



GAMMA RAY

5" = 100' FEET MD

COMPANY : ANADARKO PETROLEUM CORP.  
WELL : GITTLEIN 3N-28HZ  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : COLORADO  
COUNTRY : U.S.A.  
UWI : 05-123-36225

COMPANY : ANADARKO PETROLEUM CORP.  
WELL : GITTLEIN 3N-28HZ  
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UWI : 05-123-36225

WELL LOCATION  
LAT:40°5'18.380"N LONG:104°40'14.614"W  
N:1276147.90 ft E:3232019.43 ft

OTHER SERVICES

SEC:33 TWP:2N RANGE:65W DIRECTIONAL ROP

DEPTH REF. : RKB

REF. HEIGHT : 25.000 ft

RKB to Ground Level

GROUND LEVEL : 4911.000 ft

G.L. to MEAN SEA LEVEL

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
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12.25	0	1341	0 - 10	0	6455
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8.75	1341	7250	10 - 90	6455	7250
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6.125	7250	14210	90 - 91	7250	14210
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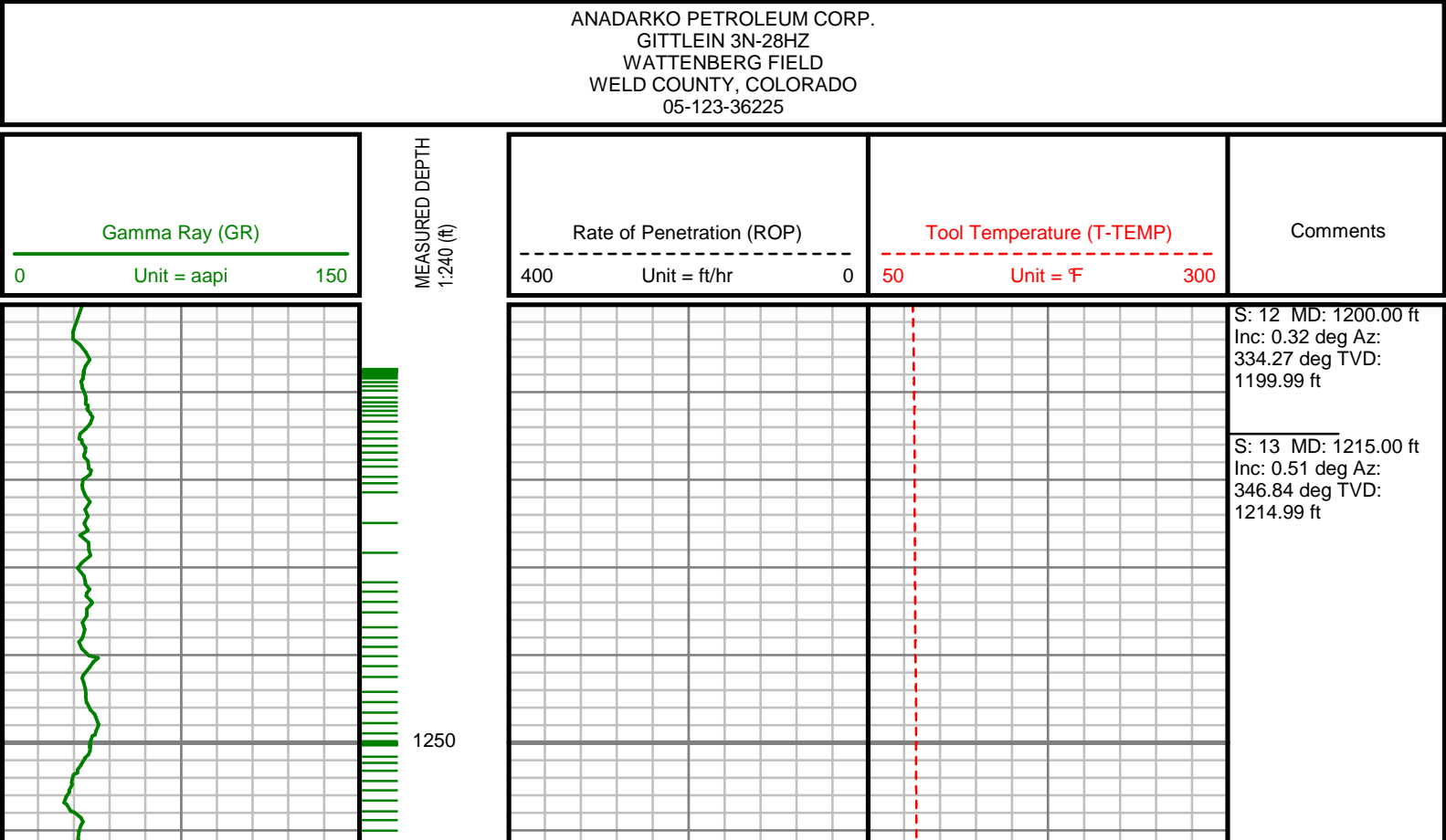
DRILLING CO. : H & P  
RIG : 311  
LWD UNIT NO. : C-46  
SPUD DATE : 09/01/2013  
LWD START DATE : 10/12/2013  
LWD END DATE : 10/19/2013  
DISTRICT : CASPER  
DEPTH : 1341 ft  
DEPTH : 14210 ft  
TOTAL DEPTH : 14210 ft

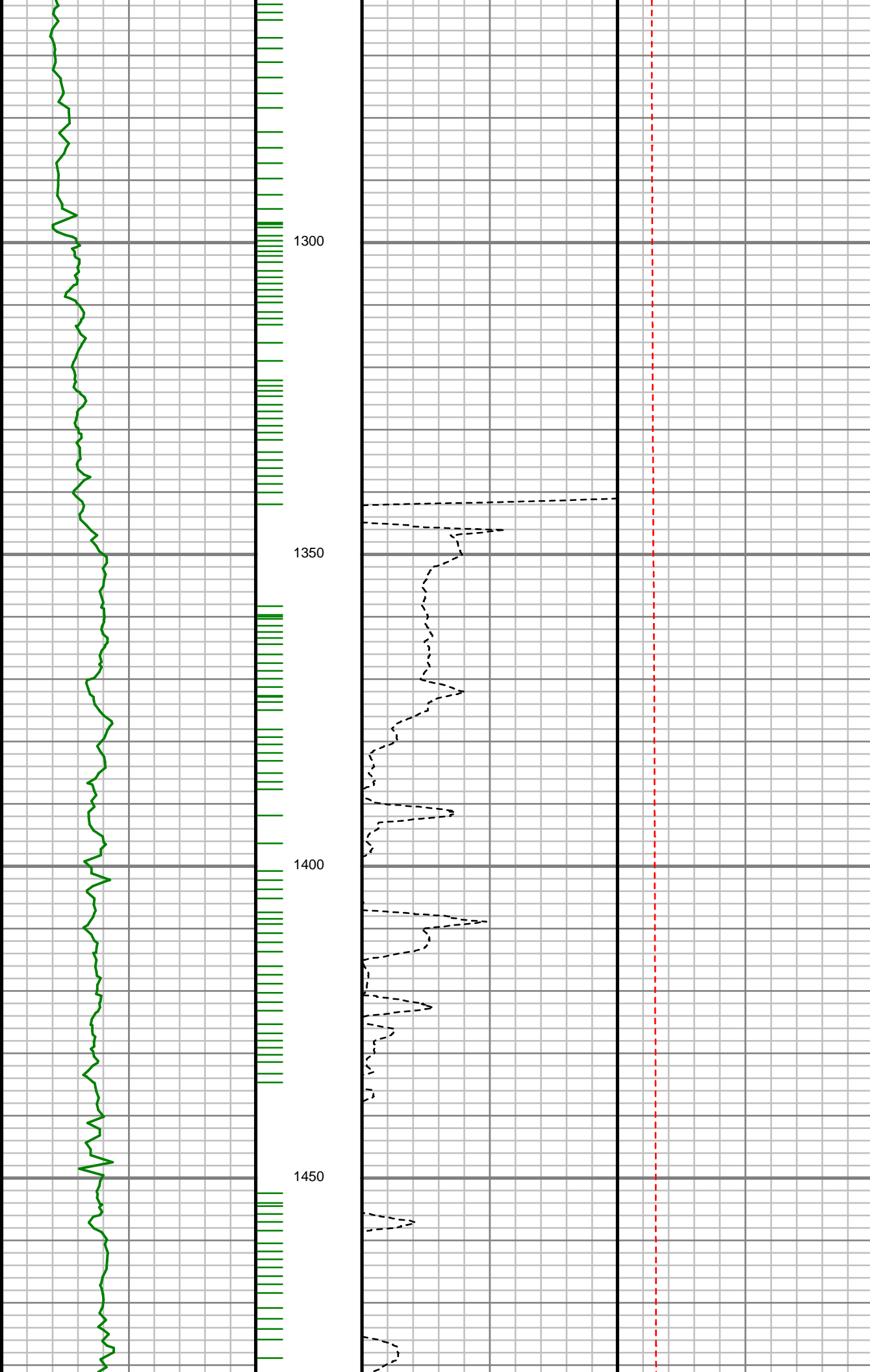
Run Data

RUN NUMBER	1	2				
START DATE	10/12/2013	10/15/2013				
START TIME	1550	2100				
END DATE	10/15/2013	10/19/2013				
END TIME	2100	0030				
DEPTH IN (ft)	1341	7250				
DEPTH OUT (ft)	7250	14210				
LOG TOP (ft)	1330	7191				
LOG BOTTOM (ft)	7191	14140				
HOLE SIZE (in)	8.75	6.125				
MUD DATA @ (ft)	7250	14210				
MUD TYPE	WATER- BASED	WATER-BASED				
DENSITY (lb / gal)	10	9.8				
VISCOSITY (s / qt)	36	40				
pH	9.5	9.5				
FLUID LOSS (cm3 / 30)	-	-				
SALINITY (ppm)	1300	1300				
Rm (ohmm @ deg F)	-	-				
Rmf (ohmm @ deg F)	-	-				
MAX TEMP (deg F)	163	240				
Rm @ MAX TEMP (ohmm)	-	-				
LWD ENGINEER #1	B. GREER	M. SHARKER				
LWD ENGINEER #2	J. WHITLEY	B. GREER				
LWD ENGINEER #3	M. SHARKER	-				
LOG WTINNESS #1	R. CANNON	J. STUART				
LOG WTINNESS #2	-	-				

Remarks
ANADARKO PETROLEUM CORP. PRODUCTION AFE# 2075258
SCIENTIFIC DRILLING INTERNATIONAL JOB# 68619
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 = 128-185 / CONT = 397 / MWD EYE = 0259 / GAMMA RAY = 180
BIT TO SENSOR OFFSETS: SURVEY = 56.83 FT. / GAMMA RAY = 47.43 FT.
RUN #2: MWD / GAMMA RAY LOGGIN RUN
SENSORS S/N: PULSER = 78-077 / CONT = 807 / MWD EYE = 0206 / GAMMA RAY = 232
BIT TO SENSOR OFFSETS: SURVEY = 68.15 FT. / GAMMA RAY = 58.90 FT.
SURVEY WELL NOTES:
SURVEYS FROM 0.0 FT. TO 1341 FT. WERE ACQUIRED BY MS GYRO MWD
SURVEYS FROM 1341 FT. TO 14140 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING INTERNATIONAL MWD
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
T-TEMP = TOOL TEMPERATURE

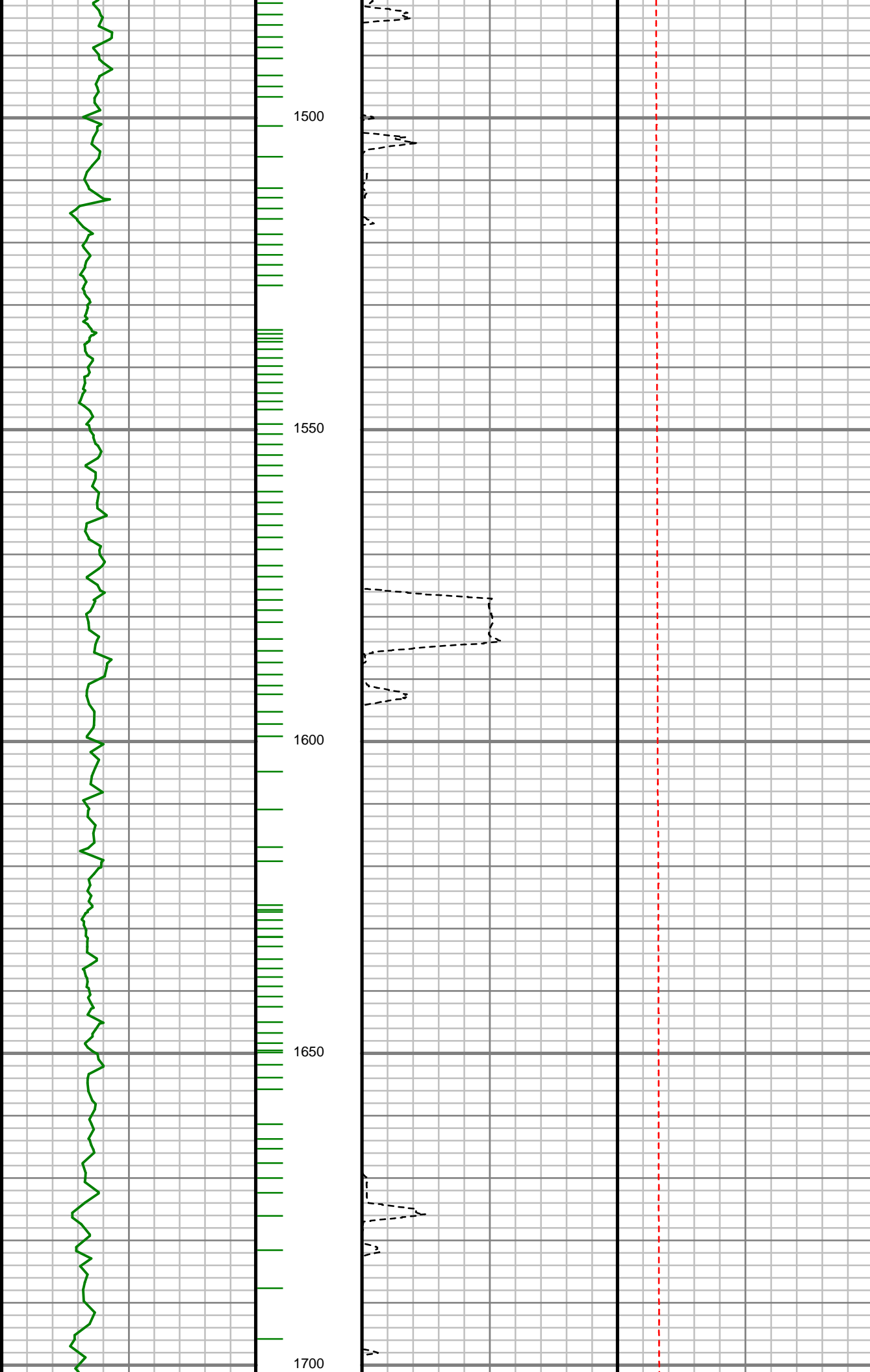
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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: 14 MD: 1330.00 ft  
Inc: 0.45 deg Az:  
333.65 deg TVD:  
1329.99 ft

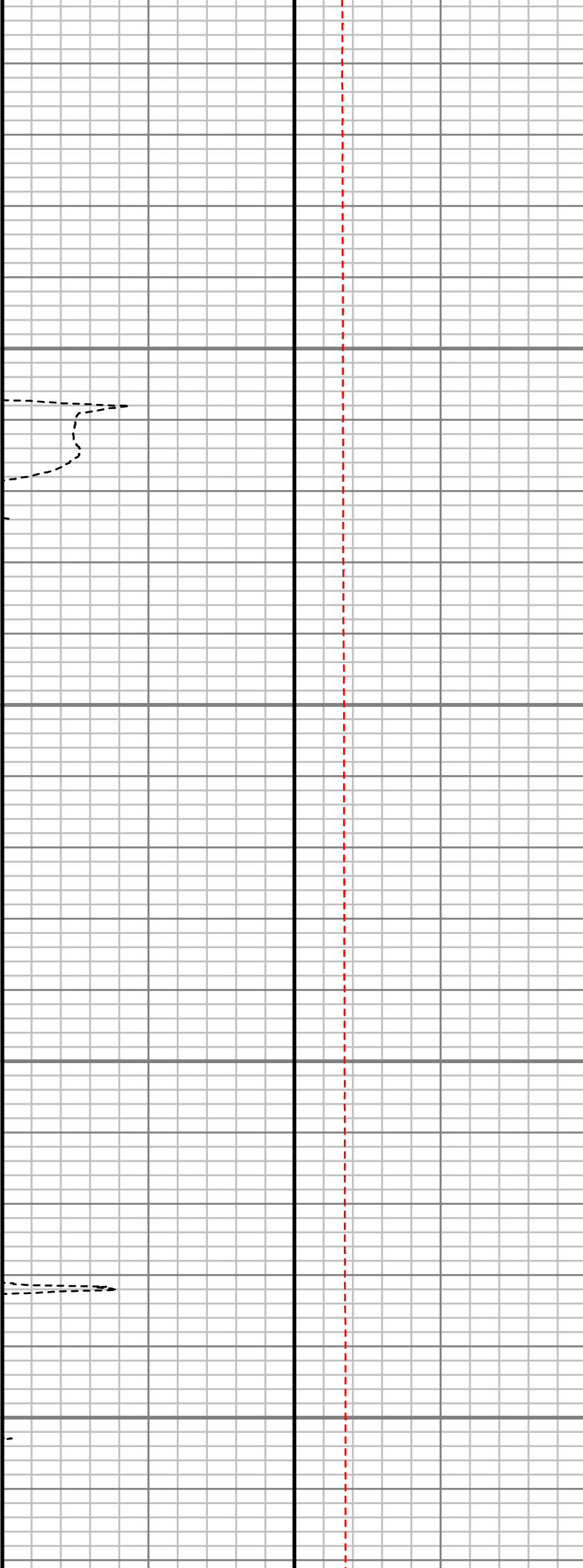
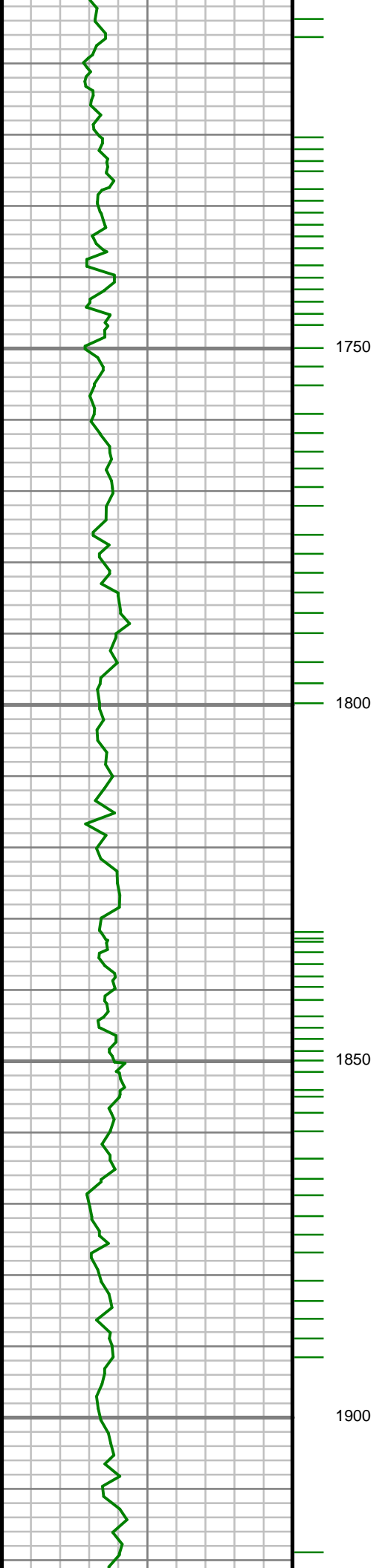
S: 15 MD: 1421.00 ft  
Inc: 1.82 deg Az:  
117.15 deg TVD:  
1420.97 ft



S: 16 MD: 1513.00 ft  
Inc: 3.63 deg Az:  
113.26 deg TVD:  
1512.86 ft

S: 17 MD: 1604.00 ft  
Inc: 5.06 deg Az:  
121.15 deg TVD:  
1603.60 ft

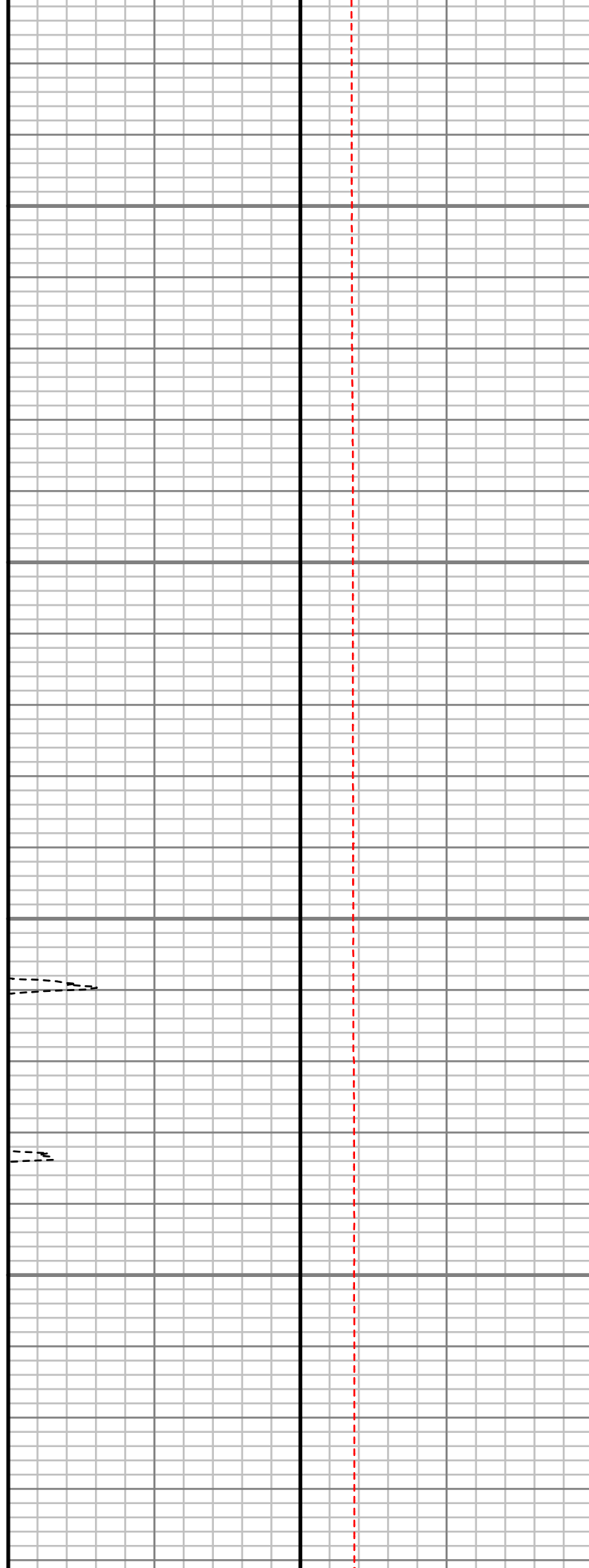
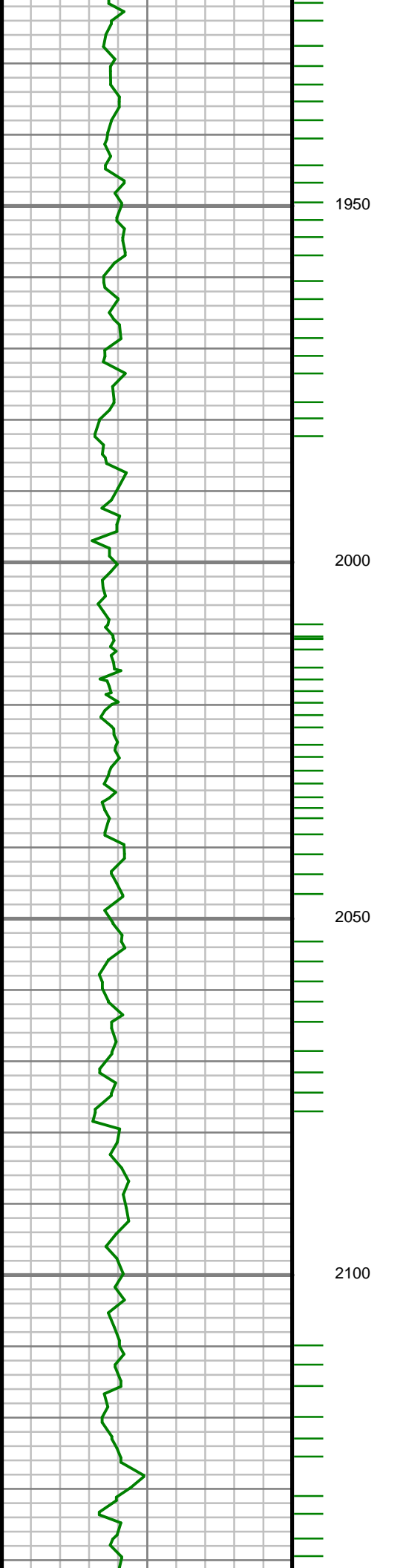
S: 18 MD: 1696.00 ft  
Inc: 7.29 deg Az:



124.85 deg TVD:  
1695.06 ft

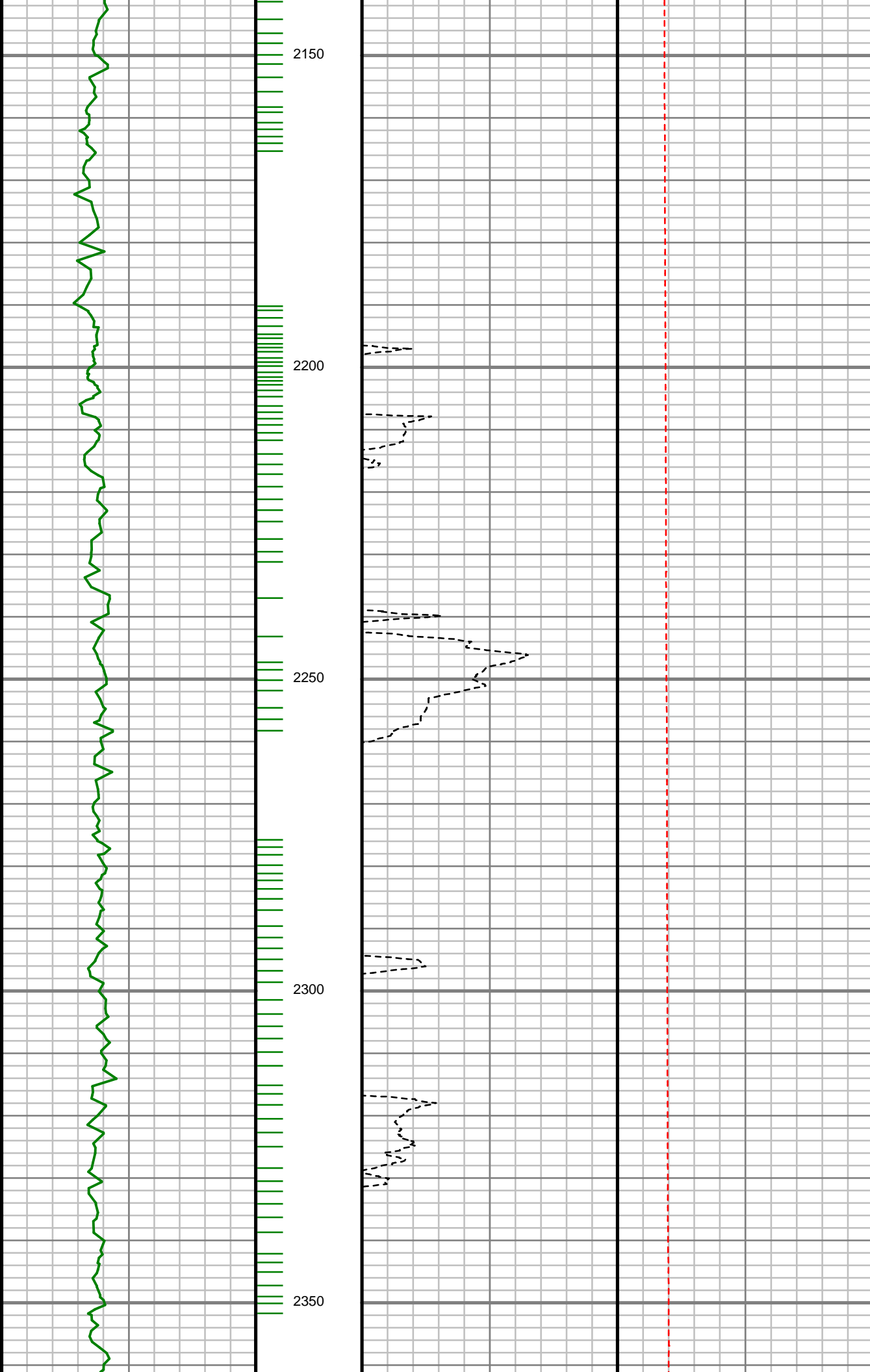
S: 19 MD: 1787.00 ft  
Inc: 9.59 deg Az:  
110.76 deg TVD:  
1785.08 ft

S: 20 MD: 1879.00 ft  
Inc: 10.06 deg Az:  
107.71 deg TVD:  
1875.73 ft



S: 21 MD: 1971.00 ft  
Inc: 10.45 deg Az:  
102.84 deg TVD:  
1966.26 ft

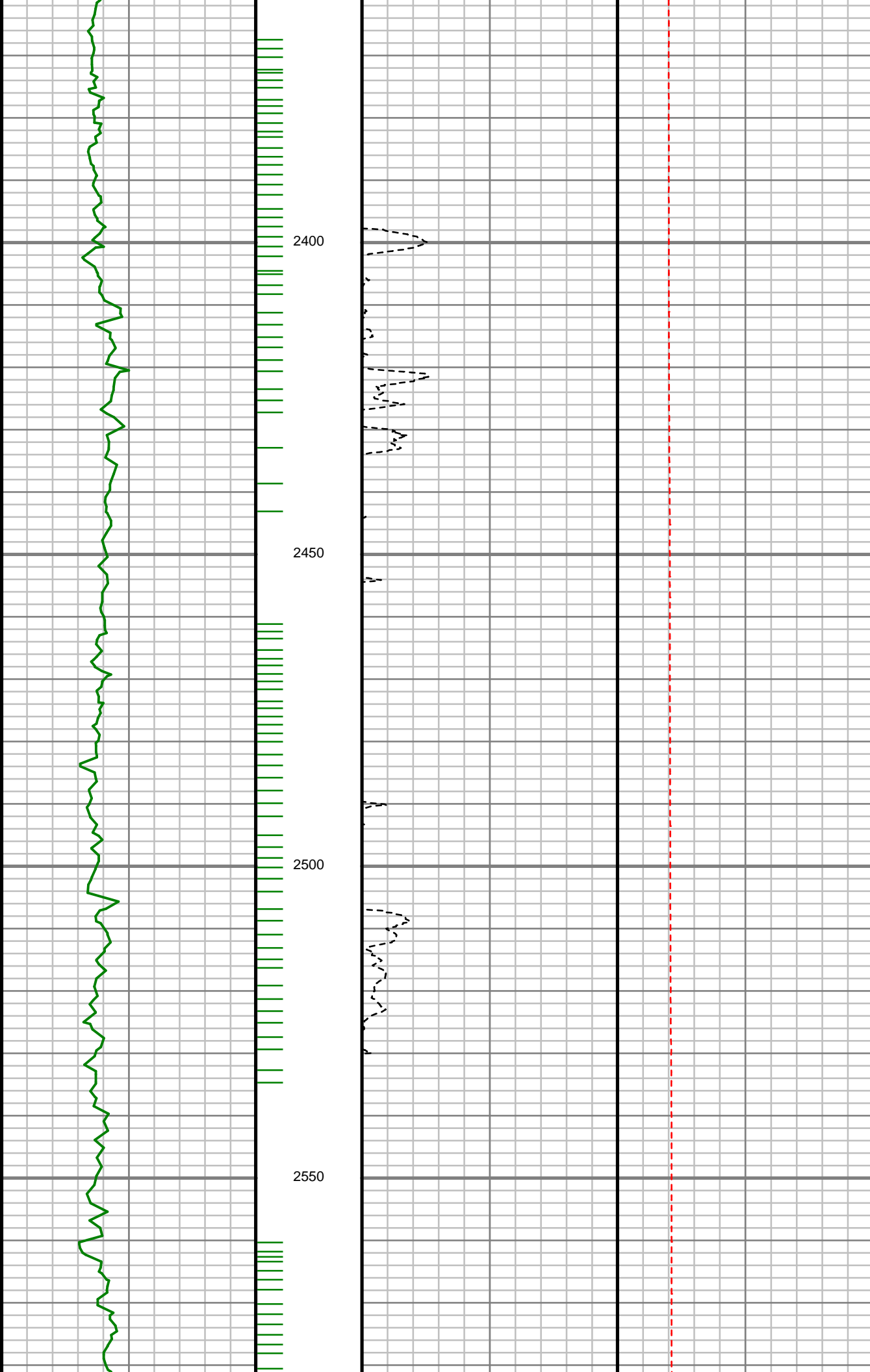
S: 22 MD: 2063.00 ft  
Inc: 11.32 deg Az:  
109.04 deg TVD:  
2056.61 ft



