



Weatherford®

**MEASURED DEPTH
X-Y CALIPER
LOG**

COMPANY			WHITTING OIL AND GAS CORPORATION		
WELL			HORSETAIL 30F-1943		
FIELD			REDTAIL		
PROVINCE/COUNTY			WELD		
COUNTRY/STATE			U.S.A. / COLORADO		
LOCATION			SHL: 2324' FNL & 1920' FWL		
PERMIT NUMBER			AFE: 13-1914		
SEC 30	TWP 10N	RGE 57W	Other Services		
			INDUCTION		
			IMAGER		
API Number			05-123-38739 NEUTRON/DENSITY		
Permanent Datum G.L., Elevation 4780 feet					
Log Measured From KB					
Drilling Measured From K.B. @ 17 FEET					
Date	9-OCT-2014				
Run Number	ONE				
Service Order	2577-100067384				
Depth Driller	13702.00		feet		
Depth Logger	13702.00		feet		
First Reading	13655.00		feet		
Last Reading	5995.00		feet		
Casing Driller	5993.00		feet		
Casing Logger	5995.00		feet		
Bit Size	6.000		inches		
Hole Fluid Type	WBM				
Density / Viscosity	10.20 lb/USg		42.00		type in
PH / Fluid Loss	9.00		3.80		ml/30Min
Sample Source	FLOWLINE				
Rm @ Measured Temp	1.65 @ 63.7		ohm-m		
Rmf @ Measured Temp	1.32 @ 63.7		ohm-m		
Rmc @ Measured Temp	1.98 @ 63.7		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.51 @215.0		ohm-m		
Time Since Circulation	NO DELAY				
Max Recorded Temp	215.00		deg F		
Equipment / Base	18063		Casper		
Recorded By	M.RICHINS				
Witnessed By	M. ODEGARD				
WSL	K.RENTON		GEOLOGIST		
			WSL		

BOREHOLE RECORD					Last Edited: 09-OCT-2014 19:59
Bit Size inches		Depth From feet		Depth To feet	
6.000		5993.00		13702.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	7.000	0.00	5993.00	29.00	

REMARKS
LOGGED WITH WLS 14.01.3220
LOGGED USING MESSENGER SHUTTLE METHOD OF DEPLOYMENT
HARDWARE:
MDN: MIS-A DOUBLE BOWSPRING USED ABOVE MDN
MPD: 4INCH PROFILE PLATE USED, MIS-A SINGLE BOWSPRING USED BELOW MPD
CMI: OVER BODY BASKET AND MIS-D BASKETS PLACED ABOVE AND BELOW FOR CENTRALIZATION
SGS: RAN BELOW CMI. ECCENTRALIZED WITH SKJ.
2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
LONGITUDE: -103.796464
LATITUDE: 40.810683
ANNULAR HOLE VOLUME FROM TD TO CASING AT 5995 FEET = 770 CUBIC FEET

ANNULAR HOLE VOLUME FROM TD TO CASING AT 5995 FEET = 170 CUBIC FEET.
TOTAL HOLE VOLUME FROM TD TO CASING AT 5995 FEET = 1620 CUBIC FEET.

DRILL PIPE DEPTH DURING DEPLOYMENT: 13586.17 FEET
LOGGING TOOL DEPTH AFTER DEPLOYMENT: 13688.35 FEET

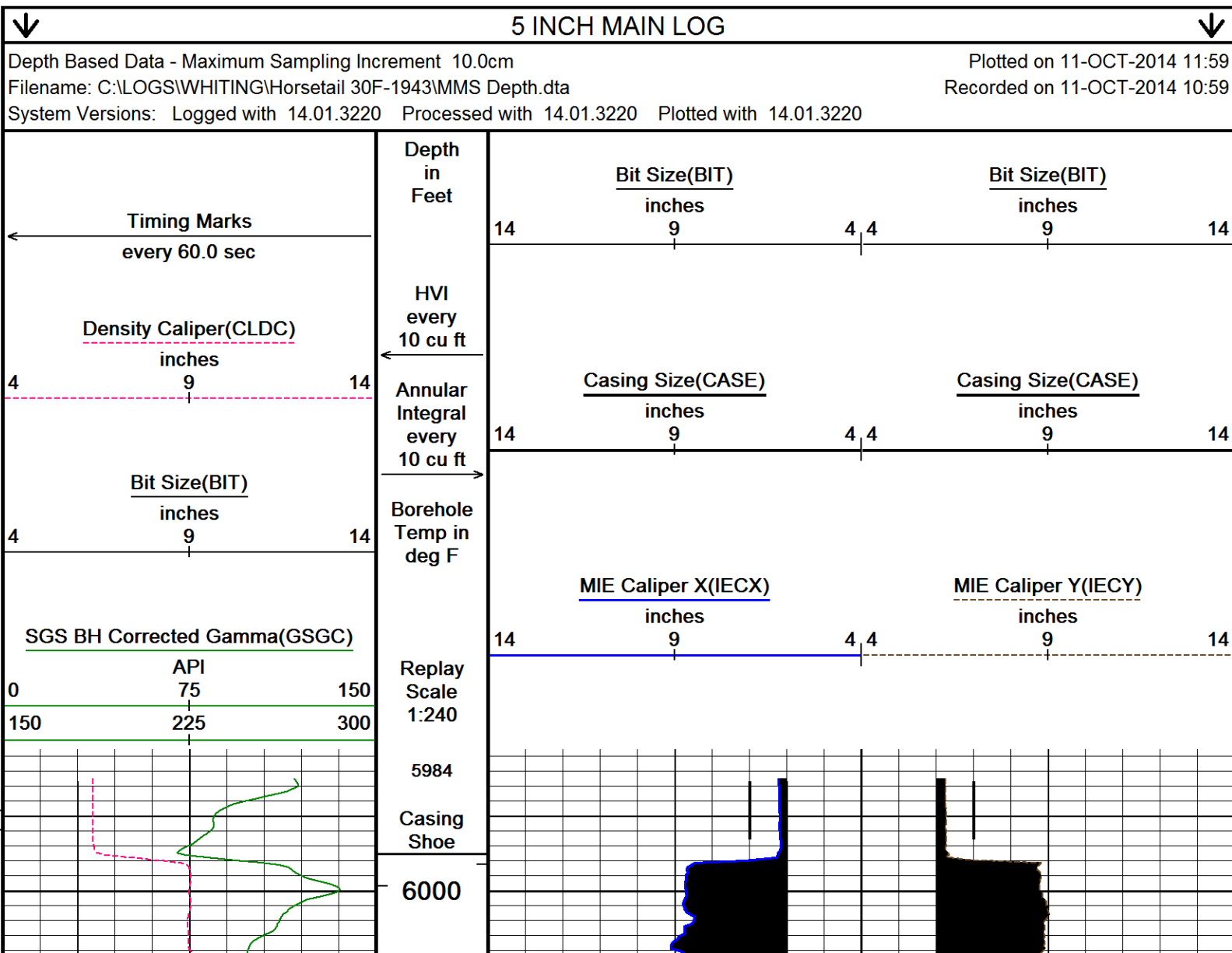
SLOWLY ROTATED LAST 26 STANDS DOWN AT 20-30 RPM TO REACH TD - EXCESSIVE STICK/SLIP LOW HOOKLOAD WHEN NOT ROTATING.

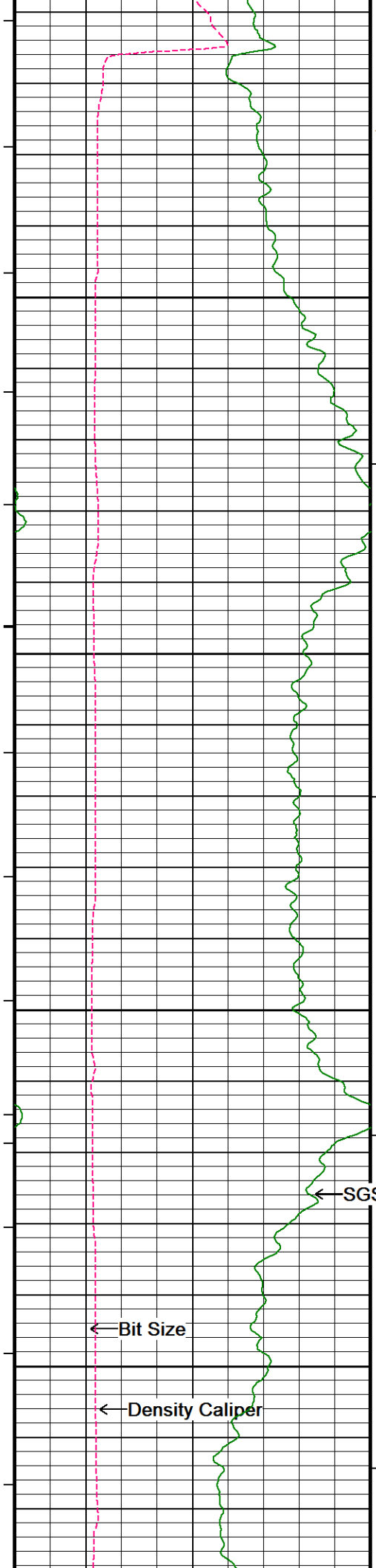
PIPE ROTATED AT 20 RPM FOR FIRST 10 STANDS DURING LOGGING RUN

OPERATORS: D.SMITH, C.WADLINGTON

RIG: XTREME 18

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.





