



Weatherford

GAMMA RAY

MGS

SCALE 5":100

COMPANY

SAVIA PERU S.A

WELL

LO06-29D

FIELD

LOBITOS

PROVINCE/COUNTY

PIURA

COUNTRY/STATE

Peru

LOCATION

N: 9 508 656.13 m
E: 459 052.36 m

Other Services

MDL

MDN

MPD

Permanent Datum SEA LEVEL, Elevation 50.000 feet

Log Measured From KB

Drilling Measured From KB

Date 17-SEPT-2013

Run Number 1

Service Order 846

Depth Driller 8691.00

Depth Logger 8676.00

First Reading 8590.98

Last Reading 4982.00

Casing Driller 4982.00

Casing Logger 4982.00

Bit Size 8.500

Hole Fluid Type WATER BASED

Density / Viscosity 11.50 lb/USg

PH / Fluid Loss 9.00

Sample Source MUD PIT

Rm @ Measured Temp 0.27 @ 75.0

Rmf @ Measured Temp 0.16 @ 75.0

Rmc @ Measured Temp 0.50 @ 75.0

Source Rmf / Rmc

Rm @ BHT 0.18 @ 117.0

Time Since Circulation 08:00 16SEPT

Max Recorded Temp 117.00

Equipment / Base

Recorded By YANINA MENDEZ

Witnessed By AUGUSTO ORTEGA

Elevations:

KB

DF

GL

feet
50.00
50.00
-335.00

REMARKS

- Objective: to obtain accurate open hole Gamma Ray, 1 arm Caliper , Nuclear and Resistivity (Dual Laterolog) log in 8.5" section.
- This is the first run on the hole and on Compact Well Shuttle - Messenger Conveyance.
- Maximum recorded temperature measured by Gamma Ray External Temperature sensor: 137 °F.
- Mud resistivity measurements: Rm= 0.27@ 75 °F, Rmf= 0.16 @ 75 °F, Rmc= 0.50 @ 75 °F.
- Mud resistivity measurements at BHT: Rm= 0.18 @ 117 °F, Rmf = 0.10 @ 117 °F, Rmc= 0.33 @ 117 °F.
- Deviated well with a maximum deviation of 62.70° @ 4031 ft MD and a maximum dogleg of 5.53 @ 1306 ft MD.
- Well sketch as per driller's depth.
- Bottom not tagged due to nature of the conveyance. Maximun depth recorded in Log header (8676ft) is the maximun depth reached by the induction tool in the run.
- Logging speed below 30ft/min (following operational procedures)
- Main section from 8676ft to 4982ft, as requested.
- No repeat section performed due to the method used for this job.
- Resistivities curves (Dual Laterolog) presented in this log are not corrected for borehole conditions.
- Neutron log is corrected by temperature and borehole size by the density caliper.
- Density log is corrected for mud density and borehole size by the density caliper.
- Density matrix = 2.72g/cc. from TD to 7200ft (Mogollon) and 2.68g/cc from 7200ft to Casing Shoe (Rio Bravo) as per client request.
- Hole volume= 1918 ft³
- Annular volume= 945 ft³ for a casing of 7"
- Caliper Average 9.85 in
- Flow test were done at the following depths: 300ft, 1000ft, 2000ft, 3000ft, 4000ft, 5000ft, 6000ft, 7000ft, 8000ft, 8620ft

Crew at your service:

Y. Mendez, J. Guerrero, G. Robladillo, J. Jimenez, C. Viera.

BOREHOLE RECORD

Last Edited: 17-SEP-2013 11:40

Bit Size
inches

17.000

Depth From
feet

0.00

Depth To
feet

1994.00

17.000	0.00	1994.00
12.250	1994.00	4982.00
8.500	4982.00	8691.00

CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
k55	13.380	0.00	1994.00	54.50
N80	9.625	0.00	4982.00	43.50

WELL DIAGRAM

13.38 in Casing: 0.00 ft

9.63 in Casing: 0.00 ft

17.00 in Bit size: 0.00 - 1994.00 ft

13.38 in Casing shoe: 1994.00 ft

12.25 in Bit size: 1994.00 - 4982.00 ft

9.63 in Casing shoe: 4982.00 ft

8.50 in Bit size: 4982.00 - 8691.00 ft

Total bit depth: 8691.00 ft

Temperature: 117.00 Degrees F

DOWNHOLE EQUIPMENT

C:\YANINA'S INFORMATION\playing_well mgr\Savia\LO6-29D\New Folder2\Final_Data.dta

Shuttle Running Tool 3.5" (SRT A)
SRT-A 10 LG: 6.47 ft WT: 37.5 lb OD: 2.52 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 168 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub
MBS-F.A 71 LG: 17.06 ft WT: 123.5 lb OD: 2.24 in

Compact Memory Sub E.B
MMS-E.B 148 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 99 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Stiff Bridle Electrode Sub.
MBE-C.B 259 LG: 12.33 ft WT: 77.2 lb OD: 2.28 in

Compact Stiff Bridle Electrode Sub.

Compact Stiff Bridge Electrode Sub.
MBE-D.A 136 LG: 12.33 ft WT: 77.2 lb OD: 2.24 in

Compact Stiff Bridge Electrode Sub.
MBE-A.A 56 LG: 12.33 ft WT: 77.2 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 98 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Short Gamma
MGS-C.A 43 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

Compact Collar Locator
MCL-B.J 57 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 171 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 486 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 236 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-C.A 441 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.A 197 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 756 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

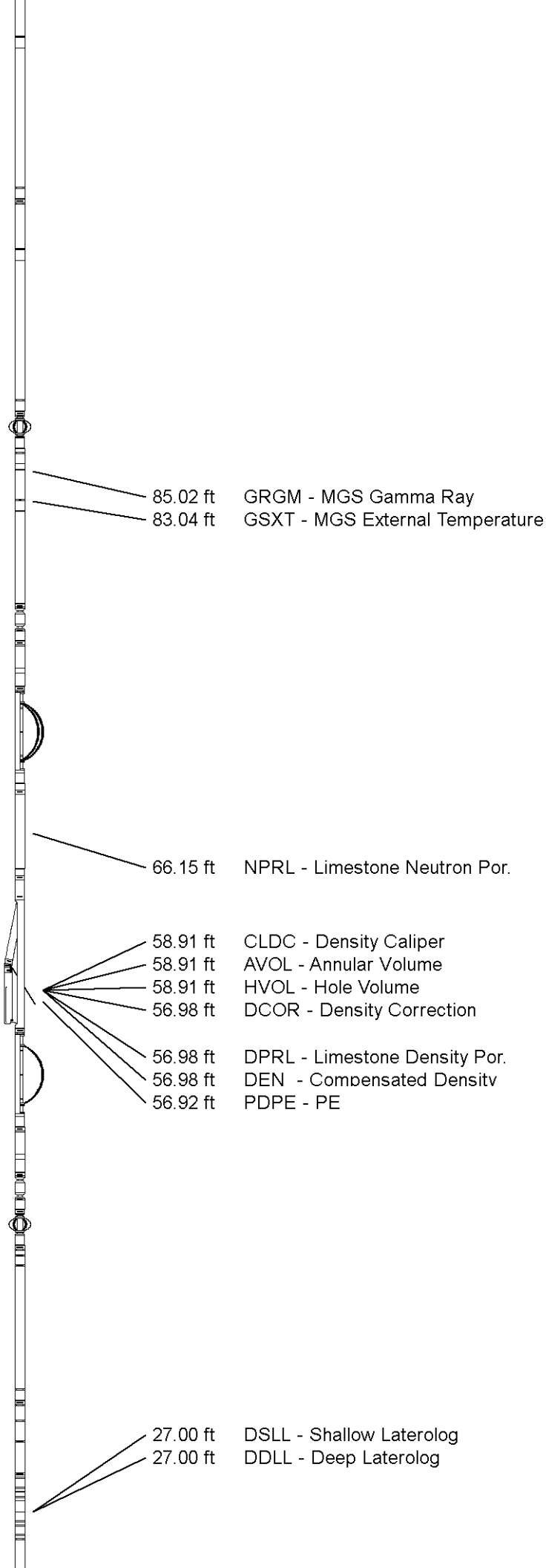
SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 479 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 180 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 641 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Upper Guard sub
MUG-B.B 260 LG: 8.98 ft WT: 68.3 lb OD: 2.24 in

Compact Laterolog Electrode Sub.
MLE-D.A 228 LG: 12.34 ft WT: 92.6 lb OD: 2.24 in



Compact Lower Guard Sub.
MLG-B.B 257 LG: 8.00 ft WT: 55.1 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 307 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
MAI-B.J 367 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 158.10 ft Weight: 1131.0 lb

