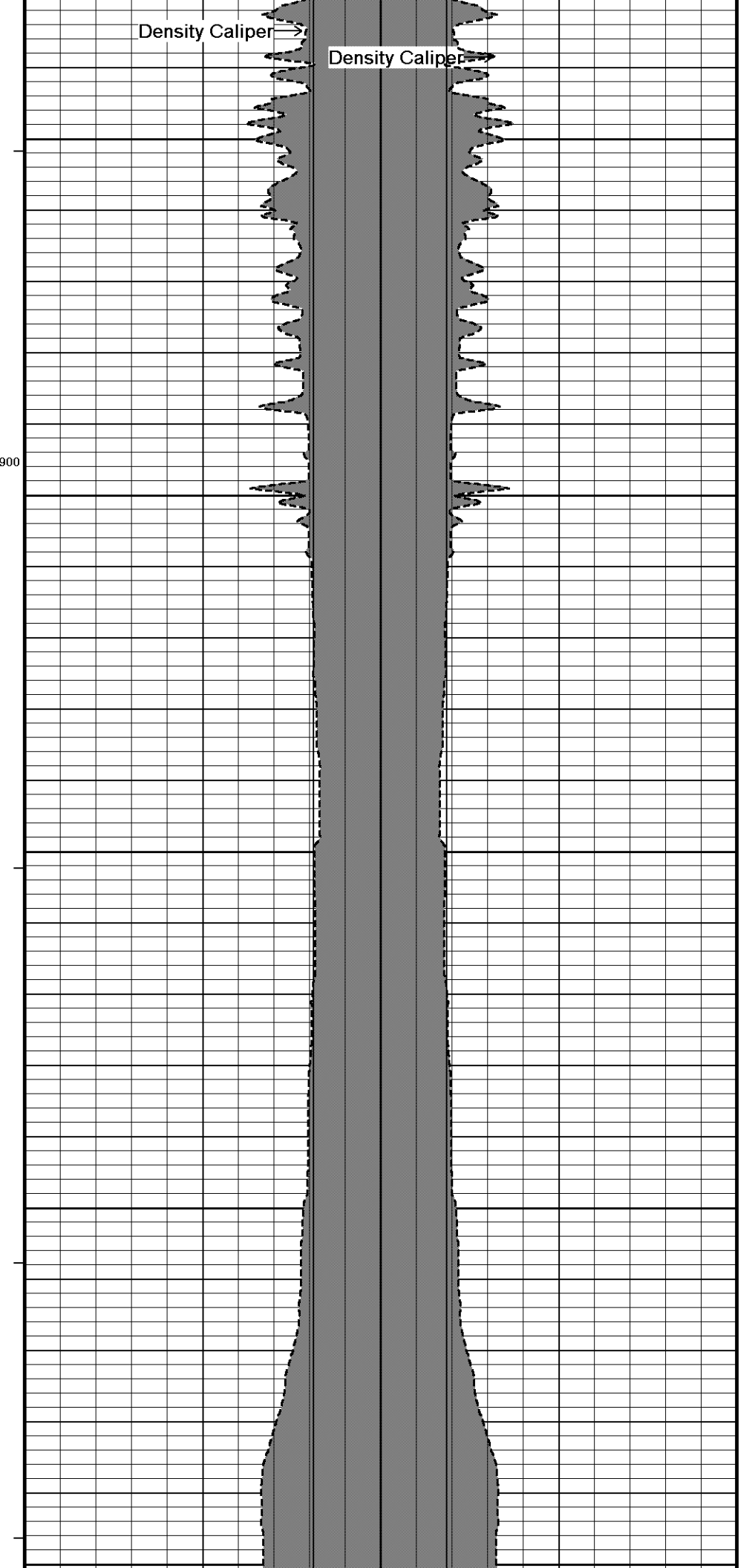
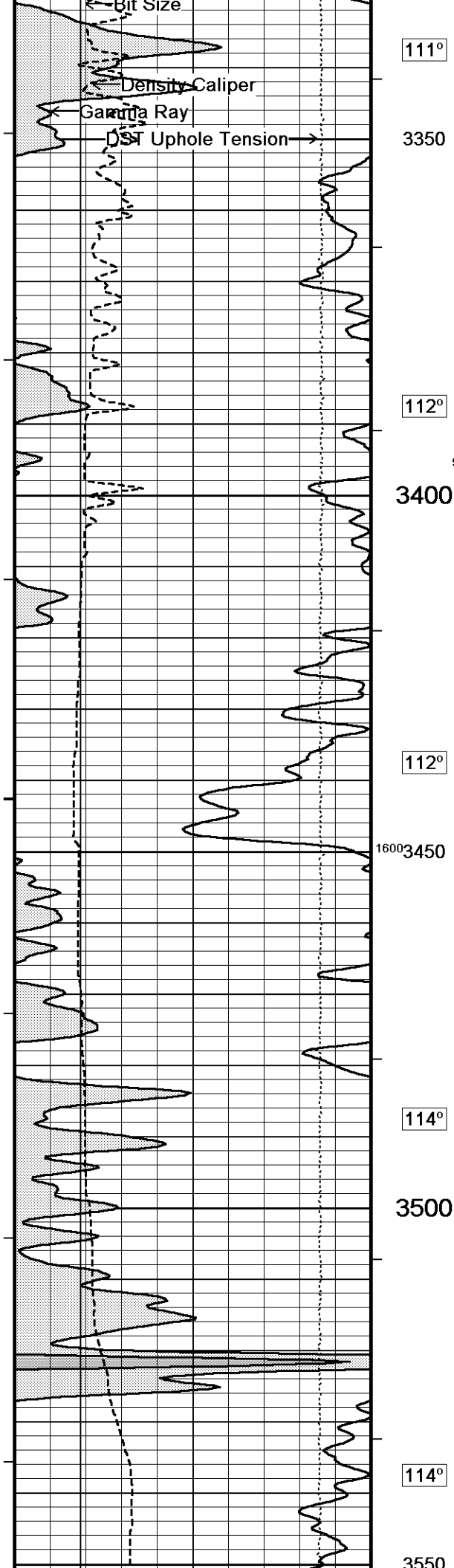
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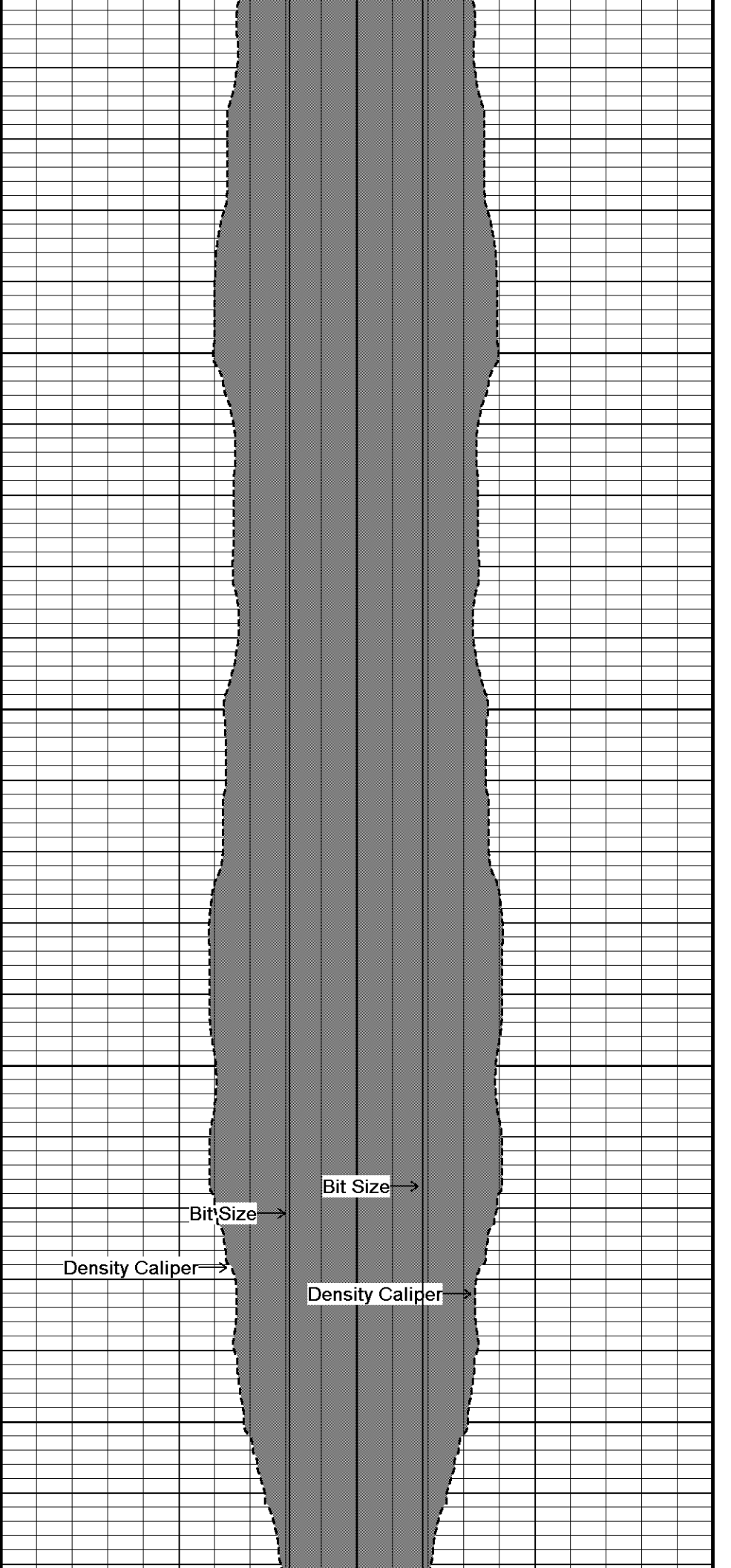
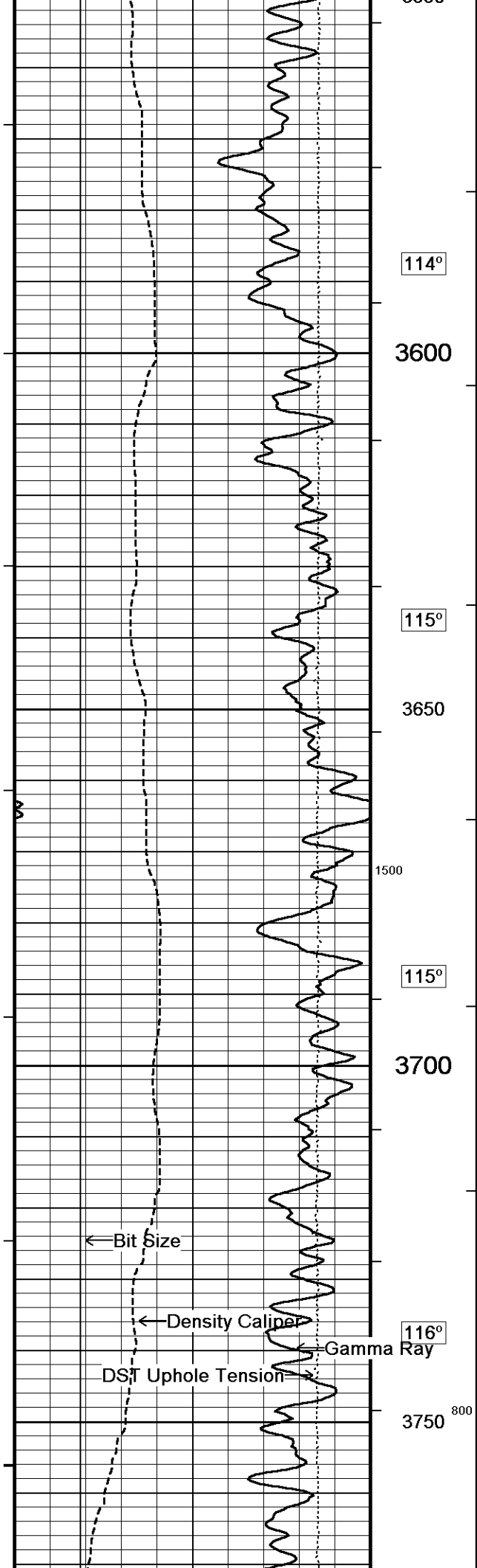
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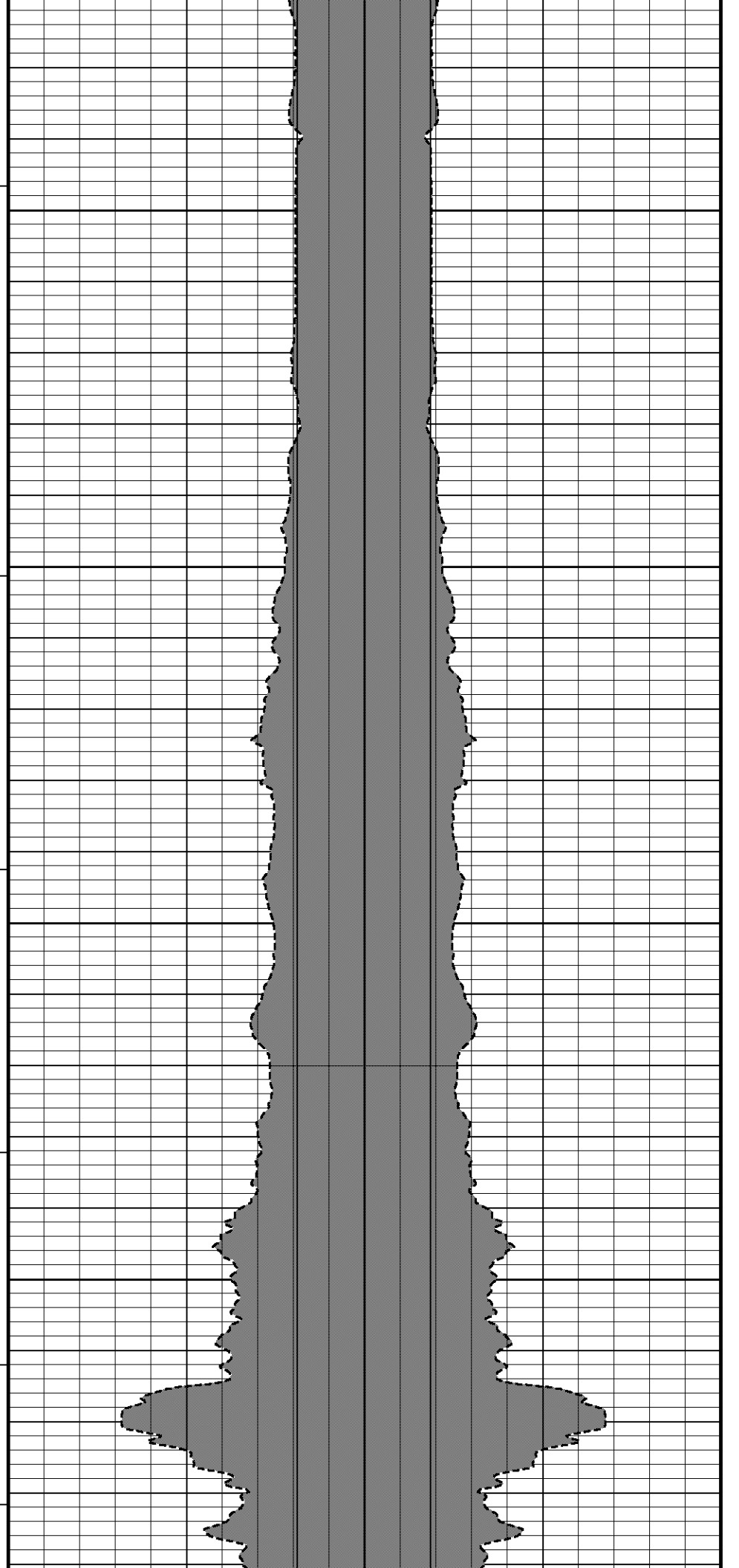
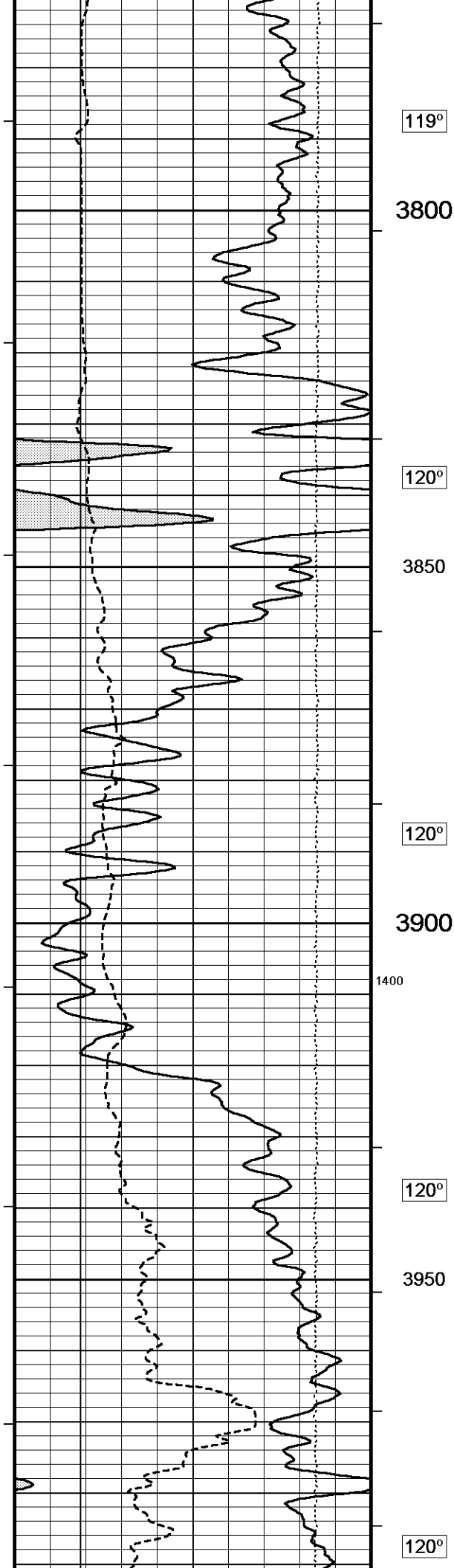
Bit Size →