1600

201°

6050

201°

6100

202°

6150

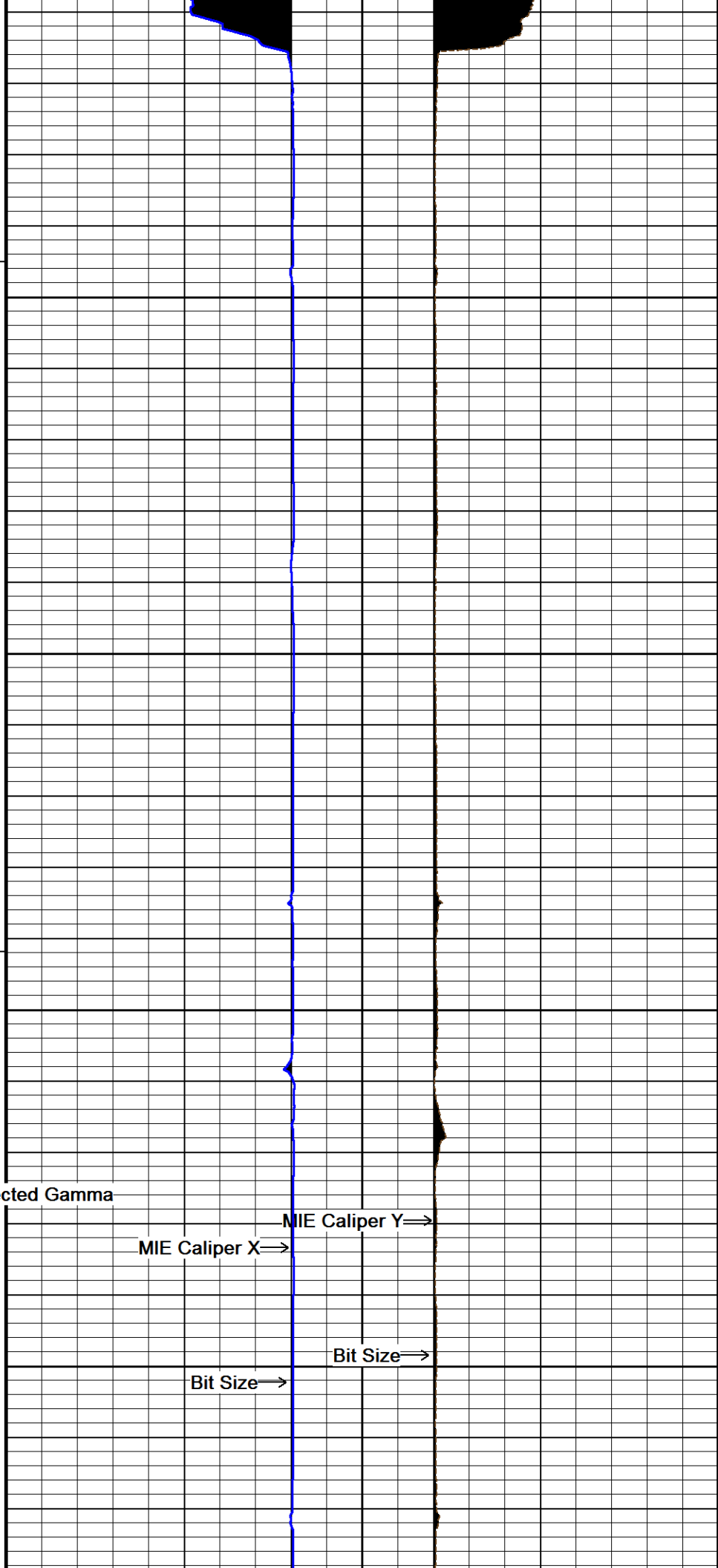
← SGS BH Corrected Gamma

202°

6200

← Bit Size

← Density Caliper

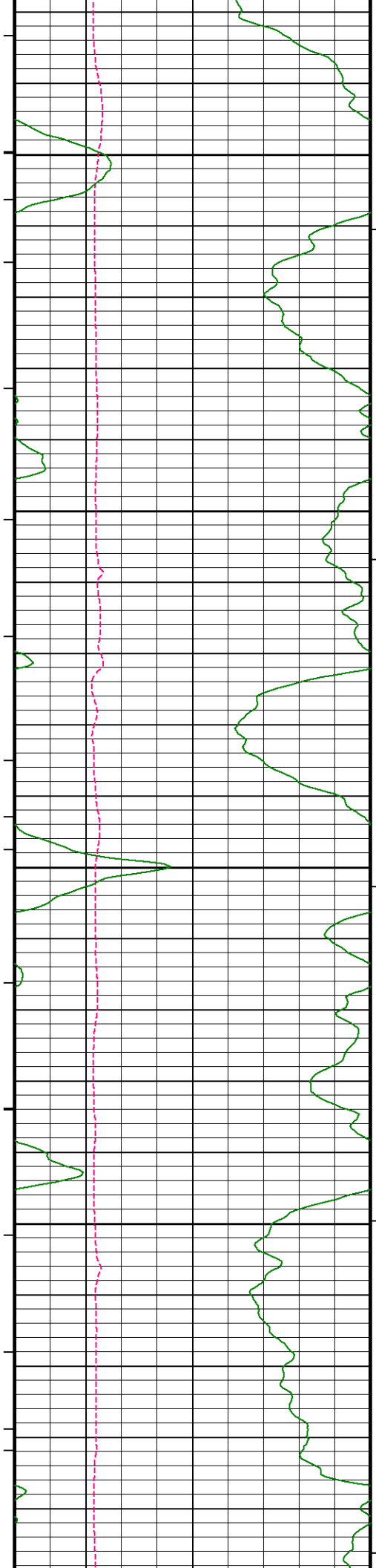


MIE Caliper Y⇒

MIE Caliper X⇒

Bit Size⇒

Bit Size⇒



202°

6250

203°

6300

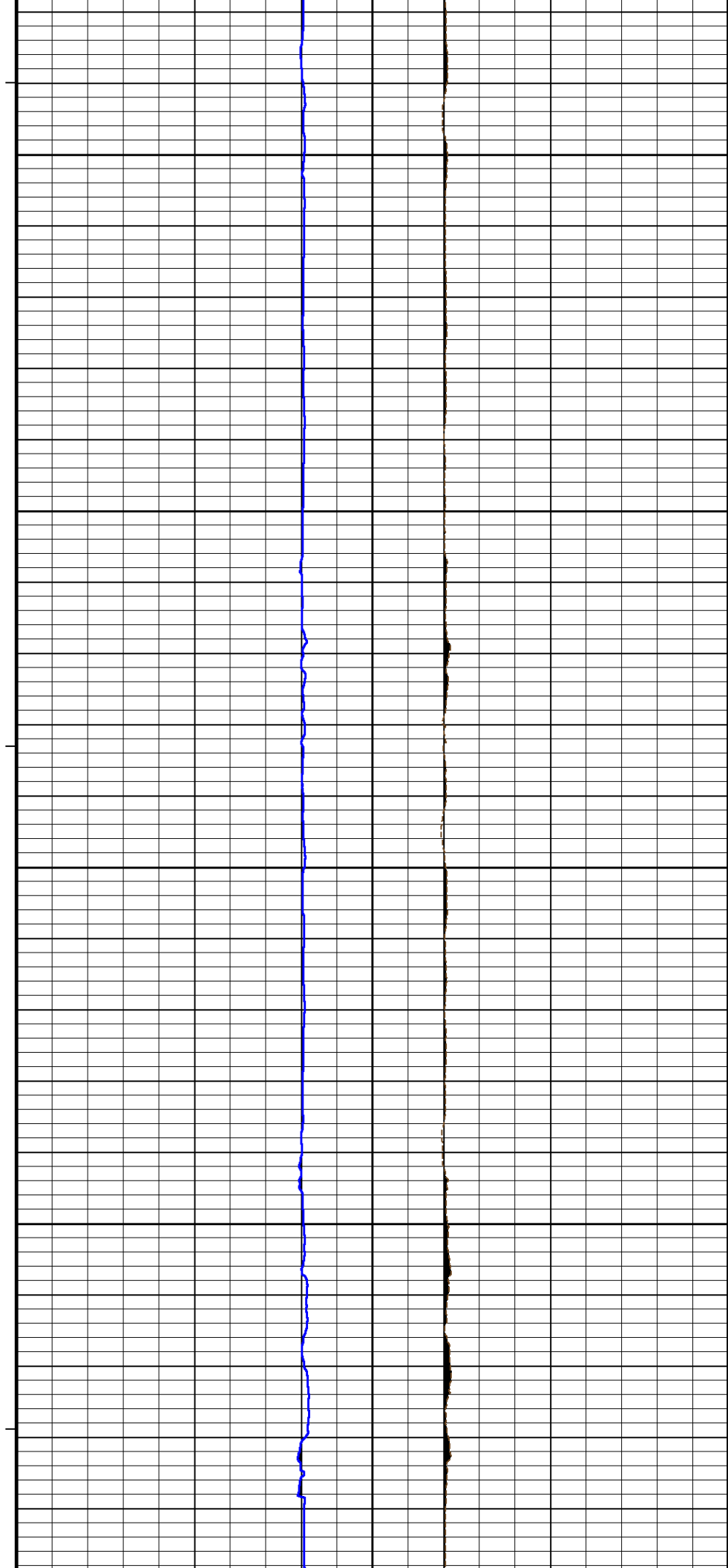
203°

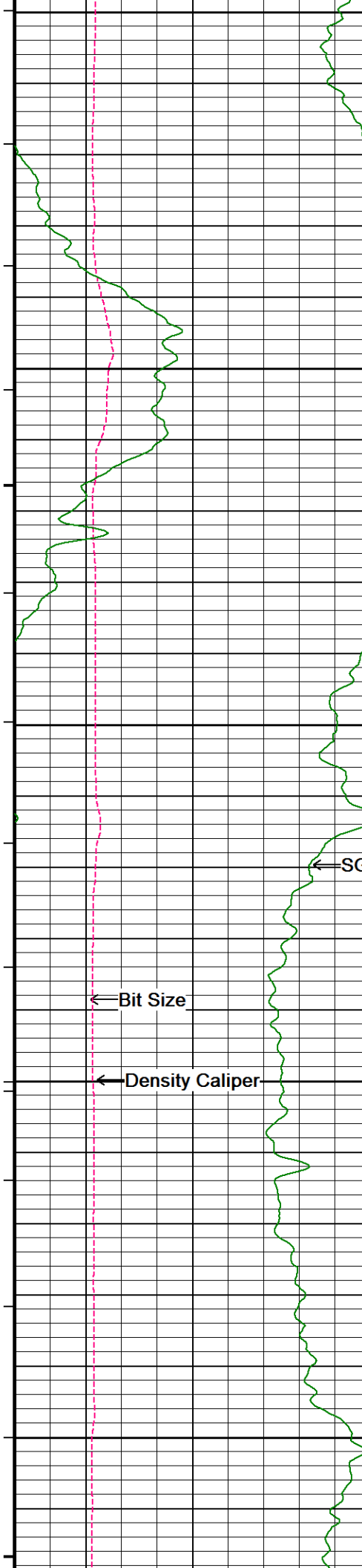
6350

203°

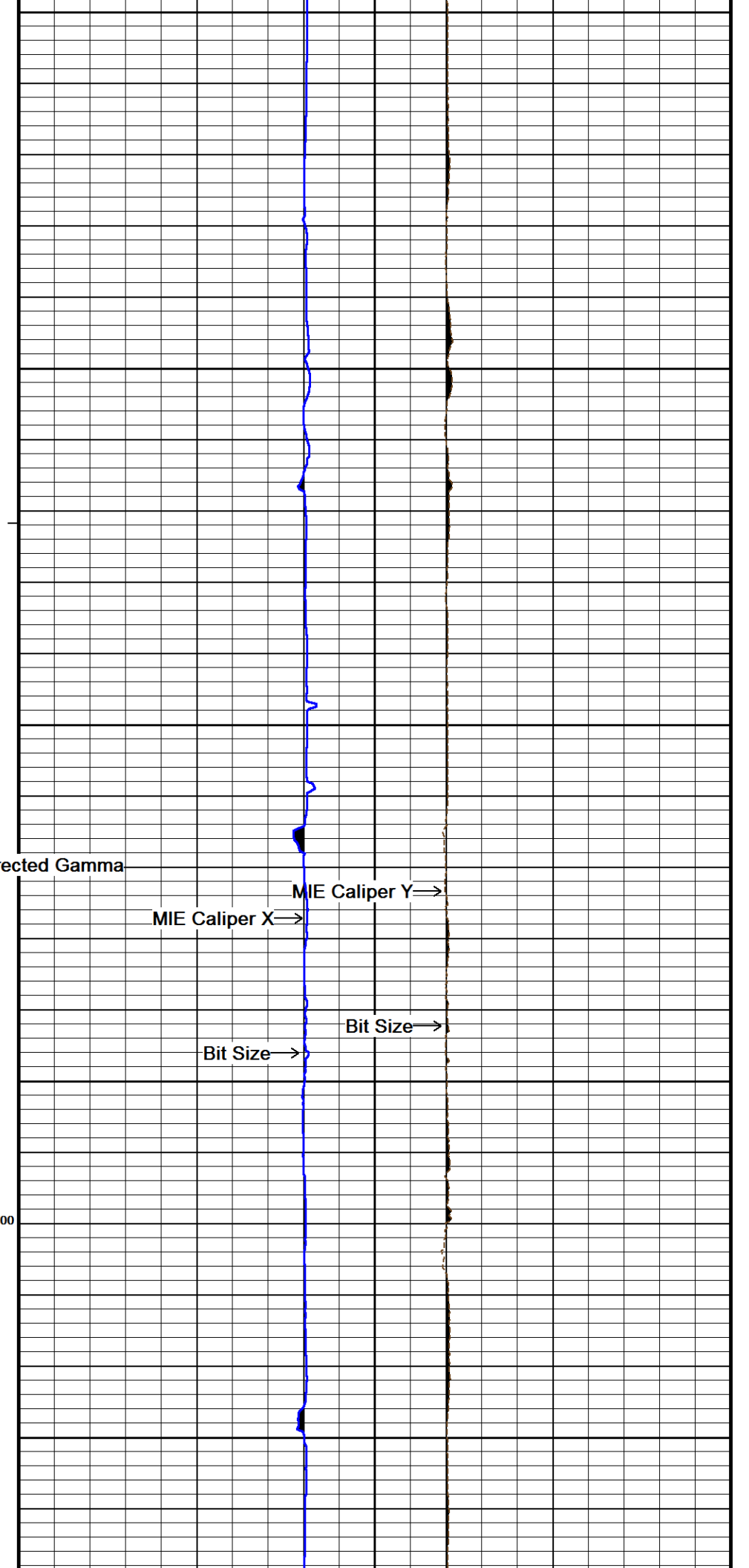
6400

203°





6450
204°
1500
6500
204°
6550
204°
6600
700
204°
6650



← SGS BH Corrected Gamma

MIE Caliper Y →

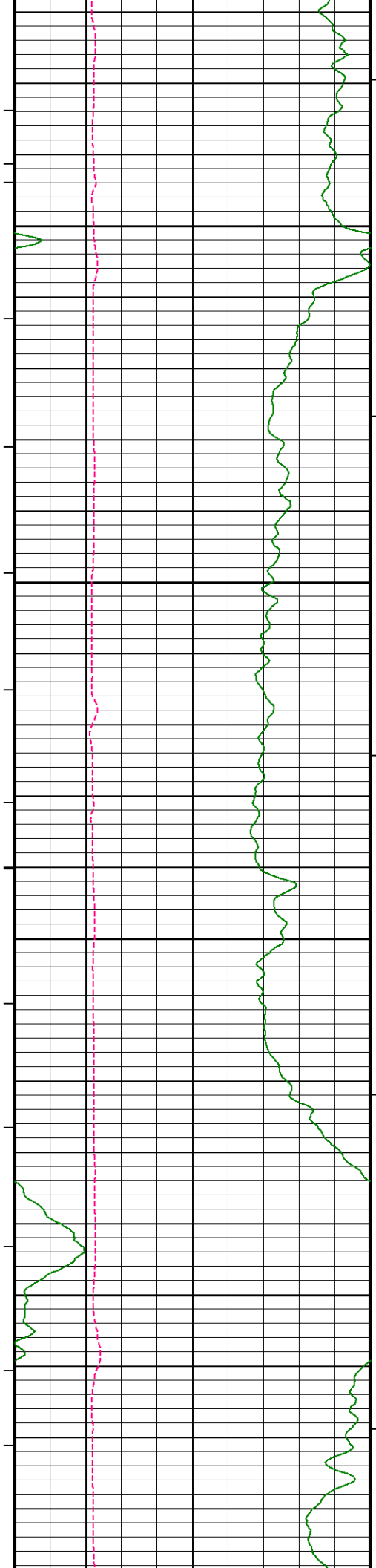
MIE Caliper X →

← Bit Size

Bit Size →

← Density Caliper

Bit Size →



205°

6700

205°

6750

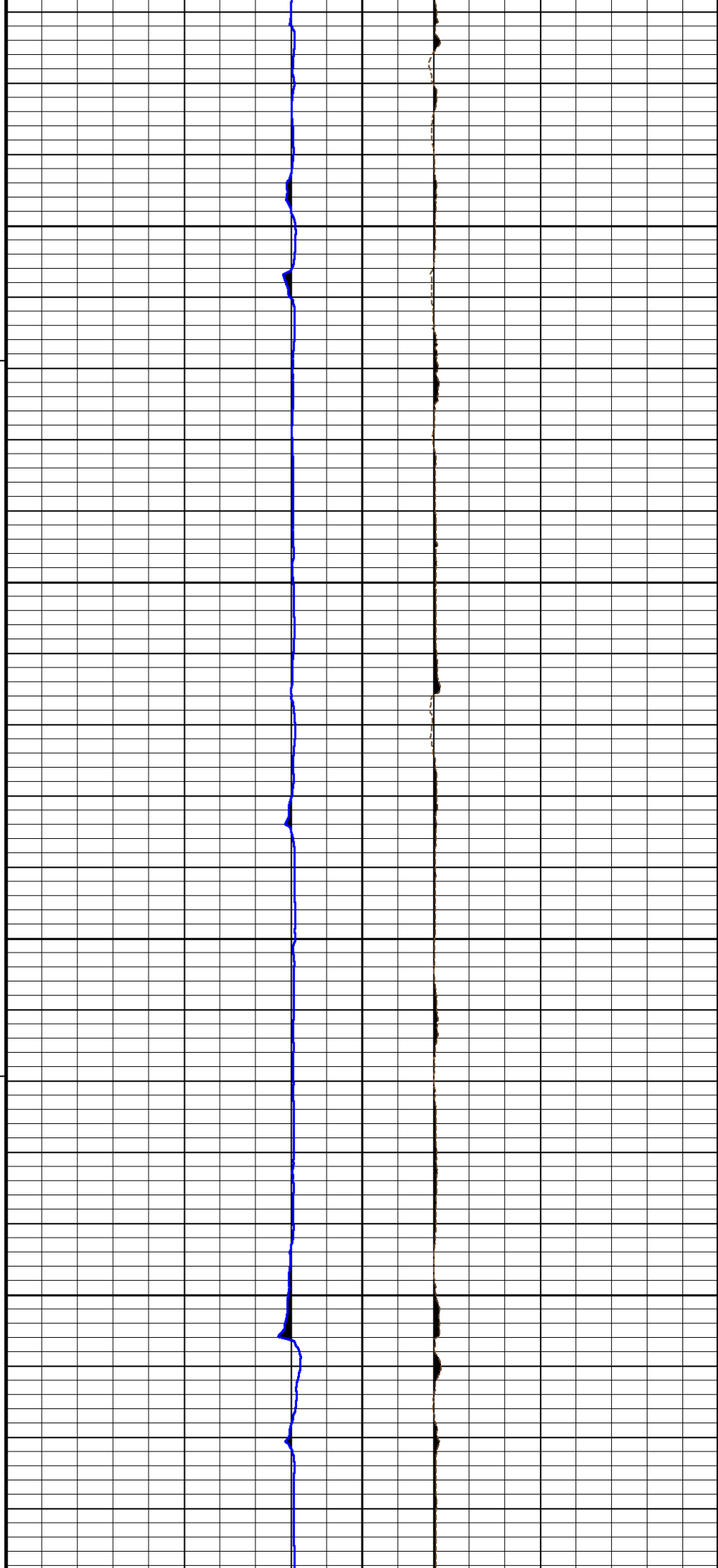
205°

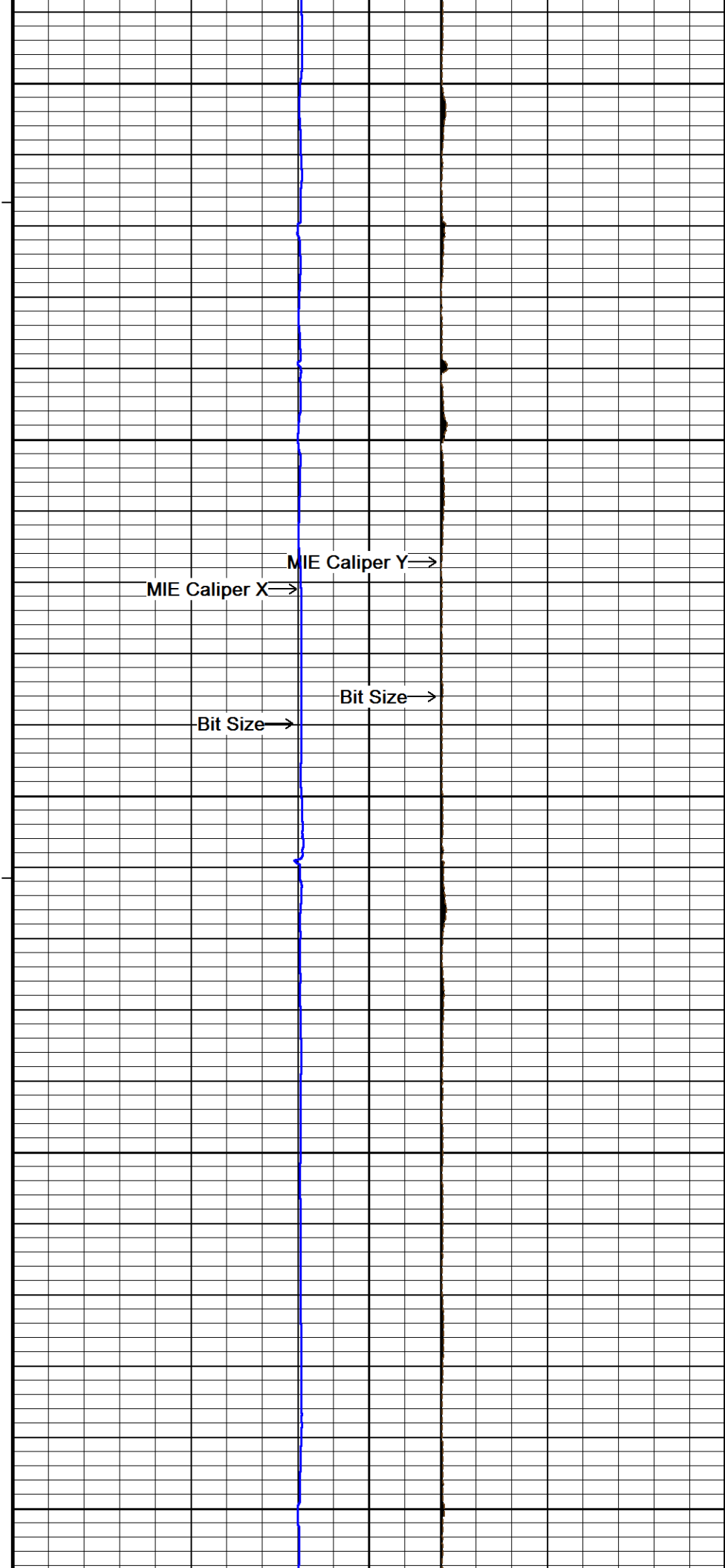
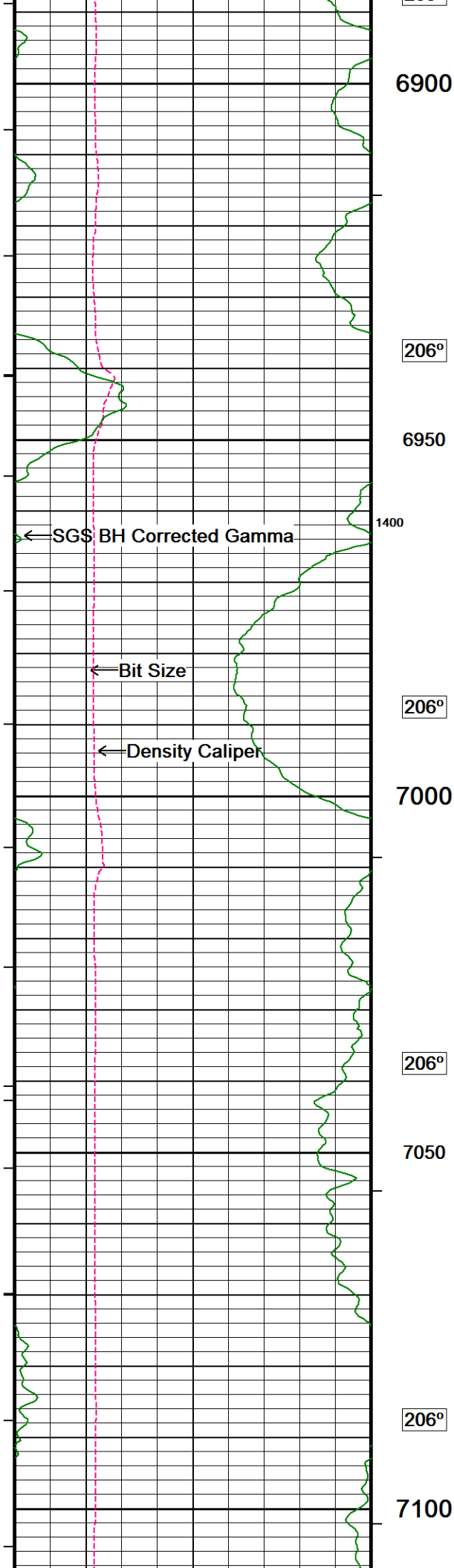
6800

