

CATHEDRAL

Cathedral Energy Services
1949 North Pyrite Road
Casper, Wyoming 82604

145226

5":100' - MD

9/11/2014 2:51:42 PM

Oper. Company: Encana Oil & Gas (USA) Inc.

Country: U.S.A.

State / Province: Colorado

County / Parish: Weld

Started: 07/18/2014 09:30 PM

API/UWI: 05-123-39214-0000

Field: Wattenberg (Niobrara)

Well: Mumby State 4D-36H-P266

Rig: Helmerich & Payne 522

Ended: 07/21/2014 04:03 AM

Gamma Ray
Section Plane: 0.00
Magnetic North: 8.41
Gamma Averaging: 7%

Personnel

Day Hand: J. Nichols

Night Hand: A. Stewart

Comp. Emp: Kevin Bergeron

Maximum Temperature: 226°F

Location

Latitude: 40.090826

Longitude: -104.719588

Elev. GL: 5018

Elev. DF: 30

Elev. KB: 5048

Log and Survey Depths Relative to Kelly Bushing (KB) Depth

Hole Data

Size	From	To
8-3/4	1195	7529
6-1//8	7529	11868

Casing Data

Size	From	To
9-5/8	0	1135
7	1135	7519
4-1/2	7519	11858

Bit Sizes

Size	From	To
8-3/4	1195	7529
6-1/8	7529	11868

Mud Data

Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
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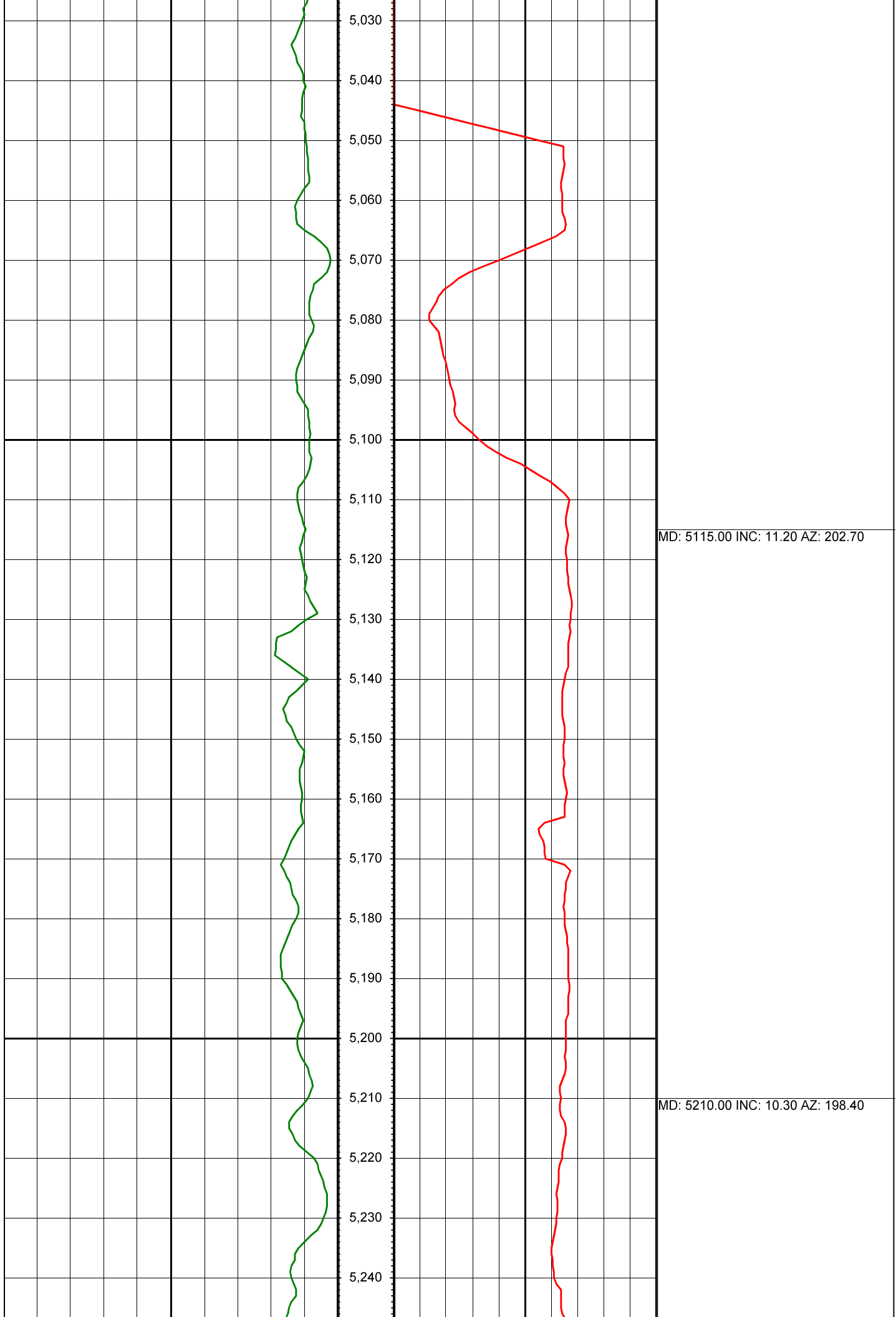
Tool Run Data

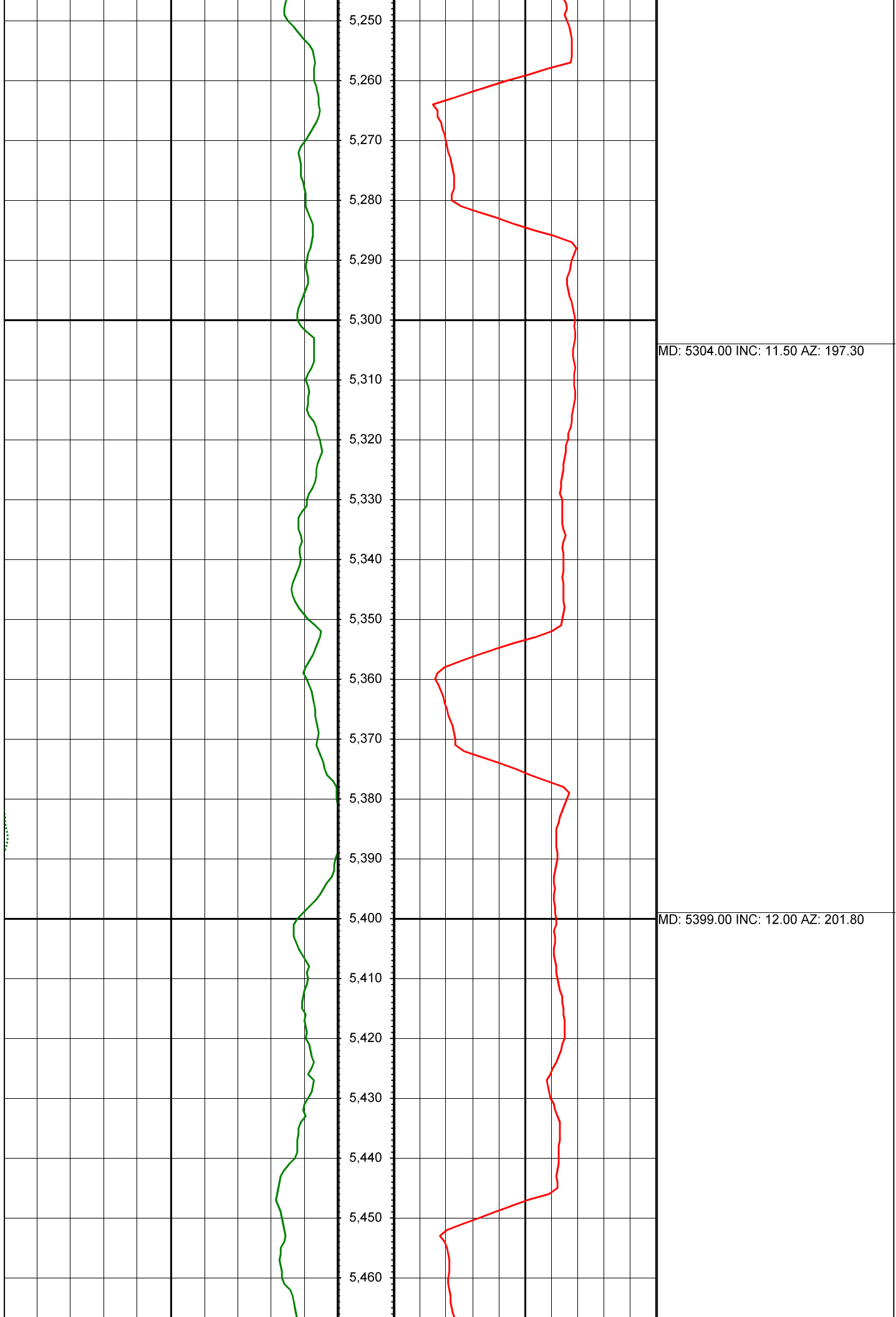
Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
333	37.93	0	7/17/2014 10:00:21 PM	1195	7/20/2014 5:30:21 AM	7529
333	37.93	0	7/21/2014 9:30:21 AM	7529	7/23/2014 9:30:21 PM	11868

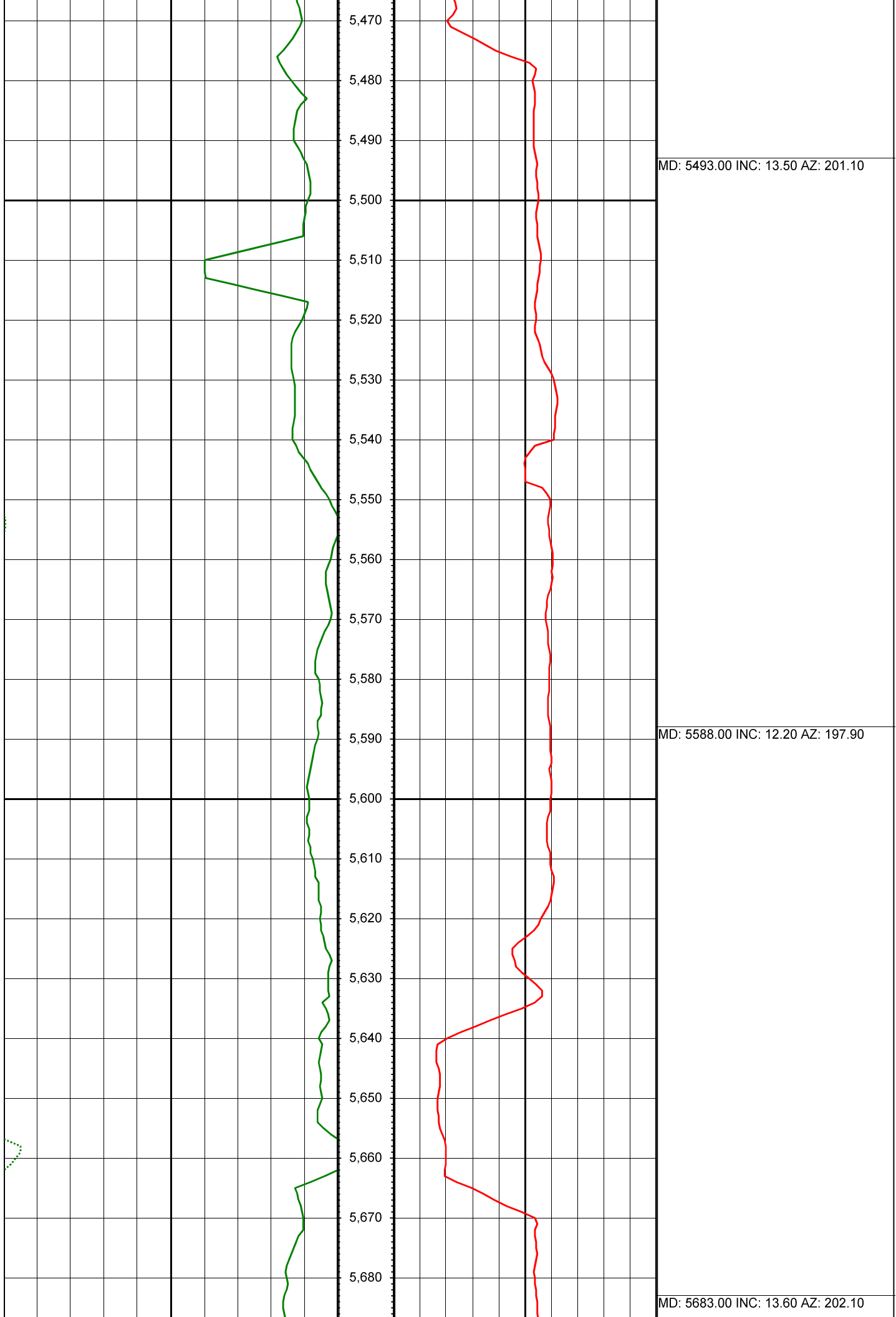
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost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