S: 23 MD: 2154.00 ft  
Inc: 11.34 deg Az:  
107.45 deg TVD:  
2145.83 ft

S: 24 MD: 2246.00 ft  
Inc: 11.16 deg Az:  
115.81 deg TVD:  
2236.07 ft

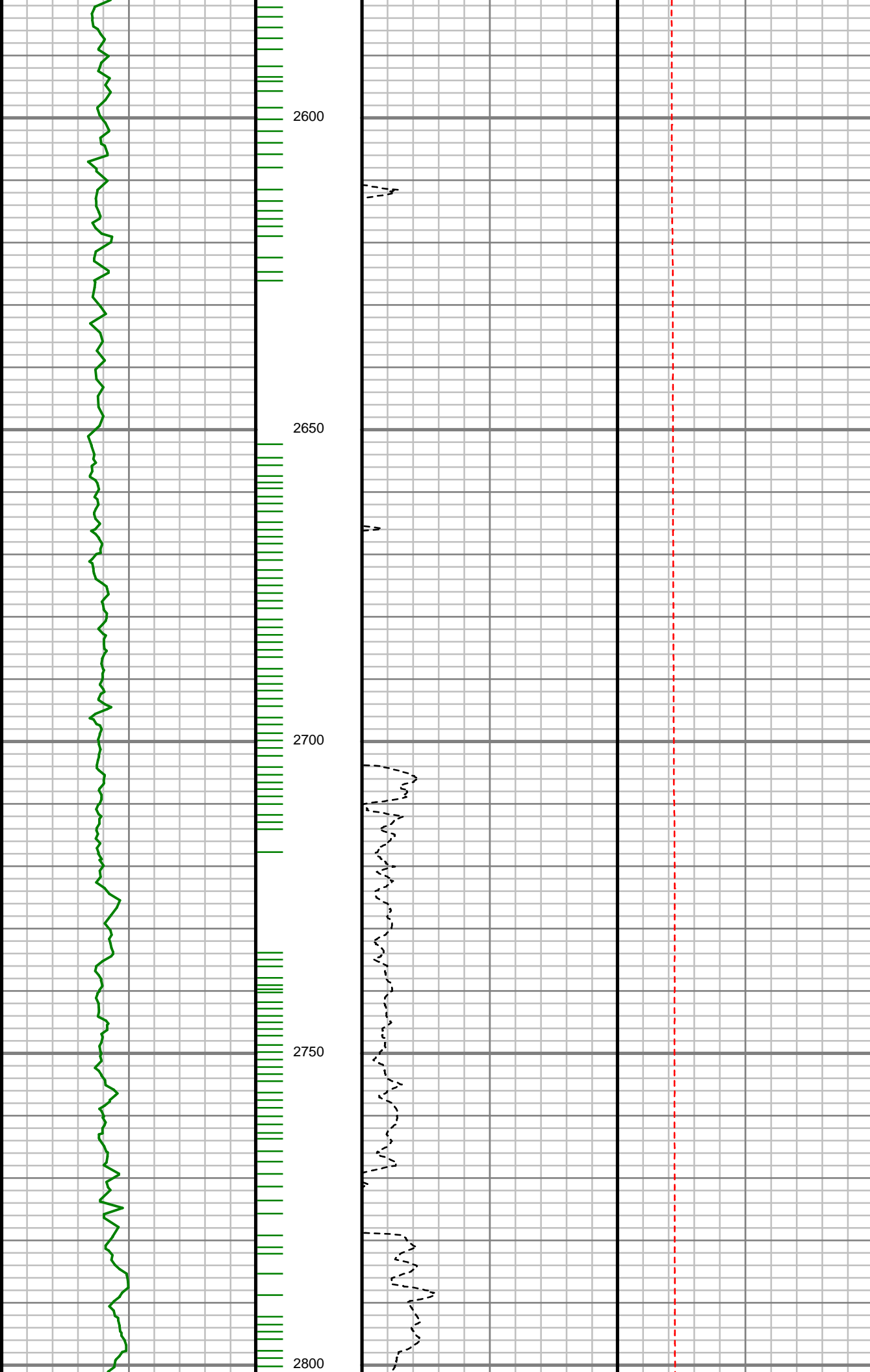
S: 25 MD: 2338.00 ft  
Inc: 11.82 deg Az:  
114.06 deg TVD:  
2326.23 ft



S: 26 MD: 2430.00 ft  
Inc: 11.24 deg Az:  
101.38 deg TVD:  
2416.39 ft

S: 27 MD: 2522.00 ft  
Inc: 11.43 deg Az:  
93.47 deg TVD:  
2506.60 ft





S: 28 MD: 2613.00 ft  
Inc: 10.90 deg Az:  
97.42 deg TVD:  
2595.88 ft

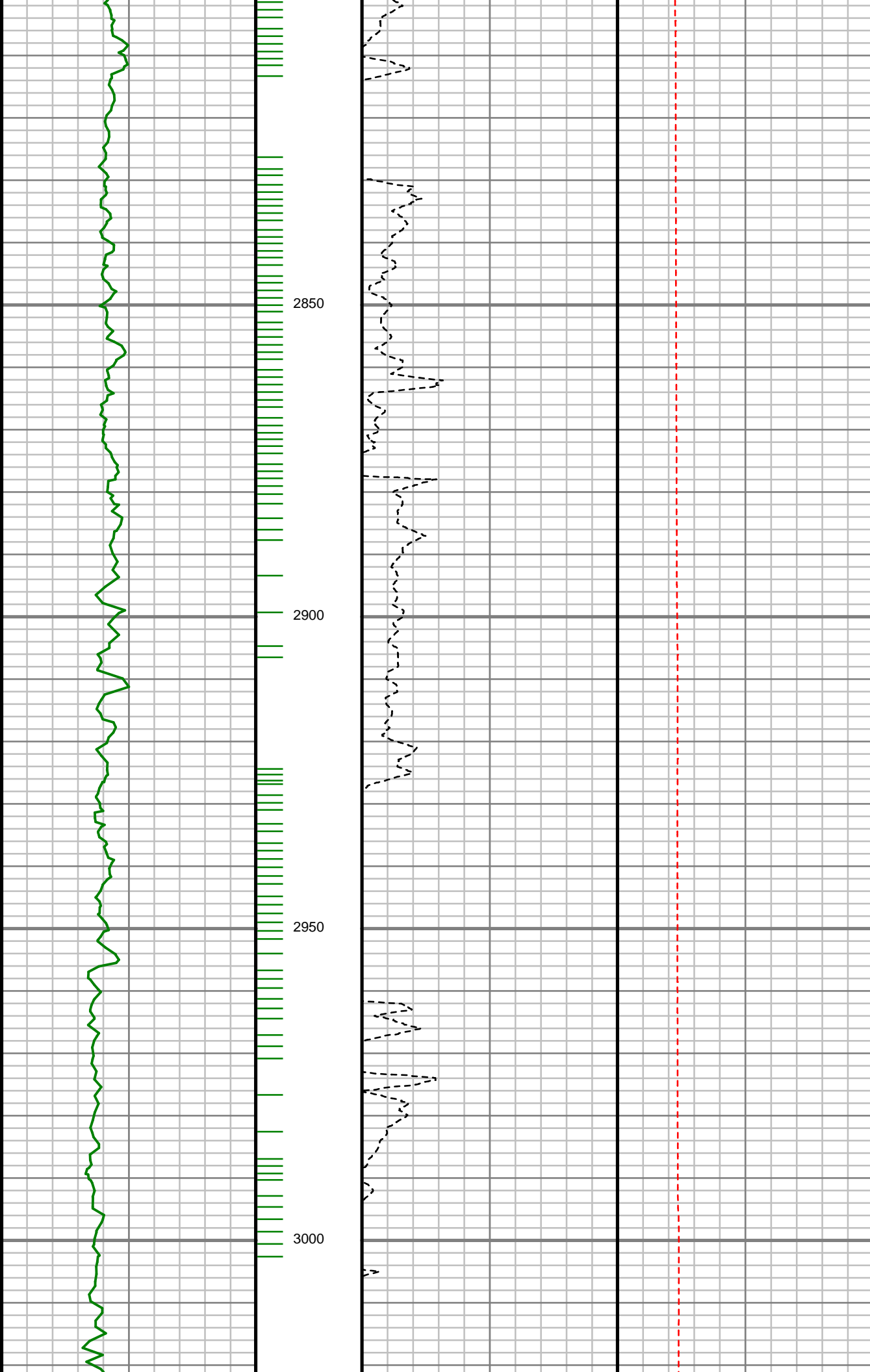
S: 29 MD: 2705.00 ft  
Inc: 11.91 deg Az:  
110.73 deg TVD:  
2686.08 ft

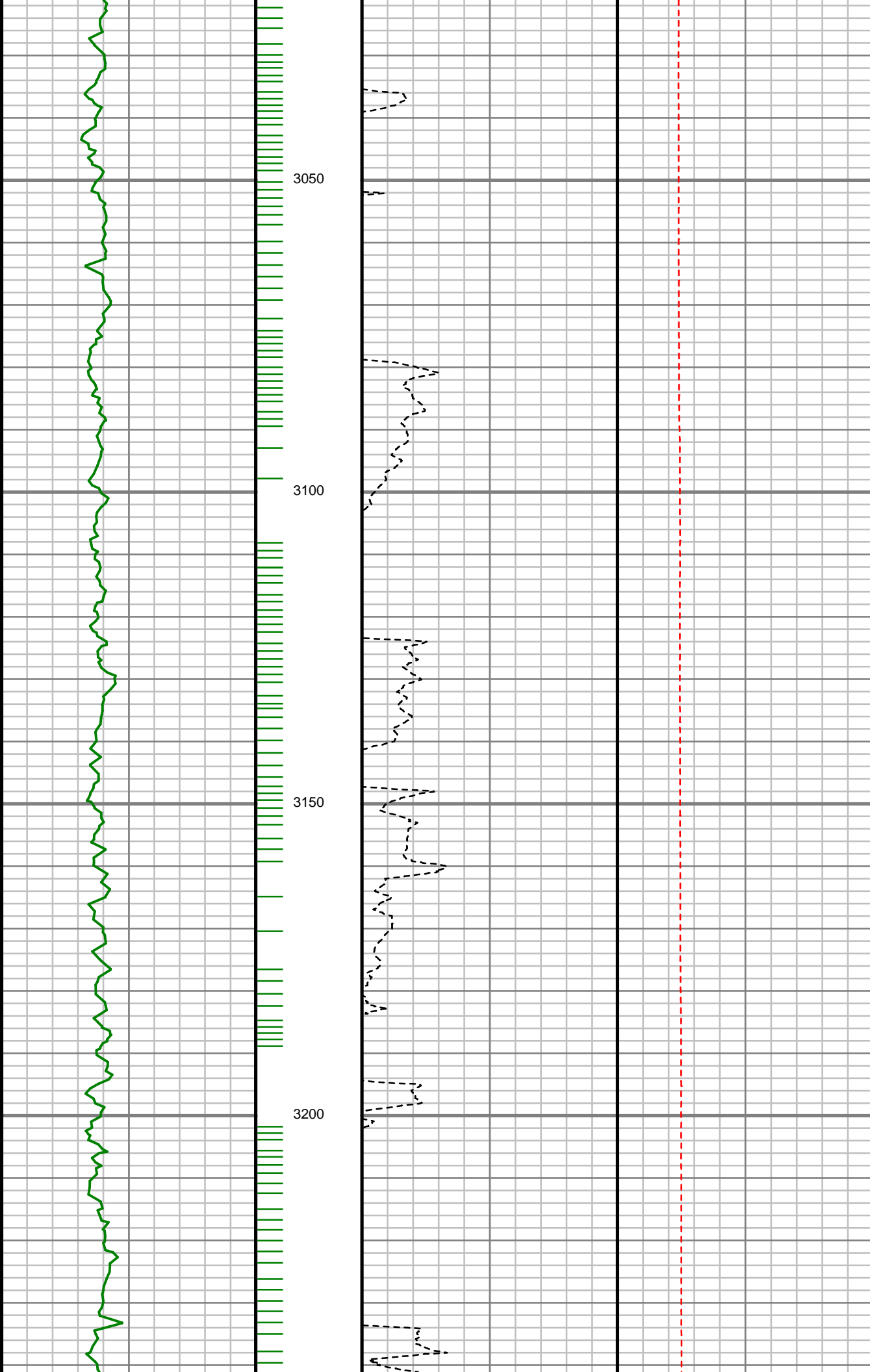
S: 30 MD: 2800.00 ft

S: 30 MD: 2800.00 ft  
Inc: 10.69 deg Az:  
120.70 deg TVD:  
2779.24 ft

S: 31 MD: 2894.00 ft  
Inc: 9.61 deg Az:  
121.01 deg TVD:  
2871.77 ft

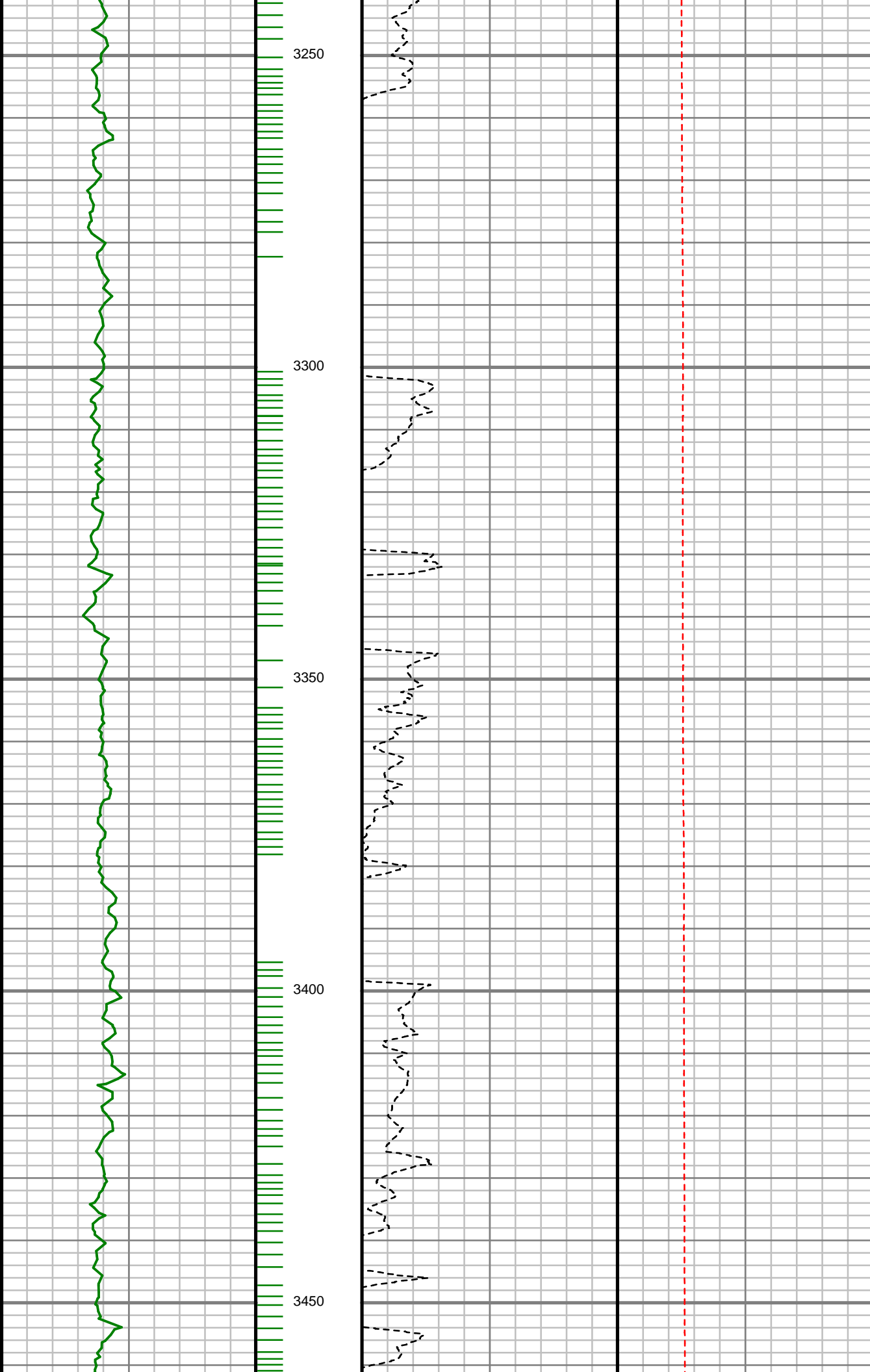
S: 32 MD: 2989.00 ft  
Inc: 10.97 deg Az:  
120.52 deg TVD:  
2965.24 ft





S: 33 MD: 3083.00 ft  
Inc: 11.32 deg Az:  
121.20 deg TVD:  
3057.47 ft

S: 34 MD: 3177.00 ft  
Inc: 11.64 deg Az:  
110.91 deg TVD:  
3149.60 ft

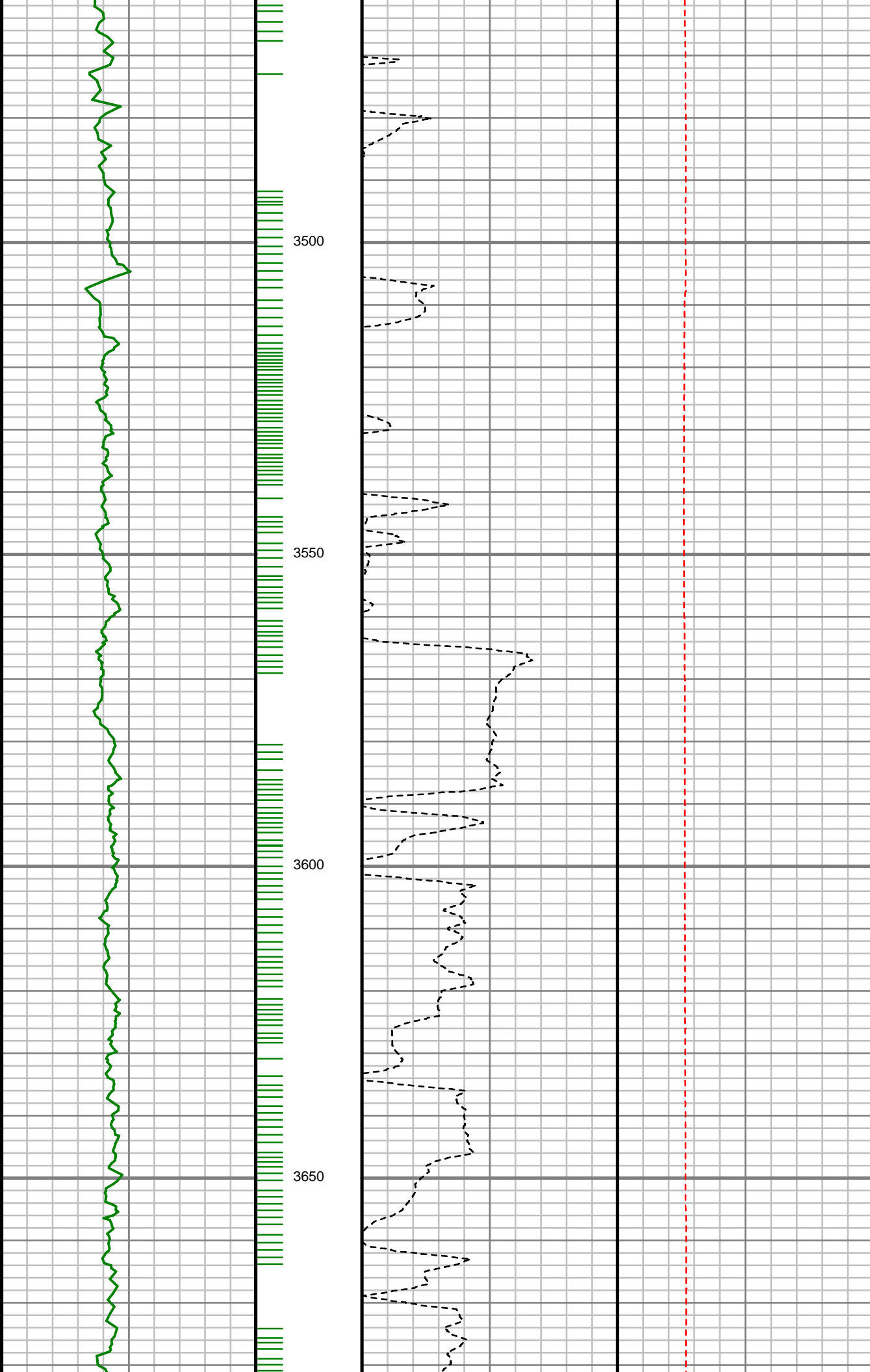


S: 35 MD: 3272.00 ft  
Inc: 10.54 deg Az:  
107.49 deg TVD:  
3242.82 ft

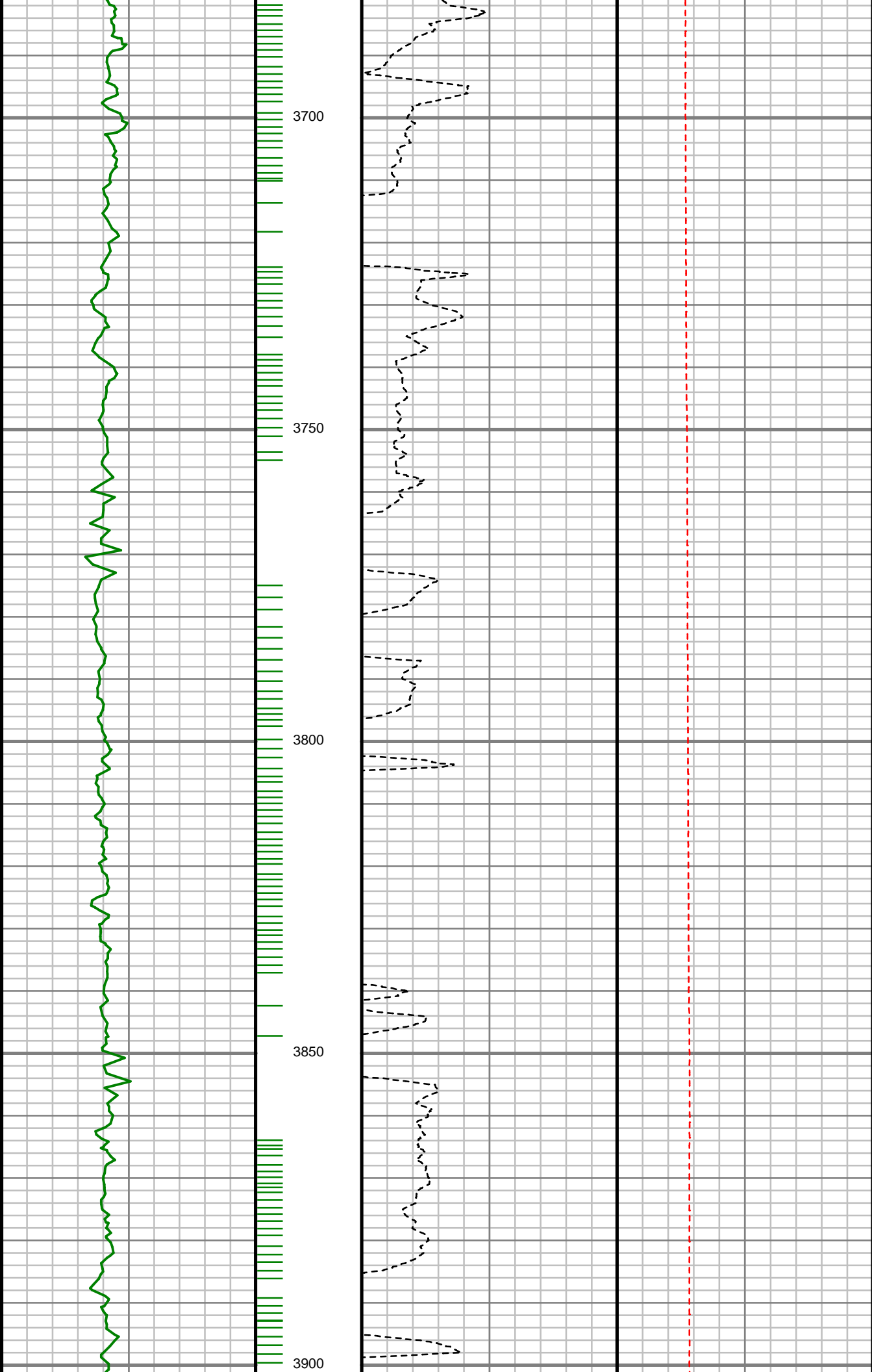
S: 36 MD: 3366.00 ft  
Inc: 10.94 deg Az:  
110.84 deg TVD:  
3335.18 ft

S: 37 MD: 3460.00 ft

S: 37 MD: 3480.00 ft  
Inc: 9.99 deg Az:  
113.98 deg TVD:  
3427.61 ft

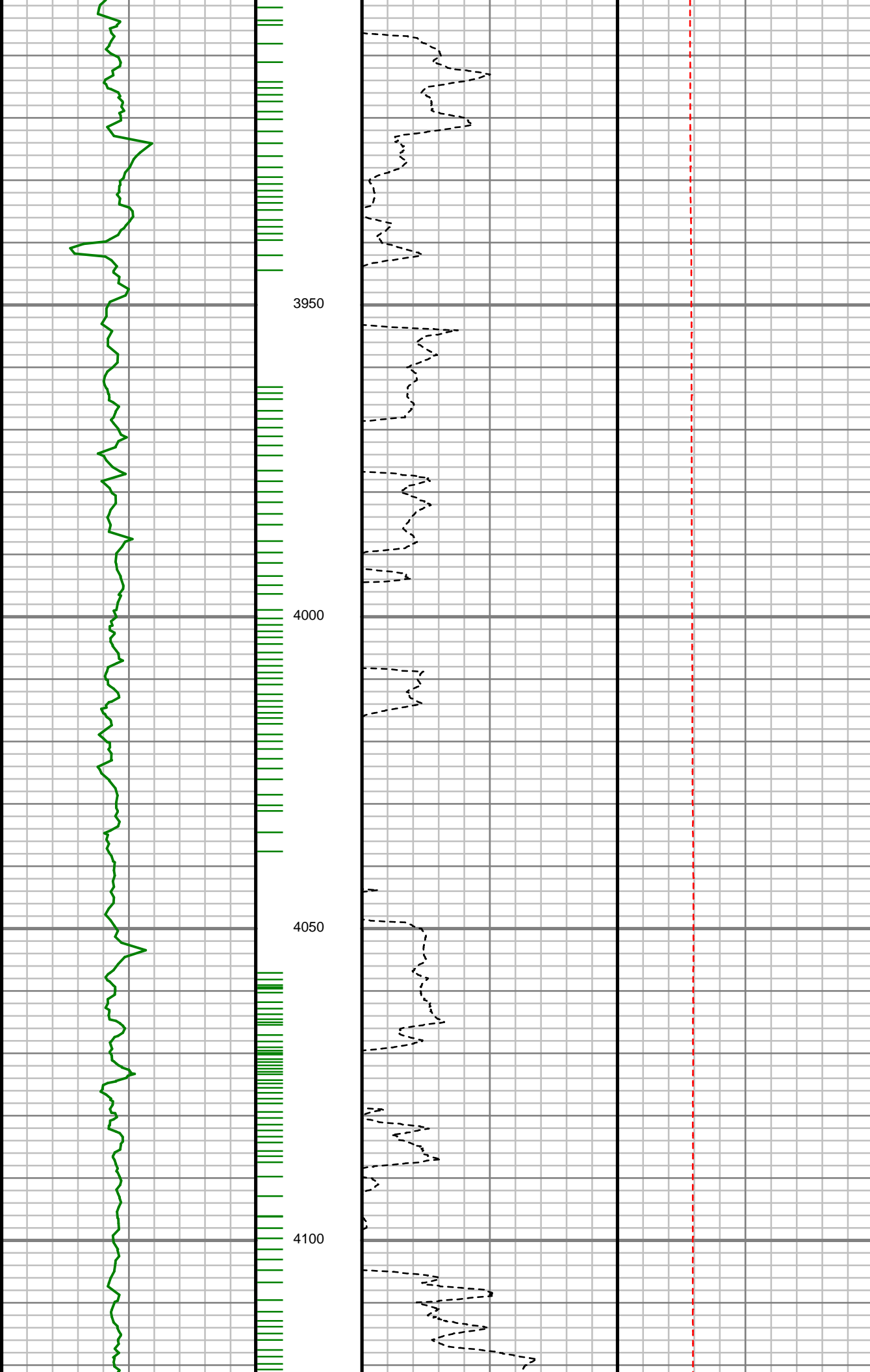


S: 38 MD: 3649.00 ft  
Inc: 9.18 deg Az:  
114.12 deg TVD:  
3613.97 ft



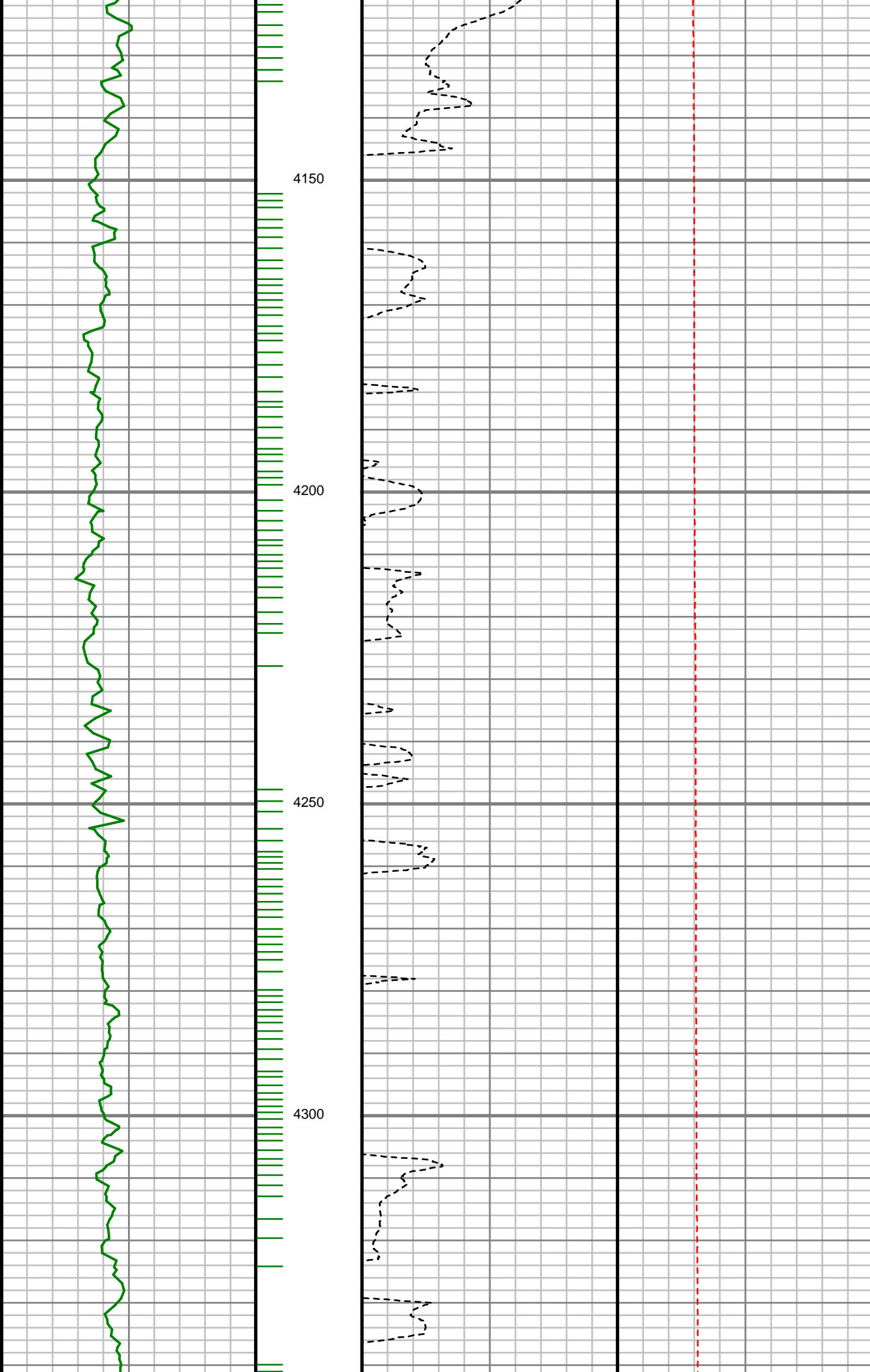
S: 39 MD: 3743.00 ft  
Inc: 9.40 deg Az:  
111.34 deg TVD:  
3706.74 ft

