



Weatherford

SPECTRAL GAMMA RAY

COMPANY WHITTING OIL AND GAS CORPORATION
 WELL RAZOR 26-2306B
 FIELD REDTAIL
 PROVINCE/COUNTY WELD
 COUNTRY/STATE U.S.A. / COLORADO
 LOCATION SHL: 2373' FSL & 1948' FWL

SEC TWP RGE Other Services
 26 10N 58W
 API Number 05-123-37878
 Permit Number

Permanent Datum G.L., Elevation 4737 feet
 Log Measured From KB
 Drilling Measured From KB

Elevations: feet
 KB 4759.50
 DF 4759.50
 GL 4737.00

Date	22-JAN-2014	
Run Number	1	
Service Order	3795-77499695	
Depth Driller	13220.00	feet
Depth Logger	12661.00	feet
First Reading	12591.00	feet
Last Reading	6087.00	feet
Casing Driller	6088.00	feet
Casing Logger	6087.00	feet
Bit Size	6.000	inches
Hole Fluid Type	WATER BASED	
Density / Viscosity	10.50 g/cc	45.00 CP
PH / Fluid Loss	9.80	19.00 ml/30Min
Sample Source	MUD PIT	
Rm @ Measured Temp	1.30 @ 56.0	ohm-m
Rmf @ Measured Temp	0.98 @ 56.0	ohm-m
Rmc @ Measured Temp	1.63 @ 56.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.35 @ 216.0	ohm-m
Time Since Circulation	1 HOUR	
Max Recorded Temp	216.00	deg F
Equipment / Base	18004	S.A.
Recorded By	MICHAEL RYAN	
Witnessed By	PETER BUCKNAM	
	RIG: FRONTIER 26	

REMARKS

LOGGED USING 13.04.8723
 ANNULAR VOLUME CALCULATED WITH 4.5 INCH CASING.
 POROSITY CALCULATED USING SANDSTONE MATRIX (2.71 gm/cc).
 WELL WAS LOGGED WITH THE COMPACT WELL SHUTTLE SYSTEM.
 LOG INTERVALS FROM TD - CASING SHOE AS PER CUSTOMER REQUESTED
 DEPTH WAS RECORDED WITH THE WEATHERFORD PASON AQUISITION SYSTEM.
 THE DEPTH WAS CORRECTED TO THE DRILLERS STRAP.
 HARDWARE: SEE THE TOOL DIAGRAM.
 LAT: 40.808886 LON: -103.834644
 BIT DEPTH DURING DEPLOYMENT 12,490 FT
 TOOL DEPTH AFTER DEPLOYMENT 12,597 FT
 THANK YOU FOR USING "WEATHERFORD".

BOREHOLE RECORD

Last Edited: 22-JAN-2014 20:36

Bit Size inches	Depth From feet	Depth To feet
6.000	6088.00	13385.00

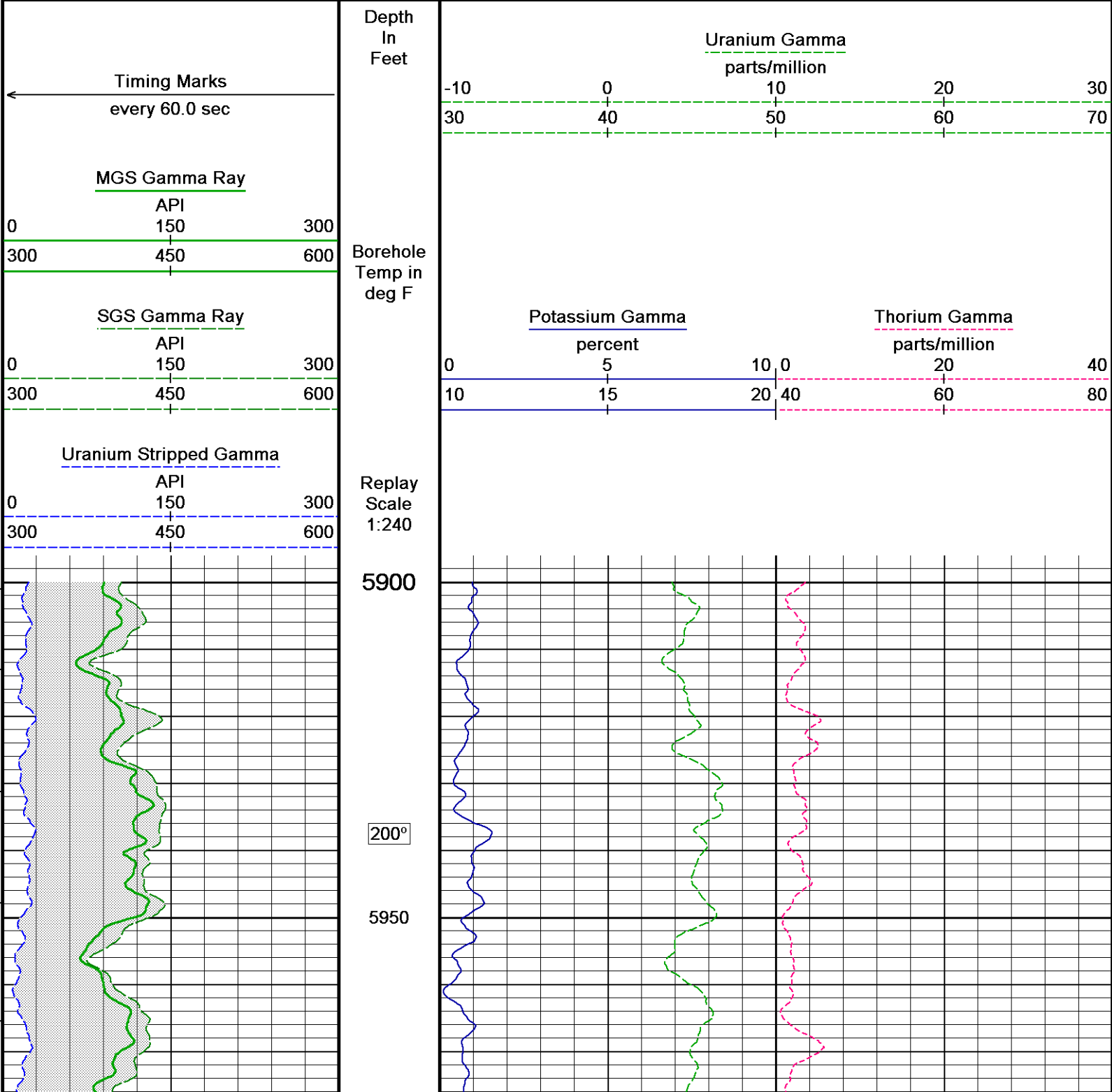
CASING RECORD

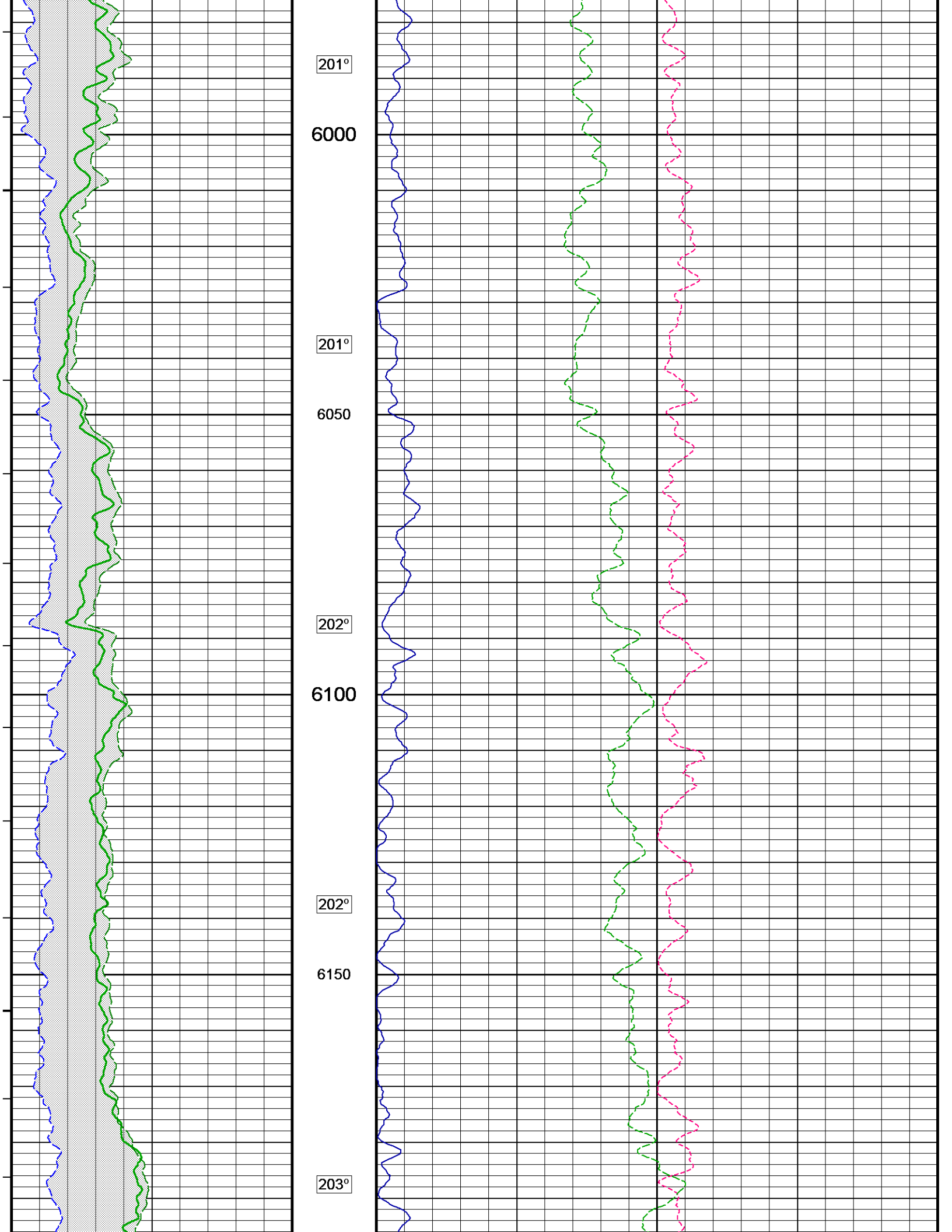
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
	7.000	0.00	6087.00	24.00

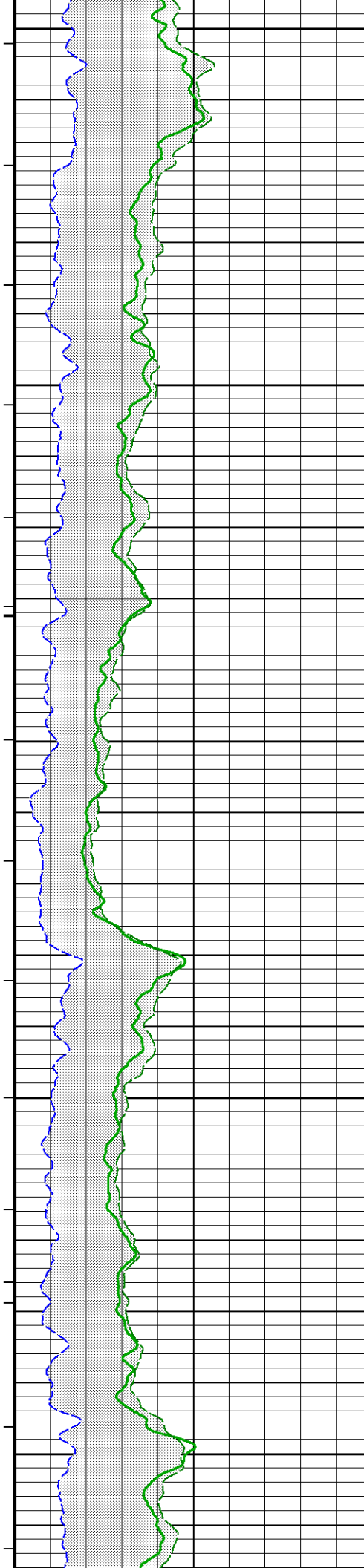
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

CWS MEMORY LOG DSC

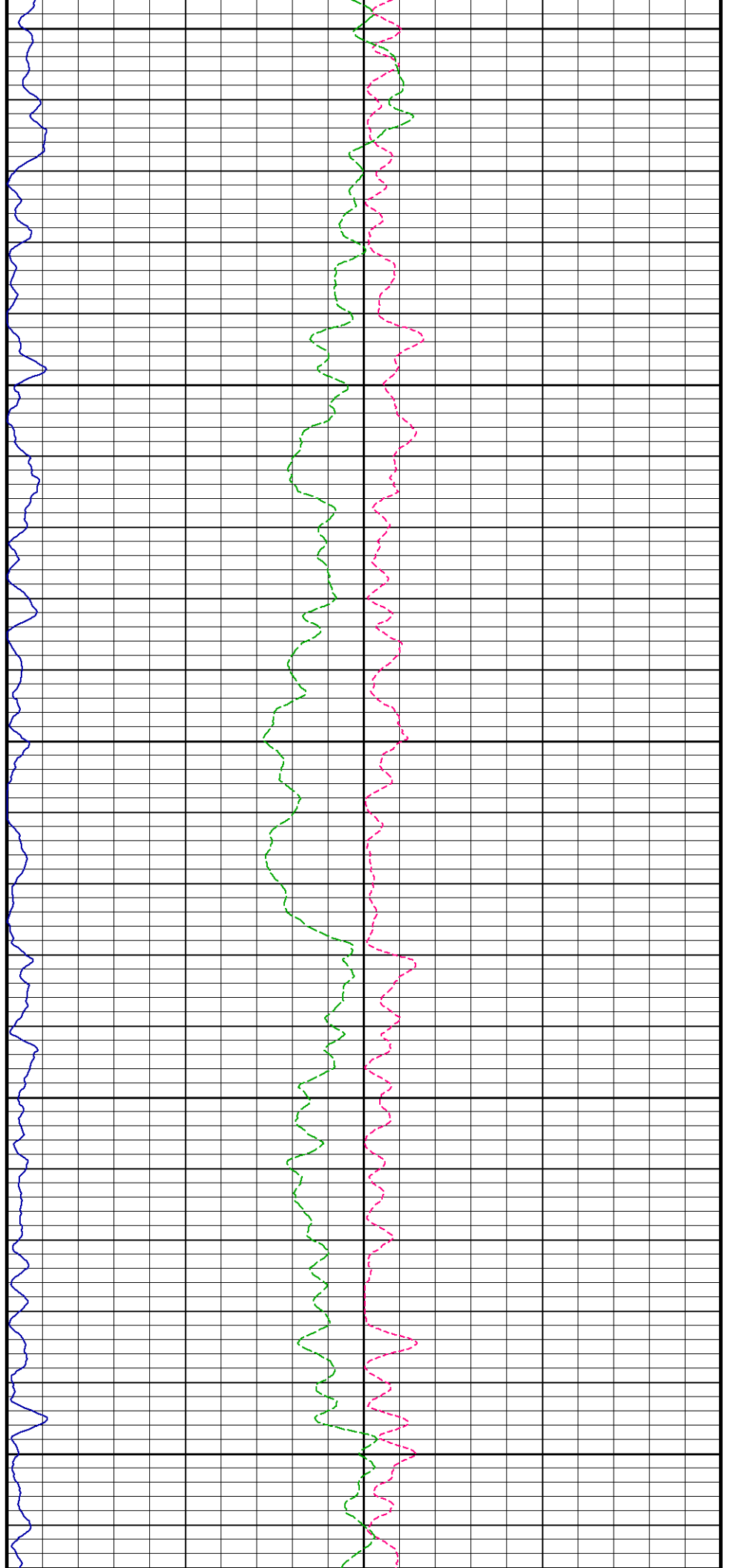
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-JAN-2014 16:05
 Filename: F:\Razor 26k-2306b\cmitsgs_008.dta Recorded on 22-JAN-2014 21:22
 System Versions: Processed with 13.04.8723 Plotted with 13.04.8723

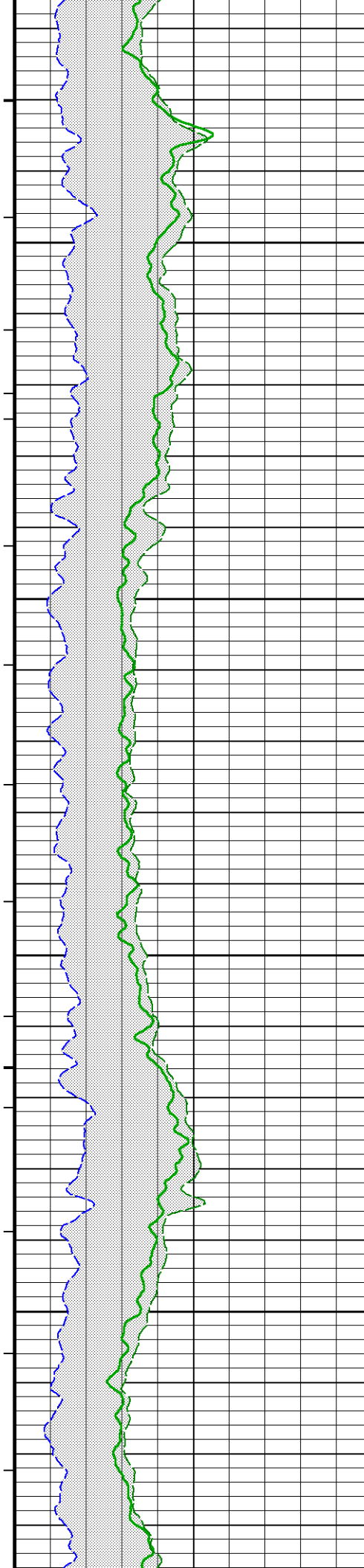






6200
203°
6250
203°
6300
203°
6350
204°
6400





204°

6450

204°

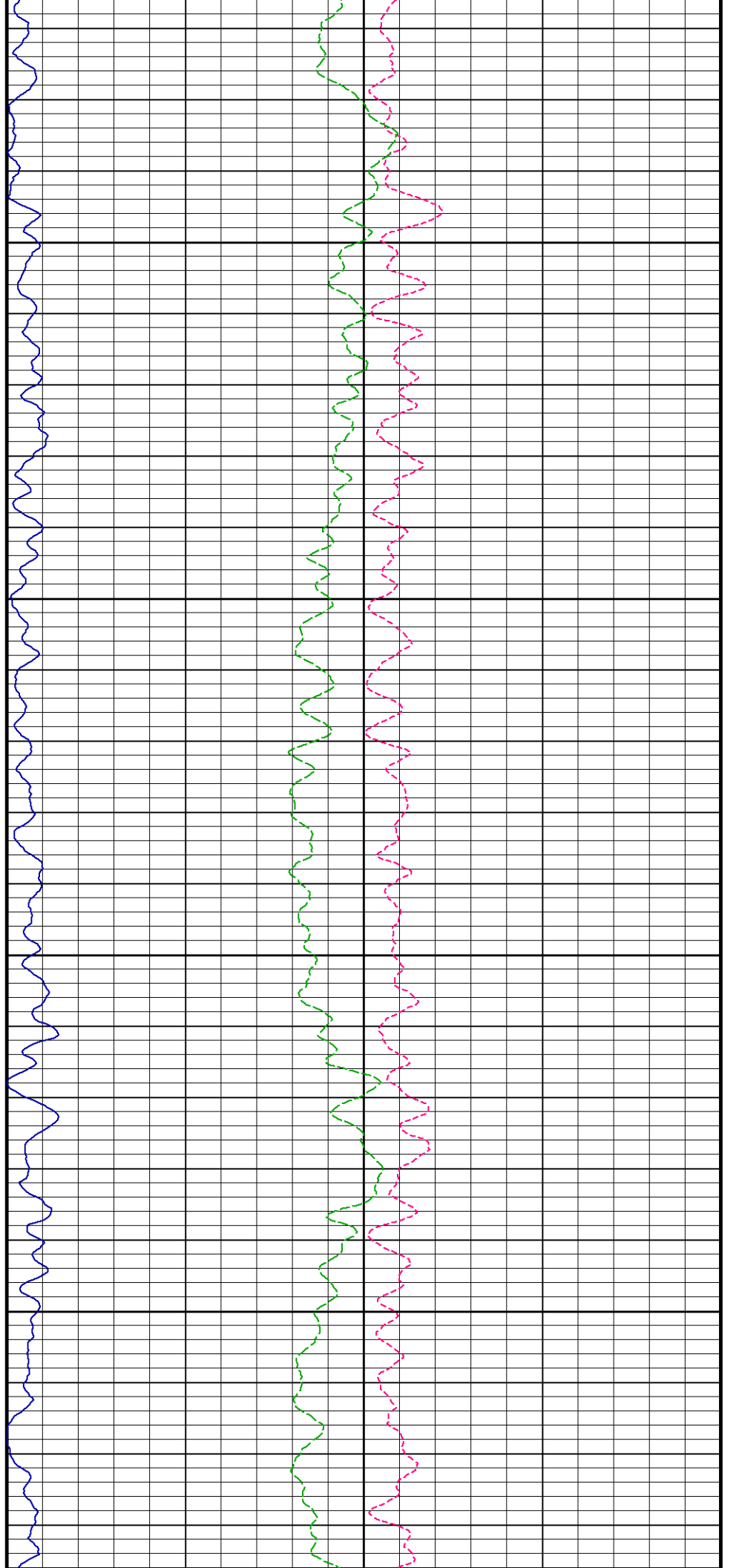
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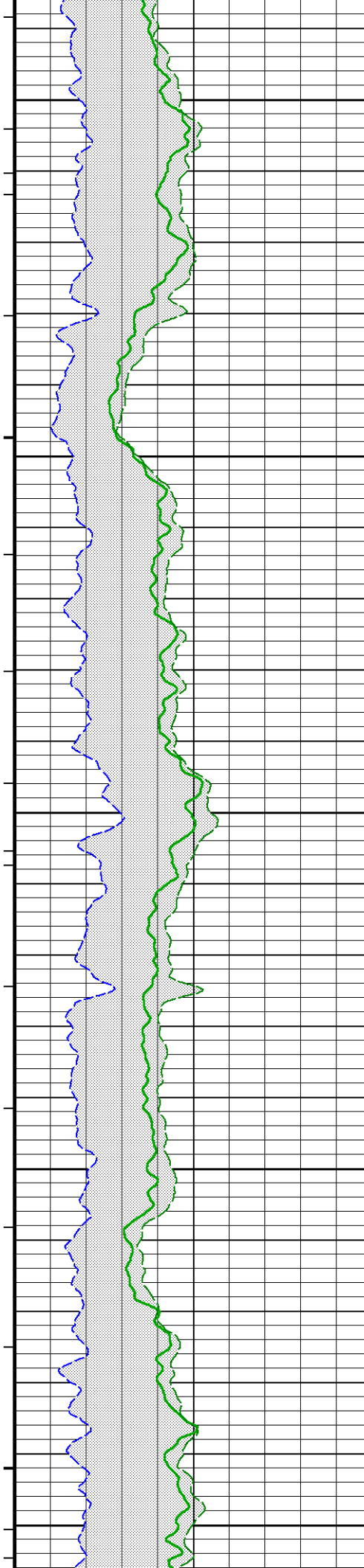
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204°

