

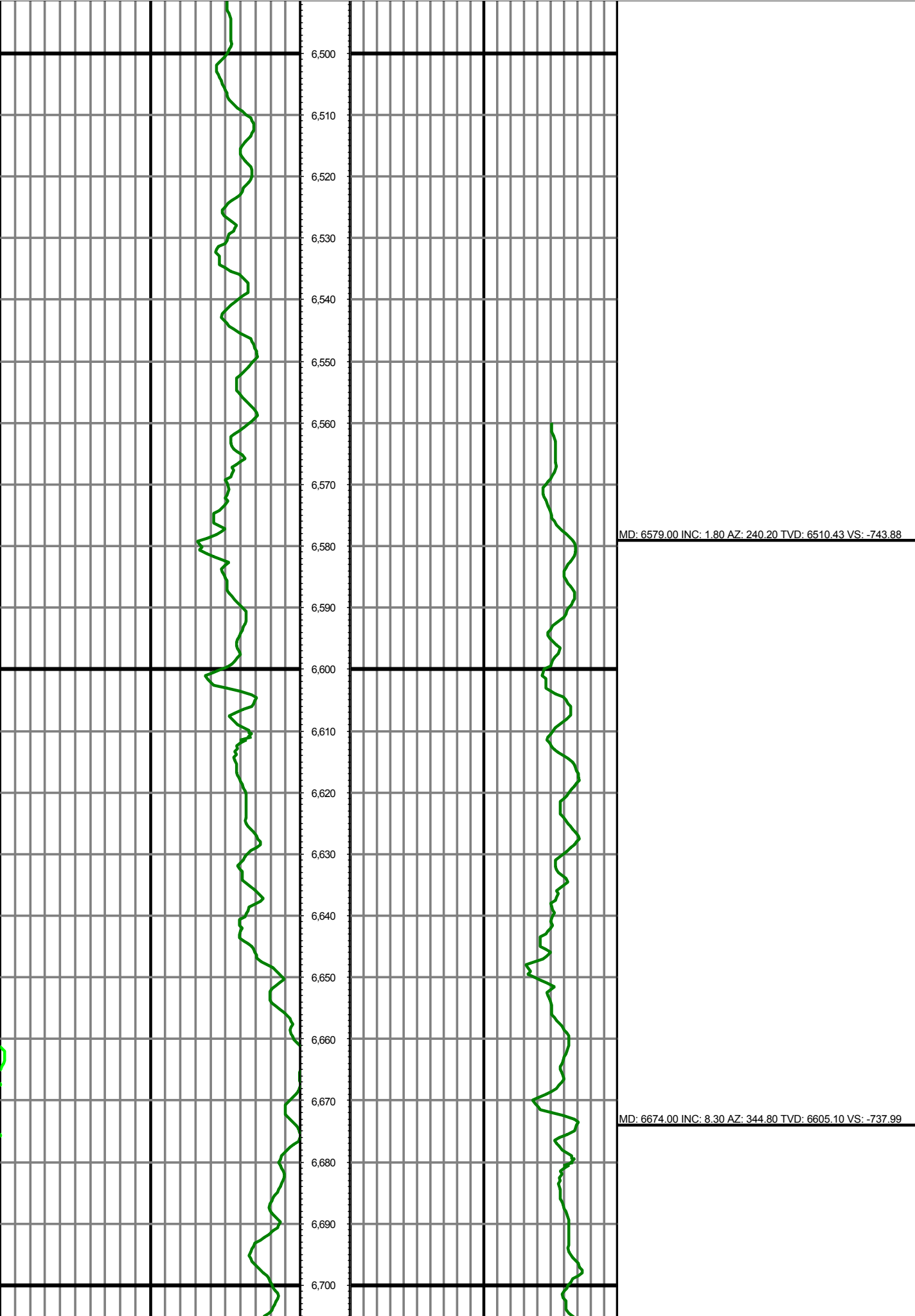
**Premier directional Drilling**

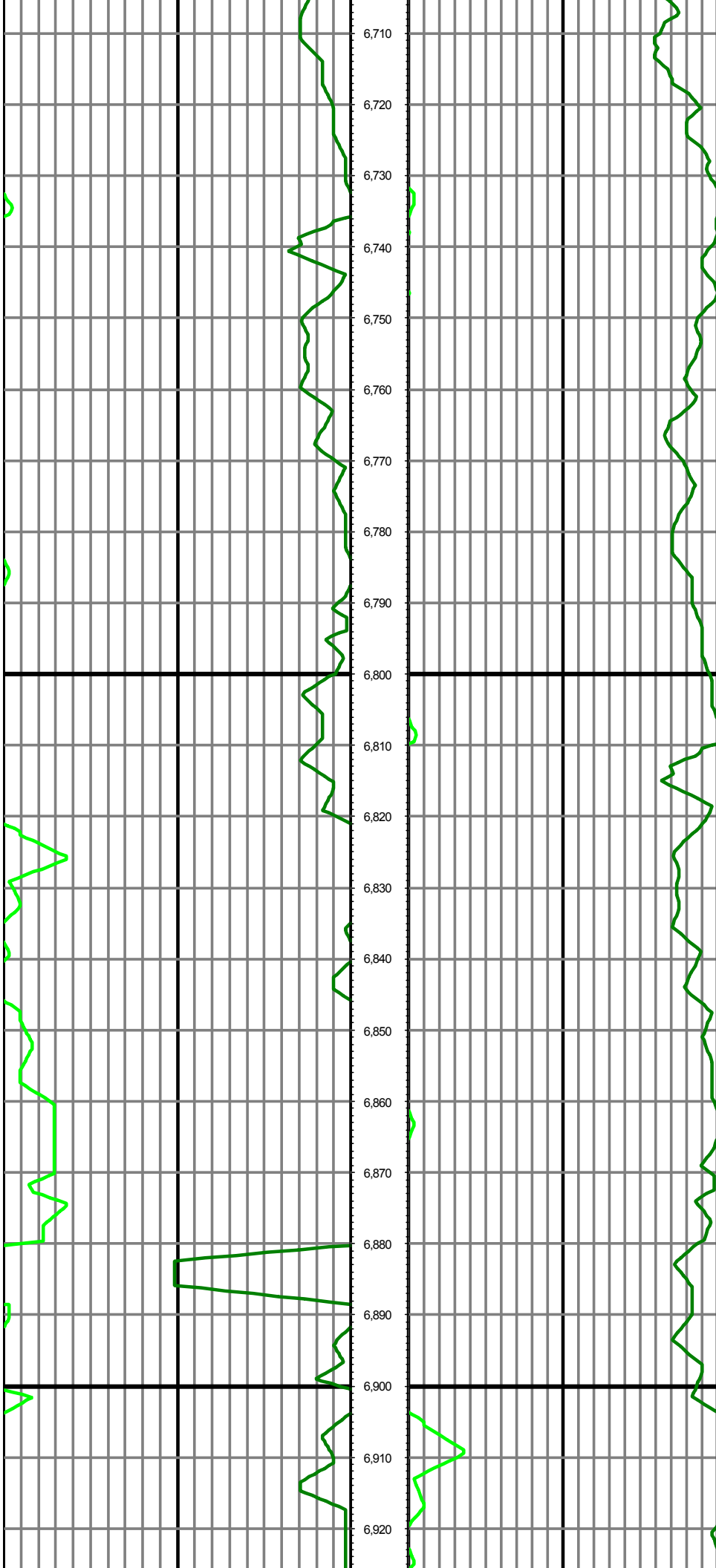
12941 North Freeway
400
Houston, TX 77060
281-673-4000

Bat 28N-9HZ**Scale 5":100' - MD****5/23/2015 11:48 AM****Oper. Company:** Anadarko Petroleum**State:** Colorado**Well:** Bat 28N-9HZ**County:** Weld**Field:** Wattenberg/ Niobrara**Country:** USA**Rig:** HP 311**Location:** 1N 65W Sect. 9**Well ID:** 05123412860000**Start Date:** 05/22/2015 05:15:00**Job Number:** R15244**End Date:** 05/23/2015 11:15:00**Notes:** LWD Real Time Log
Gamma Determined by Pipe ID & OD, Mud Weight and Bit Size**Latitude:** 40.060444**Elev KB:** 4956'**Longitude:** -104.668863**Elev DF:** 4956'**Elev GL:** 4931'**Notes:** Datum: NAD 1983 Map Zone: 13N (108 W to 102 W) Total Correction: 8.13° (Mag Var Mean) Grid Convergence: 0.21°**Operator 1:** Robert Grossman**Operator 2:** Mike Gunther**Notes:** Smoothing: 7Gap Fill: 10Survey Tool Type: Mud PulseCalculation Method: Minimum Curvature

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	262				
Bit Size	7.875				
Cal Factor	4.917763				
Gamma Offset	47.00				
Resistivity Offset	0.00				
Start Depth	1580.00				
StartDate	5/22/2015				
StartTime	5:15 AM				
EndDepth	11909.00				
EndDate	5/23/2015				
EndTime	11:15 AM				
Mud Type	OBM				
Mud Weight	9.5				
Funnel Viscosity	53				
Plastic Viscosity	16				
Yield Point	12				
Gel Strength	NA				
Solids Content	7.9				
Sand Content	NA				
Mud Alkalinity	3.3				
Filtrate Alkalinity	NA				
Chlorides	54000				
Mud RM	NA				
Mud RMF	NA				
Mud RMC	NA				
Mud RM at BHT	NA				
Temperature	NA				
Hole Data			Casing Data		
Size	From	To	Size	From	To
13.5	0.00	1580.00	9.625	0.00	1569.00
7.875	1580.00	11909.00	5.5	0.00	11909.00

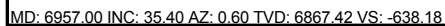
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost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





