

**Premier Directional Drilling**

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

**Joker27N1-9HZ****Scale 5":100' - MD****8/5/2015 3:22 PM****Oper. Company:** Anadarko Petroleum Corporation**State:** Colorado**Well:** Joker27N1-9HZ**County:** Weld**Field:** Niobrora**Country:** USA**Rig:** H&P 311**Location:** 1N-65W-09**Well ID:** 05123413290000**Start Date:** 08/03/2015 10:00:00**Job Number:** R15297**End Date:** 08/05/2015 15:18:08


**Notes:** Real Time Log  
Gamma Correction Determined by Pipe ID & OD, Mud Weight & Bit Size

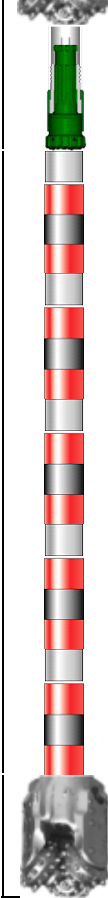
**Latitude:** 40.060442**Elev KB:** 4994'**Longitude:** -104.662735**Elev DF:** 4994'**Elev GL:** 4969'**Notes:** Datum: NAD 1983Map Zone: 13N (108 W to 102 W)Total Correction: 8.15°Grid Convergence: 0.00° ( True North)**Operator 1:** Mike Gunther**Operator 2:** John Kent**Notes:** Smoothing: 7Gap Fill: 10Survey Tool Type: Mud PulseCalculation Method: Minimum Curvature

| Tool Run Data       | Run #1      | Run #2 | Run #3 | Run #4 | Run #5 |
|---------------------|-------------|--------|--------|--------|--------|
| Tool S/N            | DM1537/G189 |        |        |        |        |
| Bit Size            | 8.5         |        |        |        |        |
| Cal Factor          | 5.93364     |        |        |        |        |
| Gamma Offset        | 54.00       |        |        |        |        |
| Resistivity Offset  | 0.00        |        |        |        |        |
| Start Depth         | 1871.00     |        |        |        |        |
| StartDate           | 8/3/2015    |        |        |        |        |
| StartTime           | 10:00 PM    |        |        |        |        |
| EndDepth            | 11921.00    |        |        |        |        |
| EndDate             | 8/5/2015    |        |        |        |        |
| EndTime             | 3:18 PM     |        |        |        |        |
| Mud Type            | OBM         |        |        |        |        |
| Mud Weight          | 9.3         |        |        |        |        |
| Funnel Viscosity    | 58          |        |        |        |        |
| Plastic Viscosity   | 21          |        |        |        |        |
| Yield Point         | 12          |        |        |        |        |
| Gel Strength        | N/A         |        |        |        |        |
| Solids Content      | 7.9         |        |        |        |        |
| Sand Content        | N/A         |        |        |        |        |
| Mud Alkalinity      | 3           |        |        |        |        |
| Filtrate Alkalinity | N/A         |        |        |        |        |
| Chlorides           | 55,000      |        |        |        |        |
| Mud RM              | N/A         |        |        |        |        |
| Mud RMF             | N/A         |        |        |        |        |
| Mud RMC             | N/A         |        |        |        |        |
| Mud RM at BHT       | N/A         |        |        |        |        |
| Temperature         | N/A         |        |        |        |        |

| Hole Data |         |          | Casing Data |         |          |
|-----------|---------|----------|-------------|---------|----------|
| Size      | From    | To       | Size        | From    | To       |
| 13.5      | 0.00    | 1853.00  | 13.5        | 0.00    | 1853.00  |
| 8.5       | 1853.00 | 11921.00 | 8.5         | 1853.00 | 11921.00 |

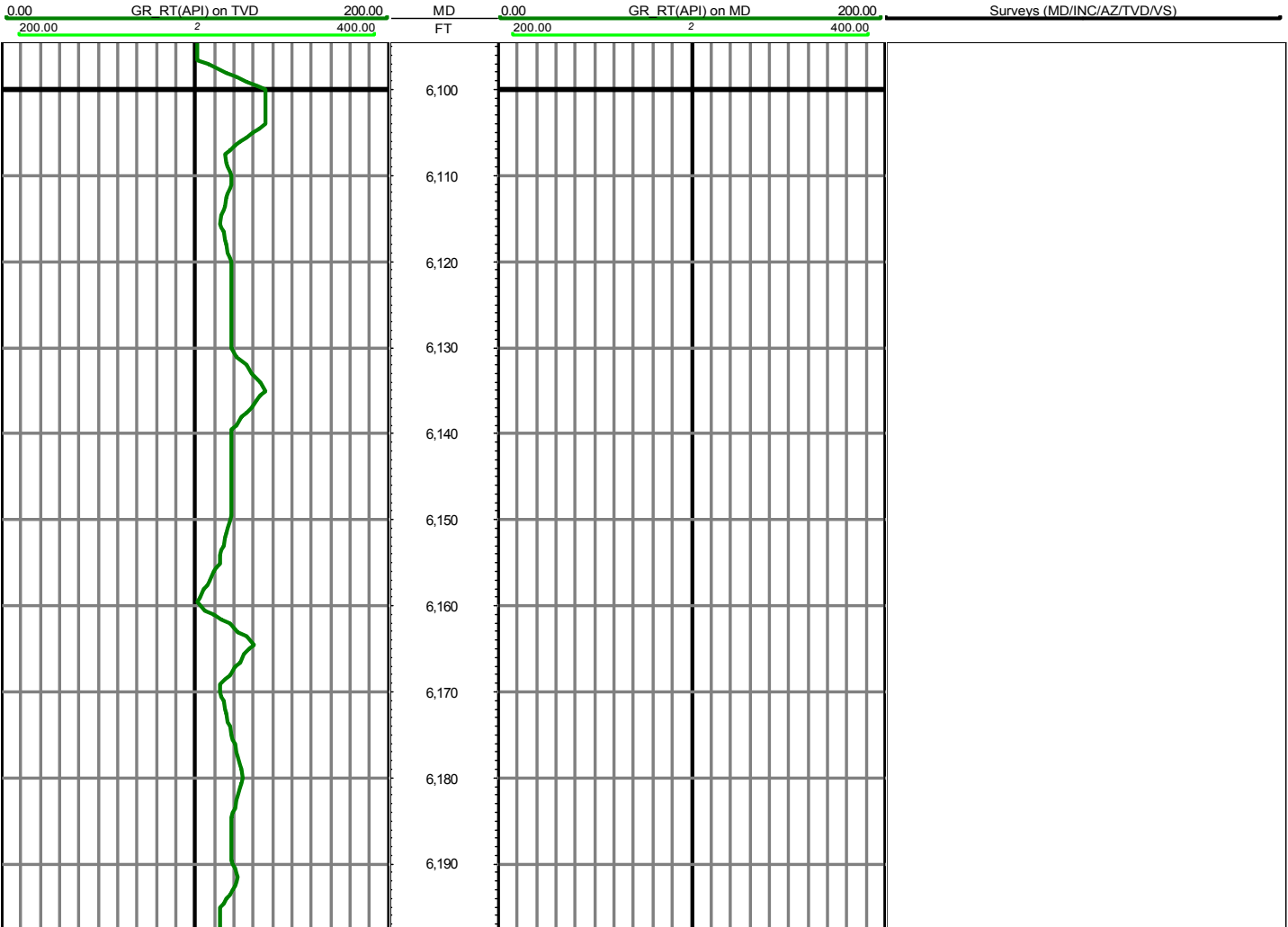
**BHA Data**

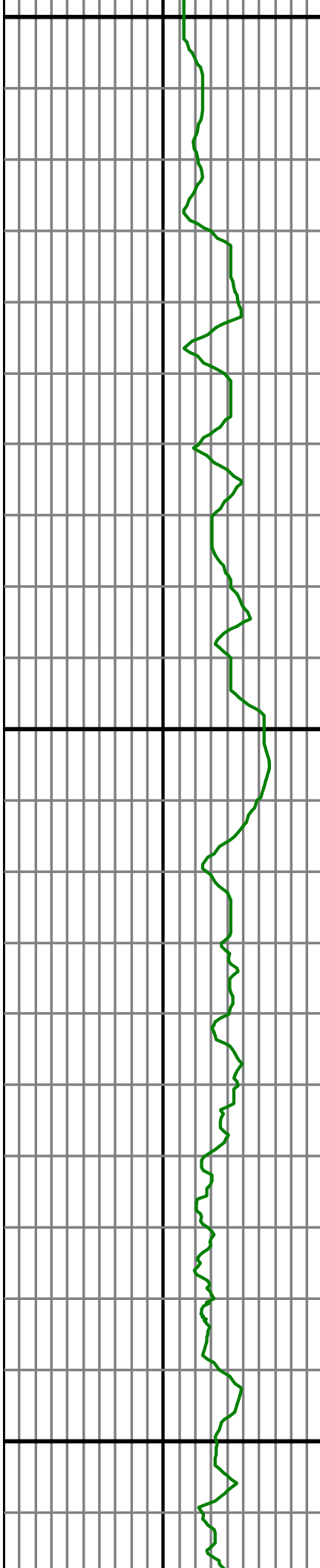
| Picture   | Type | Length | Description   |
|---|------|--------|---------------|
|  | Bit  | 0.65   | SMITH SDI 516 |



