

LWD MEMORY LOG									
<div>Baker Hughes</div>			Gamma Ray						
Scale:	Company: Noble Energy								
Measured Depth	1:240		Well:			Reveille A35-772			
			Field:			Wattenberg			
			County:			Weld		Country: United States	
Depth Reference:	Driller's Depth		State:		Colorado				
Status:	Final Print		Surface Location:			Other Services:			
API No:	05-123-50796-00		Latitude:			40° 26' 10.788" N			
Job ID:	110697728		Longitude:			104° 31' 31.440" W			
Permanent Datum (P.D.):	Mean Sea Level		Elevation:			0.00 ft			
	Rig Floor		Above P.D.:			4678.00 ft			
						Elev. KB: N/A			
Log Measured From:			Elev. DF:			4678.00 ft			
			Elev. GL:			4648.00 ft			
Dates	Interval		Magnetic Field Reference						
From: 2021-01-18	Drilled (ft)	Logged (ft)	Azi Reference North:				Grid	Dip Angle: (deg)	66.83
To: 2021-01-20	Top: 1944.00	Top: 1944.00	Total Magnetic Field Strength: (nT)				51975		
Sput: 2021-01-18	Bottom: 17043.00	Bottom: 17030.00							
Borehole Record									
Casing Record									
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)			
13.500	30.00	1944.00	9.625	36.00	30.00	1934.00			
8.500	1944.00	17043.00							
				</					

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Log Run Summary														
Run No	Bit Run No.	Bit Size	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours		
						Top	Bottom	From	To	Start Logging	End Logging			
		(in)				(ft)	(ft)	(ft)	(ft)	(h)				
1	1	8.500	PDC	2.50	Rotary Steerable	1944.00	9378.00	1944.00	9391.00	2021-01-18 06:00	2021-01-19 09:50	26.71		
2	1RR	8.500	PDC	2.50	Rotary Steerable	9378.00	17030.00	9391.00	17043.00	2021-01-19 18:47	2021-01-20 19:40	24.76		
Crew														
Name			Arrive Wellsite	Depart Wellsite	Name			Arrive Wellsite	Depart Wellsite	Name			Arrive Wellsite	Depart Wellsite
Adam Schlenz			2021-01-17	2021-01-21										

Mud Properties Record											
Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2021-01-18 04:36	1	1944.00	Oil Based Mud	9.4	12	N/A	17.8	68.9/19.4	Active Pit	27211	0.00
2021-01-18 16:00	1	5893.00	Oil Based Mud	9.2	11	N/A	15.8	70.8/19	Active Pit	26239	0.00
2021-01-19 05:00	1	7644.00	Oil Based Mud	9.6	12	N/A	17.4	70.4/18	Active Pit	26239	0.00
2021-01-19 16:00	2	9391.00	Oil Based Mud	9.6	11	N/A	18.3	69.6/18.4	Active Pit	25753	0.00
2021-01-20 05:00	2	12889.00	Oil Based Mud	9.8	14	N/A	19.2	68.8/18	Active Pit	26725	0.00
2021-01-20 16:00	2	16100.00	Oil Based Mud	9.8	14	N/A	18.7	68.4/18	Active Pit	25267	0.00

Equipment and Service Data							
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	AutoTrak Curve Steering Unit	14452345	Near Bit Inclination	5.93	6.78	7.000	4.330

1	AutoTrak Curve Steering Unit	14452345	Near Bit VSS	5.93	6.78	7.000	4.330
1	AutoTrak Curve MWD	14219791	Gamma (single)	2.75	12.95	7.000	3.250
1	AutoTrak Curve MWD	14219791	Directional (mag)	12.27	22.47	7.000	3.250
2	AutoTrak Curve Steering Unit	14381997	Near Bit VSS	5.93	6.78	7.000	4.330
2	AutoTrak Curve Steering Unit	14381997	Near Bit Inclination	5.93	6.78	7.000	4.330
2	AutoTrak Curve MWD	14313857	Gamma (single)	2.75	12.93	7.000	3.250
2	AutoTrak Curve MWD	14313857	Directional (mag)	12.27	22.45	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

