



Weatherford

**HOLE VOLUME
CALIPER
LOG**

COMPANY

EAST CHEYENNE GAS STORAGE LLC

WELL

ECGS No 6-21 WPD004-2

FIELD

WEST PEETZ

PROVINCE/COUNTY LOGAN

COUNTRY/STATE U.S.A / COLORADO

LOCATION SHL: 1440' FSL & 2297' FWL

SEC 6 TWP 11N RGE 52W

Other Services

Latitude

MPD/MDN

MFE/MAI

Longitude

CMI

API Number 0507509426-0000

Permanent Datum GL, Elevation 4557 feet

Log Measured From KB

Drilling Measured From KB

Date 18-OCT-2014

Elevations:
KB 4567.00
DF 4566.00
GL 4557.00

Run Number 1

Service Order 2577-100789597

Depth Driller 5440.00 feet

Depth Logger 5440.00 feet

First Reading 5388.00 feet

Last Reading 1213.00 feet

Casing Driller 1220.00 feet

Casing Logger 1213.00 feet

Bit Size 8.750 inches

Hole Fluid Type WBM

Density / Viscosity 9.60 lb/USg 70.00 SEC/QT

PH / Fluid Loss 8.00

Sample Source FLOWLINE

Rm @ Measured Temp 2.21 @ 65.7 ohm-m

Rmf @ Measured Temp 1.76 @ 65.7 ohm-m

Rmc @ Measured Temp 2.65 @ 65.7 ohm-m

Source Rmf / Rmc FLOWLINE

Rm @ BHT 0.89 @168.0 ohm-m

Time Since Circulation 5 HOURS

Max Recorded Temp 168.00 deg F

Equipment / Base 13173 CASPER

Recorded By M.RICHINS

Witnessed By R.LYNDE

BOREHOLE RECORD

Last Edited: 17-OCT-2014 20:59

Bit Size
inches

8.750

Depth From
feet

1219.00

Depth To
feet

5260.00

CASING RECORD

Type

Size
inches

9.625

Depth From
feet

0.00

Shoe Depth
feet

1219.00

Weight
pounds/ft

36.00

REMARKS

SOFTWARE VERSION: 14.01.3220

MCG, MDN, MPD, MFE, MIE, AND MAI RAN IN COMBINATION.

HARDWARE: MAI: 0.5" STAND OFF, SEE TOOL STRING.

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

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

IMAGE TOOL PACKED UP WITH MUD AND WELL DEBRIS. REPEAT PASS PRESENTED INSTEAD OF MAIN. IMAGE PULLED 300 FEET OFF BOTTOM.

POROSITY TOOLS PULLED TO 3900 FEET PER CUSTOMER REQUEST.

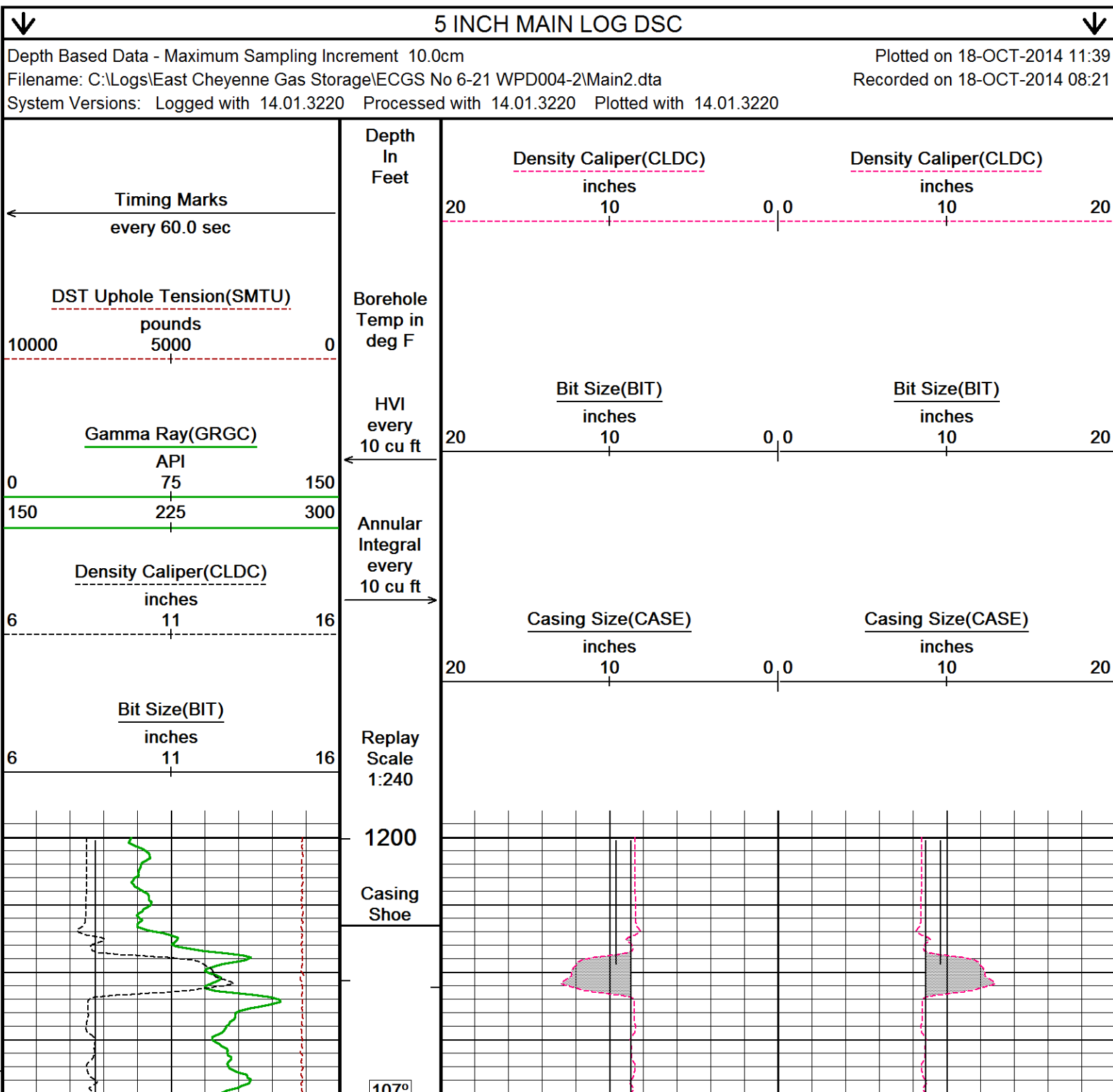
RESISTIVITY PULLED TO SURFACE CASING, AND GAMMA PULLED TO SURFACE.

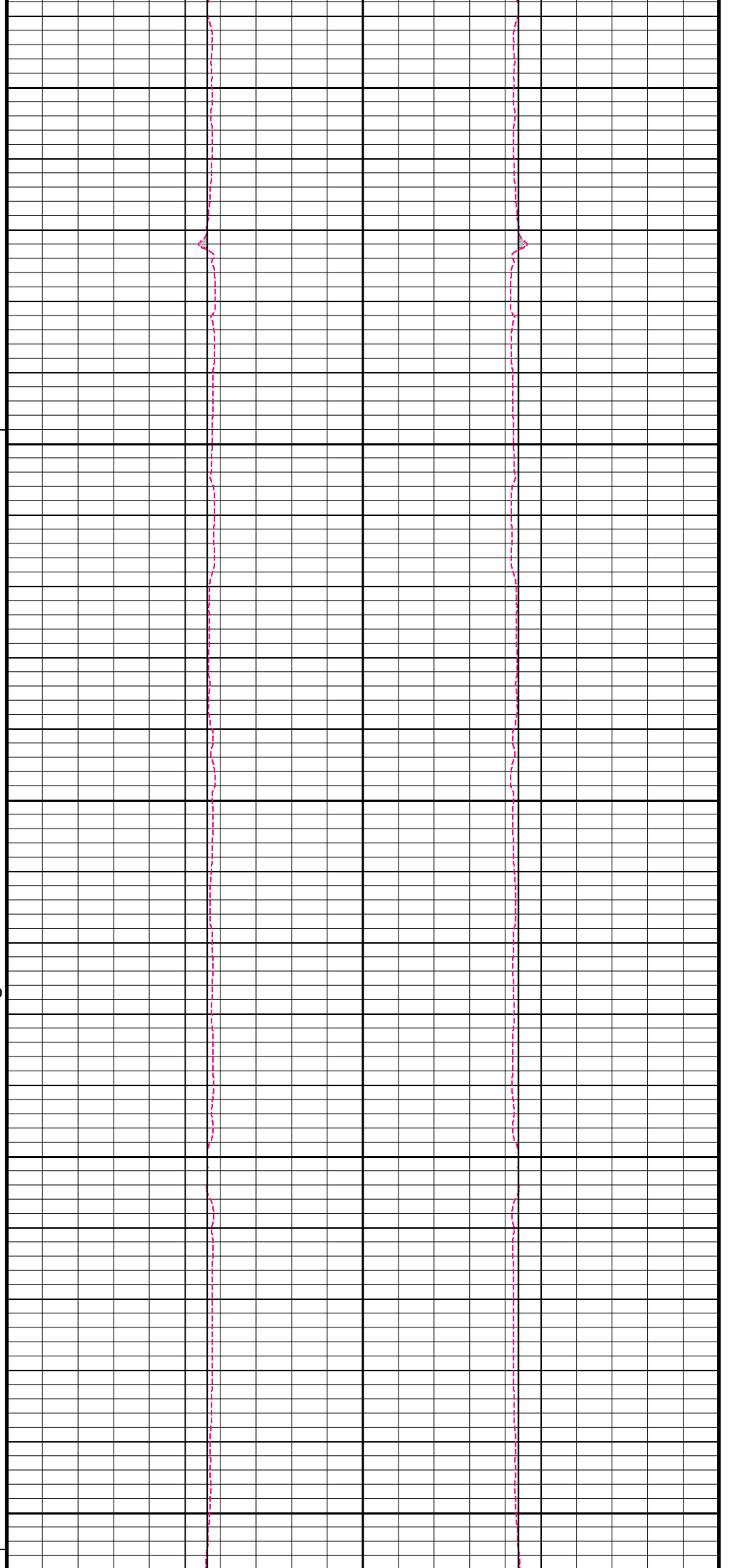
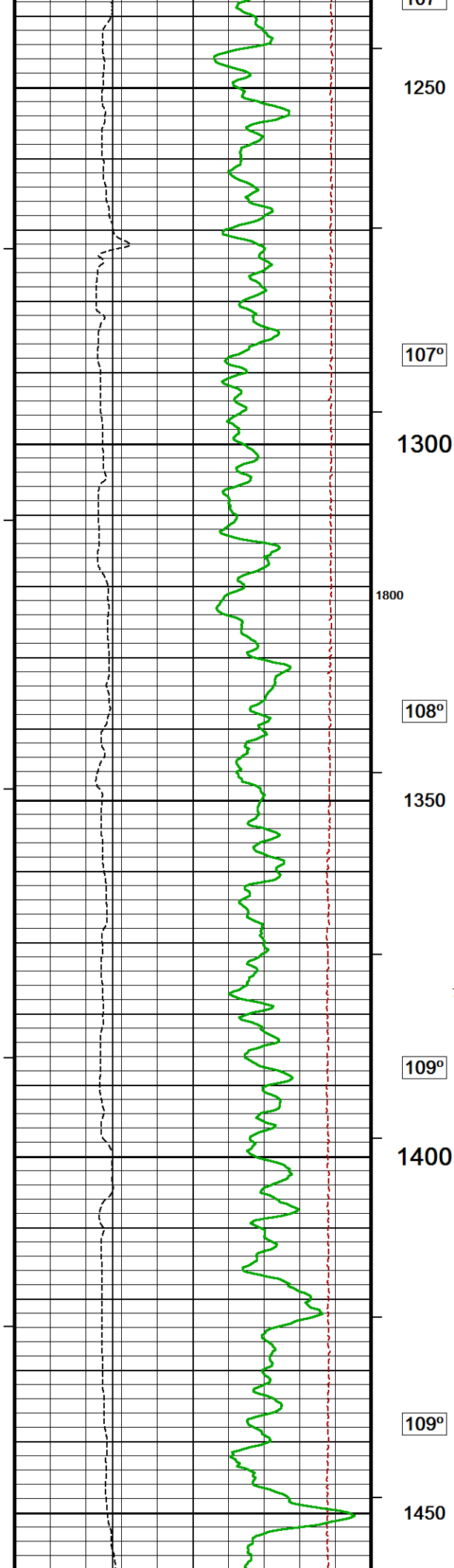
TOTAL HOLE VOLUME FROM TD (5440 FEET) TO SURFACE CASING = 1840 CUBIC FEET