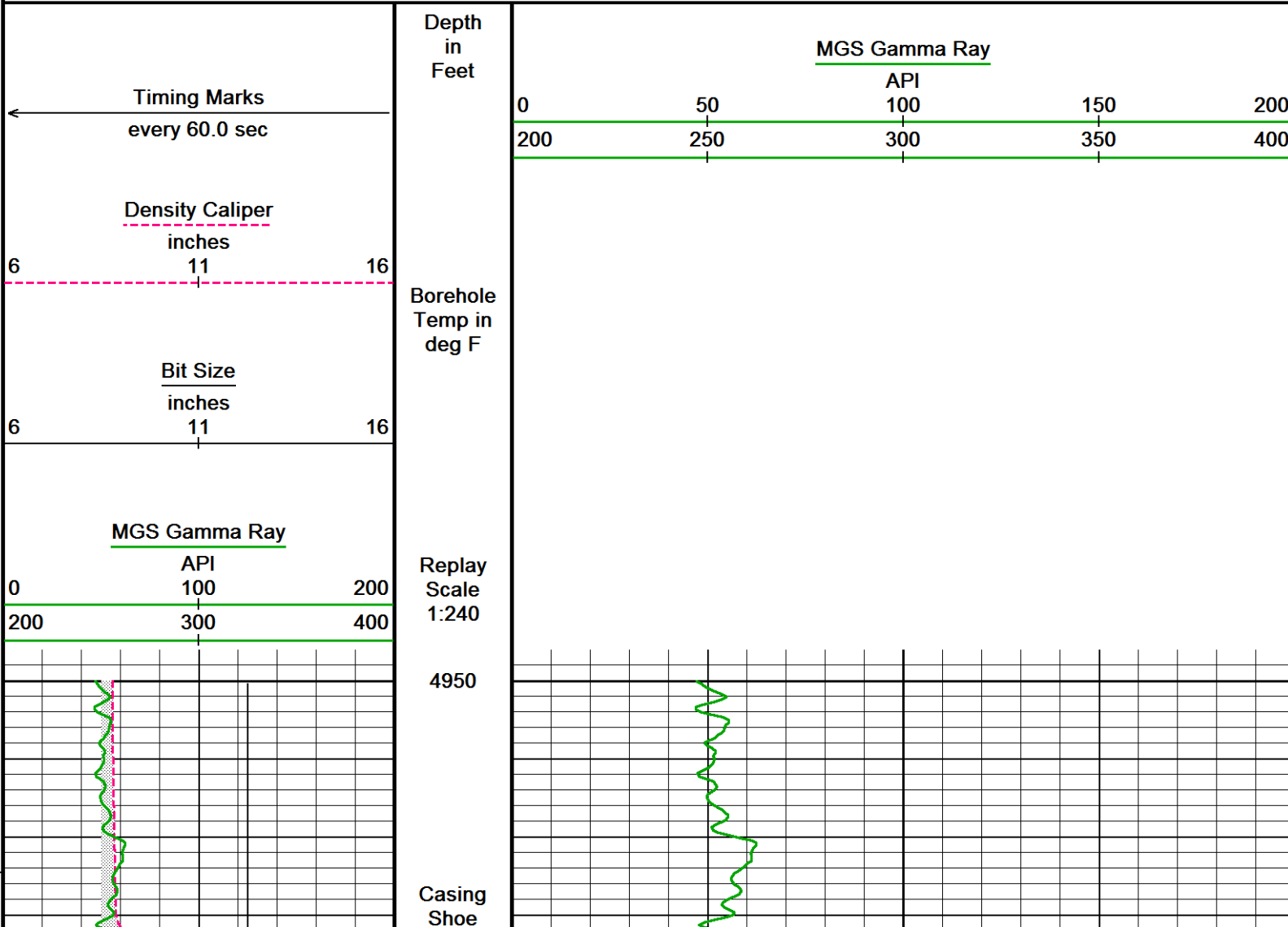


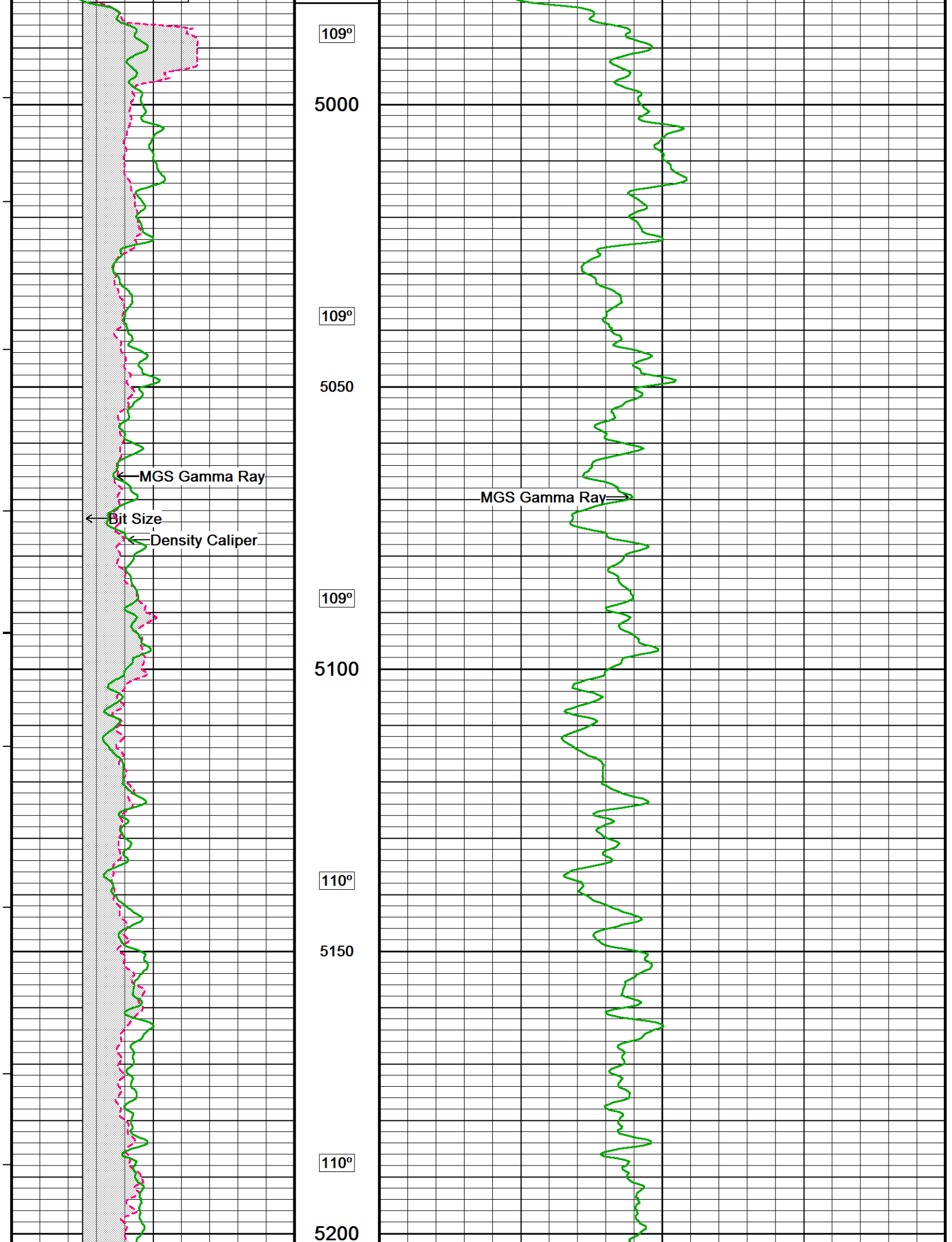
Tool Zero (0.13ft from bottom)
All measurements relative to tool zero.

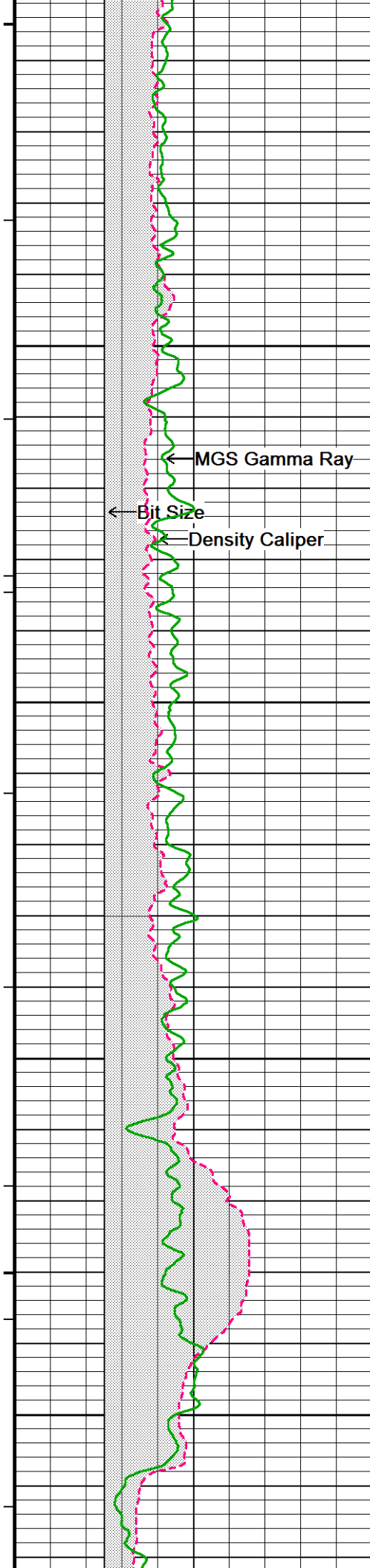
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAIN SECTION 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 18-SEP-2013 20:59
Filename: C:\YANINA'S INFORMATION\playing_well mgr\Savia\LO6-29D\...\Final_Complete_Data.dta
Recorded on 18-SEP-2013 05:18
System Versions: Plotted with 13.06.9804







