

5" = 100' FEET MD

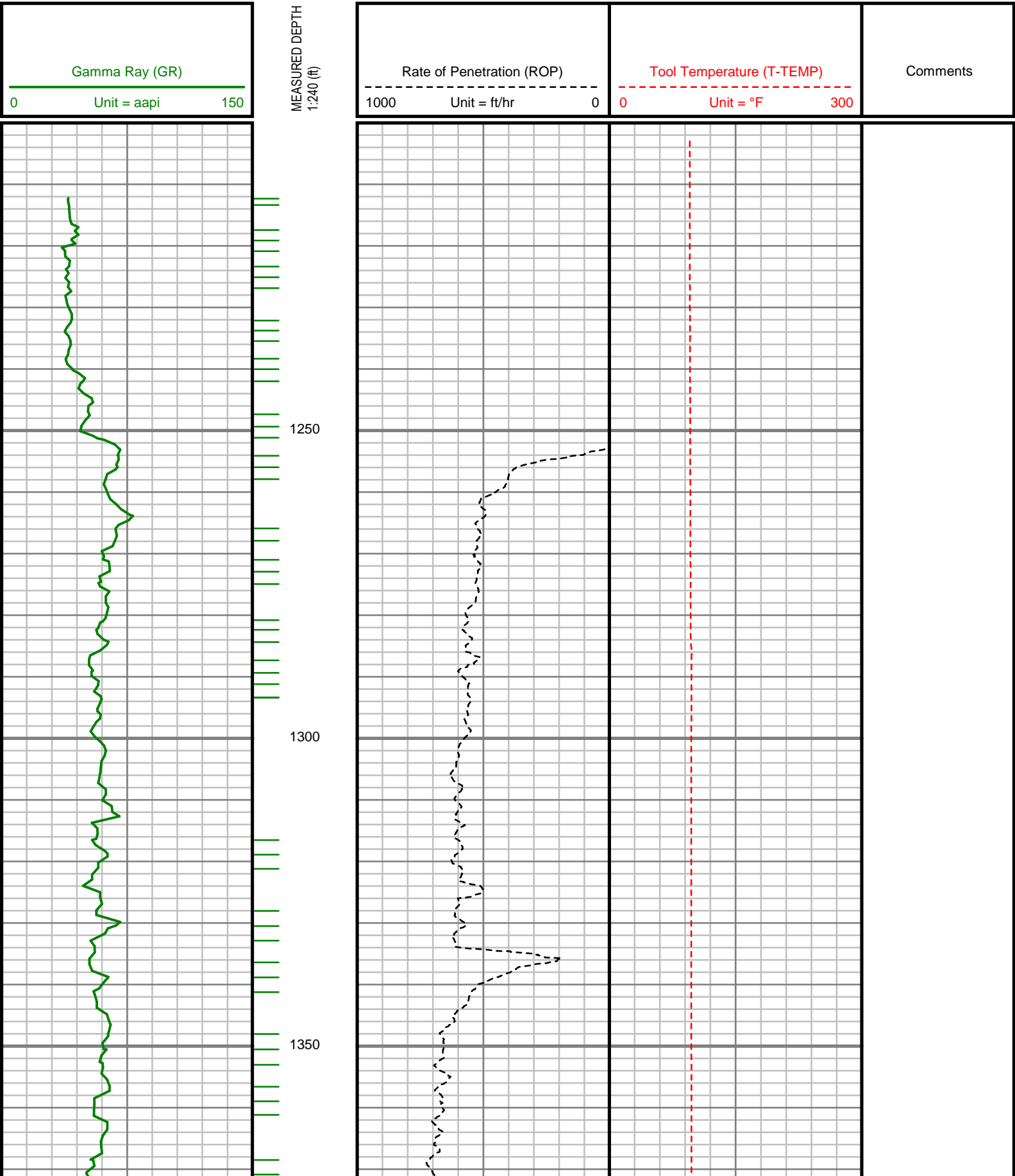
COMPANY : ANADARKO E&P ONSHORE LLC									
WELL : MULGA 28C-23HZ									
FIELD : WATTENBERRG									
COUNTY : WELD									
STATE : COLORADO									
COUNTRY : U.S.A.									
UWI : 05-123-39255									
OTHER SERVICES									
WELL LOCATION									
LAT:40°7'1.690"N LONG:104°51'34.160"W									
N:1286163.62 ft E:3179131.69 ft									
SEC:23 TWP:2N RANGE:67W									
DIRECTIONAL ROP									
DEPTH REF. : RKB									
REF. HEIGHT : 25.000 ft RKB to Ground Level									
GROUND LEVEL : 4947.000 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	0	1253	0-10	0	6891				
8.75	1253	7955	10-90	6891	7955				
6.125	7955	12534	90-94	7995	12534				
CASING RECORD									
CASING SIZE in	FROM ft	TO ft							
9.625	0	1253							
7	0	7955							
DRILLING CO.: H&P									
RIG: 311									
LMD UNIT NO.:						DISTRICT: CASPER			
SPUD DATE: 07/05/2014									
LMD START DATE: 07/22/2014						DEPTH: 1201 ft			
LMD END DATE: 07/30/2014						DEPTH: 12534 ft			
TOTAL DEPTH: 12534 ft									

Remarks
ANADARKO E&P ONSHORE LLC PRODUCTION AFE# 2094827
SCIENTIFIC DRILLING INTERNATIONAL JOB# 177535
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 LOGGING RUN
SENSORS S/N: PULSER = 128-042 / CONT = 590 / MWD EYE =1001 / GAMMA RAY =1031
BIT TO SENSOR OFFSETS: SURVEY = 50.29 FT. / GAMMA RAY = 41.04 FT.
RUN # 2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-136 / CONT = 277 / MWD EYE =1100 / GAMMA RAY =1133
BIT TO SENSOR OFFSETS: SURVEY = 46.64 FT. / GAMMA RAY = 37.39 FT.
RUN # 3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-070 / CONT = 603 / MWD EYE =840 / GAMMA RAY =1154
BIT TO SENSOR OFFSETS: SURVEY = 61.87 FT. / GAMMA RAY = 52.62 FT.
RUN # 4: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-094 / CONT = 880 / MWD EYE =1048 / GAMMA RAY =1133
BIT TO SENSOR OFFSETS: SURVEY = 59.06 FT. / GAMMA RAY = 49.81 FT.

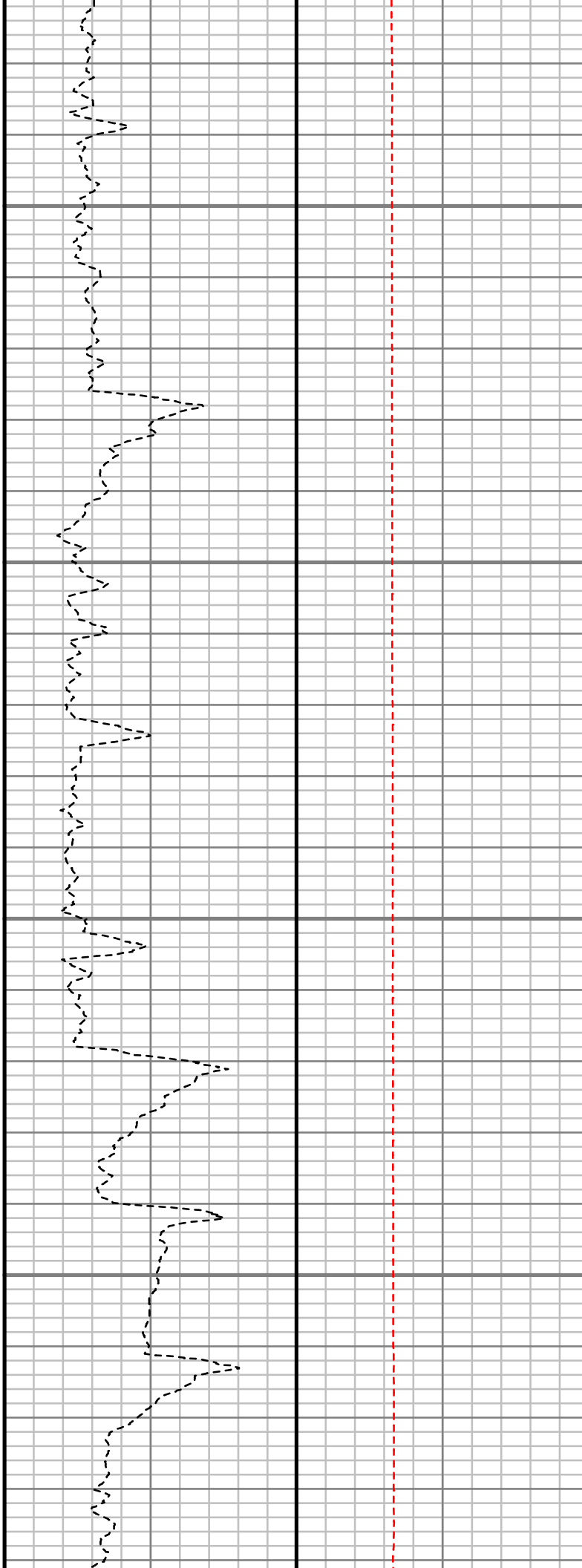
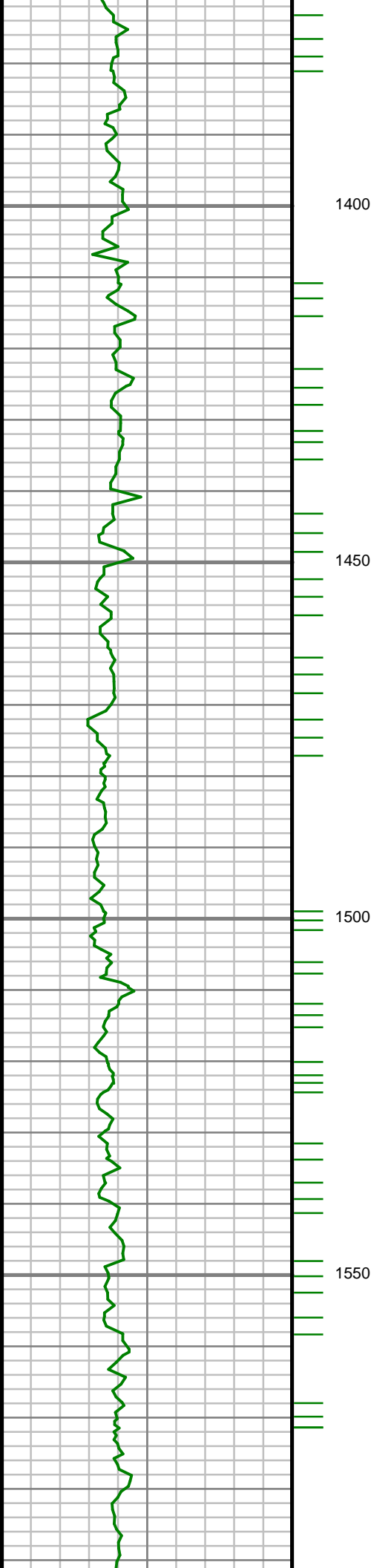
[illegible]

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.

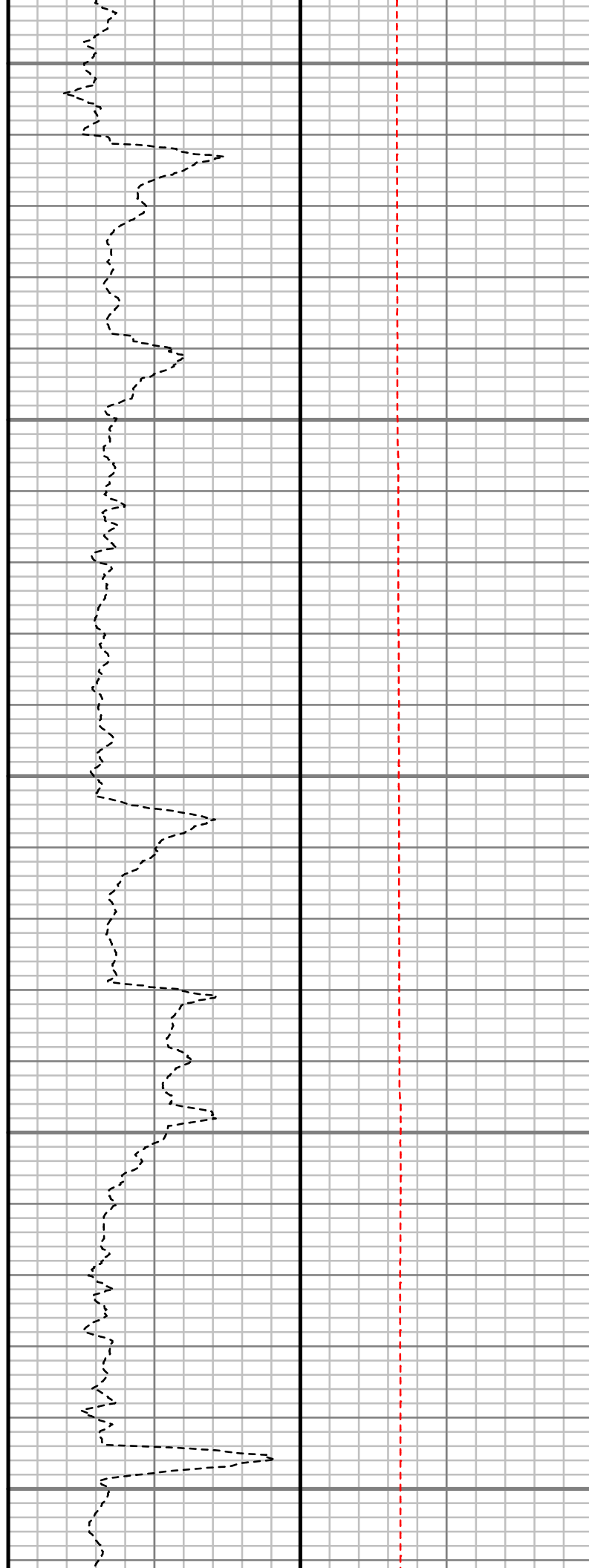
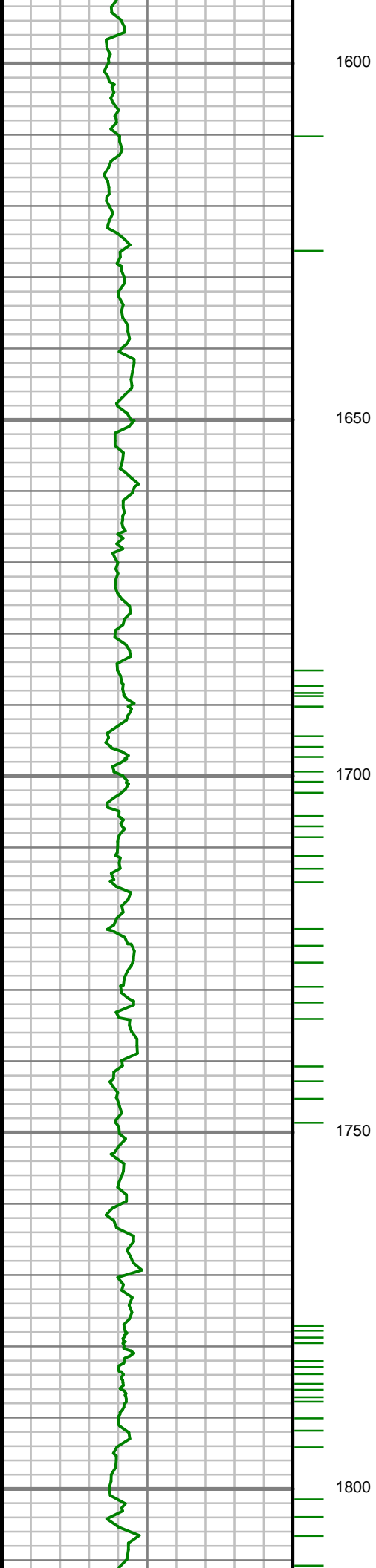
ANADARKO E&P ONSHORE LLC.  
MULGA 28C-23HZ  
WATENBERG FIELD  
WELD COUNTY, COLORADO  
05-123-39255



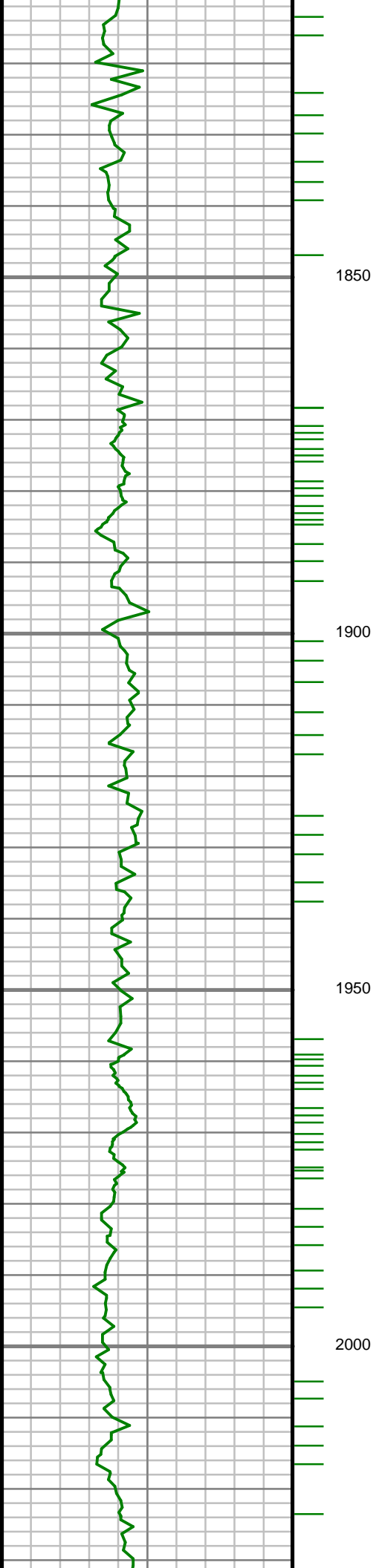
S: 14 MD: 1374.00 ft  
Inc: 0.21 deg Az: 5.21  
deg TVD: 1373.97 ft



S: 15 MD: 1557.00 ft  
Inc: 2.23 deg Az:  
132.20 deg TVD:  
1556.92 ft



S: 16 MD: 1740.00 ft  
Inc: 2.99 deg Az:  
122.40 deg TVD:  
1739.73 ft

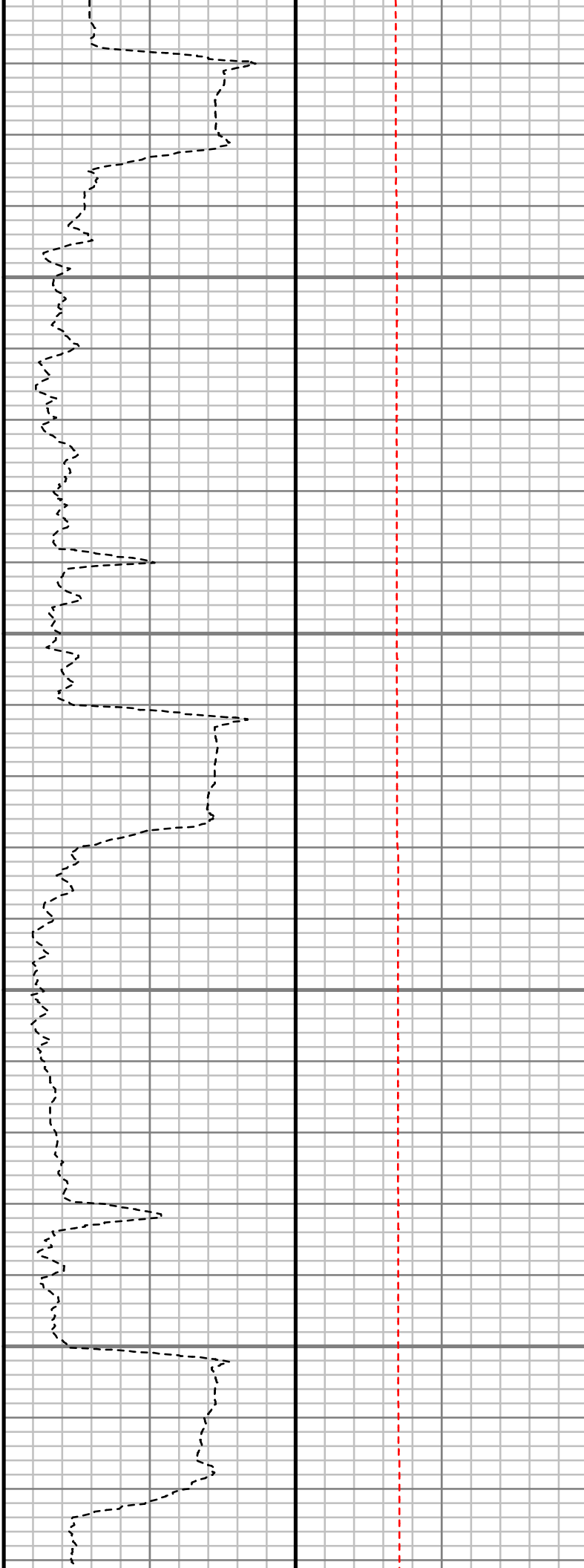


1850

1900

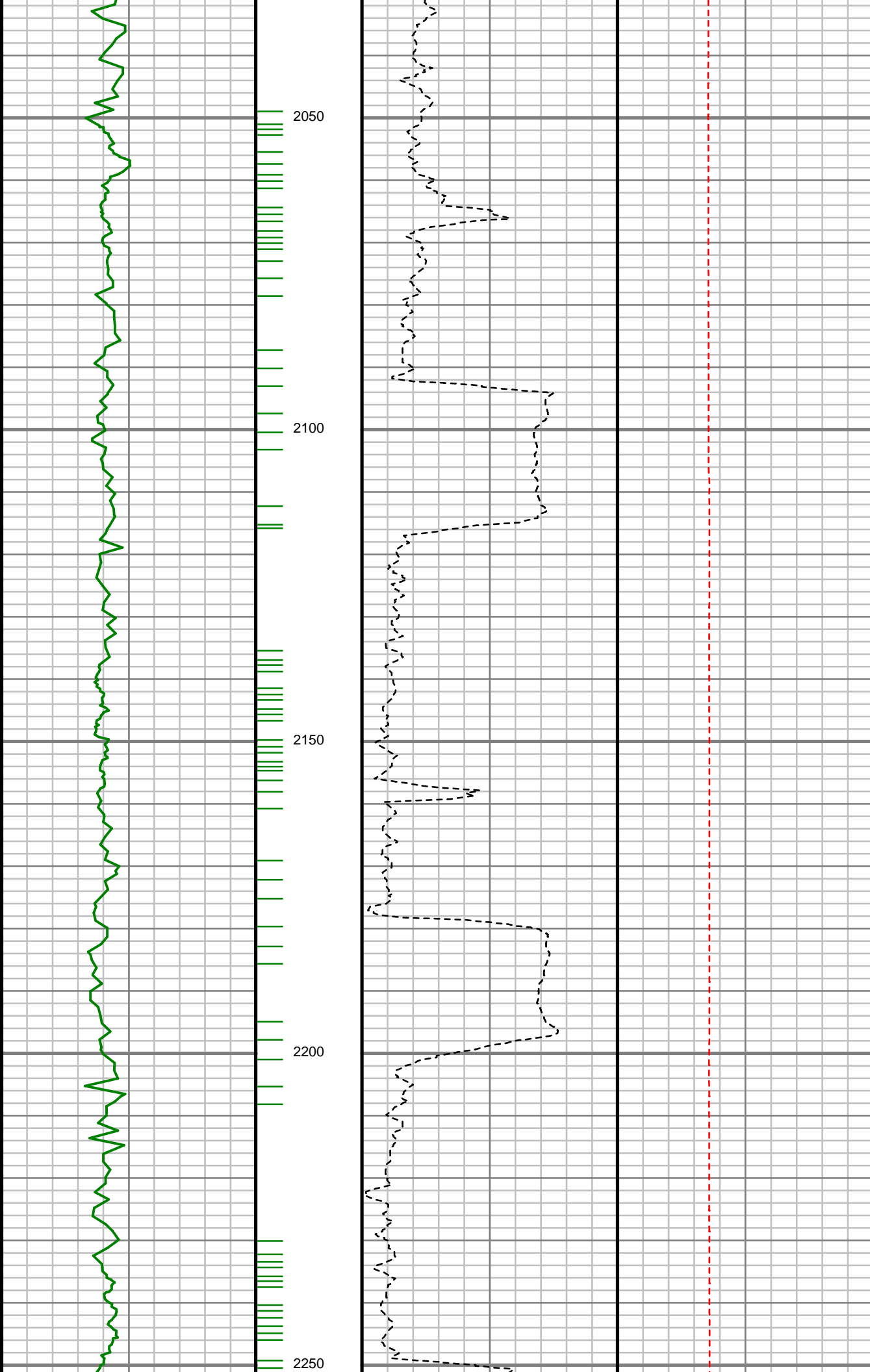
1950

2000



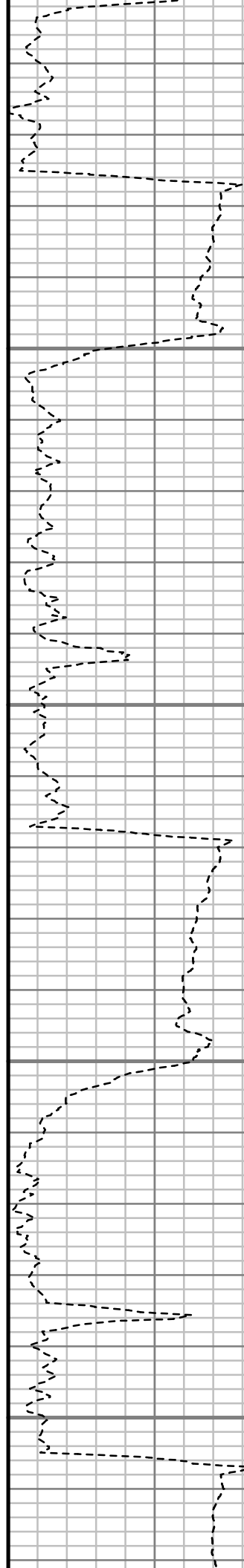
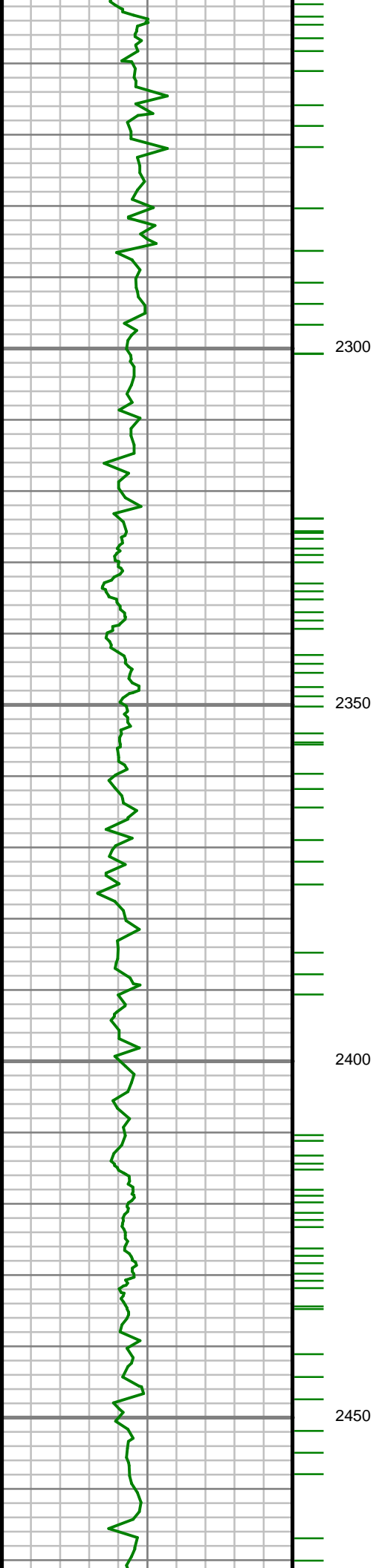
S: 17 MD: 1831.00 ft  
Inc: 4.18 deg Az:  
123.82 deg TVD:  
1830.56 ft

S: 18 MD: 2014.00 ft  
Inc: 5.96 deg Az:  
125.32 deg TVD:  
2012.83 ft



S: 19 MD: 2106.00 ft  
Inc: 7.32 deg Az:  
129.14 deg TVD:  
2104.21 ft

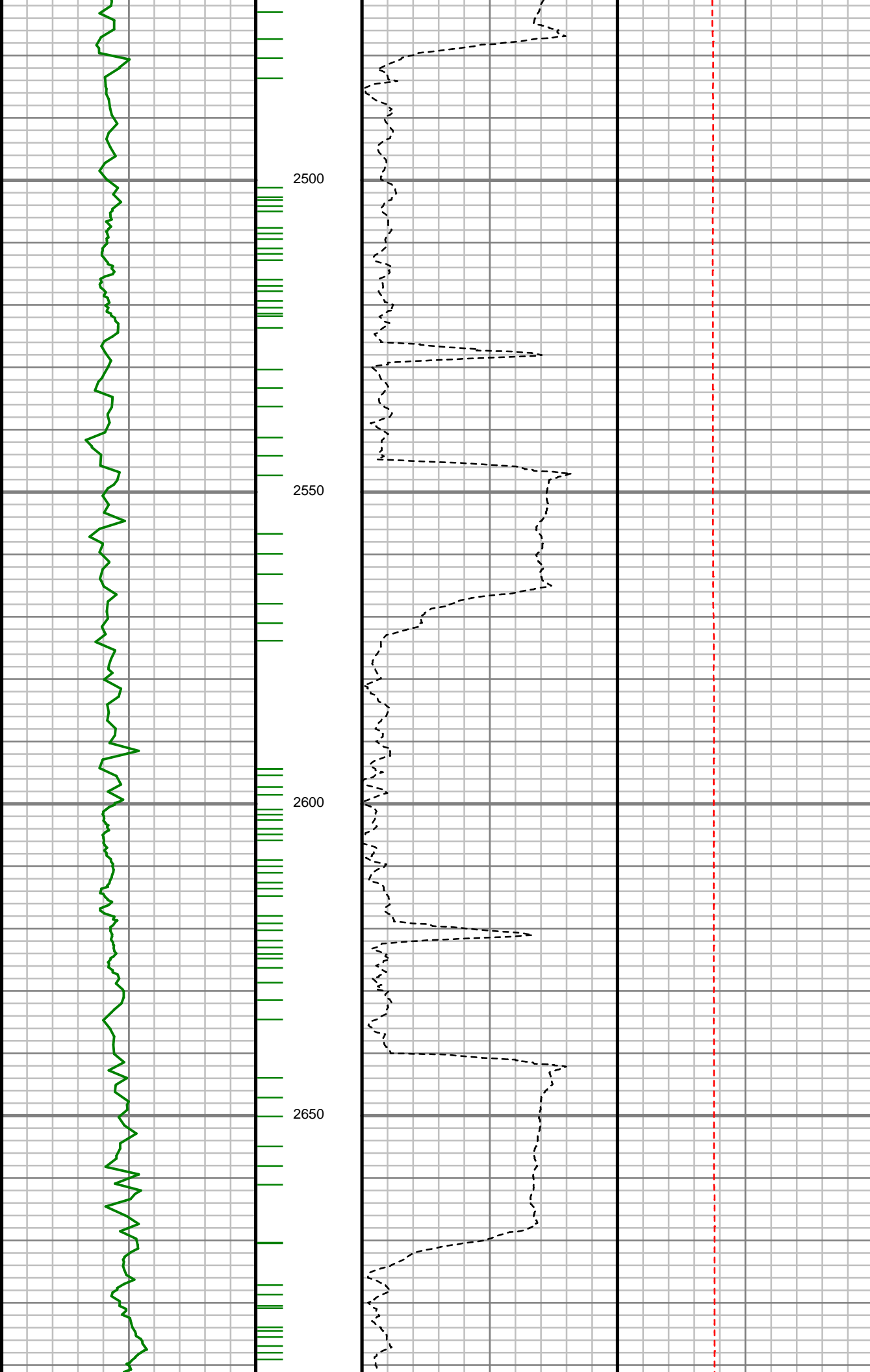
S: 20 MD: 2197.00 ft  
Inc: 9.05 deg Az:  
128.12 deg TVD:  
2194.28 ft



