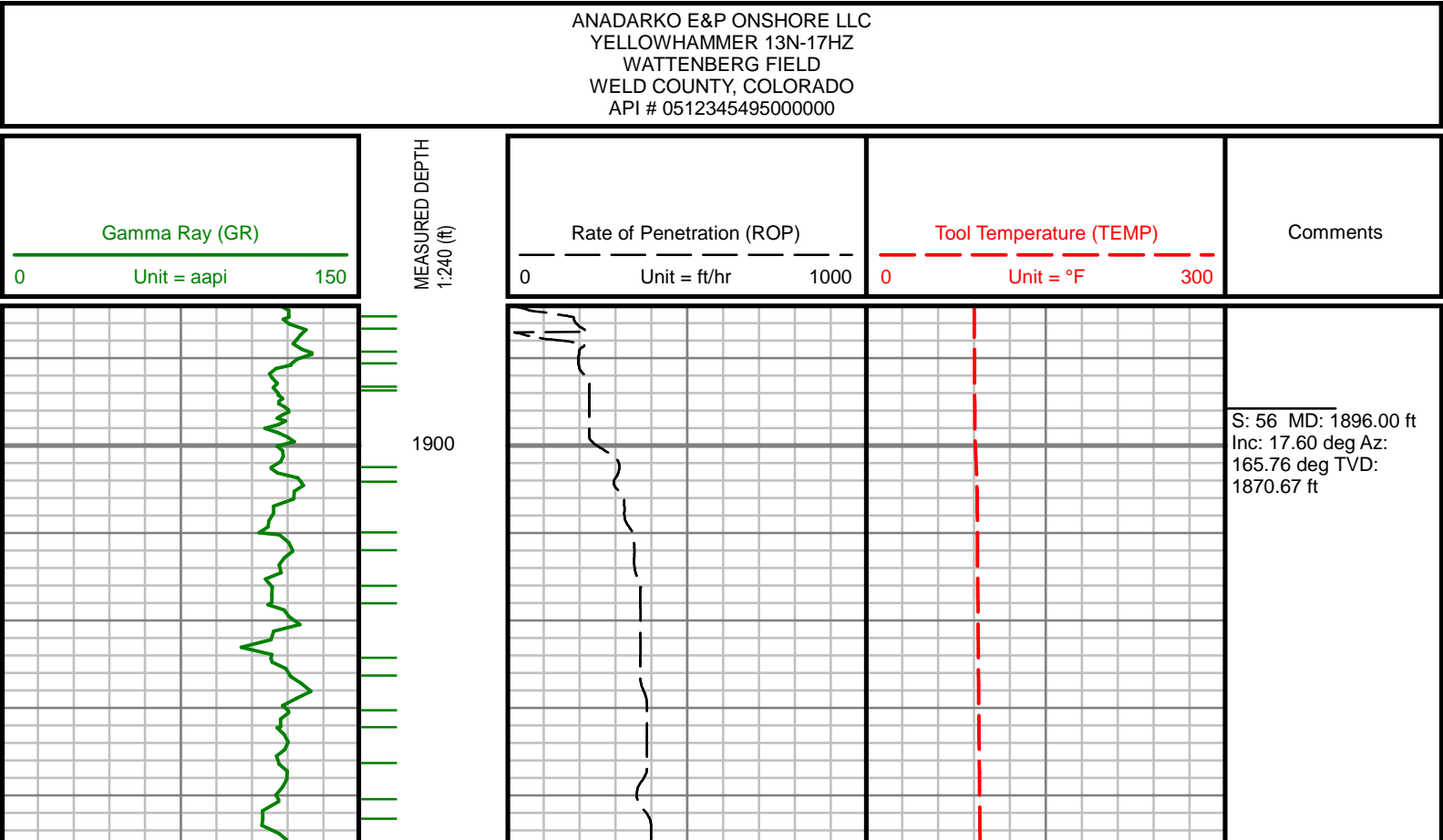
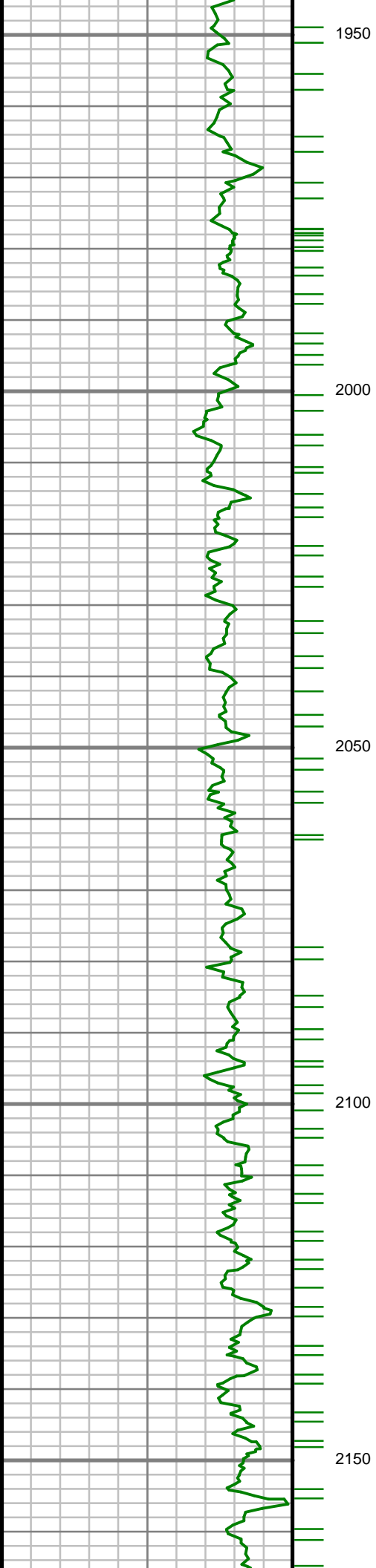


Remarks
ANADARKO E&P ONSHORE LLC AFE# 2124803
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.006677
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER=128-008 / CONTROLLER=738 / MWD EYE=1508 / GAMMA RAY=1420
BIT TO SENSOR OFFSETS: MWD EYE=54.74 FT. / GAMMA RAY=58.84 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER=78-207 / CONTROLLER=209 / MWD EYE=1445 / GAMMA RAY=1413
BIT TO SENSOR OFFSETS: MWD EYE=58.76 FT. / GAMMA RAY=61.96 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
TEMP = TOOL TEMPERATURE

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.

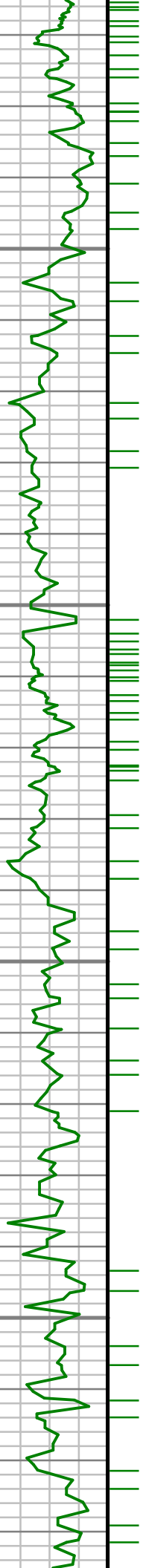




S: 57 MD: 1979.00 ft
Inc: 16.81 deg Az:
160.01 deg TVD:
1949.96 ft

S: 58 MD: 2064.00 ft
Inc: 18.18 deg Az:
162.38 deg TVD:
2031.03 ft

S: 59 MD: 2149.00 ft
Inc: 17.50 deg Az:
161.86 deg TVD:
2111.94 ft



2200

2250

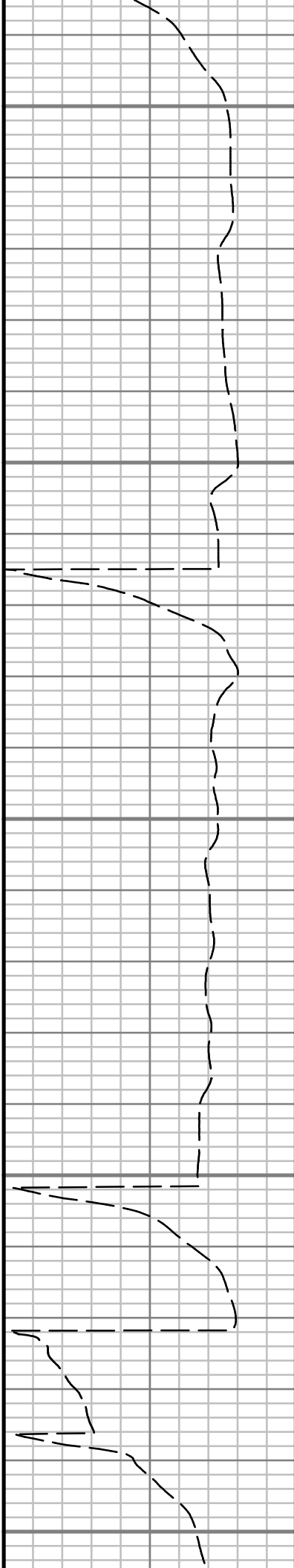
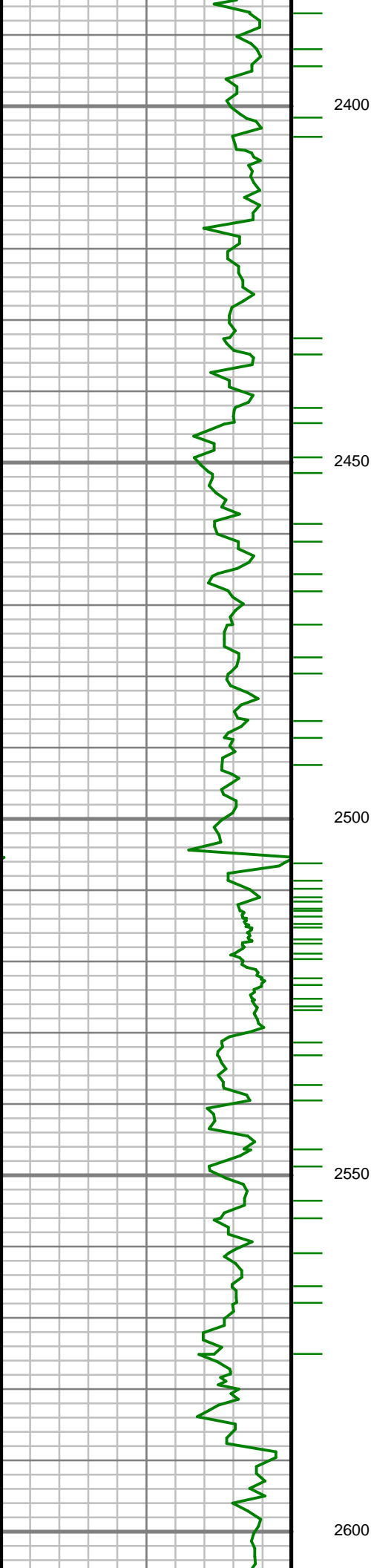
300

350



S: 60 MD: 2237.00 ft
Inc: 18.54 deg Az:
159.57 deg TVD:
2195.63 ft

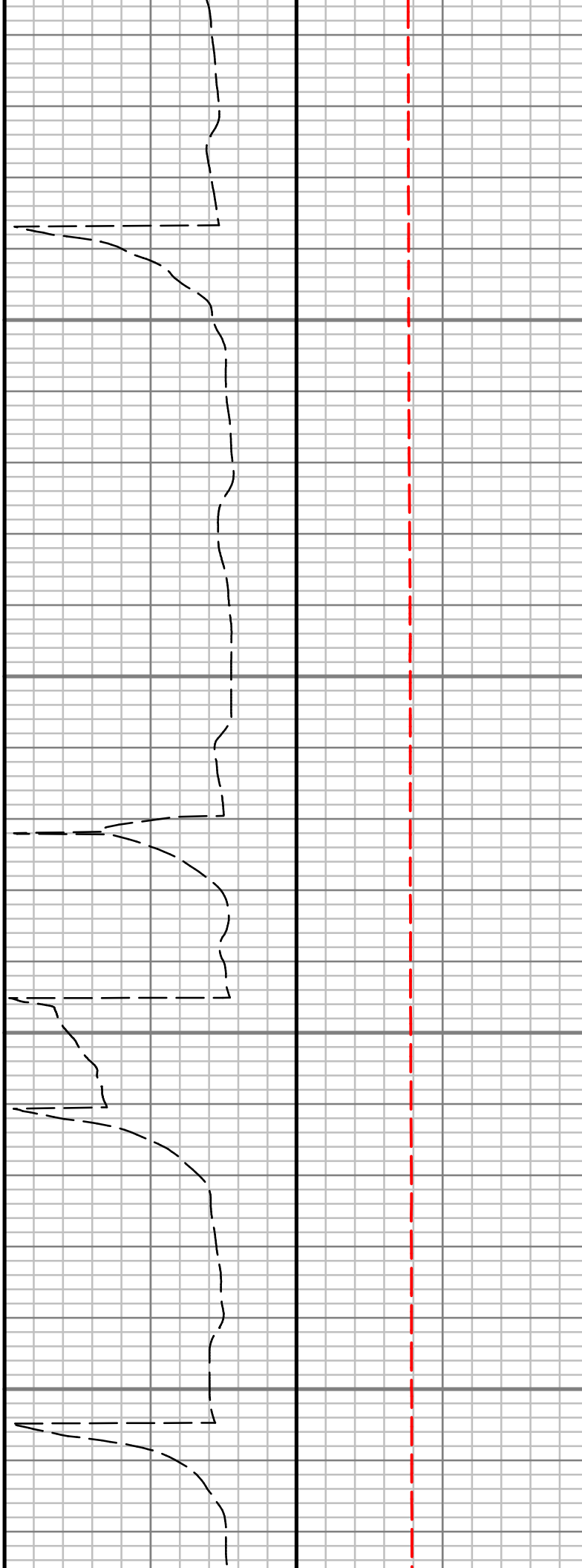
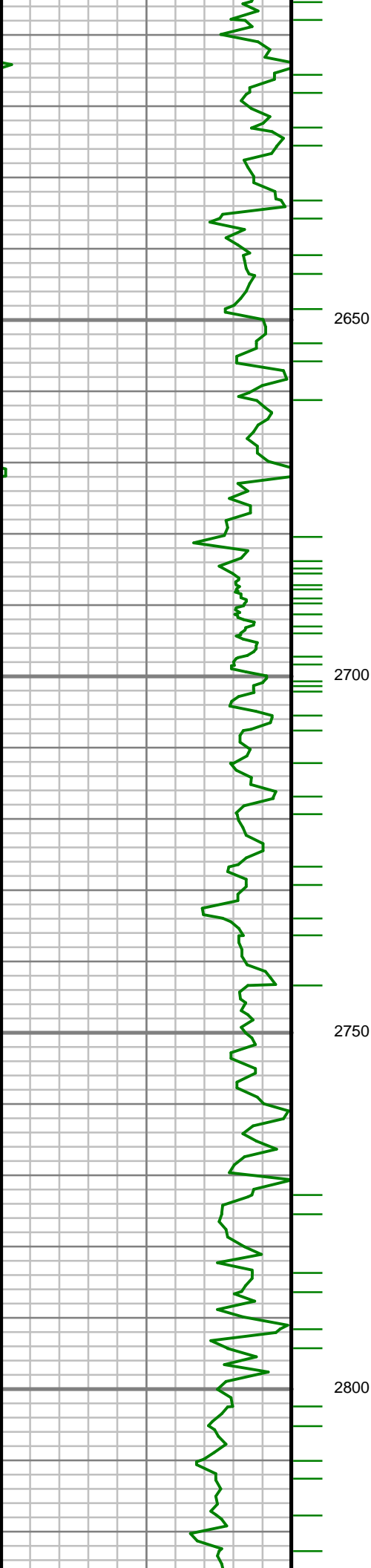
S: 61 MD: 2322.00 ft
Inc: 20.14 deg Az:
162.28 deg TVD:
2275.83 ft



S: 62 MD: 2407.00 ft
Inc: 20.09 deg Az:
162.24 deg TVD:
2355.65 ft

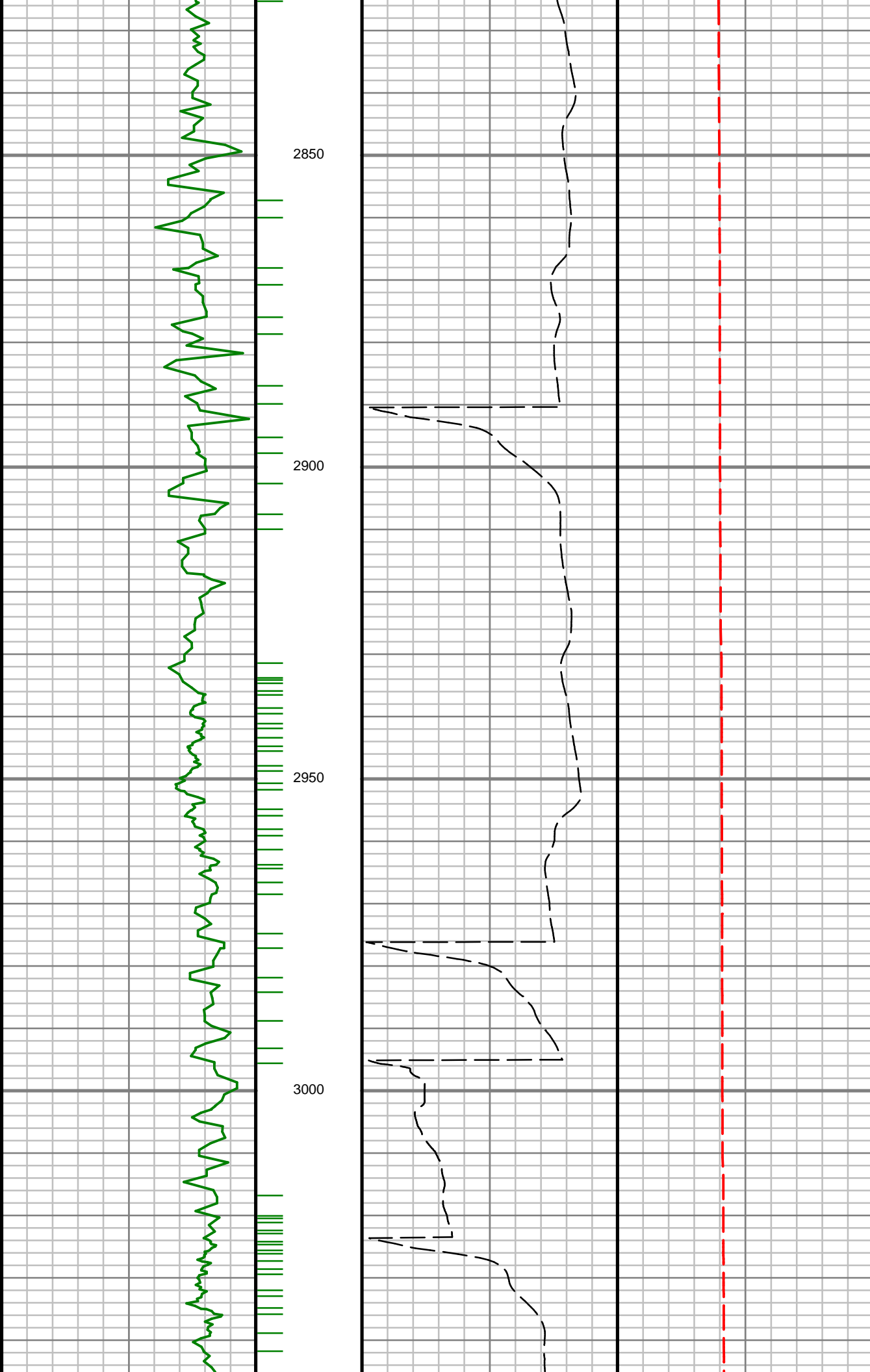
S: 63 MD: 2493.00 ft
Inc: 18.91 deg Az:
162.04 deg TVD:
2436.72 ft

S: 64 MD: 2578.00 ft
Inc: 19.11 deg Az:
159.32 deg TVD:
2517.08 ft



S: 65 MD: 2662.00 ft
Inc: 18.97 deg Az:
158.33 deg TVD:
2596.49 ft

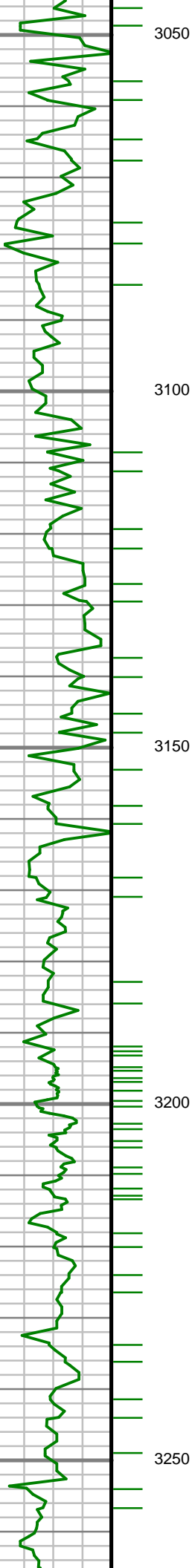
S: 66 MD: 2747.00 ft
Inc: 18.78 deg Az:
160.69 deg TVD:
2676.92 ft



S: 67 MD: 2833.00 ft
Inc: 18.54 deg Az:
163.69 deg TVD:
2758.40 ft

S: 68 MD: 2918.00 ft
Inc: 17.03 deg Az:
162.66 deg TVD:
2839.33 ft

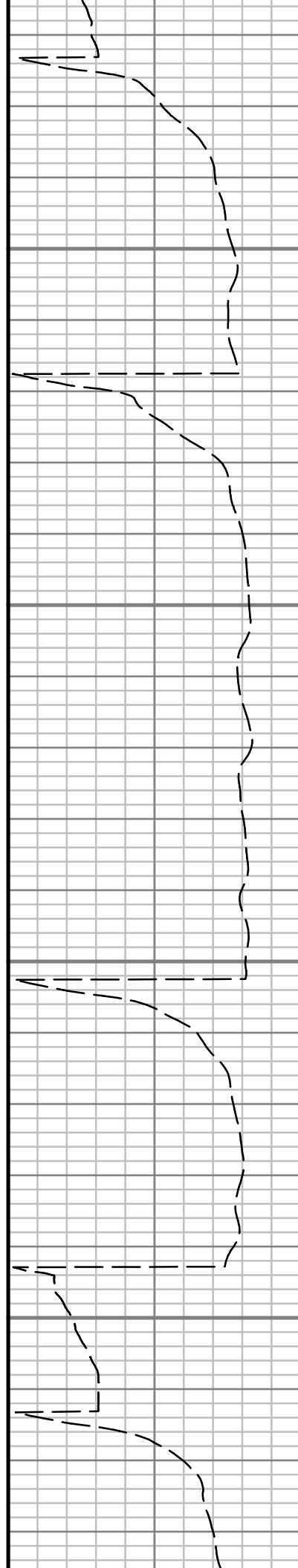
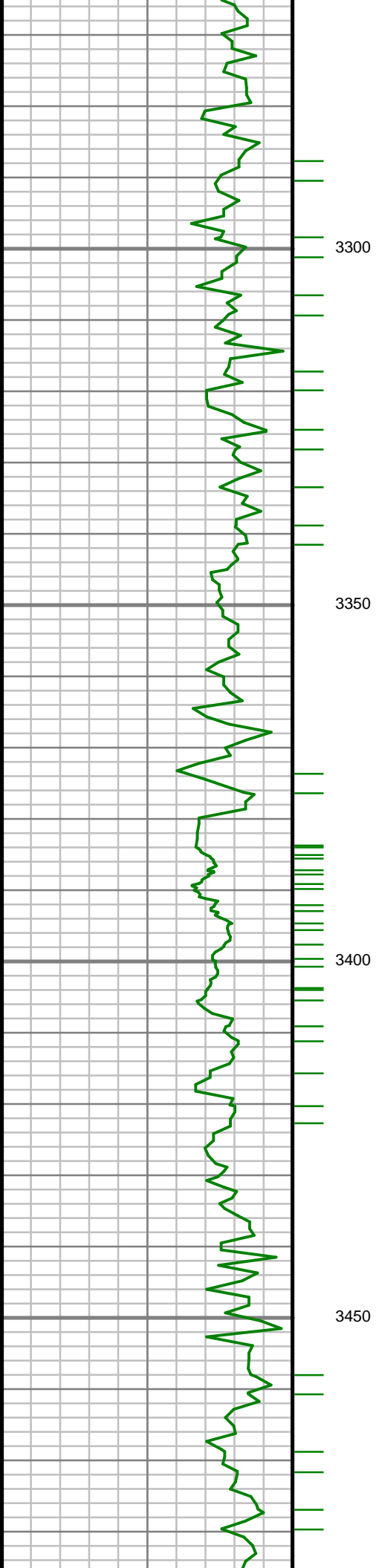
S: 69 MD: 3003.00 ft
Inc: 16.08 deg Az:
164.40 deg TVD:
2920.81 ft