MD: 6768.00 INC: 17.80 AZ: 354.30 TVD: 6696.58 VS: -717.10

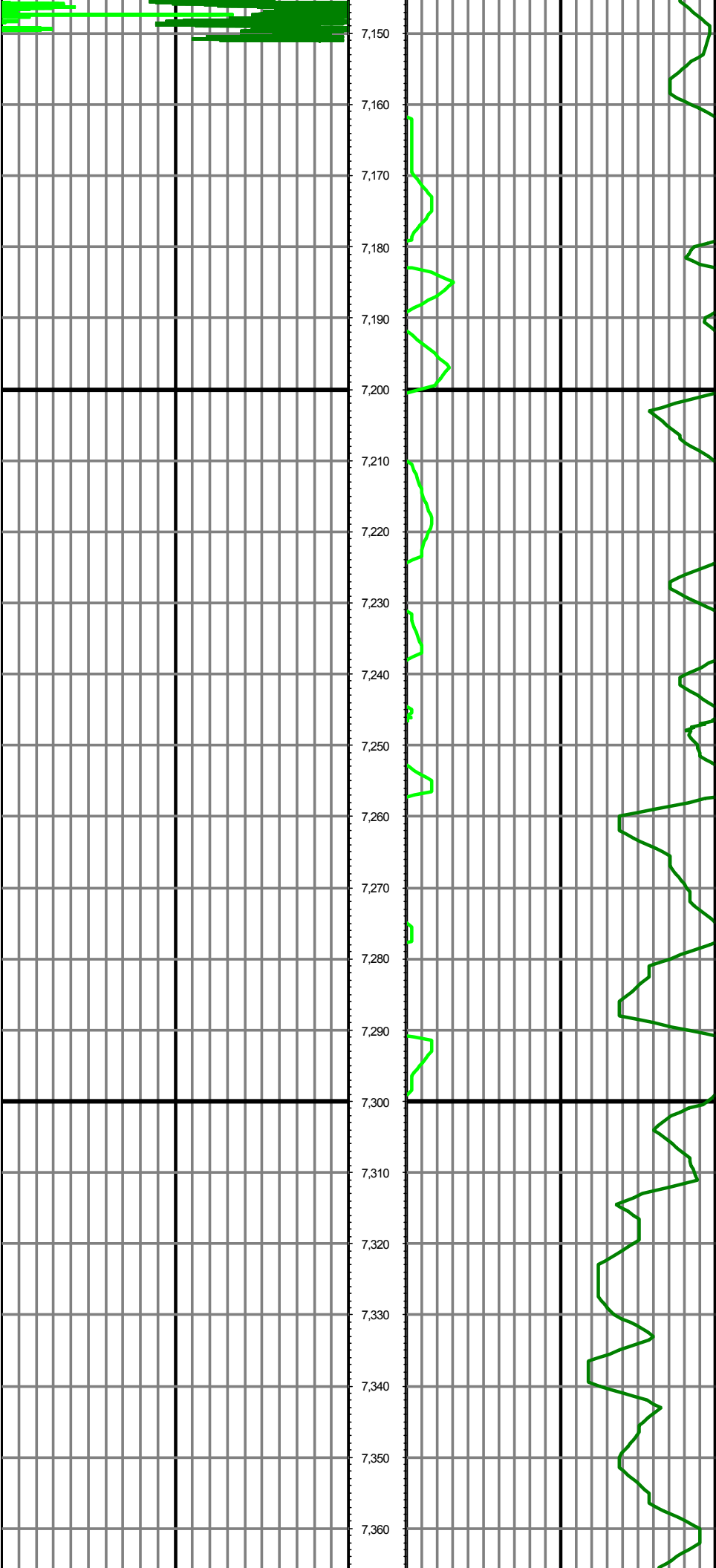
MD: 6863.00 INC: 23.10 AZ: 357.70 TVD: 6785.56 VS: -684.00



MD: 7052.00 INC: 44.10 AZ: 3.50 TVD: 6940.40 VS: -577.55

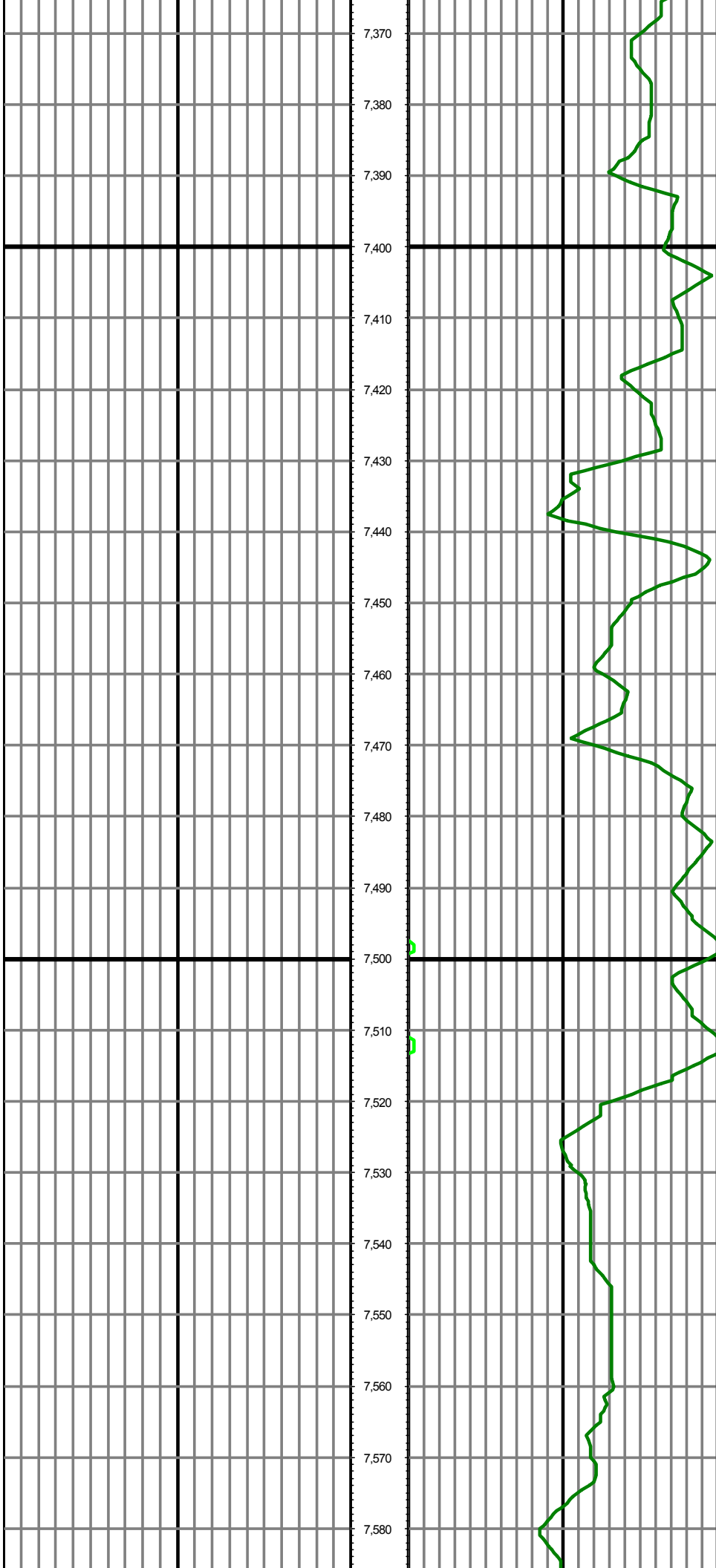
MD: 7146.00 INC: 52.60 AZ: 0.70 TVD: 7002.82 VS: -507.43

MD: 7146.00 INC: 52.60 AZ: 0.70 TVD: 7002.82 VS: -507.43



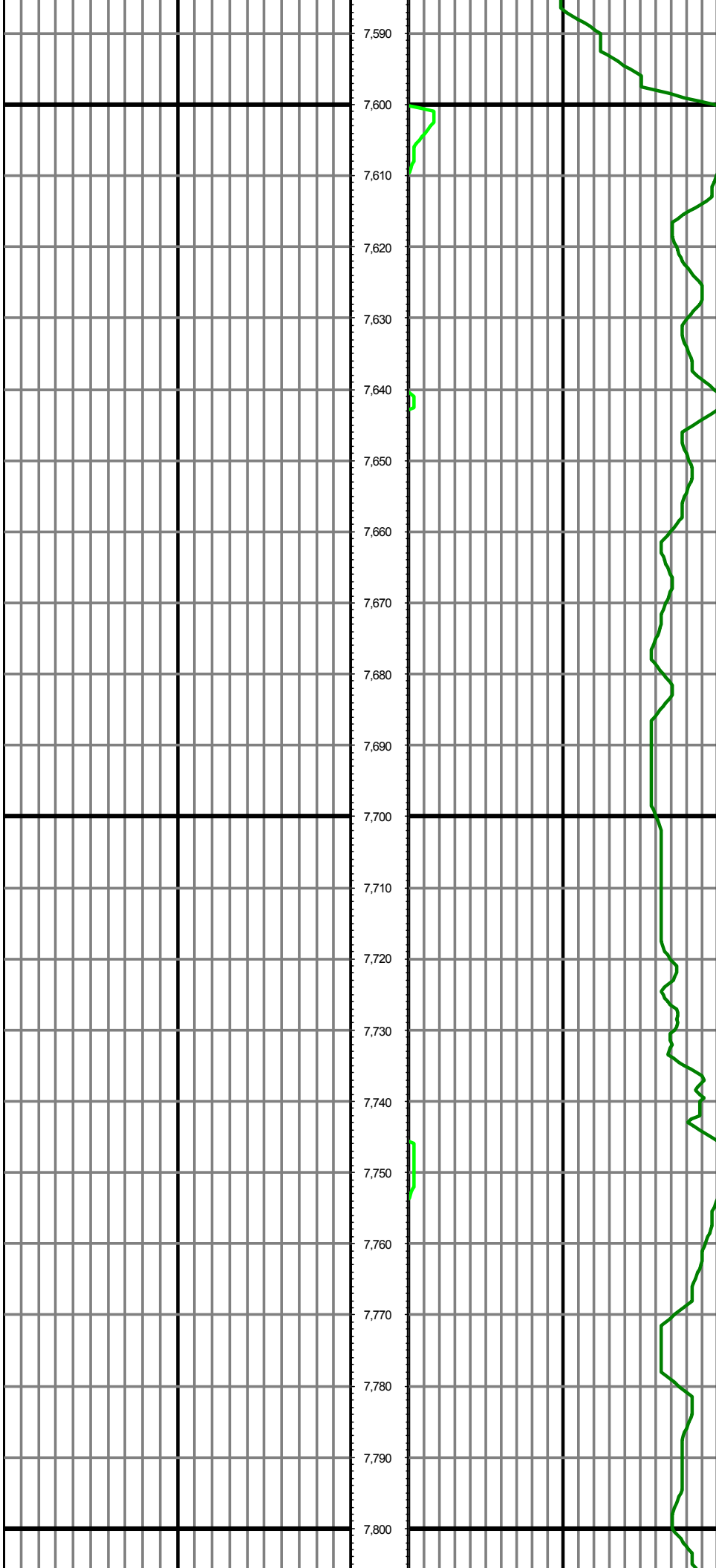
MD: 7241.00 INC: 62.90 AZ: 0.40 TVD: 7053.44 VS: -427.20