Comments

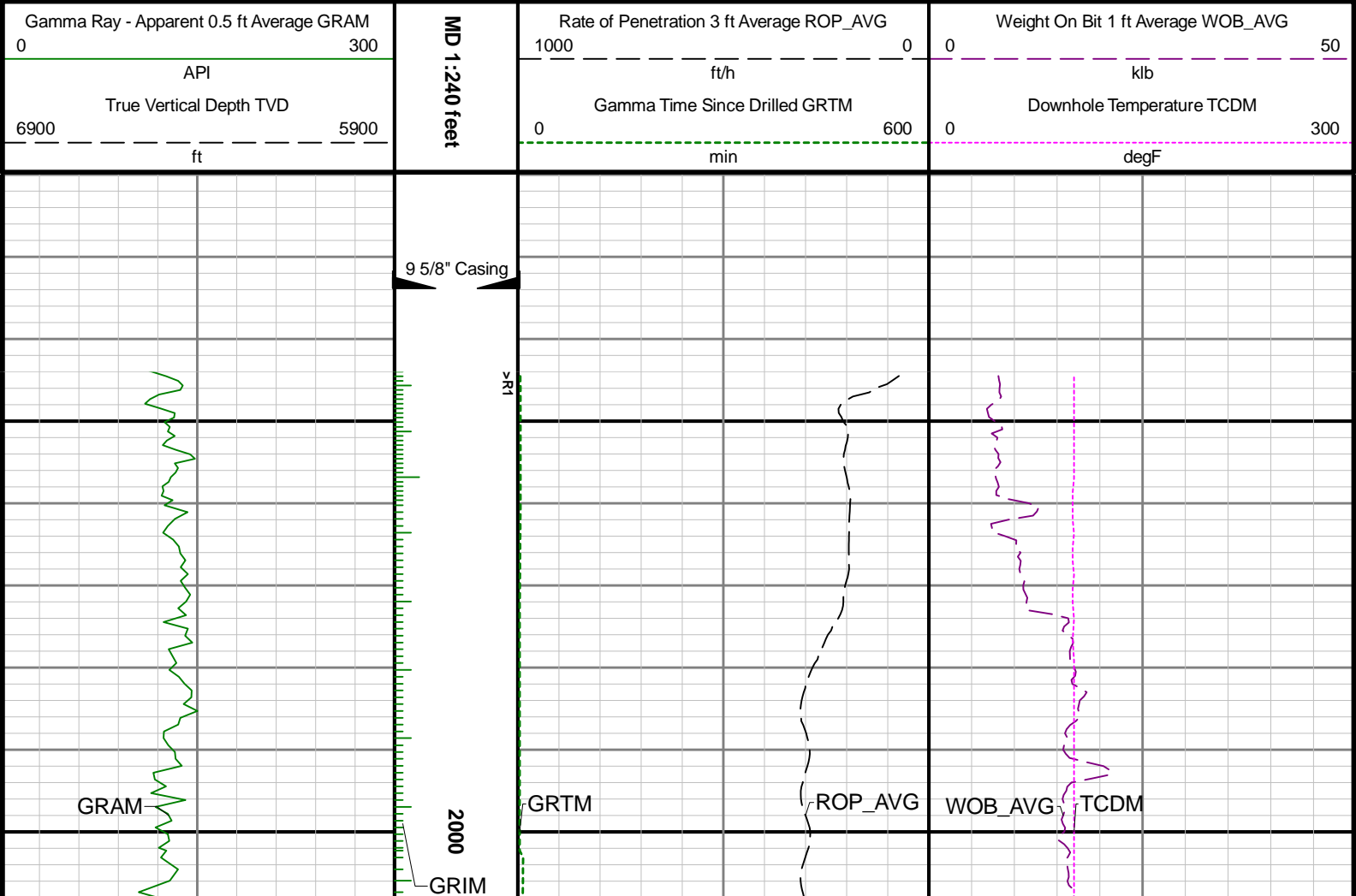
1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD runs 1 and 2 utilized a 6.75 inch NaviGamma service (Directional and Gamma Ray) behind a 8.5 inch bit and rotary steerable assembly from 1944 to 17043 feet MD (1944 to 6682 feet TVD).
3	The Gamma Ray Apparent (GRAM) data is presented 0 to 300 API, per the customer's request.