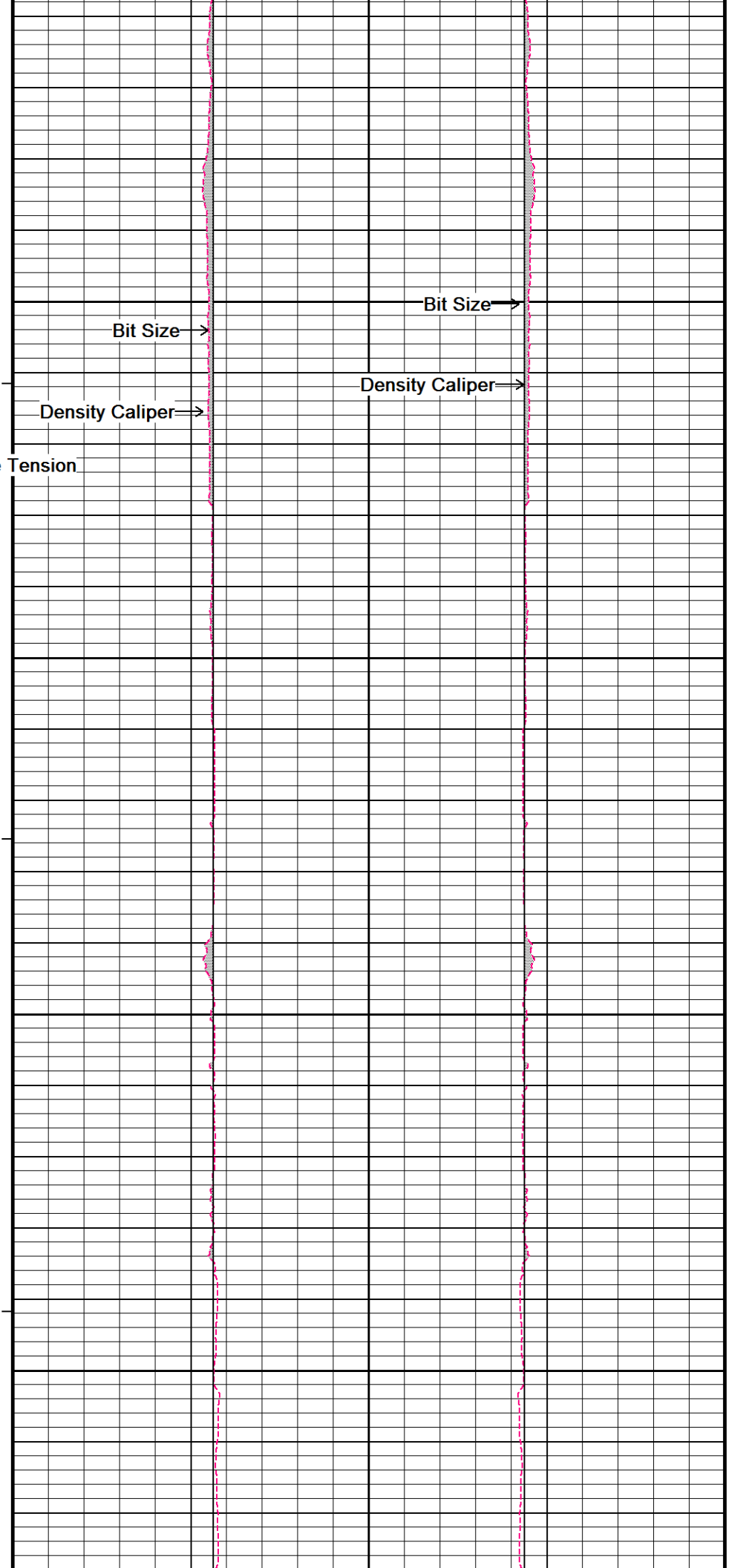
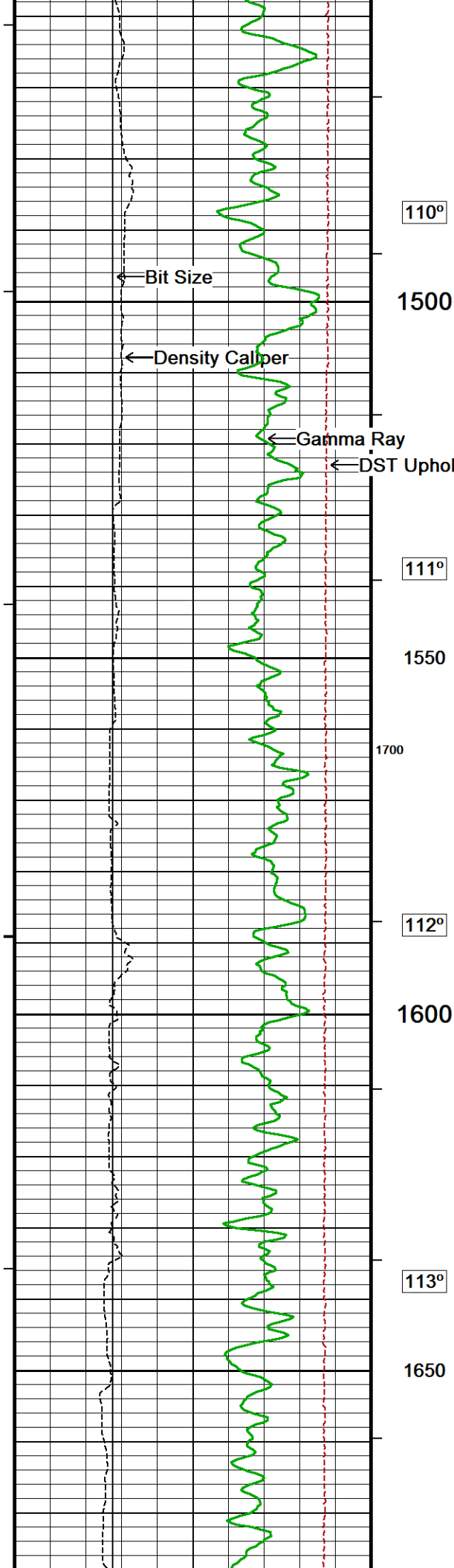
ANNUAL HOLE VOLUME FROM TD (5115 FEET) TO SURFACE CASING = 1010 CUBIC FEET.

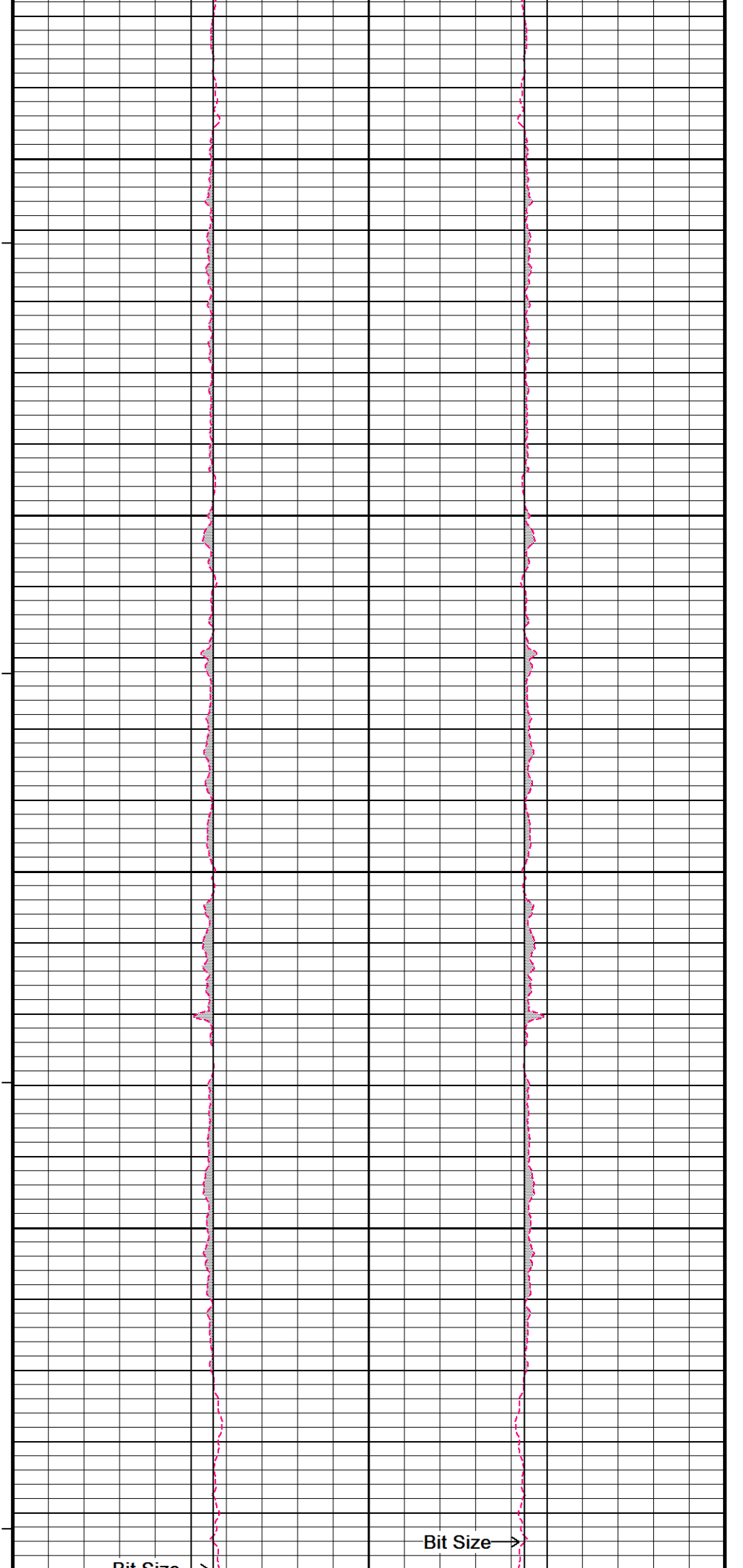
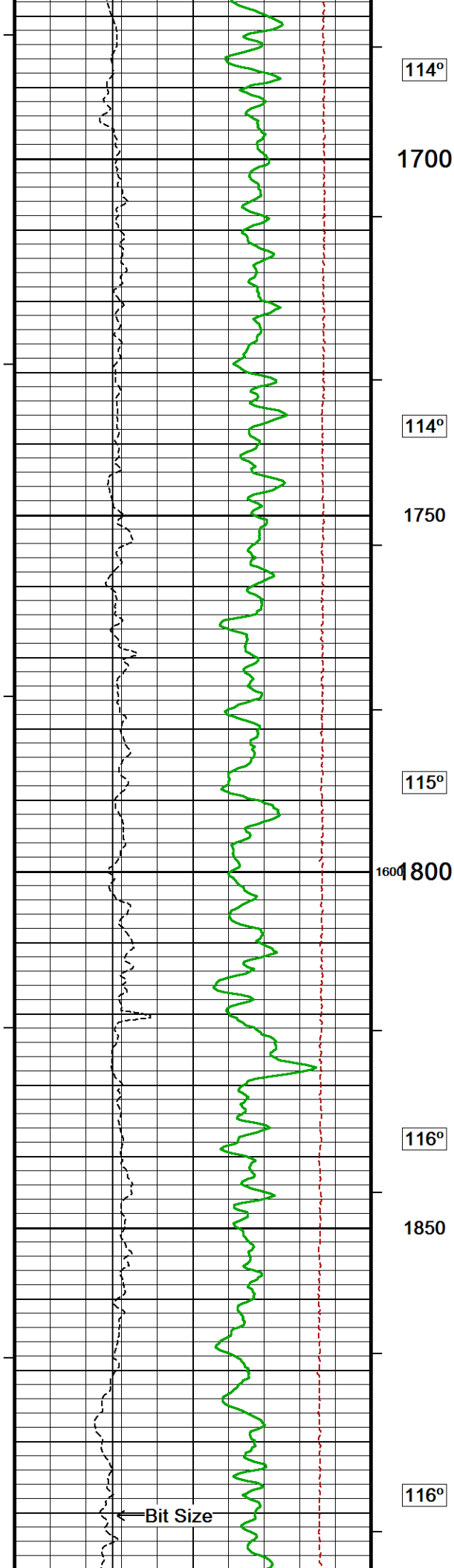
ANNULAR HOLE VOLUME WITH 7' CASING FROM TD TO SURFACE CASING = 720

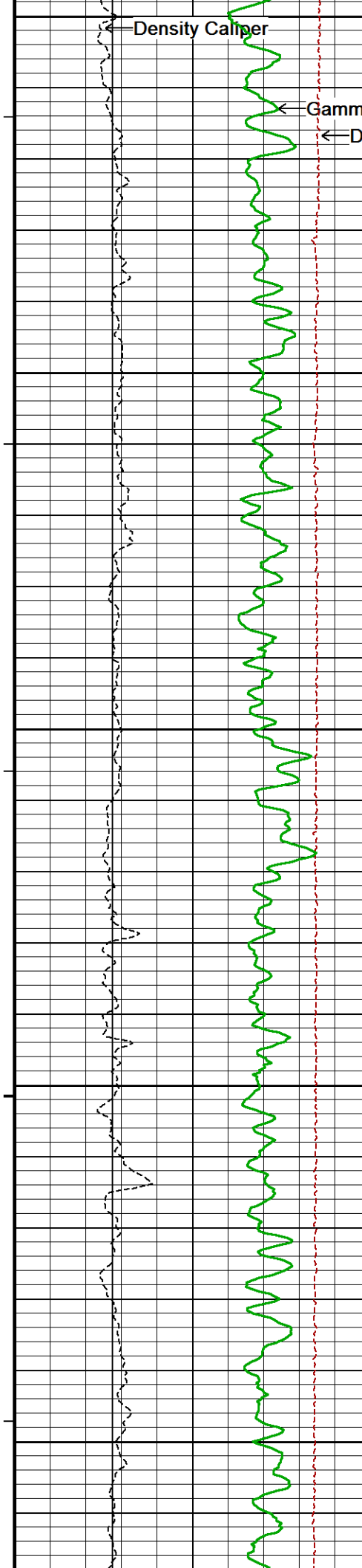
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will 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.











1900

117°

1950

118°

2000

600

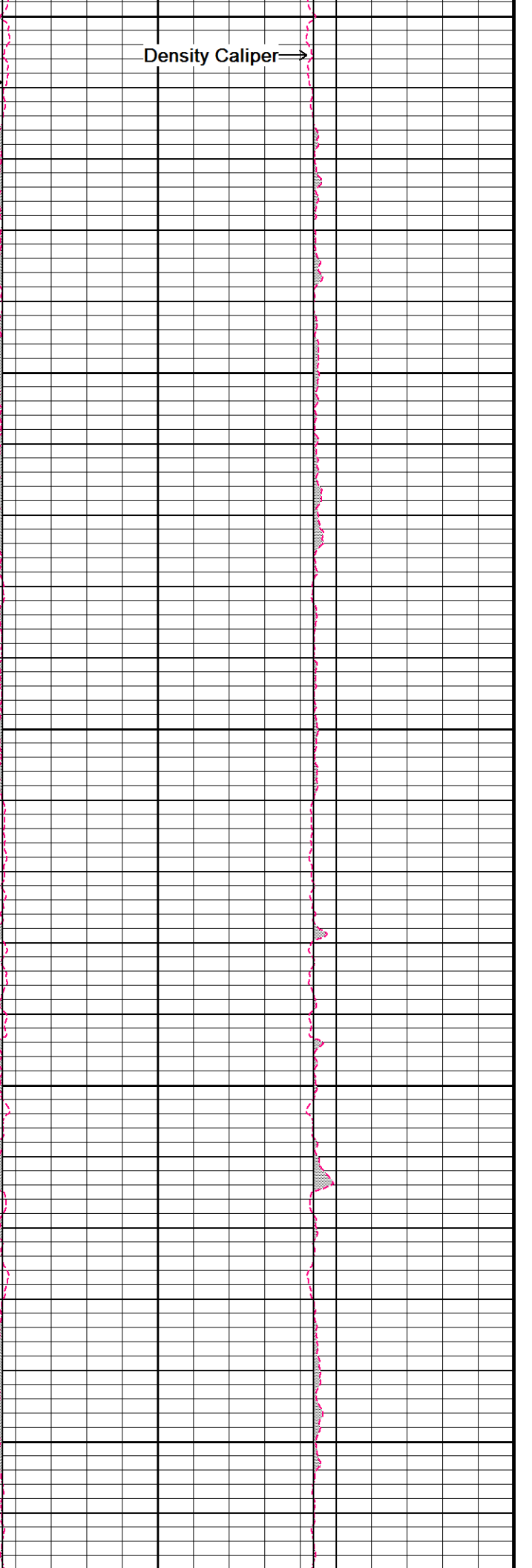
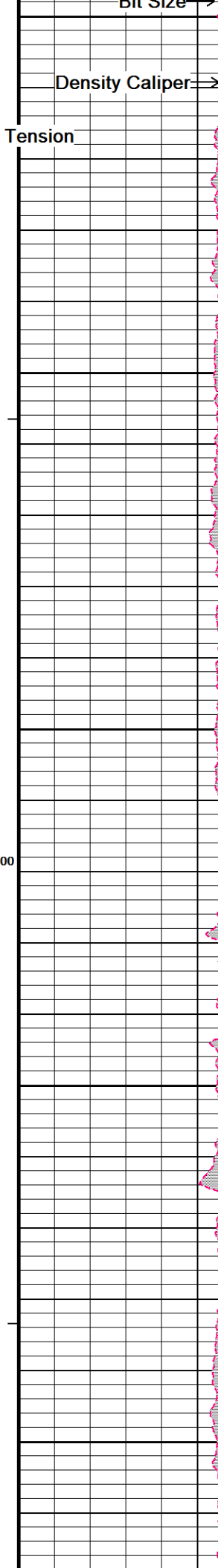
1500

