



GAMMA RAY

5" = 100' FEET TVD

COMPANY : ANADARKO PETROLEUM CORP.					
WELL : PARAGON 40C-31HZ					
FIELD : WATTENBERG					
COUNTY : WELD					
STATE : COLORADO					
COUNTRY : U.S.A.					
UWI : 05-123-38540					
			OTHER SERVICES		
WELL LOCATION LAT:40°4'27.890"N LONG:104°41'53.567"W N:1270968.39 ft E:3224375.35 ft					
SEC:6 TWP:1N RANGE:6SW			DIRECTIONAL ROP		
DEPTH REF. : RKB			REF. HEIGHT : 25.000 ft		
GROUND LEVEL : 4975.000 ft			RKB to Ground Level		
			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	0	1112	0 - 14	0	6741
8.75	1112	7815	14 - 90	6741	7815
6.125	7815	14409	90 - 93	7815	14409
CASING RECORD					
CASING SIZE in	FROM ft	TO ft			
9.625	0	1112			
7	0	7815			
			DRILLING CO.: H&P		
			RTG: 311		
			LMD UNIT NO.: C-46		
			SPUD DATE: 11/28/2013		
			DISTRICT: CASPER		
			LMD START DATE: 01/02/2014		
			DEPTH: 1008 ft		
			LMD END DATE: 01/11/2014		
			DEPTH: 14409 ft		
			TOTAL DEPTH: 14409 ft		

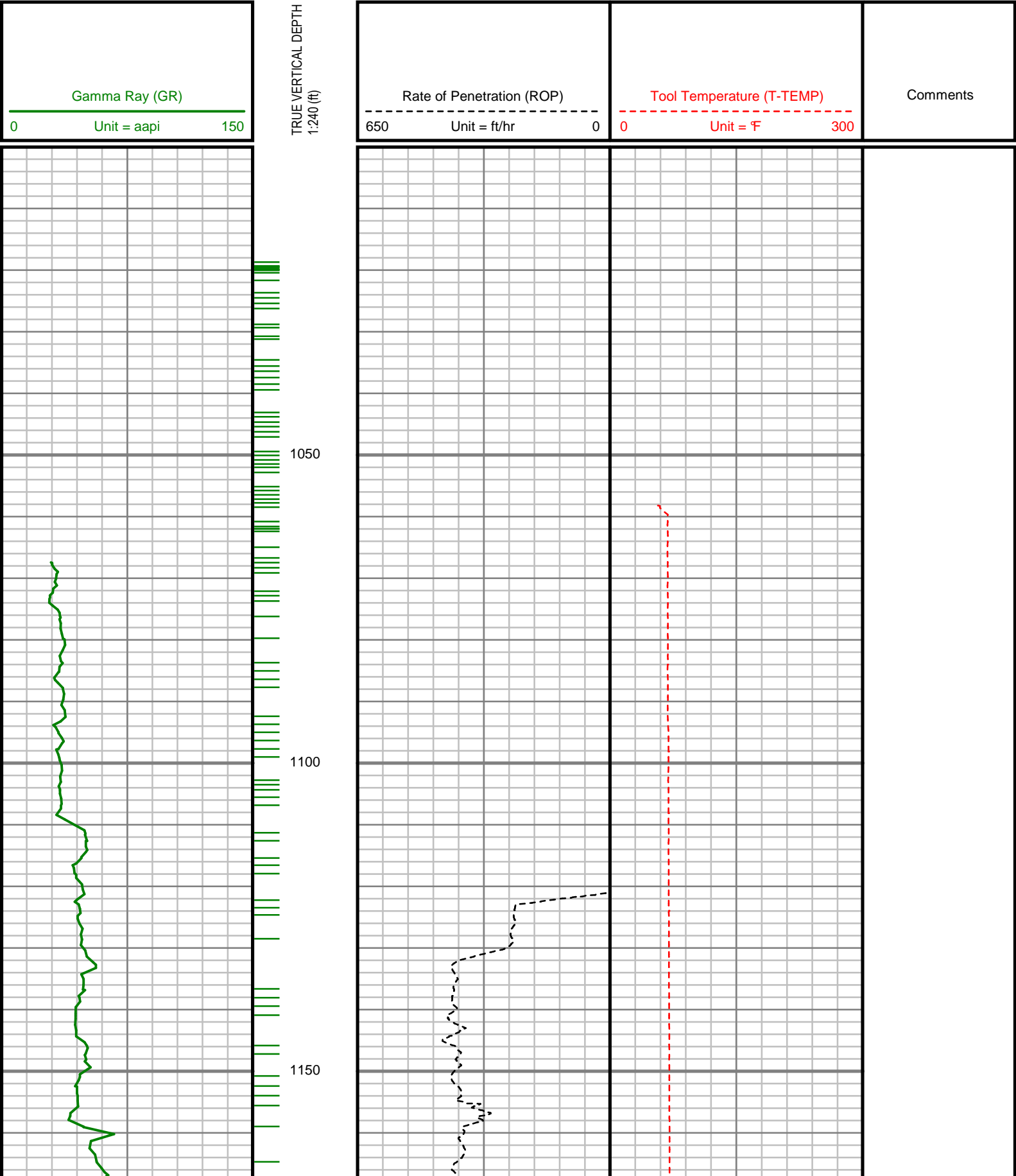
Run Data						
RUN NUMBER	1	2	3			
START DATE	01/02/2014	01/05/2014	01/08/2014			
START TIME	0500	0900	1030			
END DATE	01/04/2014	01/08/2014	01/11/2014			
END TIME	1630	1030	2200			
DEPTH IN (ft)	1112	7815	12442			
DEPTH OUT (ft)	7815	12442	14409			
LOG TOP (ft)	1008	7762	12384			
LOG BOTTOM (ft)	7762	12384	14341			
HOLE SIZE (in)	8.75	6.125	6.125			
MUD DATA @ (ft)	1112	7815	12442			
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED			
DENSITY (lb / gal)	9.1	10.2	9.80			
VISCOSITY (s / qt)	34	49	41			
pH	9.8	8.9	9.0			
FLUID LOSS (cm3 / 30)	7.8	6.4	5.4			
SALINITY (ppm)	1100	1800	2100			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	173	233	241			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	M. SHARKER	M. SHARKER	M. SHARKER			
LWD ENGINEER #2	B. GREER	B. GREER	B. GREER			
LWD ENGINEER #3	-	-	-			
LOG WITNESS #1	J. STUART	J. STUART	J. STUART			
LOG WITNESS #2	-	-	-			

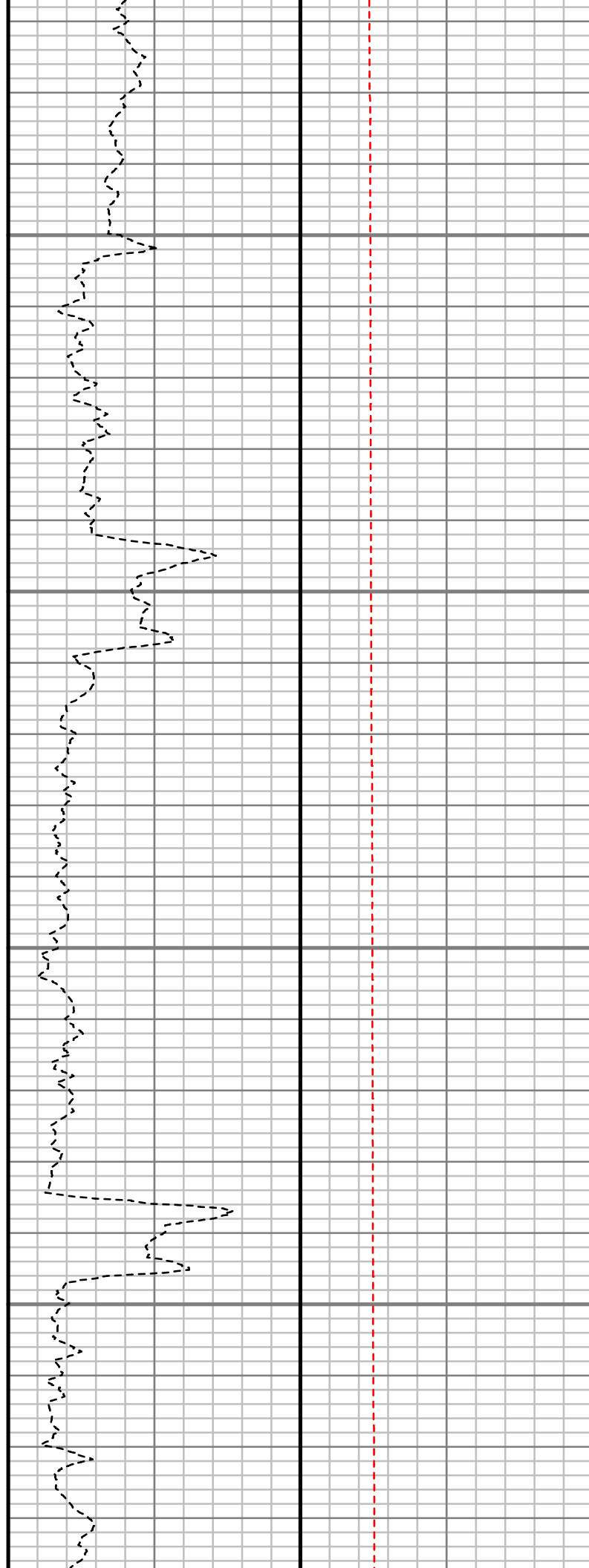
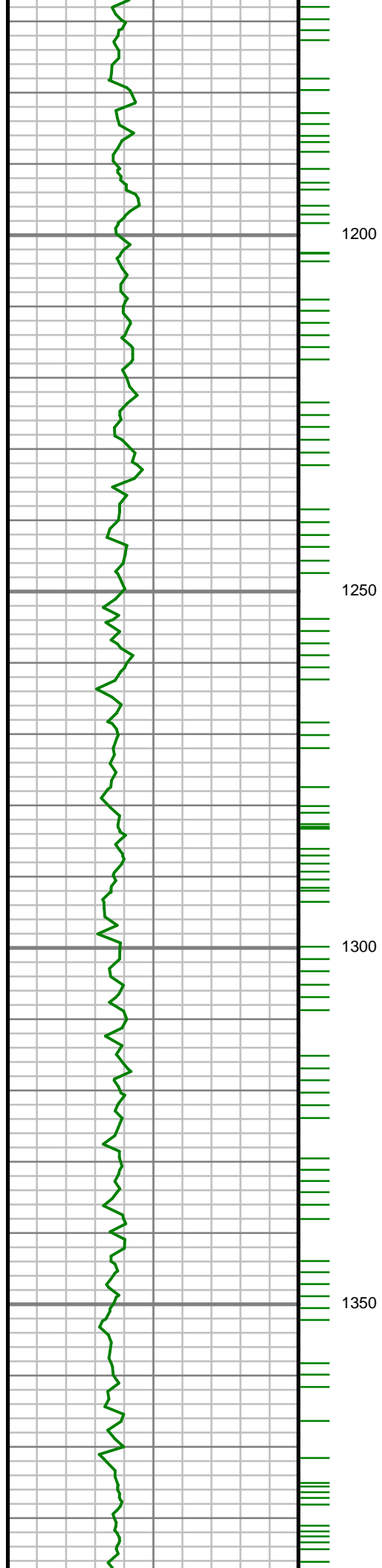
Remarks
ANADARKO PETROLEUM CORP. PRODUCTION AFE# 2088923
SCIENTIFIC DRILLING INTERNATIONAL JOB# 98764
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
RUN #1: MWD / GAMMA RAY LOGGIN RUN
SENSORS S/N: PULSER = 128-148 / CONT = 807 / MWD EYE = 0902 / GAMMA RAY = 1069
BIT TO SENSOR OFFSETS: SURVEY = 61.69 FT. / GAMMA RAY = 52.44 FT.
RUN #2: MWD / GAMMA RAY LOGGIN RUN
SENSORS S/N: PULSER = 78-277 / CONT = 603 / MWD EYE = 0606 / GAMMA RAY = 1076
BIT TO SENSOR OFFSETS: SURVEY = 66.66 FT. / GAMMA RAY = 57.41 FT.
RUN #3: MWD / GAMMA RAY LOGGIN RUN
SENSORS S/N: PULSER = 78-217 / CONT = 396 / MWD EYE = 0040 / GAMMA RAY = 1085
BIT TO SENSOR OFFSETS: SURVEY = 67.58 FT. / GAMMA RAY = 58.33 FT.
SURVEY WELL NOTES:
SURVEYS FROM 0.0 FT. TO 1112 FT. WERE ACQUIRED BY MS GYRO MWD.
SURVEYS FROM 1112 FT. TO 14339 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING INTERNATIONAL MWD.

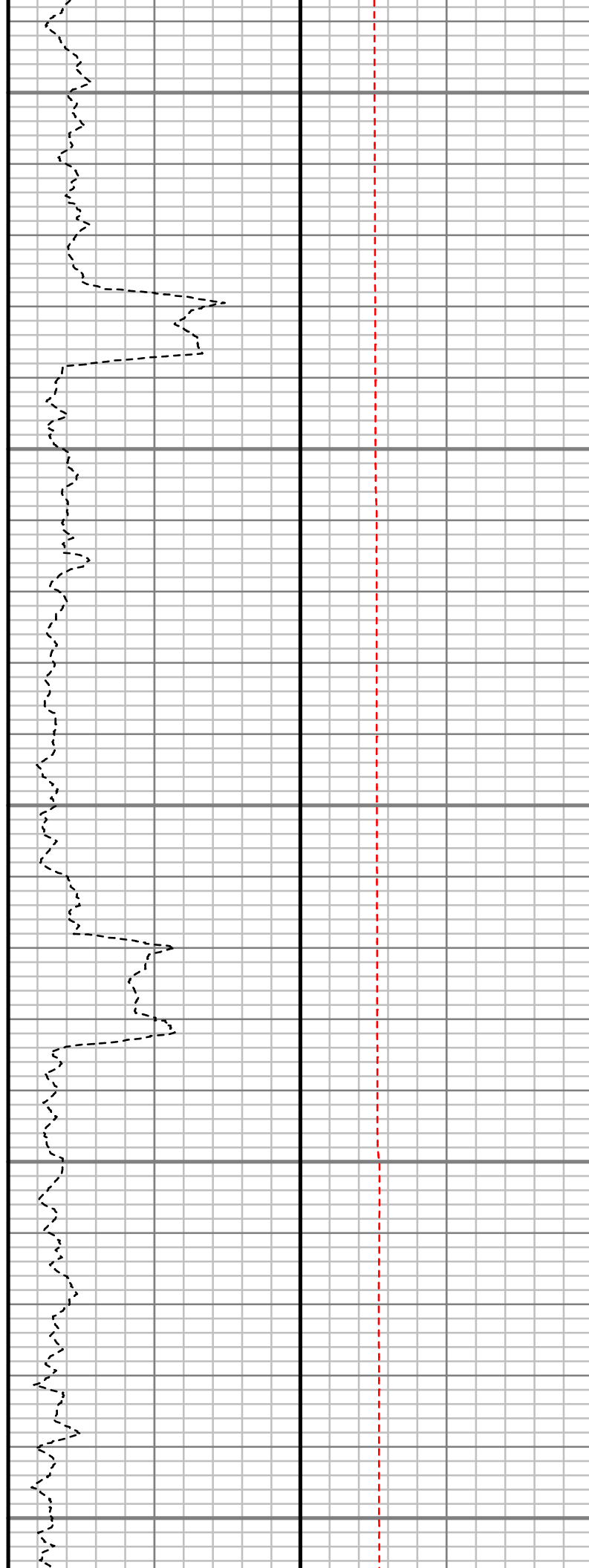
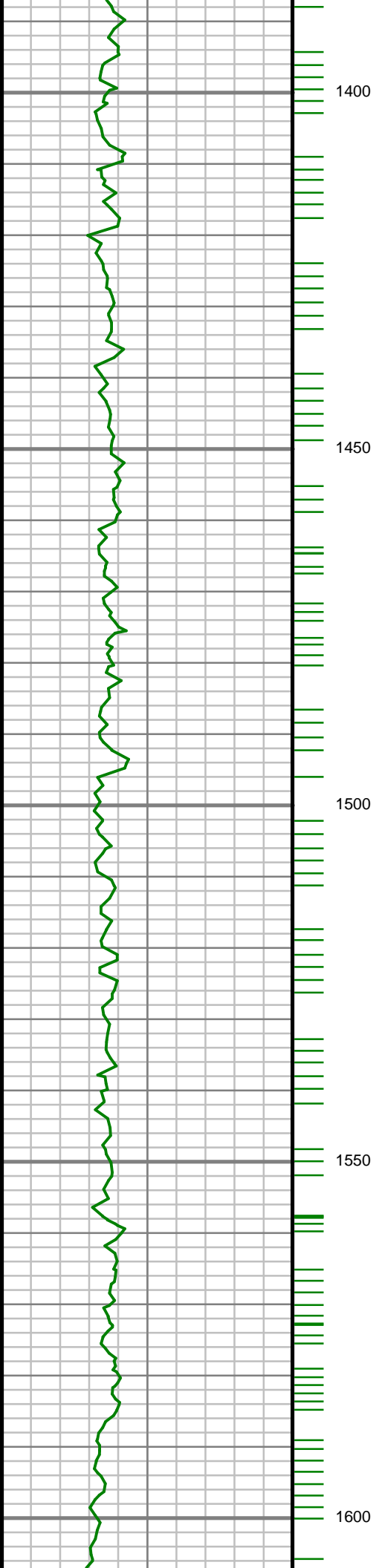
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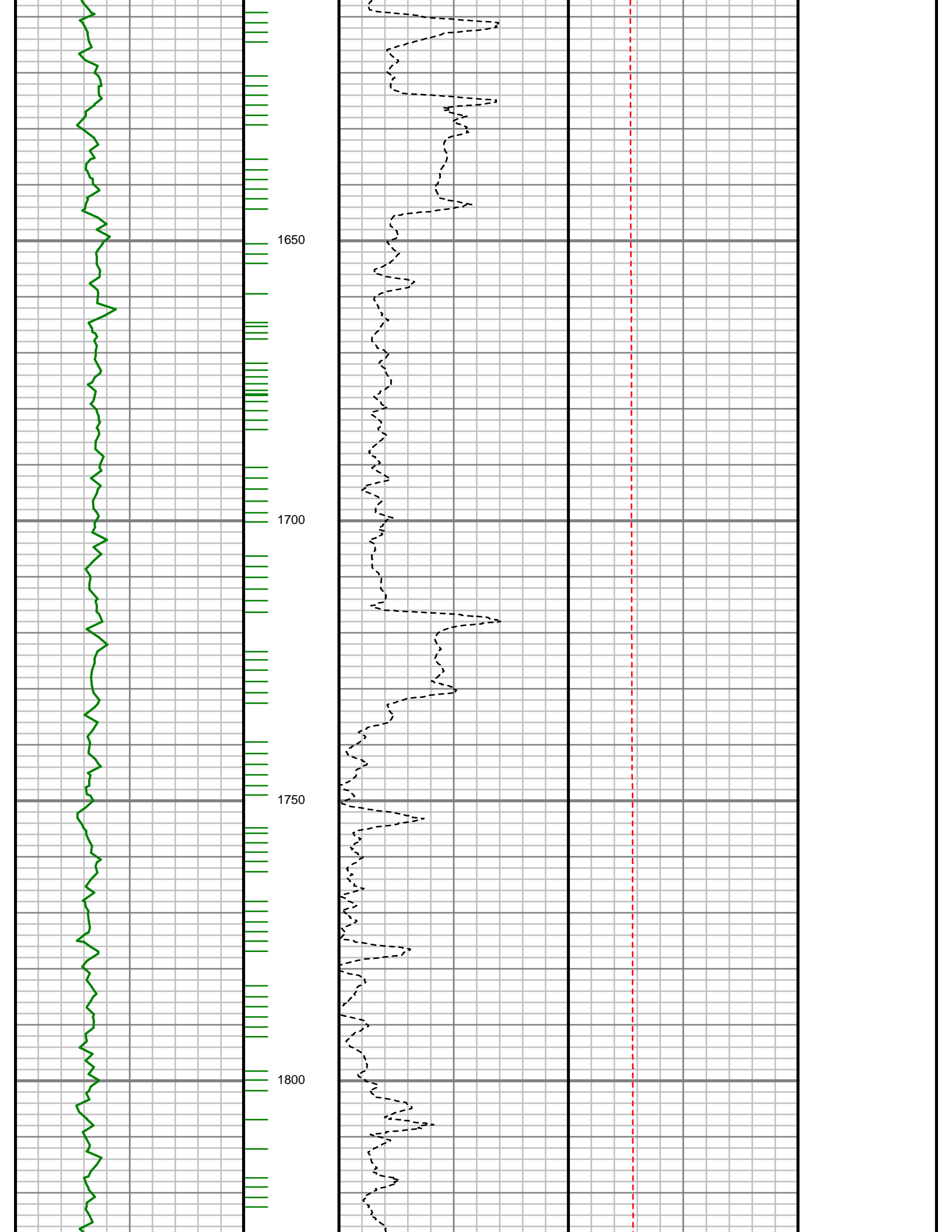
All interpretations are opinions based on electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or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

