

**Premier Directional Drilling**

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

Sarchet 16N-20HZ**Scale 5":100' - MD****9/15/2015 9:36 AM****Oper. Company:** Anadarko Petroleum**Well:** Sarchet 16N-20HZ**Field:** Wattenberg/ Niobrara**Rig:** H & P 307**Well ID:** 05123419170000**Job Number:** R15373**Notes:** LWD Real Time Log
Gamma Correction Determined by Pipe ID & OD, Mud Weight & Bit Size**State:** Colorado**County:** Weld**Country:** USA**Location:** 2N 65W Sect. 20**Start Date:** 09/11/2015 09:03:00**End Date:** 09/15/2015 09:00:00**Latitude:** 40.130225**Longitude:** -104.679601**Elev KB:** 4922'**Elev DF:** 4922'**Elev GL:** 4897'**Notes:** Datum: NAD 1983Map Zone: 13N (108 W to102 W)Total Correction: 8.21°(Mean MagVar)Grid Convergence: 0.00° (True)**Operator 1:** Robert Grossman**Operator 2:** Jeff Clement**Notes:** Smoothing: 7Gap Fill: 10Survey Tool Type: Mud PulseCalculation Method: Minimum Curvature

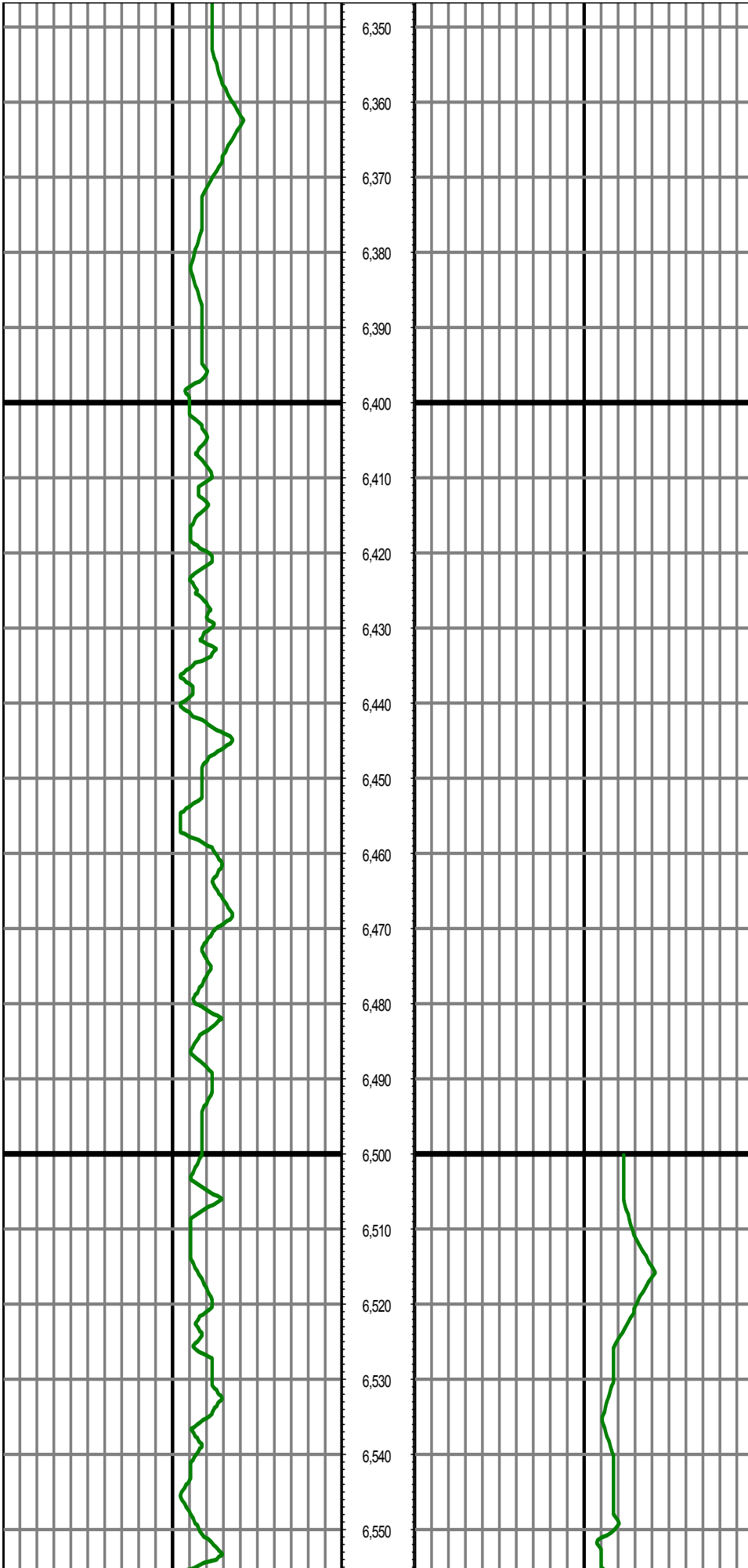
Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	234	161	161	191	
Bit Size	8 1/2	8 1/2	8 1/2	8 1/2	
Cal Factor	6.16075	6.16075	6.16075	5.9443	
Survey Offset:	73.00	76.00	73.00	73.00	
Gamma Offset	68.00	71.00	68.00	68.00	
Resistivity Offset	0.00	0.00	0.00	0.00	
Start Depth	1906.00	7095.00	7501.00	8163.00	
StartDate	9/10/2015	9/12/2015	9/13/2015	9/13/2015	
StartTime	11:15	04:15	01:30	22:40	
EndDepth	7095.00	7501.00	8163.00	12835.00	
EndDate	9/11/2015	9/12/2015	9/13/2015	9/15/2015	
EndTime	20:00	13:00	10:30	19:00	
Mud Type	OBM	OBM	OBM	OBM	
Mud Weight	9.2	9.4	9.45	9.55	
Funnel Viscosity	70	66	58	56	
Plastic Viscosity	17	22	19	22	
Yield Point	10	12	11	10	
Gel Strength	NA	NA	NA	NA	
Solids Content	5.23	8.23	8.47	9.29	
Sand Content	NA	NA	NA	NA	
Mud Alkalinity	NA	NA	NA	NA	
Filtrate Alkalinity	NA	NA	NA	NA	
Chlorides	57000	57000	62000	55000	
Mud RM	NA	NA	NA	NA	
Mud RMF	NA	NA	NA	NA	
Mud RMC	NA	NA	NA	NA	
Mud RM at BHT	NA	NA	NA	NA	
Temperature	NA	NA	NA	NA	
Hole Data			Casing Data		
Size	From	To	Size	From	To
13 1/2	0.00	1906.00	9 5/8	0.00	1897.00
8 1/2	1906.00	12838.00	5 1/2	0.00	12838.00

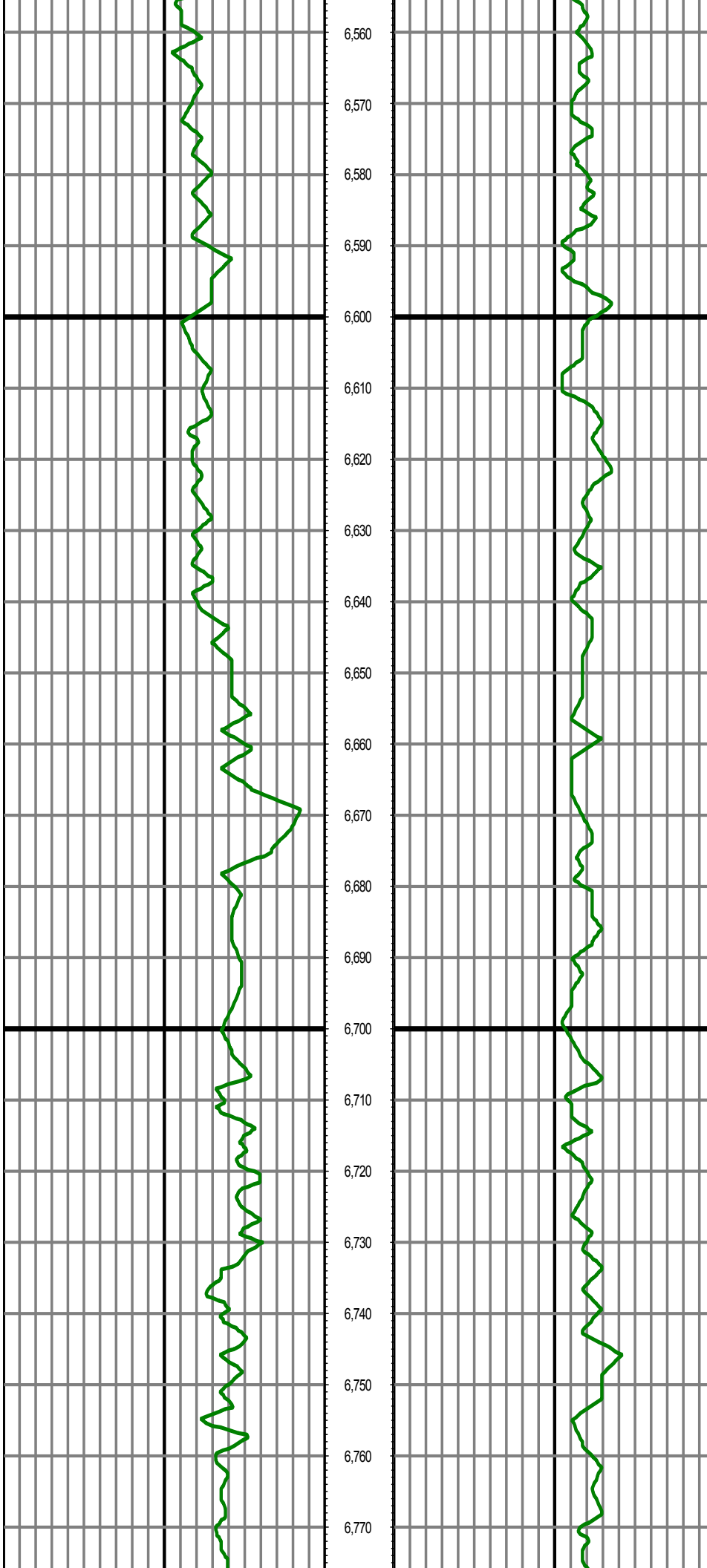
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost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

0.00 GR RT(API) on TVD 200.00
200.00 2 400.00

MD 0.00 GR RT(API) on MD 200.00
200.00 2 400.00

Surveys (MD/INC/AZ/TVD/VS)

