

**Cathedral Energy Services**

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405-261-6011 (Office)
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Melbon Ranch 4D-17H-M265**Scale 5":100' - MD****10/2/2018 8:54 AM****Oper. Company:** Crestone Peak Resources**Well:** Melbon Ranch 4D-17H-M265**Field:** DJ Basin**Rig:** Ensign 153**Well ID:** 05-123-47757-0000**Job Number:** 185290

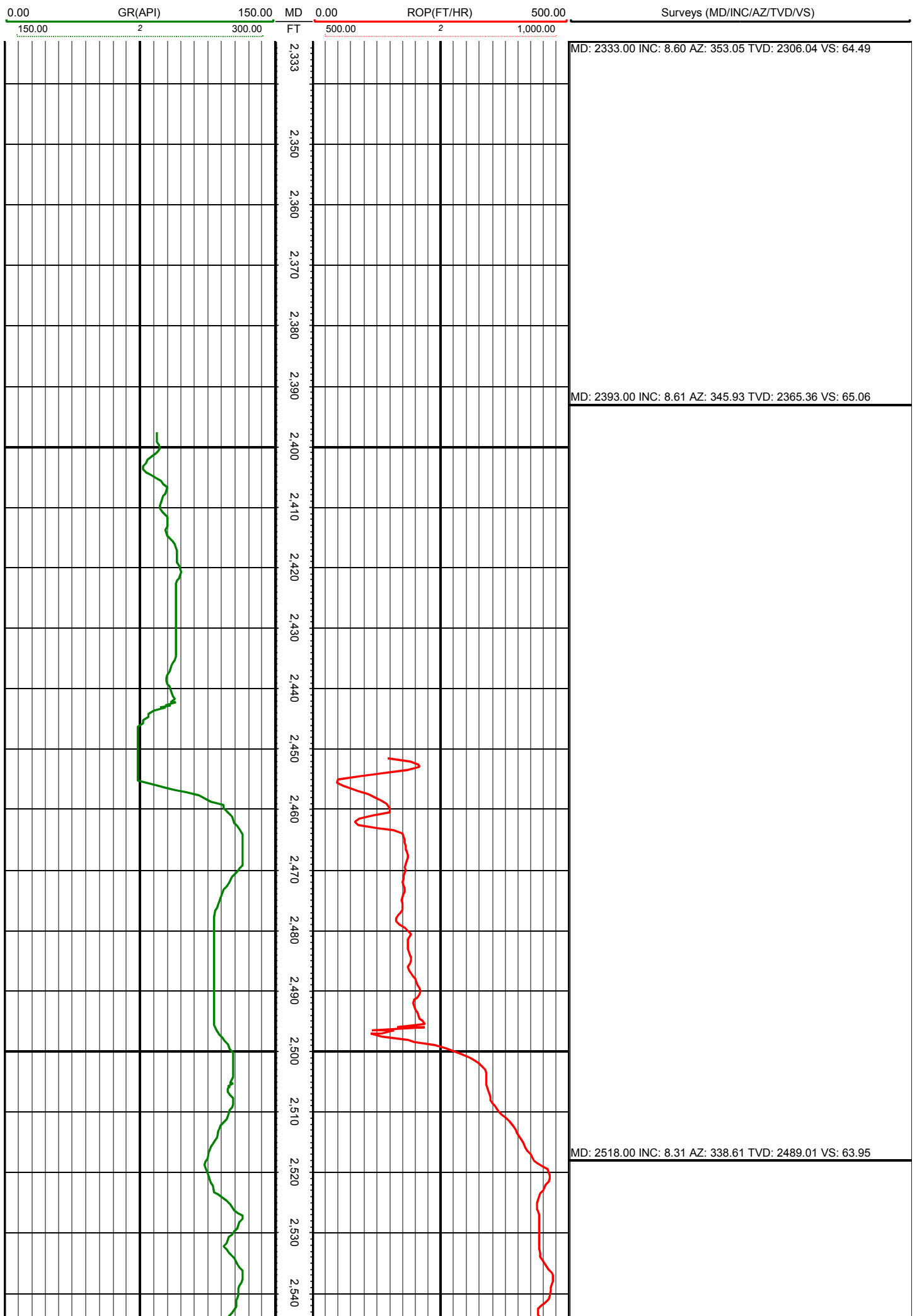
Notes: Gamma Ray Log
Section Plan: 91.44°
Datum: NAD 1983 (NADCON CONUS)
Magnetic North: 8.14°
Grid Convergence: 0.52°
Gamma Averaging: 7% Smoothing

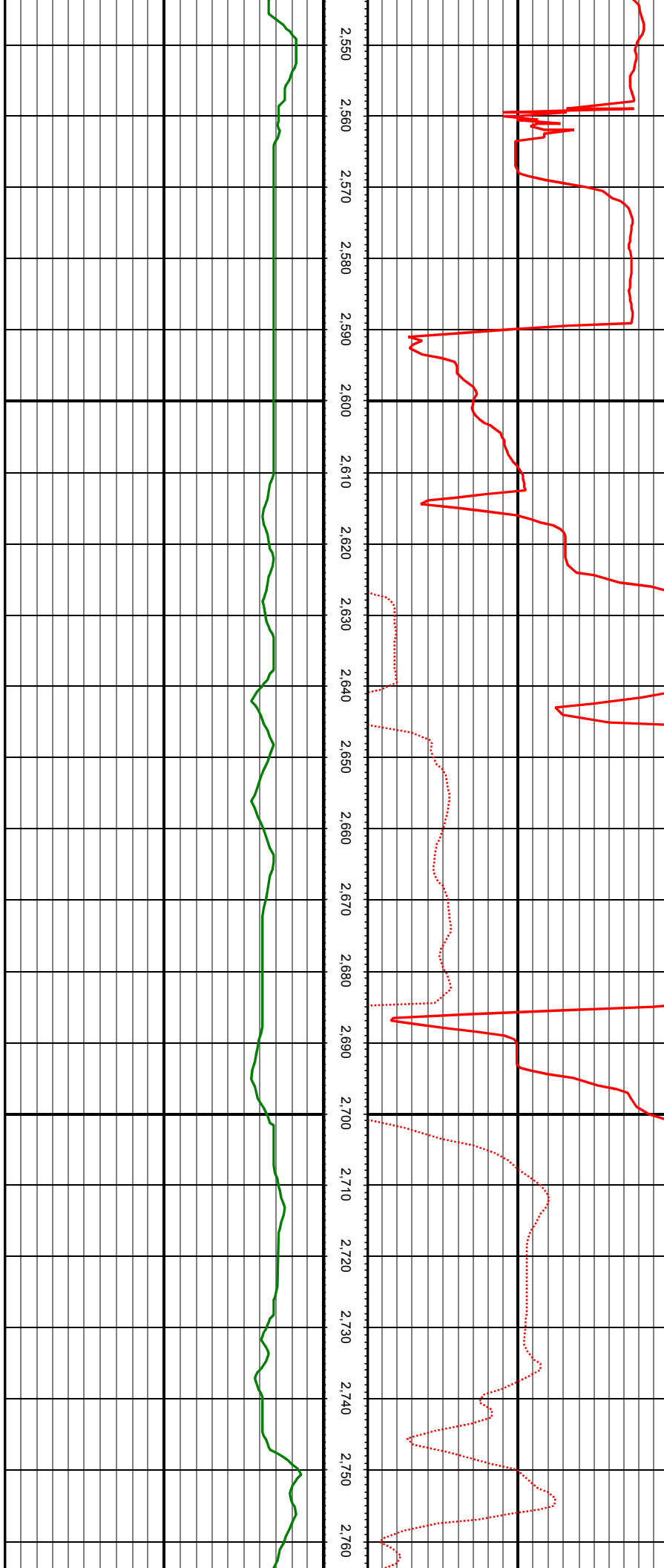
State: CO**County:** Weld**Country:** USA**Location:** SEC 17 T2N-R65W**Start Date:** 09/28/2018 22:00:00**End Date:** 10/02/2018 08:45:00**Latitude:** 40.134825**Longitude:** -104.696636**Elev GL:** 4956.00**Elev DF:** 4979.00**Elev KB:** 4979.00**Notes:** Log & Survey Depths Relative to Kelly Bushing (KB) Depth**Operator 1:** Bob Stahlecker**Operator 2:** Kyle Regan**Notes:** Maximum Temperature: 263.00°F

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	BTDM-1526	BTDM- 1526			
Bit Size	8.50	8.50			
Cal Factor	5.24	5.24			
Survey Offset	72.00	72.00			
Gamma Offset	53.81	53.81			
Resistivity Offset	0.00	0.00			
Start Depth	2450.00	6162.00			
StartDate	9/28/2018	9/29/2018			
StartTime	22:00	22:00			
EndDepth	6161.00	12196.00			
EndDate	9/29/2018	10/2/2018			
EndTime	20:00	08:45			
Mud Type	OBM / INVERT	OBM/ INVERT			
Mud Weight	9.85 PPG	9.85 PPG			
Funnel Viscosity	50.00 SEC/QT	50.00 SEC/QT			
Plastic Viscosity	18.00 CP	18.00 CP			
Yield Point	11.00 LBS/100FT2	11.00 LBS/100FT2			
Gel Strength	8.00/10.00/12.00 LBS/100FT2	8.00/10.00/12.00 LBS/100FT2			
Solids Content	8.30 %	8.30 %			
Sand Content	0.01 %	0.01 %			
Mud Alkalinity	3.50 PPG	3.50 PPG			
Filtrate Alkalinity	0.00 API	0.00 API			
Chlorides	30,000.00 MG/L	30,000.00 MG/L			
Temperature	217.00 °f	263.00 °f			

Hole Data			Casing Data		
Size	From	To	Size	From	To
12.25	0.00	2440.00	9.875	0.00	2440.00
8.50	2445.00	12196.00	8.5	0.00	12196.00

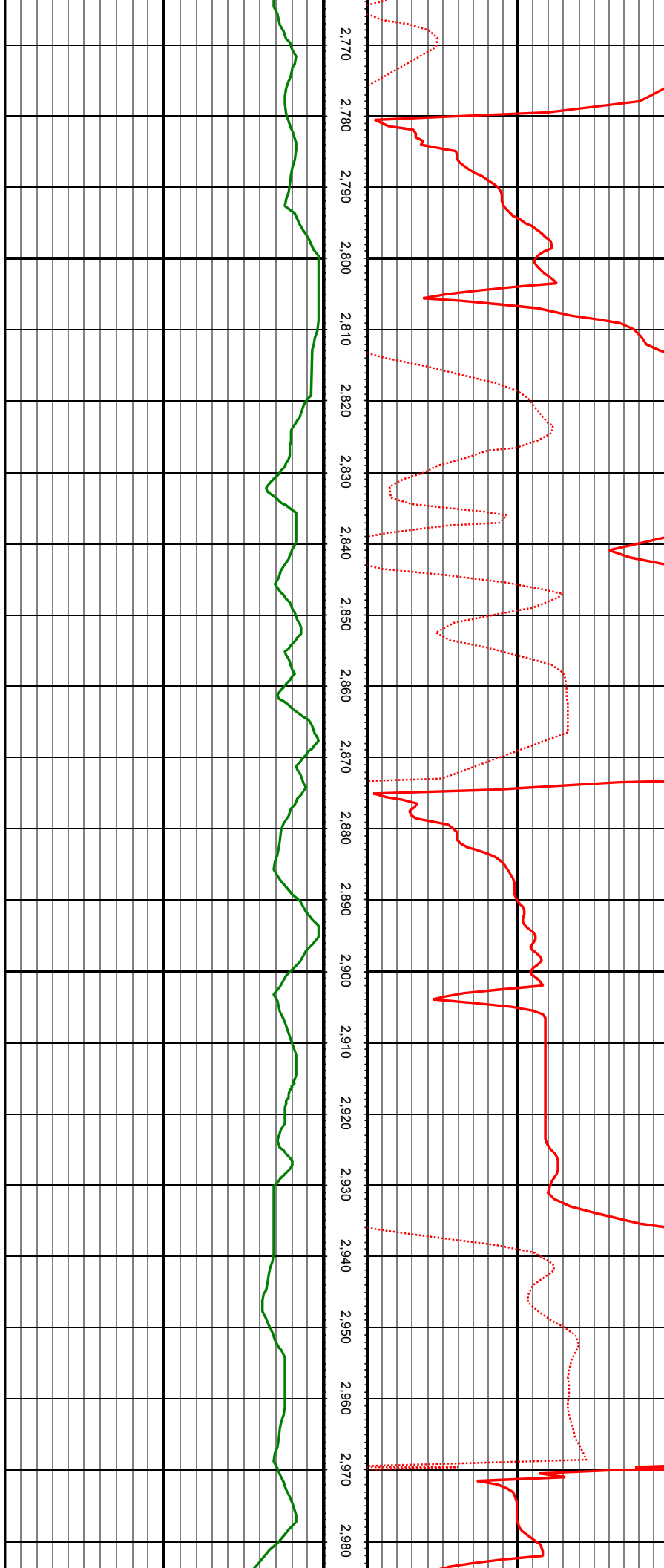
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.





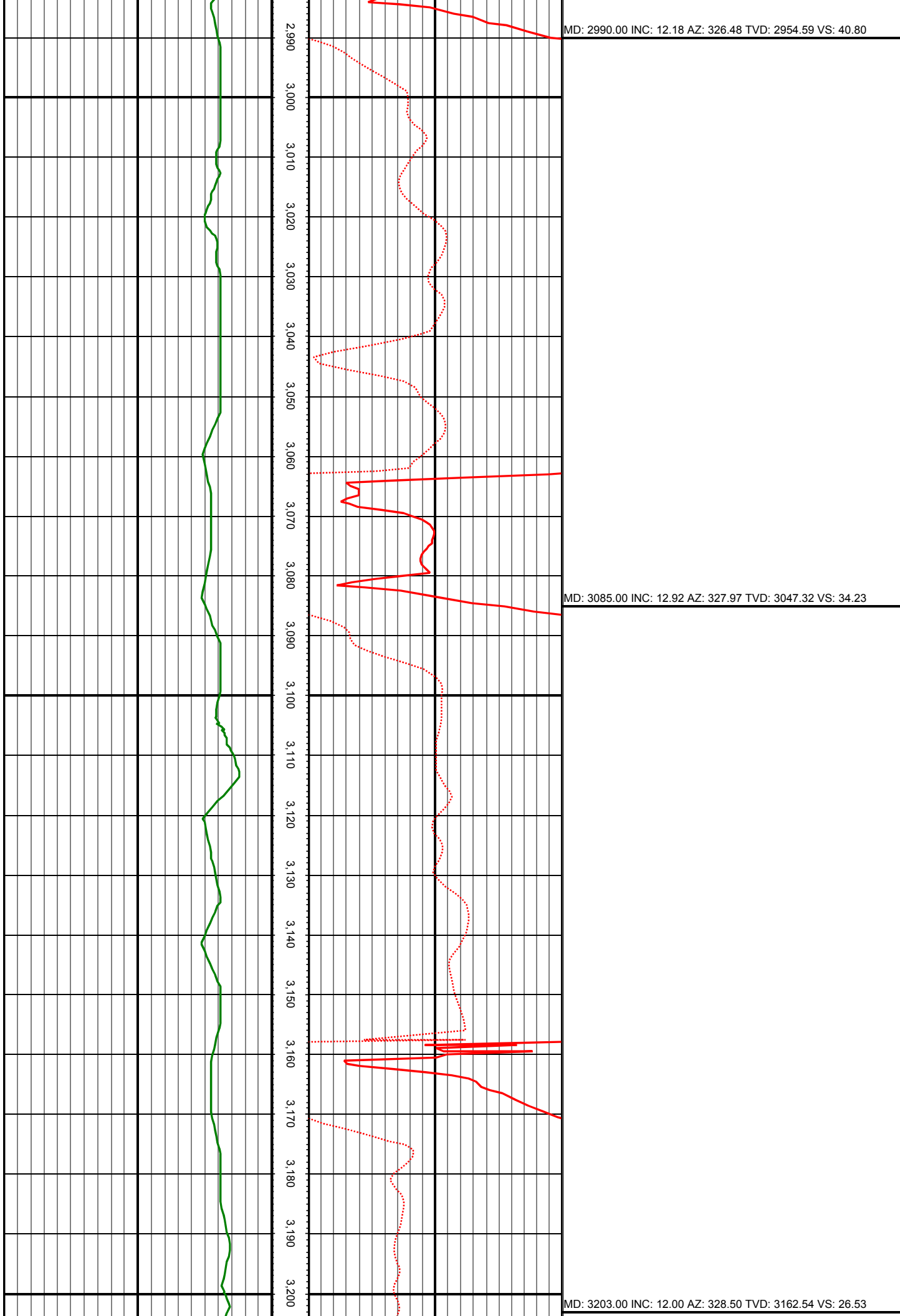
MD: 2613.00 INC: 9.14 AZ: 327.10 TVD: 2582.91 VS: 60.67

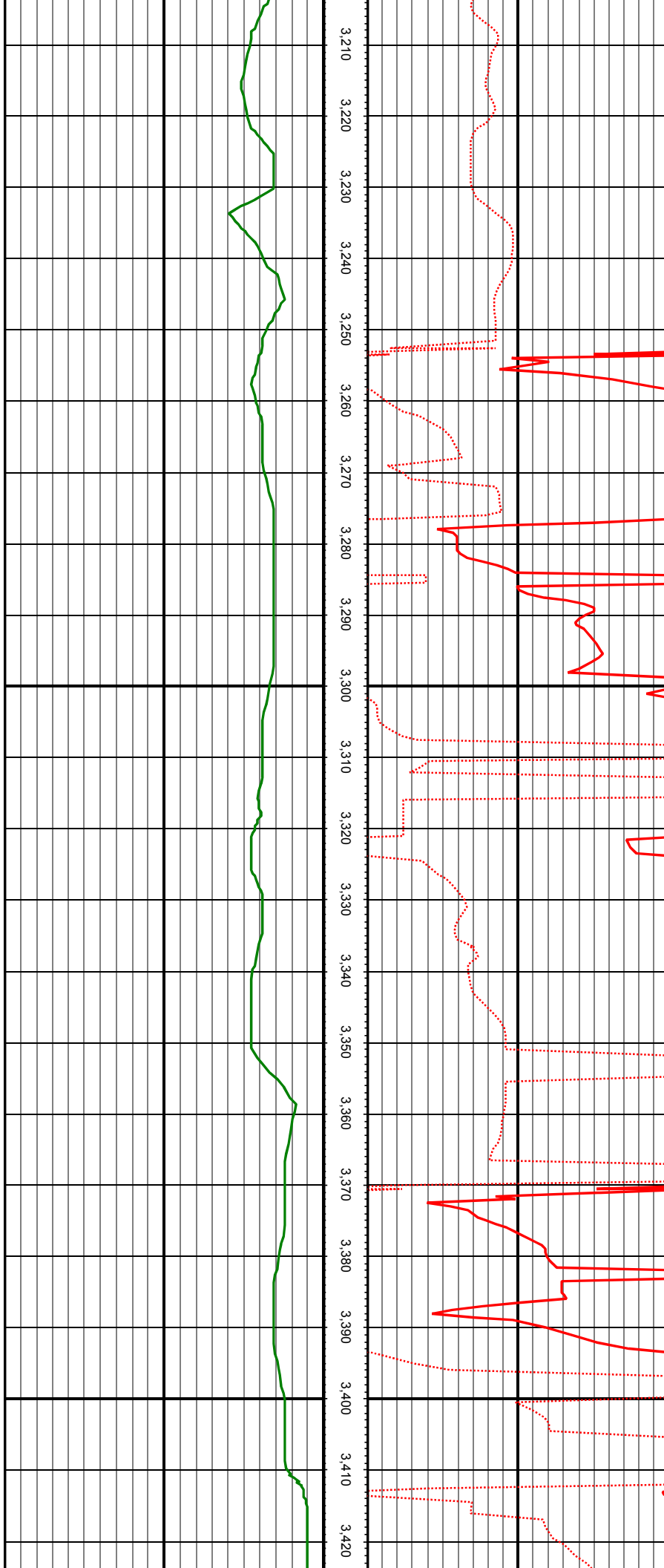
MD: 2707.00 INC: 7.78 AZ: 328.24 TVD: 2675.89 VS: 56.35