S: 21 MD: 2289.00 ft  
Inc: 9.82 deg Az:  
130.69 deg TVD:  
2285.04 ft

S: 22 MD: 2380.00 ft  
Inc: 11.30 deg Az:  
138.15 deg TVD:  
2374.50 ft

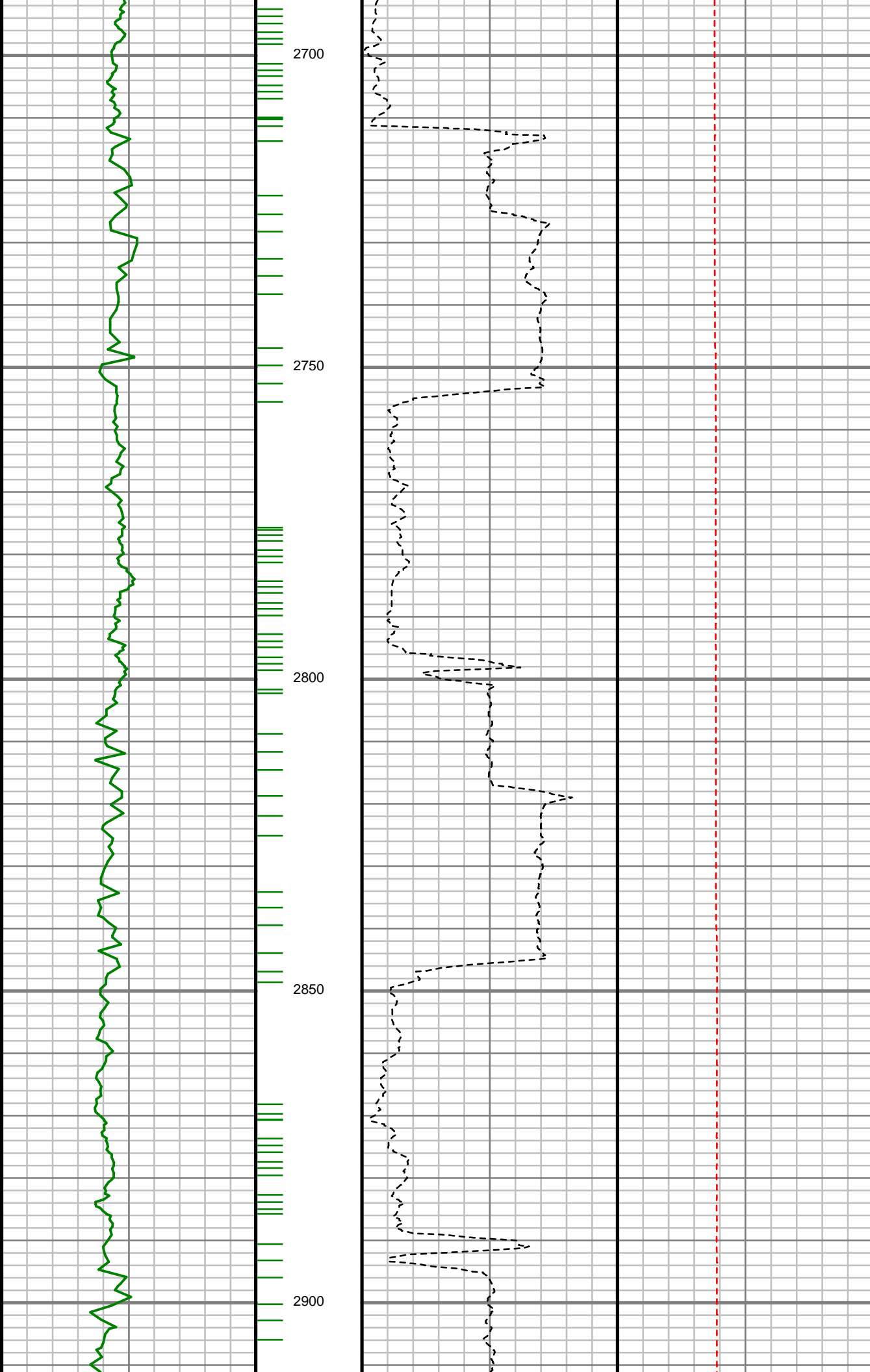




S: 23 MD: 2471.00 ft  
Inc: 13.27 deg Az:  
138.90 deg TVD:  
2463.41 ft

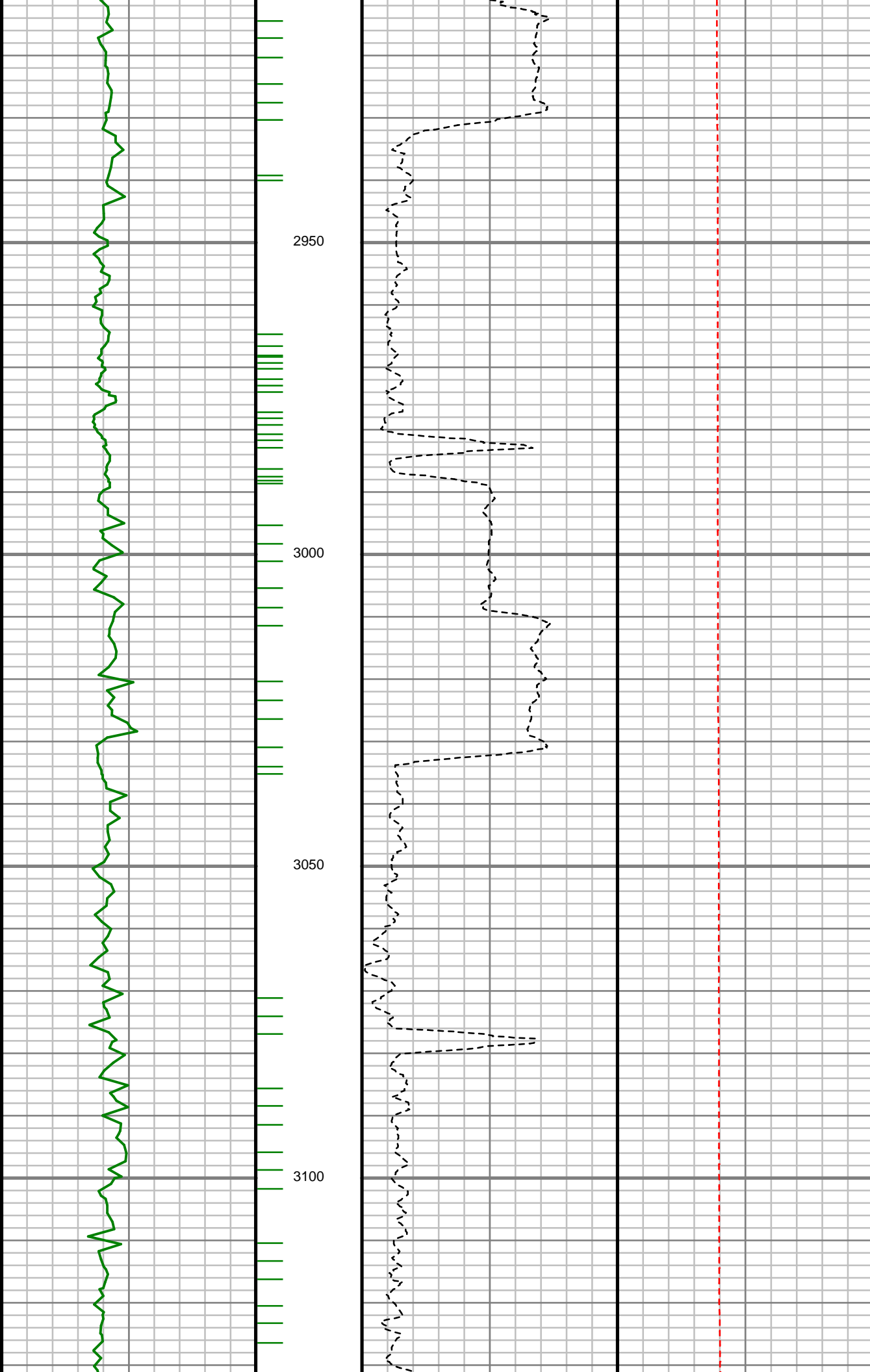
S: 24 MD: 2563.00 ft  
Inc: 13.32 deg Az:  
139.90 deg TVD:  
2552.95 ft

S: 25 MD: 2654.00 ft  
Inc: 13.14 deg Az:  
138.13 deg TVD:  
2641.53 ft



S: 26 MD: 2746.00 ft  
Inc: 13.45 deg Az:  
136.54 deg TVD:  
2731.07 ft

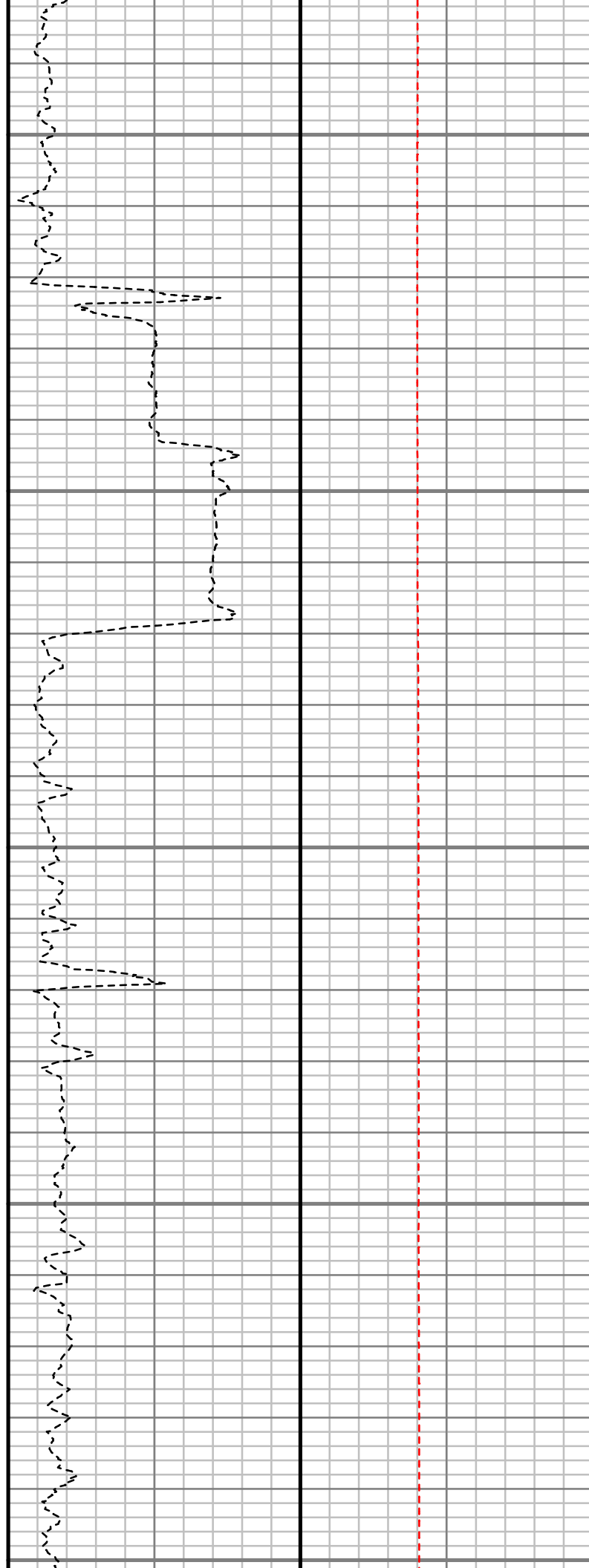
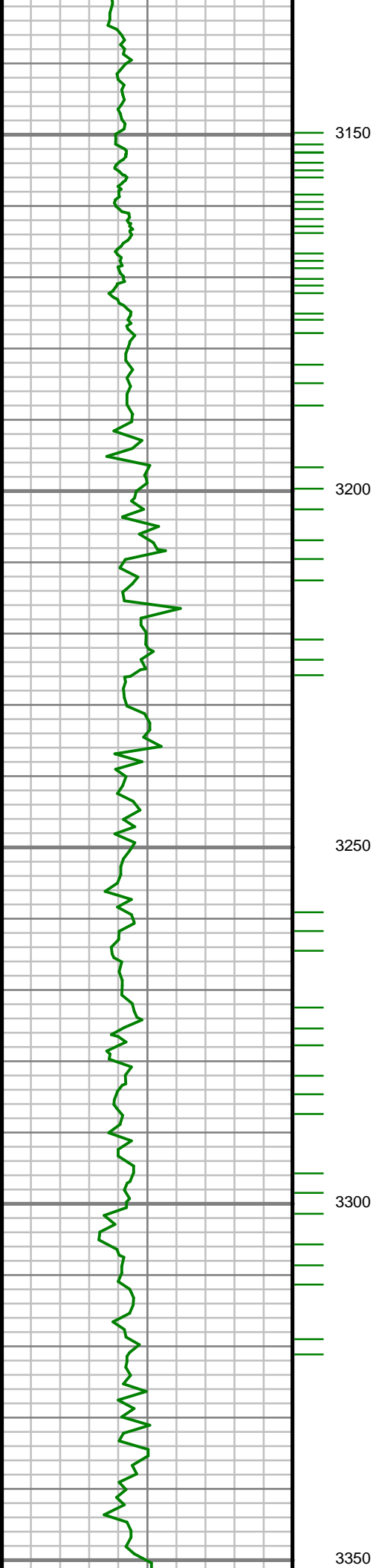
S: 27 MD: 2837.00 ft  
Inc: 14.92 deg Az:  
137.92 deg TVD:  
2819.29 ft



S: 28 MD: 2929.00 ft  
Inc: 15.91 deg Az:  
136.08 deg TVD:  
2907.98 ft

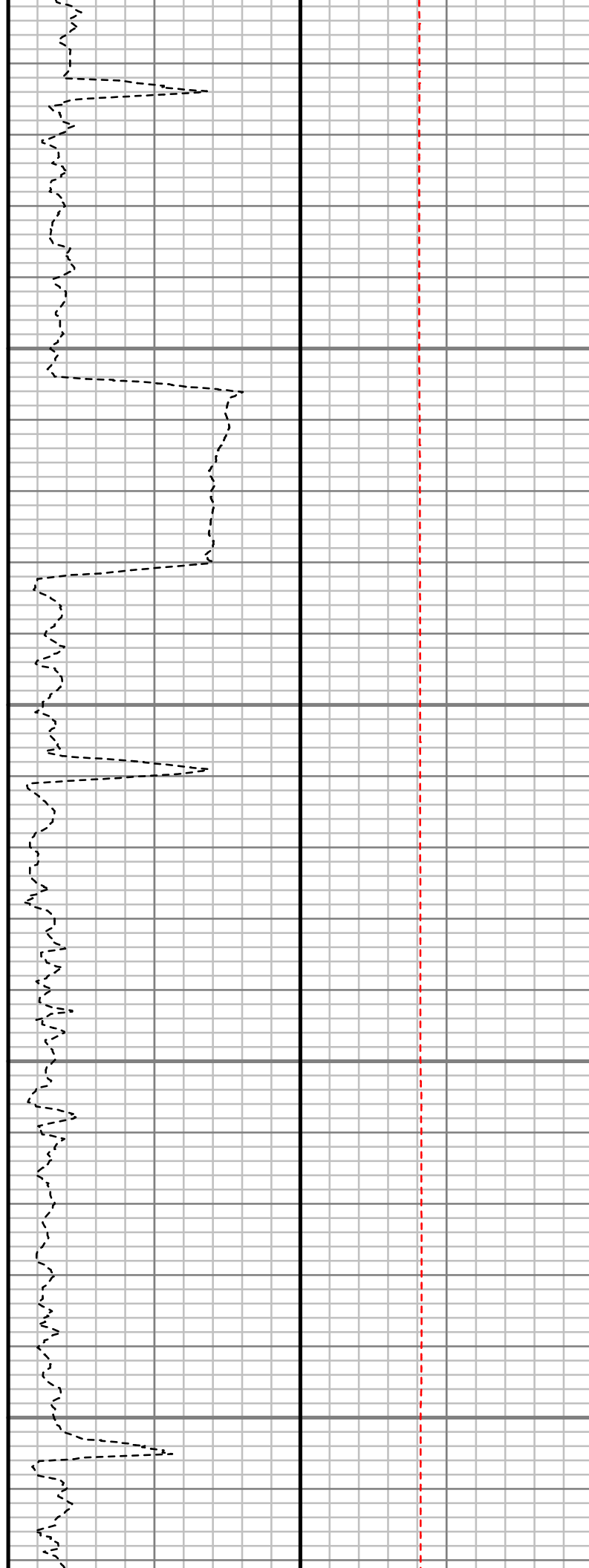
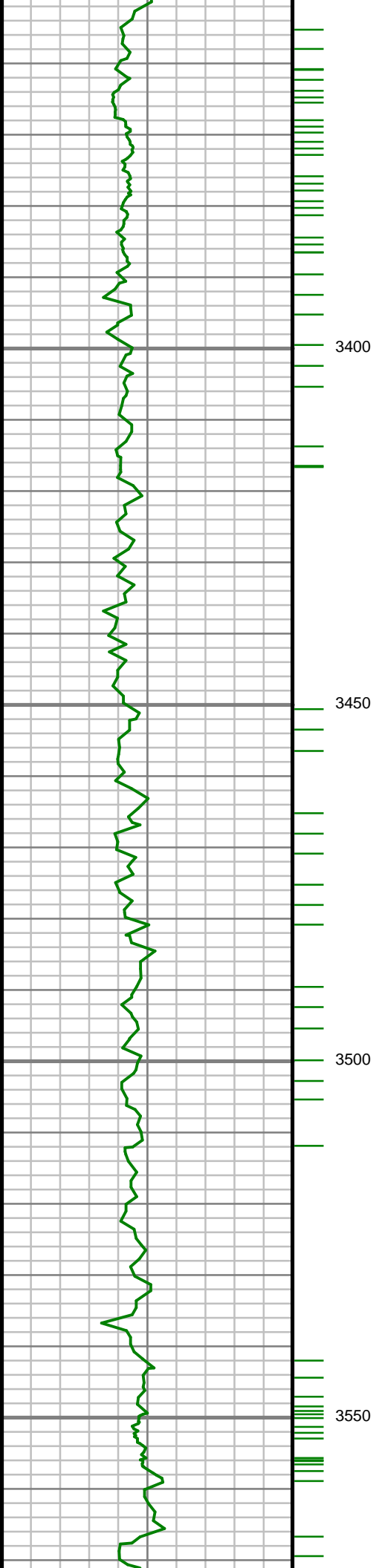
S: 29 MD: 3023.00 ft  
Inc: 15.93 deg Az:  
132.31 deg TVD:  
2998.38 ft

S: 30 MD: 3117.00 ft  
Inc: 12.40 deg Az:  
128.81 deg TVD:  
3089.51 ft



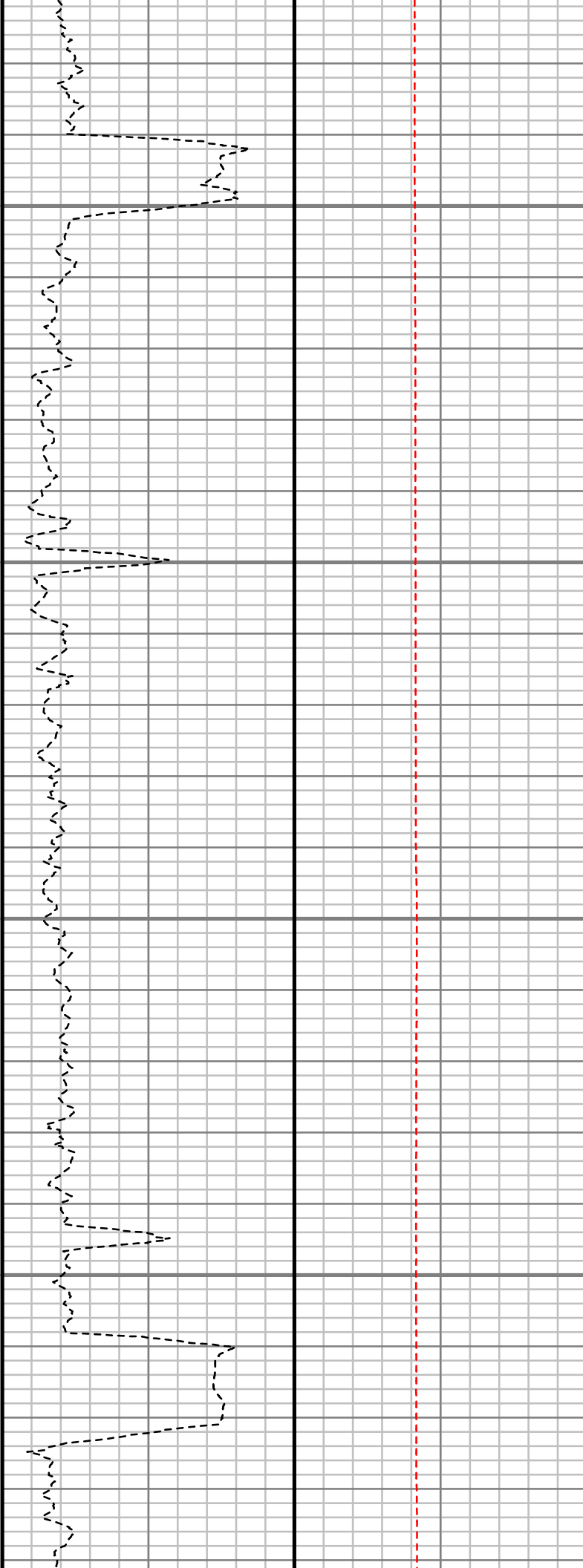
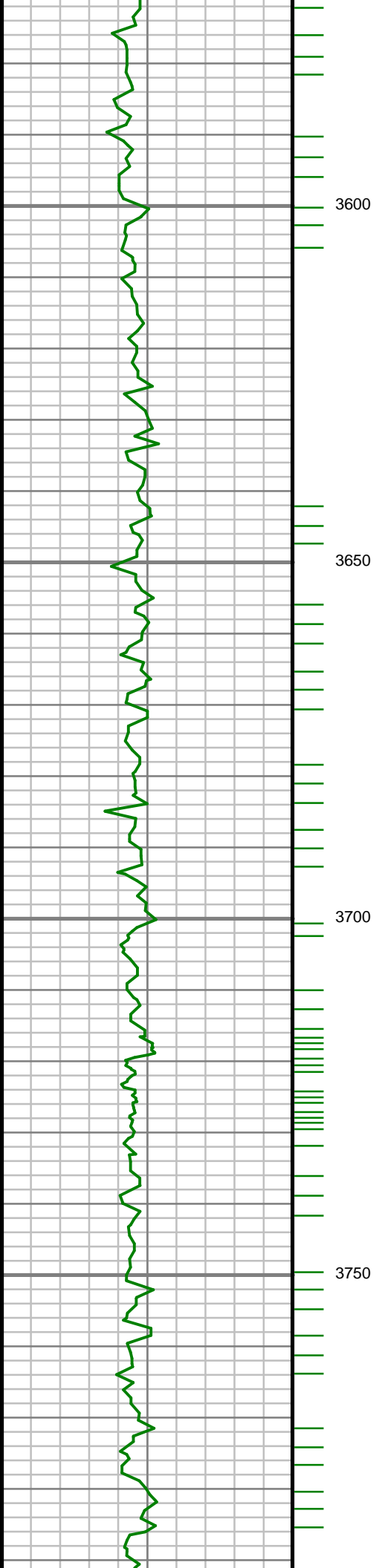
S: 31 MD: 3211.00 ft  
Inc: 11.78 deg Az:  
129.53 deg TVD:  
3181.42 ft

S: 32 MD: 3306.00 ft  
Inc: 8.54 deg Az:  
125.24 deg TVD:  
3274.92 ft



S: 33 MD: 3400.00 ft  
Inc: 6.74 deg Az:  
118.63 deg TVD:  
3368.08 ft

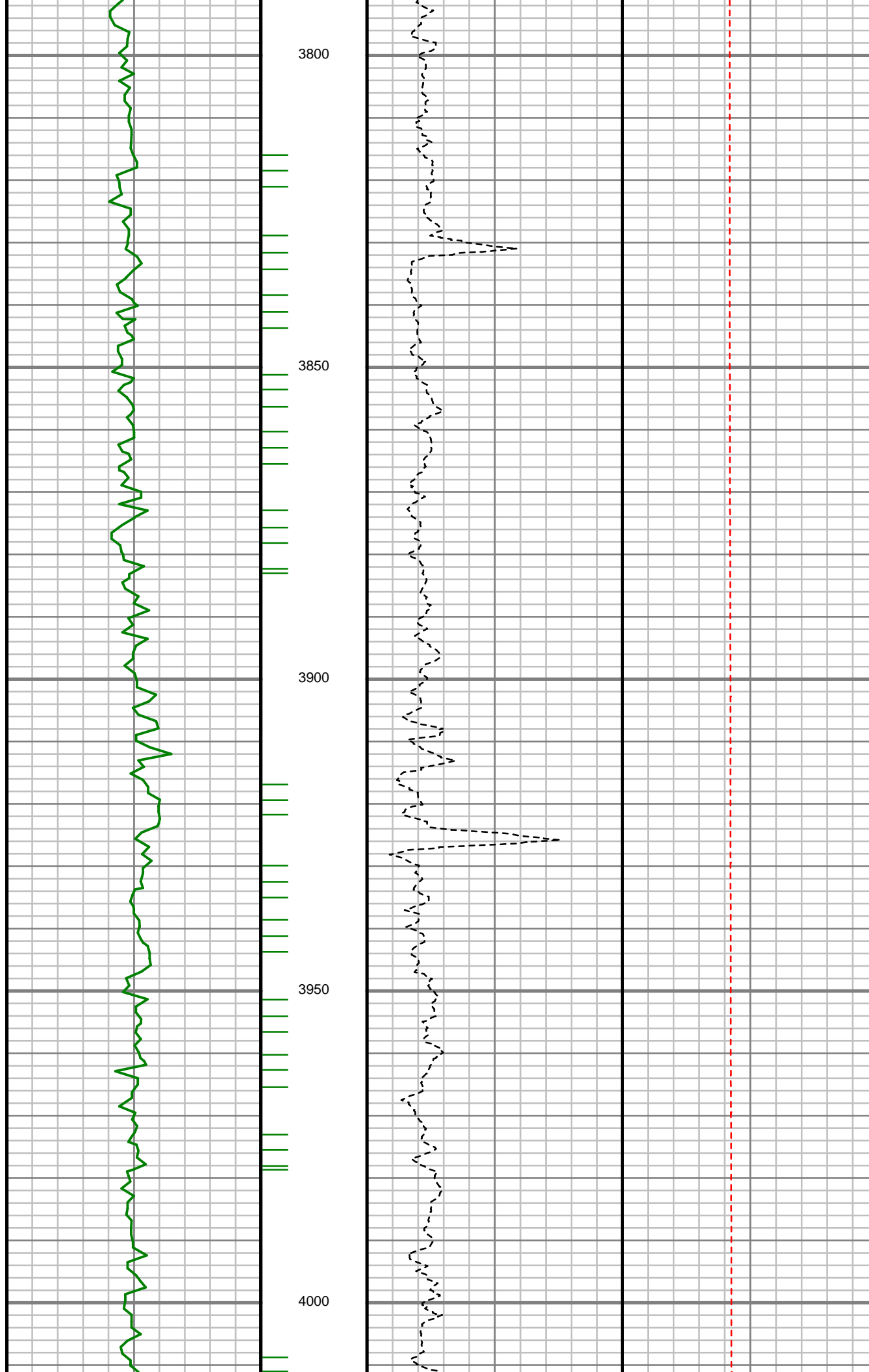
S: 34 MD: 3494.00 ft  
Inc: 5.75 deg Az:  
112.98 deg TVD:  
3461.52 ft



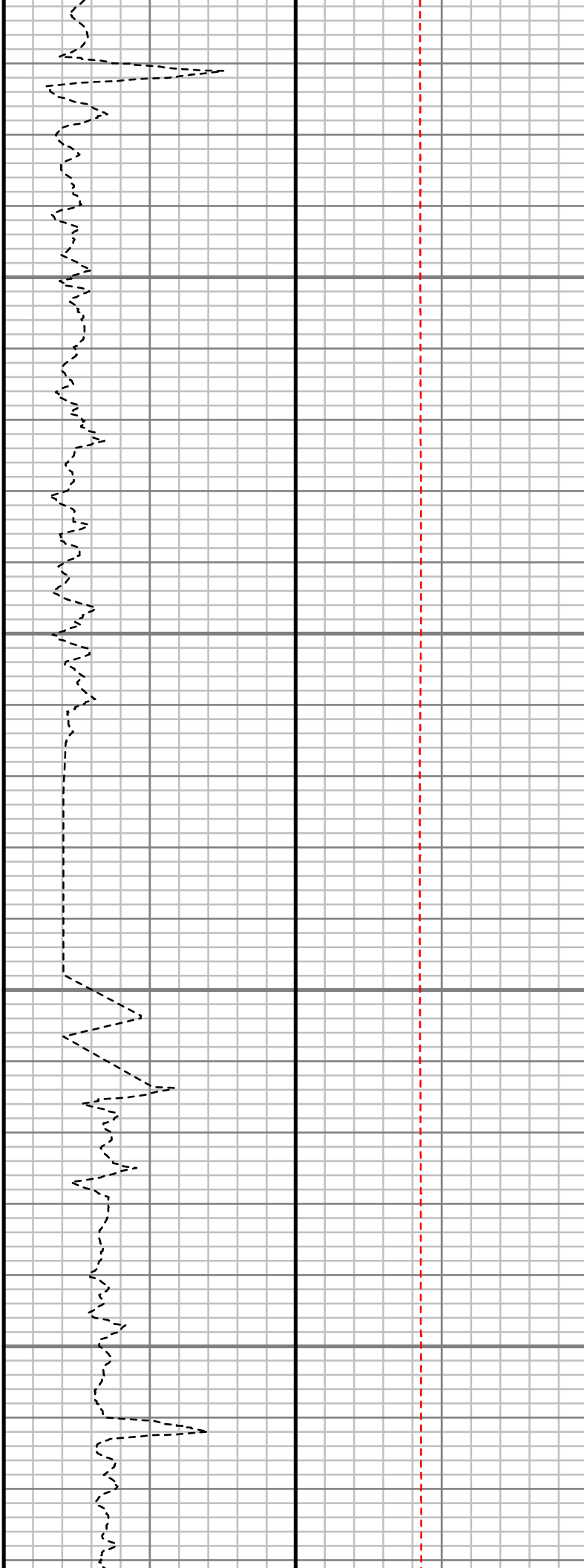
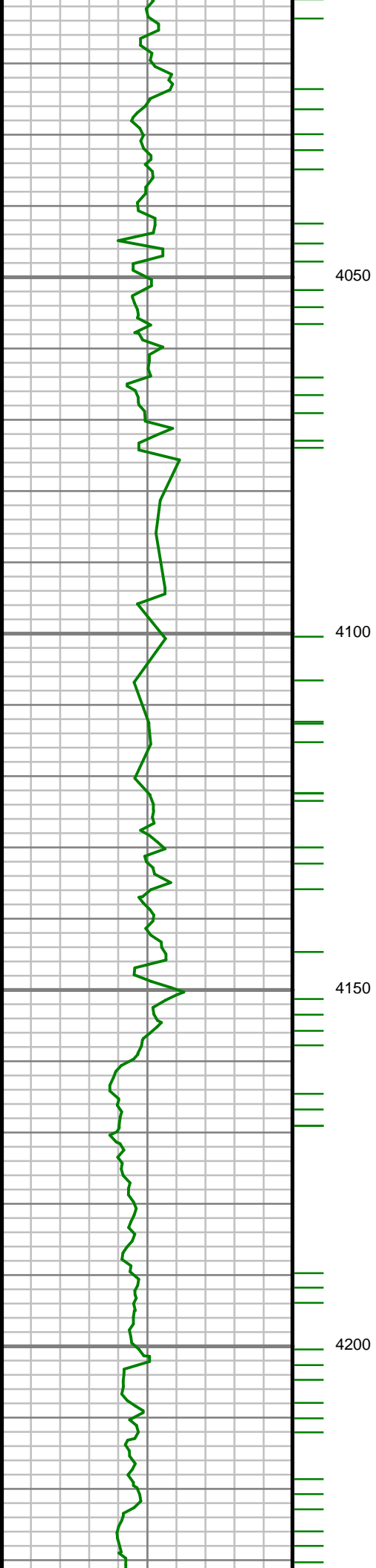
S: 35 MD: 3589.00 ft  
Inc: 2.88 deg Az: 102.98 deg TVD: 3556.25 ft

S: 36 MD: 3683.00 ft  
Inc: 1.56 deg Az: 86.69 deg TVD: 3650.17 ft

S: 37 MD: 3778.00 ft  
Inc: 0.47 deg Az: 213.46 deg TVD: 3745.16 ft

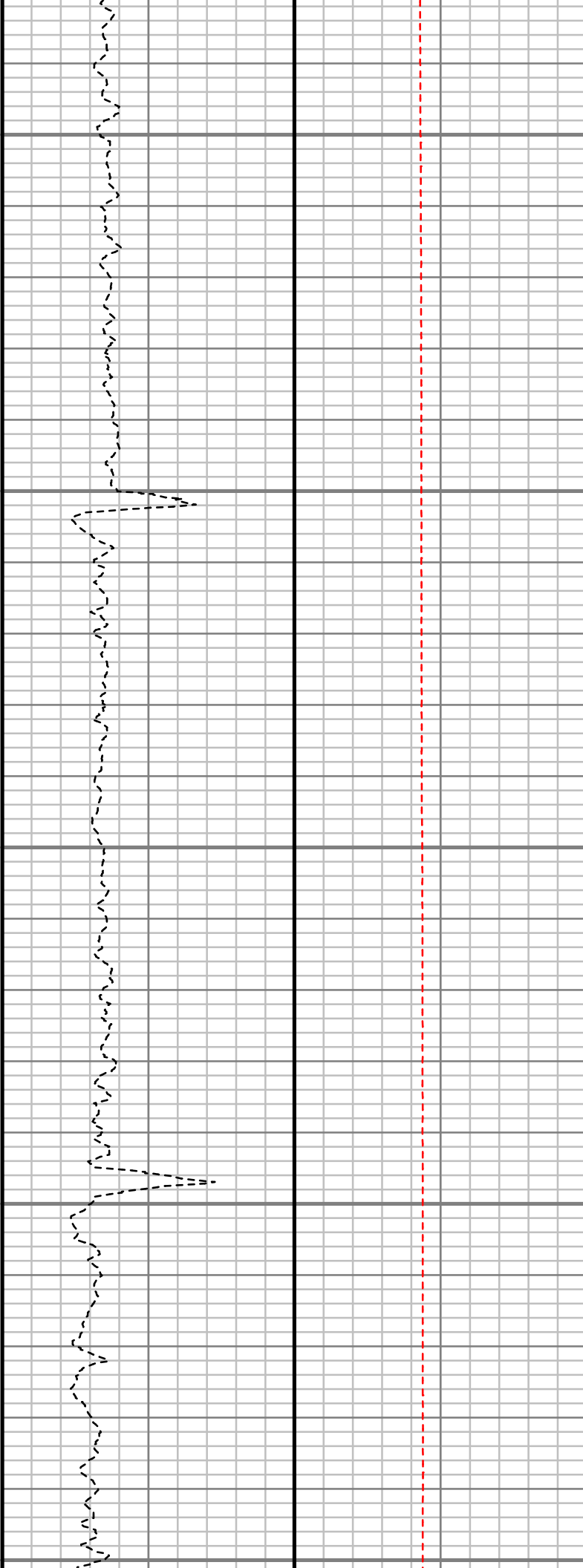
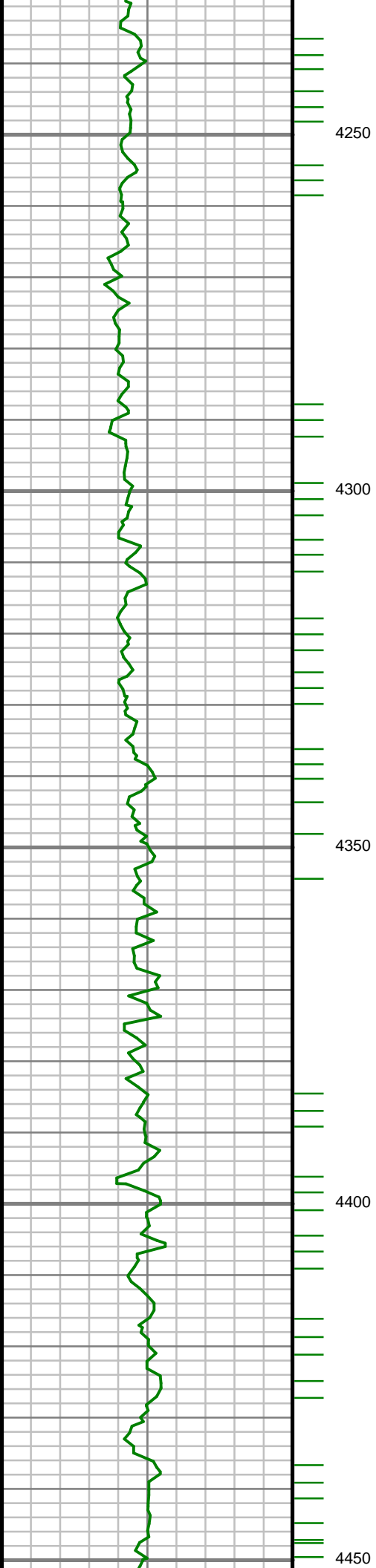