MD: 7335.00 INC: 68.60 AZ: 2.40 TVD: 7092.04 VS: -341.56



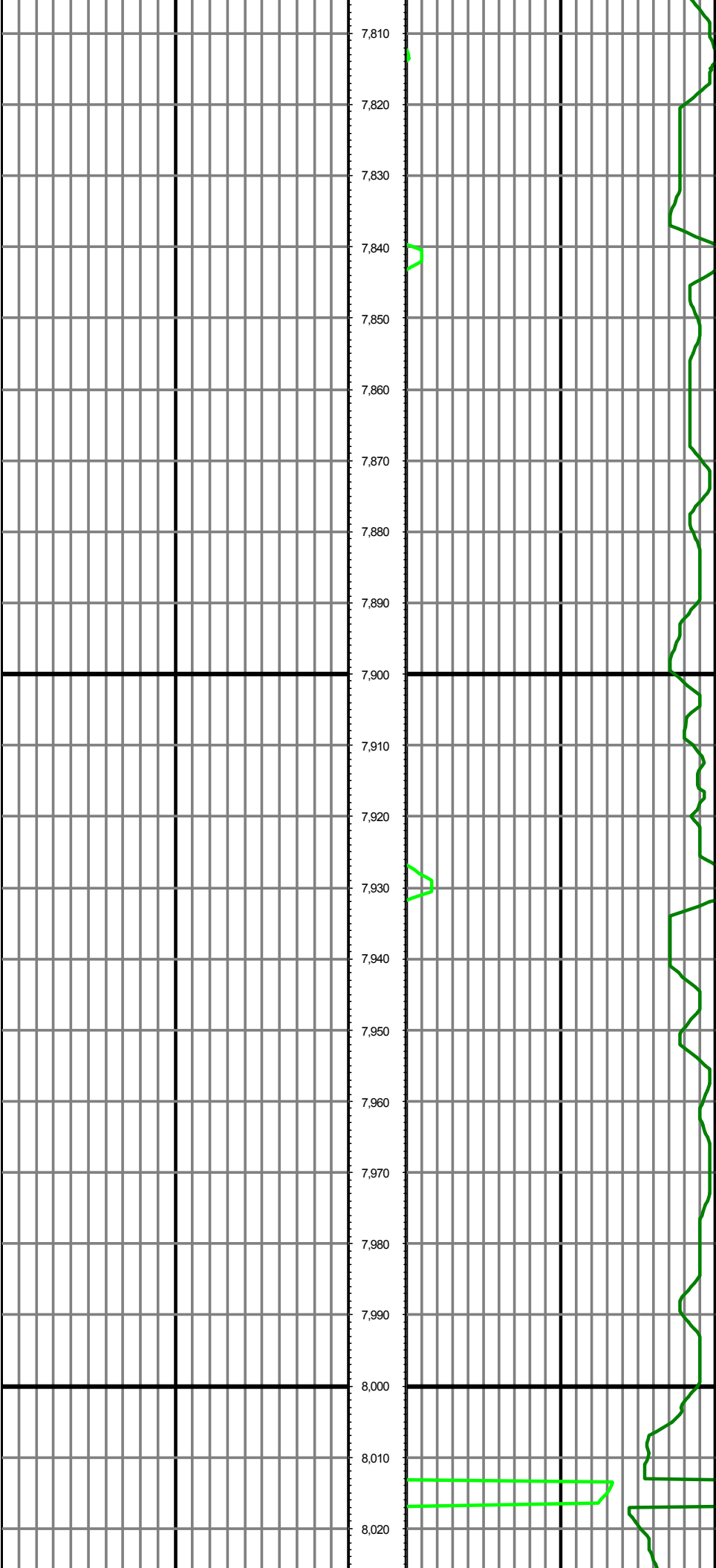
MD: 7430.00 INC: 72.40 AZ: 3.50 TVD: 7123.74 VS: -252.14

MD: 7524.00 INC: 84.10 AZ: 357.80 TVD: 7142.87 VS: -160.32



MD: 7619.00 INC: 90.50 AZ: 359.00 TVD: 7147.34 VS: -65.51

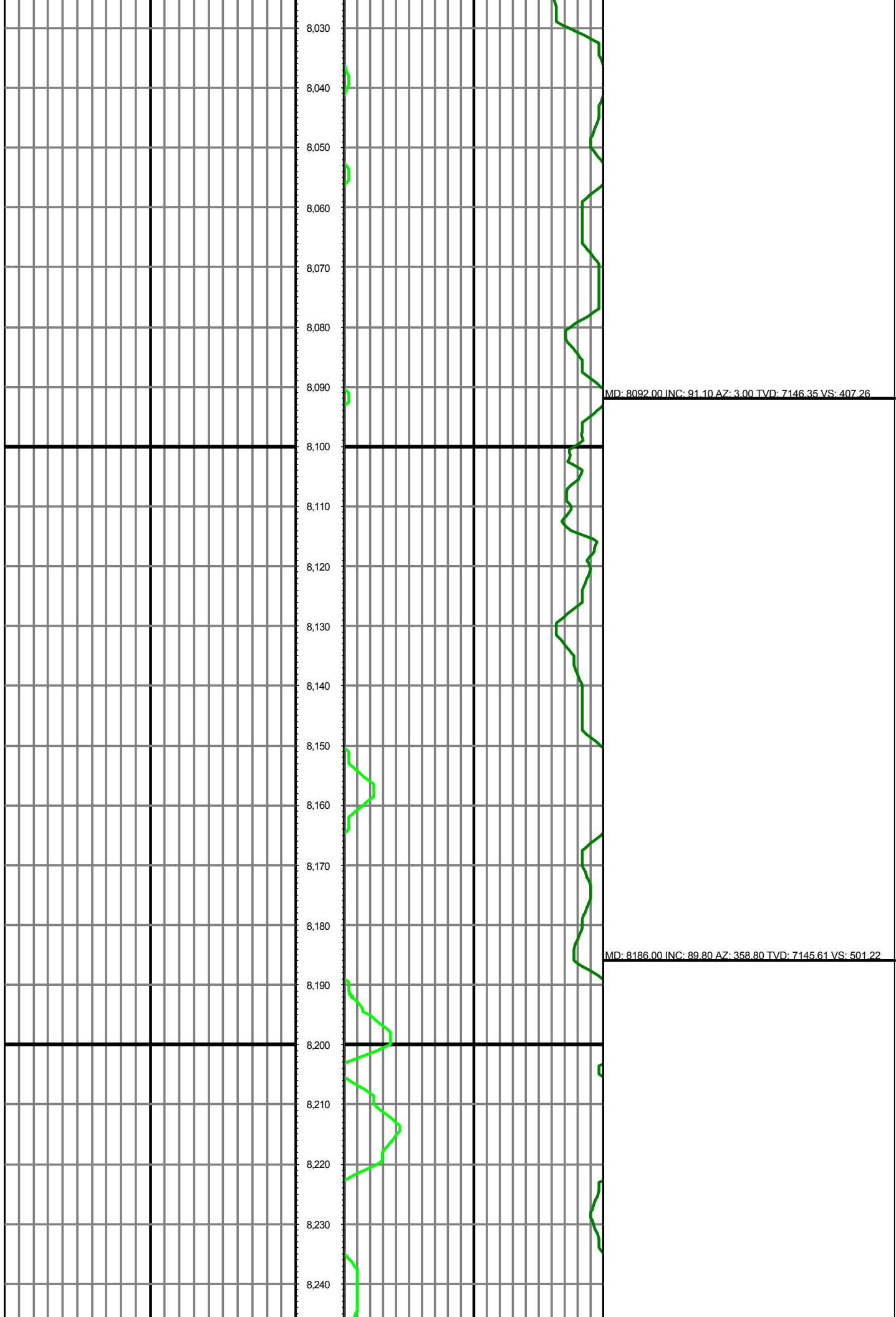
MD: 7714.00 INC: 88.40 AZ: 357.50 TVD: 7148.25 VS: 29.43