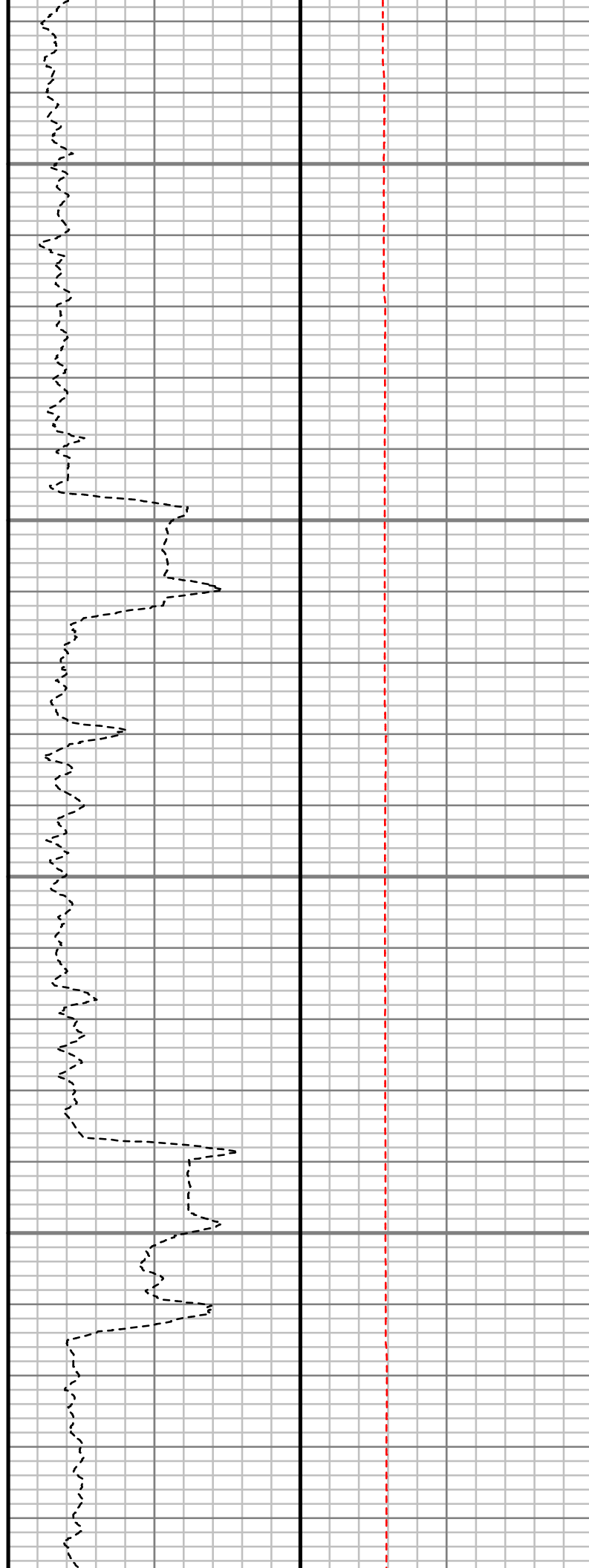
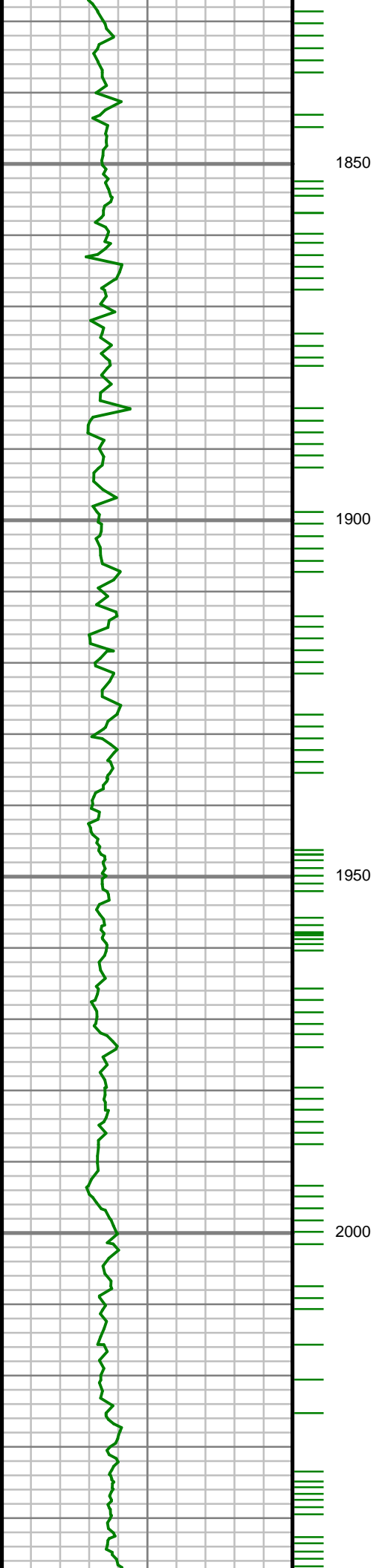
ANADARKO PETROLEUM CORP.
PARAGON 40C-31HZ
WATTENBERG FIELD
WELD COUNTY, COLORADO
05-123-38540

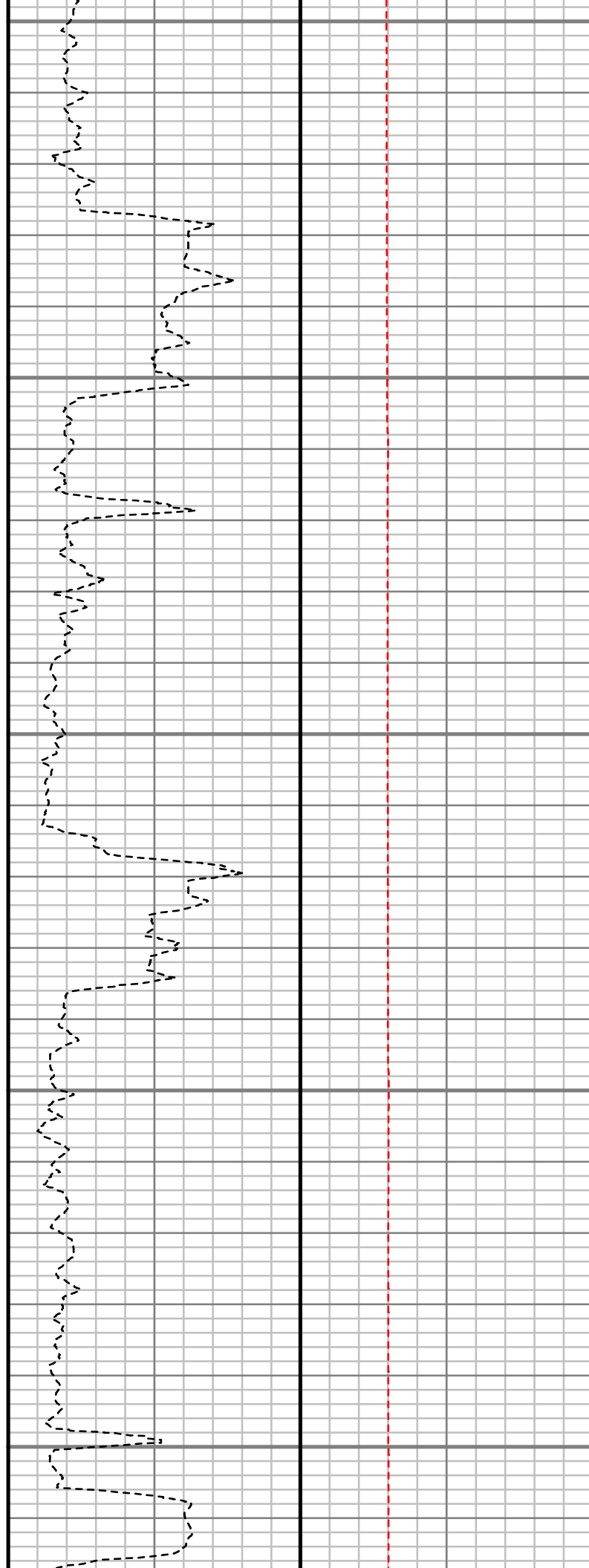
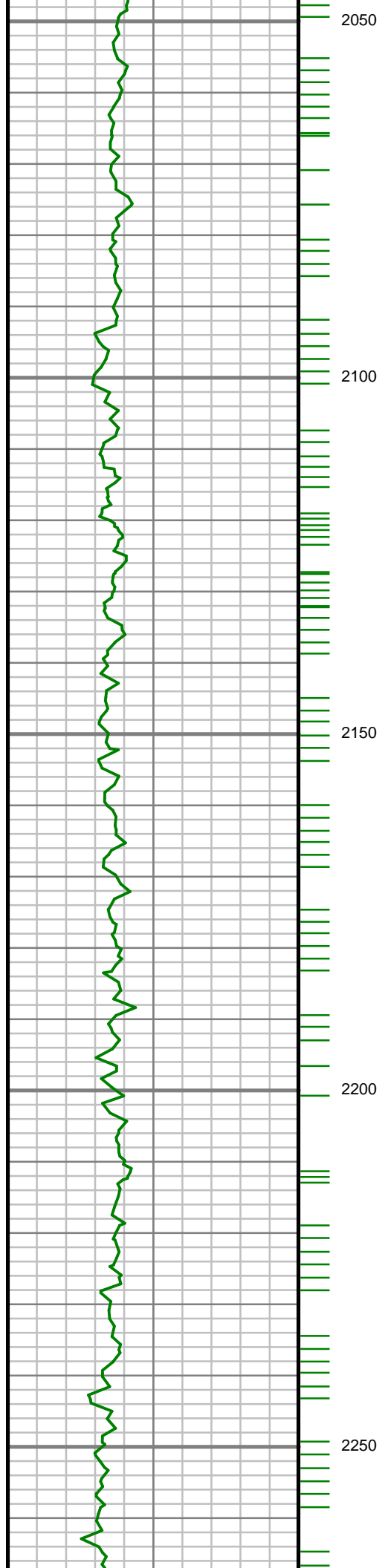


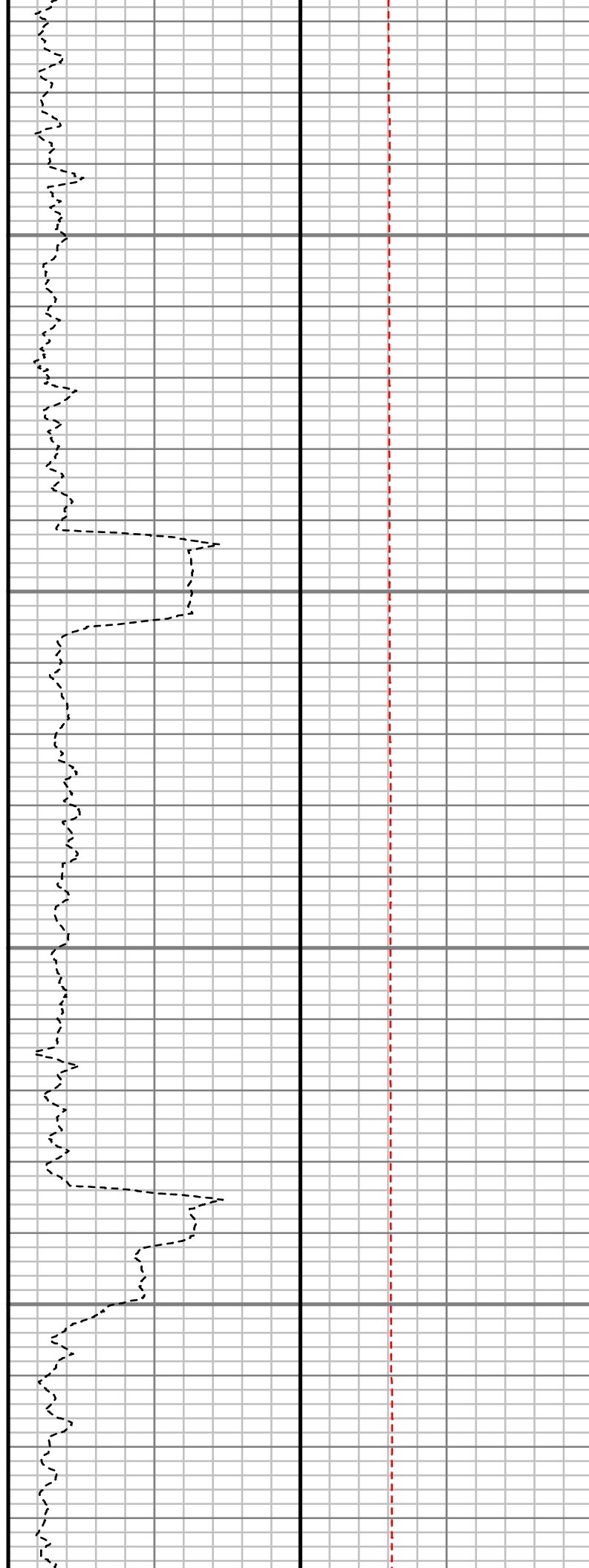
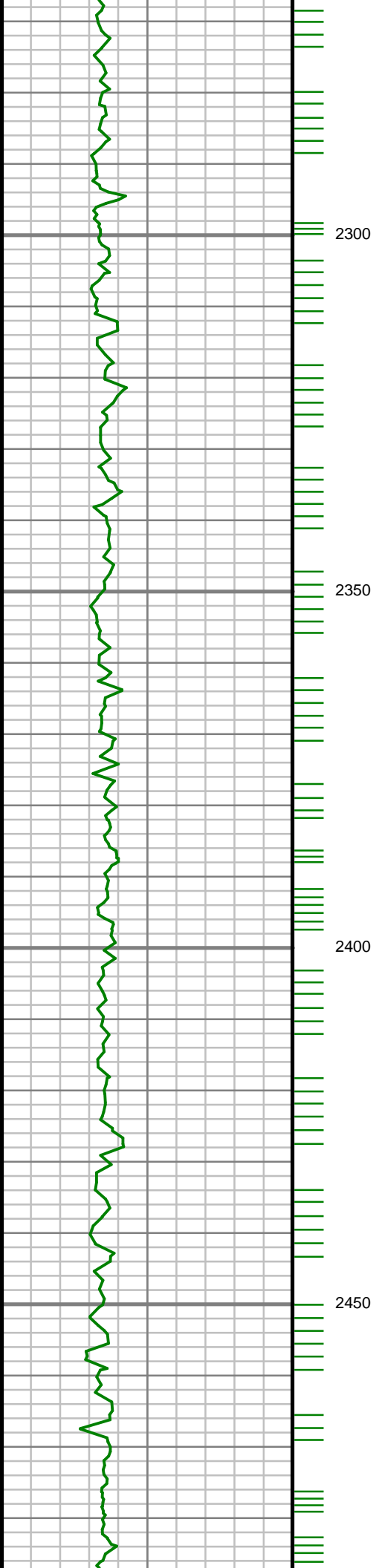