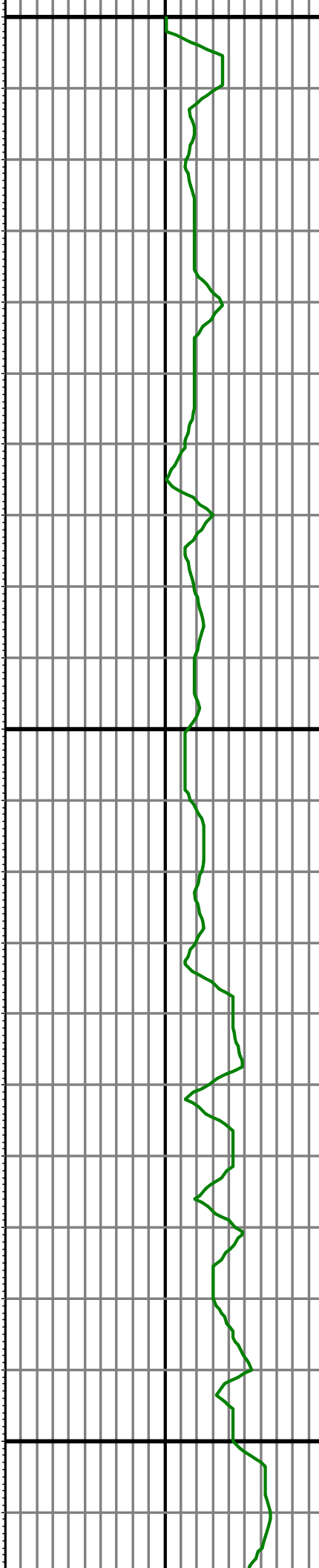
|       |       |                                  |
|-------|-------|----------------------------------|
| Motor | 29.03 | Turbo Drill 4/5 7stg. 1.83 Fixed |
| Sub2  | 6.75  | NM STAB                          |
| Sub2  | 11.1  | NMDC Pony                        |
| Sub2  | 3.45  | NM UBHO                          |
| Sub2  | 29.69 | NMDC Slick                       |
| Sub2  | 30.42 | NMDC FlexFilter Sub              |
| Bit   | 5.89  | Filter Sub                       |

*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.*

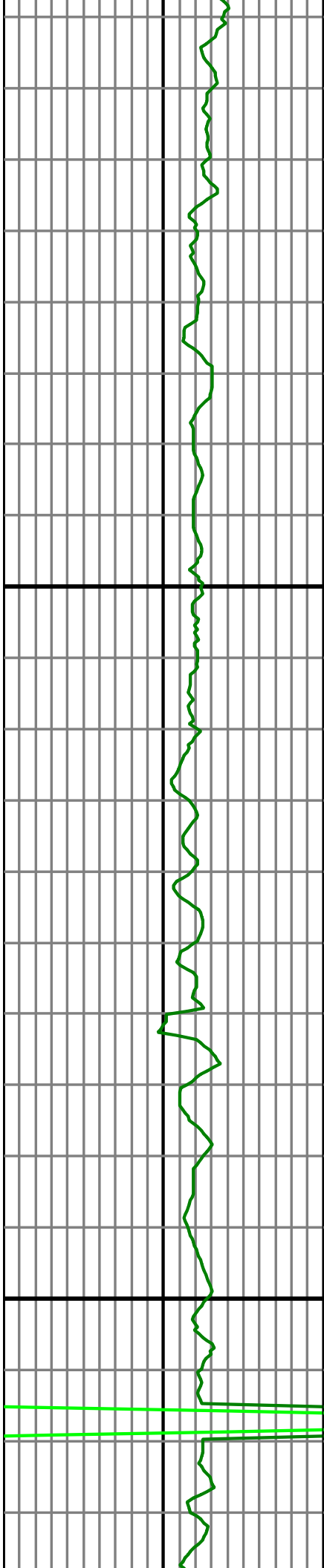




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MD: 6291.00 INC: 0.60 AZ: 197.70 TVD: 6185.55 VS: -863.77



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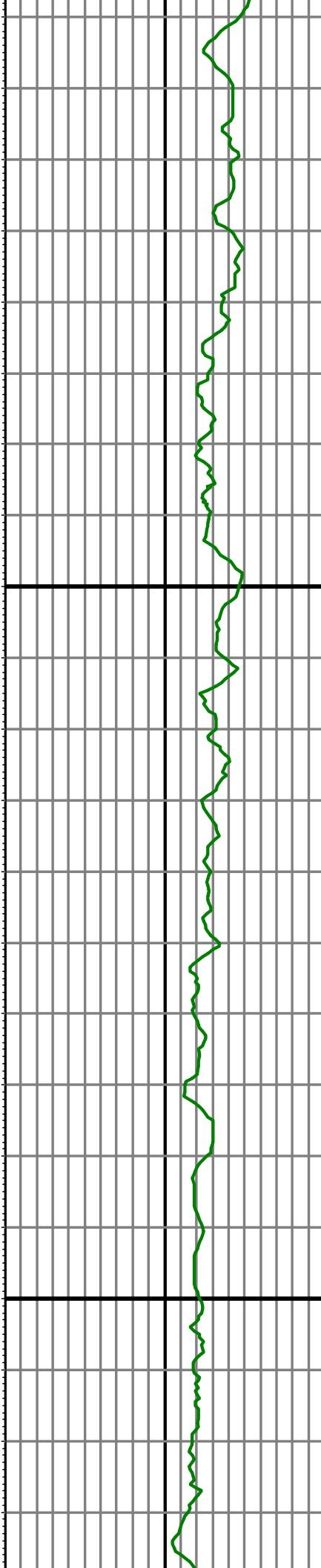
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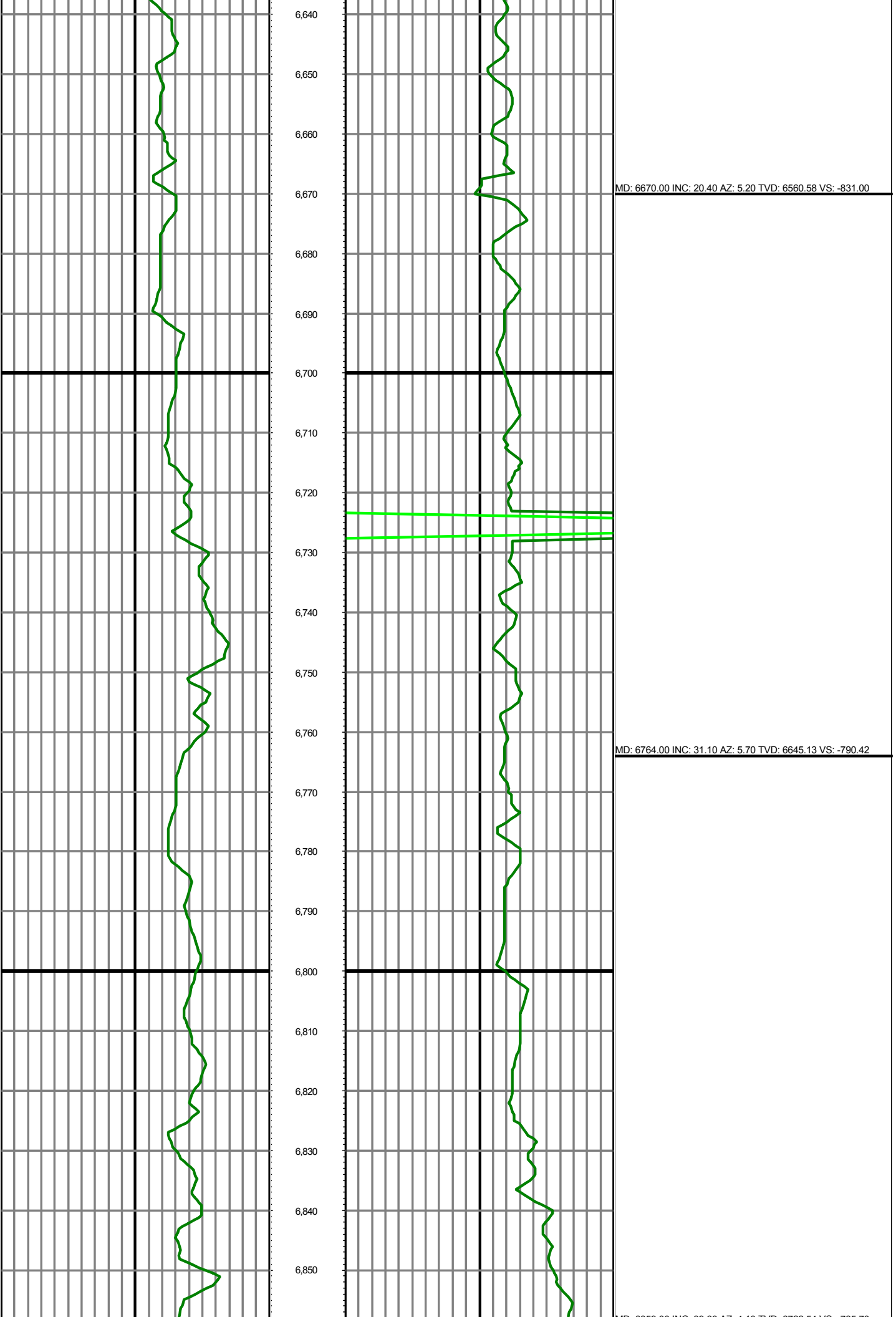
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MD: 6480.00 INC: 0.30 AZ: 311.10 TVD: 6374.55 VS: -864.39