S: 70 MD: 3088.00 ft
Inc: 18.15 deg Az:
166.53 deg TVD:
3002.04 ft

S: 71 MD: 3174.00 ft
Inc: 17.56 deg Az:
166.67 deg TVD:
3083.90 ft

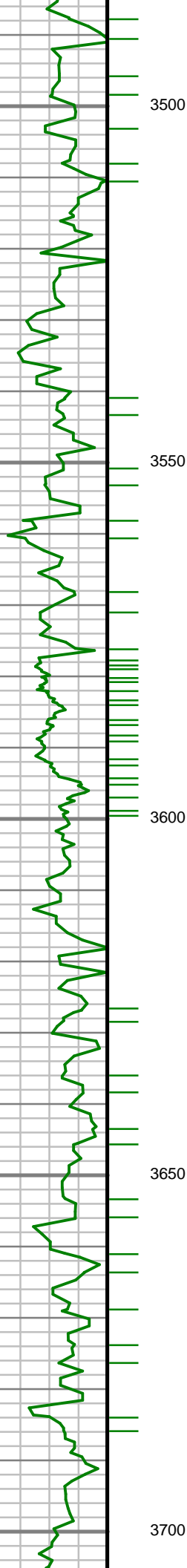
S: 72 MD: 3259.00 ft
Inc: 17.80 deg Az:
166.16 deg TVD:



166.16 deg TVD:
3164.88 ft

S: 73 MD: 3344.00 ft
Inc: 17.81 deg Az:
166.73 deg TVD:
3245.81 ft

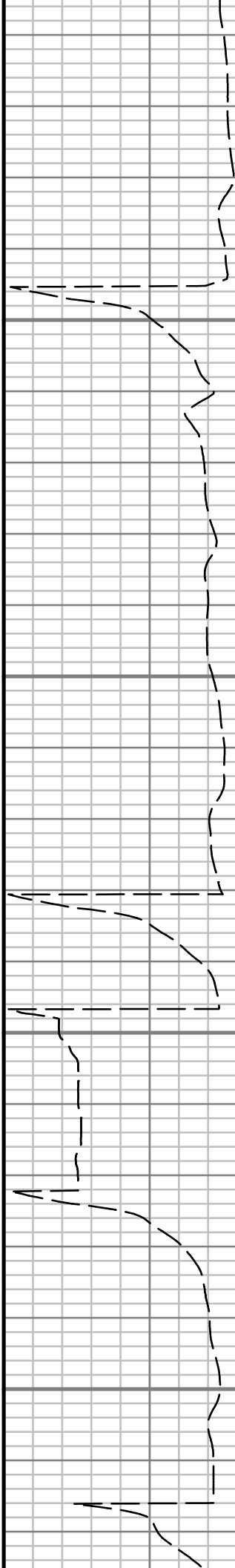
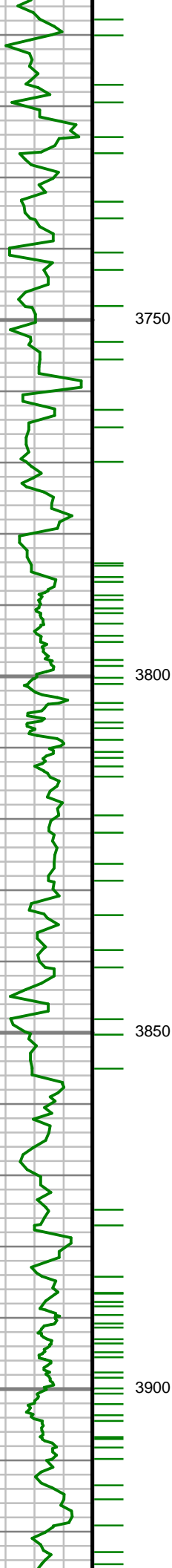
S: 74 MD: 3428.00 ft
Inc: 16.38 deg Az:
165.50 deg TVD:
3326.10 ft



S: 75 MD: 3515.00 ft
Inc: 18.02 deg Az:
165.89 deg TVD:
3409.21 ft

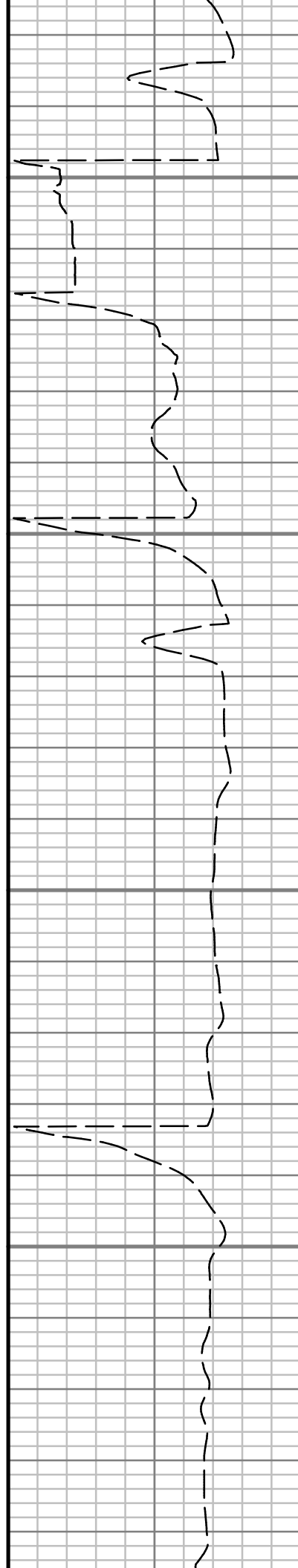
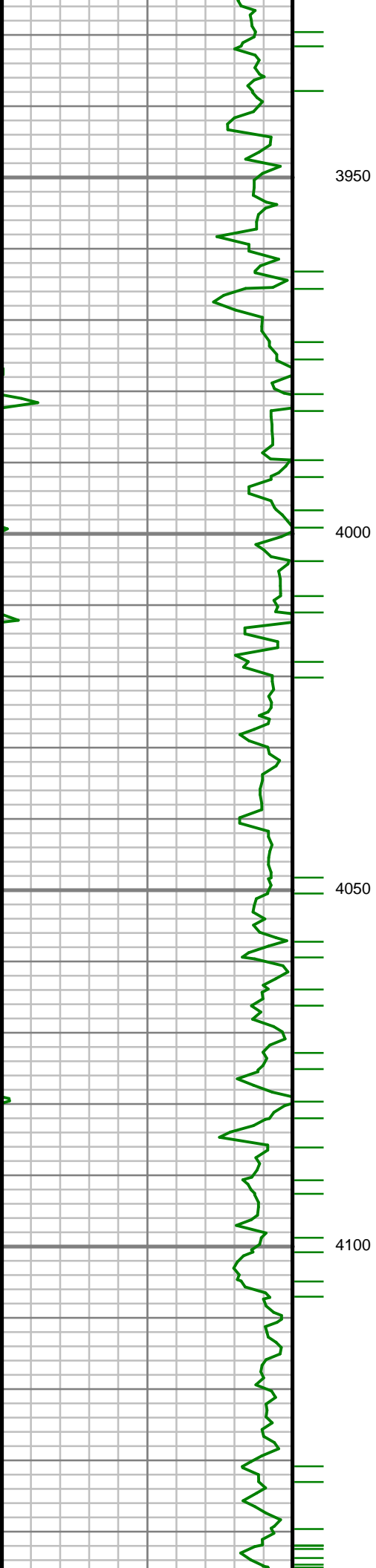
S: 76 MD: 3600.00 ft
Inc: 16.00 deg Az:
164.94 deg TVD:
3490.49 ft

S: 77 MD: 3686.00 ft
Inc: 18.10 deg Az:
163.79 deg TVD:
3572.70 ft



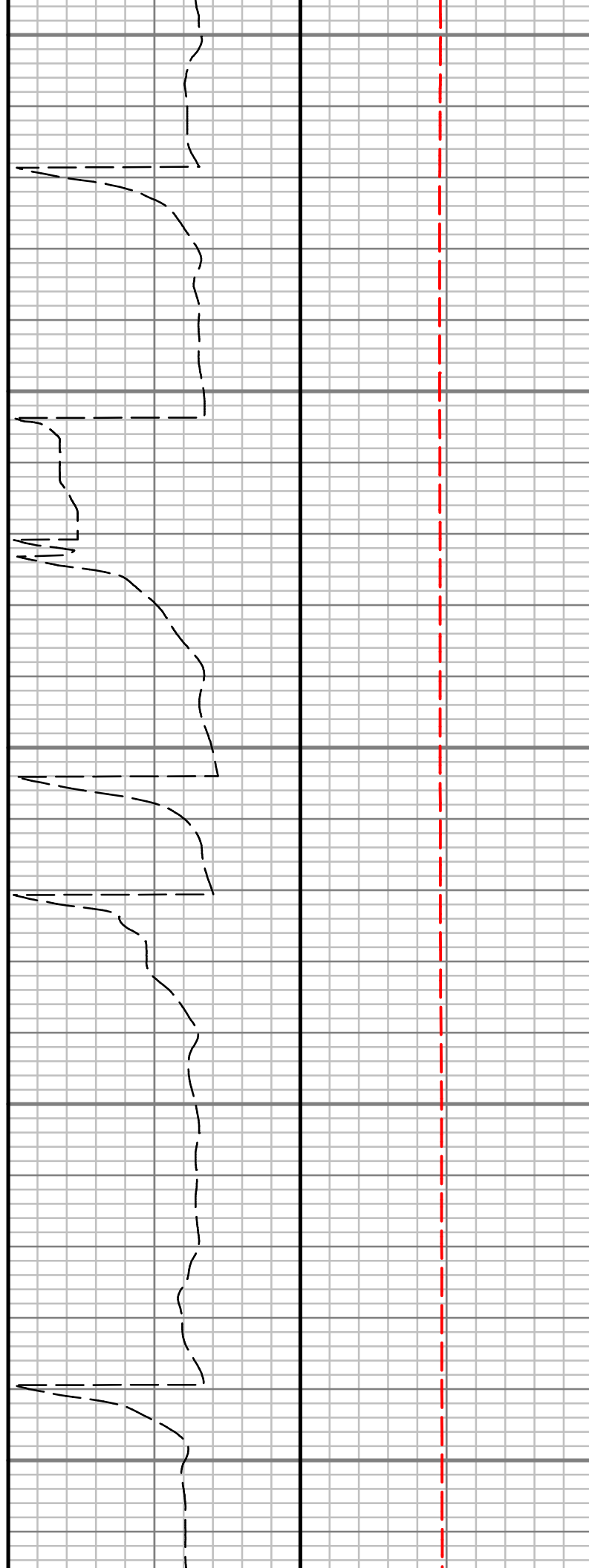
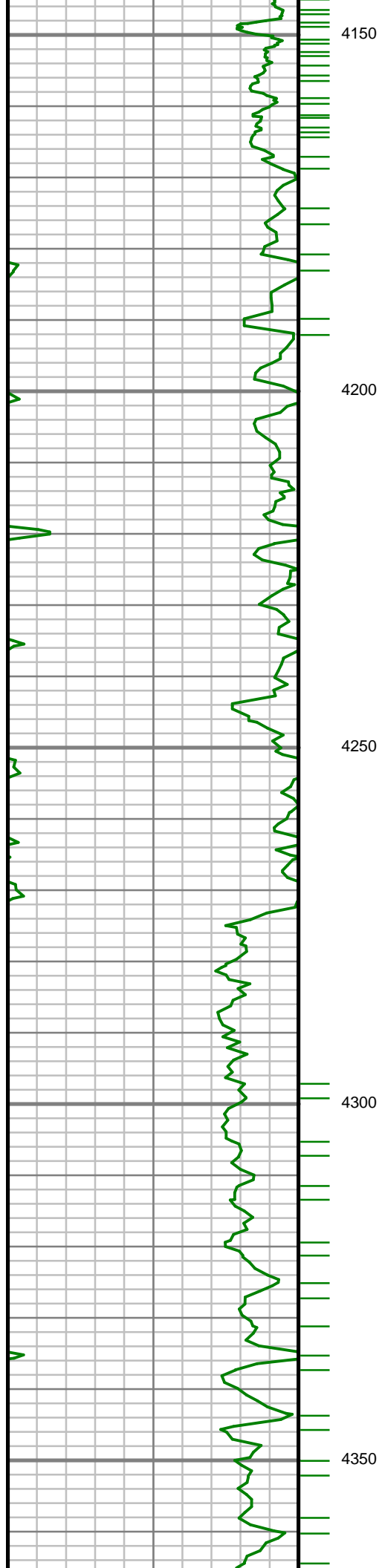
S: 78 MD: 3771.00 ft
Inc: 16.28 deg Az:
164.76 deg TVD:
3653.90 ft

S: 79 MD: 3856.00 ft
Inc: 16.05 deg Az:
161.37 deg TVD:
3735.54 ft

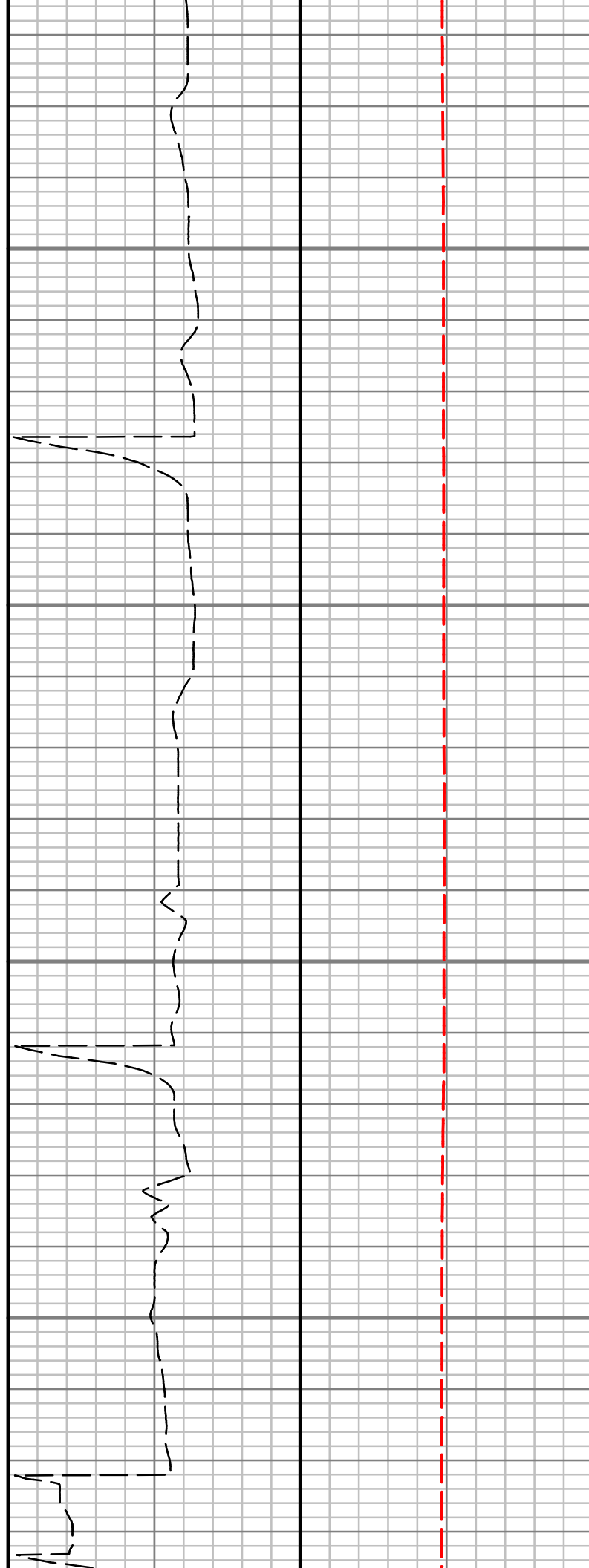
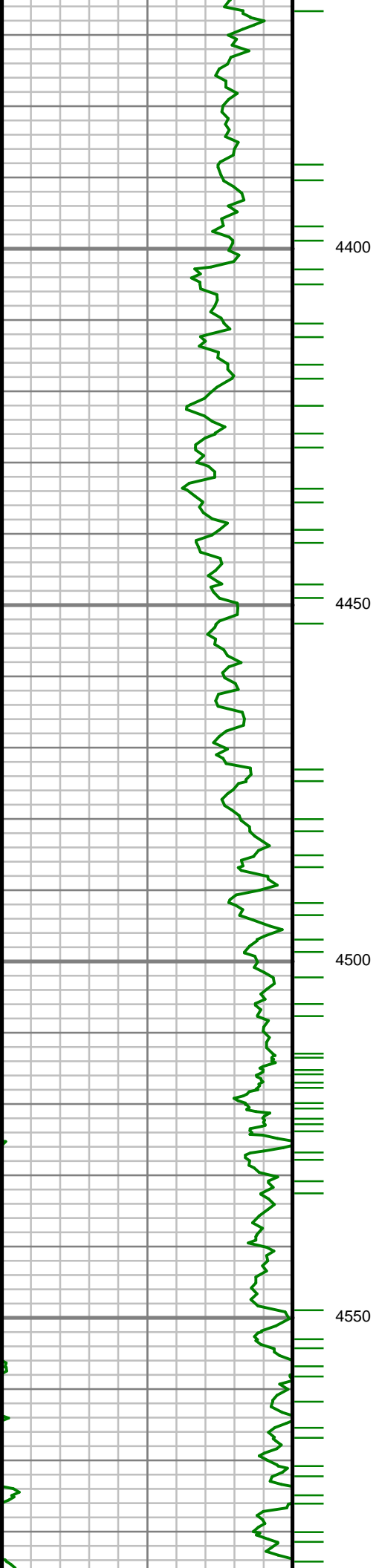


S: 80 MD: 4026.00 ft
Inc: 15.31 deg Az:
157.26 deg TVD:
3899.22 ft

S: 81 MD: 4111.00 ft
Inc: 13.15 deg Az:
157.83 deg TVD:
3881.61 ft



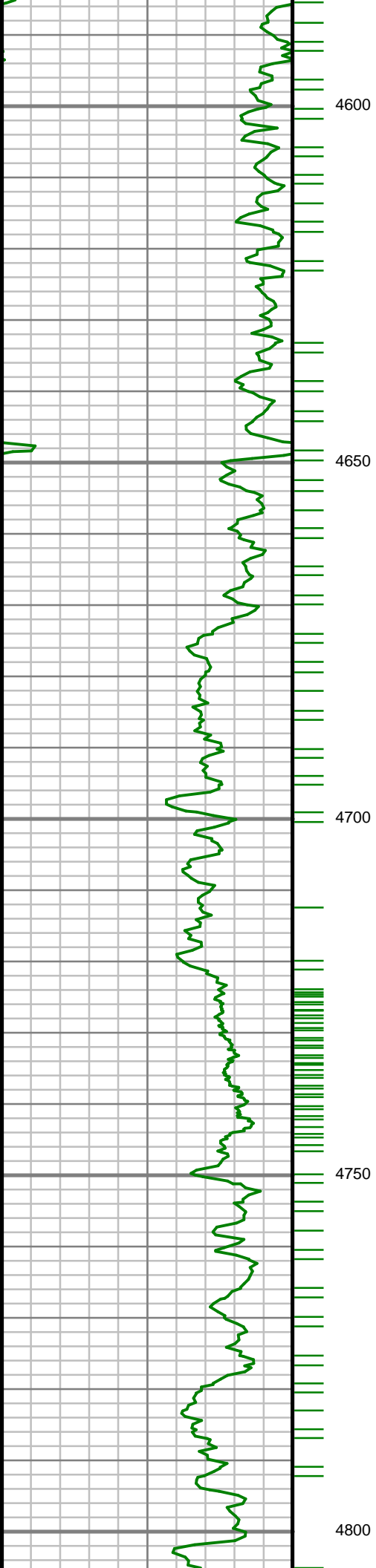
S: 82 MD: 4282.00 ft
Inc: 11.79 deg Az:
154.95 deg TVD:
4148.57 ft



S: 83 MD: 4369.00 ft
Inc: 10.14 deg Az:
153.82 deg TVD:
4233.98 ft

S: 84 MD: 4454.00 ft
Inc: 9.23 deg Az:
154.26 deg TVD:
4317.77 ft

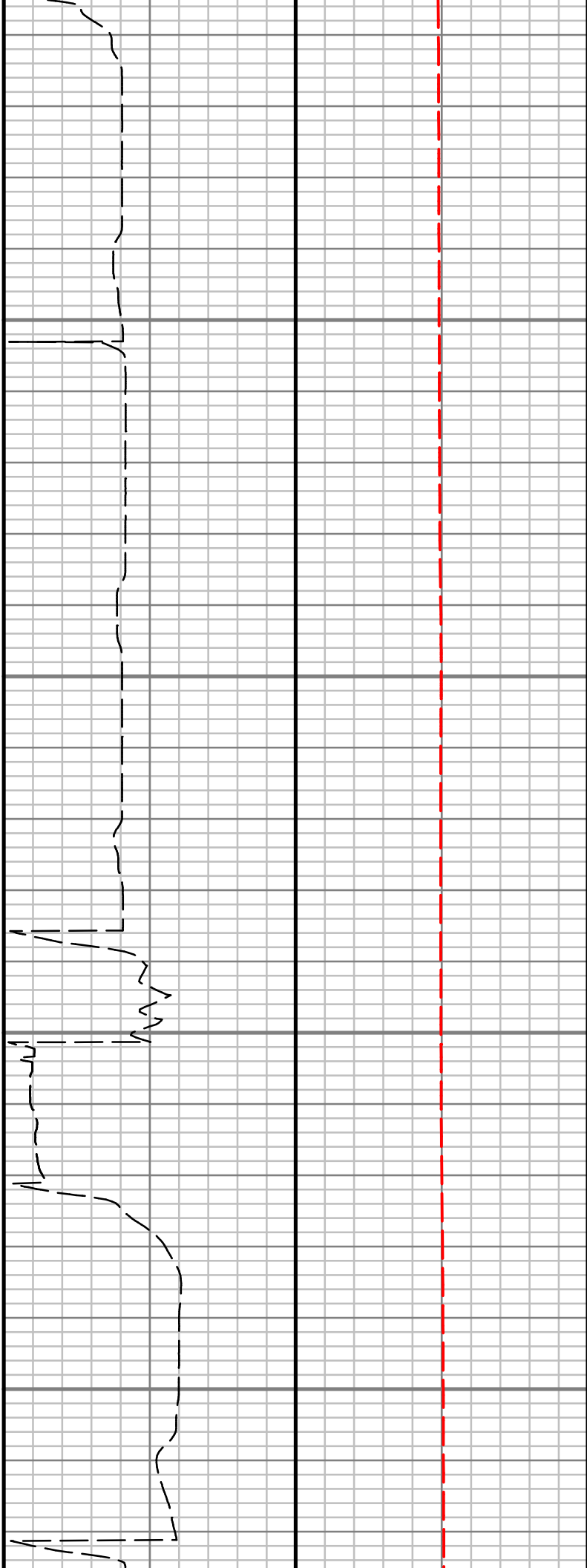
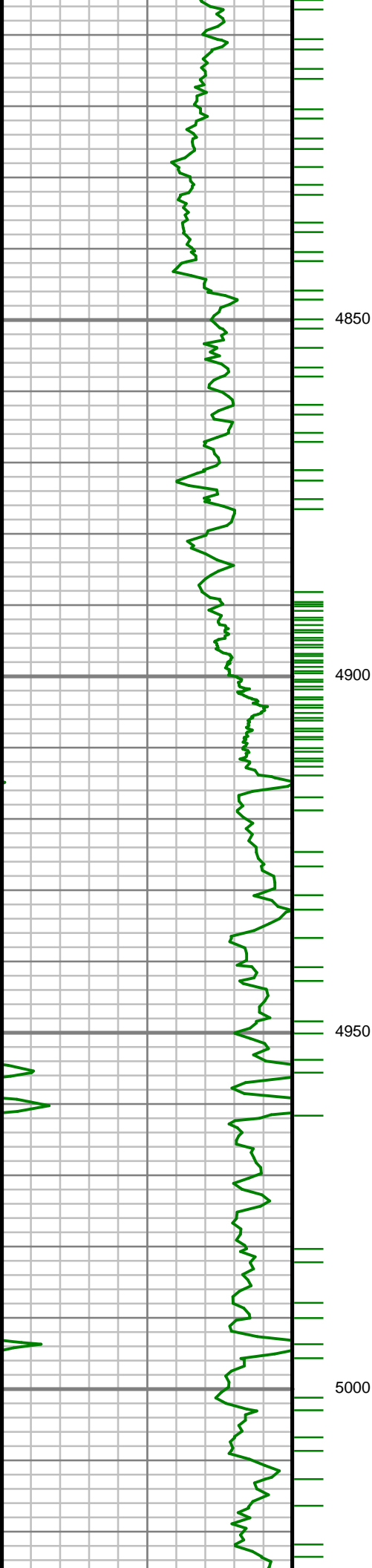
S: 85 MD: 4539.00 ft
Inc: 8.19 deg Az:
155.48 deg TVD:
4401.78 ft



S: 86 MD: 4624.00 ft
Inc: 5.97 deg Az:
154.85 deg TVD:
4486.13 ft

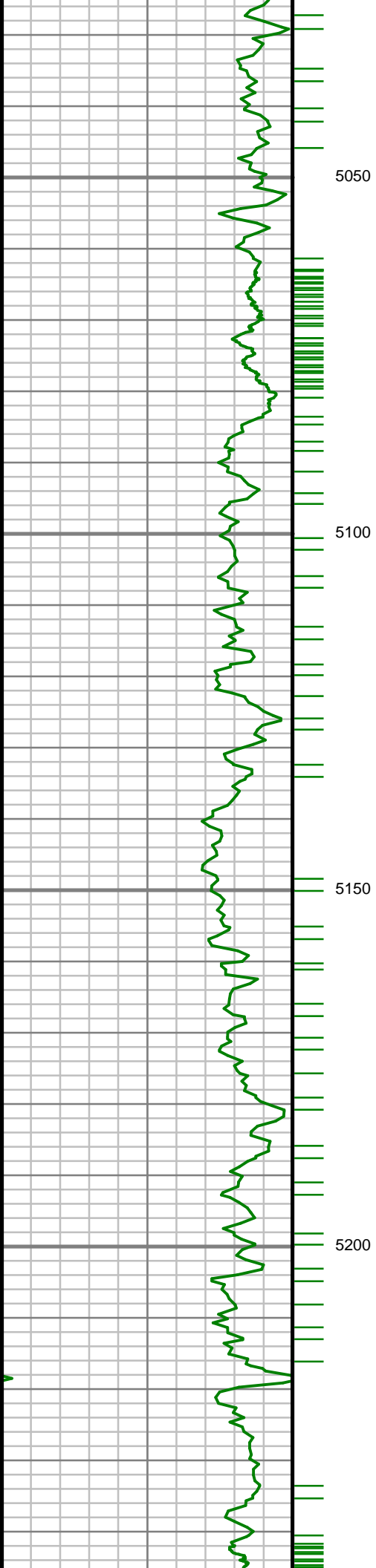
S: 87 MD: 4708.00 ft
Inc: 5.73 deg Az:
158.01 deg TVD:
4569.69 ft