110°

5250

MGS Gamma Ray

Bit Size

Density Caliper

110°

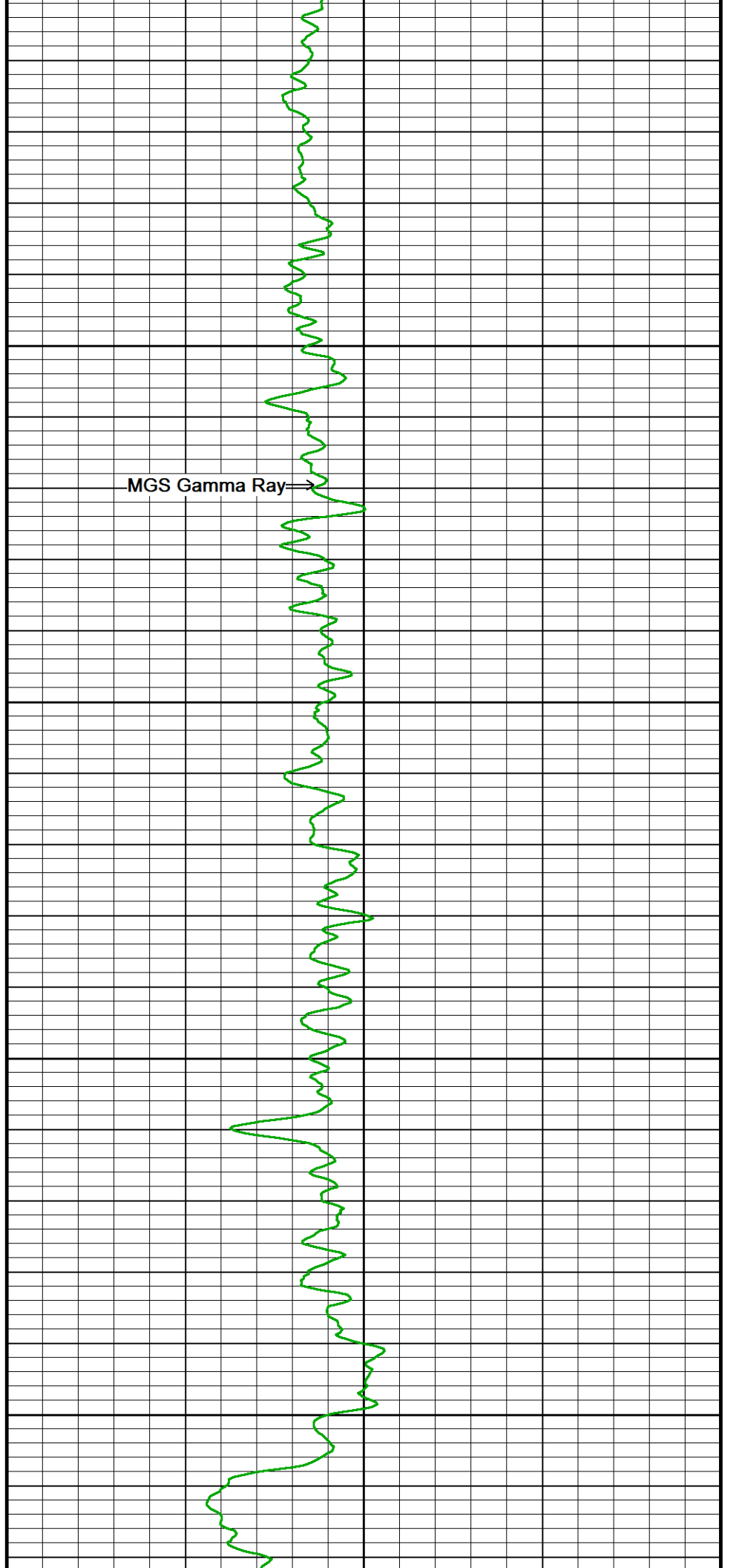
5300

110°

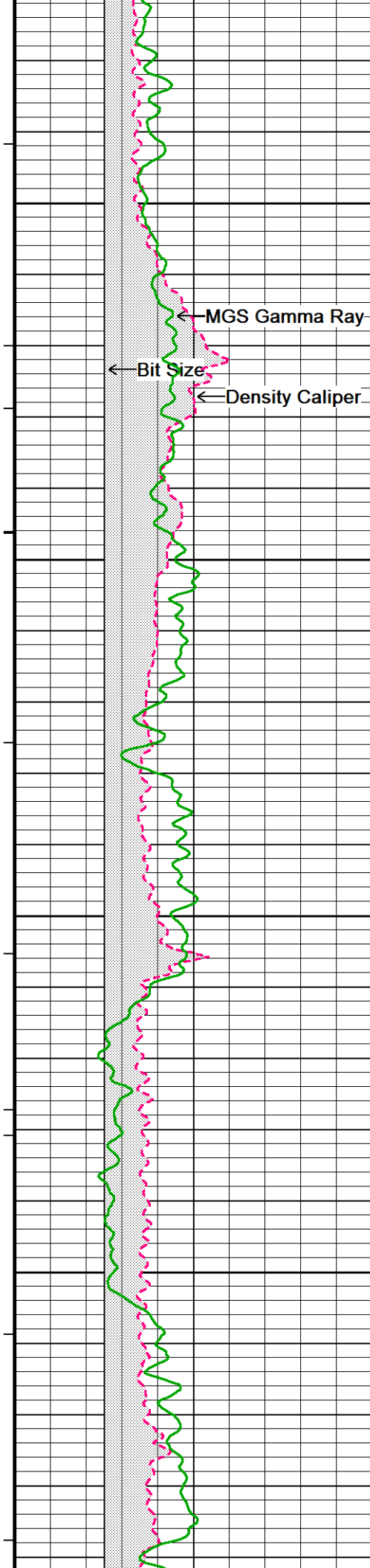
5350

110°

5400



MGS Gamma Ray



110°

5450

111°

5500

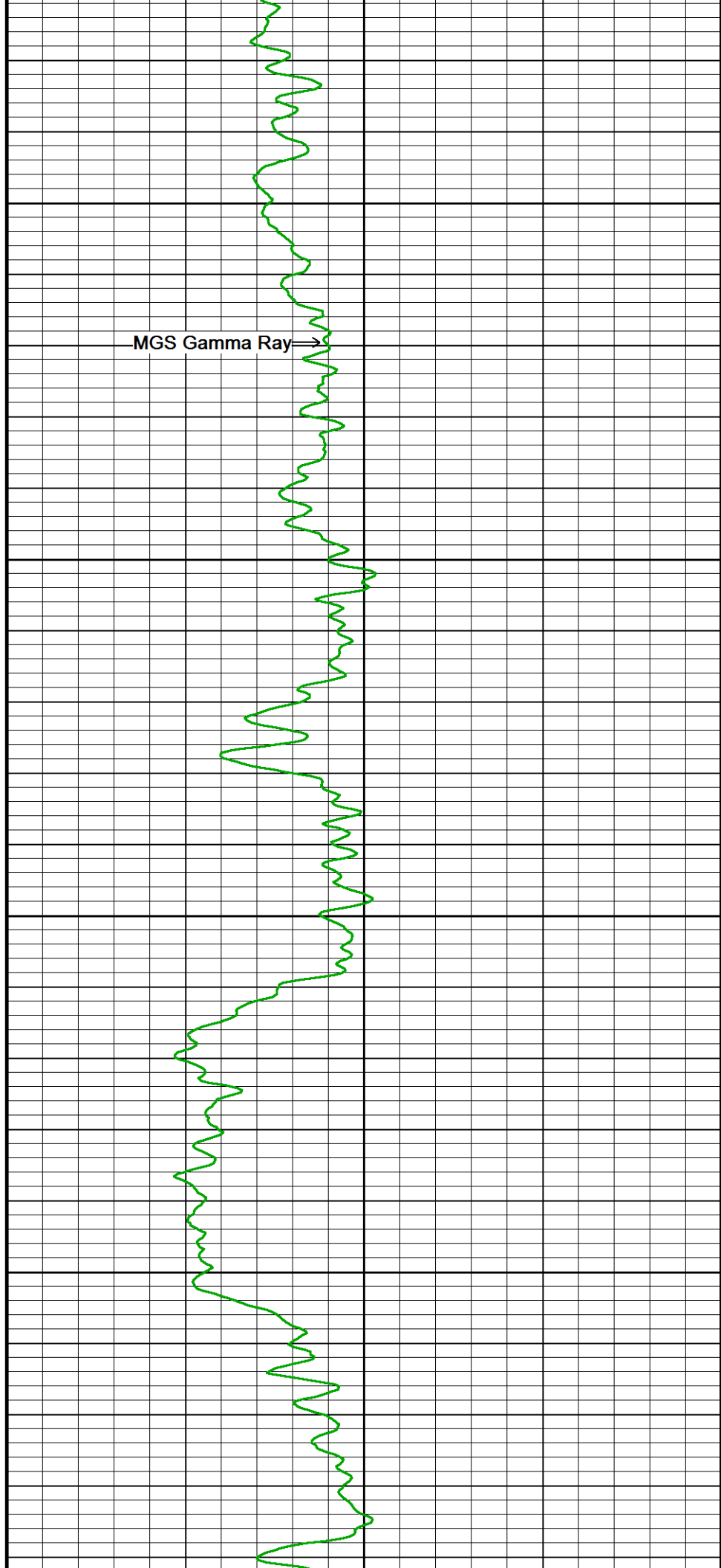
111°

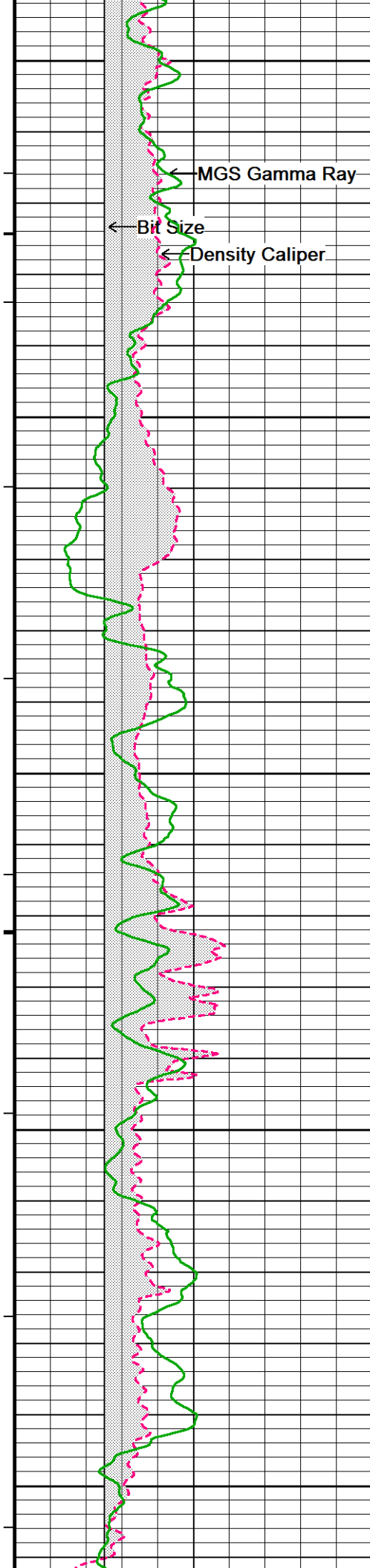
5550

111°

5600

111°





5650

111°

5700

112°

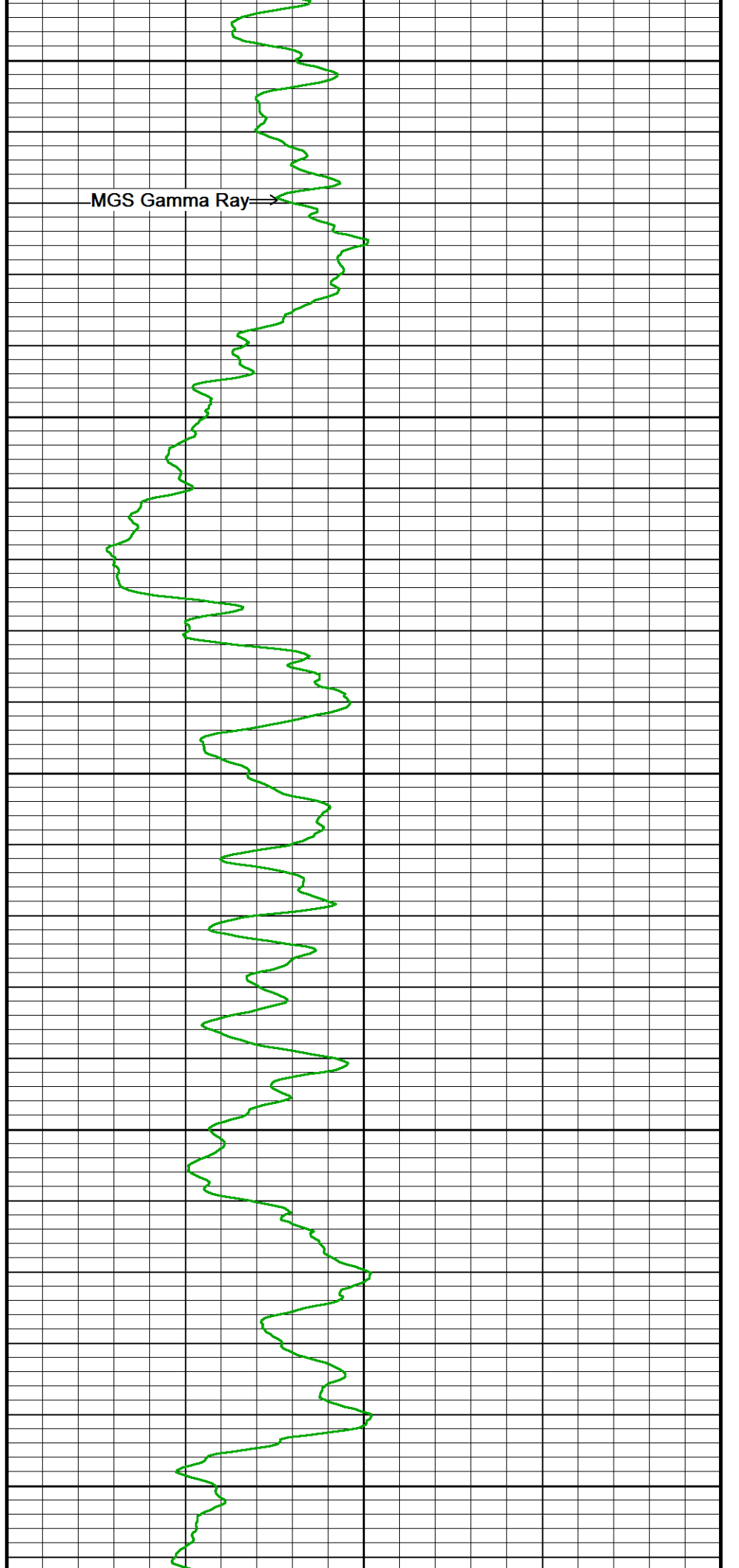
5750

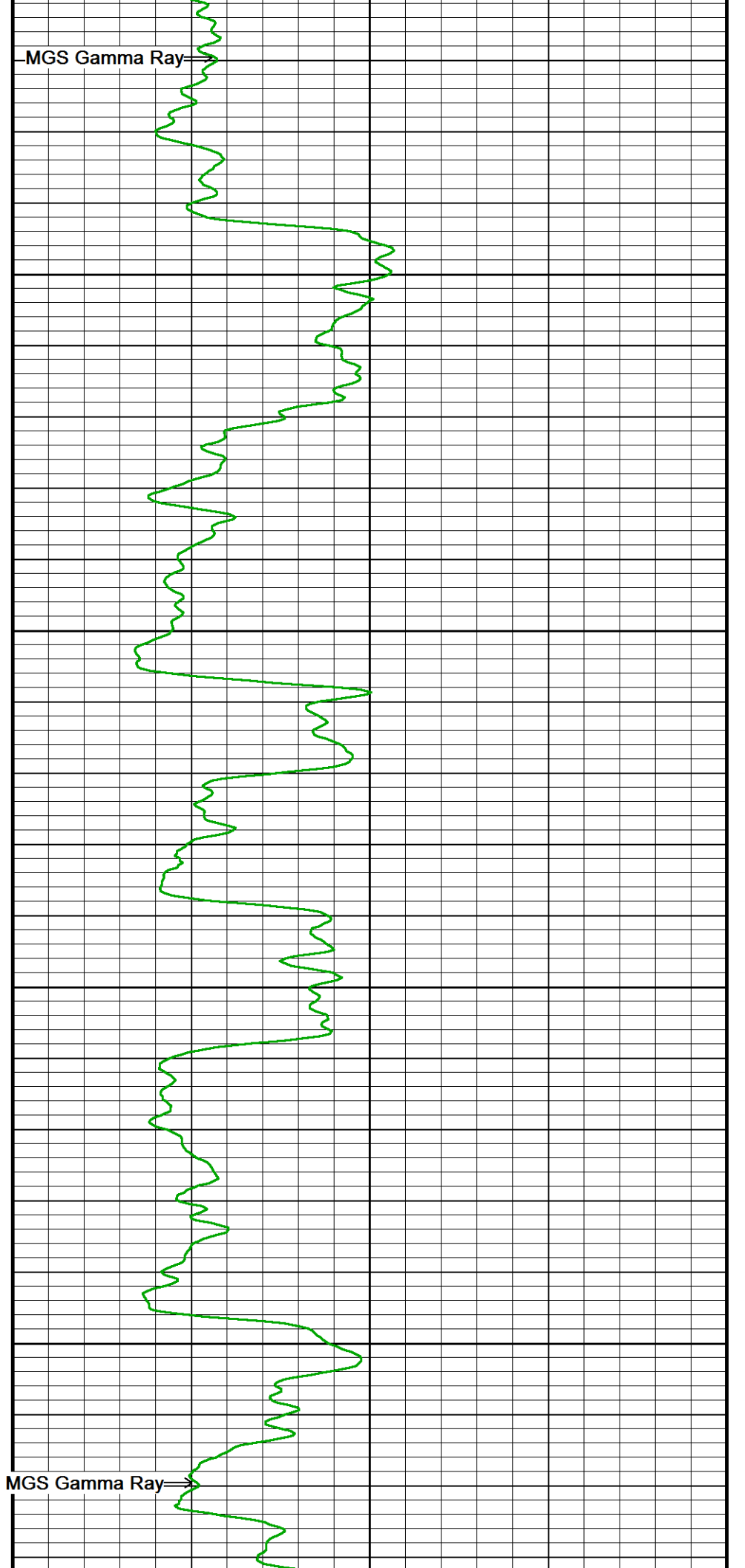
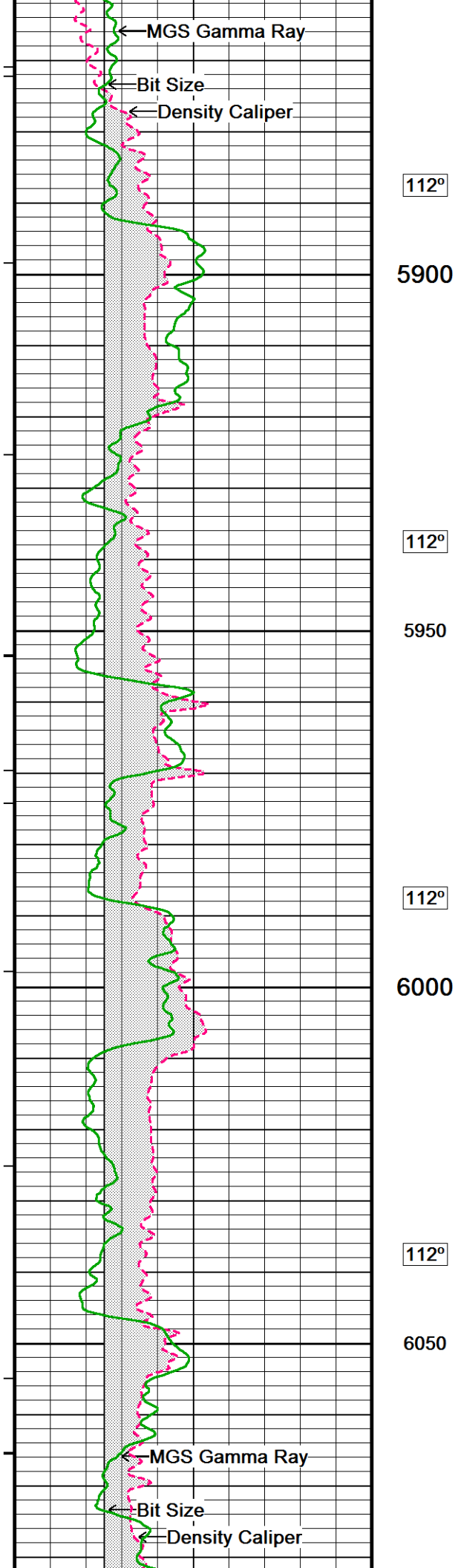
111°