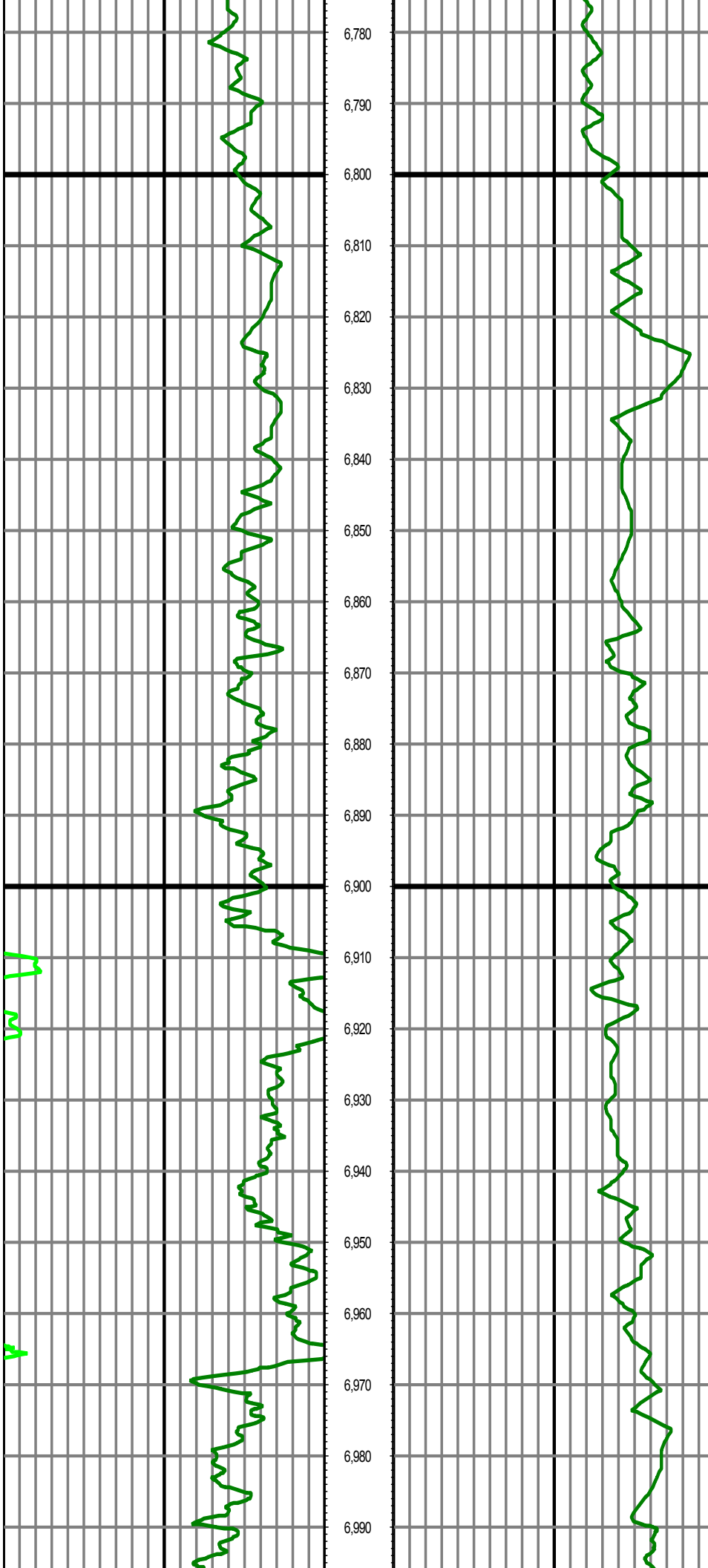




MD: 6574.00 INC: 0.80 AZ: 322.70 TVD: 6420.80 VS: -1030.22

MD: 6669.00 INC: 3.90 AZ: 184.00 TVD: 6515.74 VS: -1027.52

MD: 6763.00 INC: 11.30 AZ: 178.10 TVD: 6608.85 VS: -1015.11



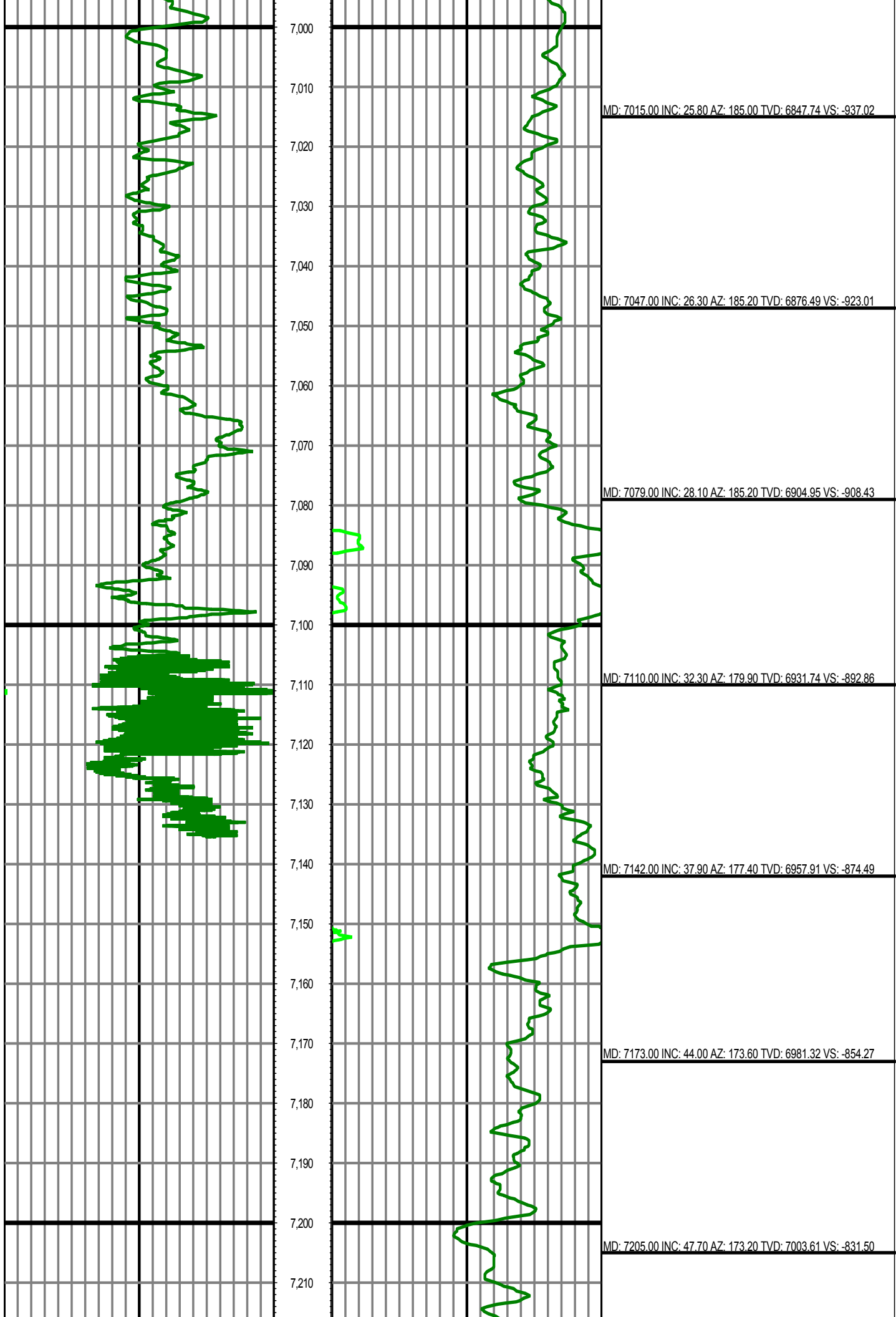
MD: 6858.00 INC: 16.30 AZ: 176.30 TVD: 6701.08 VS: -992.50

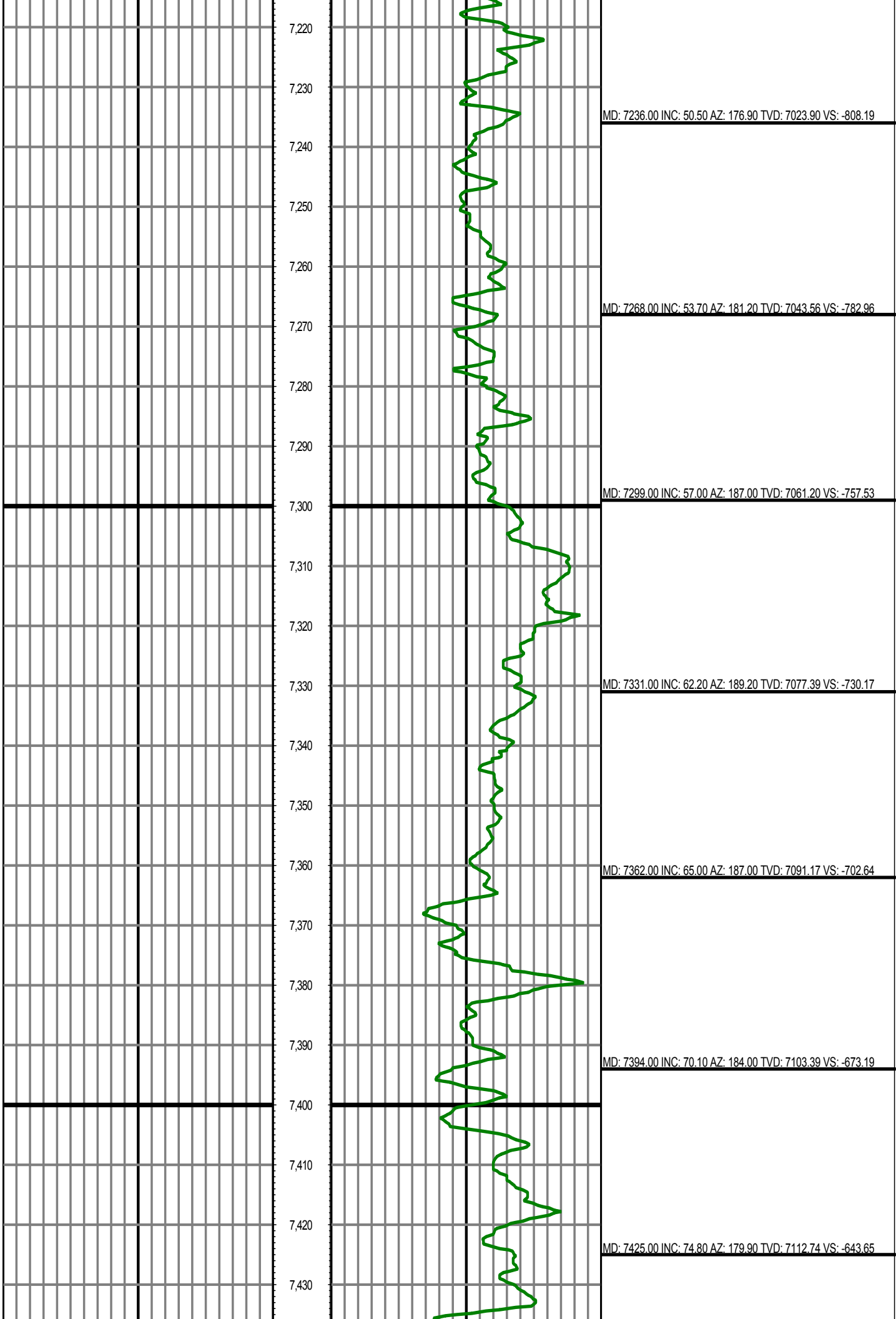
MD: 6889.00 INC: 18.20 AZ: 178.50 TVD: 6730.68 VS: -983.33

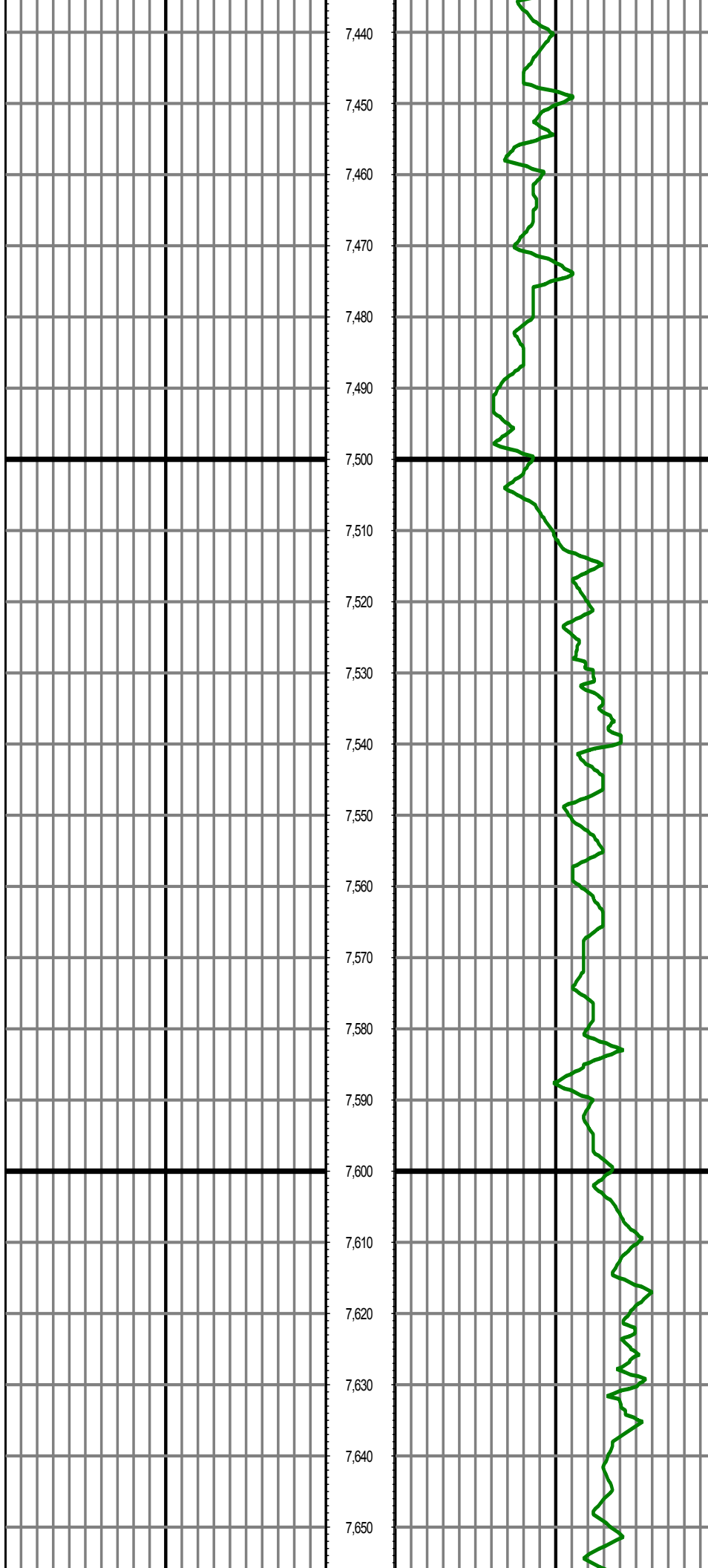
MD: 6921.00 INC: 19.80 AZ: 181.70 TVD: 6760.94 VS: -972.91