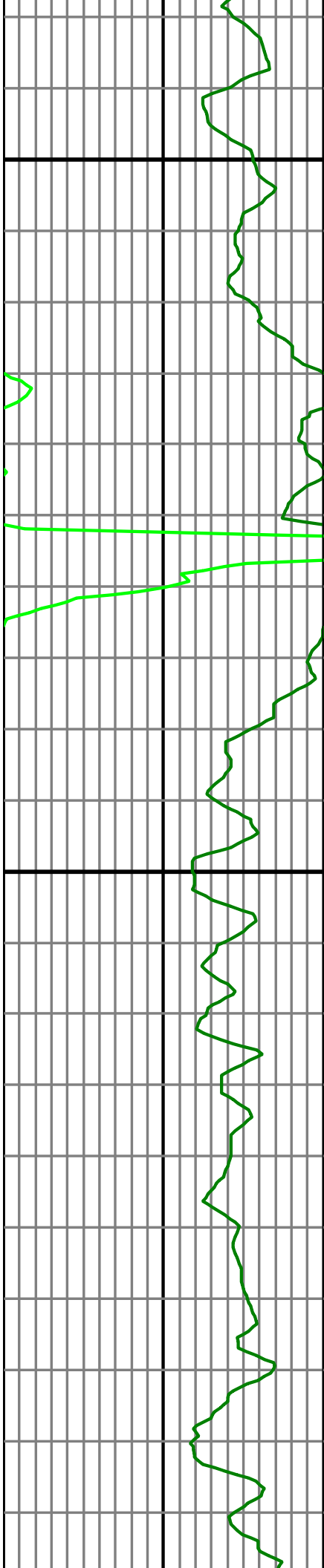
MD: 6575.00 INC: 10.10 AZ: 2.10 TVD: 6469.05 VS: -855.88



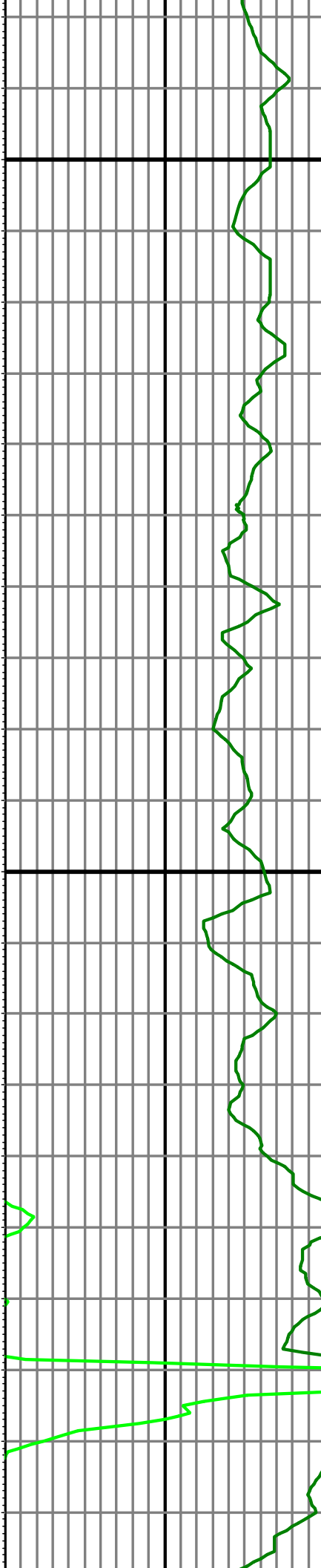
MD: 6859.00 INC: 39.60 AZ: 4.10 TVD: 6722.54 VS: -735.70

MD: 6954.00 INC: 43.00 AZ: 356.00 TVD: 6793.95 VS: -673.12

MD: 7049.00 INC: 48.10 AZ: 354.60 TVD: 6860.46 VS: -605.56

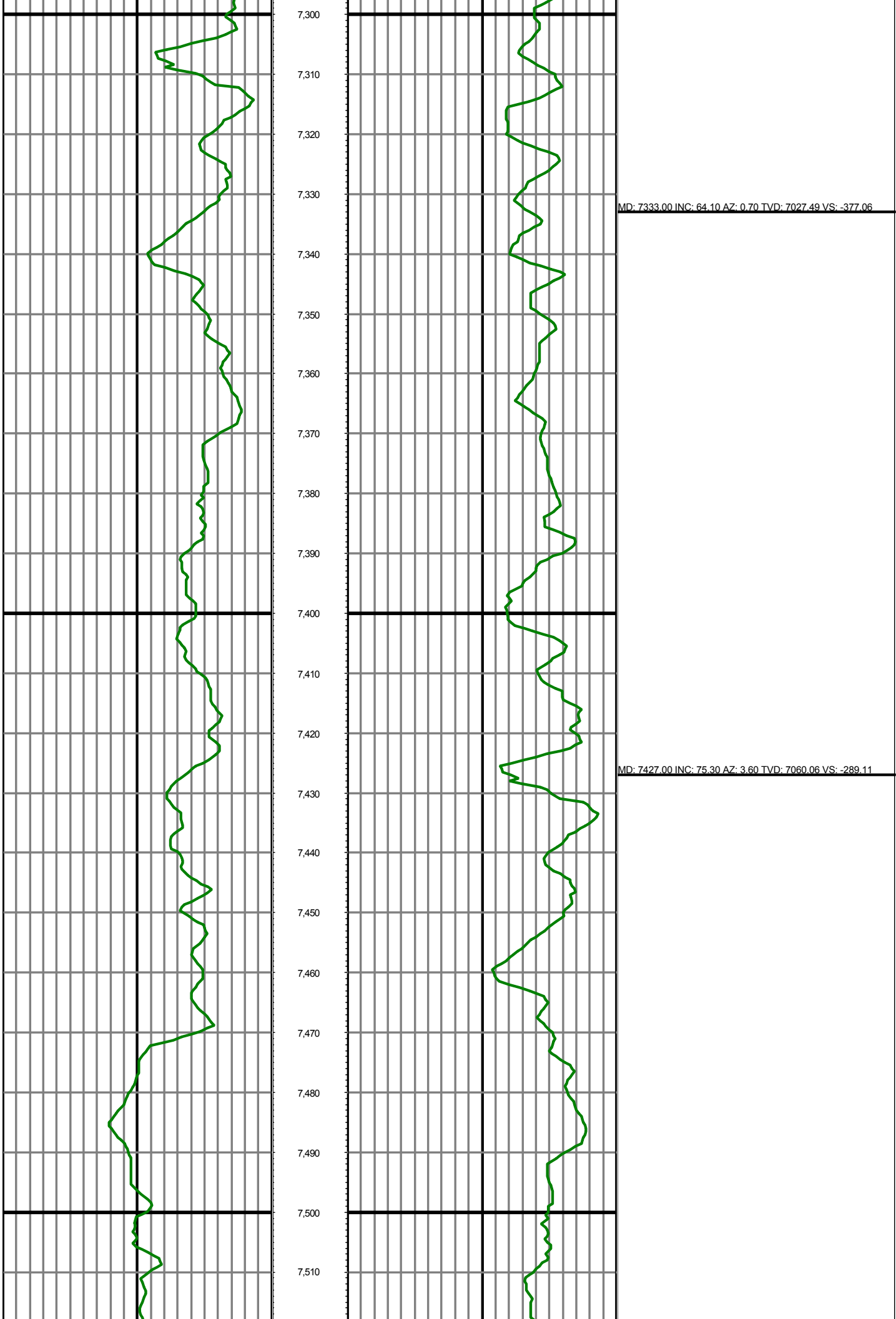


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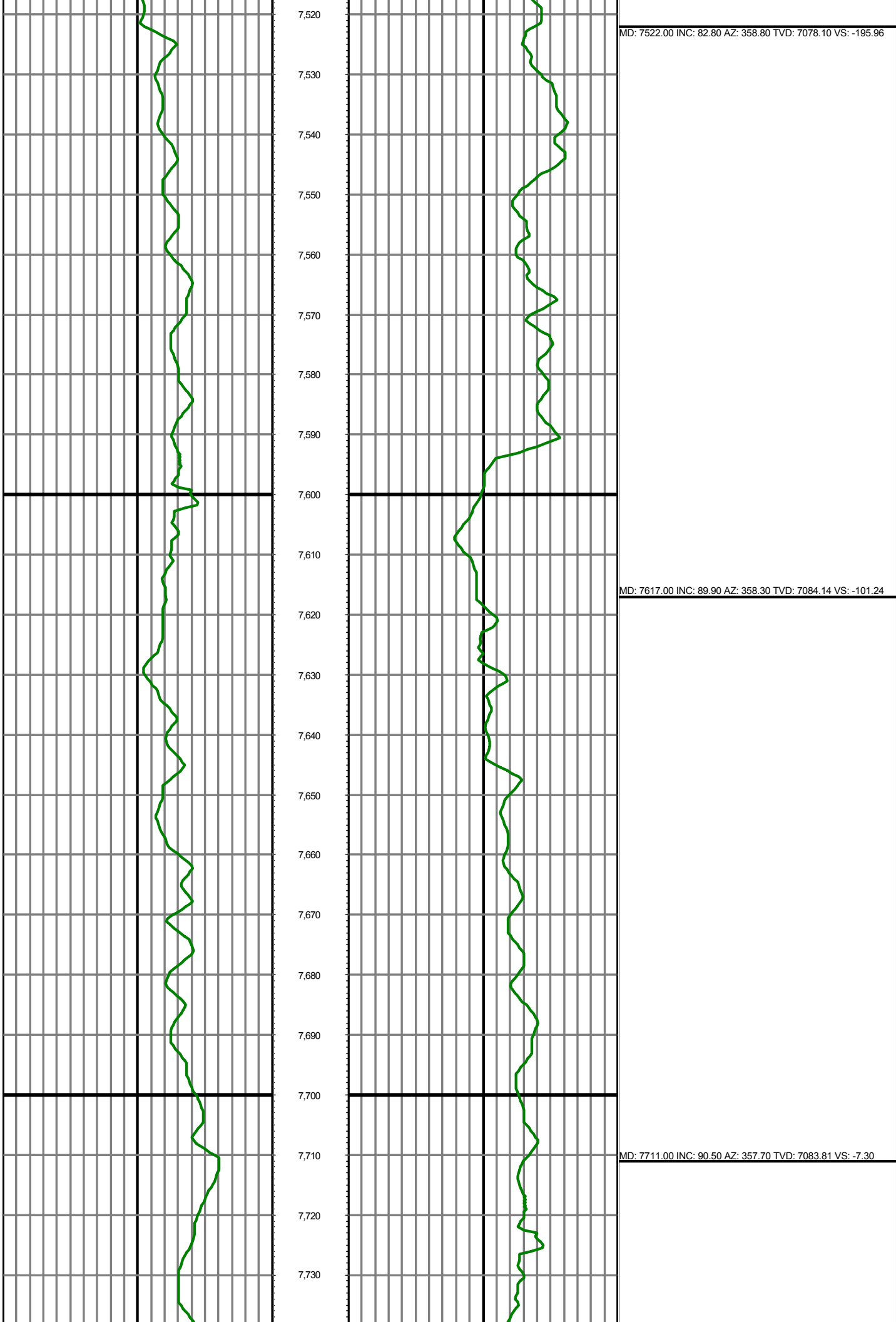


