



GAMMA RAY

5" = 100' MD

COMPANY : CRESTONE PEAK WELL : ECHEVERRIA 2K-2H-D267 FIELD : DJ BASIN COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A UWI :				COMPANY : CRESTONE PEAK WELL : ECHEVERRIA 2K-2H-D267 FIELD : DJ BASIN COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A UWI :			
DEPTH REF. : RKB REF. HEIGHT : 28.000 ft GROUND LEVEL : 4881.000 ft				RKB to Ground Level G.L. to MEAN SEA LEVEL			
BOREHOLE RECORD				DEVIATION RECORD			
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft	OTHER SERVICES	
8 1/2	2361	12425	18-18	2484	6718	DIRECTIONAL	
			18-90	6718	8027	ROP	
			90-90	8027	12425	EYE TEMP	
CASING RECORD							
CASING SIZE in	FROM ft	TO ft					
5.5	0	12412					
DRILLING CO. : ENSIGN RIG : 142 LMD UNIT NO. : KIT ELECTFEDISTRICT : GRAND JUNCTION SPUD DATE : 03/21/2019 LMD START DATE : 03/21/2019 LMD END DATE : 03/27/2019 TOTAL DEPTH : 12425 ft							

Run Data						
RUN NUMBER	1	2	3			
START DATE	03/21/2019	03/24/2019	03/25/2019			
START TIME	16:00	15:30	15:30			
END DATE	03/24/2019	03/25/2019	03/27/2019			
END TIME	15:00	15:00	10:00			
DEPTH IN (ft)	2376	7463	8084			
DEPTH OUT (ft)	7463	8084	12425			
LOG TOP (ft)	2376	7412	8034			
LOG BOTTOM (ft)	7412	8034	12377			
HOLE SIZE (in)	8 1/2	8 1/2	8 1/2			
MUD DATA @ (ft)	7463	8084	11,140			
MUD TYPE	NEO FLO	NEO FLO	NEO FLO			
DENSITY (lb / gal)	10.00	10.14	10.1			
VISCOSITY (s / qt)	45	46	43			
pH	-	-	-			
FLUID LOSS (cm3 / 30)	14.4	14.6	15.2			
SALINITY (ppm)	-	-	-			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	165	180	232			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	JAMES BAASSIRI	JAMES BAASSIRI	JAMES BAASSIRI			
LWD ENGINEER #2	ROBERT CUEVAS	ROBERT CUEVAS	ROBERT CUEVAS			
LWD ENGINEER #3						
LOG WITNESS #1						
LOG WITNESS #2						

Remarks

CRESTONE PEAK PRODUCTION AFE#

SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.017383

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 TOTAL CURVE

FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE

RUN #1: MP / GAMMA RAY

SENSORS S/N: CONTROLLER=3069 / MWD EYE=1676 / GAMMA RAY=1387

SENSOR OFFSETS (FT.): CONTROLLER=69.00 / MWD EYE=60.26 / GAMMA RAY=51.28

RUN #2: MP / GAMMA RAY

SENSORS S/N: CONTROLLER=247 / MWD EYE=1179 / GAMMA RAY=1476

SENSOR OFFSETS (FT.): CONTROLLER=66.14 / MWD EYE=56.97 / GAMMA RAY=47.99

RUN #3: MP / GAMMA RAY

SENSORS S/N: CONTROLLER=247 / MWD EYE=1179 / GAMMA RAY=1476

SENSOR OFFSETS (FT.): CONTROLLER=67.29 / MWD EYE=58.12 / GAMMA RAY=49.14

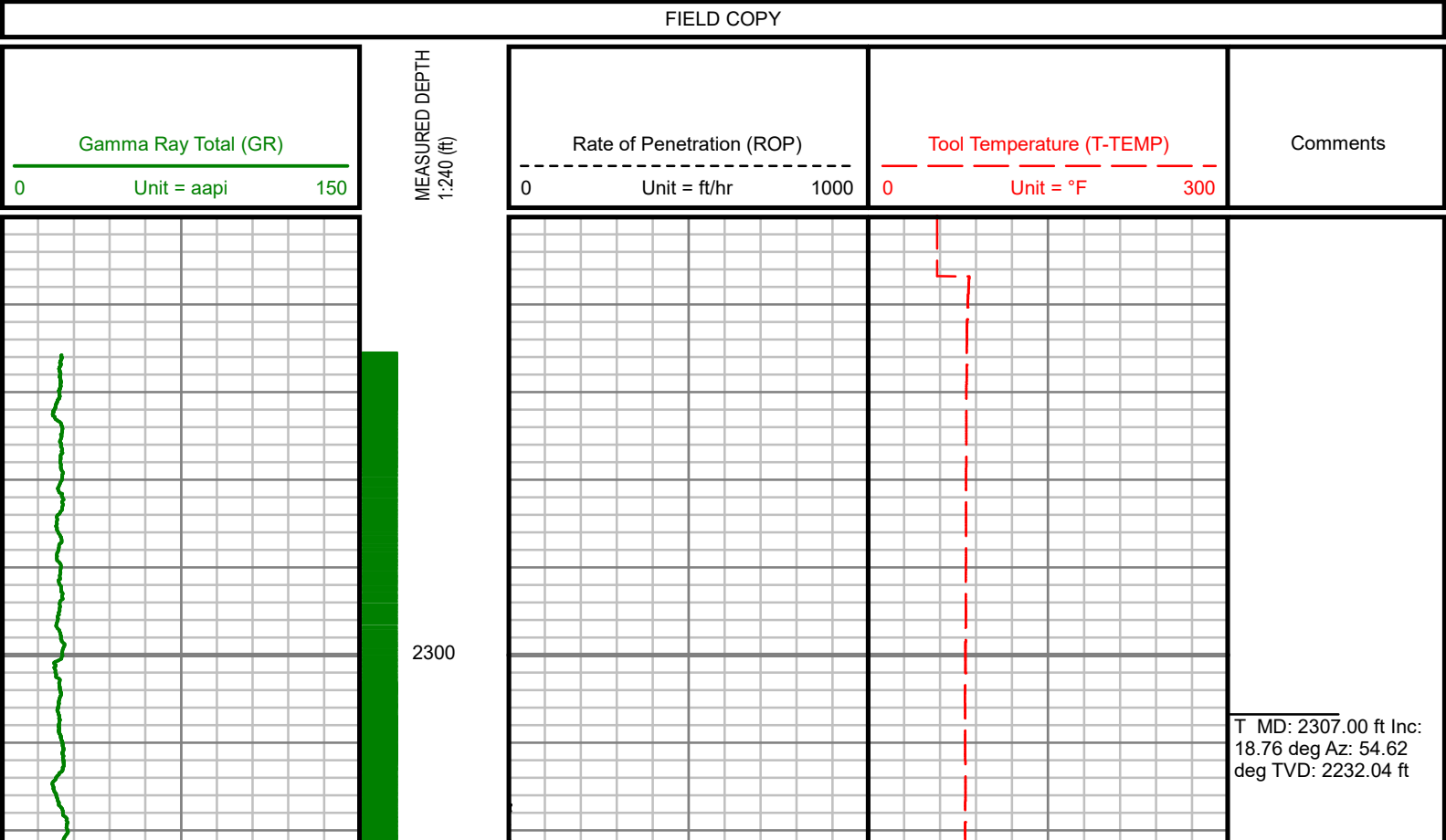
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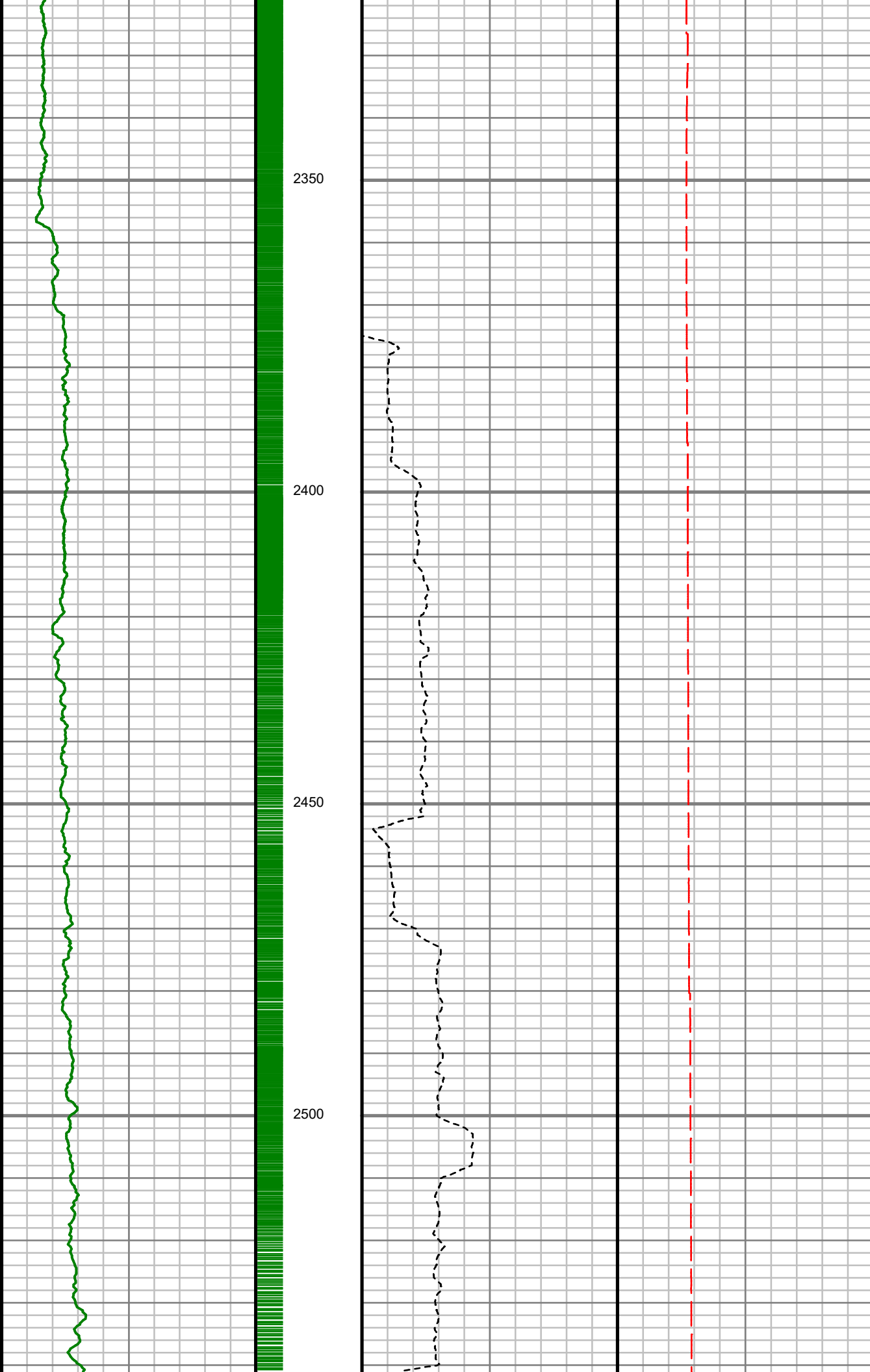
GR = GAMMA RAY TOTAL

ROP = RATE OF PENETRATION

T-TEMP = TOOL TEMPERATURE

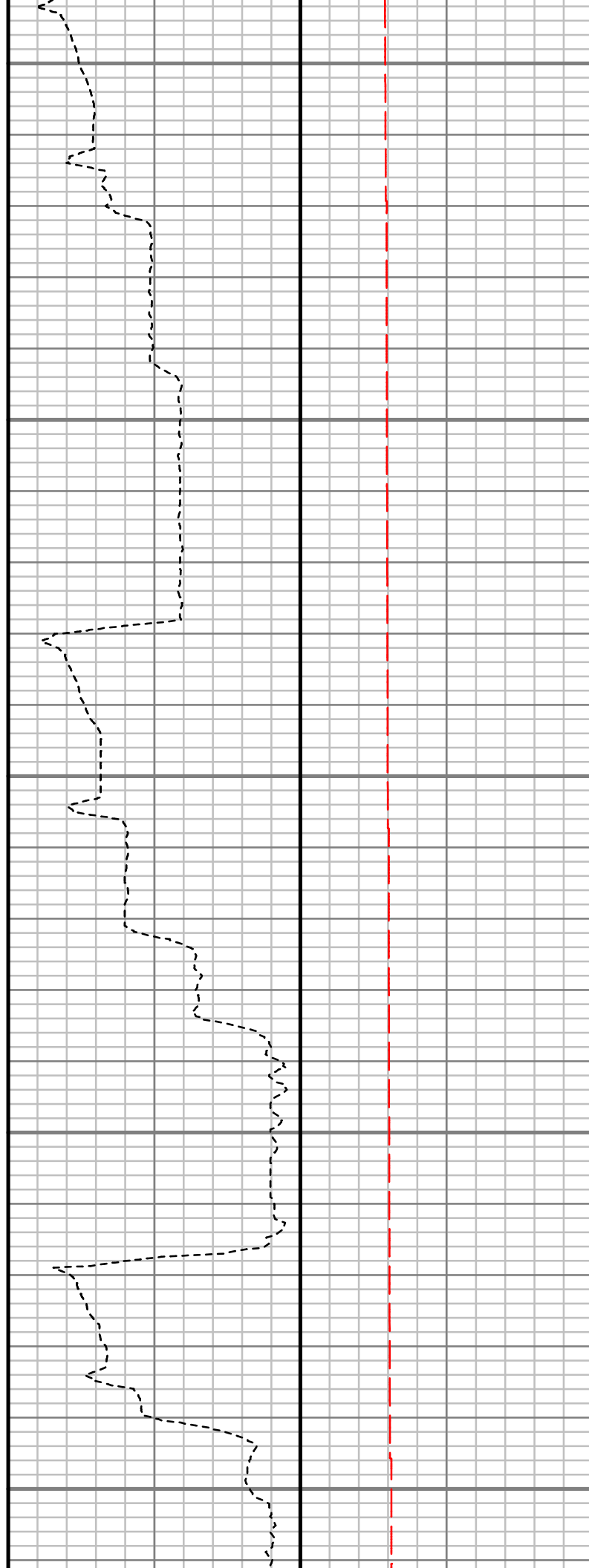
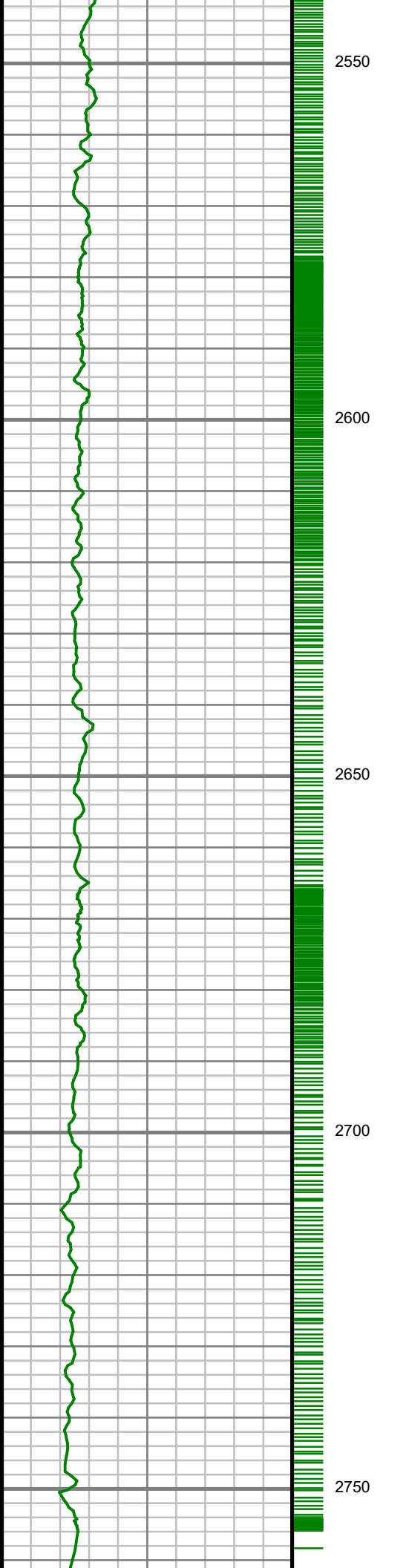
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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: 1 MD: 2394.00 ft
Inc: 17.42 deg Az:
54.53 deg TVD:
2314.74 ft

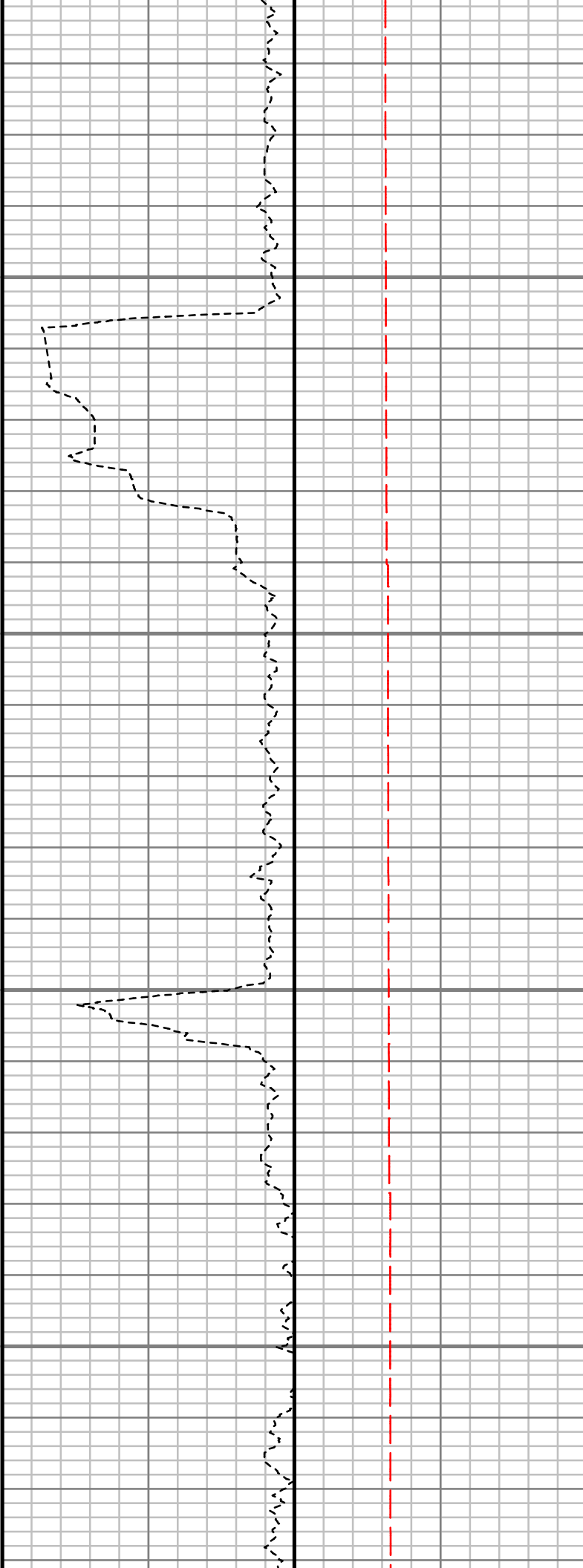
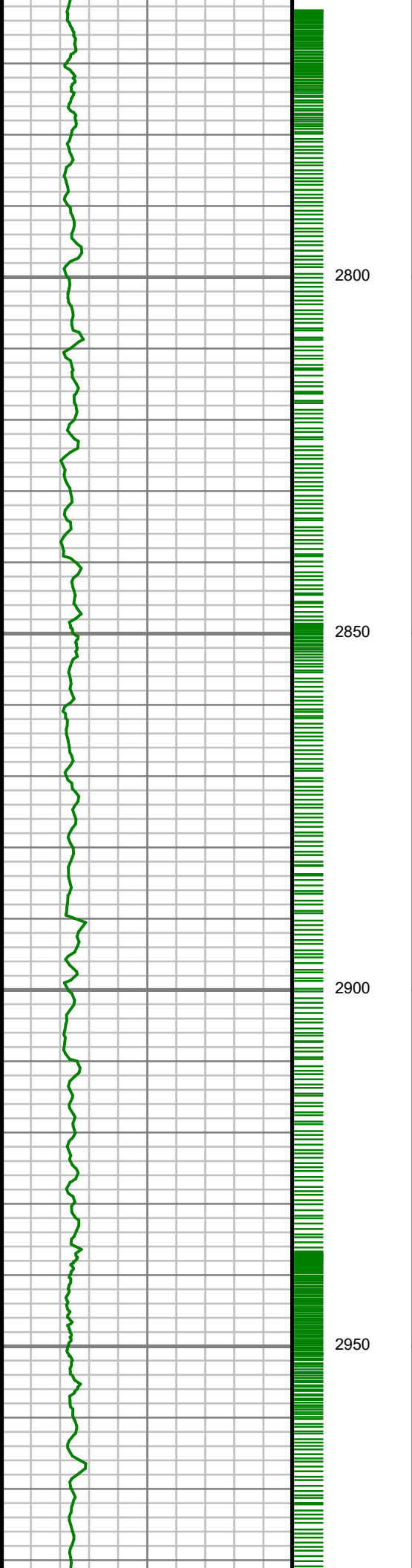
S: 2 MD: 2483.00 ft
Inc: 17.41 deg Az:
52.80 deg TVD:
2399.66 ft



S: 3 MD: 2572.00 ft
Inc: 18.16 deg Az:
55.47 deg TVD:
2484.40 ft

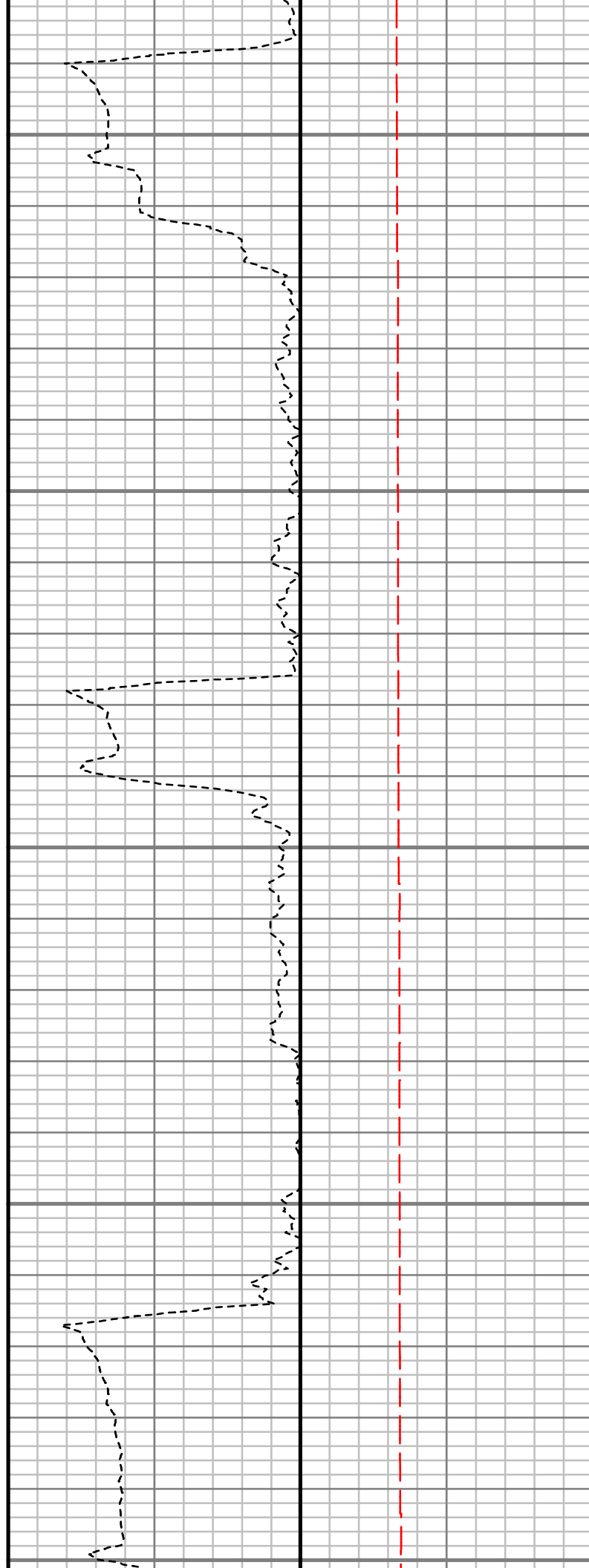
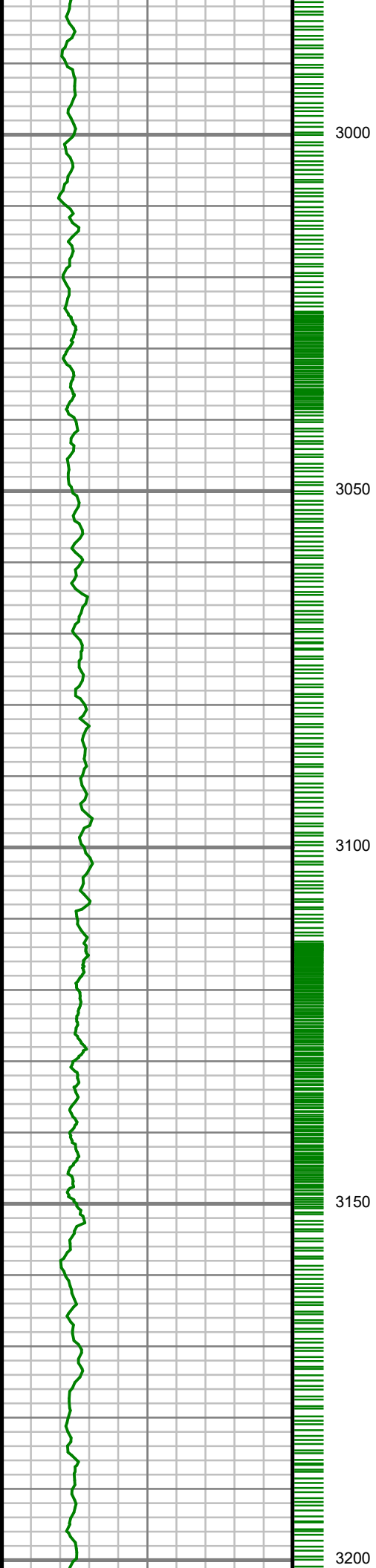
S: 4 MD: 2662.00 ft
Inc: 19.19 deg Az:
54.10 deg TVD:
2569.66 ft

