



GAMMA RAY

5" = 100' FEET MD

COMPANY : ANADARKO E&P ONSHORE LLC
WELL : FOLLEY SOUTH 3
FIELD : WATTENBERG
COUNTY : LARIMER
STATE : COLORADO
COUNTRY : U.S.A.
UWI : 05069064830000

COMPANY : ANADARKO E&P ONSHORE LLC

WELL : FOLLEY SOUTH 3

FIELD : WATTENBERG

COUNTY : LARIMER

STATE : COLORADO

COUNTRY : U.S.A.

UWI : 05069064830000

WELL LOCATION

LAT:40°23'37.684"N LONG:104°56'48.588"W
N:14670141.67 ft E:1655221.08 ft

SEC:13

TWP:5N

RANGE:68W

OTHER SERVICES

DIRECTIONAL

ROP

DEPTH REF. : RKB

REF. HEIGHT : 20.000 ft

RKB to Ground Level

GROUND LEVEL : 4886.600 ft

G.L. to MEAN SEA LEVEL

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
13.5	0	1865	0 - 24	0	2406
8.5	1865	15995	24 - 24	2406	3907
			24 - 1	3907	6568
			1 - 91	6568	7702
			91 - 93	7702	15995

CASING RECORD

CASING SIZE in	FROM ft	TO ft	DRILLING CO.: PRECISION DRILLING RIG: 461 LWD UNIT NO.: DISTRICT: CASPER SPUD DATE: 08/24/2016 LWD START DATE: 08/31/2016 DEPTH: 1900 ft LWD END DATE: 09/05/2016 DEPTH: 15995 ft TOTAL DEPTH: 15995 ft		
9.625	0	1855			

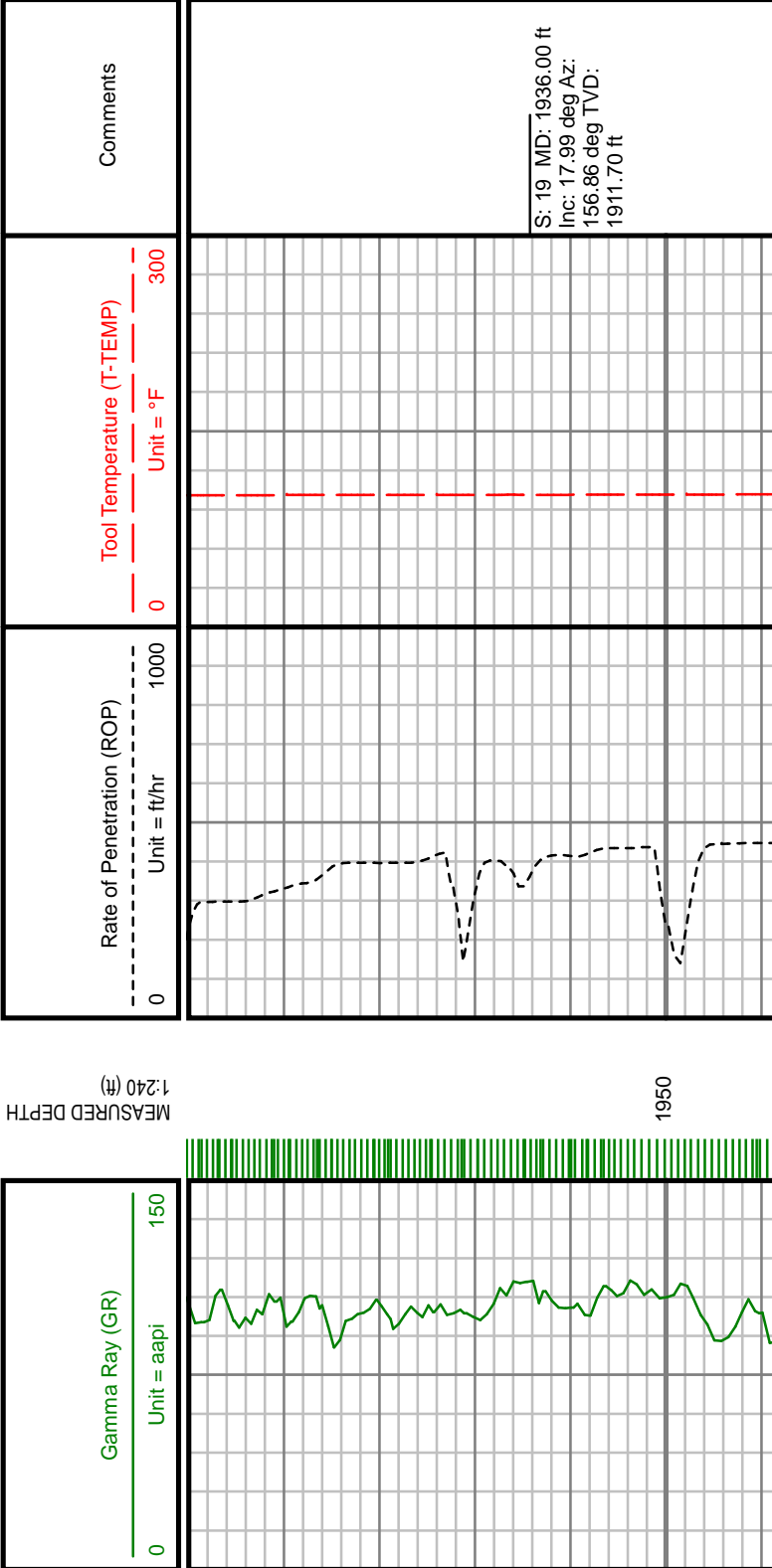
Run Data

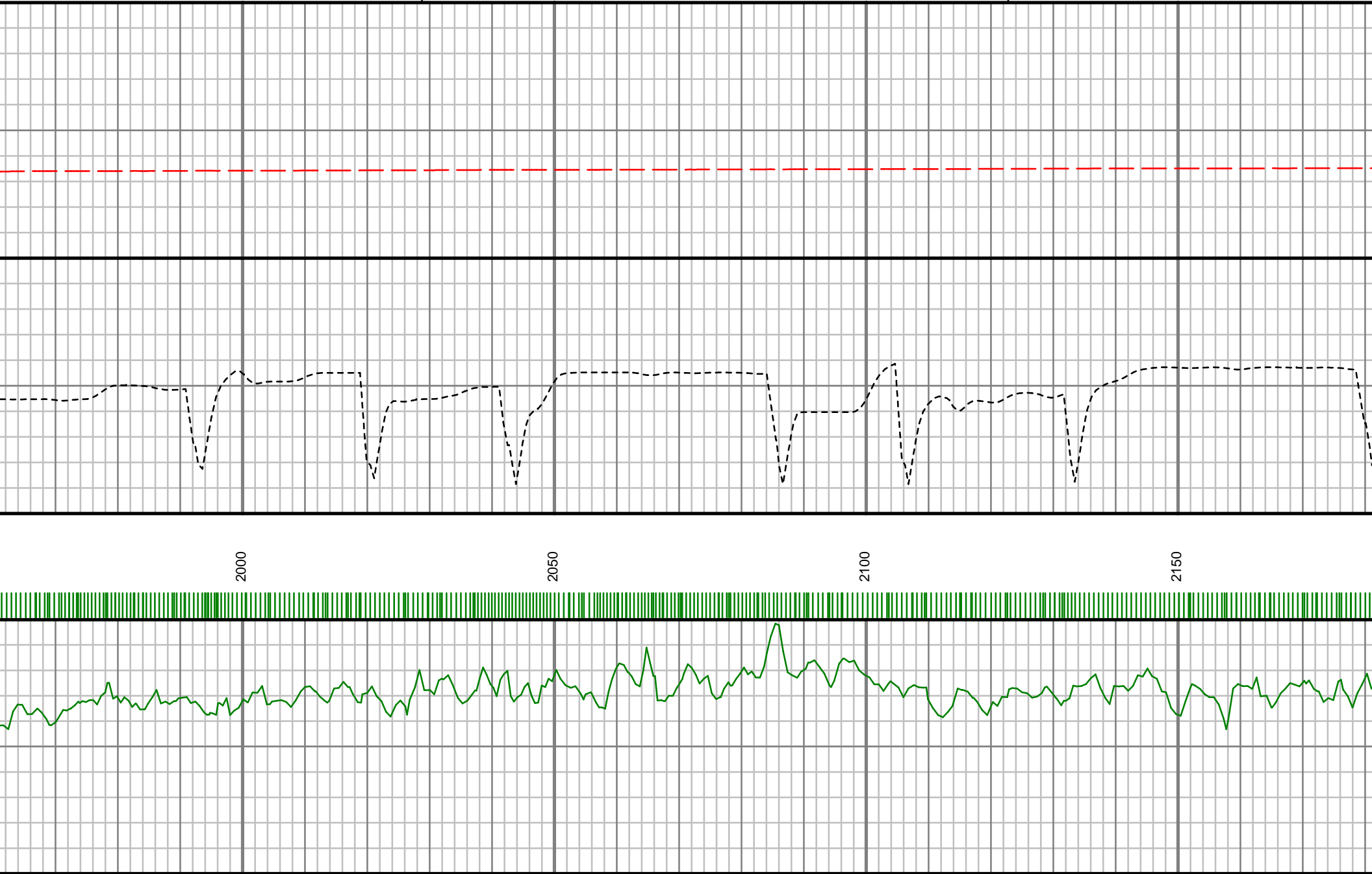
RUN NUMBER	1	2	3			
START DATE	08/31/2016	09/02/2016	9/2/216			
START TIME	1930	0445	2020			
END DATE	09/02/2016	09/02/2016	09/05/2016			
END TIME	0445	2020	2230			
DEPTH IN (ft)	1865	7002	7326			
DEPTH OUT (ft)	7002	7326	15995			
LOG TOP (ft)	1900	6954	7279			
LOG BOTTOM (ft)	6954	7279	15946			
HOLE SIZE (in)	8.5	8.5	8.5			
MUD DATA @ (ft)	5592	7326	10195			
MUD TYPE	OIL-BASED	OIL-BASED	OIL-BASED			
DENSITY (lb / gal)	9.05	9.2	9.4			
VISCOSITY (s / qt)	56	56	68			
pH	6.2	5.6	4.6			
FLUID LOSS (cm3 / 30)	-	-	-			
SALINITY (ppm)	4300	45000	41000			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	168	170	235			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	M. SMITH	C. JAKUES	C. JAKUES			
LWD ENGINEER #2	C. WRIGHT	C. WRIGHT	C. WRIGHT			
LWD ENGINEER #3	C. JAKUES	-	S. NEJAD			
LOG WITNESS #1	-	-	-			
LOG WITNESS #2	-	-	-			

Remarks
ANADARKO E&P ONSHORE LLC PRODUCTION AFF# 2123103
SCIENTIFIC DRILLING INTERNATIONAL JOB# 381665
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 = 128-347 / CONT = 862 / MWD EYE = 0153 / GAMMA RAY = 1244
BIT TO SENSOR OFFSETS: SURVEY = 56.91 FT. / GAMMA RAY = 48.22 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-347 / CONT = 862 / MWD EYE = 0153 / GAMMA RAY = 1244
BIT TO SENSOR OFFSETS: SURVEY = 54.92 FT. / GAMMA RAY = 46.23 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-347 / CONT = 862 / MWD EYE = 0153 / GAMMA RAY = 1244
BIT TO SENSOR OFFSETS: SURVEY = 56.91 FT. / GAMMA RAY = 48.22 FT.
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.

ANADARKO E&P ONSHORE LLC
FOLLEY SOUTH 3
WATTENBERG FIELD
LARIMER COUNTY, COLORADO
API # 05069064830000



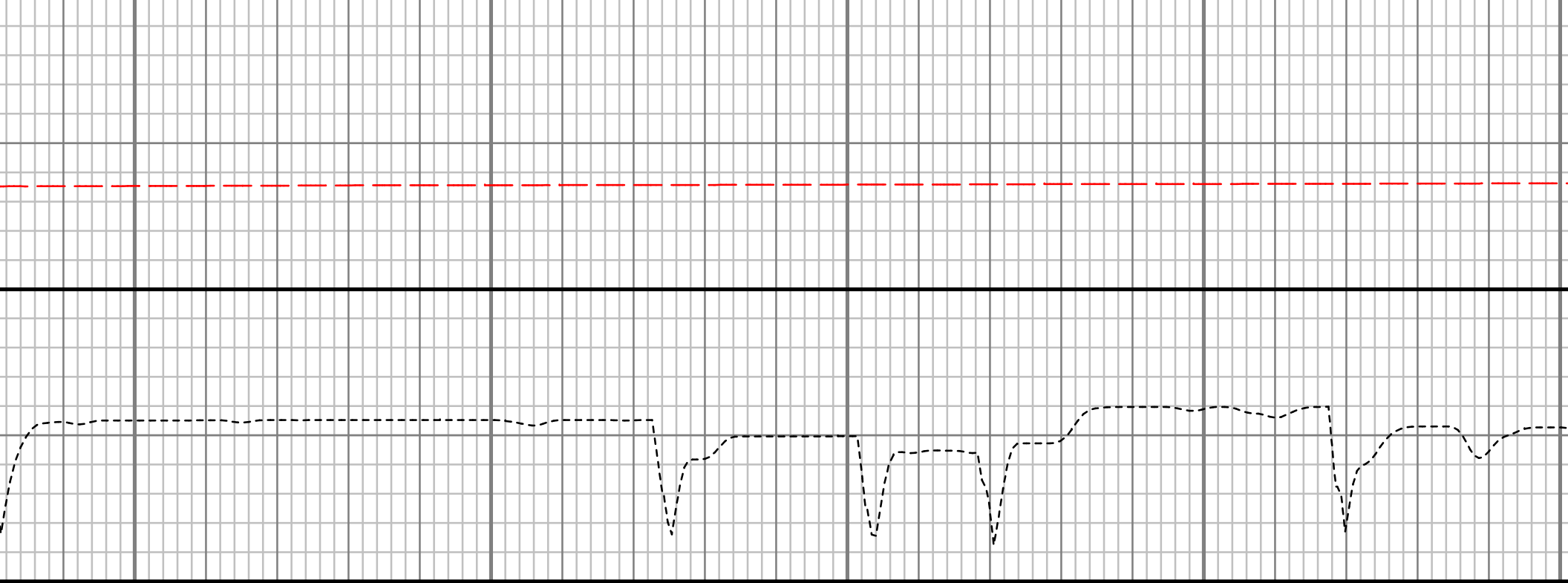


S: 20 MD: 2029.00 ft
Inc: 19.11 deg Az:
155.27 deg TVD:
1999.86 ft

S: 21 MD: 2123.00 ft
Inc: 22.18 deg Az:
155.95 deg TVD:
2087.82 ft

S: 22 MD: 2217.00 ft
Inc: 21.27 deg Az:
154.13 deg TVD:
2175.14 ft

S: 23 MD: 2312.00 ft
Inc: 22.25 deg Az:
155.74 deg TVD:
2263.37 ft



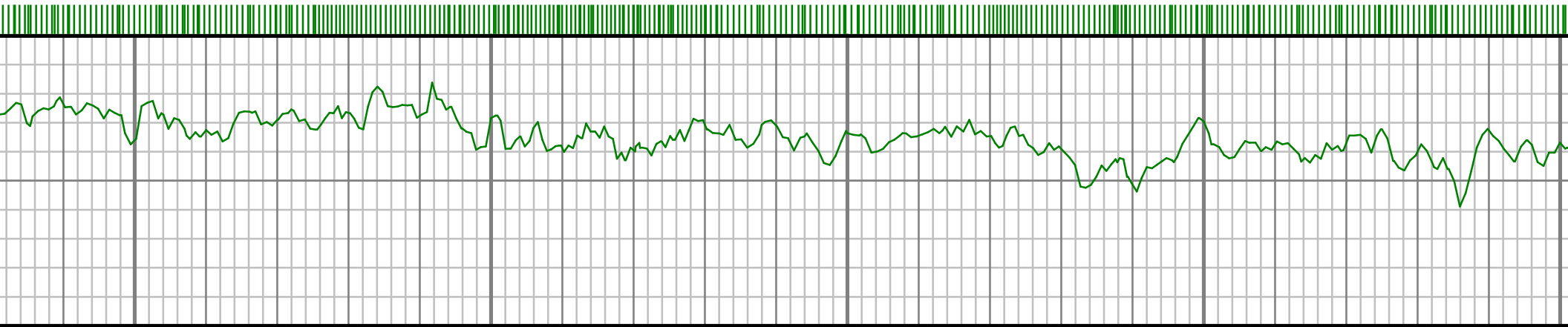
2200

2250

2300

2350

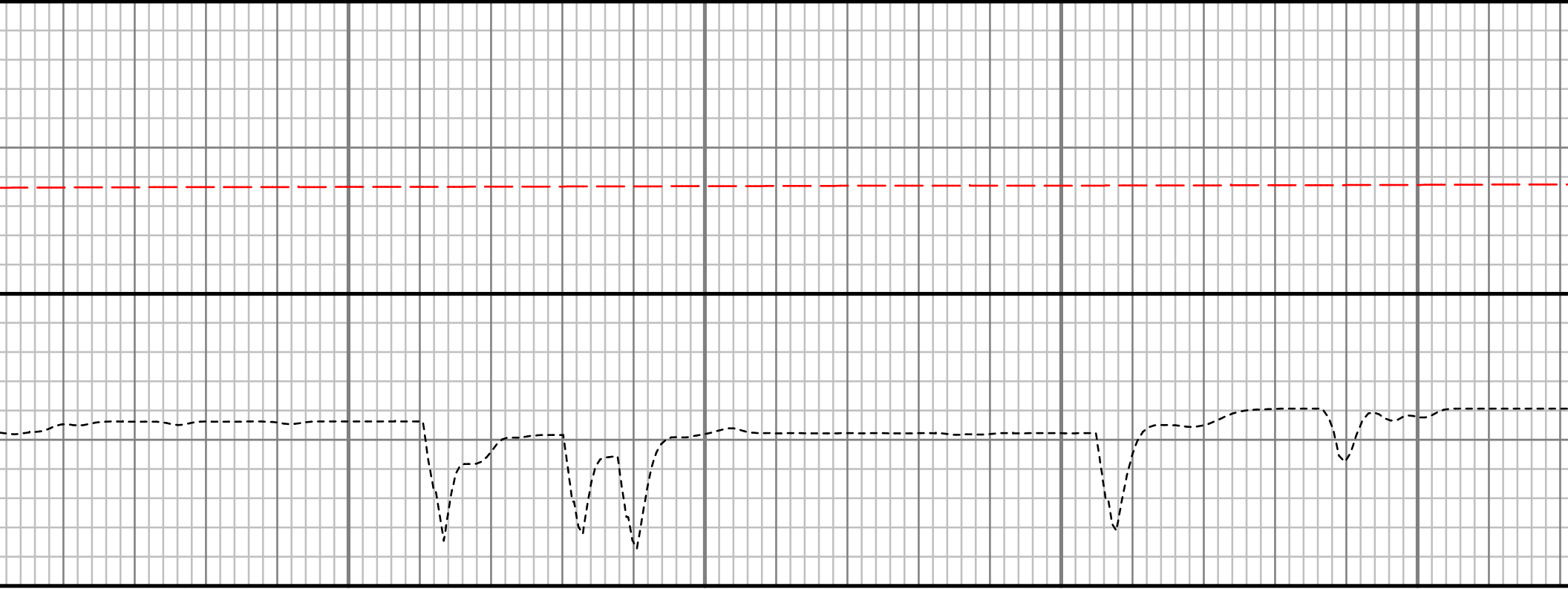
2400



S: 24 MD: 2406.00 ft
Inc: 24.31 deg Az:
159.72 deg TVD:
2349.72 ft

S: 25 MD: 2499.00 ft
Inc: 23.14 deg Az:
160.01 deg TVD:
2434.86 ft

S: 26 MD: 2594.00 ft
Inc: 21.25 deg Az:
158.37 deg TVD:
2522.82 ft

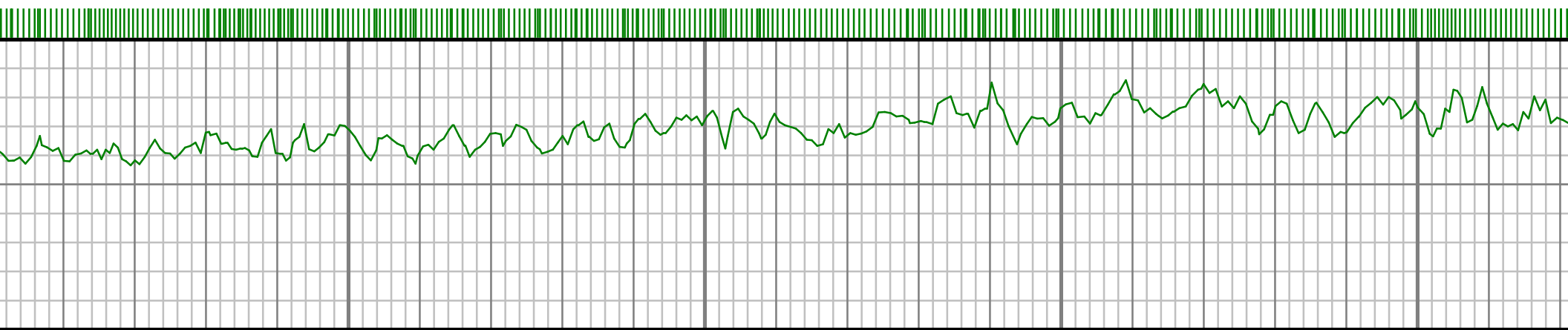


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2500

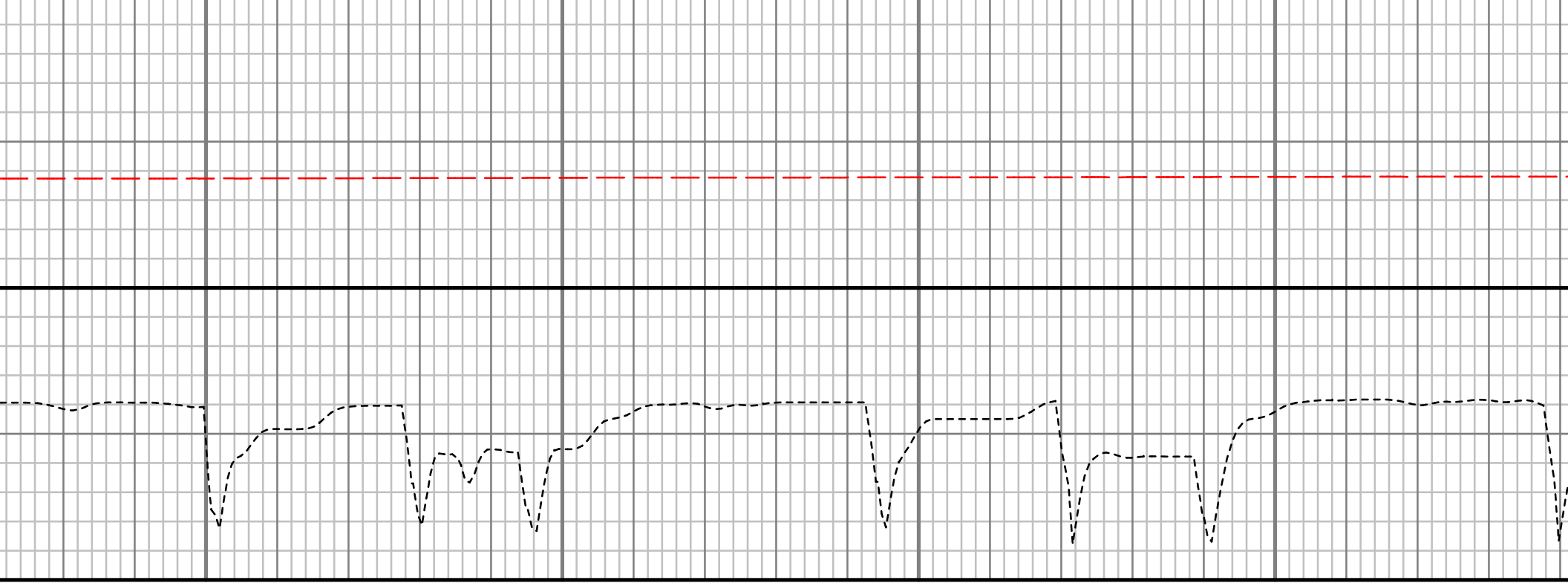
2550

2600



S: 27 MD: 2687.00 ft
Inc: 20.63 deg Az:
159.17 deg TVD:
2609.67 ft

S: 28 MD: 2782.00 ft
Inc: 21.53 deg Az:
163.50 deg TVD:
2698.32 ft

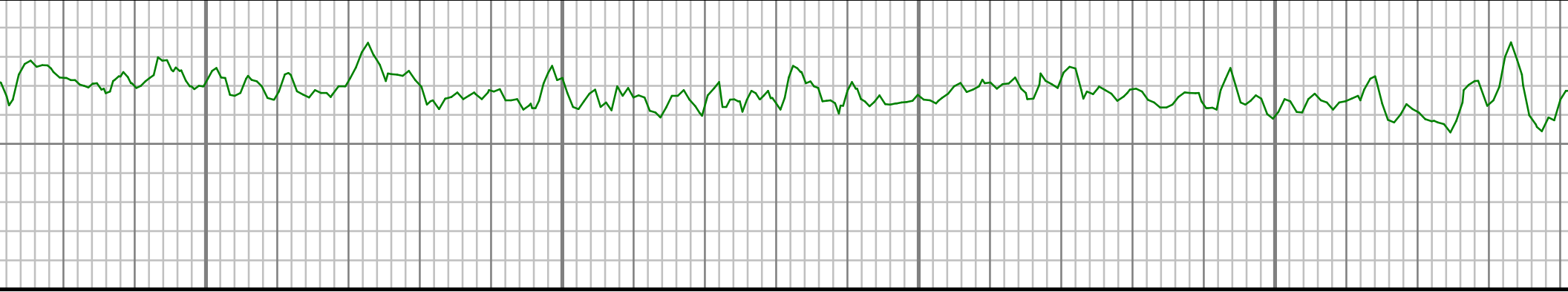


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2700

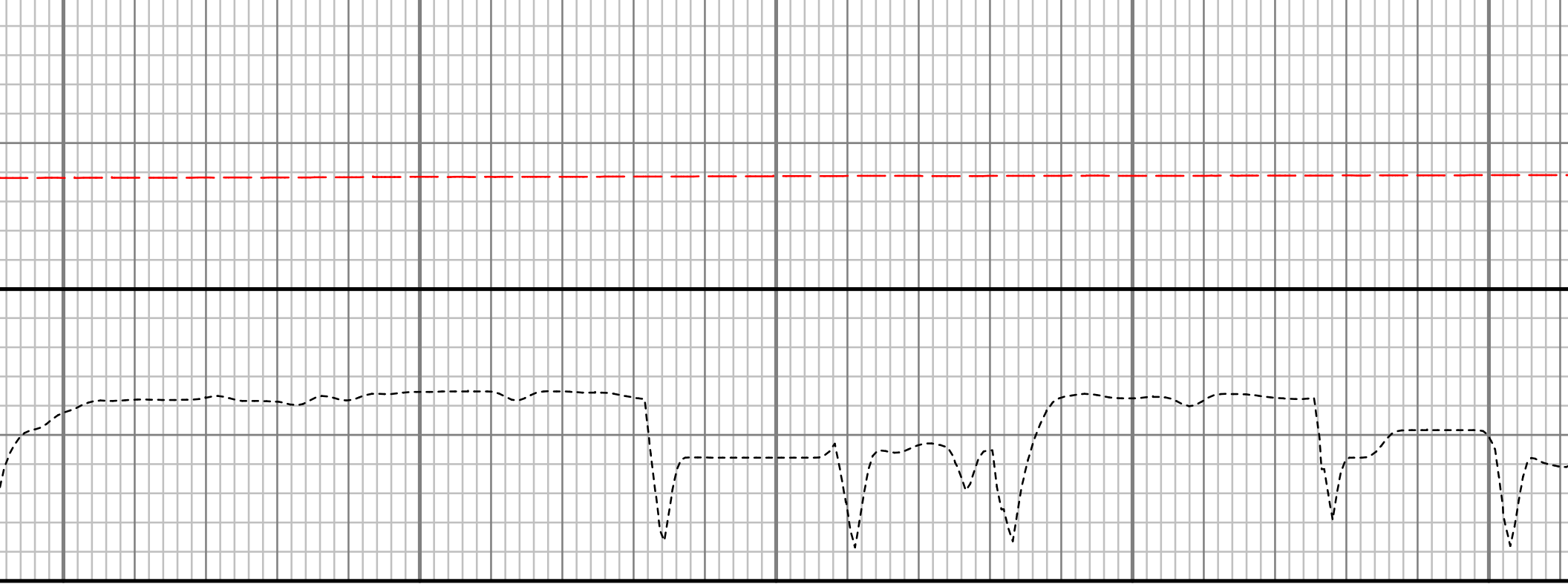
2750

2800



S: 29 MD: 2875.00 ft
Inc: 21.10 deg Az:
165.28 deg TVD:
2784.96 ft

S: 30 MD: 2969.00 ft
Inc: 19.97 deg Az:
162.64 deg TVD:
2872.99 ft



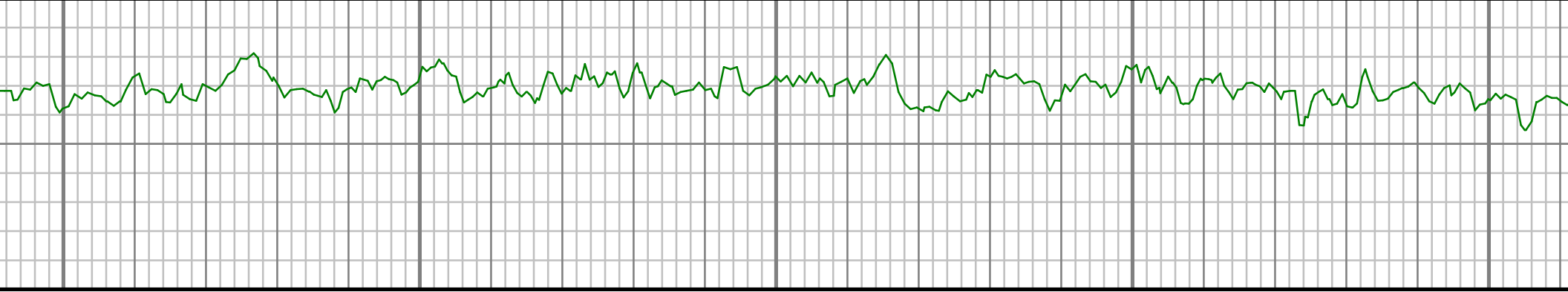
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2900

2950

3000

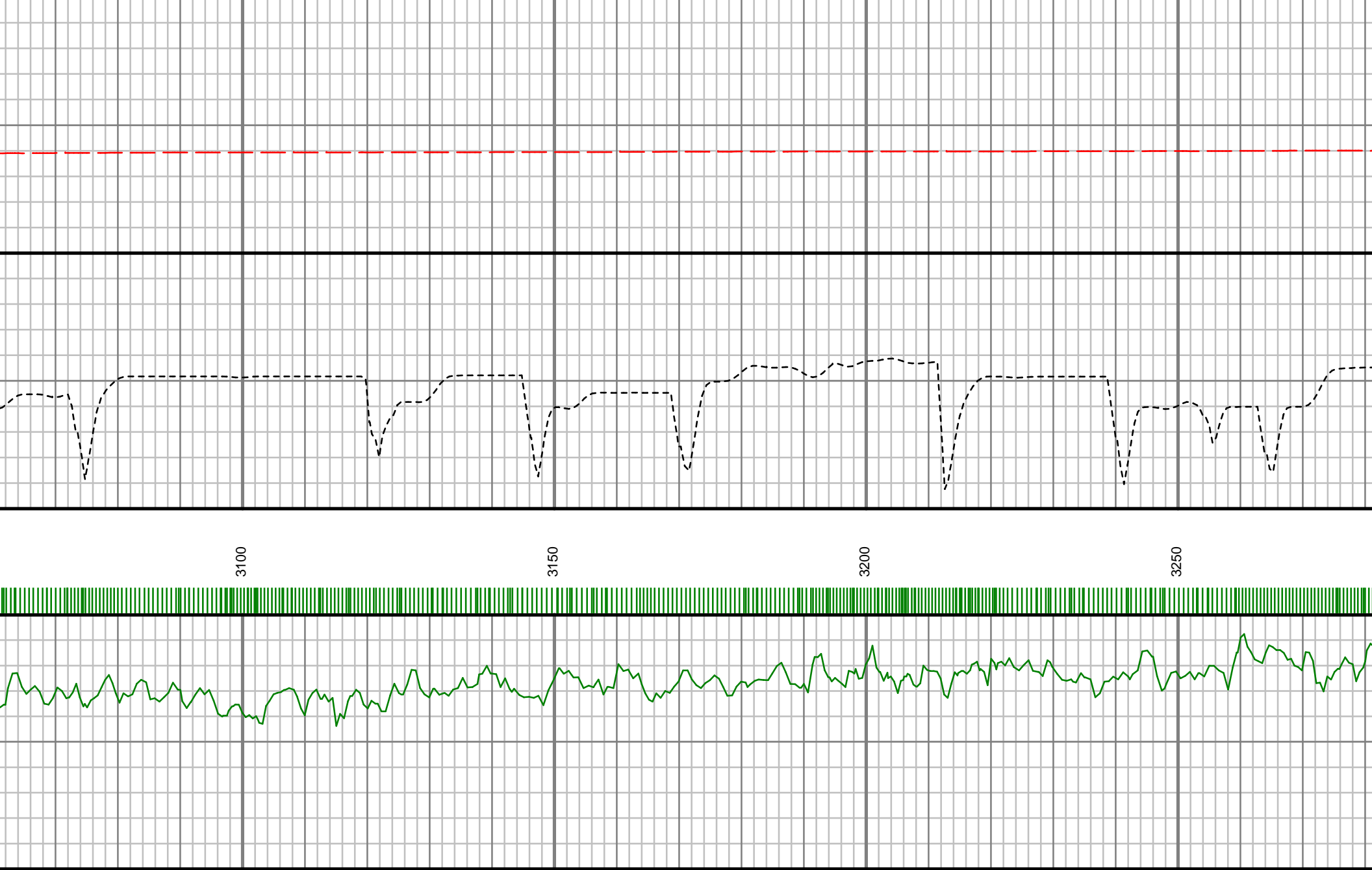
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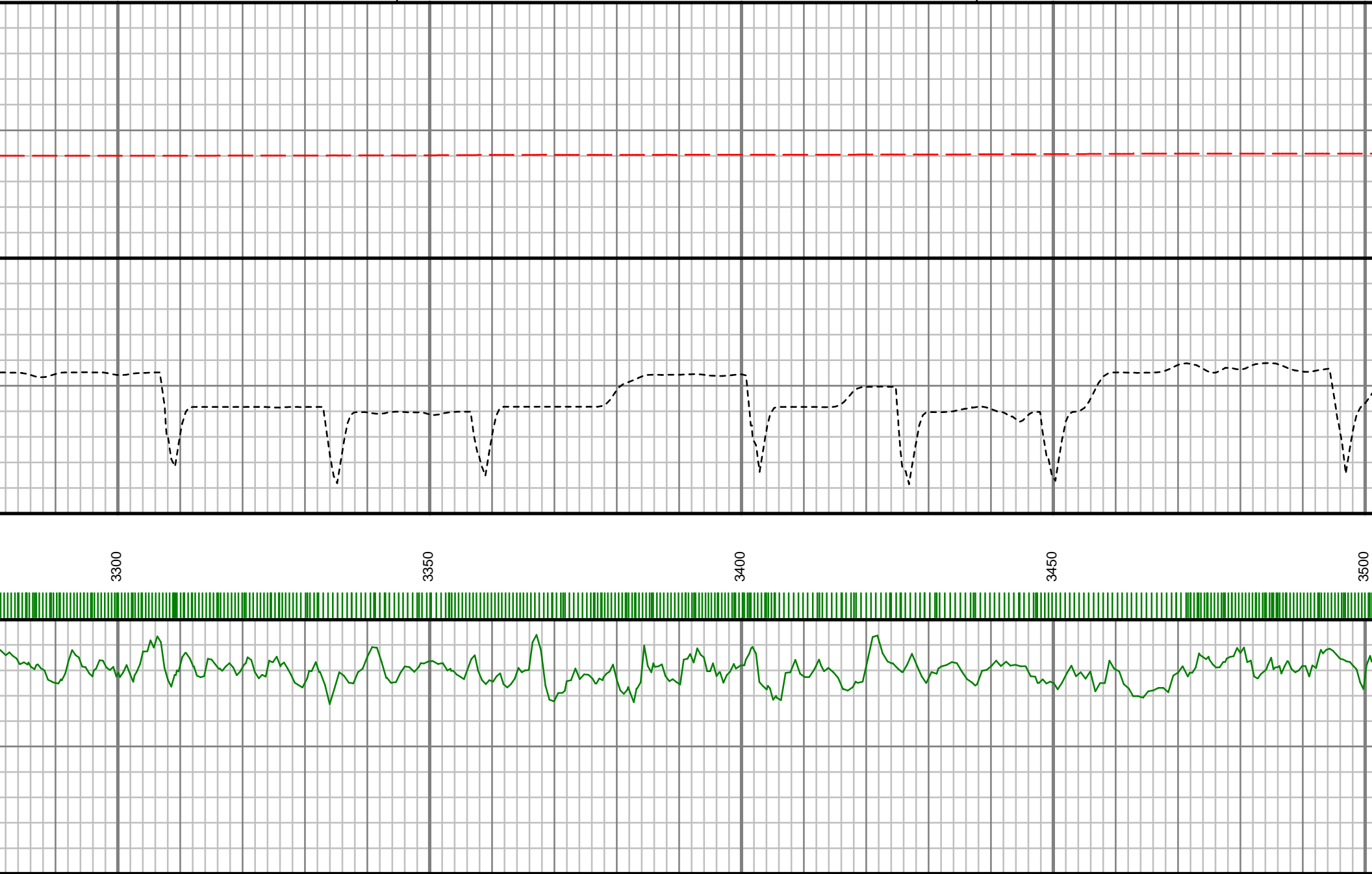