S: 38 MD: 3872.00 ft  
Inc: 0.45 deg Az:  
264.86 deg TVD:  
3839.16 ft

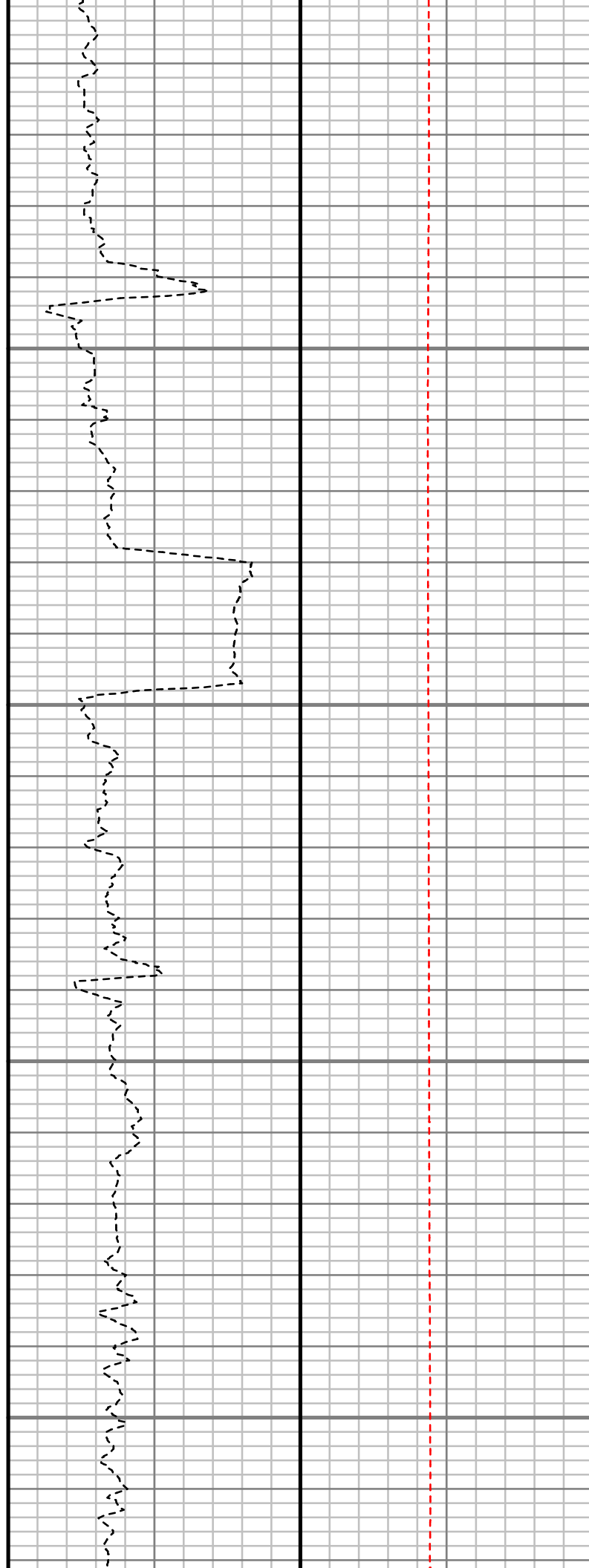
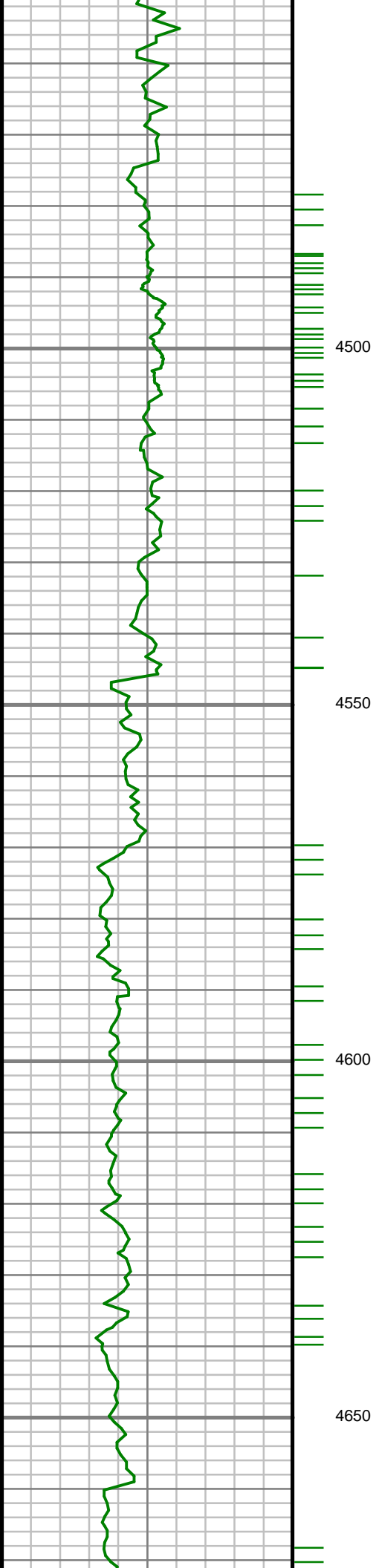


S: 39 MD: 4061.00 ft  
Inc: 0.57 deg Az:  
303.05 deg TVD:  
4028.15 ft

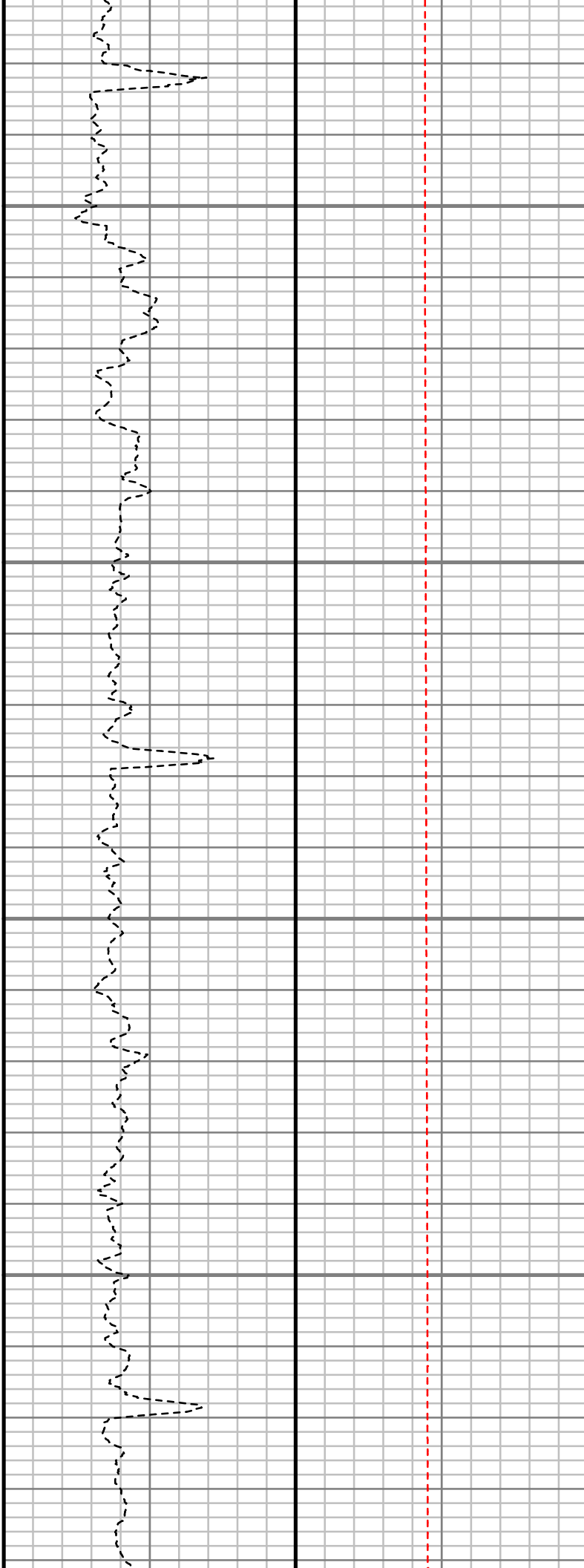
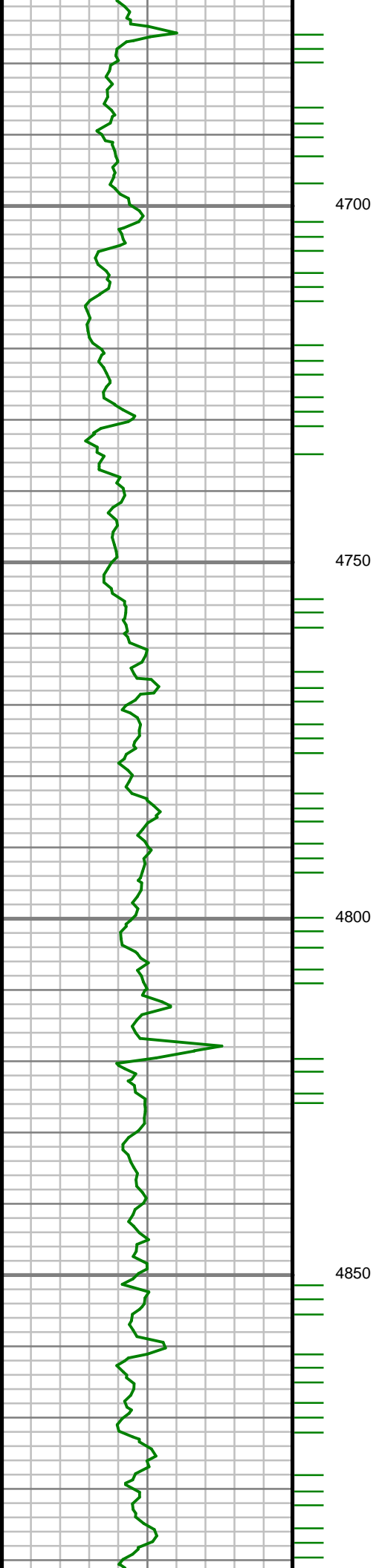




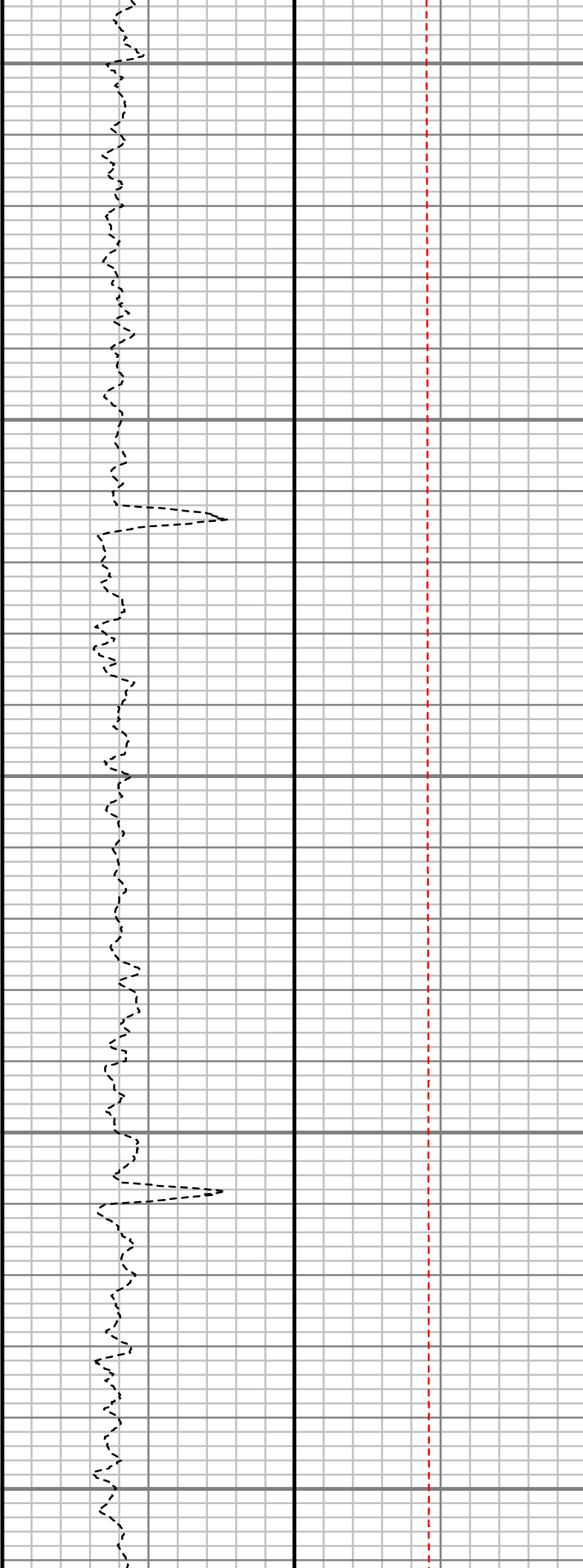
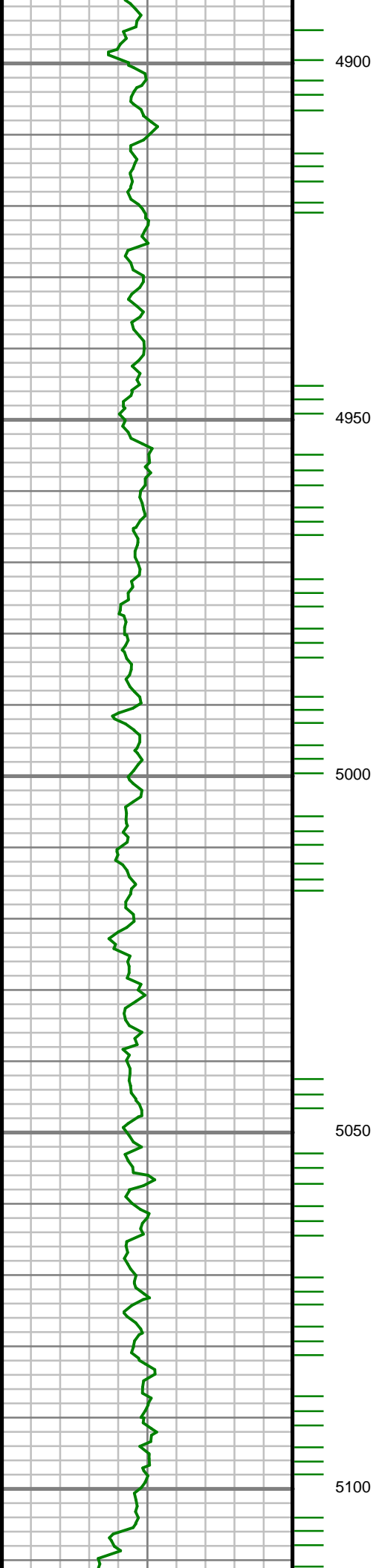
S: 40 MD: 4249.00 ft  
Inc: 0.90 deg Az:  
319.00 deg TVD:  
4216.14 ft



S: 41 MD: 4627.00 ft  
Inc: 1.00 deg Az:  
220.74 deg TVD:  
4594.11 ft

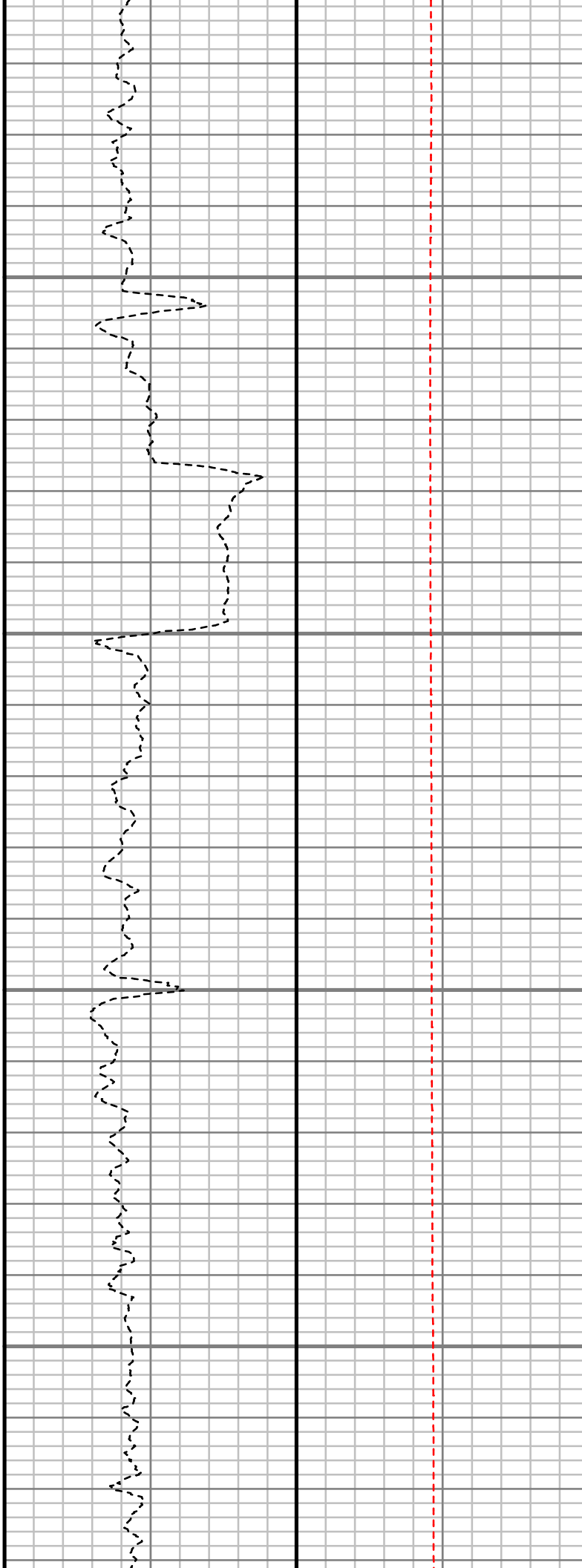
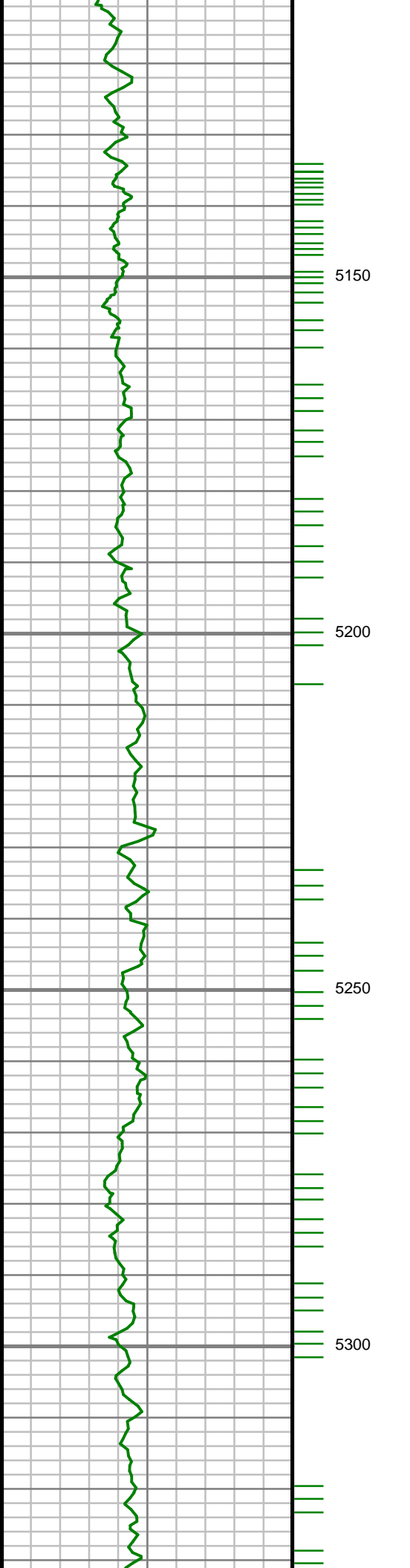


S: 42 MD: 4721.00 ft  
Inc: 1.07 deg Az:  
244.28 deg TVD:  
4688.09 ft



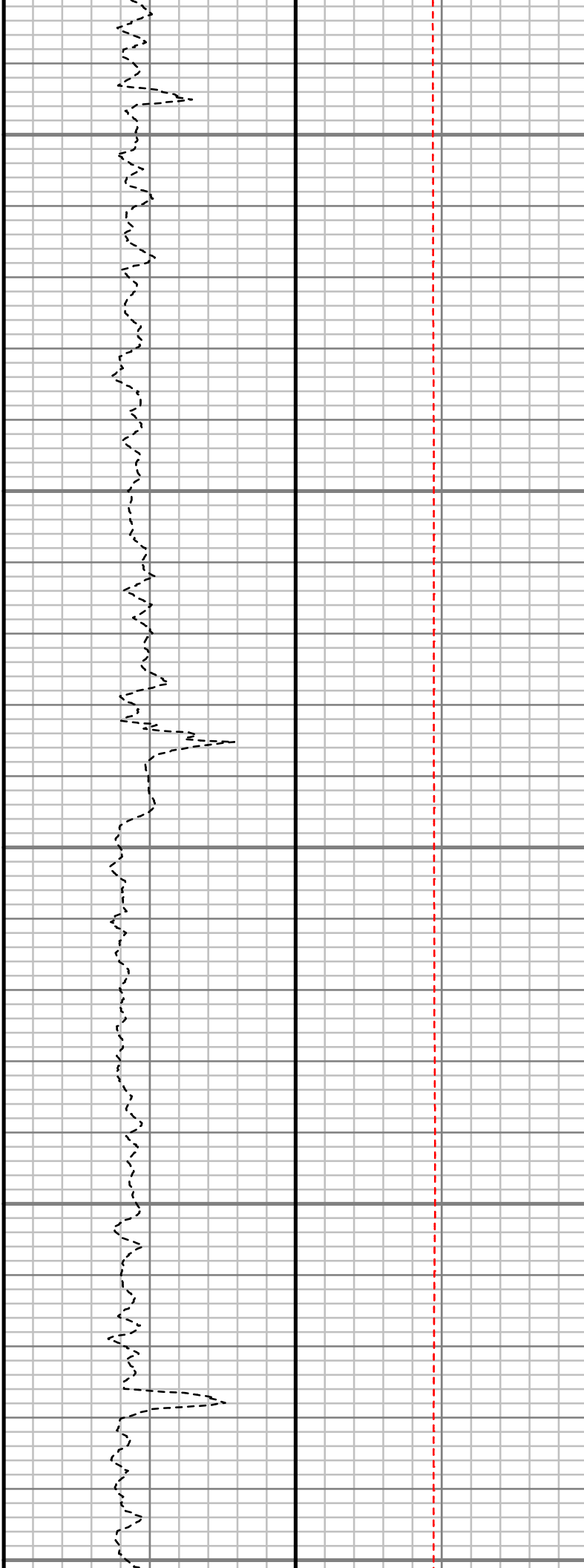
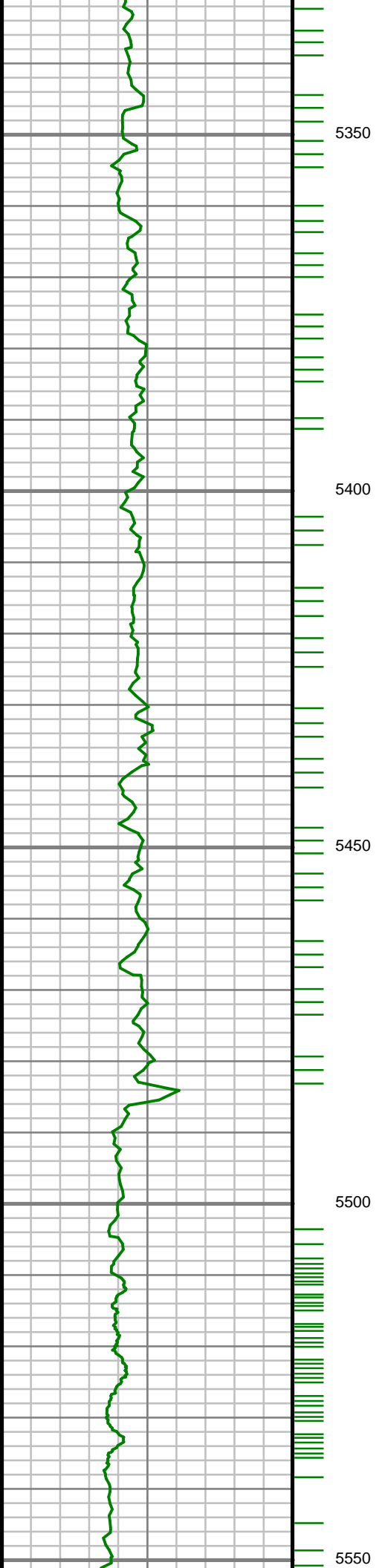
S: 43 MD: 4910.00 ft  
Inc: 1.77 deg Az:  
231.36 deg TVD:  
4877.03 ft

S: 44 MD: 5004.00 ft  
Inc: 2.90 deg Az:  
236.44 deg TVD:  
4970.95 ft



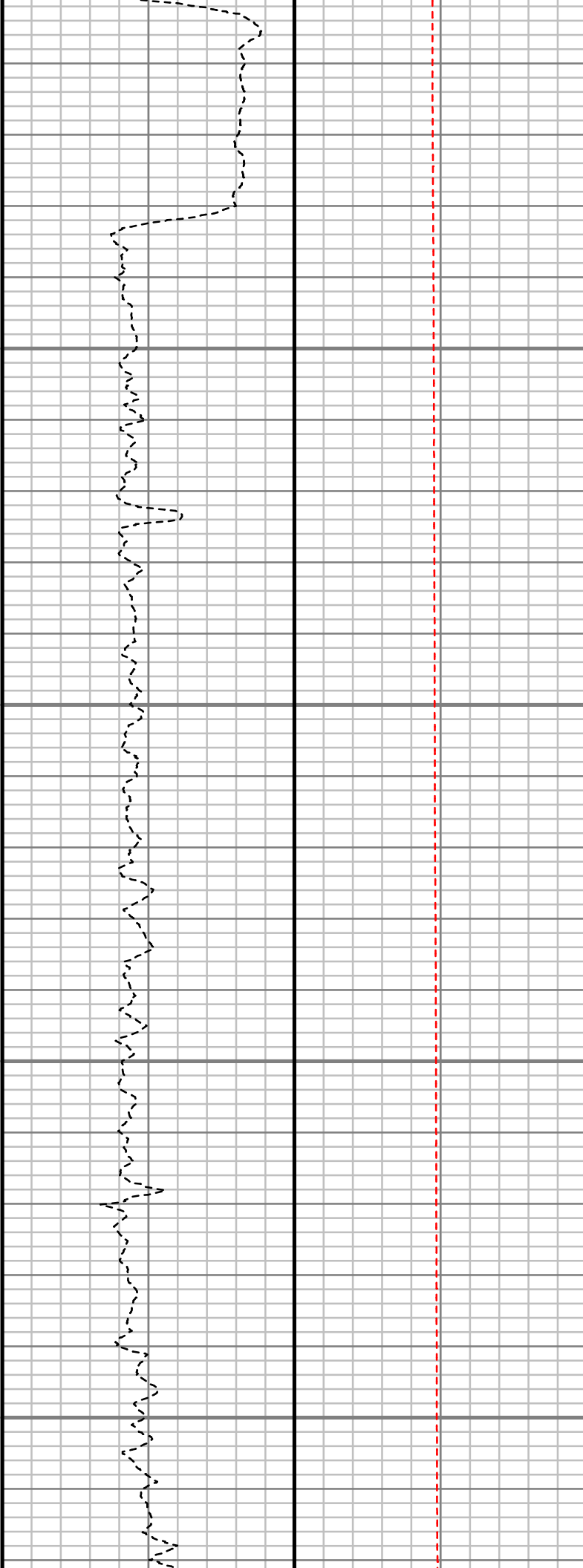
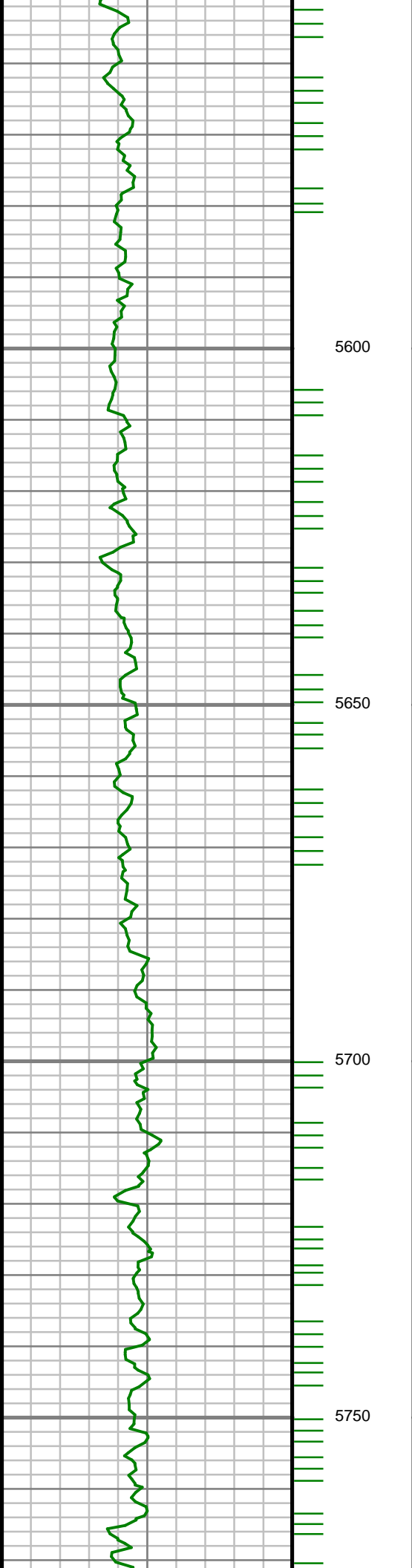
S: 45 MD: 5192.00 ft  
Inc: 1.58 deg Az:  
219.37 deg TVD:  
5158.81 ft