S: 5 MD: 2751.00 ft
Inc: 19.87 deg Az:
52.90 deg TVD:
2653.54 ft



S: 6 MD: 2840.00 ft
Inc: 20.34 deg Az:
53.00 deg TVD:
2737.12 ft

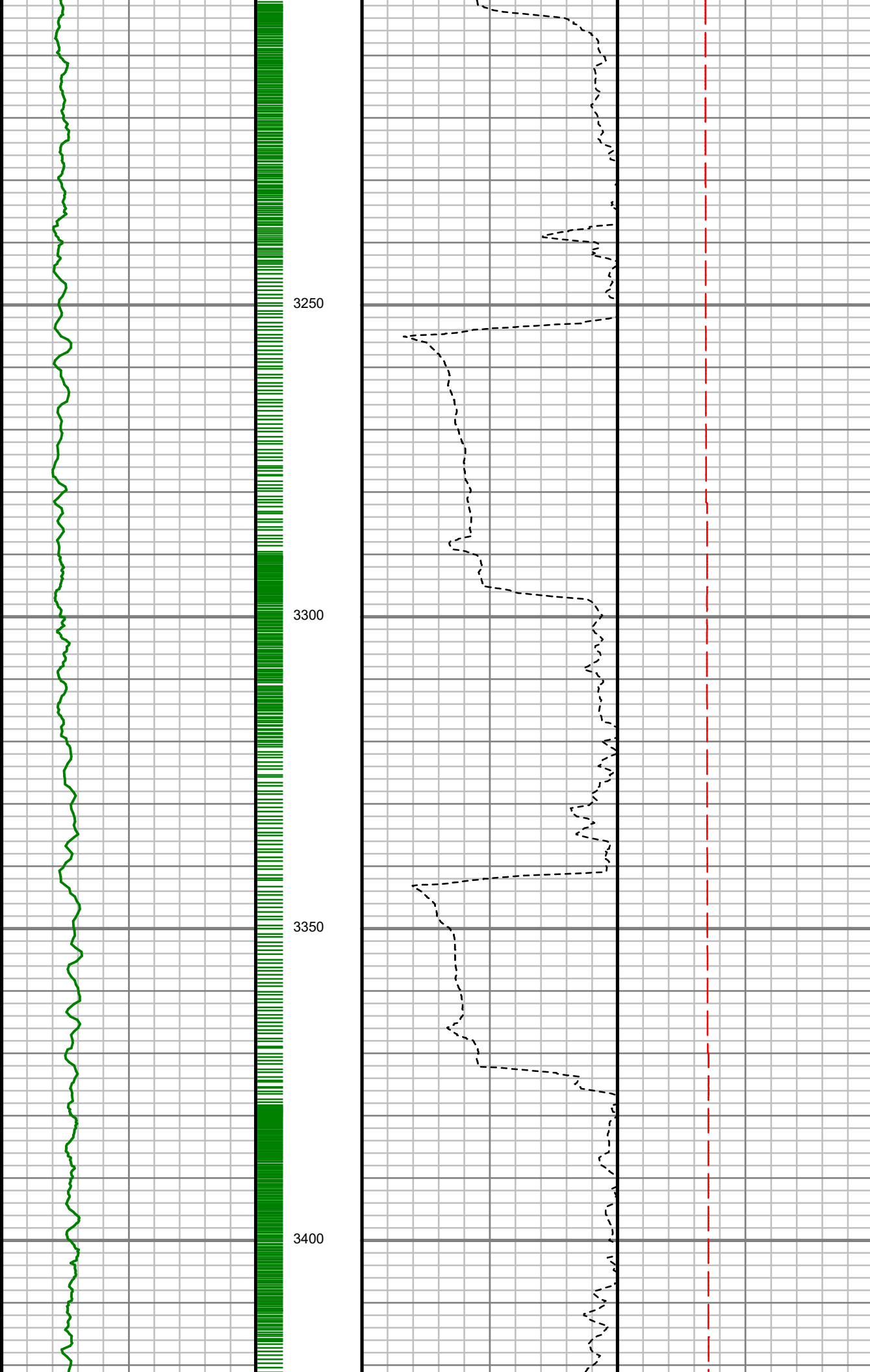
S: 7 MD: 2929.00 ft
Inc: 19.20 deg Az:
51.92 deg TVD:
2820.87 ft



S: 8 MD: 3018.00 ft
Inc: 19.08 deg Az:
53.77 deg TVD:
2904.95 ft

S: 9 MD: 3107.00 ft
Inc: 17.29 deg Az:
53.82 deg TVD:
2989.51 ft

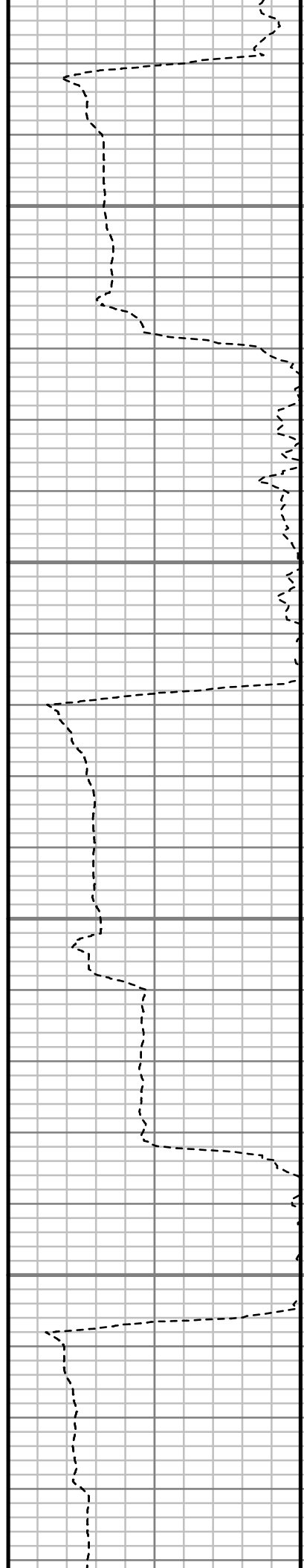
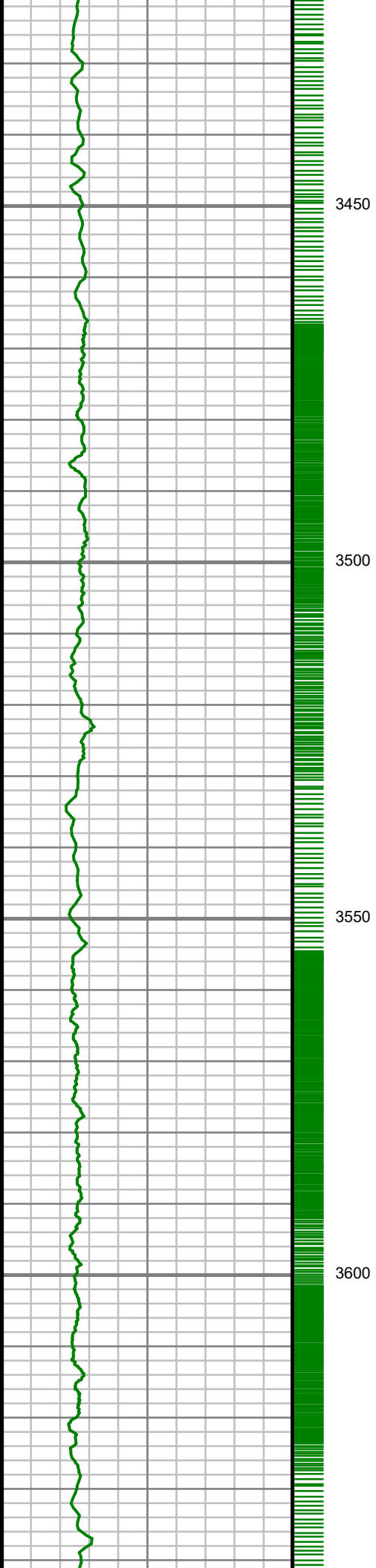
S: 10 MD: 3196.00 ft
Inc: 18.01 deg Az:



55.21 deg TVD:
3074.32 ft

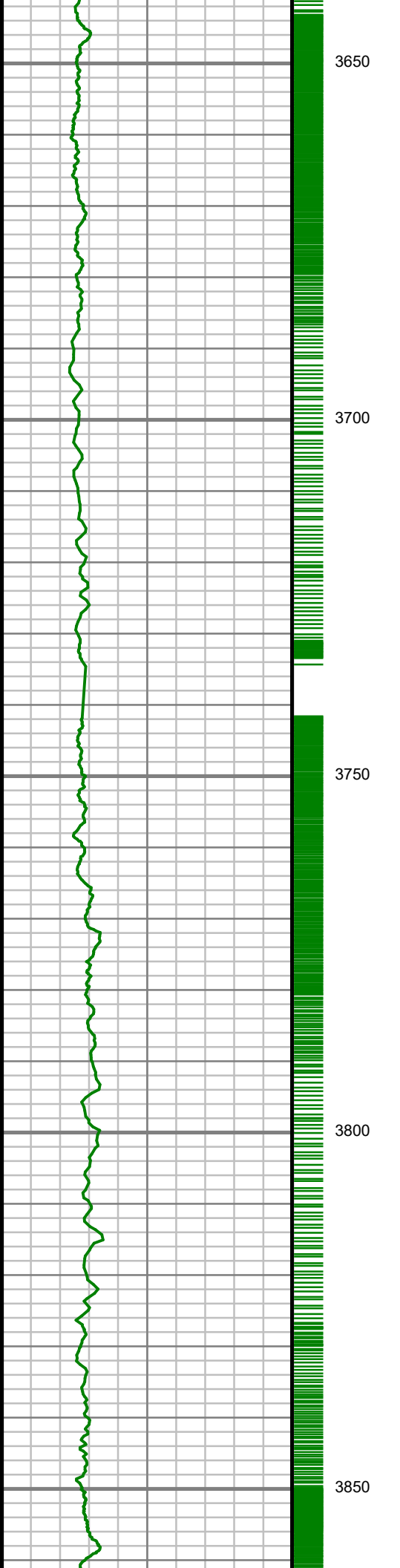
S: 11 MD: 3285.00 ft
Inc: 19.02 deg Az:
55.99 deg TVD:
3158.71 ft

S: 12 MD: 3374.00 ft
Inc: 18.13 deg Az:
49.80 deg TVD:
3243.08 ft



S: 13 MD: 3463.00 ft
Inc: 17.59 deg Az:
51.51 deg TVD:
3327.80 ft

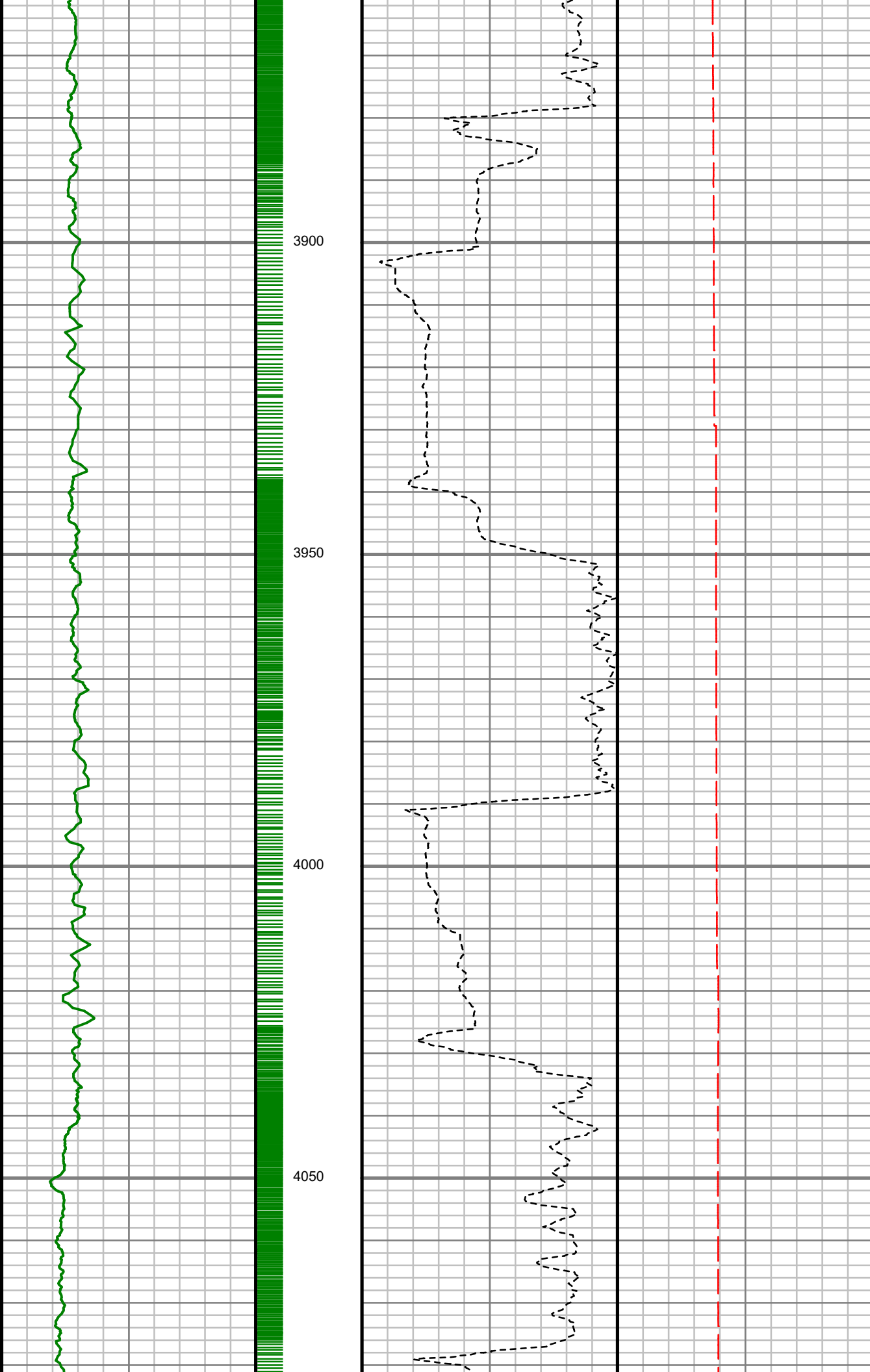
S: 14 MD: 3552.00 ft
Inc: 17.10 deg Az:
53.24 deg TVD:
3412.75 ft



S: 15 MD: 3641.00 ft
Inc: 17.66 deg Az:
56.43 deg TVD:
3497.69 ft

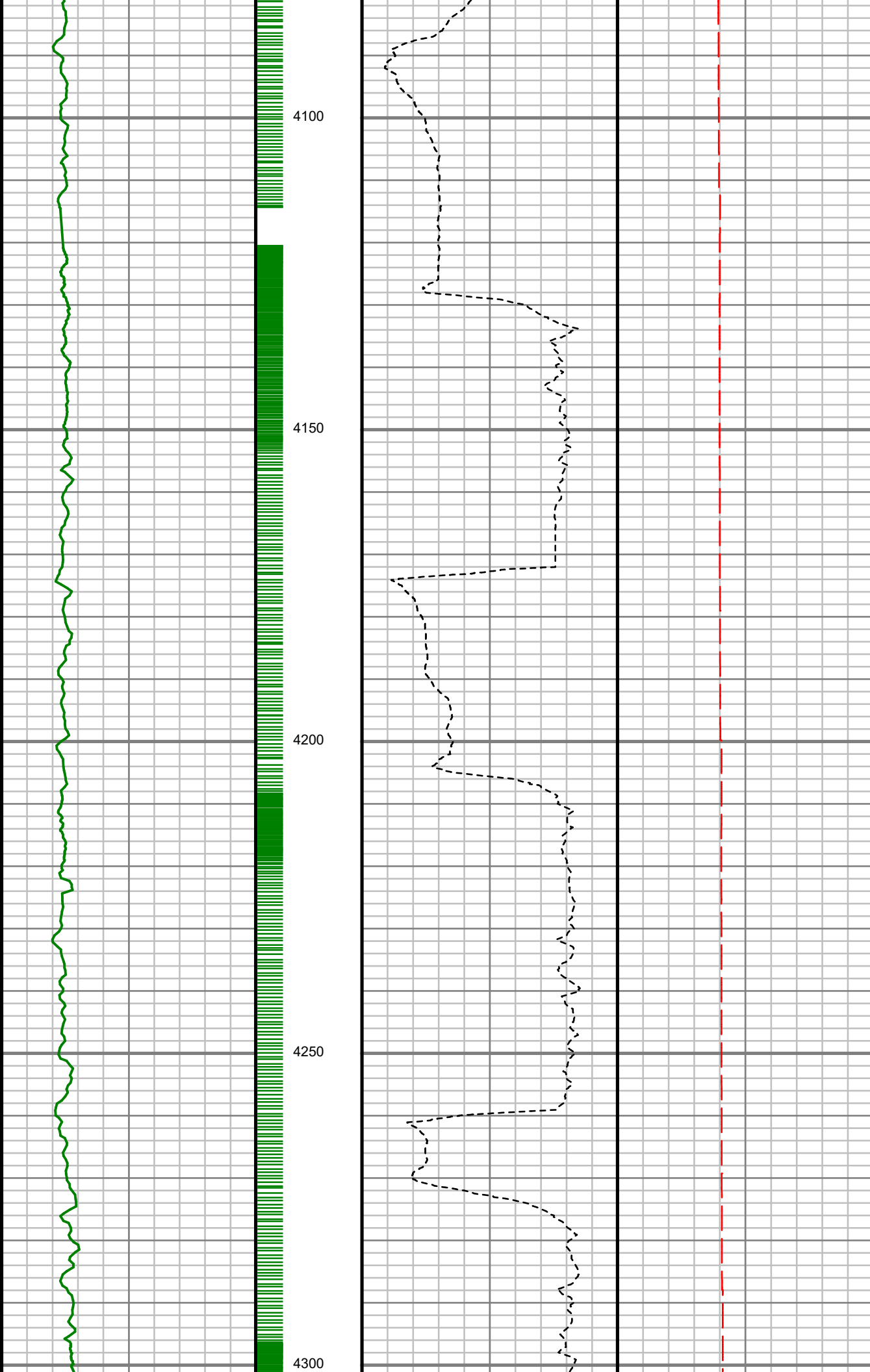
S: 16 MD: 3730.00 ft
Inc: 20.24 deg Az:
58.27 deg TVD:
3581.86 ft

S: 17 MD: 3819.00 ft
Inc: 20.59 deg Az:
57.47 deg TVD:
3665.27 ft



S: 18 MD: 3931.00 ft
Inc: 20.73 deg Az:
56.30 deg TVD:
3770.07 ft

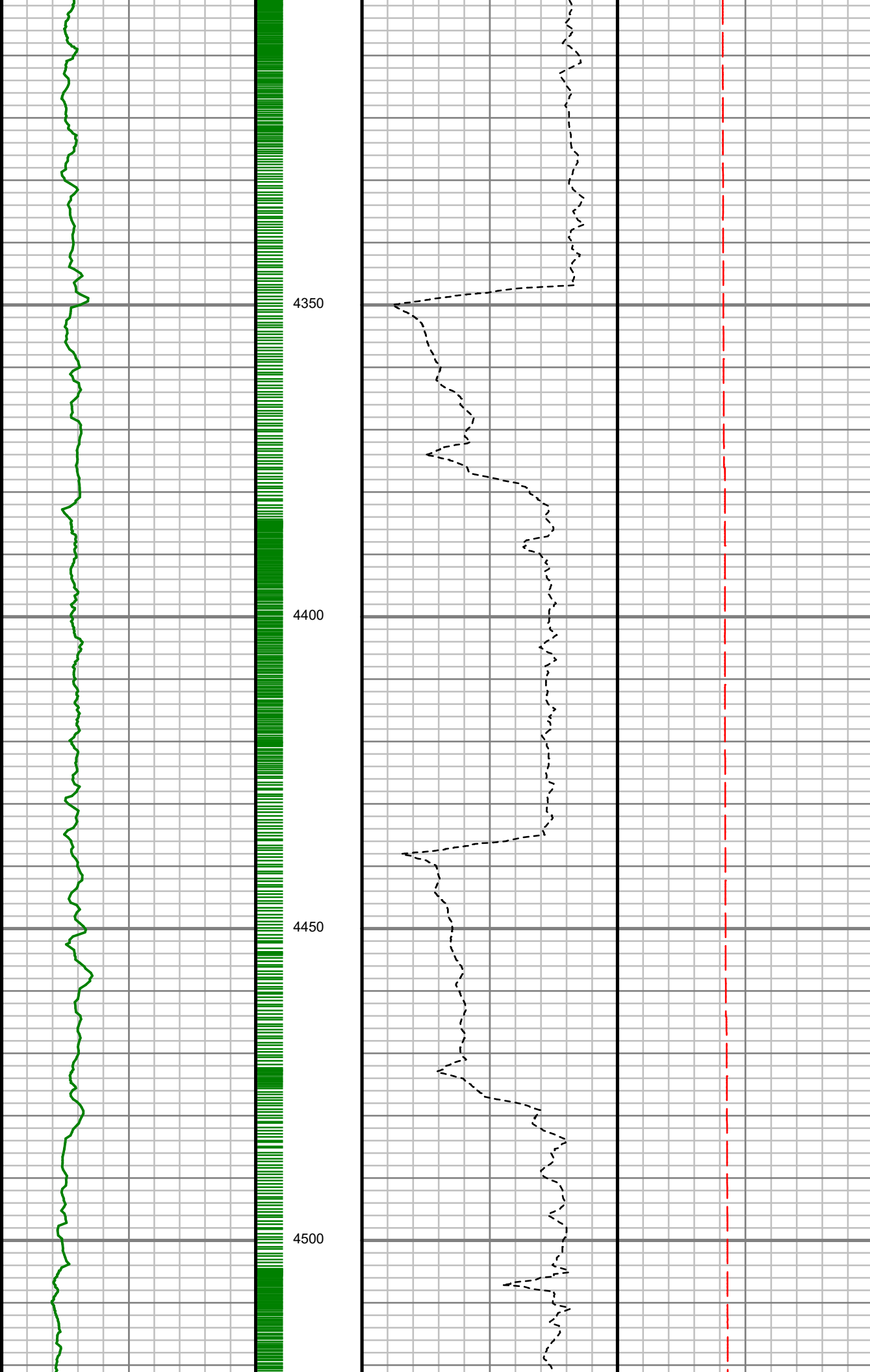
S: 19 MD: 4020.00 ft
Inc: 19.94 deg Az:
51.99 deg TVD:
3853.52 ft



