

Company : NOBLE ENERGY INC
Well : WELLS RANCH AE19-626
Field : WATTENBERG

Date : 17-Dec-2014
Time : 14:44



A Schlumberger Company

GAMMA-RAY

2" = 100'

FEET MD

COMPANY : NOBLE ENERGY INC
WELL : WELLS RANCH AE19-626
FIELD : WATTENBERG
COUNTY : WELD
STATE : CO
COUNTRY : USA
API No. : 05-123-39634

COMPANY : NOBLE ENERGY INC
WELL : WELLS RANCH AE19-626
FIELD : WATTENBERG
COUNTY : WELD
STATE : CO
COUNTRY : USA
API WELL No. : 05-123-39634

WELL LOCATION

LAT:40°28'9"N LON:104°21'21"
X:3318318' Y:1415853'
SEC:24 TWP:6N 63W RANGE:

OTHER SERVICES

DIRECTIONAL
ROP

DEPTH REF. : ROTARY TABLE
ELEVATION : 4816.00 ft (ROTARY TABLE - MEAN SEA LEVEL)
ALTITUDE : 4786.00 ft (GROUND LEVEL - MEAN SEA LEVEL)

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
13 1/2	0	733	00 +/-2	0	1600
8 3/4	733	6937	11 +/-2	1600	6000
6 1/8	6937	11482	11-90	6000	7078
			90 +/-5	7078	11842

CASING RECORD

CASING SIZE in	FROM ft	TO ft
9 5/8	0	723
7	723	6946

DRILLING Co.: H&P
RIG : 330
LMD UNIT No.: N/A DISTRICT : COO
SPUD DATE : 10-DEC-14
LMD START DATE : 11-DEC-14 DEPTH : ft
LMD END DATE : 16-DEC-14 DEPTH : 11439 ft
TOTAL DEPTH : ft

RUN DATA

RUN NUMBER	1	2			
START DATE	11-DEC-14	14-DEC-14			
START TIME	6:45	09:30			
END DATE	13-DEC-14	16-DEC-14			
END TIME	02:00	23:30			
DEPTH IN ft	653	6937			
DEPTH OUT ft	6937	11482			
LOG TOP ft	653	6900			
LOG BOTTOM ft	6897	11800			
HOLE SIZE in	8 3/4	6 1/8			
MUD DATA @ ft	1584	10637			
MUD TYPE	WATER BASED	WATER BASED			
DENSITY lb/gal	8.40	9.50			
VISCOSITY s/qt	26	35			
pH	10.2	9.8			
FLUID LOSS cm3/30		7.5			
SALINITY ppm	1900	2300			
Rm ohmm @ deg F	@	@			
Rmf ohmm @ deg F	@	@			

MAX REC TEMP deg F	80					
Rm @ MAX TEMP ohmm						
LWD ENGINEER #1	N.COOPER	N. COOPER				
LWD ENGINEER #2	D.LIPCOVSKI	T. BRIGGS				
LWD ENGINEER #3						

REMARKS

NOBLE ENERGY INC. AFE# 200468

PATHFINDER JOB #: 14CC00717

ALL LOGGING DATA IS TRANSMITTED ONLY UNLESS STATED OTHERWISE.

ALL REFERENCES TO LOG TOP, LOG BOTTOM, OR LOGGING TOOL DEPTH REFER TO GAMMA-RAY SENSOR UNLESS STATED OTHERWISE.

ALL ANNOTATIONS IN THE DEPTH TRACK ARE REFERENCED TO BIT DEPTH.

THIRD PARTY DEPTH TRACKING SERVICES ARE PROVIDED BY PASON.

RUN #1: 6 3/4" HDS1-R/GAMMA LOGGING RUN.

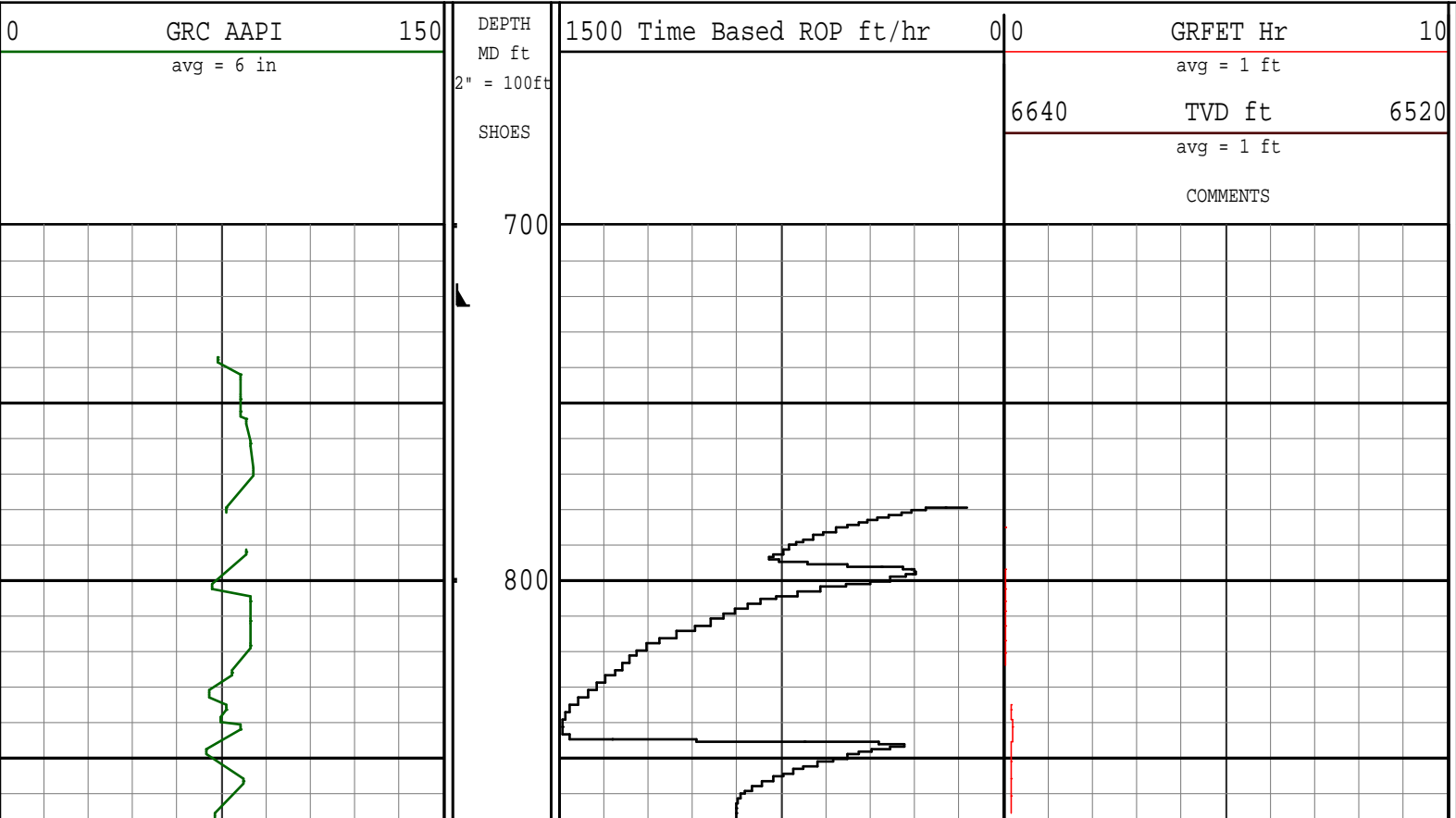
RUN #2: 4 3/4" HDS-1R/GAMMA LOGGING RUN.

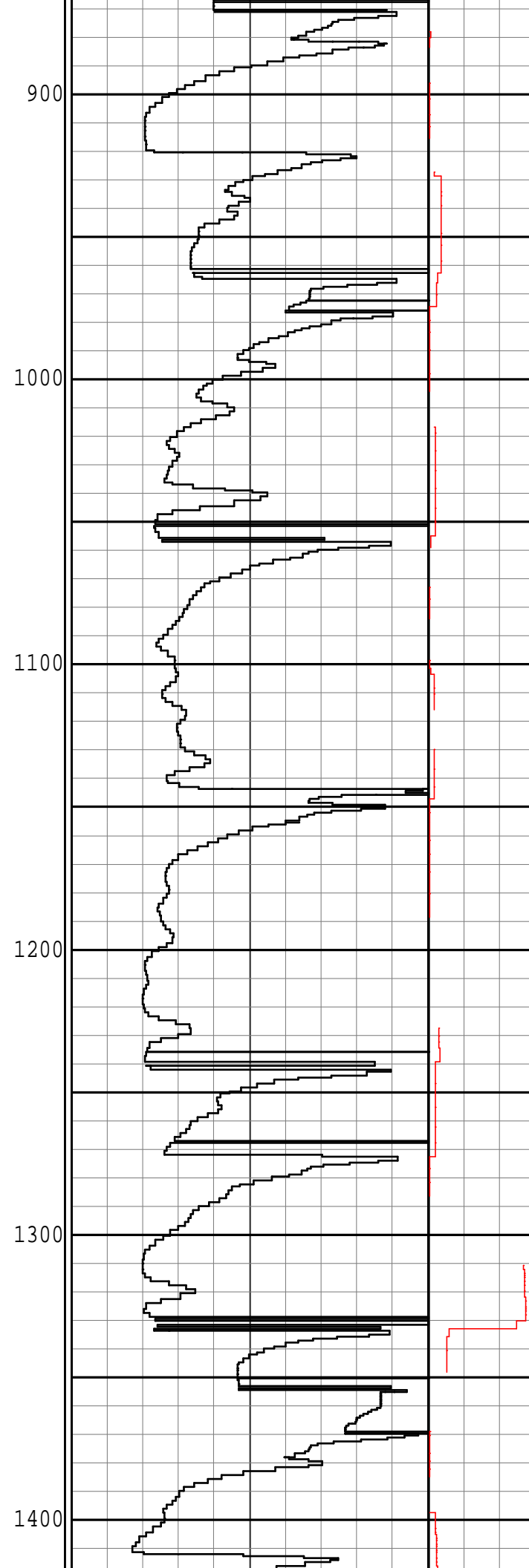
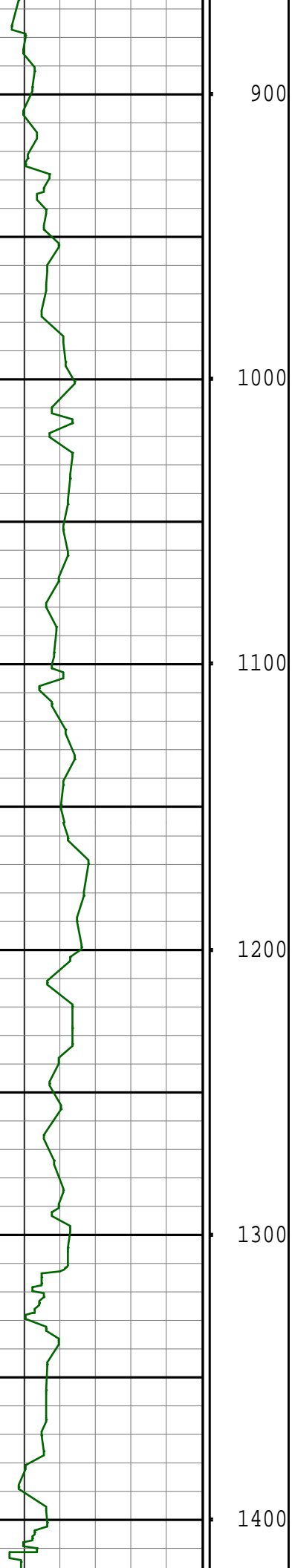
NOTICE - All interpretations are opinions based on inferences from electrical or other measurements and we do not guarantee the accuracy or correctness of any interpretations. We shall not, except in the case of gross or willful negligence on our part, be liable or responsible for loss, costs, damages or expenses incurred or sustained by anyone as a result of any interpretations made by one 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.