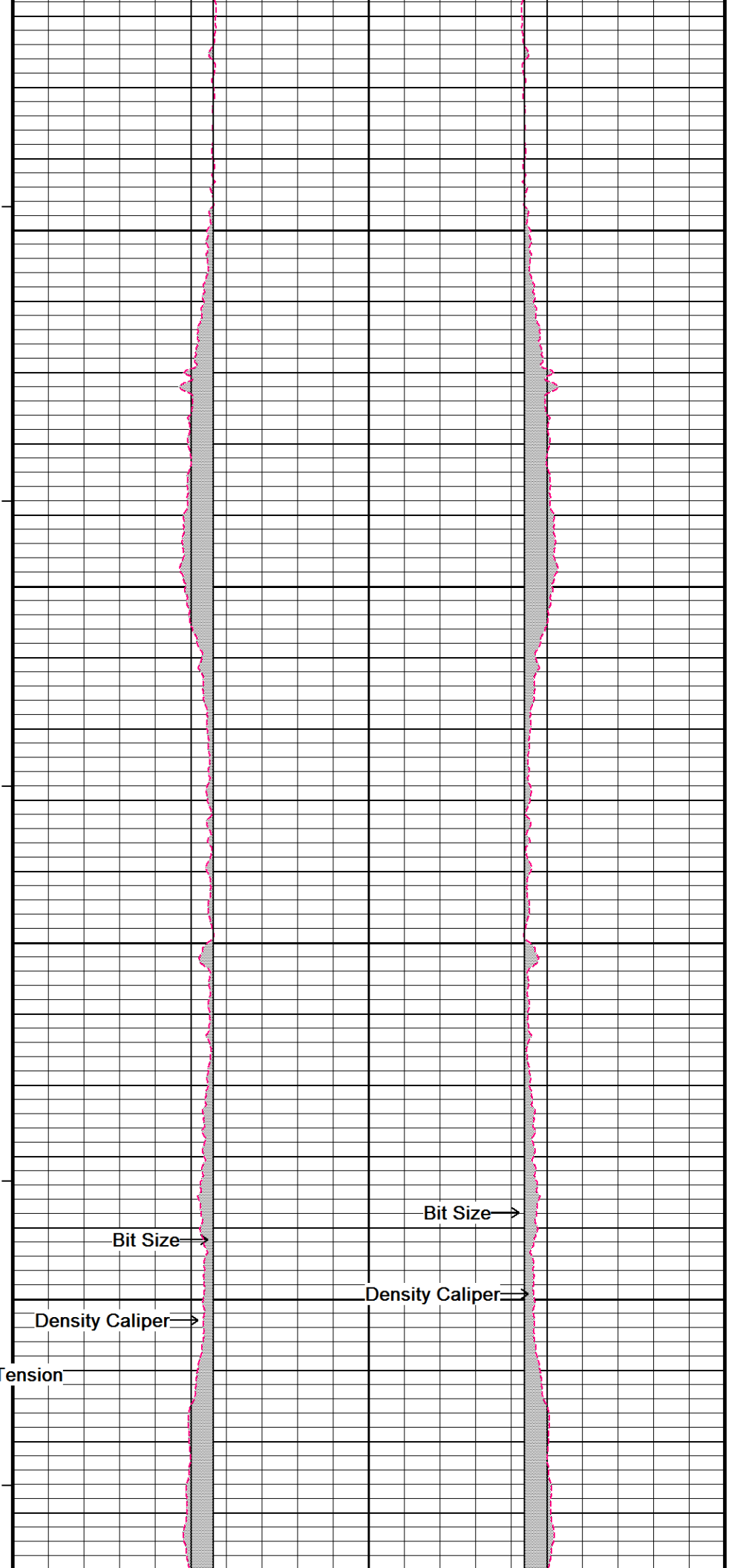
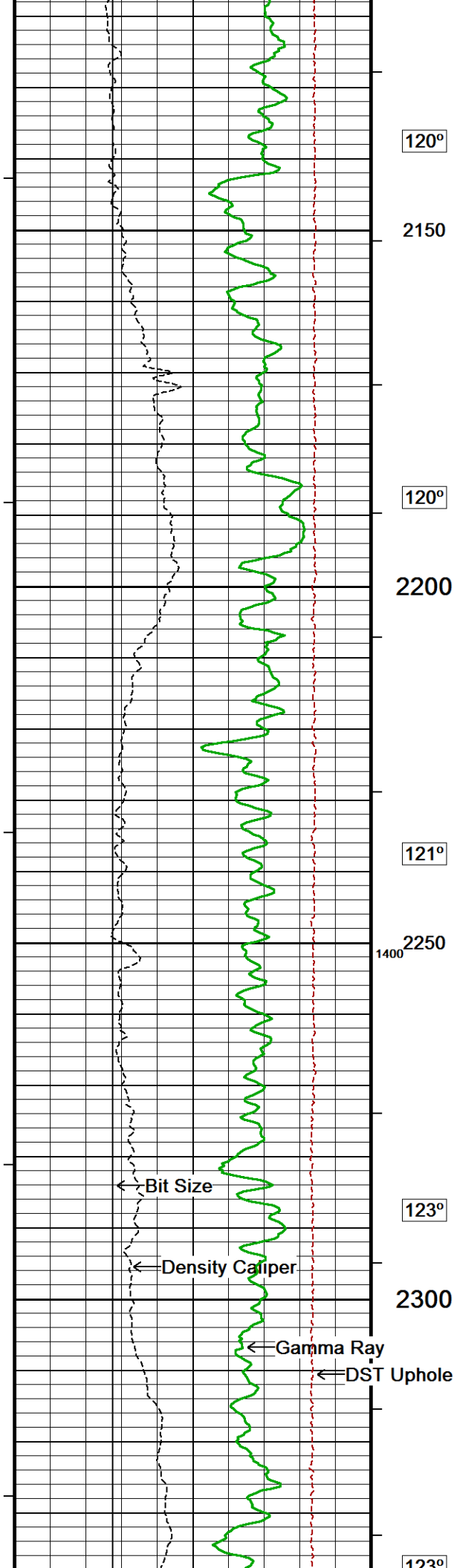
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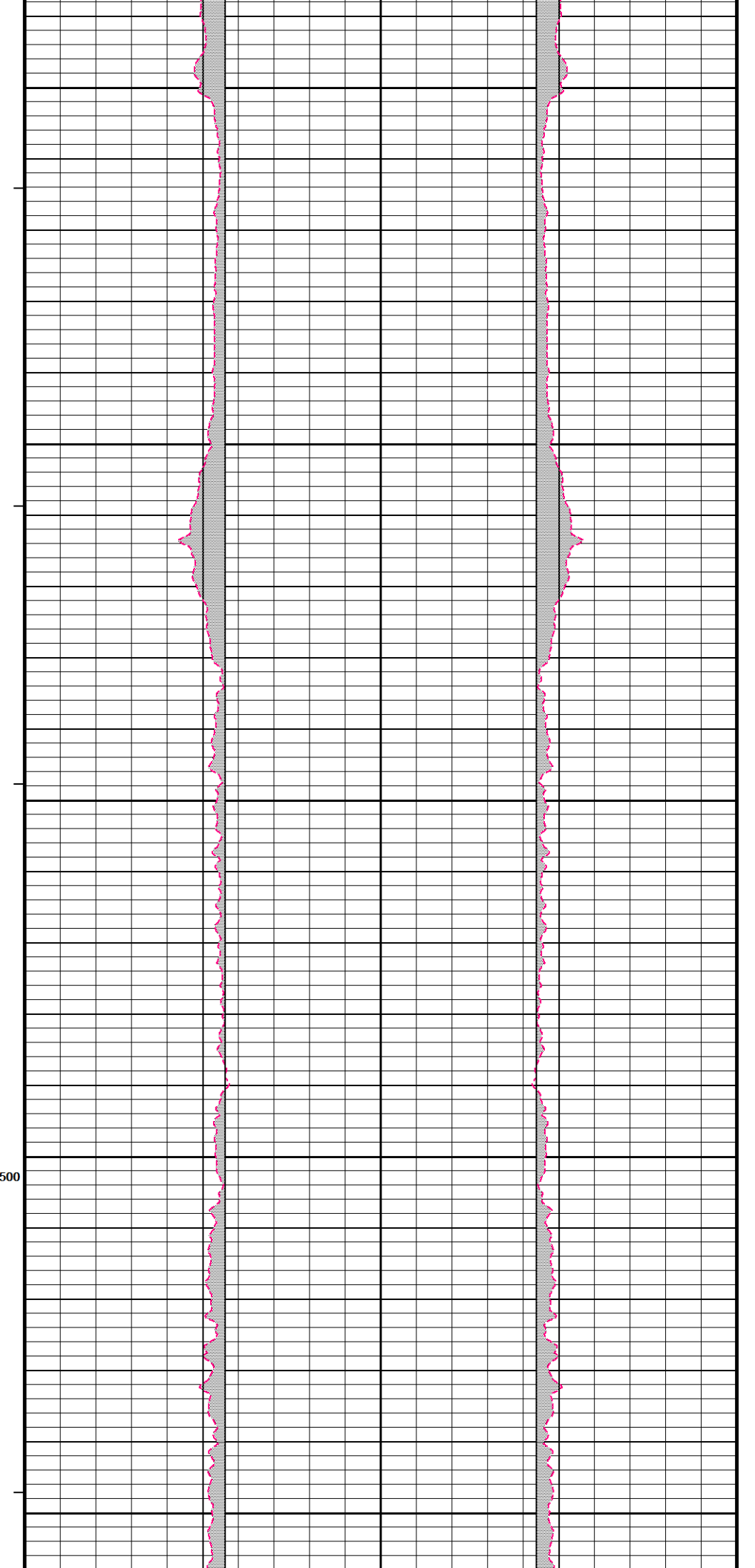
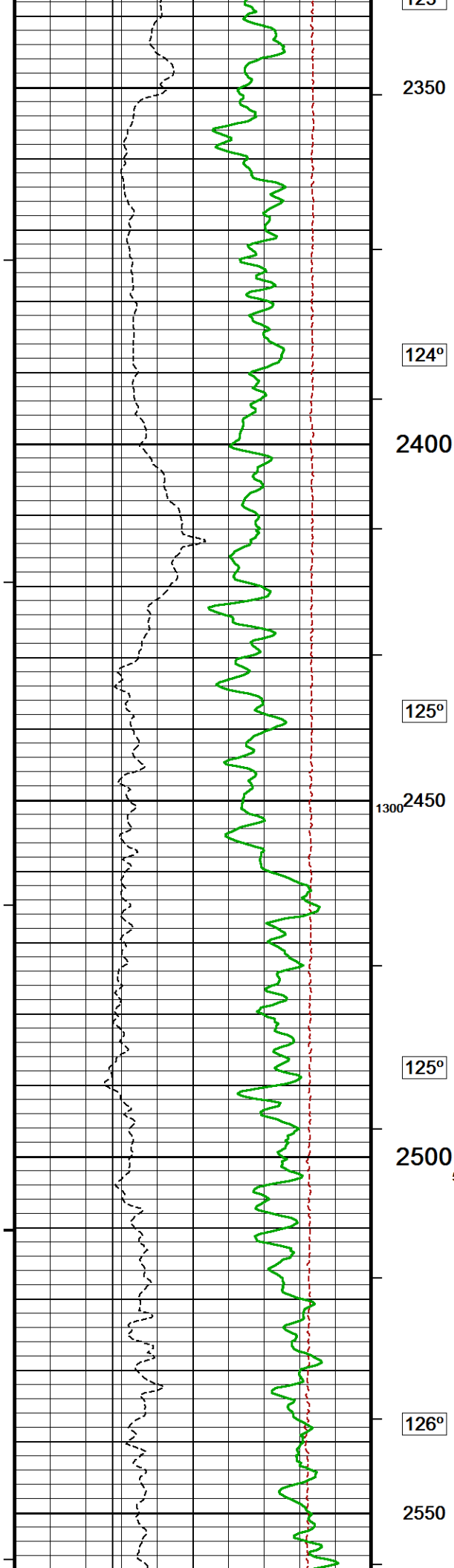
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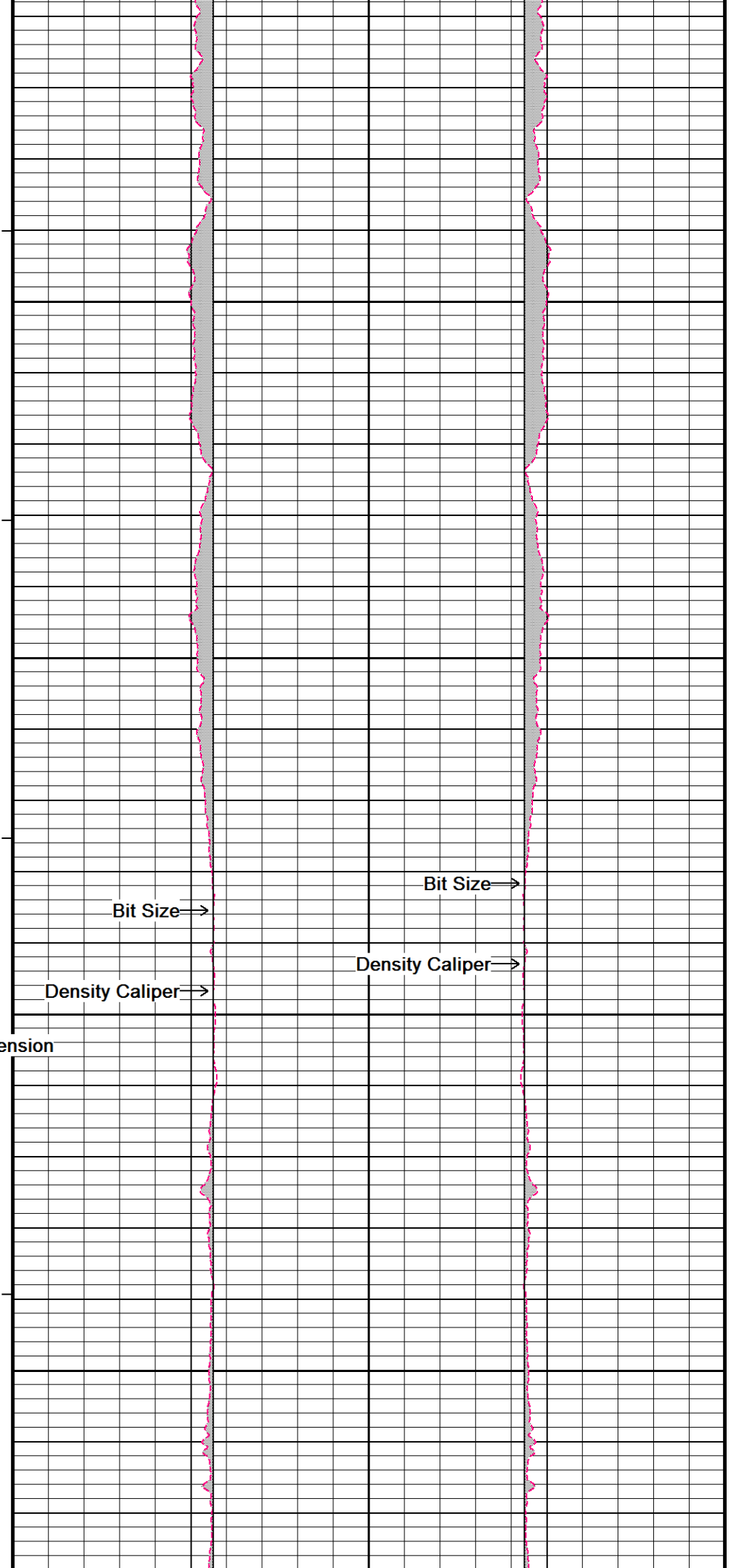