S: 20 MD: 4109.00 ft
Inc: 20.59 deg Az:
53.45 deg TVD:
3937.02 ft

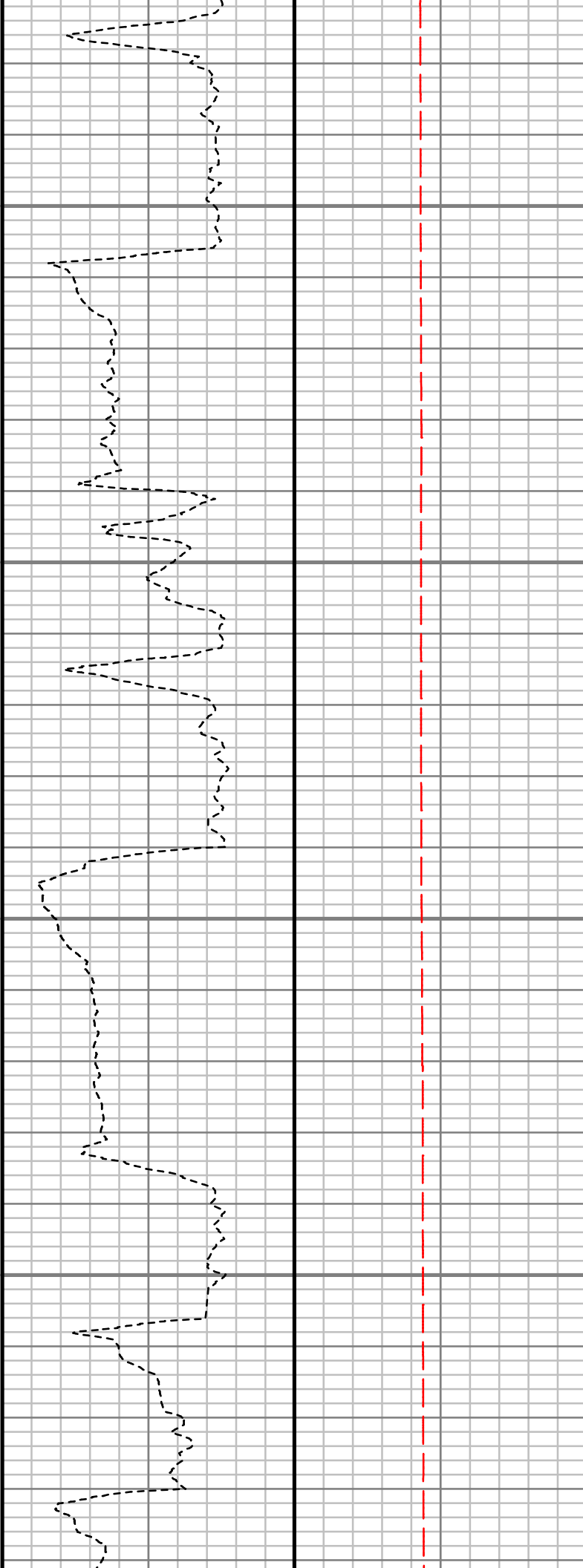
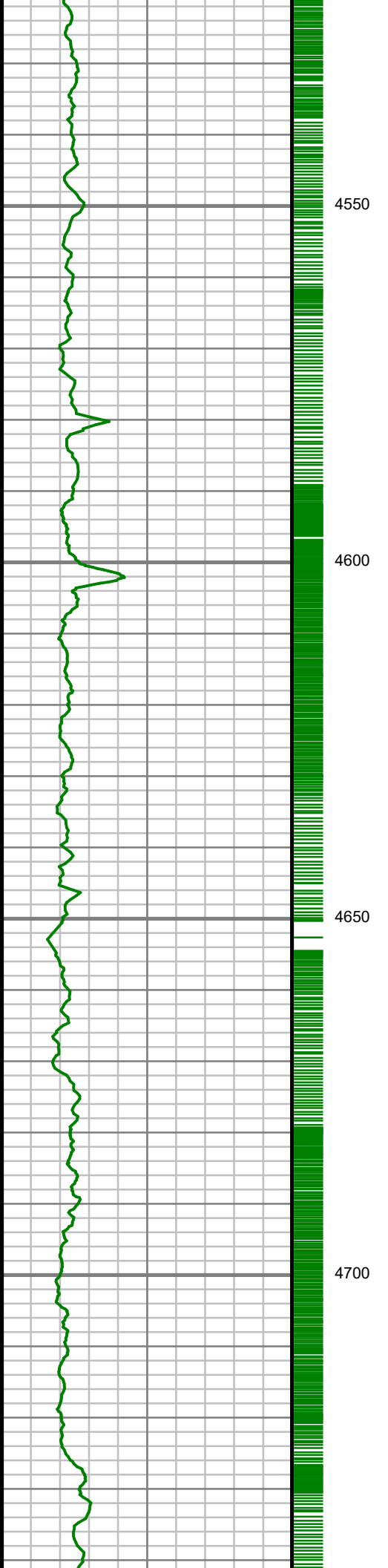
S: 21 MD: 4198.00 ft
Inc: 22.91 deg Az:
56.51 deg TVD:
4019.68 ft

S: 22 MD: 4287.00 ft
Inc: 21.14 deg Az:
55.56 deg TVD:
4102.18 ft



S: 23 MD: 4376.00 ft
Inc: 18.34 deg Az:
58.80 deg TVD:
4185.94 ft

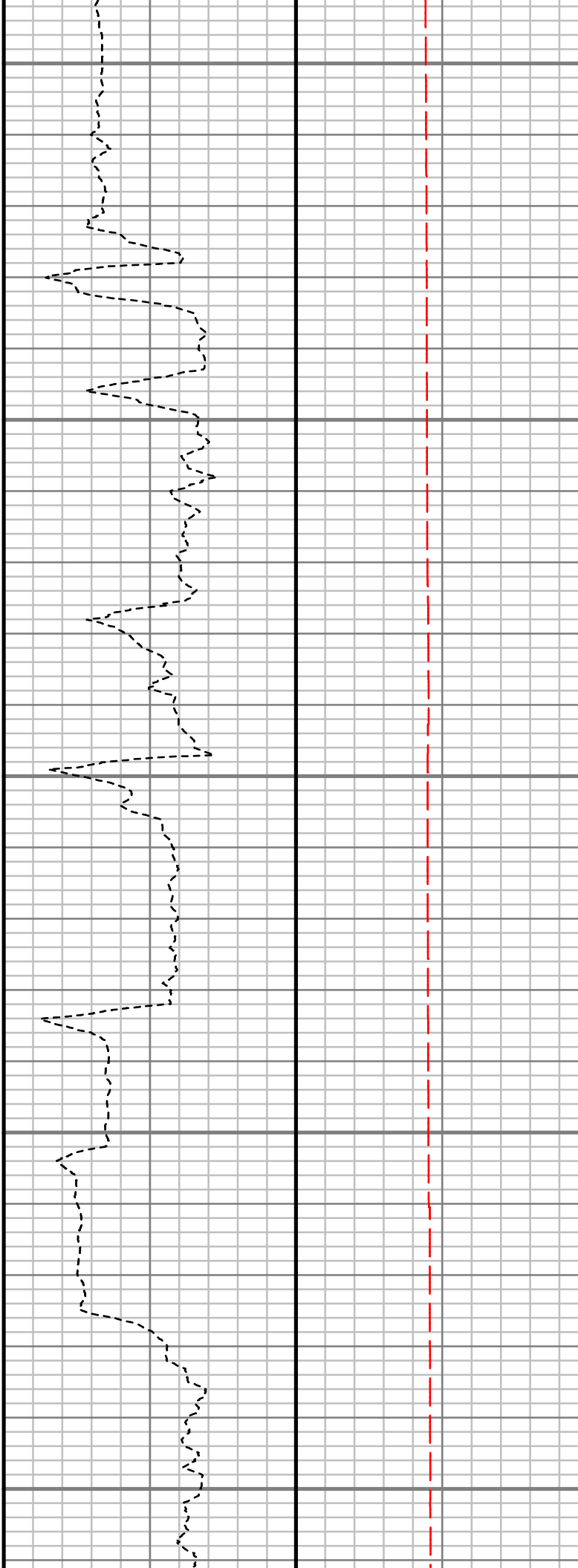
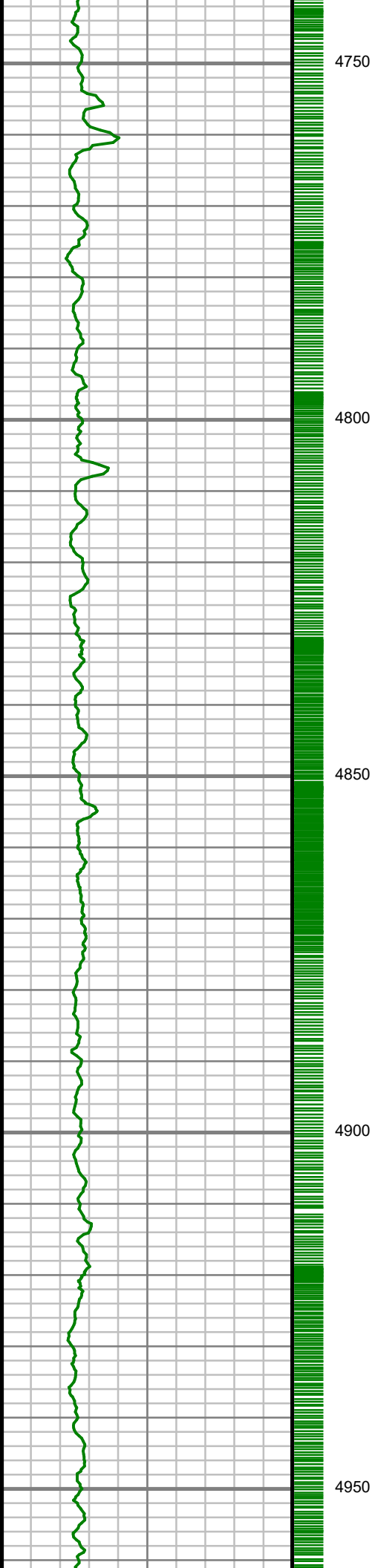
S: 24 MD: 4465.00 ft
Inc: 18.26 deg Az:
57.49 deg TVD:
4270.44 ft



S: 25 MD: 4554.00 ft
Inc: 17.68 deg Az:
55.84 deg TVD:
4355.10 ft

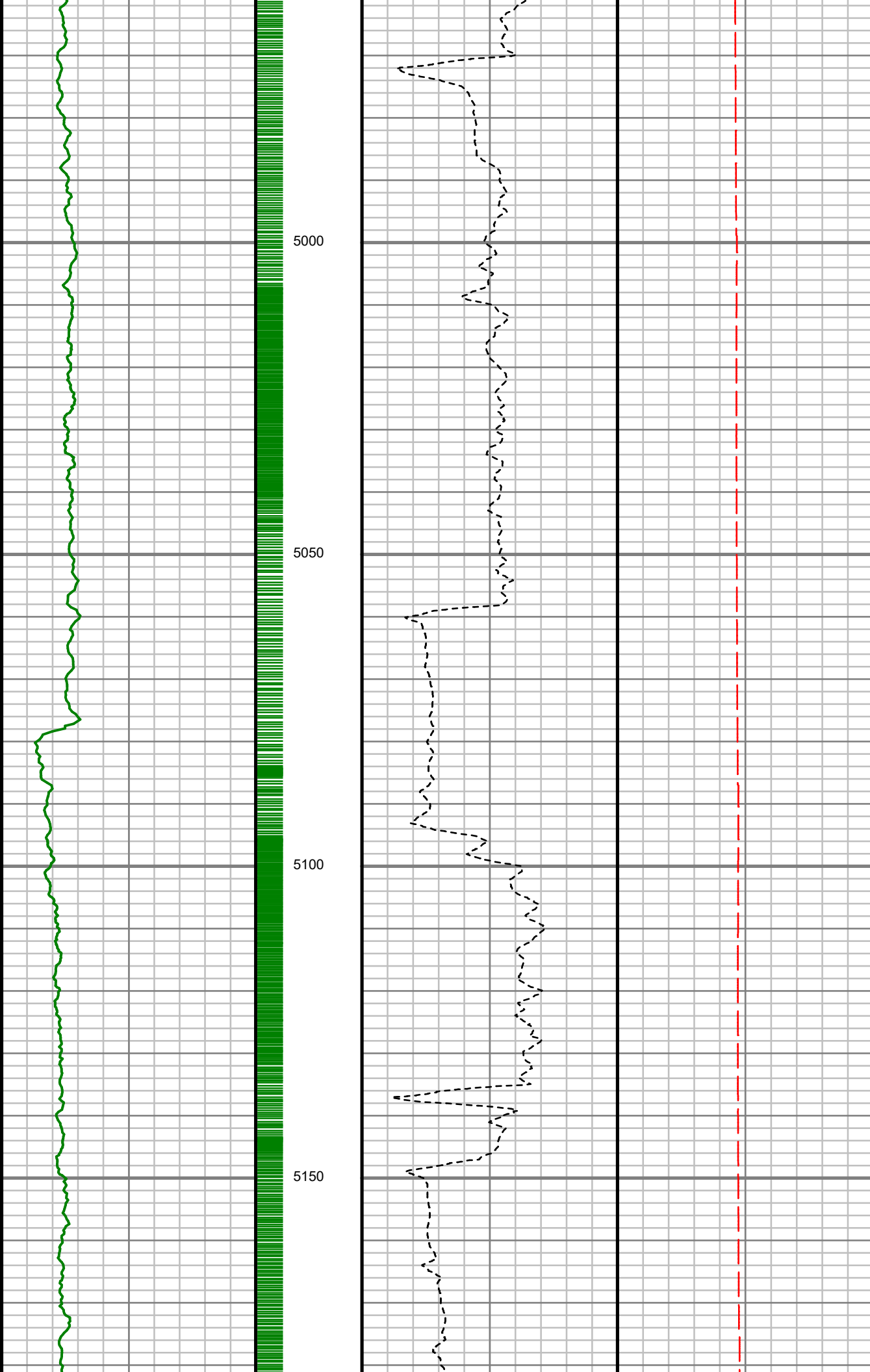
S: 26 MD: 4643.00 ft
Inc: 17.52 deg Az:
54.22 deg TVD:
4439.94 ft

S: 27 MD: 4732.00 ft
Inc: 19.90 deg Az:
54.10 deg TVD:
4524.23 ft



S: 28 MD: 4822.00 ft
Inc: 20.91 deg Az:
53.95 deg TVD:
4608.58 ft

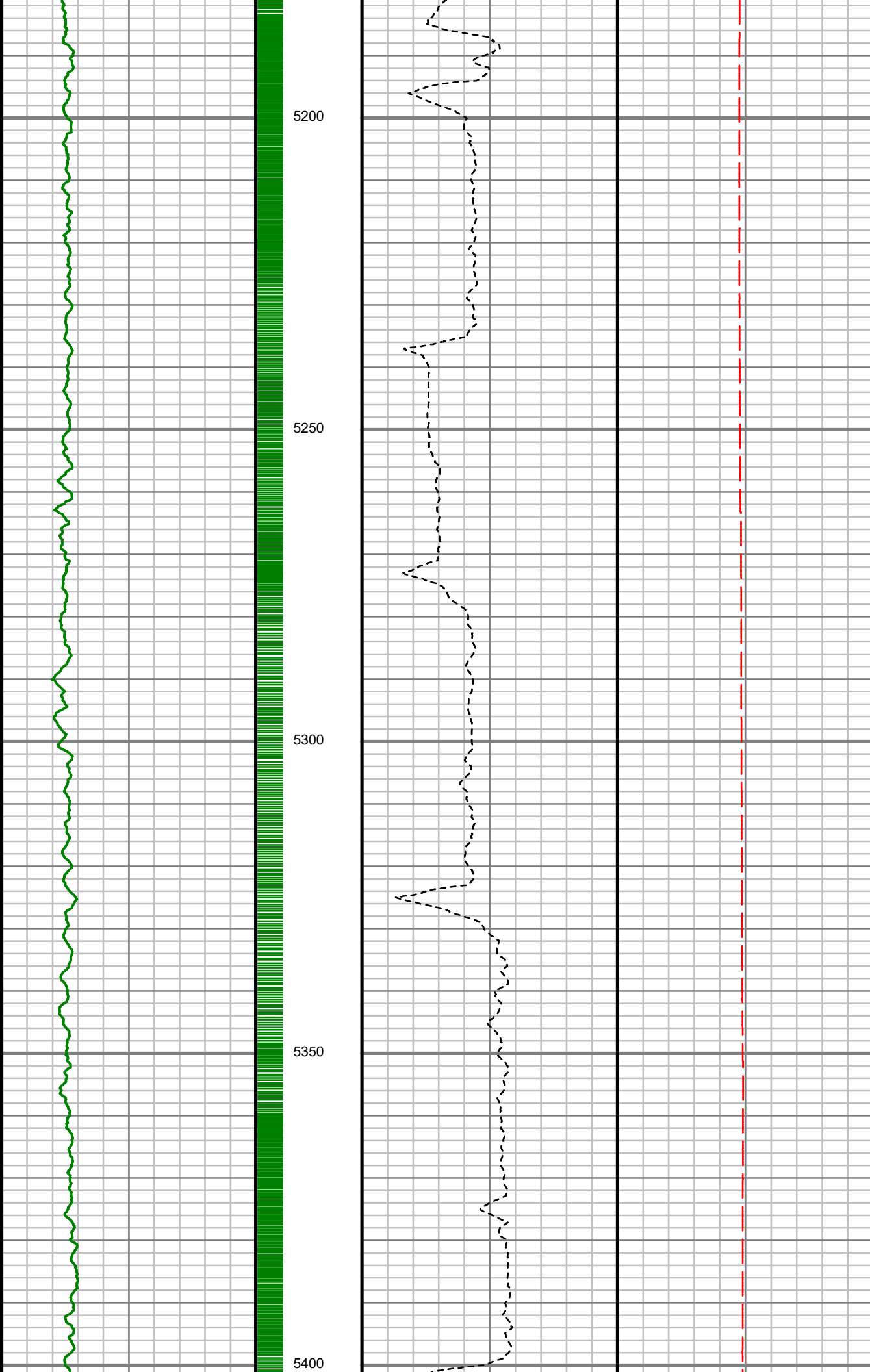
S: 29 MD: 4911.00 ft
Inc: 19.88 deg Az:
54.31 deg TVD:
4692.00 ft



S: 30 MD: 5000.00 ft
Inc: 18.26 deg Az:
54.47 deg TVD:
4776.12 ft

S: 31 MD: 5089.00 ft
Inc: 18.12 deg Az:
52.37 deg TVD:
4860.67 ft

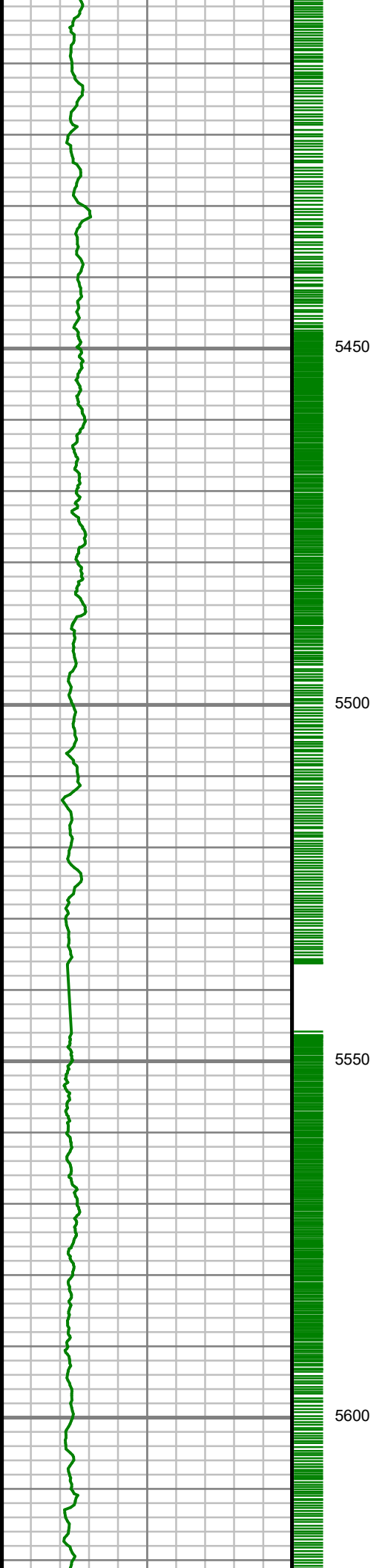
S: 32 MD: 5178.00 ft



Inc: 19.80 deg Az:
51.95 deg TVD:
4944.83 ft

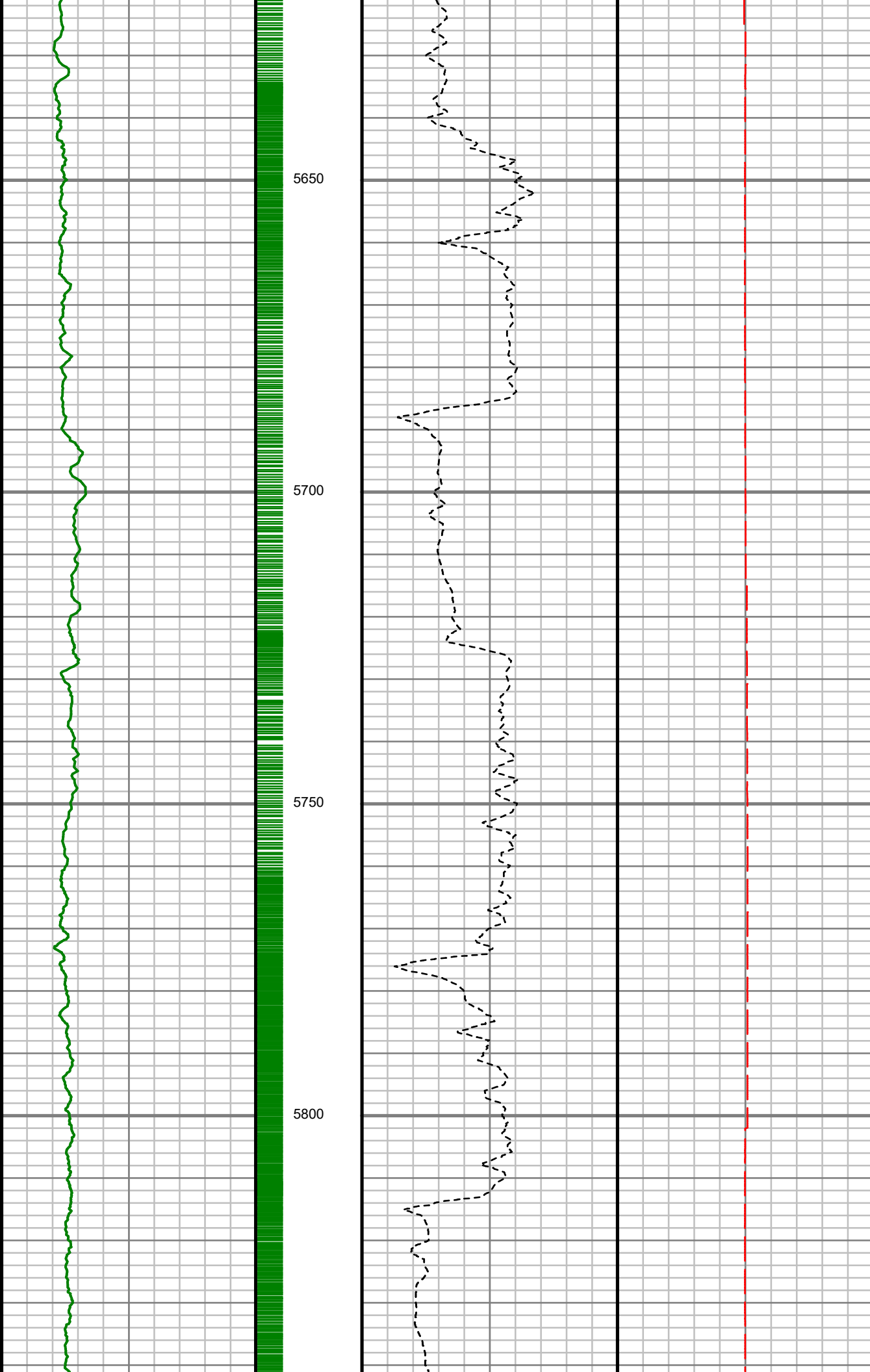
S: 33 MD: 5267.00 ft
Inc: 20.64 deg Az:
54.37 deg TVD:
5028.35 ft