6600





205°

6650

205°

6700

205°

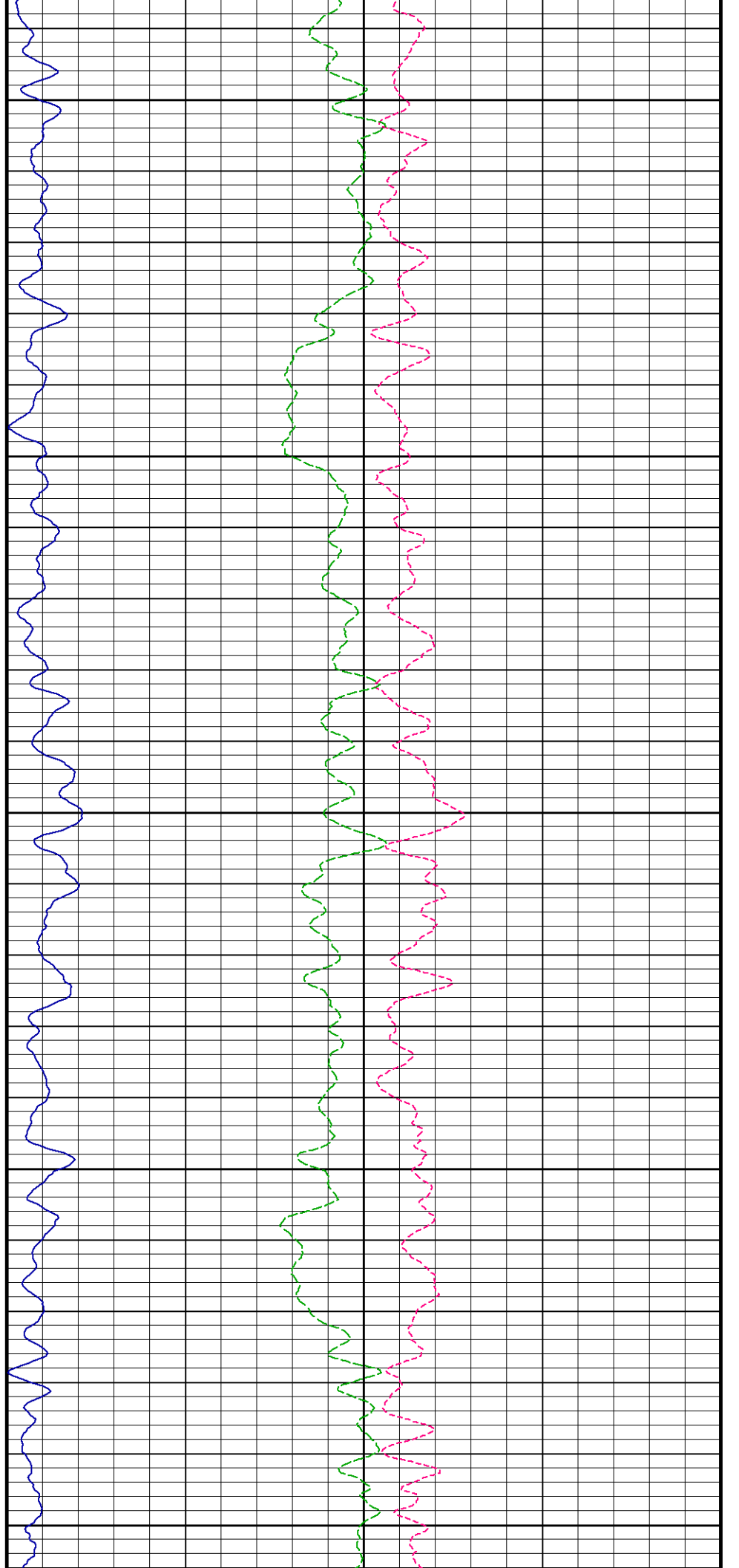
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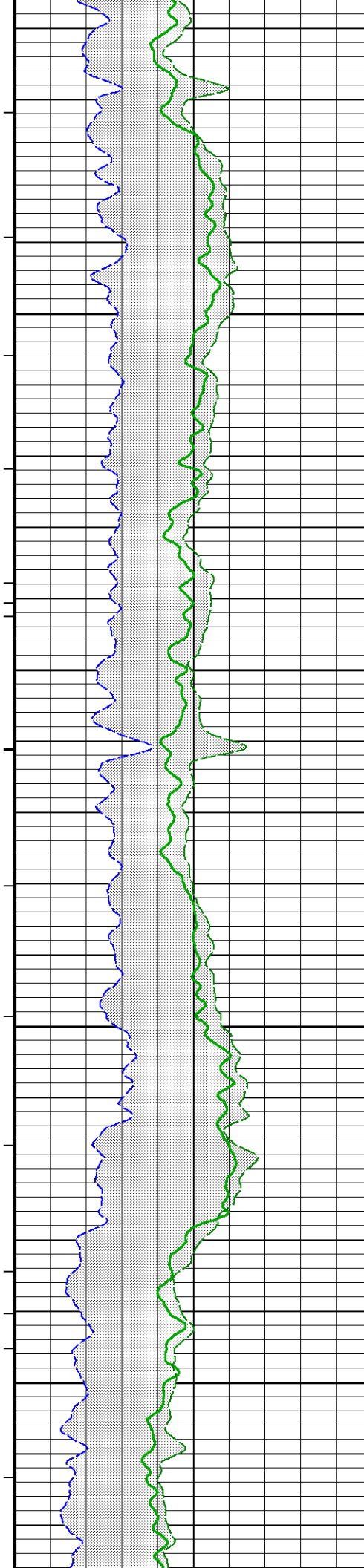
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6800

206°

6850





206°

6900

206°

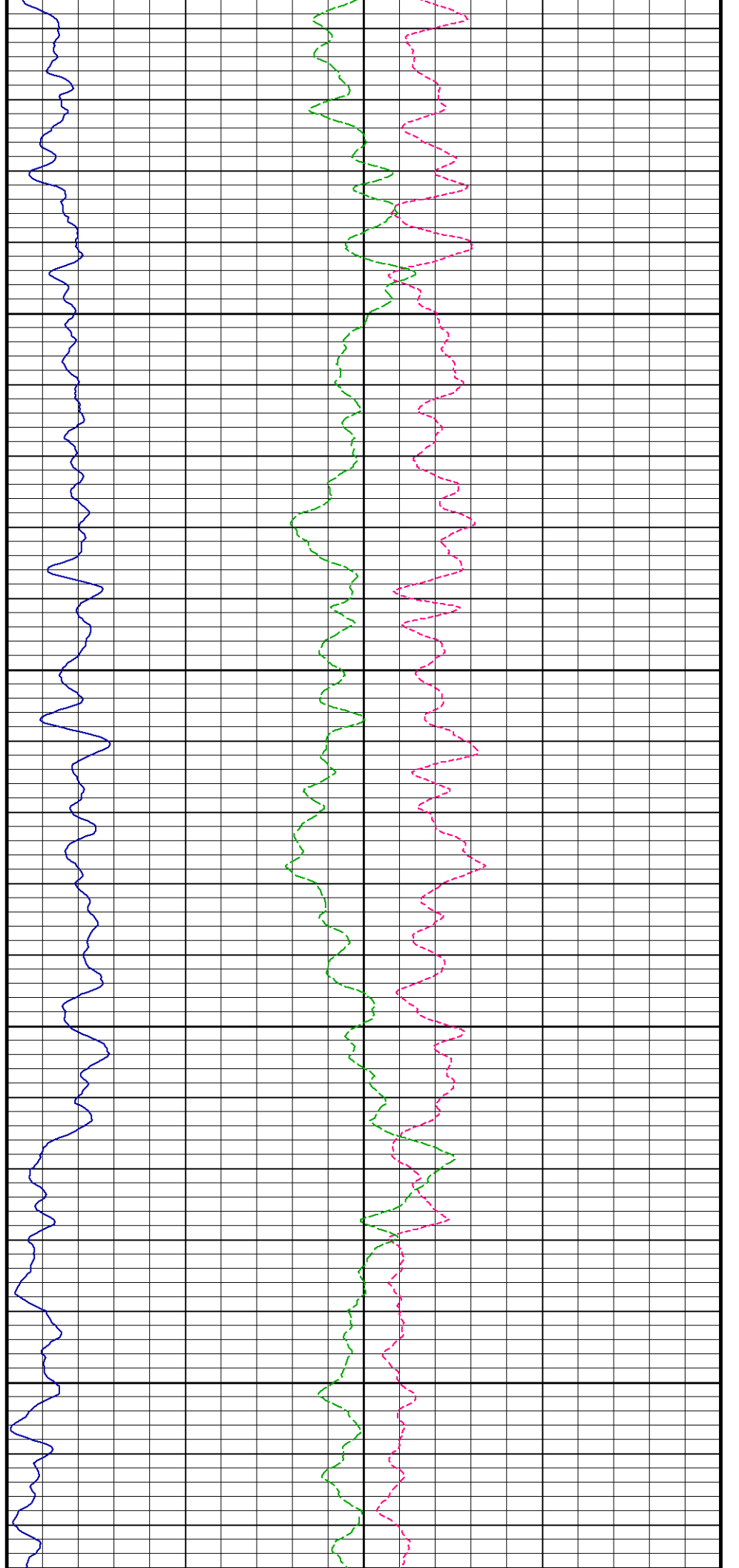
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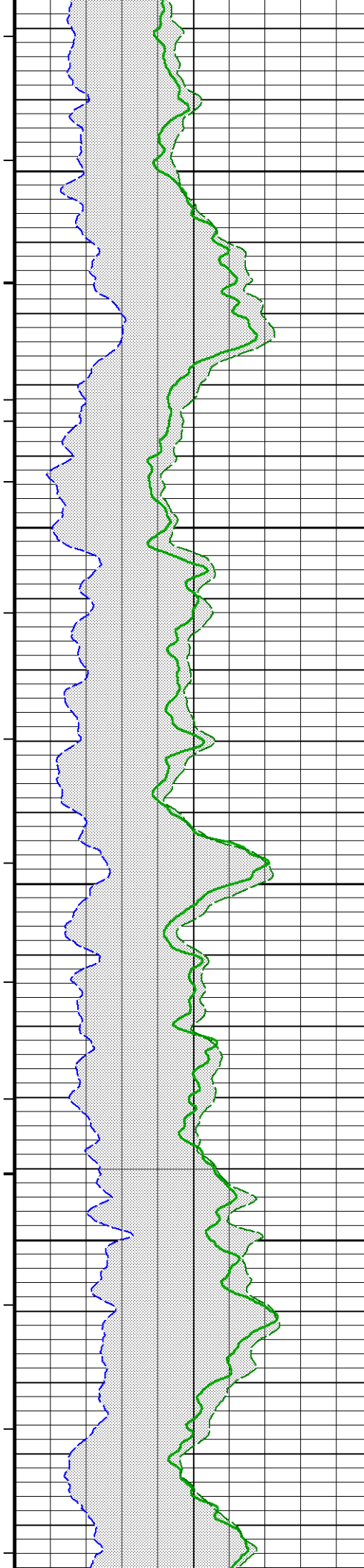
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7000

206°

7050





206°

7100

207°

7150

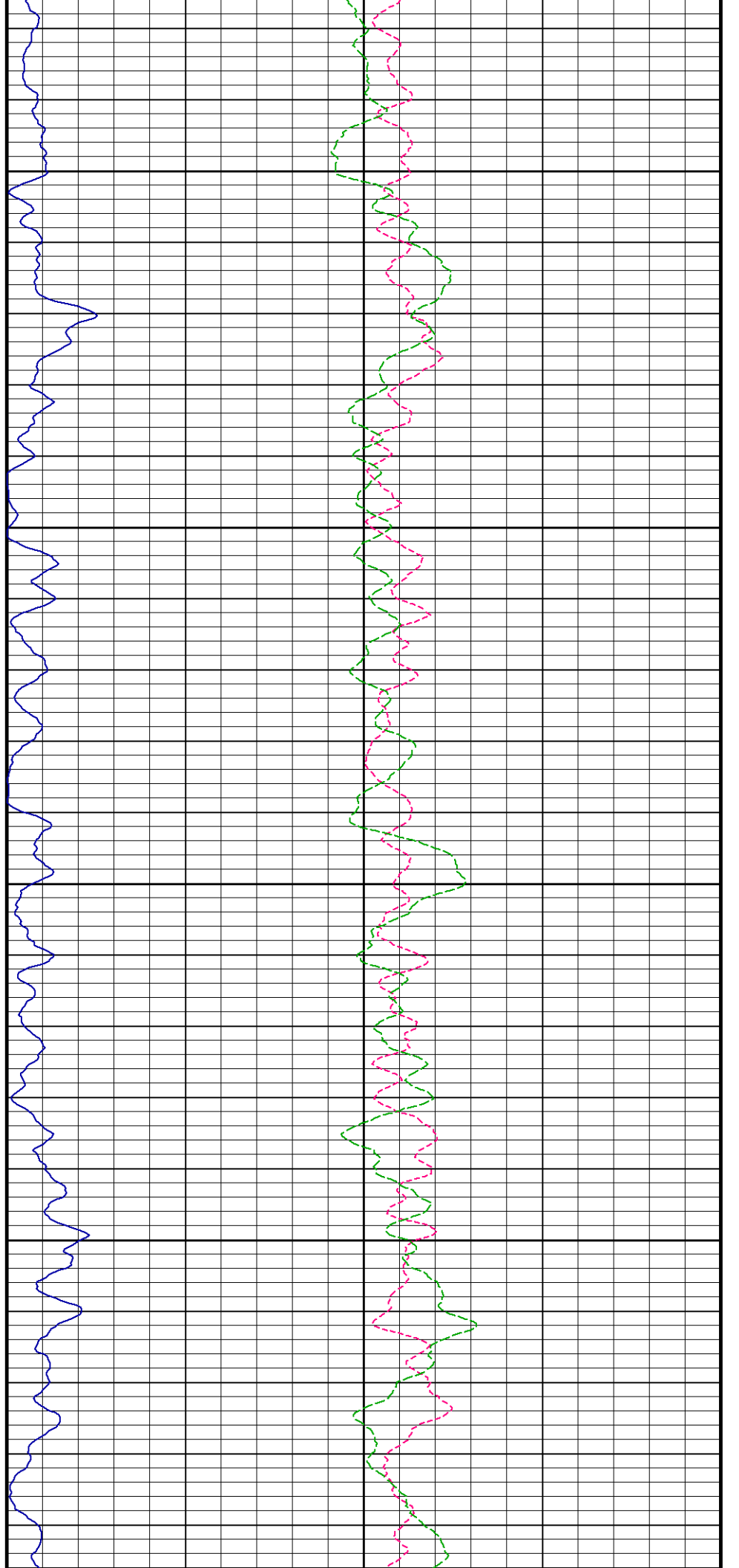
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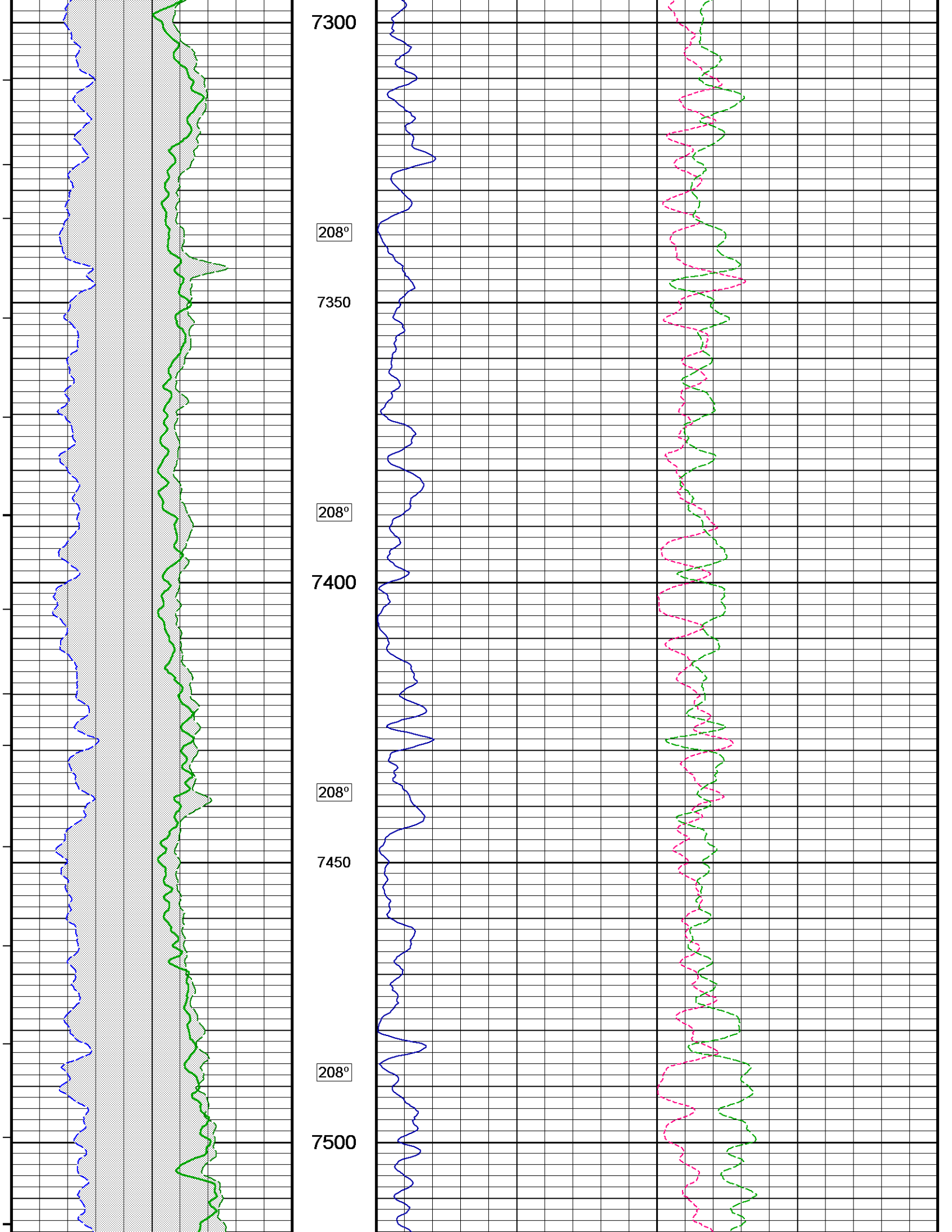
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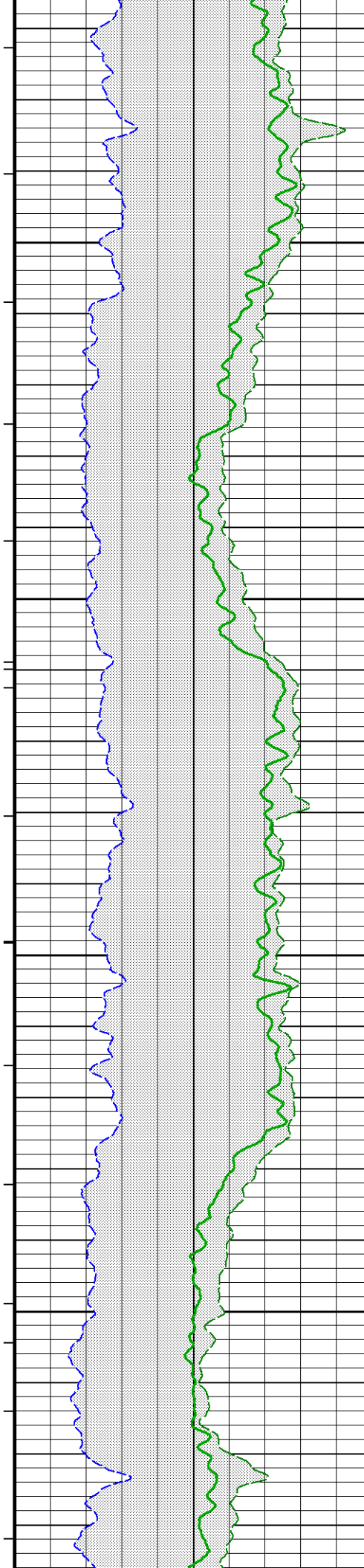
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7250