MD: 2802.00 INC: 9.01 AZ: 324.99 TVD: 2769.87 VS: 51.77

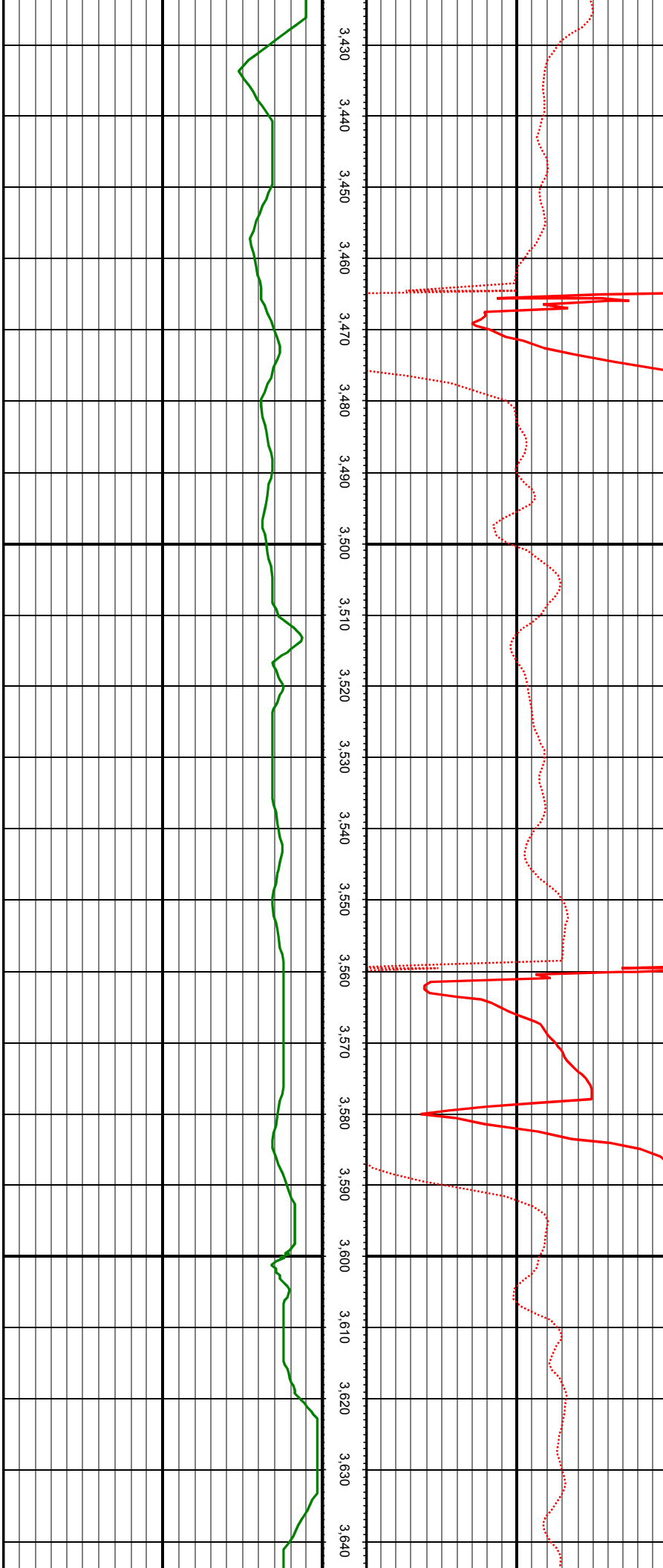
MD: 2896.00 INC: 10.77 AZ: 329.03 TVD: 2862.47 VS: 46.62





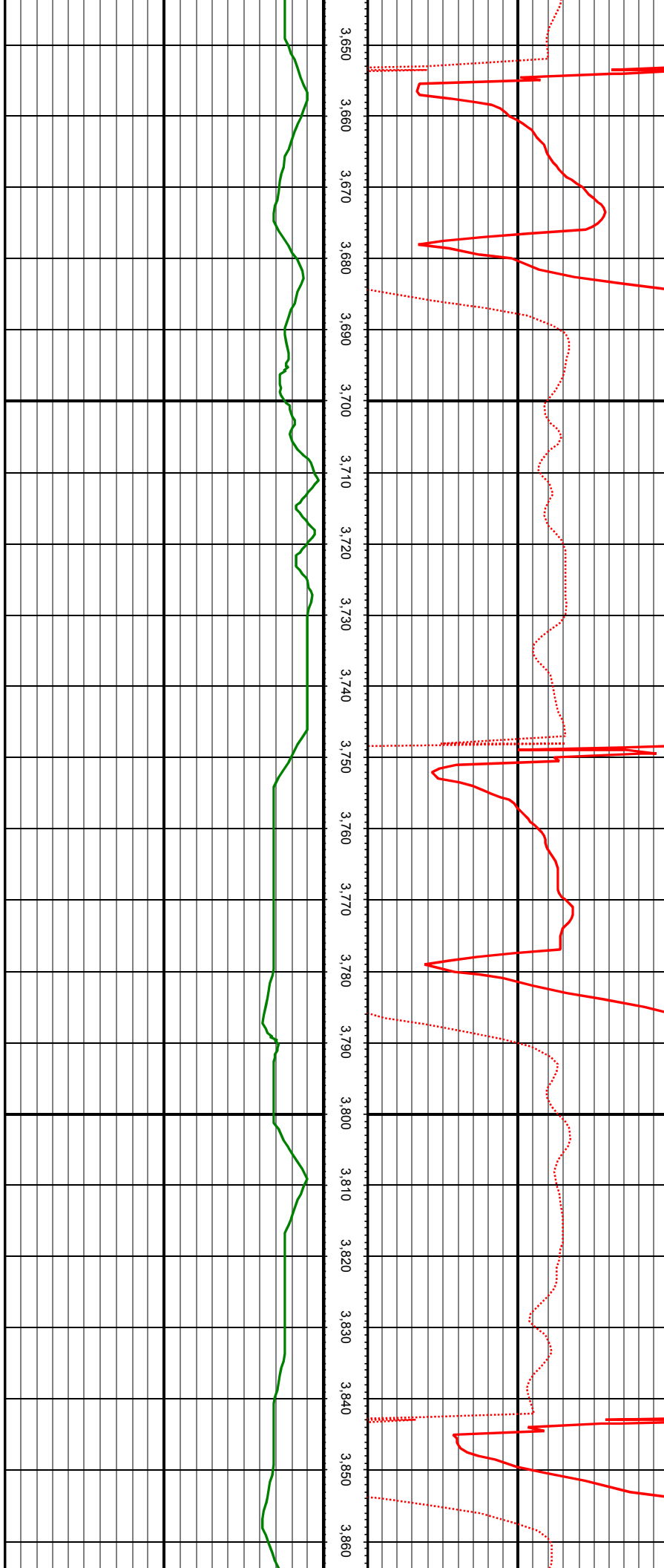
MD: 3298.00 INC: 10.95 AZ: 327.80 TVD: 3255.64 VS: 20.81

MD: 3392.00 INC: 11.43 AZ: 327.01 TVD: 3347.85 VS: 15.04



MD: 3486.00 INC: 10.55 AZ: 325.78 TVD: 3440.13 VS: 9.10

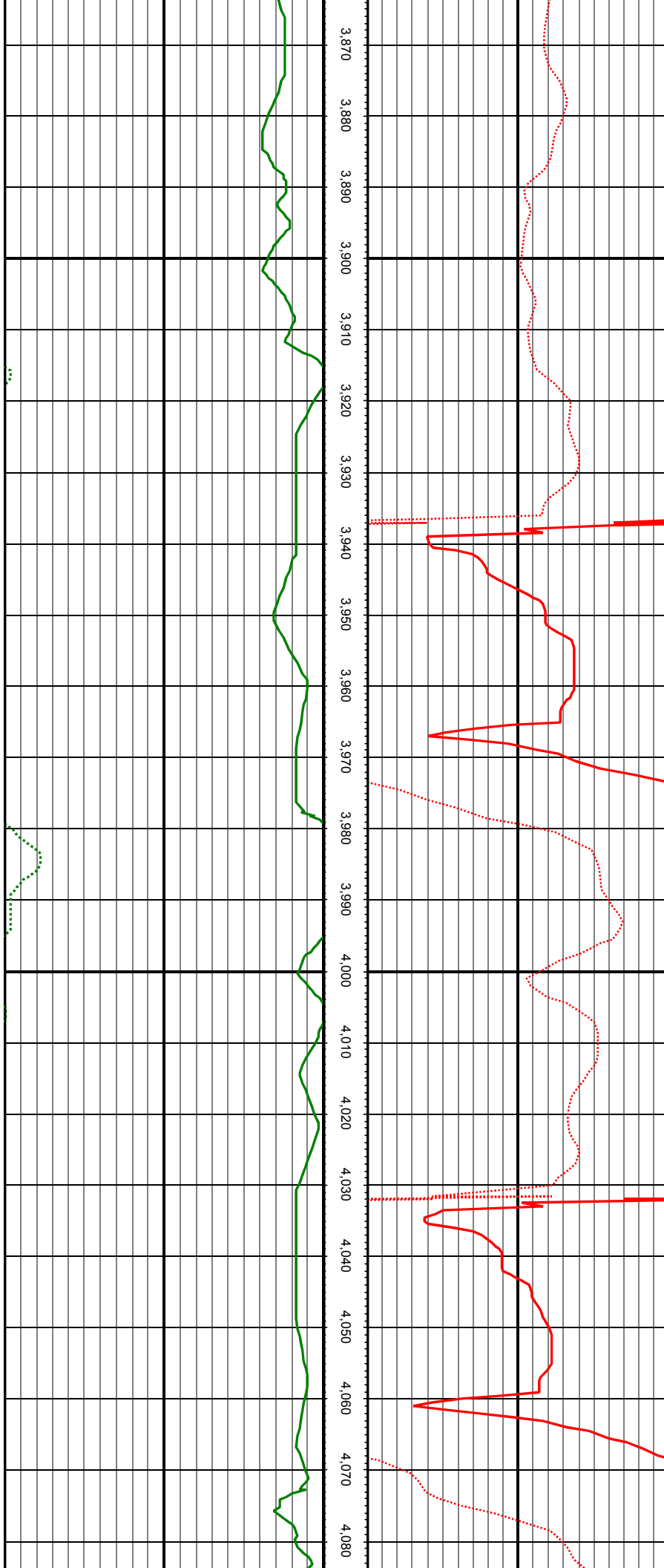
MD: 3581.00 INC: 10.37 AZ: 330.70 TVD: 3533.55 VS: 3.89



MD: 3675.00 INC: 10.33 AZ: 330.61 TVD: 3626.02 VS: -0.53

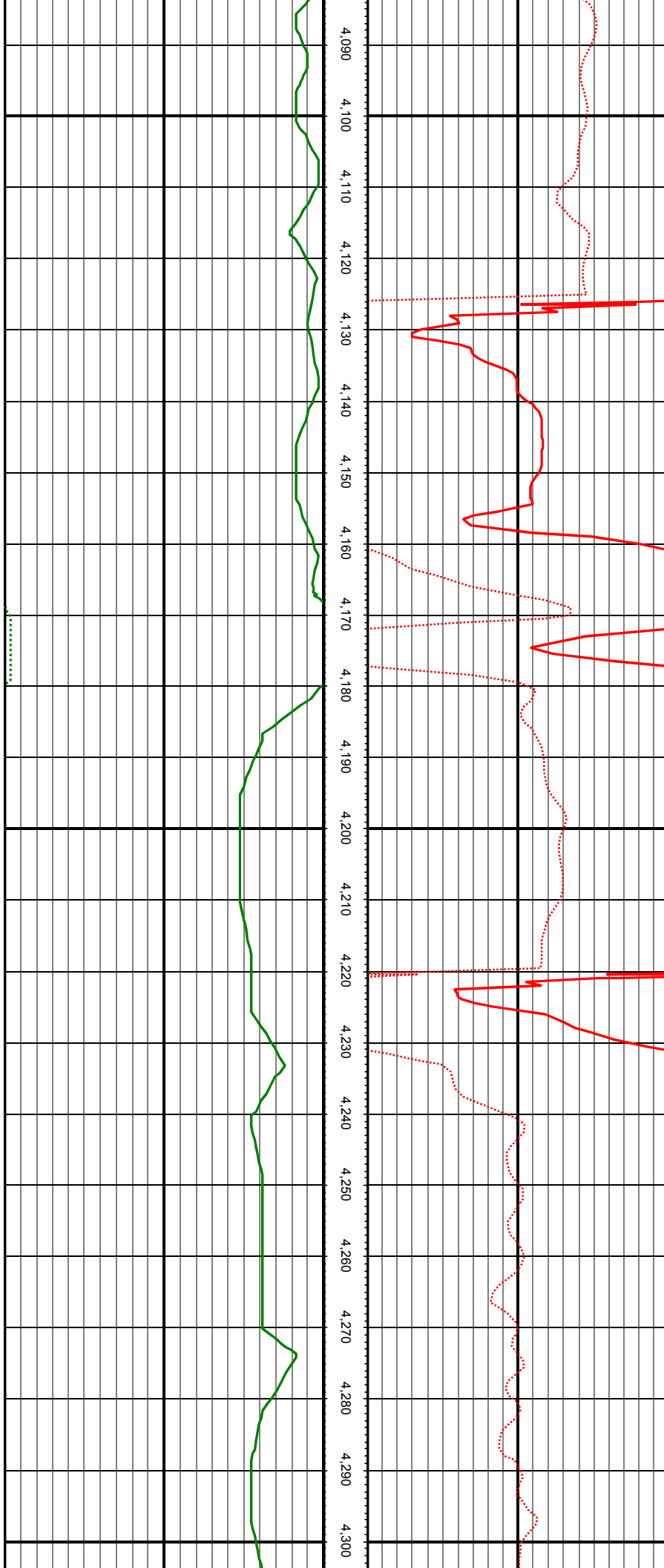
MD: 3770.00 INC: 11.87 AZ: 328.06 TVD: 3719.24 VS: -5.74

MD: 3864.00 INC: 10.07 AZ: 327.97 TVD: 3811.52 VS: -11.21



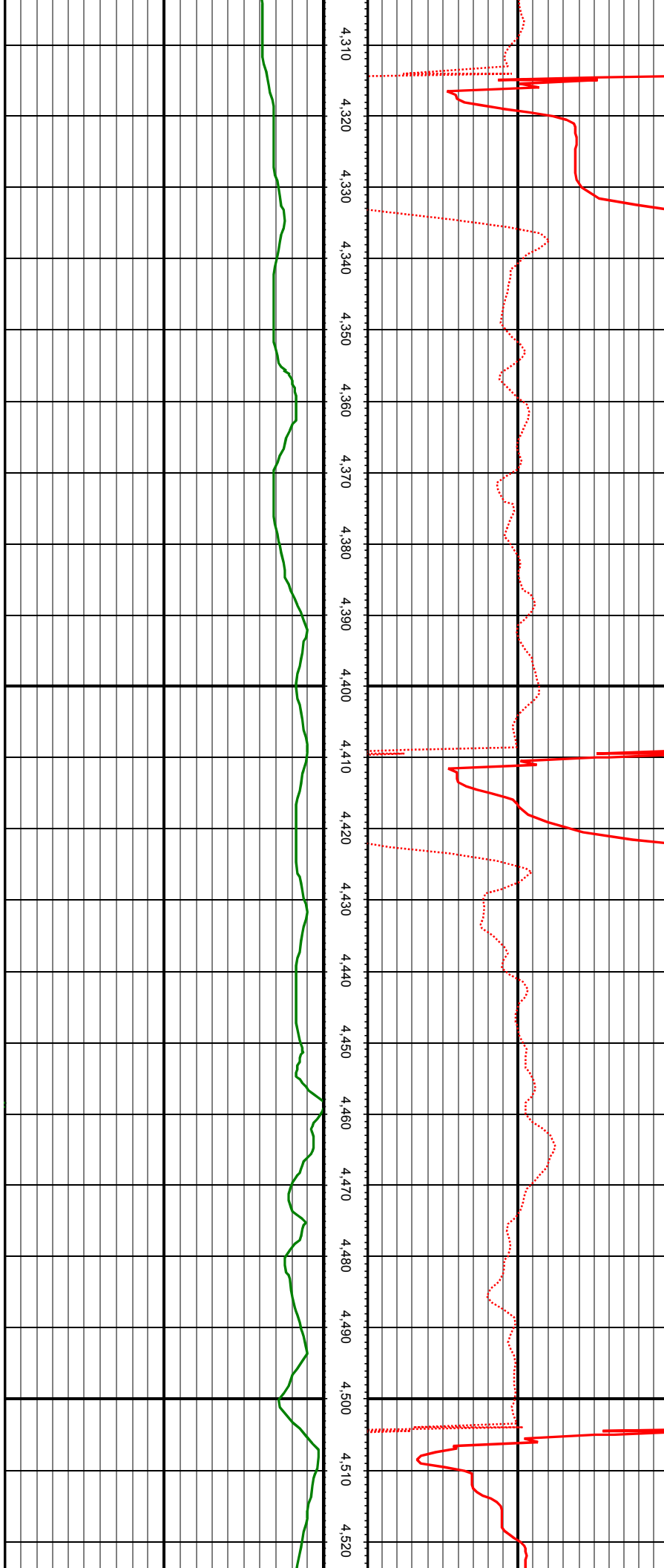
MD: 3959.00 INC: 10.59 AZ: 330.79 TVD: 3904.98 VS: -16.01

