



# Weatherford®

**6 3/4 & 4 3/4 in. WeatherfordM/LWD™**  
**Gamma Ray**  
**1 in. & 5 in. MEASURED DEPTH**  
**RECORDED DATA**  
**FINAL PRINT**

Company: Anadarko Petroleum Corp.  
Well: Howard 10N-22HZ  
Field: Wattenberg  
Rig: Xtreme 23  
County: Weld

COMPANY		Anadarko Petroleum Corp.	
WELL		Howard 10N-22HZ	
FIELD		Wattenberg	
RIG		Xtreme 23	
COUNTY		STATE	
API #		Colorado	
Location		Latitude: 40.01631° N	x = 1,249,373,865 ft
		Longitude: -104.87493° W	y = -3,175,072.22ft
Other Services:		Mag Decl: 8.61°	
		Mag Dip: 66.63°	
		Directional and Temperature	

Permanent Datum:	Mean Sea Level		
Log Measured From:	Drill Floor	Elev: 5024.0 ft	above perm. datum
Depth Reference:	Drillers Tally	Total Depth:	14676 ft
Depth Logged:	6879 ft	Runs:	3
Date Logged:	13-Nov-13	Spud Date:	6-Nov-13
		Elevation	K.B. Top Drive G.L. 5008.0 ft D.F. 5024.0 ft W.D. Land

Borehole Record			Casing Record			
Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1255 ft	9.625 in.	36.0 lb/ft	Surface	1245 ft
8.750 in.	1255 ft	8015 ft	7.000 in.	26.0 lb/ft	Surface	8003 ft
6.125 in.	8015 ft	14676 ft				

Borehole Deviation Record			Mud Record			
Hole Size	Min. Inc.	Max. Inc.	Type	Weight	From	To
13.500 in.	0.00°	0.35°	WBM	8.50 - 8.80 ppq	1245 ft	6500 ft
8.750 in.	0.16°	83.41°	WBM	8.80 - 9.10 ppq	6500 ft	6600 ft
6.125 in.	85.18°	93.58°	WBM	9.10 - 9.40 ppq	6600 ft	6746 ft
			WBM	9.40 - 9.70 ppq	6746 ft	7000 ft
			WBM	9.70 - 10.00 ppq	7000 ft	8015 ft
			WBM	8.80 - 9.10 ppq	8015 ft	14676 ft

**All interpretations of log data are opinions based on inferences from electrical or other measurements. Weatherford International does not guarantee the accuracy or correctness of any interpretation or recommendation and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation or recommendation made by any of our employees or agents.**

RUN SUMMARY							
M/LWD Run Number		1	2	3			
Bit Size	in.	8.750	6.125	6.125			
Bit Type		PDC	PDC	PDC			
Bit TFA	sq.in.	1.340	1.534	1.534			
Bit Start Depth	ft	1255	8015	10658			
Bit End Depth	ft	8015	10658	14676			
Top Log Interval	ft	6879	7961	9488			
Bottom Log Interval	ft	8015	10658	14676			
Begin Log Time	hrs	13:42	21:07	14:59			
Begin Log Date	DD-MMM-YY	13-Nov-13	15-Nov-13	17-Nov-13			
End Log Time	hrs	6:04	17:23	0:12			
End Log Date	DD-MMM-YY	14-Nov-13	16-Nov-13	20-Nov-13			
Drill or Wipe		Drill	Drill	Wipe / Drill			
Flow Rate	gal/min	597	293	290			
Max AV / CV @ MWD	ft/min	468 / 342	480 / 303	475 / 416			
Min Inc @ Depth	deg @ ft	0.16 @ 5310	87.84 @ 10399	85.18 @ 11082			
Max Inc @ Depth	deg @ ft	83.41 @ 7948	92.65 @ 8562	93.58 @ 14282			
MUD DATA							
Depth	ft	8015	10658	14676			
Fluid Type		WBM	WBM	WBM			
Mud Weight	ppg	10.00	8.80	8.80			
Plastic Viscosity	cP	10.0	8.0	12.0			
Solids / Sand	%	8.20 / 0.25	2.7 / 0.20	4.70 / 0.10			
NaCl Equiv. Chlorides	ppm	2475	2475	2475			
pH		9.30	9.20	9.2			
Oil:Water Ratio	% Vol	0.0 : 100.0	0.0 : 100.0	0.0 : 100.0			
KCl	% Vol	0	0	0			
Client Representative		J. Tittle	J. Tittle	J. Tittle			
Weatherford M/LWD Engineer		J. Leger	J. Leger	J. Leger			

## EQUIPMENT SUMMARY

M/LWD Run Number	1	2	3		
HyperPulse / HEL Serial Number	CP130526PDIRBY-T01	NW132663PDSSKI4.75	NW132664PDSSKI4.75		
<b>Sensor to Bit Offsets / Acquisition Rates</b>					
Directional	ft / sec	65.15 / RT	49.25 / RT	43.02 / RT	
Gamma Ray	ft / sec	50.94 / 16	53.26 / 5	47.12 / 5	
<b>Other Information</b>					
Total BHA Length	ft	3839.55	9170.63	9163.84	
BHA Assembly Type		Steerable	Steerable	Steerable	
Stabilizer Location	ft	na	30.32	na	
Run Circulating Time	hr	43.44	19.33	62.32	
Run Drilling Time	hr	26.83	11.08	26.00	

## MUD SUMMARY

Date and Time	Run	Bit Depth	Mud Weight	% K	Rm @ Temp	Rmf @ Temp	Rmc @ Temp	BHCT
14 Nov 13 @ 08:00	01	8015 ft	10.00 ppg	0	na	na	na	168 F
17 Nov 13 @ 08:00	02	10658 ft	8.80 ppg	0	na	na	na	210 F
20 Nov 13 @ 08:00	03	14676 ft	8.80 ppg	0	na	na	na	220 F

## M/LWD RUN REMARKS

**Run Number: 1 :: RECORDED DATA LOG**

**WFT Services Provided:**

Recorded and Real Time Logging: Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

**Borehole and Environmental Correction:**

Hole Size: 8.750 in.

**Gamma Ray:** Corrected for hole size, mudweight, Collar O.D., Collar I.D. and K1 factor.

Mud Weight: 9.90 ppg

**Collar O.D.:** 6.760 in.

K1 Factor: 3.352

**Collar I.D.:** 3.250 in.

**Run Number: 2 :: RECORDED DATA LOG**

**WFT Services Provided:**

Recorded and Real Time Logging: Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

**Borehole and Environmental Correction:**

Hole Size: 6.125 in.

**Gamma Ray:** Corrected for mud weight, hole size and KCl concentration.

Mud Weight: 8.80 ppg

KCl Concentration: 0%

**Run Number: 3 :: RECORDED DATA LOG**

**WFT Services Provided:**

Recorded and Real Time Logging: Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

**Borehole and Environmental Correction:**

Hole Size: 6.125 in.

**Gamma Ray:** Corrected for mud weight, hole size and KCl concentration.

Mud Weight: 8.80 ppg

KCl Concentration: 0%

## M/LWD LOG COMMENTS

**Comment No. 1-1**

RECORDED DATA LOG

Start of M/LWD Drilling Run 01

Weatherford International provided 6 3/4 in. Directional, Gamma Ray, and Temperature for Run 01.

Run 01 started formation drilling November 11, 2013 at 22:56 at 1255 MD / 1254 TVD. Weatherford International logged the 8.750 in. borehole.

The WBM at the start of drilling was 8.50 ppg.

**Comment No. 1-2**

Start of M/LWD Logging Run 01

Run 01 started formation logging November 13, 2013 at 13:42 at 6879 MD / 6806 TVD. Weatherford International logged the 8.750 in. borehole.

The WBM at the start of logging was 9.80 ppg.

**Comment No. 1-3**

End of M/LWD Drilling Run 01

Run 01 ended drilling formation November 14, 2013 at 06:04 at 8015 MD / 7523 TVD.

The WBM at the end of drilling was 10.00 ppg.

**Comment No. 2-1**

RECORDED DATA LOG

Start of M/LWD Drilling Run 02

Weatherford International provided 4 3/4 in. Directional, Gamma Ray, and Temperature for Run 02.

Run 02 started formation drilling November 15, 2013 at 21:07 at 8015 MD / 7523 TVD. Weatherford International logged the 6.125 in. borehole.

The WBM at the start of drilling was 9.10 ppg.

**Comment No. 2-2**

End of M/LWD Drilling Run 02

Run 02 ended drilling formation November 16, 2013 at 17:23 at 10658 MD / 7534 TVD.

The WBM at the end of drilling was 8.80 ppg.

**Comment No. 3-1**

RECORDED DATA LOG

Start of M/LWD Wipe Run 03

Weatherford International provided 4 3/4 in. Directional, Gamma Ray, and Temperature for Run 03.

Run 03 started formation wiping November 17, 2013 at 14:59 at 9488 MD / 7520 TVD. Weatherford International logged the 6.125 in. borehole.

The WBM at the start of drilling was 8.80 ppg.

**Comment No. 3-2**

Start of M/LWD Drilling Run 03

Run 03 started drilling formation November 17, 2013 at 16:35 at 10658 MD / 7534 TVD.

The WBM at the start of drilling was 8.80 ppg.

**Comment No. 3-3**

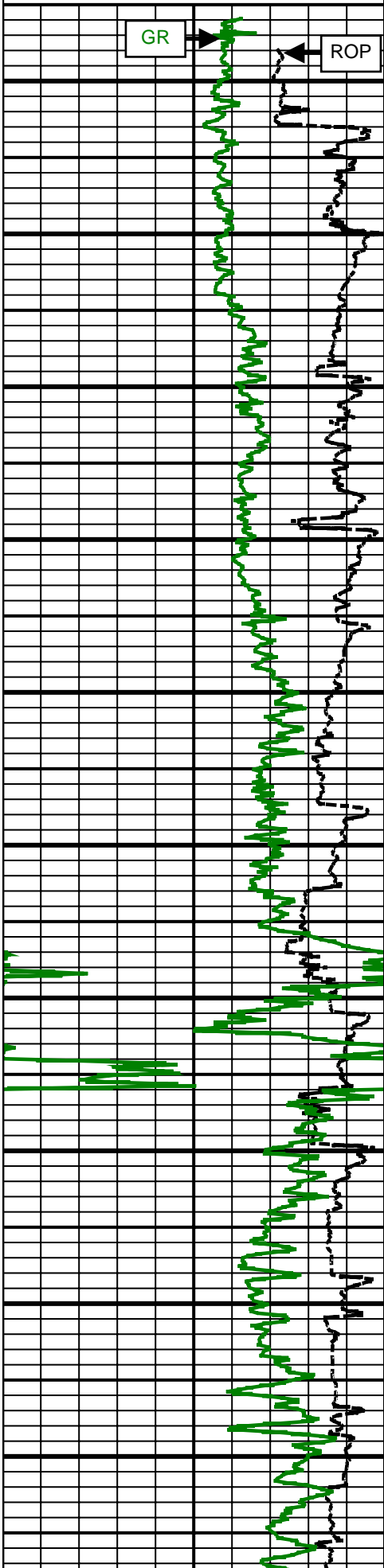
End of M/LWD Drilling Run 03

Run 03 ended drilling formation November 20, 2013 at 00:12 at 14676 MD / 7466 TVD.

The WBM at the end of drilling was 9.10 ppg.

CURVE SPECIFICATIONS				
CURVE TYPE	MNEMONIC	UNITS	COMMENTS	CORRECTIONS
Rate of Penetration	ROP	fph	Rate of Penetration 3.0 ft window 0.5 ft Exponential Smoothing	None
Gamma Ray	GR	AAPI	Gamma Ray 3.0 ft window 0.5 ft Exponential Smoothing	See M/LWD Run Remarks
Inclination	INC	deg	Survey Inclination No Smoothing	None
Azimuth	AZM	deg	Survey Azimuth No Smoothing	
Temperature	TEMP	F	Borehole Temperature 3.0 ft window 0.5 ft Exponential Smoothing	

**1 Inch - Measured Depth**



6900 MD

7000 MD

7100 MD

7200 MD

7300 MD

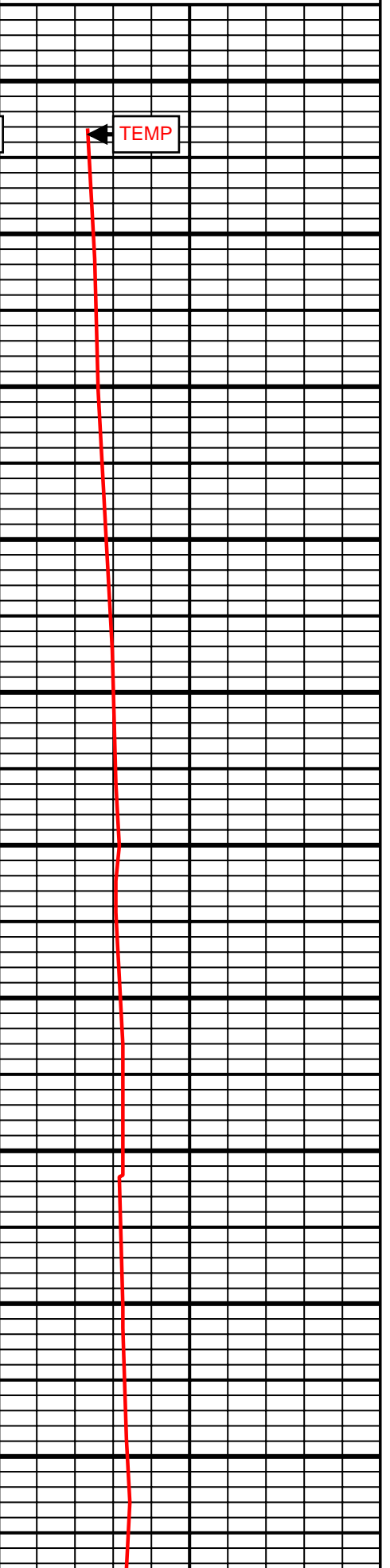
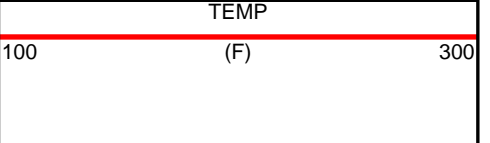
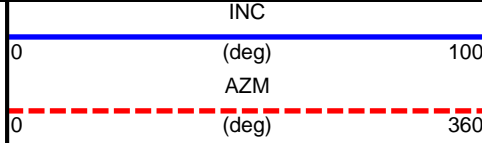
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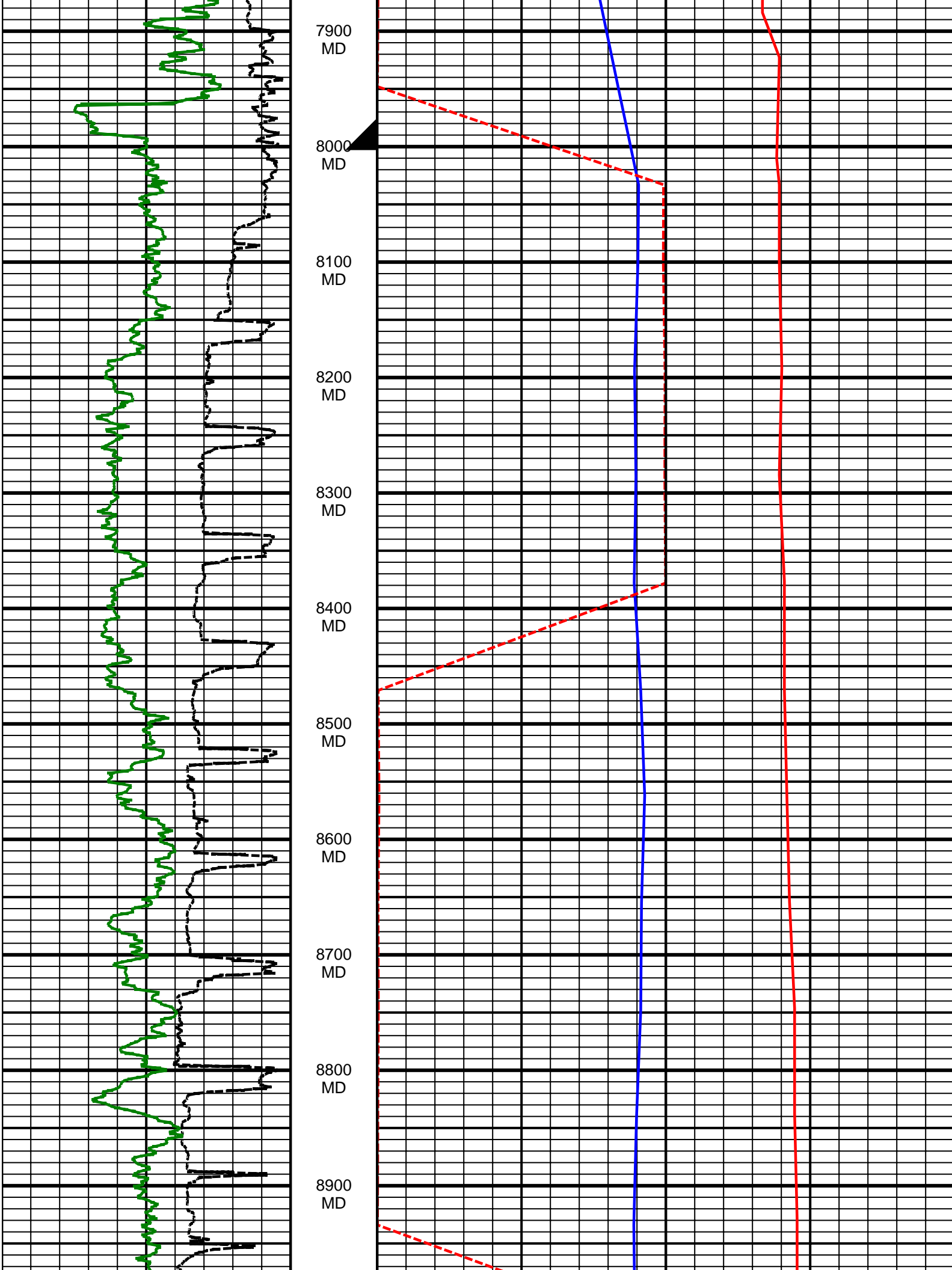
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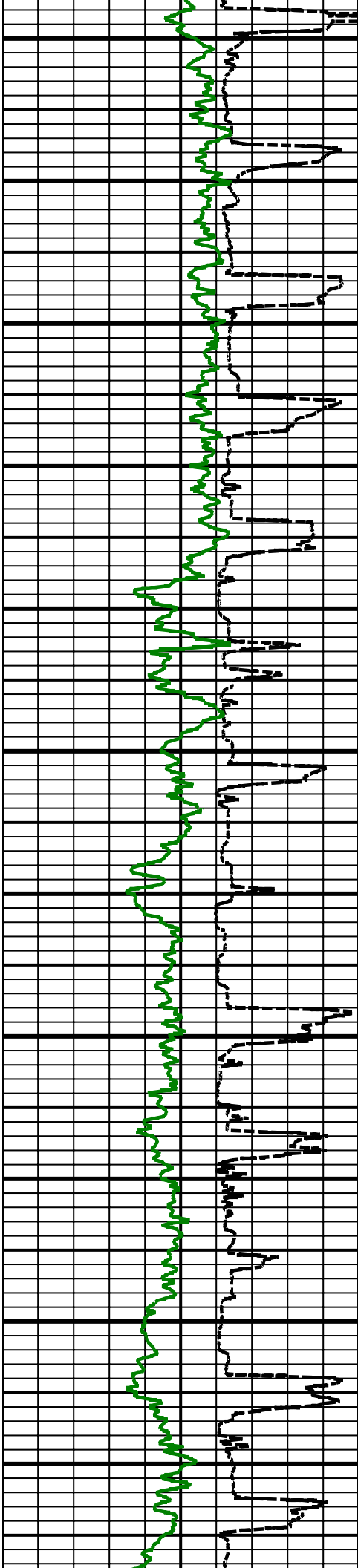
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7700 MD