207°







208°

7550

208°

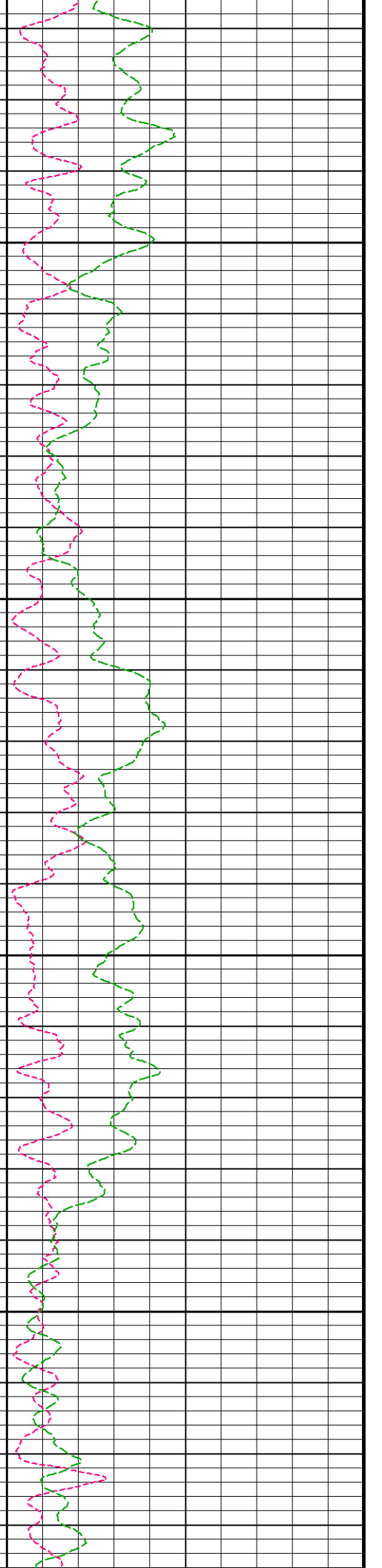
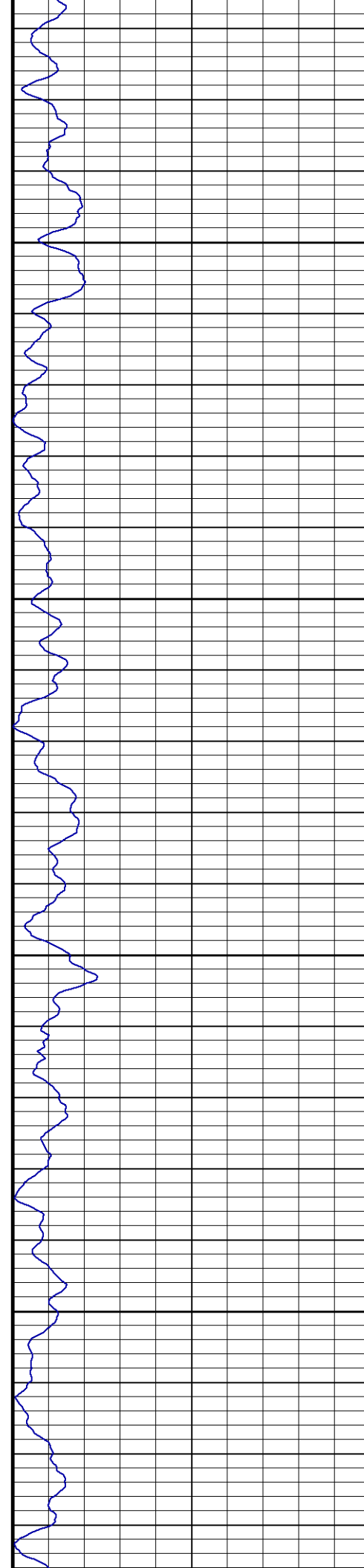
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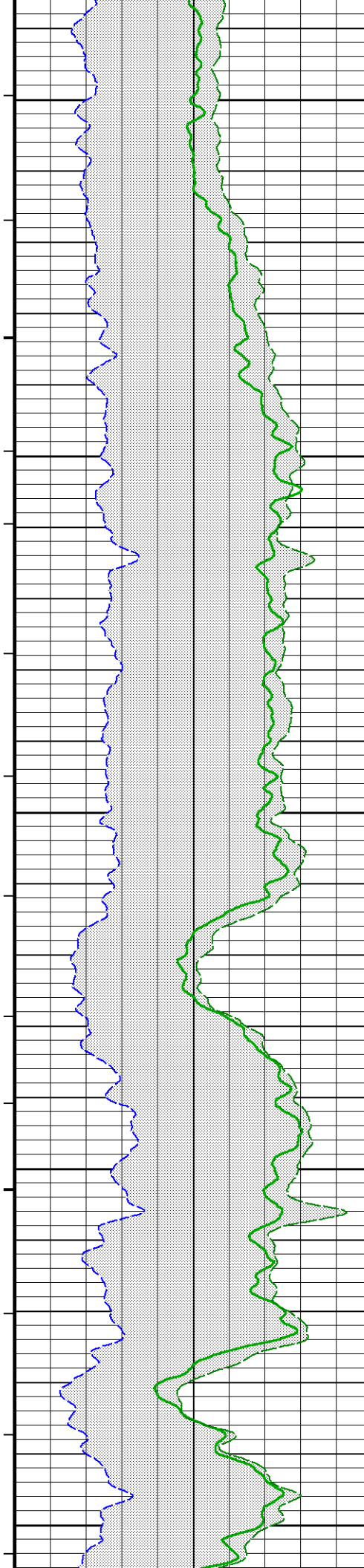
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7650

209°

7700





209°

7750

209°

7800

209°

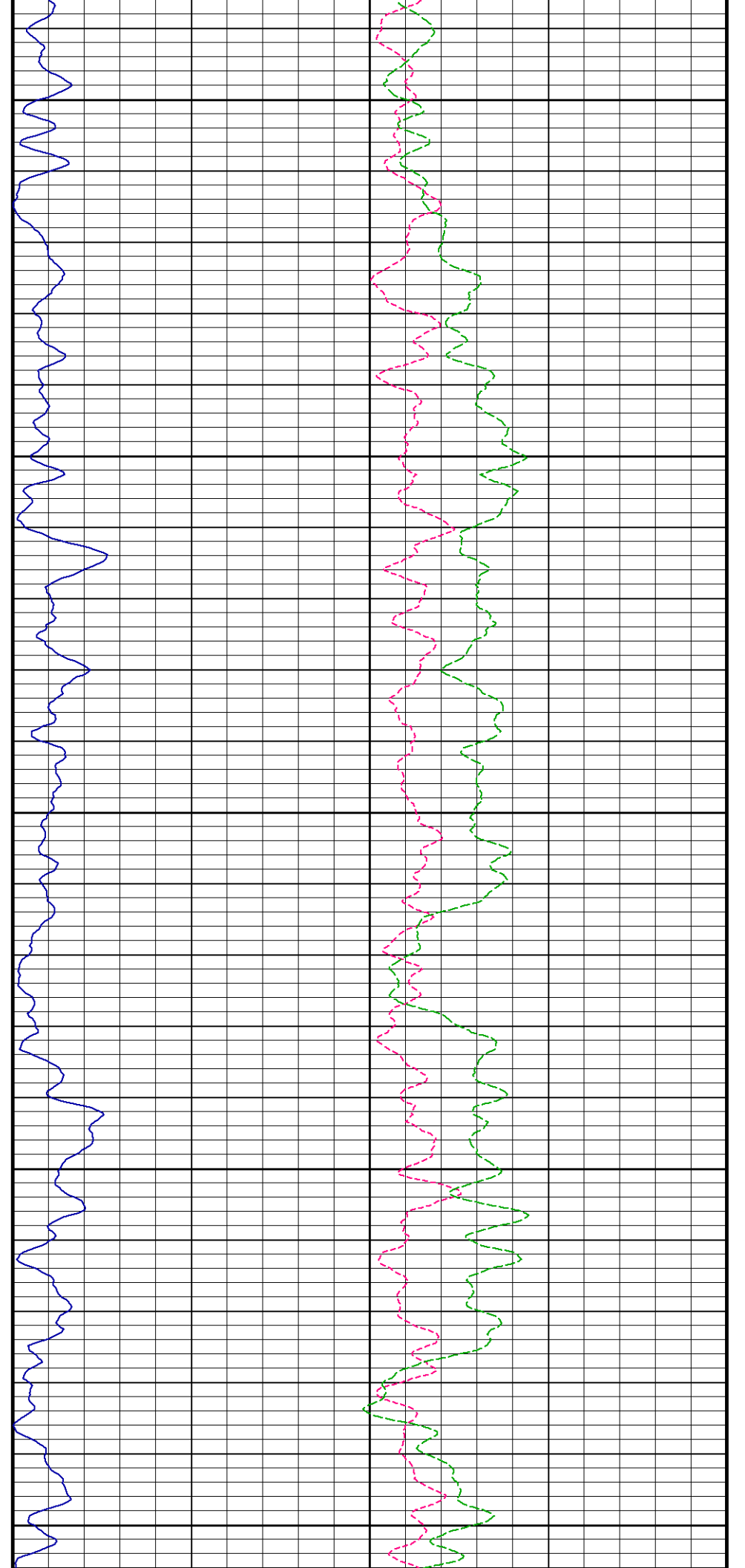
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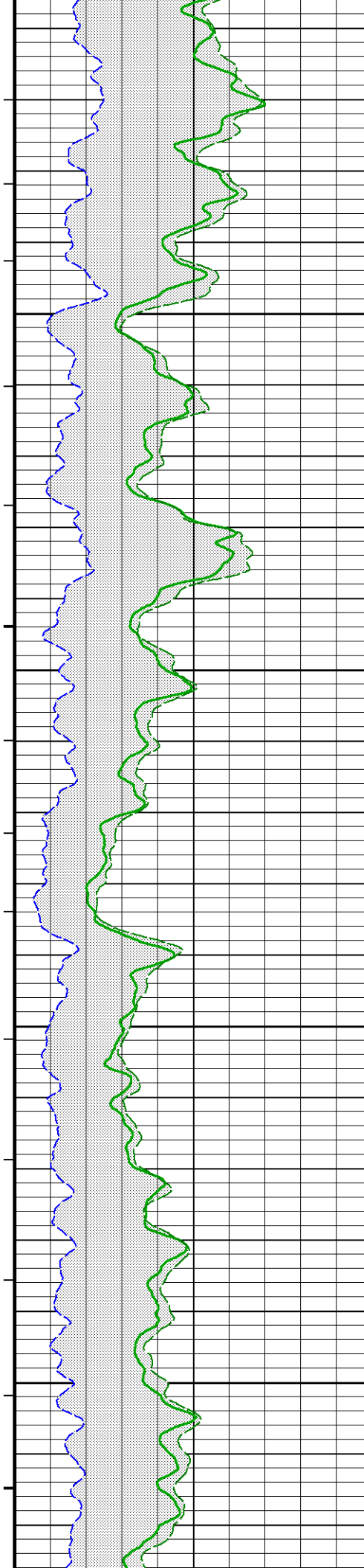
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209°

7950





210°

8000

210°

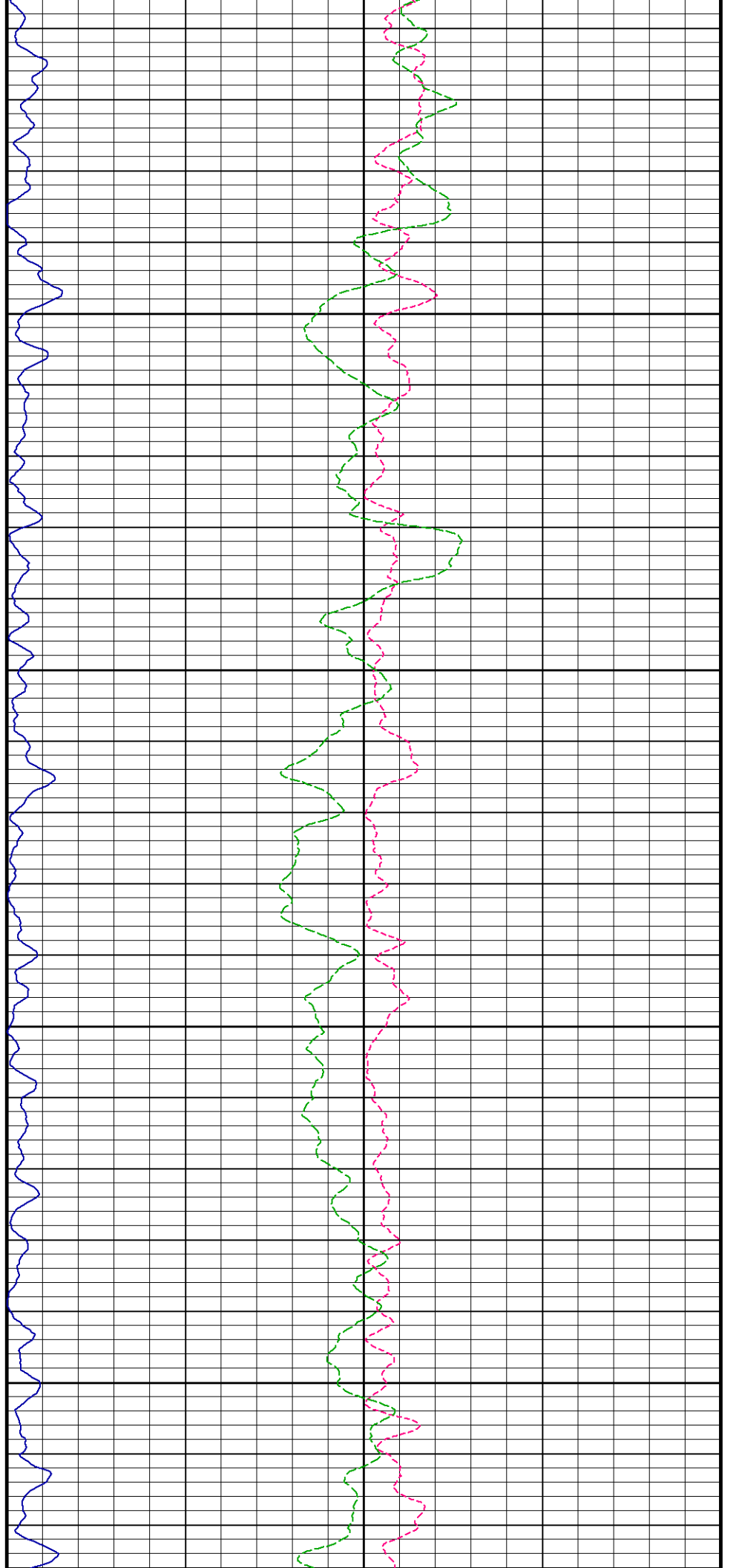
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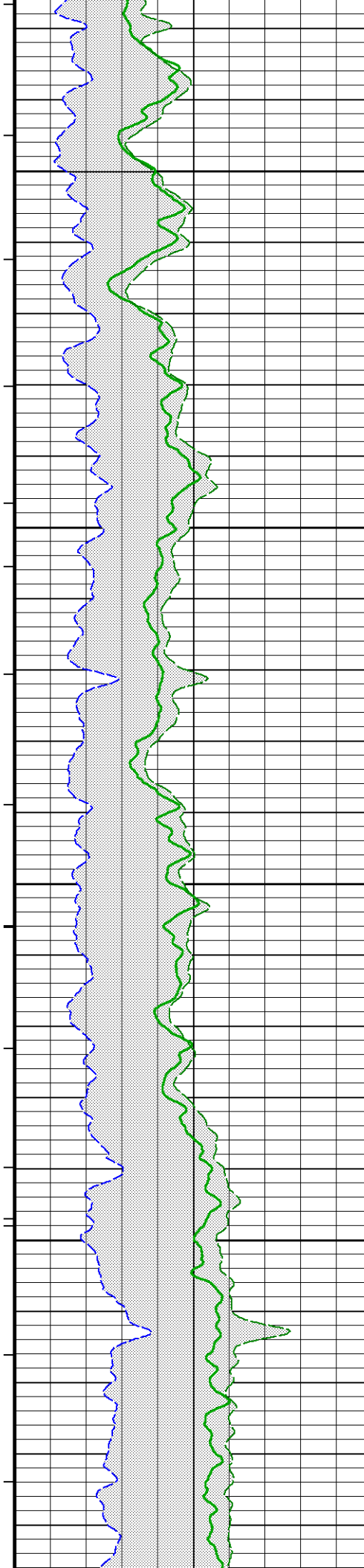
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210°

8150





210°

8200

210°

8250

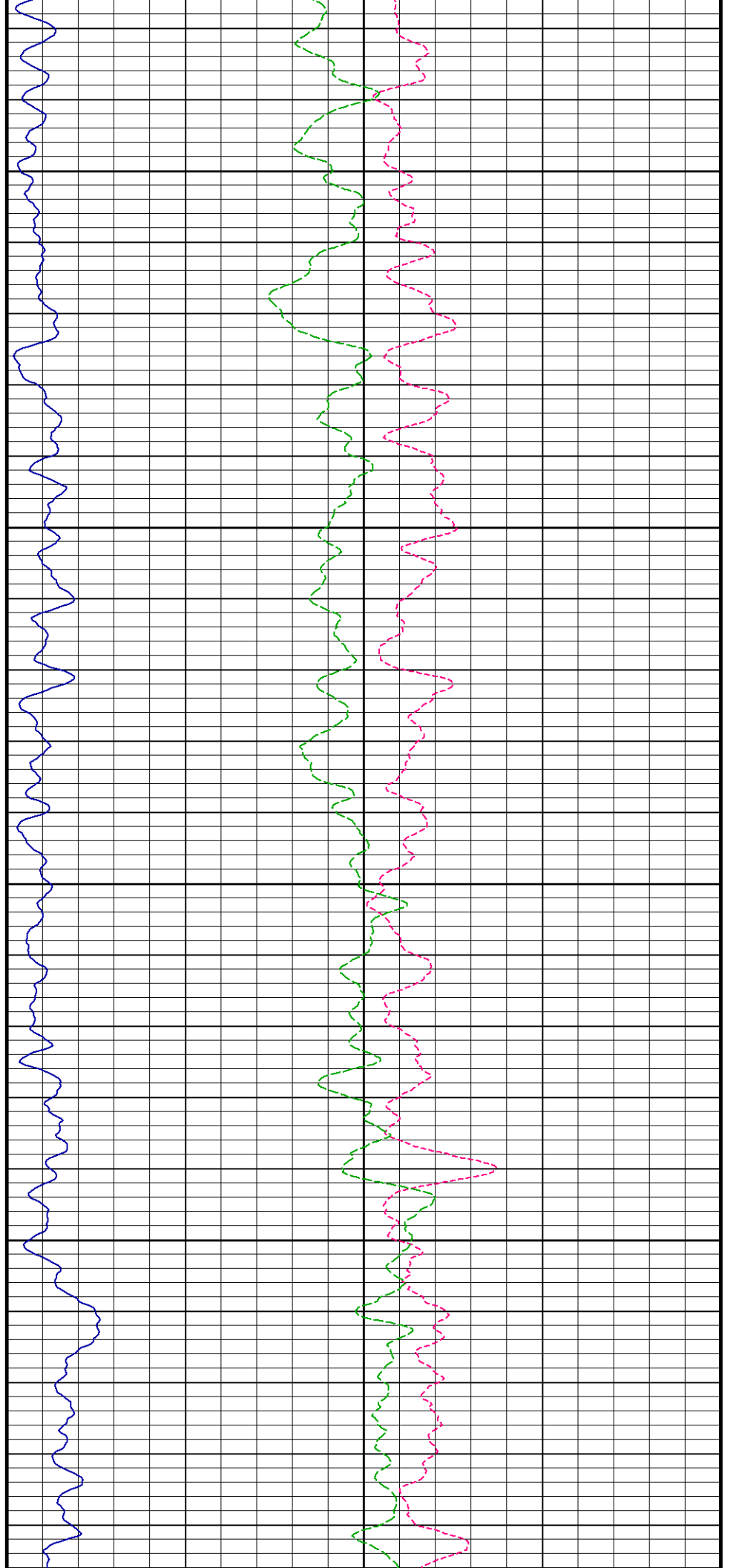
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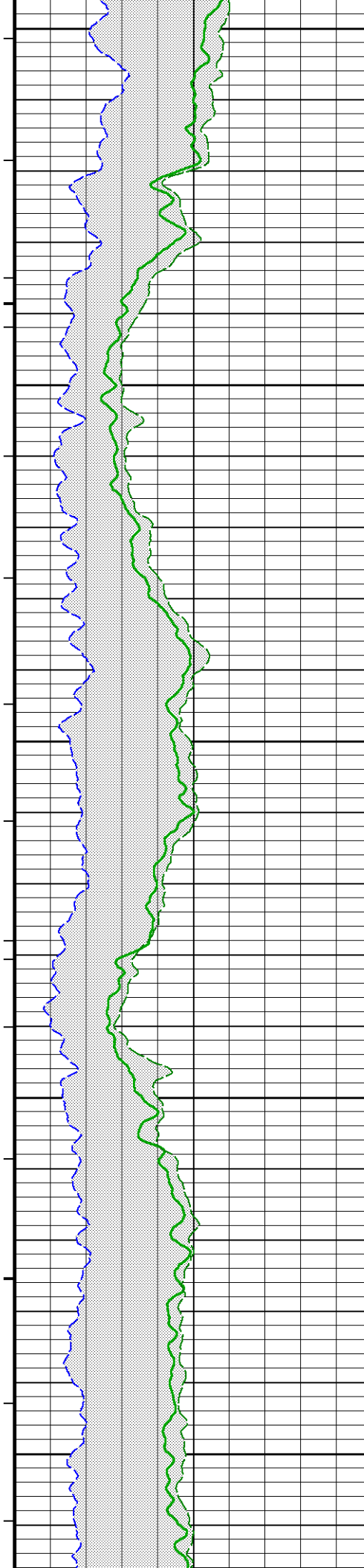
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211°

