



GAMMA RAY

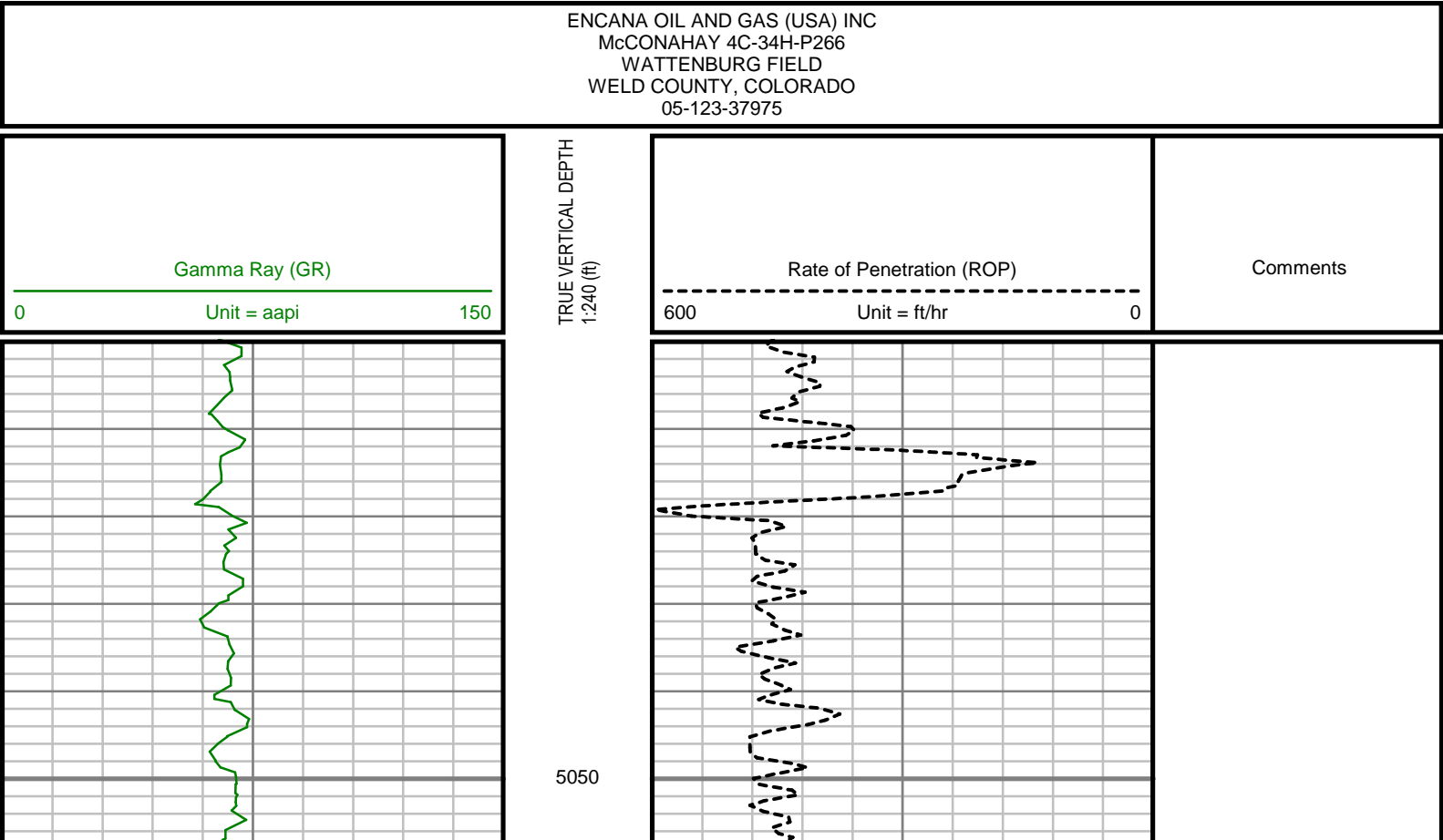
5" = 100' FEET TVD

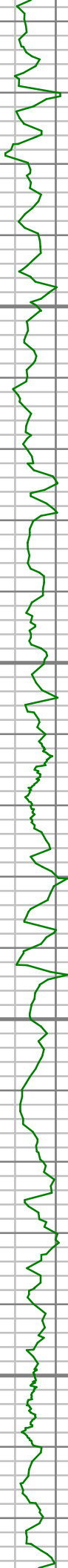
COMPANY : ENCANA OIL AND GAS (USA) INC						WELL : MCCONAHAY 4C-34H-P266					
WELL : MCCONAHAY 4C-34H-P266						FIELD : WATTENBERG					
COUNTY : WELD						STATE : COLORADO					
COUNTRY : U.S.A.						UWI : 05-123-37975					
DEPTH REF. : RKB						REF. HEIGHT : 13.000 ft					
GROUND LEVEL : 5077.000 ft						G.L. to MEAN SEA LEVEL					
BOREHOLE RECORD						DEVIATION RECORD					
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft						
12.25	96	1235	0 - 5	96	1235						
8.75	1235	7980	5 - 82	1235	7980						
6.125	7980	11980	82 - 92	7980	11980						
CASING RECORD											
CASING SIZE in	FROM ft	TO ft									
9.625	0	1234									
7	0	7967									
DRILLING CO.: ENSIGN						DISTRICT: CASPER					
RIG: 124						SPUD DATE: 01/18/2014					
LMD UNIT NO.: C-70						LMD START DATE: 01/23/2014					
						LMD END DATE: 01/29/2014					
						TOTAL DEPTH: 11980 ft					

Run Data						
RUN NUMBER	1	2	3			
START DATE	01/18/2014	01/21/2014	01/25/2014			
START TIME	2200	0400	1900			
END DATE	01/19/2014	01/24/2014	01/29/2014			
END TIME	1100	1230	1400			
DEPTH IN (ft)	96	1235	7980			
DEPTH OUT (ft)	1235	7980	11980			
LOG TOP (ft)	-	5000	7926			
LOG BOTTOM (ft)	-	7926	11902			
HOLE SIZE (in)	12.25	8.75	6.125			
MUD DATA @ (ft)	1235	7980	11980			
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED			
DENSITY (lb / gal)	8.45	10.55	10.75			
VISCOSITY (s / qt)	27	40	41			
pH	7.5	8.6	7.8			
FLUID LOSS (cm3 / 30)	-	-	-			
SALINITY (ppm)	-	-	-			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	63	176	233			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	M. SMITH	M. SMITH	M. SMITH			
LWD ENGINEER #2	J. SMITH	J. SMITH	J. SMITH			
LWD ENGINEER #3	-	-	-			
LOG WITNESS #1	M. ROANE	M. ROANE	M. ROANE			
LOG WITNESS #2	-	-	-			

Remarks
ENCANA OIL AND GAS (USA) INC PRODUCTION AFE# 13178240
SCIENTIFIC DRILLING INTERNATIONAL JOB# 105064
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 RATE OF PENETRATION CURVE
RUN #1: MWD / DIRECTIONAL RUN
SENSORS S/N: CONT = 814 / MWD EYE = 0380
BIT TO SENSOR OFFSET: SURVEY = 57.85 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-062 / CONT = 786 / MWD EYE = 0120 / GAMMA RAY = 1021
BIT TO SENSOR OFFSETS: SURVEY = 67.12 FT. / GAMMA RAY = 53.87 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-149 / CONT = 786 / MWD EYE = 0380 / GAMMA RAY = 1057
BIT TO SENSOR OFFSETS: SURVEY = 75.90 FT. / GAMMA RAY = 62.65 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION

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.