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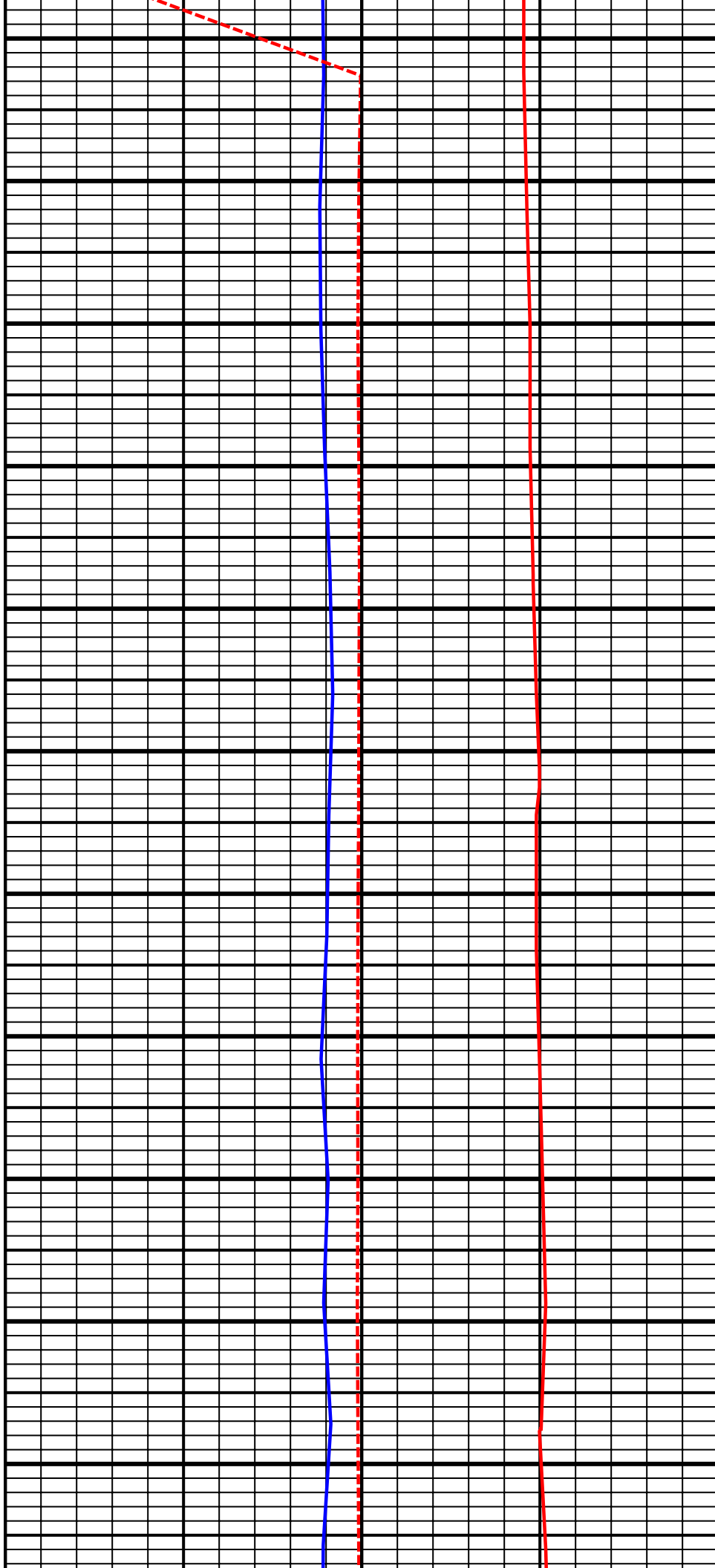
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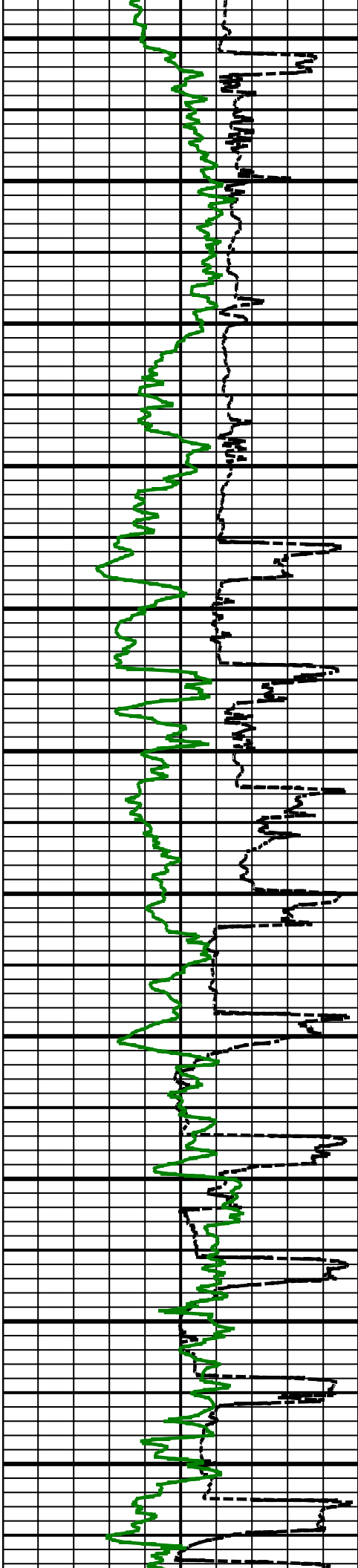
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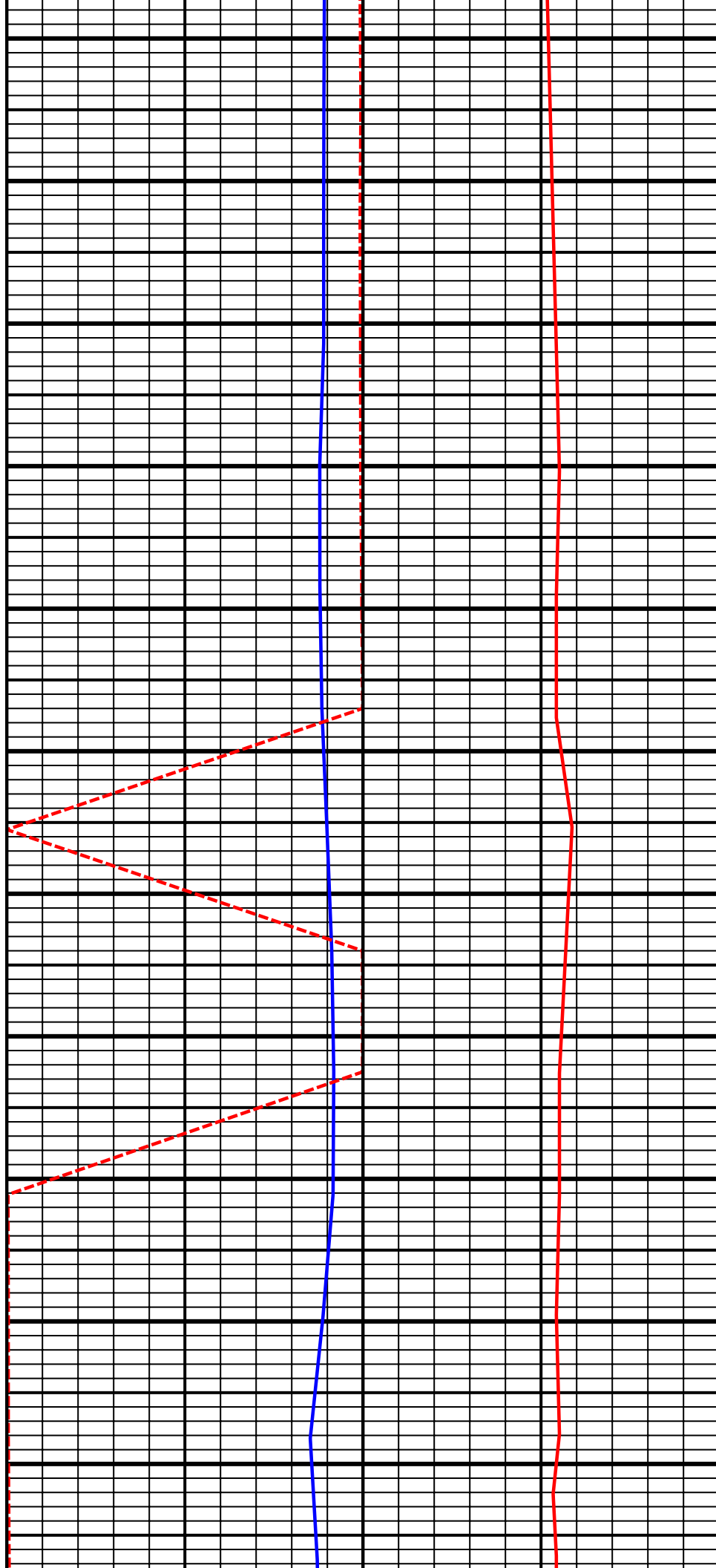
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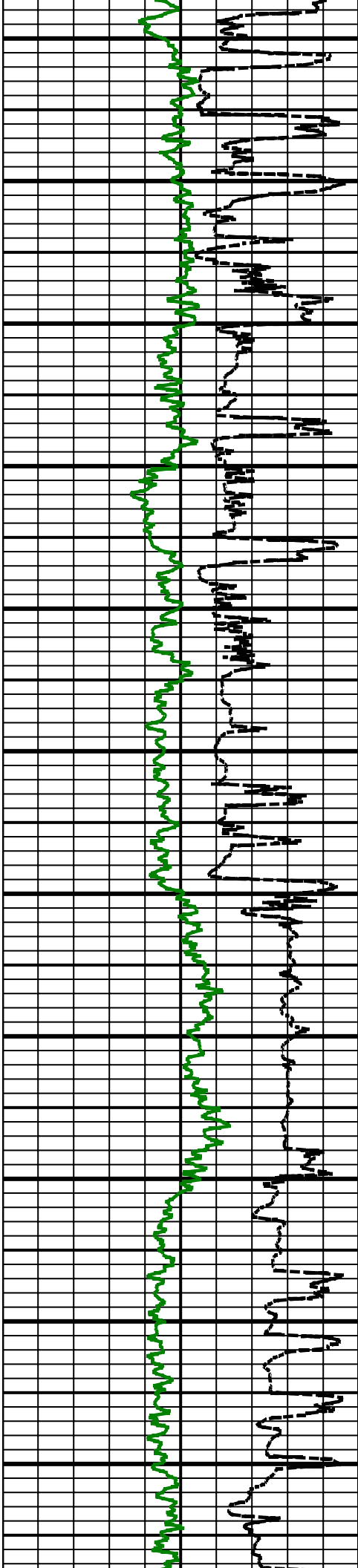
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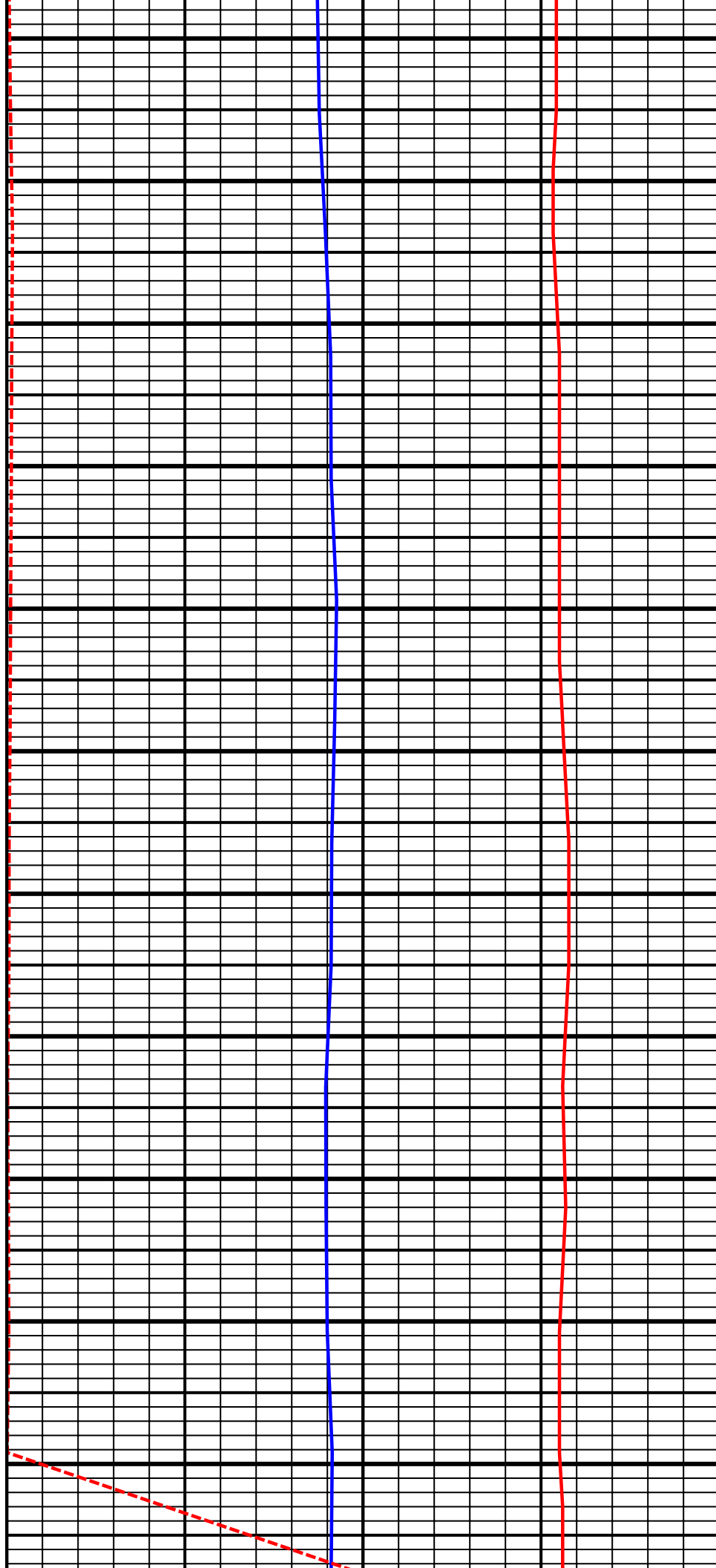
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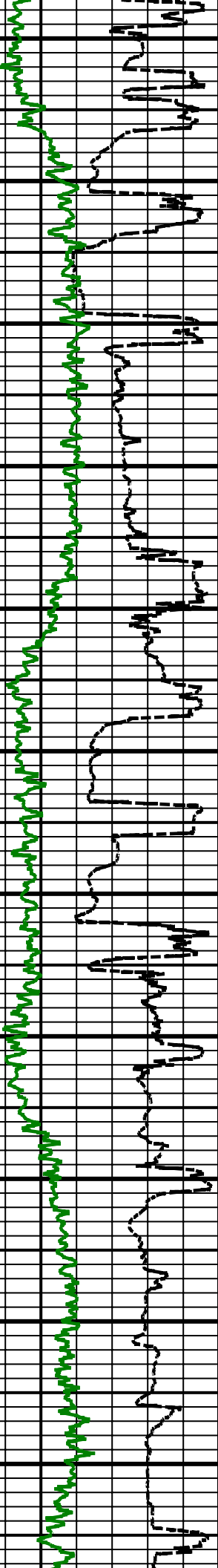
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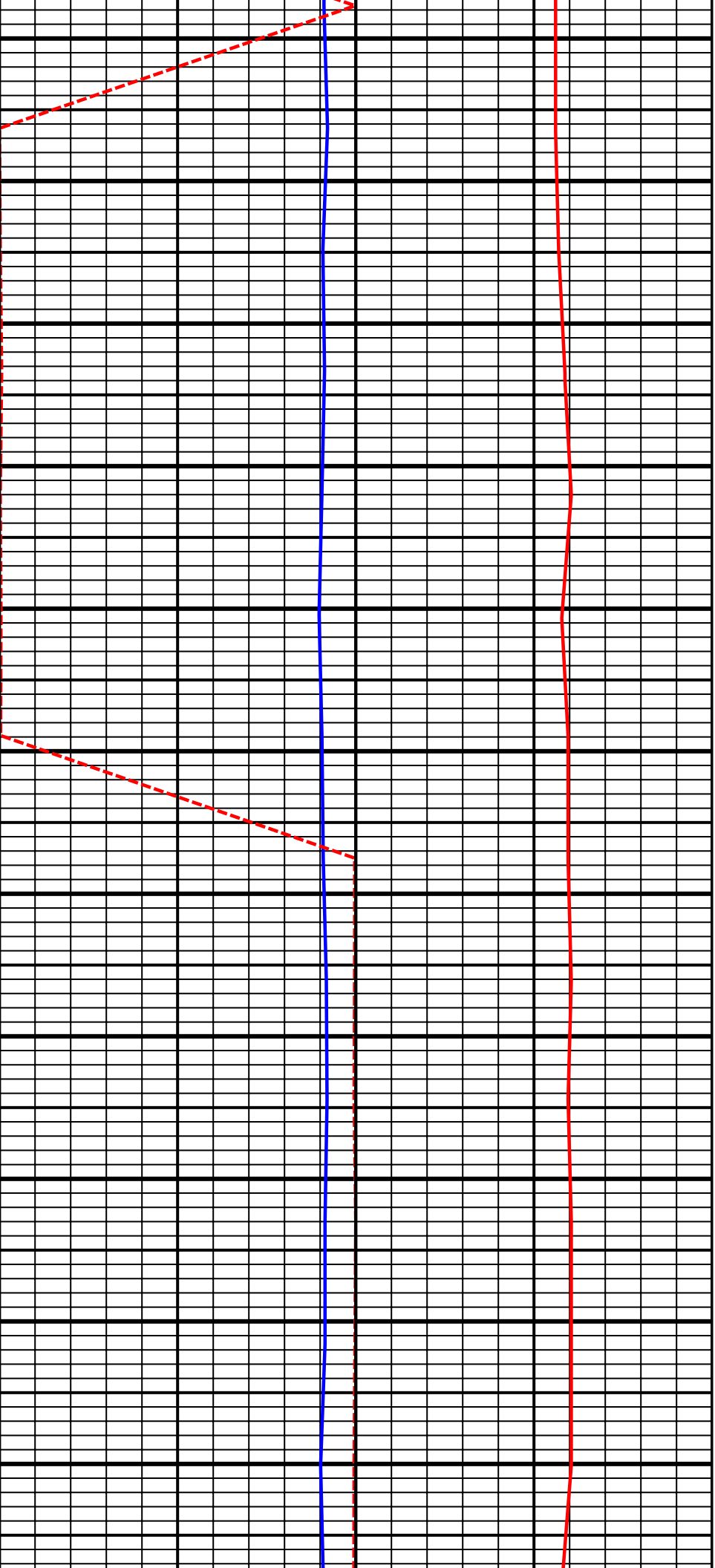
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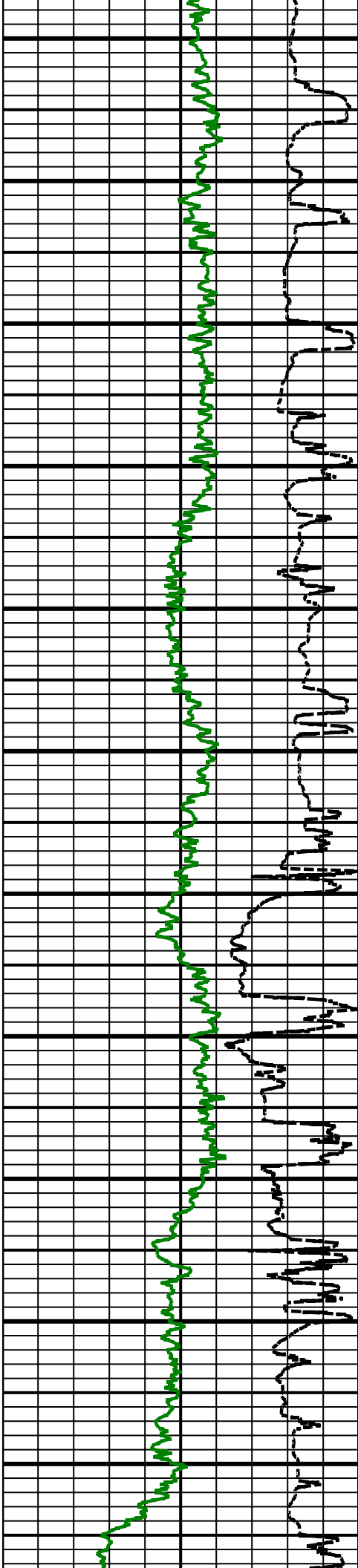
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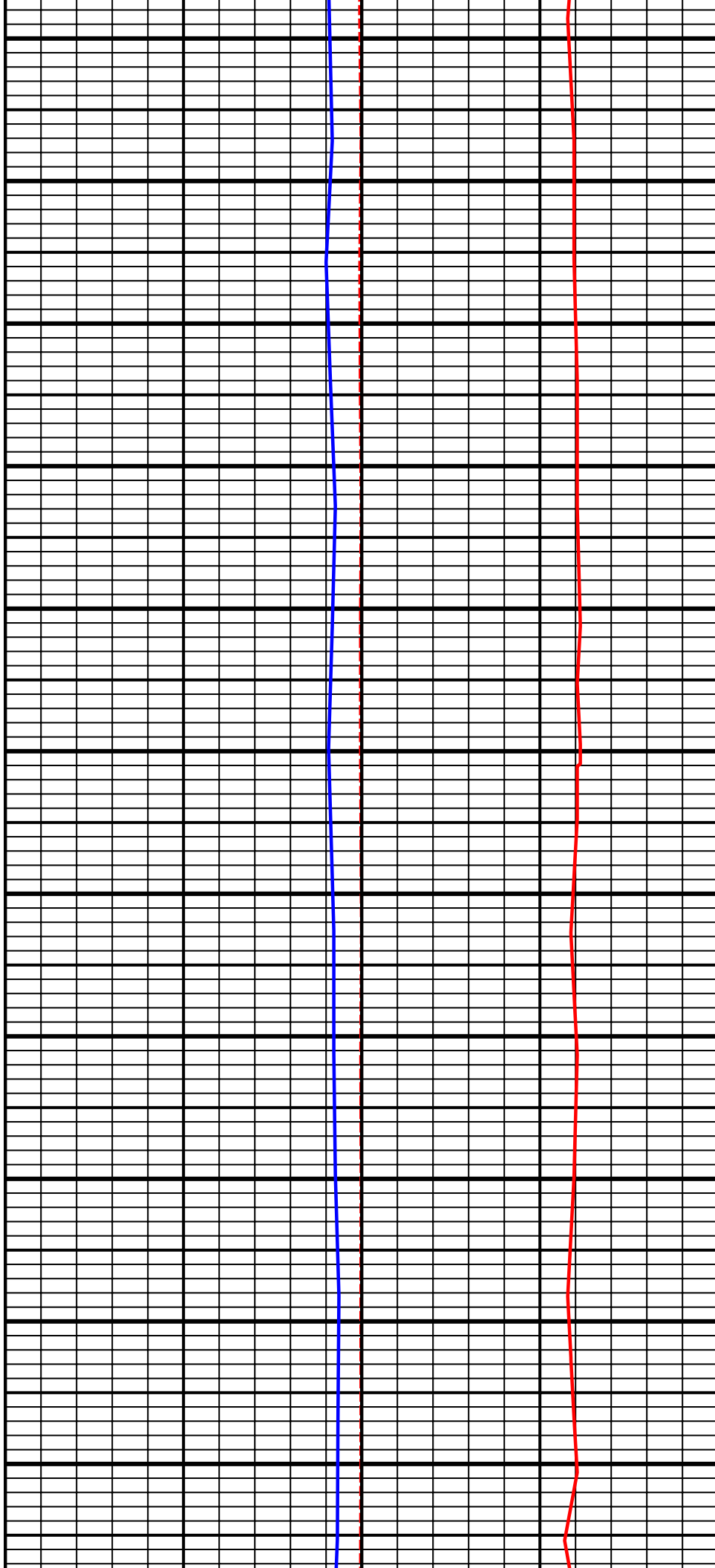
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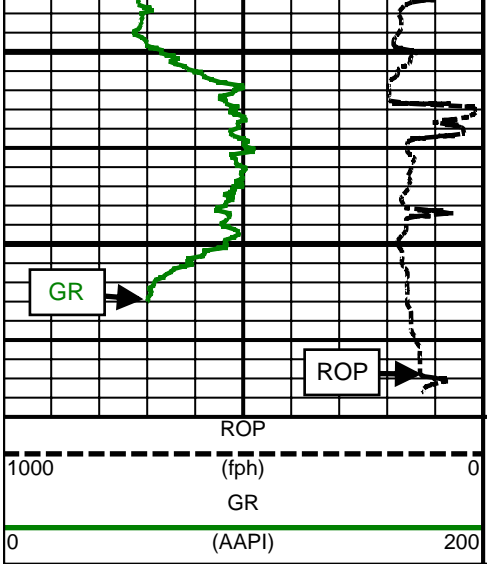
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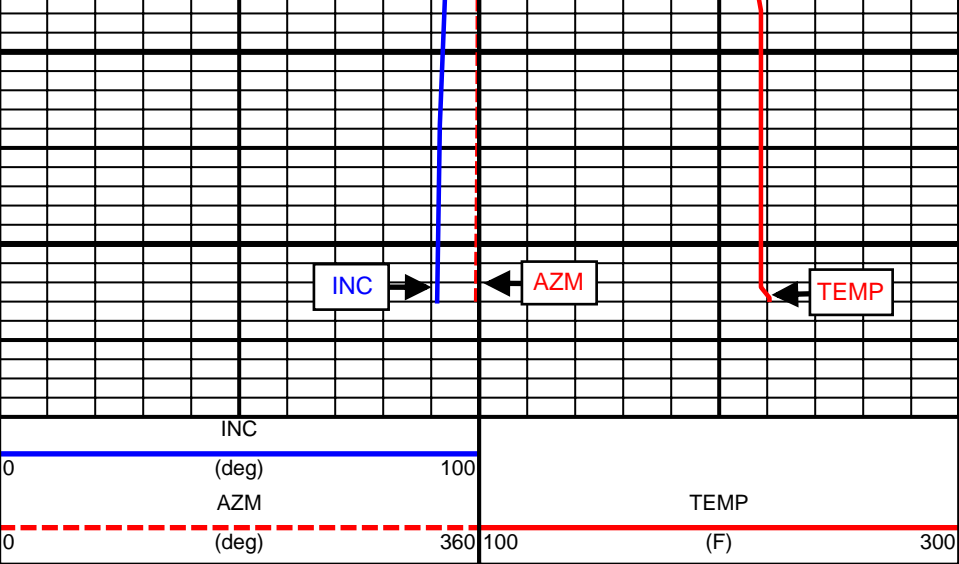
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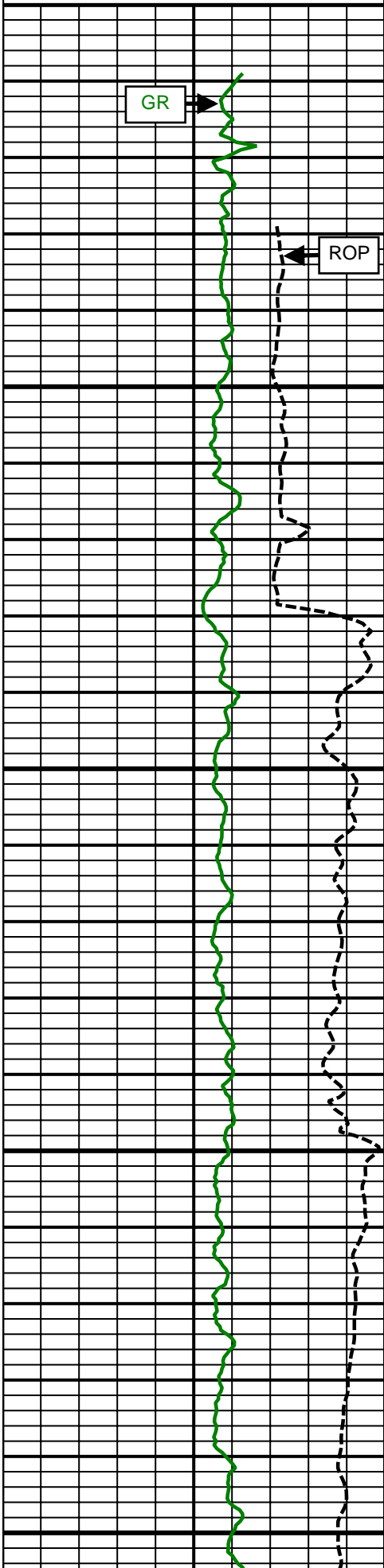
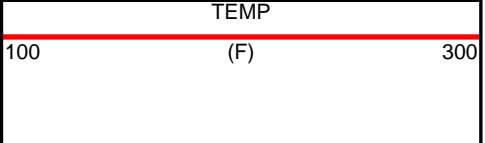
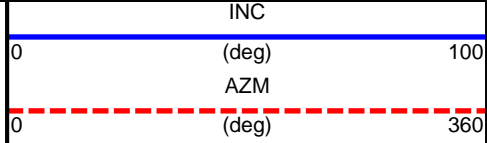
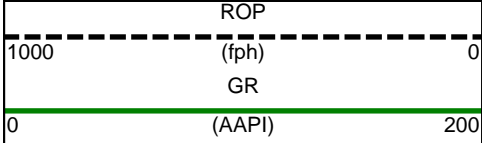


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14600 MD



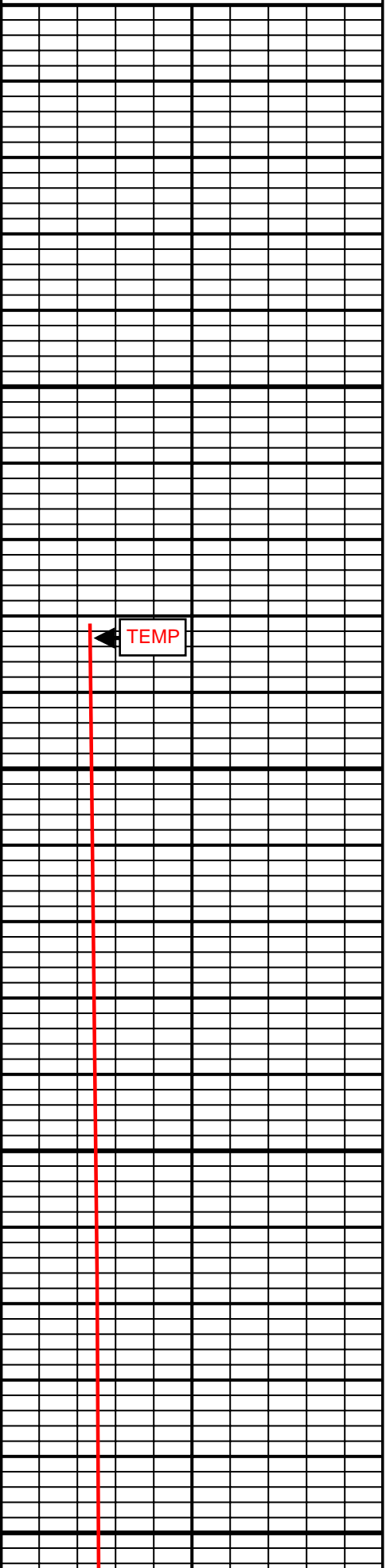
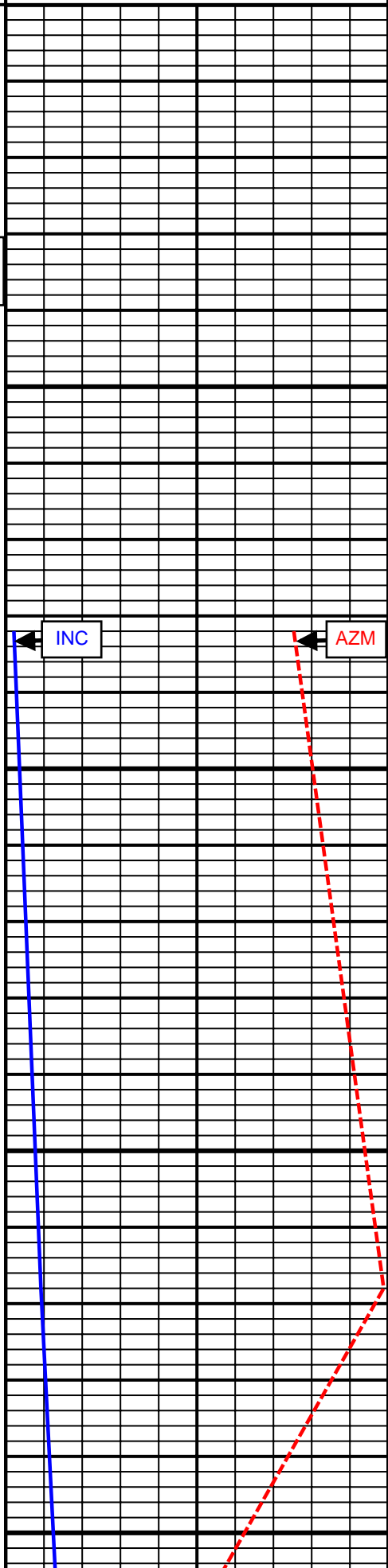
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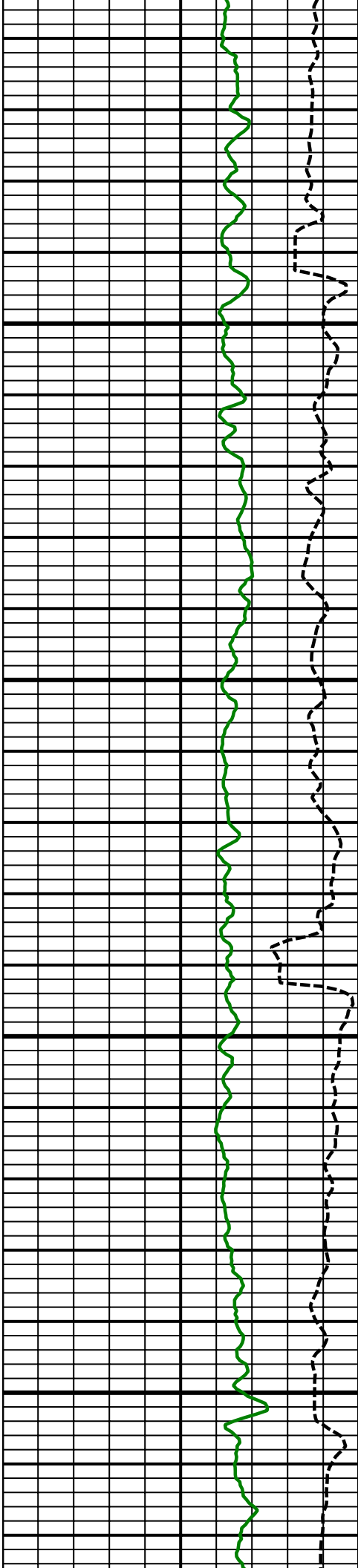


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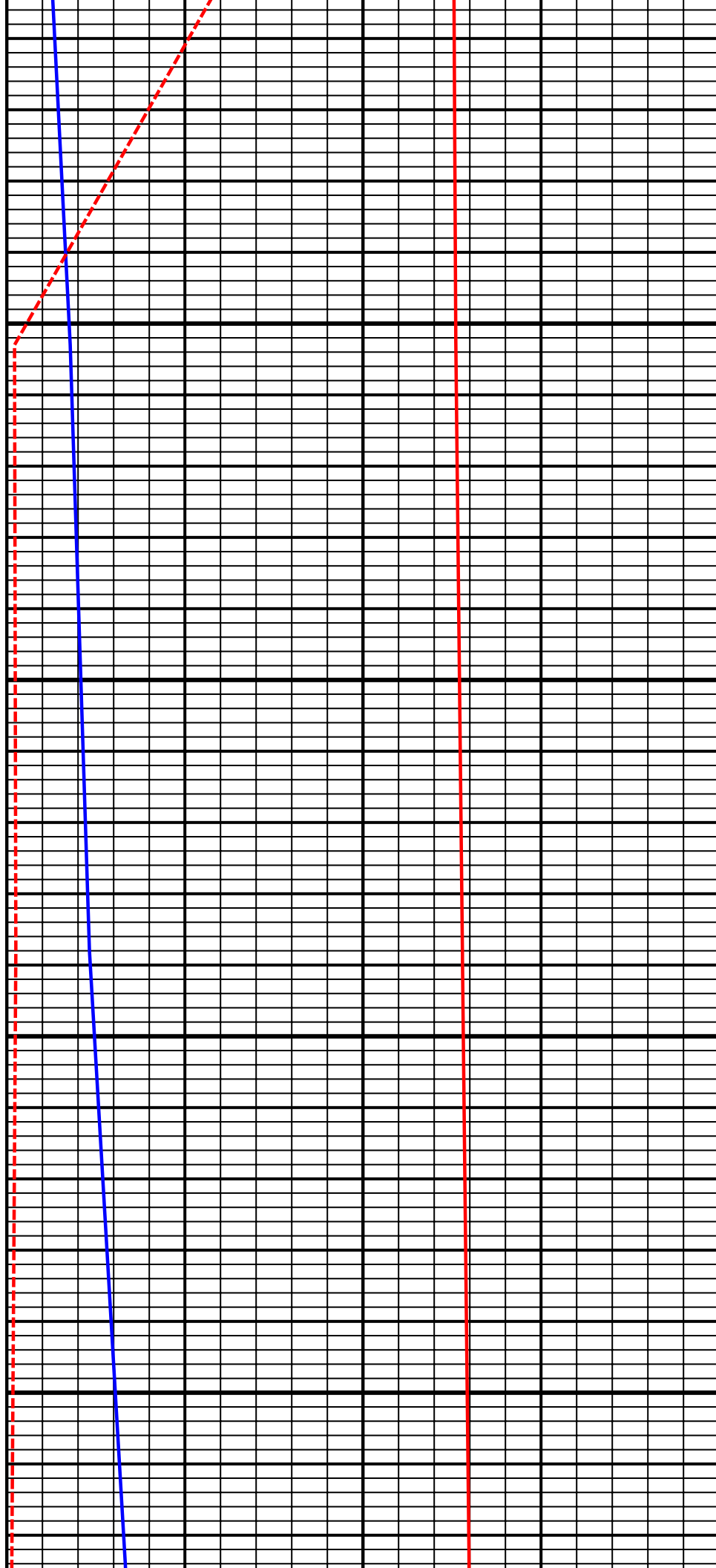
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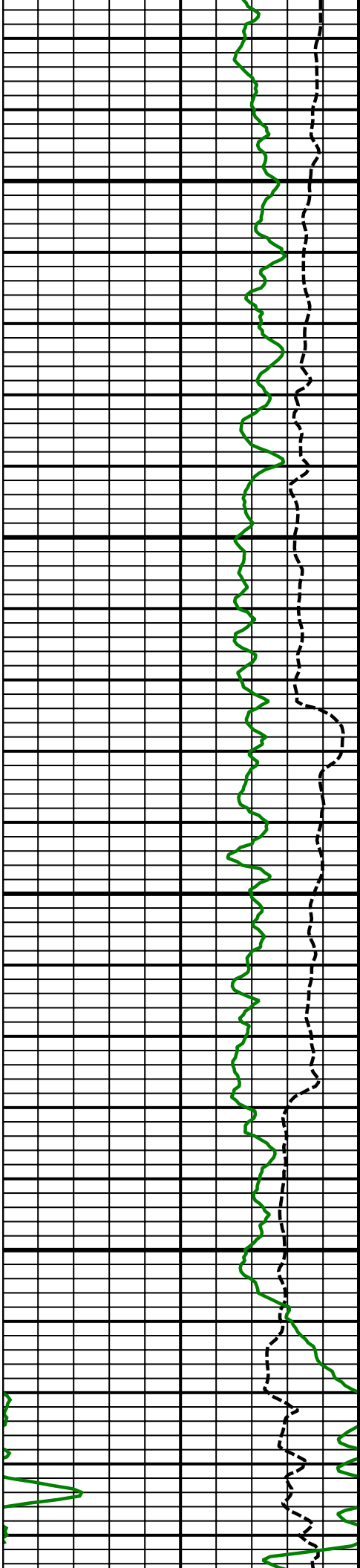