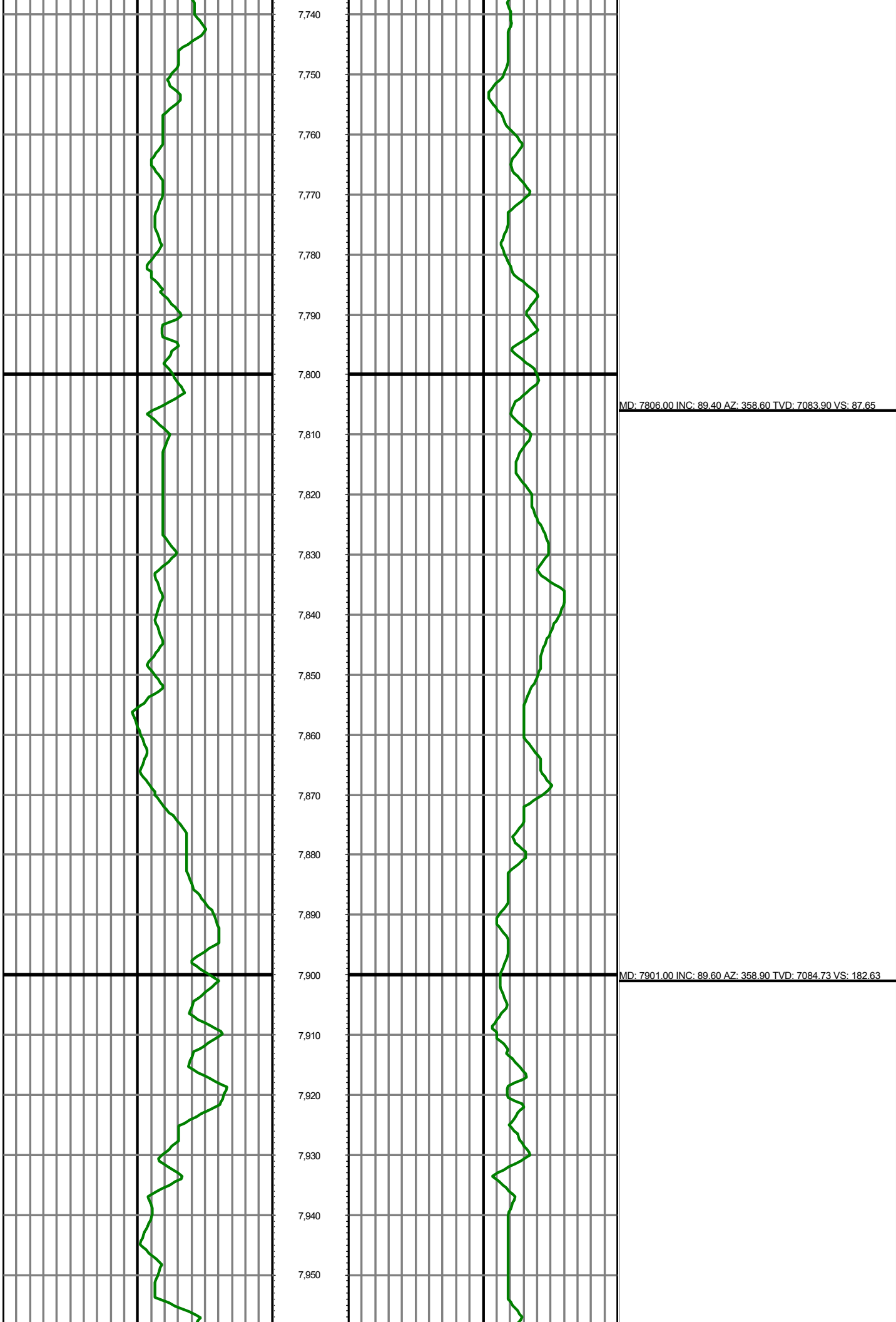
MD: 7143.00 INC: 51.80 AZ: 359.50 TVD: 6920.96 VS: -533.74

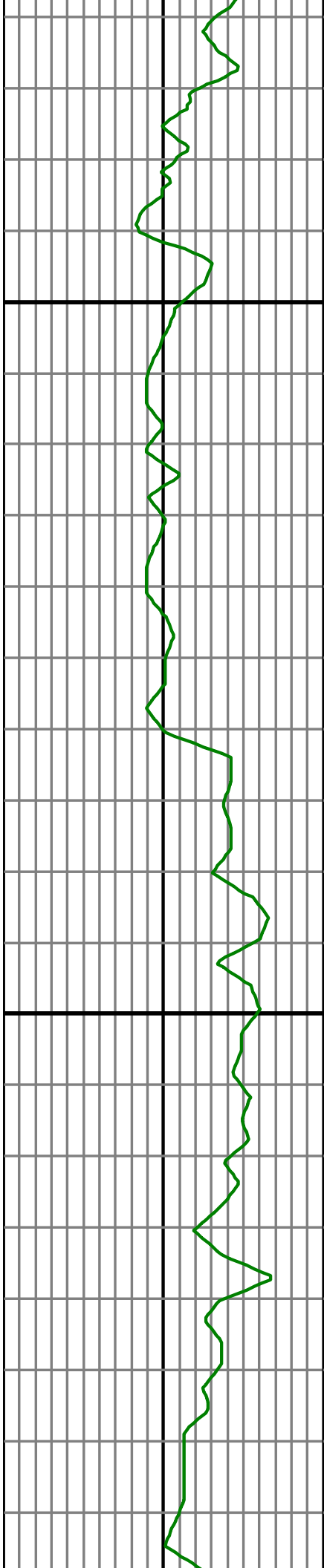
MD: 7238.00 INC: 53.70 AZ: 4.10 TVD: 6978.48 VS: -458.20