MD: 6952.00 INC: 21.10 AZ: 183.20 TVD: 6789.99 VS: -962.09

MD: 6984.00 INC: 23.60 AZ: 184.50 TVD: 6819.58 VS: -949.94



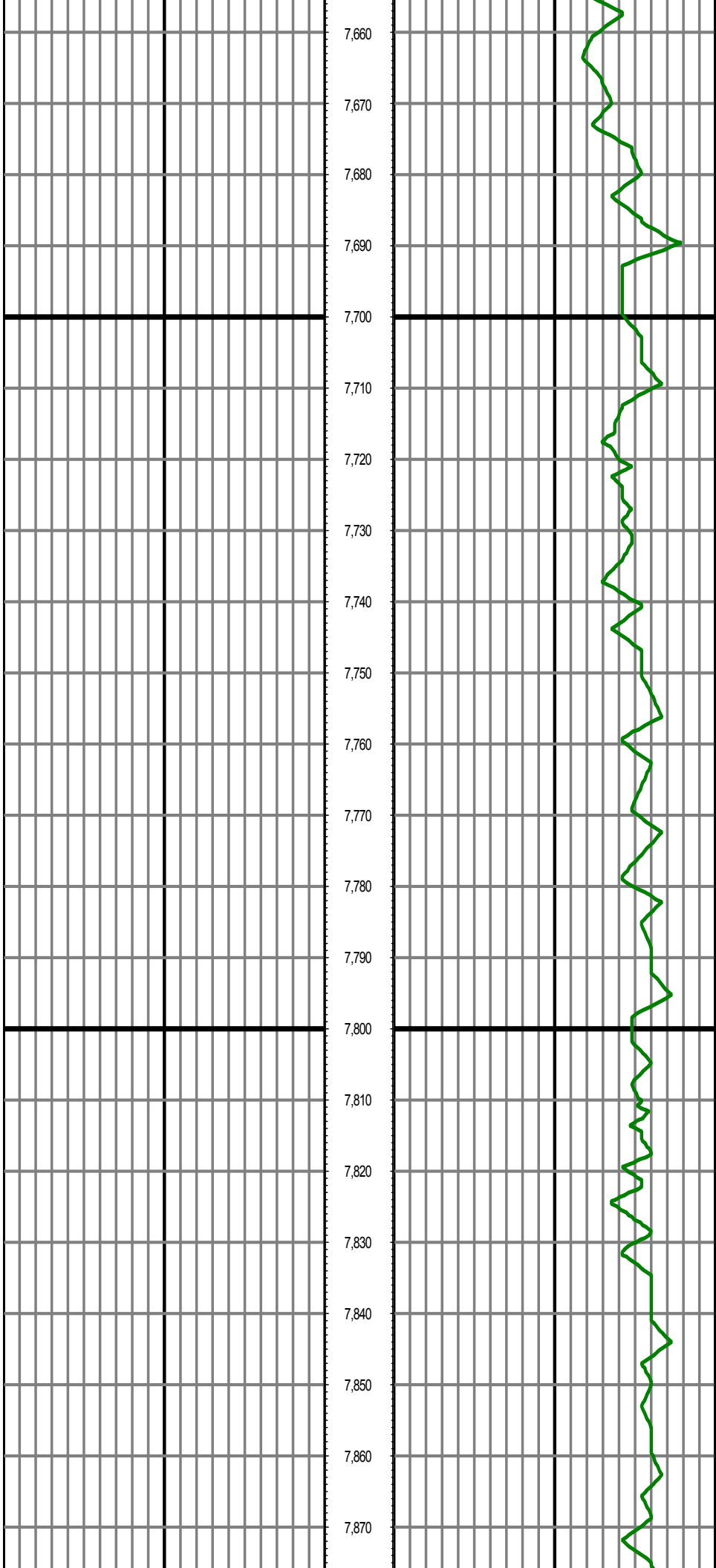




MD: 7457.00 INC: 80.50 AZ: 179.90 TVD: 7119.58 VS: -612.41

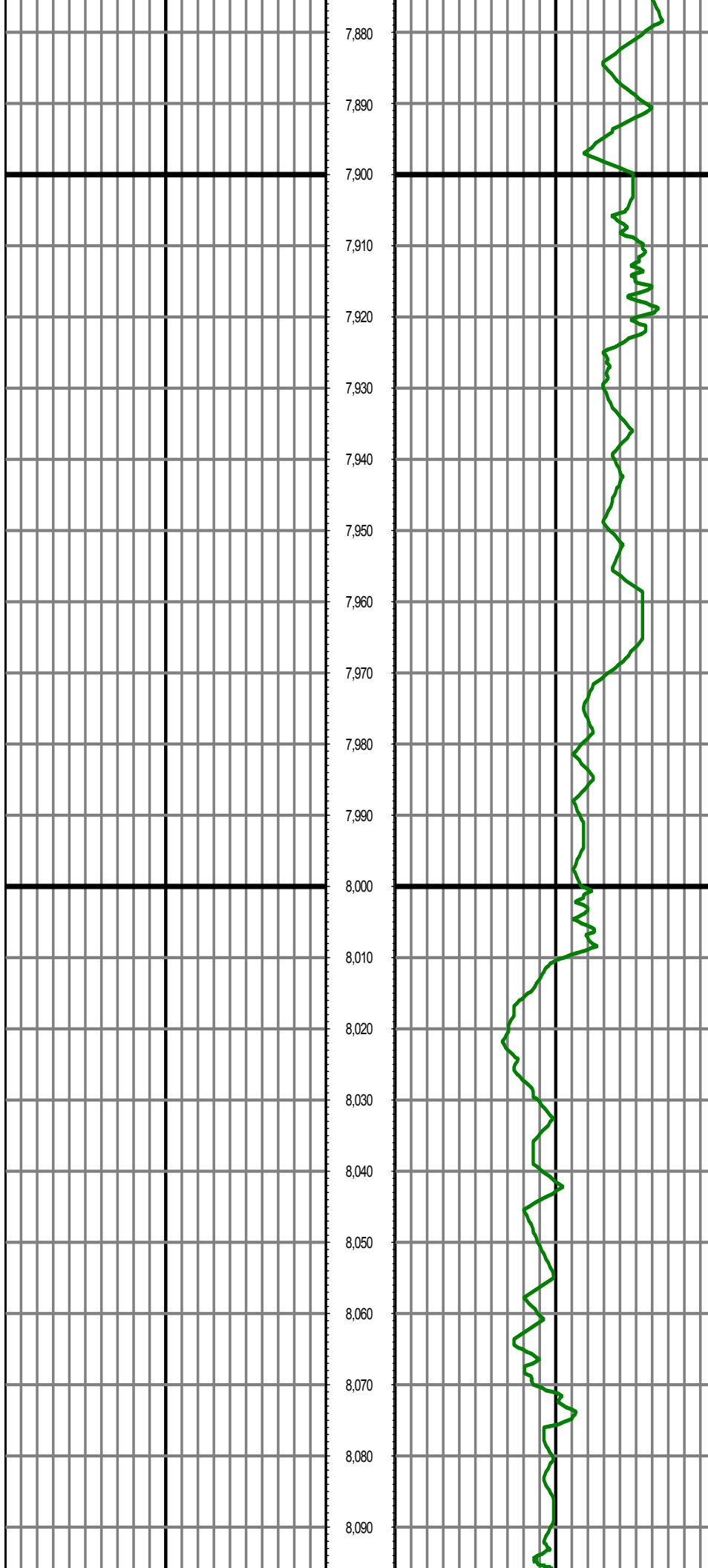
MD: 7520.00 INC: 87.30 AZ: 178.40 TVD: 7126.27 VS: -549.83

MD: 7614.00 INC: 87.80 AZ: 180.90 TVD: 7130.29 VS: -455.94



MD: 7708.00 INC: 88.20 AZ: 182.90 TVD: 7133.57 VS: -362.02

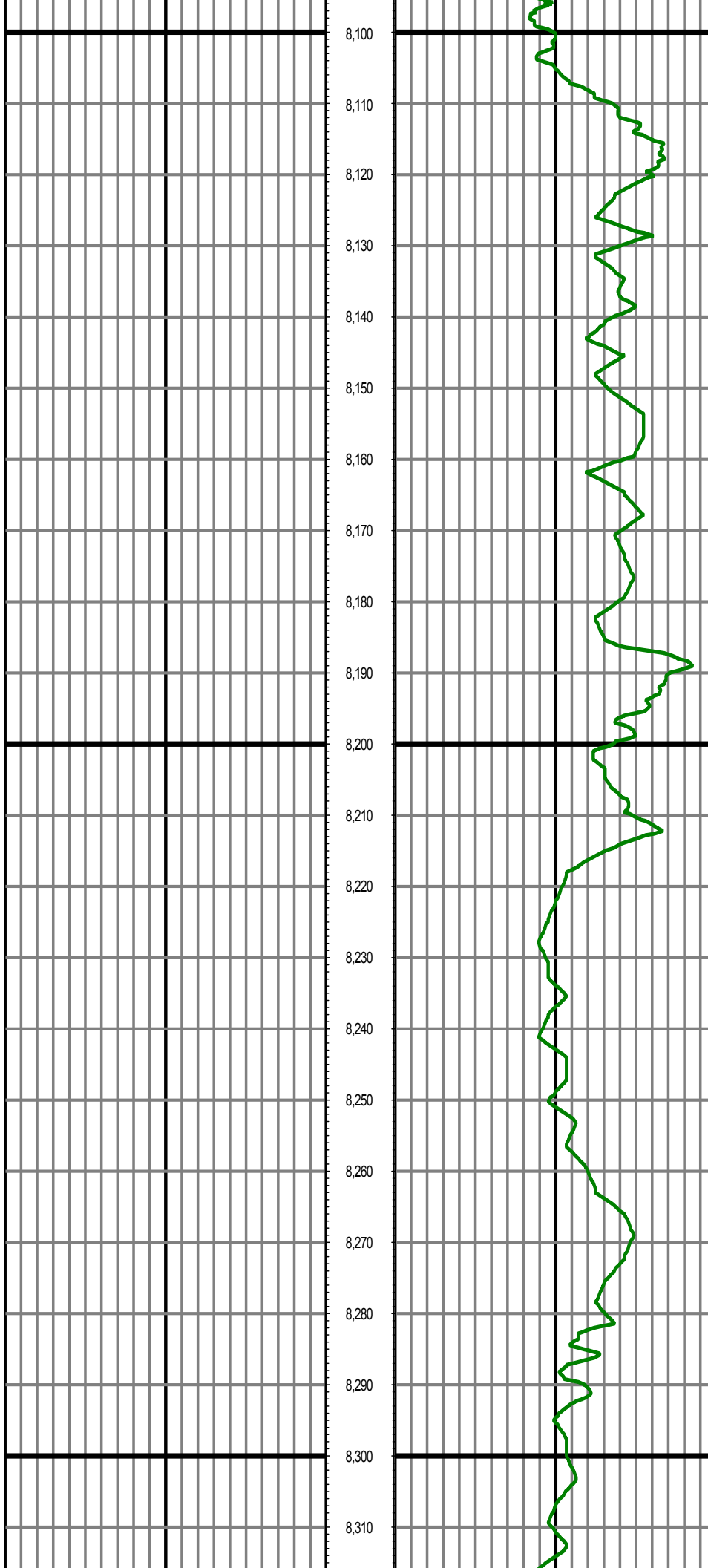
MD: 7803.00 INC: 89.70 AZ: 185.60 TVD: 7135.31 VS: -267.23



MD: 7897.00 INC: 92.40 AZ: 186.00 TVD: 7133.59 VS: -173.64

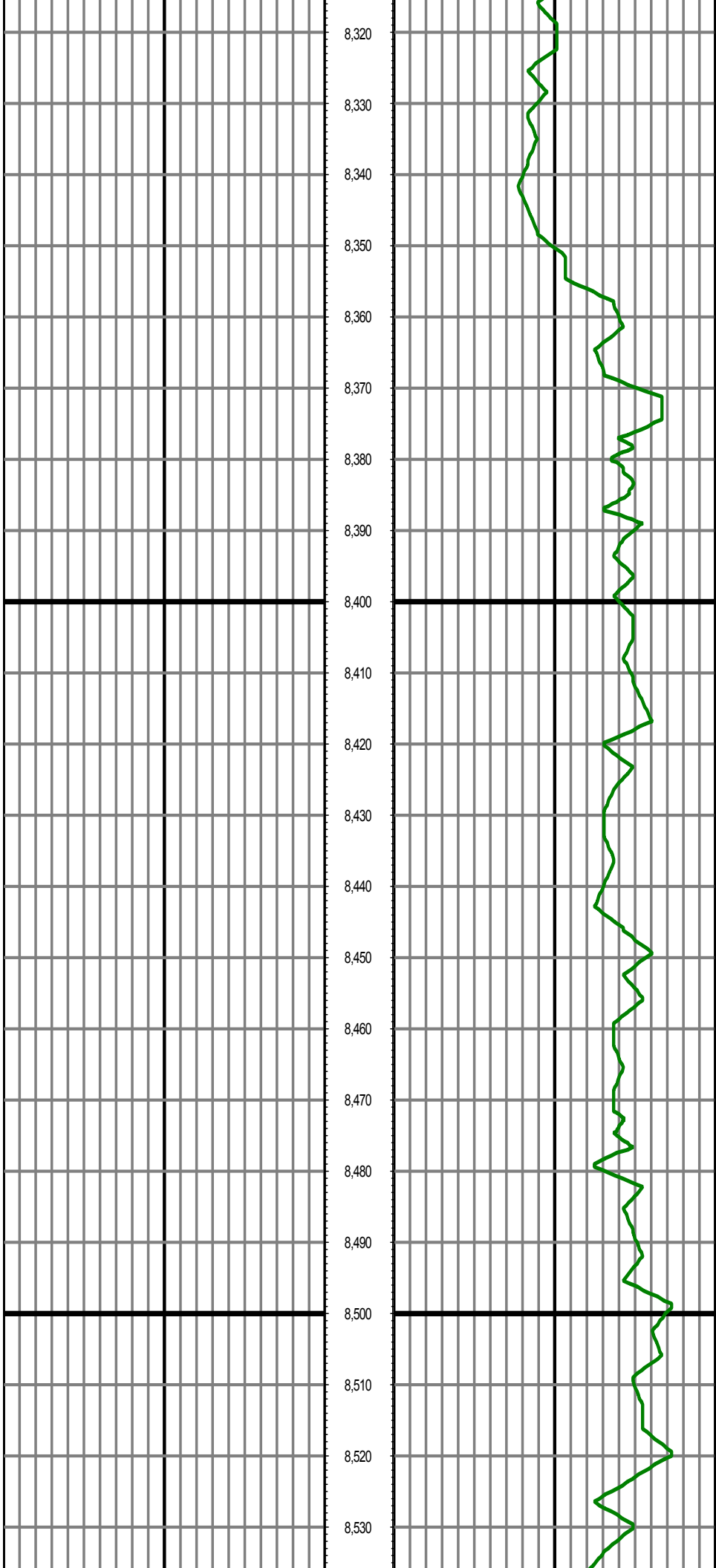
MD: 7992.00 INC: 95.10 AZ: 184.50 TVD: 7127.38 VS: -79.15