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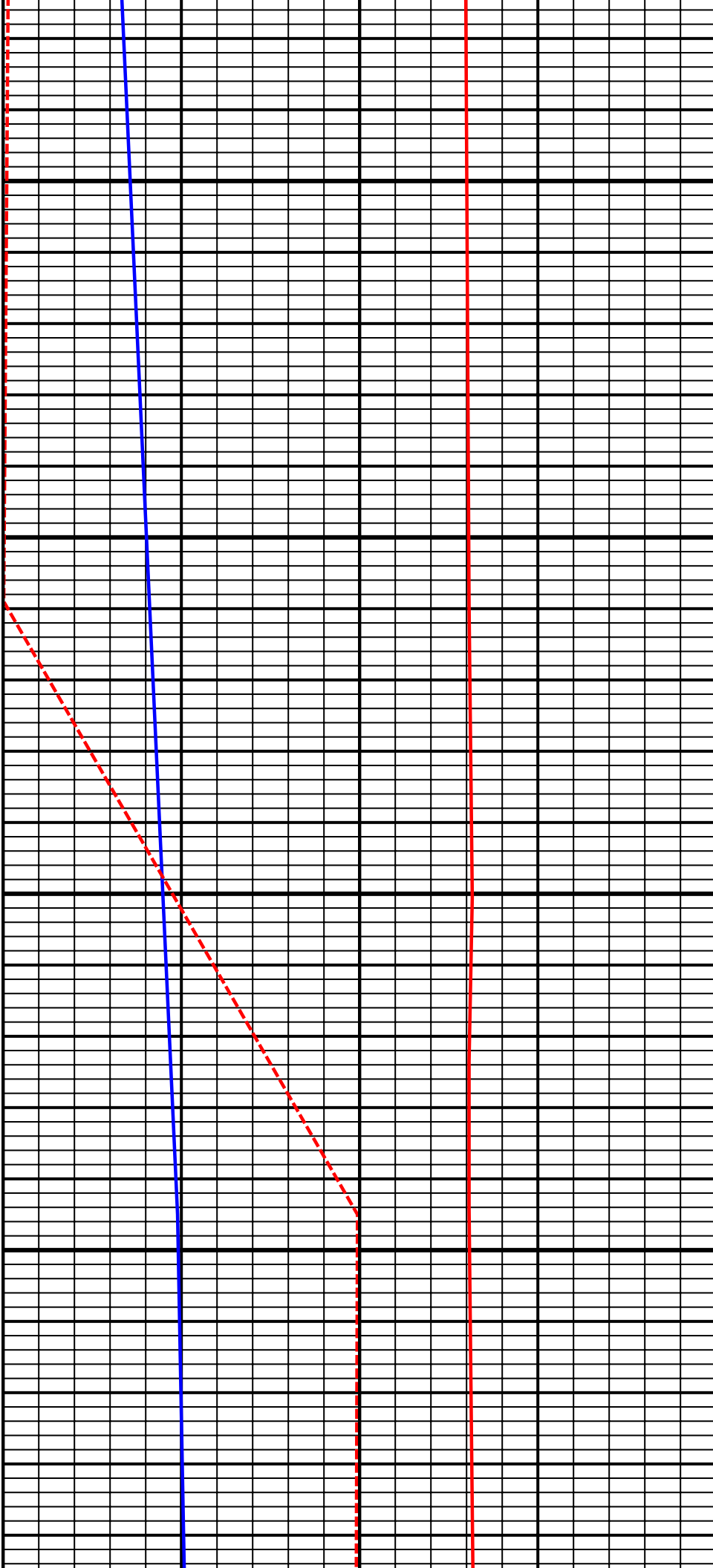
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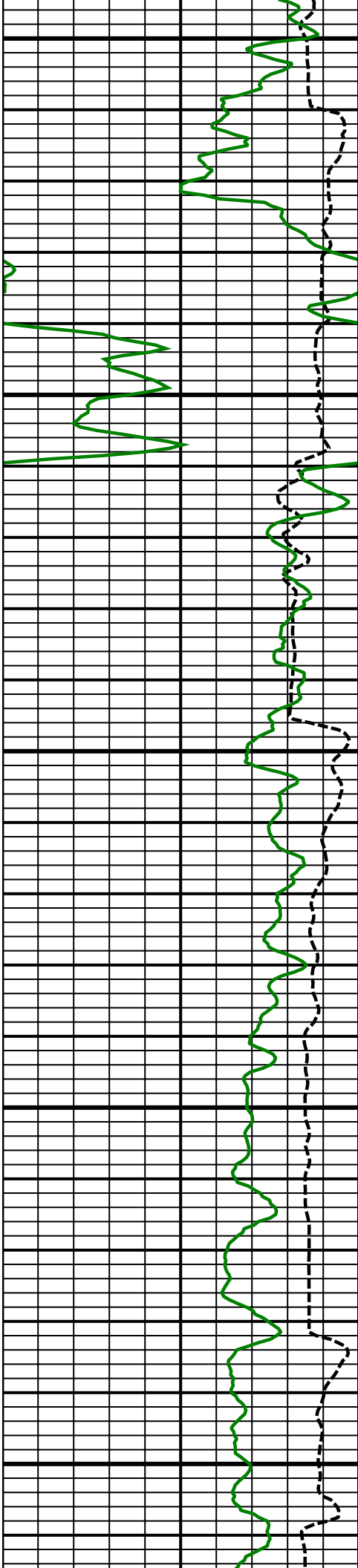




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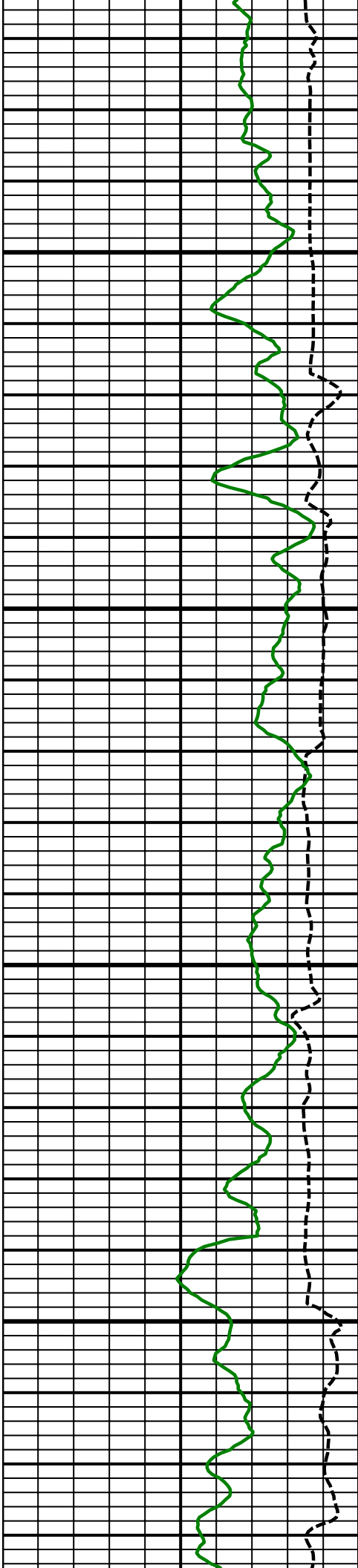


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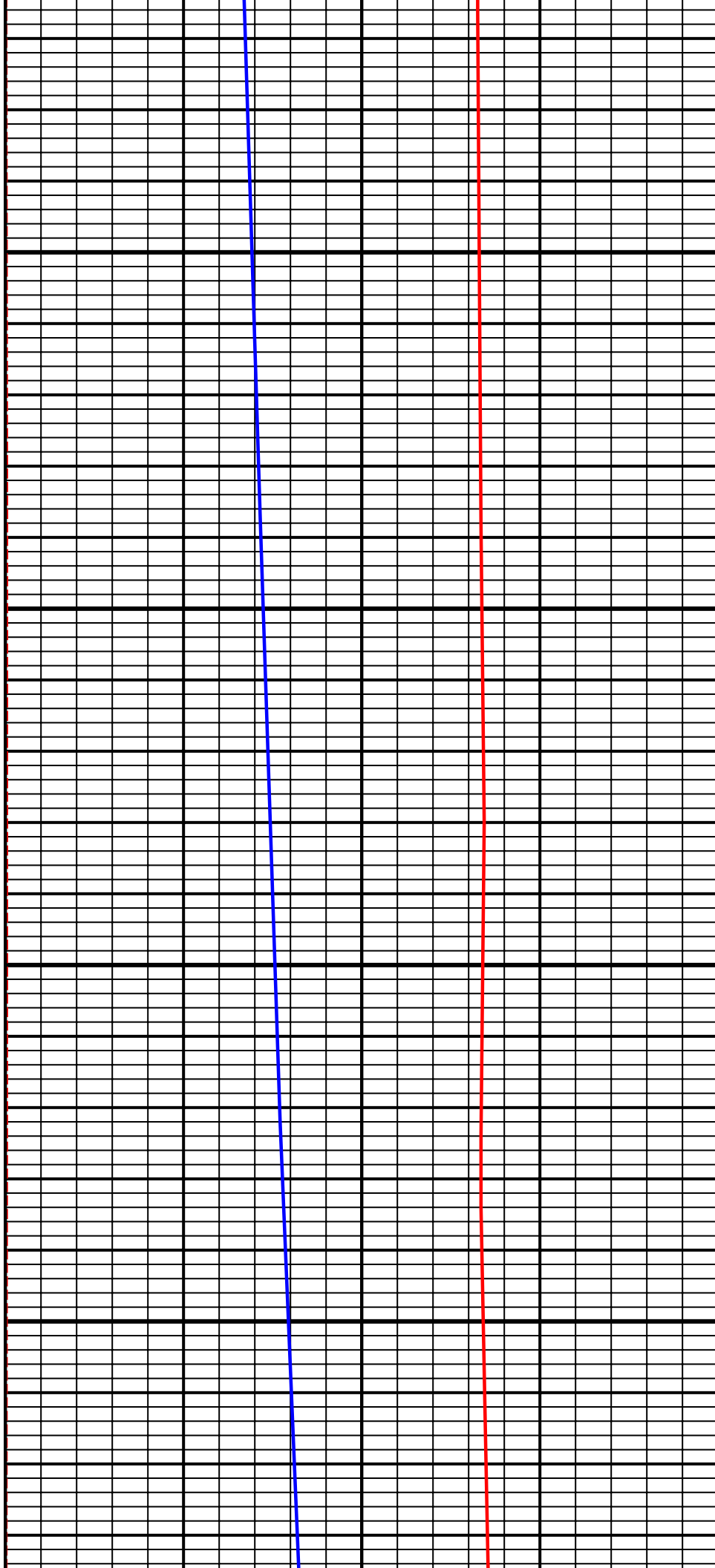
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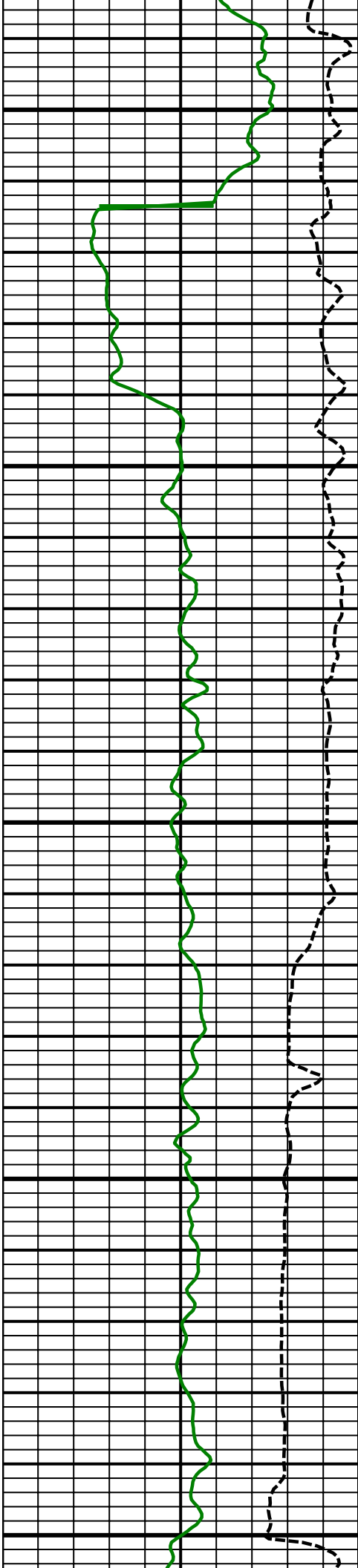




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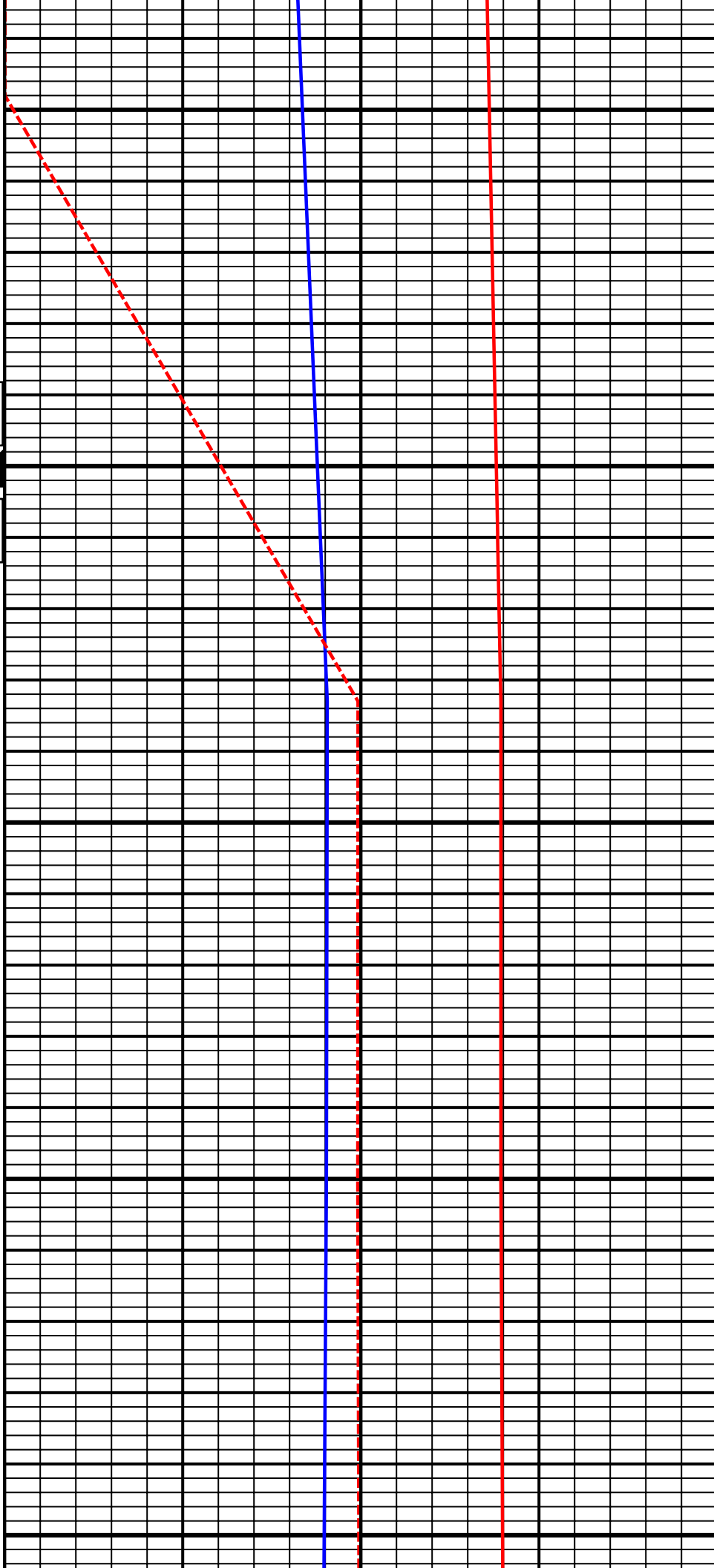


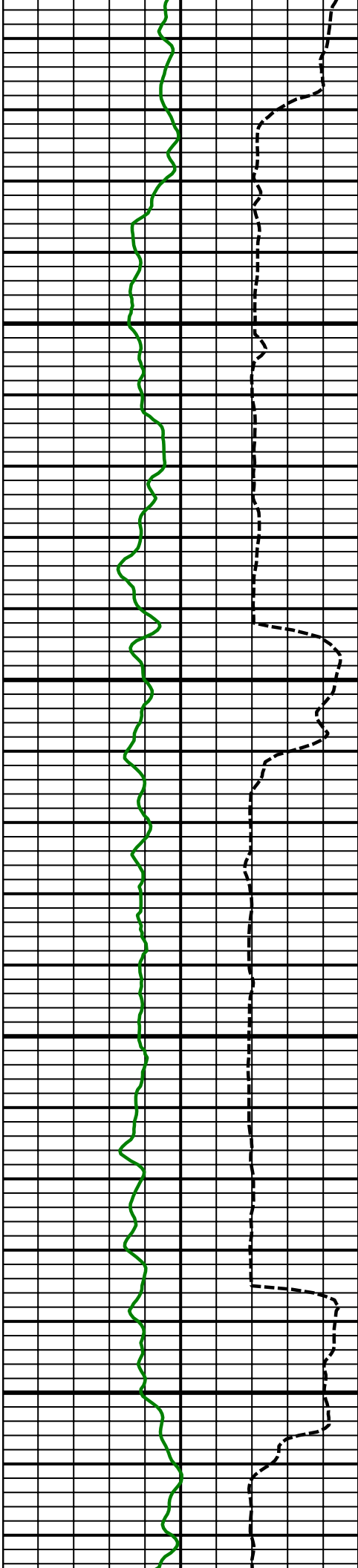
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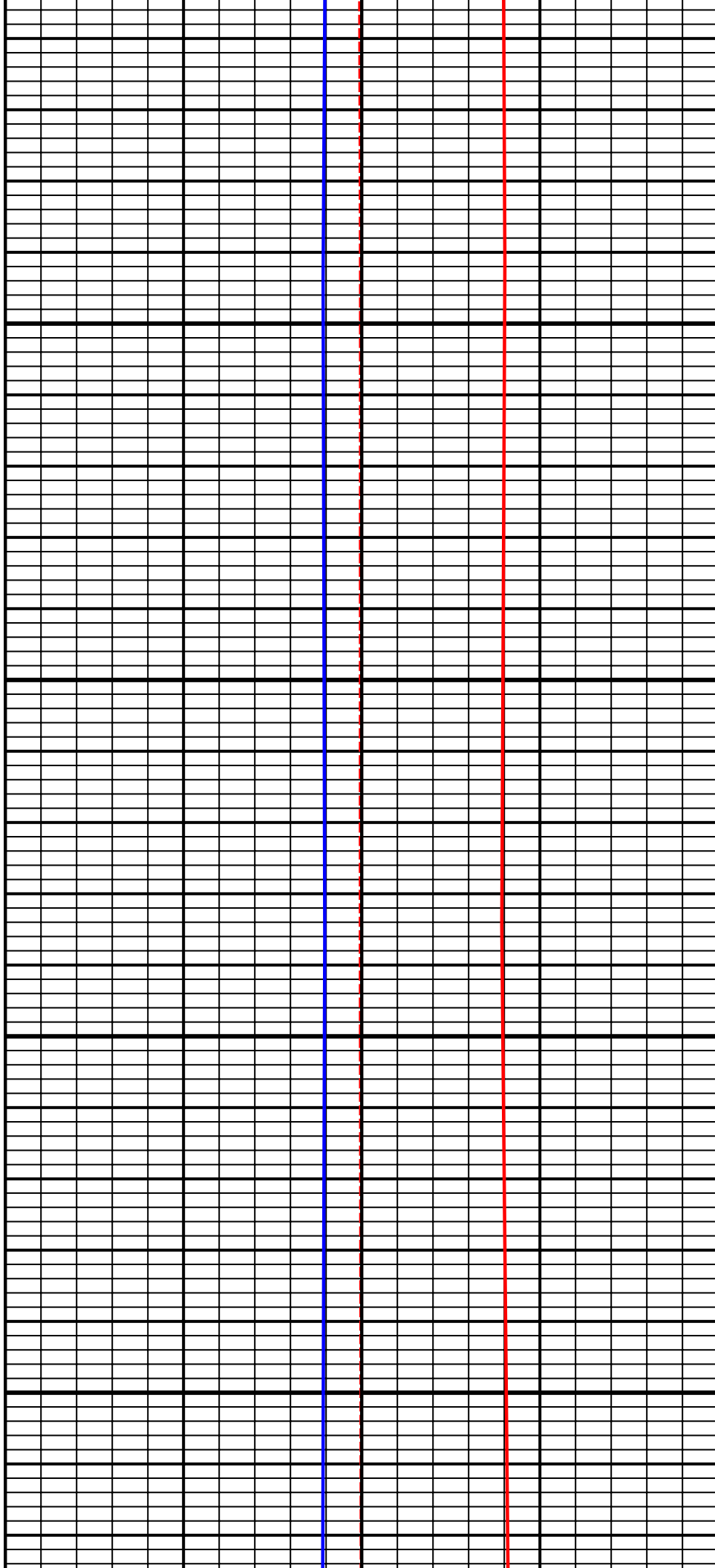
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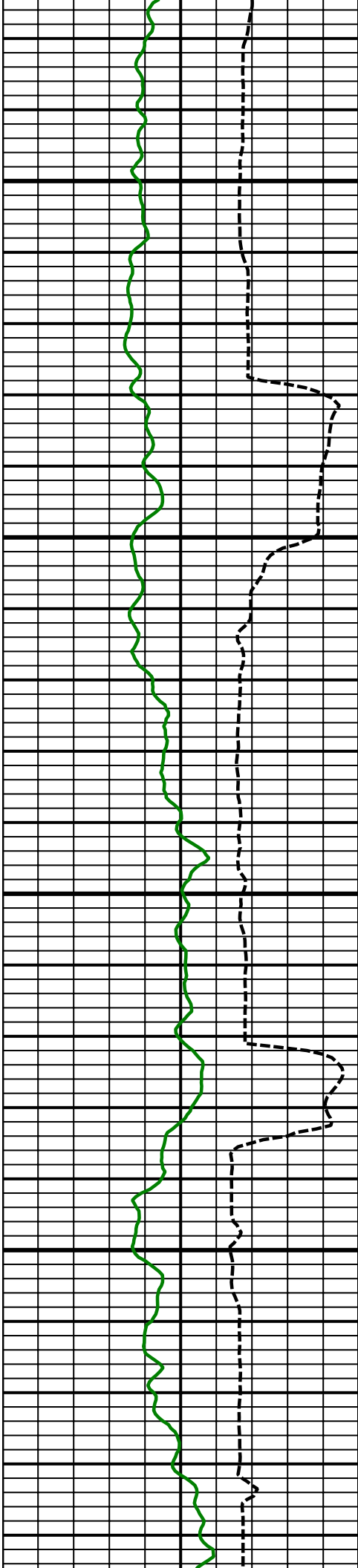




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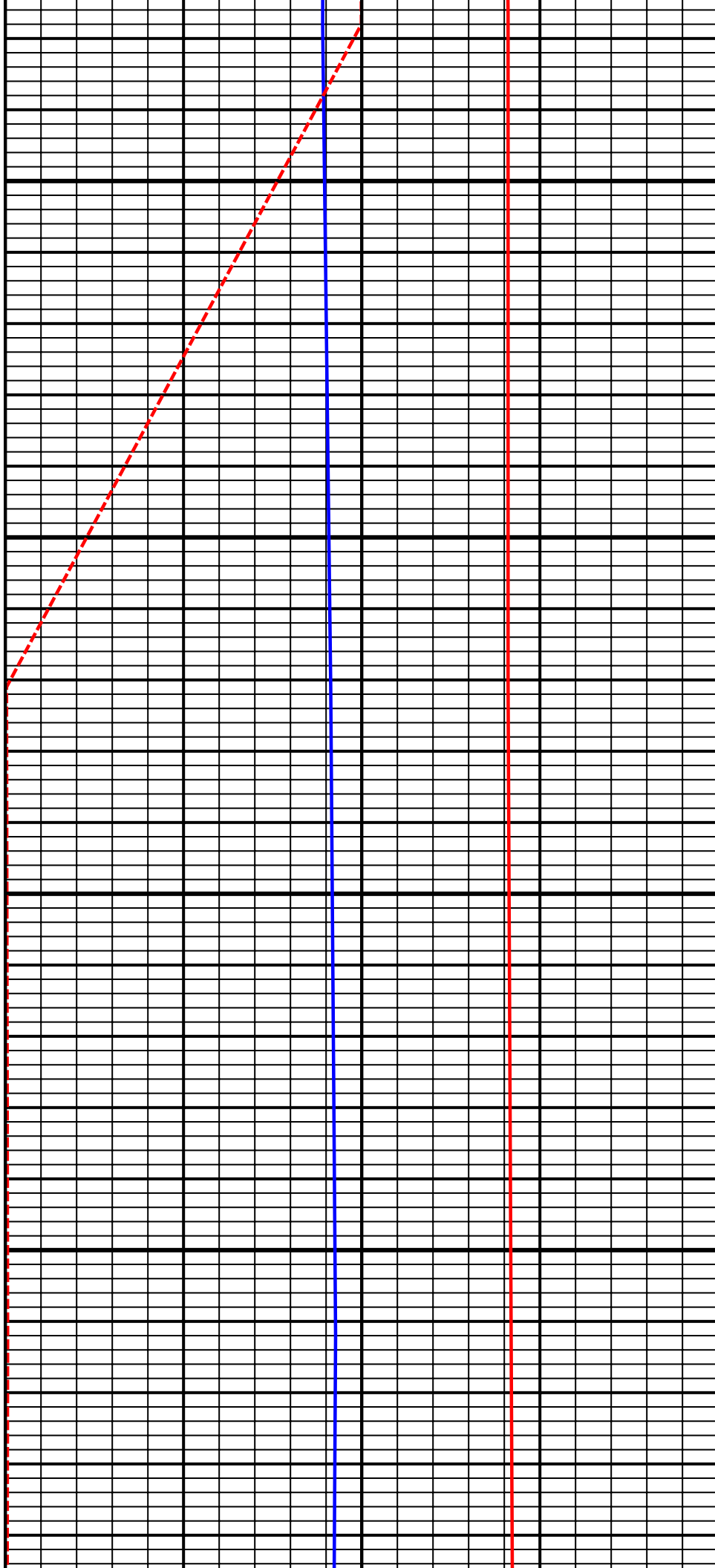
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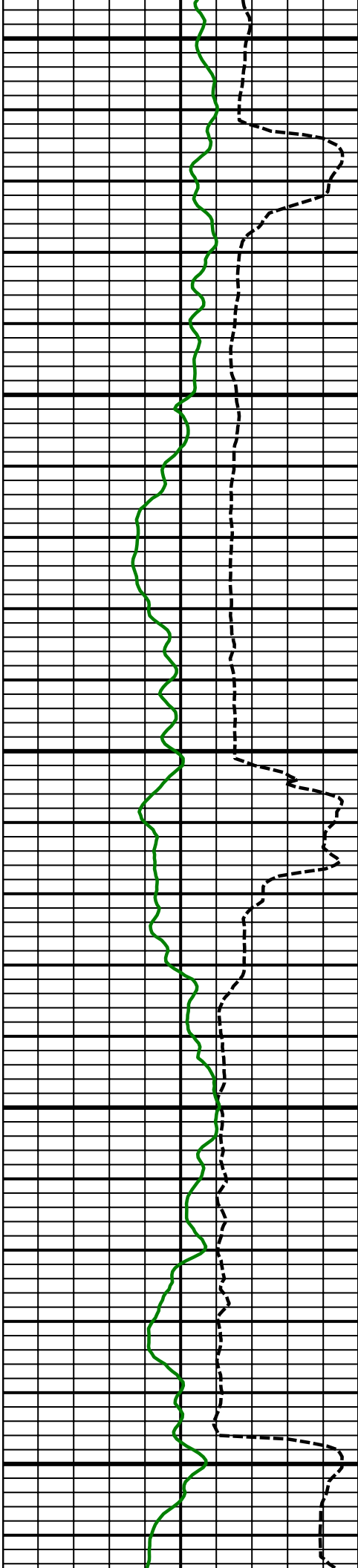