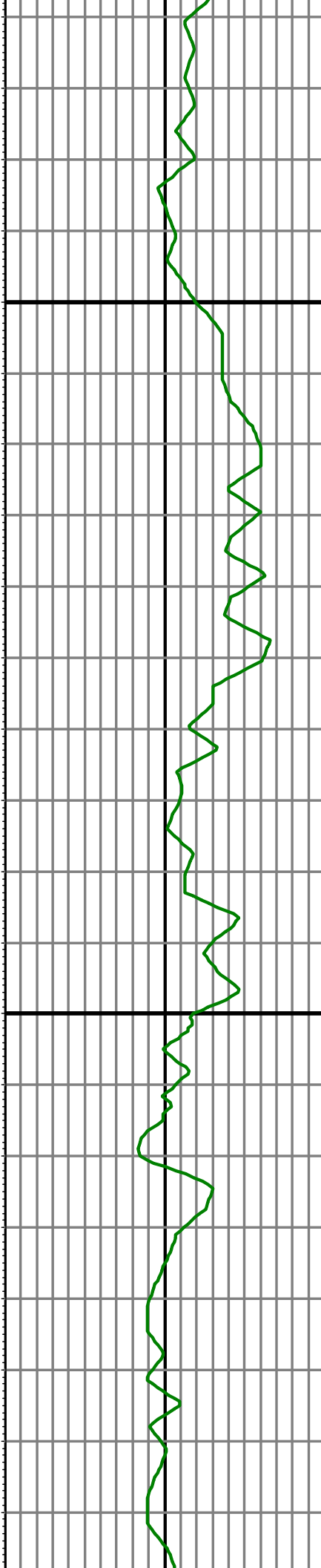






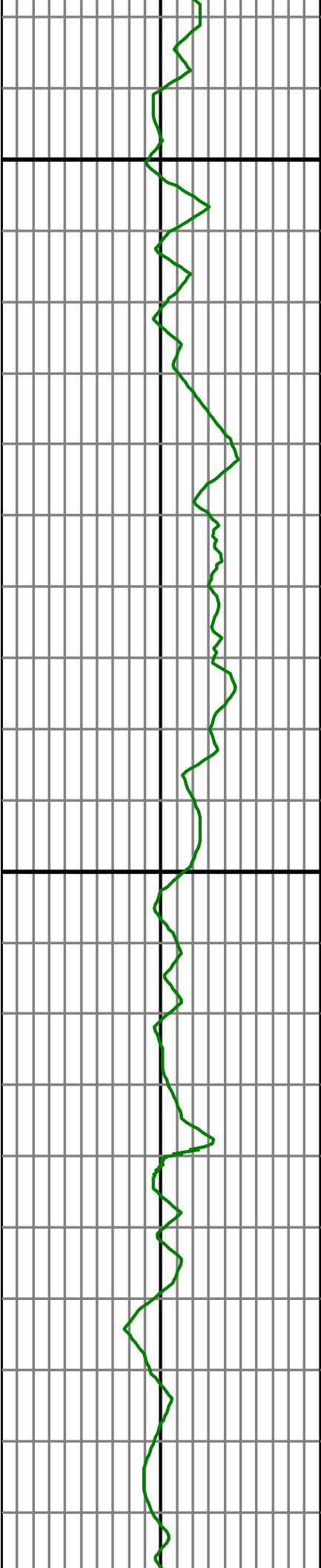


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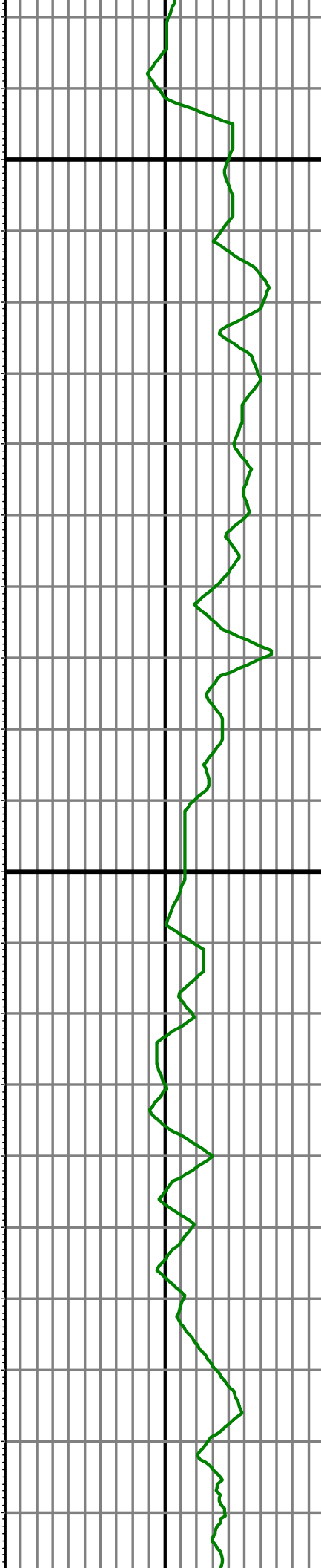


MD: 7996.00 INC: 87.90 AZ: 358.70 TVD: 7086.80 VS: 277.58

MD: 8090.00 INC: 87.80 AZ: 358.20 TVD: 7090.32 VS: 371.48



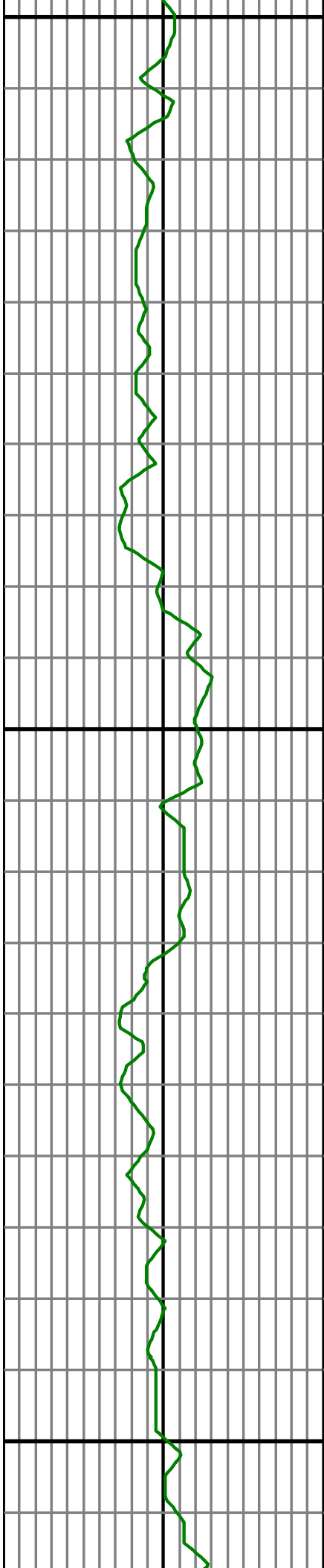
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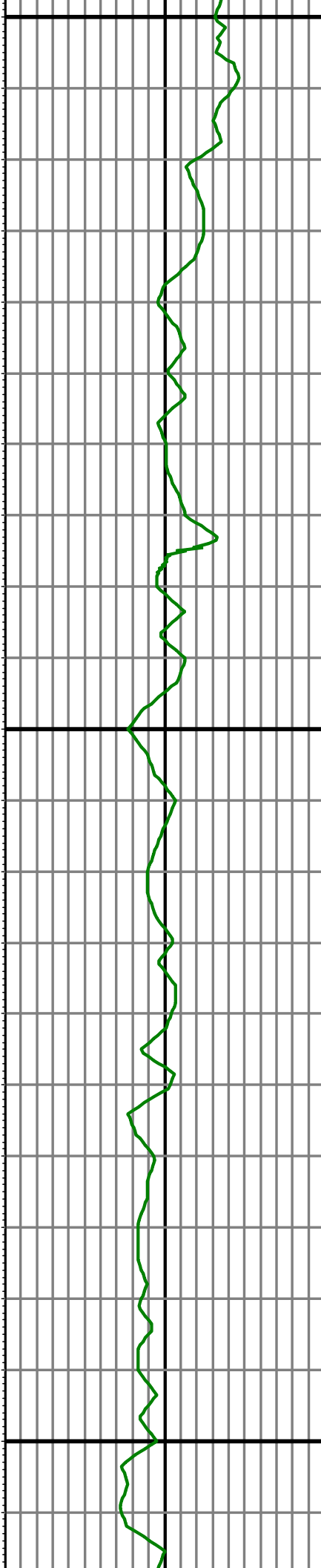
MD: 8185.00 INC: 89.10 AZ: 0.10 TVD: 7092.89 VS: 466.43

MD: 8280.00 INC: 89.30 AZ: 359.20 TVD: 7094.22 VS: 561.42

MD: 8374.00 INC: 89.50 AZ: 358.50 TVD: 7095.21 VS: 655.40

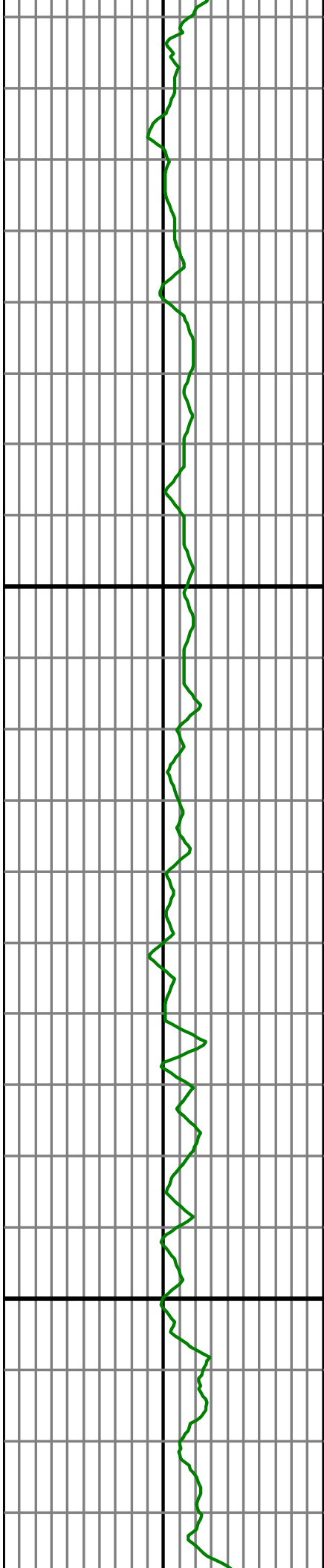


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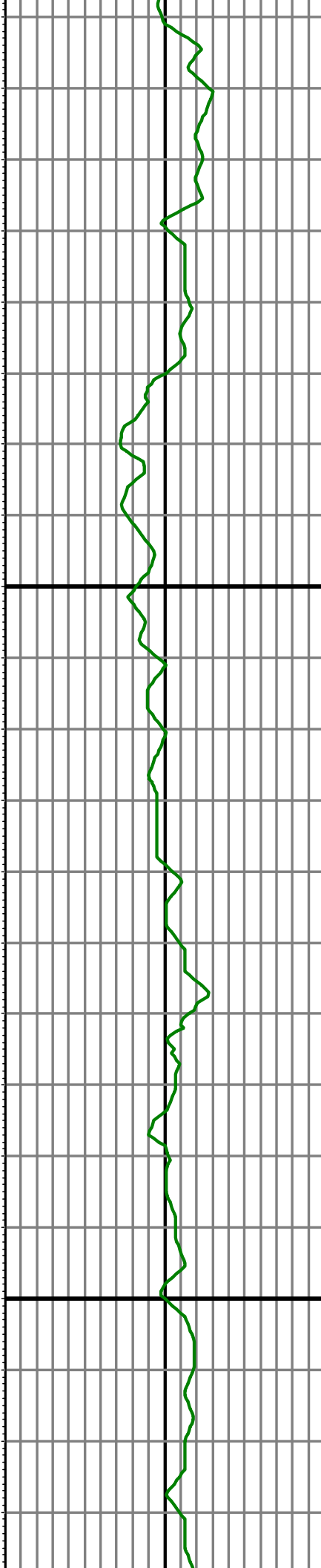