S: 88 MD: 4793.00 ft
Inc: 4.24 deg Az:
163.13 deg TVD:
4654.37 ft



S: 89 MD: 4878.00 ft
Inc: 3.14 deg Az:
164.36 deg TVD:
4739.19 ft

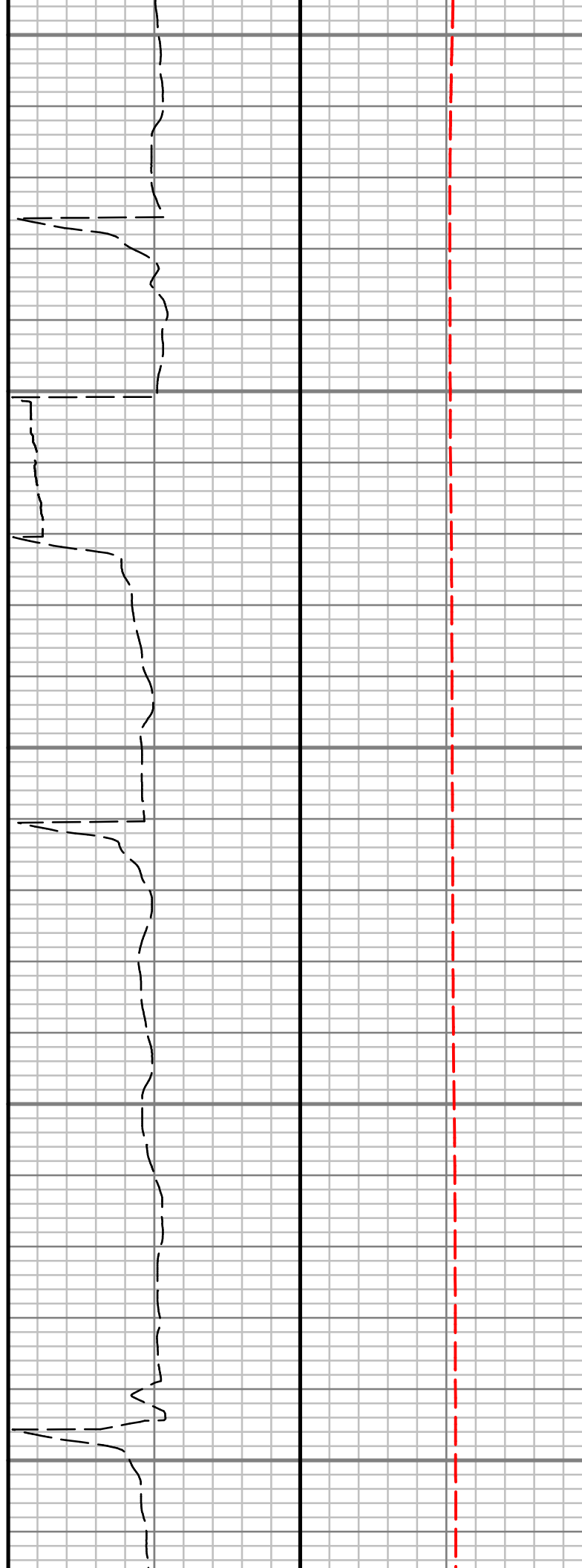
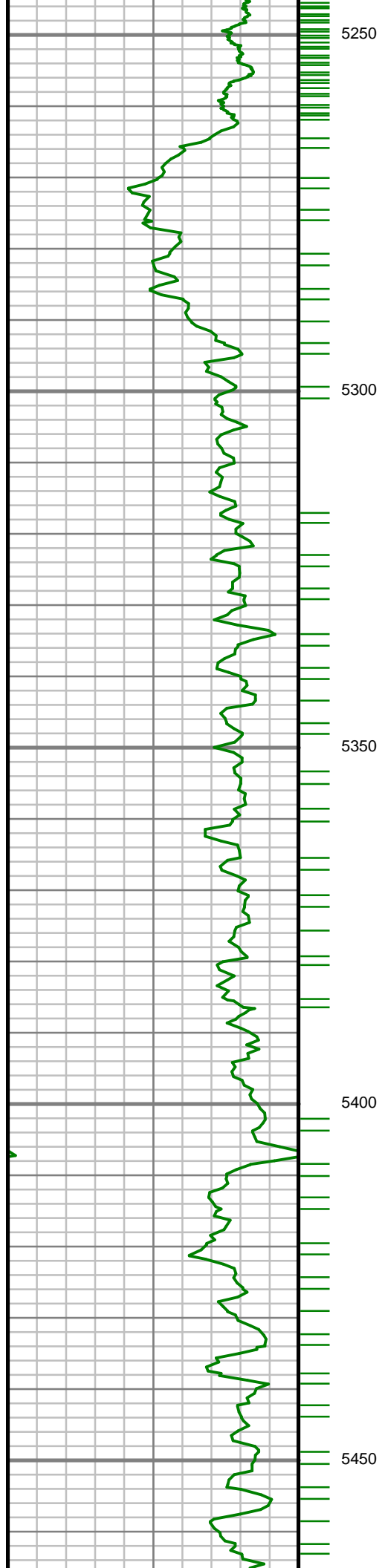
S: 90 MD: 4963.00 ft
Inc: 2.78 deg Az:
195.03 deg TVD:
4824.08 ft



S: 91 MD: 5049.00 ft
Inc: 2.39 deg Az:
214.90 deg TVD:
4910.00 ft

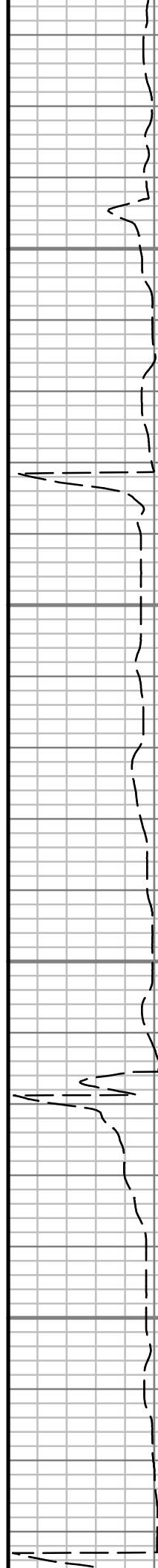
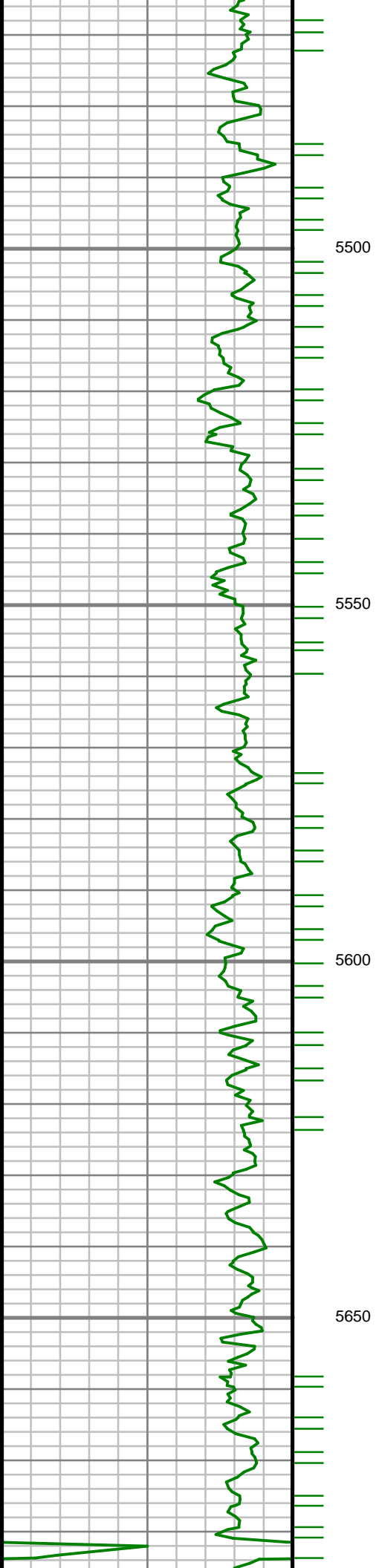
S: 92 MD: 5133.00 ft
Inc: 1.35 deg Az:
267.34 deg TVD:
4993.96 ft

S: 93 MD: 5219.00 ft
Inc: 1.83 deg Az:
282.15 deg TVD:
5079.92 ft



S: 94 MD: 5302.00 ft
Inc: 1.48 deg Az:
318.06 deg TVD:
5162.89 ft

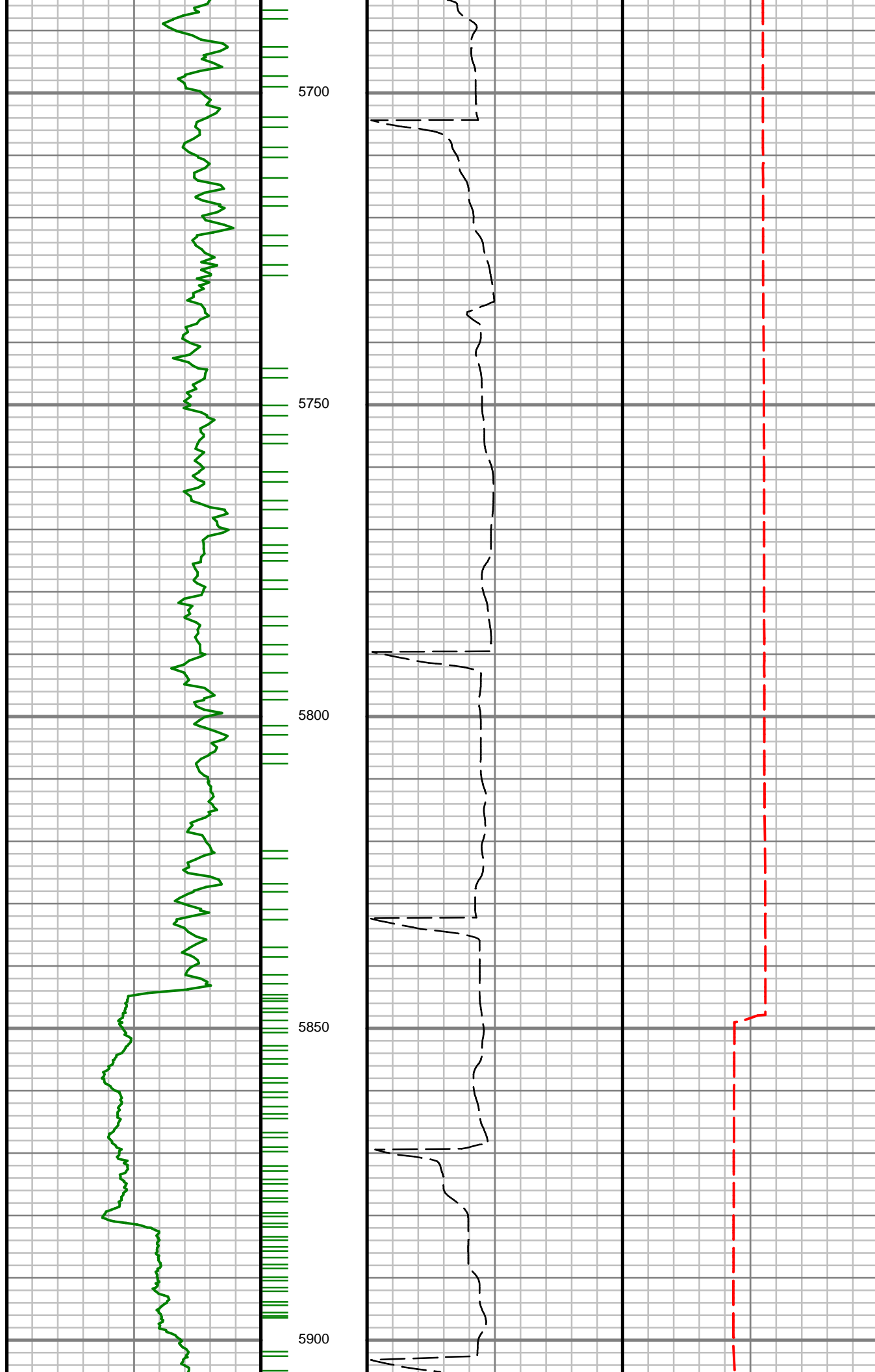
S: 95 MD: 5387.00 ft
Inc: 1.87 deg Az: 3.63
deg TVD: 5247.86 ft



S: 96 MD: 5473.00 ft
Inc: 1.37 deg Az:
350.15 deg TVD:
5333.82 ft

S: 97 MD: 5558.00 ft
Inc: 1.05 deg Az:
346.94 deg TVD:
5418.80 ft

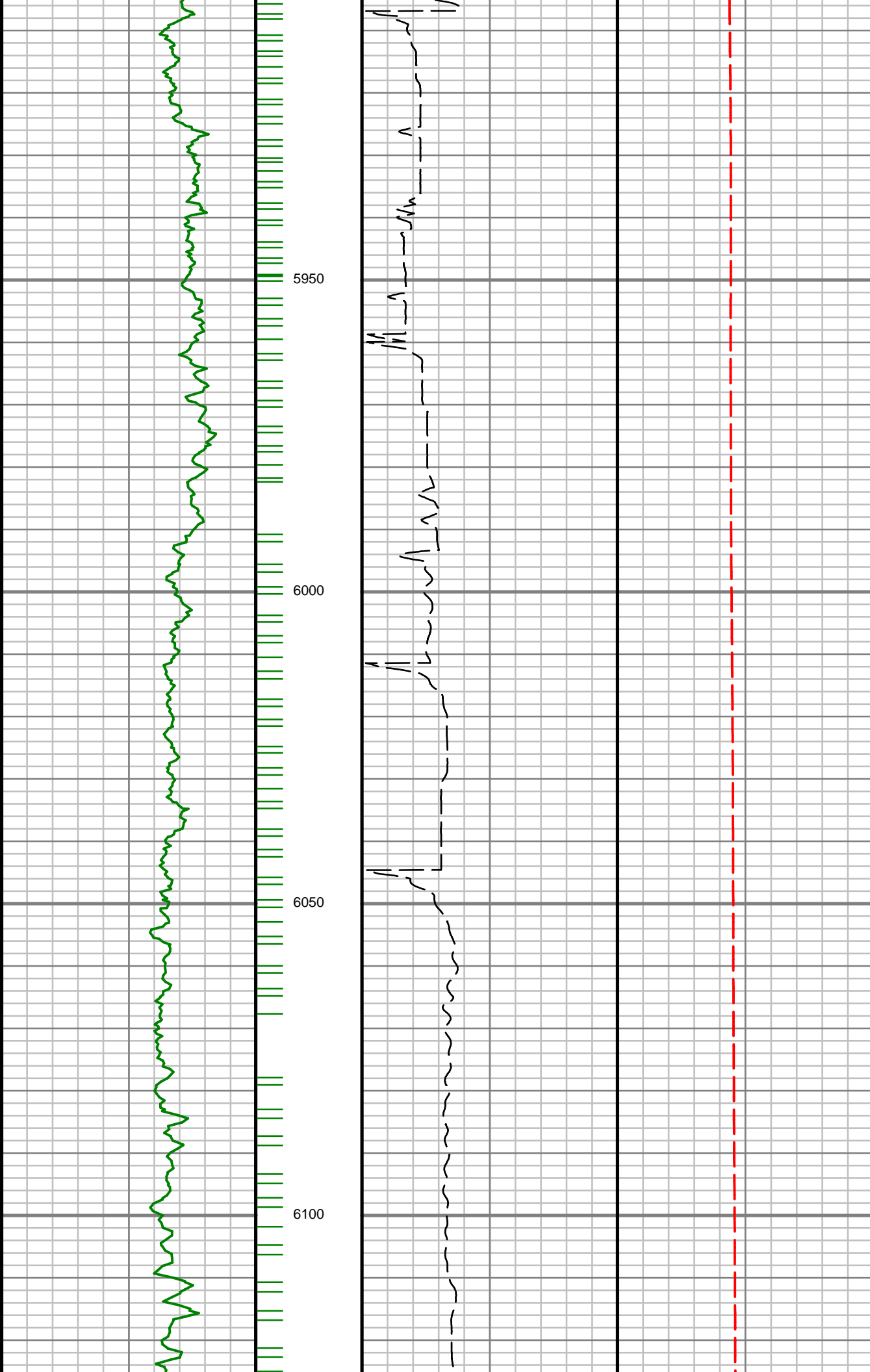
S: 98 MD: 5643.00 ft
Inc: 0.89 deg Az:
335.55 deg TVD:
5503.79 ft



S: 99 MD: 5728.00 ft
Inc: 0.81 deg Az:
319.51 deg TVD:
5588.78 ft

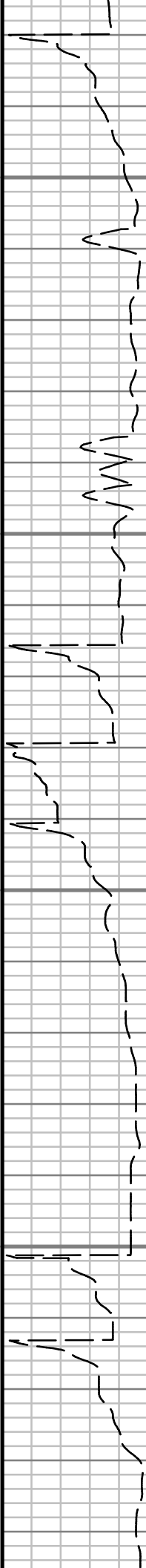
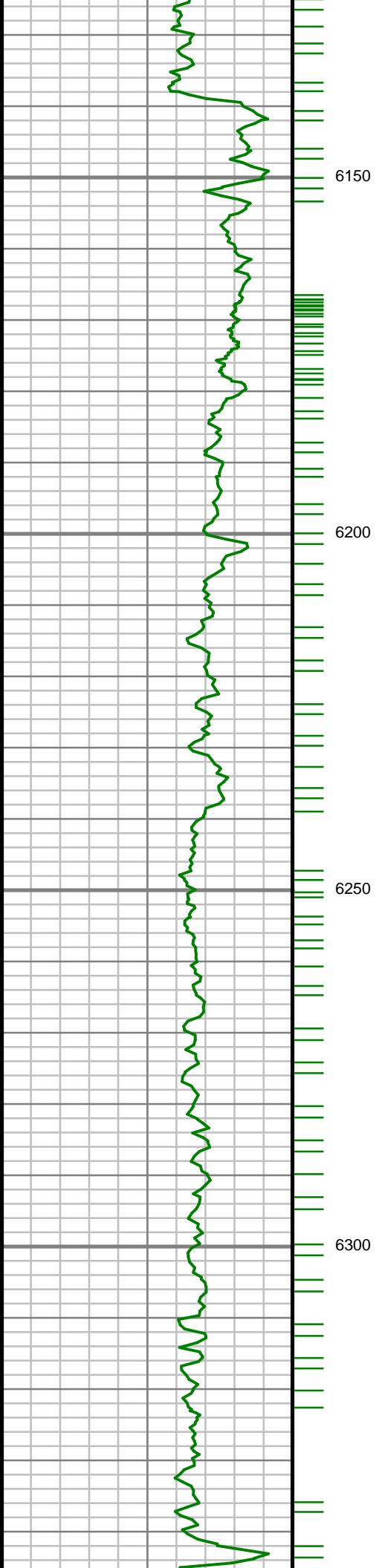
S: 100 MD: 5813.00 ft
Inc: 0.75 deg Az:
311.58 deg TVD:
5673.77 ft

S: 101 MD: 5846.00 ft
Inc: 0.92 deg Az:
312.14 deg TVD:
5706.77 ft



S: 102 MD: 5984.00 ft
Inc: 0.62 deg Az:
321.38 deg TVD:
5844.76 ft

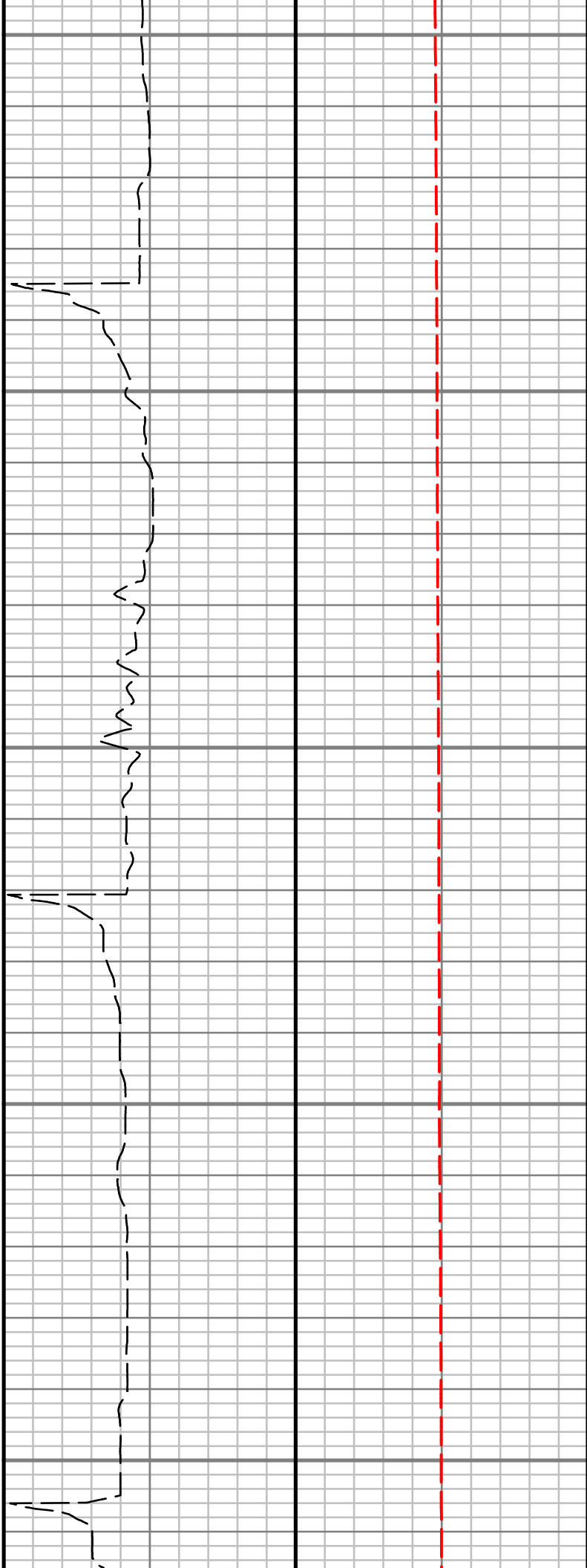
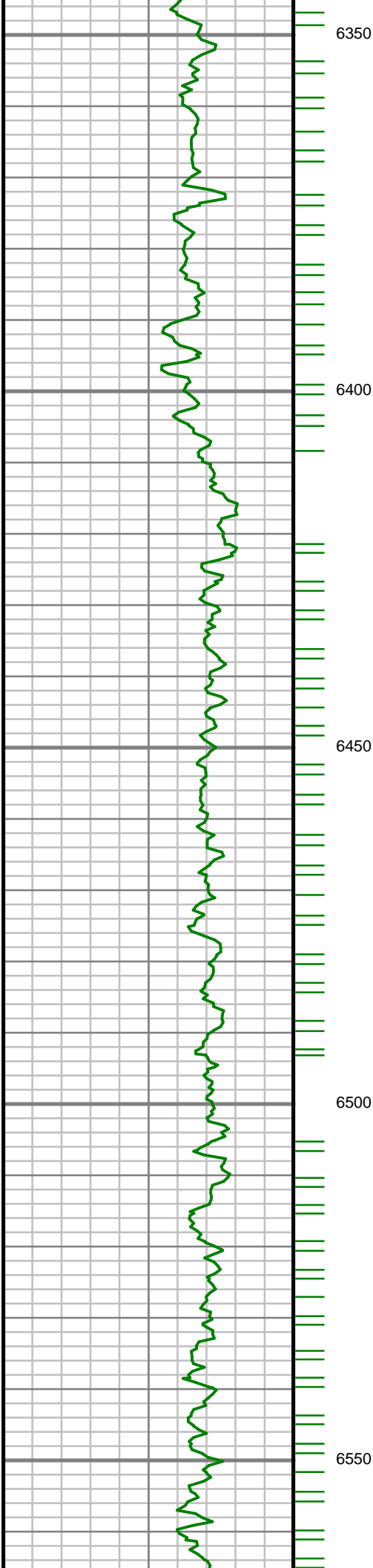
S: 103 MD: 6069.00 ft
Inc: 0.60 deg Az:
303.54 deg TVD:
5929.75 ft