S: 46 MD: 5287.00 ft  
Inc: 1.35 deg Az:  
201.04 deg TVD:  
5253.78 ft



S: 47 MD: 5381.00 ft  
Inc: 1.50 deg Az:  
191.21 deg TVD:  
5347.75 ft

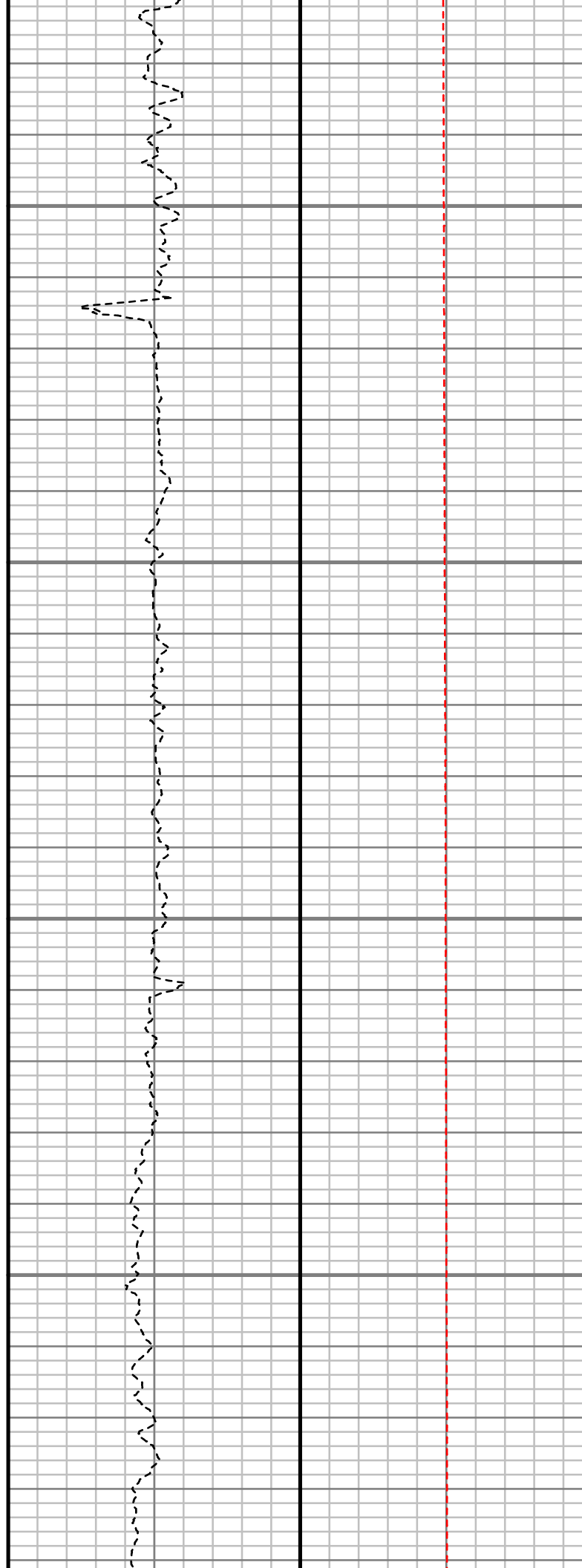
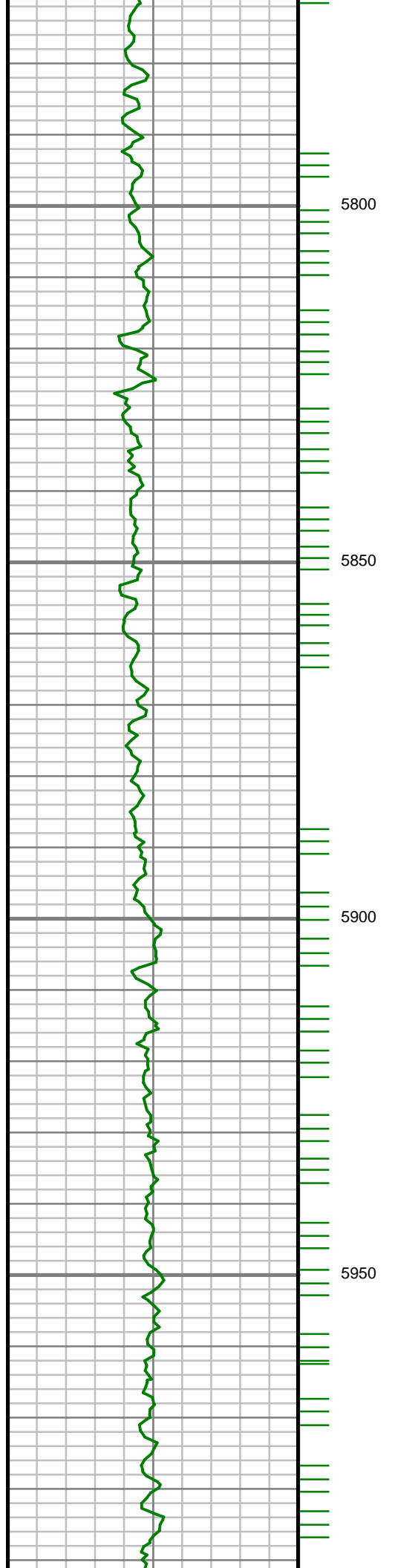
S: 48 MD: 5475.00 ft  
Inc: 1.14 deg Az:  
217.53 deg TVD:  
5441.72 ft



S: 49 MD: 5569.00 ft  
Inc: 1.45 deg Az:  
143.81 deg TVD:  
5535.71 ft

S: 50 MD: 5664.00 ft  
Inc: 1.43 deg Az:  
142.50 deg TVD:  
5630.68 ft

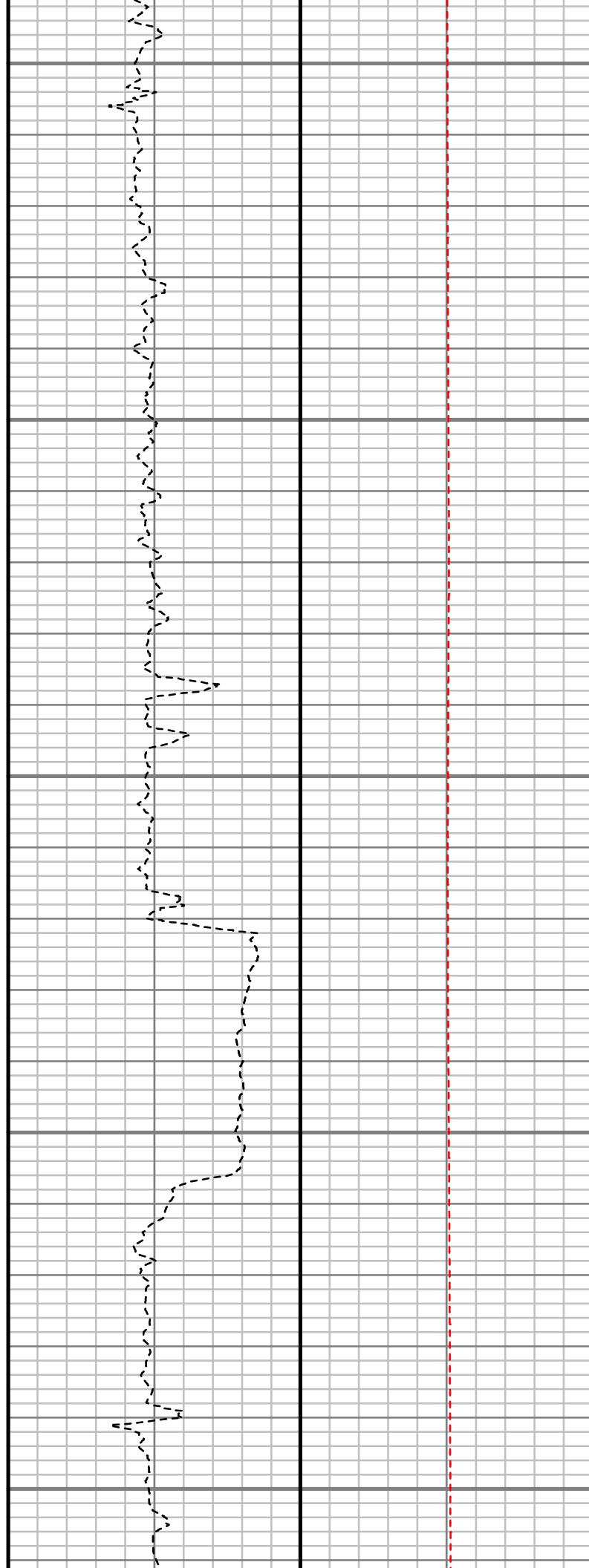
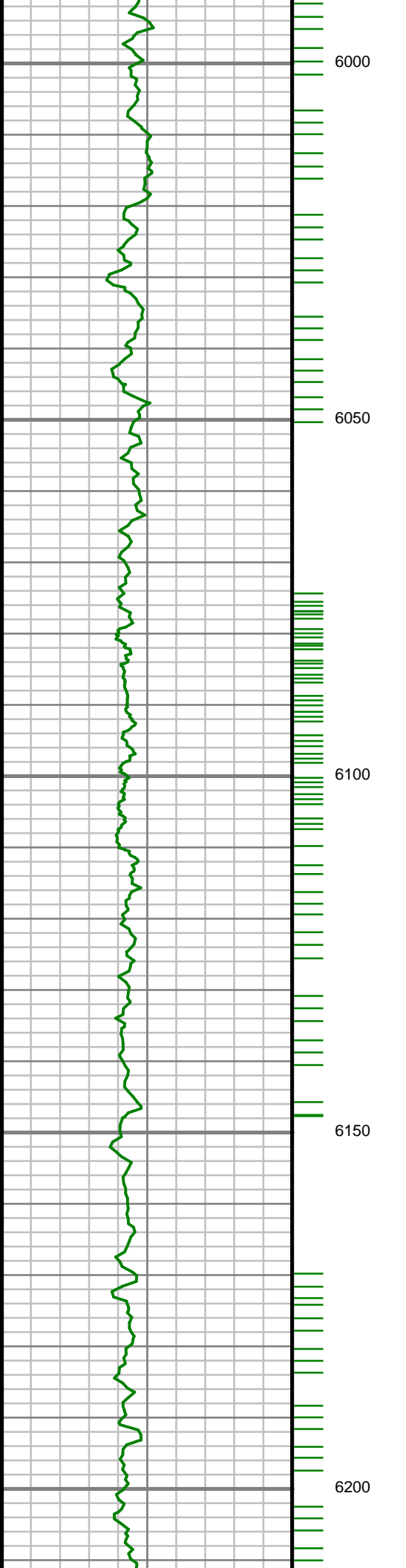
S: 51 MD: 5758.00 ft  
Inc: 0.67 deg Az:  
102.59 deg TVD:  
5724.66 ft



S: 52 MD: 5853.00 ft  
Inc: 0.43 deg Az: 88.07  
deg TVD: 5819.66 ft

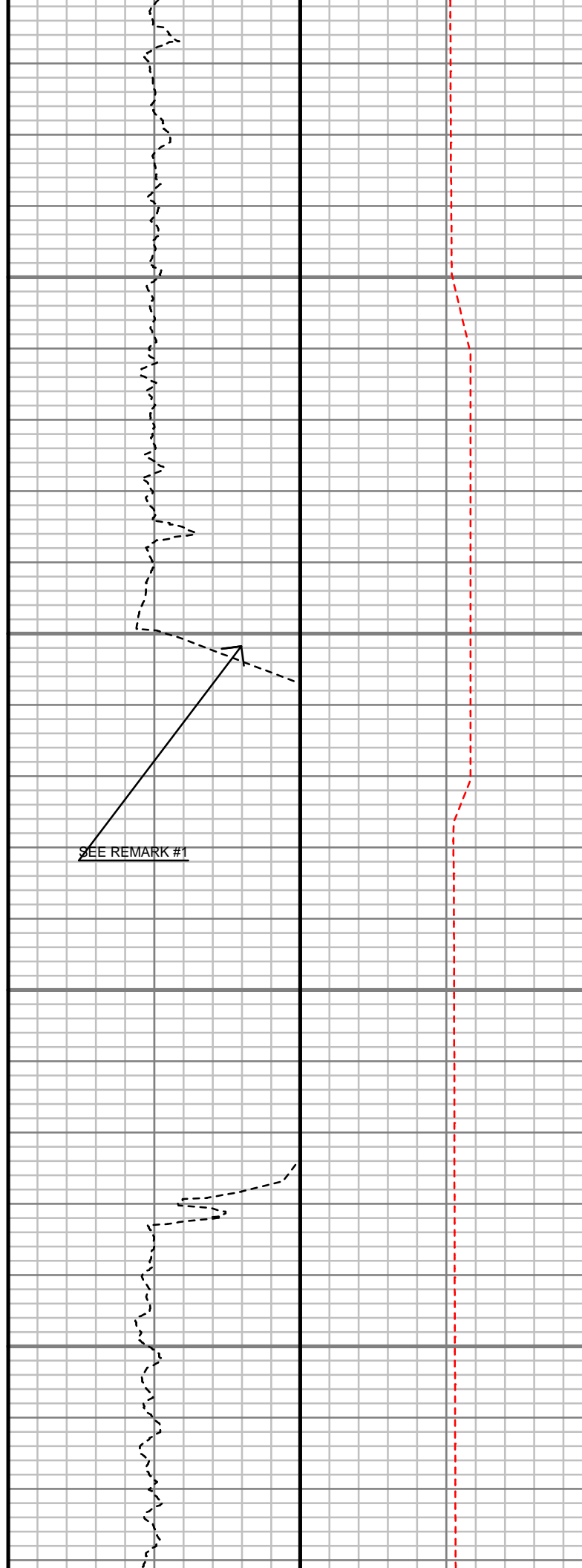
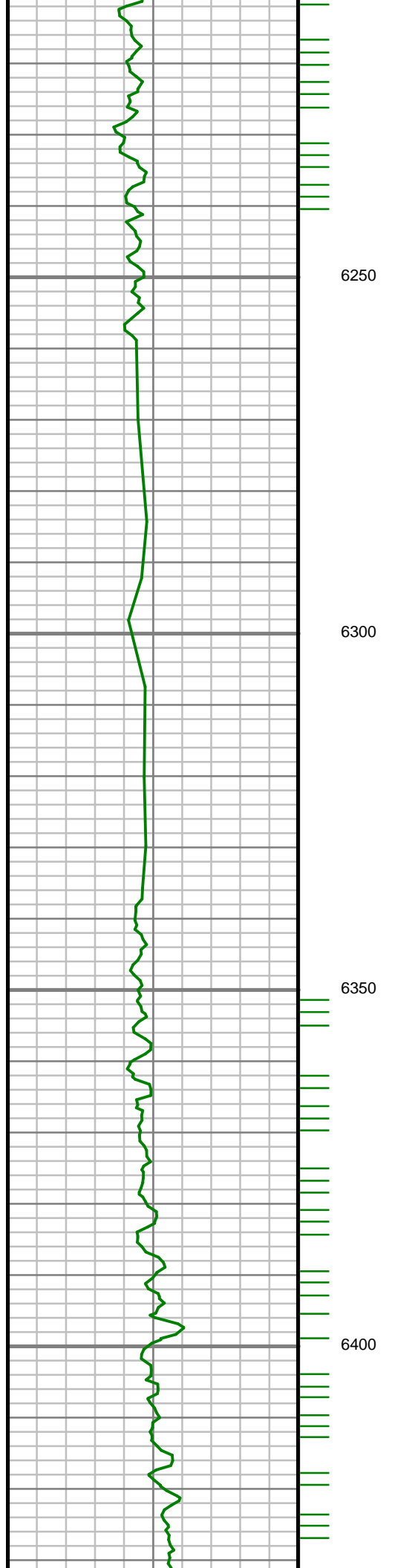
S: 53 MD: 5947.00 ft  
Inc: 0.42 deg Az: 36.76  
deg TVD: 5913.65 ft





S: 54 MD: 6041.00 ft  
Inc: 0.63 deg Az: 16.31  
deg TVD: 6007.65 ft

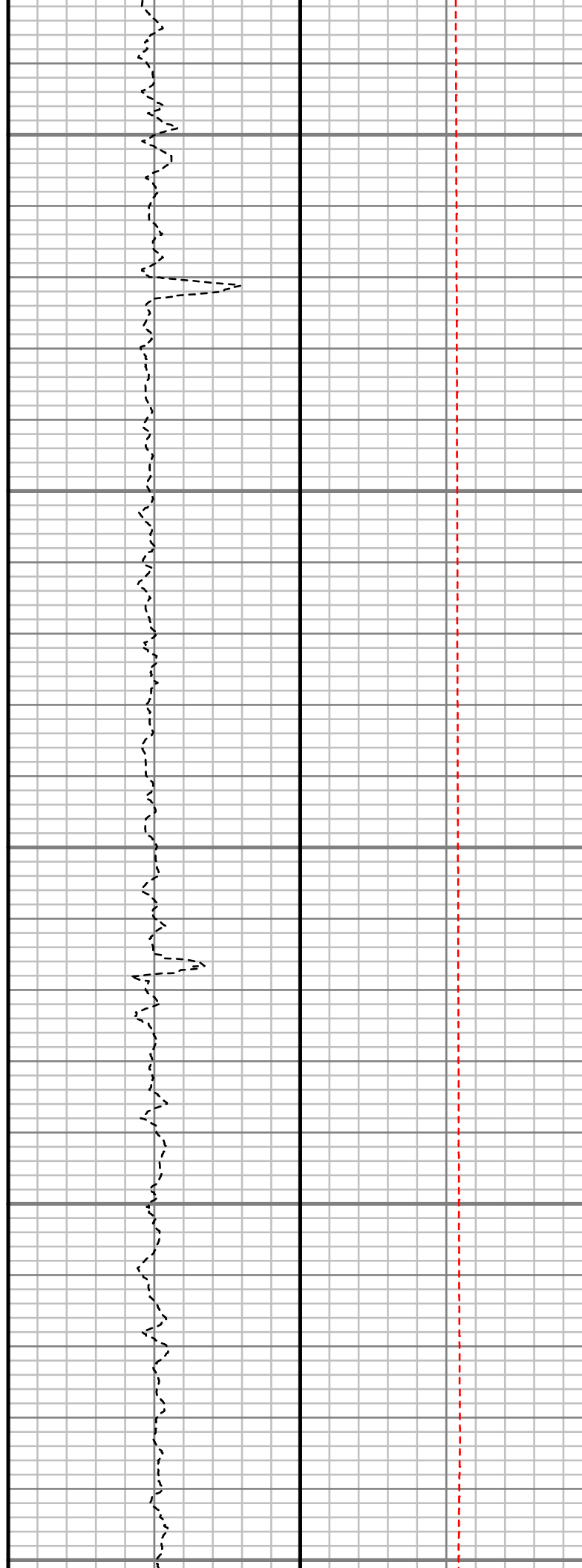
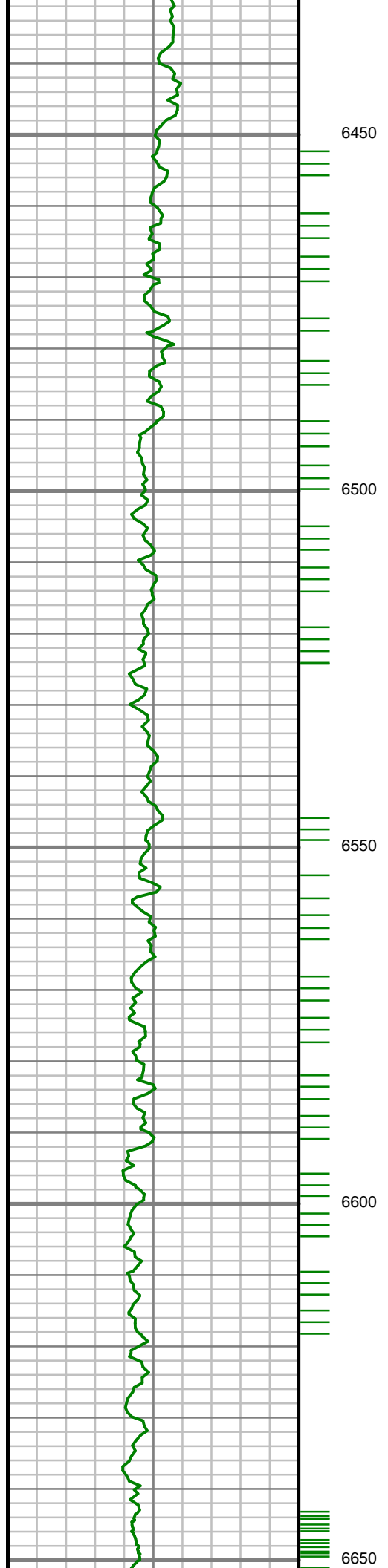
S: 55 MD: 6136.00 ft  
Inc: 1.42 deg Az:  
118.39 deg TVD:  
6102.64 ft



S: 56 MD: 6230.00 ft  
Inc: 1.58 deg Az:  
119.16 deg TVD:  
6196.61 ft

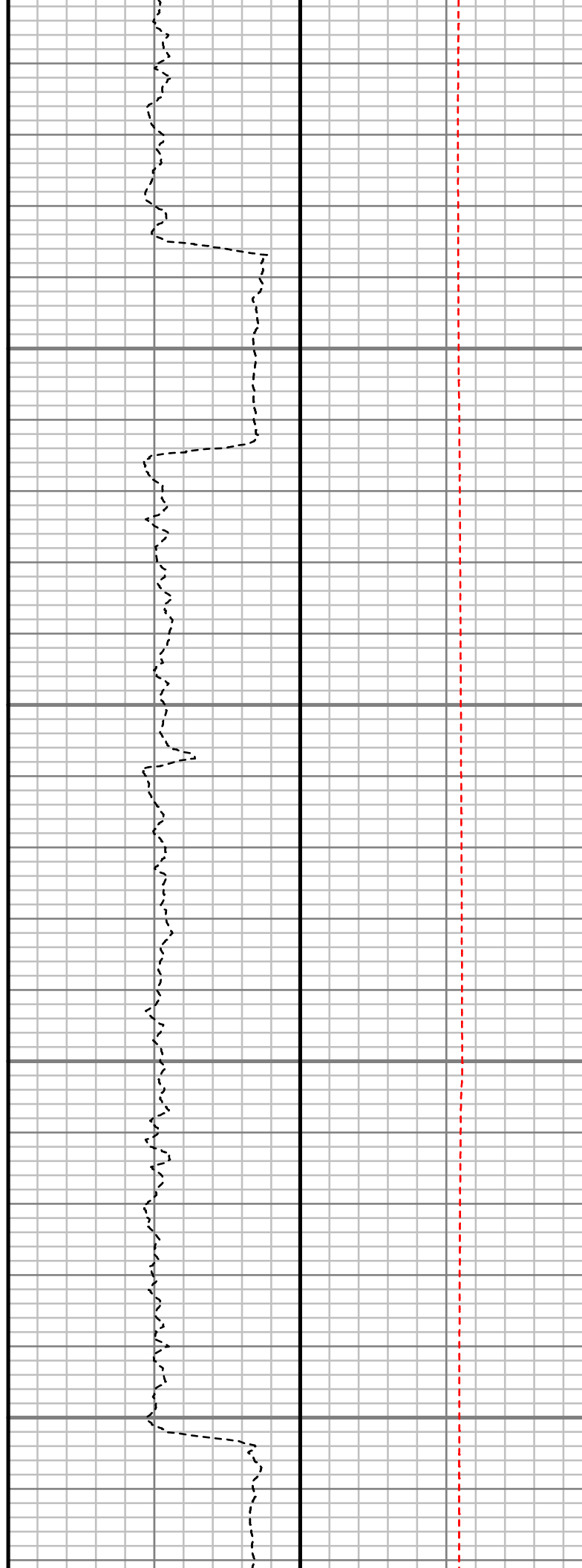
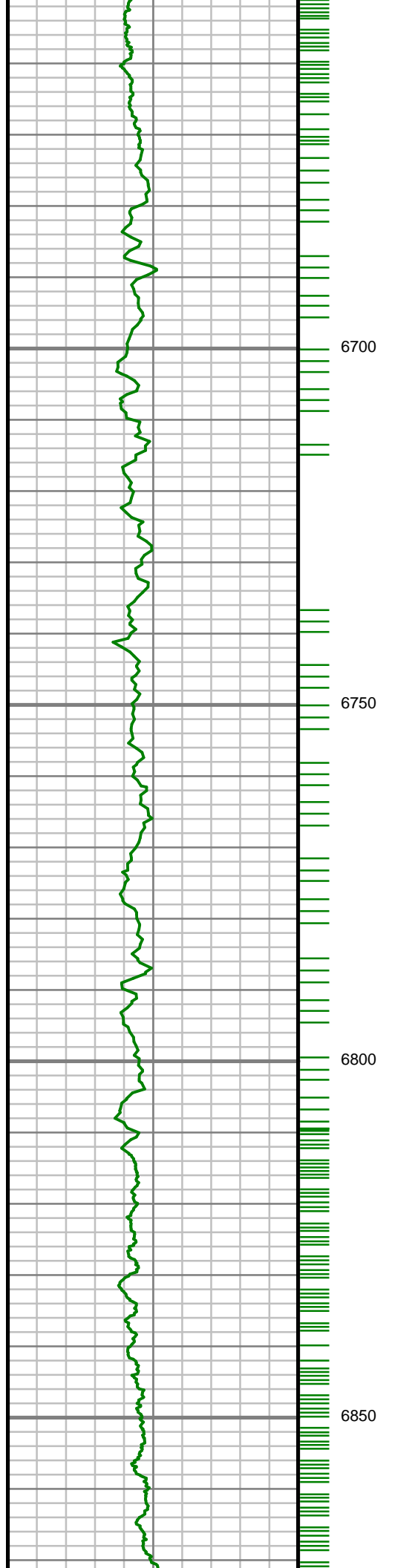
S: 57 MD: 6324.00 ft  
Inc: 0.77 deg Az:  
117.04 deg TVD:  
6290.59 ft

S: 58 MD: 6419.00 ft  
Inc: 0.55 deg Az:  
120.82 deg TVD:  
6385.58 ft



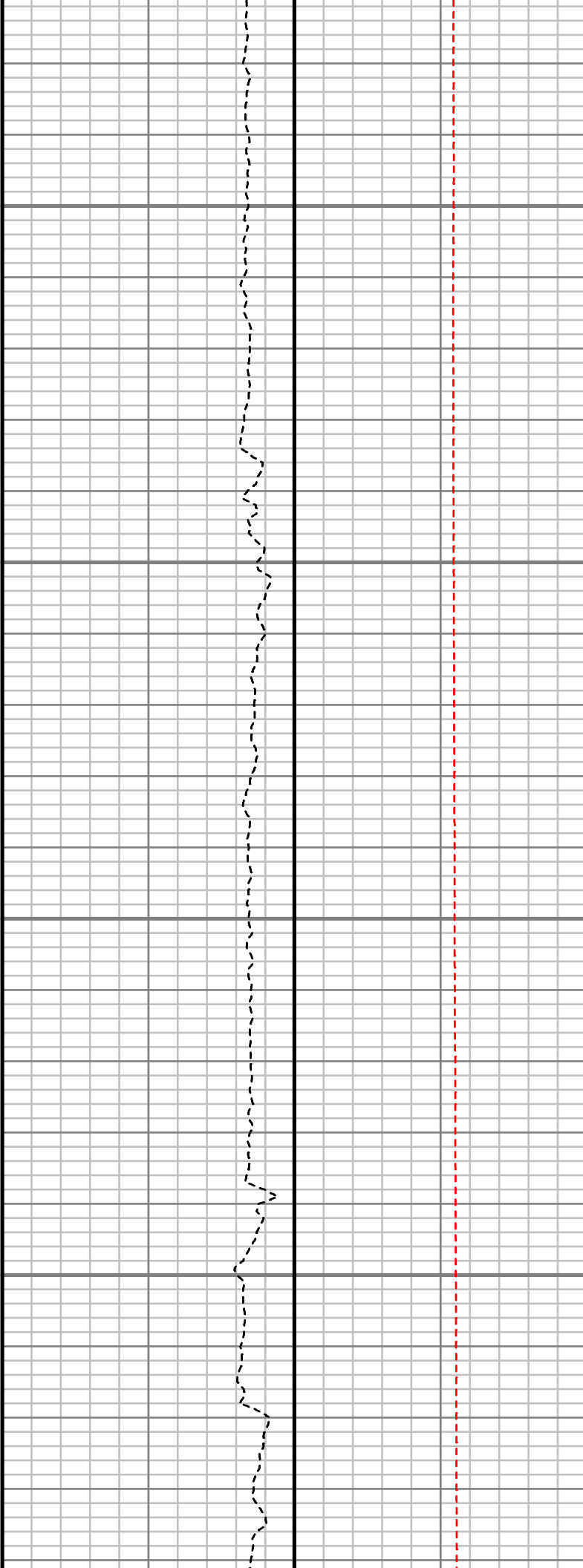
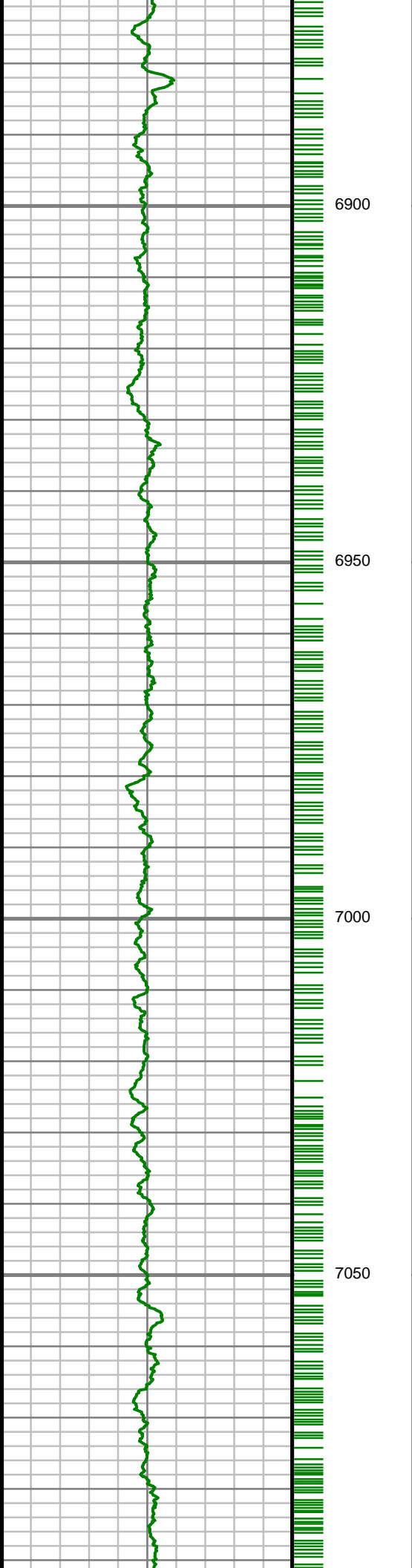
S: 59 MD: 6513.00 ft  
Inc: 0.40 deg Az:  
106.05 deg TVD:  
6479.58 ft

S: 60 MD: 6607.00 ft  
Inc: 0.23 deg Az:  
348.54 deg TVD:  
6573.57 ft



S: 61 MD: 6702.00 ft  
Inc: 2.24 deg Az: 67.21  
deg TVD: 6668.55 ft

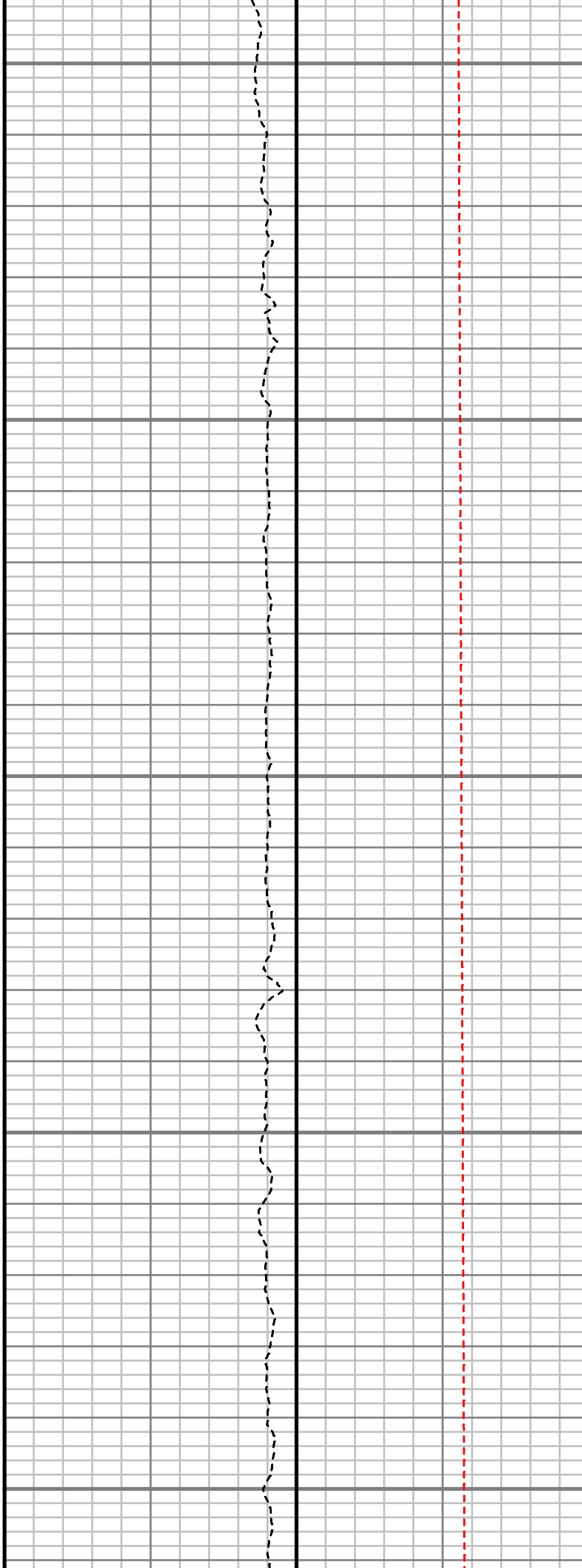
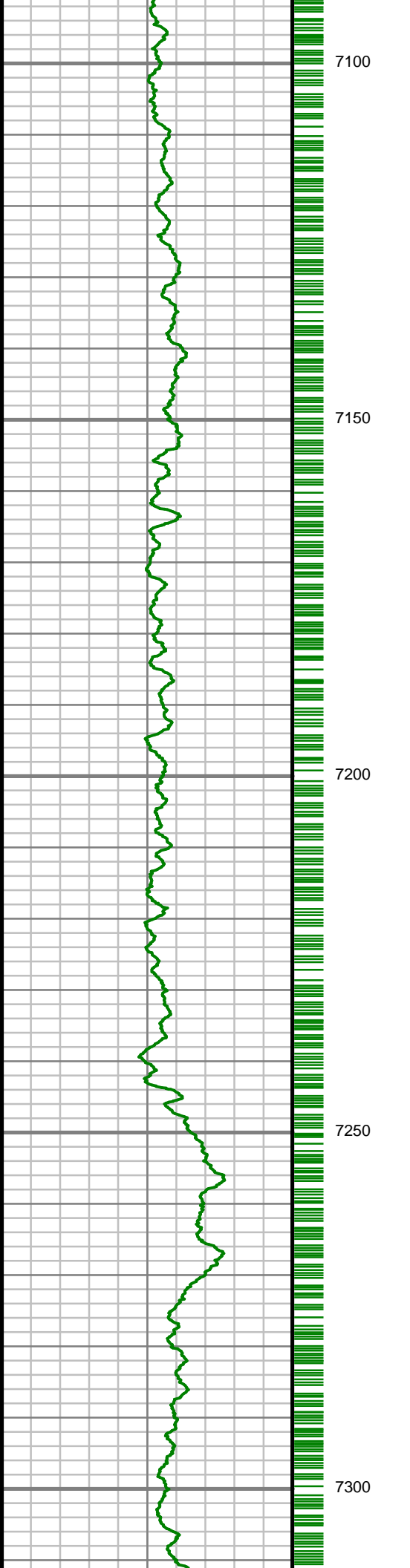
S: 62 MD: 6796.00 ft  
Inc: 1.47 deg Az: 59.82  
deg TVD: 6762.50 ft



