



Weatherford

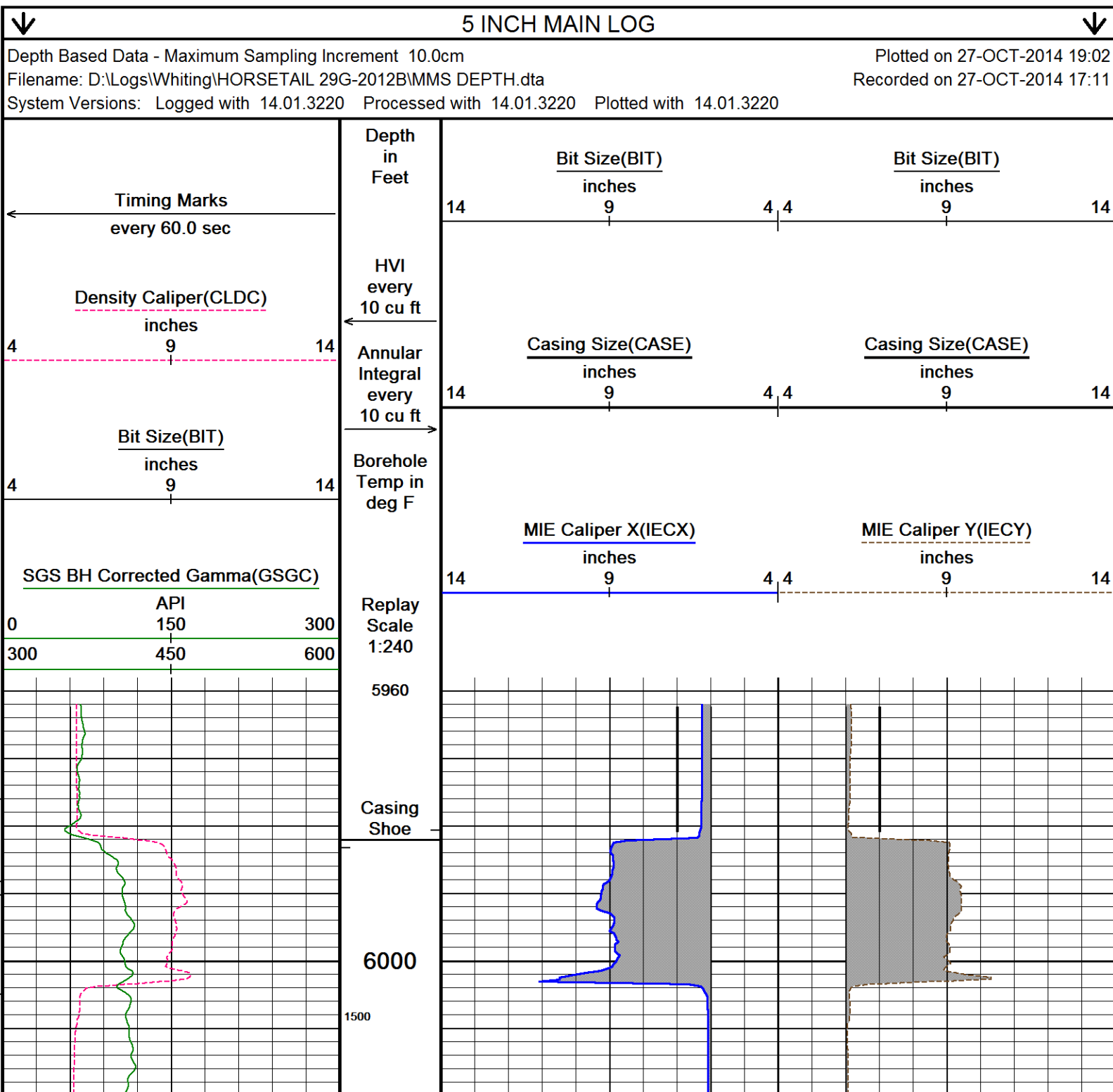
**MEASURED DEPTH
X-Y CALIPER
HOLE VOLUME LOG**

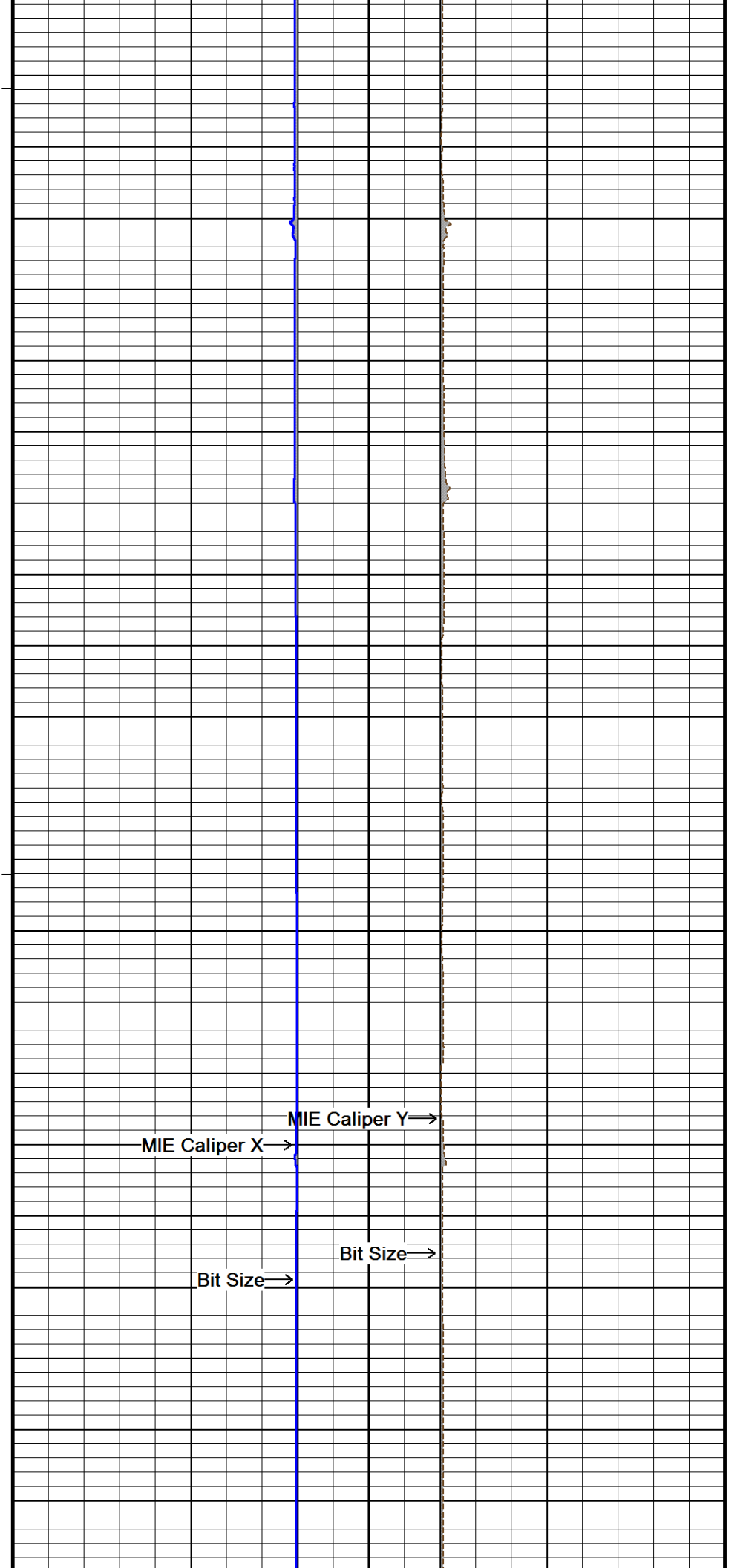
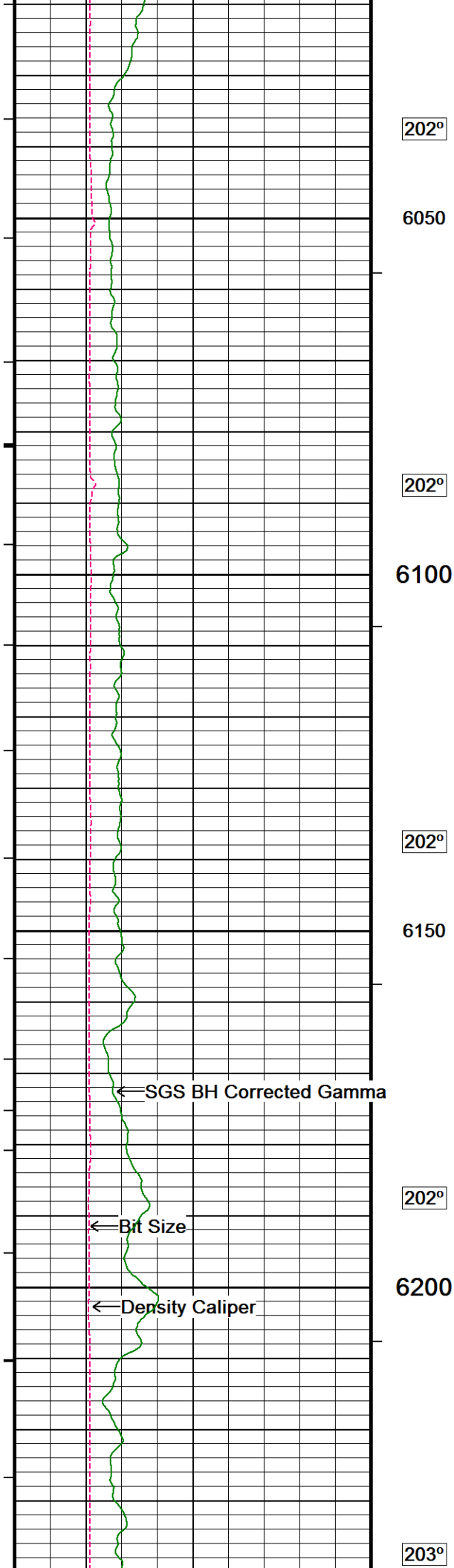
COMPANY			WHITTING OIL AND GAS CORPORATION		
WELL			HORSETAIL 29G-2012B		
FIELD			REDTAIL		
PROVINCE/COUNTY			WELD		
COUNTRY/STATE			U.S.A. / COLORADO		
LOCATION			SHL: 2328 FNL & 1888 FWL		
PERMIT NUMBER			BHL: 100 FNL & 1485 FWL		
SEC 29	TWP 10N	RGE 57W	Other Services		SPECTRAL GAMMA
			ARRAY INDUCTION		
			MICRO IMAGER		
			NEUTRON/DENSITY		
API Number			05-123-38804		
Permanent Datum G.L., Elevation 4694 feet					
Log Measured From KB					
Drilling Measured From K.B. @ 18 FEET					
Date	26-OCT-2014				
Run Number	ONE				
Service Order	6551-101540329				
Depth Driller	13700.00		feet		
Depth Logger	13700.00		feet		
First Reading	13650.00		feet		
Last Reading	5962.00		feet		
Casing Driller	5981.00		feet		
Casing Logger	5982.00		feet		
Bit Size	6.000		inches		
Hole Fluid Type	WBM				
Density / Viscosity	10.60	lb/USg	44.00	type in	
PH / Fluid Loss	8.40		5.60	ml/30Min	
Sample Source	FLOWLINE				
Rm @ Measured Temp	1.88 @ 86.6		ohm-m		
Rmf @ Measured Temp	1.50 @ 86.6		ohm-m		
Rmc @ Measured Temp	2.26 @ 86.6		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.79 @210.0		ohm-m		
Time Since Circulation	1 HOUR				
Max Recorded Temp	216.00		deg F		
Equipment / Base	18086		Casper		
Recorded By	C CULLEN				
Witnessed By	M ODEBERG				
WSL					GEOLOGIST
					WSL

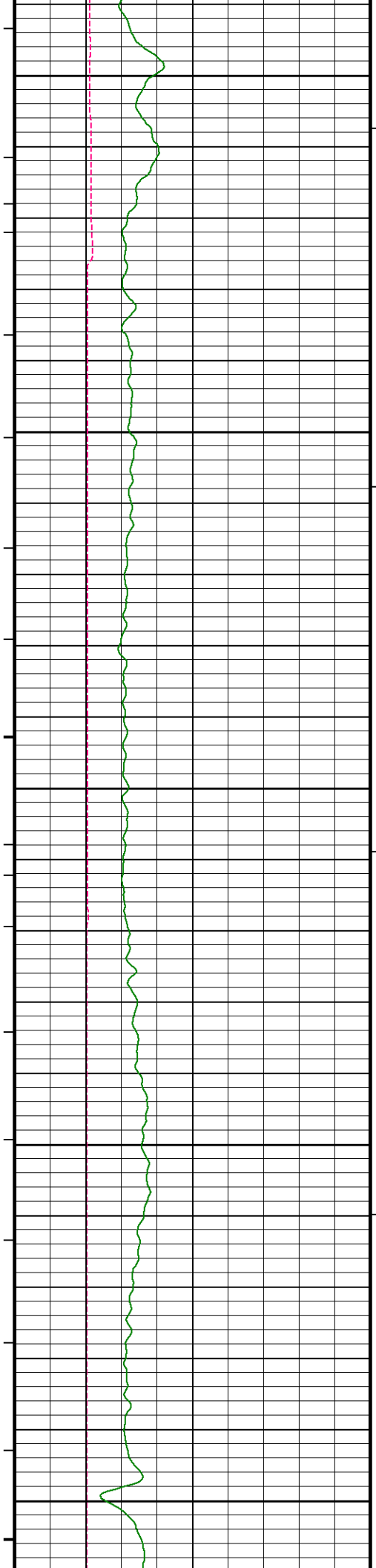
BOREHOLE RECORD					Last Edited: 26-OCT-2014 09:16
Bit Size inches		Depth From feet		Depth To feet	
6.000		5981.00		13700.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	7.000	0.00	5981.00	29.00	

REMARKS
LOGGED WITH WLS 14.01.3220
LOGGED USING MESSENGER SHUTTLE METHOD OF DEPLOYMENT
HARDWARE:
MDN: MIS-A SINGLE 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
ANNULAR HOLE VOLUME FROM TD TO 7"-29# CASING AT 5982 FEET = 660 CUBIC FEET.
TOTAL HOLE VOLUME FROM TD TO 7"-29# CASING AT 5982 FEET = 1510 CUBIC FEET.
OPERATORS: S I ANDON J GERDES

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.







6250

203°

6300

203°

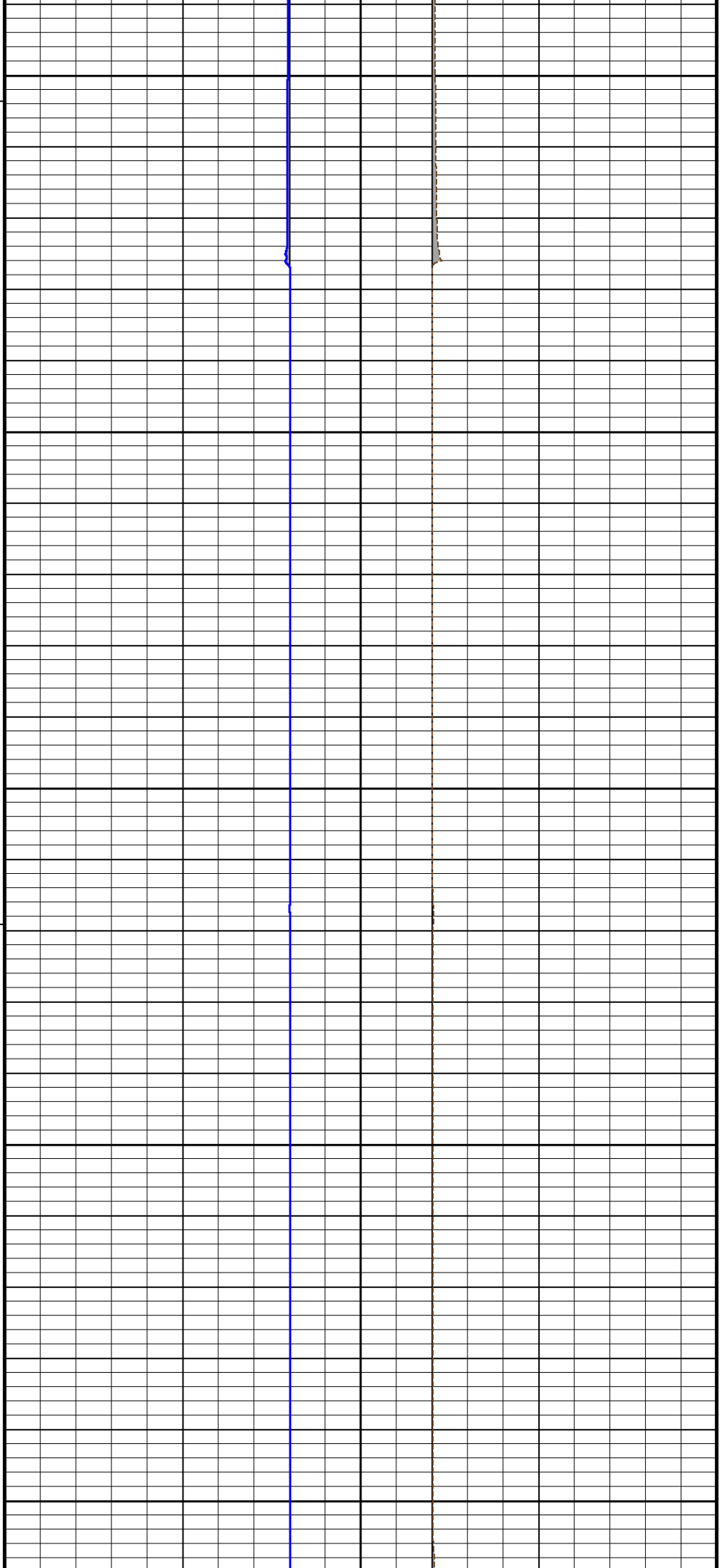
6350

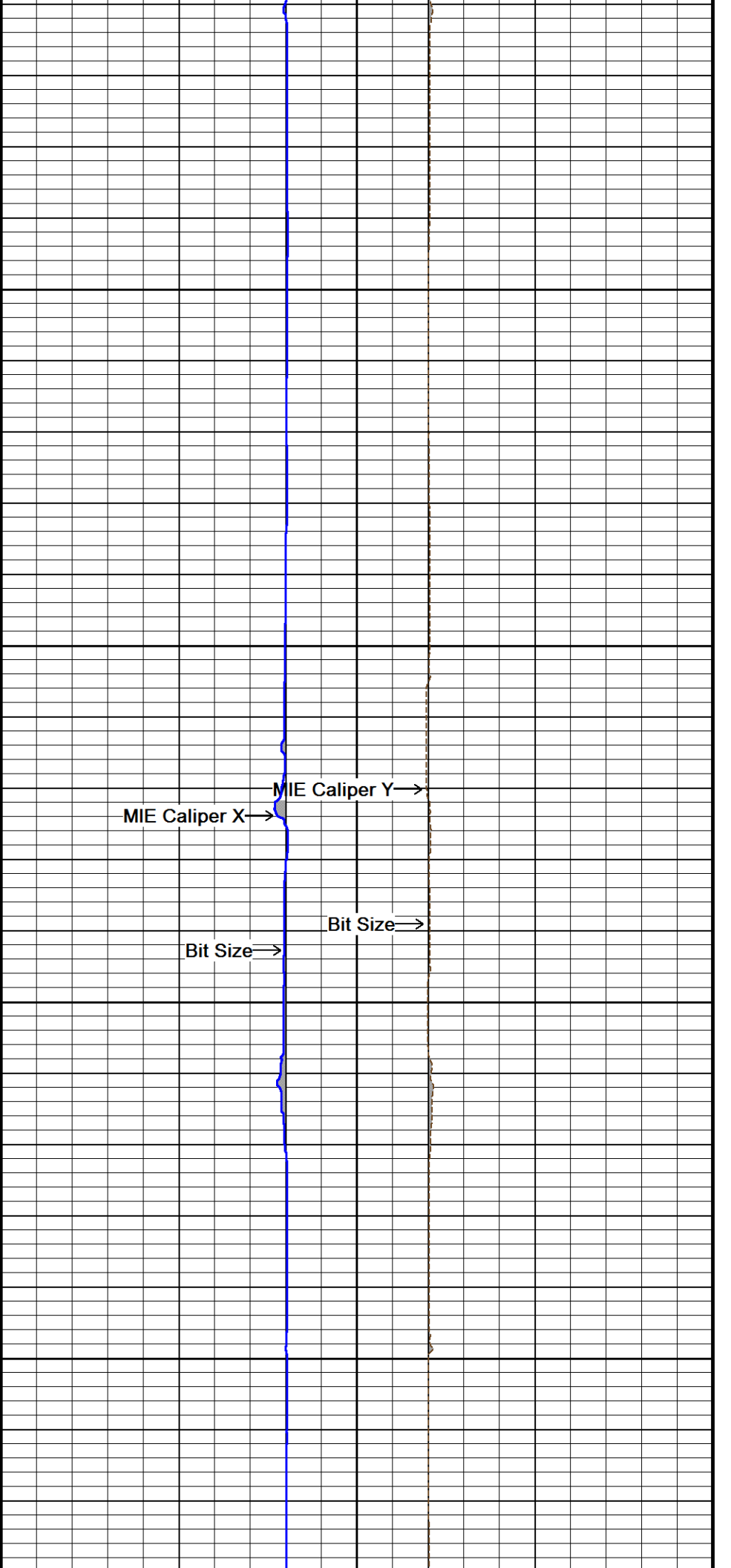
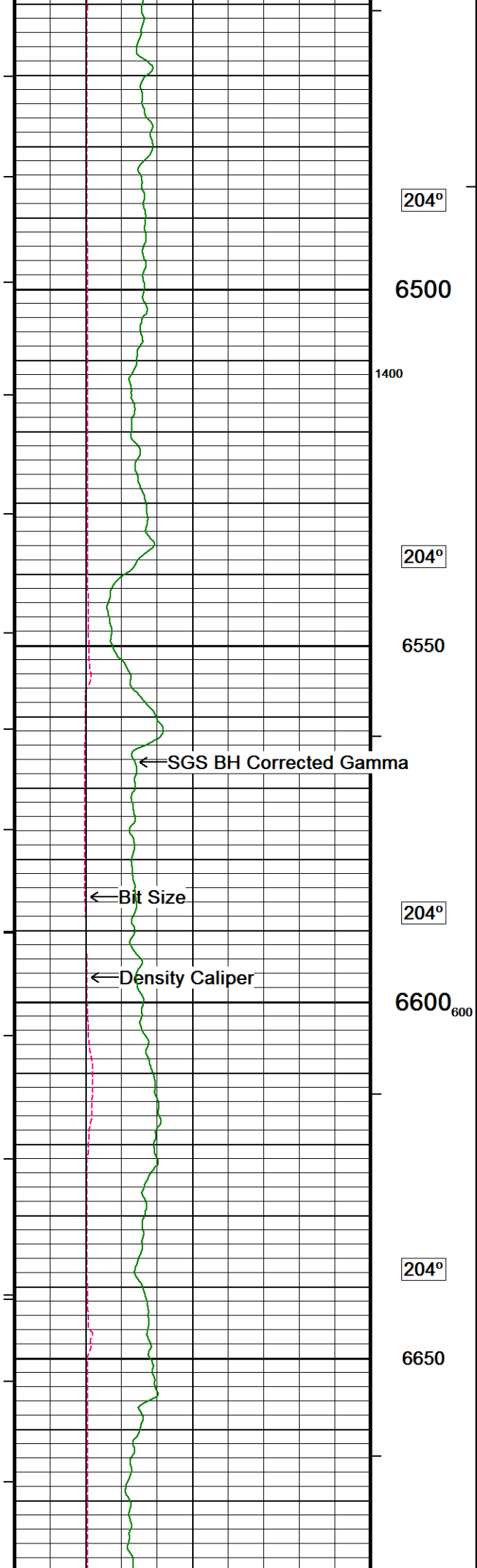
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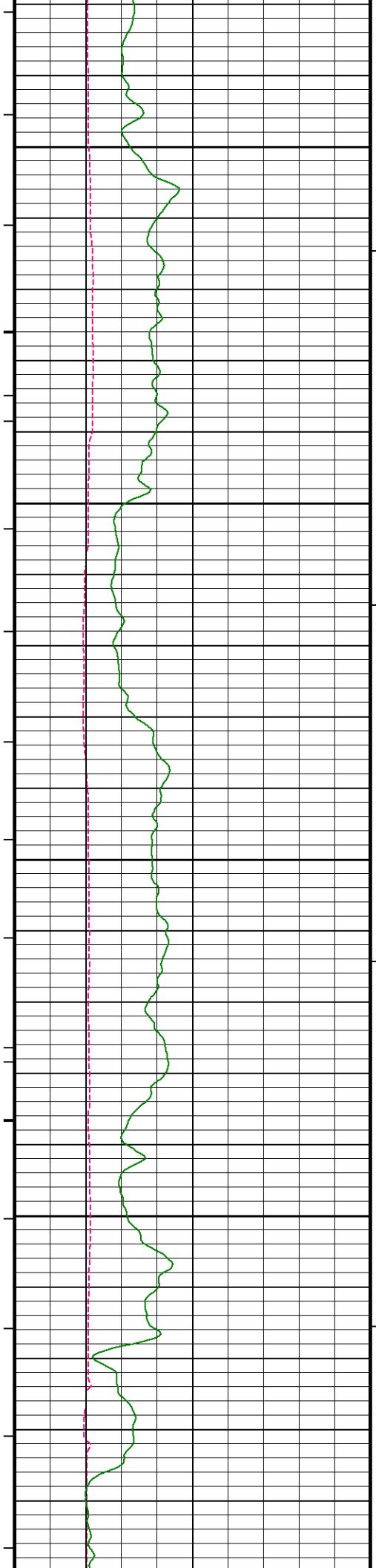
6400