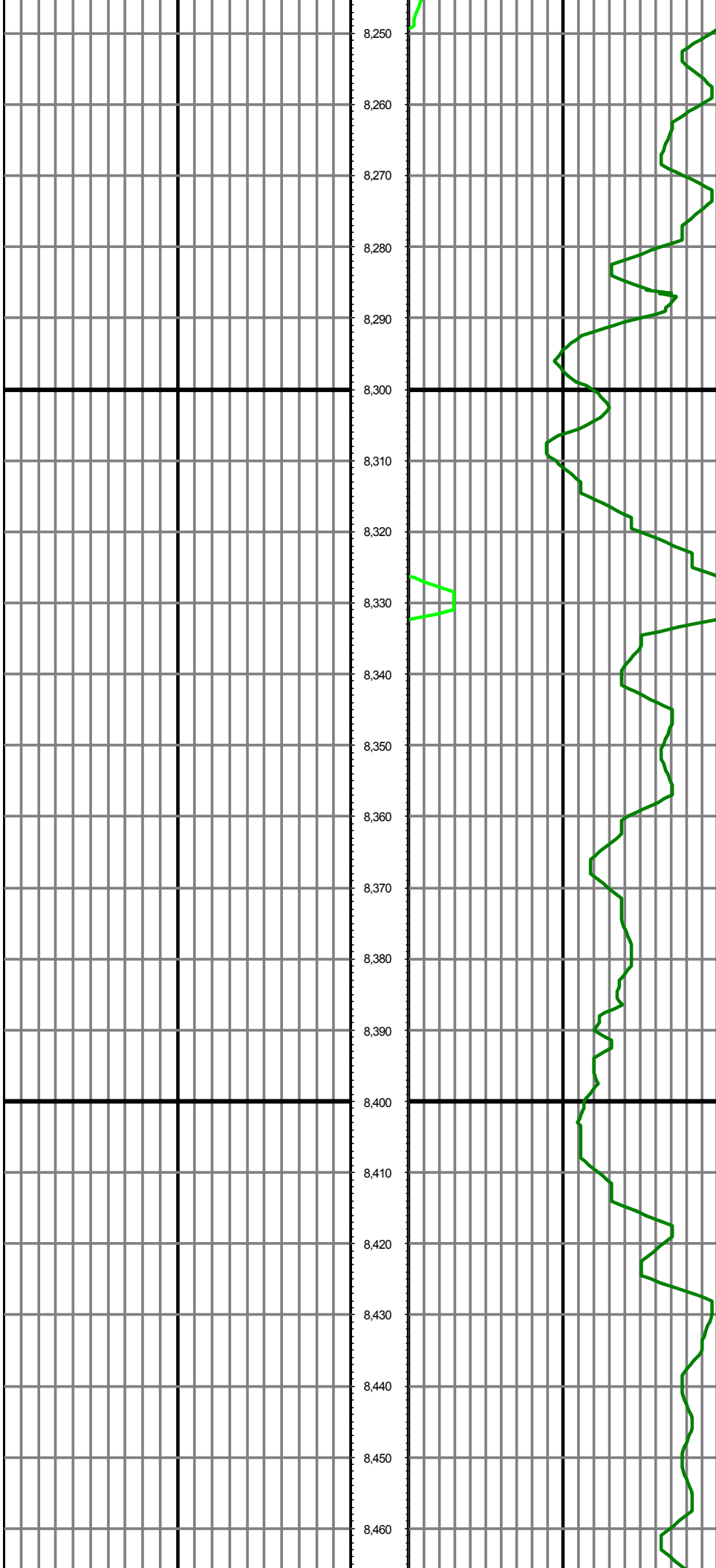


MD: 7808.00 INC: 91.20 AZ: 358.70 TVD: 7148.58 VS: 123.37

MD: 7902.00 INC: 89.80 AZ: 0.70 TVD: 7147.76 VS: 217.36

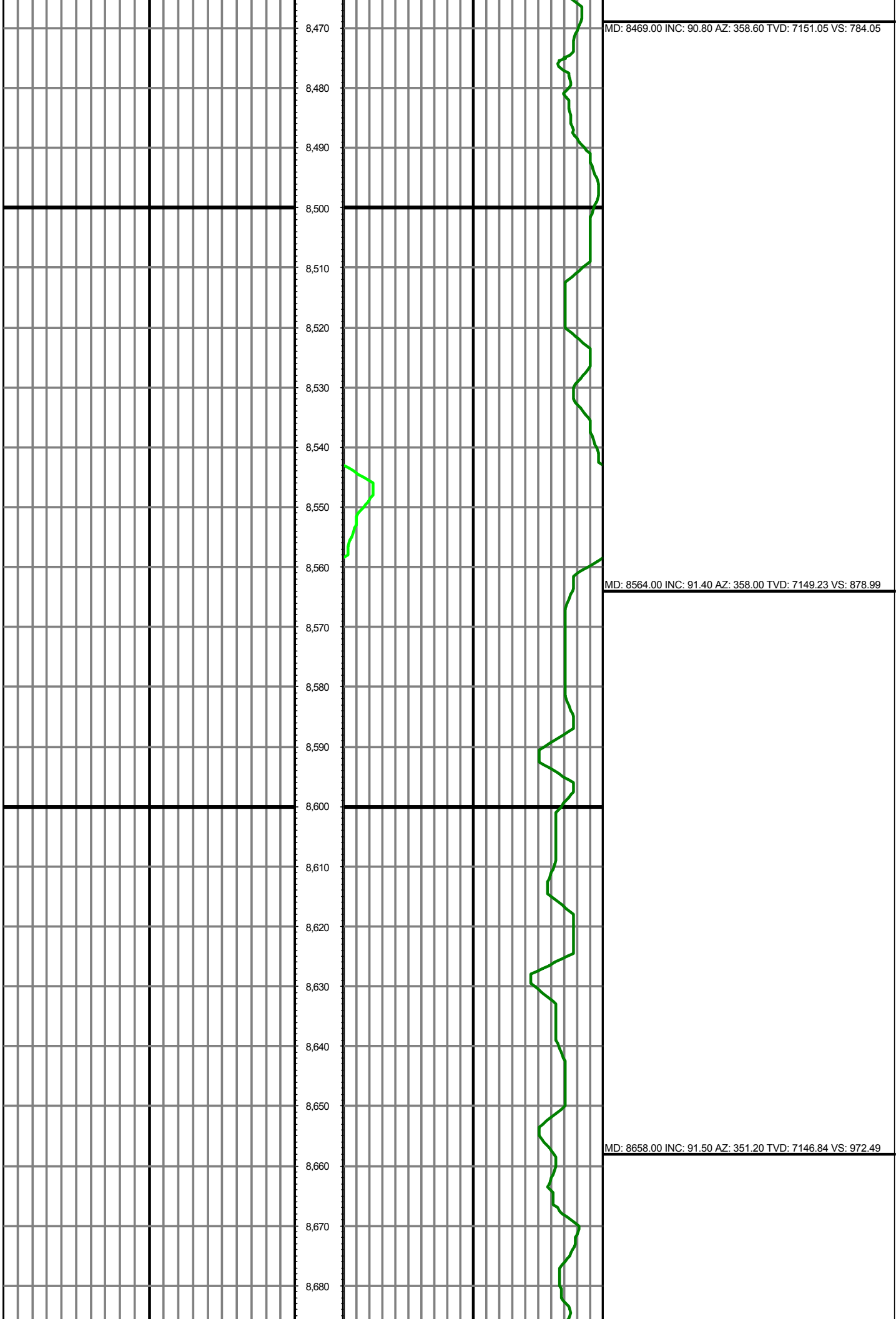
MD: 7997.00 INC: 90.40 AZ: 1.40 TVD: 7147.60 VS: 312.34

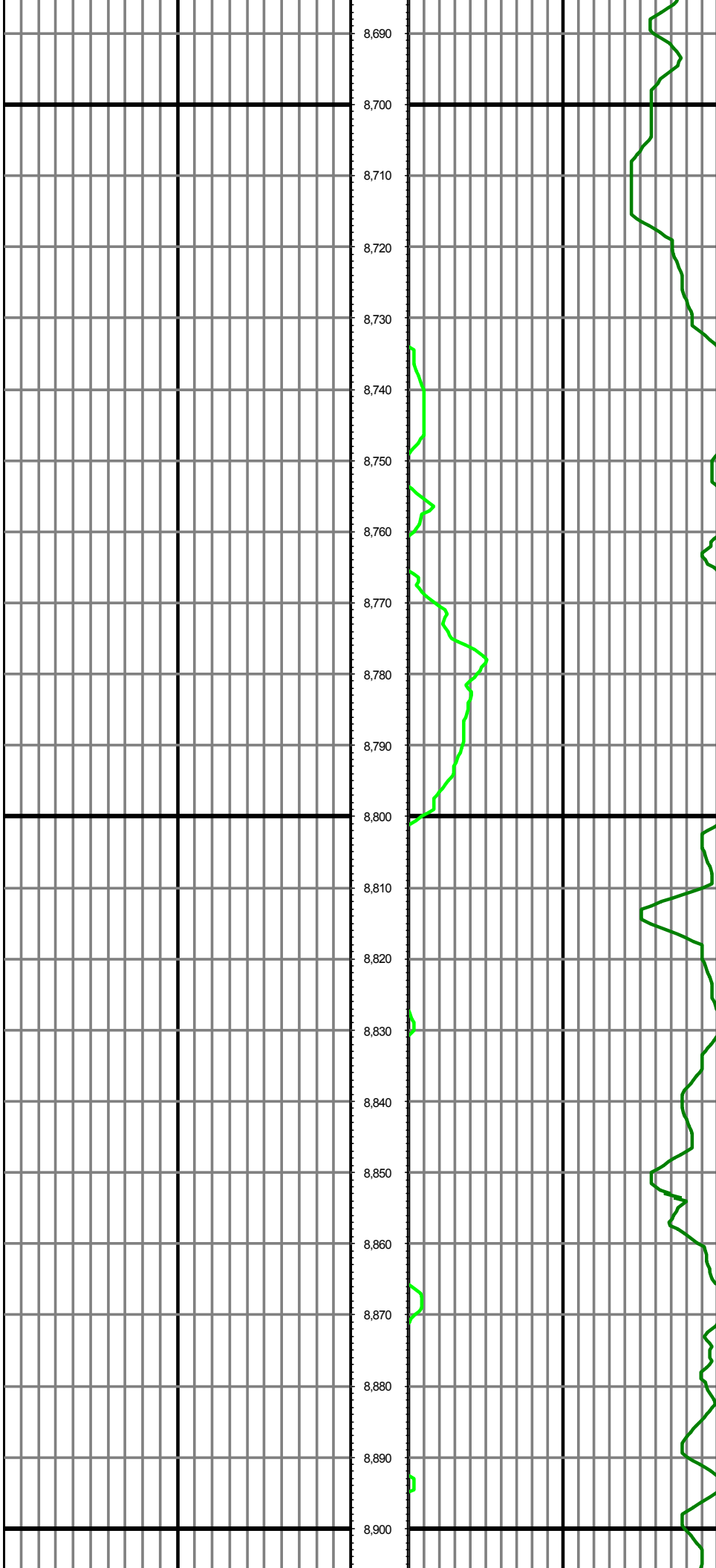




MD: 8281.00 INC: 87.50 AZ: 358.70 TVD: 7147.85 VS: 596.16

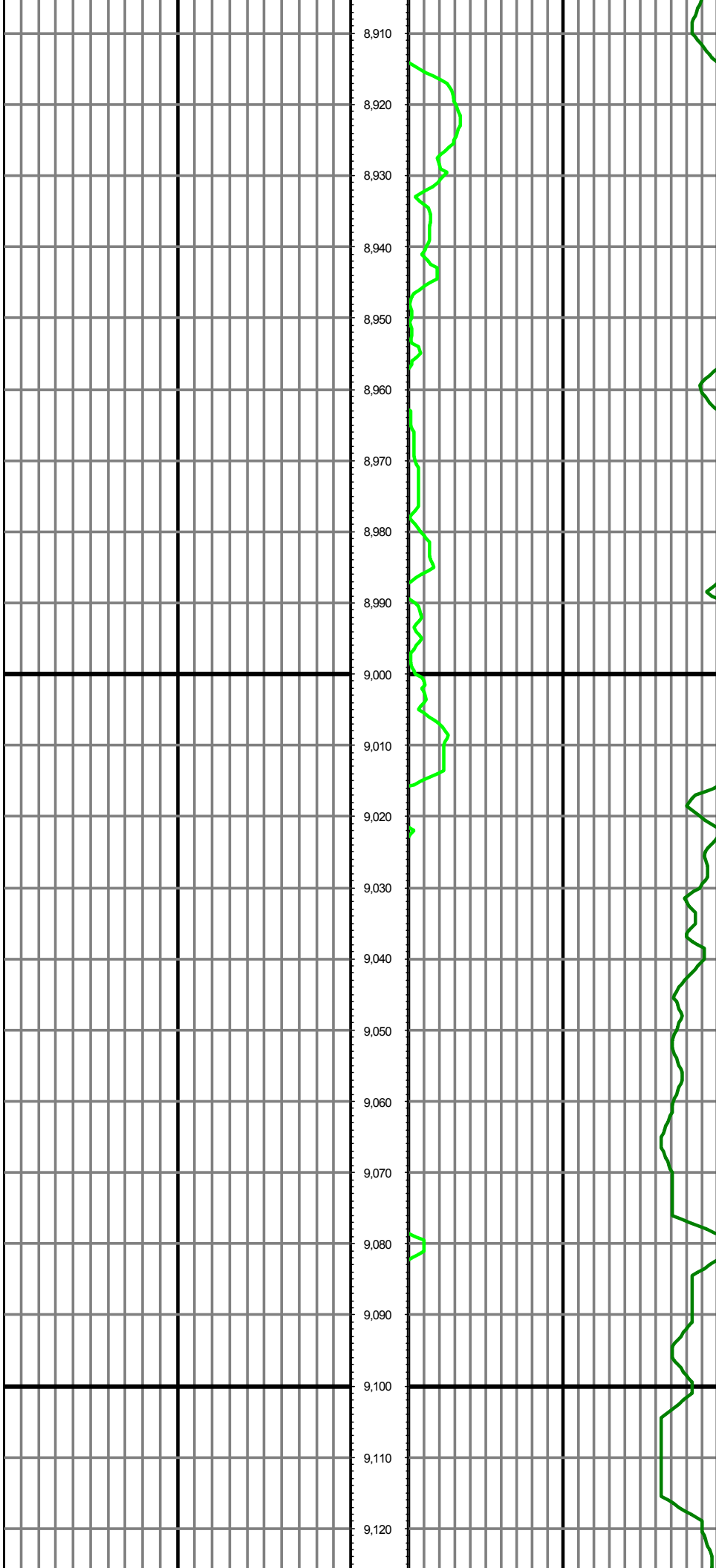
MD: 8375.00 INC: 88.90 AZ: 358.50 TVD: 7150.80 VS: 690.09