S: 63 MD: 6891.00 ft  
Inc: 4.69 deg Az: 9.35  
deg TVD: 6857.36 ft

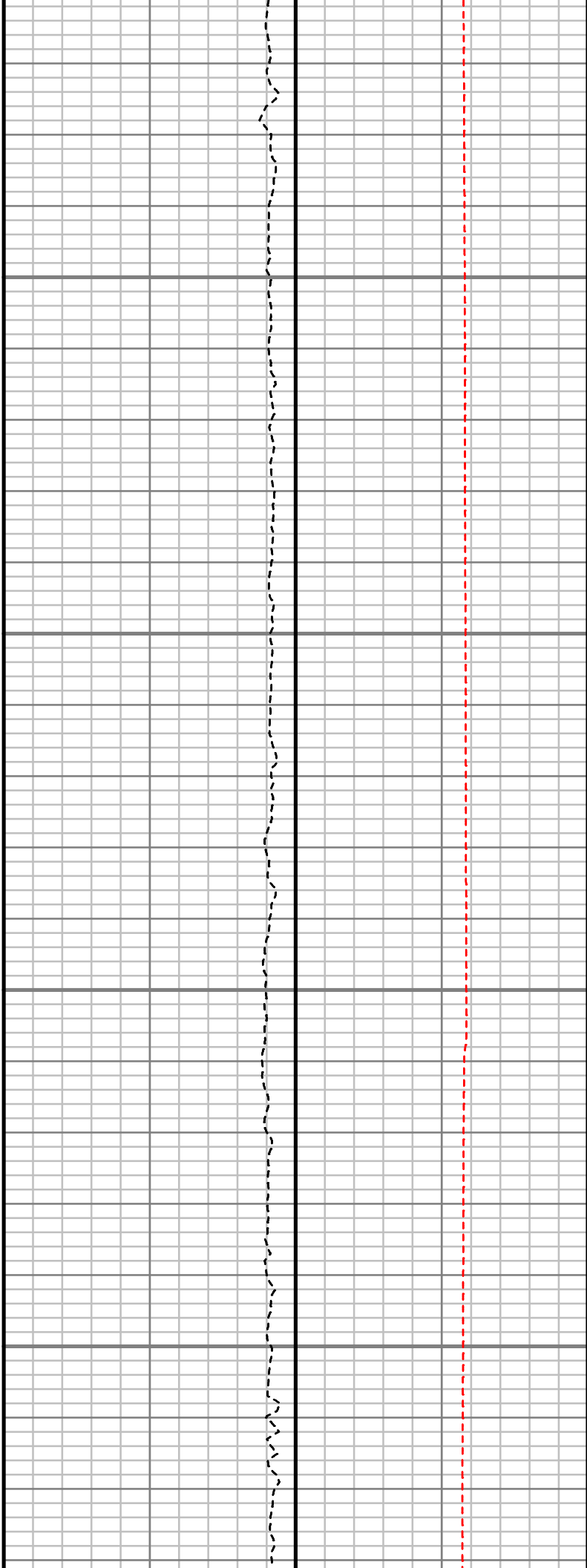
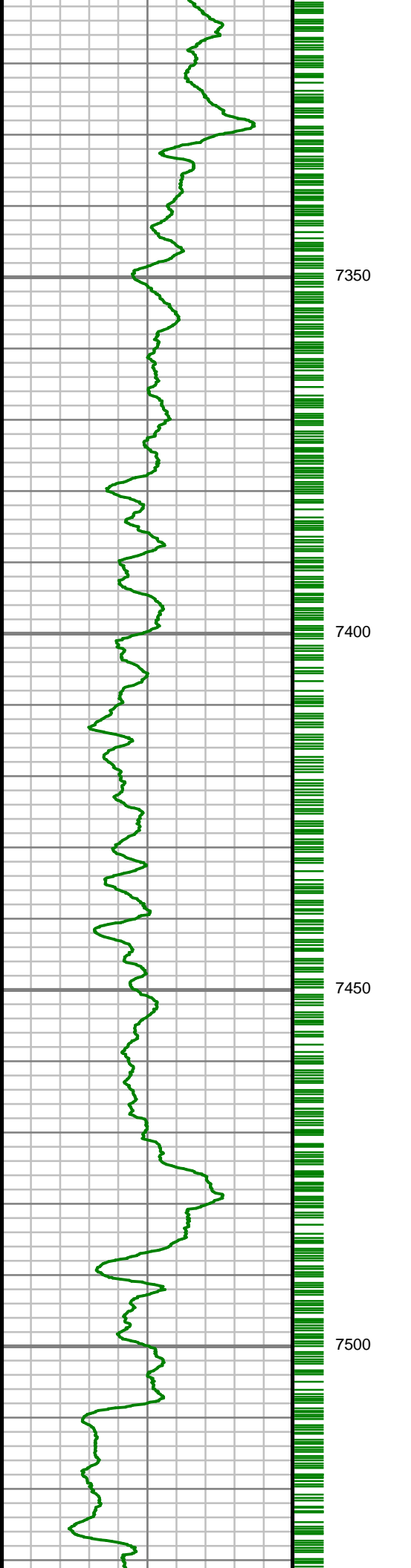
S: 64 MD: 6985.00 ft  
Inc: 10.05 deg Az:  
359.25 deg TVD:  
6950.55 ft

S: 65 MD: 7079.00 ft  
Inc: 13.62 deg Az: 3.68  
deg TVD: 7042.54 ft



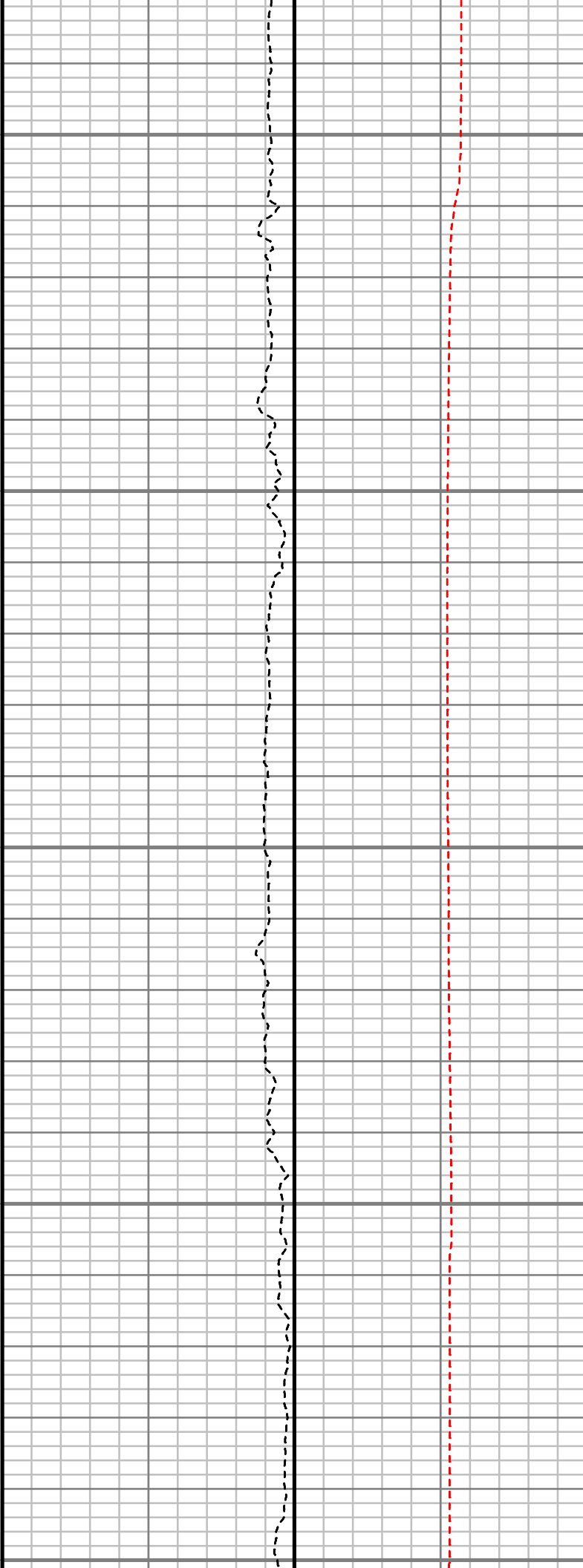
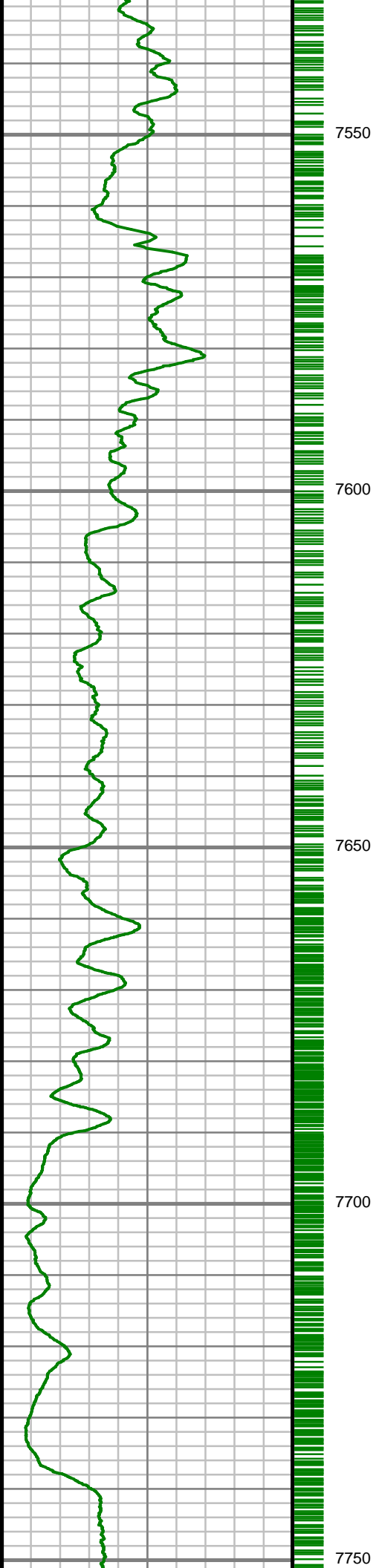
S: 66 MD: 7173.00 ft  
Inc: 18.95 deg Az: 4.79  
deg TVD: 7132.74 ft

S: 67 MD: 7267.00 ft  
Inc: 24.47 deg Az: 6.76  
deg TVD: 7220.04 ft



S: 68 MD: 7362.00 ft  
Inc: 30.26 deg Az: 0.42  
deg TVD: 7304.39 ft

S: 69 MD: 7456.00 ft  
Inc: 38.02 deg Az:  
357.54 deg TVD:  
7382.14 ft



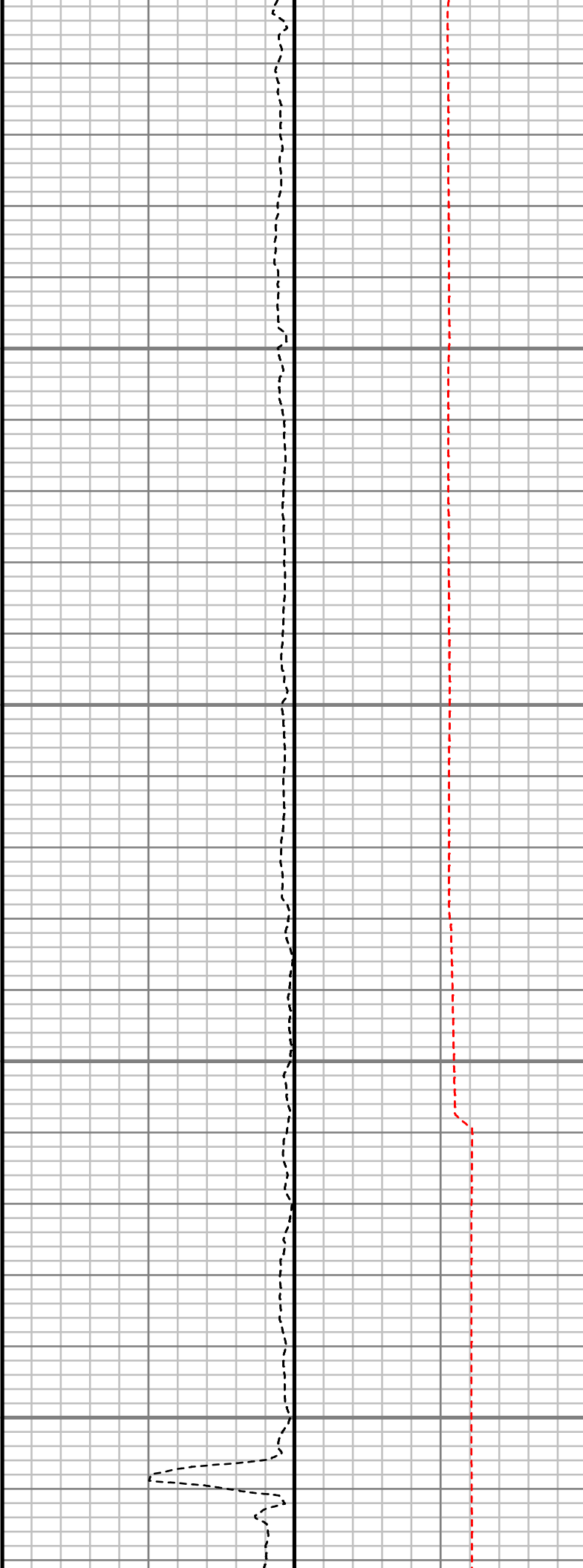
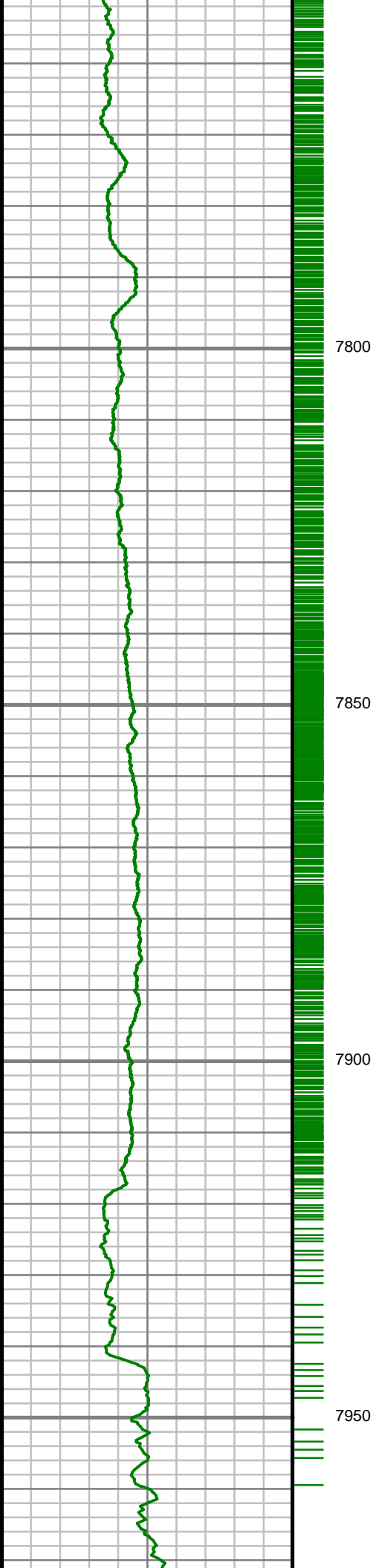
S: 70 MD: 7551.00 ft  
Inc: 45.85 deg Az:  
353.69 deg TVD:  
7452.77 ft

S: 71 MD: 7655.00 ft  
Inc: 56.73 deg Az:  
353.26 deg TVD:  
7517.70 ft

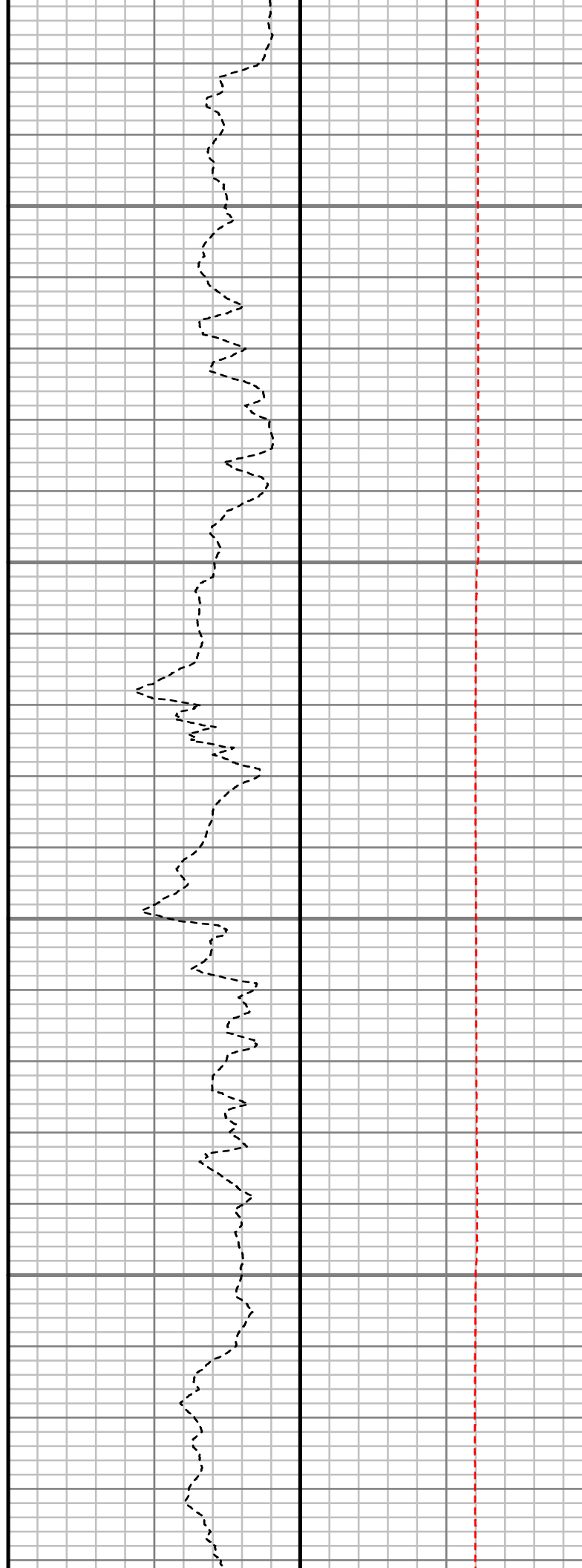
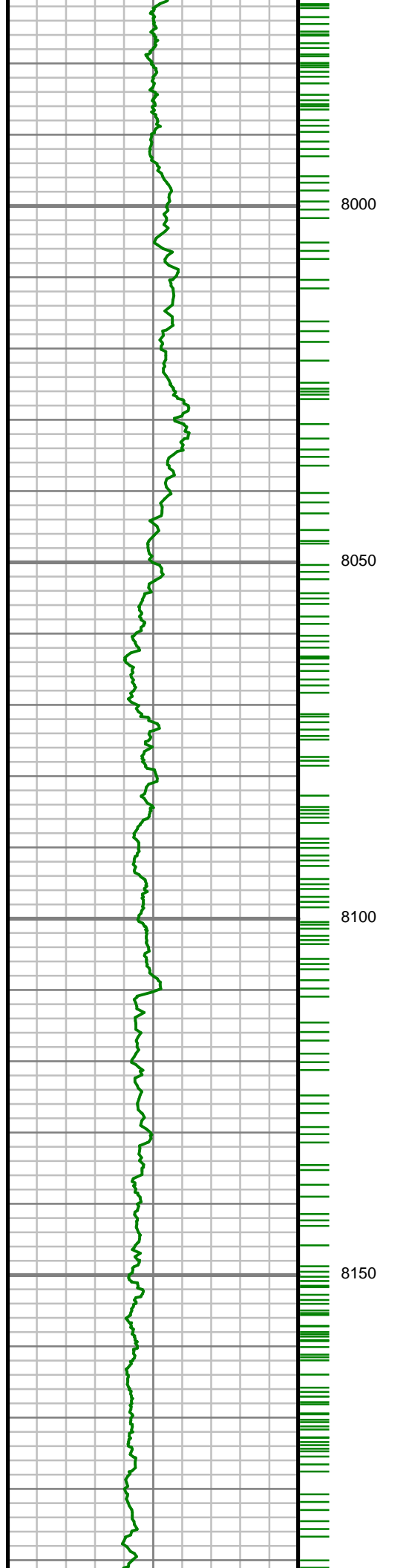
S: 72 MD: 7702.00 ft  
Inc: 64.34 deg Az:  
353.12 deg TVD:  
7540.81 ft

S: 73 MD: 7749.00 ft



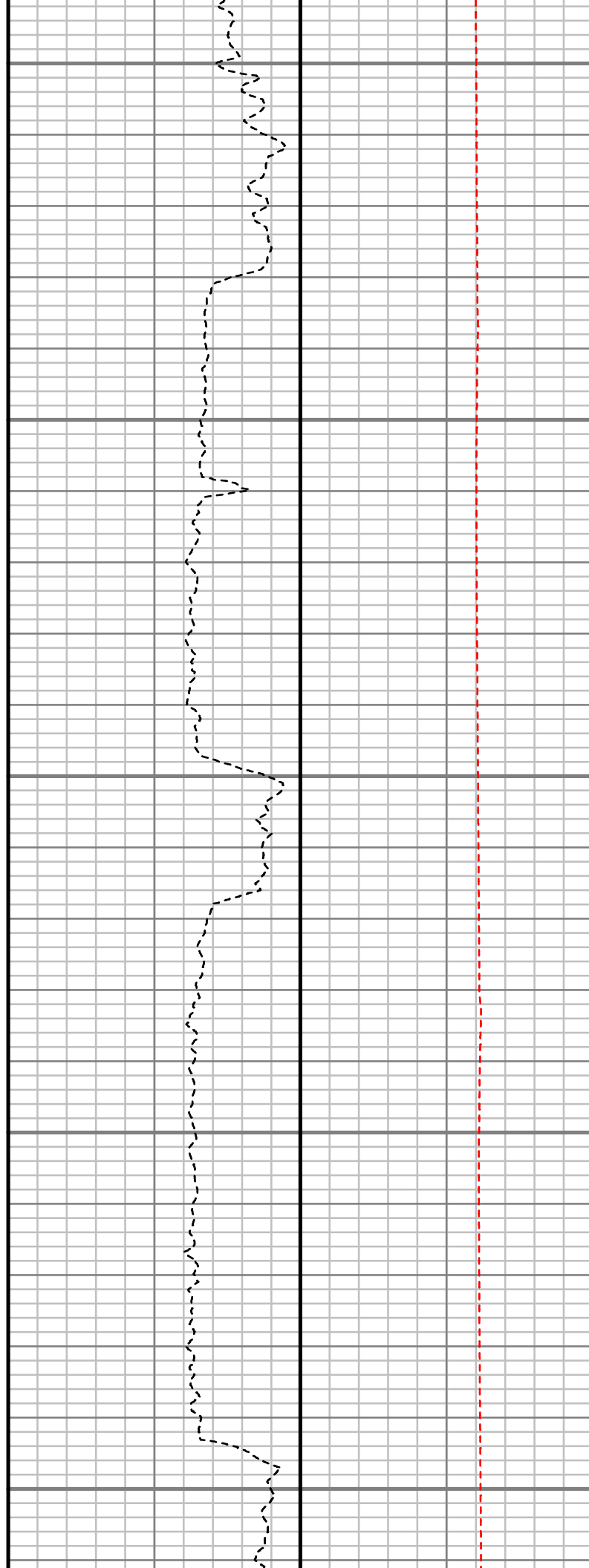
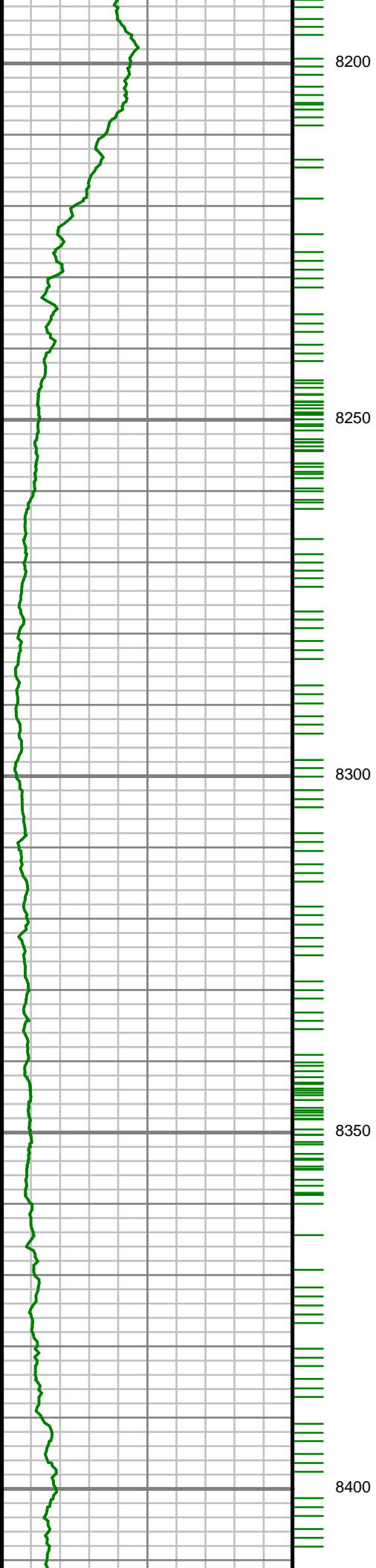


	Inc: 71.12 deg Az:
	353.28 deg TVD:
	7558.61 ft
S: 74 MD: 7796.00 ft	Inc: 78.67 deg Az:
	353.23 deg TVD:
	7570.85 ft
S: 75 MD: 7843.00 ft	Inc: 85.80 deg Az:
	352.76 deg TVD:
	7577.19 ft
S: 76 MD: 7873.00 ft	Inc: 90.40 deg Az:
	353.30 deg TVD:
	7578.19 ft
S: 77 MD: 7890.00 ft	Inc: 91.44 deg Az:
	355.39 deg TVD:
	7577.91 ft
S: 78 MD: 7906.00 ft	Inc: 92.22 deg Az:
	357.40 deg TVD:
	7577.40 ft



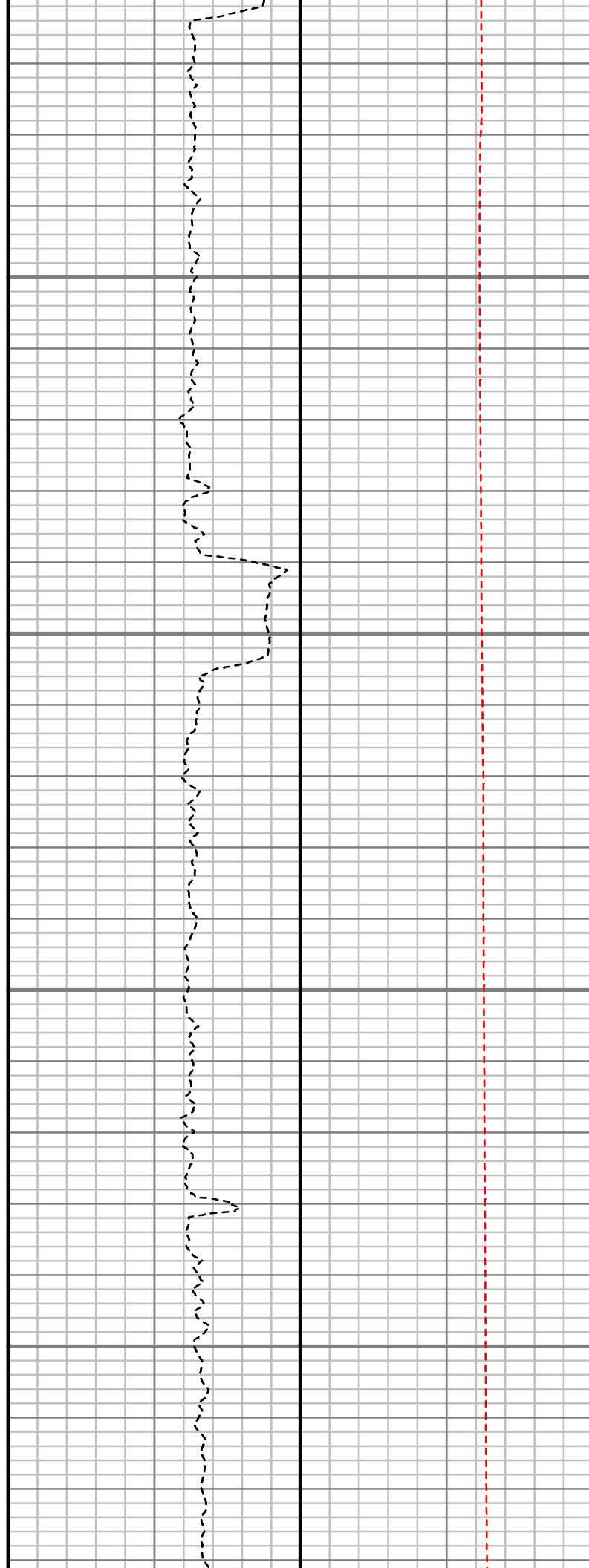
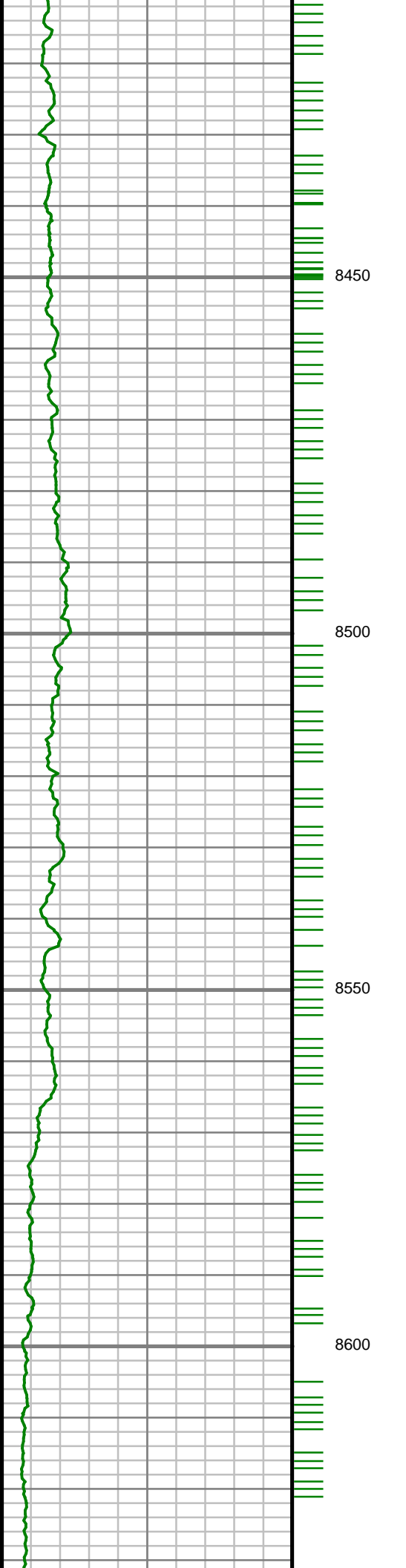
S: 79 MD: 8044.00 ft  
Inc: 94.24 deg Az: 1.61  
deg TVD: 7569.63 ft

S: 80 MD: 8139.00 ft  
Inc: 93.93 deg Az: 4.20  
deg TVD: 7562.86 ft



S: 81 MD: 8233.00 ft  
Inc: 91.21 deg Az: 2.35  
deg TVD: 7558.64 ft

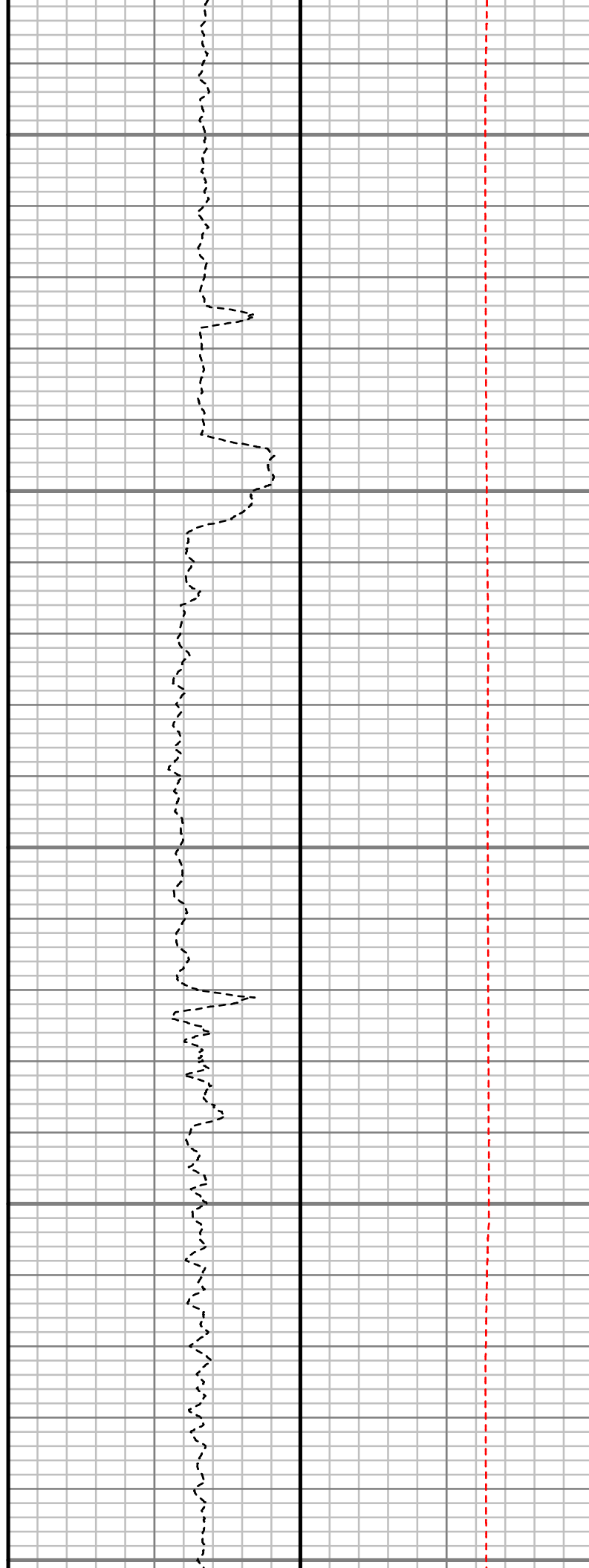
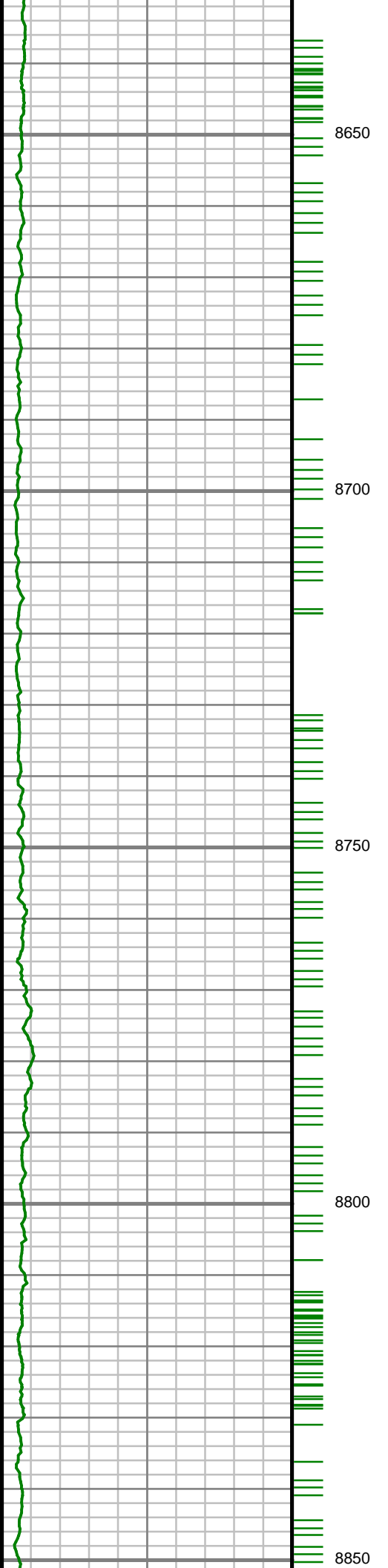
S: 82 MD: 8328.00 ft  
Inc: 90.50 deg Az: 1.49  
deg TVD: 7557.21 ft



