



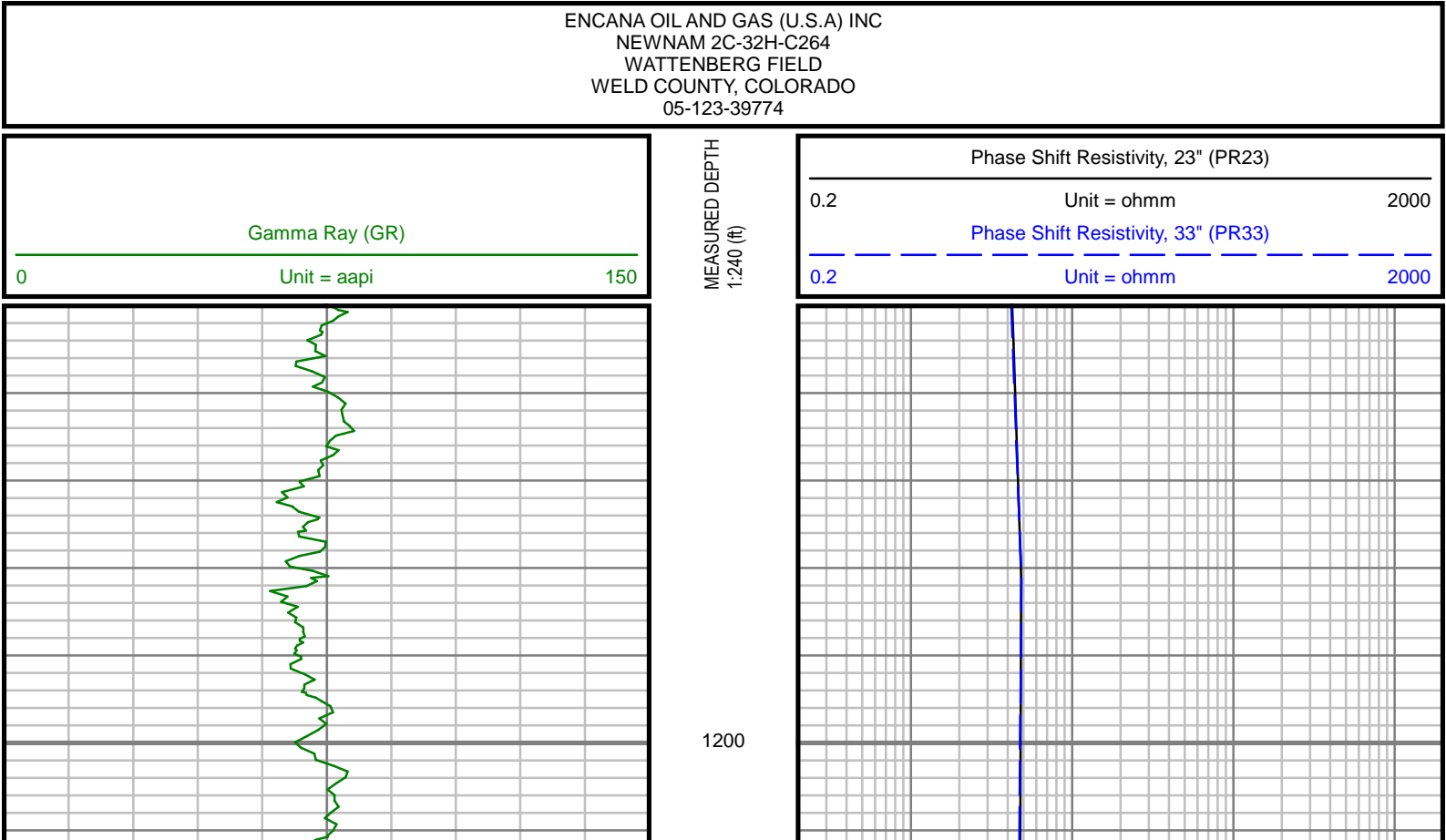
PROPAGATION RESISTIVITY
GAMMA RAY

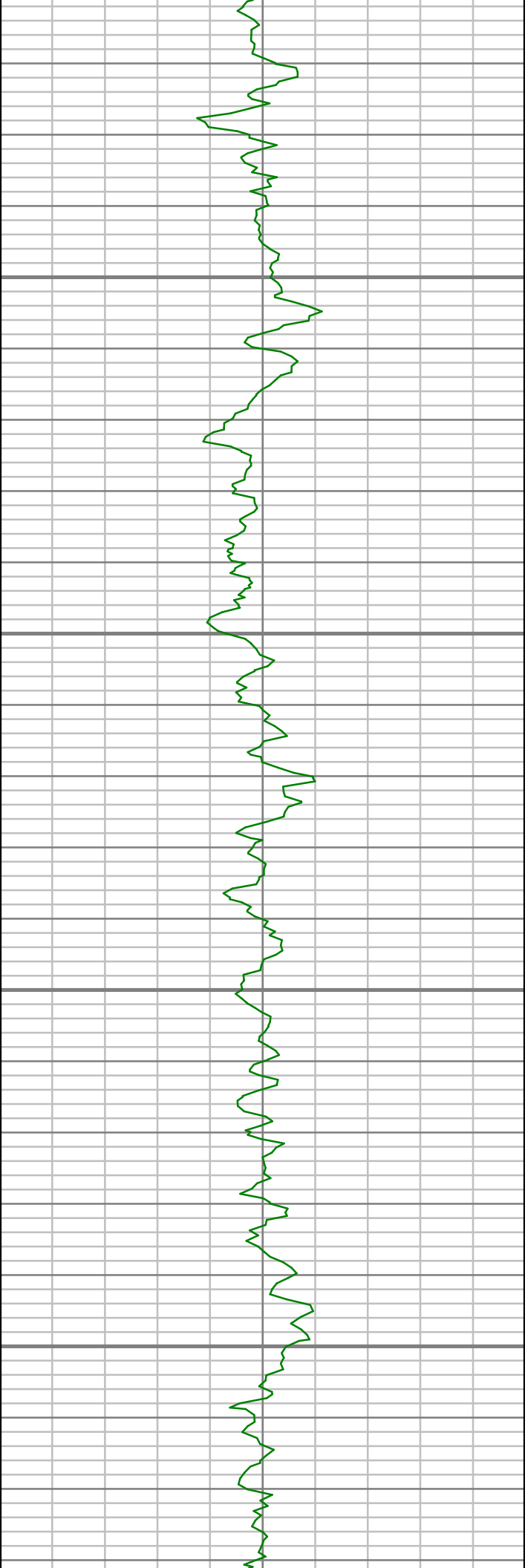
5" = 100' FEET MD

[illegible]

Remarks
ENCANA OIL AND GAS (USA) INC PRODUCTION AFE# 13179811
SCIENTIFIC DRILLING INTERNATIONAL JOB# 219238
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO PHASE SHIFT RESISTIVITY, 23" CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO PHASE SHIFT RESISTIVITY, 33" CURVE
RUN #1: MWD / DIRECTIONAL RUN
SENSORS S/N: PULSER = 128-063 / CONT = 865 / MWD EYE = 1012 / GMWD = 012
BIT TO SENSOR OFFSETS: SURVEY = 62.22 FT. / GYRO = 49.24 FT.
RUN #2: MWD / GAMMA RAY / PROPAGATION RESISTIVITY LOGGING RUN
SENSORS S/N: PULSER = 128-003 / CONT = 218 / MWD EYE = 0809 / PRT = 323 / GAMMA RAY = 1194
BIT TO SENSOR OFFSETS: SURVEY = 57.27 FT. / RESISTIVITY = 46.04 FT. / GAMMA RAY = 40.30 FT.
MNEMONICS LIST:
GR = GAMMA RAY
PR23 = PHASE SHIFT RESISTIVITY, 23"
PR33 = PHASE SHIFT RESISTIVITY, 33"

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 willful 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 as set out in our current price schedule.



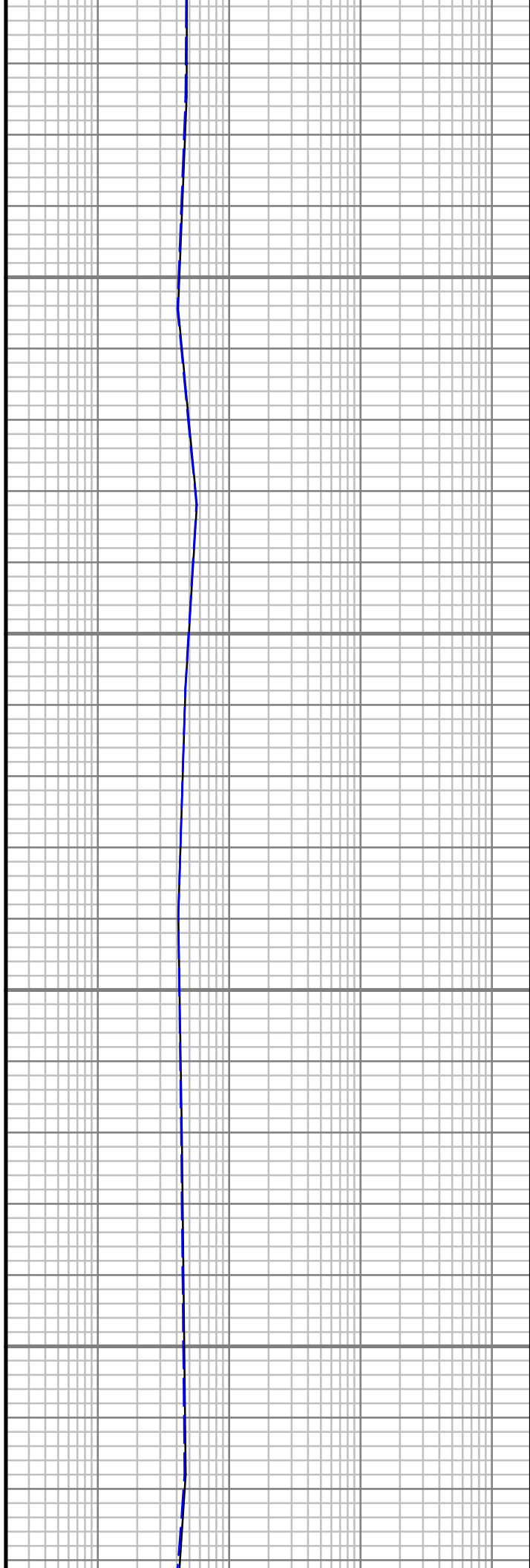


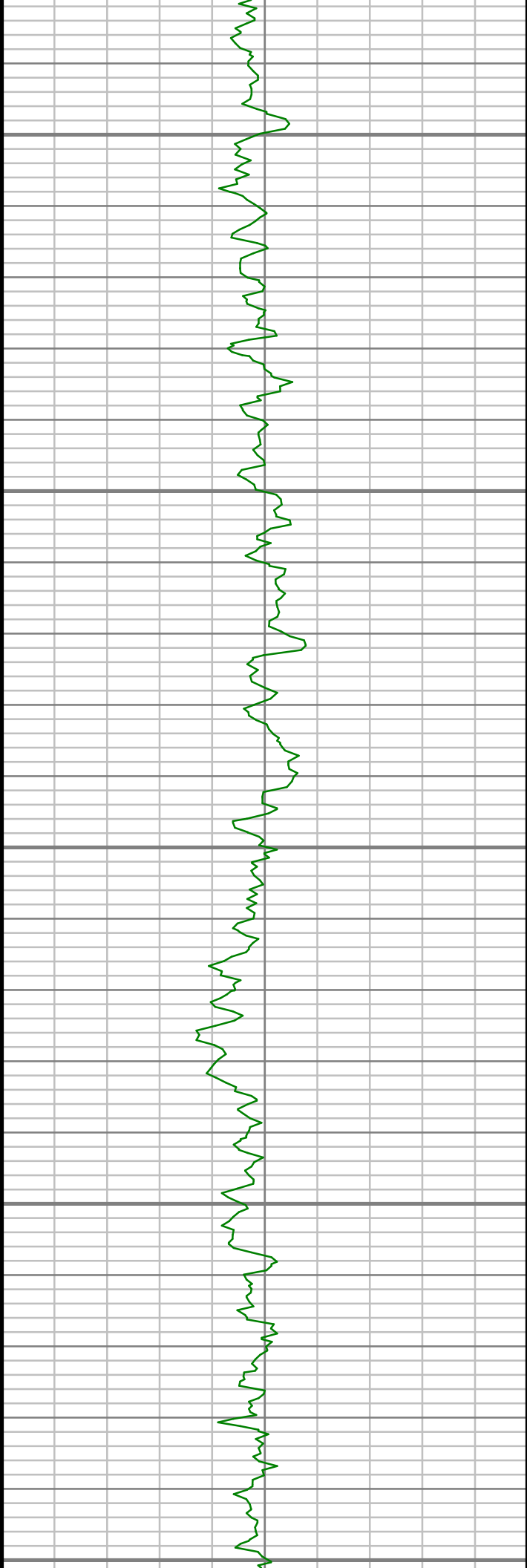
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1350

1400





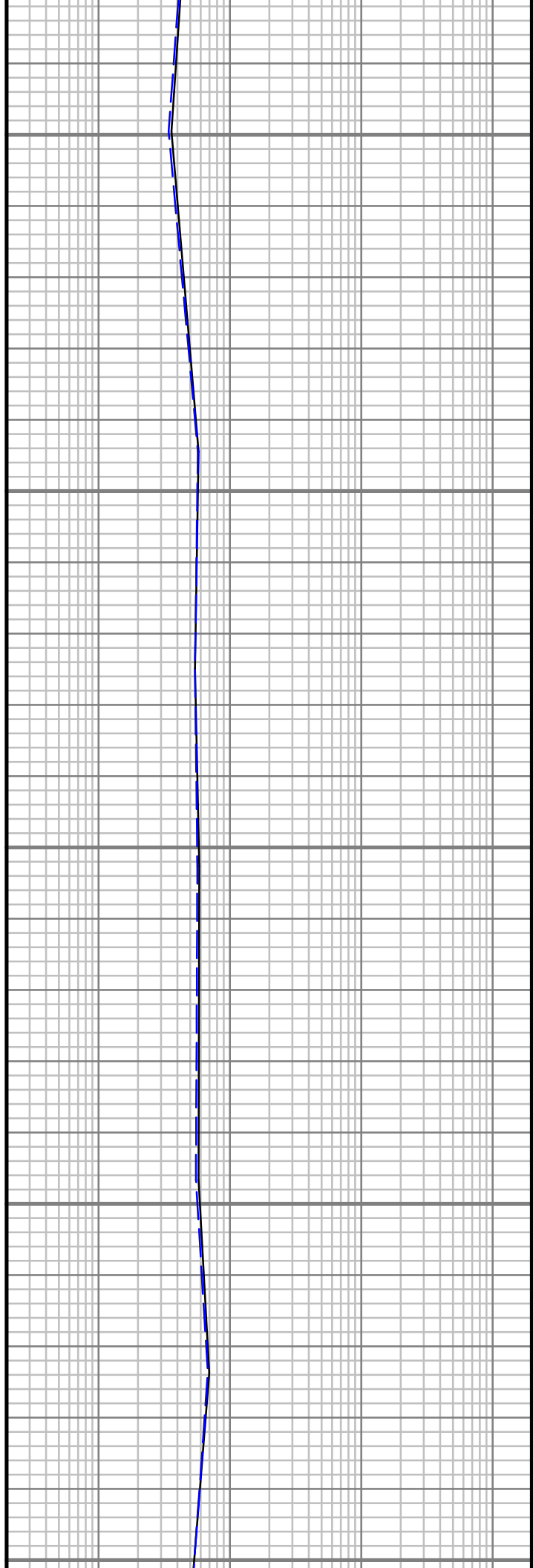
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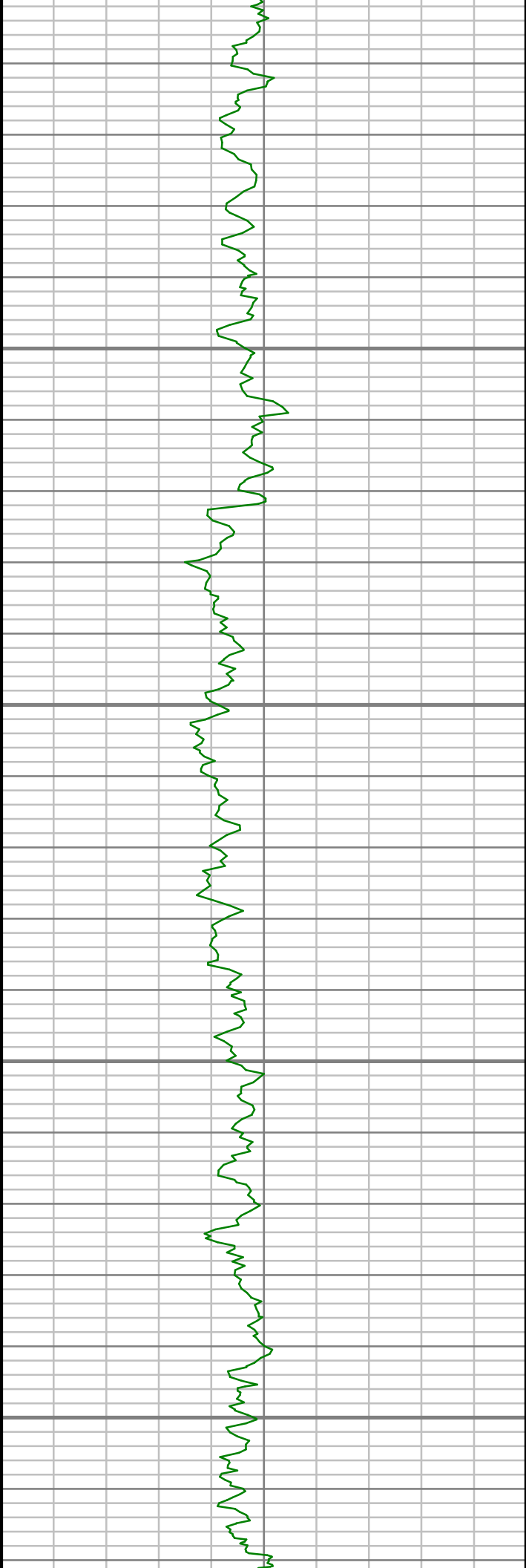
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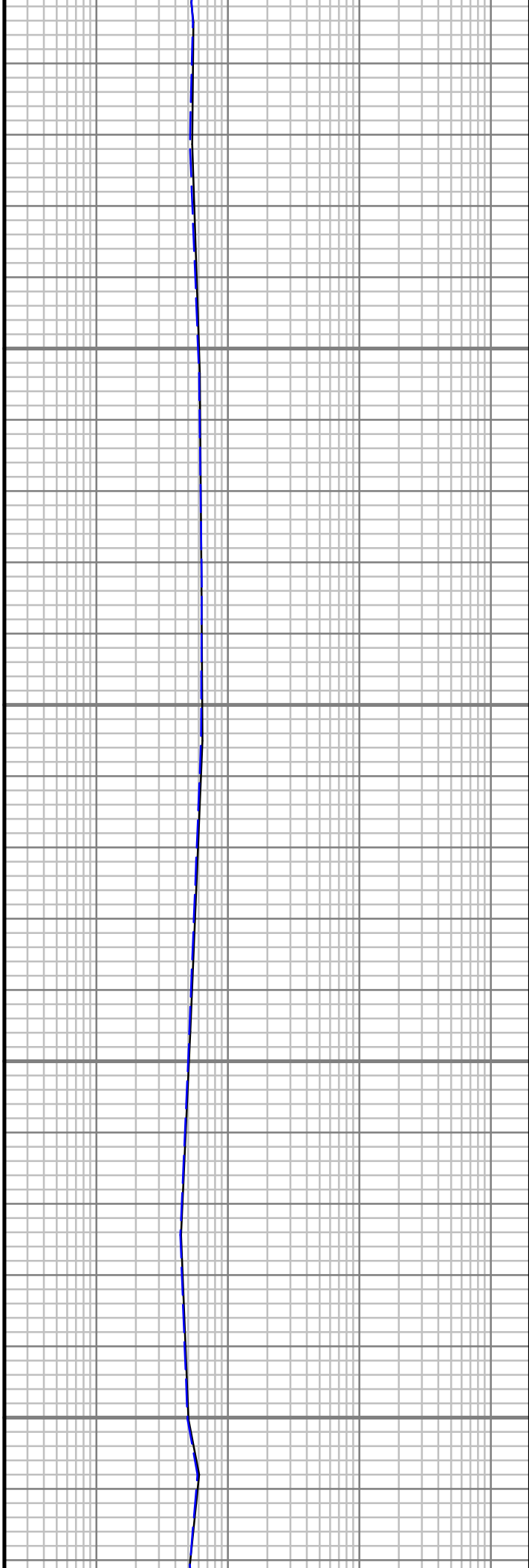


