



# Cathedral Energy Services

4701 United Drive  
Oklahoma City, OK 73179  
405-261-6011 (Office)  
405-261-6188 (Fax)

HWY52-4H-32H-0268

Scale 5":100' - MD

2/13/2019 11:39 AM

Oper. Company: Crestone Peak Resources

Well: HWY52-4H-32H-0268

Field: DH Basin

Rig: Ensign 140

Well ID: 05-123-38269-00

Job Number: 175093

Notes: Gamma Ray Log  
Section Plan: 180.0°  
Datum: NAD 1927 (NADCON CONUS)  
Magnetic North: 8.53°  
Grid Convergence: °  
Gamma Averaging: 7% Smoothing

State: Colorado

County: Weld

Country: USA

Location: S32-T2N-R68W

Start Date: 06/11/2017 17:00:00

End Date: 06/16/2017 21:30:00

Latitude: 40.089355

Longitude: -105.025035

Elev GL: 4992

Elev DF: 23

Elev KB: 5015

Notes: Log & Survey Depths Relative to Kelly Bushing (KB) Depth

Operator 1: W. Steele

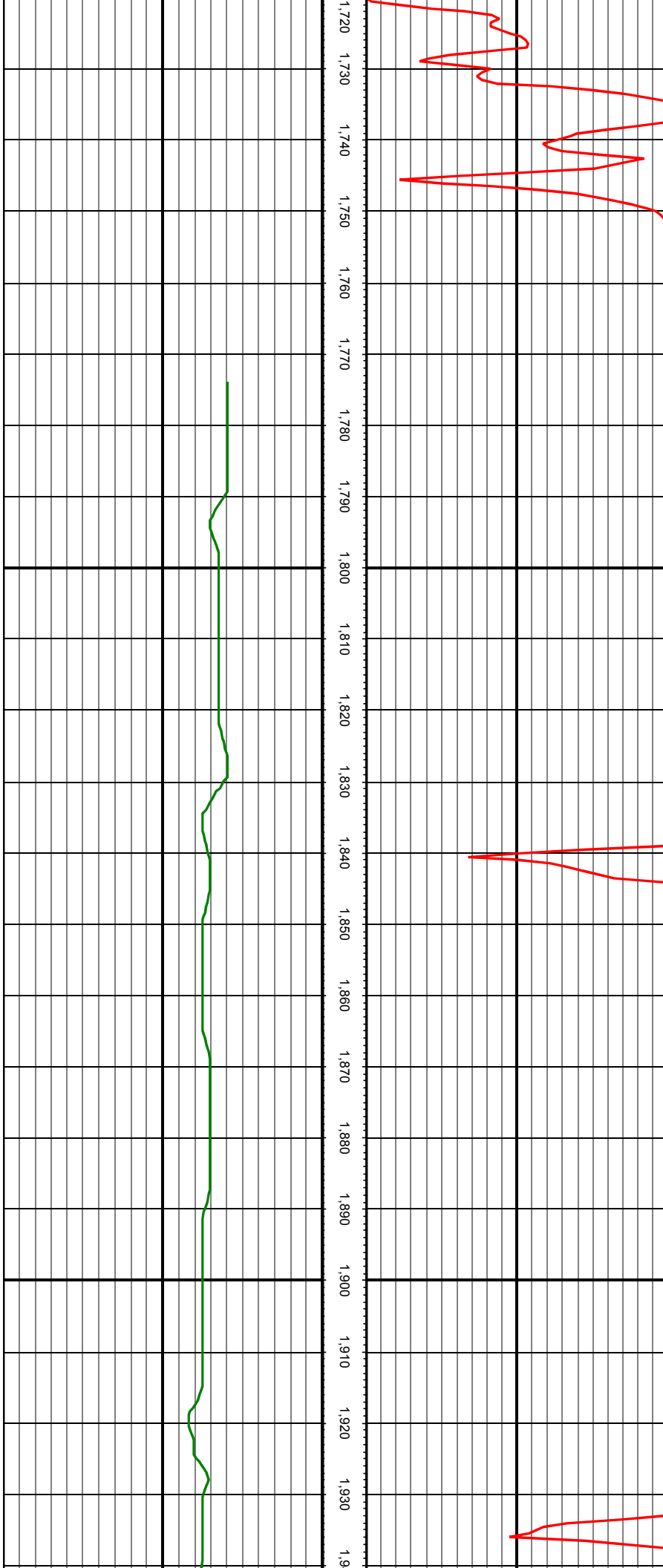
Operator 2: A. Bertagnole

Notes: Maximum Temperature: 226°F

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	DM-1278 G-IIA31-02	DM-1278 G-IIA31-02			
Bit Size	8.5	8.5			
Cal Factor	3.898	3.898			
Survey Offset	55.00	55.00			
Gamma Offset	44.12	43.24			
Resistivity Offset	0.00	0.00			
Start Depth	1717.00	7021.00			
StartDate	5/11/2017	6/16/2017			
StartTime	17:00	18:54			
EndDepth	7021.00	13402.00			
EndDate	5/13/2017	6/16/2017			
EndTime	20:00	09:30			
Mud Type	OBM	OBM			
Mud Weight	9.5	9.8			
Funnel Viscosity	42	44			
Plastic Viscosity	17	14			
Yield Point	4	8			
Gel Strength	2	8			
Solids Content	9.5	13.5			
Sand Content	N/A	N/A			
Chlorides	259874	243561			
Temperature	125	226			

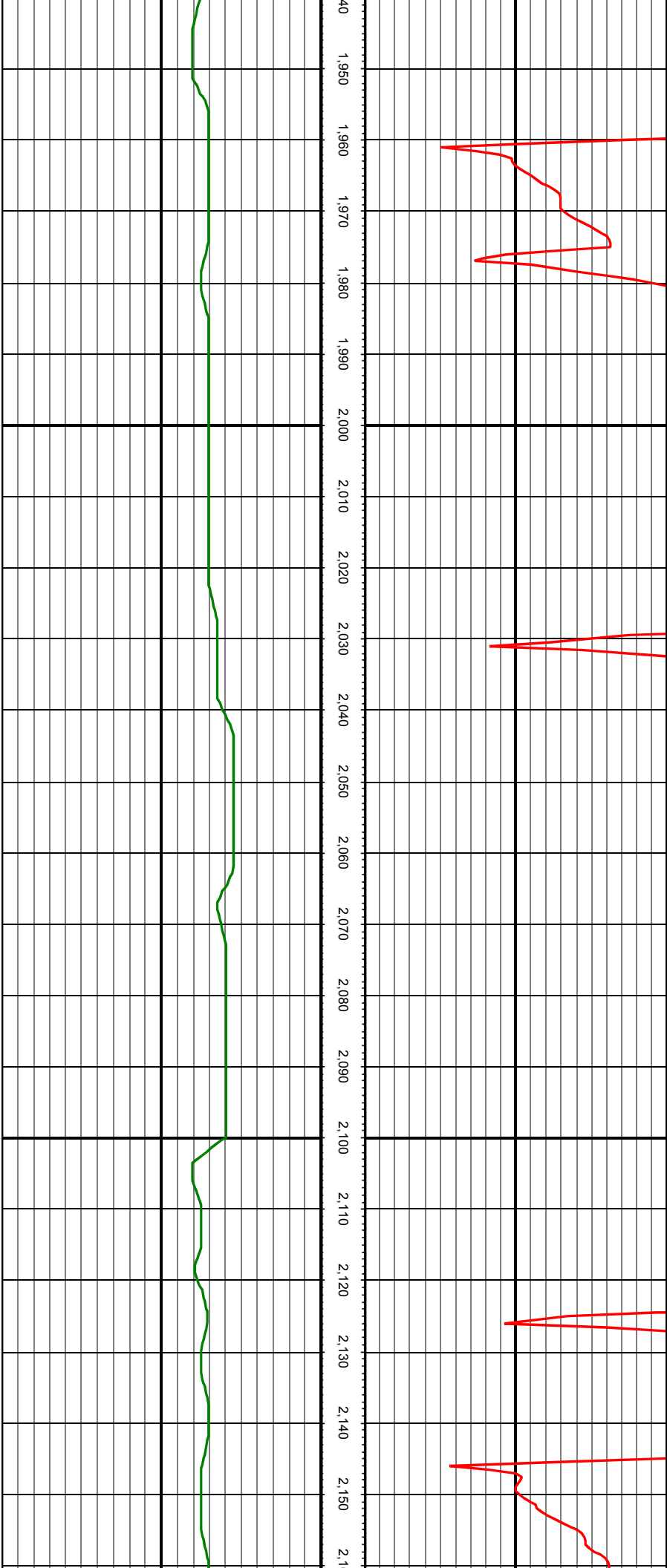
Hole Data			Casing Data		
Size	From	To	Size	From	To
12.5	0.00	1717.00	9.625	0.00	1695.00
8.5	1717.00	13402.00			

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 interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.



MD: 1783.00 INC: 14.15 AZ: 56.43 TVD: 1761.34 VS: -94.86

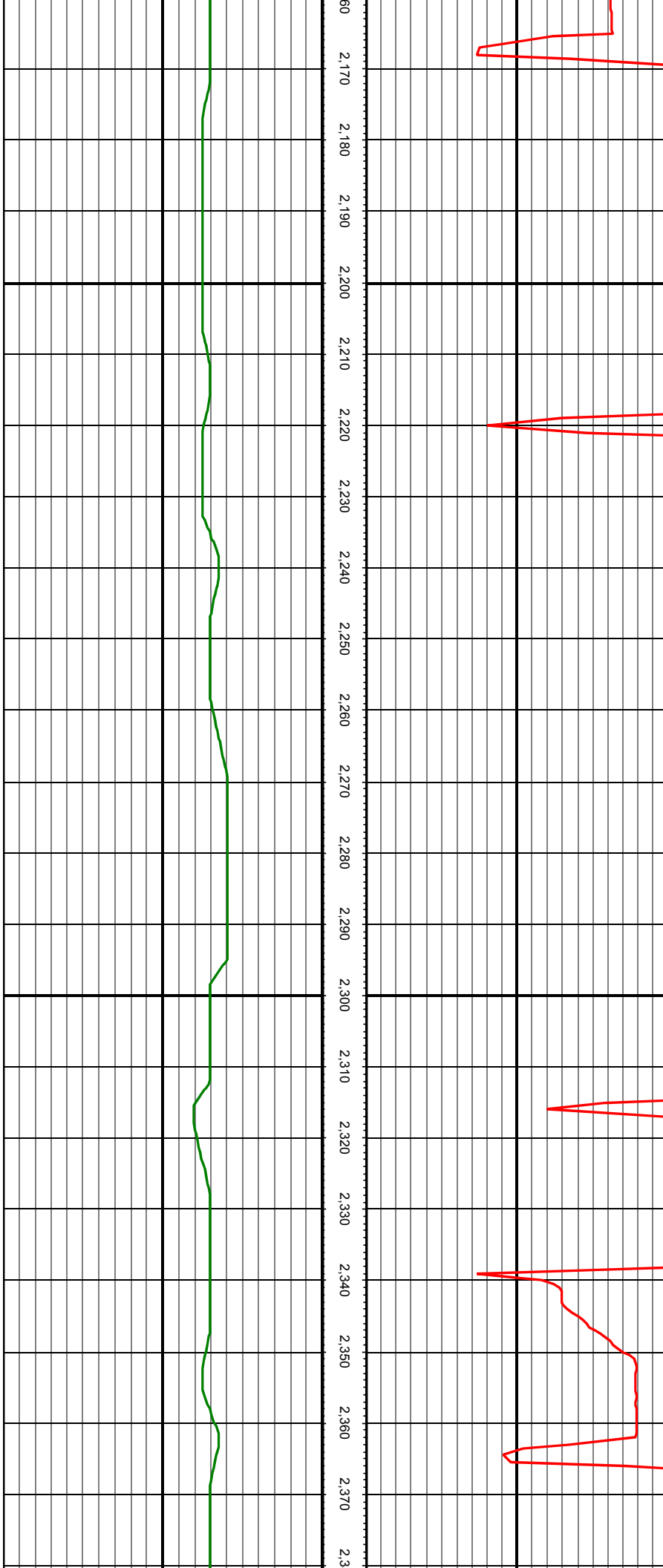
MD: 1877.00 INC: 13.41 AZ: 53.18 TVD: 1852.63 VS: -107.75



MD: 1972.00 INC: 14.20 AZ: 55.64 TVD: 1944.89 VS: -120.92

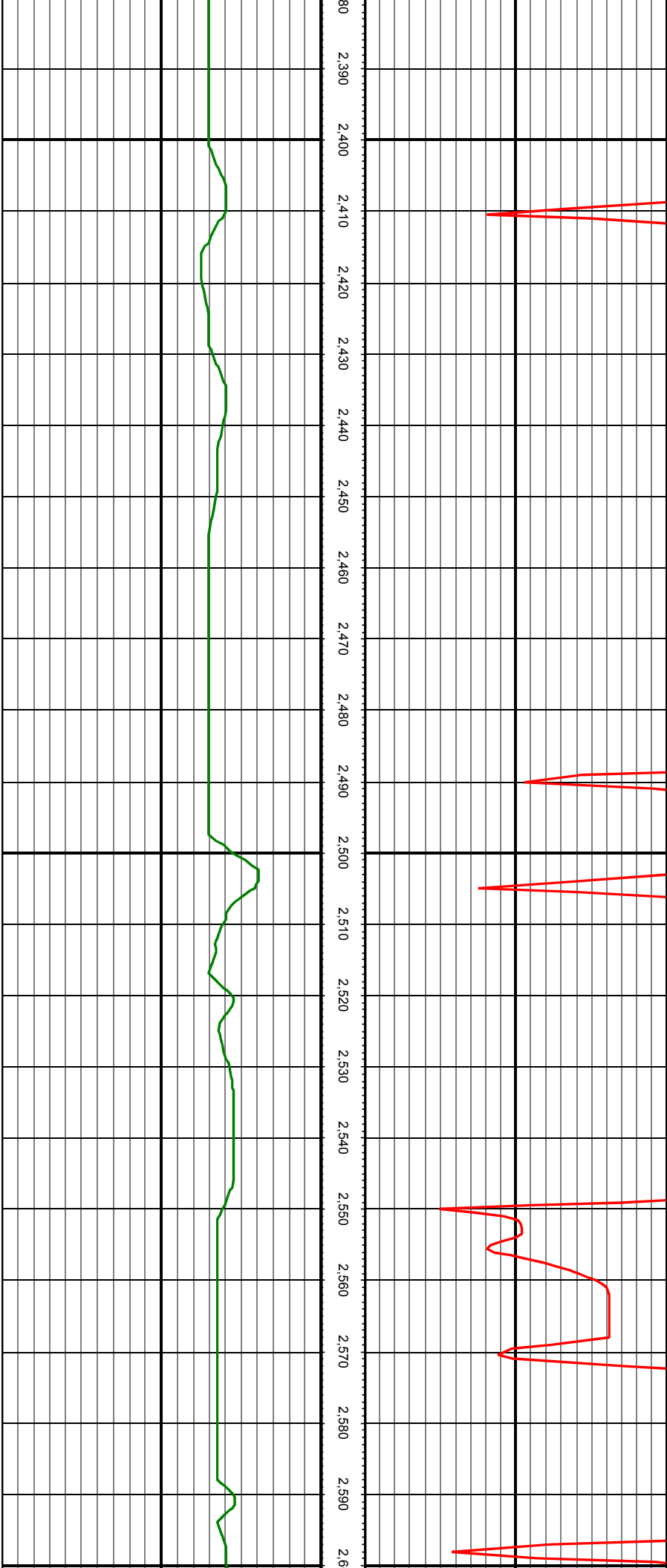
MD: 2066.00 INC: 13.27 AZ: 55.55 TVD: 2036.20 VS: -133.53

MD: 2161.00 INC: 13.85 AZ: 63.99 TVD: 2128.56 VS: -144.69



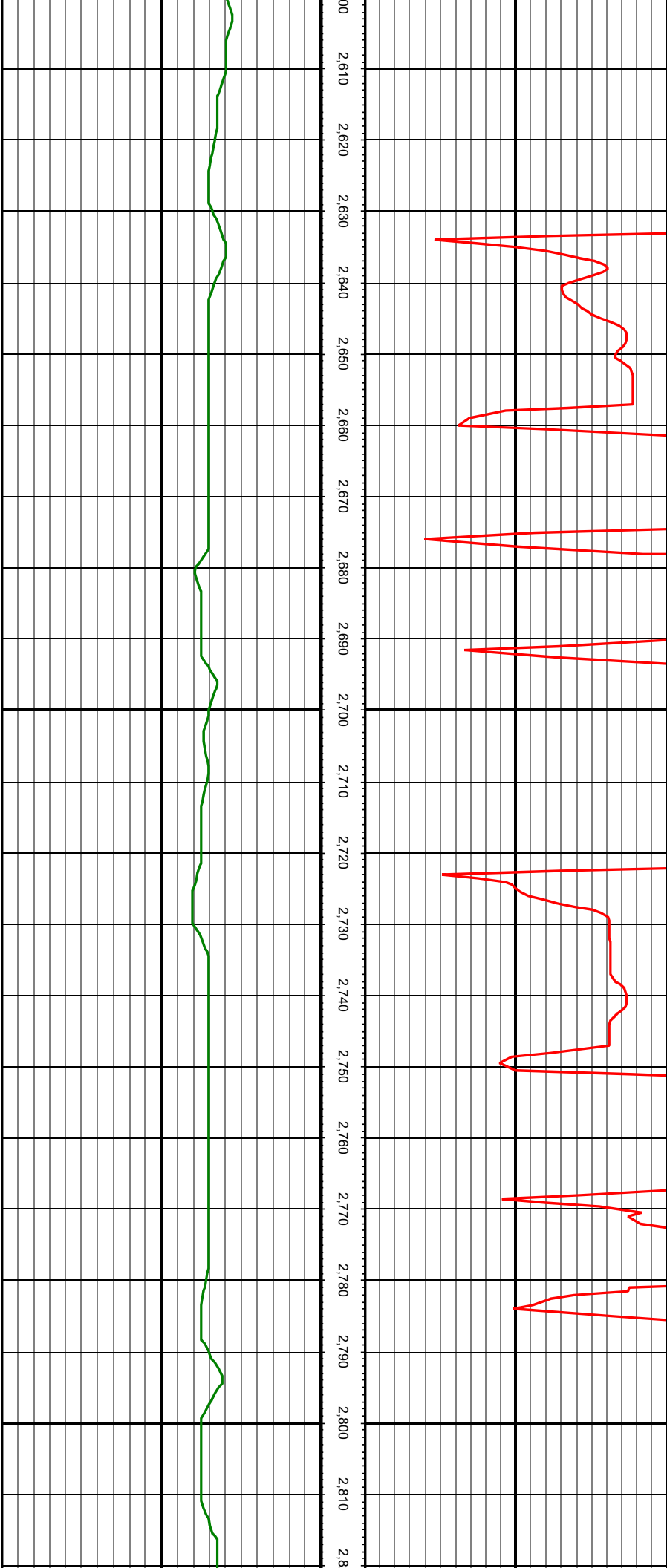
MD: 2255.00 INC: 12.92 AZ: 64.52 TVD: 2220.01 VS: -154.14

MD: 2350.00 INC: 13.80 AZ: 70.49 TVD: 2312.44 VS: -162.50



MD: 2445.00 INC: 12.84 AZ: 70.32 TVD: 2404.88 VS: -169.84

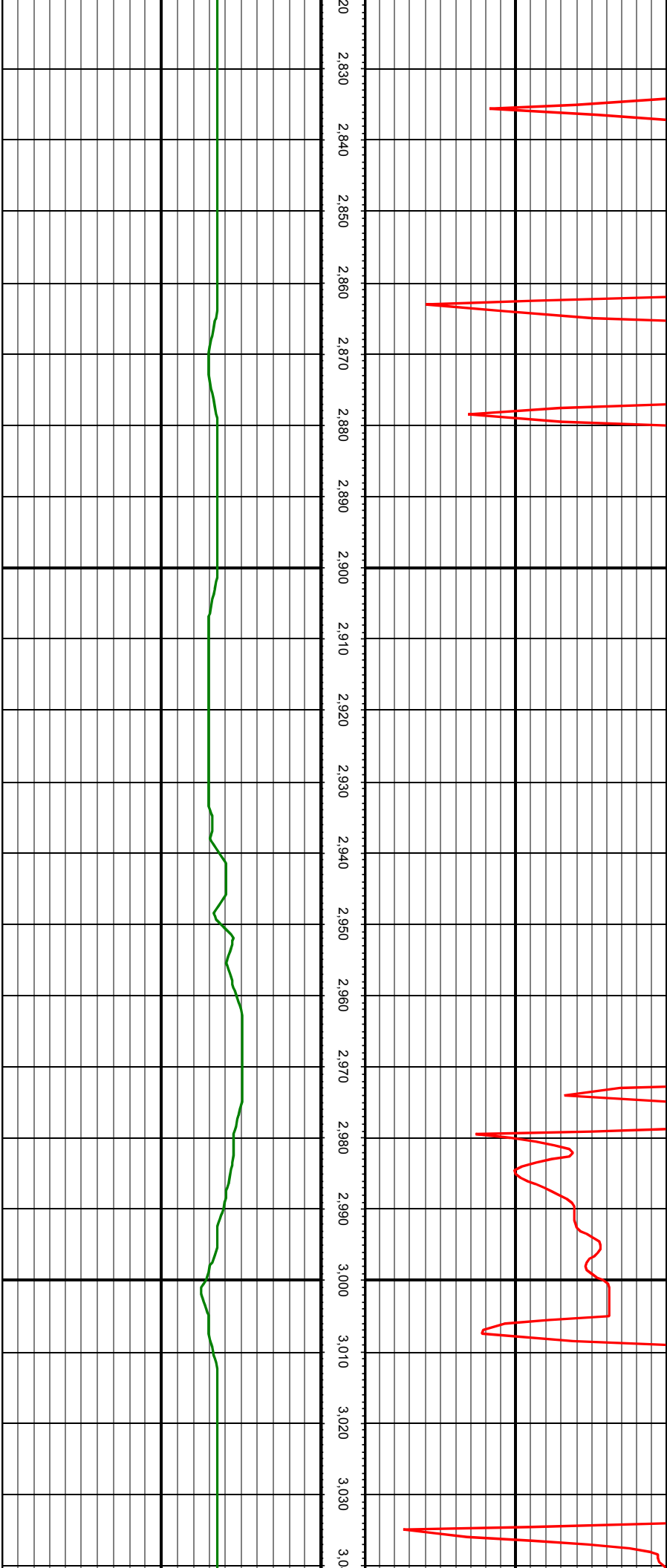
MD: 2539.00 INC: 11.43 AZ: 67.59 TVD: 2496.78 VS: -176.91