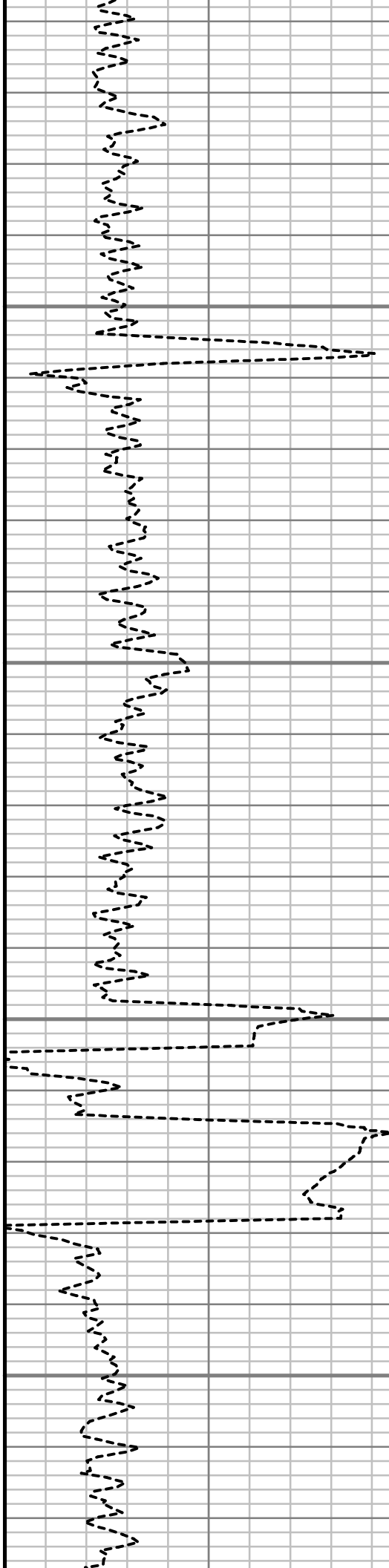


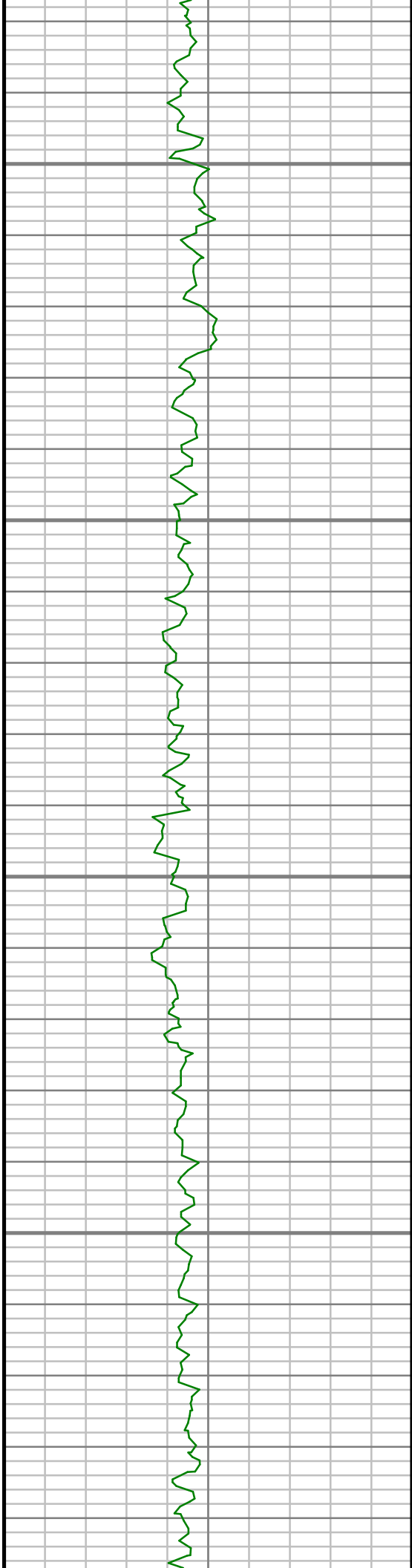
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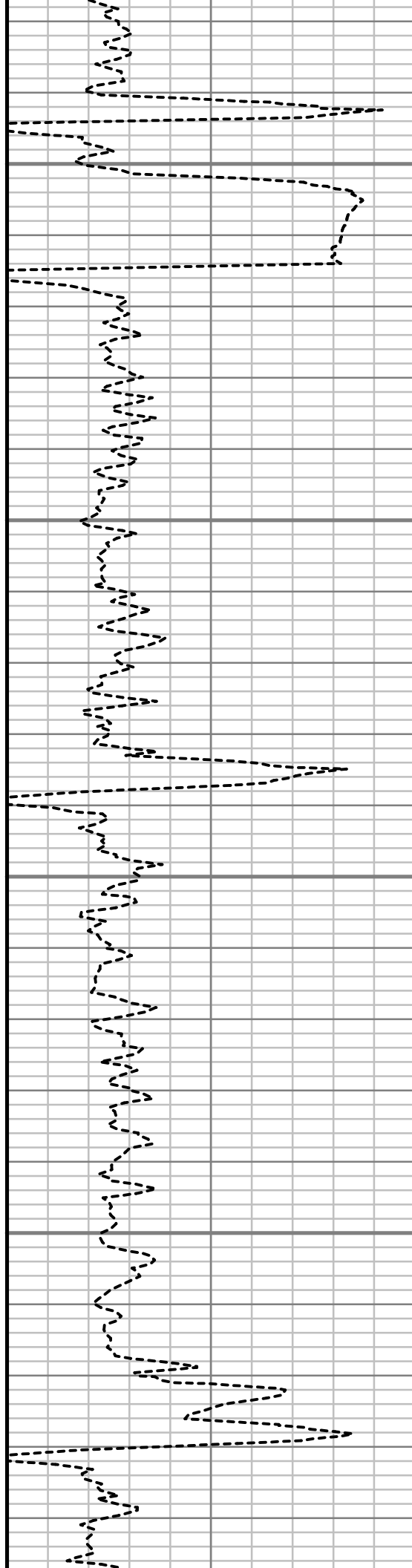