MD: 4053.00 INC: 11.65 AZ: 331.40 TVD: 3997.21 VS: -20.61



MD: 4147.00 INC: 12.84 AZ: 329.91 TVD: 4089.07 VS: -25.84

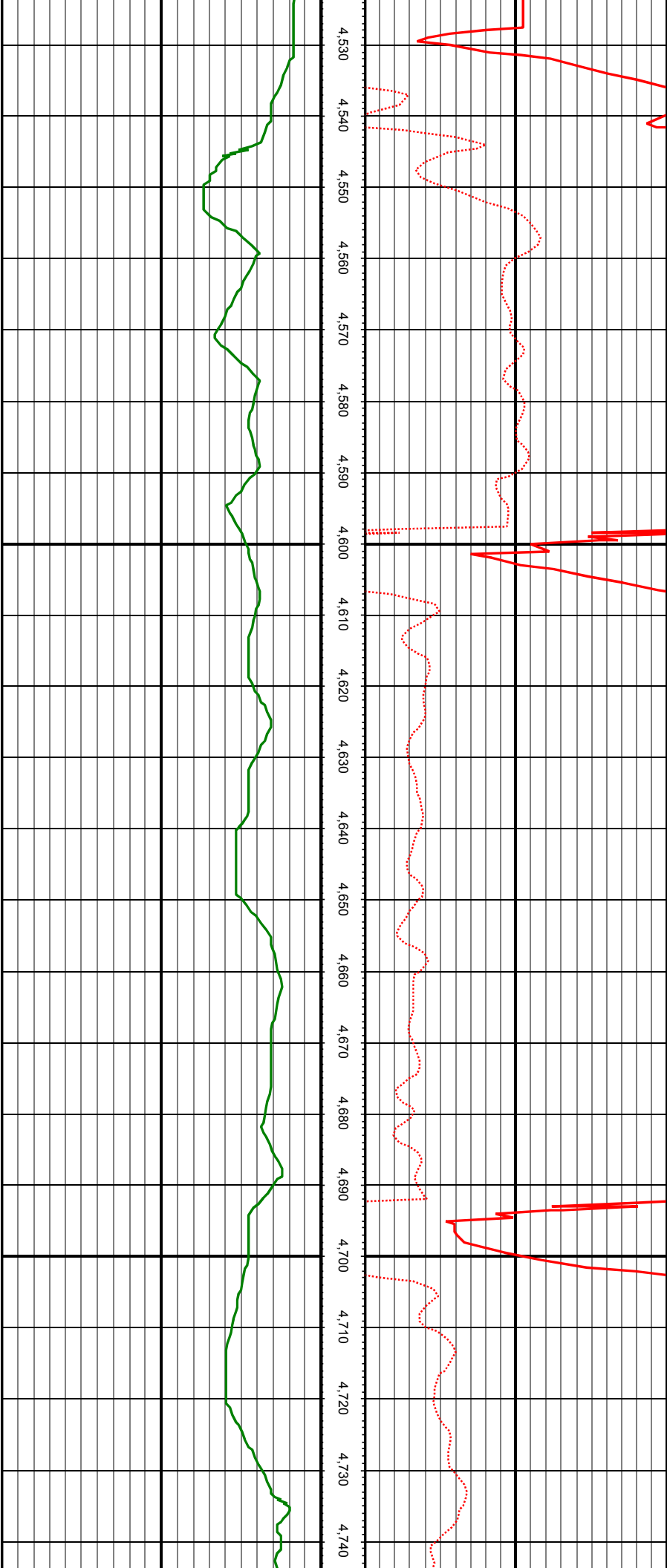
MD: 4242.00 INC: 12.48 AZ: 330.52 TVD: 4181.76 VS: -31.43



MD: 4336.00 INC: 12.26 AZ: 331.84 TVD: 4273.58 VS: -36.52

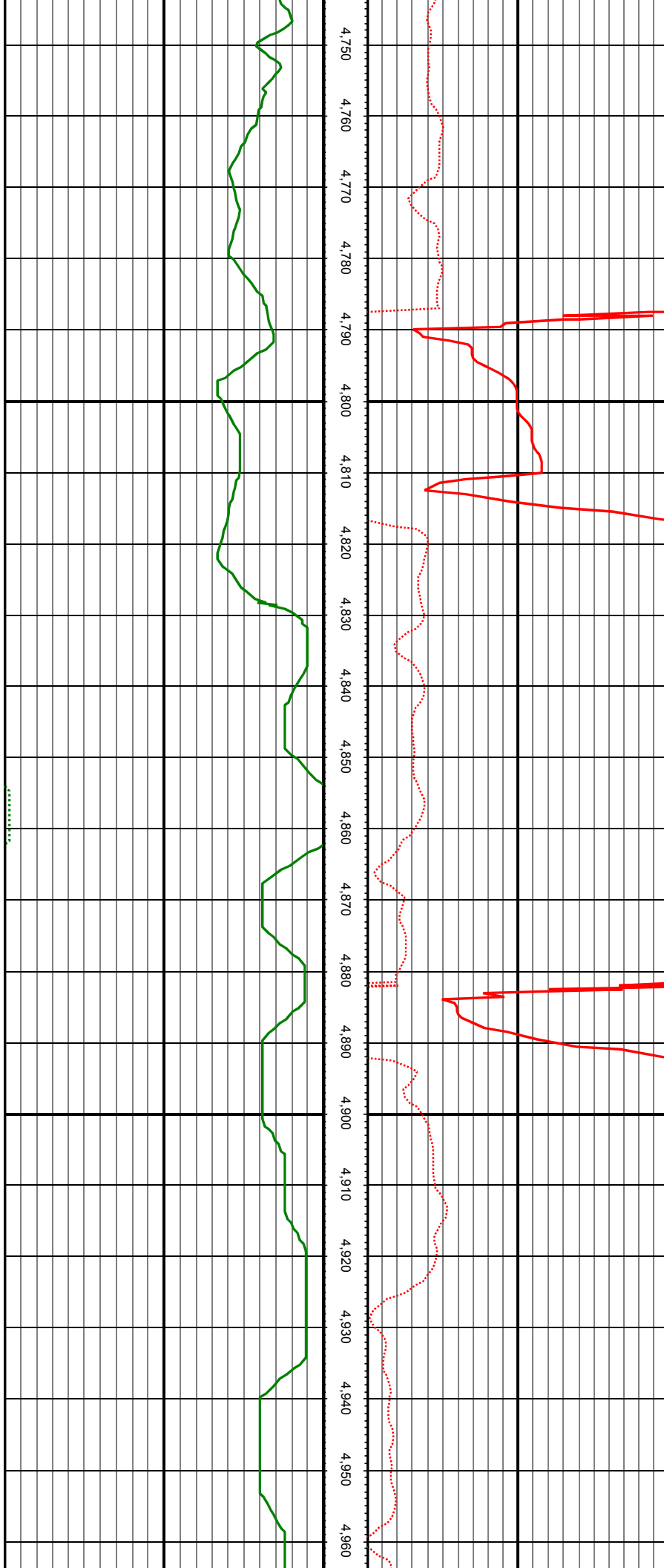
MD: 4431.00 INC: 10.77 AZ: 334.04 TVD: 4366.67 VS: -40.77

MD: 4526.00 INC: 11.56 AZ: 324.90 TVD: 4459.87 VS: -45.98



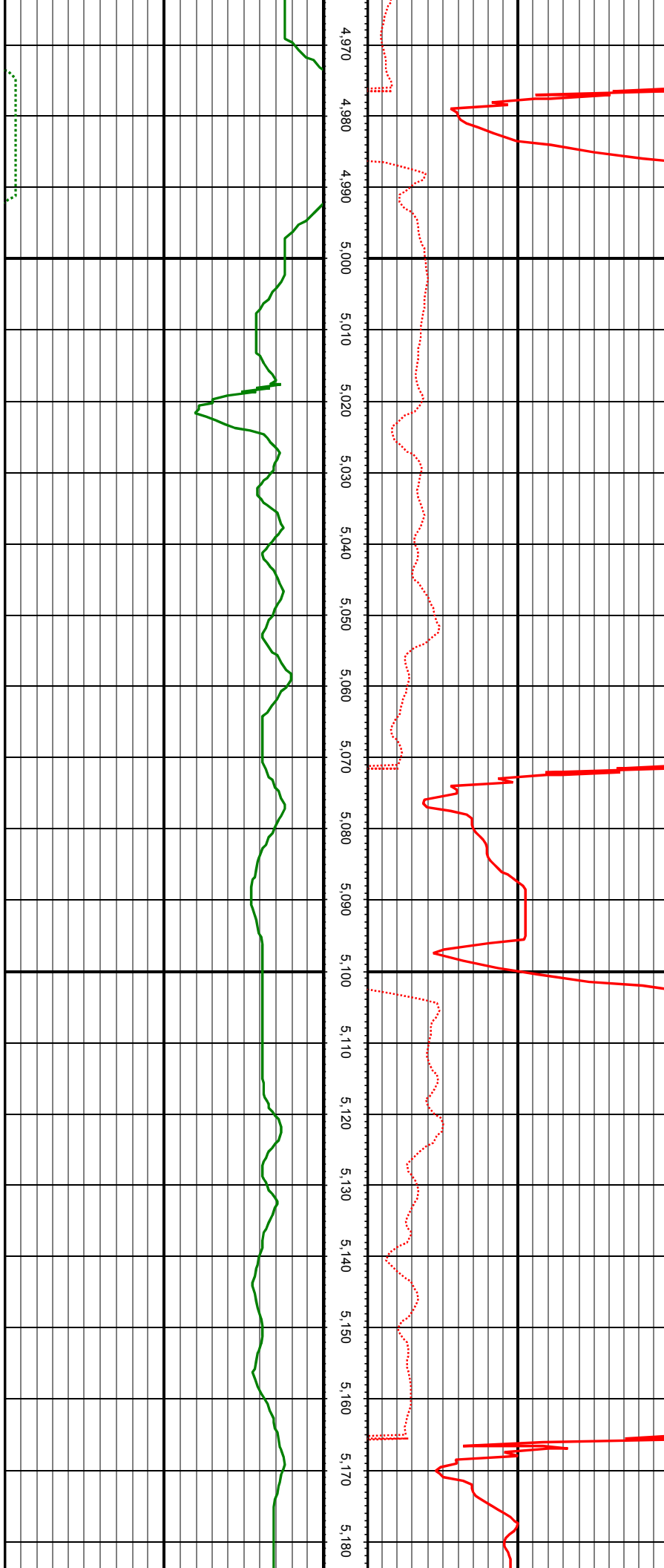
MD: 4620.00 INC: 11.43 AZ: 323.49 TVD: 4551.99 VS: -52.88

MD: 4715.00 INC: 10.29 AZ: 322.26 TVD: 4645.29 VS: -59.84



MD: 4809.00 INC: 11.56 AZ: 319.36 TVD: 4737.58 VS: -67.39

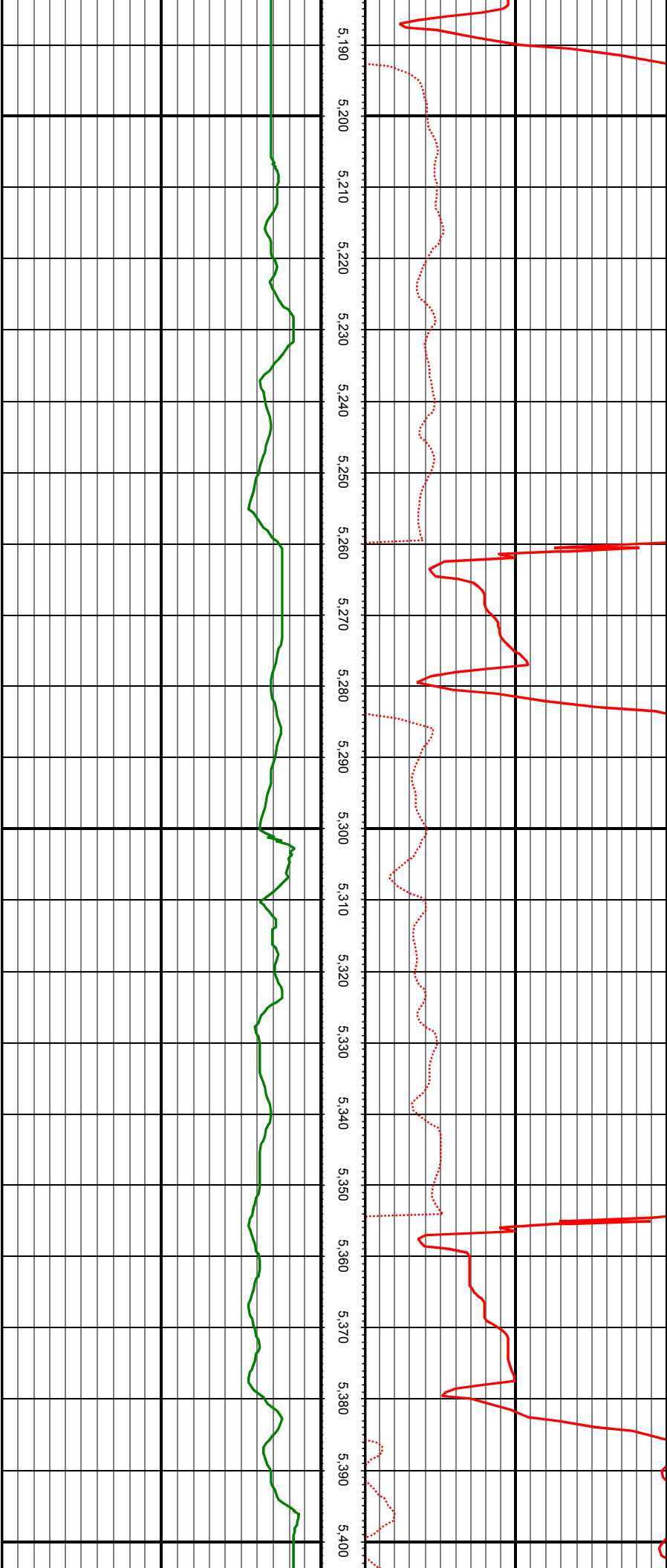
MD: 4904.00 INC: 11.74 AZ: 318.31 TVD: 4830.63 VS: -76.09



MD: 4999.00 INC: 10.37 AZ: 316.28 TVD: 4923.86 VS: -84.77

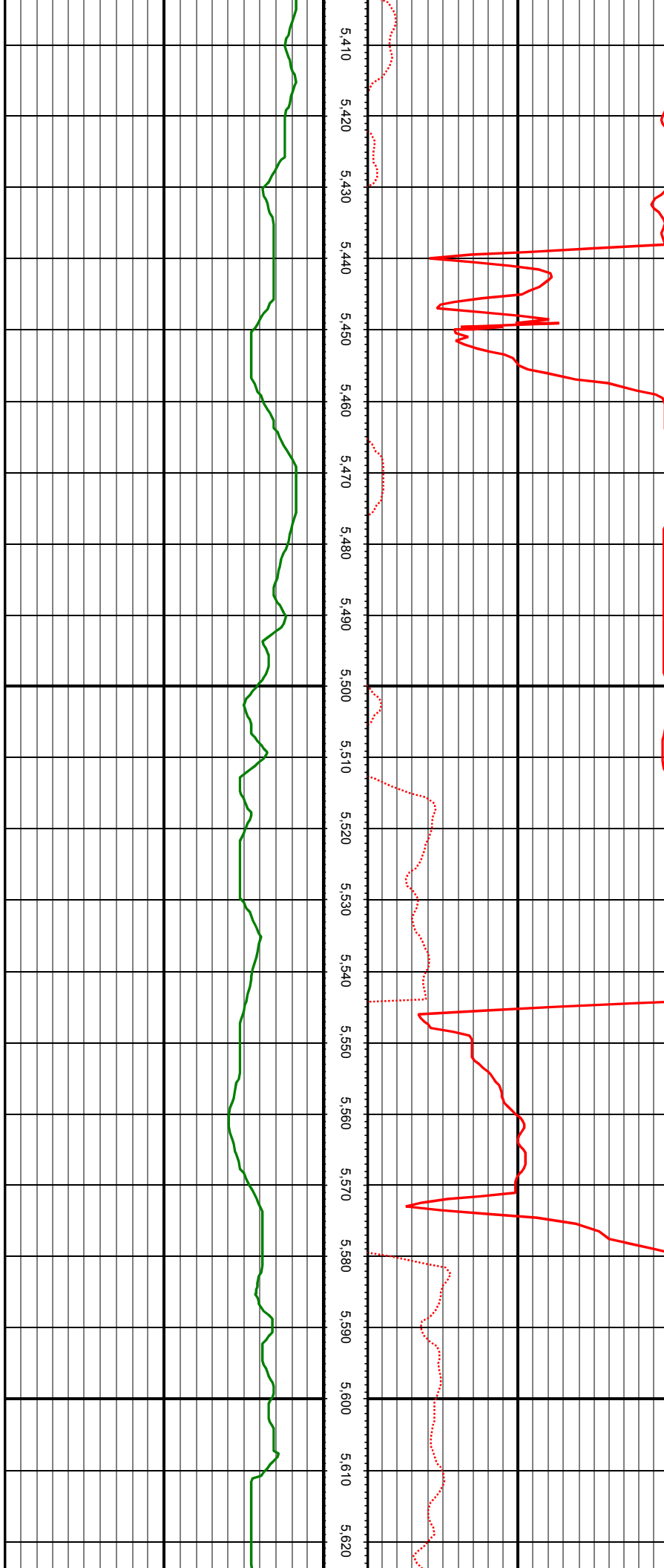
MD: 5093.00 INC: 11.25 AZ: 317.43 TVD: 5016.19 VS: -93.30

MD: 5187.00 INC: 11.74 AZ: 322.35 TVD: 5108.31 VS: -101.46



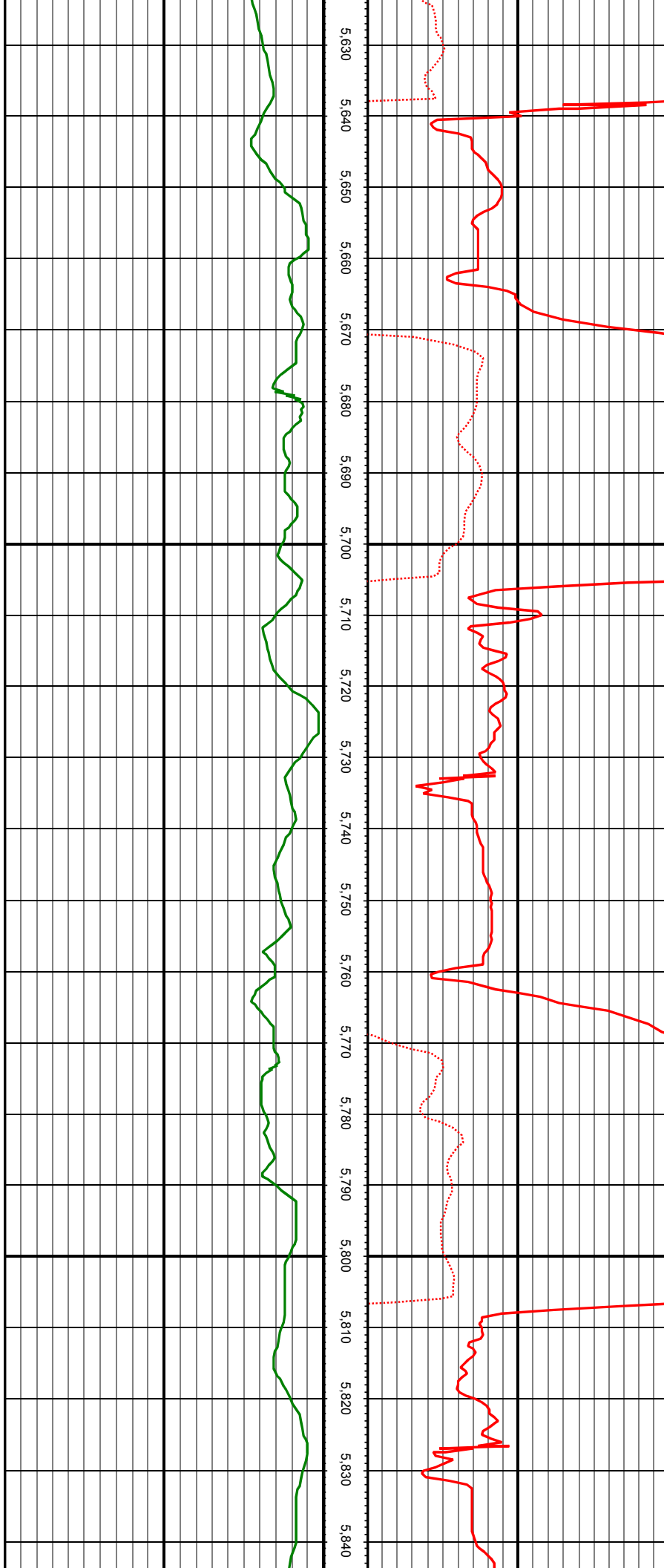
MD: 5282.00 INC: 10.37 AZ: 319.62 TVD: 5201.54 VS: -109.09