MD: 2634.00 INC: 12.92 AZ: 68.82 TVD: 2589.64 VS: -184.33

MD: 2729.00 INC: 15.16 AZ: 70.76 TVD: 2681.80 VS: -192.26

MD: 2823.00 INC: 15.52 AZ: 70.23 TVD: 2772.45 VS: -200.57



MD: 2917.00 INC: 12.84 AZ: 69.26 TVD: 2863.58 VS: -208.52

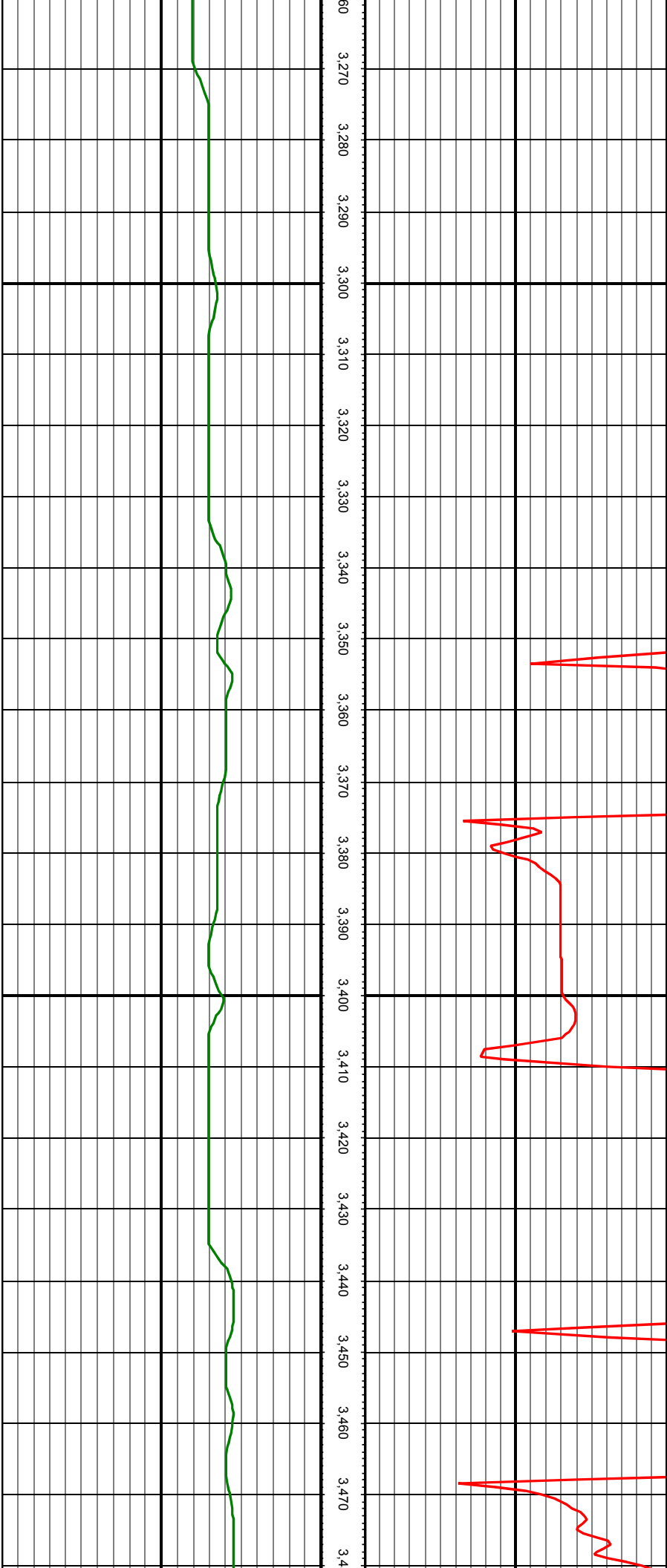
MD: 3012.00 INC: 14.59 AZ: 63.81 TVD: 2955.87 VS: -217.54



MD: 3106.00 INC: 15.78 AZ: 60.82 TVD: 3046.58 VS: -229.00

MD: 3201.00 INC: 15.65 AZ: 57.57 TVD: 3138.04 VS: -242.17



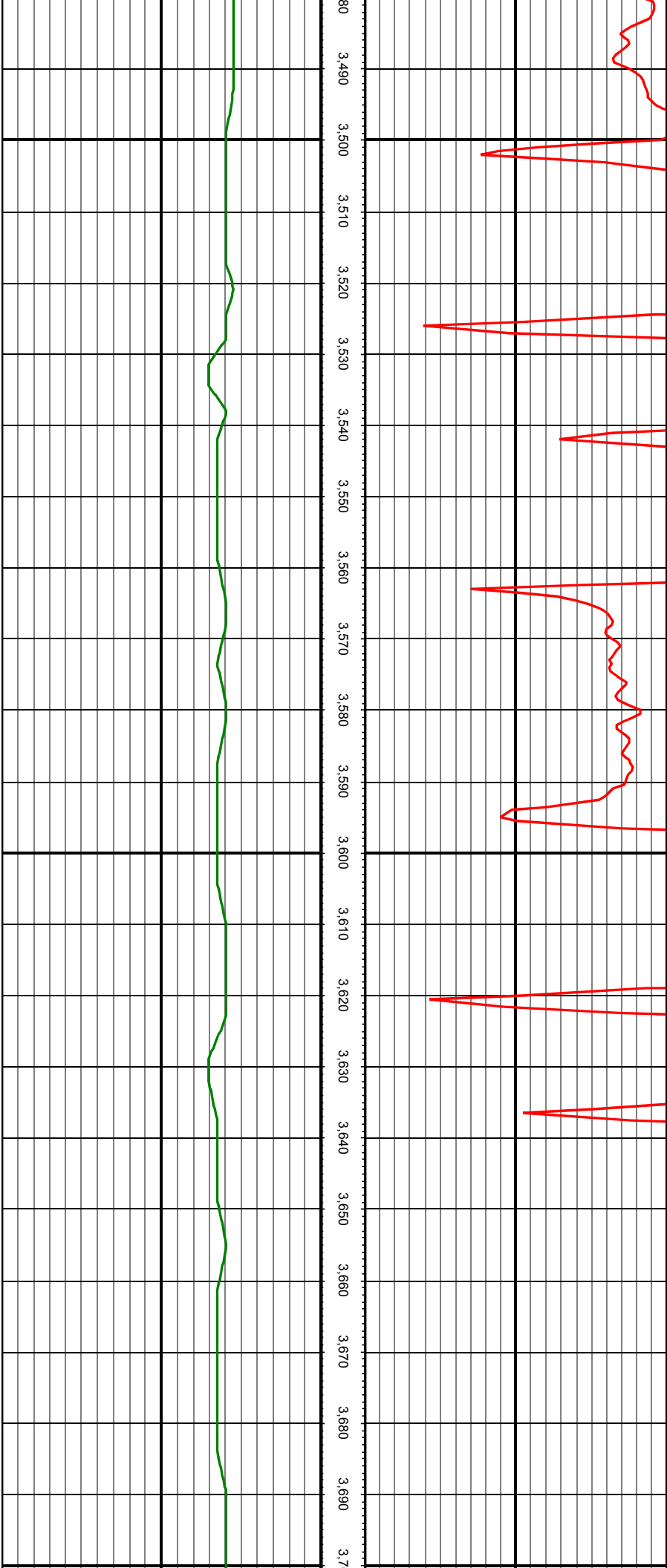


60 3.270 3.280 3.290 3.300 3.310 3.320 3.330 3.340 3.350 3.360 3.370 3.380 3.390 3.400 3.410 3.420 3.430 3.440 3.450 3.460 3.470 3.4

MD: 3295.00 INC: 13.45 AZ: 53.62 TVD: 3229.02 VS: -255.45

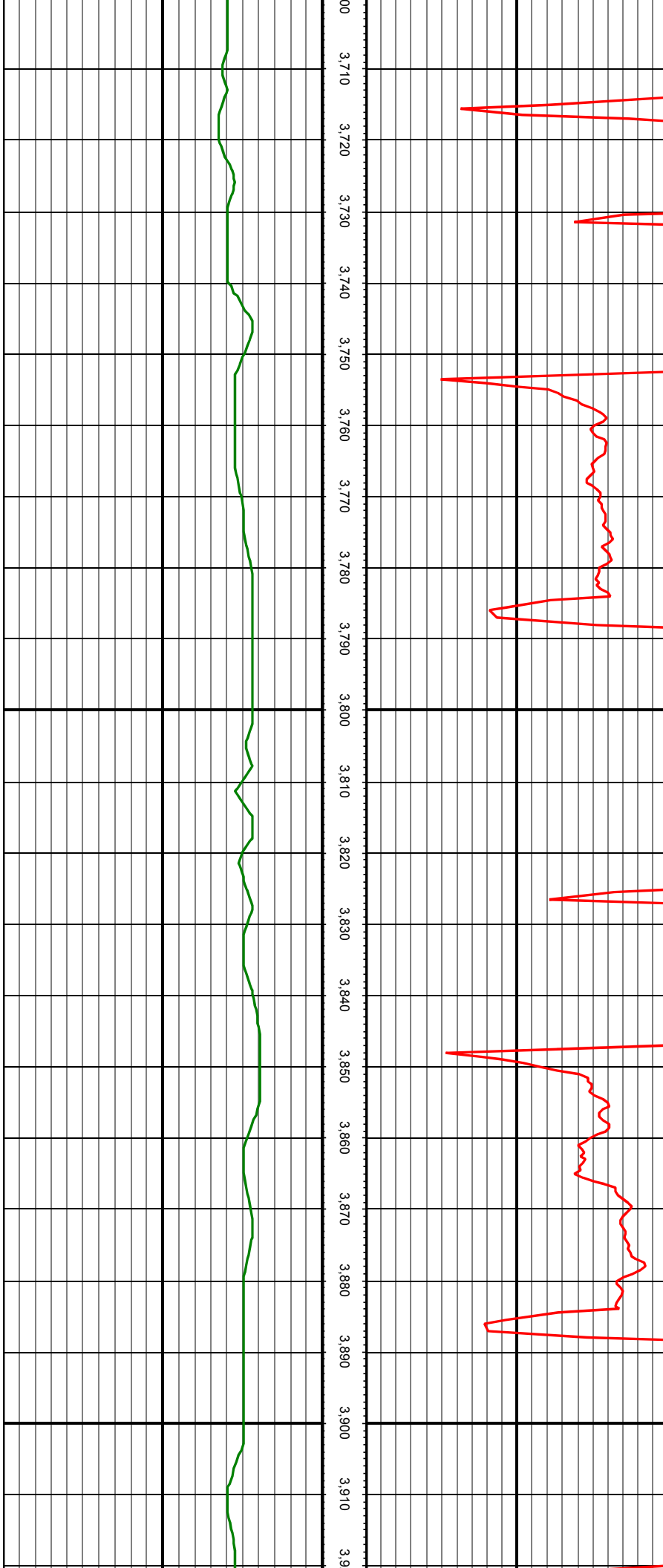
MD: 3390.00 INC: 12.75 AZ: 55.02 TVD: 3321.54 VS: -268.02

MD: 3485.00 INC: 14.02 AZ: 59.95 TVD: 3413.97 VS: -279.79



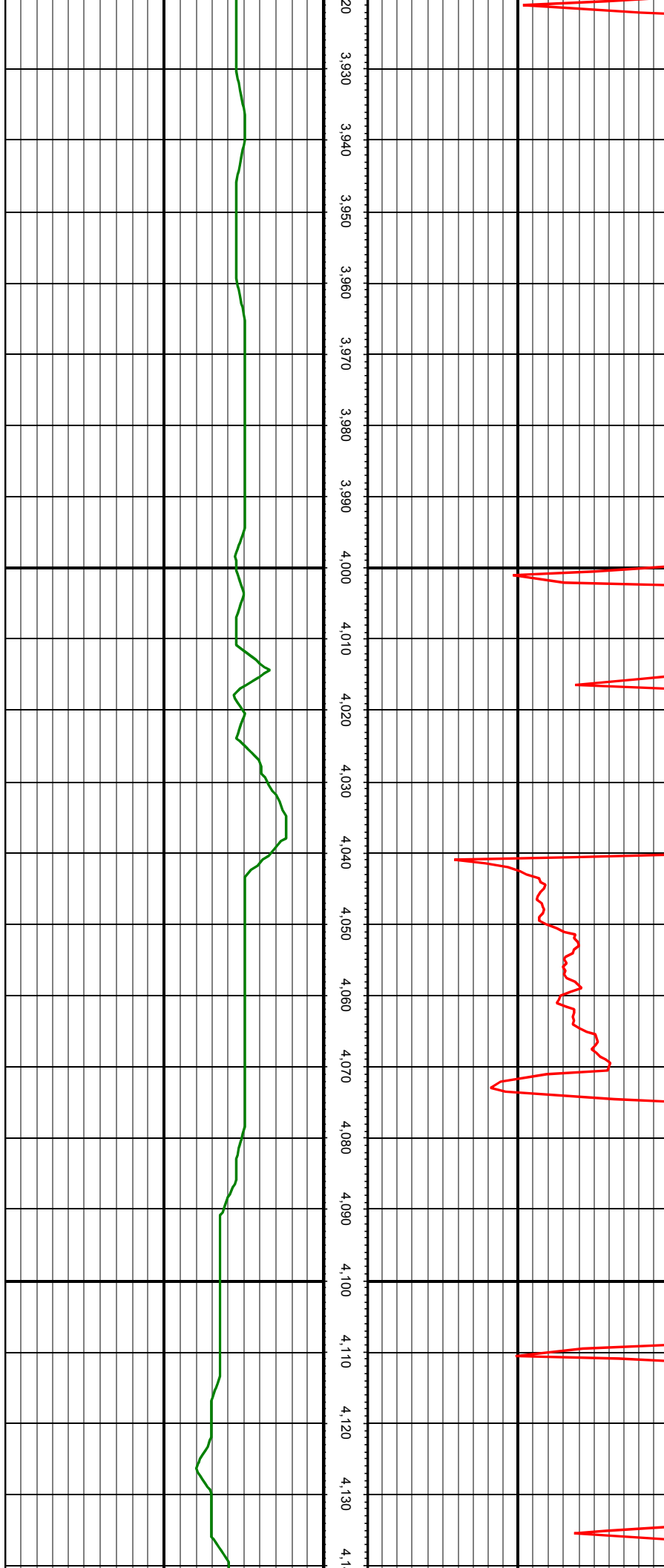
MD: 3579.00 INC: 14.55 AZ: 68.21 TVD: 3505.07 VS: -289.88

MD: 3673.00 INC: 12.92 AZ: 72.16 TVD: 3596.38 VS: -297.48



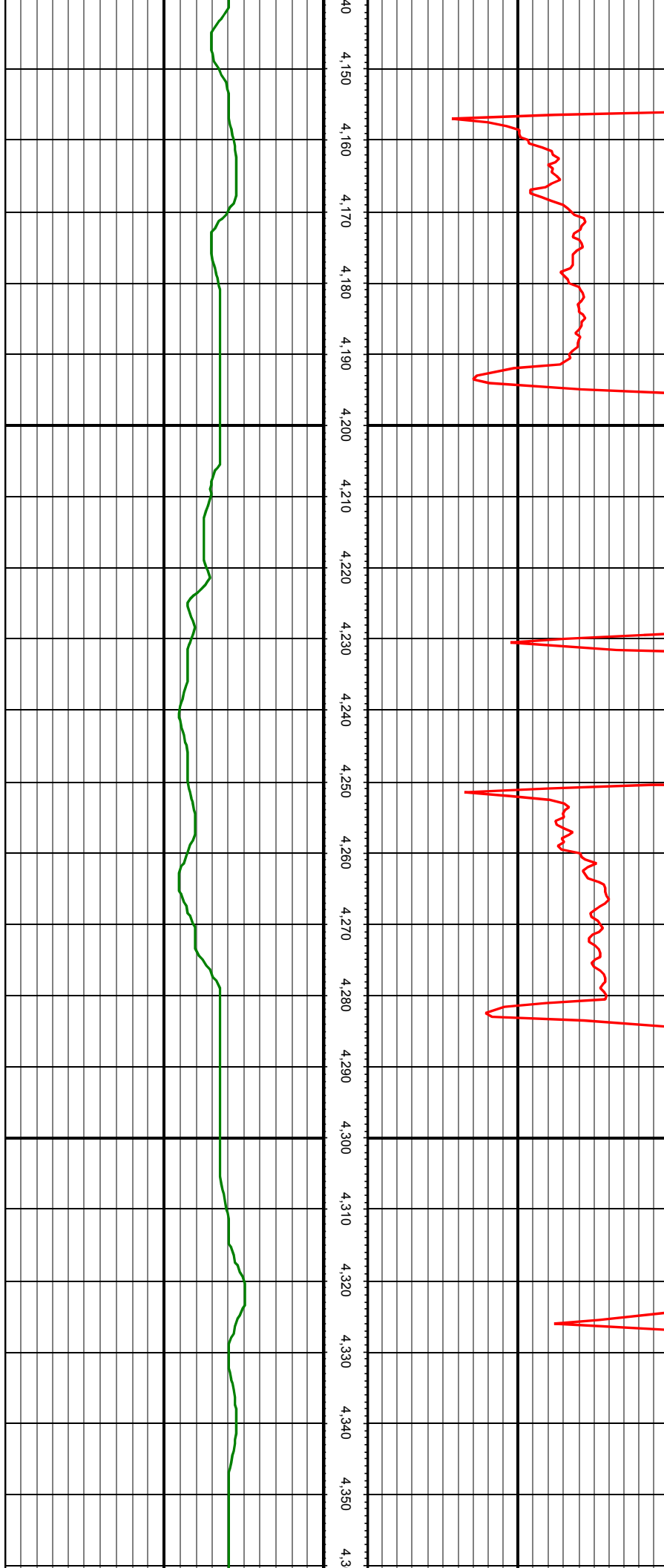
MD: 3768.00 INC: 12.53 AZ: 66.01 TVD: 3689.05 VS: -304.92

MD: 3863.00 INC: 14.59 AZ: 60.21 TVD: 3781.40 VS: -315.06



MD: 3957.00 INC: 13.76 AZ: 57.40 TVD: 3872.54 VS: -326.97

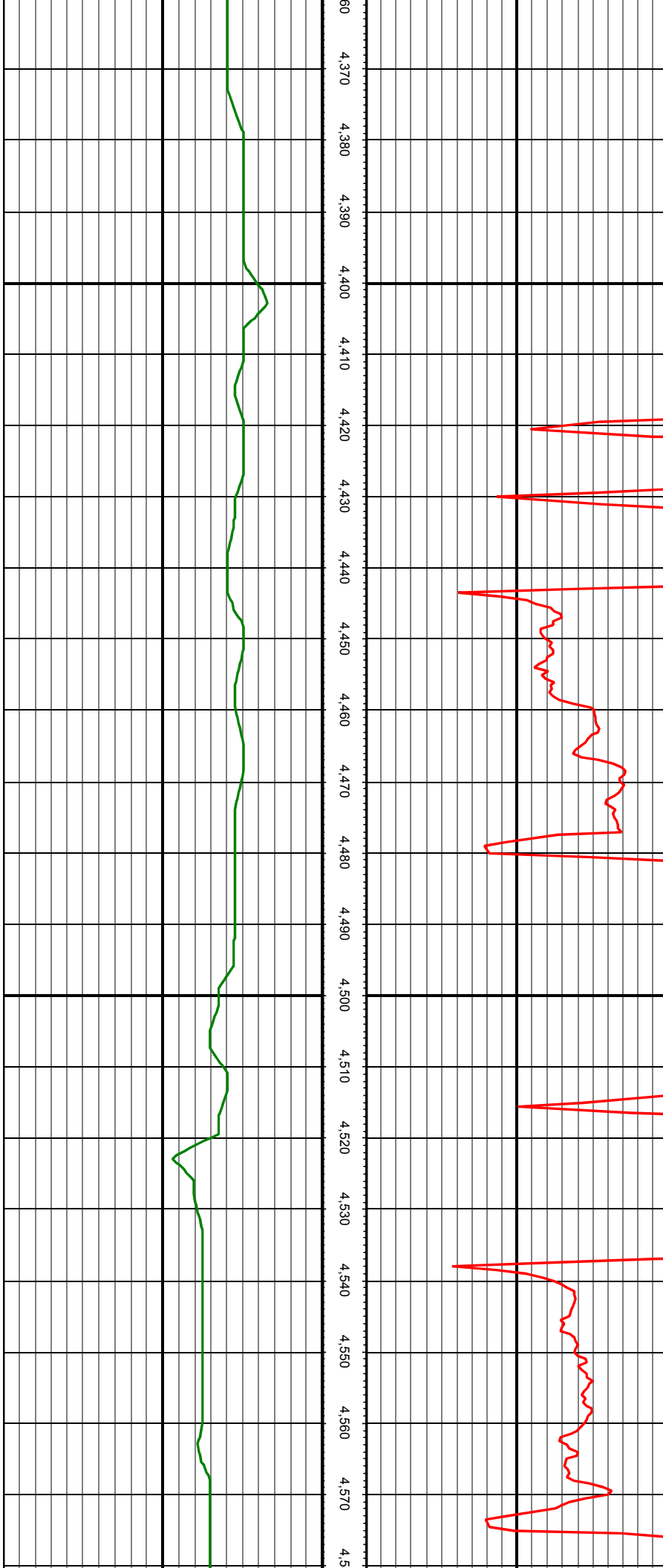
MD: 4077.00 INC: 13.01 AZ: 55.55 TVD: 3989.28 VS: -342.30