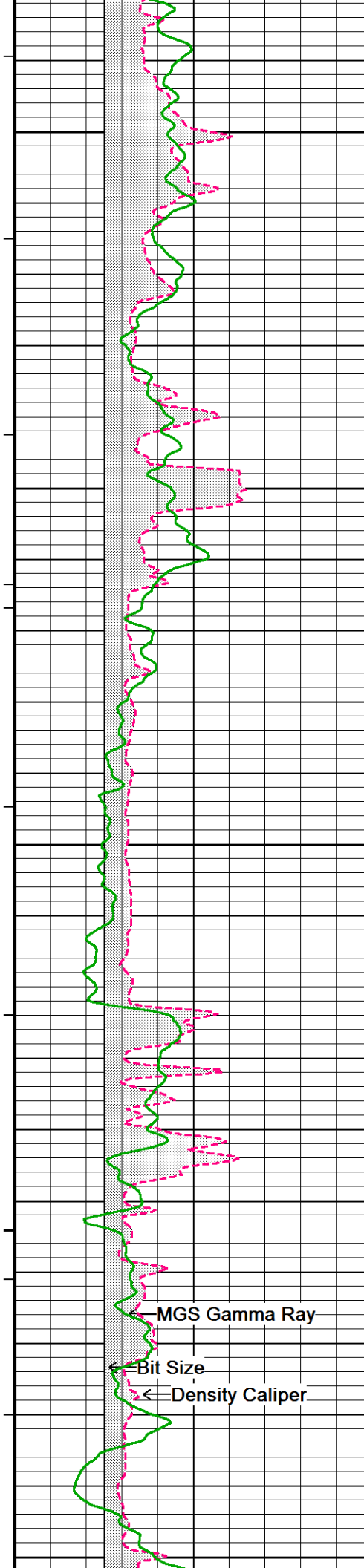
5800

112°

5850







112°

6100

112°

6150

112°

6200

113°

6250

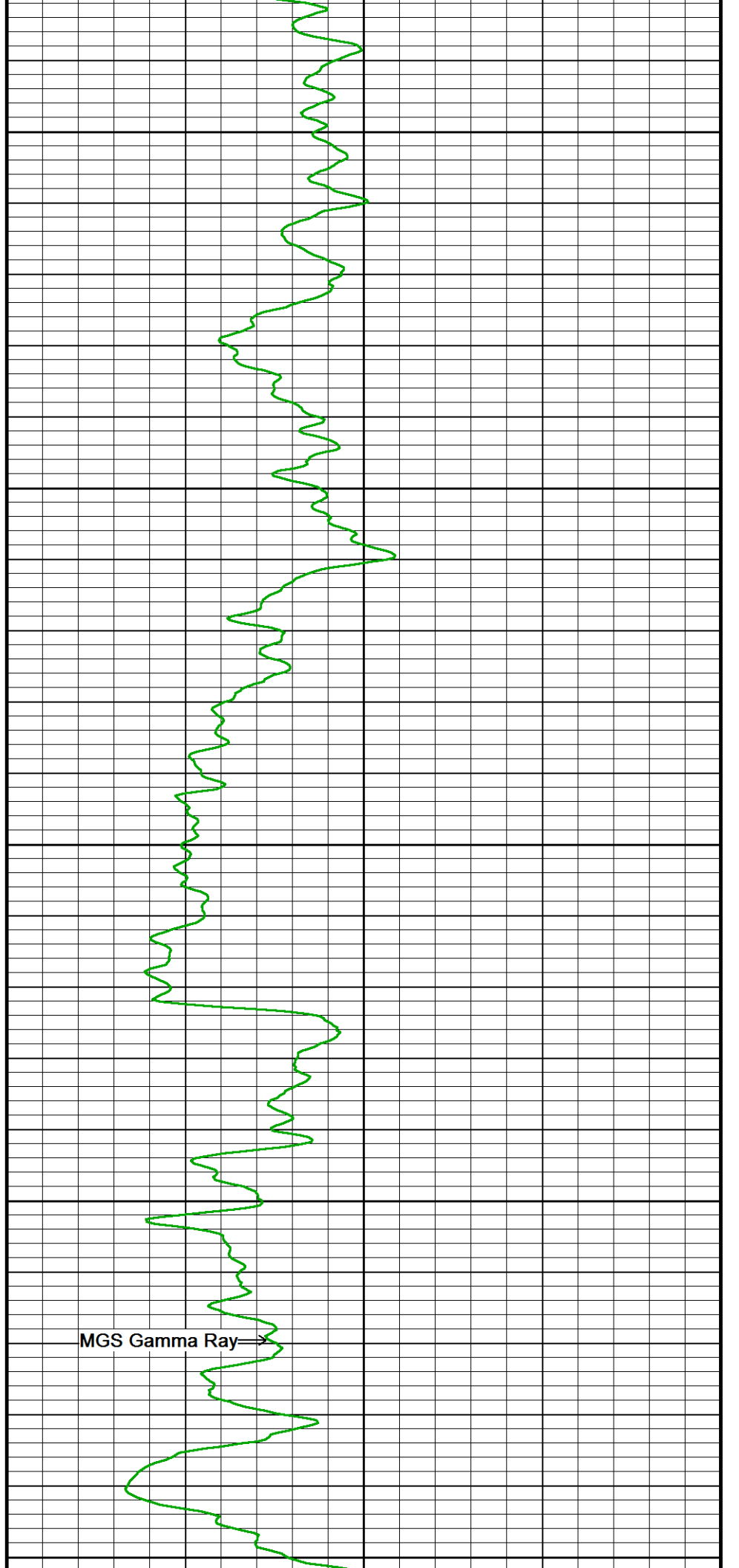
113°

6300

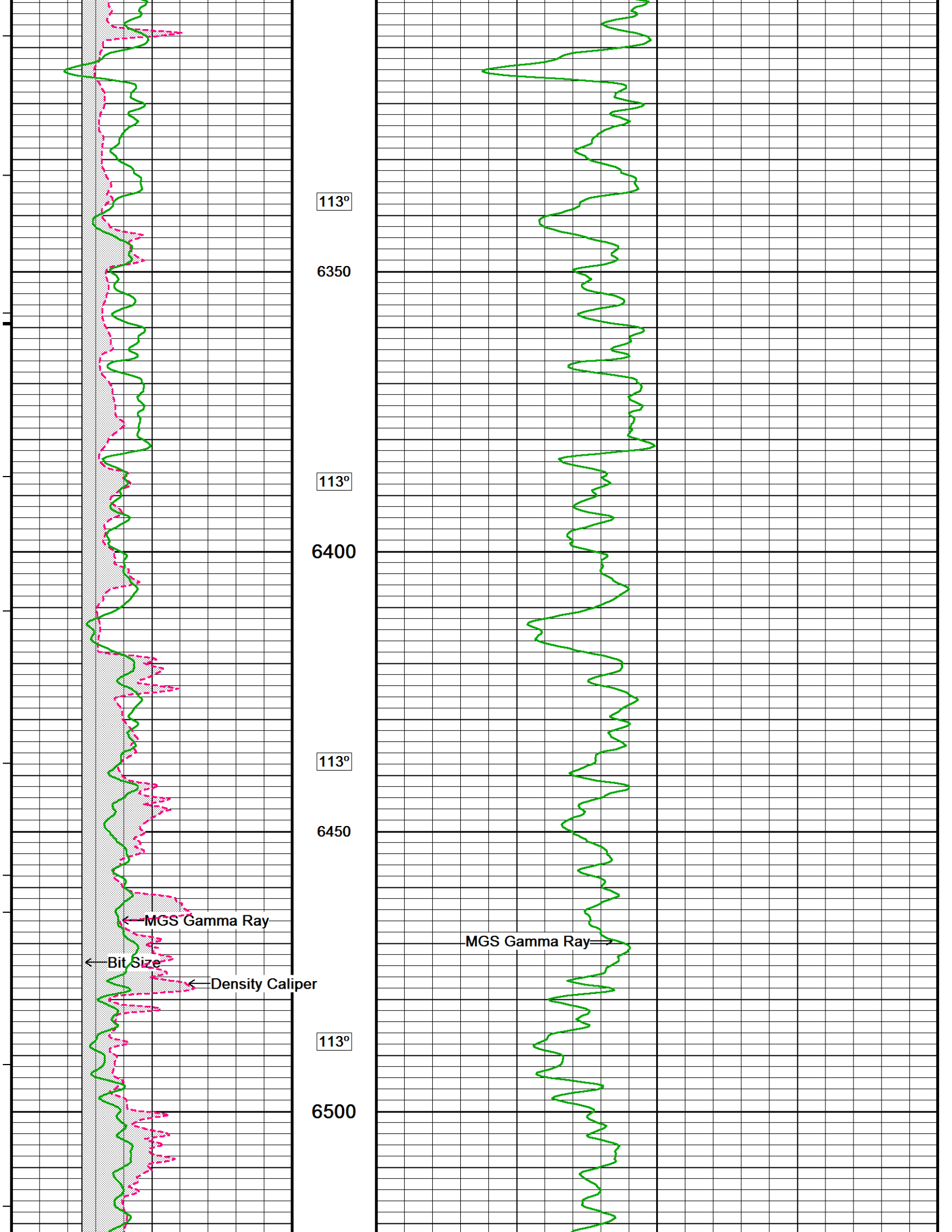
← MGS Gamma Ray

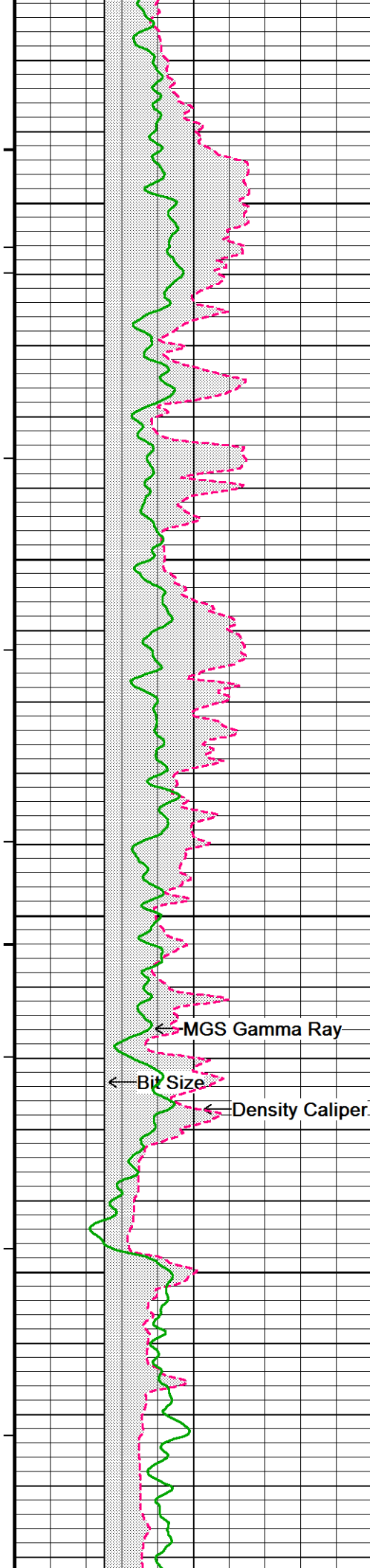
← Bit Size

← Density Caliper



MGS Gamma Ray →





113°

6550

113°

6600

113°

6650

← MGS Gamma Ray