203°

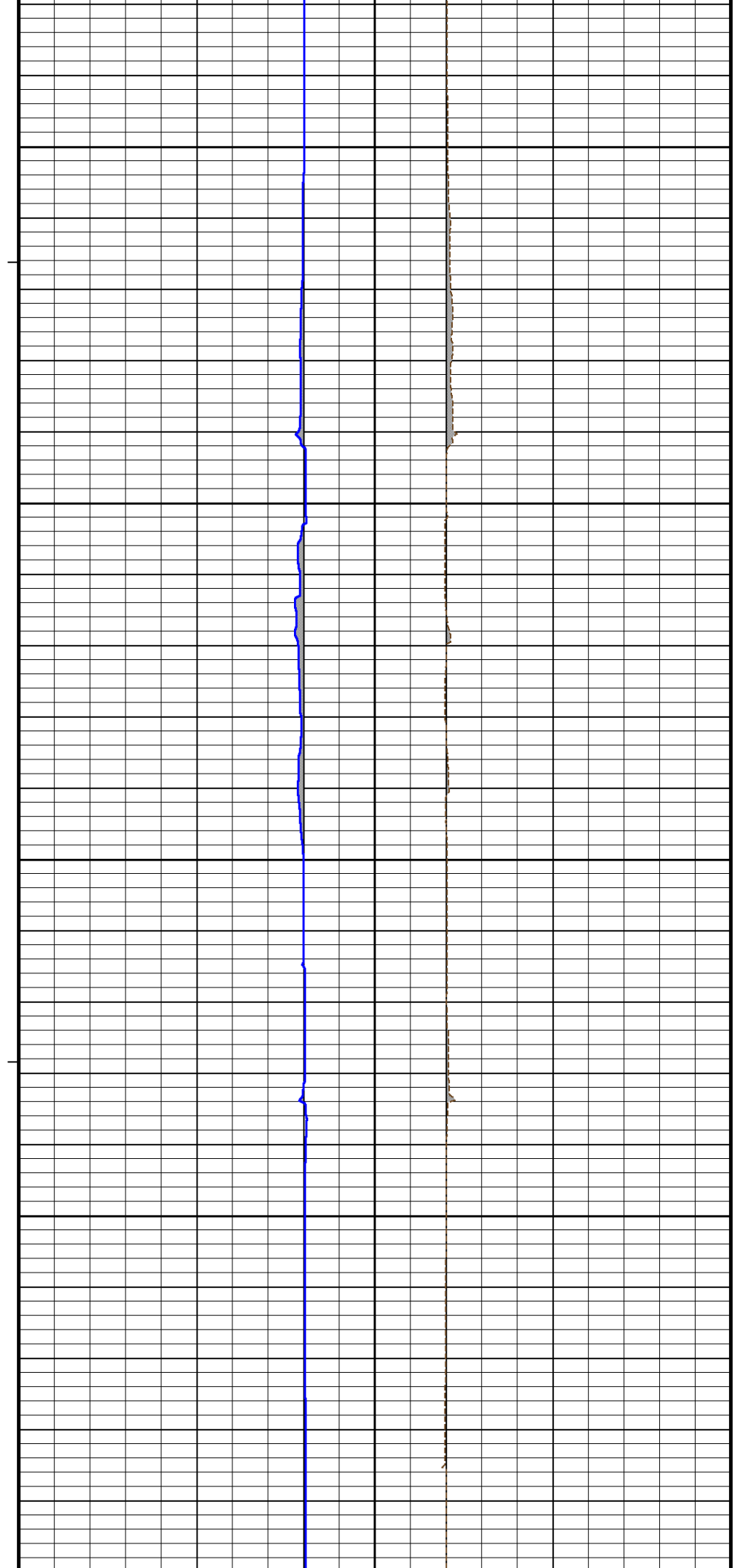
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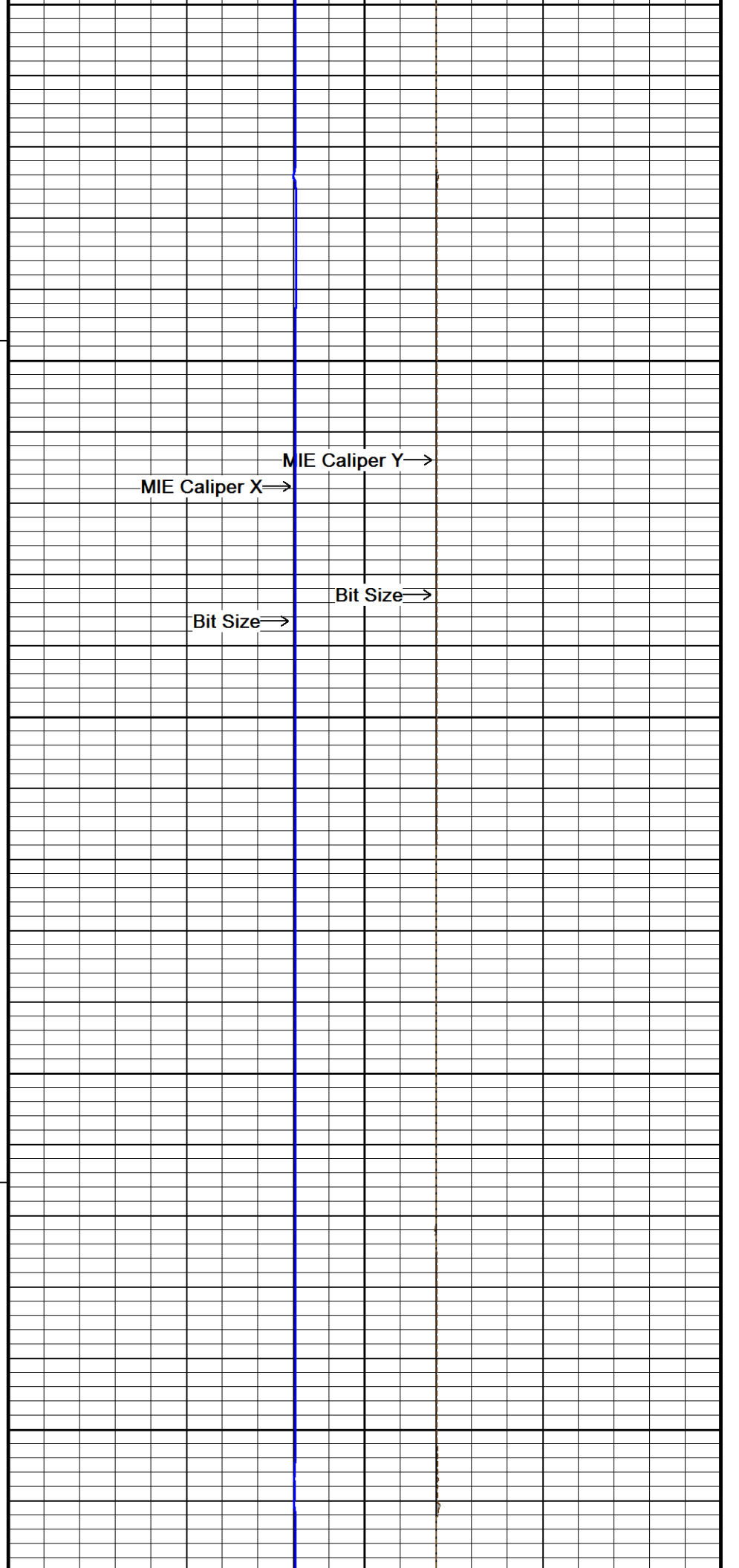
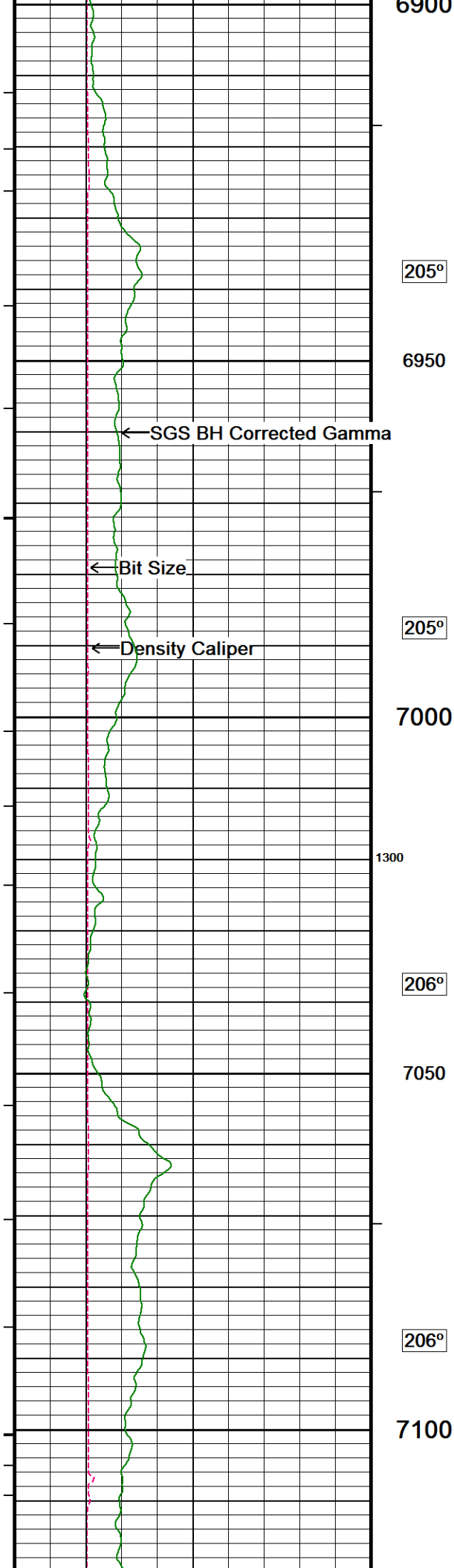


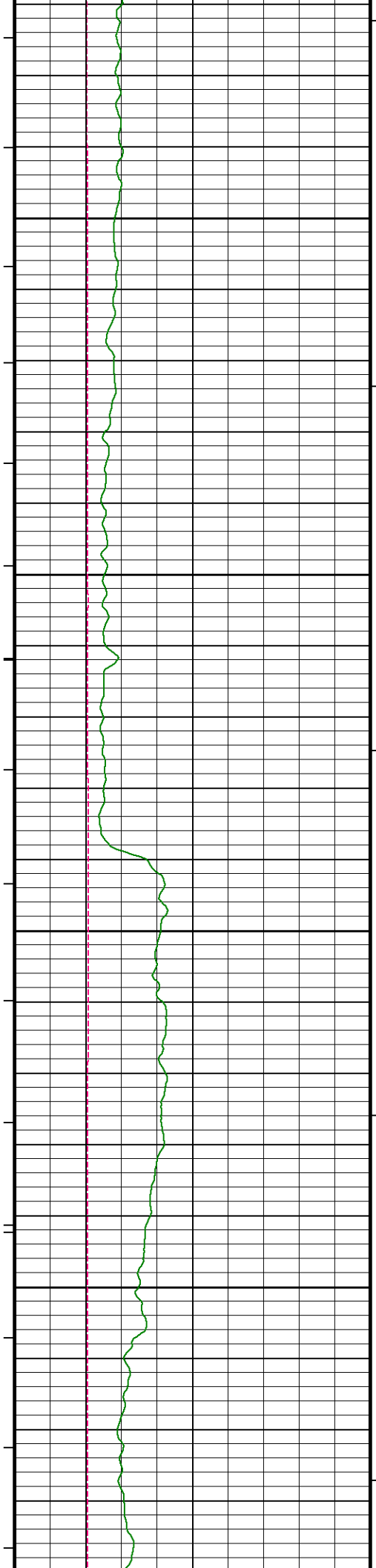




204°
6700
204°
6750
205°
6800
205°
6850
205°
6900







206°

7150

206°

7200

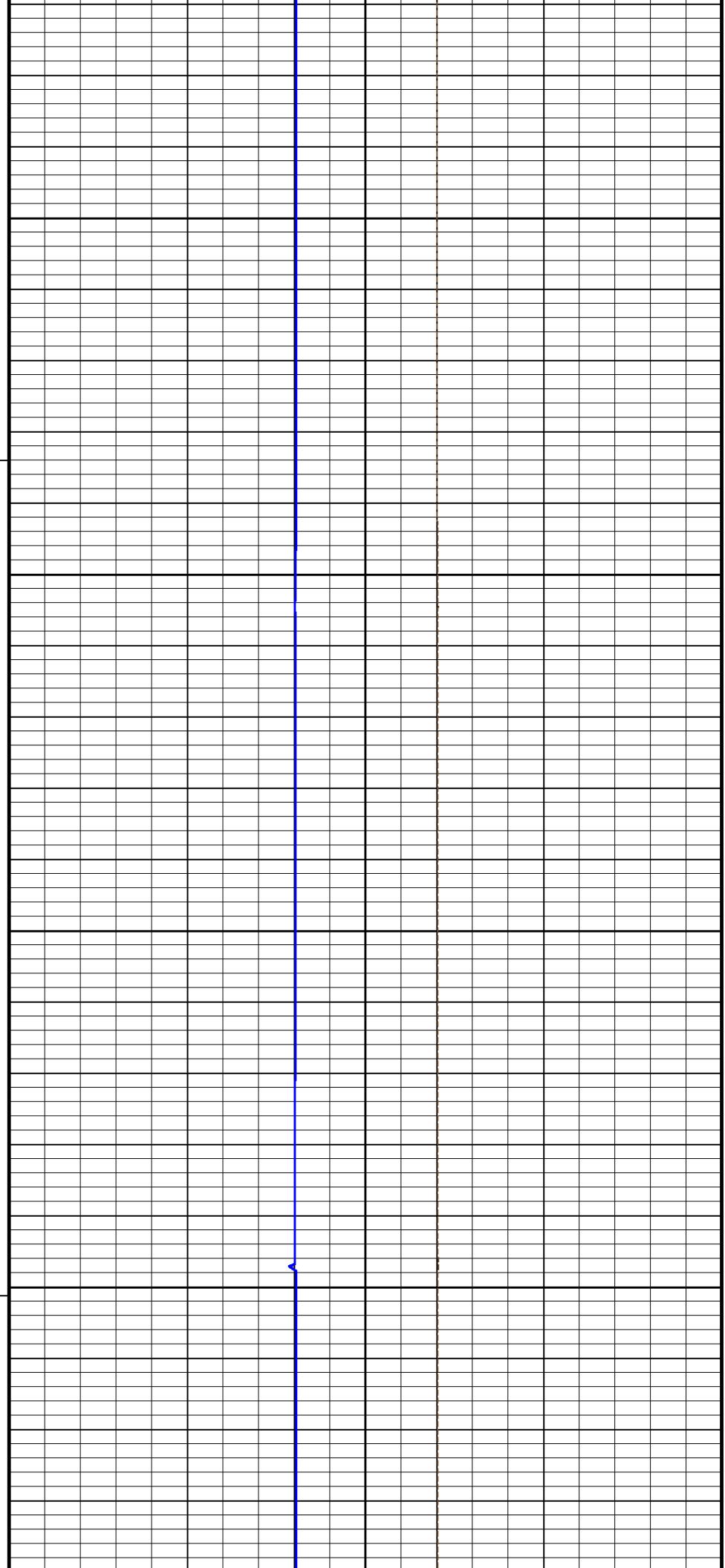
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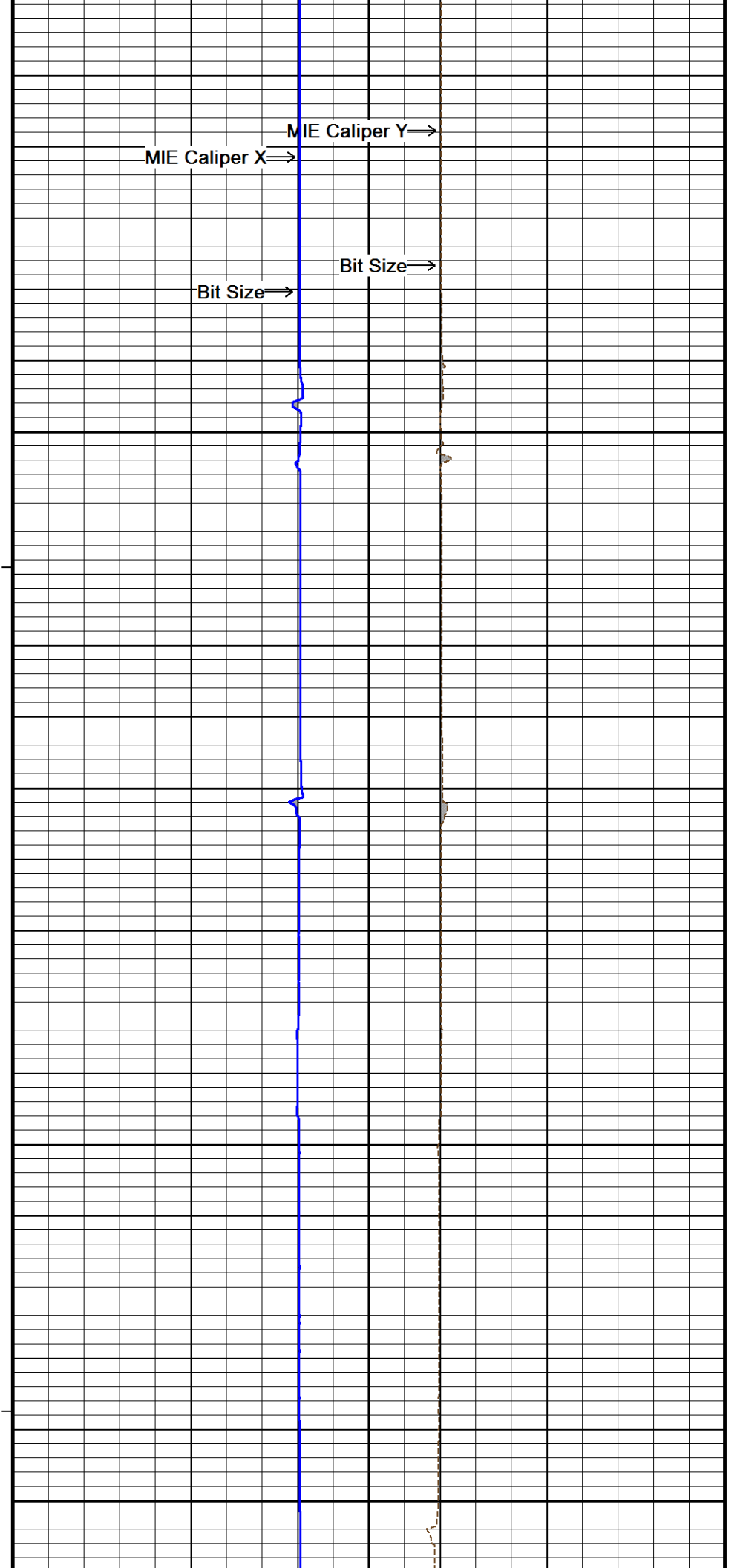
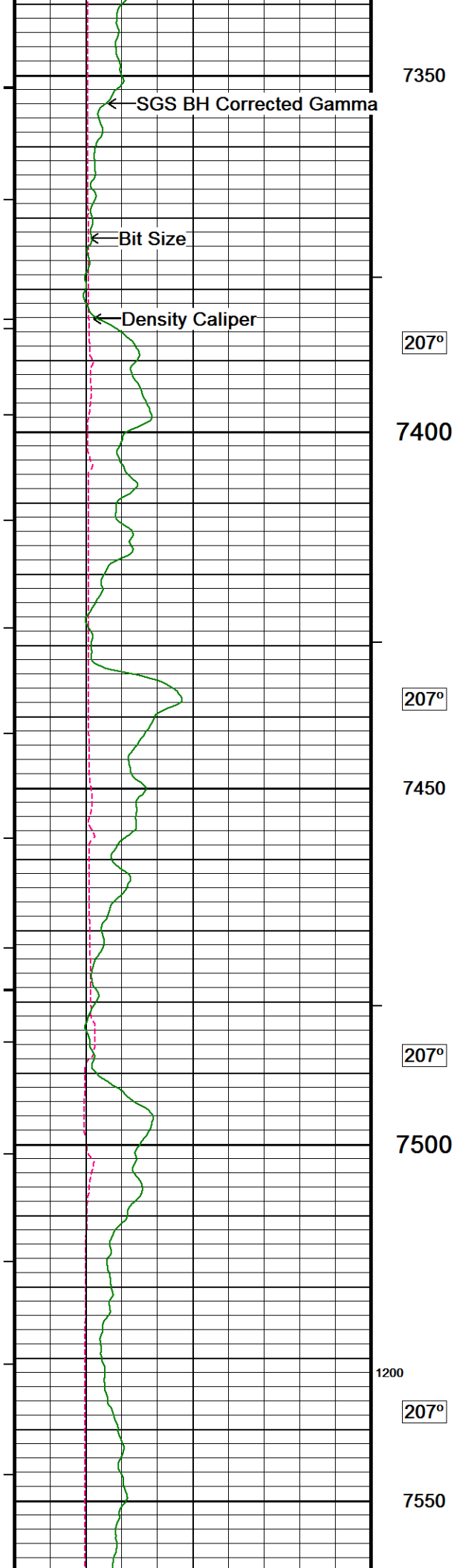
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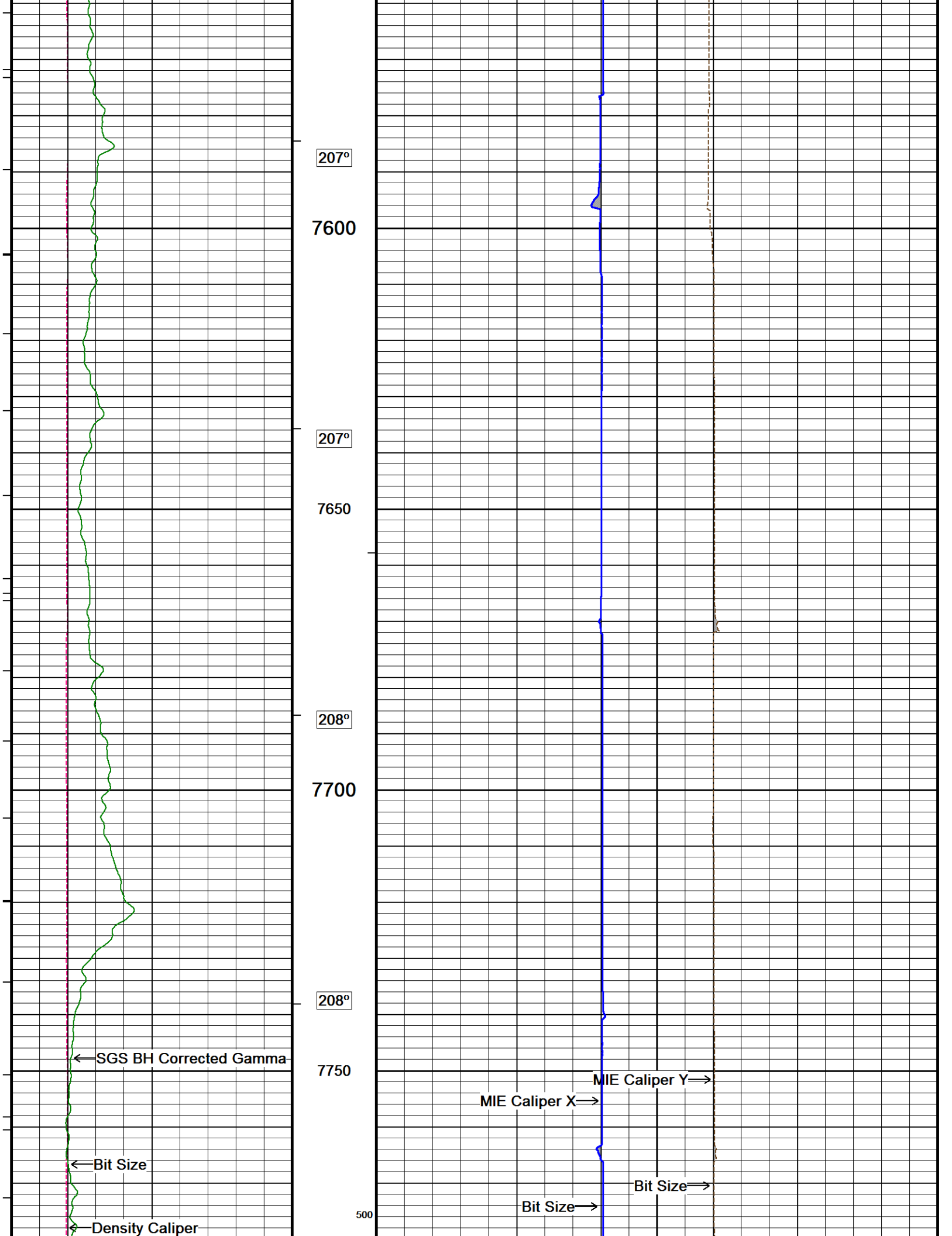
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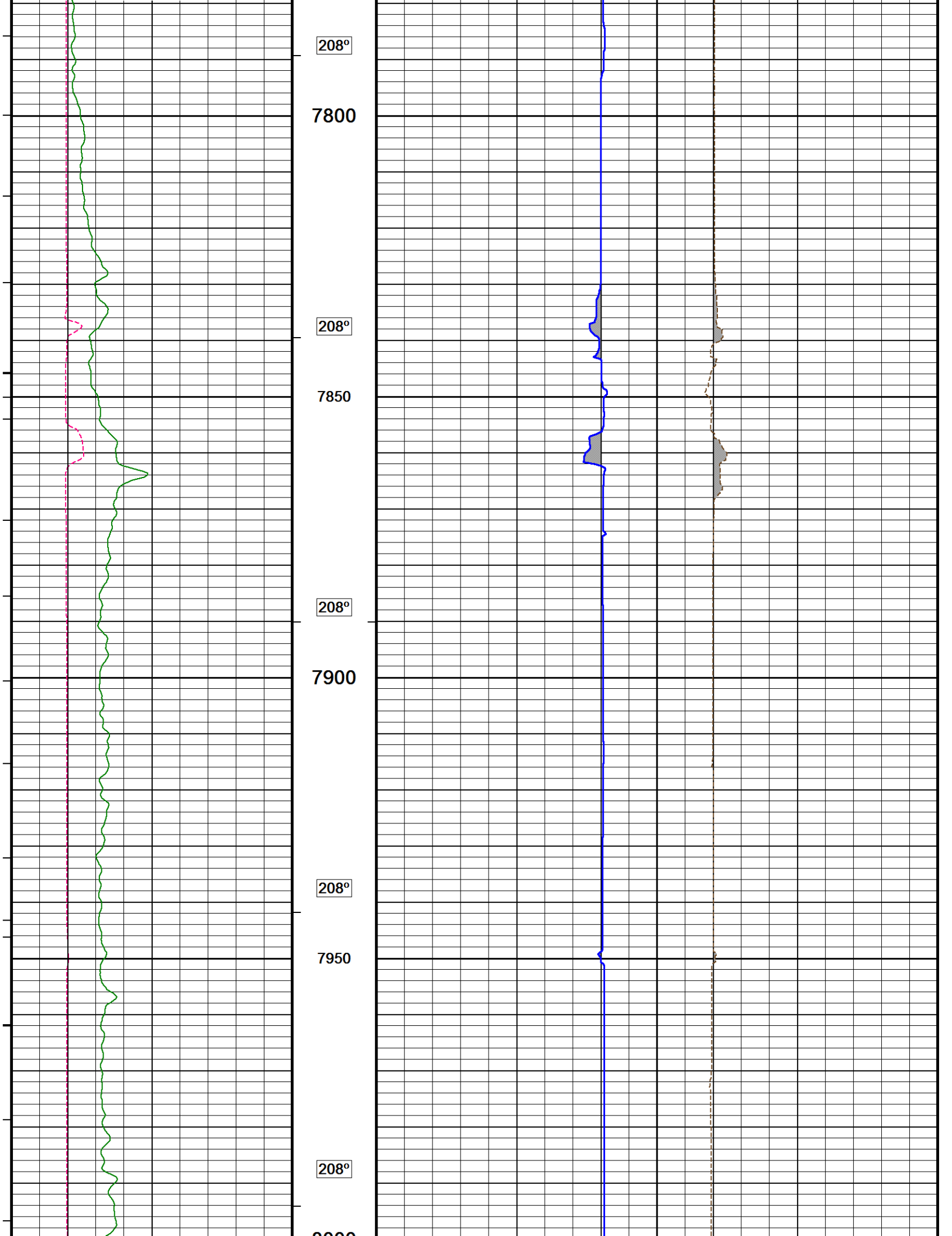
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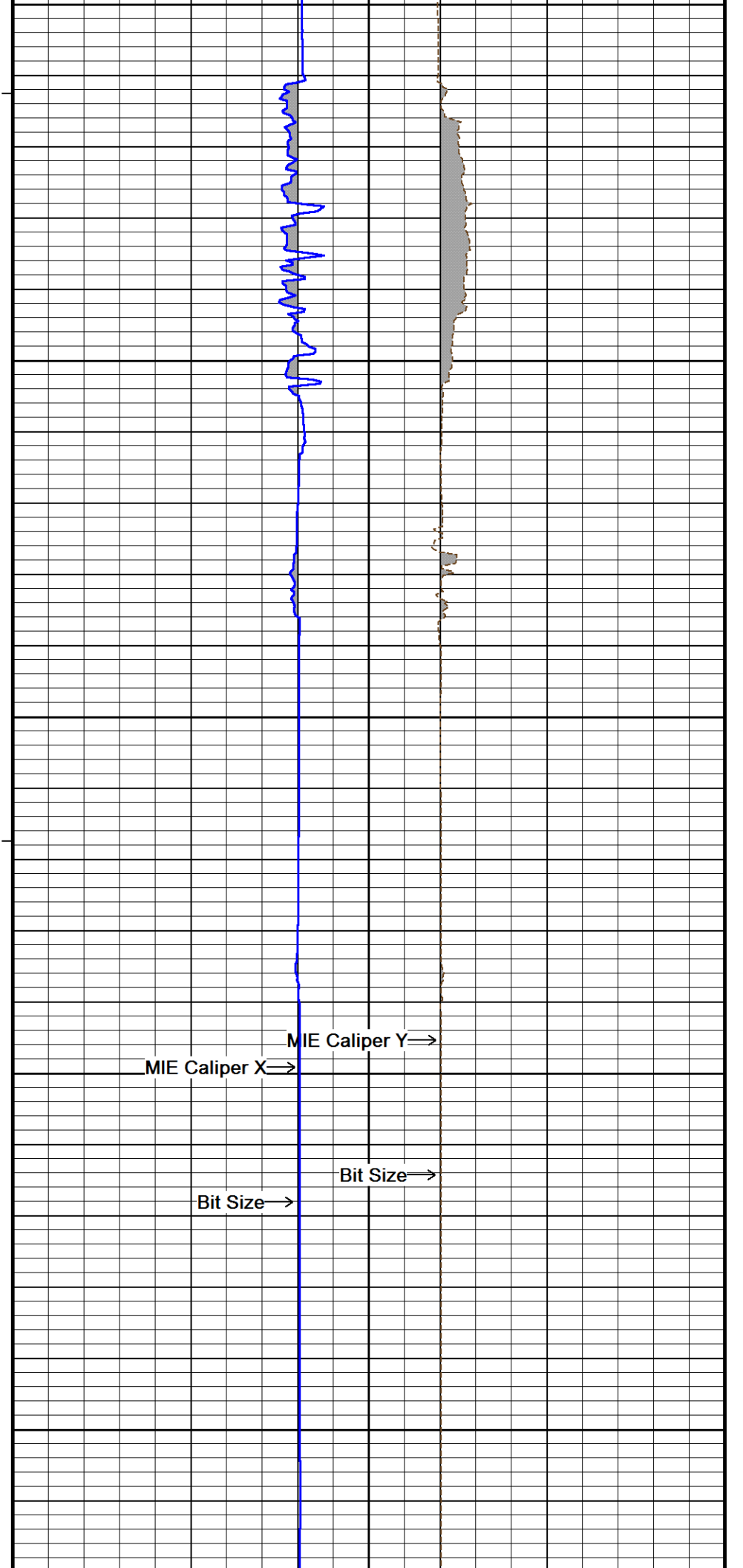
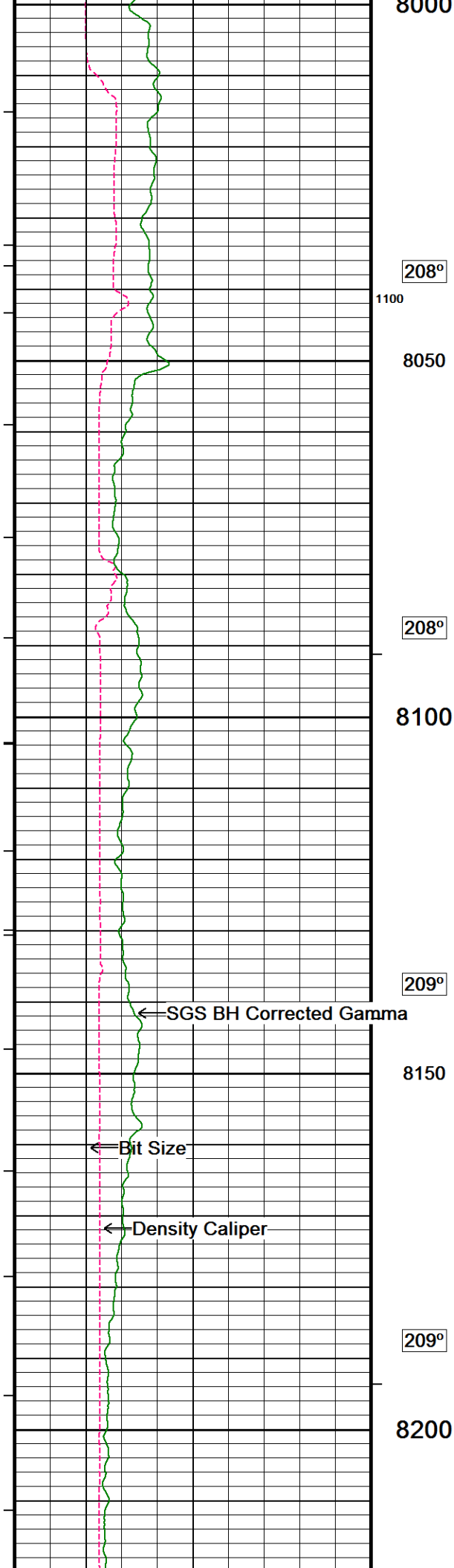
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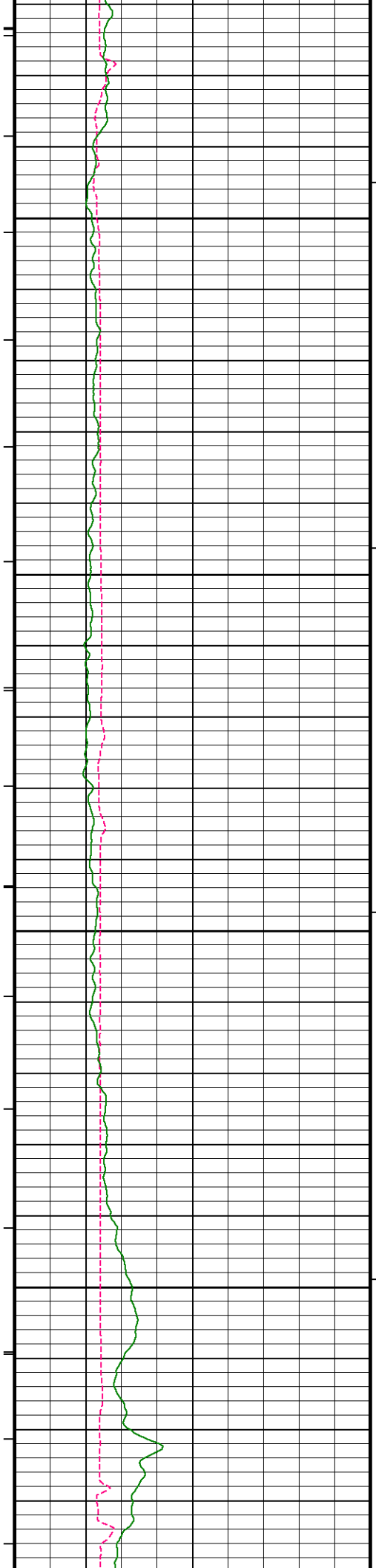