MD: 4171.00 INC: 13.32 AZ: 55.38 TVD: 4080.81 VS: -354.43

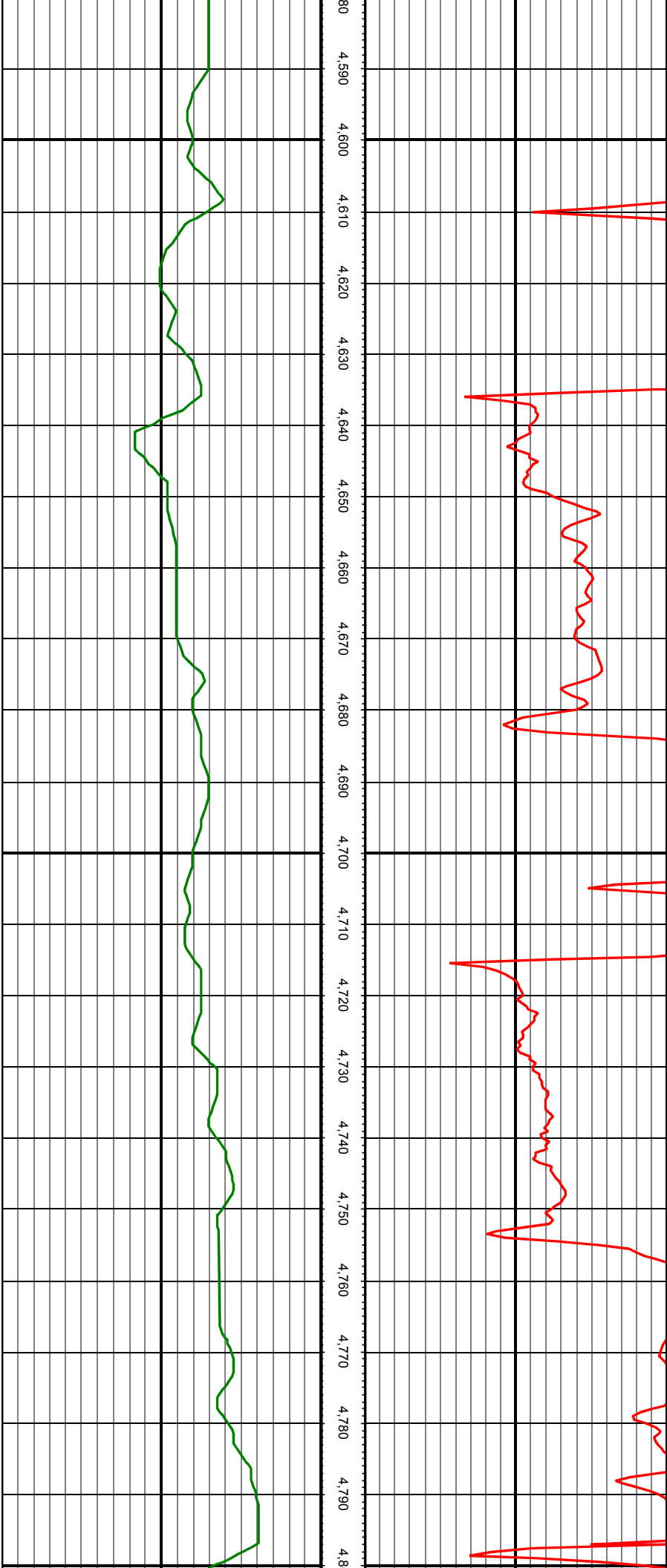
MD: 4266.00 INC: 16.00 AZ: 50.54 TVD: 4172.71 VS: -368.97

MD: 4361.00 INC: 14.42 AZ: 47.29 TVD: 4264.38 VS: -385.32



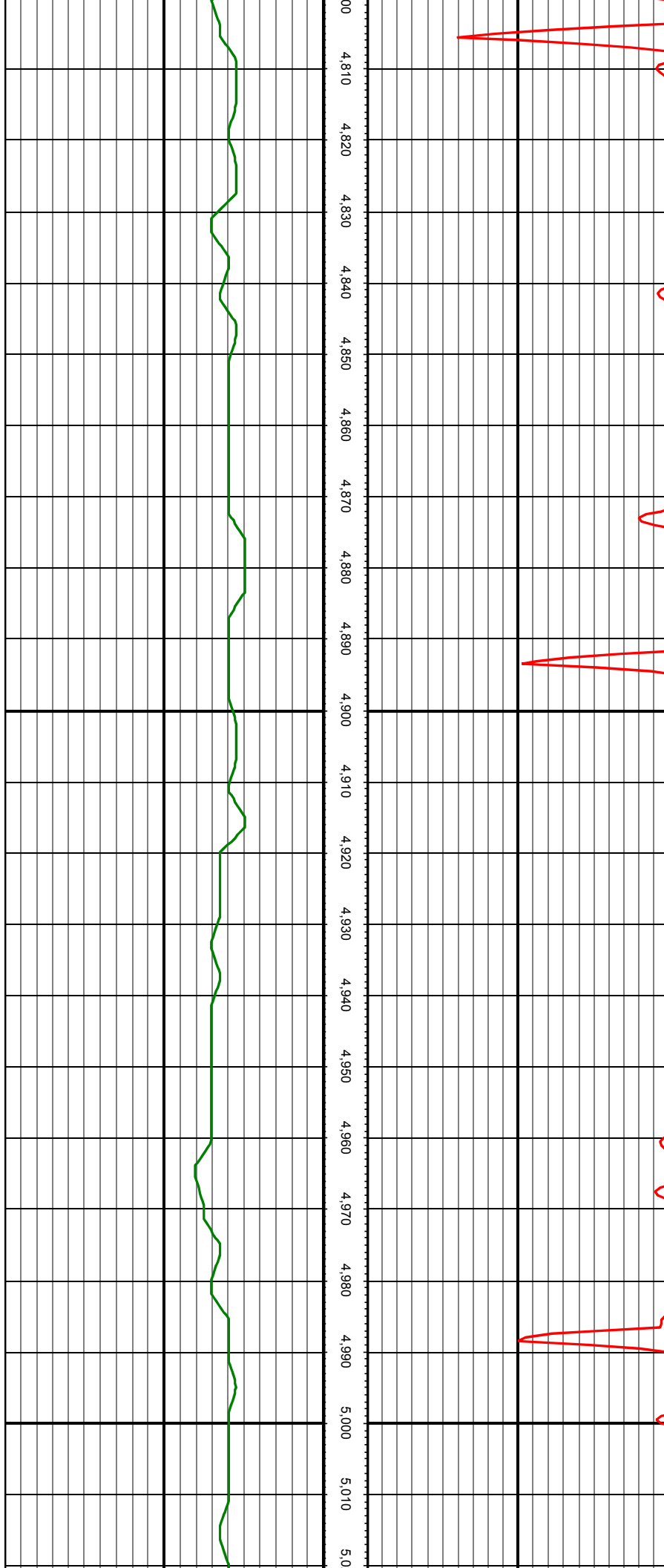
MD: 4456.00 INC: 11.12 AZ: 46.50 TVD: 4357.02 VS: -399.65

MD: 4550.00 INC: 11.25 AZ: 56.17 TVD: 4449.24 VS: -411.00



MD: 4645.00 INC: 12.40 AZ: 62.49 TVD: 4542.23 VS: -420.87

MD: 4740.00 INC: 18.51 AZ: 71.11 TVD: 4633.76 VS: -430.47



MD: 4834.00 INC: 17.89 AZ: 70.76 TVD: 4723.06 VS: -440.06

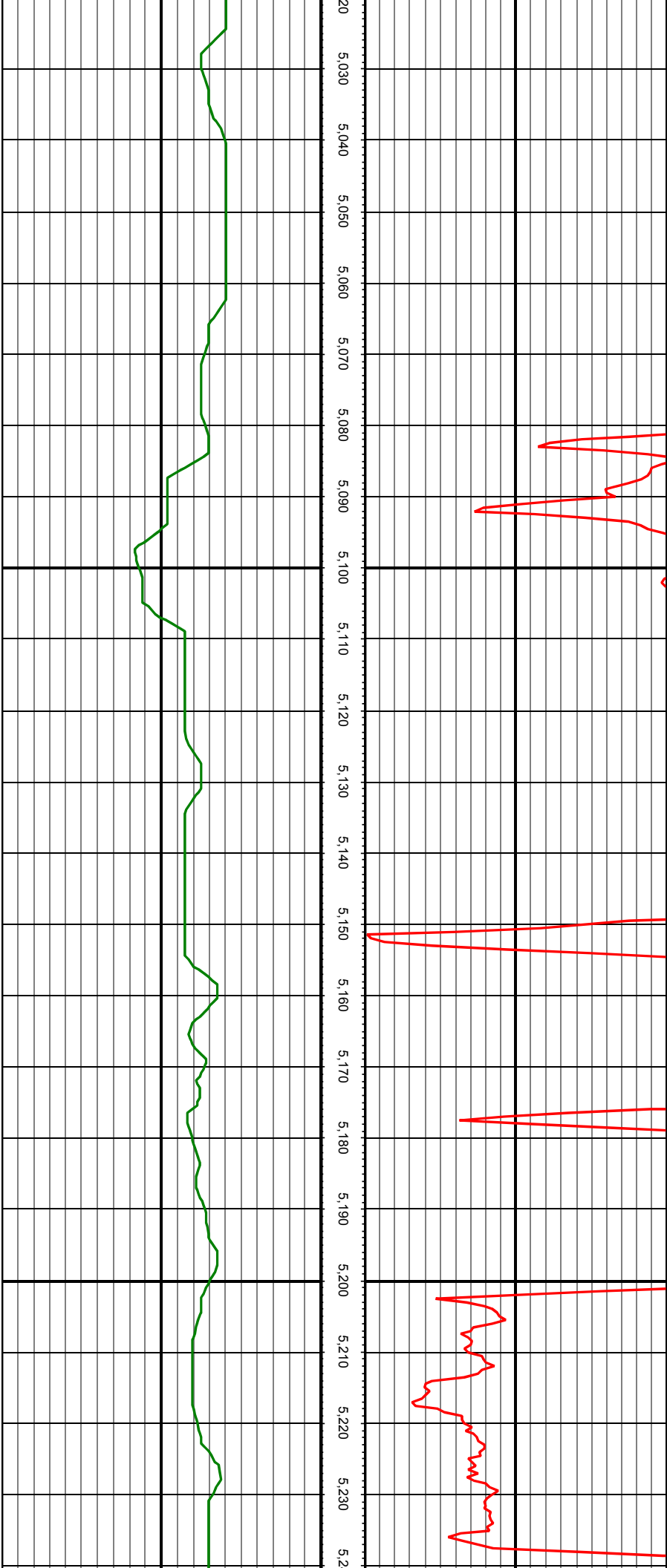
MD: 4928.00 INC: 15.60 AZ: 67.24 TVD: 4813.07 VS: -449.71

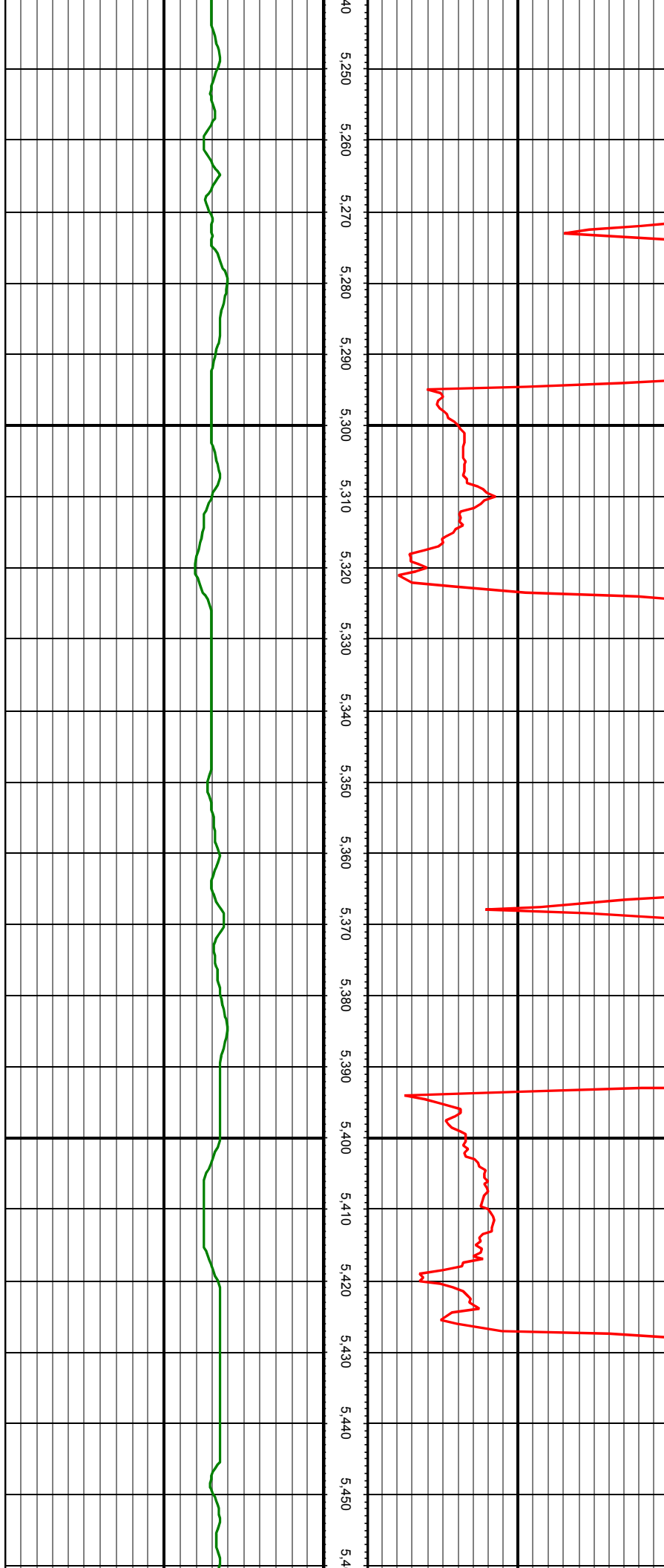


MD: 5024.00 INC: 13.58 AZ: 67.15 TVD: 4905.97 VS: -459.08

MD: 5118.00 INC: 12.35 AZ: 64.78 TVD: 4997.57 VS: -467.65

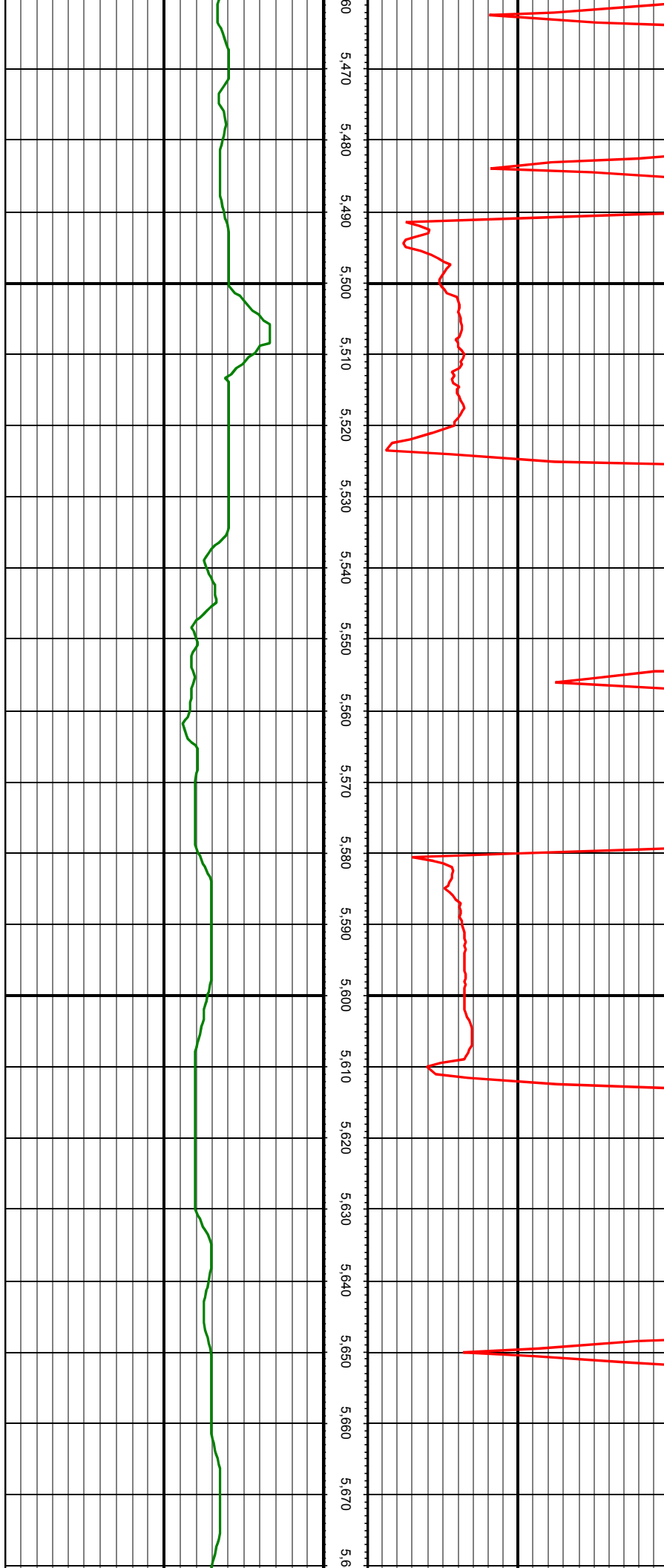
MD: 5213.00 INC: 12.31 AZ: 65.04 TVD: 5090.38 VS: -476.25





MD: 5307.00 INC: 13.27 AZ: 62.93 TVD: 5182.05 VS: -485.39

MD: 5402.00 INC: 12.75 AZ: 60.30 TVD: 5274.61 VS: -495.55



MD: 5496.00 INC: 12.70 AZ: 65.75 TVD: 5366.30 VS: -504.93

MD: 5591.00 INC: 14.20 AZ: 74.27 TVD: 5458.70 VS: -512.38

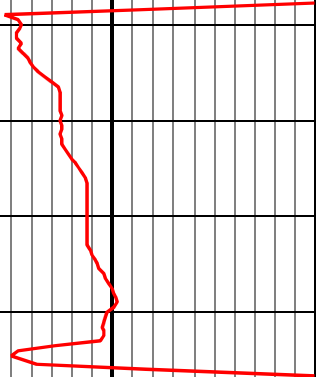
MD: 5686.00 INC: 13.41 AZ: 75.85 TVD: 5550.96 VS: -518.23

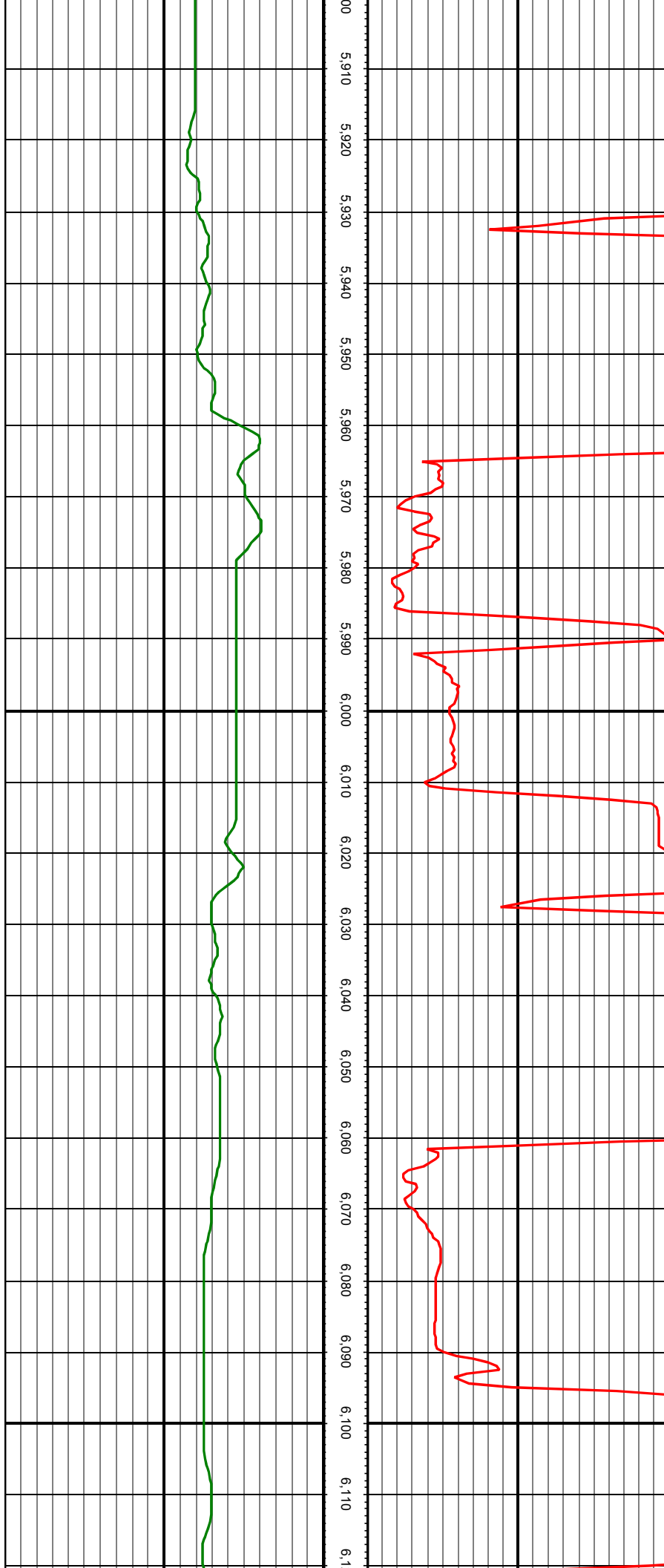


MD: 5780.00 INC: 11.03 AZ: 73.74 TVD: 5642.82 VS: -523.42



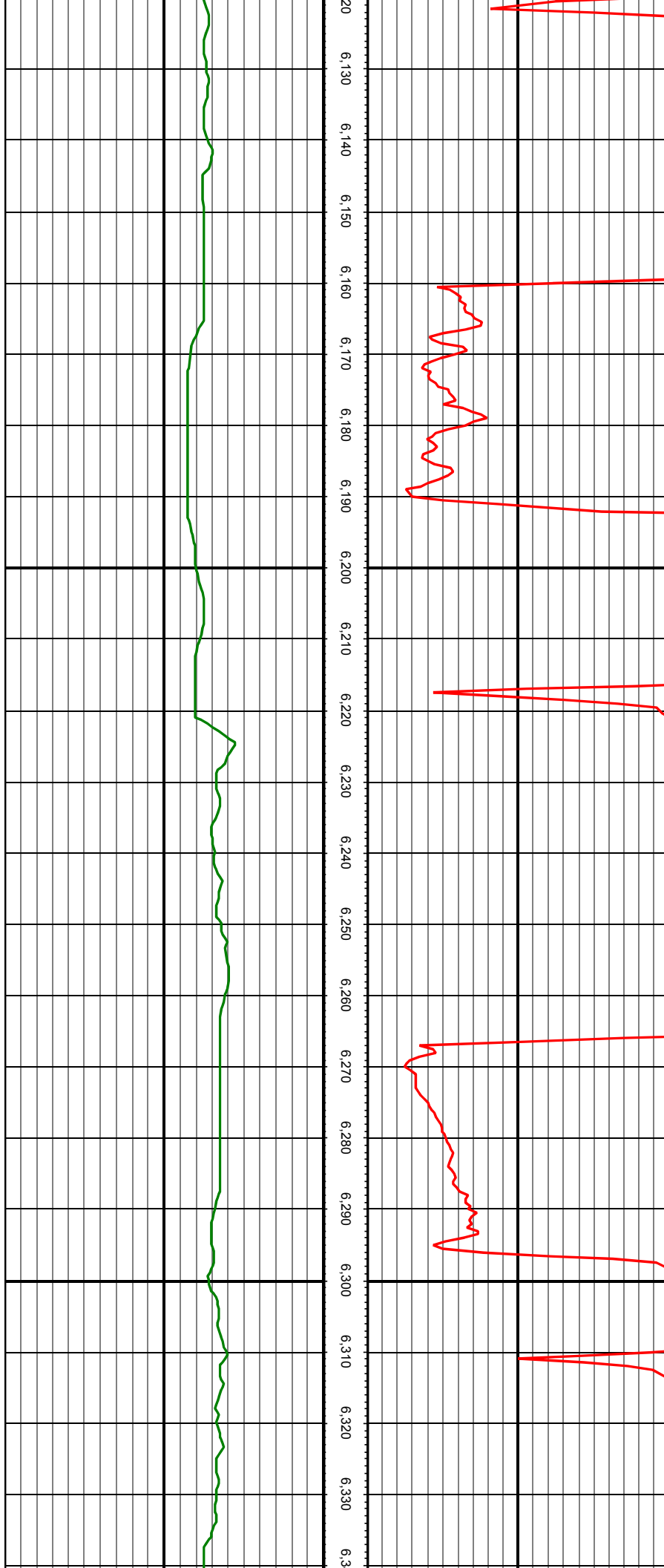
MD: 5875.00 INC: 12.00 AZ: 71.02 TVD: 5735.91 VS: -529.17