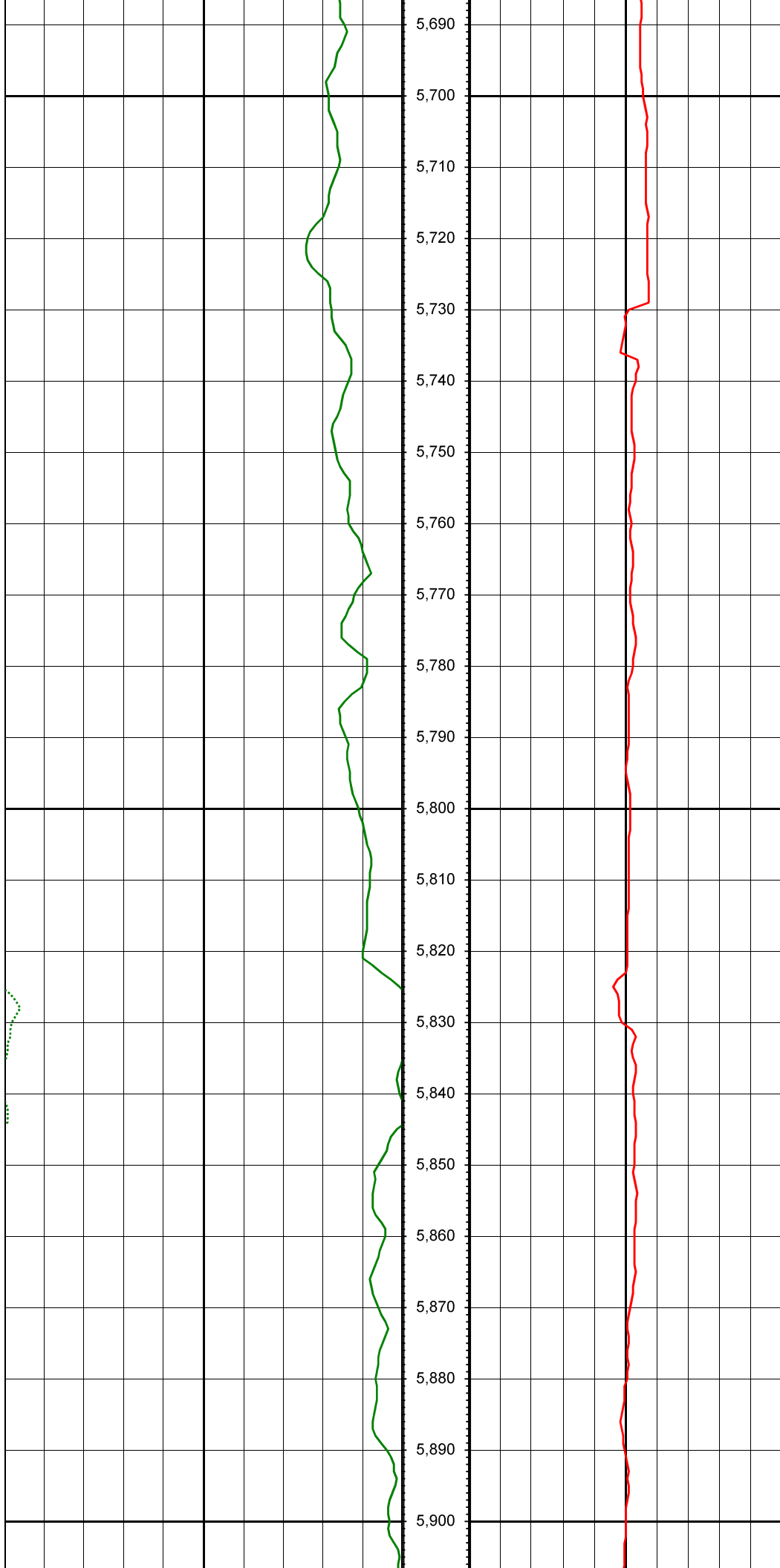
Activity	Start	End	Duration
Gamma Ray (API)	0.00	150.00	150.00
MD	150.00	300.00	150.00
ROP (FT/HR)	300.00	600.00	300.00
Surveys (MD/INC/AZ)	600.00	1500.00	900.00
Total	0.00	1500.00	1500.00