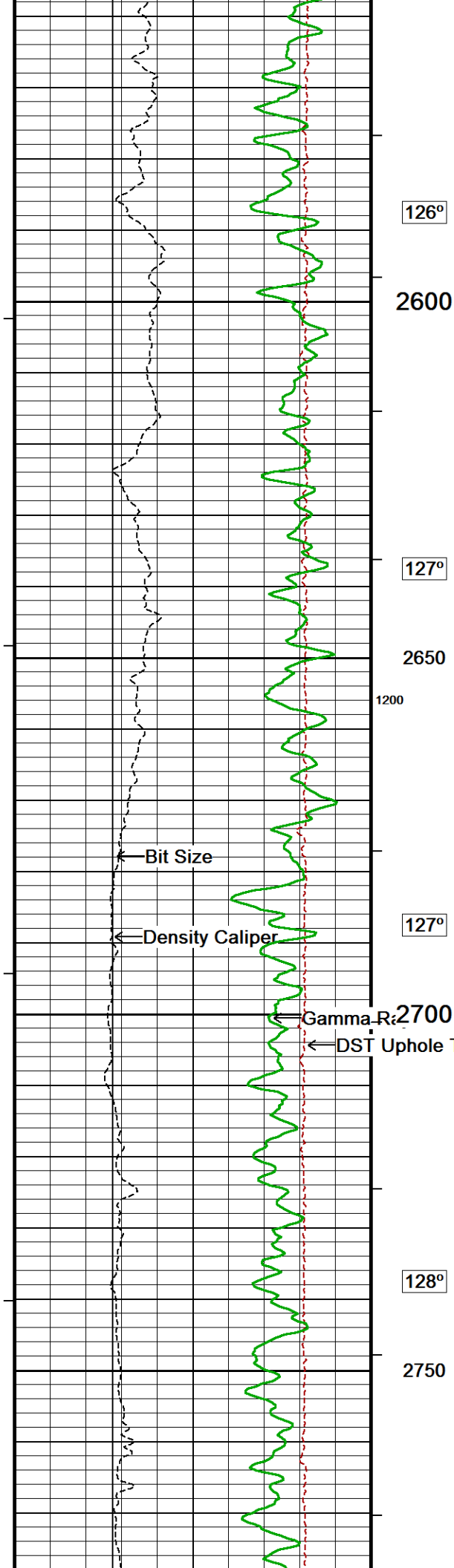
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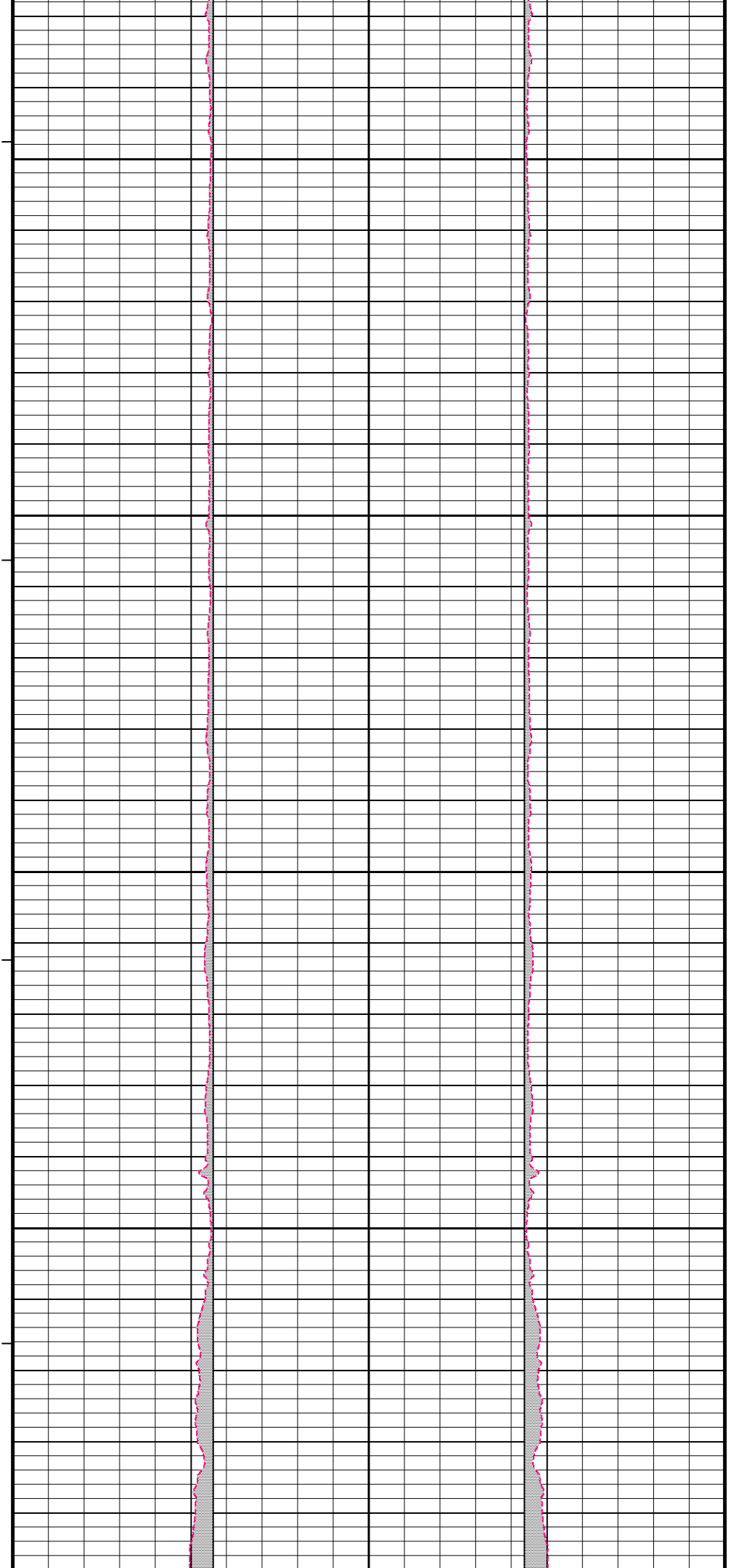
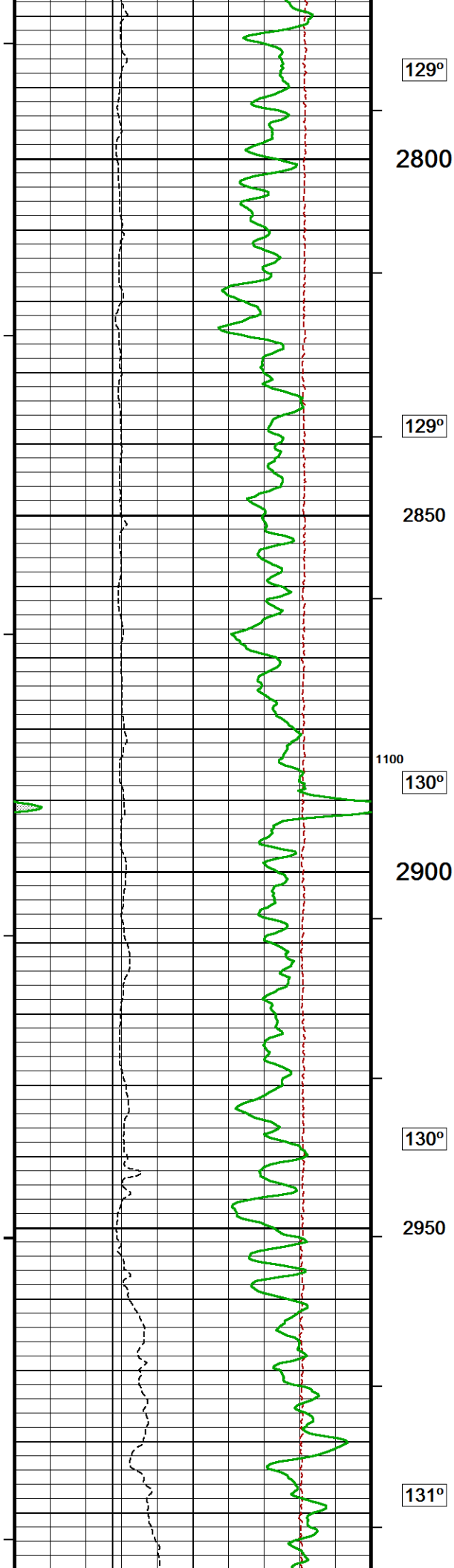
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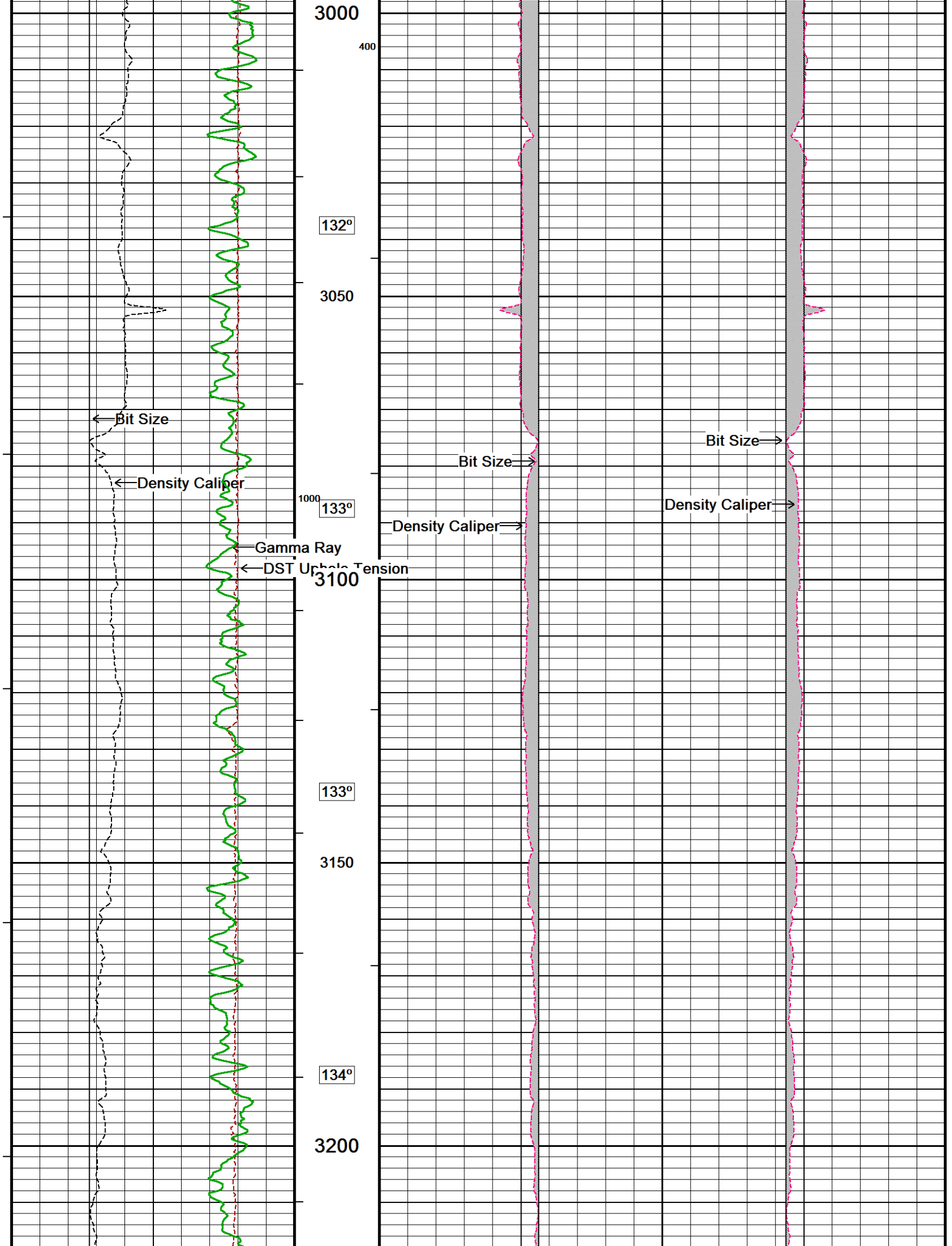