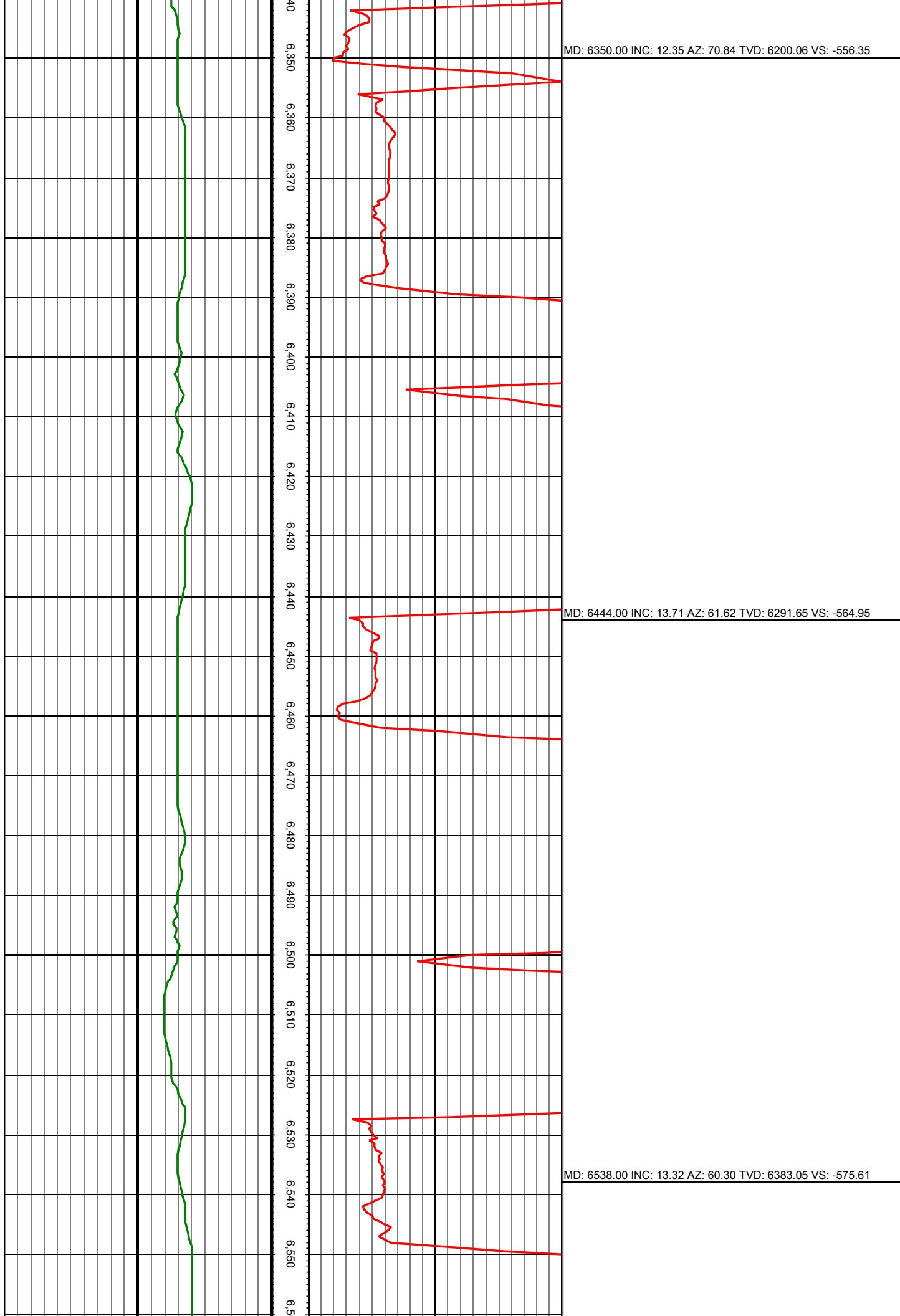
MD: 5970.00 INC: 12.00 AZ: 73.04 TVD: 5828.84 VS: -535.27

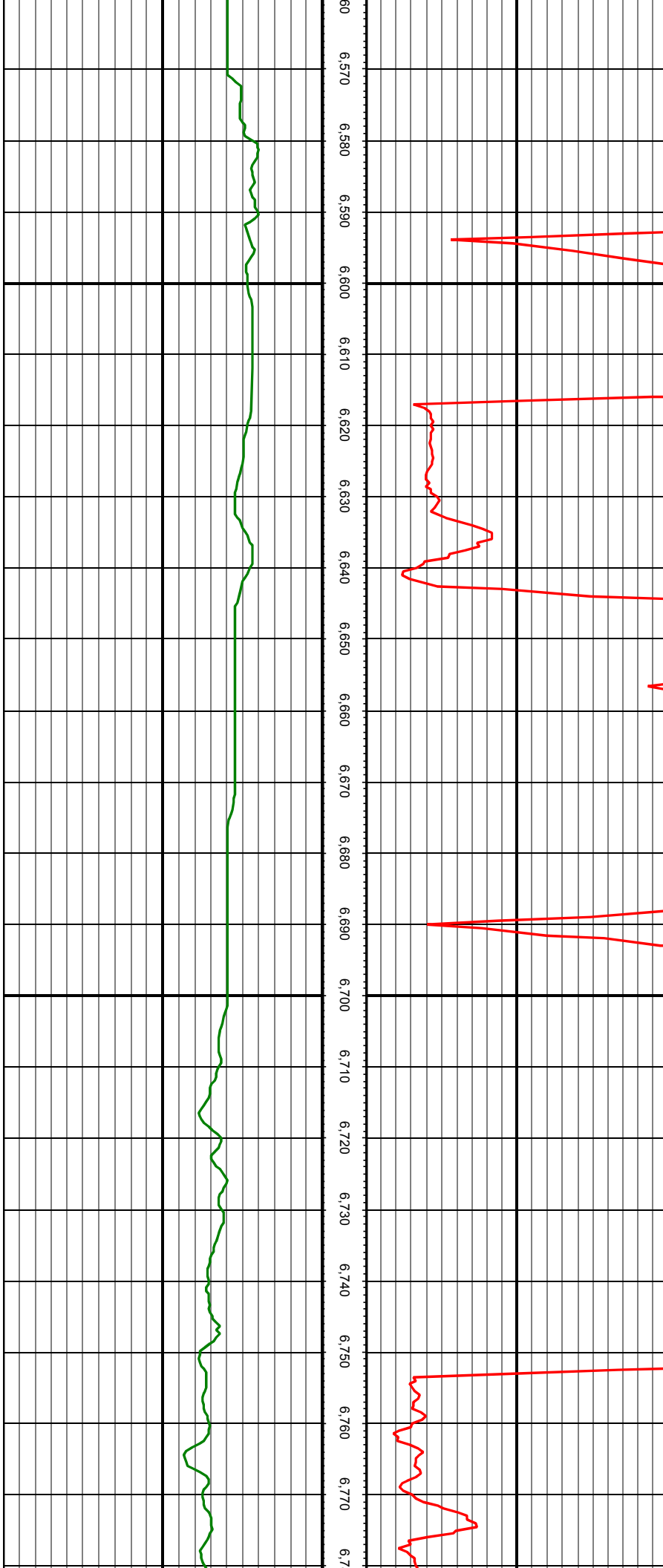
MD: 6065.00 INC: 12.79 AZ: 73.48 TVD: 5921.62 VS: -541.14



MD: 6160.00 INC: 13.27 AZ: 74.36 TVD: 6014.17 VS: -547.07

MD: 6255.00 INC: 11.08 AZ: 80.51 TVD: 6107.04 VS: -551.51

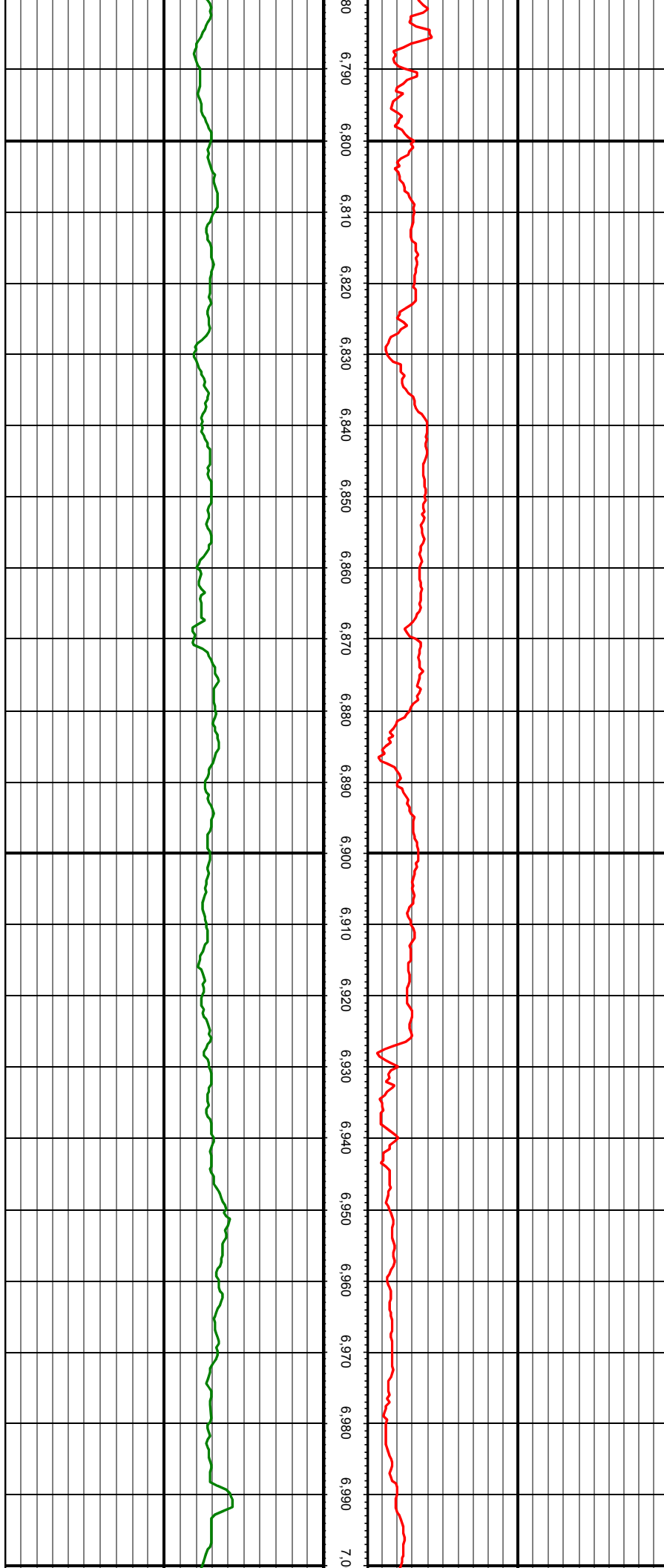




MD: 6633.00 INC: 13.45 AZ: 60.21 TVD: 6475.47 VS: -586.52

MD: 6728.00 INC: 11.56 AZ: 57.40 TVD: 6568.21 VS: -597.14

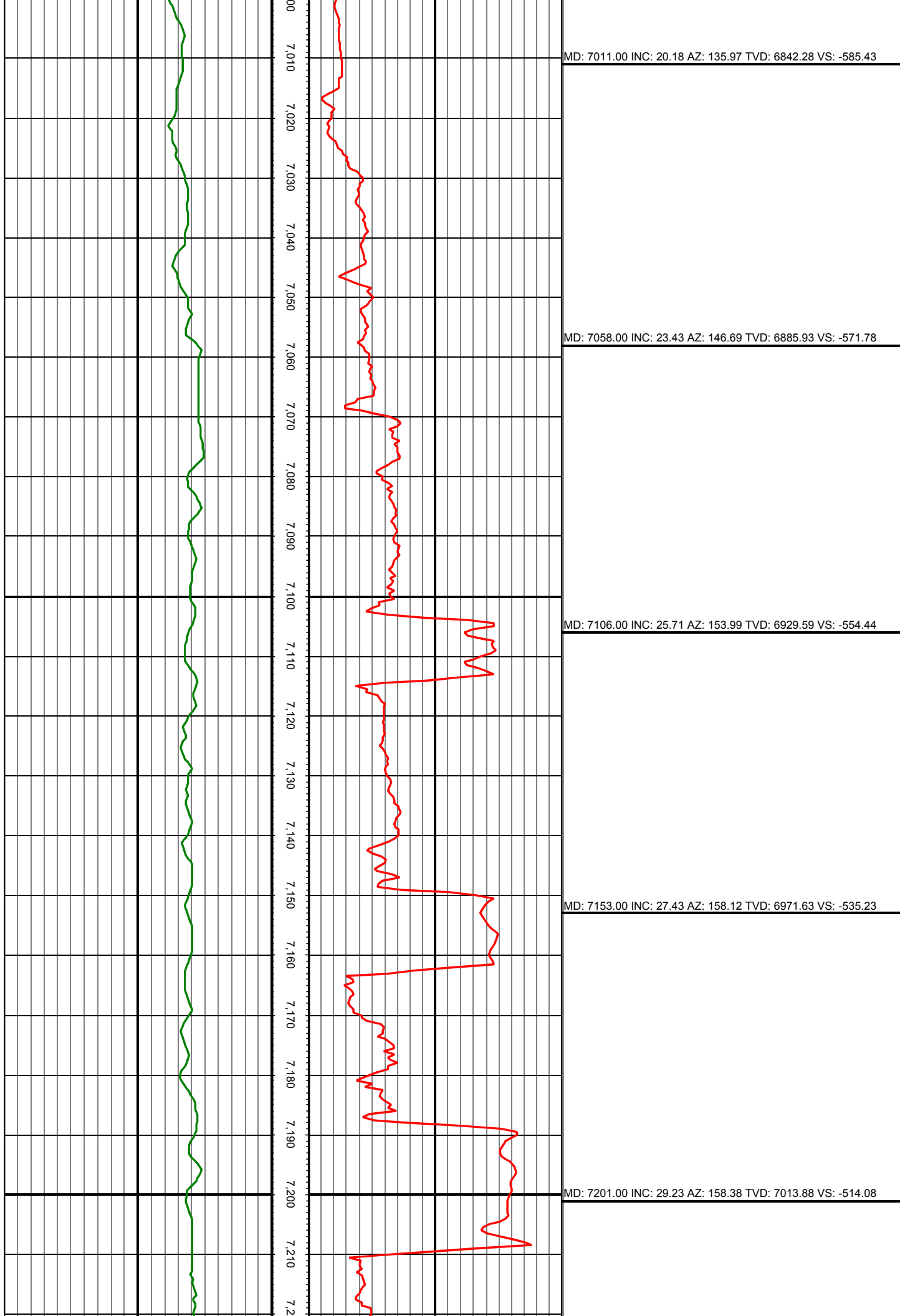


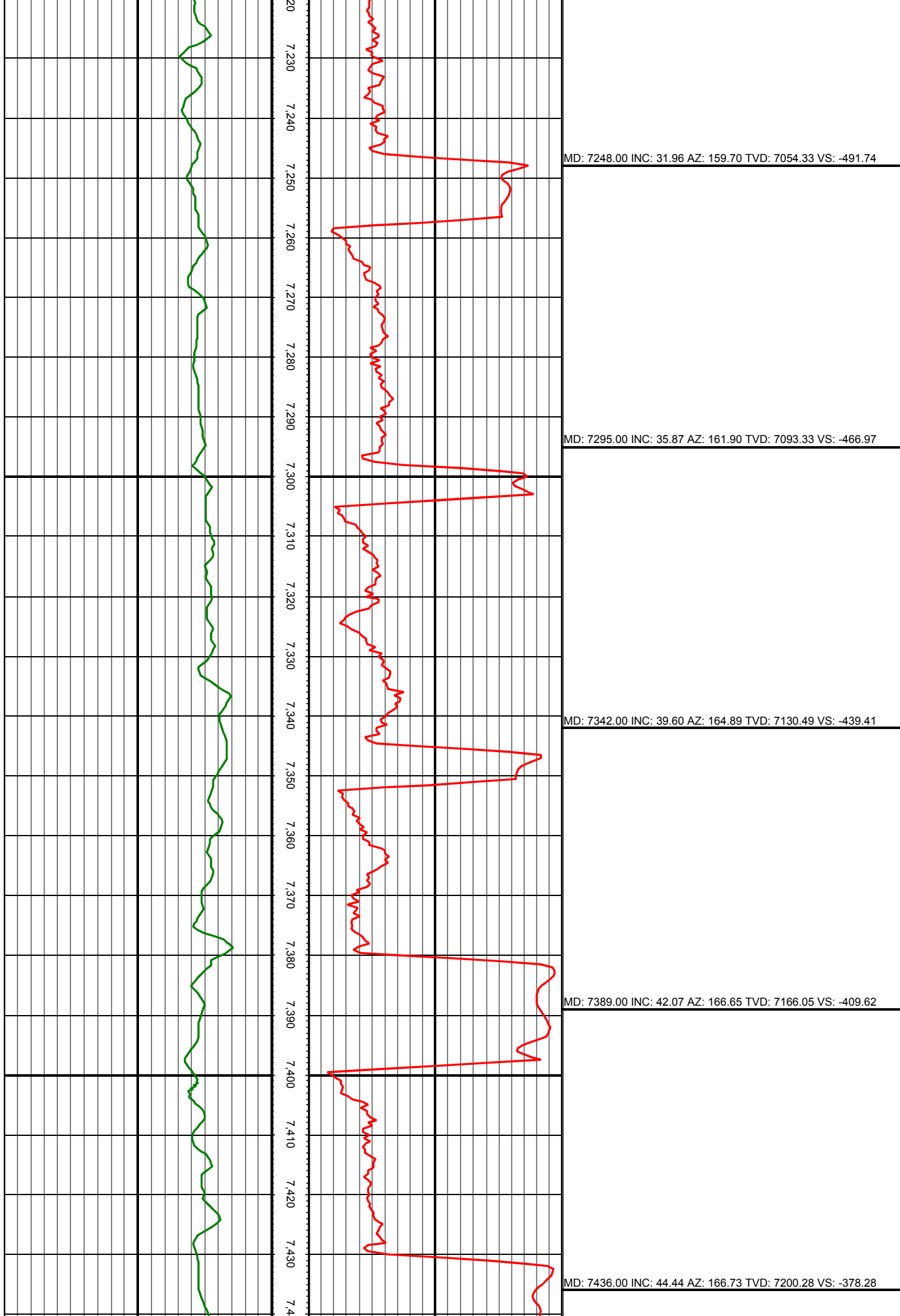


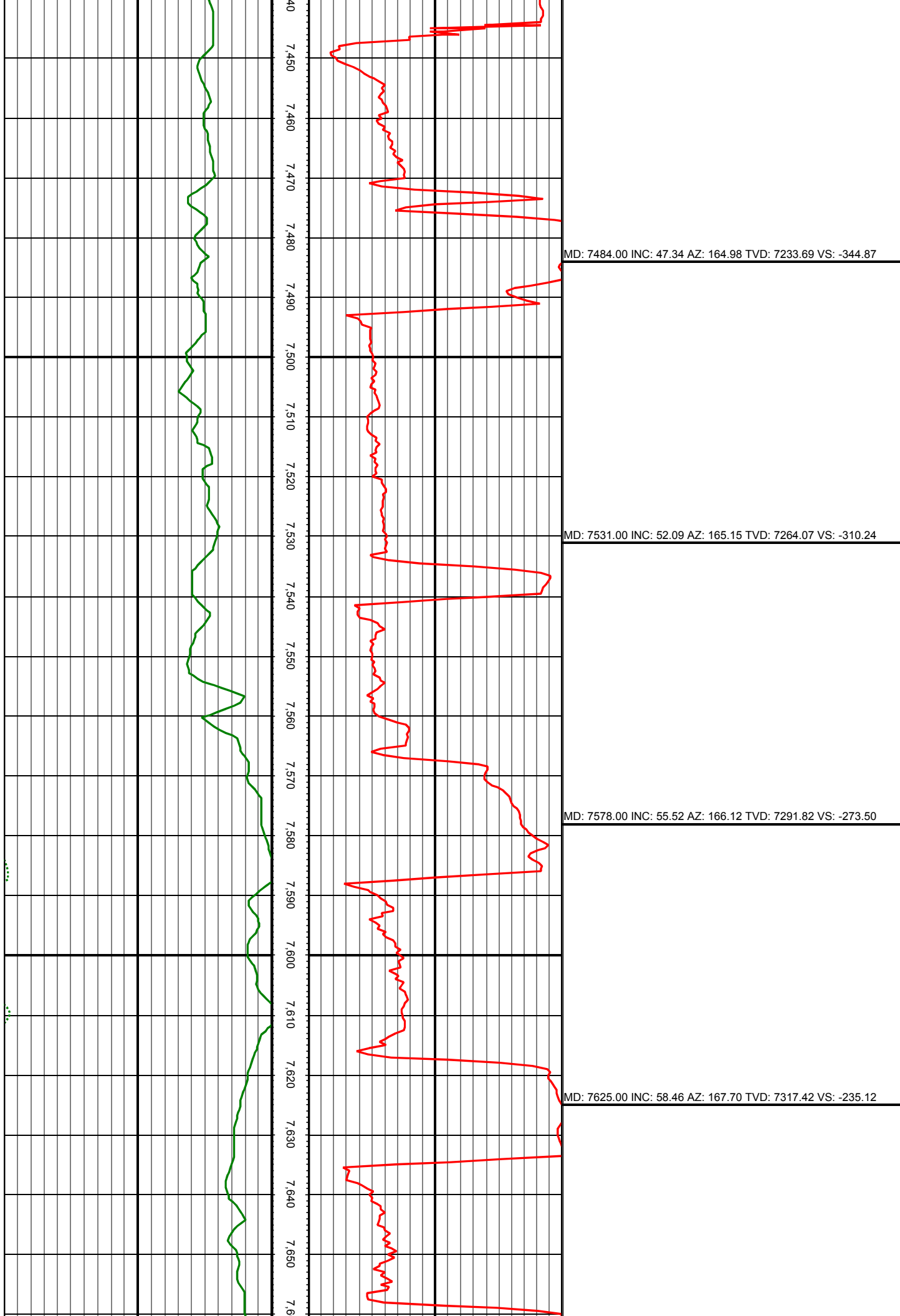
MD: 6822.00 INC: 11.25 AZ: 79.28 TVD: 6660.40 VS: -603.92