S: 31 MD: 3062.00 ft
Inc: 20.51 deg Az:
161.76 deg TVD:
2960.25 ft

S: 32 MD: 3156.00 ft
Inc: 20.60 deg Az:
160.65 deg TVD:
3048.27 ft

S: 33 MD: 3251.00 ft
Inc: 20.29 deg Az:
153.76 deg TVD:
3137.30 ft





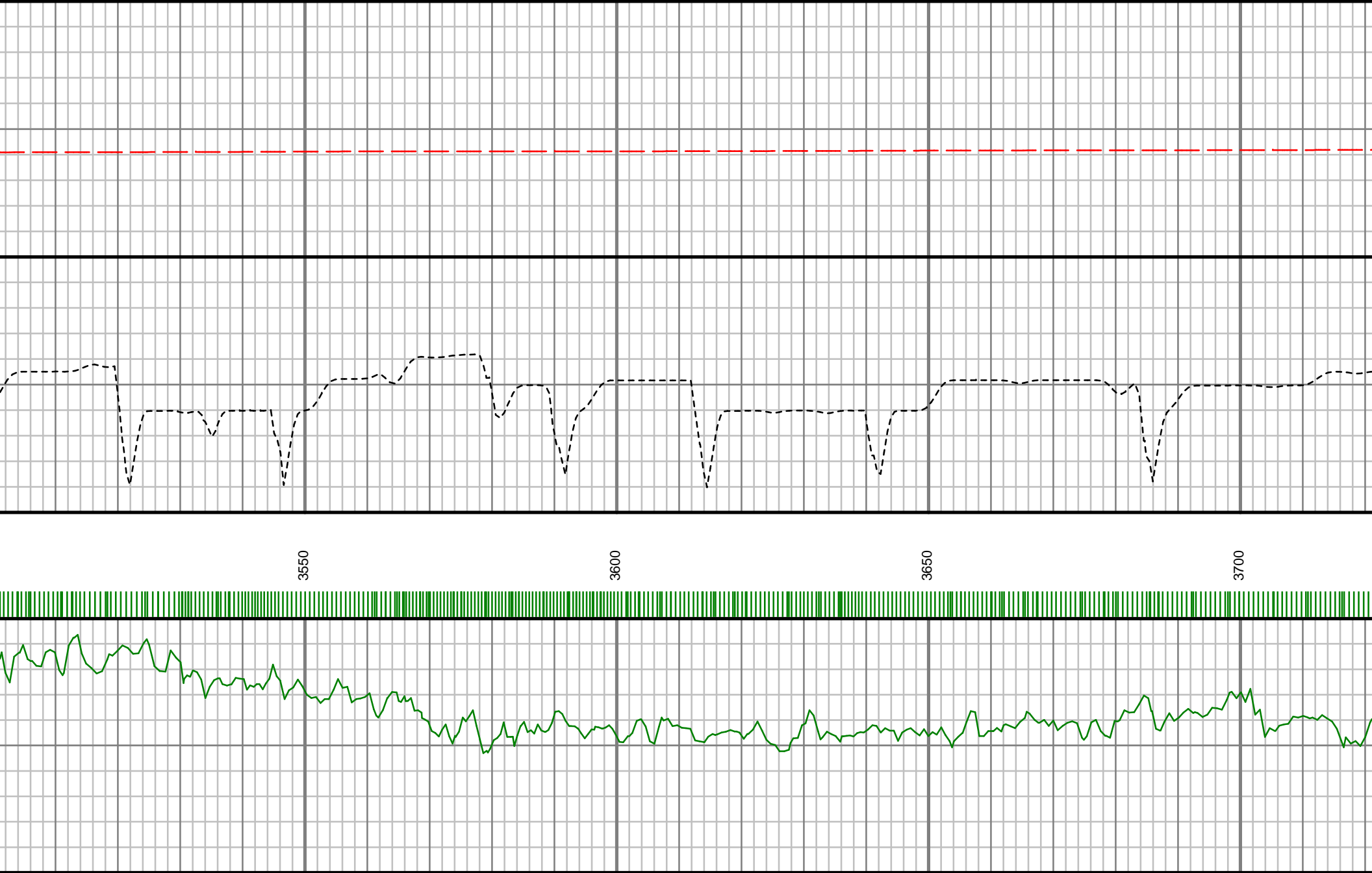
S: 34 MD: 3345.00 ft
Inc: 19.93 deg Az:
153.18 deg TVD:
3225.57 ft

S: 35 MD: 3438.00 ft
Inc: 19.38 deg Az:
154.89 deg TVD:
3313.15 ft

S: 36 MD: 3533.00 ft
Inc: 18.78 deg Az:
155.48 deg TVD:
3402.93 ft

S: 37 MD: 3627.00 ft
Inc: 22.04 deg Az:
159.62 deg TVD:
3491.02 ft

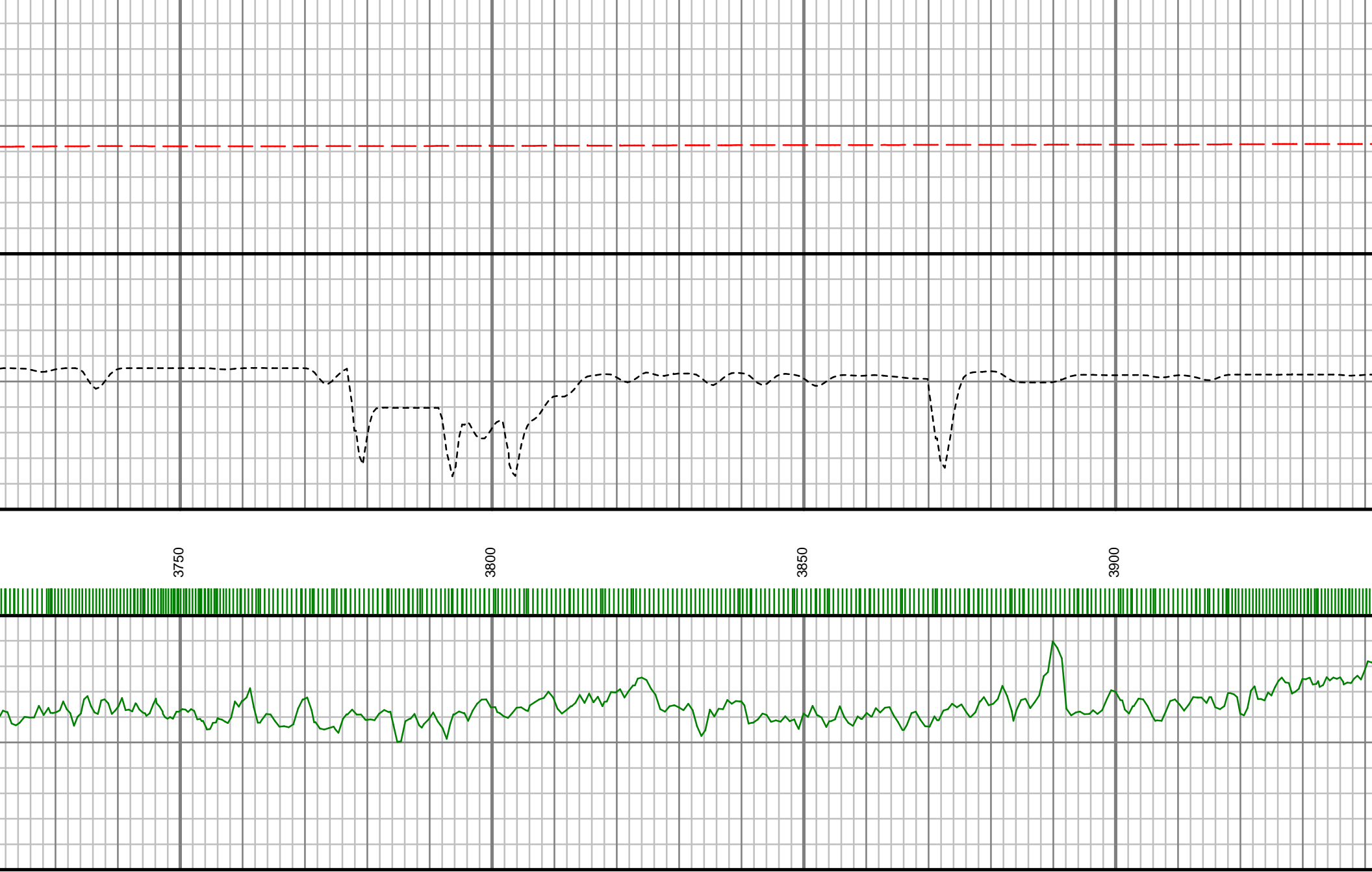
S: 38 MD: 3720.00 ft
Inc: 22.04 deg Az:
159.62 deg TVD:
3491.02 ft



S: 38 MD: 3720.00 ft
Inc: 24.29 deg Az:
161.49 deg TVD:
3576.52 ft

S: 39 MD: 3812.00 ft
Inc: 24.05 deg Az:
162.61 deg TVD:
3660.46 ft

S: 40 MD: 3907.00 ft
Inc: 24.06 deg Az:
163.32 deg TVD:
3747.21 ft



S: 41 MD: 4002.00 ft
Inc: 20.83 deg Az:
164.96 deg TVD:
3835.00 ft

S: 42 MD: 4097.00 ft
Inc: 18.32 deg Az:
166.13 deg TVD:
3924.51 ft



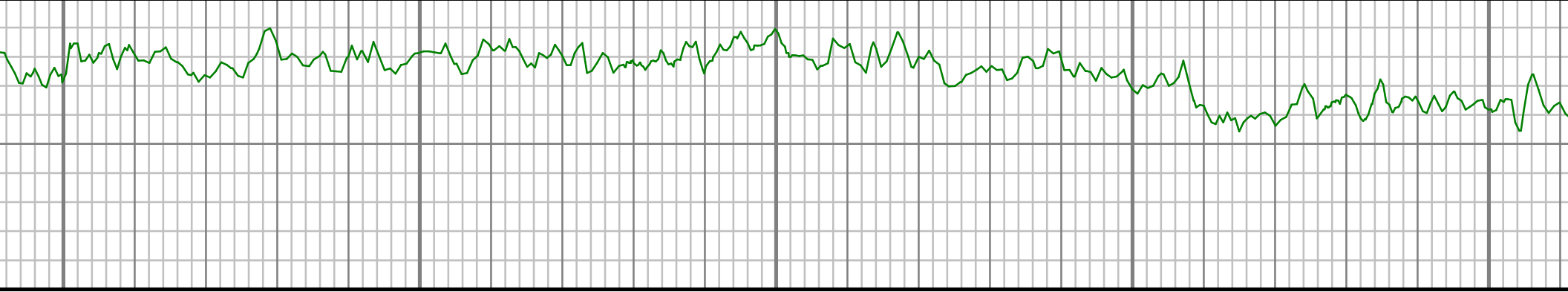
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4000

4050

4100

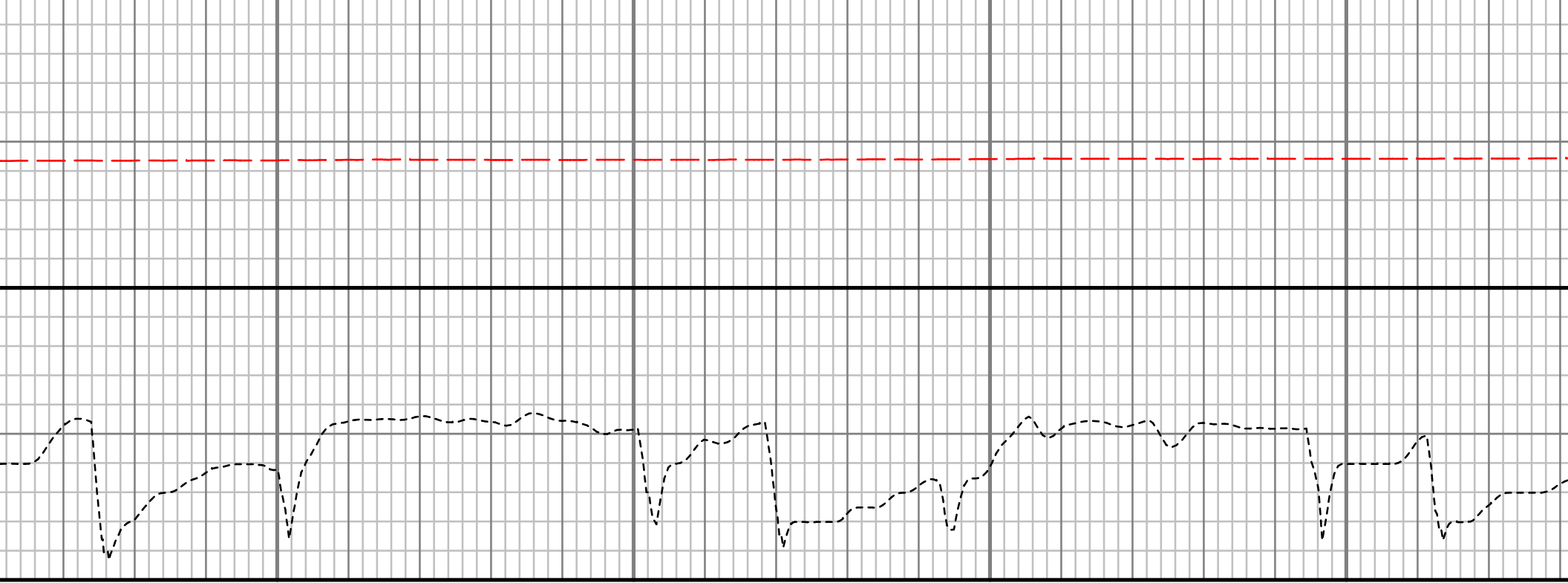
4150



S: 43 MD: 4192.00 ft
Inc: 19.14 deg Az:
162.92 deg TVD:
4014.48 ft

S: 44 MD: 4286.00 ft
Inc: 18.09 deg Az:
158.06 deg TVD:
4103.56 ft

S: 45 MD: 4280.00 ft

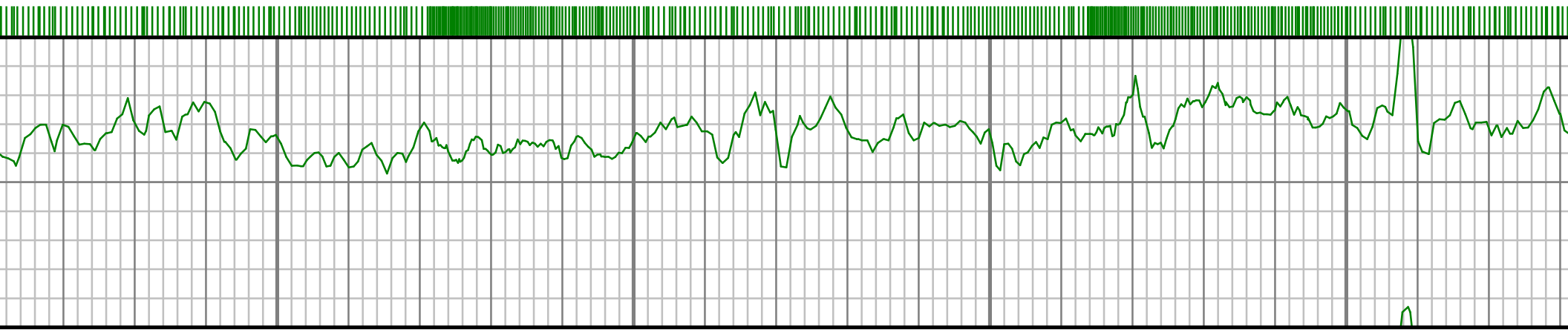


4200

4250

4300

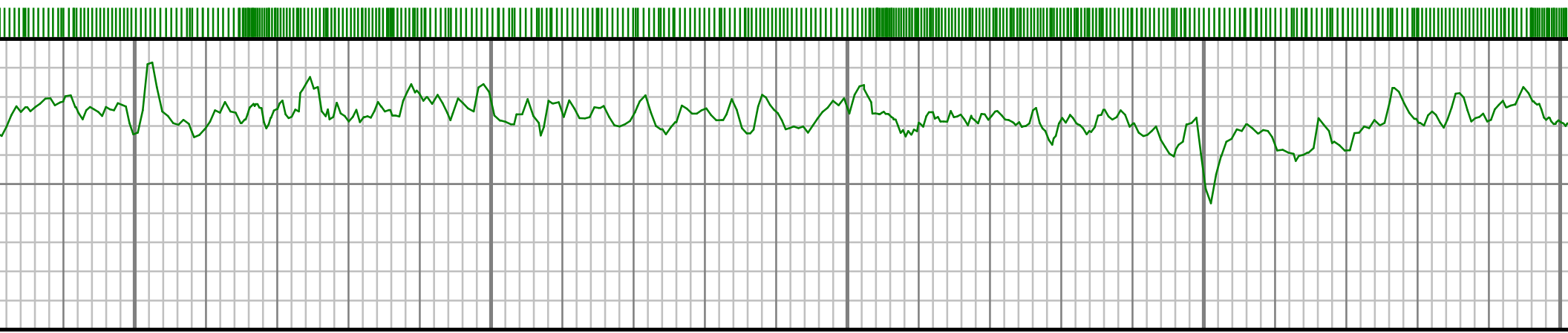
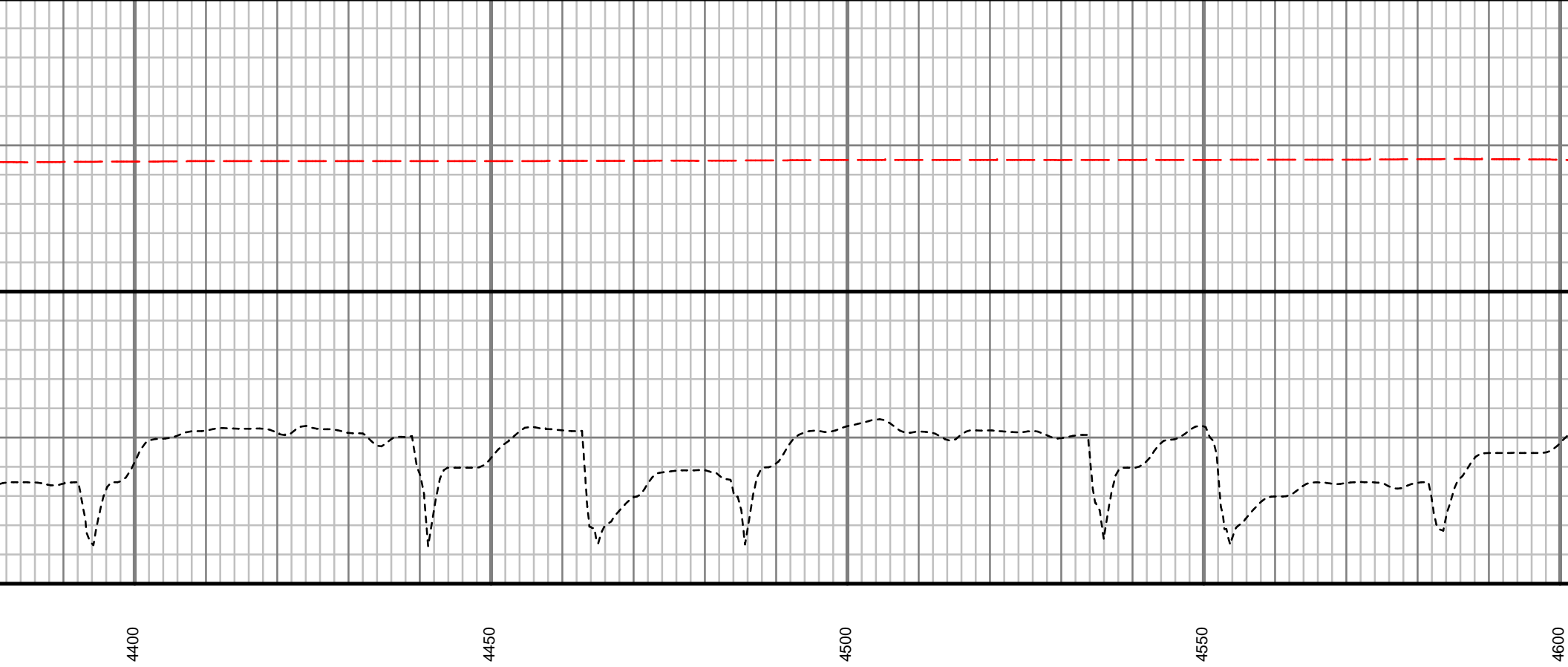
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S: 43 MD: 4360.00 ft
Inc: 19.21 deg Az:
156.67 deg TVD:
4192.63 ft

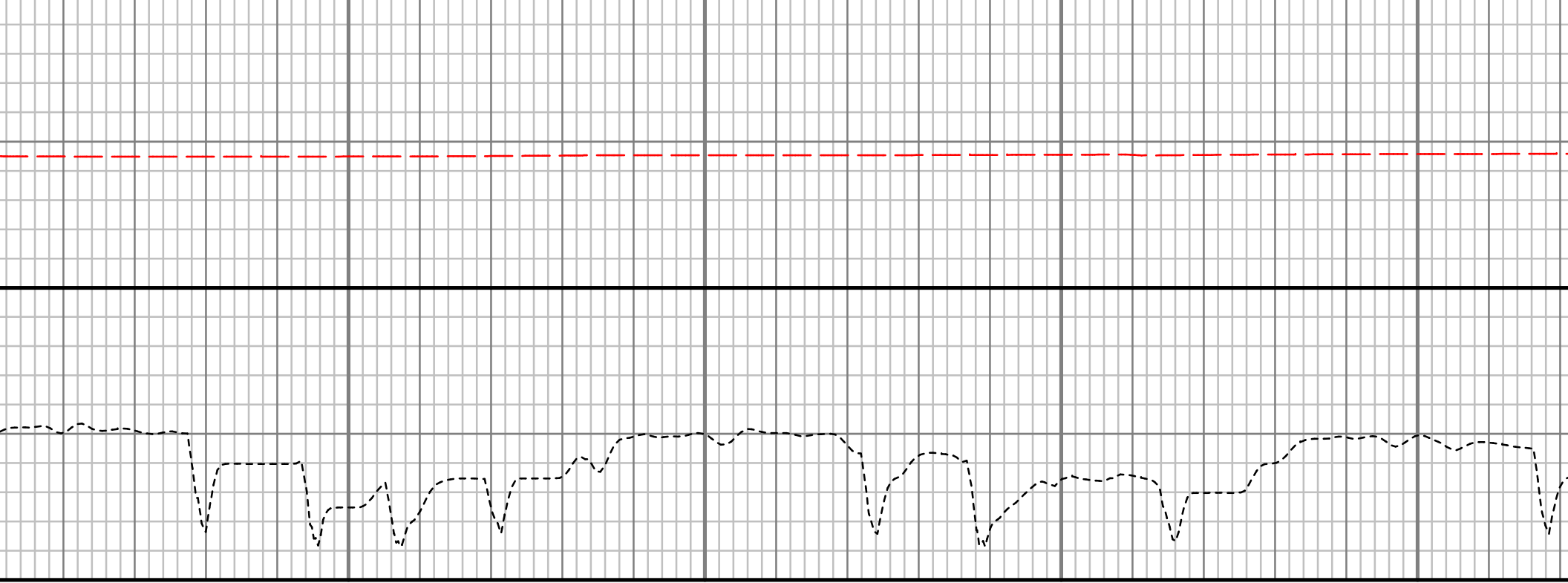
S: 46 MD: 4474.00 ft
Inc: 19.13 deg Az:
158.40 deg TVD:
4281.42 ft

S: 47 MD: 4569.00 ft
Inc: 19.27 deg Az:
159.56 deg TVD:
4371.14 ft



S: 48 MD: 4662.00 ft
Inc: 19.04 deg Az:
157.46 deg TVD:
4458.99 ft

S: 49 MD: 4756.00 ft
Inc: 21.22 deg Az:
158.33 deg TVD:
4547.24 ft

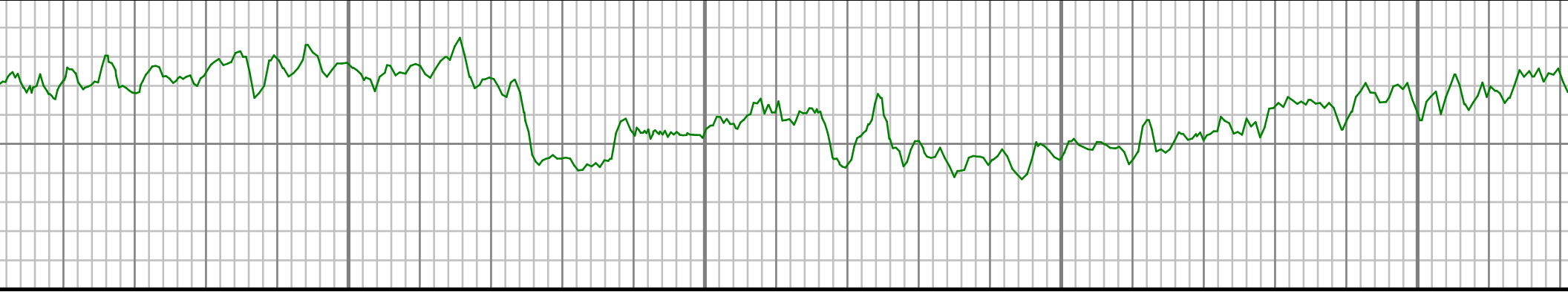


4650

4700

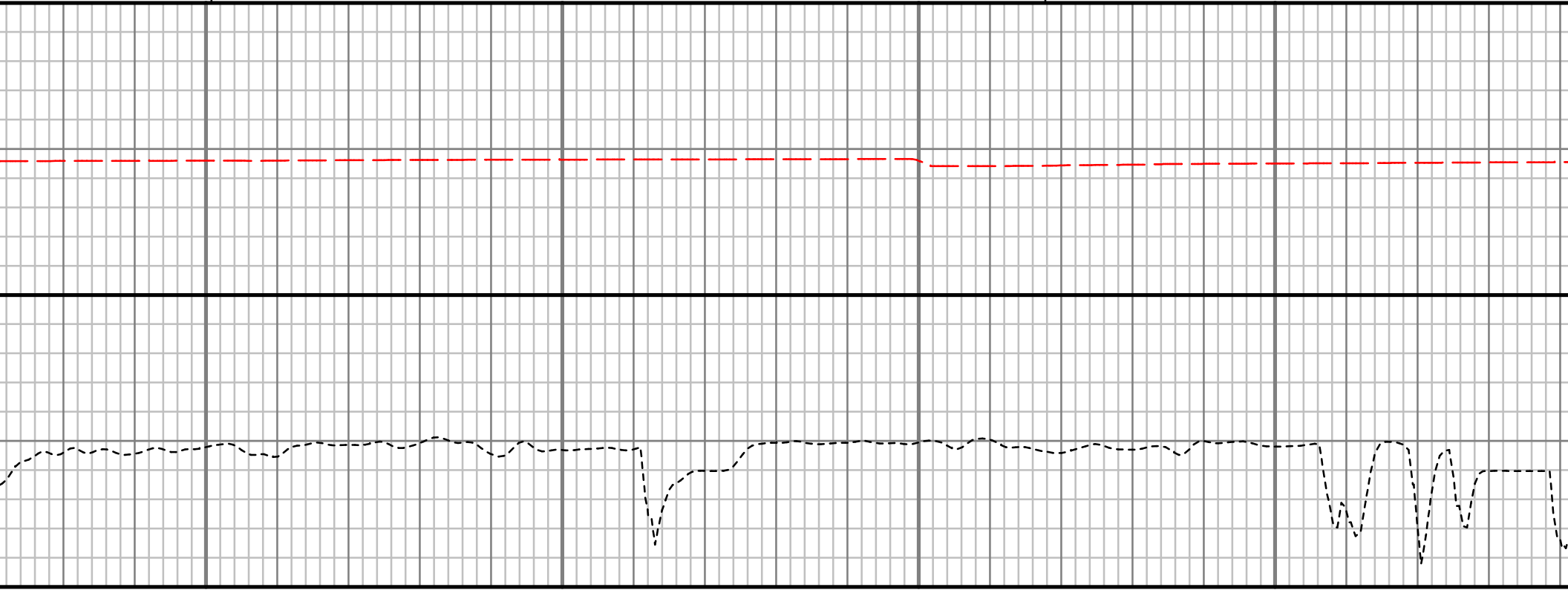
4750

4800



S: 50 MD: 4851.00 ft
Inc: 19.95 deg Az:
157.55 deg TVD:
4636.17 ft

S: 51 MD: 4968.00 ft
Inc: 15.14 deg Az:
156.88 deg TVD:
4747.70 ft

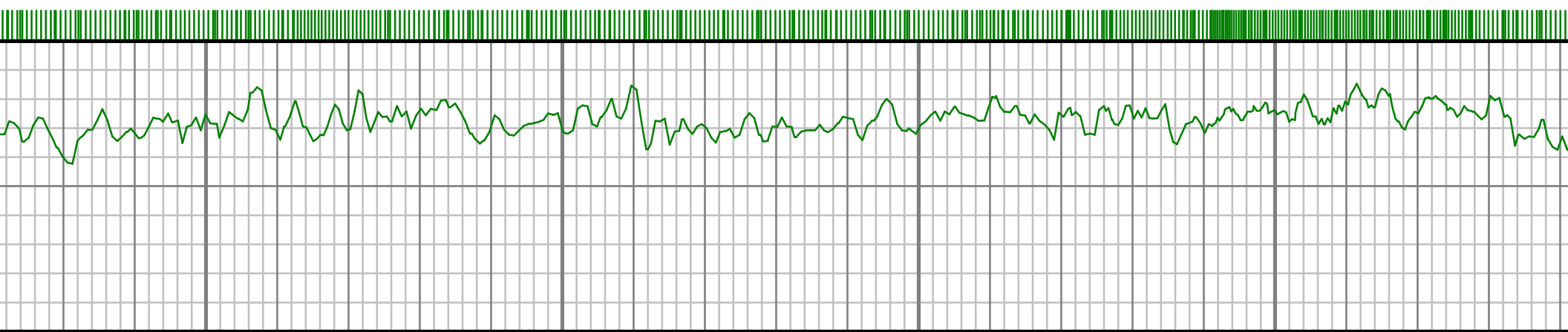


4850

4900

4950

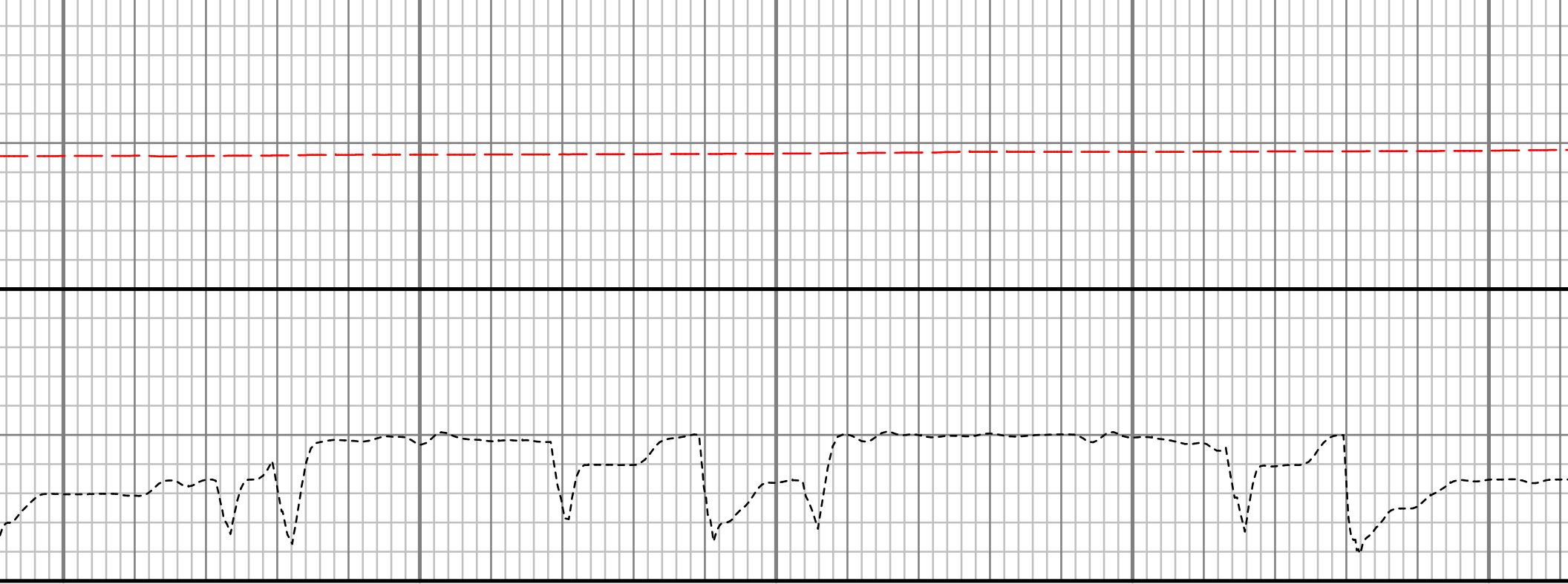
5000



S: 52 MD: 5062.00 ft
Inc: 12.68 deg Az:
154.60 deg TVD:
4838.94 ft

S: 53 MD: 5157.00 ft
Inc: 11.88 deg Az:
159.30 deg TVD:
4931.76 ft

S: 54 MD: 5251.00 ft
Inc: 11.33 deg Az:
160.59 deg TVD:
5023.84 ft



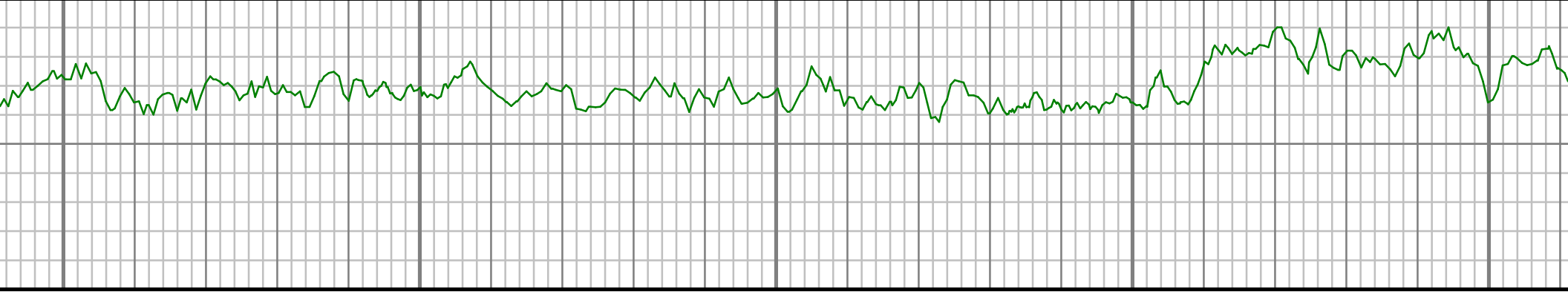
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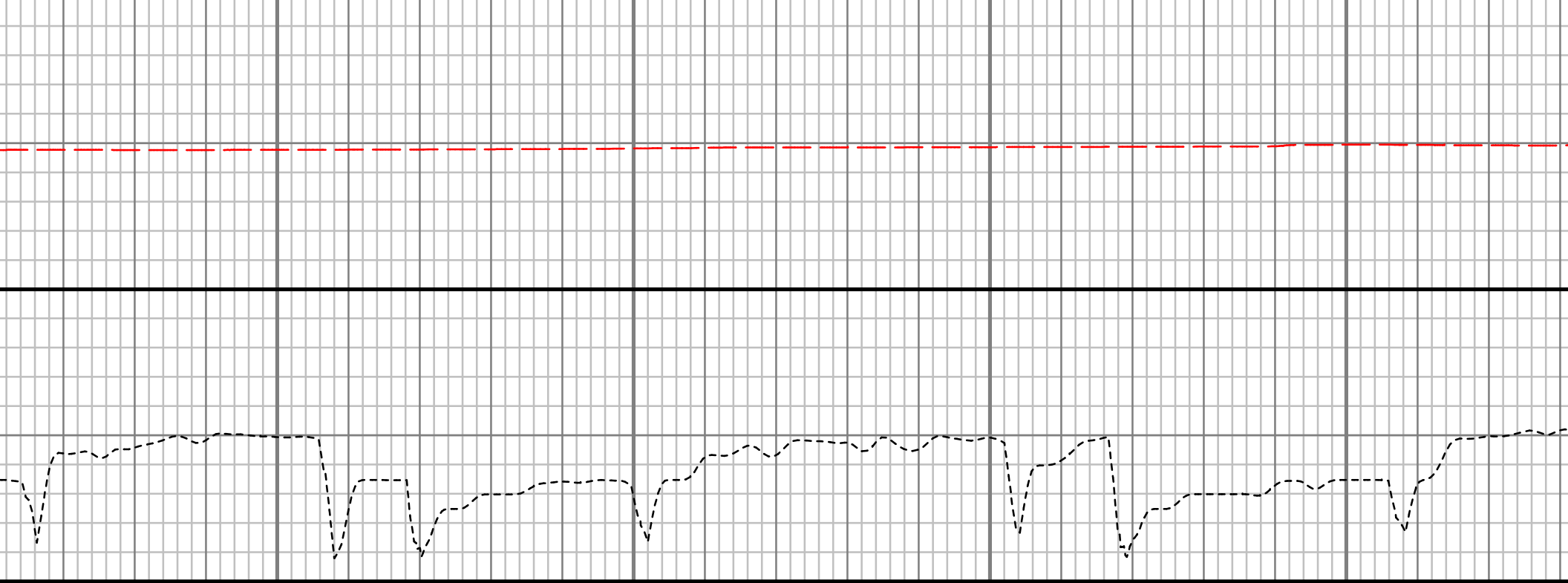
5100