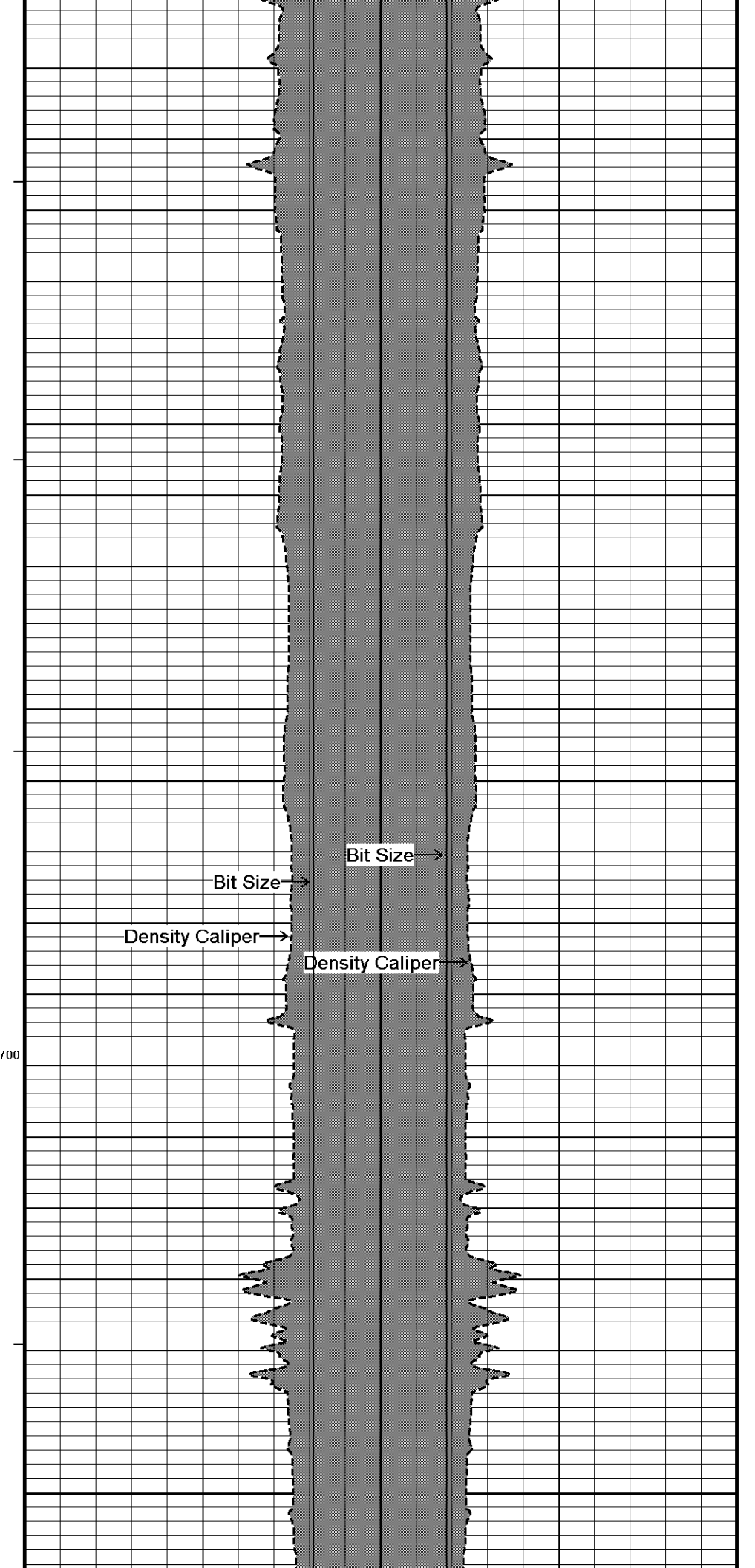
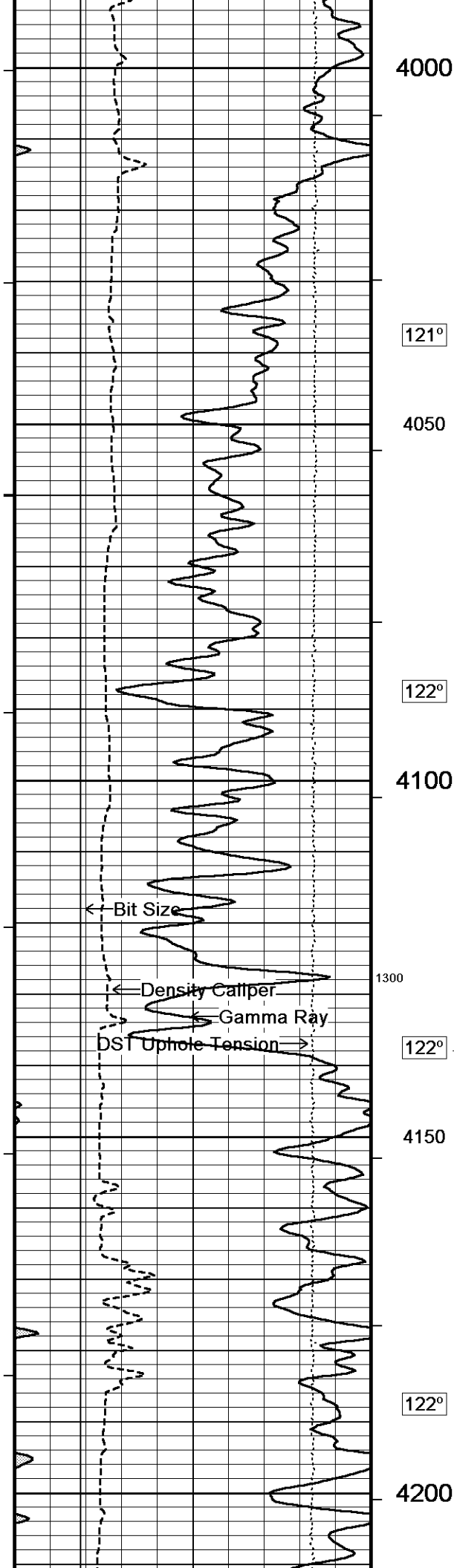
Bit Size →