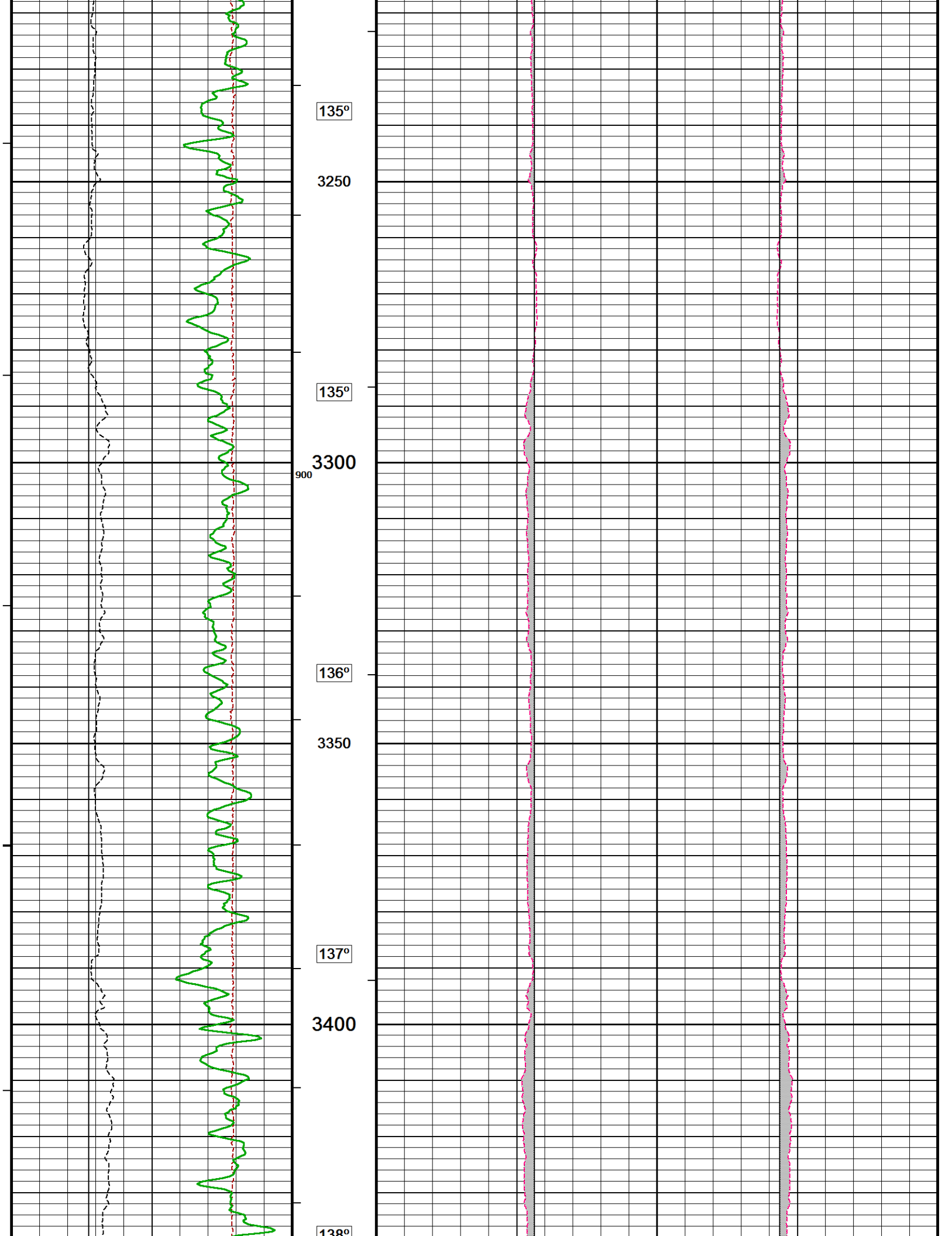


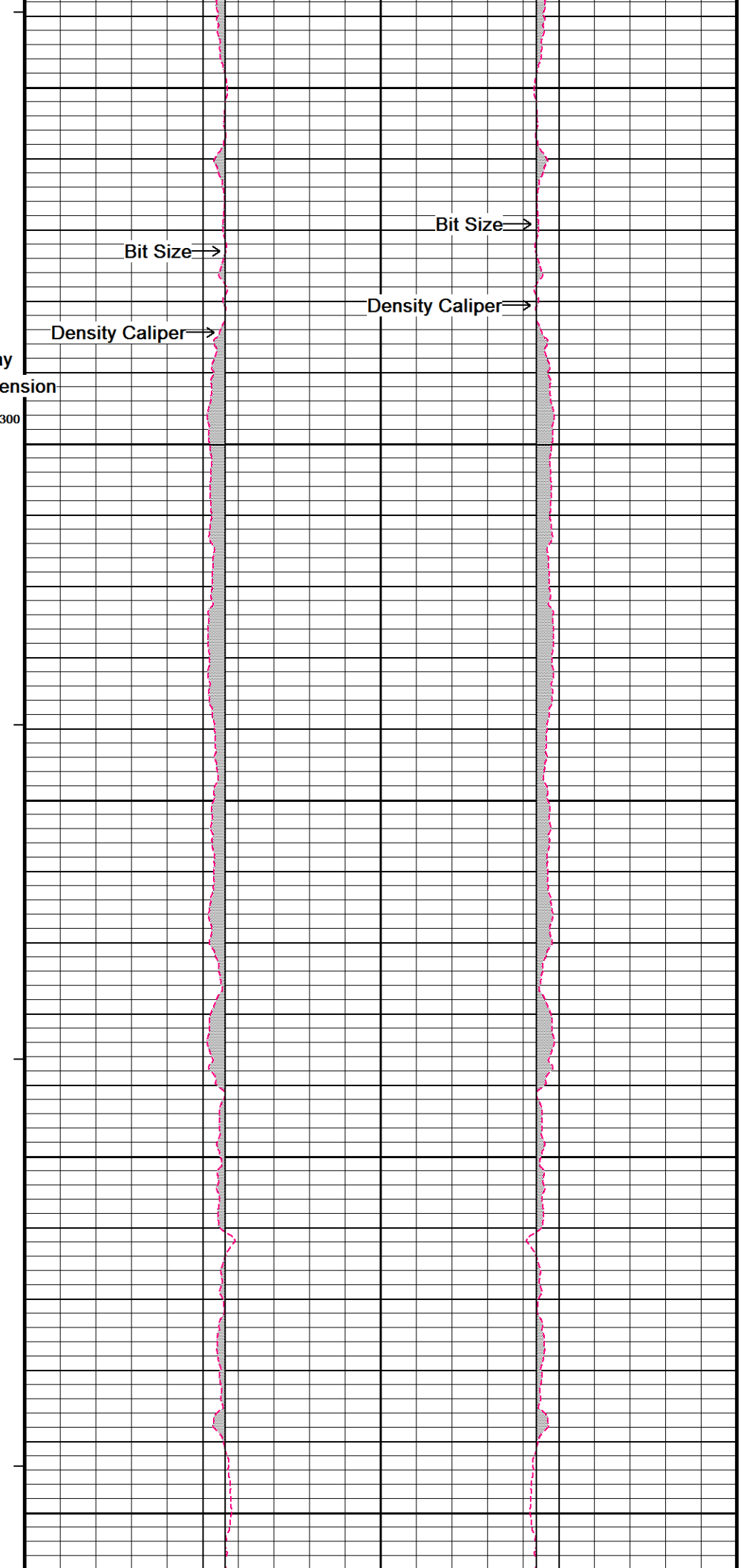
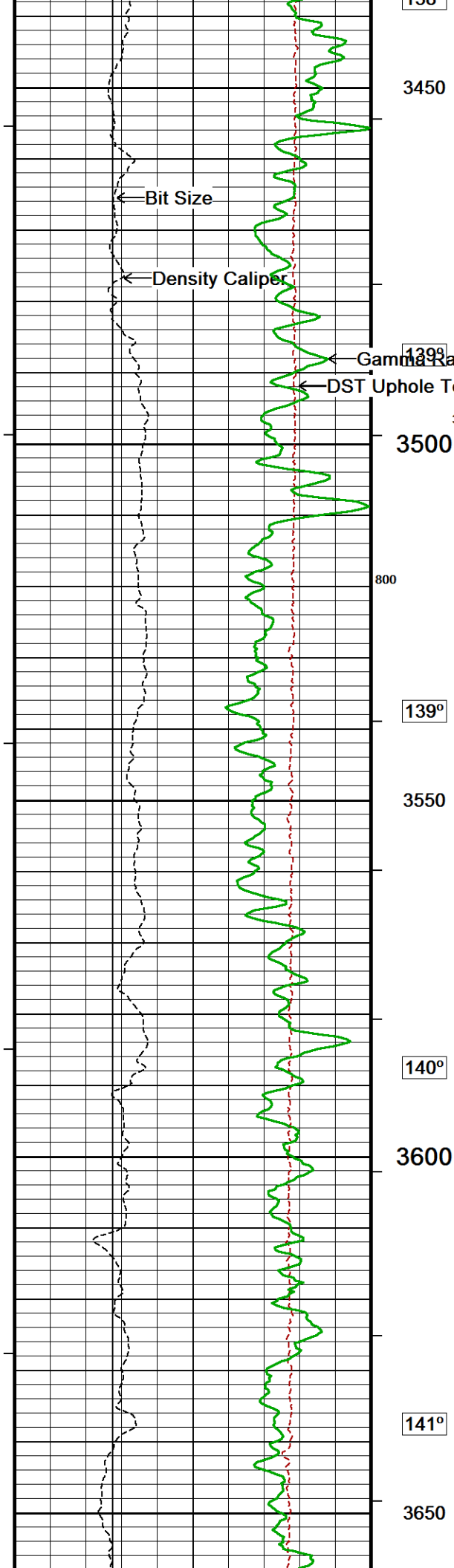


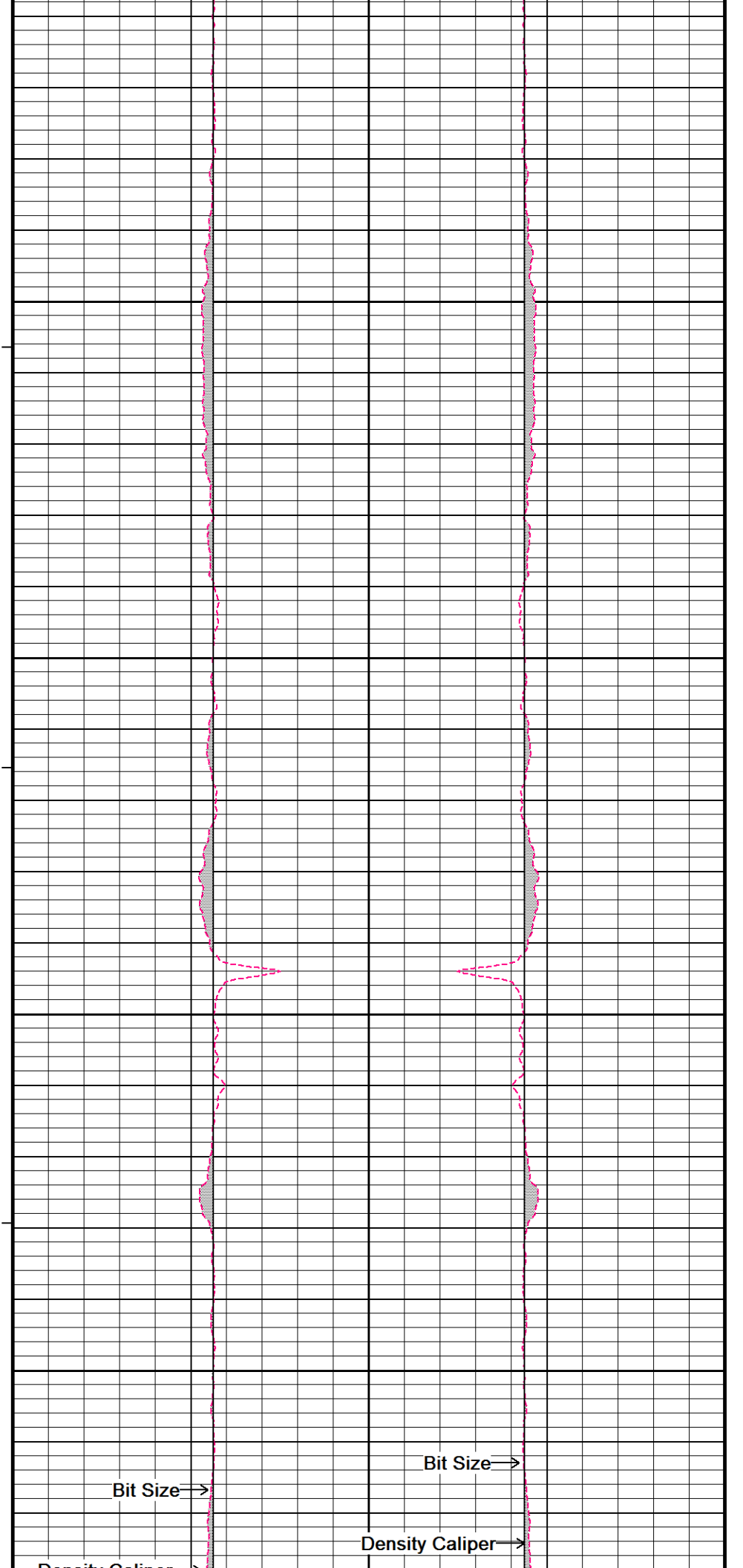
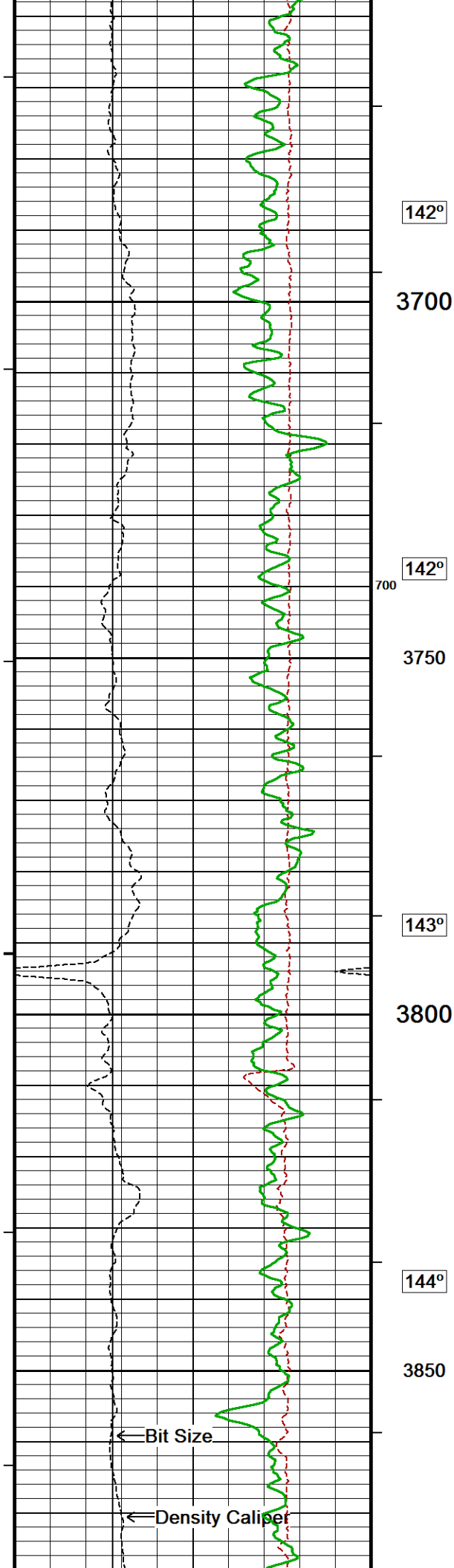