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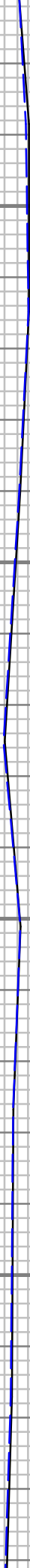


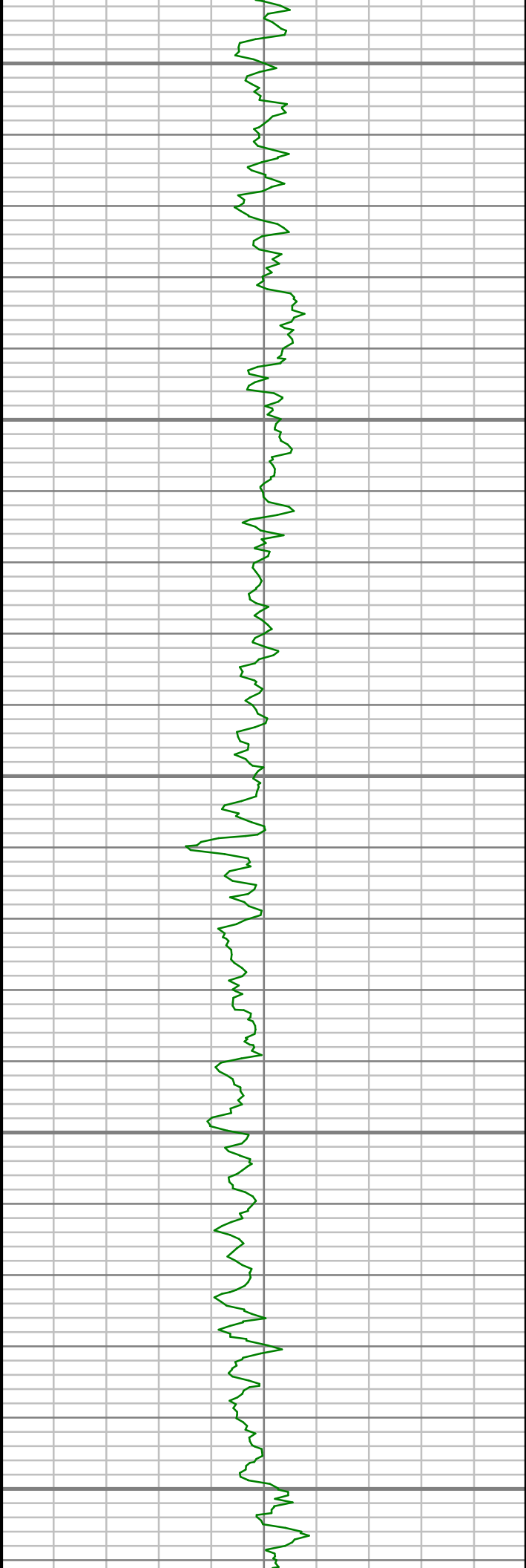
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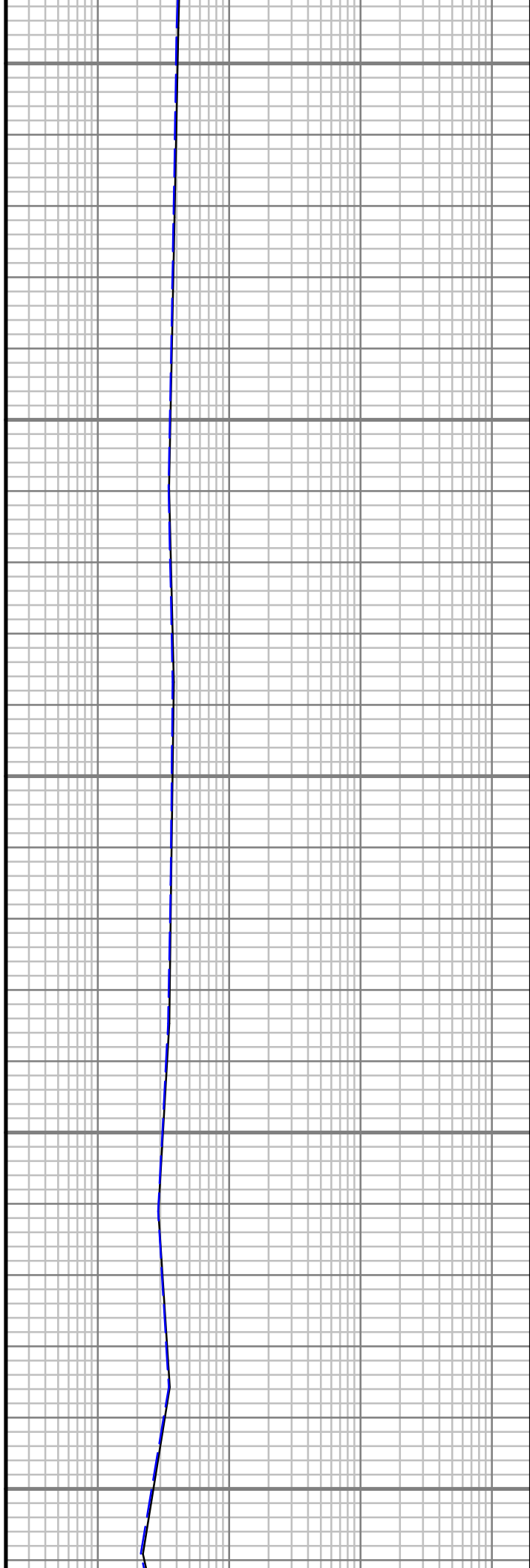
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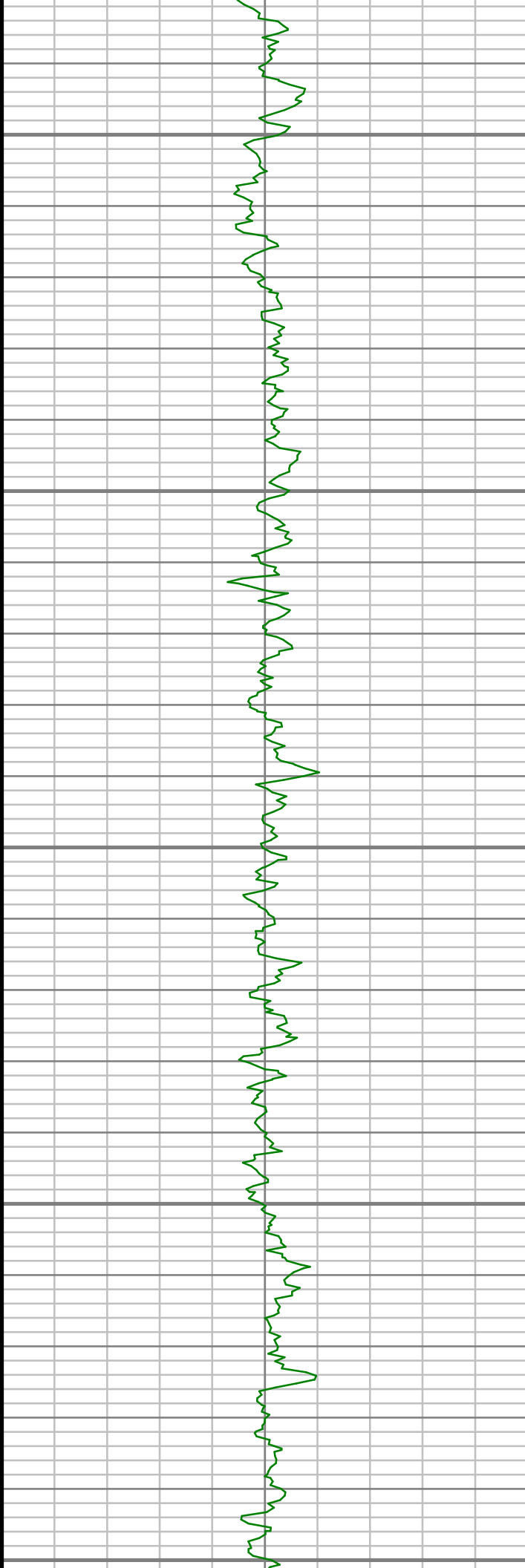
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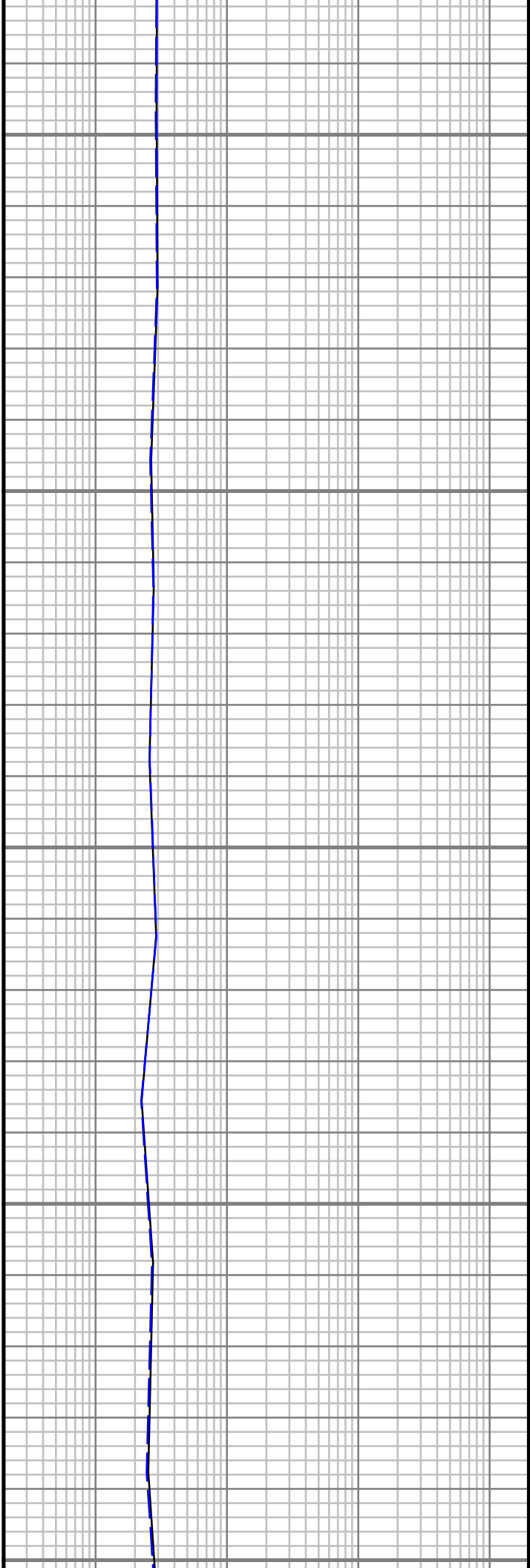
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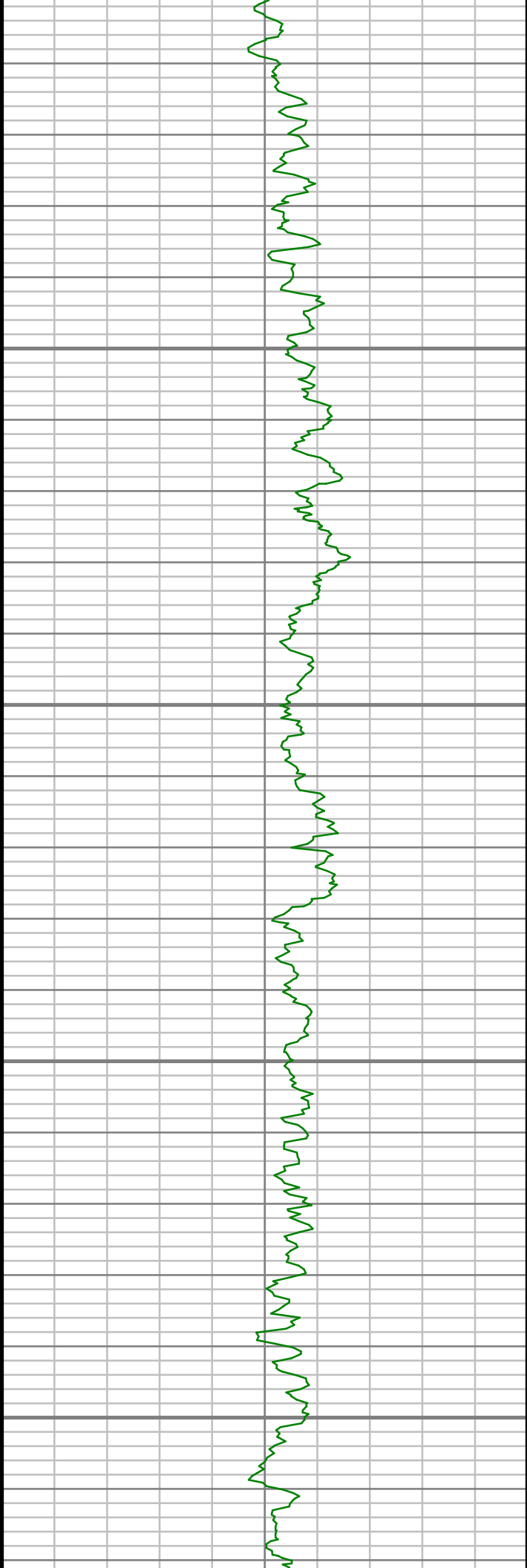
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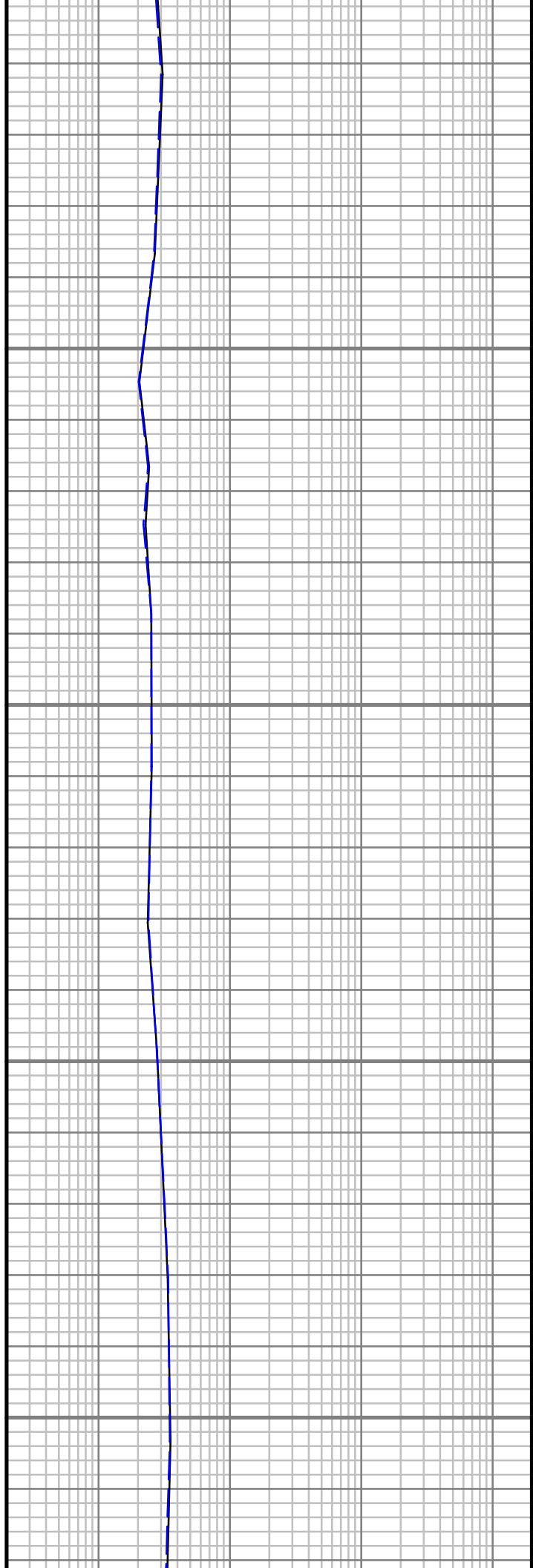


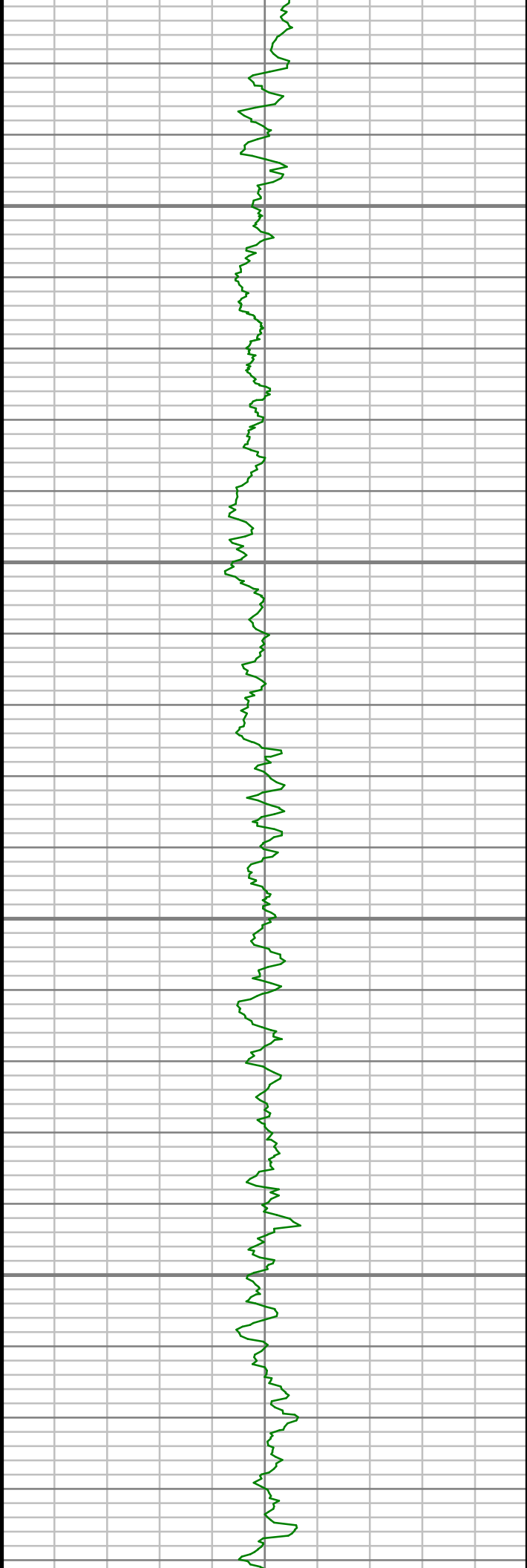
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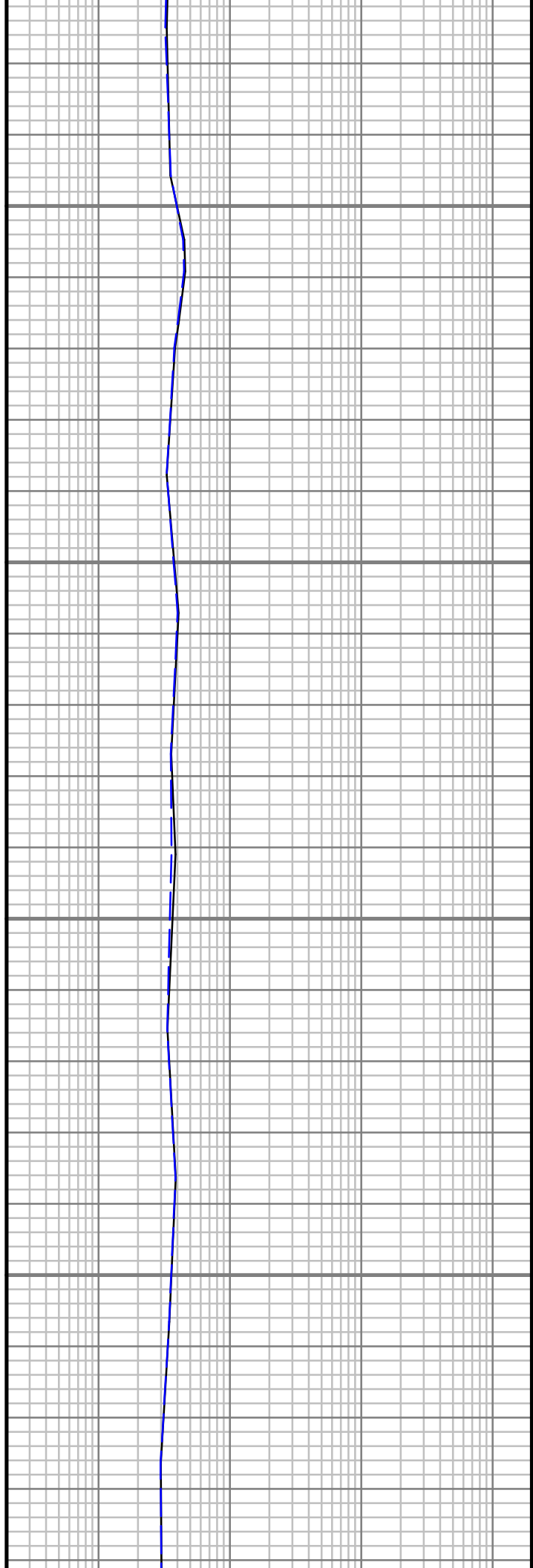