5150

5200

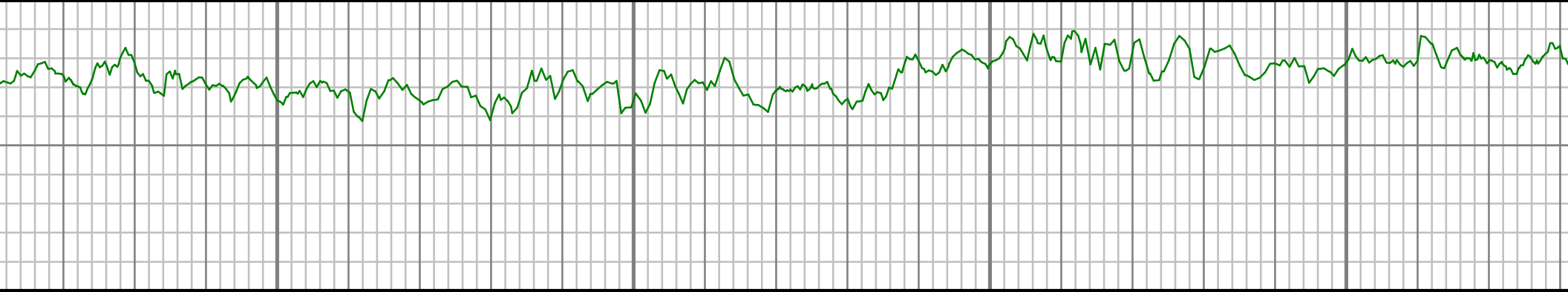
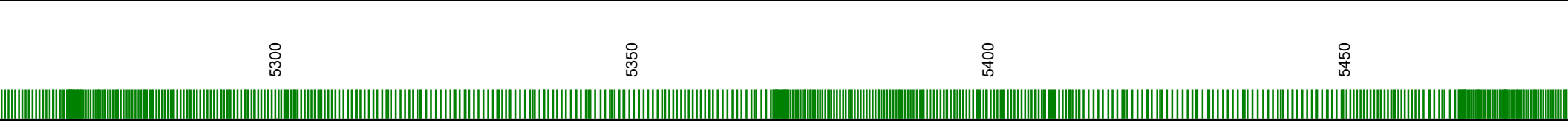
5250





S: 55 MD: 5346.00 ft
Inc: 12.18 deg Az:
158.34 deg TVD:
5116.85 ft

S: 56 MD: 5441.00 ft
Inc: 11.87 deg Az:
161.15 deg TVD:
5209.76 ft



5300

5350

5400

5450



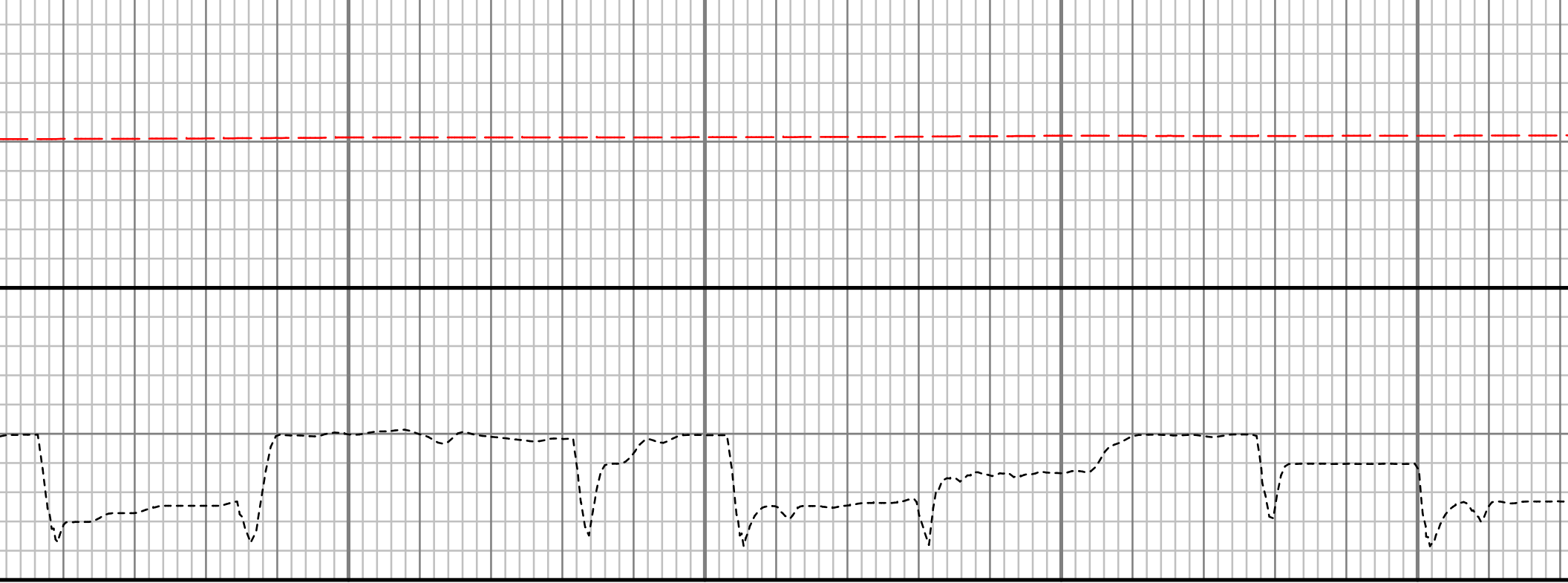
S: 57 MD: 5535.00 ft
Inc: 10.94 deg Az:
156.32 deg TVD:
5301.91 ft

S: 58 MD: 5629.00 ft
Inc: 11.69 deg Az:
162.64 deg TVD:
5394.08 ft

S: 59 MD: 5723.00 ft
Inc: 11.09 deg Az:
158.16 deg TVD:
5486.23 ft

S: 60 MD: 5819.00 ft
Inc: 9.75 deg Az:
157.85 deg TVD:
5580.64 ft

S: 61 MD: 5914.00 ft
Inc: 8.77 deg Az:
161.02 deg TVD:
5674.00 ft

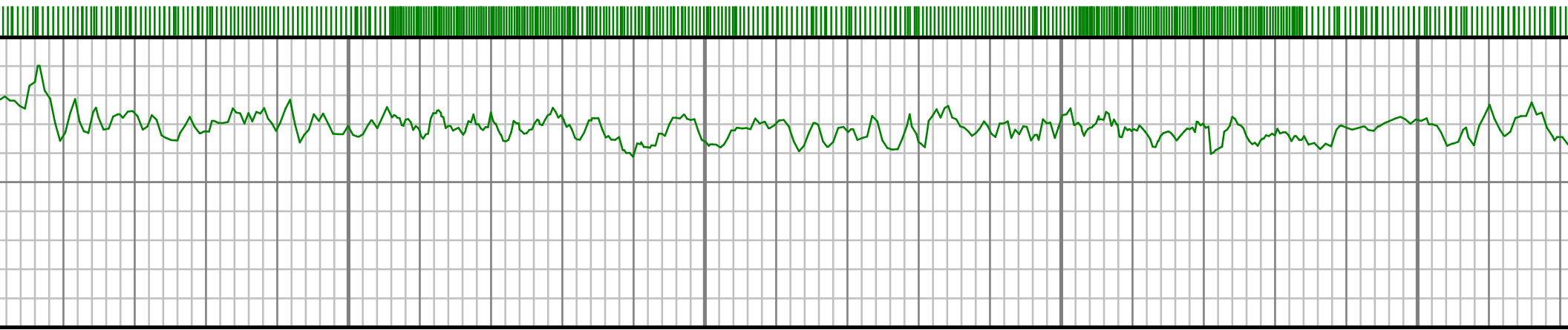


5750

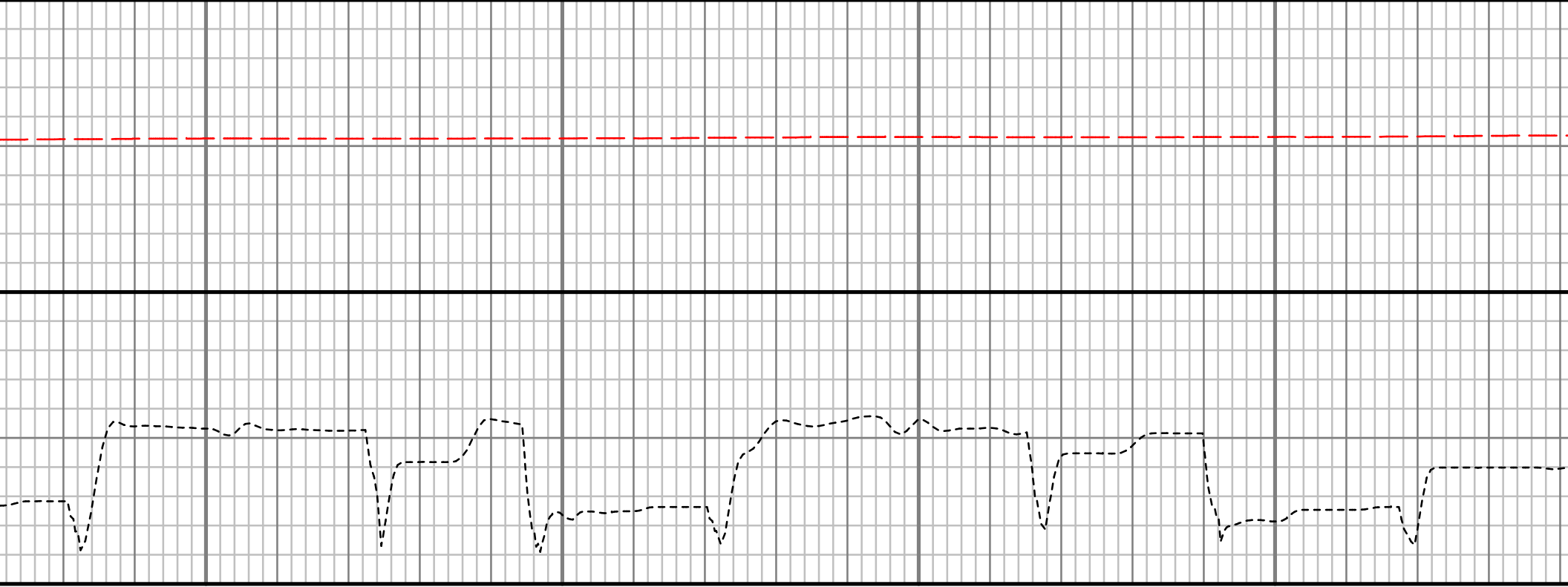
5800

5850

5900



5674.41 ft

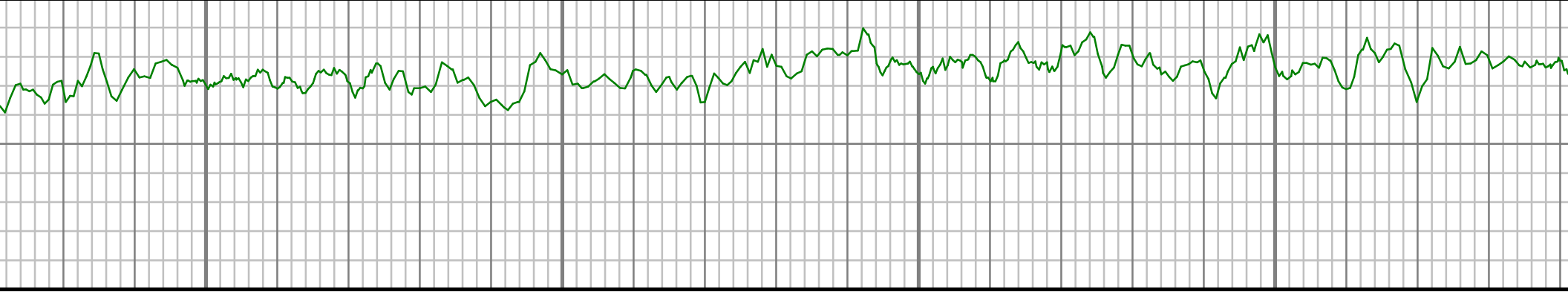


5950

6000

6050

6100

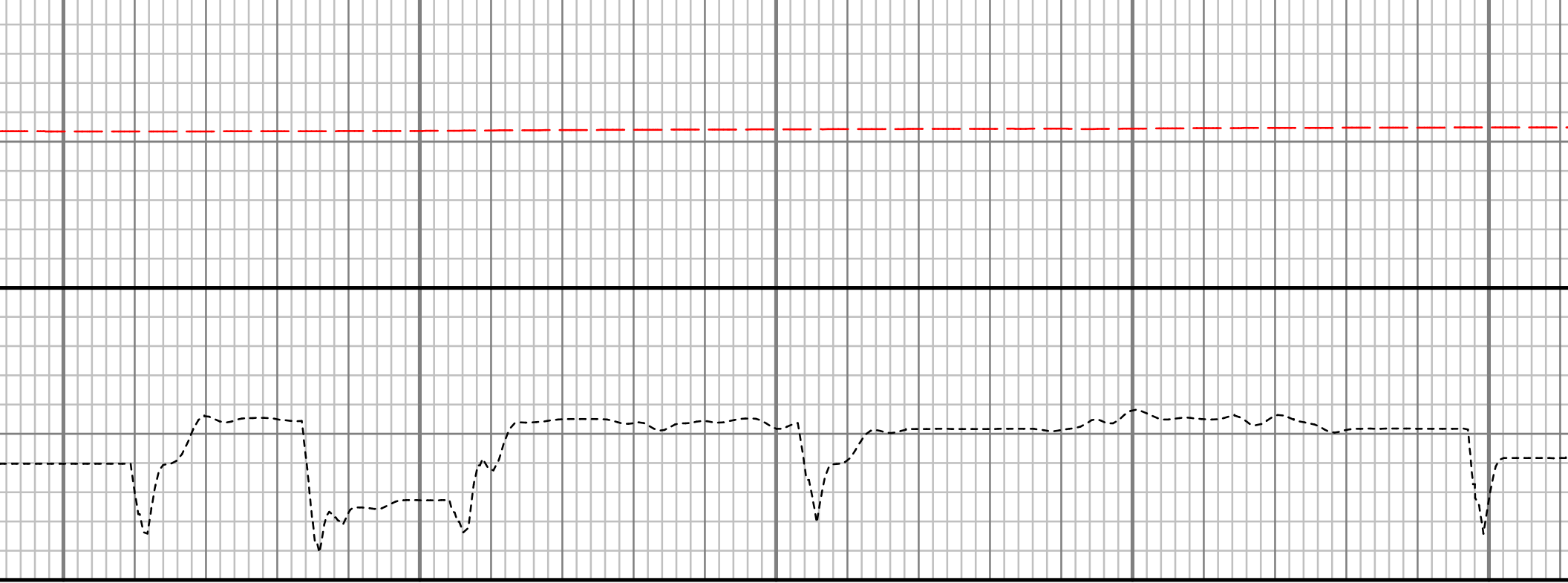


S: 62 MD: 6006.00 ft
Inc: 7.92 deg Az:
158.17 deg TVD:
5765.43 ft

S: 63 MD: 6100.00 ft
Inc: 7.48 deg Az:
158.08 deg TVD:
5858.58 ft

S: 64 MD: 6193.00 ft
Inc: 7.20 deg Az:
155.58 deg TVD:
5950.82 ft

S: 65 MD: 6287.00 ft
Inc: 5.25 deg Az:
159.17 deg TVD:
6044.26 ft



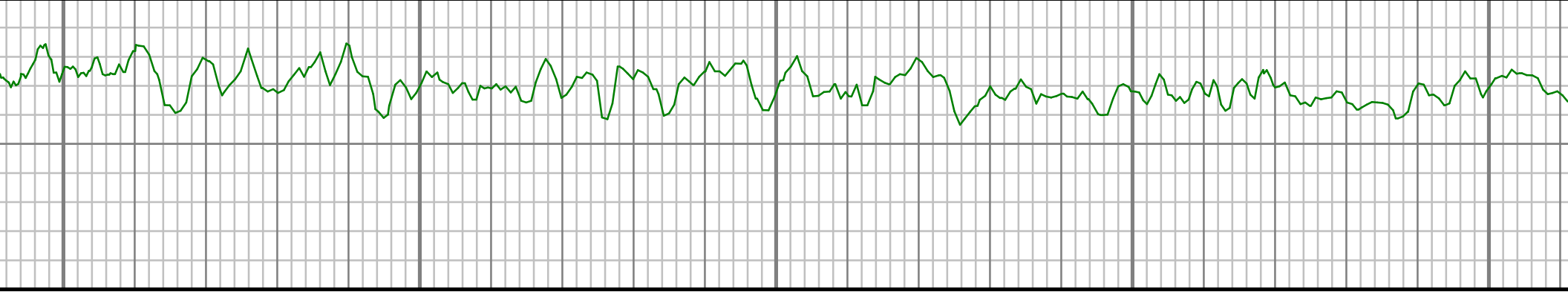
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6200

6250

6300

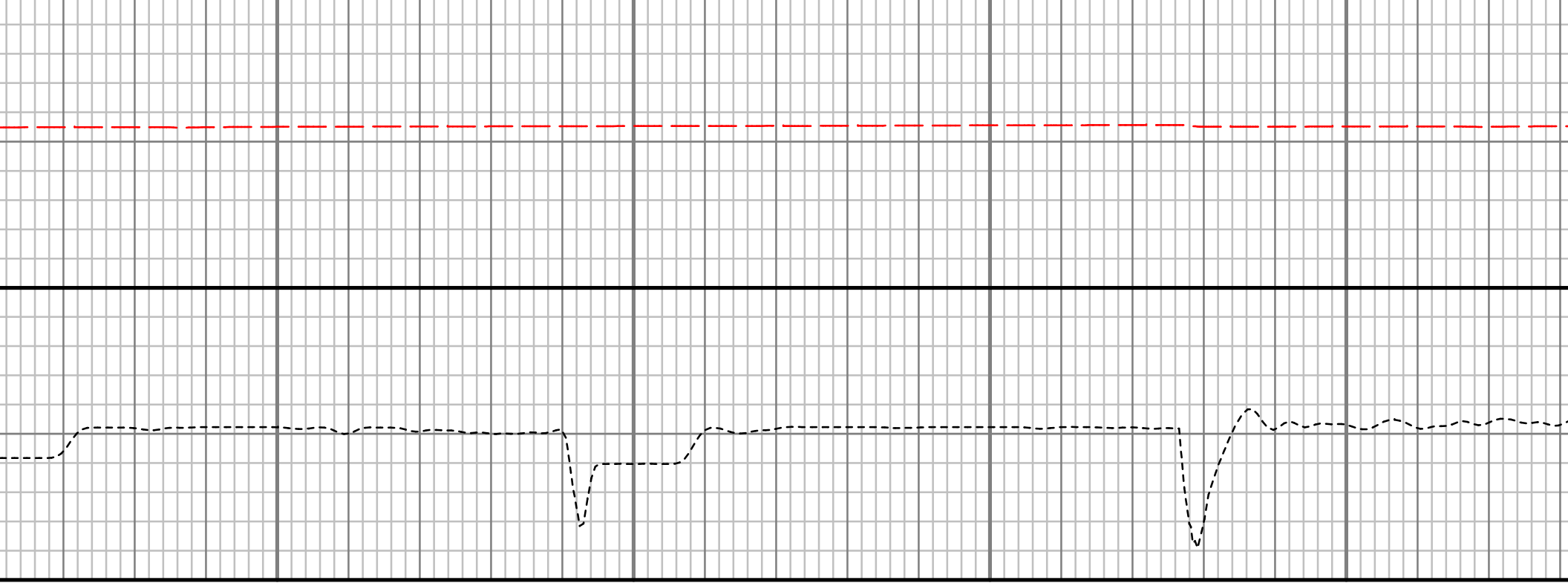
6350



S: 66 MD: 6380.00 ft
Inc: 3.22 deg Az:
160.15 deg TVD:
6137.00 ft

S: 67 MD: 6473.00 ft
Inc: 2.15 deg Az:
166.01 deg TVD:
6229.90 ft

S: 68 MD: 6568.00 ft
Inc: 1.57 deg Az:
187.86 deg TVD:
6324.85 ft

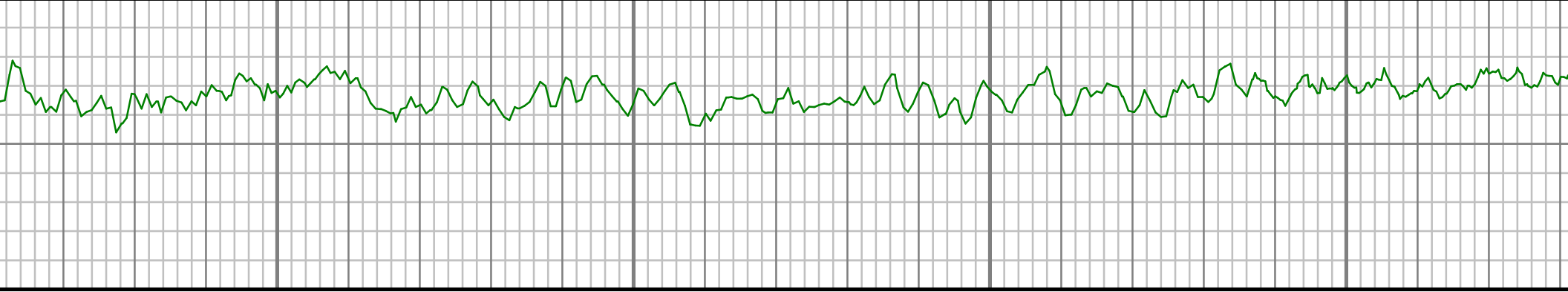


6400

6450

6500

6550

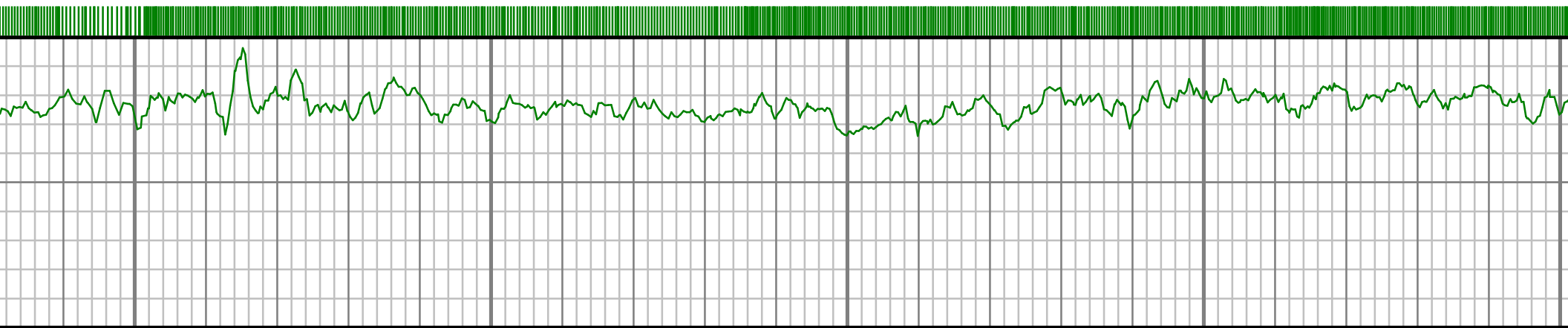




S: 69 MD: 6660.00 ft
Inc: 4.56 deg Az:
250.60 deg TVD:
6416.73 ft

S: 70 MD: 6754.00 ft
Inc: 7.74 deg Az:
253.24 deg TVD:
6510.18 ft

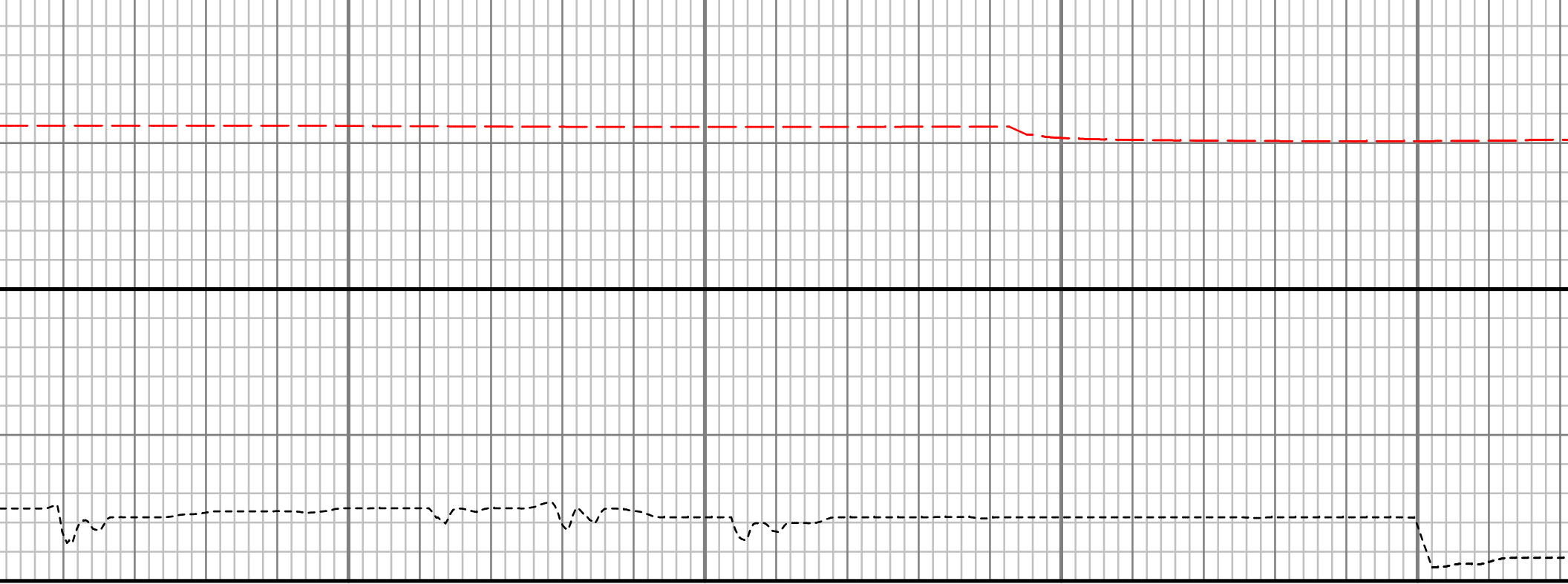
6600 6650 6700 6750 6800



S: 71 MD: 6848.00 ft
Inc: 12.07 deg Az:
257.13 deg TVD:
6602.75 ft

S: 72 MD: 6943.00 ft
Inc: 15.57 deg Az:
261.19 deg TVD:
6694.99 ft

S: 73 MD: 7015.00 ft
Inc: 20.94 deg Az:
265.55 deg TVD:
6755.55 ft

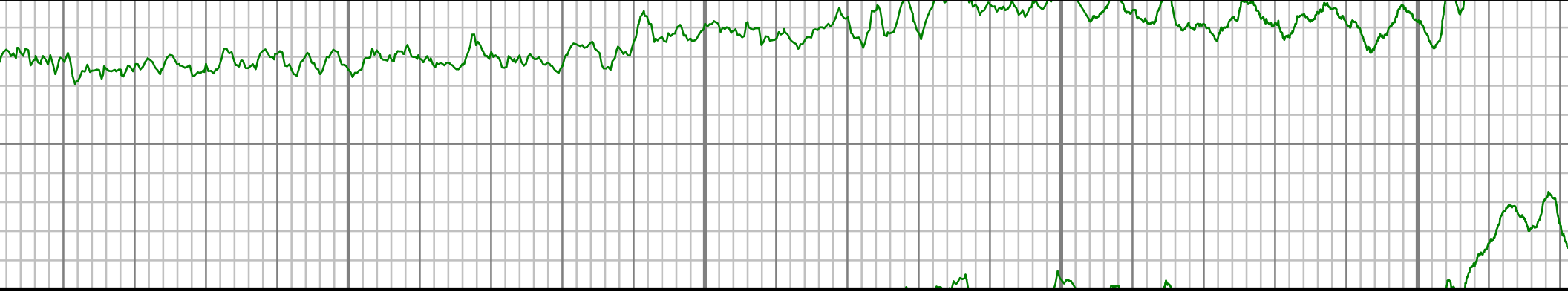


6850

6900

6950

7000



200.33 deg TVD:
6763.35 ft

S: 74 MD: 7109.00 ft
Inc: 37.11 deg Az:
266.29 deg TVD:
6845.27 ft

S: 75 MD: 7204.00 ft
Inc: 53.10 deg Az:
268.65 deg TVD:
6912.11 ft

7050

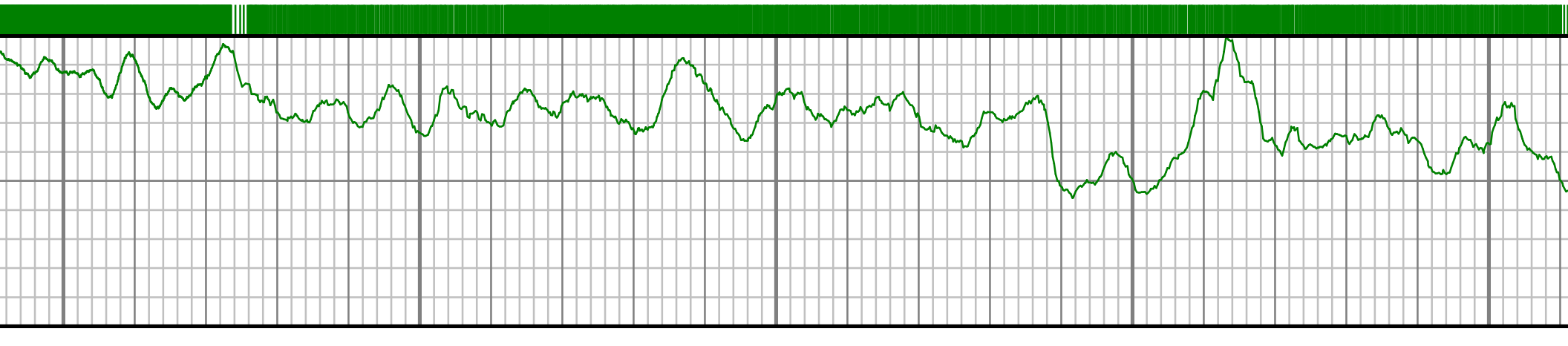
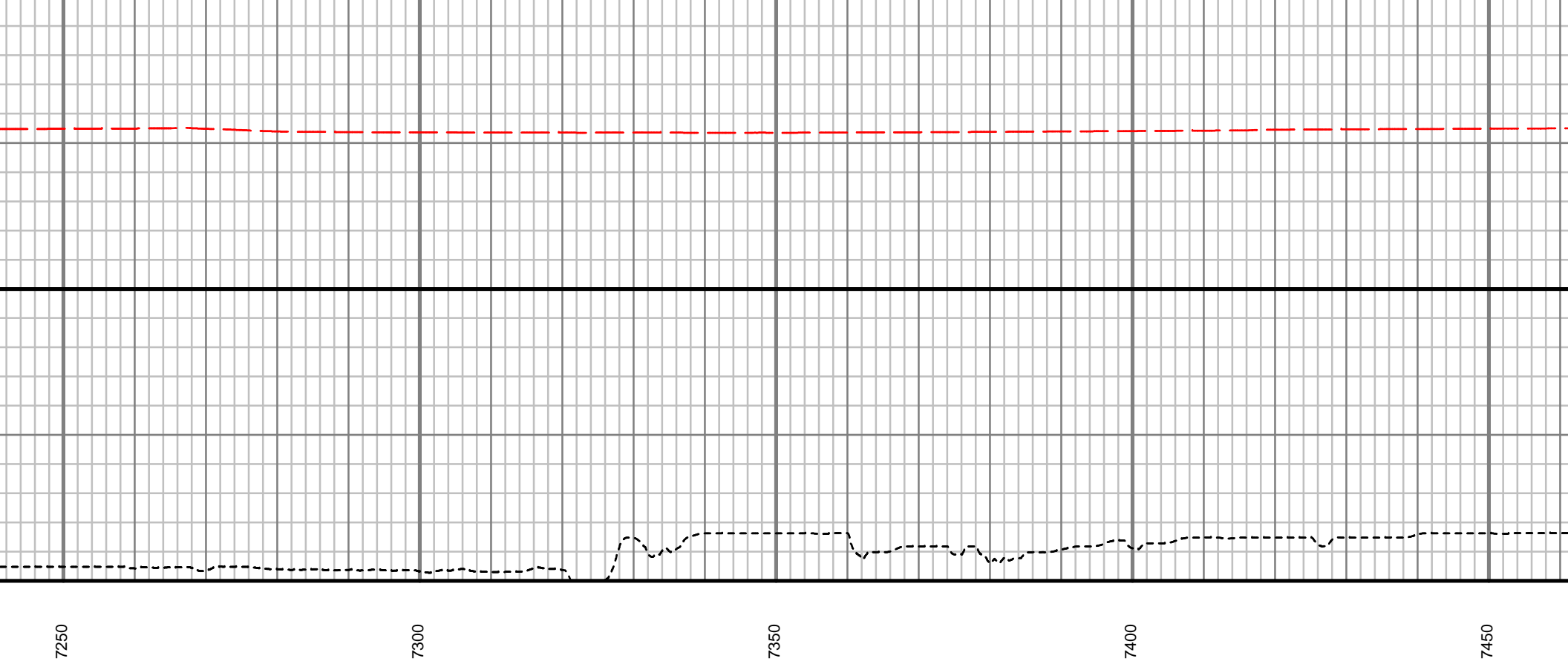
7100