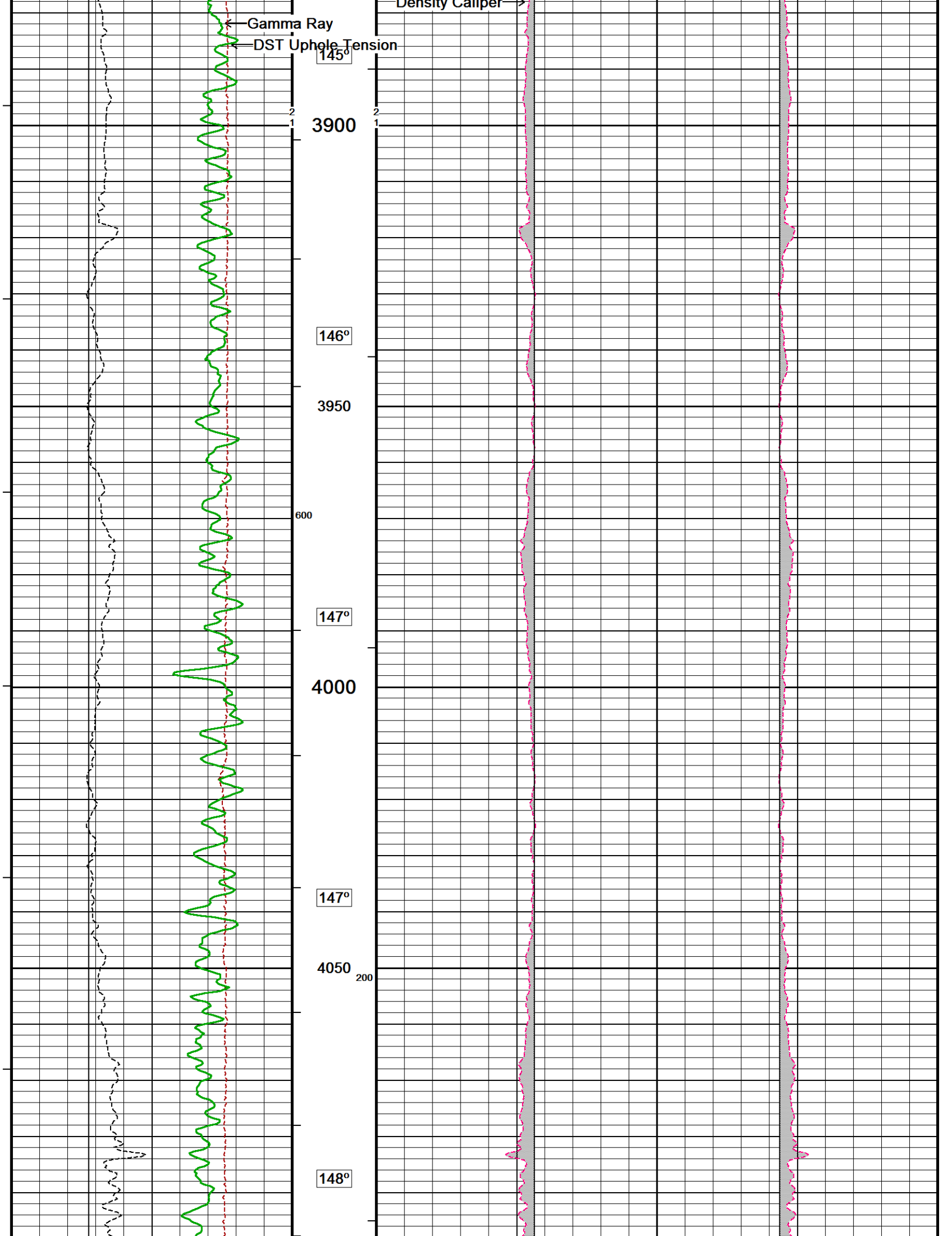


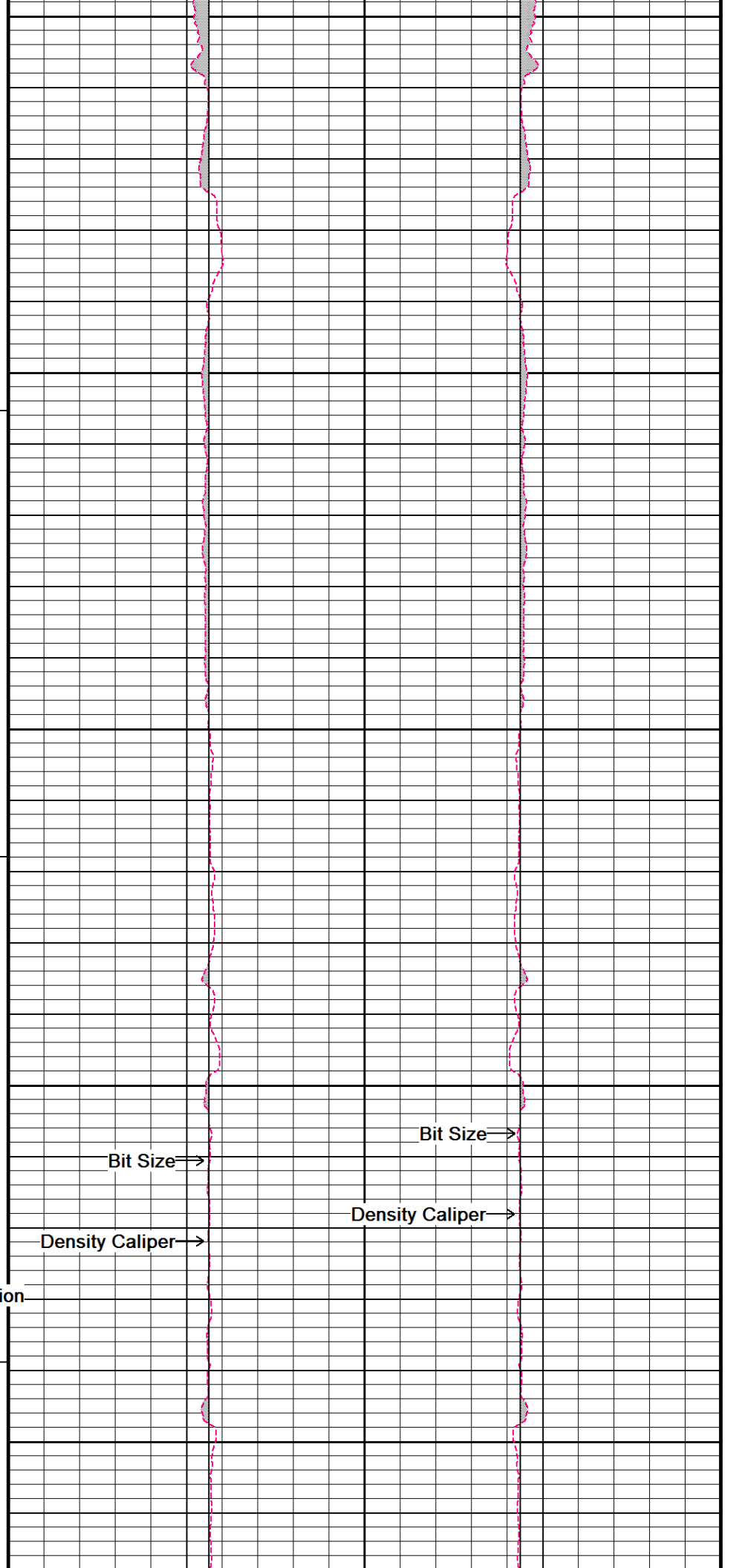
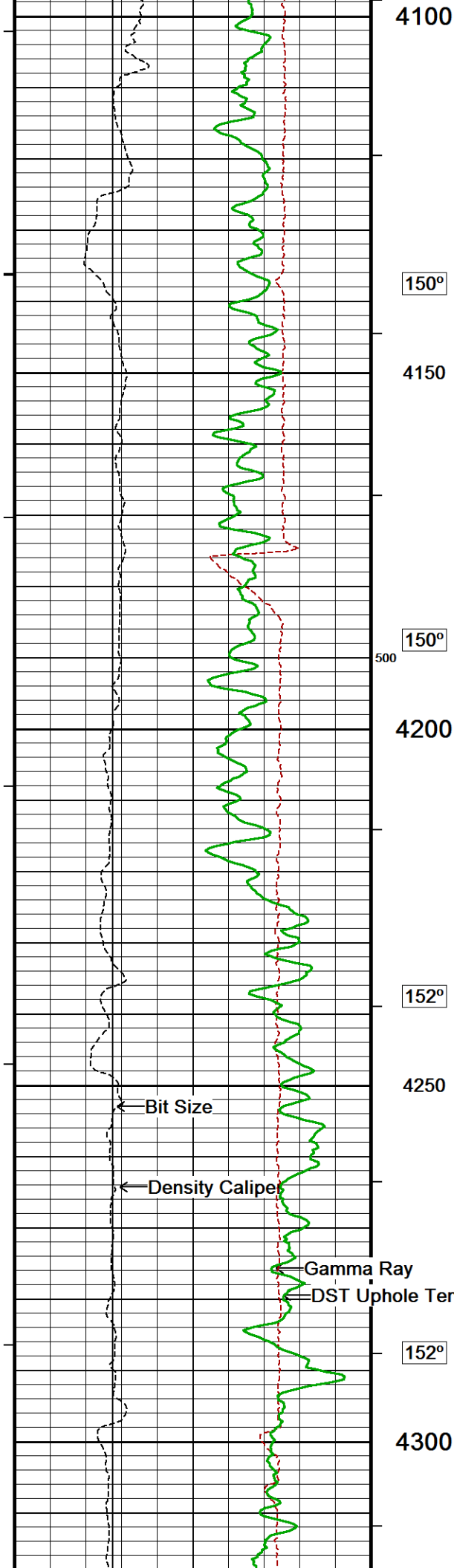


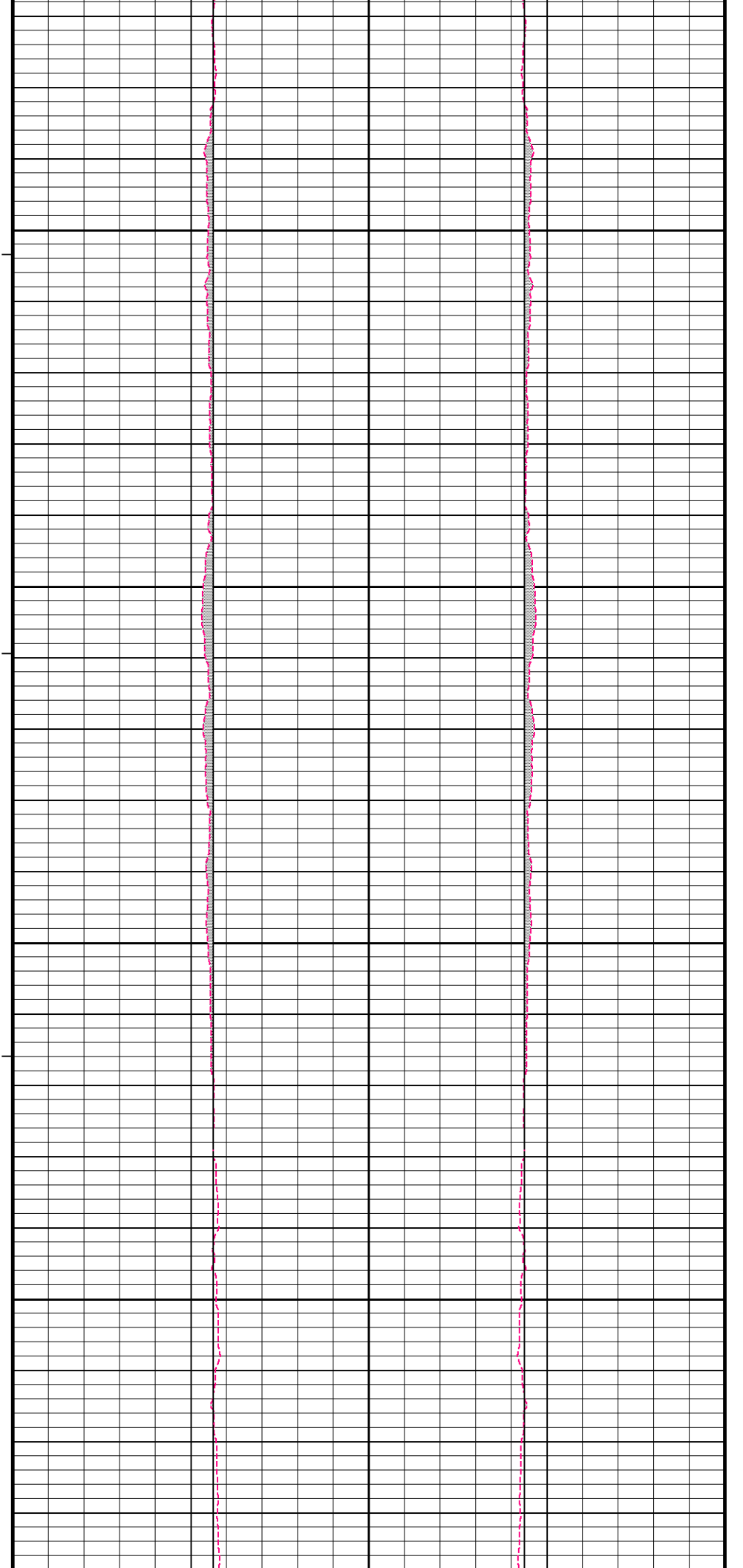
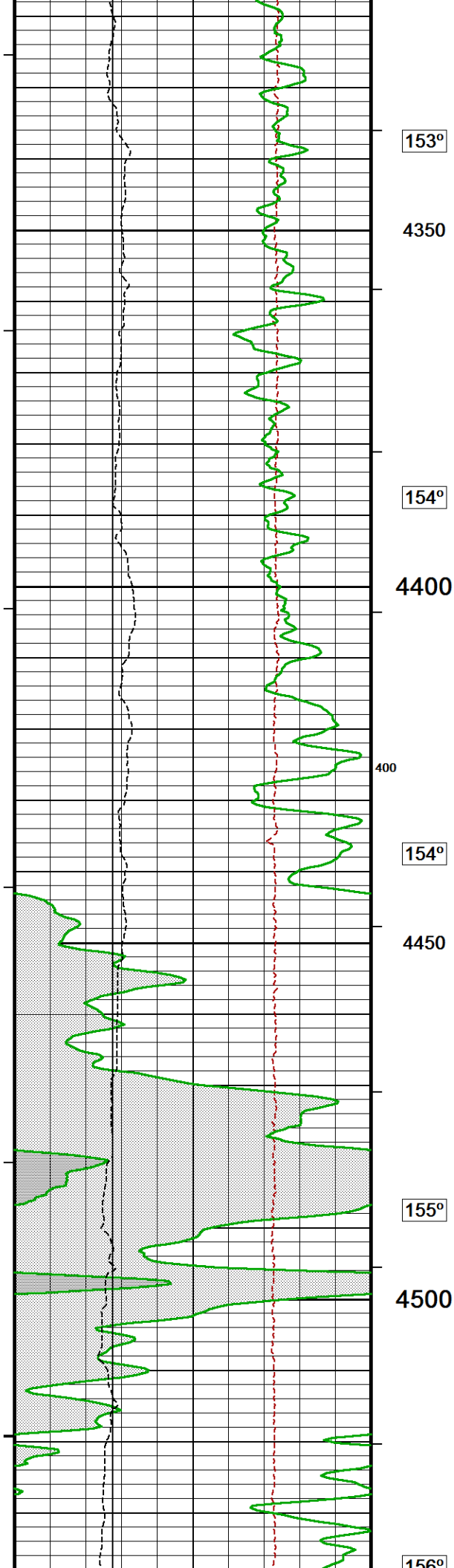