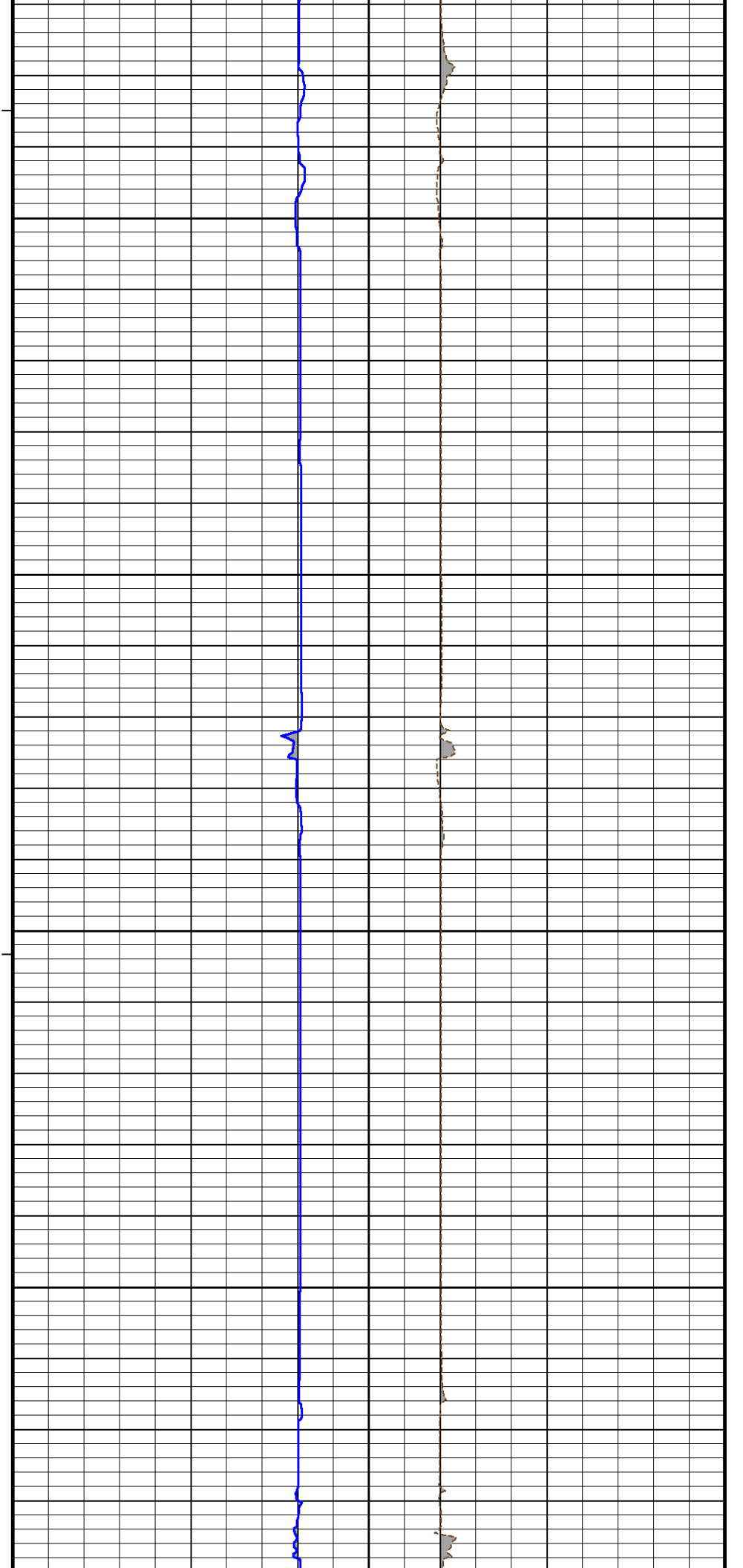


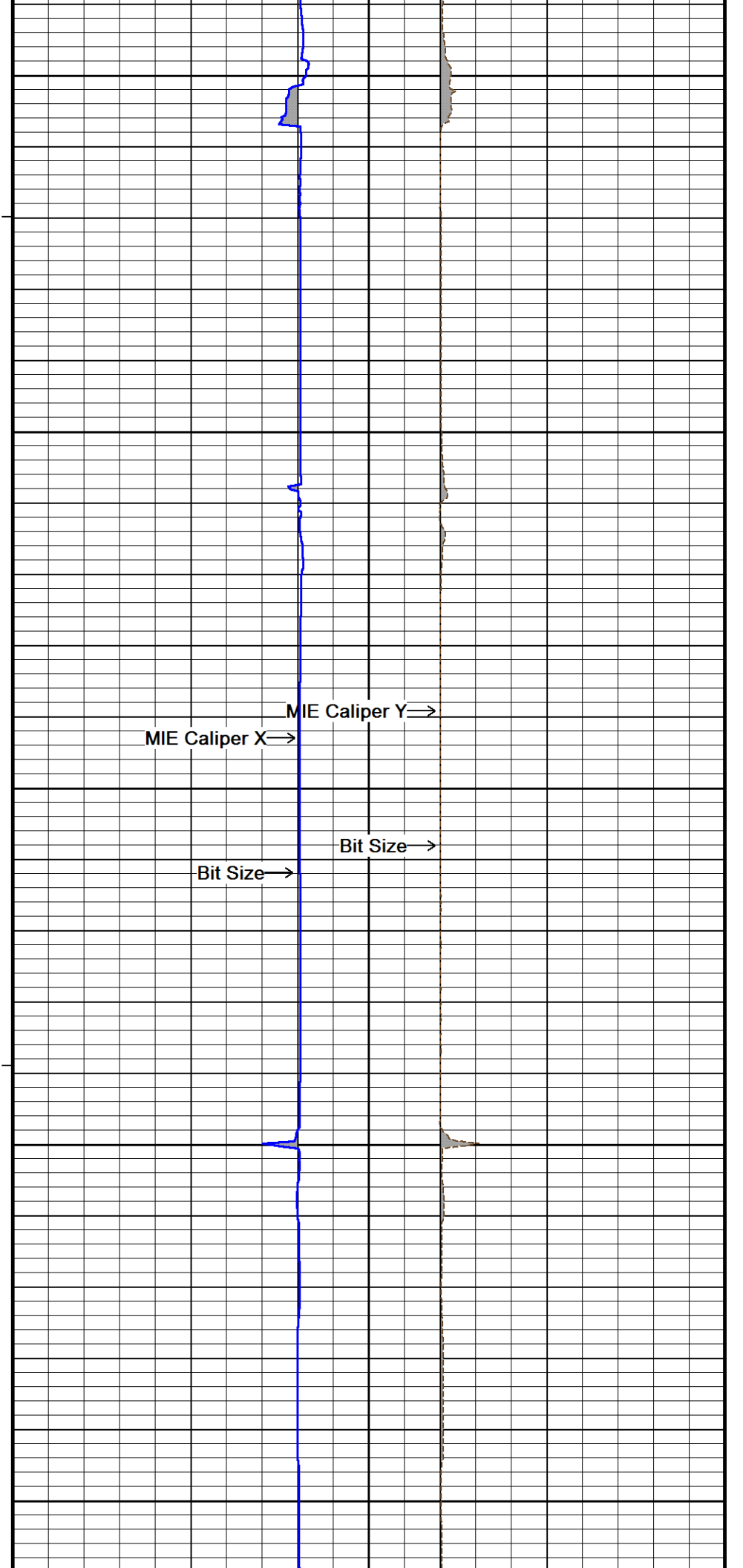
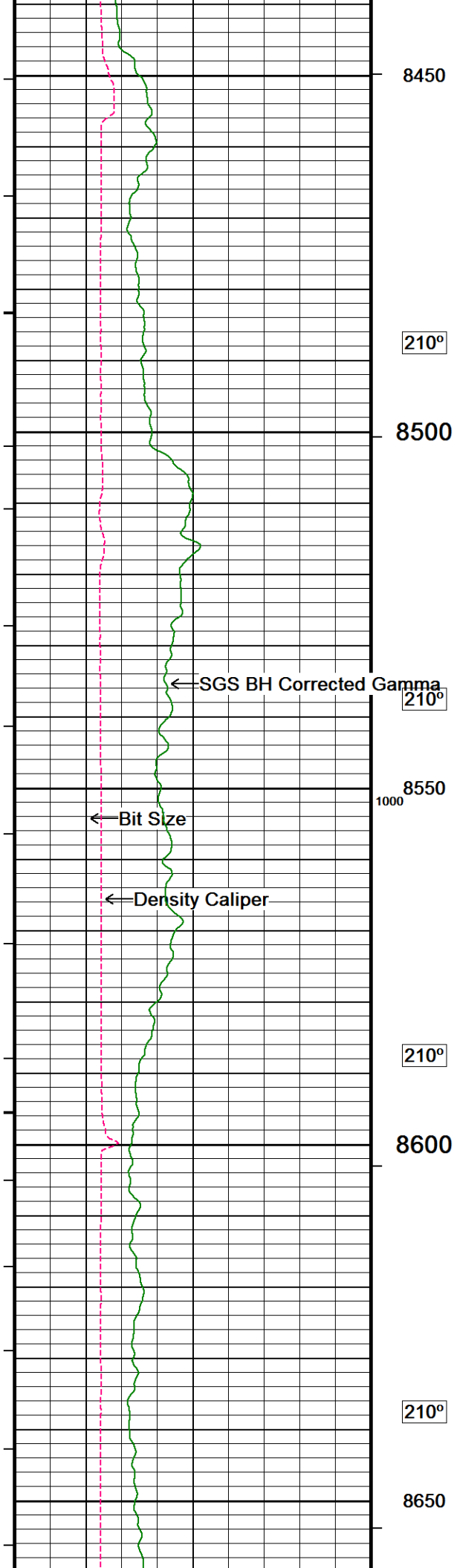