S: 34 MD: 5356.00 ft
Inc: 18.49 deg Az:
54.81 deg TVD:
5112.20 ft



S: 35 MD: 5445.00 ft
Inc: 17.50 deg Az:
52.88 deg TVD:
5196.85 ft

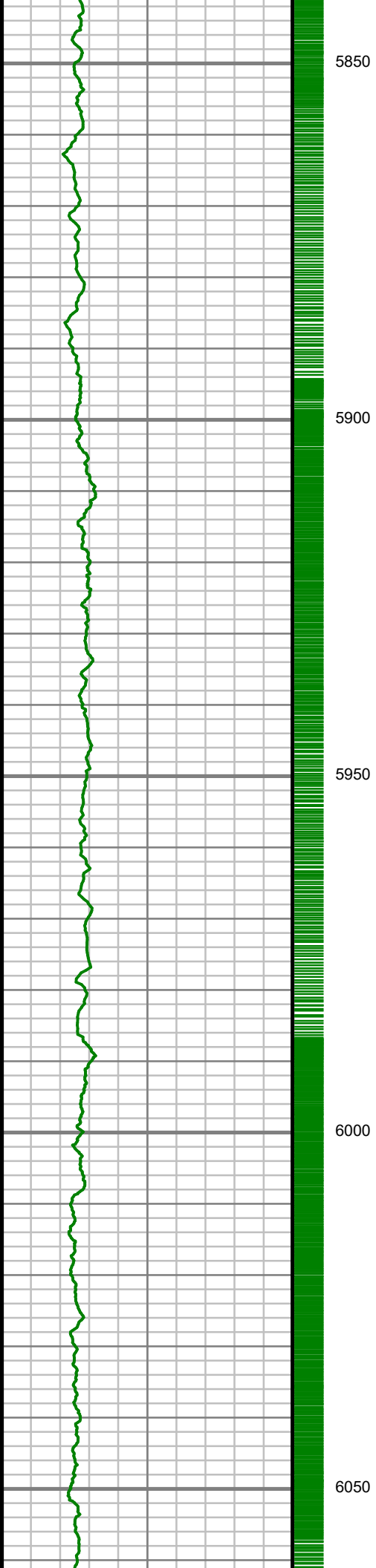
S: 36 MD: 5534.00 ft
Inc: 17.45 deg Az:
54.70 deg TVD:
5281.74 ft



S: 37 MD: 5623.00 ft
Inc: 18.31 deg Az:
54.55 deg TVD:
5366.44 ft

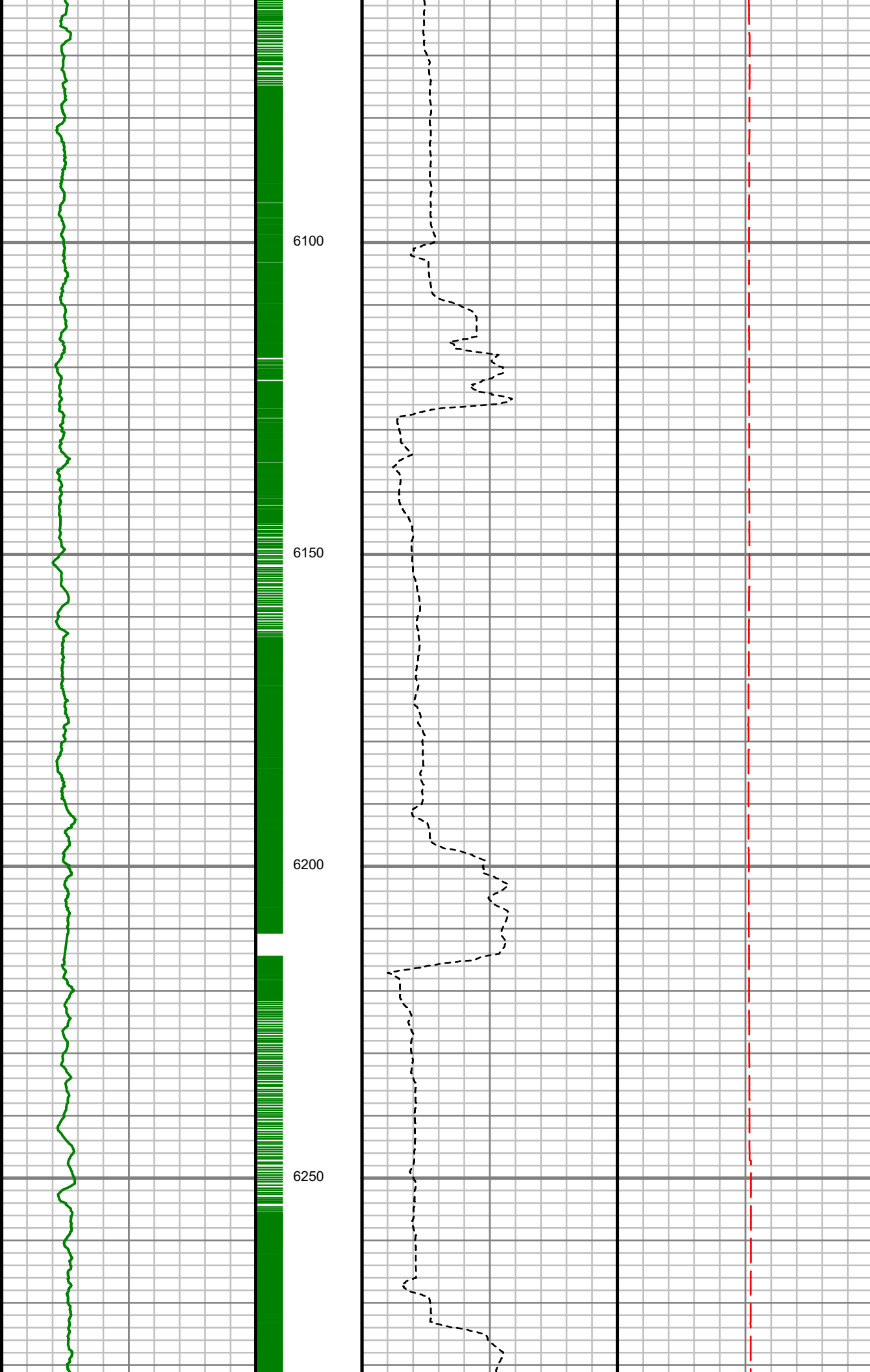
S: 38 MD: 5712.00 ft
Inc: 17.94 deg Az:
56.24 deg TVD:
5451.03 ft

S: 39 MD: 5802.00 ft
Inc: 15.31 deg Az:
56.27 deg TVD:
5537.26 ft



S: 40 MD: 5891.00 ft
Inc: 17.34 deg Az:
55.08 deg TVD:
5622.67 ft

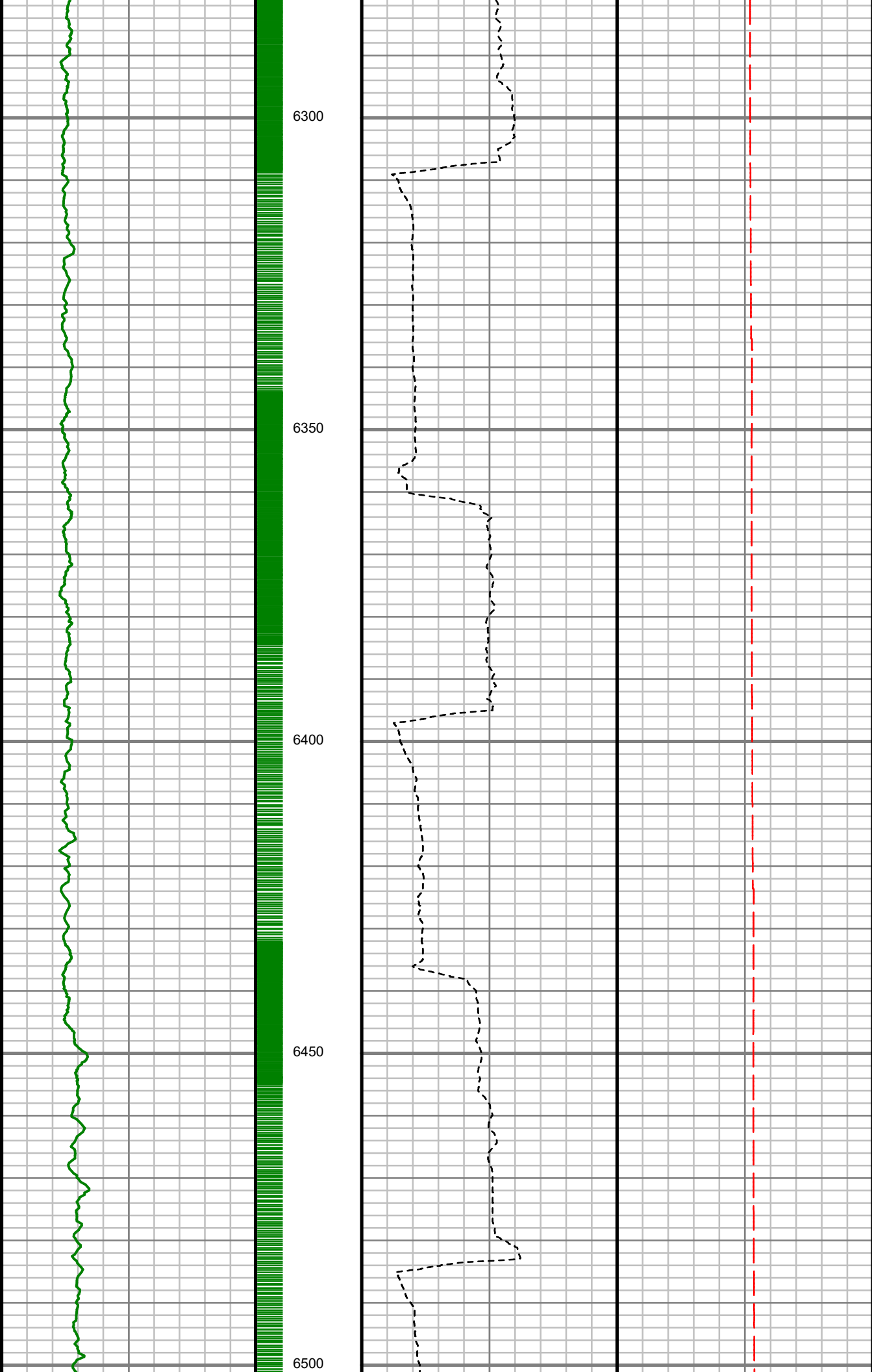
S: 41 MD: 5980.00 ft
Inc: 17.05 deg Az:
53.83 deg TVD:
5707.69 ft



S: 42 MD: 6069.00 ft
Inc: 16.73 deg Az:
51.63 deg TVD:
5792.85 ft

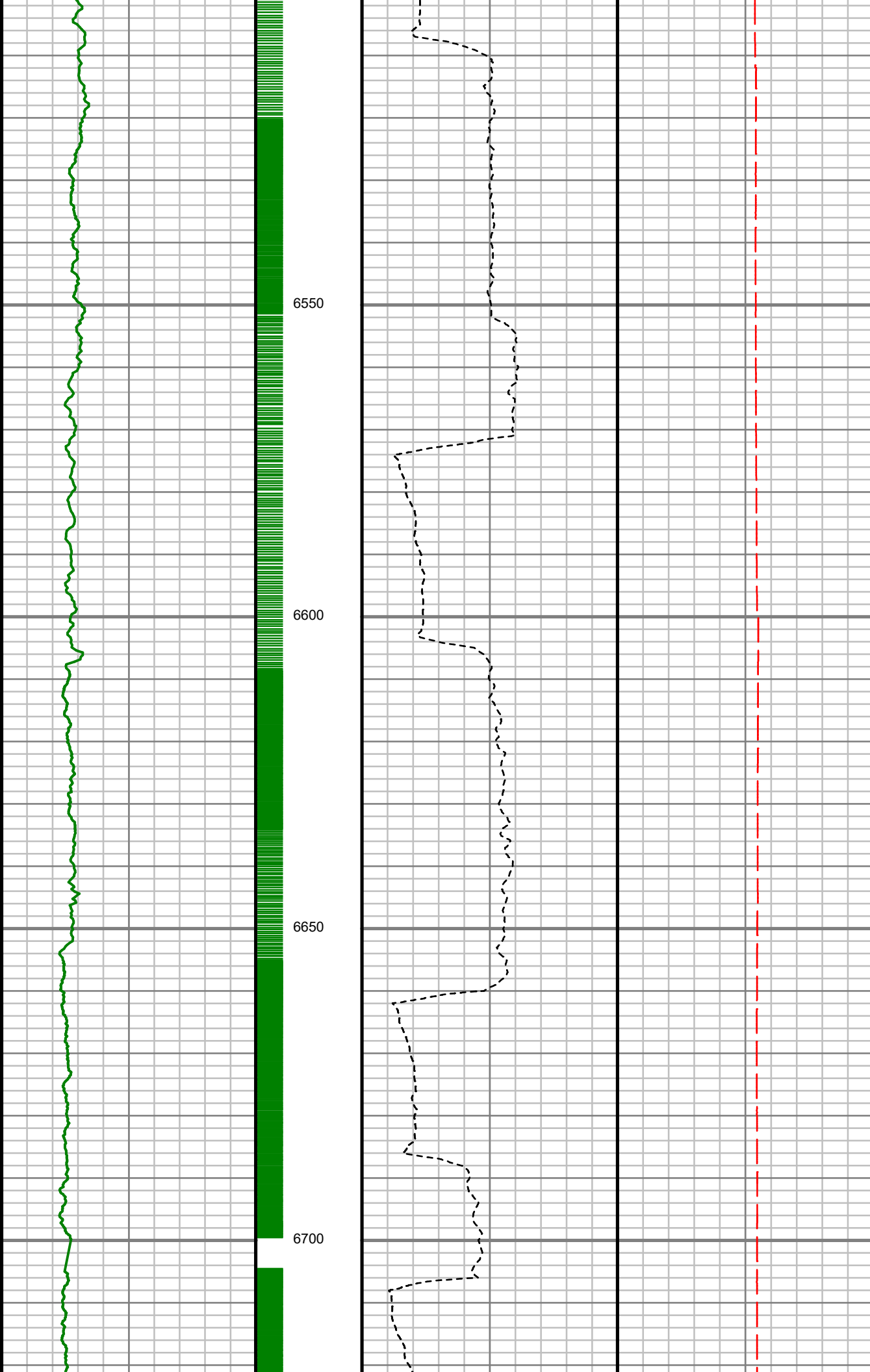
S: 43 MD: 6158.00 ft
Inc: 18.99 deg Az:
53.85 deg TVD:
5877.56 ft

S: 44 MD: 6247.00 ft
Inc: 21.32 deg Az:
57.70 deg TVD:
5961.11 ft



S: 45 MD: 6336.00 ft
Inc: 21.88 deg Az:
56.90 deg TVD:
6043.86 ft

S: 46 MD: 6426.00 ft
Inc: 22.26 deg Az:
54.50 deg TVD:
6127.26 ft

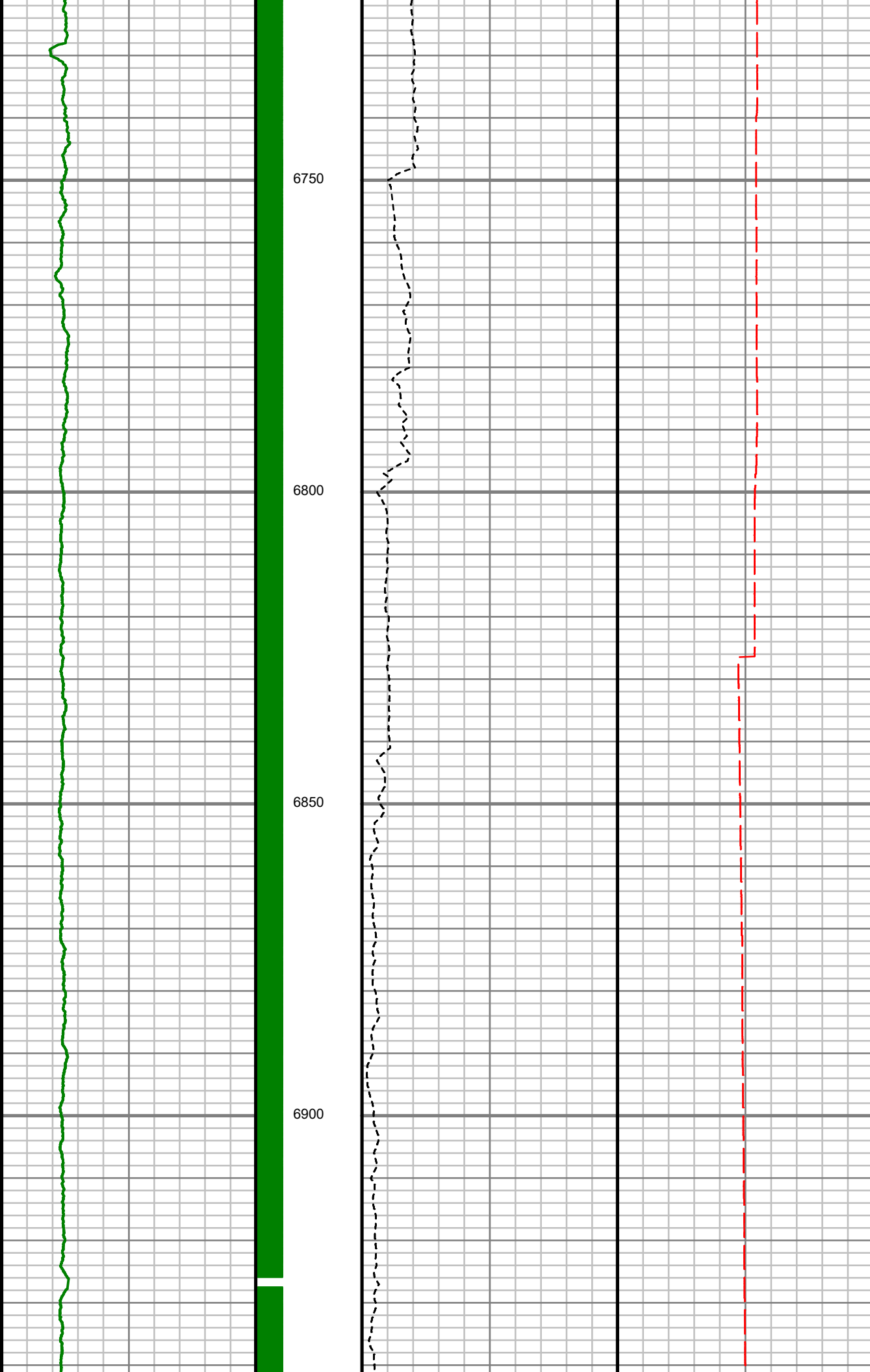


S: 47 MD: 6515.00 ft
Inc: 20.79 deg Az:
55.63 deg TVD:
6210.05 ft

S: 48 MD: 6604.00 ft
Inc: 18.64 deg Az:
56.76 deg TVD:
6293.83 ft

S: 49 MD: 6648.00 ft
Inc: 17.26 deg Az:
57.36 deg TVD:
6335.69 ft

S: 50 MD: 6693.00 ft
Inc: 16.47 deg Az:
61.64 deg TVD:
6378.75 ft



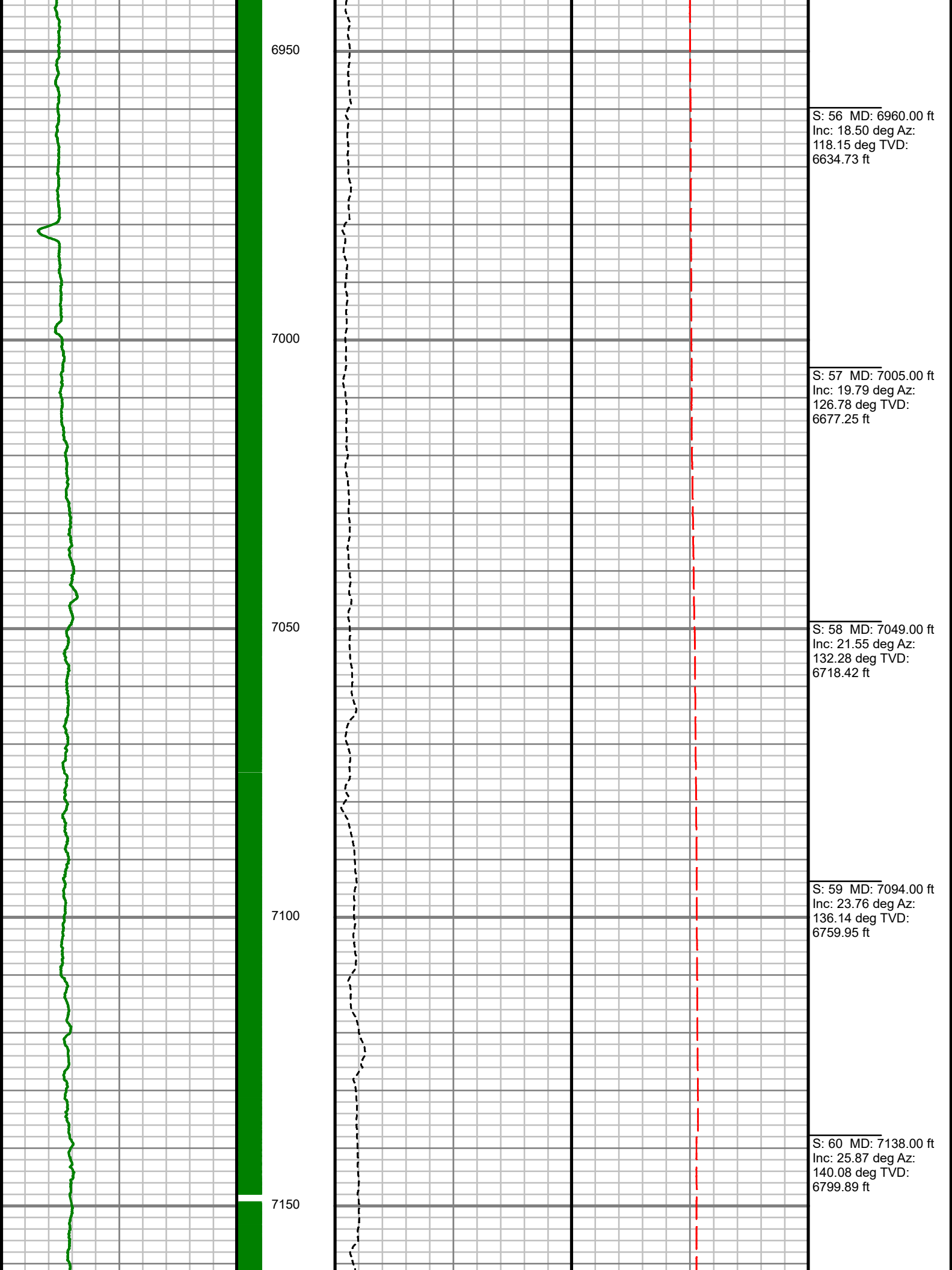
S: 51 MD: 6737.00 ft
Inc: 15.89 deg Az:
70.53 deg TVD:
6421.01 ft

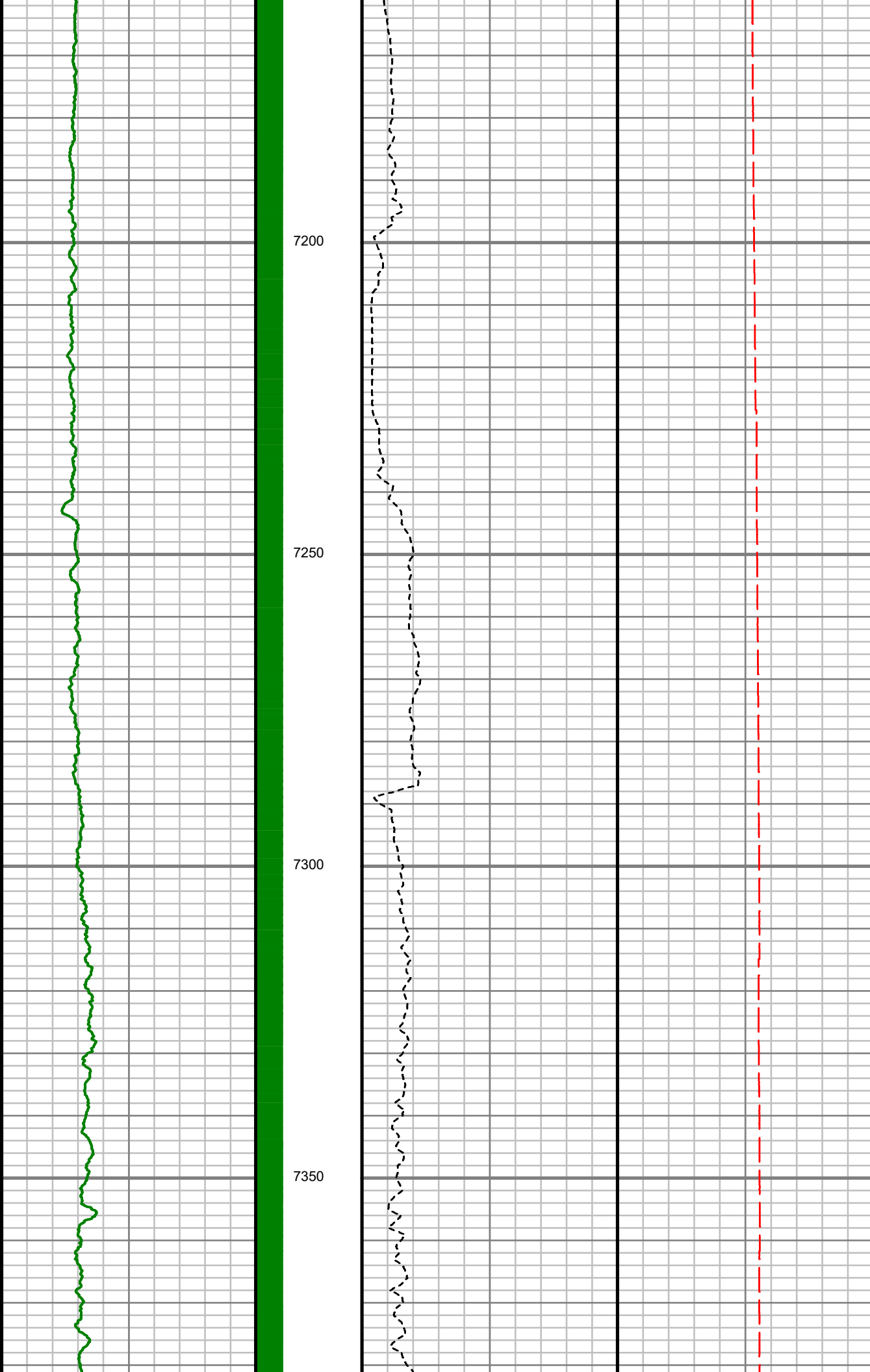
S: 52 MD: 6782.00 ft
Inc: 16.05 deg Az:
82.03 deg TVD:
6464.29 ft