MD: 8087.00 INC: 96.10 AZ: 181.10 TVD: 7118.10 VS: 15.31



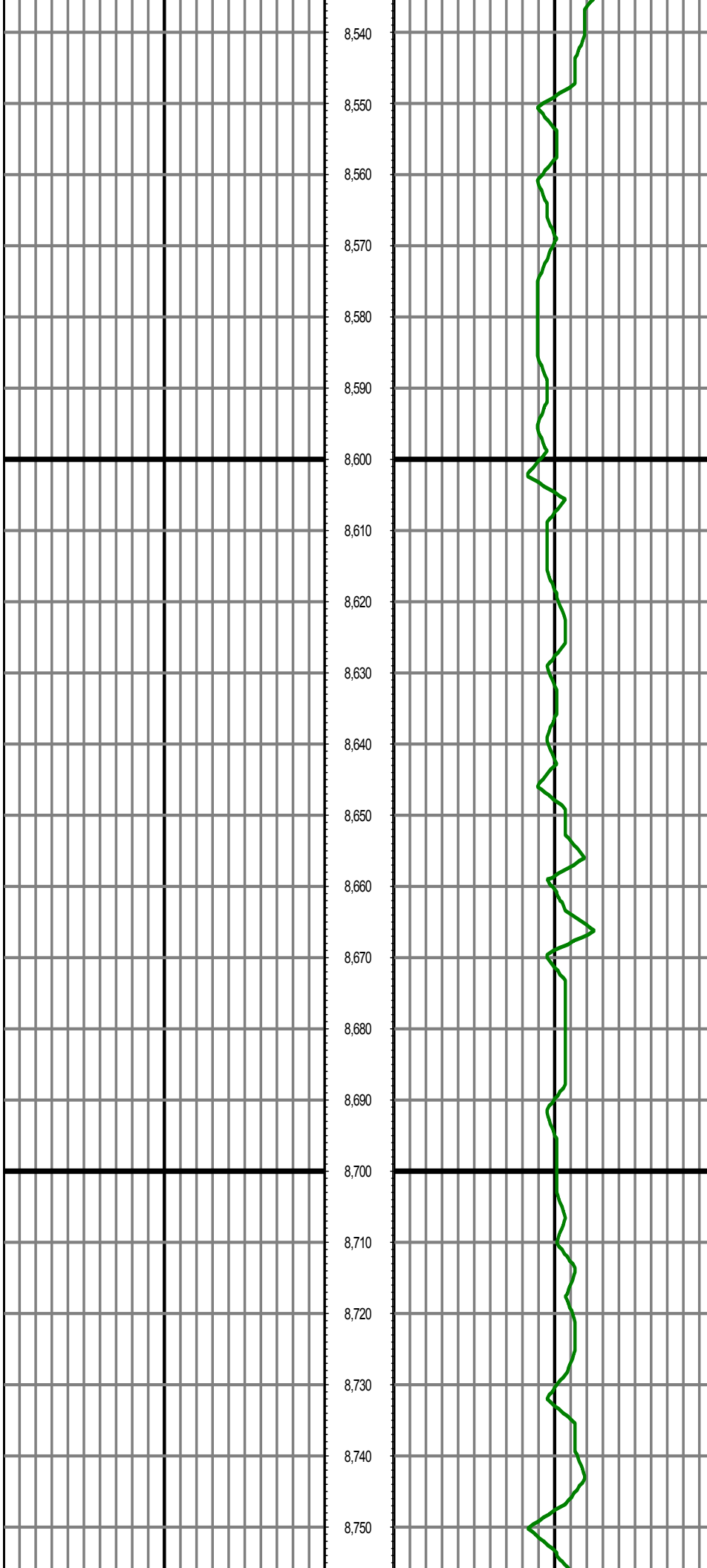
MD: 8181.00 INC: 93.70 AZ: 176.80 TVD: 7110.07 VS: 108.90

MD: 8276.00 INC: 89.50 AZ: 177.70 TVD: 7107.42 VS: 203.67



MD: 8370.00 INC: 86.30 AZ: 178.10 TVD: 7110.86 VS: 297.48

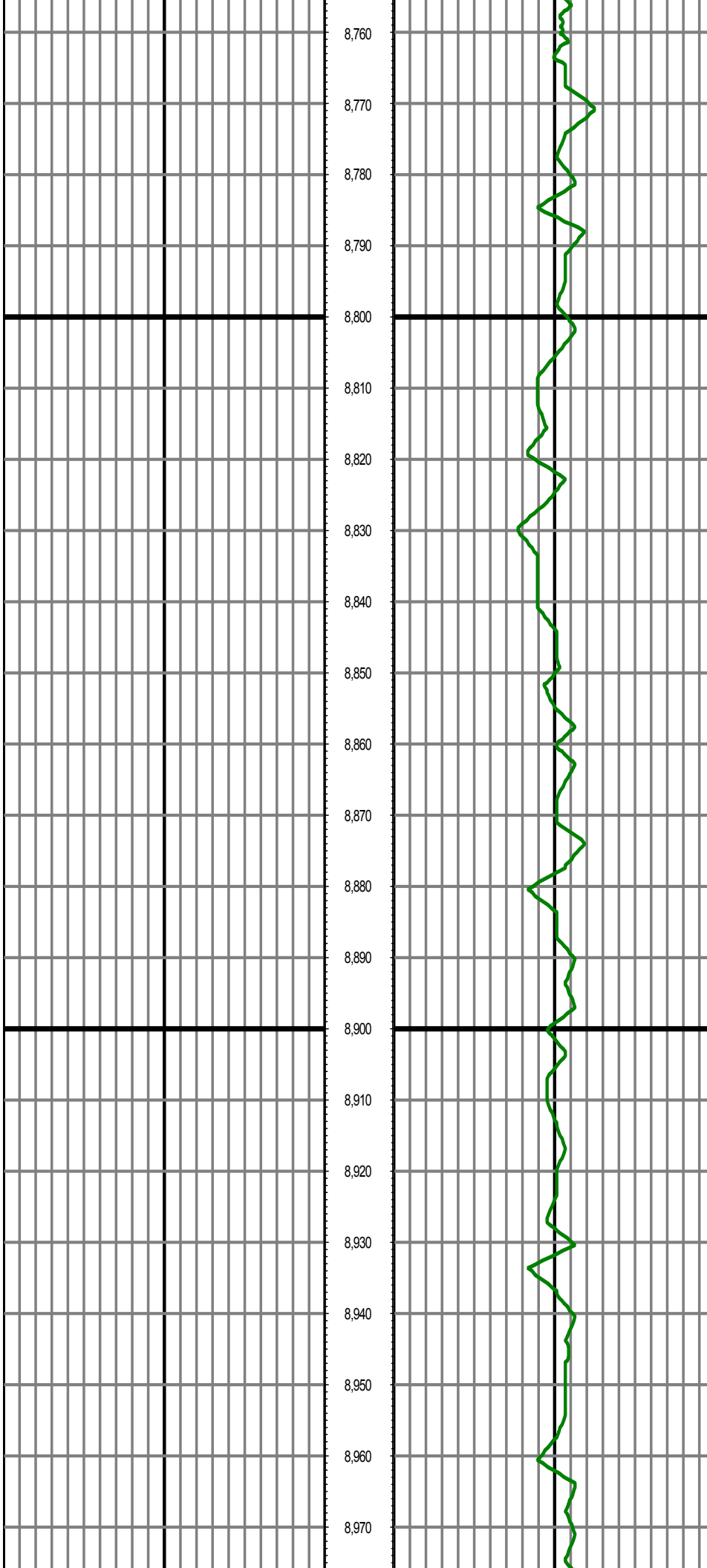
MD: 8465.00 INC: 87.90 AZ: 178.50 TVD: 7115.67 VS: 392.28



MD: 8559.00 INC: 88.80 AZ: 178.70 TVD: 7118.38 VS: 486.18

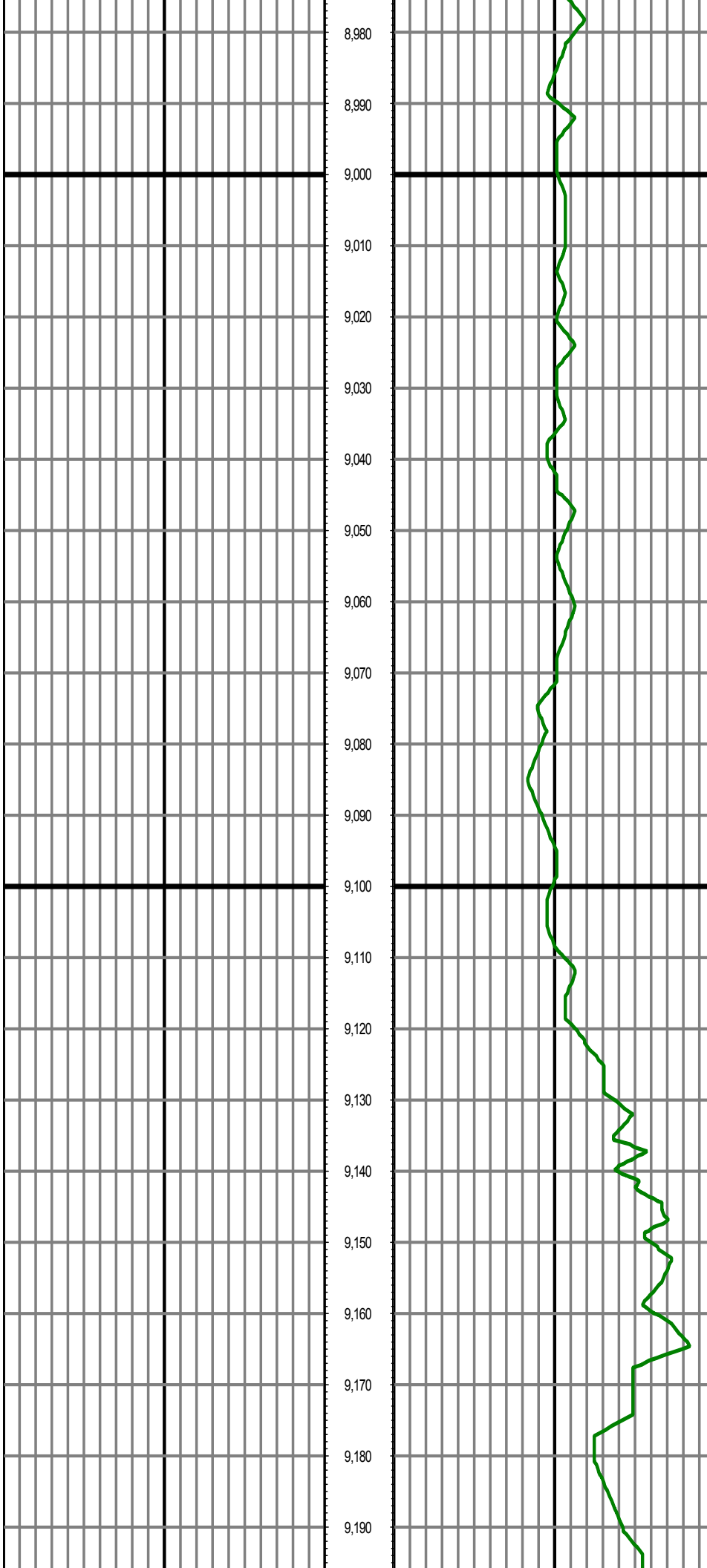
MD: 8654.00 INC: 89.60 AZ: 179.40 TVD: 7119.70 VS: 581.13

MD: 8748.00 INC: 90.90 AZ: 180.00 TVD: 7119.29 VS: 675.11



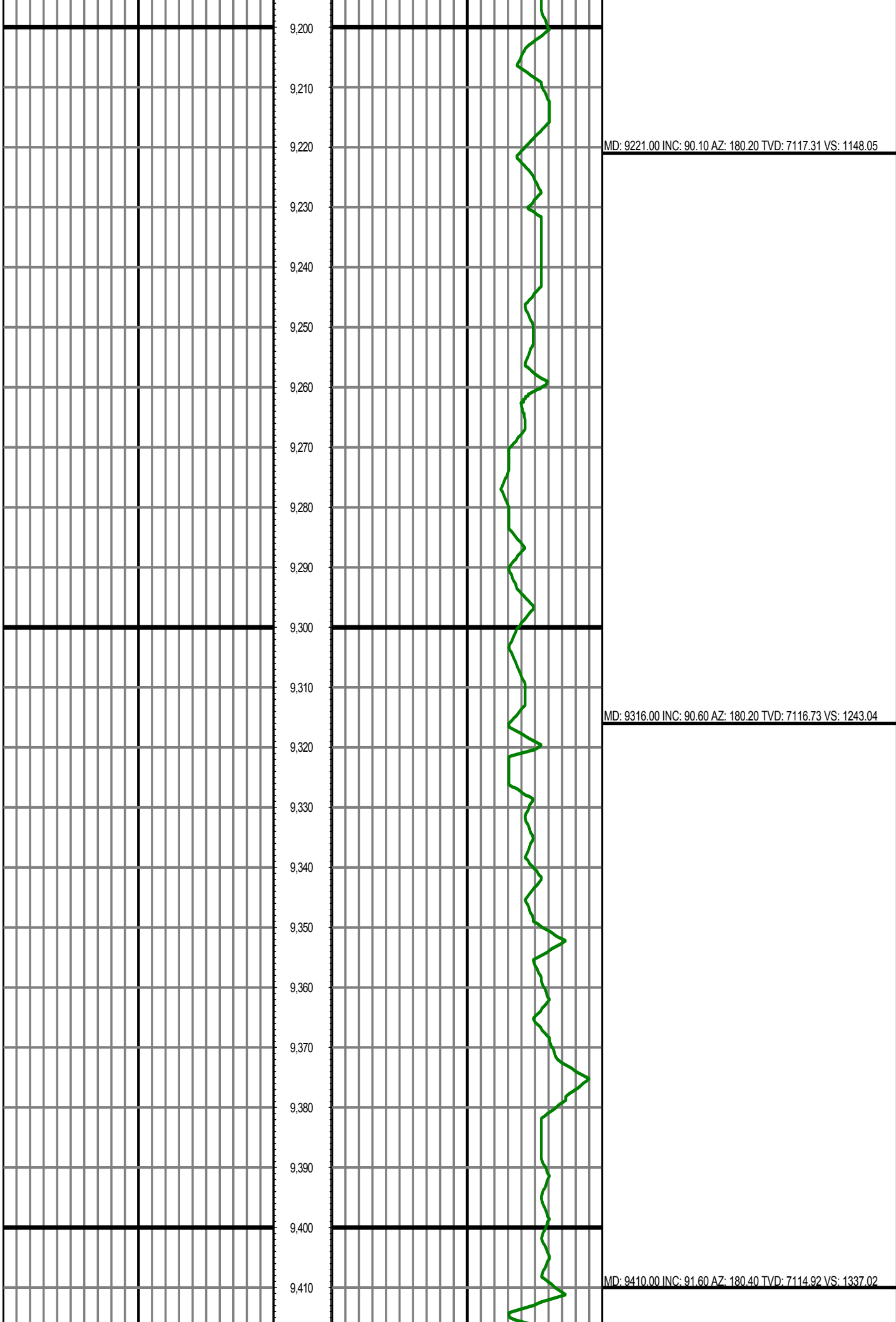
MD: 8843.00 INC: 89.20 AZ: 179.90 TVD: 7119.21 VS: 770.10