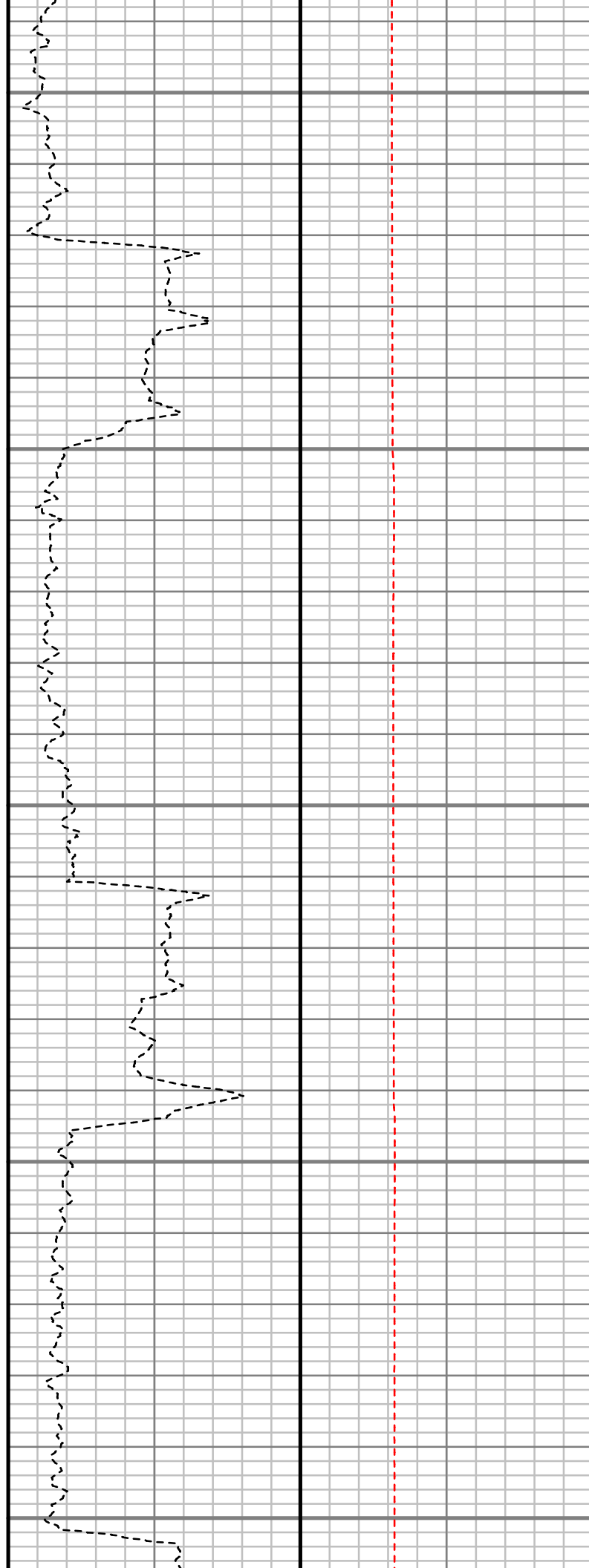
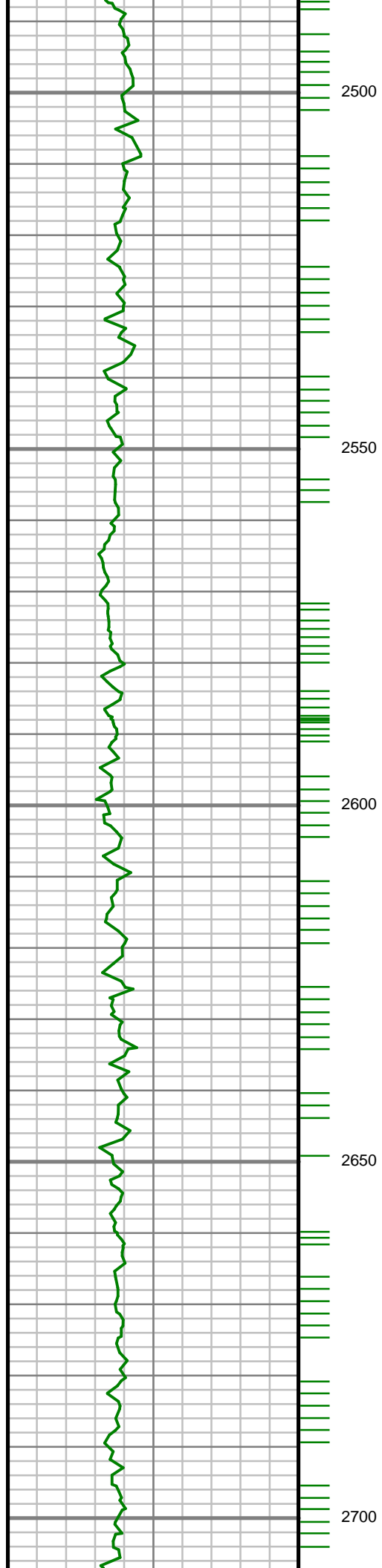


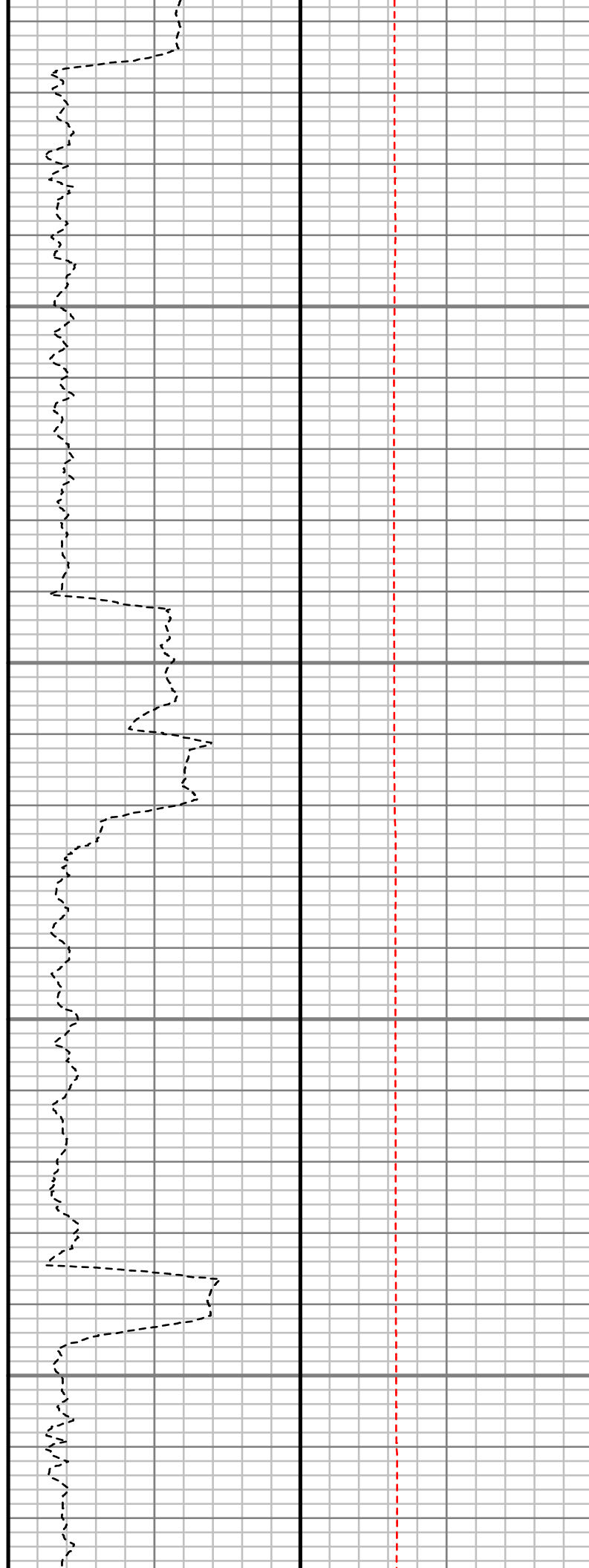
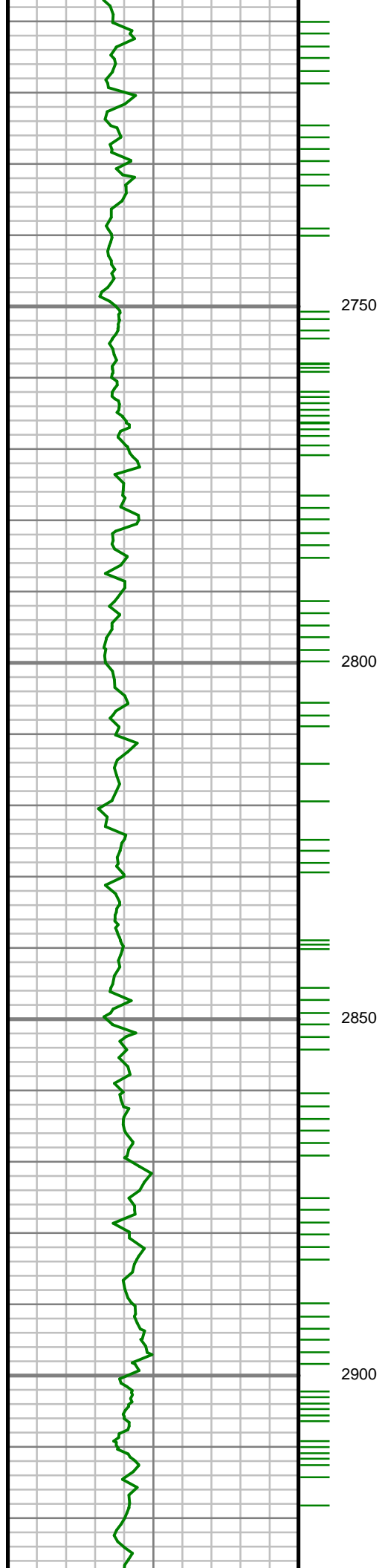


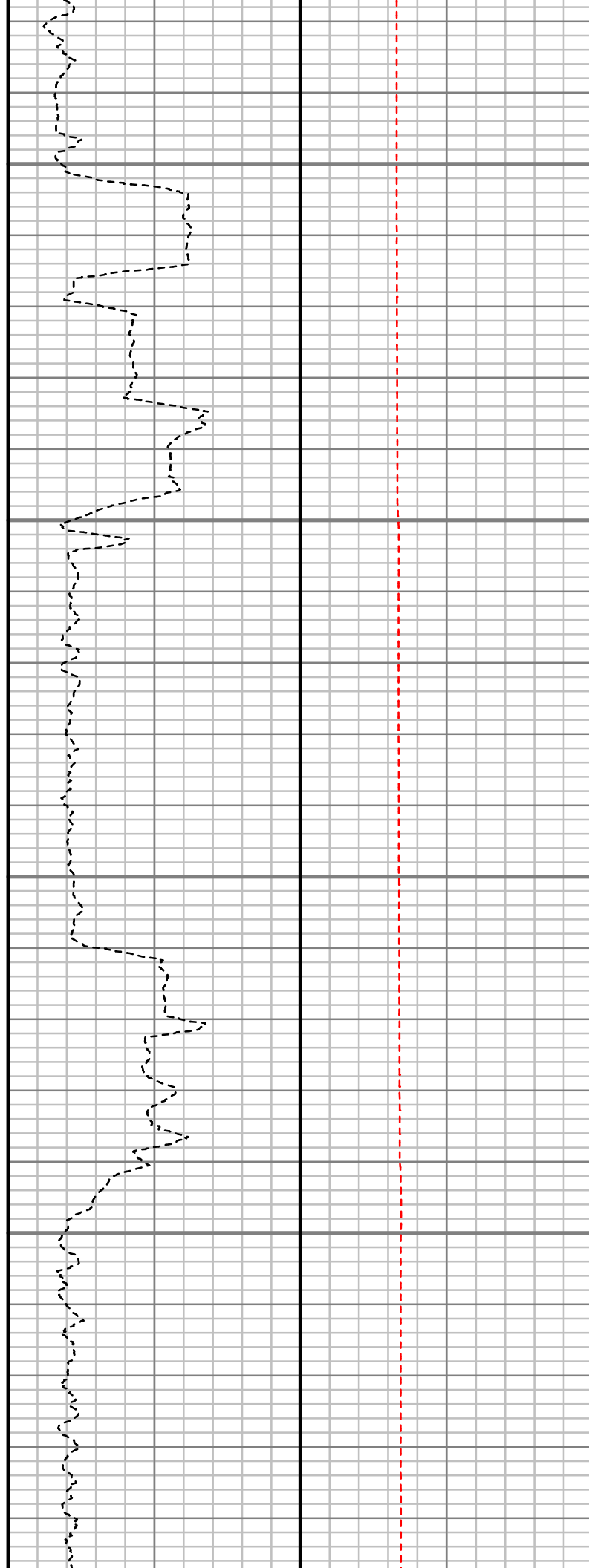
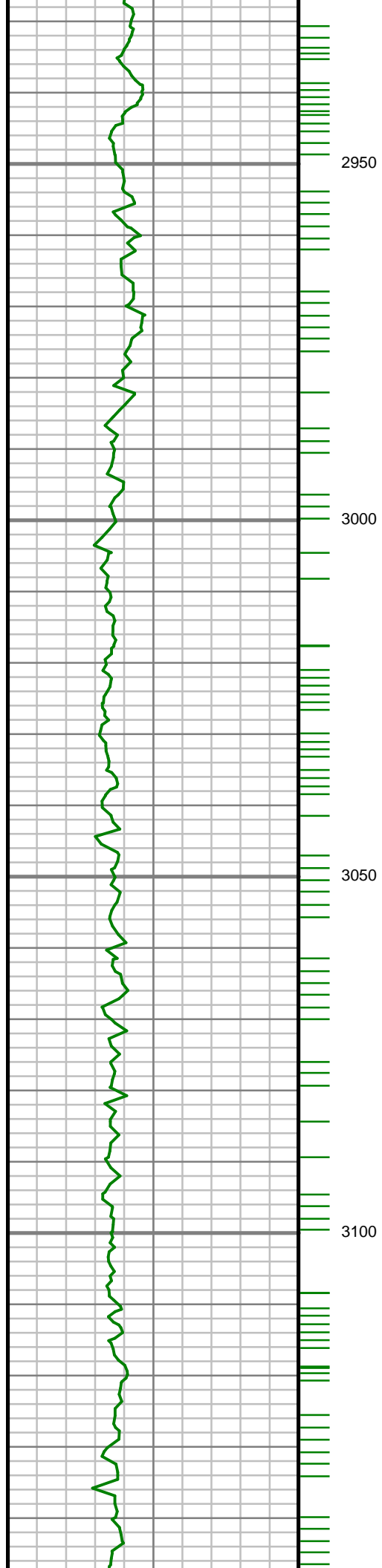


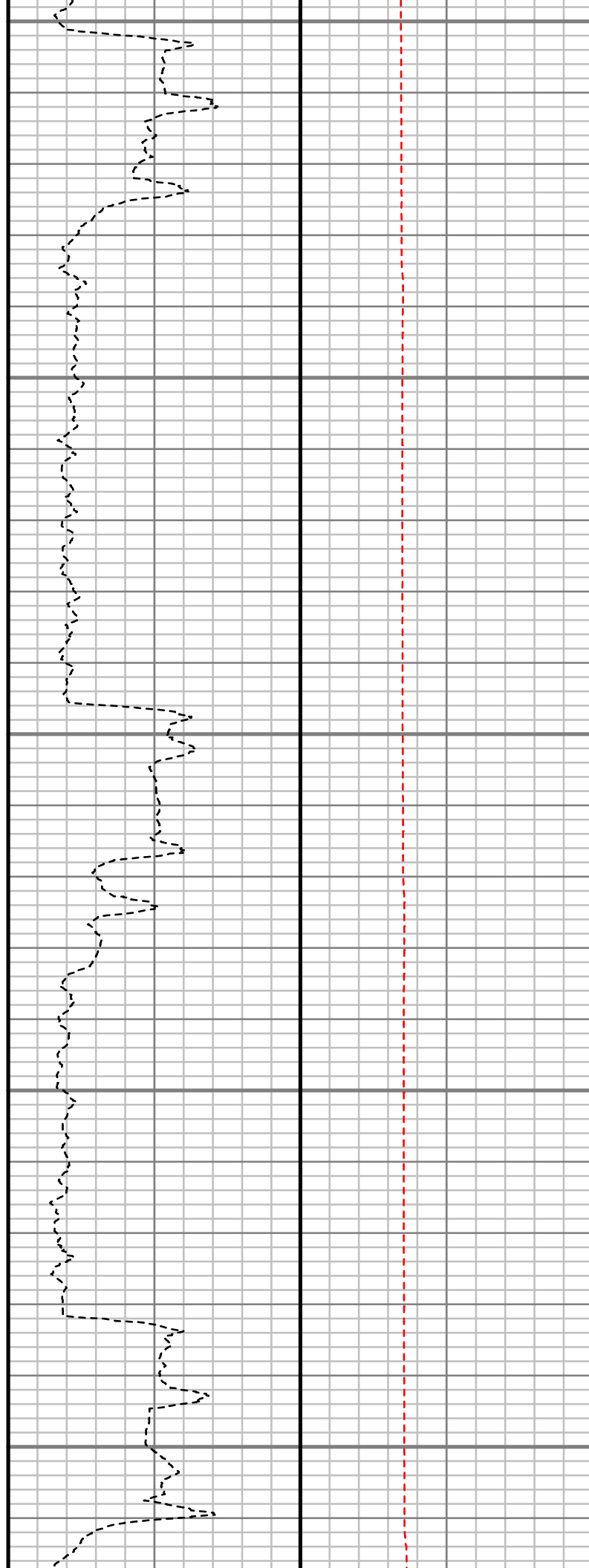
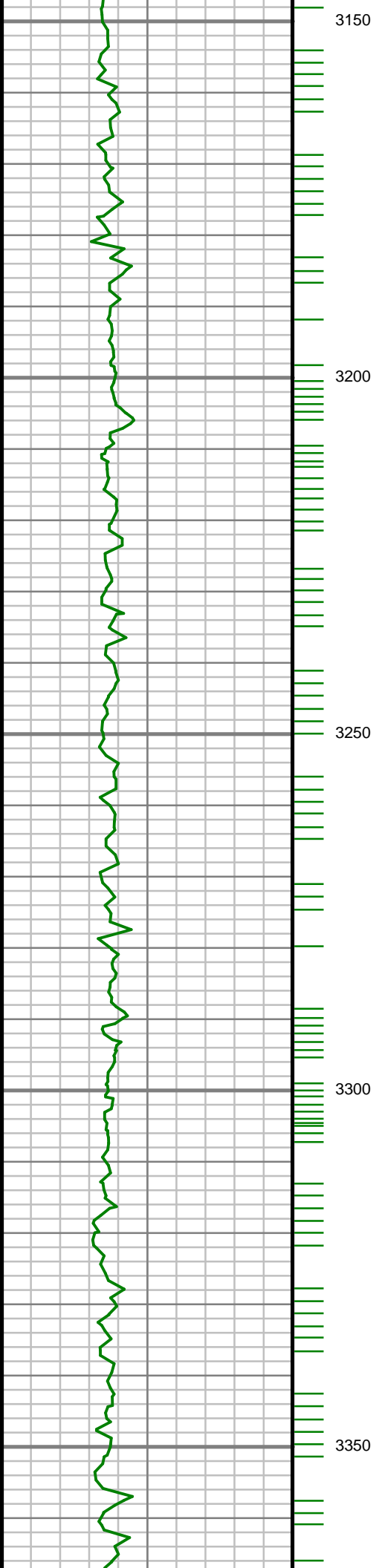