8350

211°





8400

211°

8450

211°

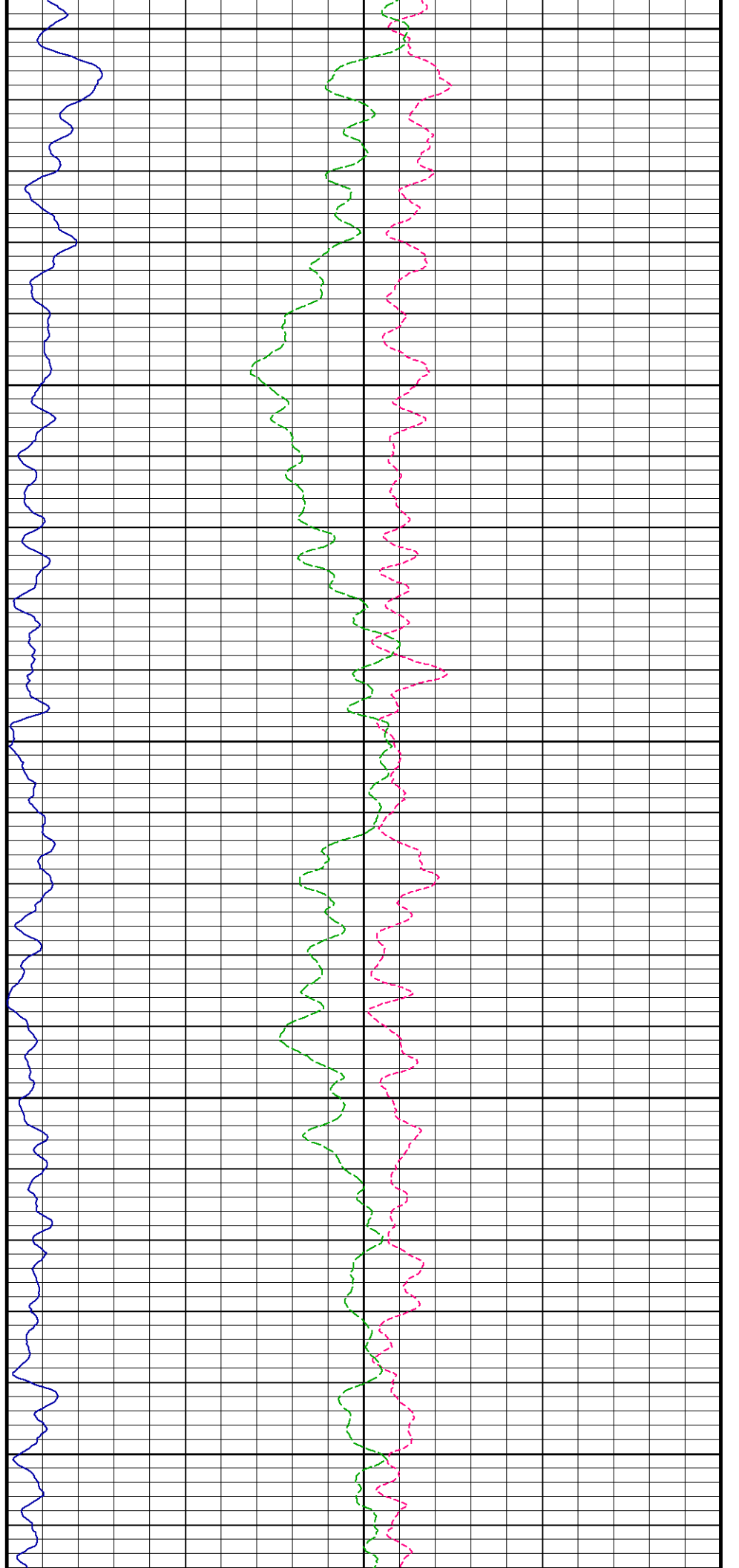
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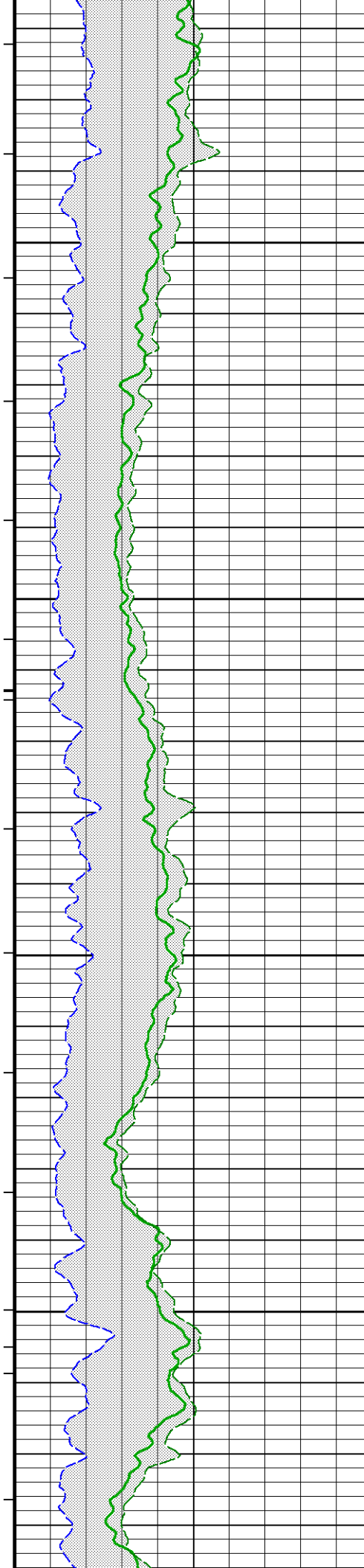
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8600





212°

8650

212°

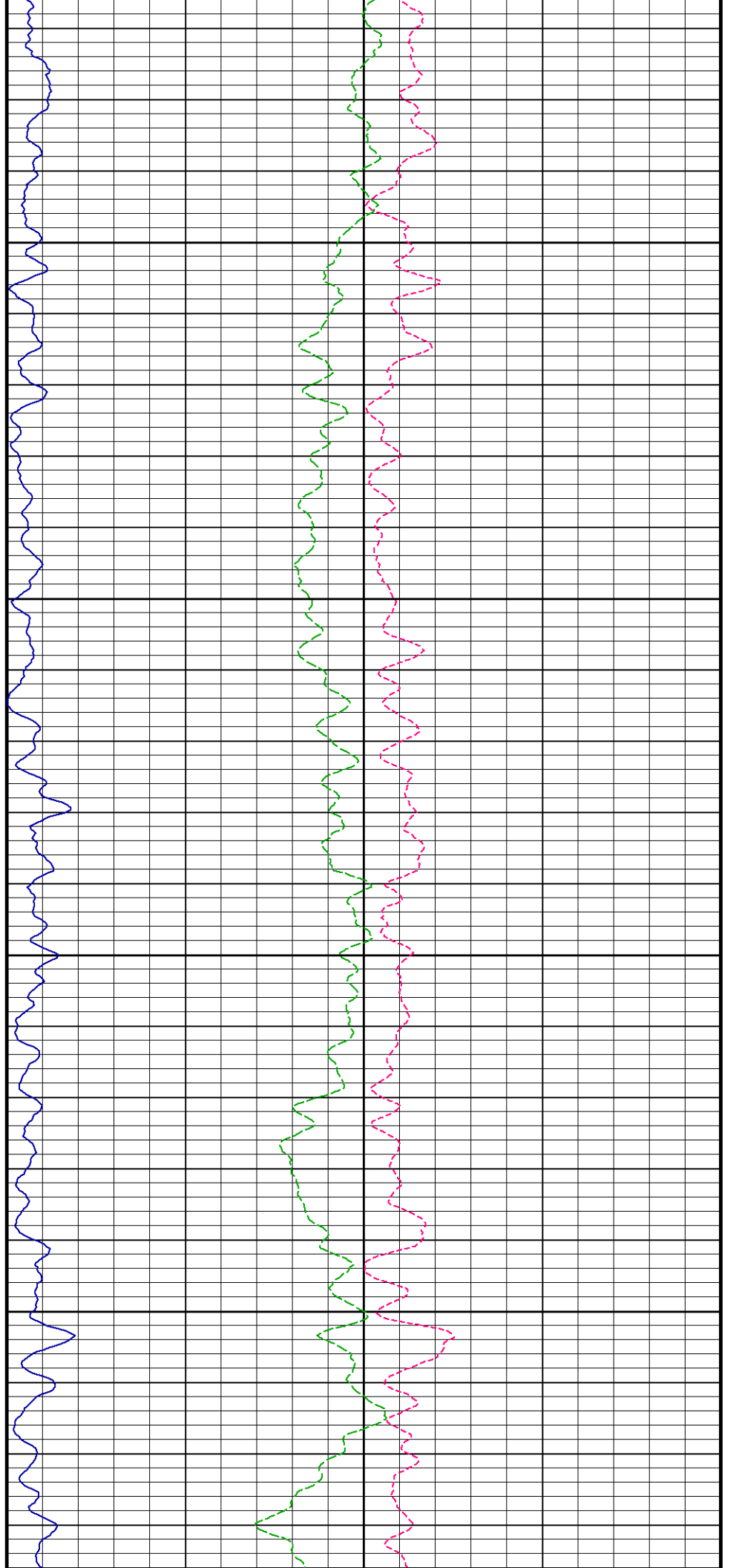
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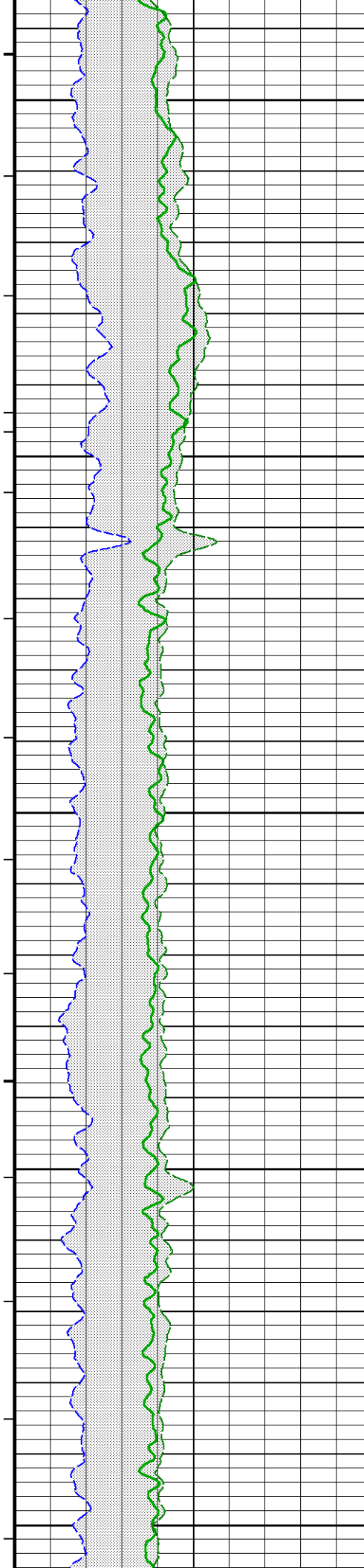
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212°

8800





212°

8850

212°

8900

212°

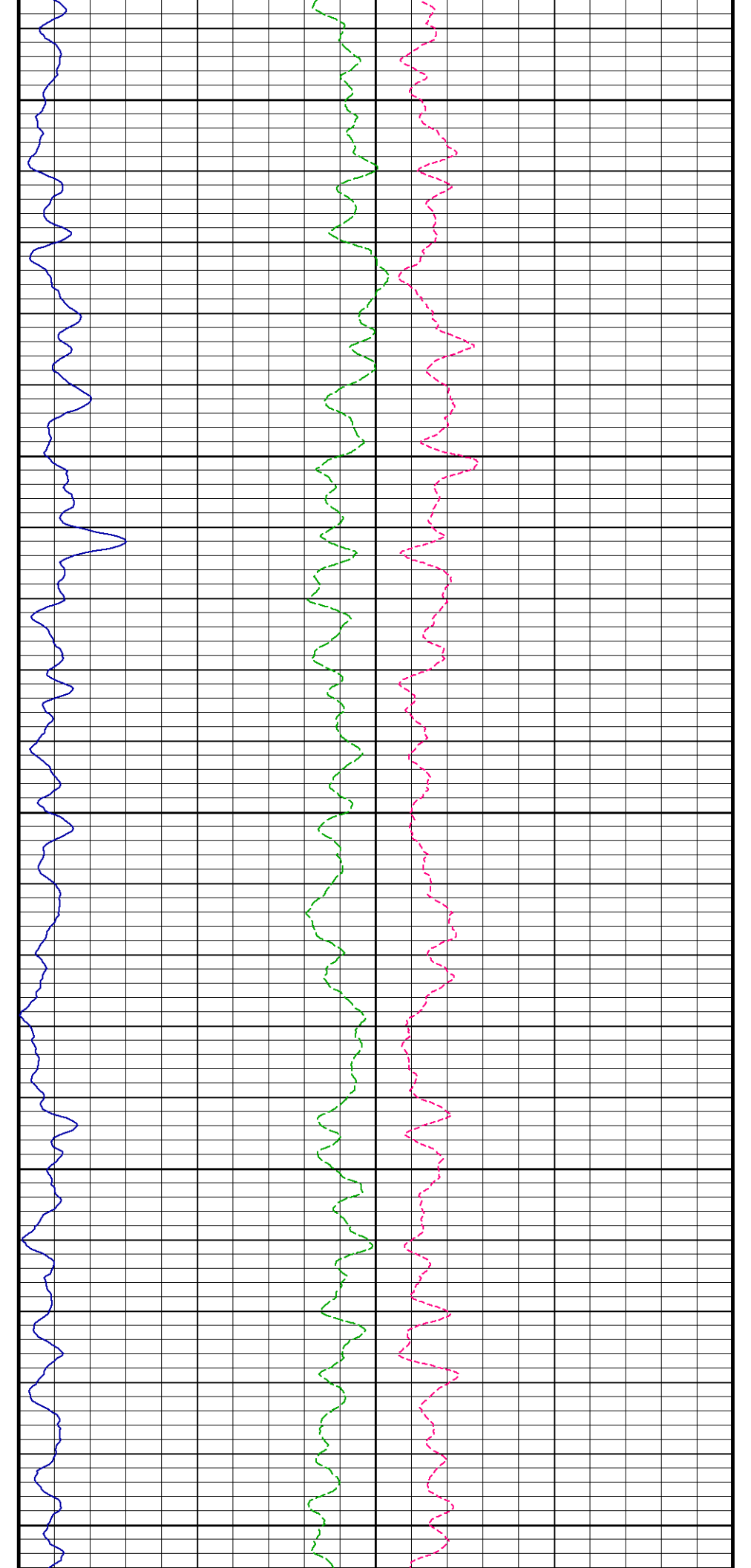
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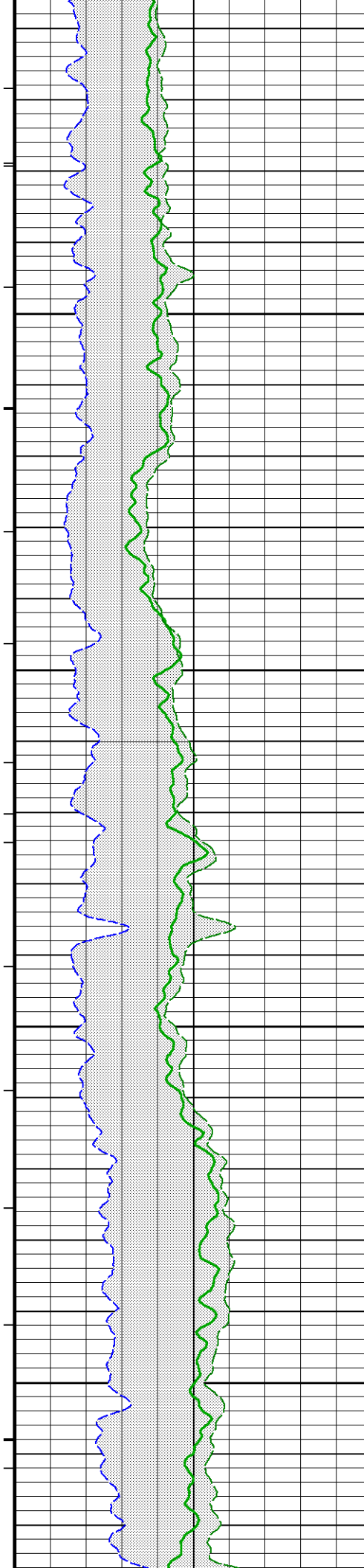
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9000

213°

9050





213°

9100

213°

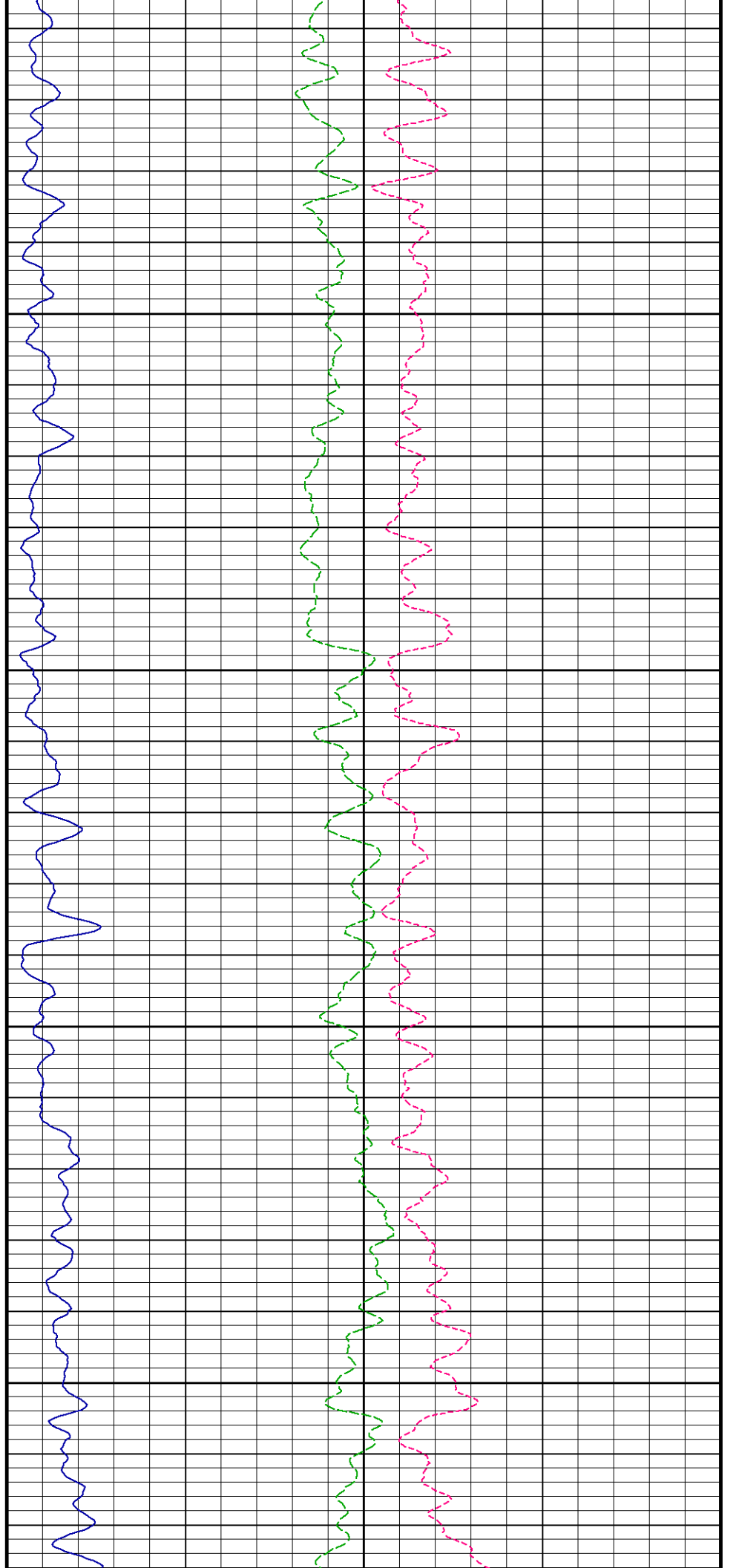
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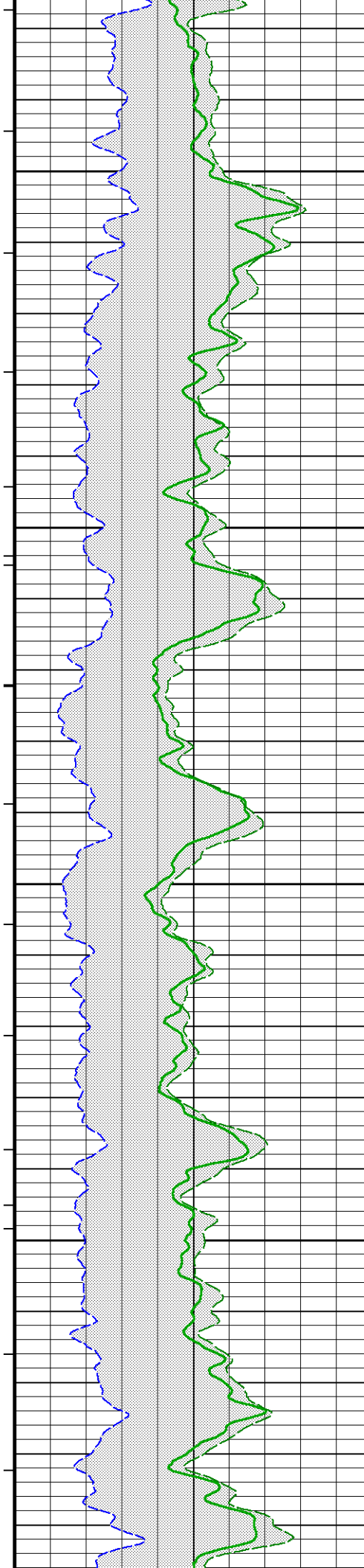
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9200