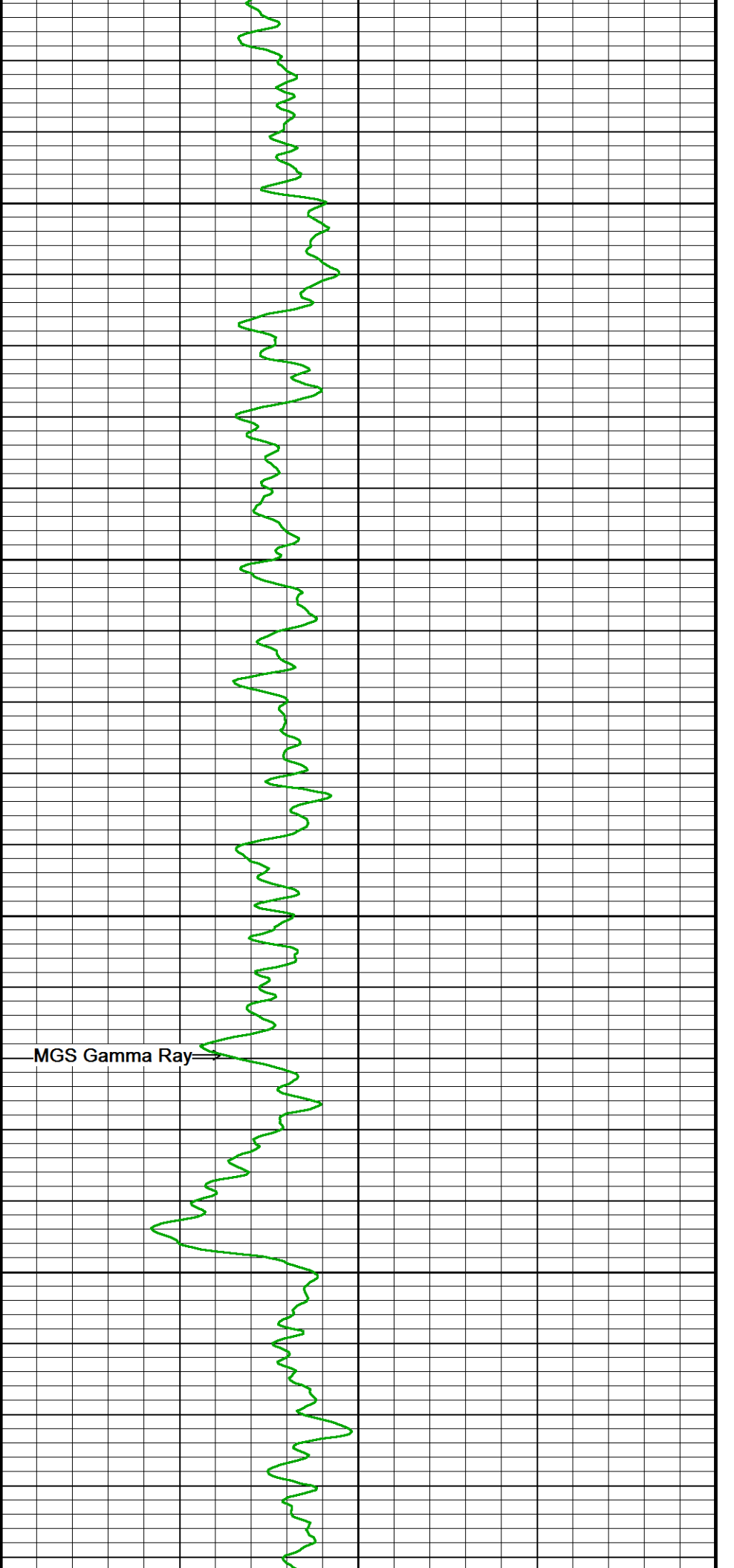
← Bit Size

← Density Caliper

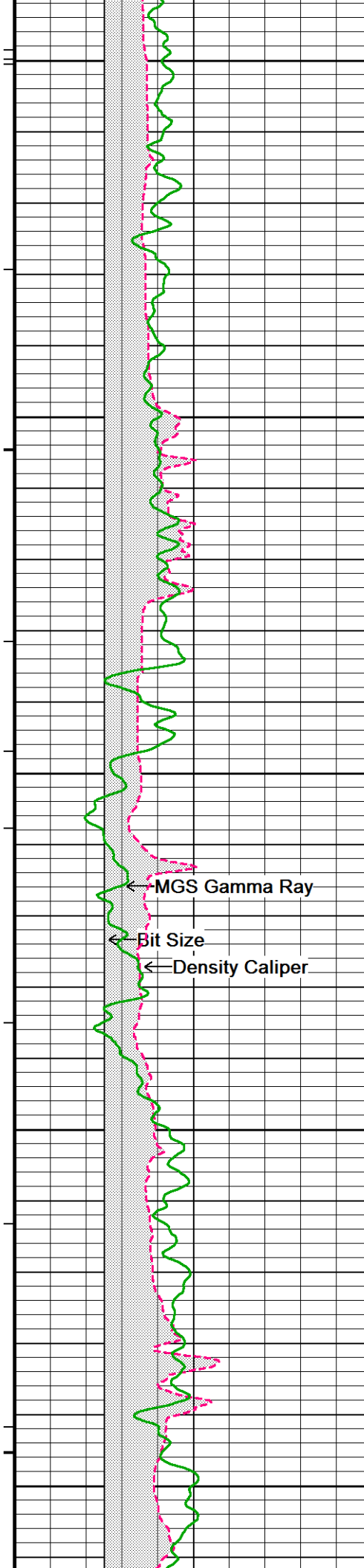
114°

6700

114°



MGS Gamma Ray →



6750

114°

6800

114°

6850

← MGS Gamma Ray

← Bit Size

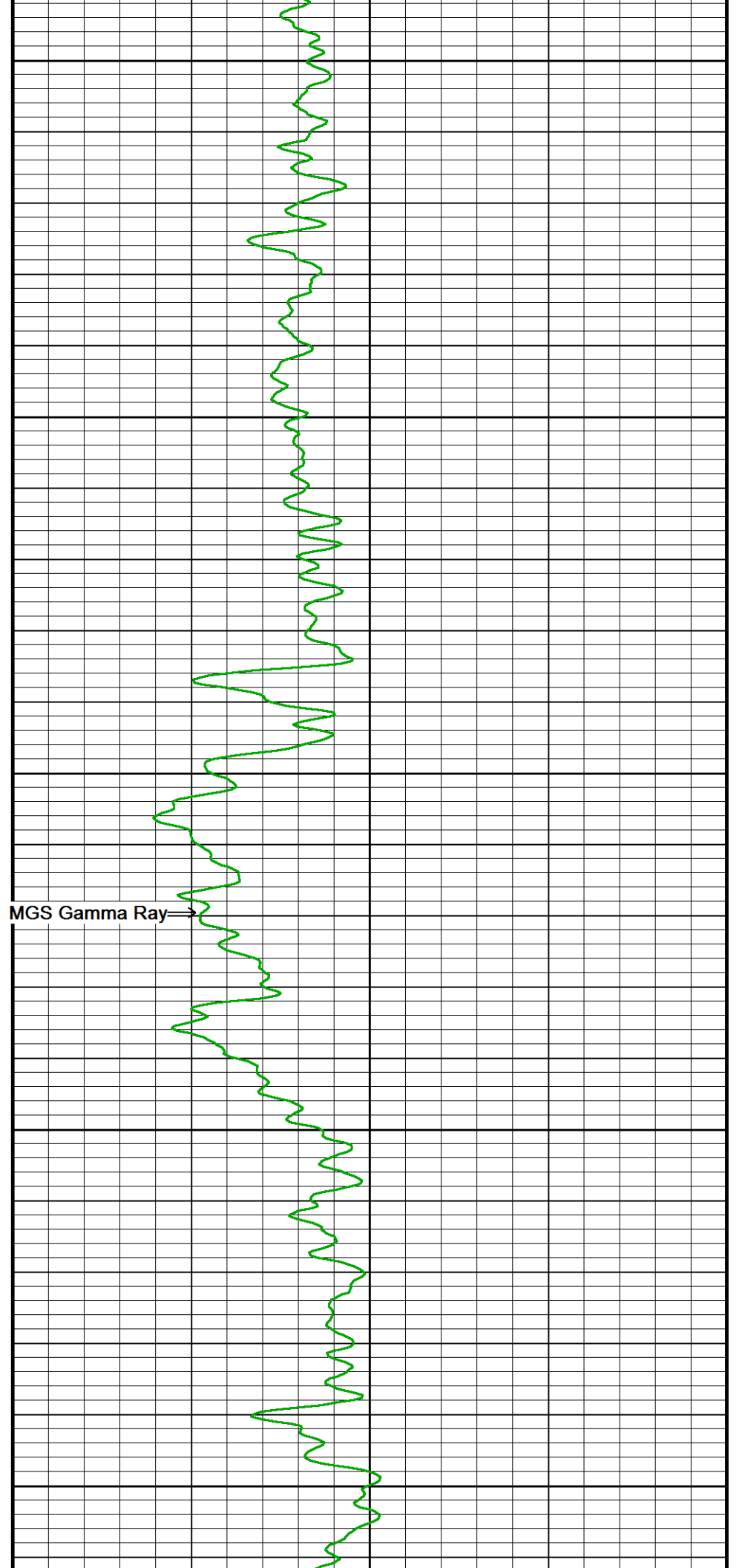
← Density Caliper

114°

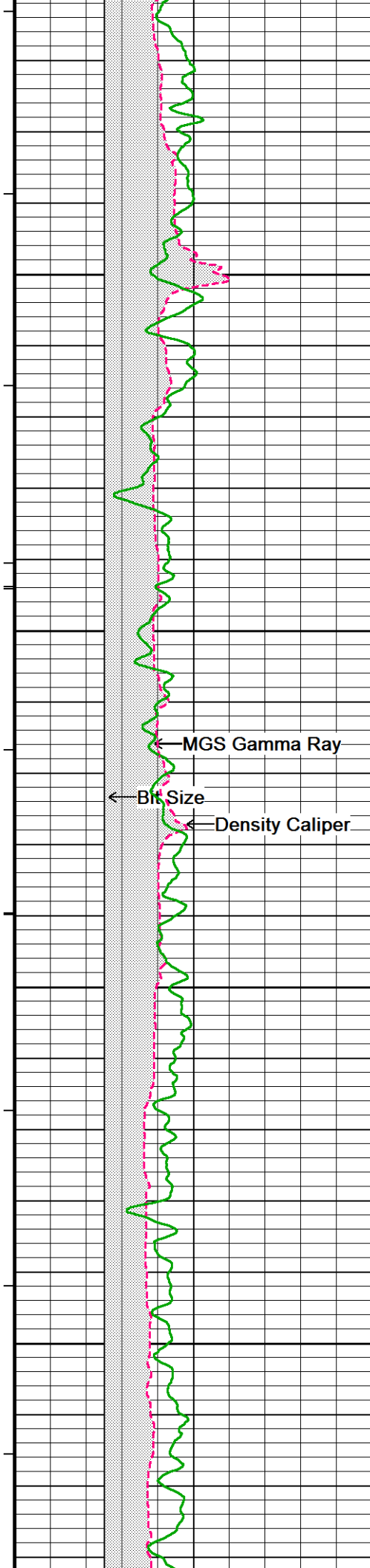
6900

114°

6950



MGS Gamma Ray →



114°

7000

114°

7050

← MGS Gamma Ray