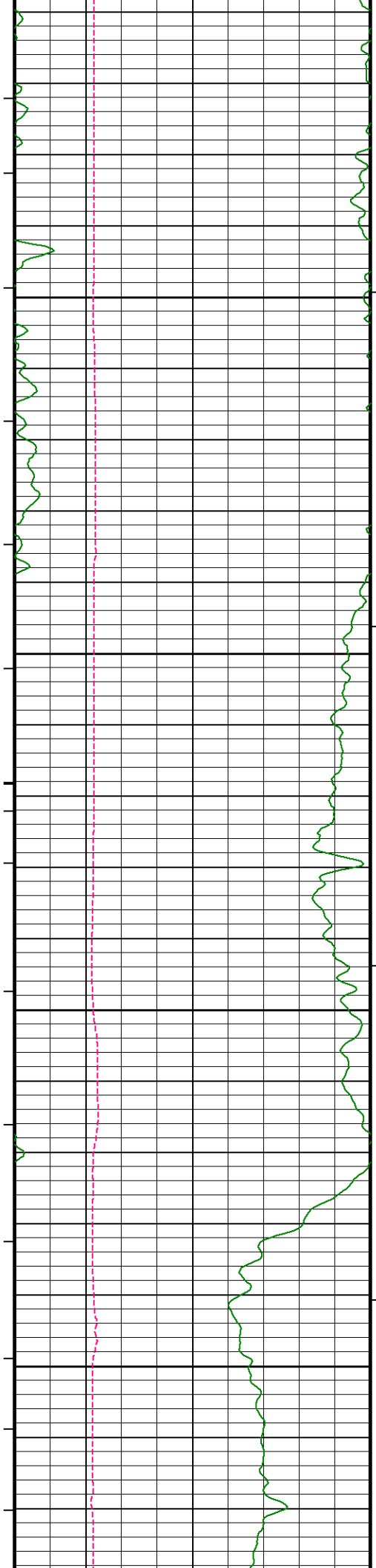
205°

6850

205°







206°

7150

207°

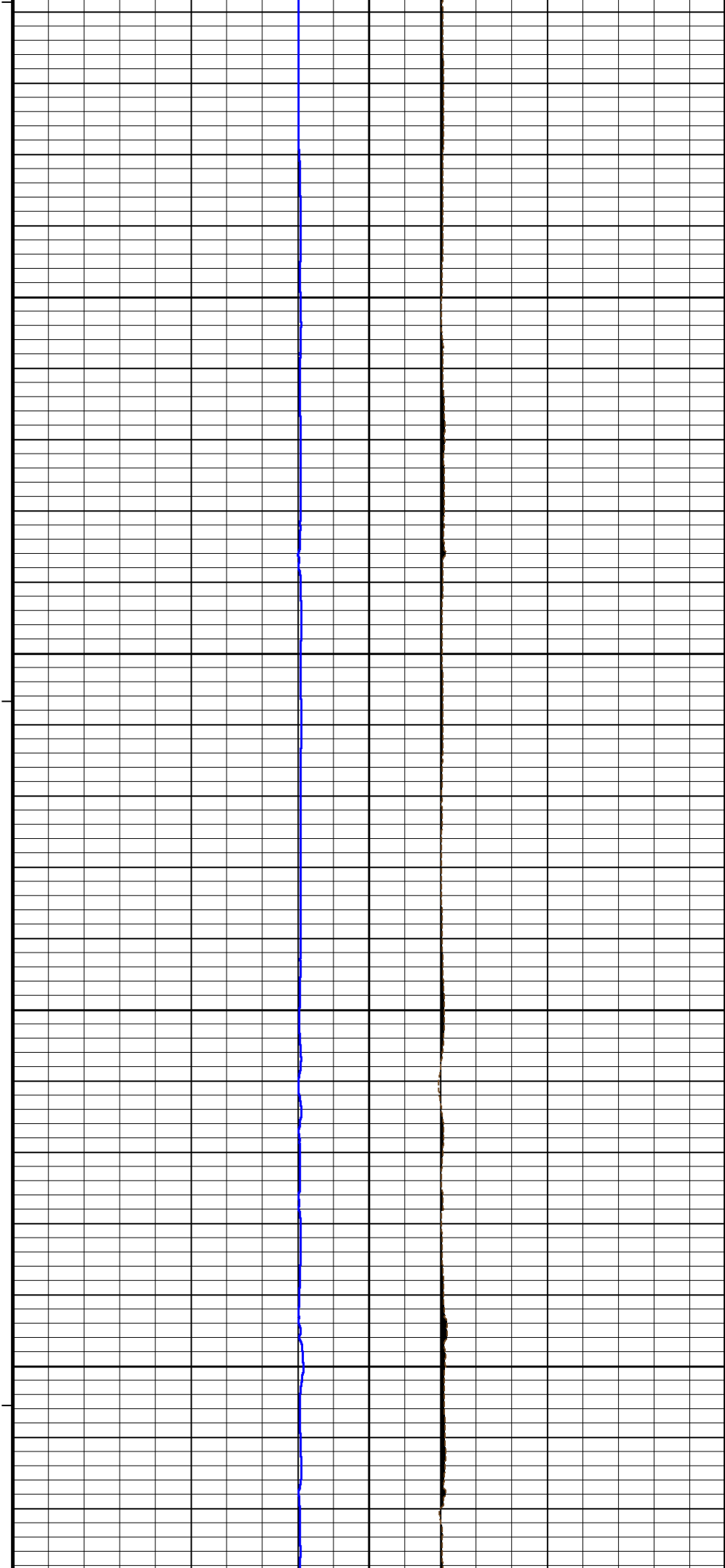
7200

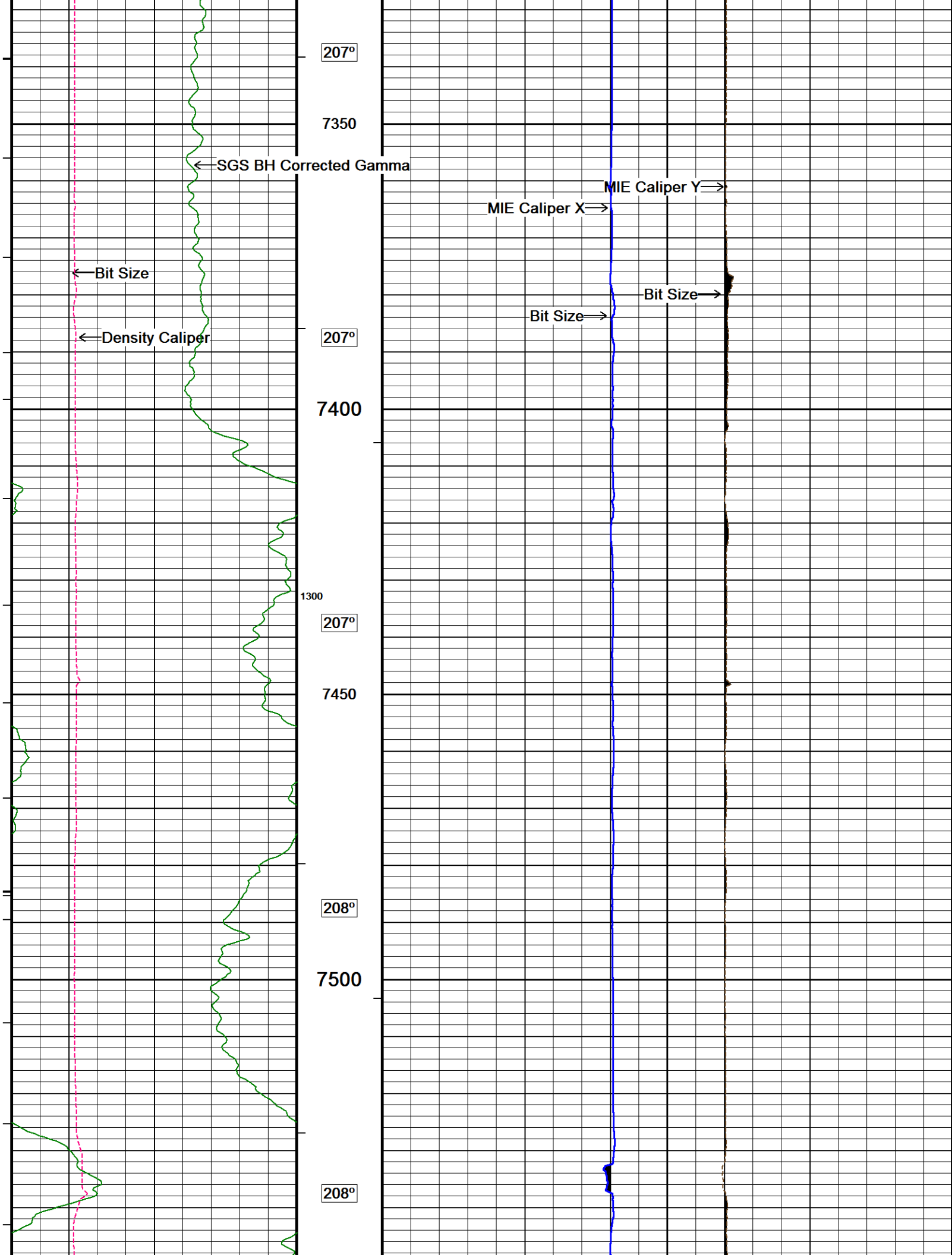
207°

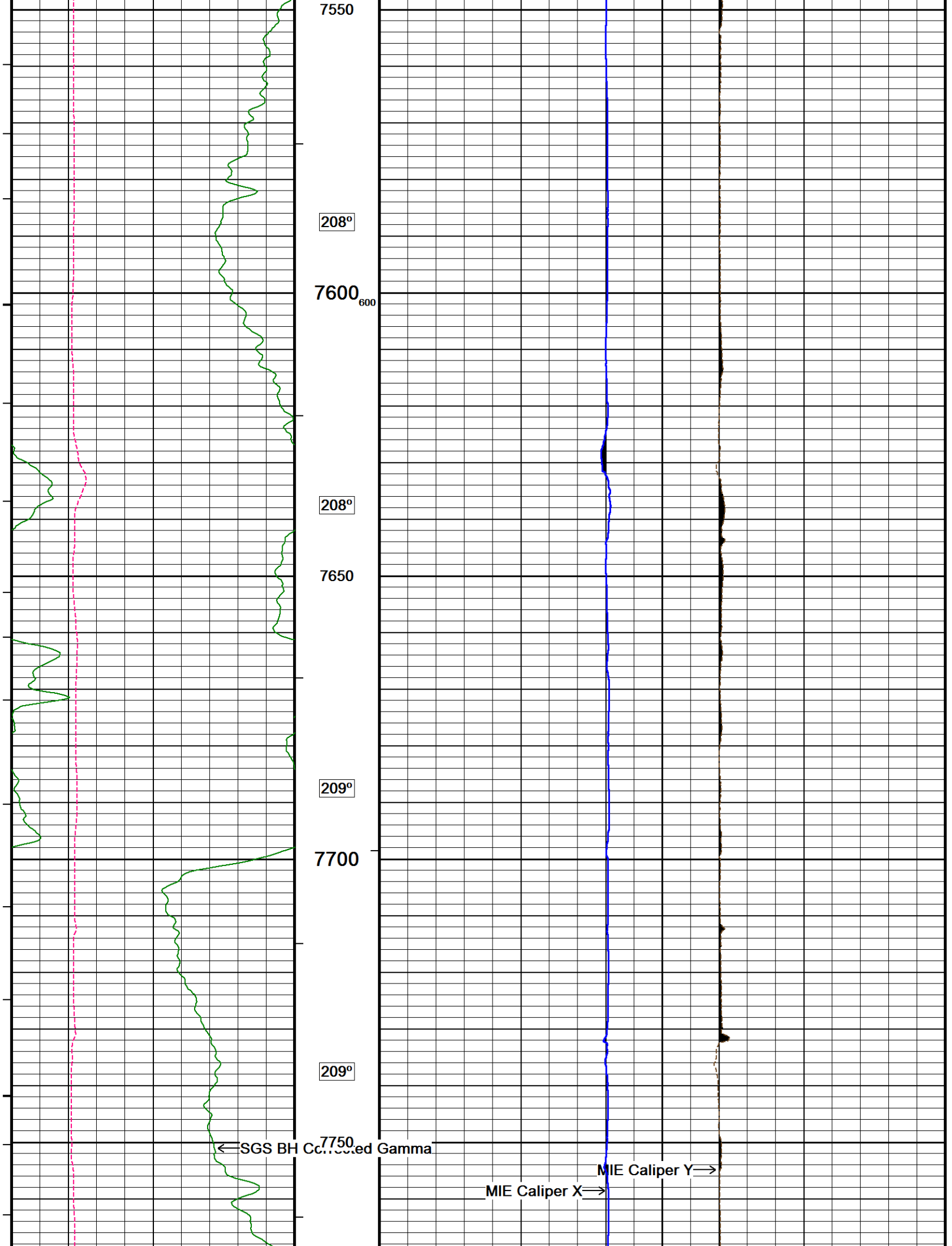
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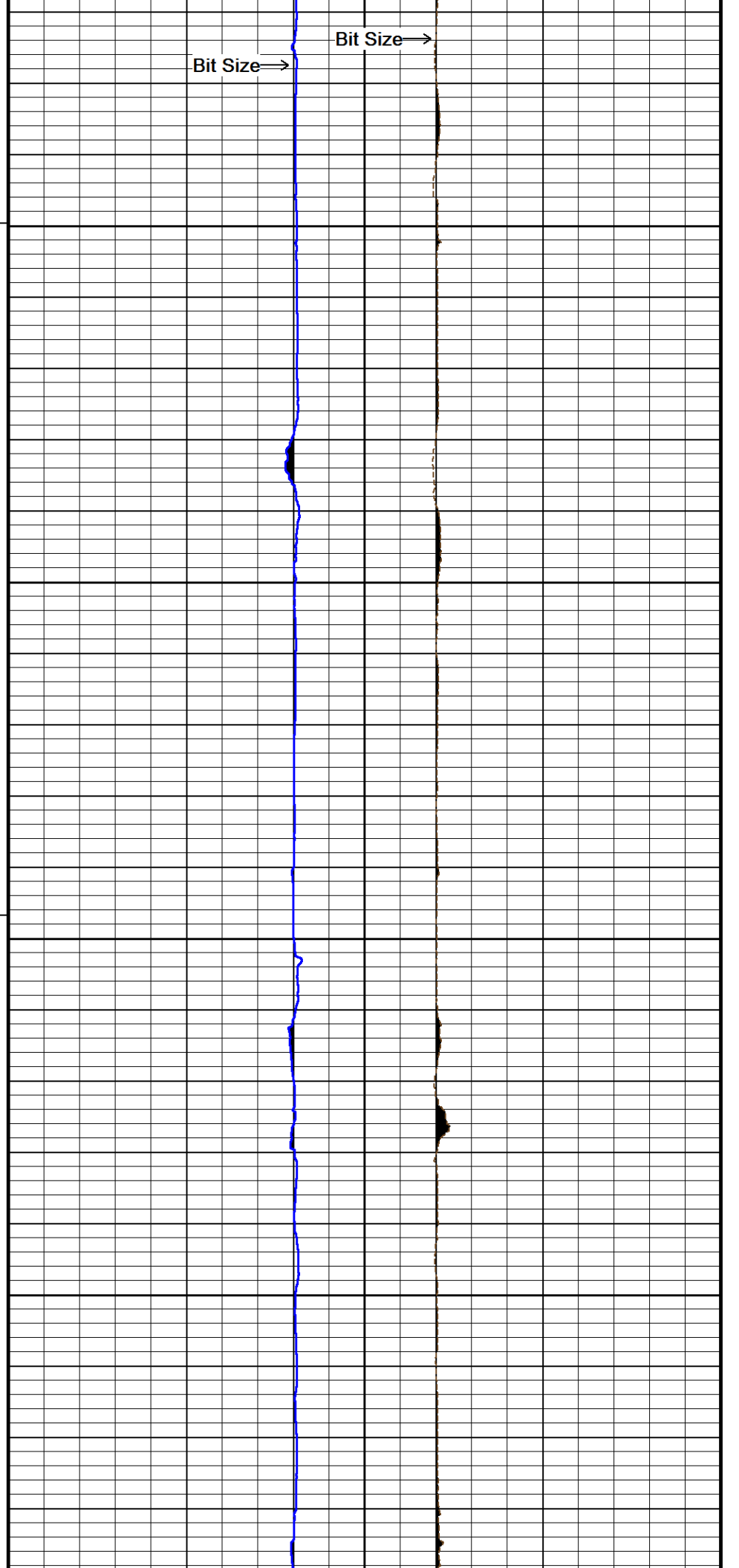
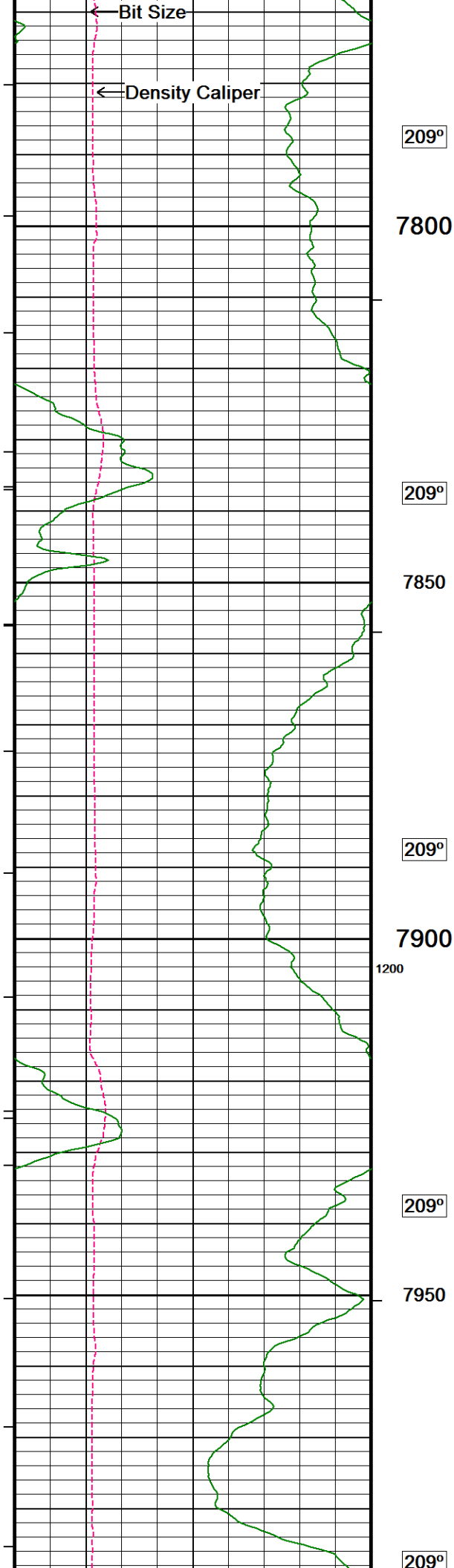
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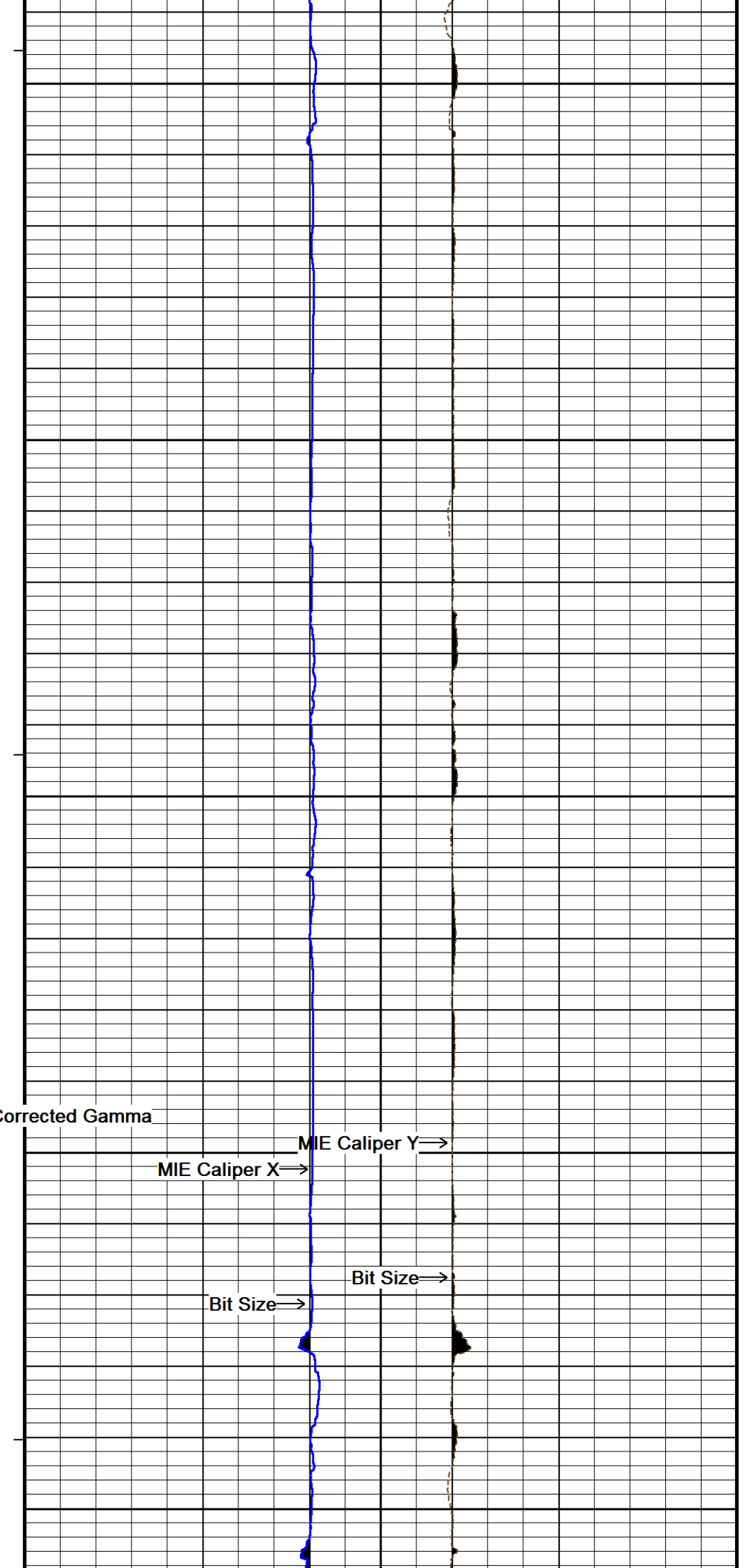
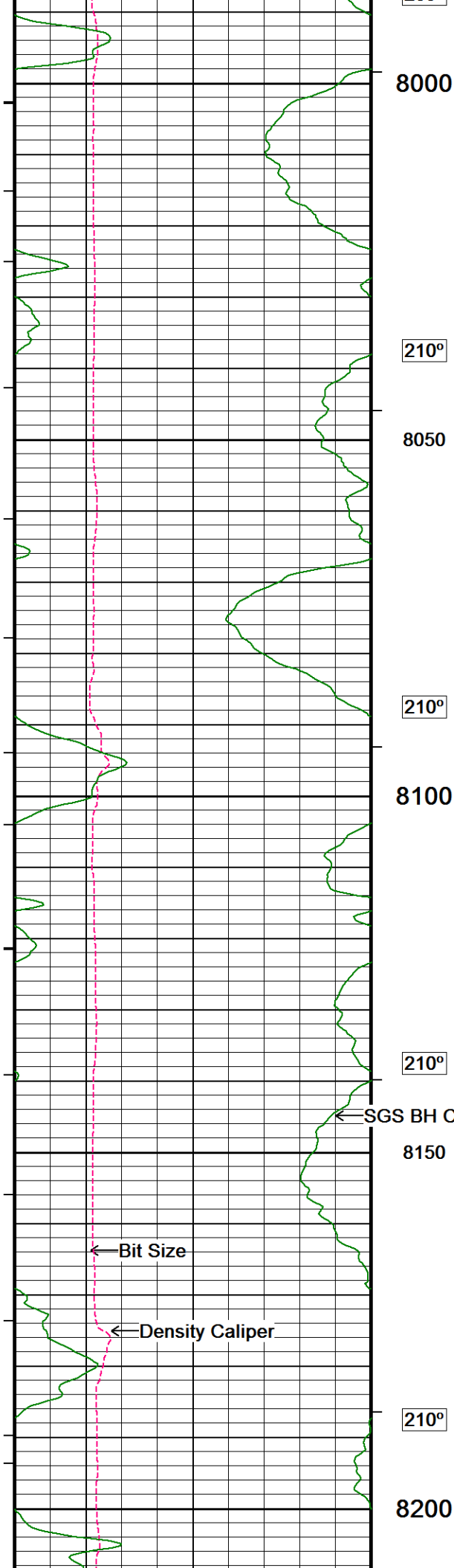
7300