Remarks

Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	9391.00	8.500	2	The interval from 9378 to 9391 feet MD (6675 feet TVD) was logged 9 hours after being drilled, due to a trip out of the hole to pick up a new bottom hole assembly. Due to a gamma ray sensor failure there is a gap in gamma ray memory data from 9290 to 9379 feet MD (6675 feet TVD).
2	17043.00	8.500	2	The interval from 17030 to 17043 feet MD (6682 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

Curve Mnemonics

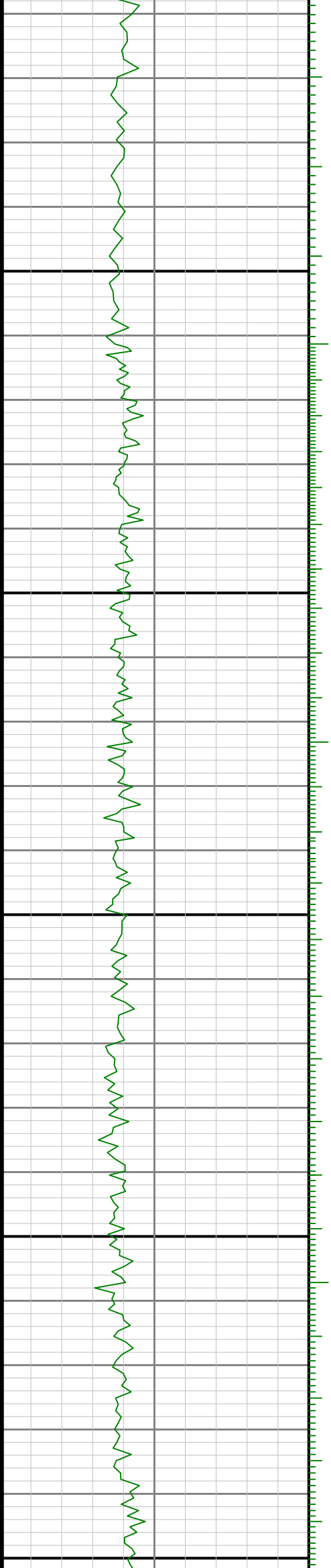
Presented Curves	Description	Units
ROP_AVG	Rate of Penetration - Average 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOB_AVG	Weight on Bit - Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	Gamma Ray - Time Since Drilled - Memory	min
TCDM	Directional Real-Time Survey Temperature	degF