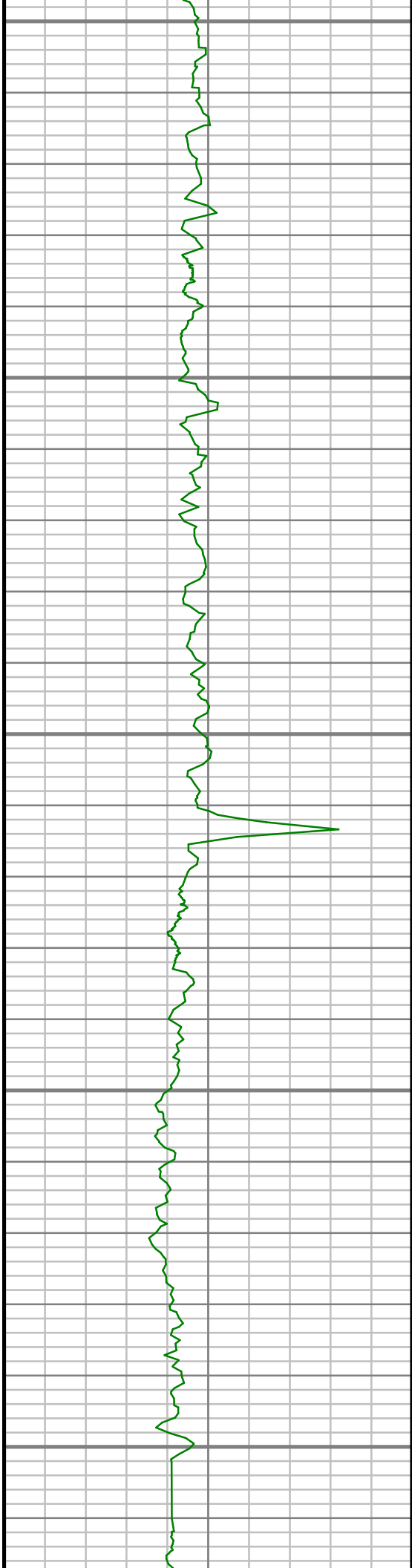
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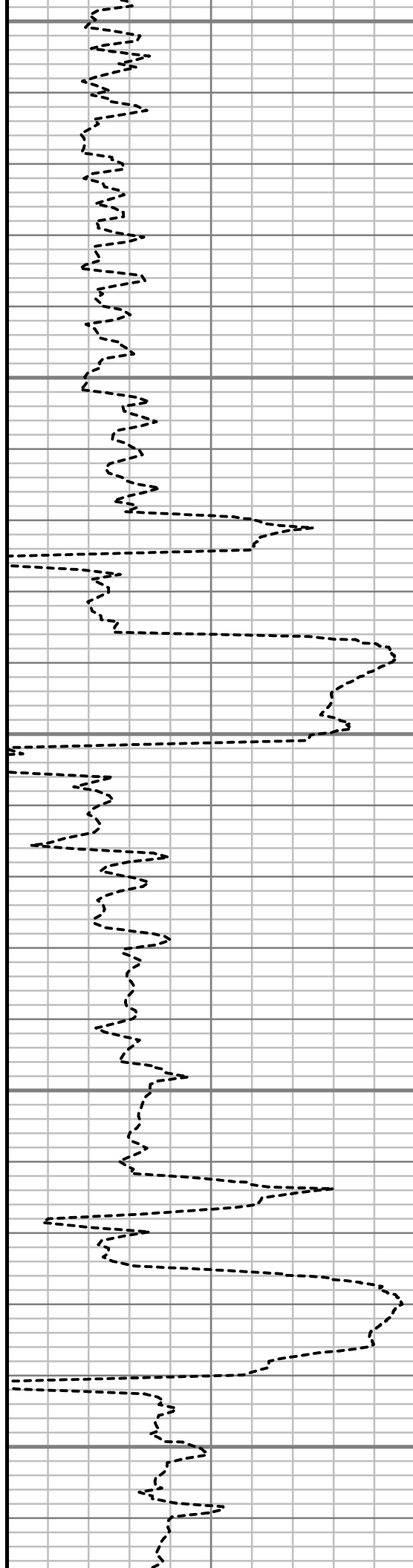
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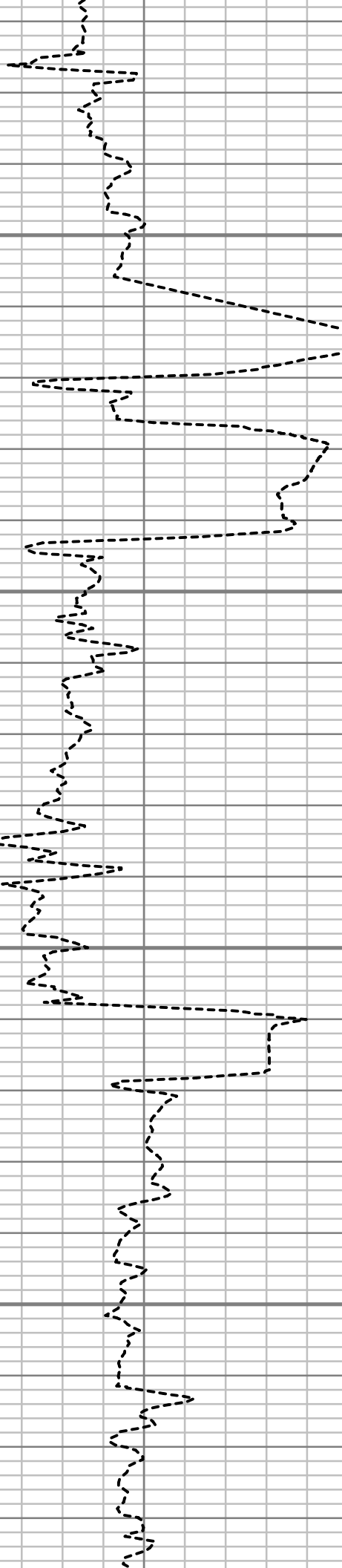


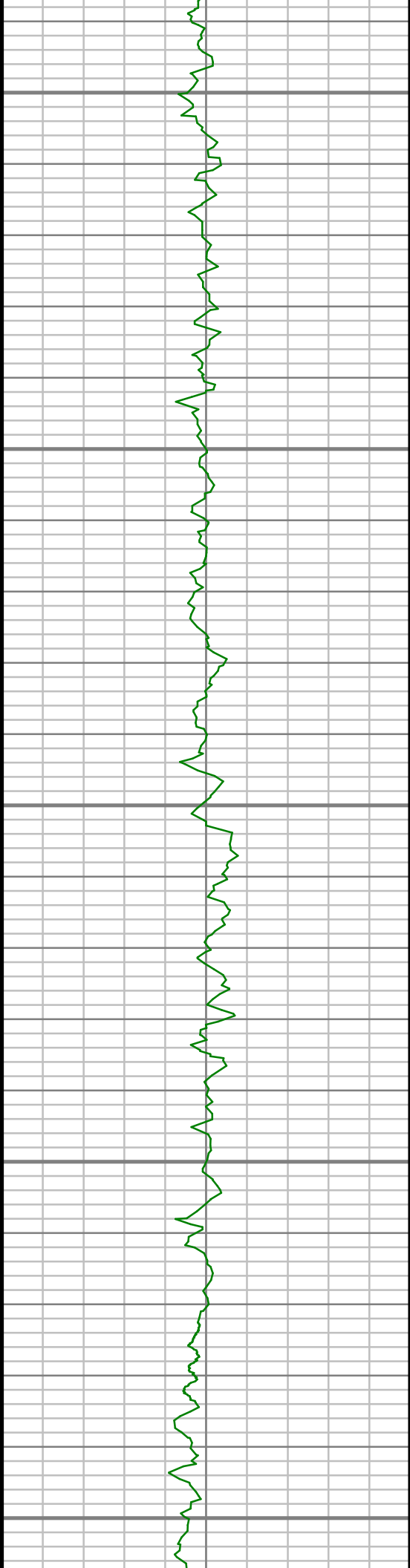
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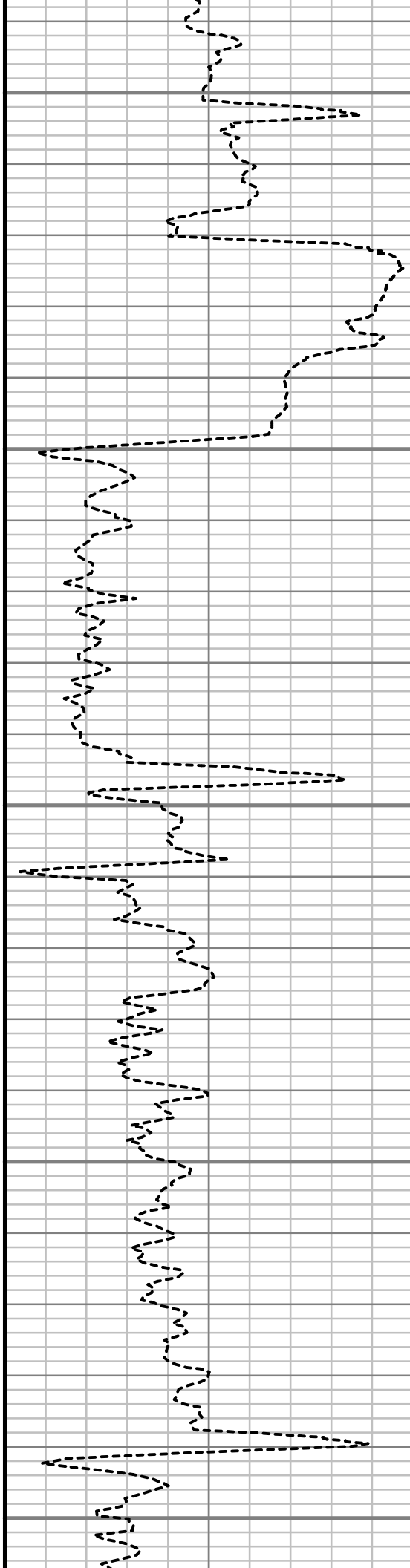
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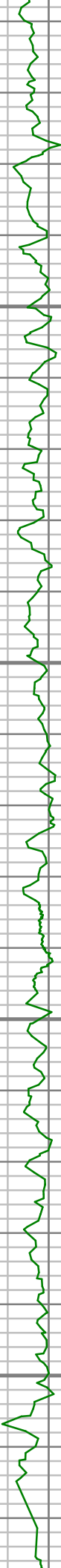
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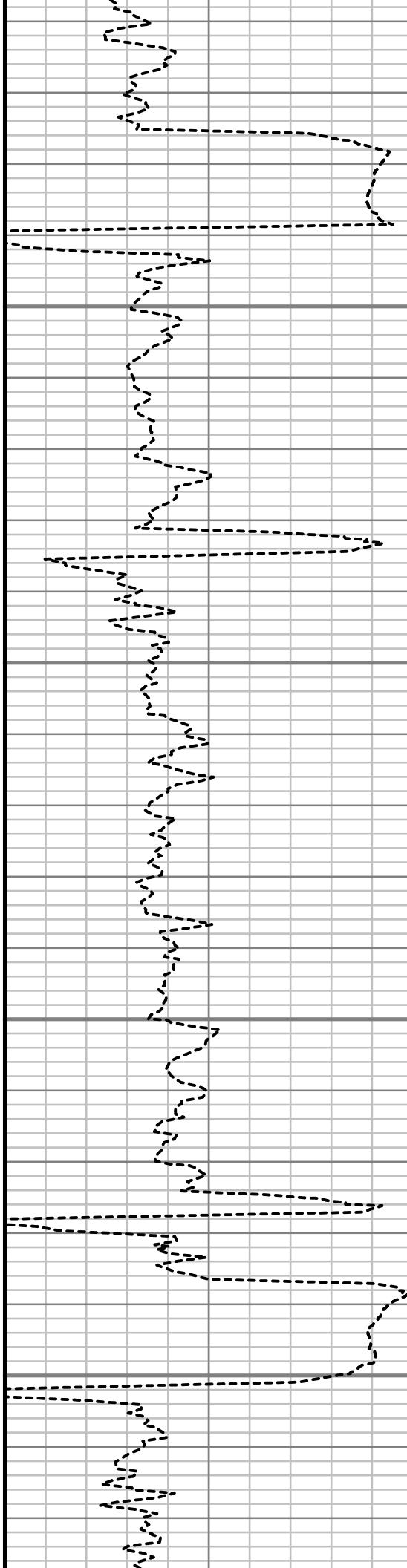