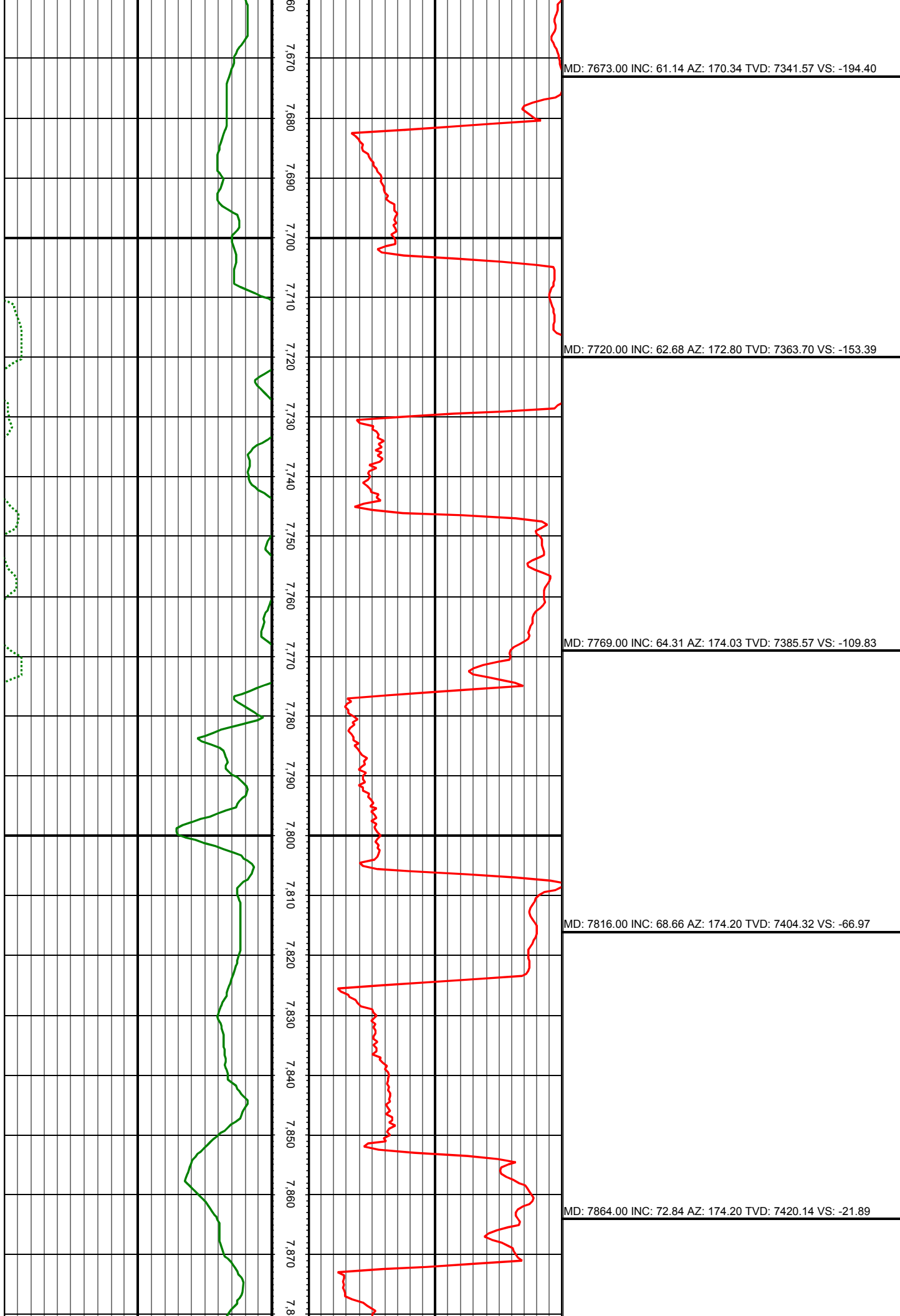
MD: 6917.00 INC: 16.40 AZ: 110.75 TVD: 6752.74 VS: -600.89

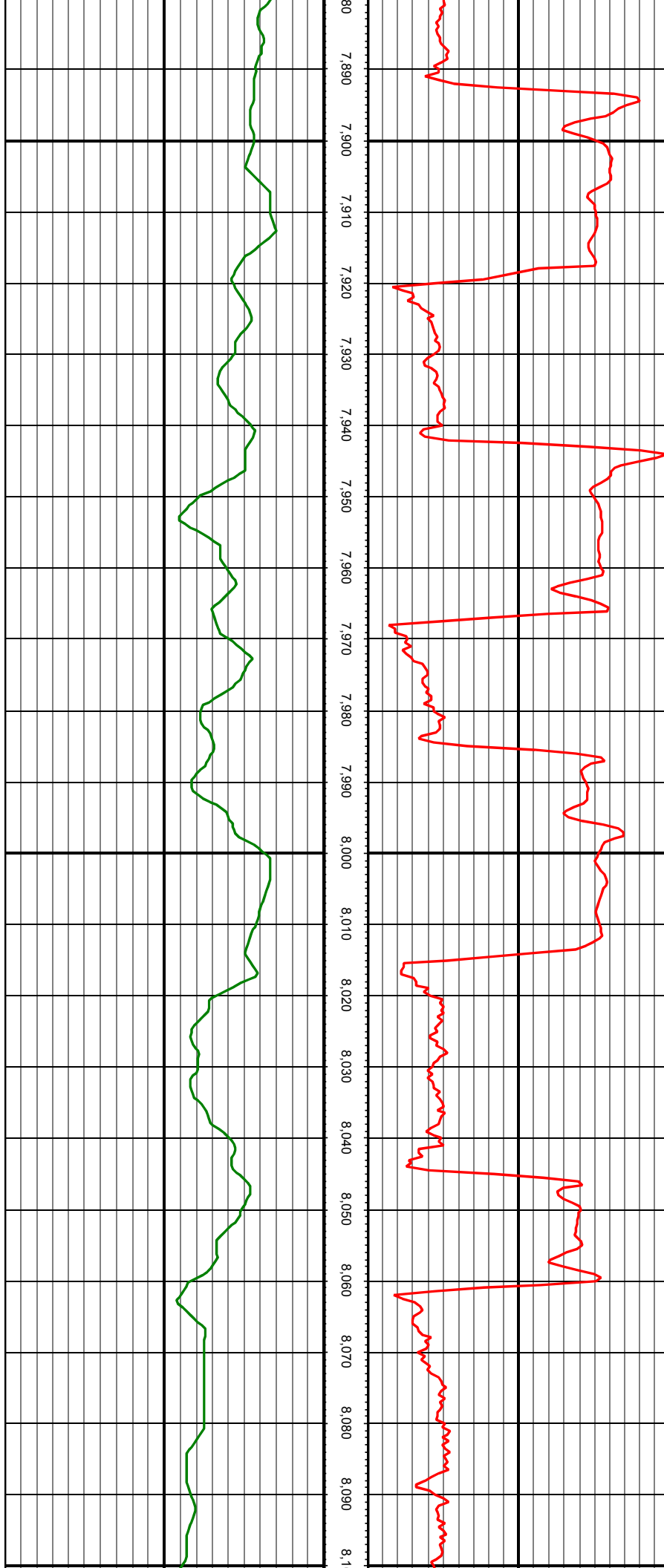
MD: 6964.00 INC: 17.23 AZ: 121.47 TVD: 6797.74 VS: -594.90









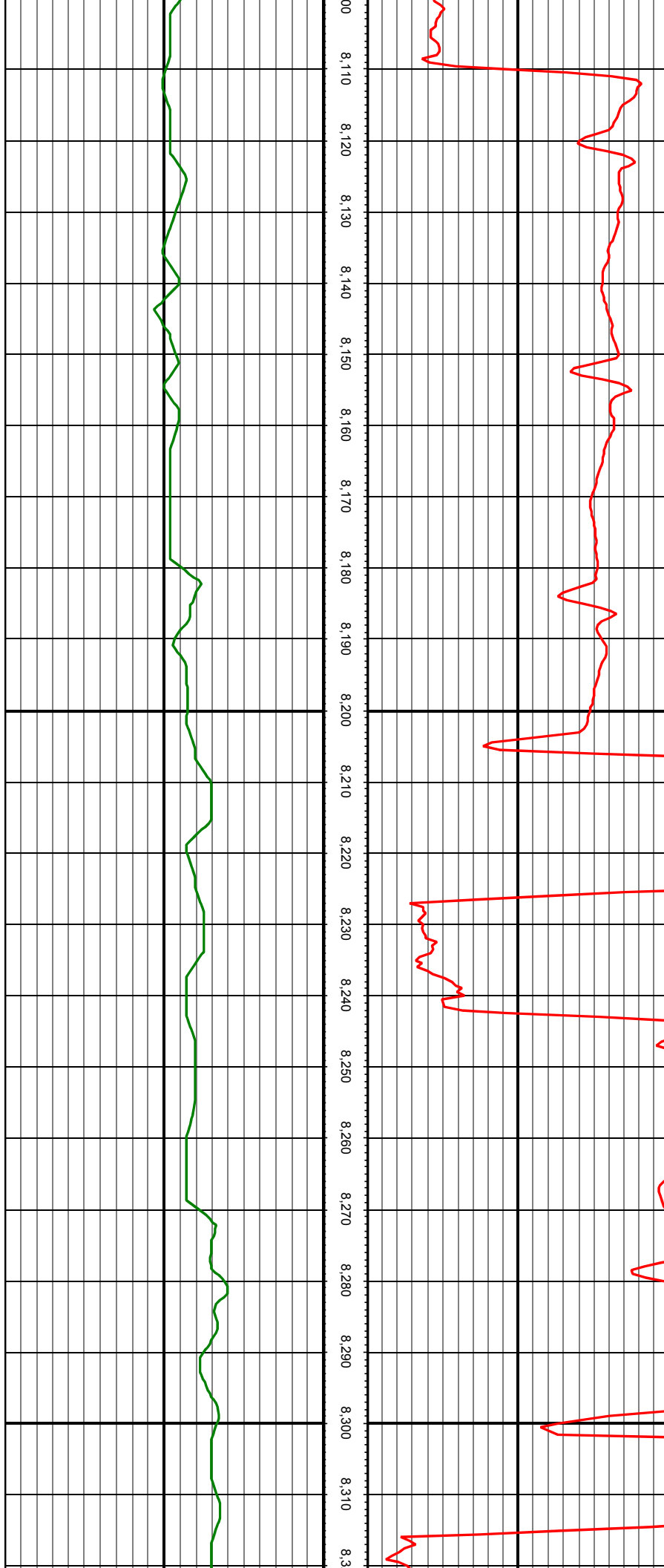


MD: 7911.00 INC: 75.69 AZ: 175.17 TVD: 7432.88 VS: 23.14

MD: 7958.00 INC: 78.42 AZ: 175.79 TVD: 7443.41 VS: 68.80

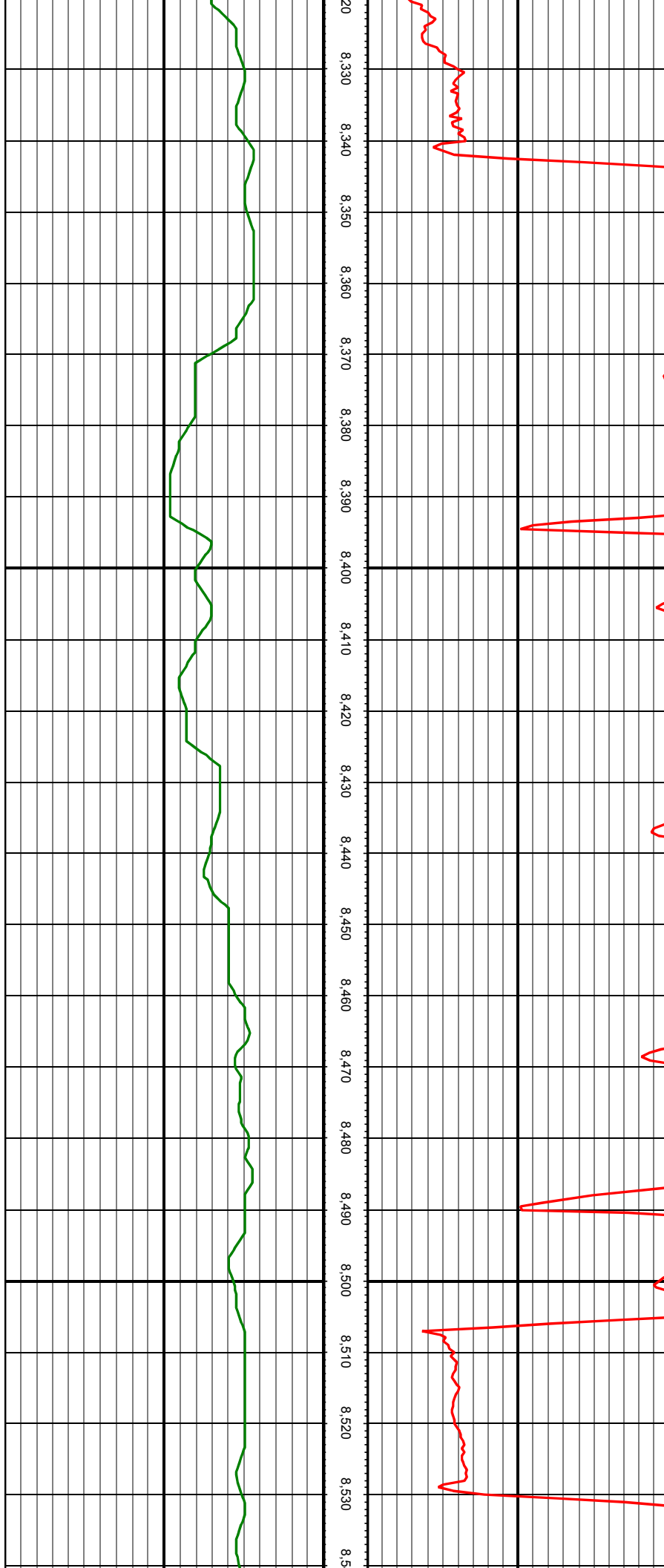
MD: 8005.00 INC: 79.82 AZ: 176.23 TVD: 7452.28 VS: 114.85

MD: 8053.00 INC: 82.95 AZ: 176.66 TVD: 7459.47 VS: 162.21



MD: 8147.00 INC: 89.76 AZ: 177.02 TVD: 7465.44 VS: 255.82

MD: 8242.00 INC: 89.80 AZ: 177.81 TVD: 7465.81 VS: 350.72

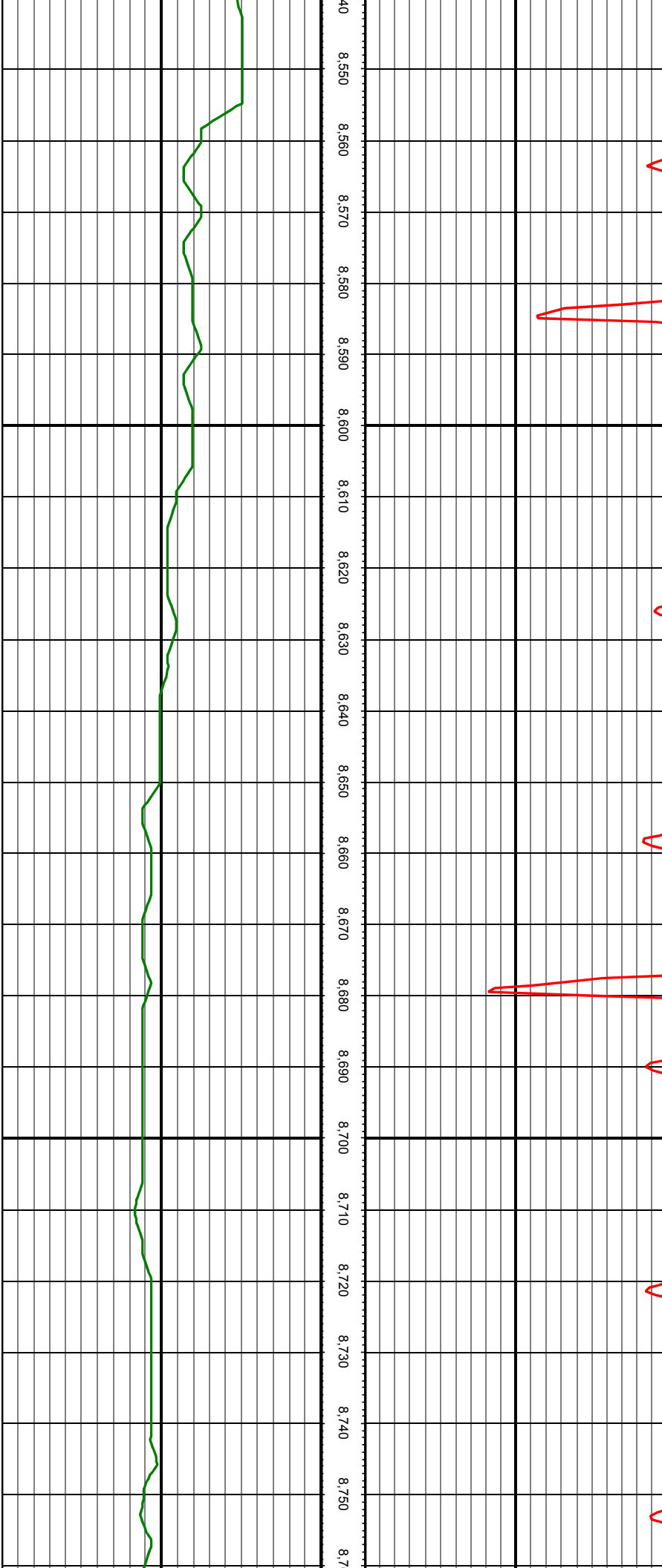


MD: 8337.00 INC: 88.70 AZ: 179.92 TVD: 7467.05 VS: 445.69

MD: 8432.00 INC: 89.41 AZ: 179.57 TVD: 7468.62 VS: 540.67

MD: 8526.00 INC: 87.38 AZ: 178.69 TVD: 7471.25 VS: 634.62

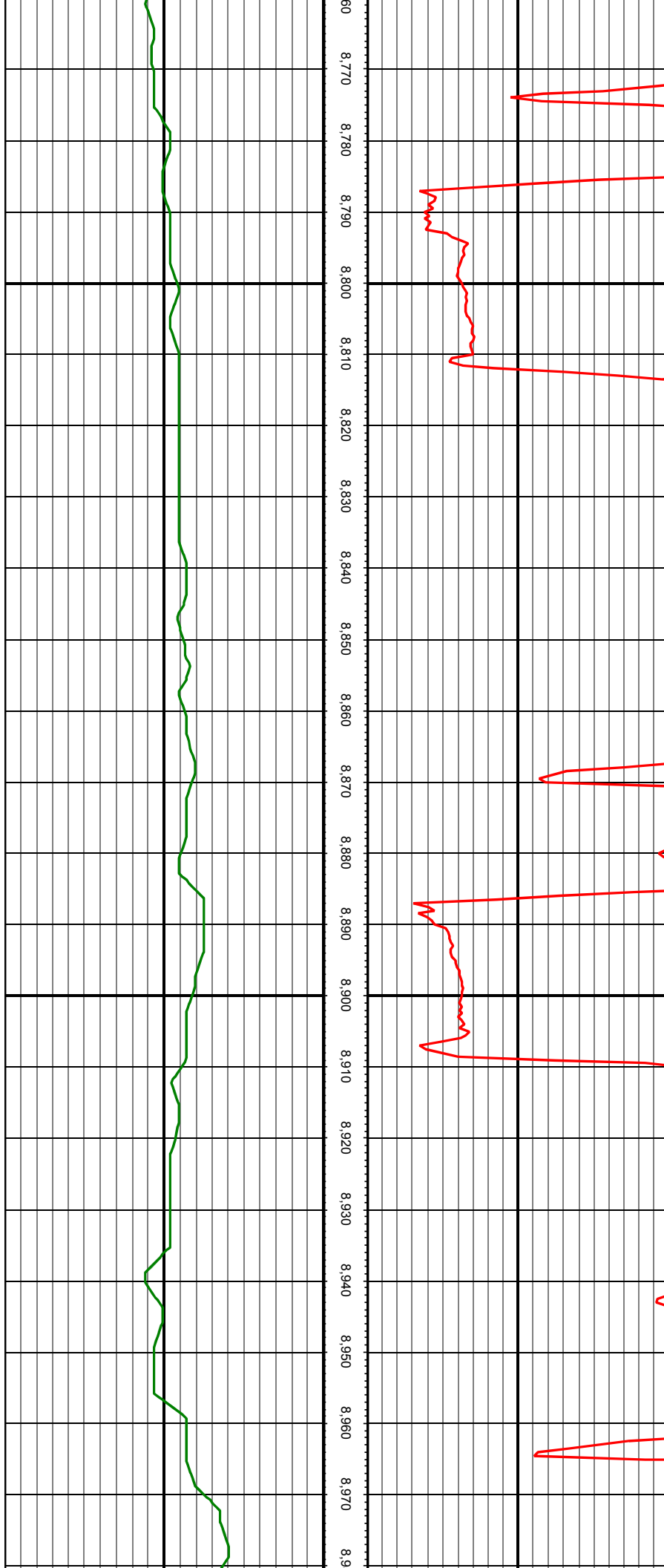




40 8.550 8.560 8.570 8.580 8.590 8.600 8.610 8.620 8.630 8.640 8.650 8.660 8.670 8.680 8.690 8.700 8.710 8.720 8.730 8.740 8.750 8.7