MD: 8469.00 INC: 89.70 AZ: 1.50 TVD: 7095.87 VS: 750.38

MD: 8563.00 INC: 90.60 AZ: 1.00 TVD: 7095.62 VS: 844.36

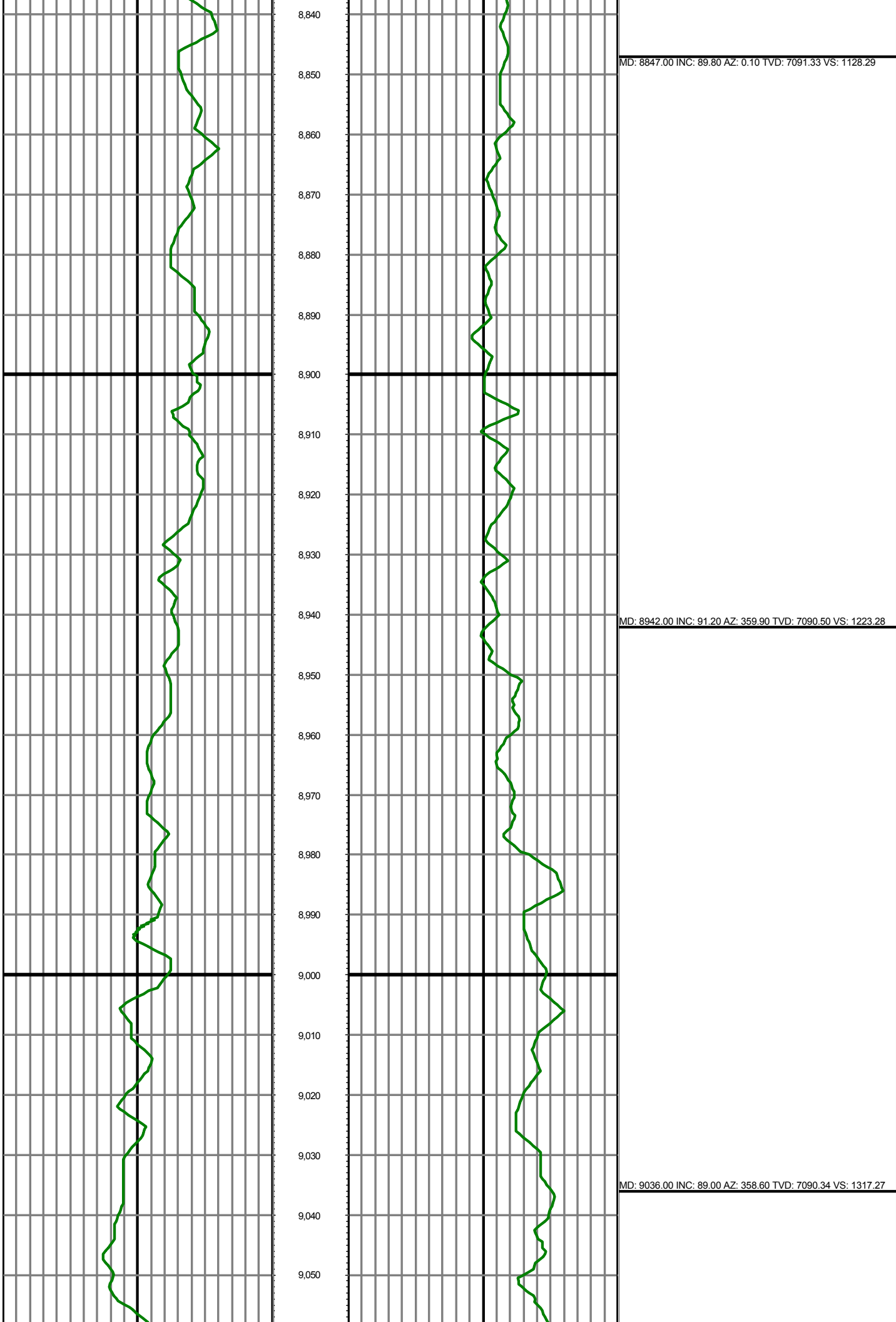


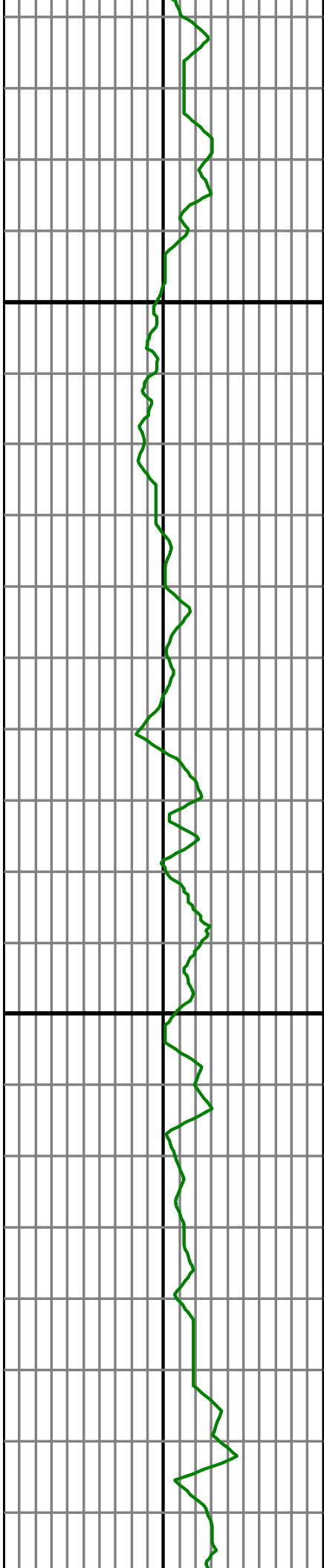
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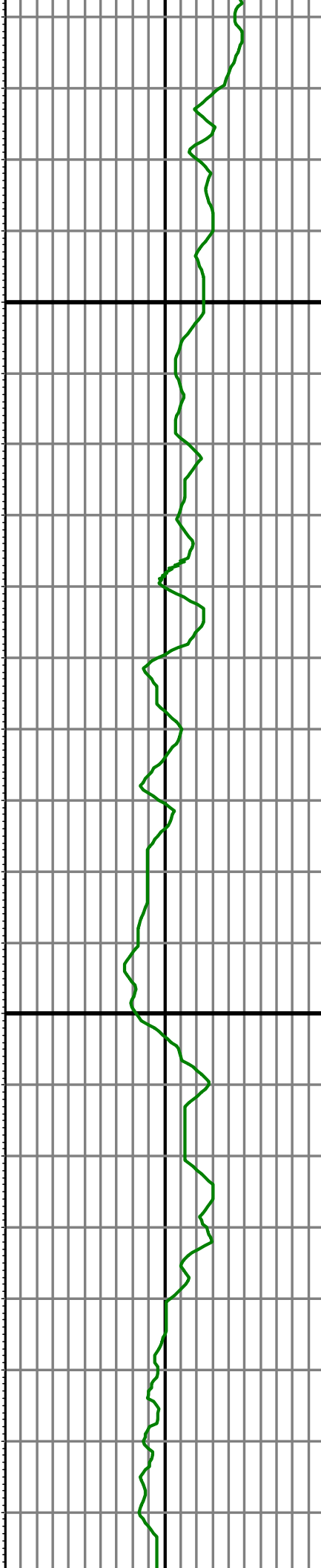
MD: 8658.00 INC: 91.70 AZ: 0.90 TVD: 7093.72 VS: 939.32

MD: 8752.00 INC: 90.70 AZ: 0.50 TVD: 7091.75 VS: 1033.29





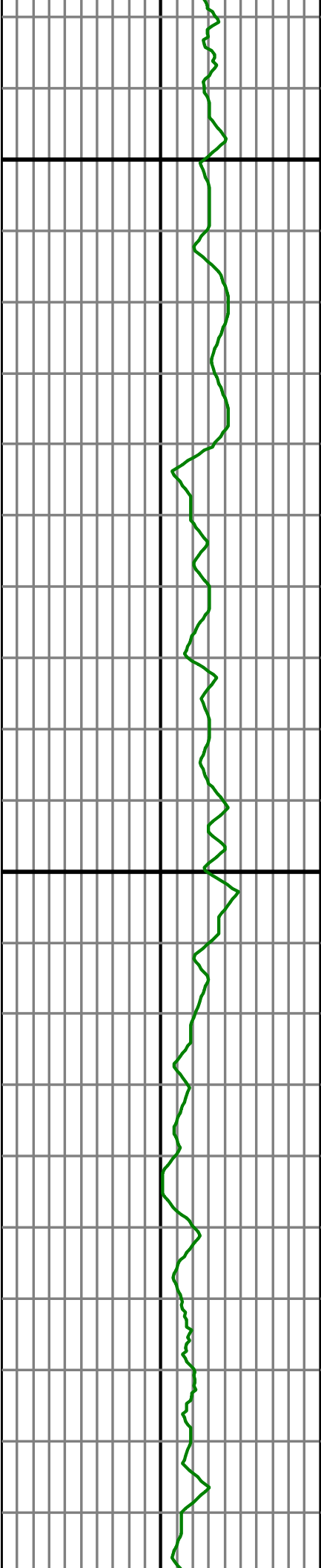
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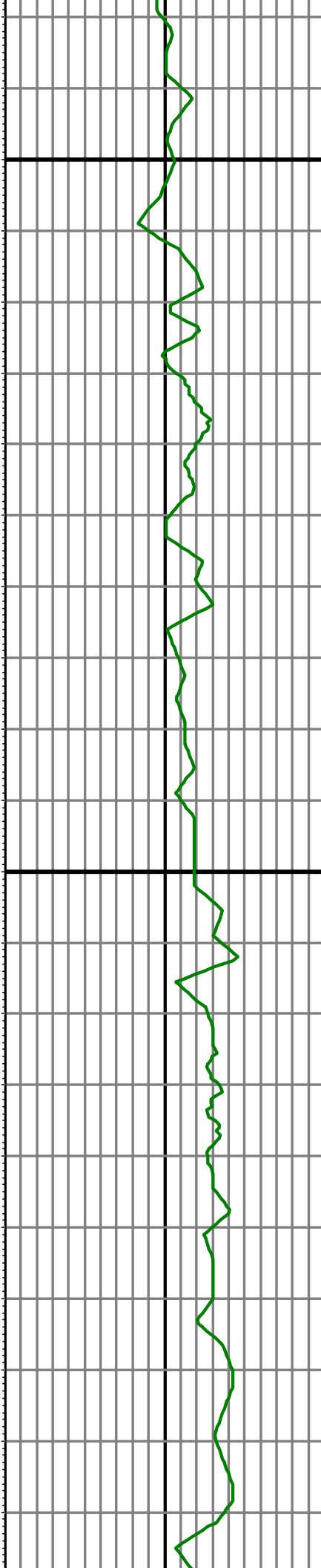
MD: 9131.00 INC: 87.20 AZ: 357.50 TVD: 7093.49 VS: 1412.16