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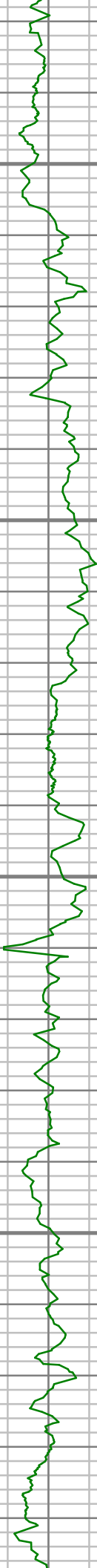
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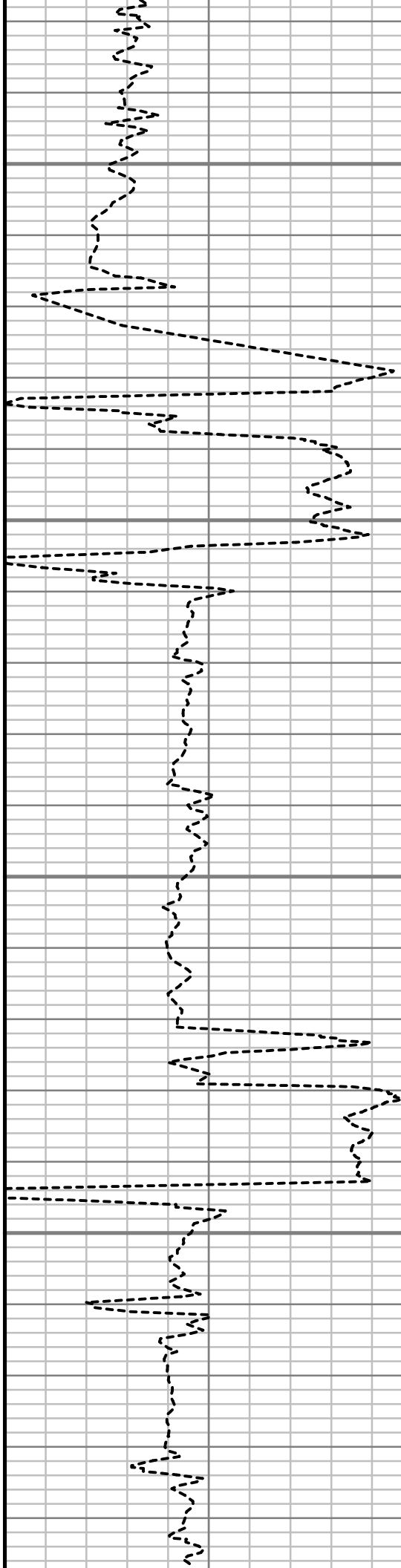