210°

8250

210°

8300

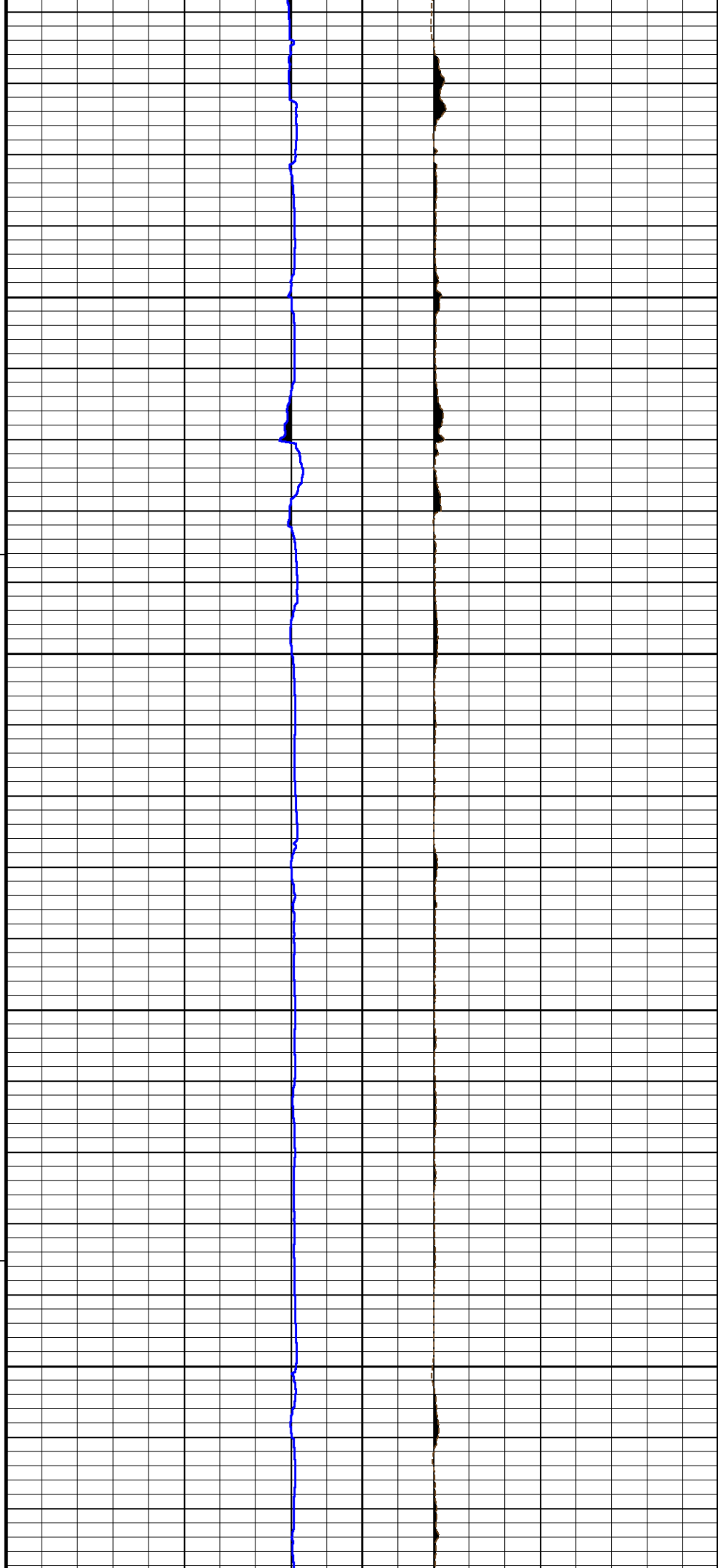
211°

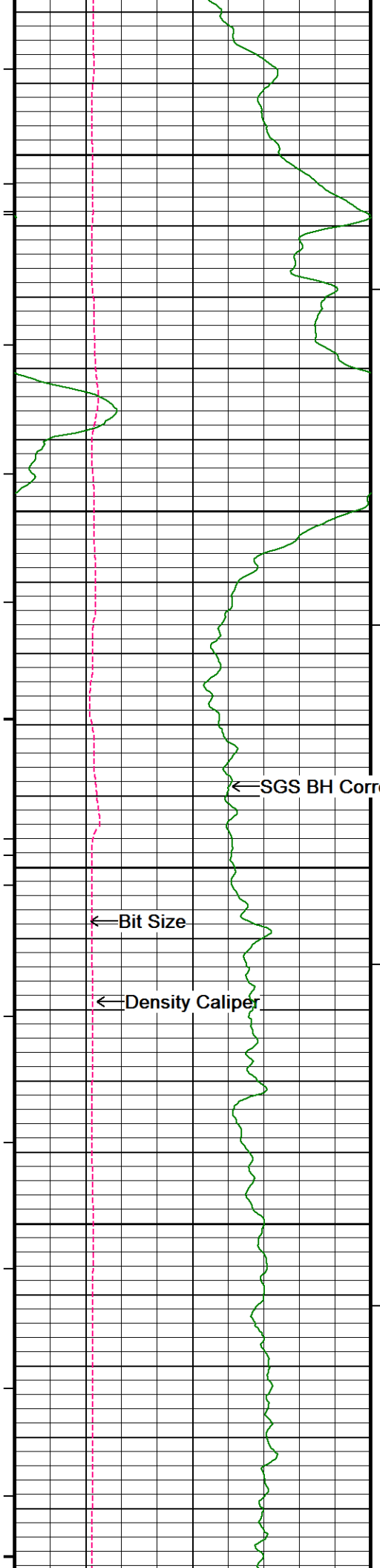
8350

1100

211°

8400





211°

8450

211°

8500

211°

8550

211°⁵⁰⁰

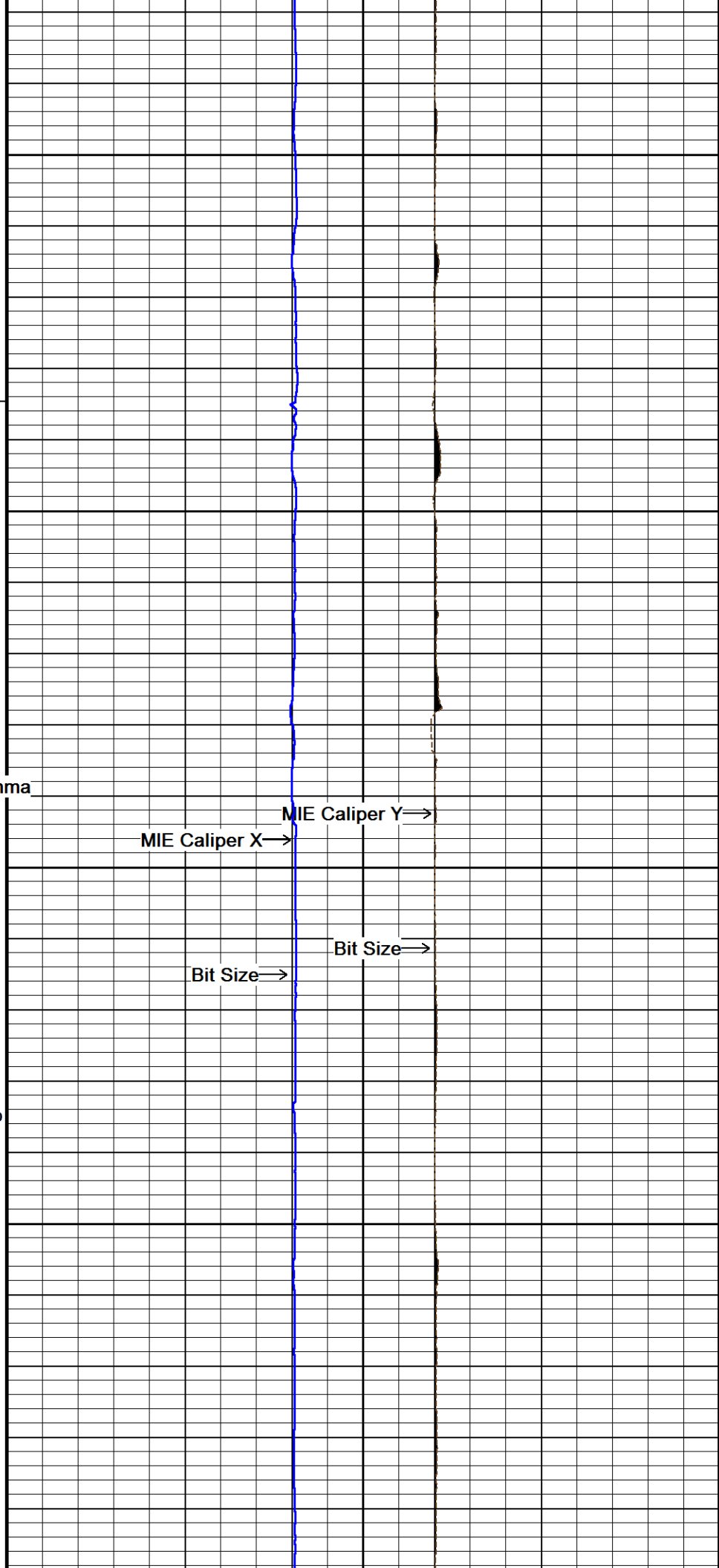
8600

211°

← SGS BH Corrected Gamma

← Bit Size

← Density Caliper

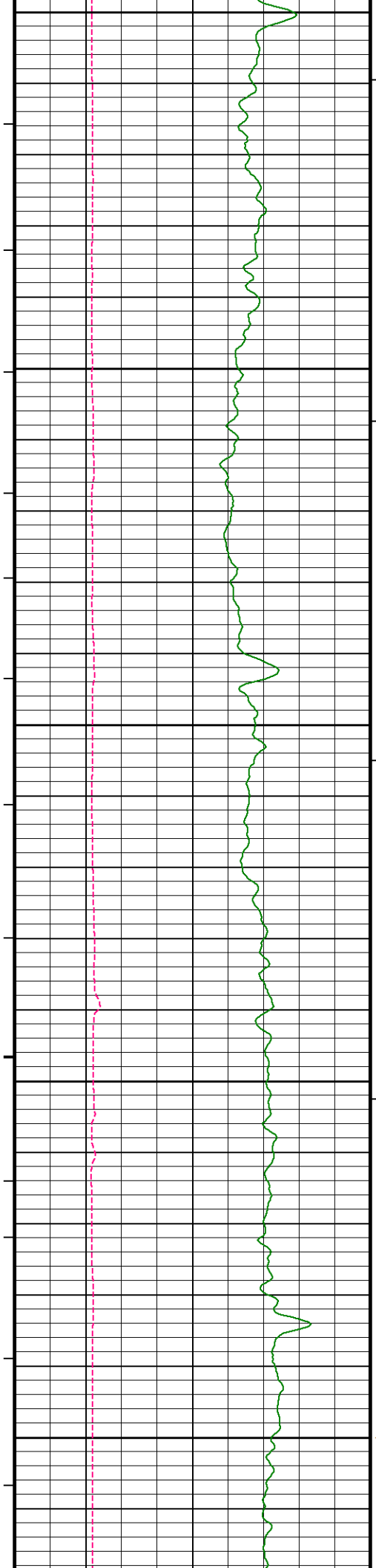


MIE Caliper Y⇒

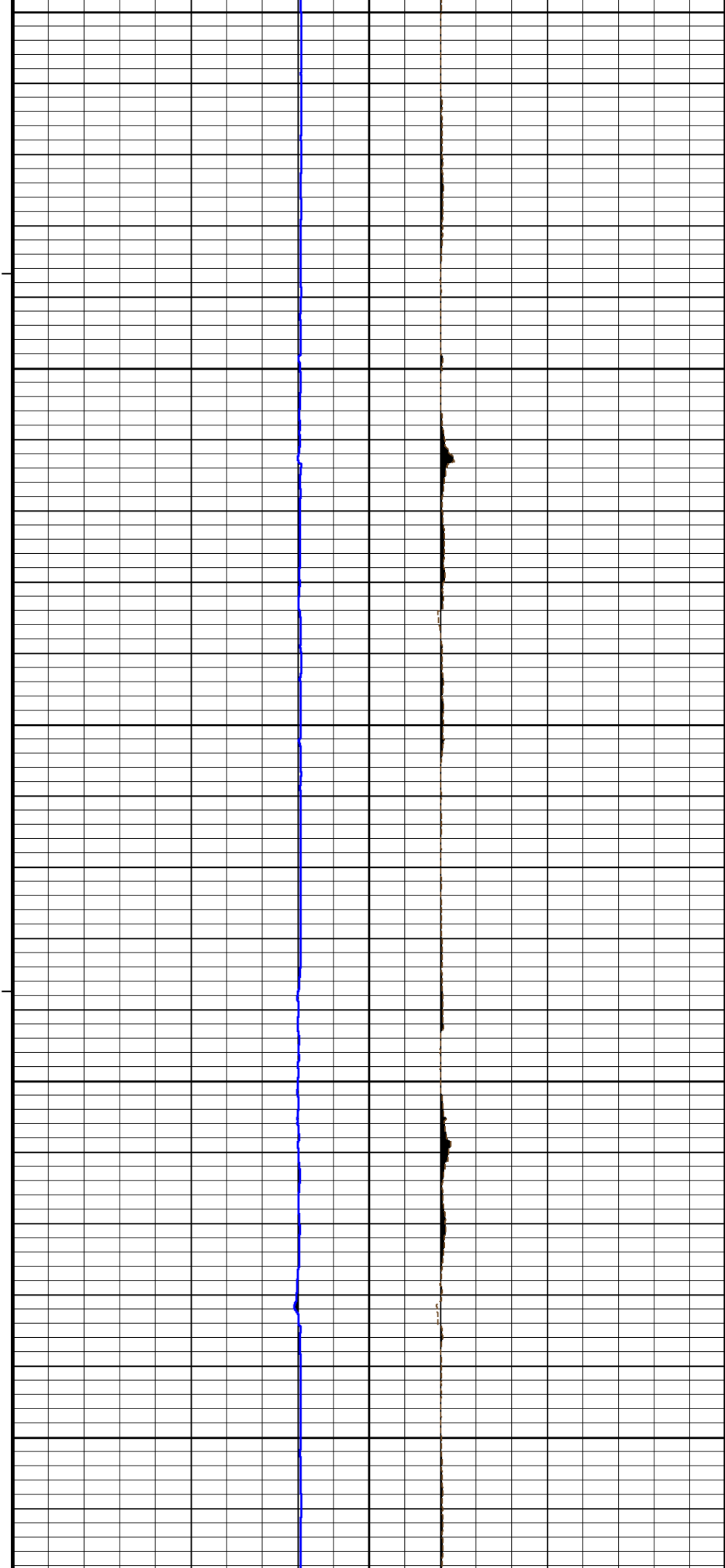
MIE Caliper X→

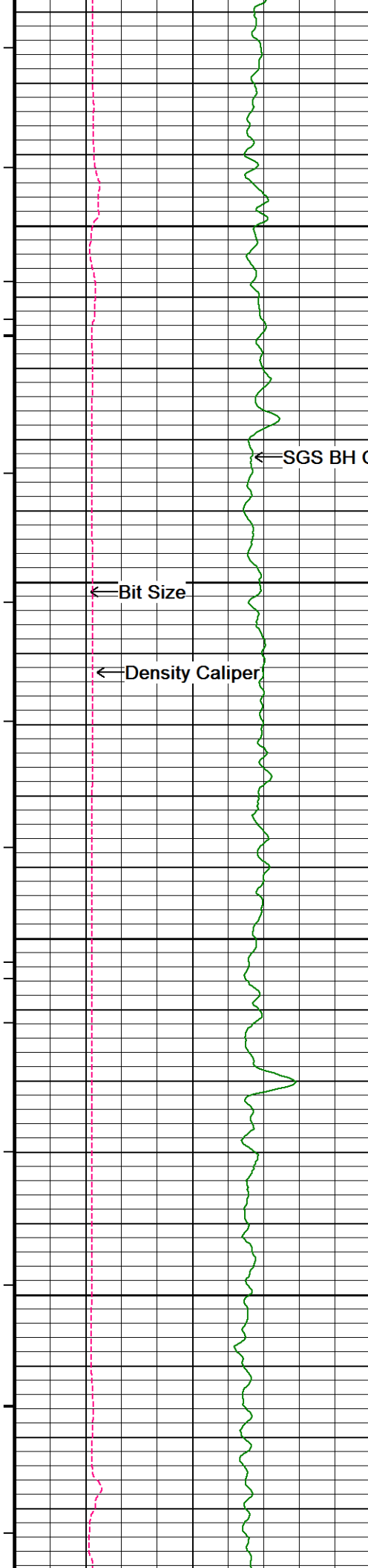
Bit Size→

Bit Size⇒



8650
212°
8700
212°
8750
212°
8800
212°
10008850





212°

8900

← SGS BH Corrected Gamma

212°

8950

← Bit Size

← Density Caliper

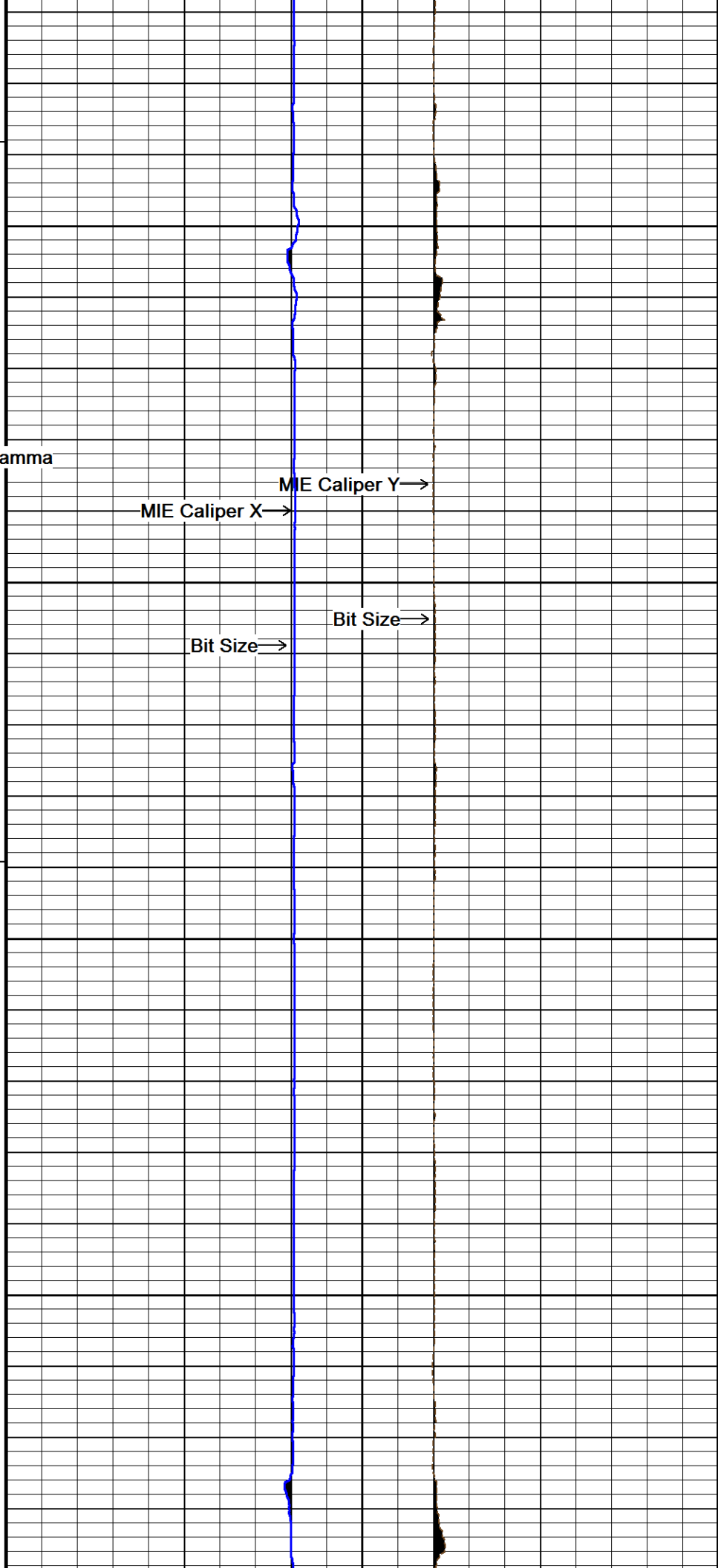
212°

9000

212°

9050

212°

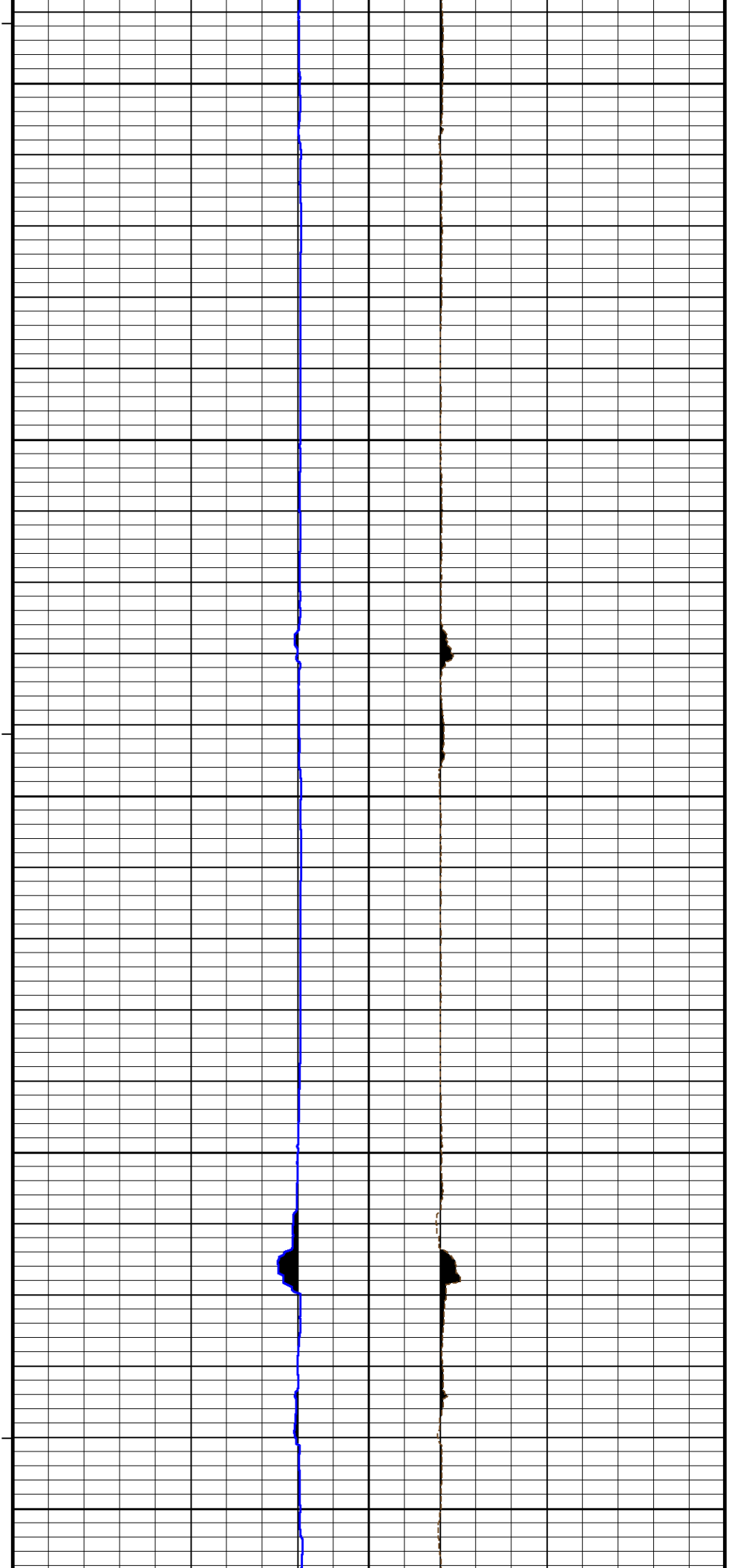
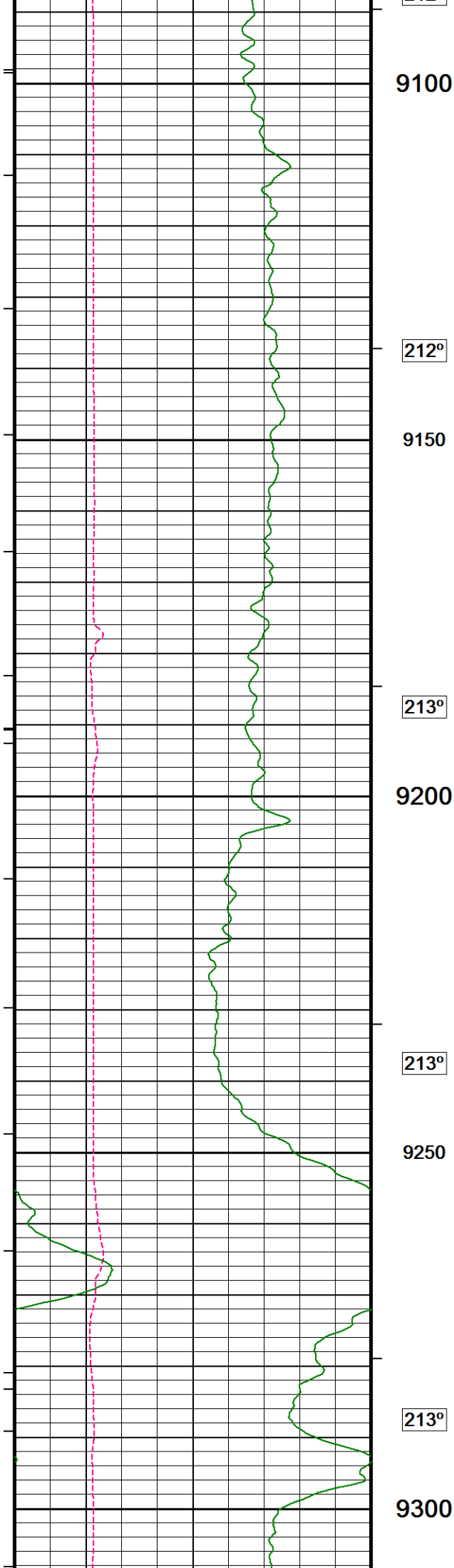


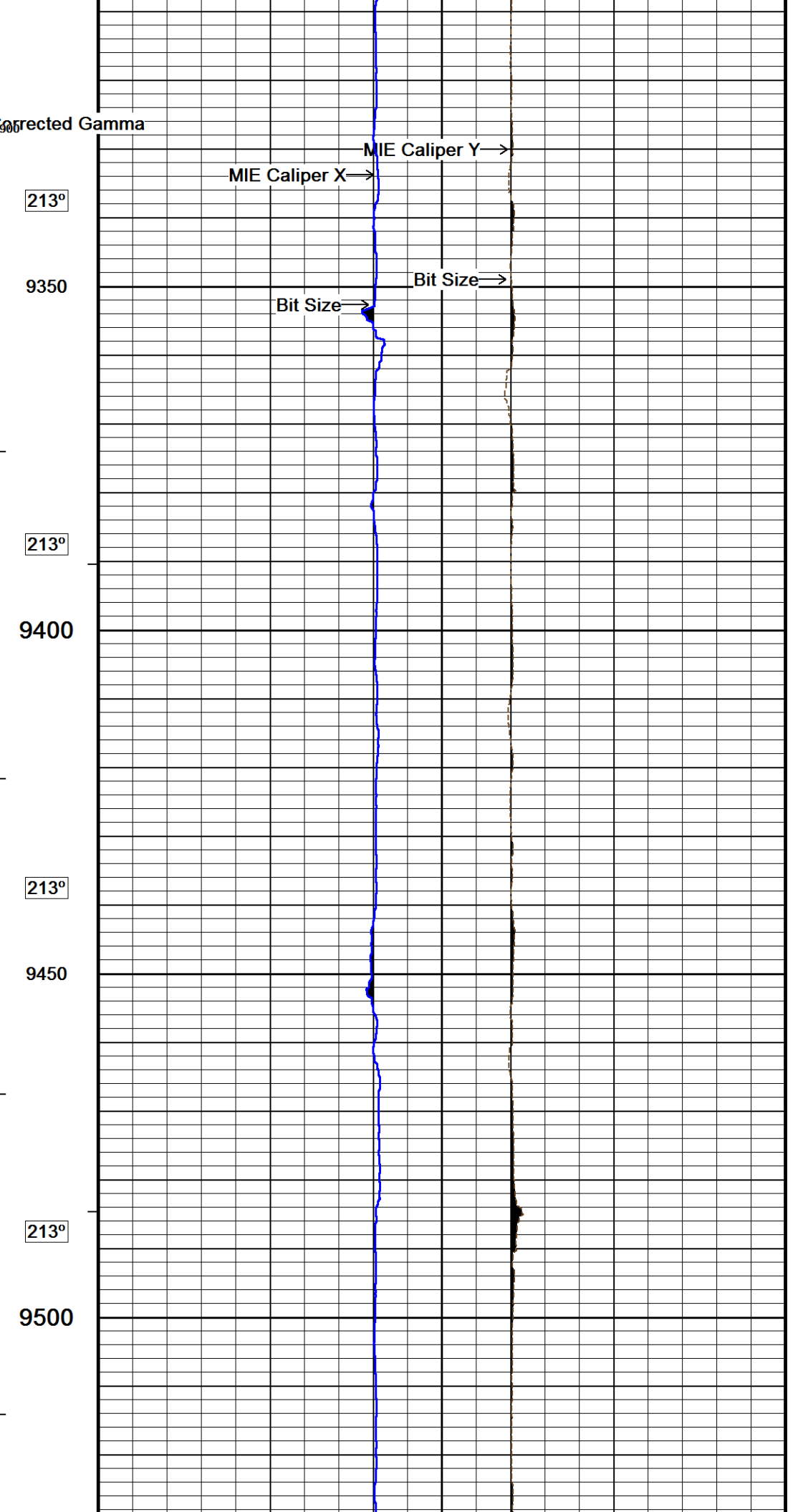
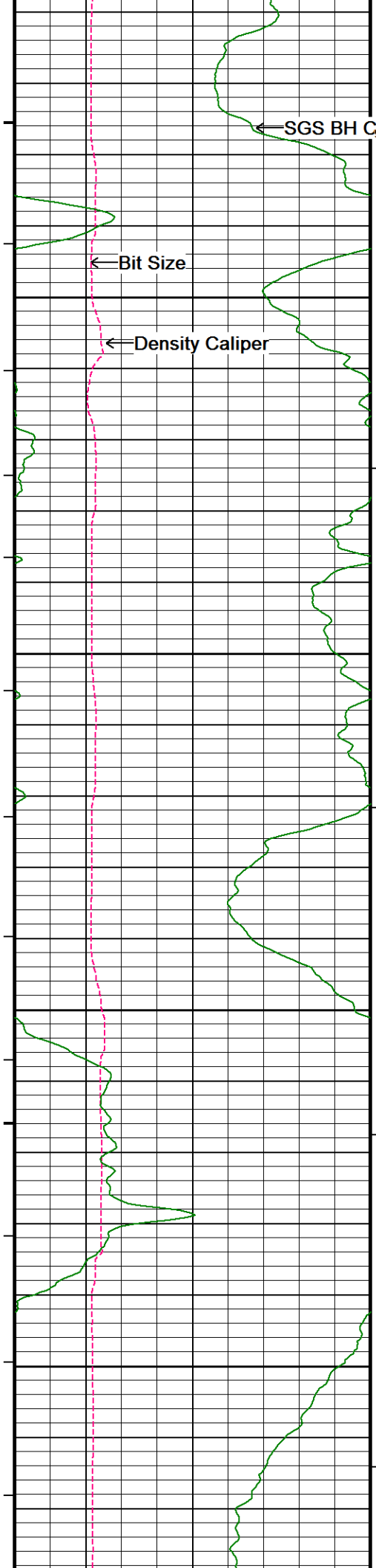
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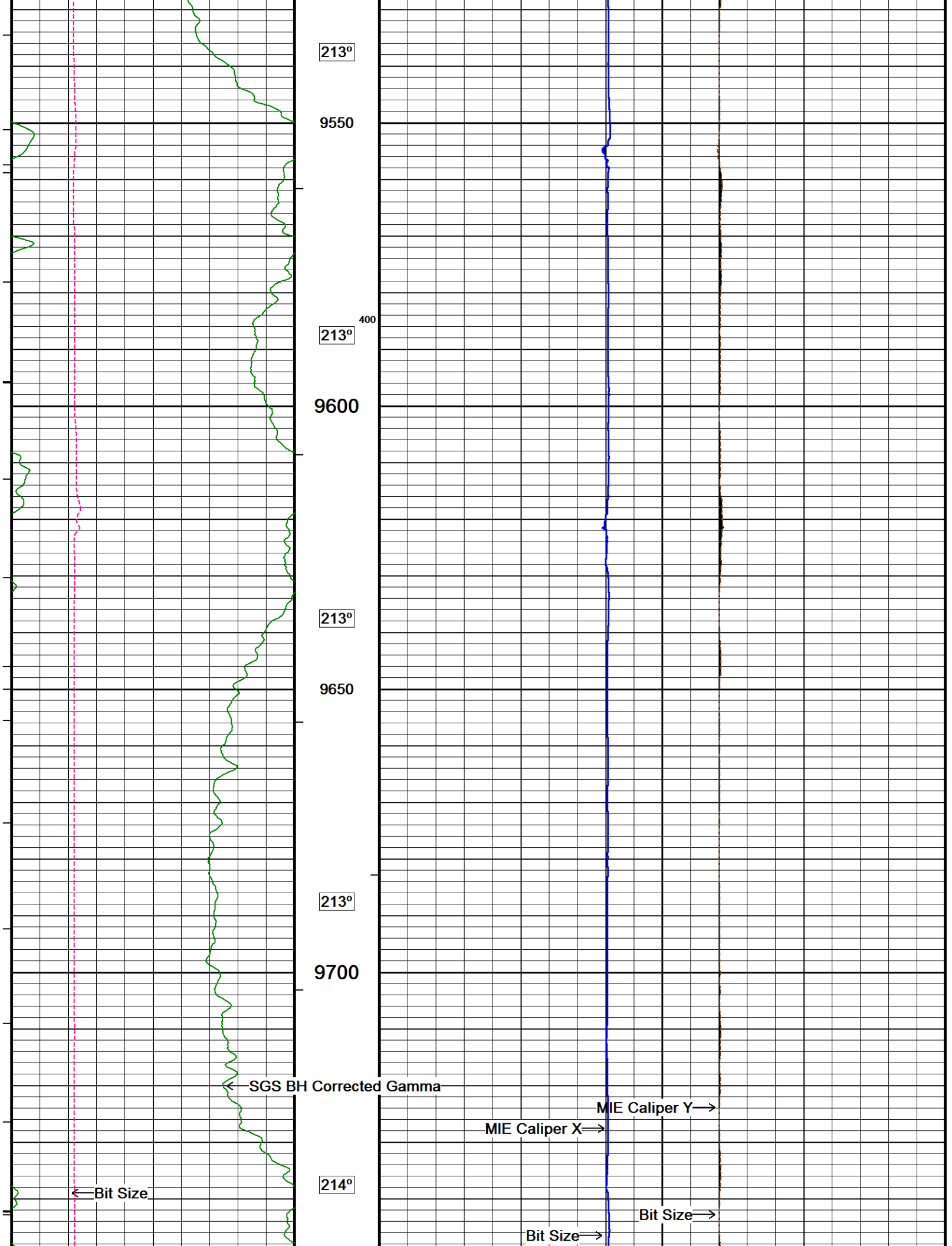
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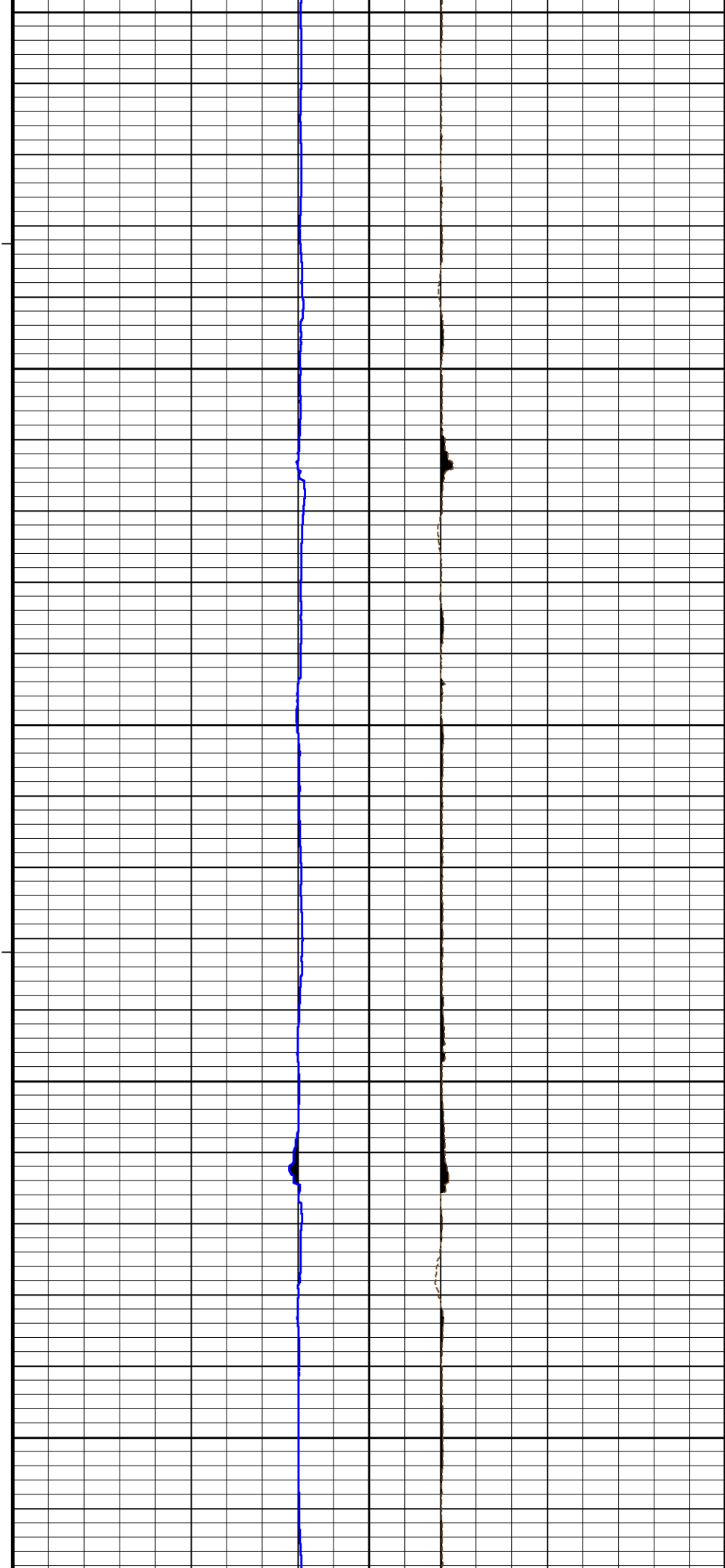
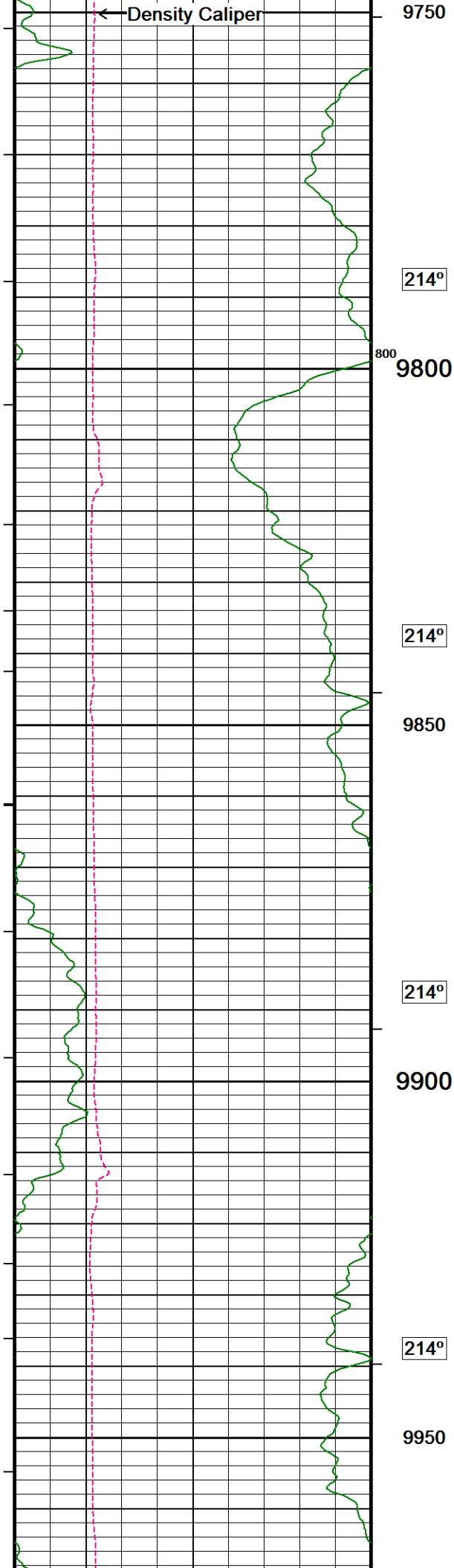
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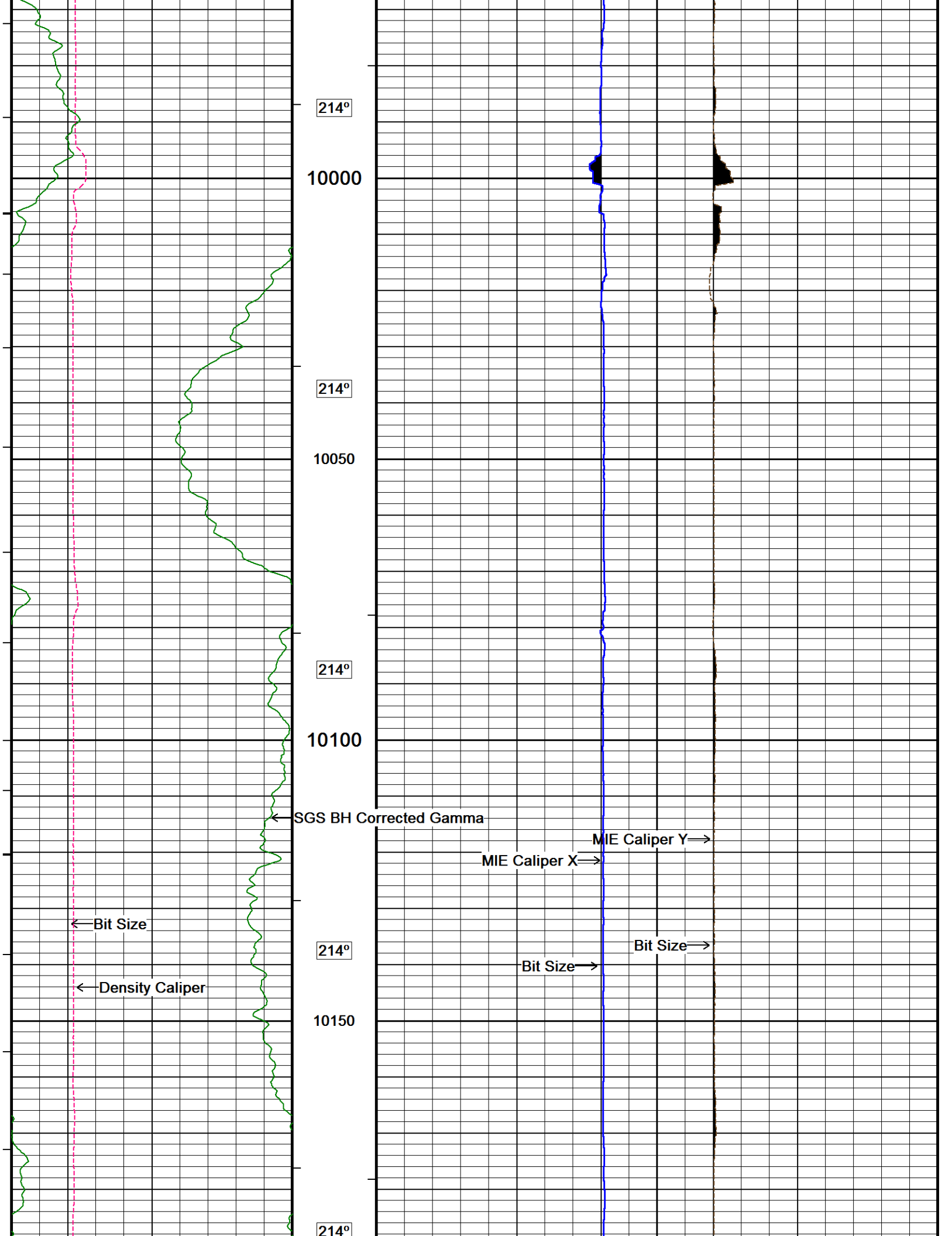
Bit Size →