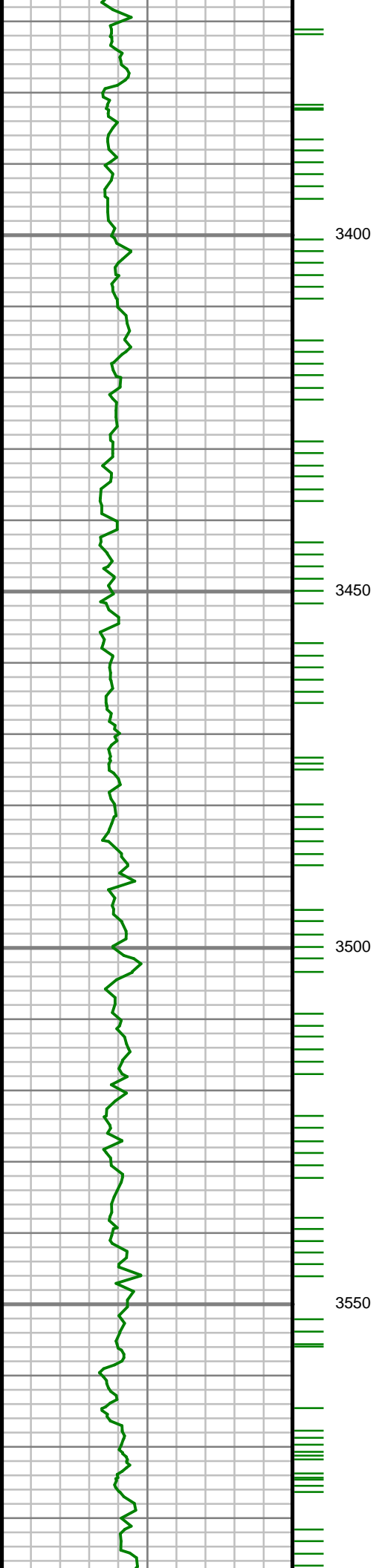


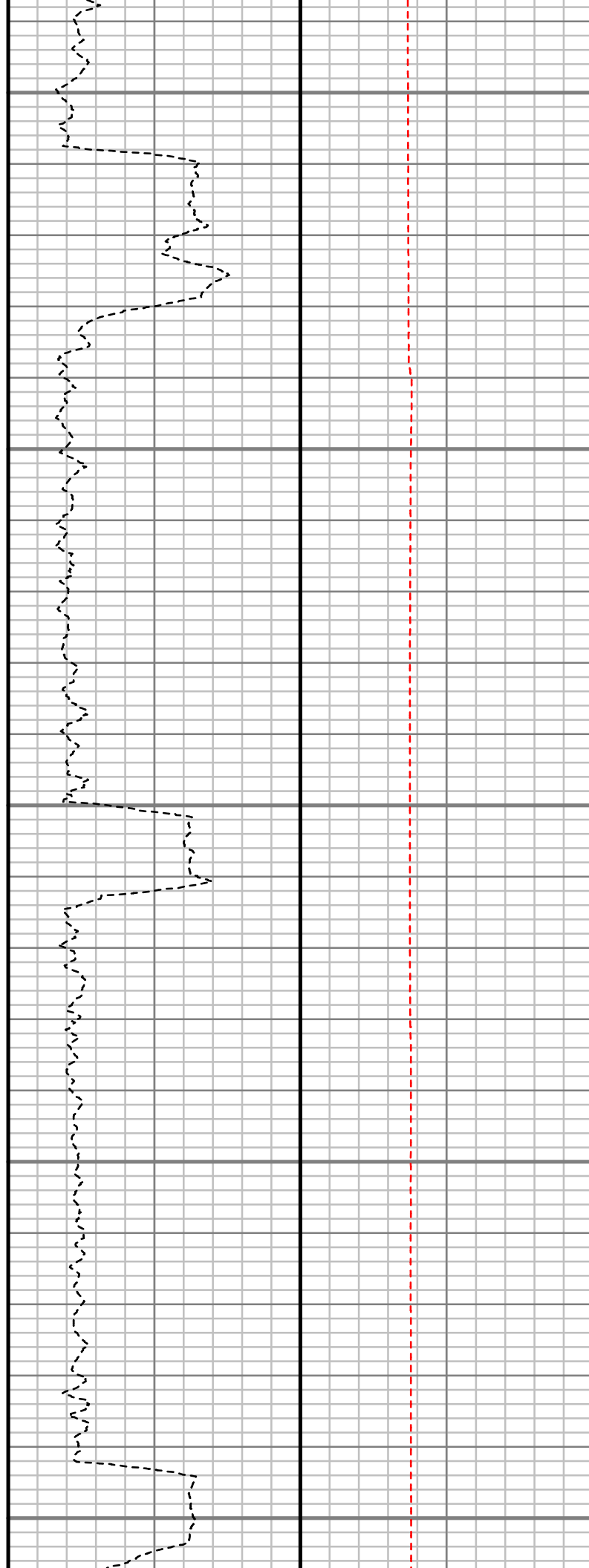
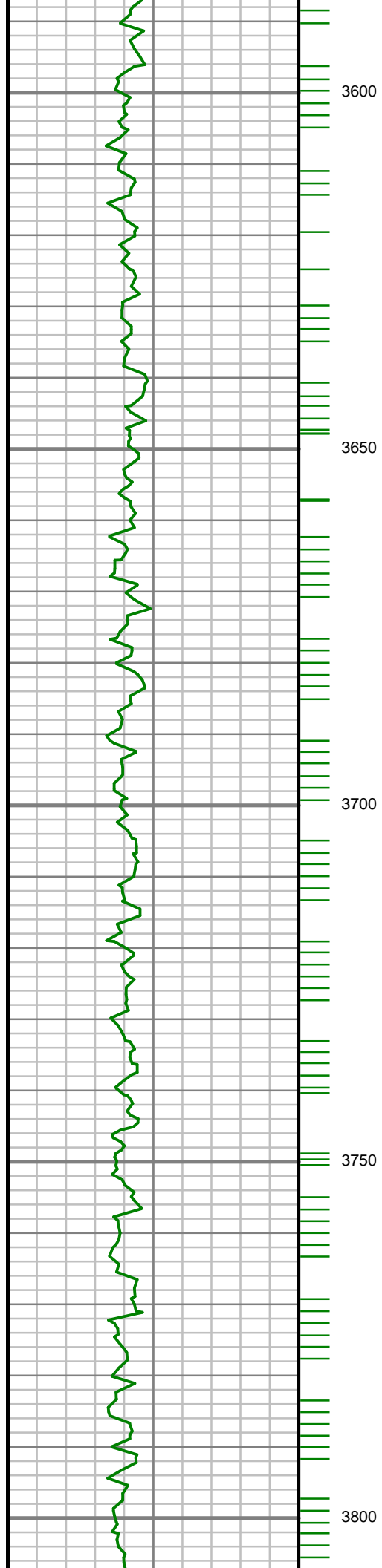


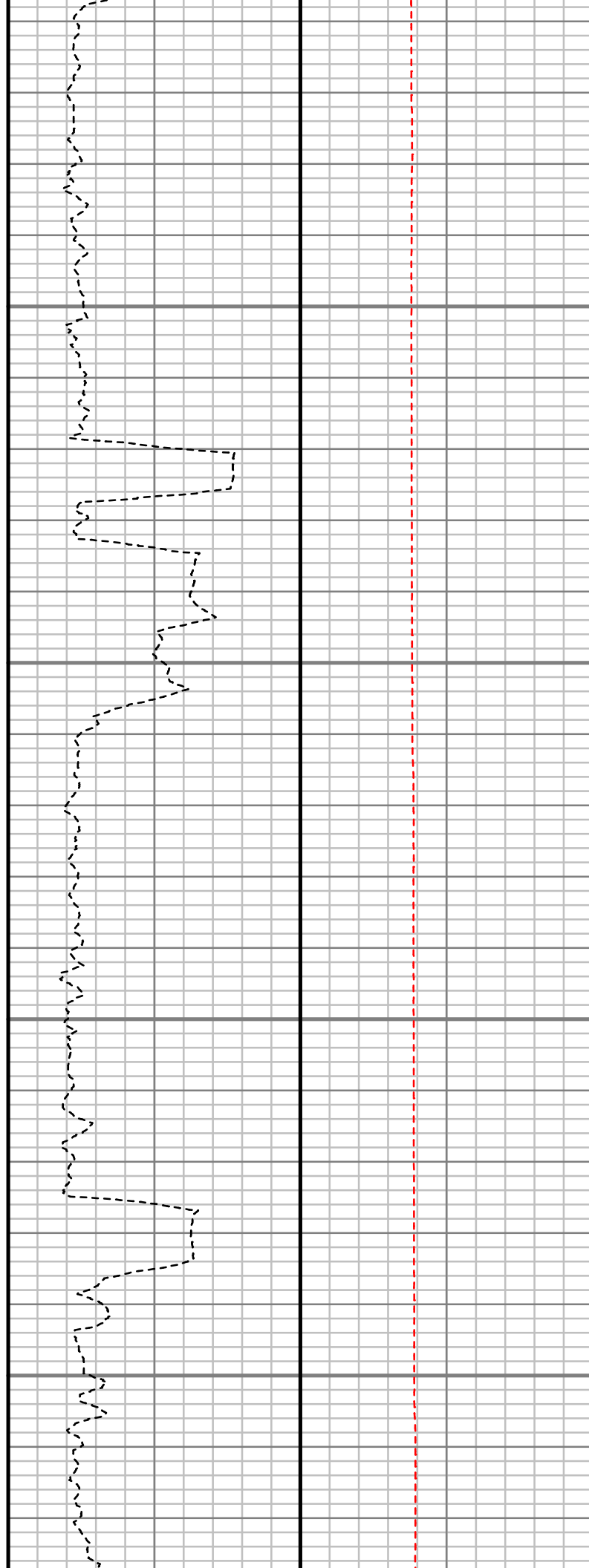
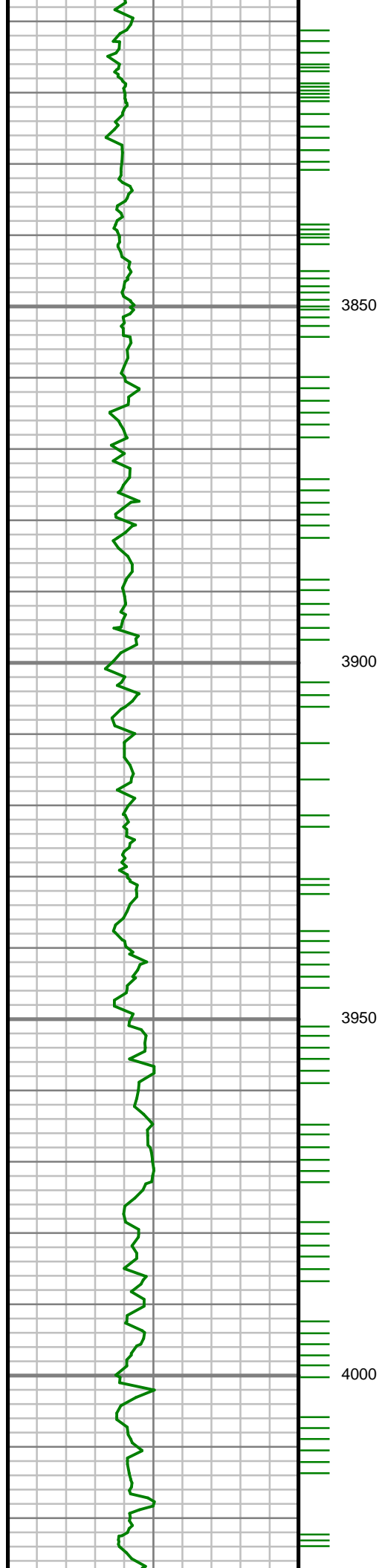


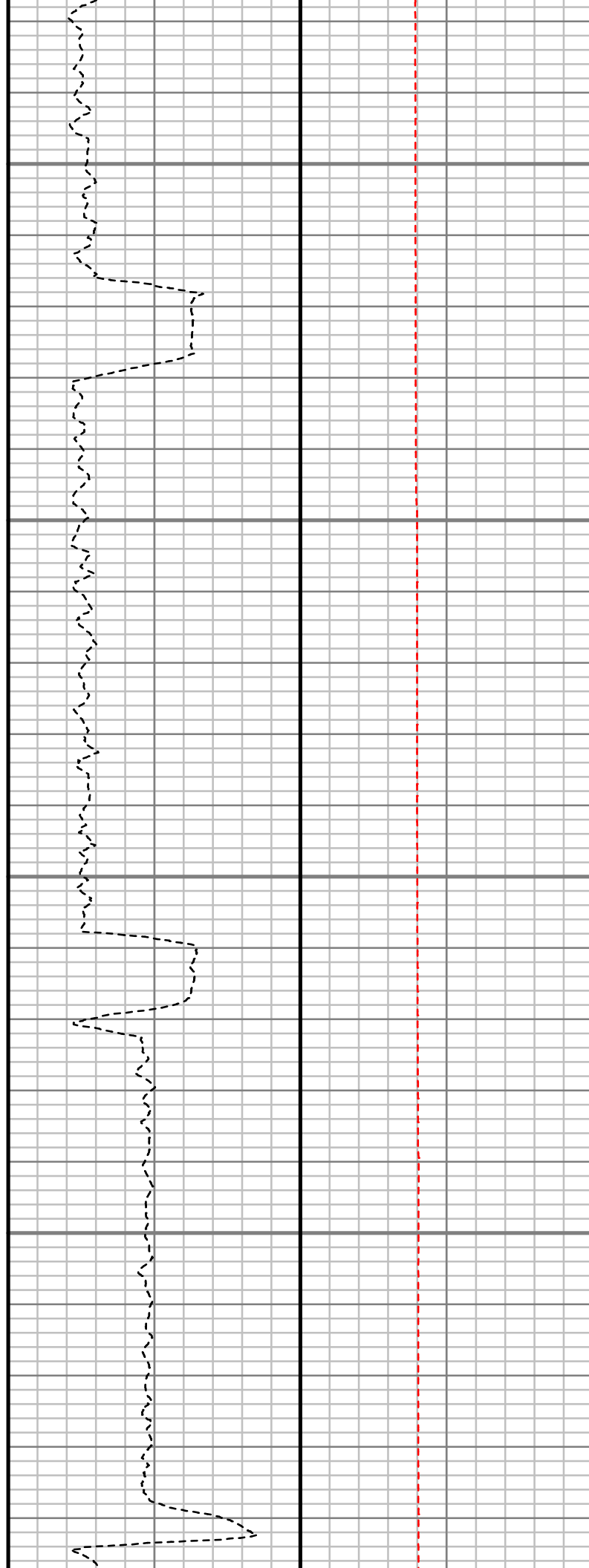
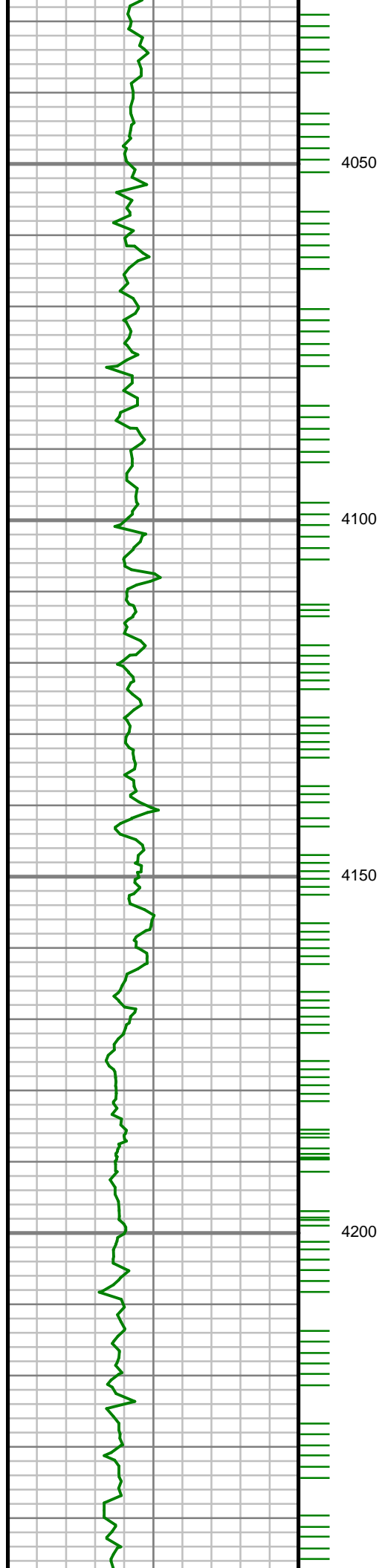


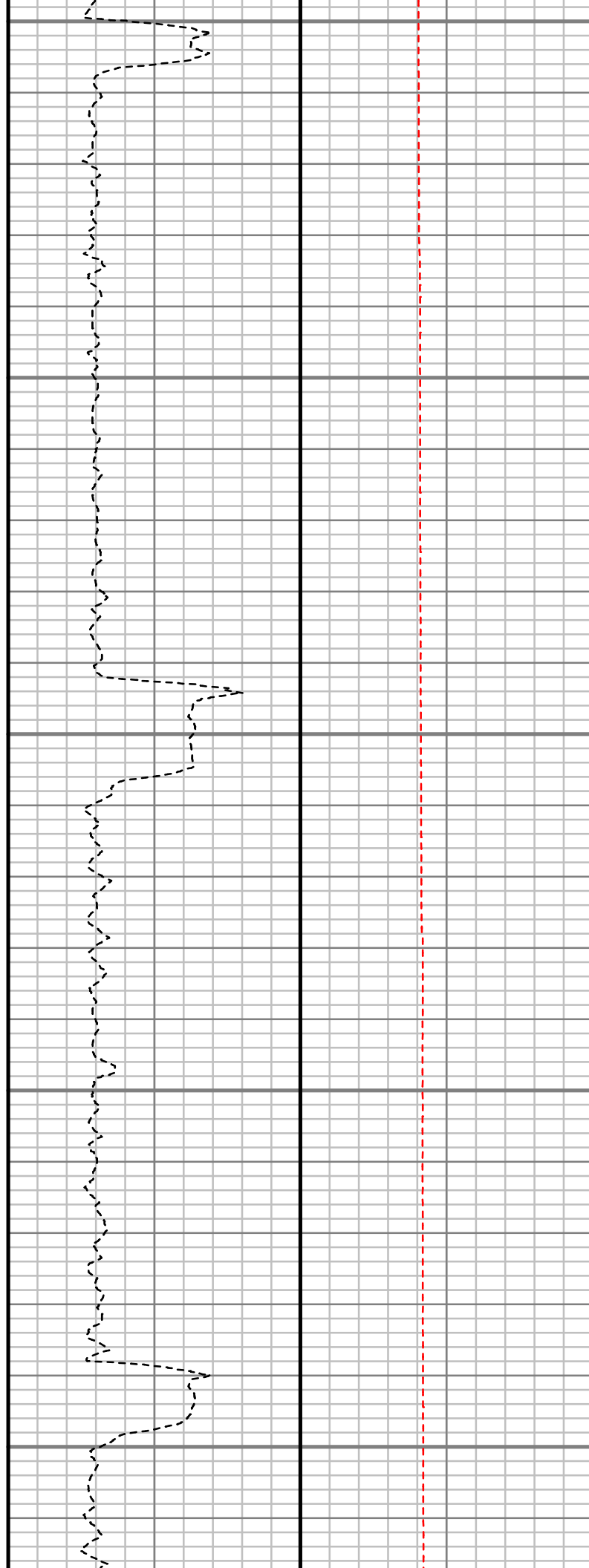
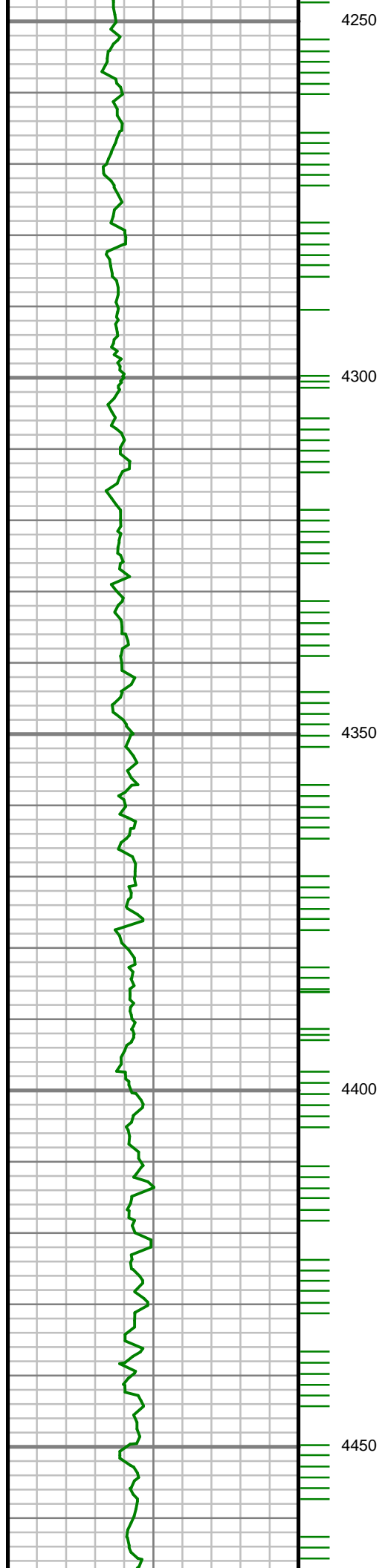