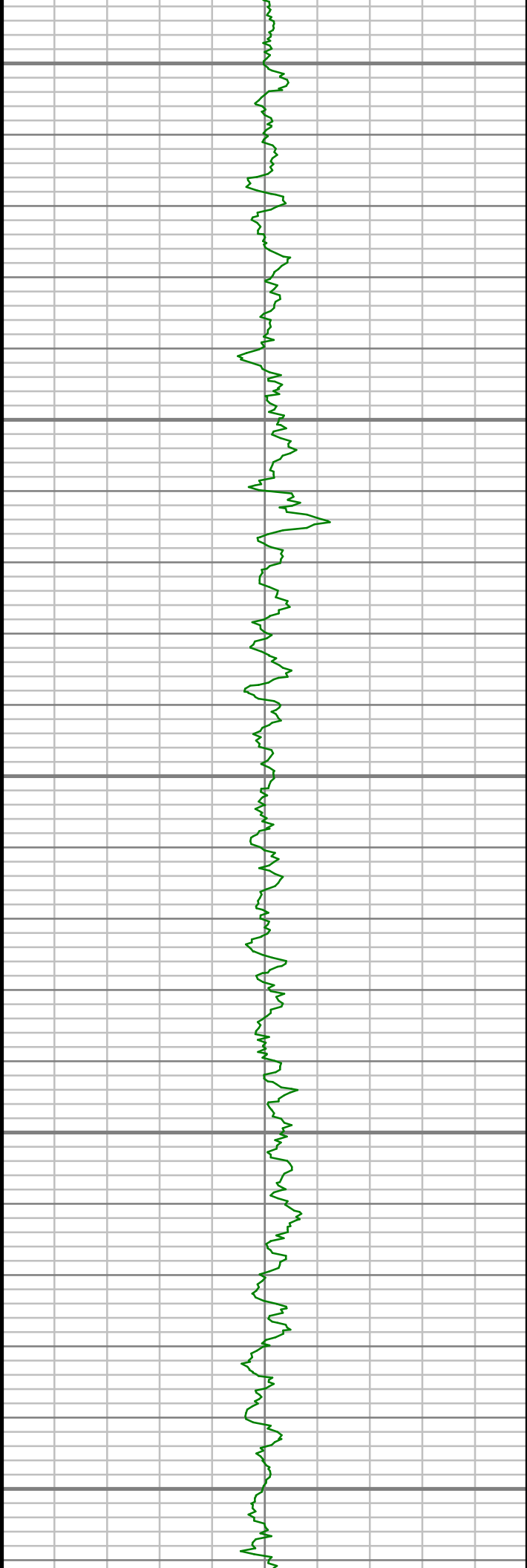
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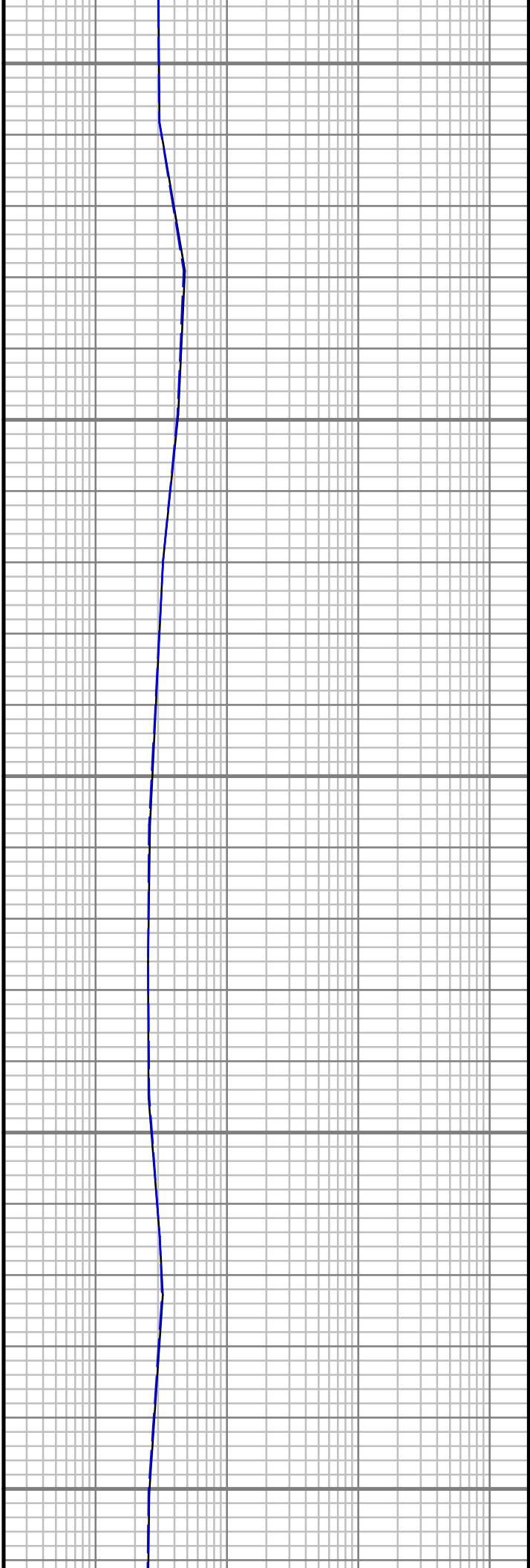
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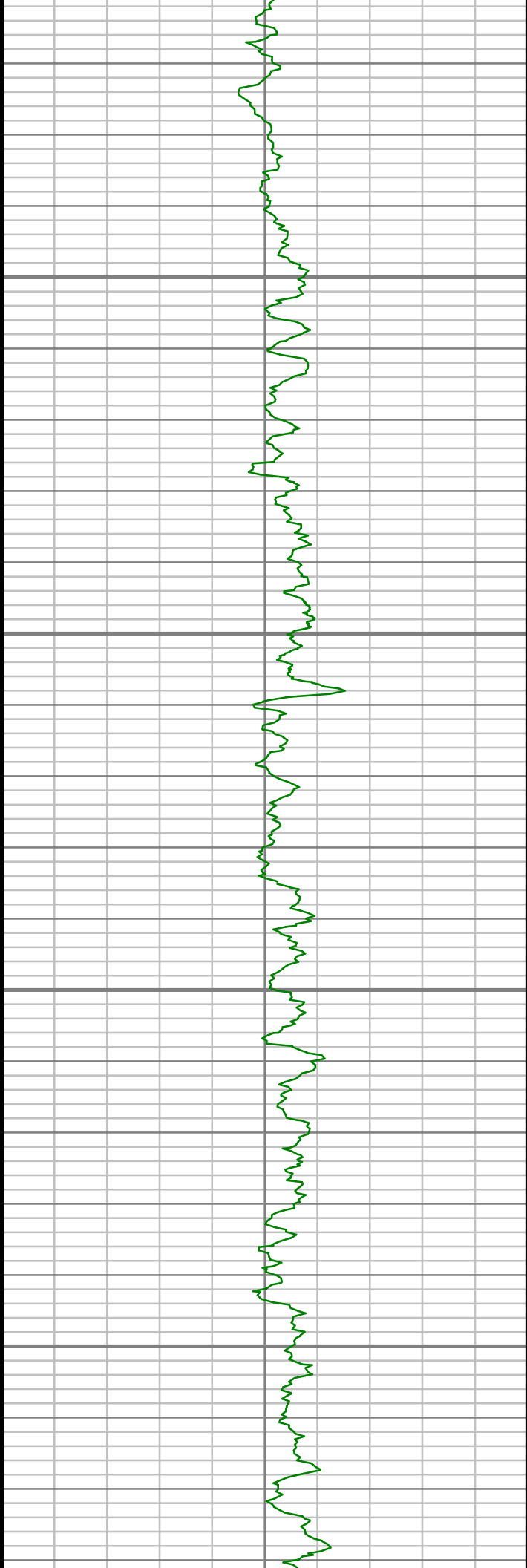
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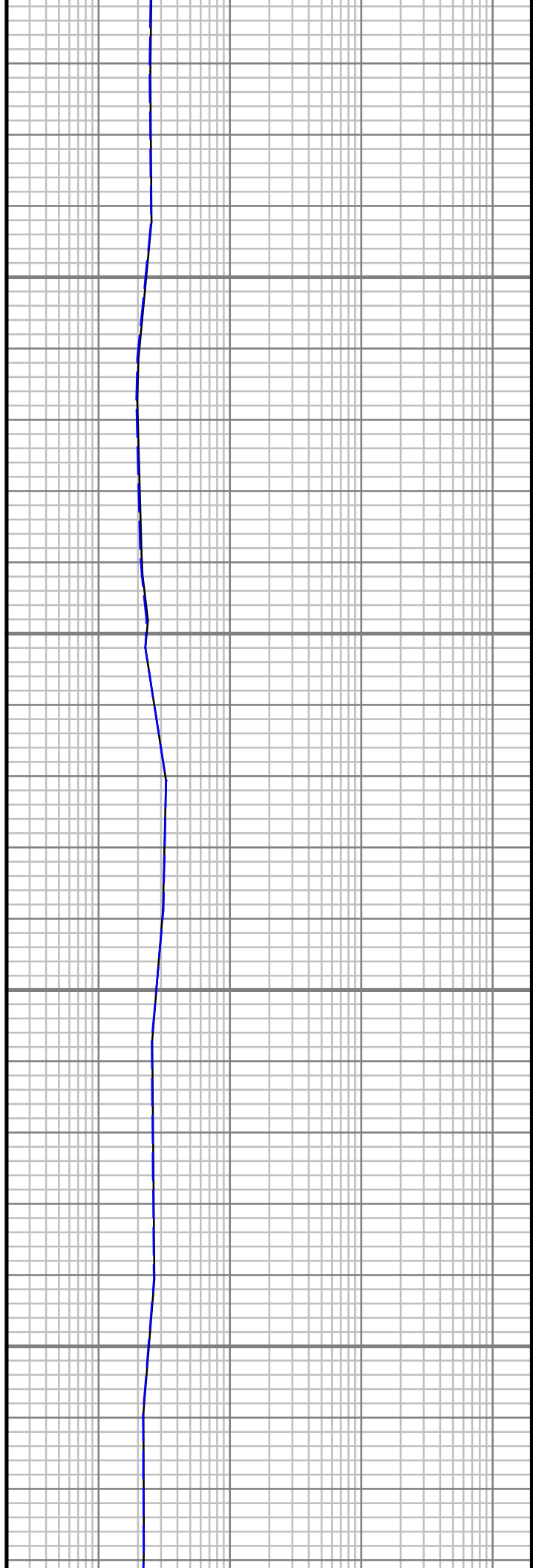


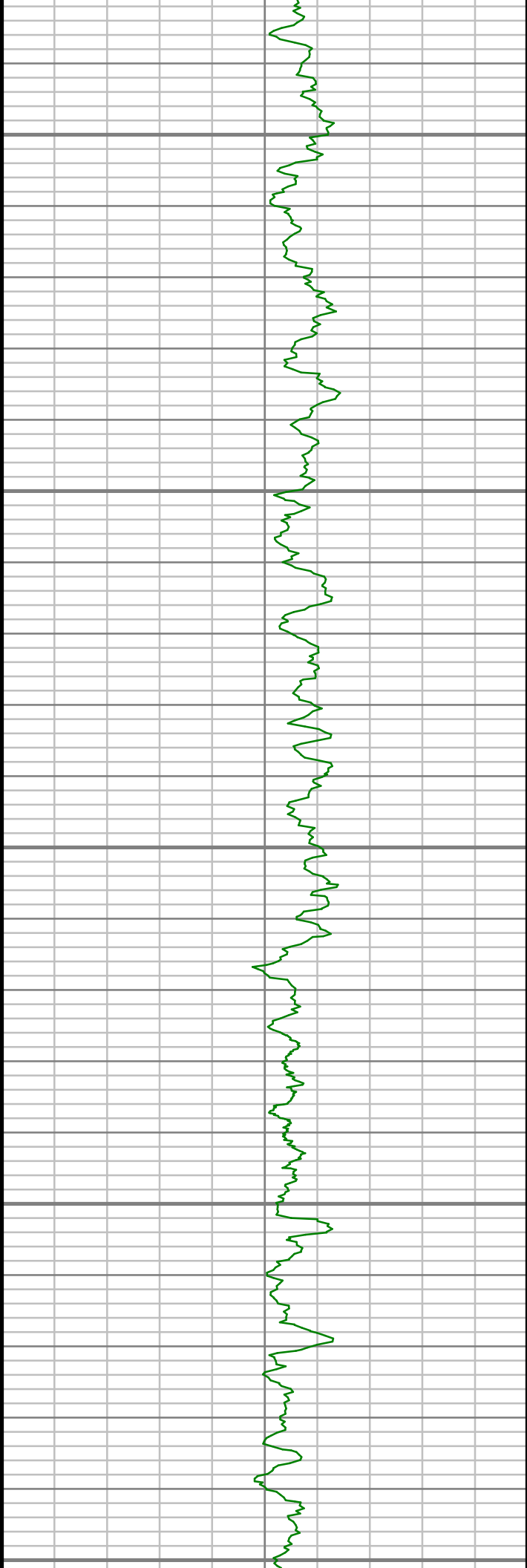
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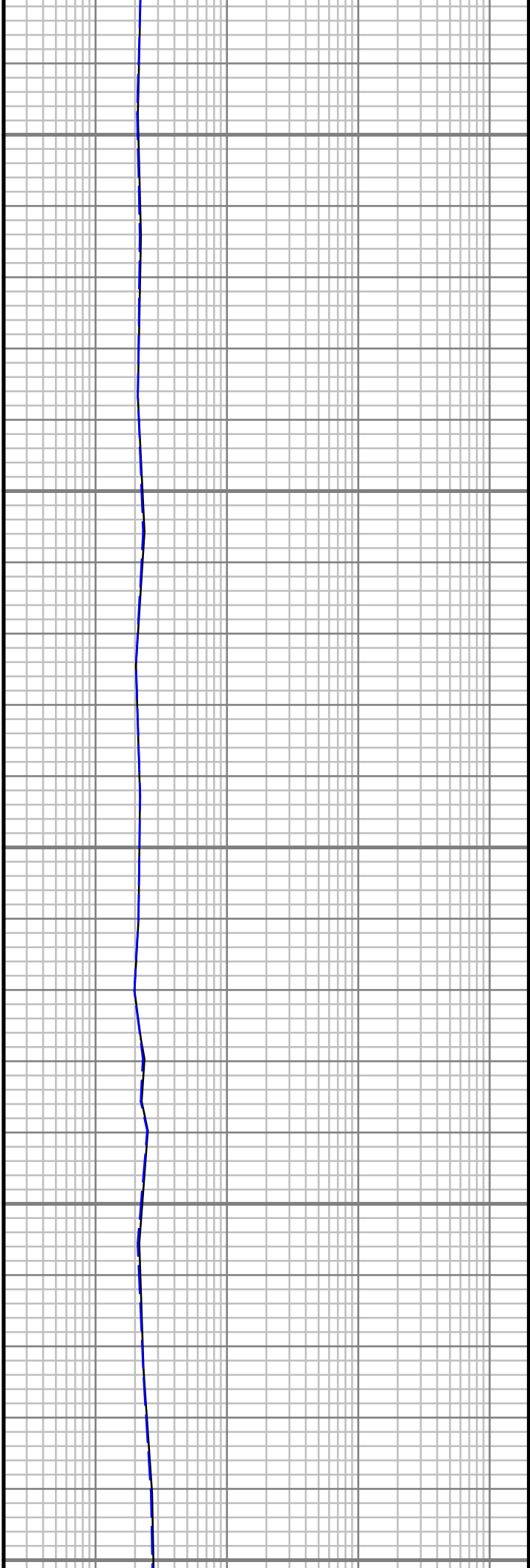
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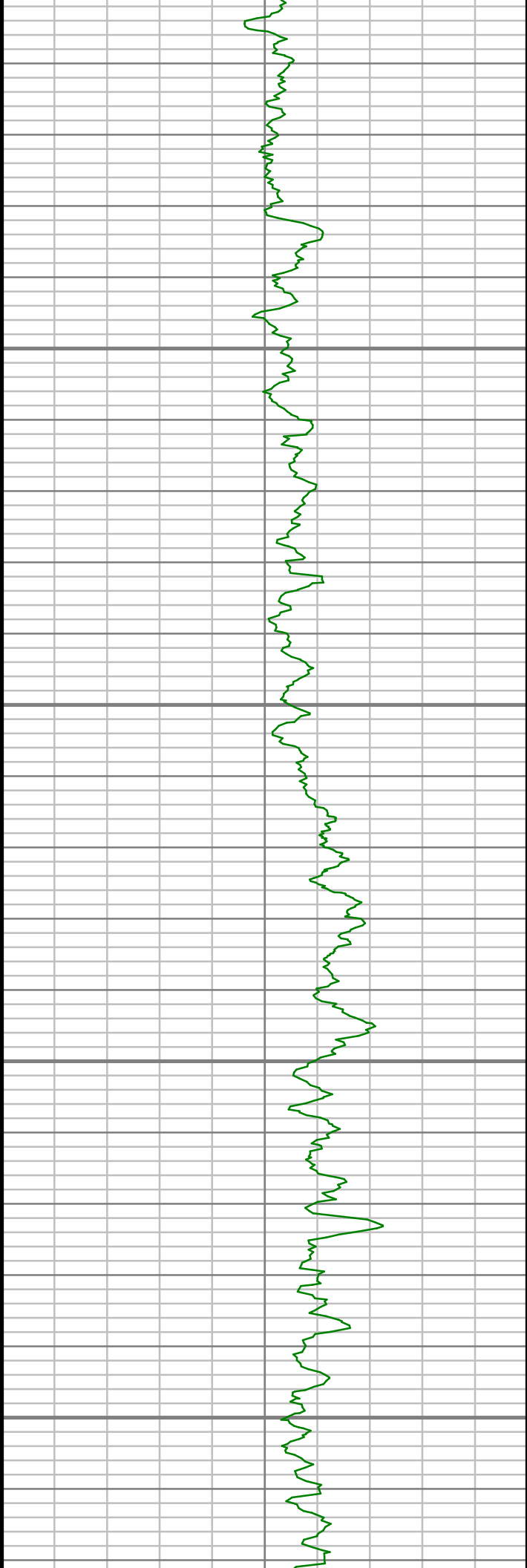
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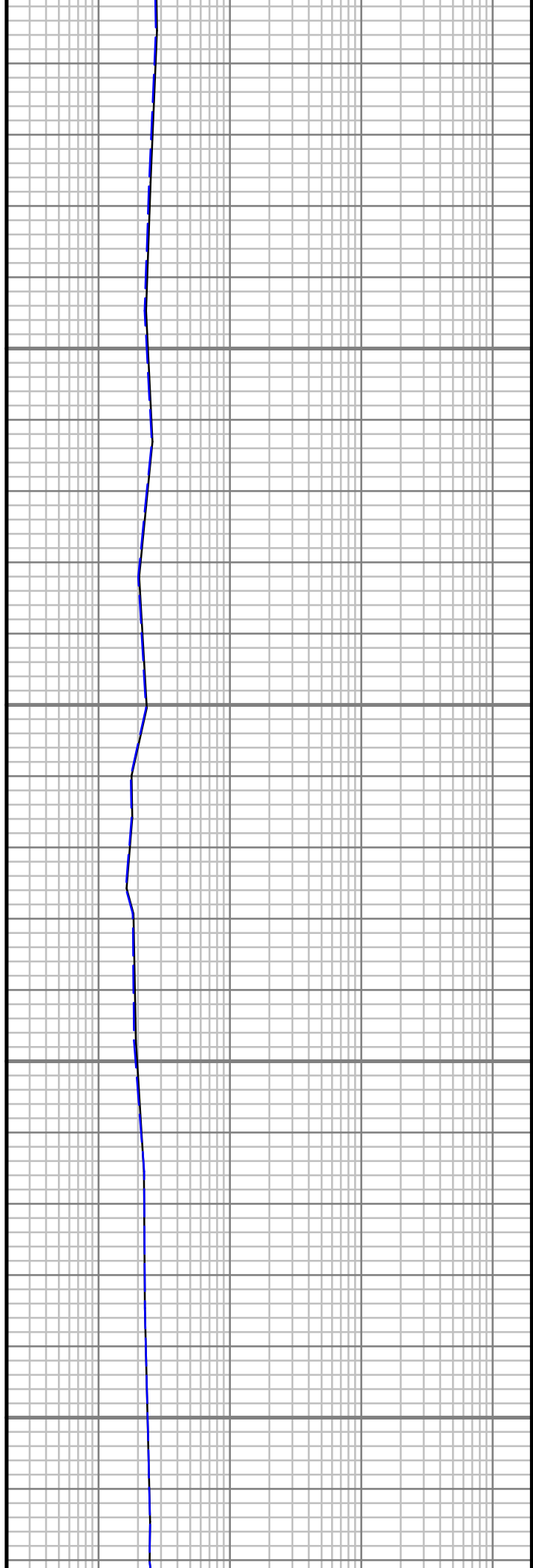