← Bit Size

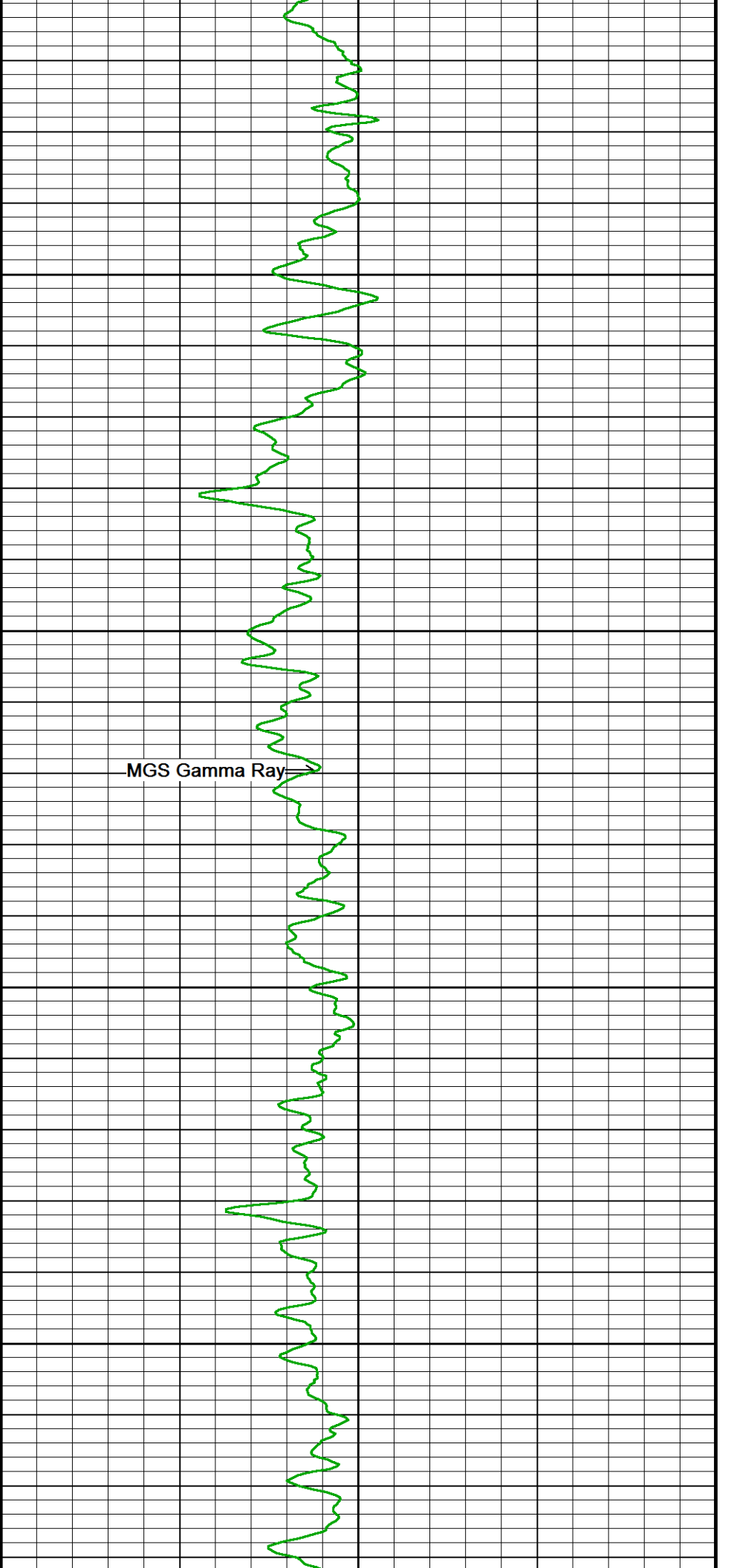
← Density Caliper

114°

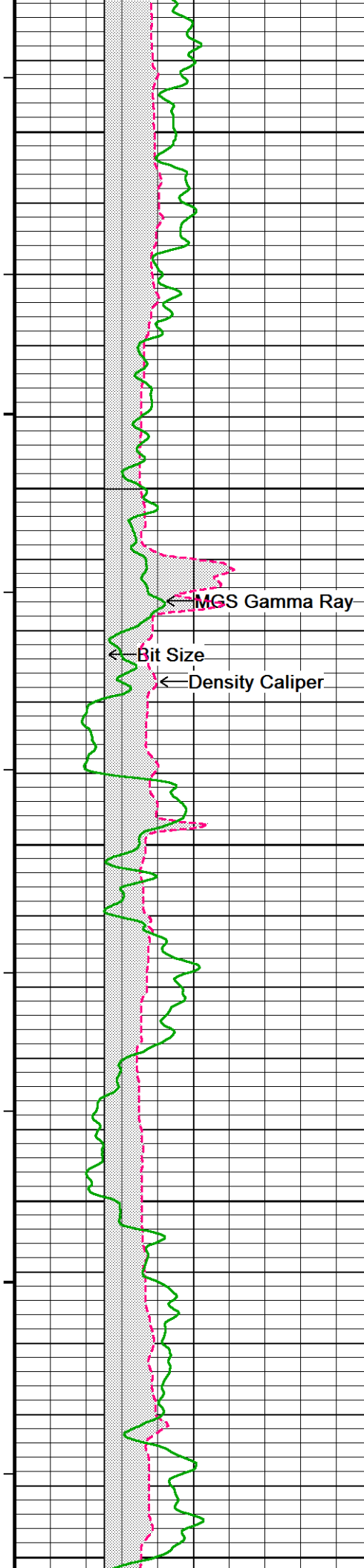
7100

114°

7150



← MGS Gamma Ray



114°

7200

114°

7250

← MGS Gamma Ray

← Bit Size

← Density Caliper

114°

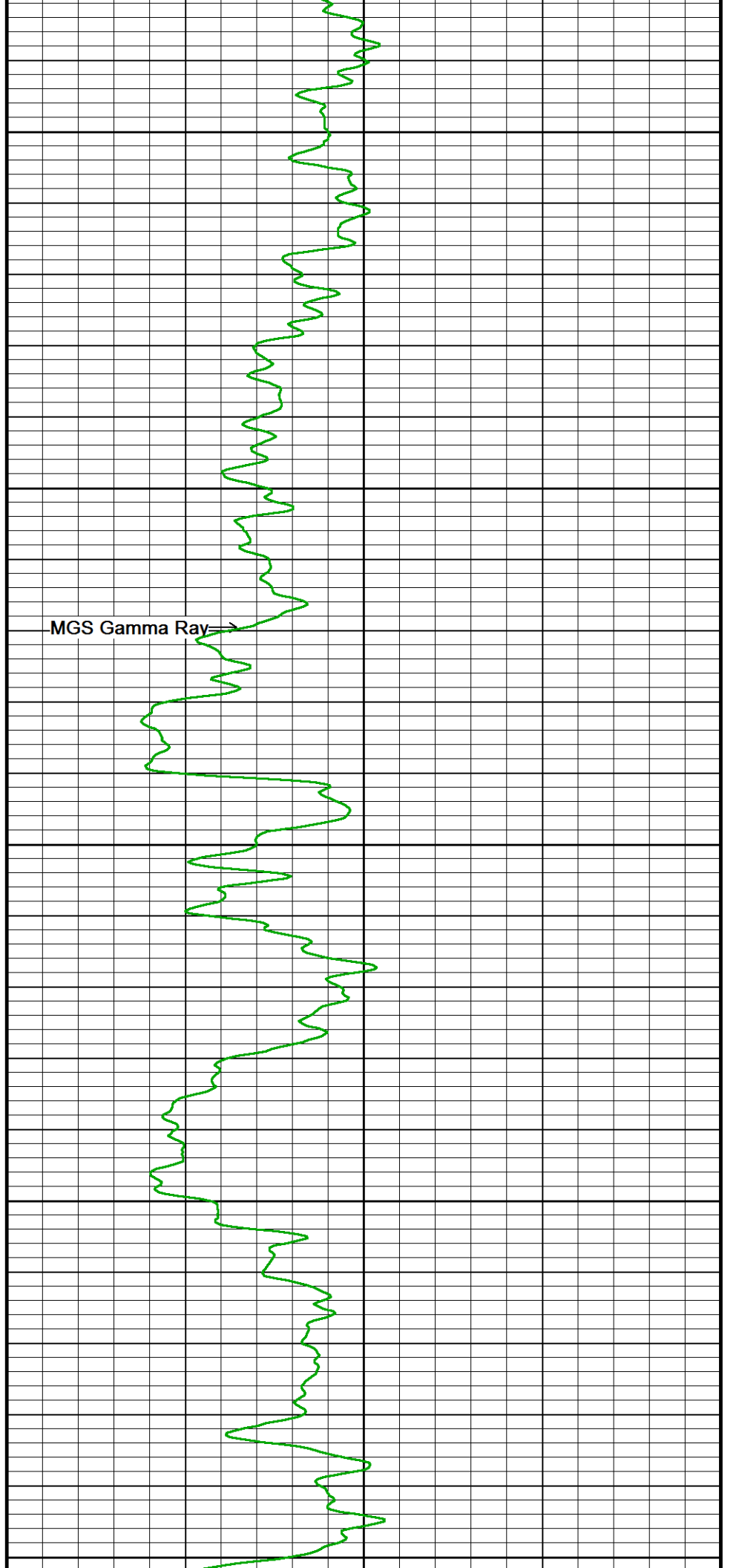
7300

114°

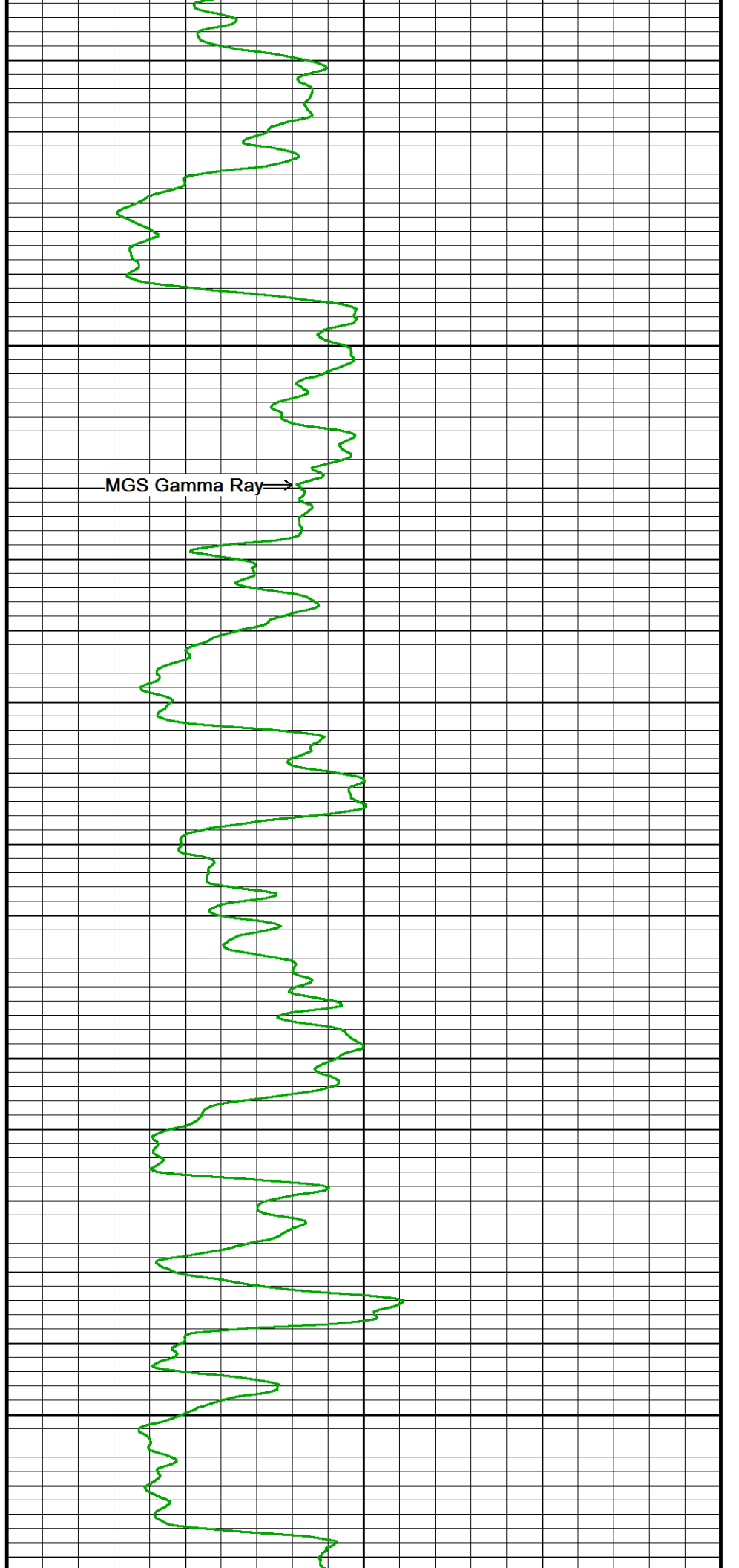
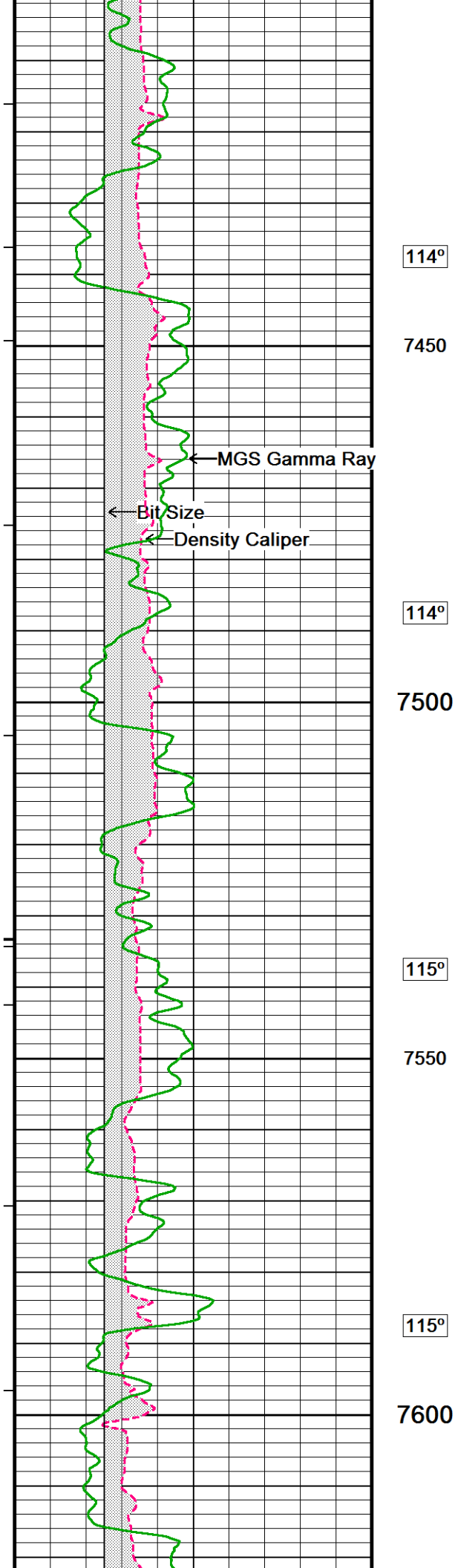
7350