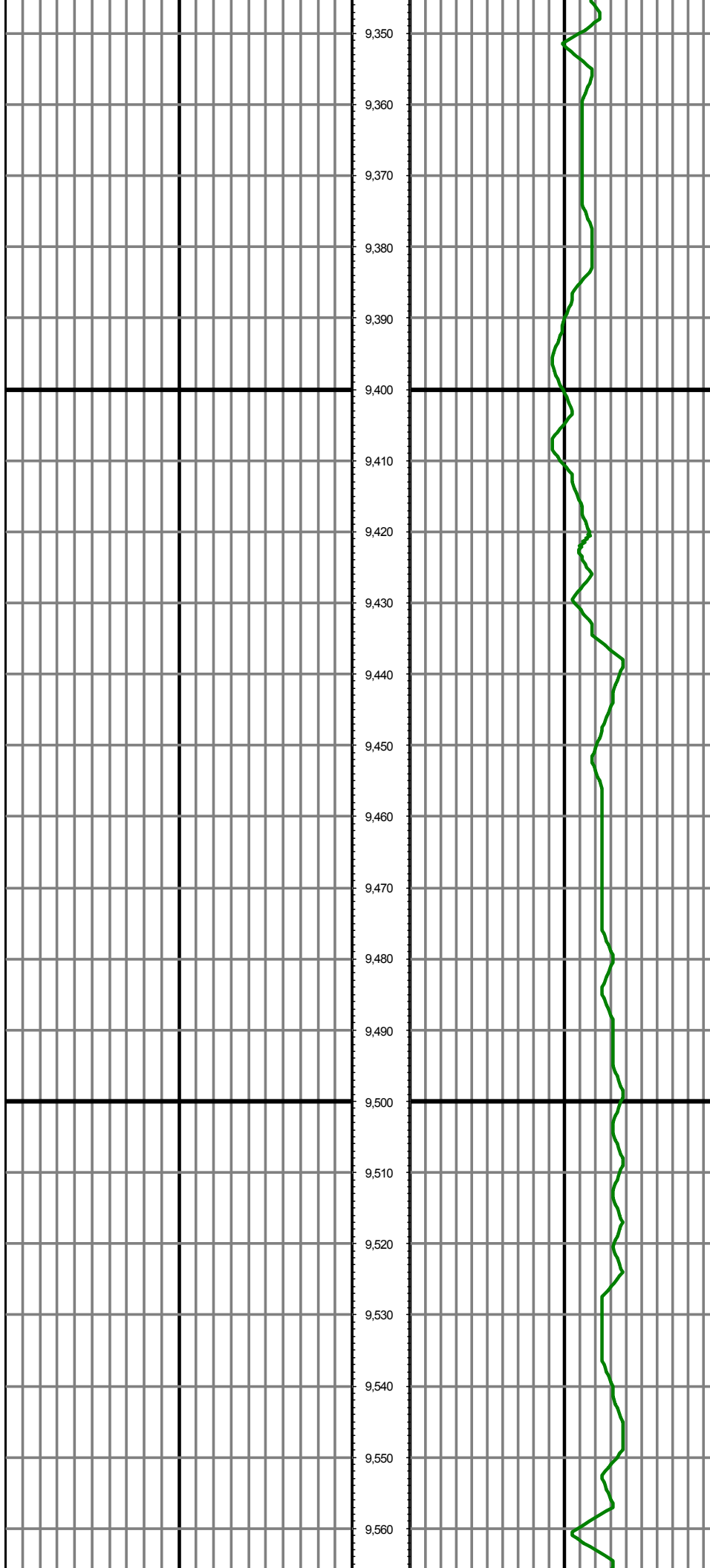
MD: 8753.00 INC: 92.10 AZ: 354.00 TVD: 7143.86 VS: 1066.64

MD: 8848.00 INC: 90.50 AZ: 356.90 TVD: 7141.70 VS: 1161.31



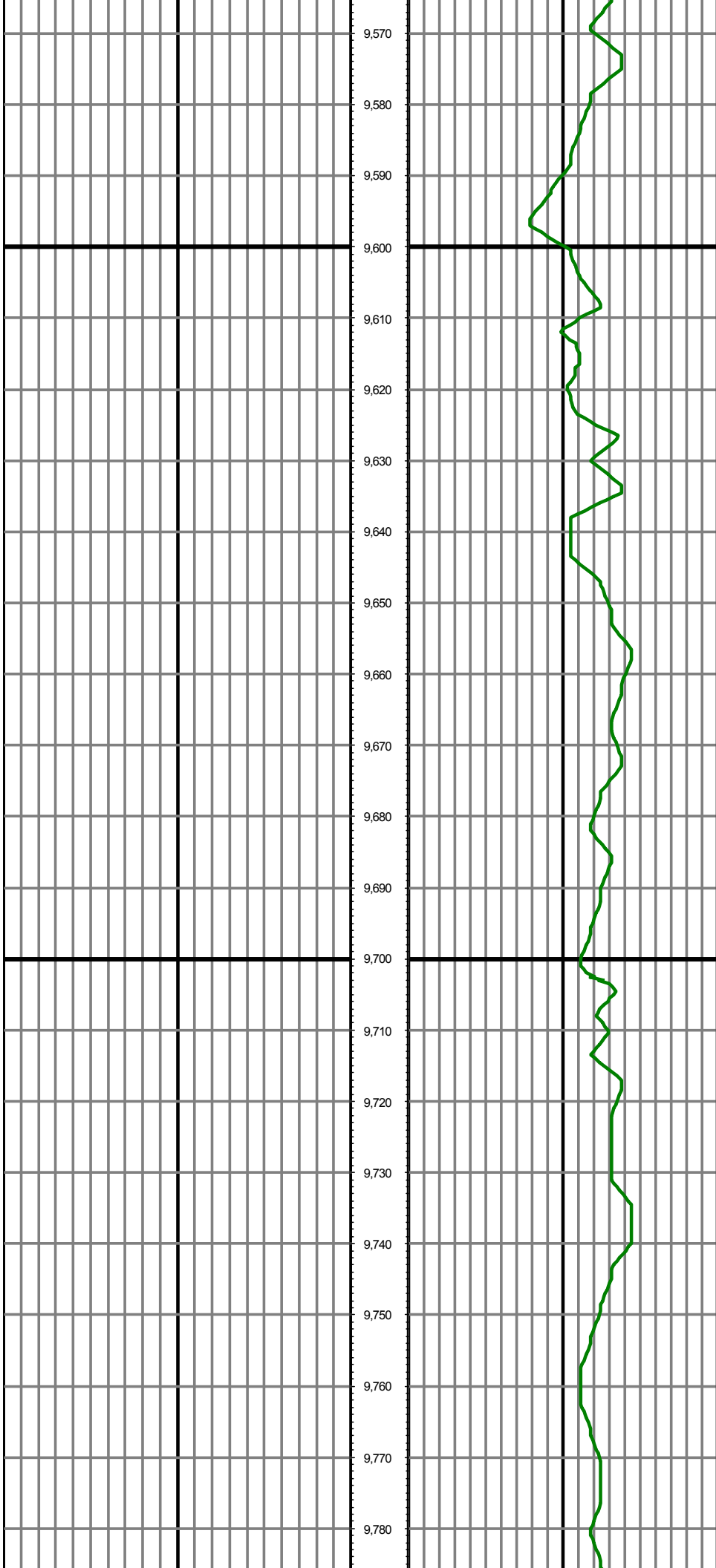
MD: 8942.00 INC: 91.80 AZ: 0.60 TVD: 7139.82 VS: 1255.25

MD: 9037.00 INC: 89.50 AZ: 2.90 TVD: 7138.74 VS: 1350.18



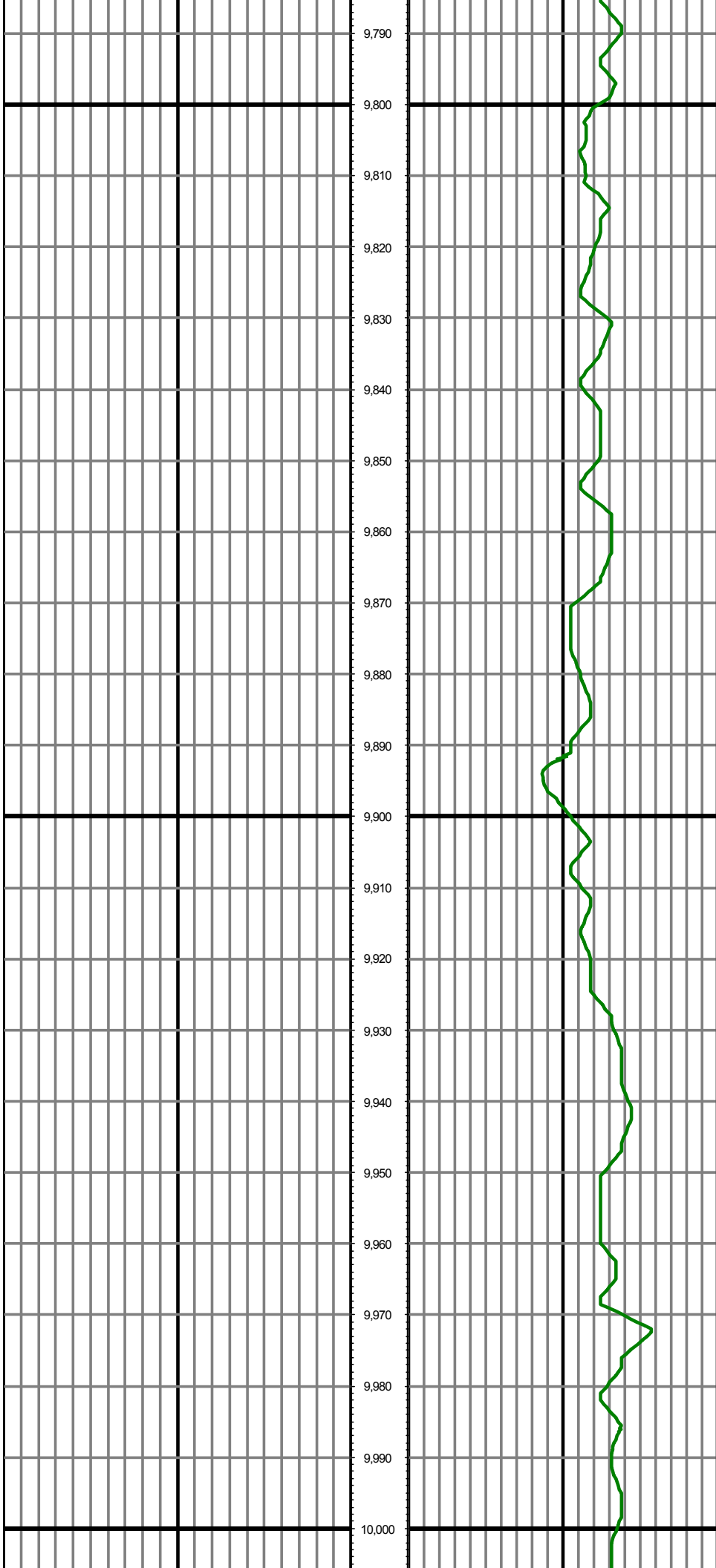
MD: 9414.00 INC: 89.80 AZ: 3.90 TVD: 7140.46 VS: 1726.84