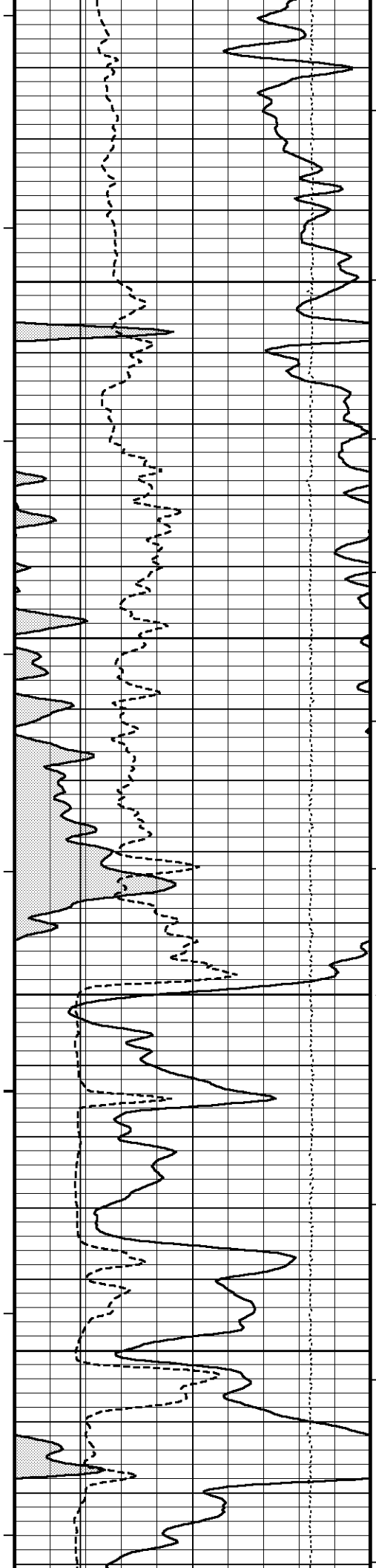




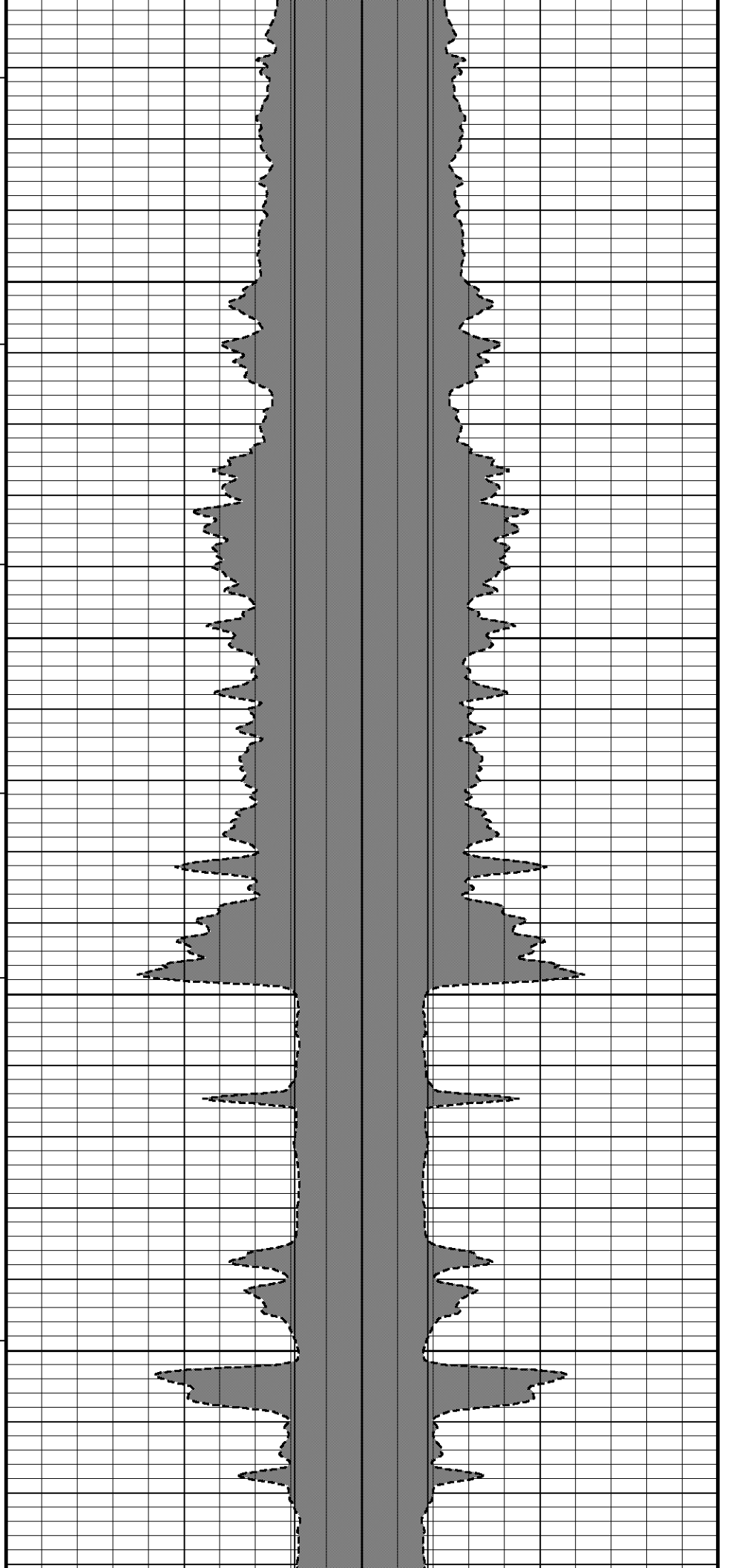


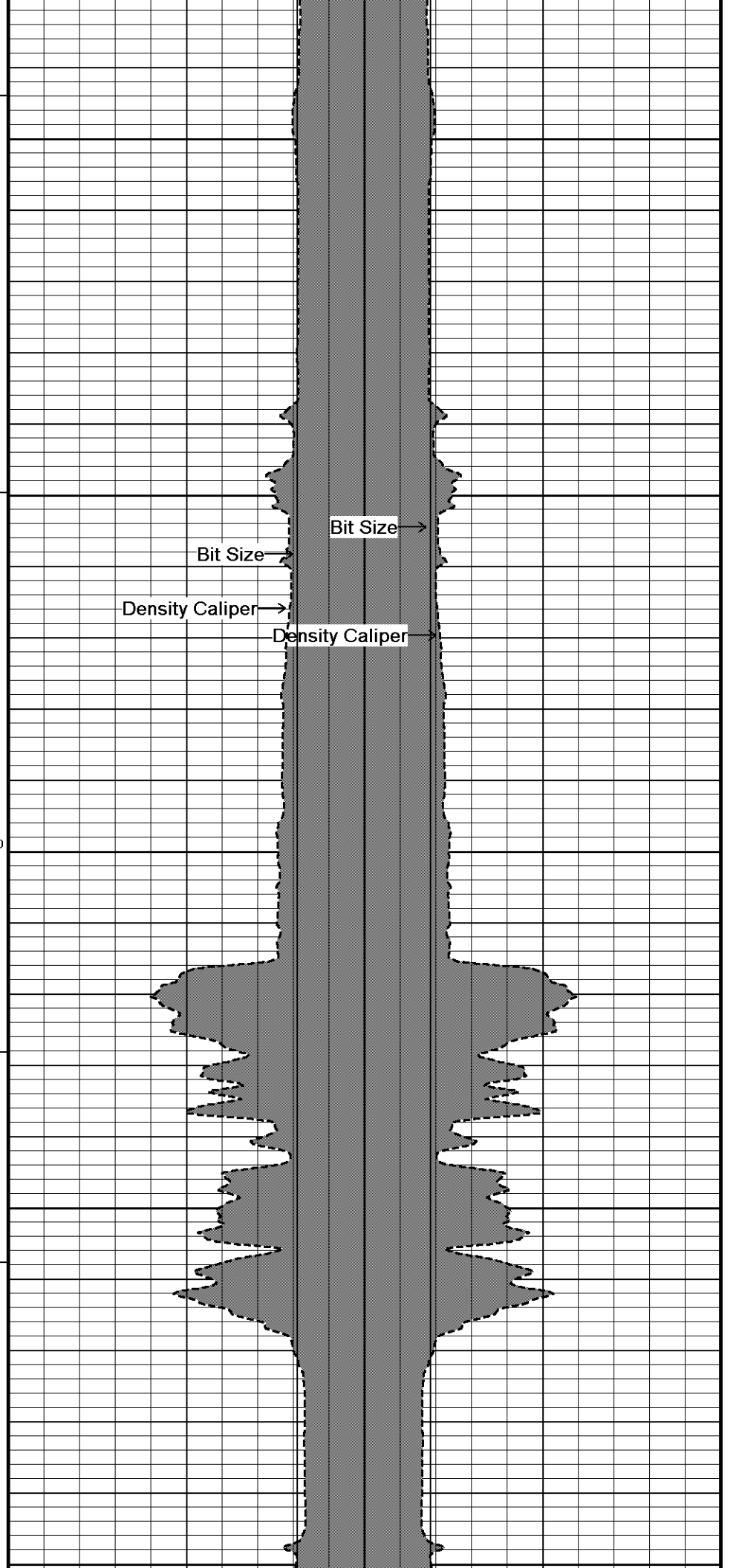
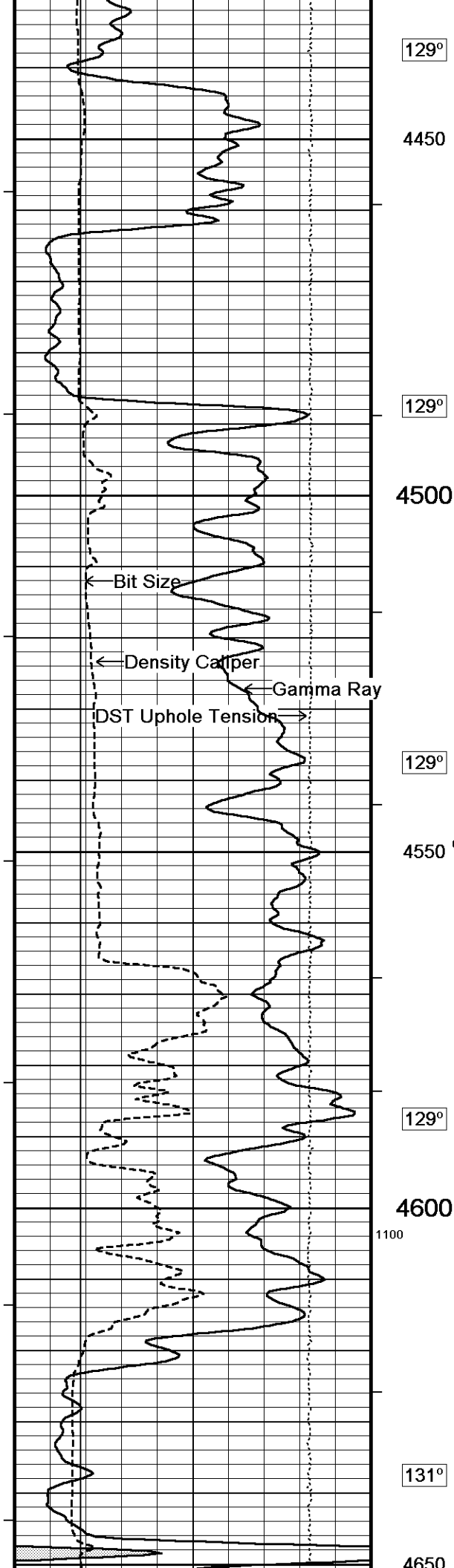


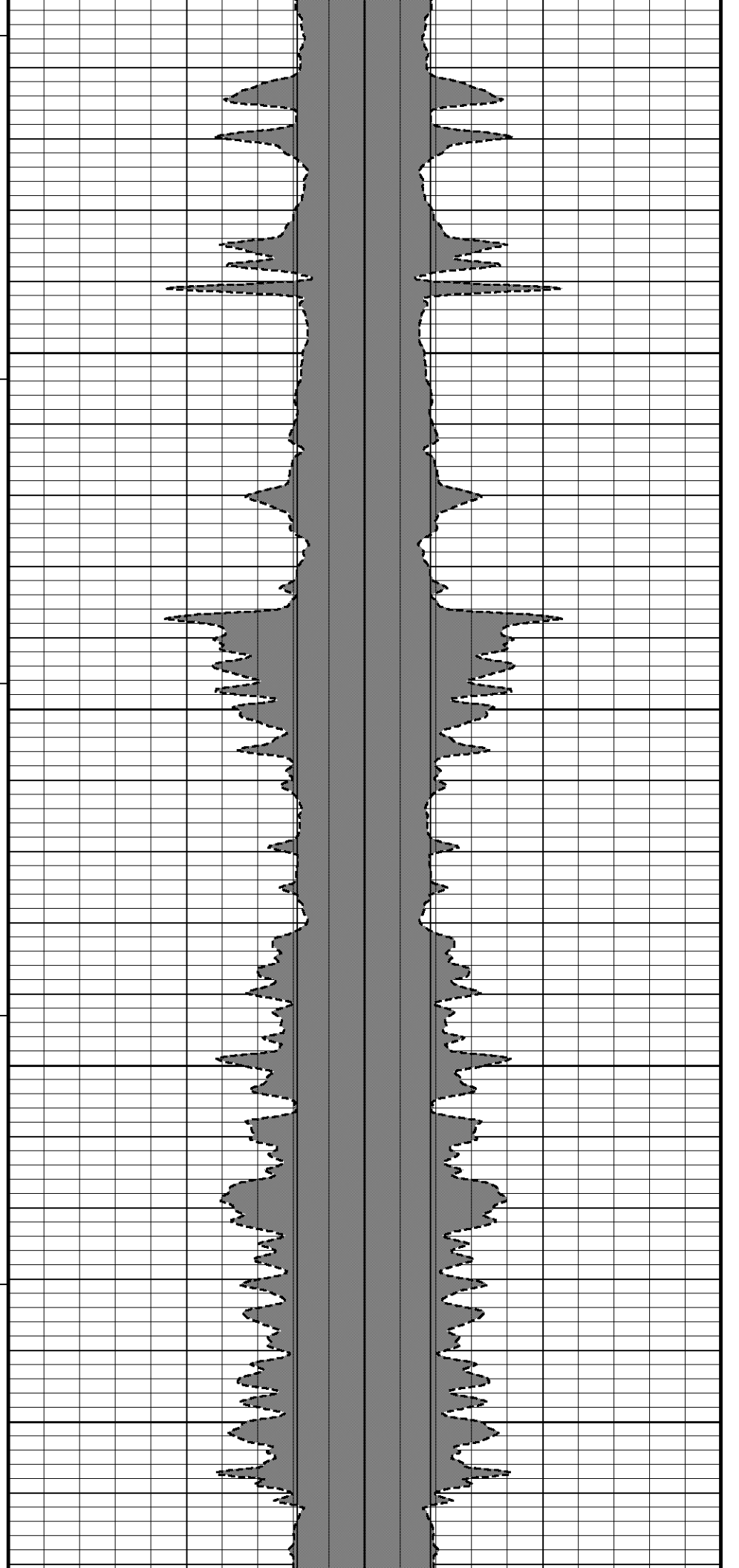
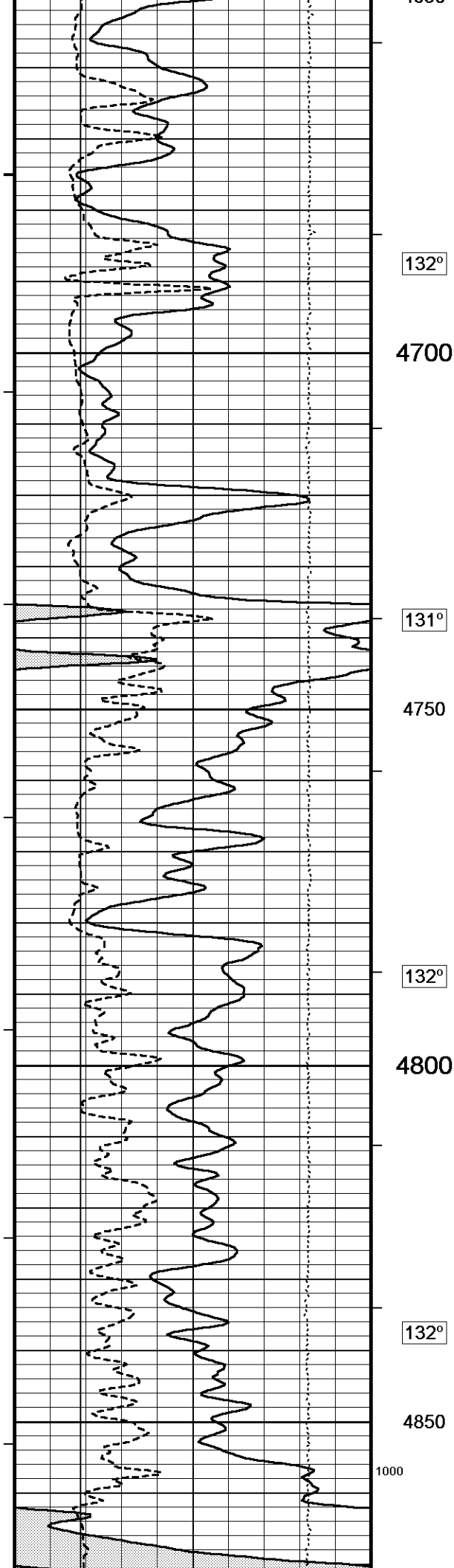