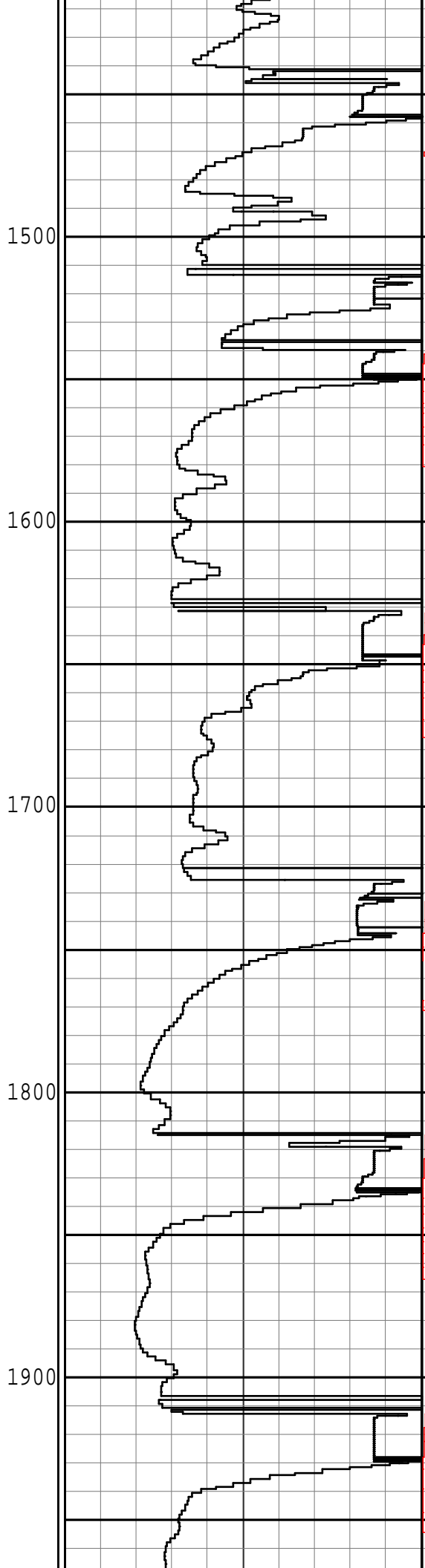
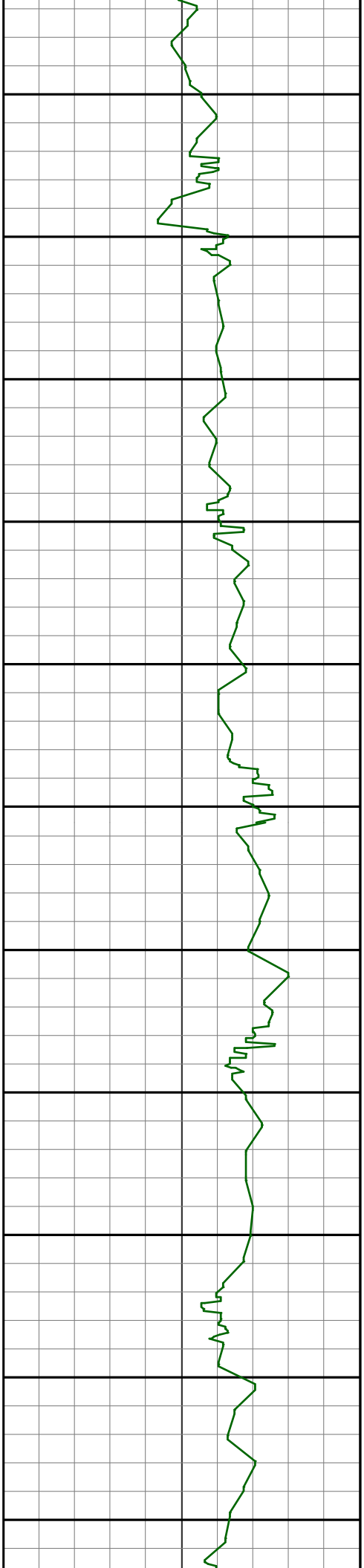
PATHFINDER - A Schlumberger Company

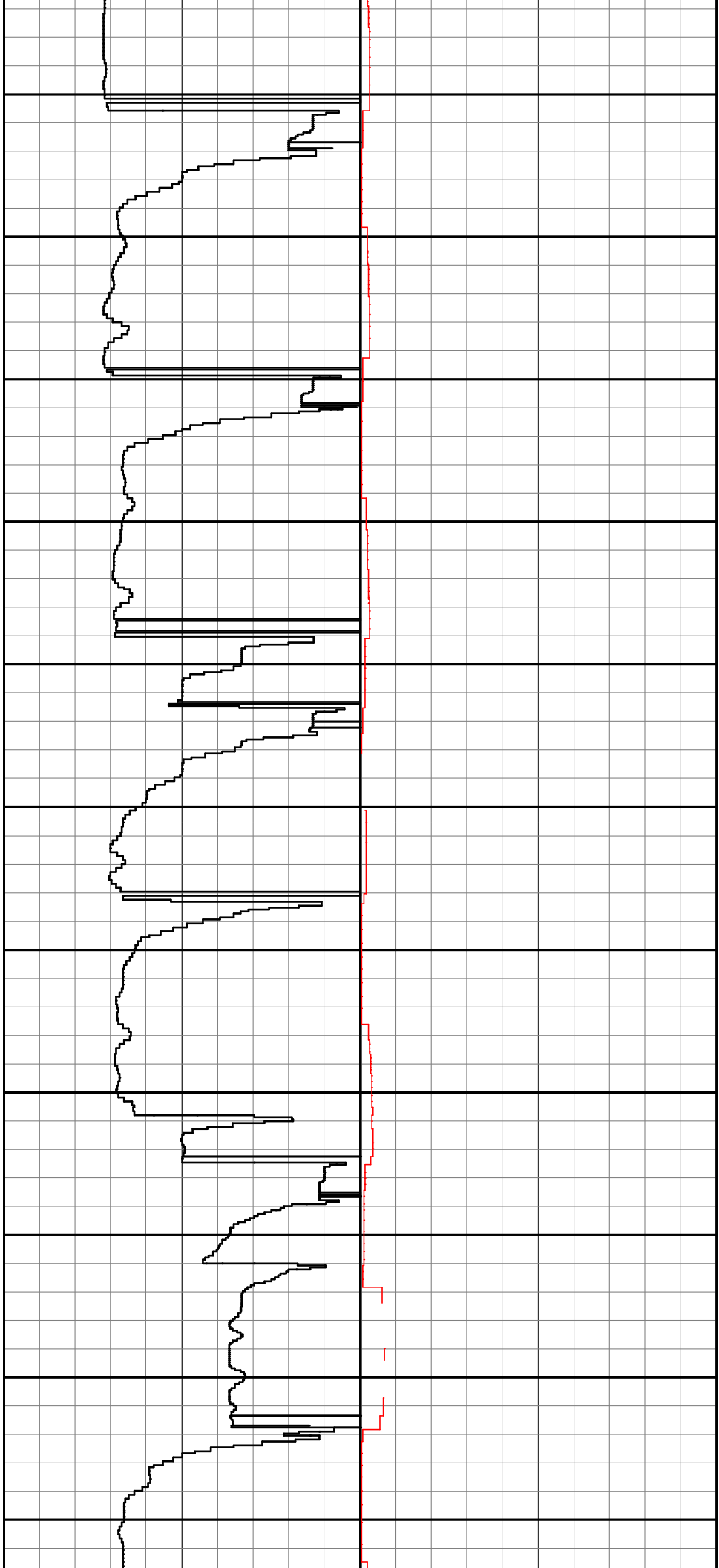
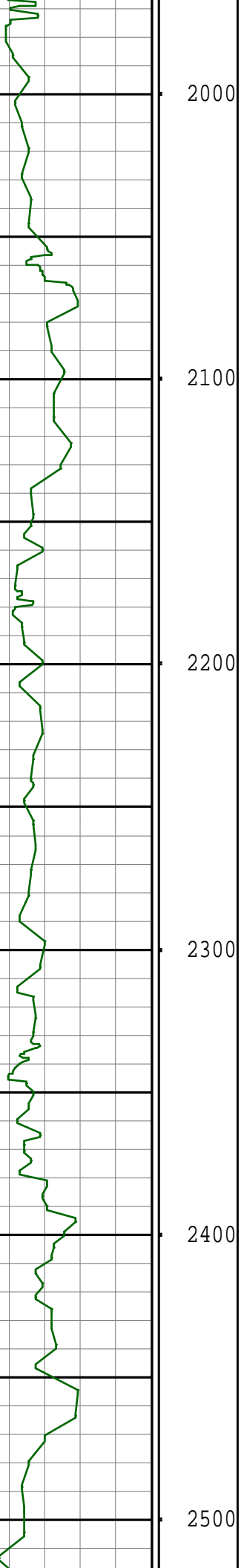
Version No : RX5 V6.05B Release 20Jun2014

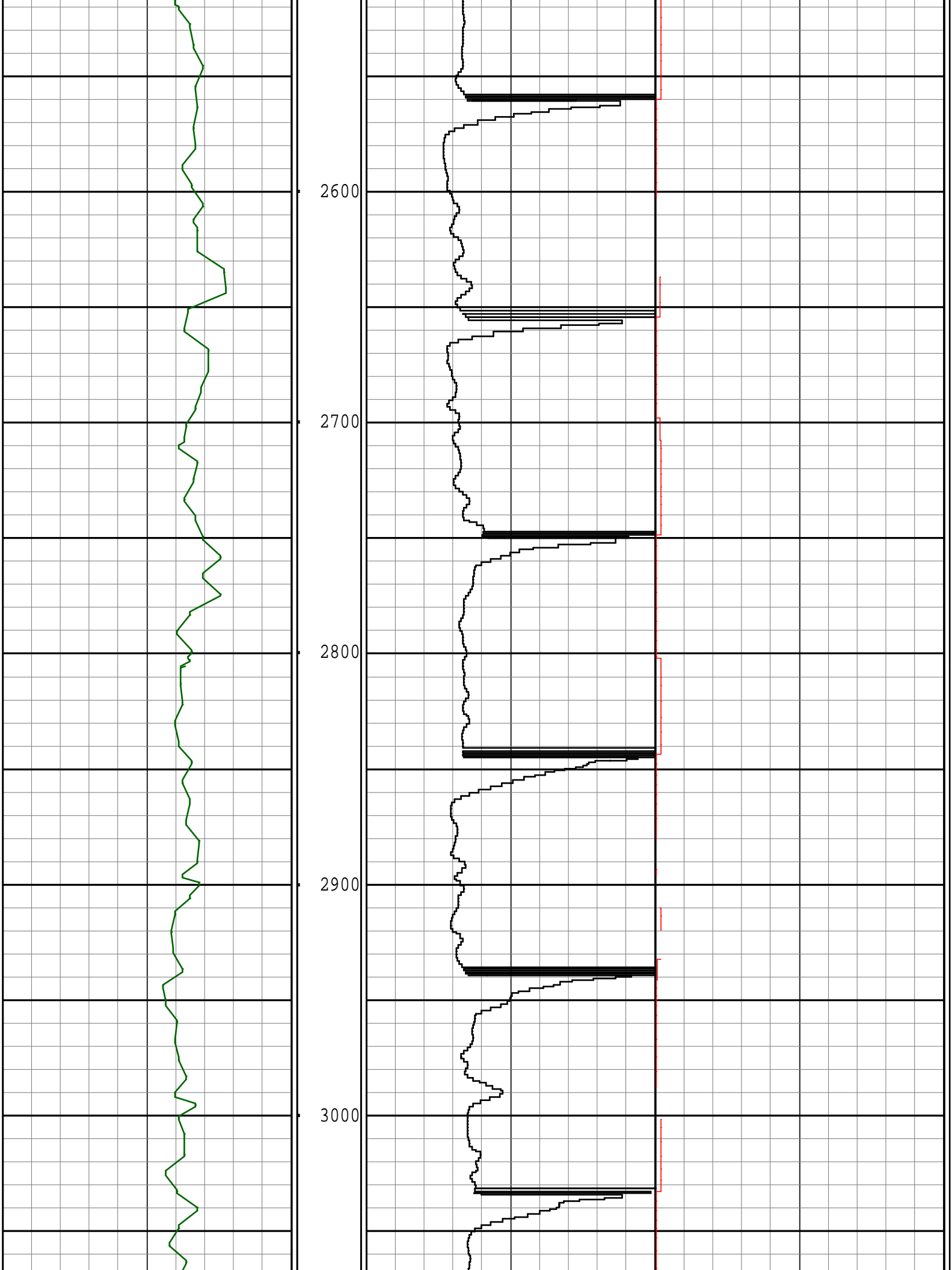
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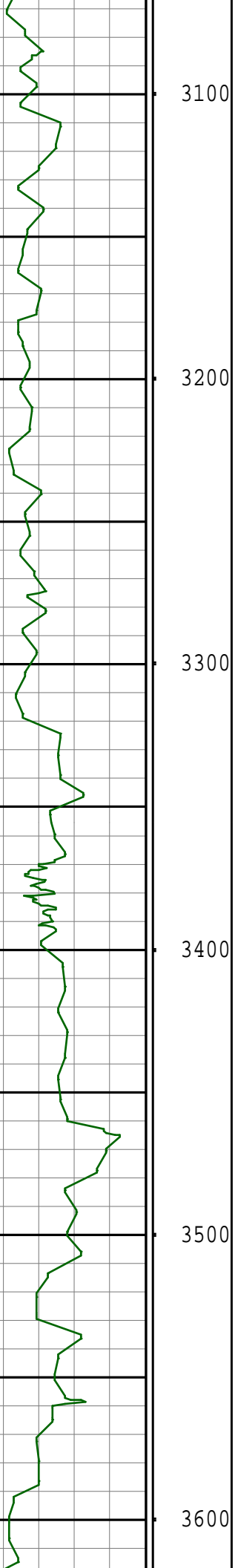