MD: 5376.00 INC: 11.25 AZ: 326.57 TVD: 5293.88 VS: -115.84



MD: 5471.00 INC: 8.97 AZ: 329.03 TVD: 5387.40 VS: -121.03

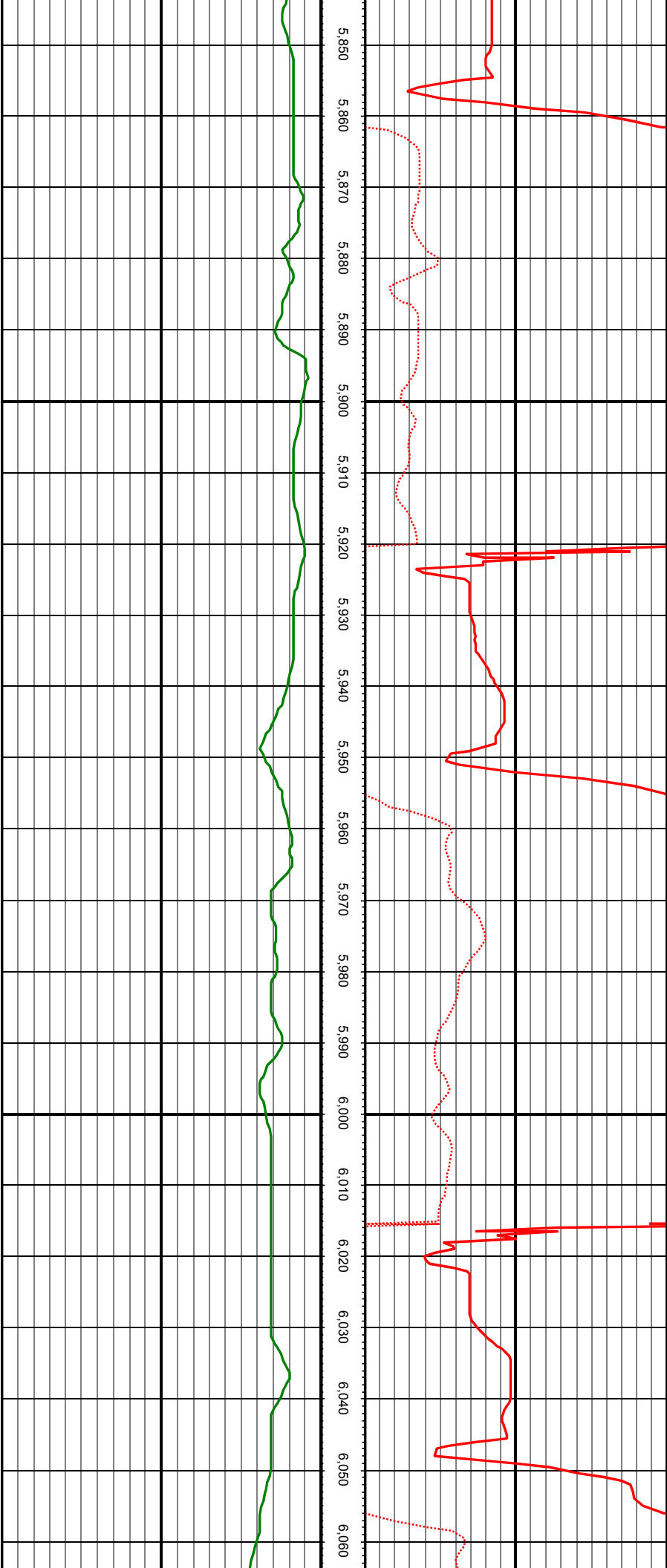
MD: 5565.00 INC: 10.15 AZ: 327.62 TVD: 5480.09 VS: -125.74



MD: 5660.00 INC: 10.20 AZ: 324.99 TVD: 5573.60 VS: -131.34

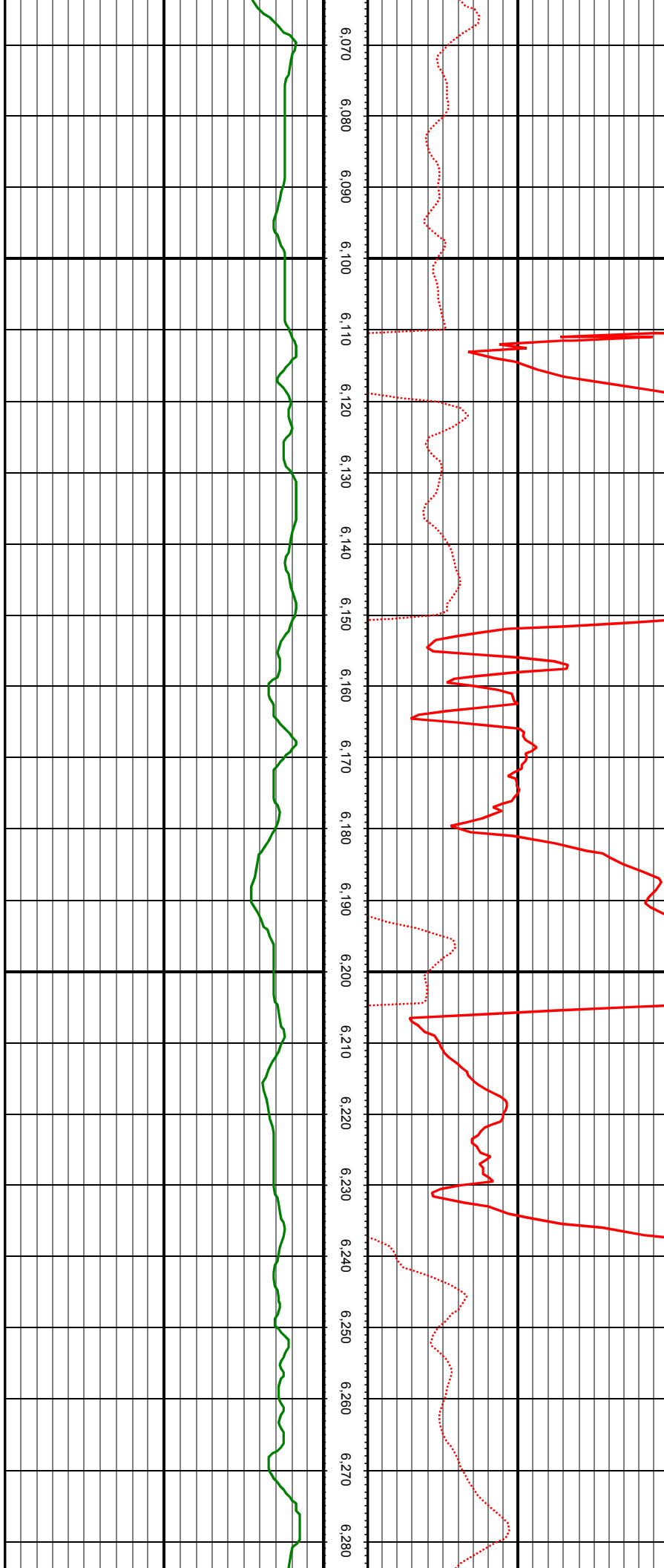
MD: 5754.00 INC: 10.29 AZ: 331.31 TVD: 5666.10 VS: -136.40

MD: 5848.00 INC: 10.95 AZ: 332.81 TVD: 5758.49 VS: -140.51



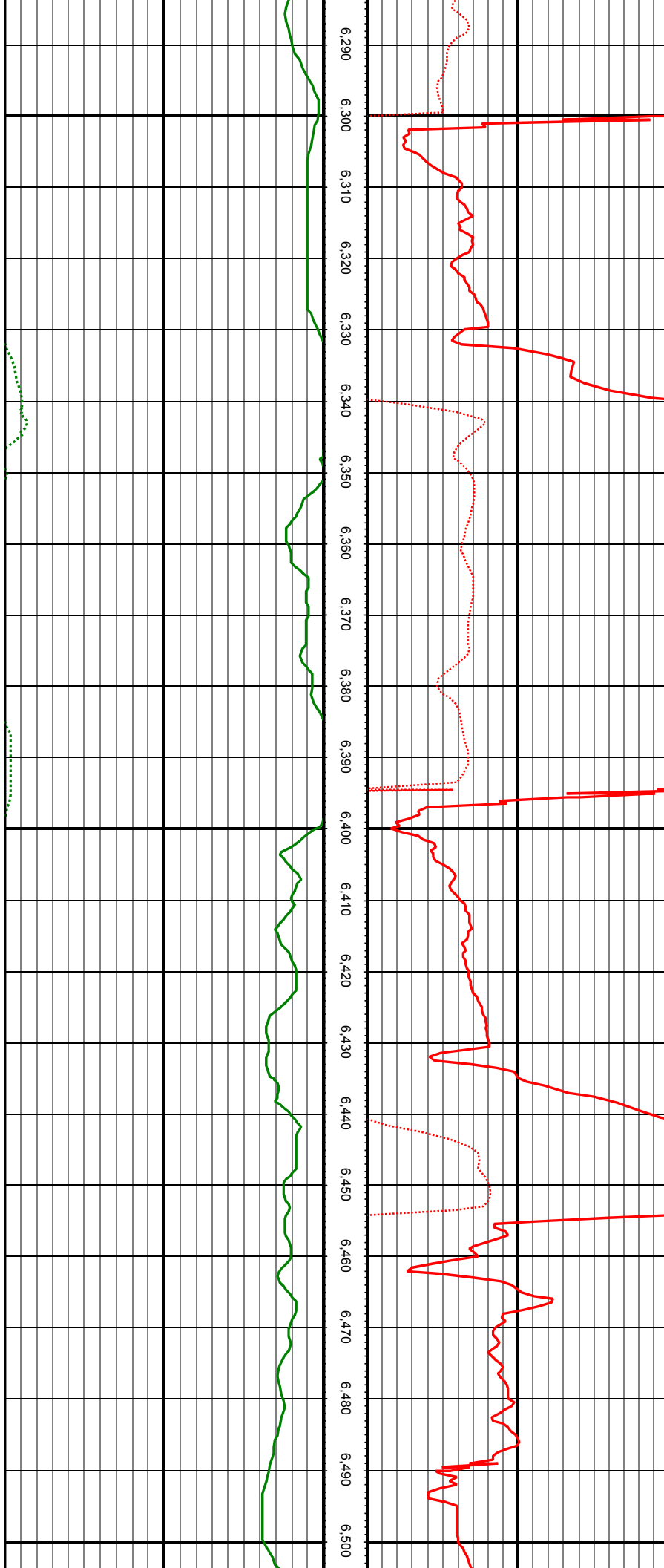
MD: 5943.00 INC: 11.56 AZ: 330.52 TVD: 5851.66 VS: -145.05

MD: 6038.00 INC: 12.44 AZ: 324.99 TVD: 5944.59 VS: -151.20



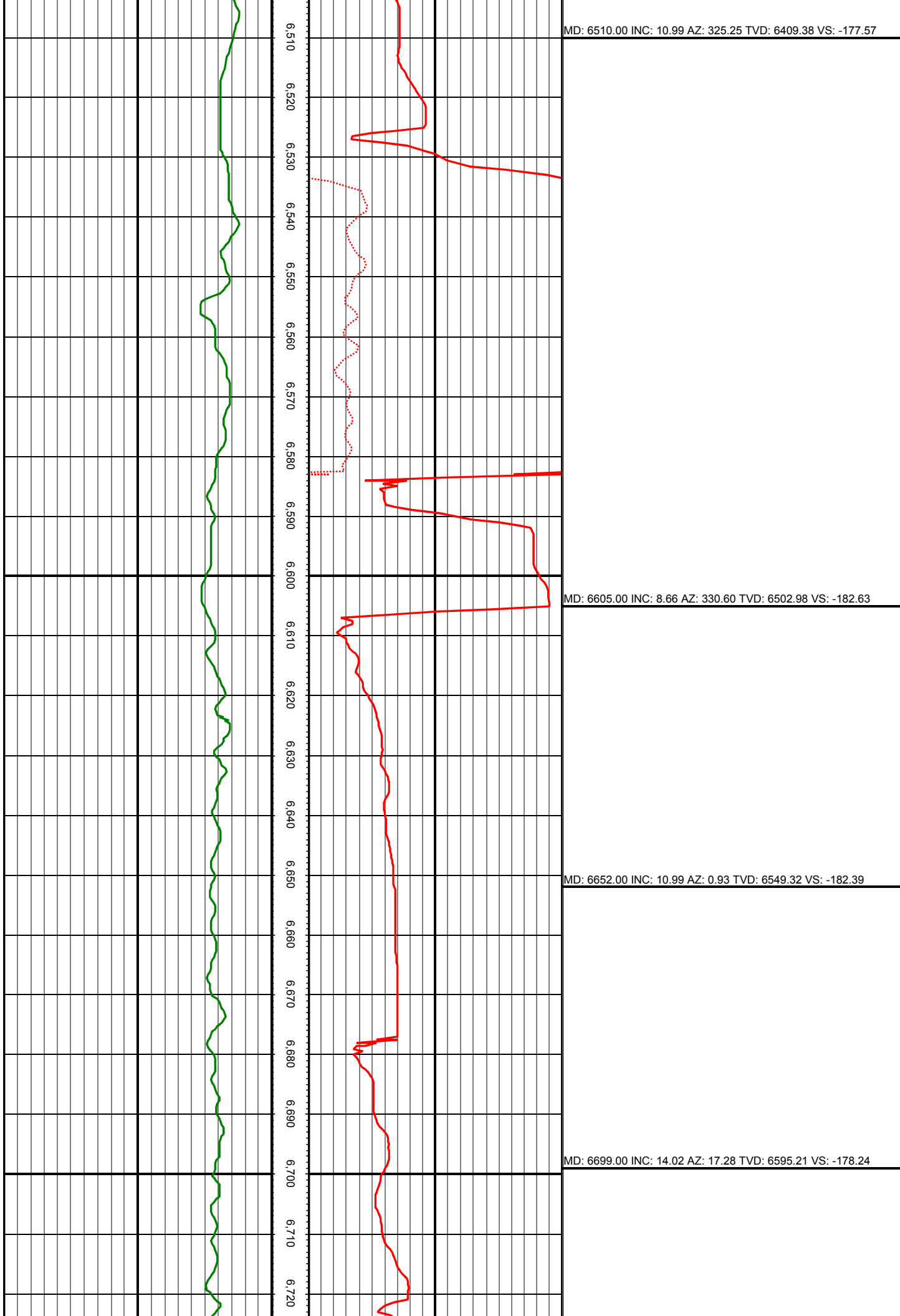
MD: 6132.00 INC: 9.89 AZ: 325.78 TVD: 6036.80 VS: -157.56

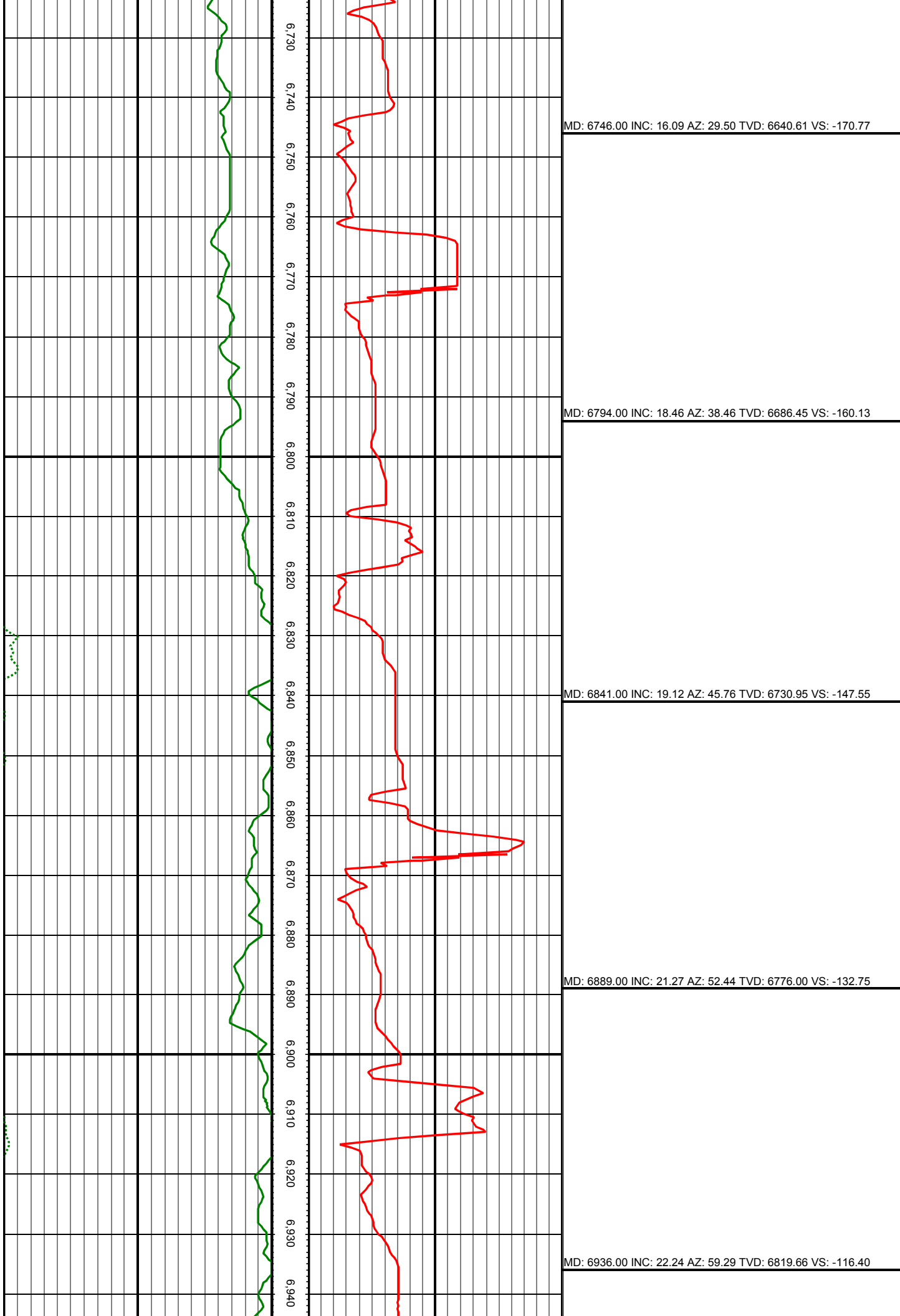
MD: 6227.00 INC: 9.85 AZ: 322.88 TVD: 6130.40 VS: -163.52