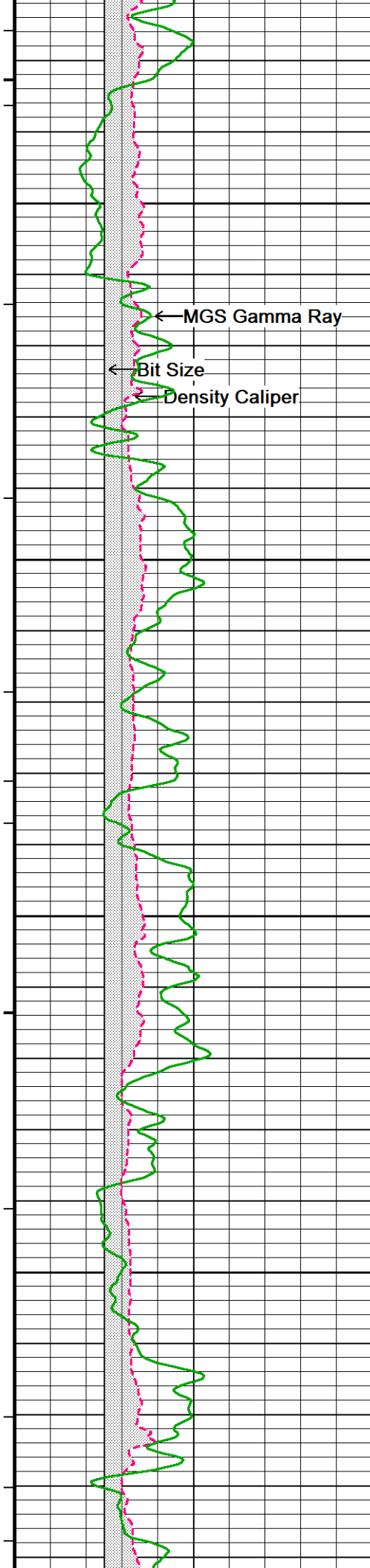
114°

7400



MGS Gamma Ray →





114°

7650

114°

7700

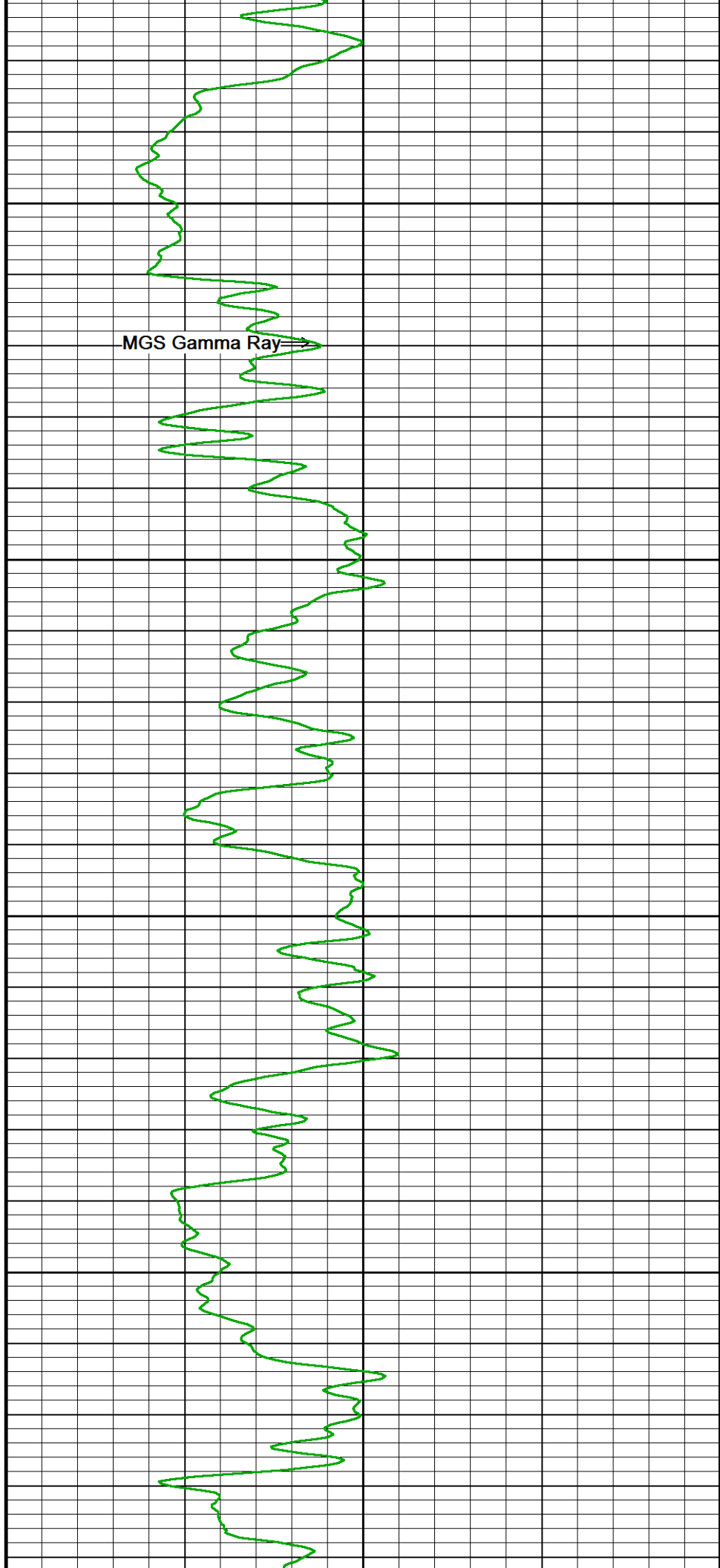
115°

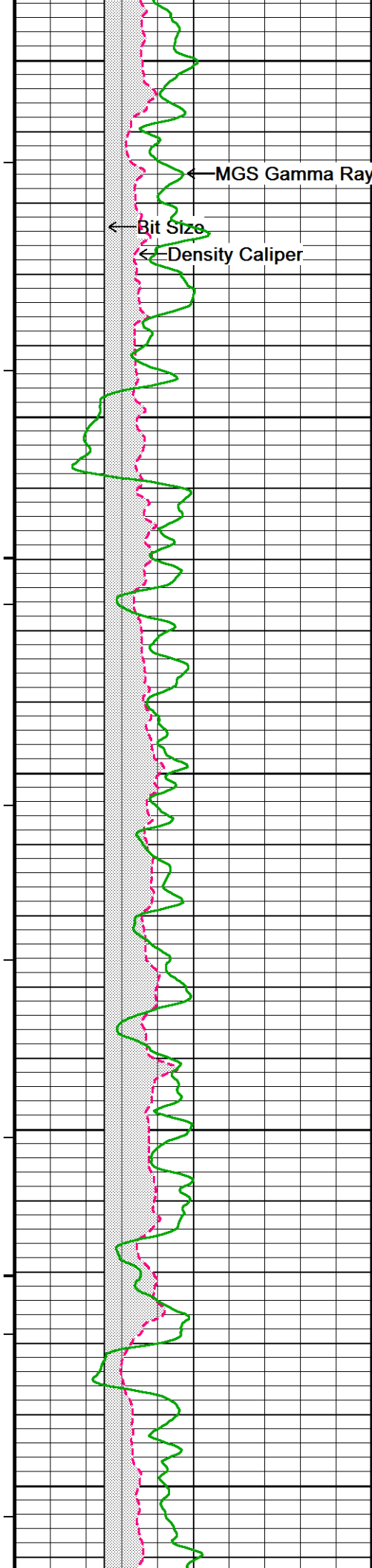
7750

114°

7800

114°





7850

114°

7900

114°

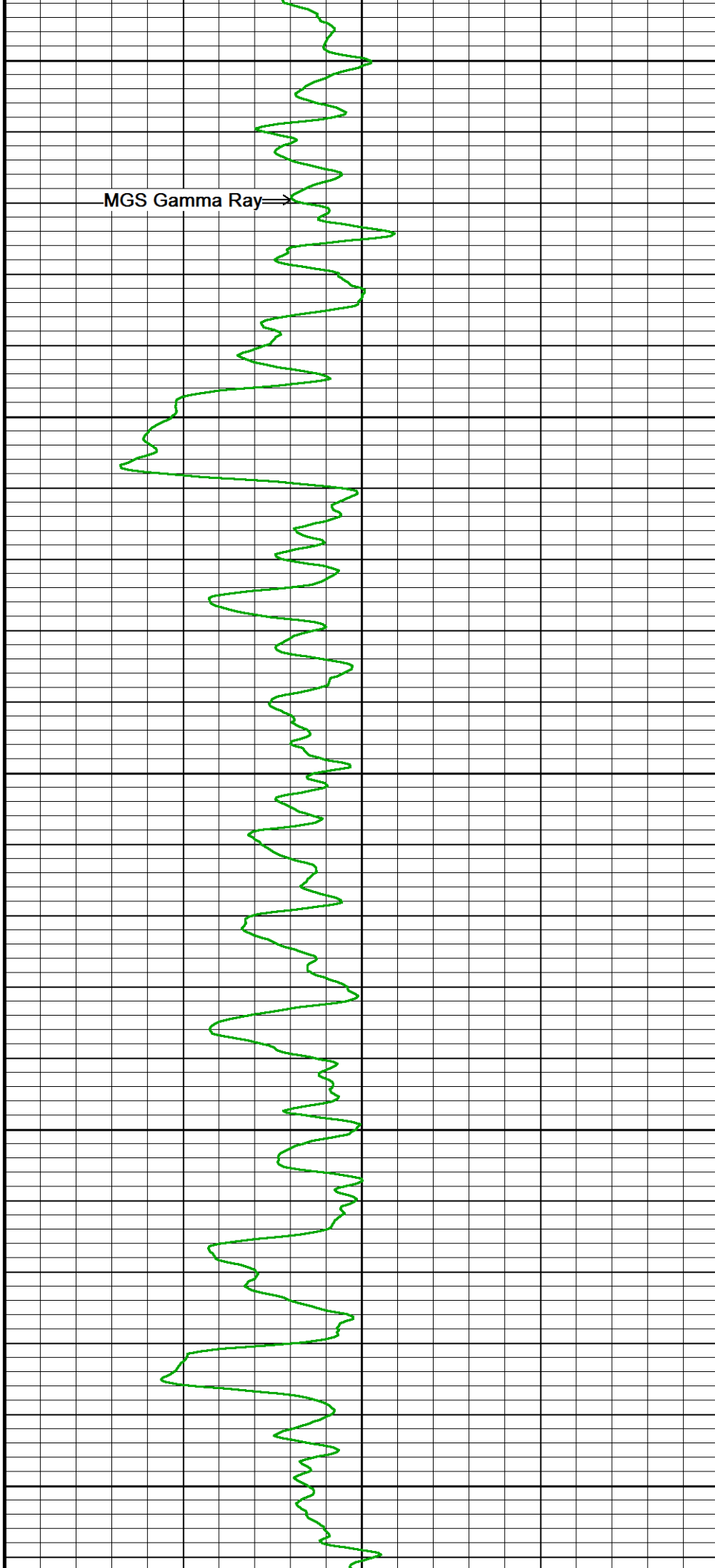
7950

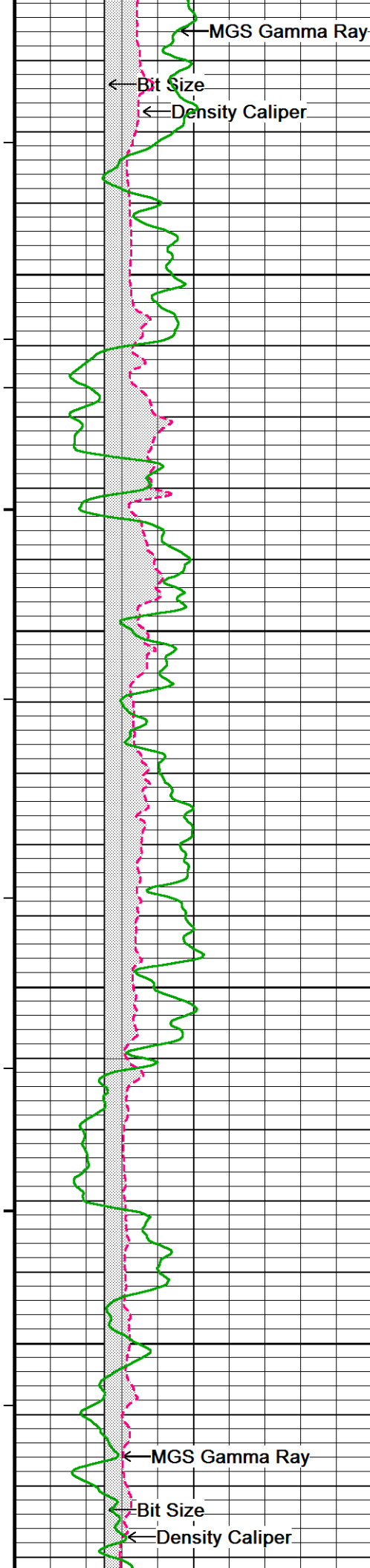
114°

8000

114°

8050





114°

8100

114°

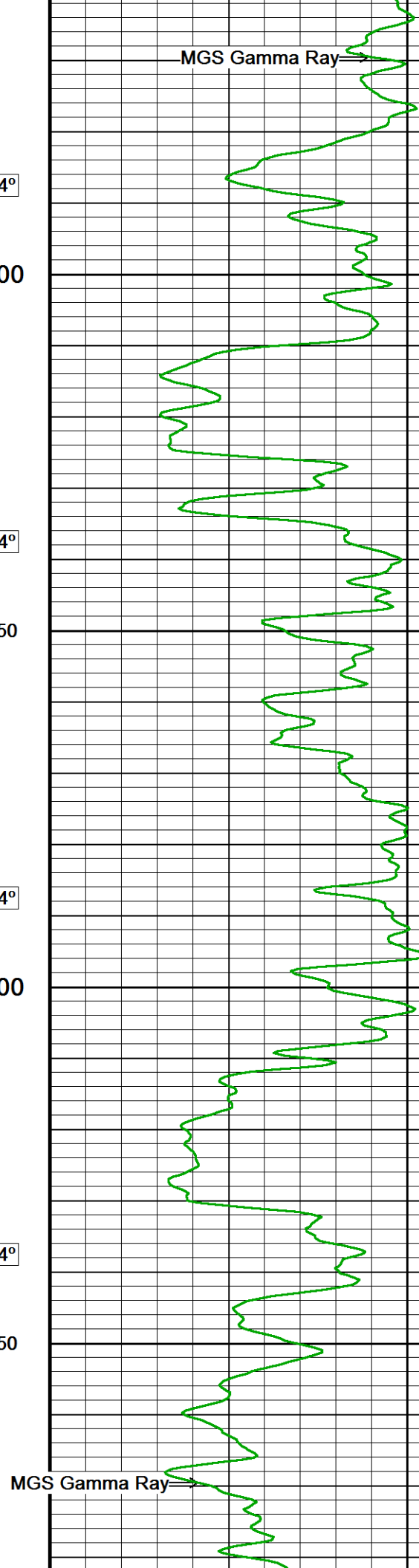
8150

114°

8200

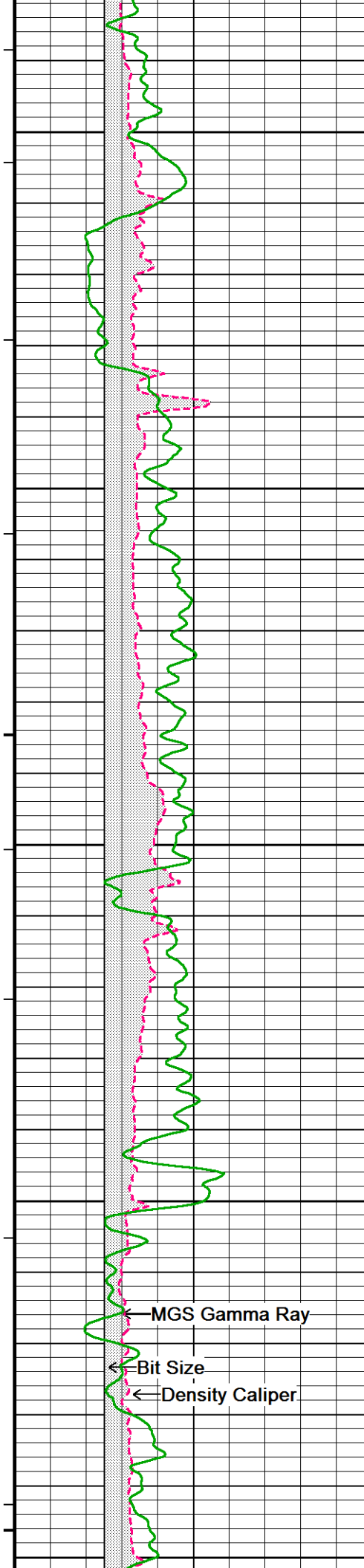
114°

8250



MGS Gamma Ray

MGS Gamma Ray



114°

8300

114°

8350

114°

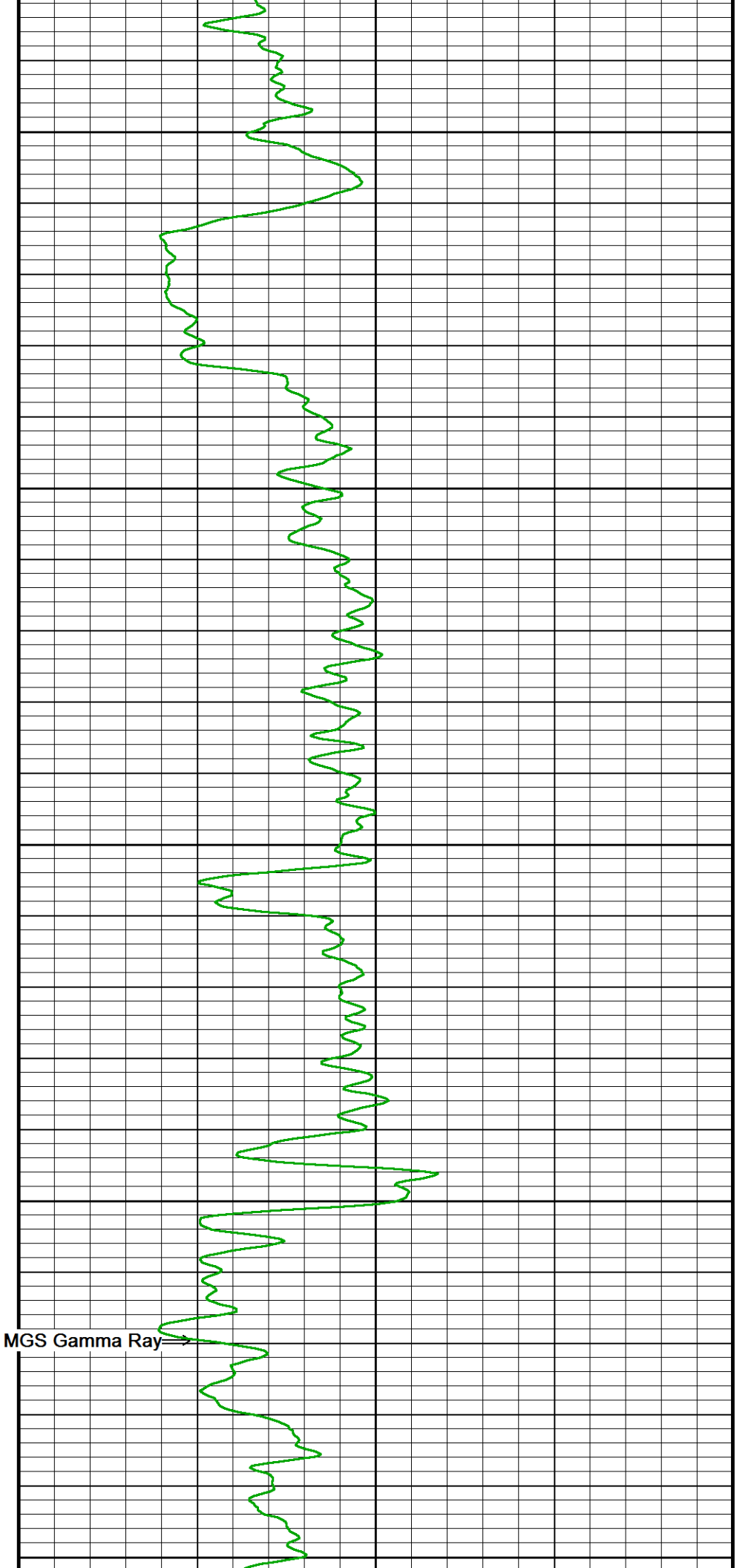
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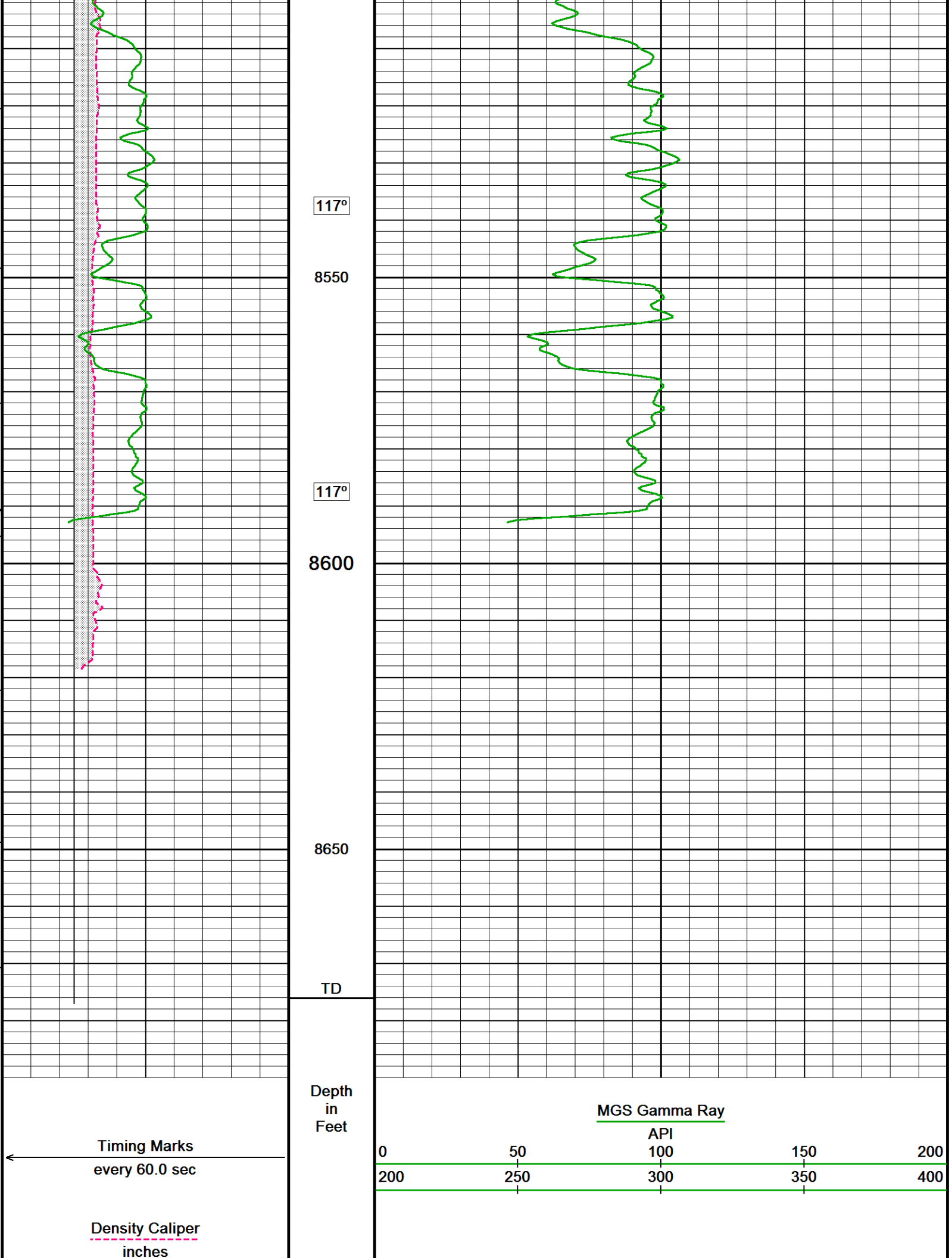
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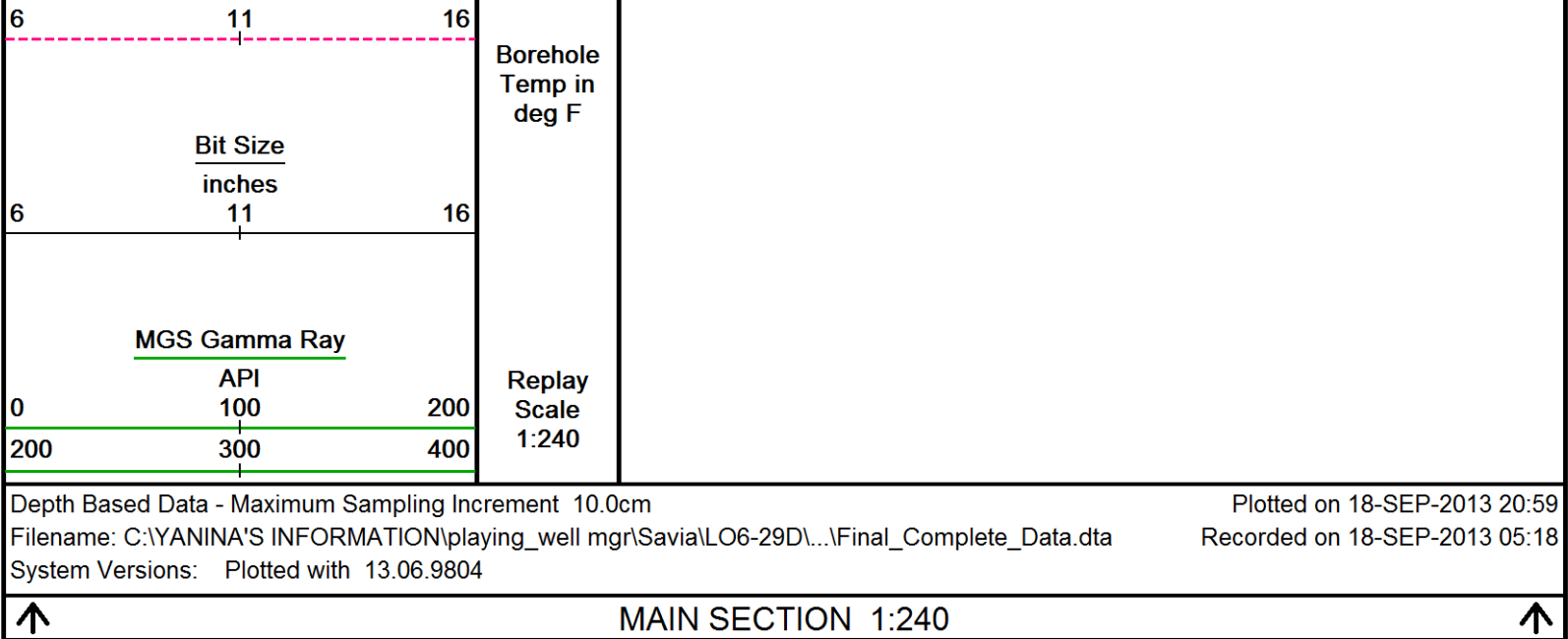
8450

116°

8500







BEFORE SURVEY CALIBRATION

C:\YANINA'S INFORMATION\playing_well mgr\Savia\LO6-29D\New Folder2\Final_Data.dta

General Constants All 000			Last Edited on 17-SEP-2013,05:31	
General Parameters				
Mud Resistivity	0.270		ohm-metres	
Mud Resistivity Temperature	75.000		degrees F	
Water Level	0.000		feet	
Borehole Fluid Processing	N/A			
Hole/Annular Volume and Differential Caliper Parameters				
HVOL Method	Single Caliper			
HVOL Caliper 1	Density Caliper			
HVOL Caliper 2	N/A			
Annular Volume Diameter	7.000		inches	
Caliper for Differential Caliper	Density Caliper			
Rwa Parameters				
Porosity used	Base Density Porosity			
Resistivity used	Deep Induction			
RWA Constant A	0.610			
RWA Constant M	2.150			
SW/APOR Tool Source	0.000			

MMS Parameters MMS-E.B 148		Last Edited on 17-SEP-2013 05:33	
Logging Parameters			
Firmware Version	2v40		
Caliper Open On	MAI		
Caliper Open Delay		minutes	
Caliper Closed On	Unknown		
Caliper Closed Delay	N/A	minutes	
Sample Rate	1.00	seconds	
Use Deep Sleep	Yes		
Delay Deep Sleep	No		
Deep Sleep Wake Time	360.0	minutes	
Deep Sleep Wake on Temperature	No		
Deep Sleep Wake Temperature	N/A	degrees C	
Deep Sleep Wake on Pressure	No		
Deep Sleep Wake Pressure	N/A	psi	