213°

9250





213°

9300

213°

9350

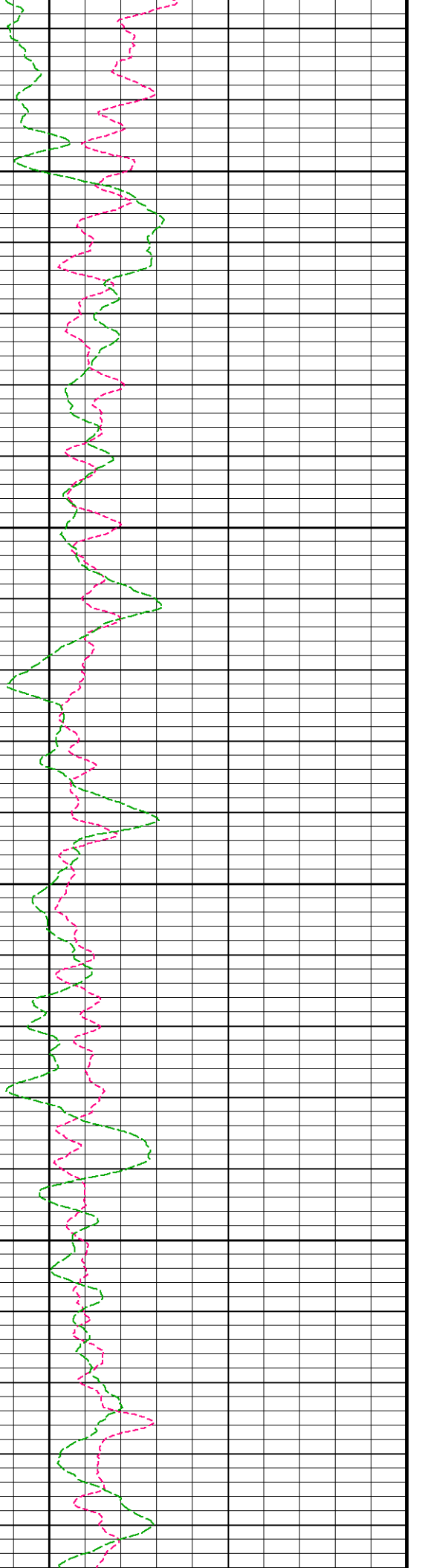
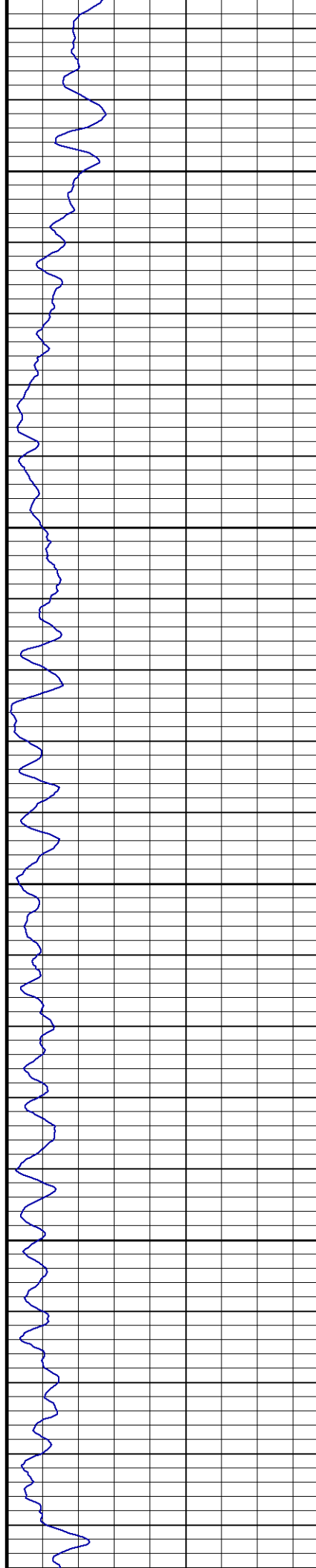
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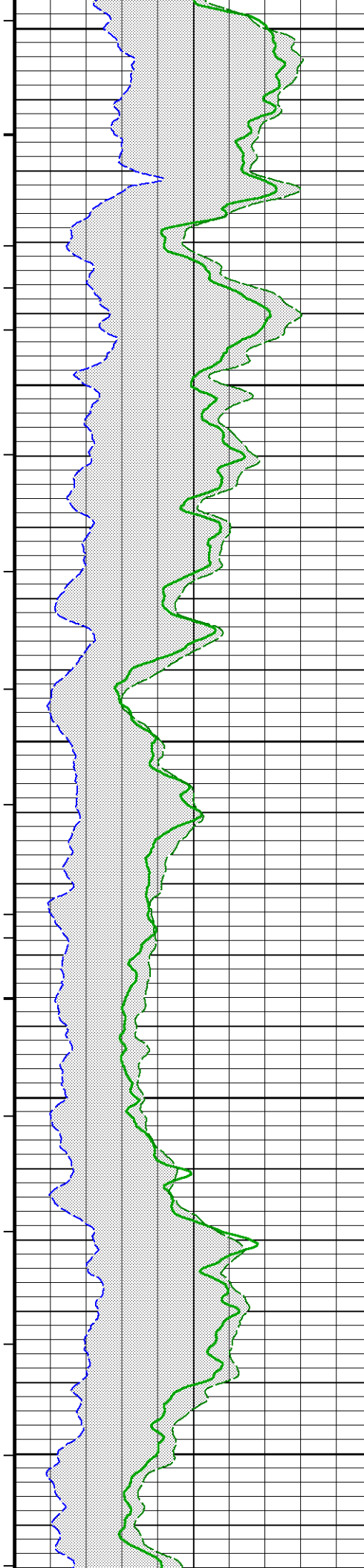
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9450

214°





9500

214°

9550

214°

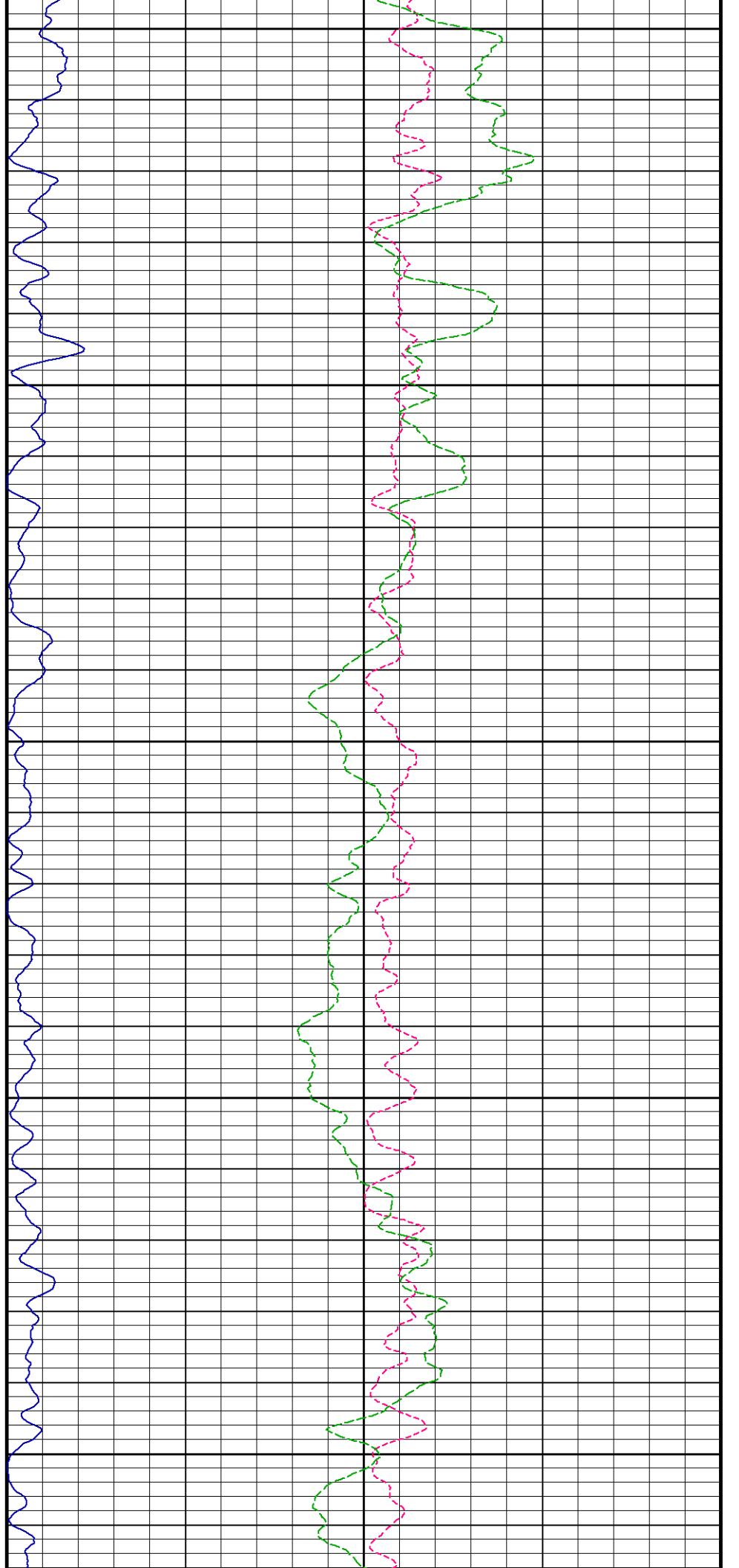
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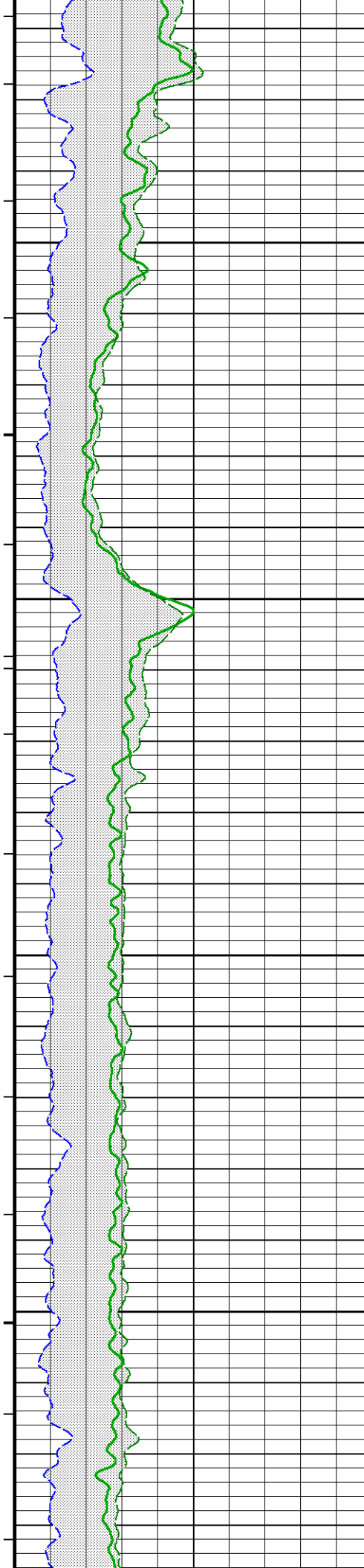
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215°

9700





215°

9750

215°

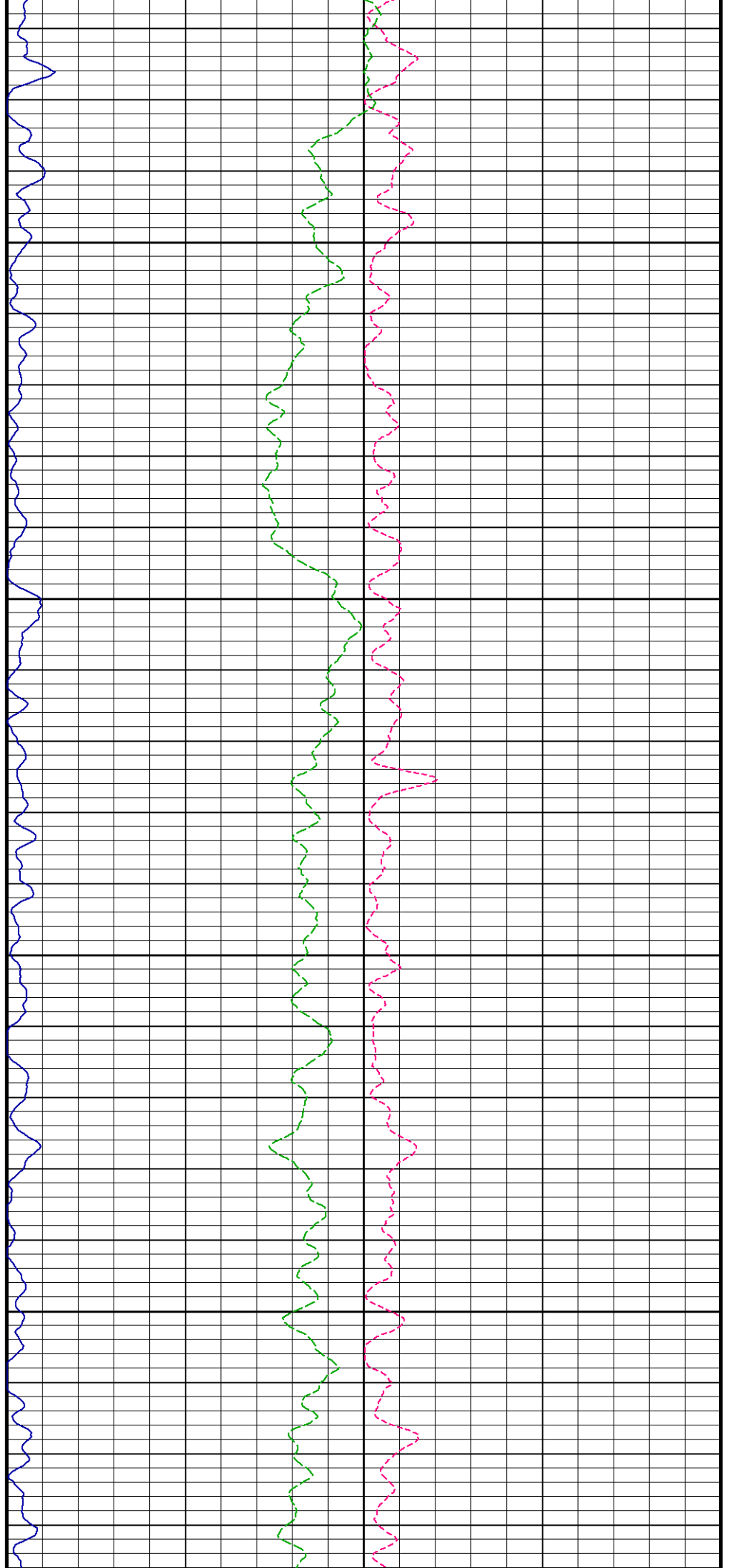
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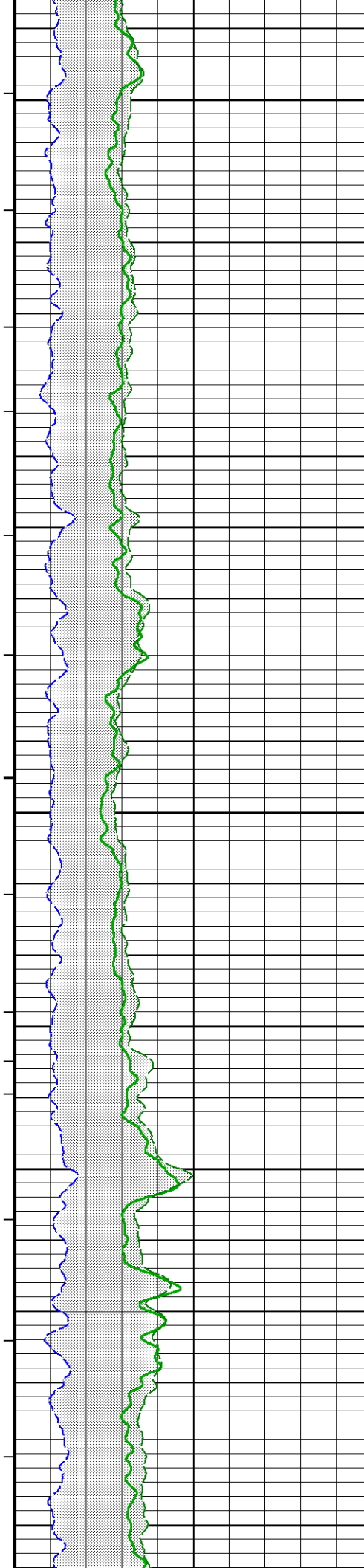
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9850