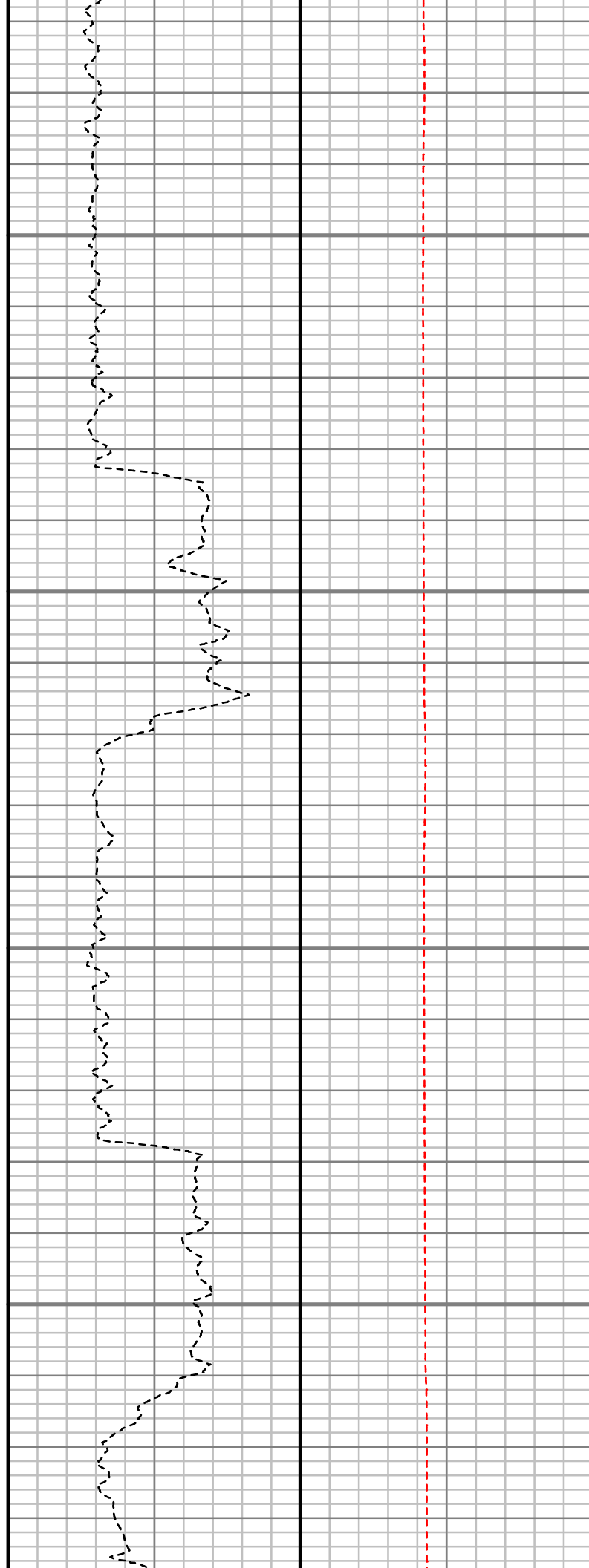
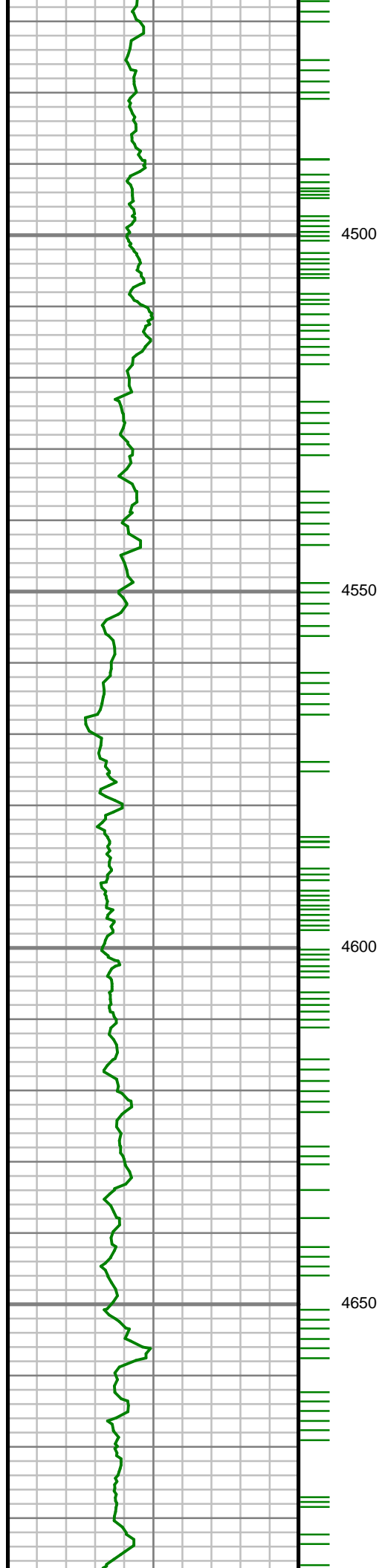


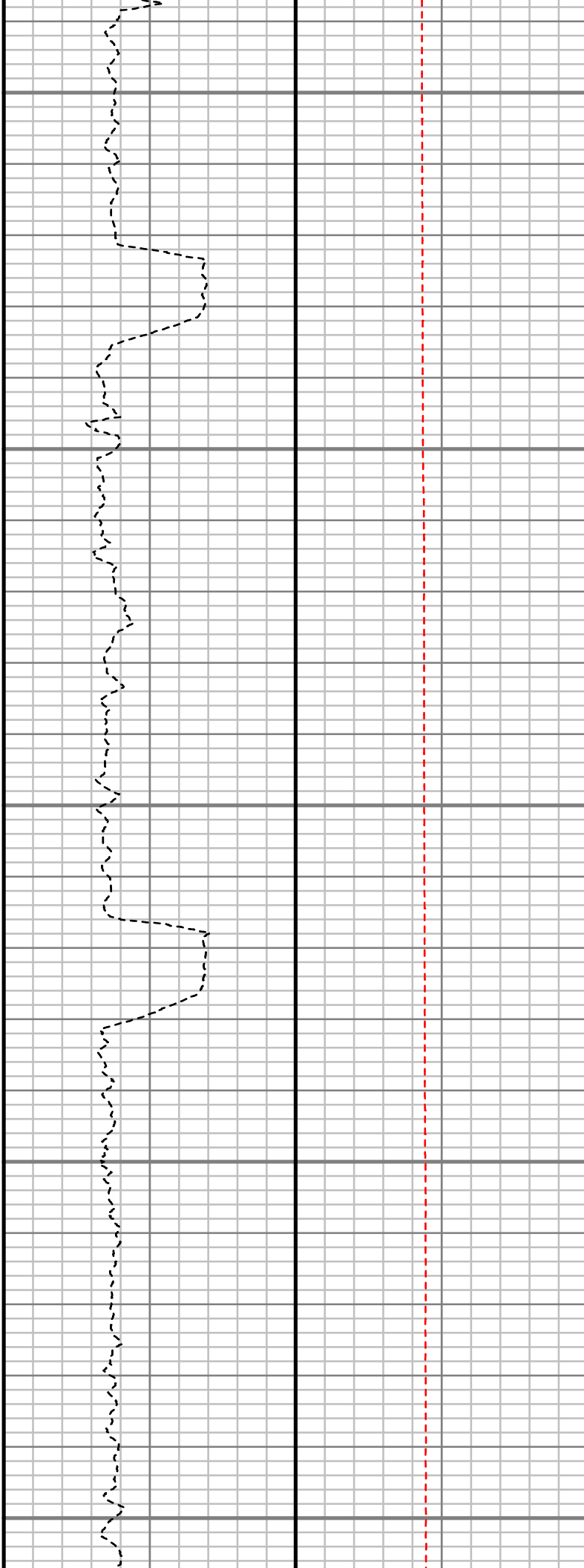
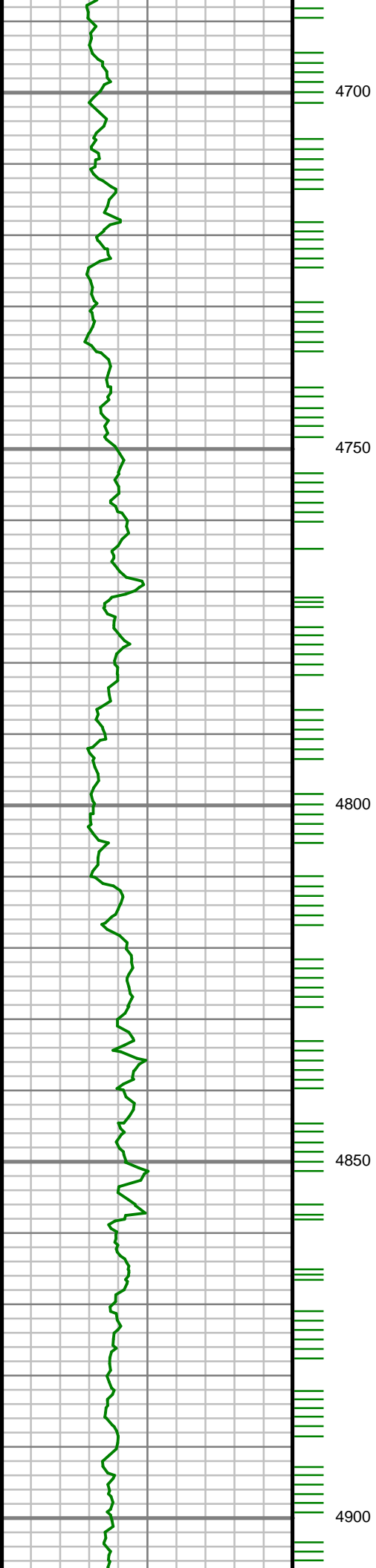


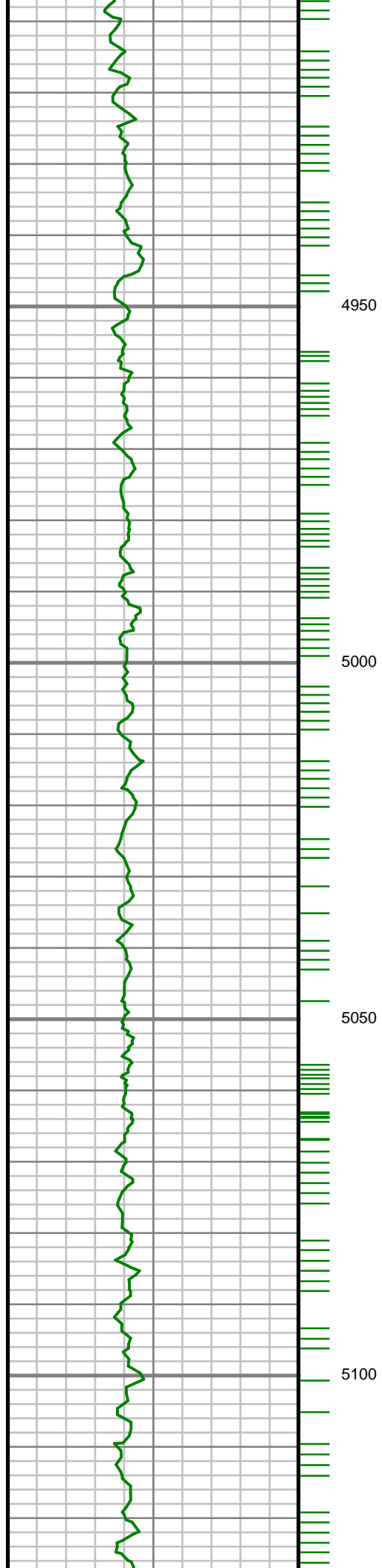


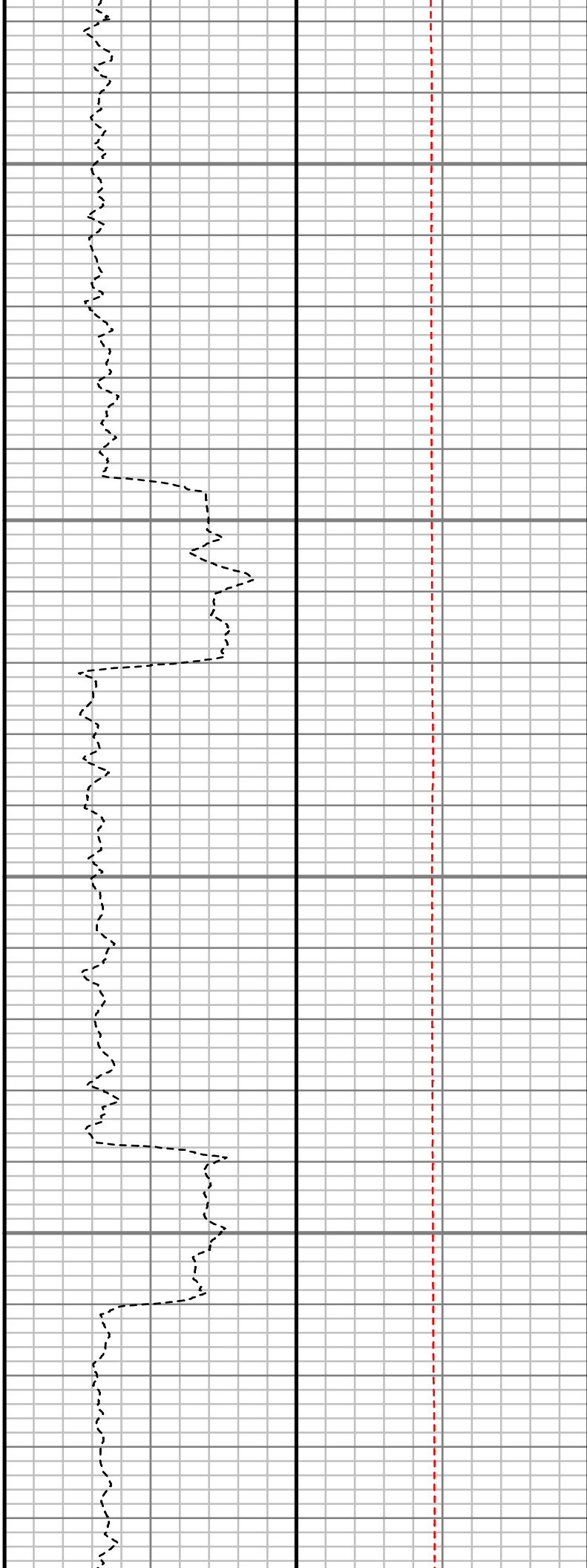
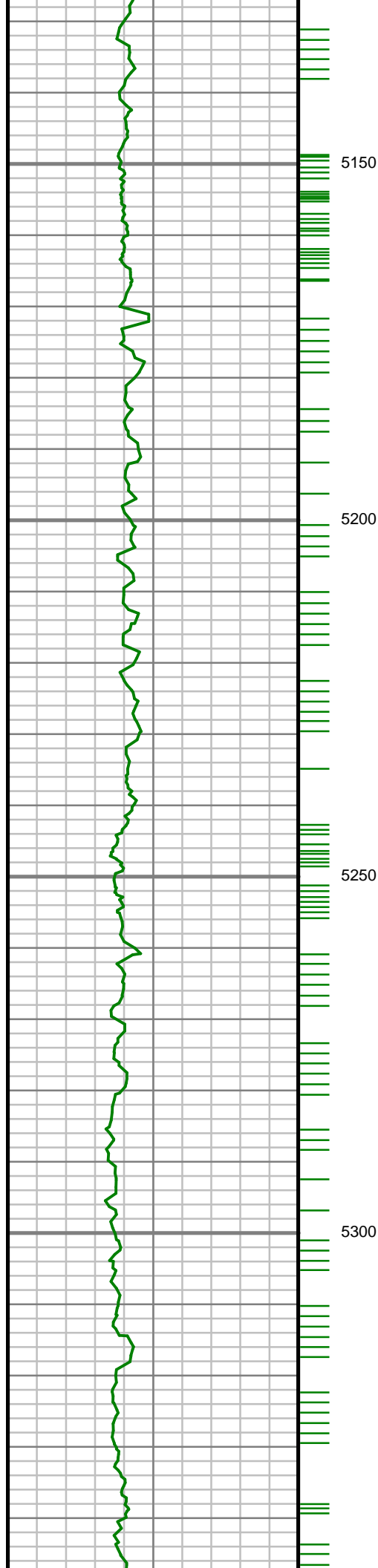


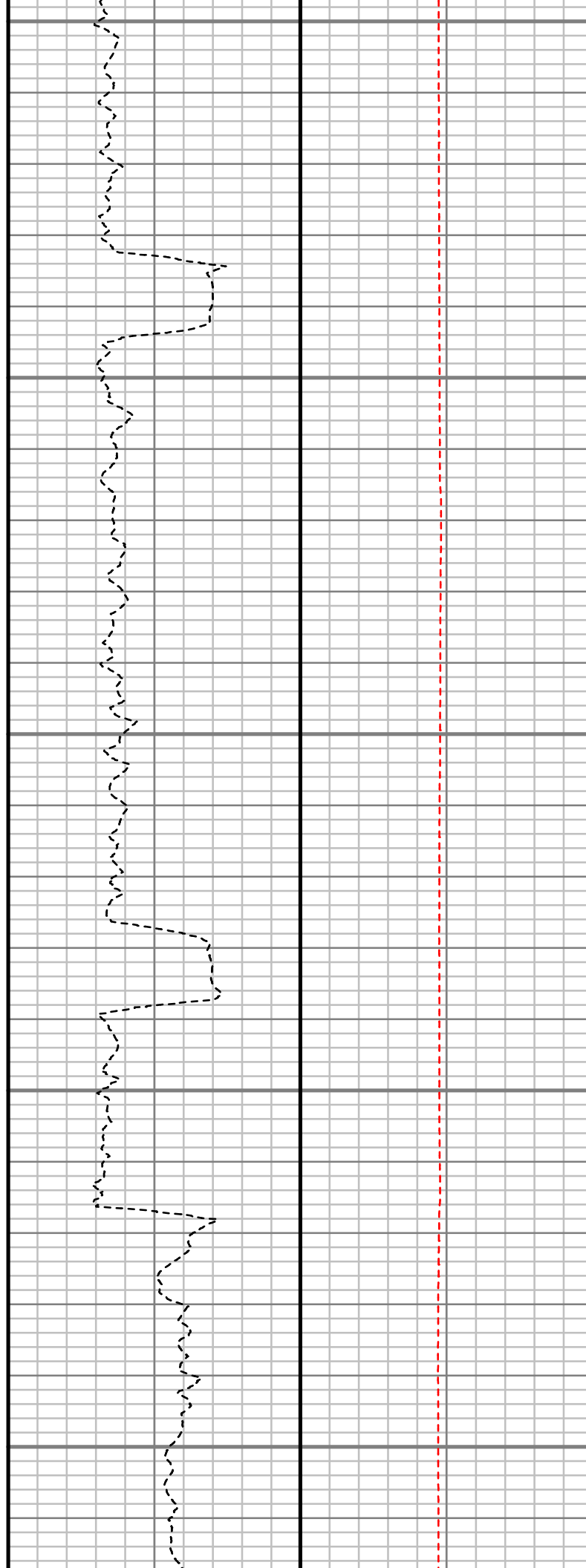
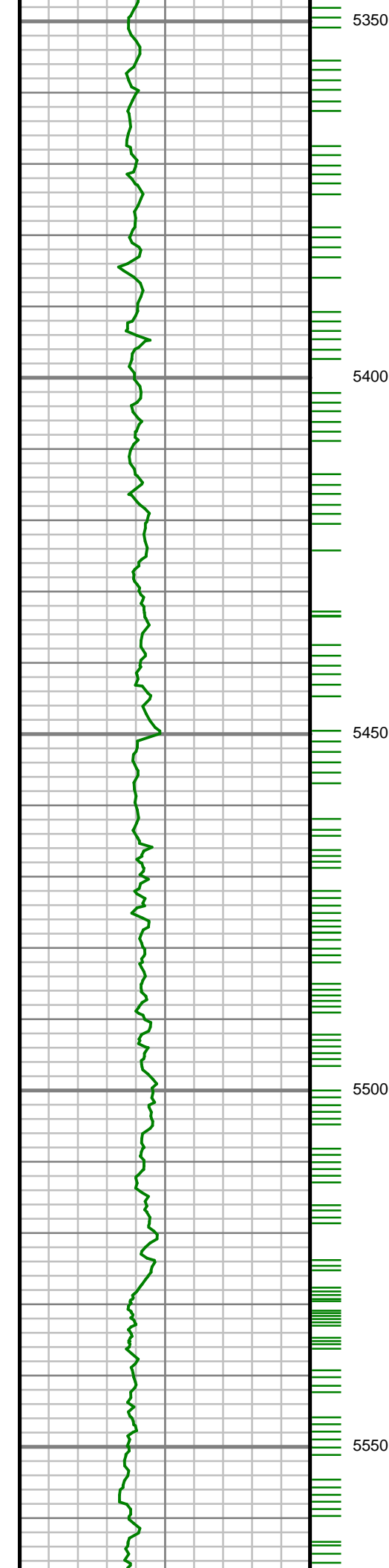