7150

7200

S: 76 MD: 7323.00 ft
Inc: 71.54 deg Az:
275.29 deg TVD:
6967.20 ft

S: 77 MD: 7418.00 ft
Inc: 80.31 deg Az:
272.29 deg TVD:
6990.28 ft



S: 78 MD: 7513.00 ft
Inc.: 88.18 deg Az:
269.85 deg TVD:
6999.80 ft

S: 79 MD: 7607.00 ft
Inc.: 87.21 deg Az:
270.05 deg TVD:
7003.57 ft

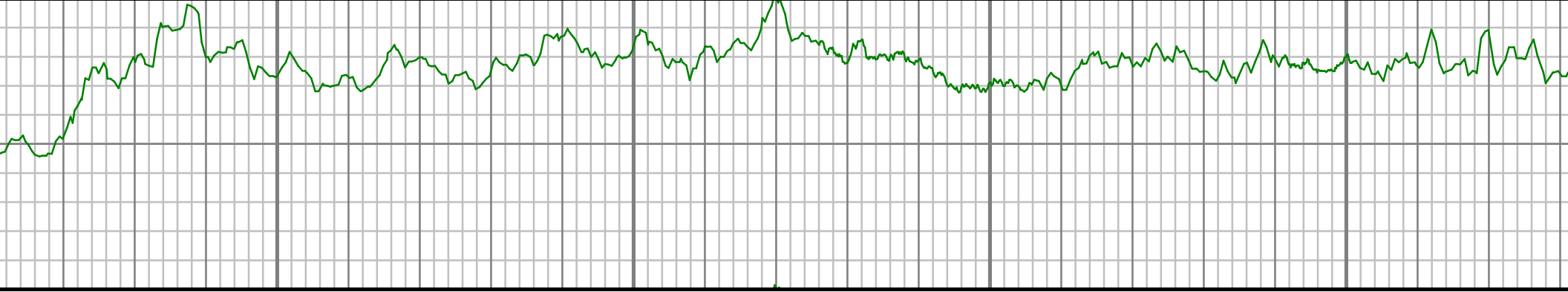


7500

7550

7600

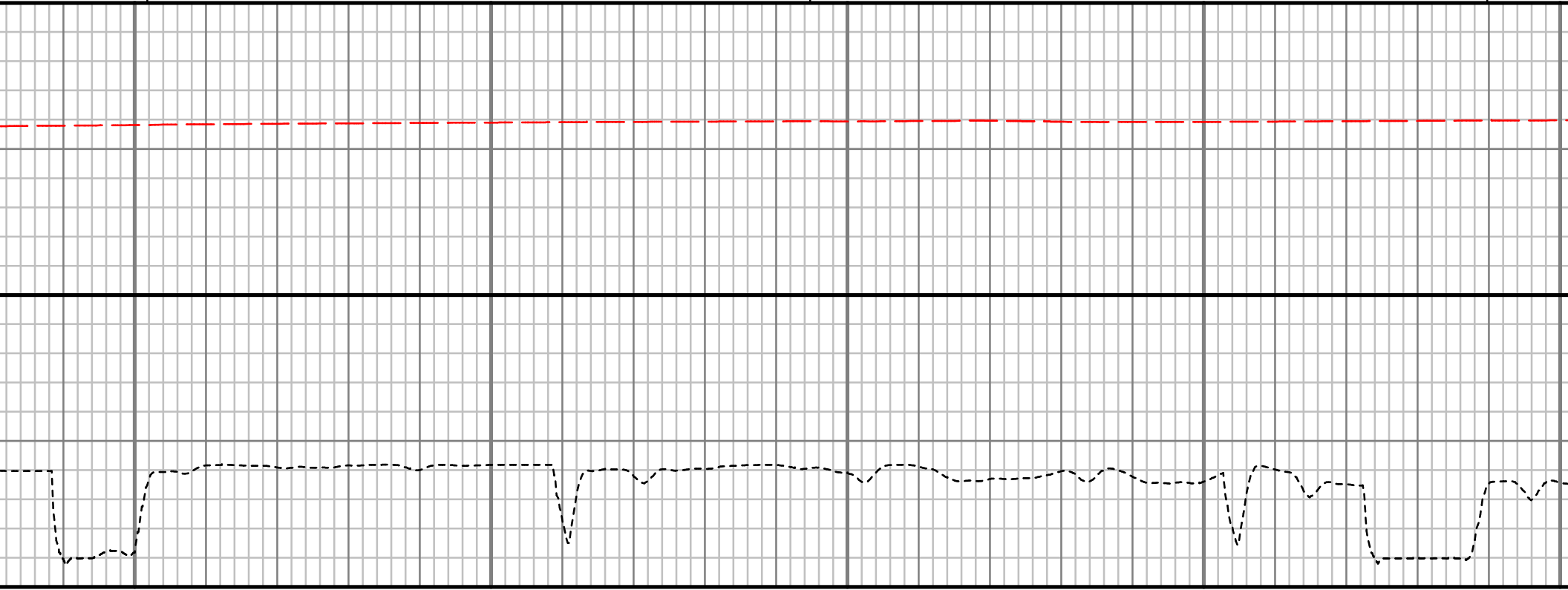
7650



S: 80 MD: 7702.00 ft
Inc: 91.34 deg Az:
271.06 deg TVD:
7004.77 ft

S: 81 MD: 7795.00 ft
Inc: 92.05 deg Az:
271.22 deg TVD:
7002.02 ft

S: 82 MD: 7890.00 ft
Inc: 89.77 deg Az:
270.09 deg TVD:
7000.52 ft



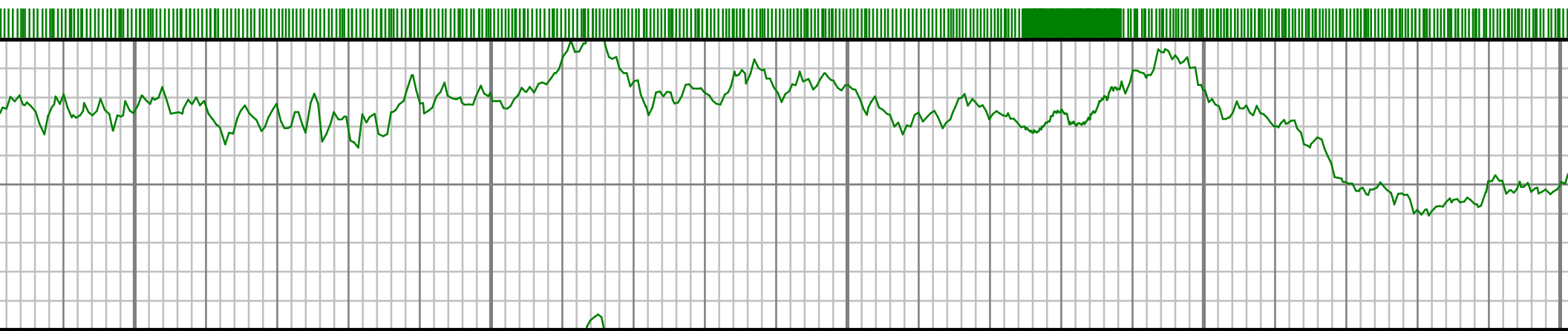
7700

7750

7800

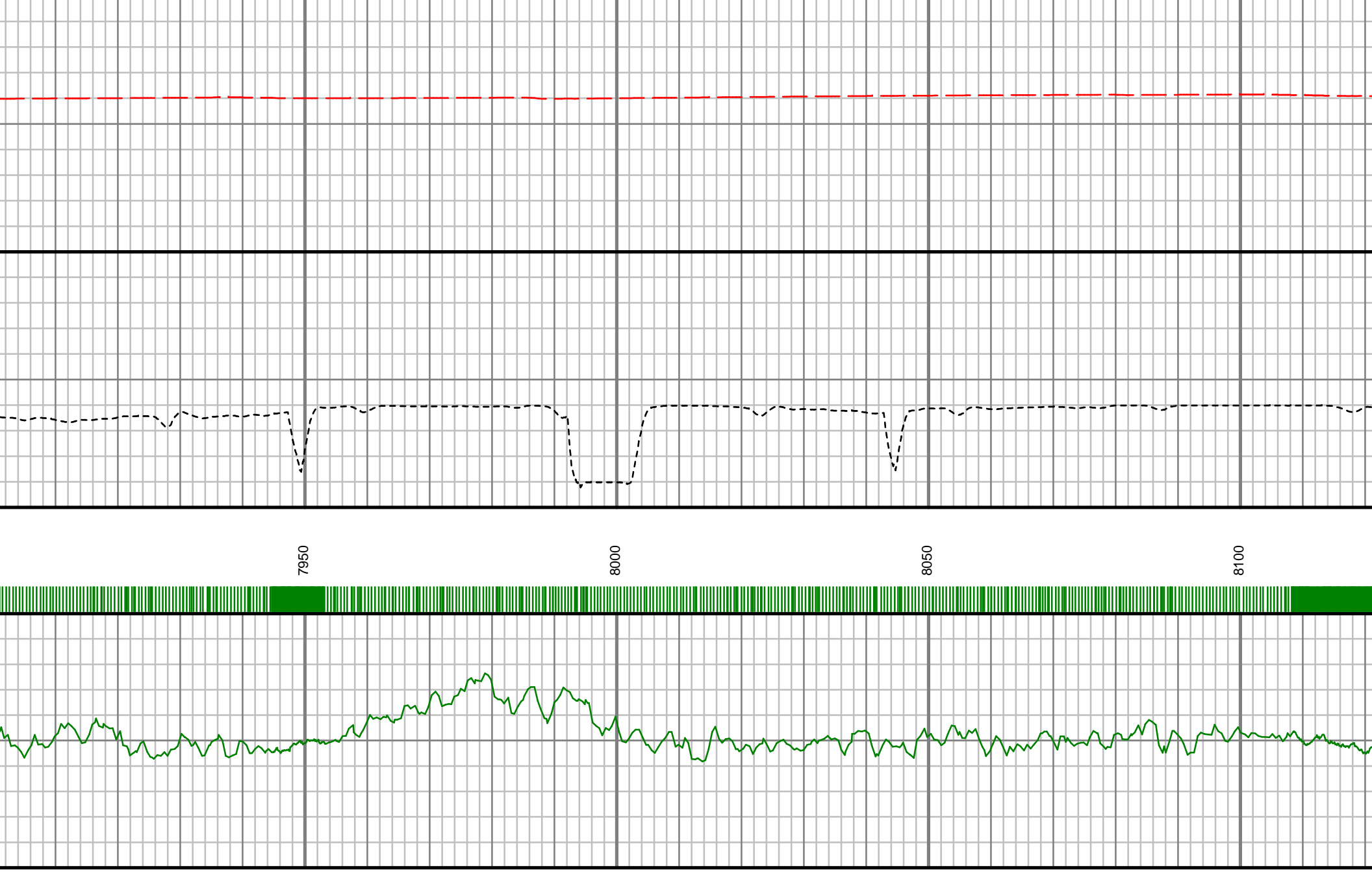
7850

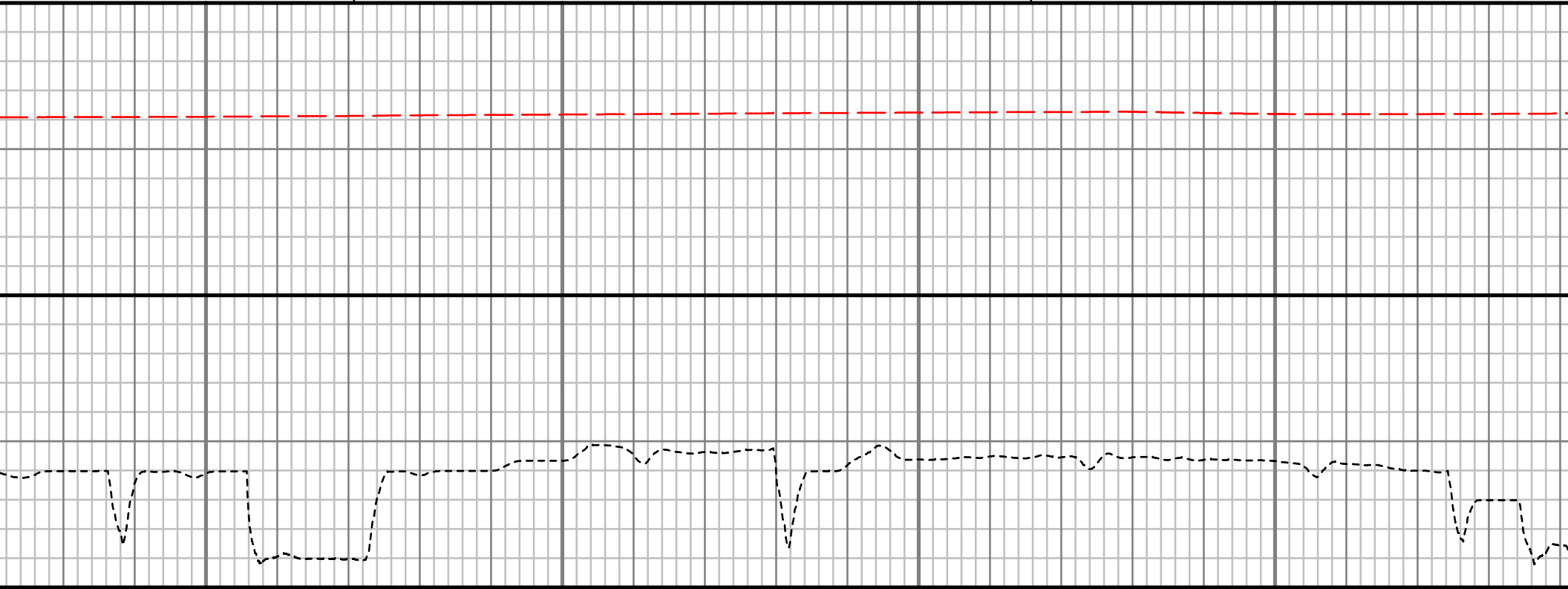
7900



S: 83 MD: 7985.00 ft
Inc: 89.40 deg Az:
270.27 deg TVD:
7001.21 ft

S: 84 MD: 8078.00 ft
Inc: 88.05 deg Az:
268.67 deg TVD:
7003.28 ft





S: 85 MD: 8171.00 ft
Inc: 89.03 deg Az:
269.71 deg TVD:
7005.65 ft

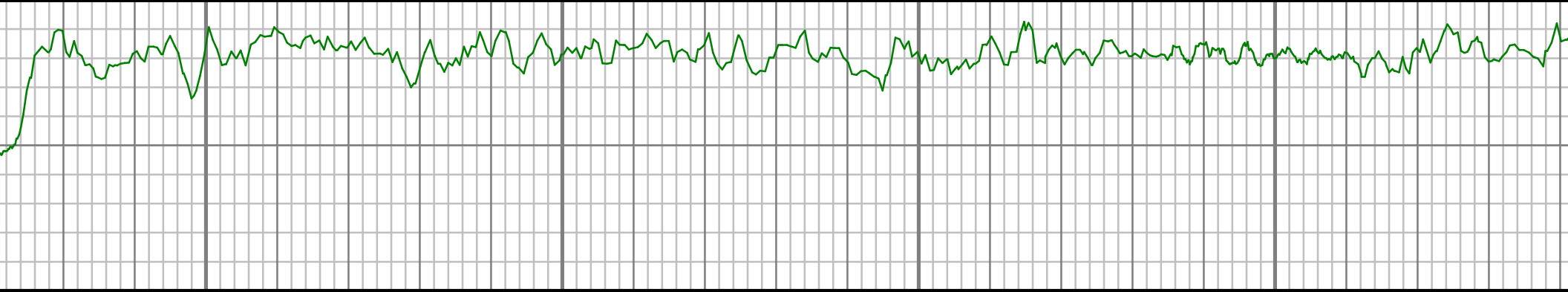
S: 86 MD: 8266.00 ft
Inc: 89.16 deg Az:
268.74 deg TVD:
7007.15 ft