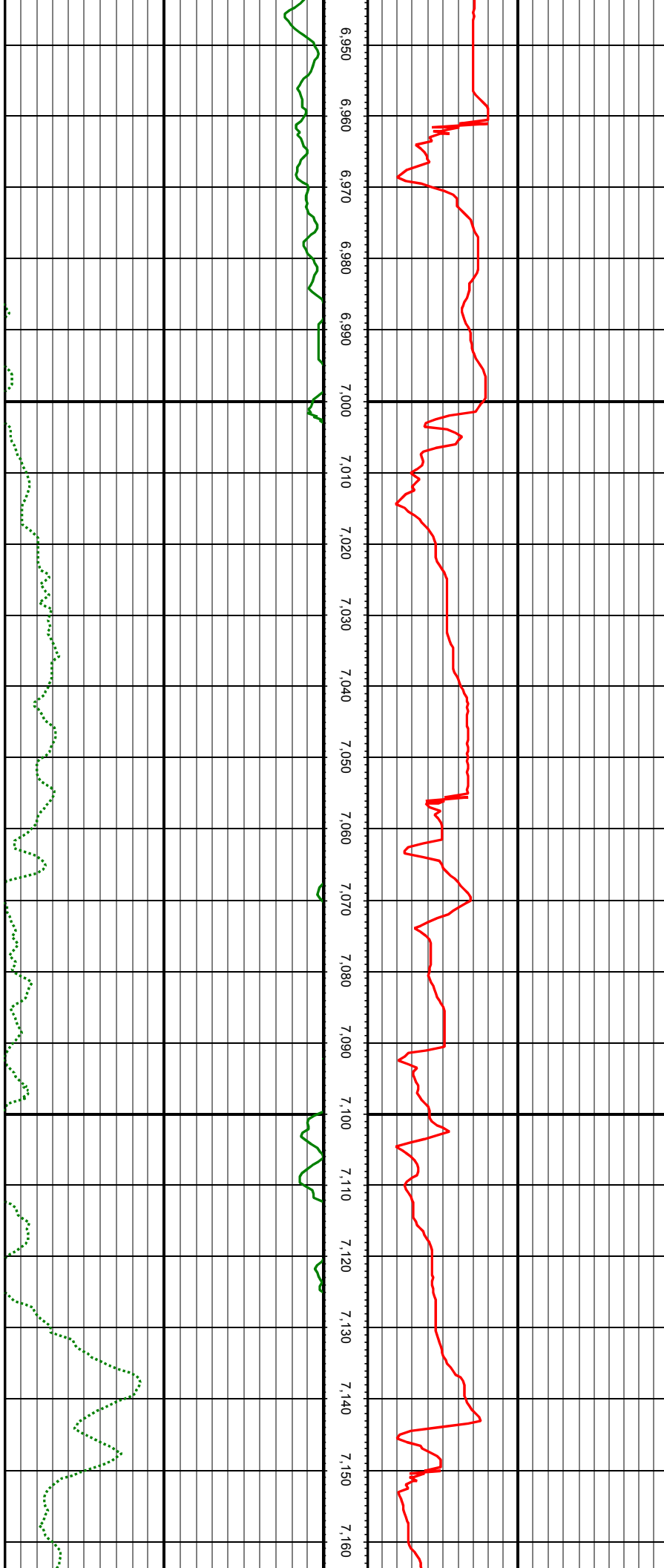


MD: 6322.00 INC: 9.05 AZ: 334.13 TVD: 6224.12 VS: -168.20

MD: 6416.00 INC: 9.54 AZ: 328.15 TVD: 6316.88 VS: -172.06



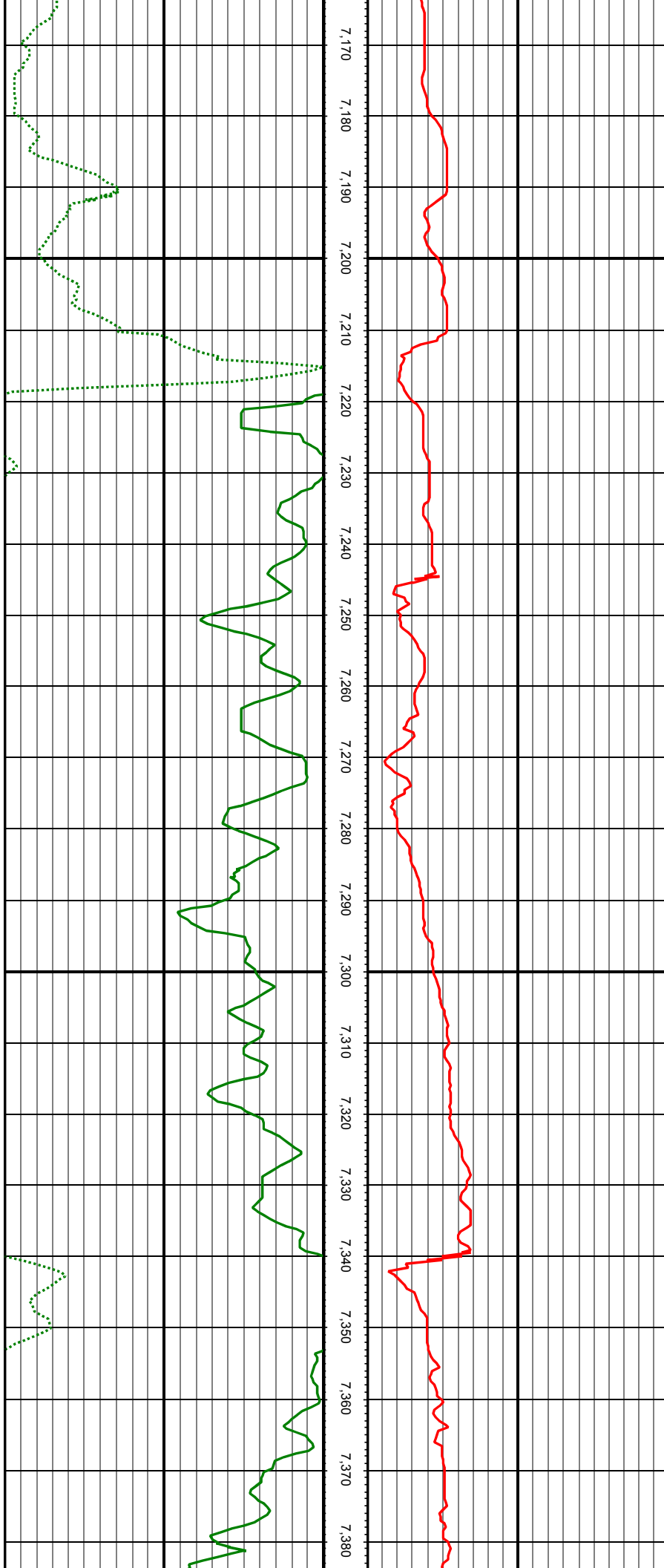




MD: 6983.00 INC: 23.47 AZ: 69.14 TVD: 6862.99 VS: -98.57

MD: 7030.00 INC: 26.20 AZ: 73.97 TVD: 6905.64 VS: -78.89

MD: 7078.00 INC: 28.00 AZ: 79.68 TVD: 6948.37 VS: -57.06

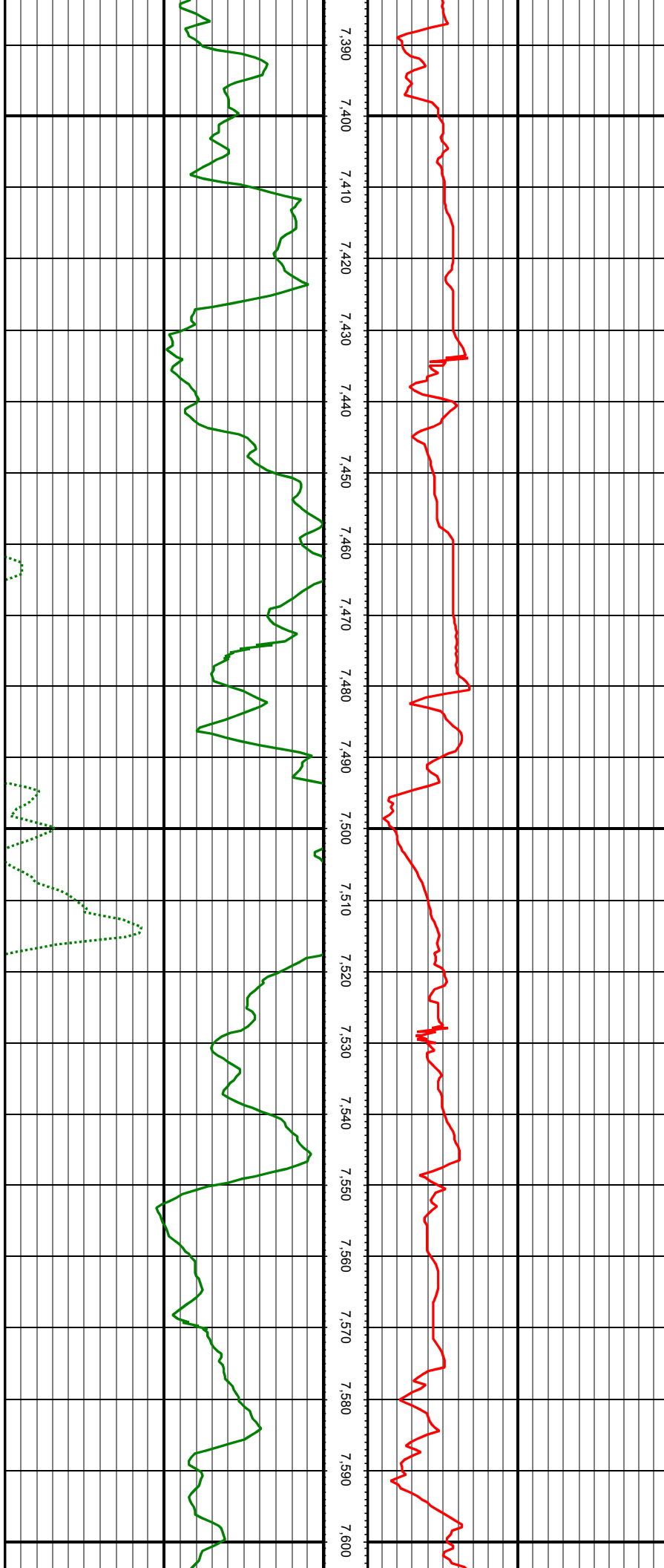


MD: 7172.00 INC: 35.74 AZ: 79.60 TVD: 7028.14 VS: -7.57

MD: 7267.00 INC: 41.45 AZ: 74.50 TVD: 7102.38 VS: 51.61

MD: 7314.00 INC: 45.27 AZ: 74.15 TVD: 7136.55 VS: 83.86

MD: 7361.00 INC: 50.24 AZ: 72.48 TVD: 7168.14 VS: 118.61



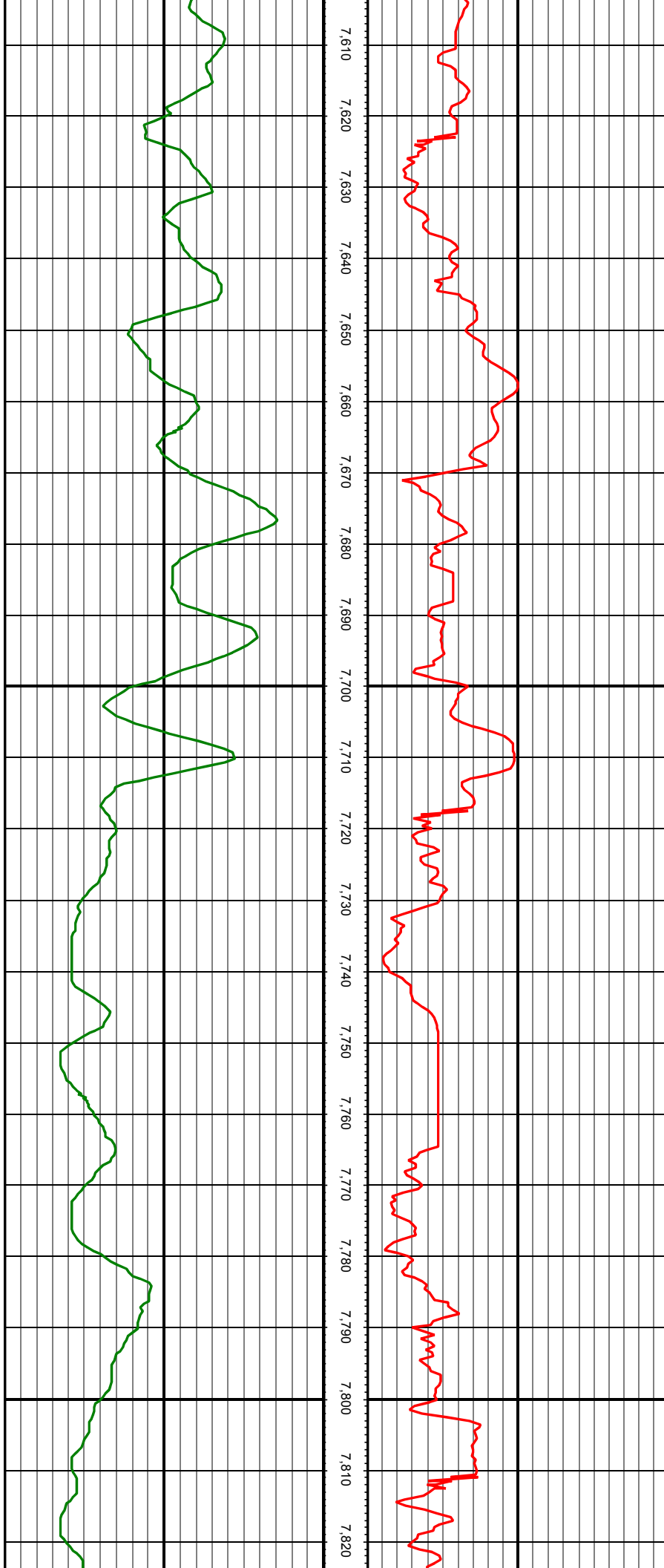
MD: 7408.00 INC: 54.51 AZ: 74.06 TVD: 7196.82 VS: 155.79

MD: 7456.00 INC: 59.25 AZ: 78.10 TVD: 7223.05 VS: 195.96

MD: 7503.00 INC: 63.69 AZ: 80.12 TVD: 7245.49 VS: 237.17

MD: 7550.00 INC: 69.10 AZ: 83.64 TVD: 7264.31 VS: 279.97

MD: 7597.00 INC: 70.37 AZ: 88.12 TVD: 7280.60 VS: 323.37



MD: 7645.00 INC: 74.20 AZ: 89.26 TVD: 7295.20 VS: 367.93

MD: 7692.00 INC: 76.13 AZ: 88.47 TVD: 7307.24 VS: 412.19

MD: 7739.00 INC: 76.88 AZ: 89.79 TVD: 7318.20 VS: 456.66

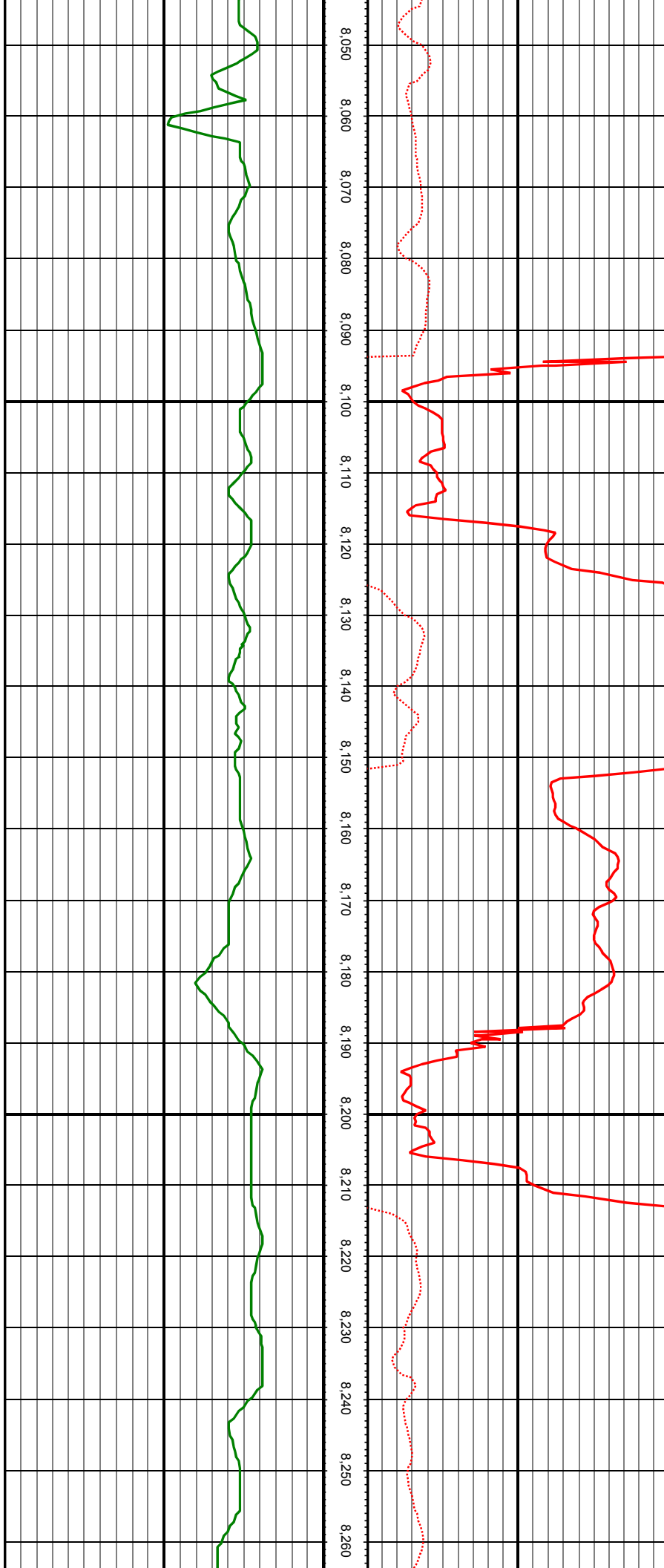
MD: 7786.00 INC: 81.41 AZ: 90.93 TVD: 7327.05 VS: 501.32