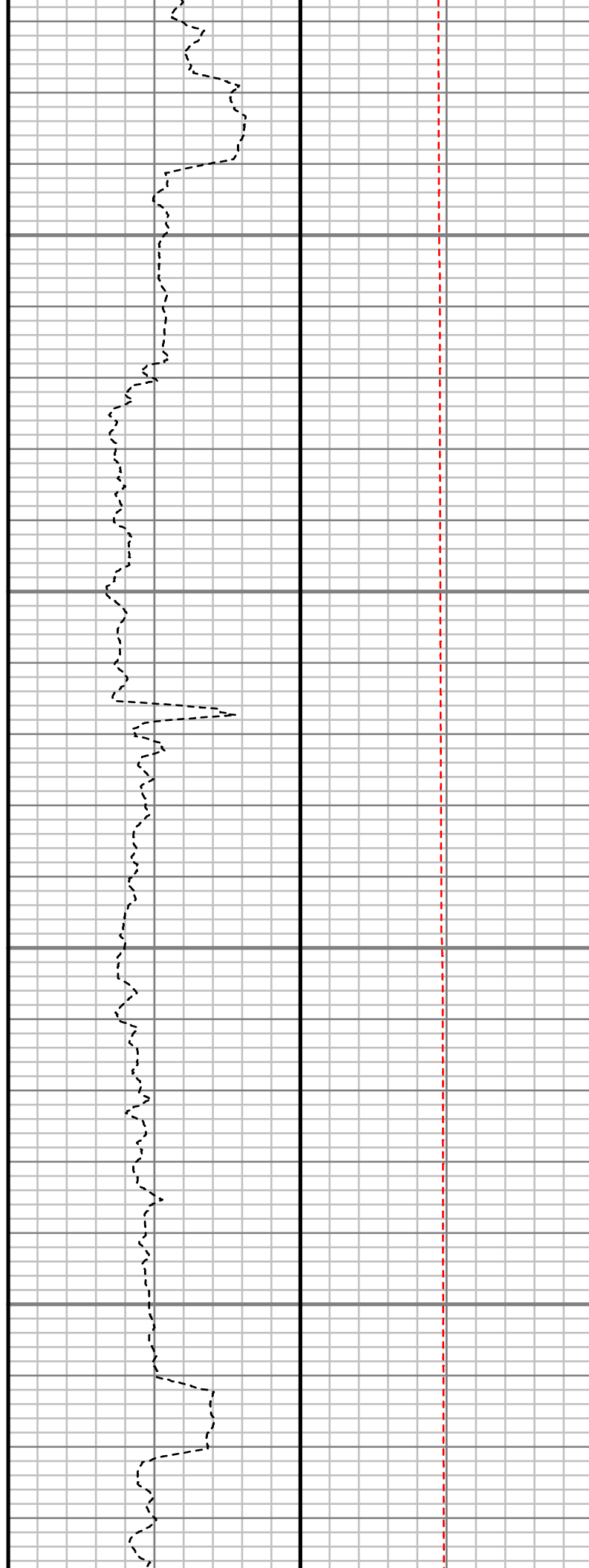
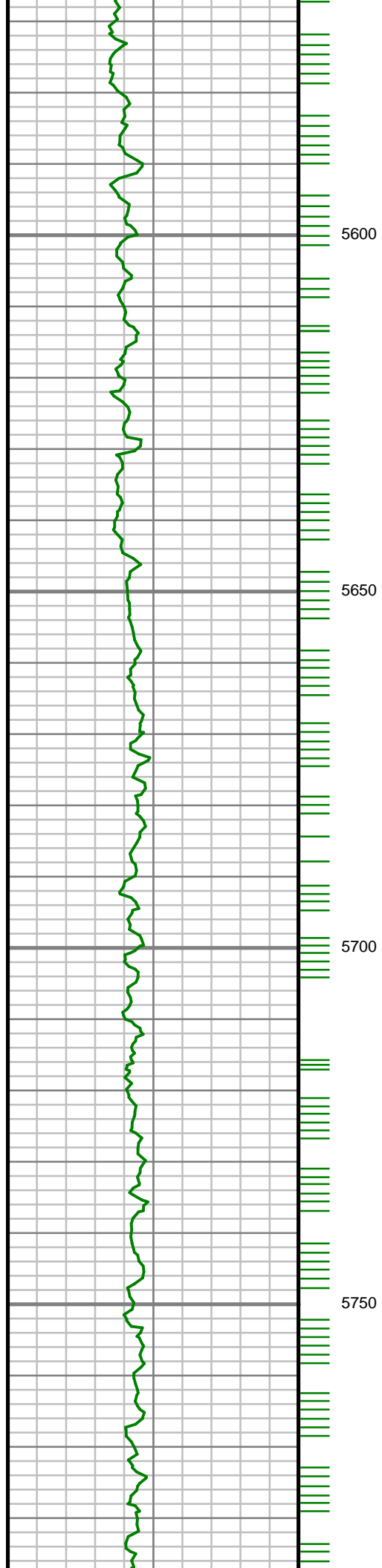


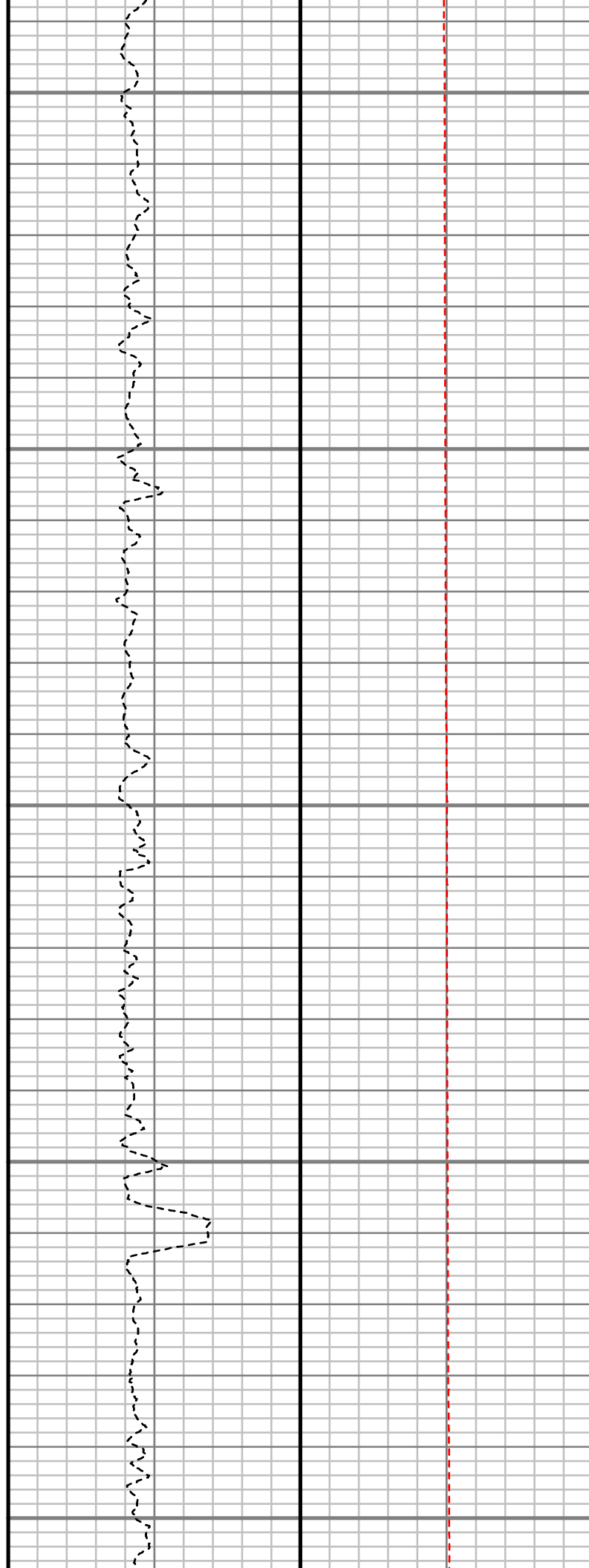
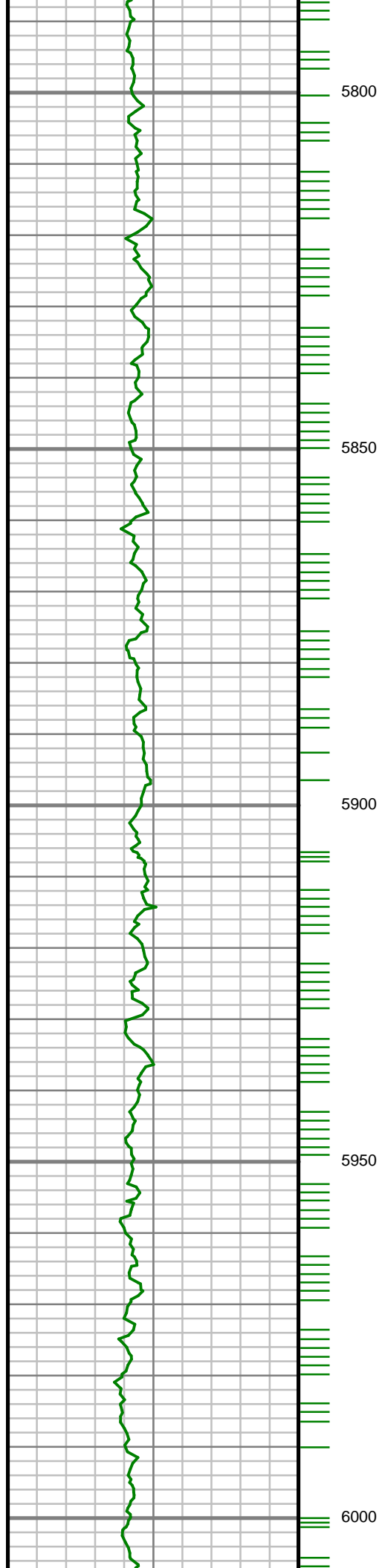


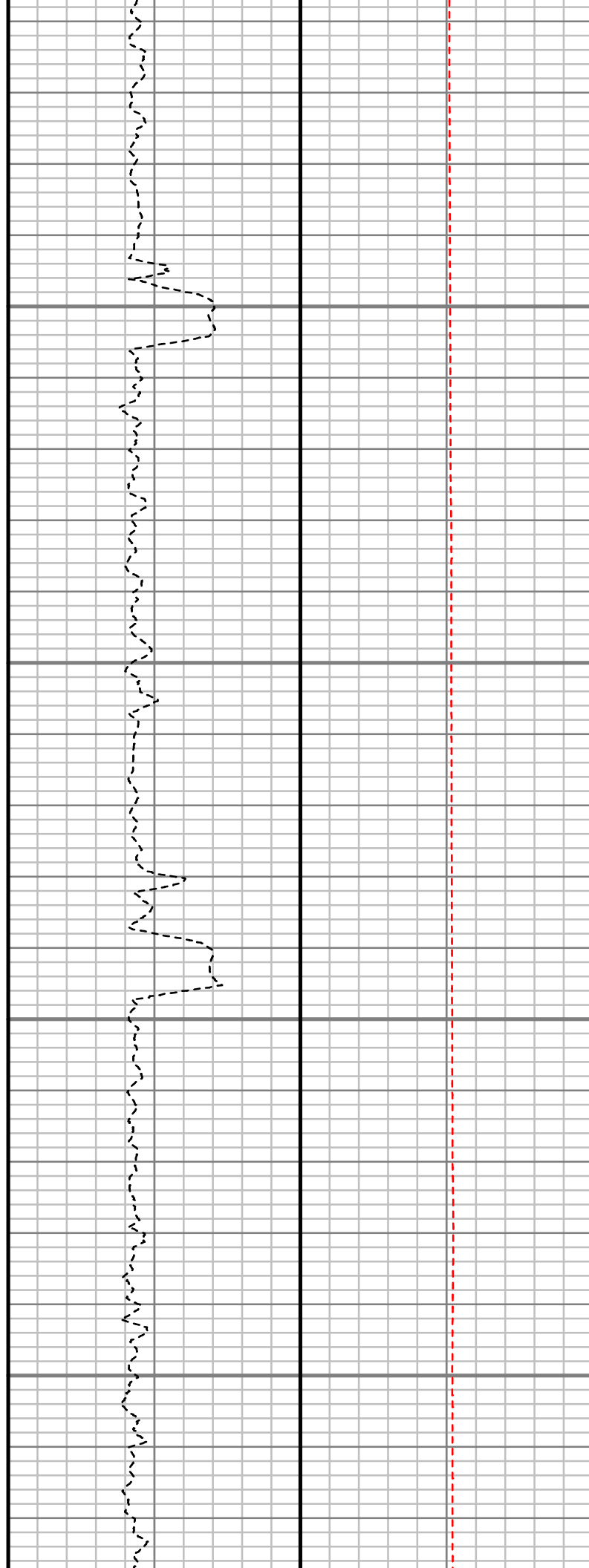
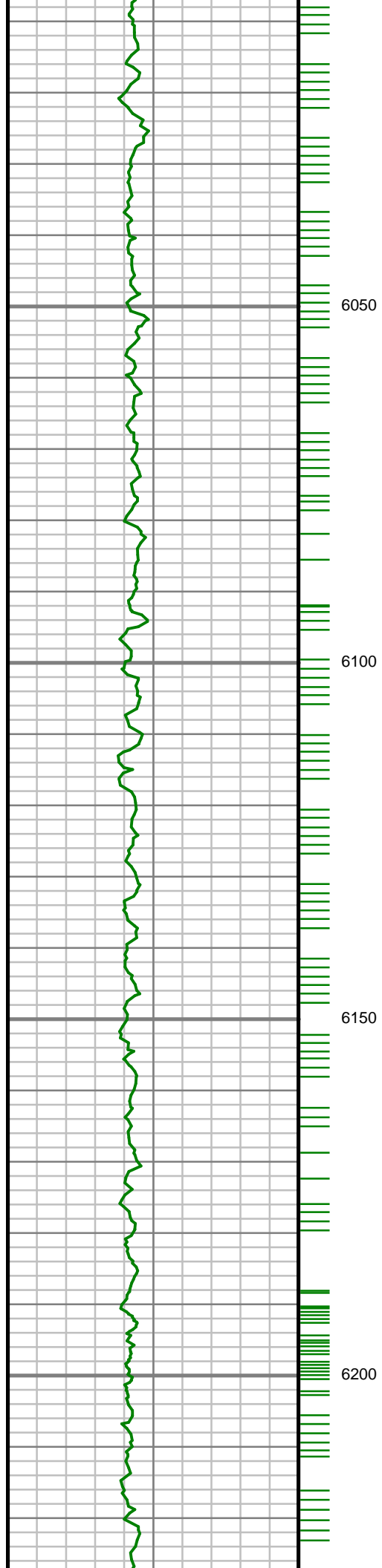


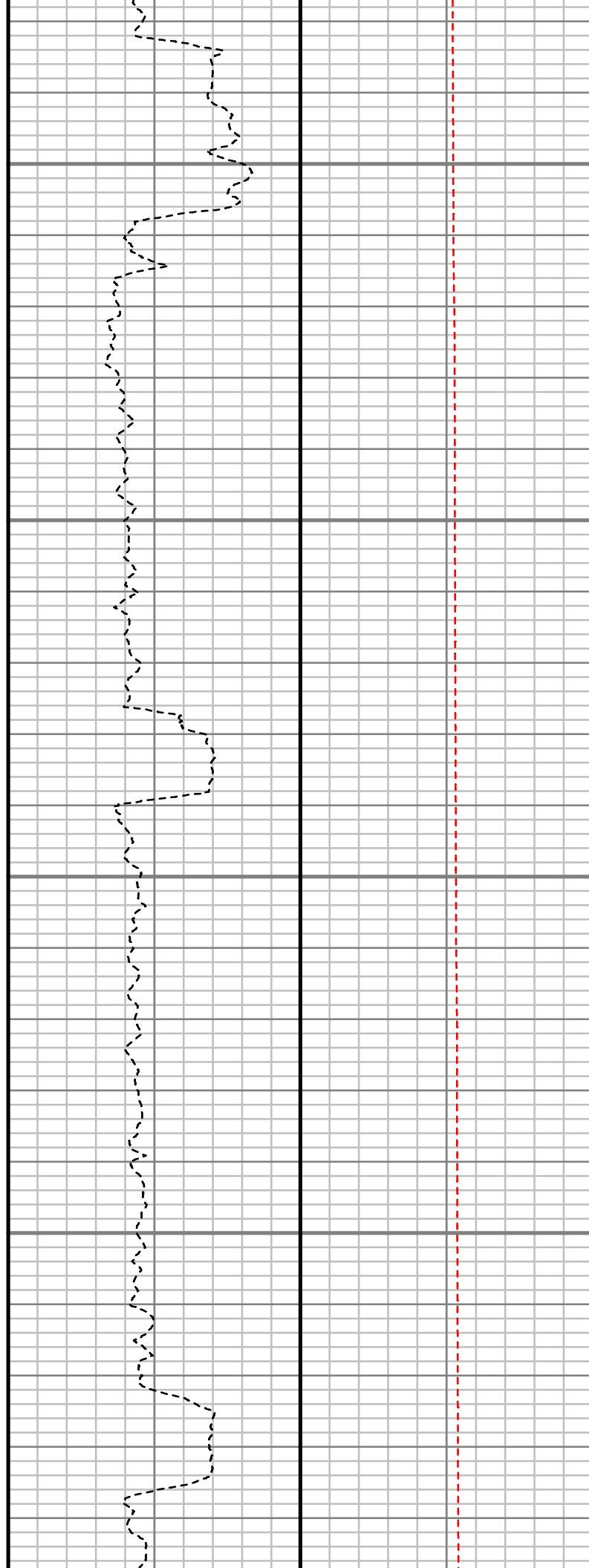
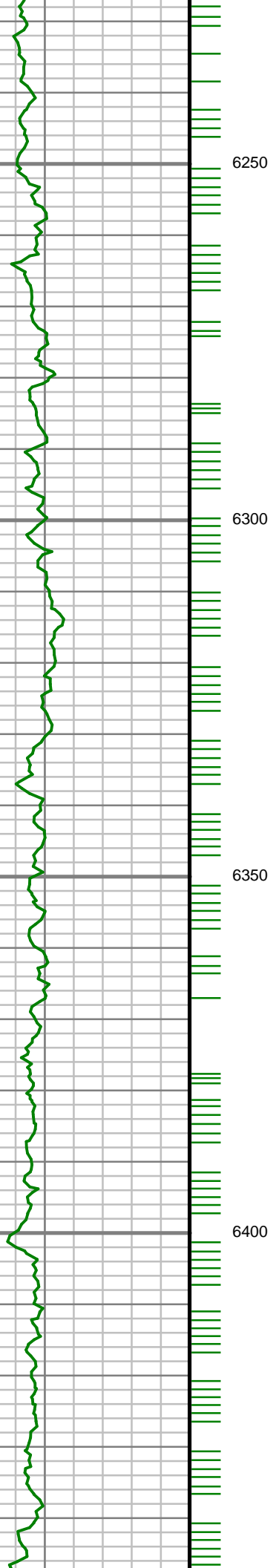