215°

9900





215°

9950

215°

10000

215°

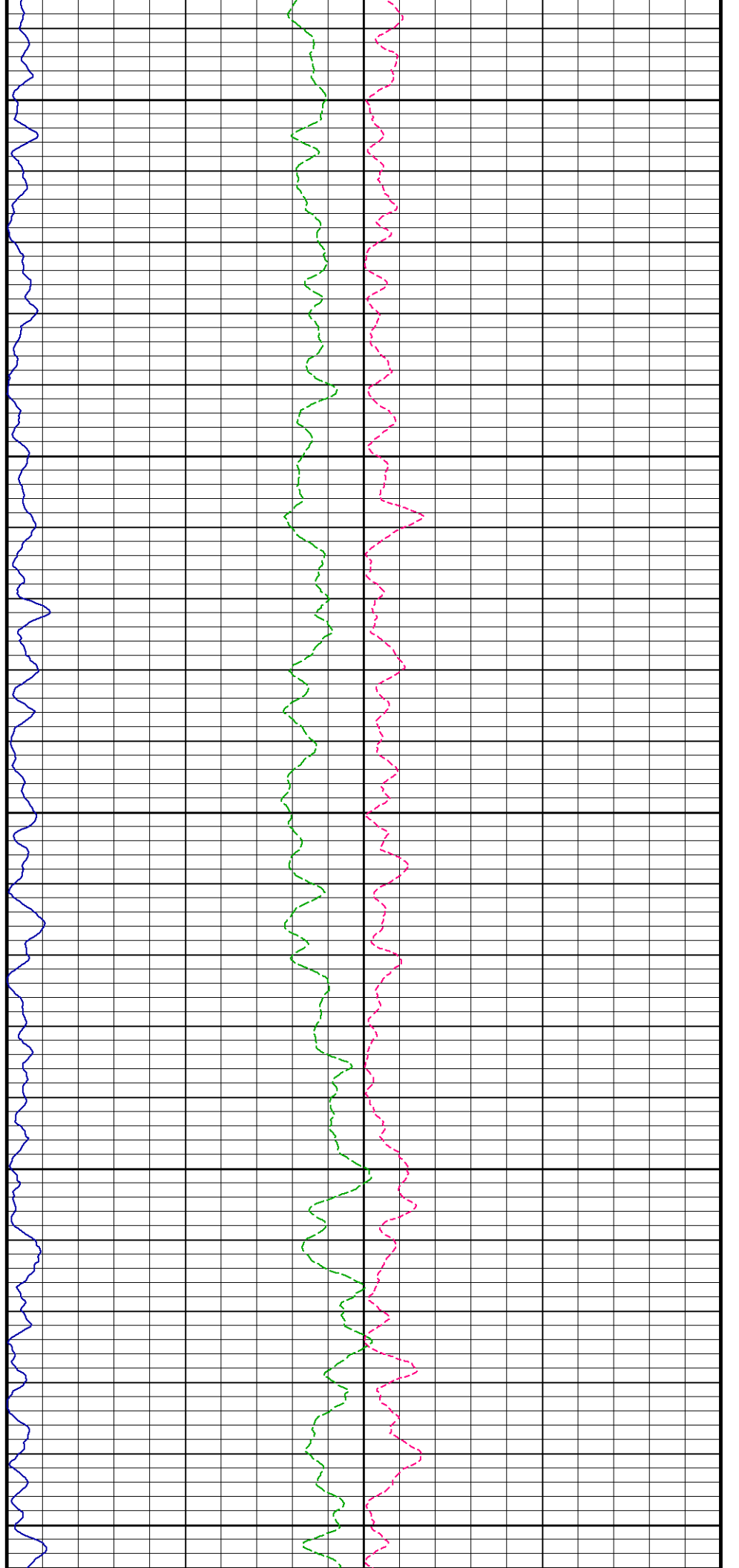
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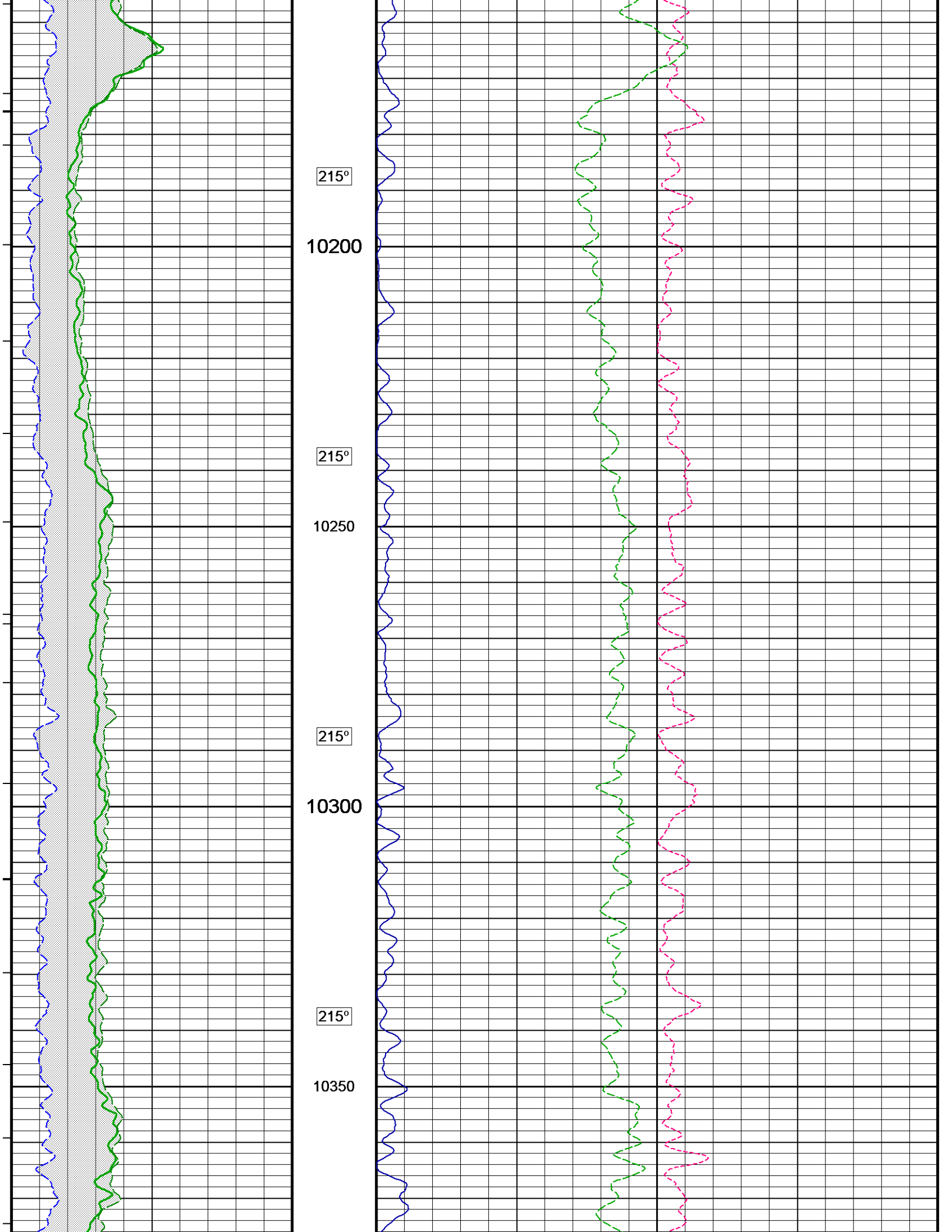
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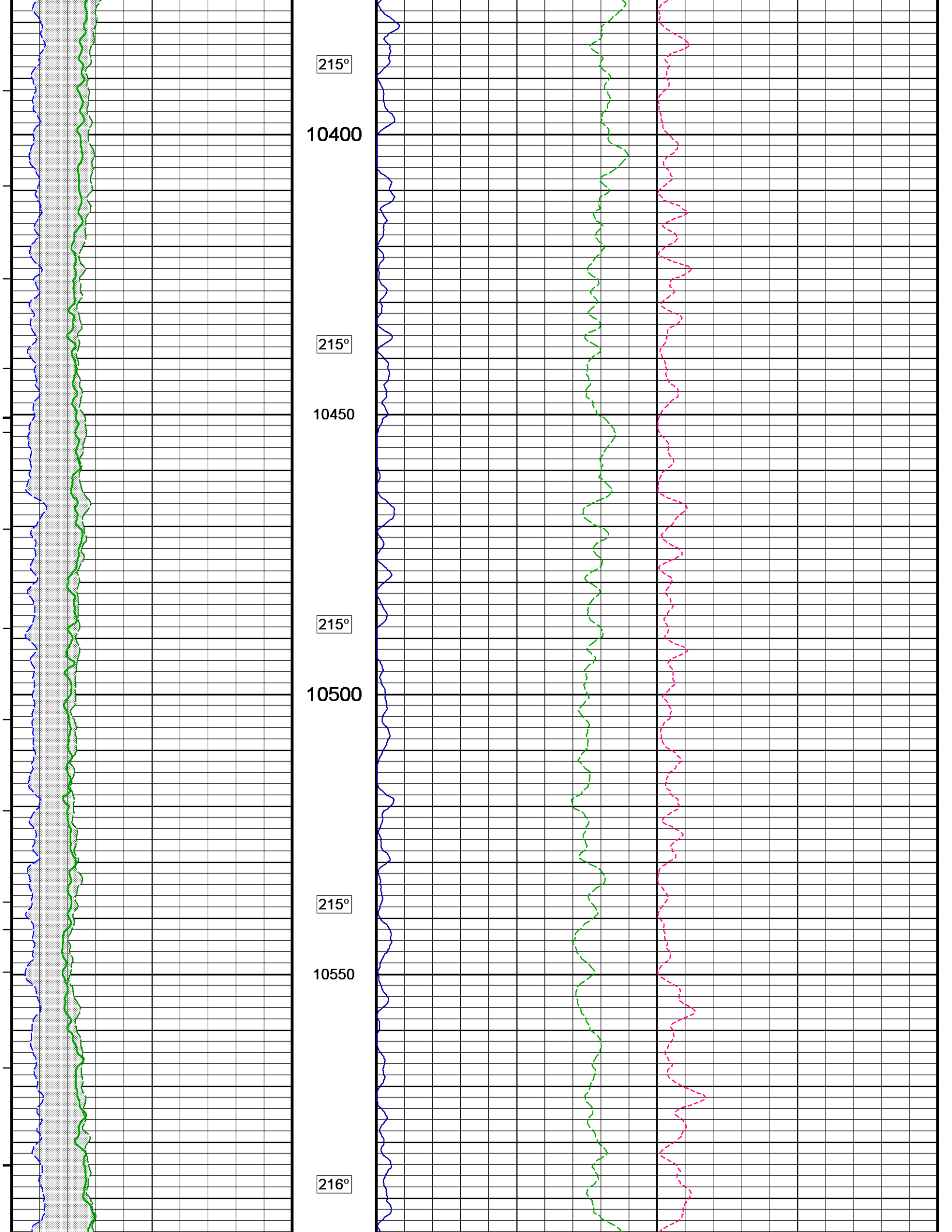
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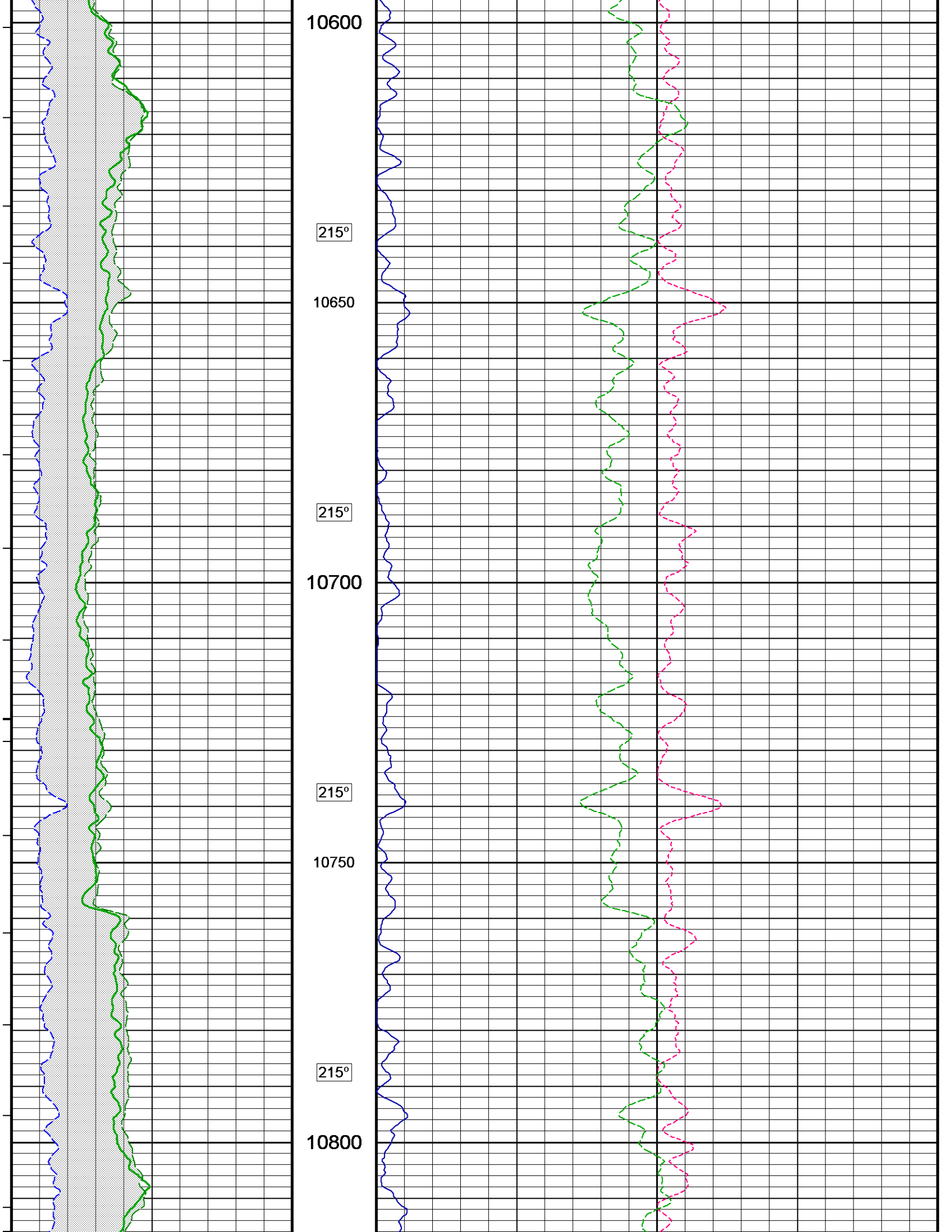
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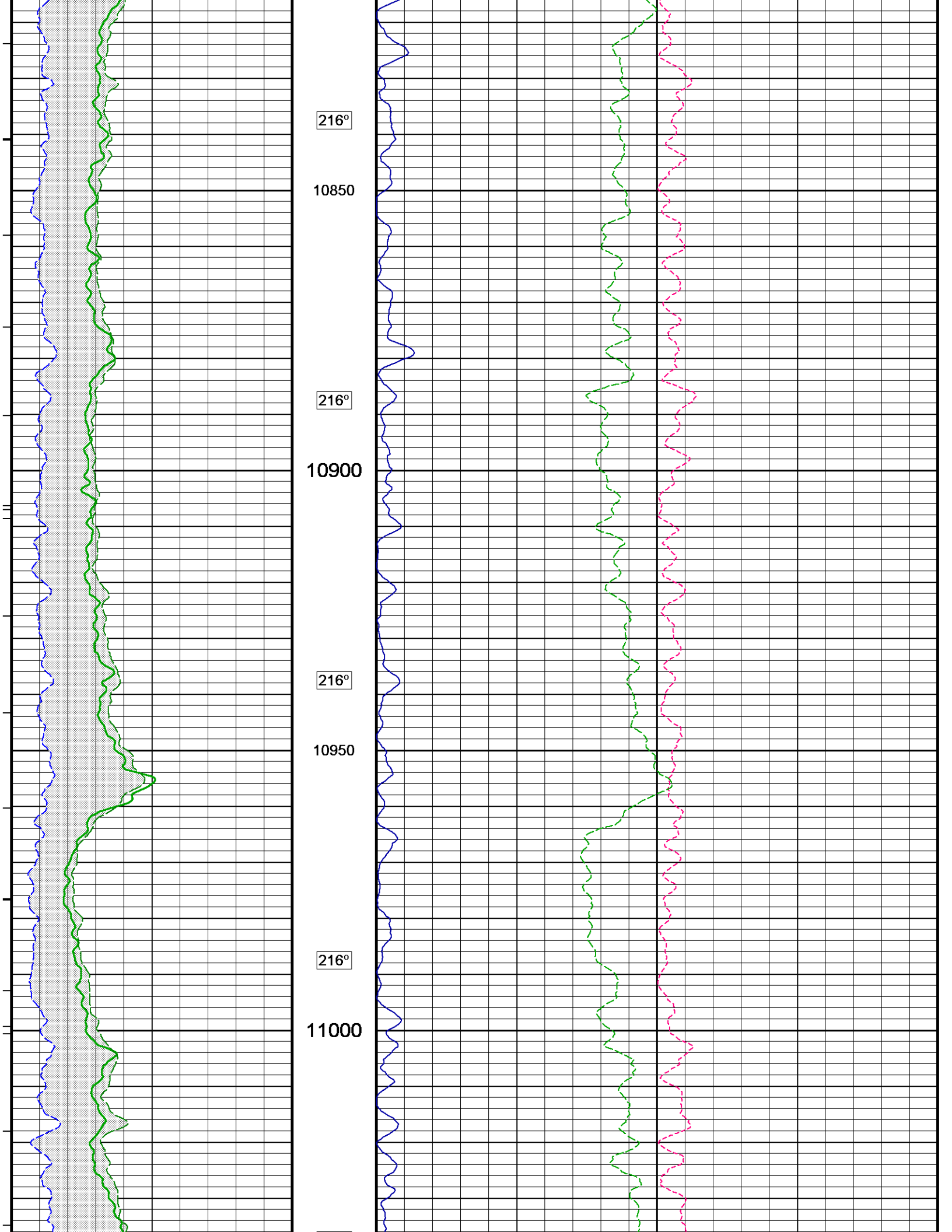
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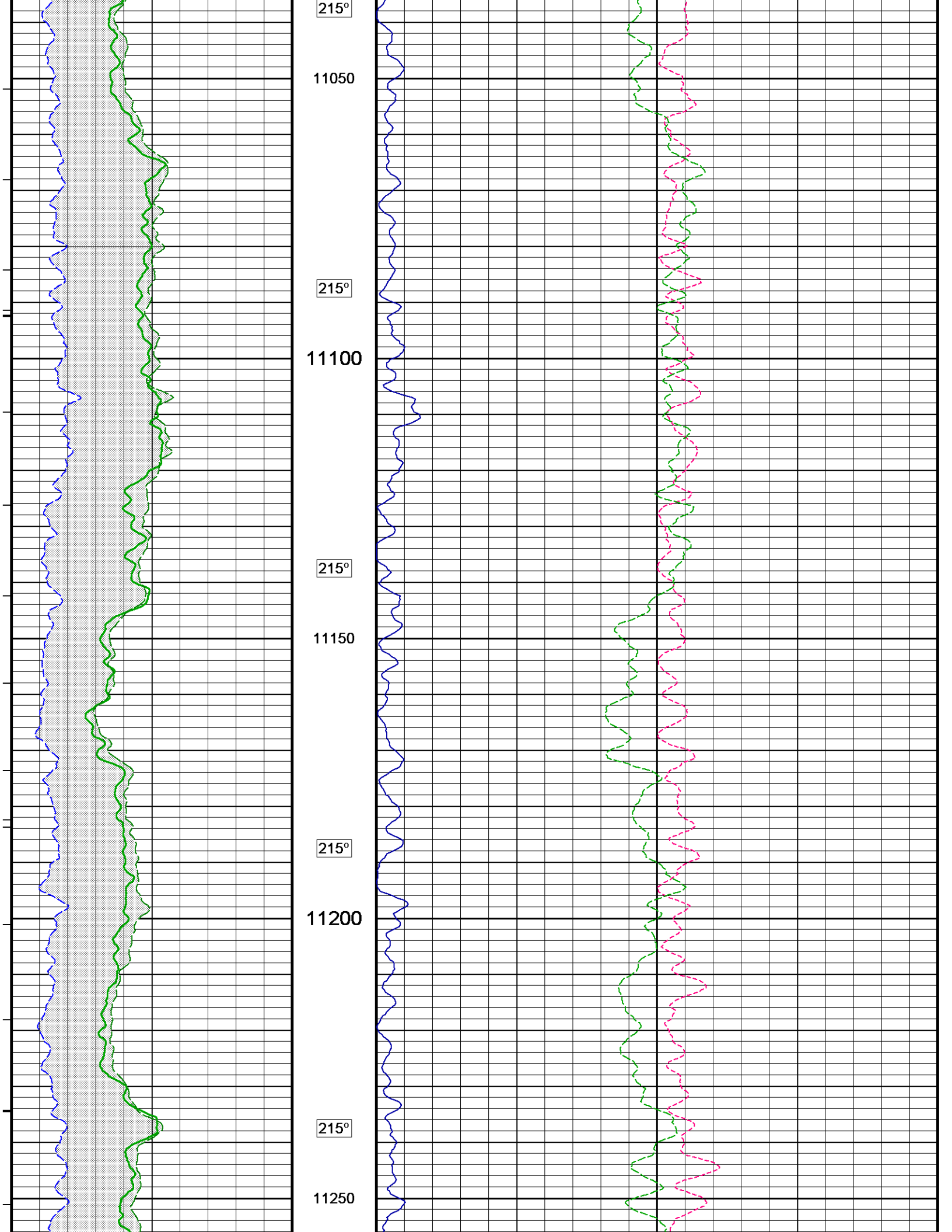