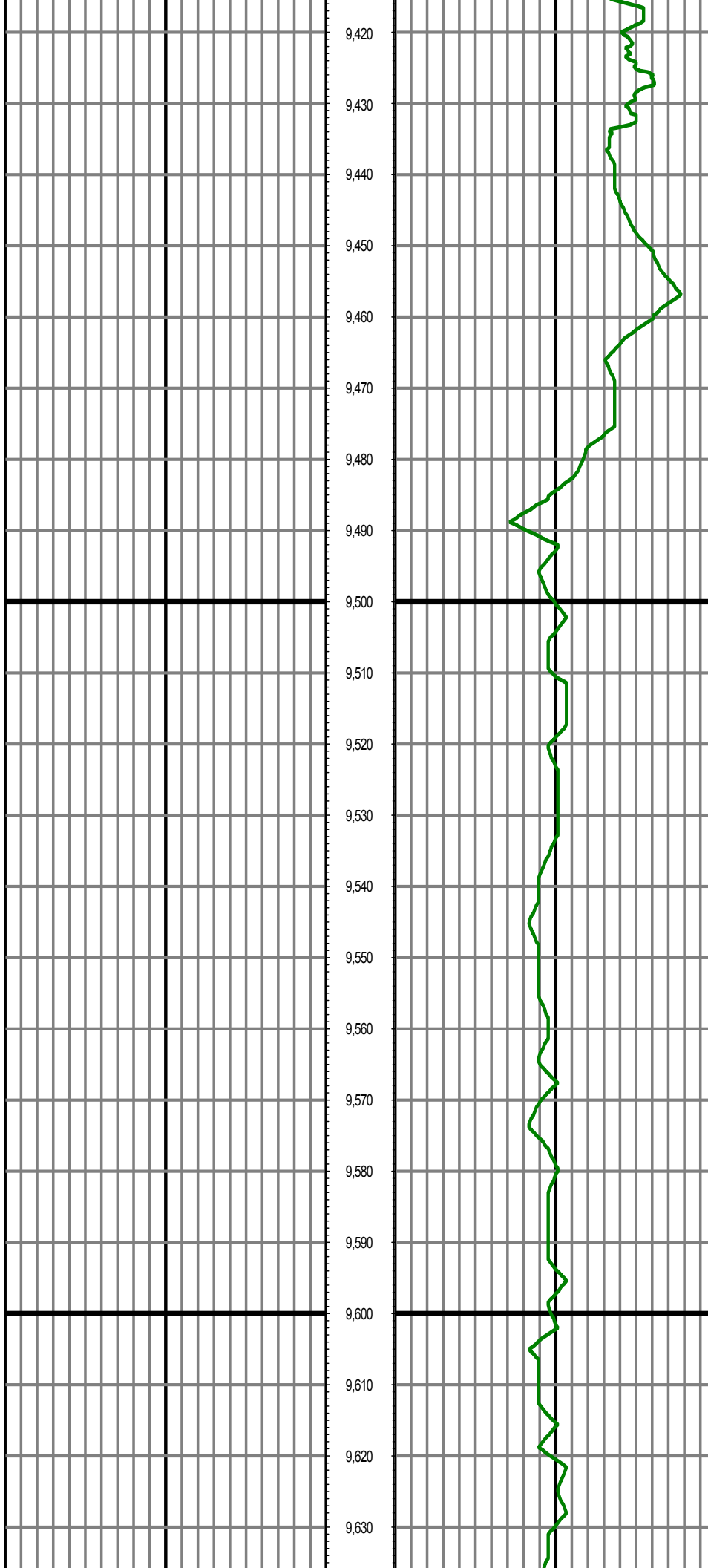
MD: 8937.00 INC: 89.50 AZ: 179.80 TVD: 7120.28 VS: 864.09



MD: 9032.00 INC: 90.50 AZ: 180.20 TVD: 7120.28 VS: 959.08

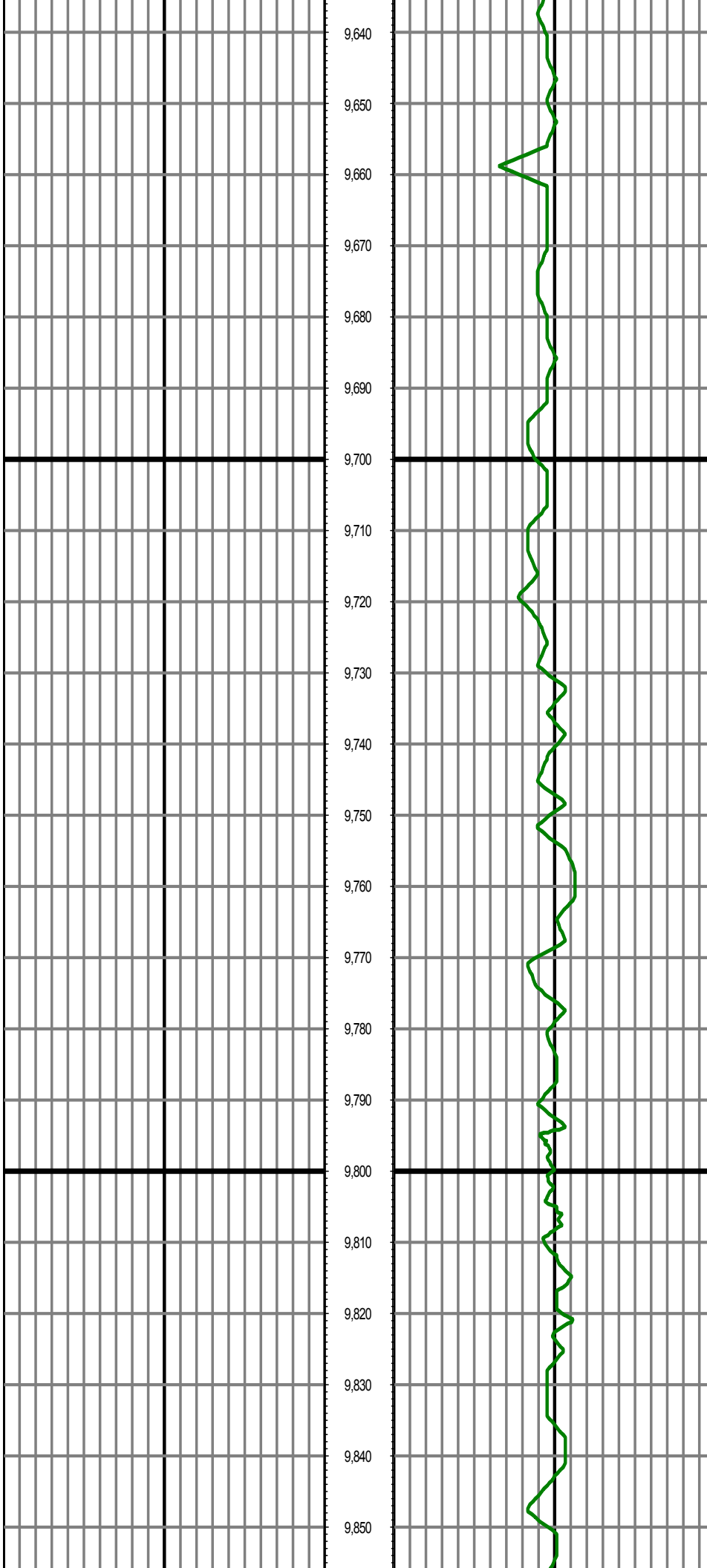
MD: 9126.00 INC: 91.50 AZ: 180.30 TVD: 7118.63 VS: 1053.06





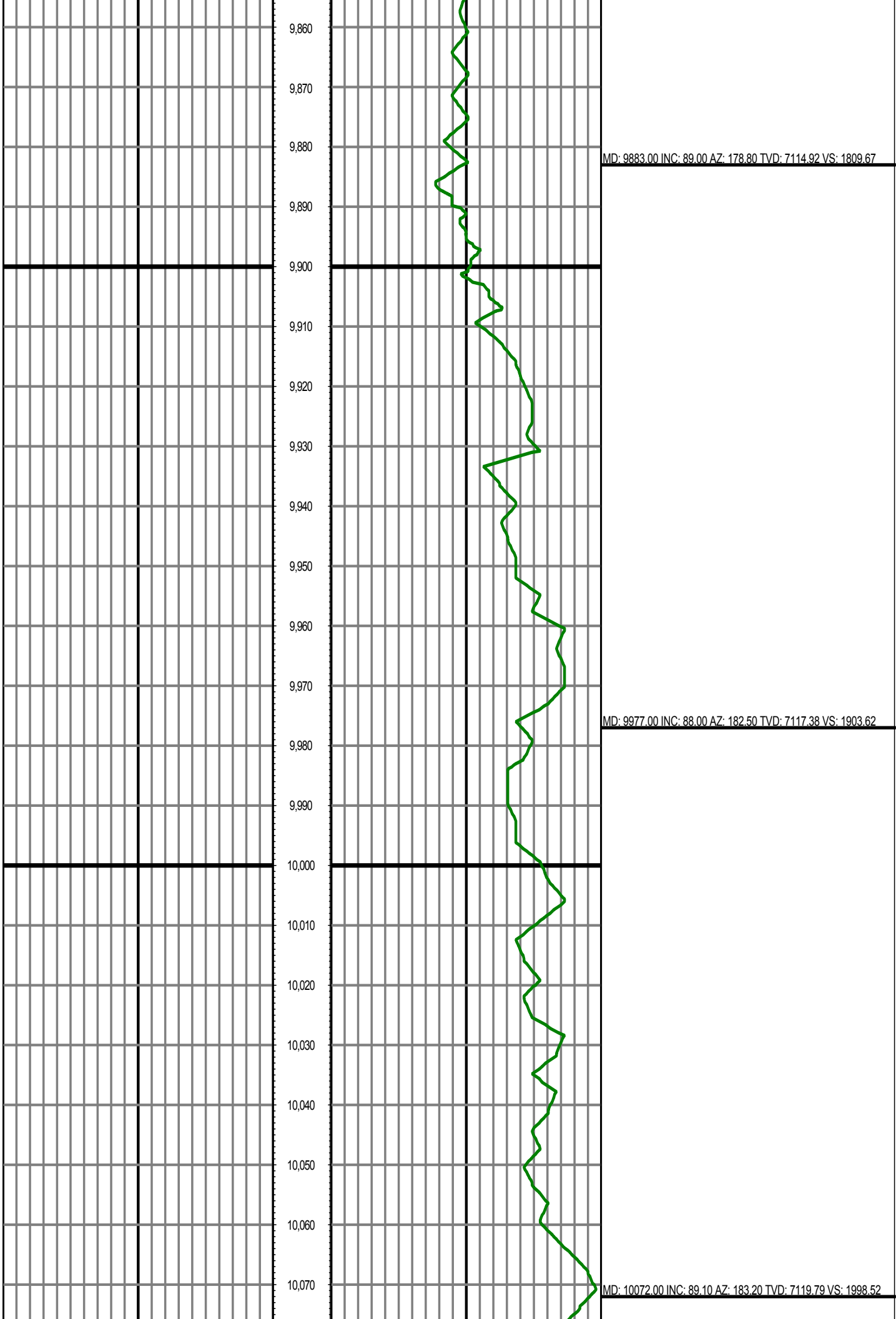
MD: 9505.00 INC: 89.90 AZ: 179.80 TVD: 7113.68 VS: 1432.00

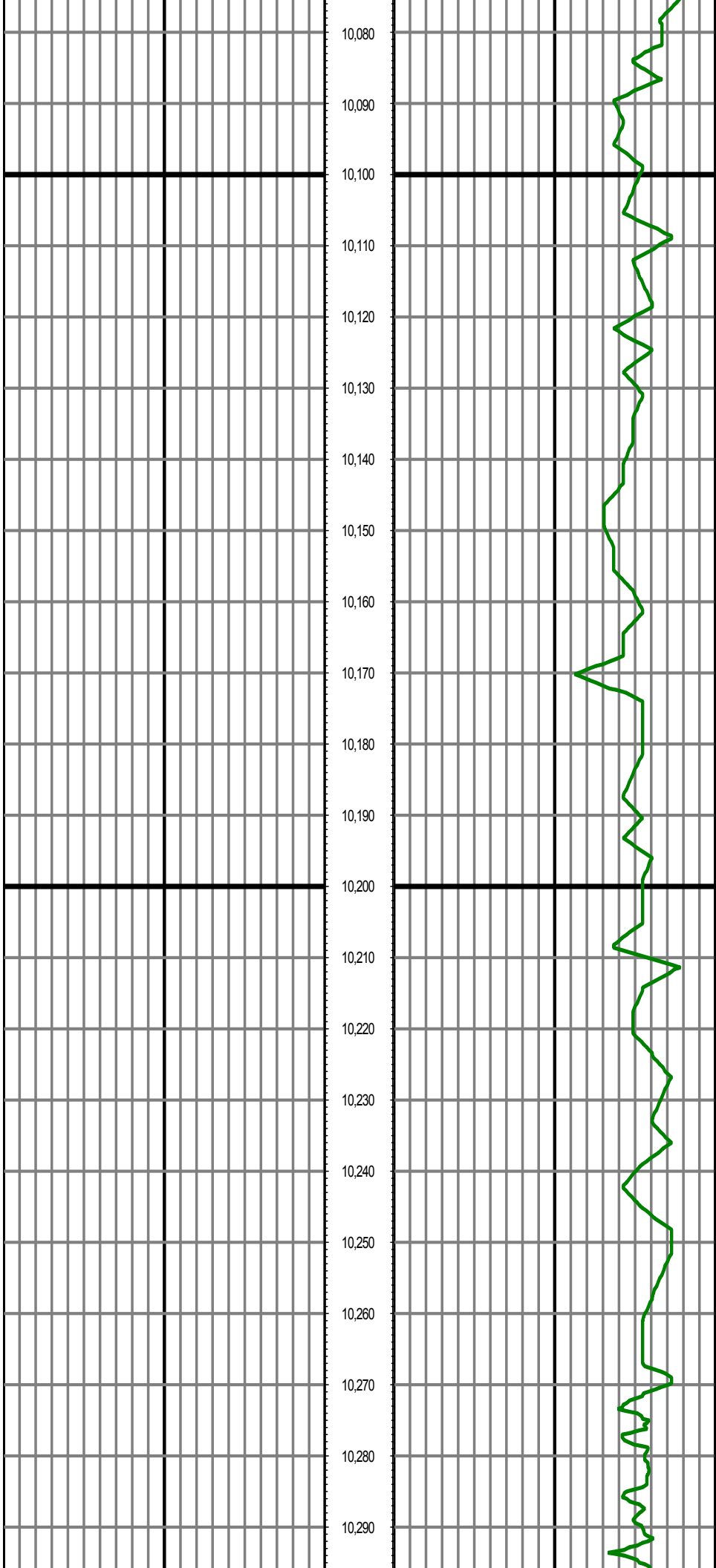
MD: 9599.00 INC: 89.80 AZ: 178.60 TVD: 7113.93 VS: 1525.97