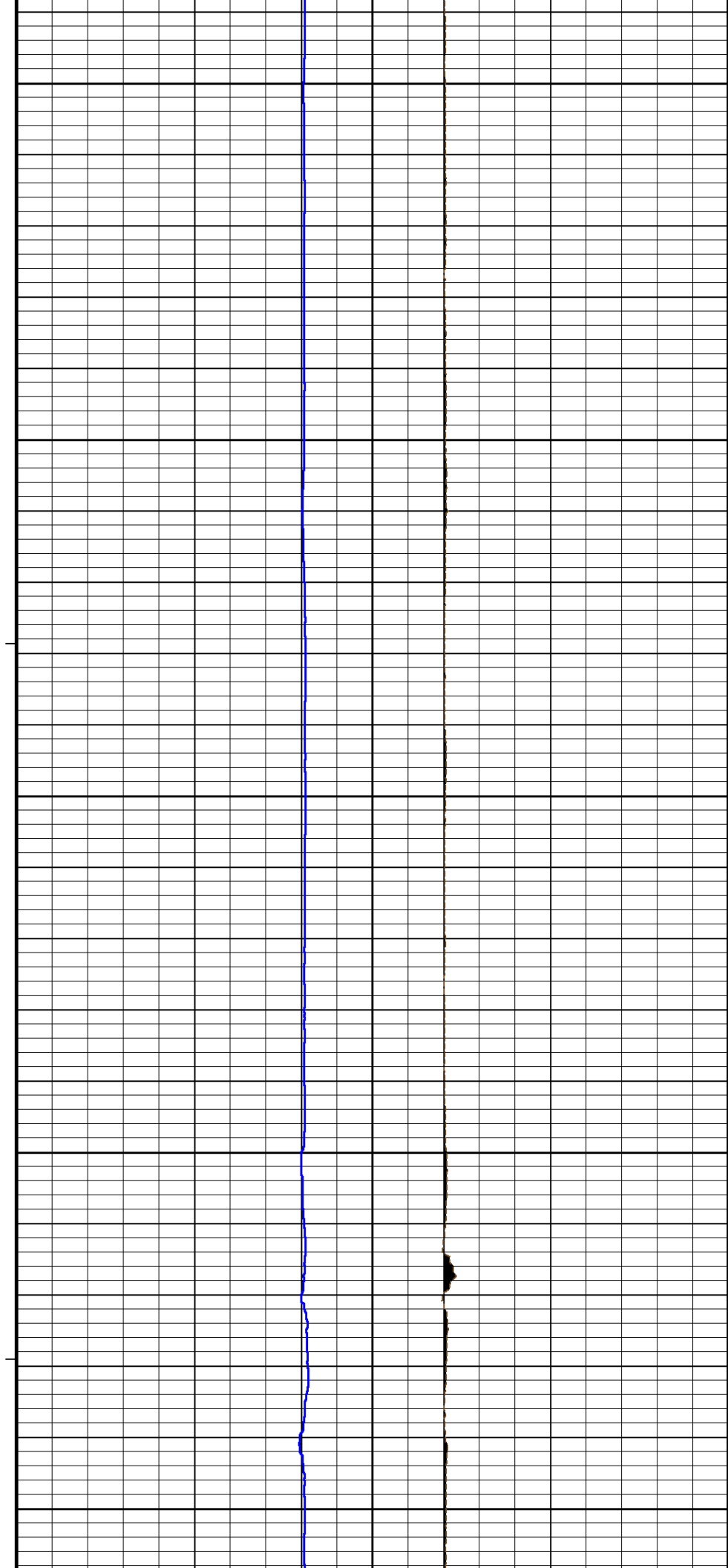
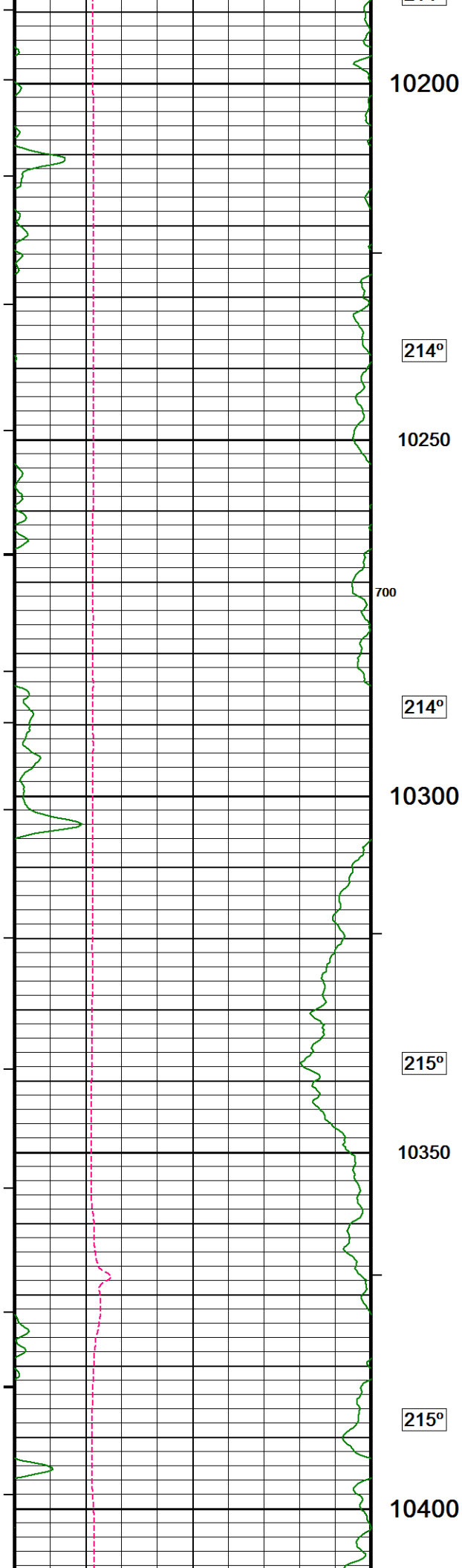


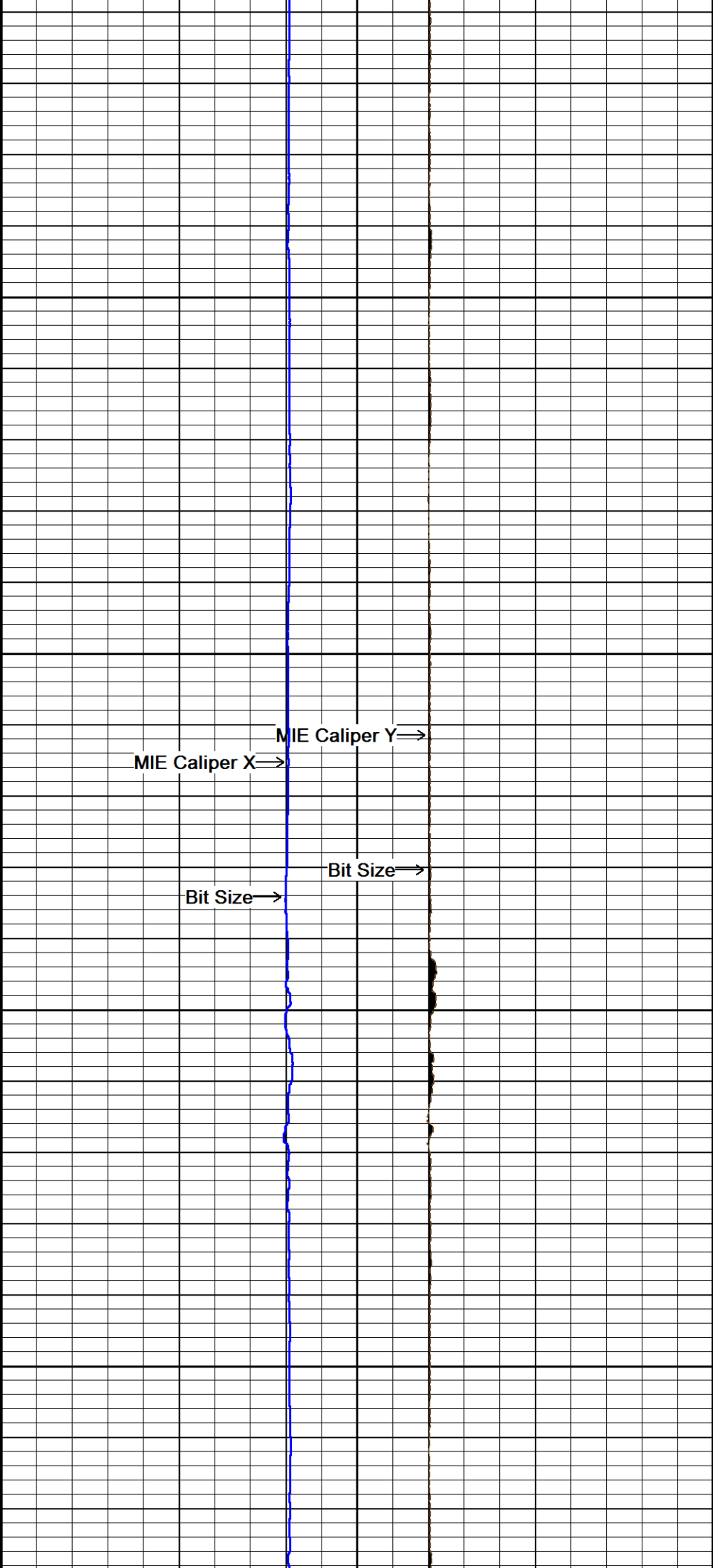
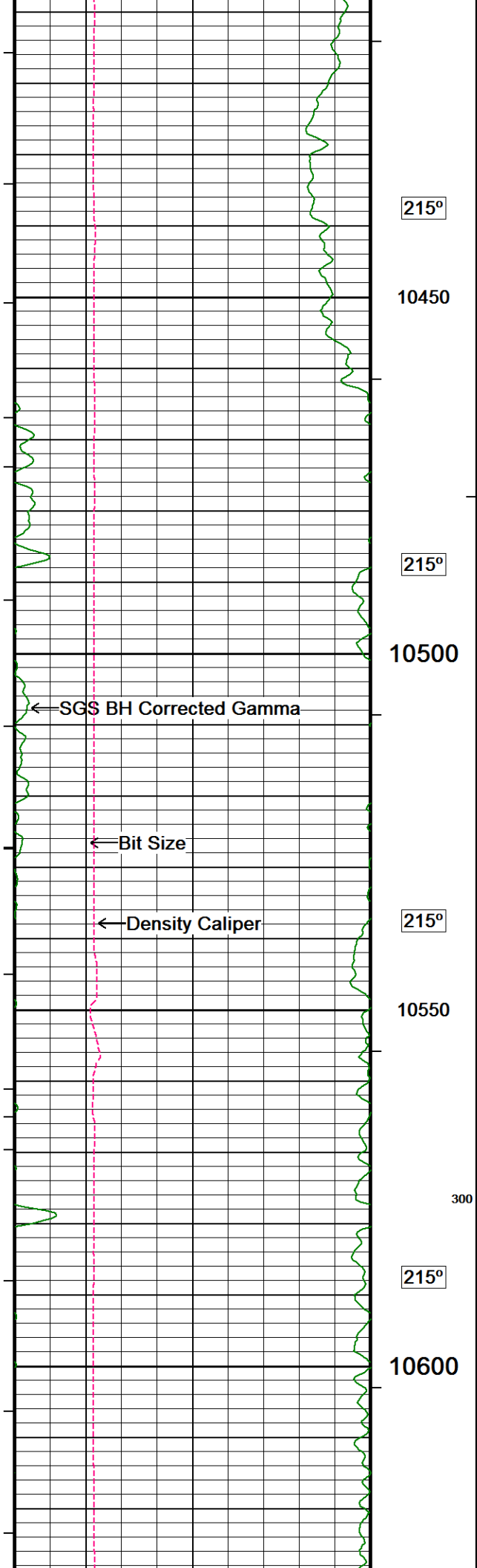


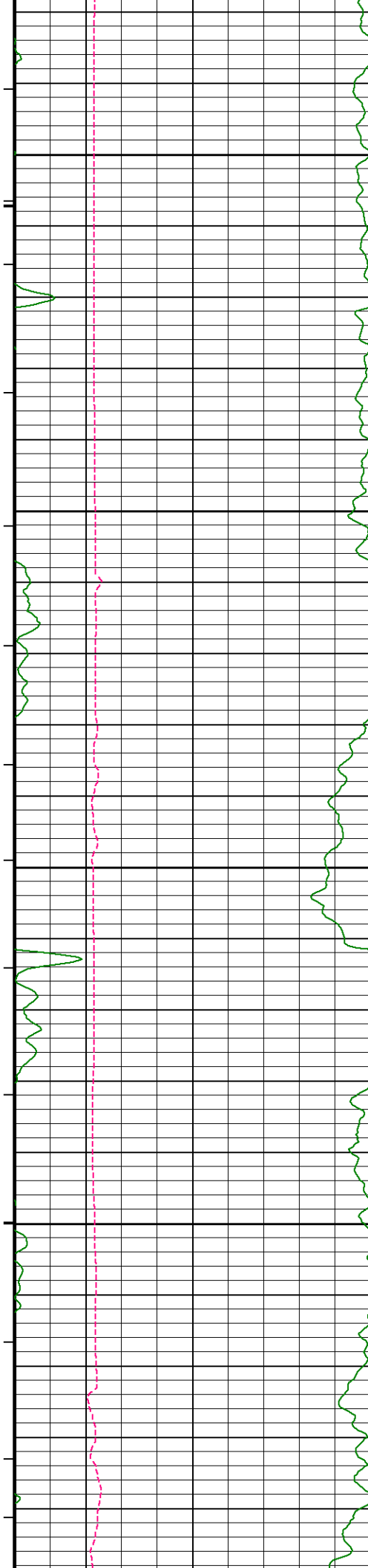












215°

10650

215°

10700

215°

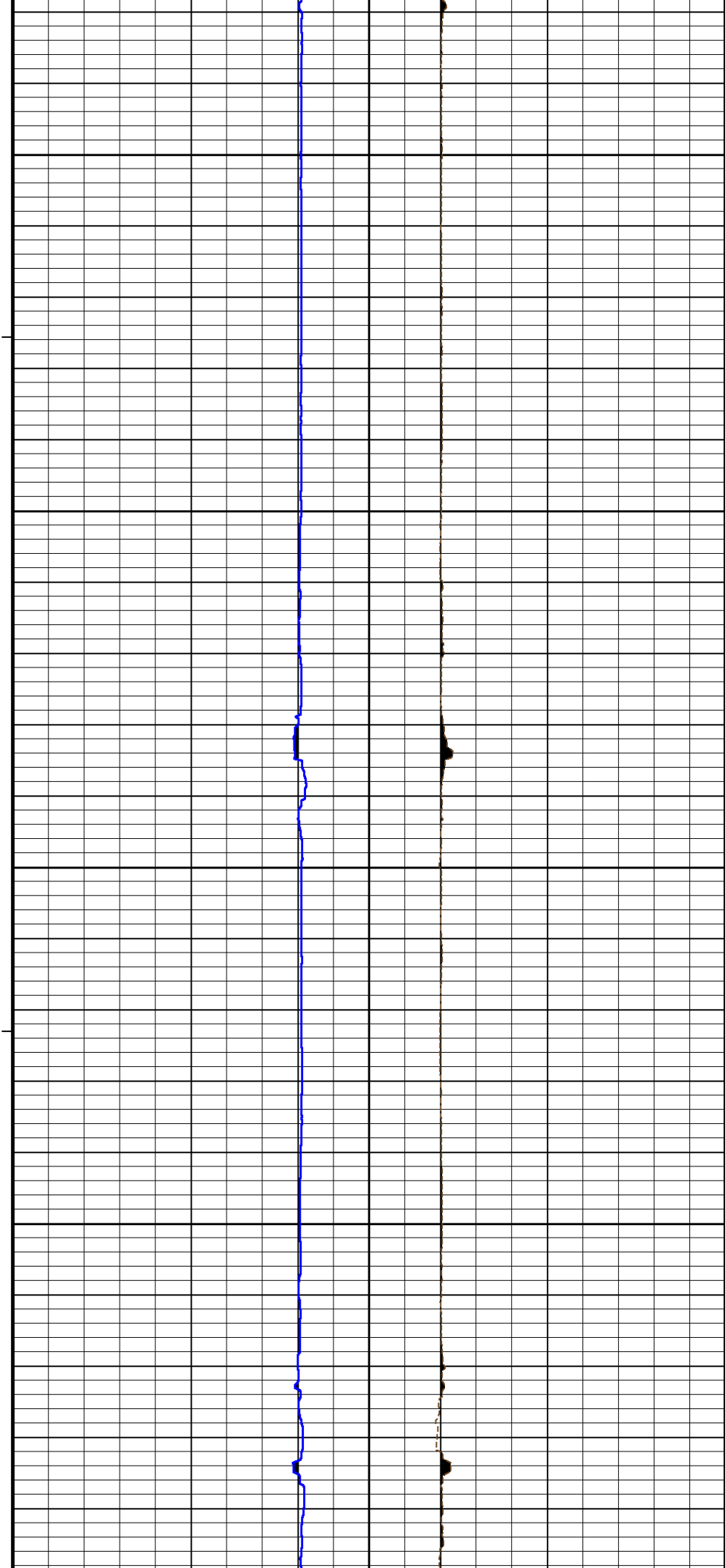
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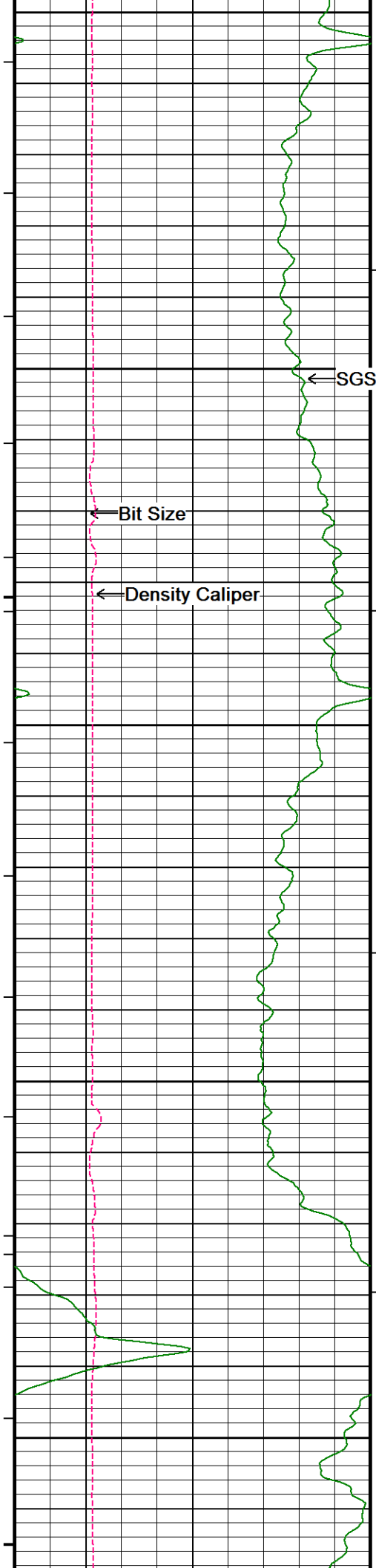
10750