MD: 5020.00 INC: 11.00 AZ: 195.20



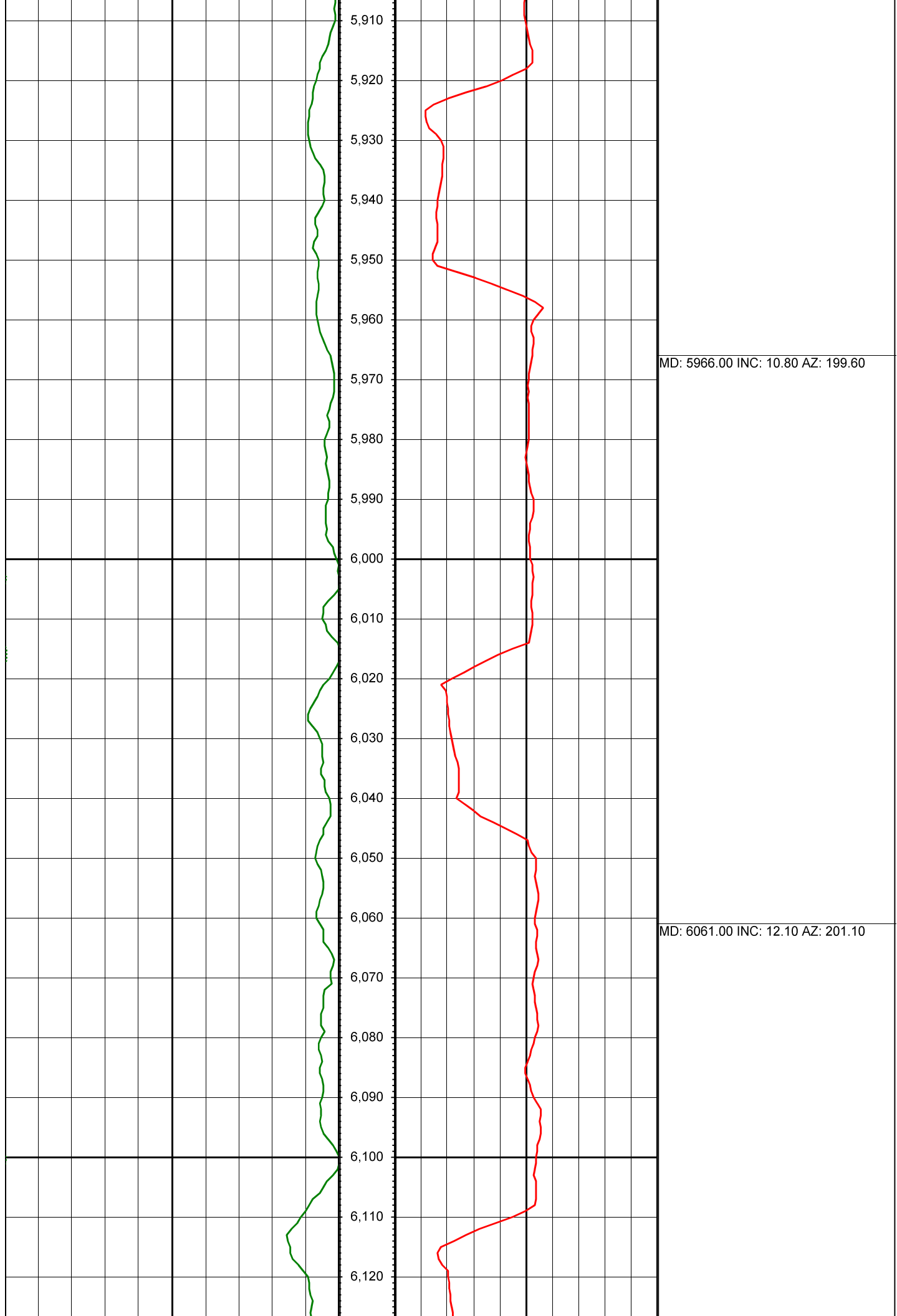


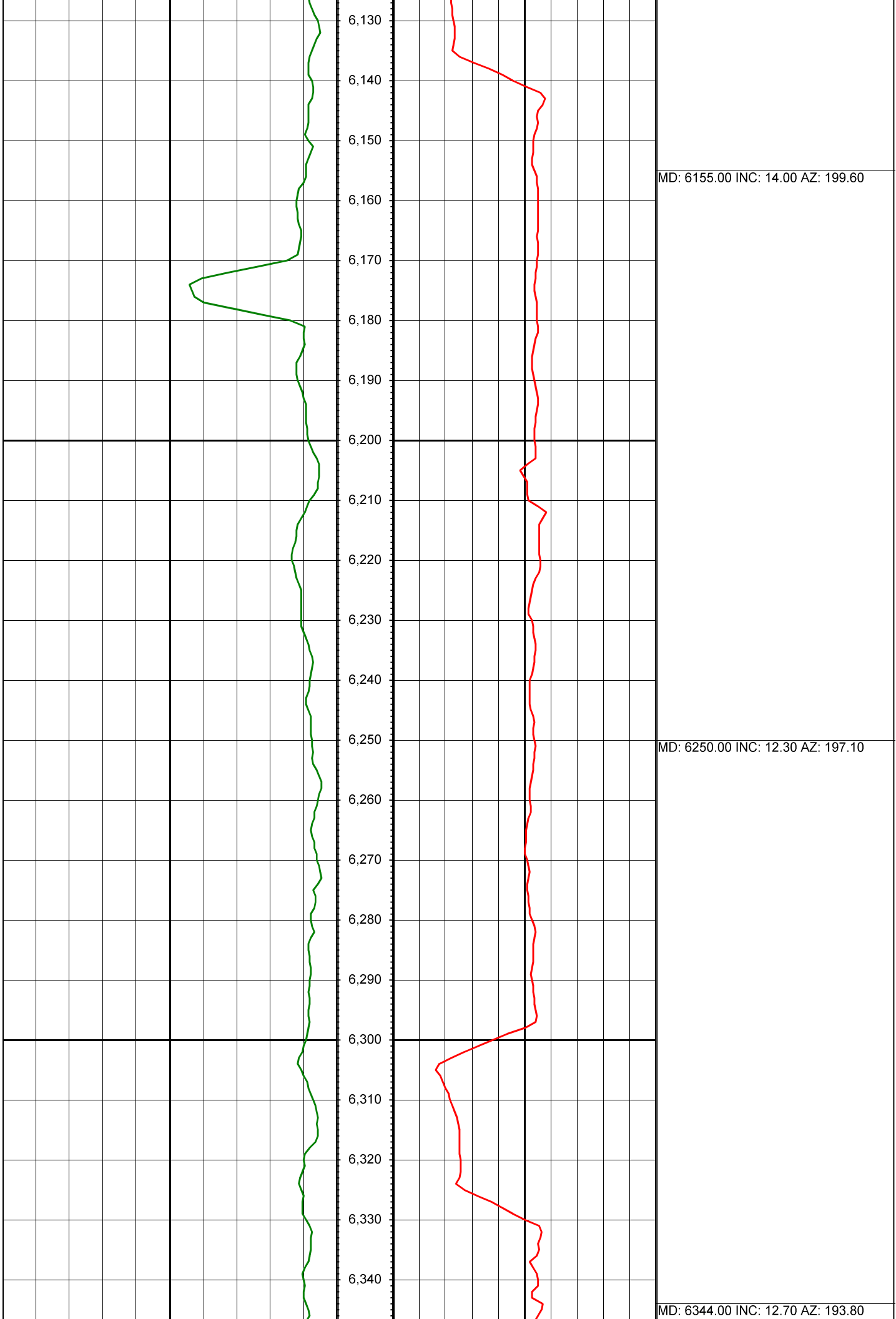


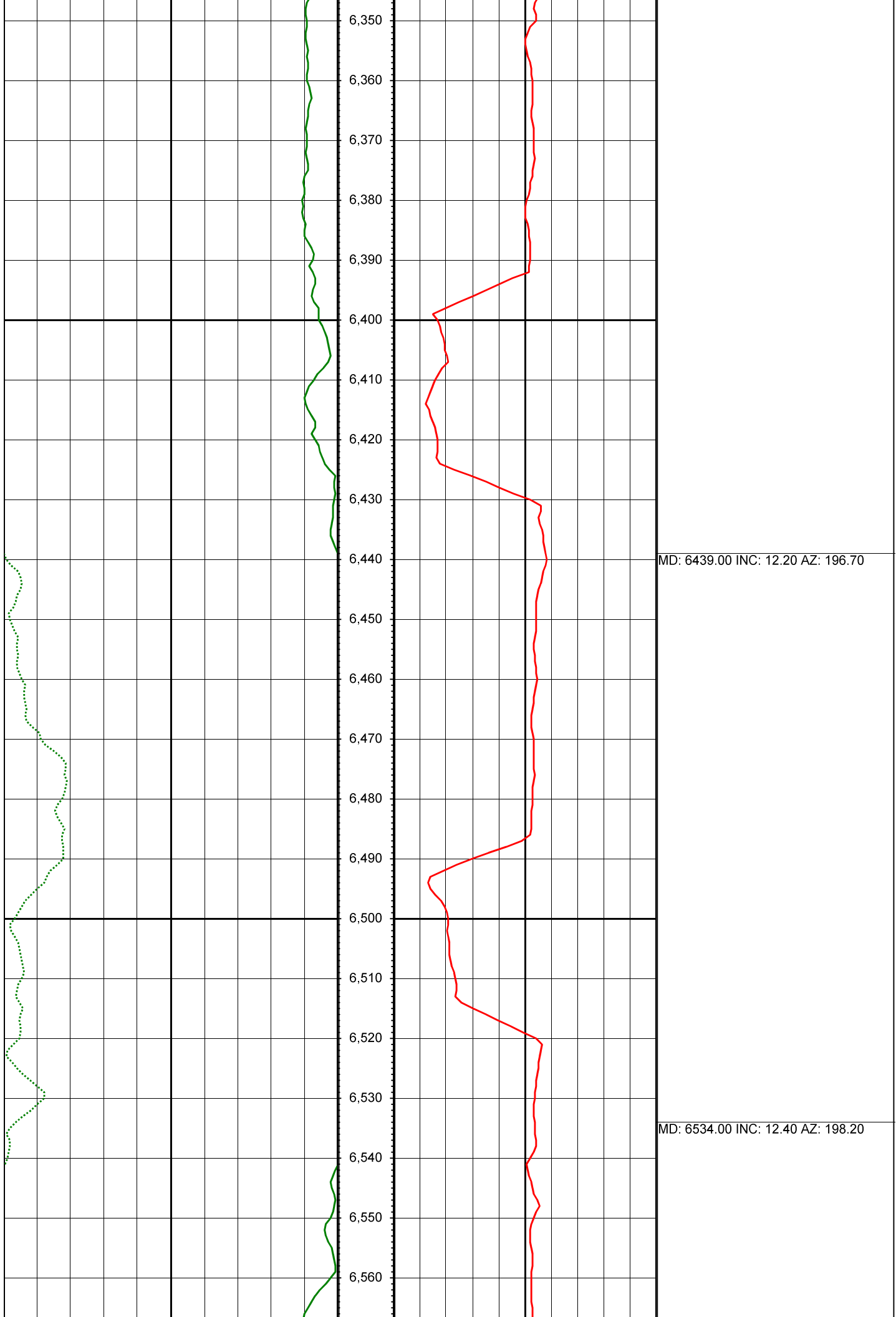


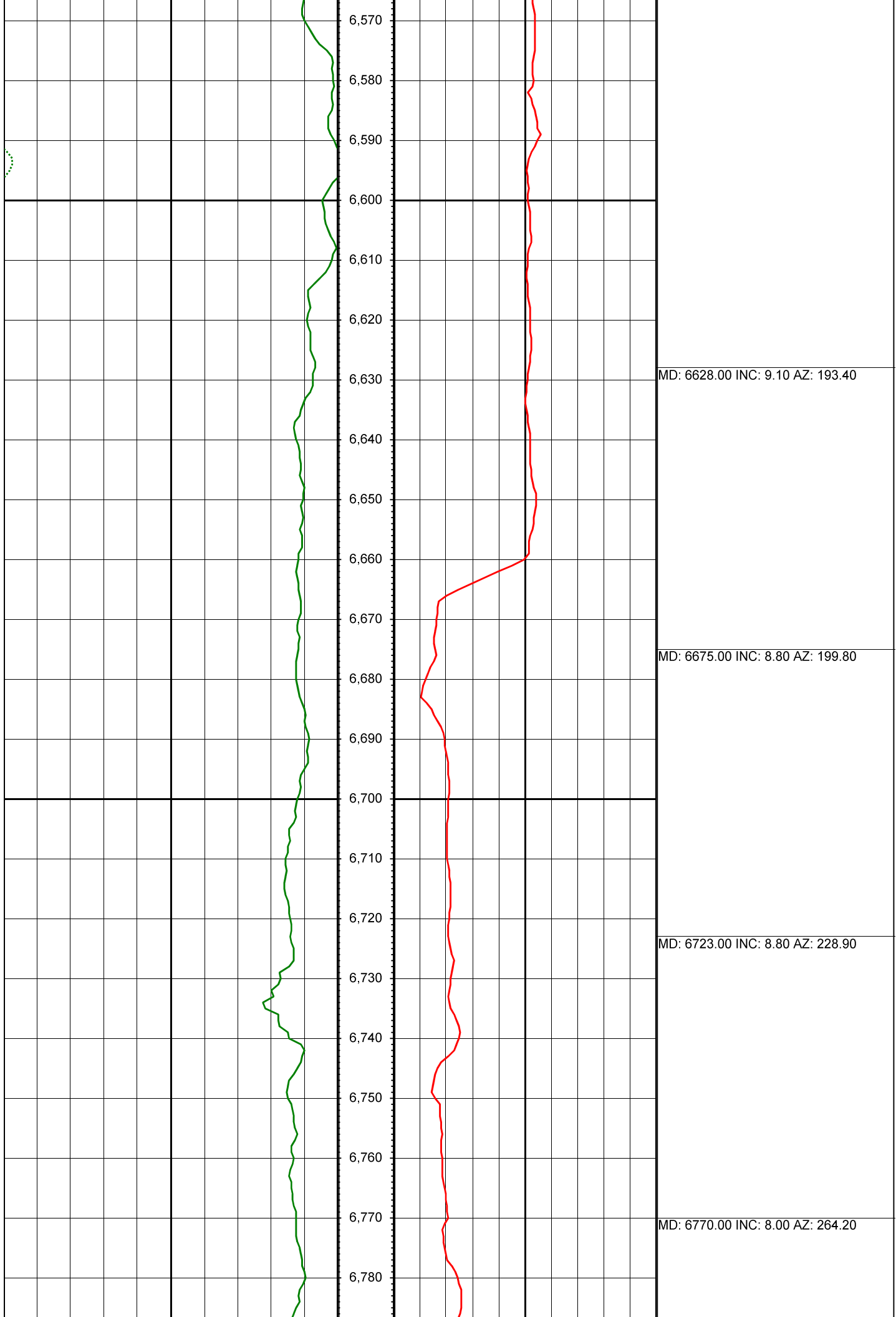