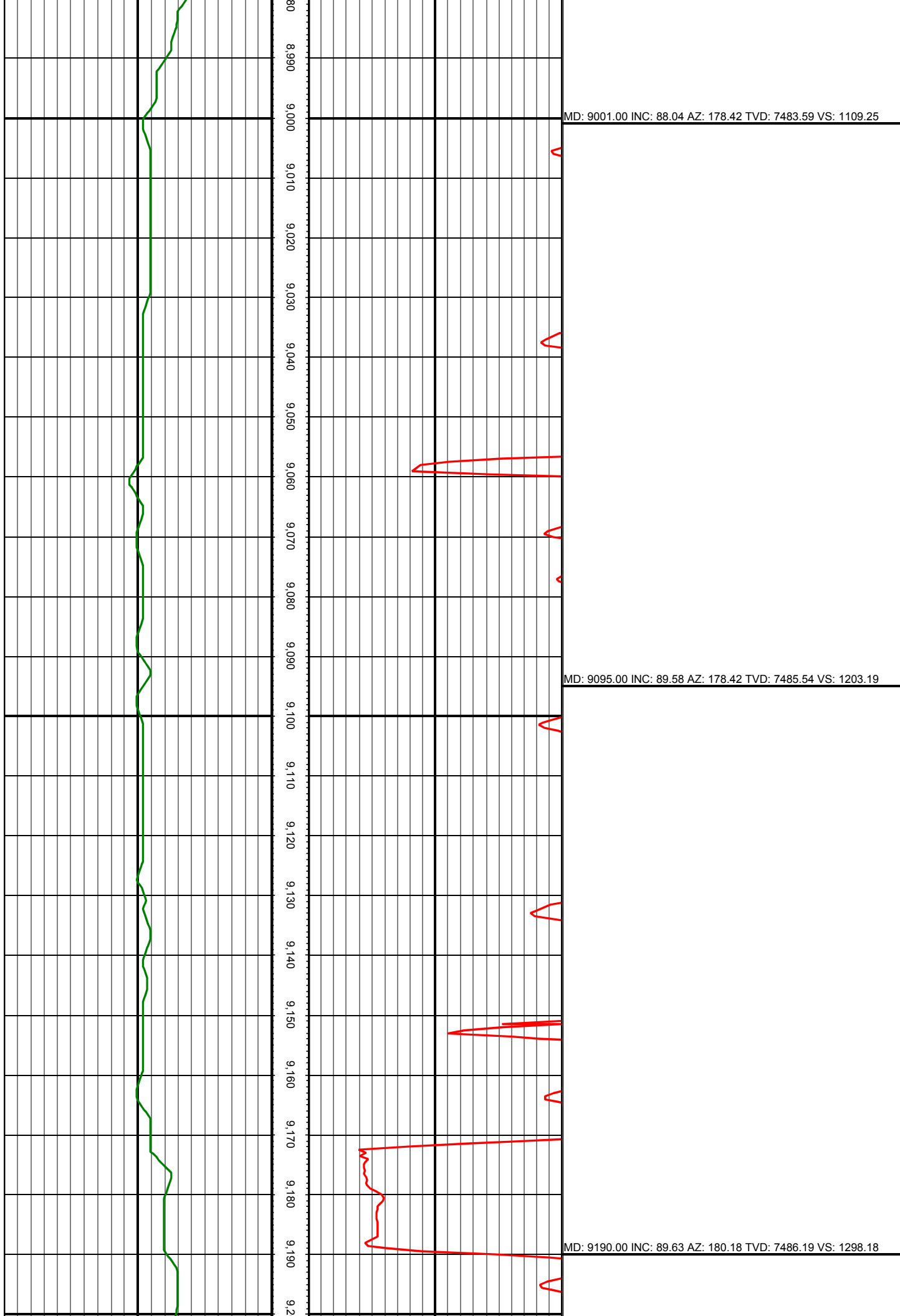
MD: 8621.00 INC: 88.00 AZ: 178.25 TVD: 7475.08 VS: 729.51

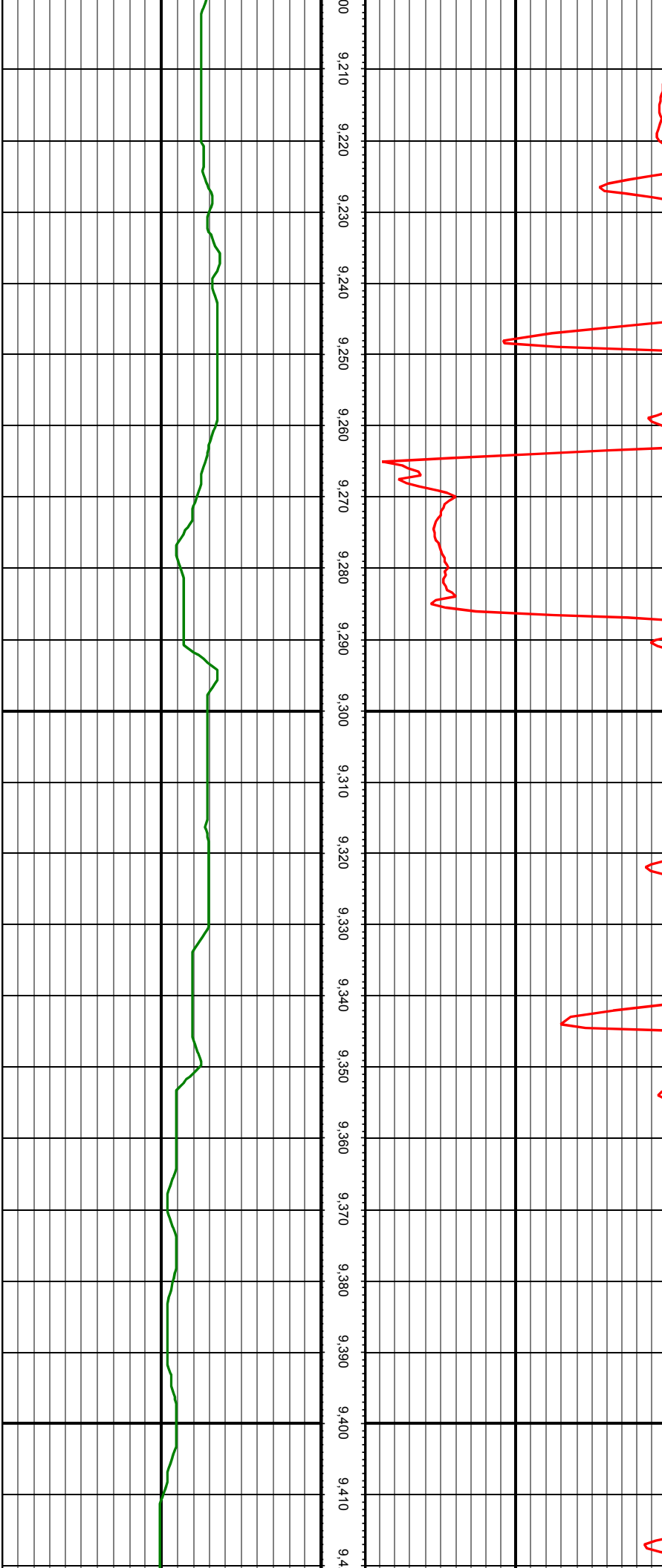
MD: 8716.00 INC: 89.89 AZ: 177.72 TVD: 7476.83 VS: 824.43



MD: 8811.00 INC: 89.71 AZ: 179.74 TVD: 7477.16 VS: 919.40

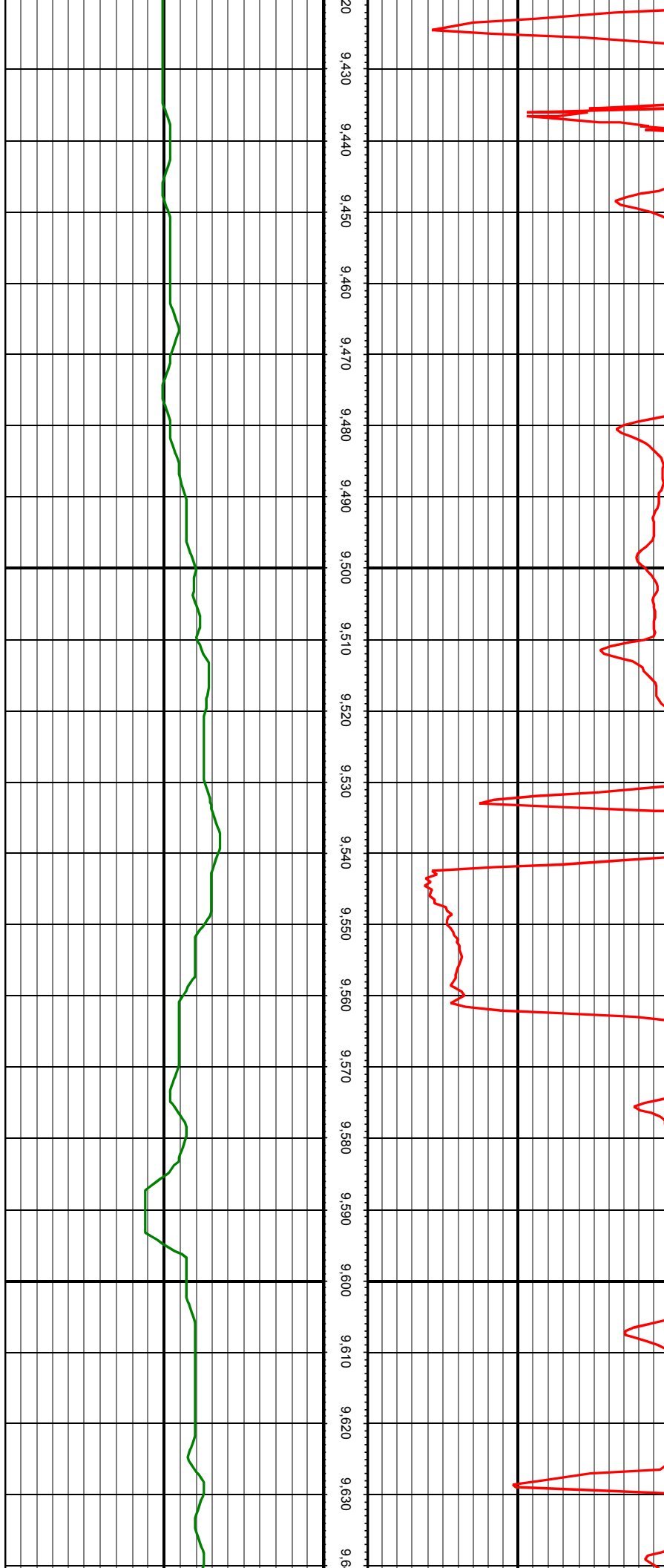
MD: 8906.00 INC: 87.25 AZ: 179.04 TVD: 7479.68 VS: 1014.35





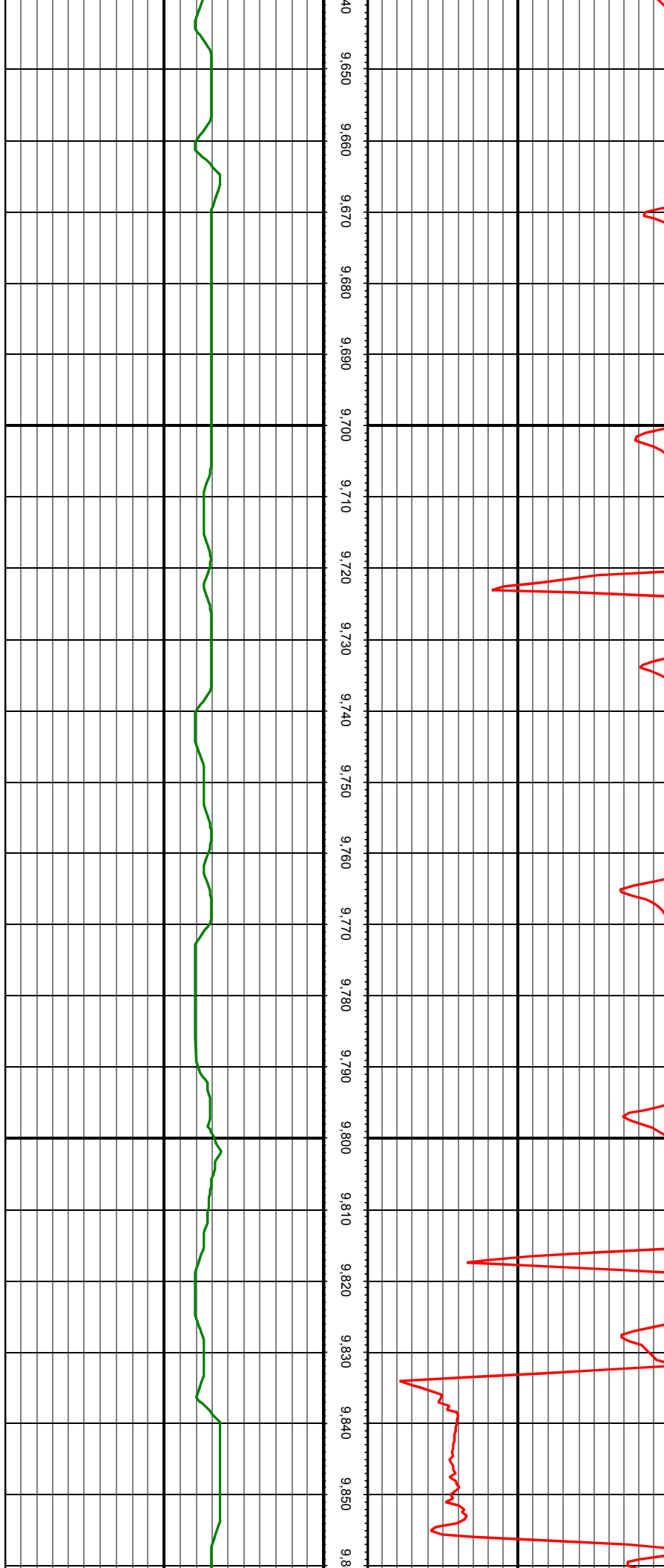
MD: 9285.00 INC: 88.09 AZ: 179.21 TVD: 7488.08 VS: 1393.15

MD: 9380.00 INC: 89.27 AZ: 178.77 TVD: 7490.27 VS: 1488.11



MD: 9475.00 INC: 90.55 AZ: 178.60 TVD: 7490.42 VS: 1583.08

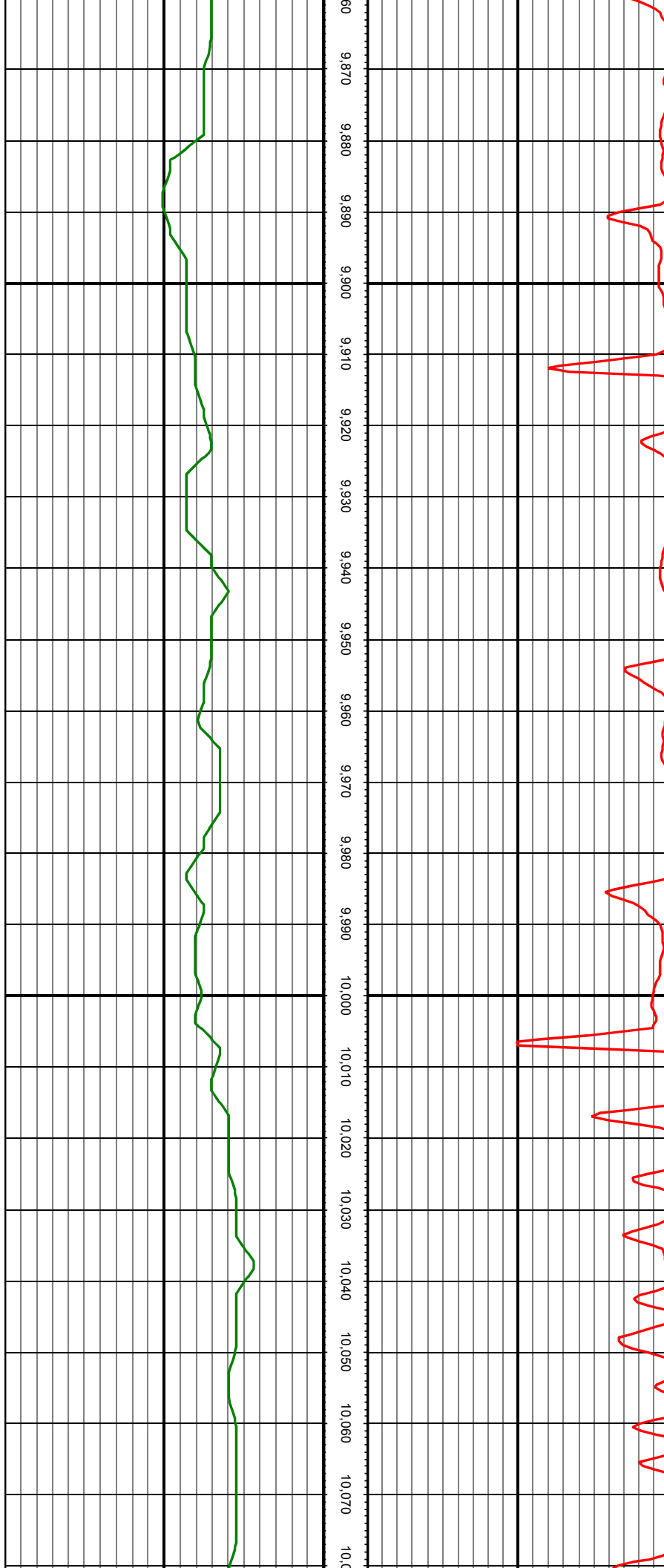
MD: 9570.00 INC: 89.36 AZ: 179.39 TVD: 7490.50 VS: 1678.07



MD: 9665.00 INC: 89.71 AZ: 178.86 TVD: 7491.27 VS: 1773.05

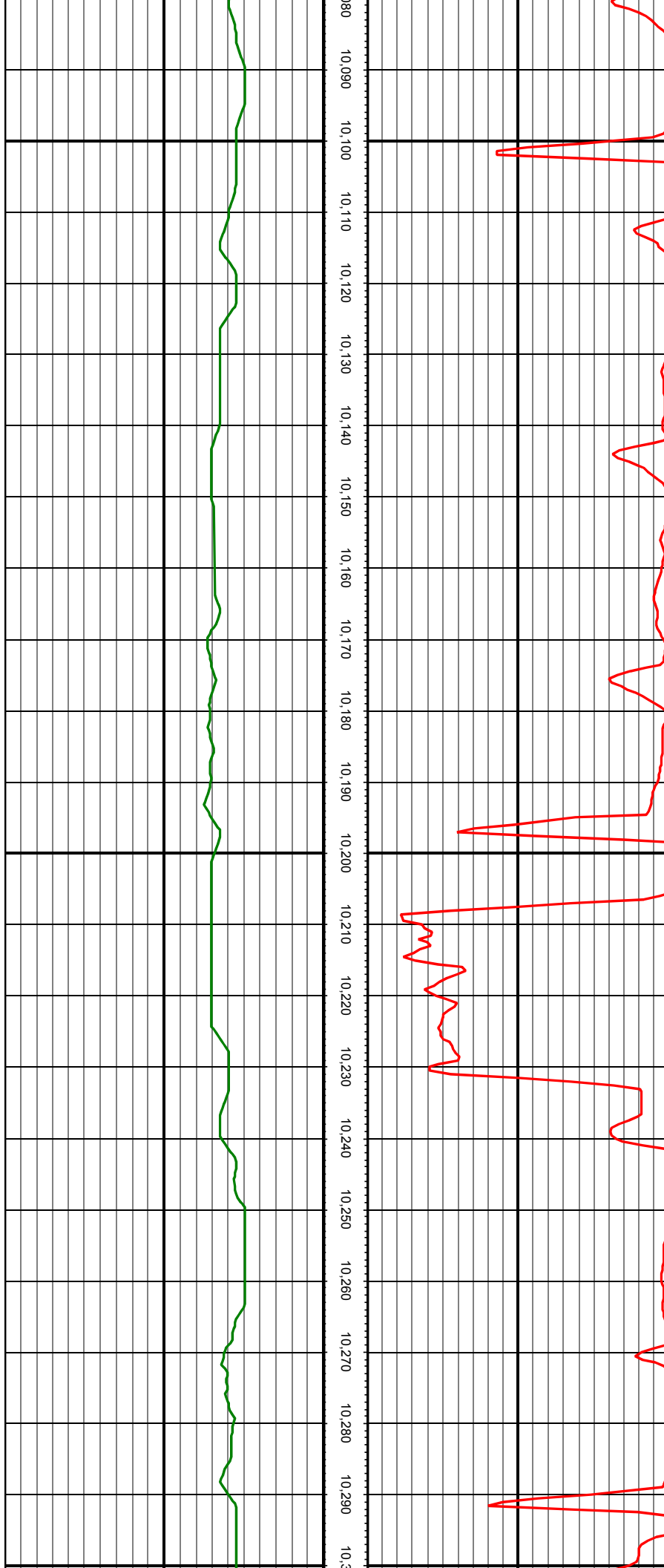
MD: 9759.00 INC: 90.02 AZ: 178.16 TVD: 7491.49 VS: 1867.02