MD: 7833.00 INC: 84.48 AZ: 91.99 TVD: 7332.83 VS: 546.23

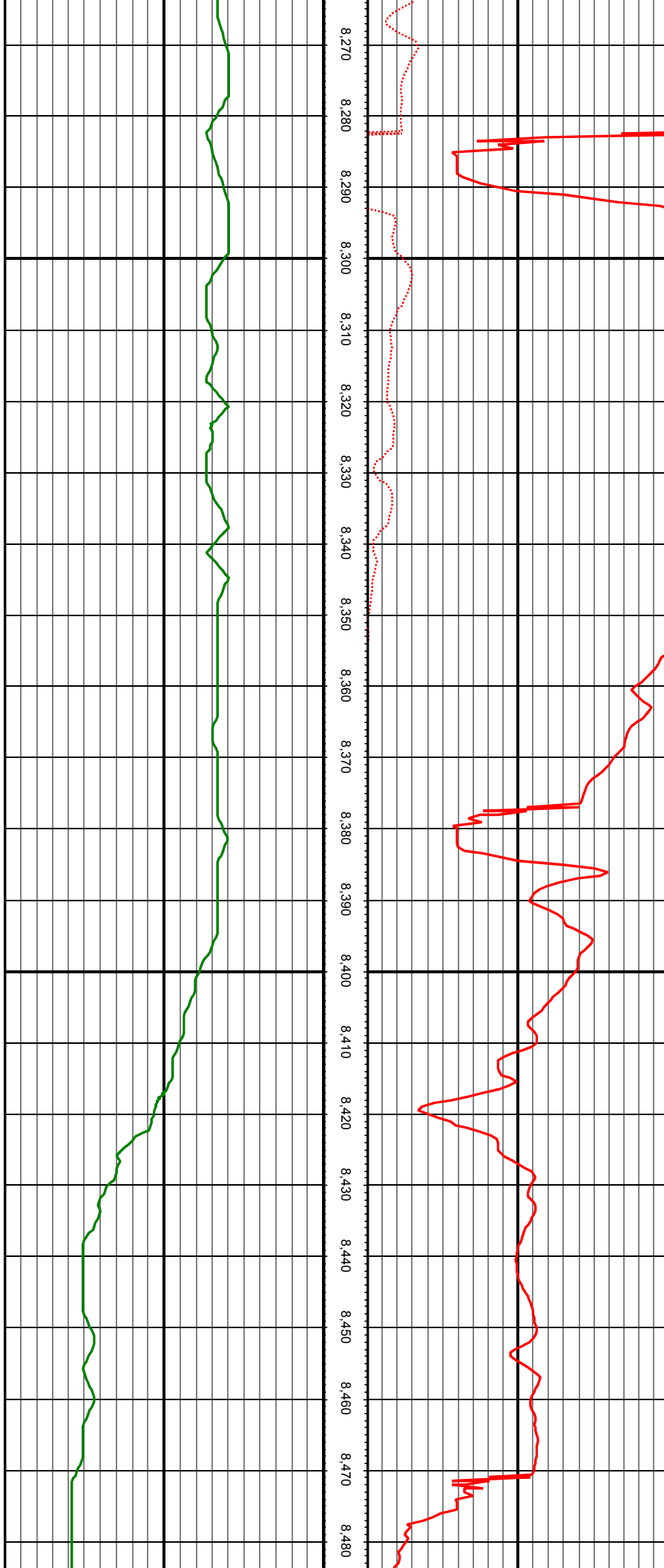
MD: 7927.00 INC: 86.99 AZ: 91.90 TVD: 7339.82 VS: 636.27

MD: 8022.00 INC: 88.92 AZ: 92.43 TVD: 7343.21 VS: 727.37



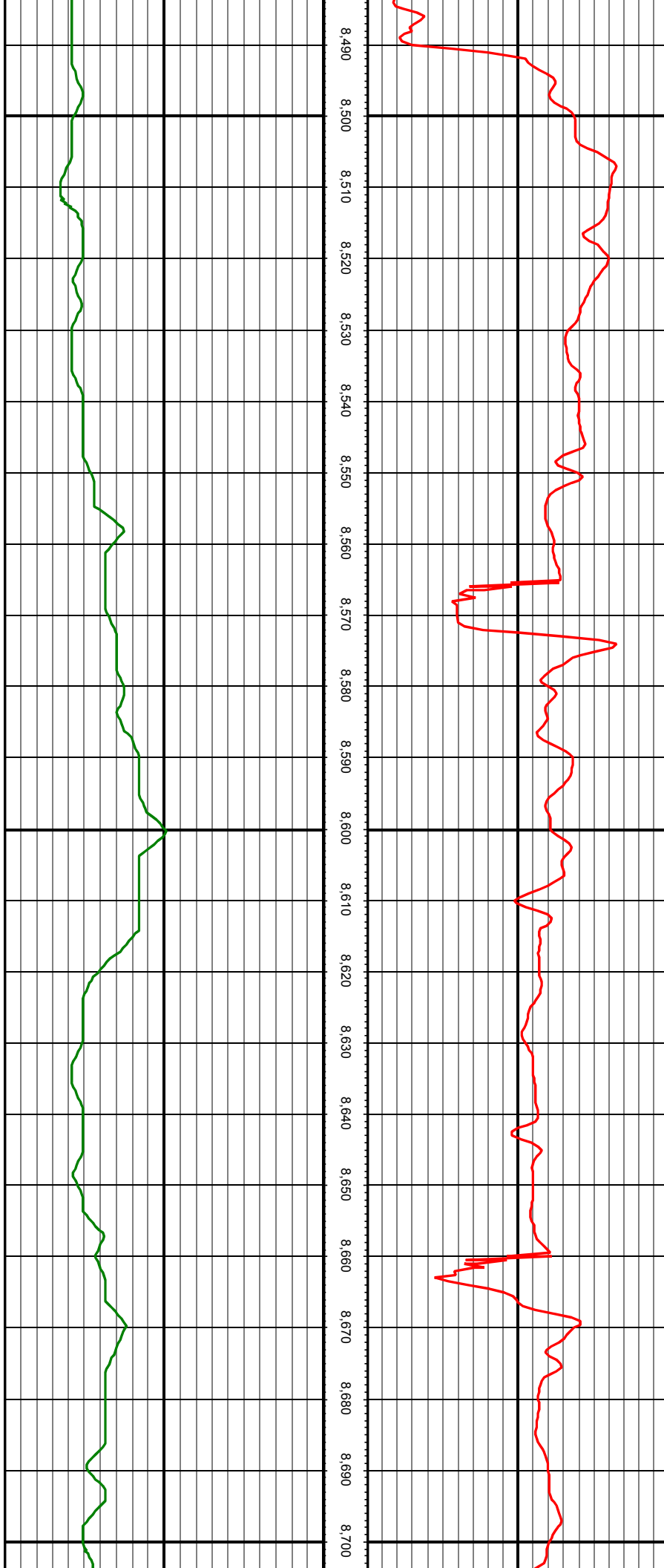
MD: 8116.00 INC: 90.42 AZ: 90.41 TVD: 7343.75 VS: 817.89

MD: 8210.00 INC: 91.78 AZ: 90.67 TVD: 7341.94 VS: 908.78



MD: 8304.00 INC: 91.91 AZ: 90.58 TVD: 7338.92 VS: 999.61

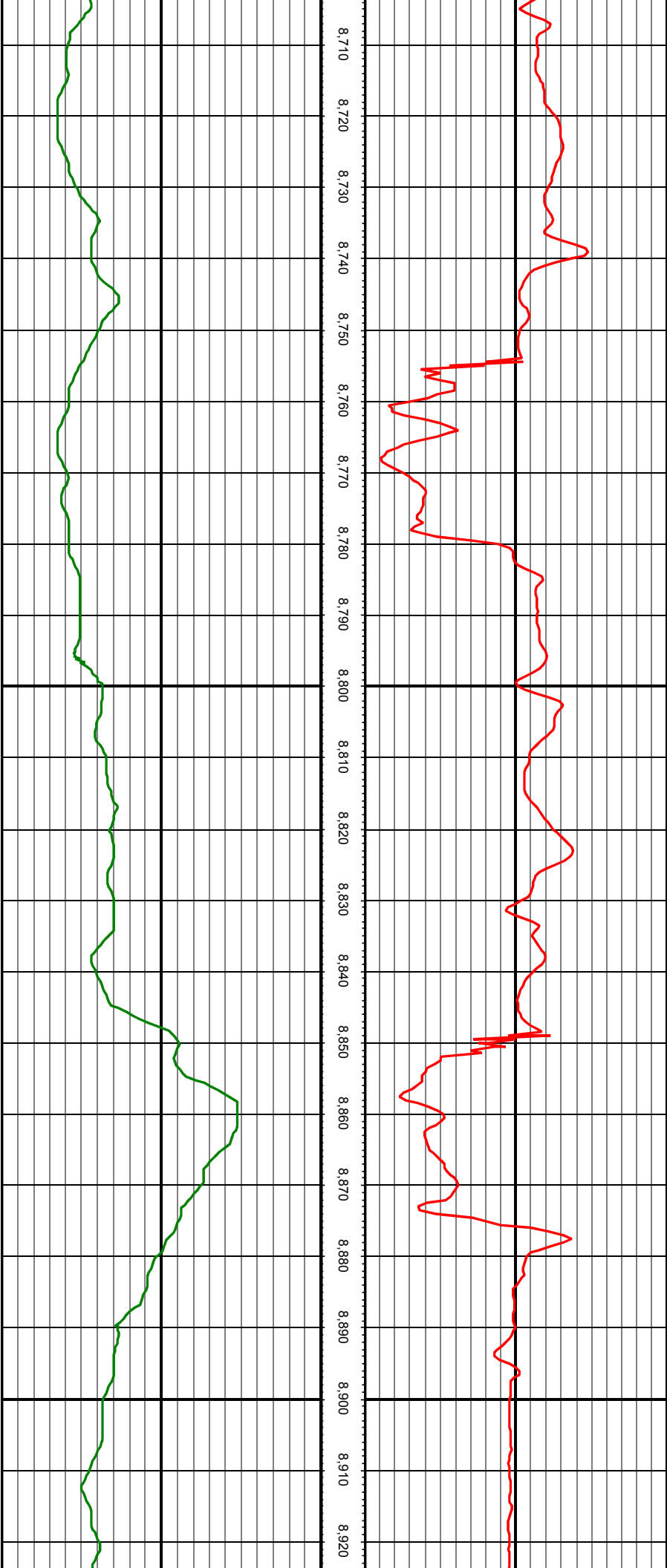
MD: 8399.00 INC: 90.59 AZ: 89.09 TVD: 7336.84 VS: 1091.75



MD: 8493.00 INC: 90.77 AZ: 90.41 TVD: 7335.73 VS: 1182.97

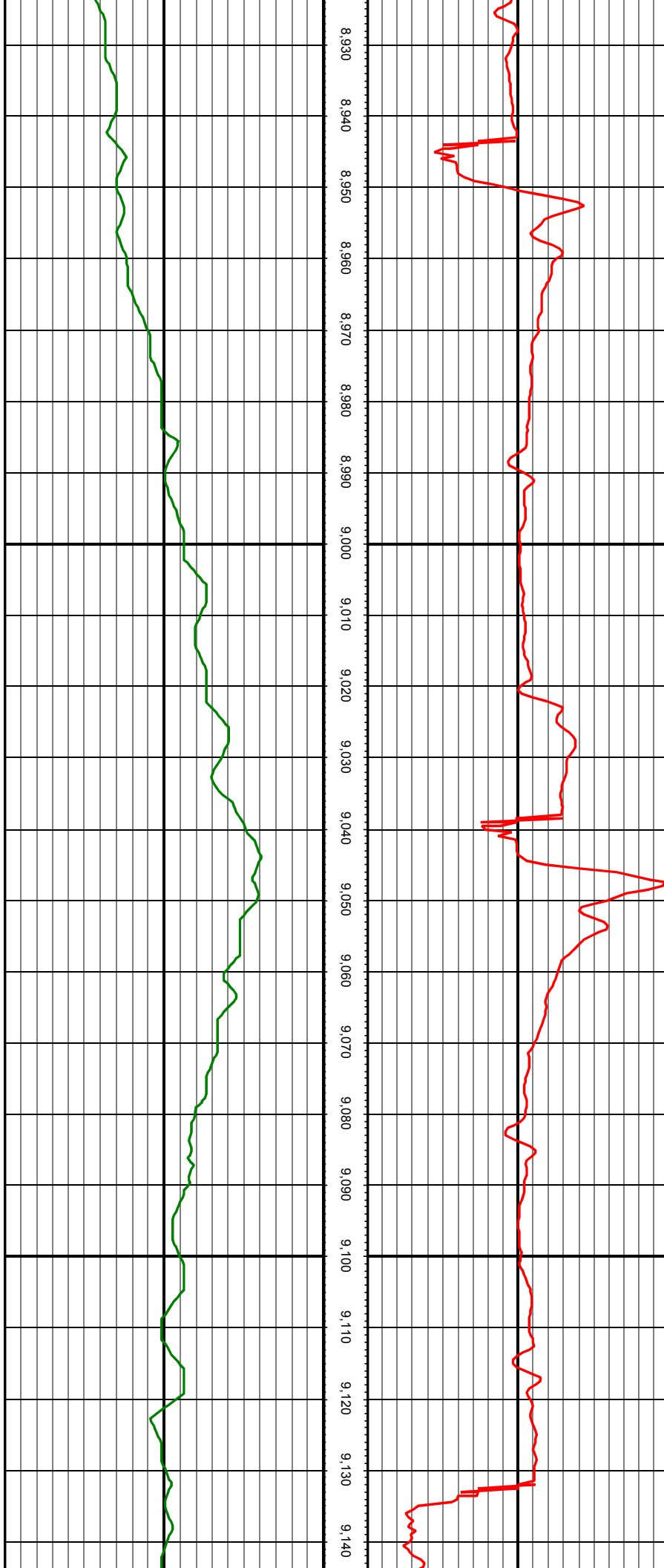
MD: 8587.00 INC: 91.21 AZ: 90.49 TVD: 7334.10 VS: 1273.91

MD: 8682.00 INC: 91.30 AZ: 89.88 TVD: 7332.02 VS: 1365.91



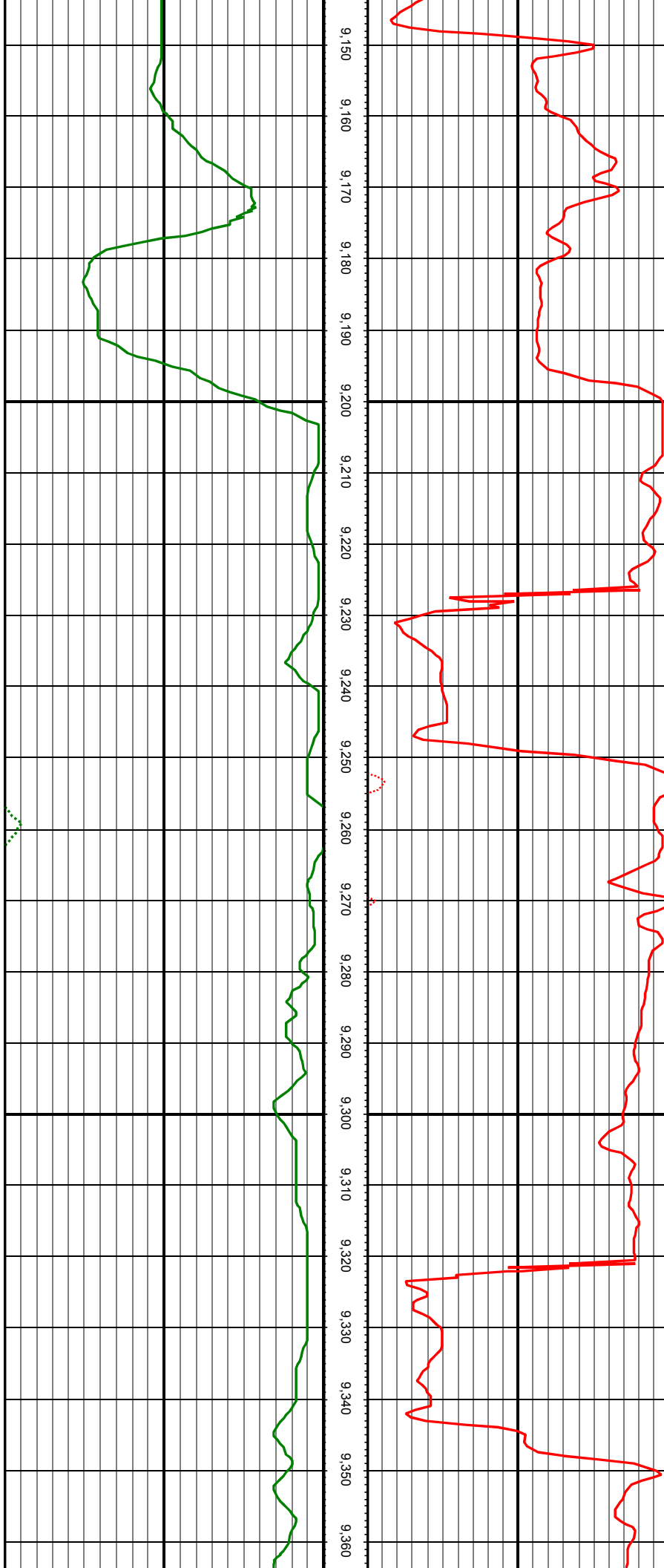
MD: 8776.00 INC: 91.21 AZ: 90.67 TVD: 7329.96 VS: 1456.91