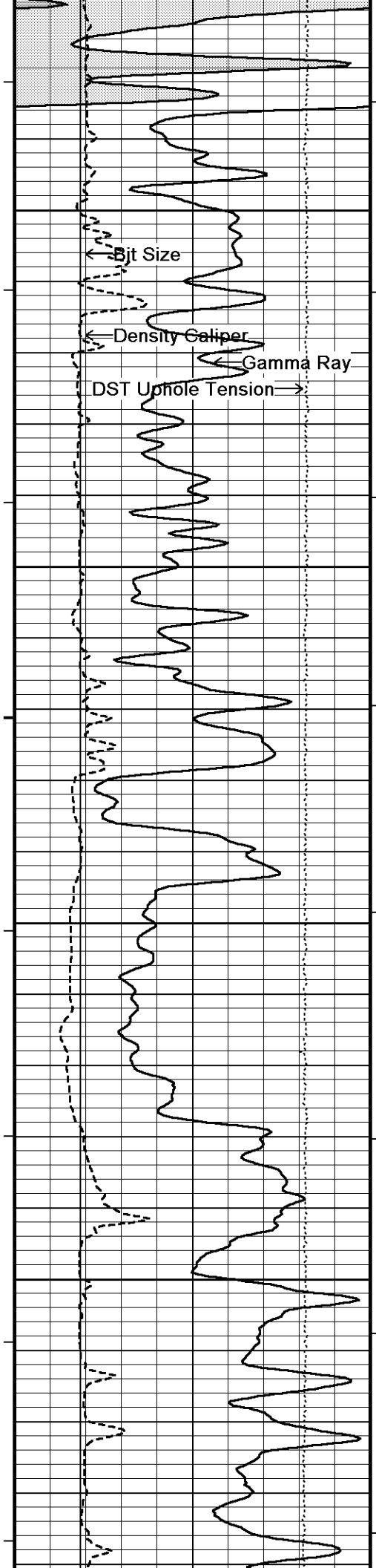


123°
4250
124°
4300
125°
4350
1200
127°
4400

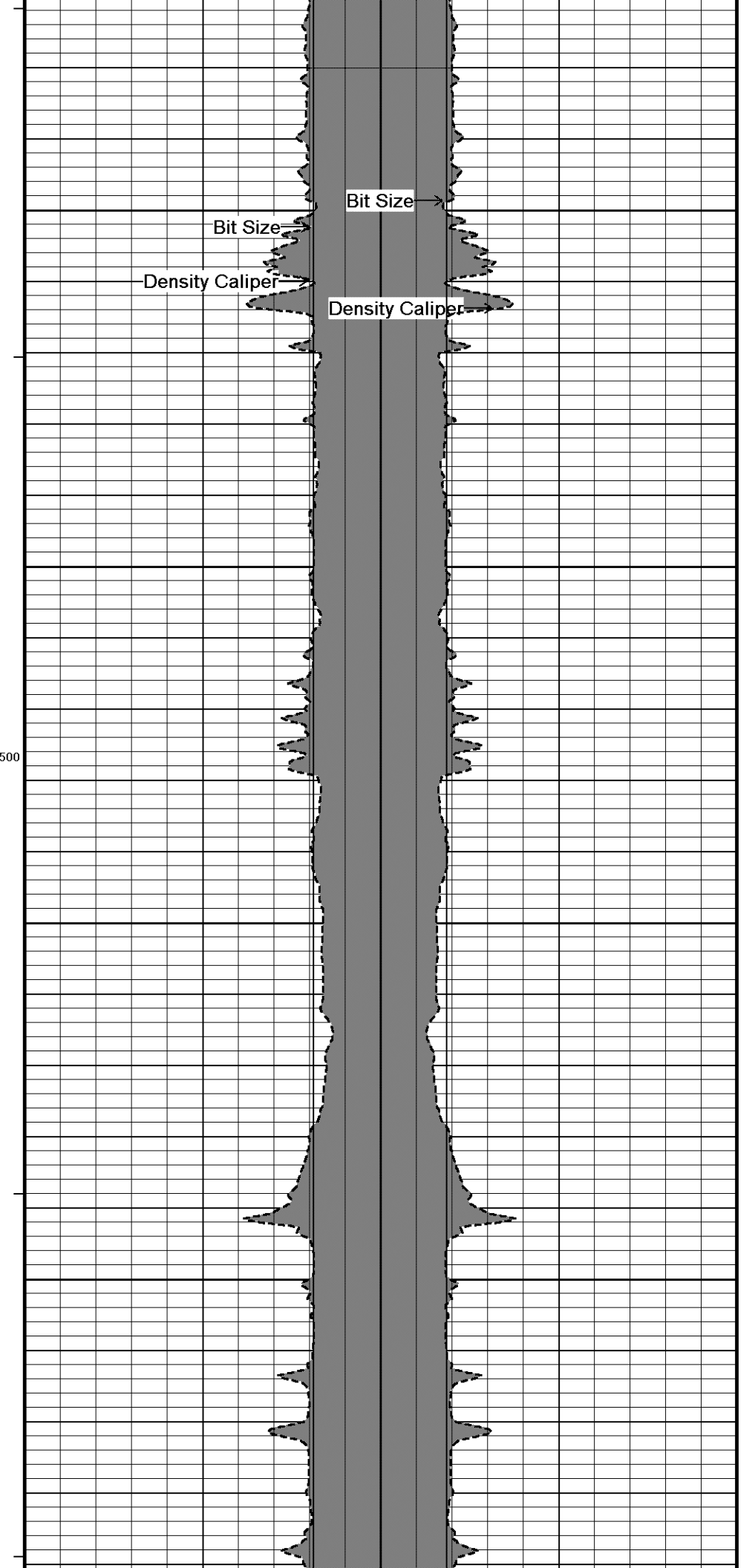


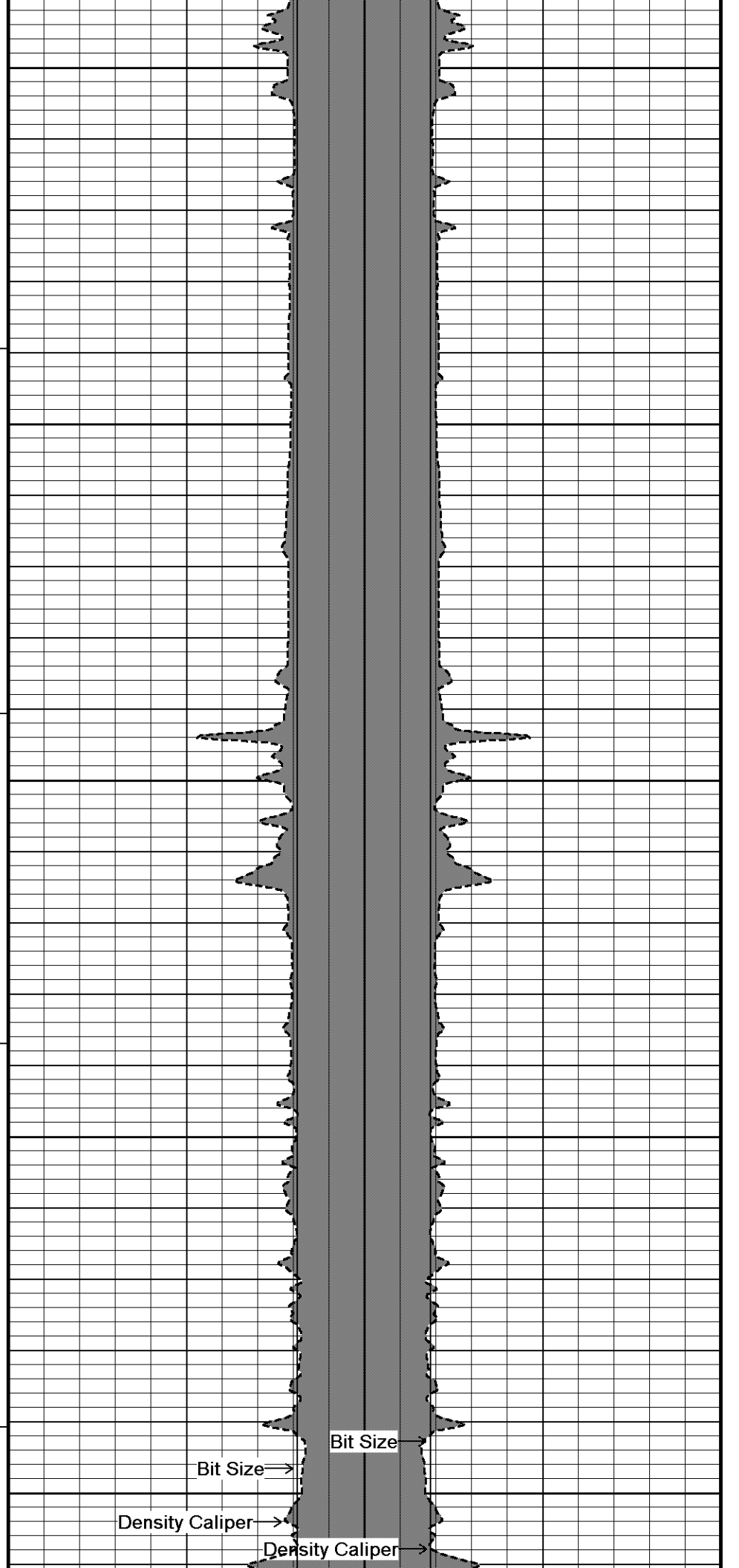
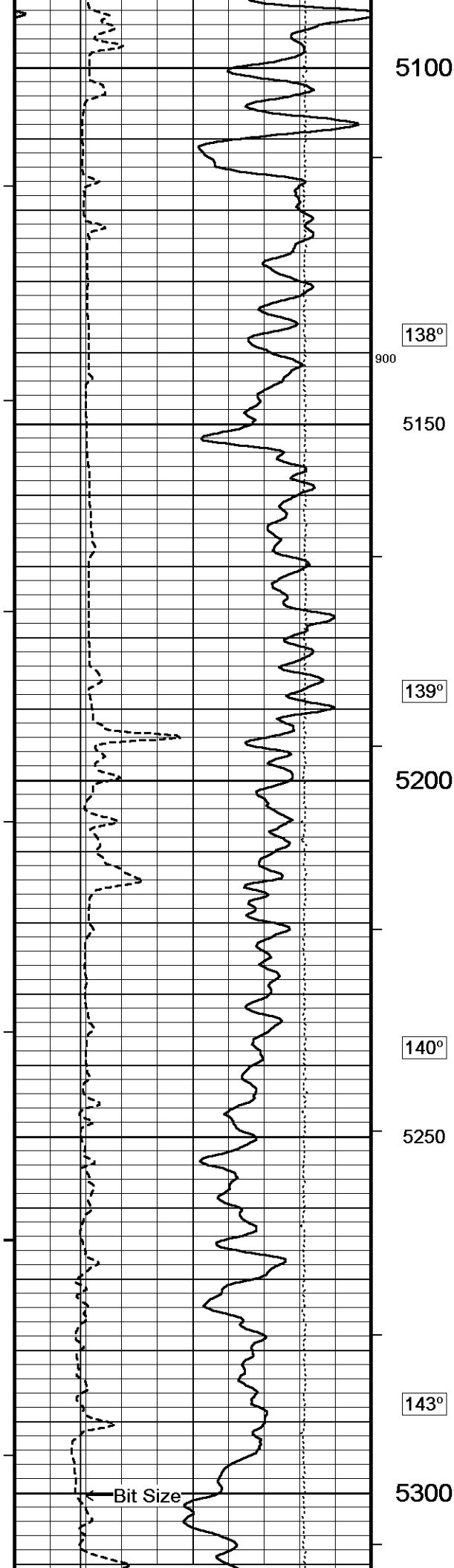


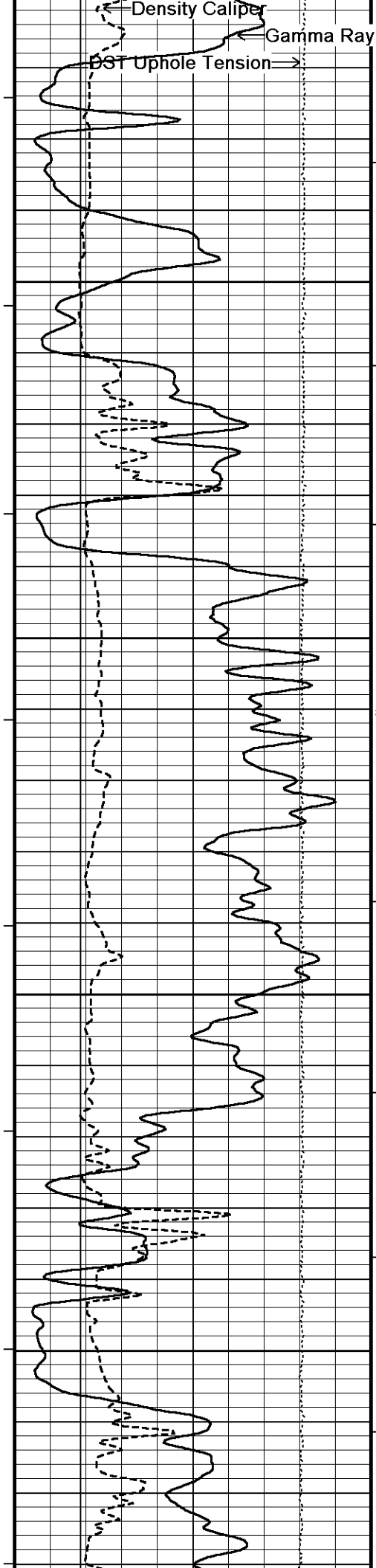




133°
4900
135°
4950
500
136°
5000
136°
5050
137°







144°

5350

144°

5400

800

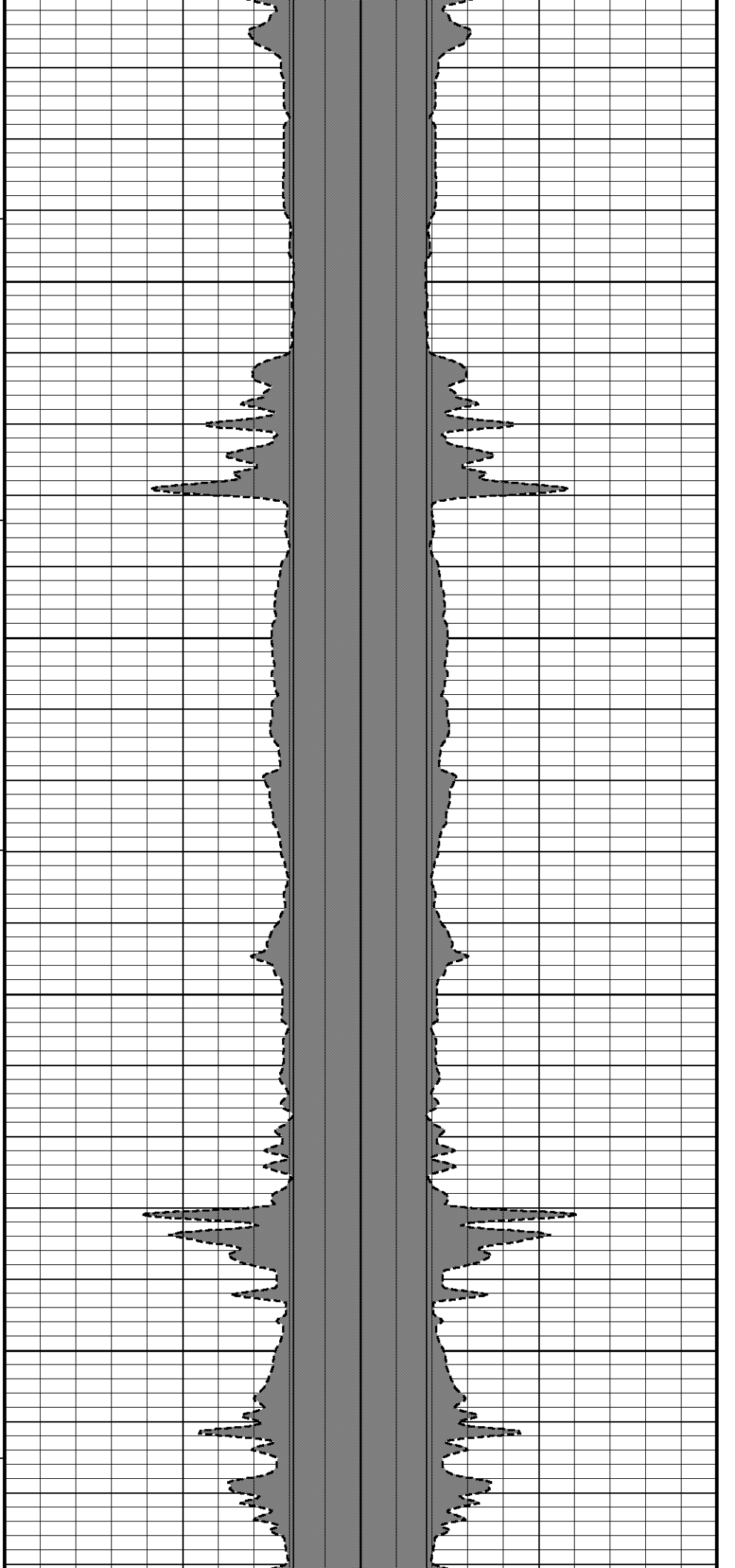
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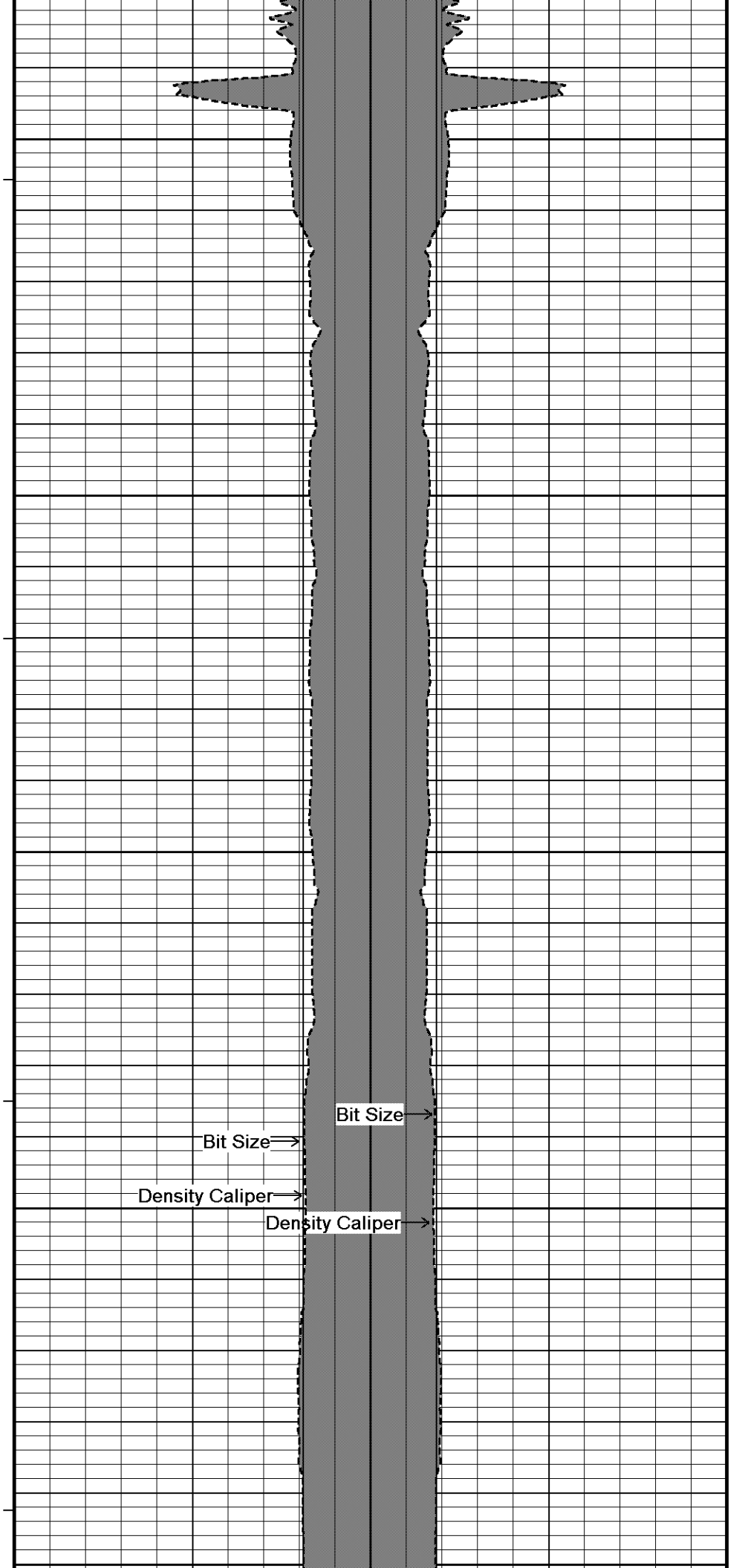
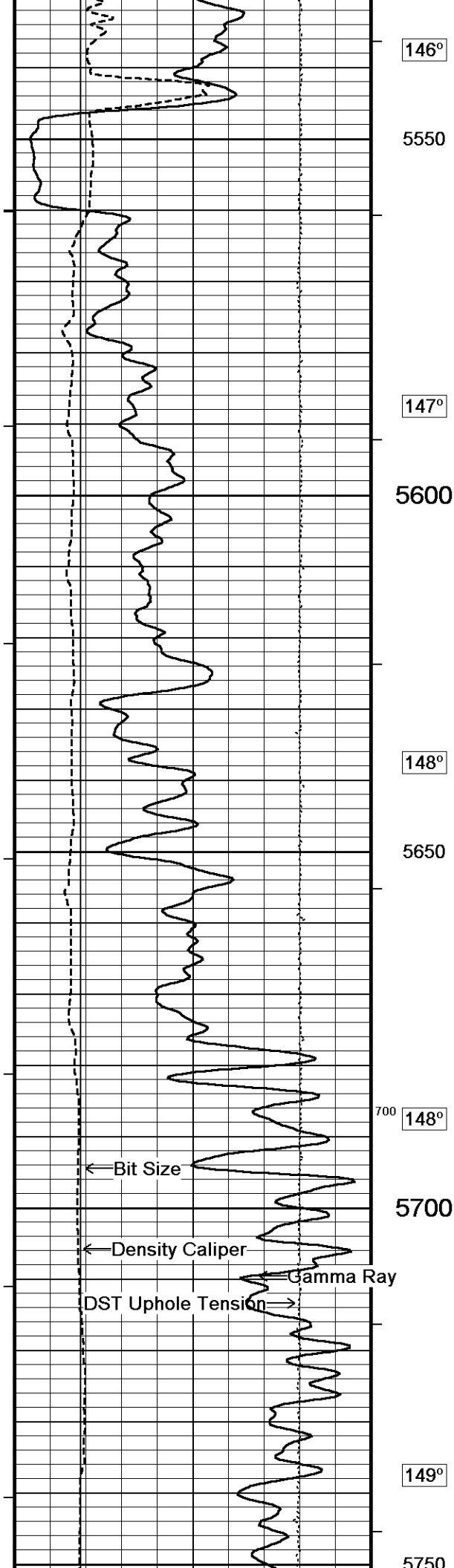
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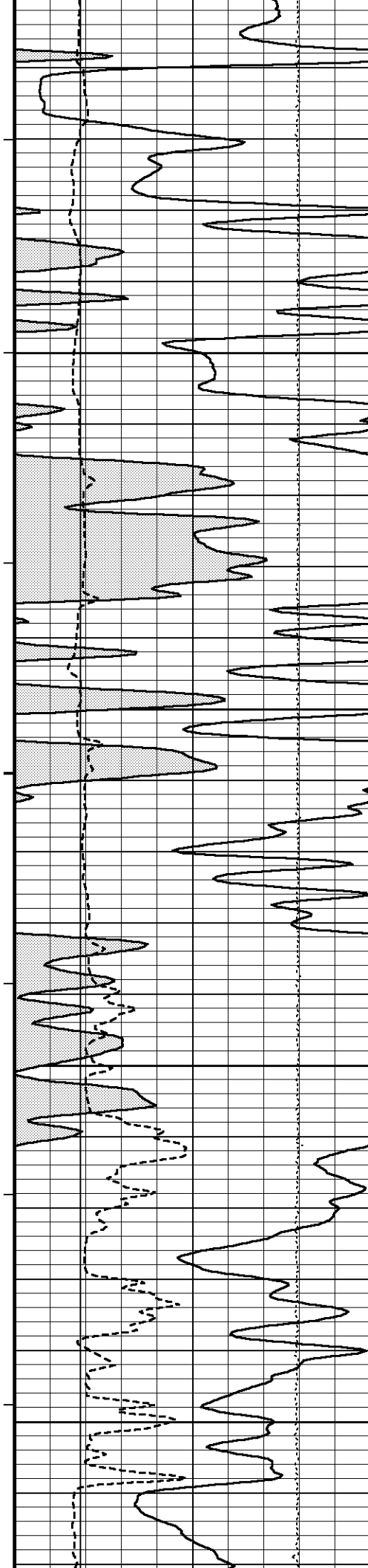
400