S: 40 MD: 3838.00 ft  
Inc: 8.75 deg Az:  
108.04 deg TVD:  
3800.55 ft



S: 41 MD: 3932.00 ft  
Inc: 8.10 deg Az:  
113.48 deg TVD:  
3893.54 ft

S: 42 MD: 4027.00 ft  
Inc: 6.77 deg Az:  
114.37 deg TVD:  
3987.74 ft

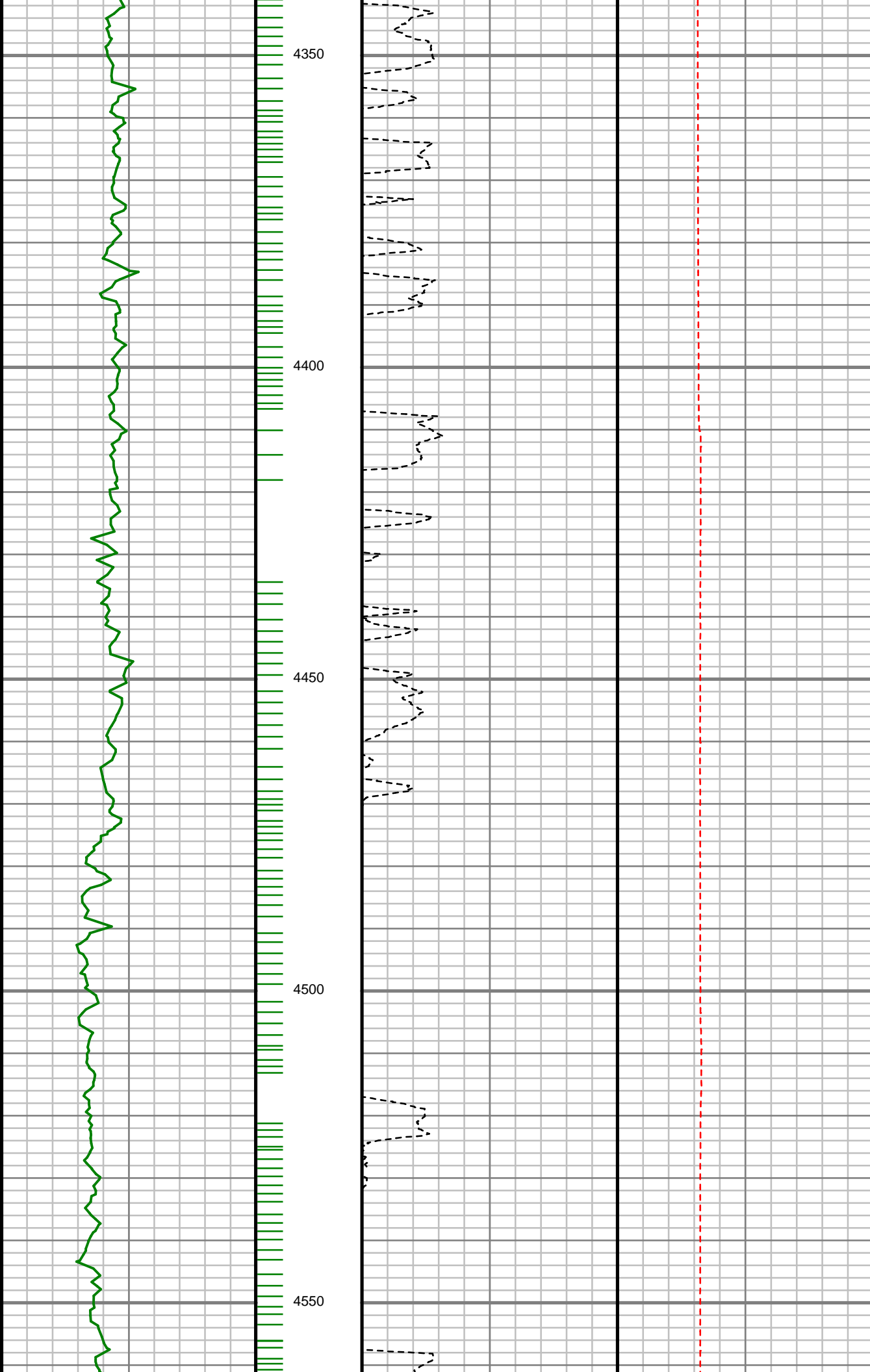


S: 43 MD: 4121.00 ft  
Inc: 5.92 deg Az:  
113.22 deg TVD:  
4081.16 ft

S: 44 MD: 4215.00 ft  
Inc: 7.85 deg Az:  
113.03 deg TVD:  
4174.48 ft

S: 45 MD: 4310.00 ft  
Inc: 6.76 deg Az:  
113.48 deg TVD:  
4268.71 ft





4350

4400

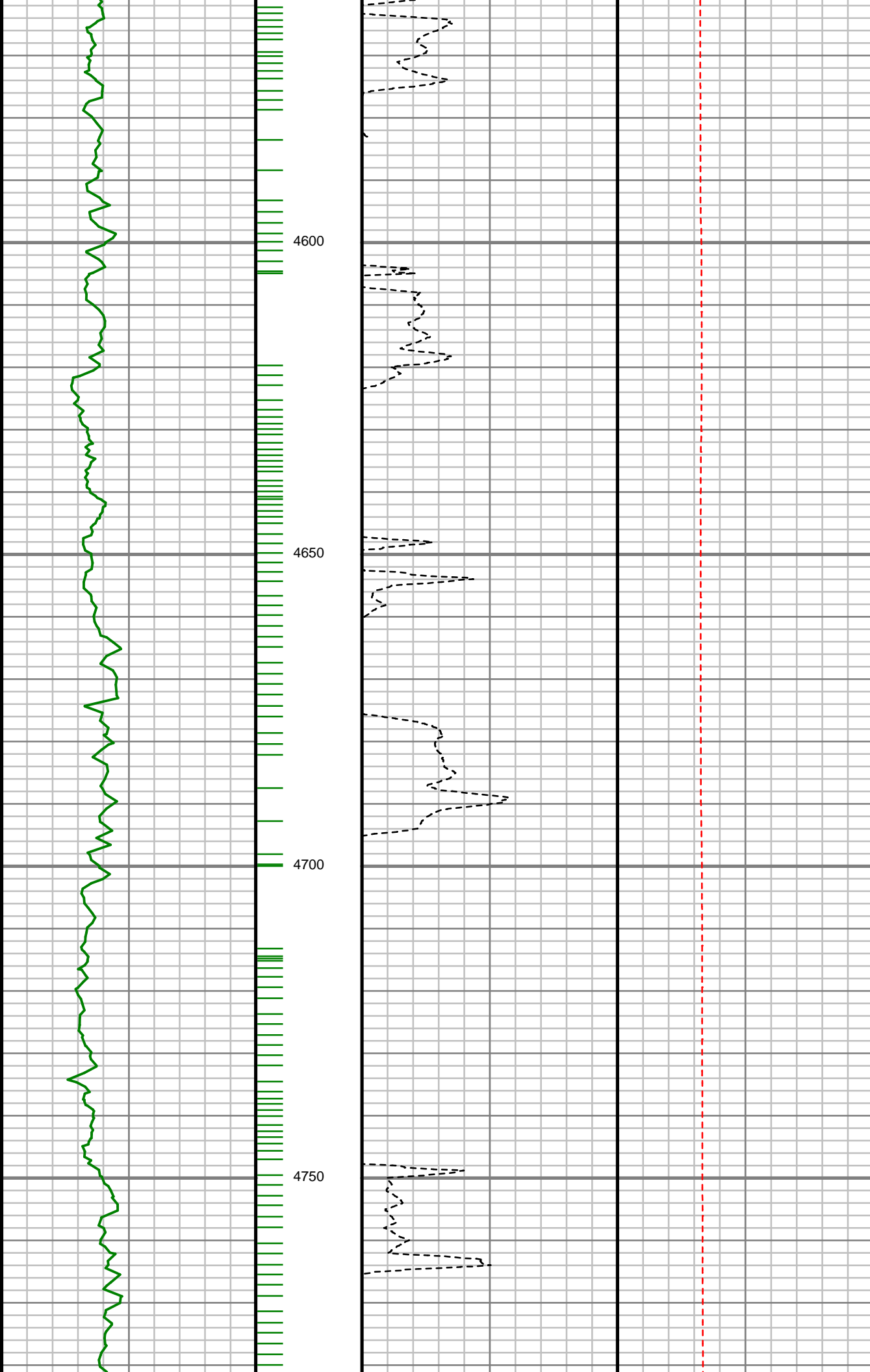
4450

4500

4550

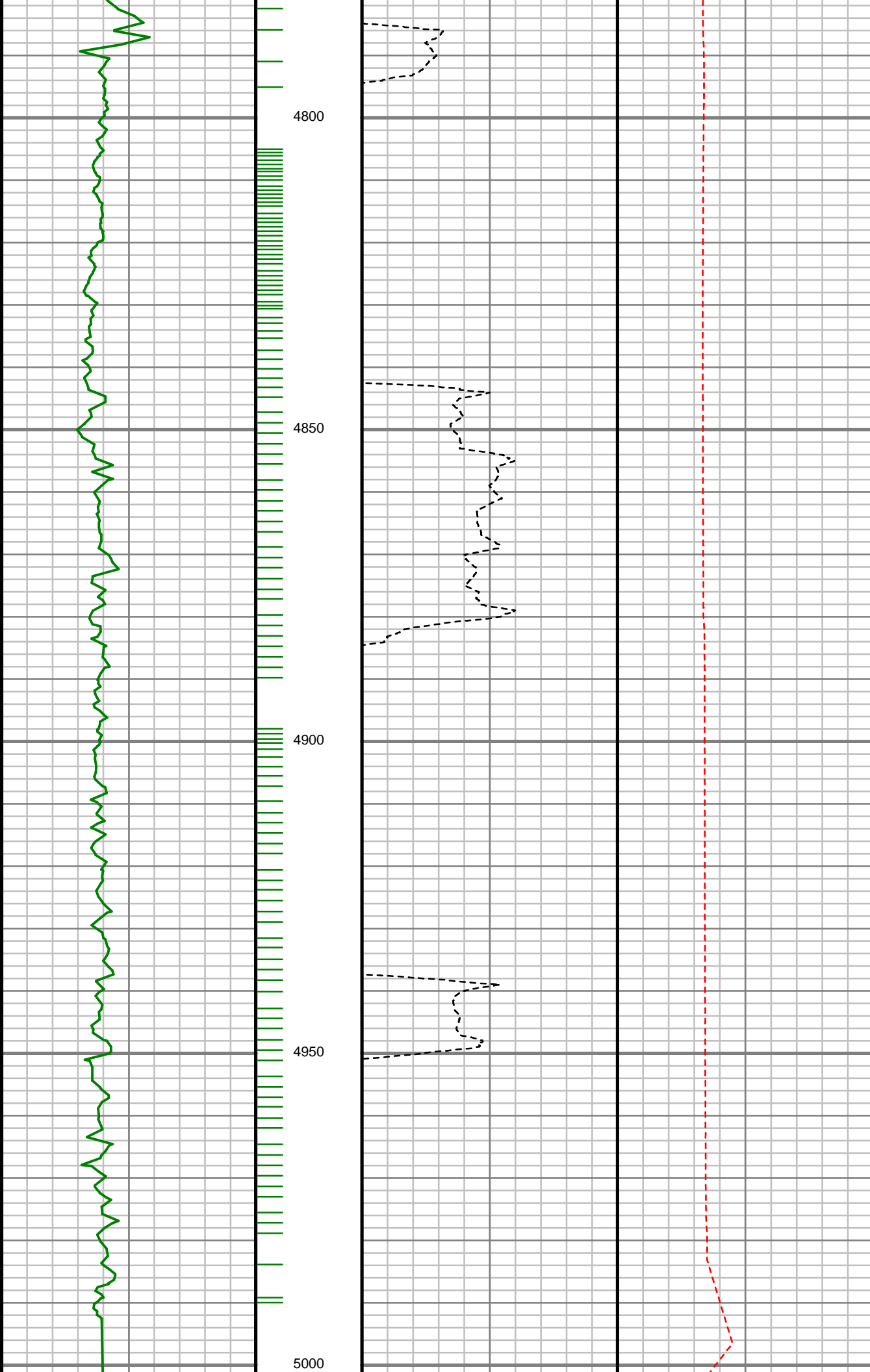
S: 46 MD: 4404.00 ft  
Inc: 5.33 deg Az:  
111.71 deg TVD:  
4362.18 ft

S: 47 MD: 4498.00 ft  
Inc: 4.03 deg Az:  
103.40 deg TVD:  
4455.87 ft



S: 48 MD: 4593.00 ft  
Inc: 2.93 deg Az: 97.30  
deg TVD: 4550.69 ft

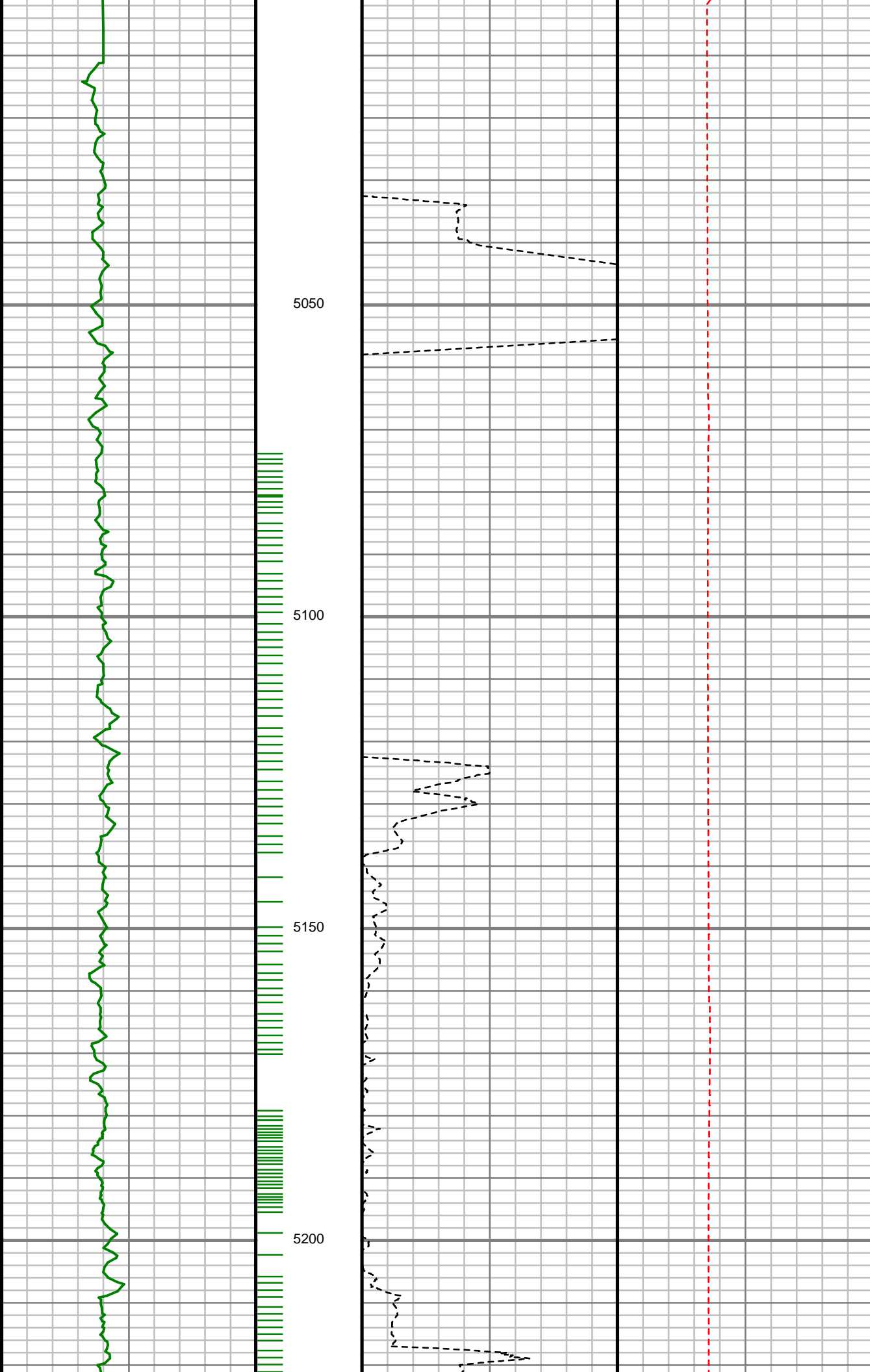
S: 49 MD: 4687.00 ft  
Inc: 1.97 deg Az: 96.07  
deg TVD: 4644.60 ft



S: 50 MD: 4781.00 ft  
Inc: 1.52 deg Az: 84.64  
deg TVD: 4738.56 ft

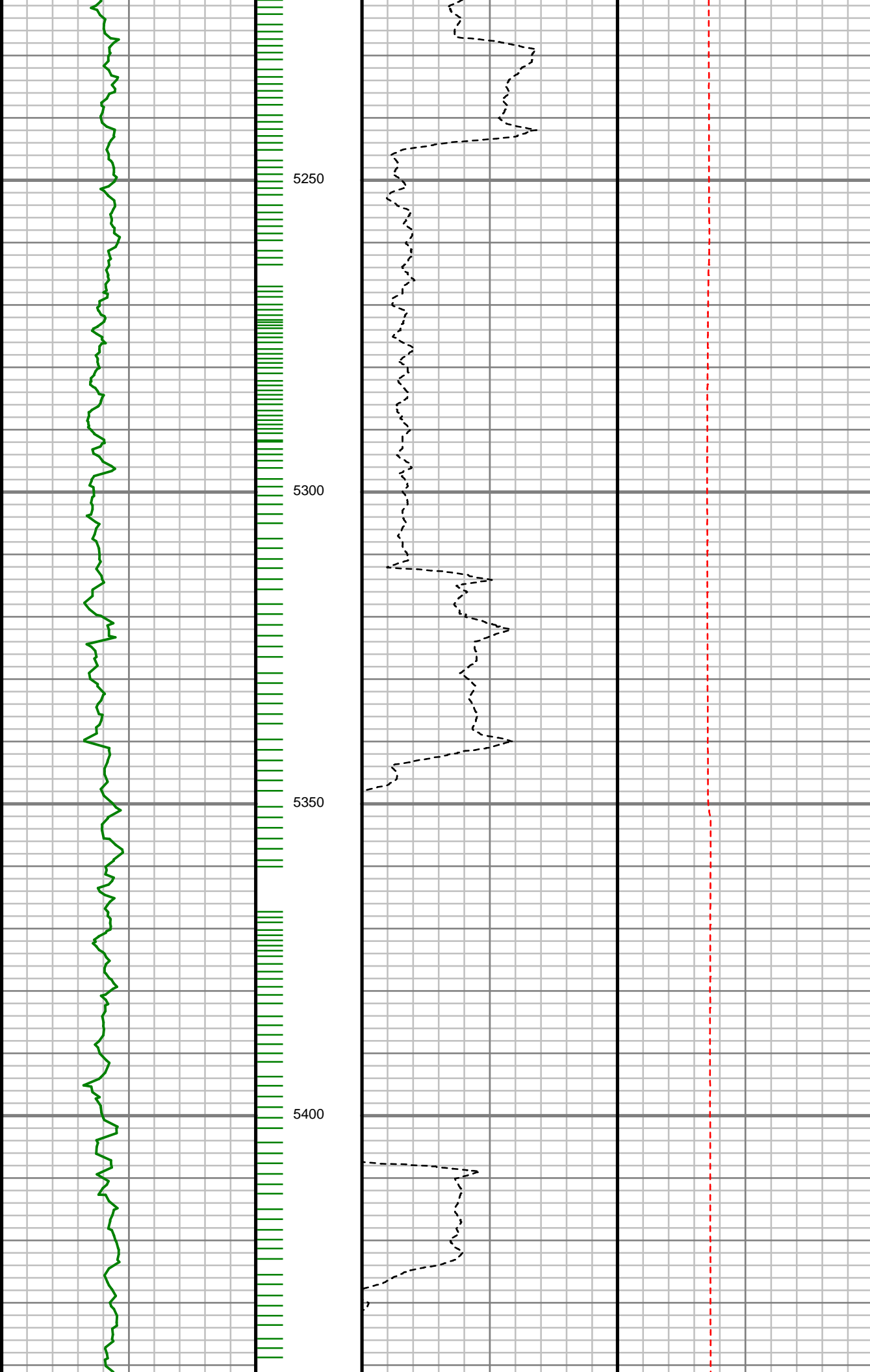
S: 51 MD: 4876.00 ft  
Inc: 1.19 deg Az:  
318.32 deg TVD:  
4833.55 ft

S: 52 MD: 4970.00 ft  
Inc: 1.68 deg Az:  
302.48 deg TVD:  
4927.52 ft



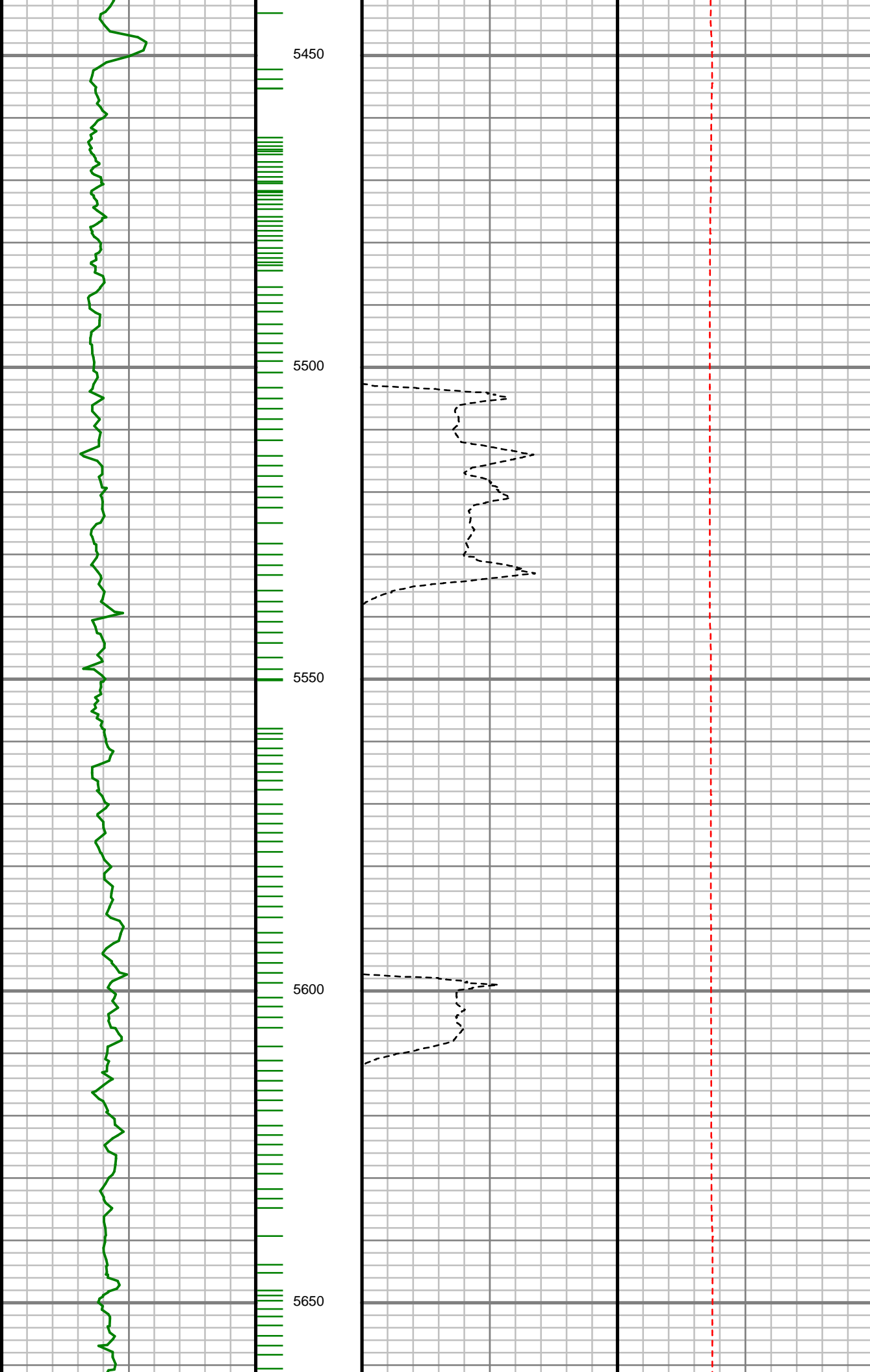
S: 53 MD: 5064.00 ft  
Inc: 1.58 deg Az:  
302.15 deg TVD:  
5021.48 ft

S: 54 MD: 5159.00 ft  
Inc: 1.89 deg Az:  
298.36 deg TVD:  
5116.44 ft



S: 55 MD: 5253.00 ft  
Inc: 1.89 deg Az:  
246.89 deg TVD:  
5210.39 ft

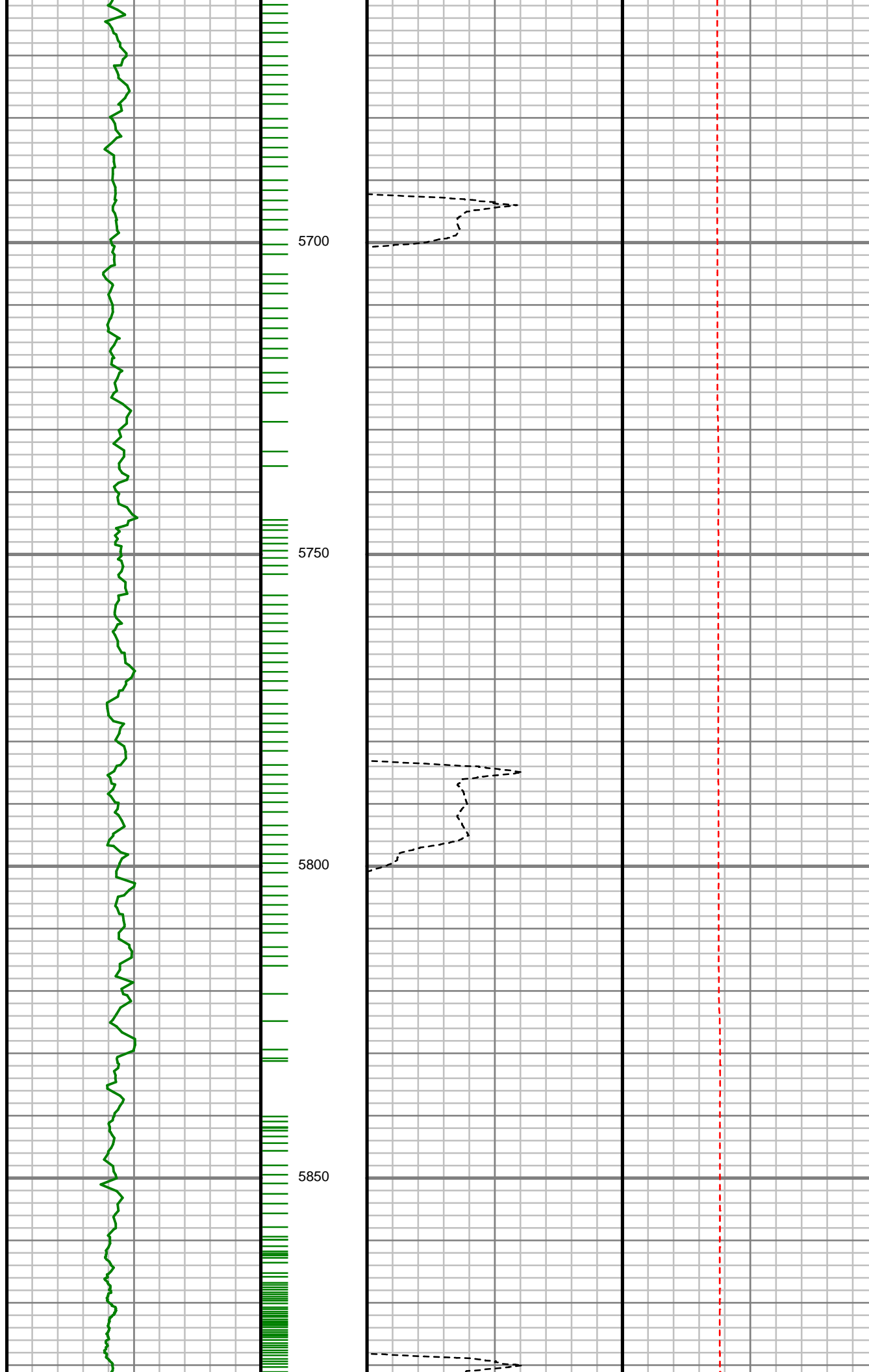
S: 56 MD: 5347.00 ft  
Inc: 2.08 deg Az:  
132.13 deg TVD:  
5304.36 ft



S: 57 MD: 5442.00 ft  
Inc: 2.95 deg Az:  
125.60 deg TVD:  
5399.27 ft

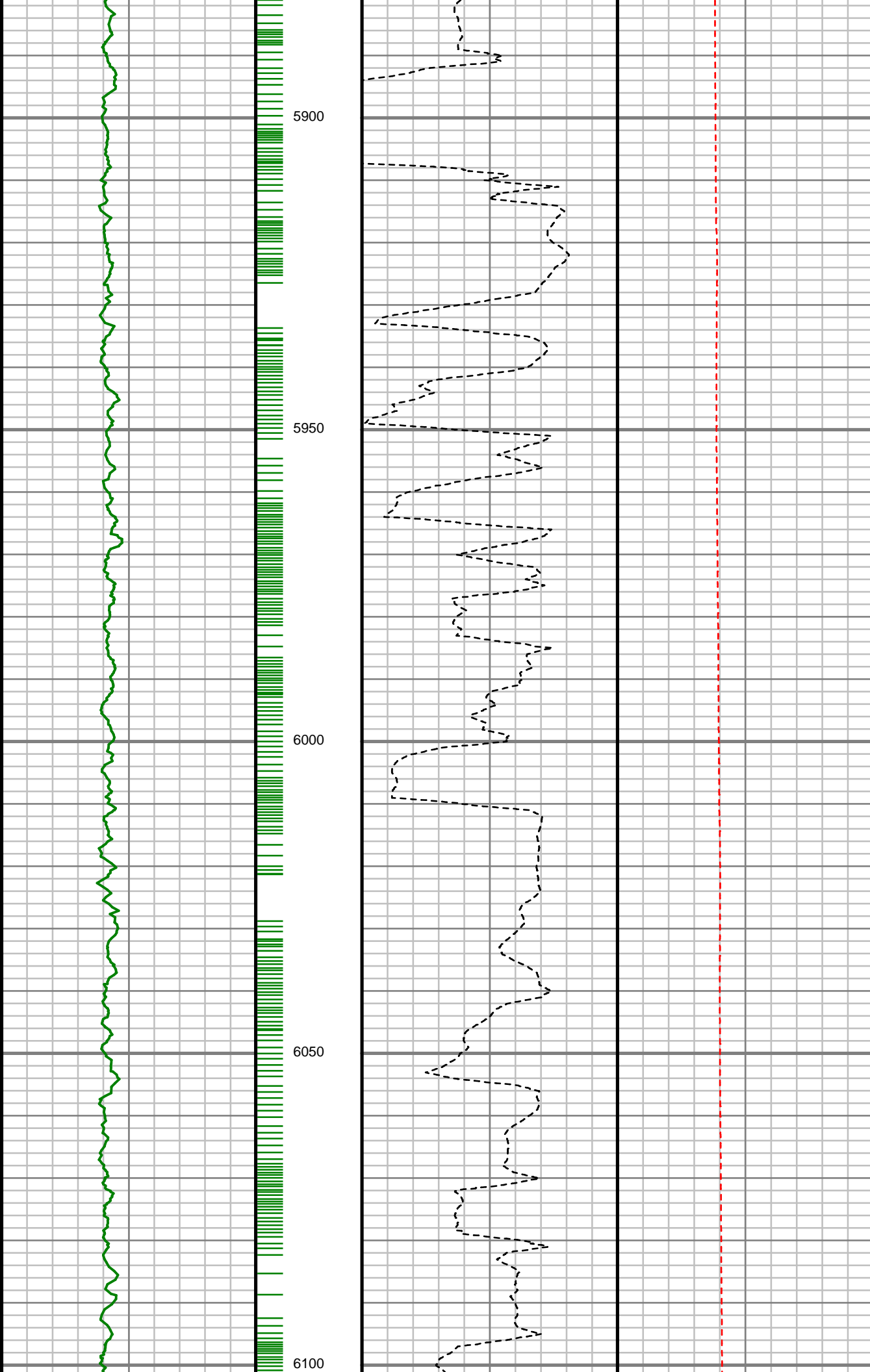
S: 58 MD: 5536.00 ft  
Inc: 0.34 deg Az: 3.78  
deg TVD: 5493.23 ft

S: 59 MD: 5630.00 ft  
Inc: 1.19 deg Az:  
323.57 deg TVD:  
5587.22 ft



S: 60 MD: 5725.00 ft  
Inc: 1.18 deg Az:  
337.00 deg TVD:  
5682.20 ft

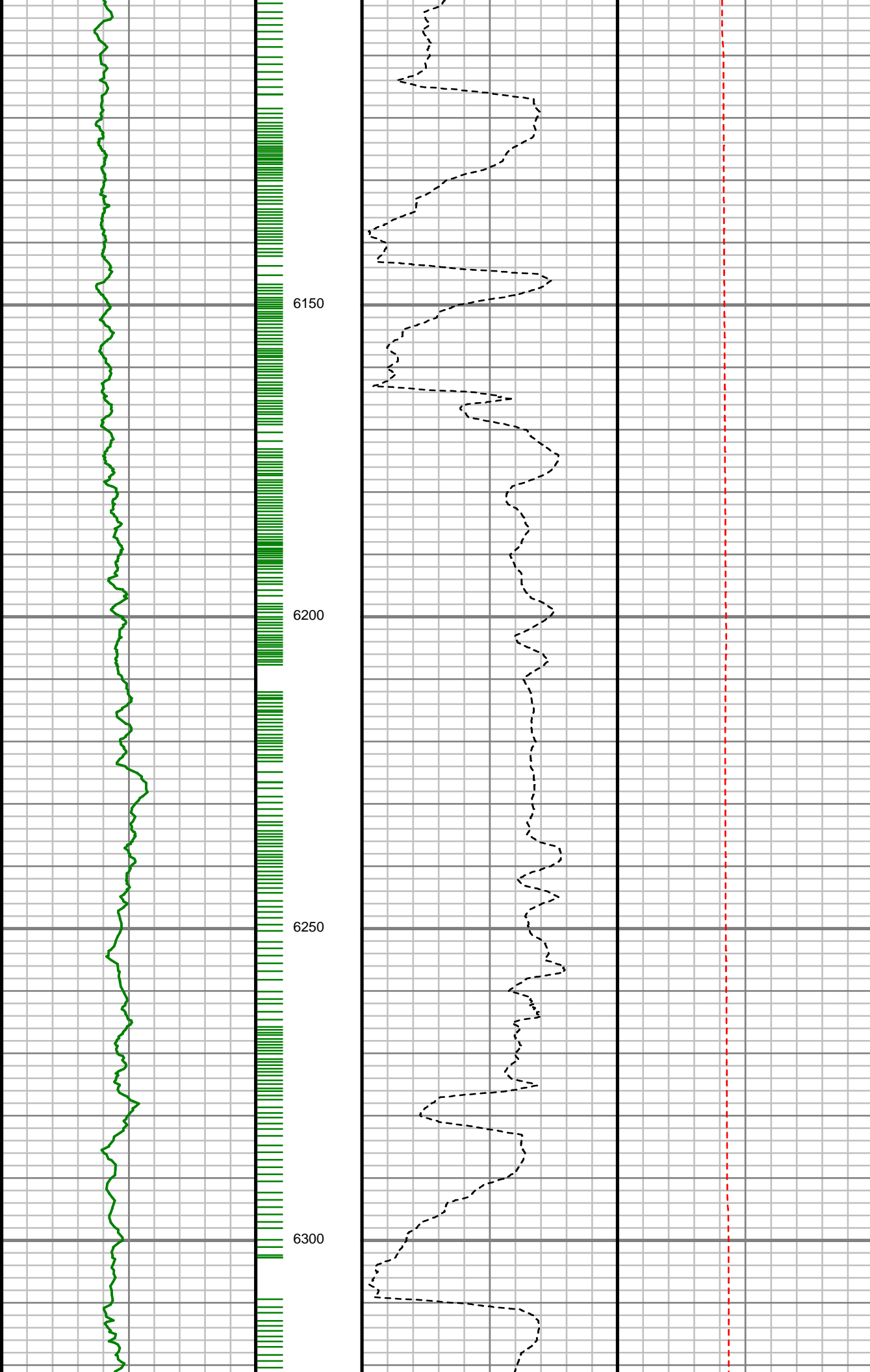
S: 61 MD: 5819.00 ft  
Inc: 1.14 deg Az:  
322.15 deg TVD:  
5776.18 ft