MD: 9694.00 INC: 90.20 AZ: 178.30 TVD: 7113.93 VS: 1620.90

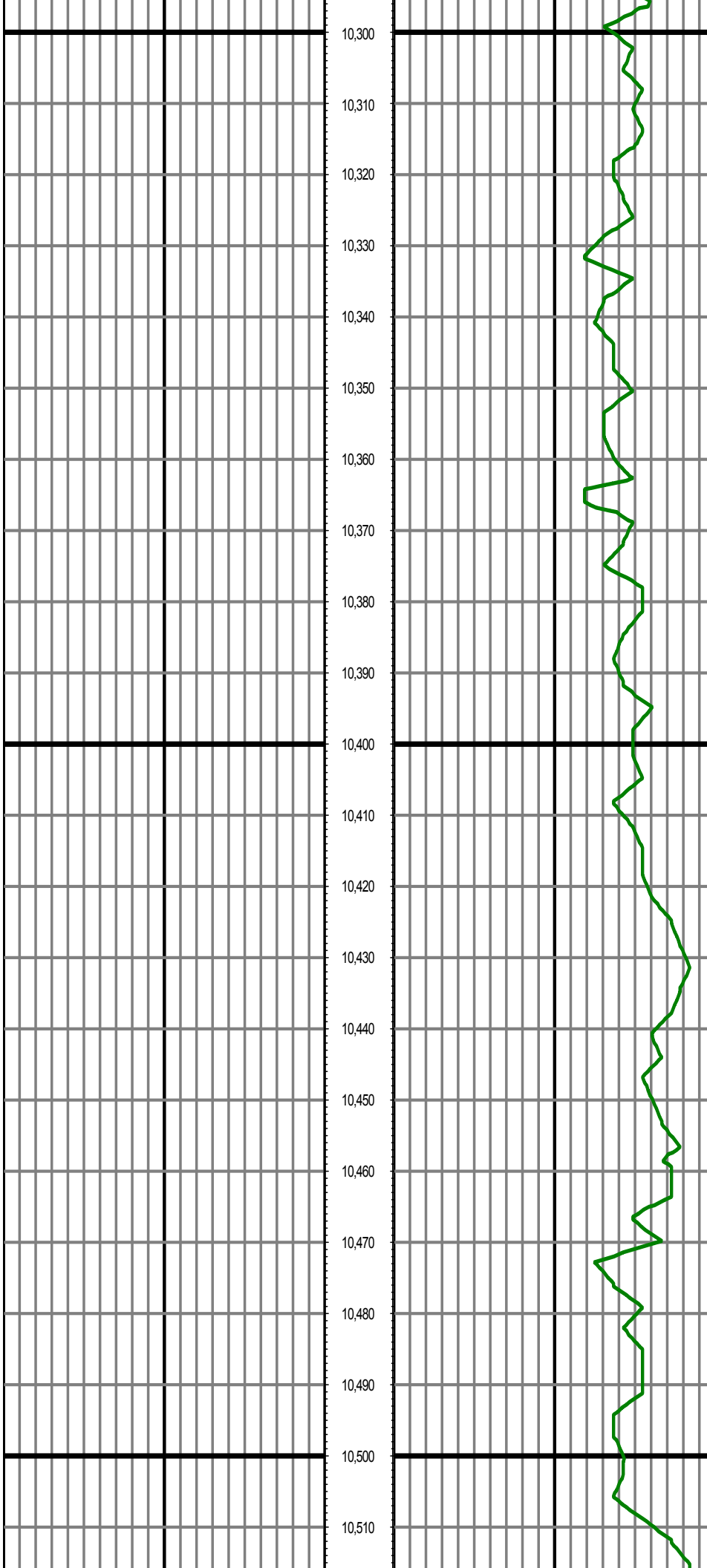
MD: 9788.00 INC: 89.80 AZ: 177.20 TVD: 7113.93 VS: 1714.78





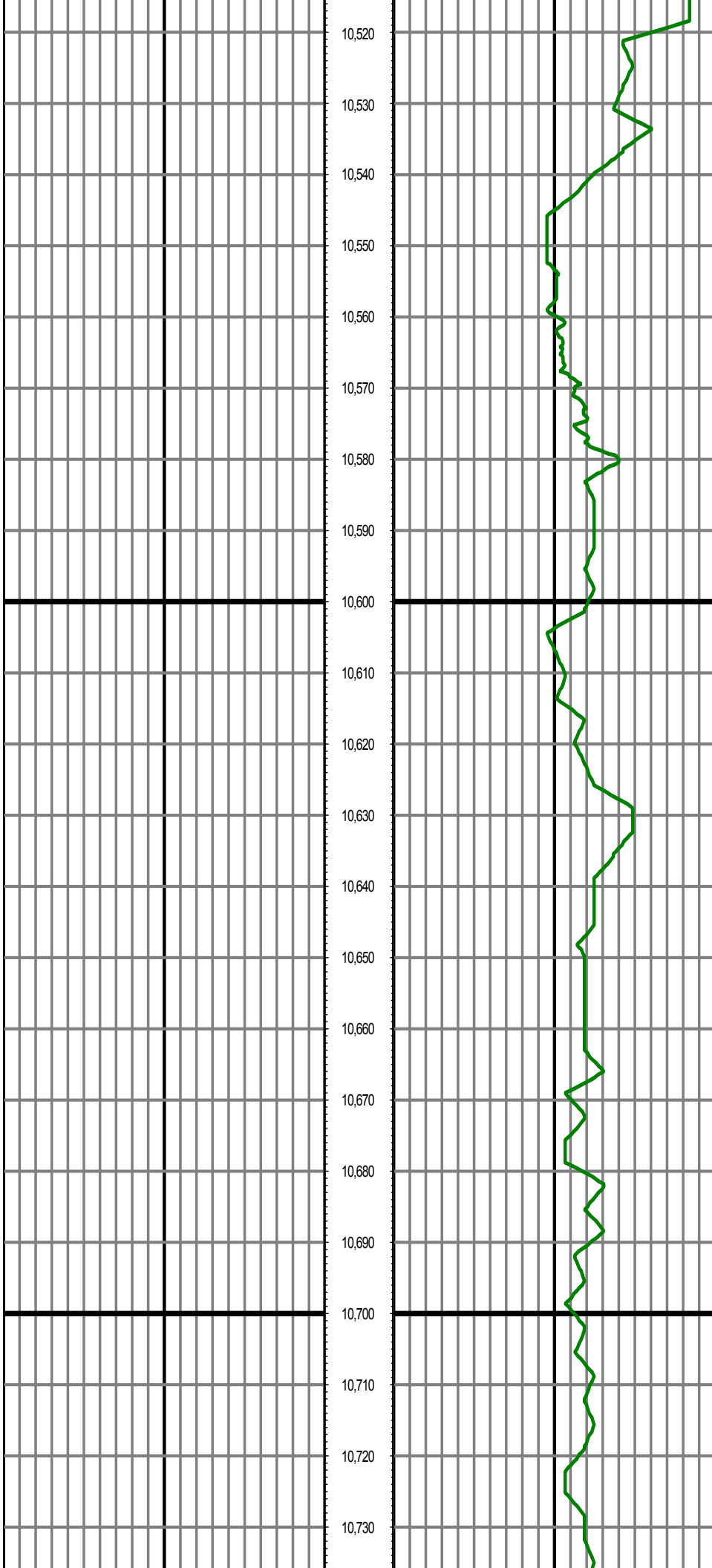
MD: 10166.00 INC: 89.40 AZ: 183.50 TVD: 7121.02 VS: 2092.40

MD: 10261.00 INC: 90.00 AZ: 184.90 TVD: 7121.51 VS: 2187.22



MD: 10356.00 INC: 90.50 AZ: 182.00 TVD: 7121.10 VS: 2282.09

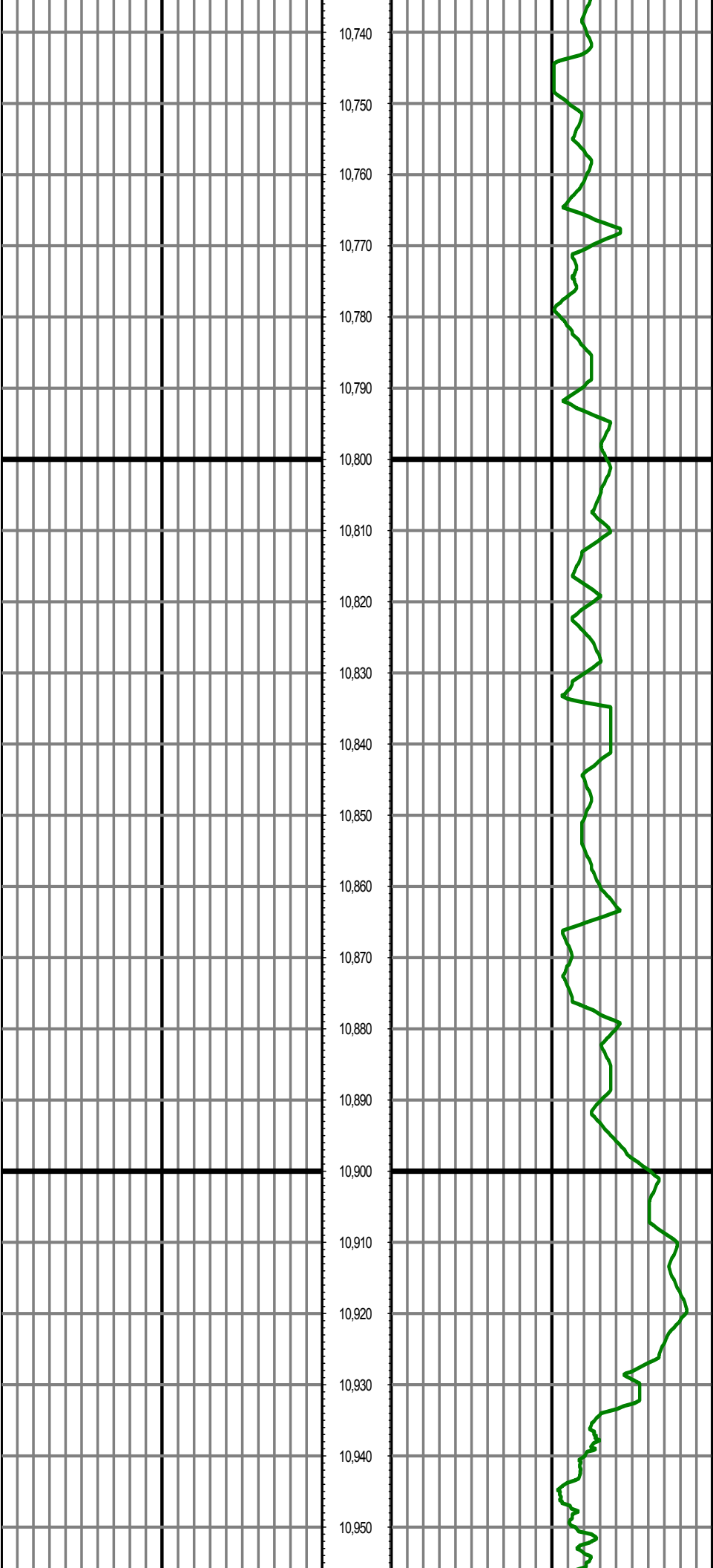
MD: 10450.00 INC: 91.60 AZ: 180.60 TVD: 7119.38 VS: 2376.07



MD: 10545.00 INC: 92.20 AZ: 181.00 TVD: 7116.23 VS: 2471.02

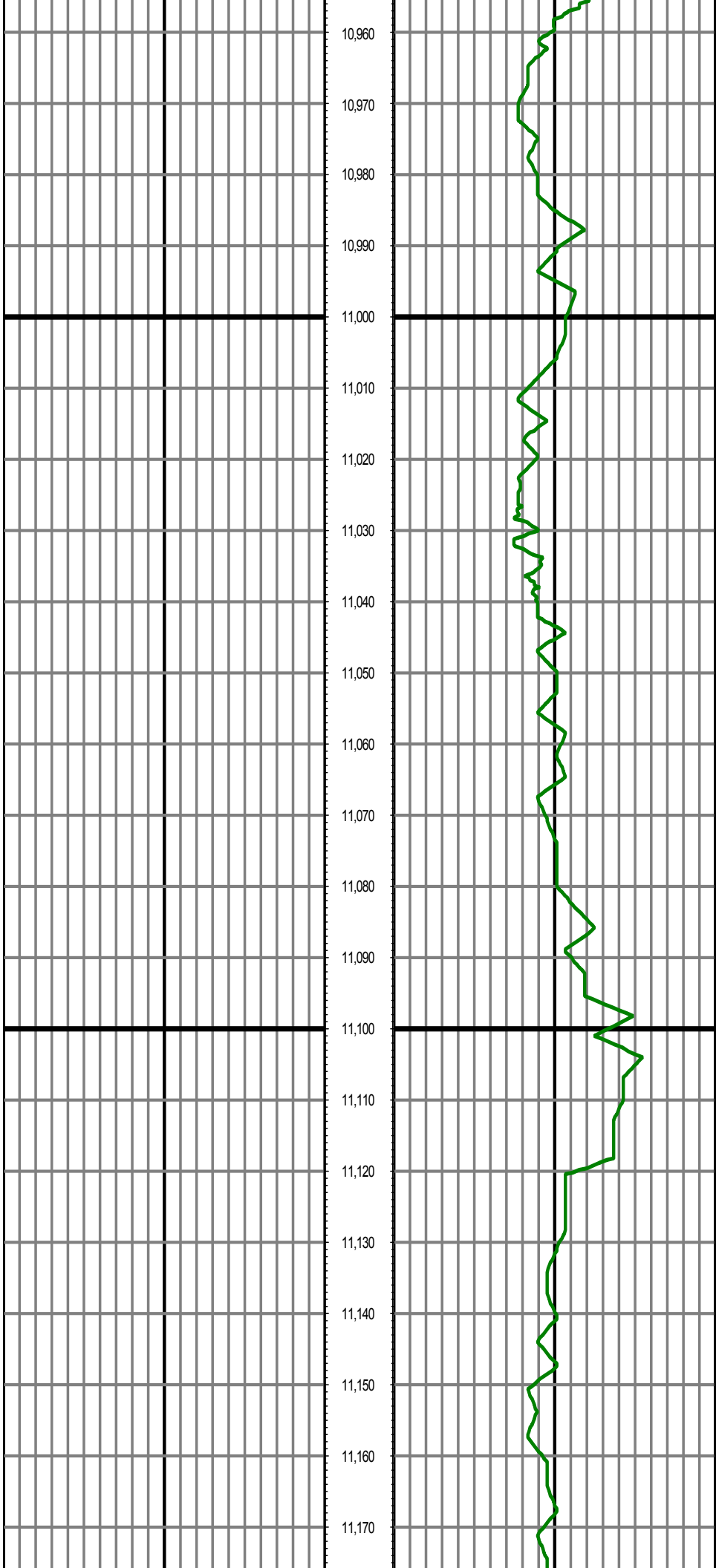
MD: 10640.00 INC: 90.70 AZ: 180.20 TVD: 7113.82 VS: 2565.98