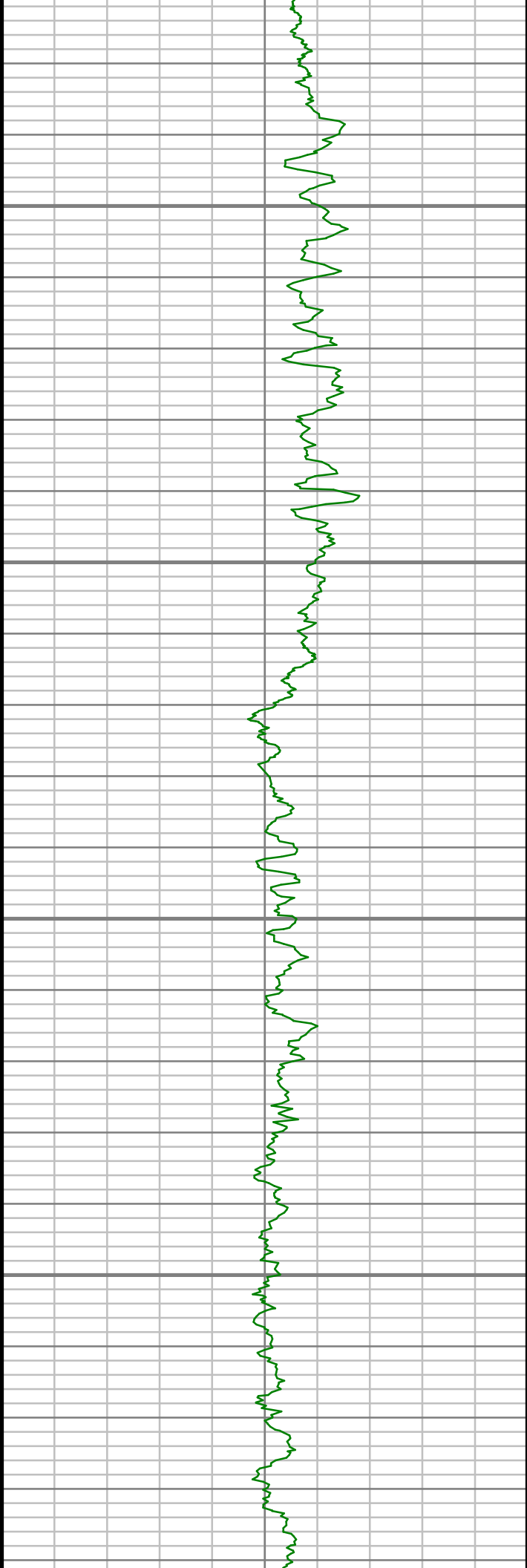
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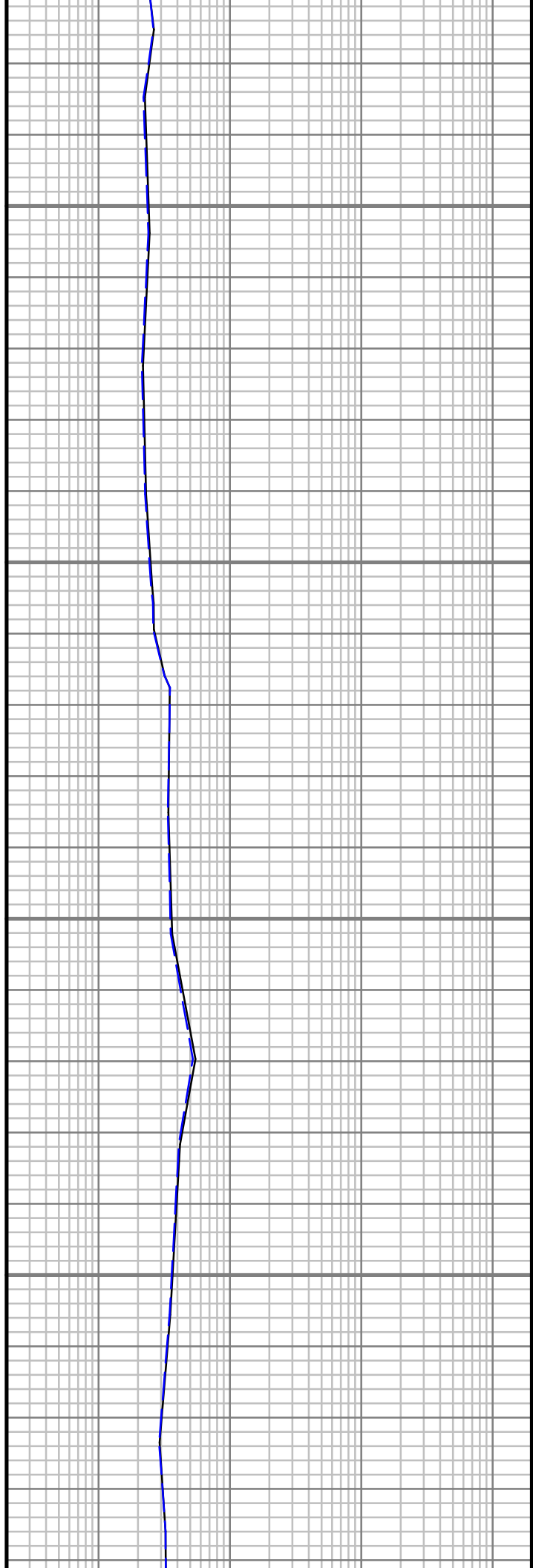


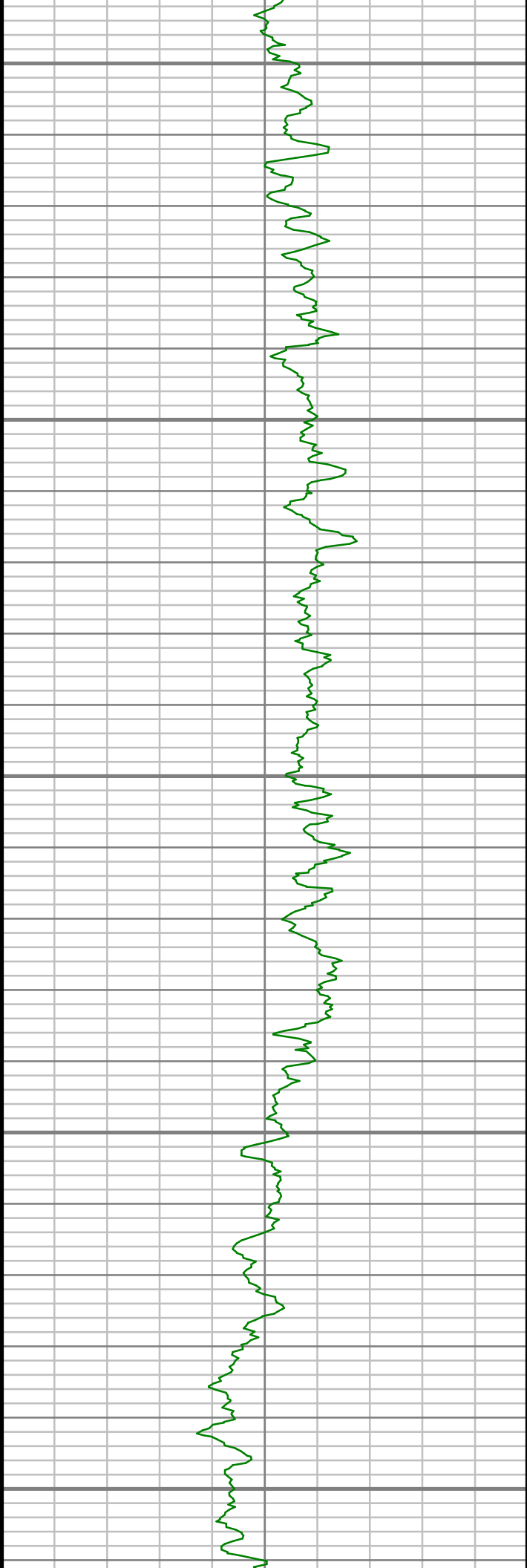
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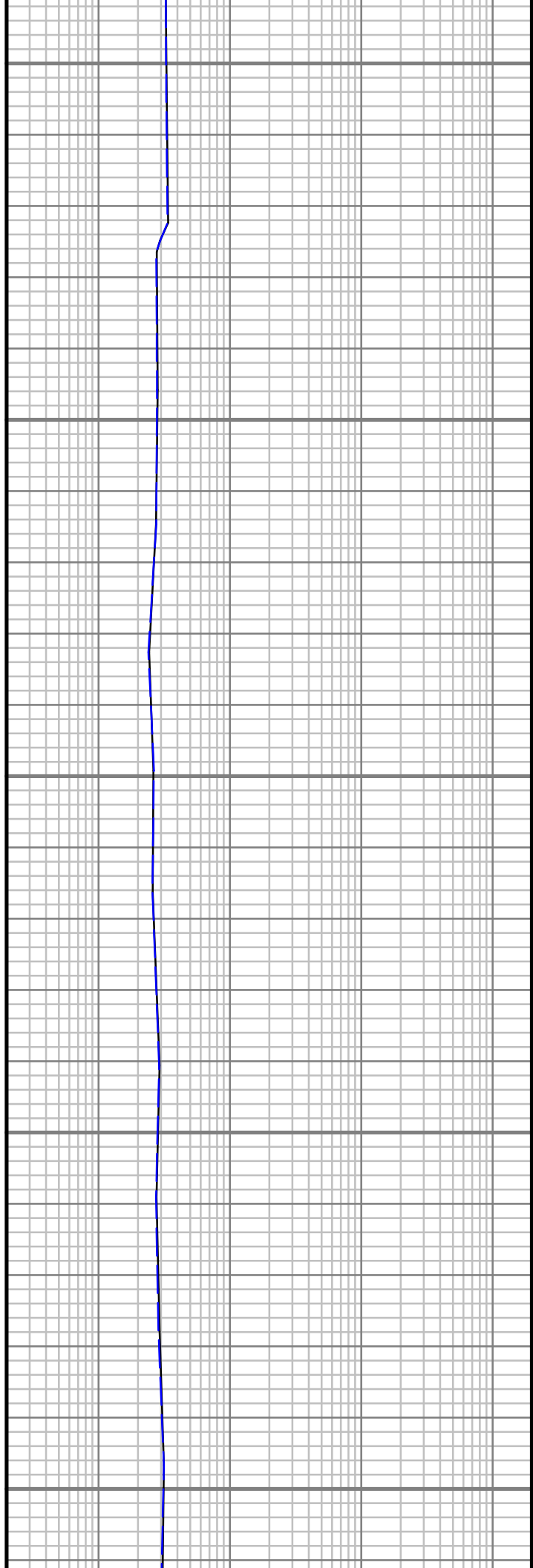
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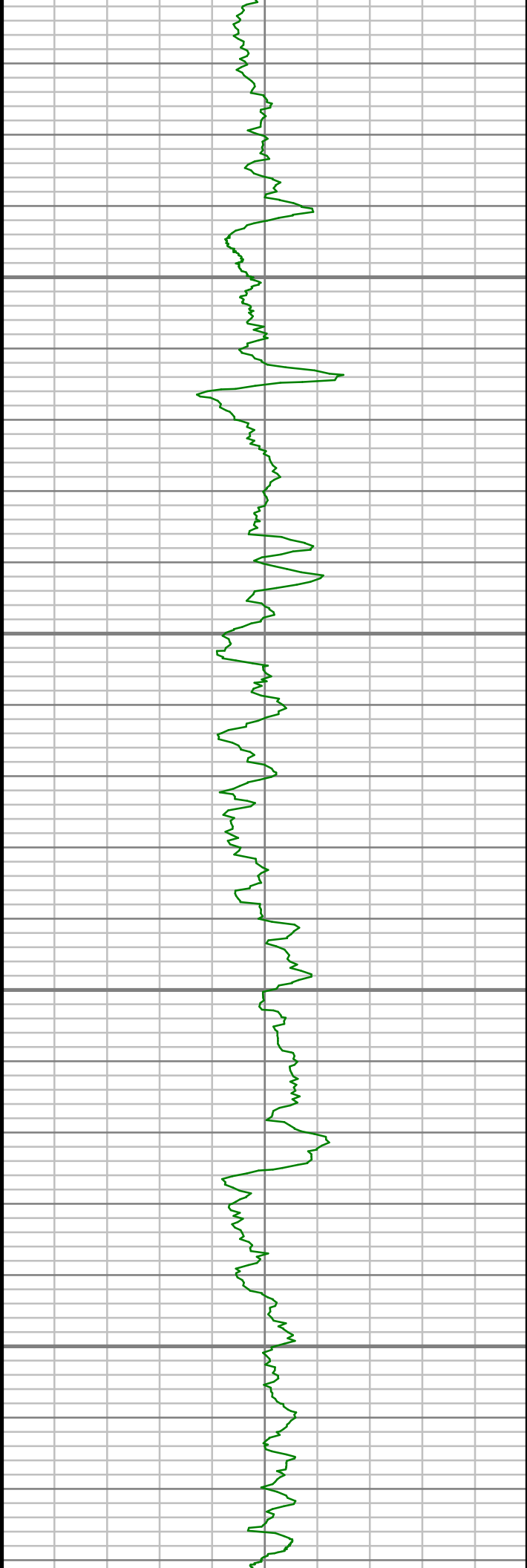
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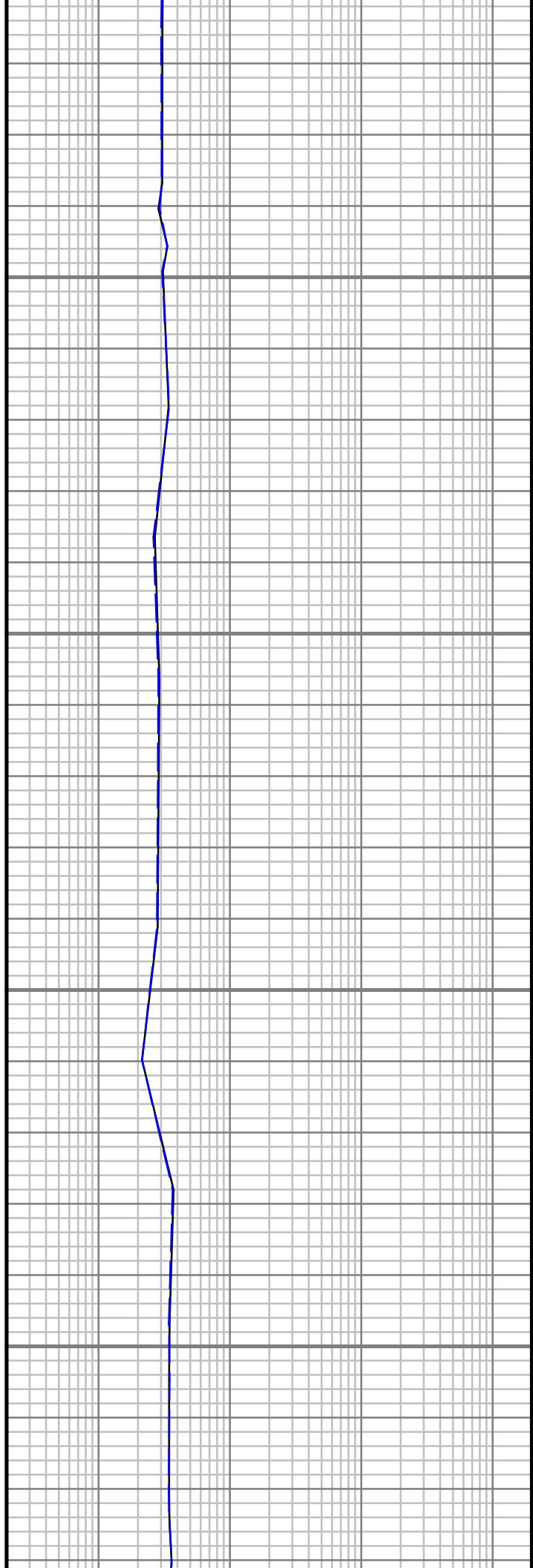