S: 53 MD: 6826.00 ft
Inc: 16.31 deg Az:
92.62 deg TVD:
6506.55 ft

S: 54 MD: 6871.00 ft
Inc: 16.19 deg Az:
101.33 deg TVD:
6549.76 ft

S: 55 MD: 6916.00 ft
Inc: 17.33 deg Az:
110.11 deg TVD:
6592.86 ft

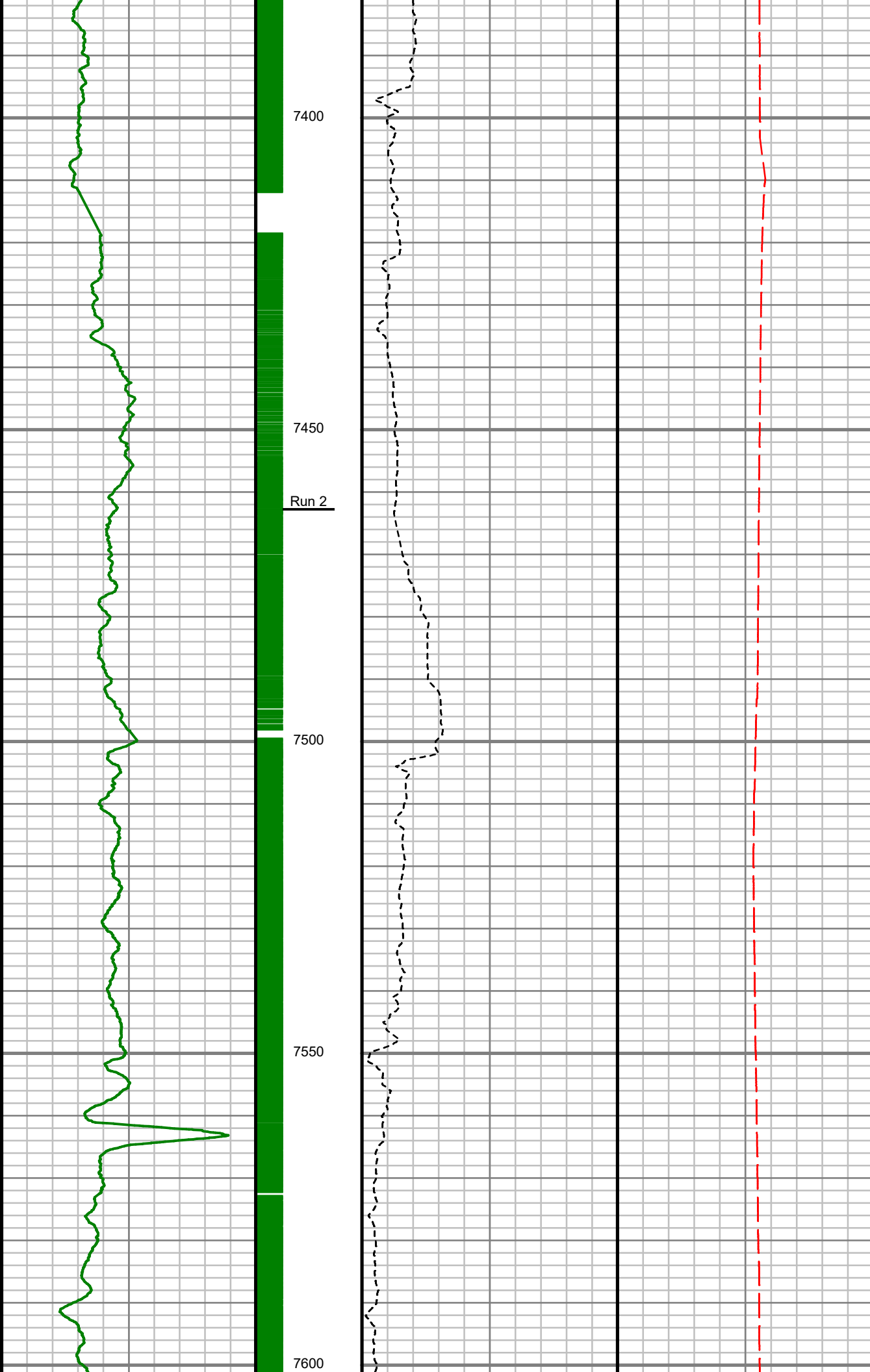




S: 61 MD: 7227.00 ft
Inc: 30.30 deg Az:
148.16 deg TVD:
6878.41 ft

S: 62 MD: 7316.00 ft
Inc: 33.60 deg Az:
154.94 deg TVD:
6953.94 ft

S: 63 MD: 7361.00 ft
Inc: 36.42 deg Az:
158.21 deg TVD:
6990.80 ft

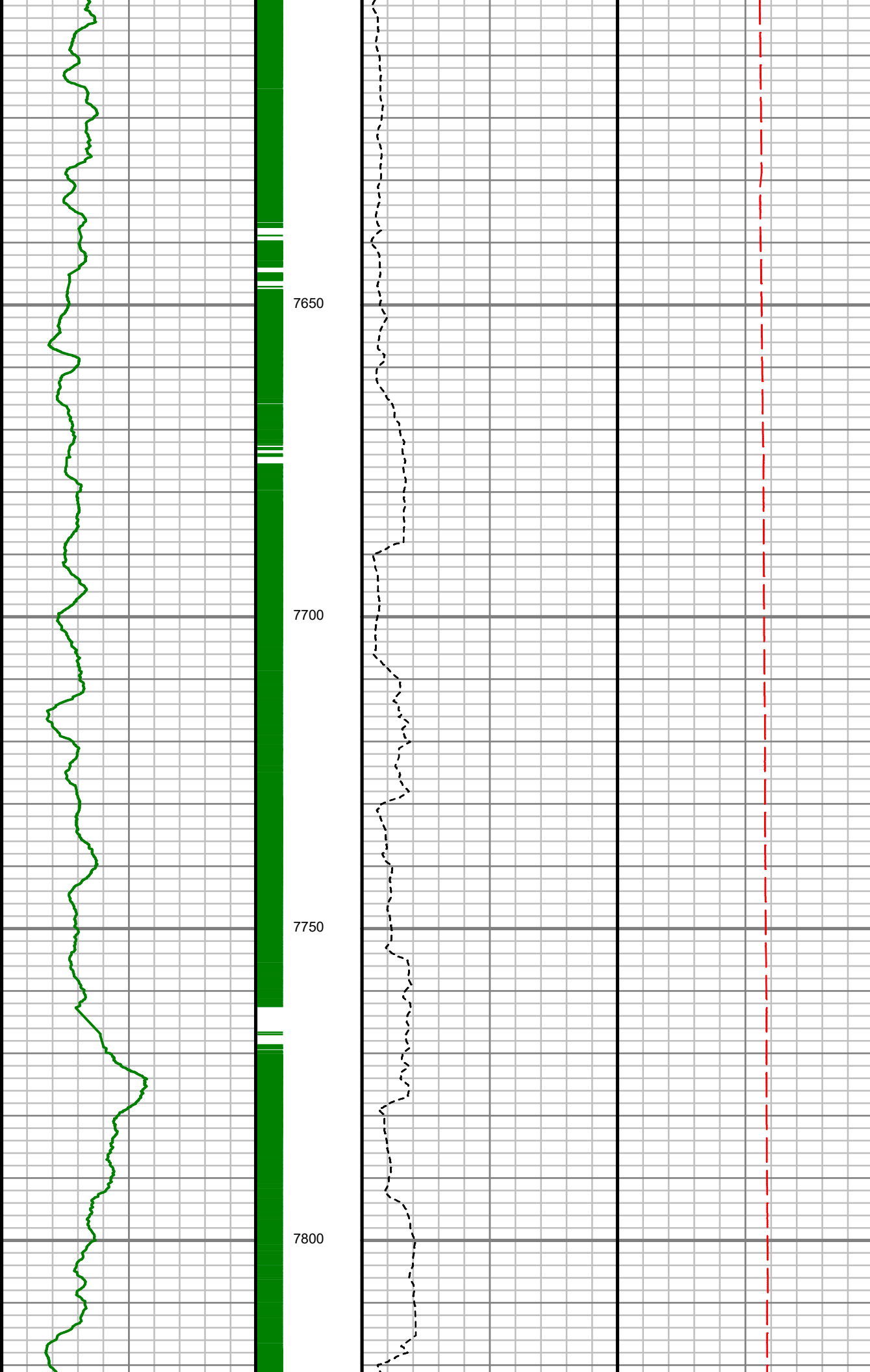


S: 64 MD: 7405.00 ft
Inc: 39.01 deg Az:
157.34 deg TVD:
7025.60 ft

S: 65 MD: 7492.00 ft
Inc: 43.49 deg Az:
164.30 deg TVD:
7091.03 ft

S: 66 MD: 7537.00 ft
Inc: 48.51 deg Az:
171.25 deg TVD:
7122.30 ft

S: 67 MD: 7581.00 ft
Inc: 54.43 deg Az:
175.40 deg TVD:
7149.70 ft



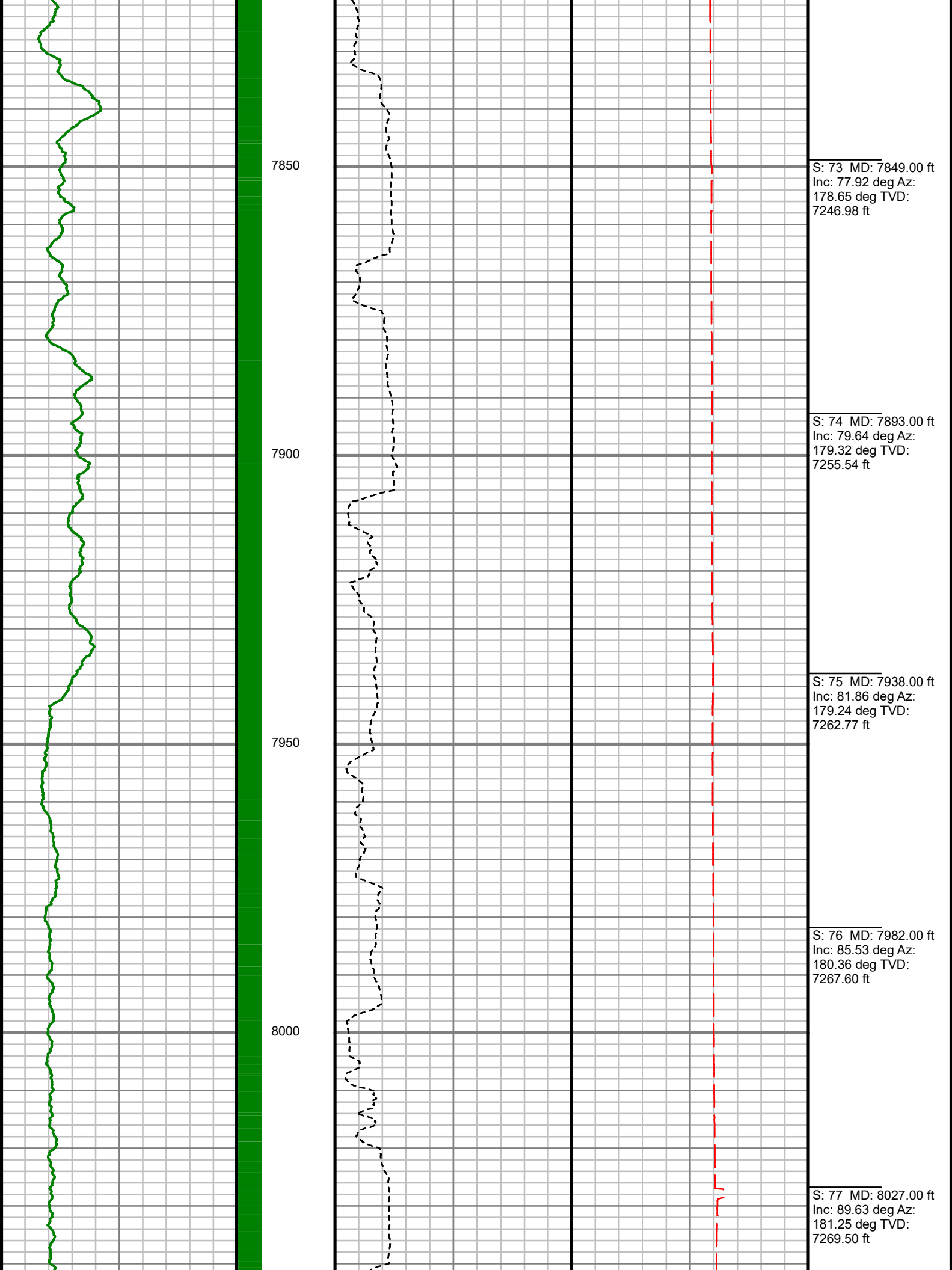
S: 68 MD: 7626.00 ft
Inc: 61.83 deg Az:
177.64 deg TVD:
7173.45 ft

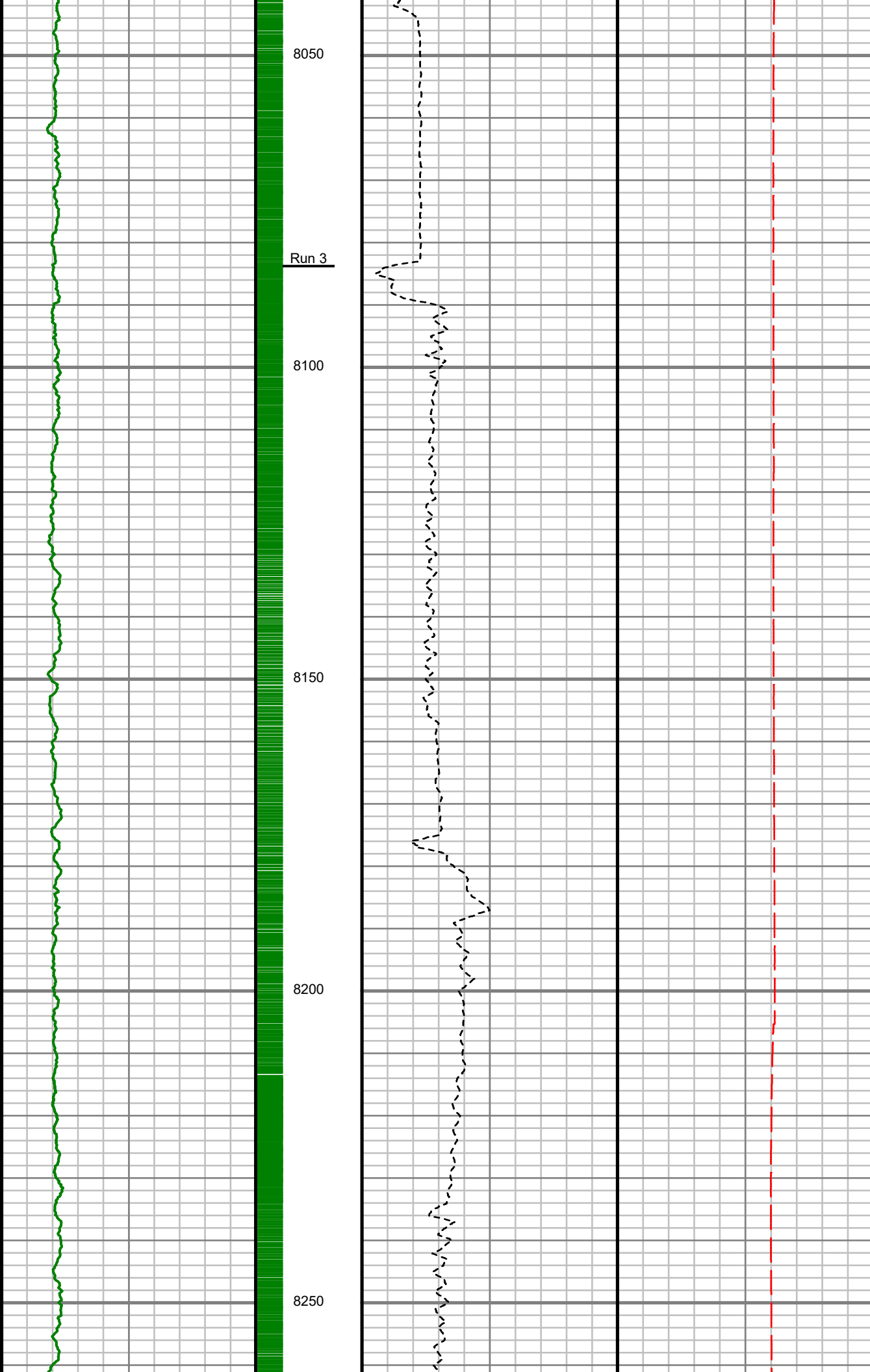
S: 69 MD: 7670.00 ft
Inc: 65.30 deg Az:
180.17 deg TVD:
7193.03 ft

S: 70 MD: 7715.00 ft
Inc: 68.88 deg Az:
181.02 deg TVD:
7210.55 ft

S: 71 MD: 7759.00 ft
Inc: 73.06 deg Az:
181.13 deg TVD:
7224.90 ft

S: 72 MD: 7804.00 ft
Inc: 76.09 deg Az:
179.50 deg TVD:
7236.86 ft





8050

Run 3

8100

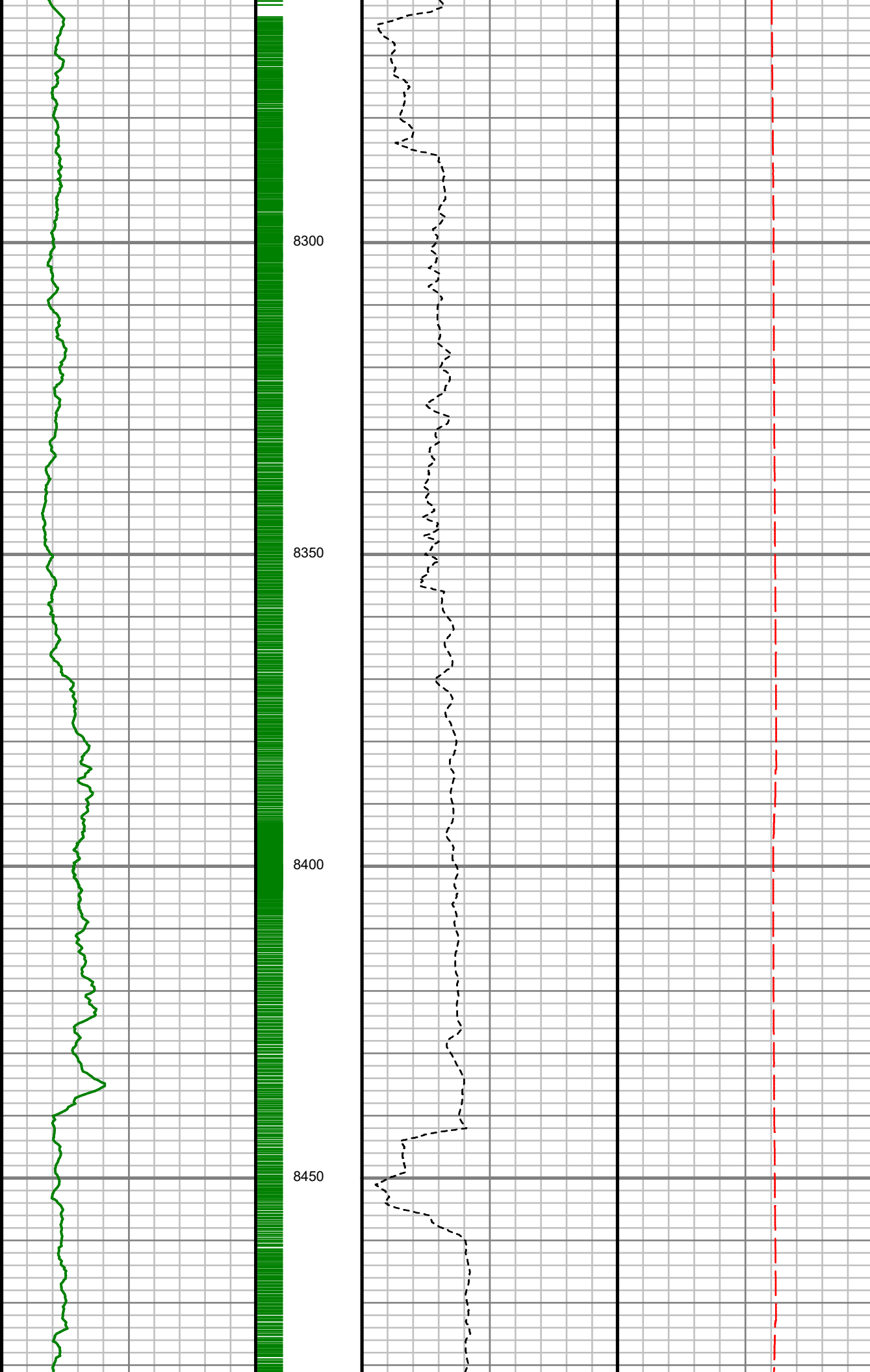
8150

8200

8250

S: 78 MD: 8117.00 ft
Inc: 89.50 deg Az:
180.25 deg TVD:
7270.18 ft

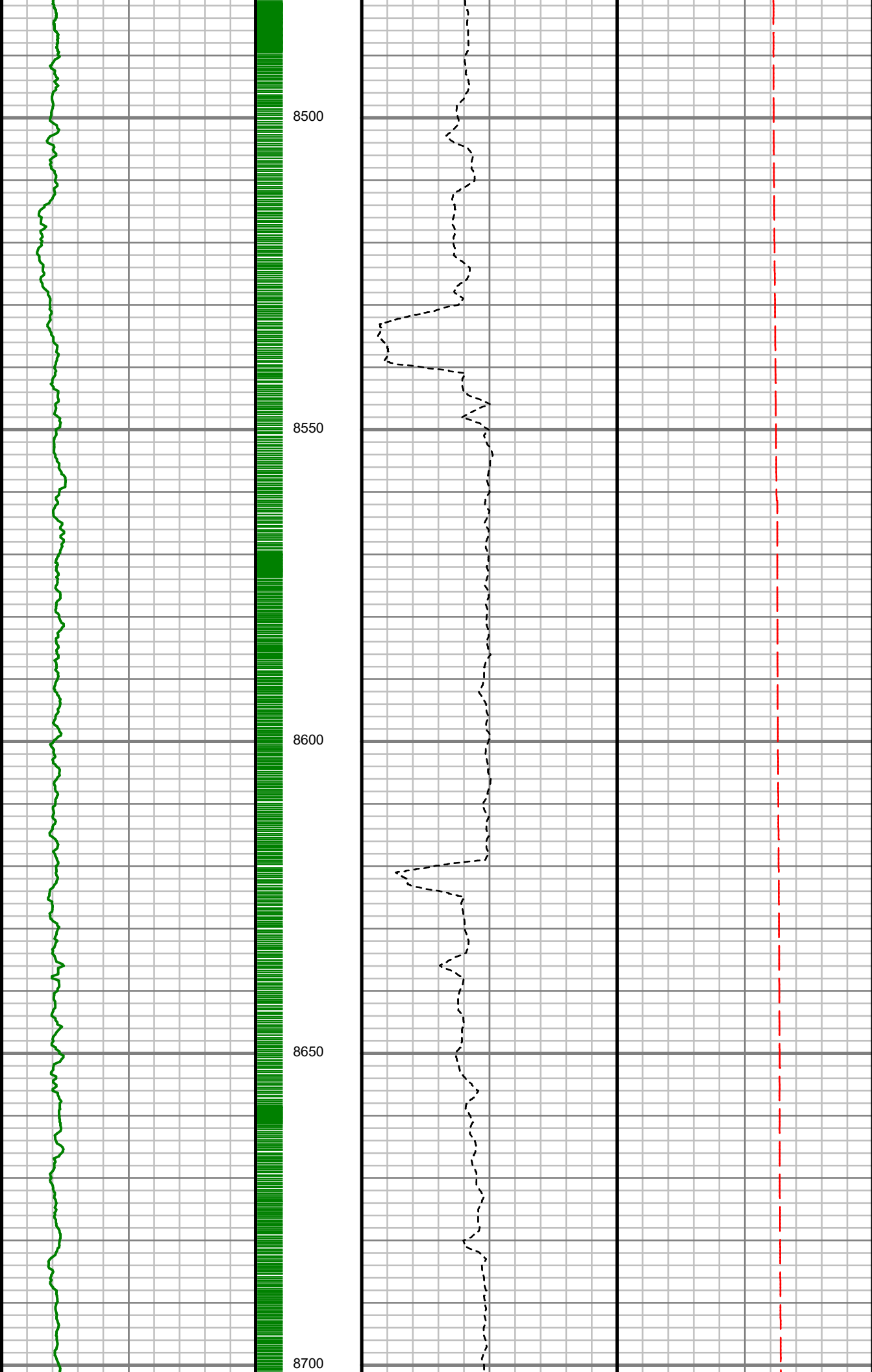
S: 79 MD: 8206.00 ft
Inc: 88.43 deg Az:
178.65 deg TVD:
7271.80 ft