MD: 10734.00 INC: 90.10 AZ: 181.80 TVD: 7113.17 VS: 2659.97



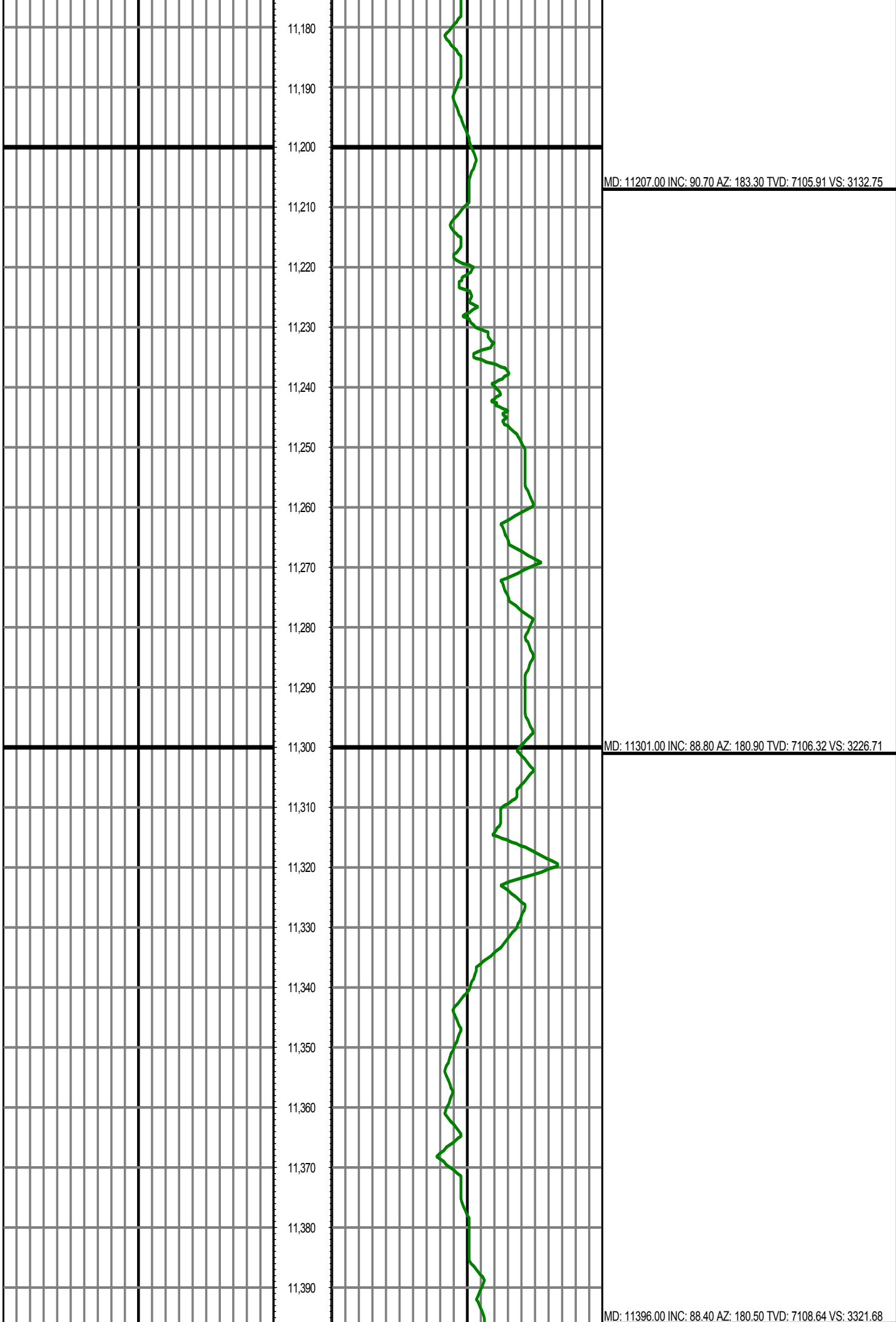
MD: 10829.00 INC: 90.90 AZ: 182.00 TVD: 7112.34 VS: 2754.95

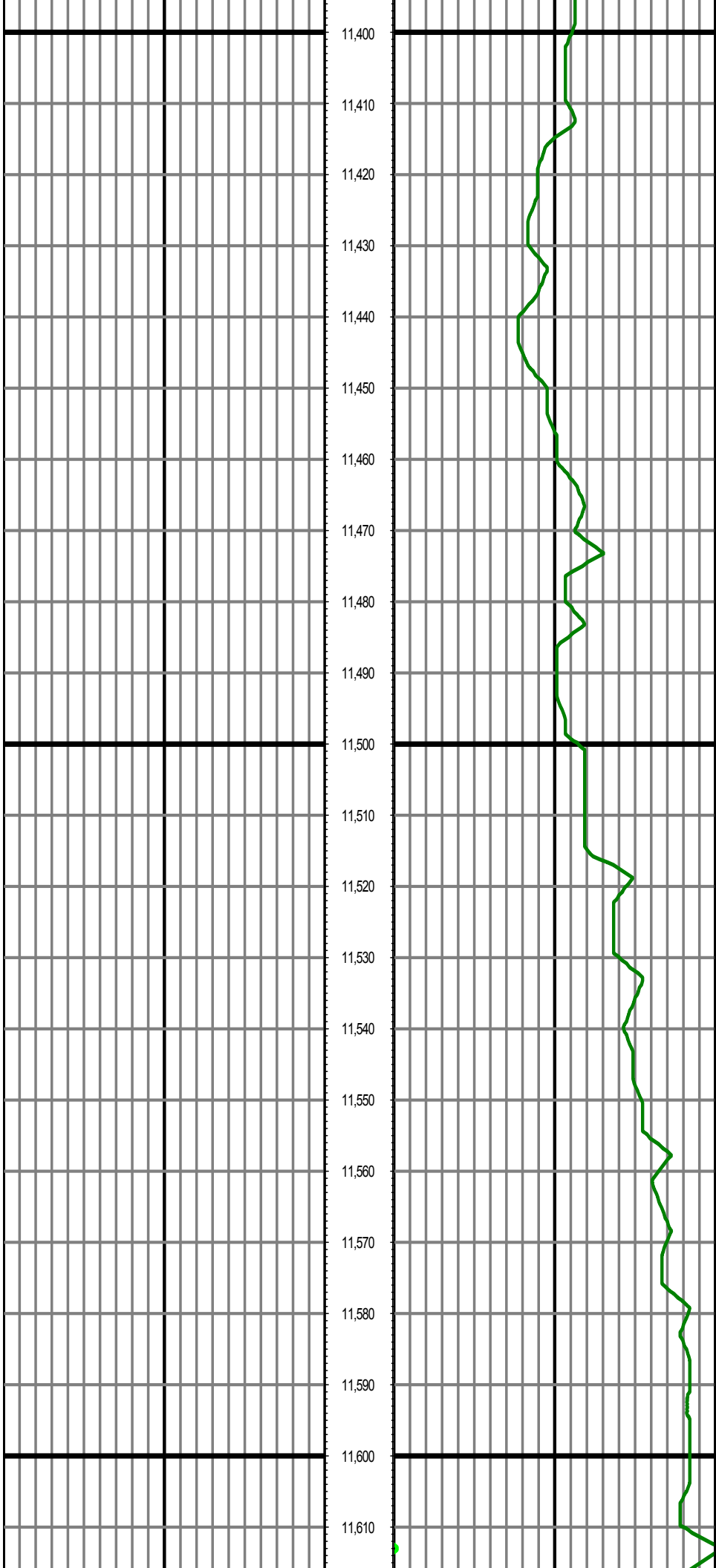
MD: 10923.00 INC: 92.10 AZ: 181.90 TVD: 7109.88 VS: 2848.89



MD: 11018.00 INC: 91.30 AZ: 181.80 TVD: 7107.06 VS: 2943.83

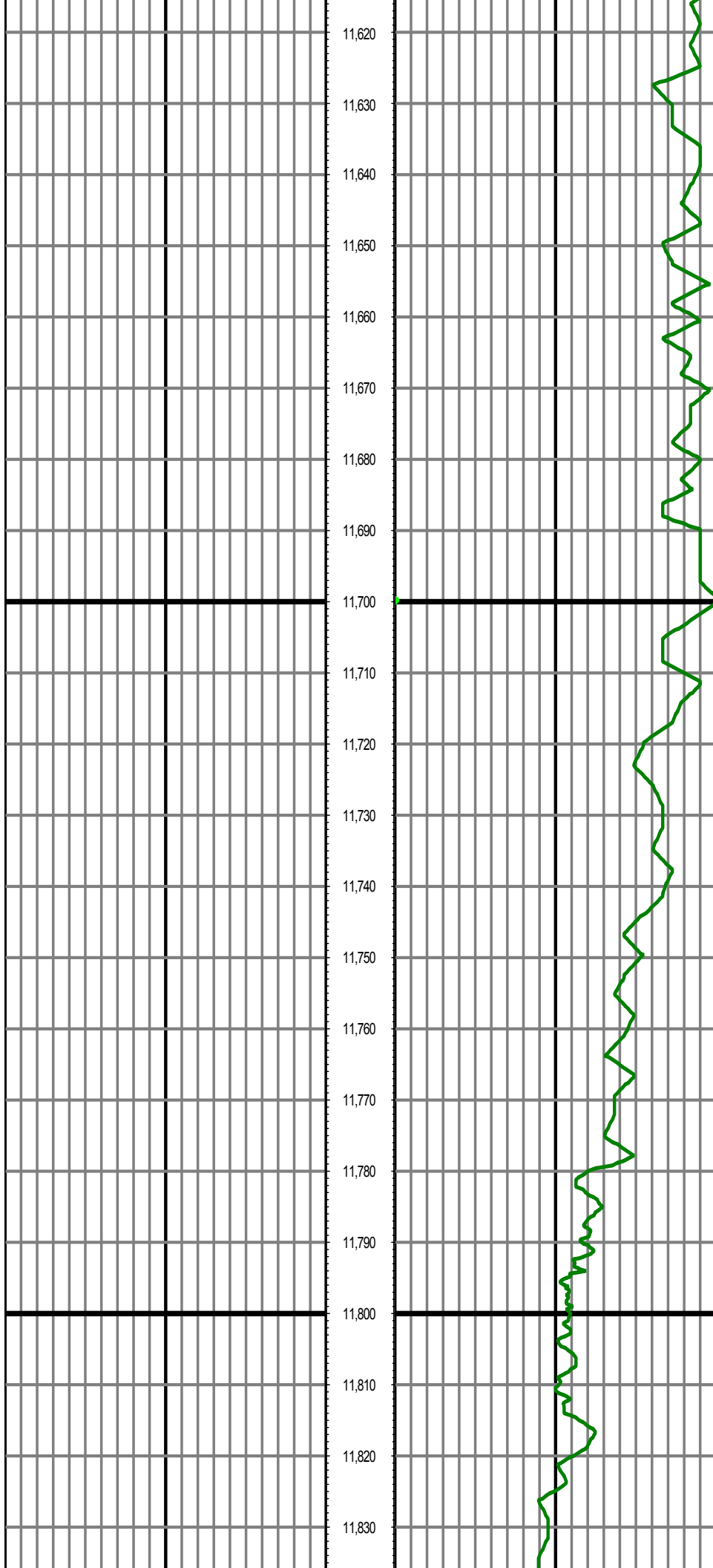
MD: 11112.00 INC: 89.70 AZ: 181.60 TVD: 7106.24 VS: 3037.80