S: 62 MD: 5914.00 ft  
Inc: 2.36 deg Az:  
306.16 deg TVD:  
5871.14 ft

S: 63 MD: 6008.00 ft  
Inc: 1.44 deg Az:  
272.85 deg TVD:  
5965.09 ft

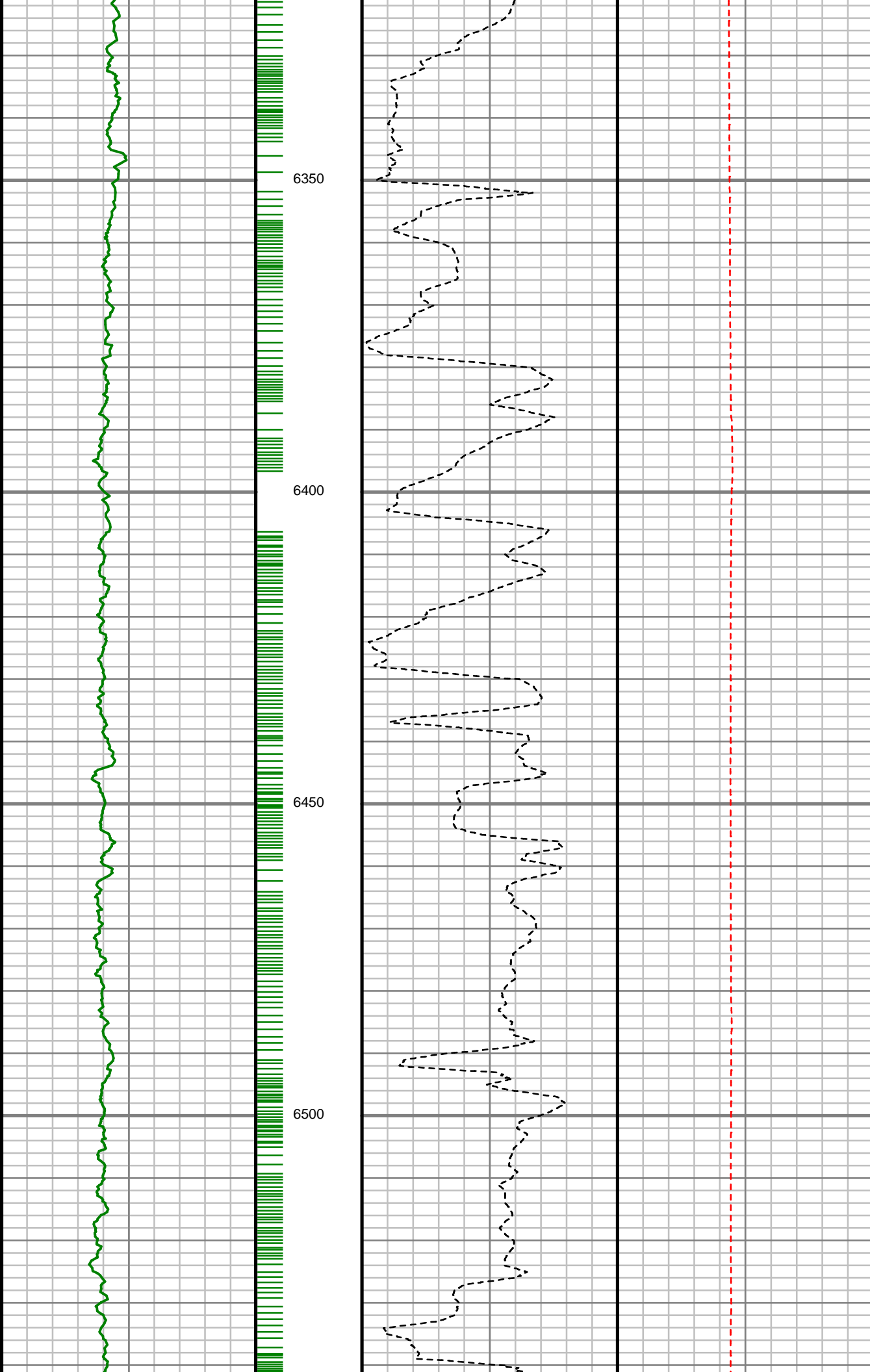




S: 64 MD: 6102.00 ft  
Inc: 0.48 deg Az: 79.82  
deg TVD: 6059.08 ft

S: 65 MD: 6197.00 ft  
Inc: 0.11 deg Az: 79.14  
deg TVD: 6154.08 ft

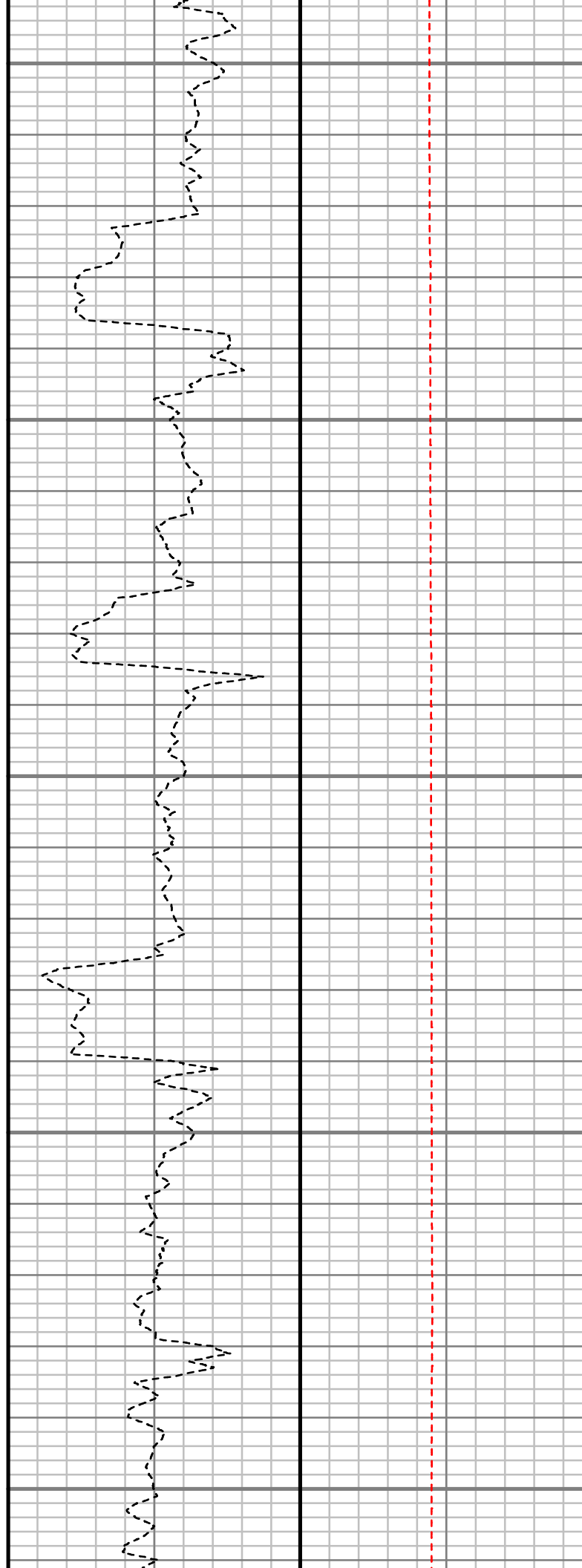
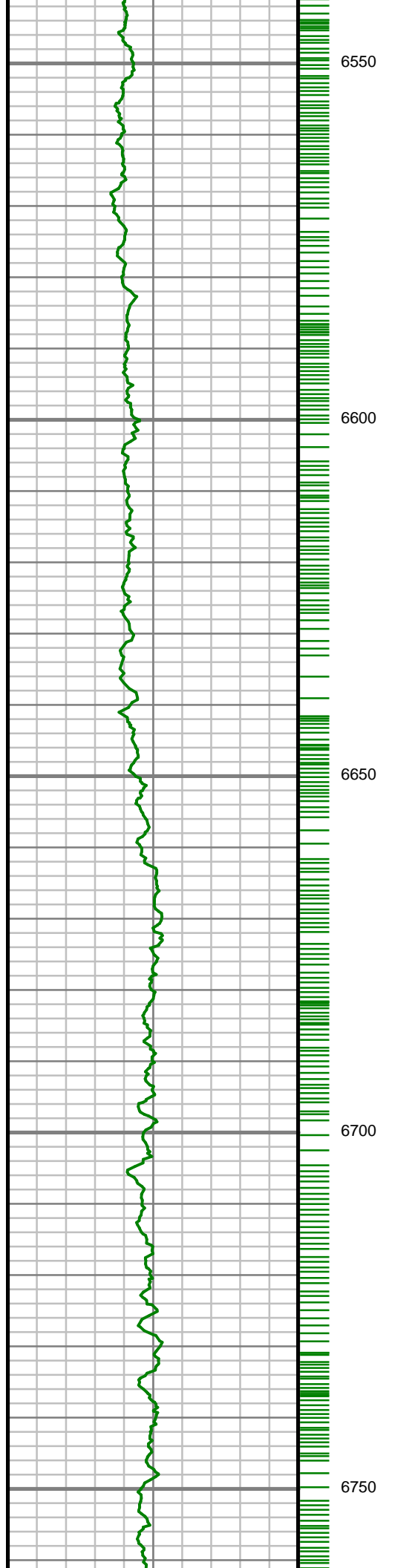
S: 66 MD: 6291.00 ft  
Inc: 0.81 deg Az: 160.68  
deg TVD: 6248.08 ft



S: 67 MD: 6433.00 ft  
Inc: 0.93 deg Az:  
175.03 deg TVD:  
6390.06 ft

S: 68 MD: 6480.00 ft  
Inc: 2.79 deg Az: 53.91  
deg TVD: 6437.04 ft

S: 69 MD: 6527.00 ft  
Inc: 6.18 deg Az: 38.30  
deg TVD: 6483.89 ft

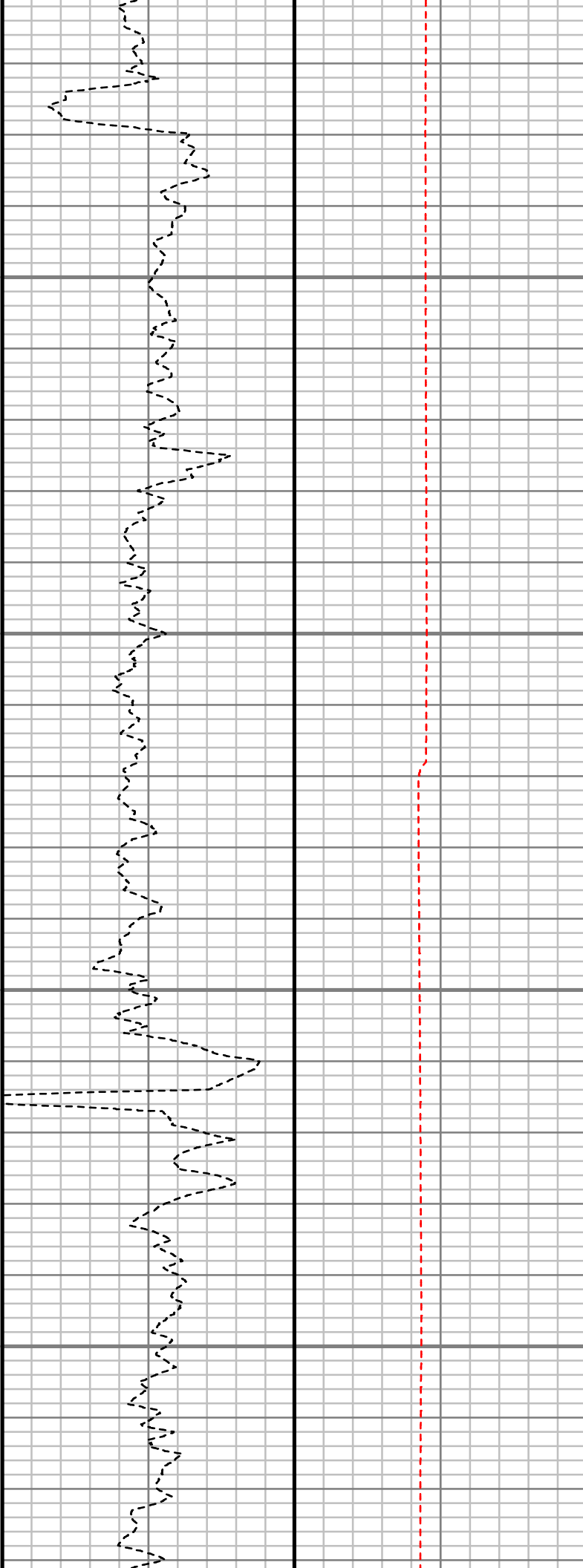
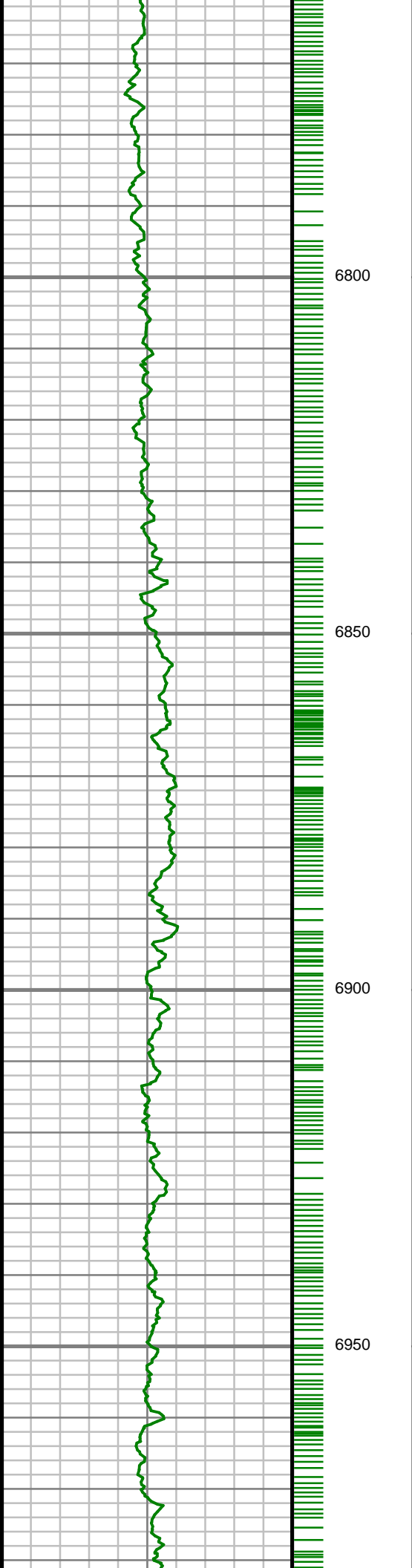


S: 70 MD: 6575.00 ft  
Inc: 9.37 deg Az: 28.19  
deg TVD: 6531.45 ft

S: 71 MD: 6622.00 ft  
Inc: 12.85 deg Az:  
30.91 deg TVD:  
6577.56 ft

S: 72 MD: 6669.00 ft  
Inc: 17.24 deg Az:  
31.66 deg TVD:  
6622.94 ft

S: 73 MD: 6716.00 ft  
Inc: 19.77 deg Az:  
31.02 deg TVD:  
6667.50 ft

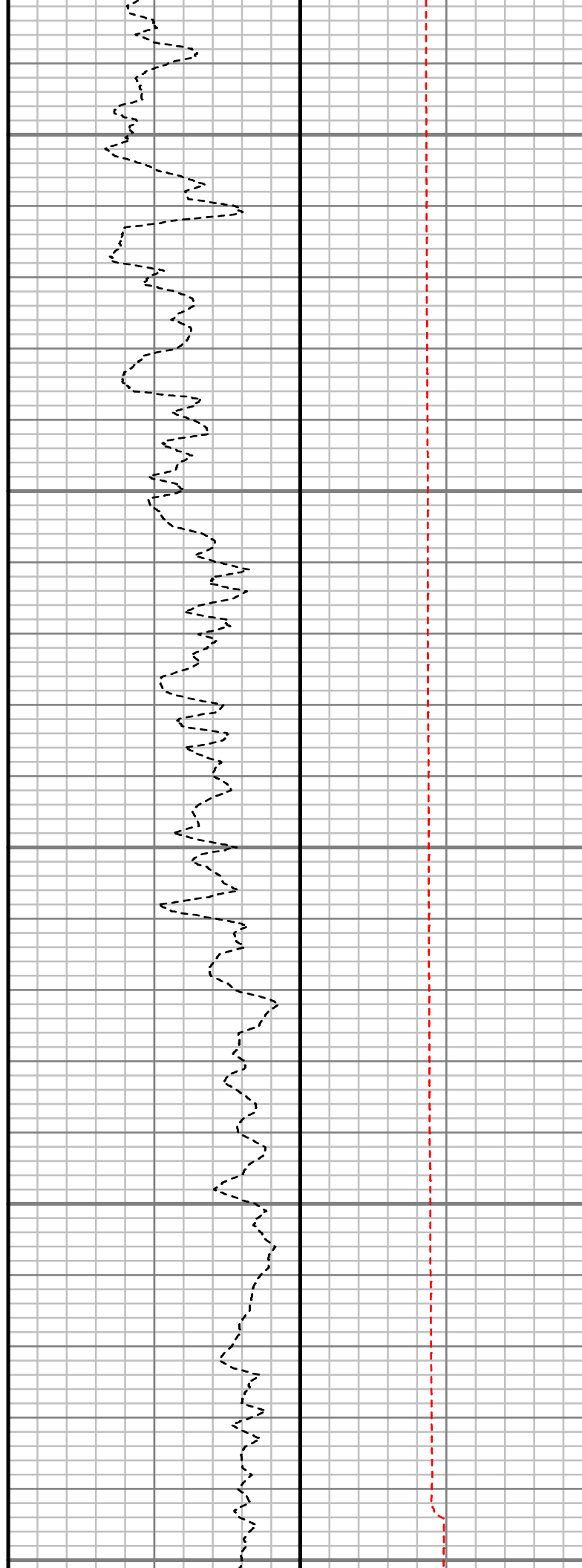
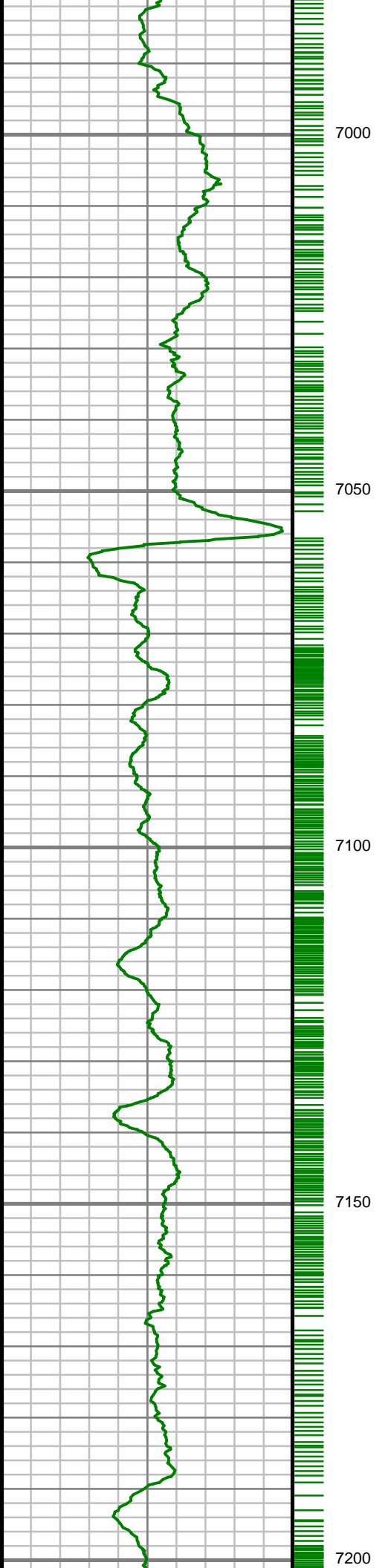


S: 74 MD: 6763.00 ft  
Inc: 24.60 deg Az:  
29.91 deg TVD:  
6711.01 ft

S: 75 MD: 6810.00 ft  
Inc: 29.61 deg Az:  
25.55 deg TVD:  
6752.84 ft

S: 76 MD: 6857.00 ft  
Inc: 35.92 deg Az:  
24.89 deg TVD:  
6792.34 ft

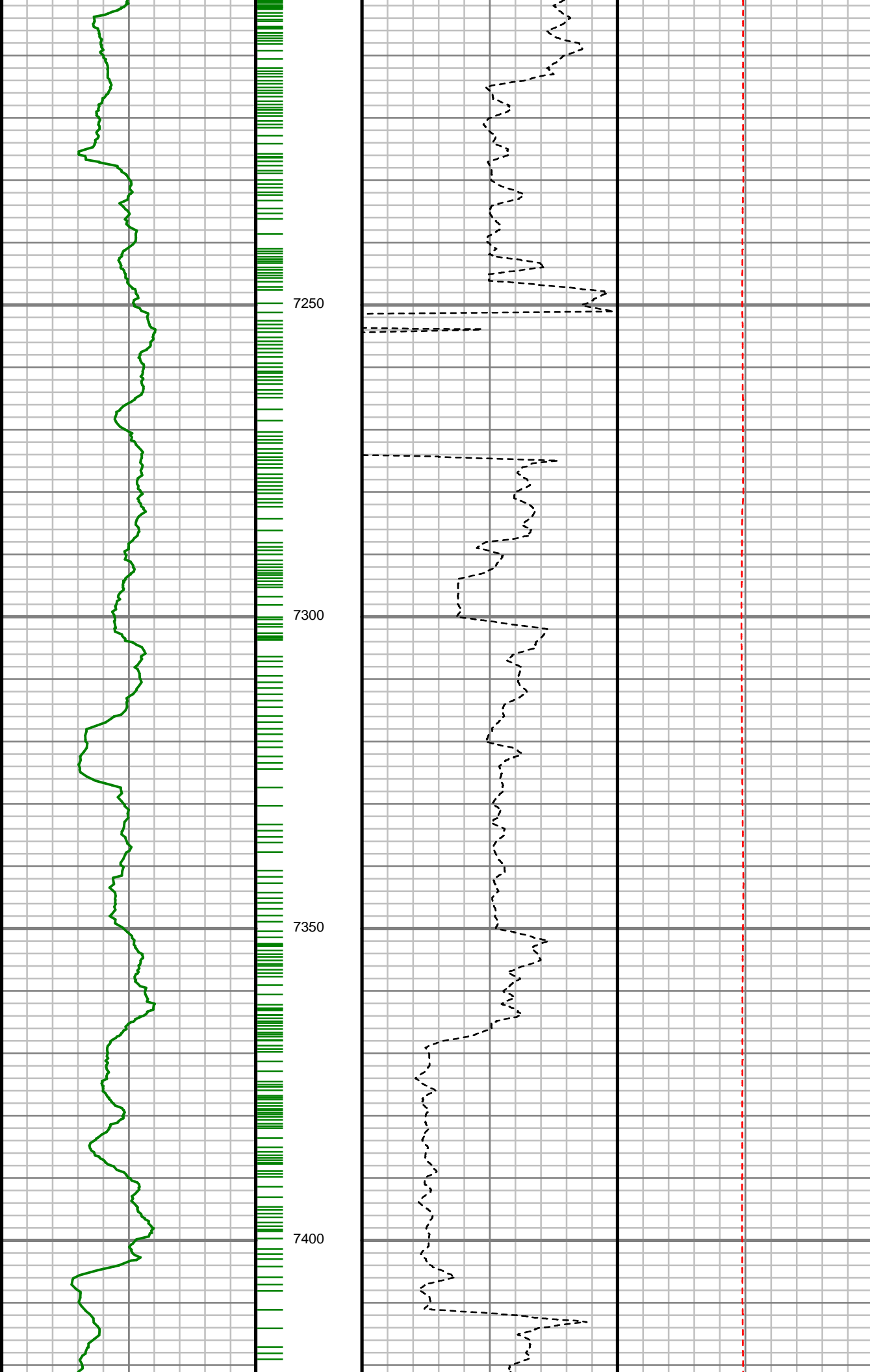
S: 77 MD: 6952.00 ft  
Inc: 45.84 deg Az:  
21.39 deg TVD:  
6864.09 ft



S: 78 MD: 7046.00 ft  
Inc: 60.15 deg Az:  
13.57 deg TVD:  
6920.58 ft

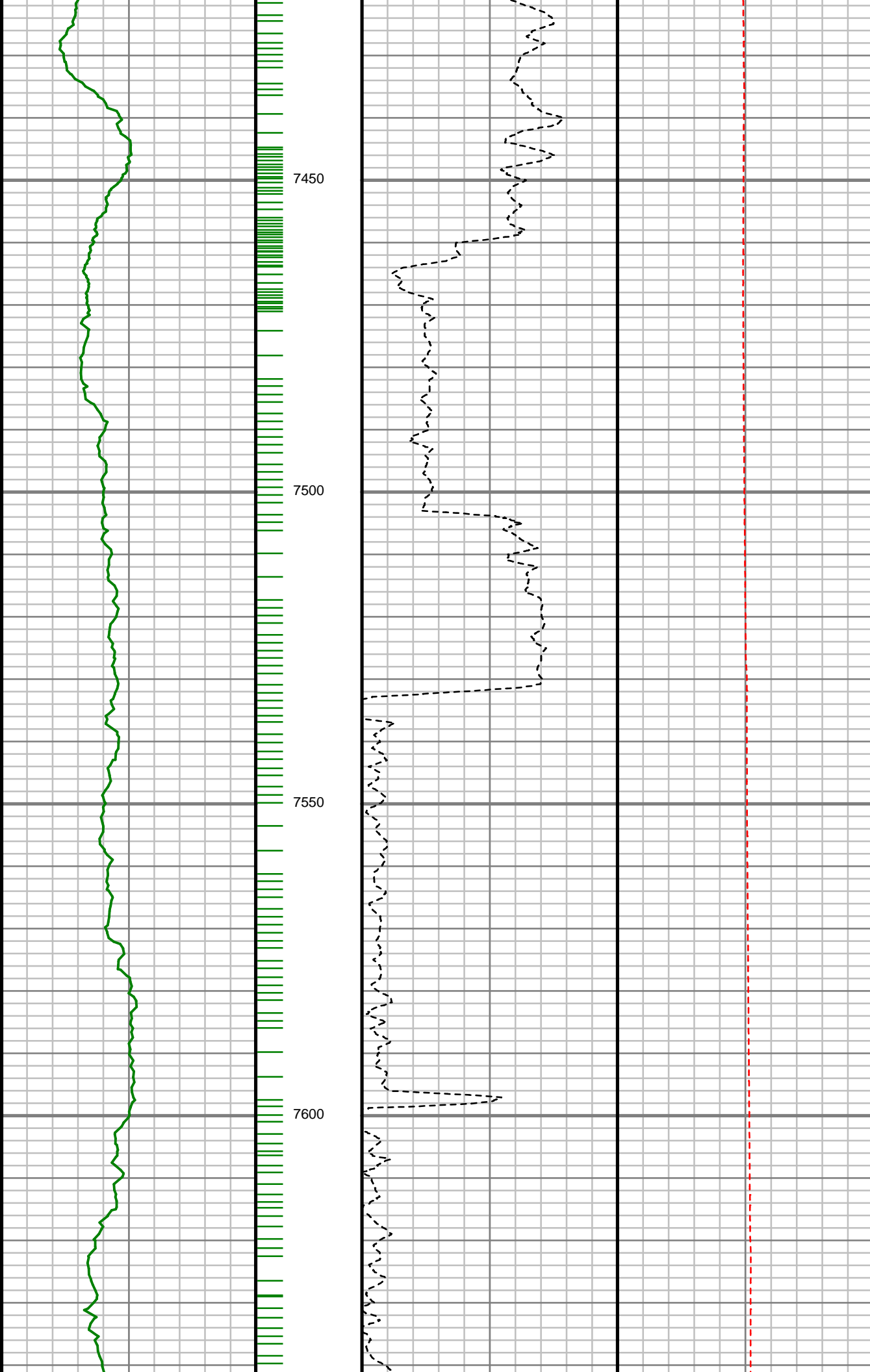
S: 79 MD: 7140.00 ft  
Inc: 69.90 deg Az: 9.05  
deg TVD: 6960.24 ft

S: 80 MD: 7187.00 ft  
Inc: 72.27 deg Az: 1.40  
deg TVD: 6975.49 ft



S: 81 MD: 7280.00 ft  
Inc: 78.42 deg Az:  
358.03 deg TVD:  
6999.02 ft

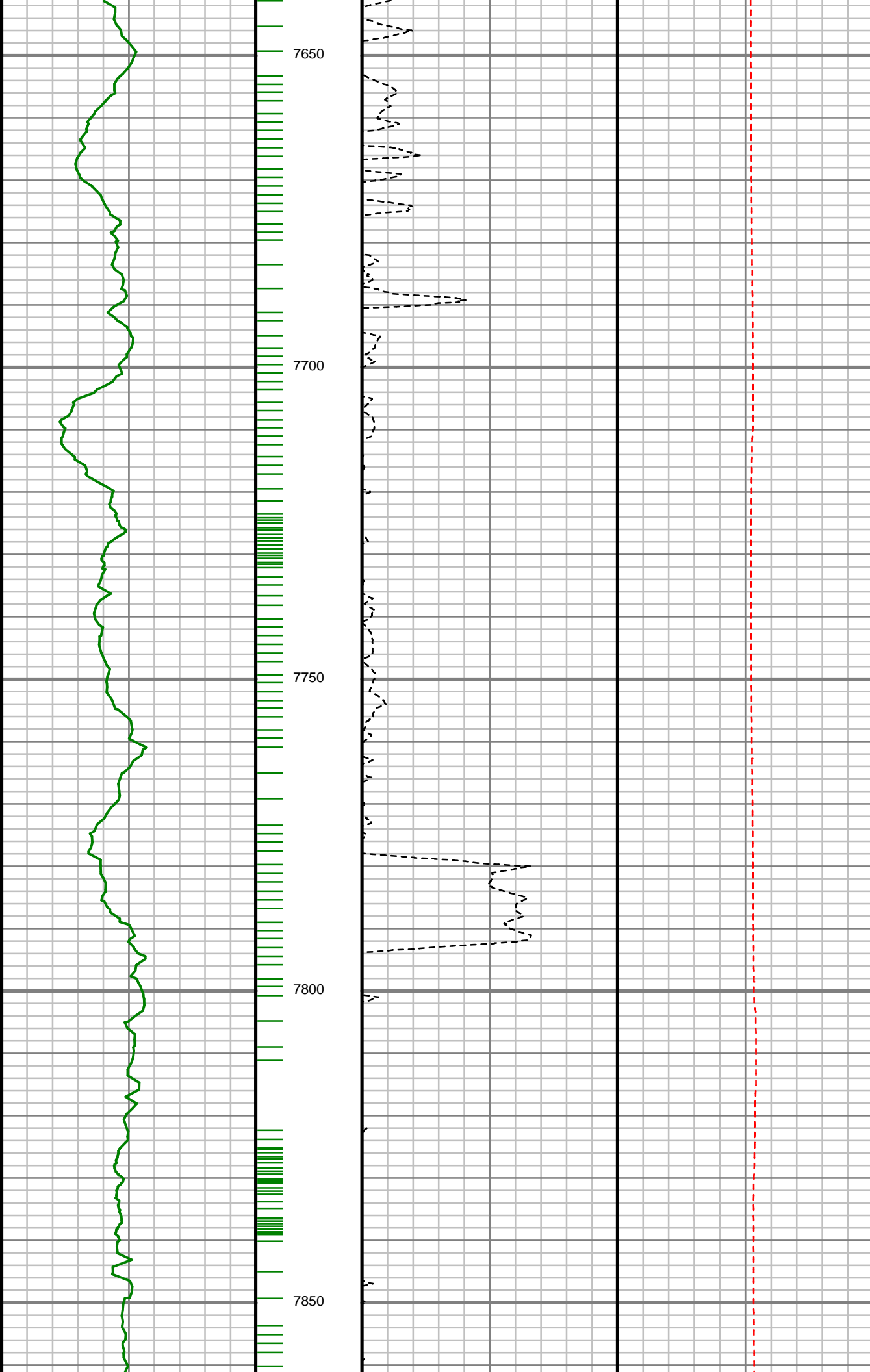
S: 82 MD: 7342.00 ft  
Inc: 80.51 deg Az:  
358.00 deg TVD:  
7010.36 ft



S: 83 MD: 7433.00 ft  
Inc: 83.12 deg Az:  
357.63 deg TVD:  
7023.31 ft

S: 84 MD: 7525.00 ft  
Inc: 87.62 deg Az:  
356.32 deg TVD:  
7030.74 ft

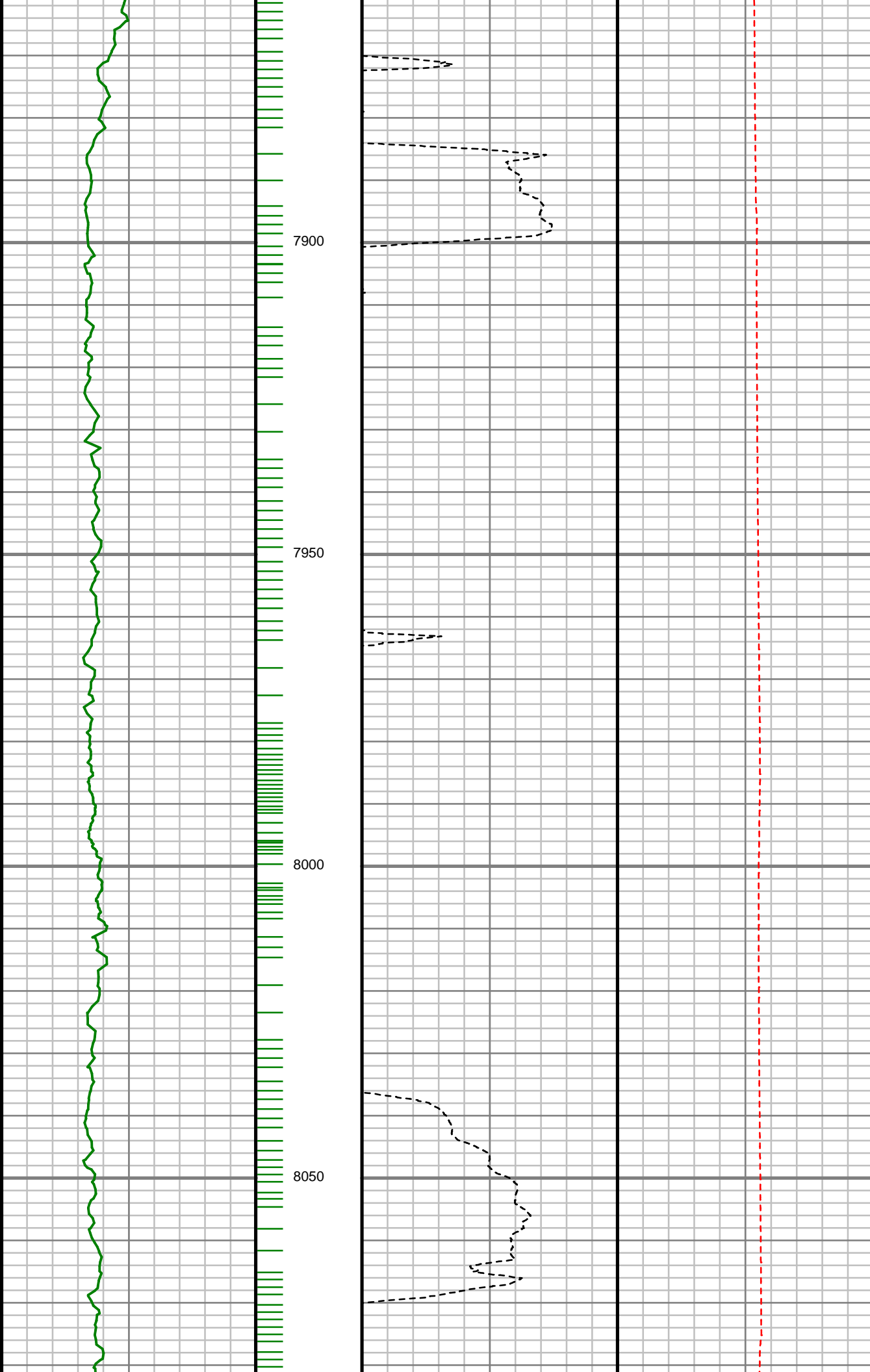
S: 85 MD: 7617.00 ft  
Inc: 88.05 deg Az:  
356.46 deg TVD:  
7034.22 ft