S: 83 MD: 8422.00 ft  
Inc: 90.14 deg Az: 2.30  
deg TVD: 7556.69 ft

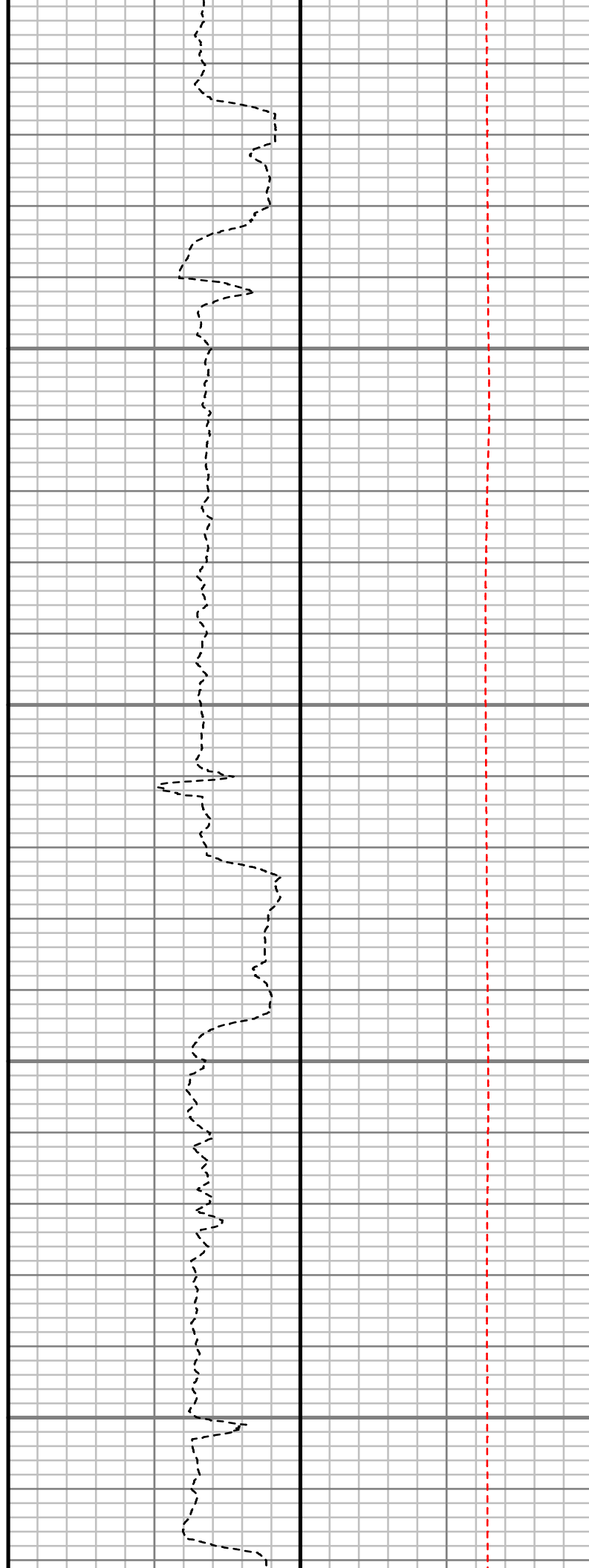
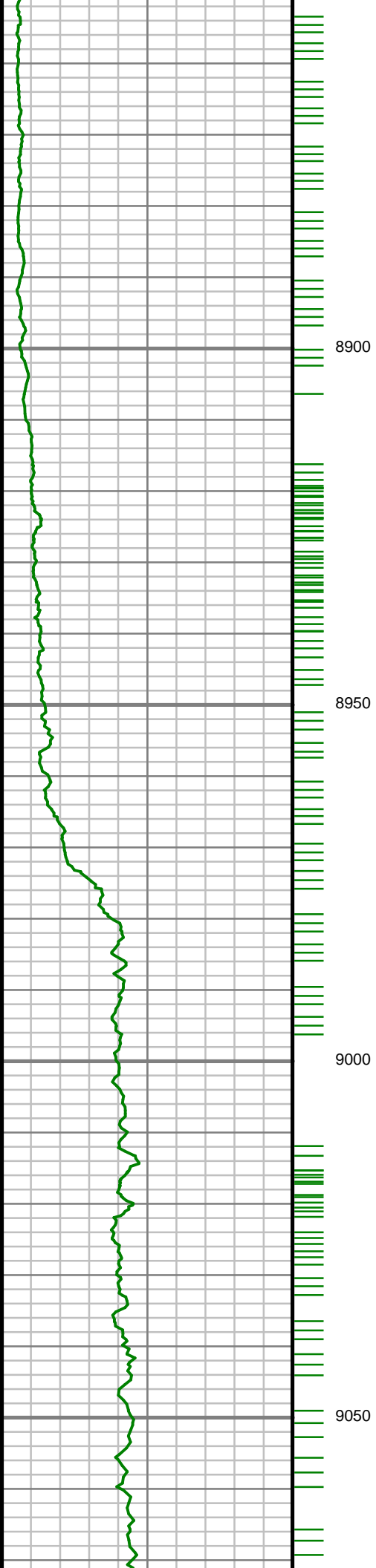
S: 84 MD: 8516.00 ft  
Inc: 88.45 deg Az: 3.04  
deg TVD: 7557.84 ft

S: 85 MD: 8611.00 ft  
Inc: 89.22 deg Az: 2.76  
deg TVD: 7559.77 ft



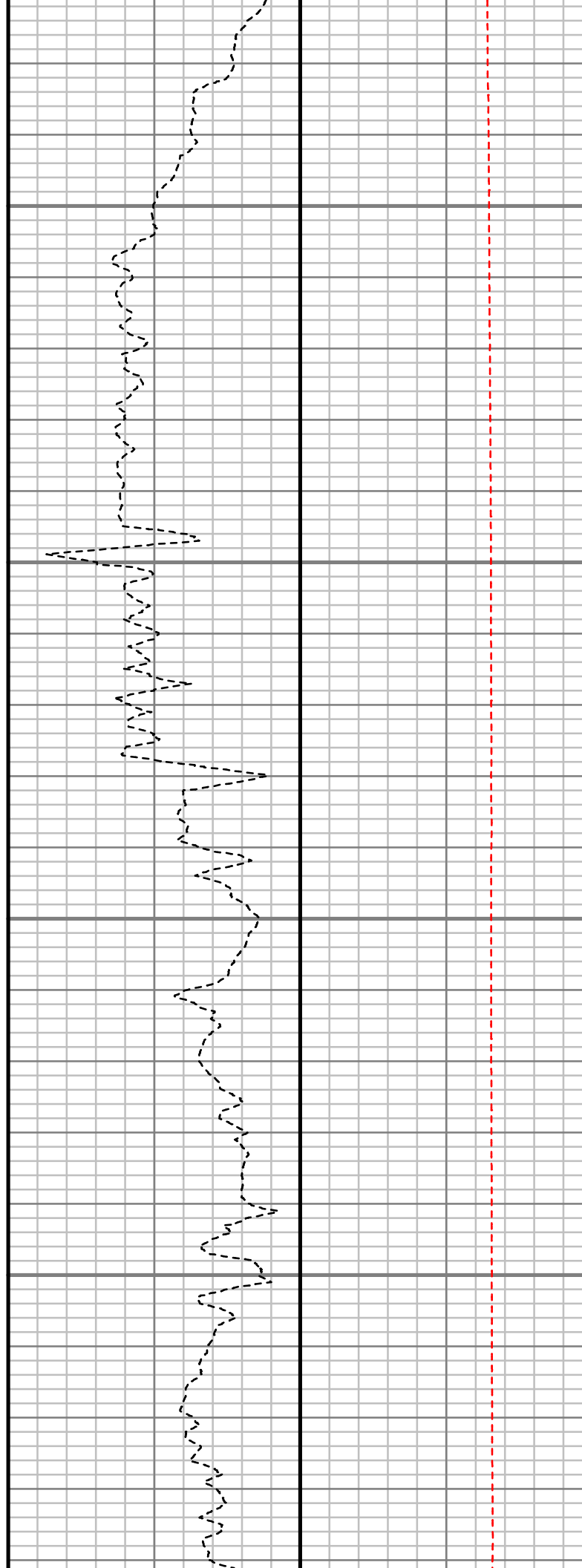
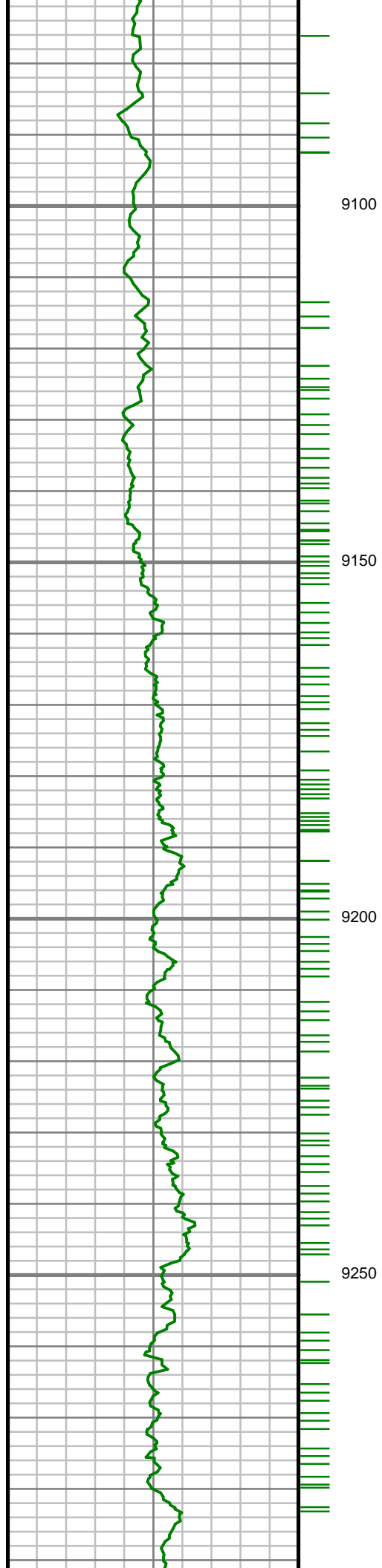
S: 86 MD: 8705.00 ft  
Inc: 89.16 deg Az: 2.16  
deg TVD: 7561.09 ft

S: 87 MD: 8799.00 ft  
Inc: 90.57 deg Az: 1.96  
deg TVD: 7561.31 ft

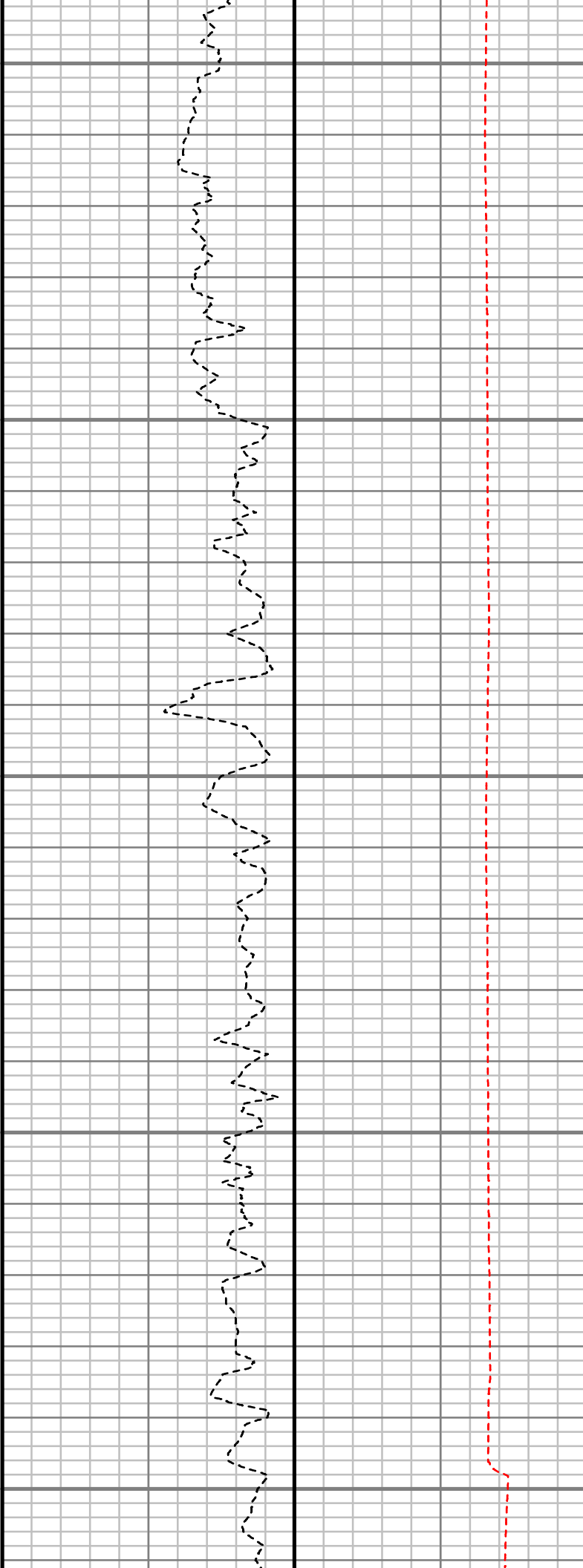
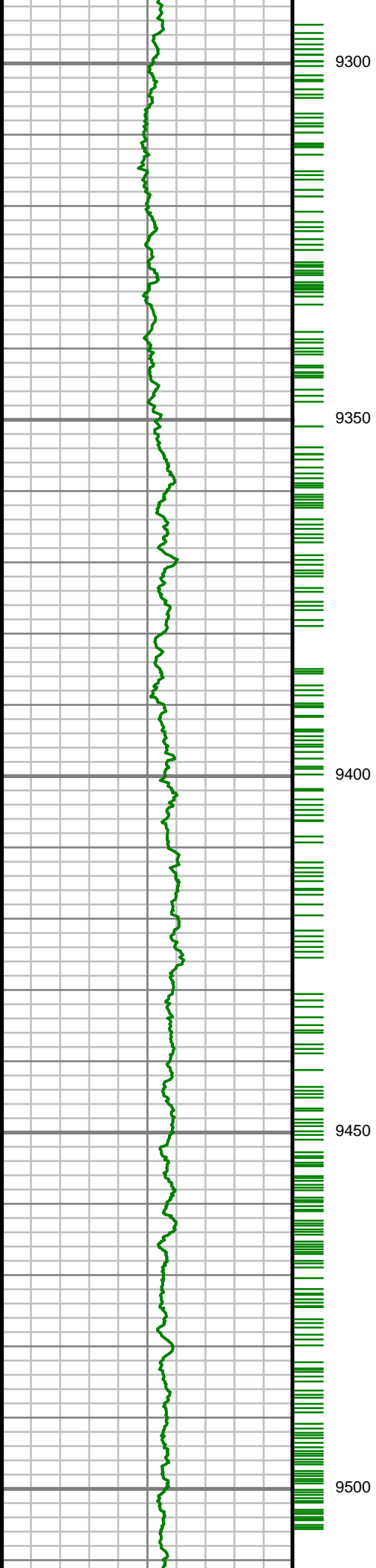


S: 88 MD: 8893.00 ft  
Inc: 90.07 deg Az: 2.02  
deg TVD: 7560.79 ft

S: 89 MD: 8987.00 ft  
Inc: 89.50 deg Az: 2.73  
deg TVD: 7561.15 ft



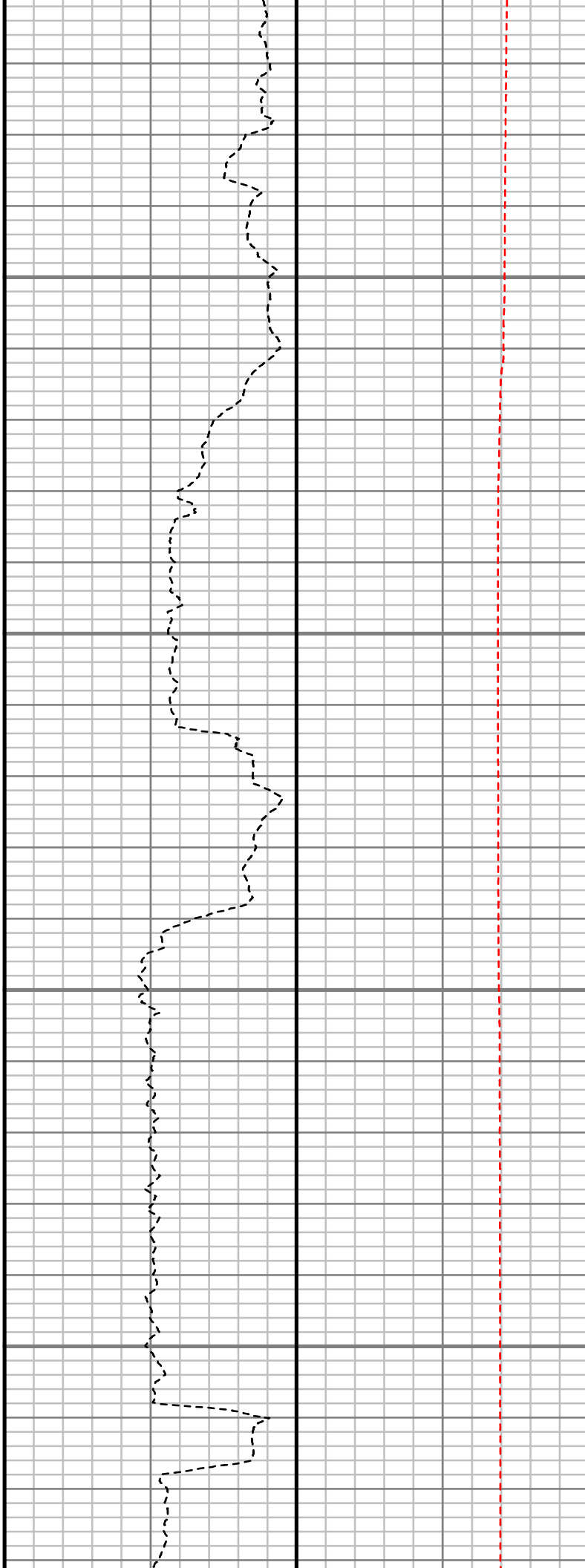
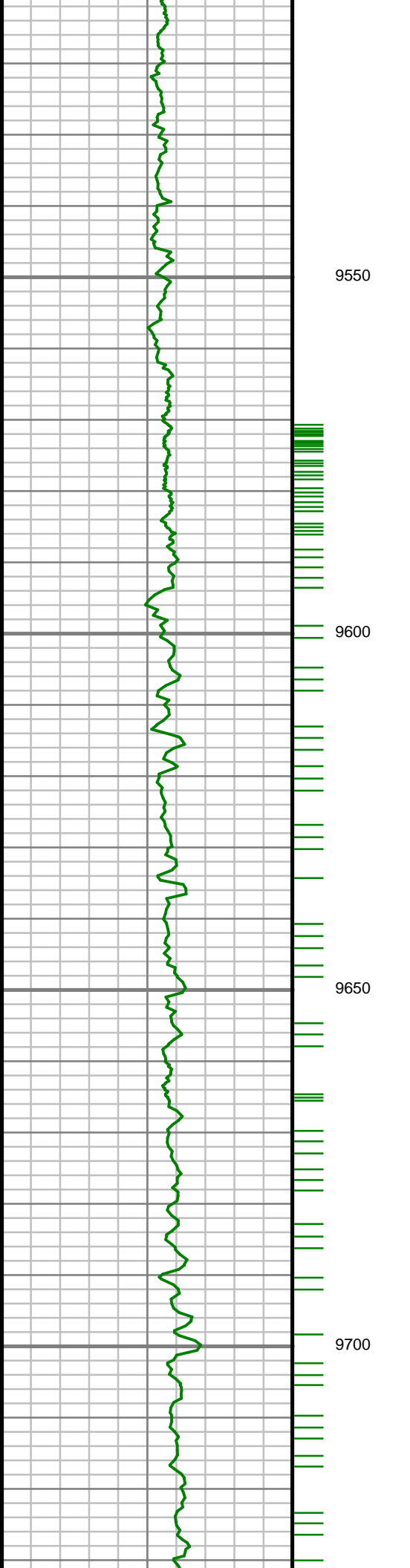
S: 90 MD: 9176.00 ft  
Inc: 87.68 deg Az: 3.26  
deg TVD: 7565.81 ft



S: 91 MD: 9365.00 ft  
Inc: 88.02 deg Az: 0.84  
deg TVD: 7572.90 ft

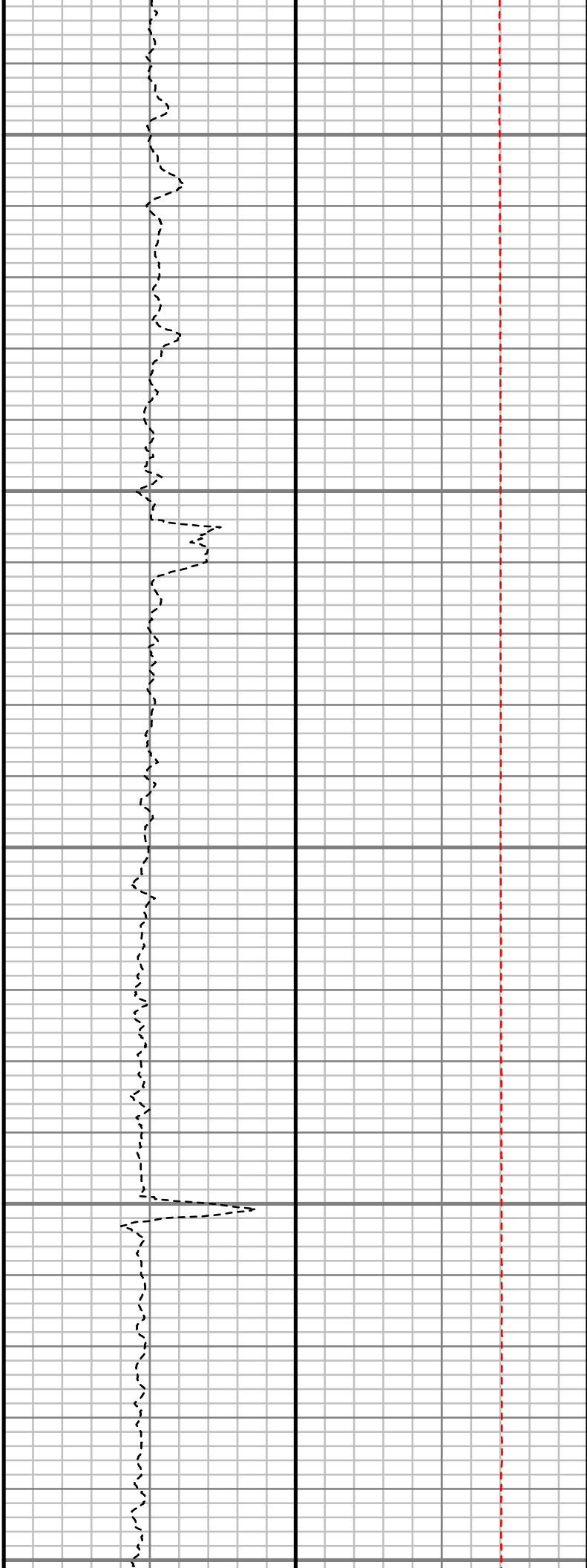
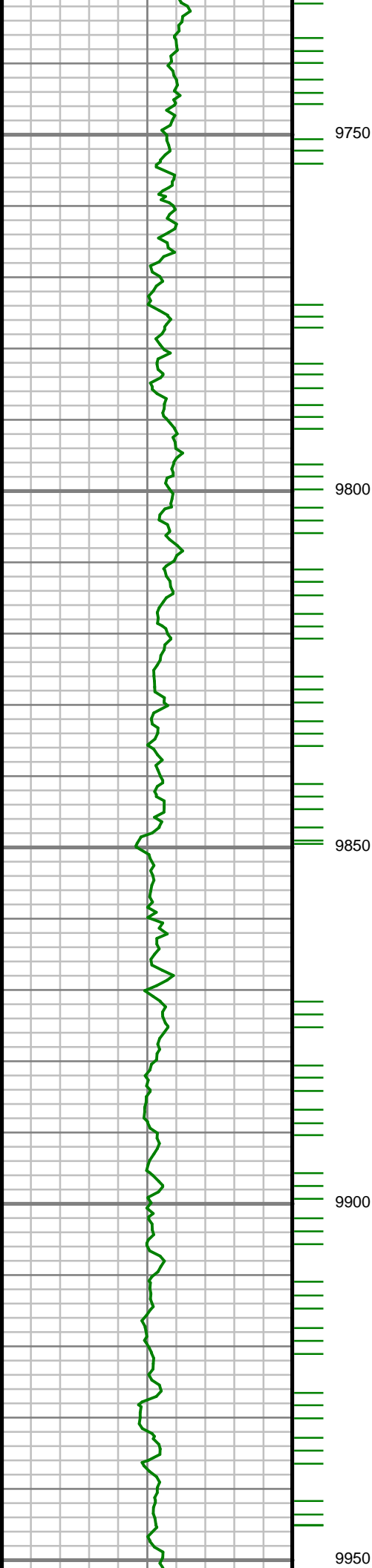
S: 92 MD: 9459.00 ft  
Inc: 89.60 deg Az:  
358.95 deg TVD:  
7574.85 ft





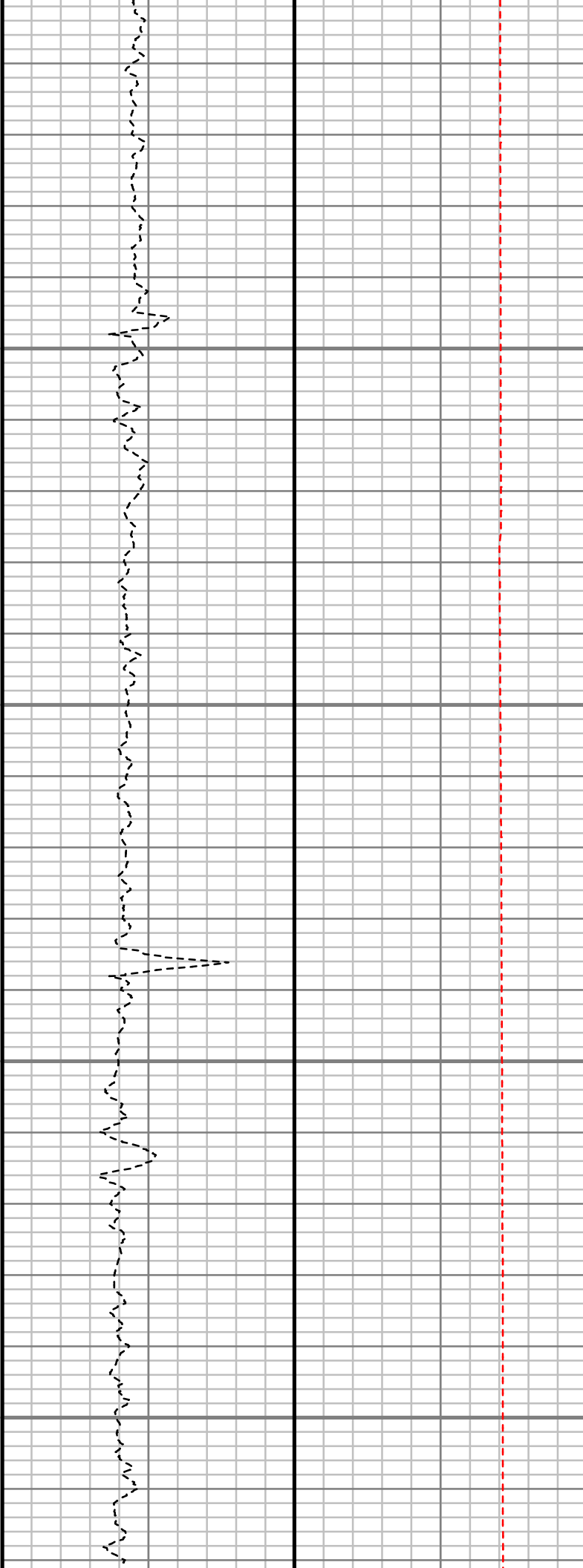
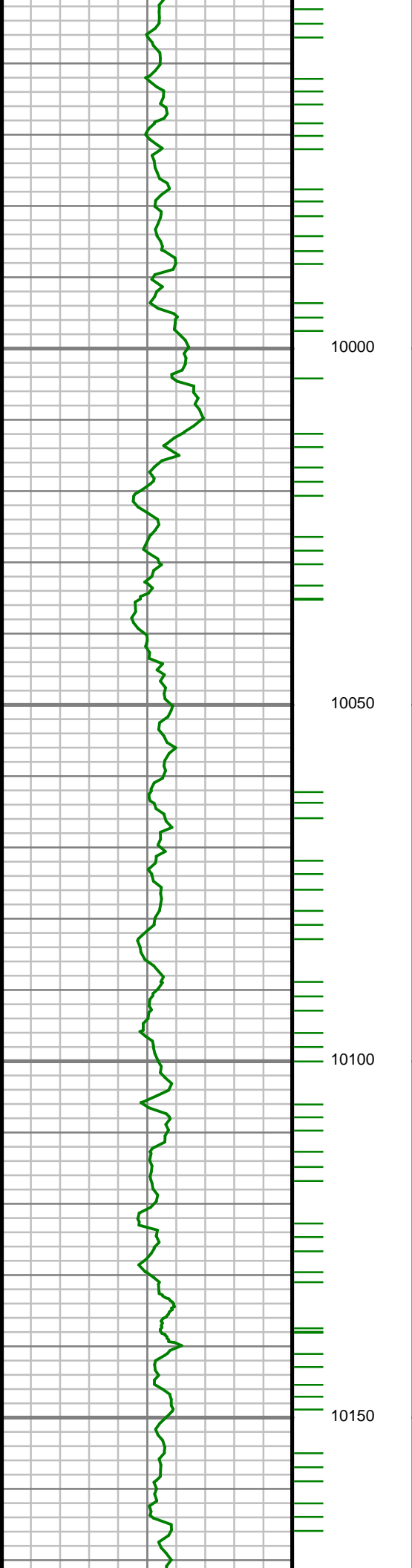
S: 93 MD: 9553.00 ft  
Inc: 90.00 deg Az:  
359.70 deg TVD:  
7575.18 ft