145°

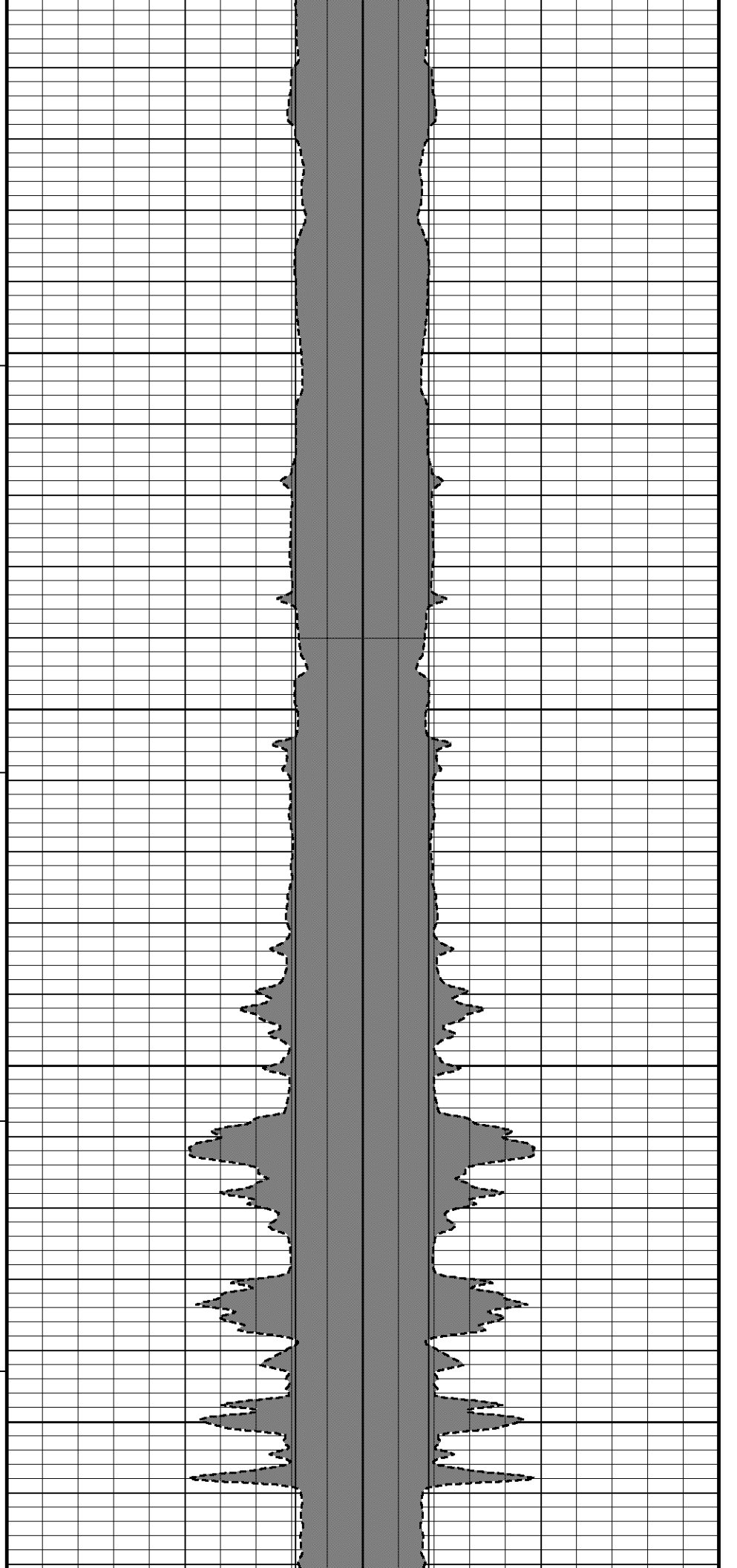
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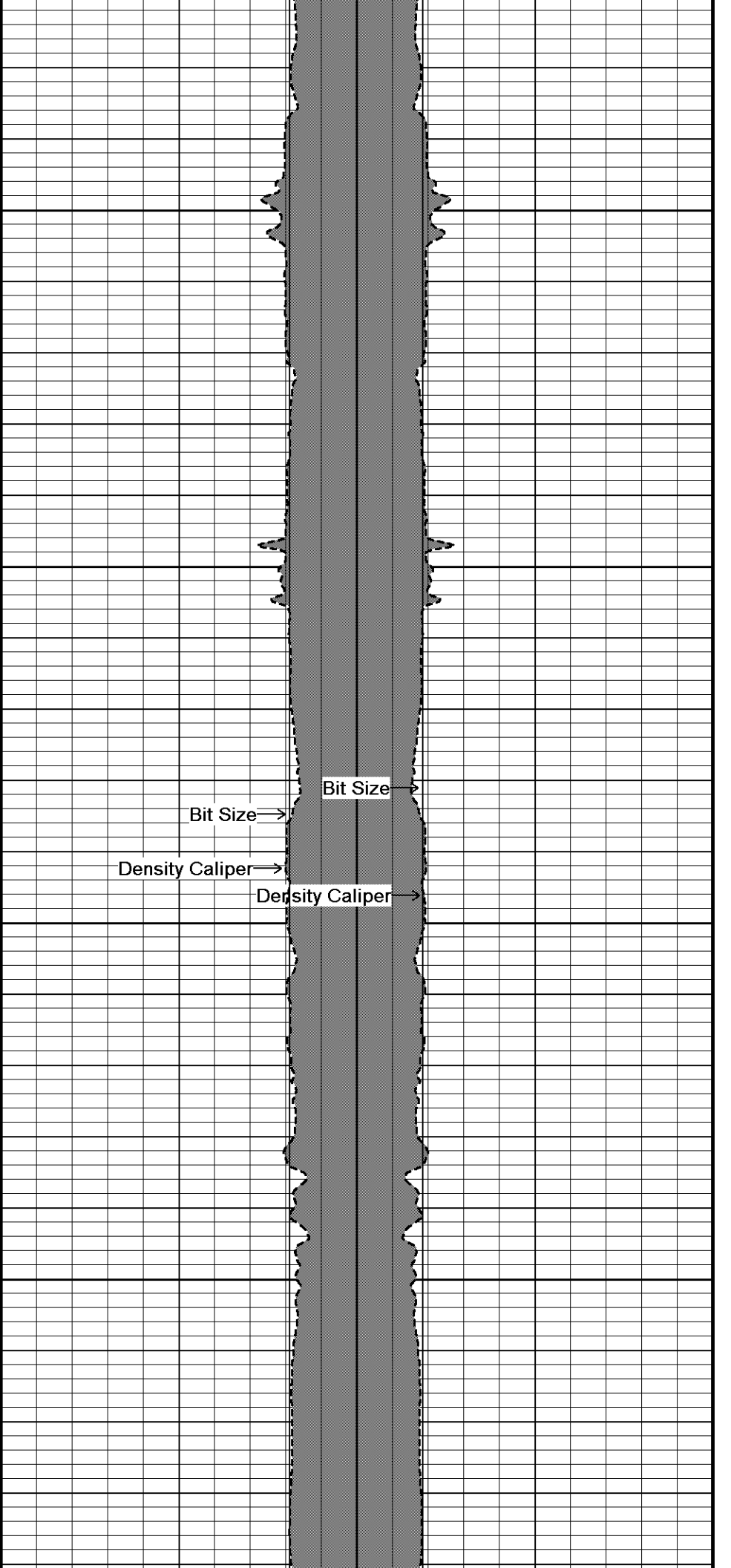
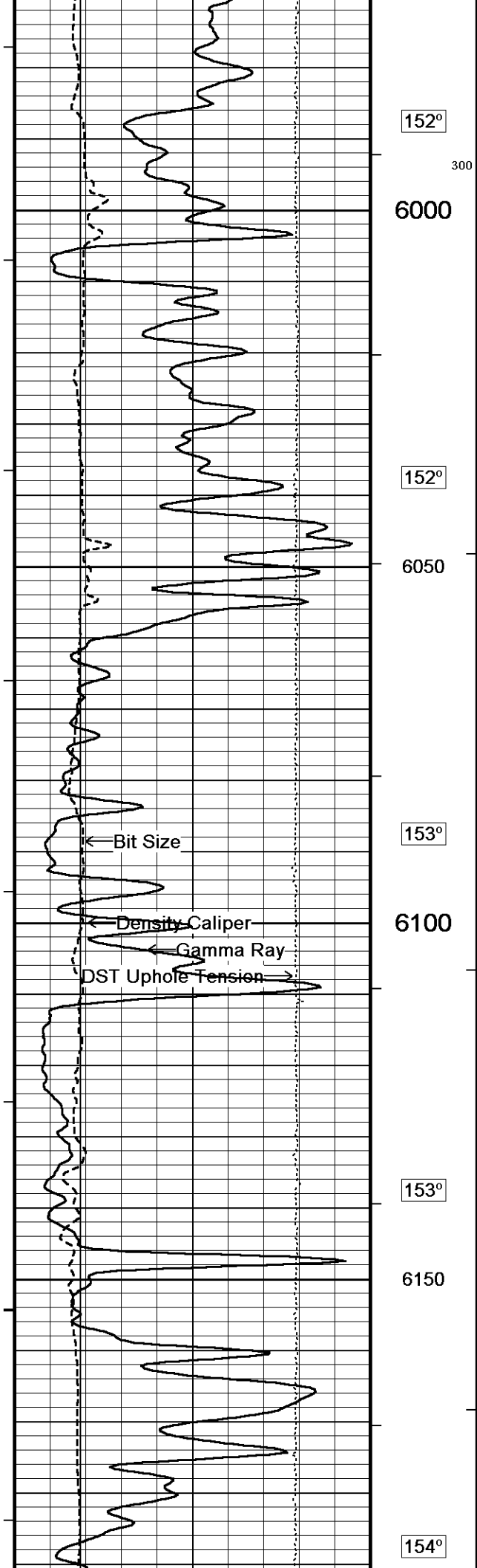