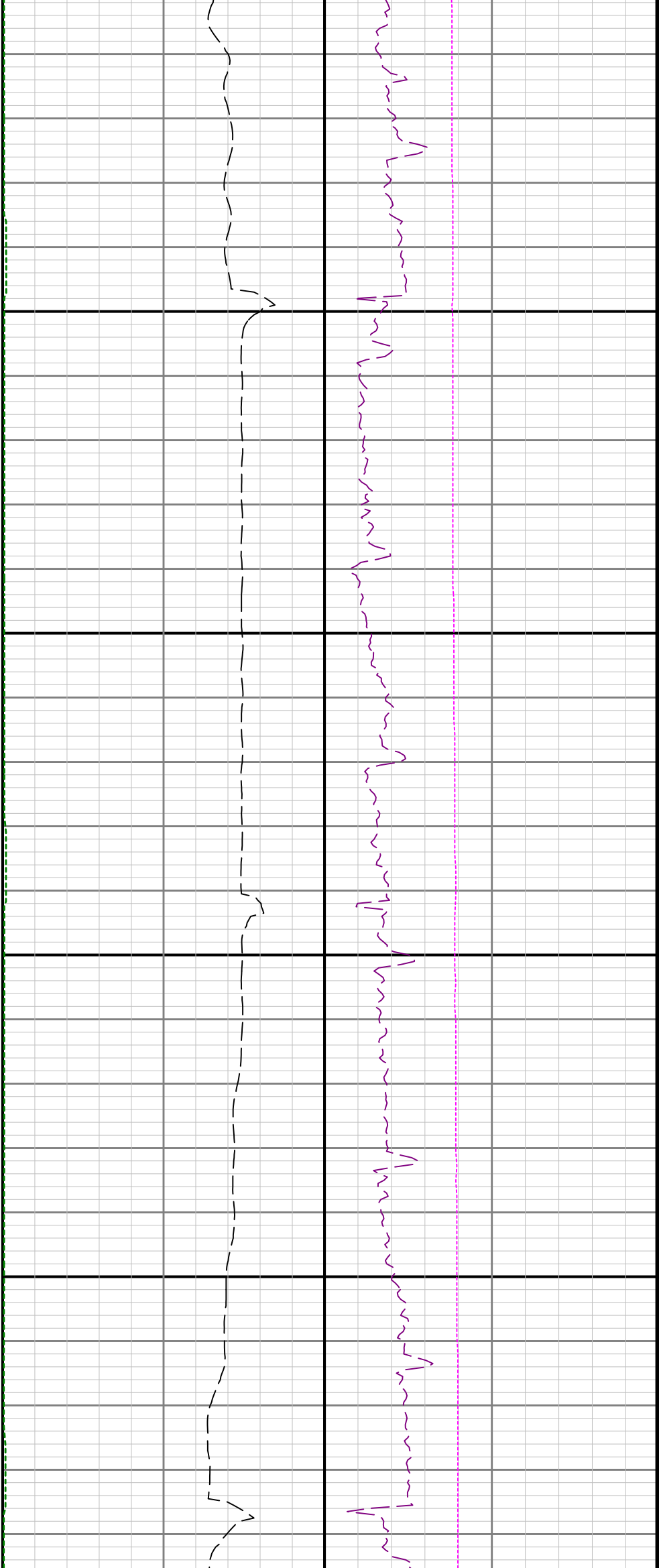




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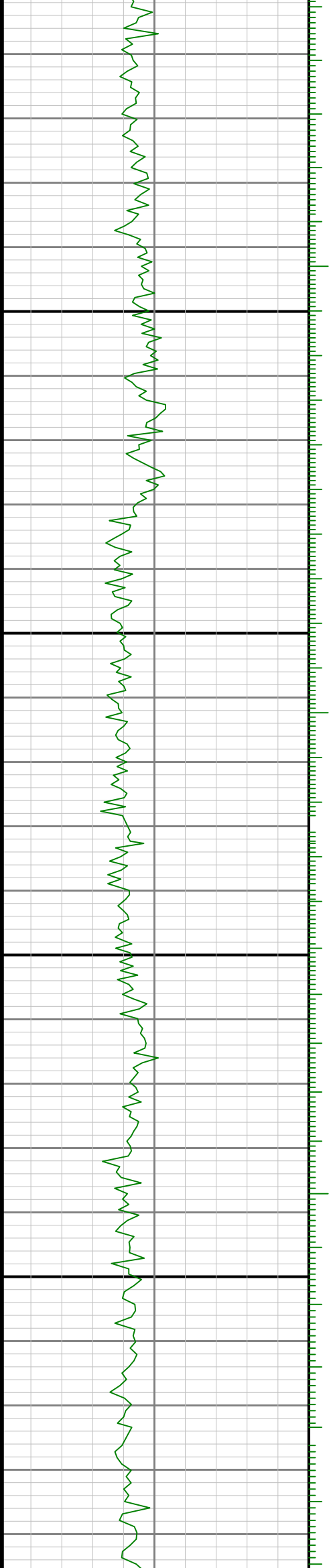