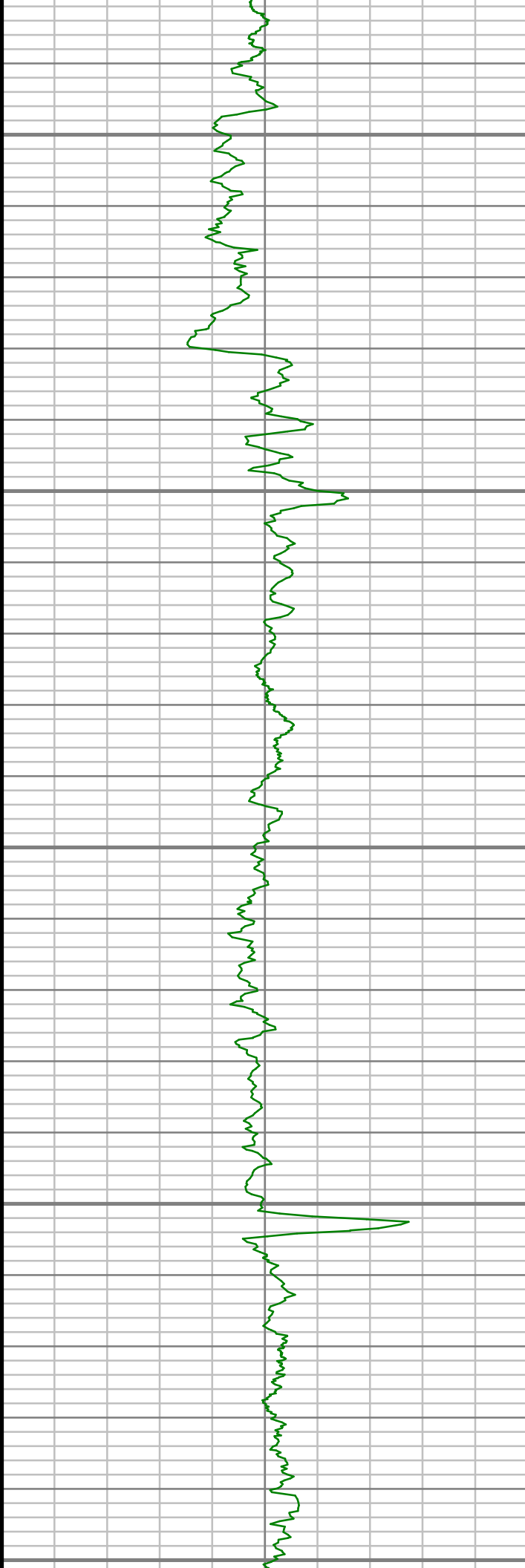
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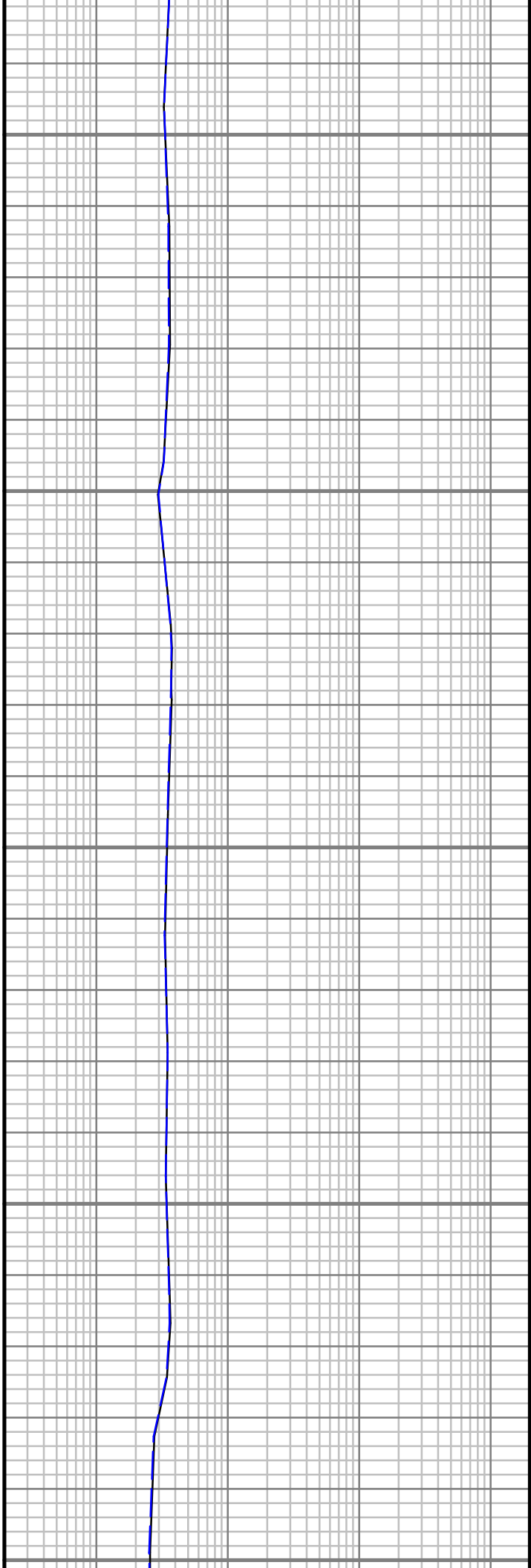
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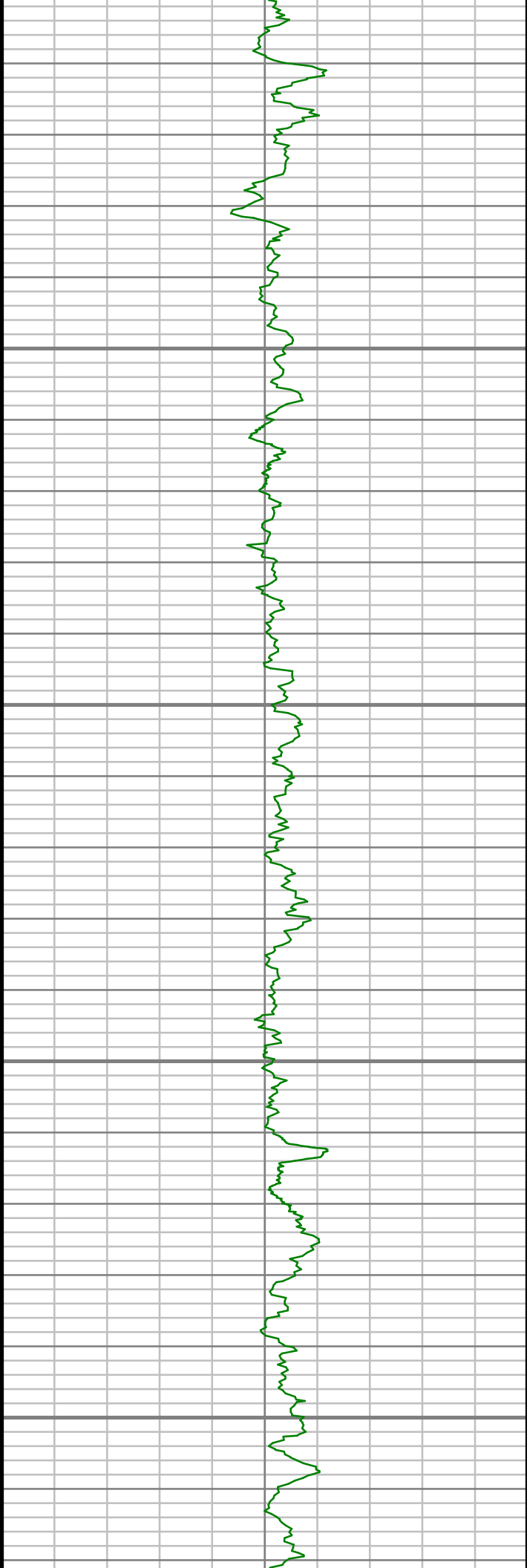
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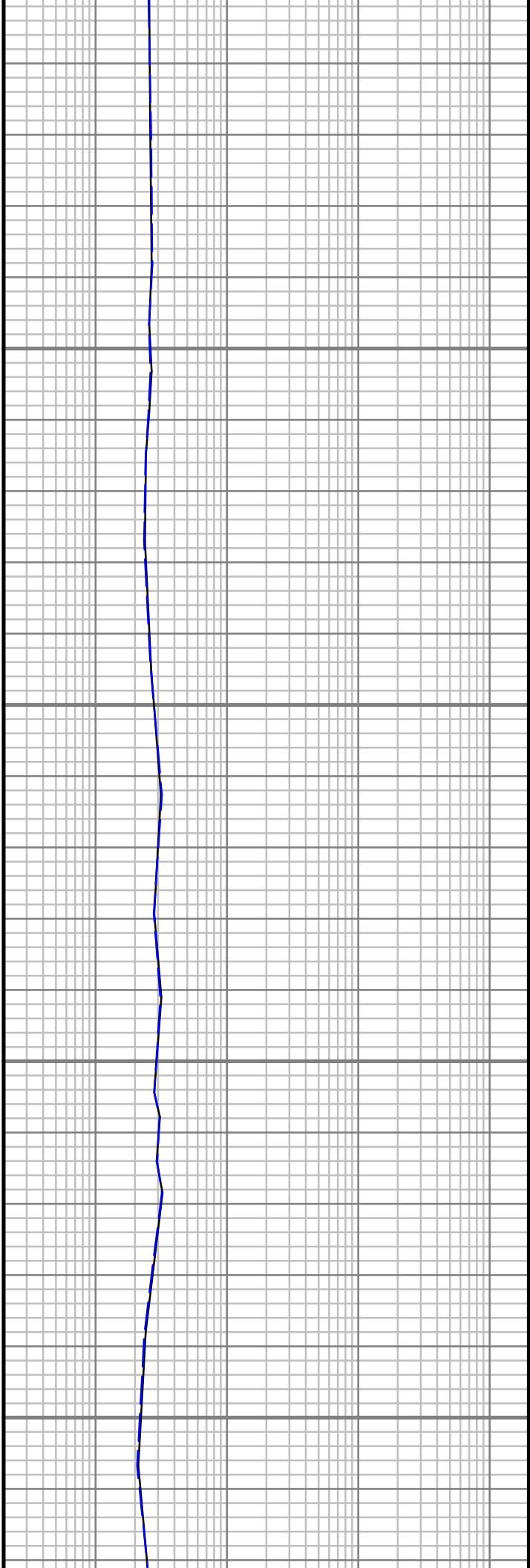


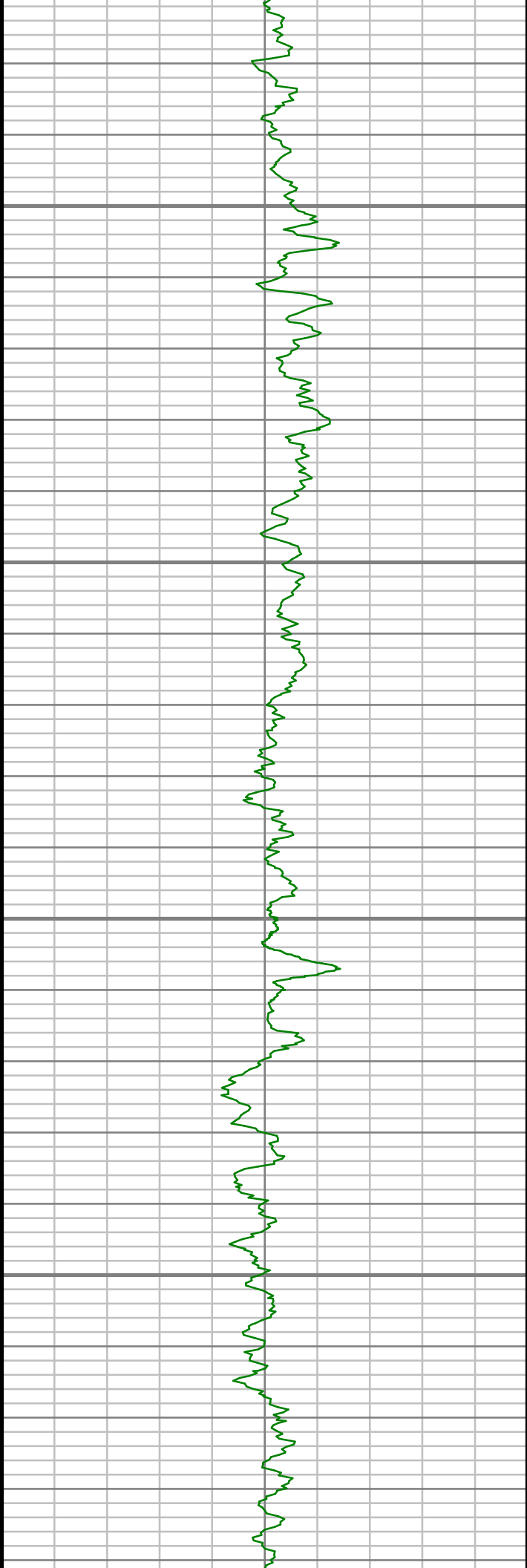
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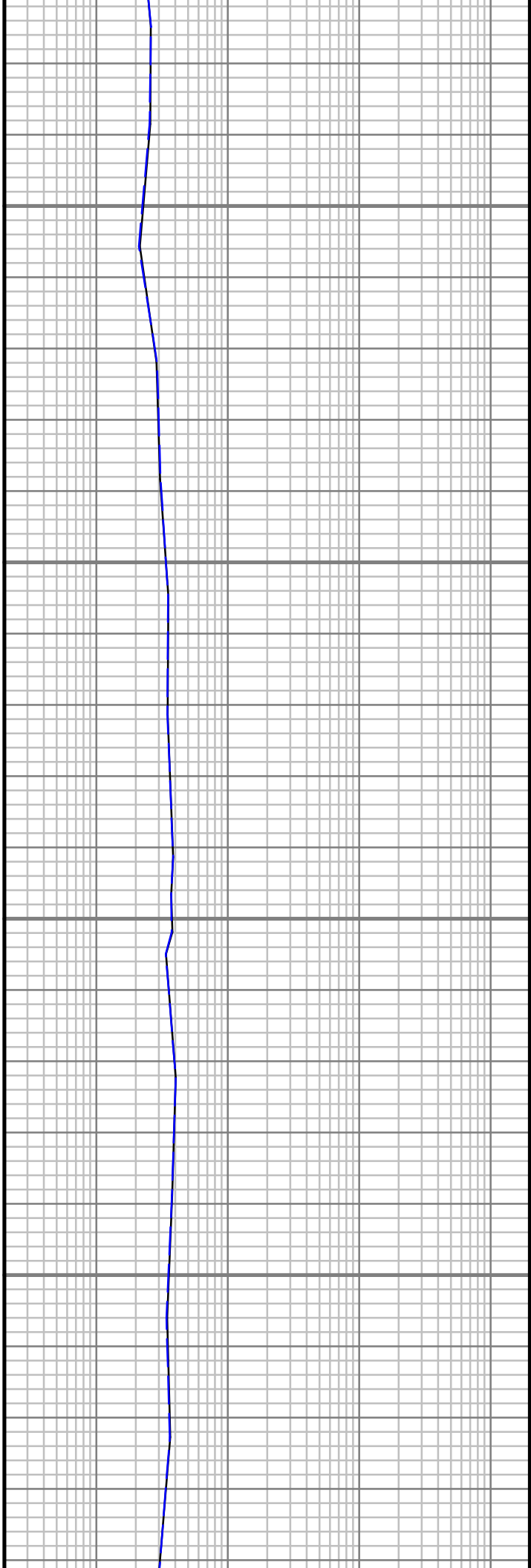