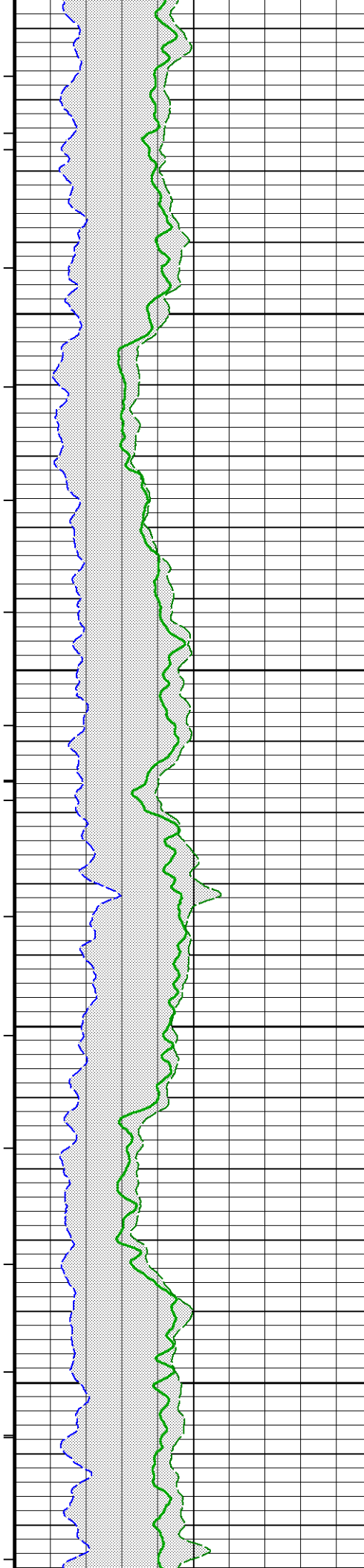












215°

11300

215°

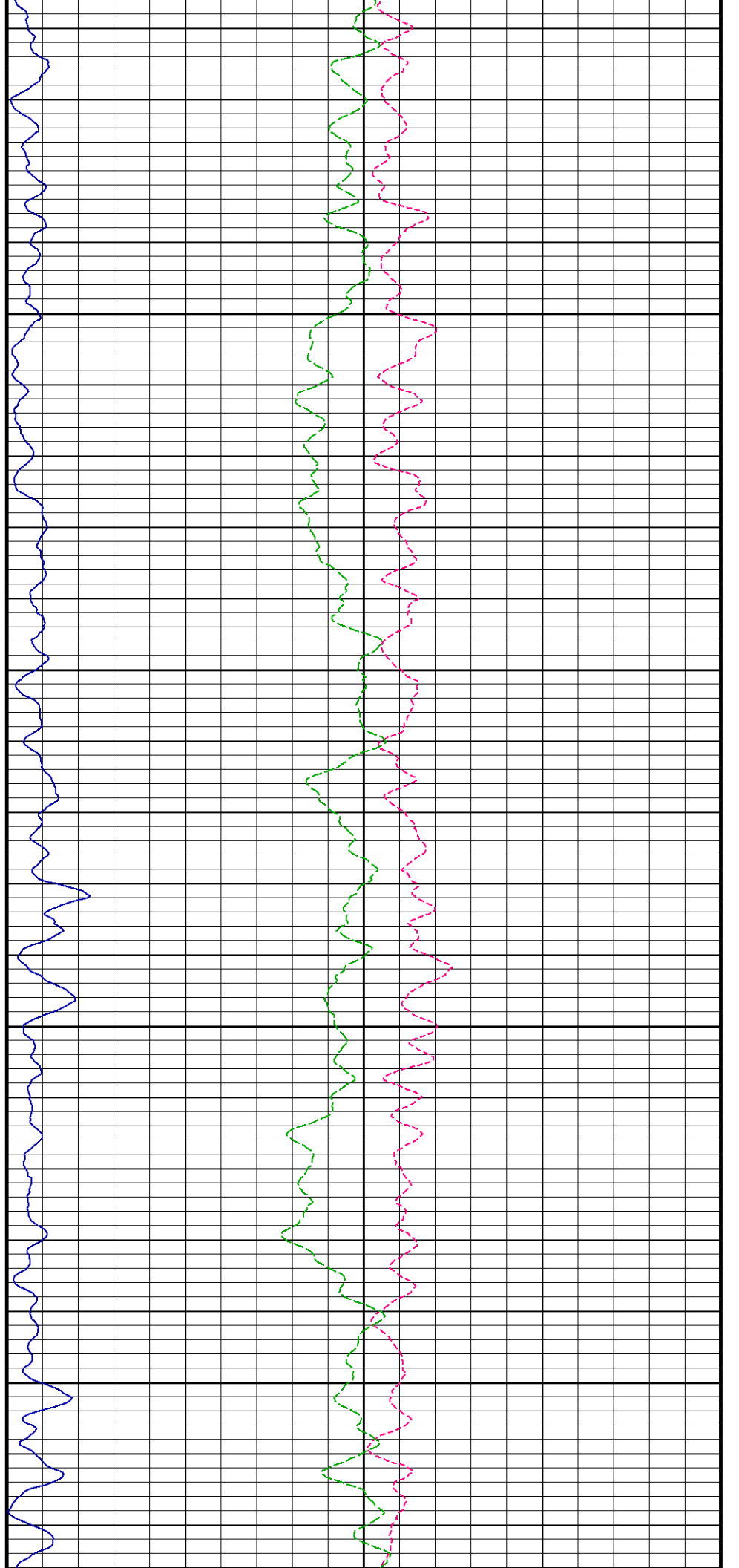
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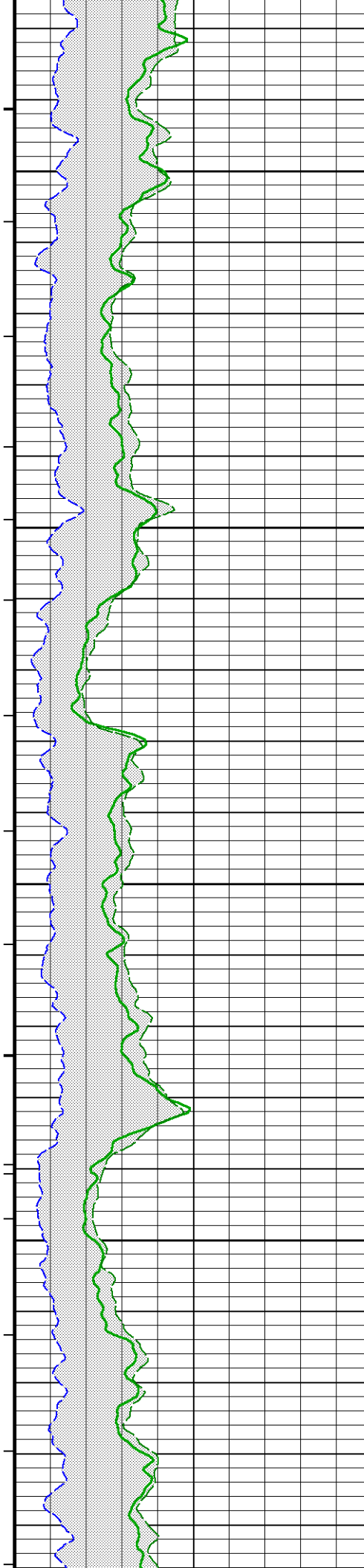
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11400

215°

11450





215°

11500

215°

11550

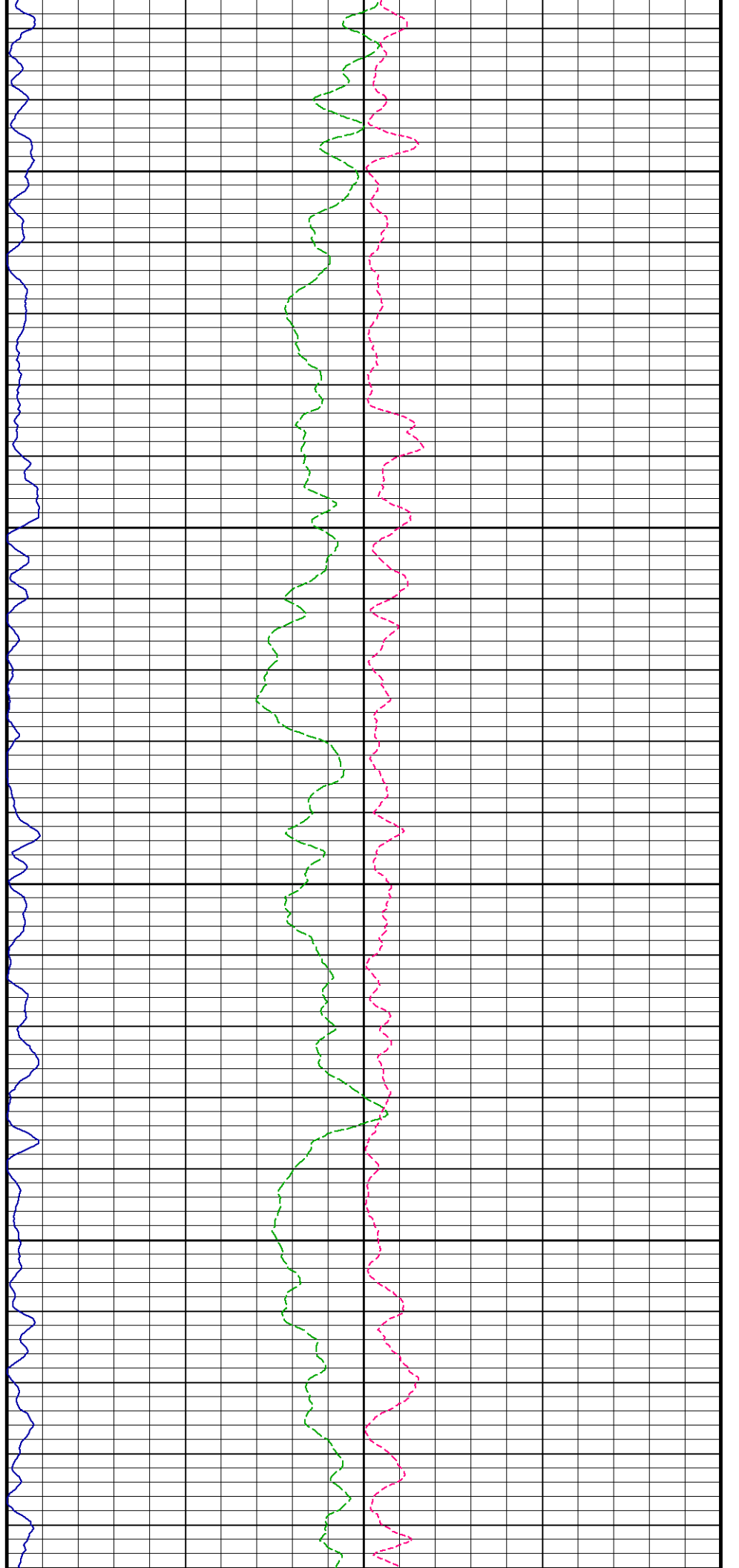
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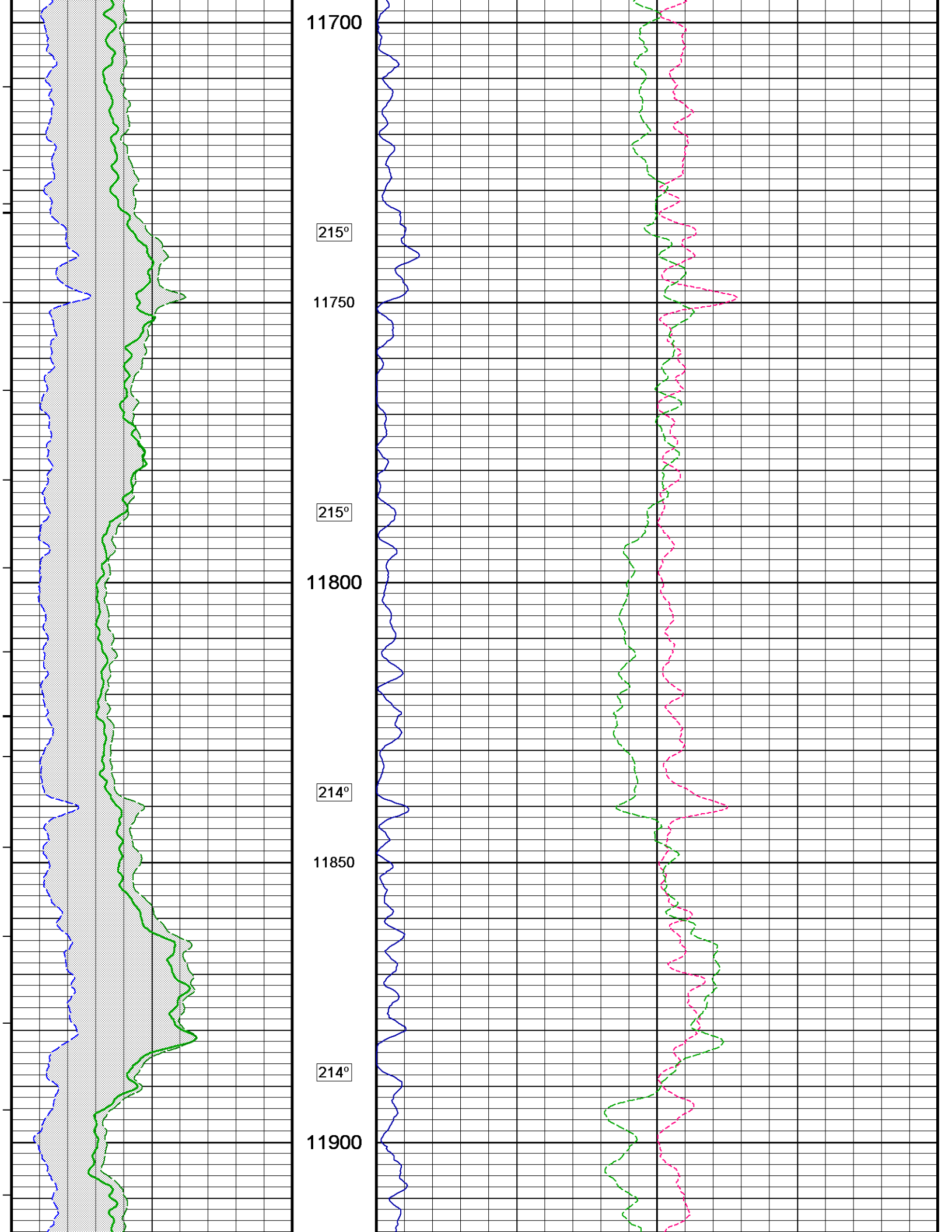
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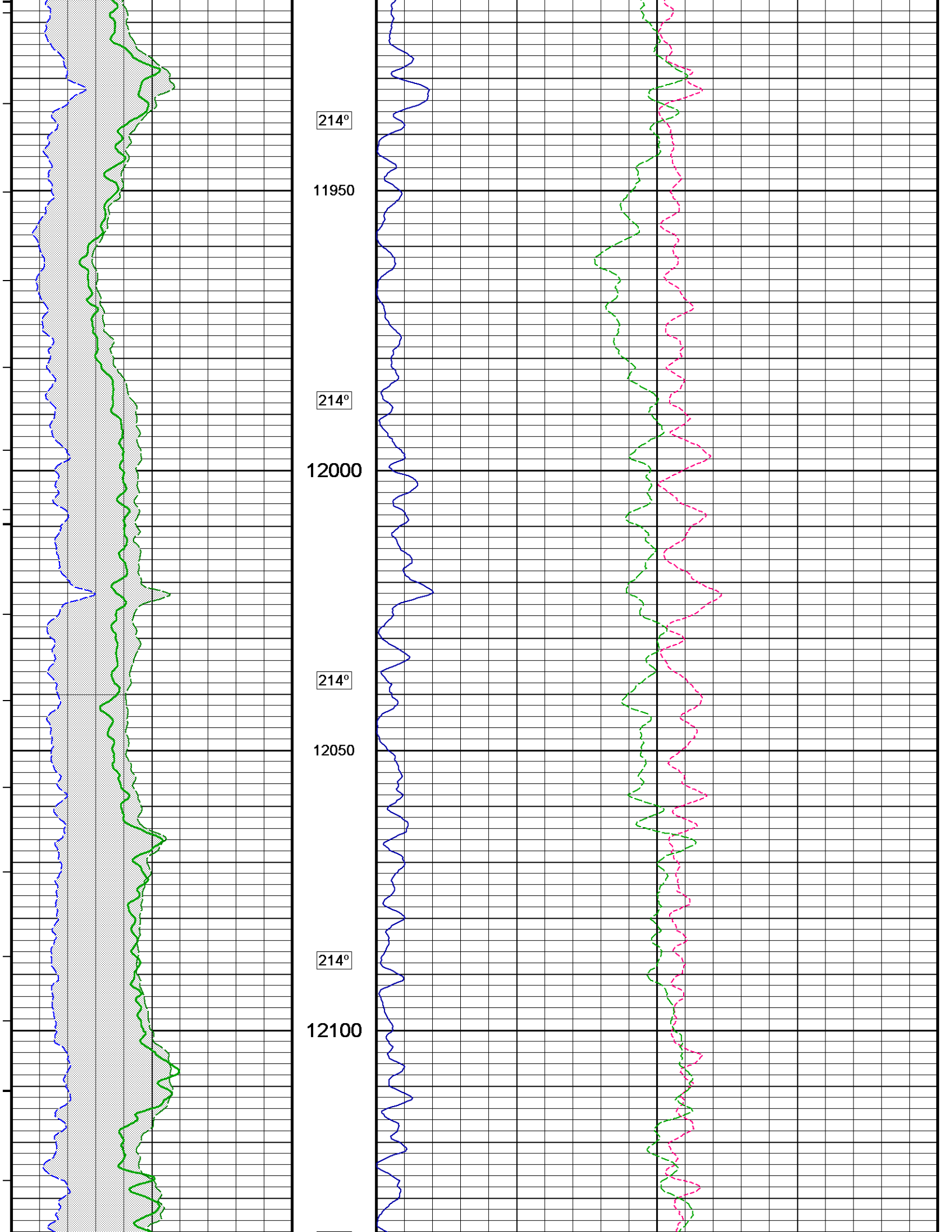
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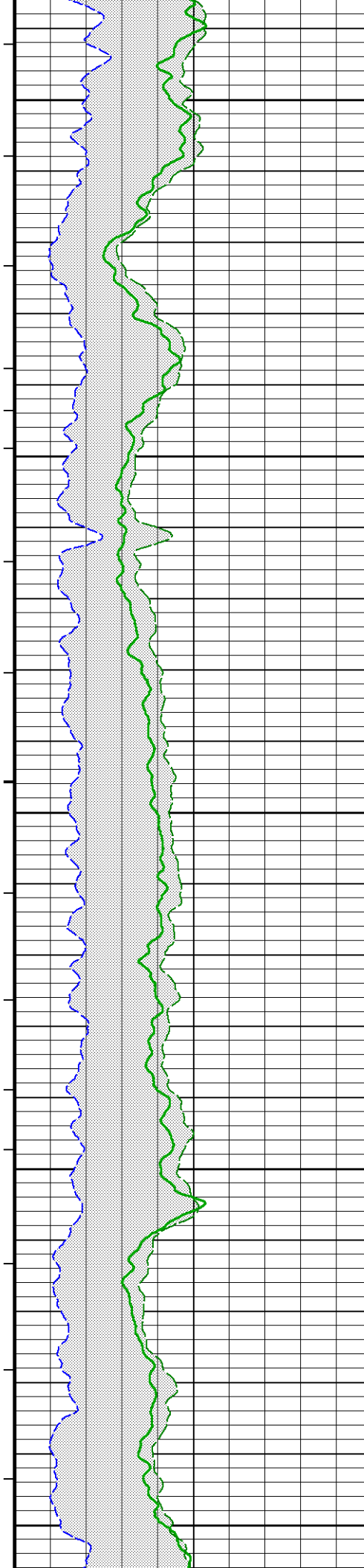
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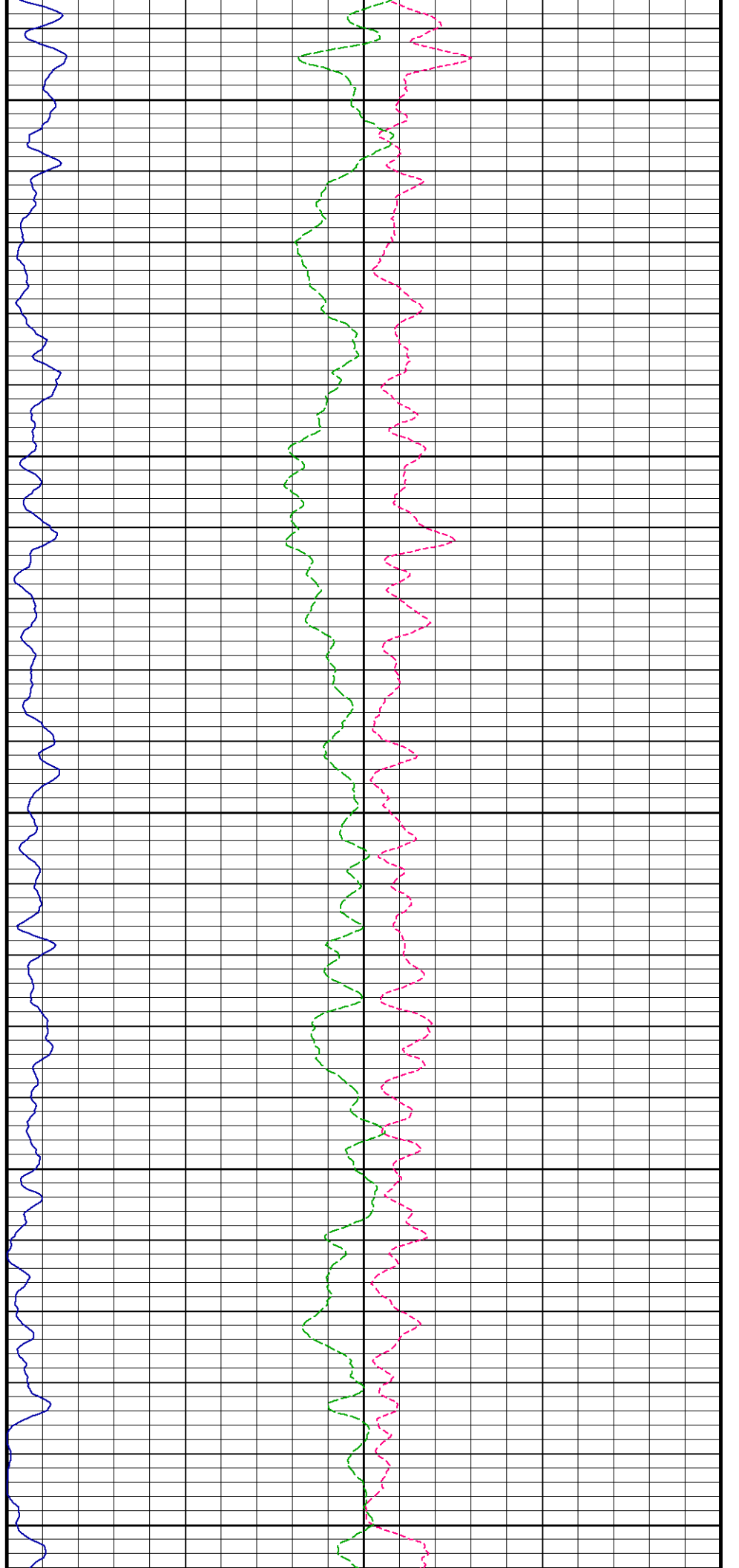