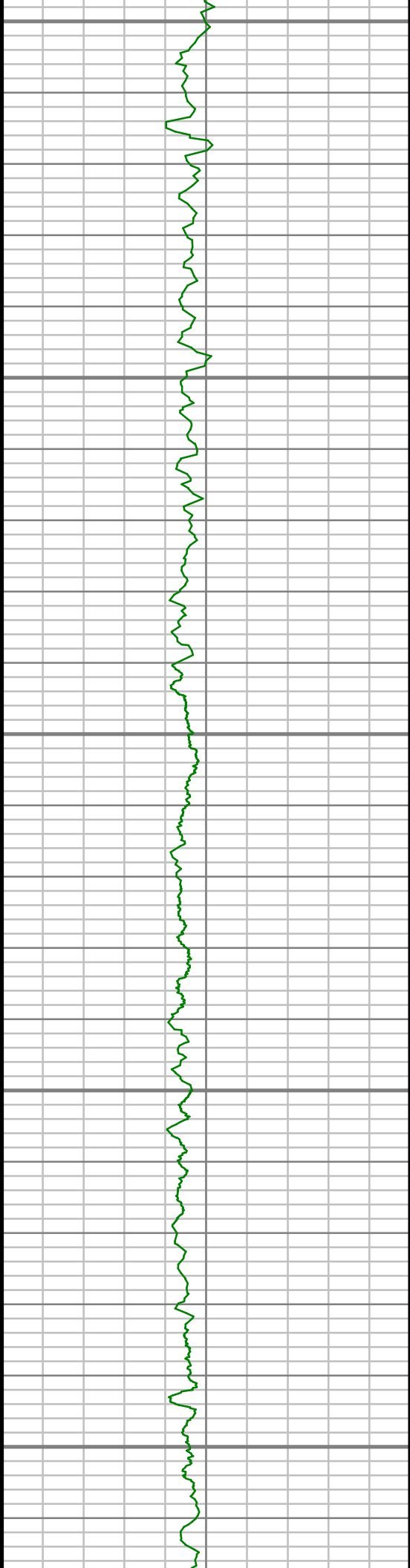
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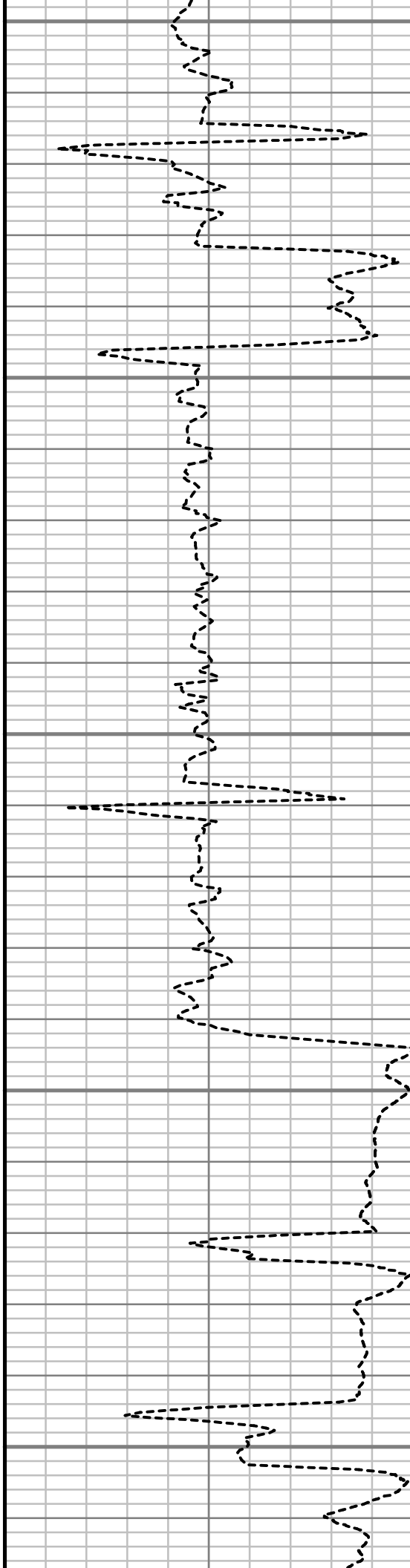
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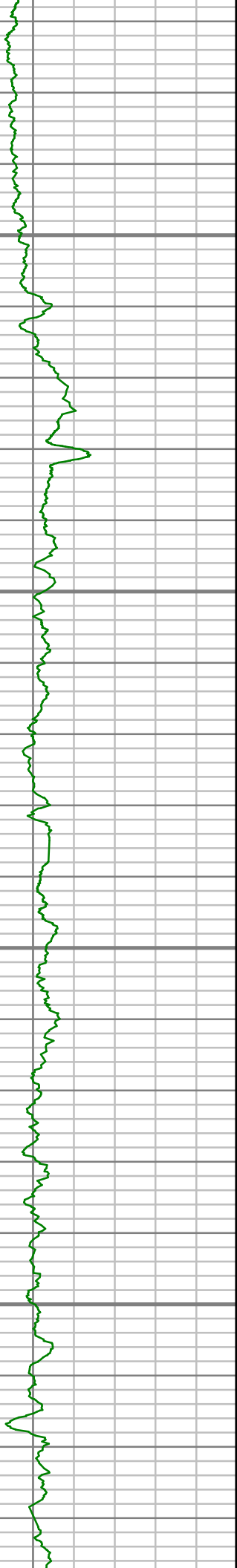
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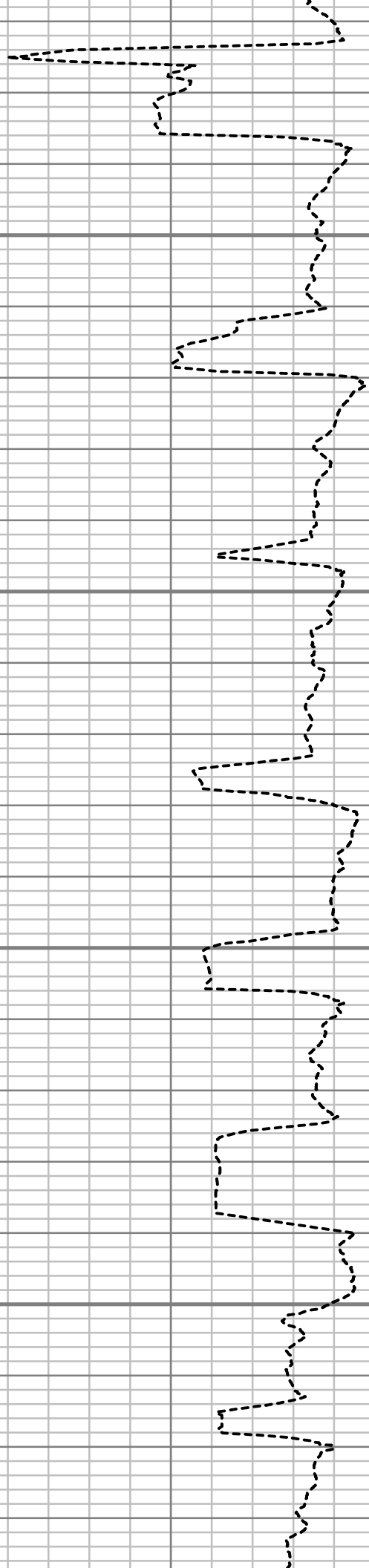