S: 94 MD: 9647.00 ft  
Inc: 90.77 deg Az: 0.98  
deg TVD: 7574.55 ft



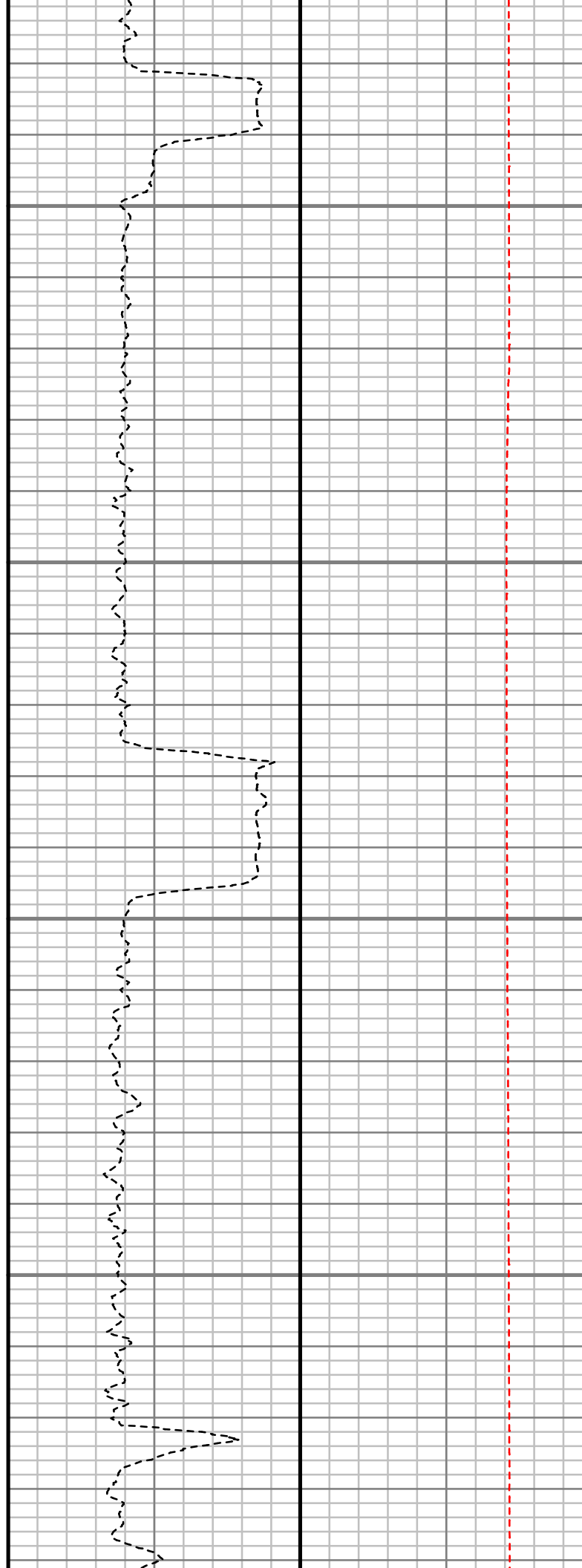
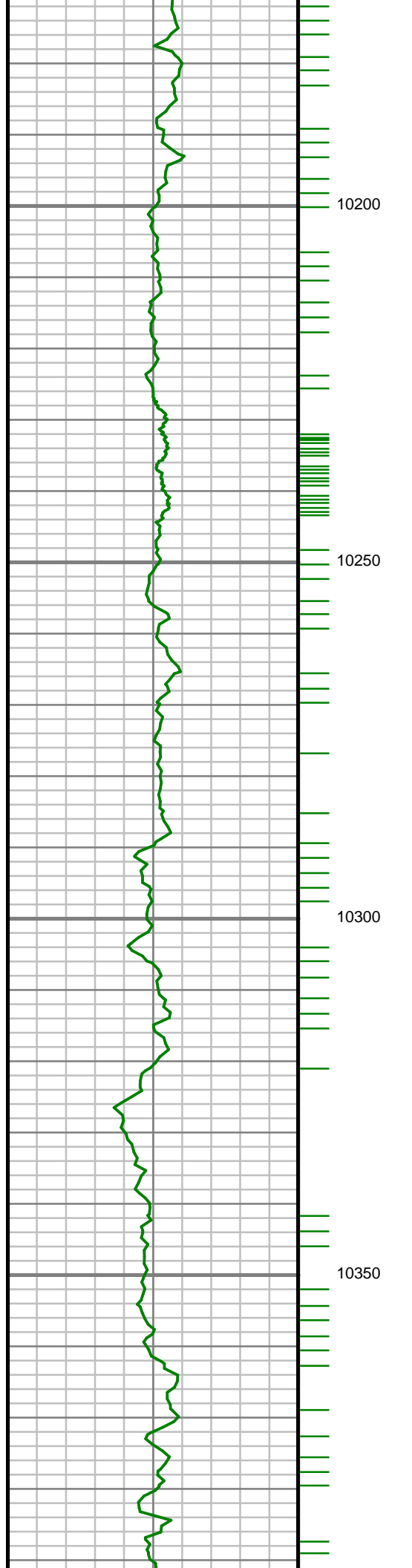
S: 95 MD: 9836.00 ft  
Inc: 90.84 deg Az: 0.53  
deg TVD: 7571.89 ft

S: 96 MD: 9930.00 ft  
Inc: 91.14 deg Az: 0.59  
deg TVD: 7570.26 ft



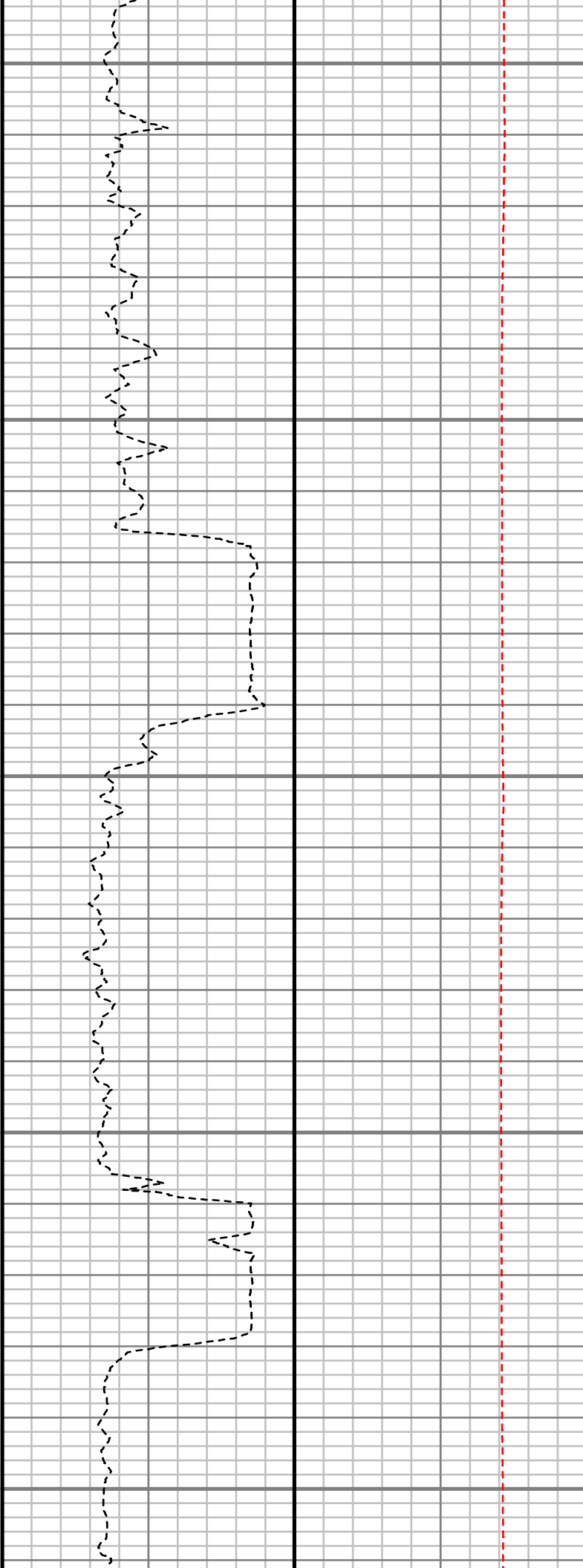
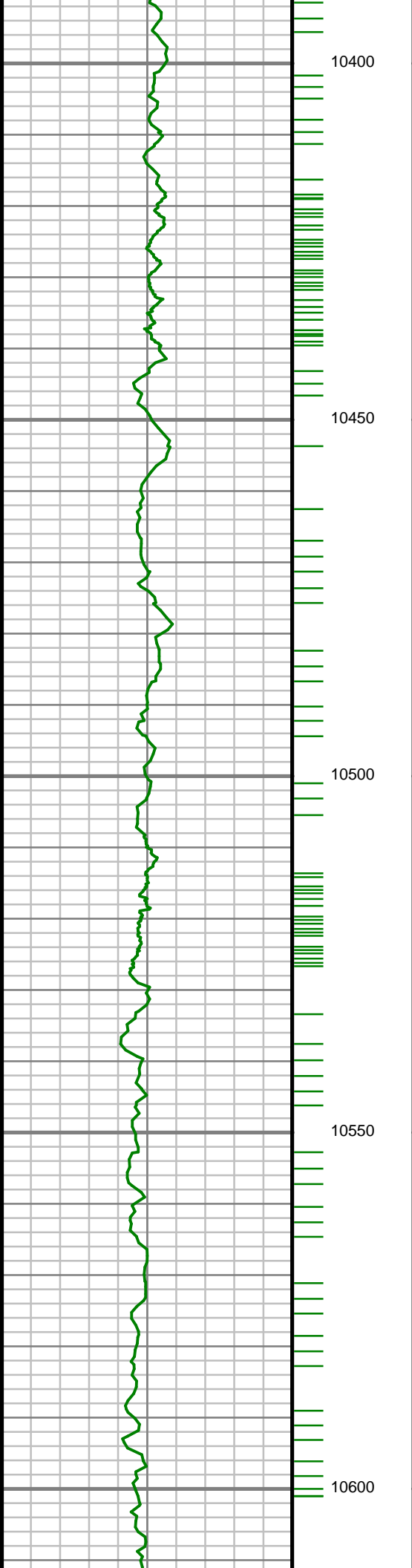
S: 97 MD: 10025.00 ft  
Inc: 91.24 deg Az: 0.52  
deg TVD: 7568.28 ft

S: 98 MD: 10119.00 ft  
Inc: 90.44 deg Az:  
359.84 deg TVD:  
7566.91 ft



S: 99 MD: 10213.00 ft  
Inc: 91.14 deg Az:  
359.54 deg TVD:  
7565.61 ft

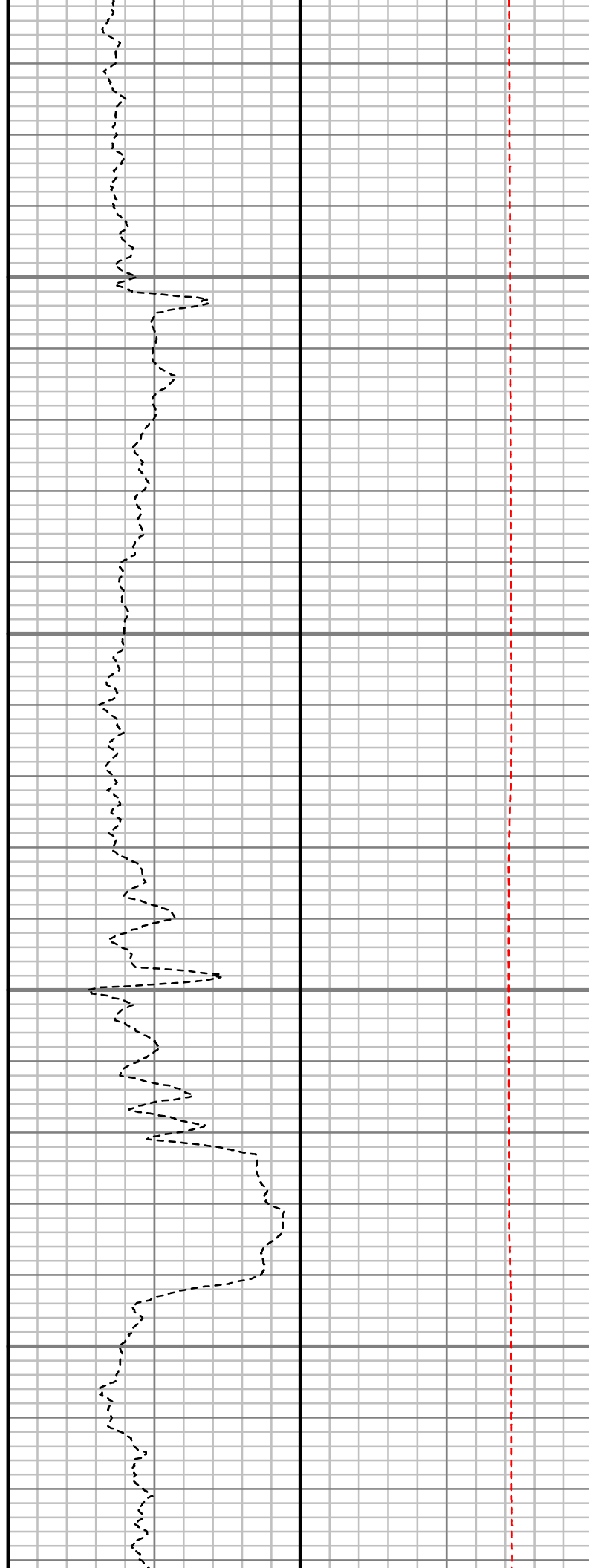
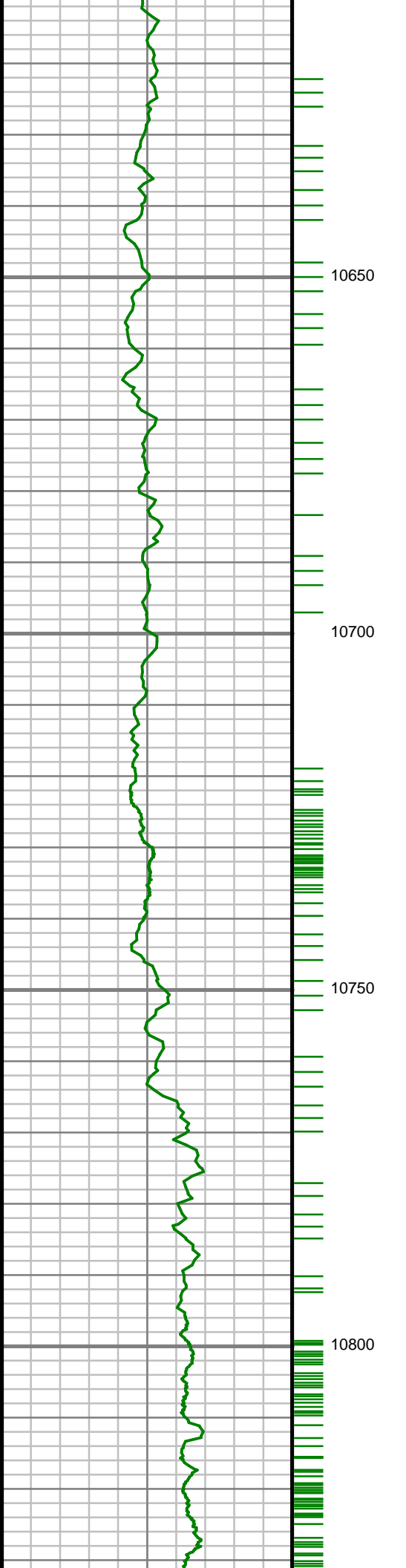
S: 100 MD: 10307.00 ft  
Inc: 90.34 deg Az:  
359.62 deg TVD:  
7564.40 ft



S: 101 MD: 10402.00 ft  
Inc: 91.78 deg Az: 359.74 deg TVD: 7562.64 ft

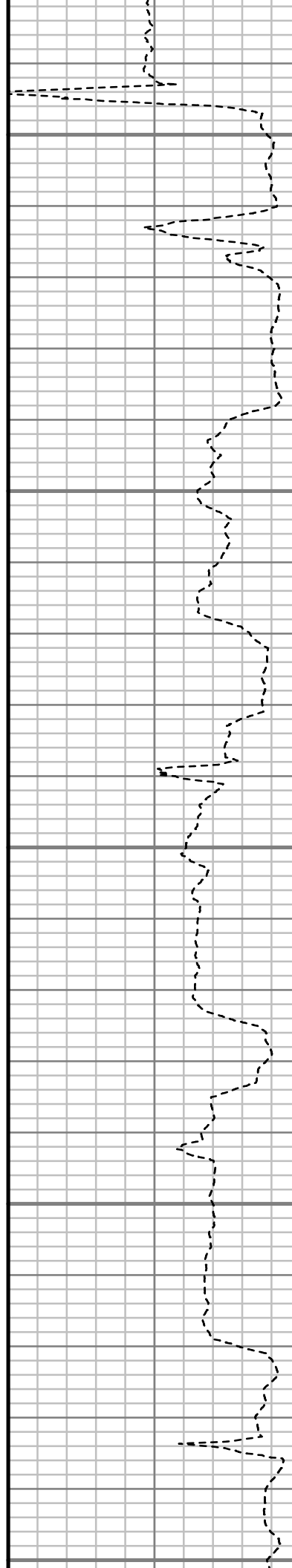
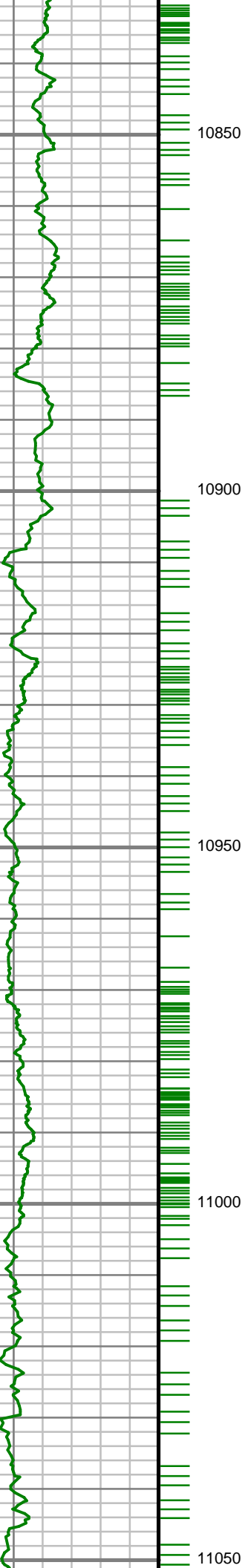
S: 102 MD: 10496.00 ft  
Inc: 90.27 deg Az: 1.39 deg TVD: 7560.96 ft

S: 103 MD: 10590.00 ft  
Inc: 88.55 deg Az: 0.43 deg TVD: 7561.92 ft



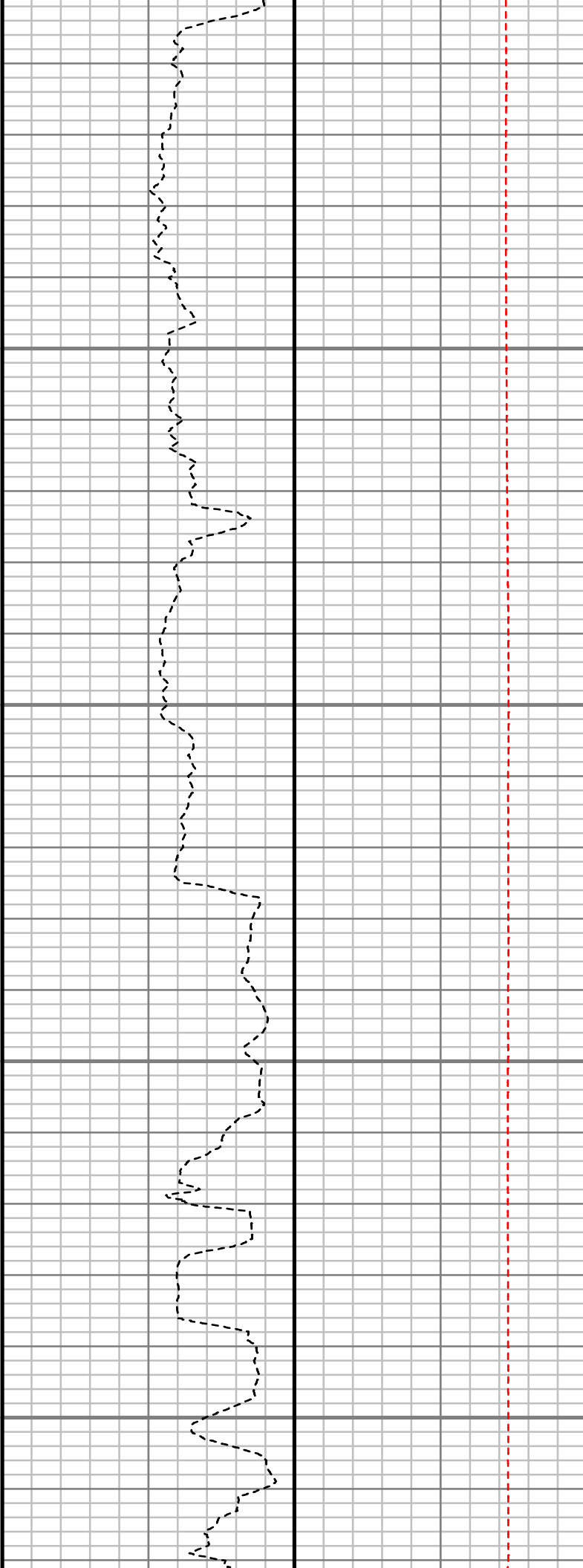
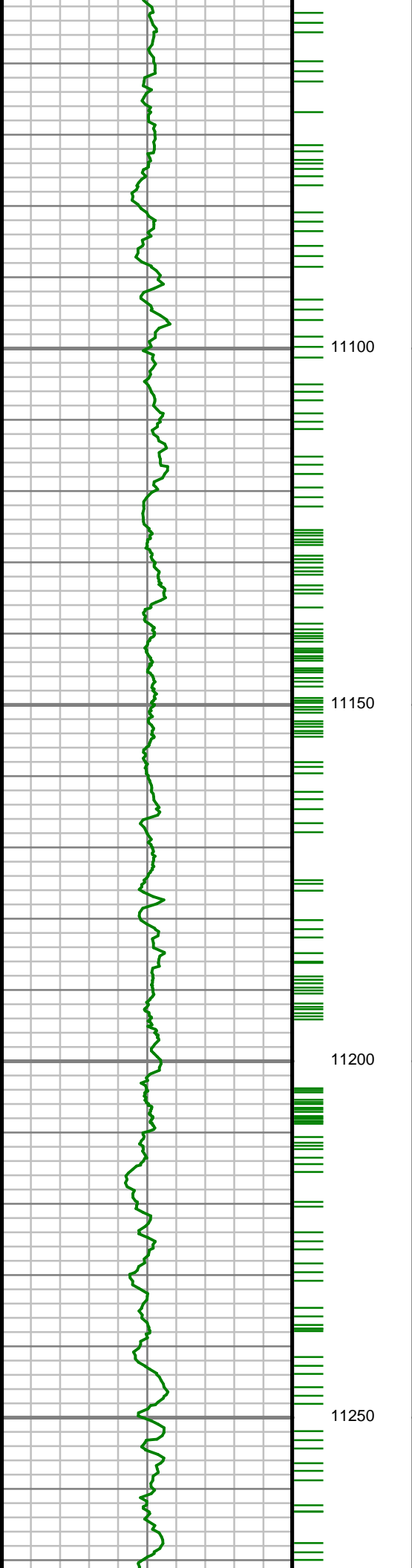
S: 104 MD: 10684.00 ft  
Inc: 88.22 deg Az: 0.16  
deg TVD: 7564.57 ft

S: 105 MD: 10779.00 ft  
Inc: 89.43 deg Az:  
358.80 deg TVD:  
7566.52 ft



S: 106 MD: 10873.00 ft  
Inc: 90.34 deg Az:  
357.86 deg TVD:  
7566.71 ft

S: 107 MD: 10967.00 ft  
Inc: 90.94 deg Az:  
357.80 deg TVD:  
7565.67 ft

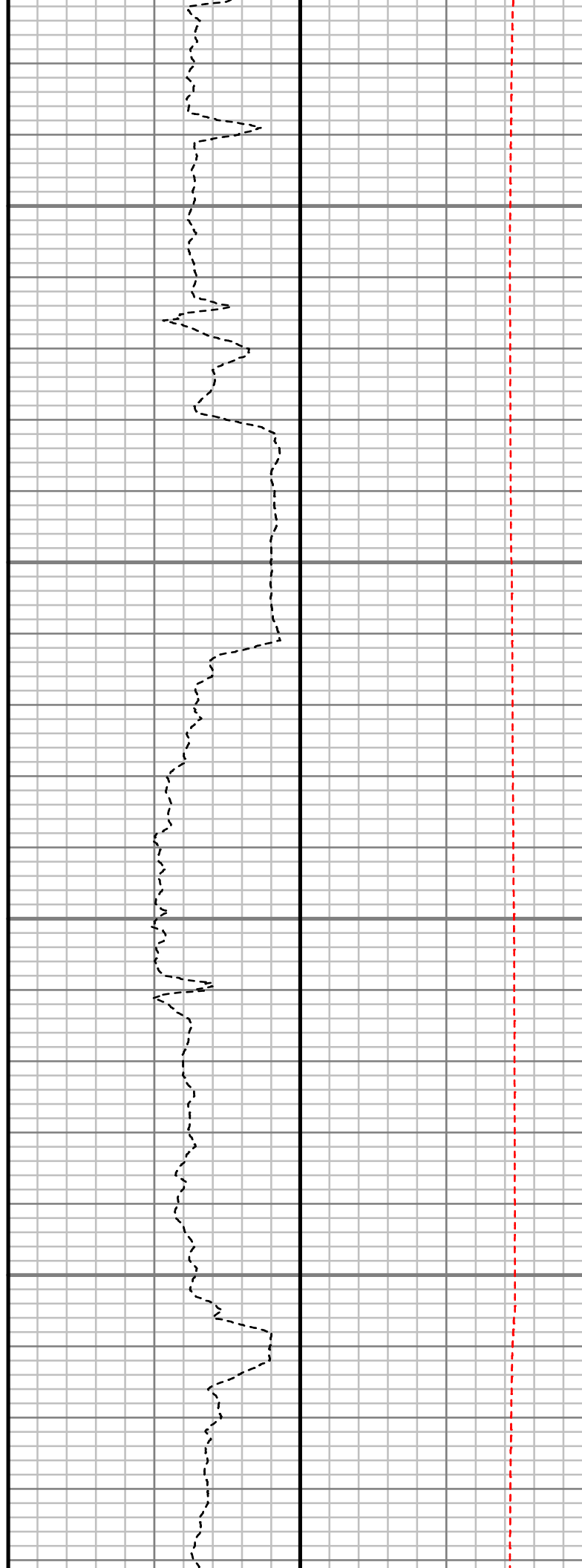
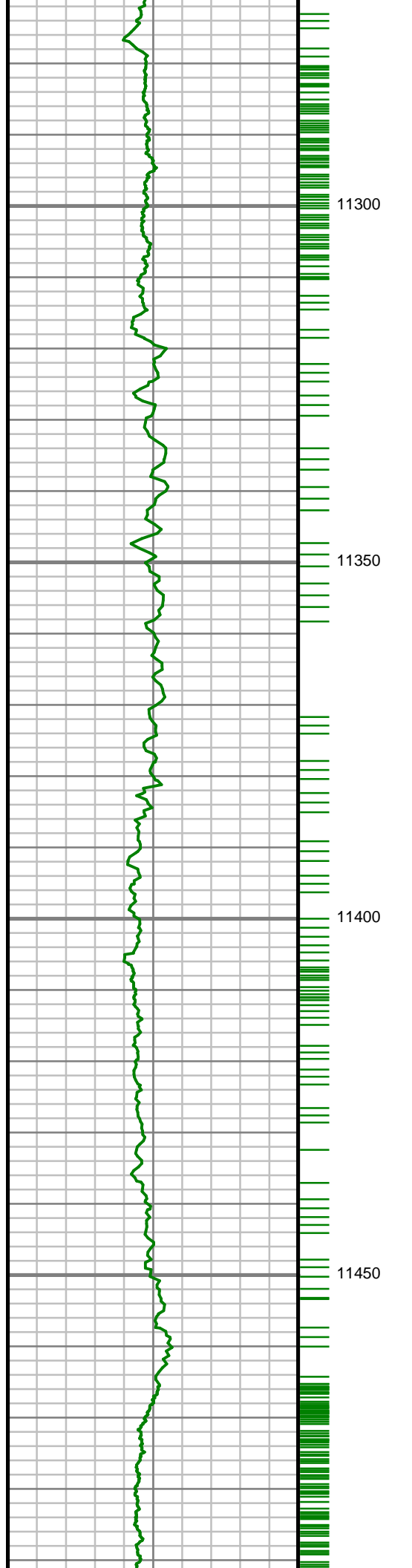


S: 108 MD: 11062.00 ft  
Inc: 89.76 deg Az:  
358.42 deg TVD:  
7565.08 ft

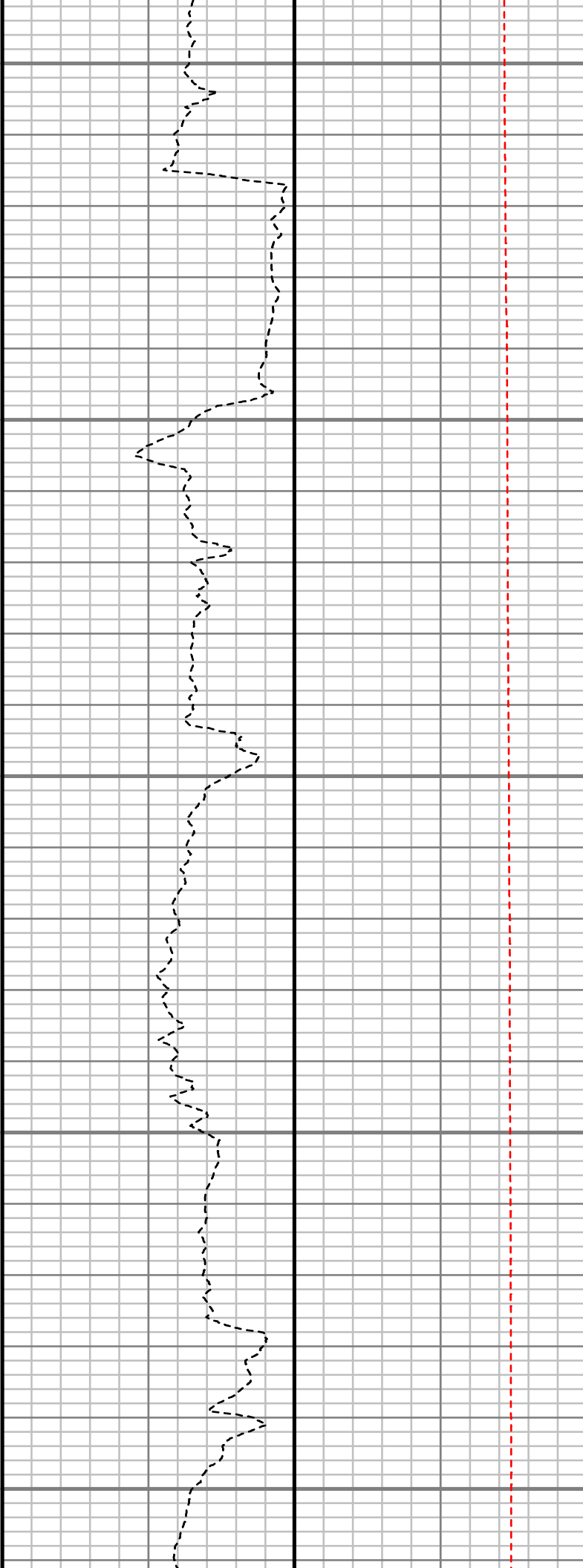
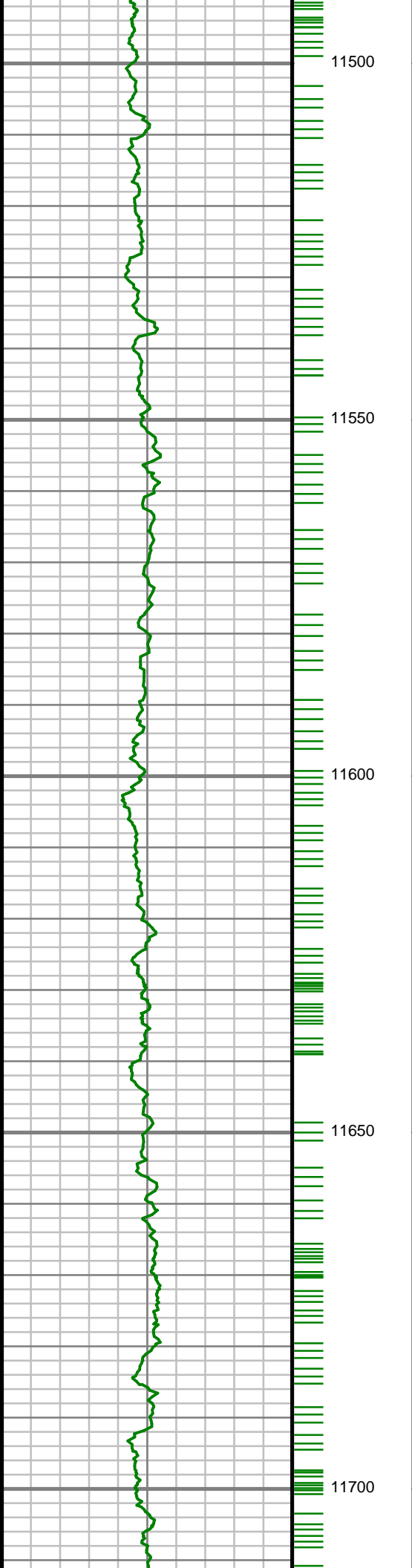
S: 109 MD: 11156.00 ft  
Inc: 90.30 deg Az:  
358.50 deg TVD:  
7565.03 ft