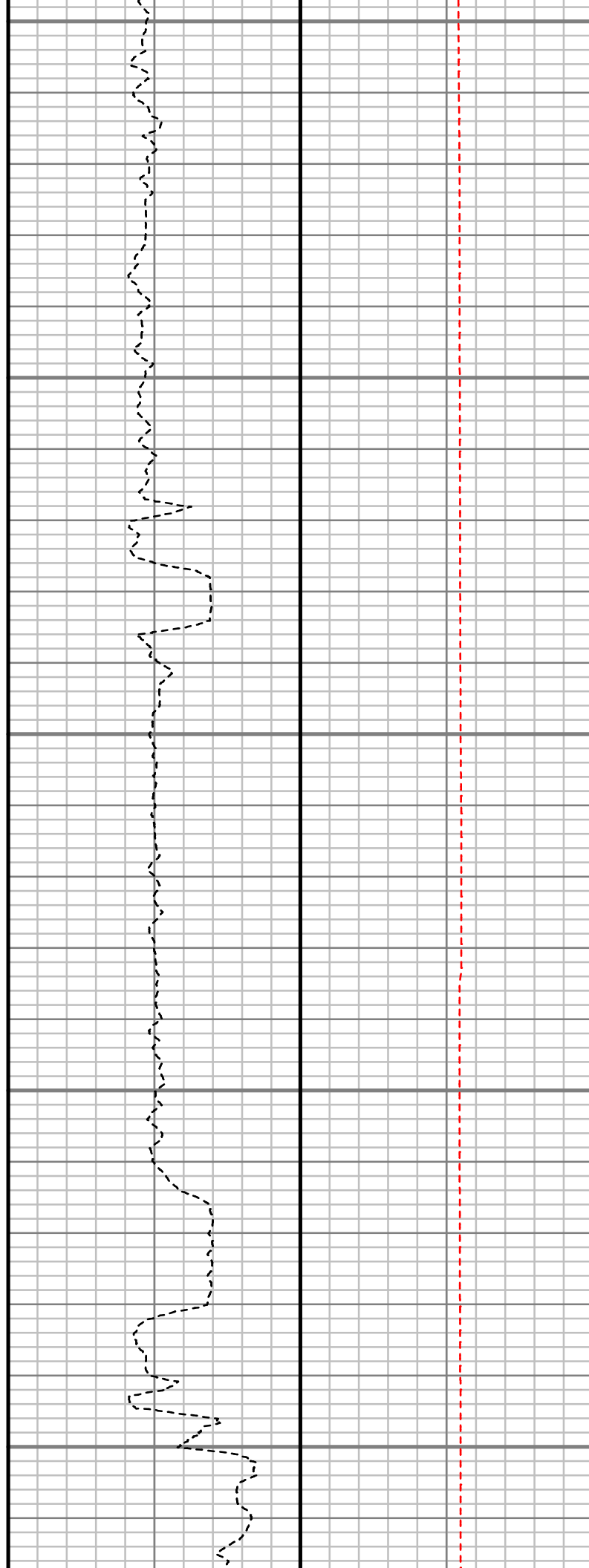
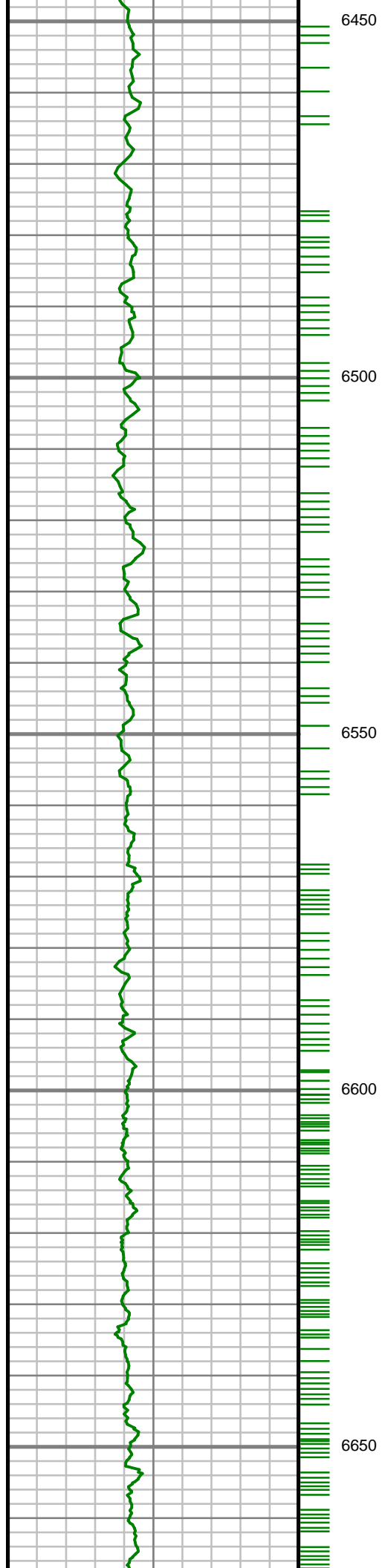


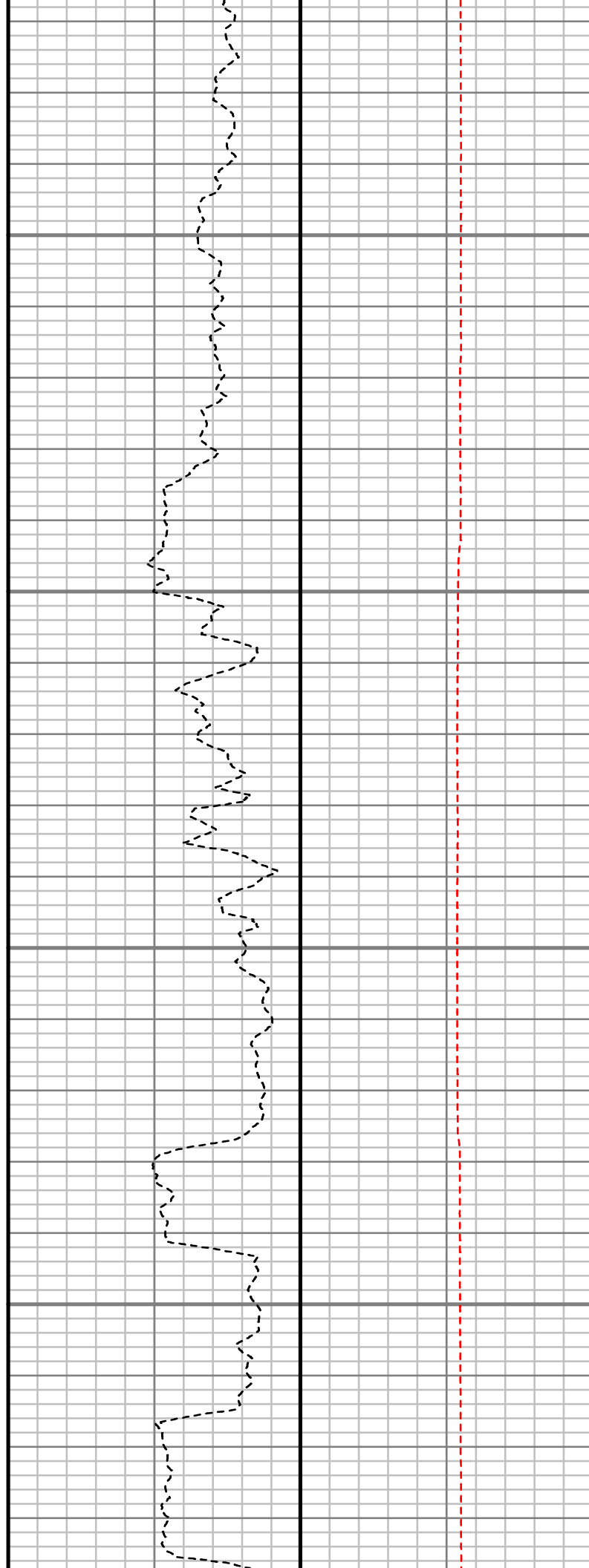
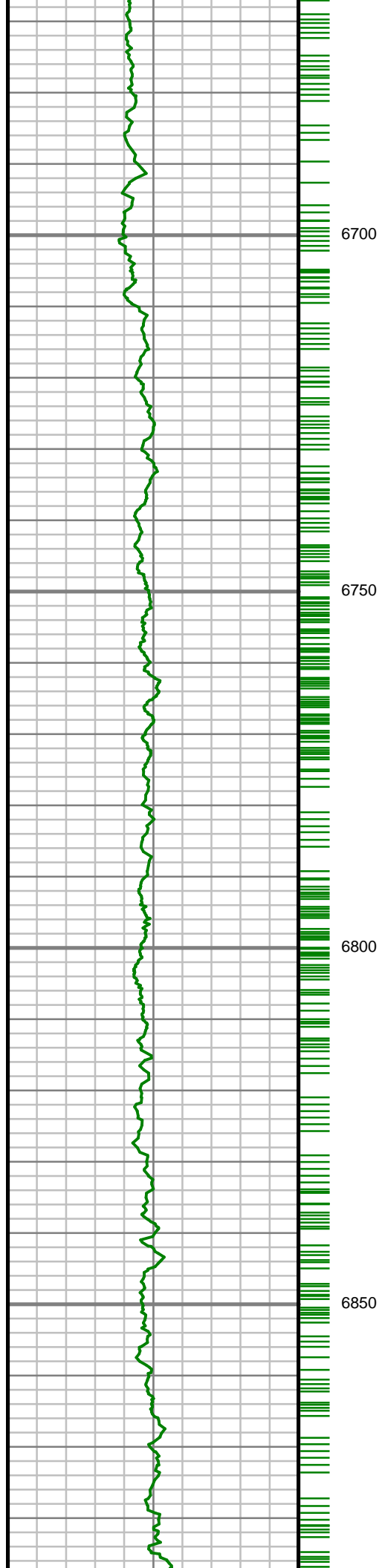


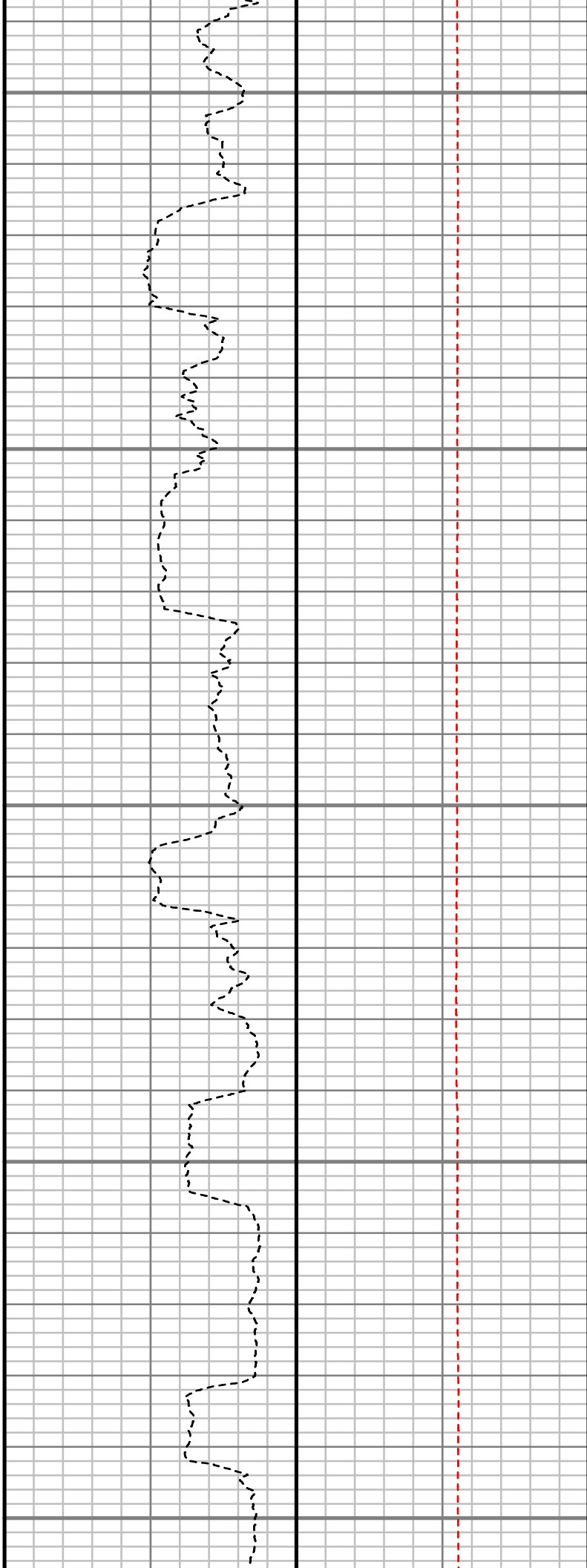
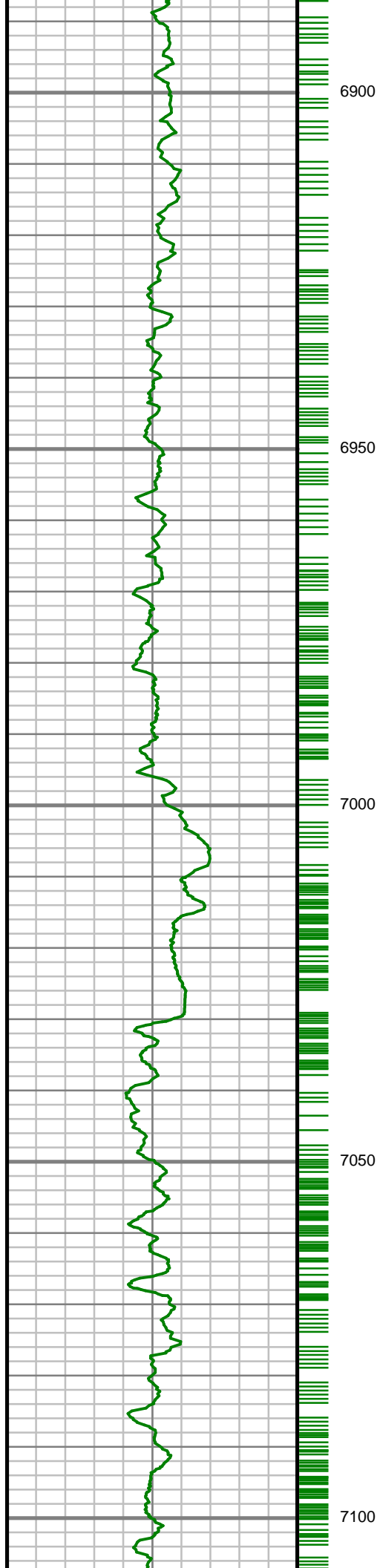


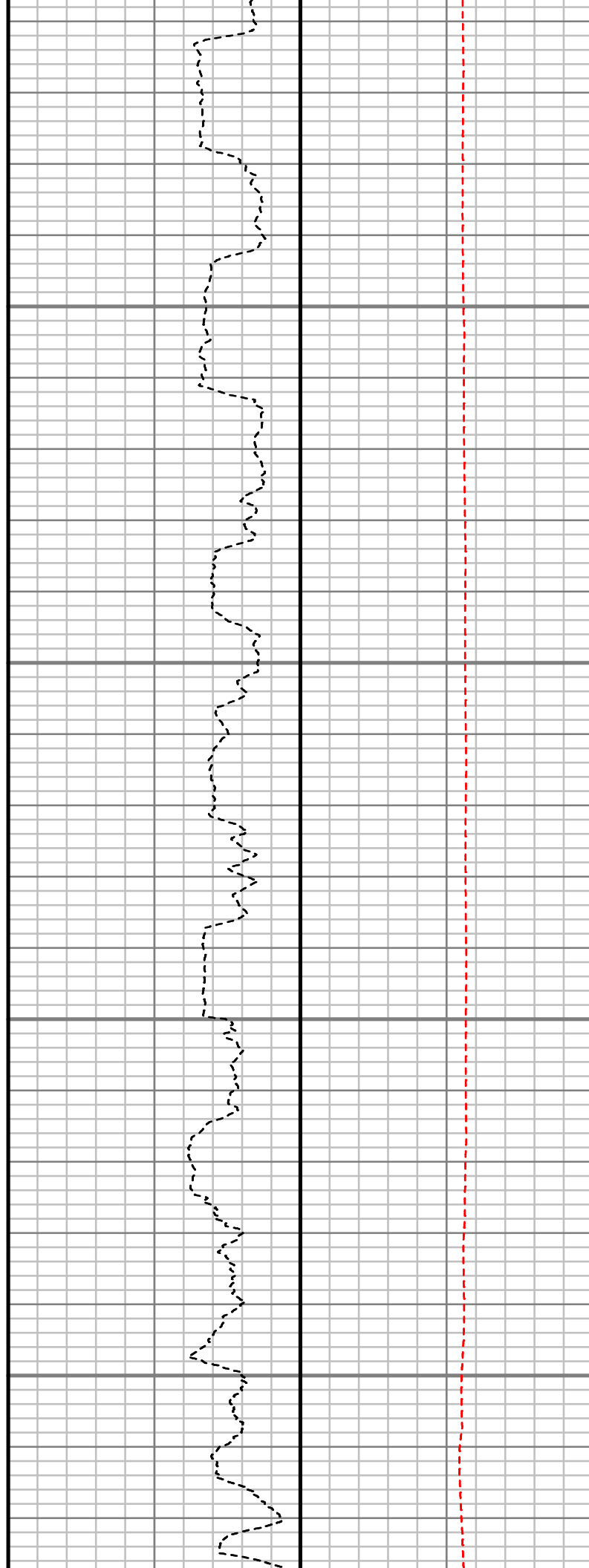
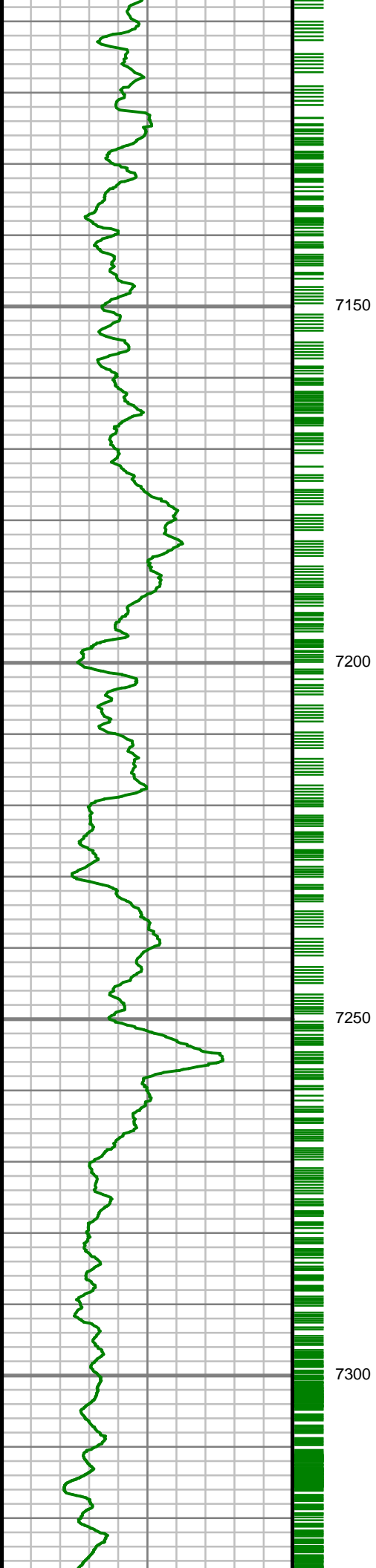