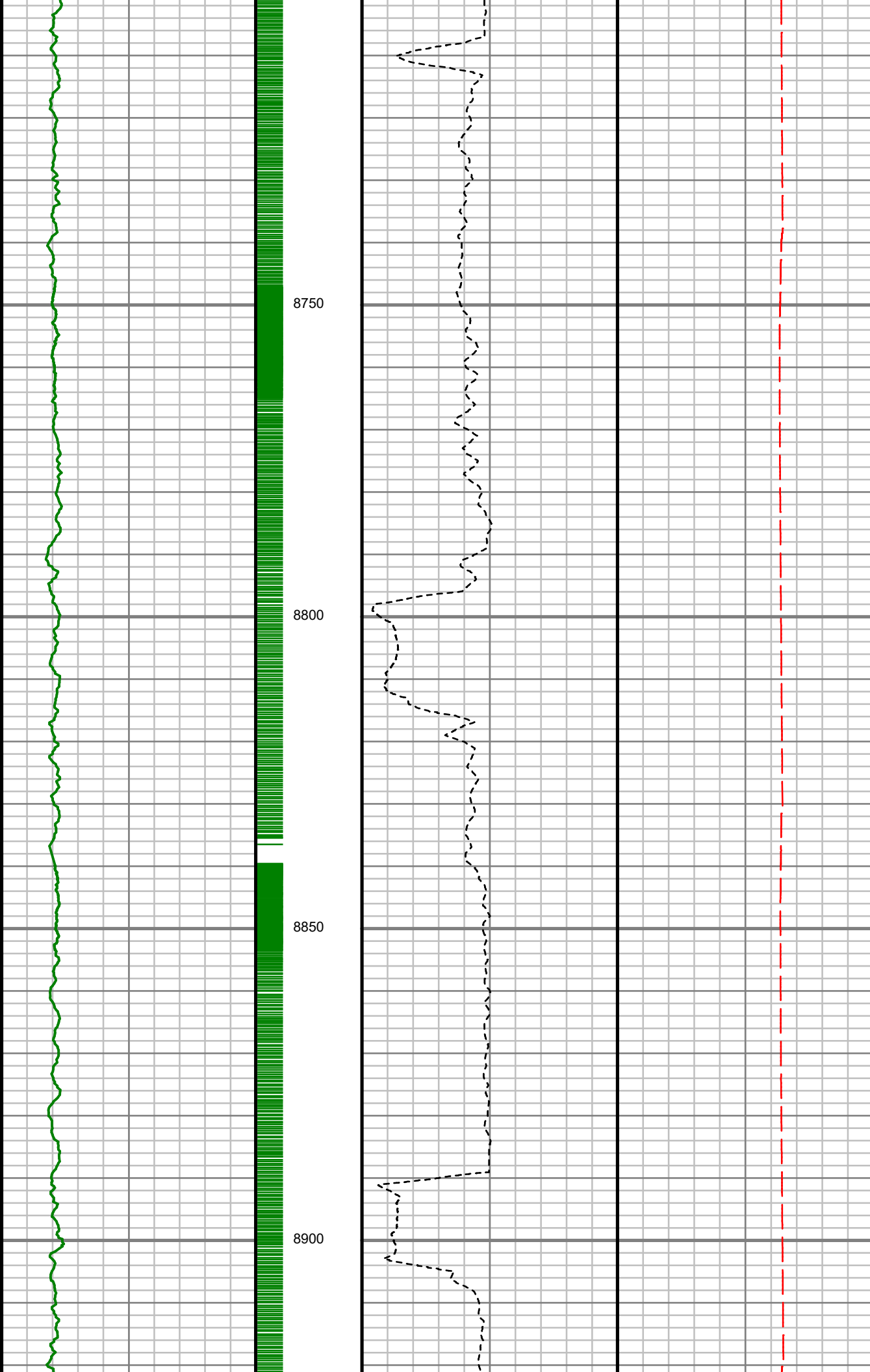


S: 80 MD: 8295.00 ft
Inc: 91.58 deg Az:
179.81 deg TVD:
7271.80 ft

S: 81 MD: 8384.00 ft
Inc: 92.08 deg Az:
179.24 deg TVD:
7268.95 ft

S: 82 MD: 8473.00 ft
Inc: 91.28 deg Az:
180.12 deg TVD:

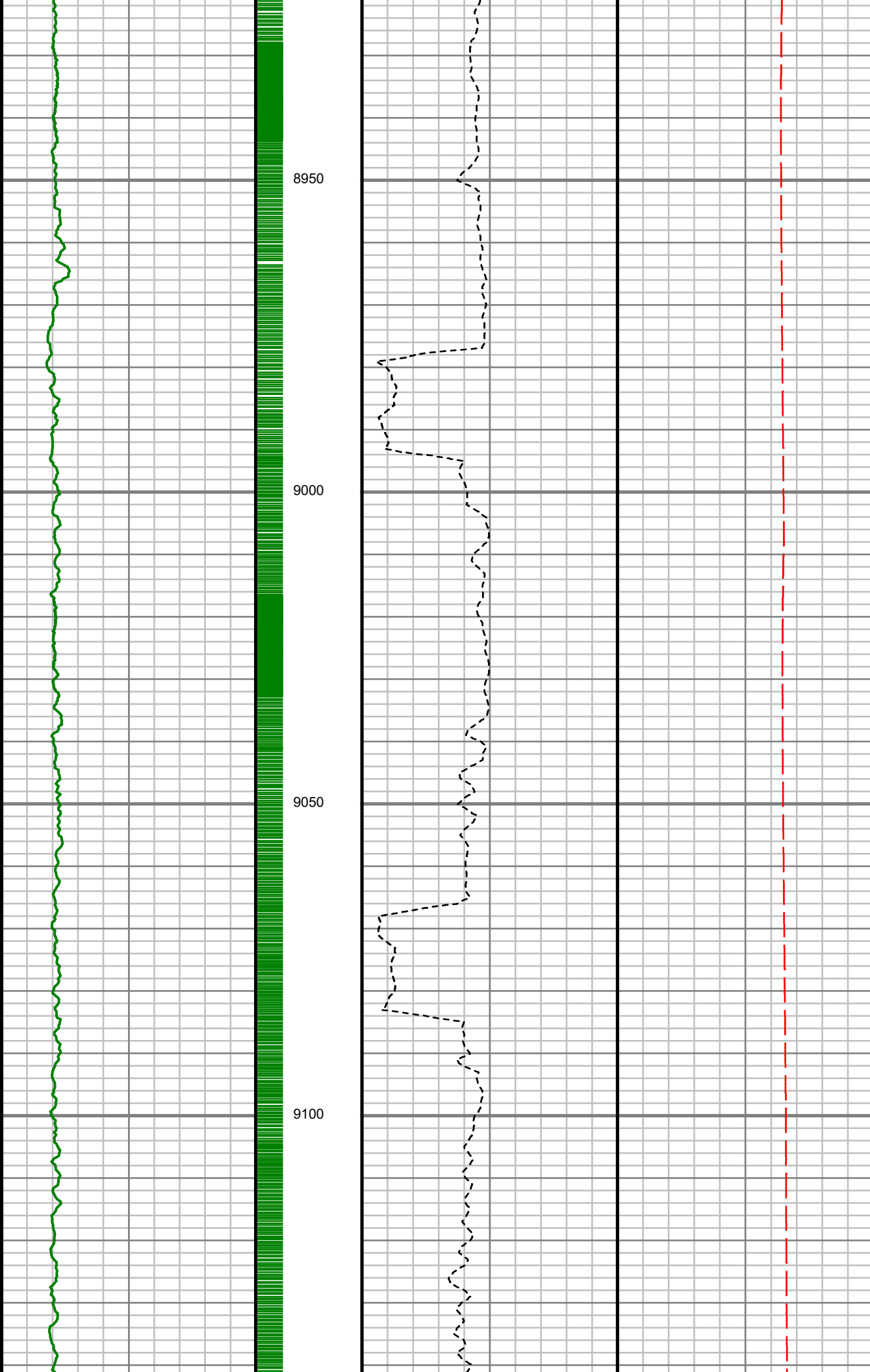




S: 85 MD: 8740.00 ft
Inc: 89.43 deg Az:
177.75 deg TVD:
7265.33 ft

S: 86 MD: 8829.00 ft
Inc: 89.26 deg Az:
178.54 deg TVD:
7266.34 ft

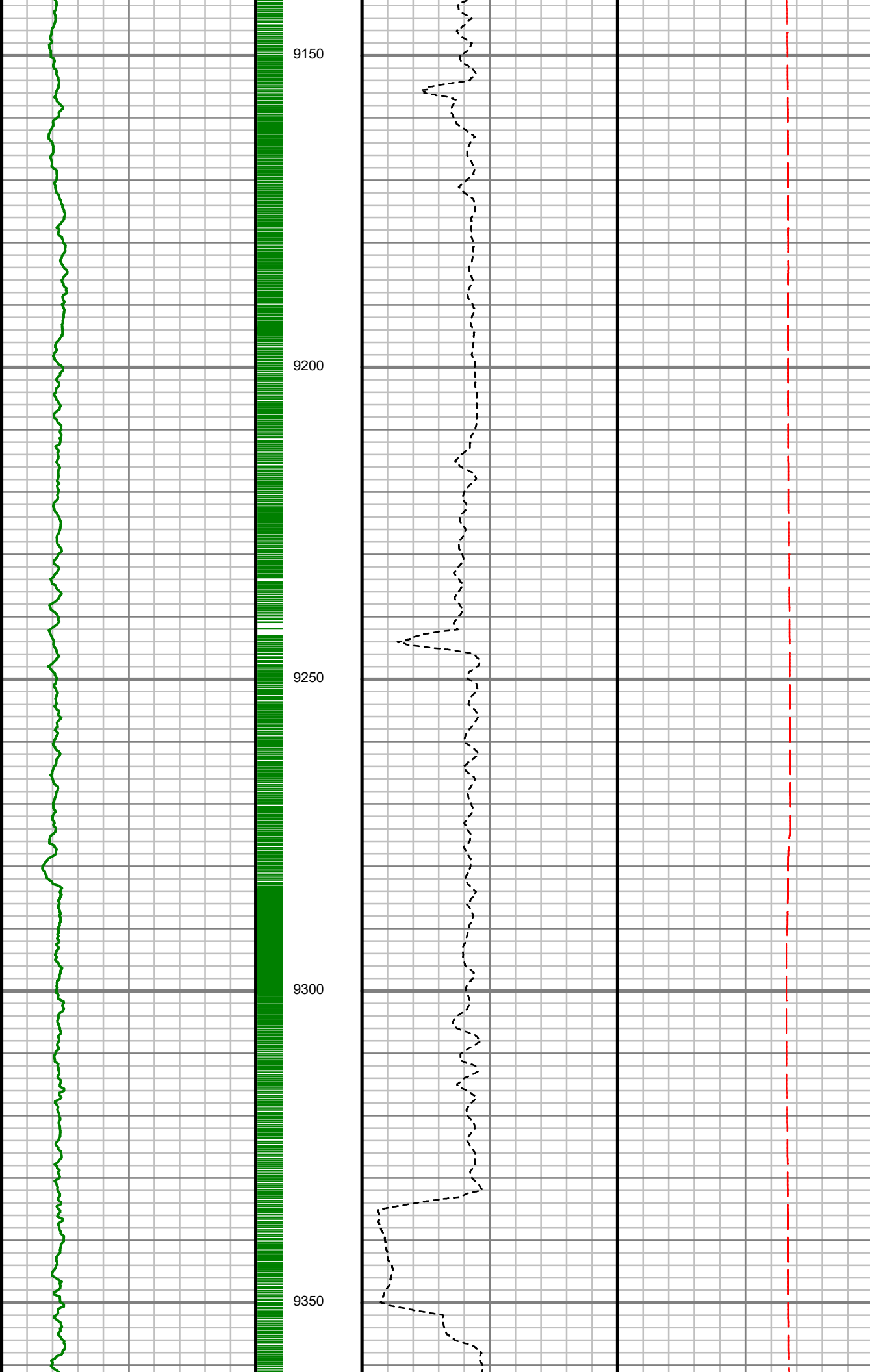
S: 87 MD: 8919.00 ft



Inc: 89.13 deg Az:
178.74 deg TVD:
7267.61 ft

S: 88 MD: 9008.00 ft
Inc: 88.76 deg Az:
179.61 deg TVD:
7269.25 ft

S: 89 MD: 9097.00 ft
Inc: 90.27 deg Az:
180.65 deg TVD:
7270.01 ft



9150

9200

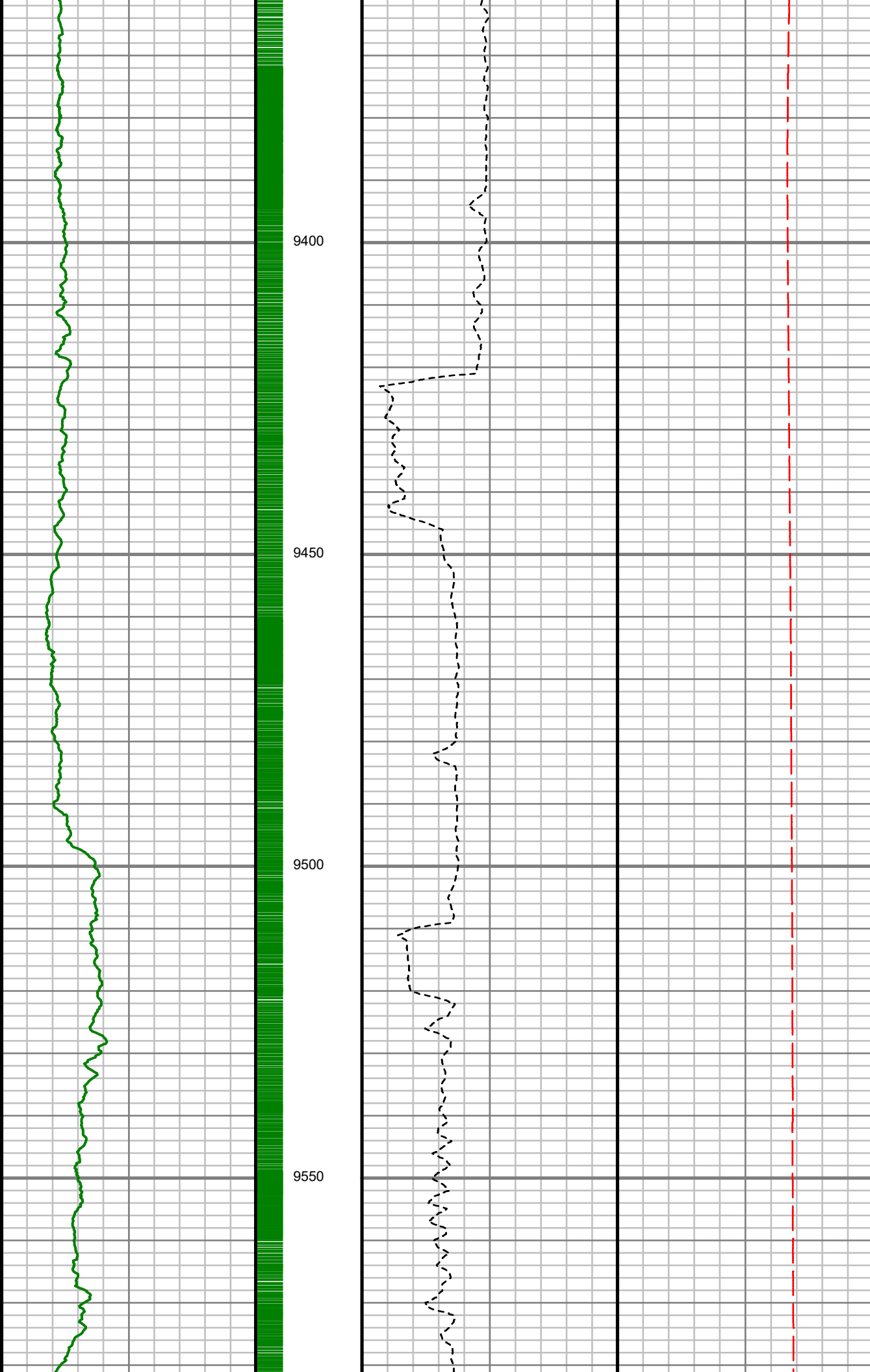
9250

9300

9350

S: 90 MD: 9186.00 ft
Inc: 90.57 deg Az:
180.47 deg TVD:
7269.36 ft

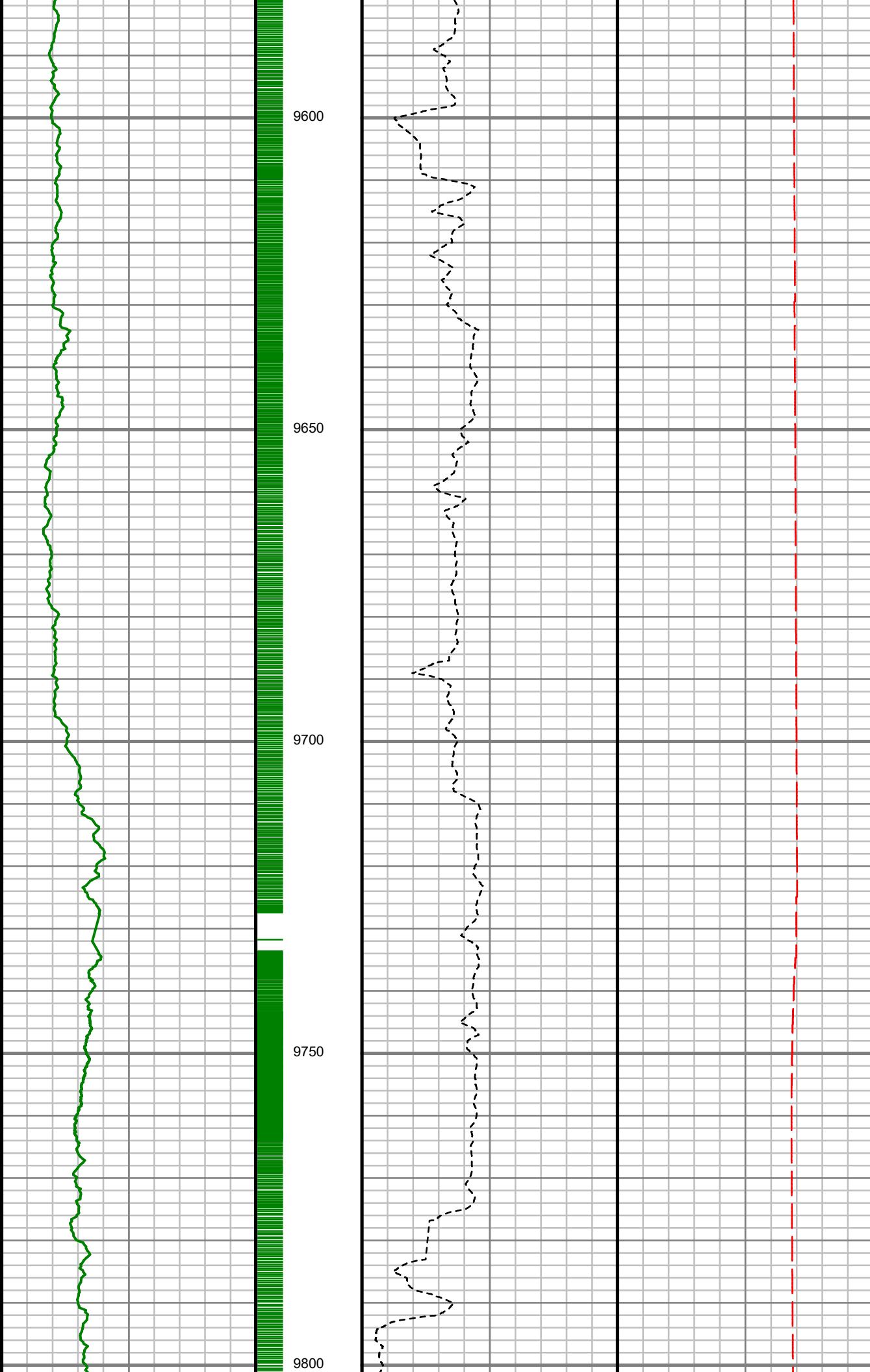
S: 91 MD: 9275.00 ft
Inc: 89.43 deg Az:
179.68 deg TVD:
7269.36 ft



S: 92 MD: 9364.00 ft
Inc: 89.10 deg Az:
179.61 deg TVD:
7270.51 ft

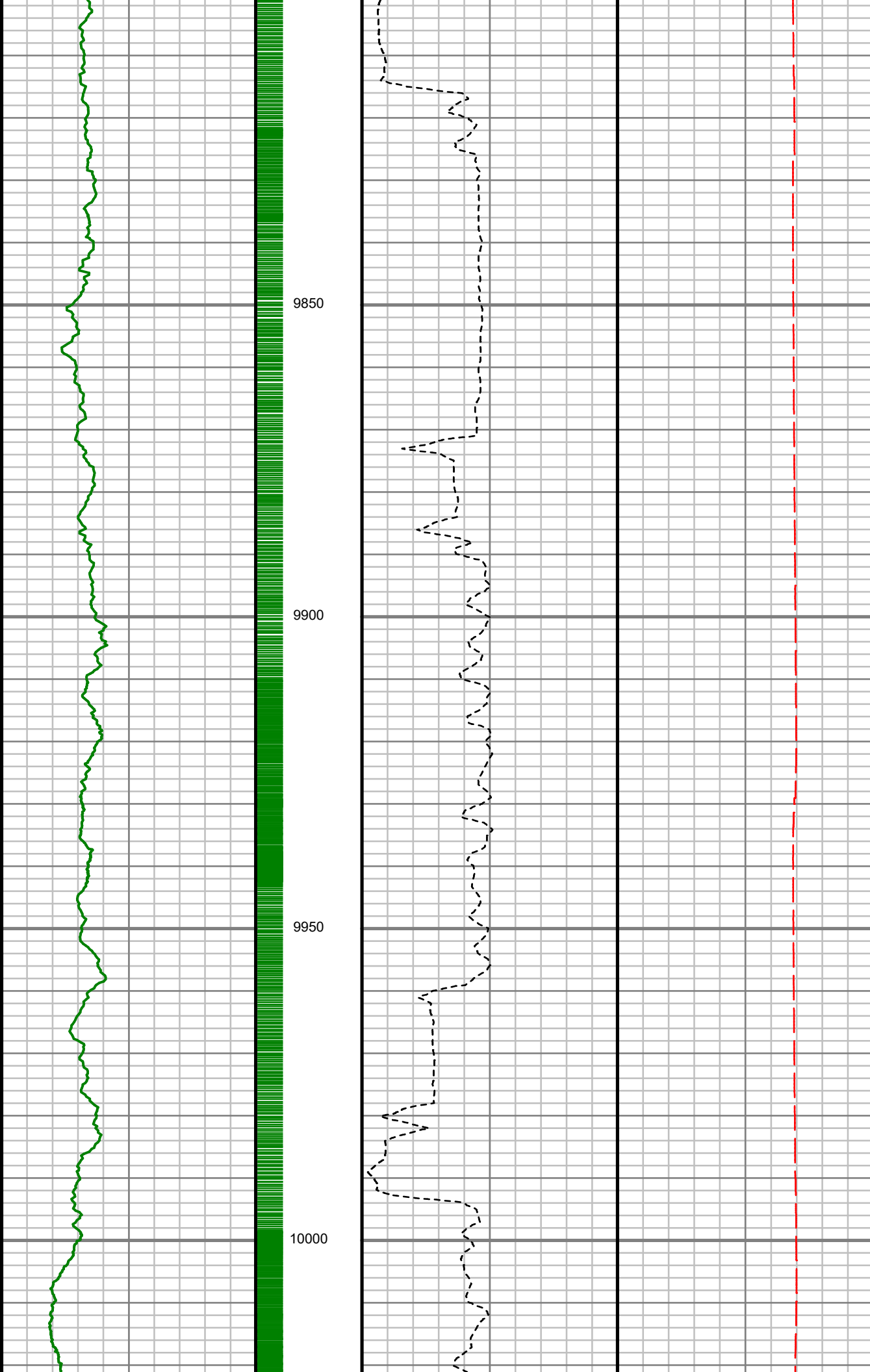
S: 93 MD: 9453.00 ft
Inc: 90.94 deg Az:
181.23 deg TVD:
7270.48 ft