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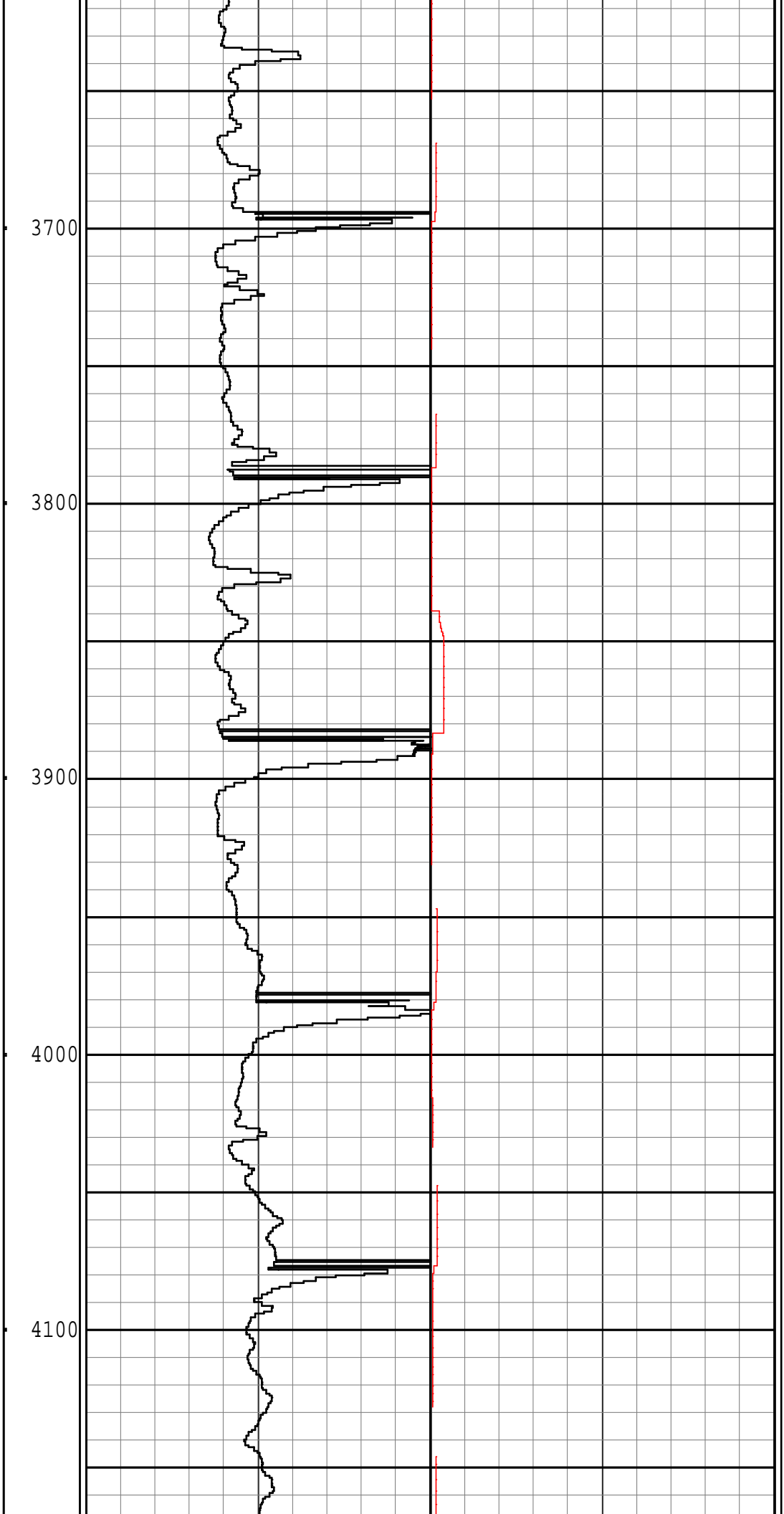
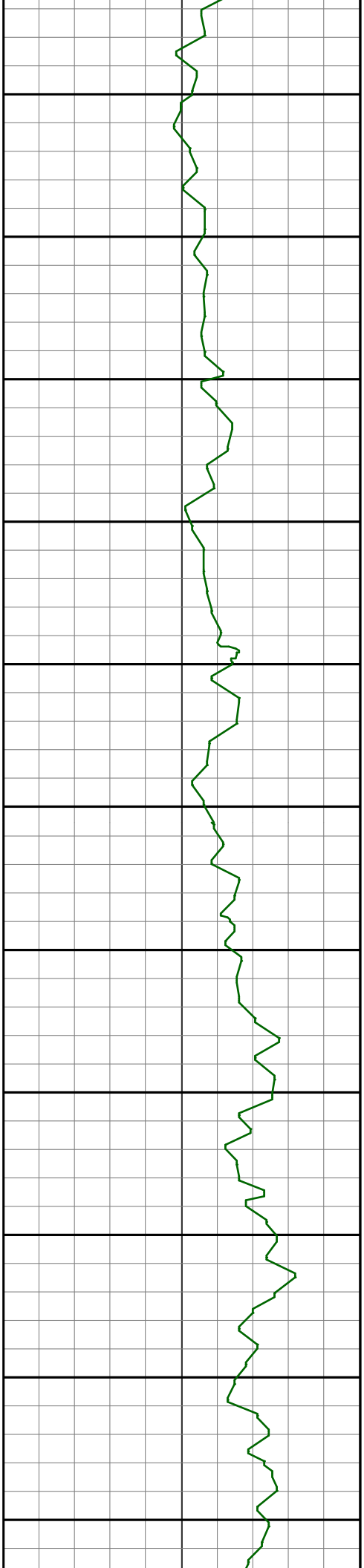
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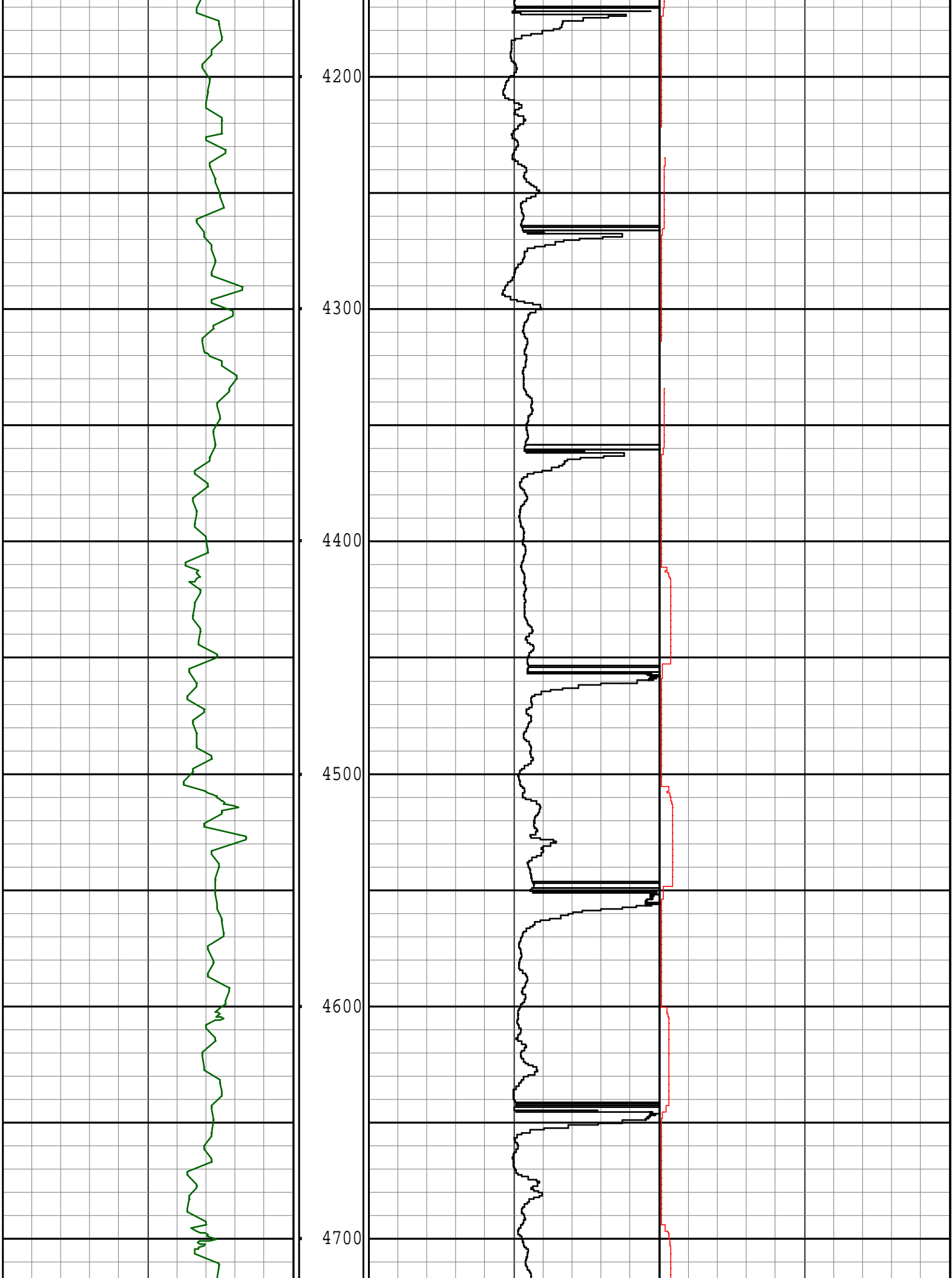
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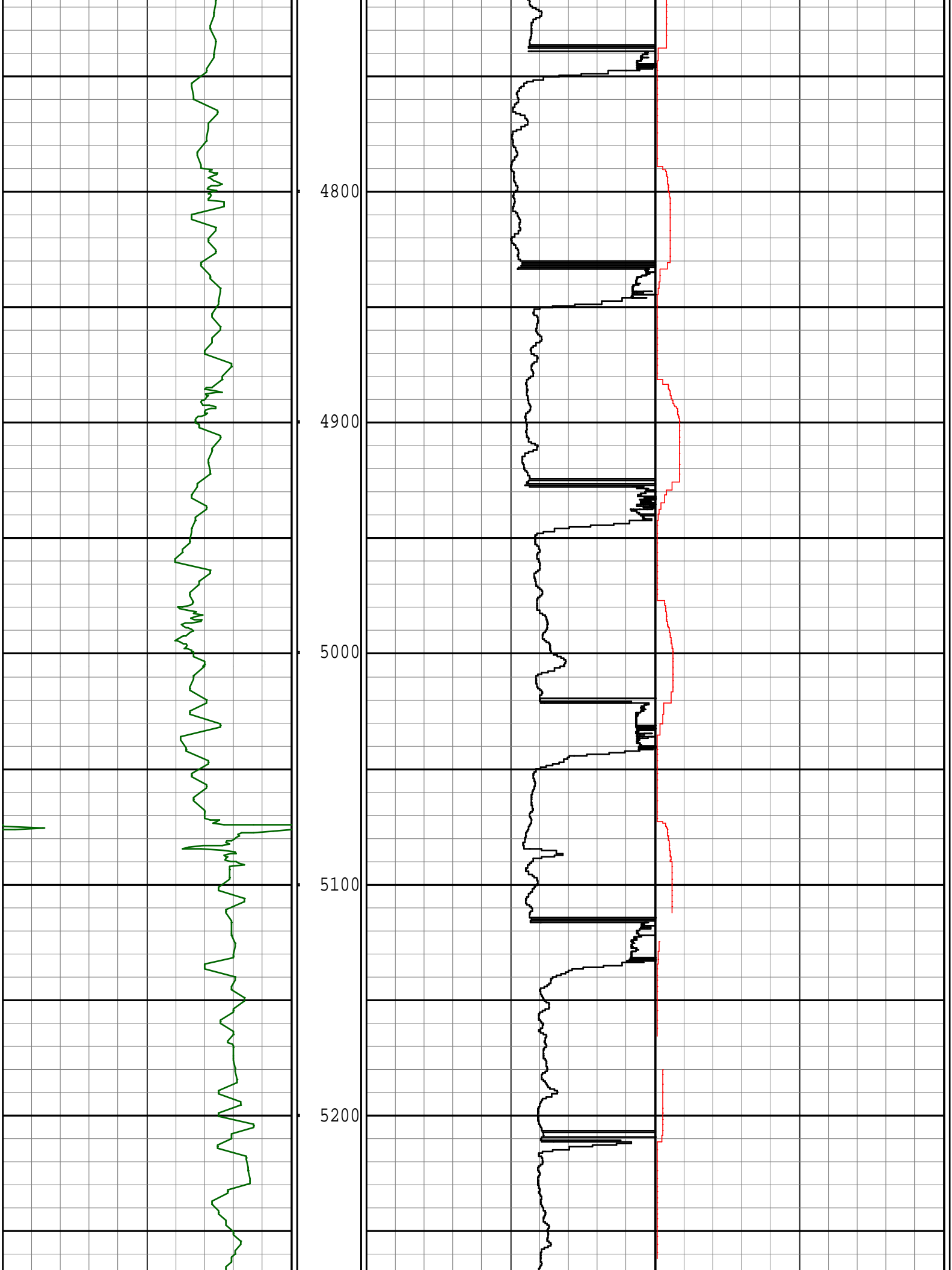