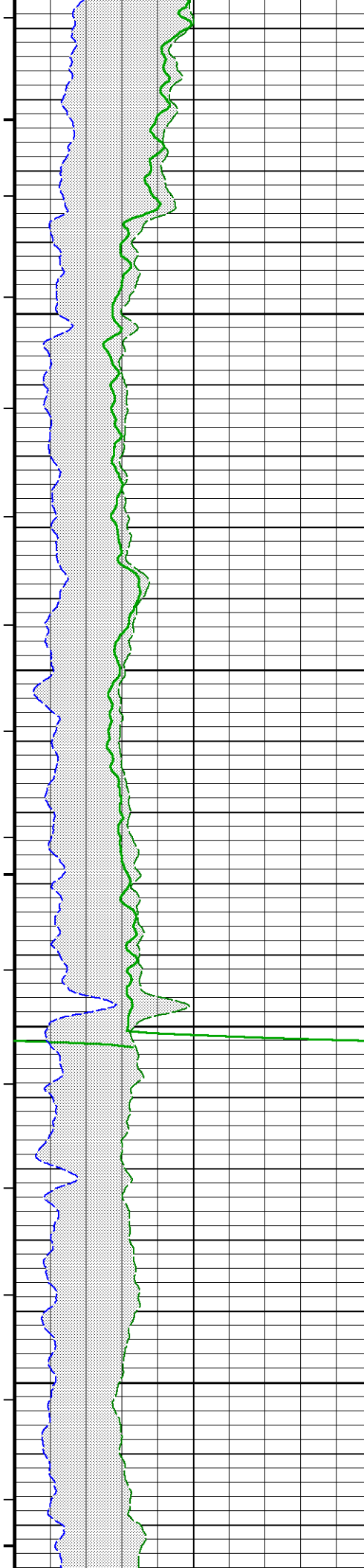






214°
12150
214°
12200
213°
12250
214°
12300
214°
12350





214°

12400

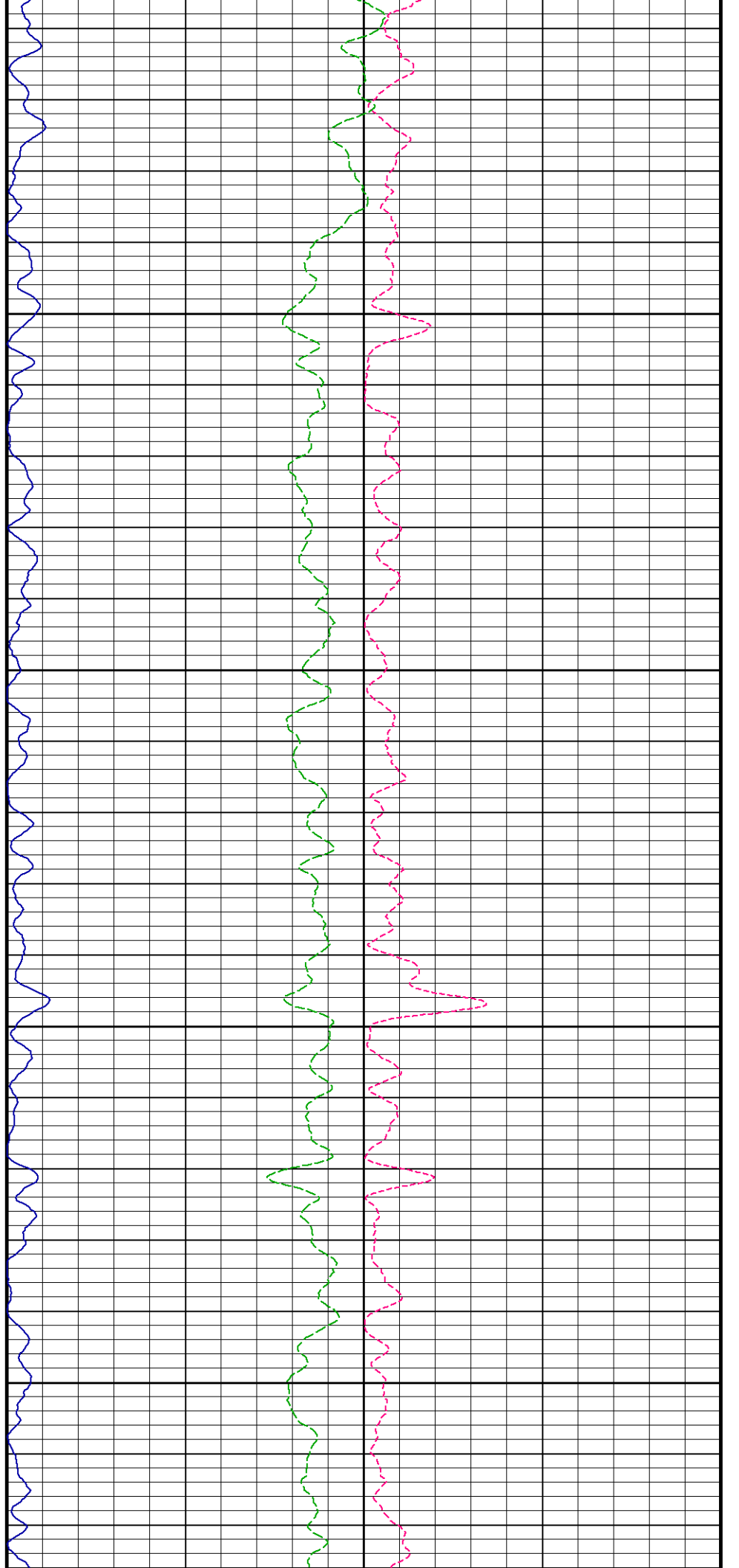
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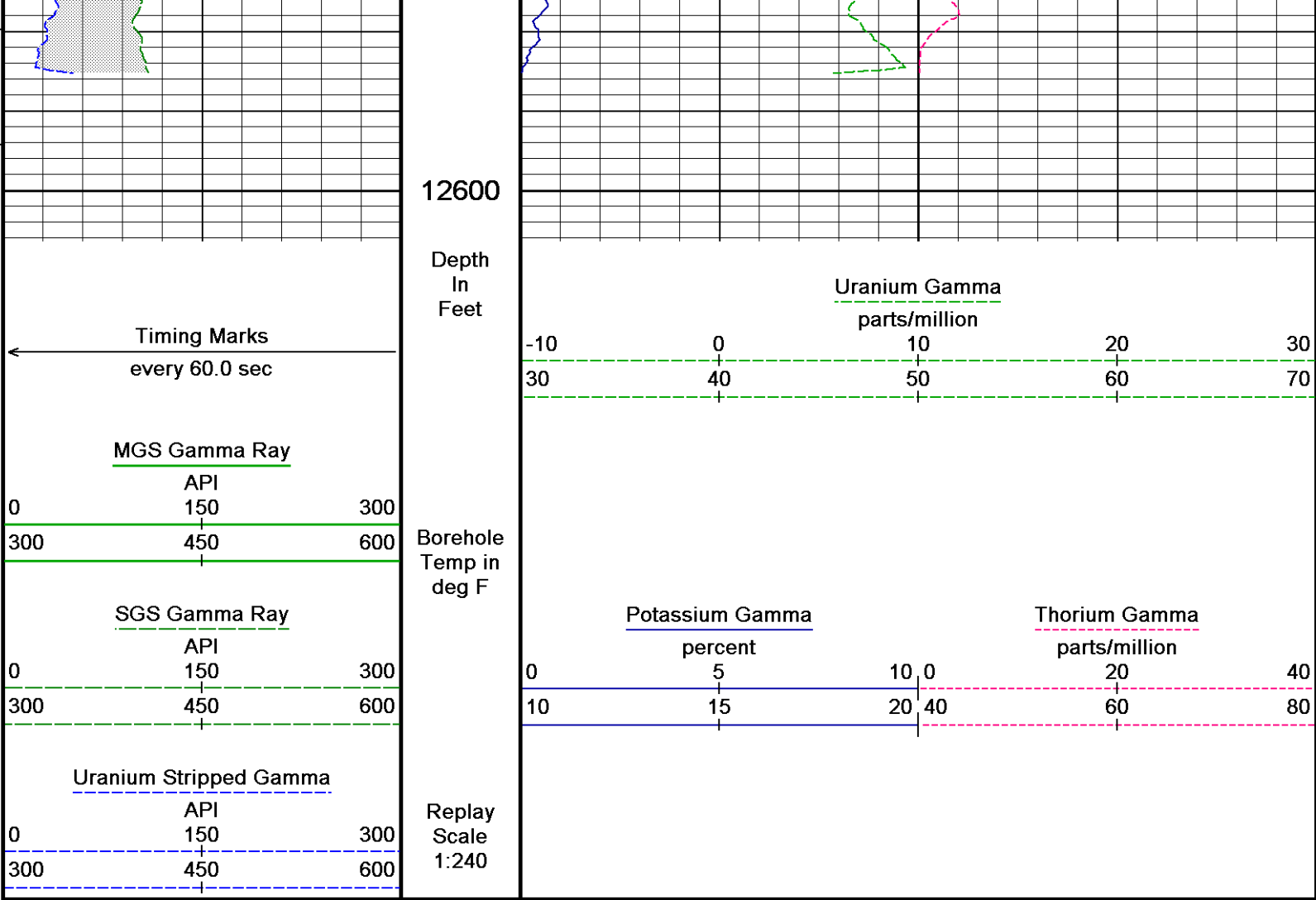
12450

216°

12500

12550





Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 23-JAN-2014 16:06
 Filename: F:\Razor 26k-2306b\cmitsgs_008.dta
 Recorded on 22-JAN-2014 21:22
 System Versions: Processed with 13.04.8723 Plotted with 13.04.8723

↑ CWS MEMORY LOG DSC ↑

BEFORE SURVEY CALIBRATION

F:\Razor 26k-2306b\cmitsgs_008.dta

General Constants All 000 Last Edited on 21-JAN-2014,12:29

General Parameters		
Mud Resistivity	1.000	ohm-metres
Mud Resistivity Temperature	80.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Sandstone Density Por.	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Strain Gauge Constants MMS-F.A 247 Last Edited on

Atmospheric Pressure	14.70	psi
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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	0.000
2000.0	0.000	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	0.000
6000.0	0.000	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	0.000
10000.0	0.000		0.000		0.000		0.000		0.000

High Resolution Temperature Calibration MGS-D.A 216

Field Calibration on 25-JUN-2013,14:57

	Measured	Calibrated(Deg F)
Lower	77.00	77.00
Upper	300.00	300.00

High Resolution Temperature Constants MGS-D.A 216

Last Edited on 25-JUN-2013,14:57

Pre-filter Length 11

SP Calibration MGS-D.A 216

Field Calibration on 25-JUN-2013,14:59

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

Gamma Calibration MGS-D.A 216

Field Calibration on 19-JAN-2014 17:48

	Measured	Calibrated (API)
Background	121	79
Calibrator (Gross)	1374	905
Calibrator (Net)	1253	826

Gamma Constants MGS-D.A 216

Last Edited on 21-JAN-2014,12:21

Gamma Calibrator Number GRC_064
 Mud Density 1.22 gm/cc
 Caliper Source for Processing Bit Size
 Tool Position Eccentred
 Concentration of KCl 0.00 kppm

Neutron Calibration MDN-C.A 399

Base Calibration on 20-JAN-2014 15:43
 Field Check on 20-JAN-2014 15:56

Base Calibration	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	2906	88	3714	110
	33.088		33.764	
Field Calibrator at Base			Calibrated (cps)	
			2185	3224
Ratio			0.678	
Field Check			Calibrated (cps)	
			2193	3230
Ratio			0.679	

Neutron Constants MDN-C.A 399

Last Edited on 22-JAN-2014,23:53

Neutron Source Id P0196NN
 Neutron Jig Number NECD122
 Epithermal Neutron No
 Caliper Source for Processing Density Caliper
 Stand-off 0.00 inches
 Mud Density 1.22 gm/cc
 Limestone Sigma 7.10 cu
 Sandstone Sigma 7.00 cu
 Dolomite Sigma 4.70 cu
 Formation Pressure Source Constant Value

Formation Pressure	0.00	ksi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Applied	

Imager Pad Check MIE-A.A 152

Field Check on 06-NOV-2012 14:52

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 152

Last Edited on 21-JAN-2014,11:24

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	N/A	mAmp	
Image Processing	Enabled		

Navigation Constants MIE-A.A 152

Last Edited on 06-MAY-2013,14:40

Magnetic Declination	0.00	degrees	East
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Magnetometer Parameters MIE-A.A 152

Date Of Last Magnetometer Calibration	23-OCT-2013,14:04		
Slope	X Magnetometer	Y Magnetometer	Z Magnetometer
Offset	-1.000000	-1.011308	-1.009313
	0.014784	-0.018048	0.011120

Magnetometer Constants MIE-A.A 152

Last Edited on

Magnetometer Calibrator Number	000
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Accelerometer Parameters MIE-A.A 152

Date Of Last Accelerometer Calibration	22-OCT-2013,17:26		
Slope	X Accelerometer	Y Accelerometer	Z Accelerometer
Offset	-1.115516	-1.113946	-1.107642
	0.005263	0.007295	-0.003463

Accelerometer Constants MIE-A.A 152

Last Edited on 21-JAN-2014,11:23

Accelerometer Calibrator Number	000
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Accelerometer Temperature Characterisation

X Accelerometer

Serial Number	507			
Calibration Date	17-Dec-2007			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	2.33131e-005	-3.14945e-008	1.78935e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.78190e-004	5.47258e-007	-2.50879e-010

Y Accelerometer

Serial Number	493			
Calibration Date	17-Dec-2007			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.45357e-005	1.15075e-008	1.28767e-010
	SF0	SF1	SF2	SF3

Scale Factor(mA/g) 3.00000e+000 2.78988e-004 5.43234e-007 -1.61097e-010

Z Accelerometer

Serial Number 477
 Calibration Date 17-Dec-2007
 Bias(g) B0 B1 B2 B3
 0.00000e+000 1.79322e-005 -8.77826e-009 6.28113e-011
 Scale Factor(mA/g) SF0 SF1 SF2 SF3
 3.00000e+000 2.74904e-004 6.33380e-007 -4.25536e-010

Caliper Calibration MIE-A.A 152

Base Calibration on 21-JAN-2014,11:22
 Field Calibration on 21-JAN-2014 12:19

Base Calibration

Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)
1	23924	24299	5.96
2	34363	34920	7.98
3	44375	44525	9.94
4	55279	55401	11.90
5	0	0	0.00

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	24409	24570	25315	24442	5.96
2	33087	33317	33733	33230	7.98
3	41703	41529	42192	41868	9.94
4	50890	51070	51451	50730	11.90
5	0	0	0	0	0.00

Field Calibration

Measured Pads 1-5 Caliper(in)	Measured Pads 3-7 Caliper(in)	Actual Caliper(in)
6.09	6.01	5.96

Measured Pad 2 Caliper(in)	Measured Pad 4 Caliper(in)	Measured Pad 6 Caliper(in)	Measured Pad 8 Caliper(in)	Actual Caliper(in)
3.02	3.00	2.98	3.01	5.96

Caliper Constants MIE-A.A 152

Last Edited on 30-DEC-2011,10:36

Caliper Difference for BRKT 0.120 inches

High Resolution Temperature Calibration MAI-C.A 401

Field Calibration on 25-JUL-2012,21:13

	Measured	Calibrated(Deg F)
Lower	77.00	77.00
Upper	300.00	300.00

High Resolution Temperature Constants MAI-C.A 401

Last Edited on 27-JUL-2013,10:08

Pre-filter Length 11

Induction Calibration MAI-C.A 401

Base Calibration on 21-JUL-2011 11:50
 Field Check on

Base Calibration

Test Loop Calibration Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.8	459.1	9.3	966.2
2	5.9	373.4	7.6	821.4
3	3.5	256.8	5.2	566.0
4	1.6	132.9	2.6	279.2

Array Temperature 74.5 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	-3.7	2106.2		
2	14.5	1928.5		
3	14.5	1647.0		
4	10.6	1108.9		
Deep	8.3	1053.6		
Medium	22.7	2184.2		
Shallow	22.1	2881.5		

Array Temperature 90.9 Deg F

Induction Constants MAI-C.A 401

Last Edited on 23-JAN-2014 00:01

Induction Model	RtAP-WBM		
Caliper for Borehole Corr.	Bit Size		
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.	Borehole Temp. Unfilt.		
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-D.A 410	Base Calibration on 03-DEC-2013,15:21 Field Calibration on 19-JAN-2014 17:37
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Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	16379	4.01	
2	25748	5.96	
3	35807	7.98	
4	45926	9.94	
5	56769	11.90	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	7.95	7.98	

Photo Density Calibration MPD-D.A 410	Base Calibration on 21-JAN-2014,12:24 Field Check on 21-JAN-2014,12:26
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Density Calibration					
Base Calibration					
		Measured		Calibrated (sdu)	
	Near	Far	Near	Far	
Reference 1	41720	14361	53325	19319	
Reference 2	20008	2370	25278	2556	
Field Check at Base					
	1330.7	1330.4			
Field Check					
	1331.8	1329.6			

PE Calibration					
Base Calibration					
	WS	Measured		Calibrated	
		WH	Ratio	Ratio	

Background	254	1194		
Reference 1	15731	41541	0.384	0.317
Reference 2	6279	19862	0.323	0.274

Field Check at Base
254.5 1193.9

Field Check
253.6 1192.6

Density Constants MPD-D.A 410

Last Edited on 21-JAN-2014,12:23

Density Source Id	261	
Nylon Calibrator Number	DNC-D-515	
Aluminium Calibrator Number	DAC-D-515	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.22	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)	
2.68		
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	0.00	

Spectral Gamma Calibration SGS-E.J 128

Base Calibration on 21-JAN-2014,12:43
Field Calibration on 21-JAN-2014,12:43

Base Calibration					
Potassium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	152.7	53.5	5.8	1.8	2.9
Calibrator (Gross)	288.3	145.3	31.8	3.1	3.1
Calibrator (Net)	135.6	91.8	26.0	1.3	0.2
Concentrations	K %	U ppm	Th ppm		
	5.9	0.0	0.0		
Uranium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	152.7	53.5	5.8	1.8	2.9
Calibrator (Gross)	611.7	218.9	19.7	12.4	6.2
Calibrator (Net)	459.0	165.4	13.9	10.6	3.3
Concentrations	K %	U ppm	Th ppm		
	0.0	16.6	0.0		
Thorium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	152.7	53.5	5.8	1.8	2.9
Calibrator (Gross)	474.2	174.3	14.4	7.6	18.0
Calibrator (Net)	321.5	120.8	8.6	5.8	15.2
Concentrations	K %	U ppm	Th ppm		
	0.0	0.0	44.7		
Mixture Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	152.7	53.5	5.8	1.8	2.9
Calibrator (Gross)	950.5	384.4	50.5	14.9	20.8
Calibrator (Net)	797.9	330.9	44.7	13.1	17.9

Field Calibration
Gamma Ray

	Measured	Calibrated (API)
Background	223	45
Calibrator (Gross)	1428	285
Calibrator (Net)	1205	240

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	152.7	53.5	5.8	1.8	2.9
Calibrator (Gross)	950.5	384.4	50.5	14.9	20.8
Calibrator (Net)	797.9	330.9	44.7	13.1	17.9

Spectral Gamma Constants SGS-E.J 128

Last Edited on 21-JAN-2014,12:40

Background Calibrator Number	440	
Mixture Calibrator Number	450	
Potassium Calibrator Number	500	
Uranium Calibrator Number	506	
Thorium Calibrator Number	503	
Mud Density	1.22	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

DOWNHOLE EQUIPMENT

F:\Razor 26k-2306b\cmitsgs_008.dta

Shuttle Running Tool 3.5")
SRT-A.A 57 LG: 6.62 ft WT: 37.5 lb OD: 2.52 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 716 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Linker 400v mbs
MLK-E.A 117 LG: 14.24 ft WT: 99.2 lb OD: 2.24 in

Compact Linker 200 v std batt w xover
MLK-D.A 104 LG: 10.55 ft WT: 30.9 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 455 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub
MBS-F.A 130 LG: 17.06 ft WT: 123.5 lb OD: 2.24 in

Compact Memory Sub F.A
MMS-F.A 247 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.
MTI-B.A 49 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma
MGS-D.A 216 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in



95.68 ft GRGM - MGS Gamma Ray
93.69 ft GSX I - MGS External Temperature

Compact Collar Locator
MCL-C.A 121 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 581 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 582 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 722 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-C.A 399 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-D.A 410 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 720 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 549 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 580 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 718 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 579 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 721 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact MMI Memory Section
MIM-A.A 152 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section
MIE-A.A 152 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 324 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 474 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Spectral Gamma Ray Sub
SGS-E.J 128 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in

Compact Induction
MAI-C.A 401 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 156.11 ft Weight: 1142.0 lb



69.5 / ft CLDC - Density Caliper

3.34 ft R60F - Array Ind. Four Res 60
3.34 ft R40F - Array Ind. Four Res 40
3.34 ft R30F - Array Ind. Four Res 30
3.34 ft R20F - Array Ind. Four Res 20
3.34 ft R85F - Array Ind. Four Res 85
3.34 ft R1AF - Array Ind. Four Res Rt
Tool Zero (0.13ft from bottom)

All measurements relative to tool zero



All measurements relative to tool zero.

COMPANY	WHITING OIL AND GAS CORPORATION		
WELL	RAZOR 26-2306B		
FIELD	REDTAIL		
PROVINCE/COUNTY	WELD		
COUNTRY/STATE	U.S.A. / COLORADO		

Elevation Kelly Bushing	4759.50	feet	First Reading		feet
Elevation Drill Floor	4759.50	feet	Depth Driller	13220.00	feet
Elevation Ground Level	4737.00	feet	Depth Logger	12661.00	feet



Weatherford[®]

SPECTRAL GAMMA RAY