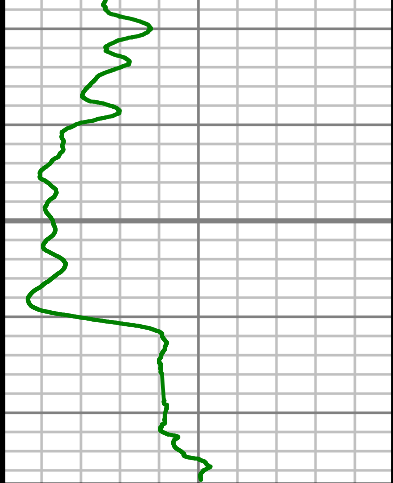










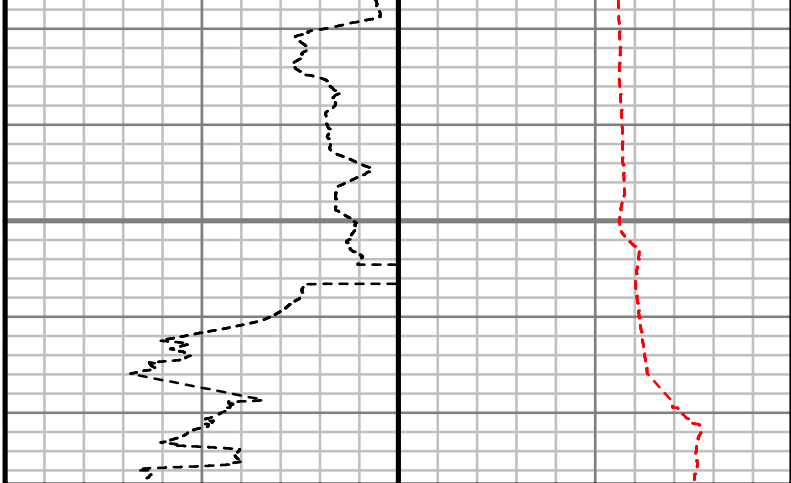


7350

TRUE VERTICAL DEPTH
1:240 (ft)

Gamma Ray (GR)

0 Unit = aapi 150



Rate of Penetration (ROP)

650 Unit = ft/hr 0

Tool Temperature (T-TEMP)

0 Unit = °F 300

Comments

Survey Report

Customer Name:	ANADARKO PETROLEUM CORP.
Site Name:	PARAGON 16-6HZ
Well Name:	PARAGON 40C-31HZ
Survey:	PARAGON 40C-31HZ
Survey Date:	1/1/2014
Magnetic Declination:	8.24 deg
North Reference:	True North
Calculation Method:	Minimum Curvature
Section (VS) Ref:	0.00N (ft), 0.00E (ft), 0.00Azim (deg)

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
125.00	0.54	207.73	125.00	-0.42	-0.42	-0.22	0.54
225.00	0.45	208.67	224.99	-1.18	-1.18	-0.63	0.09
325.00	0.49	224.89	324.99	-1.83	-1.83	-1.12	0.14
425.00	0.27	235.00	424.99	-2.26	-2.26	-1.61	0.23
525.00	0.06	199.48	524.99	-2.45	-2.45	-1.82	0.22
625.00	0.14	200.72	624.99	-2.61	-2.61	-1.88	0.08
725.00	0.12	59.57	724.99	-2.67	-2.67	-1.84	0.25

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
825.00	0.11	20.15	824.99	-2.53	-2.53	-1.71	0.08
925.00	0.17	206.96	924.99	-2.57	-2.57	-1.75	0.28
1025.00	0.21	186.65	1024.99	-2.89	-2.89	-1.84	0.08
1178.00	0.29	35.38	1177.99	-2.85	-2.85	-1.65	0.32
1270.00	2.27	219.27	1269.97	-4.08	-4.08	-2.67	2.78
1362.00	4.48	208.78	1361.80	-8.63	-8.63	-5.55	2.48
1453.00	6.01	207.25	1452.42	-15.99	-15.99	-9.44	1.70
1544.00	7.96	193.13	1542.74	-26.36	-26.36	-13.06	2.84
1657.00	10.45	177.13	1654.30	-44.23	-44.23	-14.32	3.14
1749.00	12.86	162.08	1744.41	-62.31	-62.31	-10.75	4.19
1840.00	13.38	157.70	1833.04	-81.69	-81.69	-3.64	1.24
1932.00	13.42	153.27	1922.54	-101.08	-101.08	5.20	1.12
2023.00	12.87	157.31	2011.15	-119.86	-119.86	13.86	1.18
2115.00	11.69	166.36	2101.05	-138.38	-138.38	20.02	2.45
2206.00	12.76	170.38	2189.99	-157.25	-157.25	23.87	1.49
2297.00	12.58	170.52	2278.78	-176.93	-176.93	27.18	0.20
2389.00	11.67	171.27	2368.72	-196.00	-196.00	30.24	1.01
2481.00	11.19	168.25	2458.90	-213.94	-213.94	33.47	0.83
2573.00	11.50	174.68	2549.10	-231.82	-231.82	36.14	1.42
2664.00	13.65	172.24	2637.92	-251.50	-251.50	38.44	2.43

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
2756.00	13.12	175.14	2727.42	-272.66	-272.66	40.79	0.93
2848.00	12.36	168.09	2817.16	-292.70	-292.70	43.70	1.88
2939.00	11.66	163.42	2906.17	-311.04	-311.04	48.34	1.32
3031.00	10.21	172.79	2996.50	-328.03	-328.03	52.01	2.49
3122.00	6.93	177.09	3086.48	-341.52	-341.52	53.30	3.67
3214.00	5.46	152.74	3177.95	-350.95	-350.95	55.59	3.24
3306.00	3.25	132.46	3269.69	-356.60	-356.60	59.52	2.89
3397.00	0.29	64.00	3360.64	-358.24	-358.24	61.62	3.47
3489.00	0.99	350.90	3452.63	-357.35	-357.35	61.70	1.03
3580.00	1.29	344.98	3543.61	-355.59	-355.59	61.32	0.35
3672.00	0.57	351.52	3635.60	-354.14	-354.14	60.98	0.78
3763.00	0.44	354.94	3726.60	-353.34	-353.34	60.88	0.15
3855.00	0.61	353.19	3818.59	-352.51	-352.51	60.79	0.18
3947.00	1.07	202.37	3910.59	-352.82	-352.82	60.41	1.77
4038.00	1.12	185.34	4001.57	-354.49	-354.49	60.00	0.36
4130.00	1.06	173.74	4093.56	-356.23	-356.23	60.01	0.25
4222.00	0.71	153.95	4185.54	-357.59	-357.59	60.35	0.51
4316.00	1.09	140.69	4279.53	-358.80	-358.80	61.17	0.46
4410.00	1.00	144.98	4373.52	-360.17	-360.17	62.21	0.12

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
4505.00	1.44	118.31	4468.50	-361.42	-361.42	63.74	0.74
4599.00	0.93	137.88	4562.48	-362.54	-362.54	65.29	0.68
4694.00	0.95	242.59	4657.47	-363.48	-363.48	65.11	1.57
4788.00	1.04	272.31	4751.46	-363.81	-363.81	63.56	0.55
4882.00	0.82	287.83	4845.44	-363.57	-363.57	62.07	0.36
4977.00	0.65	314.33	4940.44	-362.98	-362.98	61.04	0.39
5071.00	1.26	339.69	5034.42	-361.64	-361.64	60.29	0.77
5165.00	1.98	330.96	5128.38	-359.25	-359.25	59.15	0.81
5260.00	0.81	326.90	5223.35	-357.25	-357.25	57.98	1.24
5354.00	0.96	249.21	5317.35	-356.97	-356.97	56.89	1.18
5449.00	1.35	230.65	5412.33	-357.97	-357.97	55.28	0.57
5543.00	1.70	218.70	5506.29	-359.76	-359.76	53.55	0.50
5638.00	0.70	249.81	5601.27	-361.06	-361.06	52.12	1.22
5732.00	0.56	220.02	5695.27	-361.60	-361.60	51.29	0.37
5826.00	0.59	181.26	5789.26	-362.43	-362.43	50.99	0.40
5921.00	0.51	136.85	5884.26	-363.23	-363.23	51.27	0.44
6015.00	0.92	138.17	5978.25	-364.10	-364.10	52.06	0.44
6110.00	1.35	118.12	6073.23	-365.19	-365.19	53.55	0.61
6204.00	1.76	105.56	6167.20	-366.10	-366.10	55.92	0.57
6298.00	1.56	29.88	6261.17	-365.38	-365.38	57.95	2.18

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
6393.00	1.69	23.83	6356.13	-362.97	-362.97	59.16	0.22
6488.00	1.67	19.72	6451.09	-360.39	-360.39	60.20	0.13
6582.00	1.24	13.35	6545.06	-358.11	-358.11	60.89	0.49
6677.00	1.28	347.78	6640.04	-356.07	-356.07	60.91	0.59
6724.00	5.88	359.64	6686.93	-353.15	-353.15	60.78	9.87
6771.00	11.11	8.40	6733.40	-346.25	-346.25	61.43	11.43
6818.00	12.12	14.39	6779.44	-336.99	-336.99	63.31	3.35
6865.00	15.82	5.41	6825.05	-325.82	-325.82	65.15	9.10
6912.00	20.73	3.11	6869.66	-311.13	-311.13	66.20	10.56
6960.00	23.01	2.77	6914.21	-293.27	-293.27	67.11	4.76
7007.00	25.08	359.91	6957.13	-274.14	-274.14	67.54	5.04
7054.00	27.53	356.83	6999.26	-253.32	-253.32	66.93	5.98
7101.00	31.68	354.06	7040.11	-230.19	-230.19	65.05	9.28
7148.00	37.48	356.95	7078.80	-203.61	-203.61	63.01	12.82
7195.00	41.27	0.06	7115.13	-173.82	-173.82	62.26	9.09
7242.00	44.89	359.84	7149.45	-141.72	-141.72	62.23	7.70
7289.00	48.90	359.75	7181.56	-107.42	-107.42	62.11	8.53
7337.00	51.85	359.45	7212.17	-70.45	-70.45	61.85	6.17
7384.00	54.78	359.07	7240.25	-32.77	-32.77	61.35	6.28

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
7431.00	58.66	359.31	7266.03	6.51	6.51	60.80	8.26
7478.00	64.15	2.00	7288.52	47.75	47.75	61.29	12.71
7526.00	69.91	3.54	7307.25	91.87	91.87	63.44	12.37
7573.00	74.97	3.92	7321.43	136.57	136.57	66.35	10.78
7620.00	78.52	2.56	7332.20	182.24	182.24	68.93	8.07
7667.00	80.23	2.17	7340.87	228.39	228.39	70.84	3.72
7714.00	82.87	1.81	7347.78	274.85	274.85	72.45	5.68
7751.00	84.79	2.04	7351.75	311.61	311.61	73.69	5.23
7805.00	87.95	359.78	7355.17	365.49	365.49	74.54	7.19
7897.00	88.42	0.21	7358.08	457.44	457.44	74.54	0.70
7988.00	88.59	359.52	7360.45	548.41	548.41	74.33	0.78
8080.00	88.86	359.13	7362.50	640.38	640.38	73.25	0.52
8171.00	89.23	359.11	7364.02	731.36	731.36	71.86	0.41
8263.00	89.36	359.08	7365.15	823.34	823.34	70.40	0.15
8355.00	89.77	359.05	7365.85	915.32	915.32	68.90	0.44
8447.00	90.74	358.50	7365.45	1007.30	1007.30	66.93	1.22
8538.00	90.77	357.14	7364.25	1098.22	1098.22	63.47	1.49
8630.00	90.67	358.03	7363.09	1190.14	1190.14	59.60	0.97
8721.00	89.26	358.06	7363.14	1281.08	1281.08	56.49	1.55
8813.00	88.93	358.97	7364.60	1373.04	1373.04	54.11	1.05

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
8904.00	89.66	0.10	7365.72	1464.02	1464.02	53.37	1.48
8996.00	91.31	359.76	7364.93	1556.02	1556.02	53.26	1.83
9088.00	90.44	0.63	7363.53	1648.00	1648.00	53.57	1.34
9179.00	90.07	359.24	7363.13	1739.00	1739.00	53.46	1.59
9271.00	88.96	358.90	7363.91	1830.98	1830.98	51.96	1.26
9362.00	90.07	358.18	7364.68	1921.95	1921.95	49.64	1.45
9454.00	90.64	358.11	7364.12	2013.90	2013.90	46.67	0.63
9546.00	87.95	357.51	7365.25	2105.82	2105.82	43.15	3.00
9637.00	87.82	359.22	7368.61	2196.71	2196.71	40.55	1.88
9729.00	91.04	1.65	7369.53	2288.69	2288.69	41.24	4.39
9821.00	91.18	1.79	7367.75	2380.63	2380.63	44.01	0.21
9912.00	88.39	358.99	7368.09	2471.61	2471.61	44.63	4.34
10004.00	89.26	0.41	7369.98	2563.58	2563.58	44.16	1.81
10098.00	91.92	2.74	7369.01	2657.53	2657.53	46.75	3.76
10193.00	91.61	2.12	7366.09	2752.40	2752.40	50.78	0.73
10287.00	90.71	1.08	7364.19	2846.34	2846.34	53.40	1.47
10381.00	90.57	2.08	7363.14	2940.30	2940.30	55.99	1.08
10476.00	91.51	2.17	7361.41	3035.21	3035.21	59.51	0.99
10570.00	90.17	1.78	7360.04	3129.15	3129.15	62.76	1.49

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
10664.00	91.27	3.34	7358.85	3223.04	3223.04	66.96	2.03
10758.00	88.59	0.97	7358.97	3316.96	3316.96	70.50	3.81
10853.00	88.72	0.79	7361.19	3411.92	3411.92	71.96	0.24
10947.00	88.99	1.07	7363.06	3505.89	3505.89	73.48	0.41
11041.00	89.33	0.87	7364.44	3599.87	3599.87	75.07	0.41
11136.00	87.52	359.53	7367.05	3694.82	3694.82	75.41	2.37
11230.00	89.26	359.75	7369.70	3788.78	3788.78	74.82	1.87
11324.00	89.87	359.28	7370.41	3882.77	3882.77	74.03	0.81
11419.00	90.27	359.18	7370.30	3977.76	3977.76	72.76	0.44
11513.00	90.20	357.59	7369.92	4071.72	4071.72	70.11	1.70
11607.00	90.03	358.11	7369.72	4165.66	4165.66	66.59	0.59
11701.00	91.11	359.39	7368.79	4259.63	4259.63	64.55	1.78
11796.00	90.94	0.87	7367.09	4354.61	4354.61	64.76	1.56
11890.00	89.97	2.36	7366.34	4448.56	4448.56	67.41	1.90
11984.00	89.66	2.14	7366.65	4542.49	4542.49	71.10	0.40
12079.00	89.90	1.88	7367.01	4637.43	4637.43	74.43	0.37
12173.00	88.49	1.10	7368.33	4731.39	4731.39	76.88	1.71
12267.00	90.64	2.29	7369.05	4825.34	4825.34	79.67	2.61
12362.00	89.30	2.11	7369.10	4920.26	4920.26	83.32	1.43
12457.00	88.99	1.05	7370.52	5015.22	5015.22	85.94	1.16

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
12552.00	88.56	1.10	7372.55	5110.18	5110.18	87.72	0.46
12646.00	89.13	1.51	7374.45	5204.13	5204.13	89.85	0.75
12741.00	88.79	0.86	7376.18	5299.10	5299.10	91.81	0.77
12835.00	90.34	0.38	7376.90	5393.09	5393.09	92.82	1.72
12929.00	89.97	0.21	7376.65	5487.08	5487.08	93.31	0.43
13024.00	90.17	359.97	7376.54	5582.08	5582.08	93.46	0.33
13118.00	90.94	0.66	7375.63	5676.08	5676.08	93.97	1.10
13212.00	91.61	0.35	7373.54	5770.05	5770.05	94.80	0.78
13307.00	91.75	0.43	7370.76	5865.01	5865.01	95.44	0.16
13401.00	91.48	359.84	7368.11	5958.97	5958.97	95.66	0.69
13496.00	92.45	359.91	7364.86	6053.91	6053.91	95.45	1.03
13590.00	88.96	358.99	7363.70	6147.88	6147.88	94.56	3.84
13684.00	89.87	358.78	7364.66	6241.86	6241.86	92.73	0.99
13783.00	89.63	358.88	7365.10	6340.84	6340.84	90.71	0.26
13873.00	88.66	359.07	7366.44	6430.81	6430.81	89.10	1.10
13967.00	89.02	359.42	7368.34	6524.78	6524.78	87.86	0.54
14061.00	88.15	357.43	7370.66	6618.72	6618.72	85.29	2.31
14156.00	88.92	358.57	7373.08	6713.62	6713.62	81.98	1.45
14250.00	89.63	358.04	7374.27	6807.58	6807.58	79.21	0.94

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
14339.00	89.87	358.42	7374.66	6896.53	6896.53	76.46	0.50

5" = 100' FEET TVD