S: 104 MD: 6154.00 ft
Inc: 0.47 deg Az:
281.95 deg TVD:
6014.75 ft

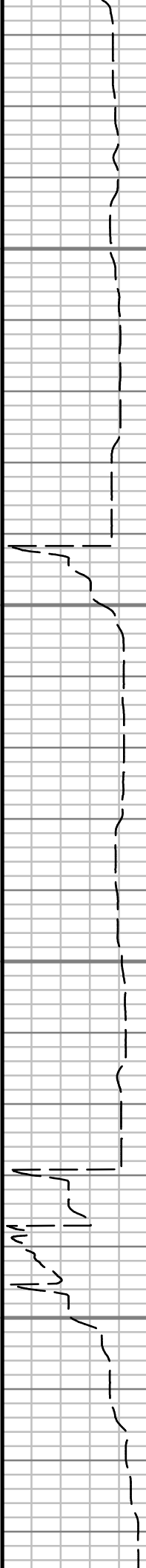
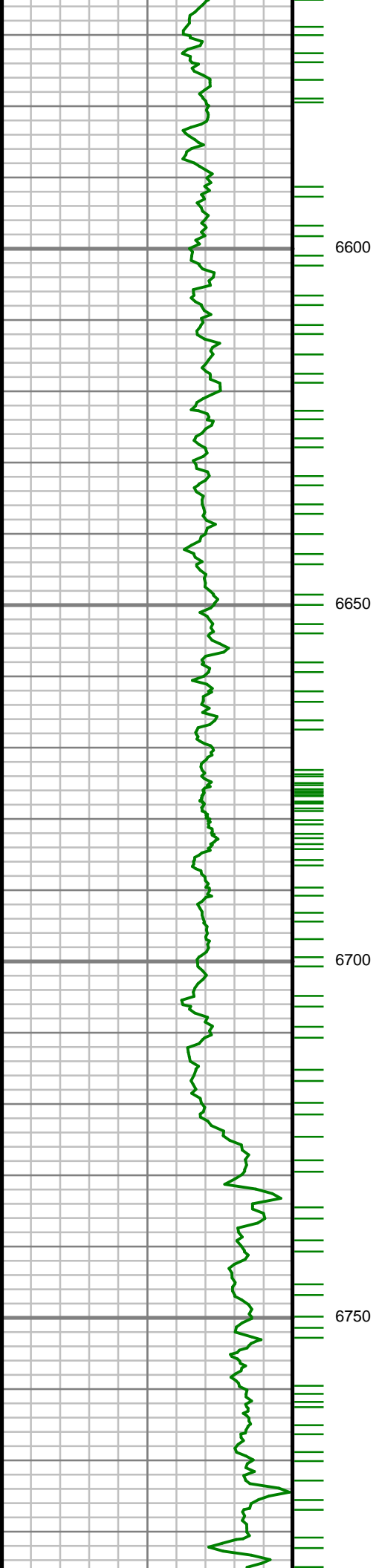
S: 105 MD: 6239.00 ft
Inc: 1.01 deg Az:
124.20 deg TVD:
6099.75 ft

S: 106 MD: 6324.00 ft
Inc: 1.59 deg Az:
106.64 deg TVD:
6184.72 ft



S: 107 MD: 6410.00 ft
Inc: 1.87 deg Az:
113.02 deg TVD:
6270.68 ft

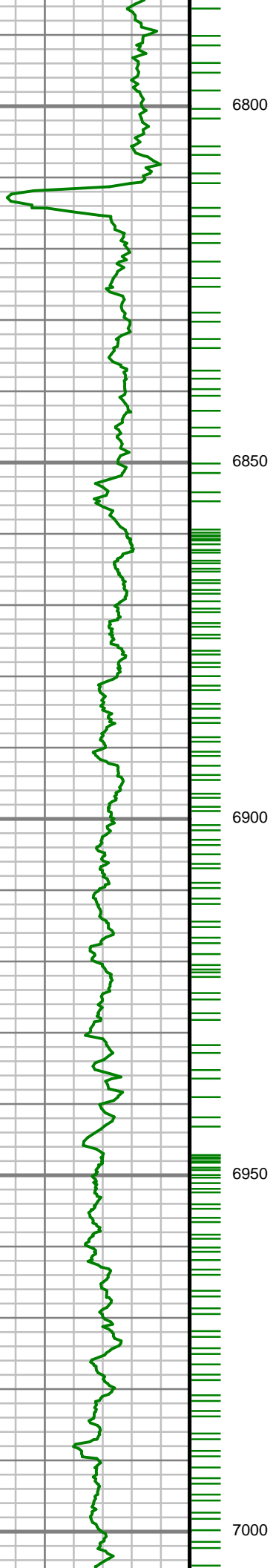
S: 108 MD: 6495.00 ft
Inc: 1.41 deg Az:
101.30 deg TVD:
6355.65 ft



S: 109 MD: 6580.00 ft
Inc: 1.44 deg Az: 84.57
deg TVD: 6440.62 ft

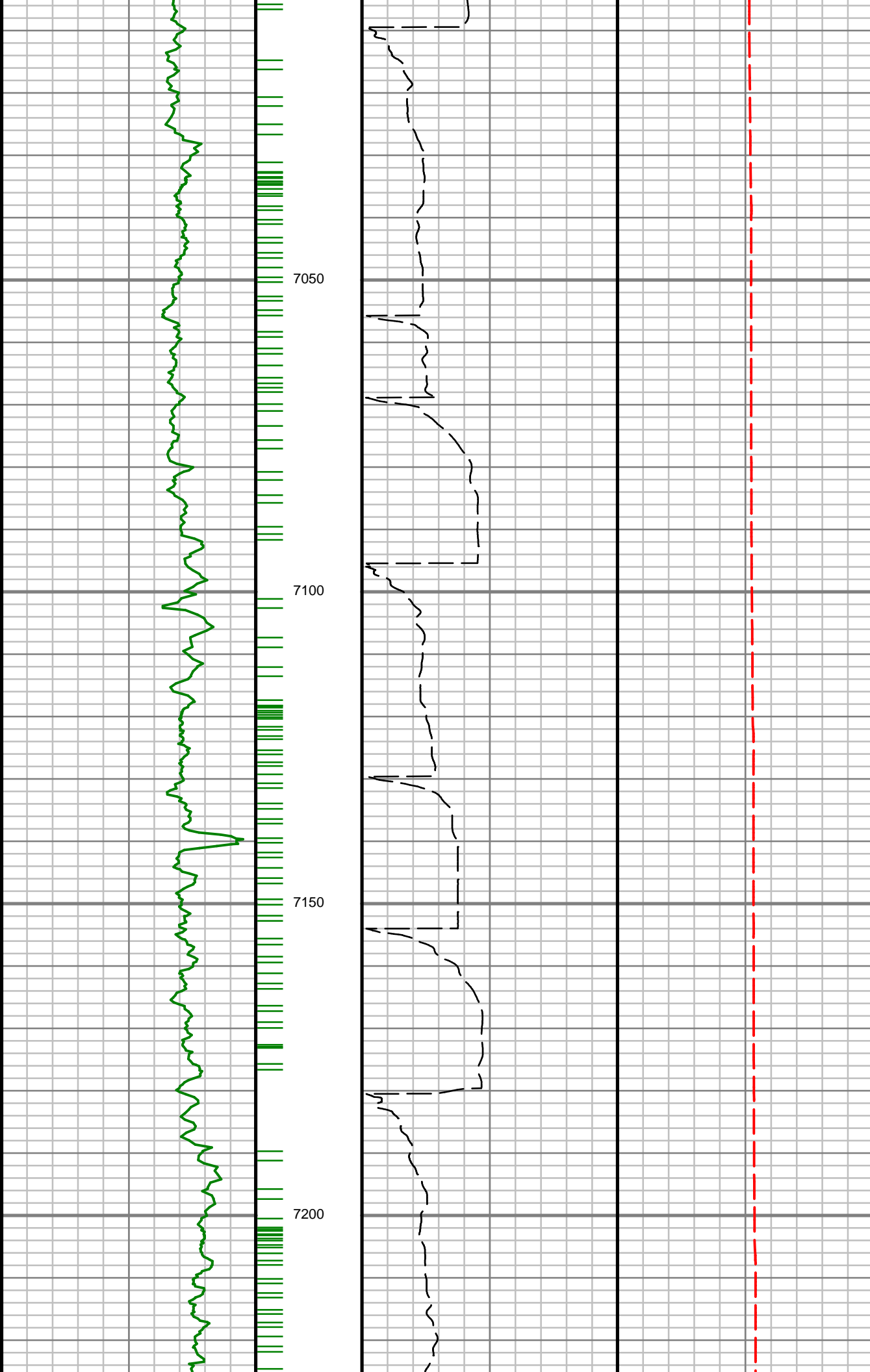
S: 110 MD: 6667.00 ft
Inc: 0.93 deg Az: 82.31
deg TVD: 6527.61 ft

S: 111 MD: 6753.00 ft
Inc: 1.37 deg Az:
129.37 deg TVD:
6613.59 ft



S: 112 MD: 6838.00 ft
Inc: 1.28 deg Az:
112.56 deg TVD:
6698.57 ft

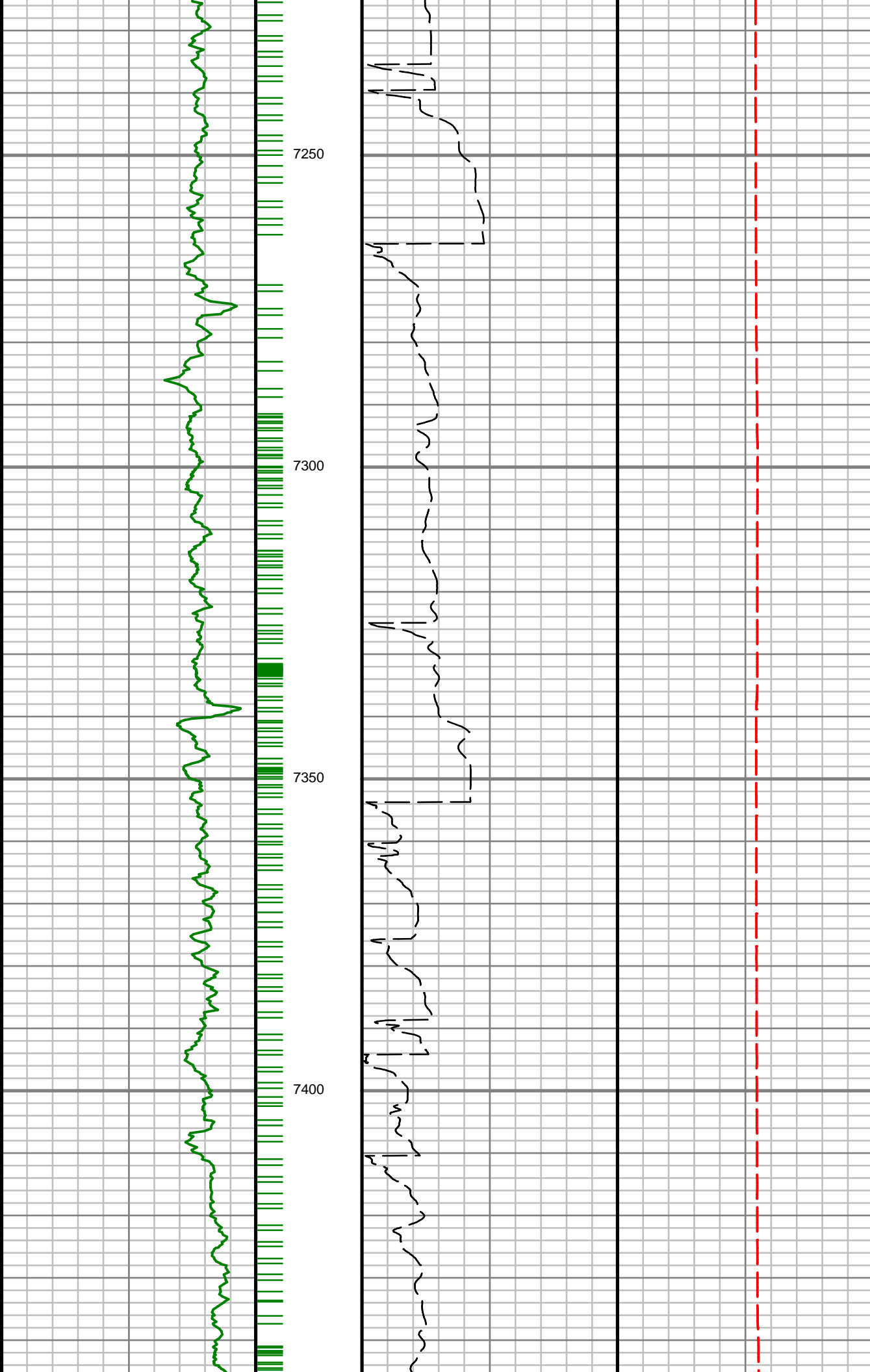
S: 113 MD: 6923.00 ft
Inc: 1.65 deg Az:
153.27 deg TVD:
6783.54 ft



S: 114 MD: 7008.00 ft
Inc: 10.71 deg Az:
177.11 deg TVD:
6867.97 ft

S: 115 MD: 7093.00 ft
Inc: 16.06 deg Az:
174.72 deg TVD:
6950.63 ft

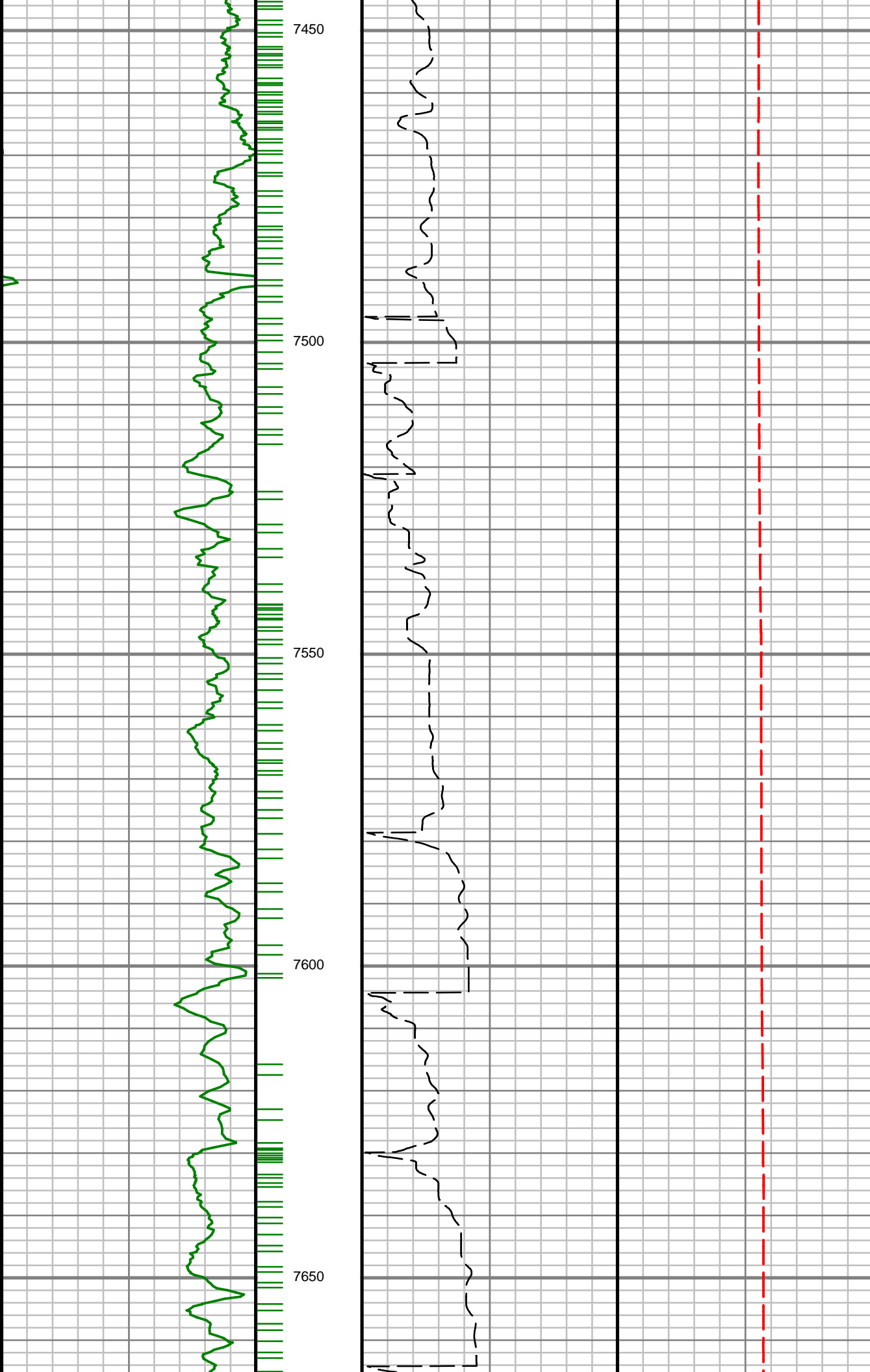
S: 116 MD: 7178.00 ft
Inc: 18.88 deg Az:
177.01 deg TVD:
7031.70 ft



S: 117 MD: 7263.00 ft
Inc: 24.99 deg Az:
171.23 deg TVD:
7110.52 ft

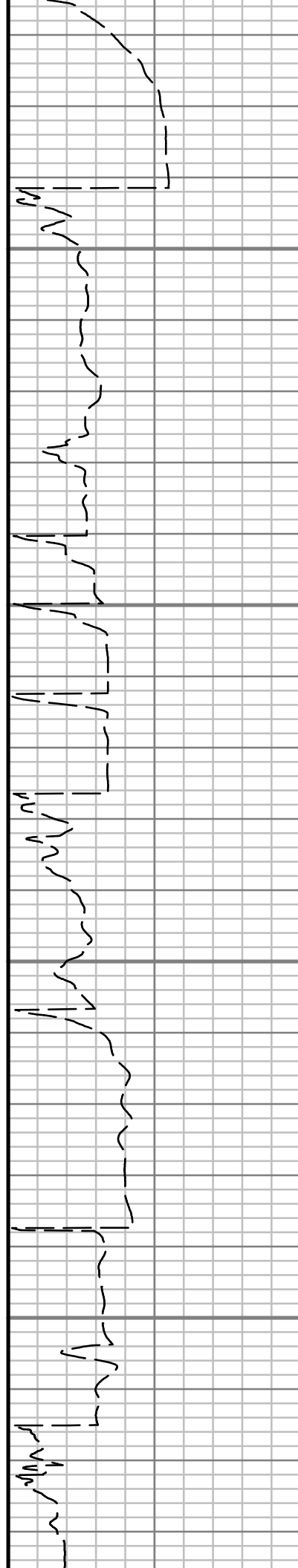
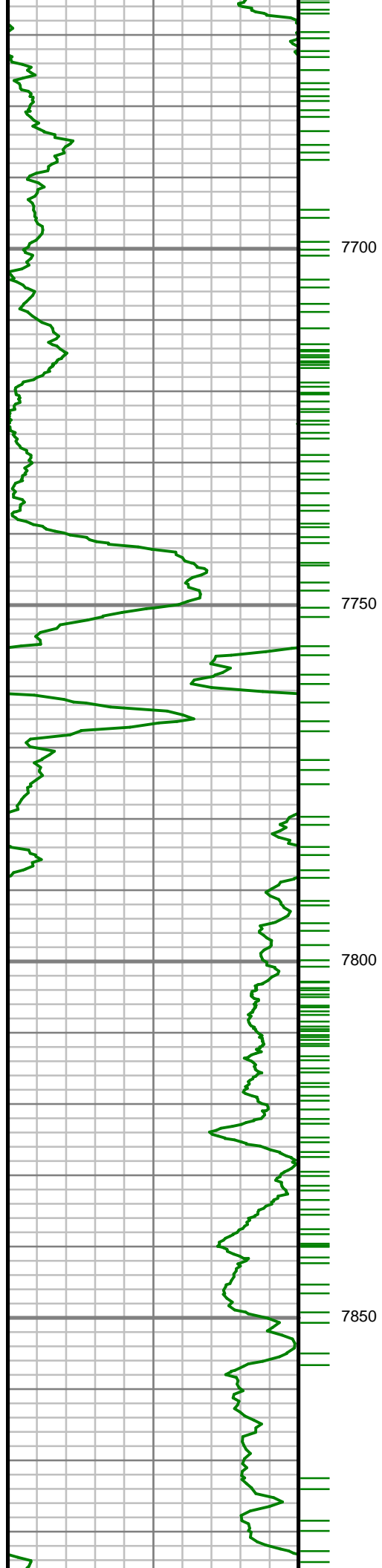
S: 118 MD: 7348.00 ft
Inc: 28.03 deg Az:
172.70 deg TVD:
7186.57 ft

S: 119 MD: 7433.00 ft
Inc: 36.08 deg Az:
175.24 deg TVD:
7258.56 ft



S: 120 MD: 7518.00 ft
Inc: 45.72 deg Az:
176.22 deg TVD:
7322.73 ft

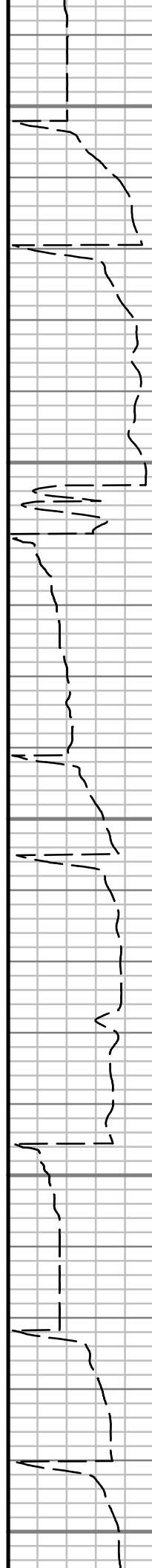
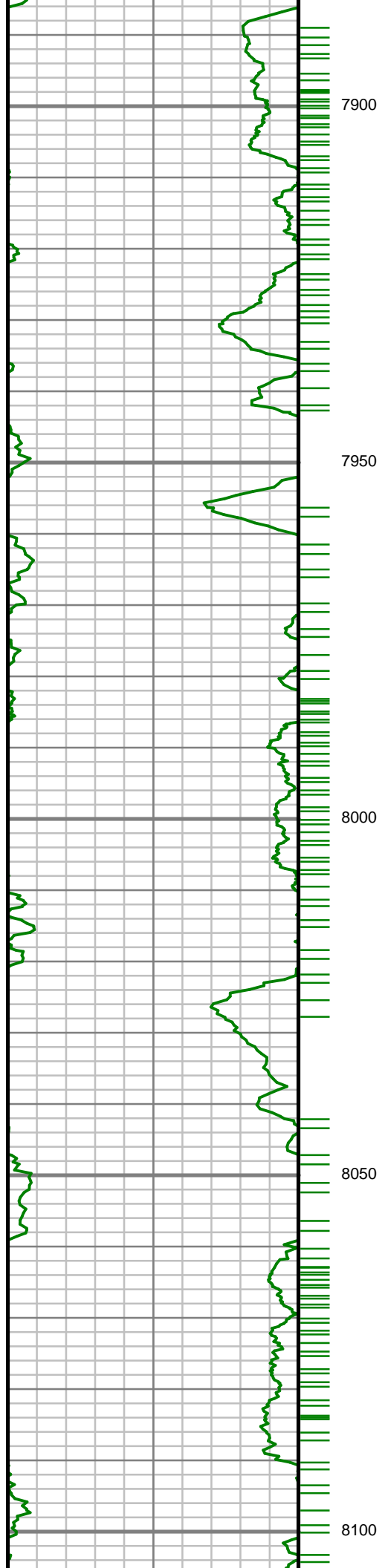
S: 121 MD: 7603.00 ft
Inc: 54.12 deg Az:
180.19 deg TVD:
7377.41 ft



S: 122 MD: 7689.00 ft
Inc: 57.26 deg Az:
177.96 deg TVD:
7425.88 ft

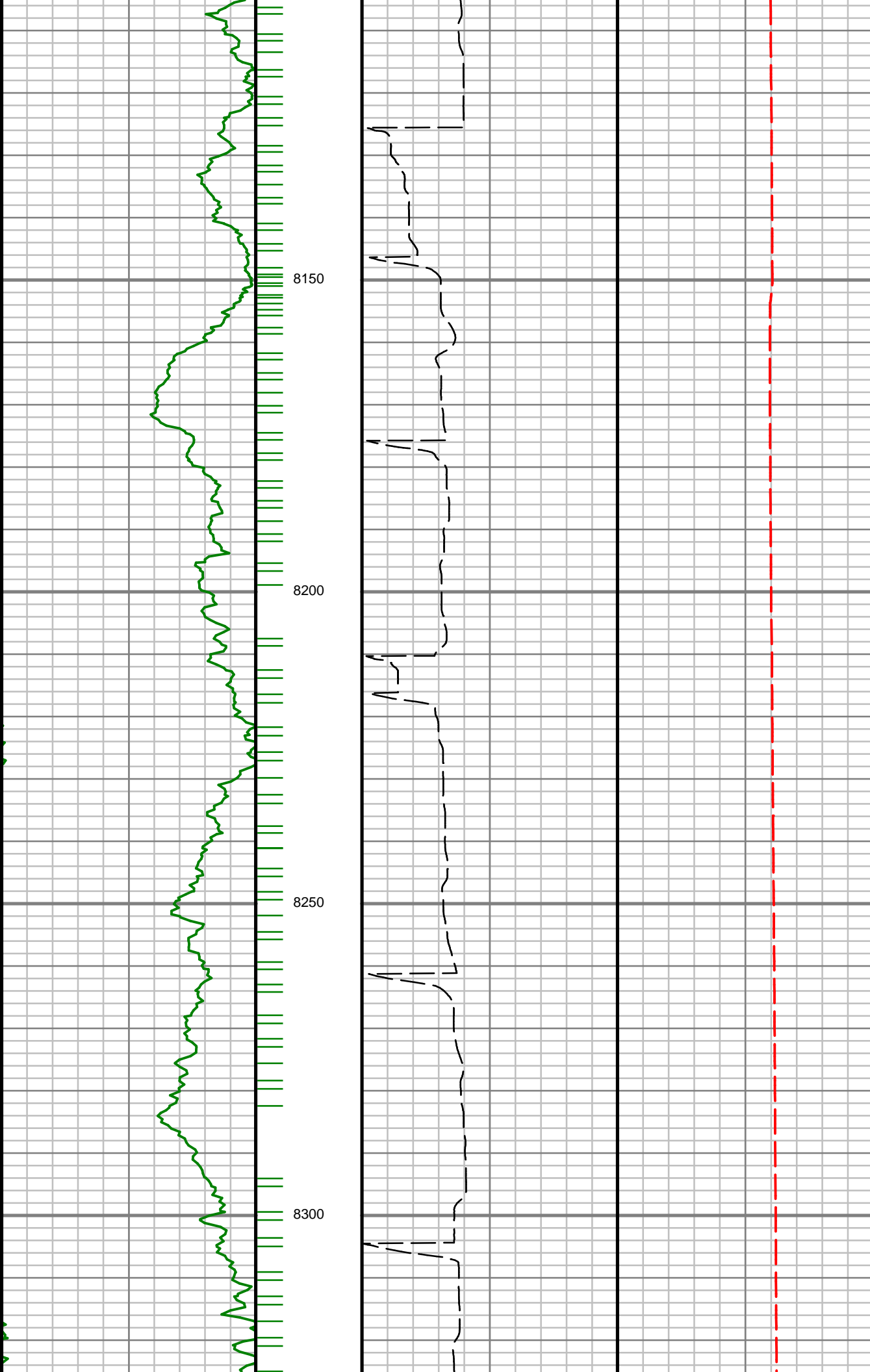
S: 123 MD: 7774.00 ft
Inc: 62.66 deg Az:
181.87 deg TVD:
7468.43 ft