MD: 9854.00 INC: 87.03 AZ: 178.16 TVD: 7493.93 VS: 1961.93



MD: 9949.00 INC: 87.47 AZ: 177.46 TVD: 7498.49 VS: 2056.75

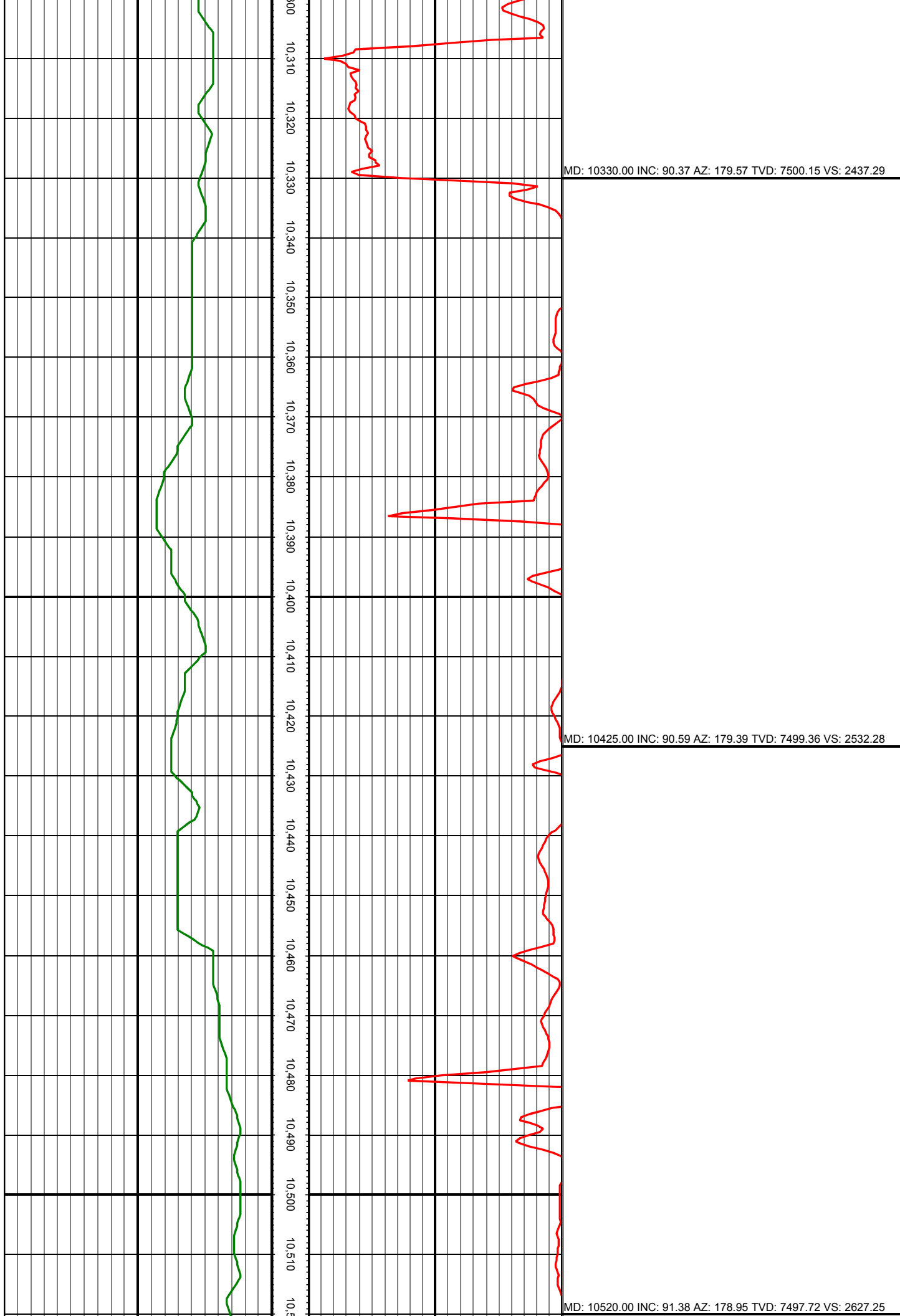
MD: 10044.00 INC: 88.53 AZ: 176.84 TVD: 7501.81 VS: 2151.57

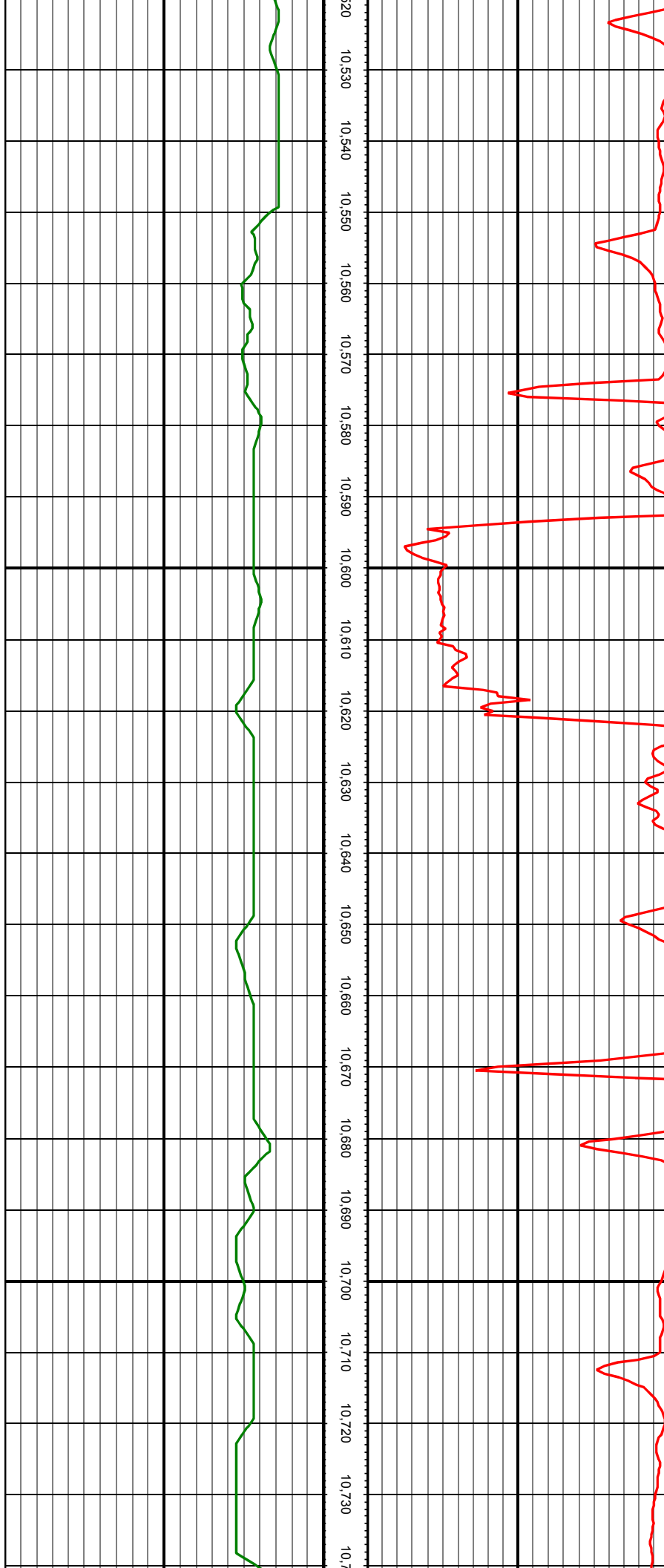


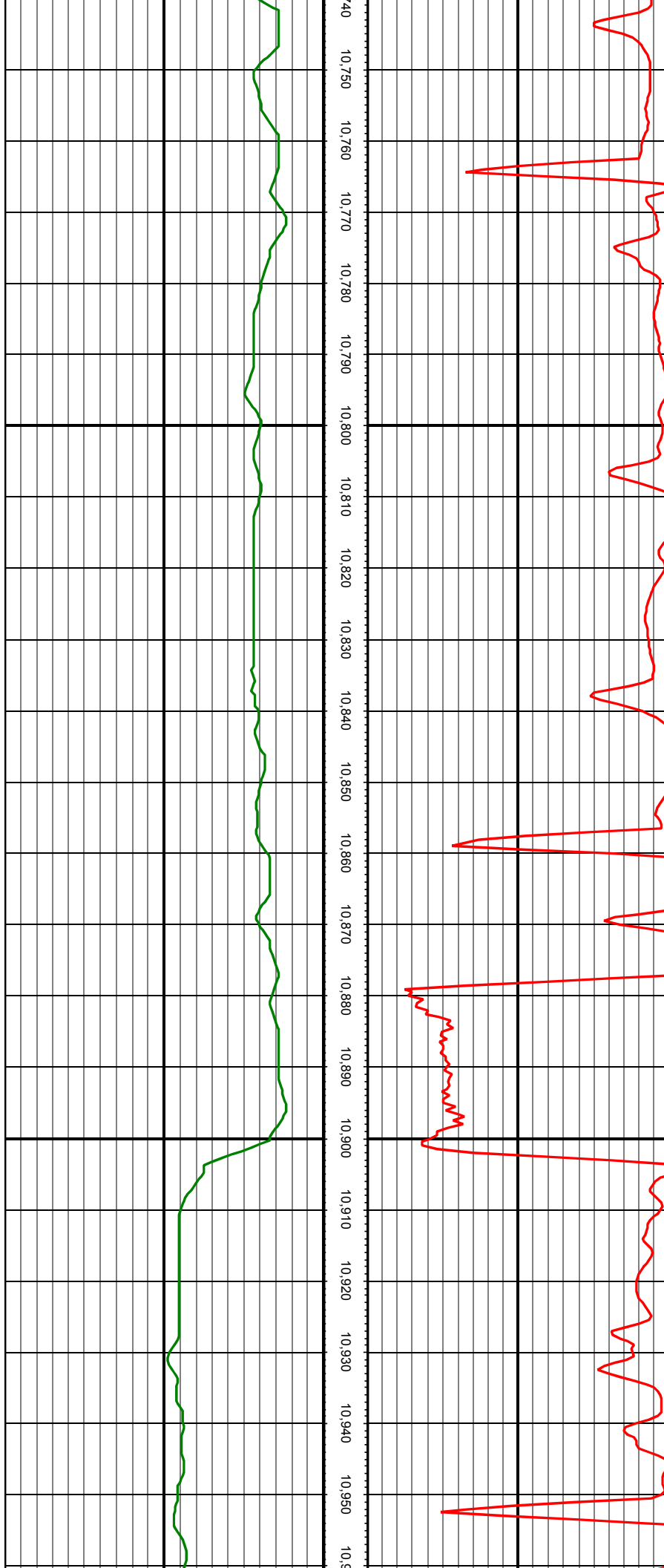
MD: 10139.00 INC: 89.76 AZ: 176.93 TVD: 7503.22 VS: 2246.42

MD: 10235.00 INC: 91.78 AZ: 178.42 TVD: 7501.93 VS: 2342.32



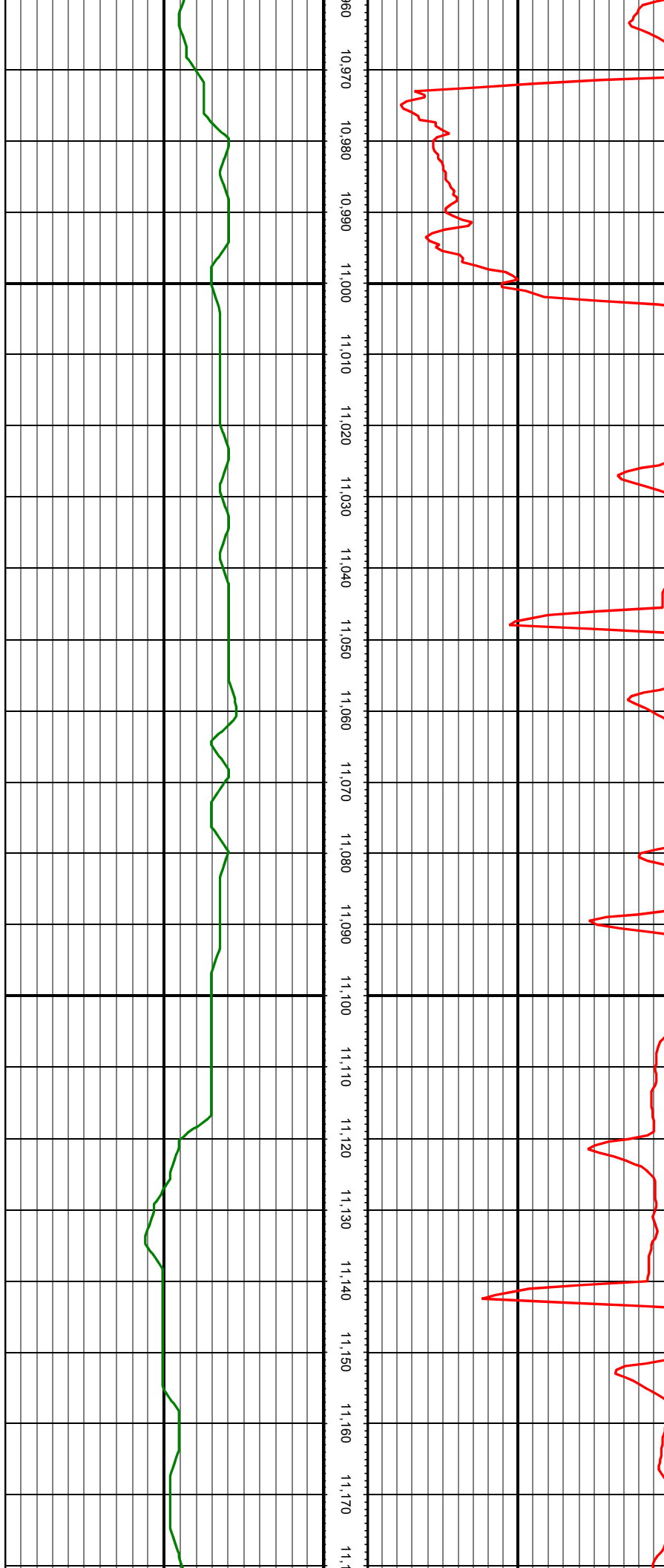






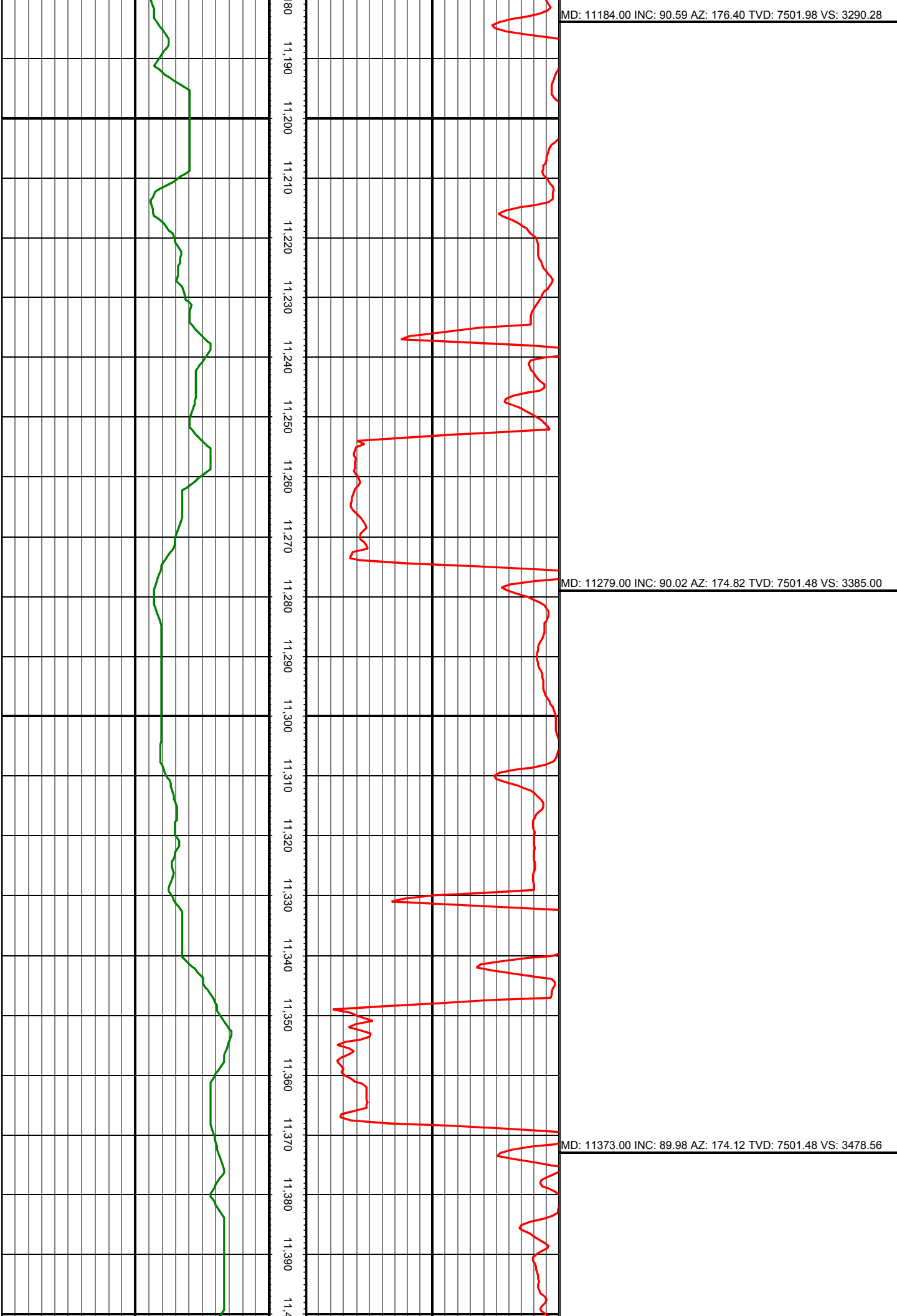
MD: 10805.00 INC: 91.03 AZ: 177.63 TVD: 7497.05 VS: 2912.09

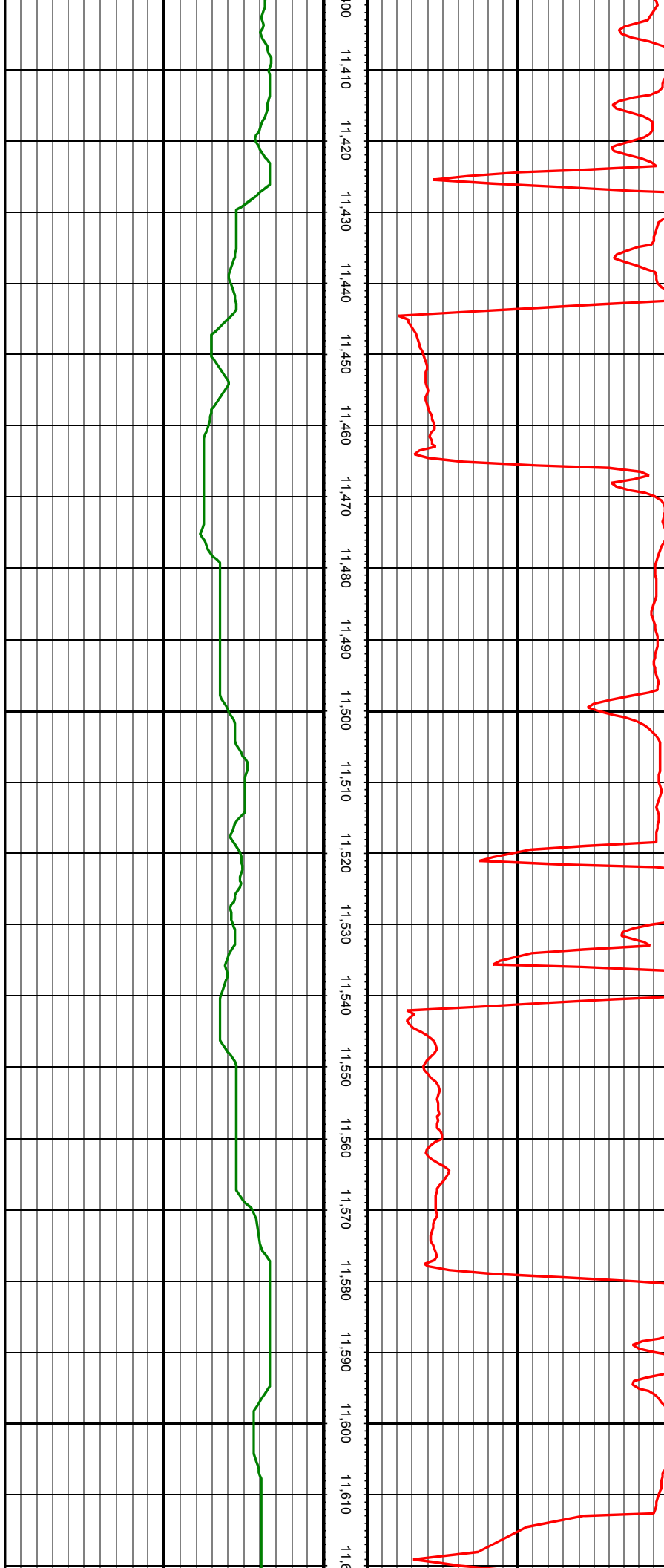
MD: 10900.00 INC: 89.41 AZ: 176.23 TVD: 7496.68 VS: 3006.95