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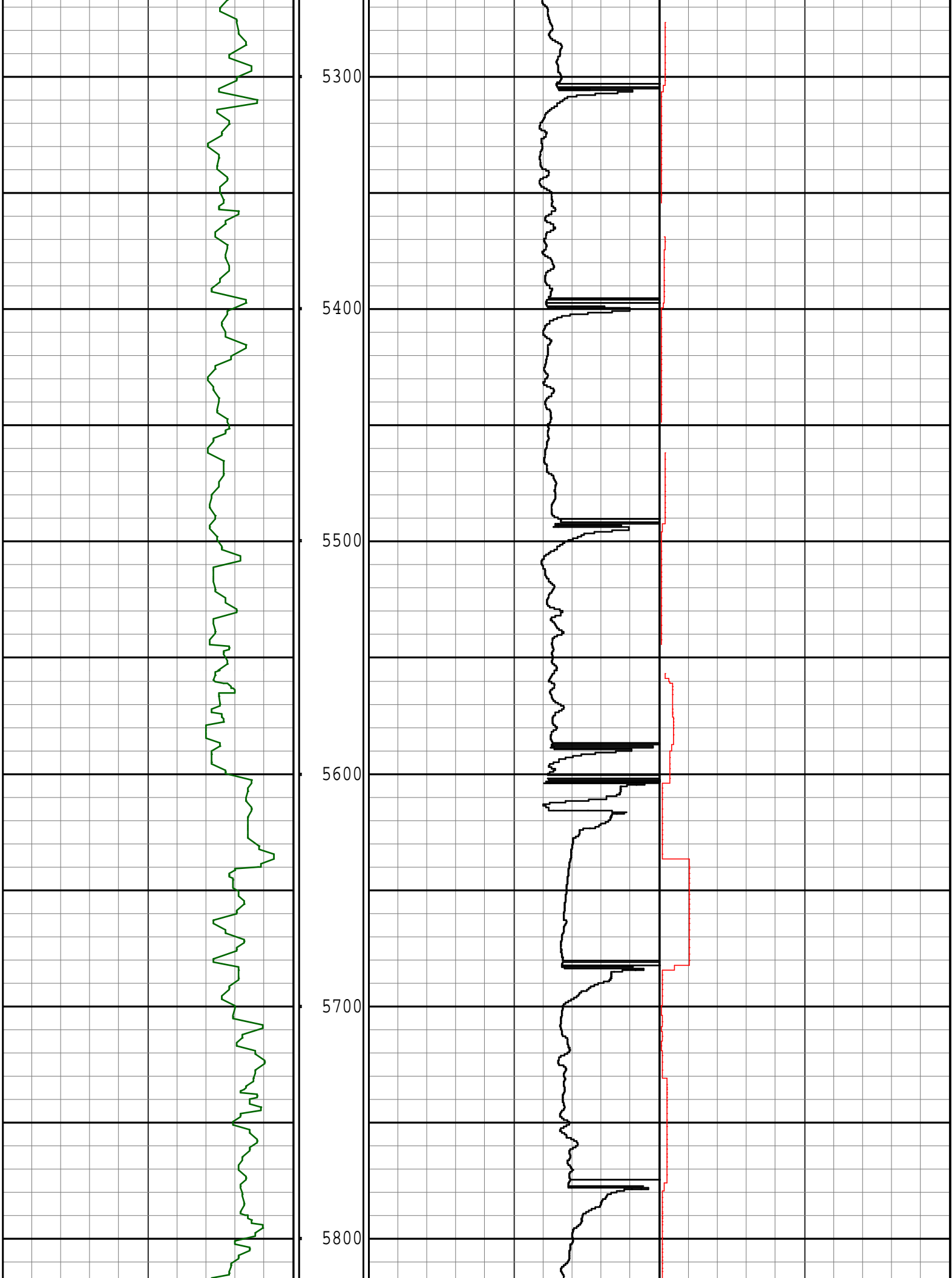
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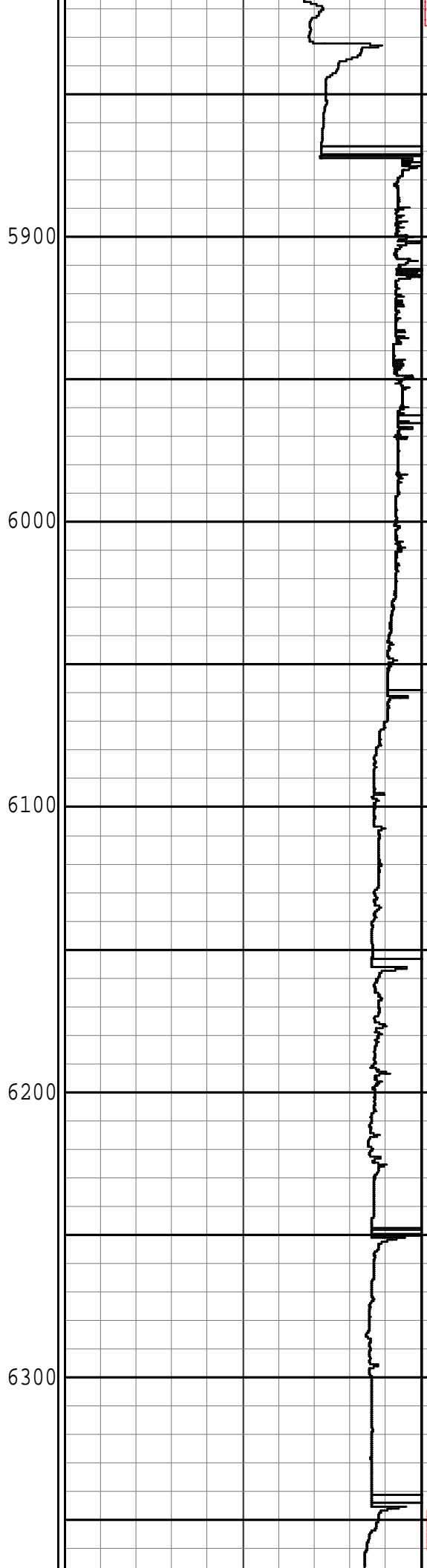
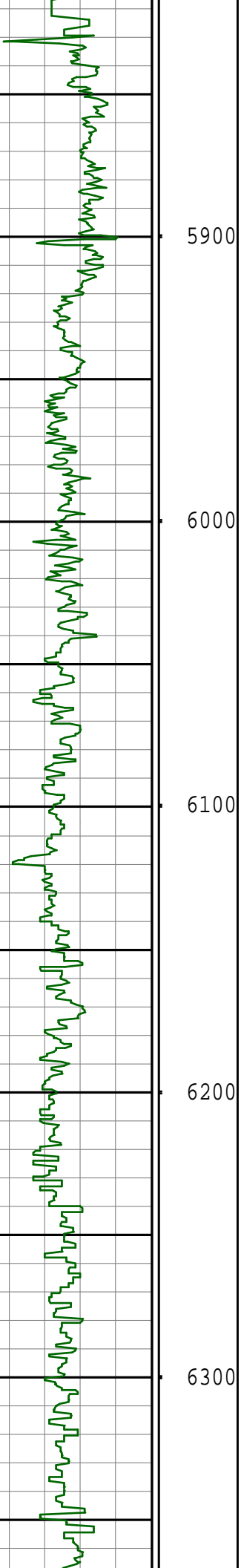
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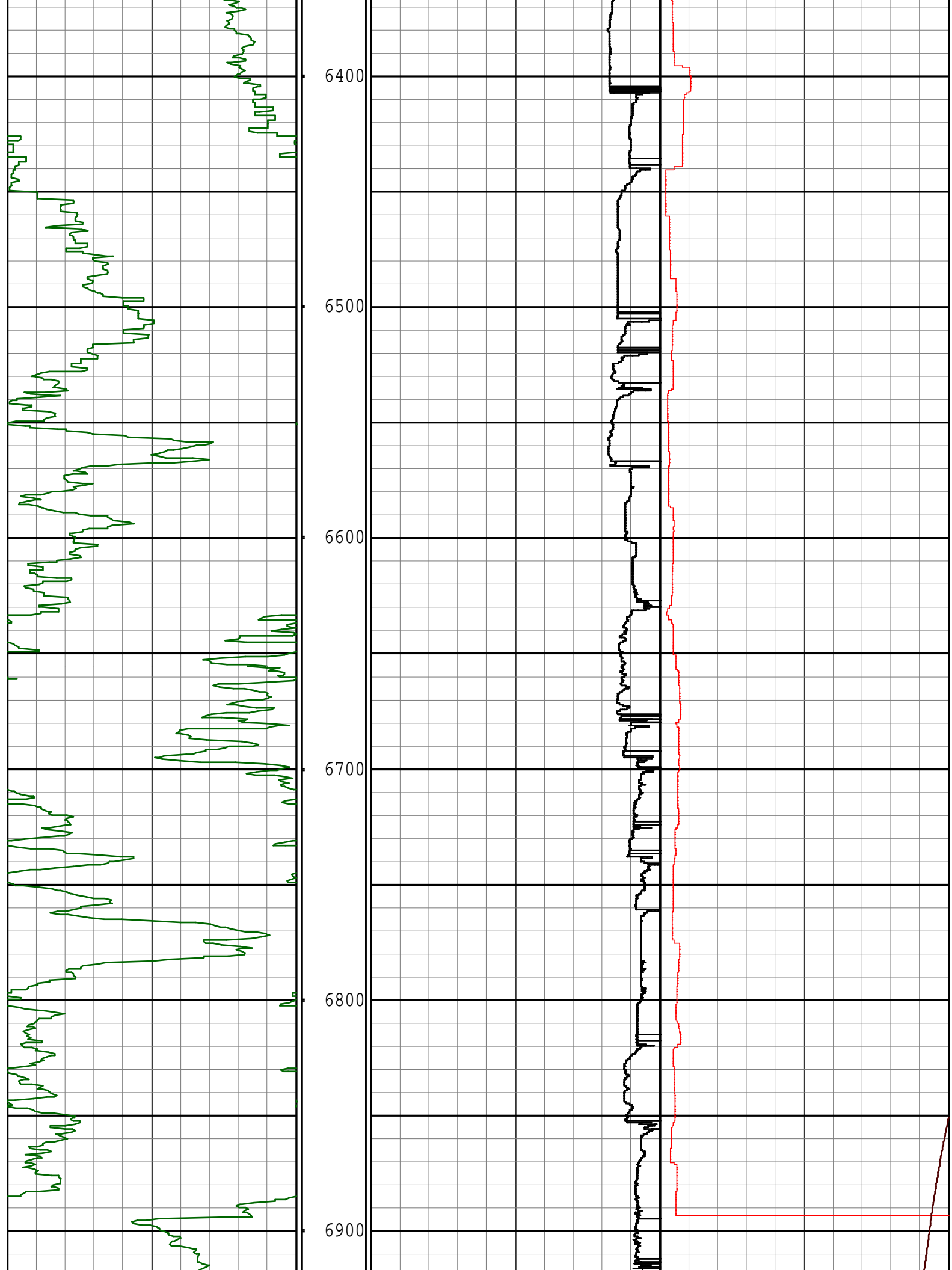