S: 86 MD: 7709.00 ft  
Inc: 87.84 deg Az:  
356.16 deg TVD:  
7037.52 ft

S: 87 MD: 7800.00 ft  
Inc: 89.09 deg Az:  
355.82 deg TVD:  
7039.95 ft

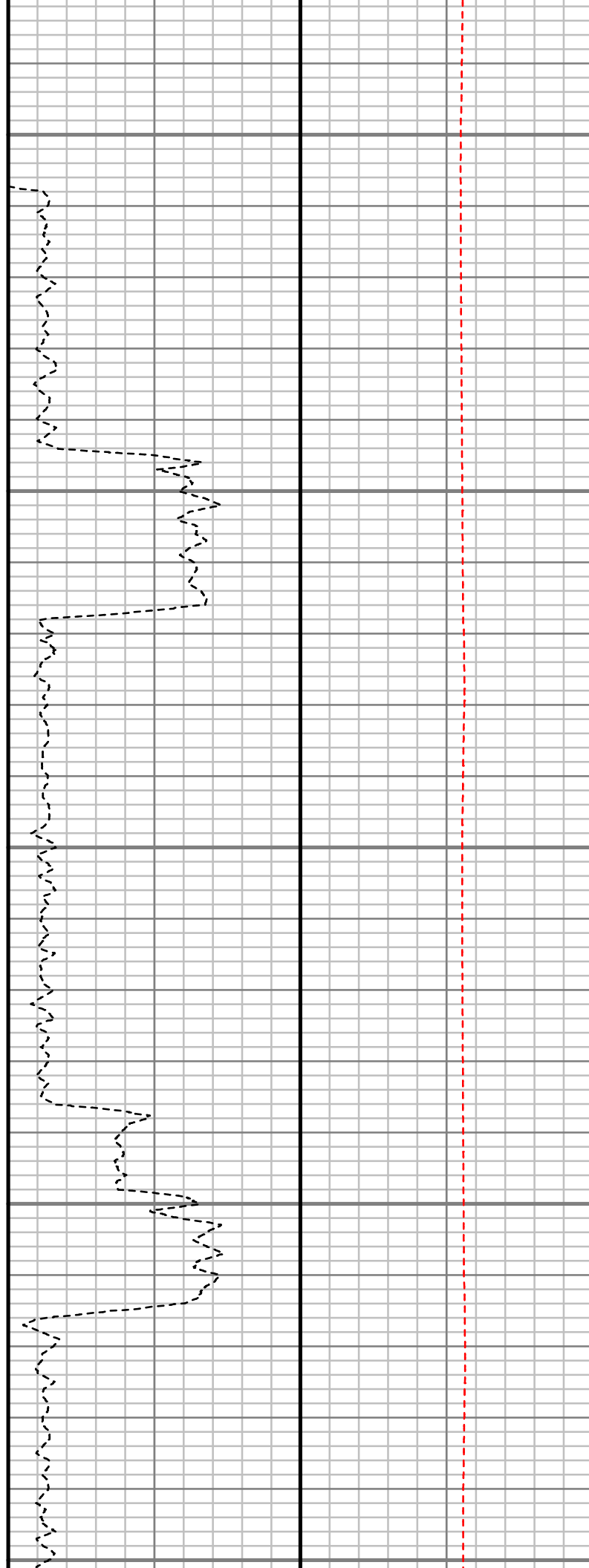
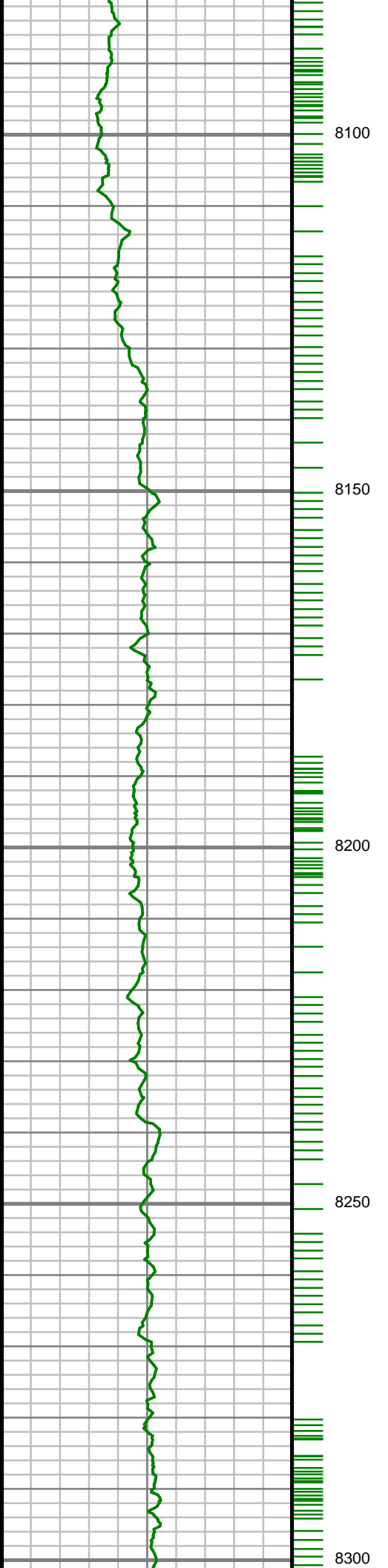




S: 88 MD: 7891.00 ft  
Inc: 90.37 deg Az:  
356.17 deg TVD:  
7040.38 ft

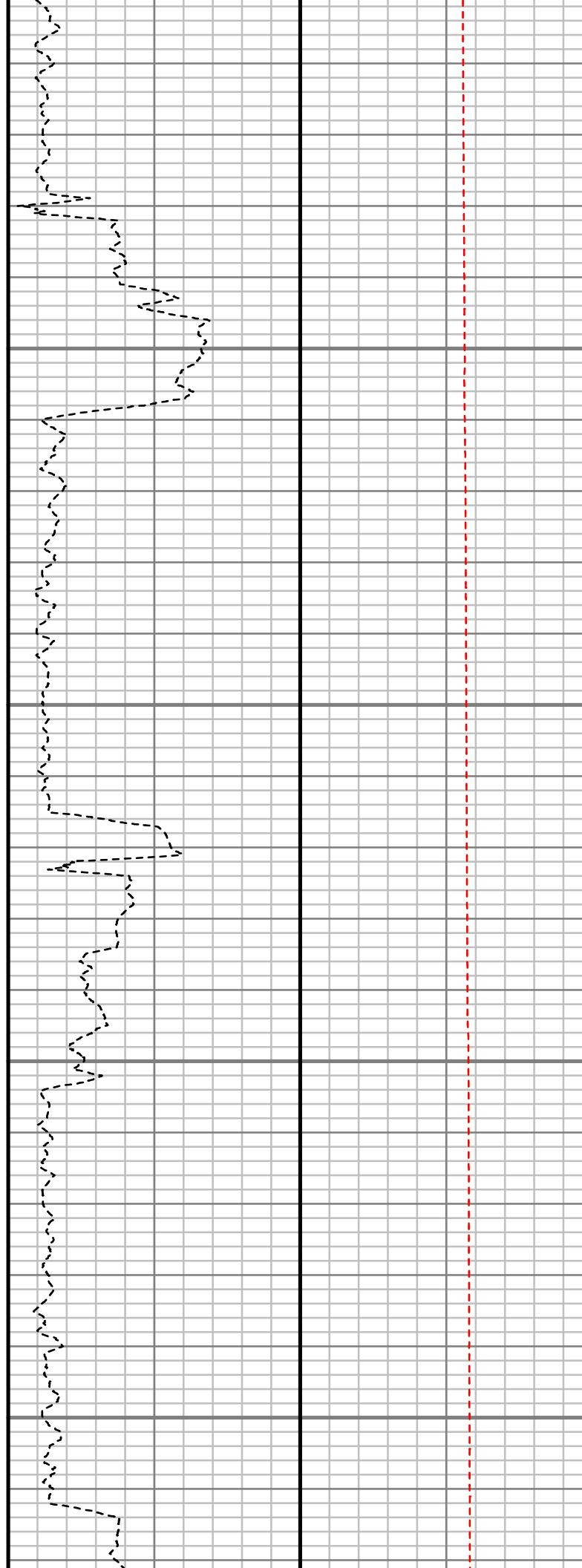
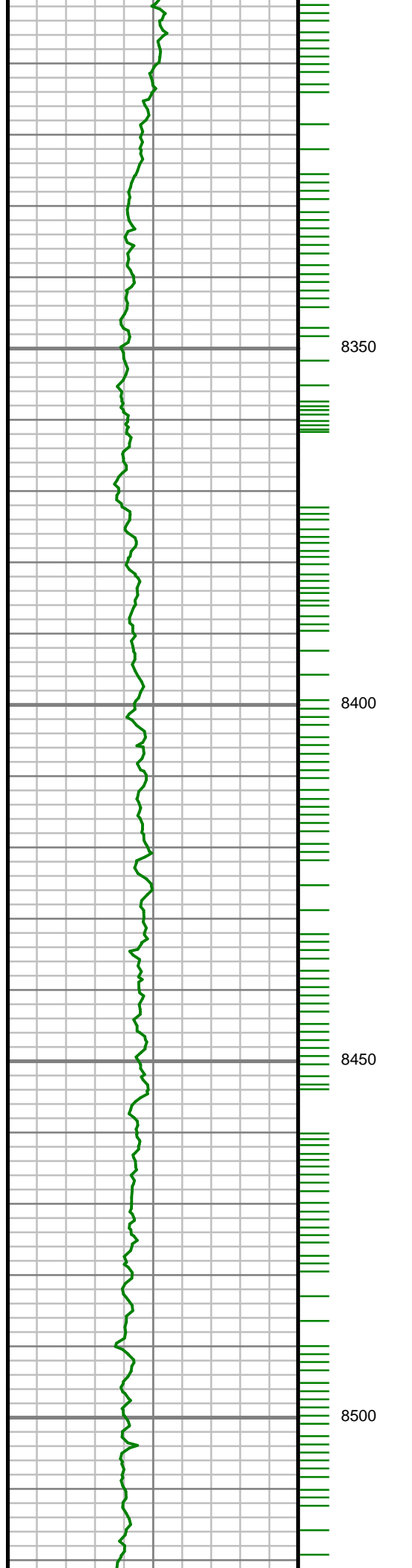
S: 89 MD: 7981.00 ft  
Inc: 91.51 deg Az:  
357.48 deg TVD:  
7038.90 ft

S: 90 MD: 8072.00 ft  
Inc: 91.89 deg Az:  
358.29 deg TVD:  
7036 20 ft



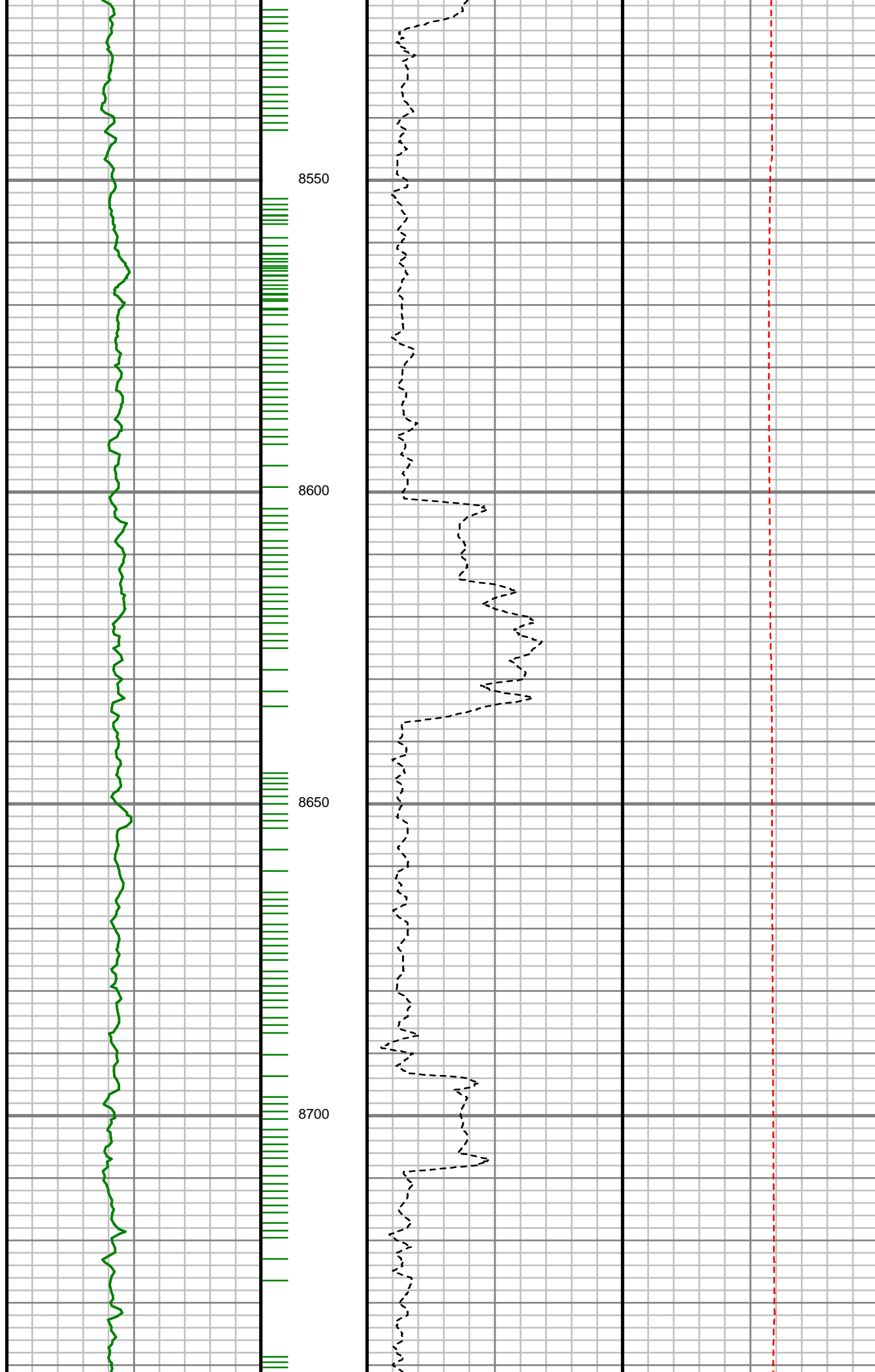
S: 91 MD: 8164.00 ft  
Inc: 90.71 deg Az:  
358.78 deg TVD:  
7034.12 ft

S: 92 MD: 8256.00 ft  
Inc: 90.10 deg Az:  
358.16 deg TVD:  
7033.47 ft



S: 93 MD: 8344.00 ft  
Inc: 89.60 deg Az:  
358.61 deg TVD:  
7033.70 ft

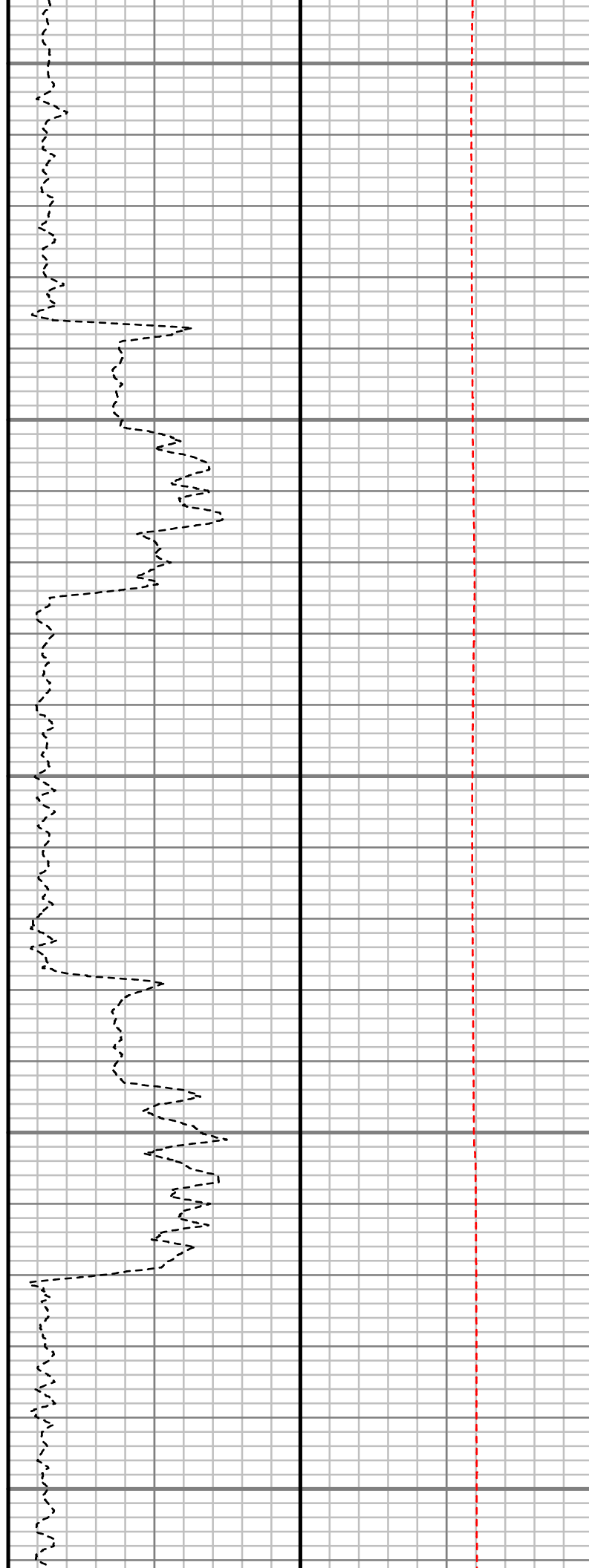
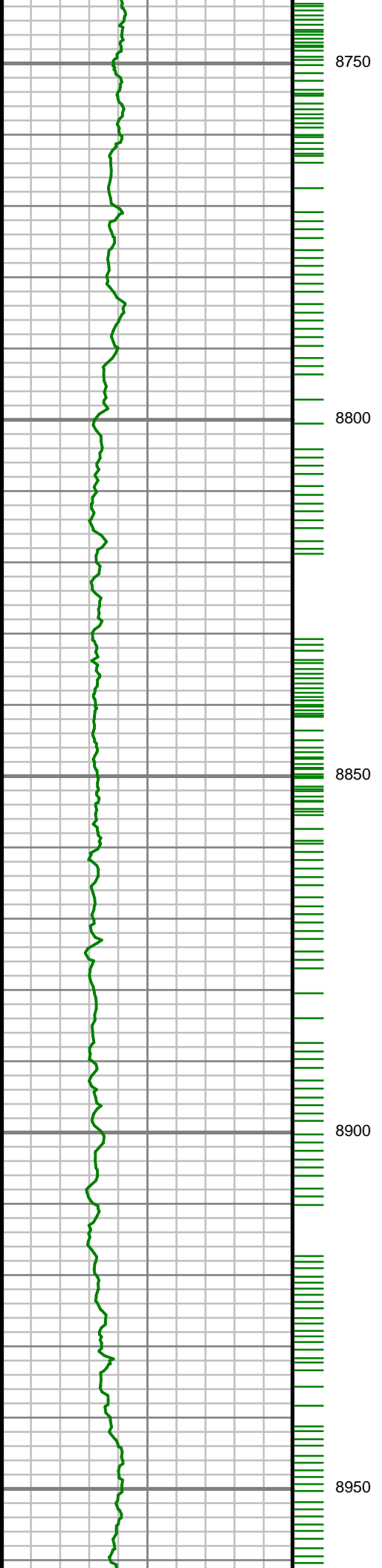
S: 94 MD: 8438.00 ft  
Inc: 89.73 deg Az:  
358.16 deg TVD:  
7034.25 ft



S: 95 MD: 8530.00 ft  
Inc: 90.54 deg Az:  
358.57 deg TVD:  
7034.04 ft

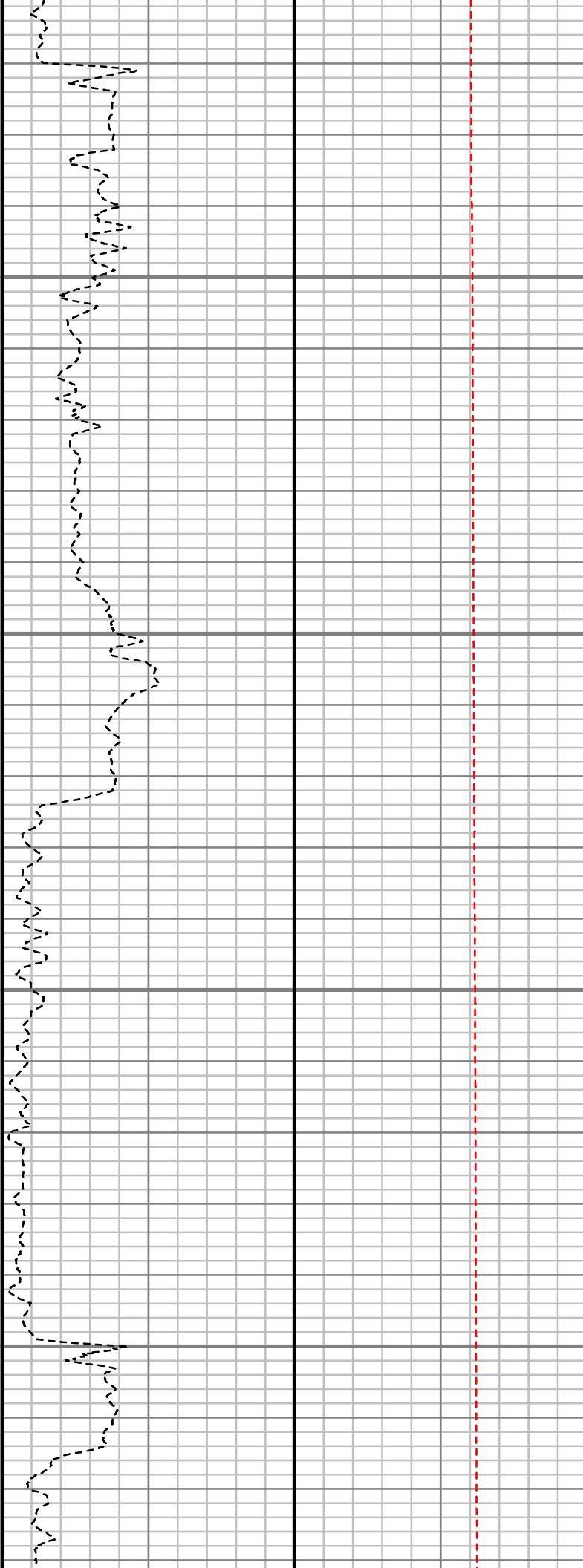
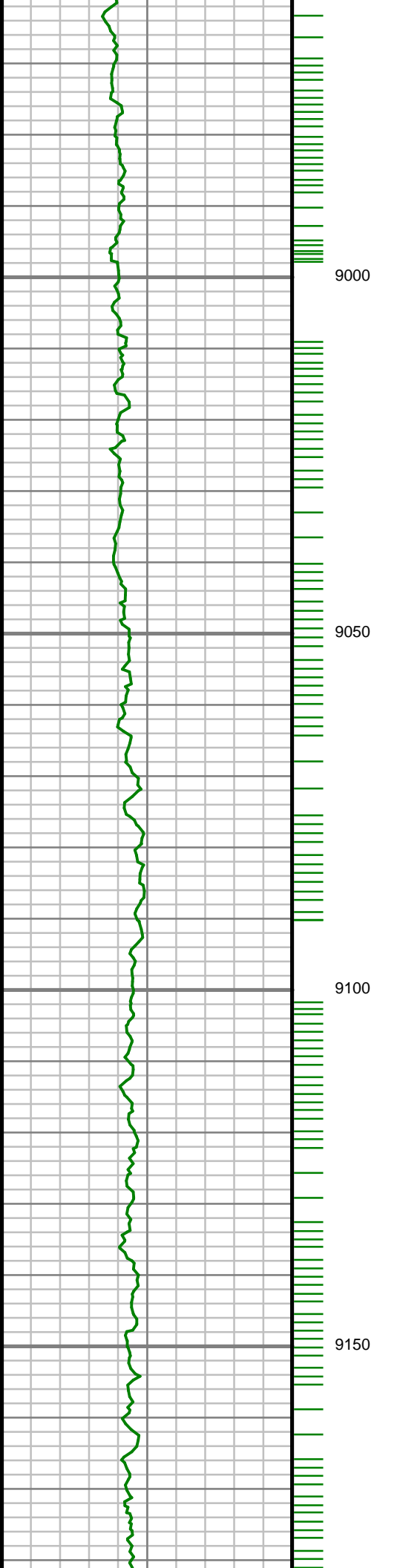
S: 96 MD: 8621.00 ft  
Inc: 90.44 deg Az:  
358.60 deg TVD:  
7033.26 ft

S: 97 MD: 8713.00 ft  
Inc: 90.57 deg Az:  
357.64 deg TVD:  
7032.45 ft



S: 98 MD: 8805.00 ft  
Inc: 90.67 deg Az:  
358.53 deg TVD:  
7031.45 ft

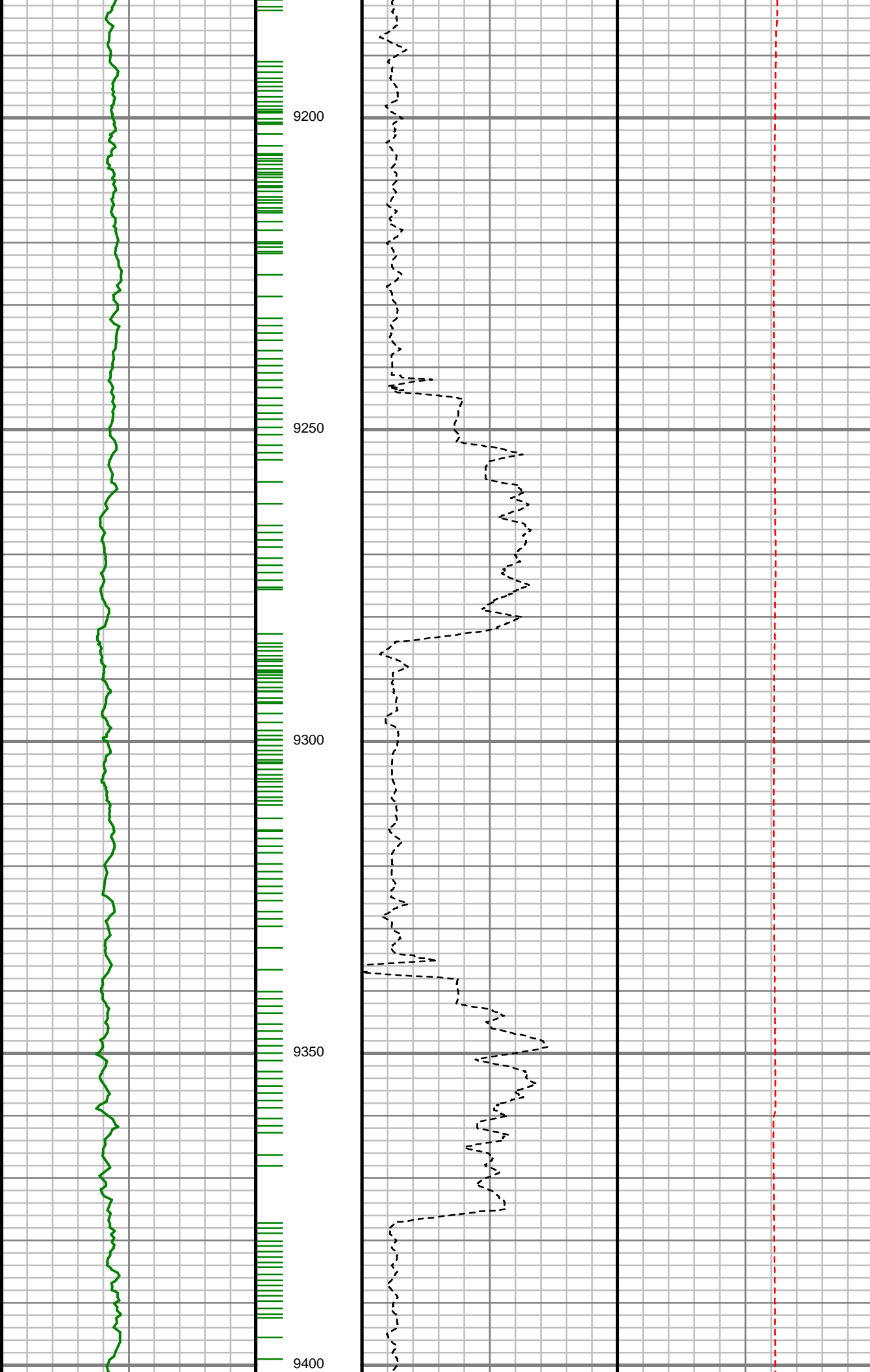
S: 99 MD: 8896.00 ft  
Inc: 89.87 deg Az:  
358.03 deg TVD:  
7031.03 ft



S: 100 MD: 8988.00 ft  
Inc: 89.29 deg Az:  
358.87 deg TVD:  
7031.70 ft

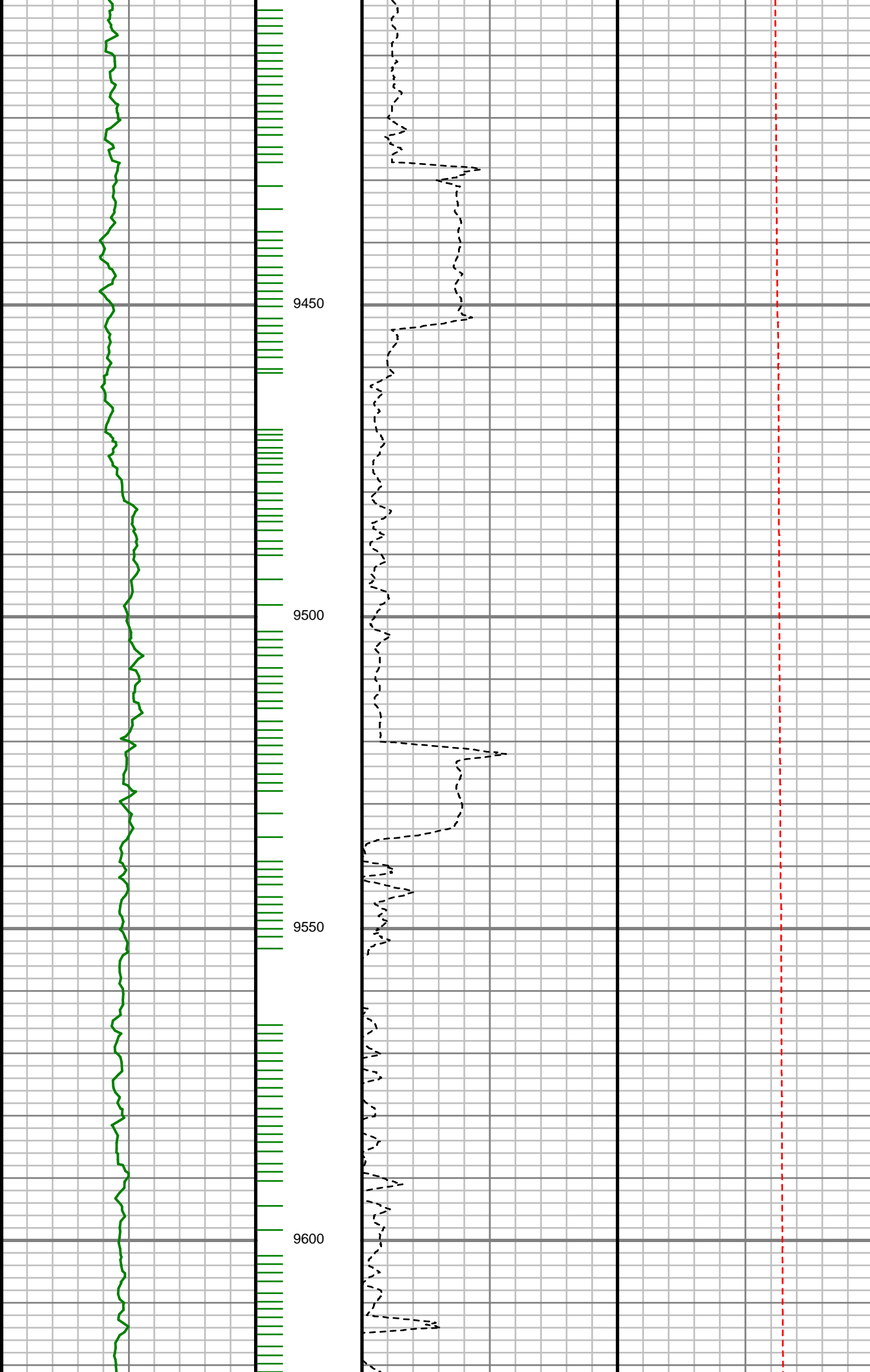
S: 101 MD: 9079.00 ft  
Inc: 90.10 deg Az:  
358.91 deg TVD:  
7032.18 ft