S: 124 MD: 7859.00 ft
Inc: 66.07 deg Az:
182.07 deg TVD:
7505.20 ft



S: 125 MD: 7944.00 ft
Inc: 71.73 deg Az:
180.22 deg TVD:
7535.79 ft

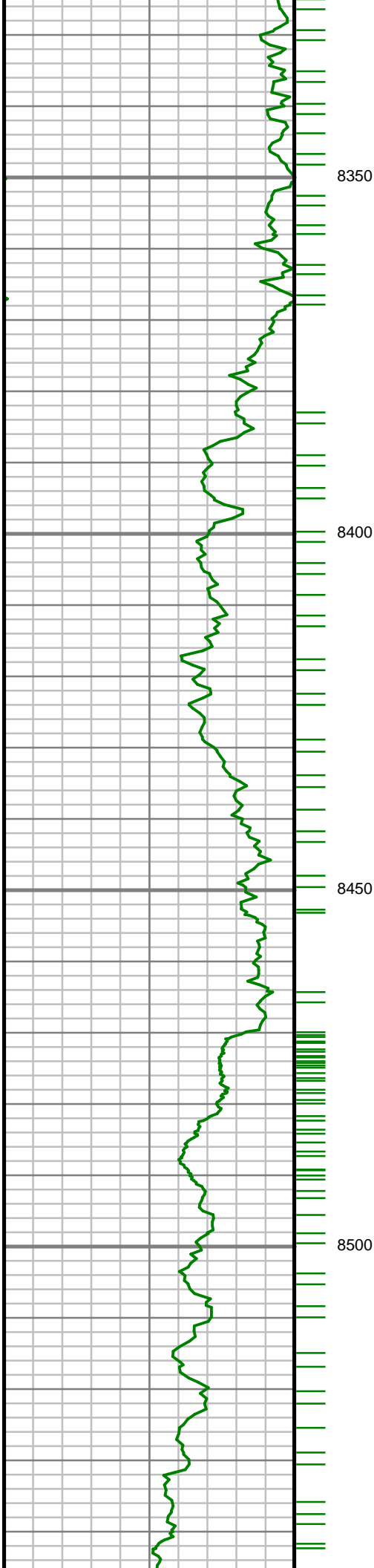
S: 126 MD: 8029.00 ft
Inc: 77.74 deg Az:
179.61 deg TVD:
7558.16 ft



S: 127 MD: 8115.00 ft
Inc: 82.48 deg Az:
179.46 deg TVD:
7572.93 ft

S: 128 MD: 8200.00 ft
Inc: 86.68 deg Az:
179.57 deg TVD:
7580.95 ft

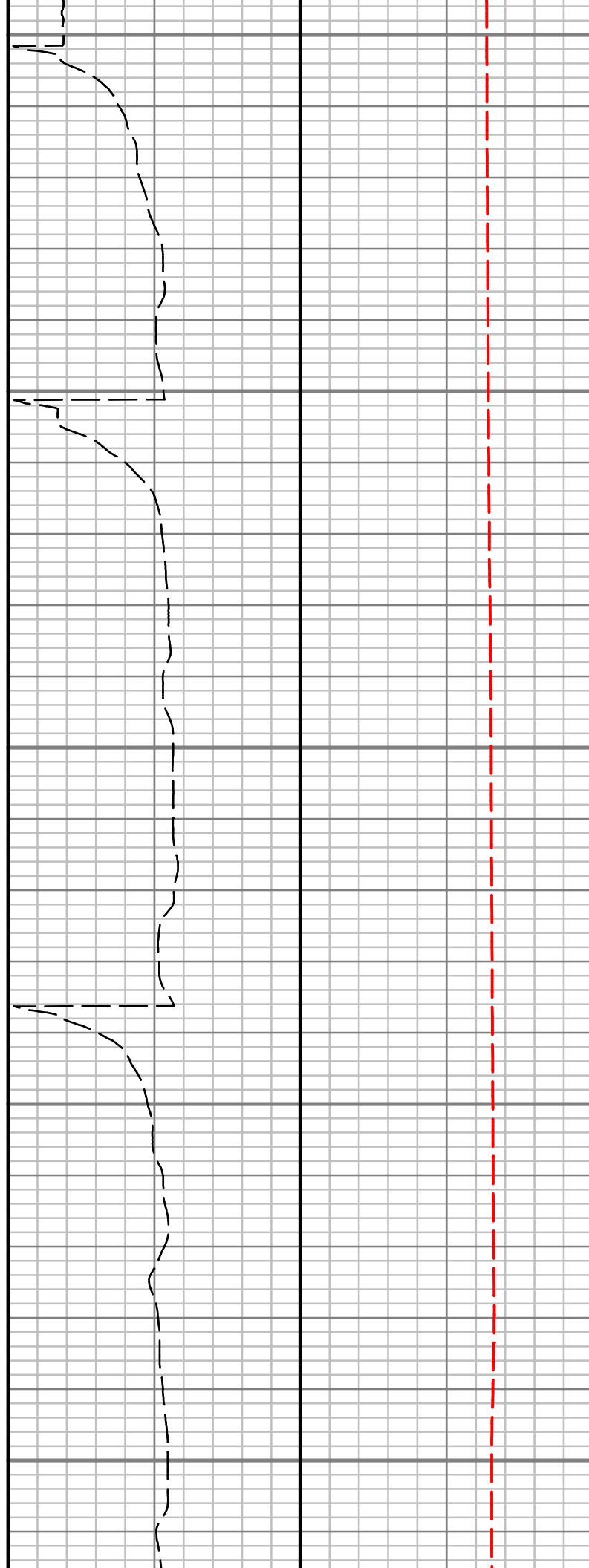
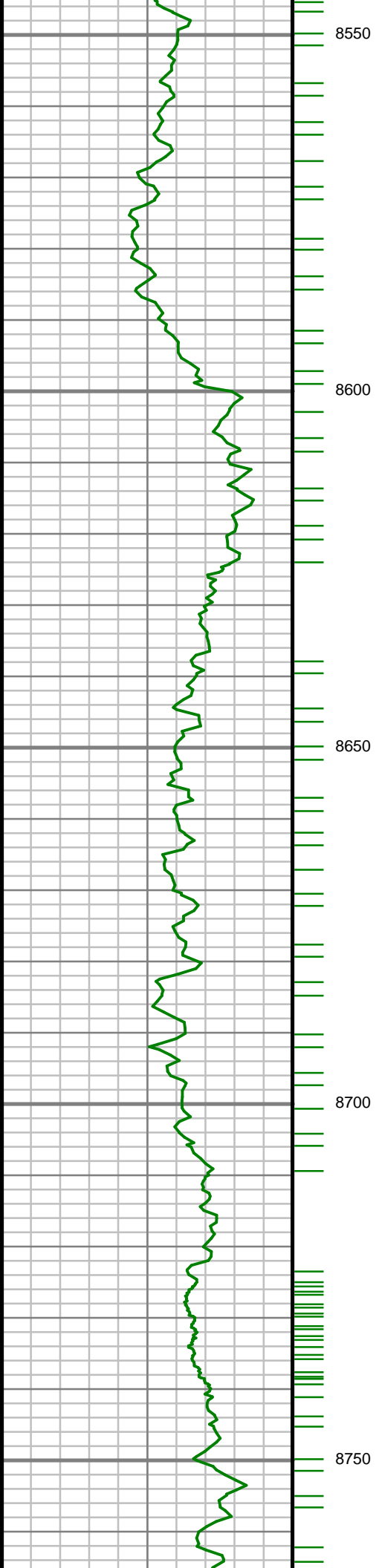
S: 129 MD: 8285.00 ft
Inc: 87.65 deg Az:
179.33 deg TVD:
7585.15 ft



S: 130 MD: 8370.00 ft
Inc: 87.65 deg Az:
179.18 deg TVD:
7588.63 ft

S: 131 MD: 8455.00 ft
Inc: 87.65 deg Az:
178.17 deg TVD:
7592.11 ft

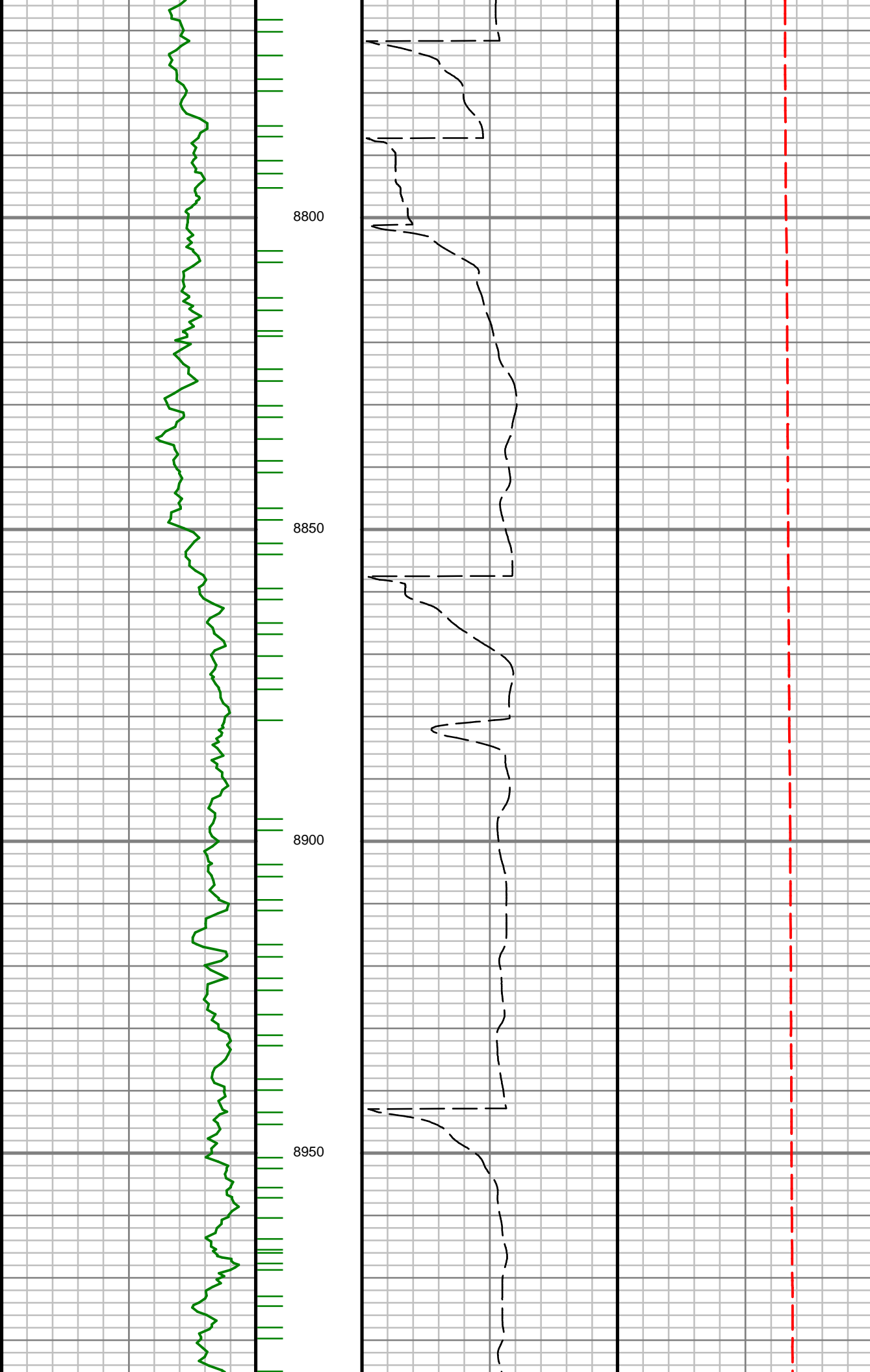
S: 132 MD: 8541.00 ft
Inc: 88.19 deg Az:



S: 133 MD: 8626.00 ft
Inc: 88.89 deg Az:
180.22 deg TVD:
7597.39 ft

S: 133 MD: 8626.00 ft
Inc: 88.89 deg Az:
180.22 deg TVD:
7597.39 ft

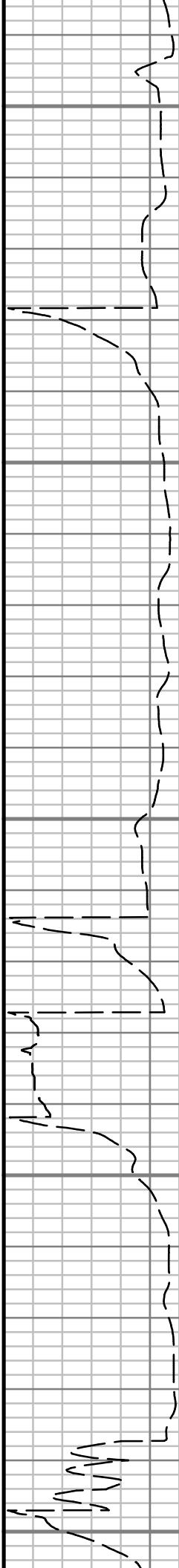
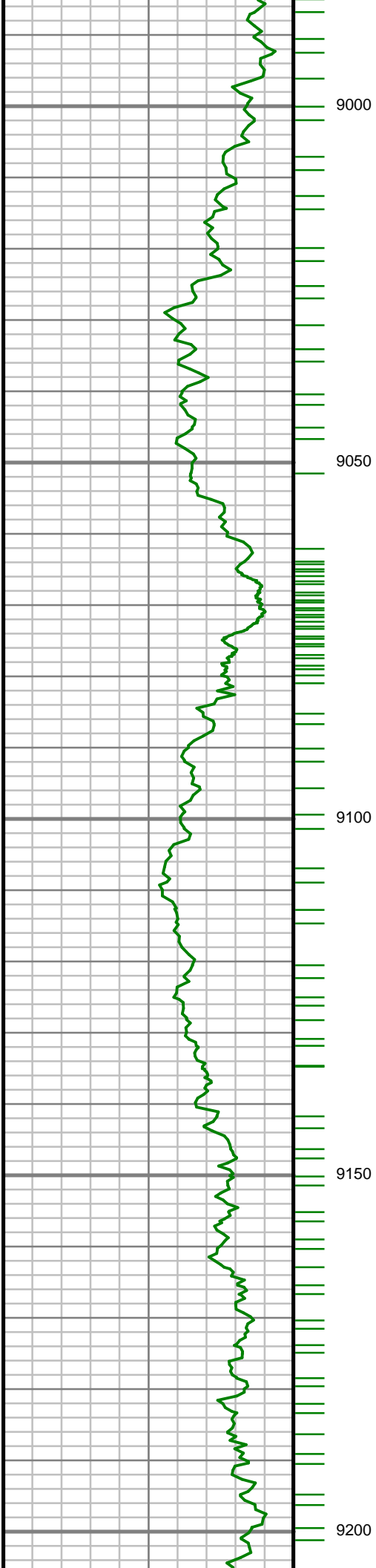
S: 134 MD: 8711.00 ft
Inc: 89.40 deg Az:
179.04 deg TVD:
7598.66 ft



S: 135 MD: 8797.00 ft
Inc: 89.00 deg Az:
180.79 deg TVD:
7599.86 ft

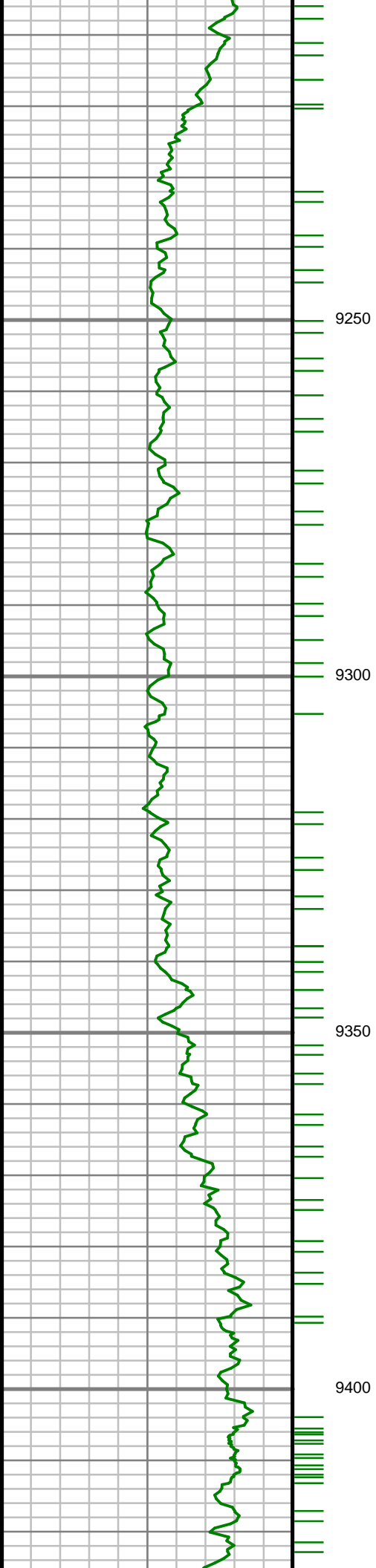
S: 136 MD: 8882.00 ft
Inc: 88.56 deg Az:
180.72 deg TVD:
7601.68 ft

S: 137 MD: 8967.00 ft
Inc: 88.86 deg Az:
180.63 deg TVD:
7603.59 ft



S: 138 MD: 9052.00 ft
Inc: 88.96 deg Az:
179.75 deg TVD:
7605.21 ft

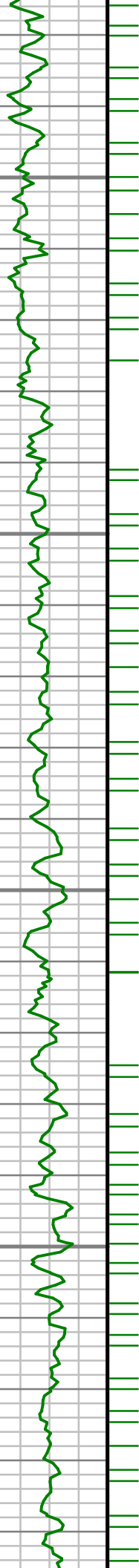
S: 139 MD: 9138.00 ft
Inc: 88.93 deg Az:
181.70 deg TVD:
7606.79 ft



S: 140 MD: 9223.00 ft
Inc: 88.86 deg Az:
181.99 deg TVD:
7608.43 ft

S: 141 MD: 9308.00 ft
Inc: 89.56 deg Az:
181.22 deg TVD:
7609.60 ft

S: 142 MD: 9393.00 ft
Inc: 89.20 deg Az:
180.28 deg TVD:
7610.52 ft

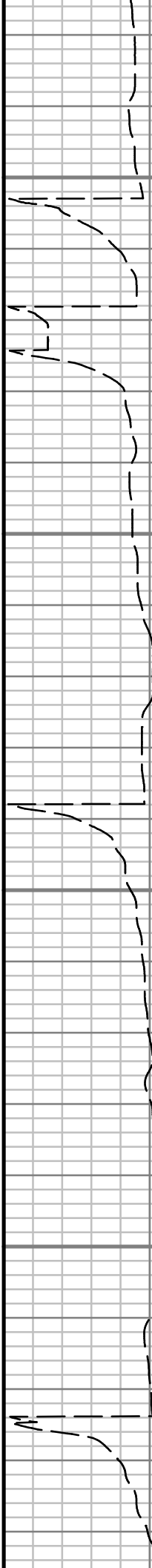


9450

9500

9550

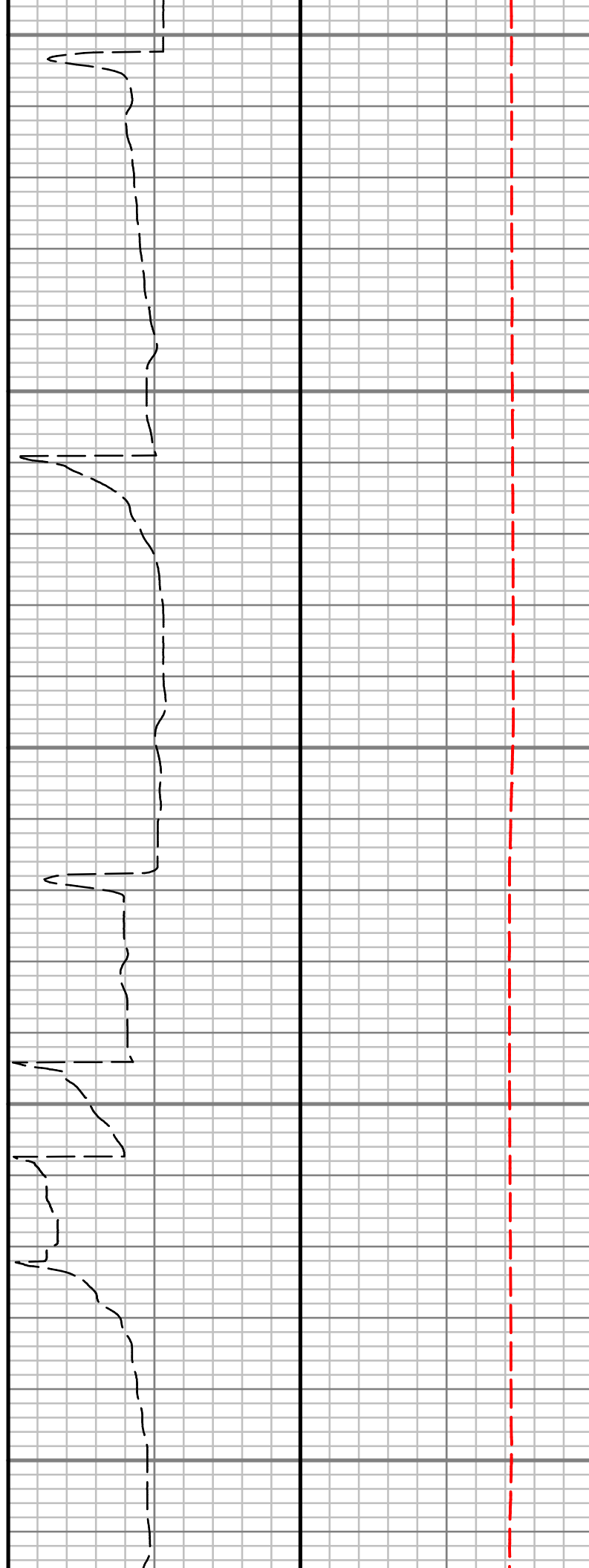
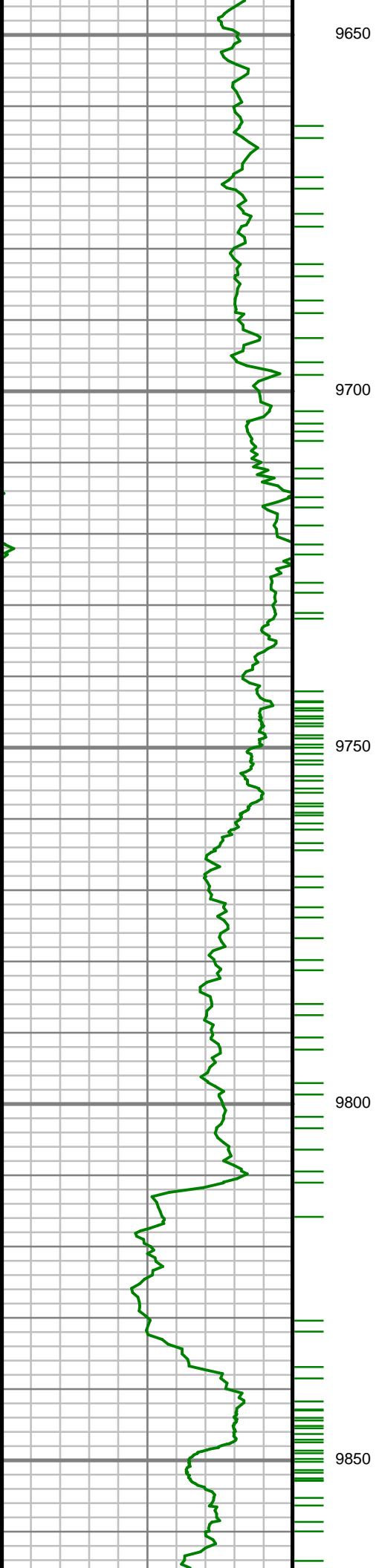
9600