MD: 5777.00 INC: 12.20 AZ: 198.50

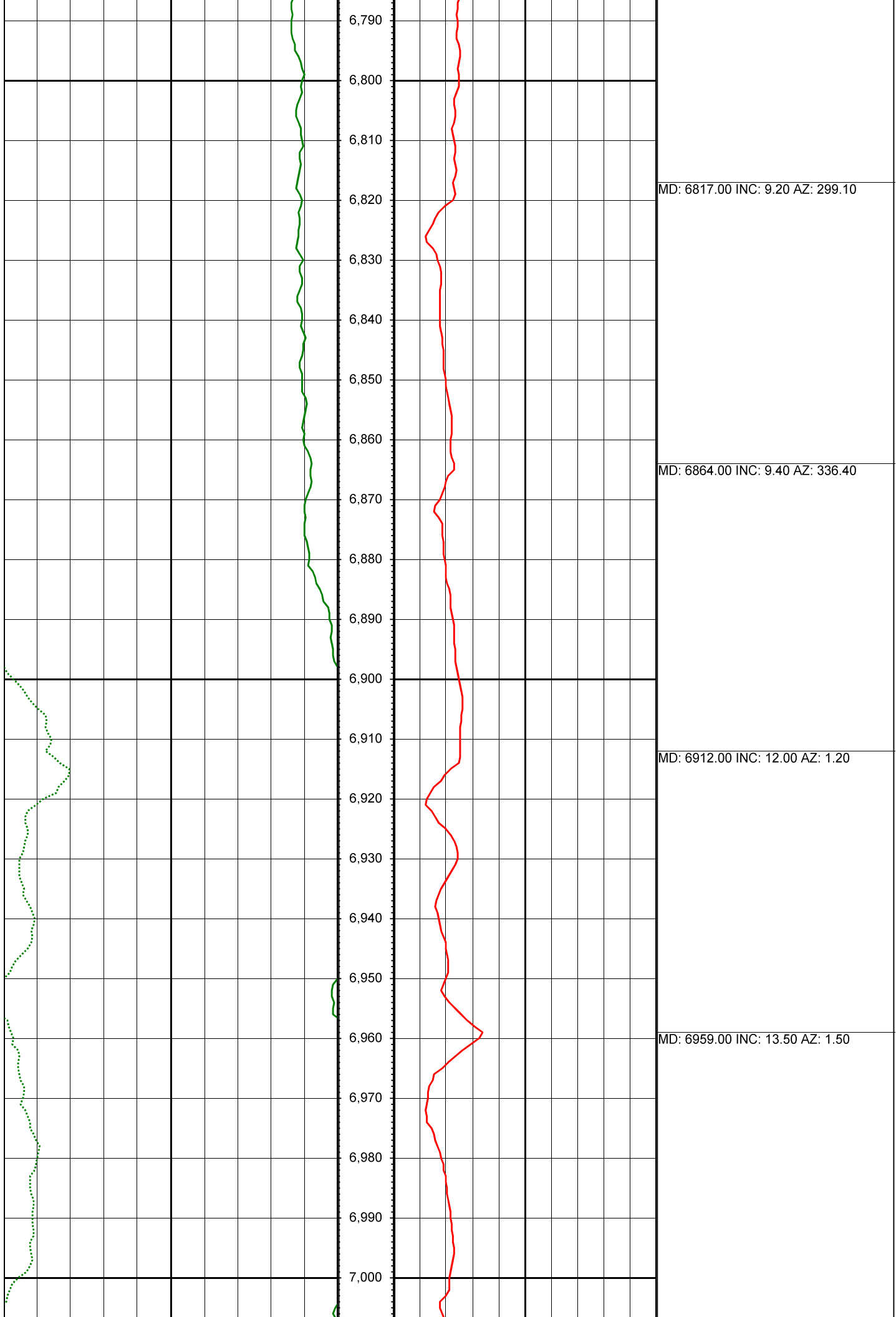
MD: 5872.00 INC: 9.90 AZ: 195.80

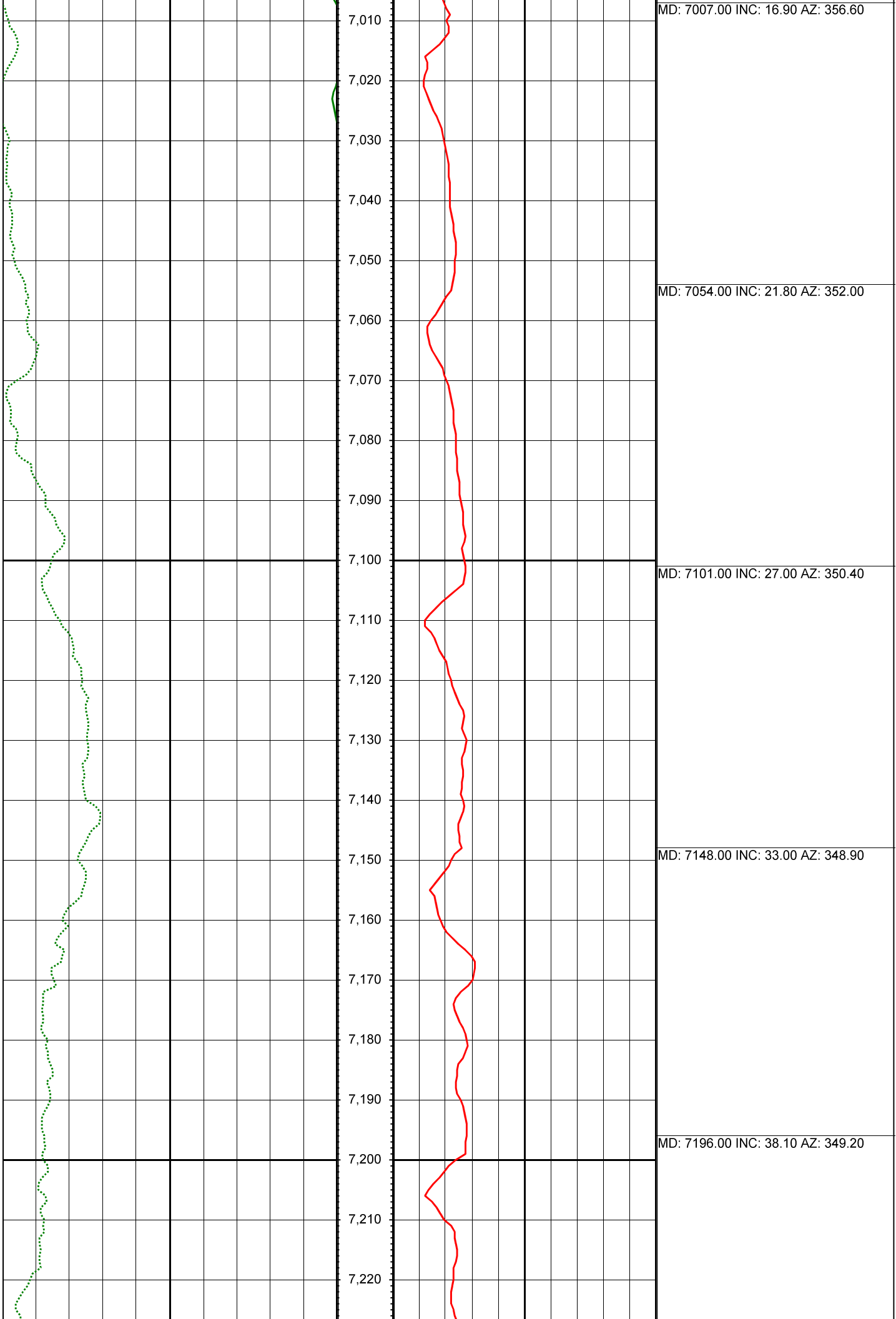


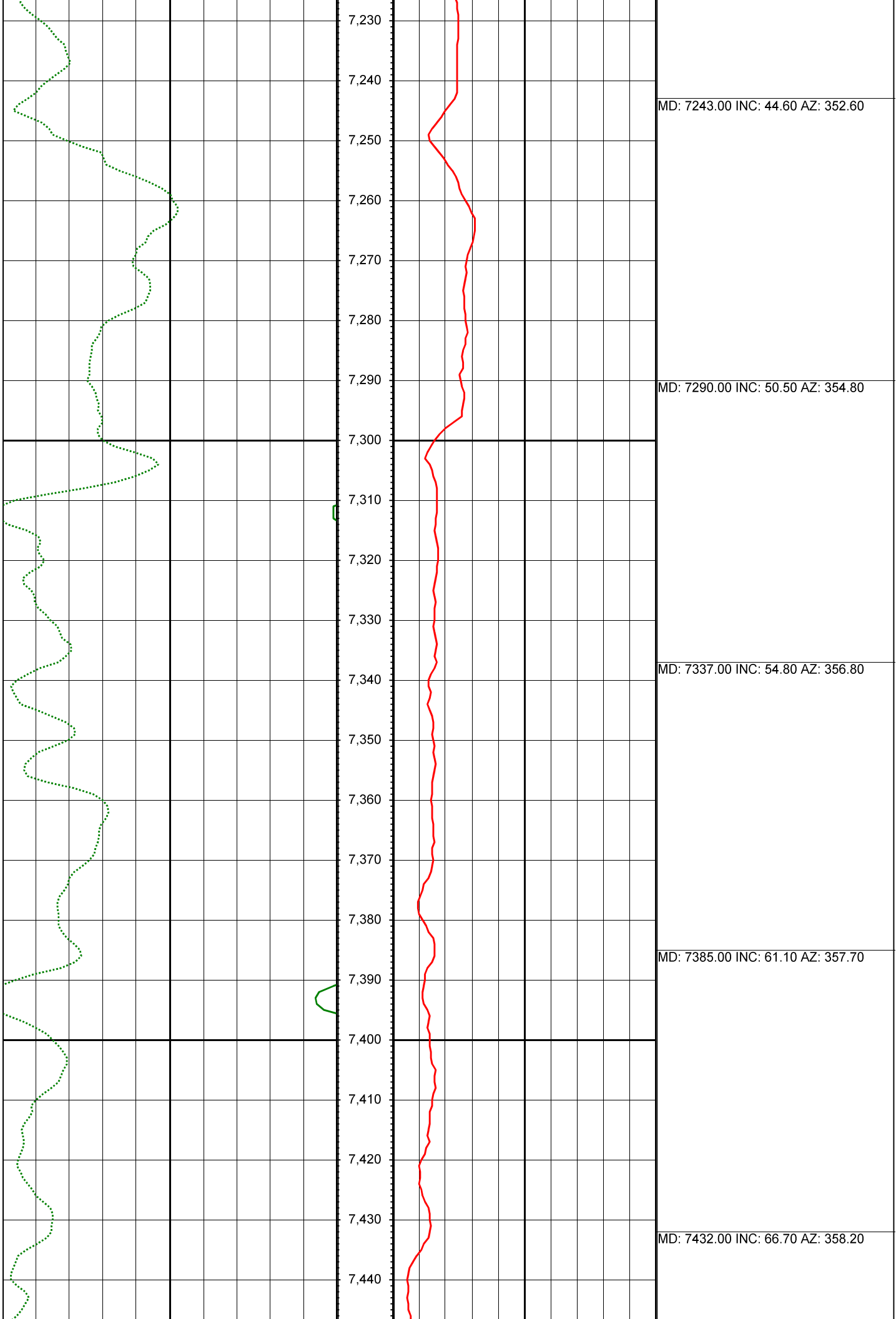