S: 102 MD: 9171.00 ft  
Inc: 91.04 deg Az:  
358.66 deg TVD:  
7031.27 ft



S: 103 MD: 9263.00 ft  
Inc: 91.11 deg Az:  
358.96 deg TVD:  
7029.54 ft

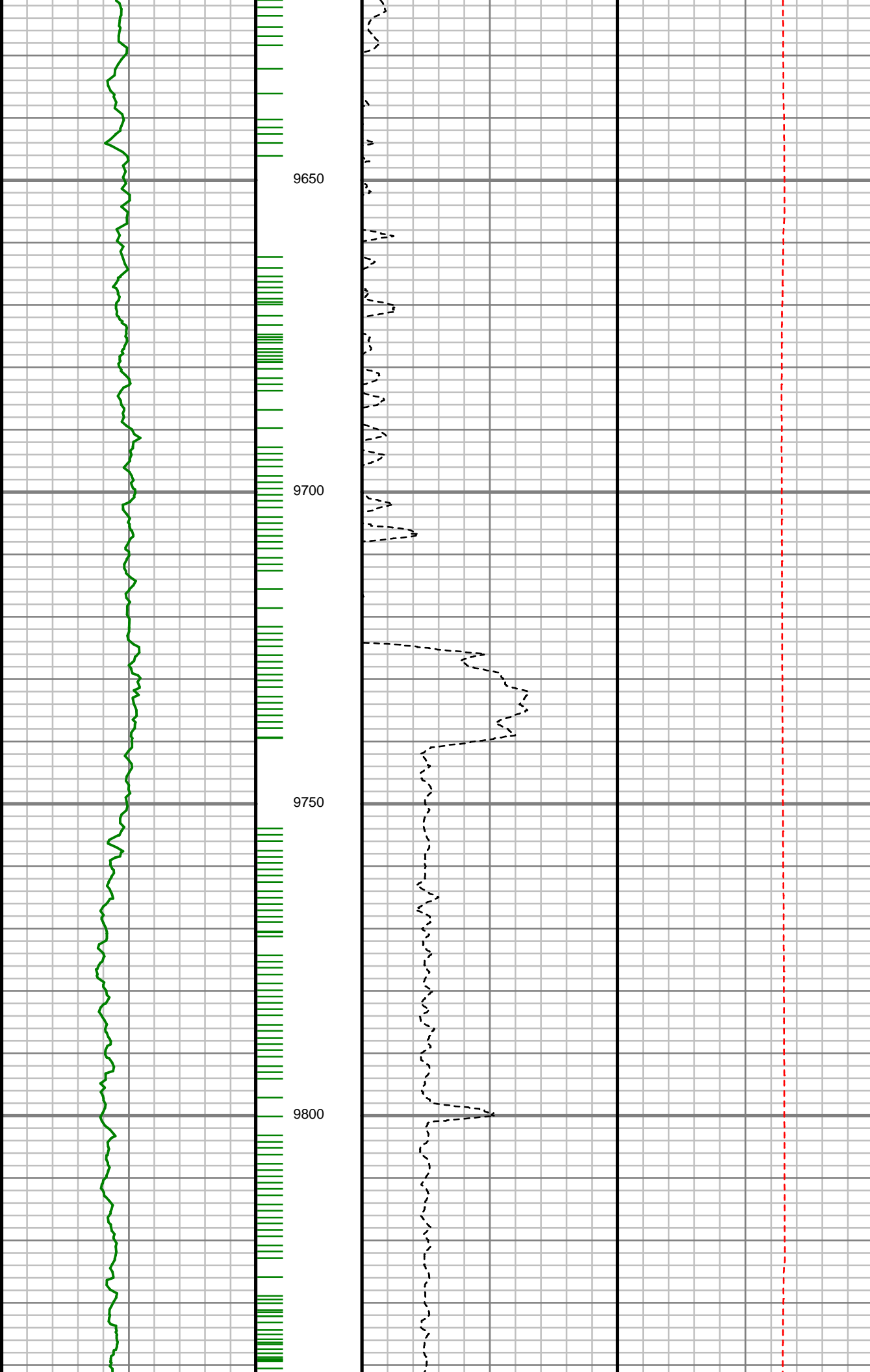
S: 104 MD: 9355.00 ft  
Inc: 88.83 deg Az:  
359.23 deg TVD:  
7029.59 ft



S: 105 MD: 9446.00 ft  
Inc: 88.45 deg Az:  
359.30 deg TVD:  
7031.75 ft

S: 106 MD: 9538.00 ft  
Inc: 88.69 deg Az:  
358.62 deg TVD:  
7034.05 ft

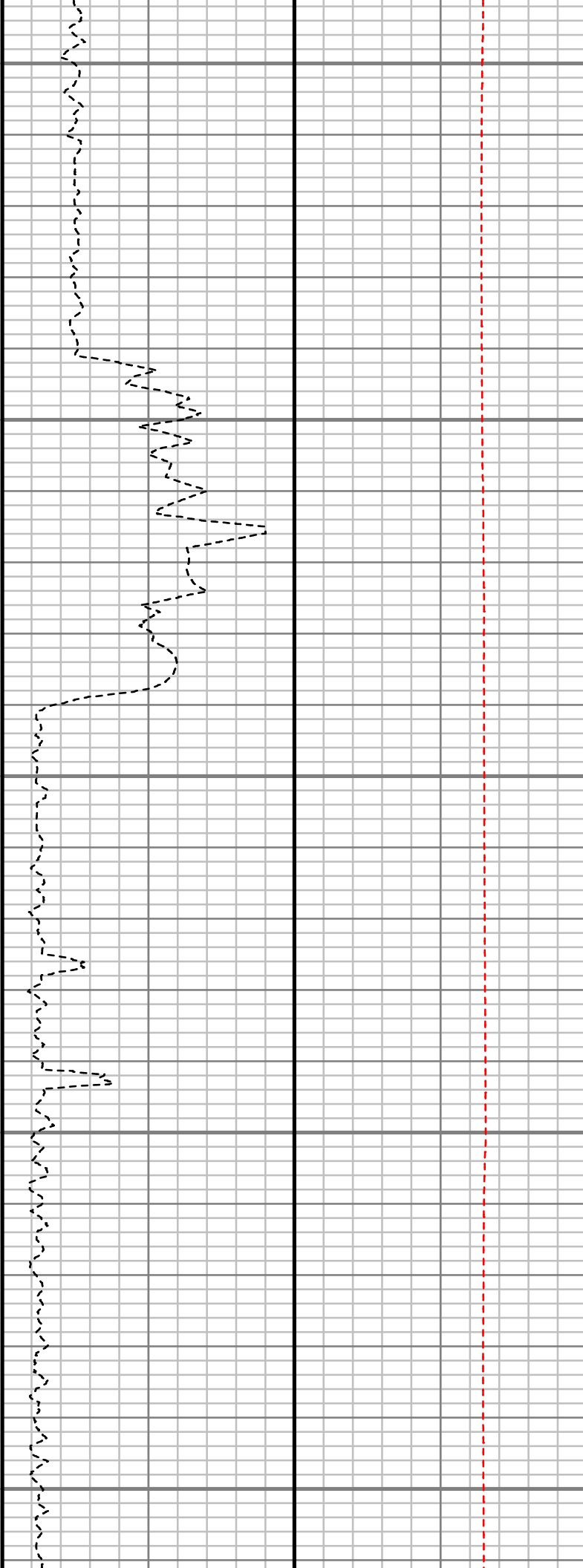
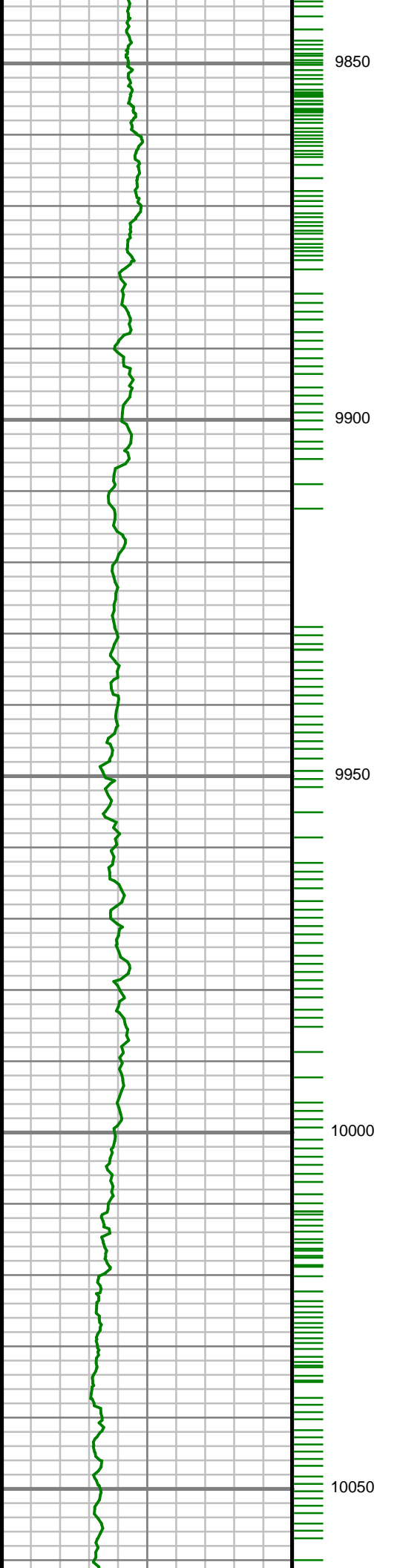




S: 107 MD: 9650.00 ft  
Inc: 90.34 deg Az:  
359.16 deg TVD:  
7035.00 ft

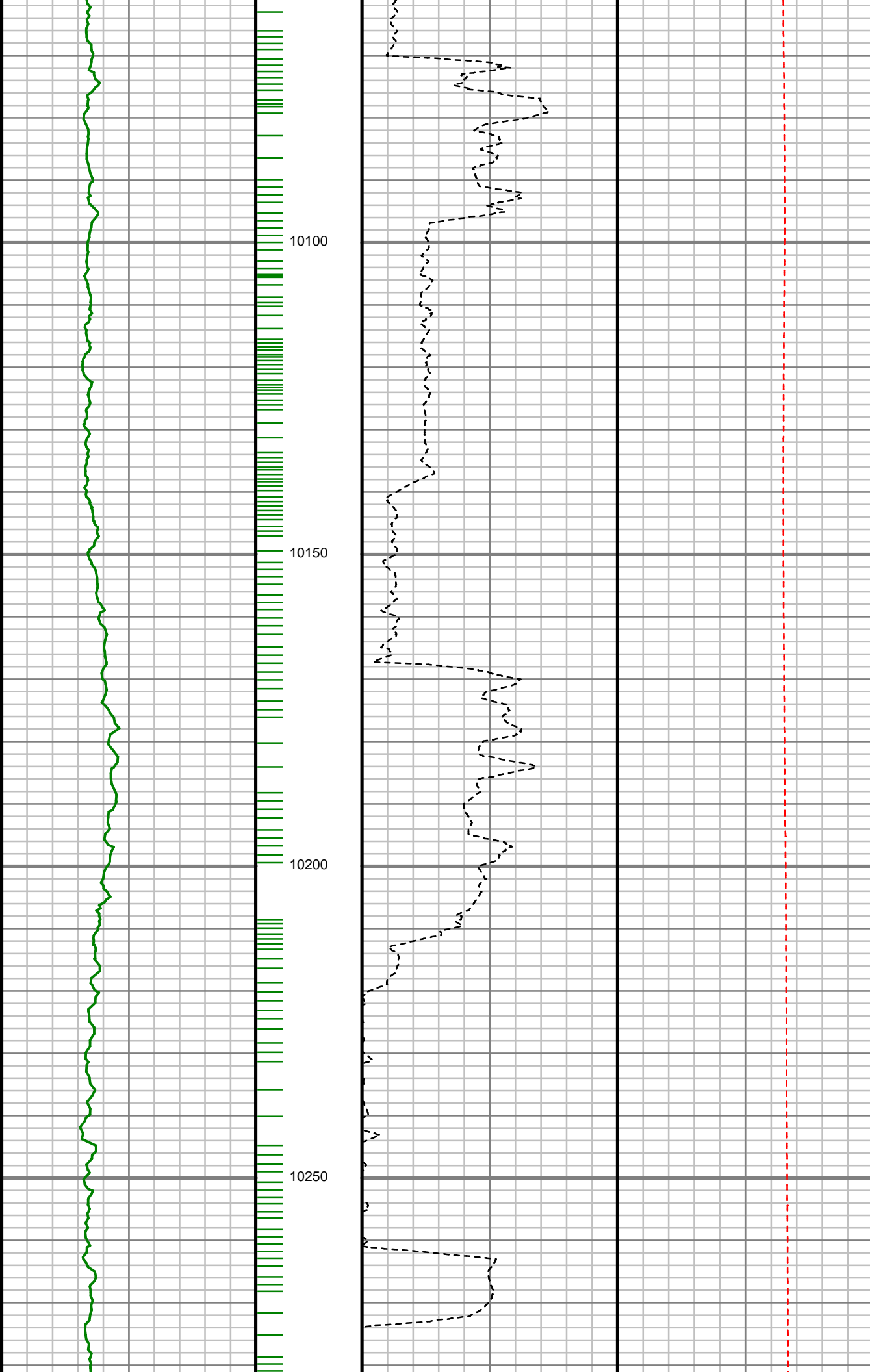
S: 108 MD: 9722.00 ft  
Inc: 90.27 deg Az:  
359.33 deg TVD:  
7034.62 ft

S: 109 MD: 9814.00 ft  
Inc: 90.97 deg Az:  
358.96 deg TVD:  
7033.62 ft



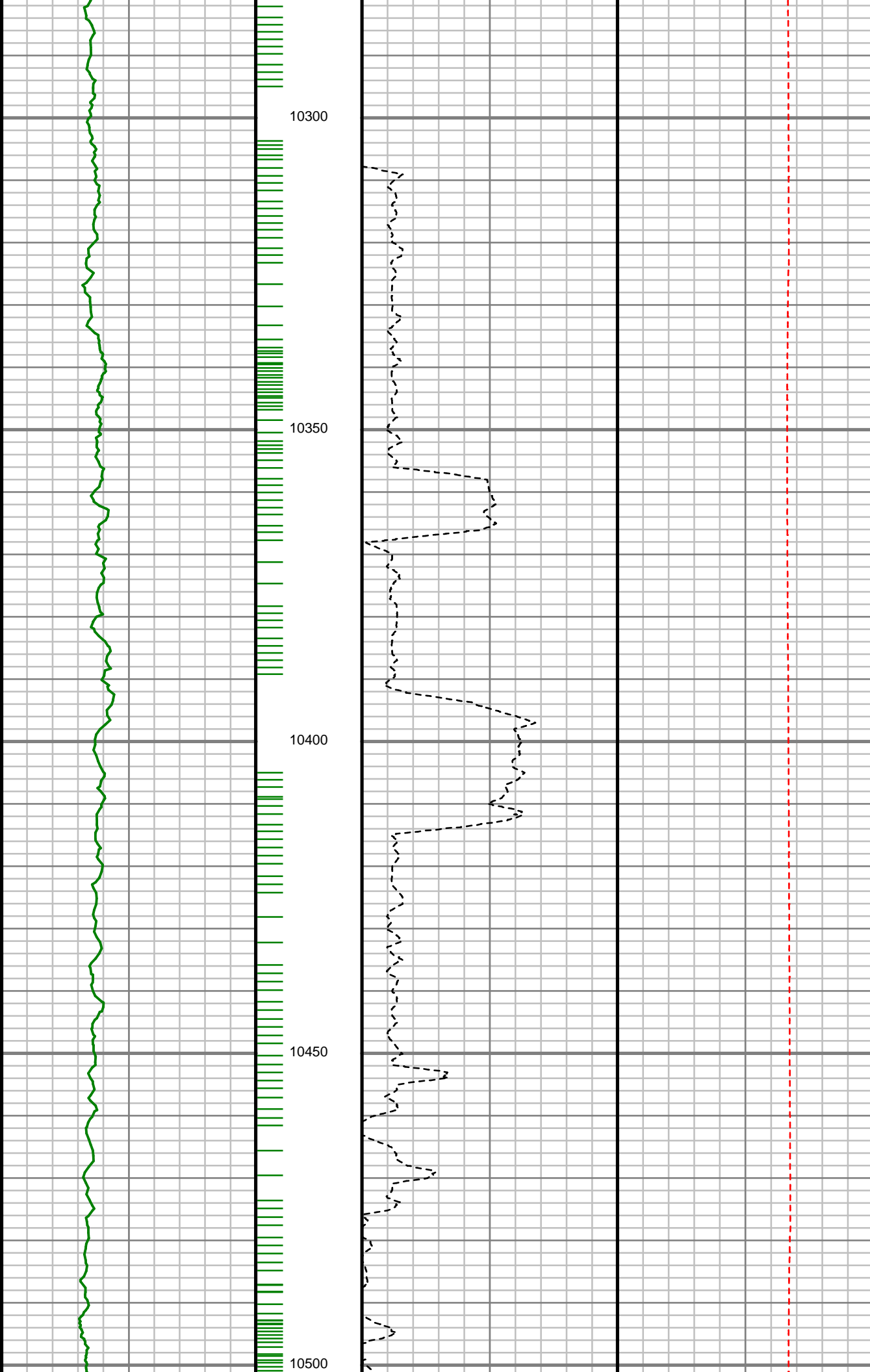
S: 110 MD: 9906.00 ft  
Inc: 90.87 deg Az:  
359.75 deg TVD:  
7032.14 ft

S: 111 MD: 10000.00 ft  
Inc: 90.77 deg Az: 0.10  
deg TVD: 7030.79 ft



S: 112 MD: 10095.00 ft  
Inc: 90.77 deg Az:  
359.92 deg TVD:  
7029.50 ft

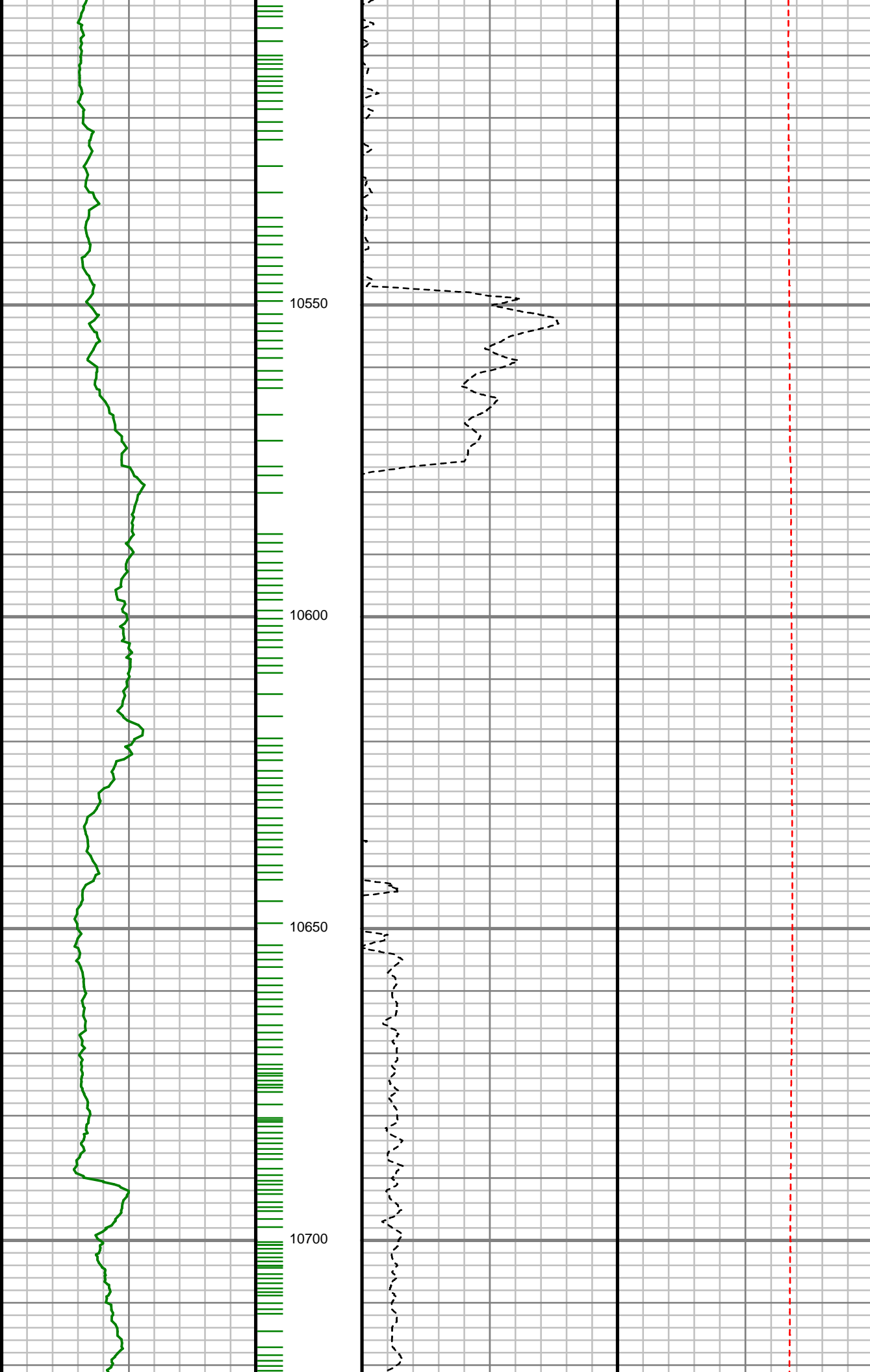
S: 113 MD: 10189.00 ft  
Inc: 89.87 deg Az:  
359.52 deg TVD:  
7028.98 ft



S: 114 MD: 10284.00 ft  
Inc: 89.56 deg Az:  
359.91 deg TVD:  
7029.45 ft

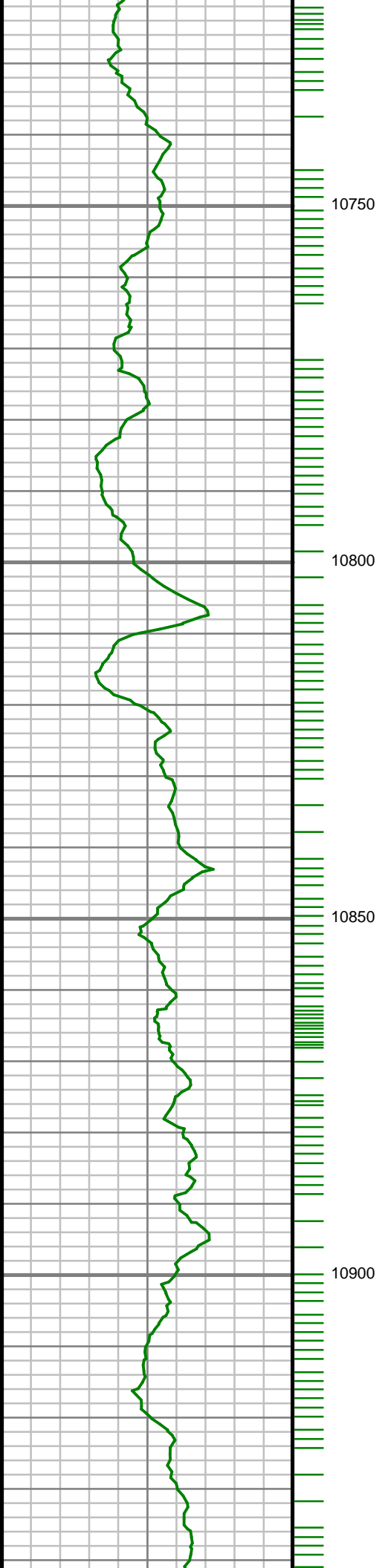
S: 115 MD: 10378.00 ft  
Inc: 90.51 deg Az:  
359.40 deg TVD:  
7029.40 ft

S: 116 MD: 10472.00 ft  
Inc: 89.83 deg Az:  
358.71 deg TVD:  
7029.12 ft



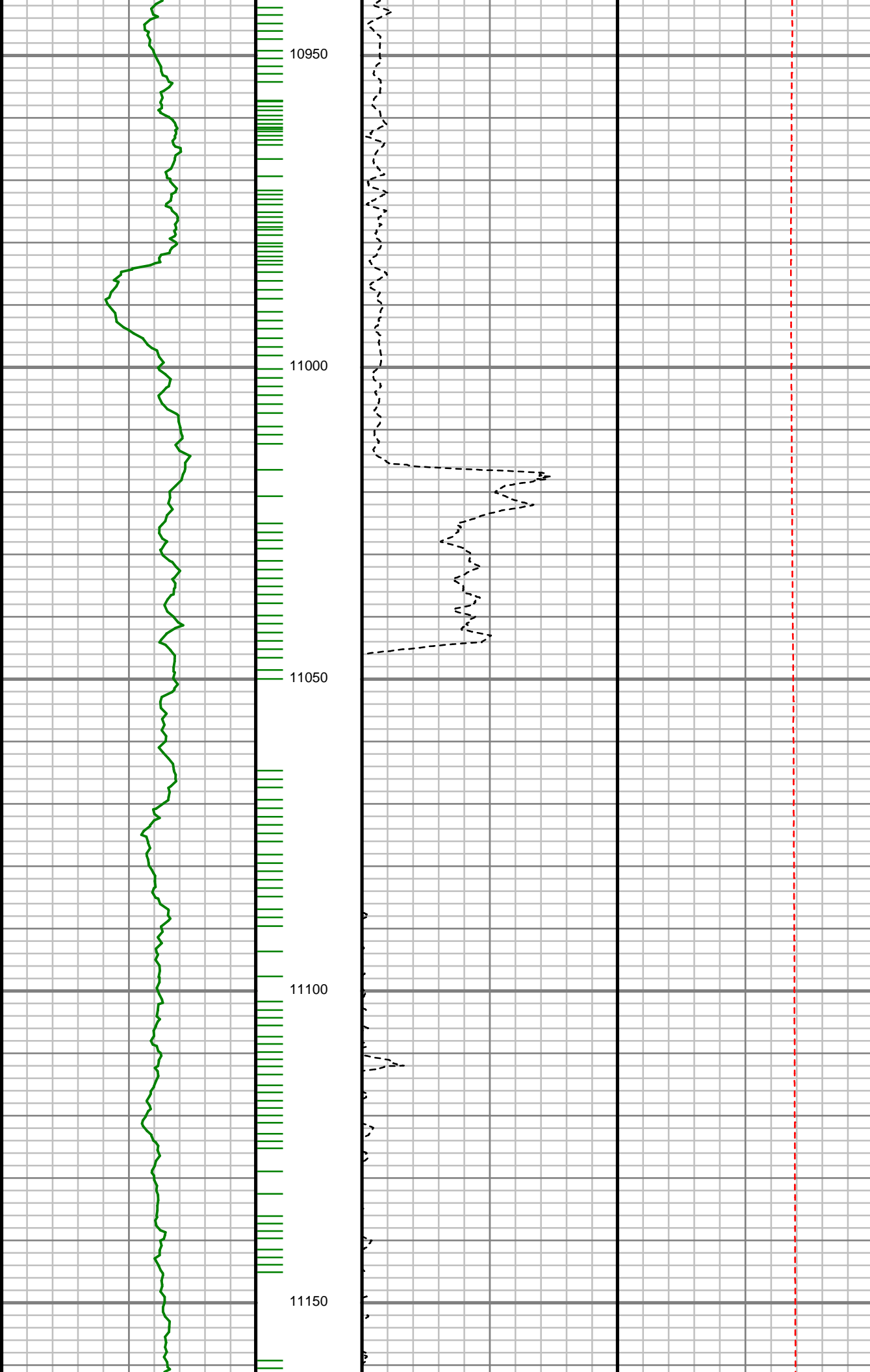
S: 117 MD: 10566.00 ft  
Inc: 89.56 deg Az:  
358.49 deg TVD:  
7029.62 ft

S: 118 MD: 10661.00 ft  
Inc: 90.30 deg Az:  
359.15 deg TVD:  
7029.73 ft



S: 119 MD: 10755.00 ft  
Inc: 89.87 deg Az:  
359.42 deg TVD:  
7029.59 ft

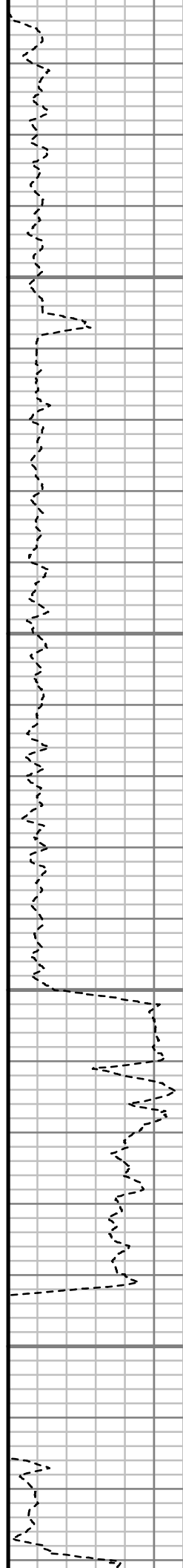
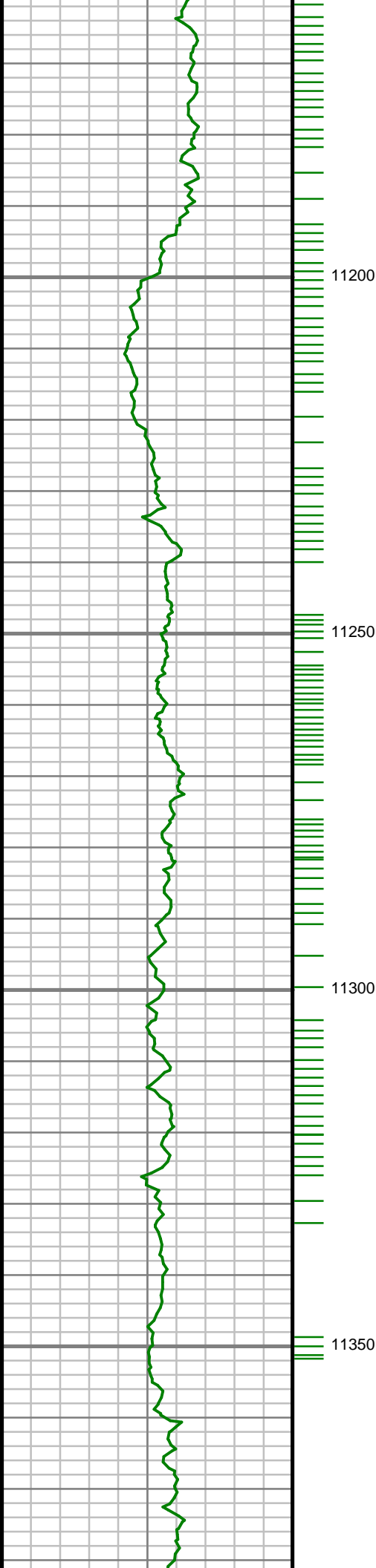
S: 120 MD: 10850.00 ft  
Inc: 88.89 deg Az: 1.02  
deg TVD: 7030.62 ft



S: 121 MD: 10944.00 ft  
Inc: 89.23 deg Az: 0.28  
deg TVD: 7032.17 ft

S: 122 MD: 11039.00 ft  
Inc: 88.05 deg Az: 0.47  
deg TVD: 7034.43 ft

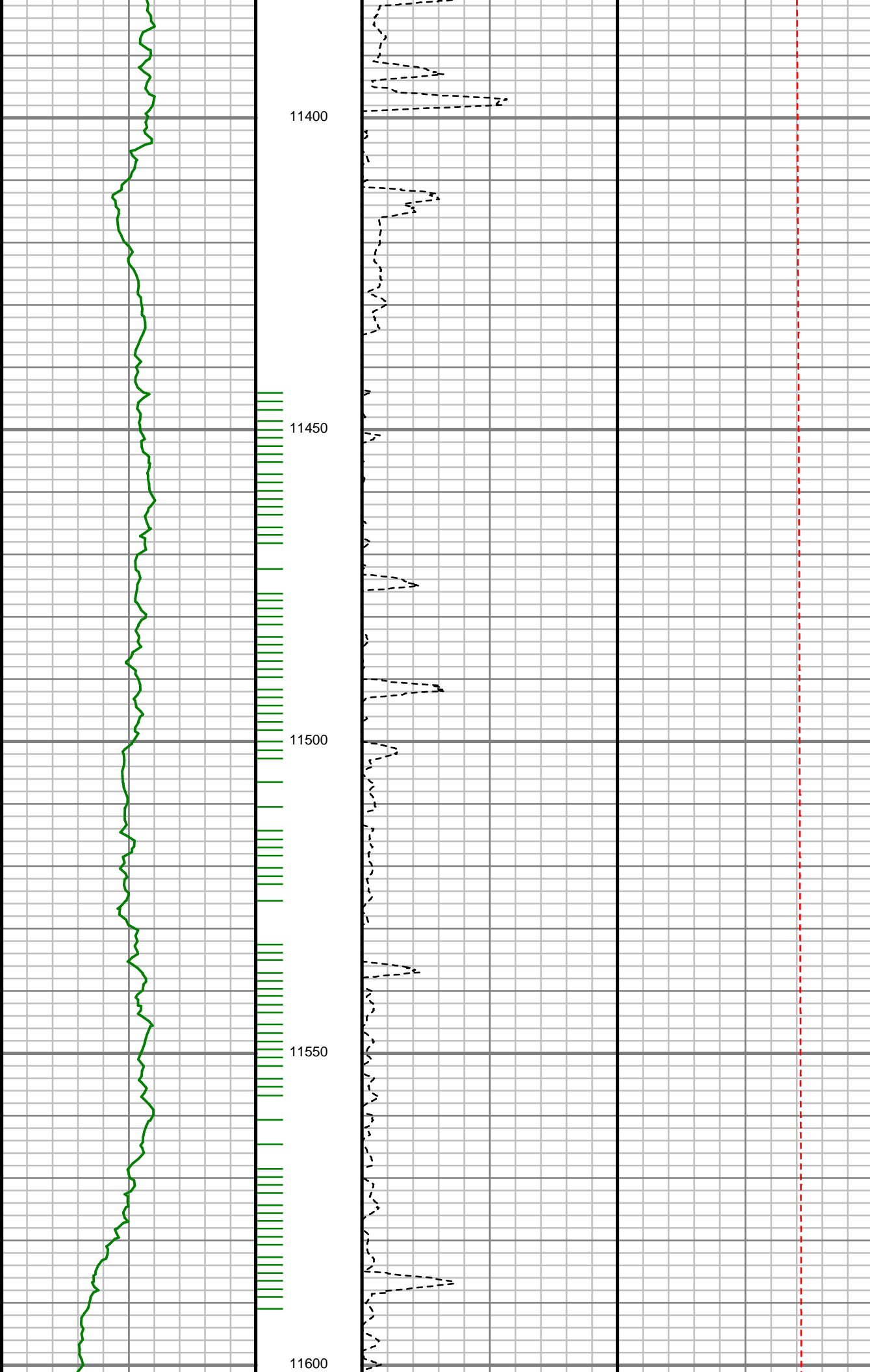
S: 123 MD: 11133.00 ft  
Inc: 88.86 deg Az: 0.98  
deg TVD: 7036.97 ft