8150

8200

8250

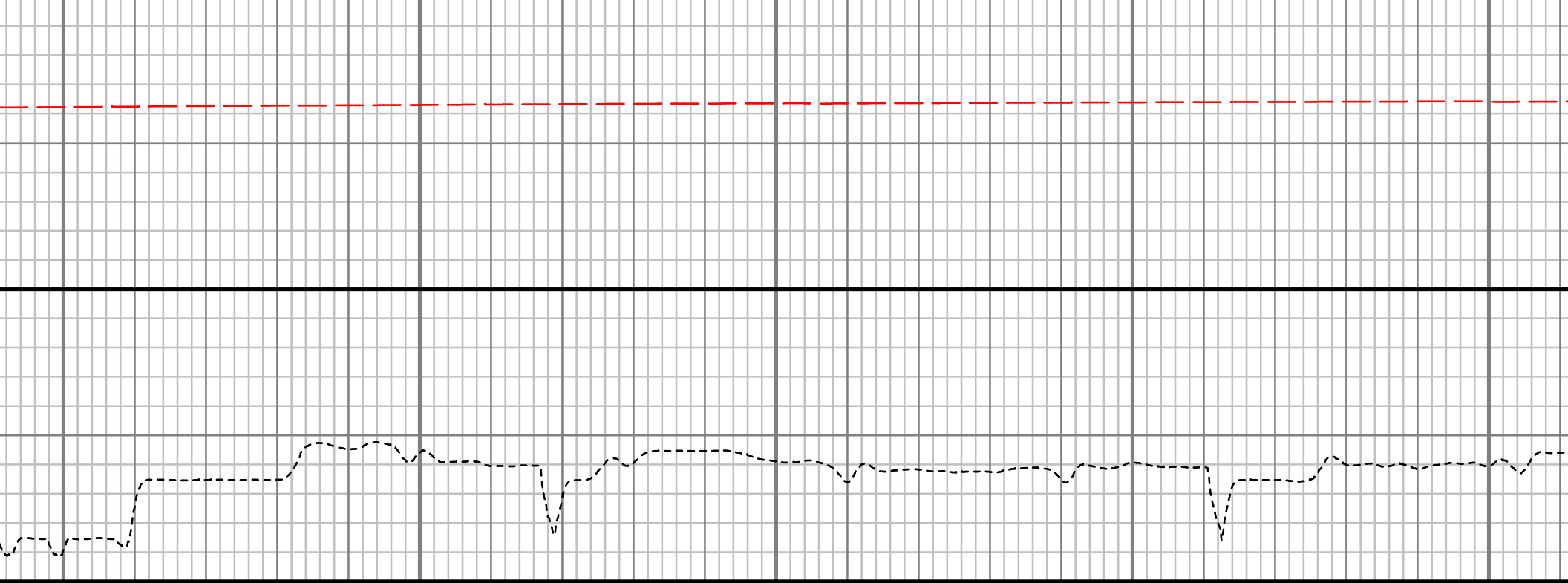
8300



S: 87 MD: 8358.00 ft
Inc: 90.64 deg Az:
271.16 deg TVD:
7007.32 ft

S: 88 MD: 8451.00 ft
Inc: 90.30 deg Az:
271.13 deg TVD:
7006.55 ft

S: 89 MD: 8546.00 ft
Inc: 90.91 deg Az:
272.36 deg TVD:
7005.55 ft



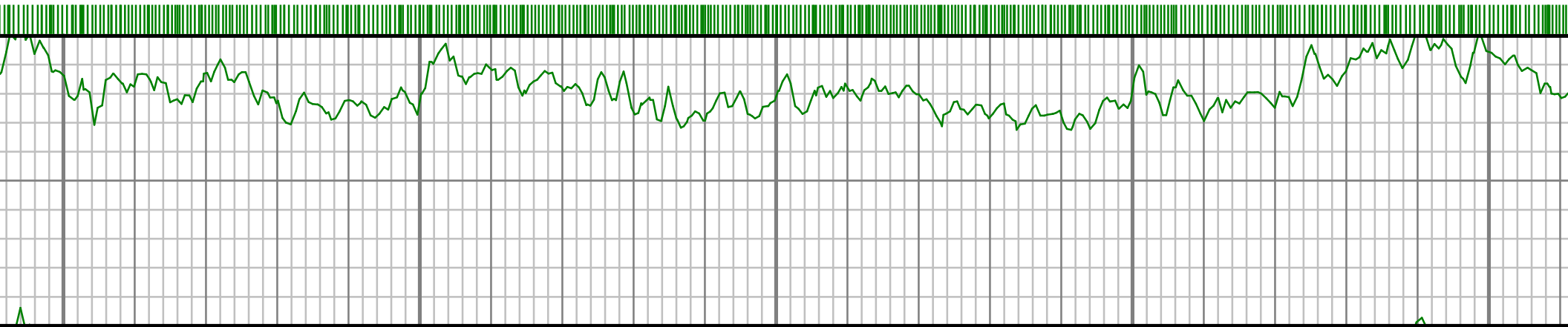
8350

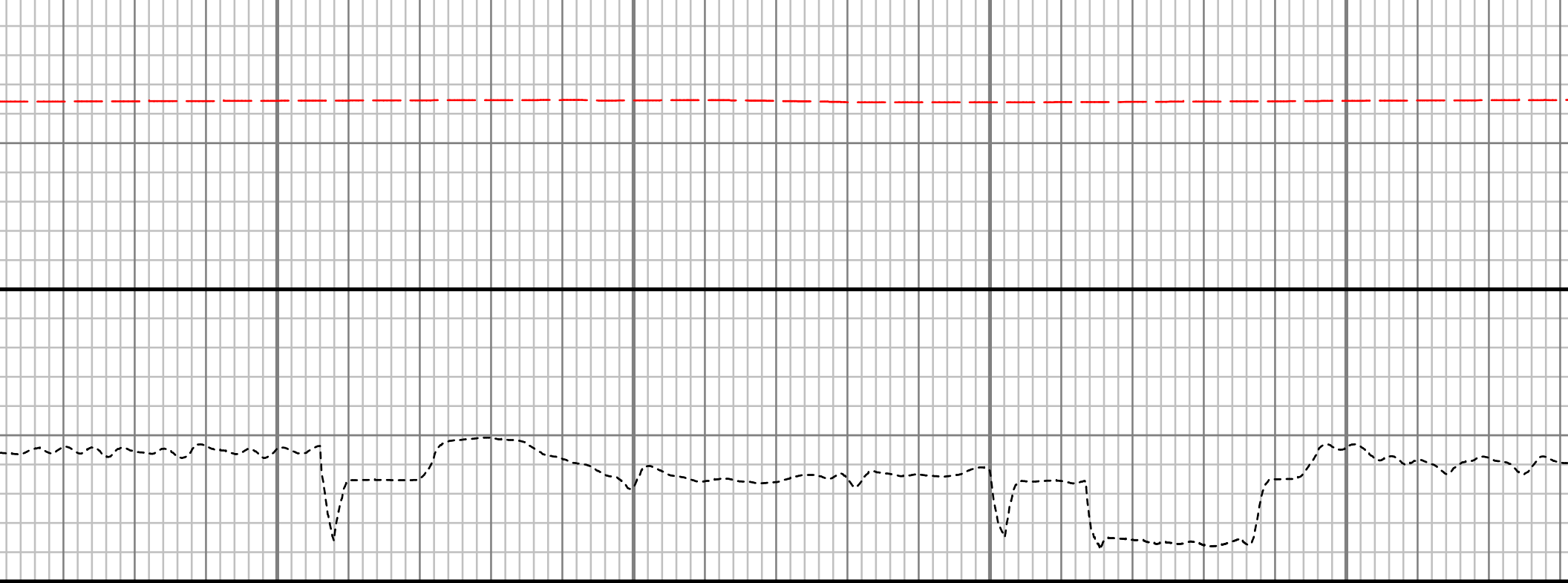
8400

8450

8500

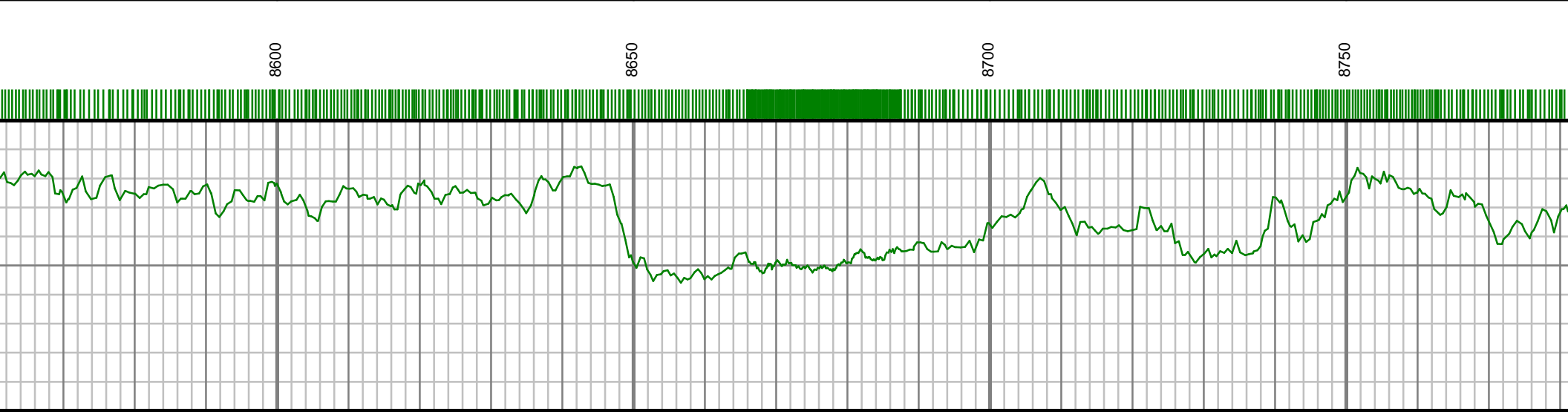
8550





S: 90 MD: 8639.00 ft
Inc: 89.73 deg Az:
269.86 deg TVD:
7005.03 ft

S: 91 MD: 8733.00 ft
Inc: 90.94 deg Az:
272.03 deg TVD:
7004.48 ft



8600

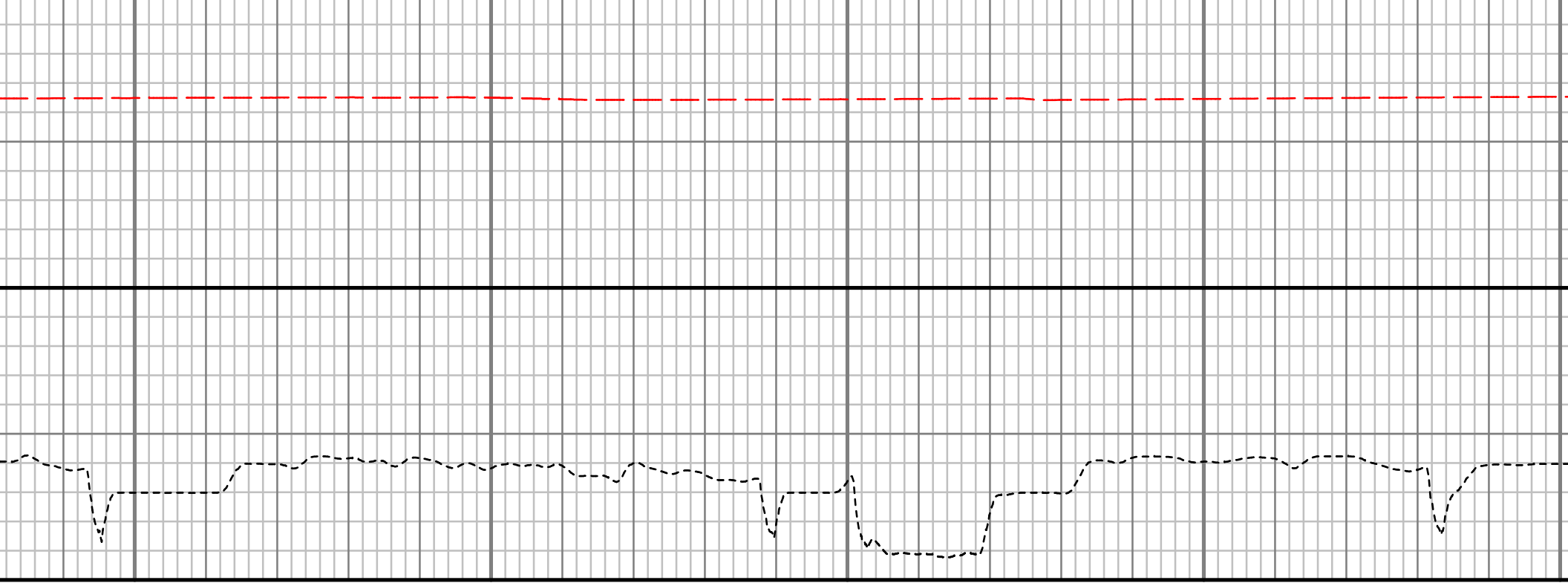
8650

8700

8750

S: 92 MD: 8827.00 ft
Inc: 91.81 deg Az:
273.17 deg TVD:
7002.23 ft

S: 93 MD: 8920.00 ft
Inc: 90.57 deg Az:
272.12 deg TVD:
7000.29 ft



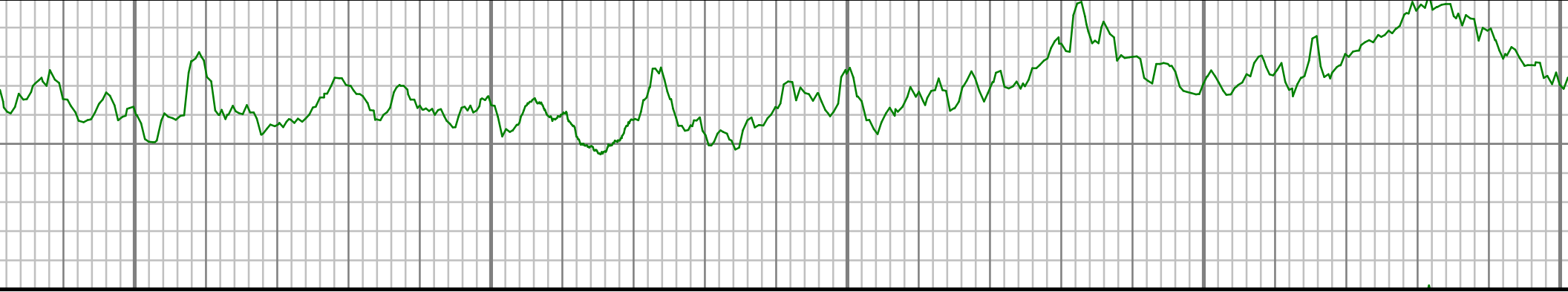
8800

8850

8900

8950

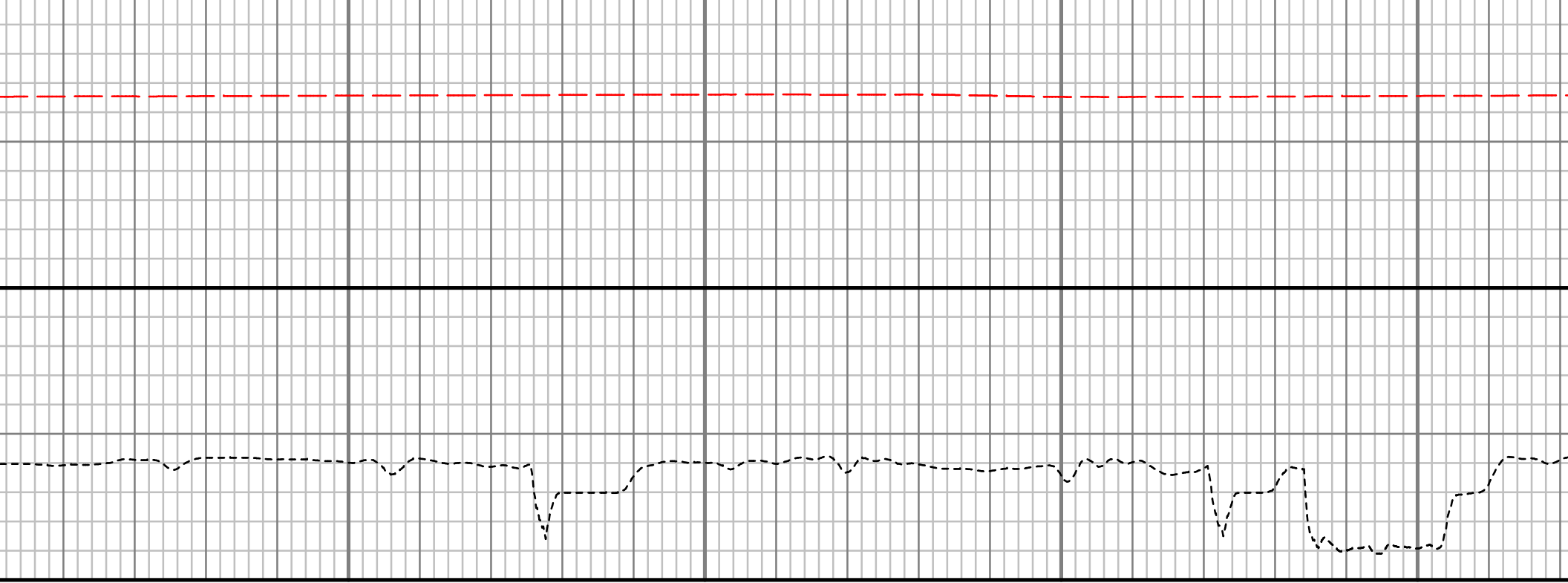
9000



S: 94 MD: 9014.00 ft
Inc: 89.93 deg Az:
272.94 deg TVD:
6999.88 ft

S: 95 MD: 9109.00 ft
Inc: 88.99 deg Az:
272.36 deg TVD:
7000.77 ft

S: 96 MD: 9203.00 ft
Inc: 88.72 deg Az:
271.13 deg TVD:
7002.65 ft

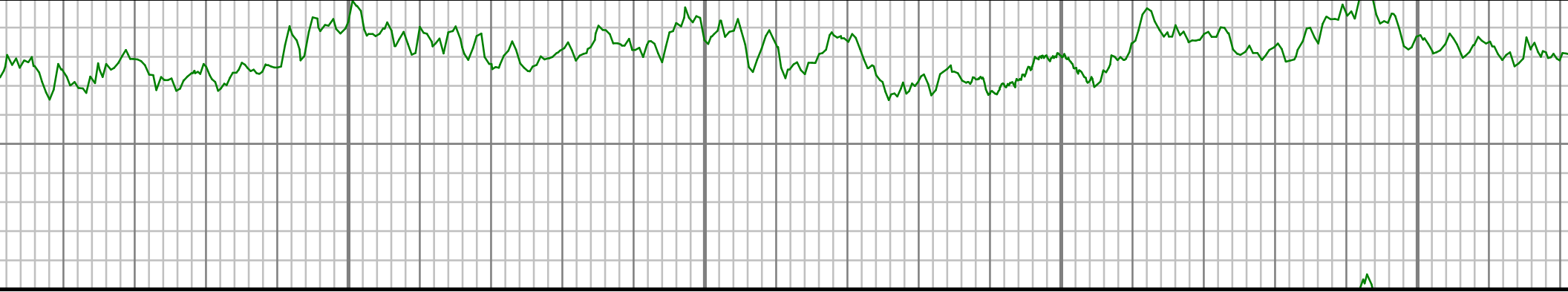


9050

9100

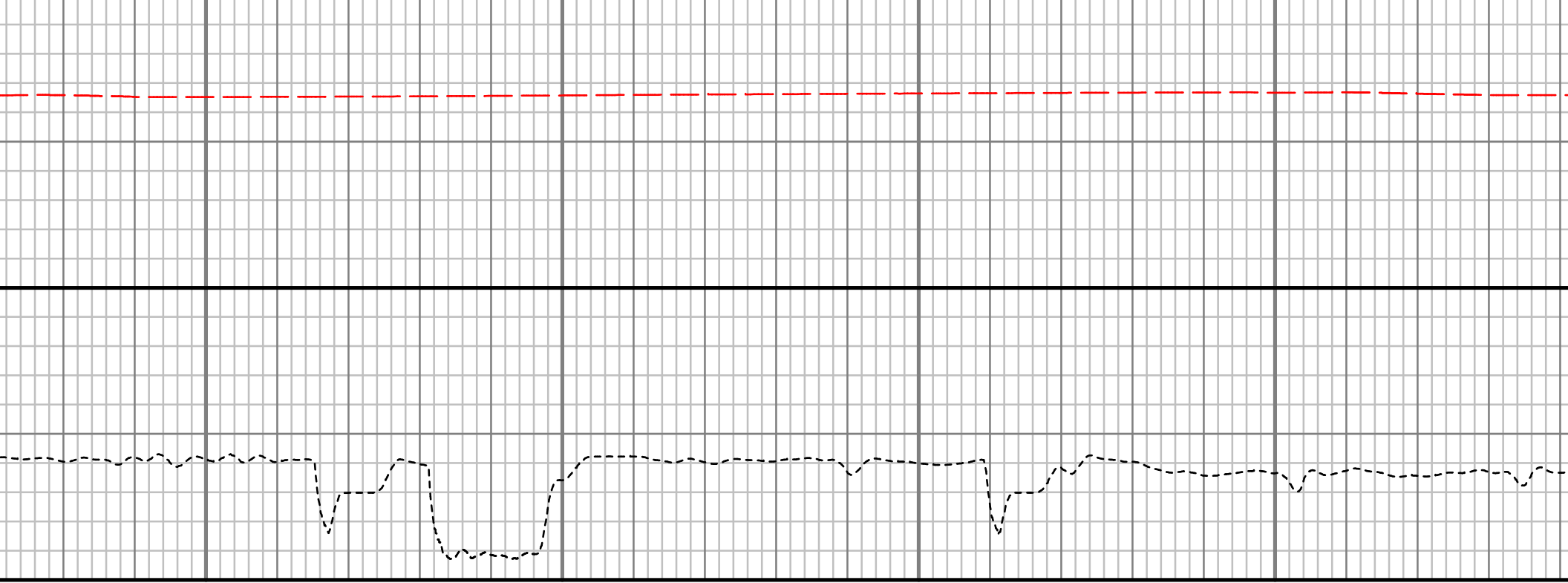
9150

9200



S: 97 MD: 9297.00 ft
Inc: 89.03 deg Az:
271.48 deg TVD:
7004.49 ft

S: 98 MD: 9391.00 ft
Inc: 88.43 deg Az:
271.25 deg TVD:
7006.58 ft

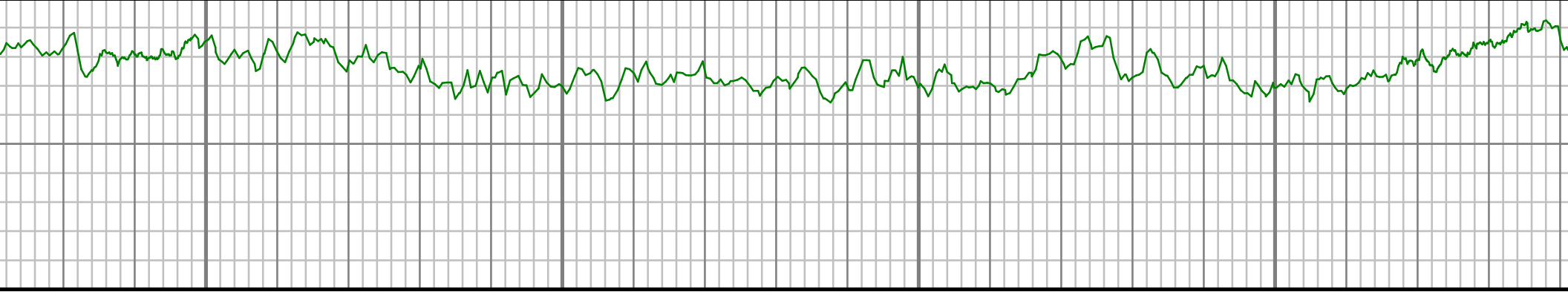


9250

9300

9350

9400



S: 99 MD: 9485.00 ft
Inc: 89.73 deg Az:
270.54 deg TVD:
7008.09 ft

S: 100 MD: 9579.00 ft
Inc: 91.44 deg Az:
269.26 deg TVD:
7007.13 ft



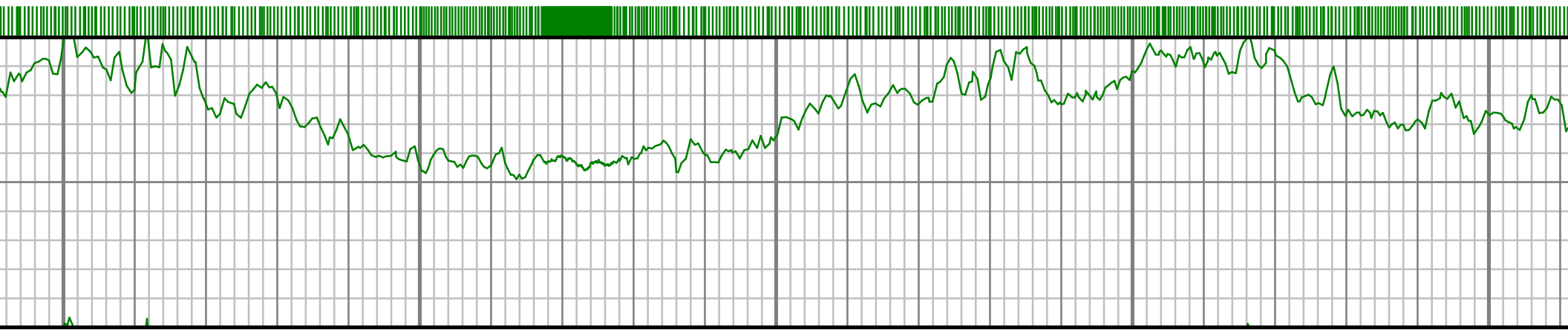
9450

9500

9550

9600

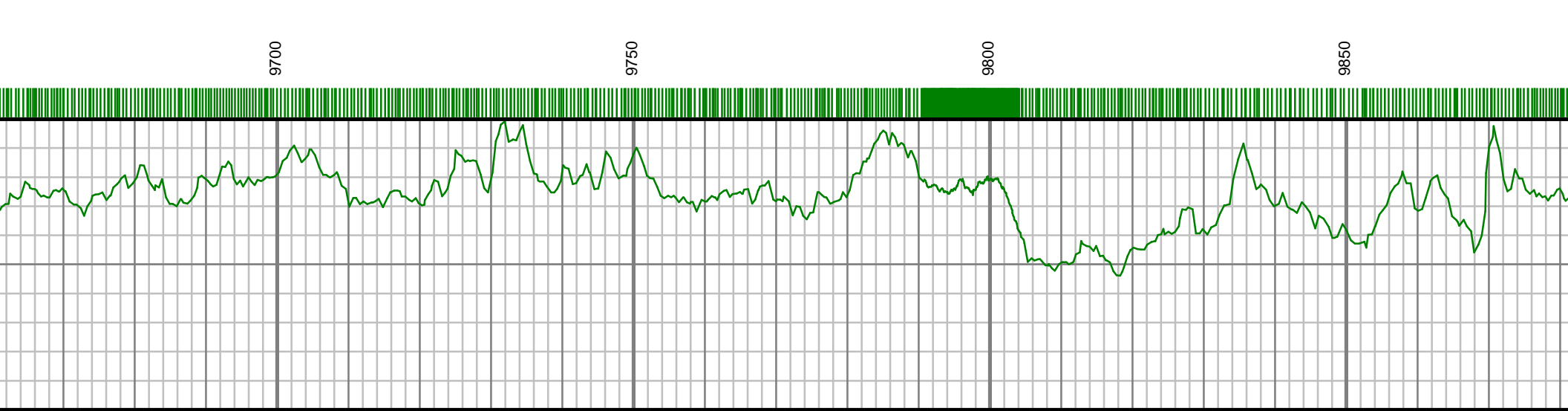
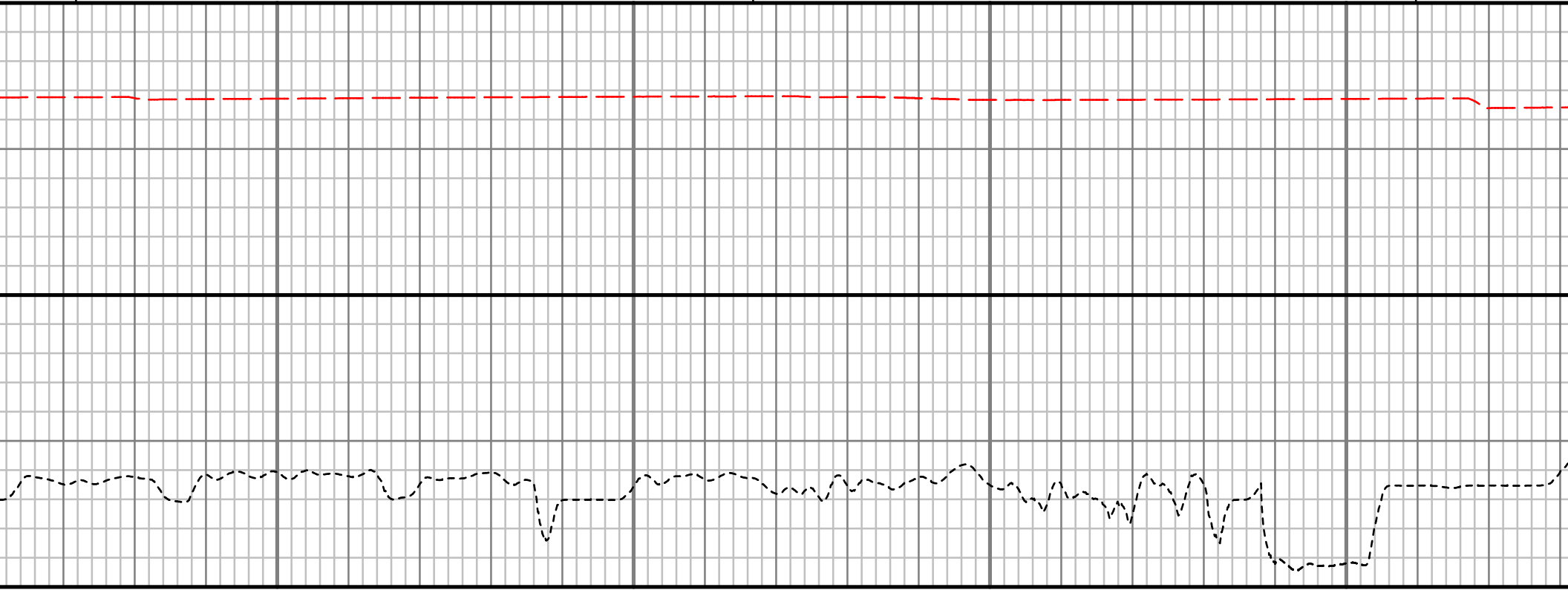
9650



S: 101 MD: 9672.00 ft
Inc: 91.78 deg Az:
269.39 deg TVD:
7004.51 ft

S: 102 MD: 9767.00 ft
Inc: 92.65 deg Az:
269.54 deg TVD:
7000.84 ft

S: 103 MD: 9860.00 ft
Inc: 90.74 deg Az:
269.91 deg TVD:
6998.09 ft

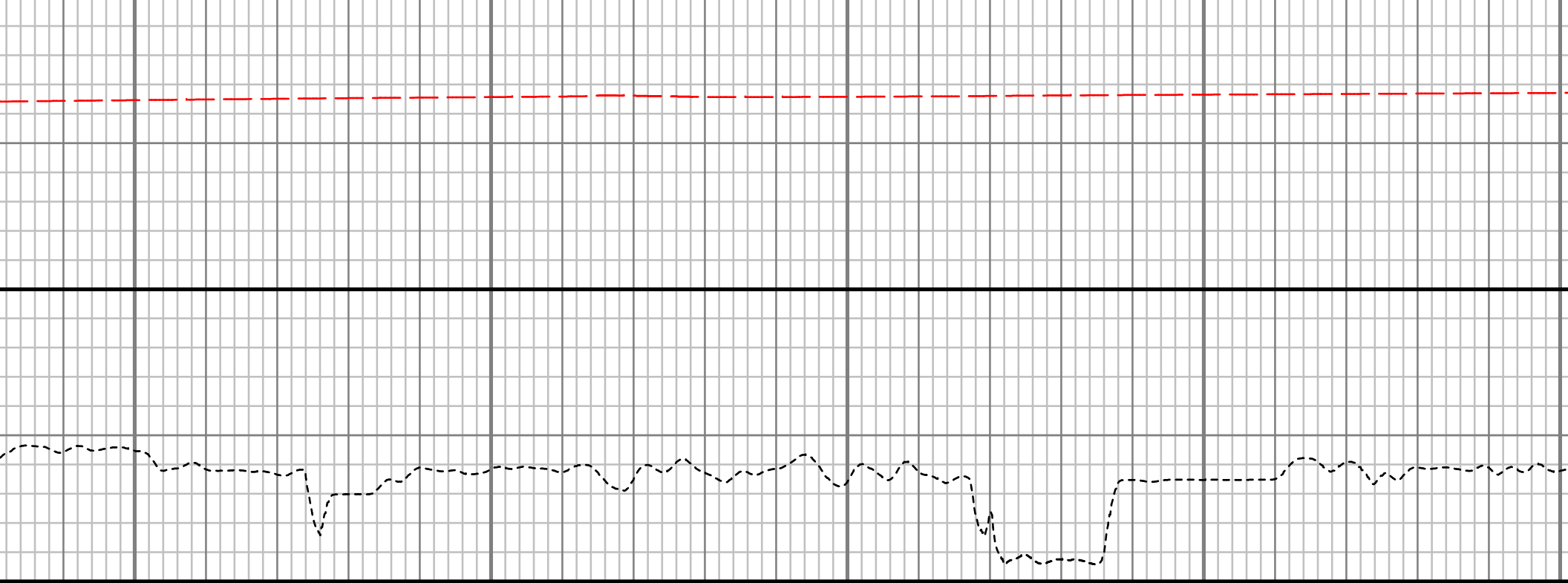


9700

9750

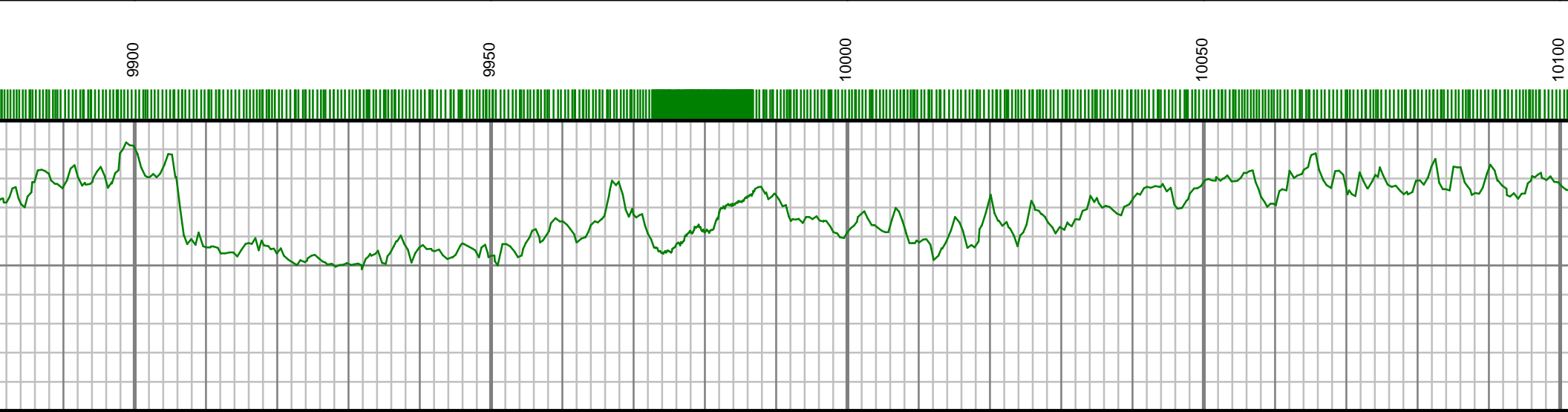
9800

9850



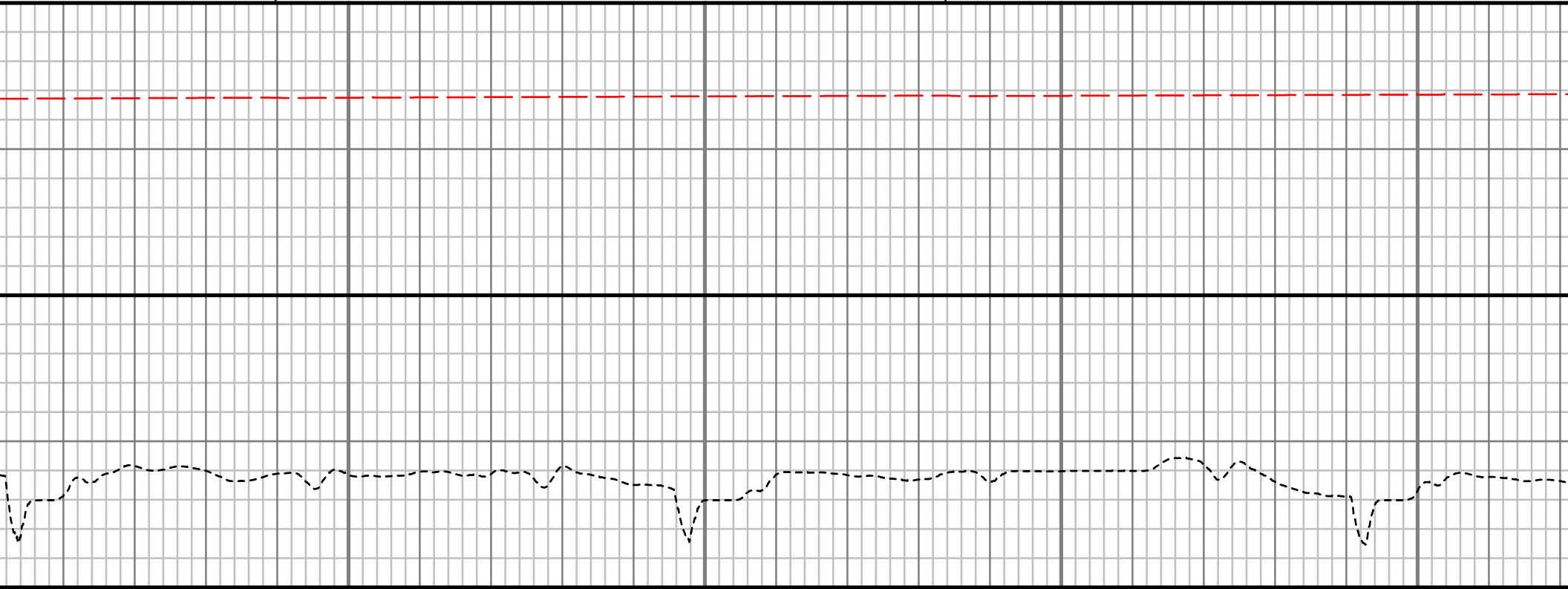
S: 104 MD: 9952.00 ft
Inc: 91.21 deg Az:
269.96 deg TVD:
6996.52 ft

S: 105 MD: 10046.00 ft
Inc: 90.17 deg Az:
269.70 deg TVD:
6995.39 ft



S: 106 MD: 10140.00 ft
Inc: 90.71 deg Az:
269.69 deg TVD:
6994.68 ft

S: 107 MD: 10234.00 ft
Inc: 90.27 deg Az:
270.42 deg TVD:
6993.88 ft

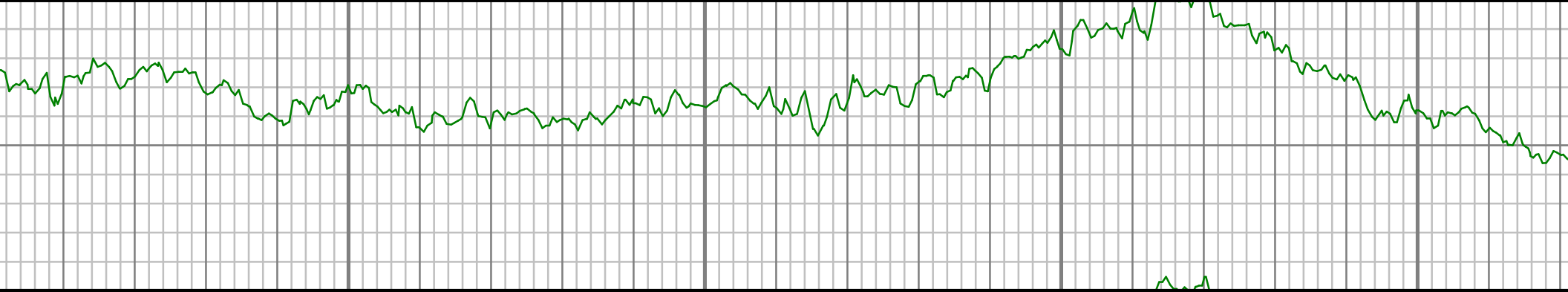


10150

10200

10250

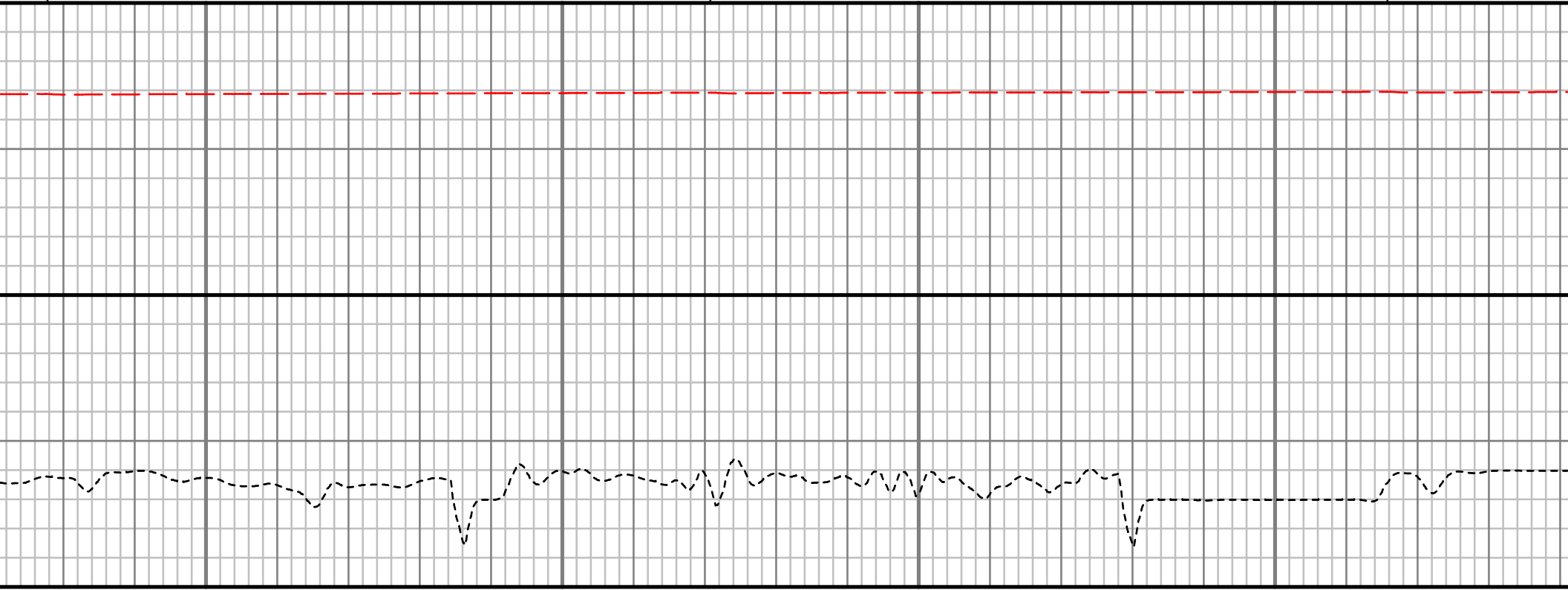
10300



S: 108 MD: 10328.00 ft
Inc: 90.17 deg Az:
270.11 deg TVD:
6993.52 ft

S: 109 MD: 10421.00 ft
Inc: 90.13 deg Az:
270.55 deg TVD:
6993.28 ft

S: 110 MD: 10516.00 ft
Inc: 90.20 deg Az:
271.16 deg TVD:
6993.00 ft

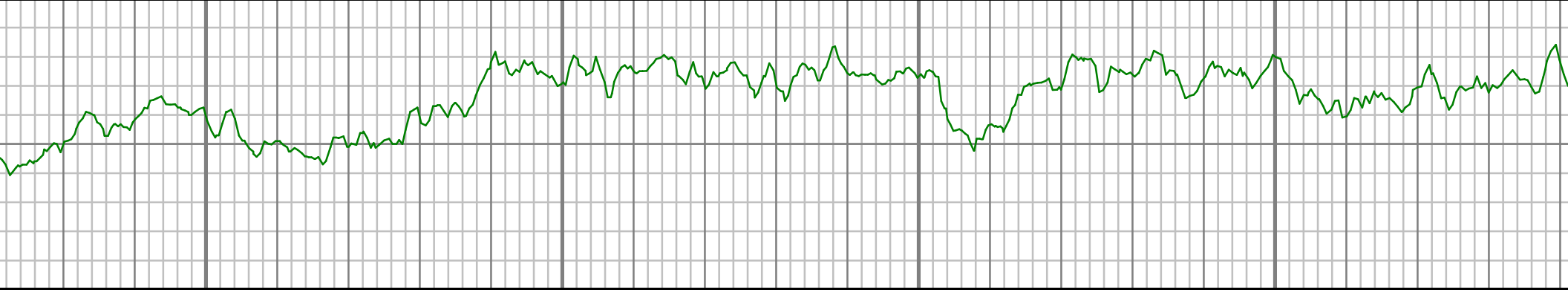


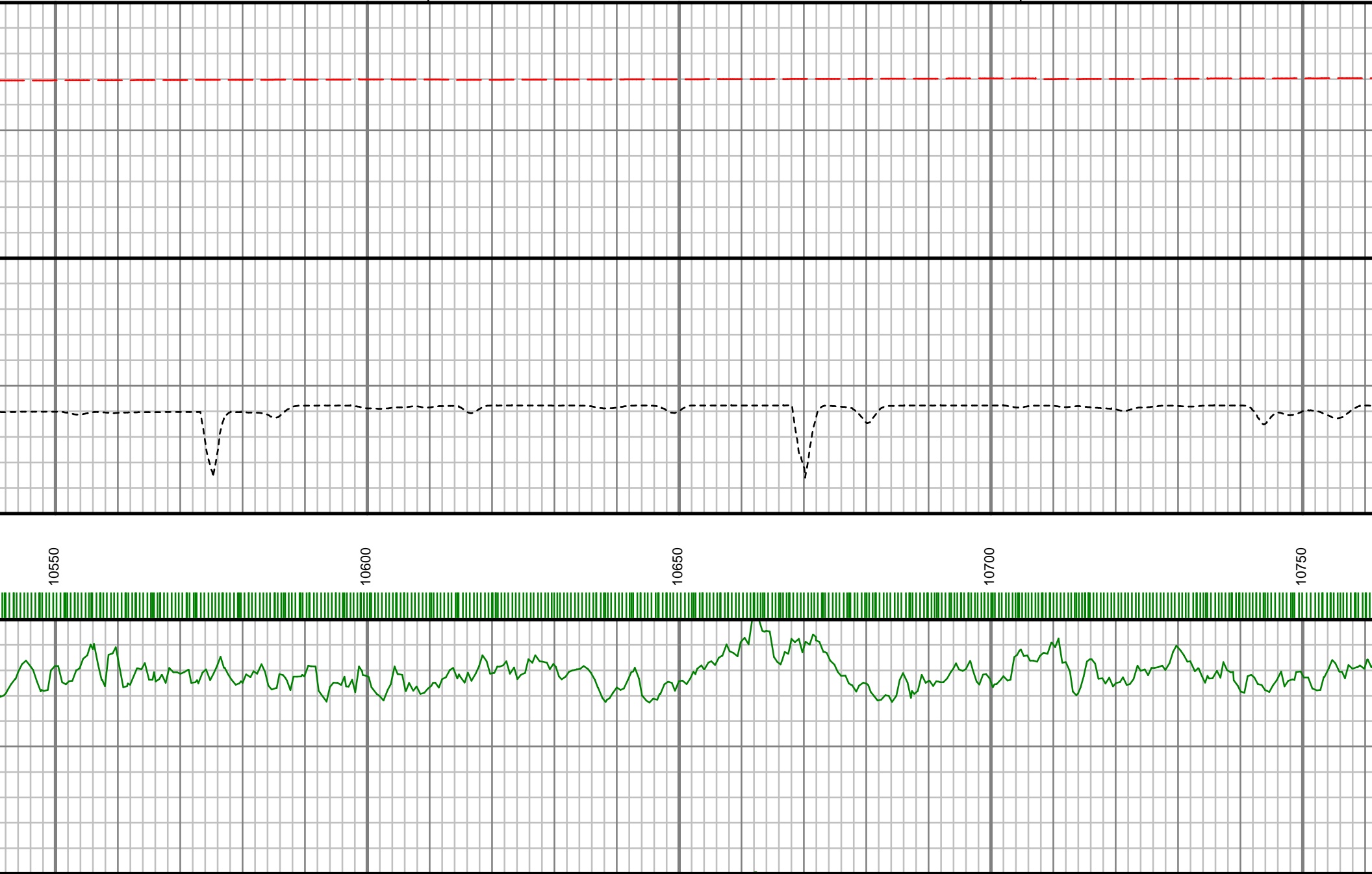
10350

10400

10450

10500



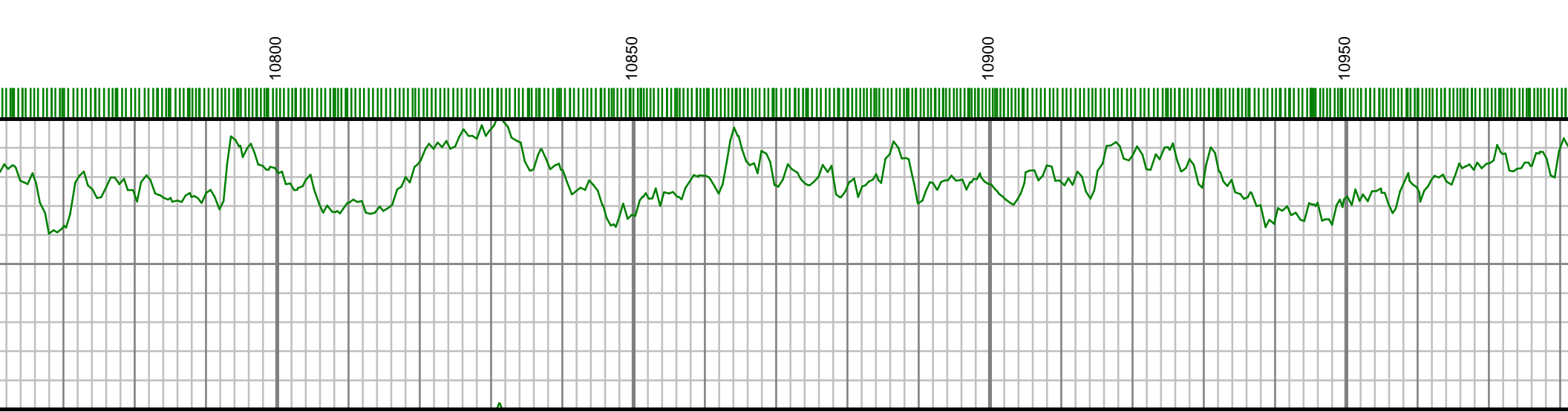
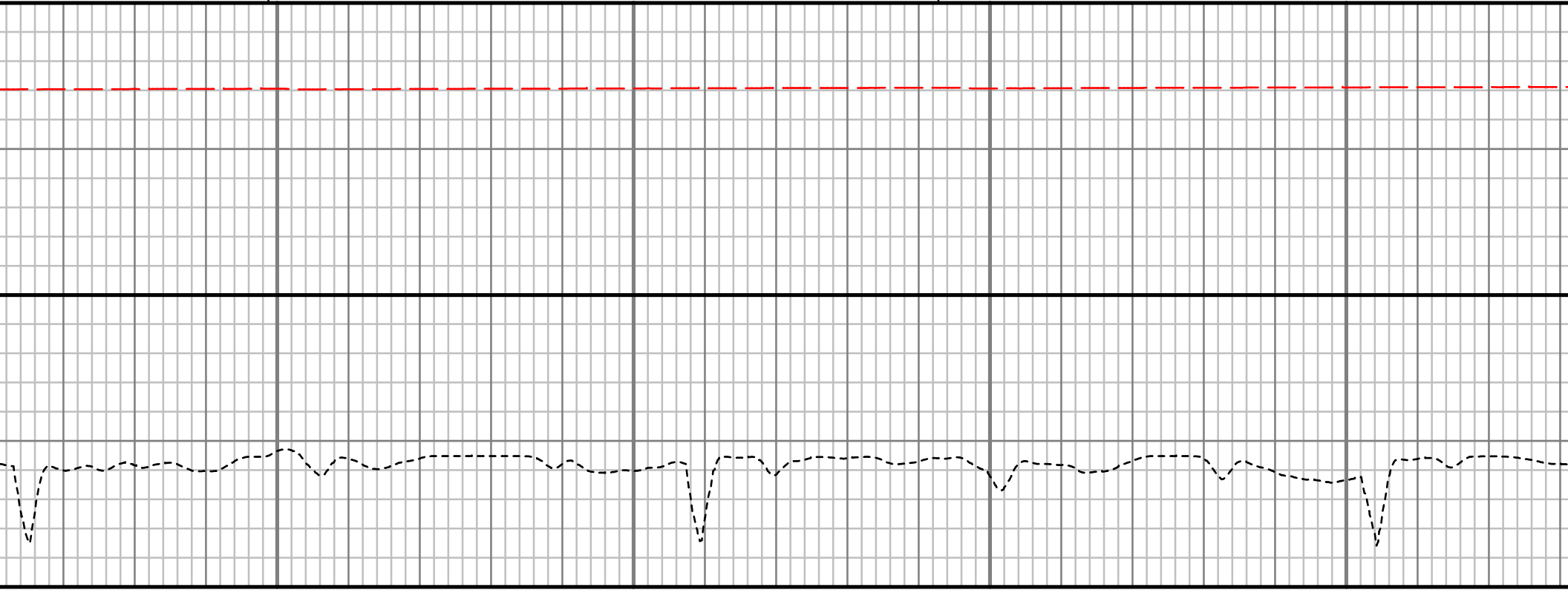


S: 111 MD: 10610.00 ft
Inc: 89.80 deg Az:
270.97 deg TVD:
6993.00 ft

S: 112 MD: 10705.00 ft
Inc: 89.56 deg Az:
271.01 deg TVD:
6993.53 ft

S: 113 MD: 10799.00 ft
Inc: 89.43 deg Az:
270.07 deg TVD:
6994.35 ft

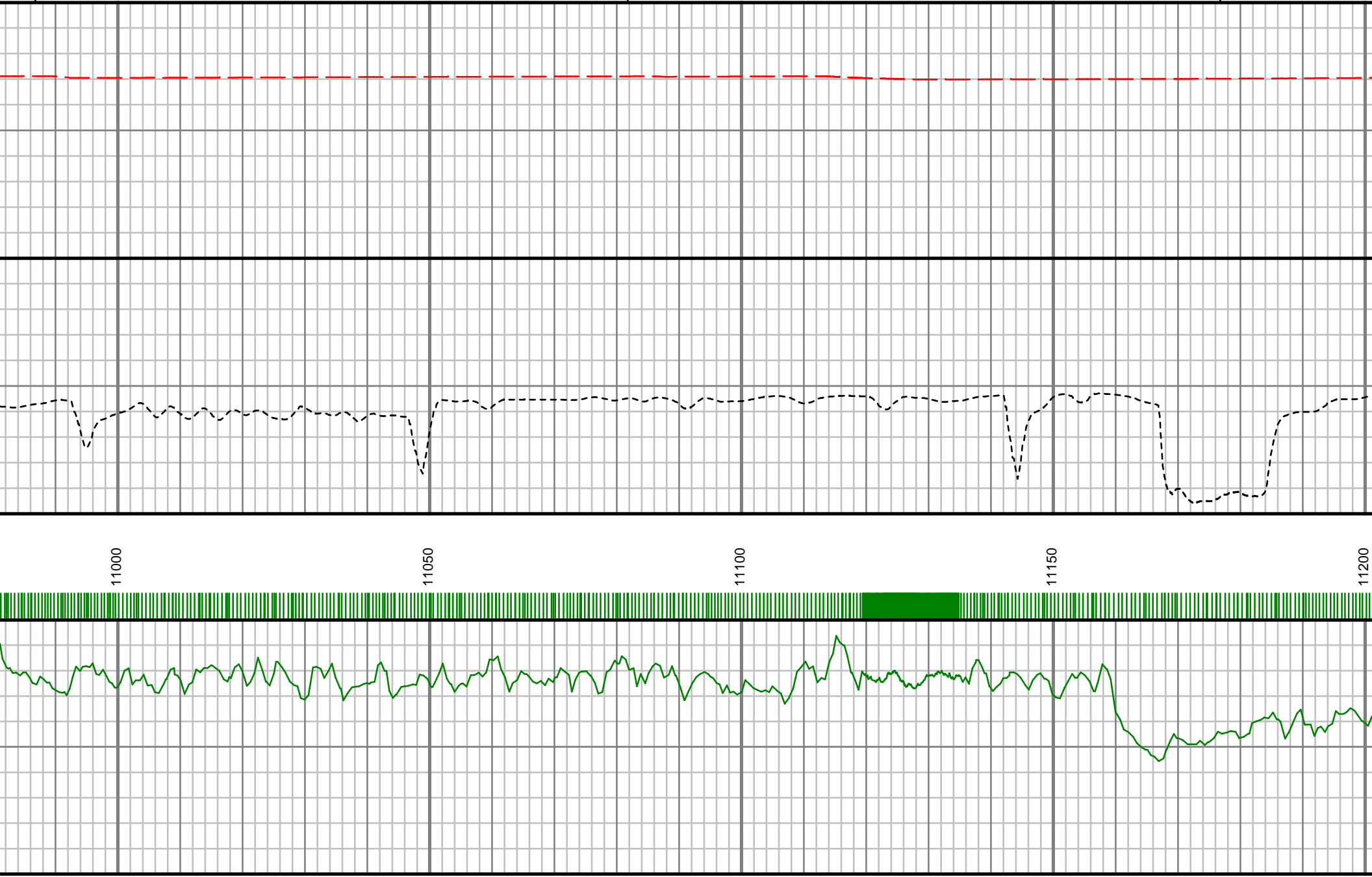
S: 114 MD: 10893.00 ft
Inc: 89.36 deg Az:
270.12 deg TVD:
6995.34 ft