MD: 9509.00 INC: 89.20 AZ: 3.10 TVD: 7141.28 VS: 1821.66



MD: 9603.00 INC: 88.80 AZ: 2.50 TVD: 7142.93 VS: 1915.53

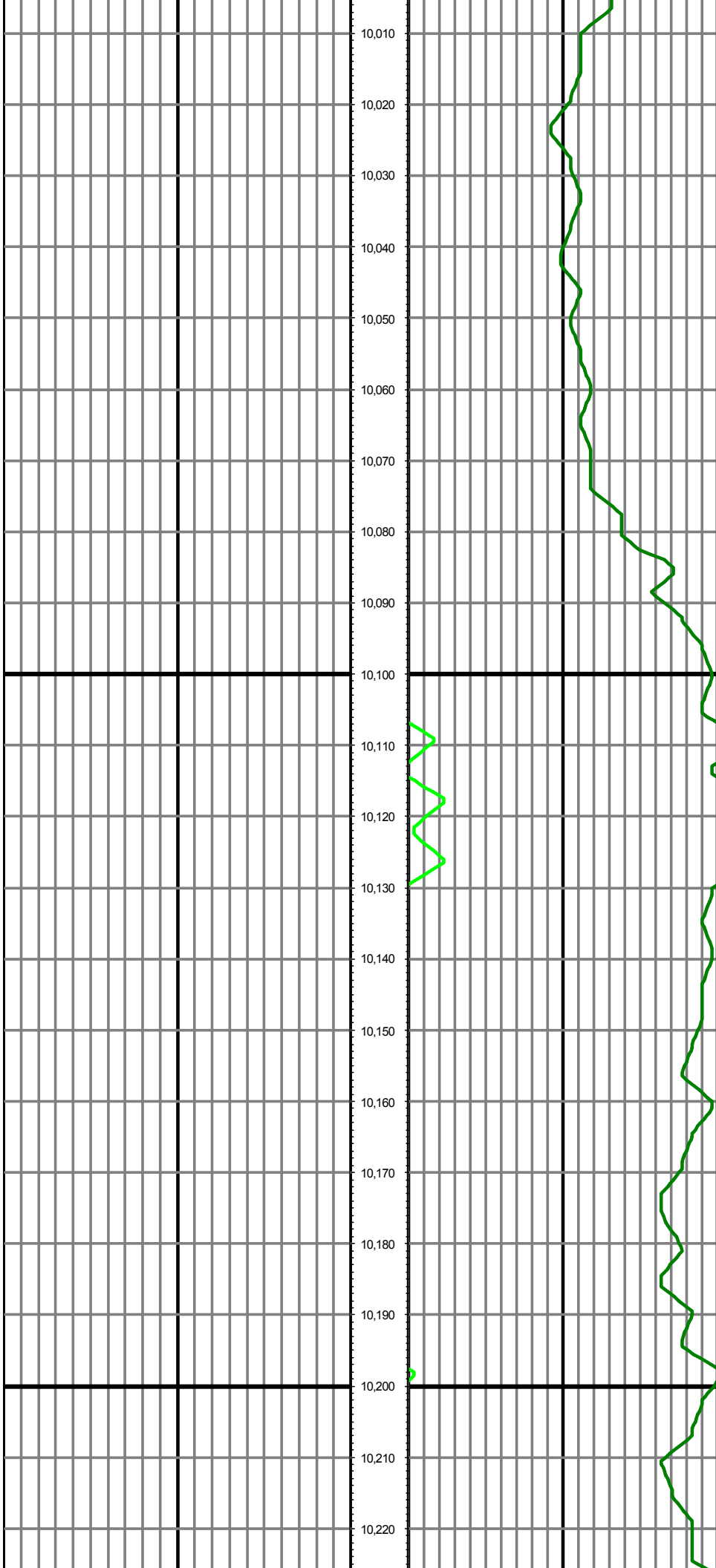
MD: 9697.00 INC: 90.60 AZ: 3.40 TVD: 7143.42 VS: 2009.40



MD: 9792.00 INC: 89.50 AZ: 2.30 TVD: 7143.33 VS: 2104.28

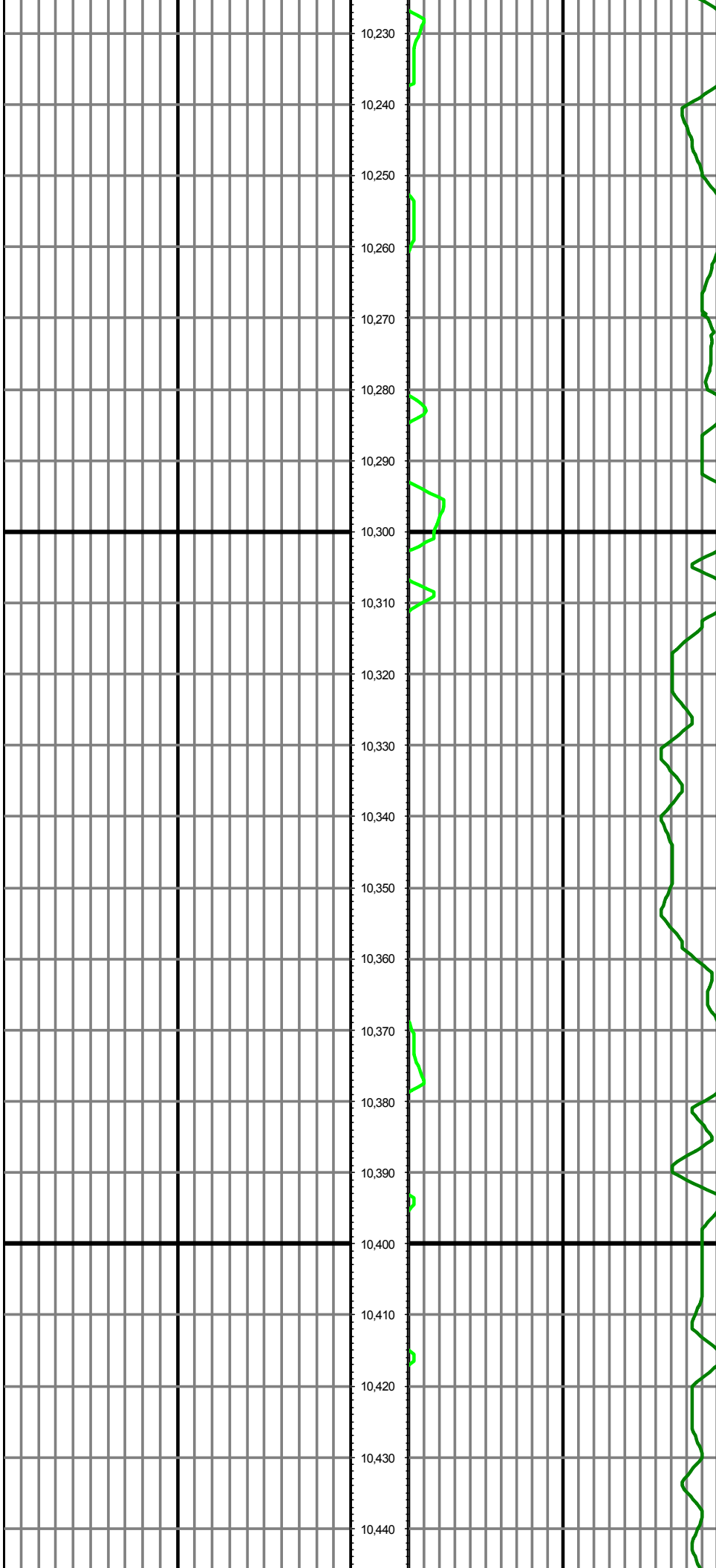
MD: 9886.00 INC: 91.90 AZ: 0.50 TVD: 7142.19 VS: 2198.24