S: 124 MD: 11227.00 ft  
Inc: 89.53 deg Az: 0.50  
deg TVD: 7038.29 ft

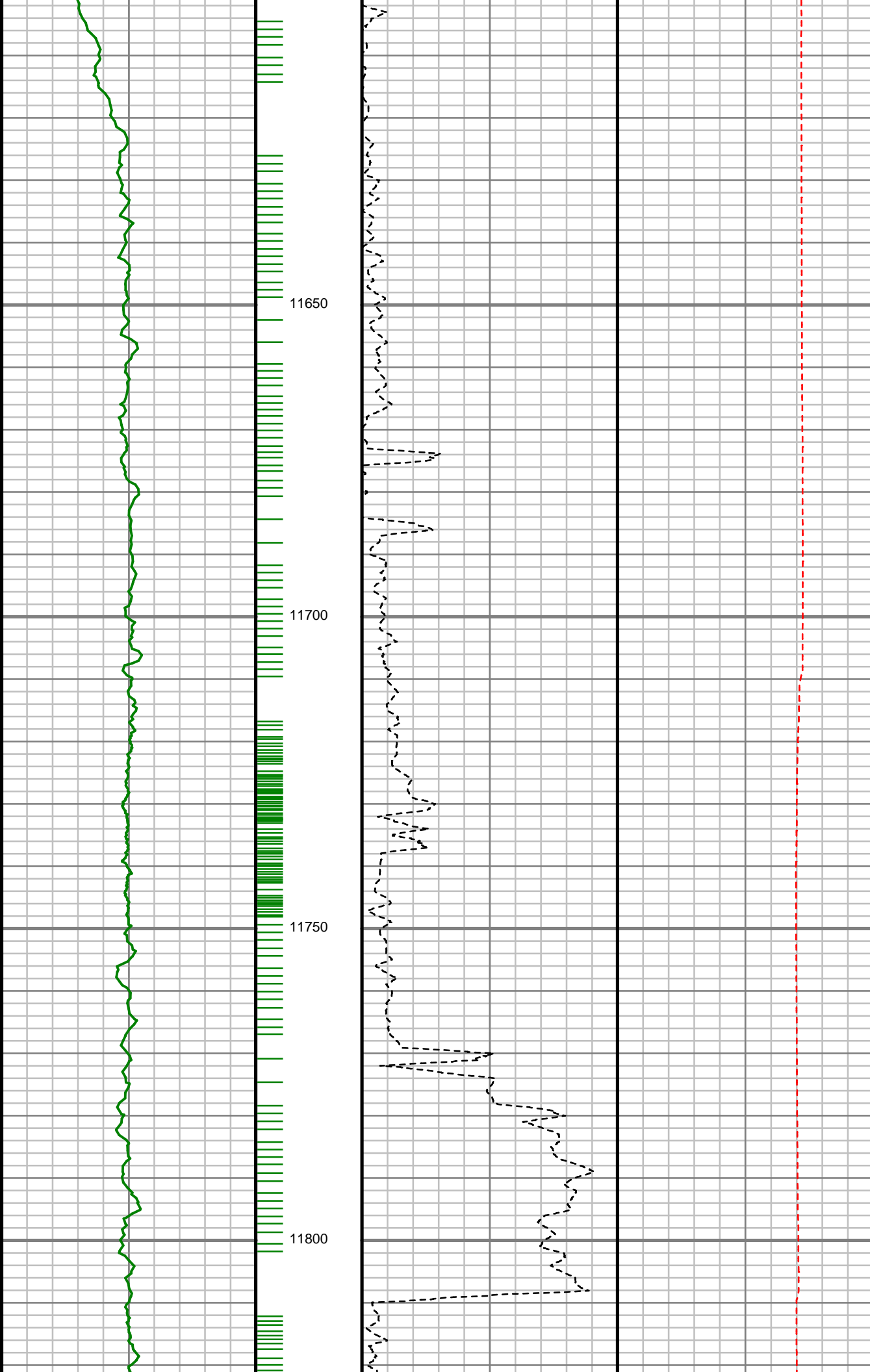
S: 125 MD: 11321.00 ft  
Inc: 88.96 deg Az: 0.22  
deg TVD: 7039.53 ft





S: 126 MD: 11416.00 ft  
Inc: 88.89 deg Az: 0.20  
deg TVD: 7041.31 ft

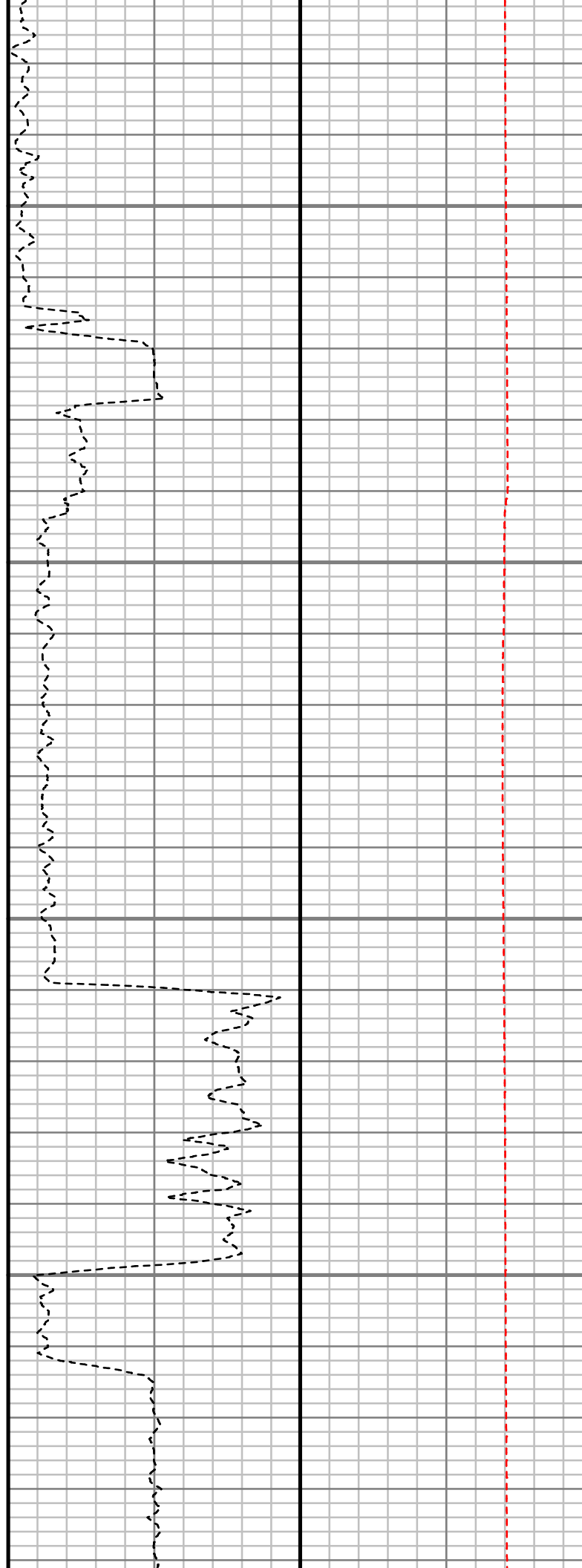
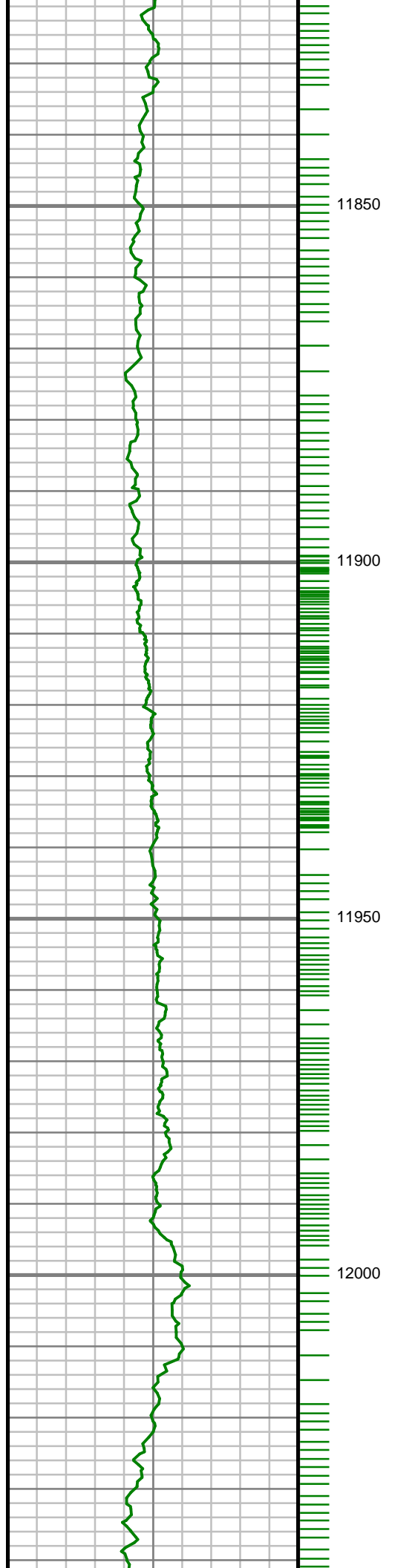
S: 127 MD: 11510.00 ft  
Inc: 89.87 deg Az: 0.26  
deg TVD: 7042.33 ft



S: 128 MD: 11604.00 ft  
Inc: 90.44 deg Az:  
359.78 deg TVD:  
7042.08 ft

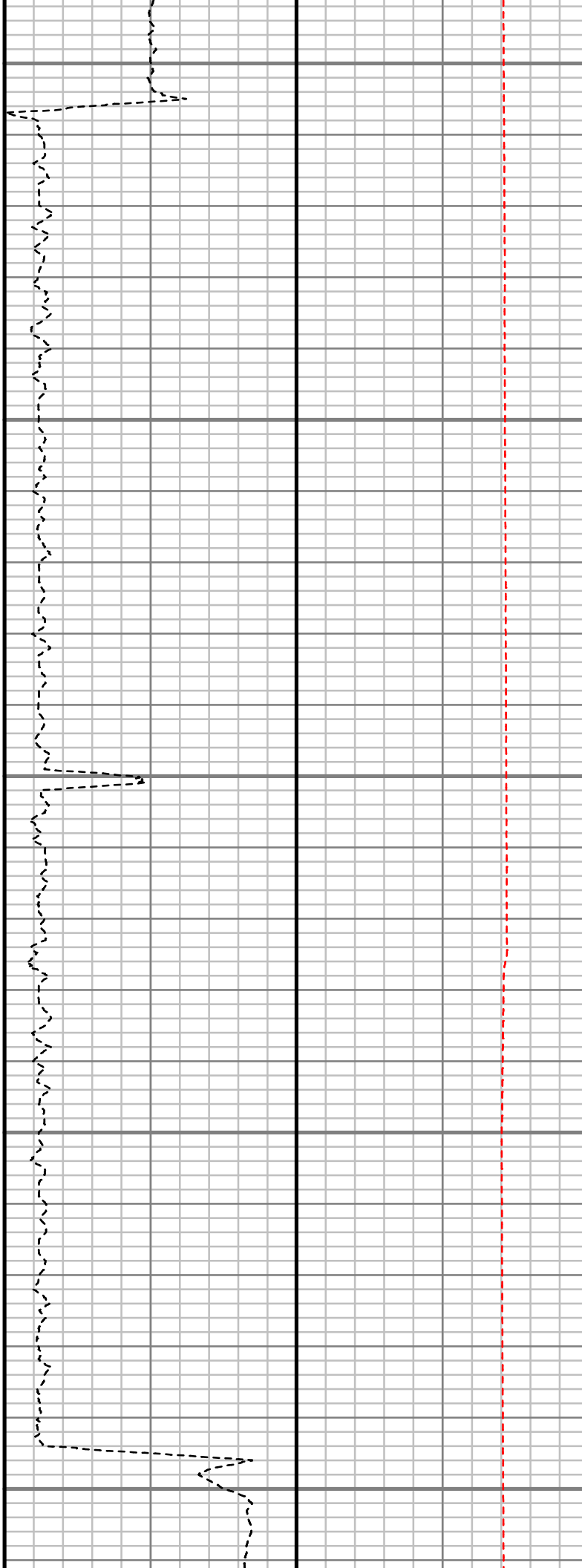
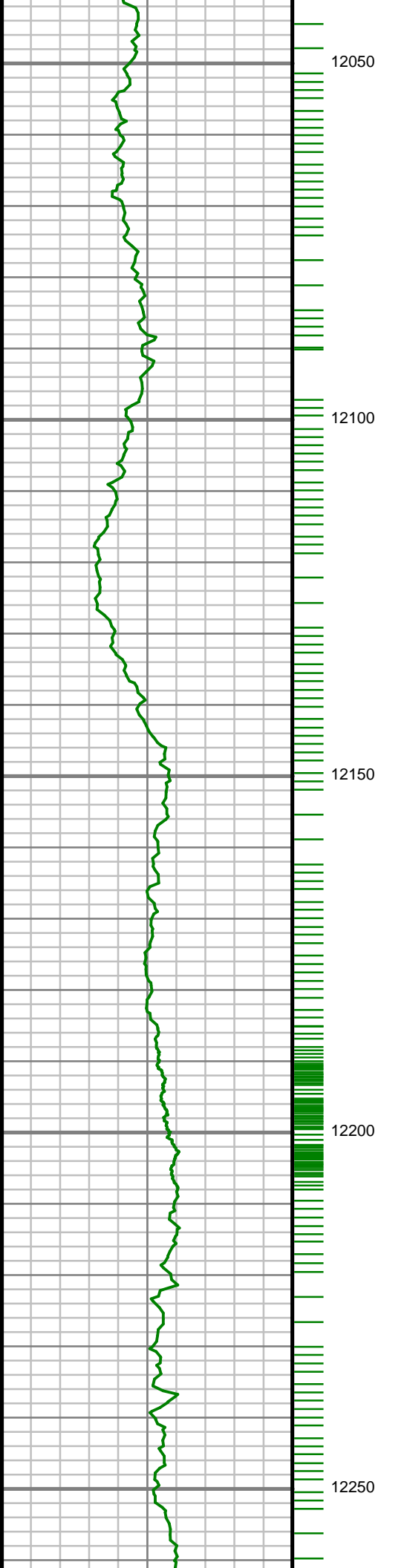
S: 129 MD: 11699.00 ft  
Inc: 91.38 deg Az:  
359.99 deg TVD:  
7040.58 ft

S: 130 MD: 11793.00 ft  
Inc: 90.60 deg Az: 0.59  
deg TVD: 7038.95 ft



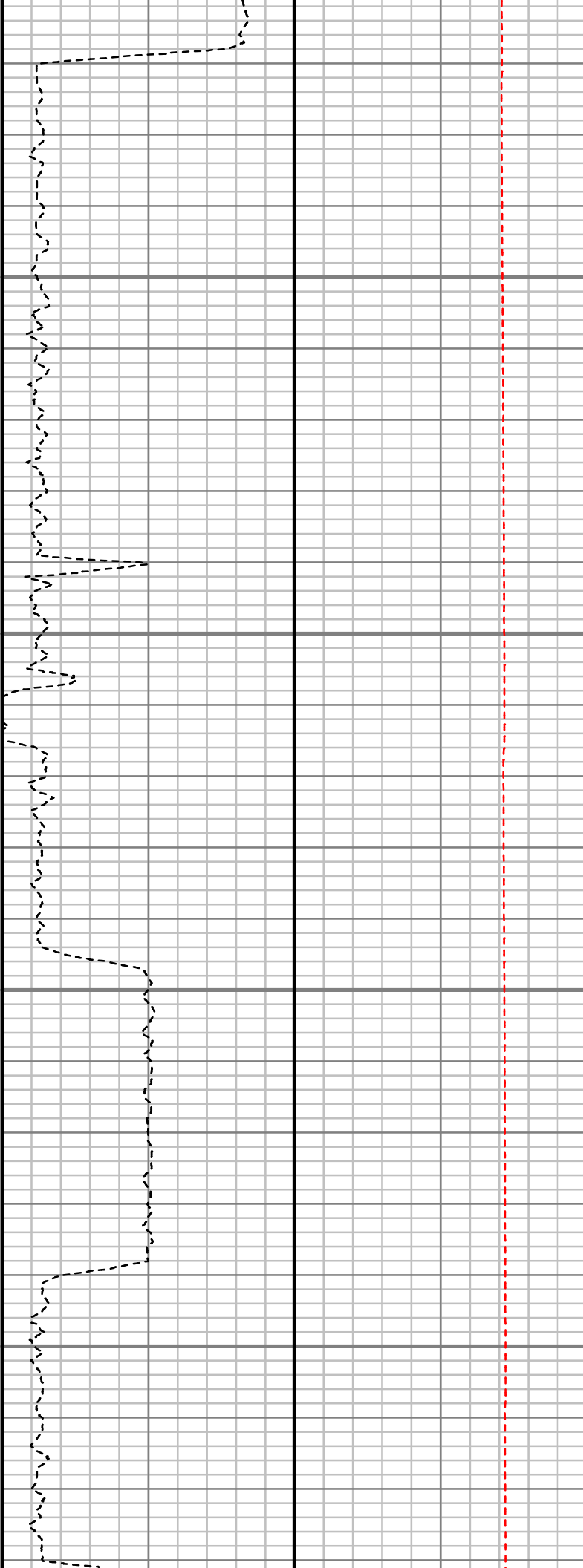
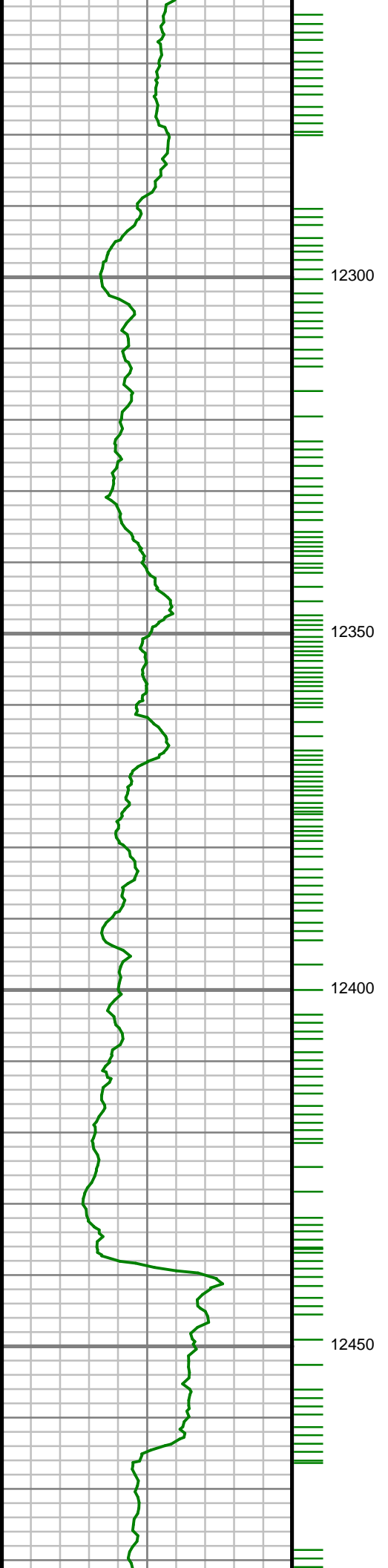
S: 131 MD: 11888.00 ft  
Inc: 90.77 deg Az: 0.51  
deg TVD: 7037.81 ft

S: 132 MD: 11982.00 ft  
Inc: 89.46 deg Az: 0.41  
deg TVD: 7037.61 ft



S: 133 MD: 12077.00 ft  
Inc: 89.56 deg Az: 0.41  
deg TVD: 7038.42 ft

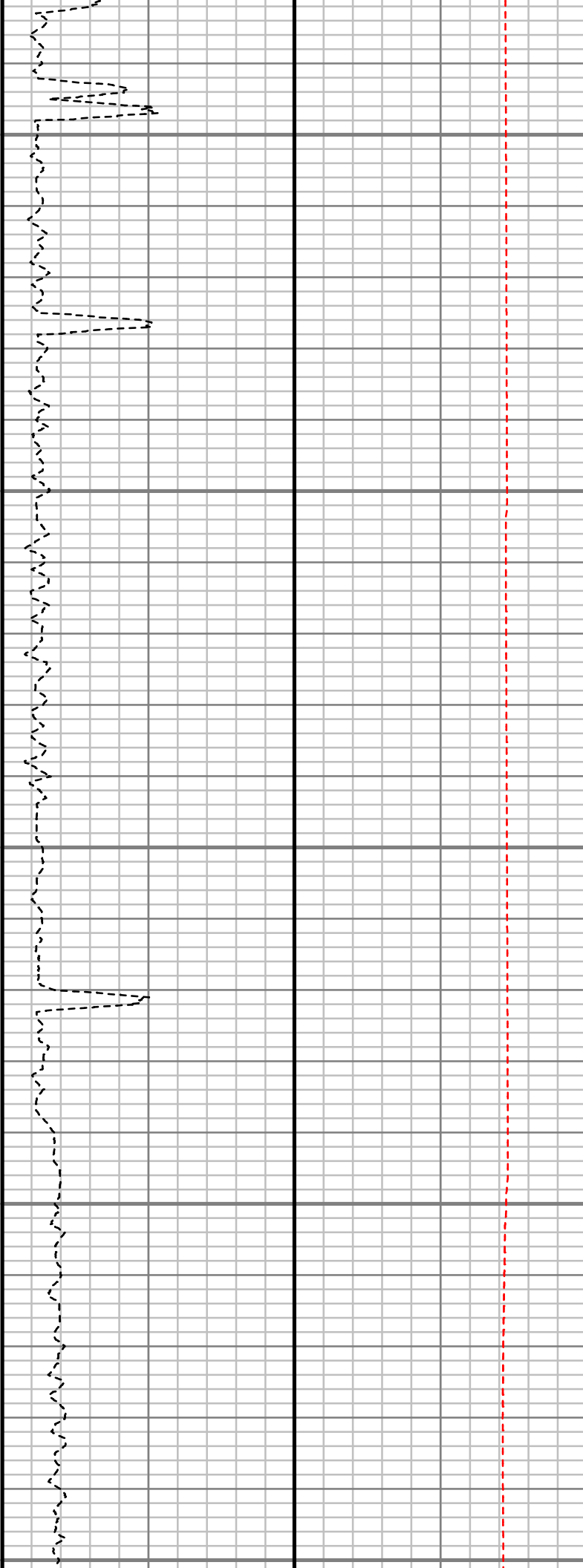
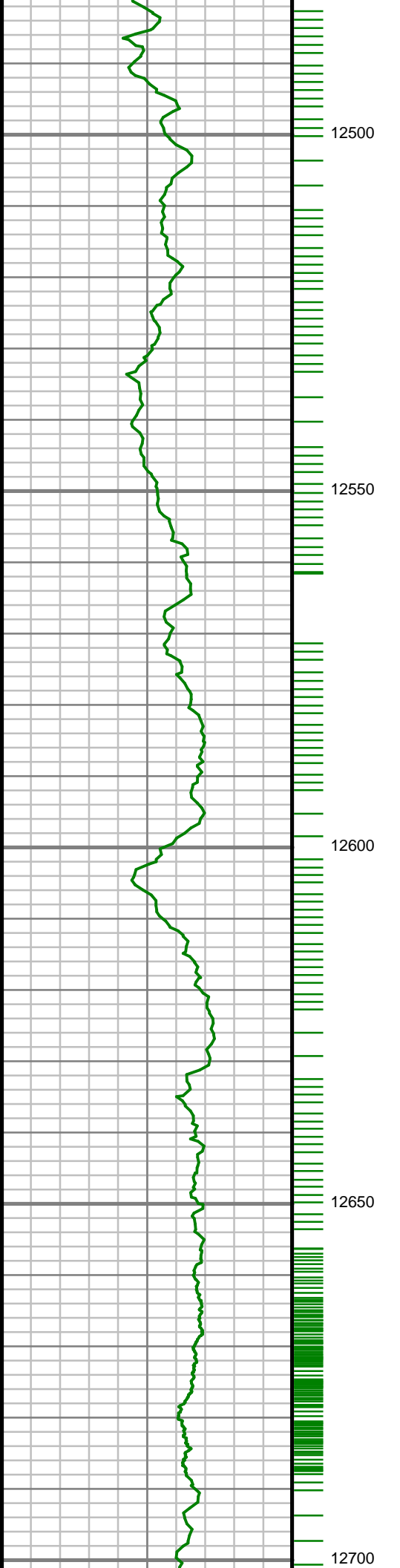
S: 134 MD: 12171.00 ft  
Inc: 90.24 deg Az: 0.05  
deg TVD: 7038.59 ft



S: 135 MD: 12266.00 ft  
Inc: 88.86 deg Az:  
358.41 deg TVD:  
7039.34 ft

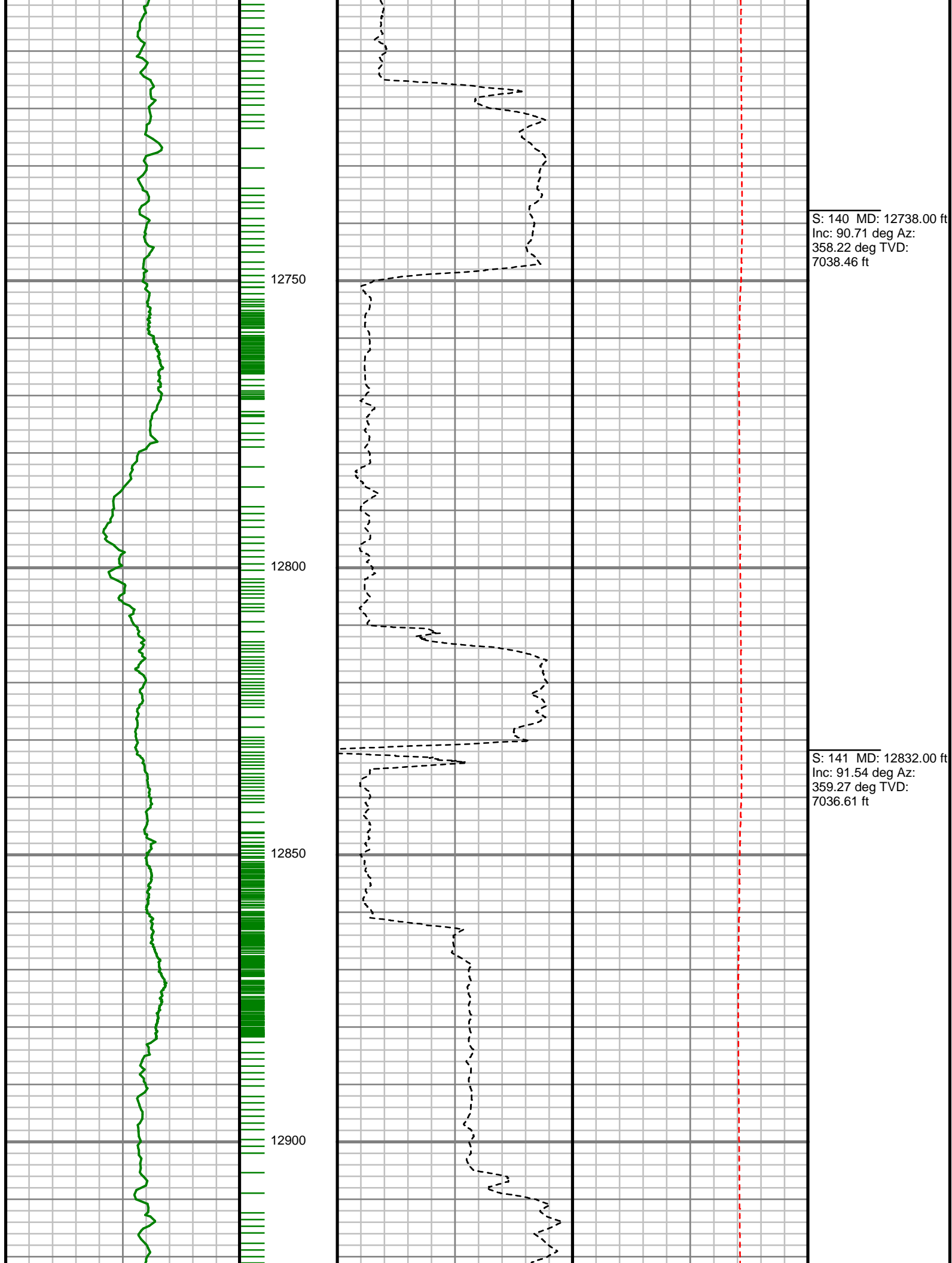
S: 136 MD: 12360.00 ft  
Inc: 89.19 deg Az:  
358.37 deg TVD:  
7040.93 ft

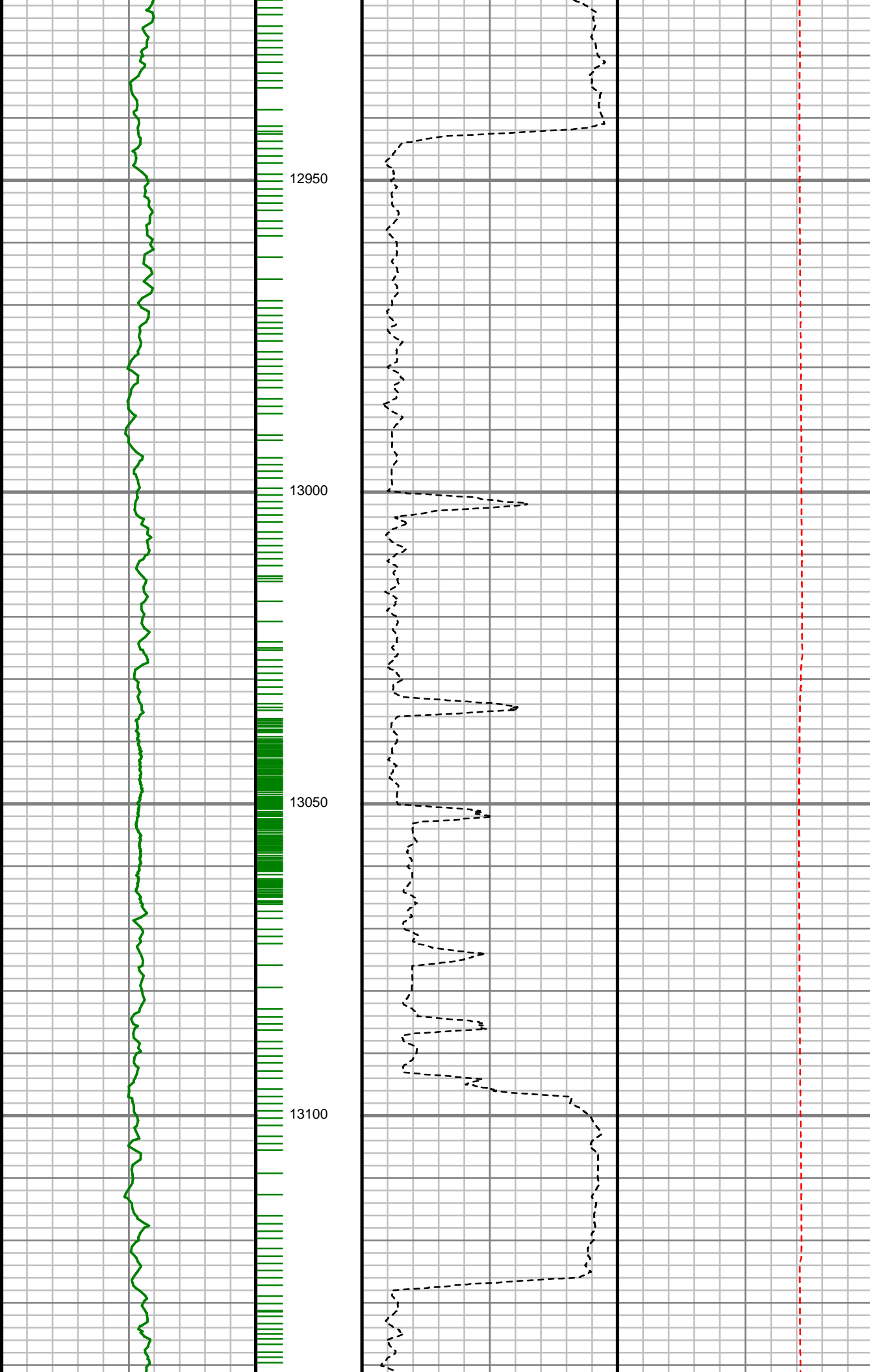
S: 137 MD: 12454.00 ft  
Inc: 89.50 deg Az:  
358.10 deg TVD:  
7042.01 ft



S: 138 MD: 12549.00 ft  
Inc: 90.67 deg Az:  
358.29 deg TVD:  
7041.87 ft

S: 139 MD: 12643.00 ft  
Inc: 91.38 deg Az:  
357.73 deg TVD:  
7040.19 ft



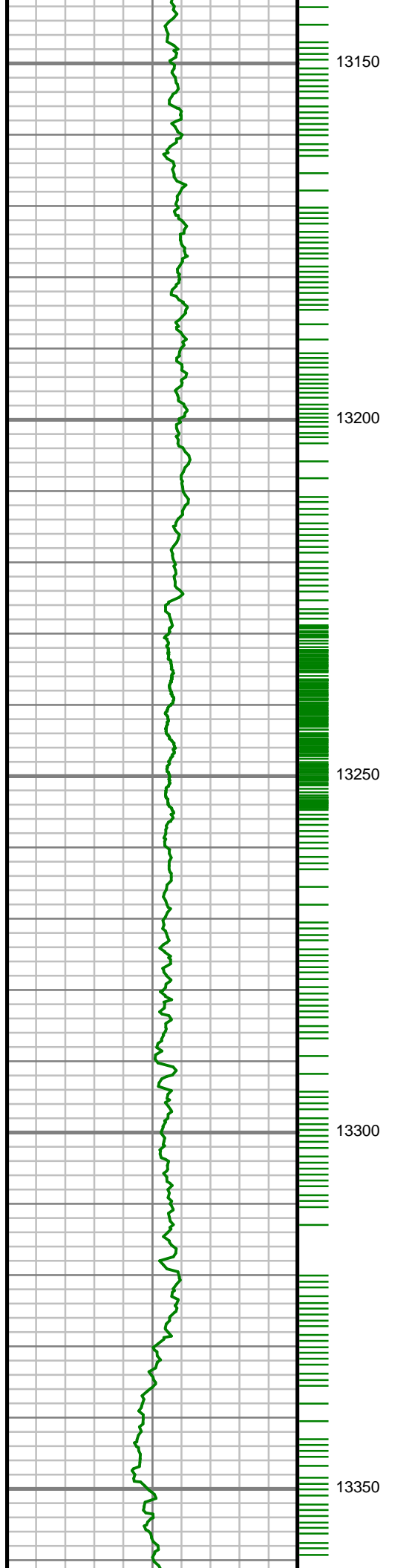


S: 142 MD: 12927.00 ft  
Inc: 90.40 deg Az:  
359.77 deg TVD:  
7035.00 ft

S: 143 MD: 13021.00 ft  
Inc: 90.57 deg Az:  
359.44 deg TVD:  
7034.20 ft

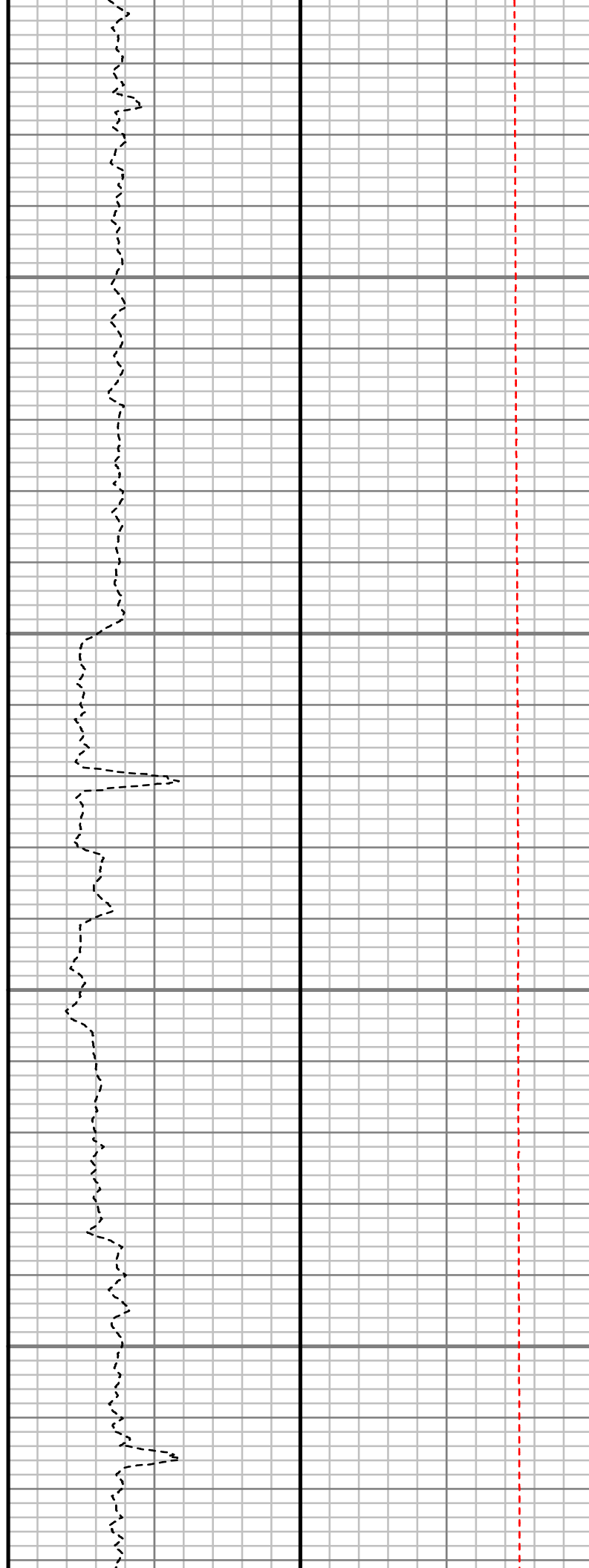
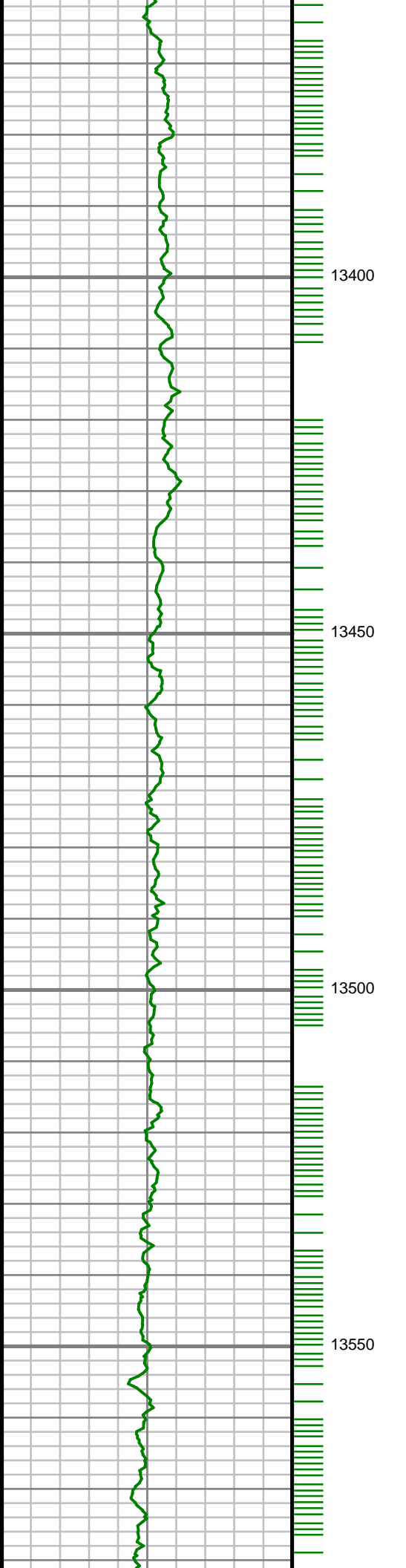
S: 144 MD: 13115.00 ft  
Inc: 88.76 deg Az:  
359.67 deg TVD:  
7034.75 ft