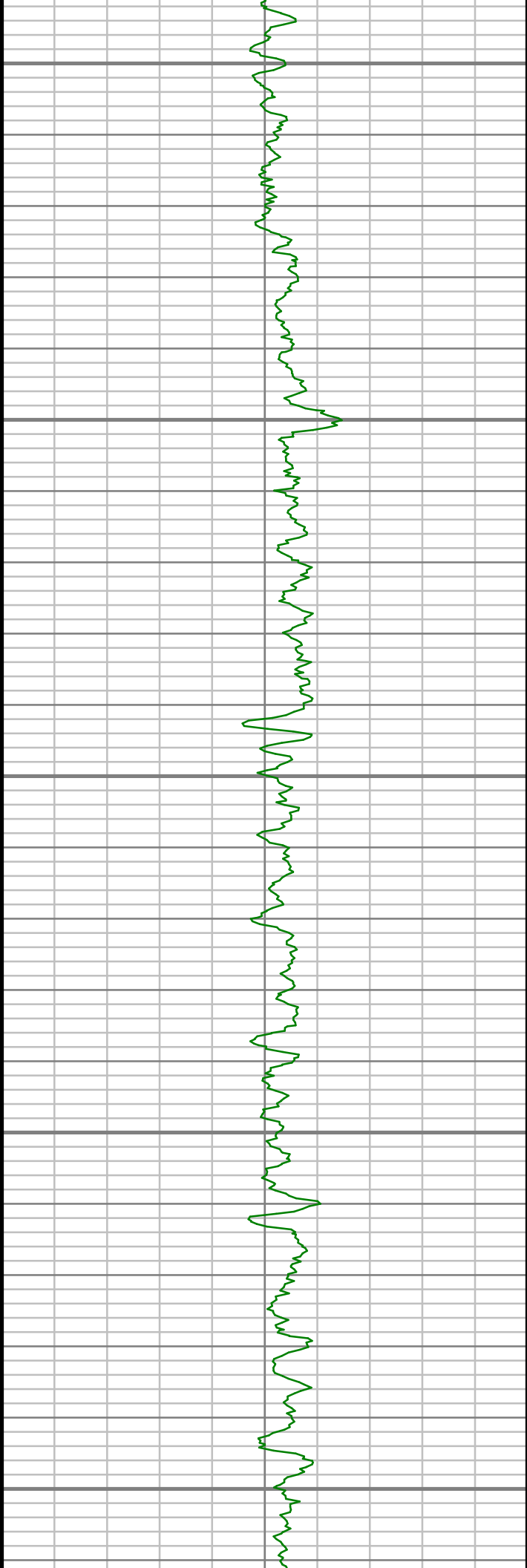
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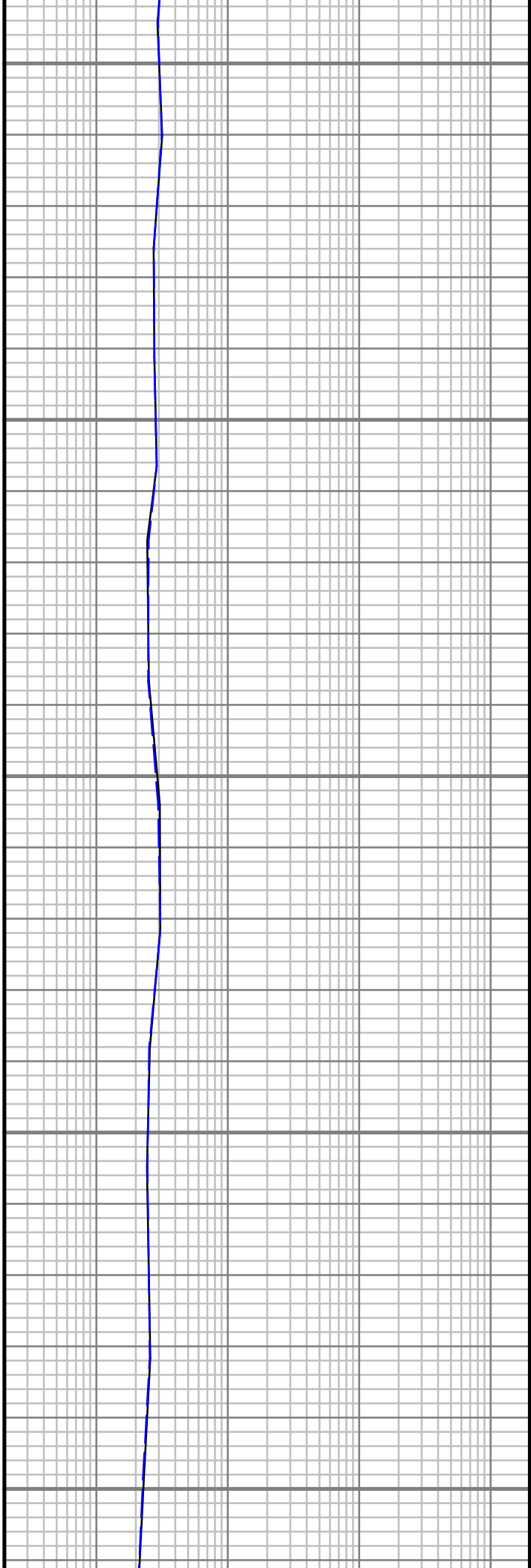
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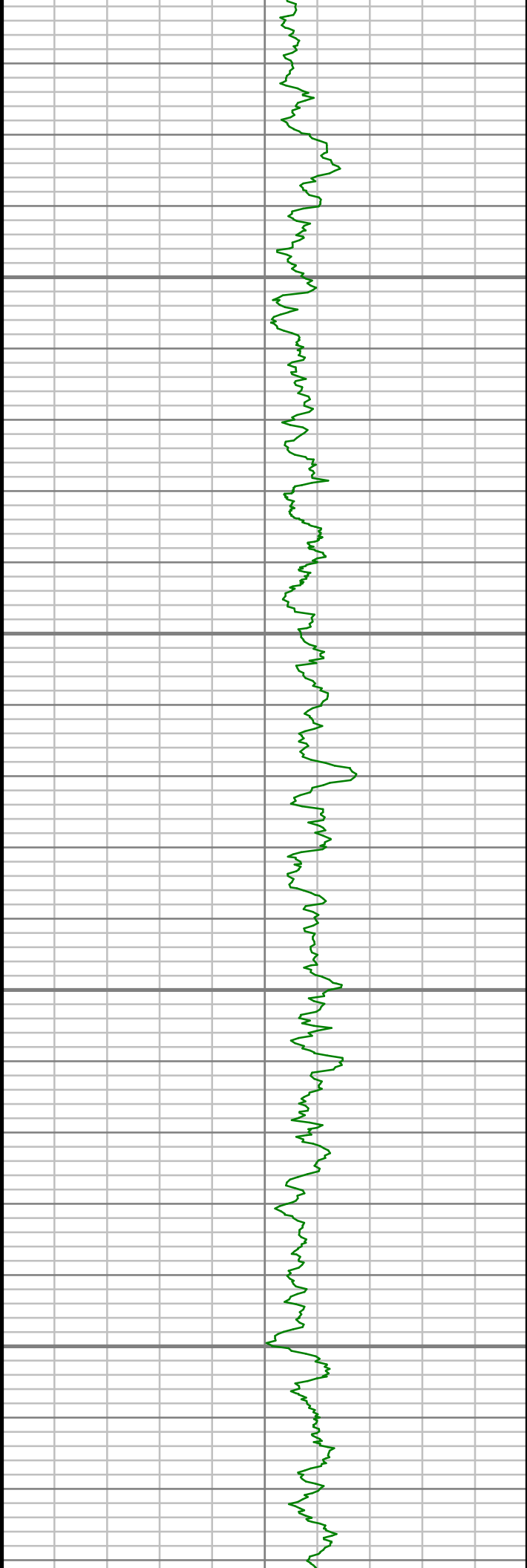
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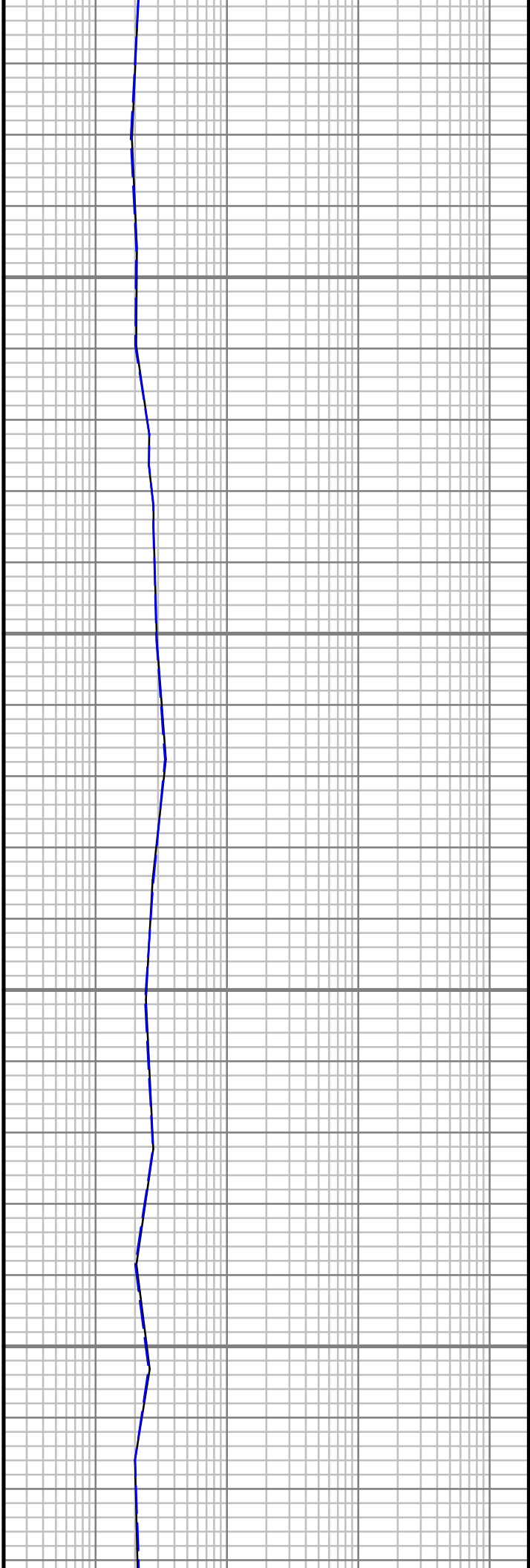


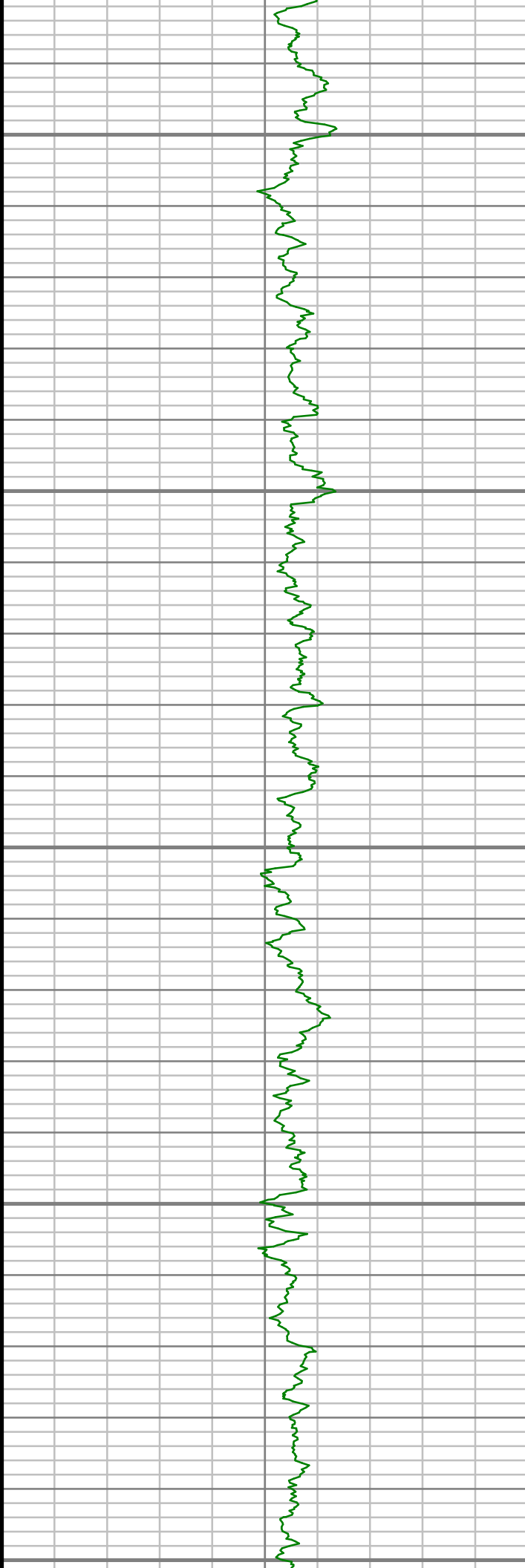
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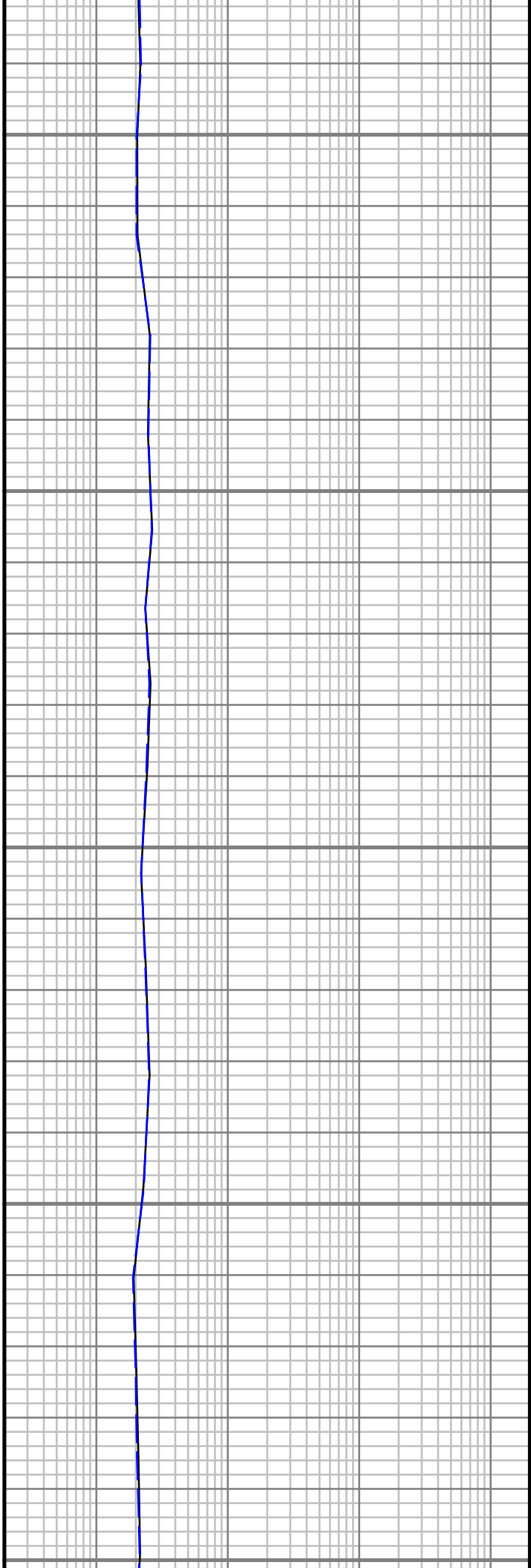
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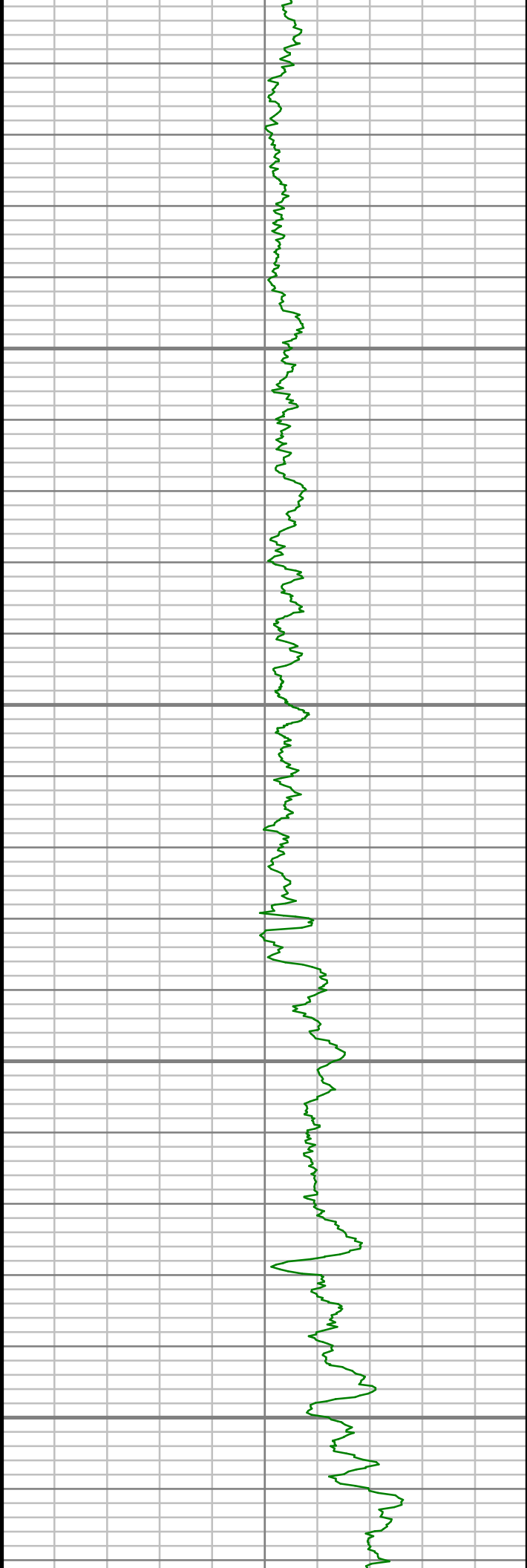
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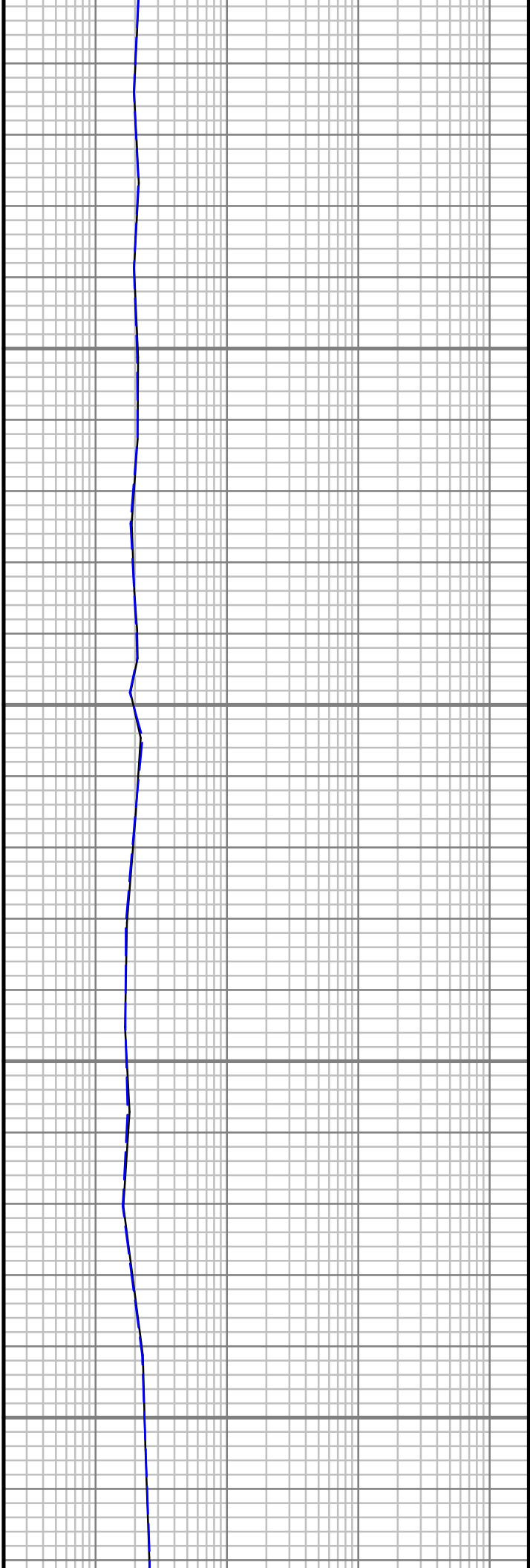


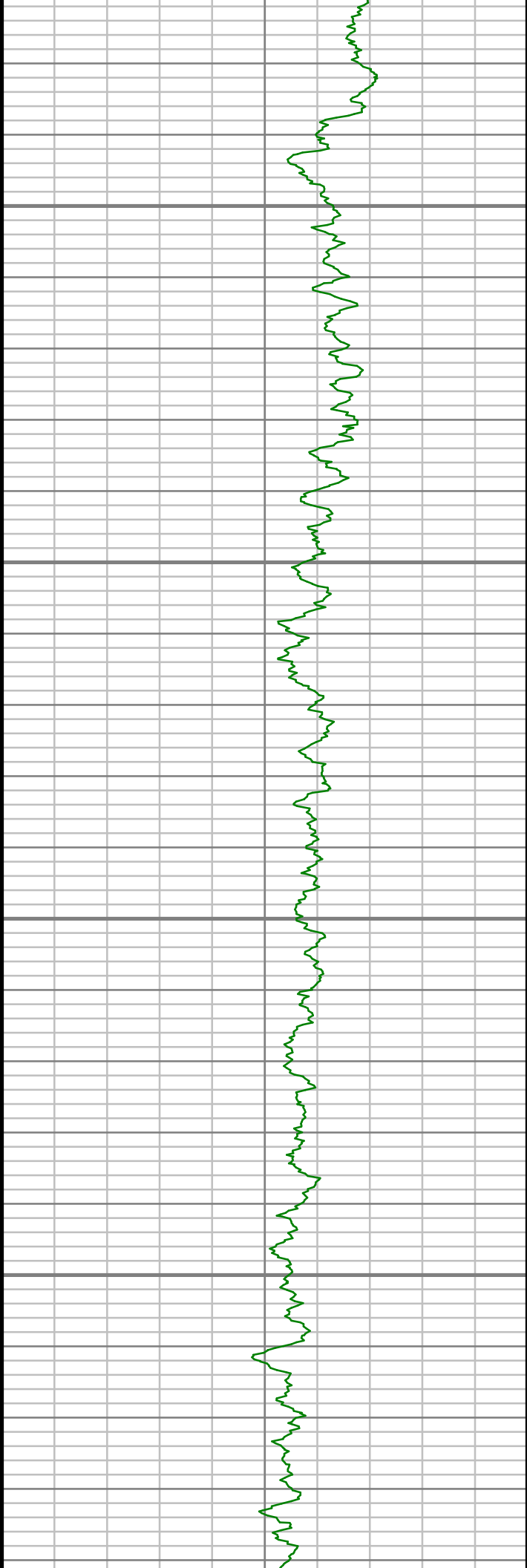
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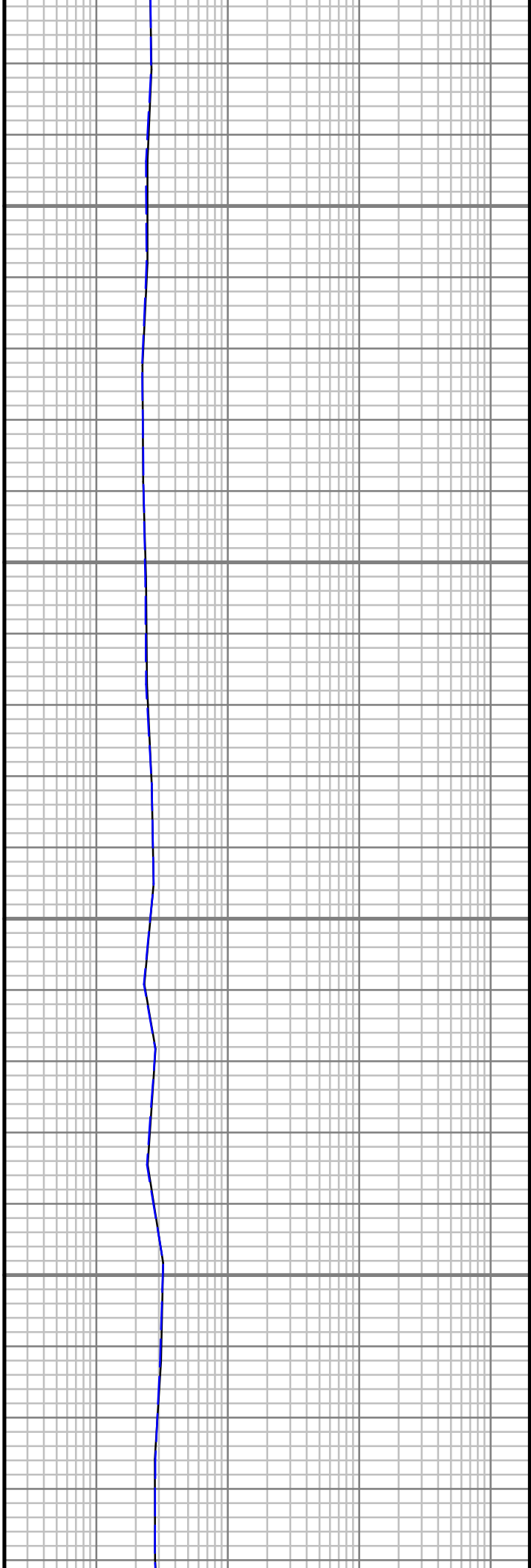