S: 110 MD: 11251.00 ft  
Inc: 90.54 deg Az:  
357.67 deg TVD:  
7564.33 ft

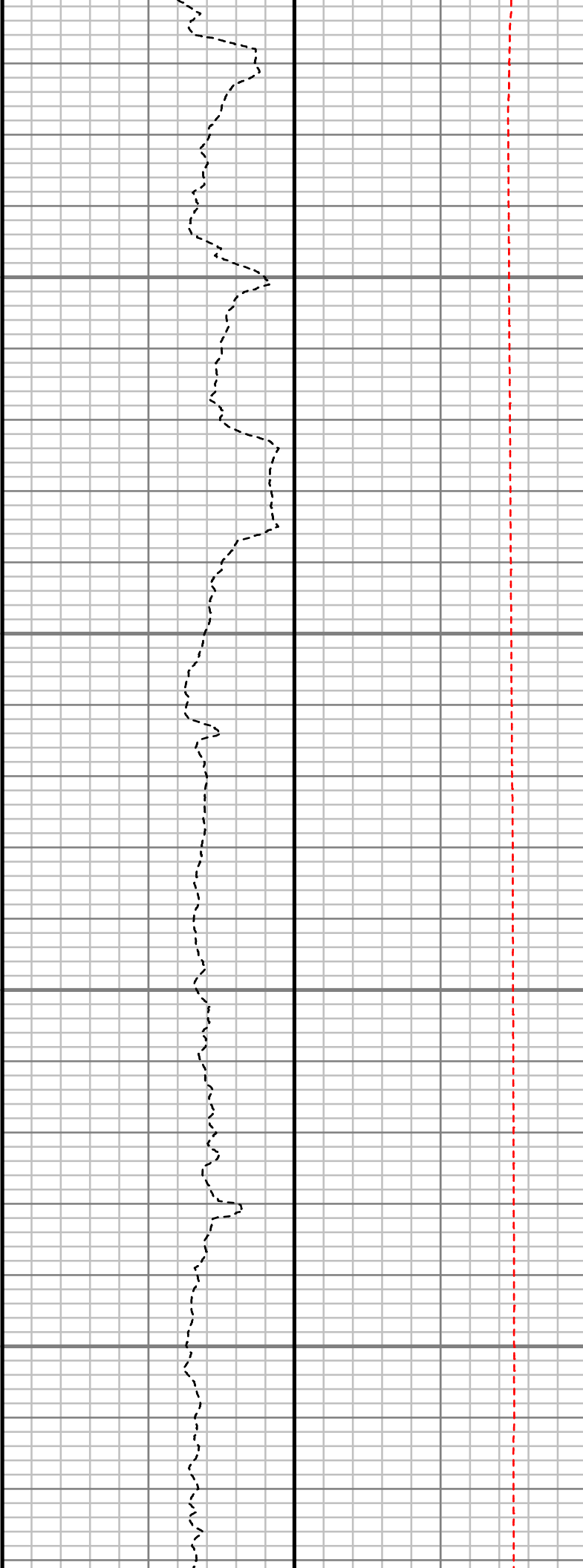
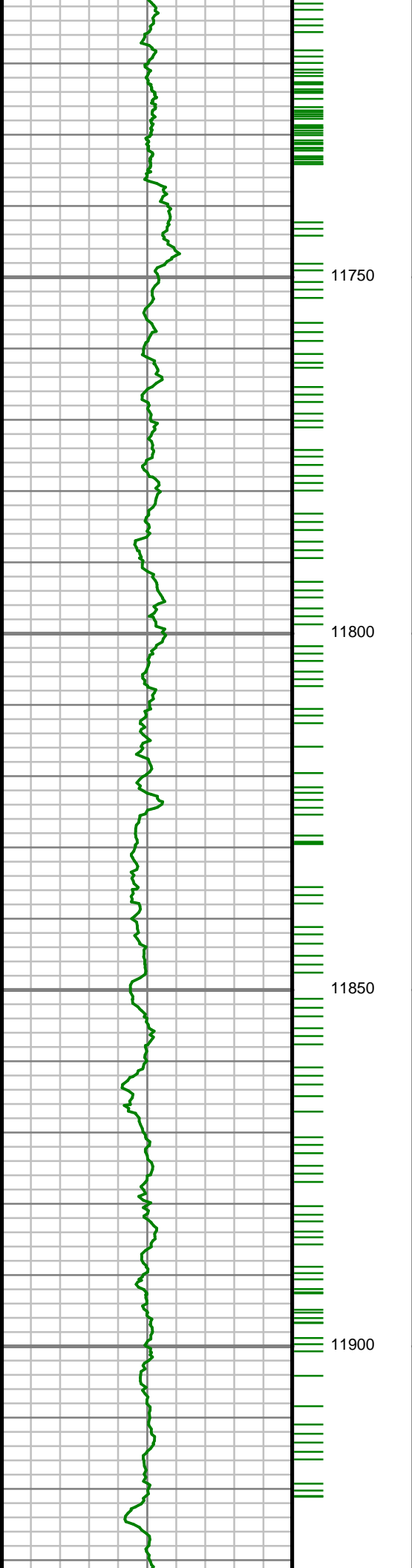




S: 111 MD: 11345.00 ft  
Inc: 90.57 deg Az:  
359.38 deg TVD:  
7563.42 ft



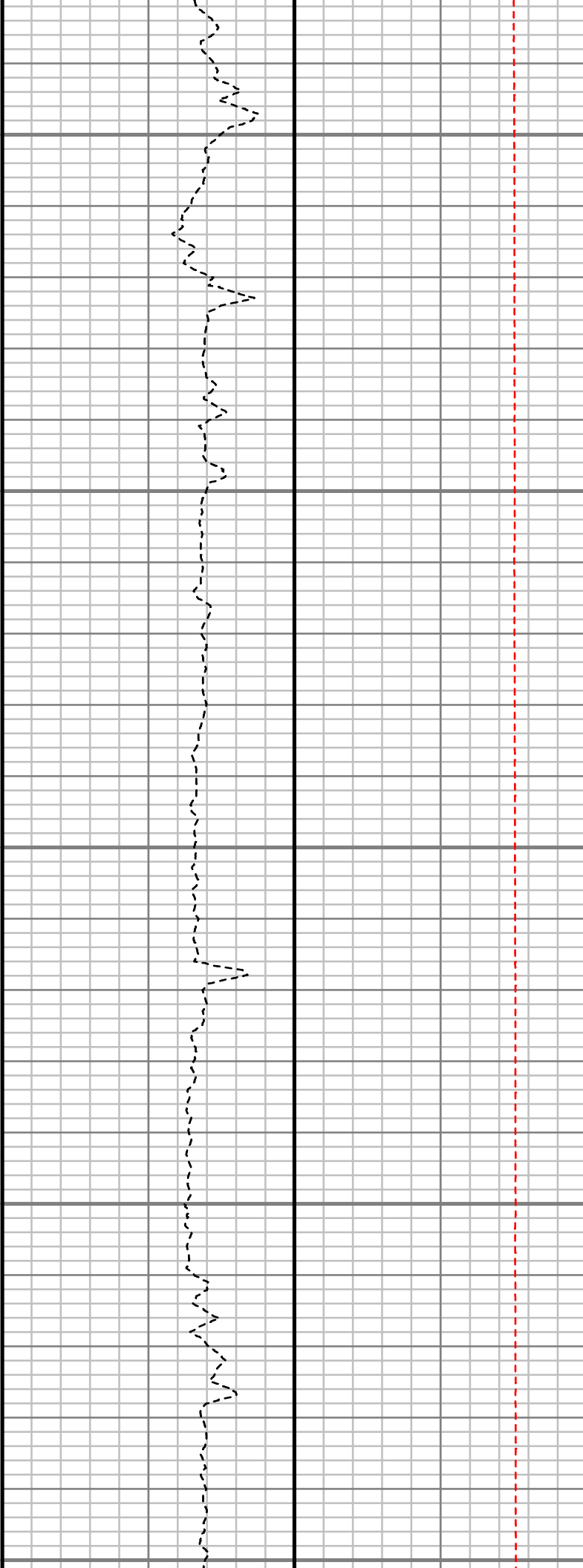
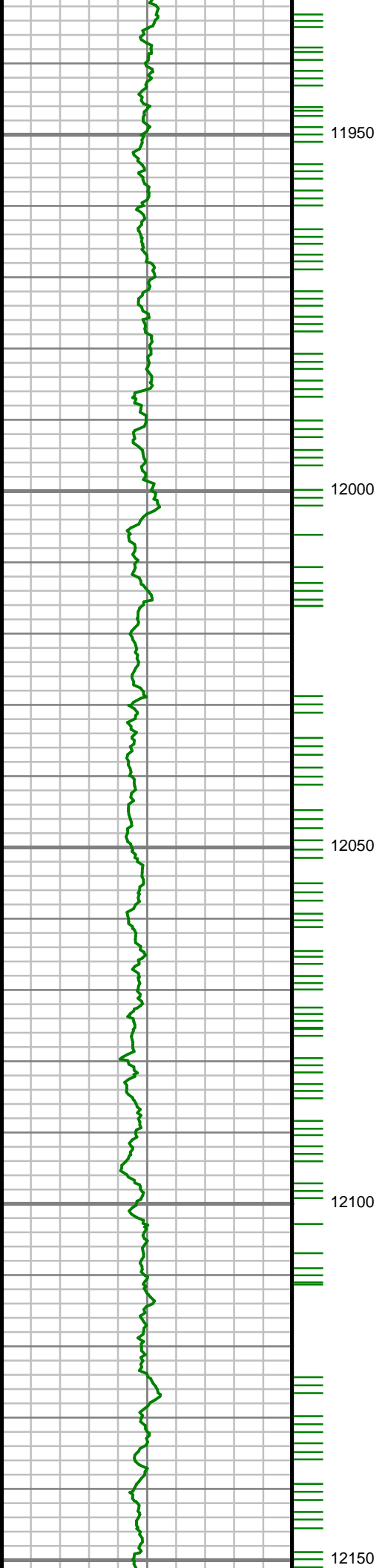
S: 112 MD: 11533.00 ft  
Inc: 89.33 deg Az: 1.18  
deg TVD: 7563.58 ft



S: 113 MD: 11722.00 ft  
Inc: 88.96 deg Az: 0.94  
deg TVD: 7566.41 ft

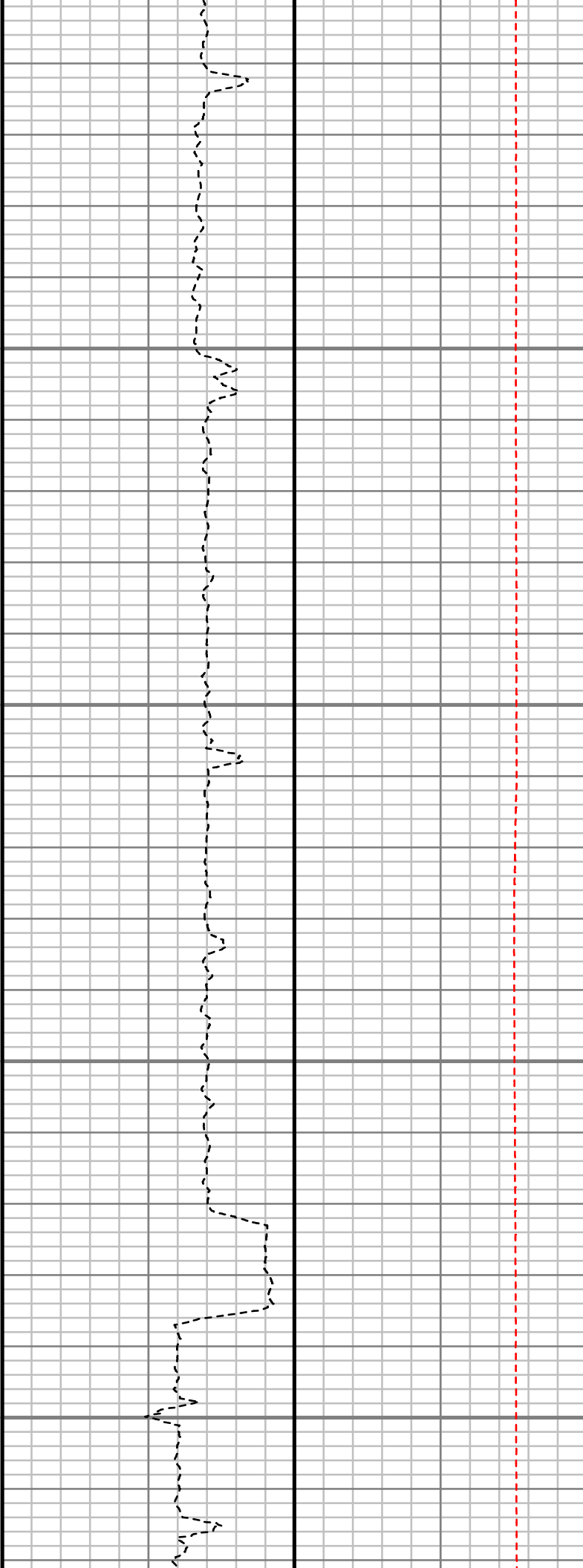
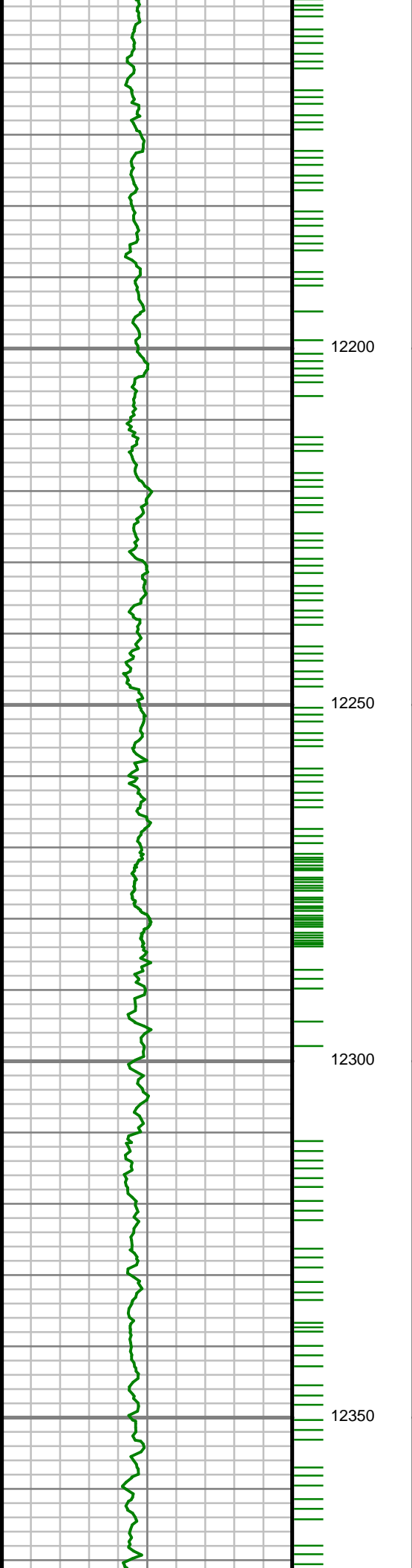
S: 114 MD: 11816.00 ft  
Inc: 89.73 deg Az: 0.55  
deg TVD: 7567.49 ft

S: 115 MD: 11910.00 ft  
Inc: 91.11 deg Az: 1.18  
deg TVD: 7566.80 ft



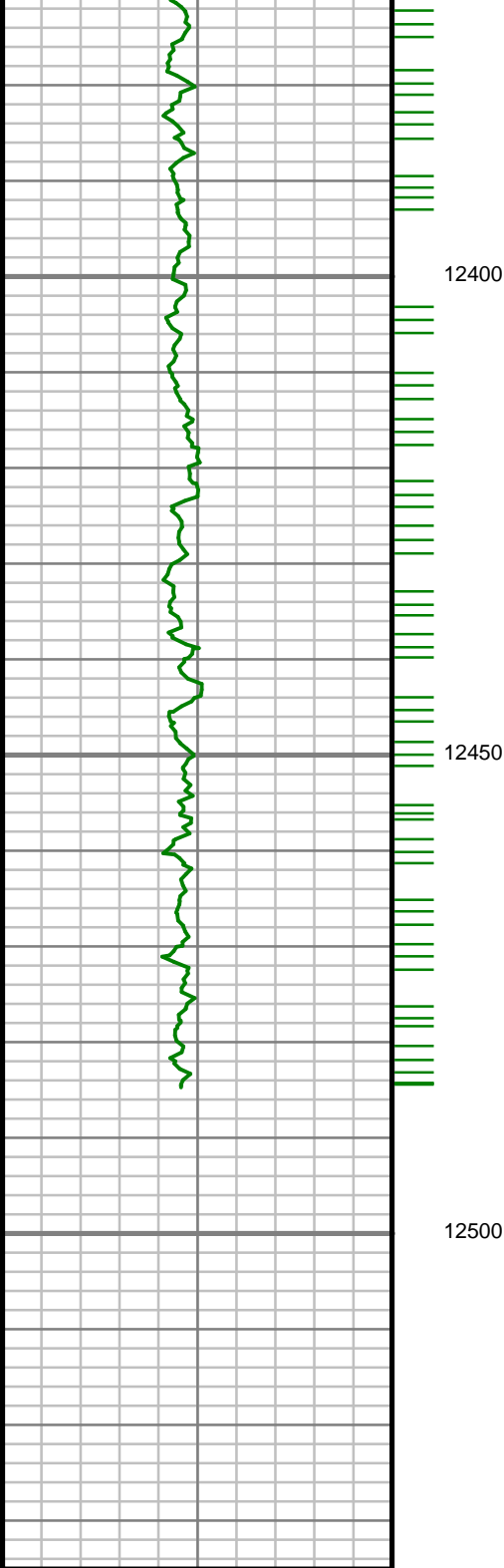
S: 116 MD: 12005.00 ft  
Inc: 91.38 deg Az: 1.27  
deg TVD: 7564.74 ft

S: 117 MD: 12099.00 ft  
Inc: 91.21 deg Az: 1.28  
deg TVD: 7562.61 ft

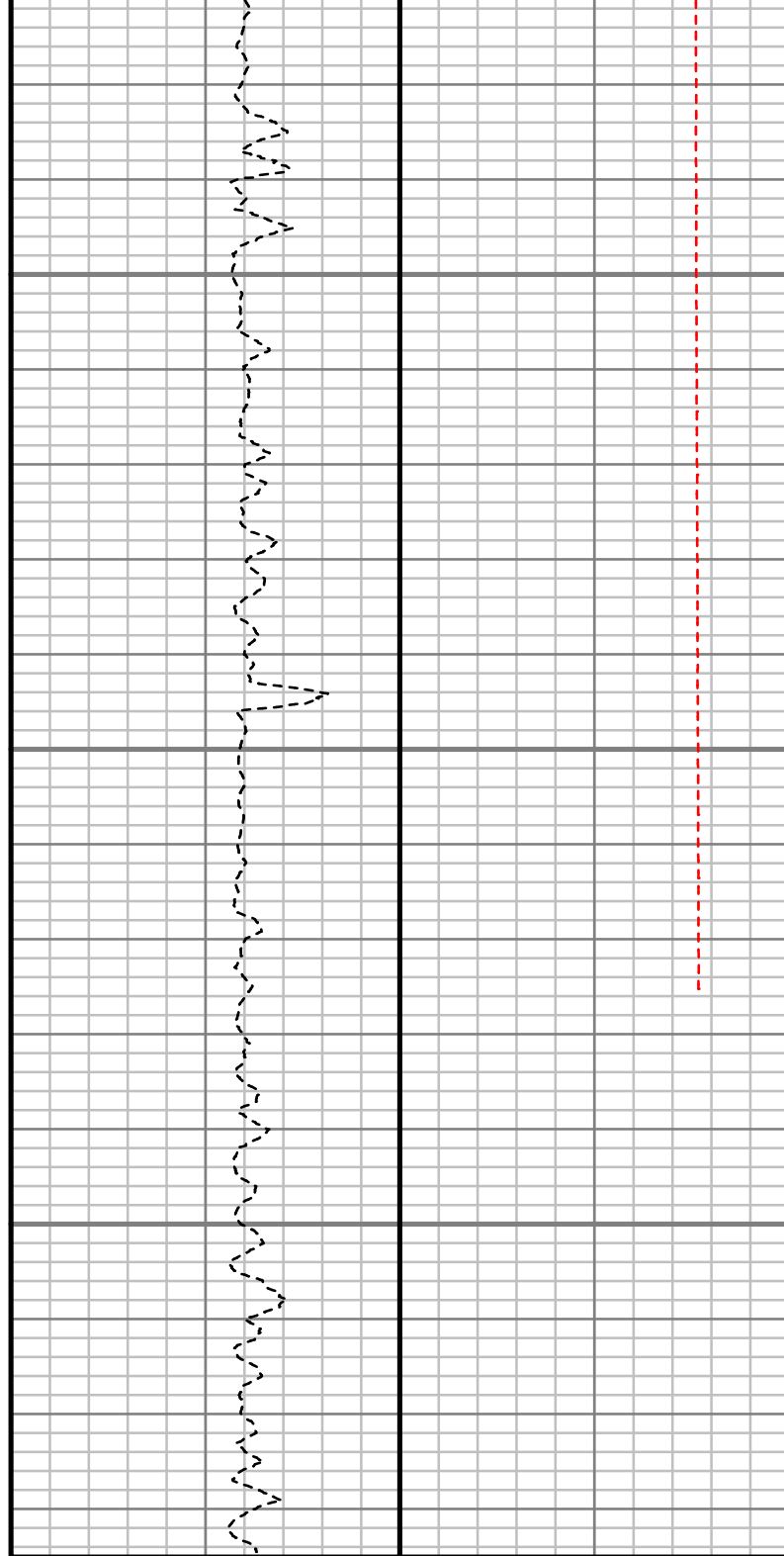


S: 118 MD: 12193.00 ft  
Inc: 90.77 deg Az: 1.24  
deg TVD: 7560.98 ft

S: 119 MD: 12287.00 ft  
Inc: 90.77 deg Az: 1.59  
deg TVD: 7559.72 ft



Gamma Ray (GR)  
0 Unit = aapi 150



Rate of Penetration (ROP)  
1000 Unit = ft/hr 0

Tool Temperature (T-TEMP)  
0 Unit = °F 300

S: 120 MD: 12382.00 ft  
Inc: 89.60 deg Az: 1.76  
deg TVD: 7559.41 ft

S: 121 MD: 12473.00 ft  
Inc: 89.56 deg Az: 1.32  
deg TVD: 7560.08 ft

Comments

## MWD Survey Report

<b>Well Location</b>	MULGA 13-23HZ PAD
<b>Well Name</b>	MULGA 28C-23HZ
<b>Survey Date</b>	7/23/2014
<b>Latitude</b>	40°7'1.690"N
<b>Longitude</b>	104°51'34.160"W
<b>Btotal</b>	52728, 52805 nT
<b>Dip</b>	66.76, 66.80 deg
<b>Magnetic Declination</b>	8.59, 8.63 deg
<b>North Reference</b>	True North
<b>Grid Correction</b>	None
<b>Depth Reference</b>	RKB (25.00 ft)
<b>Calculation Method</b>	Minimum Curvature
<b>Section (VS) Ref</b>	0.00N (ft), 0.00E (ft), 0.00Azim (deg)
<b>Operator(s)</b>	B. GREER, M. SHARKER

### Well Notes

SURVEYS FROM 0 FT. TO 1253  
FT WERE ACQUIRED BY MS GYRO MWD.

SURVEYS FROM 1253 FT. TO 12473 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING  
INTERNATIONAL MWD.

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Course Length
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	Invalid
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	25.00
125.00	0.41	154.74	125.00	-0.32	-0.32	0.15	0.41	100.00
225.00	0.26	185.73	225.00	-0.87	-0.87	0.28	0.23	100.00
325.00	0.21	307.08	325.00	-0.99	-0.99	0.11	0.41	100.00
425.00	0.55	15.29	425.00	-0.41	-0.41	0.09	0.51	100.00
525.00	0.65	14.39	524.99	0.60	0.60	0.36	0.10	100.00
625.00	0.18	42.72	624.99	1.26	1.26	0.61	0.50	100.00
725.00	0.28	310.54	724.99	1.54	1.54	0.53	0.34	100.00
825.00	0.45	315.29	824.98	1.97	1.97	0.07	0.17	100.00
925.00	0.47	306.95	924.98	2.50	2.50	-0.54	0.07	100.00
1025.00	0.49	326.20	1024.98	3.10	3.10	-1.10	0.16	100.00
1125.00	0.50	353.53	1124.97	3.89	3.89	-1.39	0.23	100.00
1148.00	0.51	358.96	1147.97	4.09	4.09	-1.40	0.21	23.00
1374.00	0.21	5.21	1373.97	5.52	5.52	-1.38	0.13	226.00
1557.00	2.23	132.20	1556.92	3.47	3.47	1.28	1.29	183.00
1740.00	2.99	122.40	1739.73	-1.47	-1.47	7.94	0.48	183.00
1831.00	4.18	123.82	1830.56	-4.58	-4.58	12.70	1.31	91.00
2014.00	5.96	125.32	2012.83	-13.79	-13.79	25.99	0.97	183.00

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Course Length ft
2106.00	7.32	129.14	2104.21	-20.25	-20.25	34.43	1.56	92.00
2197.00	9.05	128.12	2194.28	-28.32	-28.32	44.55	1.90	91.00
2289.00	9.82	130.69	2285.04	-37.91	-37.91	56.19	0.96	92.00
2380.00	11.30	138.15	2374.50	-49.61	-49.61	68.03	2.21	91.00
2471.00	13.27	138.90	2463.41	-64.12	-64.12	80.85	2.16	91.00
2563.00	13.32	139.90	2552.95	-80.18	-80.18	94.61	0.26	92.00
2654.00	13.14	138.13	2641.53	-95.90	-95.90	108.27	0.48	91.00
2746.00	13.45	136.54	2731.07	-111.45	-111.45	122.60	0.52	92.00
2837.00	14.92	137.92	2819.29	-127.83	-127.83	137.73	1.66	91.00
2929.00	15.91	136.08	2907.98	-145.70	-145.70	154.41	1.20	92.00
3023.00	15.93	132.31	2998.38	-163.67	-163.67	172.89	1.10	94.00
3117.00	12.40	128.81	3089.51	-178.68	-178.68	190.30	3.86	94.00
3211.00	11.78	129.53	3181.42	-191.12	-191.12	205.57	0.68	94.00
3306.00	8.54	125.24	3274.92	-201.37	-201.37	218.82	3.50	95.00
3400.00	6.74	118.63	3368.08	-208.04	-208.04	229.36	2.13	94.00
3494.00	5.75	112.98	3461.52	-212.52	-212.52	238.54	1.24	94.00
3589.00	2.88	102.98	3556.25	-214.92	-214.92	245.25	3.11	95.00
3683.00	1.56	86.69	3650.17	-215.37	-215.37	248.83	1.54	94.00

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Course Length ft
3778.00	0.47	213.46	3745.16	-215.62	-215.62	249.91	1.98	95.00
3872.00	0.45	264.86	3839.16	-215.98	-215.98	249.33	0.42	94.00
4061.00	0.57	303.05	4028.15	-215.53	-215.53	247.81	0.19	189.00
4249.00	0.90	319.00	4216.14	-213.91	-213.91	246.05	0.21	188.00
4627.00	1.00	220.74	4594.11	-214.15	-214.15	241.95	0.38	378.00
4721.00	1.07	244.28	4688.09	-215.15	-215.15	240.63	0.45	94.00
4910.00	1.77	231.36	4877.03	-217.74	-217.74	236.76	0.41	189.00
5004.00	2.90	236.44	4970.95	-219.96	-219.96	233.64	1.21	94.00
5192.00	1.58	219.37	5158.81	-224.59	-224.59	228.04	0.78	188.00
5287.00	1.35	201.04	5253.78	-226.64	-226.64	226.81	0.55	95.00
5381.00	1.50	191.21	5347.75	-228.88	-228.88	226.18	0.31	94.00
5475.00	1.14	217.53	5441.72	-230.83	-230.83	225.37	0.74	94.00
5569.00	1.45	143.81	5535.71	-232.53	-232.53	225.50	1.67	94.00
5664.00	1.43	142.50	5630.68	-234.44	-234.44	226.93	0.04	95.00
5758.00	0.67	102.59	5724.66	-235.50	-235.50	228.19	1.08	94.00
5853.00	0.43	88.07	5819.66	-235.61	-235.61	229.09	0.30	95.00
5947.00	0.42	36.76	5913.65	-235.32	-235.32	229.64	0.39	94.00
6041.00	0.63	16.31	6007.65	-234.55	-234.55	229.99	0.30	94.00



MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Course Length
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft
6136.00	1.42	118.39	6102.64	-234.60	-234.60	231.17	1.75	95.00
6230.00	1.58	119.16	6196.61	-235.79	-235.79	233.33	0.18	94.00
6324.00	0.77	117.04	6290.59	-236.71	-236.71	235.03	0.86	94.00
6419.00	0.55	120.82	6385.58	-237.23	-237.23	235.99	0.24	95.00
6513.00	0.40	106.05	6479.58	-237.55	-237.55	236.69	0.20	94.00
6607.00	0.23	348.54	6573.57	-237.46	-237.46	236.98	0.58	94.00
6702.00	2.24	67.21	6668.55	-236.56	-236.56	238.65	2.32	95.00
6796.00	1.47	59.82	6762.50	-235.24	-235.24	241.39	0.85	94.00
6891.00	4.69	9.35	6857.36	-230.79	-230.79	243.08	4.13	95.00
6985.00	10.05	359.25	6950.55	-218.79	-218.79	243.60	5.84	94.00
7079.00	13.62	3.68	7042.54	-199.54	-199.54	244.20	3.92	94.00
7173.00	18.95	4.79	7132.74	-173.26	-173.26	246.18	5.68	94.00
7267.00	24.47	6.76	7220.04	-138.69	-138.69	249.75	5.92	94.00
7362.00	30.26	0.42	7304.39	-95.18	-95.18	252.24	6.81	95.00
7456.00	38.02	357.54	7382.14	-42.49	-42.49	251.17	8.43	94.00
7551.00	45.85	353.69	7452.77	20.73	20.73	246.16	8.68	95.00
7655.00	56.73	353.26	7517.70	101.24	101.24	236.93	10.46	104.00
7702.00	64.34	353.12	7540.81	141.84	141.84	232.08	16.18	47.00

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Course Length
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft
7749.00	71.12	353.28	7558.61	185.00	185.00	226.94	14.45	47.00
7796.00	78.67	353.23	7570.85	230.03	230.03	221.61	16.06	47.00
7843.00	85.80	352.76	7577.19	276.22	276.22	215.93	15.19	47.00
7873.00	90.40	353.30	7578.19	305.98	305.98	212.30	15.46	30.00
7890.00	91.44	355.39	7577.91	322.89	322.89	210.62	13.71	17.00
7906.00	92.22	357.40	7577.40	338.85	338.85	209.61	13.44	16.00
8044.00	94.24	1.61	7569.63	476.59	476.59	208.42	3.38	138.00
8139.00	93.93	4.20	7562.86	571.21	571.21	213.22	2.74	95.00
8233.00	91.21	2.35	7558.64	664.95	664.95	218.58	3.49	94.00
8328.00	90.50	1.49	7557.21	759.89	759.89	221.76	1.18	95.00
8422.00	90.14	2.30	7556.69	853.83	853.83	224.86	0.94	94.00
8516.00	88.45	3.04	7557.84	947.72	947.72	229.24	1.96	94.00
8611.00	89.22	2.76	7559.77	1042.58	1042.58	234.05	0.86	95.00
8705.00	89.16	2.16	7561.09	1136.48	1136.48	238.09	0.65	94.00
8799.00	90.57	1.96	7561.31	1230.42	1230.42	241.46	1.51	94.00
8893.00	90.07	2.02	7560.79	1324.36	1324.36	244.72	0.54	94.00
8987.00	89.50	2.73	7561.15	1418.28	1418.28	248.61	0.98	94.00
9176.00	87.68	3.26	7565.81	1606.95	1606.95	258.49	1.00	189.00

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Course Length
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft
9365.00	88.02	0.84	7572.90	1795.69	1795.69	265.26	1.29	189.00
9459.00	89.60	358.95	7574.85	1889.66	1889.66	265.09	2.62	94.00
9553.00	90.00	359.70	7575.18	1983.65	1983.65	263.98	0.91	94.00
9647.00	90.77	0.98	7574.55	2077.64	2077.64	264.54	1.59	94.00
9836.00	90.84	0.53	7571.89	2266.61	2266.61	267.04	0.24	189.00
9930.00	91.14	0.59	7570.26	2360.59	2360.59	267.96	0.33	94.00
10025.00	91.24	0.52	7568.28	2455.56	2455.56	268.87	0.13	95.00
10119.00	90.44	359.84	7566.91	2549.55	2549.55	269.17	1.12	94.00
10213.00	91.14	359.54	7565.61	2643.54	2643.54	268.67	0.82	94.00
10307.00	90.34	359.62	7564.40	2737.53	2737.53	267.98	0.86	94.00
10402.00	91.78	359.74	7562.64	2832.51	2832.51	267.45	1.53	95.00
10496.00	90.27	1.39	7560.96	2926.48	2926.48	268.38	2.38	94.00
10590.00	88.55	0.43	7561.92	3020.46	3020.46	269.88	2.09	94.00
10684.00	88.22	0.16	7564.57	3114.42	3114.42	270.37	0.46	94.00
10779.00	89.43	358.80	7566.52	3209.40	3209.40	269.51	1.92	95.00
10873.00	90.34	357.86	7566.71	3303.35	3303.35	266.77	1.39	94.00
10967.00	90.94	357.80	7565.67	3397.28	3397.28	263.21	0.65	94.00
11062.00	89.76	358.42	7565.08	3492.23	3492.23	260.08	1.40	95.00

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Course Length
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft
11156.00	90.30	358.50	7565.03	3586.19	3586.19	257.56	0.58	94.00
11251.00	90.54	357.67	7564.33	3681.13	3681.13	254.38	0.91	95.00
11345.00	90.57	359.38	7563.42	3775.10	3775.10	251.95	1.82	94.00
11533.00	89.33	1.18	7563.58	3963.08	3963.08	252.86	1.16	188.00
11722.00	88.96	0.94	7566.41	4152.03	4152.03	256.36	0.23	189.00
11816.00	89.73	0.55	7567.49	4246.01	4246.01	257.59	0.92	94.00
11910.00	91.11	1.18	7566.80	4340.00	4340.00	259.01	1.61	94.00
12005.00	91.38	1.27	7564.74	4434.95	4434.95	261.04	0.30	95.00
12099.00	91.21	1.28	7562.61	4528.90	4528.90	263.13	0.18	94.00
12193.00	90.77	1.24	7560.98	4622.87	4622.87	265.20	0.47	94.00
12287.00	90.77	1.59	7559.72	4716.83	4716.83	267.52	0.37	94.00
12382.00	89.60	1.76	7559.41	4811.79	4811.79	270.30	1.25	95.00
12473.00	89.56	1.32	7560.08	4902.75	4902.75	272.75	0.49	91.00

5" = 100' FEET MD