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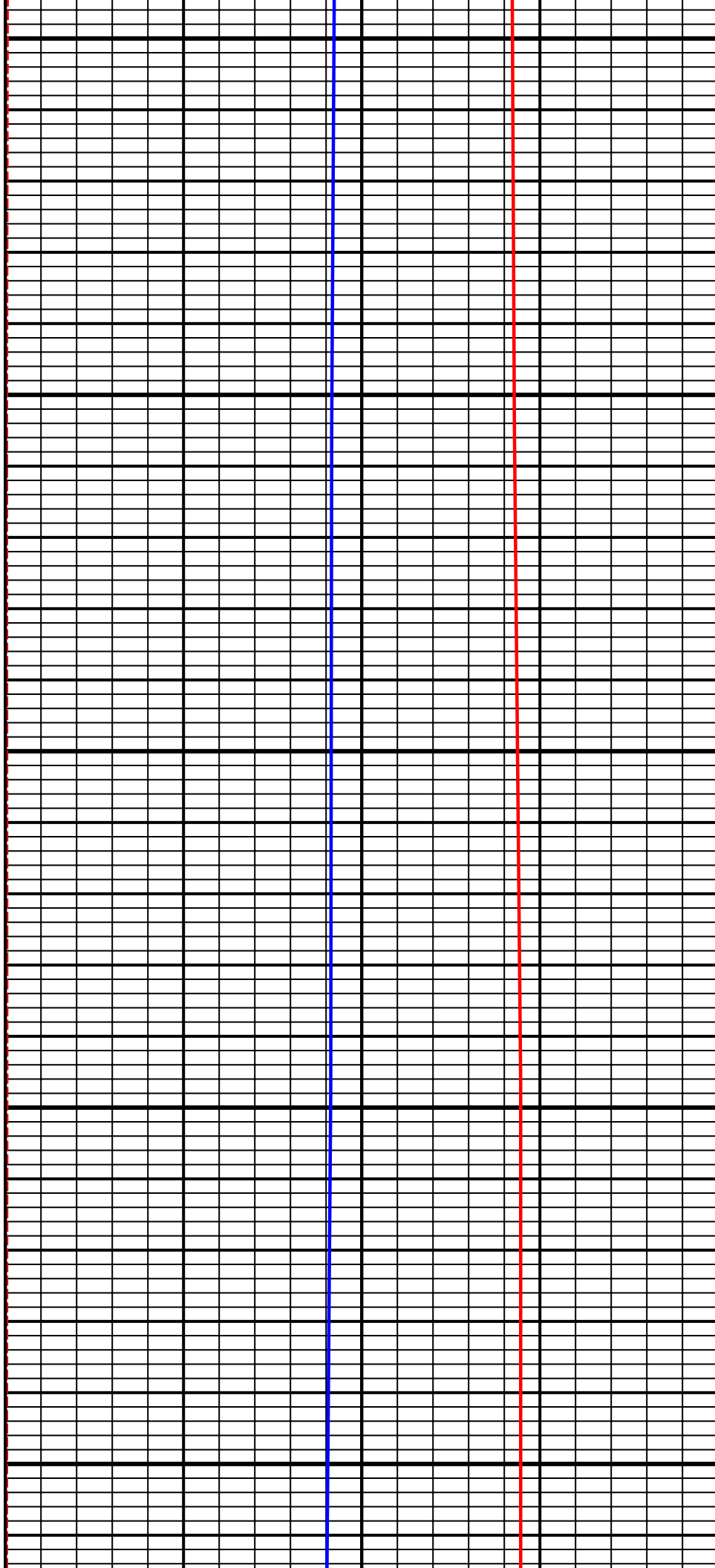


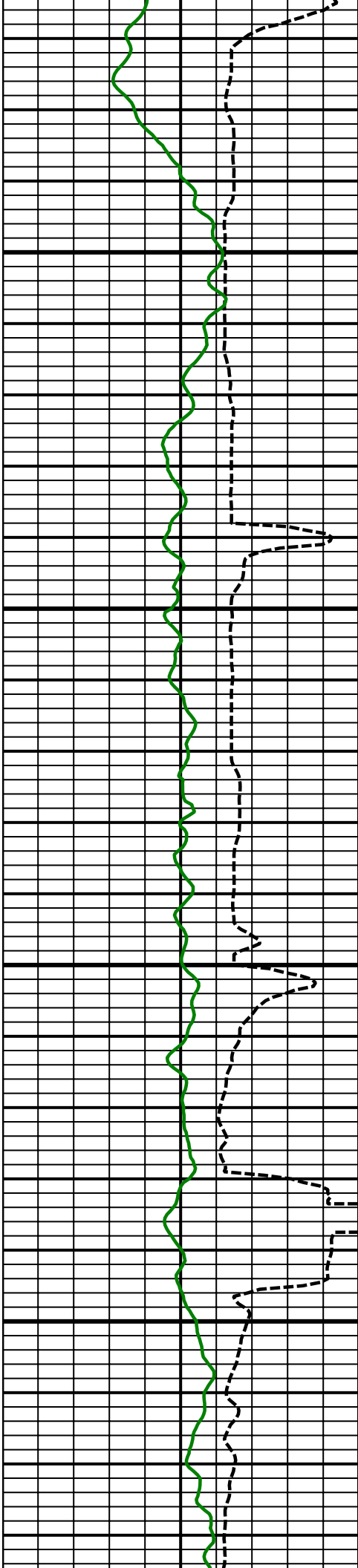


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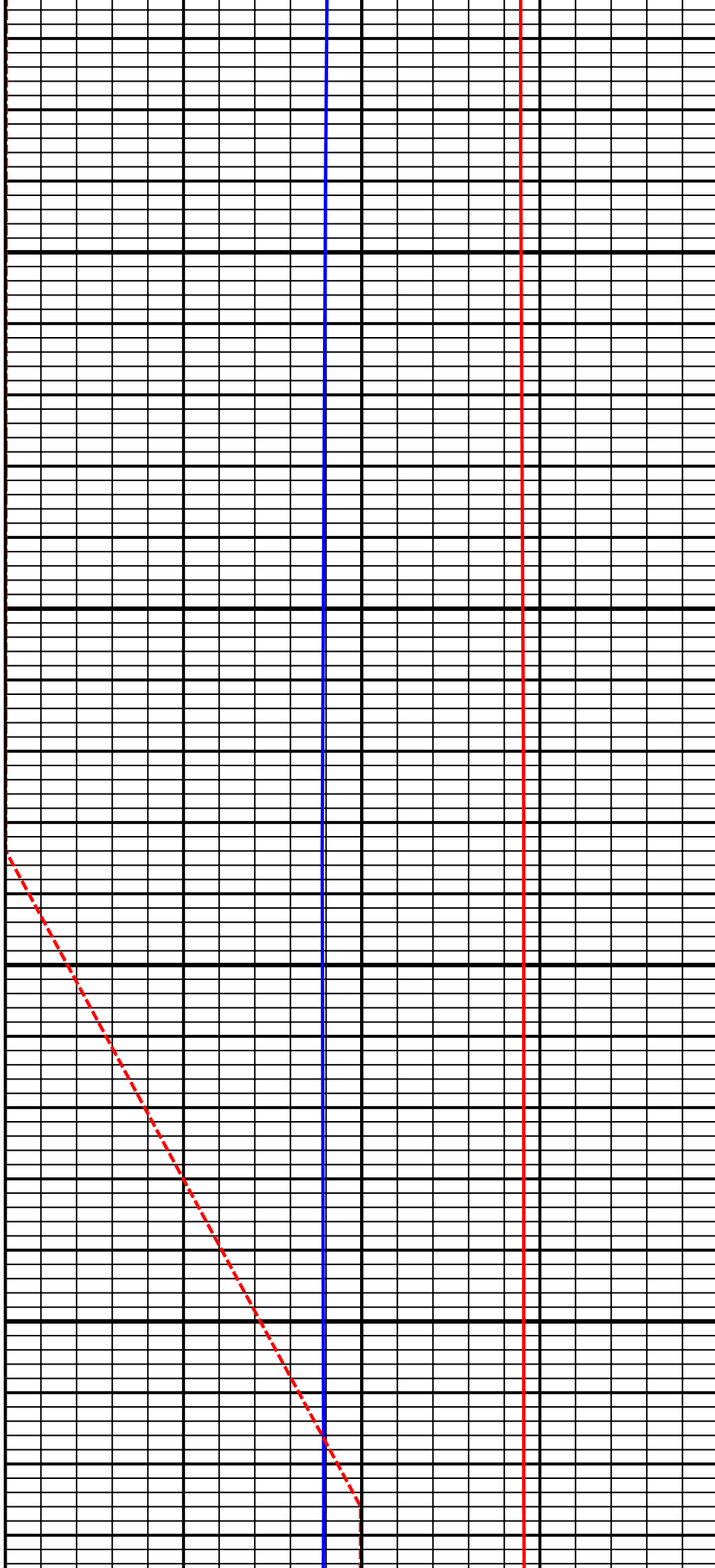
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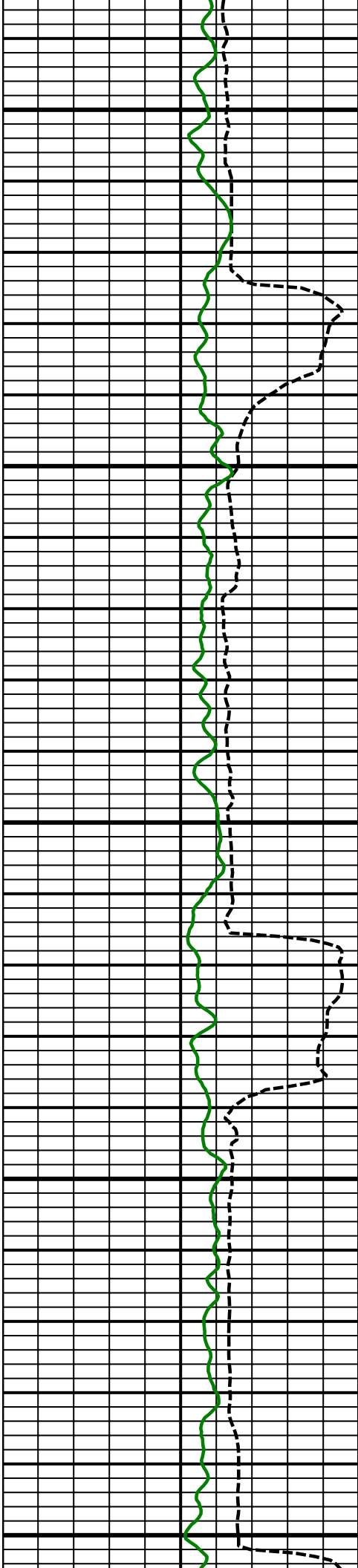




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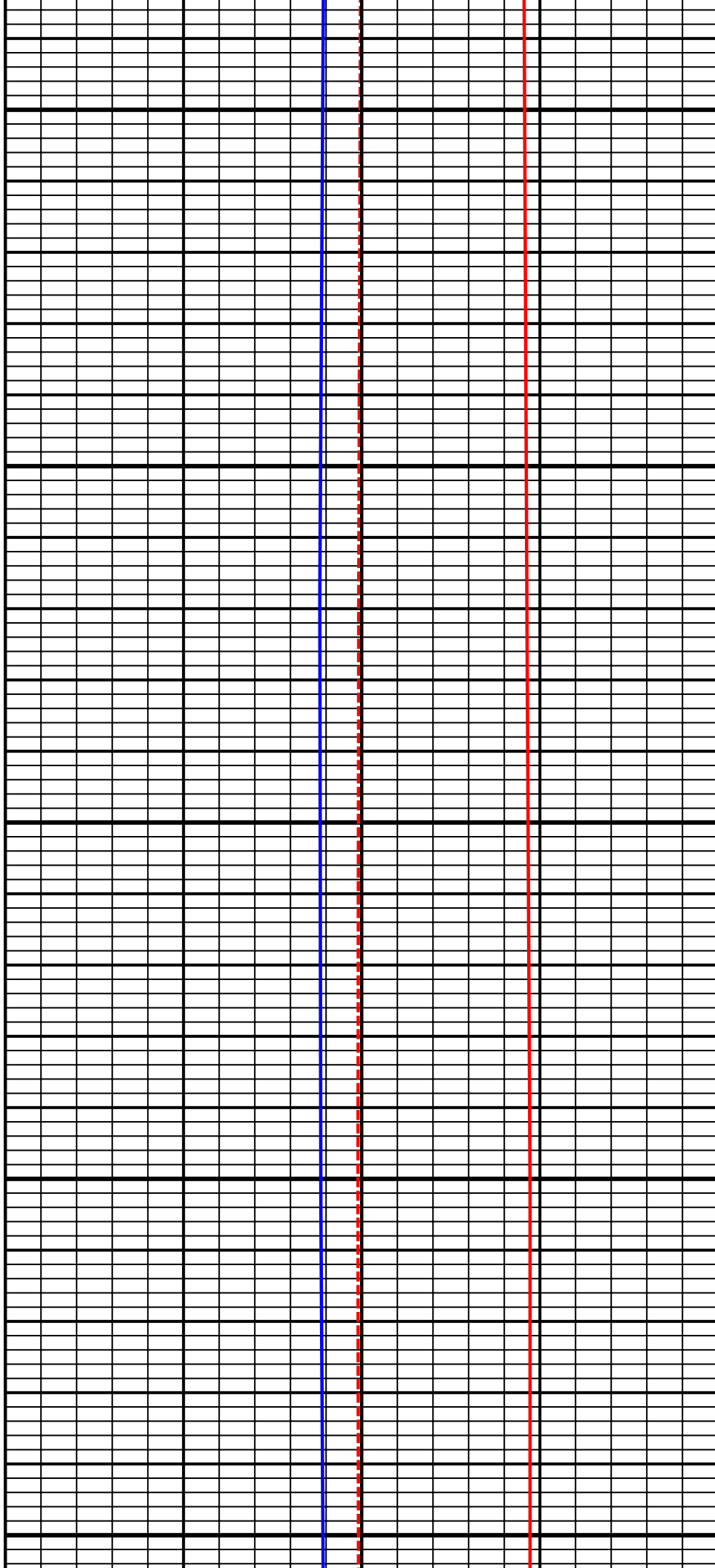
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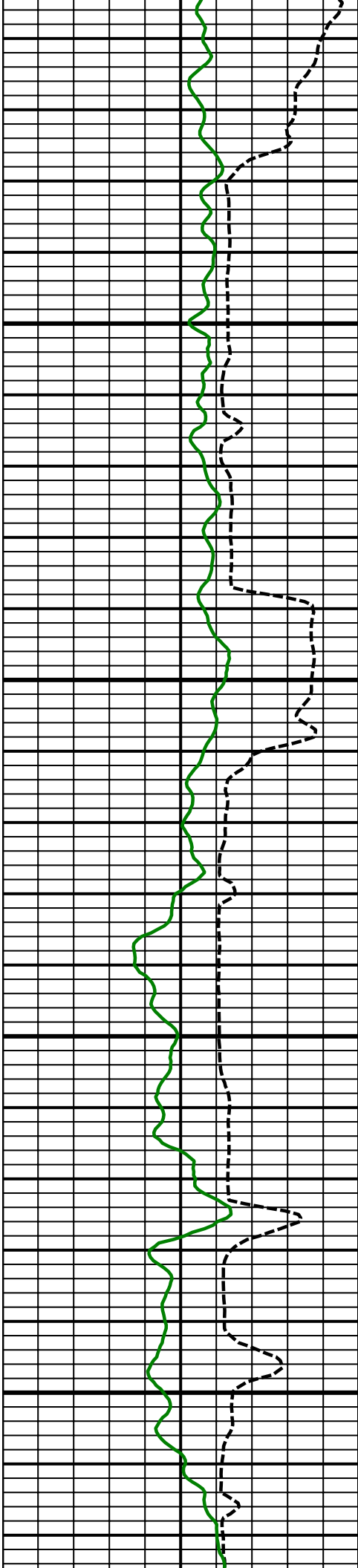




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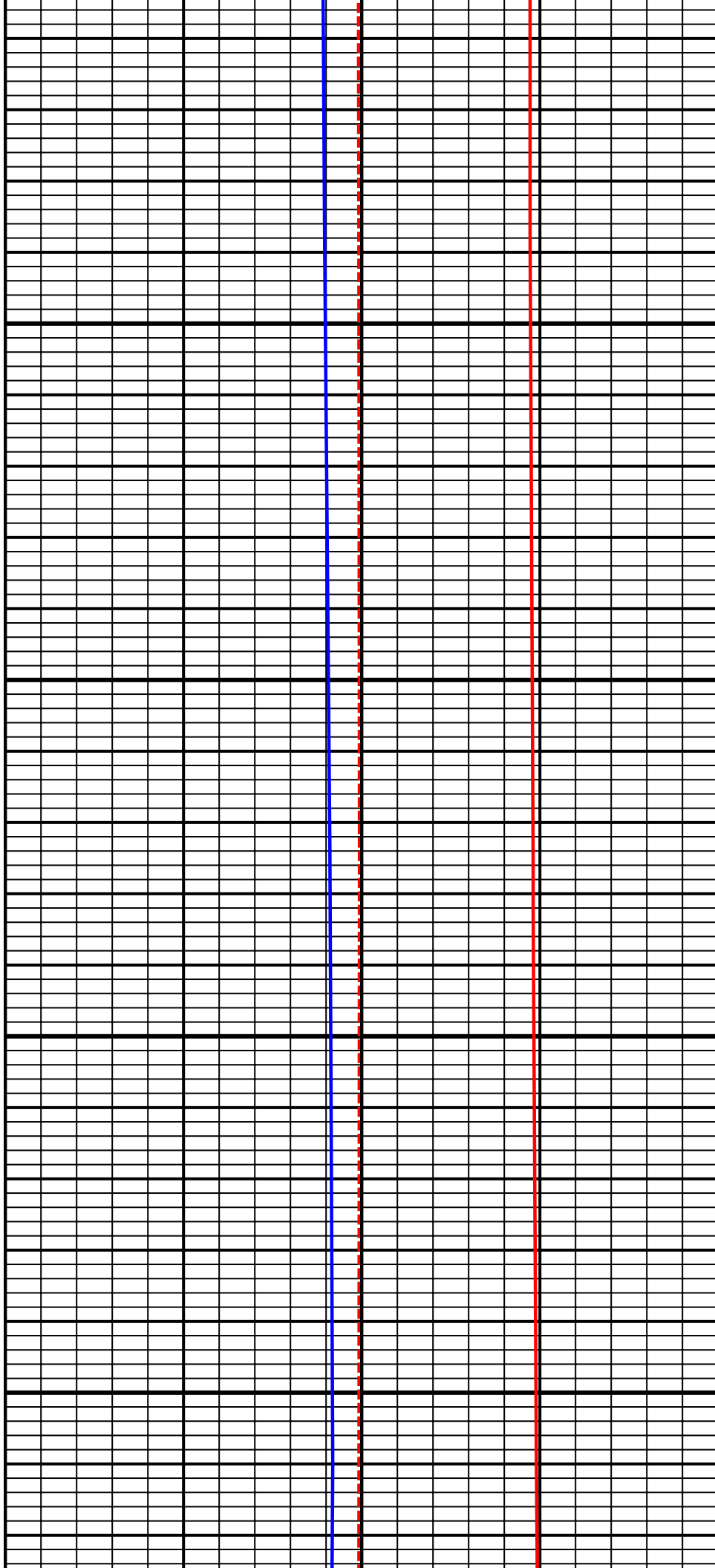
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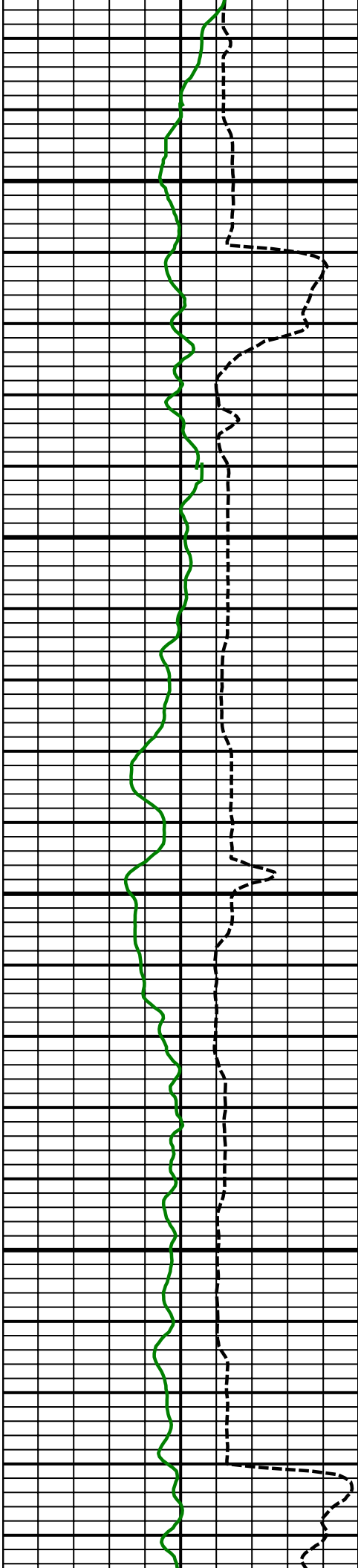




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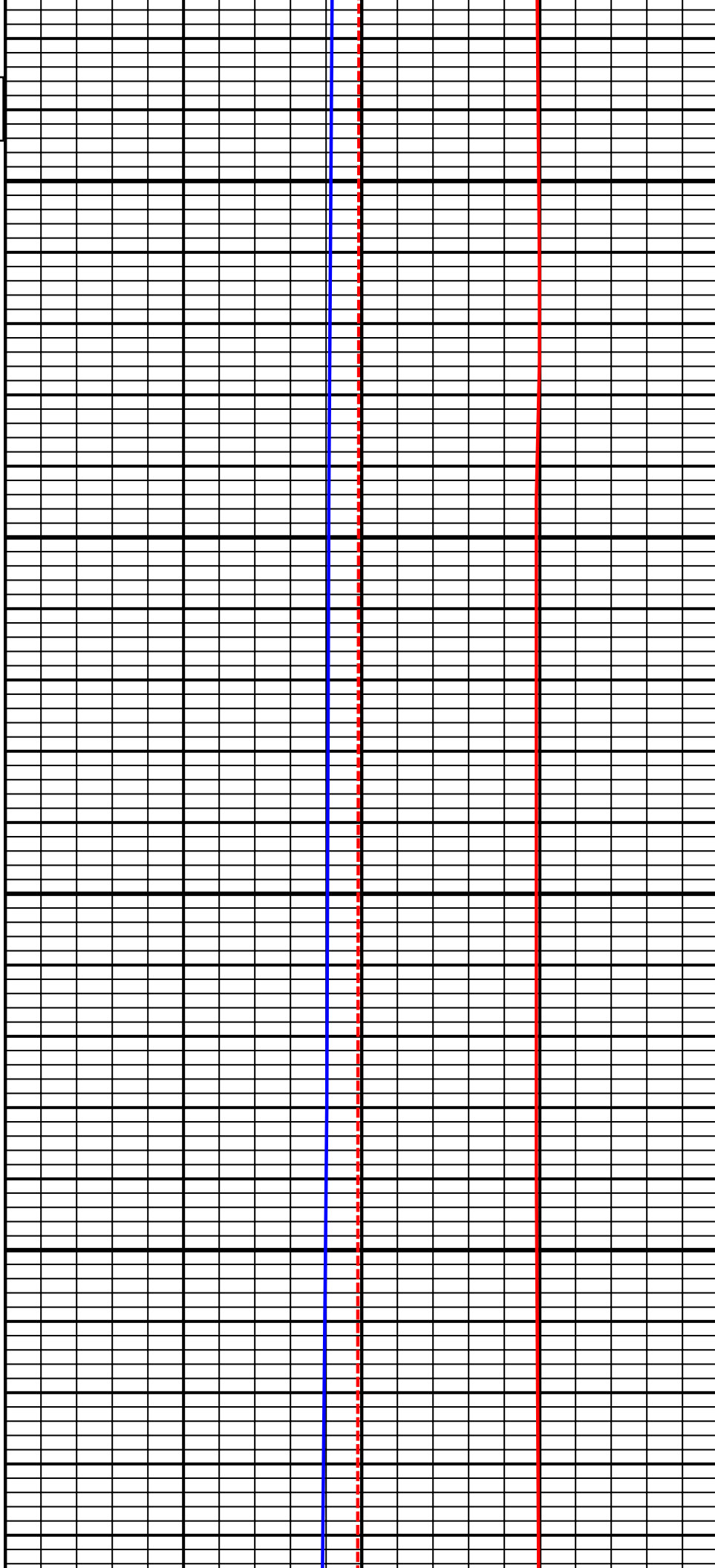


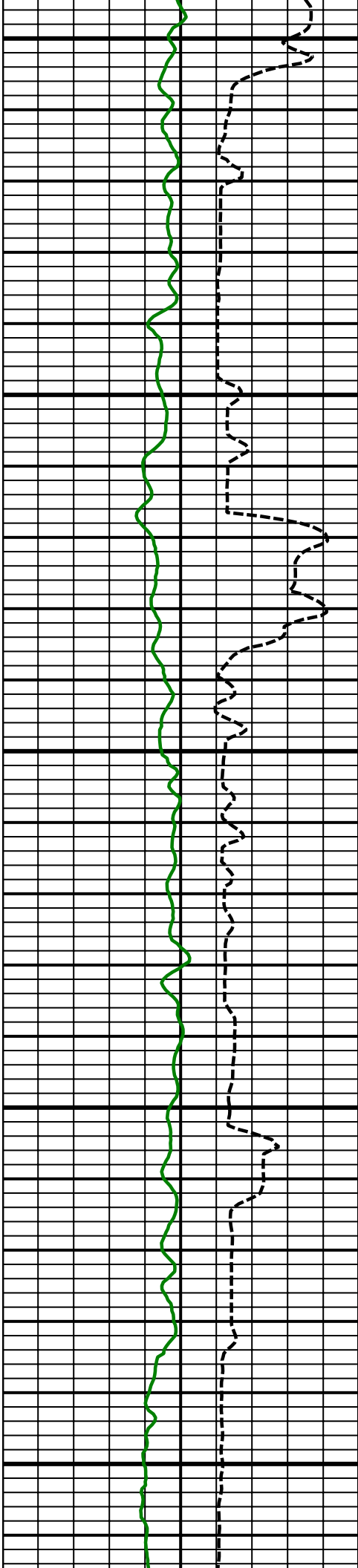


Comment  
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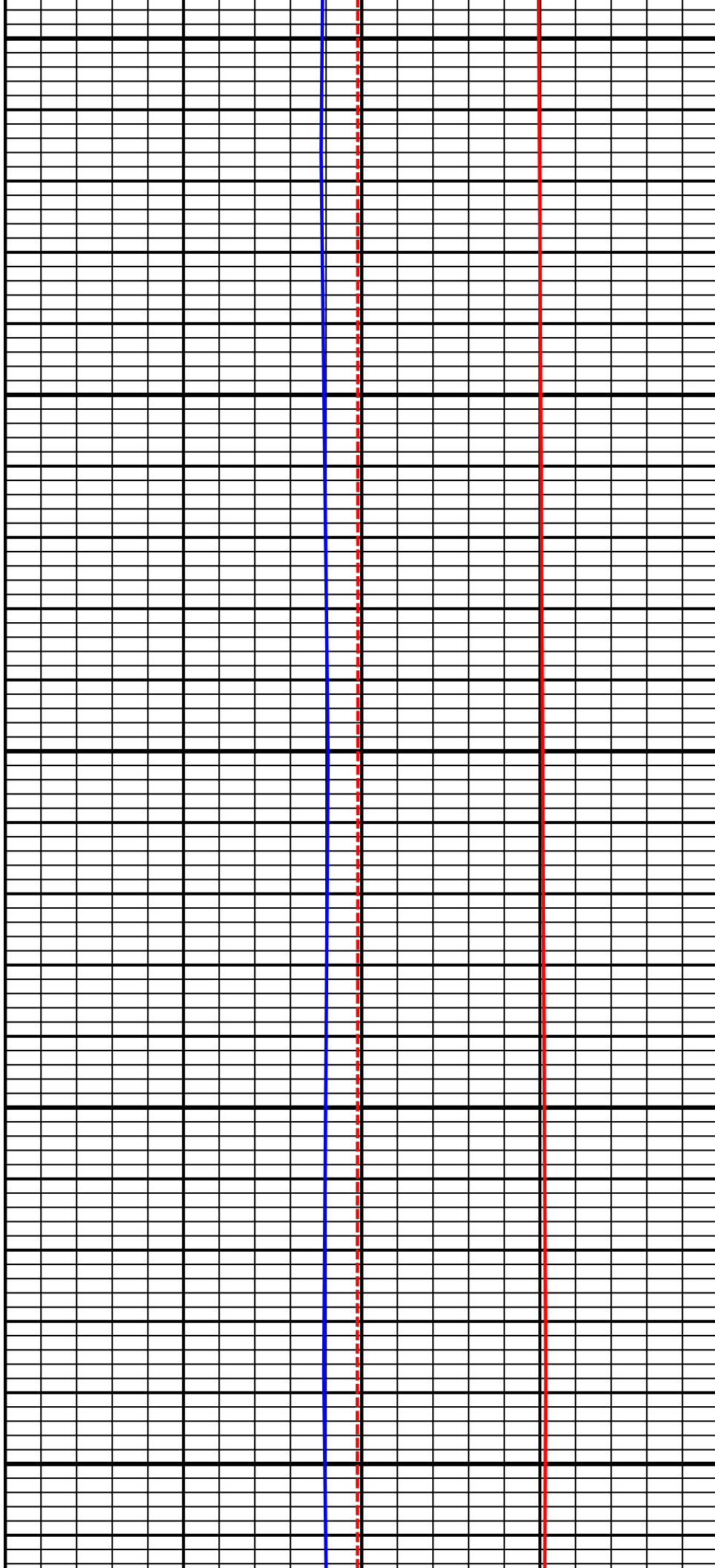