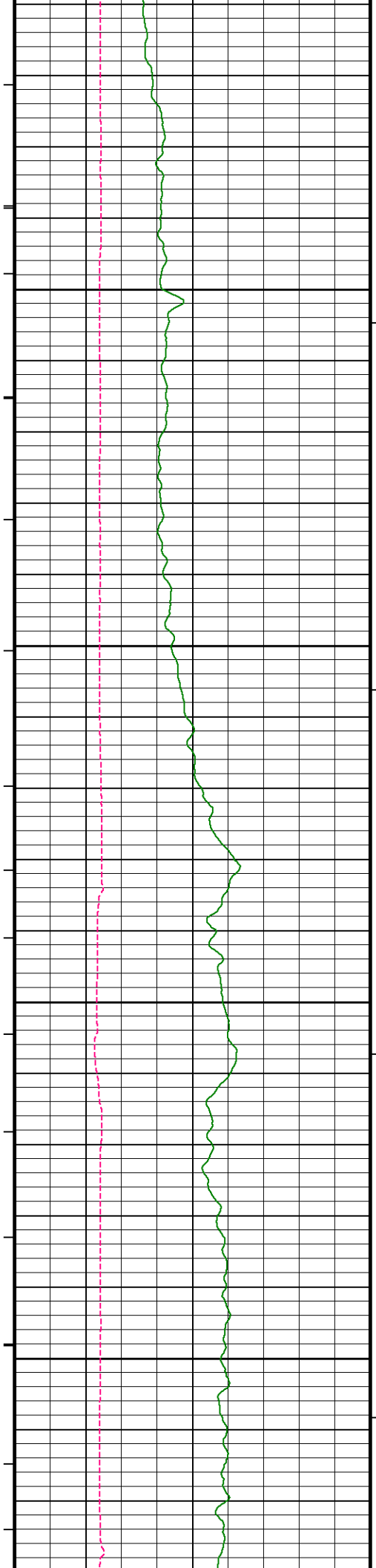




209°
8250
209°
8300
209°
8350
209°
8400
209°







210°

8700

210°

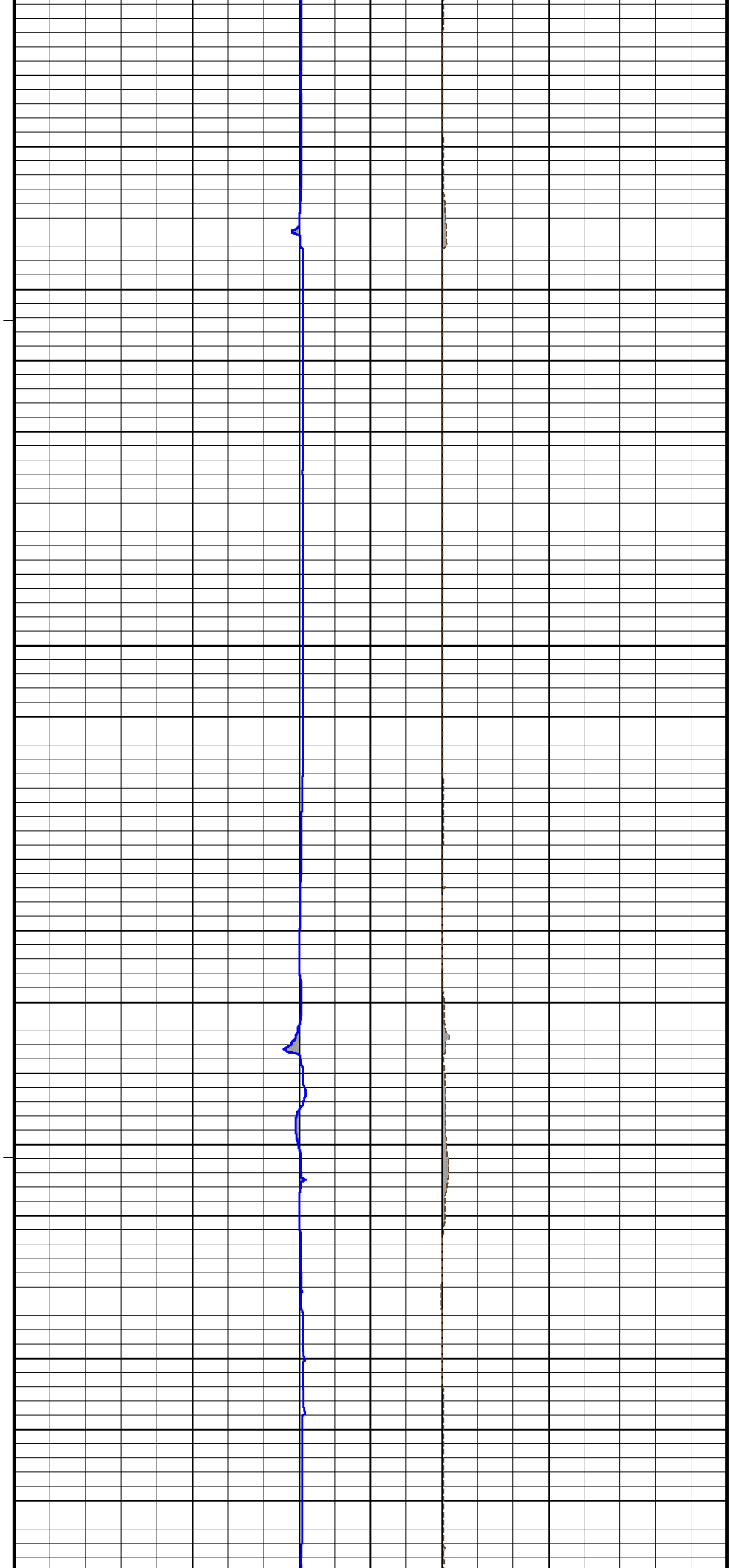
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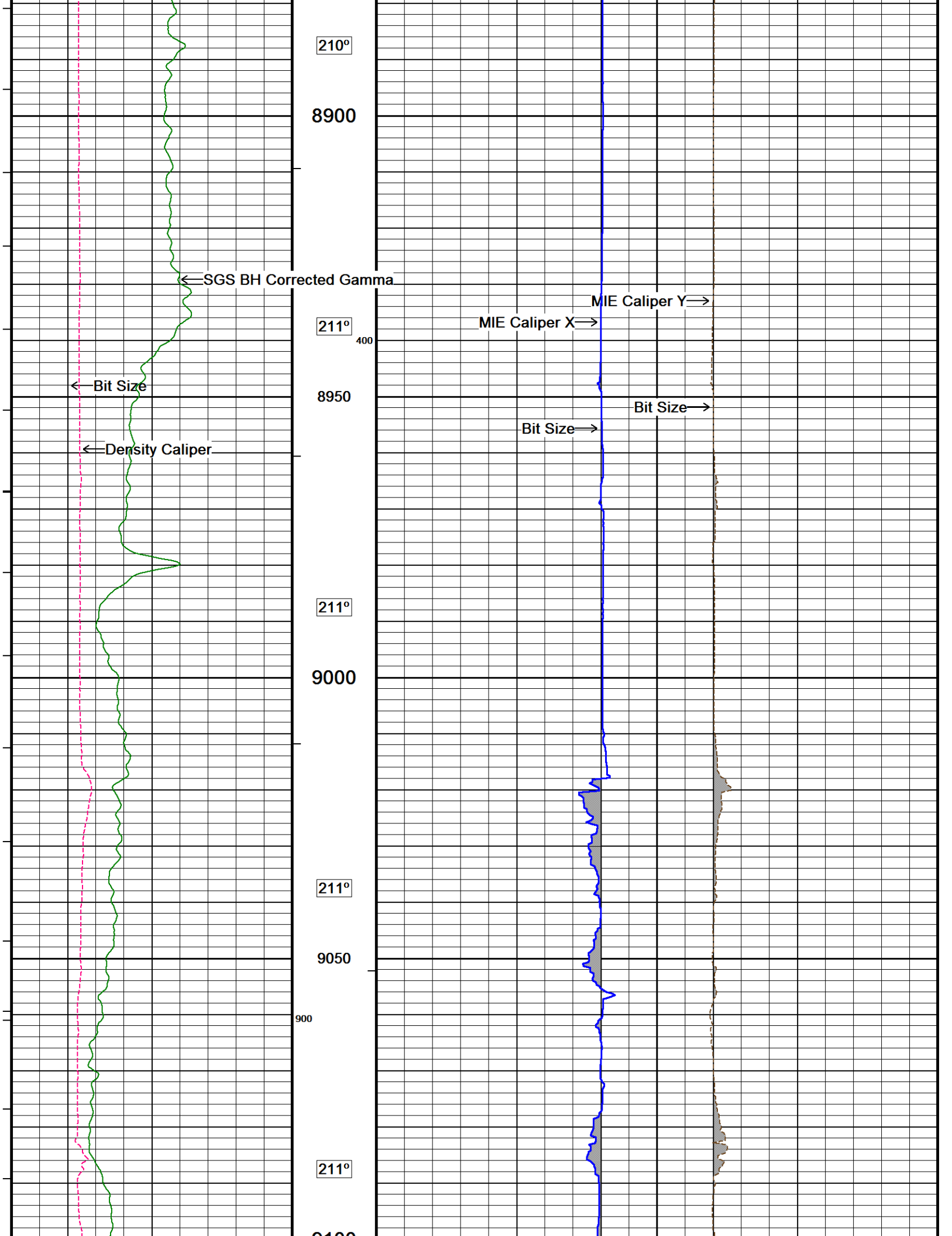
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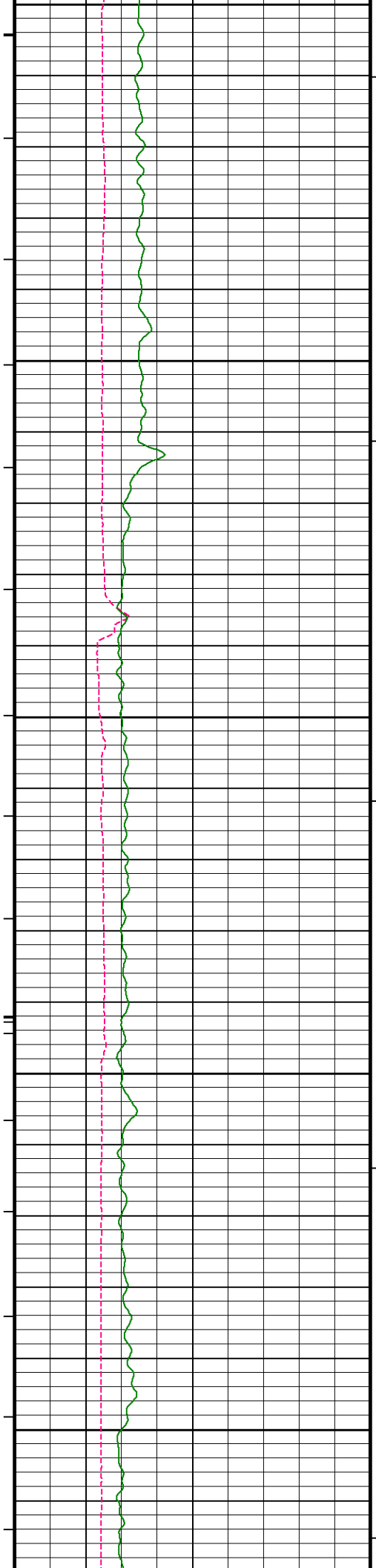
8800

210°

8850







9100

211°

9150

211°

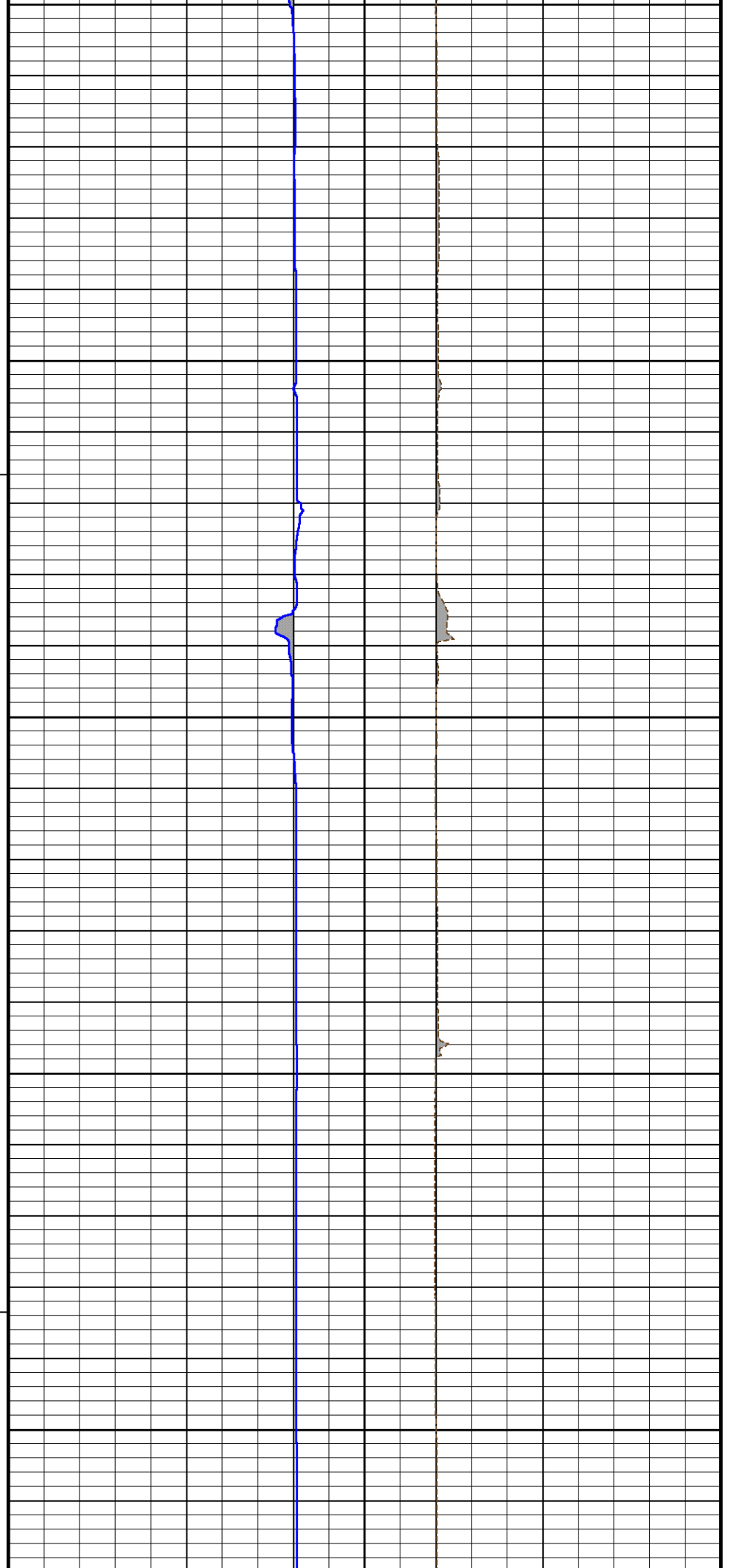
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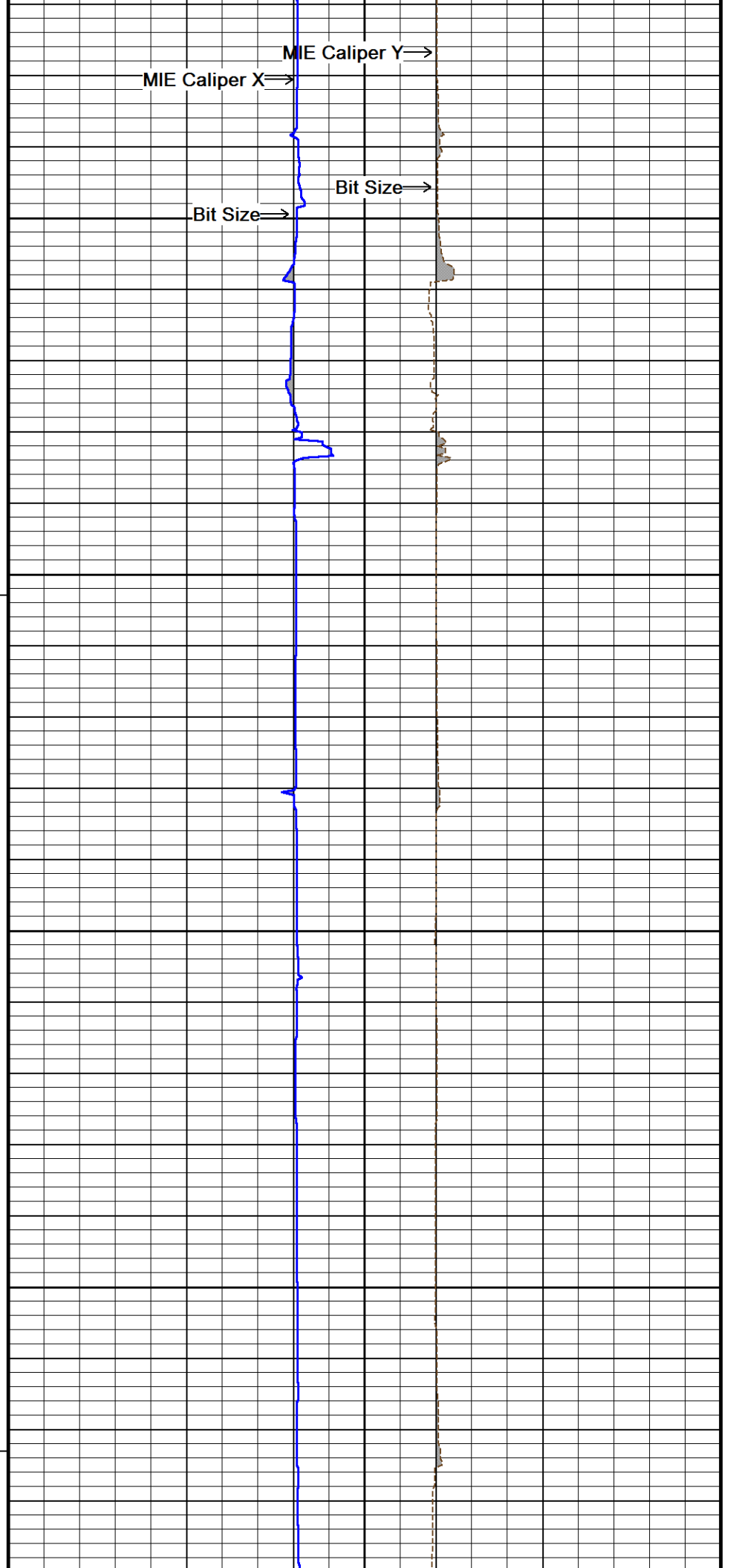
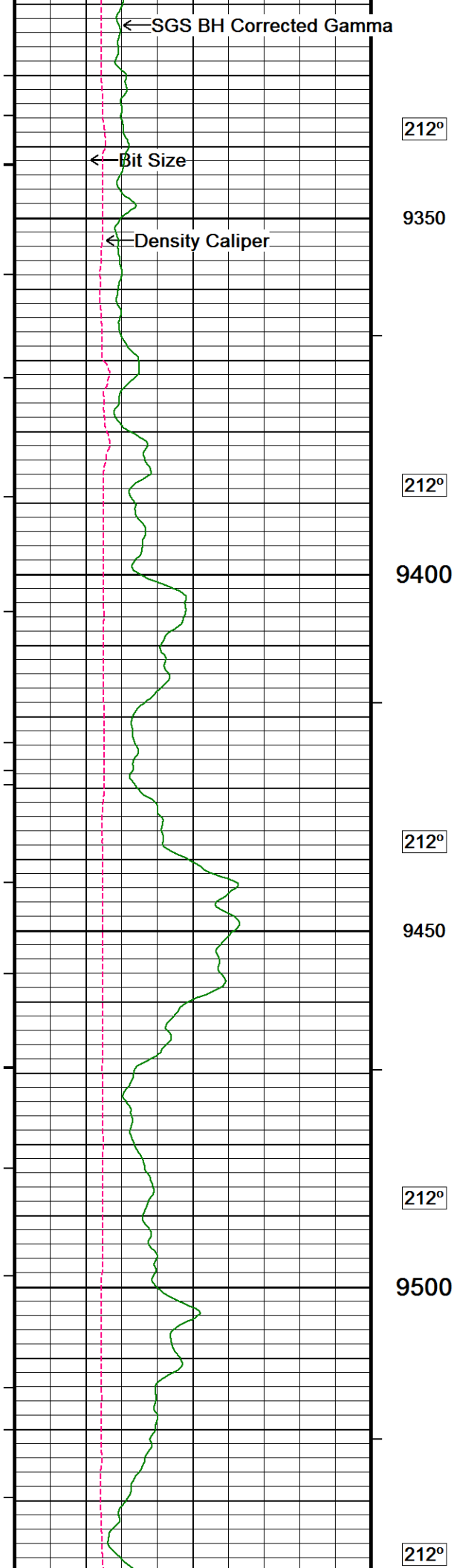
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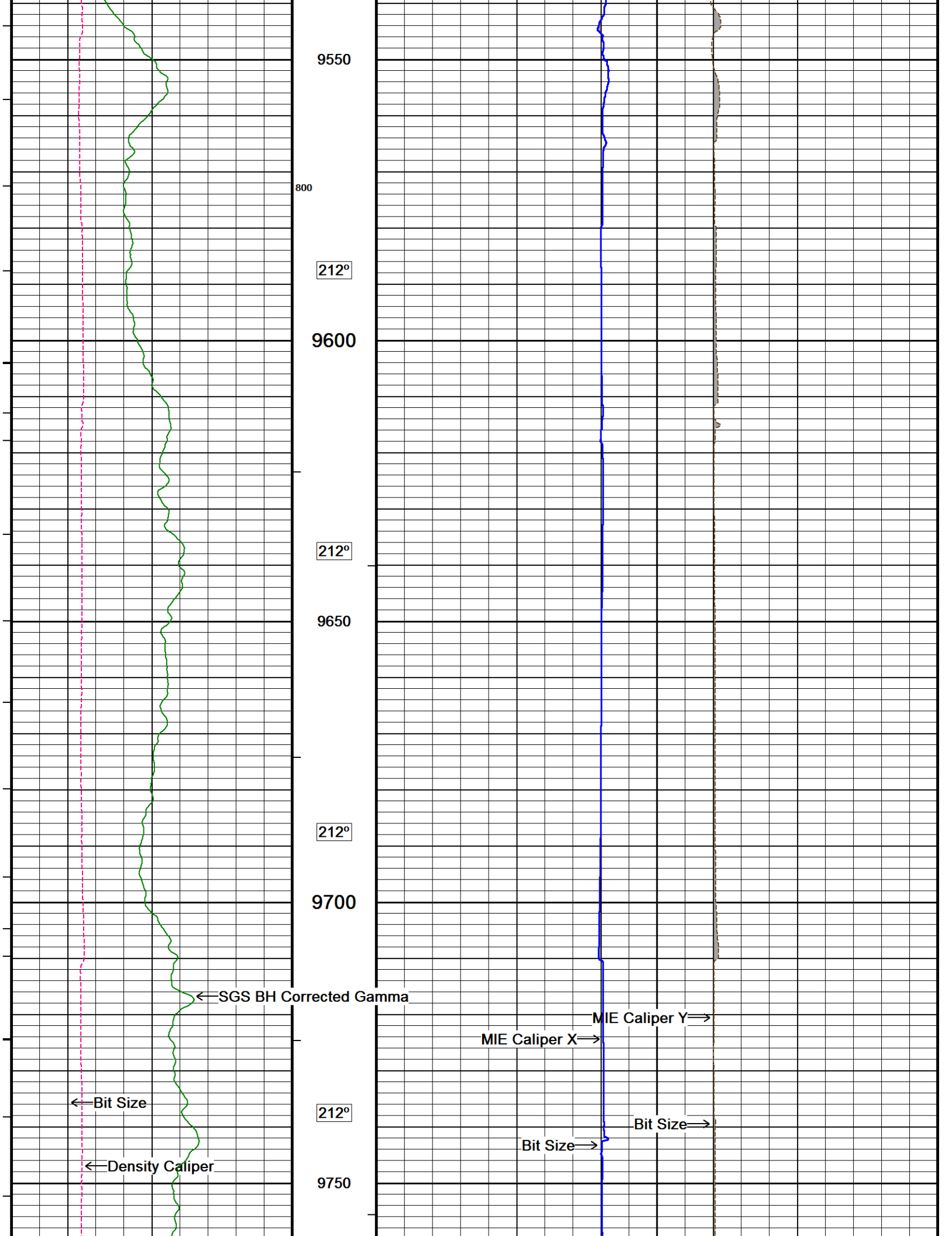
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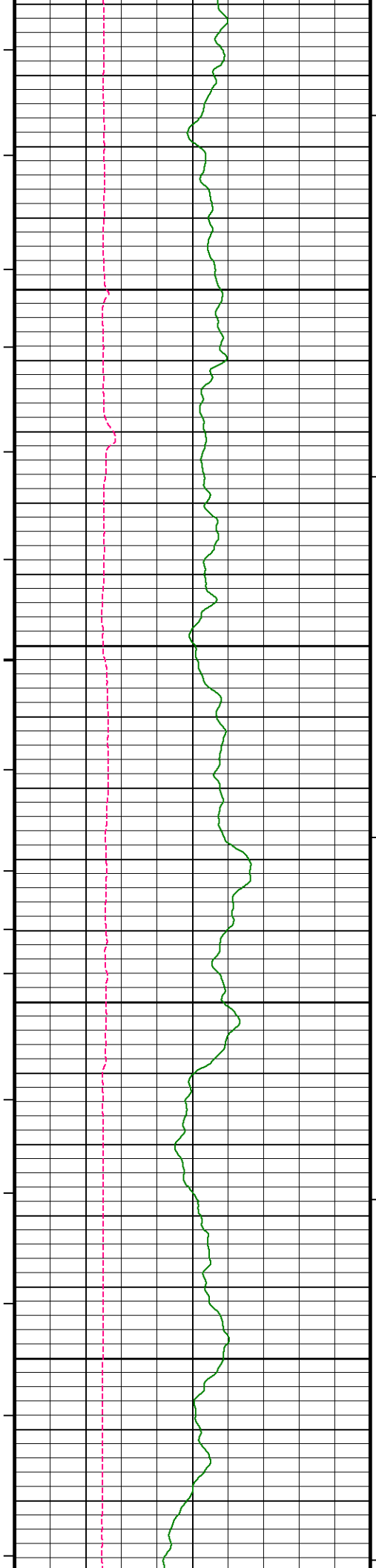
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9300