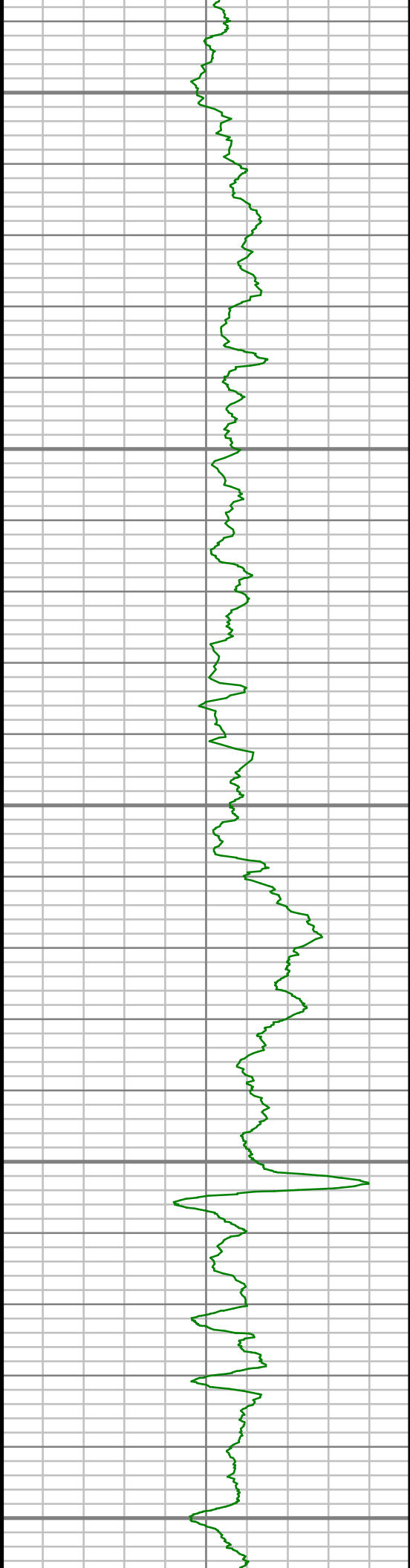
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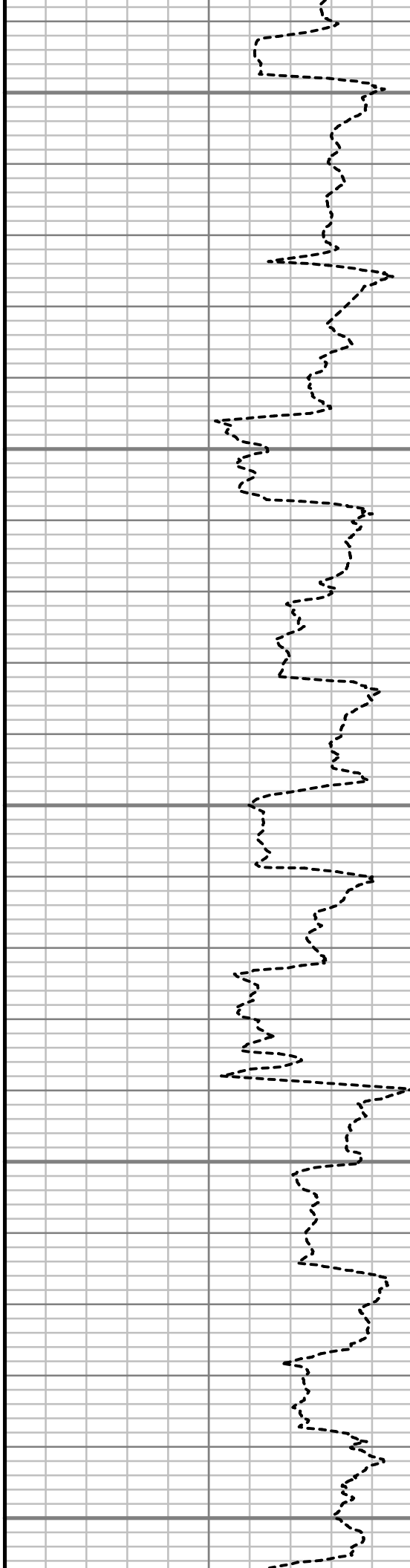
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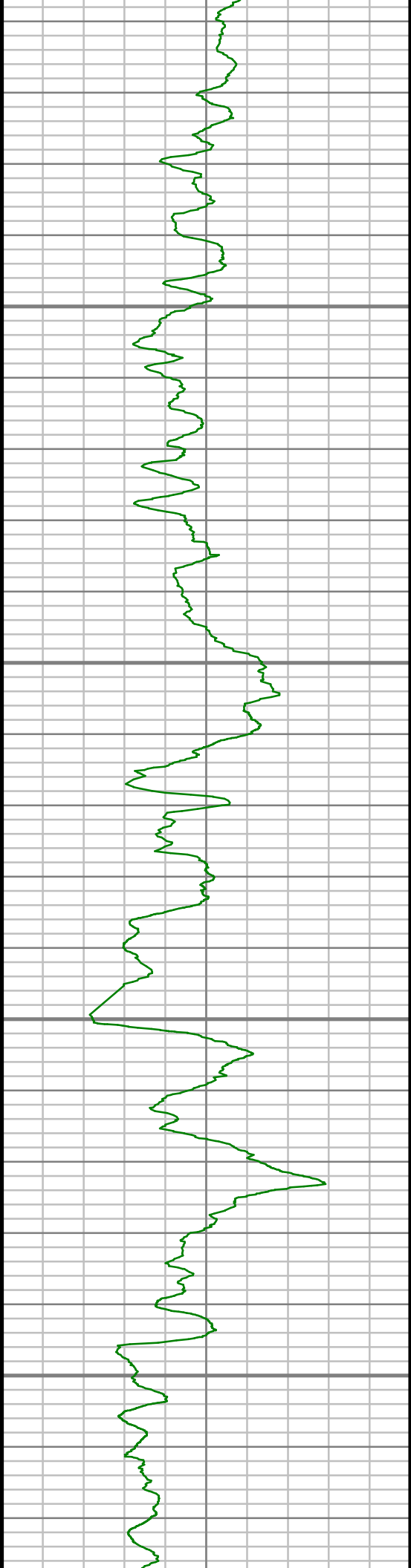
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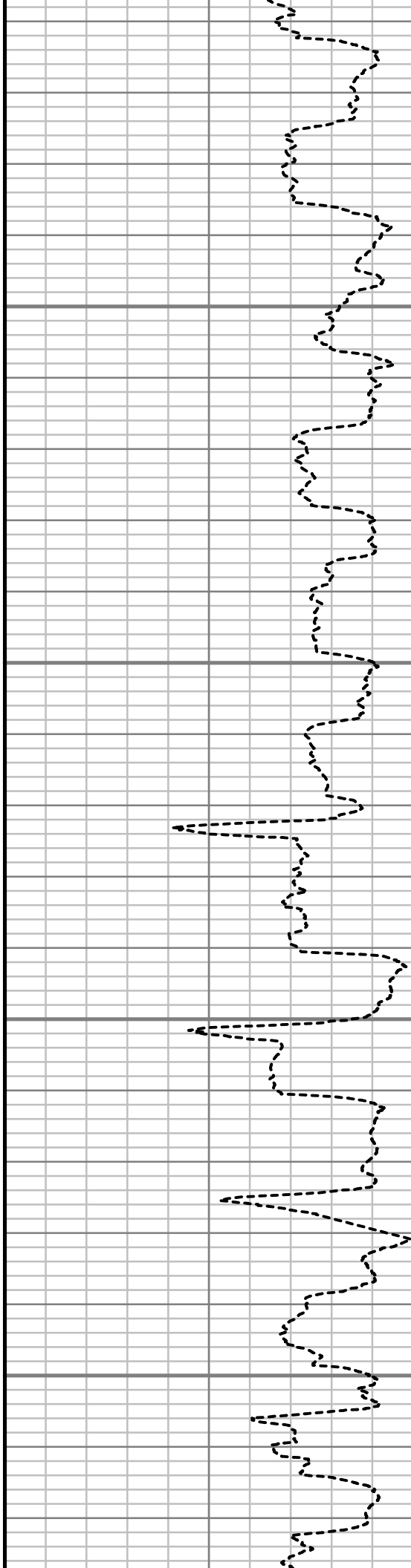


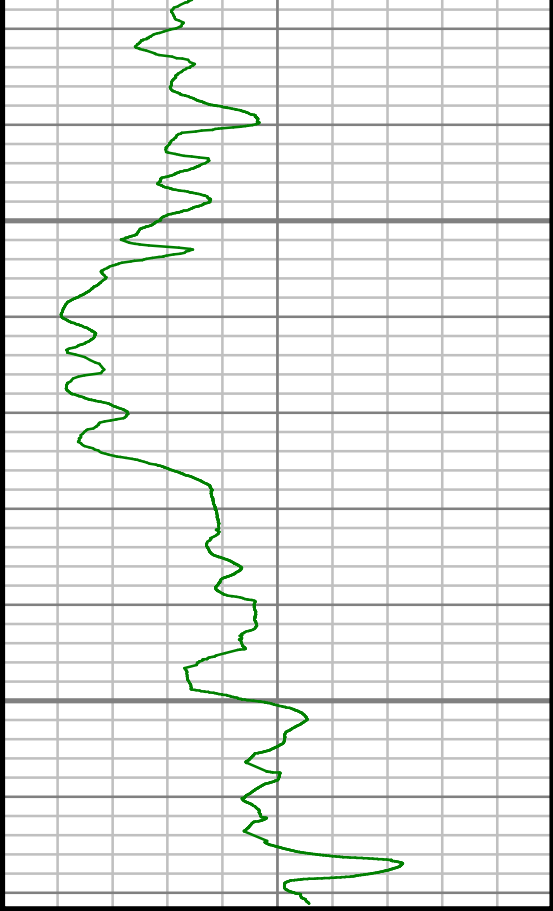
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Gamma Ray (GR)

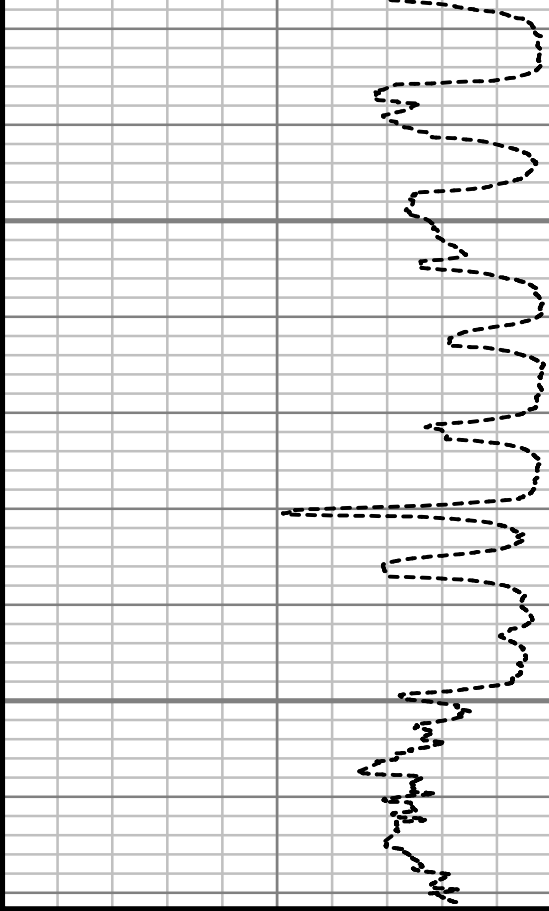
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0 Unit = aapi 150