S: 94 MD: 9542.00 ft
Inc: 91.17 deg Az:
180.27 deg TVD:
7268.84 ft



S: 95 MD: 9631.00 ft
Inc: 91.14 deg Az:
179.90 deg TVD:
7267.04 ft

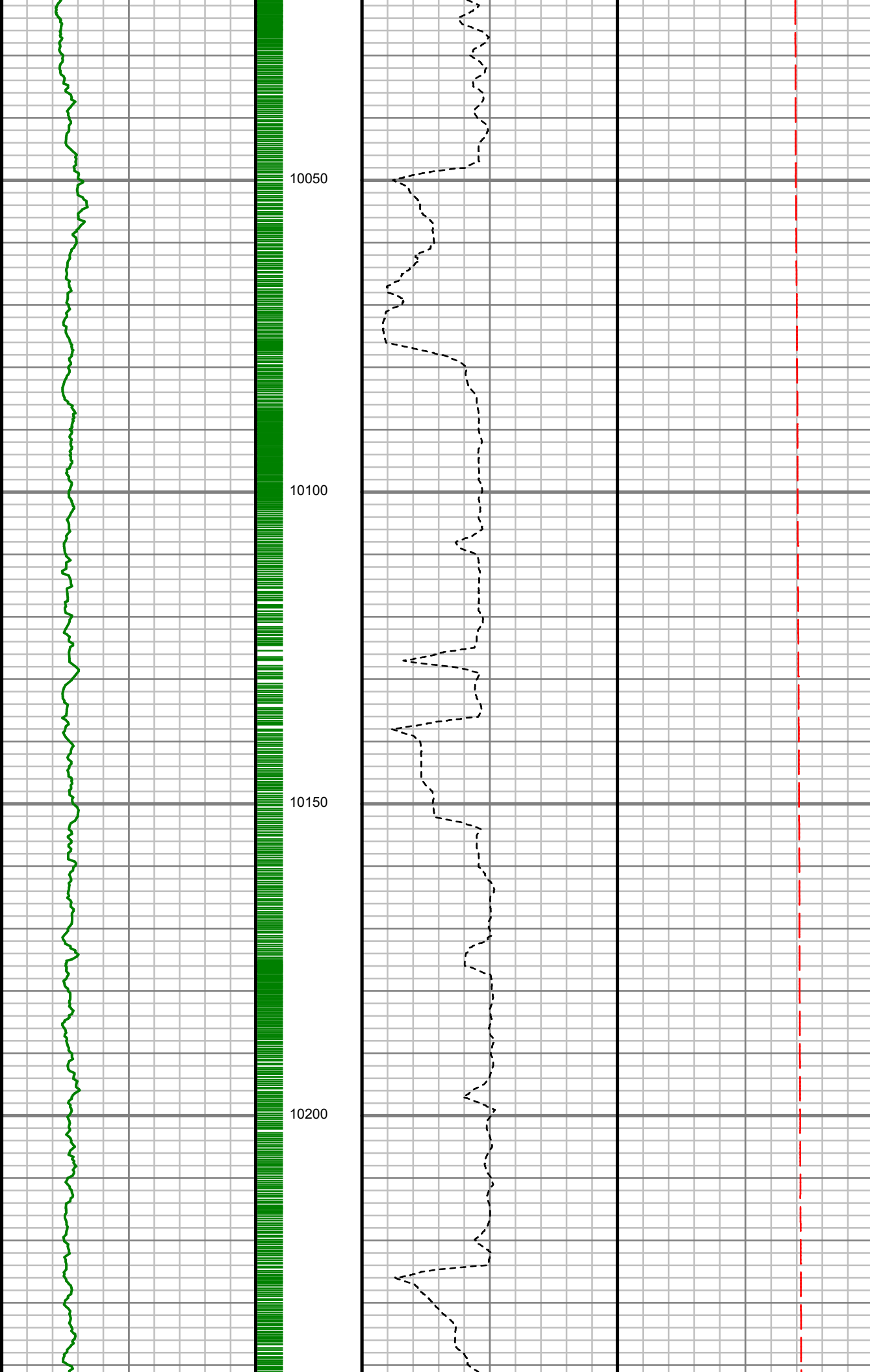
S: 96 MD: 9721.00 ft
Inc: 91.51 deg Az:
178.93 deg TVD:
7264.96 ft



S: 97 MD: 9810.00 ft
Inc: 91.64 deg Az:
181.23 deg TVD:
7262.52 ft

S: 98 MD: 9899.00 ft
Inc: 91.68 deg Az:
180.61 deg TVD:
7259.94 ft

S: 99 MD: 9988.00 ft
Inc: 91.85 deg Az:
181.62 deg TVD:
7257.21 ft



10050

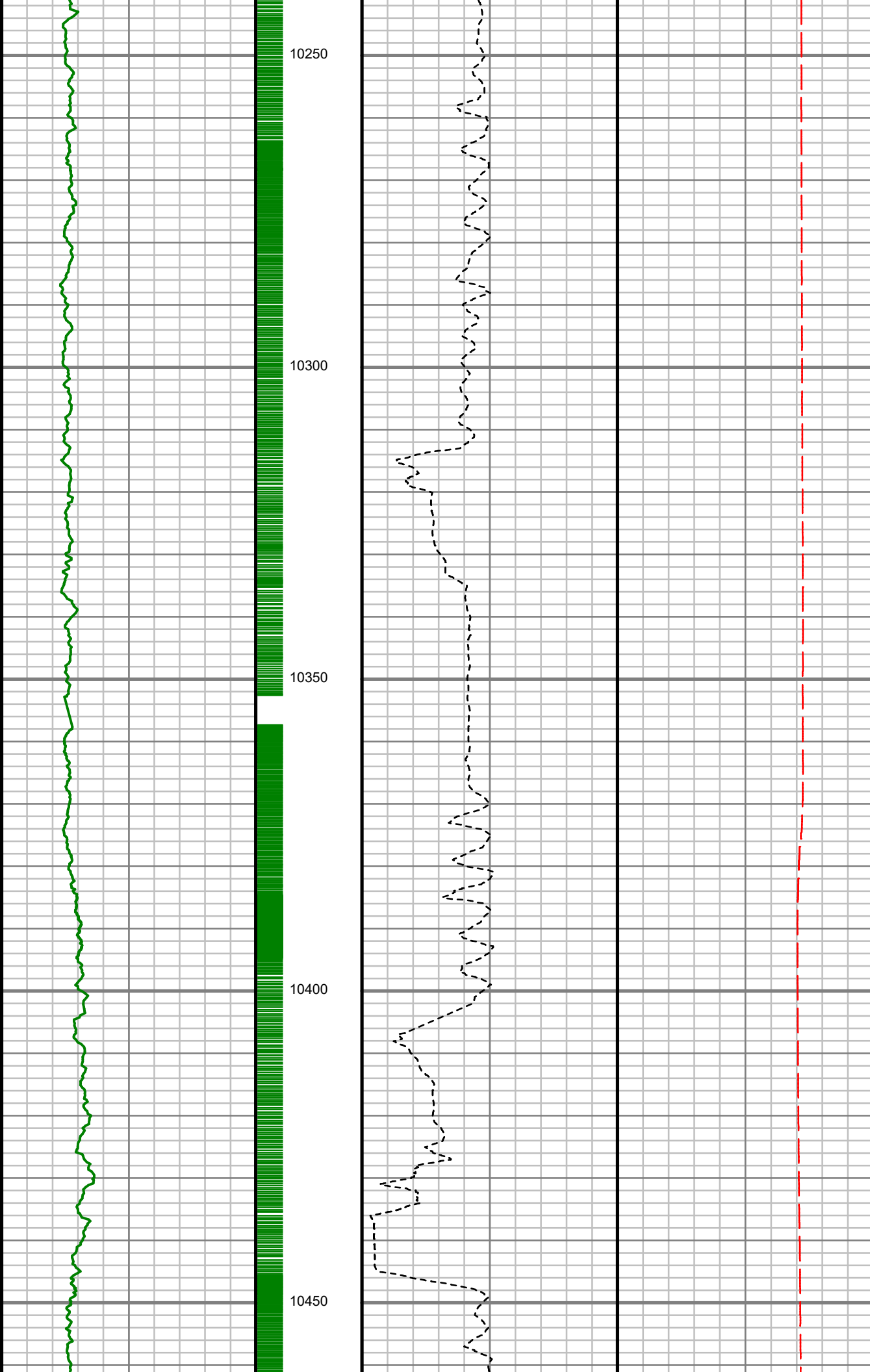
10100

10150

10200

S: 100 MD: 10077.00 ft
Inc: 90.37 deg Az:
181.82 deg TVD:
7255.48 ft

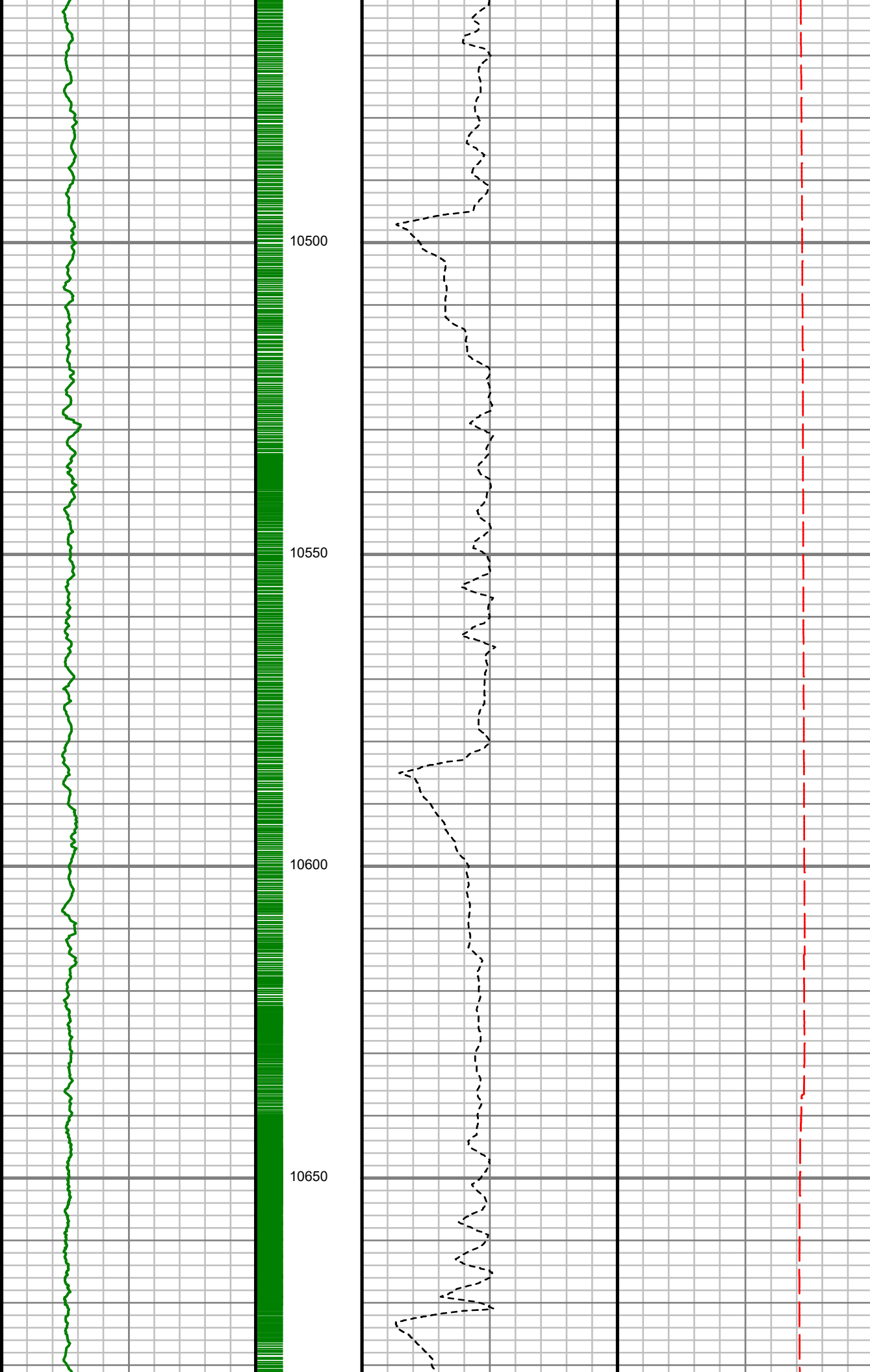
S: 101 MD: 10166.00 ft
Inc: 90.24 deg Az:
179.90 deg TVD:
7255.01 ft



S: 102 MD: 10255.00 ft
Inc: 89.83 deg Az:
179.21 deg TVD:
7254.96 ft

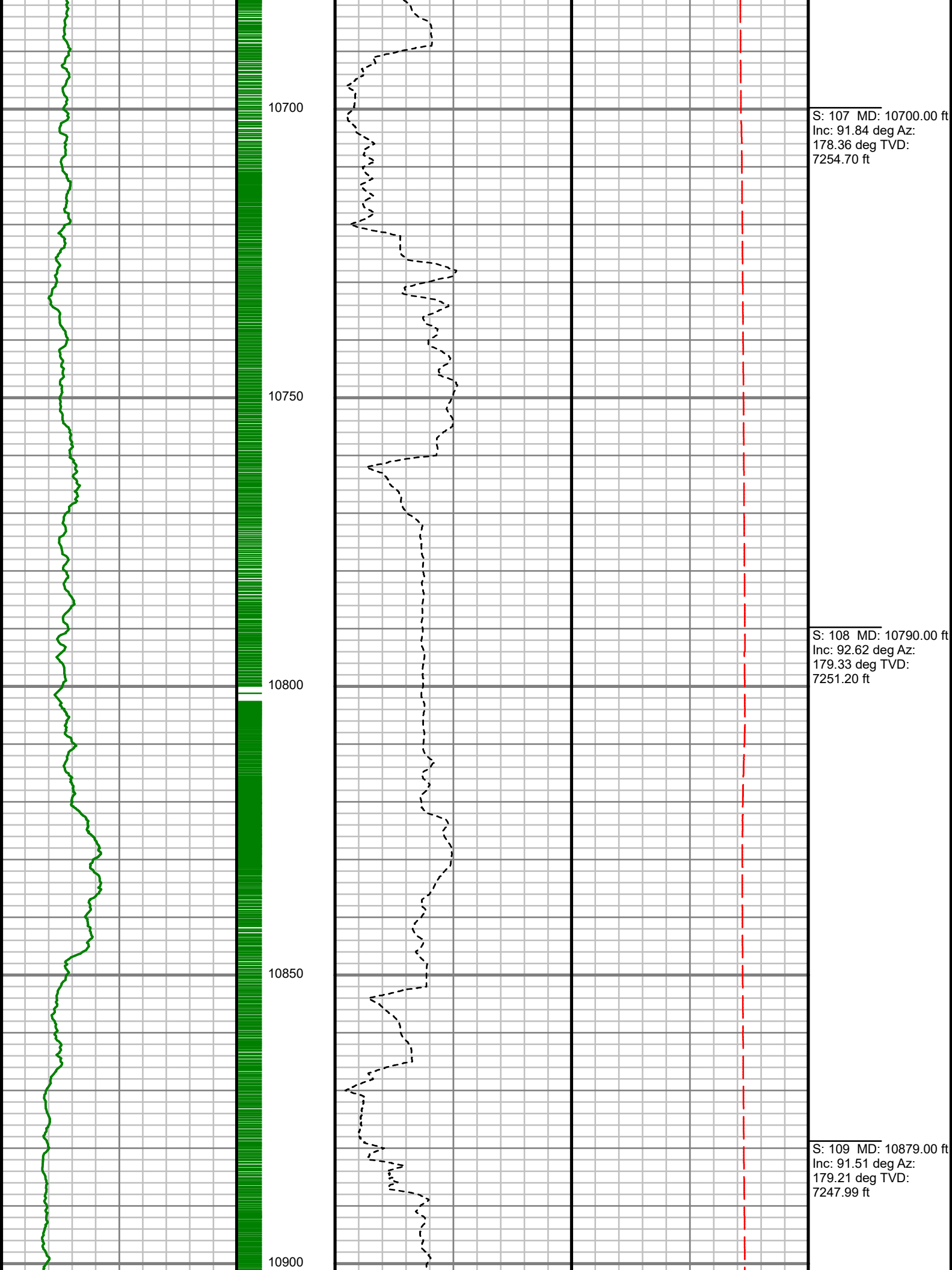
S: 103 MD: 10344.00 ft
Inc: 89.40 deg Az:
177.11 deg TVD:
7255.56 ft

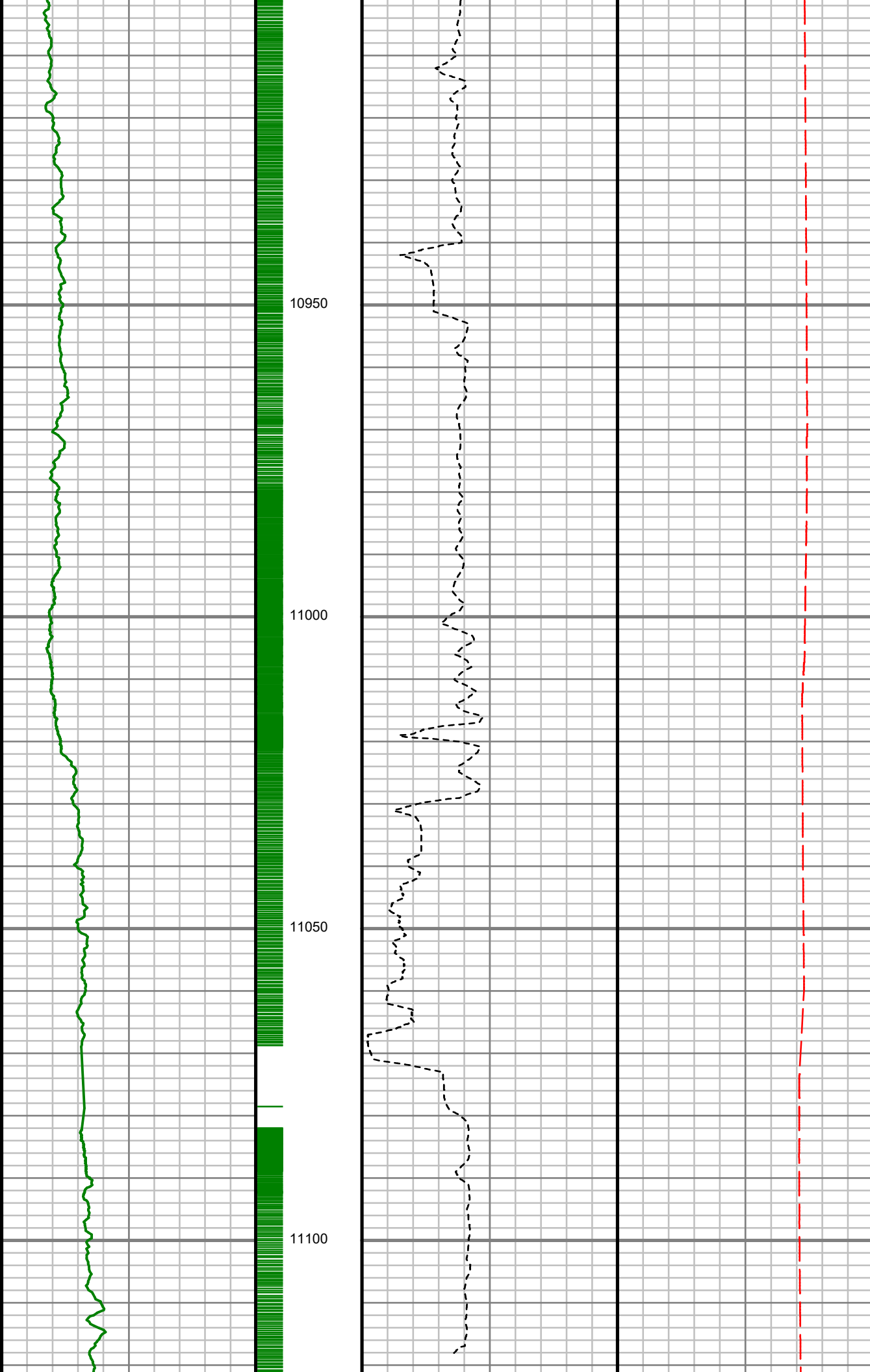
S: 104 MD: 10433.00 ft
Inc: 90.67 deg Az:
179.85 deg TVD:
7255.51 ft



S: 105 MD: 10522.00 ft
Inc: 89.77 deg Az:
178.69 deg TVD:
7255.17 ft

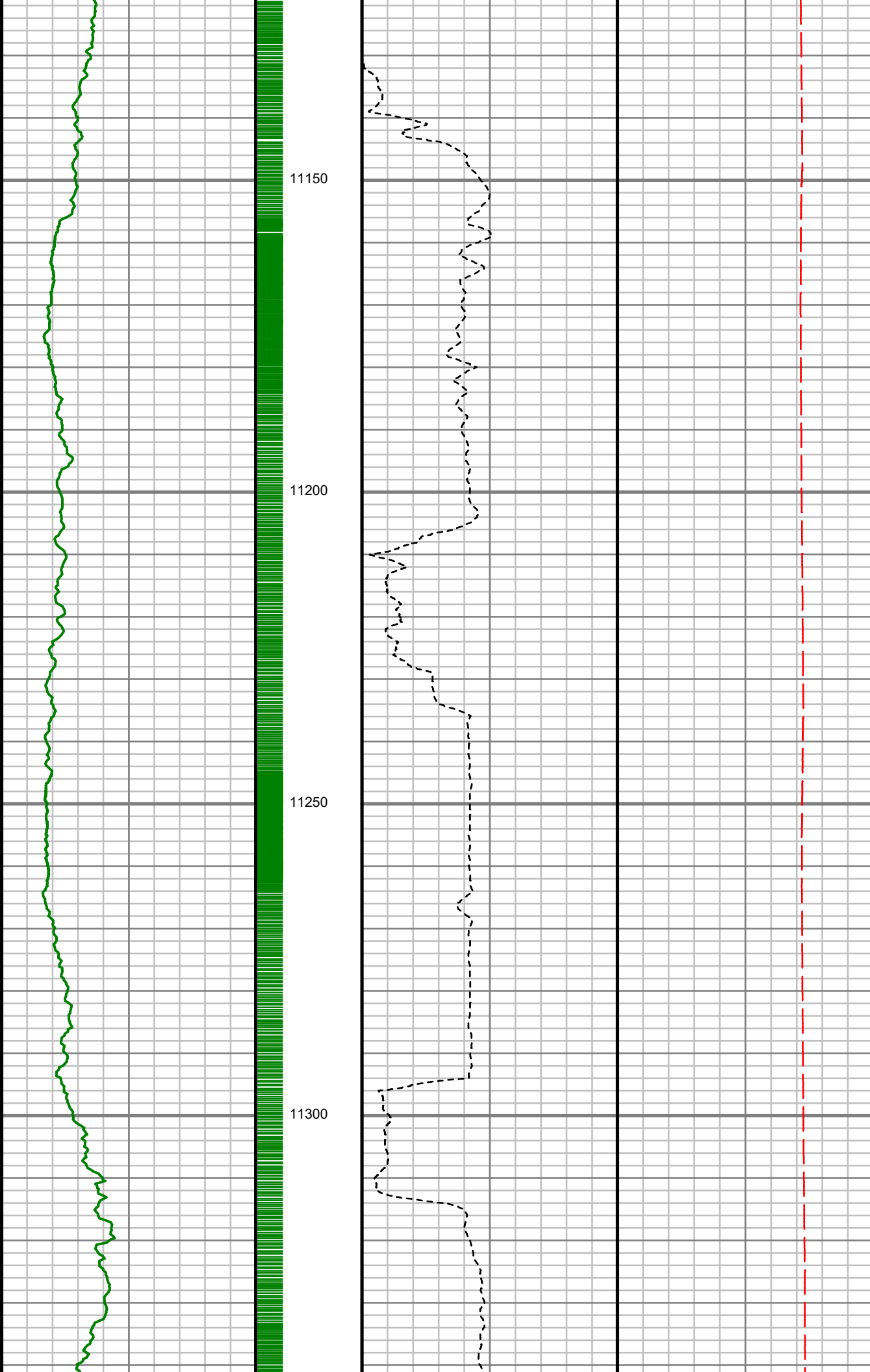
S: 106 MD: 10611.00 ft
Inc: 89.50 deg Az:
177.36 deg TVD:
7255.74 ft