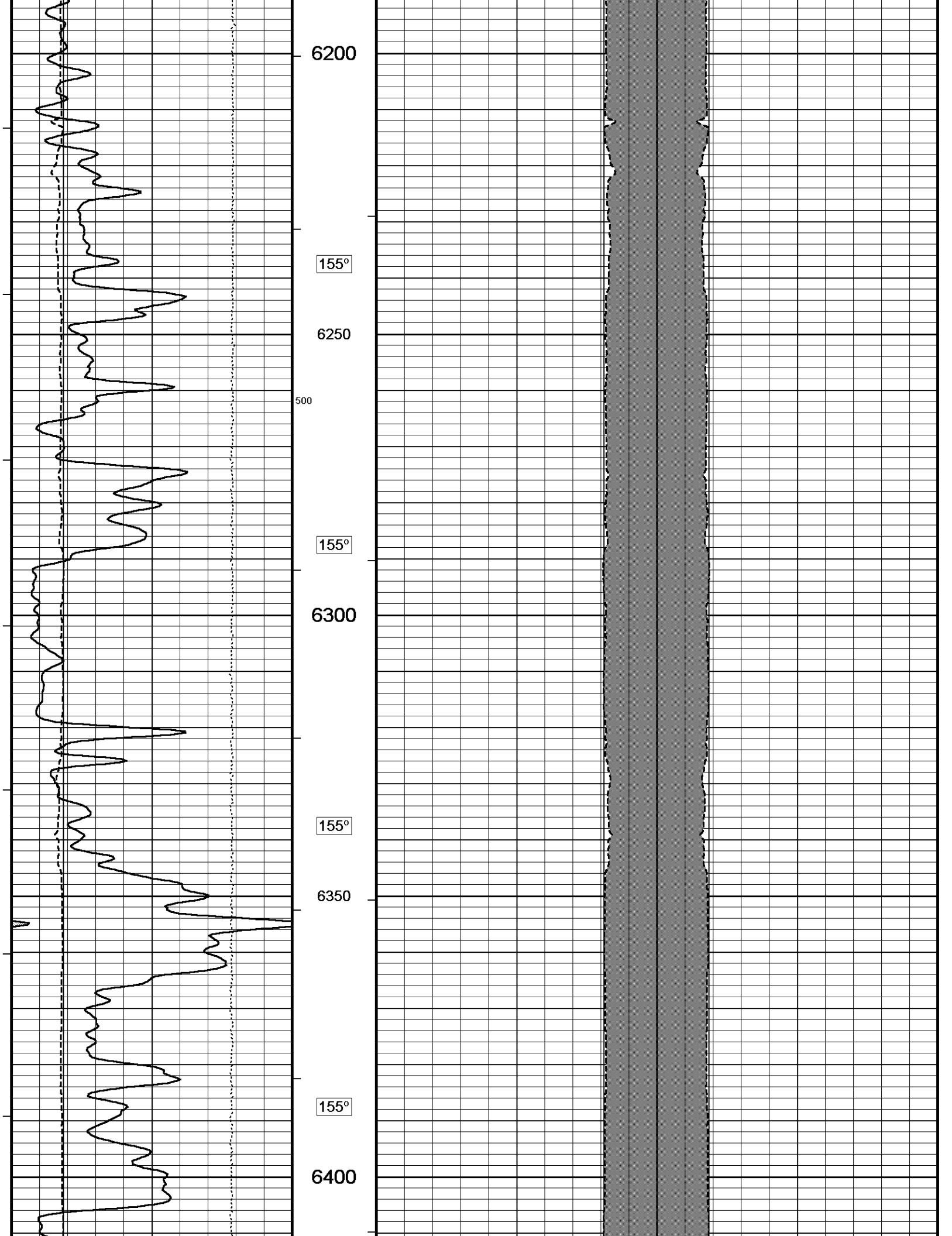


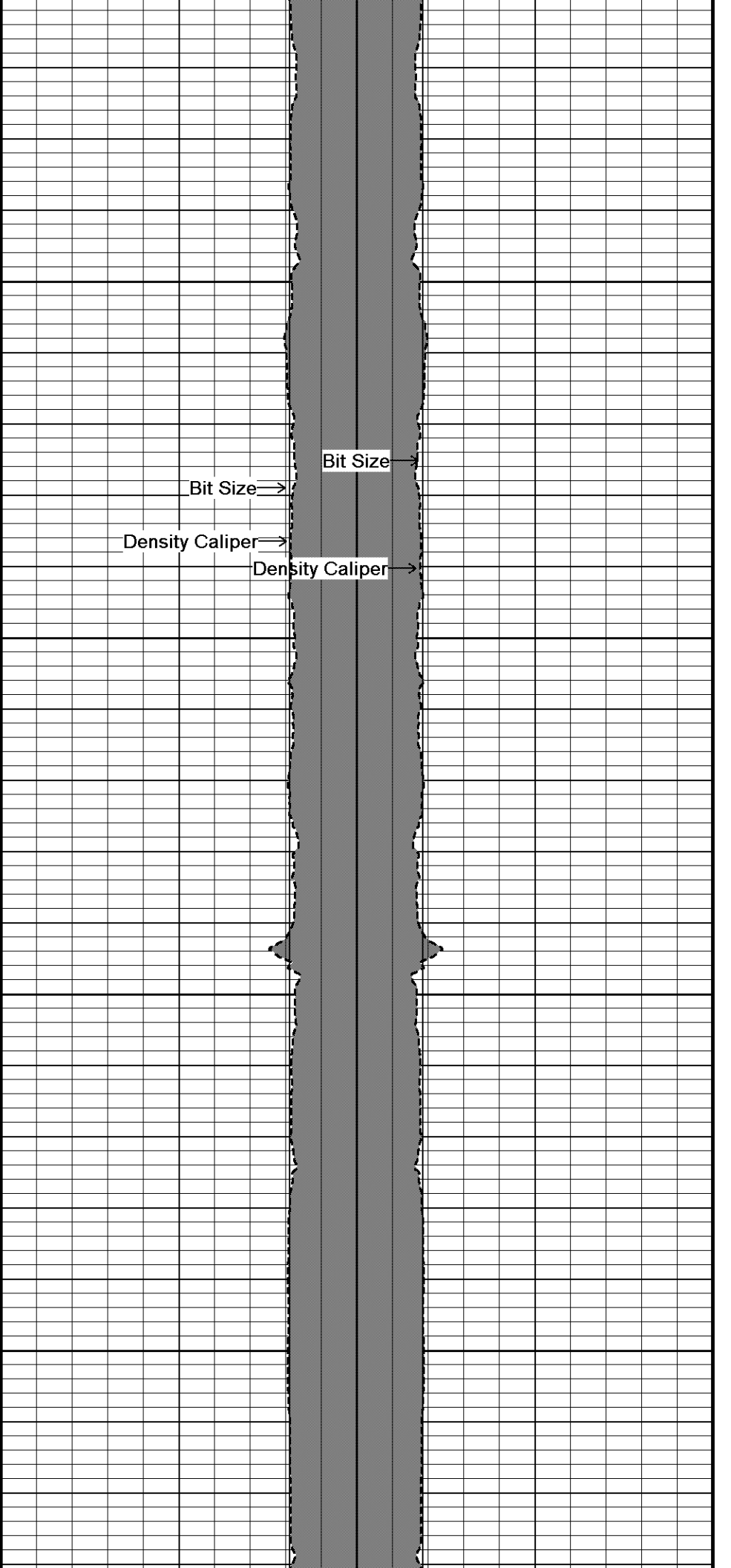
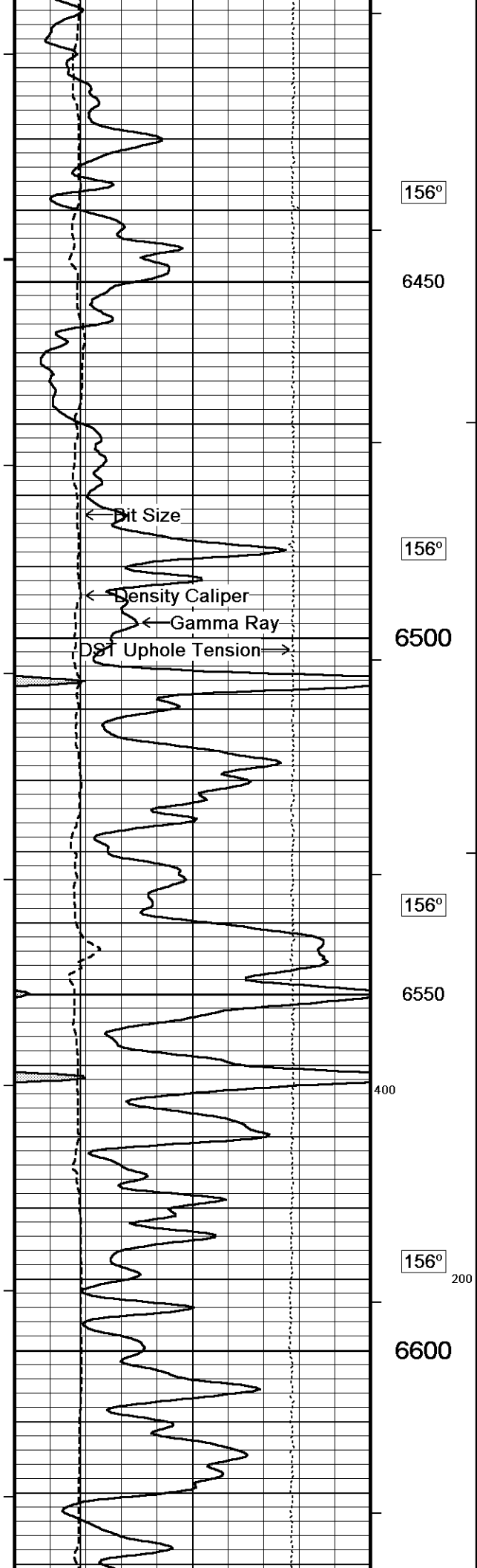


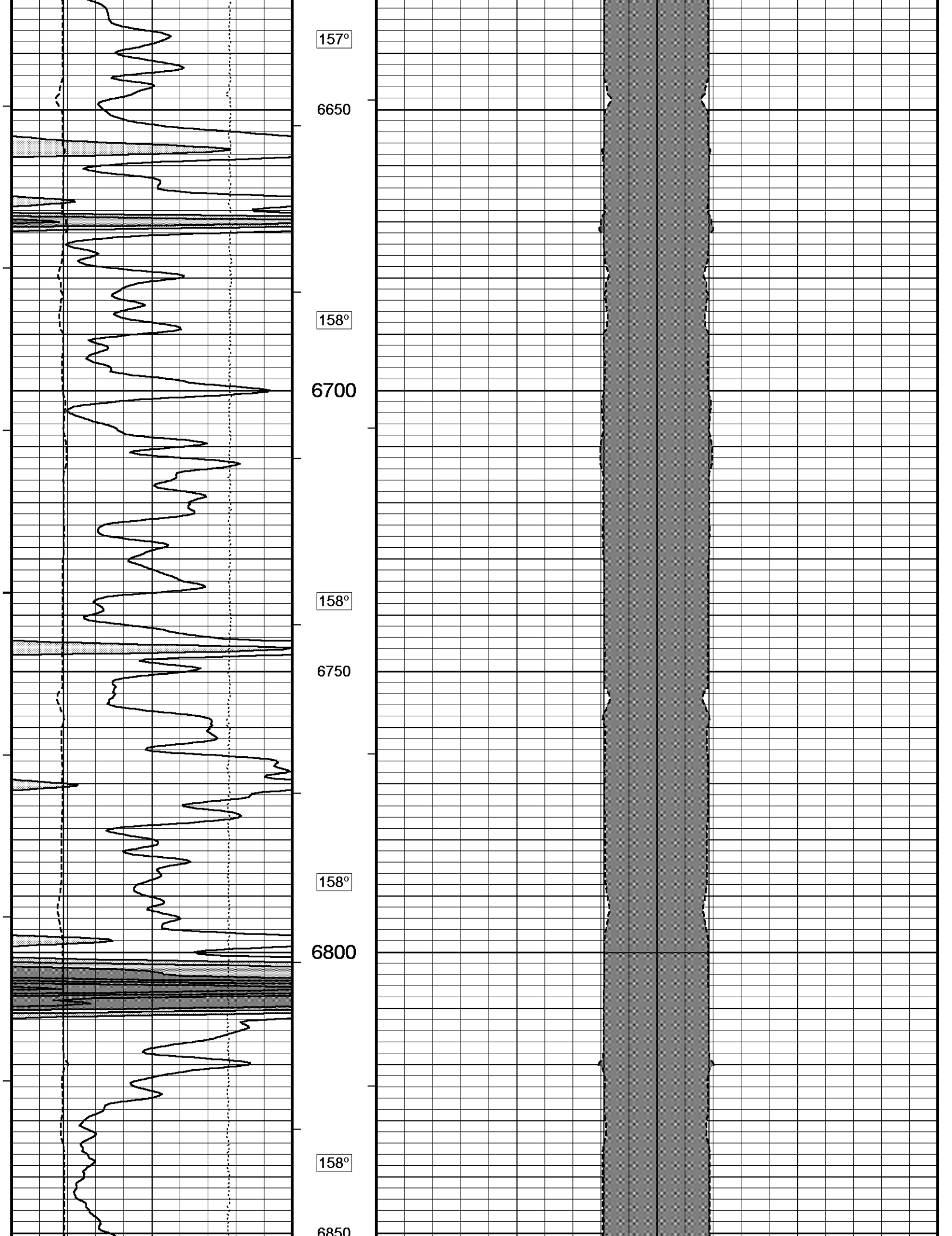
5780
149°
5800
149°
5850
150°
5900
151°
5950
600