7500

7550

TRUE VERTICAL DEPTH  
1:240 (ft)



Rate of Penetration (ROP)

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600 Unit = ft/hr 0

Comments

# Survey Report

<b>Customer Name:</b>	ENCANA OIL AND GAS (USA) INC						
<b>Site Name:</b>	MCCONAHAY						
<b>Well Name:</b>	MCCONAHAY 4C-34H-P266						
<b>Survey:</b>	McCONAHAY 4C-34H-P266						
<b>Survey Date:</b>	1/26/2014						
<b>Magnetic Declination:</b>	8.48 deg						
<b>North Reference:</b>	True North						
<b>Calculation Method:</b>	Minimum Curvature						
<b>Section (VS) Ref:</b>	0.00N (ft), 0.00E (ft), 270.00Azim (deg)						
<b>MD</b> ft	<b>Inc</b> deg	<b>Azim</b> deg	<b>TVD</b> ft	<b>VS</b> ft	<b>+N/-S</b> ft	<b>+E/-W</b> ft	<b>DLS</b> 7100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
153.00	0.33	214.14	153.00	0.25	-0.37	-0.25	0.22
246.00	0.88	175.83	245.99	0.35	-1.30	-0.35	0.70
339.00	1.31	128.14	338.98	-0.54	-2.66	0.54	1.04
432.00	2.40	111.84	431.93	-3.18	-4.04	3.18	1.30
525.00	3.63	112.16	524.80	-7.71	-5.88	7.71	1.32
618.00	3.11	102.62	617.64	-12.90	-7.54	12.90	0.82
711.00	3.26	103.42	710.49	-17.93	-8.70	17.93	0.16
803.00	4.42	101.77	802.29	-23.95	-10.03	23.95	1.28

<b>MD</b> ft	<b>Inc</b> deg	<b>Azim</b> deg	<b>TVD</b> ft	<b>VS</b> ft	<b>+N/-S</b> ft	<b>+E/-W</b> ft	<b>DLS</b> 7100ft
896.00	4.58	103.24	895.00	-31.07	-11.61	31.07	0.21
989.00	4.92	104.32	987.68	-38.56	-13.45	38.56	0.38
1082.00	4.84	98.08	1080.34	-46.30	-14.99	46.30	0.58
1175.00	5.22	102.11	1172.99	-54.32	-16.43	54.32	0.56
1311.00	5.16	94.43	1308.43	-66.47	-18.20	66.47	0.51
1373.00	5.85	107.74	1370.15	-72.26	-19.38	72.26	2.33
1466.00	5.65	110.39	1462.68	-81.07	-22.42	81.07	0.35
1559.00	5.61	112.32	1555.23	-89.56	-25.74	89.56	0.21
1652.00	5.55	111.77	1647.79	-97.94	-29.13	97.94	0.08
1745.00	5.47	111.52	1740.36	-106.25	-32.43	106.25	0.09
1838.00	6.17	108.47	1832.88	-115.11	-35.64	115.11	0.82
1931.00	6.41	106.68	1925.32	-124.82	-38.71	124.82	0.34
2026.00	6.19	105.10	2019.75	-134.85	-41.56	134.85	0.30
2121.00	5.78	100.69	2114.23	-144.49	-43.79	144.49	0.64
2215.00	5.37	101.07	2207.78	-153.46	-45.51	153.46	0.45
2310.00	5.18	105.91	2302.38	-161.94	-47.54	161.94	0.51
2405.00	5.21	112.28	2396.99	-170.06	-50.35	170.06	0.61
2500.00	5.56	108.98	2491.57	-178.41	-53.48	178.41	0.50
2594.00	7.15	120.48	2585.00	-187.76	-57.93	187.76	2.16
2689.00	6.46	121.03	2679.33	-197.43	-63.69	197.43	0.73

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
2784.00	4.65	118.82	2773.88	-205.39	-68.30	205.39	1.91
2879.00	5.20	111.20	2868.53	-212.78	-71.71	212.78	0.90
2974.00	6.47	112.04	2963.03	-221.76	-75.28	221.76	1.34
3068.00	7.69	105.19	3056.31	-232.74	-78.92	232.74	1.58
3163.00	7.55	99.74	3150.48	-245.03	-81.64	245.03	0.77
3258.00	6.51	97.12	3244.76	-256.53	-83.36	256.53	1.15
3353.00	5.32	94.17	3339.25	-266.26	-84.35	266.26	1.29
3448.00	5.60	100.69	3433.82	-275.21	-85.53	275.21	0.72
3542.00	5.63	115.07	3527.38	-283.89	-88.34	283.89	1.49
3638.00	5.98	108.82	3622.88	-292.89	-91.94	292.89	0.76
3733.00	5.49	98.20	3717.41	-302.08	-94.19	302.08	1.23
3828.00	6.24	103.58	3811.91	-311.60	-96.05	311.60	0.97
3922.00	5.27	104.94	3905.44	-320.73	-98.36	320.73	1.04
4017.00	5.38	98.30	4000.03	-329.35	-100.13	329.35	0.66
4112.00	6.43	103.83	4094.53	-338.92	-102.04	338.92	1.25
4207.00	6.00	102.49	4188.97	-348.93	-104.39	348.93	0.47
4302.00	4.88	100.83	4283.54	-357.75	-106.22	357.75	1.19
4397.00	5.86	95.27	4378.12	-366.55	-107.43	366.55	1.16
4492.00	6.65	101.72	4472.56	-376.77	-108.99	376.77	1.11

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
4587.00	5.32	99.67	4567.04	-386.49	-110.85	386.49	1.42
4682.00	5.45	99.35	4661.62	-395.28	-112.32	395.28	0.14
4777.00	6.49	103.11	4756.10	-404.96	-114.27	404.96	1.17
4872.00	7.65	107.60	4850.38	-416.21	-117.40	416.21	1.35
4967.00	7.87	110.00	4944.51	-428.35	-121.54	428.35	0.41
5061.00	6.89	108.19	5037.73	-439.76	-125.50	439.76	1.07
5157.00	5.86	102.74	5133.13	-450.02	-128.38	450.02	1.25
5251.00	6.35	96.53	5226.60	-459.85	-130.03	459.85	0.87
5346.00	7.08	106.70	5320.95	-470.67	-132.31	470.67	1.46
5441.00	6.96	106.49	5415.24	-481.80	-135.62	481.80	0.13
5536.00	5.99	103.12	5509.64	-492.14	-138.38	492.14	1.09
5631.00	5.30	106.26	5604.17	-501.18	-140.73	501.18	0.80
5726.00	5.50	111.07	5698.75	-509.65	-143.60	509.65	0.52
5821.00	6.65	106.03	5793.22	-519.18	-146.76	519.18	1.34
5916.00	6.04	100.12	5887.64	-529.39	-149.15	529.39	0.95
6011.00	5.93	106.68	5982.12	-539.01	-151.44	539.01	0.73
6106.00	5.10	113.93	6076.68	-547.56	-154.56	547.56	1.14
6201.00	5.05	110.82	6171.31	-555.33	-157.76	555.33	0.30
6295.00	5.27	107.40	6264.93	-563.31	-160.52	563.31	0.40
6390.00	5.31	110.10	6359.53	-571.60	-163.33	571.60	0.26



MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
6485.00	5.52	99.72	6454.10	-580.22	-165.61	580.22	1.05
6580.00	5.85	106.81	6548.64	-589.36	-167.78	589.36	0.82
6675.00	5.19	110.70	6643.20	-598.01	-170.70	598.01	0.80
6707.00	4.83	116.72	6675.08	-600.57	-171.82	600.57	1.98
6738.00	4.58	115.41	6705.97	-602.85	-172.94	602.85	0.89
6770.00	4.31	126.68	6737.88	-604.97	-174.21	604.97	2.85
6801.00	4.58	160.38	6768.79	-606.33	-176.07	606.33	8.35
6833.00	6.19	180.80	6800.65	-606.73	-179.00	606.73	7.76
6864.00	7.99	195.32	6831.41	-606.14	-182.75	606.14	8.14
6896.00	9.12	214.32	6863.06	-604.12	-186.99	604.12	9.46
6928.00	10.61	237.03	6894.60	-600.22	-190.69	600.22	12.91
6959.00	12.35	252.89	6924.99	-594.65	-193.21	594.65	11.58
6991.00	13.97	257.19	6956.15	-587.62	-195.08	587.62	5.91
7023.00	15.32	256.46	6987.11	-579.74	-196.92	579.74	4.26
7054.00	17.88	256.42	7016.81	-571.13	-199.00	571.13	8.26
7085.00	21.39	258.06	7046.00	-560.97	-201.29	560.97	11.46
7117.00	25.18	257.35	7075.39	-548.62	-203.99	548.62	11.88
7149.00	28.15	257.95	7103.99	-534.59	-207.05	534.59	9.32
7181.00	30.43	259.91	7131.89	-519.23	-210.05	519.23	7.73

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
7212.00	32.38	263.00	7158.35	-503.25	-212.44	503.25	8.16
7244.00	34.17	265.66	7185.11	-485.79	-214.16	485.79	7.22
7275.00	36.00	266.27	7210.47	-468.01	-215.41	468.01	6.01
7307.00	37.99	265.80	7236.03	-448.80	-216.75	448.80	6.28
7338.00	41.09	266.77	7259.93	-429.11	-218.02	429.11	10.20
7370.00	43.48	267.85	7283.61	-407.61	-219.03	407.61	7.81
7402.00	45.53	268.48	7306.43	-385.19	-219.74	385.19	6.55
7433.00	47.07	269.81	7327.84	-362.78	-220.07	362.78	5.86
7465.00	48.68	271.77	7349.31	-339.05	-219.74	339.05	6.78
7497.00	49.46	272.21	7370.27	-314.89	-218.90	314.89	2.65
7528.00	50.35	272.97	7390.24	-291.20	-217.83	291.20	3.43
7560.00	52.90	273.05	7410.10	-266.15	-216.51	266.15	7.97
7591.00	56.51	272.04	7428.01	-240.88	-215.39	240.88	11.94
7623.00	58.61	271.57	7445.18	-213.89	-214.54	213.89	6.68
7655.00	60.89	271.20	7461.30	-186.26	-213.88	186.26	7.19
7686.00	63.84	270.44	7475.67	-158.80	-213.49	158.80	9.76
7718.00	65.96	270.02	7489.25	-129.82	-213.37	129.82	6.73
7749.00	67.68	268.62	7501.45	-101.33	-213.71	101.33	6.93
7781.00	70.37	273.21	7512.91	-71.47	-213.22	71.47	15.82
7813.00	73.57	273.14	7522.81	-41.09	-211.54	41.09	10.00

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
7844.00	76.15	272.30	7530.90	-11.20	-210.12	11.20	8.73
7876.00	78.40	272.50	7537.95	19.98	-208.81	-19.98	7.04
7911.00	82.62	273.03	7543.72	54.46	-207.14	-54.46	12.16
8017.00	87.58	271.07	7552.77	159.96	-203.37	-159.96	5.03
8111.00	89.26	272.38	7555.36	253.88	-200.53	-253.88	2.26
8206.00	89.63	273.15	7556.28	348.76	-195.95	-348.76	0.89
8301.00	90.30	273.87	7556.33	443.59	-190.14	-443.59	1.04
8396.00	89.63	272.45	7556.39	538.44	-184.90	-538.44	1.65
8491.00	89.26	272.95	7557.31	633.33	-180.42	-633.33	0.66
8586.00	88.59	271.76	7559.09	728.23	-176.52	-728.23	1.44
8681.00	89.33	272.00	7560.82	823.16	-173.40	-823.16	0.82
8776.00	90.37	273.55	7561.07	918.04	-168.80	-918.04	1.96
8871.00	89.46	270.67	7561.21	1012.97	-165.31	-1012.97	3.18
8965.00	89.26	270.10	7562.26	1106.96	-164.68	-1106.96	0.65
9061.00	89.43	269.67	7563.35	1202.95	-164.87	-1202.95	0.48
9156.00	90.64	270.63	7563.30	1297.95	-164.62	-1297.95	1.62
9251.00	89.56	269.25	7563.13	1392.95	-164.72	-1392.95	1.84
9346.00	88.69	267.94	7564.58	1487.90	-167.05	-1487.90	1.66
9440.00	88.42	267.11	7566.95	1581.79	-171.10	-1581.79	0.93

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
9535.00	88.99	269.06	7569.09	1676.70	-174.27	-1676.70	2.14
9630.00	89.16	268.91	7570.63	1771.68	-175.95	-1771.68	0.24
9725.00	90.44	267.66	7570.96	1866.63	-178.79	-1866.63	1.88
9820.00	91.55	267.22	7569.32	1961.52	-183.03	-1961.52	1.25
9915.00	91.88	268.77	7566.48	2056.42	-186.35	-2056.42	1.66
10010.00	91.88	269.73	7563.36	2151.36	-187.59	-2151.36	1.01
10105.00	92.05	269.73	7560.11	2246.30	-188.04	-2246.30	0.18
10200.00	90.98	270.84	7557.60	2341.26	-187.57	-2341.26	1.62
10294.00	90.97	271.08	7556.00	2435.23	-185.99	-2435.23	0.26
10389.00	89.87	270.77	7555.30	2530.22	-184.46	-2530.22	1.21
10484.00	89.73	270.78	7555.64	2625.21	-183.17	-2625.21	0.14
10579.00	89.83	270.65	7556.00	2720.20	-181.99	-2720.20	0.17
10674.00	89.80	270.45	7556.31	2815.20	-181.08	-2815.20	0.22
10769.00	89.87	270.98	7556.59	2910.19	-179.89	-2910.19	0.56
10864.00	90.00	271.22	7556.70	3005.17	-178.07	-3005.17	0.29
10959.00	90.10	271.07	7556.61	3100.15	-176.18	-3100.15	0.19
11054.00	89.26	269.45	7557.14	3195.14	-175.74	-3195.14	1.92
11149.00	89.90	268.98	7557.84	3290.13	-177.04	-3290.13	0.84
11244.00	89.66	268.62	7558.20	3385.11	-179.03	-3385.11	0.46
11338.00	89.43	268.22	7558.94	3479.07	-181.63	-3479.07	0.49

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	7100ft
11433.00	89.87	268.28	7559.53	3574.02	-184.53	-3574.02	0.46
11529.00	90.74	269.29	7559.02	3670.00	-186.57	-3670.00	1.39
11623.00	90.84	268.48	7557.73	3763.97	-188.40	-3763.97	0.87
11718.00	90.74	270.10	7556.42	3858.95	-189.58	-3858.95	1.71
11813.00	91.07	270.23	7554.92	3953.94	-189.31	-3953.94	0.38
11902.00	91.21	270.54	7553.15	4042.92	-188.71	-4042.92	0.38

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft

5" = 100' FEET TVD