212°

9800

212°

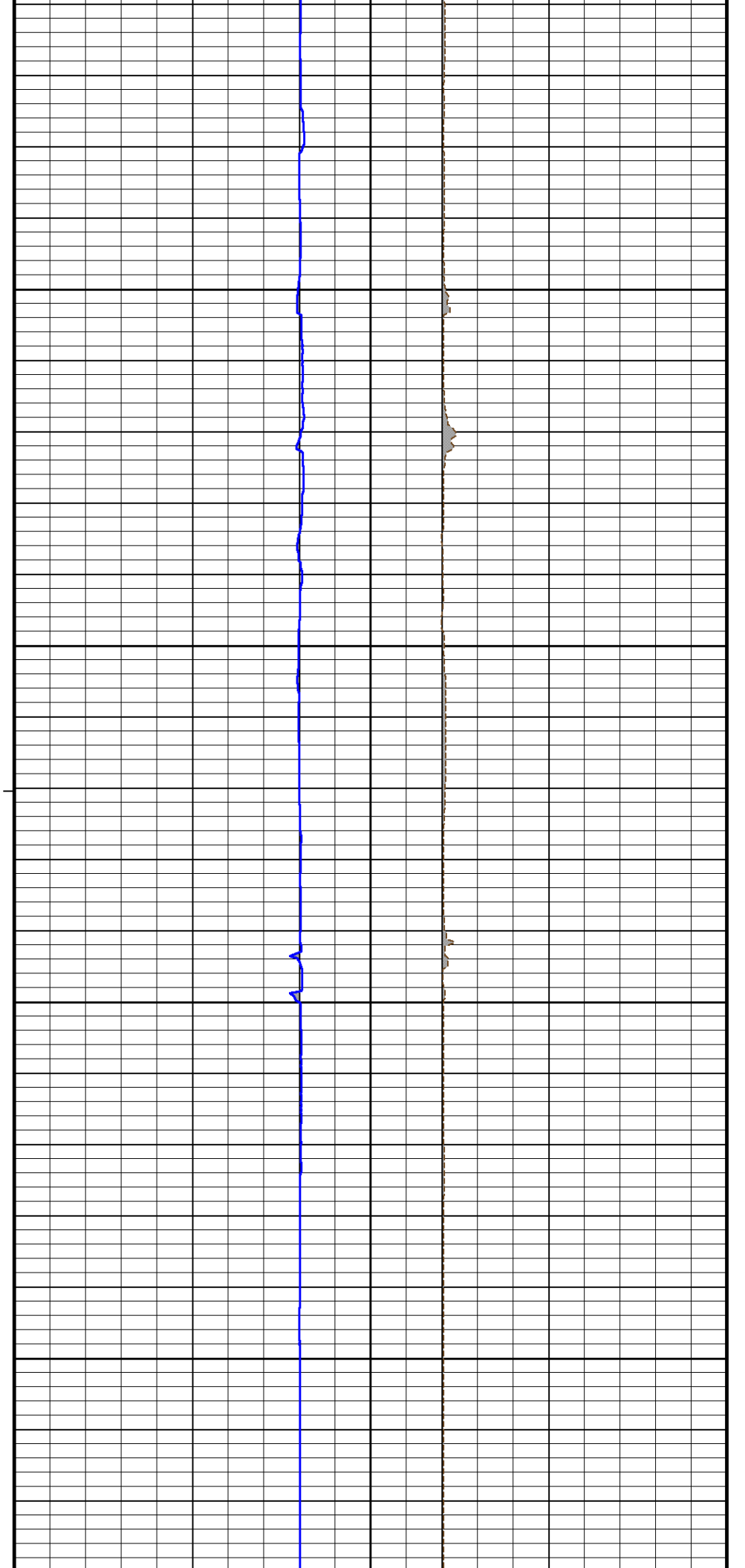
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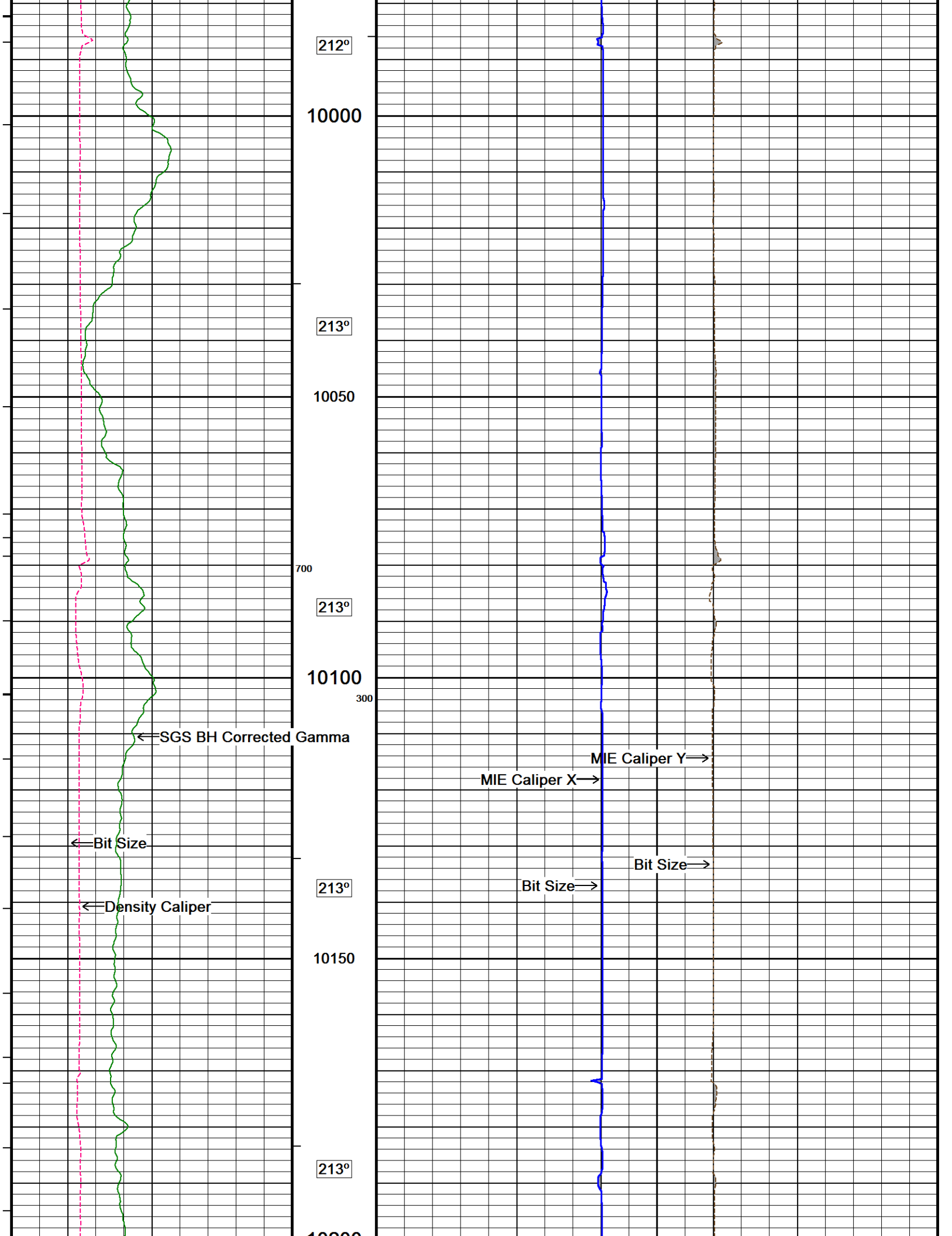
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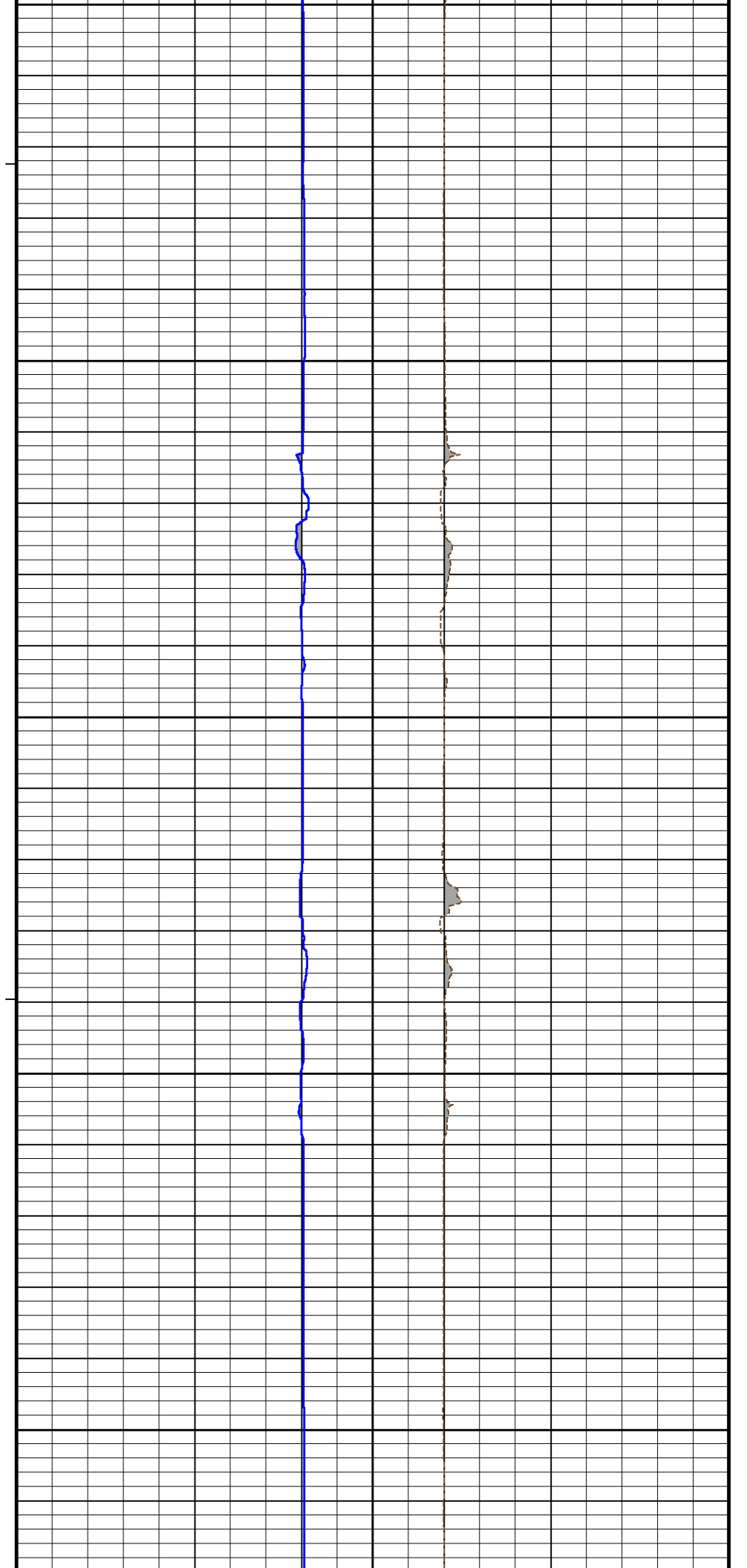
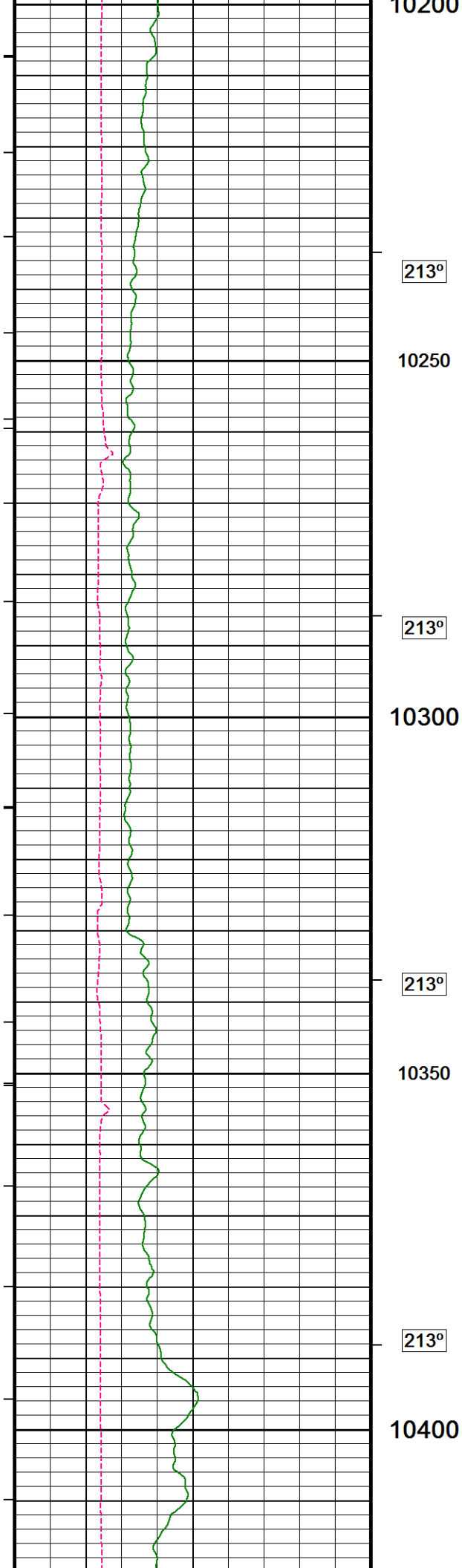
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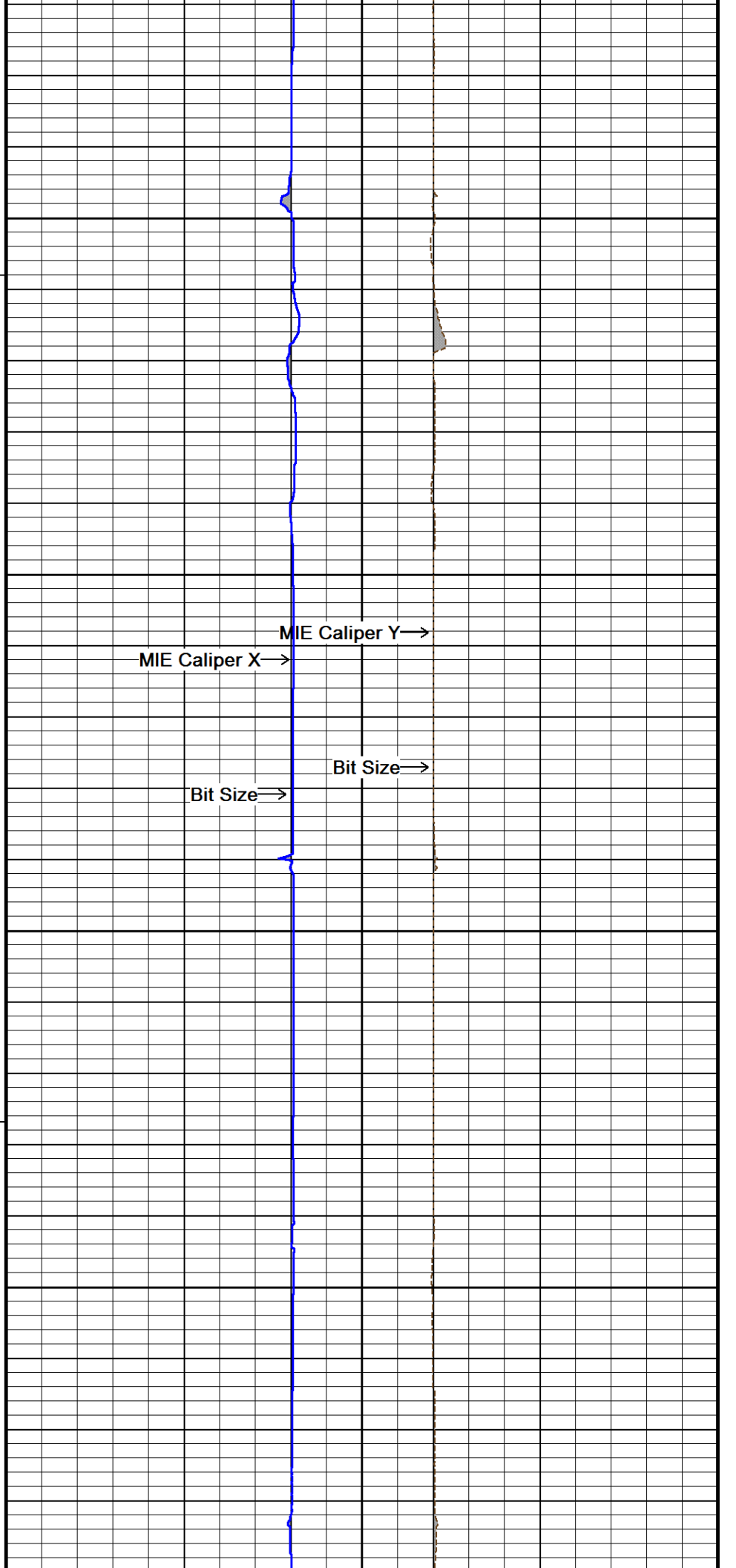
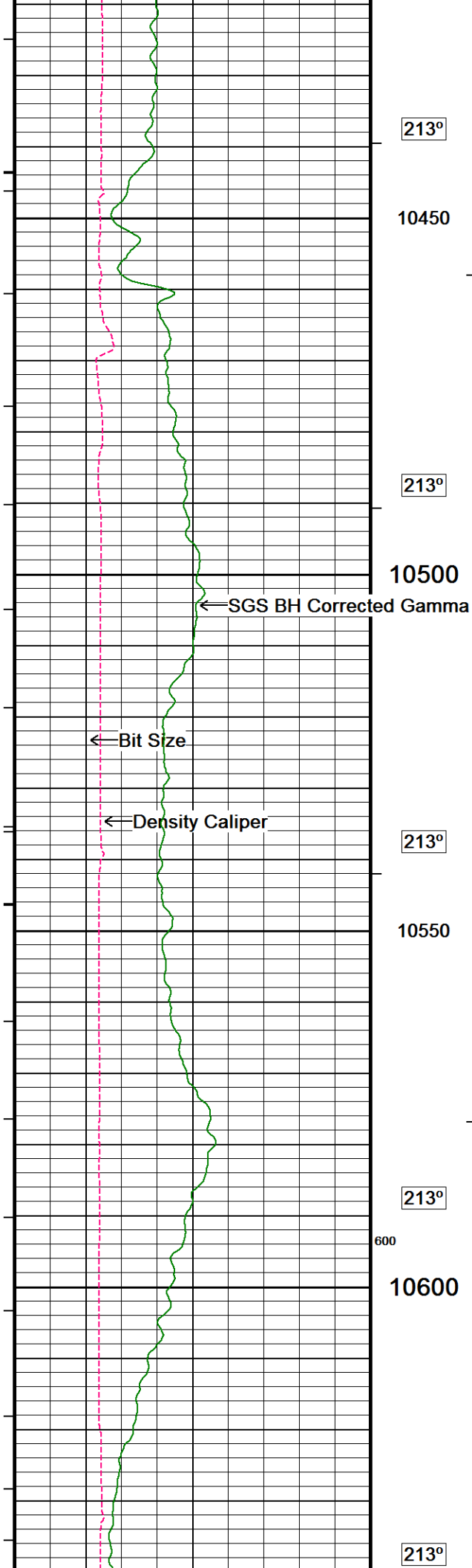
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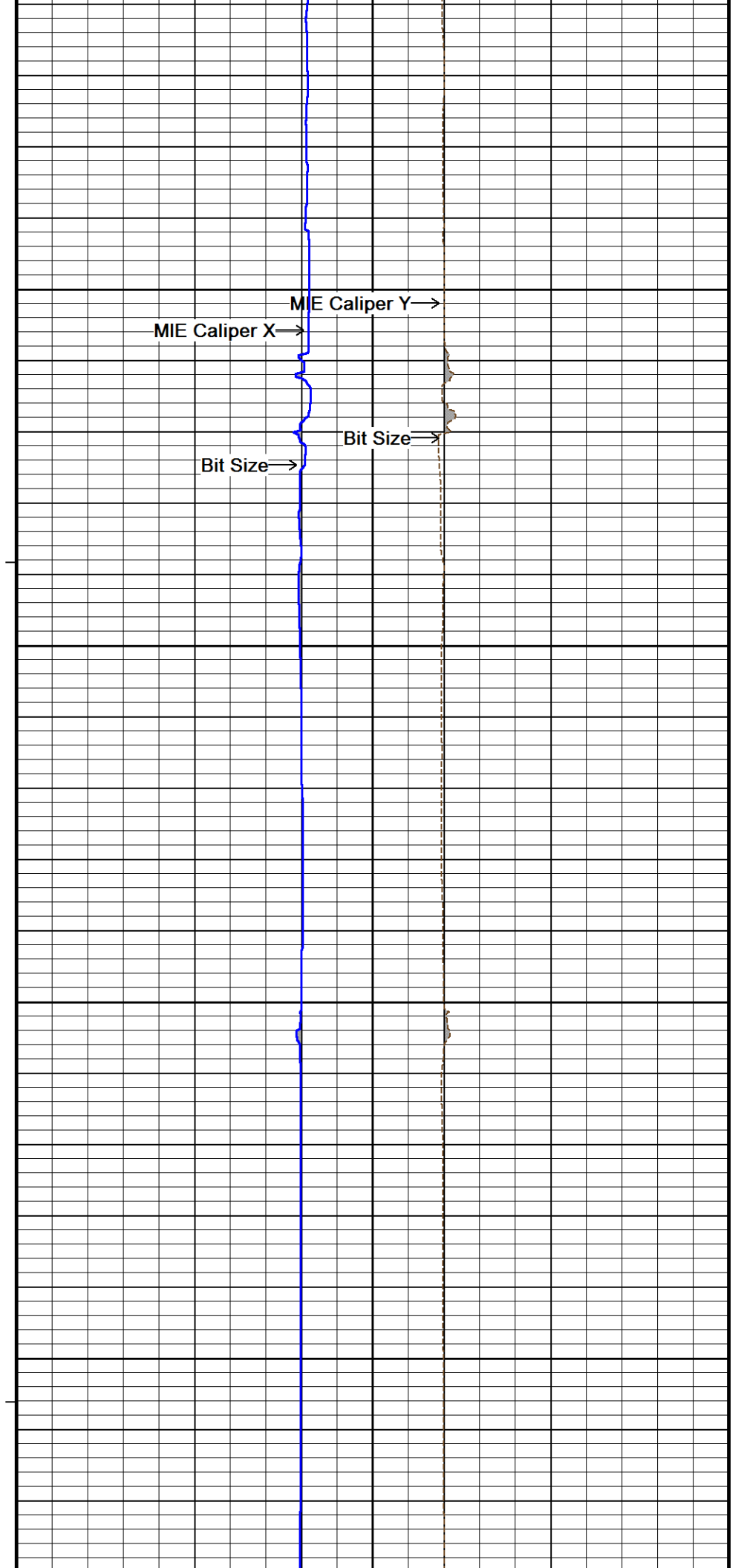
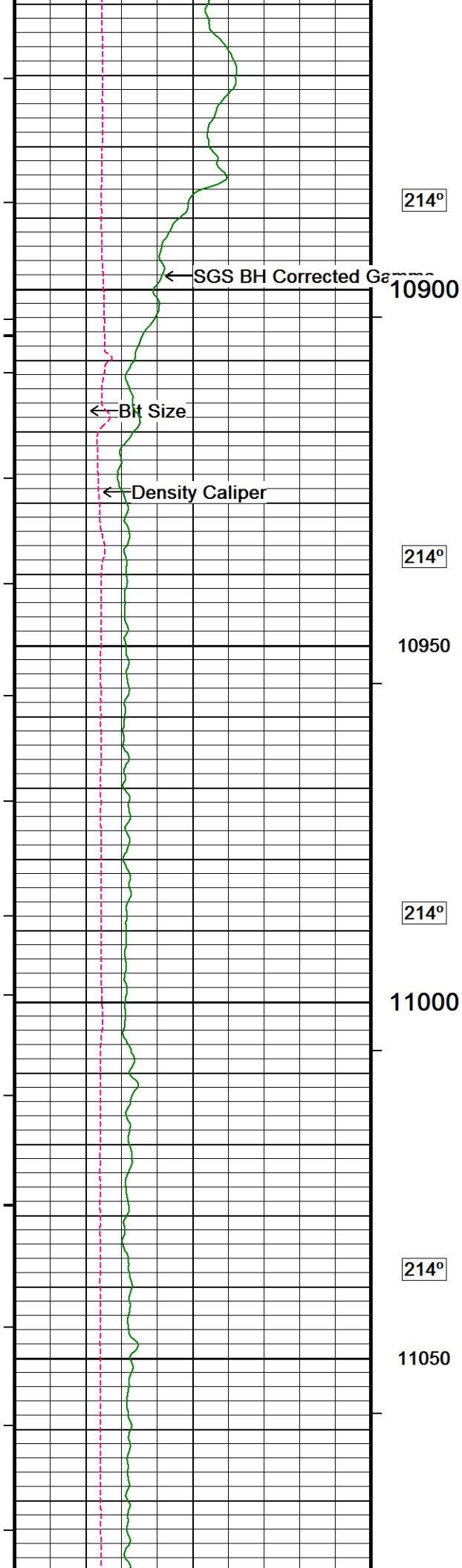
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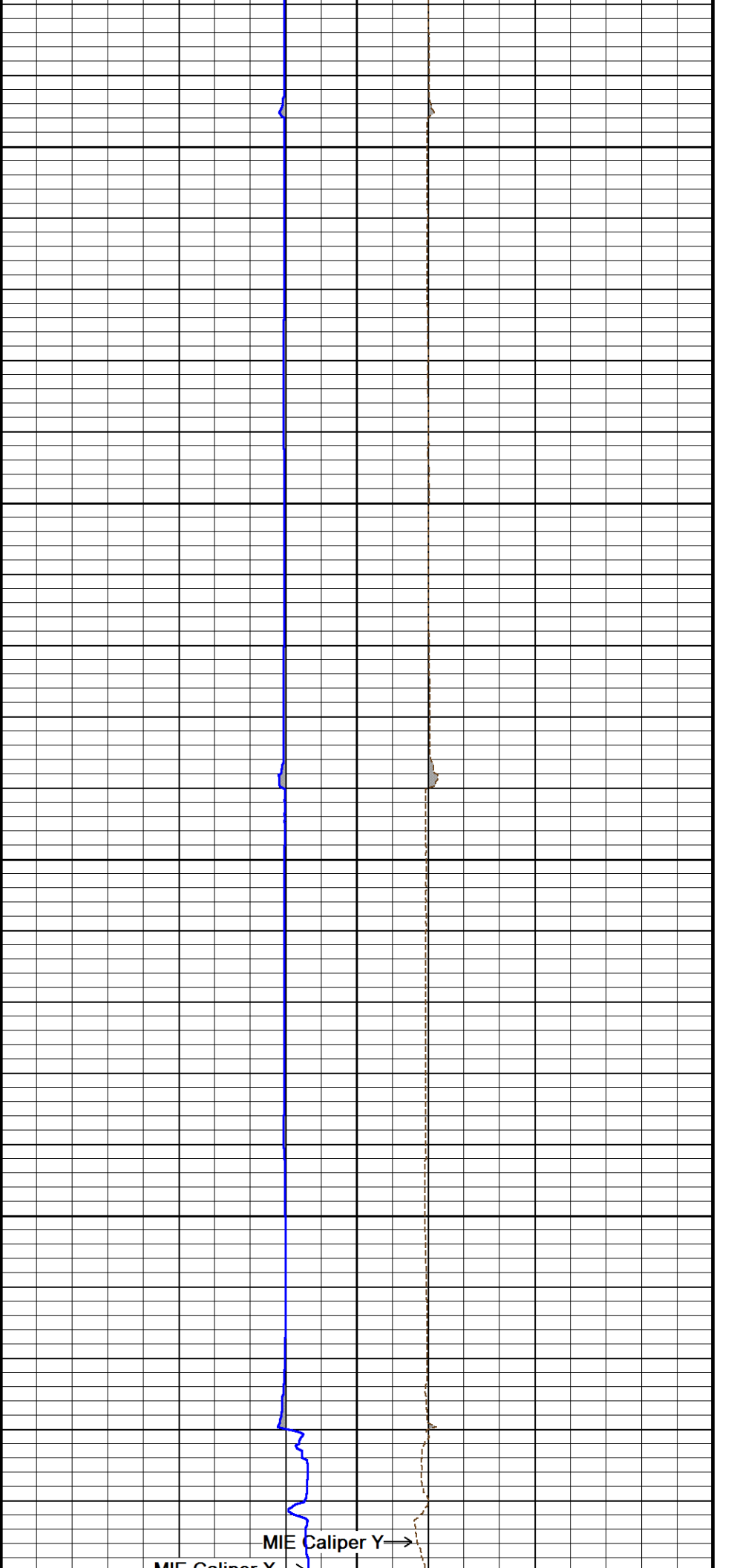
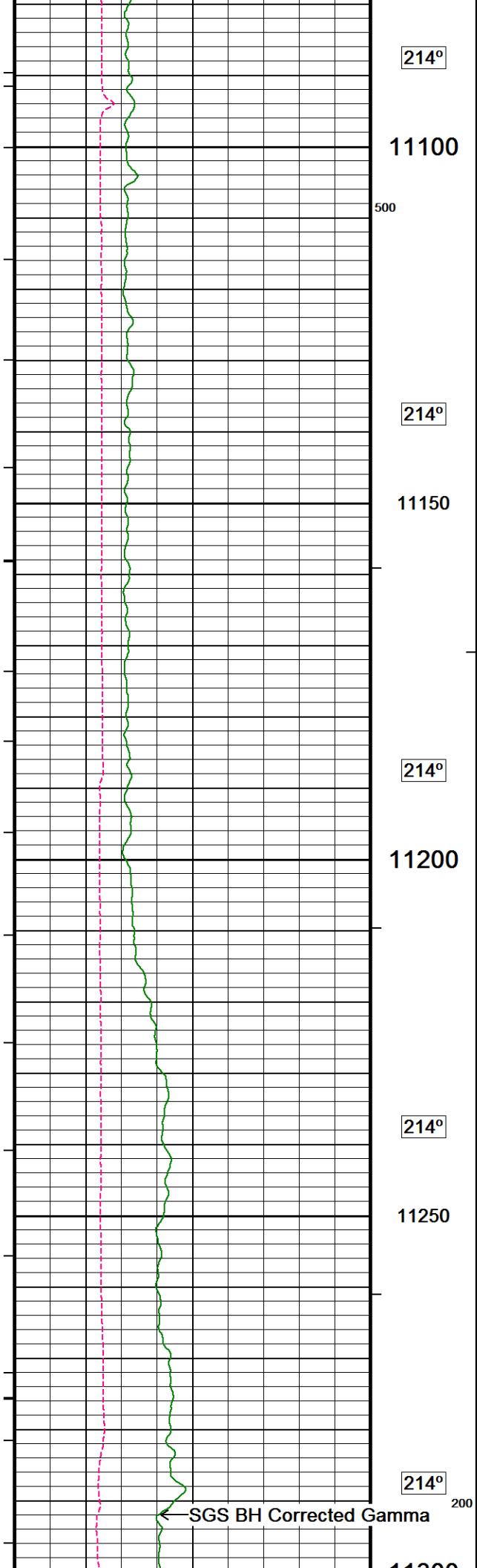