S: 143 MD: 9478.00 ft
Inc: 90.00 deg Az:
181.08 deg TVD:
7611.11 ft

S: 144 MD: 9563.00 ft
Inc: 90.03 deg Az:
179.53 deg TVD:
7611.09 ft

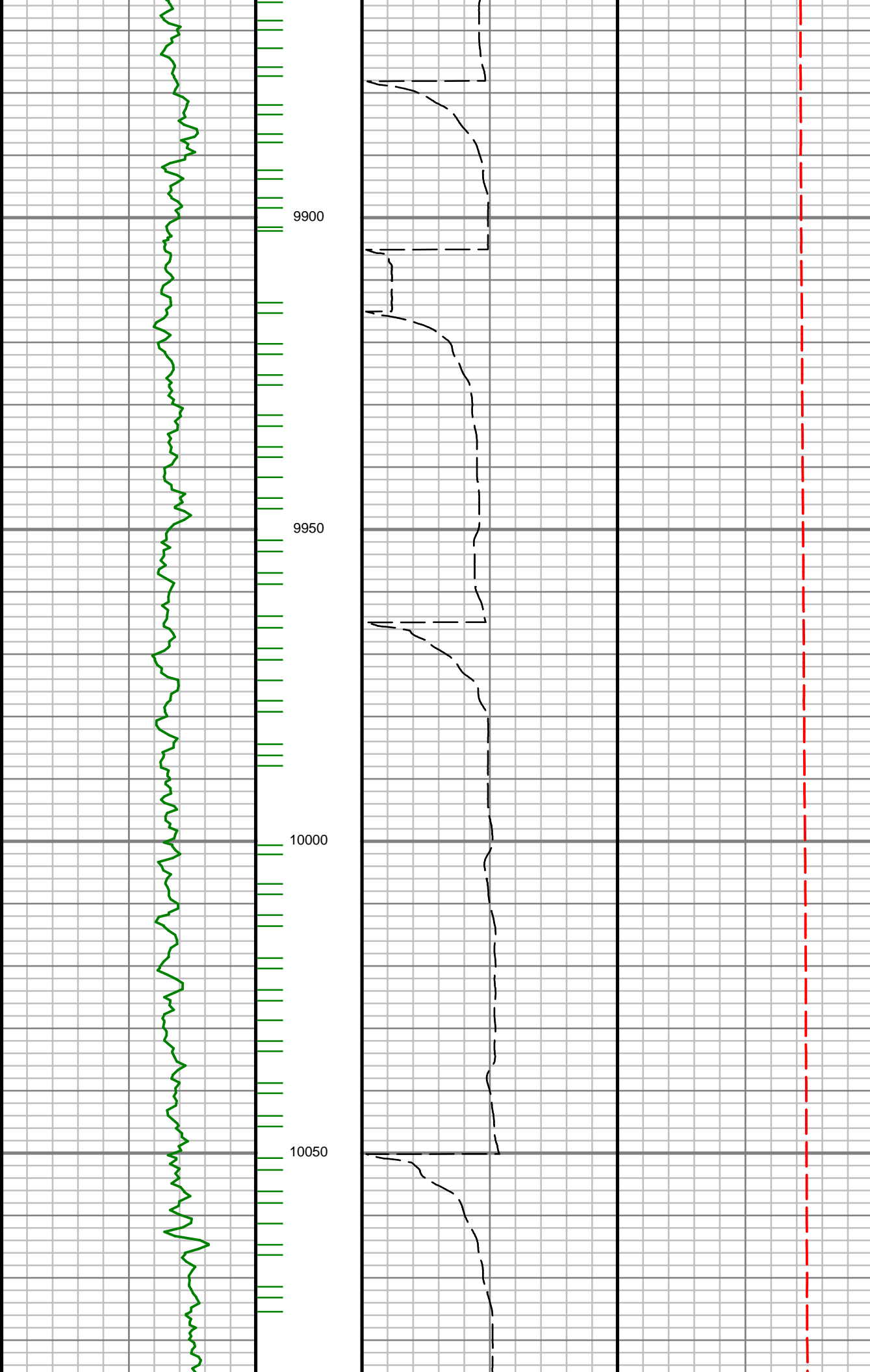
S: 145 MD: 9643.00 ft



Inc: 89.97 deg Az:
179.14 deg TVD:
7611.09 ft

S: 146 MD: 9734.00 ft
Inc: 90.54 deg Az:
177.82 deg TVD:
7610.69 ft

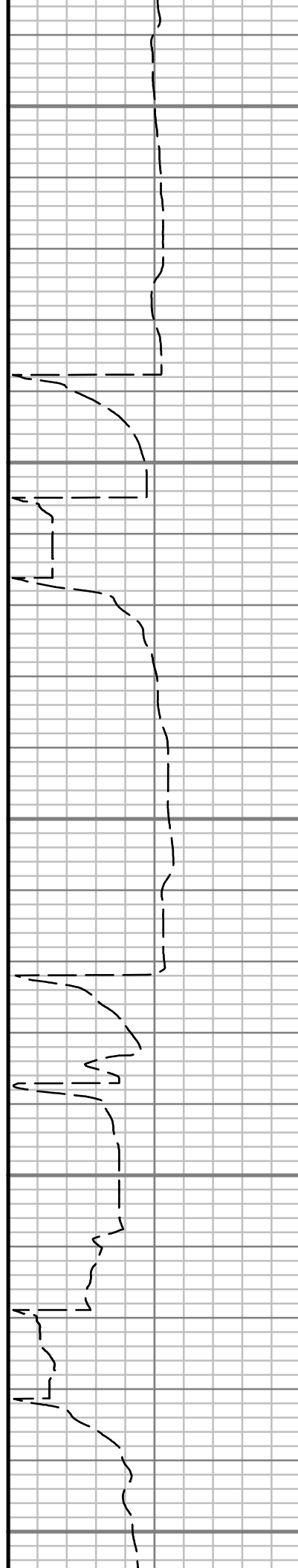
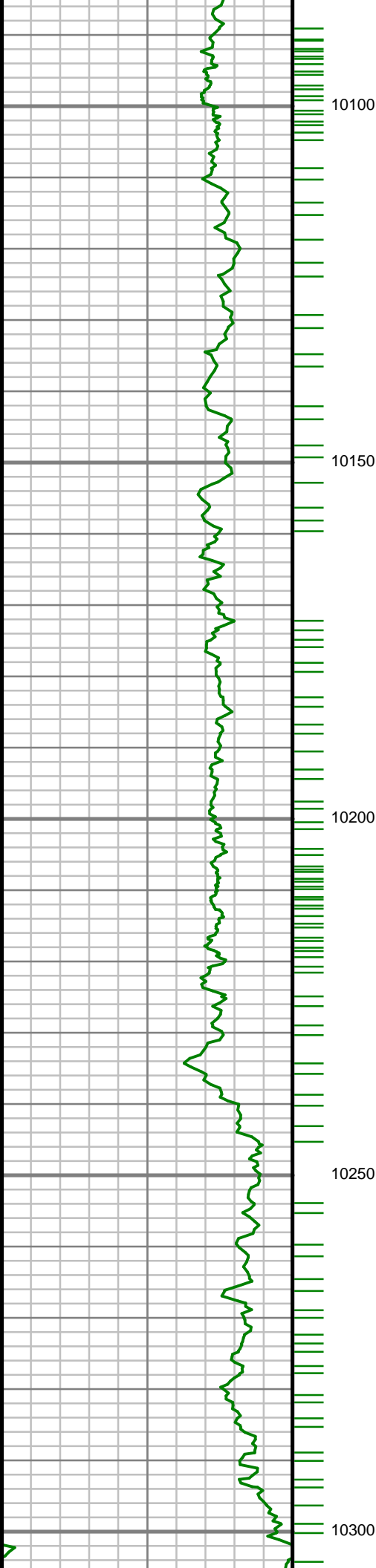
S: 147 MD: 9818.00 ft
Inc: 91.14 deg Az:
179.14 deg TVD:
7609.46 ft



S: 148 MD: 9904.00 ft
Inc: 92.14 deg Az:
179.82 deg TVD:
7607.00 ft

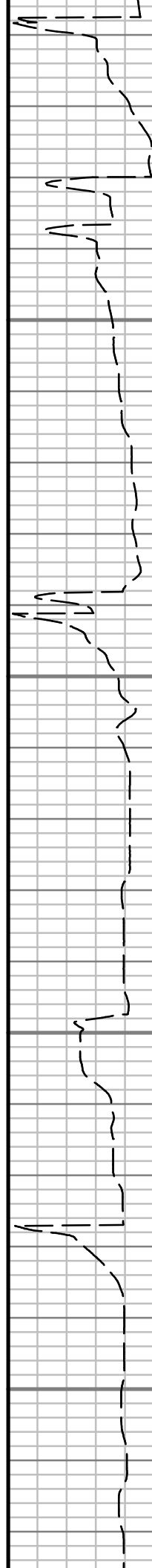
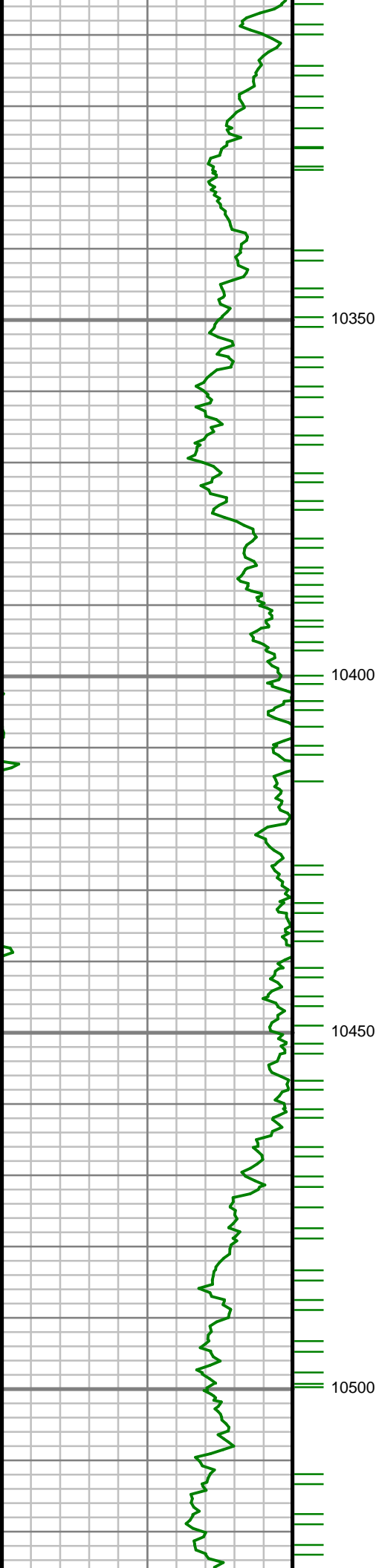
S: 149 MD: 9989.00 ft
Inc: 90.87 deg Az:
179.88 deg TVD:
7604.76 ft

S: 150 MD: 10077.00 ft
Inc: 91.17 deg Az:
179.49 deg TVD:



S: 151 MD: 10161.00 ft
Inc: 90.60 deg Az:
179.92 deg TVD:
7601.89 ft

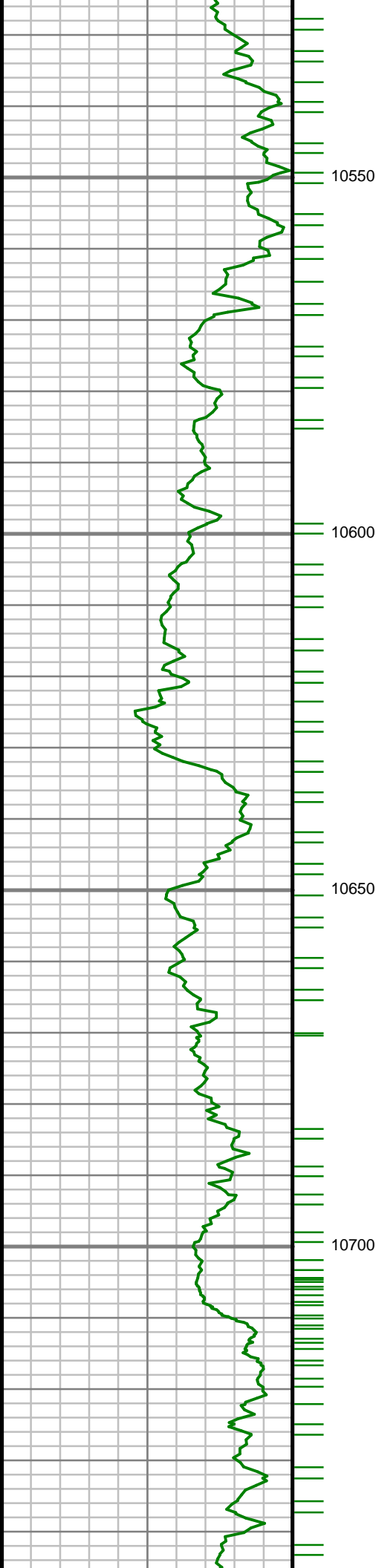
S: 152 MD: 10246.00 ft
Inc: 91.64 deg Az:
179.56 deg TVD:
7600.23 ft



S: 153 MD: 10332.00 ft
Inc: 90.10 deg Az:
181.17 deg TVD:
7598.92 ft

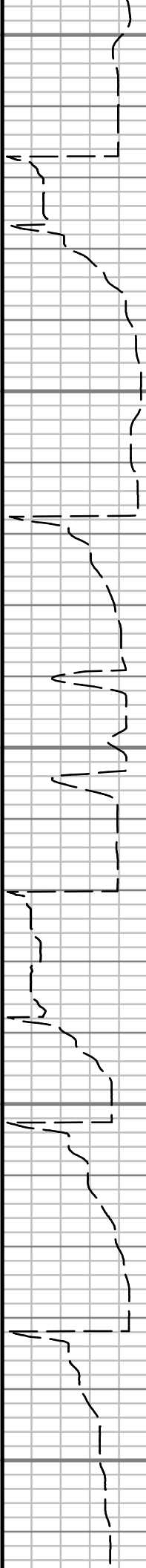
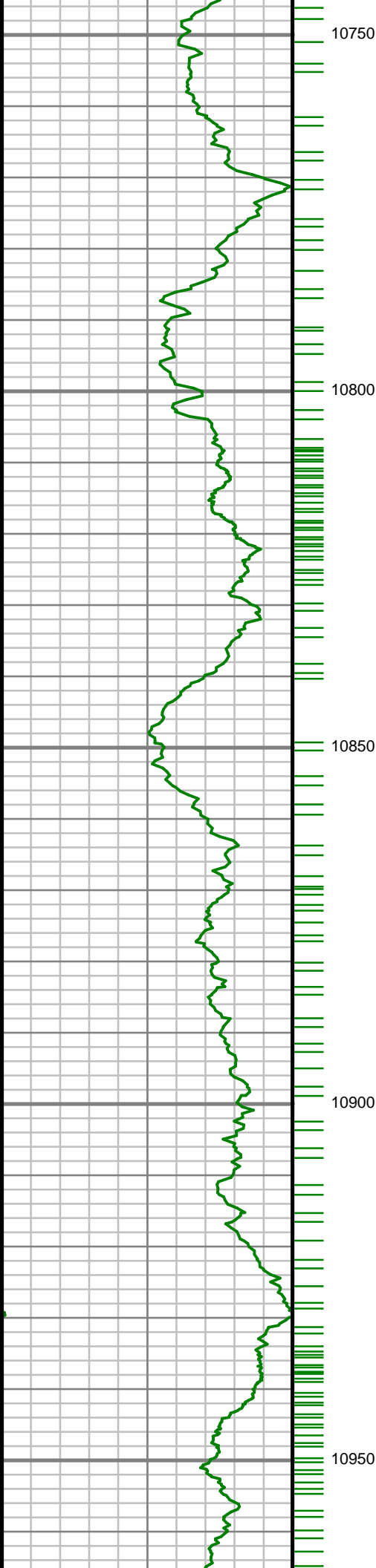
S: 154 MD: 10416.00 ft
Inc: 89.97 deg Az:
181.06 deg TVD:
7598.87 ft

S: 155 MD: 10502.00 ft
Inc: 89.40 deg Az:
180.60 deg TVD:
7599.35 ft



S: 156 MD: 10587.00 ft
Inc: 89.00 deg Az:
179.28 deg TVD:
7600.54 ft

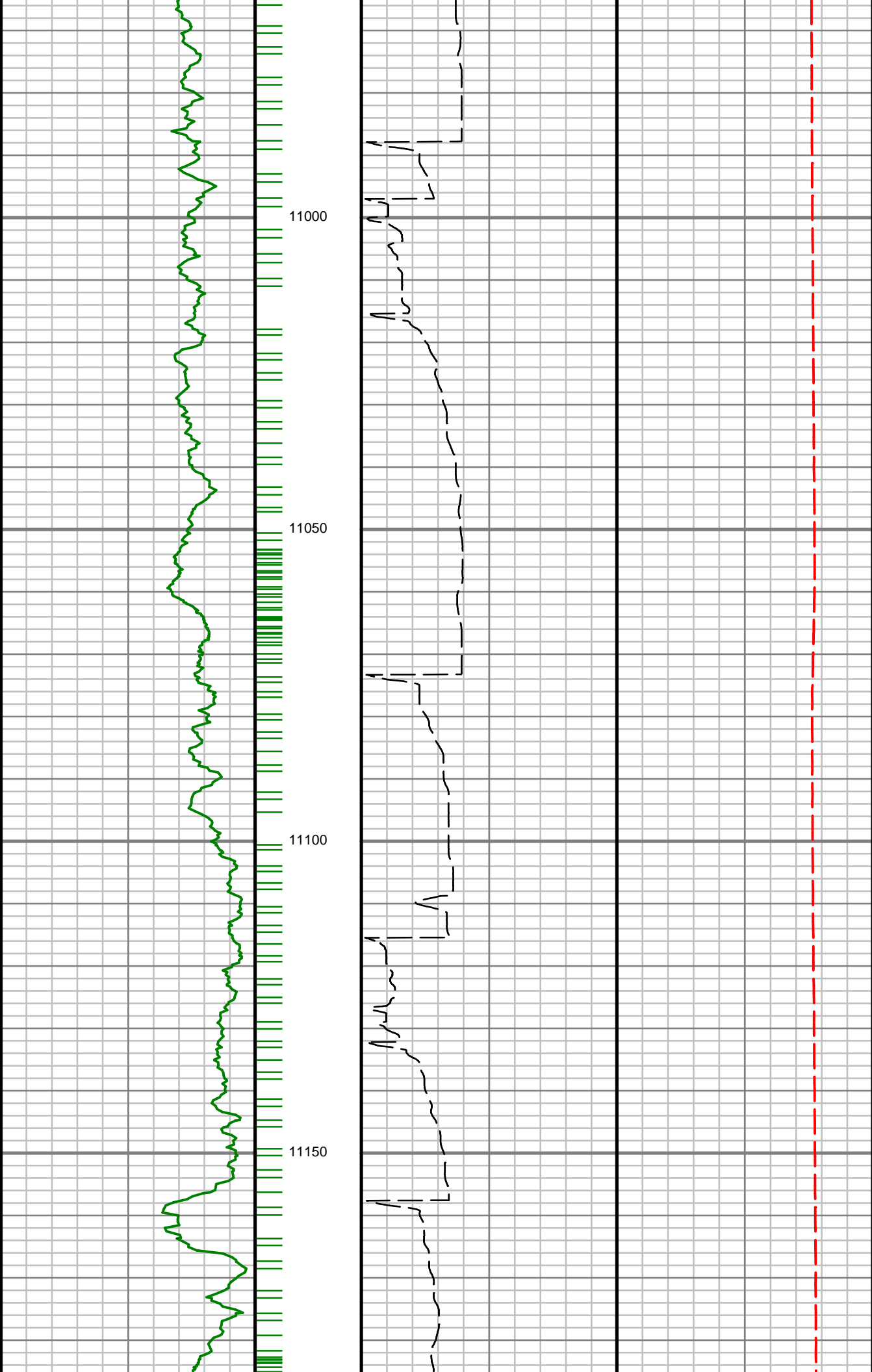
S: 157 MD: 10672.00 ft
Inc: 88.26 deg Az:
179.06 deg TVD:
7602.58 ft



S: 158 MD: 10757.00 ft
Inc: 87.39 deg Az:
177.94 deg TVD:
7605.81 ft

S: 159 MD: 10842.00 ft
Inc: 87.59 deg Az:
178.41 deg TVD:
7609.53 ft

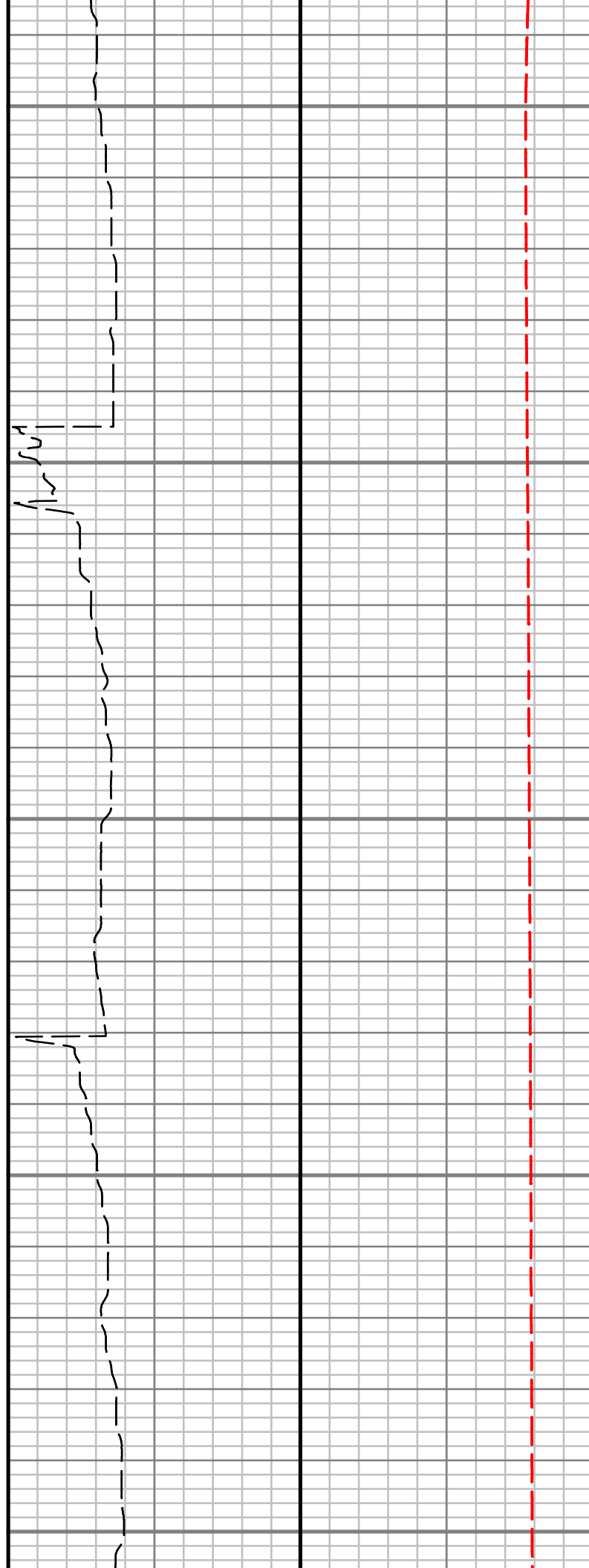
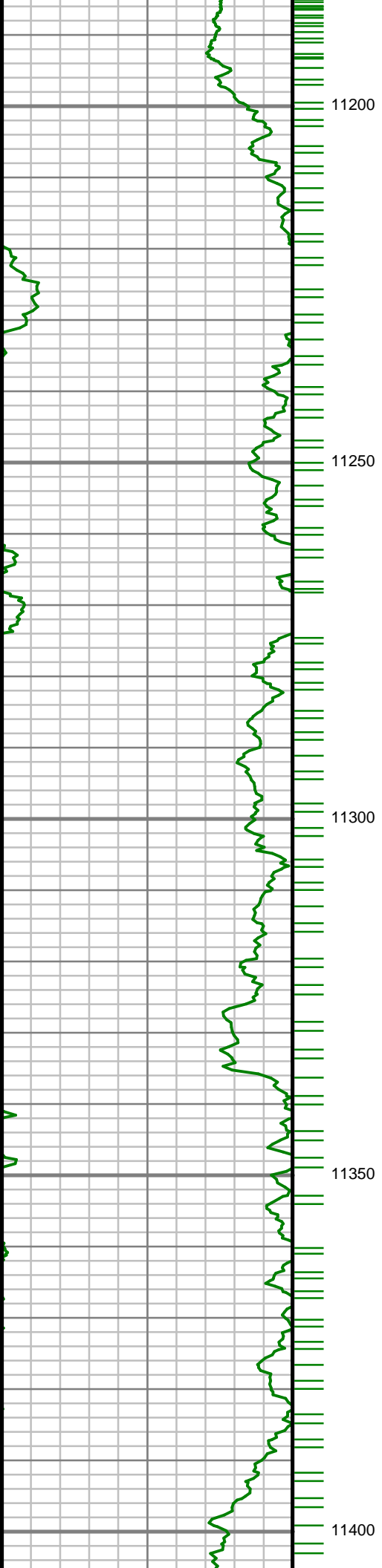
S: 160 MD: 10926.00 ft
Inc: 89.67 deg Az:
178.80 deg TVD:
7611.54 ft