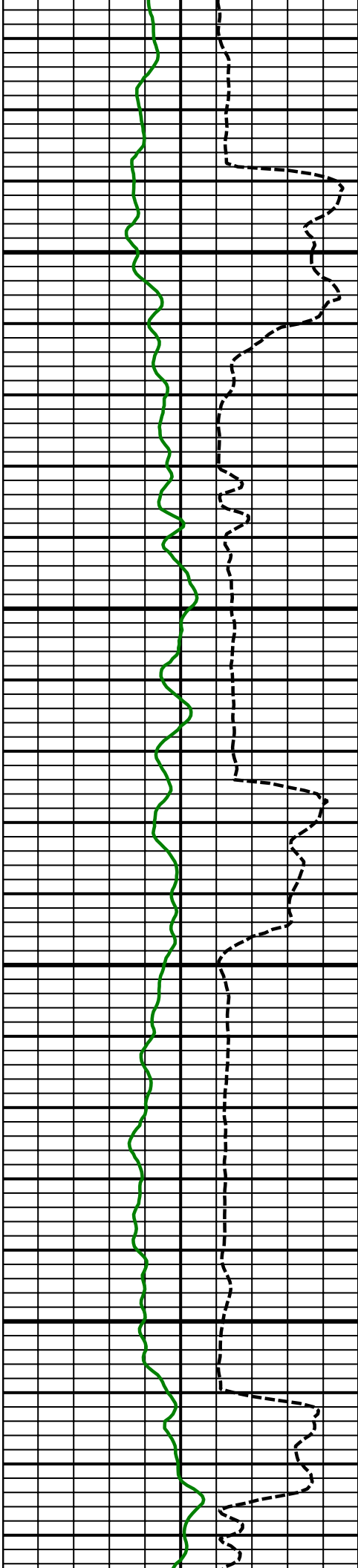


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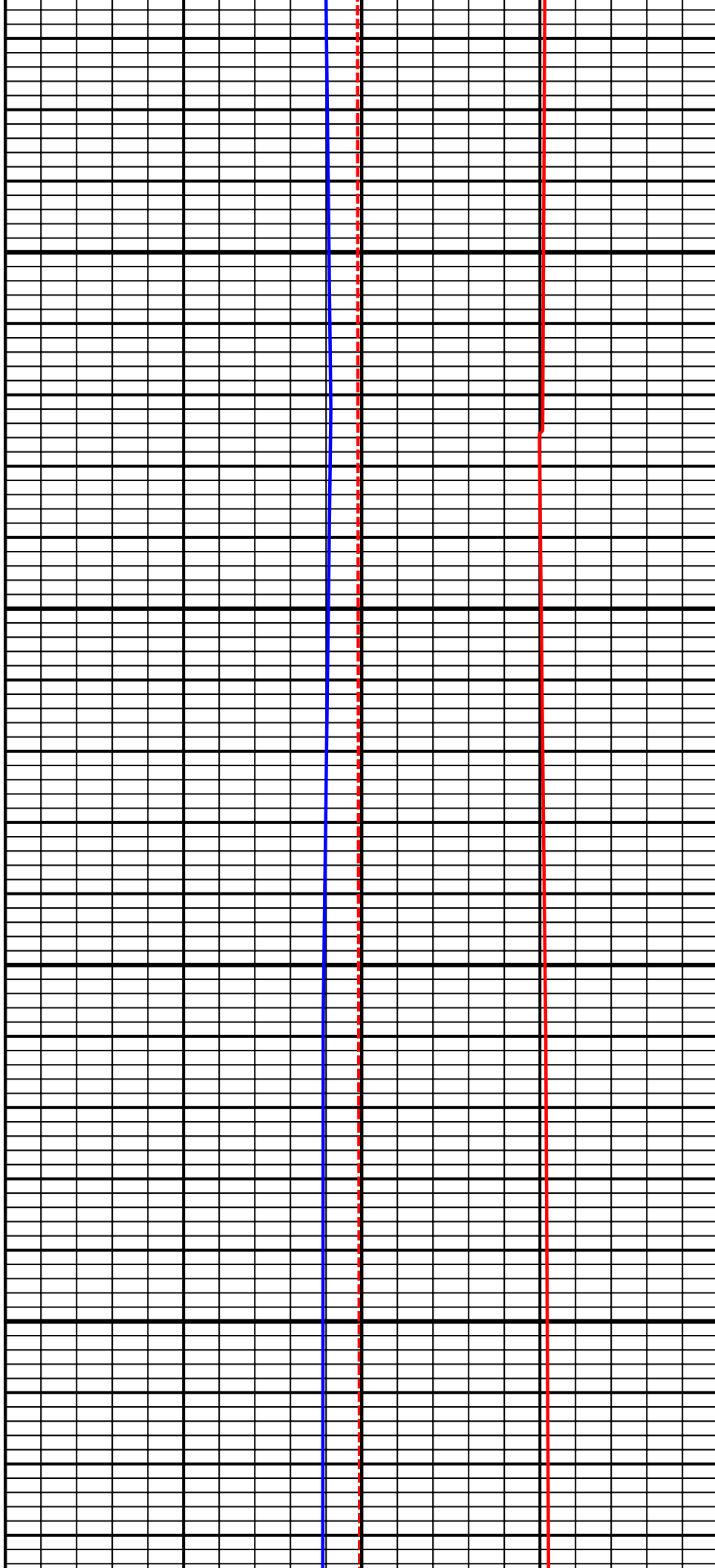
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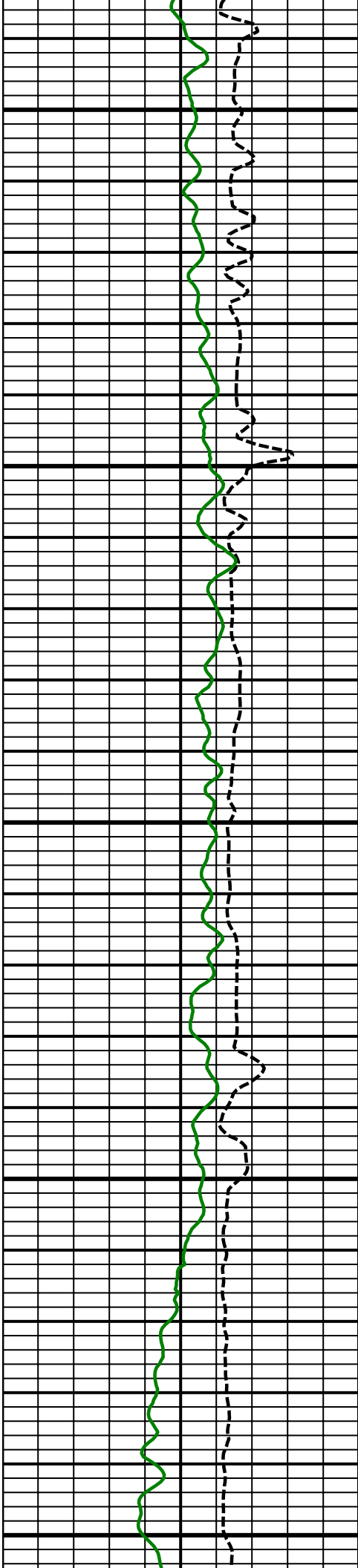




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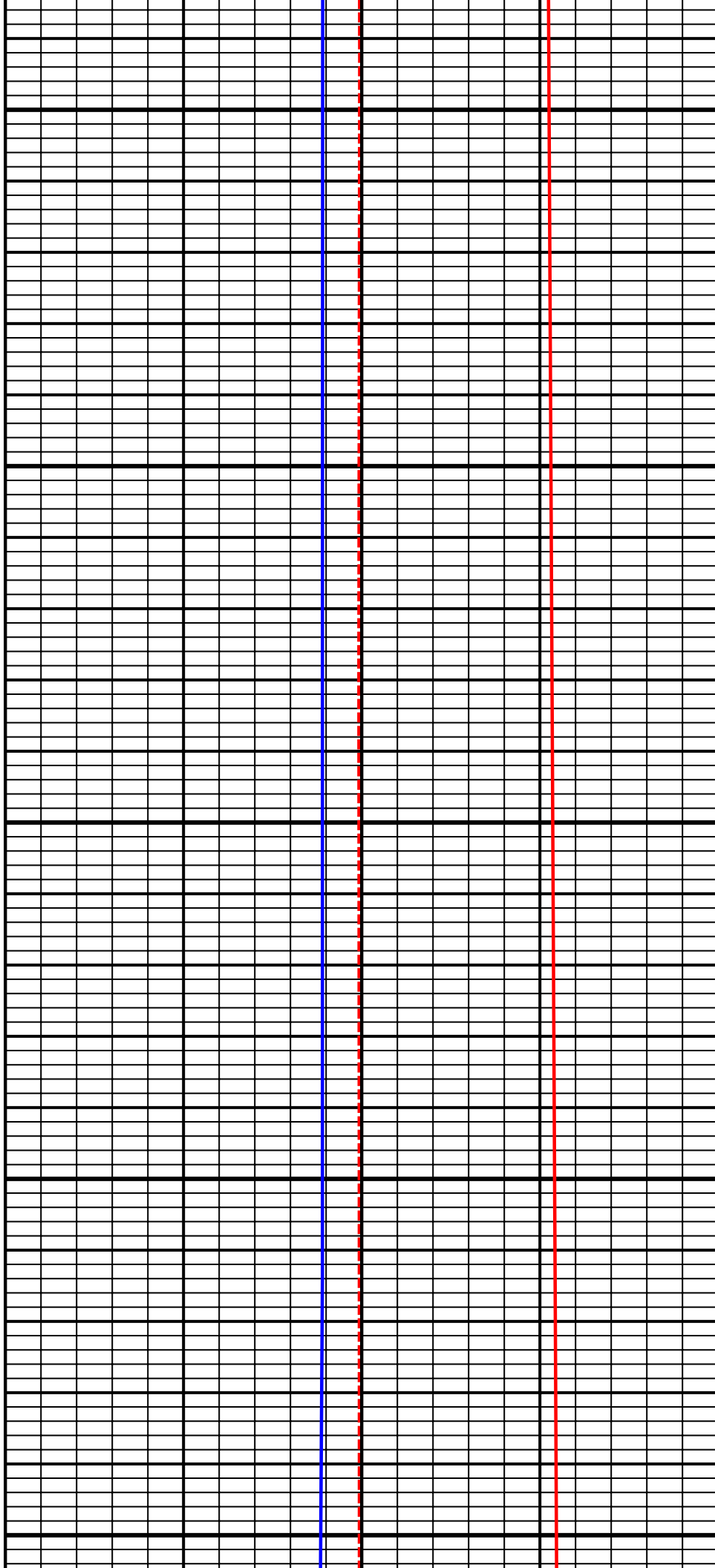
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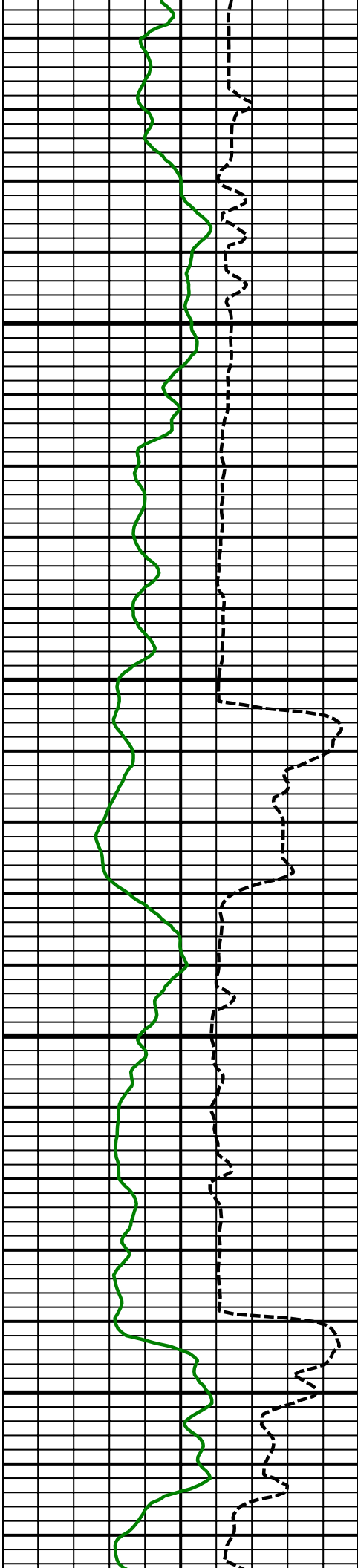