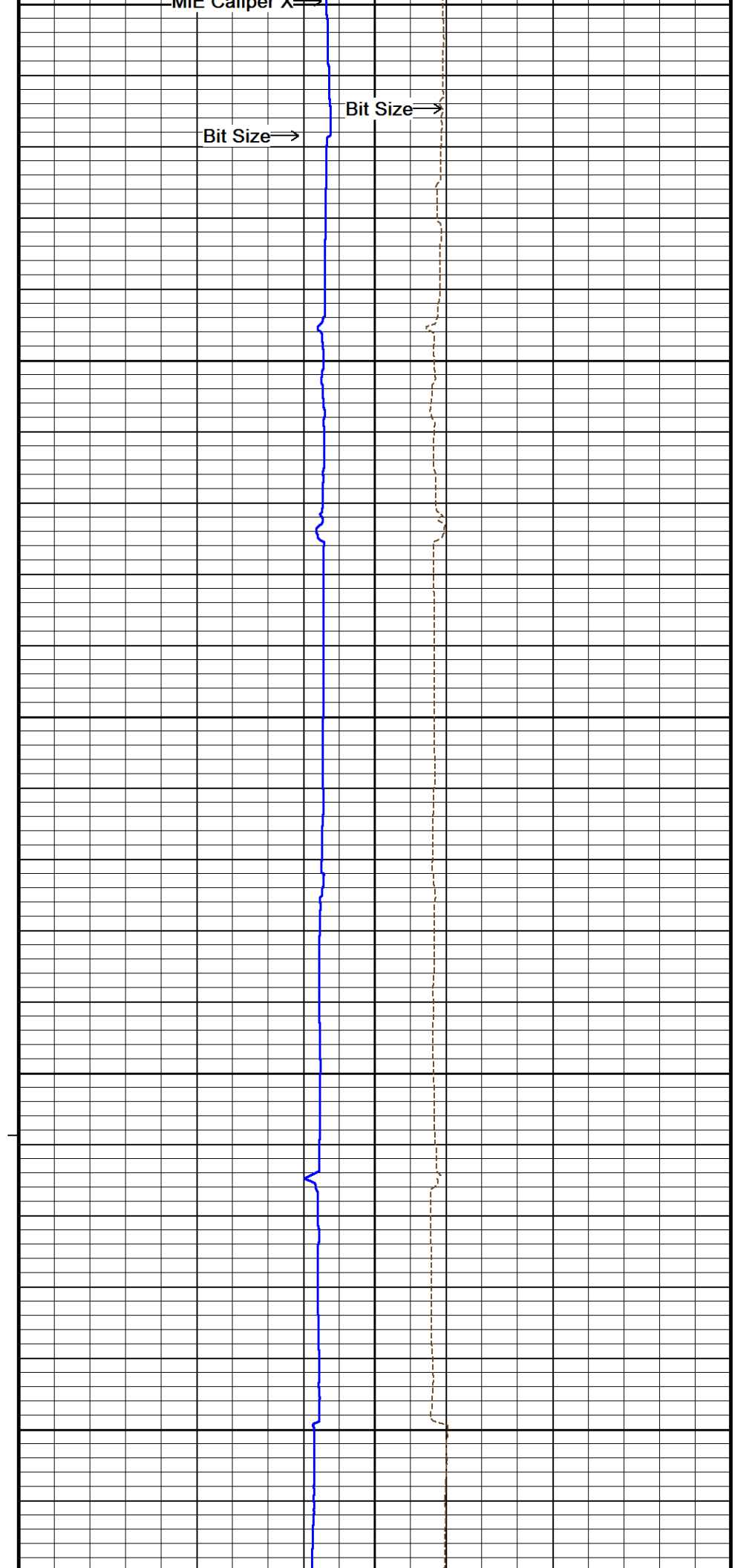
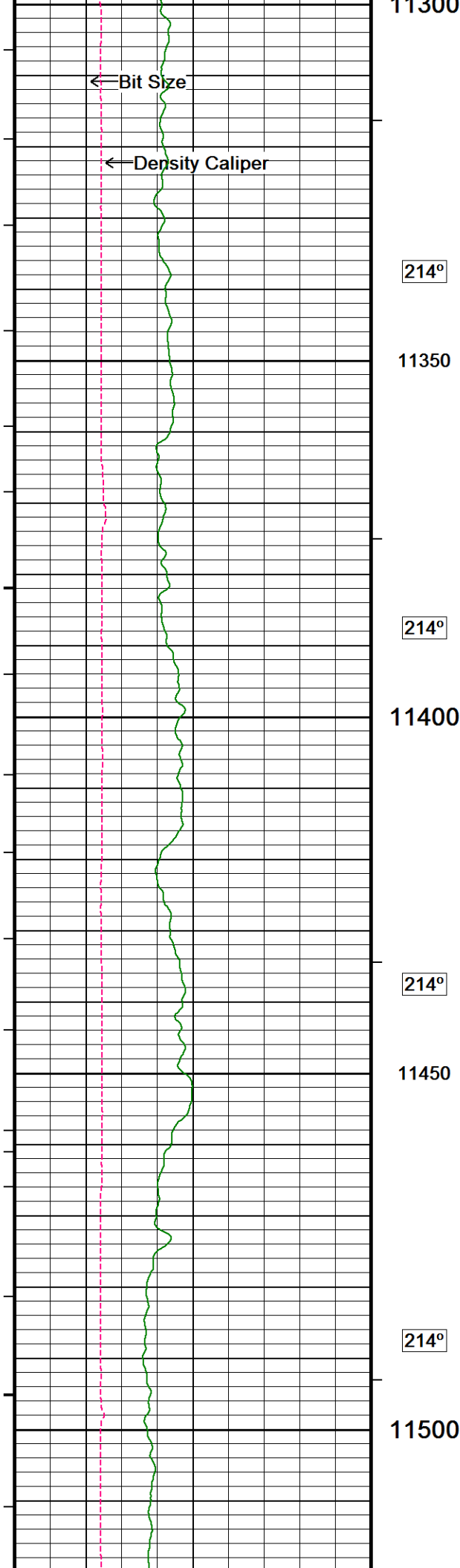


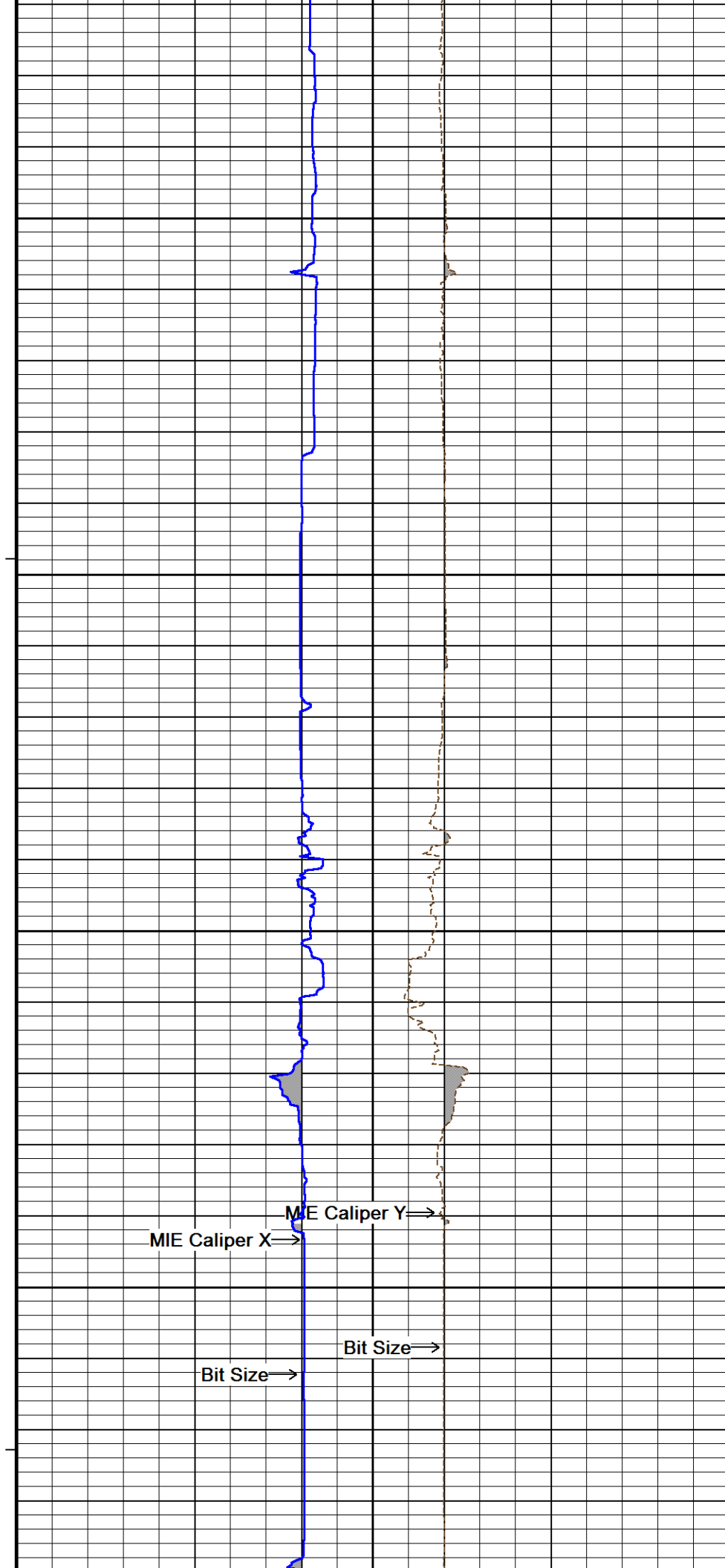
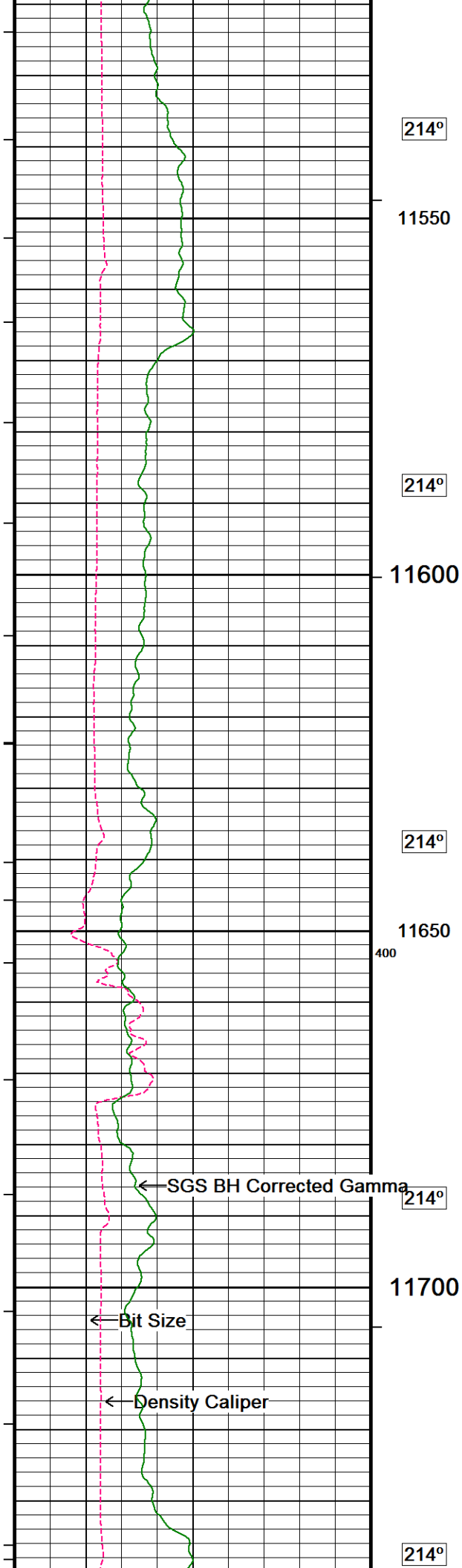


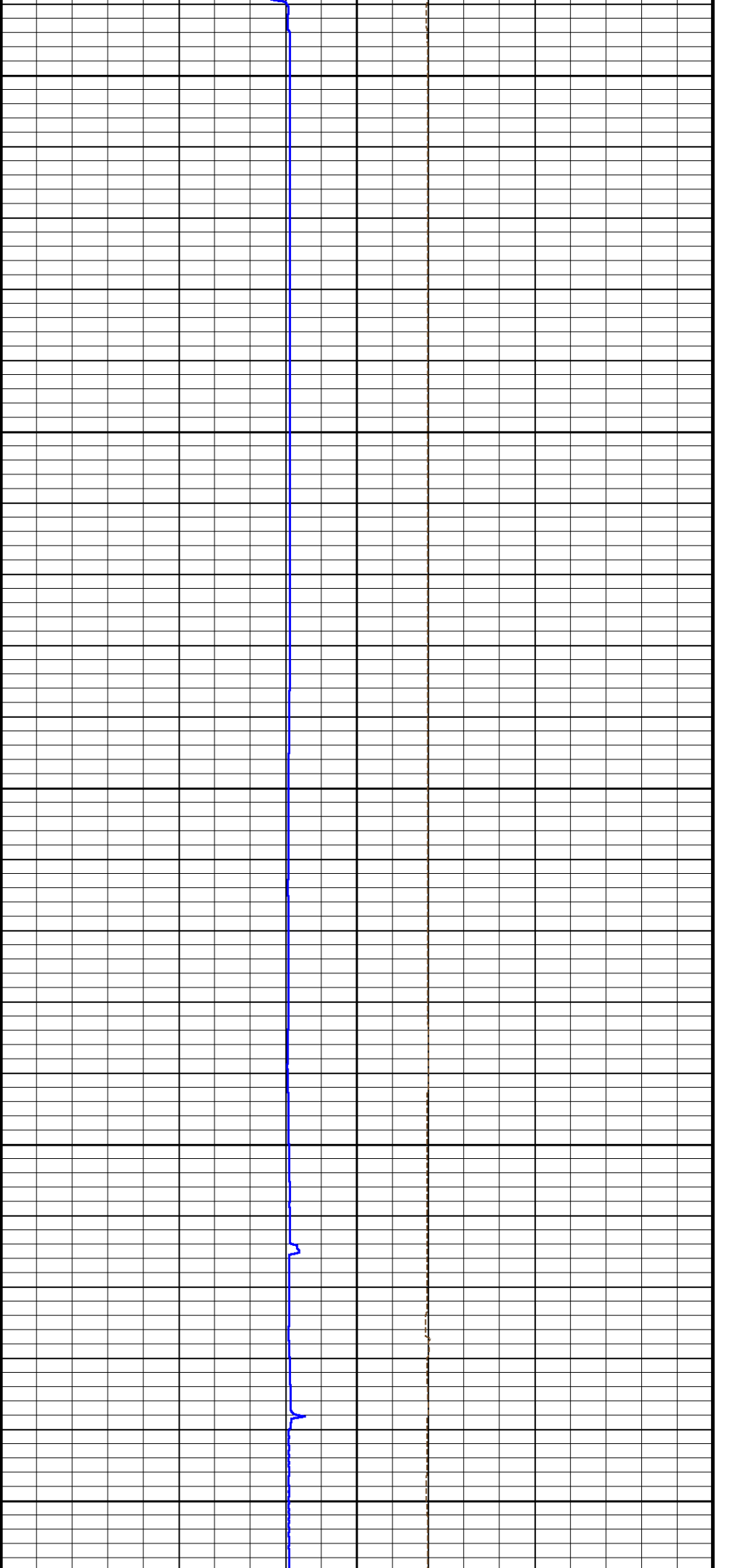
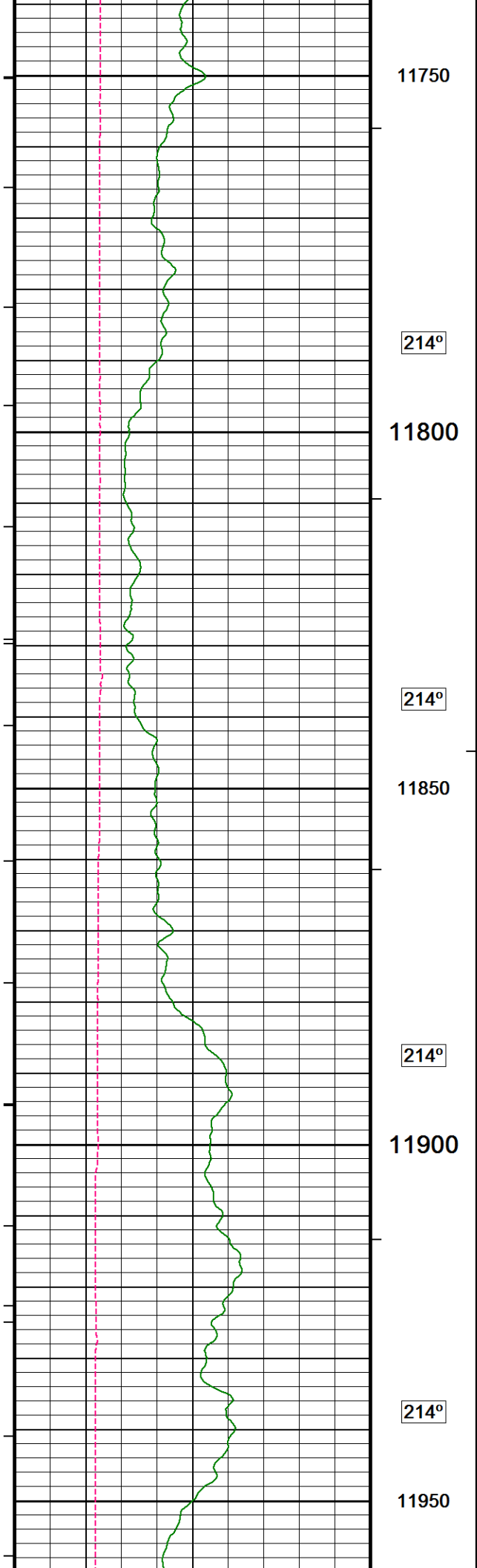


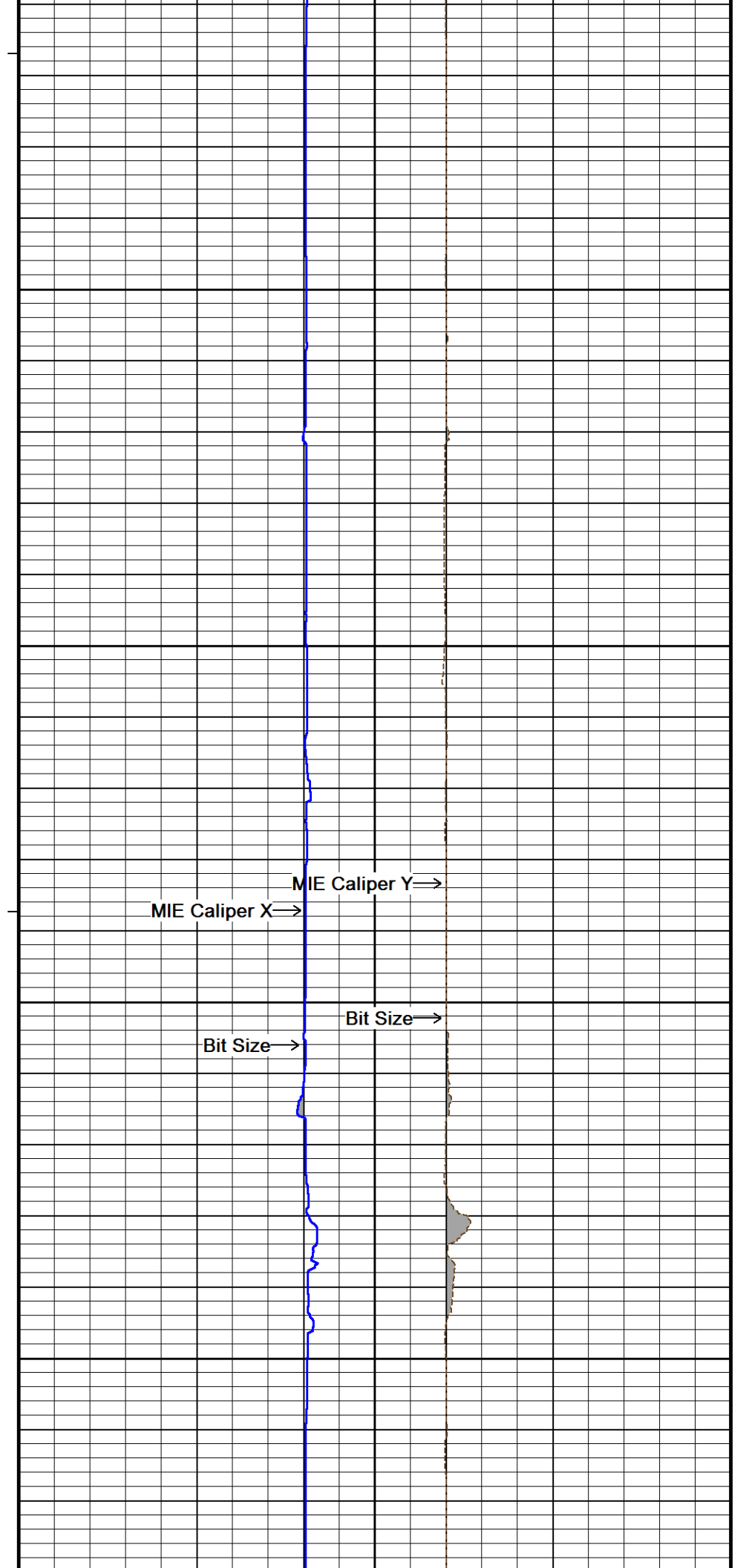
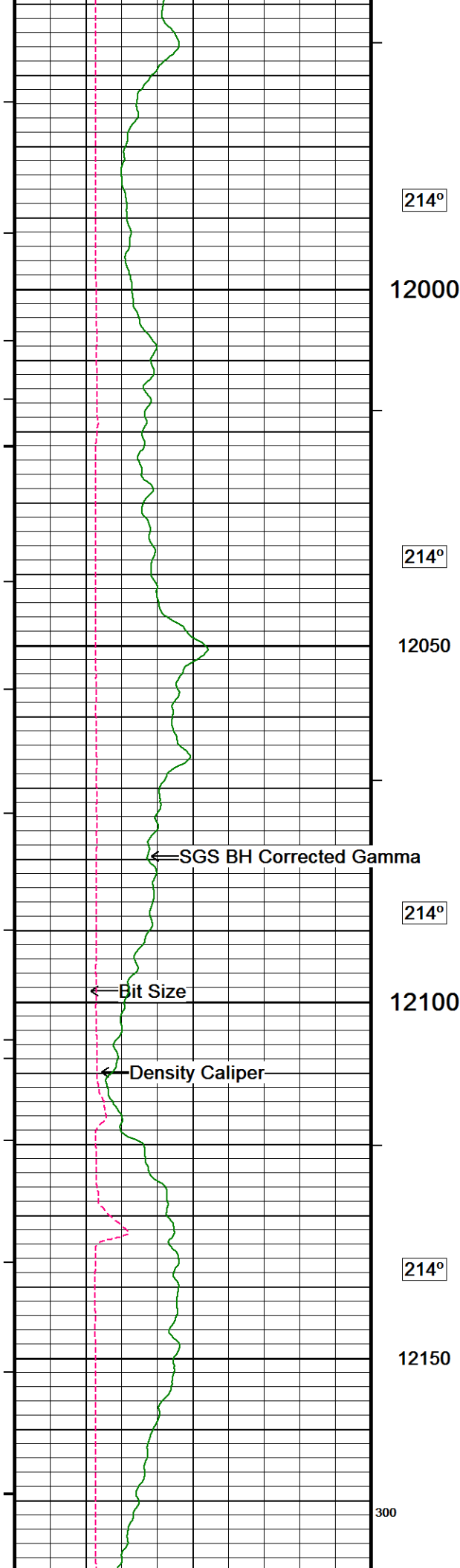