MD: 8871.00 INC: 88.26 AZ: 91.64 TVD: 7330.40 VS: 1548.51



MD: 8965.00 INC: 88.35 AZ: 91.55 TVD: 7333.18 VS: 1638.93

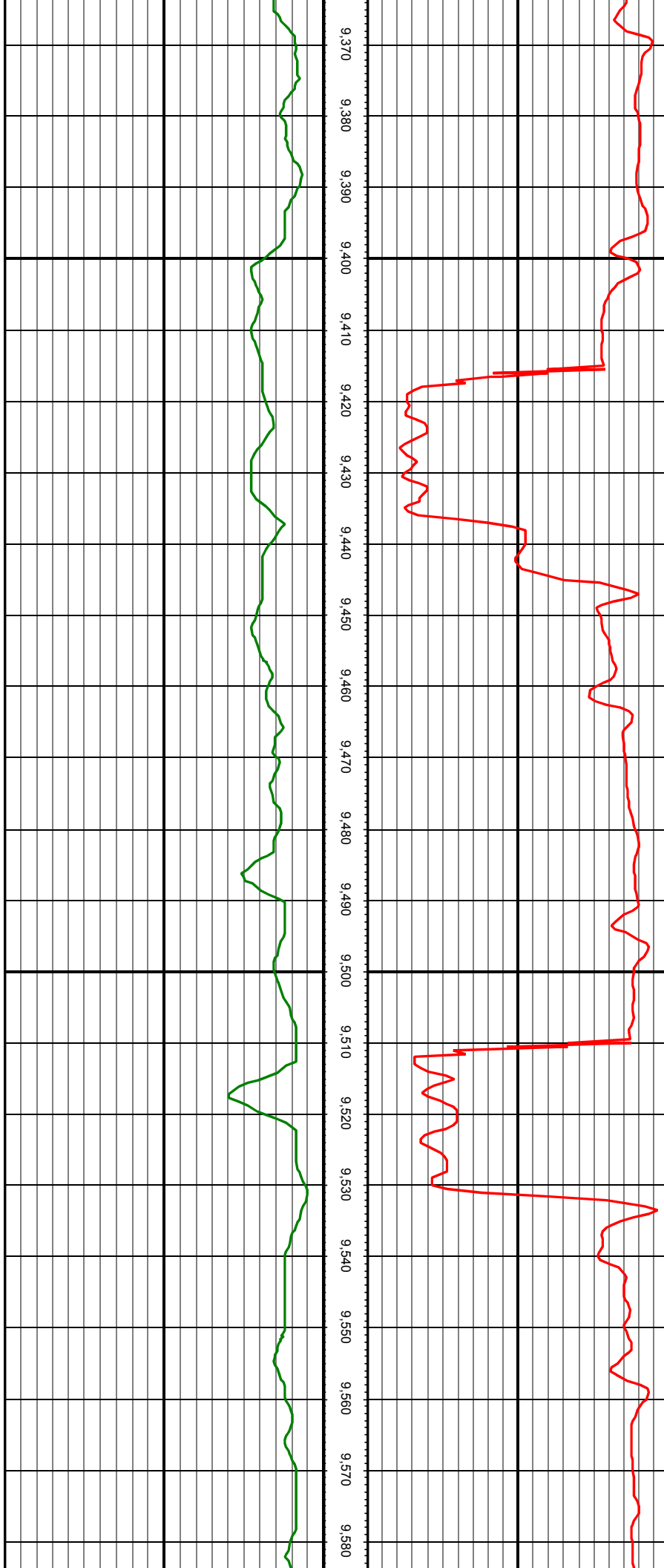
MD: 9060.00 INC: 88.48 AZ: 91.72 TVD: 7335.81 VS: 1730.29



MD: 9154.00 INC: 86.29 AZ: 90.32 TVD: 7340.10 VS: 1820.90

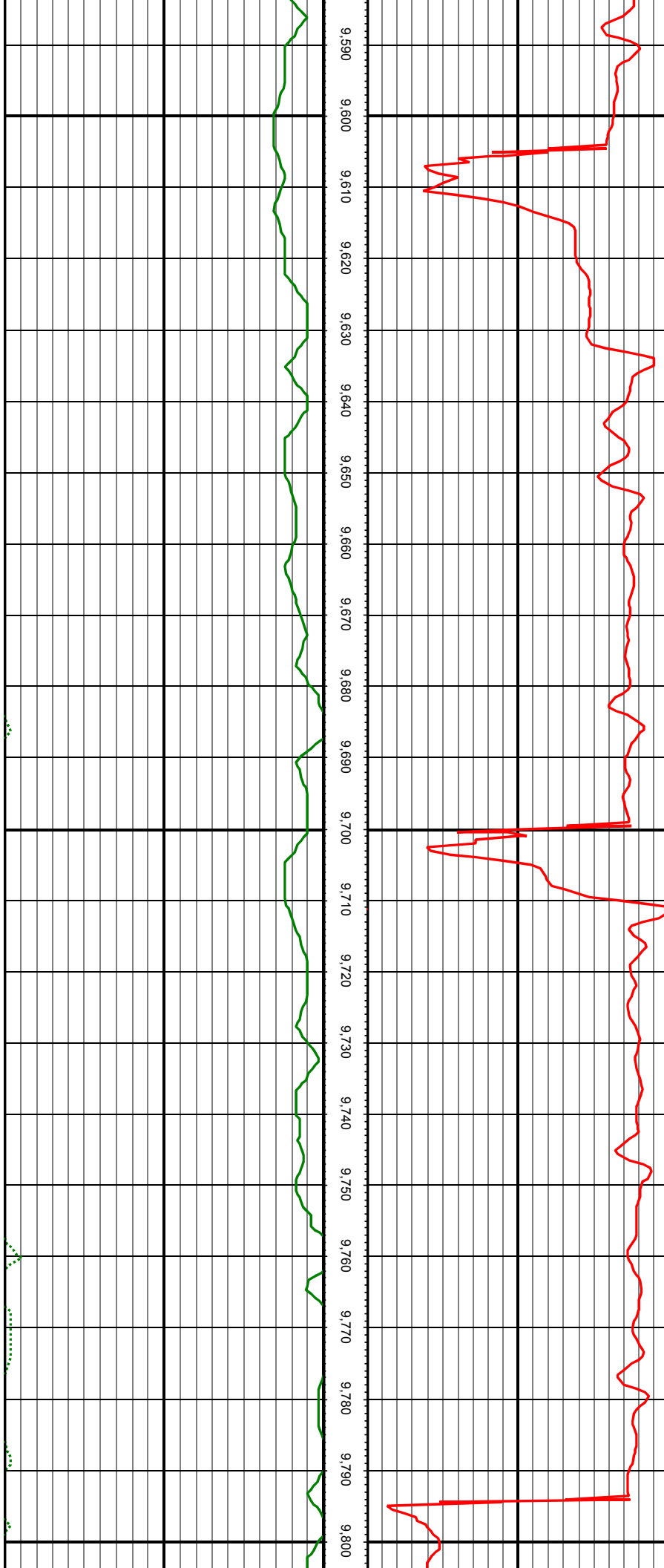
MD: 9248.00 INC: 87.43 AZ: 90.05 TVD: 7345.25 VS: 1911.81

MD: 9343.00 INC: 88.84 AZ: 88.91 TVD: 7348.34 VS: 2004.07



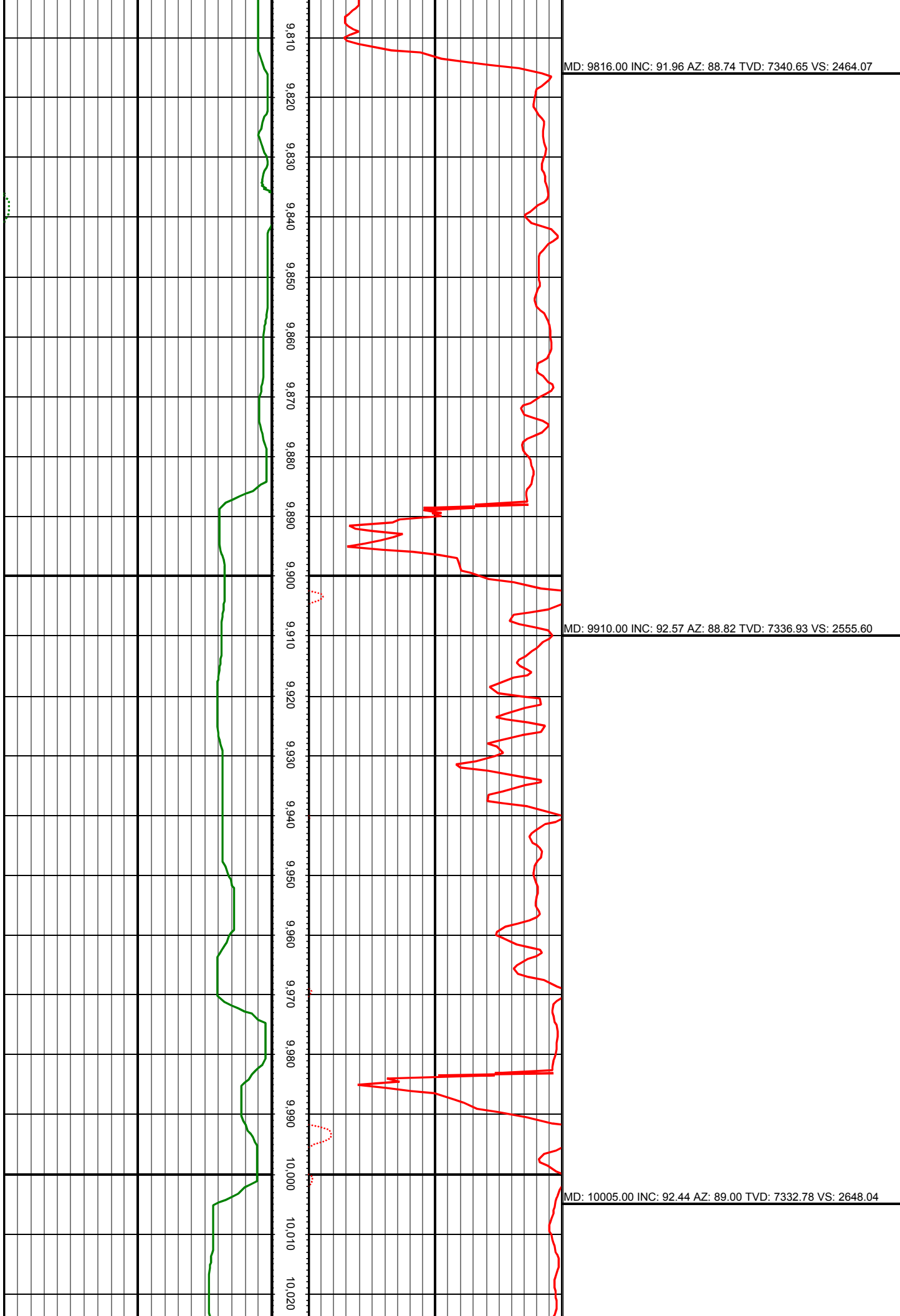
MD: 9437.00 INC: 90.24 AZ: 88.30 TVD: 7349.10 VS: 2095.73

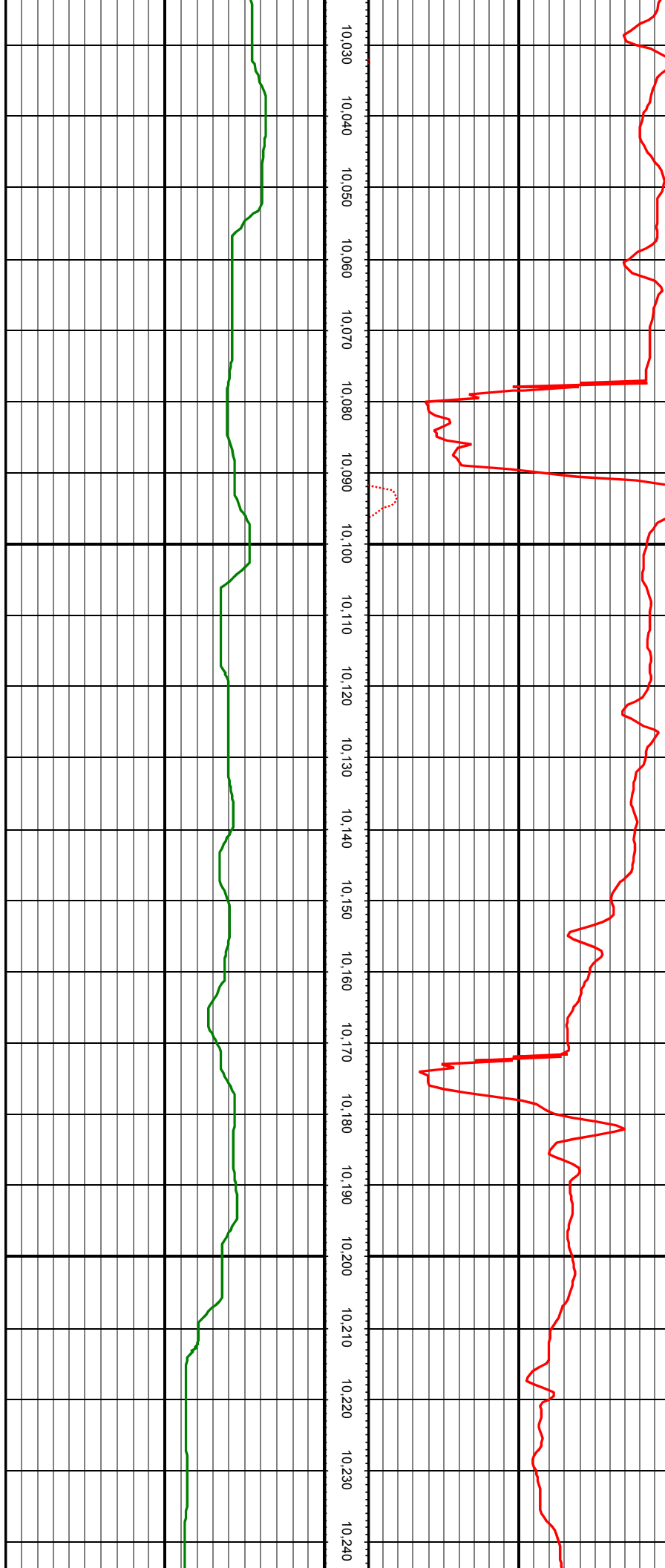
MD: 9532.00 INC: 91.47 AZ: 89.53 TVD: 7347.68 VS: 2188.24



MD: 9627.00 INC: 91.38 AZ: 89.53 TVD: 7345.32 VS: 2280.50

MD: 9721.00 INC: 91.16 AZ: 89.88 TVD: 7343.23 VS: 2371.73

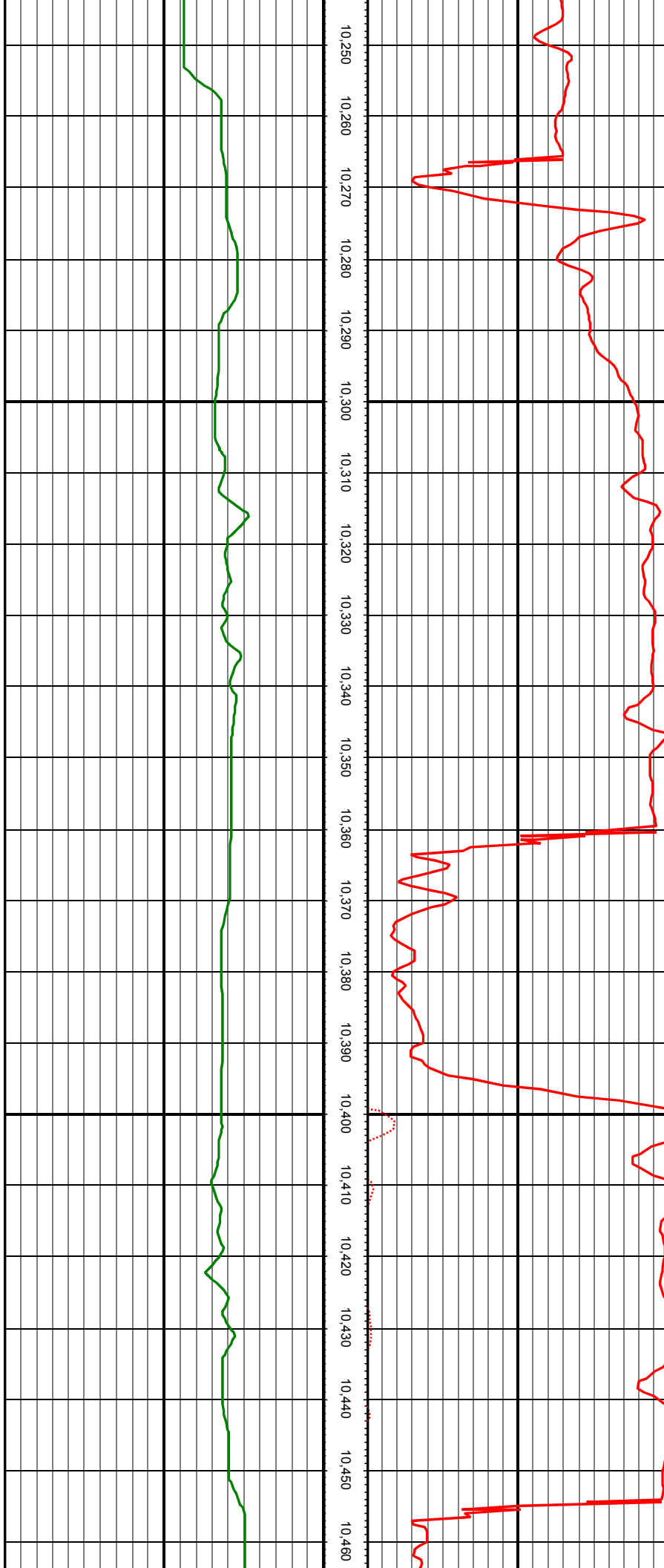




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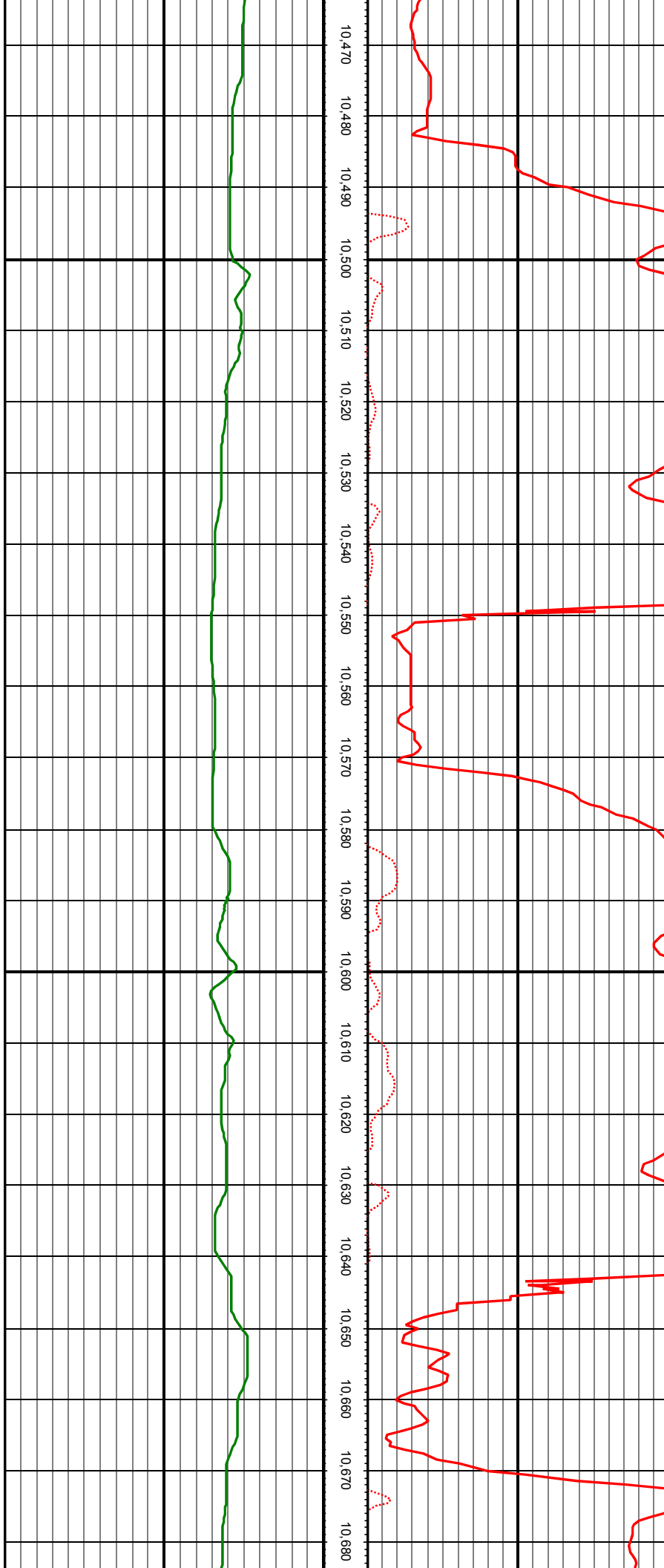
MD: 10099.00 INC: 92.57 AZ: 88.74 TVD: 7328.67 VS: 2739.52