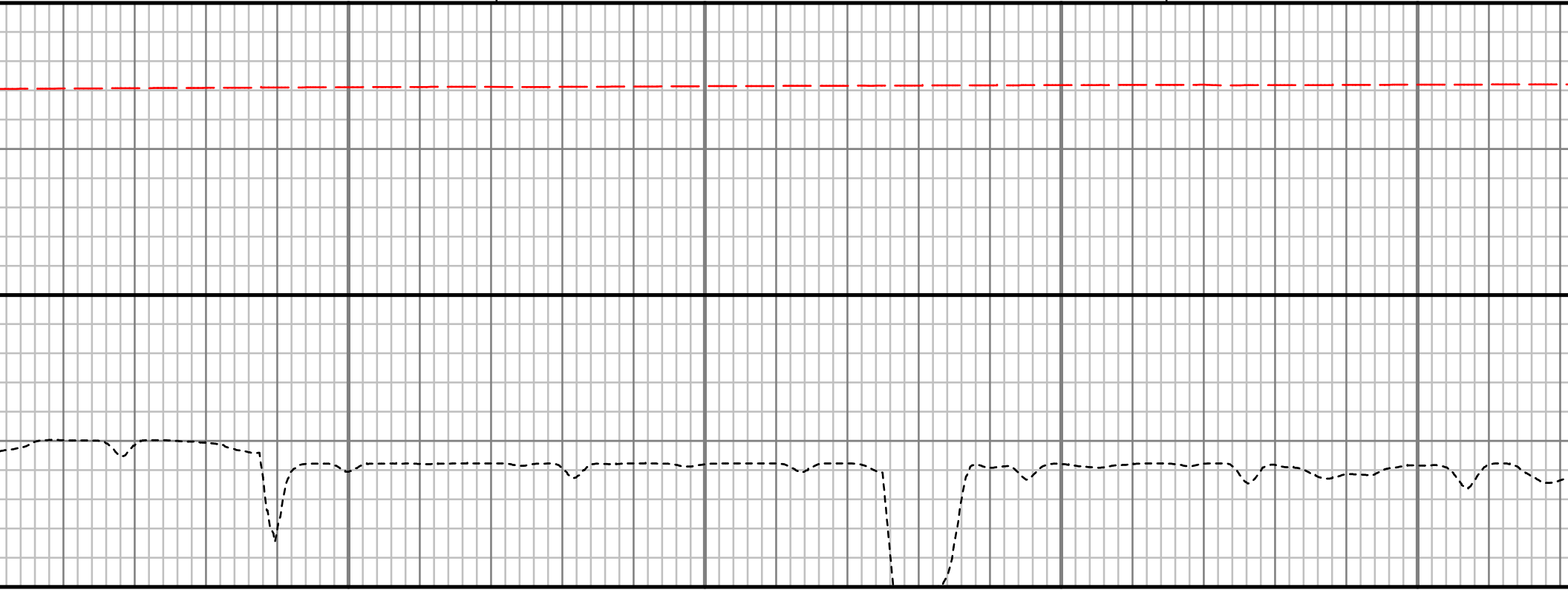


S: 115 MD: 10987.00 ft
Inc: 89.46 deg Az:
269.77 deg TVD:
6996.31 ft

S: 116 MD: 11082.00 ft
Inc: 88.39 deg Az:
269.38 deg TVD:
6998.09 ft

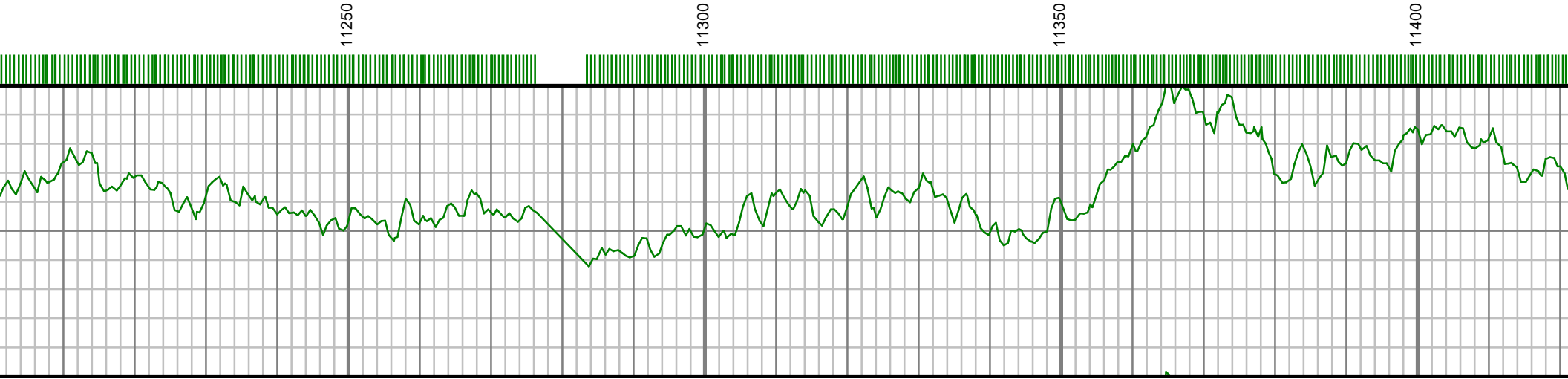
S: 117 MD: 11177.00 ft
Inc: 89.50 deg Az:
269.68 deg TVD:
6999.84 ft





S: 118 MD: 11271.00 ft
Inc: 89.97 deg Az:
270.26 deg TVD:
7000.28 ft

S: 119 MD: 11365.00 ft
Inc: 90.84 deg Az:
269.70 deg TVD:
6999.62 ft



11250

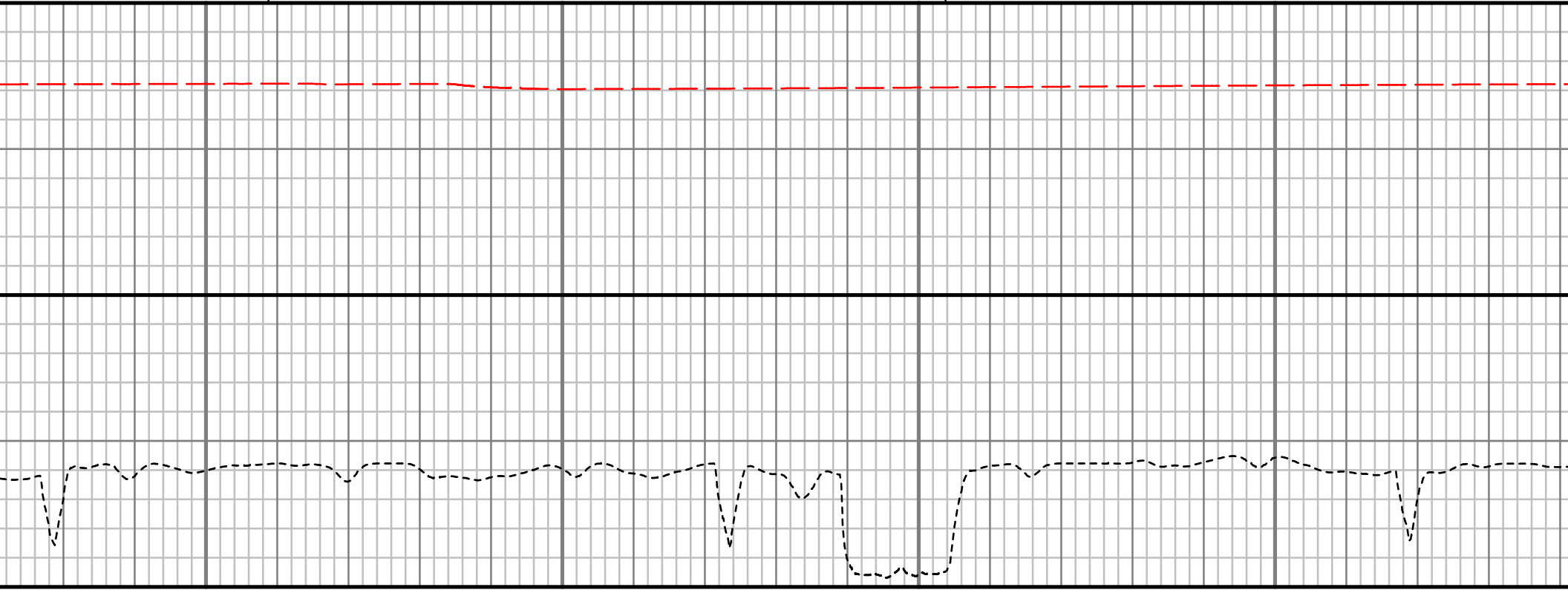
11300

11350

11400

S: 120 MD: 11459.00 ft
Inc: 91.88 deg Az:
270.16 deg TVD:
6997.39 ft

S: 121 MD: 11554.00 ft
Inc: 91.07 deg Az:
271.40 deg TVD:
6994.94 ft

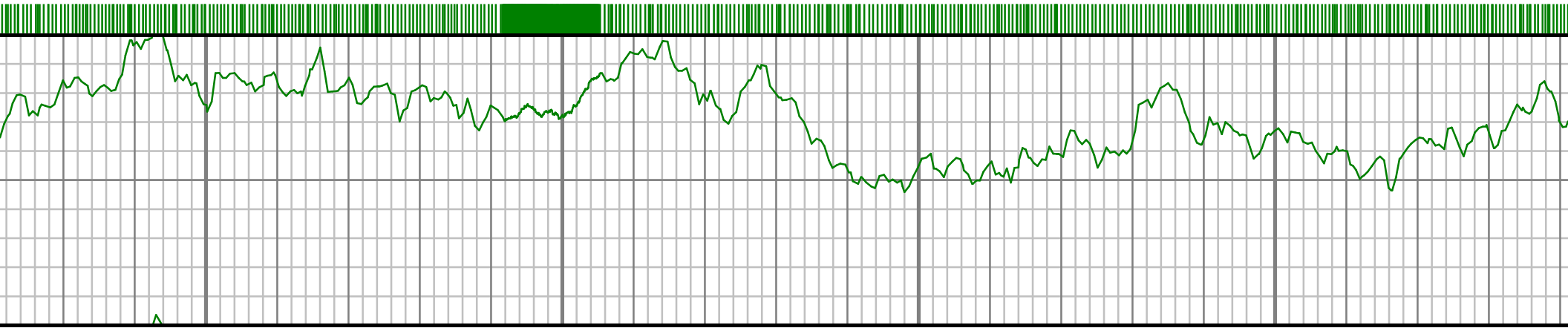


11450

11500

11550

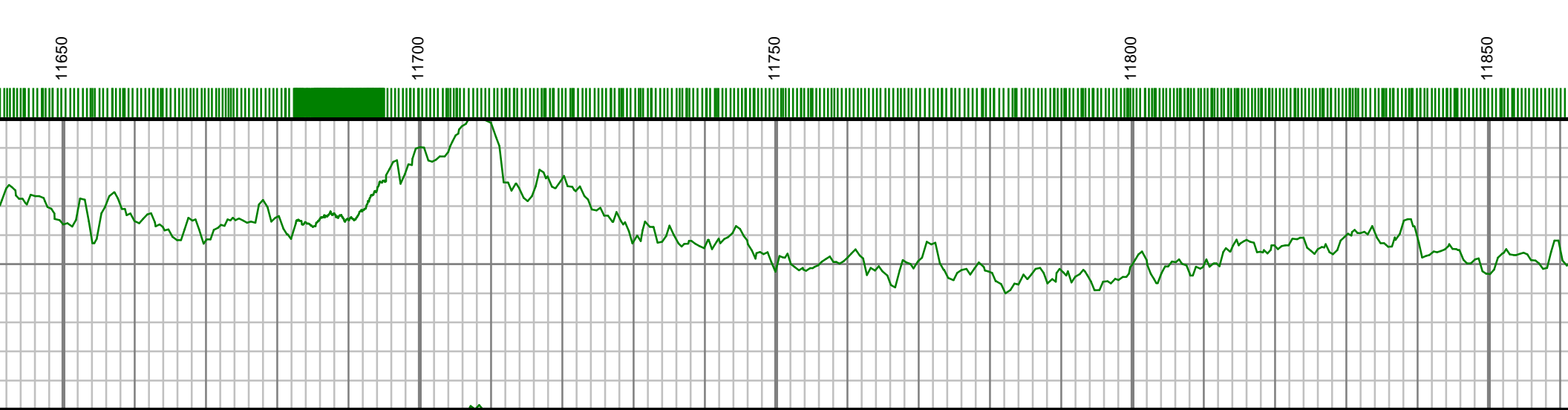
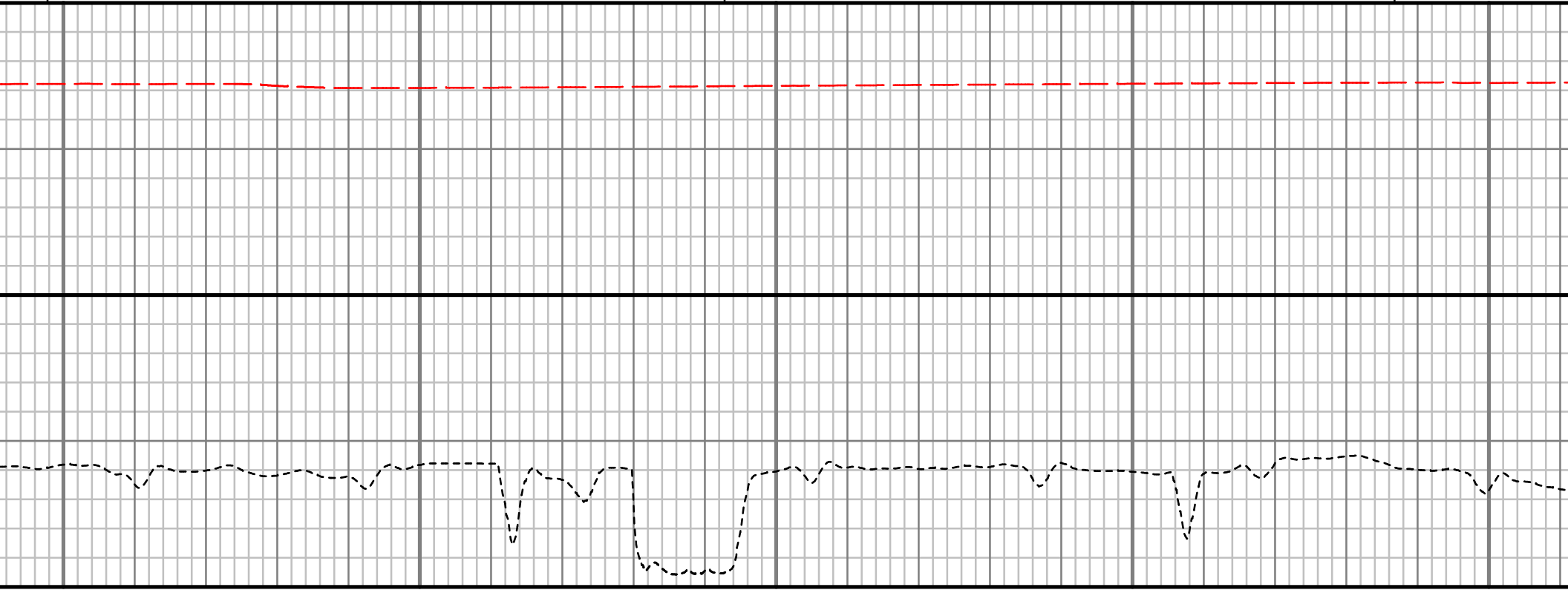
11600

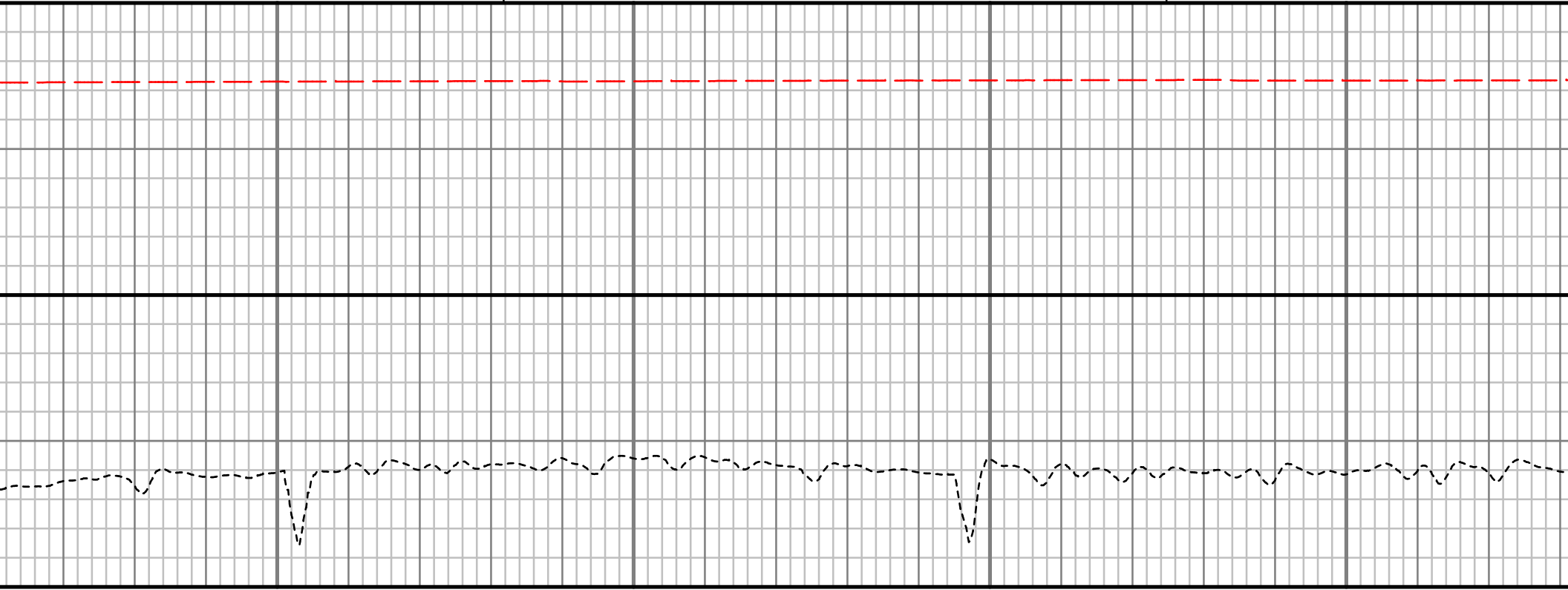


S: 122 MD: 11648.00 ft
Inc: 91.61 deg Az:
271.67 deg TVD:
6992.73 ft

S: 123 MD: 11743.00 ft
Inc: 90.10 deg Az:
271.72 deg TVD:
6991.31 ft

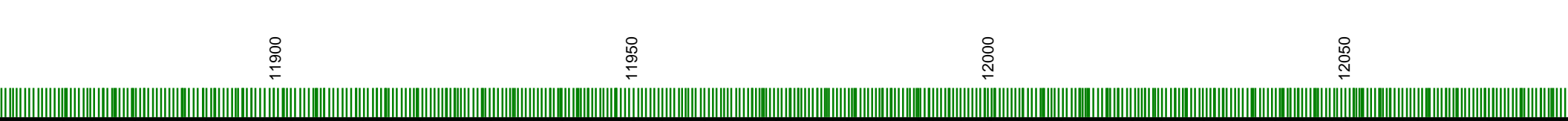
S: 124 MD: 11837.00 ft
Inc: 90.07 deg Az:
272.14 deg TVD:
6991.18 ft





S: 125 MD: 11932.00 ft
Inc: 90.30 deg Az:
272.86 deg TVD:
6990.87 ft

S: 126 MD: 12025.00 ft
Inc: 89.23 deg Az:
271.51 deg TVD:
6991.25 ft

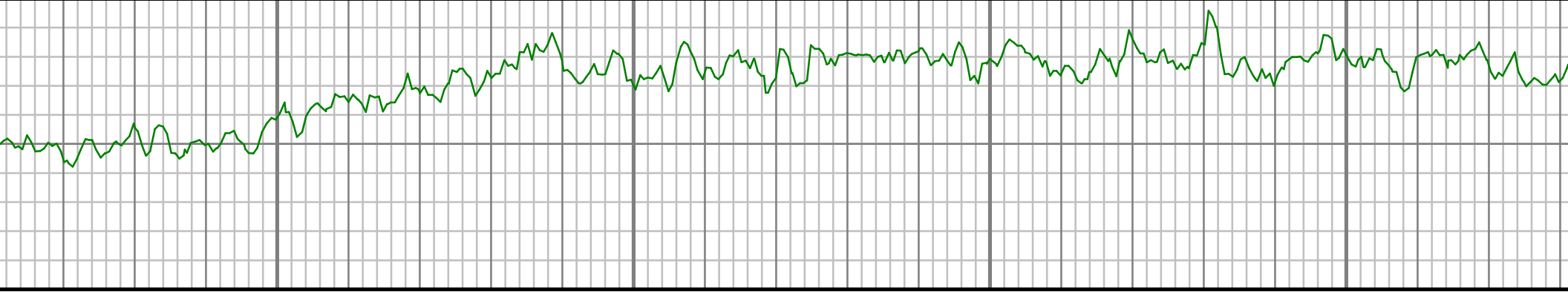


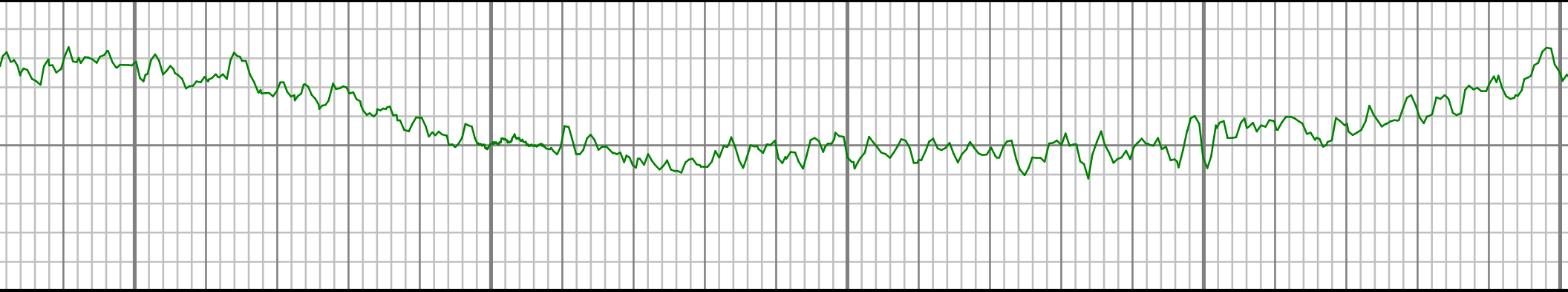
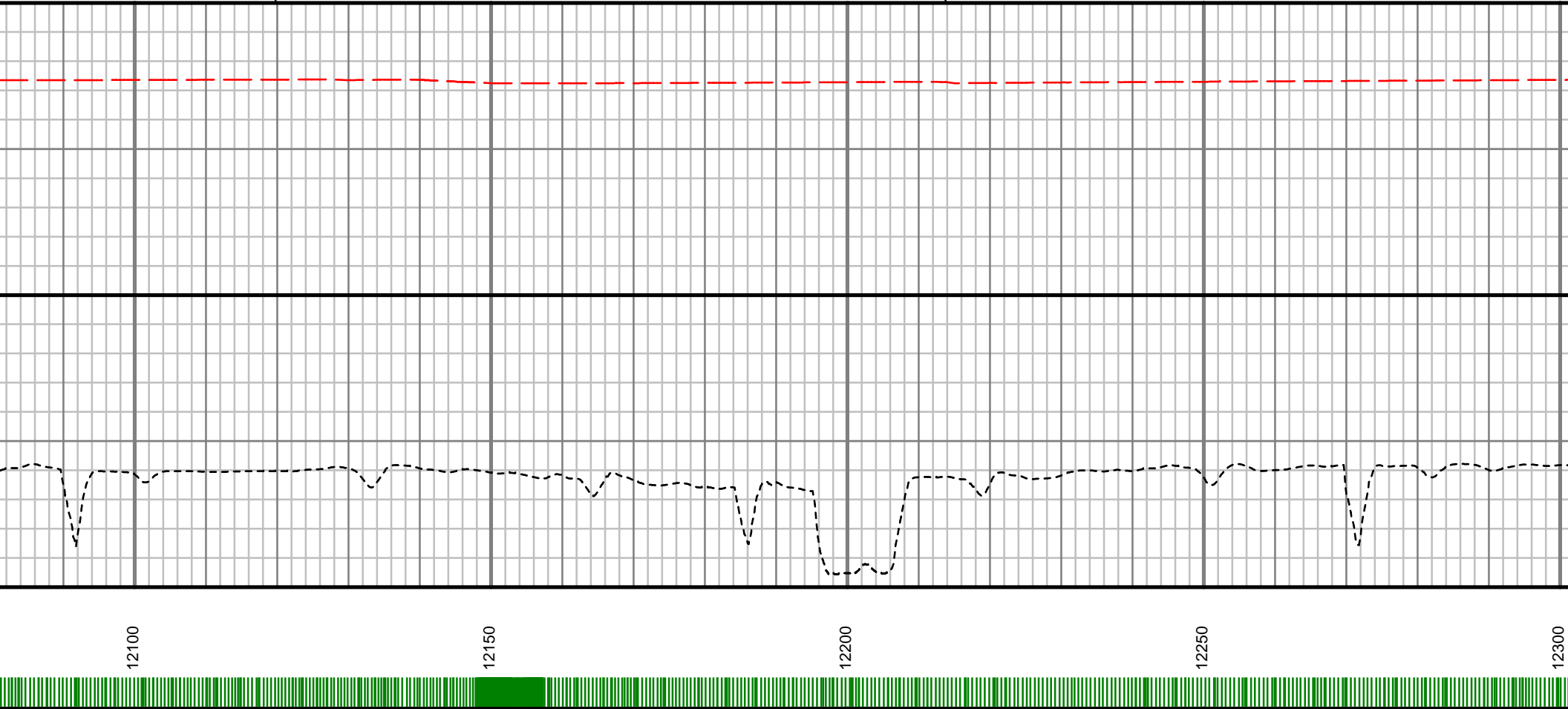
11900

11950

12000

12050

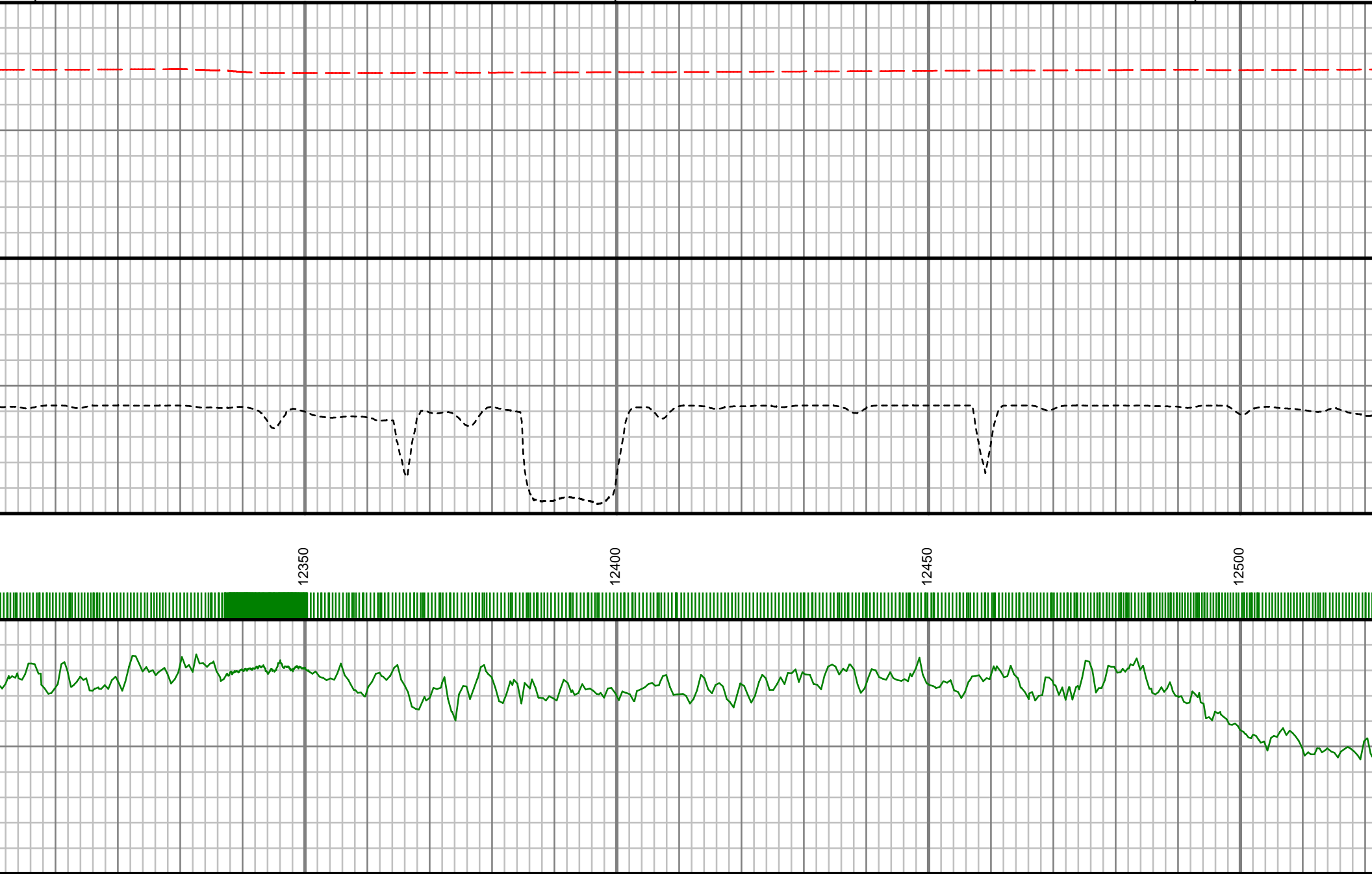


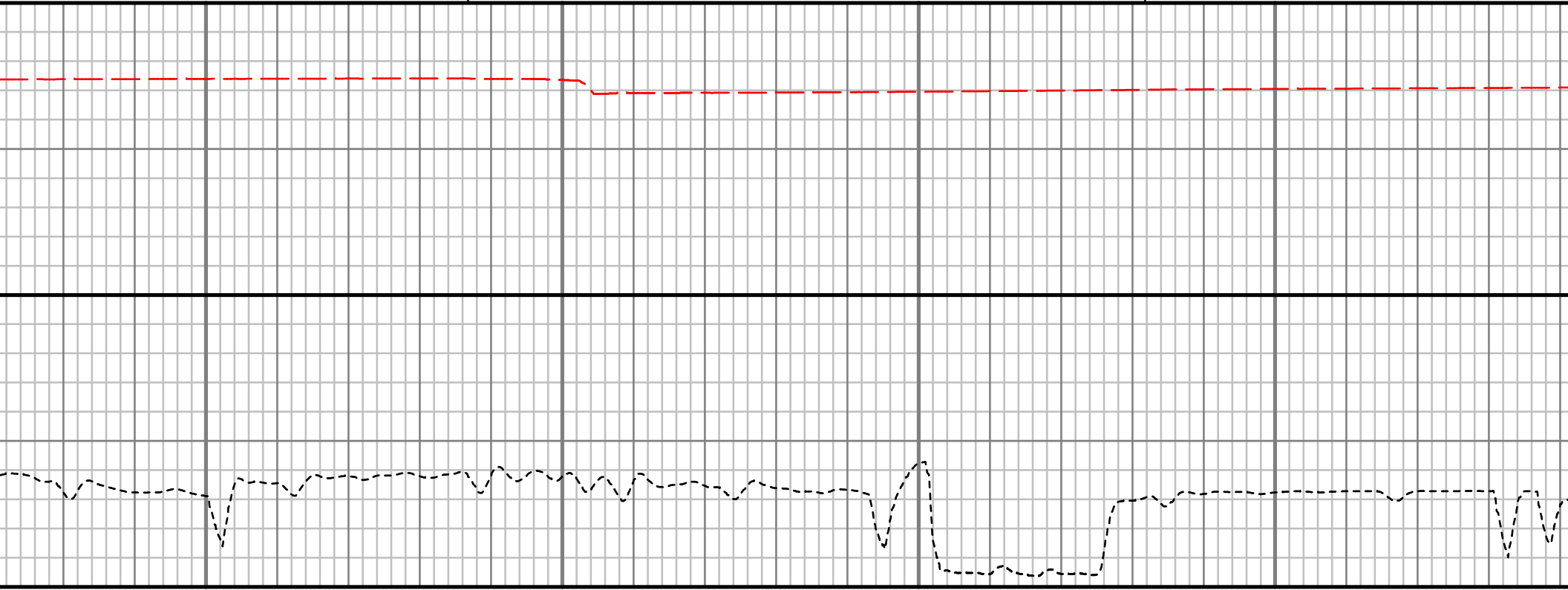


S: 129 MD: 12307.00 ft
Inc: 90.80 deg Az:
273.09 deg TVD:
6993.34 ft

S: 130 MD: 12400.00 ft
Inc: 89.23 deg Az:
271.46 deg TVD:
6993.32 ft

S: 131 MD: 12493.00 ft
Inc: 88.79 deg Az:
271.35 deg TVD:
6994.92 ft





12550

12600

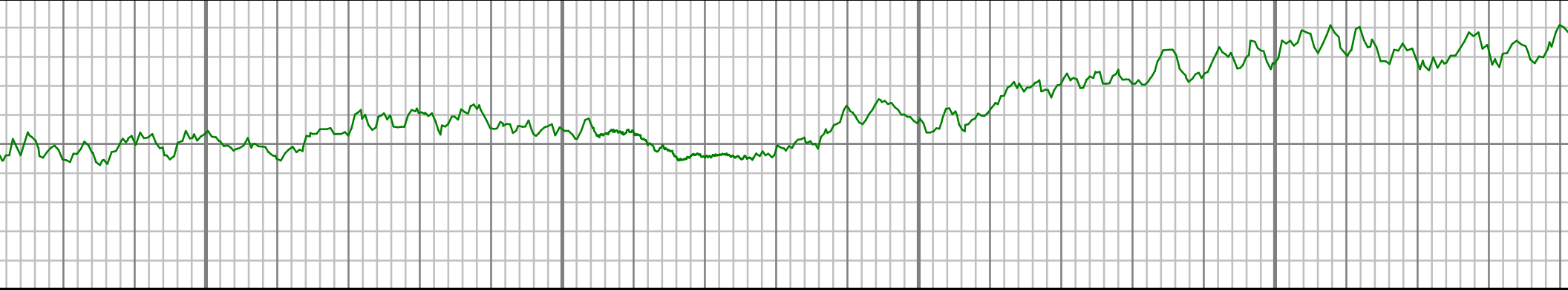
12650

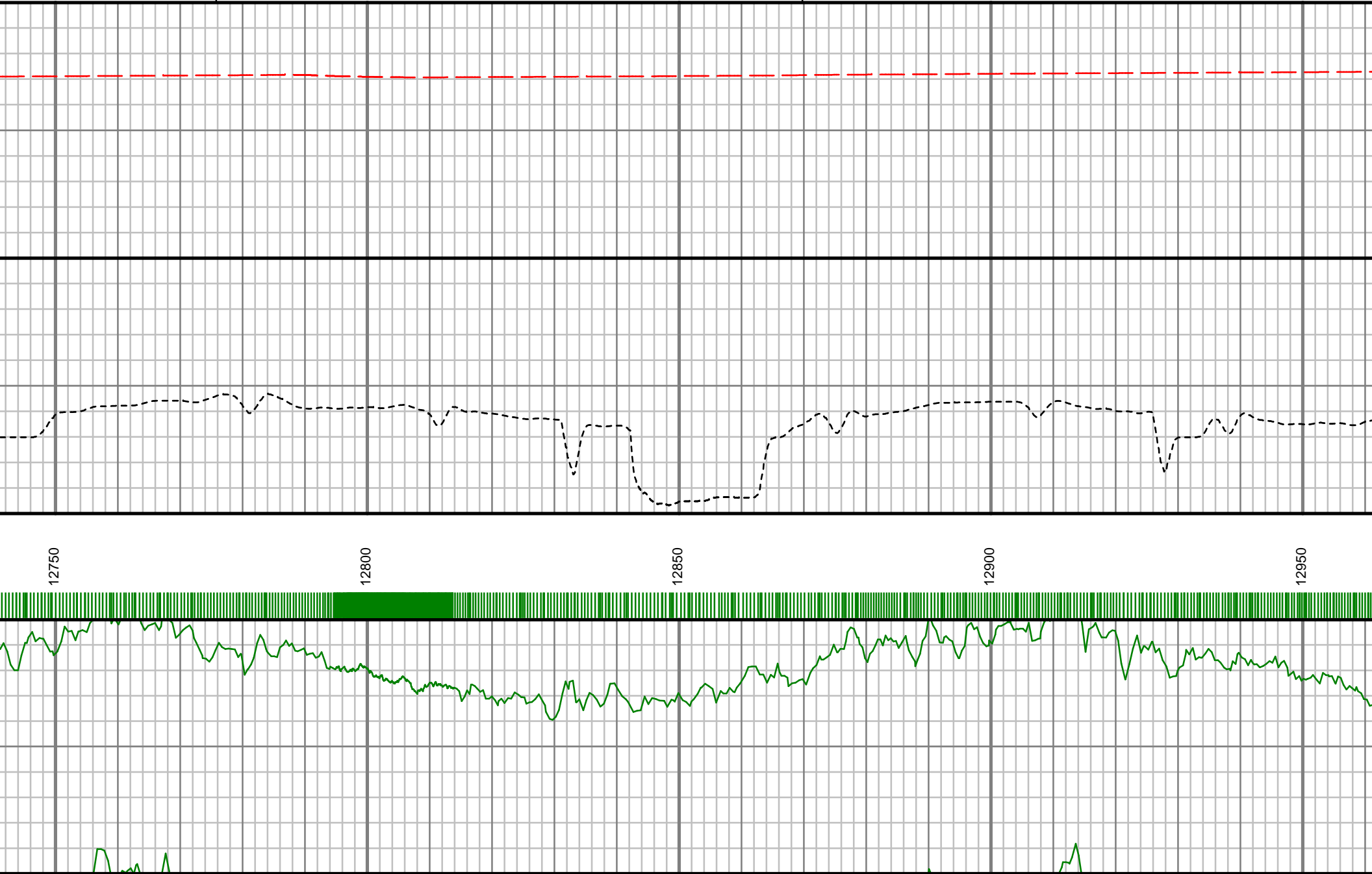
12700



S: 132 MD: 12587.00 ft
Inc: 88.42 deg Az:
271.94 deg TVD:
6997.21 ft

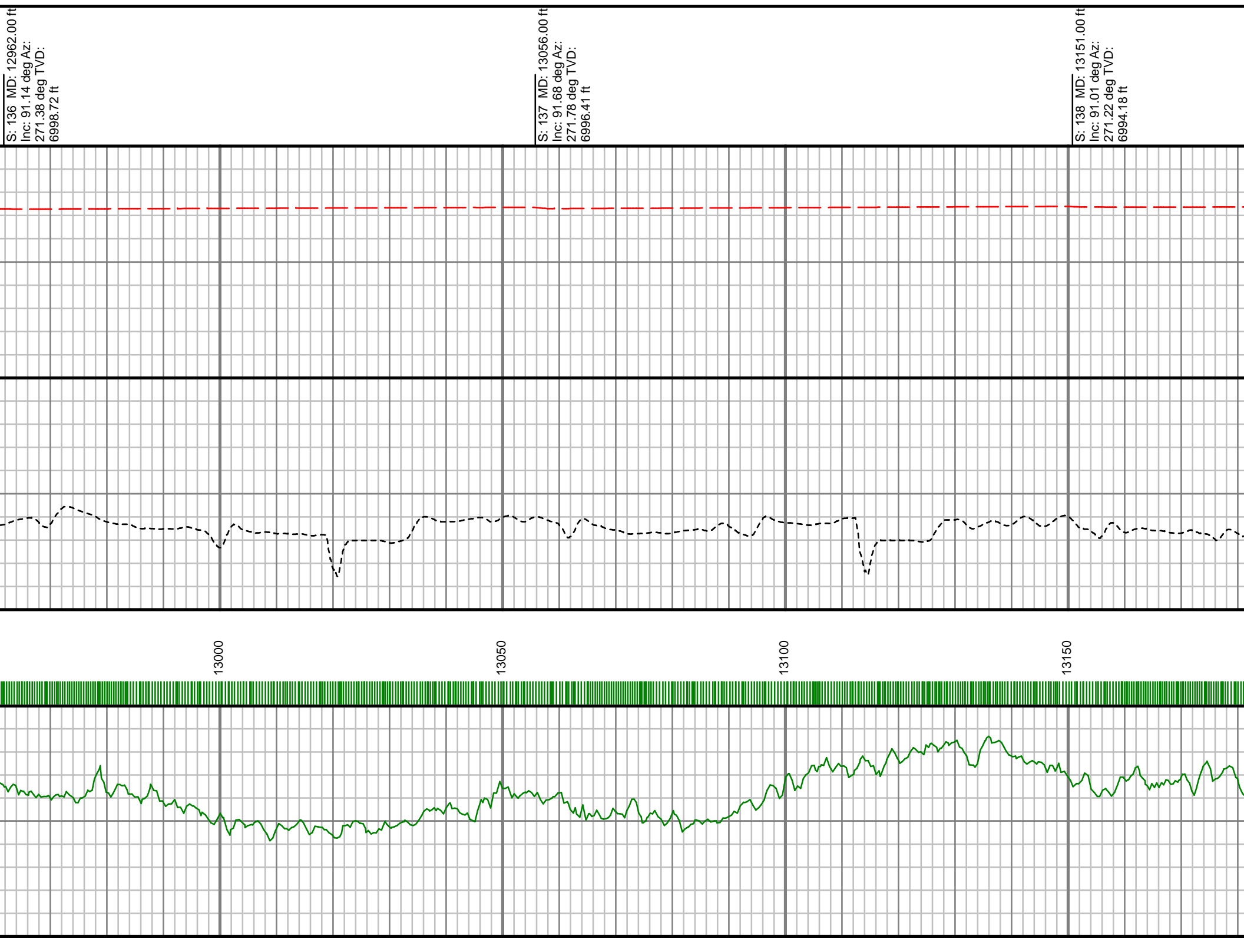
S: 133 MD: 12682.00 ft
Inc: 89.66 deg Az:
271.05 deg TVD:
6998.80 ft