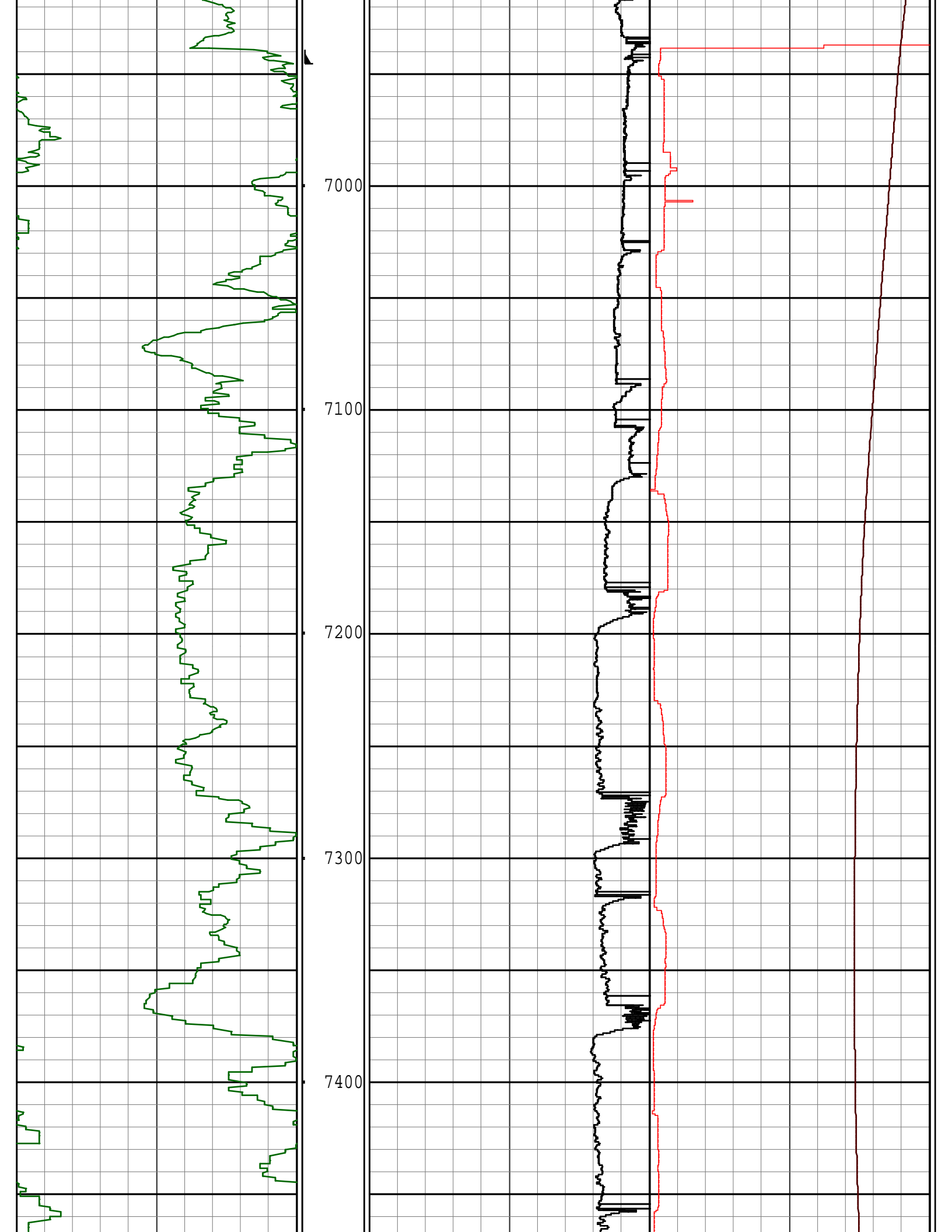


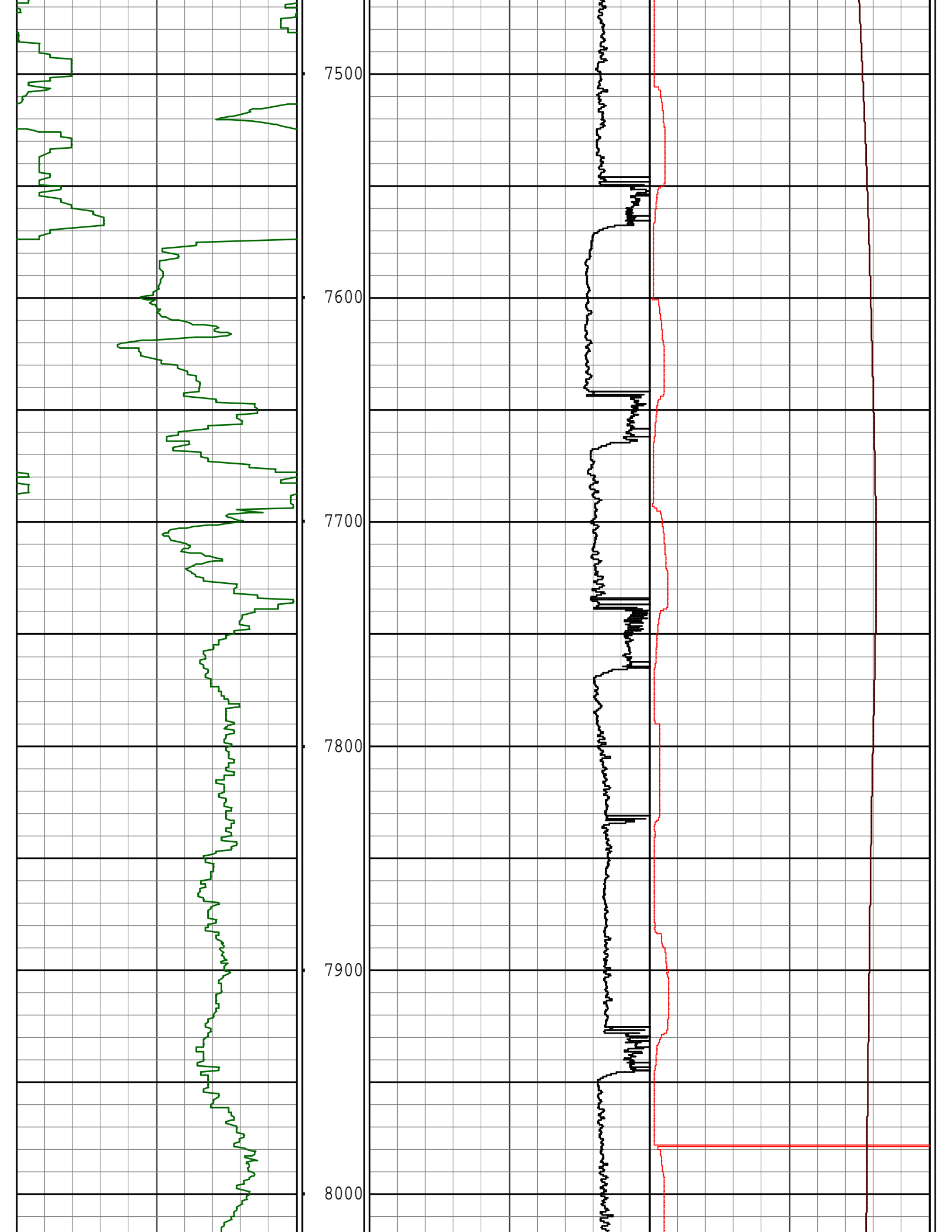


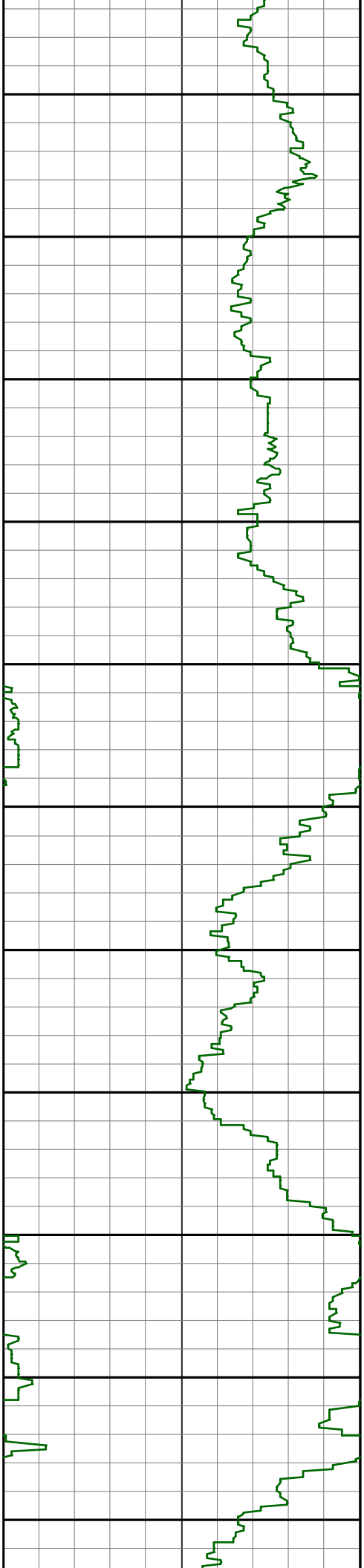












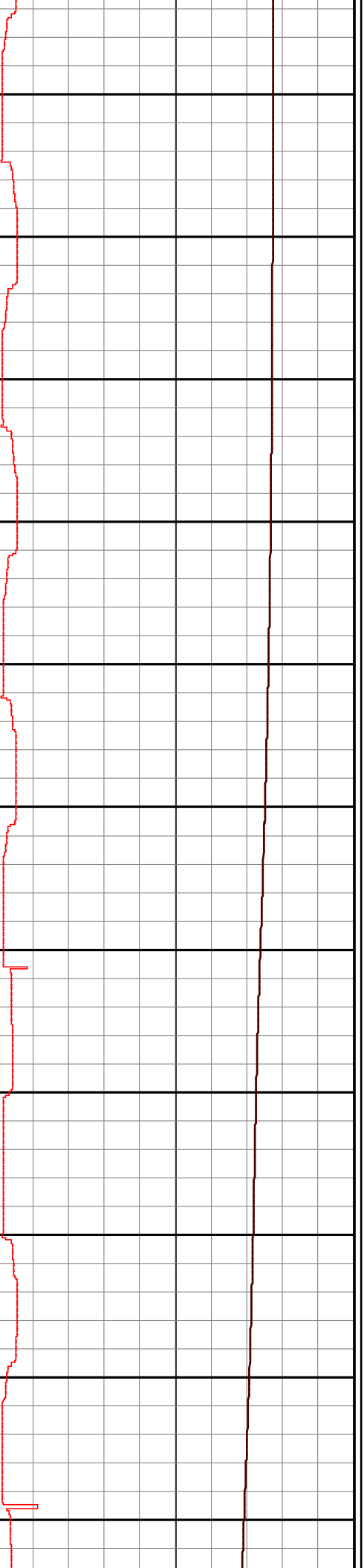
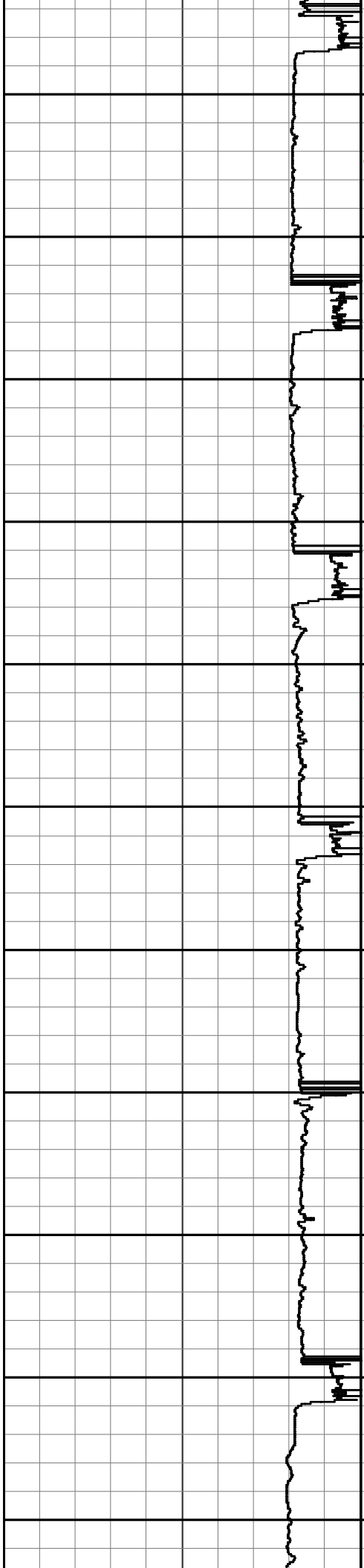
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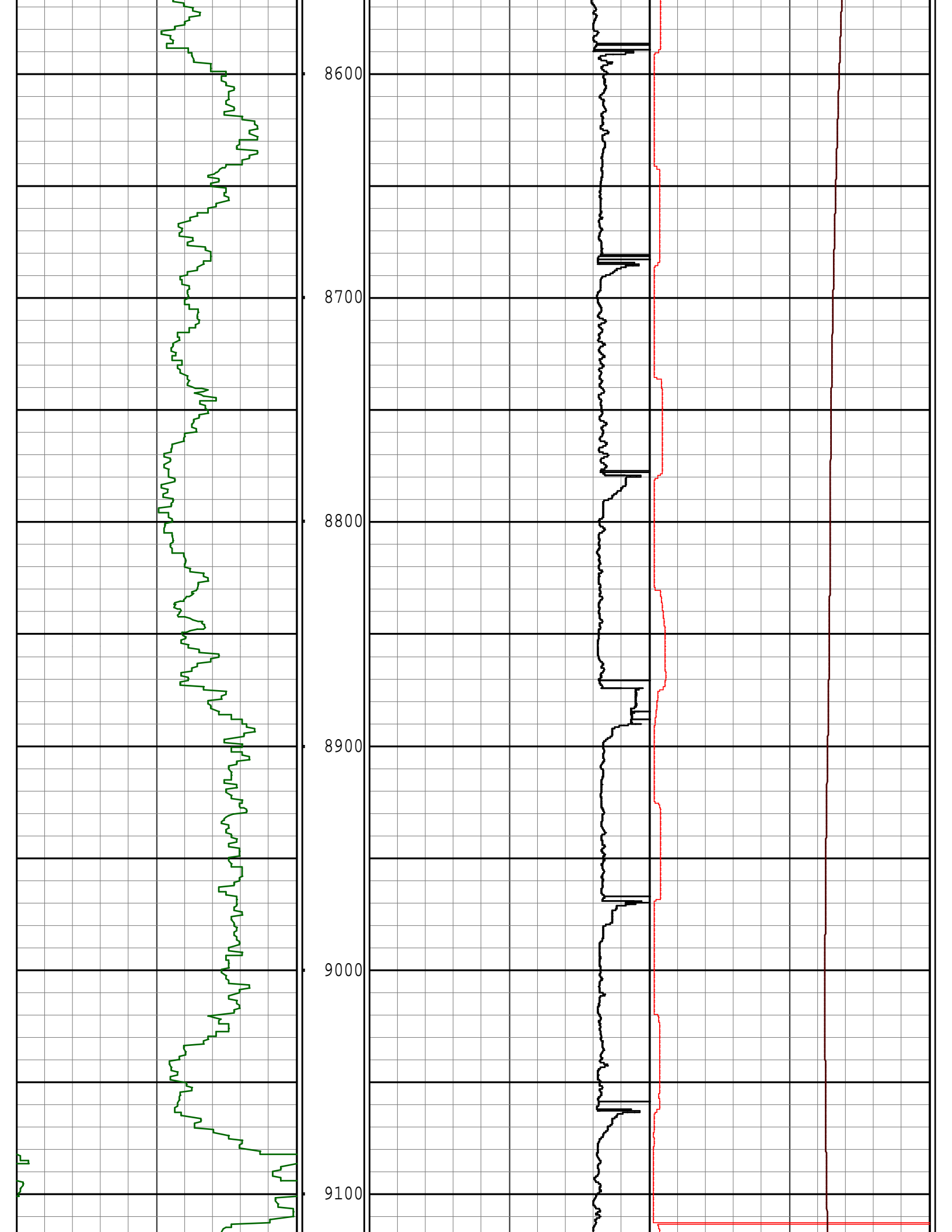