S: 110 MD: 10968.00 ft
Inc: 91.41 deg Az:
179.18 deg TVD:
7245.73 ft

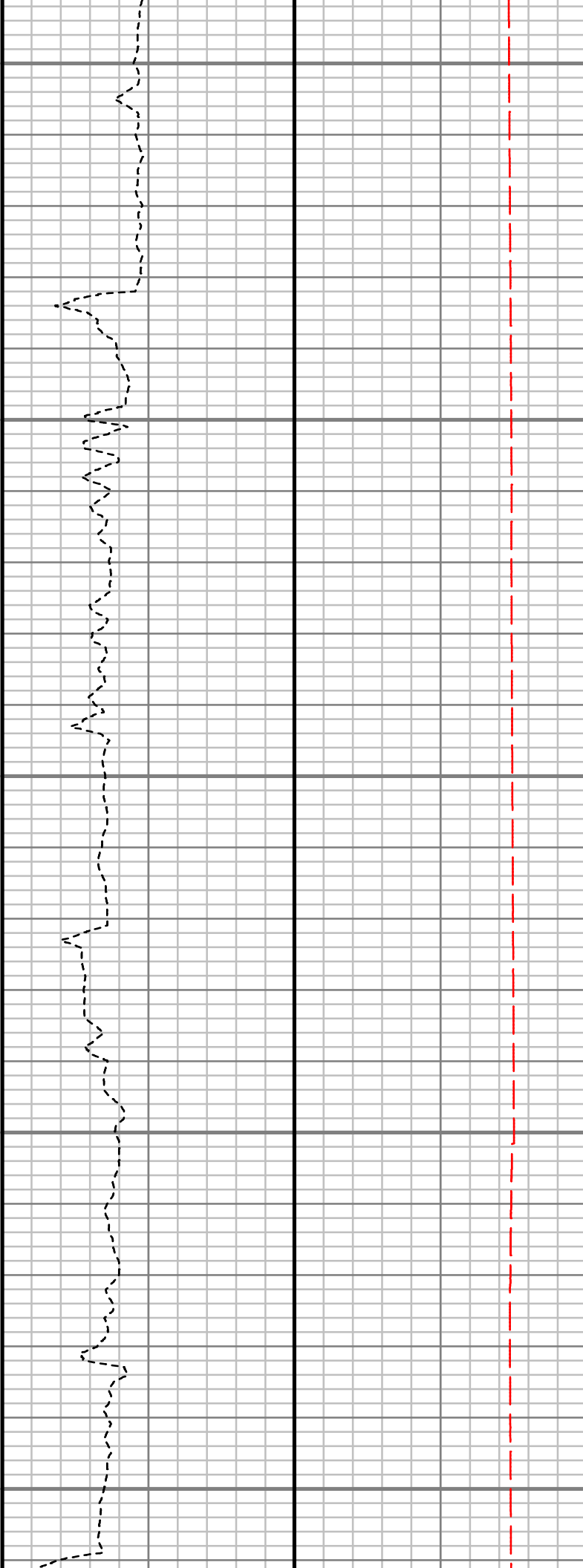
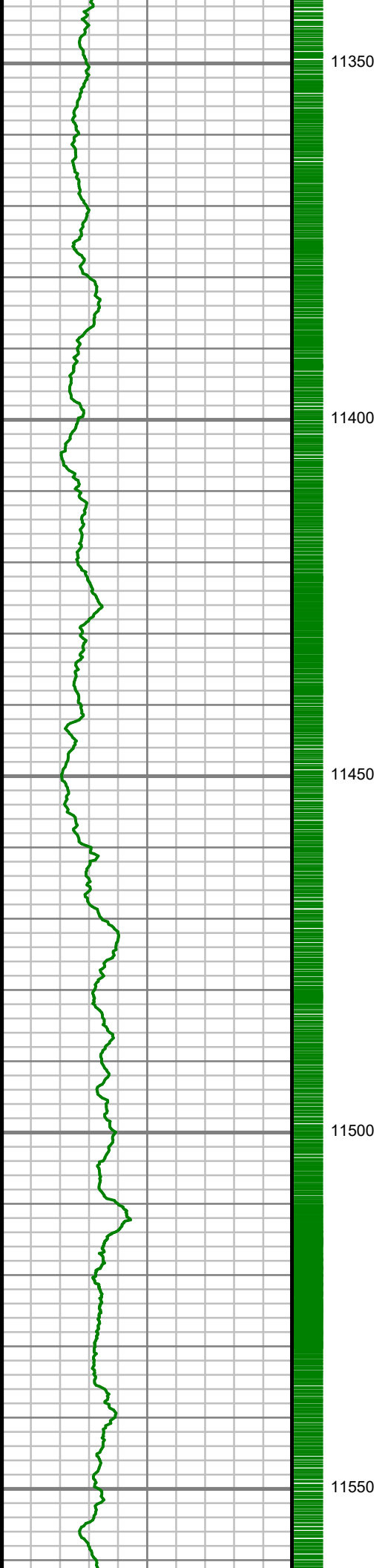
S: 111 MD: 11057.00 ft
Inc: 90.23 deg Az:
179.04 deg TVD:
7244.45 ft



S: 112 MD: 11146.00 ft
Inc: 88.16 deg Az:
179.66 deg TVD:
7245.70 ft

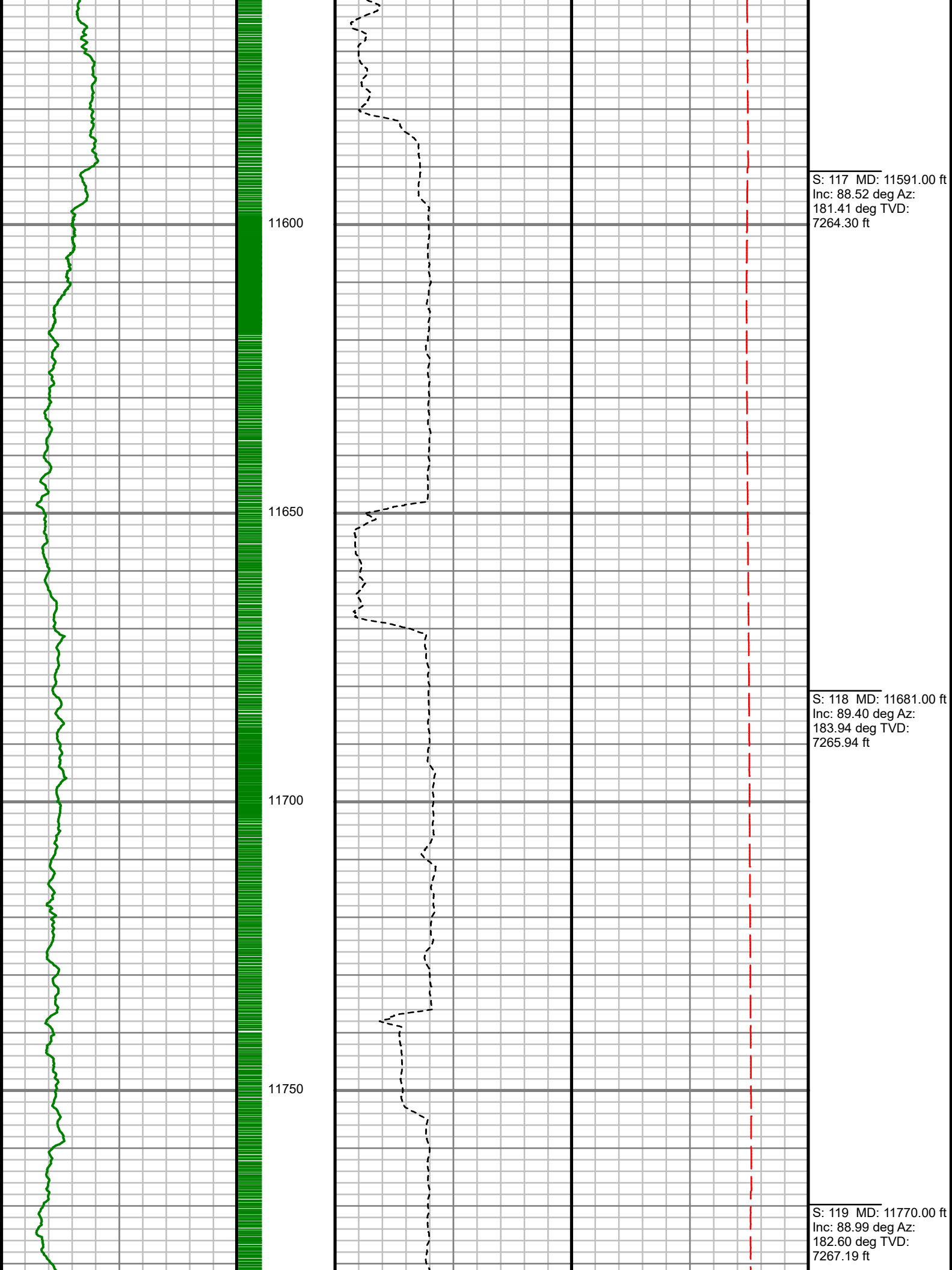
S: 113 MD: 11235.00 ft
Inc: 88.89 deg Az:
182.00 deg TVD:
7247.99 ft

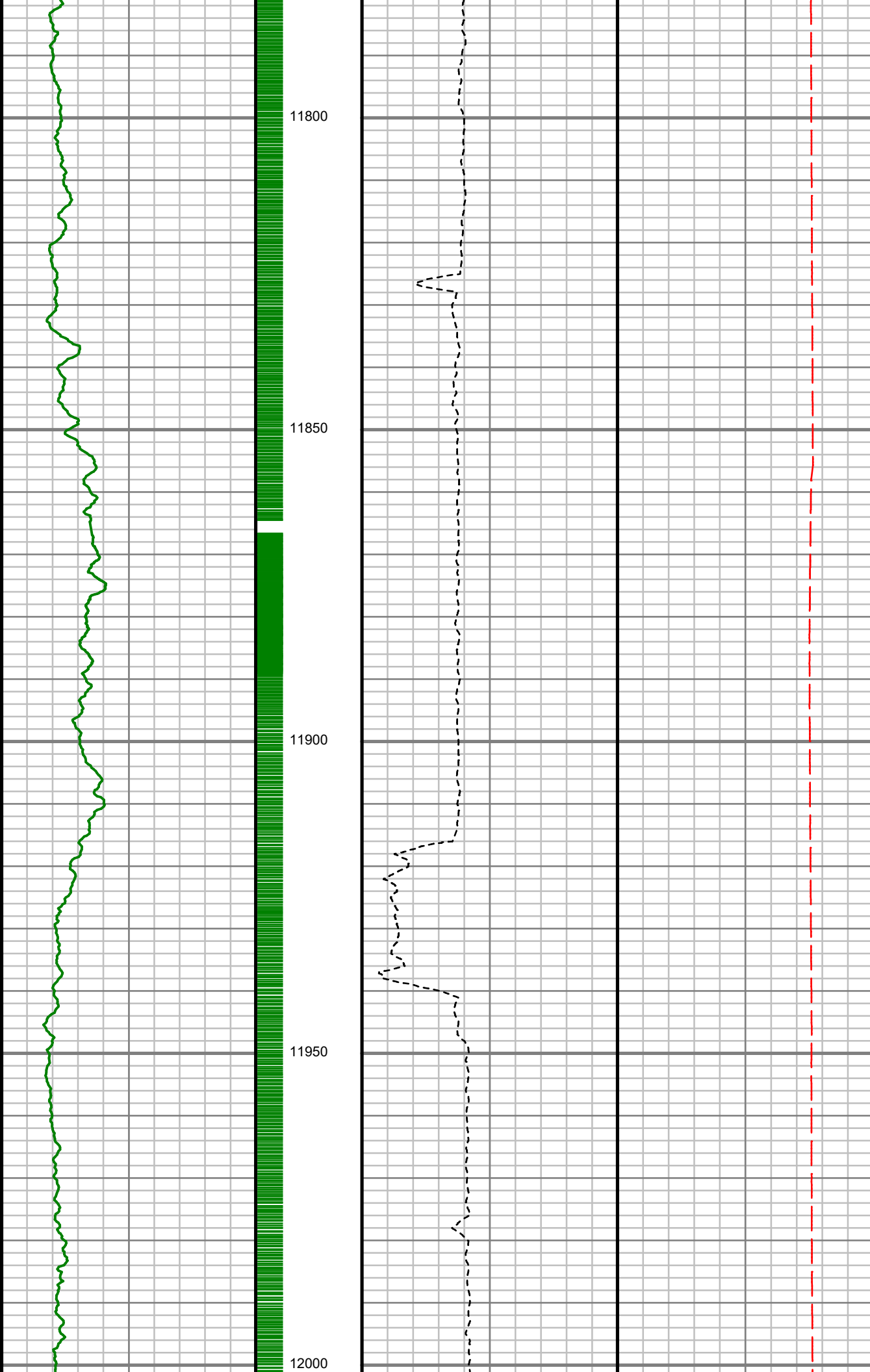
S: 114 MD: 11324.00 ft
Inc: 87.28 deg Az:
183.94 deg TVD:
7250.96 ft



S: 115 MD: 11413.00 ft
Inc: 87.01 deg Az:
183.27 deg TVD:
7255.40 ft

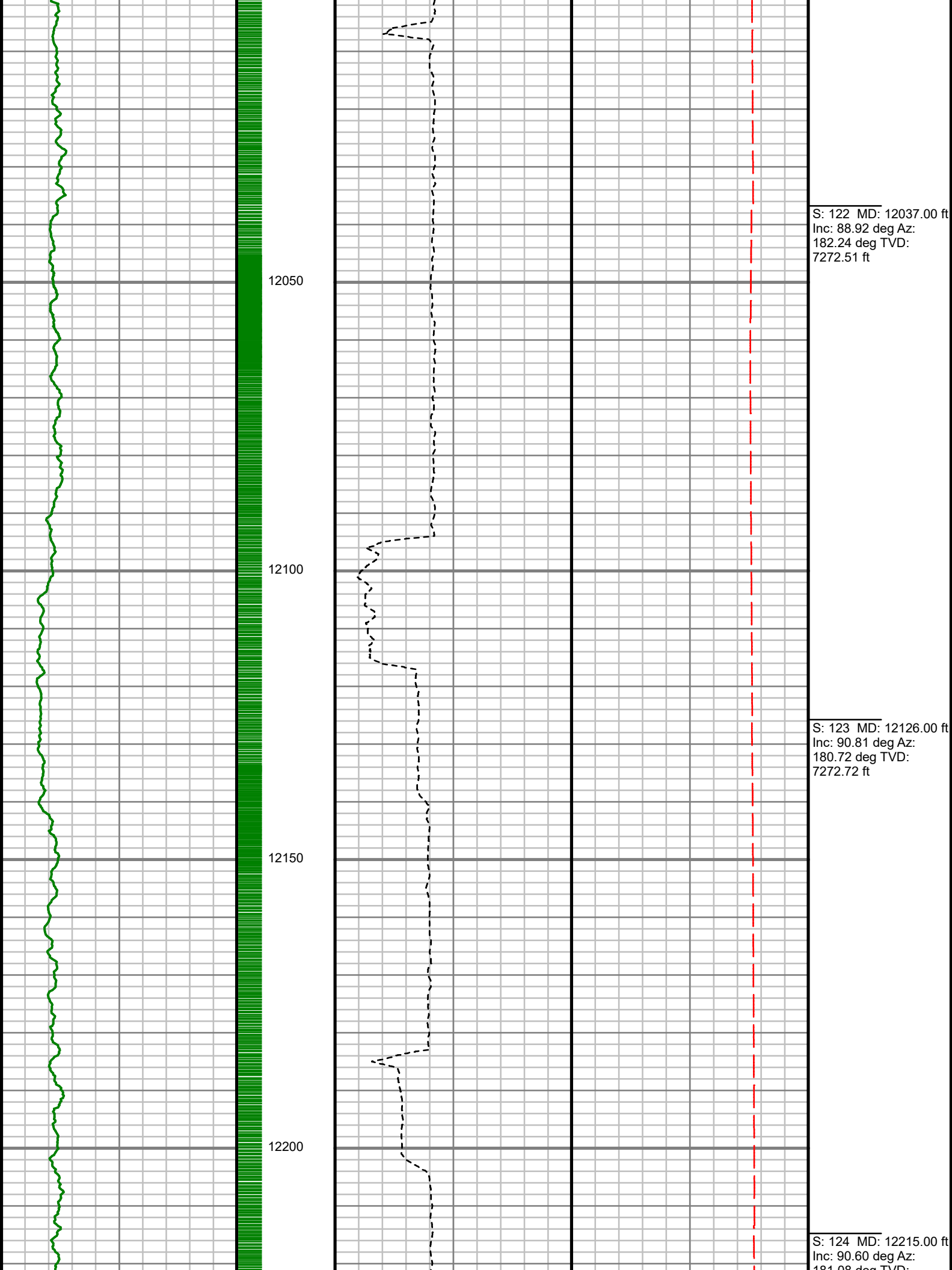
S: 116 MD: 11502.00 ft
Inc: 86.50 deg Az:
182.02 deg TVD:
7260.44 ft

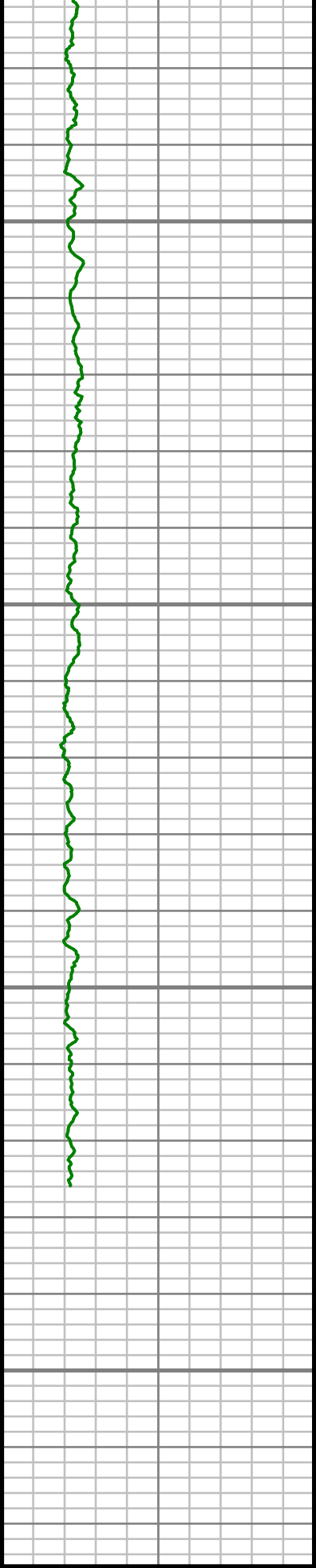




S: 120 MD: 11859.00 ft
Inc: 87.89 deg Az:
182.48 deg TVD:
7269.61 ft

S: 121 MD: 11948.00 ft
Inc: 89.73 deg Az:
182.75 deg TVD:
7271.46 ft





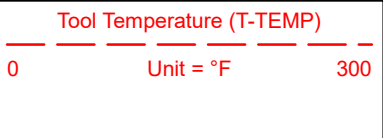
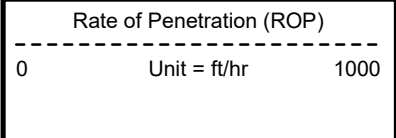
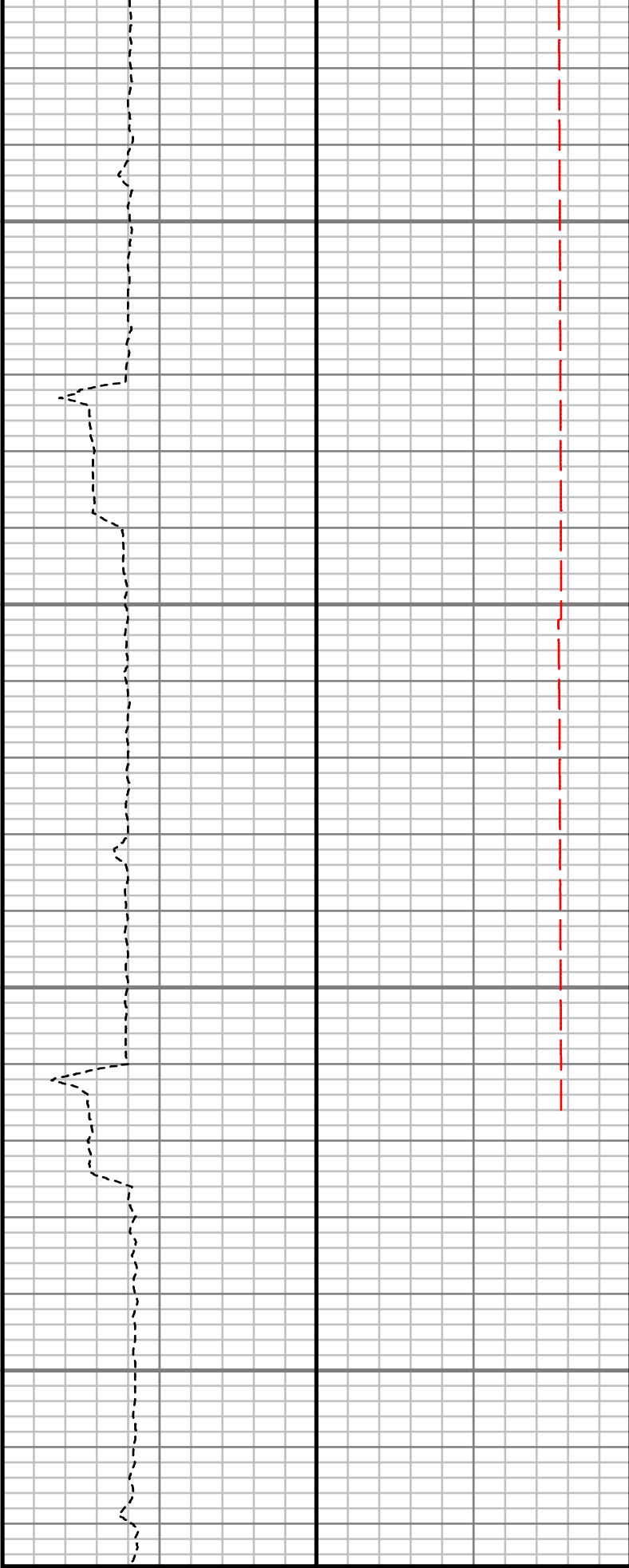
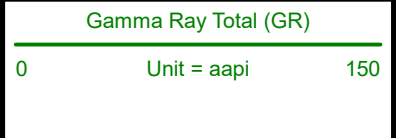
12250

12300

12350

12400

MEASURED DE
1.240 (ft)



161.08 deg TVD:
7271.62 ft

S: 125 MD: 12304.00 ft
Inc: 90.74 deg Az:
179.77 deg TVD:
7270.58 ft

S: 126 MD: 12363.00 ft
Inc: 90.07 deg Az:
177.21 deg TVD:
7270.16 ft

Comments

PTH



GAMMA RAY

5" = 100' MD