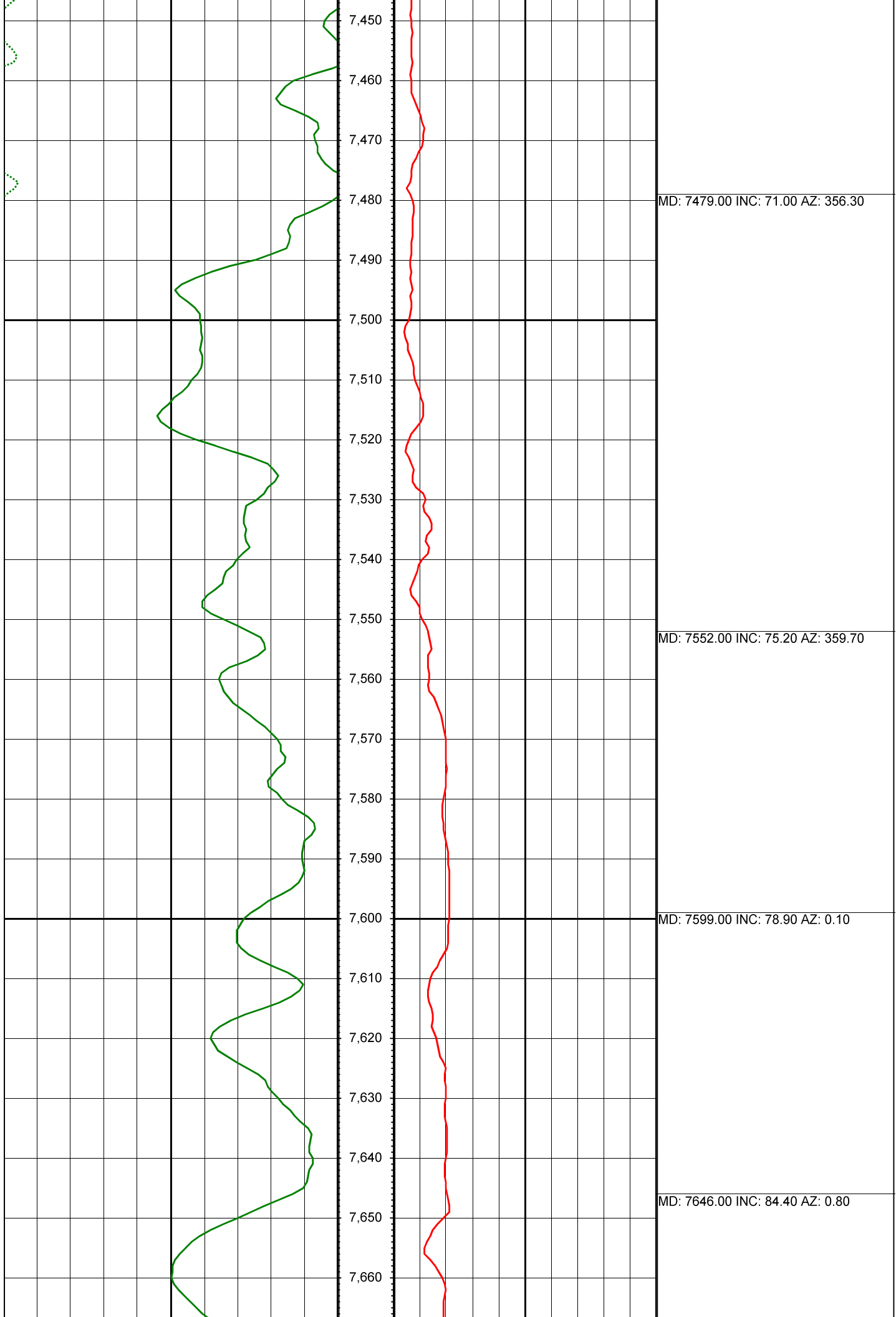


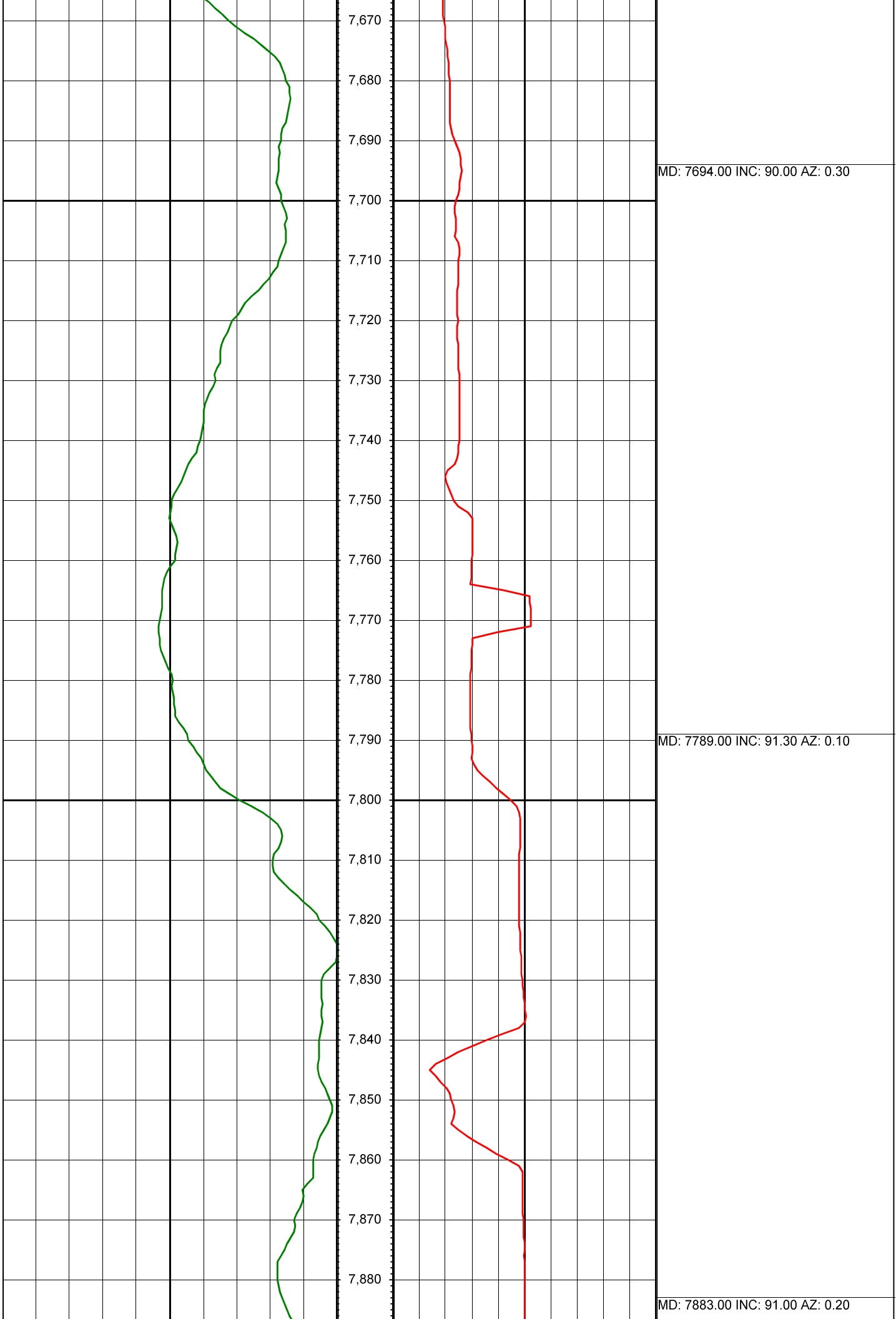


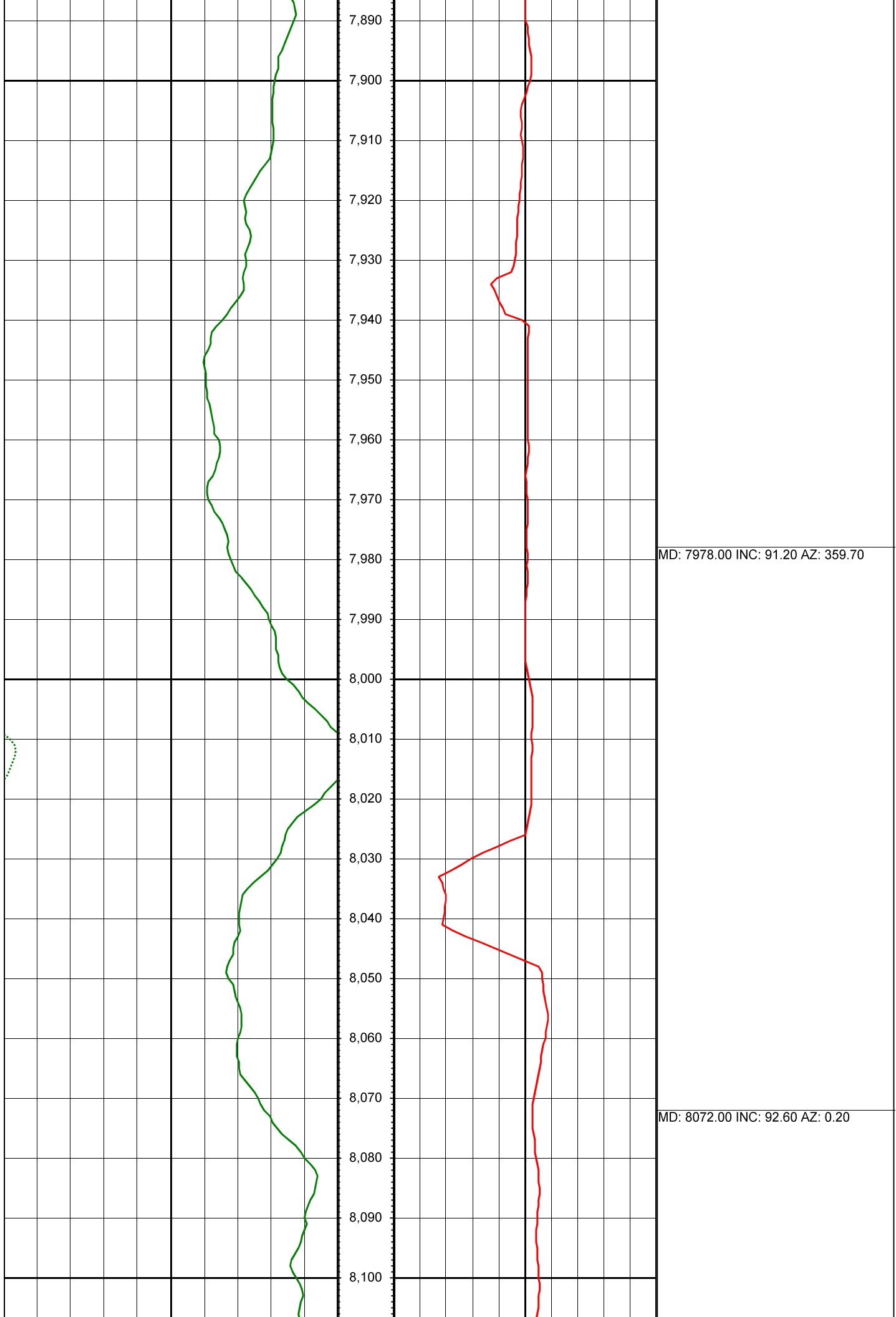


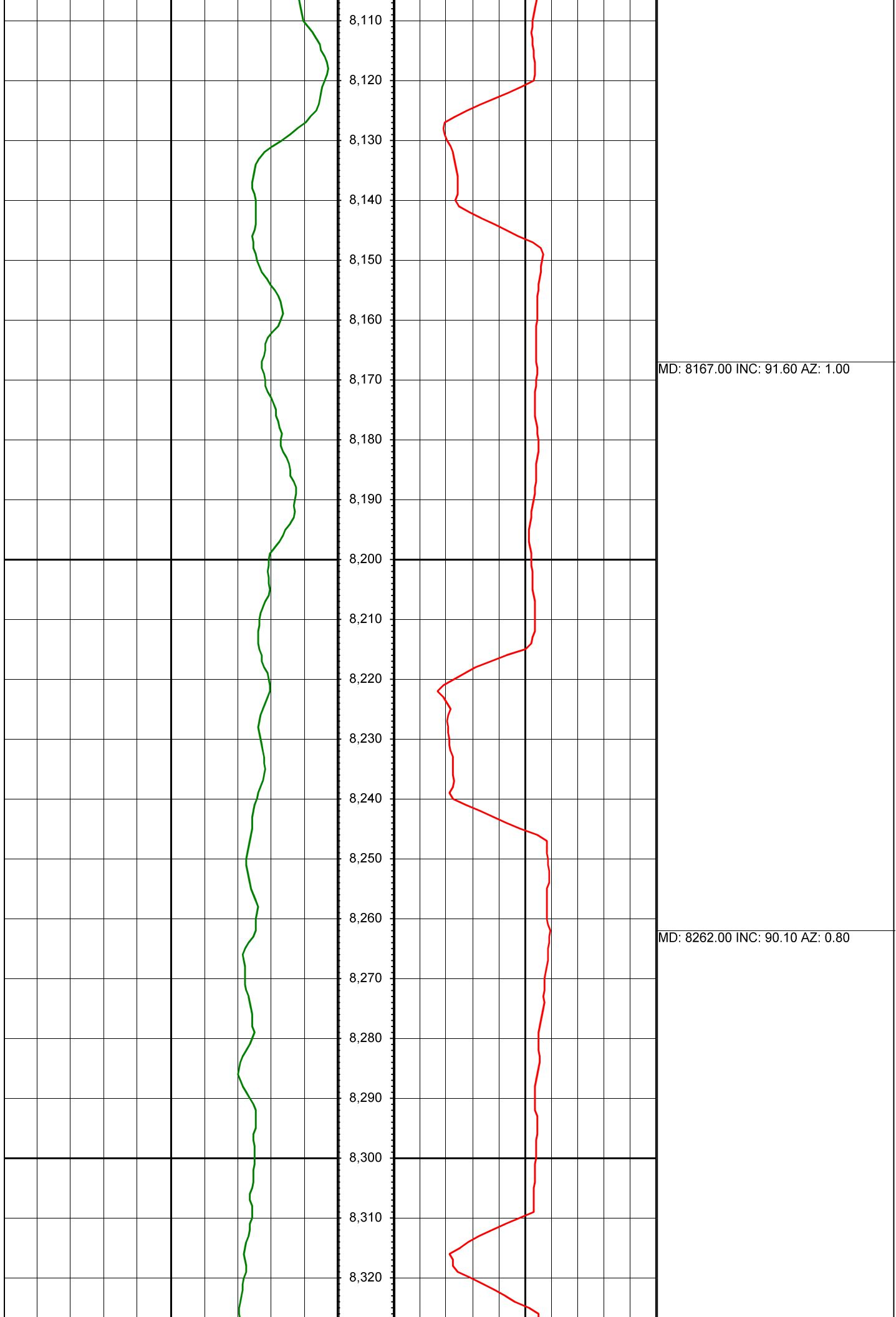


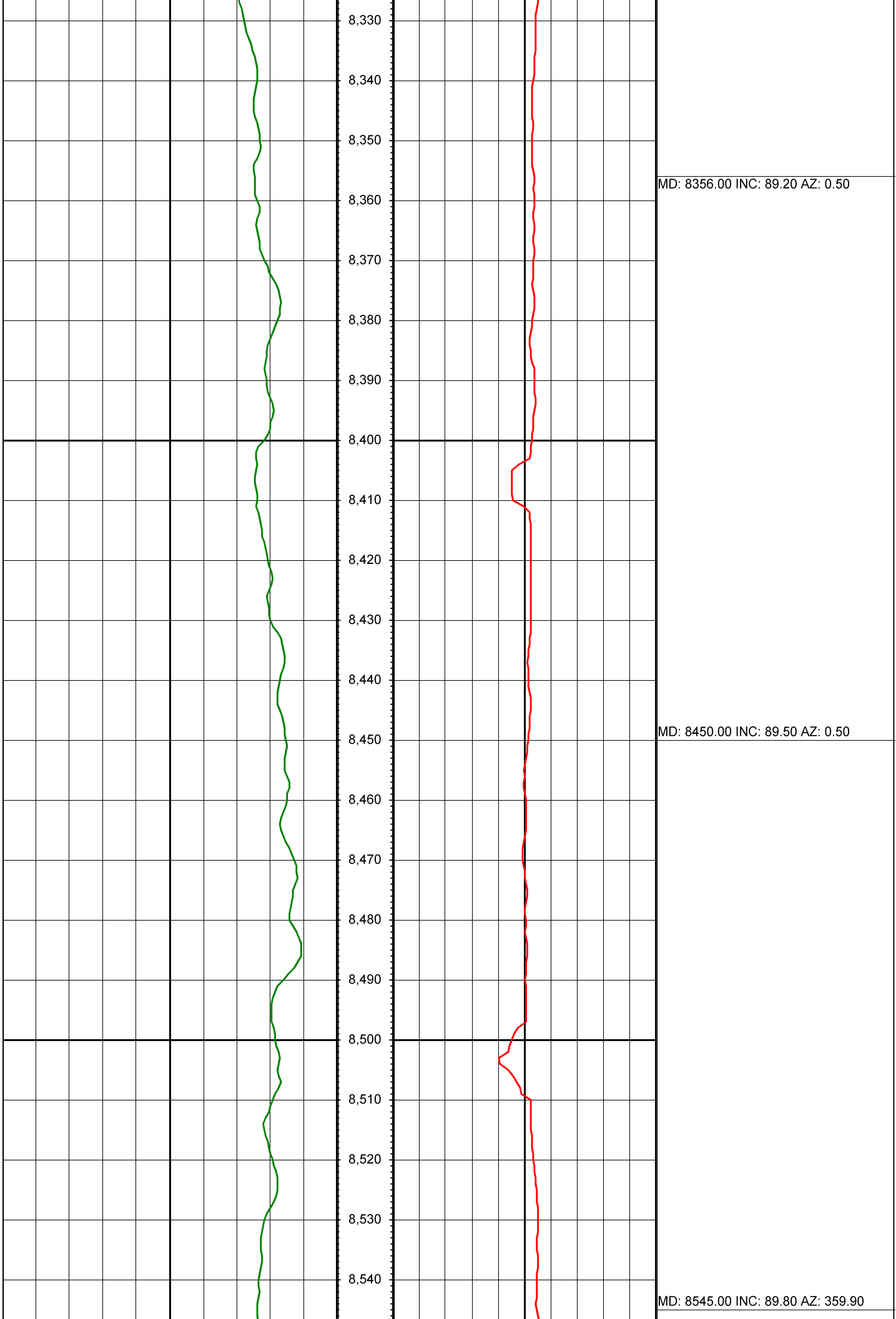