MD: 10994.00 INC: 87.91 AZ: 175.96 TVD: 7498.88 VS: 3100.70

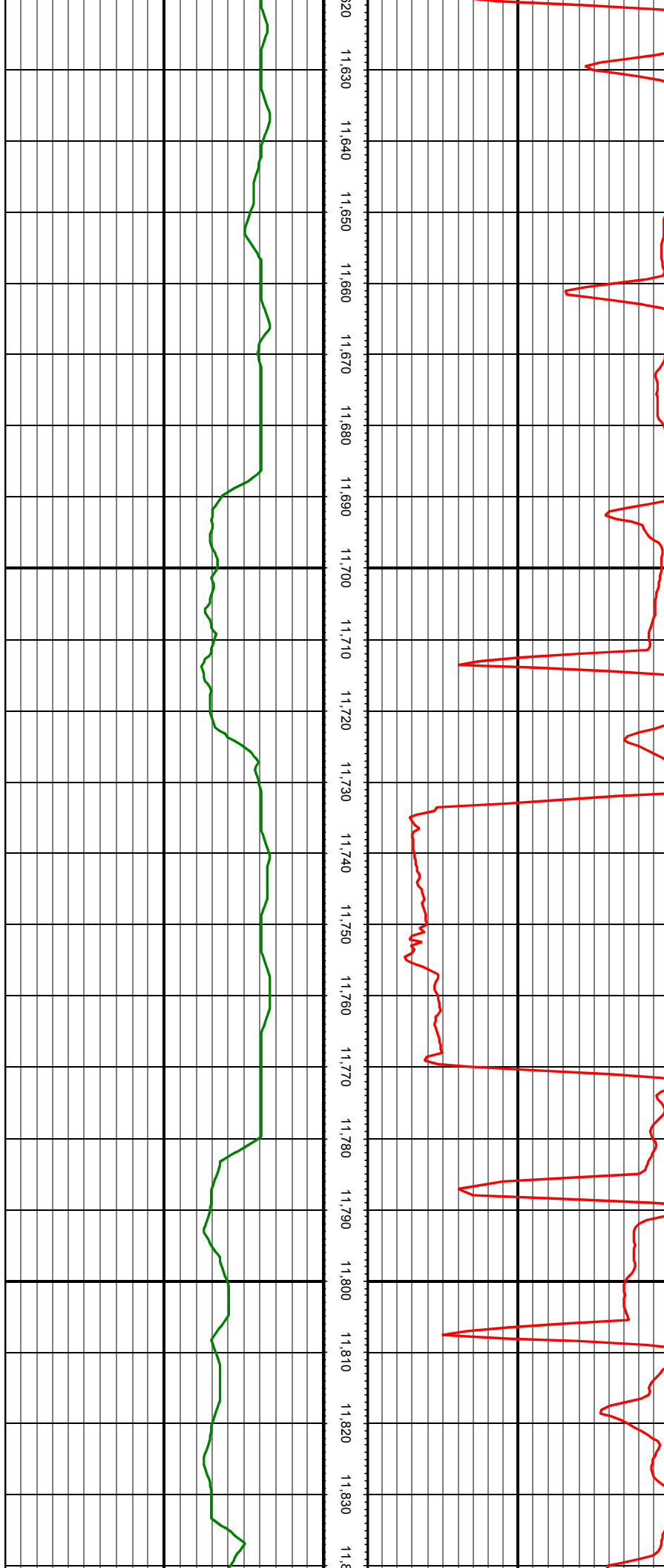
MD: 11089.00 INC: 88.88 AZ: 176.58 TVD: 7501.54 VS: 3195.46





MD: 11468.00 INC: 88.92 AZ: 174.82 TVD: 7502.39 VS: 3573.11

MD: 11562.00 INC: 88.66 AZ: 177.81 TVD: 7504.37 VS: 3666.88



MD: 11658.00 INC: 88.79 AZ: 179.30 TVD: 7506.51 VS: 3762.83

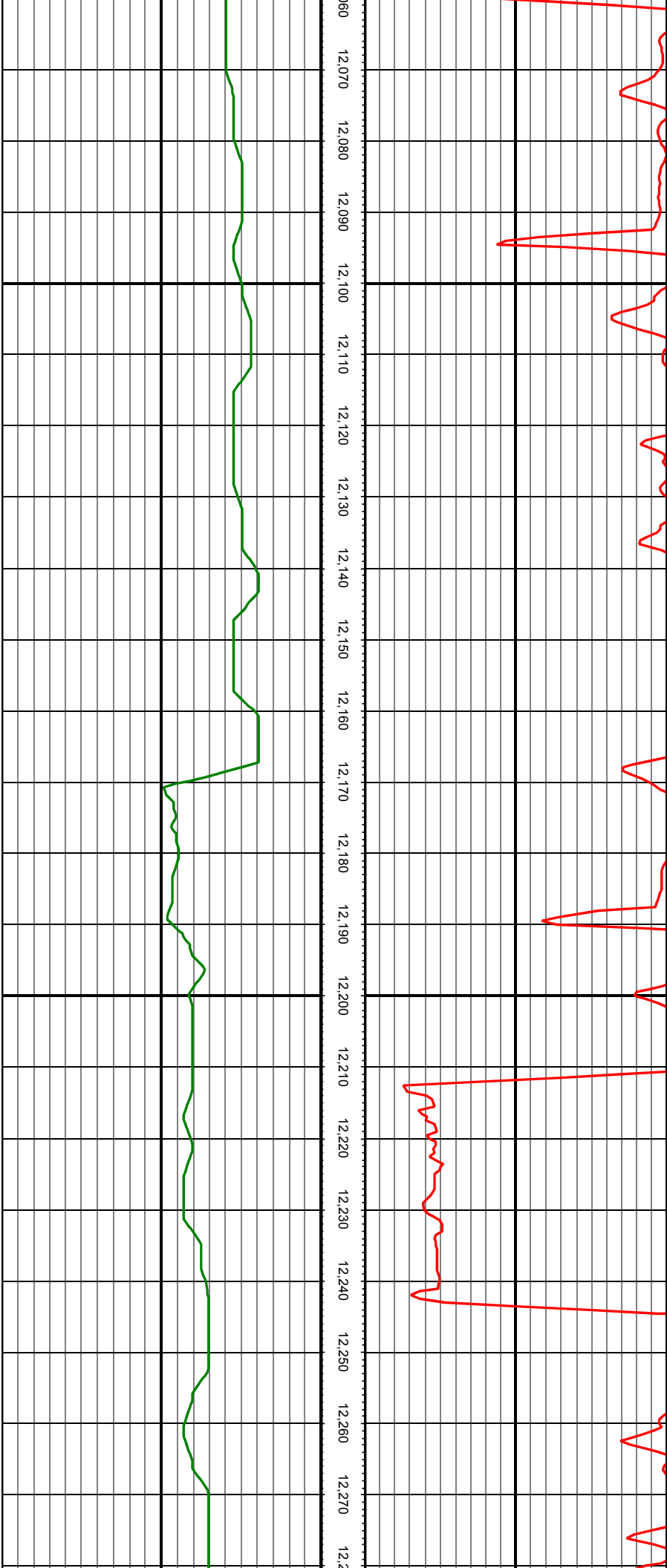
MD: 11753.00 INC: 88.84 AZ: 182.20 TVD: 7508.47 VS: 3857.79

MD: 11847.00 INC: 90.86 AZ: 183.78 TVD: 7508.72 VS: 3951.65

MD: 11942.00 INC: 92.35 AZ: 184.93 TVD: 7506.06 VS: 4046.34

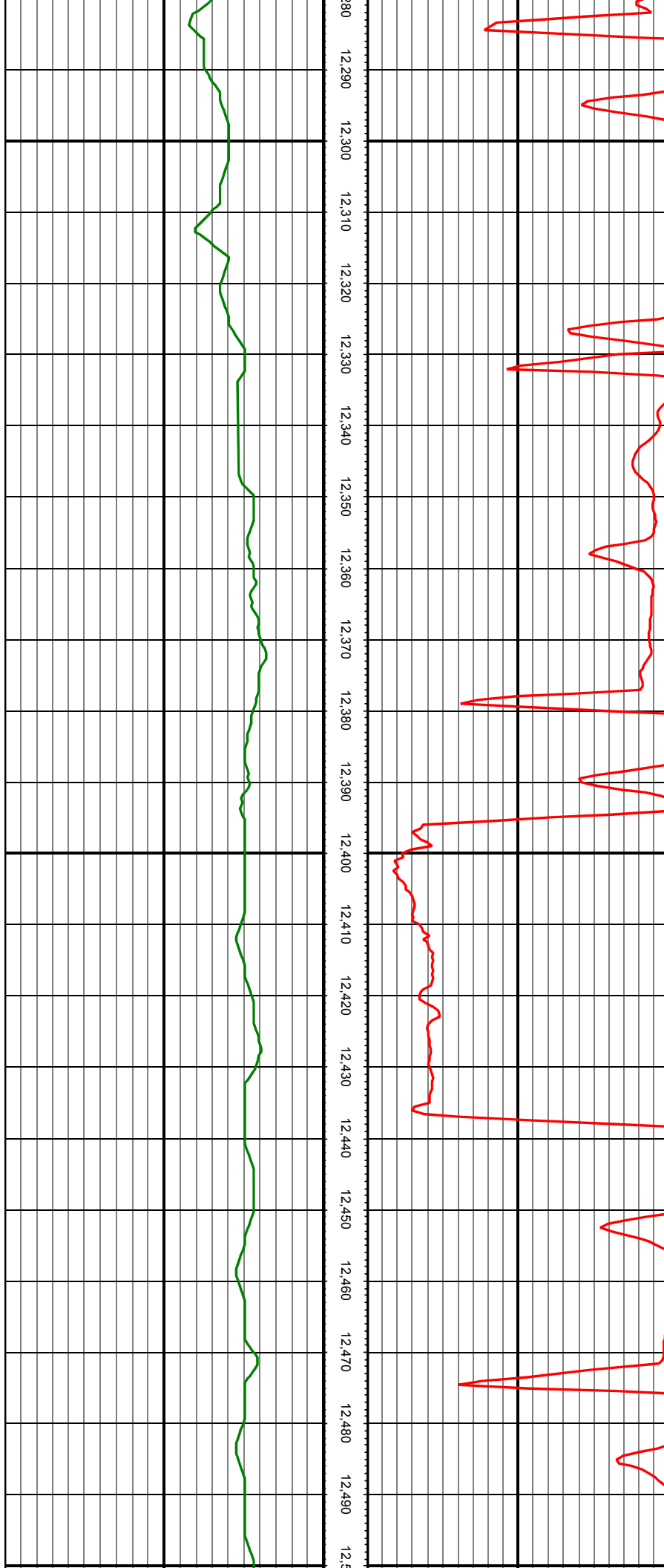
MD: 12037.00 INC: 89.67 AZ: 187.04 TVD: 7504.39 VS: 4140.79





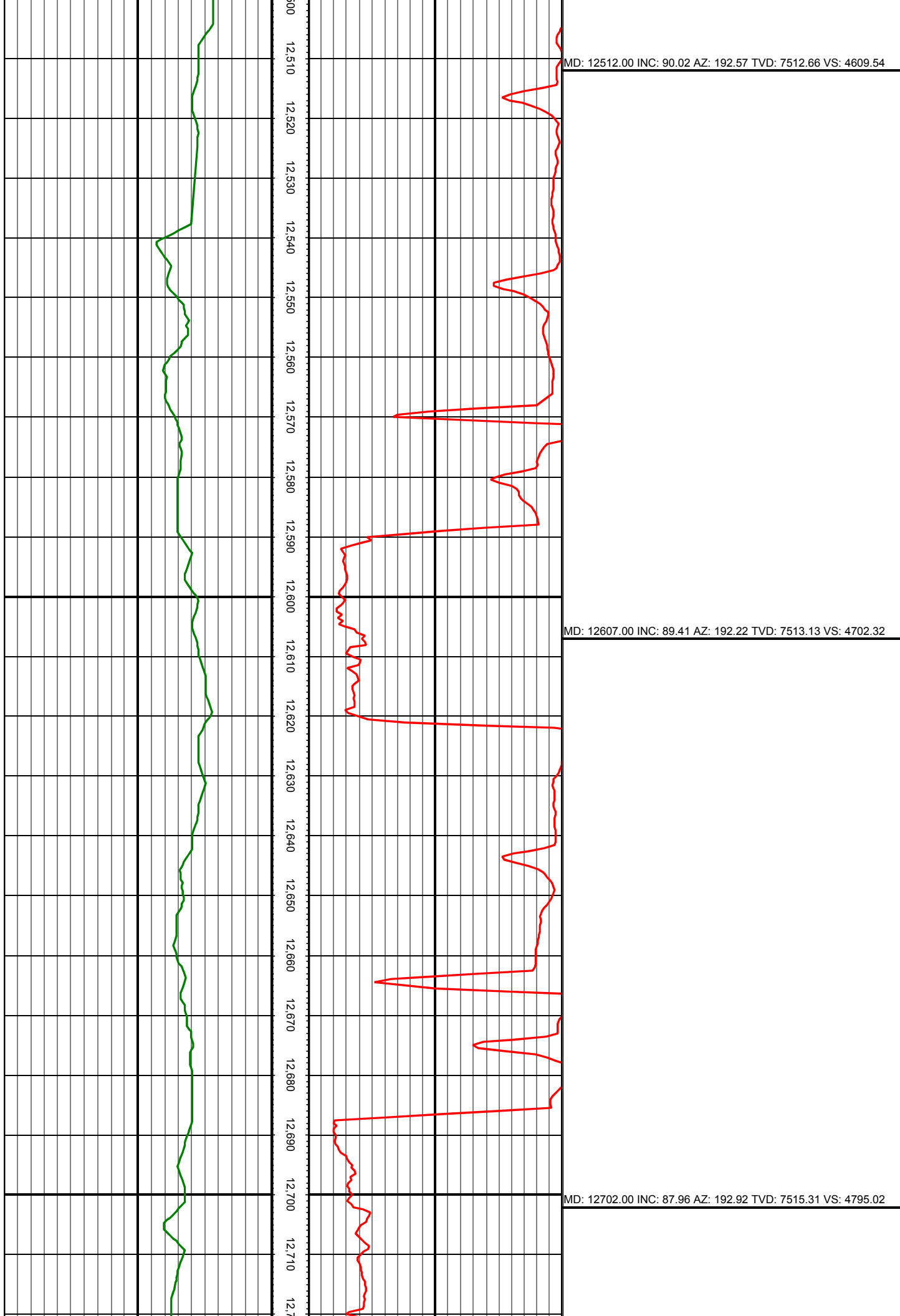
MD: 12132.00 INC: 89.01 AZ: 187.39 TVD: 7505.48 VS: 4235.03

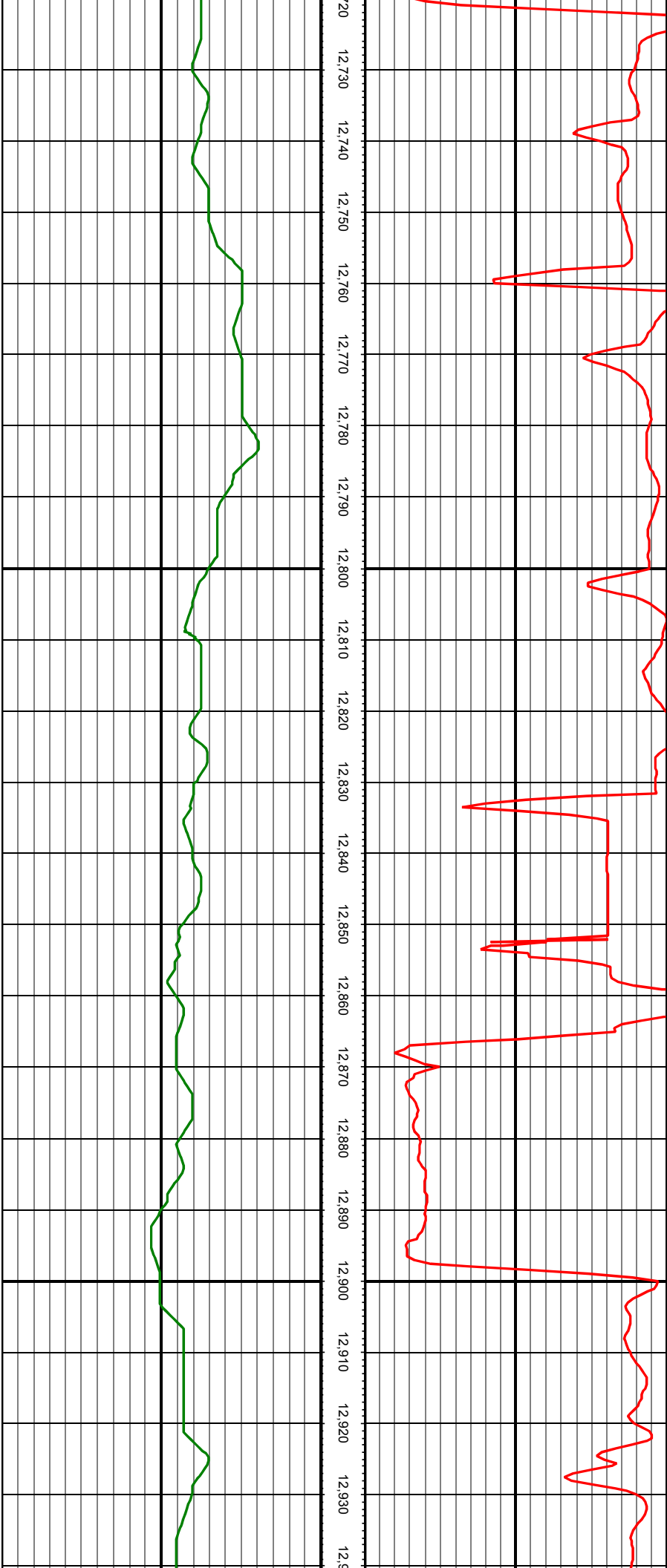
MD: 12227.00 INC: 88.22 AZ: 188.71 TVD: 7507.78 VS: 4329.06



MD: 12321.00 INC: 88.88 AZ: 188.79 TVD: 7510.15 VS: 4421.94

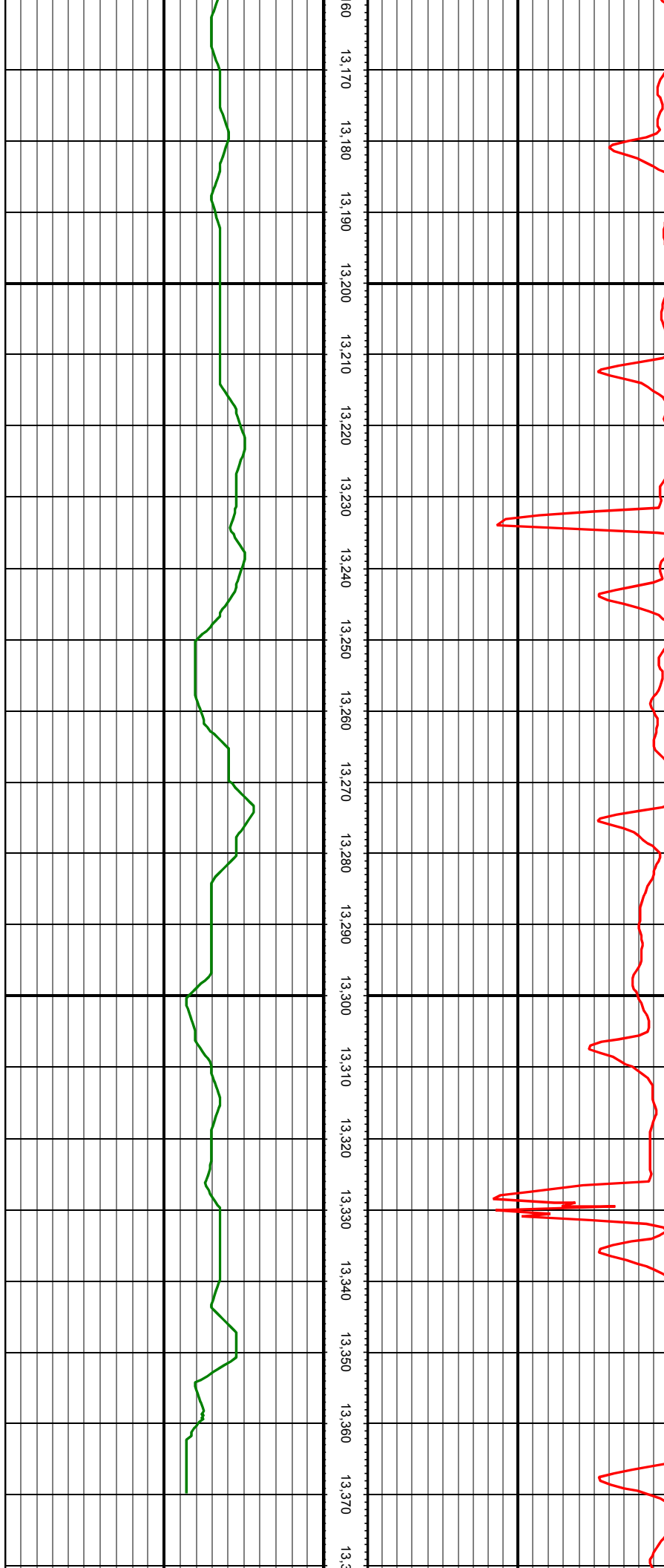
MD: 12417.00 INC: 89.05 AZ: 190.82 TVD: 7511.89 VS: 4516.52





MD: 12986.00 INC: 88.09 AZ: 194.51 TVD: 7527.87 VS: 5070.30

MD: 13081.00 INC: 87.30 AZ: 194.15 TVD: 7531.69 VS: 5162.27



MD: 13176.00 INC: 88.09 AZ: 193.80 TVD: 7535.51 VS: 5254.38

MD: 13271.00 INC: 89.36 AZ: 193.19 TVD: 7537.62 VS: 5346.74

MD: 13347.00 INC: 90.73 AZ: 192.66 TVD: 7537.56 VS: 5420.81