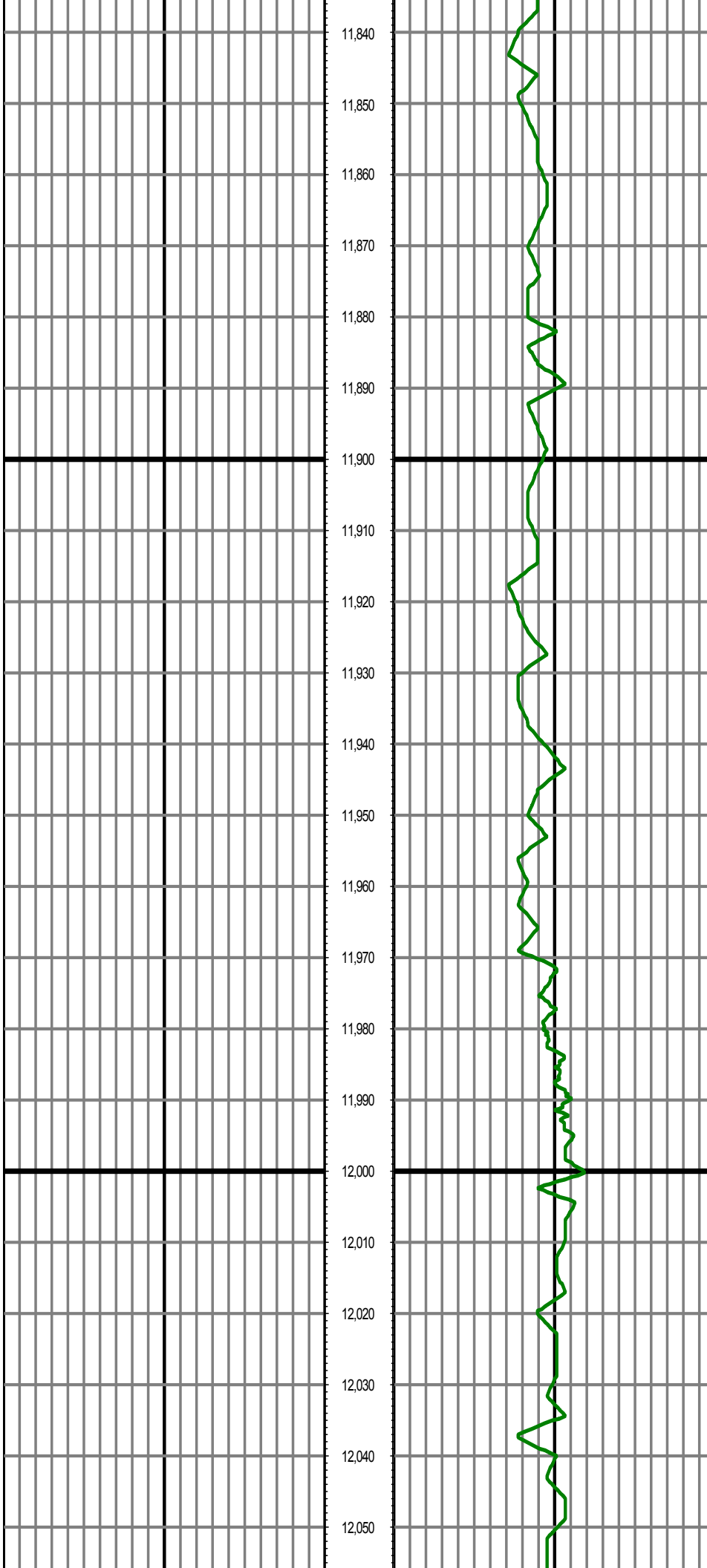
MD: 11491.00 INC: 89.30 AZ: 180.50 TVD: 7110.55 VS: 3416.66

MD: 11585.00 INC: 89.70 AZ: 180.20 TVD: 7111.37 VS: 3510.66



MD: 11679.00 INC: 90.50 AZ: 178.30 TVD: 7111.20 VS: 3604.62

MD: 11774.00 INC: 91.10 AZ: 177.60 TVD: 7109.87 VS: 3699.51



MD: 11868.00 INC: 90.20 AZ: 179.30 TVD: 7108.81 VS: 3793.43

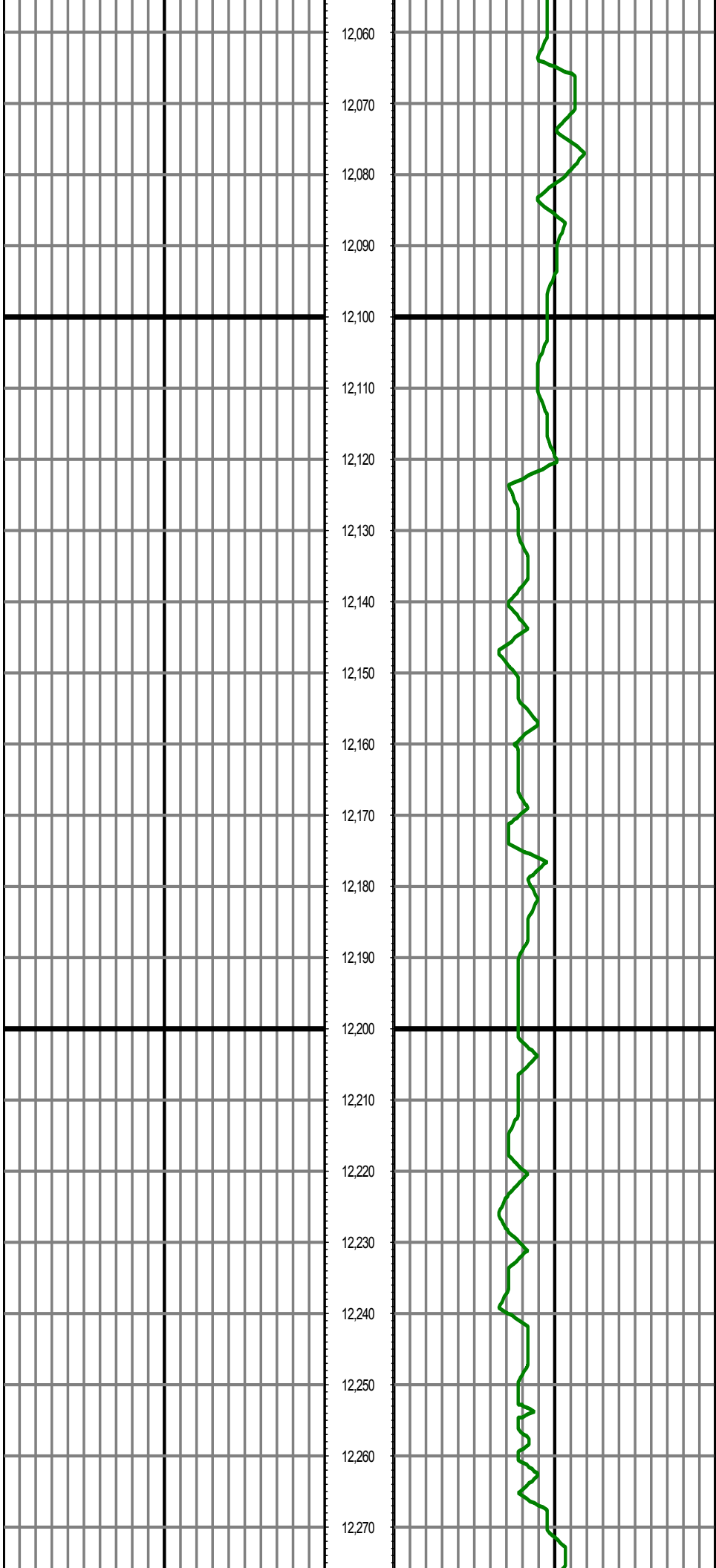
MD: 11963.00 INC: 90.70 AZ: 180.60 TVD: 7108.06 VS: 3888.41

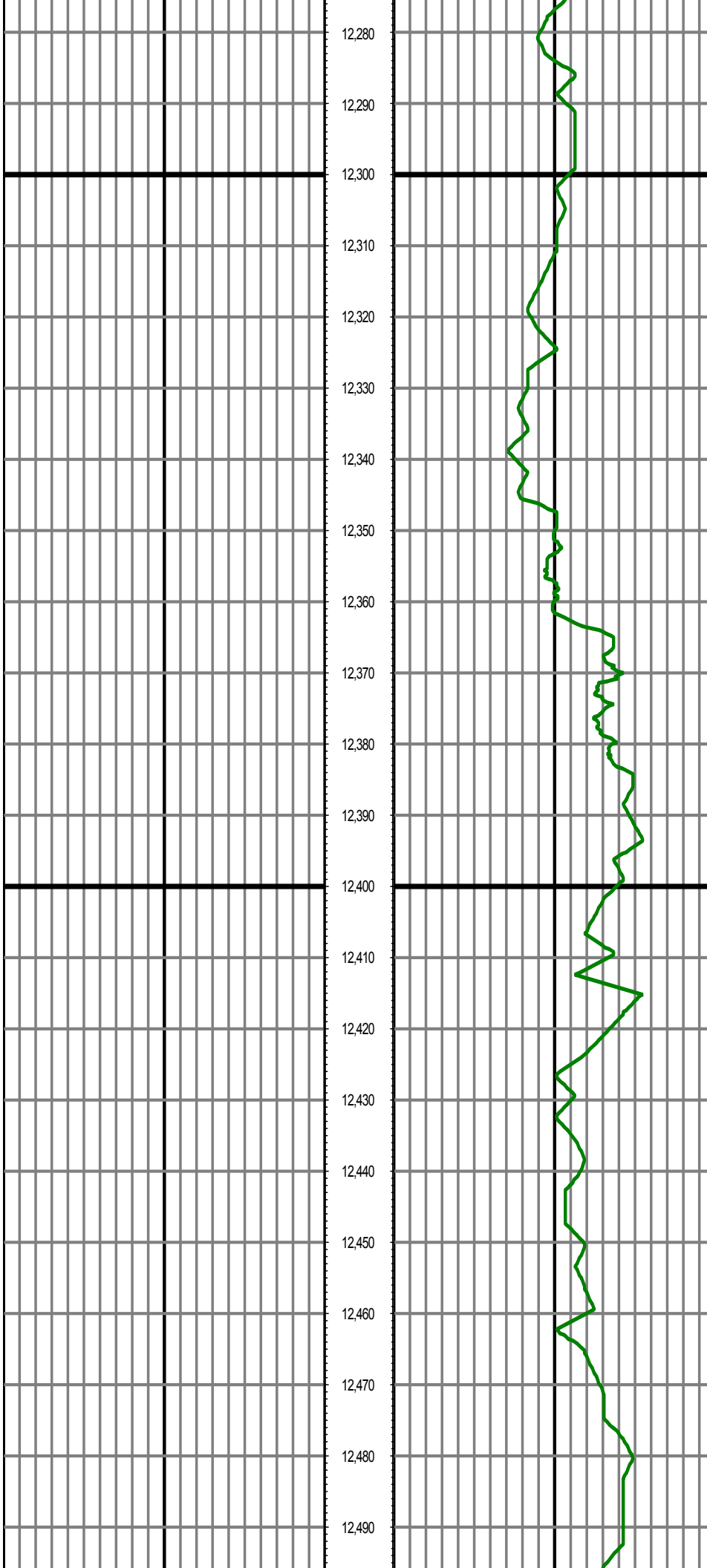
MD: 12057.00 INC: 88.70 AZ: 180.30 TVD: 7108.55 VS: 3983.44

MD: 12057.00 INC: 88.70 AZ: 180.20 TVD: 7108.55 VS: 3982.41

MD: 12152.00 INC: 89.40 AZ: 180.70 TVD: 7110.13 VS: 4077.39

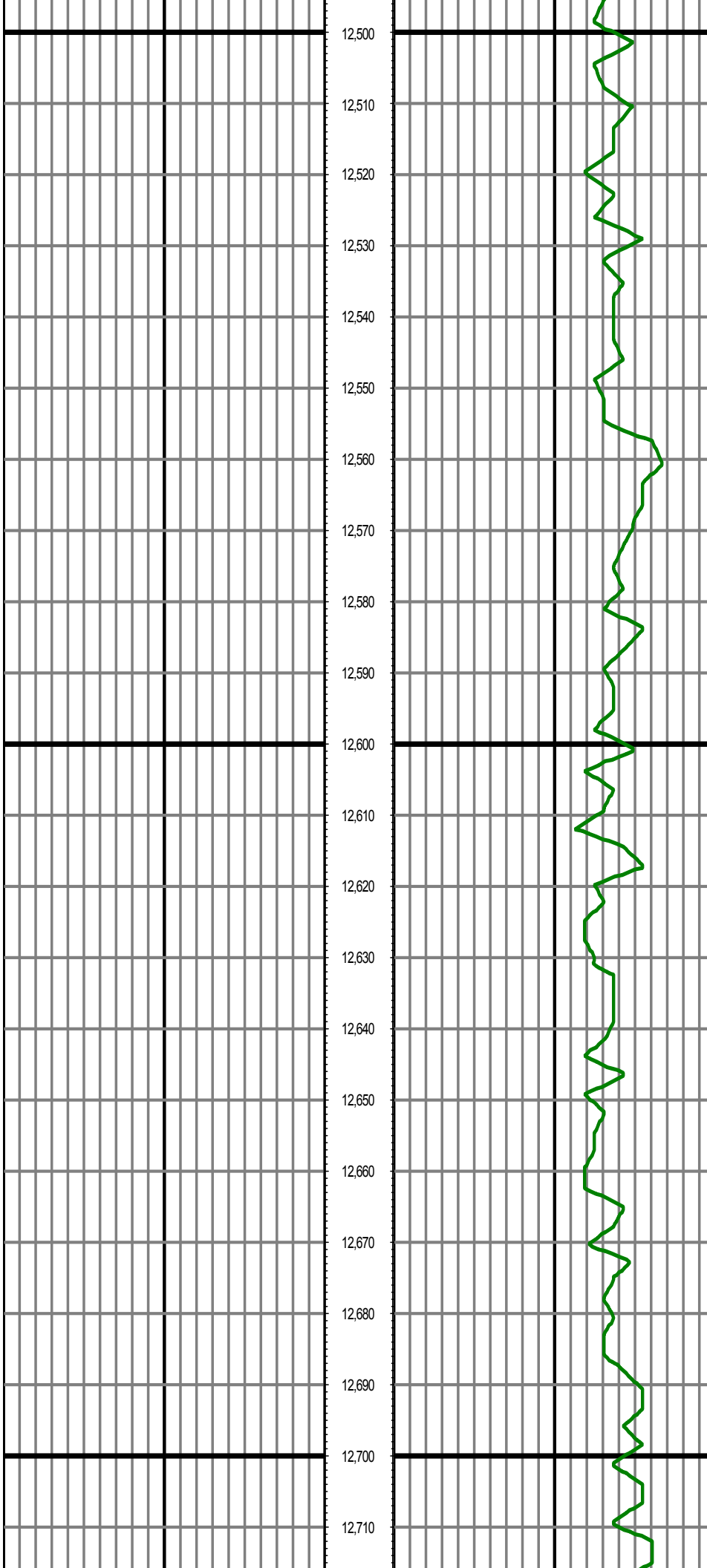
MD: 12246.00 INC: 90.60 AZ: 181.20 TVD: 7110.13 VS: 4171.39





MD: 12341.00 INC: 91.60 AZ: 181.60 TVD: 7108.31 VS: 4266.36

MD: 12435.00 INC: 90.50 AZ: 180.30 TVD: 7106.58 VS: 4360.34



MD: 12530.00 INC: 89.30 AZ: 180.10 TVD: 7106.75 VS: 4455.34

MD: 12625.00 INC: 90.10 AZ: 179.80 TVD: 7107.25 VS: 4550.33