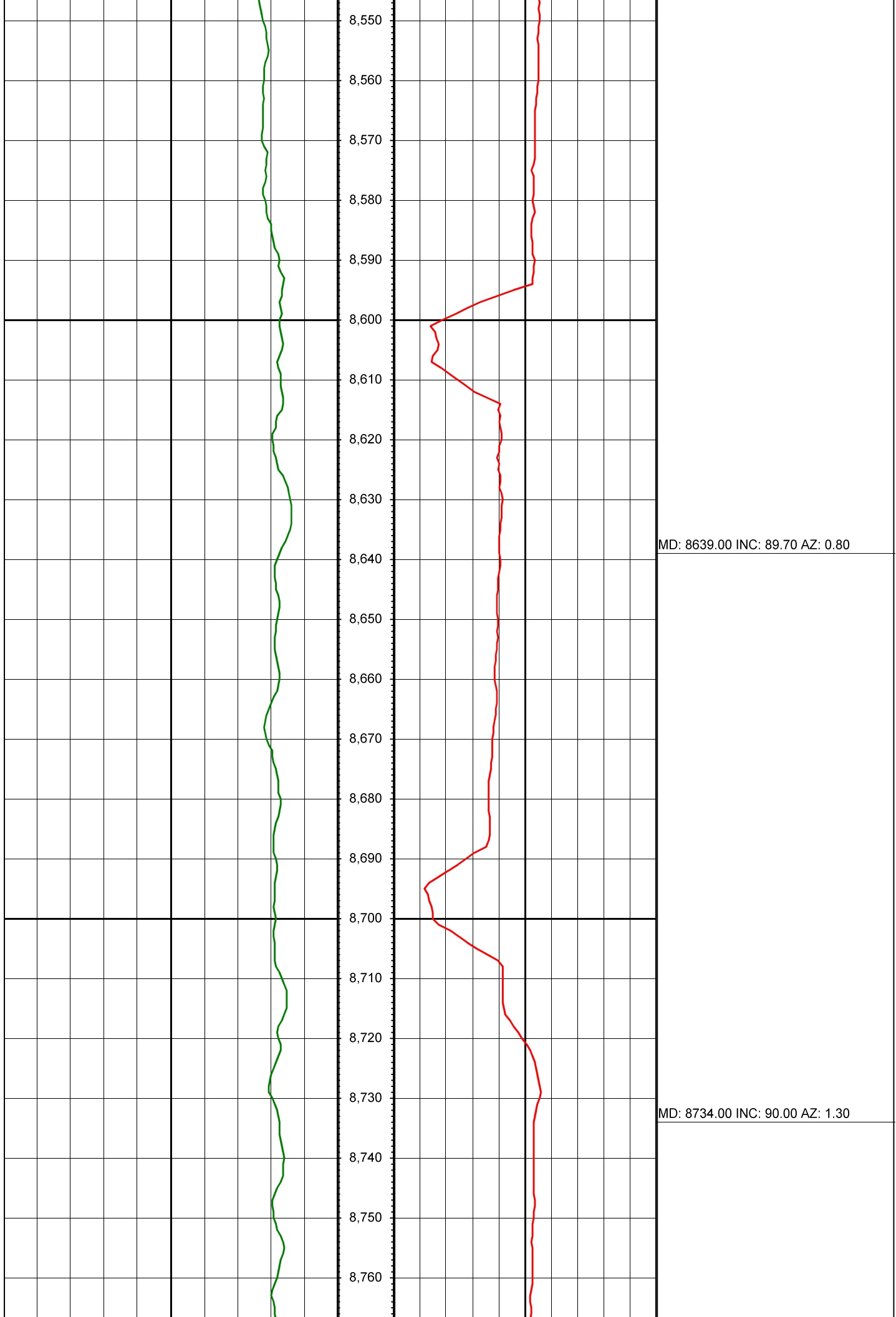


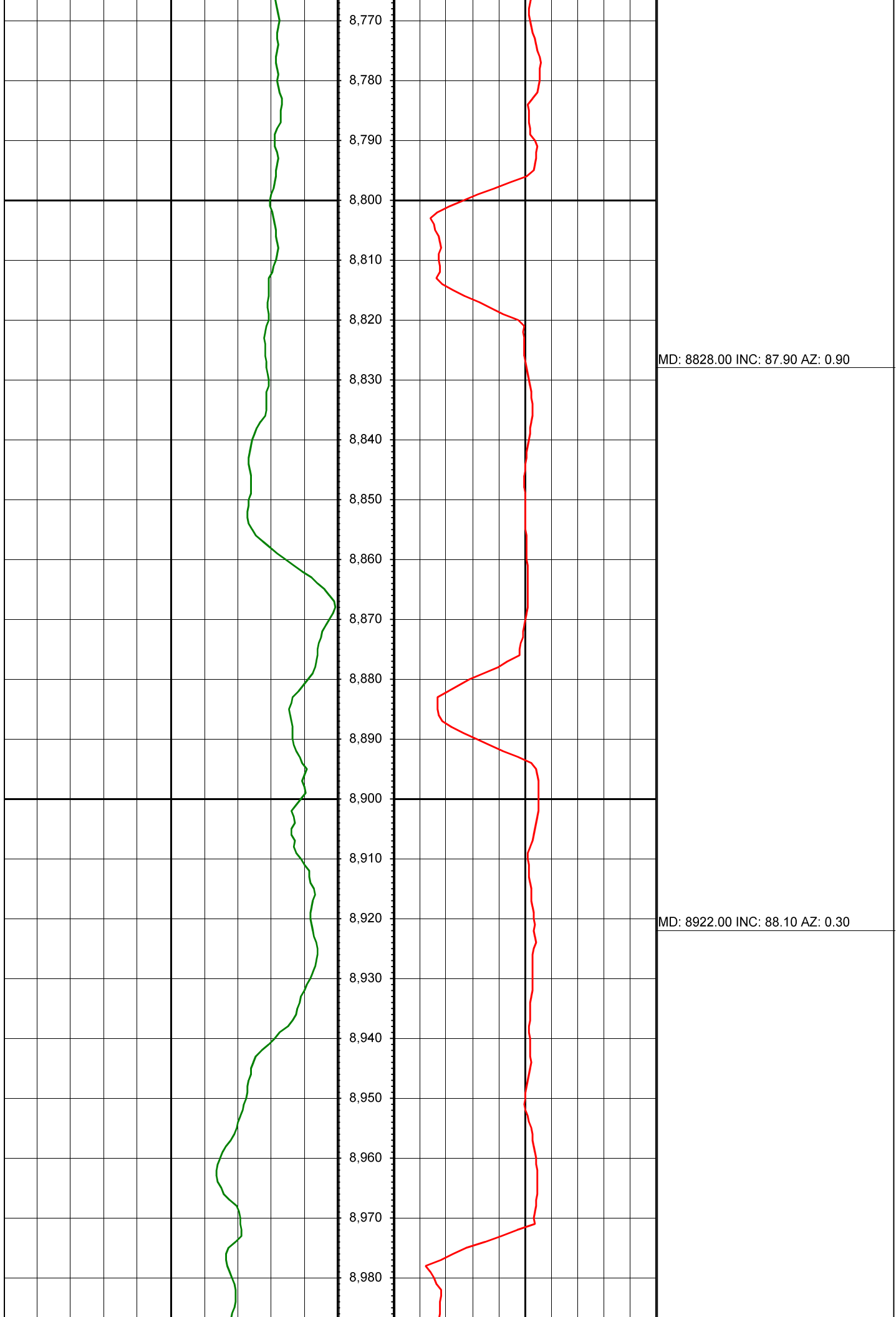


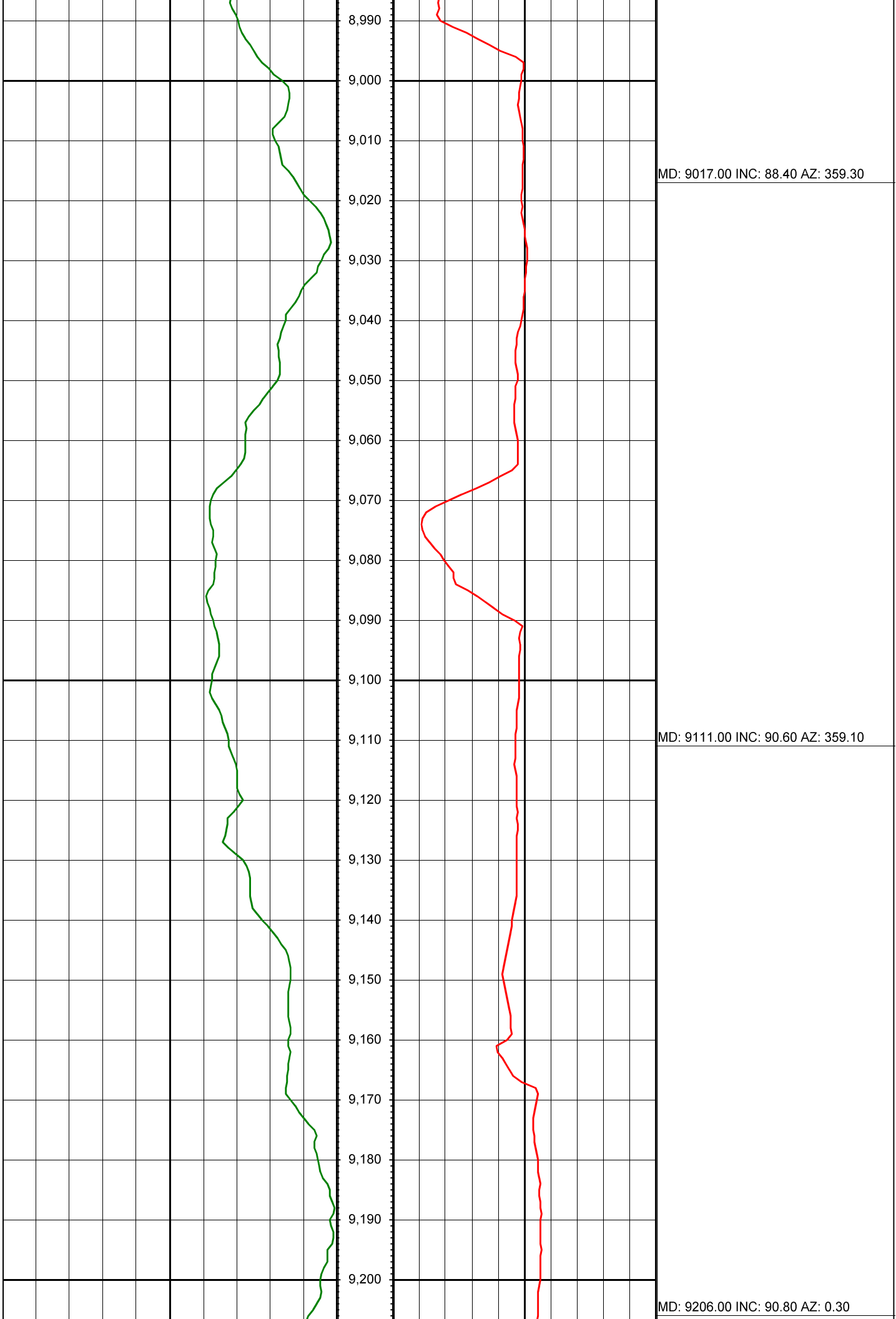


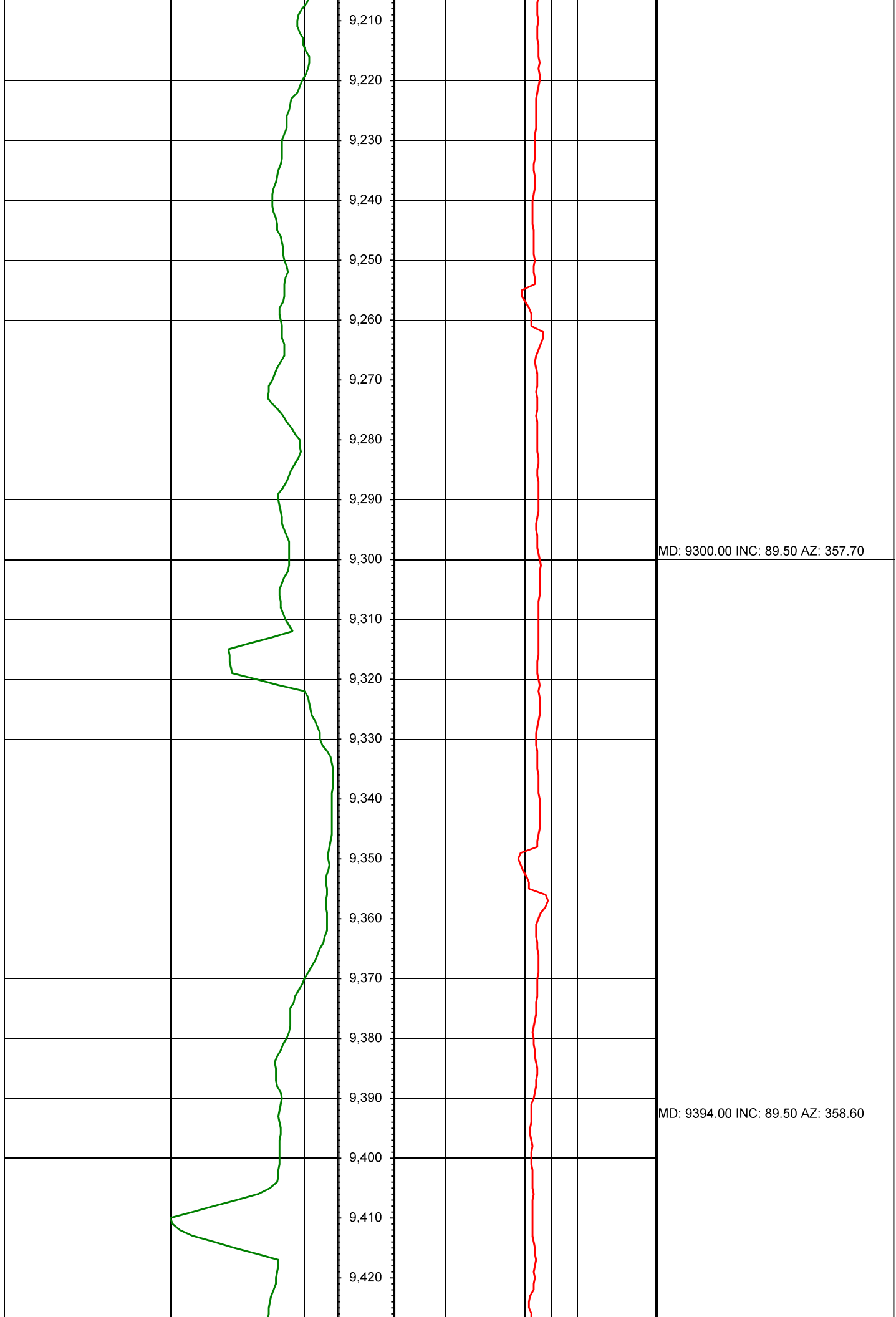


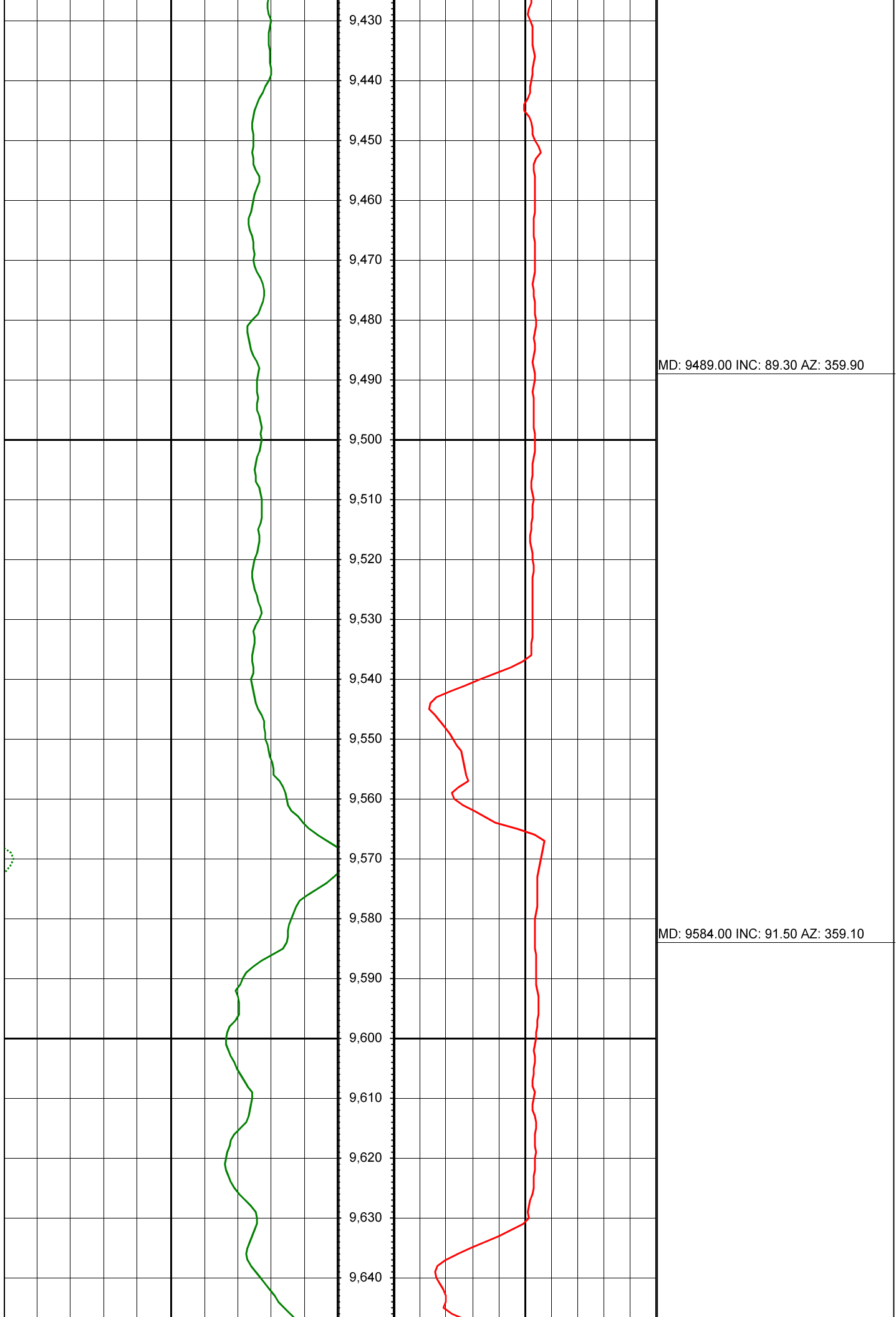