MMI Pad Pressure	0.0		
Release Parameters			
Pulse Duration Base Level	10.0	seconds	
Pulse Duration Transition Time	20.0	seconds	

Pulse Duration Status Pulse From	10.0	seconds
Pulse Duration Caliper Close From	60.0	seconds
Pulse Duration Caliper Open From	65.0	seconds
Pulse Duration Release Pulse From	90.0	seconds
Pulse Duration Release Pulse To	120.0	seconds
Pulse Release Duration	80.0	seconds
Pulse Discriminator Pressure Band	852.0	seconds
Pulse Pressure Discriminator	1765.0	seconds
Use Negative Pulsing	No	
Good Status Reply Open Hole	65535.0	seconds
Good Status Reply Cased Hole	40.0	seconds
Bad Status Reply	60.0	seconds
Status Pulse To	30.0	seconds
Caliper Close To		seconds
Caliper Open To	85.0	seconds

Configuration

MMS,MGS,MDN,MPD,MPD,MLE,MAI

Gamma Calibration MGS-C.A 43

Field Calibration on 16-SEP-2013 09:35

	Measured	Calibrated (API)
Background	93	62
Calibrator (Gross)	945	630
Calibrator (Net)	851	568

Gamma Constants MGS-C.A 43

Last Edited on 17-SEP-2013,02:44

Gamma Calibrator Number	145	
Mud Density	1.38	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MGS-C.A 43

Field Calibration on 16-SEP-2013,09:36

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	200.00	200.00

High Resolution Temperature Constants MGS-C.A 43

Last Edited on 16-SEP-2013,09:35

Pre-filter Length	11
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Caliper Calibration MPD-C.A 197

Base Calibration on 17-SEP-2013 02:30

Field Calibration on 17-SEP-2013 02:31

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16753	3.98
2	26256	5.96
3	45952	9.86
4	57280	11.93
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
11.93	11.93

COMPANY SAVIA PERU S.A

WELL LO06-29D

FIELD LOBITOS

PROVINCE/COUNTY PIURA

COUNTRY/STATE Peru

Elevation Kelly Bushing	50.00	feet	First Reading	8590.98	feet
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Elevation Drill Floor	50.00	feet	Depth Driller	8691.00	feet
Elevation Ground Level	-335.00	feet	Depth Logger	8676.00	feet
 GAMMA RAY MGS SCALE 5":100					