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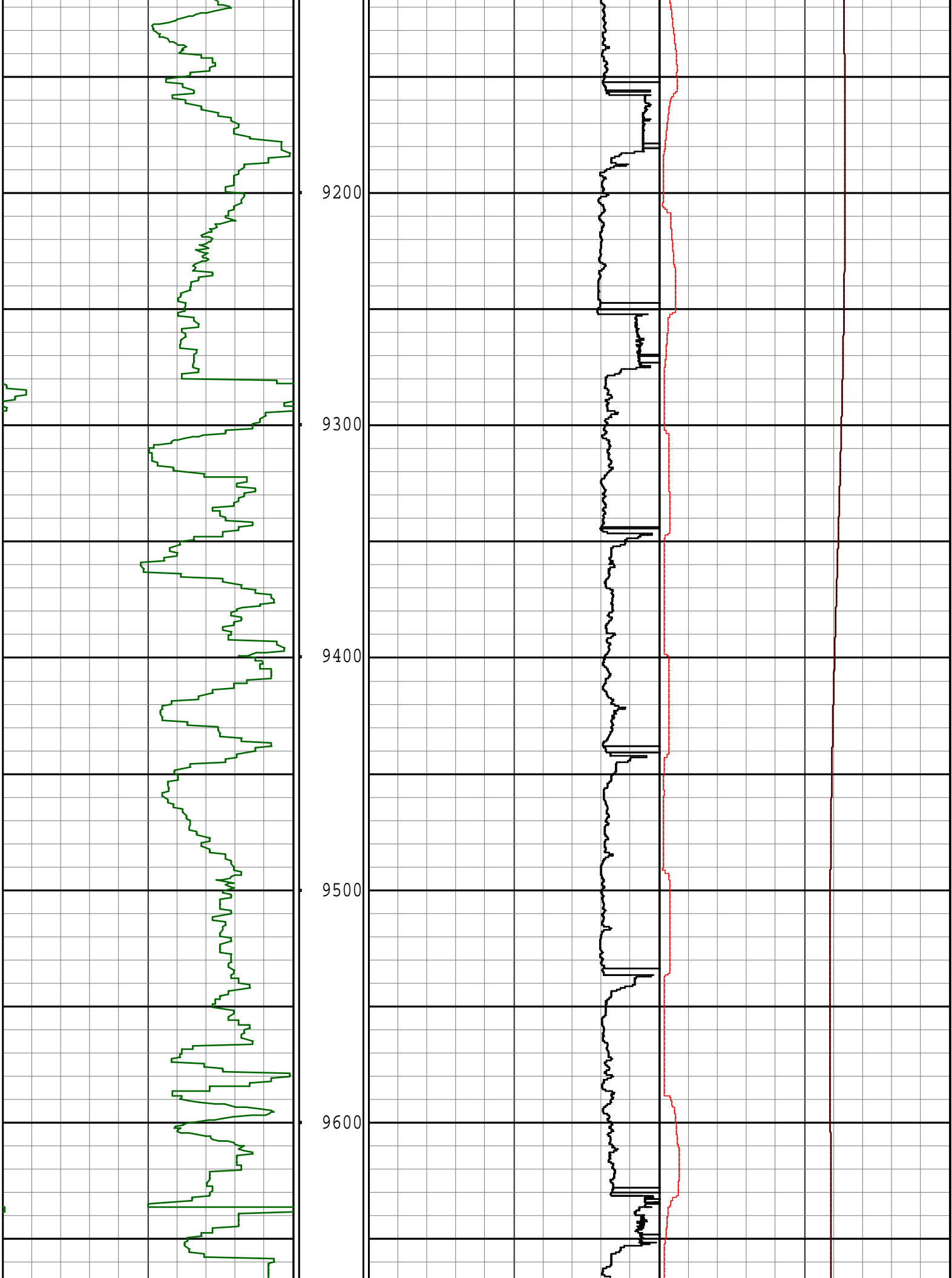
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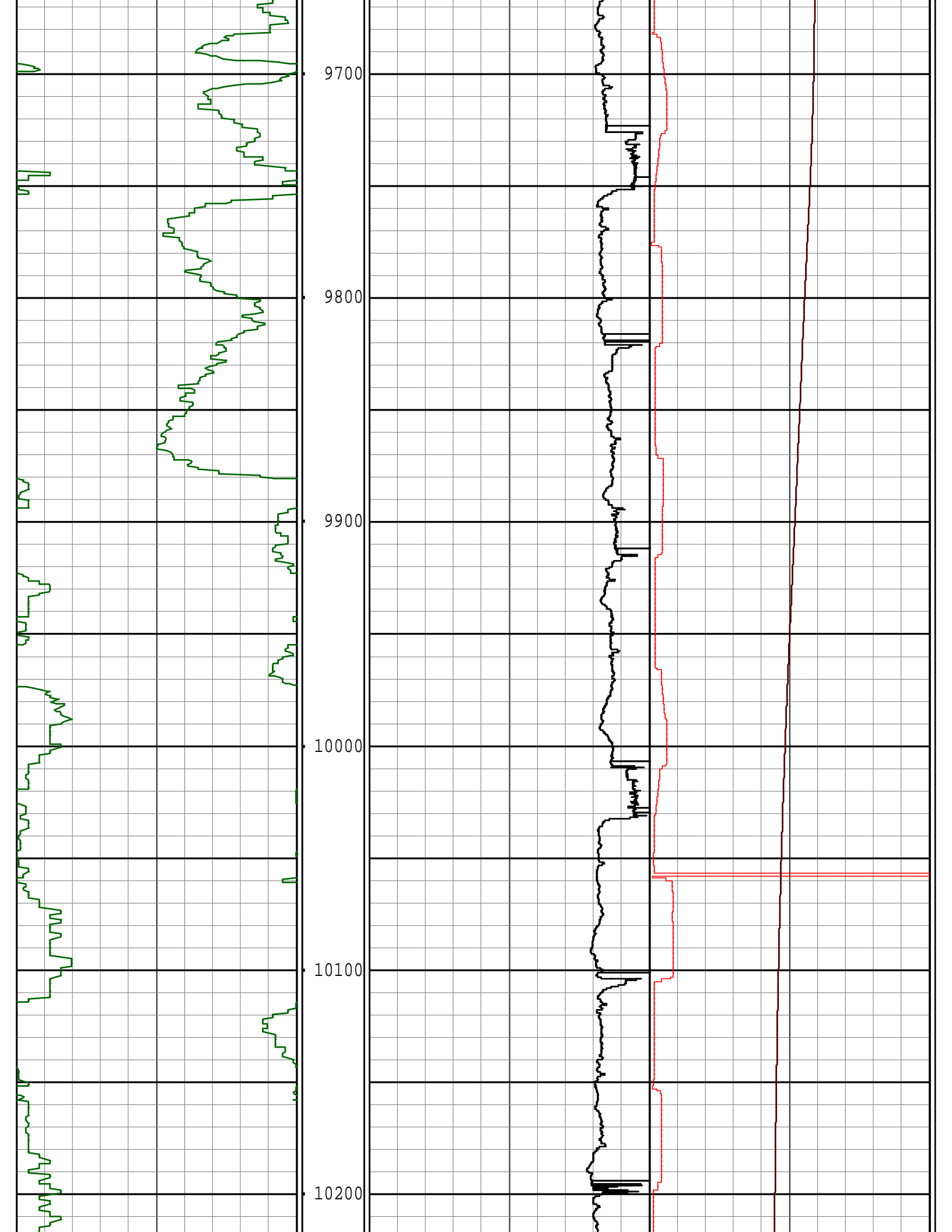
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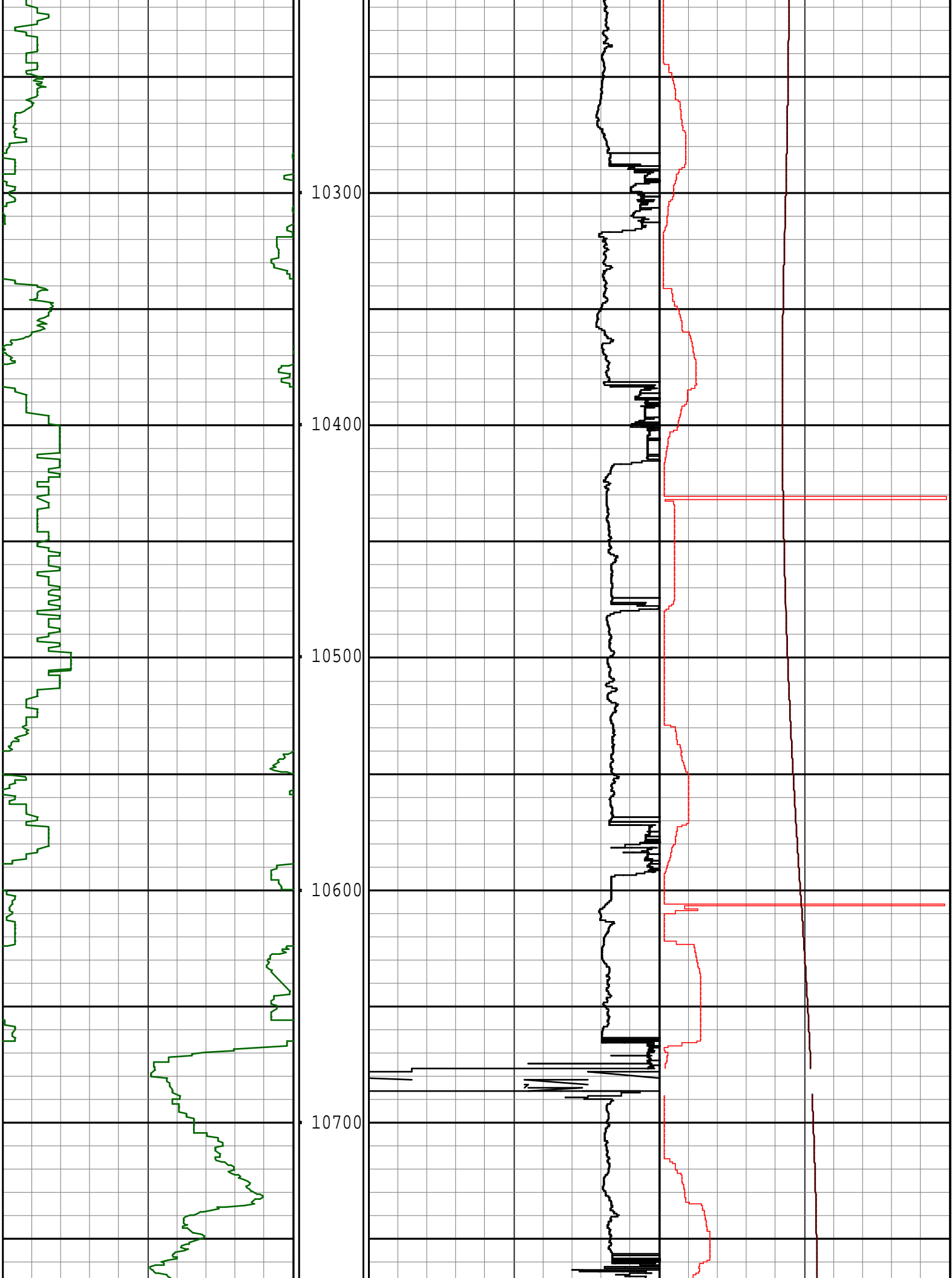
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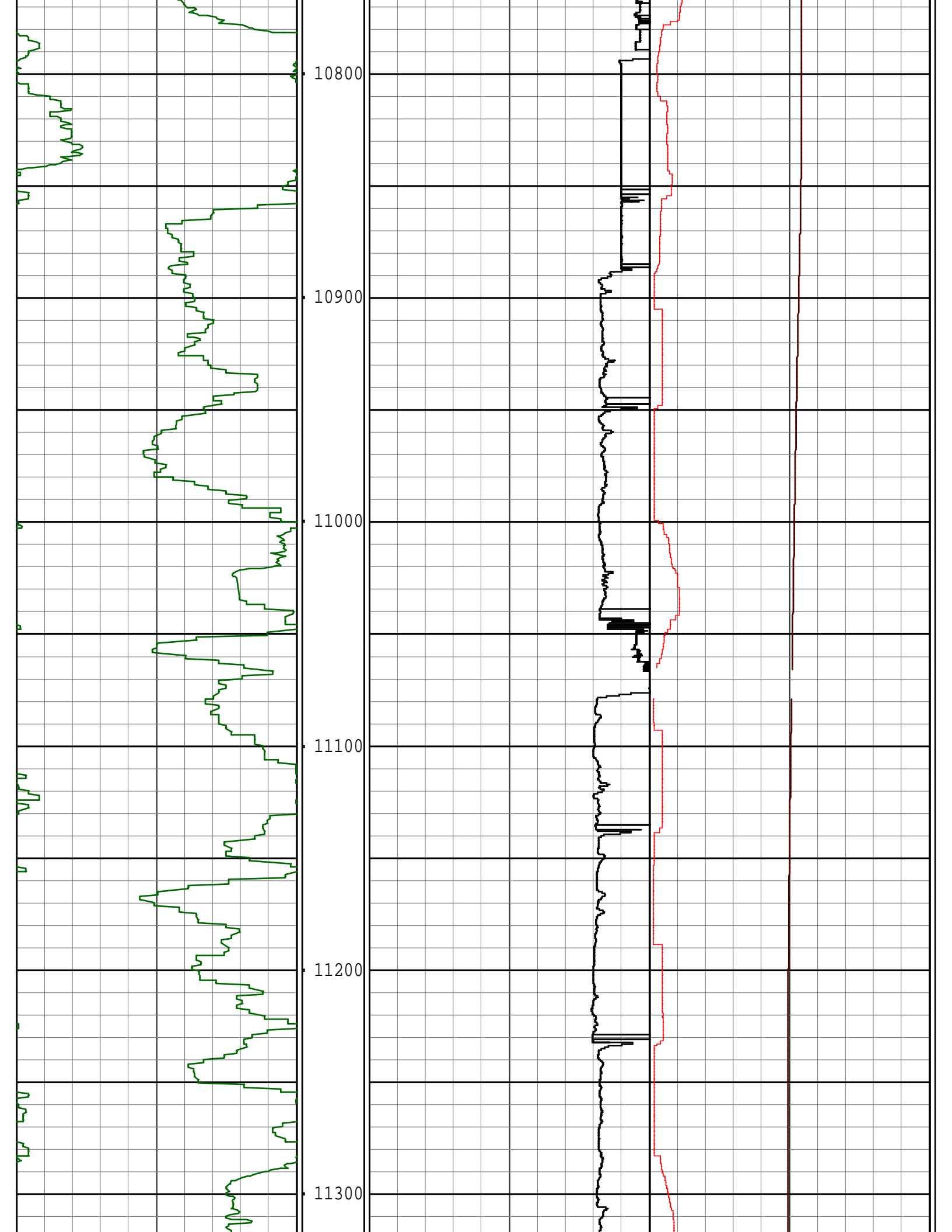