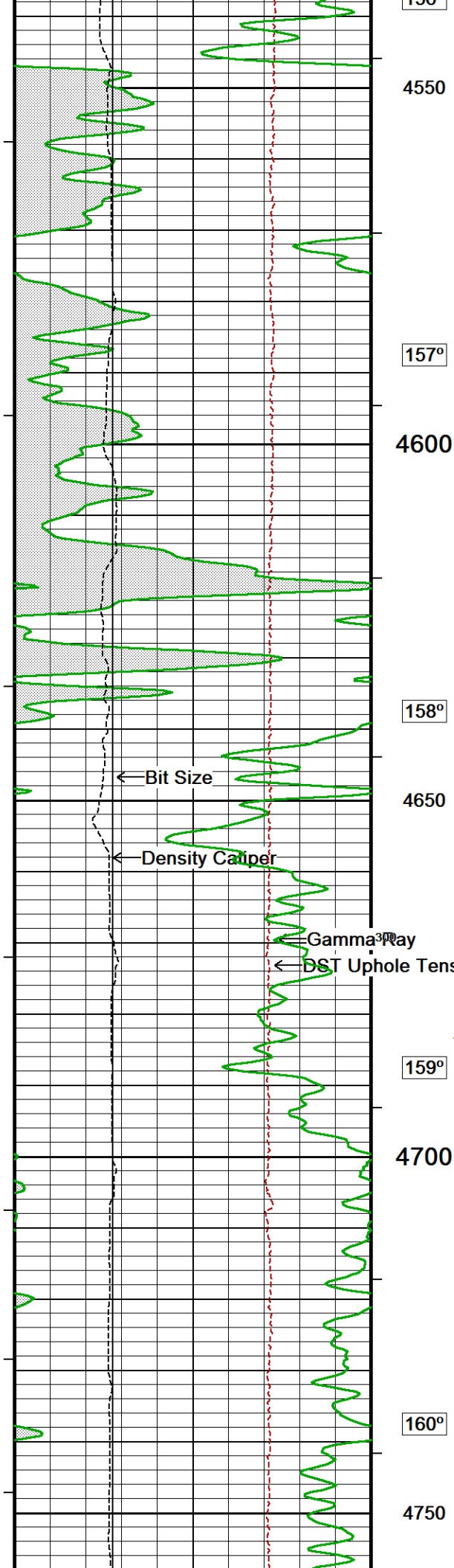




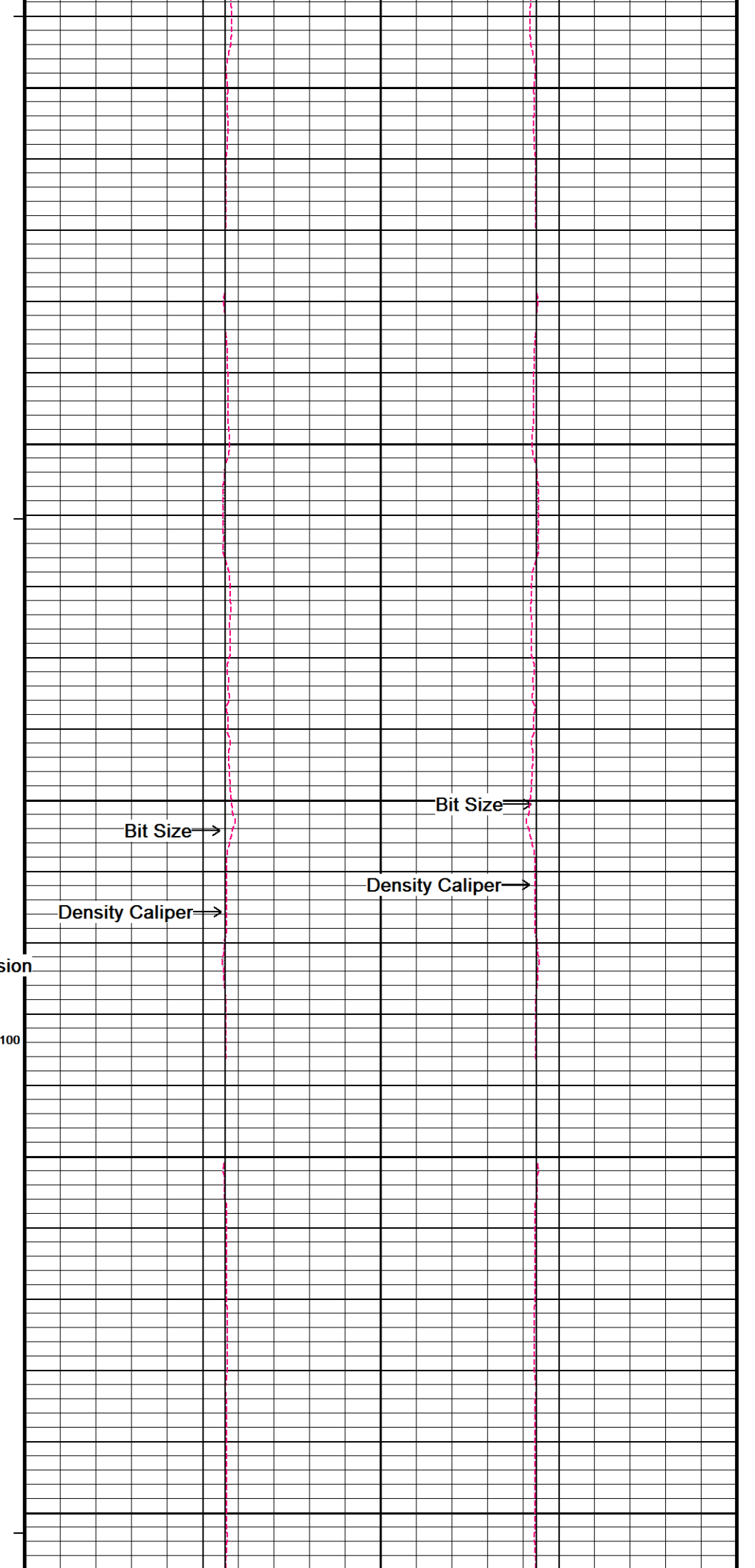






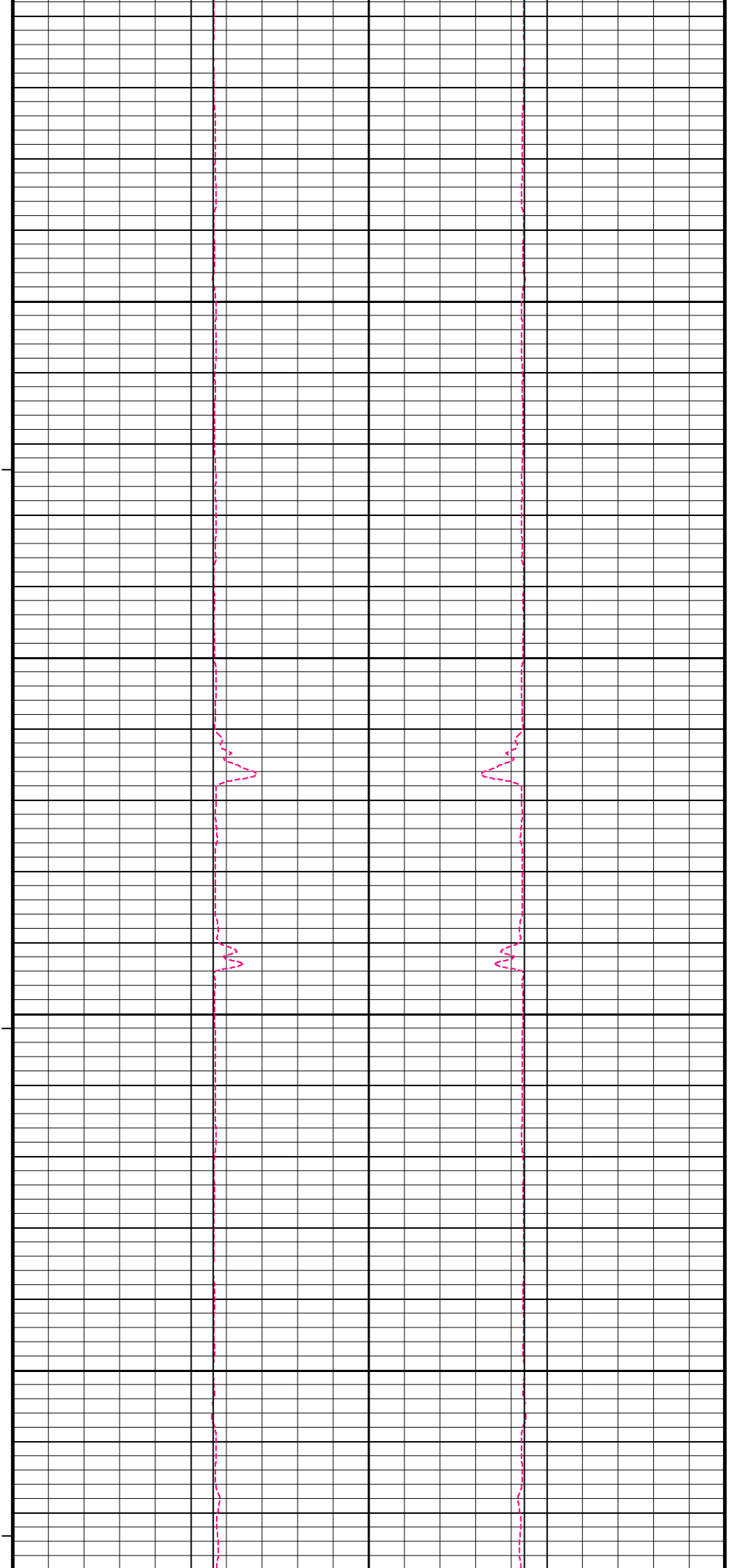
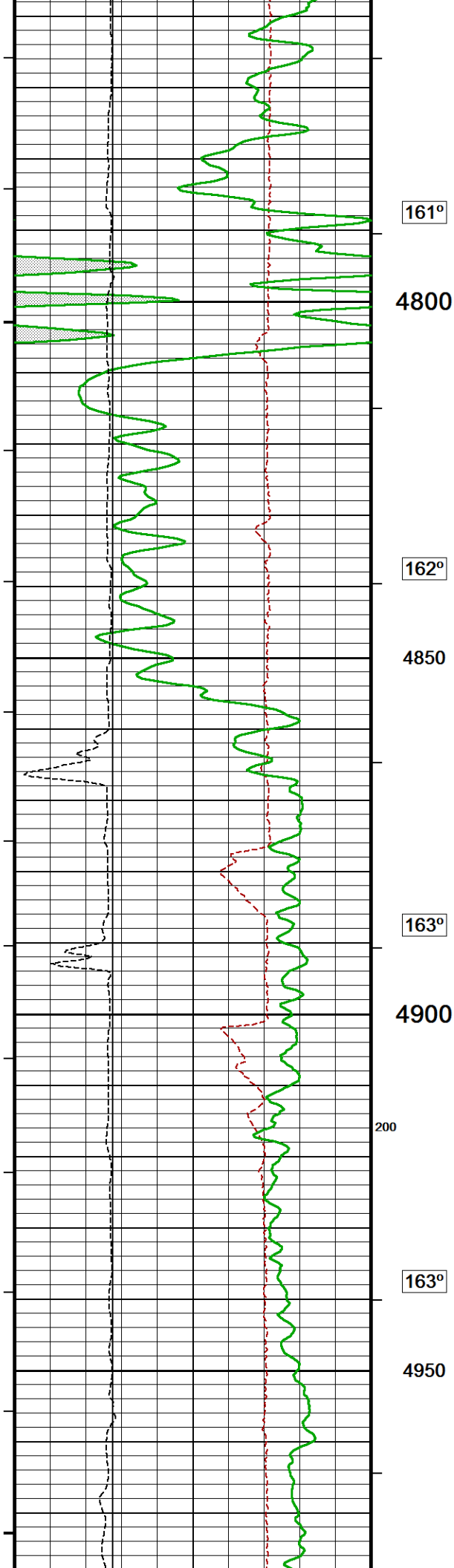


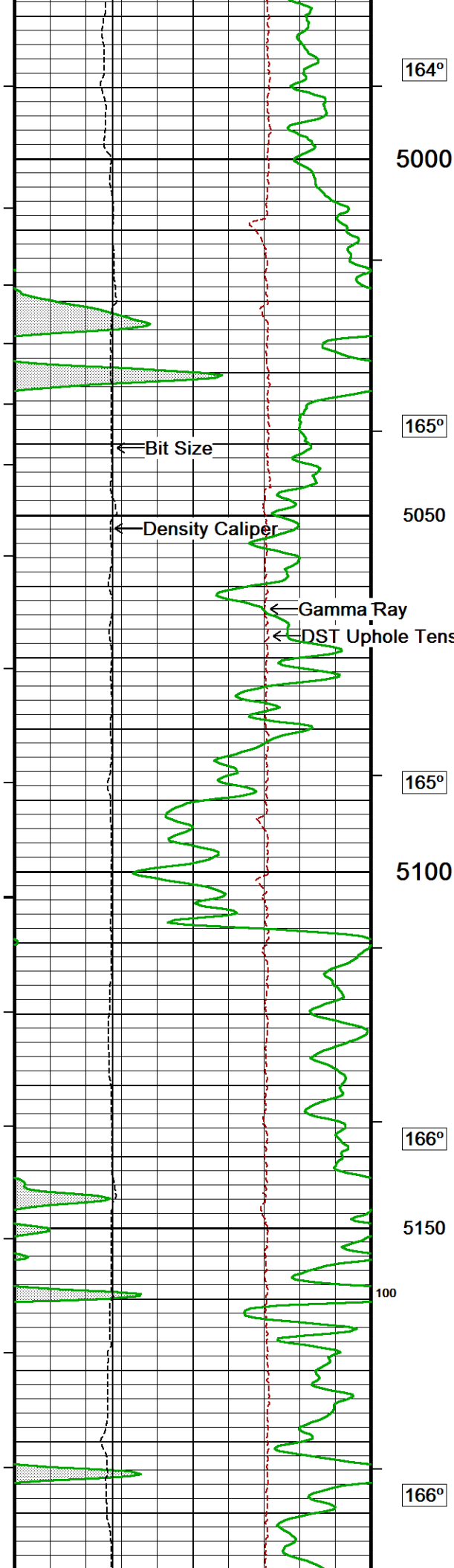
156°
4550
157°
4600
158°
4650
159°
4700
160°
4750