10200  
MD

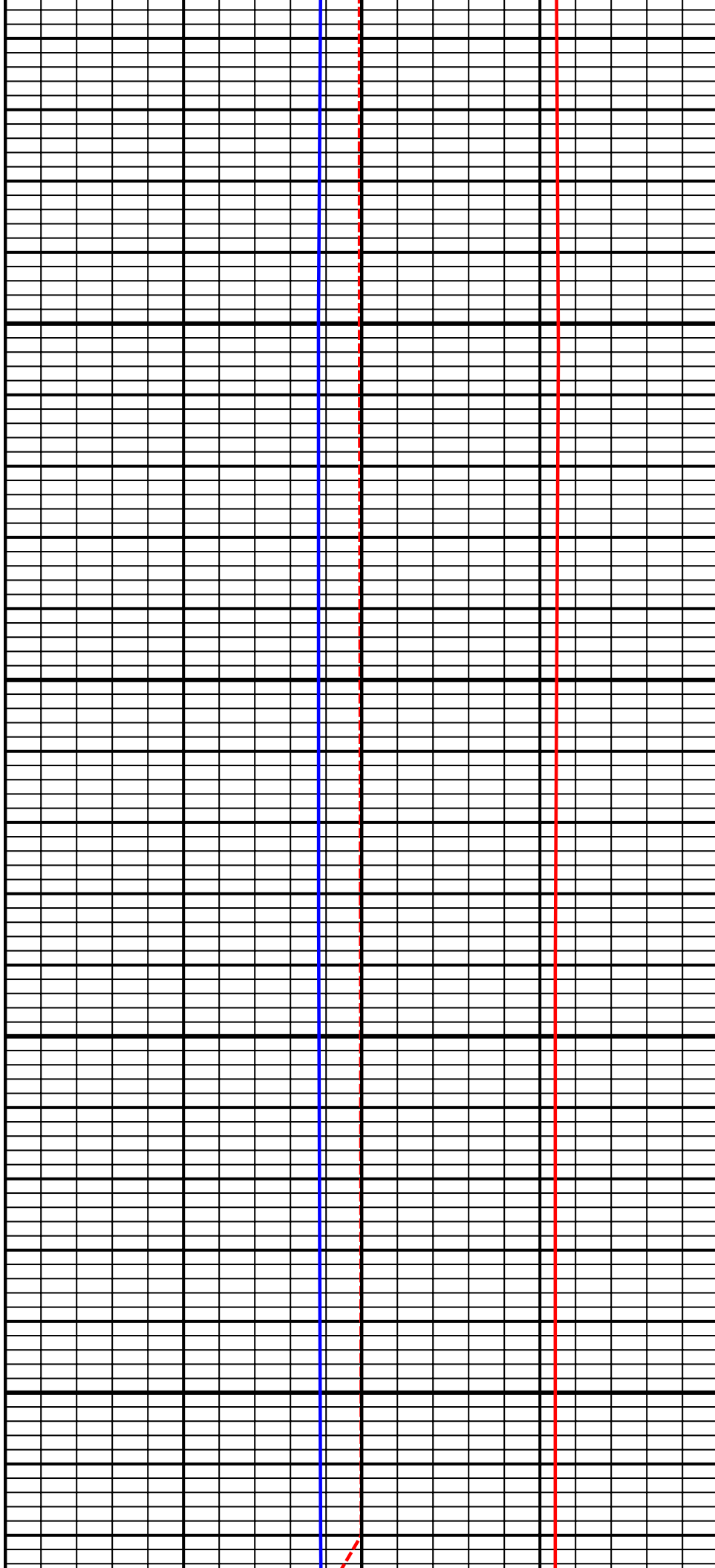
10300  
MD

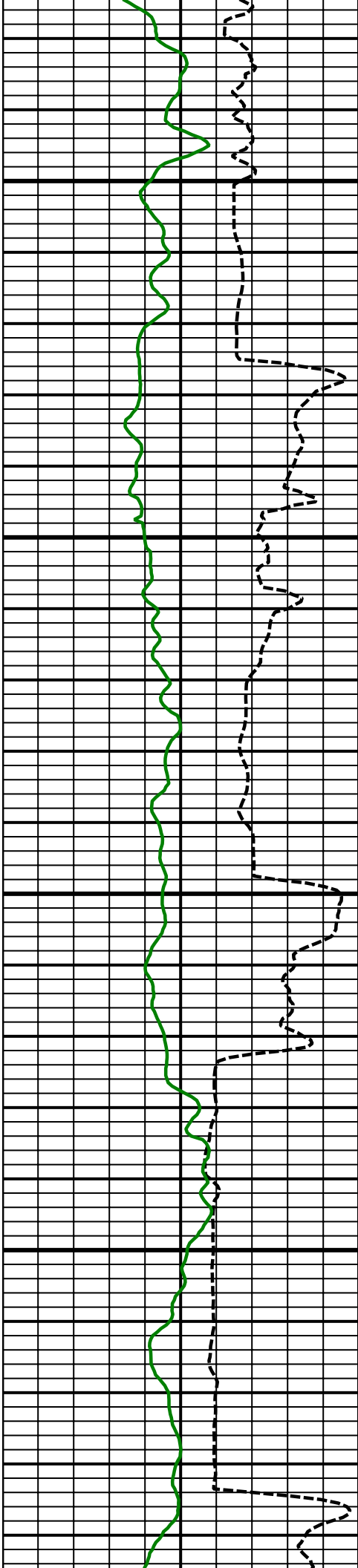




10400  
MD

10500  
MD



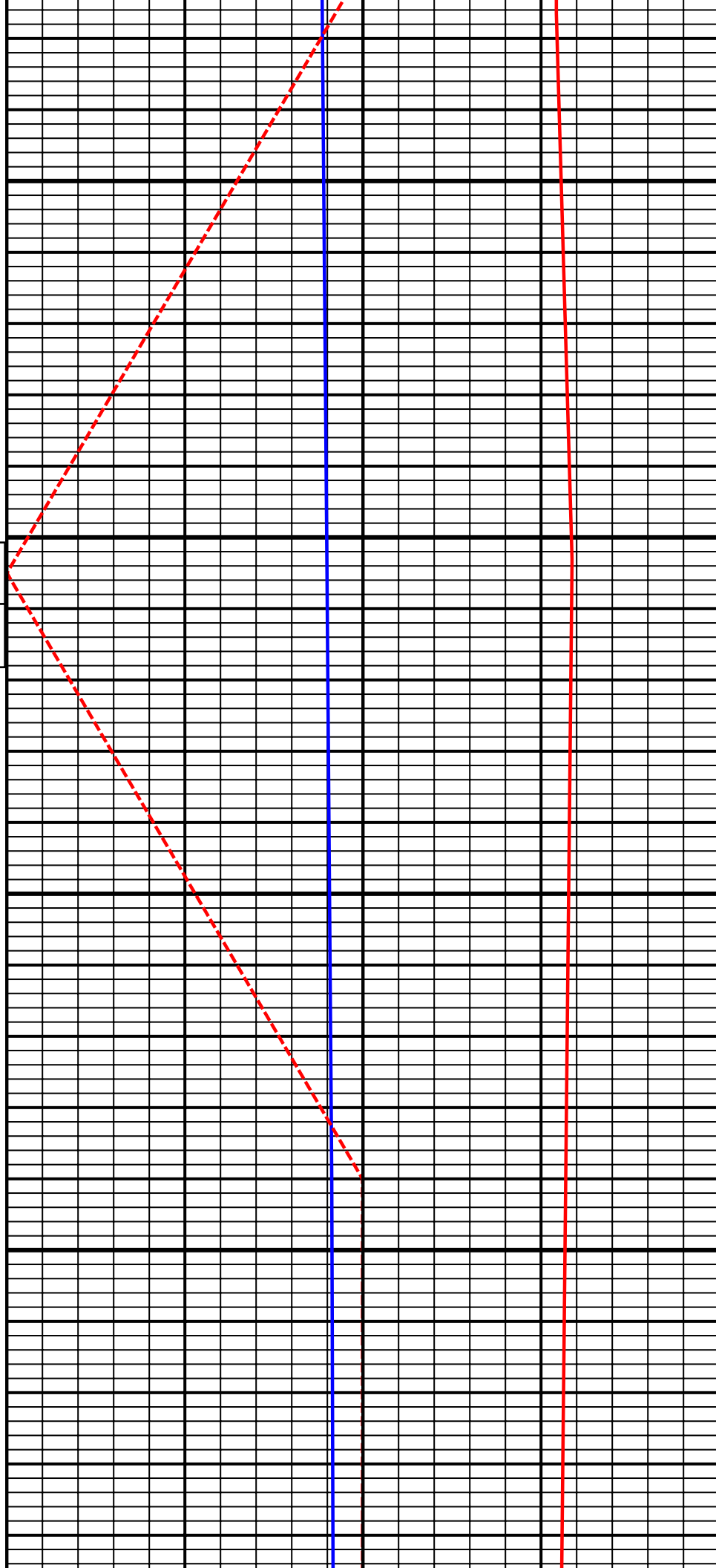


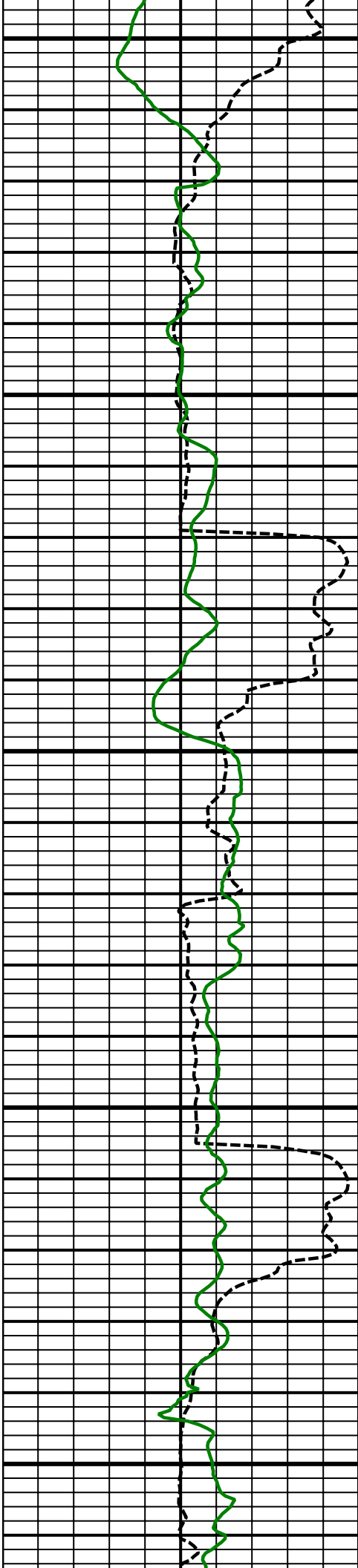
10600  
MD

Comment  
2-2

Comment  
3-2

10700  
MD



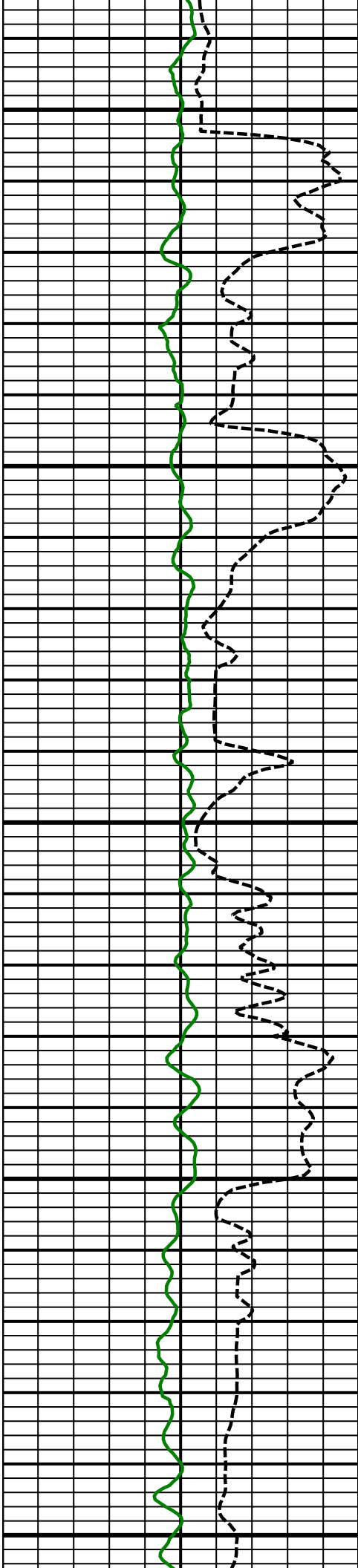


10800  
MD

10900  
MD

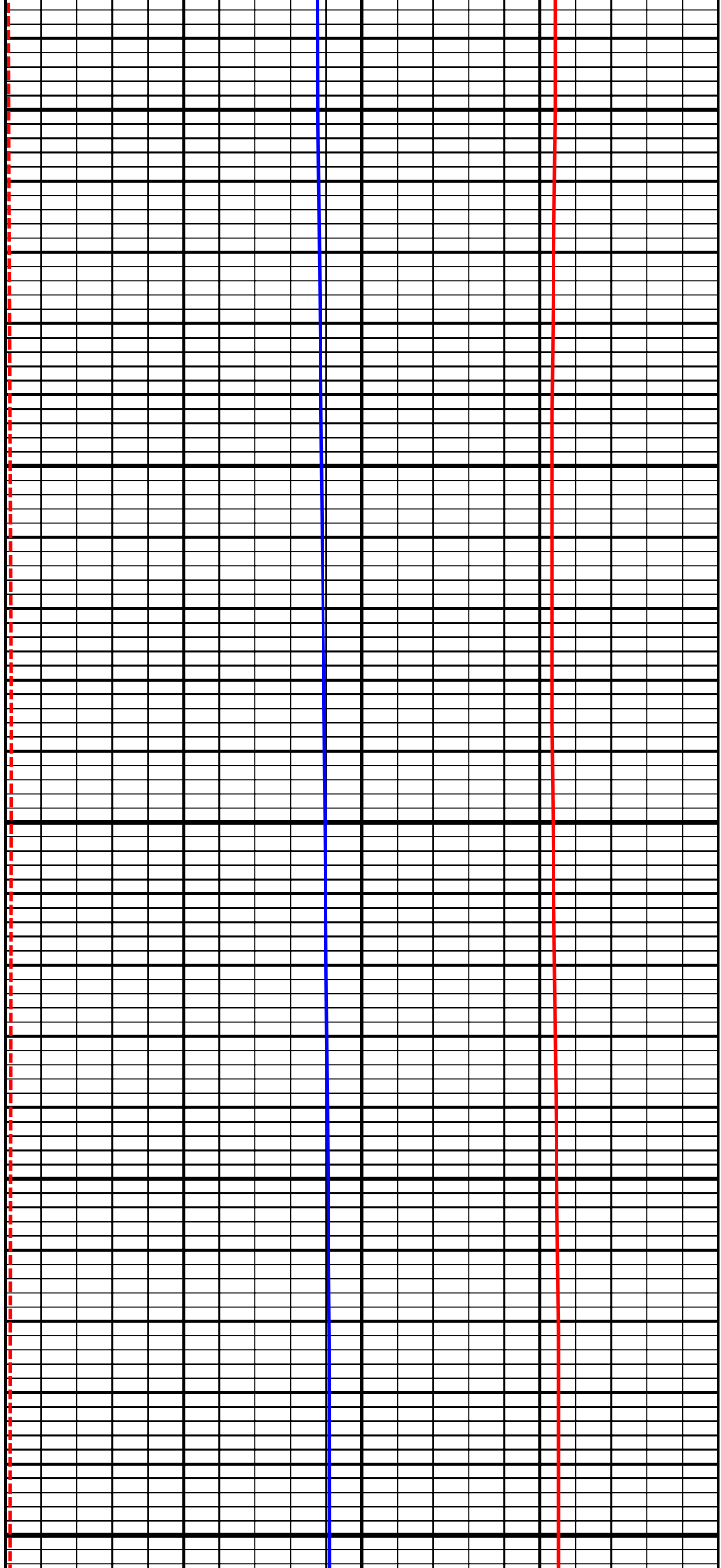
11000  
MD

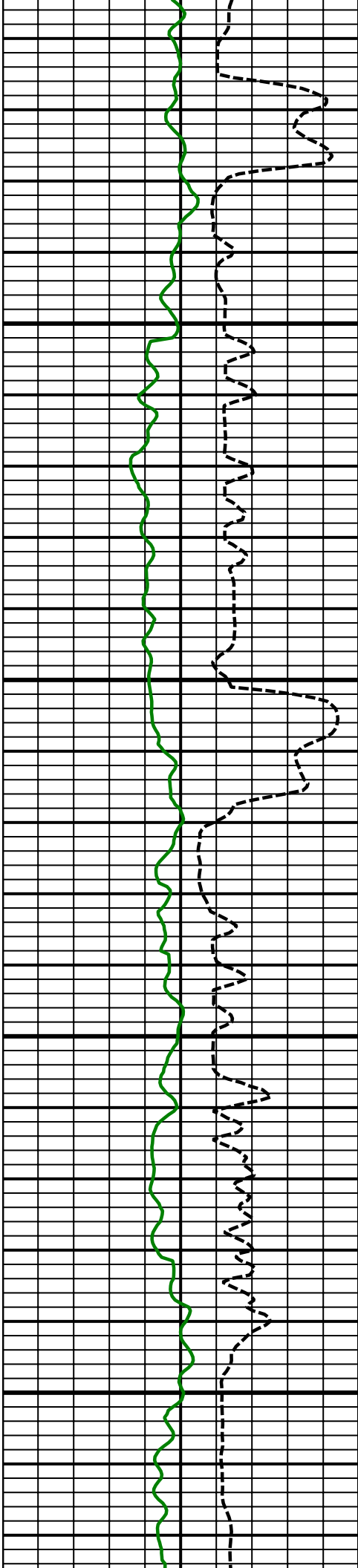




11300  
MD

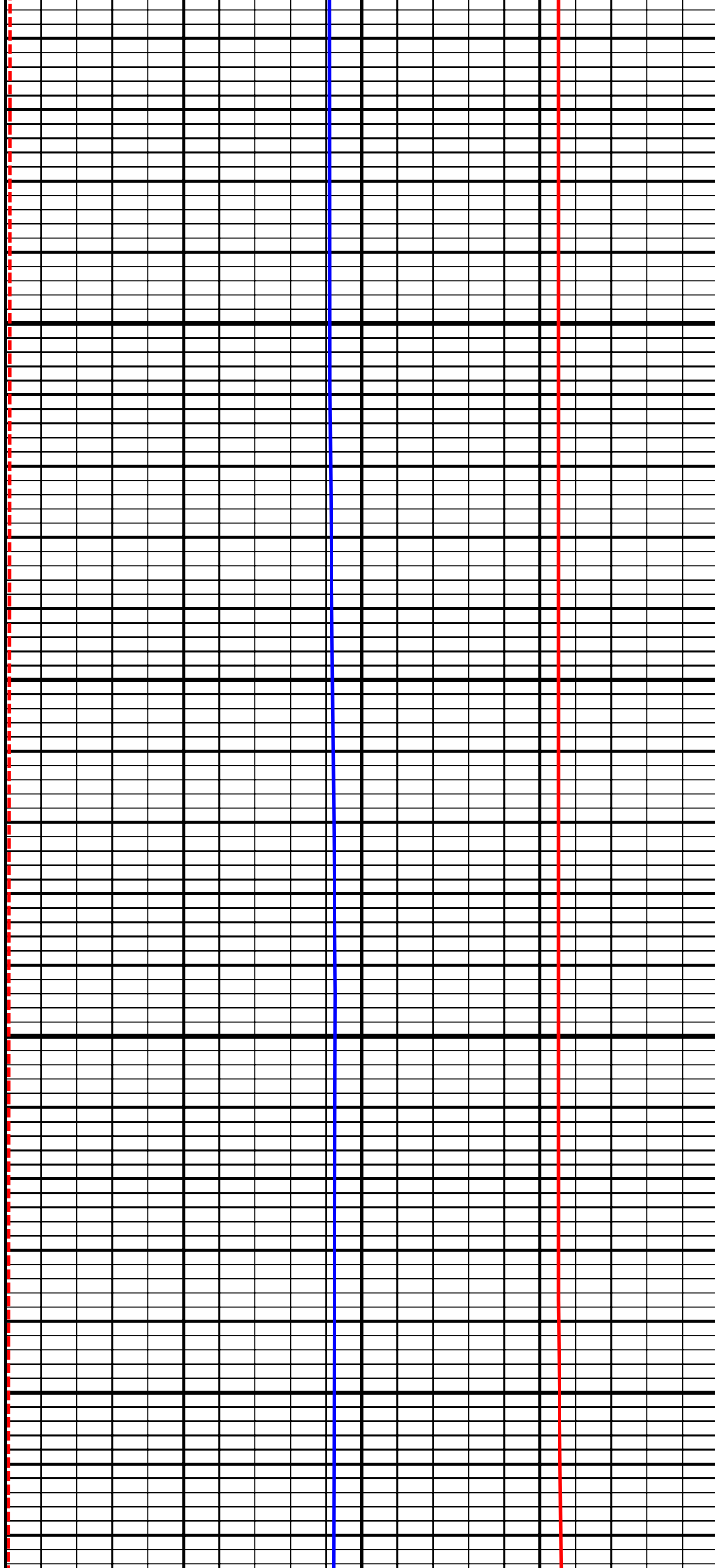
11400  
MD



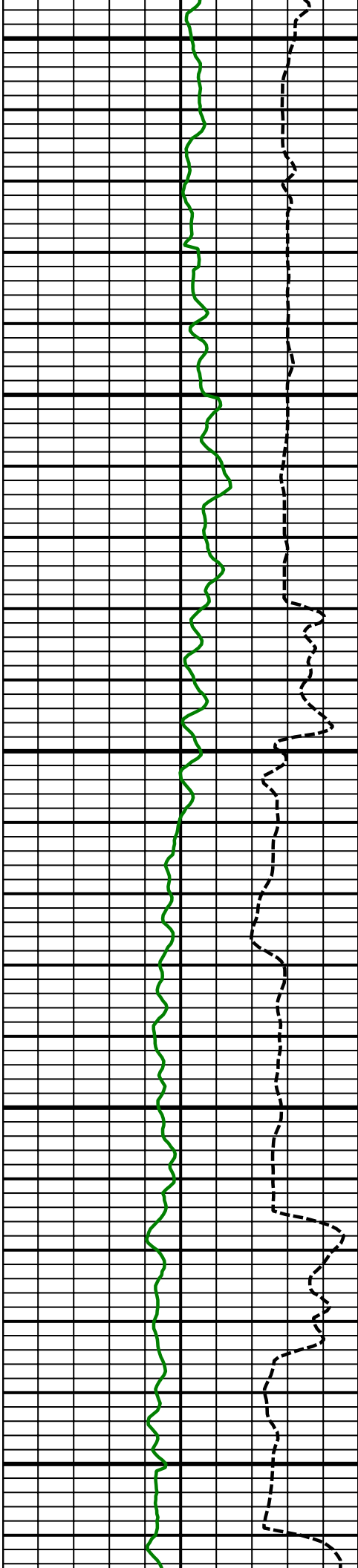


11500  
MD

11600  
MD



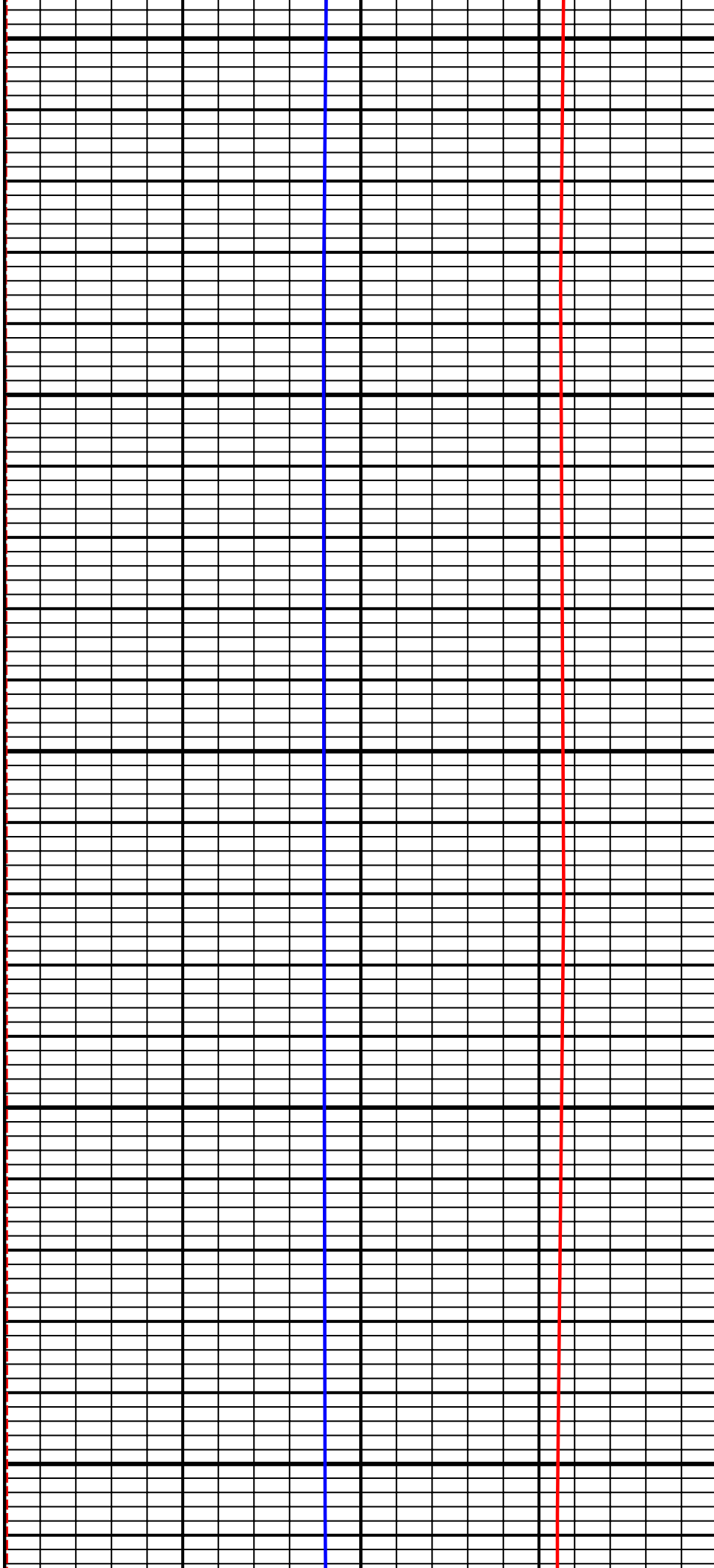


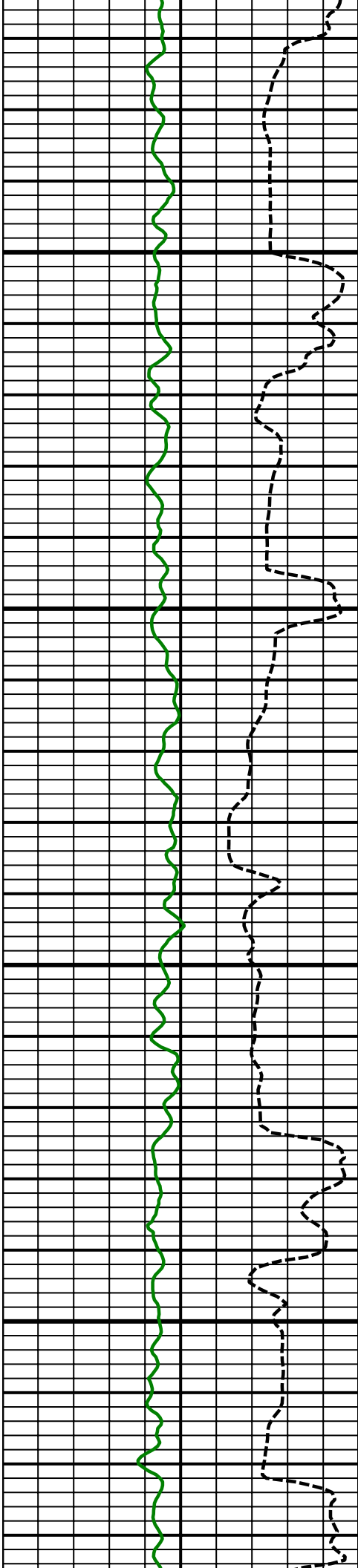


11900  
MD

12000  
MD

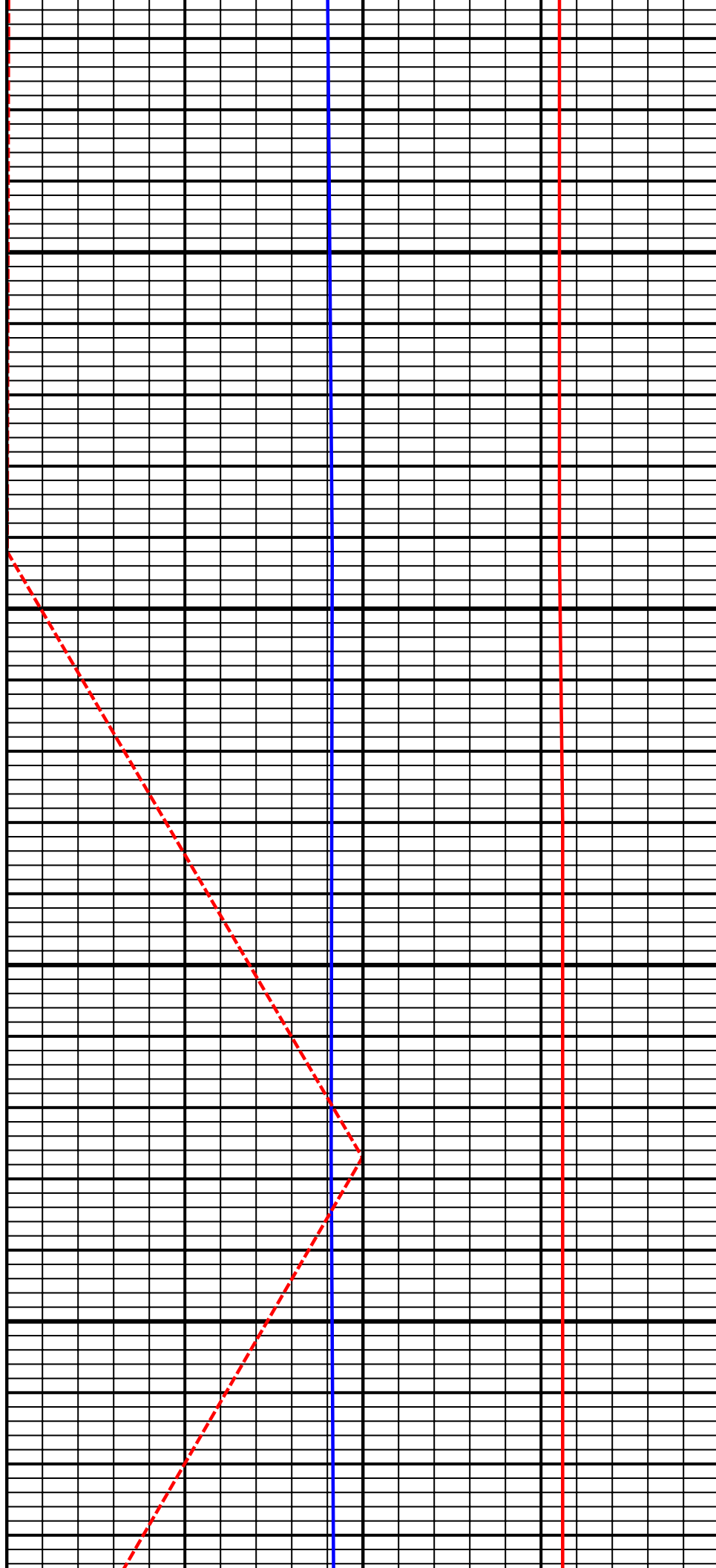
12100  
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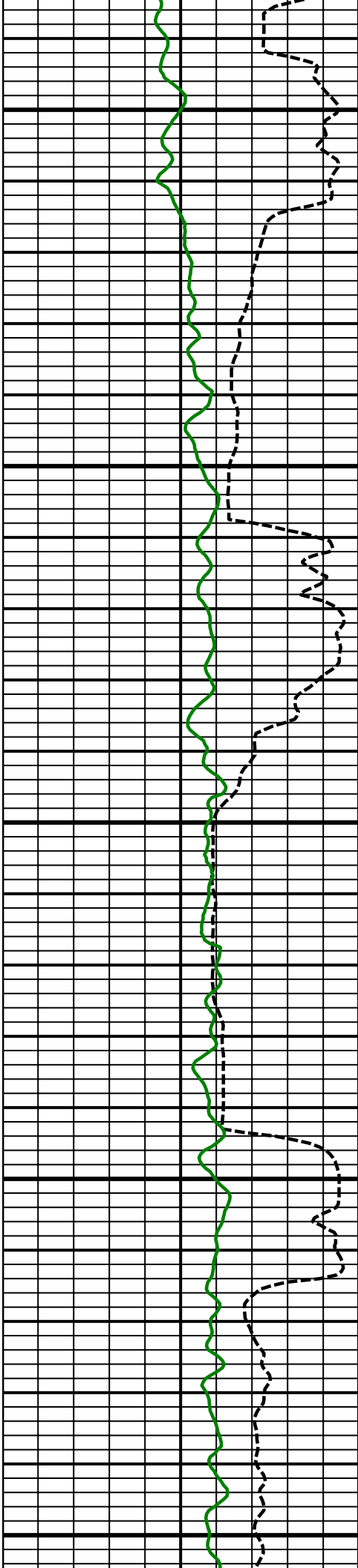




12200  
MD

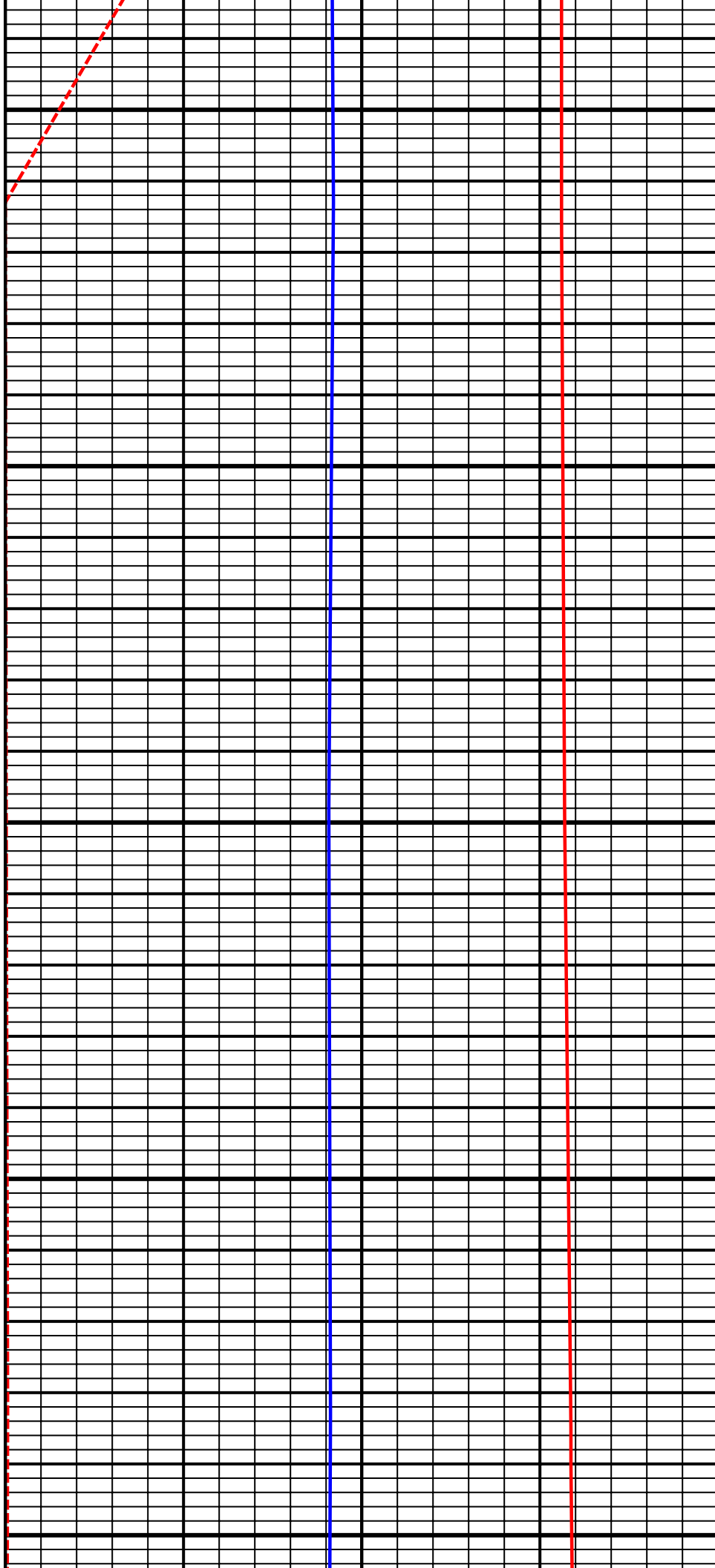
12300  
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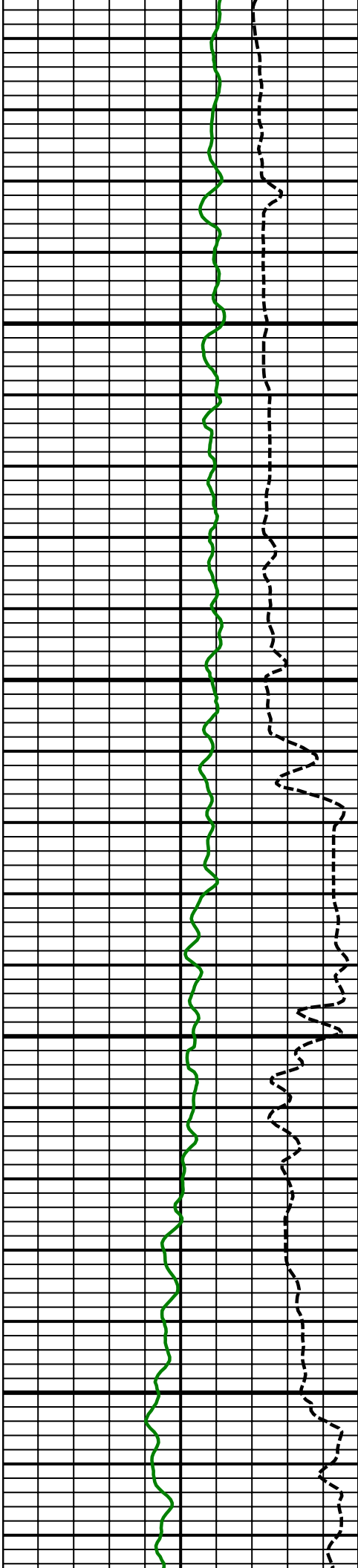




12400  
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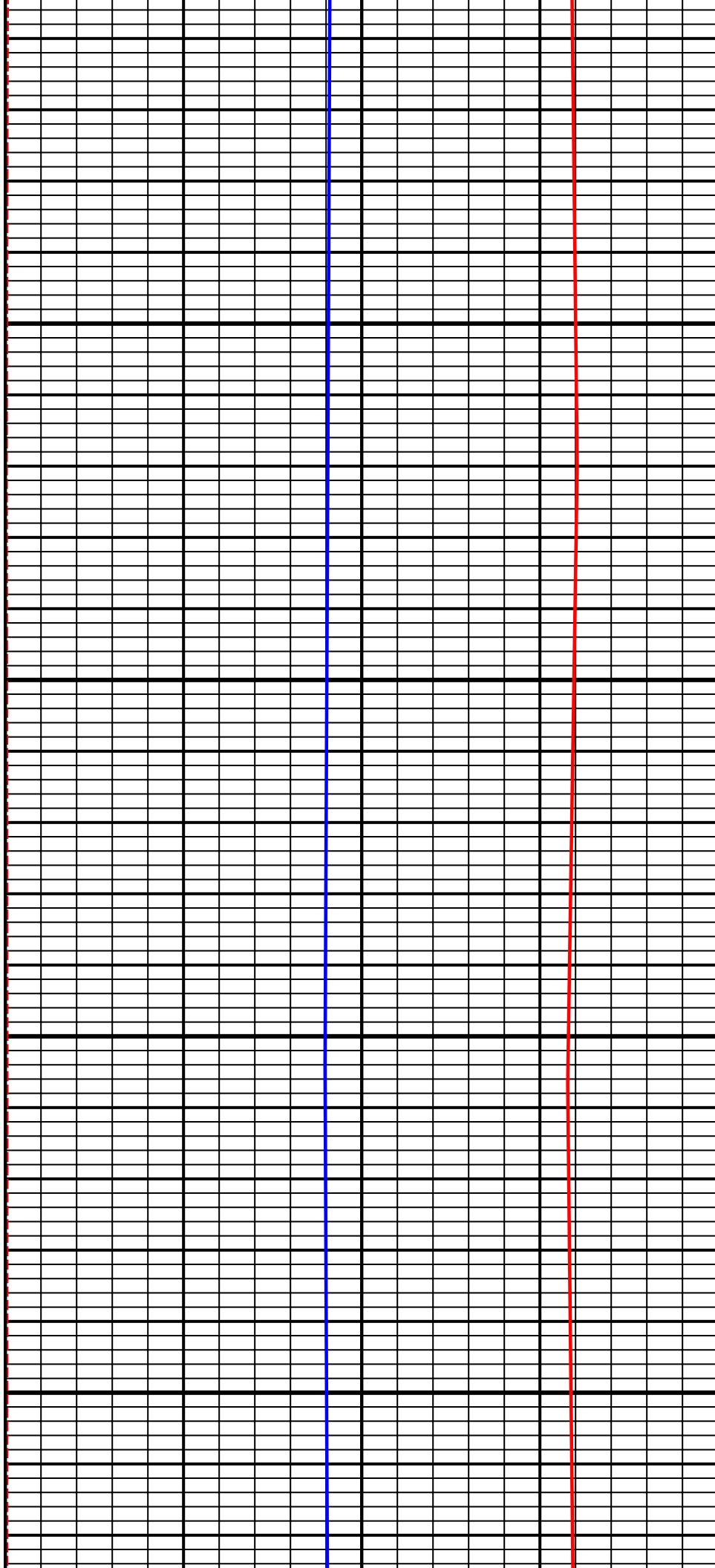
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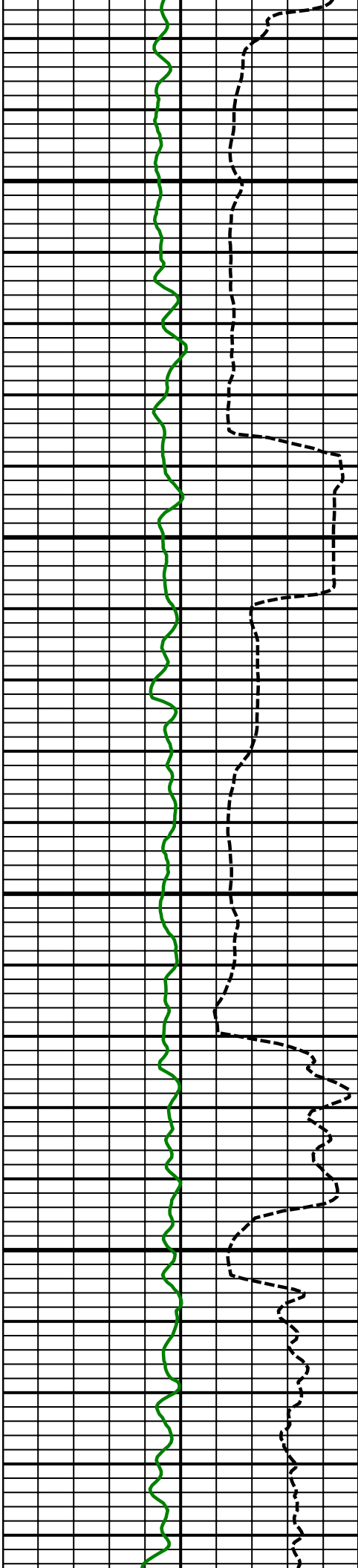




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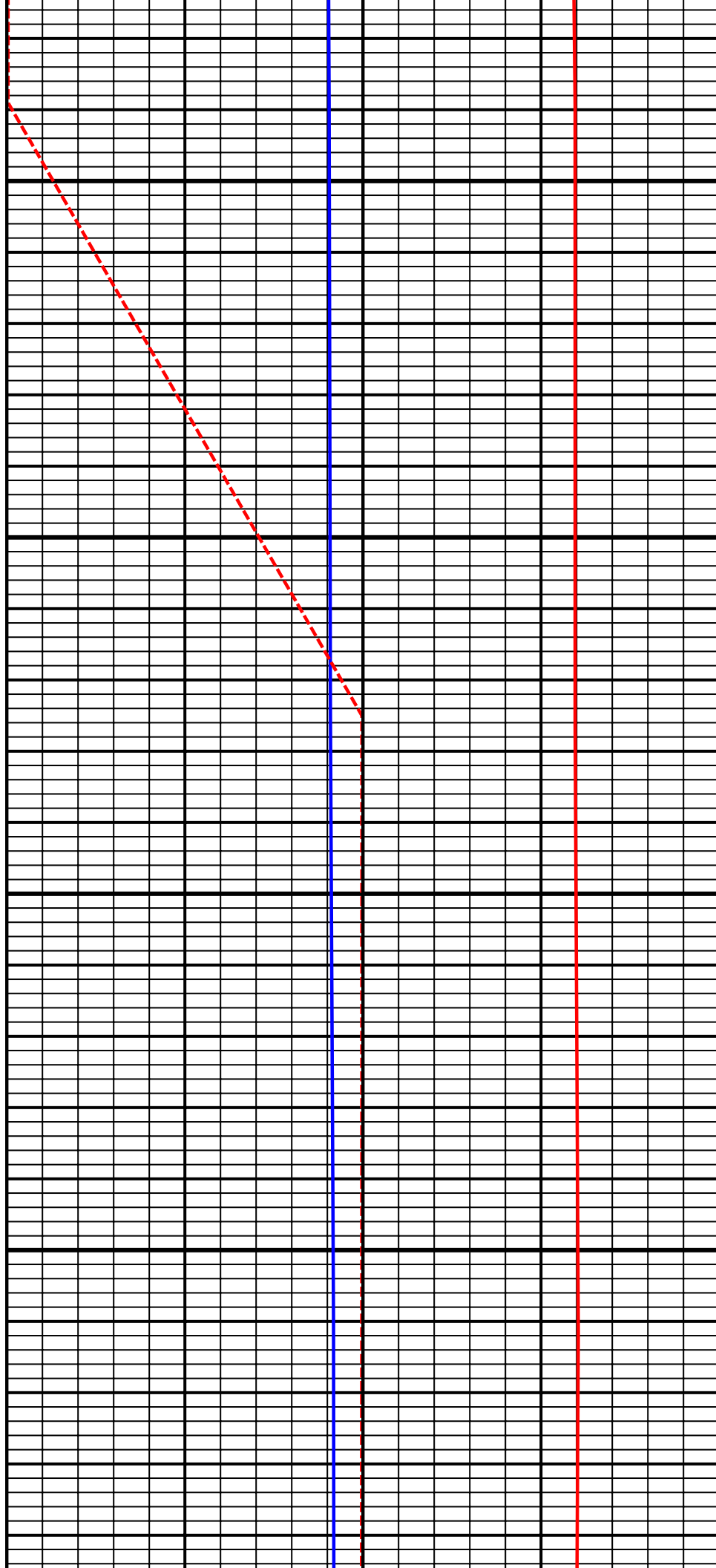
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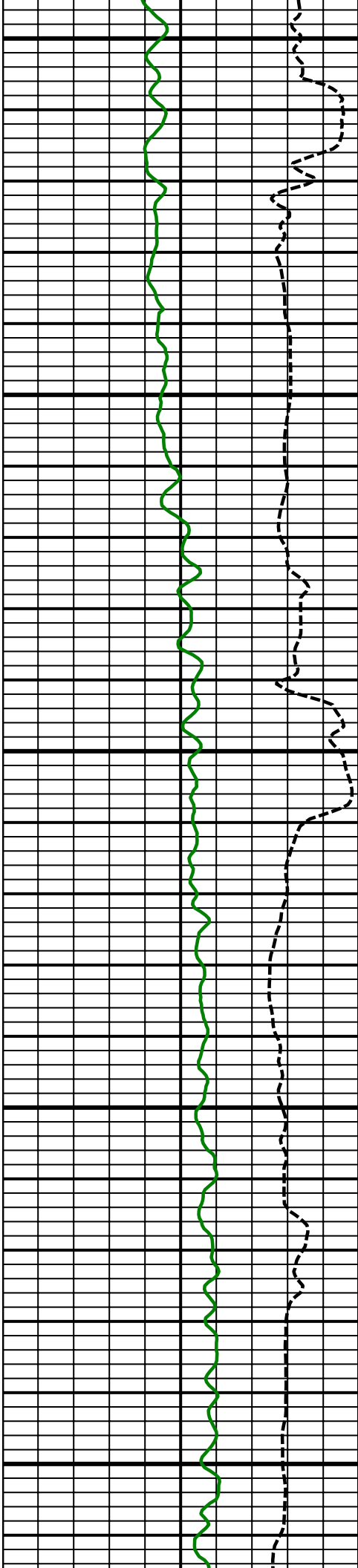