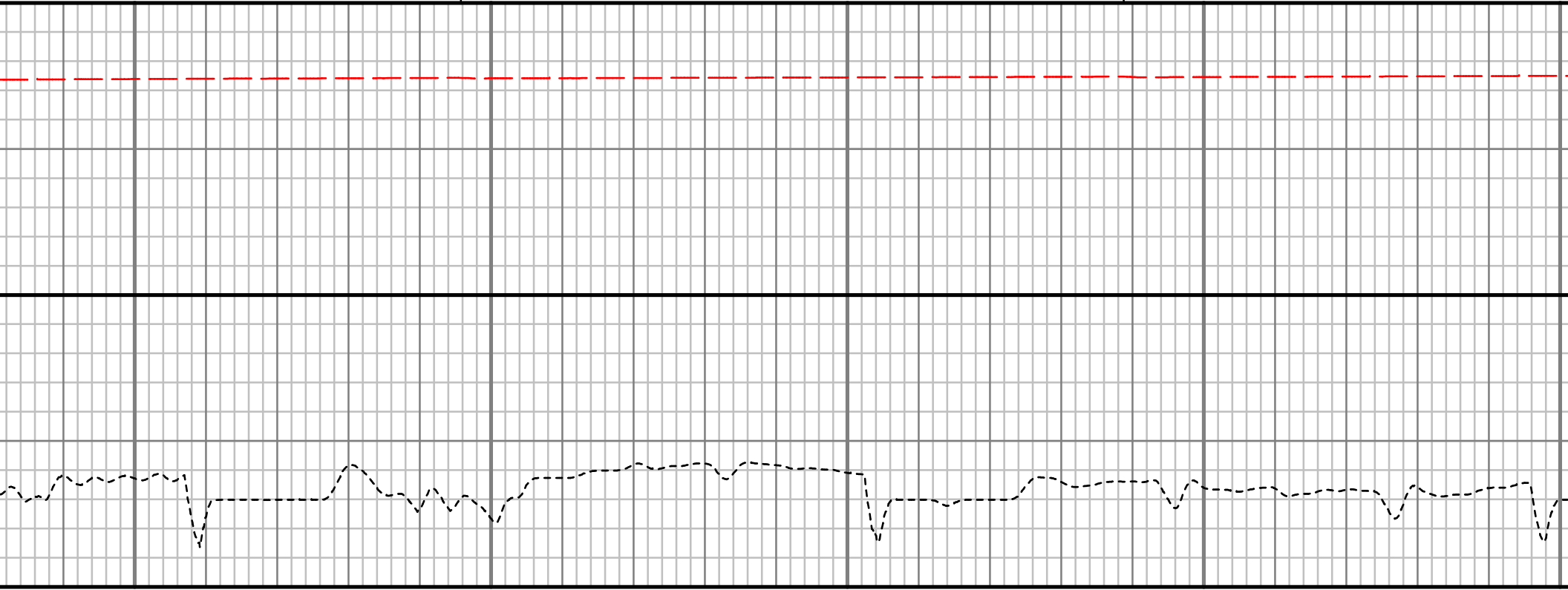




S: 134 MD: 12776.00 ft
Inc: 88.86 deg Az:
270.26 deg TVD:
7000.01 ft

S: 135 MD: 12870.00 ft
Inc: 90.81 deg Az:
271.53 deg TVD:
7000.28 ft





S: 139 MD: 13246.00 ft
Inc: 90.47 deg Az:
271.48 deg TVD:
6992.96 ft

S: 140 MD: 13339.00 ft
Inc: 90.03 deg Az:
271.21 deg TVD:
6992.55 ft

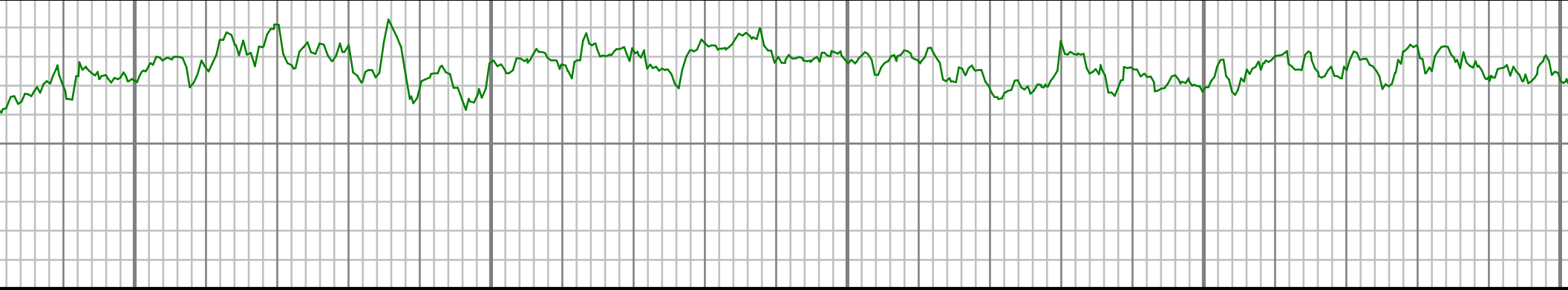
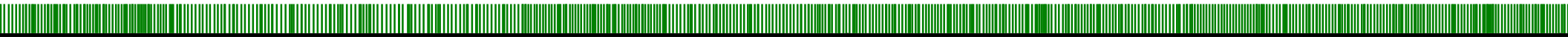
13200

13250

13300

13350

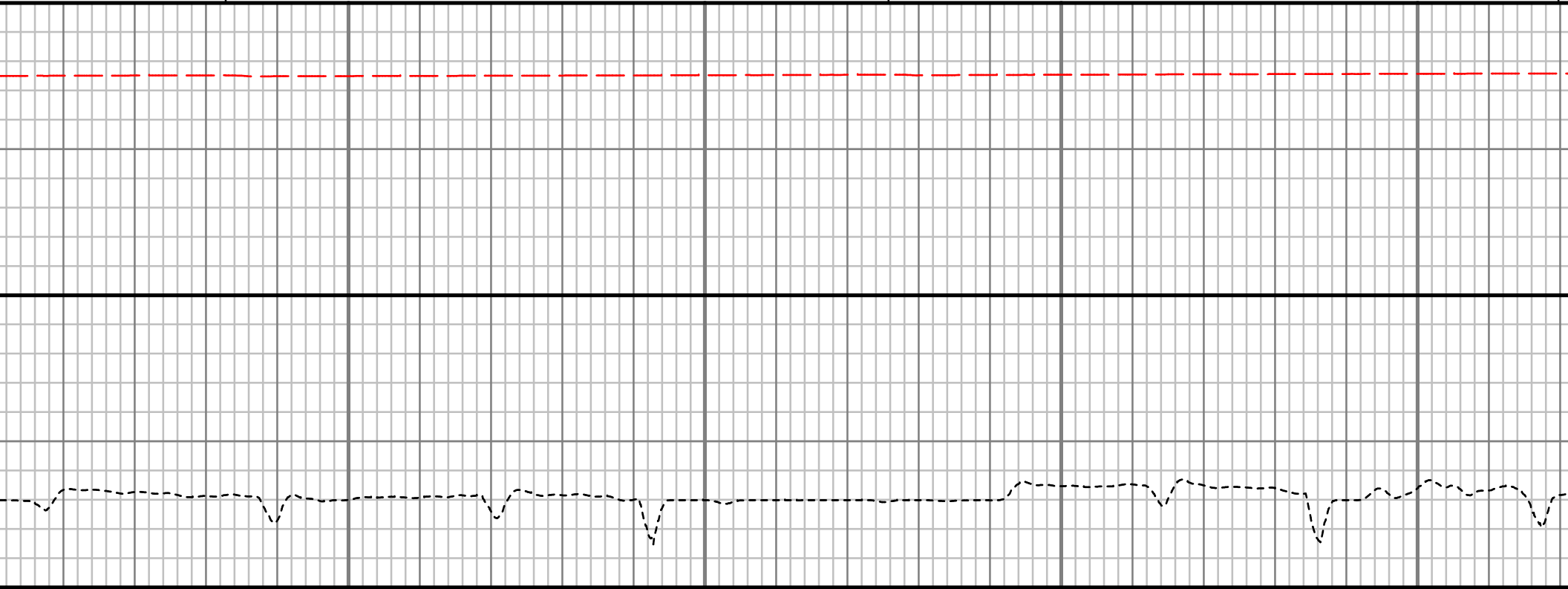
13400



S: 141 MD: 13433.00 ft
Inc: 89.83 deg Az:
271.59 deg TVD:
6992.66 ft

S: 142 MD: 13526.00 ft
Inc: 89.97 deg Az:
272.27 deg TVD:
6992.82 ft

S: 143 MD: 13620.00 ft
Inc: 89.97 deg Az:
272.27 deg TVD:
6992.82 ft

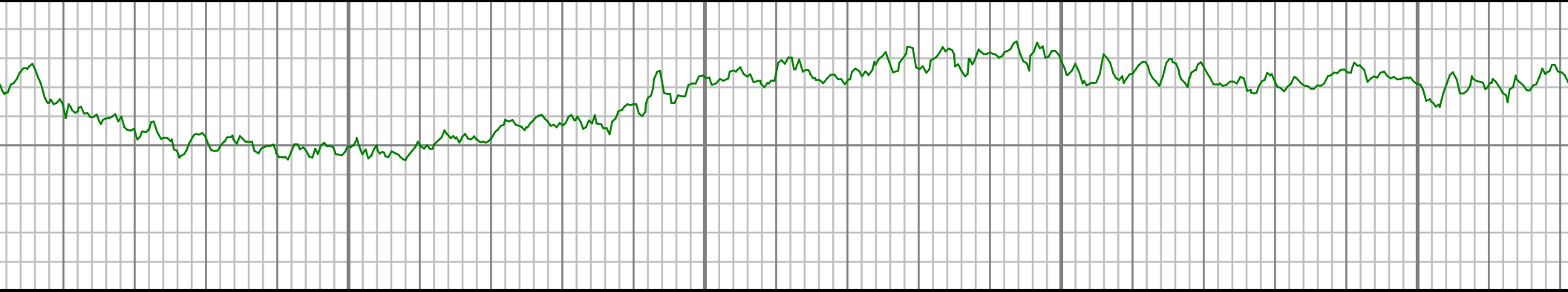


13450

13500

13550

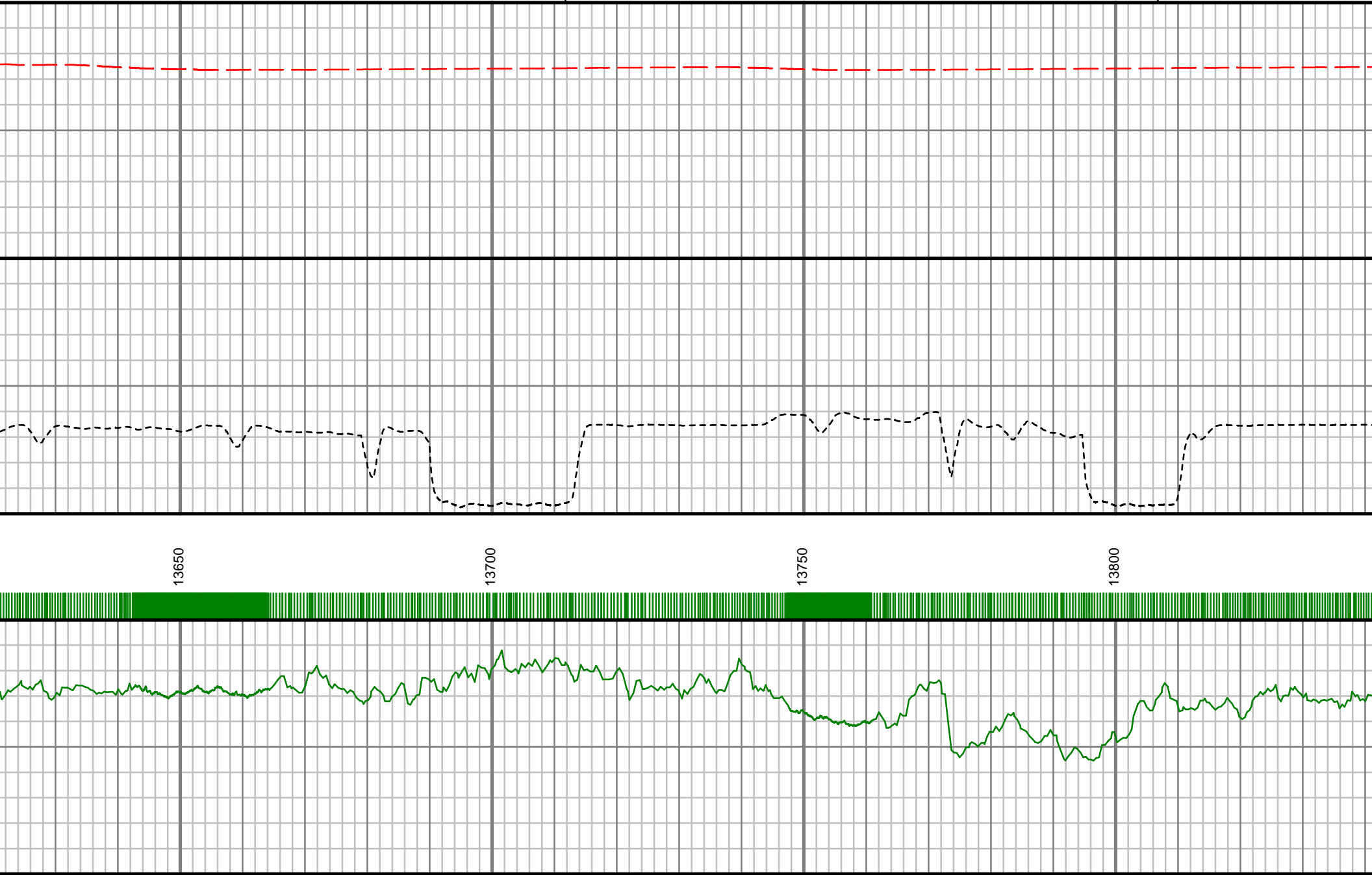
13600

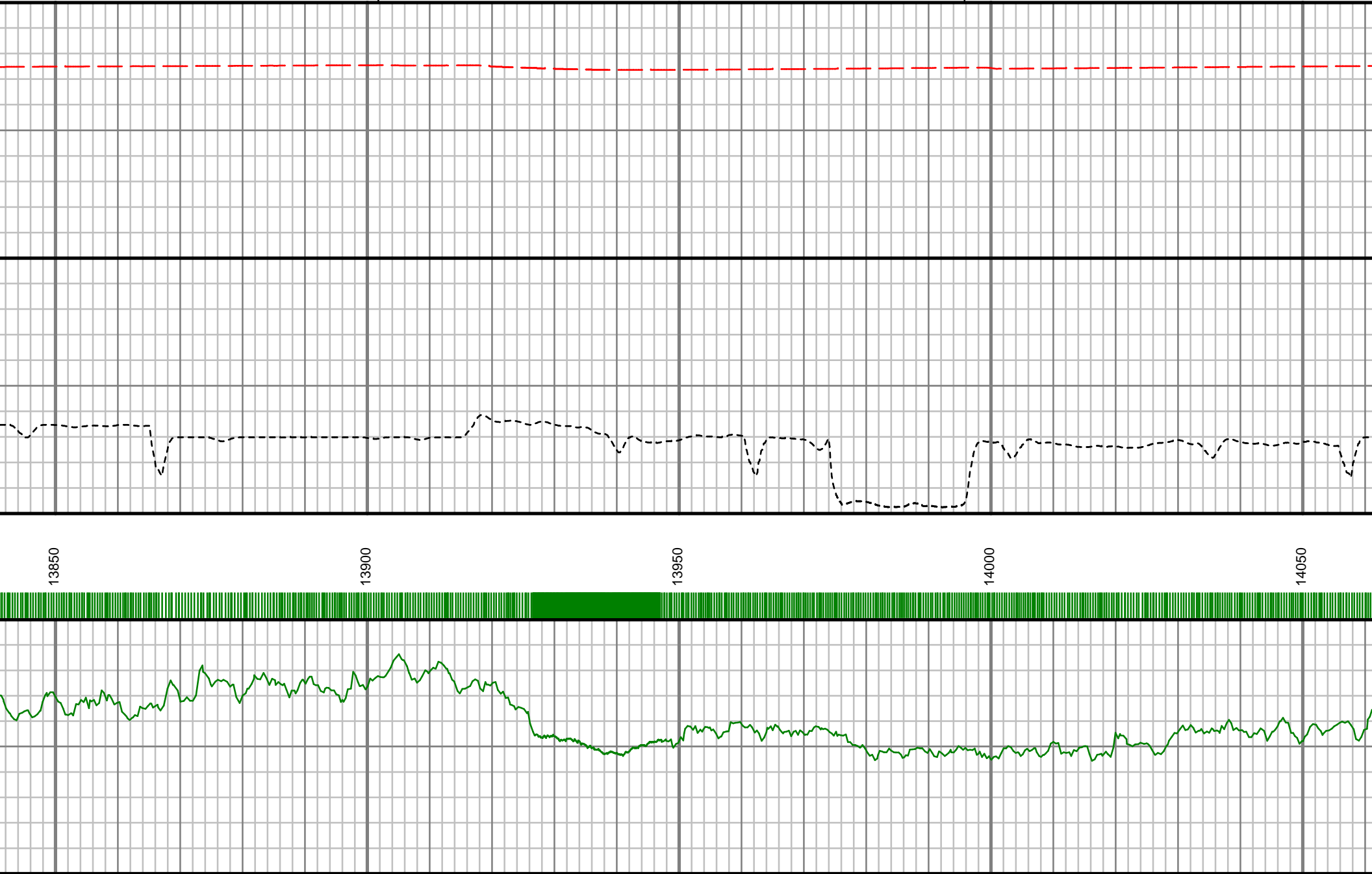


S: 143 MD: 13620.00 ft
Inc: 89.76 deg Az:
272.58 deg TVD:
6993.04 ft

S: 144 MD: 13712.00 ft
Inc: 88.69 deg Az:
270.72 deg TVD:
6994.28 ft

S: 145 MD: 13807.00 ft
Inc: 89.56 deg Az:
270.06 deg TVD:
6995.73 ft

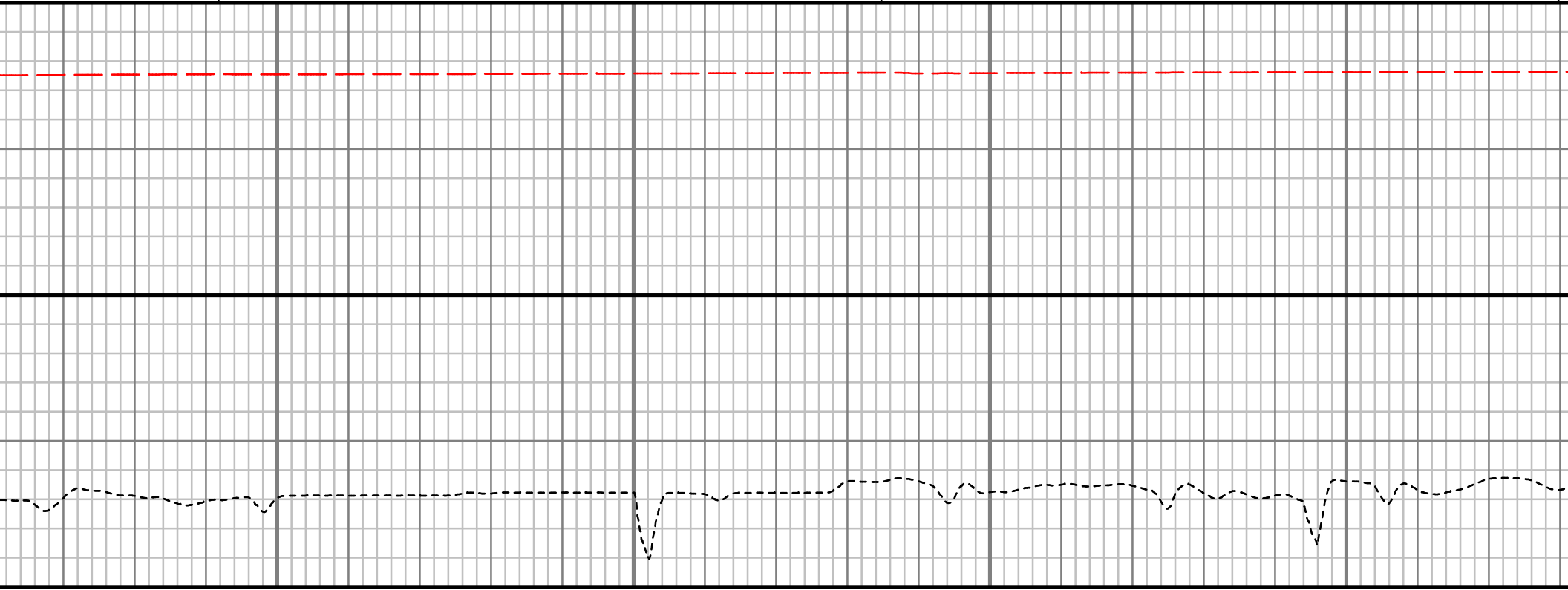




S: 148 MD: 14092.00 ft
Inc: 90.34 deg Az:
270.27 deg TVD:
6997.42 ft

S: 149 MD: 14185.00 ft
Inc: 90.27 deg Az:
270.61 deg TVD:
6996.93 ft

S: 150 MD: 14280.00 ft

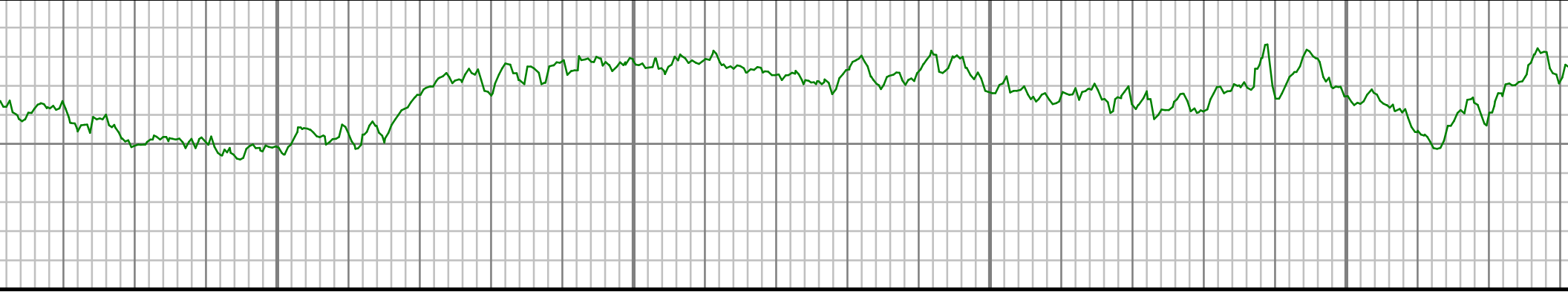
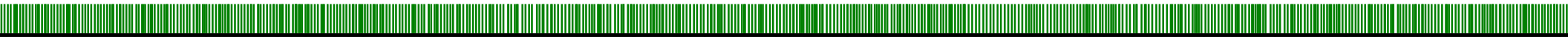


14100

14150

14200

14250



S: 150 MD: 14260.00 ft
Inc: 90.23 deg Az:
270.28 deg TVD:
6996.51 ft

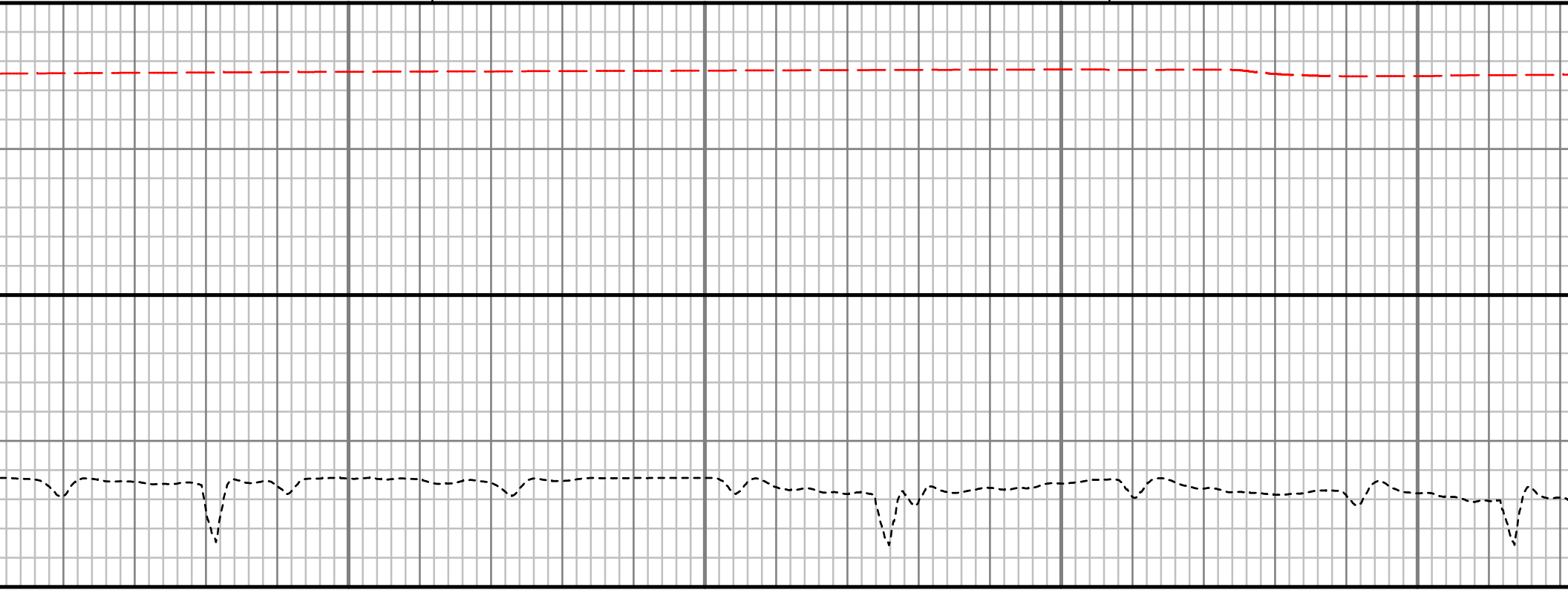
S: 151 MD: 14375.00 ft
Inc: 90.30 deg Az:
270.91 deg TVD:
6996.07 ft

S: 152 MD: 14469.00 ft
Inc: 89.66 deg Az:
269.82 deg TVD:
6996.10 ft



S: 153 MD: 14562.00 ft
Inc: 89.03 deg Az:
270.13 deg TVD:
6997.16 ft

S: 154 MD: 14657.00 ft
Inc: 88.69 deg Az:
271.01 deg TVD:
6999.05 ft

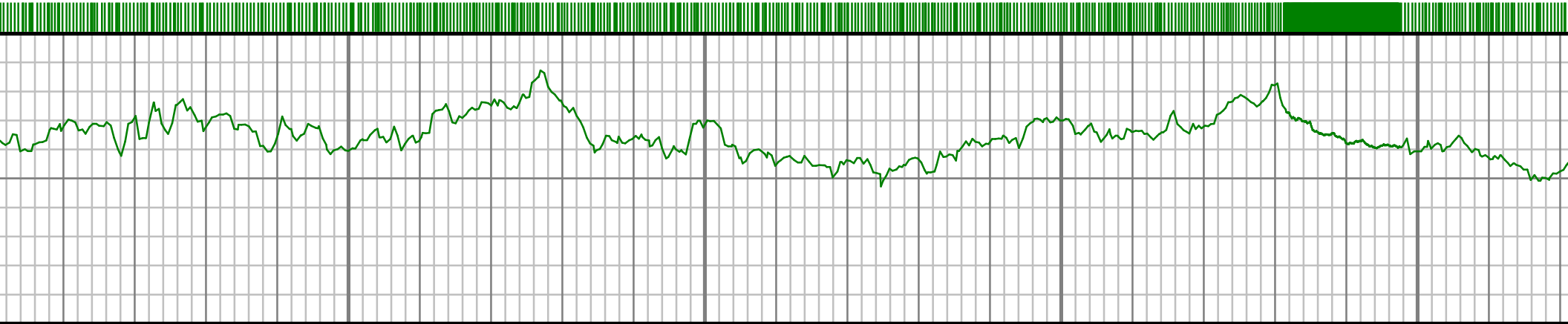


14550

14600

14650

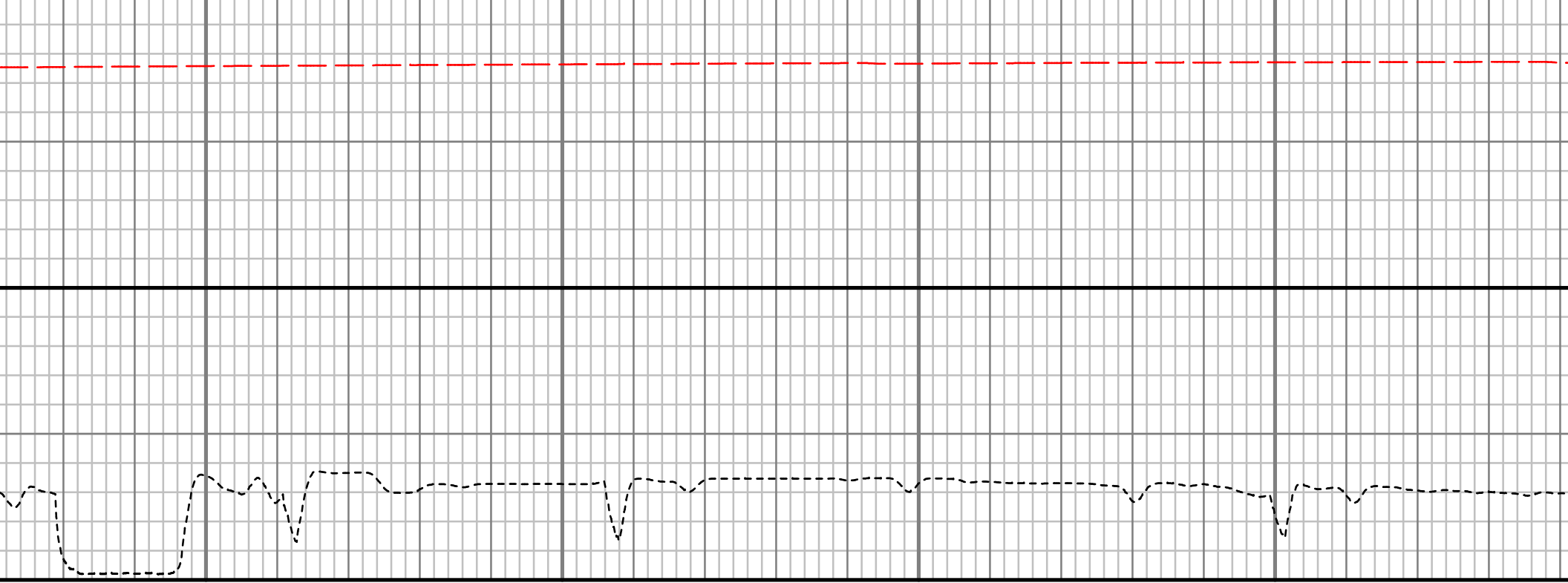
14700



S: 155 MD: 14750.00 ft
Inc: 89.33 deg Az:
269.99 deg TVD:
7000.66 ft

S: 156 MD: 14844.00 ft
Inc: 90.27 deg Az:
270.88 deg TVD:
7000.99 ft

S: 157 MD: 14939.00 ft

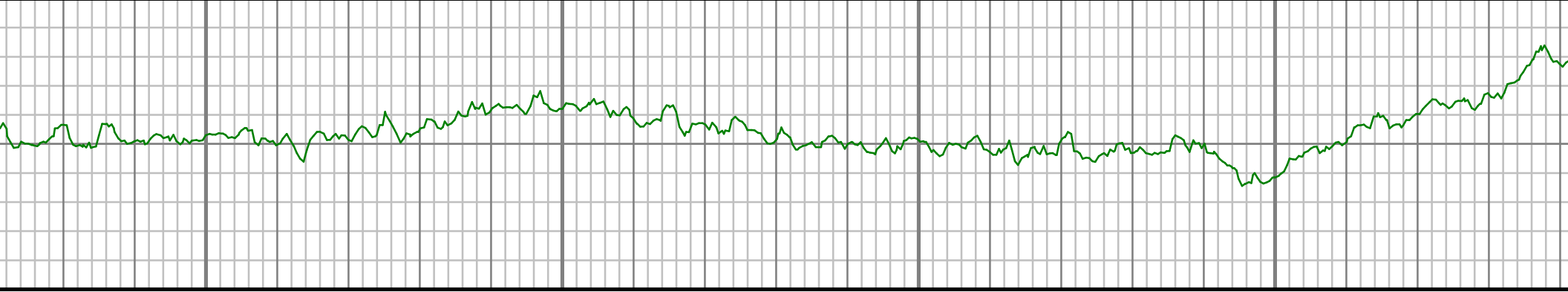


14750

14800

14850

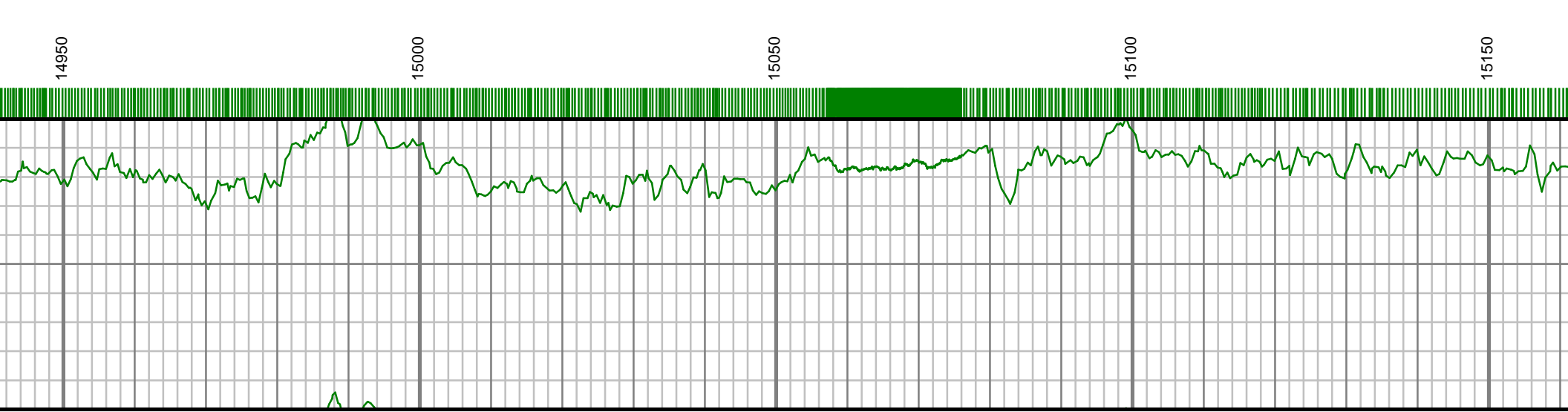
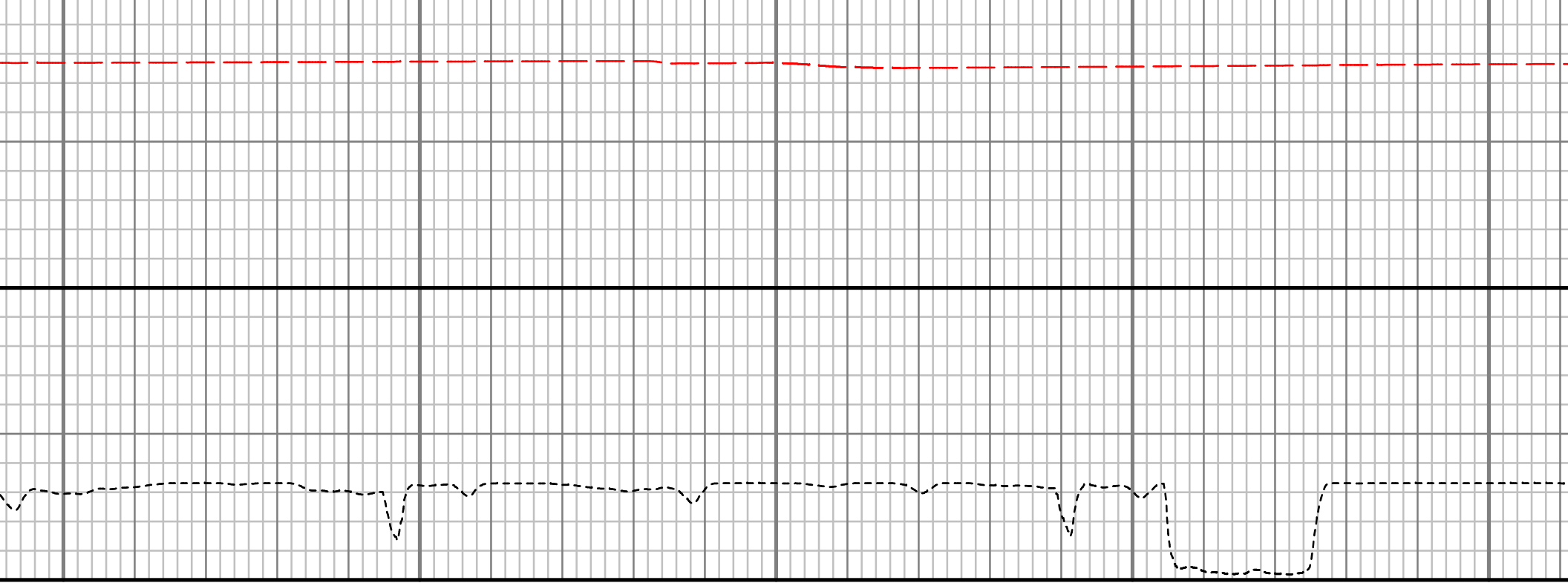
14900