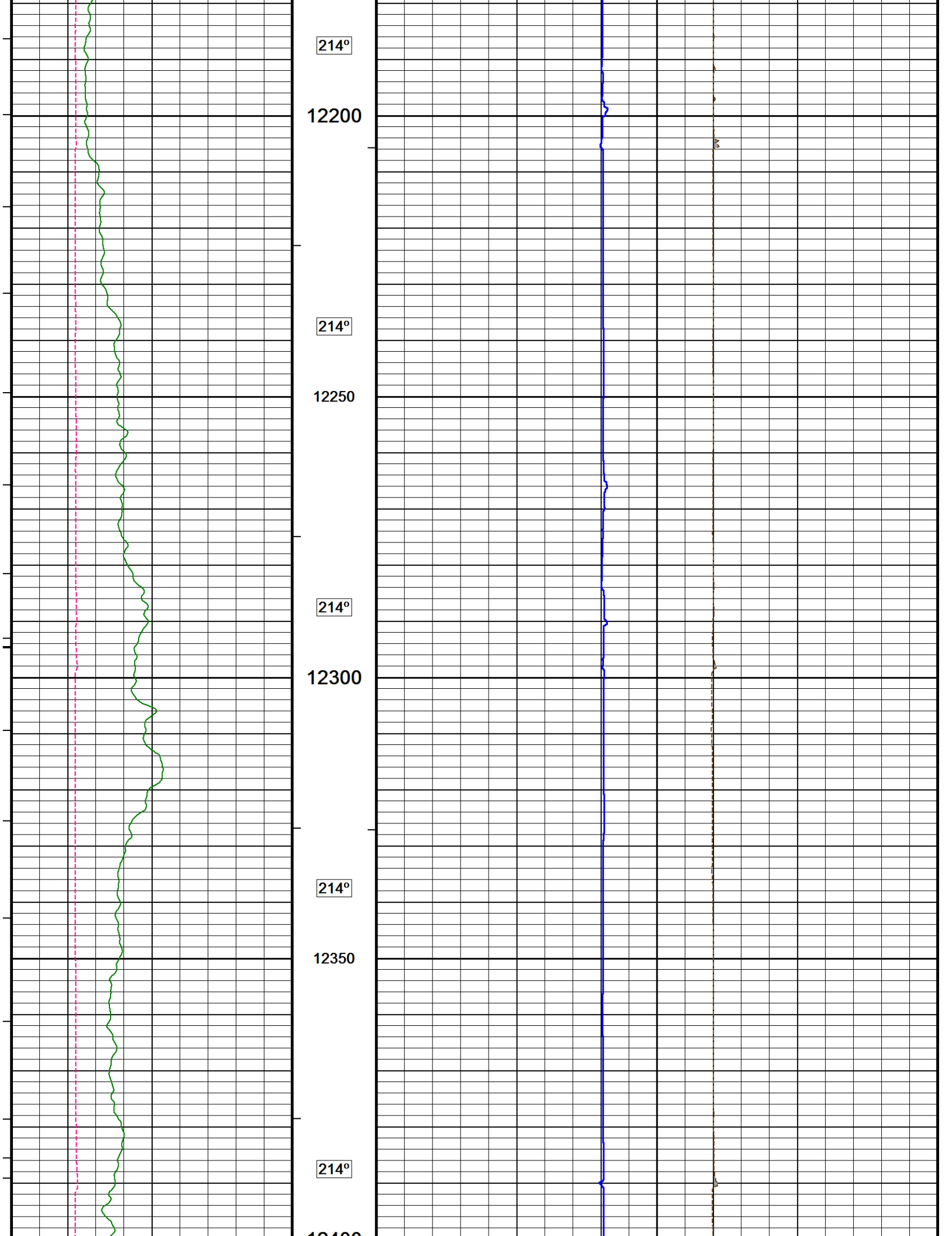


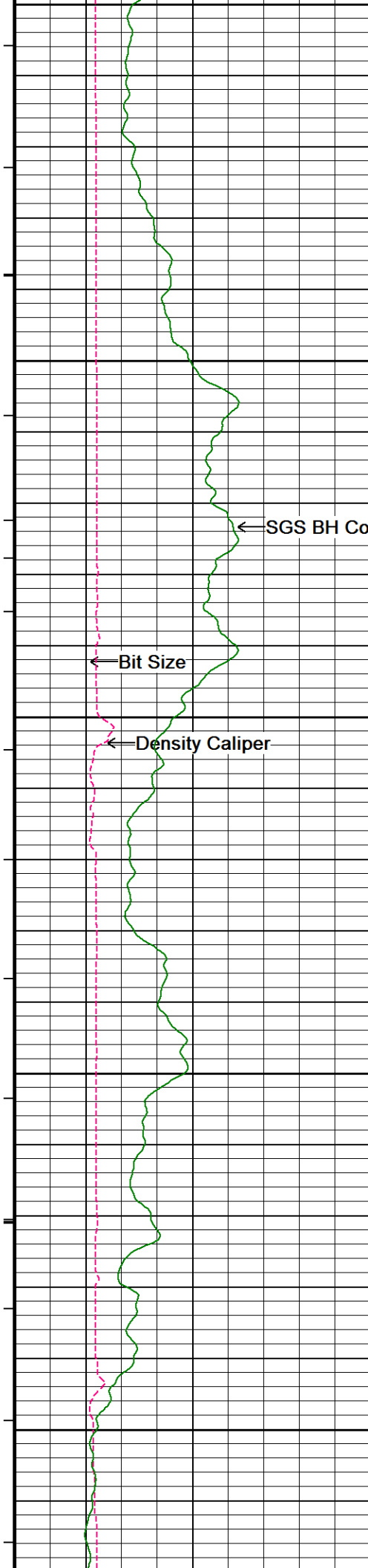












12400

214°

12450

214°

214°

12500

214°

12550

100

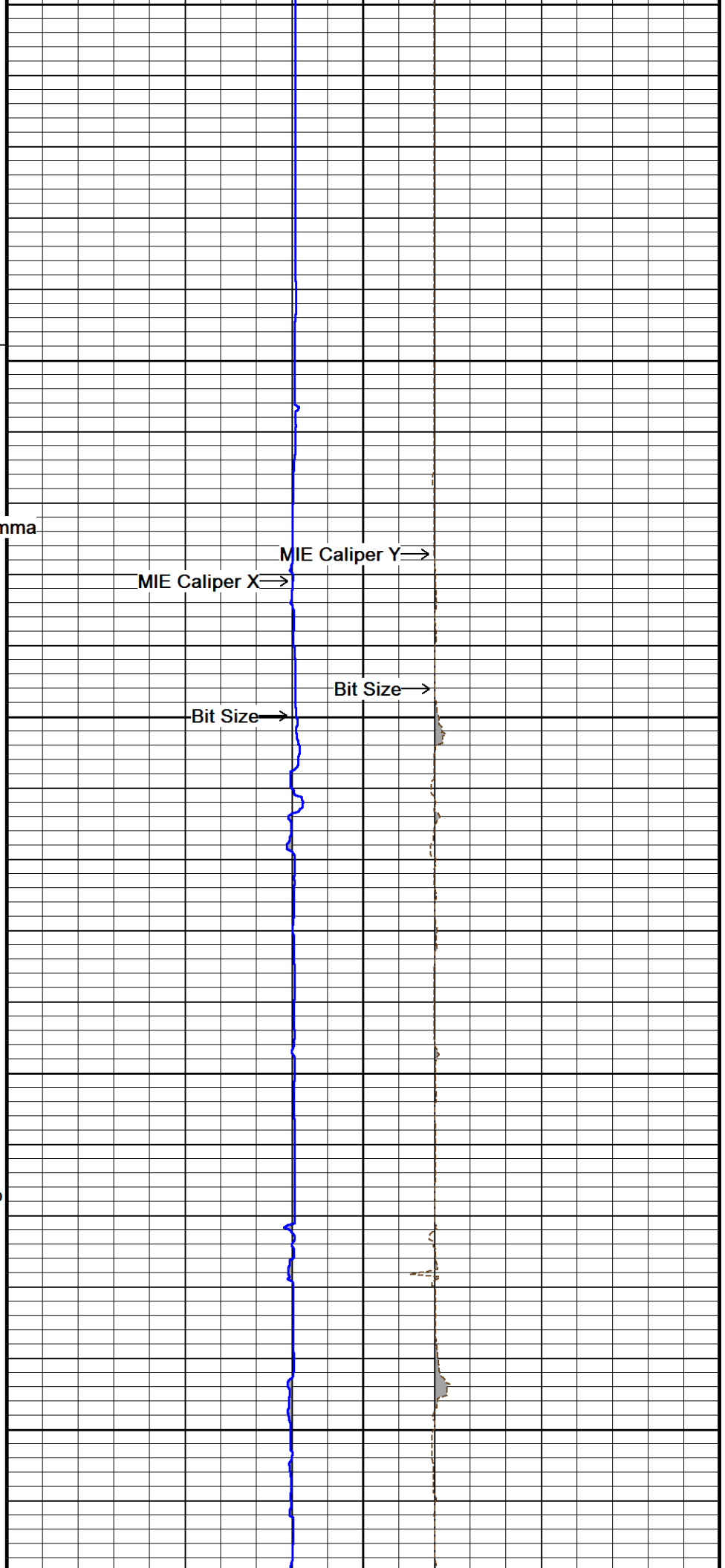
214°

12600

←SGS BH Corrected Gamma

←Bit Size

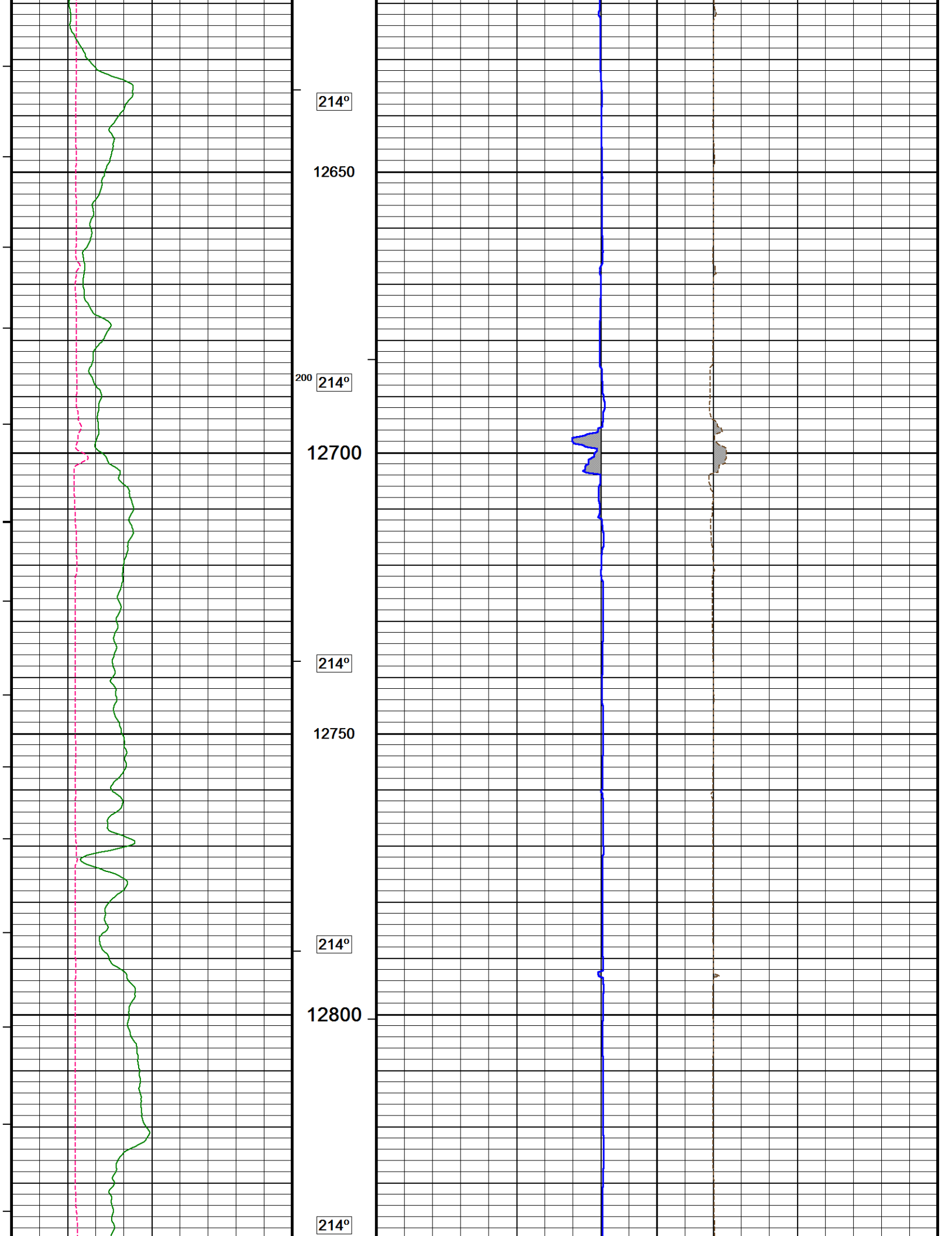
←Density Caliper

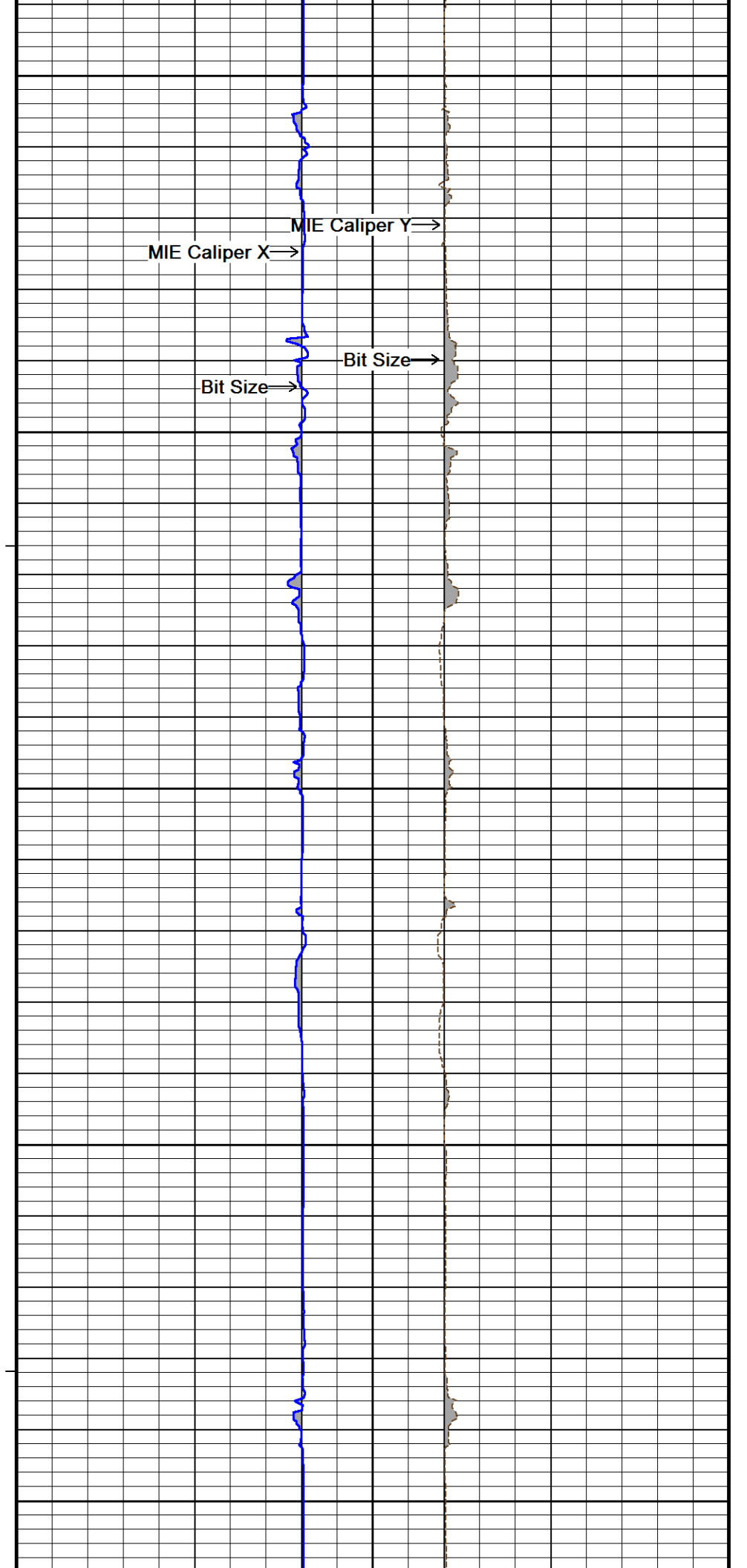
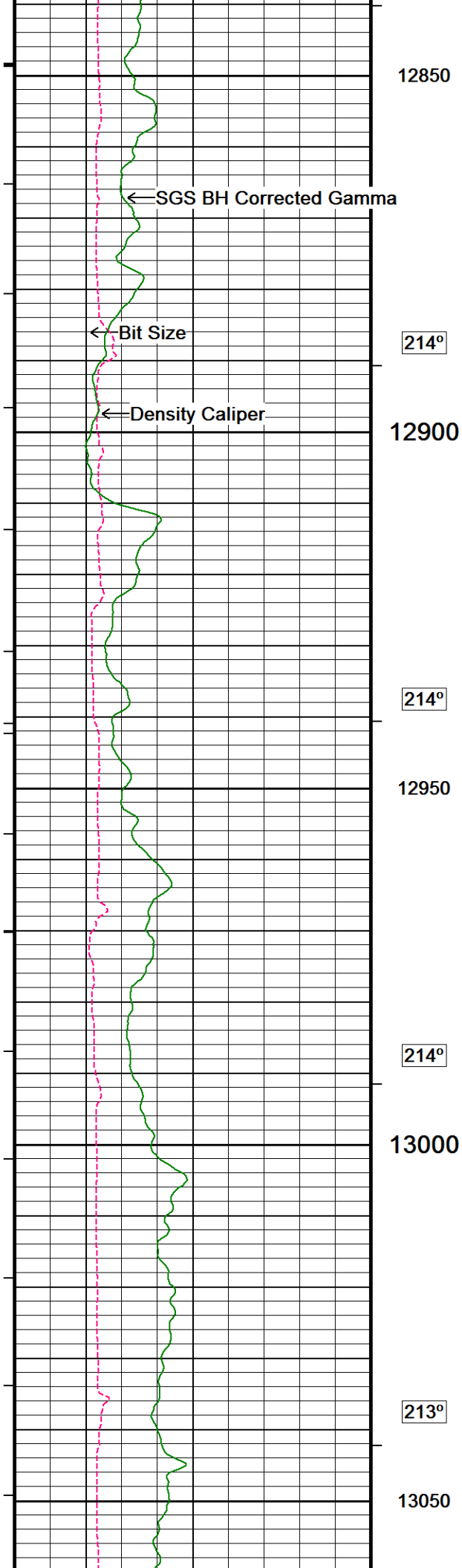


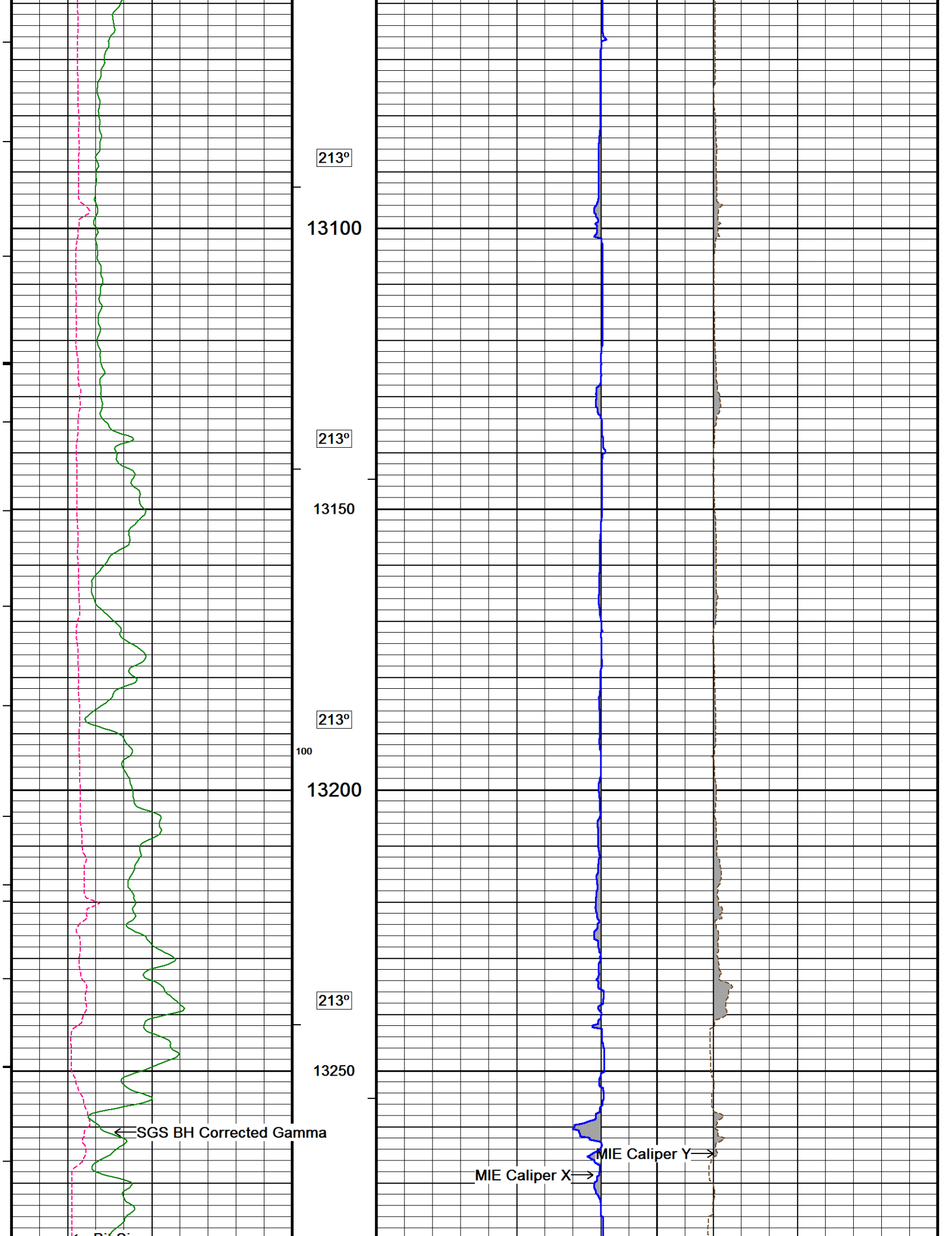
MIE Caliper X⇒

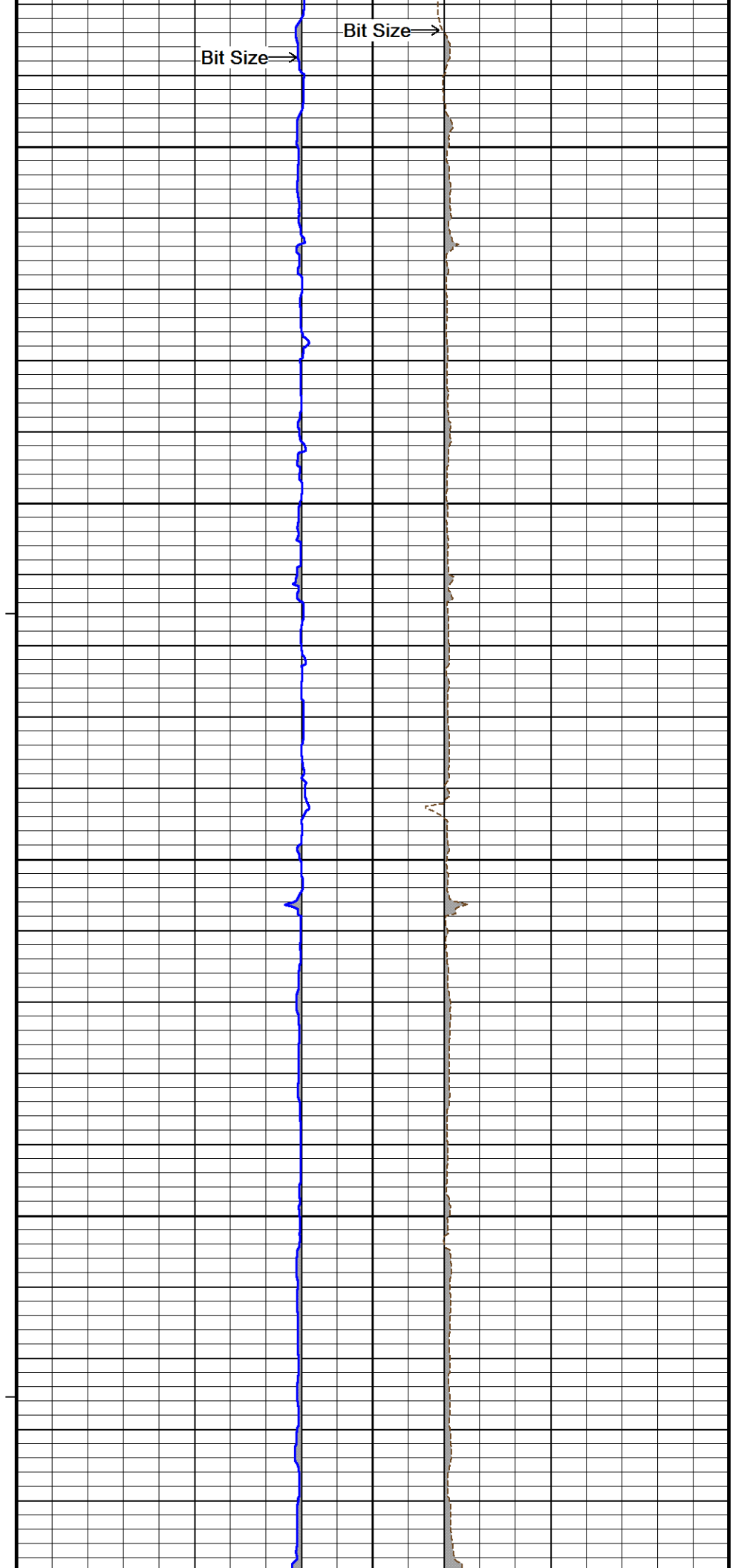
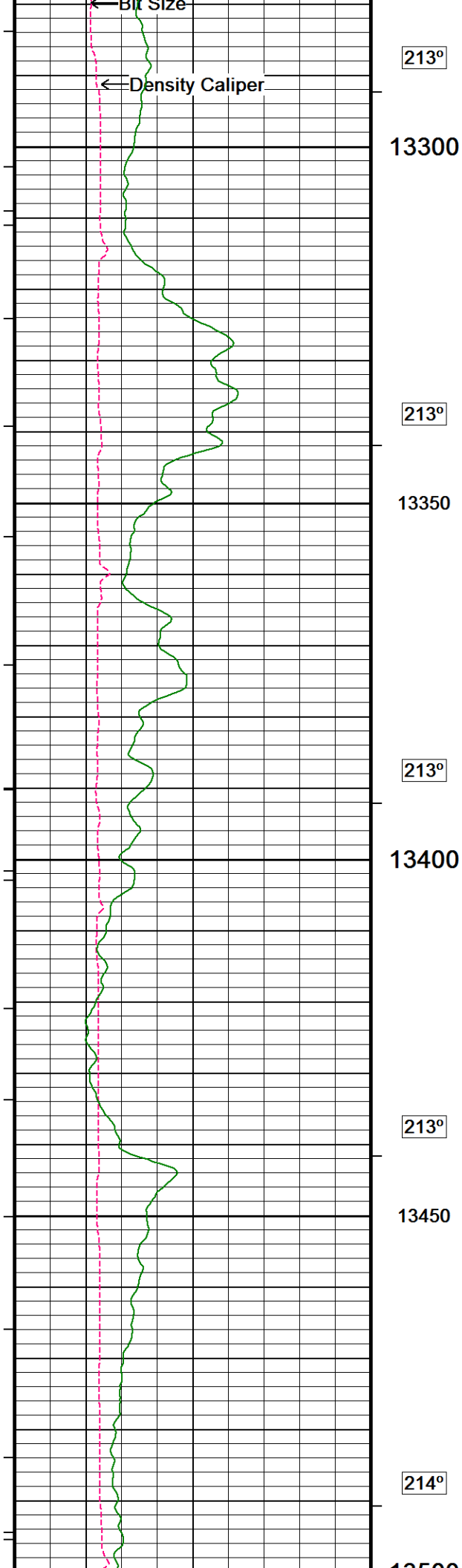
MIE Caliper Y⇒