MD: 9981.00 INC: 91.50 AZ: 0.20 TVD: 7139.37 VS: 2293.19



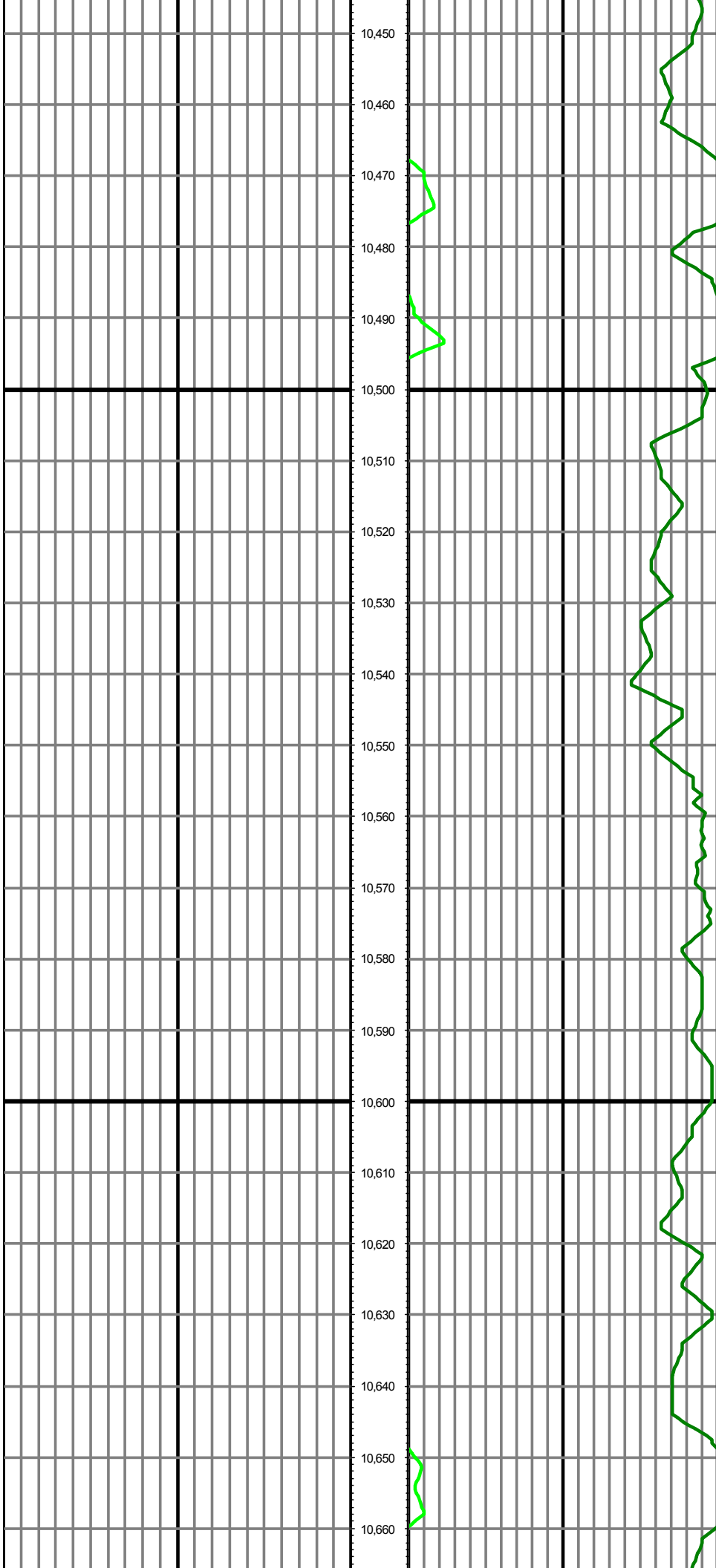
MD: 10075.00 INC: 91.30 AZ: 359.50 TVD: 7137.07 VS: 2387.16

MD: 10170.00 INC: 91.30 AZ: 359.00 TVD: 7134.92 VS: 2482.13



MD: 10264.00 INC: 91.20 AZ: 358.60 TVD: 7132.86 VS: 2576.09

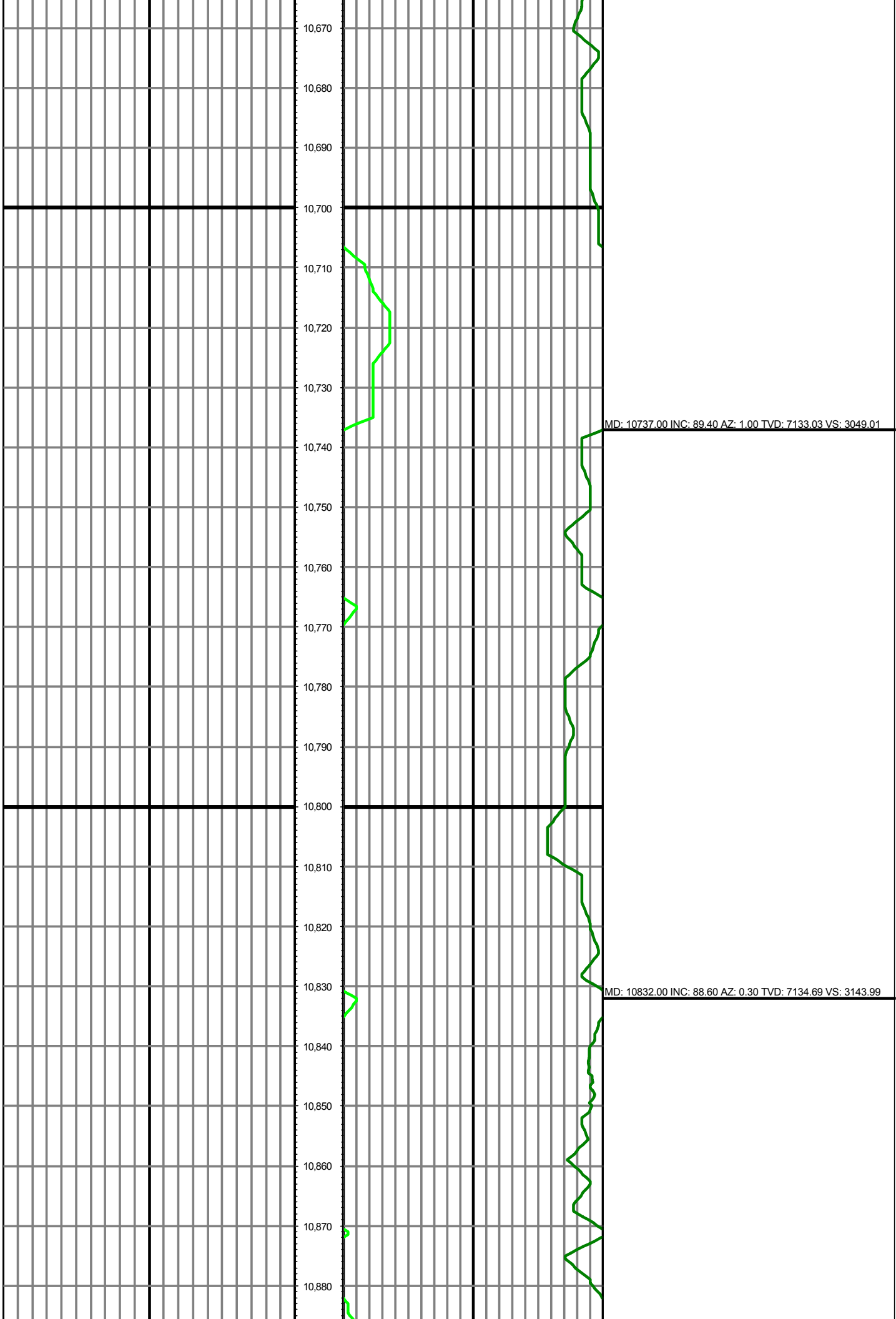
MD: 10359.00 INC: 90.70 AZ: 0.60 TVD: 7131.29 VS: 2671.07