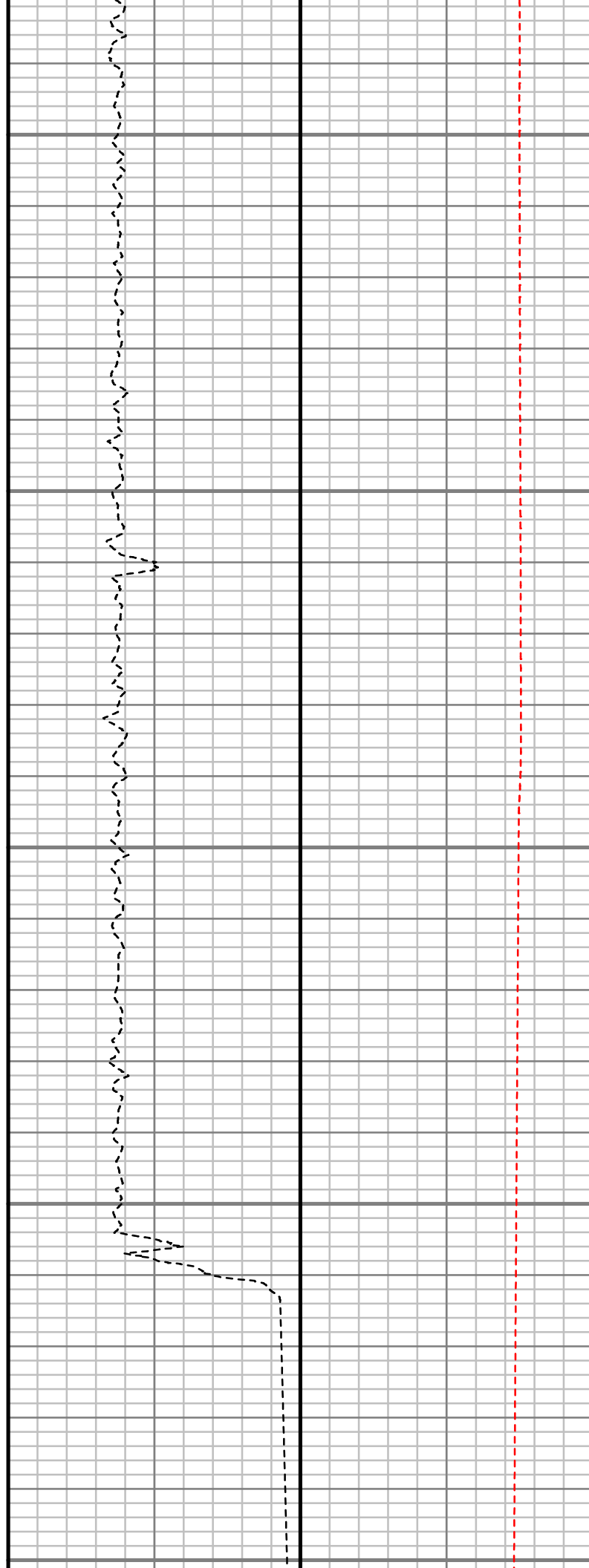
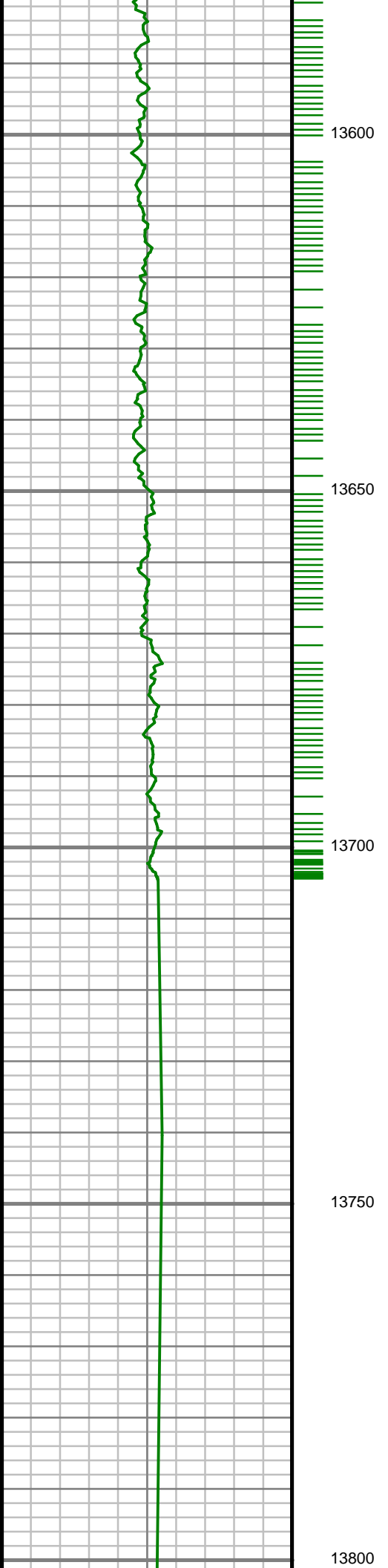
S: 145 MD: 13210.00 ft  
Inc: 89.40 deg Az:  
360.00 deg TVD:  
7036.28 ft

S: 146 MD: 13304.00 ft  
Inc: 88.52 deg Az: 0.40  
deg TVD: 7037.99 ft



S: 147 MD: 13398.00 ft  
Inc: 88.62 deg Az: 0.41  
deg TVD: 7040.33 ft

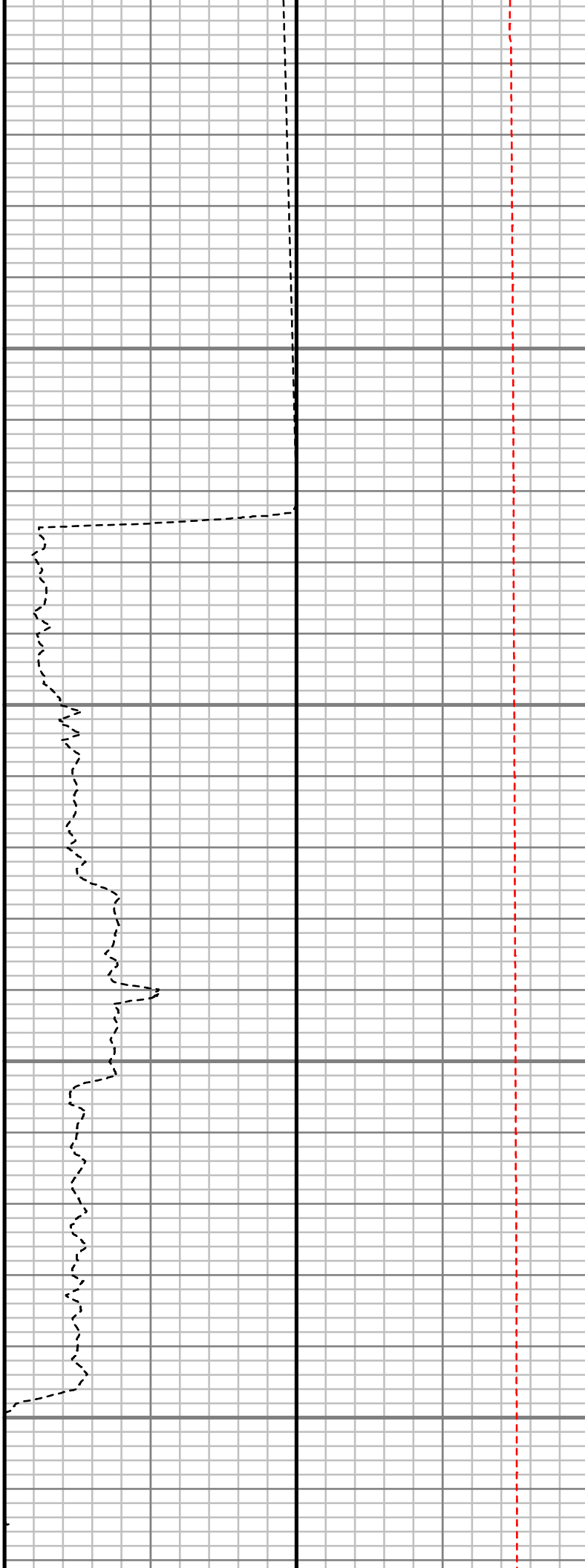
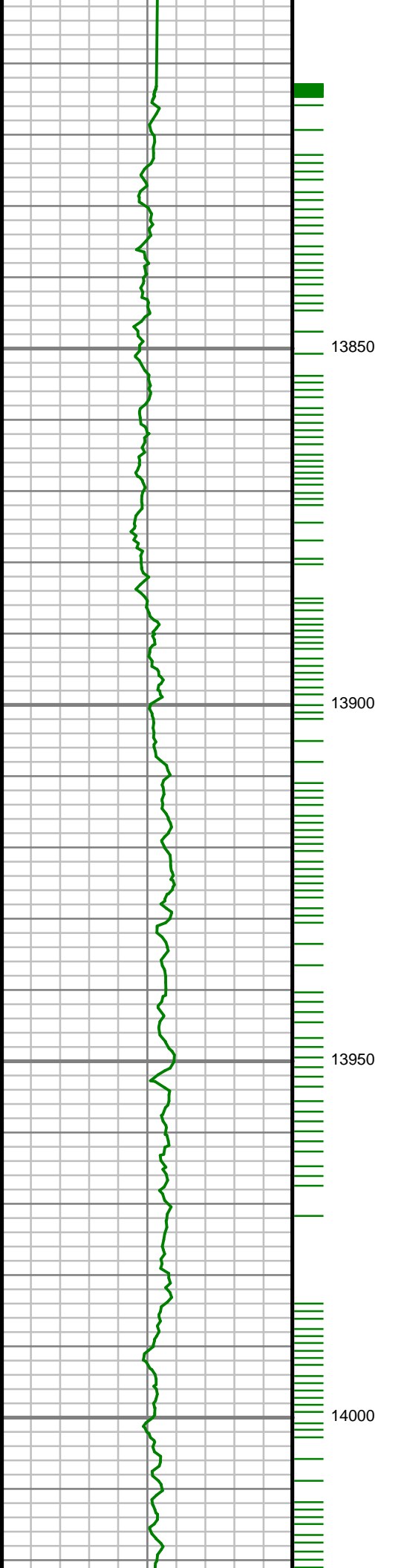
S: 148 MD: 13492.00 ft  
Inc: 89.26 deg Az:  
359.96 deg TVD:  
7042.07 ft



S: 149 MD: 13587.00 ft  
Inc: 90.07 deg Az:  
359.09 deg TVD:  
7042.62 ft

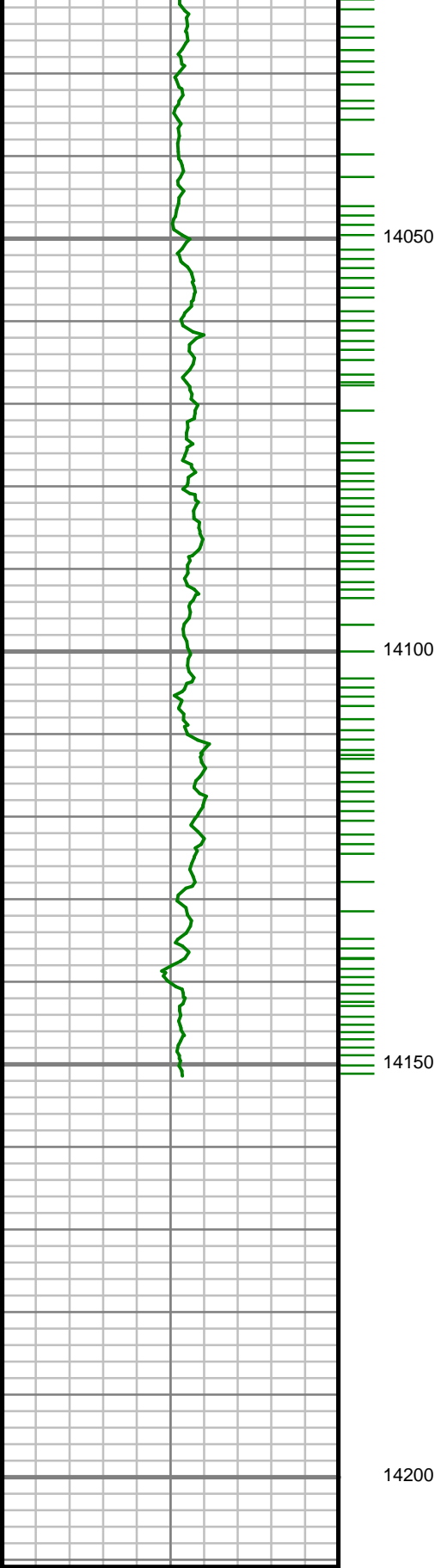
S: 150 MD: 13681.00 ft  
Inc: 90.81 deg Az:  
358.54 deg TVD:  
7041.91 ft

S: 151 MD: 13775.00 ft  
Inc: 89.16 deg Az:  
359.26 deg TVD:  
7041.94 ft



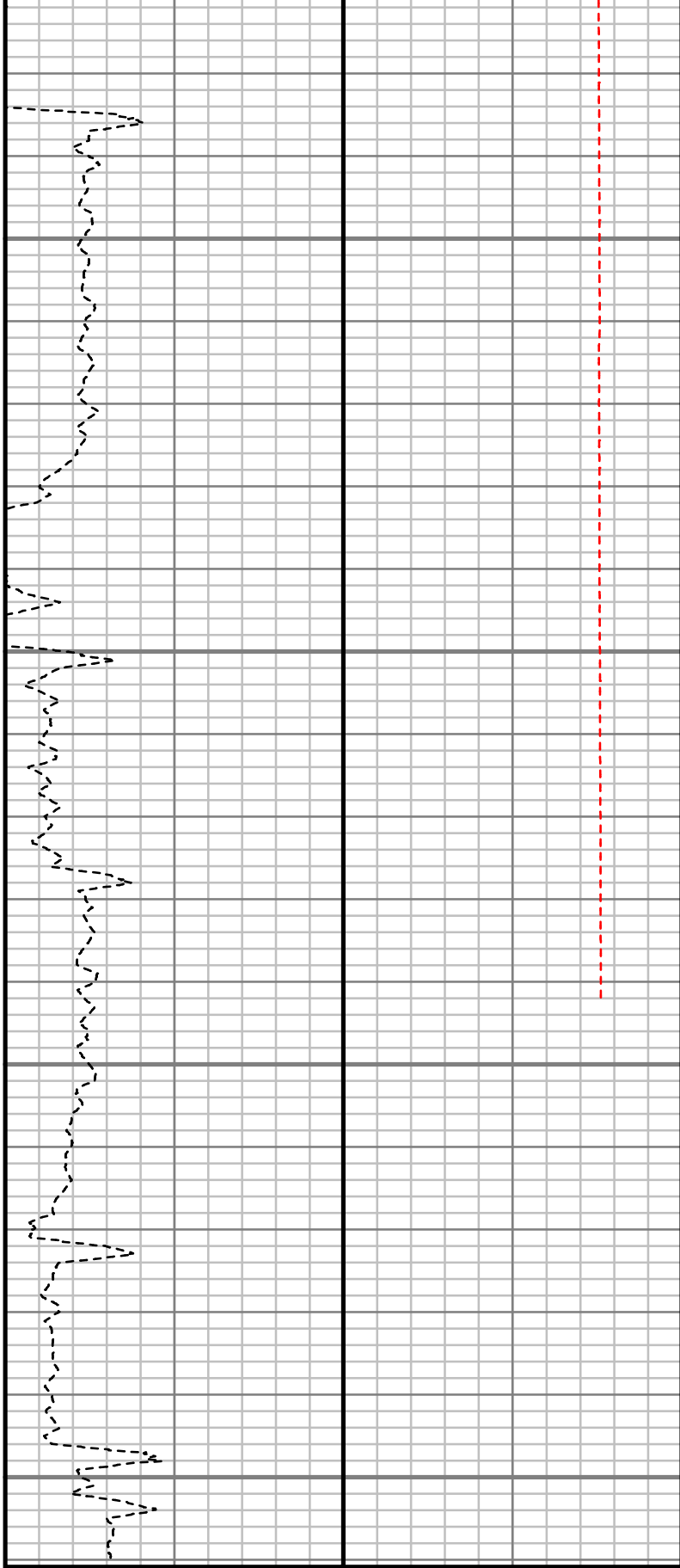
S: 152 MD: 13869.00 ft  
Inc: 88.66 deg Az:  
359.94 deg TVD:  
7043.73 ft

S: 153 MD: 13964.00 ft  
Inc: 89.36 deg Az:  
359.40 deg TVD:  
7045.37 ft



Gamma Ray (GR)		
0	Unit = aapi	150

MEASURED DEPTH  
1:240 (ft)



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

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

Comments
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S: 154 MD: 14058.00 ft  
Inc: 90.44 deg Az:  
359.49 deg TVD:  
7045.53 ft

S: 155 MD: 14140.00 ft  
Inc: 91.21 deg Az:  
359.23 deg TVD:  
7044.35 ft

# Survey Report

<b>Customer Name:</b>	ANADARKO PETROLEUM CORP.						
<b>Site Name:</b>	GITTLEIN 36-33HZ						
<b>Well Name:</b>	GITTLEIN 3N-28HZ						
<b>Survey:</b>	GITTLEIN 3N-28HZ						
<b>Survey Date:</b>	10/12/2013						
<b>Magnetic Declination:</b>	8.29 deg						
<b>North Reference:</b>	True North						
<b>Calculation Method:</b>	Minimum Curvature						
<b>Section (VS) Ref:</b>	0.00N (ft), 0.00E (ft), 0.00Azim (deg)						
<b>MD</b> ft	<b>Inc</b> deg	<b>Azim</b> deg	<b>TVD</b> ft	<b>VS</b> ft	<b>+N/-S</b> ft	<b>+E/-W</b> ft	<b>DLS</b> 7100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
100.00	0.10	341.52	100.00	0.08	0.08	-0.03	0.10
200.00	0.06	297.22	200.00	0.19	0.19	-0.10	0.07
300.00	0.07	151.02	300.00	0.16	0.16	-0.12	0.12
400.00	0.14	89.20	400.00	0.11	0.11	0.03	0.12
500.00	0.12	43.90	500.00	0.19	0.19	0.23	0.10
600.00	0.03	207.80	600.00	0.24	0.24	0.29	0.15
700.00	0.12	61.18	700.00	0.27	0.27	0.37	0.15
800.00	0.08	36.89	800.00	0.37	0.37	0.50	0.06

<b>MD</b> ft	<b>Inc</b> deg	<b>Azim</b> deg	<b>TVD</b> ft	<b>VS</b> ft	<b>+N/-S</b> ft	<b>+E/-W</b> ft	<b>DLS</b> 7100ft
900.00	0.35	19.22	900.00	0.72	0.72	0.64	0.27
1000.00	0.53	13.68	1000.00	1.45	1.45	0.85	0.18
1100.00	0.42	350.61	1099.99	2.26	2.26	0.90	0.22
1200.00	0.32	334.27	1199.99	2.88	2.88	0.72	0.14
1215.00	0.51	346.84	1214.99	2.98	2.98	0.69	1.40
1330.00	0.45	333.65	1329.99	3.88	3.88	0.37	0.11
1421.00	1.82	117.15	1420.97	3.55	3.55	1.50	2.41
1513.00	3.63	113.26	1512.86	1.73	1.73	5.47	1.98
1604.00	5.06	121.15	1603.60	-1.49	-1.49	11.56	1.70
1696.00	7.29	124.85	1695.06	-6.92	-6.92	19.83	2.46
1787.00	9.59	110.76	1785.08	-12.91	-12.91	31.66	3.38
1879.00	10.06	107.71	1875.73	-18.07	-18.07	46.48	0.76
1971.00	10.45	102.84	1966.26	-22.37	-22.37	62.27	1.03
2063.00	11.32	109.04	2056.61	-27.17	-27.17	78.95	1.58
2154.00	11.34	107.45	2145.83	-32.77	-32.77	95.92	0.34
2246.00	11.16	115.81	2236.07	-39.36	-39.36	112.57	1.78
2338.00	11.82	114.06	2326.23	-47.07	-47.07	129.18	0.82
2430.00	11.24	101.38	2416.39	-52.68	-52.68	146.58	2.82
2522.00	11.43	93.47	2506.60	-55.00	-55.00	164.46	1.70
2613.00	10.90	97.42	2595.88	-56.66	-56.66	182.00	1.02

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
2705.00	11.91	110.73	2686.08	-61.15	-61.15	199.51	3.05
2800.00	10.69	120.70	2779.24	-69.11	-69.11	216.25	2.42
2894.00	9.61	121.01	2871.77	-77.61	-77.61	230.48	1.14
2989.00	10.97	120.52	2965.24	-86.29	-86.29	245.06	1.43
3083.00	11.32	121.20	3057.47	-95.61	-95.61	260.66	0.40
3177.00	11.64	110.91	3149.60	-103.77	-103.77	277.41	2.20
3272.00	10.54	107.49	3242.82	-109.80	-109.80	294.64	1.34
3366.00	10.94	110.84	3335.18	-115.56	-115.56	311.18	0.79
3460.00	9.99	113.98	3427.61	-122.04	-122.04	326.96	1.18
3649.00	9.18	114.12	3613.97	-134.86	-134.86	355.70	0.43
3743.00	9.40	111.34	3706.74	-140.72	-140.72	369.69	0.53
3838.00	8.75	108.04	3800.55	-145.78	-145.78	383.79	0.88
3932.00	8.10	113.48	3893.54	-150.64	-150.64	396.66	1.09
4027.00	6.77	114.37	3987.74	-155.61	-155.61	407.90	1.41
4121.00	5.92	113.22	4081.16	-159.81	-159.81	417.40	0.91
4215.00	7.85	113.03	4174.48	-164.23	-164.23	427.76	2.05
4310.00	6.76	113.48	4268.71	-168.99	-168.99	438.86	1.14
4404.00	5.33	111.71	4362.18	-172.81	-172.81	447.99	1.53
4498.00	4.03	103.40	4455.87	-175.20	-175.20	455.26	1.56

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
4593.00	2.93	97.30	4550.69	-176.28	-176.28	460.91	1.22
4687.00	1.97	96.07	4644.60	-176.75	-176.75	464.90	1.02
4781.00	1.52	84.64	4738.56	-176.81	-176.81	467.75	0.60
4876.00	1.19	318.32	4833.55	-175.95	-175.95	468.34	2.55
4970.00	1.68	302.48	4927.52	-174.48	-174.48	466.53	0.67
5064.00	1.58	302.15	5021.48	-173.05	-173.05	464.27	0.11
5159.00	1.89	298.36	5116.44	-171.61	-171.61	461.78	0.34
5253.00	1.89	246.89	5210.39	-171.48	-171.48	459.00	1.74
5347.00	2.08	132.13	5304.36	-173.24	-173.24	458.84	3.56
5442.00	2.95	125.60	5399.27	-175.82	-175.82	462.11	0.96
5536.00	0.34	3.78	5493.23	-176.95	-176.95	464.10	3.34
5630.00	1.19	323.57	5587.22	-175.89	-175.89	463.54	1.02
5725.00	1.18	337.00	5682.20	-174.20	-174.20	462.57	0.29
5819.00	1.14	322.15	5776.18	-172.57	-172.57	461.61	0.32
5914.00	2.36	306.16	5871.14	-170.67	-170.67	459.46	1.36
6008.00	1.44	272.85	5965.09	-169.47	-169.47	456.72	1.49
6102.00	0.48	79.82	6059.08	-169.34	-169.34	455.92	2.03
6197.00	0.11	79.14	6154.08	-169.25	-169.25	456.40	0.39
6291.00	0.81	160.68	6248.08	-169.86	-169.86	456.70	0.85
6433.00	0.93	175.03	6390.06	-171.95	-171.95	457.14	0.18

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
6480.00	2.79	53.91	6437.04	-171.66	-171.66	458.09	7.16
6527.00	6.18	38.30	6483.89	-169.00	-169.00	460.59	7.61
6575.00	9.37	28.19	6531.45	-163.52	-163.52	464.04	7.19
6622.00	12.85	30.91	6577.56	-155.67	-155.67	468.53	7.48
6669.00	17.24	31.66	6622.94	-145.25	-145.25	474.87	9.37
6716.00	19.77	31.02	6667.50	-132.51	-132.51	482.62	5.39
6763.00	24.60	29.91	6711.01	-117.21	-117.21	491.60	10.31
6810.00	29.61	25.55	6752.84	-98.24	-98.24	501.50	11.47
6857.00	35.92	24.89	6792.34	-75.23	-75.23	512.32	13.45
6952.00	45.84	21.39	6864.09	-18.08	-18.08	536.54	10.71
7046.00	60.15	13.57	6920.58	53.39	53.39	558.54	16.59
7140.00	69.90	9.05	6960.24	136.84	136.84	575.09	11.25
7187.00	72.27	1.40	6975.49	181.07	181.07	579.12	16.19
7280.00	78.42	358.03	6999.02	270.99	270.99	578.64	7.48
7342.00	80.51	358.00	7010.36	331.90	331.90	576.53	3.37
7433.00	83.12	357.63	7023.31	421.90	421.90	573.09	2.90
7525.00	87.62	356.32	7030.74	513.45	513.45	568.25	5.09
7617.00	88.05	356.46	7034.22	605.20	605.20	562.47	0.49
7709.00	87.84	356.16	7037.52	696.95	696.95	556.55	0.40

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
7800.00	89.09	355.82	7039.95	787.69	787.69	550.18	1.42
7891.00	90.37	356.17	7040.38	878.47	878.47	543.82	1.46
7981.00	91.51	357.48	7038.90	968.31	968.31	538.84	1.93
8072.00	91.89	358.29	7036.20	1059.21	1059.21	535.48	0.99
8164.00	90.71	358.78	7034.12	1151.16	1151.16	533.13	1.39
8256.00	90.10	358.16	7033.47	1243.12	1243.12	530.67	0.94
8344.00	89.60	358.61	7033.70	1331.08	1331.08	528.20	0.77
8438.00	89.73	358.16	7034.25	1425.04	1425.04	525.55	0.50
8530.00	90.54	358.57	7034.04	1517.01	1517.01	522.92	0.98
8621.00	90.44	358.60	7033.26	1607.97	1607.97	520.67	0.12
8713.00	90.57	357.64	7032.45	1699.92	1699.92	517.65	1.06
8805.00	90.67	358.53	7031.45	1791.86	1791.86	514.57	0.98
8896.00	89.87	358.03	7031.03	1882.82	1882.82	511.84	1.04
8988.00	89.29	358.87	7031.70	1974.78	1974.78	509.34	1.10
9079.00	90.10	358.91	7032.18	2065.76	2065.76	507.58	0.89
9171.00	91.04	358.66	7031.27	2157.74	2157.74	505.63	1.06
9263.00	91.11	358.96	7029.54	2249.70	2249.70	503.73	0.33
9355.00	88.83	359.23	7029.59	2341.68	2341.68	502.27	2.50
9446.00	88.45	359.30	7031.75	2432.65	2432.65	501.10	0.42
9538.00	88.69	358.62	7034.05	2524.60	2524.60	499.44	0.78



MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
9650.00	90.34	359.16	7035.00	2636.58	2636.58	497.27	1.55
9722.00	90.27	359.33	7034.62	2708.57	2708.57	496.32	0.25
9814.00	90.97	358.96	7033.62	2800.55	2800.55	494.95	0.87
9906.00	90.87	359.75	7032.14	2892.53	2892.53	493.91	0.87
10000.00	90.77	0.10	7030.79	2986.52	2986.52	493.79	0.38
10095.00	90.77	359.92	7029.50	3081.51	3081.51	493.80	0.18
10189.00	89.87	359.52	7028.98	3175.51	3175.51	493.34	1.06
10284.00	89.56	359.91	7029.45	3270.51	3270.51	492.86	0.53
10378.00	90.51	359.40	7029.40	3364.51	3364.51	492.30	1.14
10472.00	89.83	358.71	7029.12	3458.49	3458.49	490.75	1.02
10566.00	89.56	358.49	7029.62	3552.46	3552.46	488.46	0.37
10661.00	90.30	359.15	7029.73	3647.44	3647.44	486.50	1.04
10755.00	89.87	359.42	7029.59	3741.43	3741.43	485.33	0.55
10850.00	88.89	1.02	7030.62	3836.42	3836.42	485.69	1.97
10944.00	89.23	0.28	7032.17	3930.40	3930.40	486.75	0.86
11039.00	88.05	0.47	7034.43	4025.37	4025.37	487.38	1.25
11133.00	88.86	0.98	7036.97	4119.33	4119.33	488.57	1.02
11227.00	89.53	0.50	7038.29	4213.31	4213.31	489.78	0.88
11321.00	88.96	0.22	7039.53	4307.30	4307.30	490.37	0.67

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
11416.00	88.89	0.20	7041.31	4402.28	4402.28	490.72	0.07
11510.00	89.87	0.26	7042.33	4496.28	4496.28	491.10	1.04
11604.00	90.44	359.78	7042.08	4590.27	4590.27	491.14	0.79
11699.00	91.38	359.99	7040.58	4685.26	4685.26	490.95	1.01
11793.00	90.60	0.59	7038.95	4779.24	4779.24	491.43	1.04
11888.00	90.77	0.51	7037.81	4874.23	4874.23	492.34	0.20
11982.00	89.46	0.41	7037.61	4968.23	4968.23	493.09	1.40
12077.00	89.56	0.41	7038.42	5063.22	5063.22	493.78	0.11
12171.00	90.24	0.05	7038.59	5157.22	5157.22	494.15	0.81
12266.00	88.86	358.41	7039.34	5252.20	5252.20	492.88	2.26
12360.00	89.19	358.37	7040.93	5346.15	5346.15	490.23	0.36
12454.00	89.50	358.10	7042.01	5440.10	5440.10	487.33	0.43
12549.00	90.67	358.29	7041.87	5535.05	5535.05	484.34	1.25
12643.00	91.38	357.73	7040.19	5628.98	5628.98	481.07	0.96
12738.00	90.71	358.22	7038.46	5723.90	5723.90	477.72	0.88
12832.00	91.54	359.27	7036.61	5817.86	5817.86	475.66	1.43
12927.00	90.40	359.77	7035.00	5912.84	5912.84	474.87	1.31
13021.00	90.57	359.44	7034.20	6006.84	6006.84	474.22	0.40
13115.00	88.76	359.67	7034.75	6100.83	6100.83	473.48	1.95
13210.00	89.40	0.00	7036.28	6195.81	6195.81	473.21	0.76

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	7100ft
13304.00	88.52	0.40	7037.99	6289.80	6289.80	473.53	1.03
13398.00	88.62	0.41	7040.33	6383.77	6383.77	474.20	0.11
13492.00	89.26	359.96	7042.07	6477.75	6477.75	474.51	0.83
13587.00	90.07	359.09	7042.62	6572.74	6572.74	473.73	1.25
13681.00	90.81	358.54	7041.91	6666.72	6666.72	471.79	0.98
13775.00	89.16	359.26	7041.94	6760.70	6760.70	469.99	1.91
13869.00	88.66	359.94	7043.73	6854.68	6854.68	469.33	0.90
13964.00	89.36	359.40	7045.37	6949.66	6949.66	468.78	0.93
14058.00	90.44	359.49	7045.53	7043.65	7043.65	467.87	1.15
14140.00	91.21	359.23	7044.35	7125.64	7125.64	466.96	0.99

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

5" = 100' FEET MD