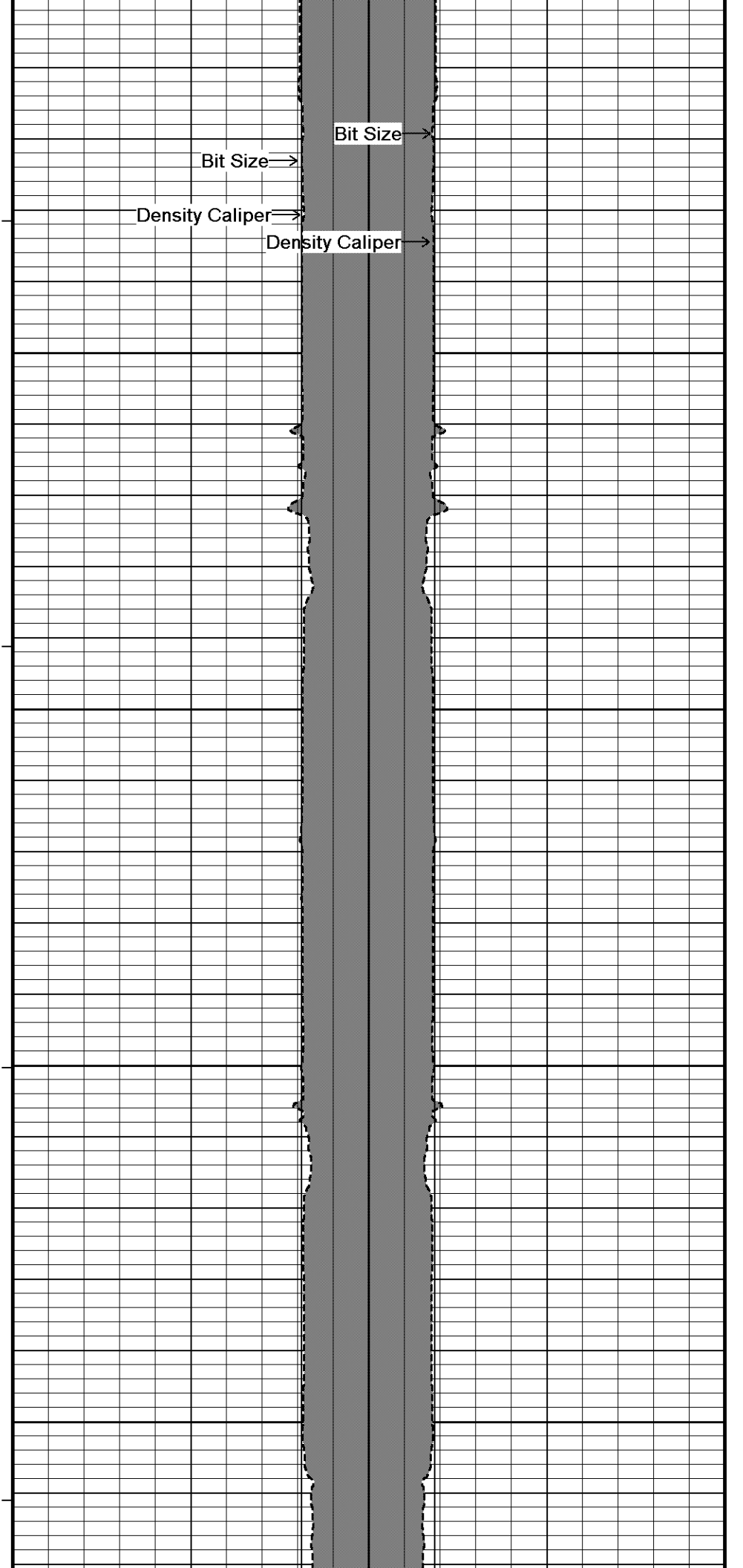
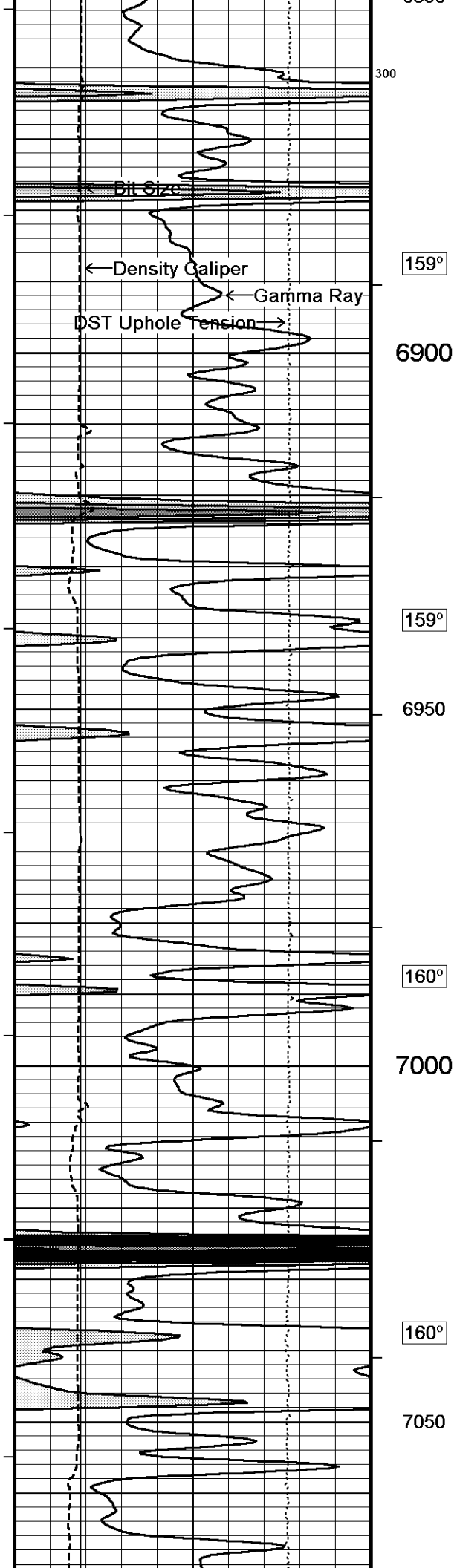


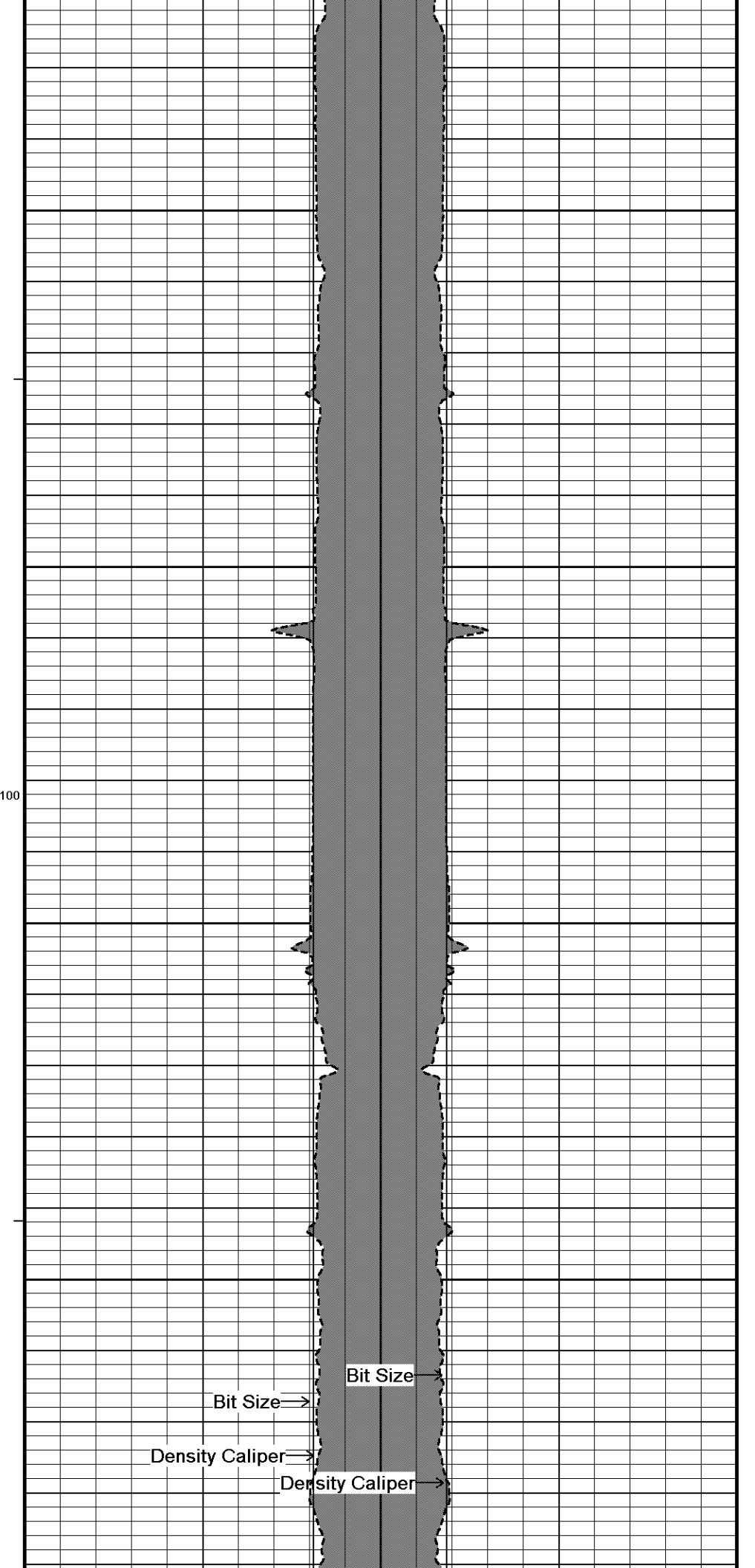
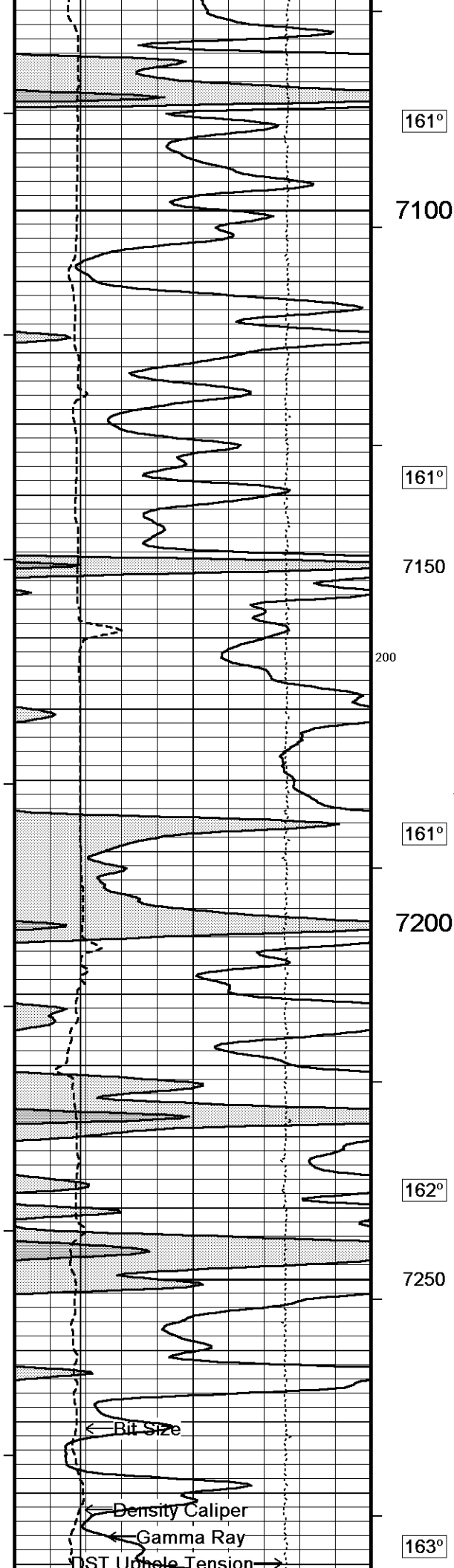


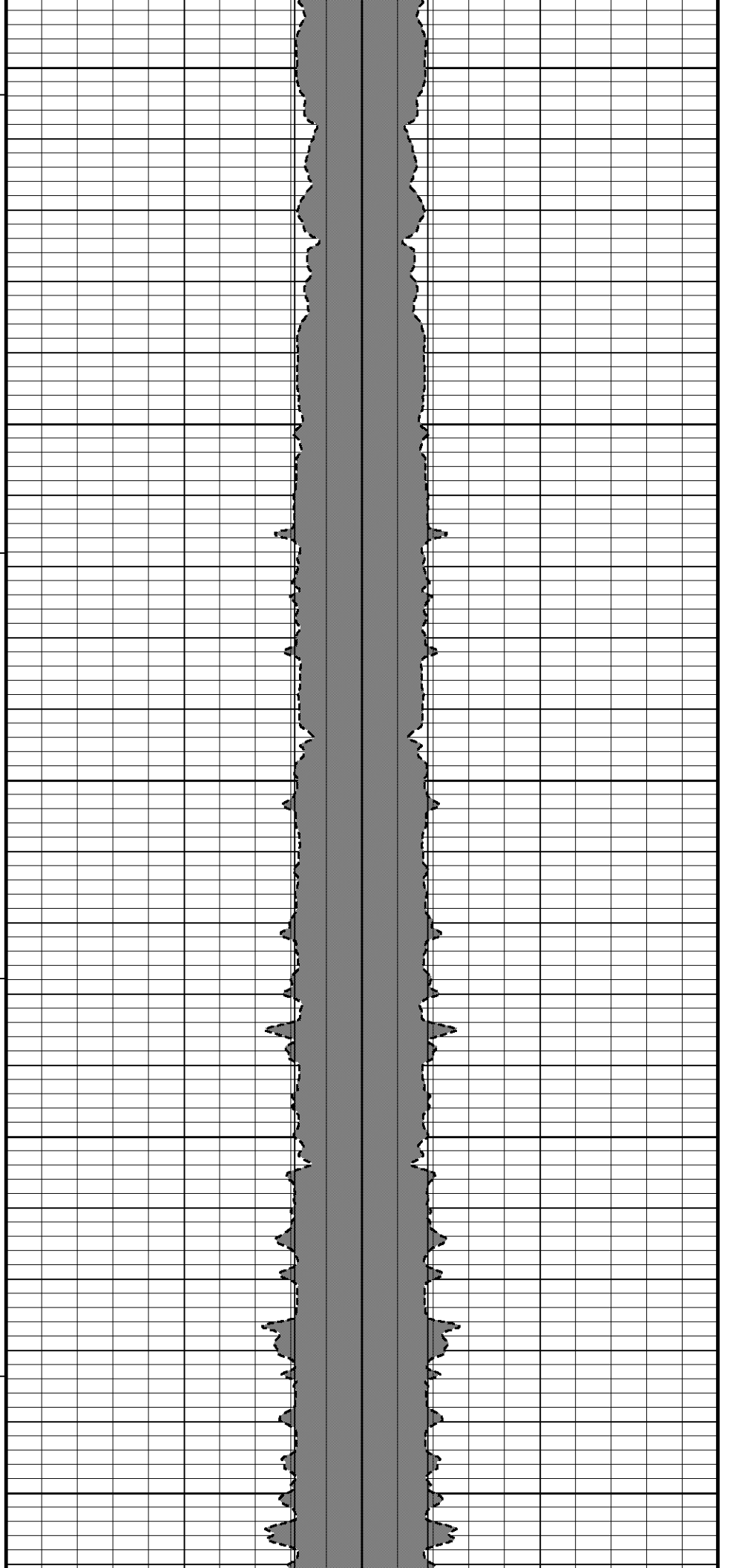
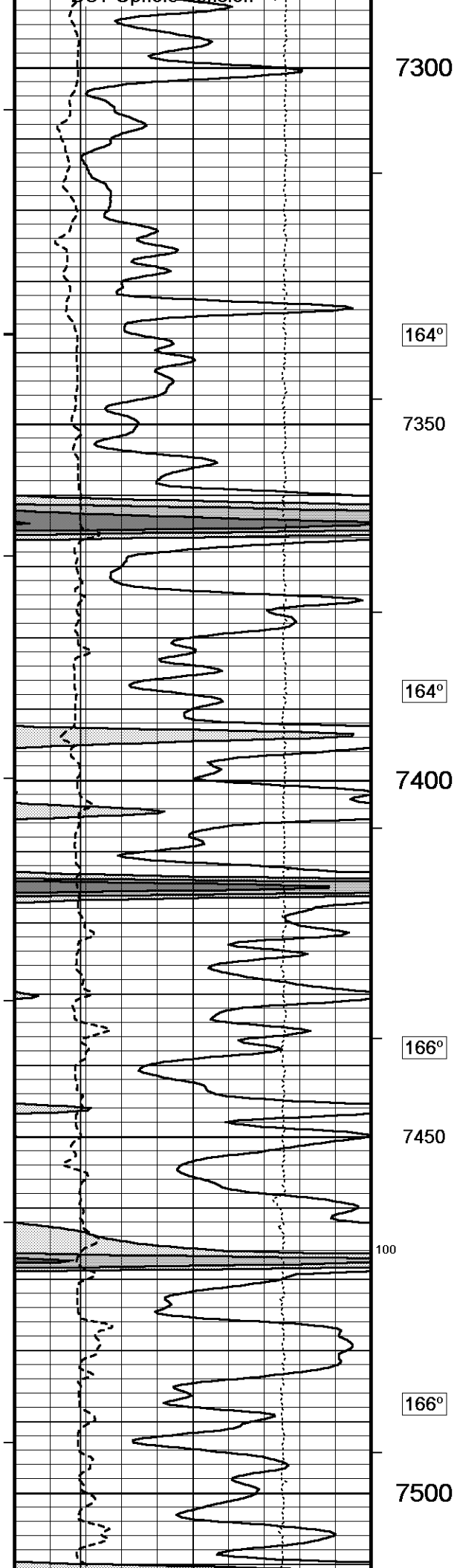