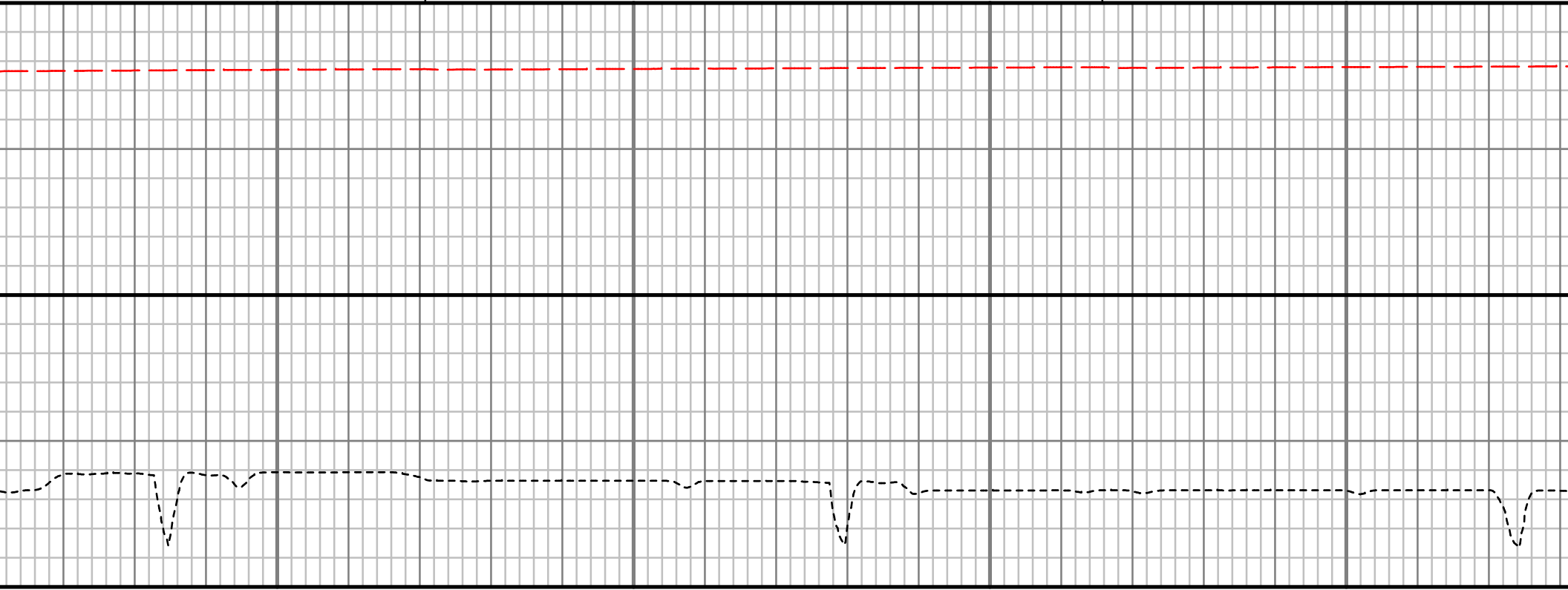


Inc: 89.50 deg Az:
270.29 deg TVD:
7001.18 ft

S: 158 MD: 15032.00 ft
Inc: 88.62 deg Az:
270.42 deg TVD:
7002.71 ft

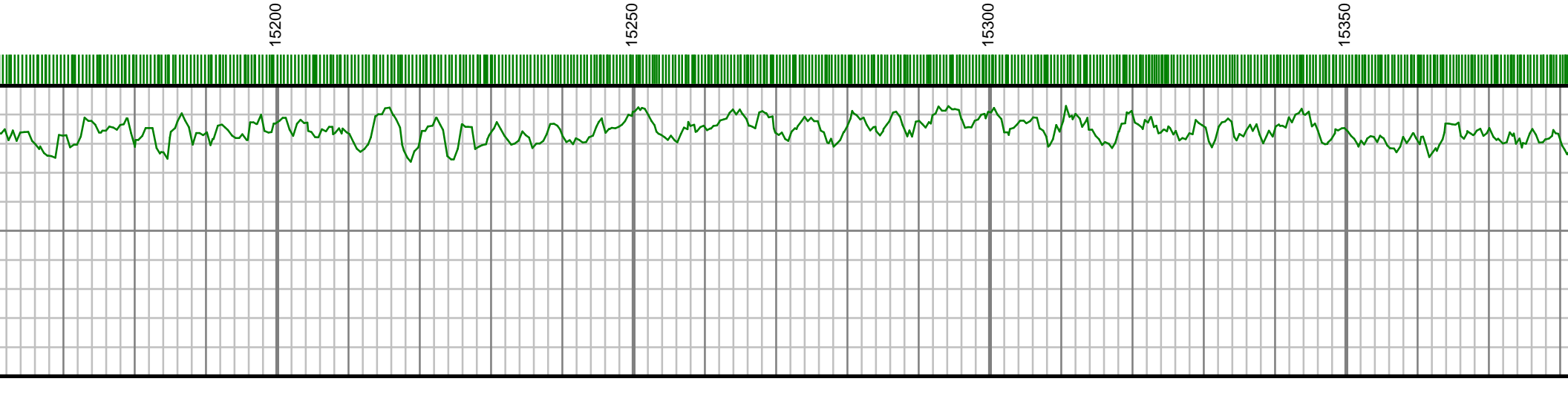
S: 159 MD: 15127.00 ft
Inc: 89.40 deg Az:
269.14 deg TVD:
7004.35 ft





S: 160 MD: 15221.00 ft
Inc: 90.40 deg Az:
270.56 deg TVD:
7004.52 ft

S: 161 MD: 15316.00 ft
Inc: 89.87 deg Az:
269.07 deg TVD:
7004.29 ft



15200

15250

15300

15350



15400

15450

15500

15550

15600



S: 162 MD: 15410.00 ft
Inc: 90.50 deg Az:
269.23 deg TVD:
7003.99 ft

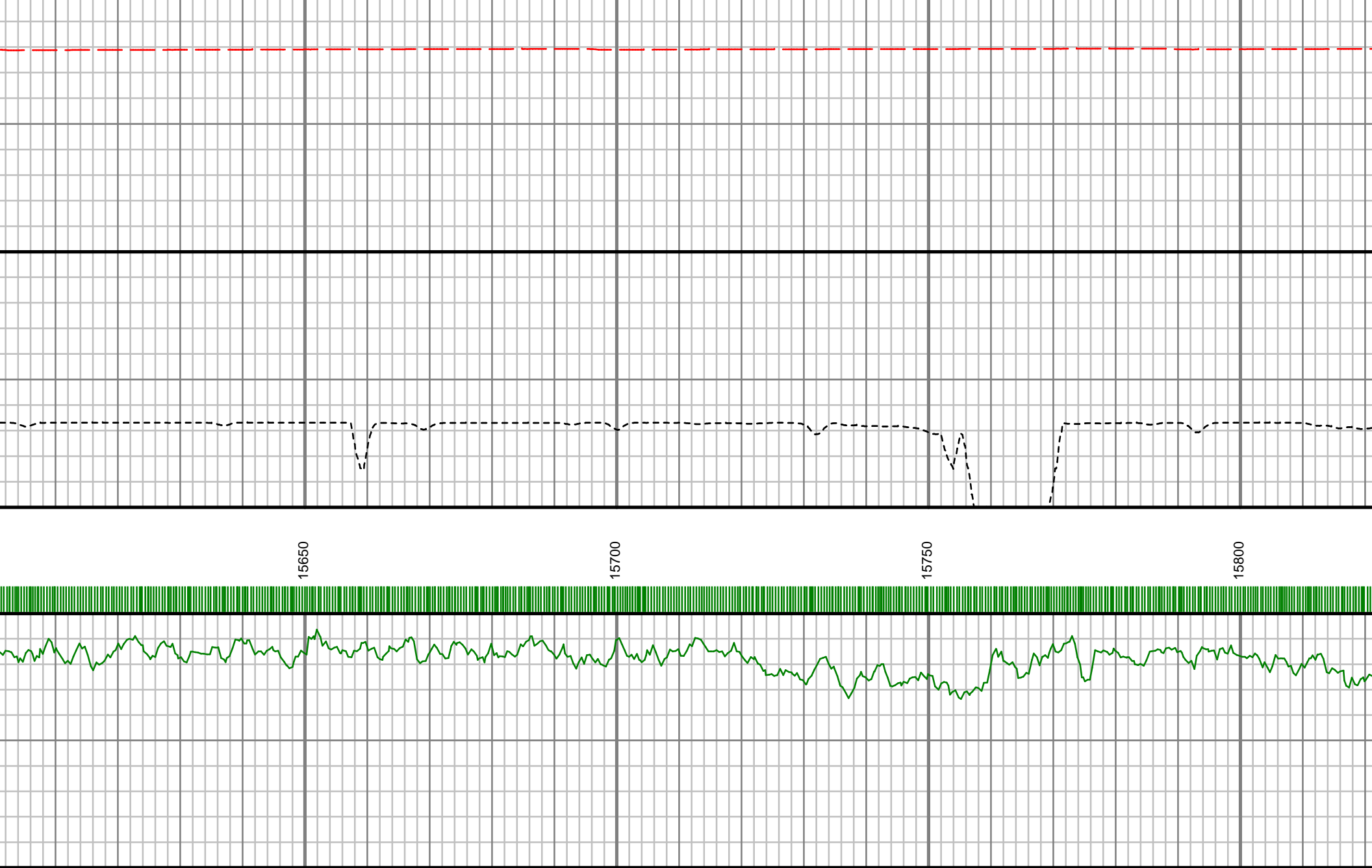
S: 163 MD: 15505.00 ft
Inc: 90.94 deg Az:
269.62 deg TVD:
7002.79 ft

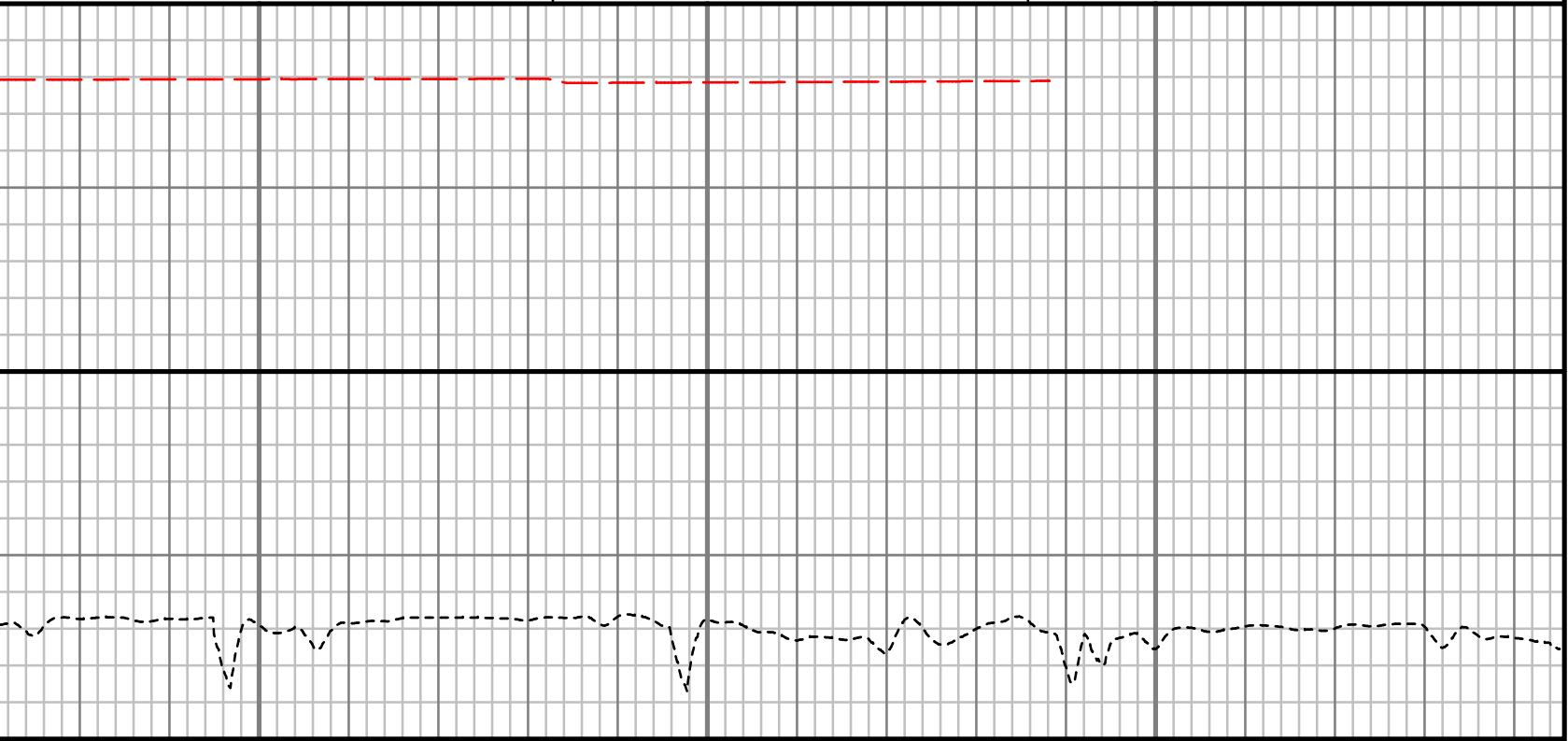
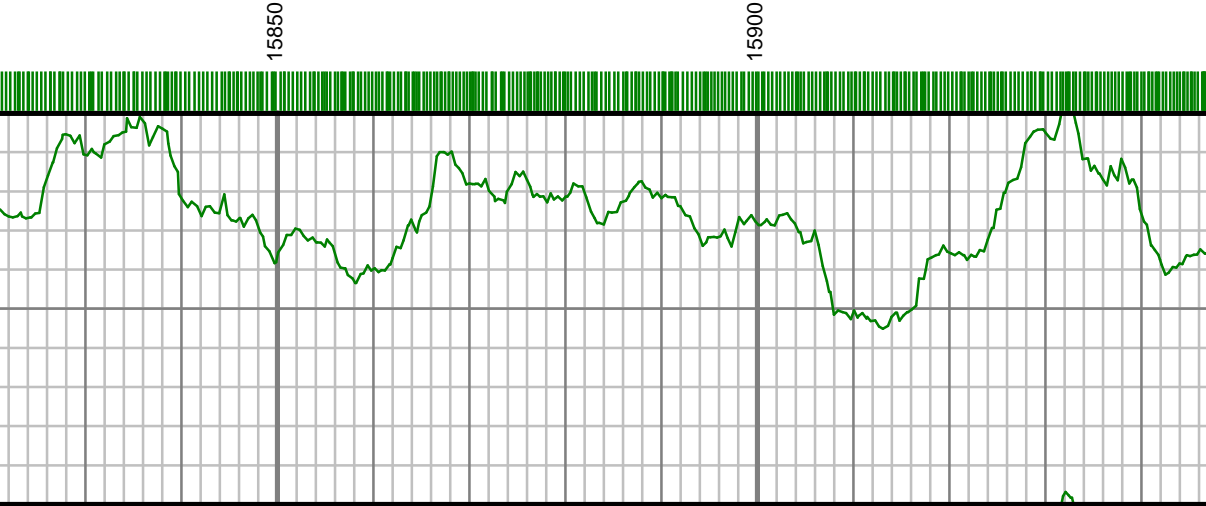
S: 164 MD: 15599.00 ft

Inc: 90.77 deg Az:
269.28 deg TVD:
7001.39 ft

S: 165 MD: 15694.00 ft
Inc: 91.11 deg Az:
269.59 deg TVD:
6999.83 ft

S: 166 MD: 15789.00 ft
Inc: 90.97 deg Az:
270.01 deg TVD:
6998.10 ft





S: 167 MD: 15883.00 ft
Inc: 90.17 deg Az:
270.49 deg TVD:
6997.16 ft

S: 168 MD: 15936.00 ft
Inc: 89.60 deg Az:
271.16 deg TVD:
6997.27 ft

Gamma Ray (GR)
Unit = aapi
0 150

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

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

Comments

CUSTOMER
PROJECT
FIELD

ANADARKO E&P ONSHORE LLC
FOLLEY
WATTENBERG

WELL INFORMATION

Lat/Long
Northing
Easting
UWI

40° 23' 37.684" N, 104° 56' 48.588" W
14,670,141.67 ft
1,655,221.08 ft
05069064830000

MAP INFORMATION

North Reference
Grid Correction
System

Datum

Map Zone

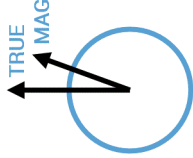
True North

Universal Transverse Mercator (US
Survey Feet)
North American Datum 1983 (GRS
1980)
Zone 13N (108 W to 102 W)

VERTICAL SECTION REFERENCE

+N/-S
+E/-W
Proposal Direction
Calculation Method

0 ft
0 ft
270.51°
Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.074 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-1867 ft	ANADAKRO MAGVAR	30 Aug 2016	8.54°	add 8.54°
1867-3155 ft	ANADAKRO MAGVAR	30 Aug 2016	8.43°	add 8.43°
3155-11268 ft	ANADAKRO MAGVAR	30 Aug 2016	8.48°	add 8.48°

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
0.00	0.00	0.00	0.00	ft	ft	ft	%/100ft
214.00	0.24	72.18	214.00	-0.43	0.14	0.43	Invalid
308.00	0.81	160.87	308.00	-0.84	-0.43	0.83	0.11
401.00	0.95	177.73	400.99	-1.09	-1.82	1.08	0.89
494.00	1.03	180.56	493.97	-1.13	-3.43	1.10	0.31
588.00	2.06	173.70	587.94	-1.33	-5.95	1.28	0.10
681.00	2.73	173.15	680.85	-1.81	-9.81	1.72	1.11
774.00	3.94	168.86	773.70	-2.74	-15.15	2.61	0.72
867.00	5.72	166.28	866.36	-4.53	-22.78	4.32	1.33
961.00	7.74	161.97	959.71	-7.69	-33.36	7.39	1.93
1055.00	9.15	161.23	1052.69	-12.17	-46.45	11.76	2.21
1150.00	9.22	161.80	1146.47	-17.11	-60.83	16.57	1.50
1243.00	9.58	163.30	1238.22	-21.79	-75.32	21.12	0.12
1336.00	10.41	160.52	1329.81	-26.95	-90.66	26.14	0.47
1431.00	11.18	158.14	1423.13	-33.39	-107.30	32.43	1.03
1523.00	12.00	158.07	1513.25	-40.43	-124.45	39.33	0.94
1618.00	13.21	157.52	1605.96	-48.44	-143.64	47.17	0.89
1712.00	14.87	158.75	1697.15	-57.11	-164.81	55.64	1.28
1802.00	16.63	159.31	1783.77	-66.05	-187.62	64.38	1.79
1936.00	17.99	156.86	1911.70	-81.28	-224.59	79.29	1.96
							1.15

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
2029.00	19.11	155.27	1999.86	-93.54	-251.62	91.30	1.32
2123.00	22.18	155.95	2087.82	-107.48	-281.81	104.97	3.28
2217.00	21.27	154.13	2175.14	-122.43	-313.36	119.65	1.20
2312.00	22.25	155.74	2263.37	-137.62	-345.26	134.56	1.20
2406.00	24.31	159.72	2349.72	-151.95	-379.64	148.57	2.75
2499.00	23.14	160.01	2434.86	-165.14	-414.77	161.45	1.27
2594.00	21.25	158.37	2522.82	-178.17	-448.32	174.18	2.09
2687.00	20.63	159.17	2609.67	-190.48	-479.29	186.22	0.74
2782.00	21.53	163.50	2698.32	-201.67	-511.65	197.12	1.89
2875.00	21.10	165.28	2784.96	-211.05	-544.20	206.22	0.83
2969.00	19.97	162.64	2872.99	-220.42	-575.88	215.31	1.55
3062.00	20.51	161.76	2960.25	-230.53	-606.51	225.15	0.66
3156.00	20.60	160.65	3048.27	-241.44	-637.75	235.78	0.42
3251.00	20.29	153.76	3137.30	-254.54	-668.29	248.60	2.55
3345.00	19.93	153.18	3225.57	-269.23	-697.20	263.03	0.44
3438.00	19.38	154.89	3313.15	-283.18	-725.32	276.73	0.85
3533.00	18.78	155.48	3402.93	-296.46	-753.51	289.77	0.66
3627.00	22.04	159.62	3491.02	-309.16	-783.81	302.19	3.79
3720.00	24.29	161.49	3576.52	-321.62	-818.31	314.35	2.55
3812.00	24.05	162.61	3660.46	-333.55	-854.14	325.96	0.56

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
3907.00	24.06	163.32	3747.21	-345.22	-891.16	337.30	0.31
4002.00	20.83	164.96	3835.00	-355.47	-926.04	347.24	3.47
4097.00	18.32	166.13	3924.51	-363.71	-956.84	355.20	2.68
4192.00	19.14	162.92	4014.48	-372.12	-986.23	363.36	1.39
4286.00	18.09	158.06	4103.56	-382.35	-1014.49	373.34	1.99
4380.00	19.21	156.67	4192.63	-394.17	-1042.23	384.91	1.28
4474.00	19.13	158.40	4281.42	-406.22	-1070.74	396.71	0.61
4569.00	19.27	159.56	4371.14	-417.68	-1099.90	407.91	0.43
4662.00	19.04	157.46	4458.99	-429.11	-1128.30	419.08	0.78
4756.00	21.22	158.33	4547.24	-441.54	-1158.28	431.24	2.33
4851.00	19.95	157.55	4636.17	-454.35	-1189.23	443.78	1.37
4968.00	15.14	156.88	4747.70	-468.27	-1221.75	457.41	4.11
5062.00	12.68	154.60	4838.94	-477.70	-1242.36	466.66	2.68
5157.00	11.88	159.30	4931.76	-485.79	-1260.93	474.59	1.35
5251.00	11.33	160.59	5023.84	-492.44	-1278.69	481.08	0.65
5346.00	12.18	158.34	5116.85	-499.40	-1296.81	487.88	1.02
5441.00	11.87	161.15	5209.76	-506.42	-1315.37	494.73	0.70
5535.00	10.94	156.32	5301.91	-513.29	-1332.69	501.44	1.42
5629.00	11.69	162.64	5394.08	-519.87	-1349.96	507.87	1.54
5723.00	11.09	158.16	5486.23	-526.23	-1367.44	514.08	1.14

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
5819.00	9.75	157.85	5580.64	-532.87	-1383.55	520.58	1.40
5914.00	8.77	161.02	5674.41	-538.39	-1397.85	525.97	1.16
6006.00	7.92	158.17	5765.43	-543.14	-1410.37	530.61	1.03
6100.00	7.48	158.08	5858.58	-547.94	-1422.05	535.30	0.47
6193.00	7.20	155.58	5950.82	-552.70	-1432.97	539.97	0.46
6287.00	5.25	159.17	6044.26	-556.75	-1442.35	543.93	2.11
6380.00	3.22	160.15	6137.00	-559.21	-1448.79	546.33	2.18
6473.00	2.15	166.01	6229.90	-560.55	-1452.94	547.64	1.19
6568.00	1.57	187.86	6324.85	-560.83	-1455.97	547.90	0.95
6660.00	4.56	250.60	6416.73	-557.23	-1458.43	544.27	4.44
6754.00	7.74	253.24	6510.18	-547.68	-1461.50	534.69	3.40
6848.00	12.07	257.13	6602.75	-532.06	-1465.51	519.04	4.66
6943.00	15.57	261.19	6694.99	-509.81	-1469.68	496.75	3.82
7015.00	20.94	265.55	6763.35	-487.44	-1472.16	474.36	7.70
7109.00	37.11	266.29	6845.27	-442.12	-1475.32	429.01	17.20
7204.00	53.10	268.65	6912.11	-375.14	-1478.09	362.00	16.92
7323.00	71.54	275.29	6967.20	-270.35	-1473.96	257.24	16.26
7418.00	80.31	272.29	6990.28	-178.45	-1467.93	165.39	9.73
7513.00	88.18	269.85	6999.80	-84.01	-1466.18	70.96	8.67
7607.00	87.21	270.05	7003.57	9.91	-1466.26	-22.96	1.06

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
7702.00	91.34	271.06	7004.77	104.88	-1465.34	-117.93	4.47
7795.00	92.05	271.22	7002.02	197.83	-1463.49	-210.87	0.78
7890.00	89.77	270.09	7000.52	292.81	-1462.40	-305.84	2.68
7985.00	89.40	270.27	7001.21	387.81	-1462.10	-400.84	0.43
8078.00	88.05	268.67	7003.28	480.76	-1462.96	-493.80	2.25
8171.00	89.03	269.71	7005.65	573.71	-1464.27	-586.76	1.53
8266.00	89.16	268.74	7007.15	668.67	-1465.55	-681.74	1.02
8358.00	90.64	271.16	7007.32	760.66	-1465.63	-773.73	3.08
8451.00	90.30	271.13	7006.55	853.65	-1463.77	-866.71	0.36
8546.00	90.91	272.36	7005.55	948.62	-1460.88	-961.66	1.44
8639.00	89.73	269.86	7005.03	1041.60	-1459.09	-1054.63	2.97
8733.00	90.94	272.03	7004.48	1135.59	-1457.54	-1148.61	2.64
8827.00	91.81	273.17	7002.23	1229.50	-1453.29	-1242.48	1.53
8920.00	90.57	272.12	7000.29	1322.41	-1448.99	-1335.36	1.75
9014.00	89.93	272.94	6999.88	1416.35	-1444.84	-1429.27	1.11
9109.00	88.99	272.36	7000.77	1511.28	-1440.44	-1524.16	1.17
9203.00	88.72	271.13	7002.65	1605.23	-1437.58	-1618.09	1.33
9297.00	89.03	271.48	7004.49	1699.21	-1435.43	-1712.05	0.49
9391.00	88.43	271.25	7006.58	1793.17	-1433.19	-1806.00	0.68
9485.00	89.73	270.54	7008.09	1887.16	-1431.72	-1899.98	1.58

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
9579.00	91.44	269.26	7007.13	1981.14	-1431.88	-1993.96	2.28
9672.00	91.78	269.39	7004.51	2074.08	-1432.98	-2086.92	0.38
9767.00	92.65	269.54	7000.84	2169.00	-1433.86	-2181.85	0.93
9860.00	90.74	269.91	6998.09	2261.94	-1434.31	-2274.80	2.10
9952.00	91.21	269.96	6996.52	2353.92	-1434.41	-2366.79	0.52
10046.00	90.17	269.70	6995.39	2447.91	-1434.68	-2460.78	1.14
10140.00	90.71	269.69	6994.68	2541.90	-1435.19	-2554.77	0.57
10234.00	90.27	270.42	6993.88	2635.89	-1435.10	-2648.77	0.90
10328.00	90.17	270.11	6993.52	2729.89	-1434.67	-2742.77	0.34
10421.00	90.13	270.55	6993.28	2822.89	-1434.14	-2835.76	0.47
10516.00	90.20	271.16	6993.00	2917.88	-1432.72	-2930.75	0.66
10610.00	89.80	270.97	6993.00	3011.88	-1430.97	-3024.74	0.48
10705.00	89.56	271.01	6993.53	3106.87	-1429.33	-3119.72	0.25
10799.00	89.43	270.07	6994.35	3200.87	-1428.44	-3213.71	1.02
10893.00	89.36	270.12	6995.34	3294.86	-1428.29	-3307.71	0.09
10987.00	89.46	269.77	6996.31	3388.85	-1428.38	-3401.70	0.38
11082.00	88.39	269.38	6998.09	3483.82	-1429.09	-3496.68	1.20
11177.00	89.50	269.68	6999.84	3578.79	-1429.86	-3591.66	1.21
11271.00	89.97	270.26	7000.28	3672.78	-1429.91	-3685.66	0.79
11365.00	90.84	269.70	6999.62	3766.78	-1429.94	-3779.65	1.11

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
11459.00	91.88	270.16	6997.39	3860.74	-1430.05	-3873.63	1.21
11554.00	91.07	271.40	6994.94	3955.71	-1428.77	-3968.58	1.56
11648.00	91.61	271.67	6992.73	4049.67	-1426.25	-4062.52	0.64
11743.00	90.10	271.72	6991.31	4144.63	-1423.44	-4157.47	1.59
11837.00	90.07	272.14	6991.18	4238.60	-1420.27	-4251.41	0.44
11932.00	90.30	272.86	6990.87	4333.55	-1416.13	-4346.32	0.80
12025.00	89.23	271.51	6991.25	4426.50	-1412.58	-4439.25	1.85
12120.00	88.73	271.05	6992.95	4521.48	-1410.45	-4534.21	0.71
12214.00	90.00	272.13	6993.99	4615.45	-1407.84	-4628.17	1.77
12307.00	90.80	273.09	6993.34	4708.38	-1403.61	-4721.07	1.34
12400.00	89.23	271.46	6993.32	4801.33	-1399.92	-4813.99	2.44
12493.00	88.79	271.35	6994.92	4894.31	-1397.64	-4906.94	0.48
12587.00	88.42	271.94	6997.21	4988.26	-1394.95	-5000.88	0.74
12682.00	89.66	271.05	6998.80	5083.23	-1392.47	-5095.83	1.61
12776.00	88.86	270.26	7000.01	5177.22	-1391.40	-5189.81	1.20
12870.00	90.81	271.53	7000.28	5271.21	-1389.93	-5283.79	2.47
12962.00	91.14	271.38	6998.72	5363.19	-1387.59	-5375.75	0.40
13056.00	91.68	271.78	6996.41	5457.14	-1384.99	-5469.69	0.71
13151.00	91.01	271.22	6994.18	5552.10	-1382.50	-5564.63	0.92
13246.00	90.47	271.48	6992.96	5647.08	-1380.26	-5659.59	0.63

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
13339.00	90.03	271.21	6992.55	5740.07	-1378.08	-5752.57	0.55
13433.00	89.83	271.59	6992.66	5834.06	-1375.78	-5846.54	0.46
13526.00	89.97	272.27	6992.82	5927.03	-1372.65	-5939.48	0.74
13620.00	89.76	272.58	6993.04	6020.98	-1368.67	-6033.40	0.40
13712.00	88.69	270.72	6994.28	6112.95	-1366.02	-6125.35	2.34
13807.00	89.56	270.06	6995.73	6207.93	-1365.38	-6220.33	1.15
13902.00	89.23	270.69	6996.73	6302.93	-1364.75	-6315.32	0.75
13996.00	89.80	270.29	6997.53	6396.92	-1363.95	-6409.32	0.74
14092.00	90.34	270.27	6997.42	6492.92	-1363.49	-6505.32	0.56
14185.00	90.27	270.61	6996.93	6585.92	-1362.77	-6598.31	0.38
14280.00	90.23	270.28	6996.51	6680.92	-1362.03	-6693.31	0.35
14375.00	90.30	270.91	6996.07	6775.92	-1361.04	-6788.30	0.66
14469.00	89.66	269.82	6996.10	6869.92	-1360.45	-6882.30	1.34
14562.00	89.03	270.13	6997.16	6962.90	-1360.49	-6975.29	0.76
14657.00	88.69	271.01	6999.05	7057.88	-1359.55	-7070.27	1.00
14750.00	89.33	269.99	7000.66	7150.87	-1358.74	-7163.25	1.29
14844.00	90.27	270.88	7000.99	7244.87	-1358.02	-7257.24	1.38
14939.00	89.50	270.29	7001.18	7339.86	-1357.05	-7352.24	1.02
15032.00	88.62	270.42	7002.71	7432.85	-1356.47	-7445.22	0.95
15127.00	89.40	269.14	7004.35	7527.83	-1356.84	-7540.20	1.58

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
15221.00	90.40	270.56	7004.52	7621.82	-1357.09	-7634.20	1.85
15316.00	89.87	269.07	7004.29	7716.81	-1357.39	-7729.19	1.66
15410.00	90.50	269.23	7003.99	7810.78	-1358.78	-7823.18	0.70
15505.00	90.94	269.62	7002.79	7905.75	-1359.73	-7918.17	0.61
15599.00	90.77	269.28	7001.39	7999.73	-1360.63	-8012.16	0.40
15694.00	91.11	269.59	6999.83	8094.70	-1361.57	-8107.14	0.48
15789.00	90.97	270.01	6998.10	8189.67	-1361.90	-8202.12	0.46
15883.00	90.17	270.49	6997.16	8283.67	-1361.49	-8296.11	1.00
15936.00	89.60	271.16	6997.27	8336.67	-1360.73	-8349.11	1.66



Scientific Drilling

5" = 100' FEET MD

GAMMA RAY