S: 161 MD: 11012.00 ft
Inc: 91.04 deg Az:
180.52 deg TVD:
7611.02 ft

S: 162 MD: 11096.00 ft
Inc: 91.68 deg Az:
180.47 deg TVD:
7609.03 ft

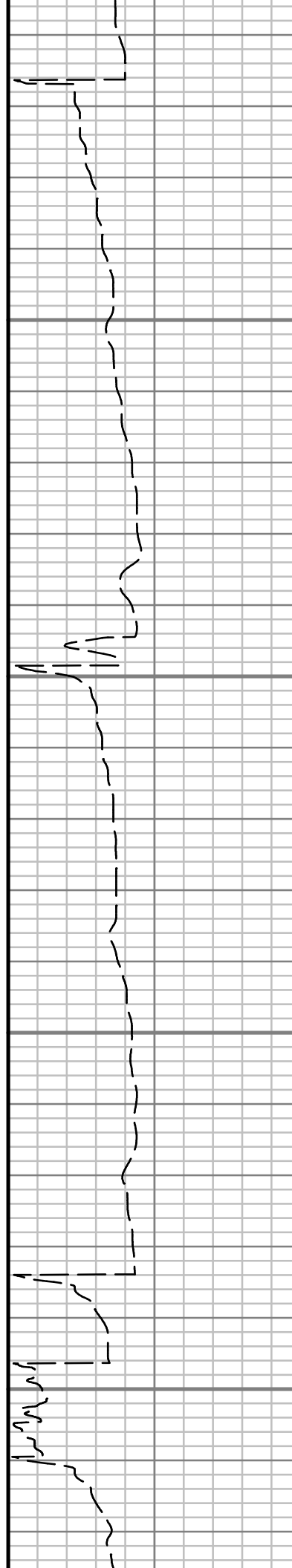
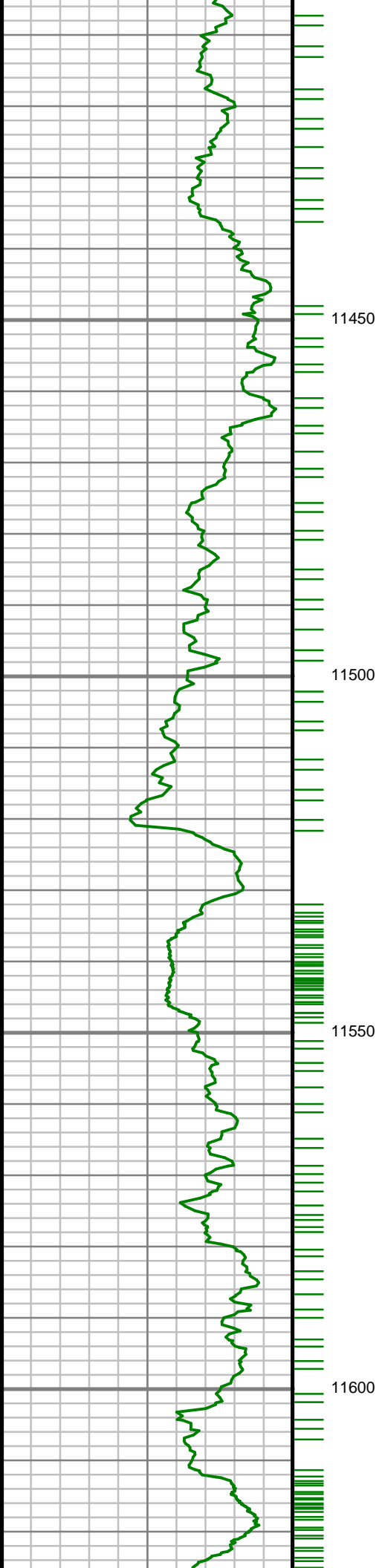
S: 163 MD: 11183.00 ft



Inc: 91.27 deg Az:
182.90 deg TVD:
7606.79 ft

S: 164 MD: 11268.00 ft
Inc: 89.70 deg Az:
183.73 deg TVD:
7606.07 ft

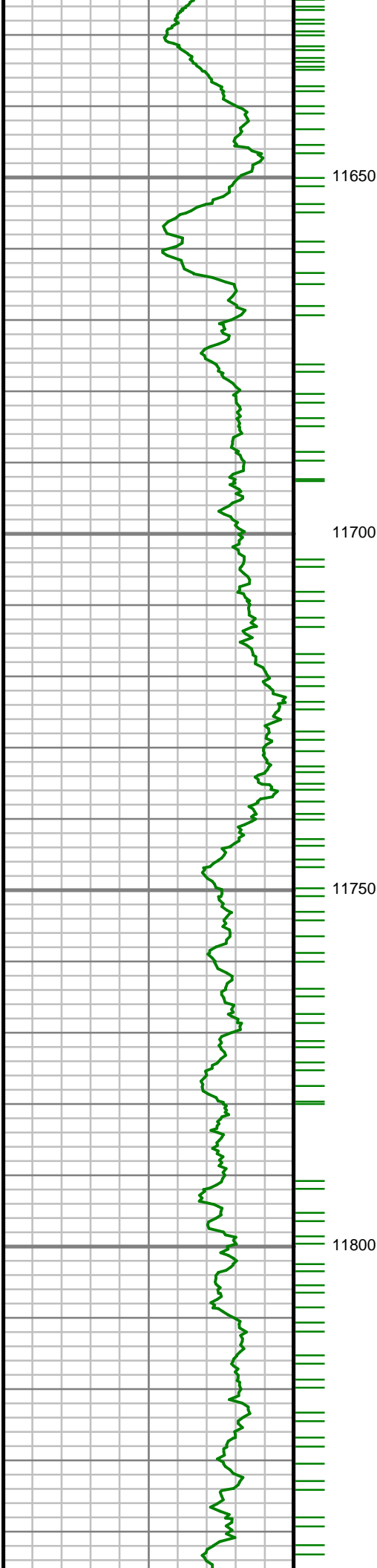
S: 165 MD: 11353.00 ft
Inc: 89.46 deg Az:
183.28 deg TVD:
7606.69 ft



S: 166 MD: 11438.00 ft
Inc: 88.86 deg Az:
182.85 deg TVD:
7607.93 ft

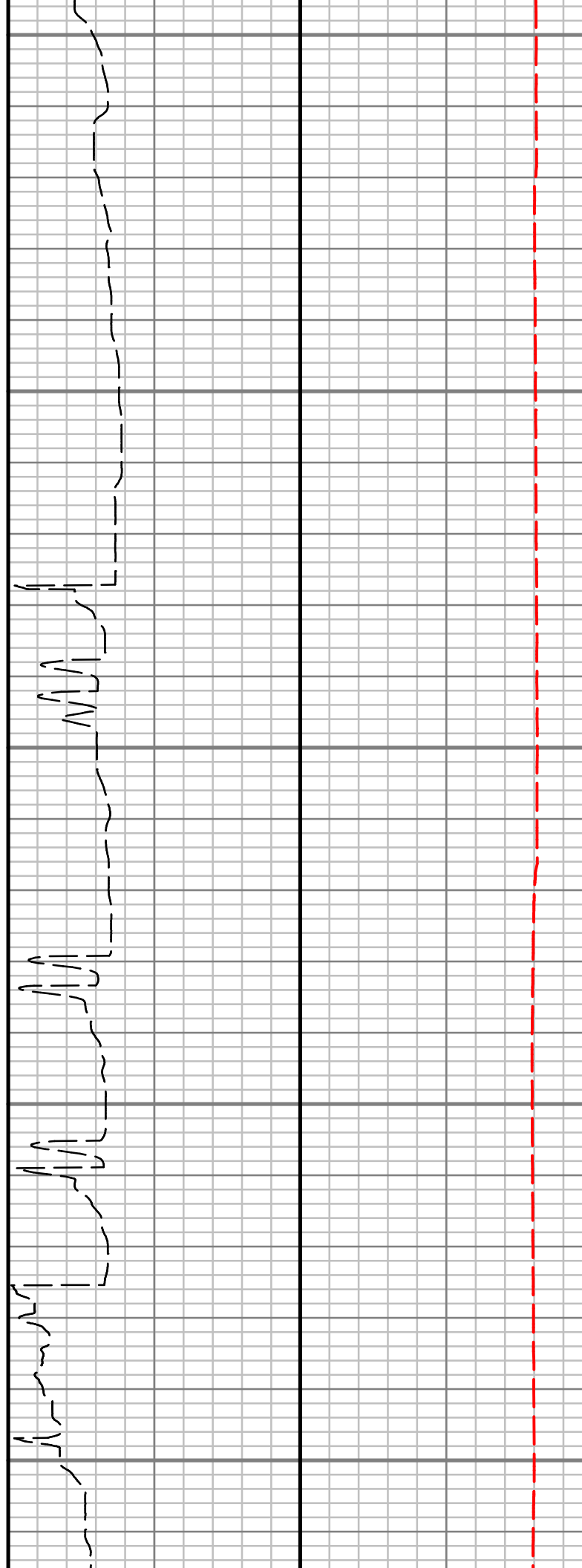
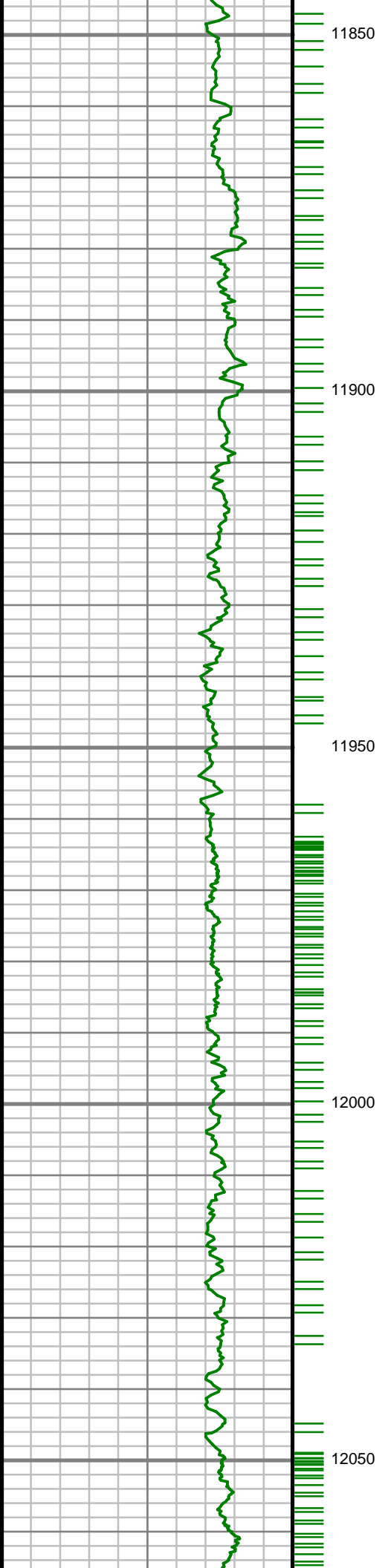
S: 167 MD: 11523.00 ft
Inc: 88.06 deg Az:
181.59 deg TVD:
7610.22 ft

S: 168 MD: 11609.00 ft
Inc: 87.89 deg Az:
179.55 deg TVD:
7613.26 ft



S: 169 MD: 11694.00 ft
Inc: 90.77 deg Az:
178.80 deg TVD:
7614.25 ft

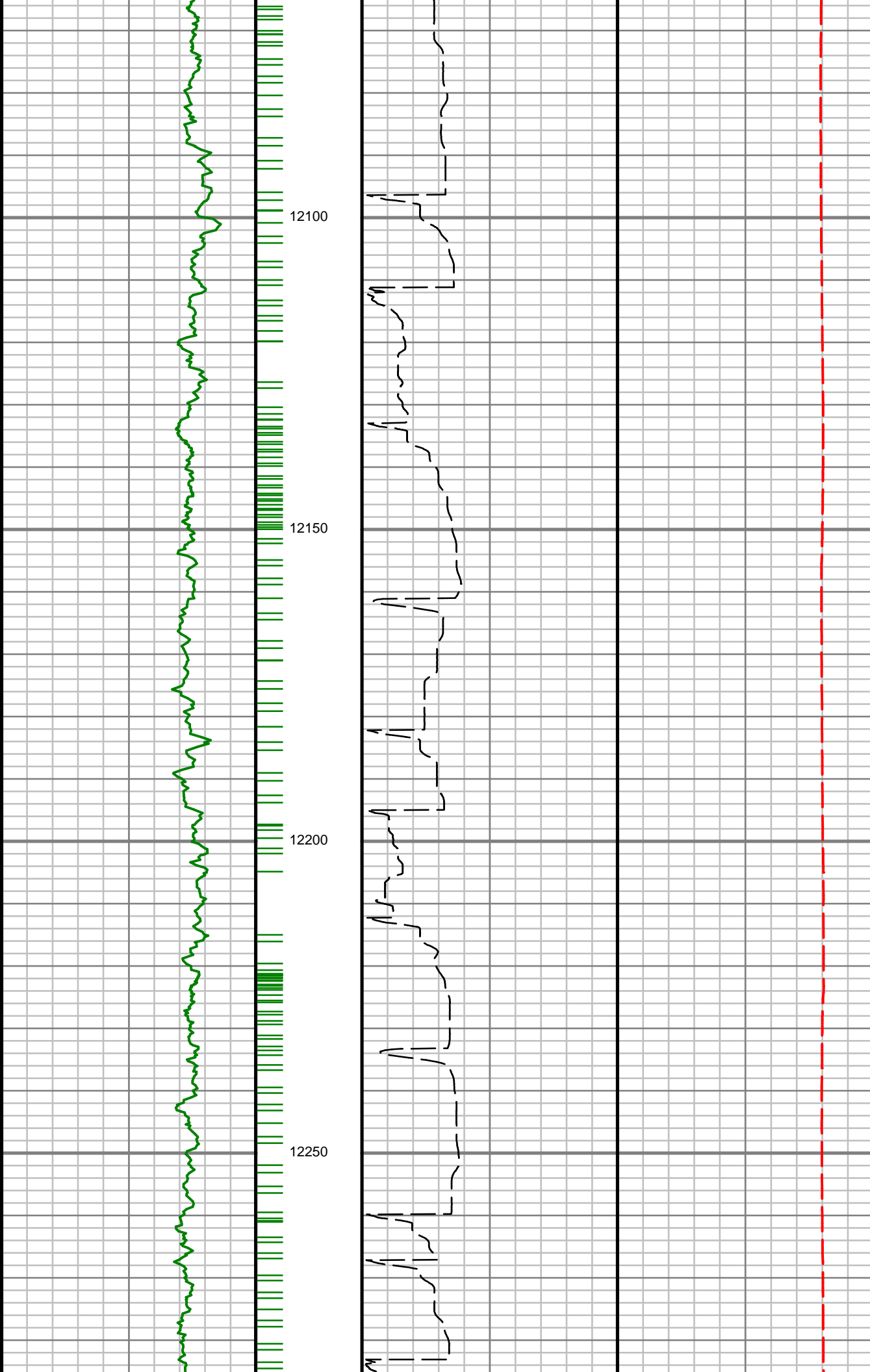
S: 170 MD: 11779.00 ft
Inc: 90.90 deg Az:
178.14 deg TVD:
7613.01 ft



S: 171 MD: 11863.00 ft
Inc: 90.50 deg Az:
177.95 deg TVD:
7611.98 ft

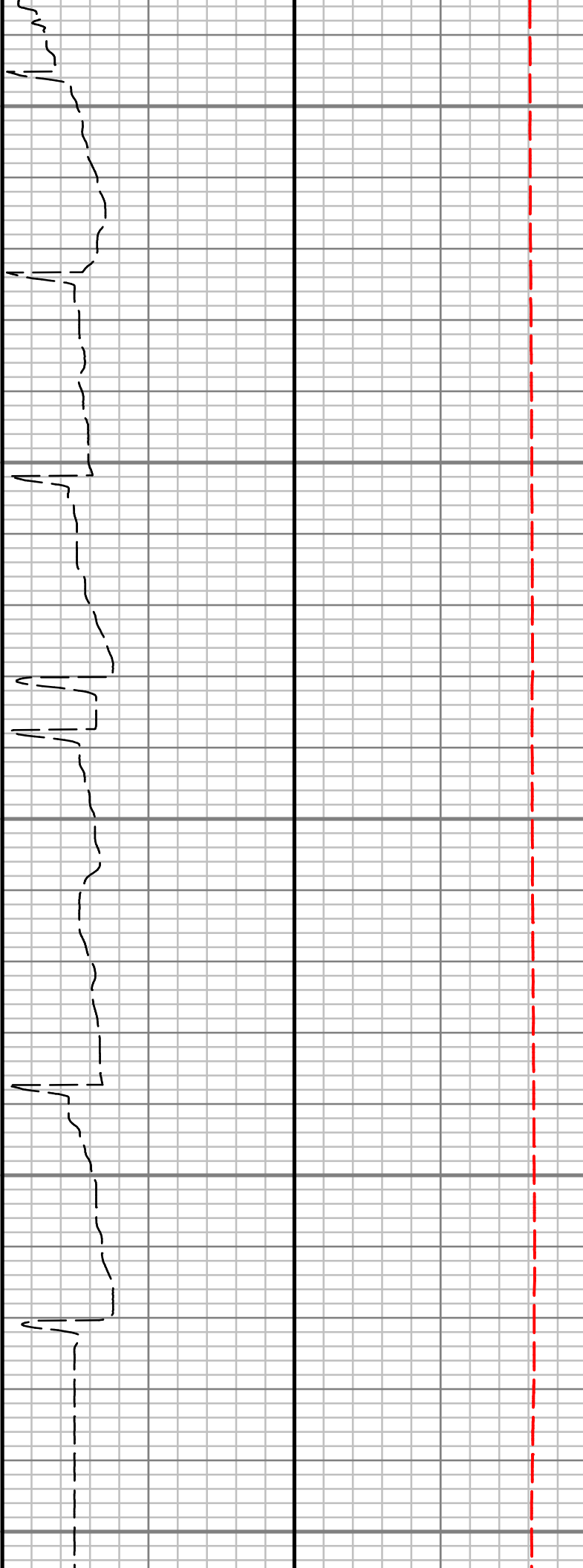
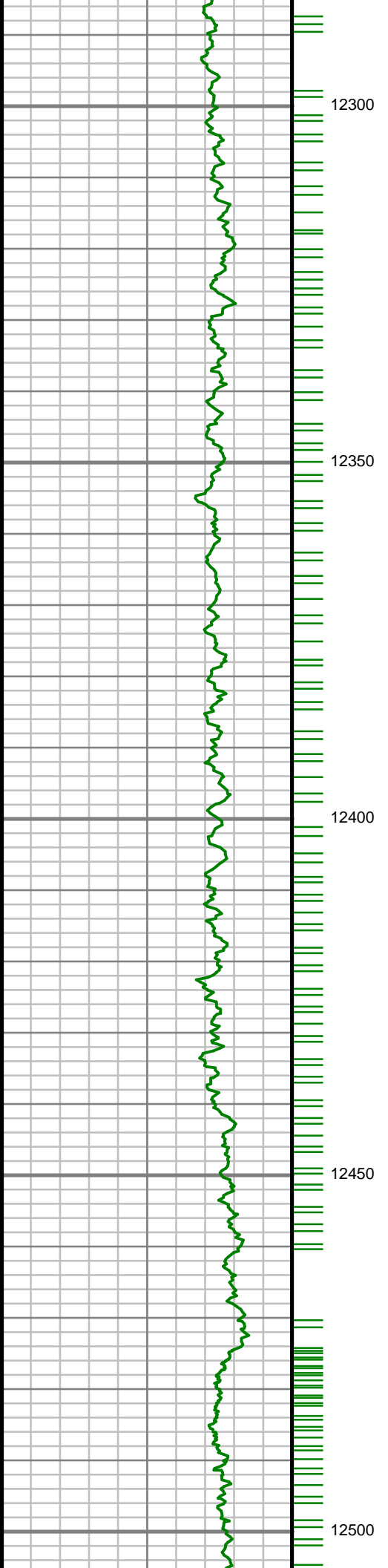
S: 172 MD: 11949.00 ft
Inc: 90.50 deg Az:
177.23 deg TVD:
7611.22 ft

S: 173 MD: 12036.00 ft
Inc: 92.14 deg Az:
178.36 deg TVD:
7609.22 ft



S: 174 MD: 12121.00 ft
Inc: 93.15 deg Az:
180.75 deg TVD:
7605.29 ft

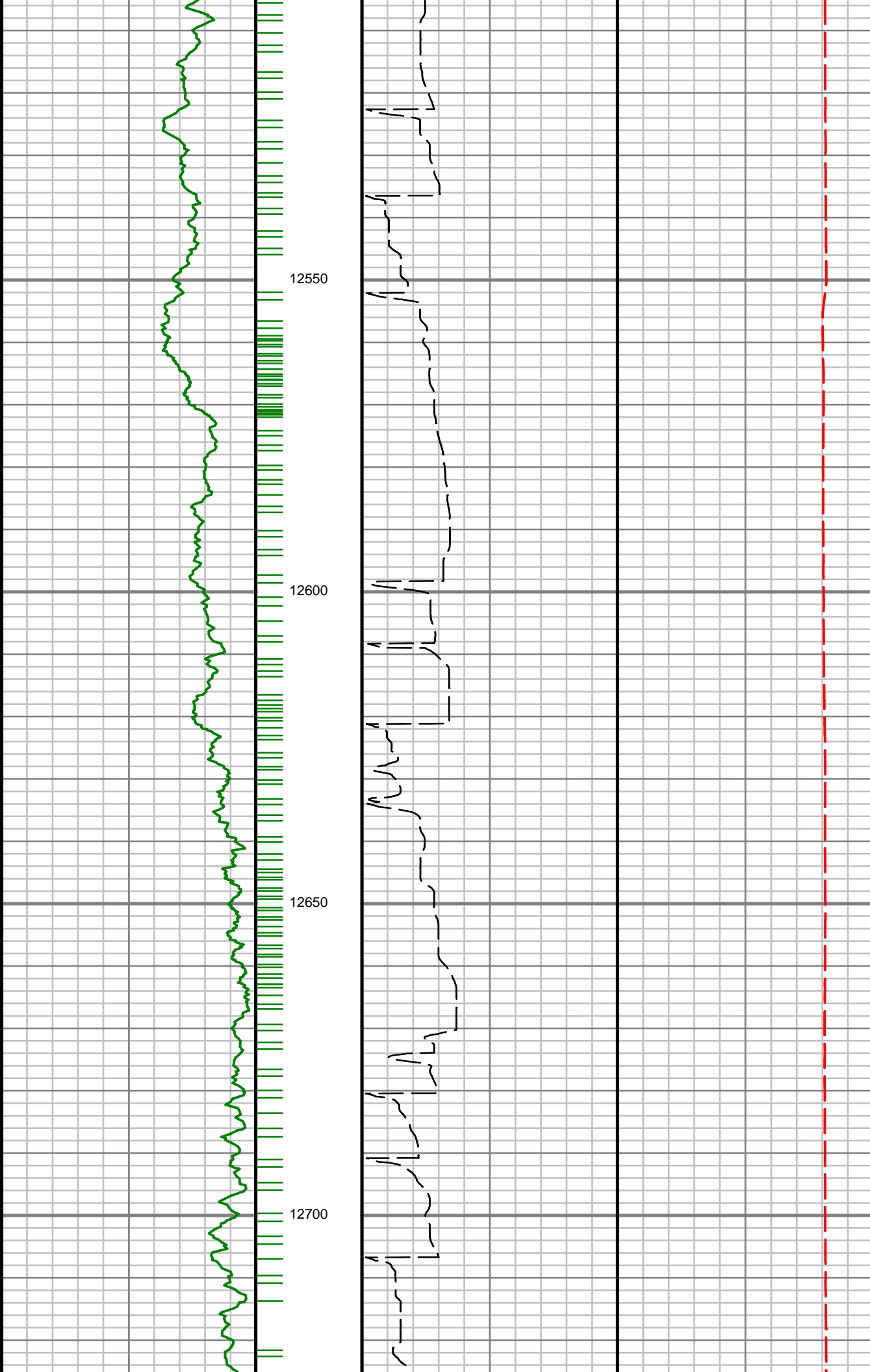
S: 175 MD: 12206.00 ft
Inc: 91.44 deg Az:
182.75 deg TVD:
7601.89 ft