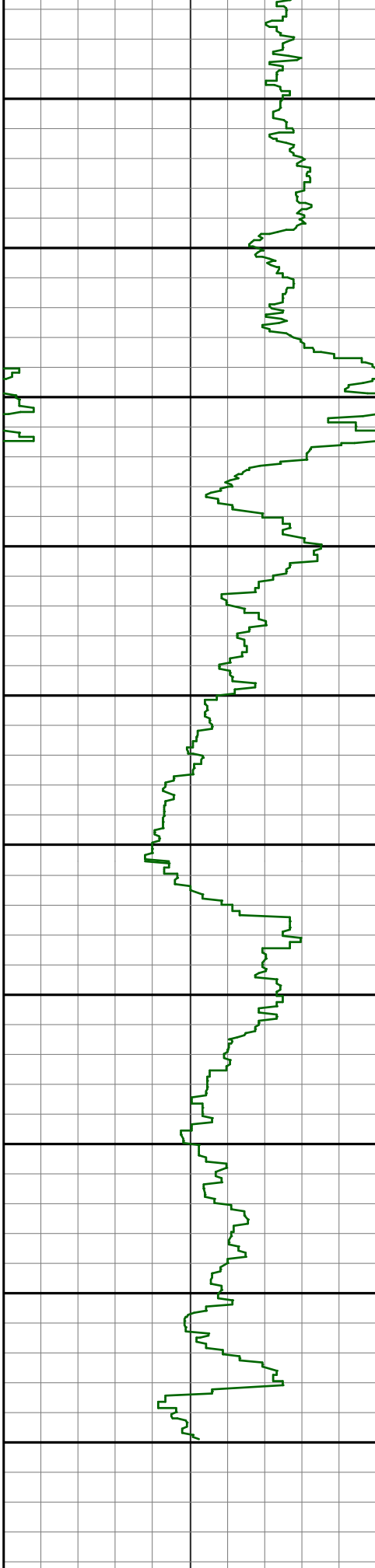












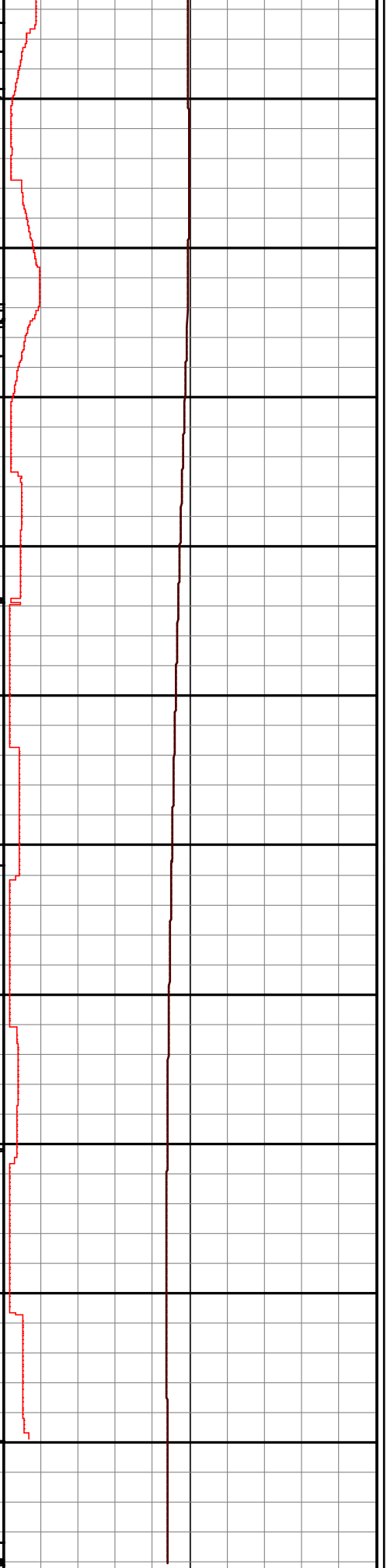
0 GRC AAPI 150
avg = 6 in

DEPTH
MD ft
2" = 100ft

11400
11500
11600
11700
11800



1500 Time Based ROP ft/hr 0 0



GRFET Hr 10
avg = 1 ft

	SHOES		6640		TVD ft	6520
			avg = 1 ft			
			COMMENTS			

Survey Report

Vertical Section Plane: 263.04°	Total Correction: 7.60° East to Grid
Calculation Method: Minimum Curvature	Survey Reference: Wellhead
North Aligned to: Grid North	Well: WELLS RANCH AE19-626

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Sub Sea TVD (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
TIED-IN TO SURFACE											
0.00	0.00	195.03	0.00	0.00	-0.00	0.00 N	0.00 E	0.00	0.00		
285.00	0.60	210.20	284.99	284.99	0.90	1.29 S	0.75 W	1.49	210.20	0.21	
650.00	0.60	210.20	649.97	649.97	3.21	4.59 S	2.67 W	5.31	210.20	0.00	
THE FOLLOWING ARE PATHFINDER MWD SURVEYS											
810.00	1.14	152.20	809.96	809.96	3.15	6.73 S	2.35 W	7.12	199.28	0.60	86.57
902.00	1.32	154.44	901.94	901.94	2.49	8.49 S	1.47 W	8.62	189.81	0.20	90.18
994.00	1.41	155.59	993.91	993.91	1.81	10.48 S	0.54 W	10.49	182.97	0.10	90.18
1087.00	1.32	162.58	1086.88	1086.88	1.27	12.54 S	0.25 E	12.54	178.86	0.20	90.18
1180.00	1.14	163.00	1179.86	1179.86	0.92	14.45 S	0.84 E	14.47	176.67	0.19	93.80
1274.00	1.32	164.72	1273.84	1273.84	0.60	16.39 S	1.40 E	16.45	175.12	0.20	93.80
1293.00	1.49	164.68	1292.84	1292.84	0.53	16.84 S	1.52 E	16.90	174.83	0.89	90.18
1387.00	0.53	334.39	1386.83	1386.83	0.49	17.62 S	1.66 E	17.70	174.63	2.14	93.80
1479.00	2.37	339.98	1478.79	1478.79	1.06	15.45 S	0.82 E	15.47	176.95	2.00	97.41
1571.00	2.64	279.80	1570.72	1570.72	3.51	13.30 S	1.92 W	13.44	188.20	2.74	97.41
1663.00	4.48	244.52	1662.55	1662.55	8.95	14.49 S	7.25 W	16.20	206.58	3.02	97.41
1756.00	4.92	240.71	1755.24	1755.24	16.08	18.00 S	14.01 W	22.81	217.88	0.58	101.02
1850.00	7.12	229.11	1848.72	1848.72	24.65	23.79 S	21.93 W	32.35	222.67	2.66	101.02
1942.00	7.47	205.18	1939.99	1939.99	32.56	32.94 S	28.78 W	43.74	221.15	3.30	101.02
2034.00	9.06	198.87	2031.04	2031.04	38.90	45.20 S	33.67 W	56.37	216.68	1.99	101.02
2127.00	10.20	190.09	2122.73	2122.73	44.51	60.24 S	37.48 W	70.95	211.89	2.00	101.02
2220.00	10.82	187.04	2214.17	2214.17	49.03	77.01 S	39.99 W	86.78	207.44	0.90	104.64
2314.00	10.82	184.76	2306.50	2306.50	52.96	94.56 S	41.81 W	103.39	203.85	0.46	104.64
2406.00	12.13	191.37	2396.66	2396.66	57.75	112.64 S	44.43 W	121.09	201.53	2.02	101.02
2499.00	11.78	191.28	2487.64	2487.64	63.80	131.53 S	48.21 W	140.09	200.13	0.38	93.80
2689.00	11.34	190.89	2673.79	2673.79	75.59	168.90 S	55.54 W	177.79	198.20	0.24	101.02
2784.00	11.26	190.22	2766.95	2766.95	81.20	187.20 S	58.95 W	196.26	197.48	0.16	101.02
2878.00	11.43	190.31	2859.11	2859.11	86.67	205.39 S	62.24 W	214.61	196.86	0.18	101.02
2973.00	11.70	189.72	2952.18	2952.18	92.23	224.15 S	65.55 W	233.54	196.30	0.31	101.02
3068.00	11.78	189.47	3045.20	3045.20	97.74	243.21 S	68.77 W	252.74	195.79	0.10	104.64
3162.00	11.34	189.51	3137.29	3137.29	103.07	261.78 S	71.88 W	271.47	195.35	0.47	104.64
3257.00	11.26	188.09	3230.45	3230.45	108.13	280.18 S	74.73 W	289.97	194.93	0.31	108.25
3352.00	10.73	186.67	3323.70	3323.70	112.62	298.15 S	77.06 W	307.94	194.49	0.63	108.25
3447.00	9.50	199.71	3417.24	3417.24	118.23	314.31 S	80.73 W	324.52	194.41	2.73	111.87
3542.00	9.23	198.49	3510.97	3510.97	125.02	328.92 S	85.79 W	339.92	194.62	0.35	111.87
3637.00	9.50	198.03	3604.70	3604.70	131.60	343.60 S	90.64 W	355.35	194.78	0.30	115.48
3732.00	10.02	198.41	3698.33	3698.33	138.46	358.90 S	95.67 W	371.43	194.93	0.55	115.48
3827.00	10.82	198.07	3791.76	3791.76	145.77	375.21 S	101.05 W	388.58	195.07	0.85	115.48
3922.00	11.34	196.14	3884.99	3884.99	153.21	392.66 S	106.41 W	406.83	195.16	0.67	115.48
4017.00	11.52	195.67	3978.11	3978.11	160.52	410.77 S	111.57 W	425.65	195.20	0.21	119.09
4112.00	11.43	195.66	4071.21	4071.21	167.79	428.97 S	116.67 W	444.55	195.22	0.09	119.09
4206.00	10.99	194.72	4163.41	4163.41	174.69	446.60 S	121.46 W	462.82	195.21	0.51	122.71
4301.00	10.11	195.49	4256.81	4256.81	181.22	463.39 S	125.99 W	480.22	195.21	0.94	122.71
4395.00	9.50	197.73	4349.43	4349.43	187.61	478.73 S	130.56 W	496.22	195.25	0.76	122.71
4490.00	8.71	197.41	4443.24	4443.24	193.85	493.07 S	135.10 W	511.24	195.32	0.83	122.71
4584.00	7.47	194.14	4536.30	4536.30	198.99	505.78 S	138.72 W	524.46	195.34	1.41	126.32
4678.00	6.68	190.29	4629.58	4629.58	202.81	517.09 S	141.19 W	536.02	195.27	0.98	126.32
4773.00	5.63	190.08	4724.03	4724.03	205.81	527.11 S	142.99 W	546.16	195.18	1.11	126.32
4867.00	4.13	191.73	4817.69	4817.69	208.25	534.97 S	144.49 W	554.13	195.11	1.60	129.94
4961.00	2.81	193.16	4911.52	4911.52	210.12	540.52 S	145.70 W	559.82	195.09	1.41	115.48
5055.00	1.93	193.92	5005.44	5005.44	211.48	544.30 S	146.60 W	563.70	195.07	0.94	126.32
5149.00	0.53	220.34	5099.41	5099.41	212.37	546.17 S	147.27 W	565.68	195.09	1.57	129.94
5244.00	0.70	246.68	5194.41	5194.41	213.25	546.74 S	148.08 W	566.44	195.16	0.34	133.55
5338.00	0.62	232.49	5288.40	5288.40	214.23	547.27 S	149.02 W	567.20	195.23	0.19	137.17
5433.00	0.62	232.67	5383.40	5383.40	215.12	547.90 S	149.83 W	568.02	195.29	0.00	140.78
5528.00	0.70	228.23	5478.39	5478.39	216.04	548.60 S	150.67 W	568.91	195.36	0.10	140.78
5622.00	0.26	186.93	5572.39	5572.39	216.56	549.19 S	151.13 W	569.61	195.39	0.57	148.01
5717.00	0.35	261.72	5667.38	5667.38	216.90	549.45 S	151.44 W	569.94	195.41	0.40	144.39
5811.00	0.53	272.58	5761.38	5761.38	217.62	549.47 S	152.16 W	570.15	195.48	0.21	148.01
5906.00	3.52	276.39	5856.31	5856.31	220.89	549.12 S	155.50 W	570.72	195.81	3.15	148.01
6001.00	9.67	275.80	5950.64	5950.64	231.52	547.99 S	166.34 W	572.68	196.89	6.47	148.01
6095.00	15.48	266.51	6042.35	6042.35	251.76	547.96 S	186.74 W	578.90	198.82	6.53	151.62
6190.00	22.77	265.54	6132.05	6132.05	282.82	550.16 S	217.76 W	591.69	201.59	7.68	151.62
6285.00	30.16	271.96	6217.05	6217.05	324.83	550.78 S	260.01 W	609.06	205.27	8.33	155.24
6379.00	40.01	275.88	6293.89	6293.89	377.76	546.86 S	313.81 W	630.50	209.85	10.75	151.62
6474.00	52.41	274.79	6359.50	6359.50	444.65	540.57 S	381.96 W	661.90	215.24	13.08	155.24
6569.00	58.92	273.00	6413.06	6413.06	521.65	535.29 S	460.18 W	705.90	220.69	7.03	158.85
6663.00	64.46	269.89	6457.63	6457.63	603.48	533.26 S	542.87 W	760.97	225.51	6.57	162.46
6758.00	70.00	267.11	6494.39	6494.39	690.64	535.60 S	630.39 W	827.19	229.65	6.42	162.46
6853.00	78.26	265.70	6520.35	6520.35	781.78	541.34 S	721.50 W	902.01	233.12	8.81	166.08
6947.00	88.00	265.10	6524.14	6524.14	882.42	543.00 S	743.00 W	918.53	233.81	12.89	166.08