215°

10800

215°





10850

215°

10900

← SGS L.I. Corrected Gamma

← Bit Size

← Density Caliper

215°

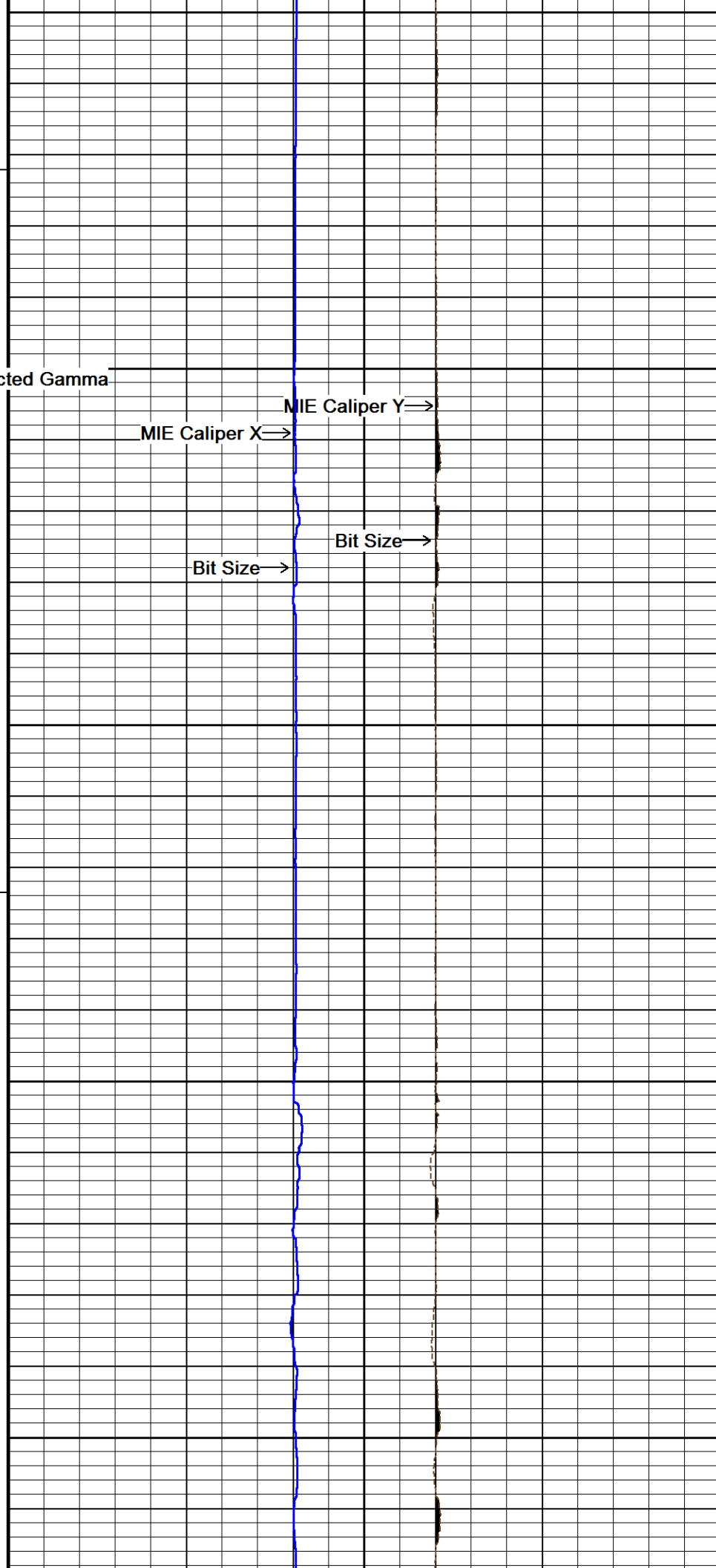
10950

215°

11000

215°

11050

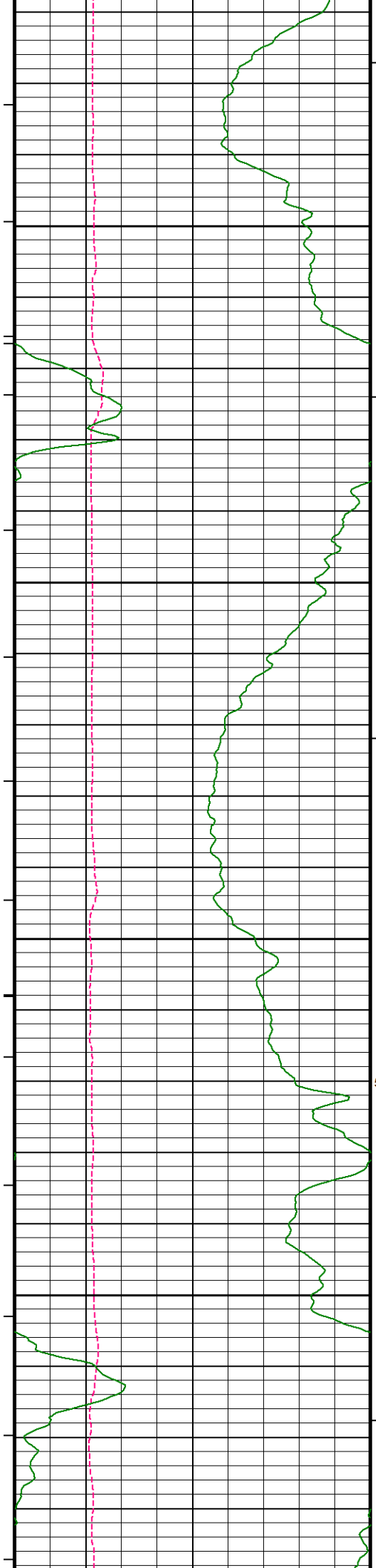


MIE Caliper Y →

MIE Caliper X →

Bit Size →

Bit Size →



215°

11100

215°

11150

215°

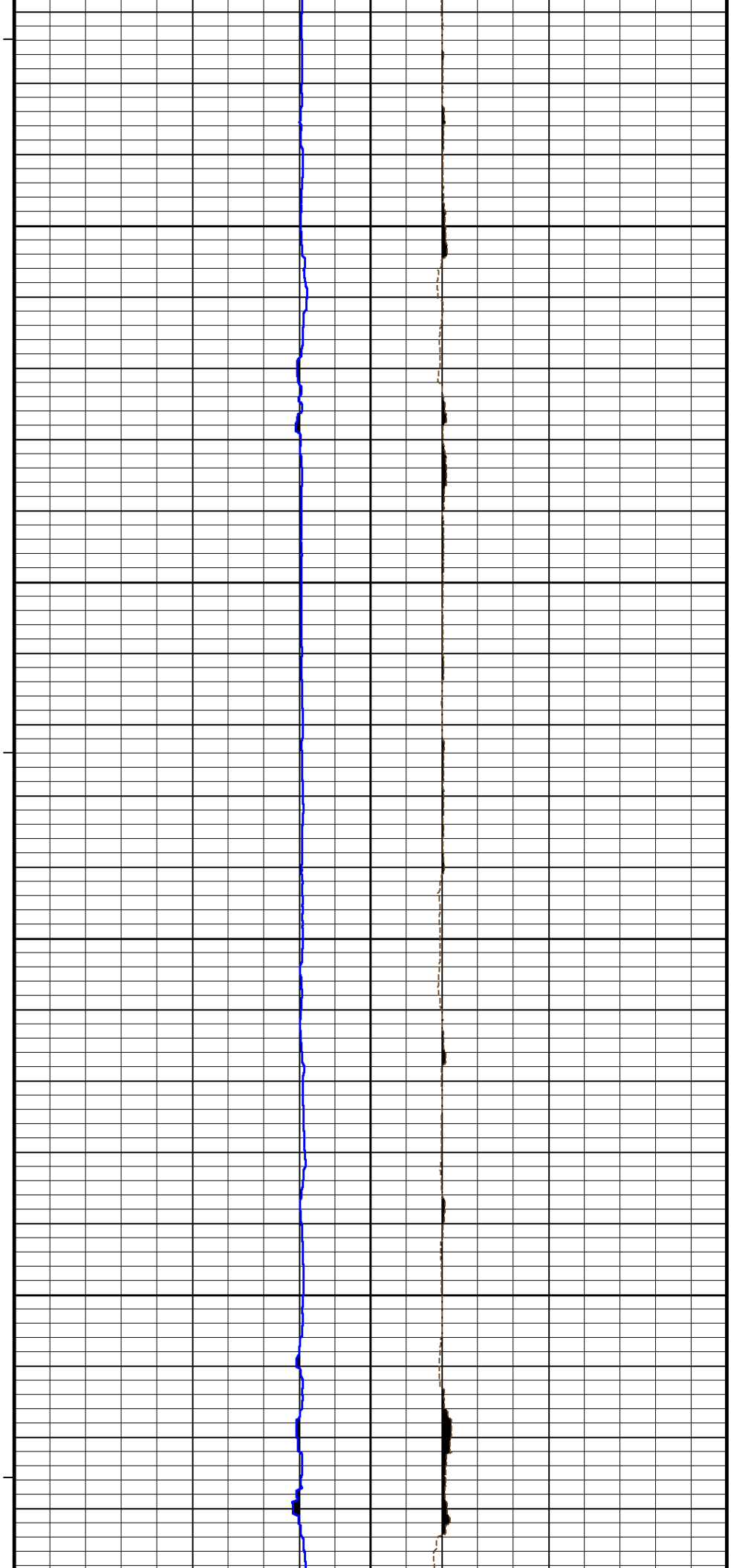
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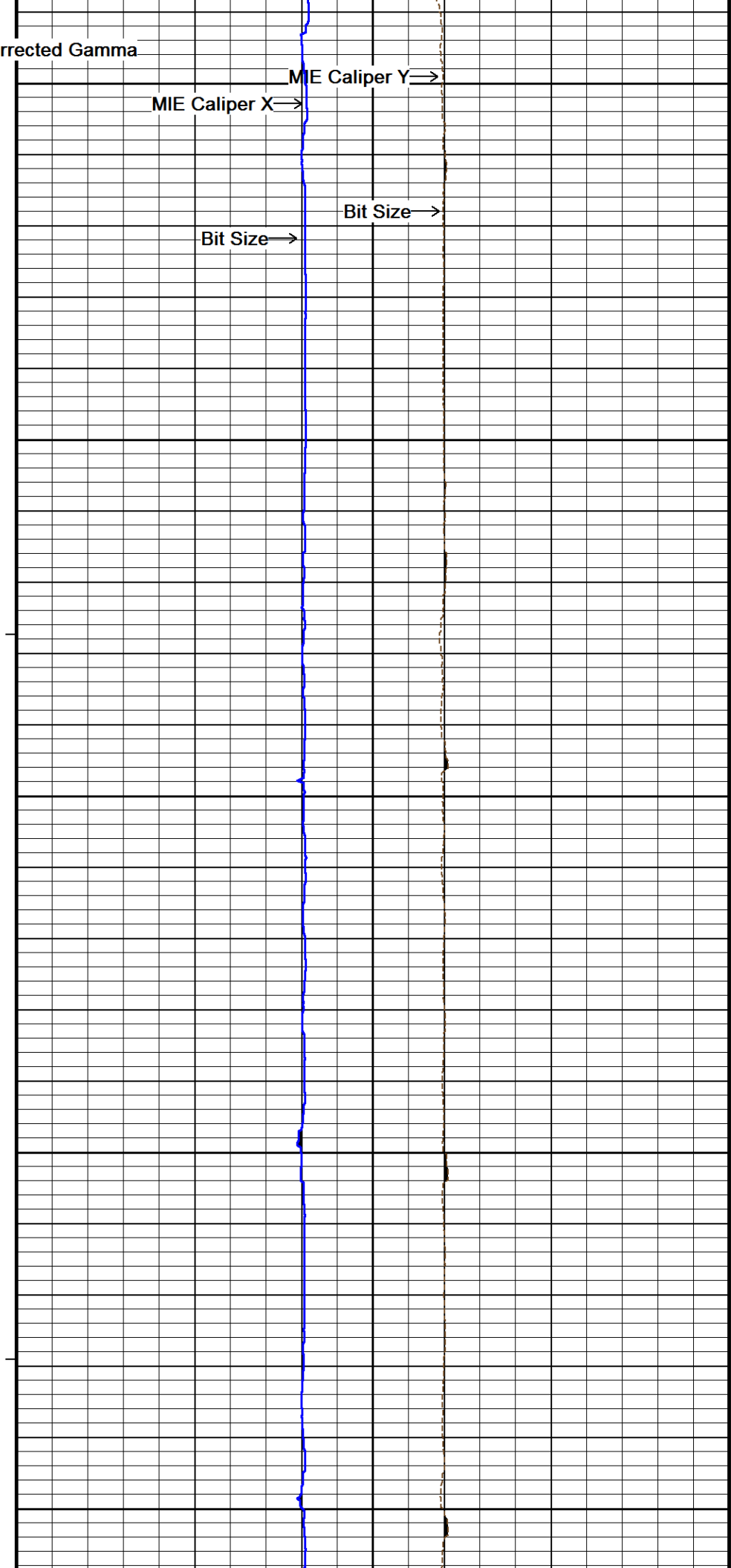
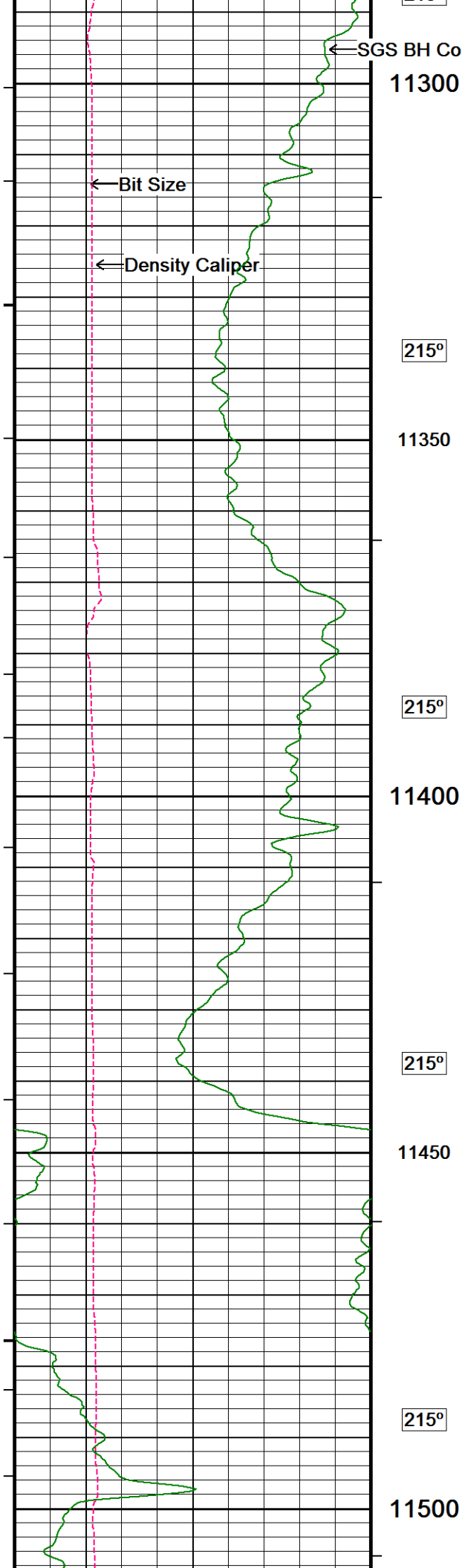
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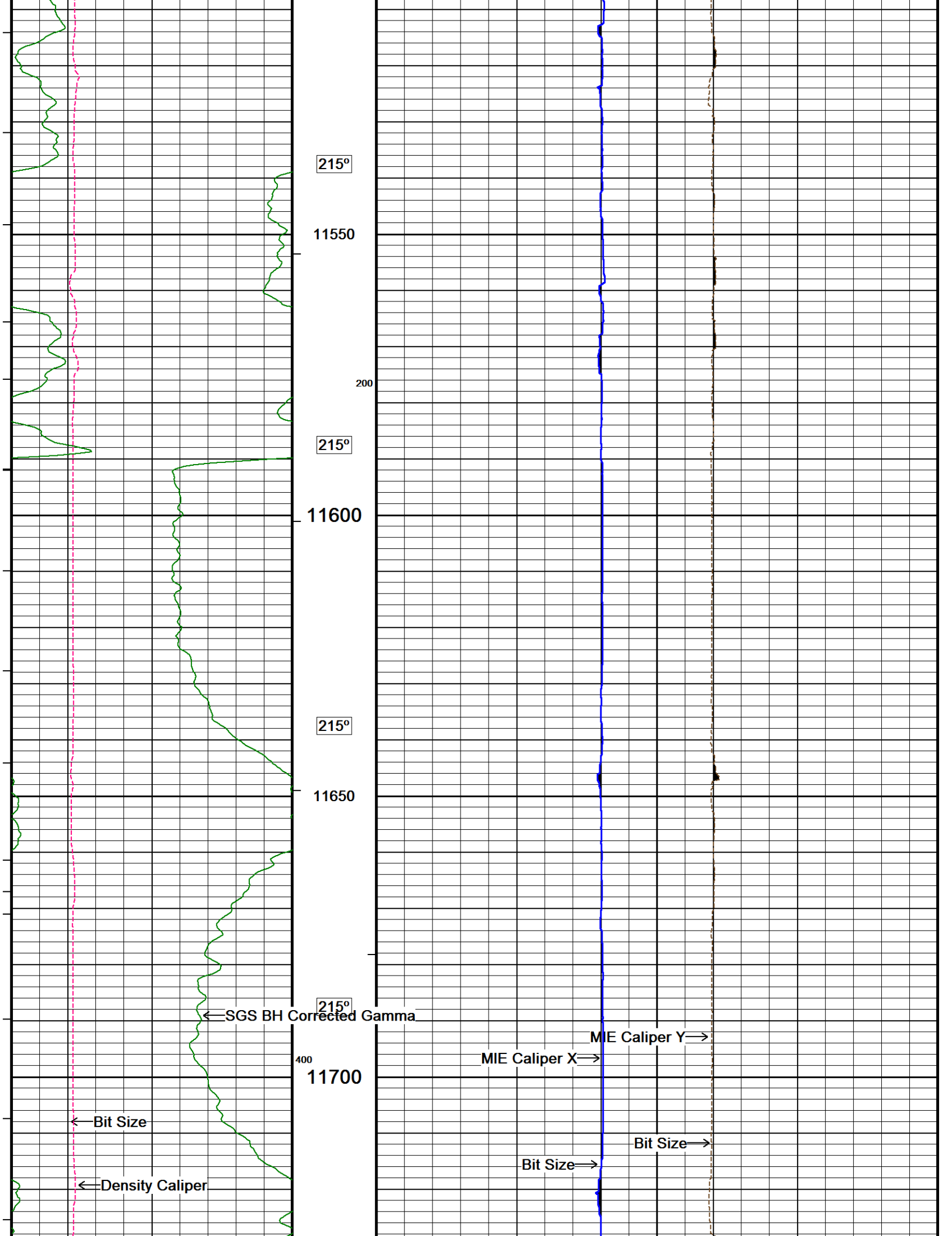
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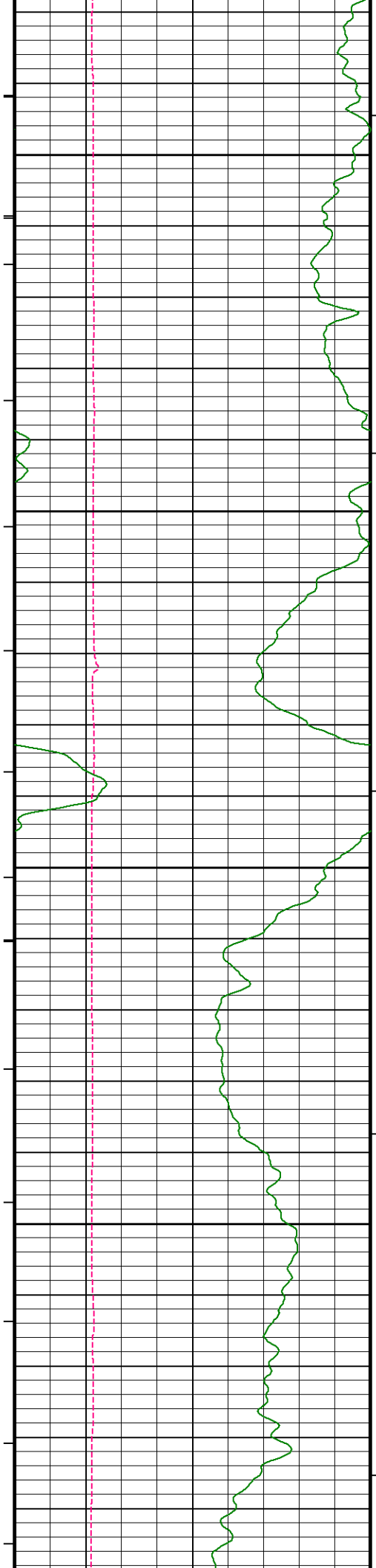
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215°

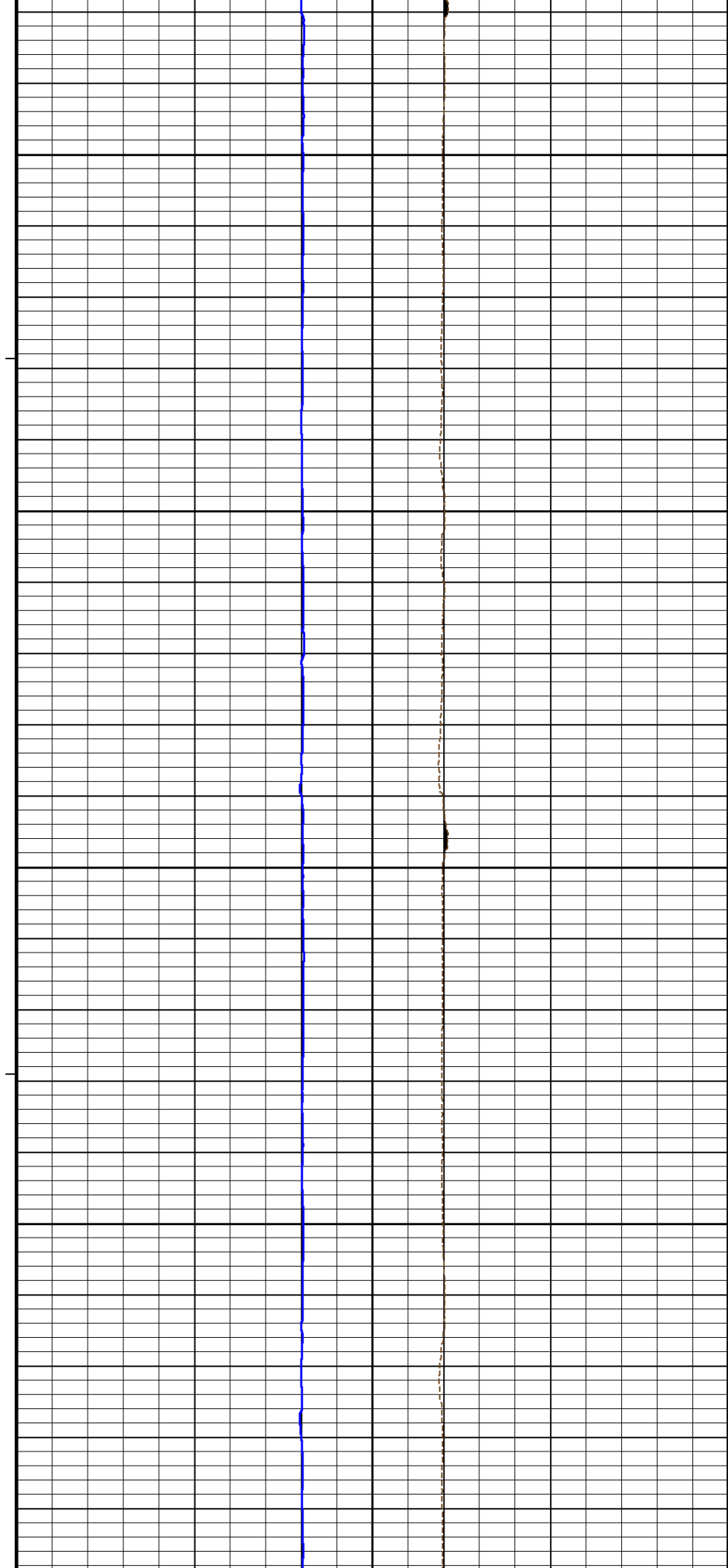


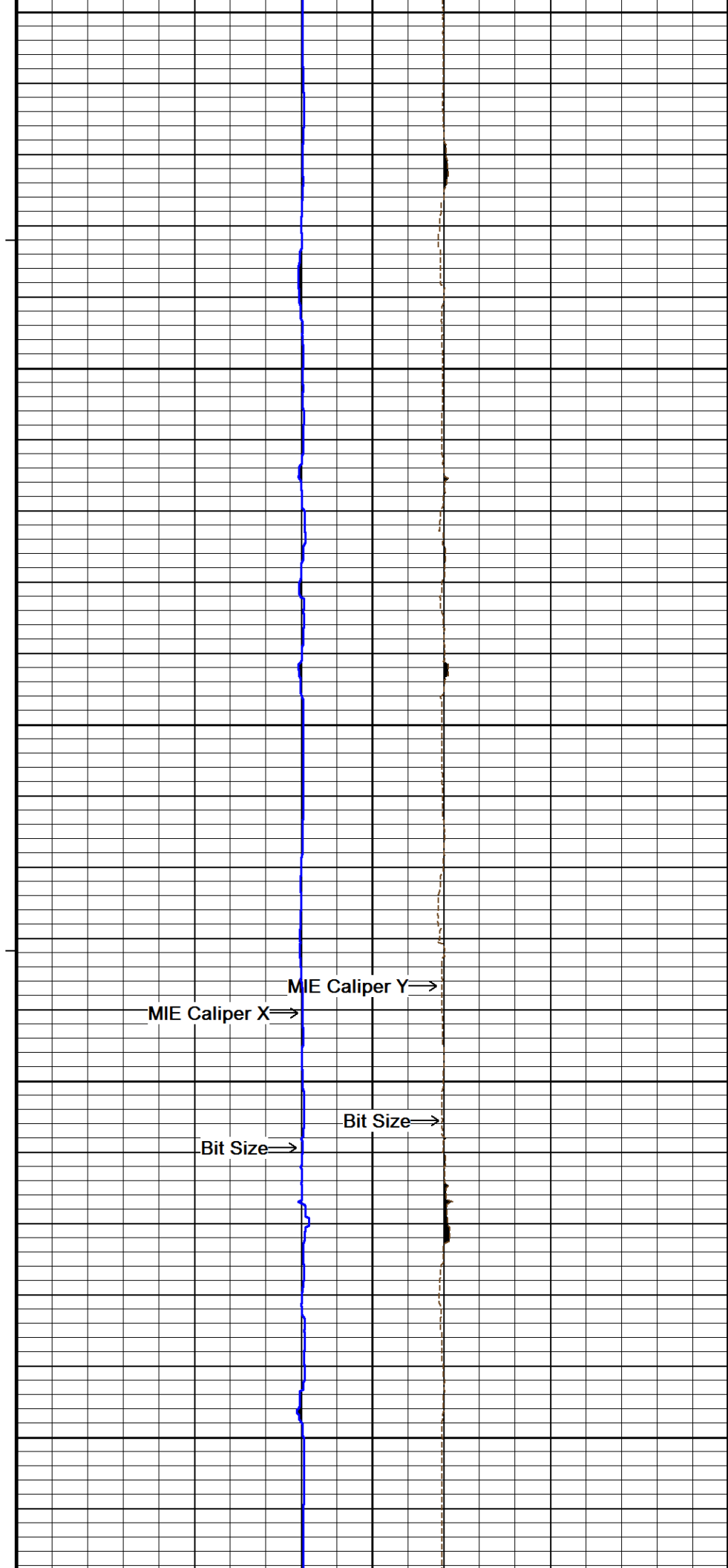
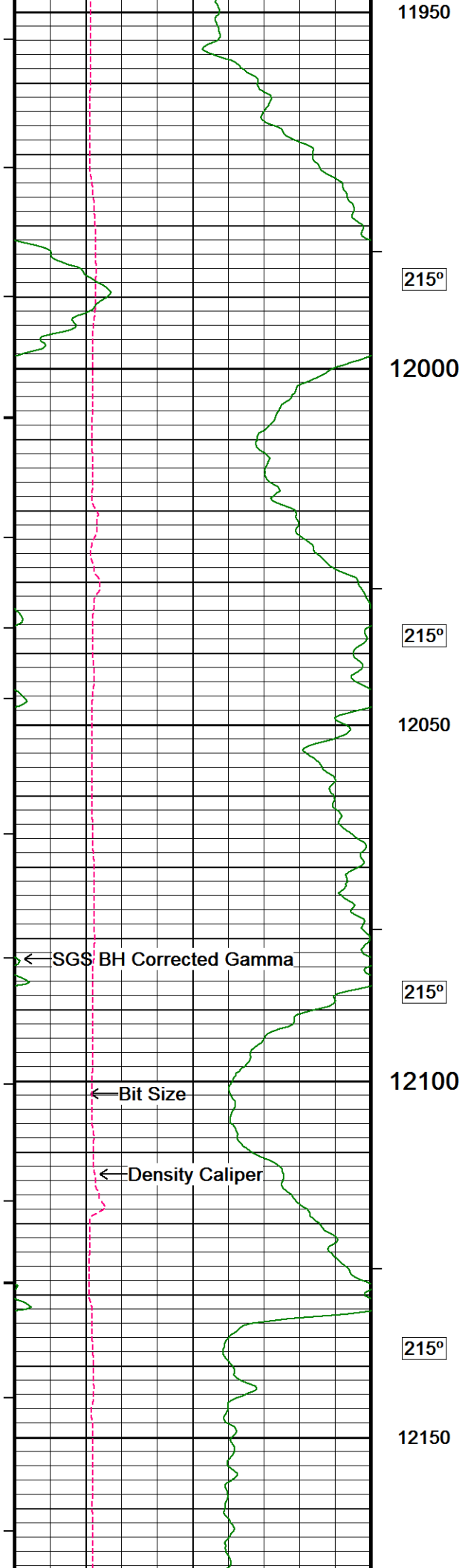