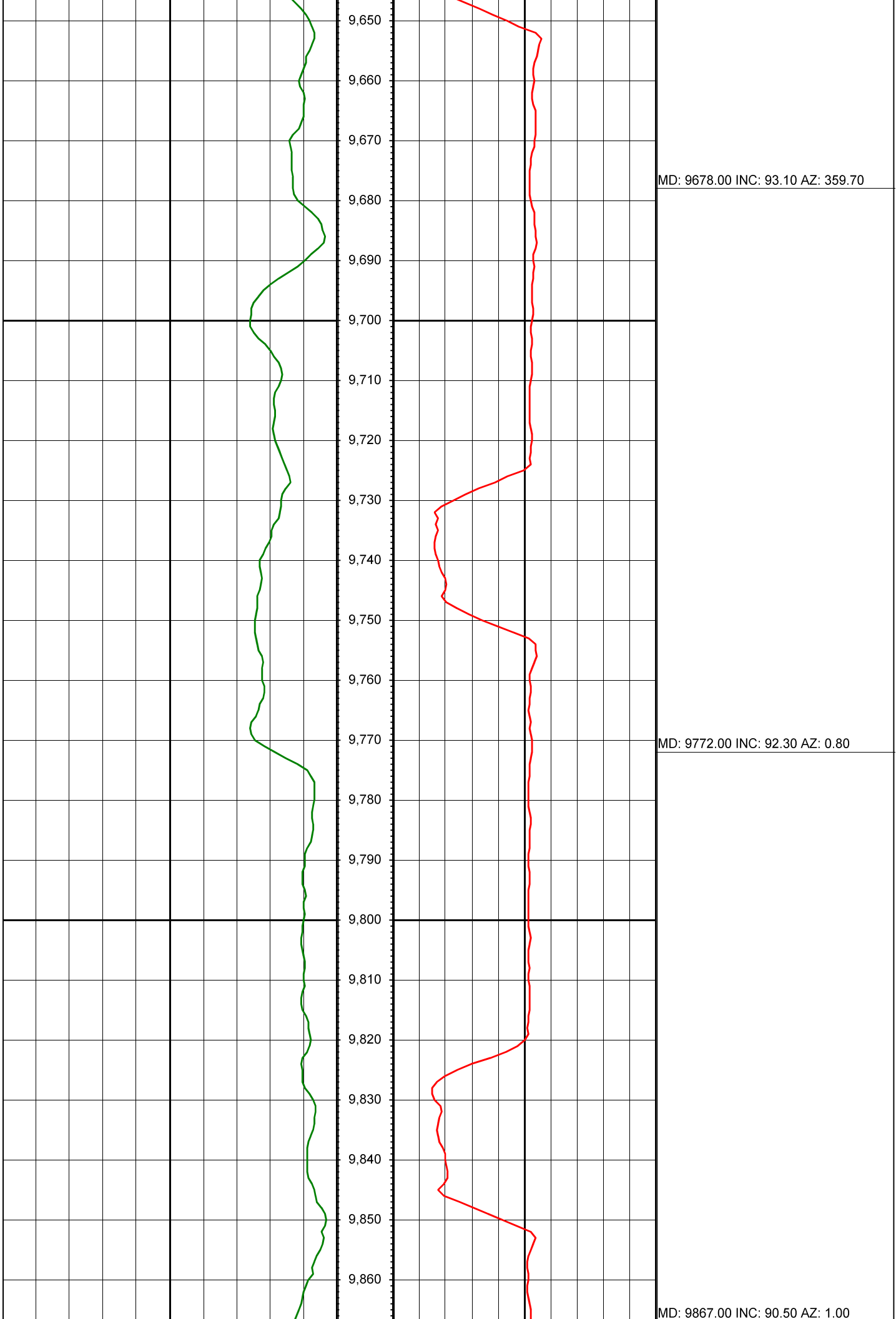


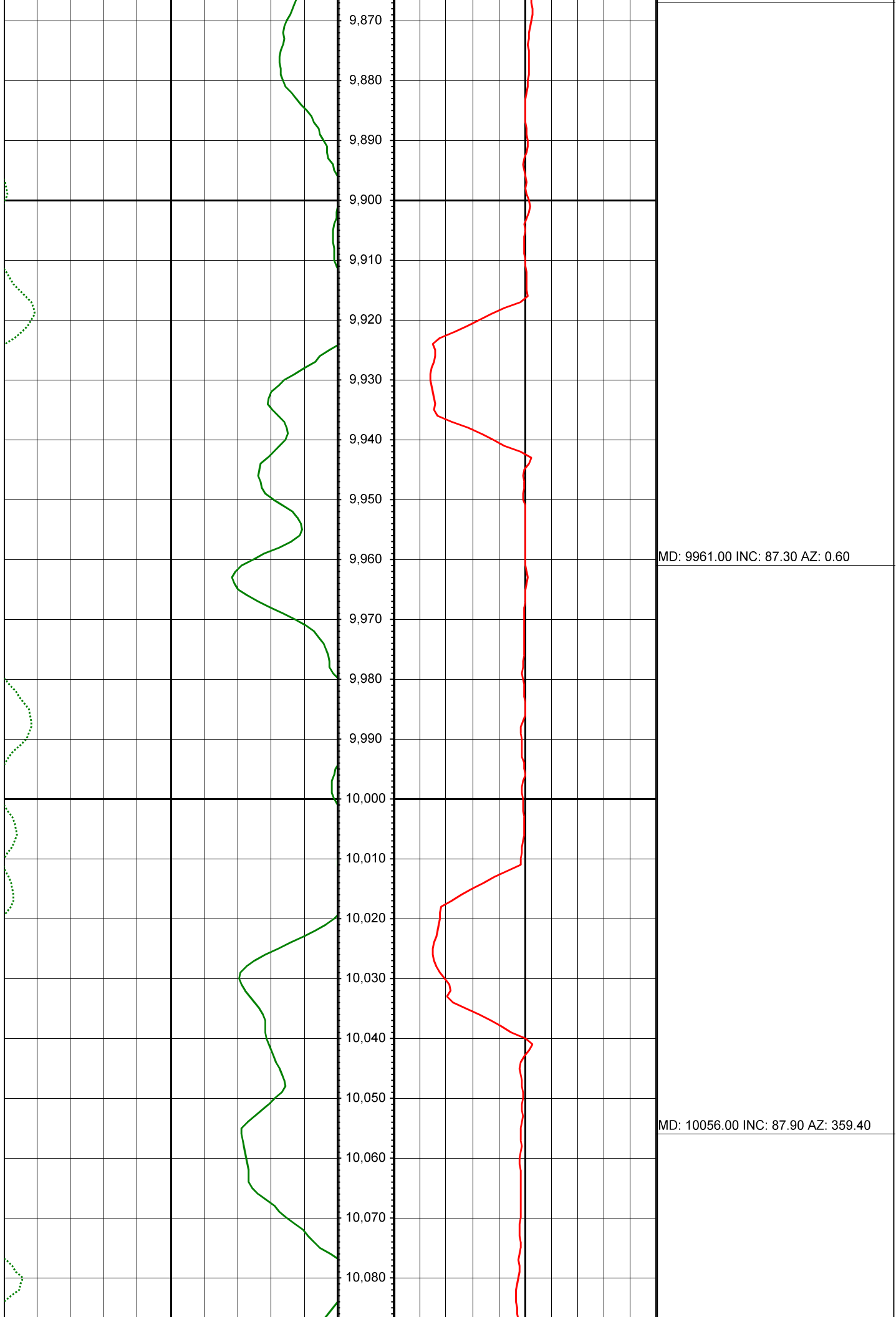


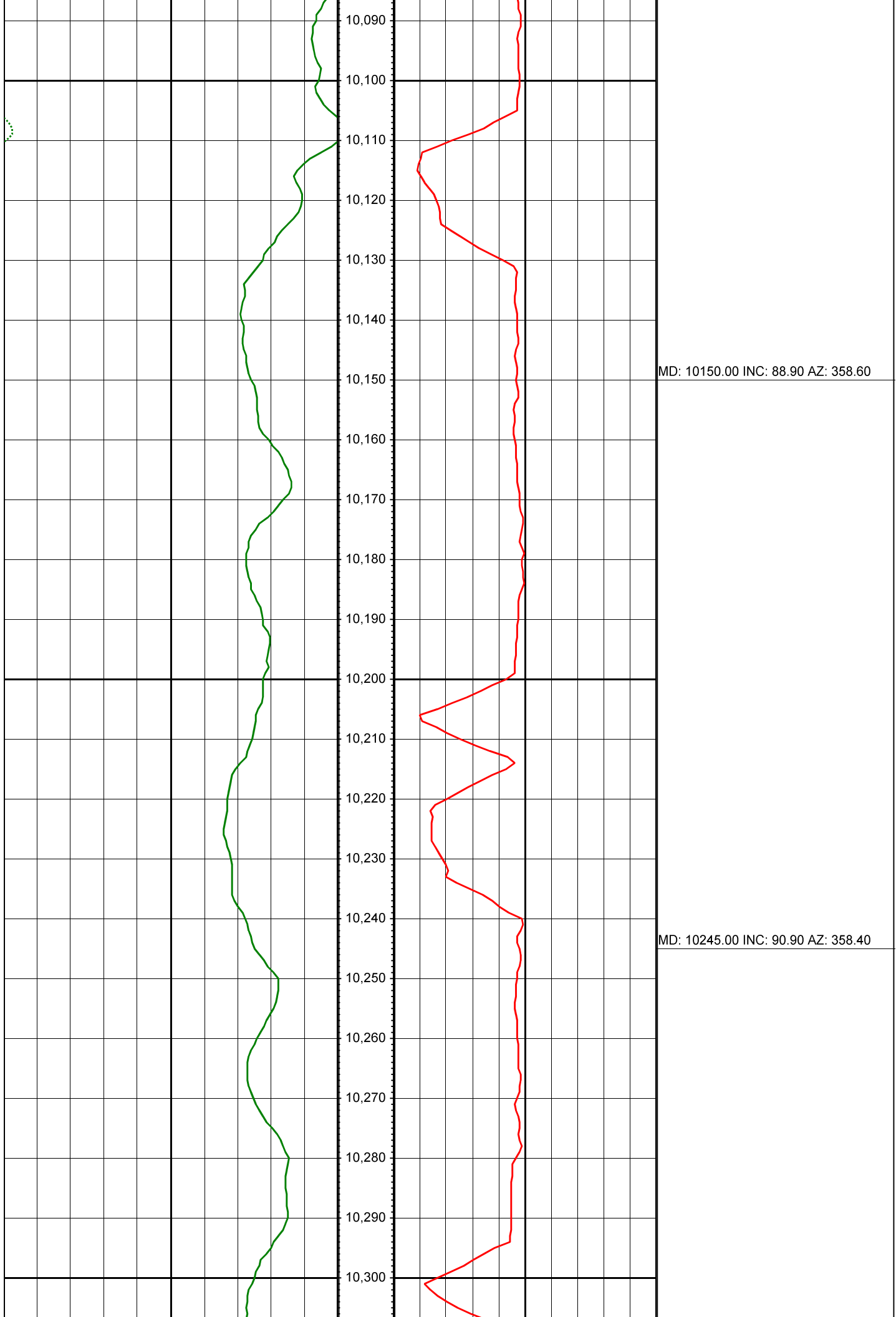


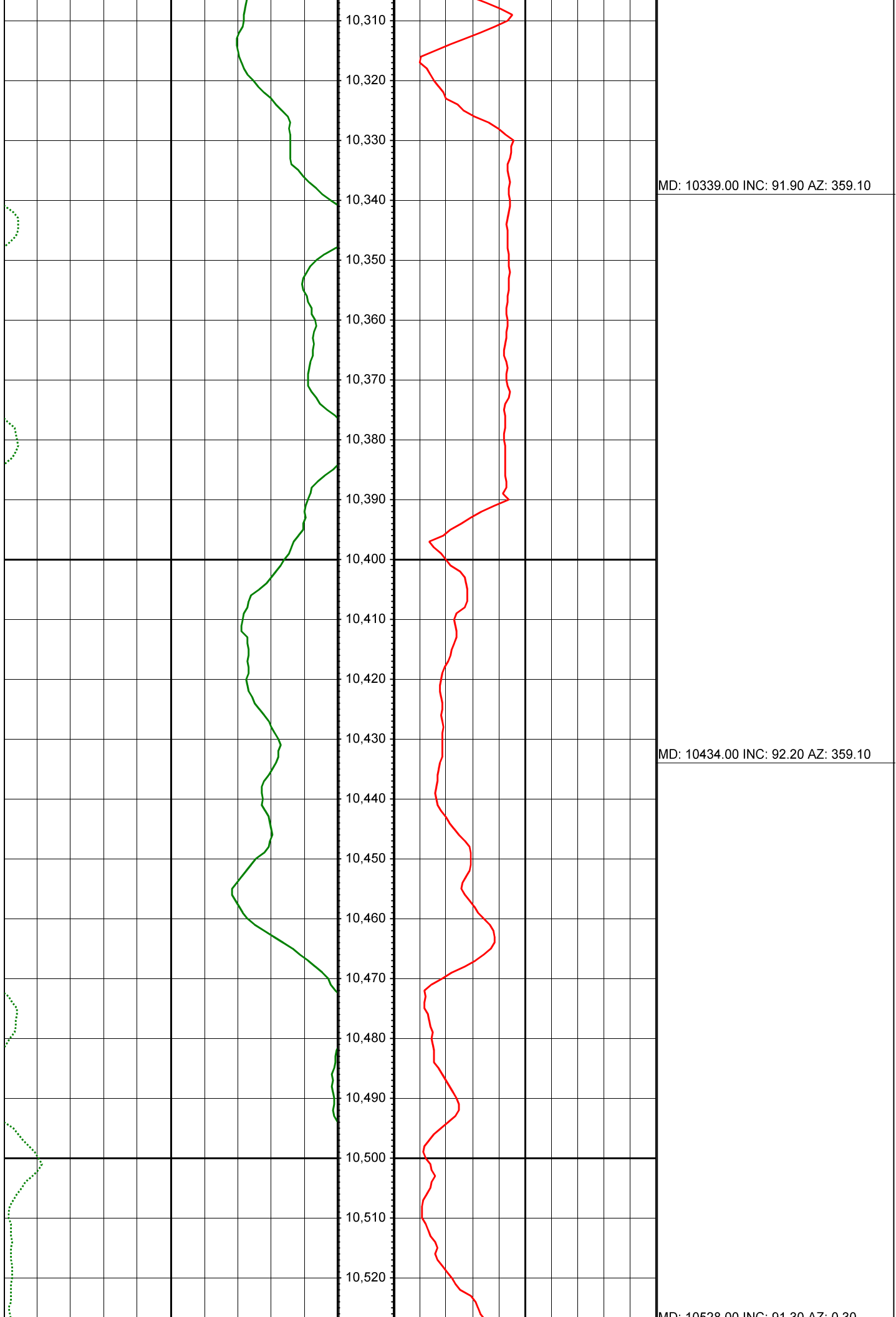