6874.00	80.90	263.17	6524.14	263.17	6524.14	802.42	543.00 S	742.09 W	919.33	233.81	12.88	166.08
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Survey Report												
Vertical Section Plane: 263.04°						Total Correction: 7.60° East to Grid						
Calculation Method: Minimum Curvature						Survey Reference: Wellhead						
North Aligned to: Grid North						Well: WELLS RANCH AE19-626						
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Sub Sea TVD (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)	
6964.00	85.91	264.37	6534.48	6534.48	891.75	551.21 S	831.09 W	997.26	236.45	5.63	148.01	
7025.00	85.65	263.36	6538.96	6538.96	952.58	557.71 S	891.57 W	1051.63	237.97	1.71	148.01	
7118.00	86.09	264.53	6545.66	6545.66	1045.33	567.49 S	983.81 W	1135.75	240.02	1.34	151.62	
7210.00	88.29	266.28	6550.17	6550.17	1137.13	574.85 S	1075.39 W	1219.40	241.87	3.05	155.24	
7303.00	89.52	268.13	6551.95	6551.95	1229.86	579.38 S	1168.26 W	1304.04	243.62	2.39	158.85	
7397.00	90.66	269.21	6551.80	6551.80	1323.40	581.57 S	1262.23 W	1389.77	245.26	1.67	162.46	
7489.00	92.68	269.36	6549.12	6549.12	1414.81	582.71 S	1354.18 W	1474.23	246.72	2.20	166.08	
7582.00	91.63	268.78	6545.63	6545.63	1507.23	584.22 S	1447.10 W	1560.58	248.02	1.29	166.08	
7677.00	91.19	268.93	6543.29	6543.29	1601.71	586.12 S	1542.05 W	1649.69	249.19	0.49	169.69	
7772.00	88.55	268.67	6543.50	6543.50	1696.23	588.11 S	1637.02 W	1739.46	250.24	2.79	166.08	
7867.00	89.25	268.30	6545.33	6545.33	1790.78	590.62 S	1731.97 W	1829.91	251.17	0.83	169.69	
7961.00	89.34	268.56	6546.48	6546.48	1884.36	593.20 S	1825.93 W	1919.87	252.00	0.29	169.69	
8056.00	89.87	269.38	6547.14	6547.14	1978.84	594.90 S	1920.91 W	2010.92	252.79	1.03	169.69	
8150.00	89.69	269.63	6547.50	6547.50	2072.25	595.71 S	2014.91 W	2101.13	253.53	0.33	169.69	
8245.00	88.99	269.41	6548.59	6548.59	2166.63	596.51 S	2109.90 W	2192.60	254.21	0.77	169.69	
8340.00	88.02	268.95	6551.07	6551.07	2261.05	597.87 S	2204.85 W	2284.48	254.83	1.13	173.31	
8434.00	88.99	268.57	6553.52	6553.52	2354.55	599.90 S	2298.80 W	2375.79	255.37	1.11	176.92	
8529.00	87.85	268.78	6556.14	6556.14	2449.06	602.10 S	2393.74 W	2468.30	255.88	1.22	176.92	
8623.00	88.29	268.62	6559.31	6559.31	2542.54	604.23 S	2487.66 W	2559.99	256.35	0.50	180.54	
8718.00	88.99	267.86	6561.56	6561.56	2637.13	607.15 S	2582.58 W	2652.99	256.77	1.09	180.54	
8812.00	89.78	267.69	6562.57	6562.57	2730.80	610.80 S	2676.51 W	2745.32	257.14	0.86	184.15	
8906.00	88.90	268.09	6563.66	6563.66	2824.45	614.26 S	2770.44 W	2837.72	257.50	1.03	184.15	
9001.00	89.87	266.75	6564.68	6564.68	2919.17	618.53 S	2865.33 W	2931.33	257.82	1.74	184.15	
9095.00	90.92	266.43	6564.03	6564.03	3012.98	624.12 S	2959.16 W	3024.26	258.09	1.17	187.76	
9190.00	90.04	268.58	6563.23	6563.23	3107.69	628.26 S	3054.06 W	3118.01	258.38	2.44	187.76	
9284.00	88.64	268.88	6564.31	6564.31	3201.21	630.34 S	3148.03 W	3210.52	258.68	1.52	187.76	
9379.00	88.20	267.96	6566.93	6566.93	3295.76	632.96 S	3242.96 W	3304.15	258.96	1.07	191.38	
9473.00	89.25	266.97	6569.03	6569.03	3389.45	637.12 S	3336.84 W	3397.12	259.19	1.54	194.99	
9567.00	90.31	266.82	6569.39	6569.39	3483.24	642.21 S	3430.70 W	3490.29	259.40	1.14	194.99	
9662.00	89.96	268.06	6569.16	6569.16	3577.96	646.45 S	3525.60 W	3584.38	259.61	1.36	198.61	
9756.00	87.32	268.72	6571.39	6571.39	3671.51	649.09 S	3619.53 W	3677.27	259.83	2.90	198.61	
9850.00	87.67	268.11	6575.50	6575.50	3765.01	651.69 S	3713.40 W	3770.15	260.05	0.75	202.22	
9944.00	87.41	267.18	6579.54	6579.54	3858.62	655.55 S	3807.24 W	3863.26	260.23	1.03	202.22	
10038.00	88.29	269.32	6583.06	6583.06	3952.16	658.42 S	3901.12 W	3956.29	260.42	2.46	198.61	
10132.00	89.08	268.90	6585.22	6585.22	4045.60	659.88 S	3995.08 W	4049.21	260.62	0.95	202.22	
10226.00	89.43	268.13	6586.44	6586.44	4139.17	662.31 S	4089.04 W	4142.33	260.80	0.90	205.83	
10321.00	88.46	266.47	6588.19	6588.19	4233.88	666.79 S	4183.92 W	4236.72	260.94	2.02	202.22	
10416.00	90.57	270.84	6589.00	6589.00	4328.40	669.01 S	4278.86 W	4330.84	261.11	5.11	198.61	
10510.00	92.42	270.50	6586.54	6586.54	4421.53	667.92 S	4372.82 W	4423.53	261.32	2.00	202.22	
10604.00	93.83	268.40	6581.42	6581.42	4514.79	668.82 S	4466.66 W	4516.46	261.48	2.69	194.99	
10698.00	92.24	267.46	6576.44	6576.44	4608.32	672.21 S	4560.47 W	4609.74	261.62	1.96	198.61	
10793.00	89.96	268.22	6574.62	6574.62	4702.96	675.79 S	4655.37 W	4704.17	261.74	2.53	202.22	
10887.00	88.72	267.39	6575.70	6575.70	4796.62	679.39 S	4749.30 W	4797.64	261.86	1.59	205.83	
10982.00	89.08	266.45	6577.53	6577.53	4891.39	684.49 S	4844.14 W	4892.26	261.96	1.06	209.45	
11076.00	89.16	268.63	6578.97	6578.97	4985.08	688.52 S	4938.04 W	4985.81	262.06	2.32	209.45	
11171.00	89.43	268.53	6580.14	6580.14	5079.63	690.88 S	5033.00 W	5080.20	262.18	0.30	209.45	
11265.00	89.96	267.94	6580.64	6580.64	5173.24	693.77 S	5126.95 W	5173.68	262.29	0.84	213.06	
11360.00	90.40	269.71	6580.34	6580.34	5267.75	695.72 S	5221.93 W	5268.07	262.41	1.92	213.06	
11455.00	88.02	271.15	6581.65	6581.65	5361.95	695.01 S	5316.91 W	5362.14	262.55	2.93	213.06	
11549.00	88.55	271.00	6584.46	6584.46	5454.98	693.25 S	5410.85 W	5455.08	262.70	0.59	216.68	
11644.00	88.99	271.50	6586.50	6586.50	5548.99	691.17 S	5505.80 W	5549.02	262.84	0.70	216.68	
11739.00	89.87	271.40	6587.45	6587.45	5642.96	688.77 S	5600.77 W	5642.96	262.99	0.93	220.29	
11779.00	90.40	271.48	6587.35	6587.35	5682.53	687.76 S	5640.76 W	5682.53	263.05	1.34	220.29	
PROJECTED TO BIT												
11842.00	90.04	271.48	6587.11	6587.11	5744.85	686.14 S	5703.73 W	5744.86	263.14	0.57		

BOTTOM HOLE ASSEMBLY RECORD							
RUN #1		ft	RUN #2		ft		
8 3/4 PDC BIT		0.70	6 1/8 PDC BIT		0.57		
1.75° MUD MOTOR		26.18	1.75° FX MOTOR		26.79		
FLOAT SUB		3.22	FLOAT SUB		3.50		
MULESHOE SUB		2.58	SUB MULESHOE		2.97		
HDS1-R (DIR/GR)		29.50	NM DRILL COLLAR		31.11		
NM FLEX COLLAR		31.10	NM DRILL COLLAR		30.97		

NM FLEX COLLAR	31.04	FLOAT SUB	3.49				
FILTER SUB	3.00	NM DRILL COLLAR	30.97				
X/O	2.80	FILTER SUB	3.05				
HWDP	1392.51	X/O SUB	1.15				
DP	31.00	HWDP	31.10				
		STAB DRILL	8.52				
		DRILL PIPE	2179.05				
		AGITATOR	11.55				
		SHOCK SUB	11.14				
		DRILL PIPE	3875.91				
		HWDP	1392.57				
=====		=====					
TOTAL BHA LENGTH	1553.63	TOTAL BHA LENGTH	7644.41				
SENSOR OFFSETS:		SENSOR OFFSETS:					
=====		=====					
DIRECTIONAL	60.28	DIRECTIONAL	64.00				
GAMMA-RAY	42.98	GAMMA-RAY	43.00				



A Schlumberger Company

GAMMA-RAY

2" = 100'

FEET MD