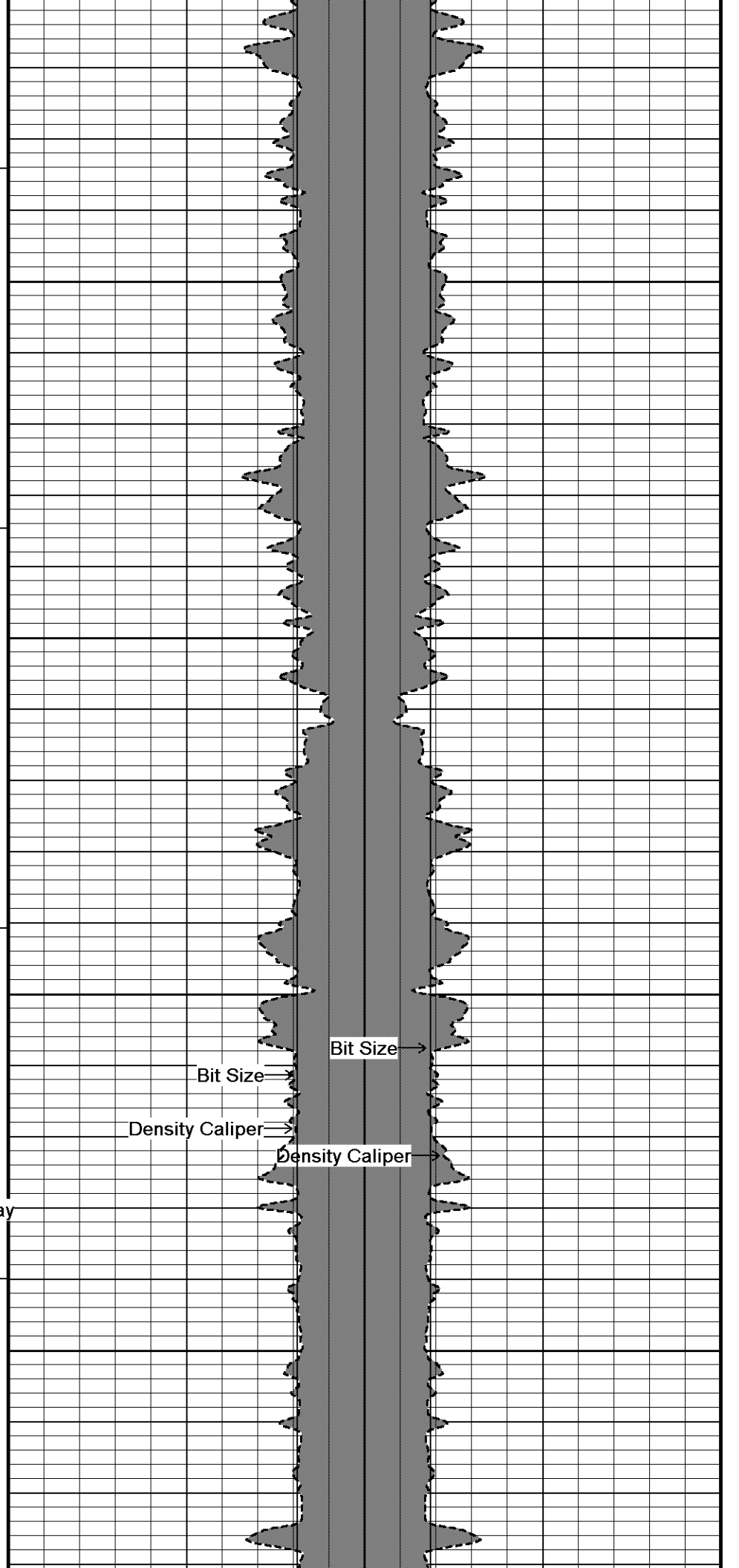
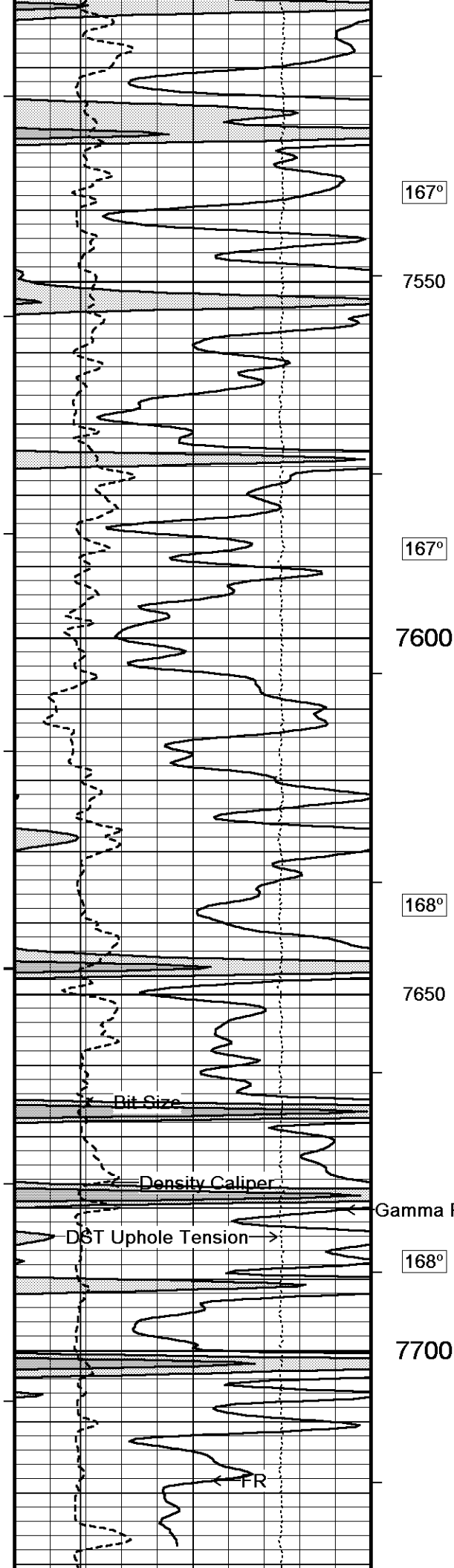


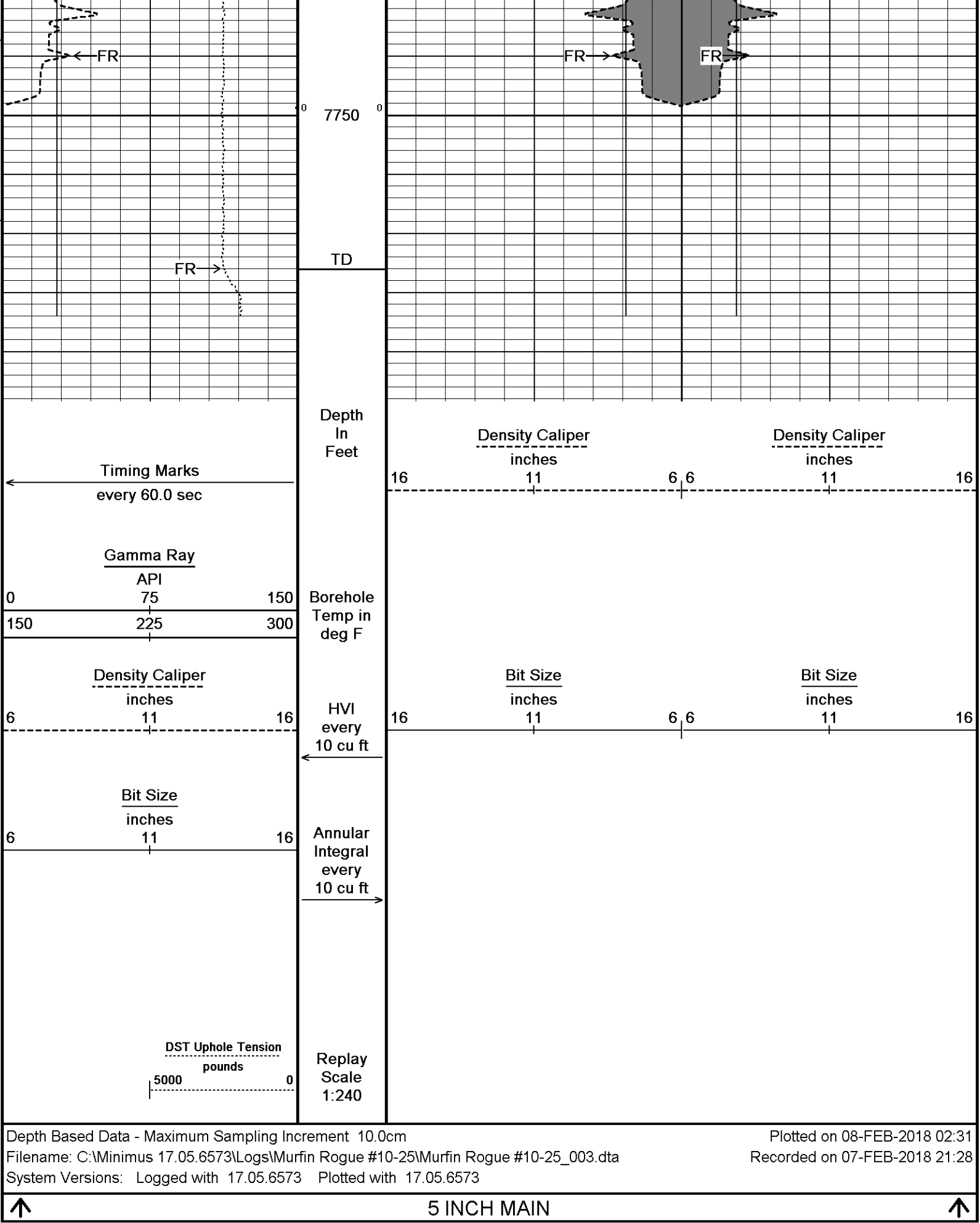












BEFORE SURVEY CALIBRATION

C:\Minimus 17.05.6573\Logs\Murfin Rogue #10-25\Murfin Rogue #10-25_003.dta

General Parameters

Mud Resistivity	1.390	ohm-metres
Mud Resistivity Temperature	75.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	

Rwa Parameters


Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.620	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-C 123

Field Calibration on 06-FEB-2018,21:03

	Measured	Calibrated (API)
Background	90	64
Calibrator (Gross)	737	520
Calibrator (Net)	646	456

Gamma Calibration Tolerances MCG-C 123

Ratio	1.417		Counts/API
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Gamma Constants MCG-C 123

Last Edited on 07-FEB-2018,10:21

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-C 123

Field Calibration on 22-JAN-2018,19:40

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

High Resolution Temperature Constants MCG-C 123

Last Edited on 22-SEP-2015,11:43

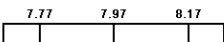
Pre-filter Length	11
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Caliper Calibration MPD-C.A 271

Base Calibration on 22-JAN-2018 20:14
Field Calibration on 06-FEB-2018 20:57

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13926	3.99
2	23856	5.98
3	33858	7.97
4	43568	9.86
5	54687	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.97	7.97

Caliper Calibration Tolerances MPD-C.A 271

Short Arm Field Cal	7.97		in
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DOWNHOLE EQUIPMENT

C:\Minimus 17.05.6573\Logs\Murfin Rogue #10-25\Murfin Rogue #10-25_003.dta

Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Swivel Head Adaptor
SHA-F 48 LG: 2.74 ft WT: 26.5 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 123 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-log
MML-A 2 LG: 7.97 ft WT: 81.6 lb OD: 2.244 in

Compact Neutron
MDN-A.B 114 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 271 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

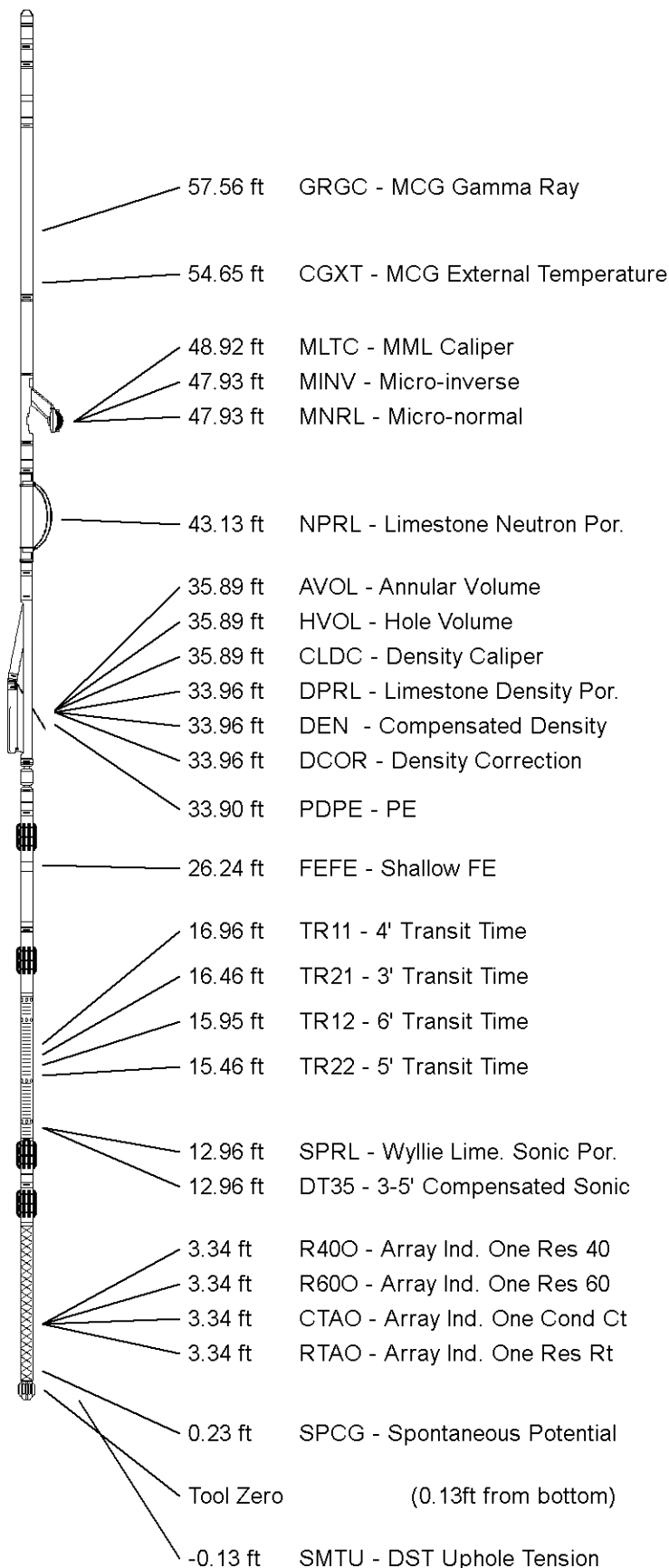
Compact Knuckle Joint
SKJ-E.B 732 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 67.98 ft Weight: 531.3 lb



All measurements relative to tool zero.

WELL	ROGUE #10-25
FIELD	WILDCAT
PROVINCE/COUNTY	LINCOLN
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	5316	feet	First Reading	7742.00	feet
Elevation Drill Floor	5314	feet	Depth Driller	8187.00	feet
Elevation Ground Level	5303	feet	Depth Logger	7776.00	feet



Weatherford®

CALIPER LOG