12800  
MD

12900  
MD

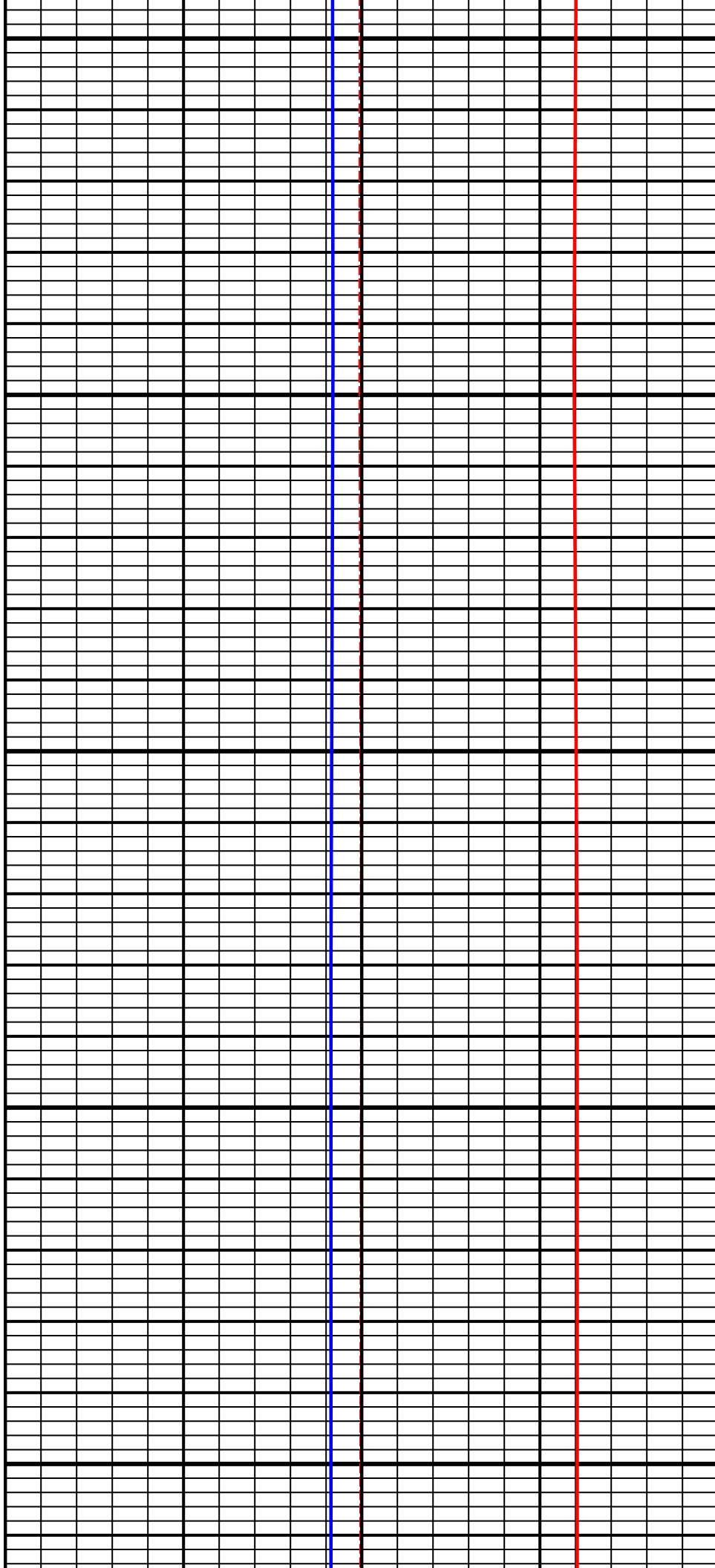


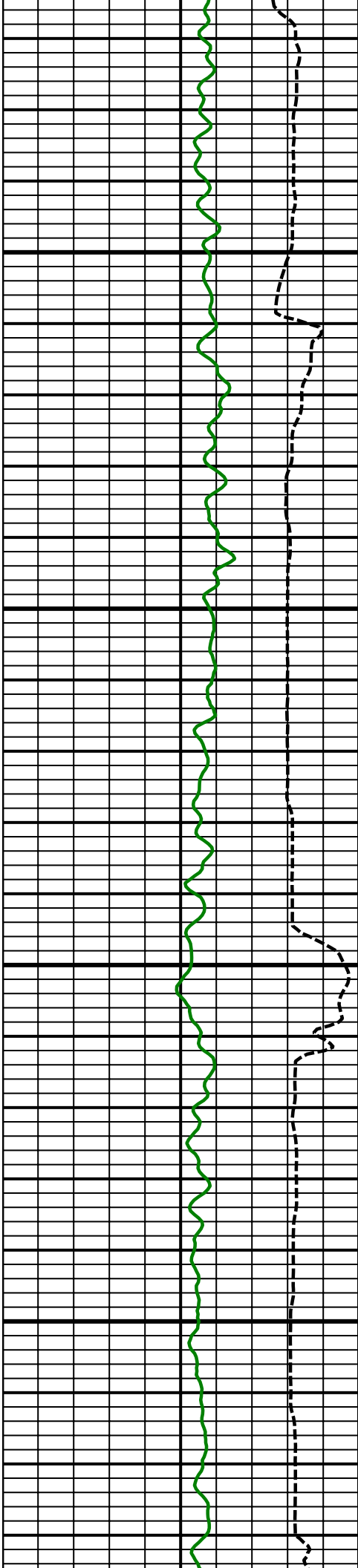


13000  
MD

13100  
MD

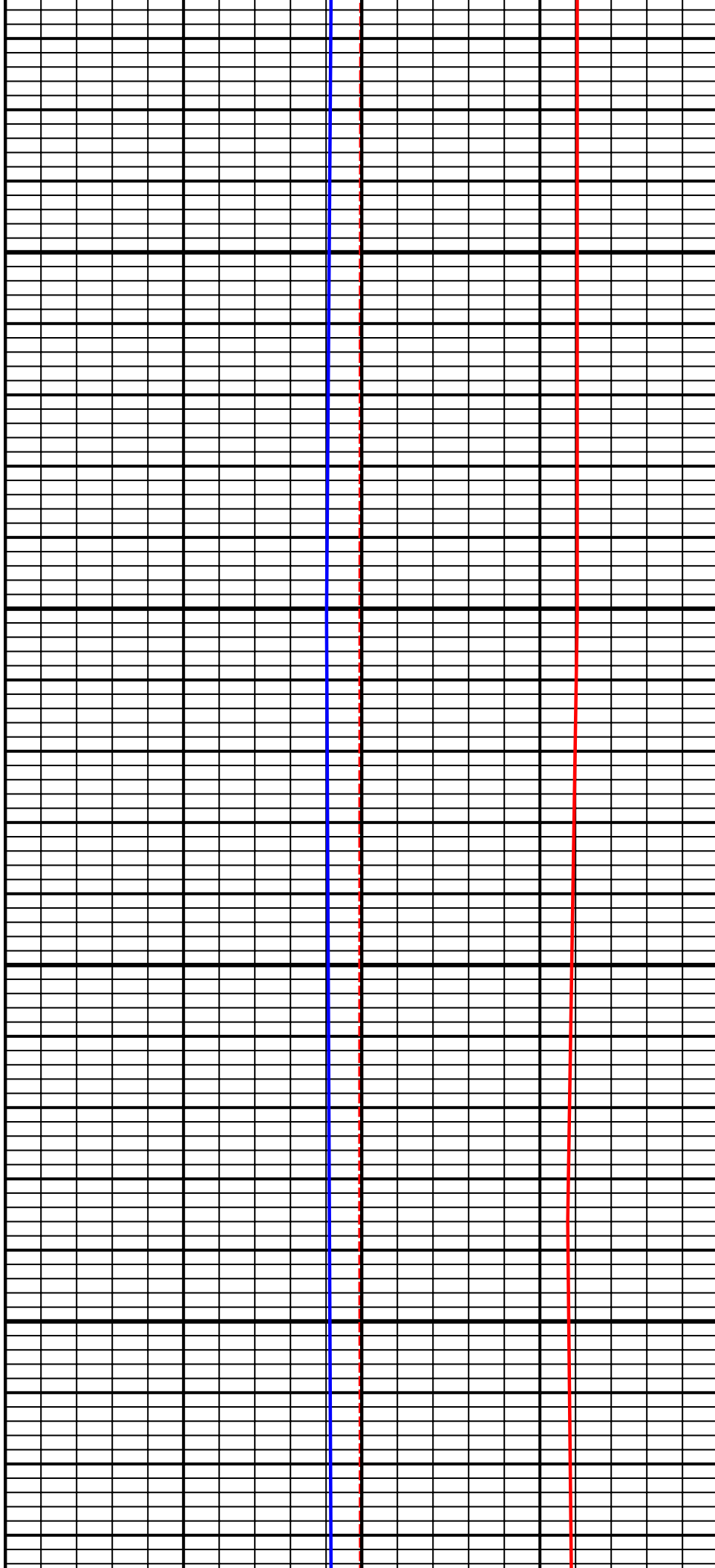
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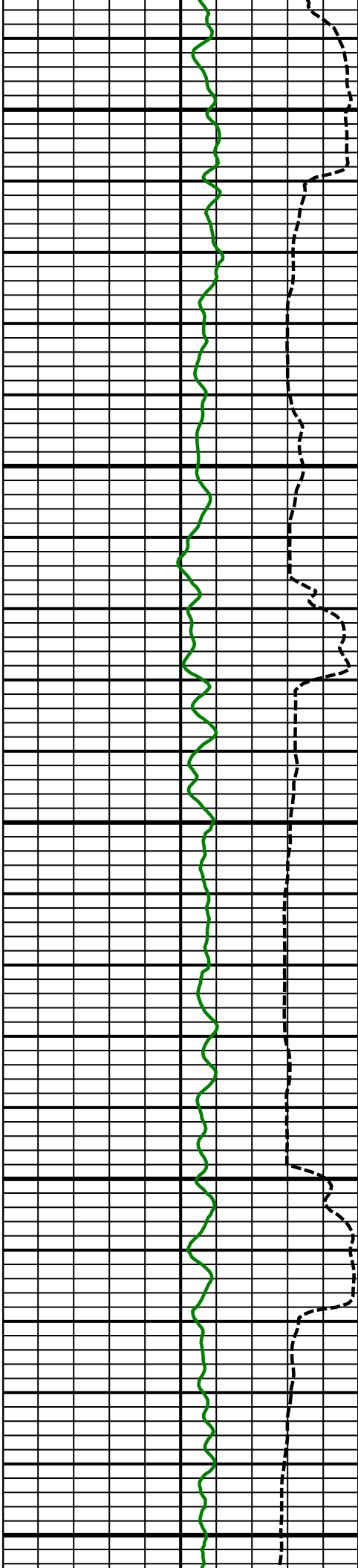




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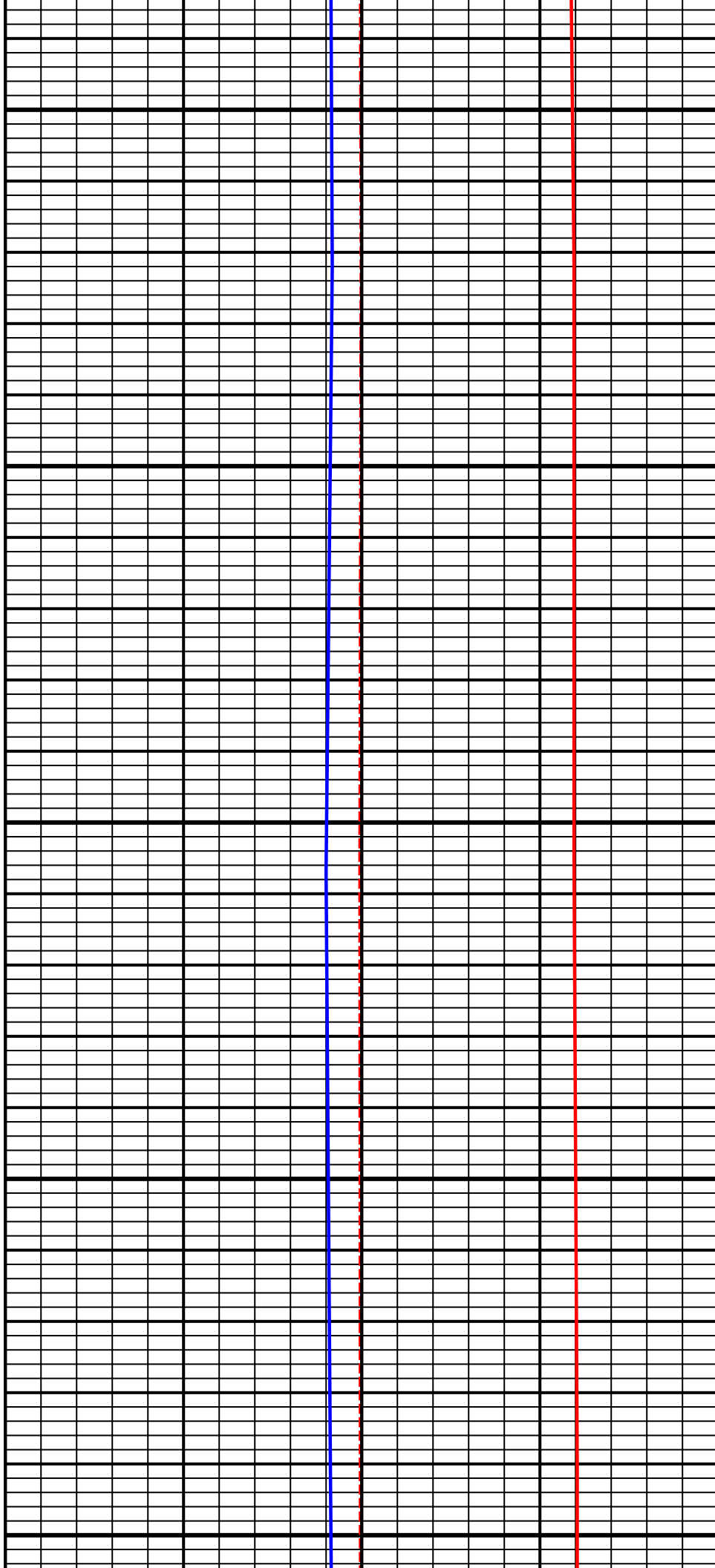
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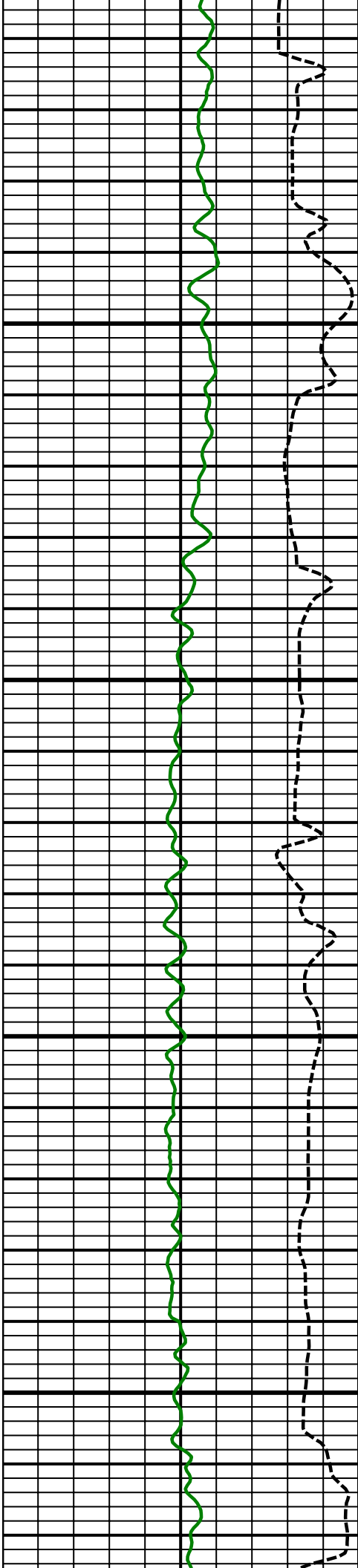




13500  
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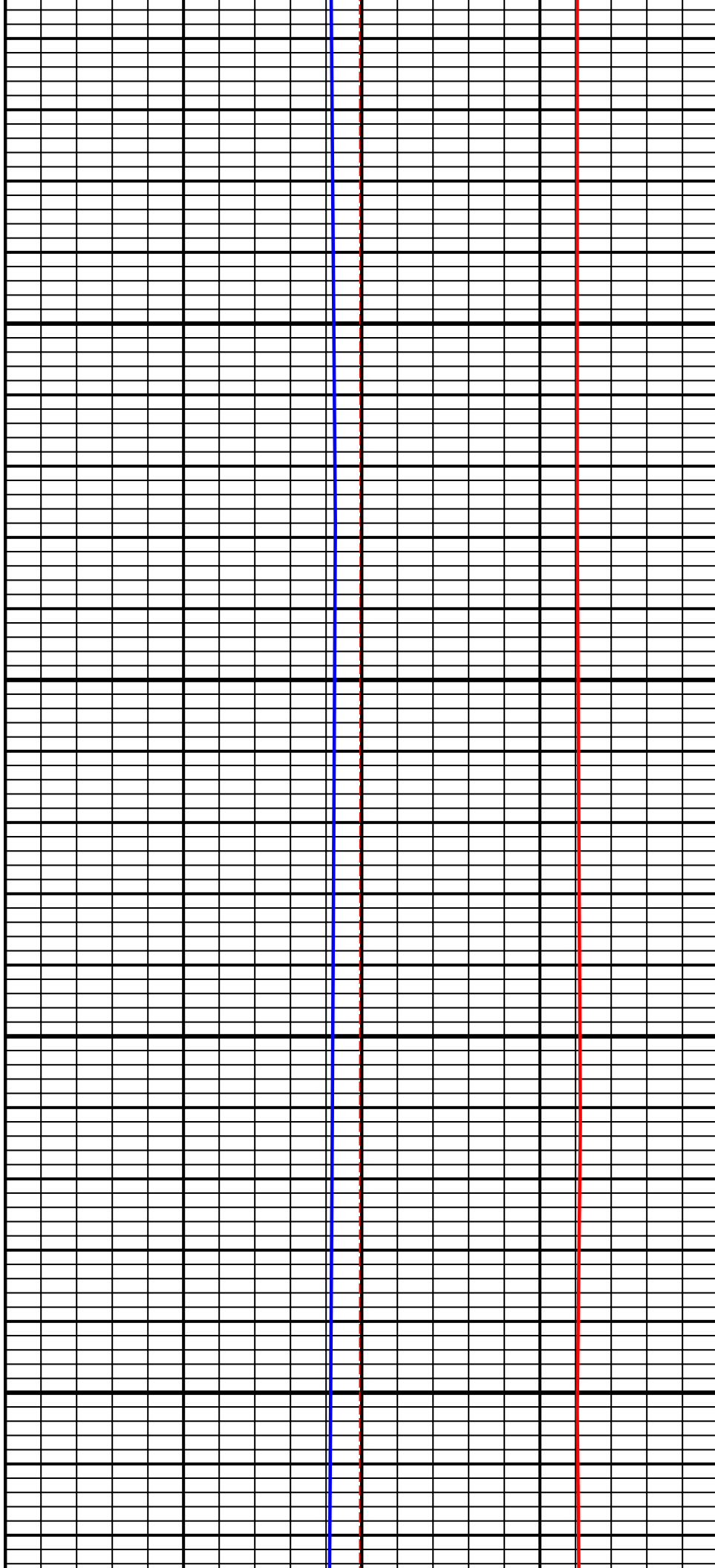
13600  
MD