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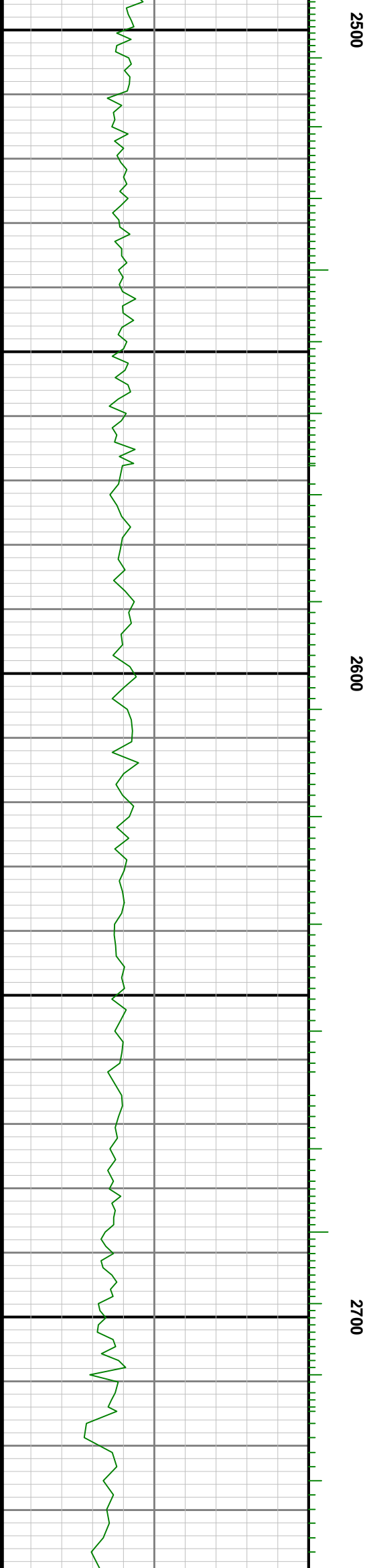
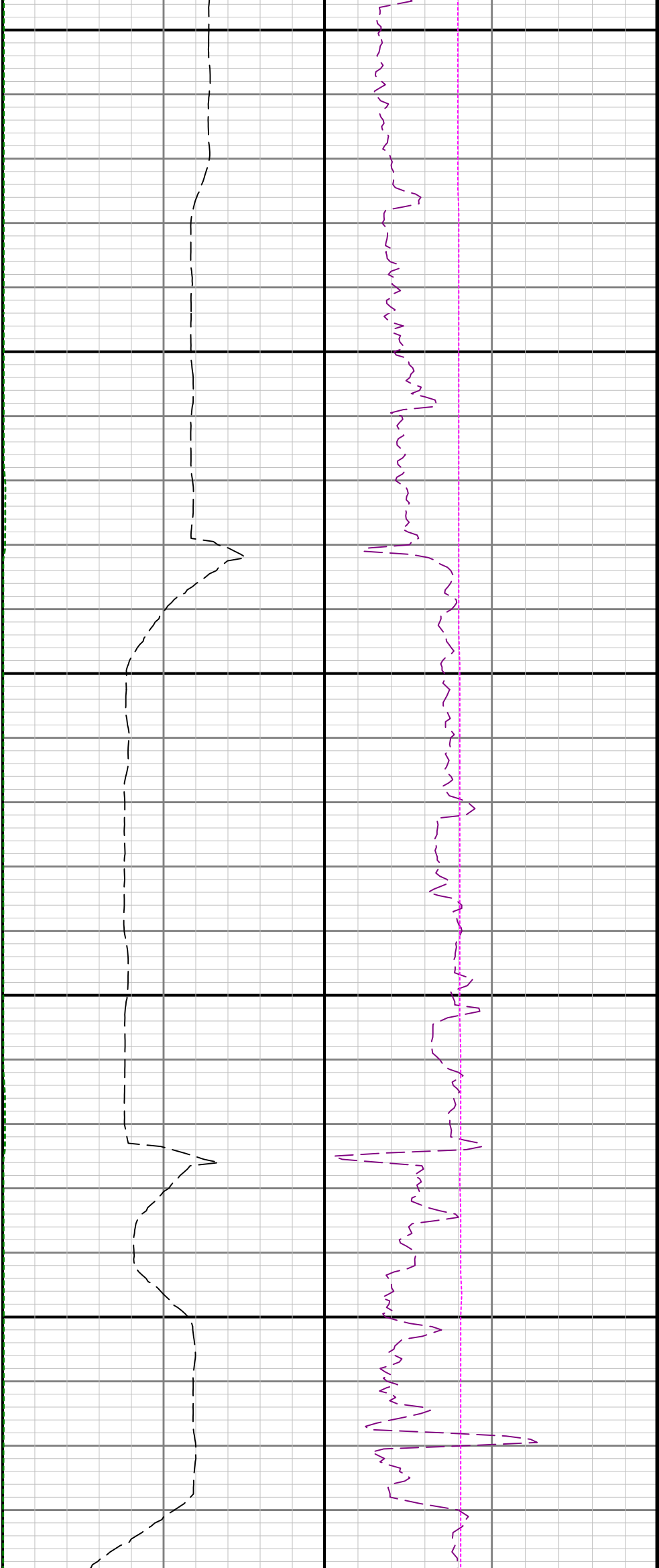