S: 176 MD: 12290.00 ft
Inc: 89.36 deg Az:
184.39 deg TVD:
7601.30 ft

S: 177 MD: 12376.00 ft
Inc: 89.20 deg Az:
183.79 deg TVD:
7602.38 ft

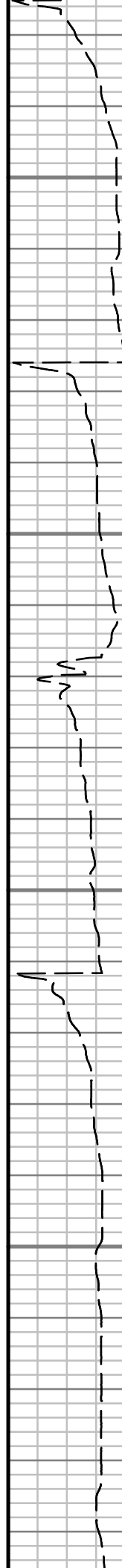
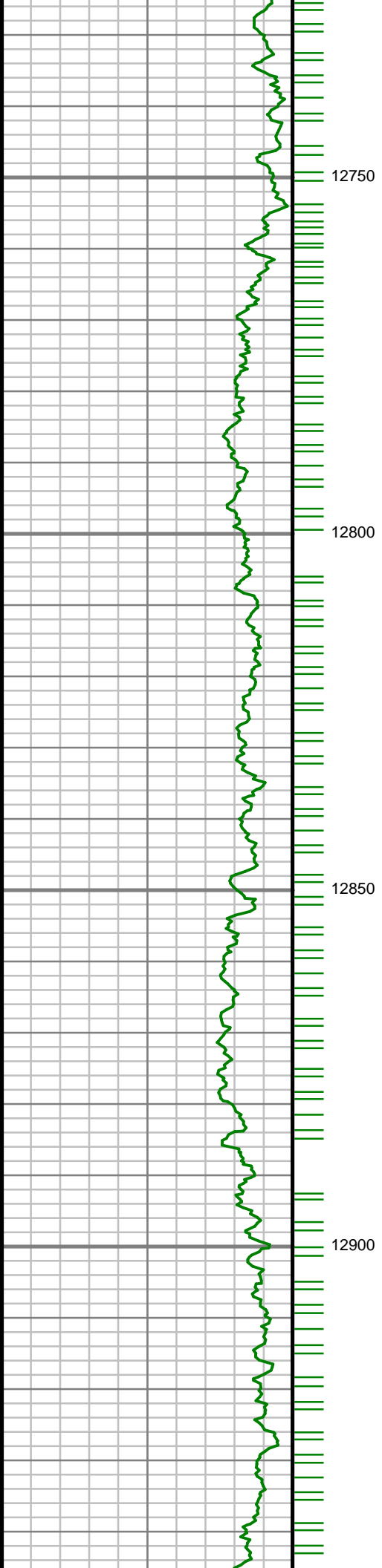
S: 178 MD: 12461.00 ft
Inc: 89.40 deg Az:
183.88 deg TVD:
7603.42 ft



S: 179 MD: 12546.00 ft
Inc: 87.99 deg Az:
181.28 deg TVD:
7605.36 ft

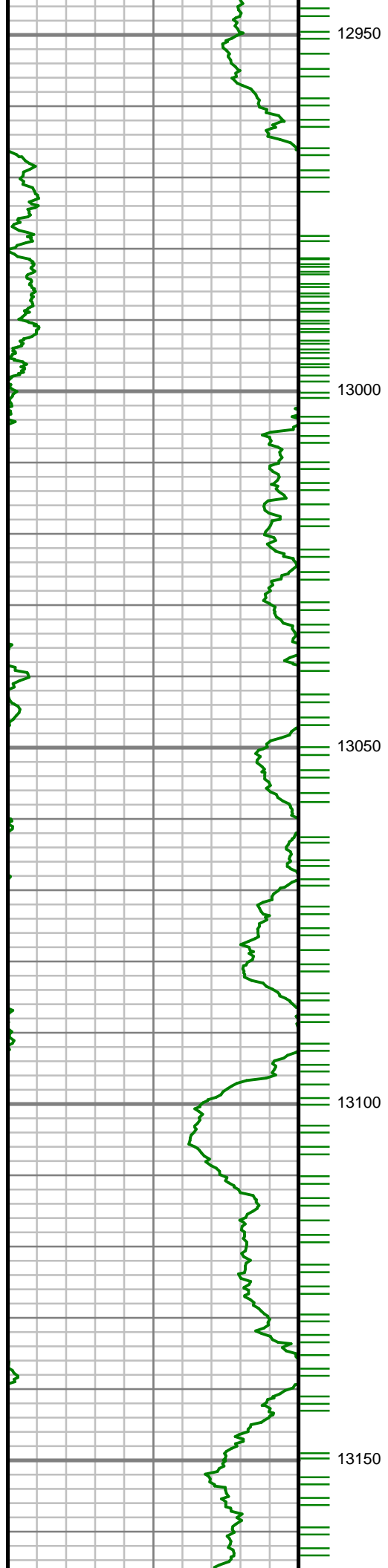
S: 180 MD: 12631.00 ft
Inc: 88.56 deg Az:
179.83 deg TVD:
7607.92 ft

S: 181 MD: 12716.00 ft
Inc: 89.67 deg Az:
180.00 deg TVD:
7609.24 ft



S: 182 MD: 12801.00 ft
Inc: 90.23 deg Az:
179.08 deg TVD:
7609.31 ft

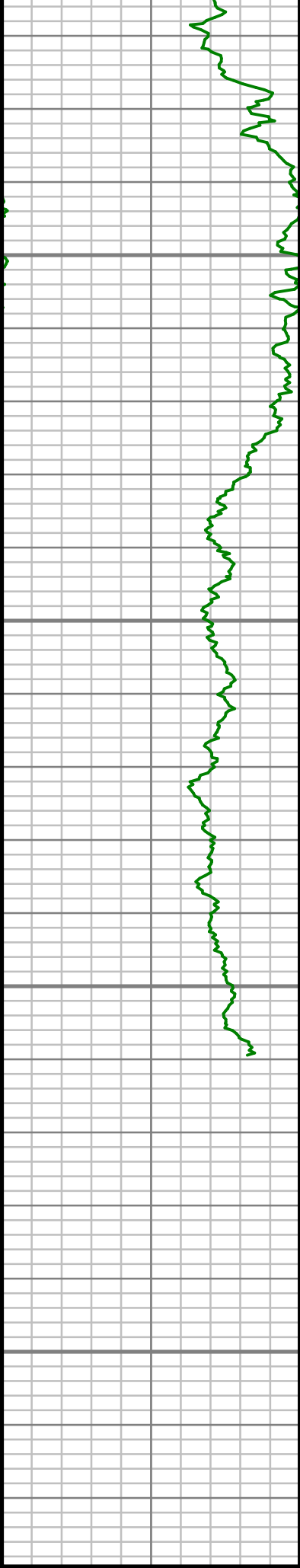
S: 183 MD: 12888.00 ft
Inc: 89.97 deg Az:
178.22 deg TVD:
7609.16 ft



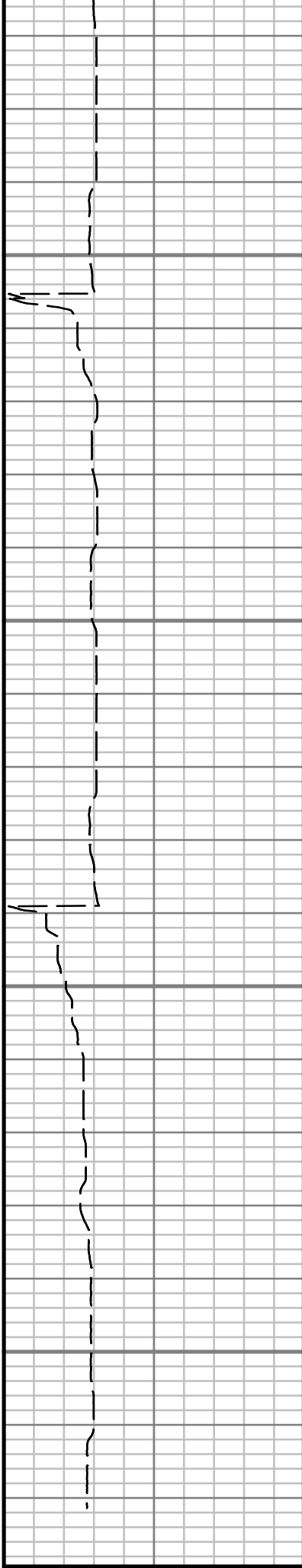
S: 184 MD: 12973.00 ft
Inc: 89.46 deg Az:
177.83 deg TVD:
7609.58 ft

S: 185 MD: 13059.00 ft
Inc: 90.54 deg Az:
177.18 deg TVD:
7609.58 ft

S: 186 MD: 13144.00 ft
Inc: 89.90 deg Az:
177.02 deg TVD:
7609.26 ft



ME/A
1:24



Tool Temperature (TEMP)

S: 187 MD: 13229.00 ft
Inc: 89.53 deg Az:
176.85 deg TVD:
7609.68 ft

S: 188 MD: 13311.00 ft
Inc: 89.06 deg Az:
177.03 deg TVD:
7610.69 ft

S: 189 MD: 13371.00 ft
Inc: 89.06 deg Az:
177.03 deg TVD:
7611.87 ft

0	Unit = aapi	150
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SURED DEPTH
0 (ft)

0	Unit = ft/hr	1000
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0	Unit = °F	300
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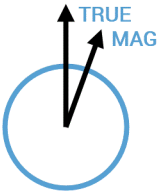
Comments

CUSTOMER ANADARKO E&P ONSHORE LLC
PROJECT YELLOWHAMMER 13N-17HZ
FIELD WATTENBERG

WELL INFORMATION
Lat/Long 40.062936° N, 105.03536° W
Northing 14,549,653.1 ft
Easting 1,630,523.16 ft
UWI 05123454950000

MAP INFORMATION
North Reference True North
Grid Correction System Universal Transverse Mercator (US Survey Feet)
Datum North American Datum 1983 (GRS 1980)
Map Zone Zone 13N (108 W to 102 W)

VERTICAL SECTION REFERENCE
+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 180.00°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION Local Gravity: 999.027 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-13371 ft	MagVAR	13 Dec 2017	8.43°	add 8.43°

WELL NOTES **OPERATORS**
J. MEYERS, J. WALSH, M. BAILY

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
128.00	1.14	128.34	127.99	0.79	-0.79	1.00	0.89
160.00	1.14	106.10	159.99	1.08	-1.08	1.55	1.37
192.00	1.05	131.06	191.98	1.36	-1.36	2.08	1.50
223.00	0.66	138.71	222.98	1.68	-1.68	2.41	1.31
254.00	0.57	116.82	253.97	1.88	-1.88	2.67	0.81
285.00	0.62	109.18	284.97	2.01	-2.01	2.96	0.30
317.00	0.22	137.74	316.97	2.11	-2.11	3.17	1.37
348.00	0.22	334.97	347.97	2.10	-2.10	3.18	1.40
380.00	0.40	262.20	379.97	2.06	-2.06	3.05	1.24
412.00	0.70	306.32	411.97	1.96	-1.96	2.78	1.56
443.00	0.92	284.26	442.97	1.78	-1.78	2.39	1.22
475.00	0.66	312.47	474.97	1.60	-1.60	2.00	1.44
507.00	0.70	321.35	506.96	1.32	-1.32	1.74	0.35
539.00	0.66	297.18	538.96	1.08	-1.08	1.46	0.90
571.00	0.97	274.68	570.96	0.98	-0.98	1.02	1.37
602.00	0.62	289.53	601.95	0.90	-0.90	0.60	1.30
634.00	0.48	341.47	633.95	0.71	-0.71	0.40	1.56
666.00	0.48	1.34	665.95	0.45	-0.45	0.36	0.52
698.00	0.13	98.28	697.95	0.32	-0.32	0.40	1.60

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
729.00	0.97	140.12	728.95	0.53	-0.53	0.60	2.83
761.00	1.23	143.19	760.94	1.01	-1.01	0.98	0.83
793.00	1.45	140.47	792.94	1.60	-1.60	1.44	0.72
825.00	1.89	155.41	824.92	2.39	-2.39	1.92	1.92
856.00	1.98	140.38	855.91	3.27	-3.27	2.47	1.66
888.00	2.24	144.16	887.88	4.20	-4.20	3.19	0.92
920.00	3.30	148.20	919.85	5.49	-5.49	4.04	3.37
952.00	4.09	147.32	951.78	7.24	-7.24	5.15	2.48
983.00	4.22	152.68	982.70	9.18	-9.18	6.27	1.32
1015.00	4.48	150.49	1014.61	11.31	-11.31	7.42	0.96
1047.00	4.97	150.40	1046.50	13.61	-13.61	8.72	1.53
1078.00	5.89	152.33	1077.36	16.18	-16.18	10.12	3.03
1110.00	6.77	154.88	1109.16	19.34	-19.34	11.69	2.89
1142.00	7.56	158.66	1140.91	23.01	-23.01	13.25	2.87
1174.00	7.91	157.78	1172.62	27.01	-27.01	14.85	1.15
1205.00	8.17	161.65	1203.32	31.08	-31.08	16.35	1.94
1237.00	9.10	165.96	1234.95	35.69	-35.69	17.68	3.54
1269.00	10.28	168.50	1266.50	40.94	-40.94	18.87	3.92
1301.00	10.85	169.47	1297.95	46.70	-46.70	19.99	1.87
1332.00	11.60	170.00	1328.36	52.64	-52.64	21.06	2.44

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
1364.00	11.43	168.68	1359.72	58.92	-58.92	22.24	0.98
1396.00	11.91	170.09	1391.06	65.28	-65.28	23.43	1.74
1427.00	13.40	168.77	1421.30	71.95	-71.95	24.68	4.90
1459.00	14.46	167.71	1452.36	79.50	-79.50	26.26	3.41
1491.00	14.81	168.50	1483.32	87.41	-87.41	27.92	1.26
1522.00	14.90	168.77	1513.29	95.20	-95.20	29.49	0.37
1554.00	15.07	168.59	1544.20	103.31	-103.31	31.11	0.55
1586.00	15.60	169.30	1575.06	111.62	-111.62	32.73	1.76
1618.00	16.39	169.65	1605.82	120.29	-120.29	34.34	2.49
1649.00	16.88	168.15	1635.52	128.99	-128.99	36.05	2.10
1681.00	17.01	167.98	1666.13	138.12	-138.12	37.98	0.43
1713.00	18.19	165.69	1696.64	147.54	-147.54	40.19	4.27
1745.00	18.37	165.96	1727.02	157.27	-157.27	42.65	0.62
1776.00	18.06	164.29	1756.47	166.63	-166.63	45.14	1.96
1808.00	18.11	163.85	1786.89	176.19	-176.19	47.86	0.45
1834.00	17.84	163.32	1811.62	183.88	-183.88	50.13	1.21
1896.00	17.60	165.76	1870.67	202.07	-202.07	55.16	1.26
1979.00	16.81	160.01	1949.96	225.51	-225.51	62.35	2.26
2064.00	18.18	162.38	2031.03	249.70	-249.70	70.57	1.82
2149.00	17.50	161.86	2111.94	274.48	-274.48	78.56	0.82

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2237.00	18.54	159.57	2195.63	300.16	-300.16	87.57	1.43
2322.00	20.14	162.28	2275.83	326.76	-326.76	96.74	2.16
2407.00	20.09	162.24	2355.65	354.60	-354.60	105.65	0.06
2493.00	18.91	162.04	2436.72	381.92	-381.92	114.45	1.37
2578.00	19.11	159.32	2517.08	408.04	-408.04	123.61	1.07
2662.00	18.97	158.33	2596.49	433.59	-433.59	133.50	0.42
2747.00	18.78	160.69	2676.92	459.34	-459.34	143.13	0.93
2833.00	18.54	163.69	2758.40	485.53	-485.53	151.55	1.15
2918.00	17.03	162.66	2839.33	510.39	-510.39	159.05	1.81
3003.00	16.08	164.40	2920.81	533.62	-533.62	165.93	1.26
3088.00	18.15	166.53	3002.04	557.83	-557.83	172.18	2.54
3174.00	17.56	166.67	3083.90	583.48	-583.48	178.29	0.69
3259.00	17.80	166.16	3164.88	608.57	-608.57	184.36	0.33
3344.00	17.81	166.73	3245.81	633.83	-633.83	190.45	0.21
3428.00	16.38	165.50	3326.10	657.80	-657.80	196.36	1.76
3515.00	18.02	165.89	3409.21	682.72	-682.72	202.72	1.89
3600.00	16.00	164.94	3490.49	706.79	-706.79	208.97	2.39
3686.00	18.10	163.79	3572.70	731.07	-731.07	215.78	2.46
3771.00	16.28	164.76	3653.90	755.24	-755.24	222.59	2.16
3856.00	16.05	161.37	3735.54	777.87	-777.87	229.48	1.14

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4026.00	15.31	157.26	3899.22	820.84	-820.84	245.66	0.79
4111.00	13.15	157.83	3981.61	840.15	-840.15	253.65	2.54
4282.00	11.79	154.95	4148.57	874.00	-874.00	268.39	0.87
4369.00	10.14	153.82	4233.98	888.93	-888.93	275.53	1.92
4454.00	9.23	154.26	4317.77	901.79	-901.79	281.79	1.08
4539.00	8.19	155.48	4401.78	913.44	-913.44	287.27	1.24
4624.00	5.97	154.85	4486.13	922.95	-922.95	291.66	2.61
4708.00	5.73	158.01	4569.69	930.80	-930.80	295.09	0.48
4793.00	4.24	163.13	4654.37	937.75	-937.75	297.59	1.83
4878.00	3.14	164.36	4739.19	943.00	-943.00	299.13	1.30
4963.00	2.78	195.03	4824.08	947.24	-947.24	299.23	1.89
5049.00	2.39	214.90	4910.00	950.72	-950.72	297.66	1.13
5133.00	1.35	267.34	4993.96	952.21	-952.21	295.67	2.26
5219.00	1.83	282.15	5079.92	951.96	-951.96	293.31	0.73
5302.00	1.48	318.06	5162.89	950.89	-950.89	291.29	1.30
5387.00	1.87	3.63	5247.86	948.69	-948.69	290.65	1.58
5473.00	1.37	350.15	5333.82	946.28	-946.28	290.56	0.72
5558.00	1.05	346.94	5418.80	944.51	-944.51	290.21	0.38
5643.00	0.89	335.55	5503.79	943.15	-943.15	289.76	0.30
5728.00	0.81	319.51	5588.78	942.09	-942.09	289.10	0.29

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5813.00	0.75	311.58	5673.77	941.27	-941.27	288.29	0.14
5846.00	0.92	312.14	5706.77	940.94	-940.94	287.93	0.49
5984.00	0.62	321.38	5844.76	939.62	-939.62	286.65	0.24
6069.00	0.60	303.54	5929.75	939.02	-939.02	285.99	0.22
6154.00	0.47	281.95	6014.75	938.70	-938.70	285.28	0.28
6239.00	1.01	124.20	6099.75	939.05	-939.05	285.55	1.71
6324.00	1.59	106.64	6184.72	939.81	-939.81	287.30	0.83
6410.00	1.87	113.02	6270.68	940.70	-940.70	289.74	0.39
6495.00	1.41	101.30	6355.65	941.45	-941.45	292.04	0.67
6580.00	1.44	84.57	6440.62	941.55	-941.55	294.13	0.49
6667.00	0.93	82.31	6527.61	941.35	-941.35	295.92	0.59
6753.00	1.37	129.37	6613.59	941.91	-941.91	297.40	1.16
6838.00	1.28	112.56	6698.57	942.92	-942.92	299.06	0.47
6923.00	1.65	153.27	6783.54	944.38	-944.38	300.48	1.27
7008.00	10.71	177.11	6867.97	953.37	-953.37	301.43	10.85
7093.00	16.06	174.72	6950.63	972.98	-972.98	302.91	6.33
7178.00	18.88	177.01	7031.70	998.43	-998.43	304.71	3.42
7263.00	24.99	171.23	7110.52	1029.94	-1029.94	308.17	7.61
7348.00	28.03	172.70	7186.57	1067.51	-1067.51	313.45	3.66
7433.00	36.08	175.24	7258.56	1112.34	-1112.34	318.07	9.60

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7518.00	45.72	176.22	7322.73	1167.78	-1167.78	322.17	11.37
7603.00	54.12	180.19	7377.41	1232.71	-1232.71	324.07	10.51
7689.00	57.26	177.96	7425.88	1303.72	-1303.72	325.24	4.23
7774.00	62.66	181.87	7468.43	1377.26	-1377.26	325.28	7.49
7859.00	66.07	182.07	7505.20	1453.83	-1453.83	322.64	4.01
7944.00	71.73	180.22	7535.79	1533.08	-1533.08	321.08	6.97
8029.00	77.74	179.61	7558.16	1615.04	-1615.04	321.21	7.10
8115.00	82.48	179.46	7572.93	1699.74	-1699.74	321.90	5.51
8200.00	86.68	179.57	7580.95	1784.34	-1784.34	322.62	4.95
8285.00	87.65	179.33	7585.15	1869.23	-1869.23	323.44	1.17
8370.00	87.65	179.18	7588.63	1954.15	-1954.15	324.55	0.18
8455.00	87.65	178.17	7592.11	2039.05	-2039.05	326.52	1.18
8541.00	88.19	179.14	7595.23	2124.97	-2124.97	328.53	1.29
8626.00	88.89	180.22	7597.39	2209.94	-2209.94	329.01	1.52
8711.00	89.40	179.04	7598.66	2294.93	-2294.93	329.56	1.51
8797.00	89.00	180.79	7599.86	2380.92	-2380.92	329.68	2.09
8882.00	88.56	180.72	7601.68	2465.89	-2465.89	328.56	0.52
8967.00	88.86	180.63	7603.59	2550.86	-2550.86	327.56	0.37
9052.00	88.96	179.75	7605.21	2635.84	-2635.84	327.28	1.04
9138.00	88.93	181.70	7606.79	2721.82	-2721.82	326.19	2.27

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9223.00	88.86	181.99	7608.43	2806.76	-2806.76	323.45	0.34
9308.00	89.56	181.22	7609.60	2891.72	-2891.72	321.07	1.23
9393.00	89.20	180.28	7610.52	2976.70	-2976.70	319.97	1.19
9478.00	90.00	181.08	7611.11	3061.69	-3061.69	318.96	1.34
9563.00	90.03	179.53	7611.09	3146.69	-3146.69	318.50	1.83
9643.00	89.97	179.14	7611.09	3226.68	-3226.68	319.43	0.50
9734.00	90.54	177.82	7610.69	3317.65	-3317.65	321.84	1.57
9818.00	91.14	179.14	7609.46	3401.61	-3401.61	324.07	1.72
9904.00	92.14	179.82	7607.00	3487.57	-3487.57	324.85	1.41
9989.00	90.87	179.88	7604.76	3572.54	-3572.54	325.08	1.50
10077.00	91.17	179.49	7603.19	3660.52	-3660.52	325.57	0.56
10161.00	90.60	179.92	7601.89	3744.51	-3744.51	326.00	0.85
10246.00	91.64	179.56	7600.23	3829.49	-3829.49	326.38	1.29
10332.00	90.10	181.17	7598.92	3915.47	-3915.47	325.83	2.59
10416.00	89.97	181.06	7598.87	3999.46	-3999.46	324.20	0.20
10502.00	89.40	180.60	7599.35	4085.45	-4085.45	322.96	0.85
10587.00	89.00	179.28	7600.54	4170.44	-4170.44	323.05	1.62
10672.00	88.26	179.06	7602.58	4255.40	-4255.40	324.27	0.90
10757.00	87.39	177.94	7605.81	4340.31	-4340.31	326.49	1.67
10842.00	87.59	178.41	7609.53	4425.18	-4425.18	329.20	0.60

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
10926.00	89.67	178.80	7611.54	4509.13	-4509.13	331.24	2.51
11012.00	91.04	180.52	7611.02	4595.12	-4595.12	331.75	2.56
11096.00	91.68	180.47	7609.03	4679.10	-4679.10	331.03	0.76
11183.00	91.27	182.90	7606.79	4766.02	-4766.02	328.48	2.83
11268.00	89.70	183.73	7606.07	4850.87	-4850.87	323.57	2.09
11353.00	89.46	183.28	7606.69	4935.71	-4935.71	318.38	0.60
11438.00	88.86	182.85	7607.93	5020.58	-5020.58	313.84	0.87
11523.00	88.06	181.59	7610.22	5105.48	-5105.48	310.55	1.75
11609.00	87.89	179.55	7613.26	5191.42	-5191.42	309.69	2.38
11694.00	90.77	178.80	7614.25	5276.40	-5276.40	310.92	3.50
11779.00	90.90	178.14	7613.01	5361.36	-5361.36	313.19	0.79
11863.00	90.50	177.95	7611.98	5445.30	-5445.30	316.05	0.53
11949.00	90.50	177.23	7611.22	5531.22	-5531.22	319.66	0.83
12036.00	92.14	178.36	7609.22	5618.13	-5618.13	323.01	2.29
12121.00	93.15	180.75	7605.29	5703.03	-5703.03	323.67	3.05
12206.00	91.44	182.75	7601.89	5787.92	-5787.92	321.07	3.08
12290.00	89.36	184.39	7601.30	5871.74	-5871.74	315.85	3.15
12376.00	89.20	183.79	7602.38	5957.52	-5957.52	309.72	0.72
12461.00	89.40	183.88	7603.42	6042.32	-6042.32	304.03	0.26
12546.00	87.99	181.28	7605.36	6127.20	-6127.20	300.21	3.48

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
12631.00	88.56	179.83	7607.92	6212.16	-6212.16	299.38	1.83
12716.00	89.67	180.00	7609.24	6297.15	-6297.15	299.50	1.32
12801.00	90.23	179.08	7609.31	6382.14	-6382.14	300.19	1.28
12888.00	89.97	178.22	7609.16	6469.12	-6469.12	302.24	1.04
12973.00	89.46	177.83	7609.58	6554.06	-6554.06	305.17	0.75
13059.00	90.54	177.18	7609.58	6639.98	-6639.98	308.92	1.46
13144.00	89.90	177.02	7609.26	6724.87	-6724.87	313.22	0.77
13229.00	89.53	176.85	7609.68	6809.75	-6809.75	317.77	0.48
13311.00	89.06	177.03	7610.69	6891.62	-6891.62	322.15	0.61
13371.00	89.06	177.03	7611.67	6951.54	-6951.54	325.25	0.00

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

5" = 100' MD