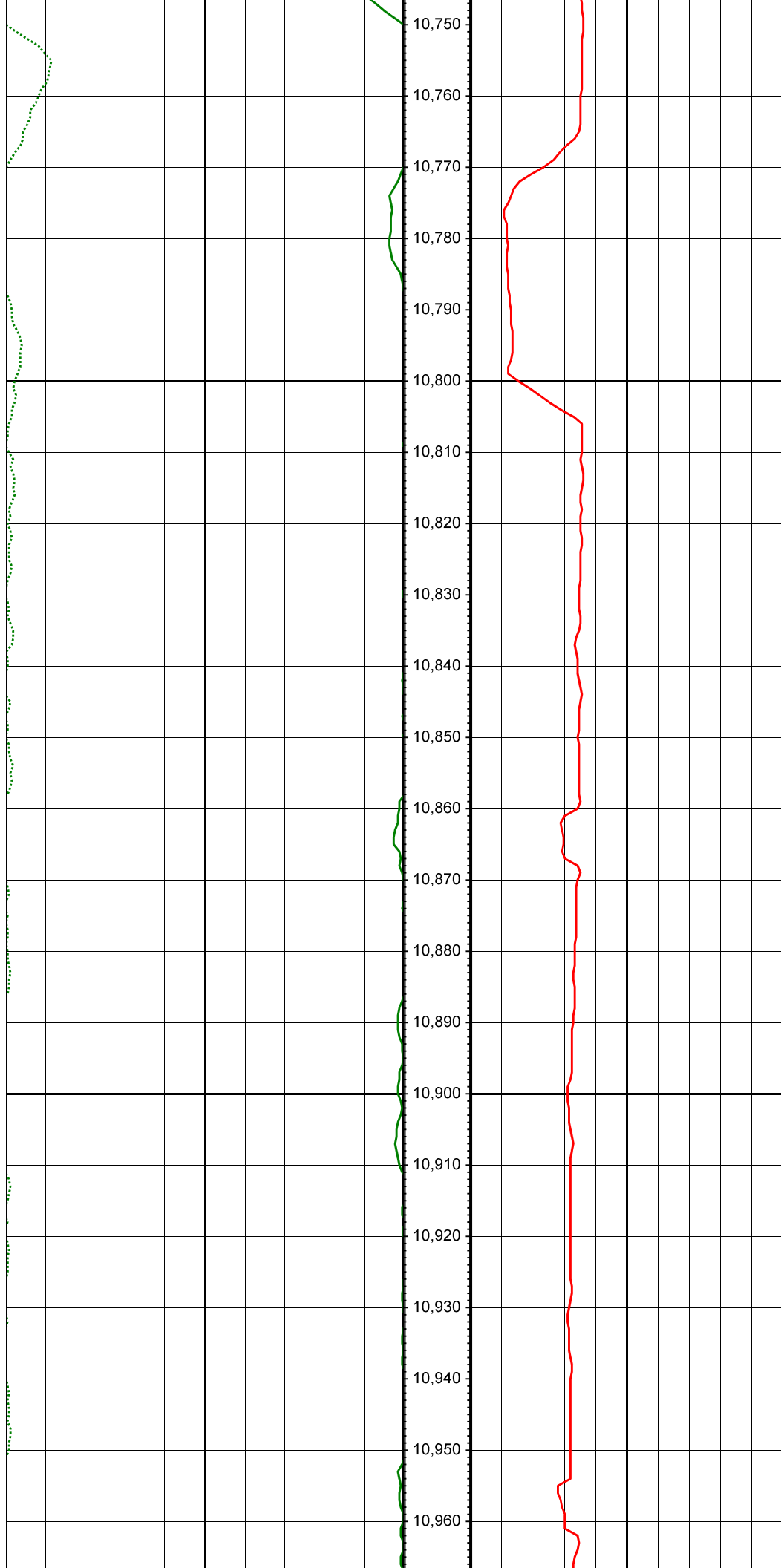




MD: 10528.00 INC: 91.30 AZ: 0.30

MD: 10623.00 INC: 91.10 AZ: 0.30

MD: 10717.00 INC: 91.80 AZ: 0.30



MD: 10812.00 INC: 89.50 AZ: 0.30

MD: 10906.00 INC: 89.40 AZ: 1.60