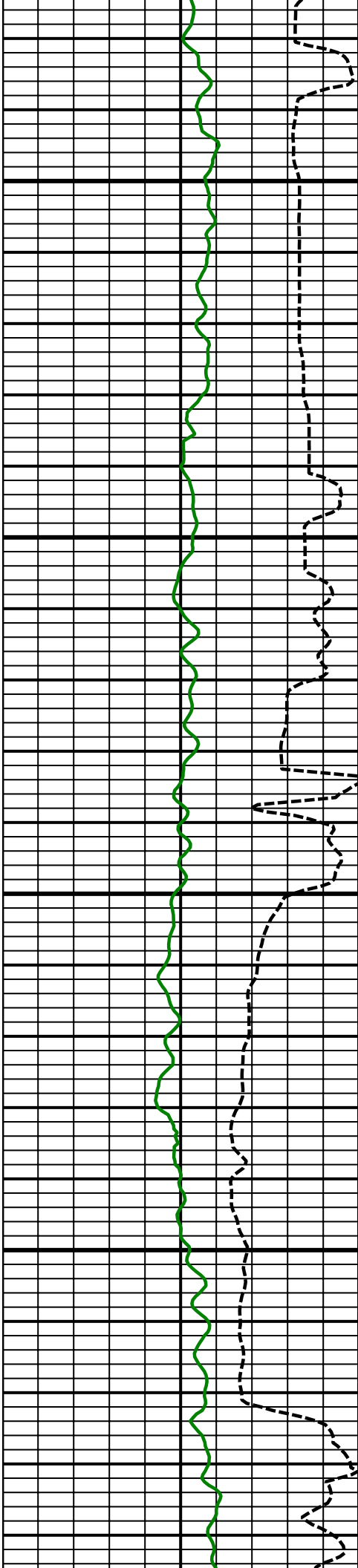




13700  
MD

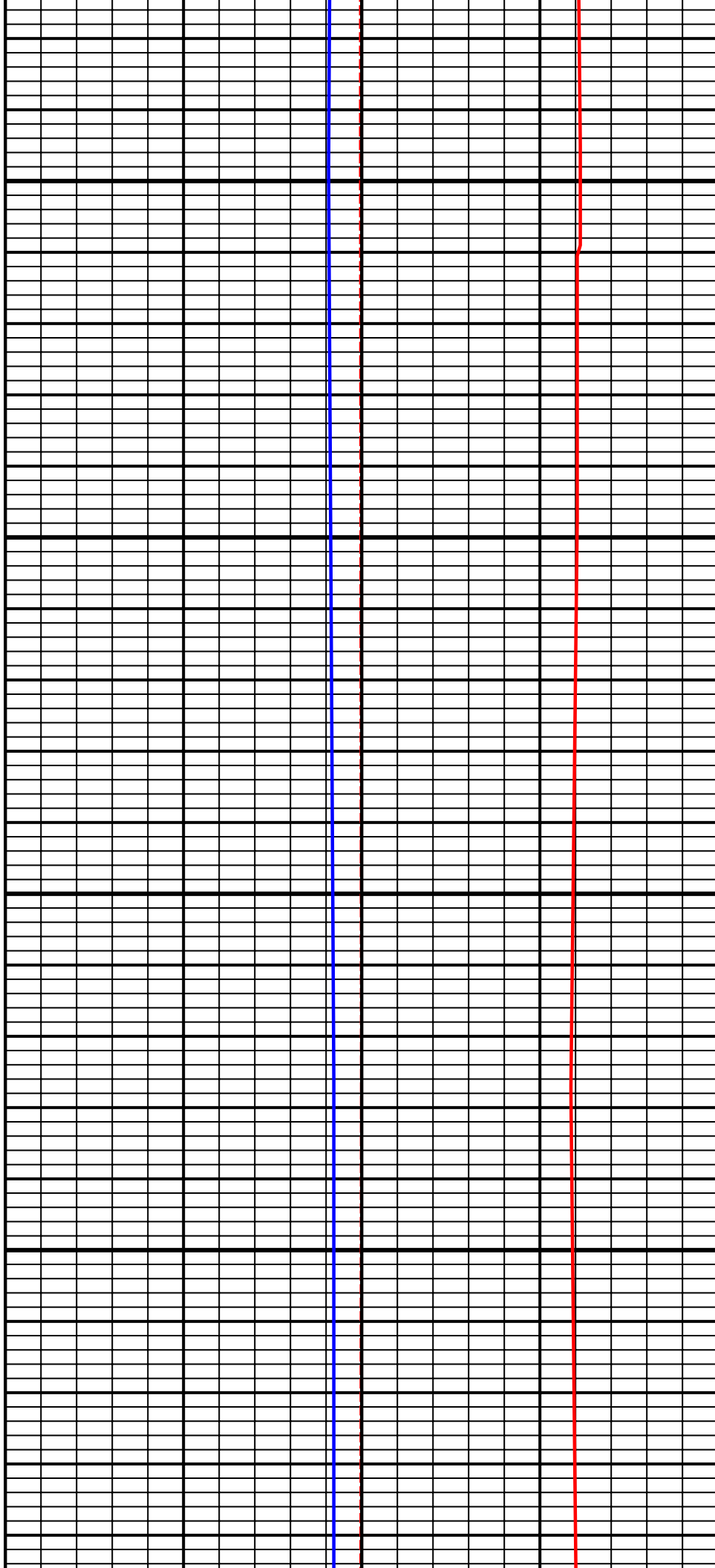
13800  
MD

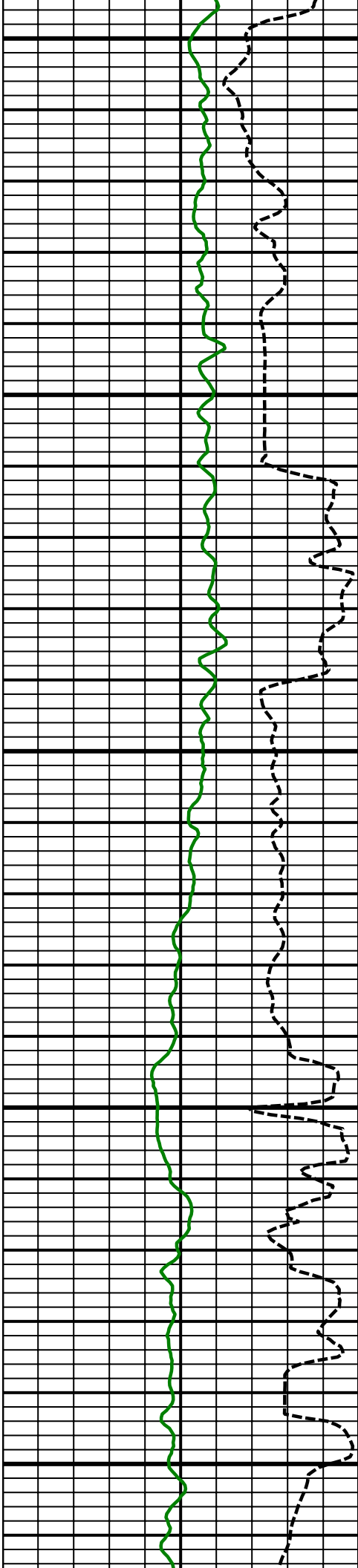




13900  
MD

14000  
MD

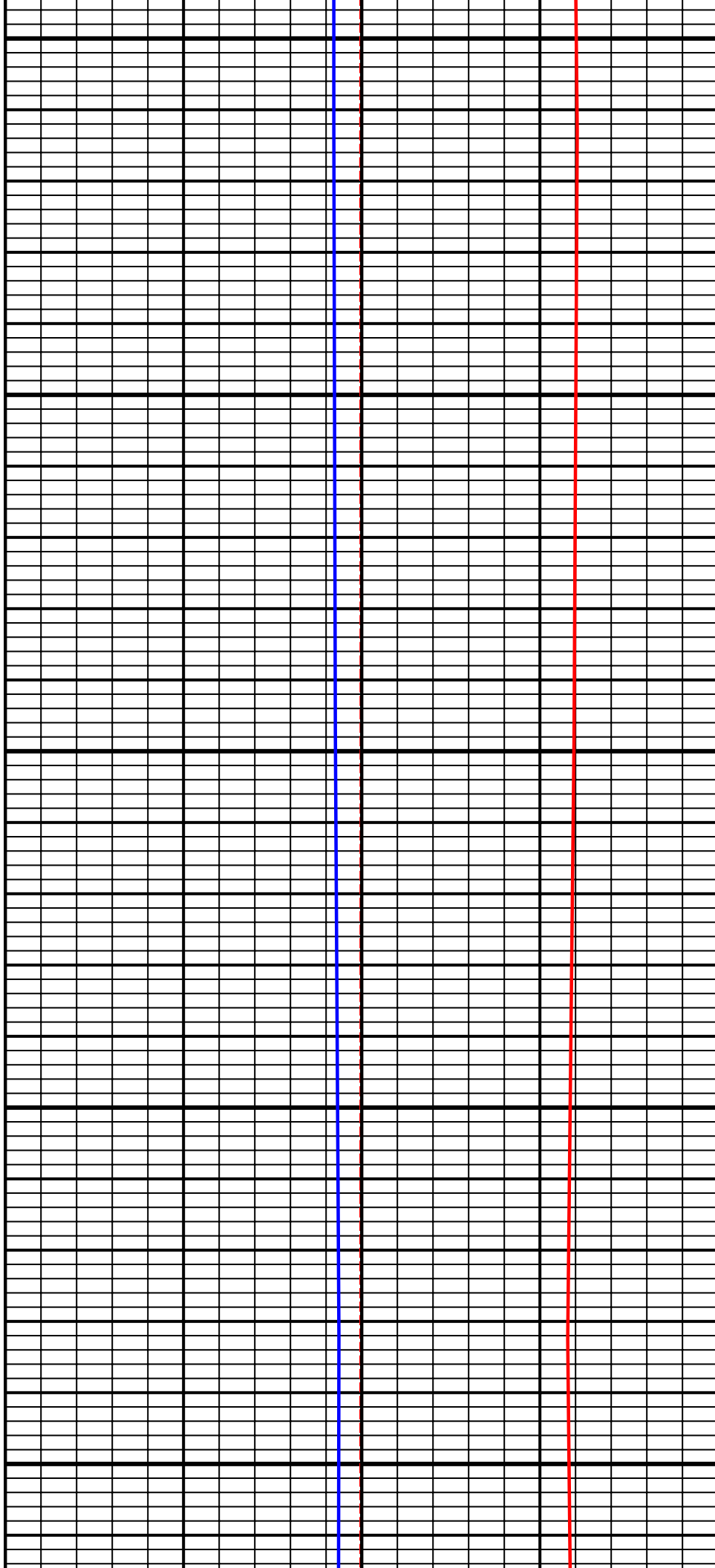


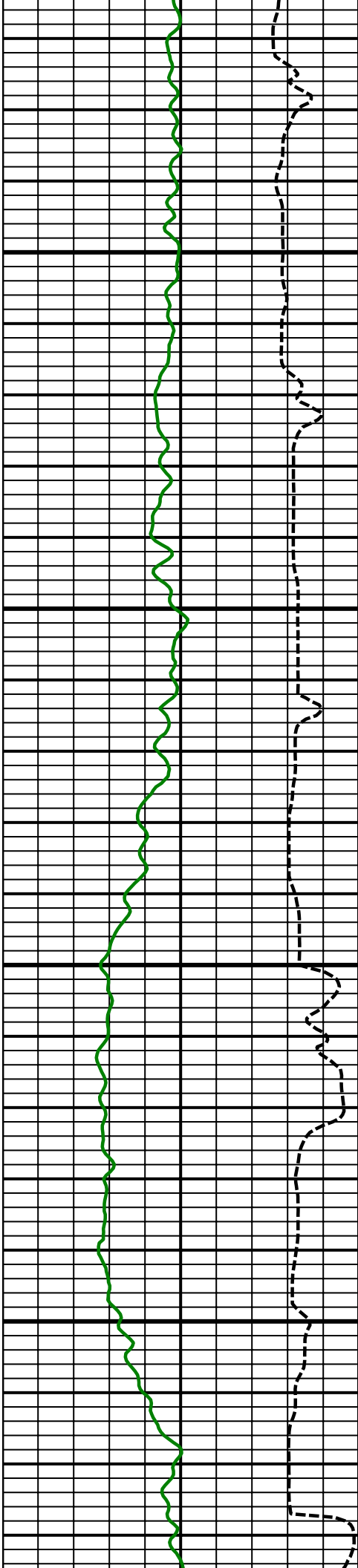


14100  
MD

14200  
MD

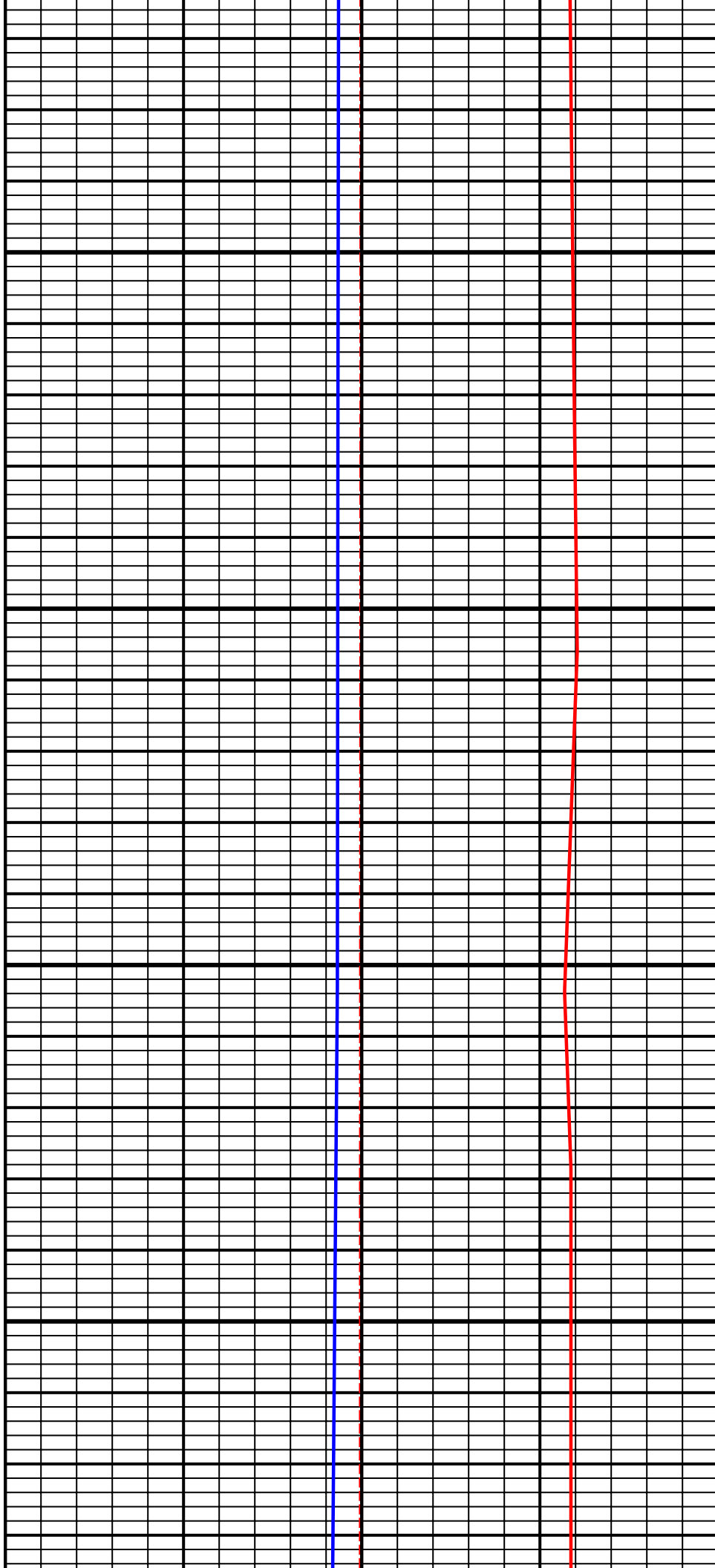
14300  
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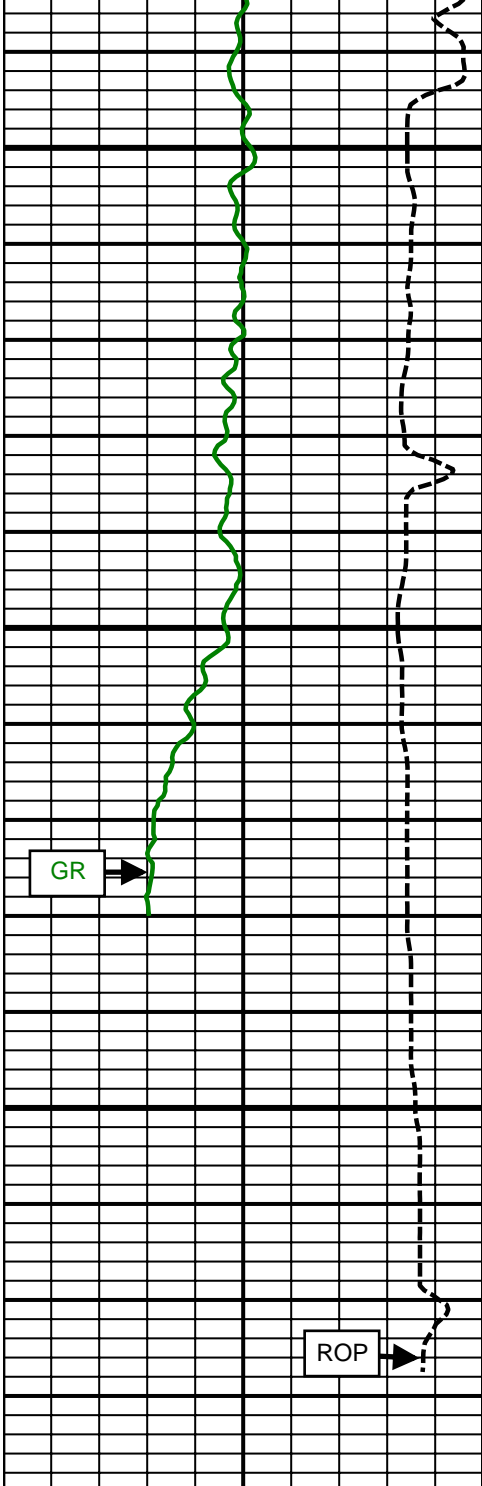




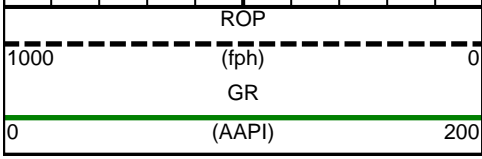
14400  
MD

14500  
MD

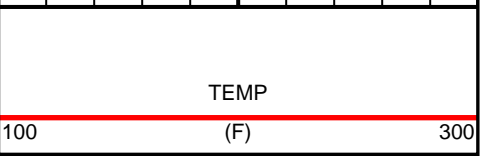
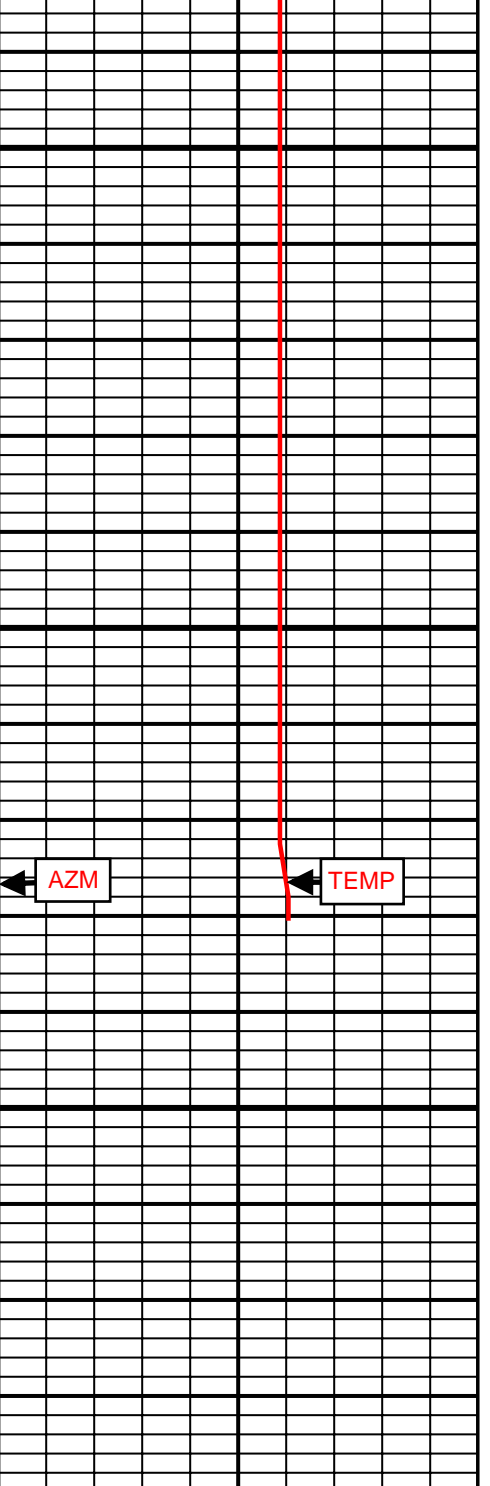
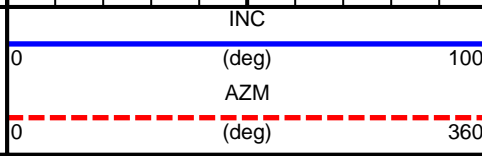
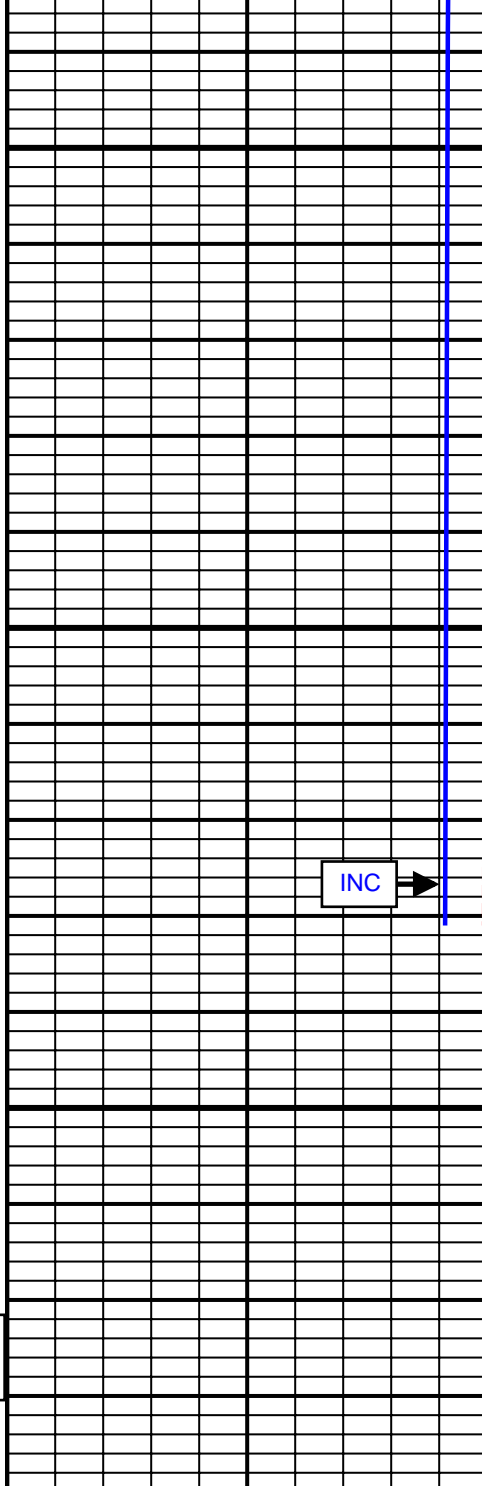




14600  
MD



Comment  
3-3



SURVEY						
Survey Calculation Method: <b>Minimum Curvature</b>						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
<b>True North</b>	<b>0.03 deg</b>	<b>52593 nT</b>	<b>66.64 deg</b>	<b>8.60 deg</b>	<b>0.00 deg</b>	<b>8.60 deg</b>
<b>Survey Tie-On</b>	Depth	INC	AZ	TVD	NS	EW
	<b>0.00 ft</b>	<b>0.00 deg</b>	<b>0.00 deg</b>	<b>0.00 ft</b>	<b>0.00 ft</b>	<b>0.00 ft</b>

Well Head							
Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	NS (ft)	EW (ft)	VSect (ft)	Dogleg (deg/100ft)
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00
116.00	0.07	184.13	116.00	-0.06	0.00	-0.06	0.07
216.00	0.26	284.62	216.00	-0.06	-0.23	-0.06	0.28
316.00	0.21	181.25	316.00	-0.19	-0.45	-0.19	0.37
416.00	0.35	89.87	416.00	-0.37	-0.15	-0.37	0.41
516.00	0.23	269.64	516.00	-0.37	-0.05	-0.37	0.58
616.00	0.33	138.60	616.00	-0.59	-0.06	-0.59	0.51
716.00	0.22	78.04	716.00	-0.77	0.32	-0.77	0.29
816.00	0.16	306.02	816.00	-0.65	0.40	-0.65	0.35
916.00	0.31	215.88	916.00	-0.78	0.13	-0.78	0.35
1016.00	0.16	153.30	1015.99	-1.13	0.03	-1.13	0.28
1116.00	0.34	74.76	1115.99	-1.17	0.38	-1.17	0.35
1156.00	0.27	47.32	1155.99	-1.08	0.56	-1.08	0.40
1364.00	0.30	73.18	1363.99	-0.59	1.44	-0.59	0.06
1458.00	1.50	204.26	1457.98	-1.64	1.17	-1.64	1.82
1552.00	3.88	145.95	1551.88	-5.40	2.45	-5.40	3.56
1646.00	6.04	151.64	1645.53	-12.38	6.58	-12.38	2.35
1740.00	7.81	144.36	1738.84	-21.93	12.65	-21.92	2.10
1928.00	11.66	144.94	1924.10	-47.87	31.01	-47.85	2.05
2022.00	13.38	143.70	2015.86	-64.41	42.91	-64.39	1.85
2113.00	14.43	142.61	2104.19	-81.91	56.03	-81.88	1.19
2205.00	15.49	145.76	2193.07	-101.17	69.90	-101.13	1.45
2296.00	17.34	148.44	2280.36	-122.77	83.84	-122.73	2.20
2387.00	16.45	146.96	2367.43	-145.13	97.96	-145.08	1.09
2479.00	15.31	145.65	2455.92	-166.08	111.92	-166.02	1.30
2572.00	15.53	148.41	2545.57	-186.82	125.37	-186.75	0.82
2663.00	15.97	148.82	2633.16	-207.91	138.23	-207.84	0.50
2754.00	17.23	147.21	2720.36	-229.95	152.01	-229.87	1.47
2848.00	16.70	140.80	2810.28	-252.12	168.09	-252.03	2.07
2940.00	17.32	141.94	2898.26	-273.15	184.89	-273.05	0.77
3032.00	17.72	142.53	2985.99	-295.04	201.85	-294.94	0.48
3125.00	17.71	148.22	3074.58	-318.30	217.91	-318.19	1.86
3216.00	16.21	147.27	3161.62	-340.75	232.07	-340.63	1.68
3309.00	16.86	147.81	3250.78	-363.09	246.27	-362.96	0.72
3402.00	15.43	147.93	3340.11	-384.99	260.02	-384.85	1.54
3495.00	13.87	146.93	3430.08	-404.81	272.68	-404.67	1.70
3587.00	12.48	144.94	3519.66	-422.19	284.40	-422.04	1.59
3680.00	10.48	143.17	3610.79	-437.19	295.25	-437.03	2.18
3772.00	9.09	141.96	3701.45	-449.61	304.74	-449.45	1.53
3857.00	7.79	144.39	3785.53	-459.58	312.23	-459.42	1.59
3943.00	5.06	146.43	3870.98	-467.48	317.72	-467.31	3.18
4028.00	3.01	153.29	3955.77	-472.60	320.80	-472.43	2.47

4114.00	0.78	182.81	4041.72	-475.20	321.79	-475.03	2.75
4199.00	0.79	201.08	4126.71	-476.33	321.55	-476.16	0.29
4284.00	0.80	212.80	4211.70	-477.37	321.02	-477.20	0.19
4370.00	1.00	220.67	4297.69	-478.44	320.20	-478.28	0.27
4455.00	1.26	217.27	4382.67	-479.75	319.15	-479.58	0.32
4540.00	1.51	228.67	4467.65	-481.23	317.75	-481.07	0.44
4626.00	0.43	191.32	4553.64	-482.30	316.83	-482.13	1.39
4712.00	0.49	185.22	4639.63	-482.98	316.73	-482.82	0.09
4797.00	0.31	202.28	4724.63	-483.56	316.61	-483.39	0.25
4967.00	0.41	280.67	4894.63	-483.87	315.84	-483.70	0.27
5138.00	0.53	232.38	5065.62	-484.24	314.61	-484.07	0.23
5224.00	0.56	237.17	5151.62	-484.71	313.95	-484.55	0.06
5310.00	0.16	264.24	5237.62	-484.95	313.47	-484.79	0.49
5396.00	0.35	328.55	5323.62	-484.74	313.22	-484.57	0.37
5481.00	0.60	358.97	5408.61	-484.07	313.07	-483.91	0.41
5566.00	0.41	310.28	5493.61	-483.43	312.83	-483.27	0.53
5651.00	0.41	213.44	5578.61	-483.49	312.43	-483.32	0.72
5737.00	0.76	54.35	5664.61	-483.41	312.73	-483.25	1.34
5822.00	1.16	30.62	5749.60	-482.34	313.62	-482.18	0.65
5907.00	0.49	29.23	5834.59	-481.28	314.24	-481.12	0.79
5993.00	0.38	27.92	5920.58	-480.71	314.55	-480.55	0.13
6078.00	0.43	30.78	6005.58	-480.19	314.85	-480.02	0.06
6164.00	0.80	43.98	6091.58	-479.48	315.43	-479.31	0.46
6249.00	0.80	77.71	6176.57	-478.93	316.42	-478.76	0.55
6334.00	0.82	86.29	6261.56	-478.76	317.61	-478.59	0.14
6420.00	0.69	74.44	6347.55	-478.58	318.72	-478.41	0.24
6505.00	0.60	76.12	6432.55	-478.34	319.65	-478.17	0.11
6591.00	0.44	50.49	6518.54	-478.02	320.34	-477.85	0.32
6676.00	0.55	76.91	6603.54	-477.72	320.99	-477.55	0.29
6847.00	0.63	244.93	6774.54	-477.93	320.94	-477.76	0.69
6932.00	2.12	271.13	6859.51	-478.10	318.94	-477.93	1.86
7018.00	9.18	355.80	6945.12	-471.21	316.84	-471.04	10.73
7103.00	17.80	7.70	7027.71	-451.53	318.09	-451.37	10.60
7188.00	23.17	9.07	7107.30	-422.12	322.47	-421.95	6.34
7274.00	33.26	4.96	7183.00	-381.81	327.19	-381.64	11.94
7359.00	41.01	0.50	7250.72	-330.62	329.45	-330.45	9.65
7445.00	48.91	357.78	7311.53	-269.92	328.44	-269.74	9.45
7530.00	52.11	355.74	7365.58	-204.44	324.71	-204.27	4.20
7616.00	59.98	357.73	7413.58	-133.28	320.70	-133.11	9.35
7701.00	66.15	0.21	7452.07	-57.56	319.39	-57.39	7.71
7787.00	71.50	1.09	7483.13	22.60	320.31	22.77	6.29
7872.00	77.09	1.07	7506.12	104.38	321.85	104.55	6.58
7948.00	83.41	0.28	7518.99	179.24	322.73	179.41	8.38
8033.00	90.55	357.10	7523.47	264.03	320.78	264.20	9.19
8100.00	90.31	356.77	7522.96	330.94	317.20	331.10	0.61
8194.00	89.14	358.92	7523.41	424.86	313.66	425.02	2.60
8286.00	89.63	358.57	7524.40	516.83	311.65	517.00	0.65
8378.00	89.01	359.57	7525.49	608.81	310.16	608.97	1.28
8471.00	91.29	1.14	7525.25	701.80	310.73	701.96	2.98
8562.00	92.65	2.21	7522.12	792.71	313.39	792.87	1.90
8655.00	91.54	1.05	7518.72	885.60	316.03	885.77	1.73
8748.00	91.29	1.34	7516.42	978.55	317.97	978.72	0.41
8841.00	89.81	0.78	7515.53	1071.53	319.69	1071.70	1.70
8934.00	88.89	0.30	7516.59	1164.52	320.57	1164.69	1.12
9026.00	89.32	358.81	7518.02	1256.50	319.85	1256.67	1.69
9118.00	88.21	356.89	7520.01	1348.41	316.40	1348.58	2.41
9204.00	88.52	356.13	7522.46	1434.22	311.17	1434.38	0.95
9289.00	89.57	357.11	7523.88	1519.05	306.16	1519.21	1.69
9374.00	91.05	357.66	7523.42	1603.96	302.28	1604.12	1.86
9460.00	91.85	357.18	7521.24	1689.85	298.41	1690.00	1.08
9545.00	90.74	356.77	7519.32	1774.70	293.93	1774.86	1.39

9630.00	90.18	356.11	7518.64	1859.54	288.65	1859.69	1.02
9716.00	88.58	355.83	7519.57	1945.32	282.61	1945.46	1.89
9801.00	90.56	356.07	7520.21	2030.10	276.60	2030.24	2.35
9887.00	89.32	355.56	7520.30	2115.87	270.33	2116.01	1.56
9972.00	91.32	356.08	7519.82	2200.63	264.13	2200.77	2.43
10057.00	89.20	356.90	7519.44	2285.47	258.93	2285.60	2.67
10143.00	89.01	357.94	7520.78	2371.37	255.06	2371.50	1.23
10228.00	88.95	357.09	7522.29	2456.27	251.37	2456.41	1.00
10314.00	88.95	357.54	7523.87	2542.17	247.35	2542.29	0.52
10399.00	87.84	357.61	7526.25	2627.05	243.75	2627.18	1.31
10484.00	87.90	358.71	7529.41	2711.95	241.02	2712.08	1.30
10570.00	88.46	359.61	7532.14	2797.90	239.76	2798.02	1.23
10655.00	89.88	0.03	7533.37	2882.89	239.50	2883.01	1.74
10740.00	91.23	359.41	7532.55	2967.88	239.08	2968.00	1.75
10825.00	91.79	359.46	7530.31	3052.84	238.24	3052.97	0.66
10911.00	91.60	1.20	7527.76	3138.80	238.74	3138.93	2.03
10996.00	88.77	1.33	7527.49	3223.77	240.61	3223.90	3.33
11082.00	85.18	1.40	7532.03	3309.61	242.66	3309.74	4.18
11167.00	87.16	2.28	7537.71	3394.37	245.38	3394.50	2.55
11252.00	87.72	3.62	7541.50	3479.18	249.75	3479.31	1.71
11337.00	89.44	5.66	7543.61	3563.86	256.63	3564.00	3.14
11423.00	90.93	4.88	7543.33	3649.50	264.53	3649.63	1.96
11509.00	91.05	4.51	7541.84	3735.19	271.57	3735.34	0.45
11594.00	92.59	3.78	7539.15	3819.93	277.71	3820.07	2.00
11679.00	92.04	3.32	7535.71	3904.69	282.96	3904.84	0.84
11765.00	91.23	2.17	7533.26	3990.56	287.08	3990.71	1.64
11850.00	91.05	2.05	7531.57	4075.48	290.21	4075.63	0.25
11936.00	89.51	0.69	7531.15	4161.45	292.27	4161.60	2.39
12021.00	89.63	1.48	7531.78	4246.43	293.88	4246.59	0.94
12107.00	89.94	1.83	7532.11	4332.40	296.36	4332.55	0.54
12192.00	91.36	0.31	7531.14	4417.37	297.95	4417.53	2.45
12277.00	91.05	359.38	7529.36	4502.35	297.72	4502.51	1.15
12363.00	92.04	0.00	7527.04	4588.32	297.25	4588.47	1.36
12448.00	90.74	0.77	7524.97	4673.29	297.82	4673.44	1.78
12533.00	91.23	2.27	7523.51	4758.24	300.08	4758.40	1.86
12619.00	90.49	0.84	7522.22	4844.20	302.41	4844.36	1.87
12704.00	89.69	1.51	7522.09	4929.18	304.15	4929.34	1.23
12789.00	90.49	1.14	7521.96	5014.16	306.12	5014.32	1.04
12875.00	90.86	358.92	7520.94	5100.15	306.16	5100.30	2.62
12960.00	91.73	358.79	7519.02	5185.11	304.47	5185.26	1.03
13045.00	91.91	358.32	7516.32	5270.04	302.32	5270.19	0.59
13130.00	91.36	359.93	7513.90	5354.99	301.03	5355.14	2.00
13216.00	91.36	359.06	7511.86	5440.96	300.27	5441.12	1.01
13301.00	90.12	358.28	7510.76	5525.93	298.30	5526.08	1.72
13386.00	90.93	358.07	7509.98	5610.88	295.59	5611.03	0.98
13472.00	91.73	359.49	7507.98	5696.83	293.76	5696.99	1.89
13557.00	90.00	358.19	7506.70	5781.80	292.04	5781.95	2.55
13642.00	91.23	358.62	7505.79	5866.76	289.67	5866.91	1.53
13728.00	92.59	359.46	7502.92	5952.70	288.23	5952.85	1.86
13813.00	91.73	358.85	7499.72	6037.63	286.98	6037.78	1.24
13898.00	90.68	358.82	7497.93	6122.59	285.25	6122.74	1.24
14026.00	92.16	359.88	7494.76	6250.54	283.80	6250.69	1.42
14112.00	92.16	359.10	7491.52	6336.47	283.03	6336.62	0.91
14197.00	92.59	359.51	7487.99	6421.39	282.00	6421.54	0.70
14282.00	93.58	359.26	7483.42	6506.26	281.09	6506.41	1.20
14368.00	93.33	359.39	7478.24	6592.10	280.08	6592.25	0.33
14453.00	93.15	359.00	7473.43	6676.96	278.89	6677.10	0.50
14538.00	91.79	358.75	7469.77	6761.86	277.22	6762.00	1.63
14631.00	91.23	357.62	7467.32	6854.78	274.28	6854.92	1.36

Projected to Total Depth:

14676.00

91.23

357.62

7466.35

6899.73

272.41

6899.87

0.00

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\*Weatherford Surveys from 1364 ft MD to 14631 ft MD.\*\*

\*TD at 14676 ft MD.\*

The total correction is 8.60 deg relative to True North.

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**Weatherford®**

Final Print

COMPANY	<u>Anadarko Petroleum Corp.</u>		
WELL	<u>Howard 10N-22HZ</u>		
FIELD	<u>Wattenberg</u>		
RIG	<u>Xtreme 23</u>		
LOC.	<u>Colorado</u>	COUNTY	<u>Weld</u>