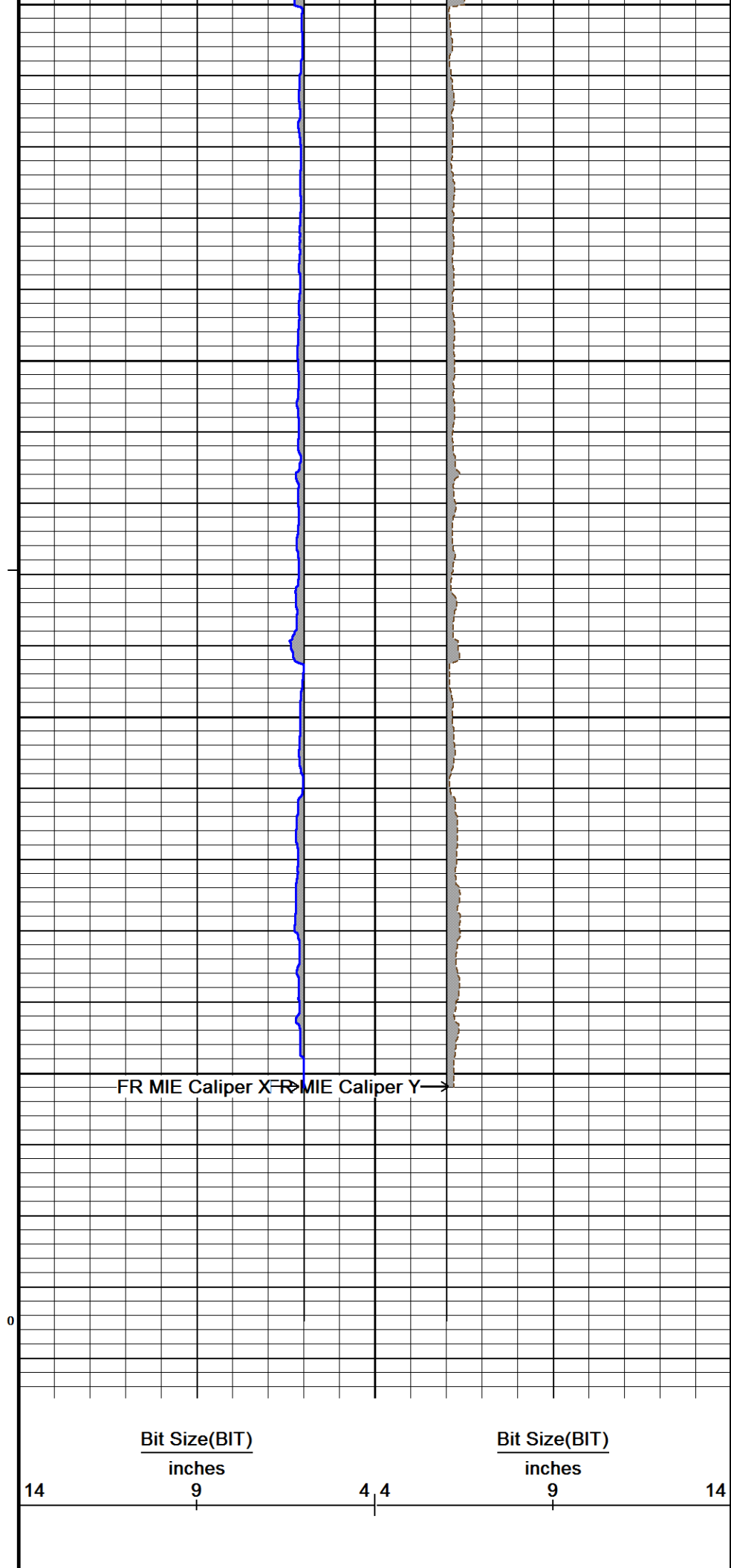
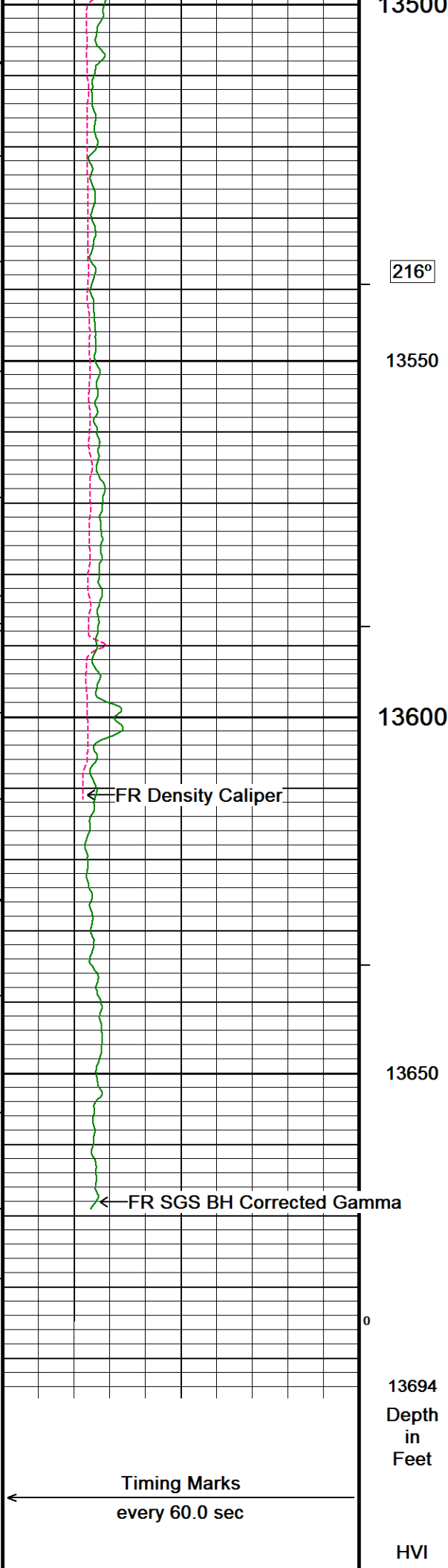
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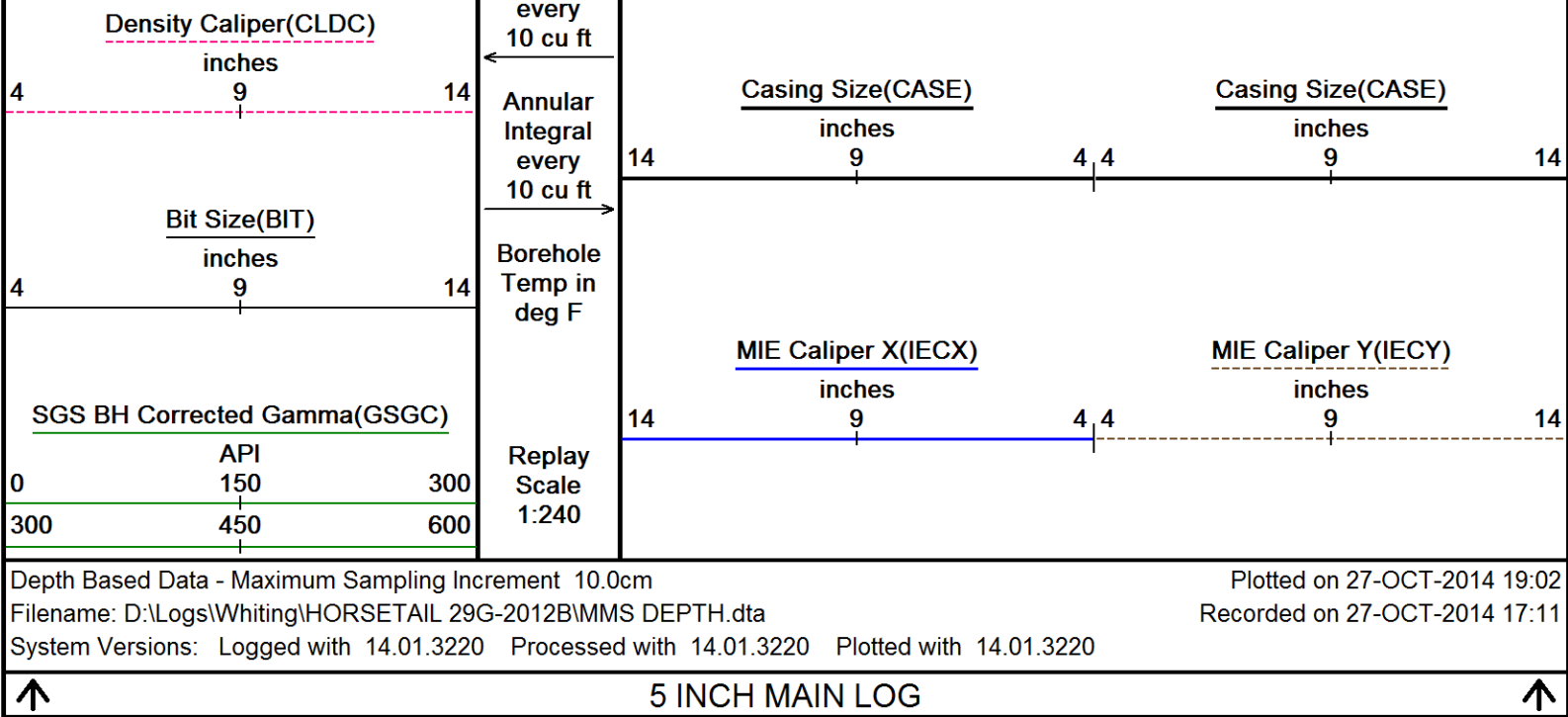












BEFORE SURVEY CALIBRATION			
D:\Logs\Whiting\HORSETAIL 29G-2012B\MMS DEPTH.dta			
Down-hole Tension Calibration All 000			
			Field Calibration on 24-OCT-2010 03:34
Reading No	Measured		
1	15659.85	0.00	
2	15734.68	370.00	
General Constants All 000			
			Last Edited on 27-OCT-2014,16:20
General Parameters			
Mud Resistivity	1.880	ohm-metres	
Mud Resistivity Temperature	86.600	degrees F	
Water Level	0.000	feet	
Borehole Fluid Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Method	XY Caliper		
HVOL Caliper 1	MIE Diam. X Armswing		
HVOL Caliper 2	MIE Diam. Y Armswing		
Annular Volume Diameter	4.500	inches	
Caliper for Differential Caliper	MIE Diam. X Armswing		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Array Ind. Four Res Rt		
RWA Constant A	0.610		
RWA Constant M	2.150		
SW/APOR Tool Source	0.000		
Down-hole Tension Calibration SMS 0			
			Field Calibration on 03-MAR-2014 17:38
Reading No	Measured	Calibrated (lbs)	
1	15344.12	0.00	
2	16163.79	590.00	
Strain Gauge Constants MMS-F.A 189			
			Last Edited on 18-SEP-2012,14:07
Atmospheric Pressure	14.70	psi	
Serial Number	0		
Calibration Date	000000000000		
Base Check Date			
Dead Weight Serial Number	0		
Dead Weight Gravitational Correction	1.0		

Temperature	75.0		150.0		250.0		350.0	degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10000.0	0.000		0.000		0.000		0.000	
High Resolution Temperature Calibration MGS-D.A 185								
			Measured		Calibrated(Deg F)		Field Calibration on 28-FEB-2014,12:06	
Lower			20.00		20.00			
Upper			200.00		200.00			
High Resolution Temperature Constants MGS-D.A 185								
Pre-filter Length			11				Last Edited on 10-APR-2014,11:59	
SP Calibration MGS-D.A 185								
			Measured		Calibrated (mV)		Field Calibration on 28-FEB-2014,12:05	
Reference 1			100.0		100.0			
Reference 2			-100.0		-100.0			
Gamma Calibration MGS-D.A 185								
			Measured		Calibrated (API)		Field Calibration on 26-OCT-2014 09:34	
Background			165		116			
Calibrator (Gross)			1022		718			
Calibrator (Net)			857		602			
Gamma Constants MGS-D.A 185								
							Last Edited on 26-OCT-2014,13:00	
Gamma Calibrator Number			GRCC224					
Mud Density			1.27		gm/cc			
Caliper Source for Processing			Density Caliper					
Tool Position			Eccentred					
Concentration of KCl					kppm			
K Mud Type			Chloride					
K Mud Concentration			0.00		%			
Neutron Calibration MDN-B.J 372								
							Base Calibration on 01-OCT-2014 13:06	
Base Calibration							Field Check on 26-OCT-2014 09:44	
			Measured		Calibrated (cps)			
	Near	Far	Near	Far				
	2881	87	3714	110				
Ratio		33.018		33.764				
Field Calibrator at Base					Calibrated (cps)			
			2377	3500				
Ratio				0.679				
Field Check					Calibrated (cps)			
			2405	3548				
Ratio				0.678				
Neutron Constants MDN-B.J 372								
							Last Edited on 27-OCT-2014,16:21	
Neutron Source Id			P44385B					
Neutron Jig Number			NJ5236					
Air Hole Processing			Modified Ratio					
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			None					
Formation Pressure			N/A		kpsi			
Temperature Source			None					
Temperature			N/A		degrees F			

Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	
Imager Pad Check MIE-A.A 173		
Field Check on 09-OCT-2014 14:29		
Pad 1	20/20 Buttons Verified	Pad 5 20/20 Buttons Verified
Pad 2	24/24 Buttons Verified	Pad 6 24/24 Buttons Verified
Pad 3	20/20 Buttons Verified	Pad 7 20/20 Buttons Verified
Pad 4	24/24 Buttons Verified	Pad 8 24/24 Buttons Verified
Compact Micro Imager Constants MIE-A.A 173		
Last Edited on 24-AUG-2014,16:32		
Sonde Configuration	Imager Mode	
Arm-Pad Kit	Normal Pads (12.25 in)	
Arm-Pad Kit Serial Number		
Centre Pad 1 Rotational Offset	0.00	degrees
Image/Borehole Ovality Reference	Azimuth of Pad 1	
Non Active Buttons	Omit	
Search Angle	0.00	degrees
Correlation Interval	3.28	feet
Correlation Step	1.64	feet
Current Offset	0.0000	mAmp
Squasher Start	11111111.0000	mAmp
Image Processing	11111111	
Navigation Constants MIE-A.A 173		
Last Edited on 10-SEP-2014,09:35		
Magnetic Declination	0.00	degrees East
Magnetometer Parameters MIE-A.A 173		
Date Of Last Magnetometer Calibration	17-JUL-2014,16:28	
	X Magnetometer	Y Magnetometer Z Magnetometer
Slope	-1.000000	-1.011067 -0.996373
Offset	0.009674	-0.014518 0.002543
Magnetometer Constants MIE-A.A 173		
Last Edited on		
Magnetometer Calibrator Number	000	
Accelerometer Parameters MIE-A.A 173		
Date Of Last Accelerometer Calibration	15-JUL-2014,13:24	
	X Accelerometer	Y Accelerometer Z Accelerometer
Slope	-1.113967	-1.108777 -1.100961
Offset	0.007433	0.003599 0.006425
Accelerometer Constants MIE-A.A 173		
Last Edited on 26-OCT-2014,10:01		
Accelerometer Calibrator Number	000	
Accelerometer Temperature Characterisation		
X Accelerometer		
Serial Number	648	
Calibration Date	19-Aug-2008	
	B0	B1 B2 B3
Bias(g)	0.00000e+000	-9.57706e-006 9.83611e-009 1.13245e-011
	SF0	SF1 SF2 SF3
Scale Factor(mA/g)	3.00000e+000	2.83616e-004 1.98700e-007 1.44742e-009
Y Accelerometer		
Serial Number	652	
Calibration Date	19-Aug-2008	
	B0	B1 B2 B3
Bias(g)	0.00000e+000	3.42793e-006 -1.11656e-008 -4.36730e-011
	SF0	SF1 SF2 SF3
Scale Factor(mA/g)	3.00000e+000	2.75161e-004 2.12516e-007 8.53262e-010
Z Accelerometer		
Serial Number	588	

Calibration Date	06-May-2008			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	2.55228e-005	-4.28668e-009	8.28710e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.82774e-004	2.50728e-007	1.25354e-009

Caliper Calibration MIE-A.A 173					Base Calibration on 26-OCT-2014 10:05
					Field Calibration on 26-OCT-2014 10:07
Base Calibration					
Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)		
1	26645	27489	5.96		
2	36054	37578	7.98		
3	45717	47596	9.86		
4	56451	58410	11.88		
5	0	0	0.00		
Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	25036	26114	25590	25375	5.96
2	33290	34908	34476	33887	7.98
3	41361	43260	42764	42134	9.86
4	50340	52903	53157	51547	11.88
5	0	0	0	0	0.00
Field Calibration					
	Measured	Measured	Actual		
	Pads 1-5 Caliper(in)	Pads 3-7 Caliper(in)	Caliper(in)		
	5.89	5.97	5.96		
	Measured	Measured	Measured	Measured	Actual
	Pad 2 Caliper(in)	Pad 4 Caliper(in)	Pad 6 Caliper(in)	Pad 8 Caliper(in)	Caliper(in)
	3.01	2.99	2.98	2.98	5.96

Caliper Constants MIE-A.A 173					Last Edited on
Caliper Difference for BRKT		0.120	inches		

High Resolution Temperature Calibration MAI-B.J 375					Field Calibration on 24-SEP-2014,03:39
	Measured	Calibrated(Deg F)			
Lower	50.00	50.00			
Upper	75.00	75.00			

High Resolution Temperature Constants MAI-B.J 375					Last Edited on 24-SEP-2014,03:39
Pre-filter Length		11			

Induction Calibration MAI-B.J 375				Base Calibration on 06-MAR-2014,09:29	
				Field Check on 26-OCT-2014 09:40	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.2	476.3	9.3	966.2	
2	6.0	379.5	7.6	821.4	
3	3.1	258.6	5.2	566.0	
4	1.5	131.2	2.6	279.2	
Array Temperature		74.3	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			12.8	3802.1	
2			30.5	3542.4	
3			29.3	3049.5	
4			20.5	2097.0	
Deep			18.5	1993.6	
Medium			42.4	4012.6	
Shallow			44.7	5231.5	
Array Temperature			69.5	Deg F	

Induction Constants MAI-B.J 375					Last Edited on 27-OCT-2014,16:22
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.	MGS 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		

Caliper Calibration MPD-C.J 378

Base Calibration on 26-OCT-2014 09:57
Field Calibration on 26-OCT-2014 09:58

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13871	4.00
2	21735	5.96
3	30021	7.98
4	37927	9.86
5	46879	11.88
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.97	5.96

Photo Density Calibration MPD-C.J 378

Base Calibration on 01-OCT-2014 11:53
Field Check on 26-OCT-2014 09:50

Density Calibration				
Base Calibration				
	Measured	Calibrated (sdu)		
	Near	Far	Near	Far
Background	1145	1223		
Reference 1	56123	24901	59443	30683
Reference 2	22147	2322	25113	2508

Field Check at Base	1145.2	1222.9
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Field Check	1146.1	1229.7
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PE Calibration				
Base Calibration				
	WS	Measured	Calibrated	
		WH	Ratio	Ratio
Background	209	1030		
Reference 1	24056	55936	0.434	0.372

Reference 2	6396	22017	0.295	0.268
Field Check at Base	209.3	1029.7		
Field Check	209.5	1029.6		

Density Constants MPD-C.J 378

Last Edited on 26-OCT-2014,13:00

Density Source Id	P44264B
Nylon Calibrator Number	652
Aluminium Calibrator Number	659
Density Shoe Profile	4 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.27 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)
2.71	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

Spectral Gamma Calibration SGS-E.J 128

Base Calibration on 25-SEP-2014 17:21
Field Calibration on 13-OCT-2014,17:33

Base Calibration

Potassium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	106.5	36.9	3.8	1.4	2.3
Calibrator (Gross)	234.7	121.4	29.0	1.5	2.4
Calibrator (Net)	128.2	84.5	25.2	0.1	0.1

	K %	U ppm	Th ppm
Concentrations	5.9	0.0	0.0

Uranium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	106.5	36.9	3.8	1.4	2.3
Calibrator (Gross)	561.8	196.8	17.3	11.1	5.9
Calibrator (Net)	455.4	159.9	13.5	9.7	3.6

	K %	U ppm	Th ppm
Concentrations	0.0	16.6	0.0

Thorium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	106.5	36.9	3.8	1.4	2.3
Calibrator (Gross)	424.1	156.4	12.6	6.6	17.3
Calibrator (Net)	317.6	119.5	8.8	5.2	14.9

	K %	U ppm	Th ppm
Concentrations	0.0	0.0	44.7

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	106.5	36.9	3.8	1.4	2.3
Calibrator (Gross)	906.0	369.5	48.4	14.6	19.8
Calibrator (Net)	799.6	332.5	44.6	13.2	17.5

Field Calibration

Gamma Ray

	Measured	Calibrated (API)
Background	157	31
Calibrator (Gross)	1356	271
Calibrator (Net)	1199	240

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	105.4	35.9	3.8	1.4	2.2
Calibrator (Gross)	900.9	365.2	48.3	14.3	19.5
Calibrator (Net)	795.4	329.3	44.5	12.9	17.3

Spectral Gamma Constants SGS-E.J 128

Last Edited on 26-OCT-2014,13:00

Background Calibrator Number	440	
Mixture Calibrator Number	450	
Potassium Calibrator Number	500	
Uranium Calibrator Number	506	
Thorium Calibrator Number	503	
Mud Density	1.27	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

DOWNHOLE EQUIPMENT

D:\Logs\Whiting\HORSETAIL 29G-2012B\MMS DEPTH.dta

Shuttle Running Tool 3.5" (SRT A)
SRT-A 6 LG: 6.47 ft WT: 37.5 lb OD: 2.520 in

400V EXT
MLK-A 1 LG: 14.23 ft WT: 30.9 lb OD: 2.240 in

200V ST
MLK-A 2 LG: 8.52 ft WT: 30.9 lb OD: 2.240 in

MMR LINKER
MLK-A 3 LG: 4.48 ft WT: 30.9 lb OD: 2.240 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 614 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MBS-G.A 200v Compact Battery Sub
MBS-G.A 126 LG: 17.06 ft WT: 123.5 lb OD: 2.240 in

Compact Memory Sub F.A
MMS-F.A 189 LG: 5.20 ft WT: 37.5 lb OD: 2.244 in

Compact Tool Isolator sub.
MTI-C.A 136 LG: 1.54 ft WT: 13.2 lb OD: 2.244 in

Compact Short Gamma
MGS-D.A 185 LG: 3.41 ft WT: 24.3 lb OD: 2.244 in

Compact Collar Locator
MCL-C.A 96 LG: 3.17 ft WT: 26.5 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 244 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

SHA-H Compact Swivel Head Adaptor
SHA-H 142 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in



MIS-D.B Compact Inline Bowspring sub
MIS-D.B 723 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 731 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 512 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 245 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

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 603 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 437 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact MMI Memory Section
MIM-A.A 173 LG: 4.65 ft WT: 26.5 lb OD: 2.240 in

Compact MMI Electrode Section
MIE-A.A 173 LG: 13.96 ft WT: 99.2 lb OD: 4.094 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 293 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 612 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.A Compact Knuckle Joint
SKJ-E.A 246 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 694 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

Compact Induction
MAI-B.J 375 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in

Total Length: 160.56 ft Weight: 1128.8 lb



Tool Zero


(0.13ft from bottom)

COMPANY	WHITING OIL AND GAS CORPORATION
WELL	HORSETAIL 29G-2012B
FIELD	REDTAIL
PROVINCE/COUNTY	WELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing 4742.00 feet

First Reading 12650.00 feet

Elevation Kelly Bushing	4712.00	feet	First Reading	13650.00	feet
Elevation Drill Floor	4712.00	feet	Depth Driller	13700.00	feet
Elevation Ground Level	4694.00	feet	Depth Logger	13700.00	feet


Weatherford[®]

MEASURED DEPTH
X-Y CALIPER
HOLE VOLUME LOG