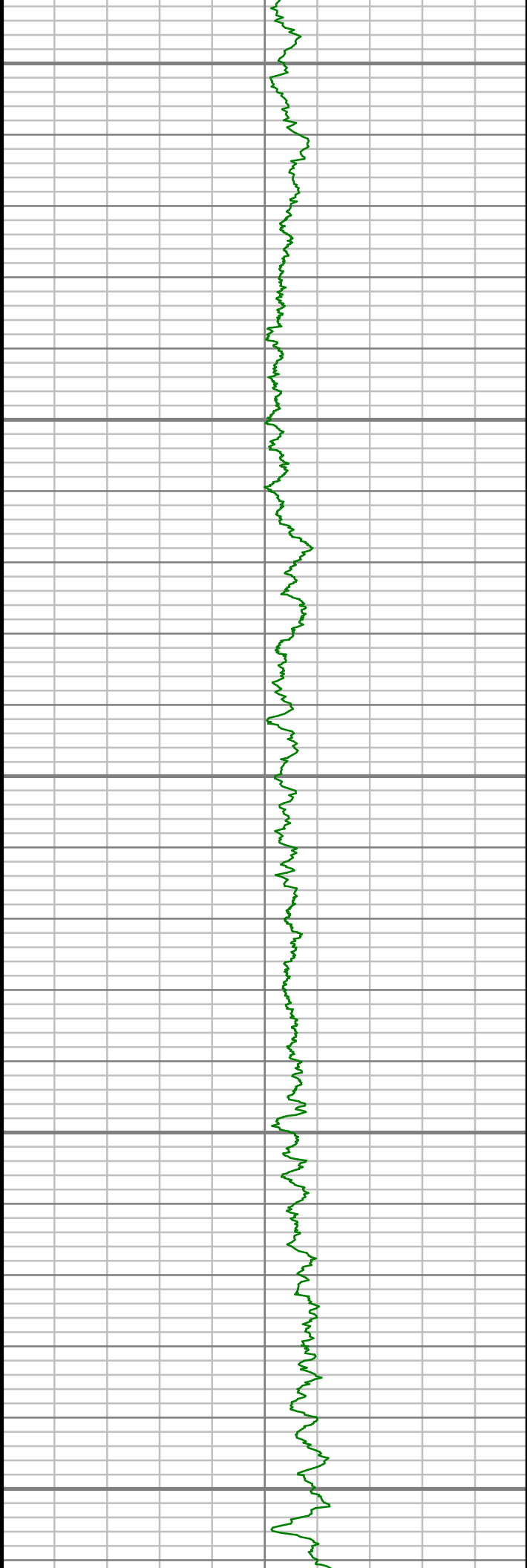
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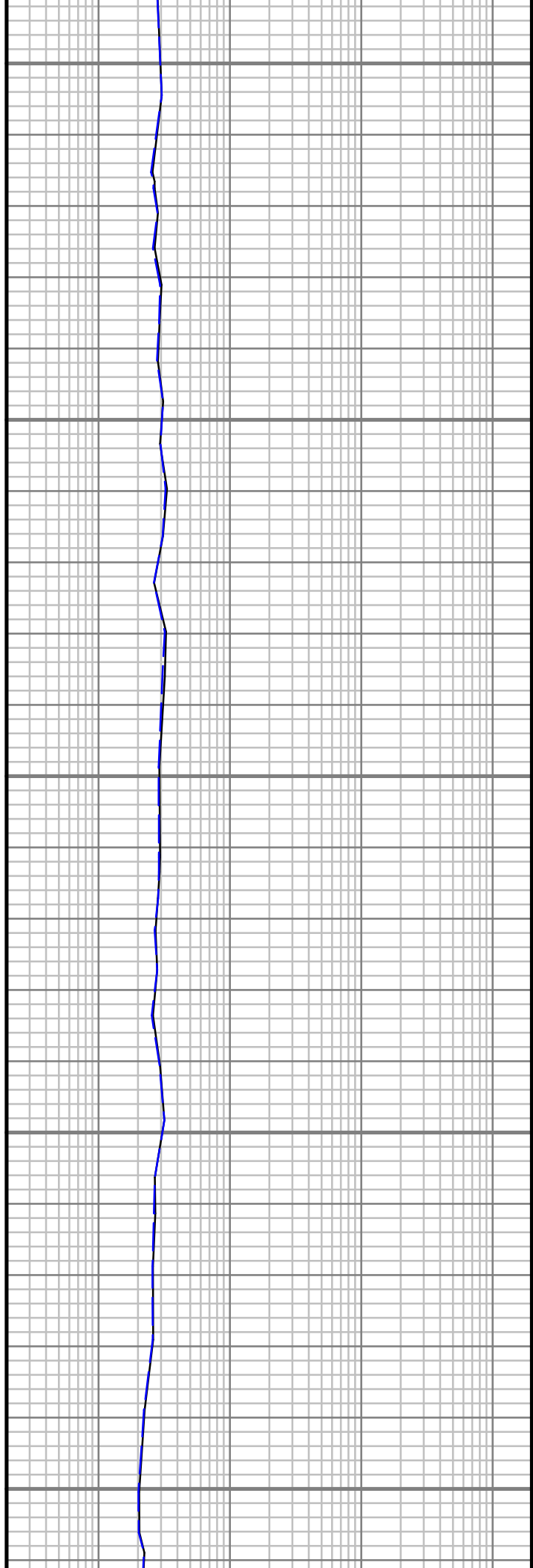
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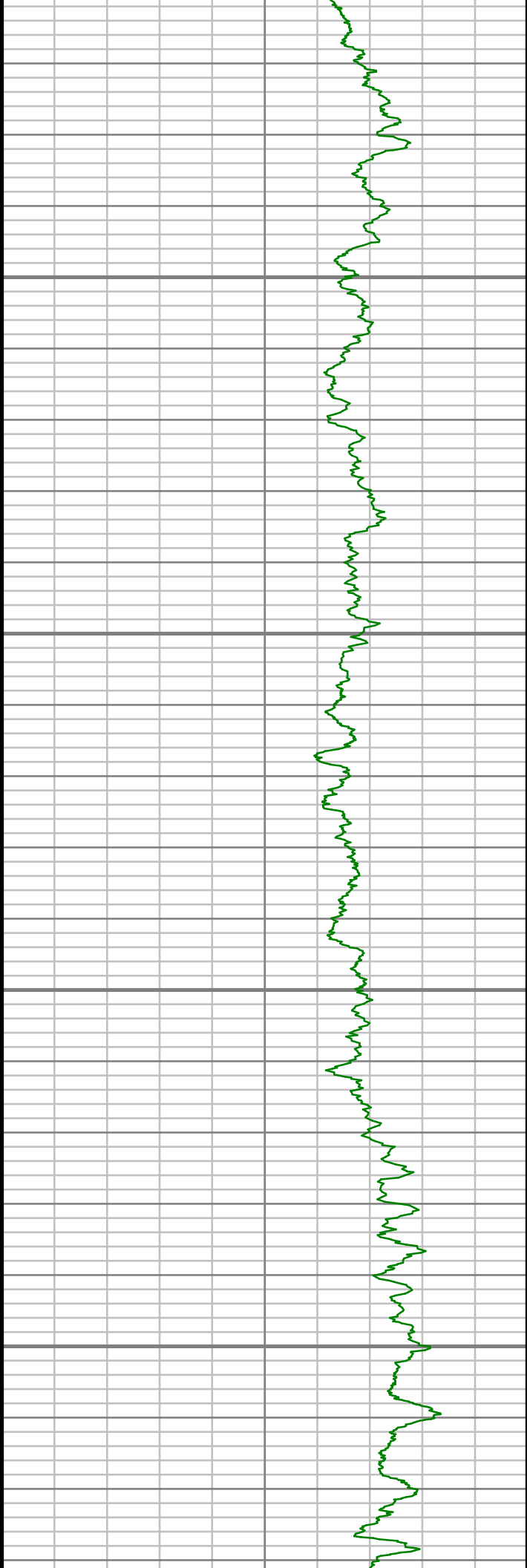
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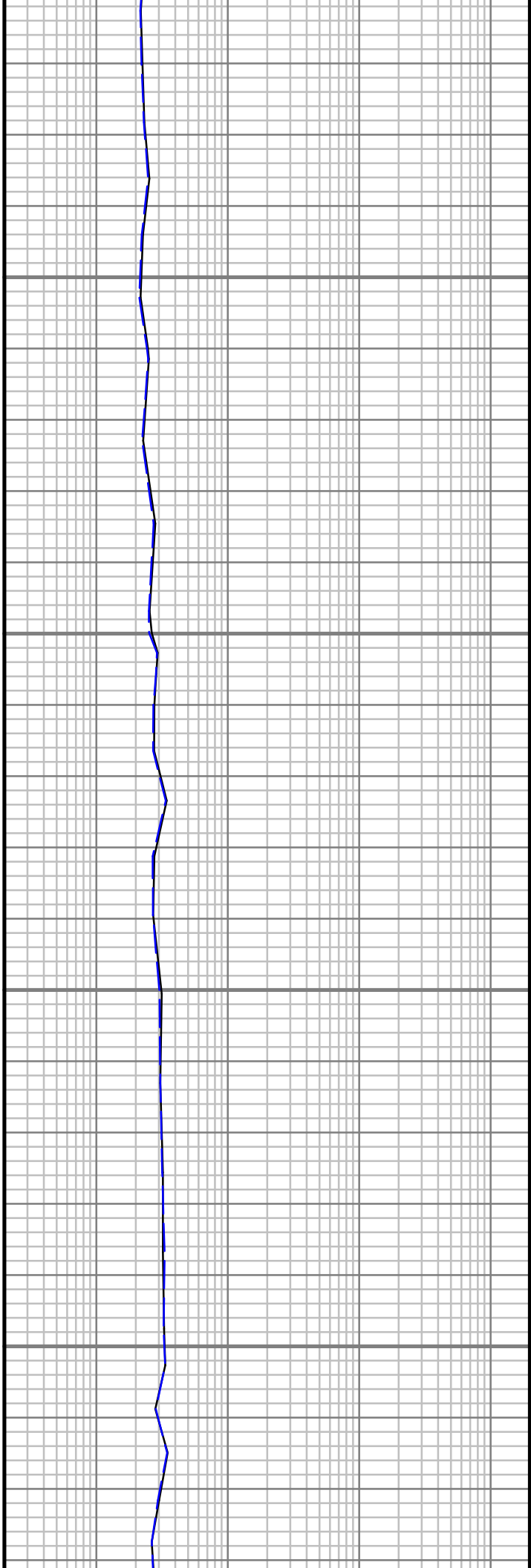


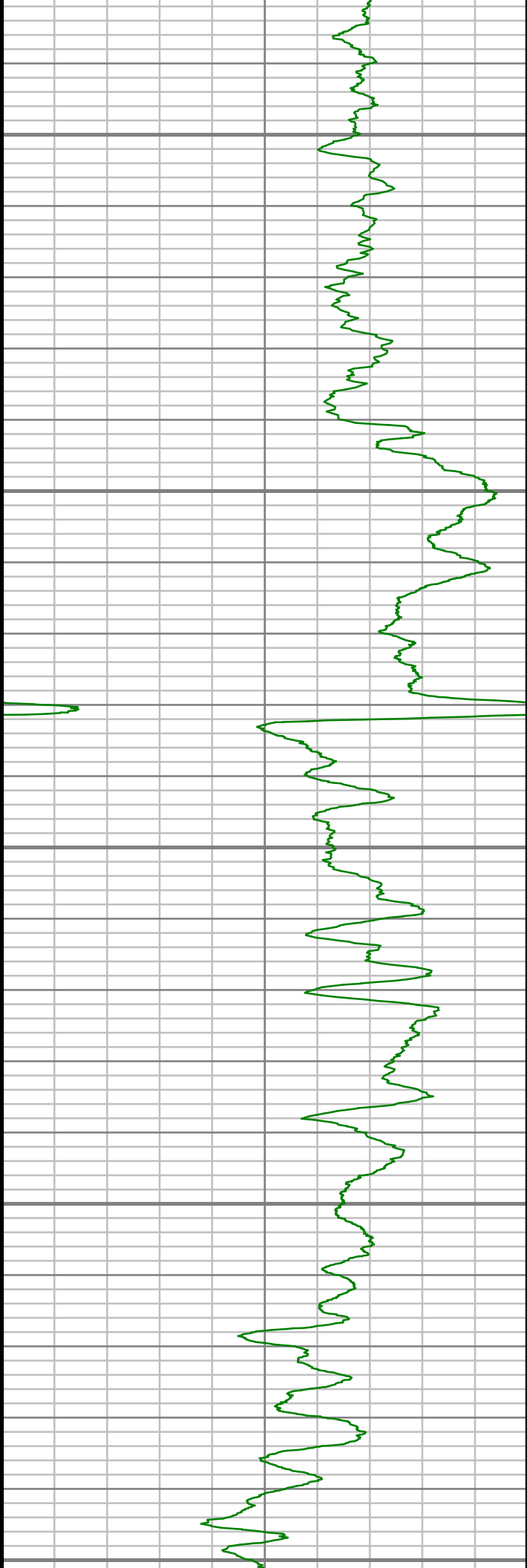
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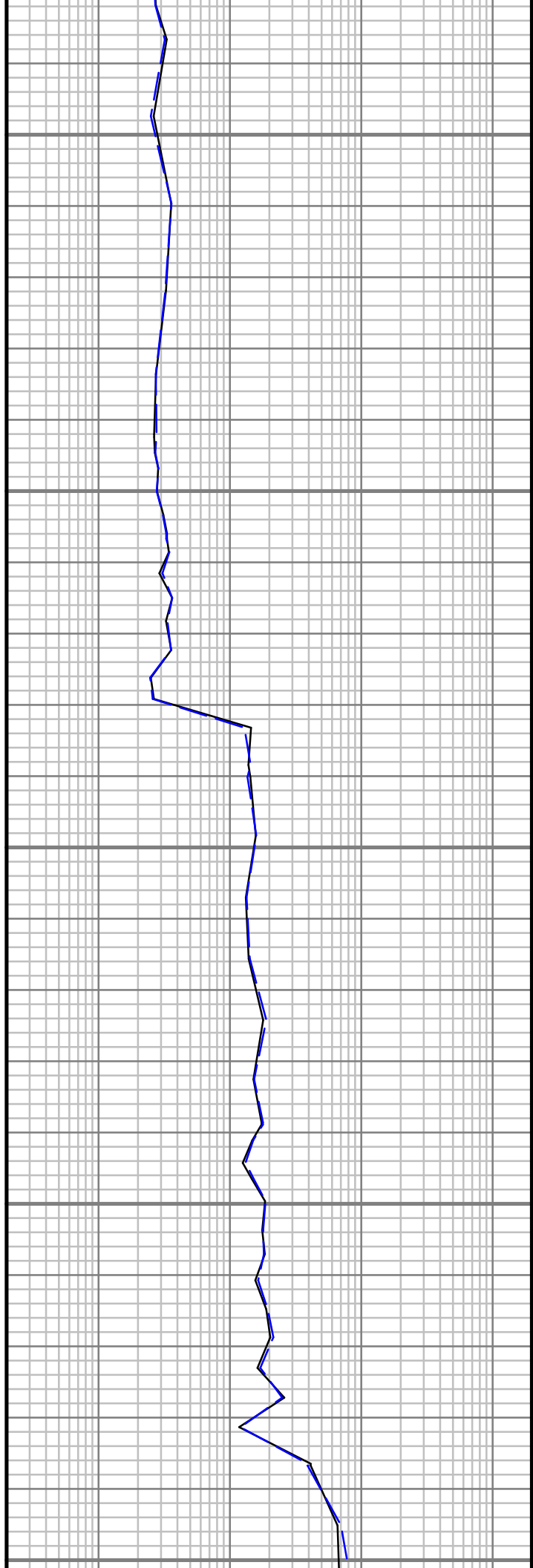
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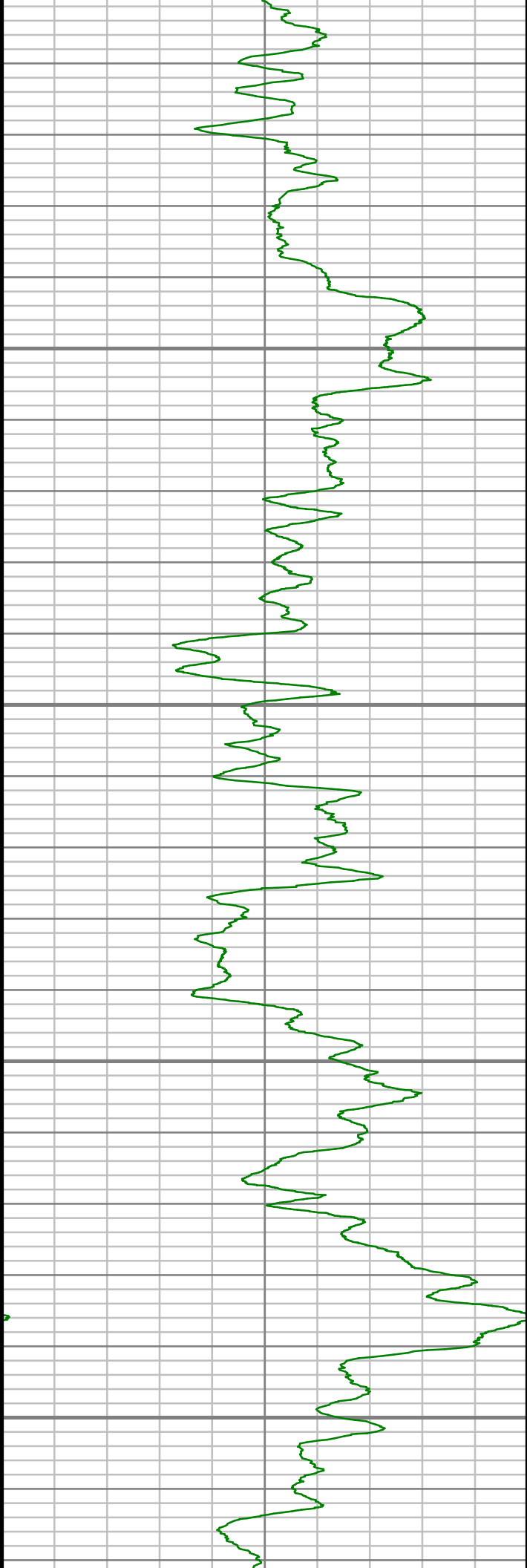
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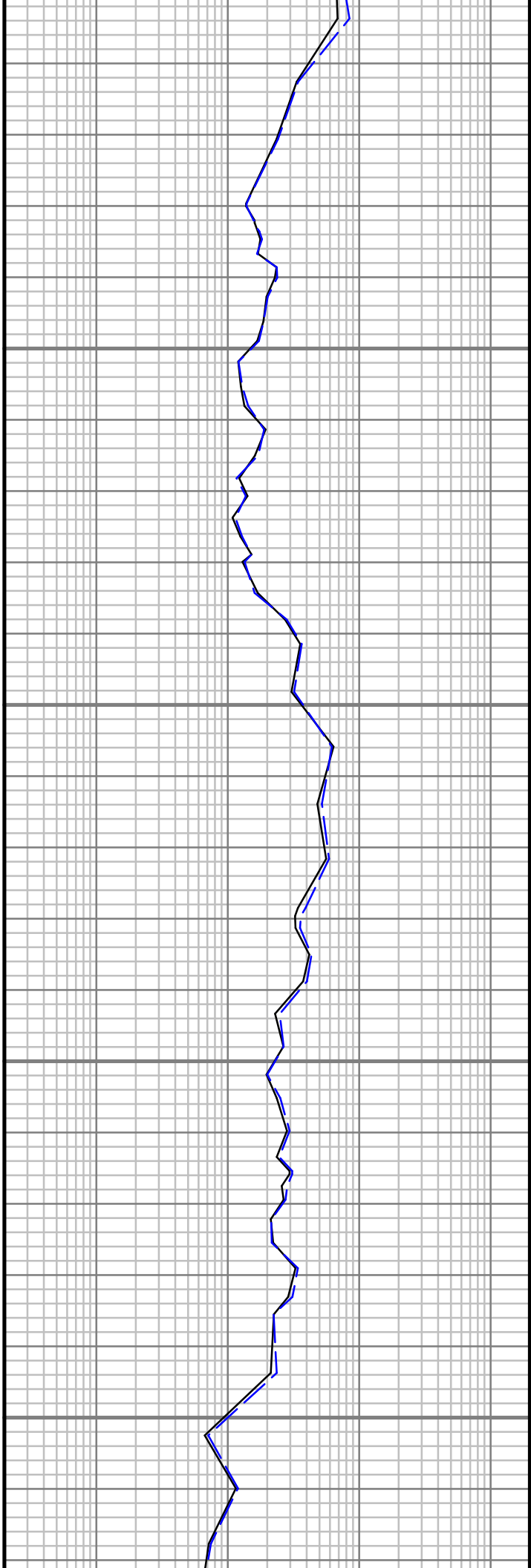