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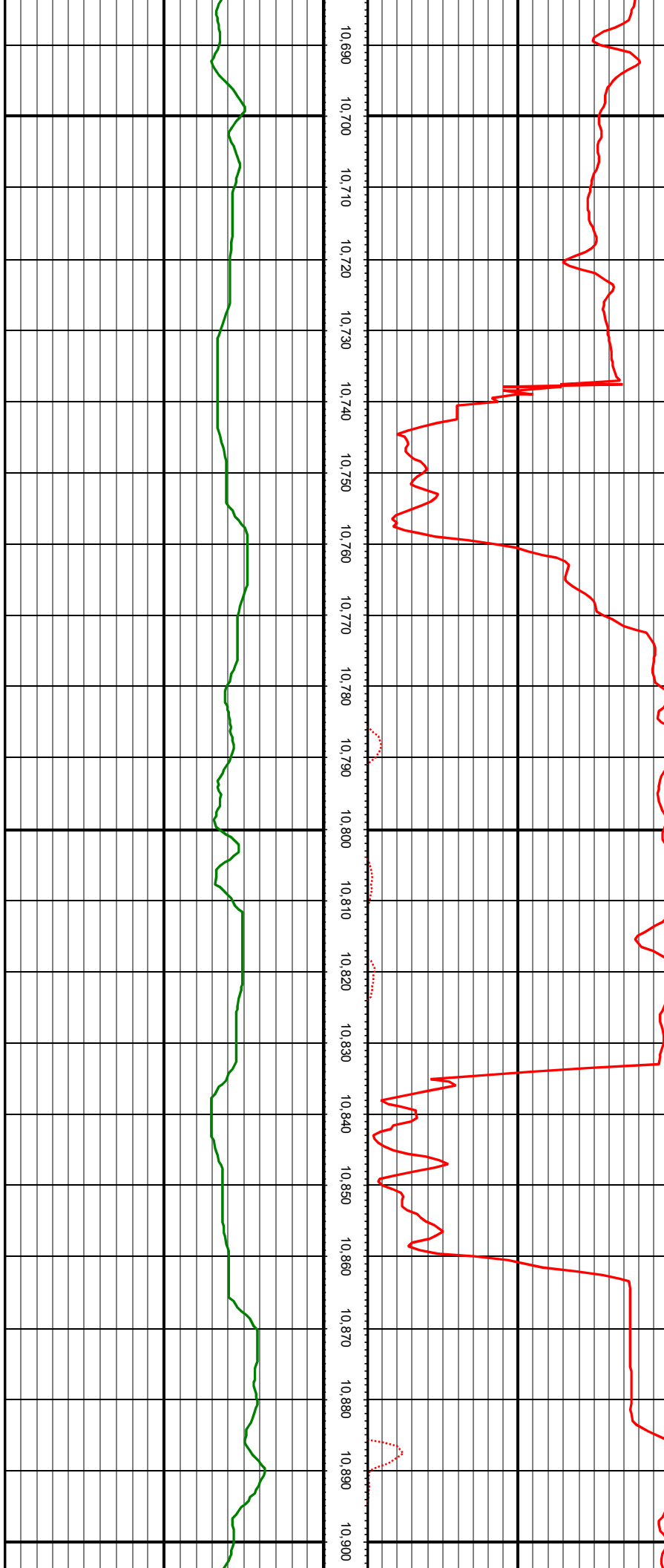
MD: 10382.00 INC: 89.32 AZ: 86.19 TVD: 7326.26 VS: 3016.94



MD: 10476.00 INC: 90.68 AZ: 87.86 TVD: 7326.26 VS: 3109.14

MD: 10570.00 INC: 91.96 AZ: 89.00 TVD: 7324.10 VS: 3200.84

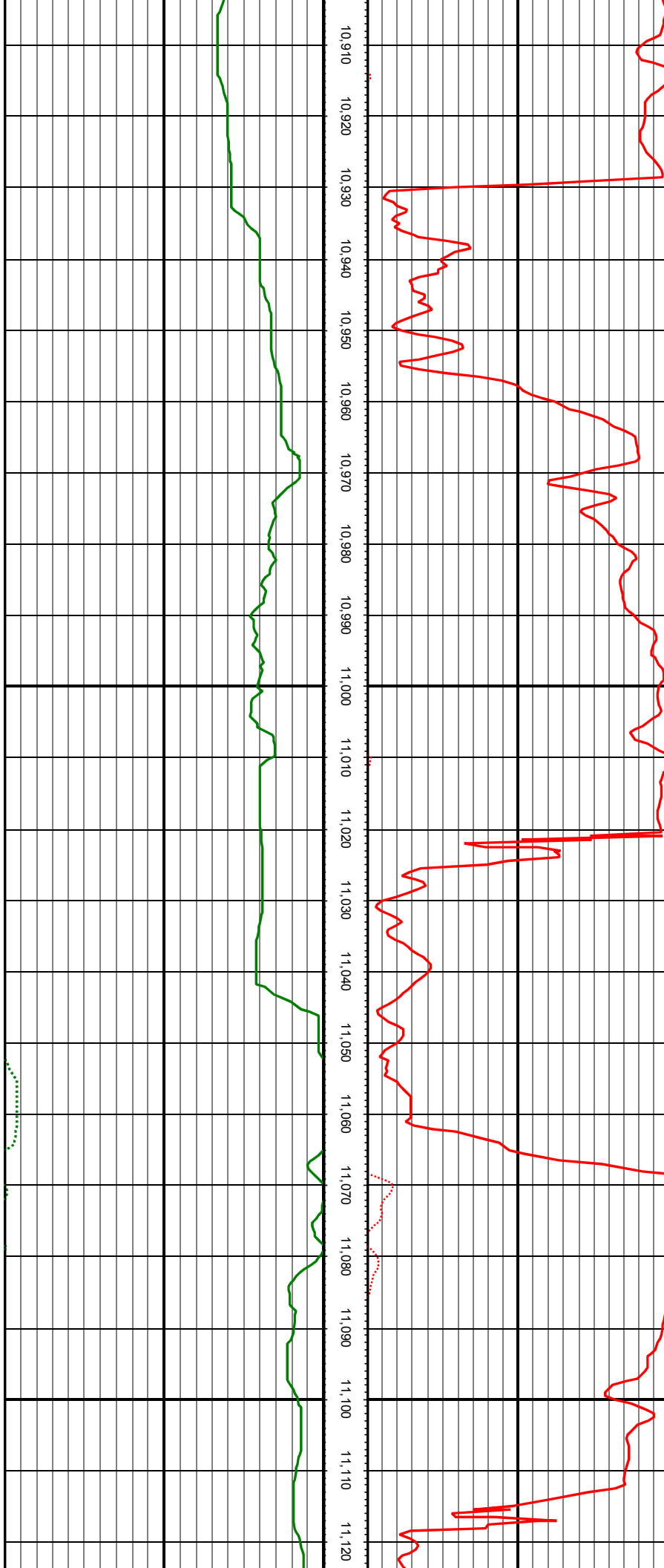
MD: 10665.00 INC: 91.56 AZ: 89.53 TVD: 7321.18 VS: 3293.19



10,690 10,700 10,710 10,720 10,730 10,740 10,750 10,760 10,770 10,780 10,790 10,800 10,810 10,820 10,830 10,840 10,850 10,860 10,870 10,880 10,890 10,900

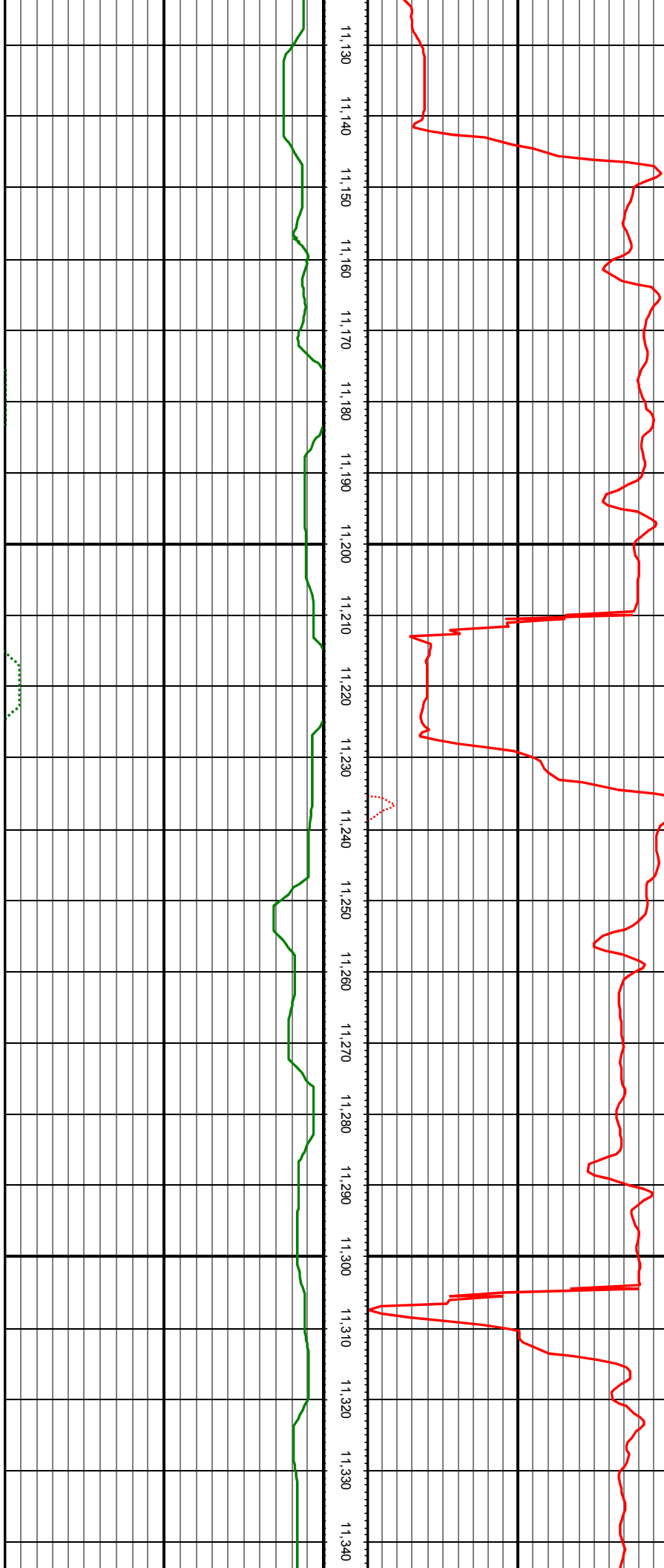
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MD: 10854.00 INC: 88.48 AZ: 89.18 TVD: 7323.34 VS: 3477.29



MD: 10948.00 INC: 87.78 AZ: 89.26 TVD: 7326.41 VS: 3568.68

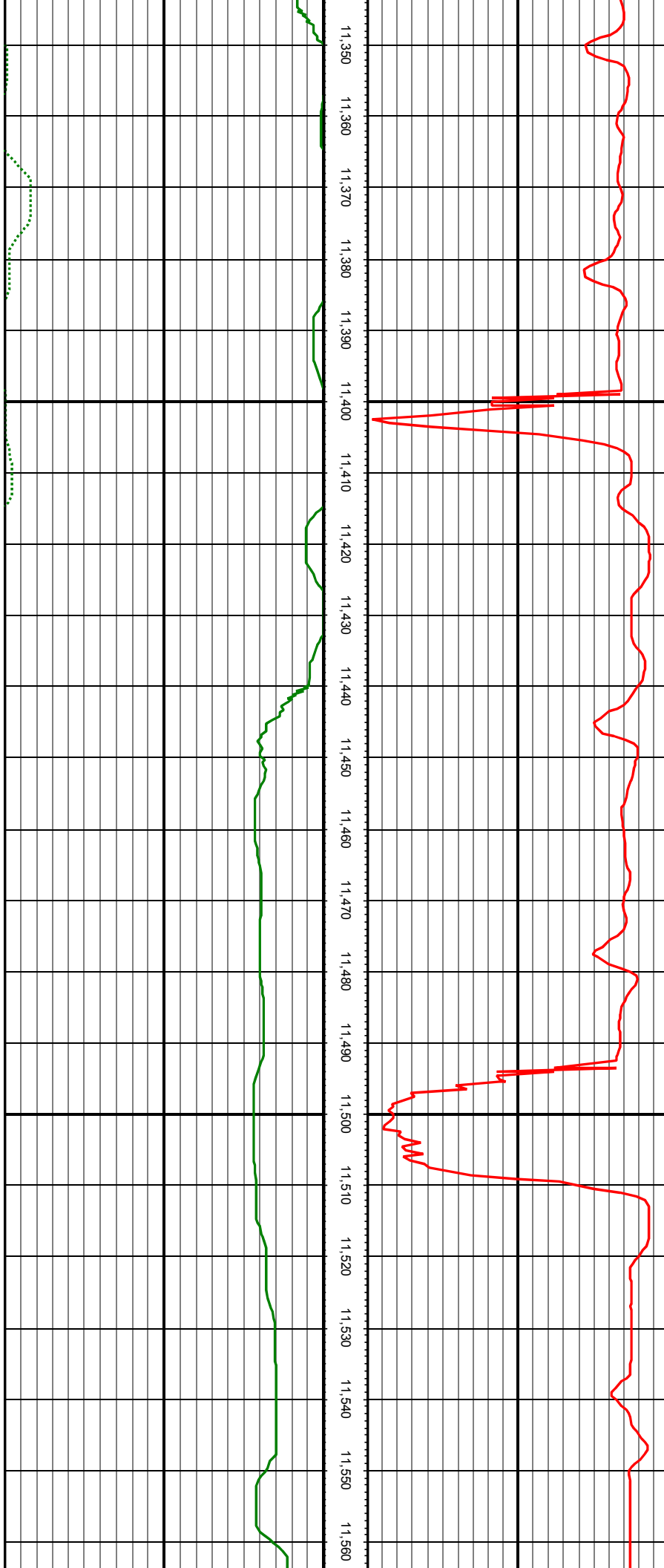
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MD: 11137.00 INC: 90.29 AZ: 90.76 TVD: 7330.29 VS: 3752.04

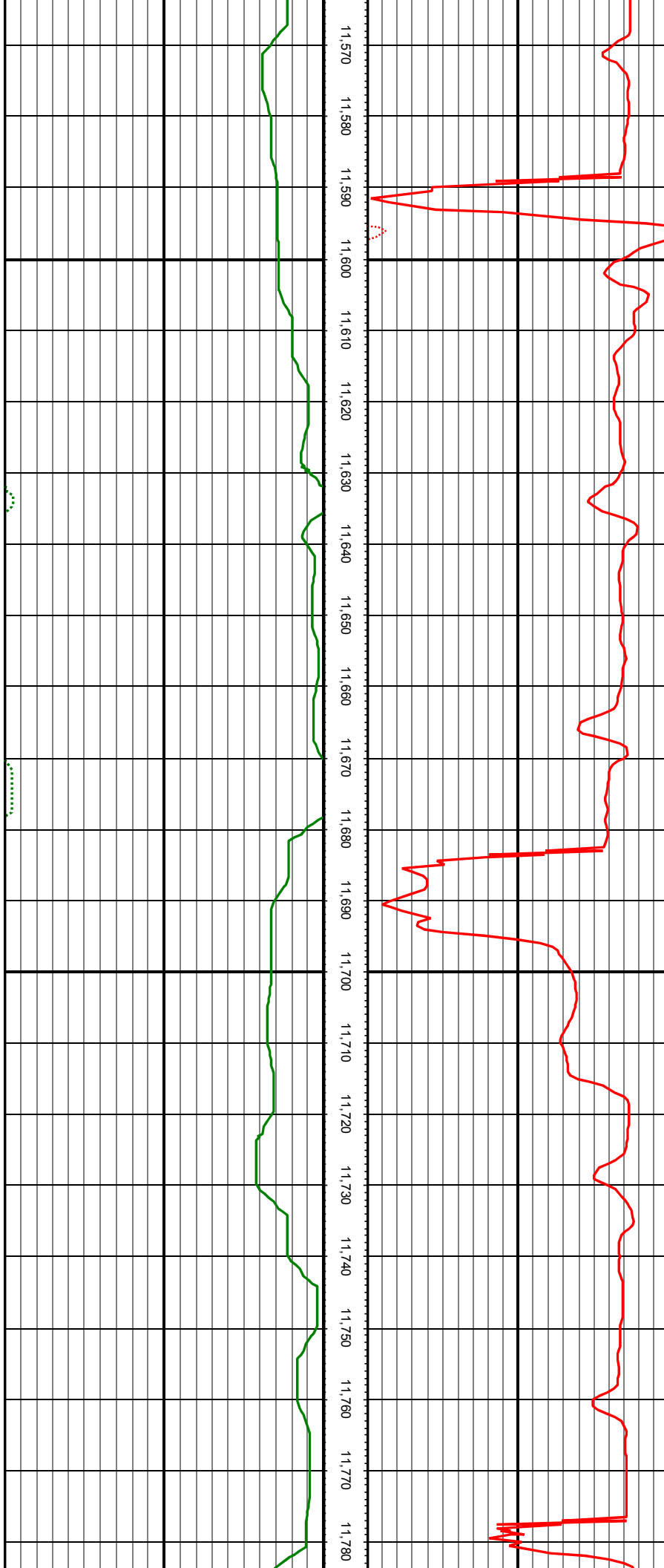
MD: 11232.00 INC: 91.60 AZ: 91.99 TVD: 7328.72 VS: 3843.54

MD: 11326.00 INC: 91.52 AZ: 92.16 TVD: 7326.16 VS: 3933.74



MD: 11421.00 INC: 91.74 AZ: 92.51 TVD: 7323.46 VS: 4024.78

MD: 11516.00 INC: 90.95 AZ: 90.85 TVD: 7321.23 VS: 4116.13



MD: 11610.00 INC: 90.68 AZ: 91.02 TVD: 7319.89 VS: 4206.87

MD: 11705.00 INC: 91.74 AZ: 89.88 TVD: 7317.89 VS: 4298.76