Bit Size
Density Caliper

Bit Size
Density Caliper





164°

5000

165°

5050

165°

5100

166°

5150

100

166°

← Bit Size

← Density Caliper

← Gamma Ray

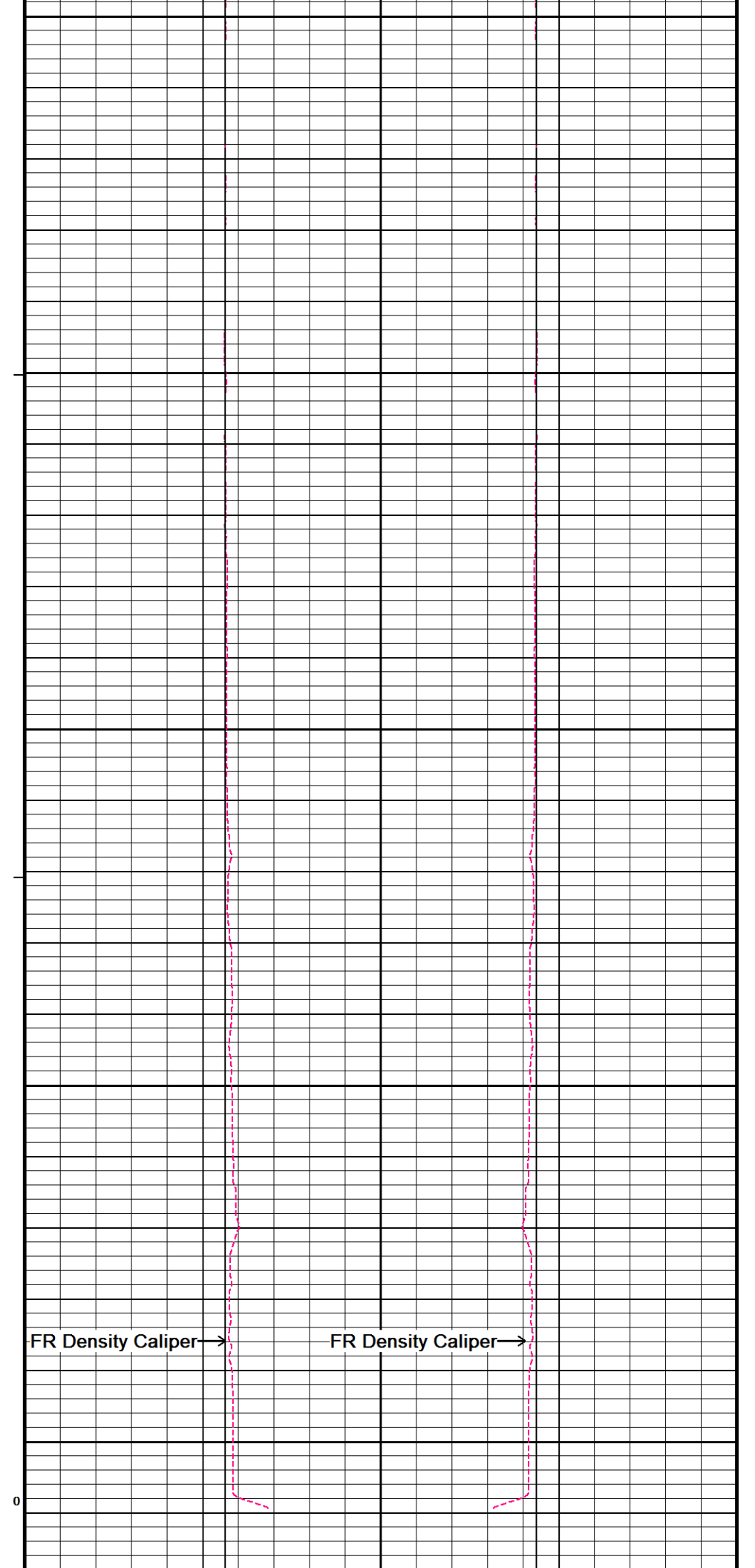
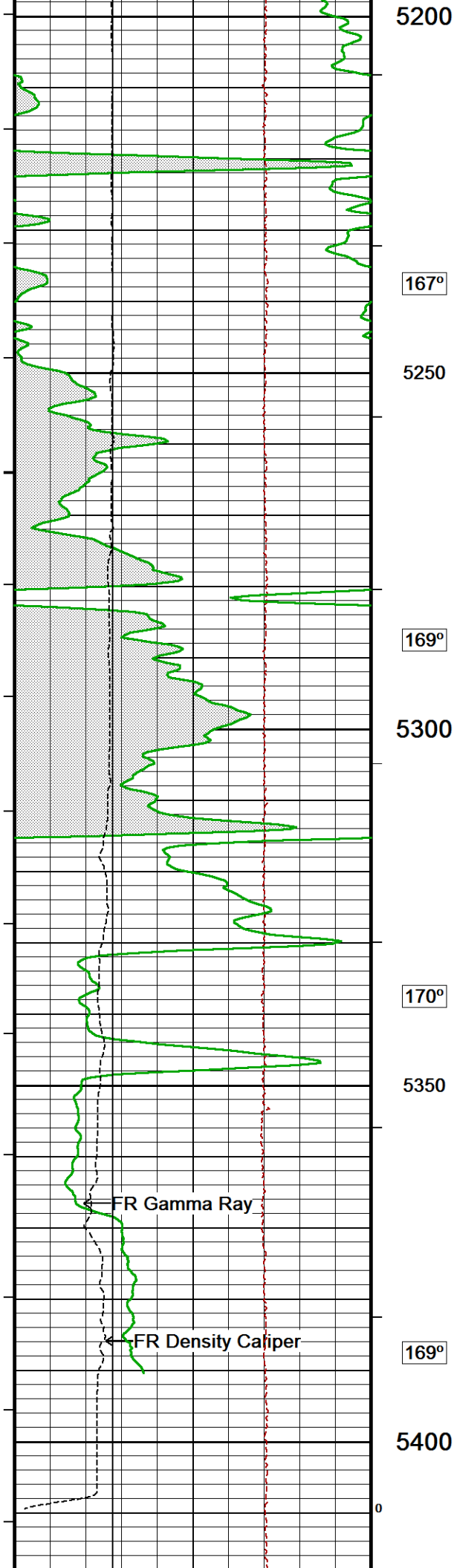
← DST Uphole Tension

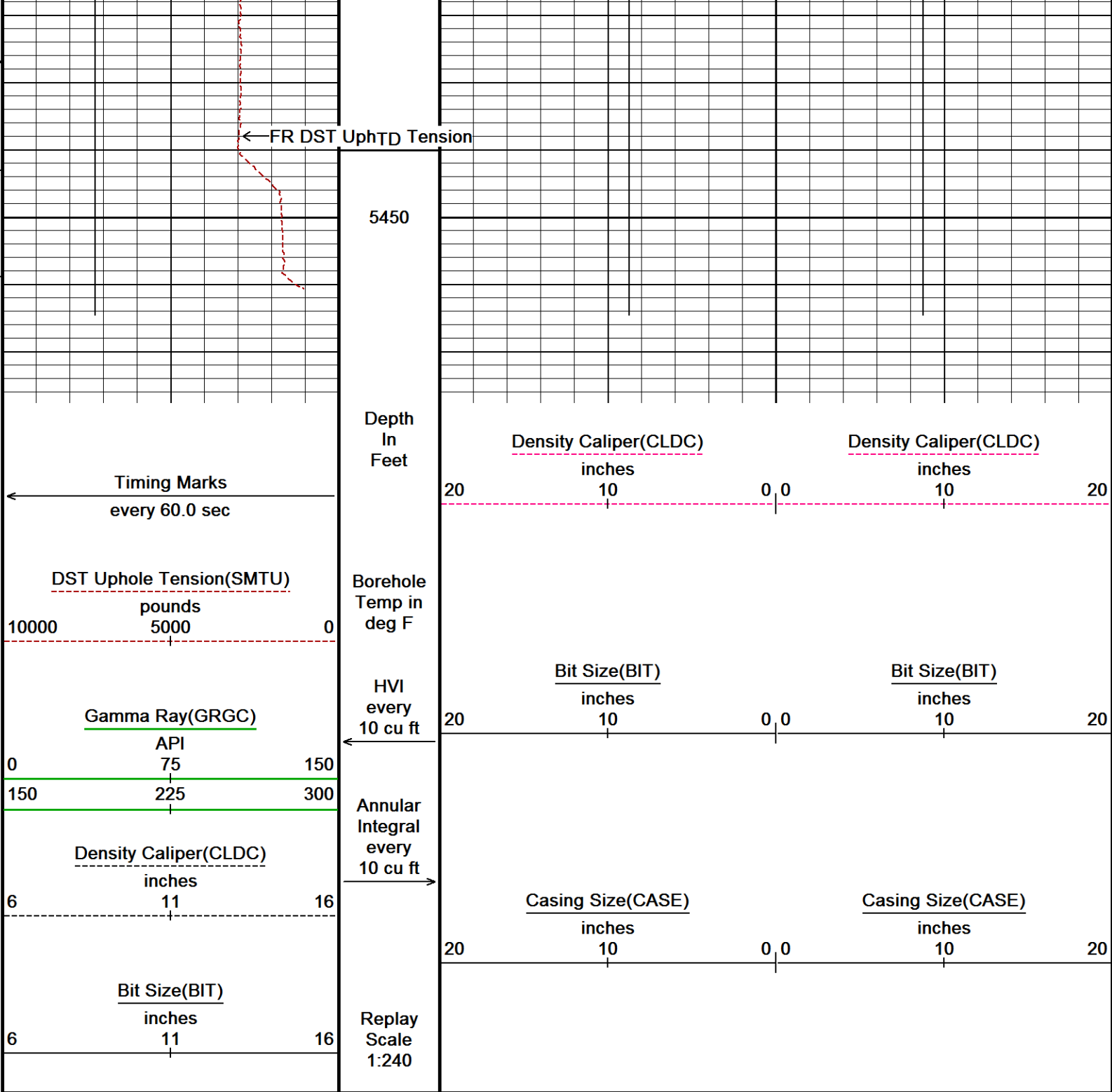
Bit Size →

Density Caliper →

Bit Size →

Density Caliper →





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Logs\East Cheyenne Gas Storage\ECGS No 6-21 WPD004-2\Main2.dta
System Versions: Logged with 14.01.3220 Processed with 14.01.3220 Plotted with 14.01.3220

Plotted on 18-OCT-2014 11:39
Recorded on 18-OCT-2014 08:21

↑ 5 INCH MAIN LOG DSC ↑

DOWNHOLE EQUIPMENT
C:\Logs\East Cheyenne Gas Storage\ECGS No 6-21 WPD004-2\Main2.dta

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 587 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Comms Gamma
MCG-E.A 514 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

71.38 ft GRGC - Gamma Ray
68.47 ft CGXT - MCG External Temperature

Compact Neutron
MDN-B.A 296 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 702 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Density/Caliper
MPD-D.A 460 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 115 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 786 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 88 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Focussed Electric
MFE-B.A 219 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

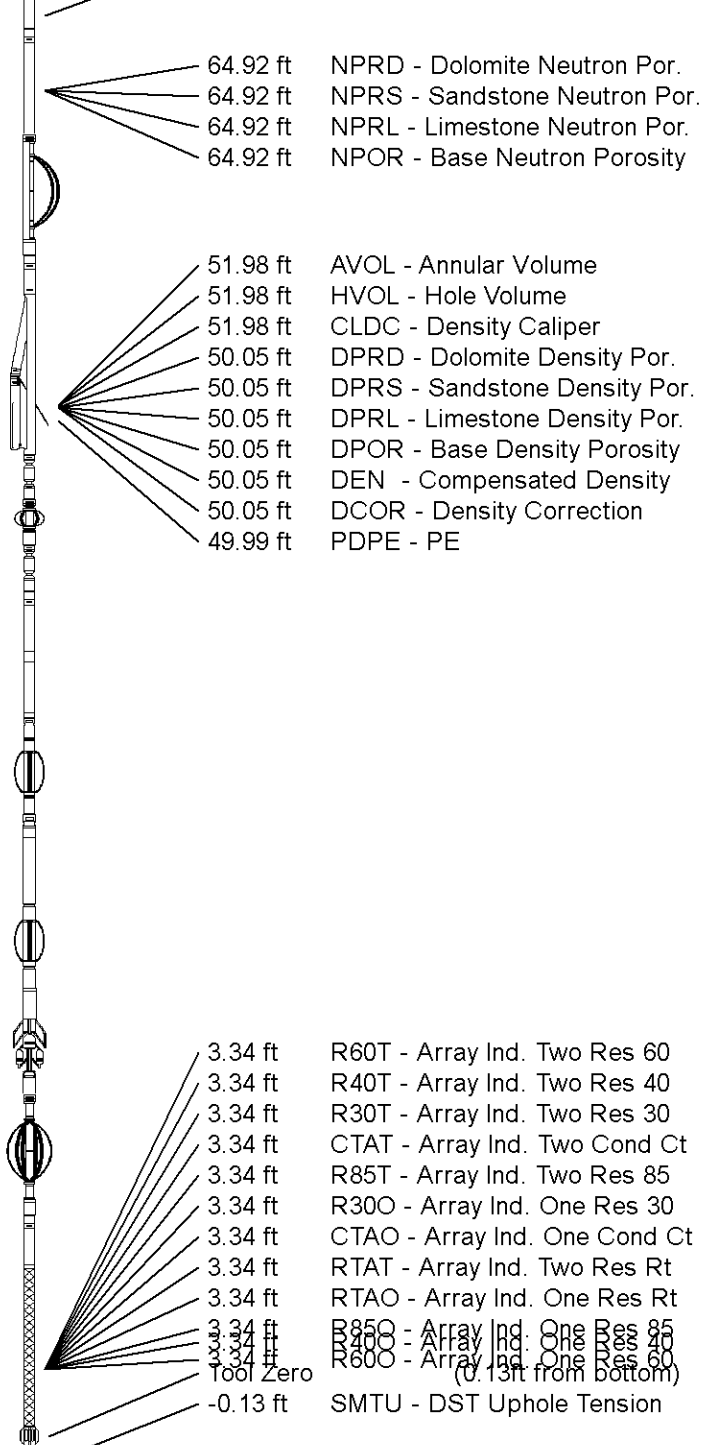
Compact MMI Memory Section
MIM-A.J 244 LG: 4.65 ft WT: 26.5 lb OD: 2.244 in

Compact MMI Electrode Section
MIE-A.J 244 LG: 13.96 ft WT: 99.2 lb OD: 4.094 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 730 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Induction
MAI-B.A 269 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in

Total Length: 78.96 ft Weight: 579.8 lb



COMPANY	EAST CHEYENNE GAS STORAGE LLC		
WELL	ECGS No 6-21 WPD004-2		
FIELD	WEST PEETZ		
PROVINCE/COUNTY	LOGAN		
COUNTRY/STATE	U.S.A / COLORADO		

Elevation Kelly Bushing	4567.00	feet	First Reading	5388.00	feet
Elevation Drill Floor	4566.00	feet	Depth Driller	5440.00	feet
Elevation Ground Level	4557.00	feet	Depth Logger	5440.00	feet



HOLE VOLUME
CALIPER
LOG

Weatherford®