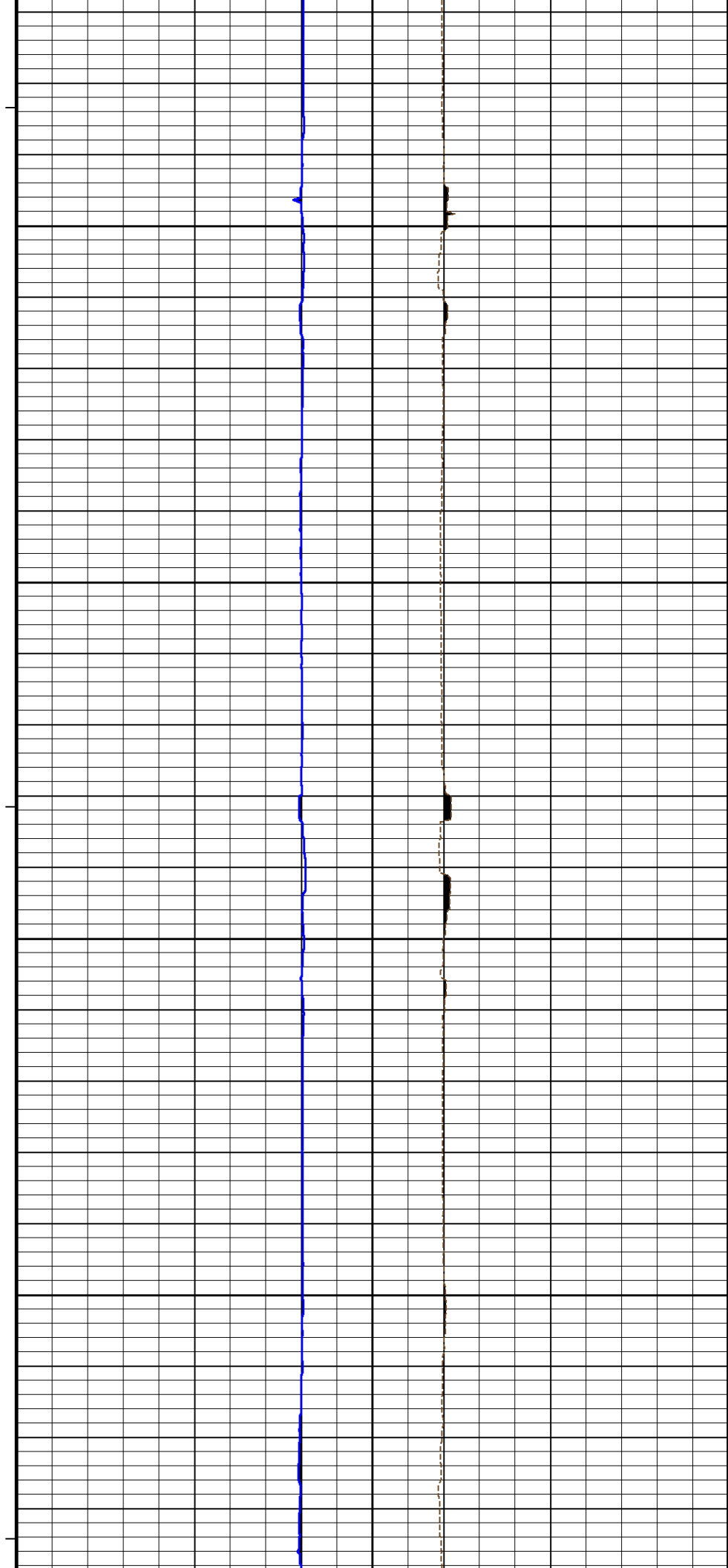
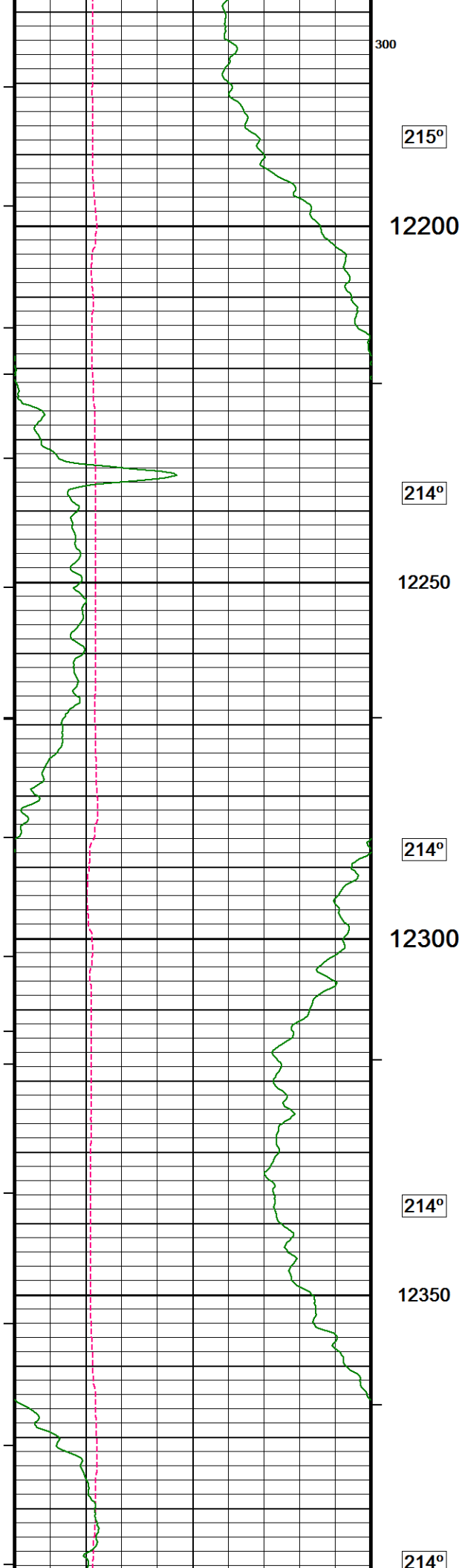


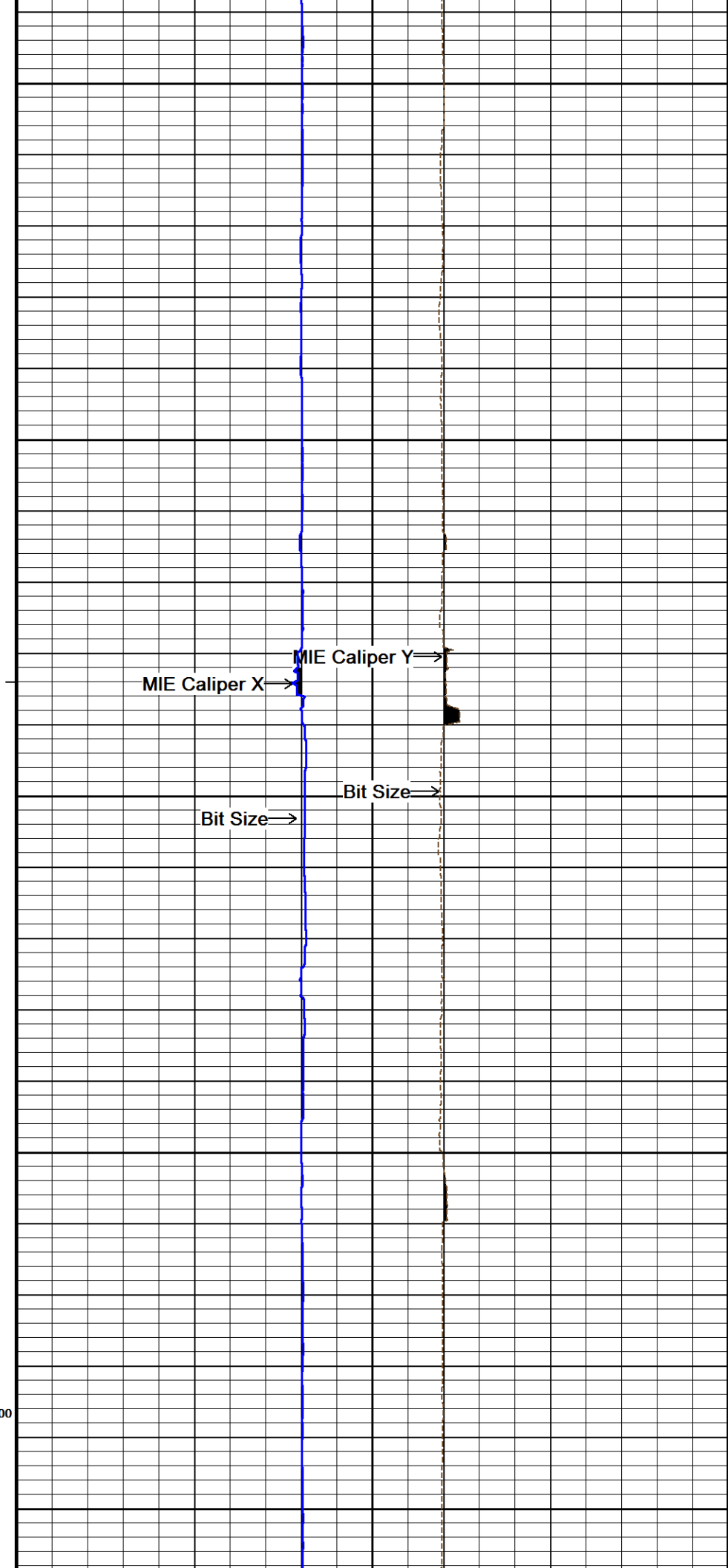
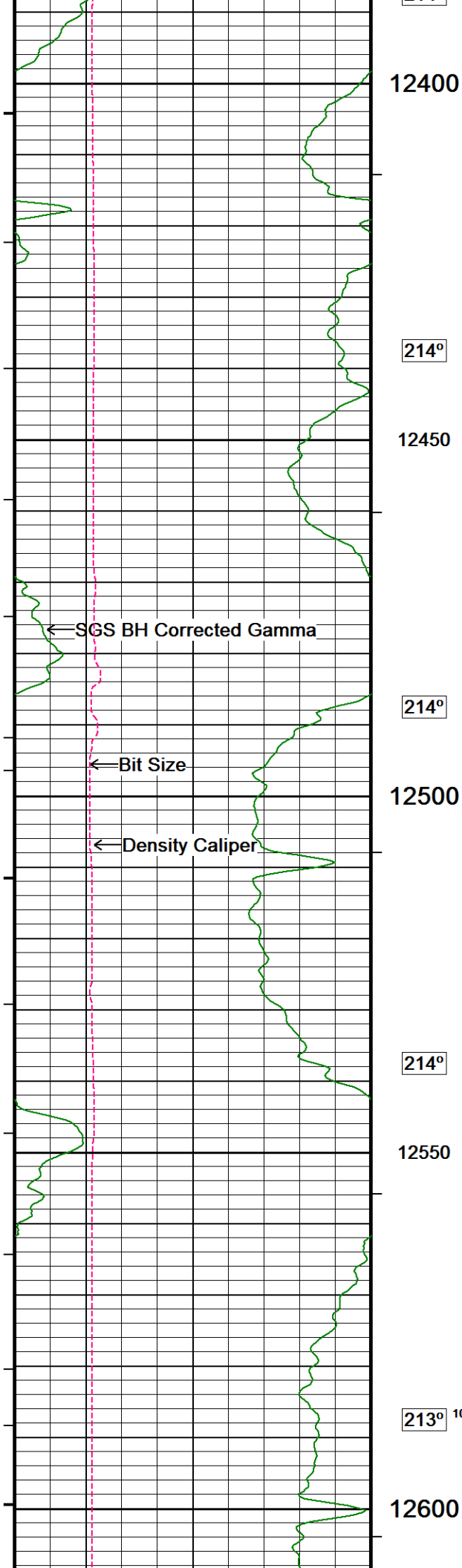


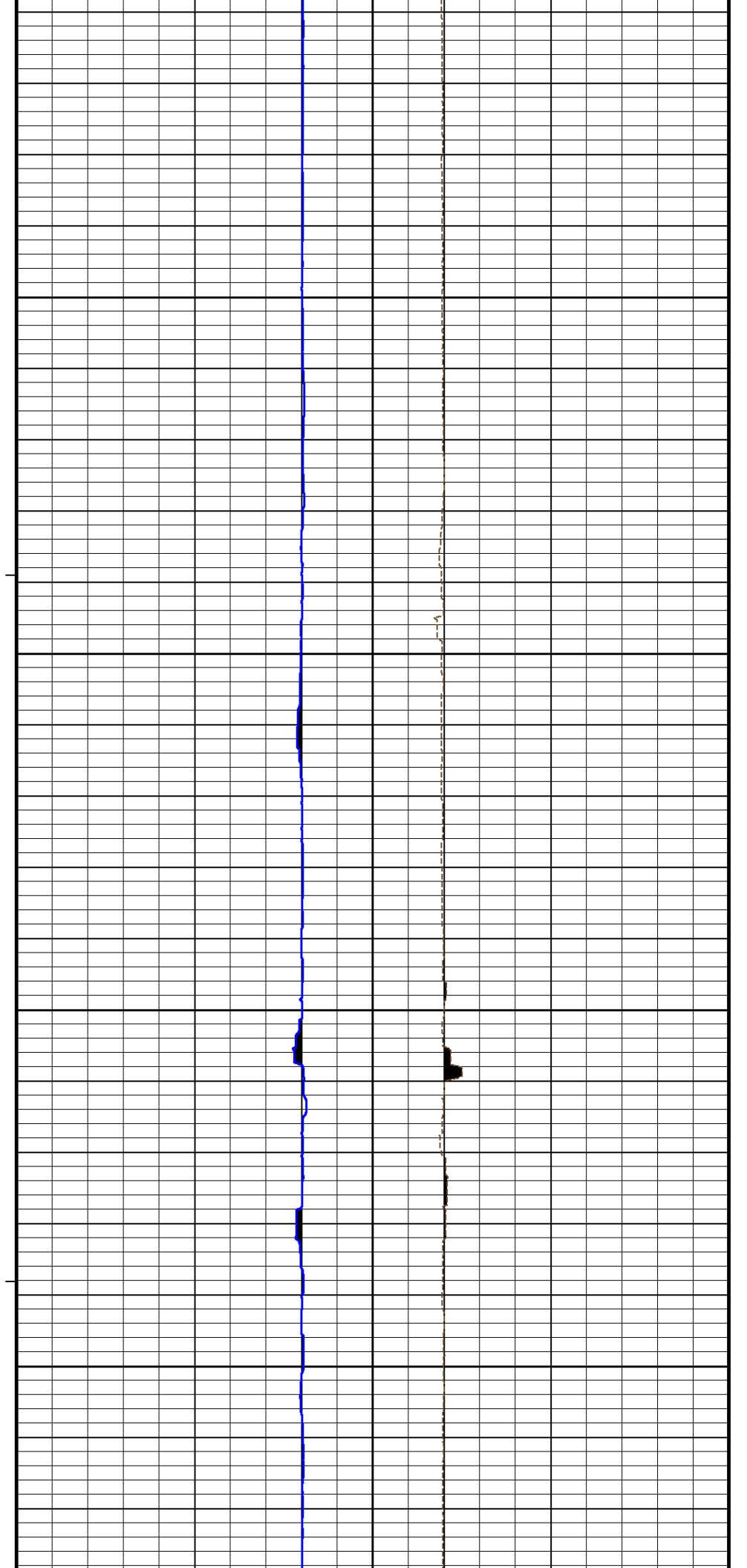
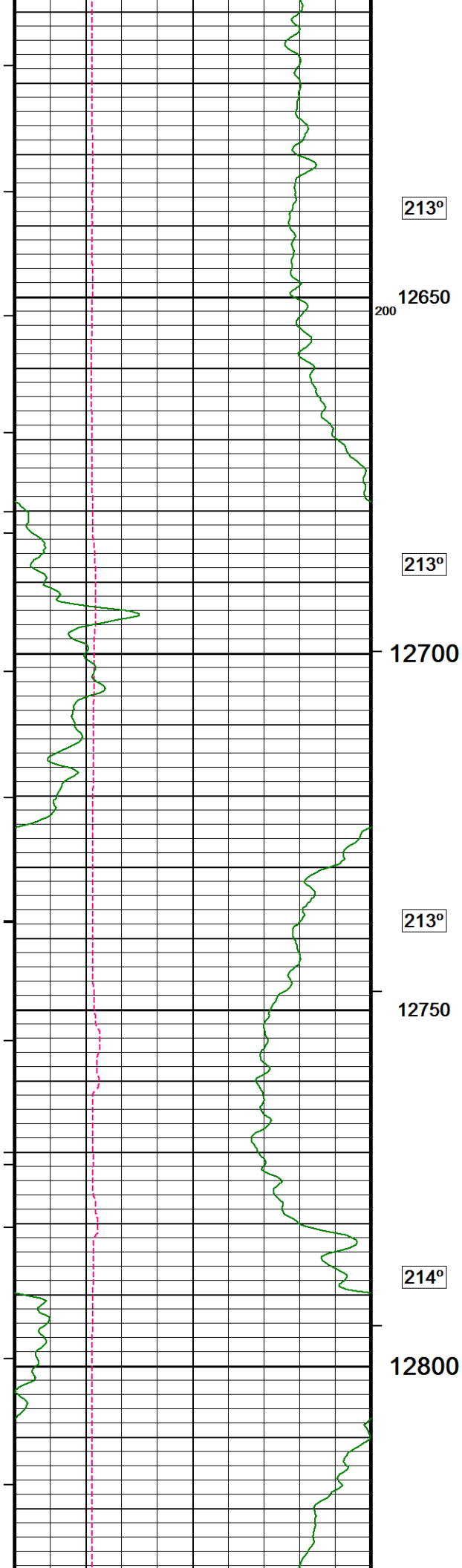
215°
11750
215°
11800
215°
11850
215°
11900
215°