MD: 9225.00 INC: 87.90 AZ: 356.90 TVD: 7097.51 VS: 1505.96



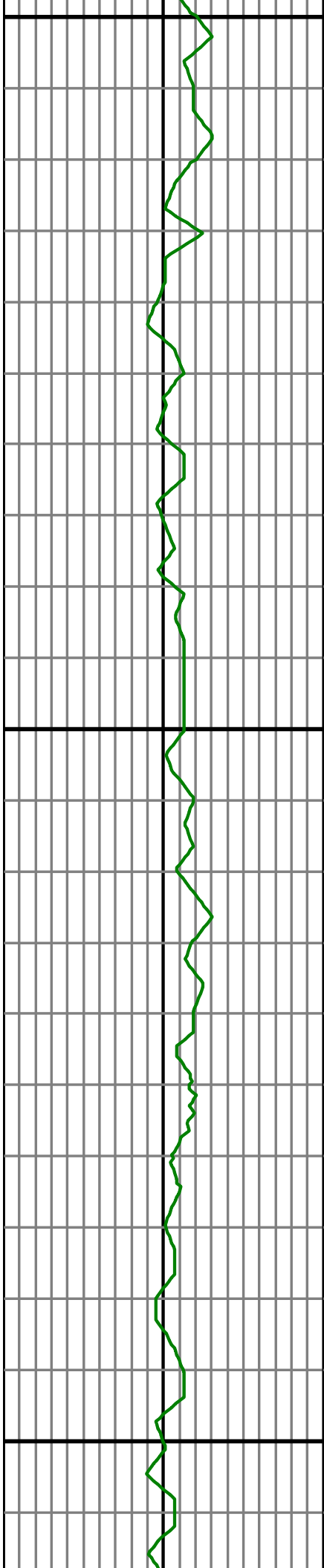


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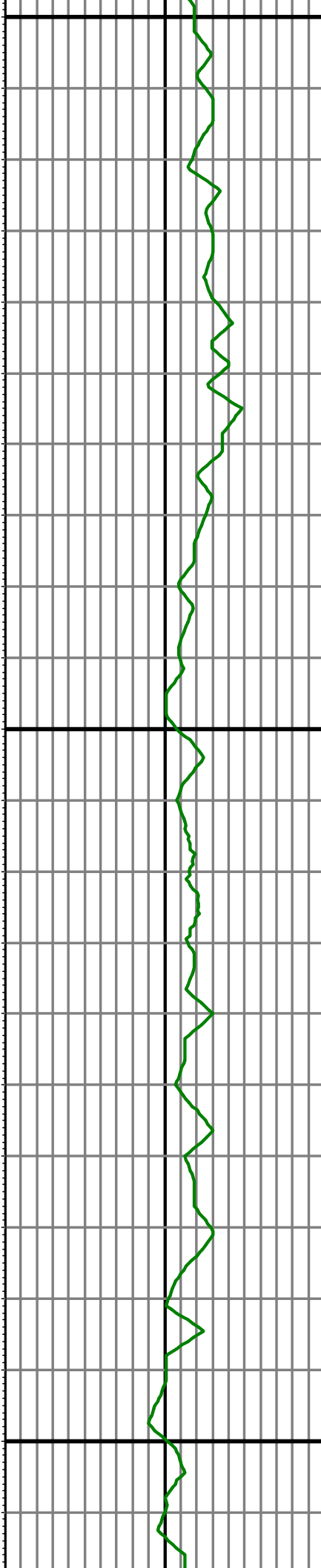


MD: 9320.00 INC: 87.50 AZ: 357.60 TVD: 7101.32 VS: 1600.78

MD: 9414.00 INC: 89.90 AZ: 0.20 TVD: 7103.45 VS: 1694.72



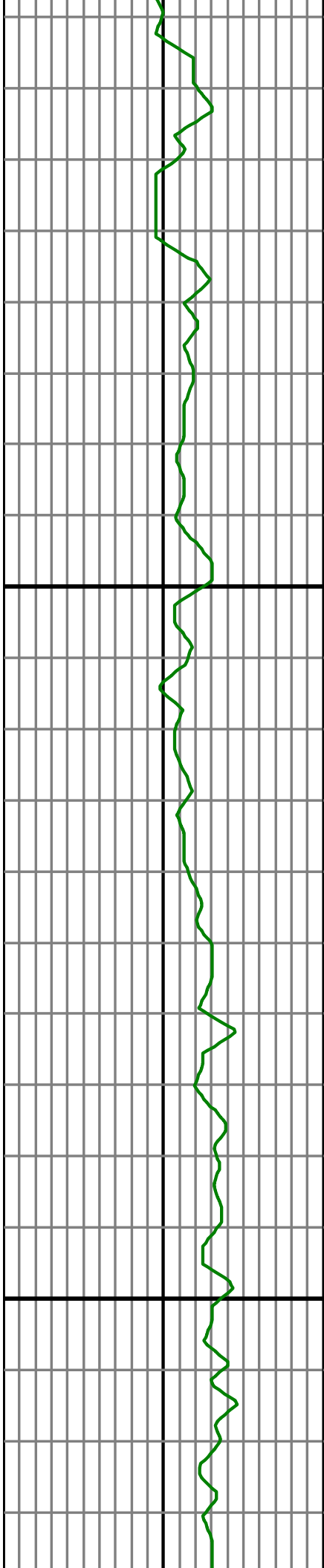
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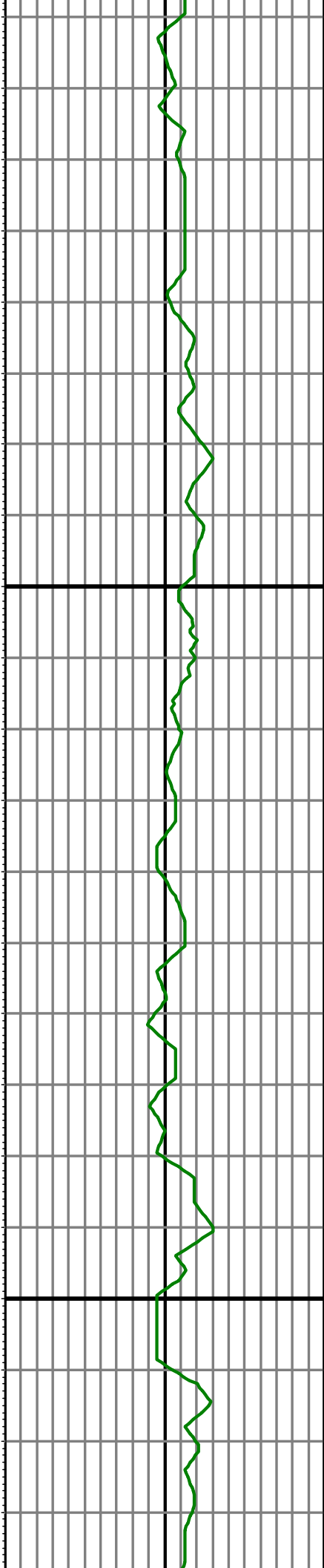
MD: 9509.00 INC: 90.80 AZ: 1.50 TVD: 7102.87 VS: 1789.71