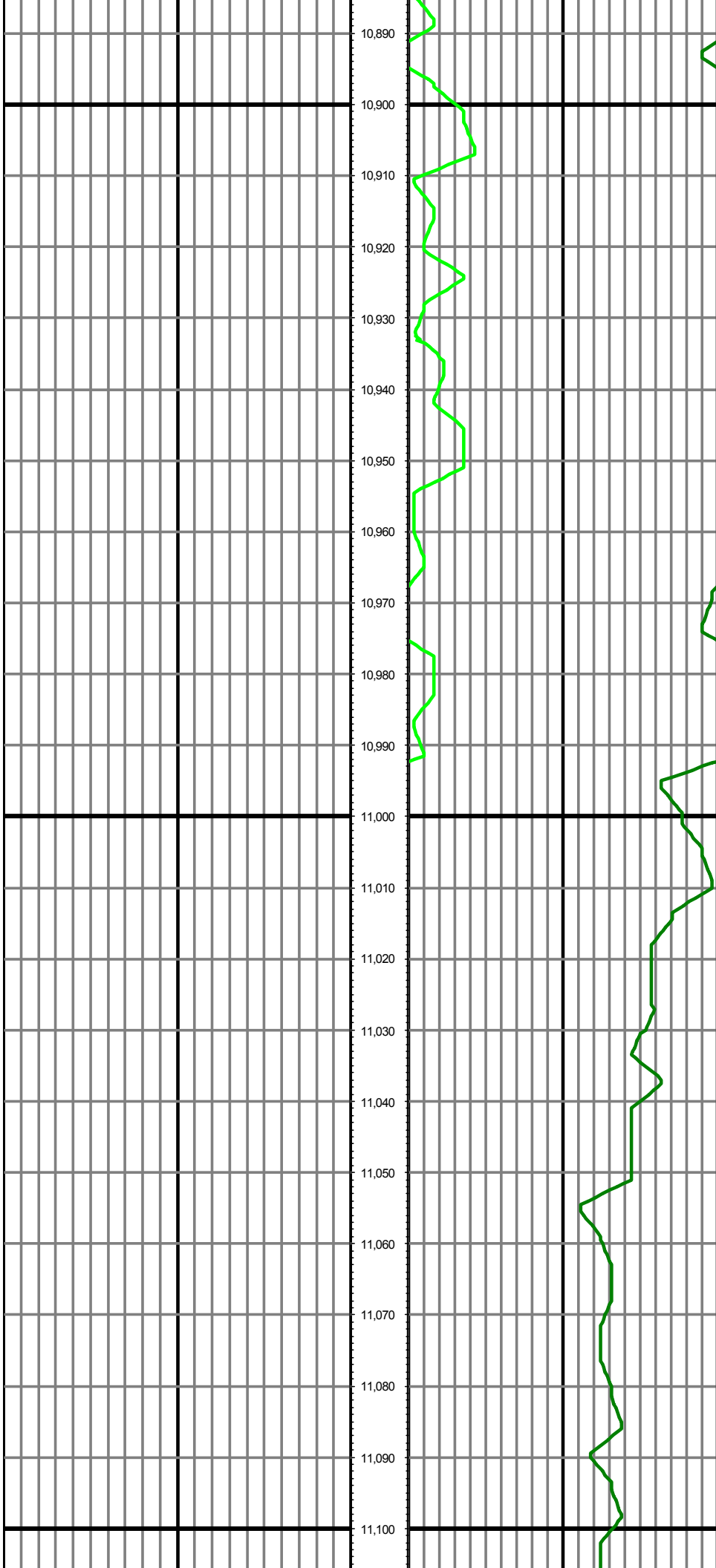


MD: 10453.00 INC: 90.00 AZ: 359.80 TVD: 7130.72 VS: 2765.06

MD: 10548.00 INC: 88.90 AZ: 359.30 TVD: 7131.63 VS: 2860.05

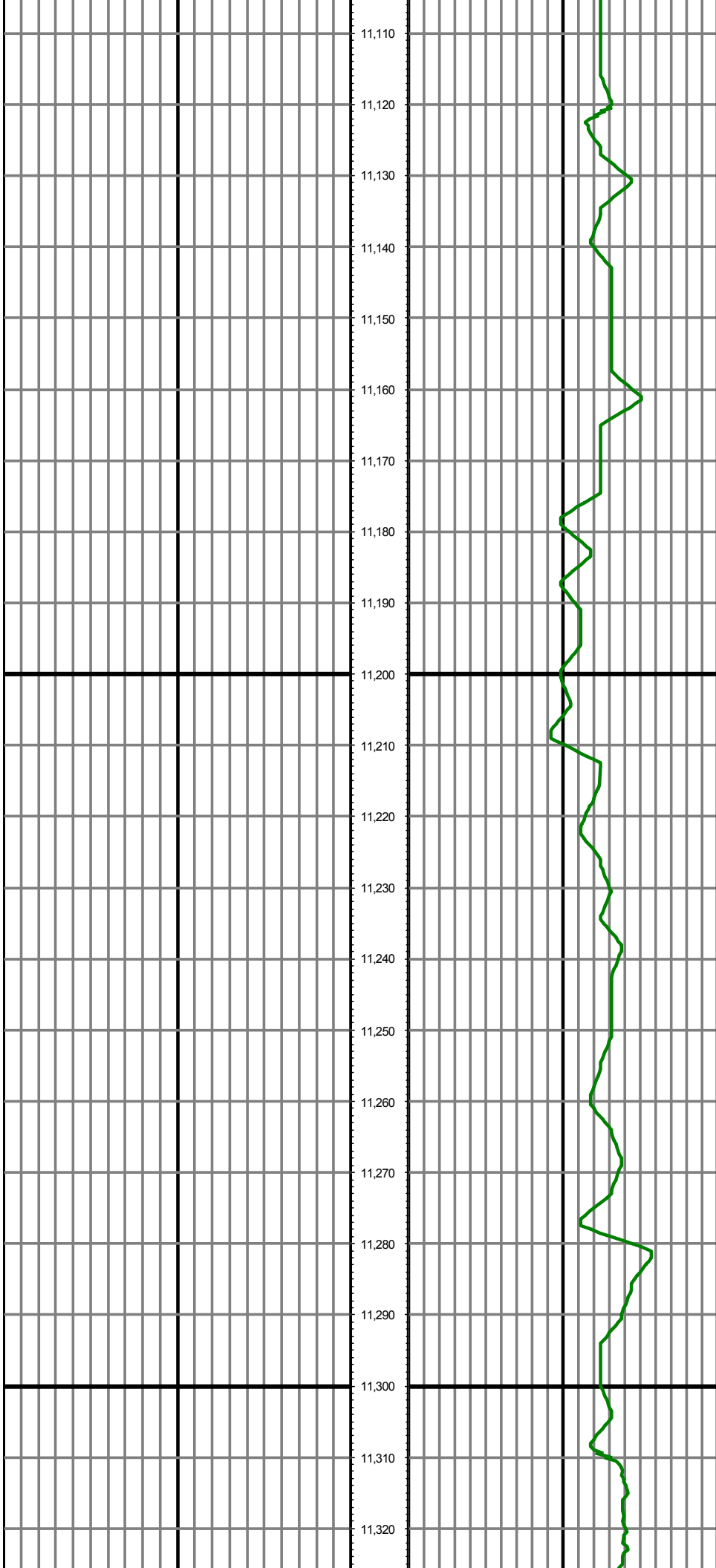
MD: 10642.00 INC: 90.00 AZ: 1.50 TVD: 7132.53 VS: 2954.04





MD: 10926.00 INC: 90.10 AZ: 1.30 TVD: 7135.75 VS: 3237.97

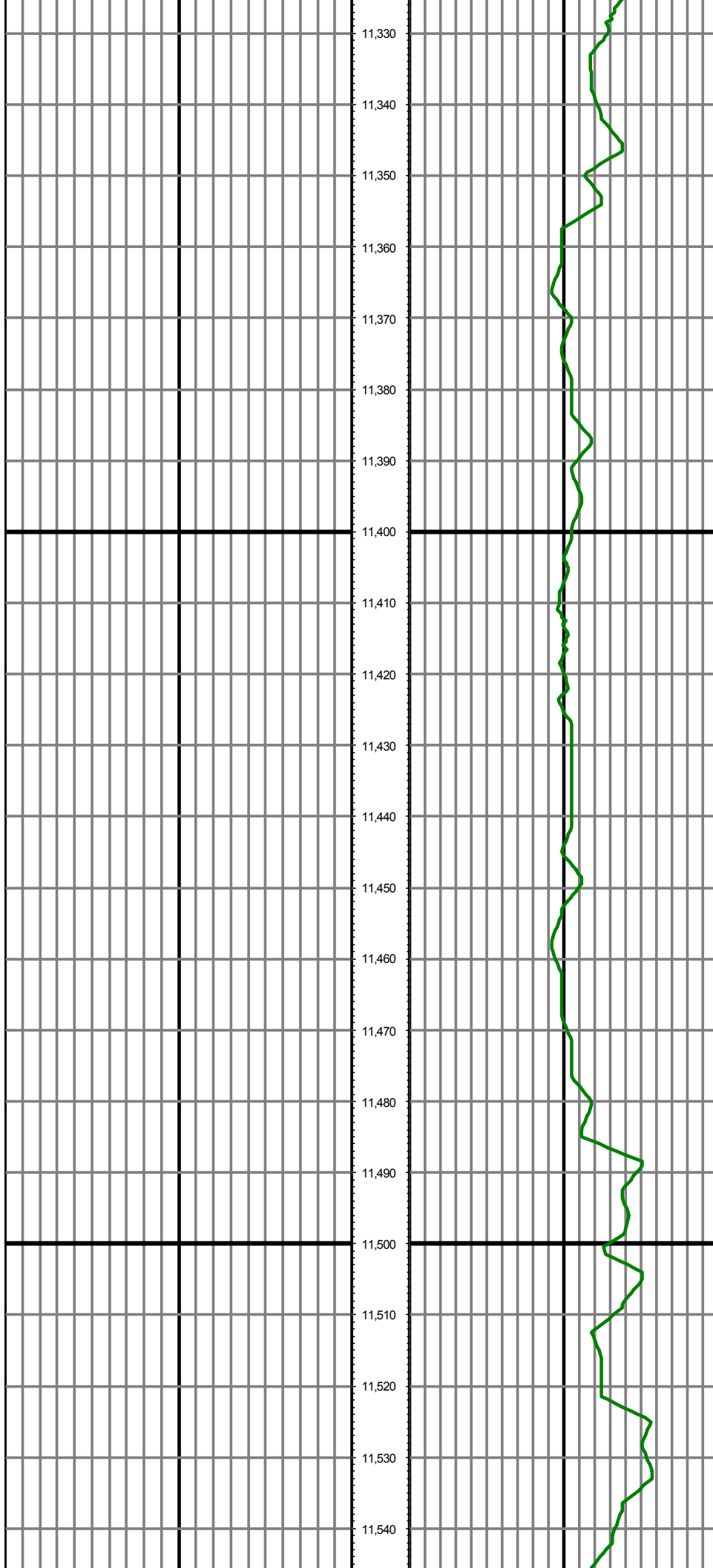
MD: 11021.00 INC: 89.50 AZ: 1.00 TVD: 7136.08 VS: 3332.95



MD: 11115.00 INC: 90.20 AZ: 1.40 TVD: 7136.33 VS: 3426.93

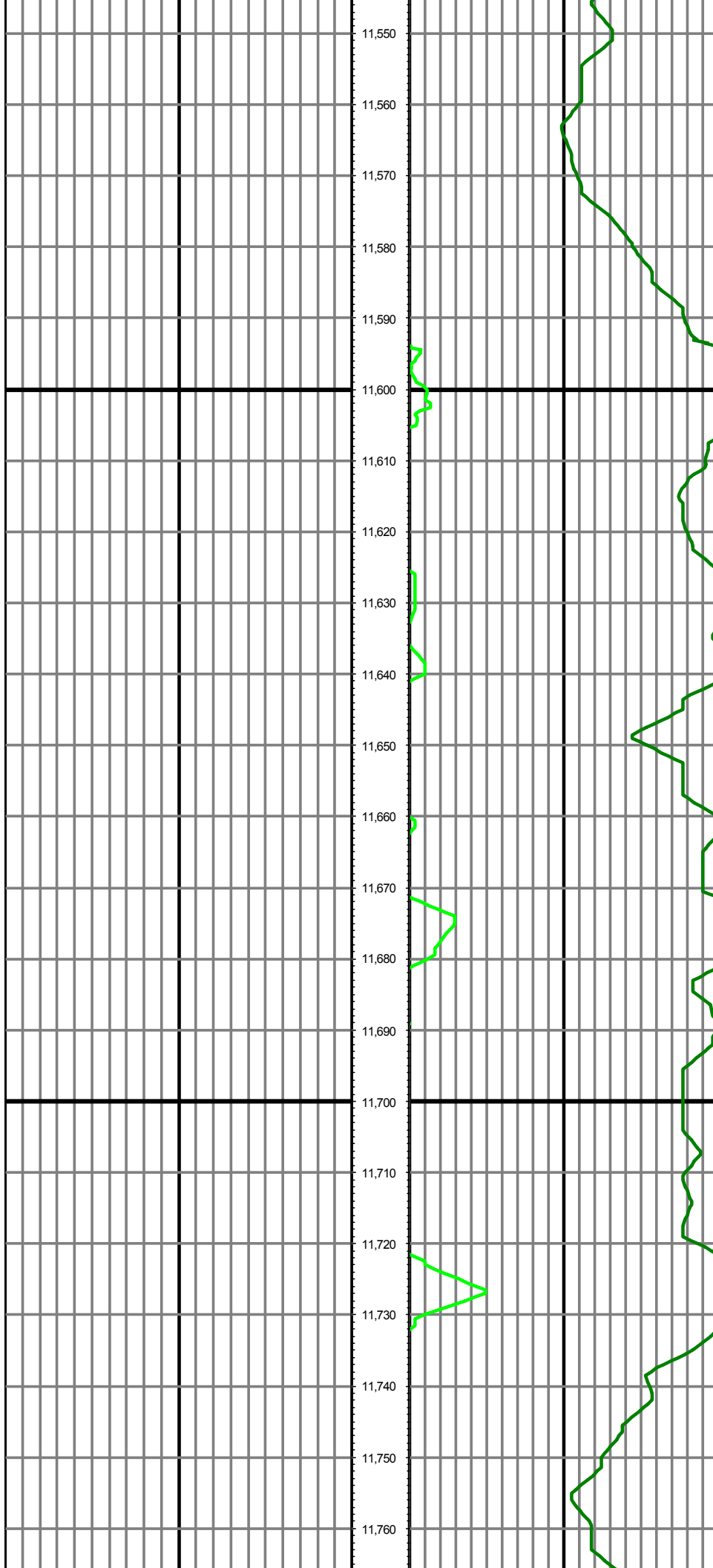
MD: 11210.00 INC: 89.30 AZ: 1.30 TVD: 7136.74 VS: 3521.90

MD: 11304.00 INC: 88.20 AZ: 0.60 TVD: 7138.79 VS: 3615.87



MD: 11398.00 INC: 90.20 AZ: 0.90 TVD: 7140.11 VS: 3709.84

MD: 11493.00 INC: 91.90 AZ: 0.40 TVD: 7138.37 VS: 3804.82



MD: 11588.00 INC: 92.50 AZ: 0.20 TVD: 7134.72 VS: 3899.75

MD: 11682.00 INC: 91.30 AZ: 0.10 TVD: 7131.60 VS: 3993.69