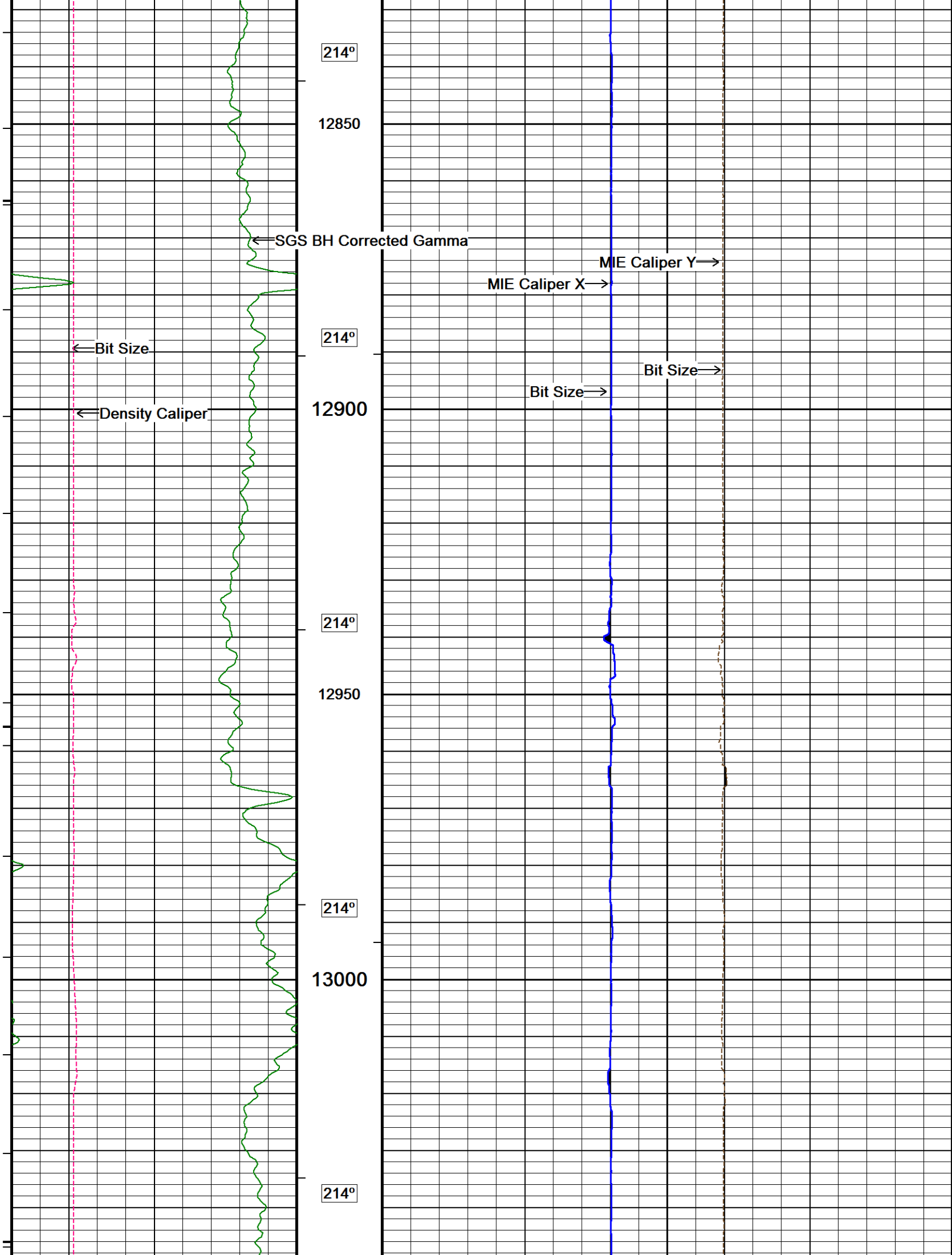


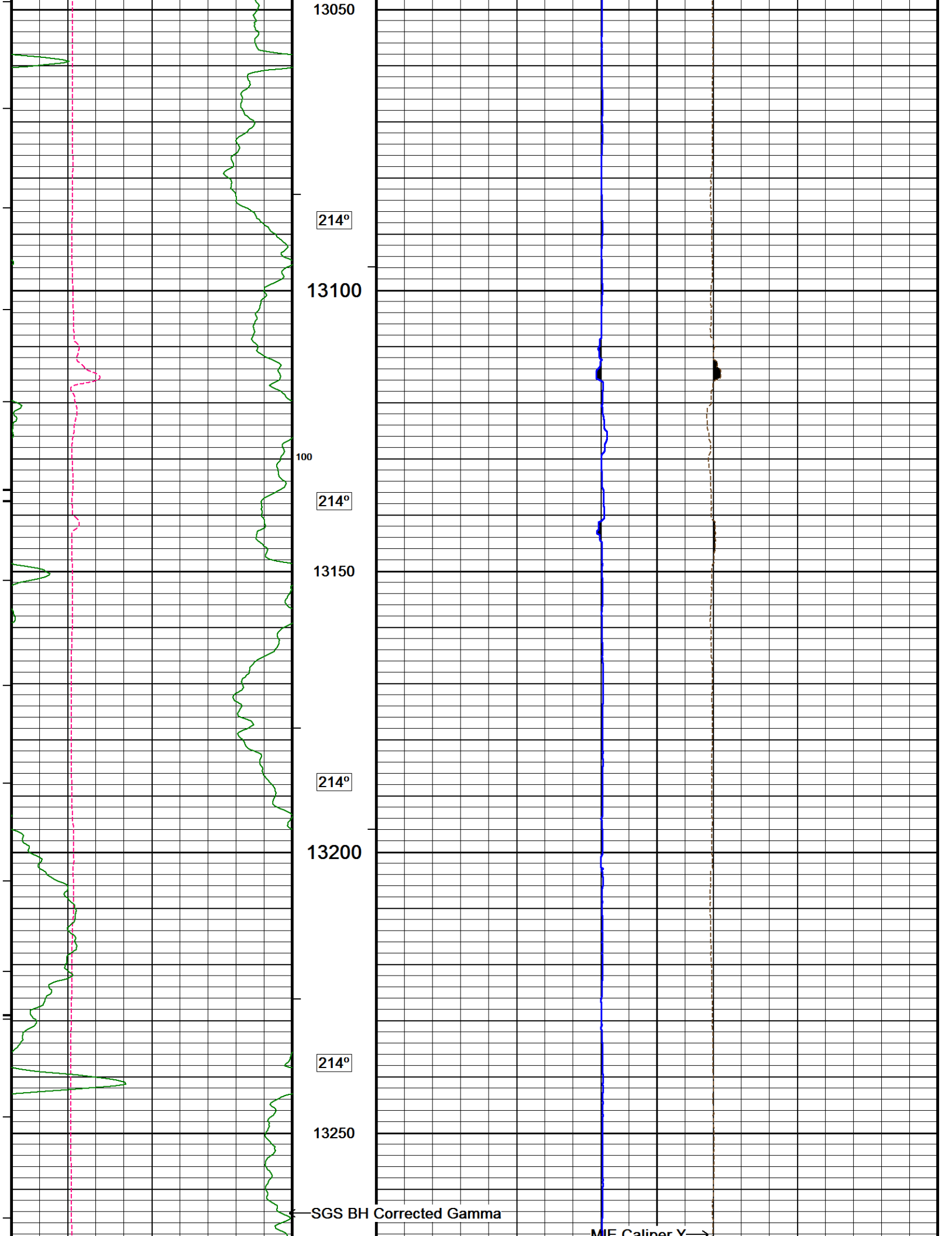


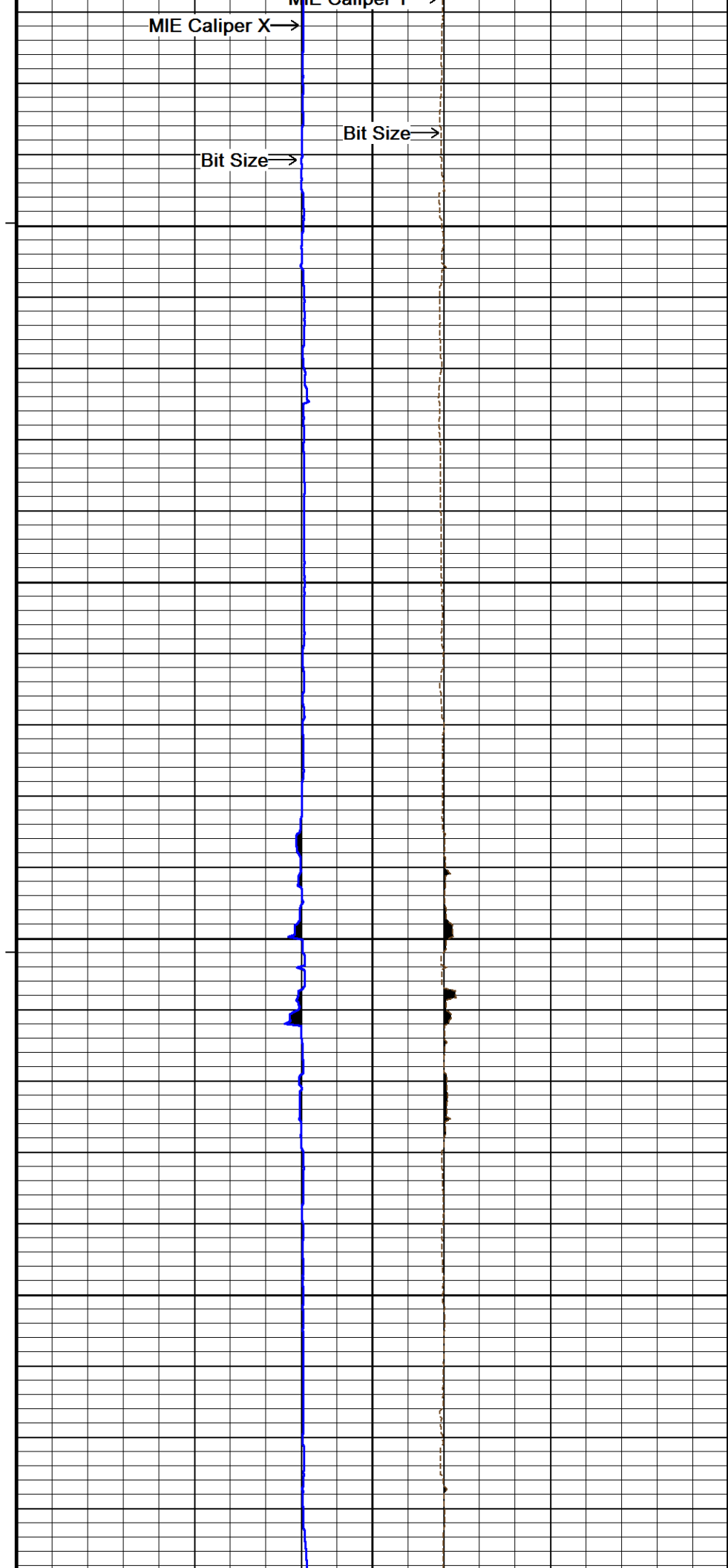
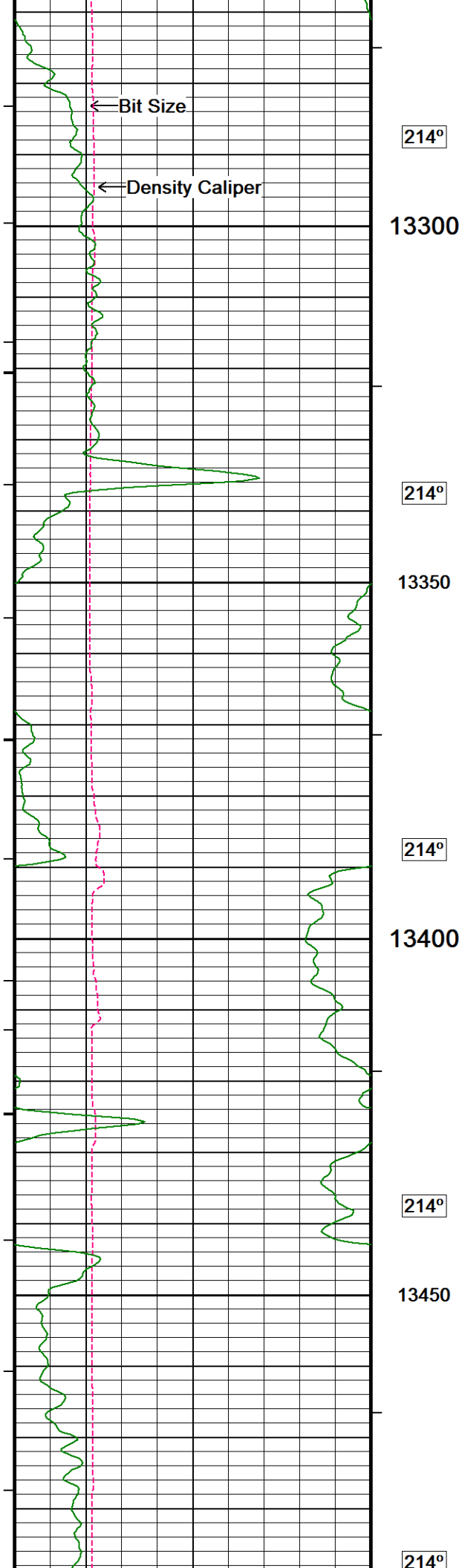


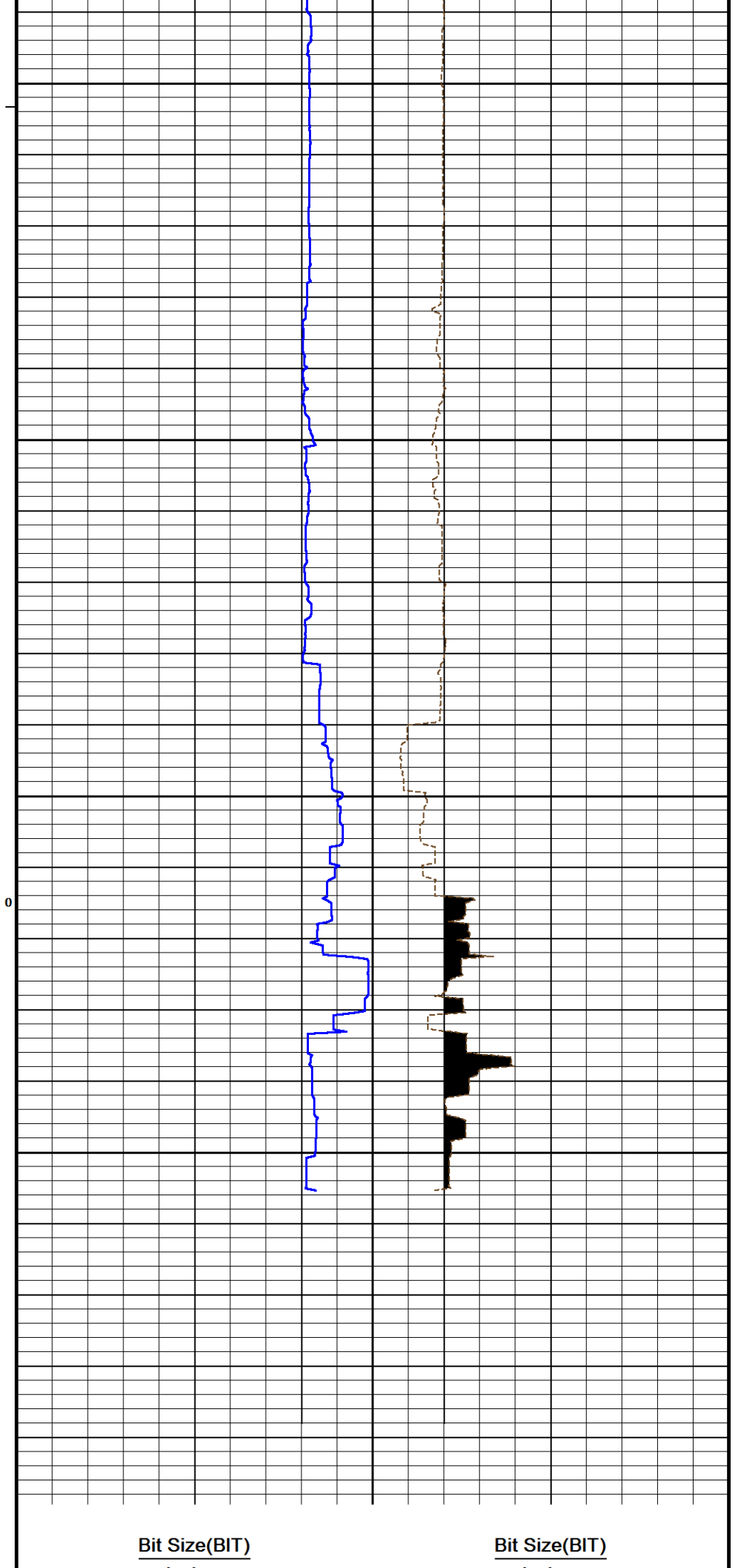
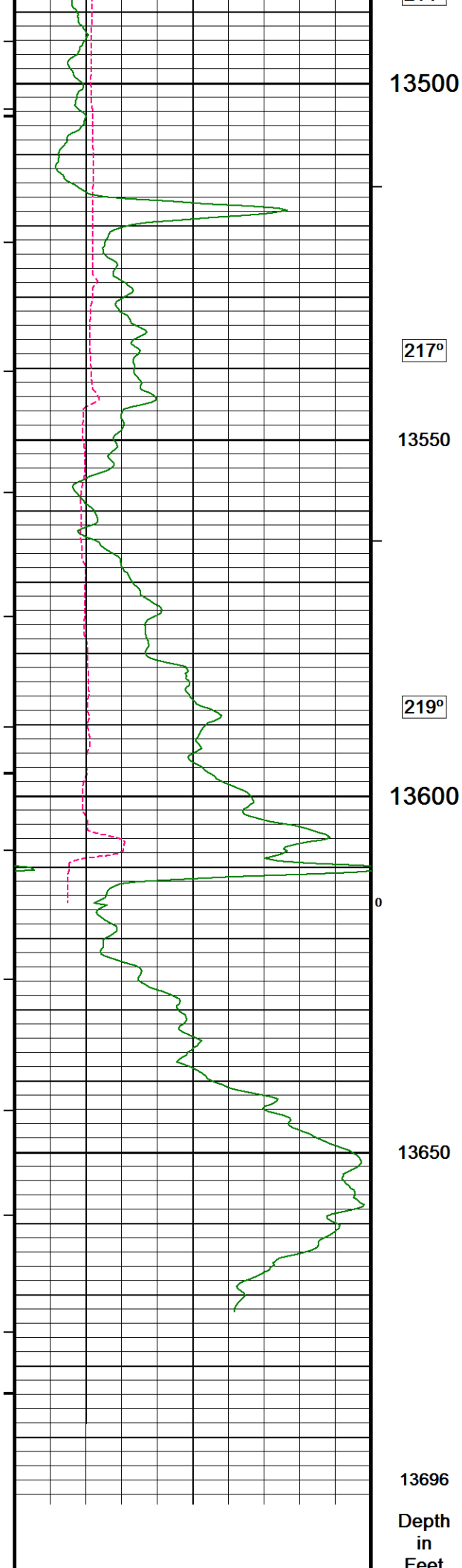


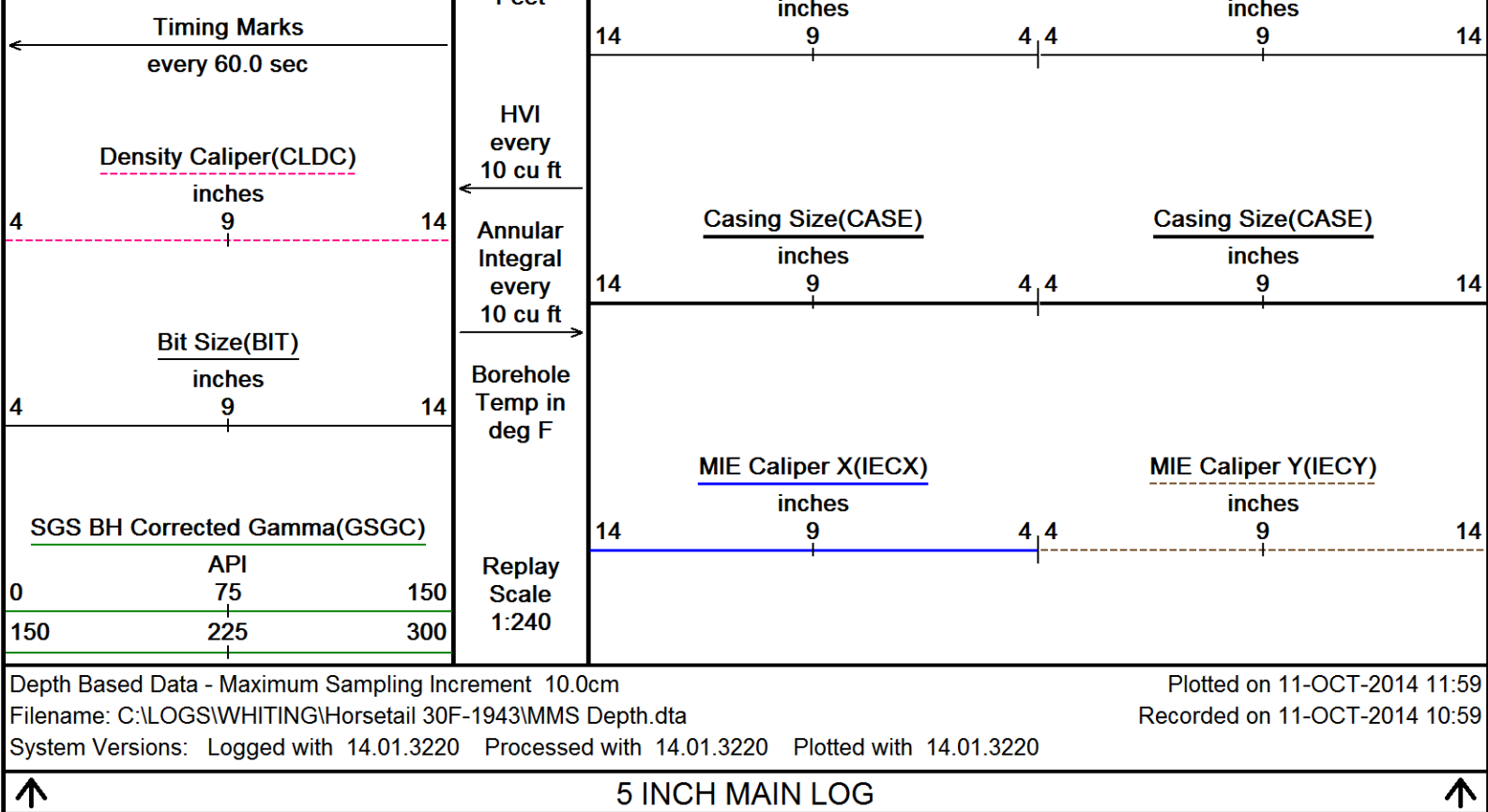






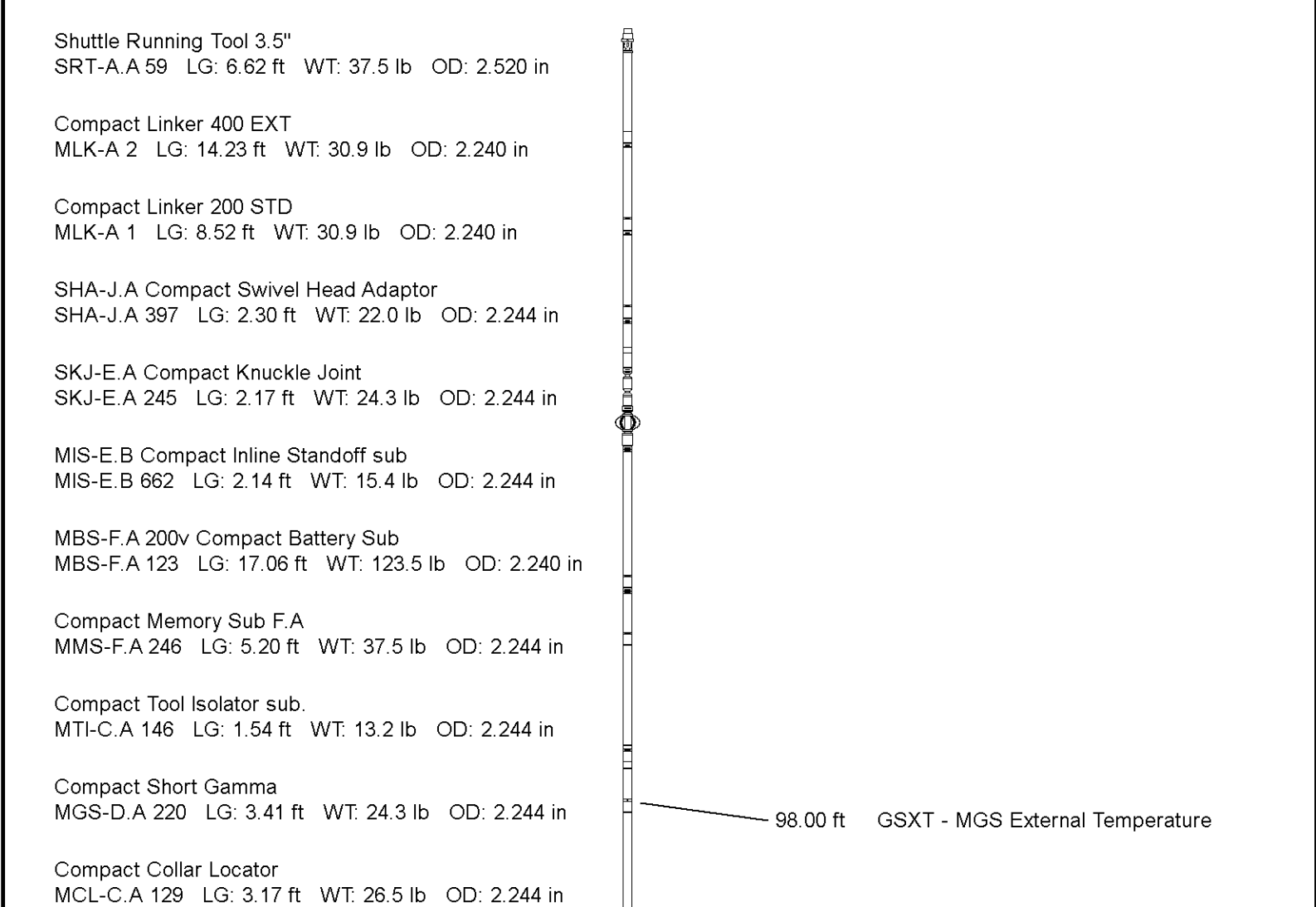






DOWNHOLE EQUIPMENT

C:\LOGS\WHITING\Horsetail 30F-1943\MMS Depth.dta



SKJ-E.B Compact Knuckle Joint
SKJ-E.B 610 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 314 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 695 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Neutron
MDN-B.J 372 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.J 378 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 734 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 682 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 537 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.A Compact Inline Standoff sub
MIS-E.A 363 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 410 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 698 LG: 5.70 ft WT: 33.1 lb OD: 2.240 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 810 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 203 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

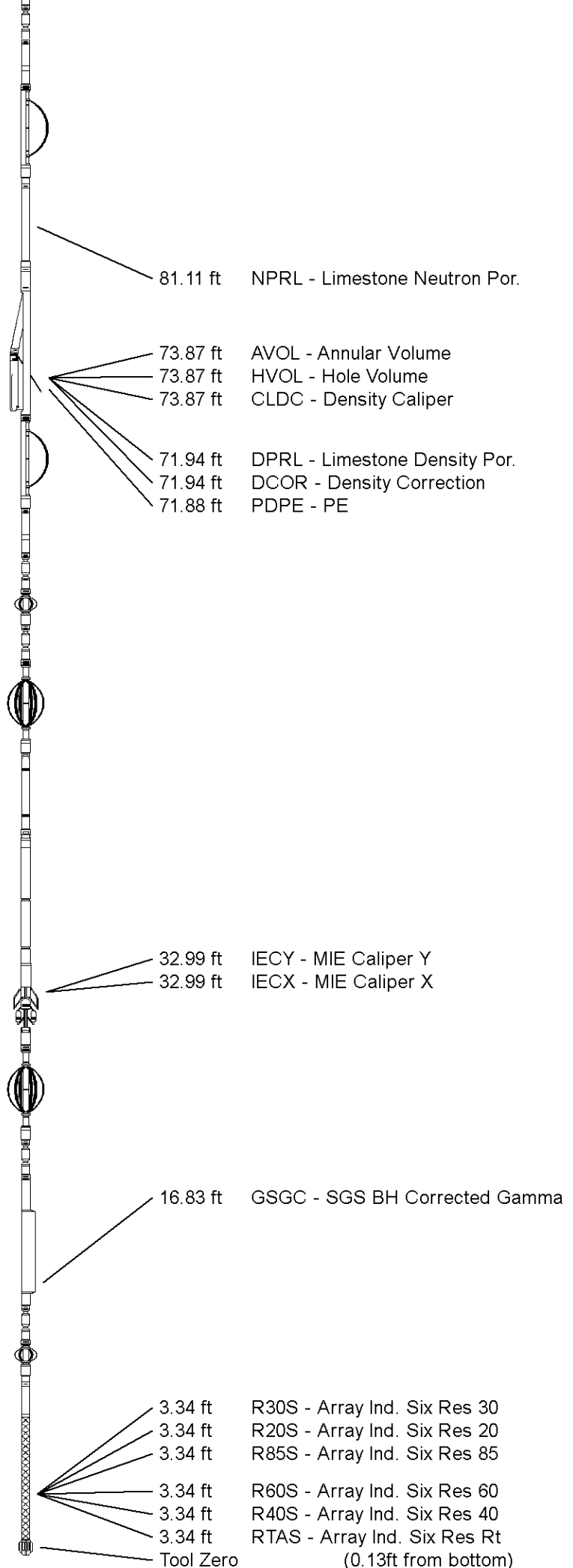
Spectral Gamma Ray Sub
SGS-E.J 128 LG: 7.78 ft WT: 105.8 lb OD: 3.543 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 611 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 695 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in


Compact Induction
MAI-B.A 289 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 160.68 ft Weight: 1135.4 lb



COMPANY	WHITING OIL AND GAS CORPORATION		
WELL	HORSETAIL 30F-1943		
FIELD	REDTAIL		
PROVINCE/COUNTY	WELD		
COUNTRY/STATE	U.S.A. / COLORADO		

Elevation Kelly Bushing	4797.00	feet	First Reading	13655.00	feet
Elevation Drill Floor	4797.00	feet	Depth Driller	13702.00	feet
Elevation Ground Level	4780.00	feet	Depth Logger	13702.00	feet


Weatherford[®]

MEASURED DEPTH
X-Y CALIPER
LOG