MD: 9603.00 INC: 91.50 AZ: 1.20 TVD: 7100.99 VS: 1883.66

MD: 9698.00 INC: 90.10 AZ: 0.70 TVD: 7099.66 VS: 1978.63

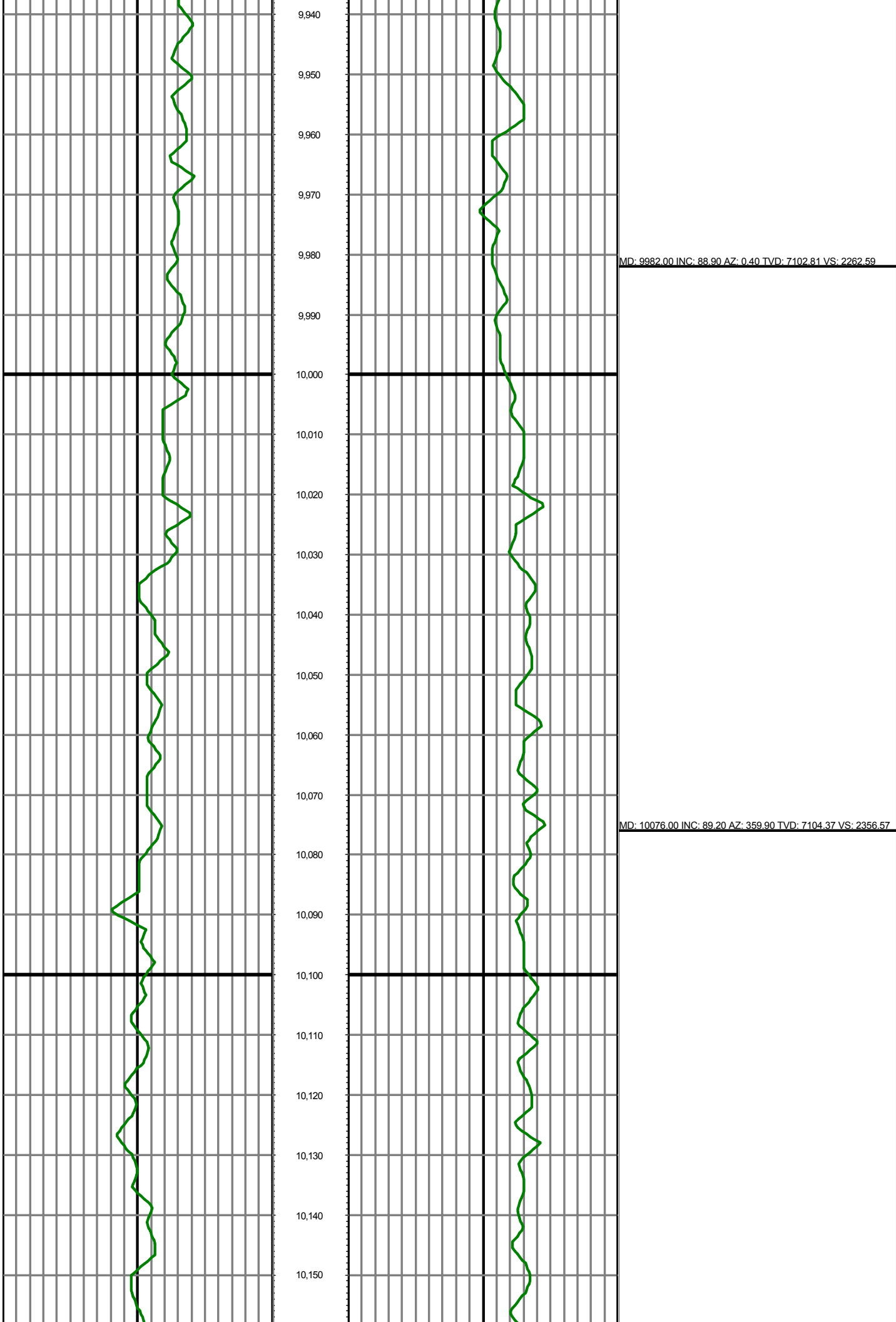


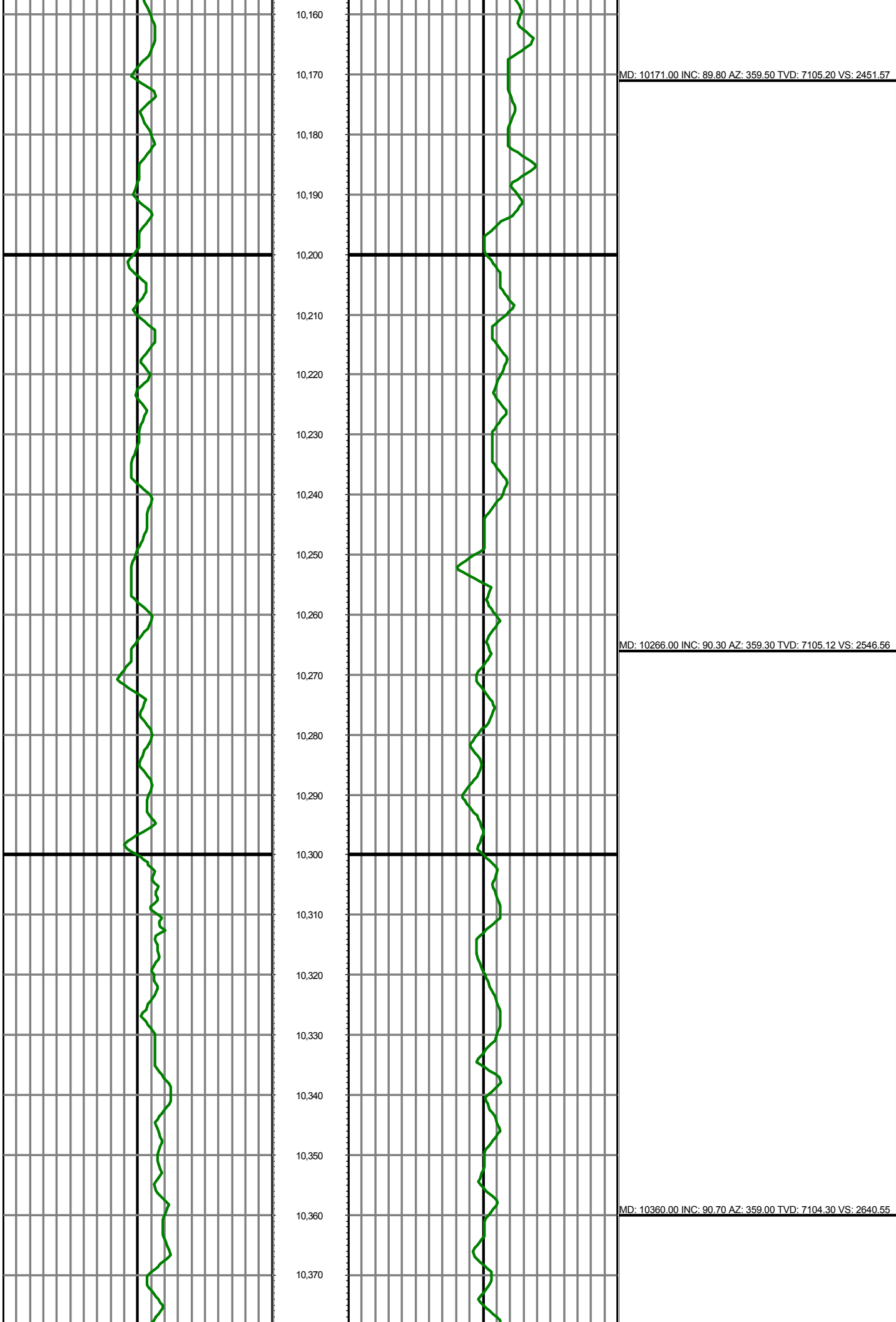
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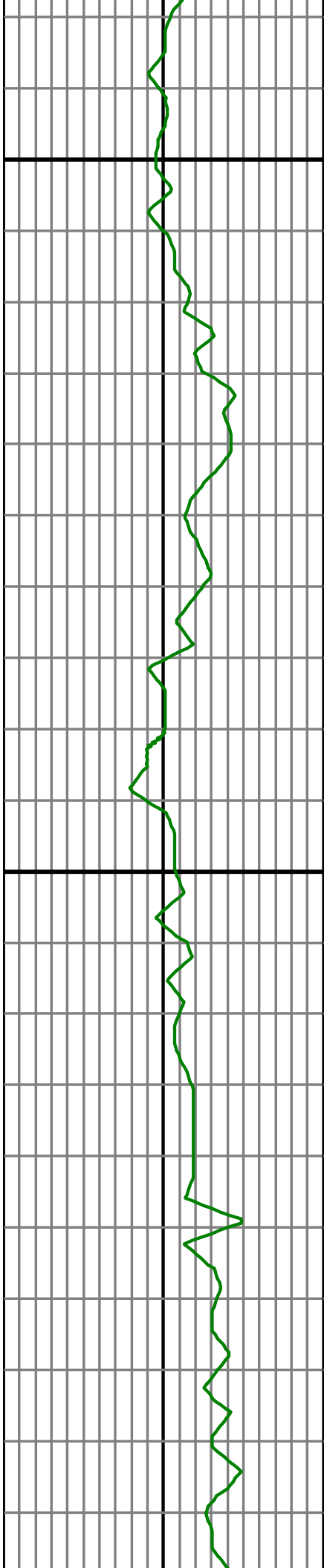


MD: 9792.00 INC: 90.20 AZ: 0.10 TVD: 7099.41 VS: 2072.63

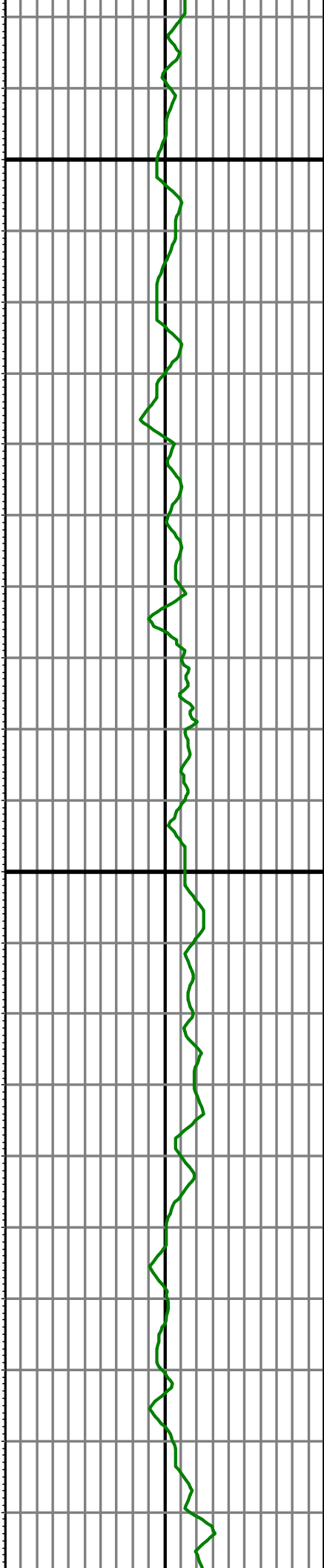
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MD: 10455.00 INC: 91.00 AZ: 358.50 TVD: 7102.89 VS: 2735.52

MD: 10549.00 INC: 88.40 AZ: 359.70 TVD: 7103.38 VS: 2829.50