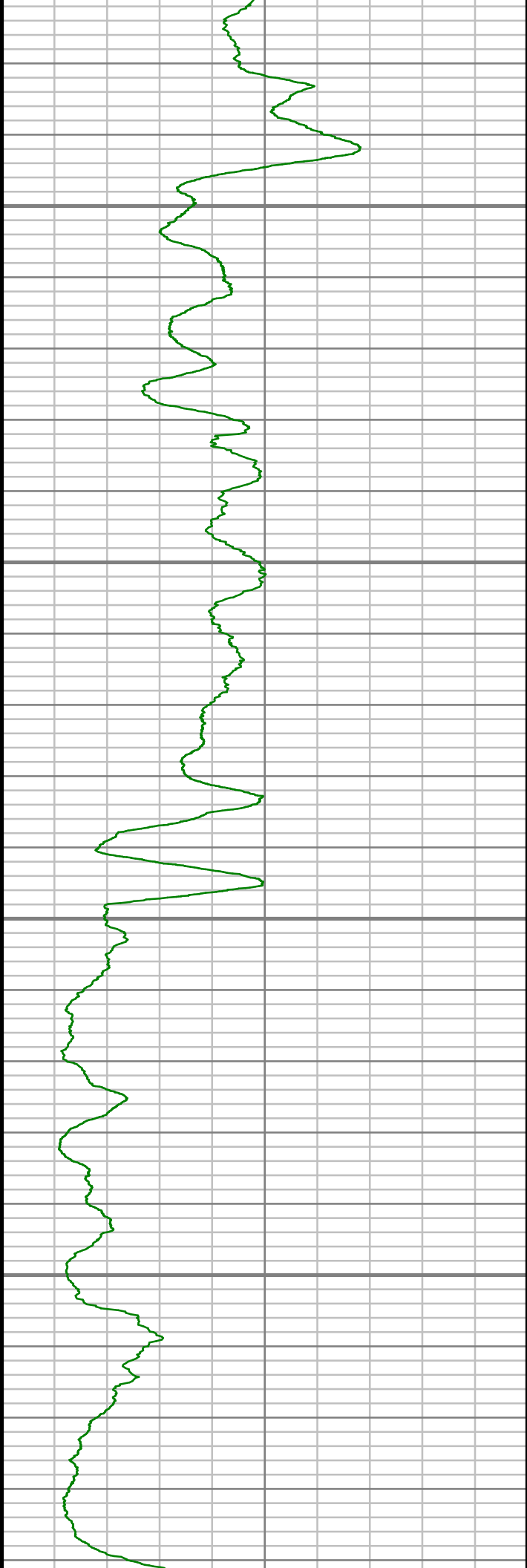
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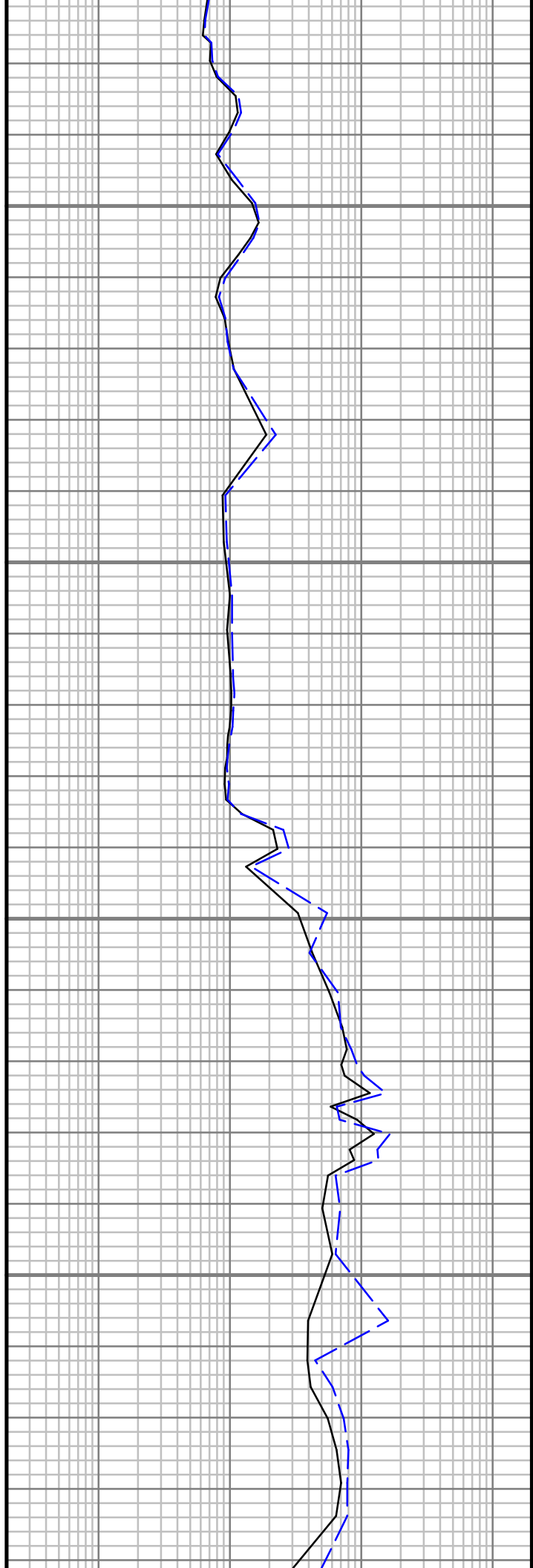


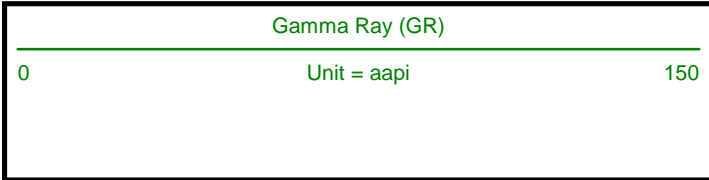
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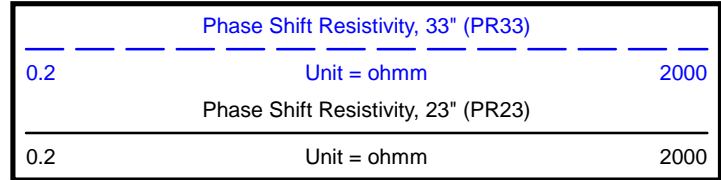
7550





7750

MEASURED DEPTH
1:240 (ft)





MWD Survey Report

Well Location	NEWNAM
Well Name	NEWNAM 2C-32H-C264
Survey Date	11/6/2014
Latitude	40°6'5.285"N
Longitude	104°34'43.093"W
Btotal	52524 nT
Dip	66.72 deg
Magnetic Declination	8.38 deg
North Reference	True North
Grid Correction	None
Depth Reference	RKB (13.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 194.03Azim (deg)
Operator(s)	J. SMITH, M. SMITH, T. WHEELER

Well Notes

MD	Inc	Azim	TVD	VS	+N-S	+E-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	"/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
159.00	0.35	266.75	159.00	0.15	-0.03	-0.49	0.49	266.75	0.22
251.00	1.06	272.81	250.99	0.39	0.00	-1.62	1.62	269.92	0.77
344.00	2.20	284.50	343.95	0.55	0.49	-4.20	4.23	276.61	1.27
424.00	3.71	293.80	423.84	0.09	1.92	-8.05	8.28	283.38	1.97
517.00	5.58	289.83	516.54	-0.87	4.66	-15.06	15.76	287.21	2.04
795.00	9.77	282.41	791.99	-1.57	14.32	-50.82	52.80	285.74	1.55
888.00	11.29	277.02	883.42	-0.24	17.13	-67.57	69.71	284.23	1.95
968.00	11.49	275.58	961.85	1.89	18.86	-83.27	85.38	282.76	0.44
1271.00	14.54	286.67	1257.08	4.57	32.71	-149.77	153.30	282.32	1.30
1457.00	14.64	285.46	1437.08	2.91	45.68	-194.79	200.07	283.20	0.17
1648.00	14.89	282.39	1621.77	3.01	57.38	-242.02	248.73	283.34	0.43
1838.00	15.01	278.24	1805.35	6.19	66.14	-290.22	297.66	282.84	0.57
2029.00	14.97	286.78	1989.87	7.51	76.80	-338.32	346.93	282.79	1.15
2220.00	15.20	283.26	2174.29	6.66	89.67	-386.32	396.59	283.07	0.49
2410.00	14.11	279.78	2358.11	8.71	99.32	-433.40	444.63	282.91	0.74
2601.00	13.97	285.92	2543.41	9.68	109.60	-478.52	490.91	282.90	0.78
2791.00	12.66	282.09	2728.30	9.63	120.25	-520.93	534.63	283.00	0.83
2982.00	13.28	285.41	2914.43	9.81	130.46	-562.54	577.47	283.06	0.51

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS °/100ft
3173.00	15.31	287.87	3099.51	7.59	144.03	-607.69	624.53	283.33	1.11
3363.00	14.42	287.02	3283.15	4.68	158.65	-654.18	673.15	283.63	0.48
3553.00	14.59	285.20	3467.10	2.95	171.85	-699.90	720.69	283.80	0.26
3743.00	12.08	282.70	3651.96	2.92	182.50	-742.40	764.50	283.81	1.36
3934.00	12.48	284.38	3838.59	3.26	192.02	-781.89	805.12	283.80	0.28
4124.00	13.84	284.12	4023.60	3.10	202.66	-823.82	848.38	283.82	0.72
4315.00	16.16	280.35	4208.08	4.77	213.01	-872.12	897.76	283.73	1.32
4505.00	15.54	278.86	4390.86	8.76	221.69	-923.28	949.52	283.50	0.39
4696.00	13.97	284.09	4575.56	11.04	231.24	-970.93	998.08	283.40	1.08
4886.00	10.67	279.52	4761.17	12.40	239.73	-1010.52	1038.57	283.35	1.81
5077.00	6.59	279.51	4949.96	14.65	244.47	-1038.79	1067.17	283.24	2.14
5267.00	4.06	287.57	5139.13	15.10	248.31	-1055.96	1084.77	283.23	1.38
5457.00	2.48	284.06	5328.81	14.68	251.34	-1066.37	1095.59	283.26	0.84
5647.00	1.95	266.90	5518.67	15.63	252.16	-1073.60	1102.82	283.22	0.44
5837.00	1.17	177.64	5708.62	18.44	250.06	-1076.76	1105.41	283.07	1.19
6027.00	1.50	149.22	5898.57	22.06	245.99	-1075.40	1103.18	282.88	0.38
6218.00	1.22	99.69	6089.53	23.69	243.49	-1072.13	1099.43	282.80	0.61
6408.00	1.46	112.90	6279.47	23.91	242.21	-1067.91	1095.04	282.78	0.21

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS °/100ft
6503.00	1.53	125.99	6374.44	24.57	241.00	-1065.77	1092.68	282.74	0.37
6597.00	7.37	161.04	6468.13	30.10	234.55	-1062.80	1088.37	282.45	6.57
6693.00	16.50	166.72	6561.96	47.41	215.43	-1057.65	1079.37	281.51	9.58
6788.00	23.48	171.05	6651.18	76.86	183.56	-1051.60	1067.50	279.90	7.51
6883.00	29.85	177.12	6736.05	116.95	141.20	-1047.47	1056.94	277.68	7.28
6978.00	35.79	179.51	6815.86	166.51	89.76	-1046.04	1049.88	274.90	6.39
7074.00	41.28	180.86	6890.93	224.56	29.99	-1046.27	1046.70	271.64	5.79
7169.00	47.33	181.95	6958.88	289.28	-36.32	-1047.93	1048.56	268.02	6.42
7264.00	54.01	182.90	7019.06	361.23	-109.69	-1051.07	1056.77	264.04	7.07
7360.00	62.27	181.71	7069.69	440.98	-191.09	-1054.30	1071.48	259.73	8.66
7455.00	70.01	181.12	7108.09	525.70	-277.87	-1056.43	1092.37	255.26	8.17
7502.00	72.56	181.25	7123.17	569.09	-322.38	-1057.35	1105.41	253.04	5.43
7550.00	76.14	180.95	7136.12	614.13	-368.58	-1058.24	1120.59	250.80	7.49
7597.00	79.52	181.44	7146.03	658.92	-414.51	-1059.20	1137.42	248.63	7.27
7645.00	82.90	182.12	7153.36	705.27	-461.91	-1060.67	1156.89	246.47	7.17
7712.00	87.61	183.40	7158.91	770.73	-528.58	-1063.89	1187.97	243.58	7.28
7817.00	90.90	183.02	7160.27	873.84	-633.40	-1069.77	1243.22	239.37	3.16
7910.00	90.47	182.43	7159.16	965.03	-726.28	-1074.18	1296.67	235.94	0.79

MD	Inc	Azim	TVD	VS	+N-S	+E-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
8005.00	91.04	182.02	7157.91	1058.01	-821.20	-1077.87	1355.06	232.70	0.73
8101.00	92.01	181.79	7155.35	1151.84	-917.11	-1081.07	1417.68	229.69	1.04
8196.00	91.95	181.41	7152.07	1244.56	-1012.02	-1083.72	1482.78	226.96	0.42
8291.00	92.12	180.96	7148.71	1337.12	-1106.94	-1085.68	1550.49	224.44	0.50
8387.00	90.50	180.49	7146.51	1430.51	-1202.90	-1086.89	1621.20	222.10	1.75
8482.00	91.41	180.58	7144.93	1522.88	-1297.89	-1087.77	1693.45	219.97	0.96
8577.00	86.38	176.87	7146.76	1614.45	-1392.80	-1085.66	1765.94	217.94	6.58
8673.00	88.49	177.54	7151.06	1706.24	-1488.58	-1080.99	1839.68	215.99	2.31
8768.00	89.97	180.59	7152.34	1798.00	-1583.55	-1079.45	1916.46	214.28	3.56
8863.00	90.97	180.56	7151.56	1890.39	-1678.54	-1080.40	1996.18	212.77	1.06
8959.00	92.31	181.98	7148.81	1983.97	-1774.47	-1082.52	2078.60	211.39	2.04
9054.00	92.61	181.37	7144.73	2076.69	-1869.34	-1085.30	2161.55	210.14	0.71
9149.00	88.06	179.04	7144.17	2168.90	-1964.31	-1085.64	2244.35	208.93	5.39
9245.00	89.80	180.15	7145.97	2261.85	-2060.28	-1084.96	2328.50	207.77	2.15
9340.00	91.61	182.16	7144.80	2354.45	-2155.25	-1086.88	2413.79	206.76	2.85
9435.00	91.84	181.43	7141.94	2447.25	-2250.16	-1089.86	2500.20	205.84	0.80
9530.00	91.04	181.56	7139.55	2539.95	-2345.09	-1092.34	2587.02	204.98	0.86
9626.00	91.14	180.88	7137.72	2633.55	-2441.05	-1094.39	2675.15	204.15	0.72

MD	Inc	Azim	TVD	VS	+N-S	+E-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
9721.00	91.61	181.07	7135.44	2726.07	-2536.01	-1096.01	2762.72	203.37	0.54
9816.00	91.24	180.36	7133.07	2818.48	-2630.98	-1097.20	2850.59	202.64	0.84
9911.00	91.24	181.12	7131.02	2910.92	-2725.94	-1098.43	2938.93	201.95	0.80
10006.00	90.10	180.04	7129.91	3003.30	-2820.93	-1099.39	3027.59	201.29	1.65
10101.00	89.06	180.12	7130.60	3095.50	-2915.93	-1099.52	3116.34	200.66	1.10
10196.00	89.66	180.89	7131.66	3187.86	-3010.92	-1100.36	3205.68	200.08	1.03
10292.00	88.76	180.24	7132.98	3281.21	-3106.90	-1101.30	3296.31	199.52	1.16
10387.00	89.70	180.18	7134.26	3373.45	-3201.89	-1101.65	3386.11	198.99	0.99
10482.00	90.87	181.75	7133.79	3465.98	-3296.87	-1103.25	3476.57	198.50	2.07
10577.00	90.77	181.40	7132.43	3558.74	-3391.82	-1105.87	3567.55	198.06	0.39
10673.00	92.68	181.66	7129.53	3652.41	-3487.74	-1108.43	3659.64	197.63	2.01
10768.00	91.11	180.26	7126.39	3744.90	-3582.67	-1110.01	3750.69	197.21	2.22
10863.00	89.09	180.44	7126.23	3837.20	-3677.66	-1110.60	3841.70	196.80	2.12
10959.00	89.23	181.16	7127.63	3930.64	-3773.64	-1111.94	3934.06	196.42	0.76
11054.00	89.09	181.84	7129.02	4023.37	-3868.60	-1114.43	4025.92	196.07	0.72
11149.00	88.02	181.21	7131.41	4116.08	-3963.54	-1116.95	4117.91	195.74	1.30
11244.00	87.52	181.62	7135.11	4208.72	-4058.43	-1119.30	4209.95	195.42	0.68
11340.00	90.87	182.59	7136.46	4302.62	-4154.34	-1122.82	4303.41	195.12	3.64

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
11435.00	88.69	181.74	7136.82	4395.58	-4249.27	-1126.41	4396.03	194.85	2.46
11530.00	89.60	182.59	7138.24	4488.54	-4344.19	-1130.00	4488.75	194.58	1.30
11561.00	90.80	183.19	7138.13	4518.96	-4375.15	-1131.56	4519.11	194.50	4.36

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft

5" = 100' FEET MD