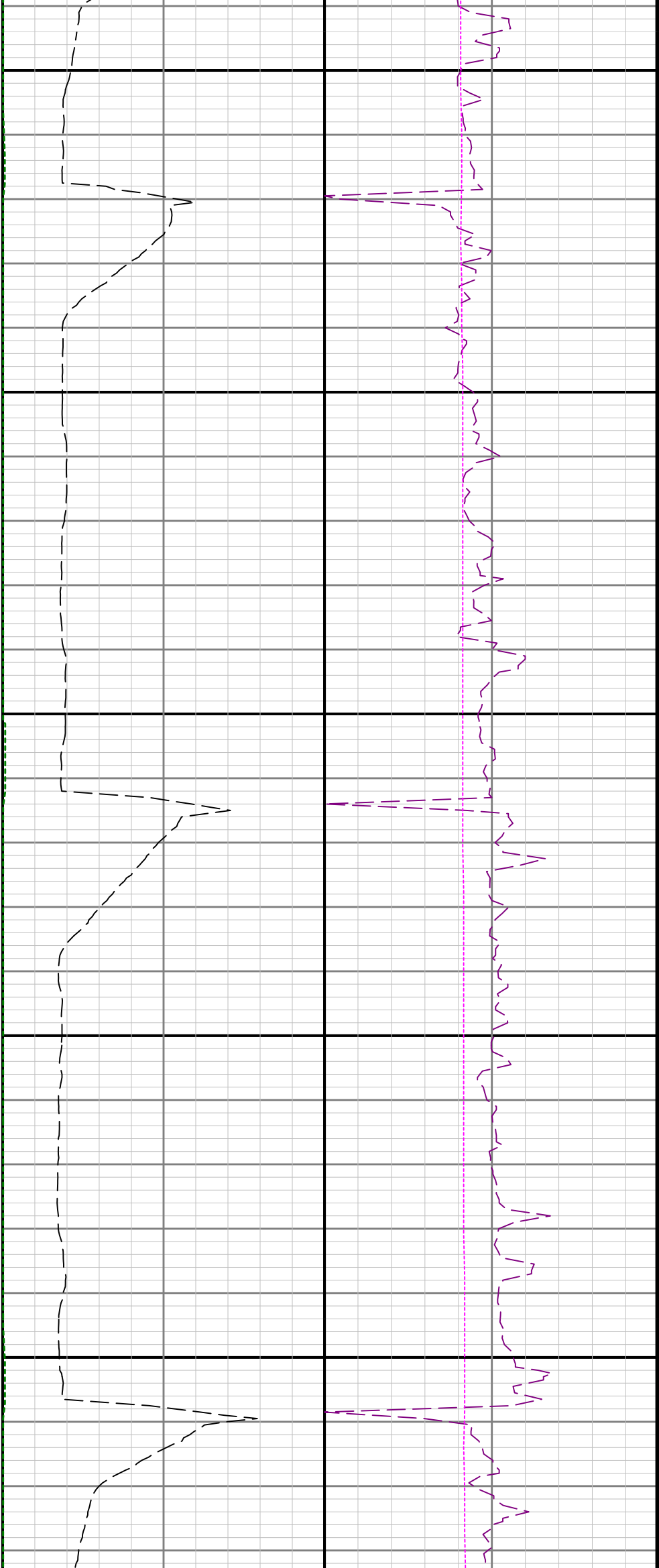


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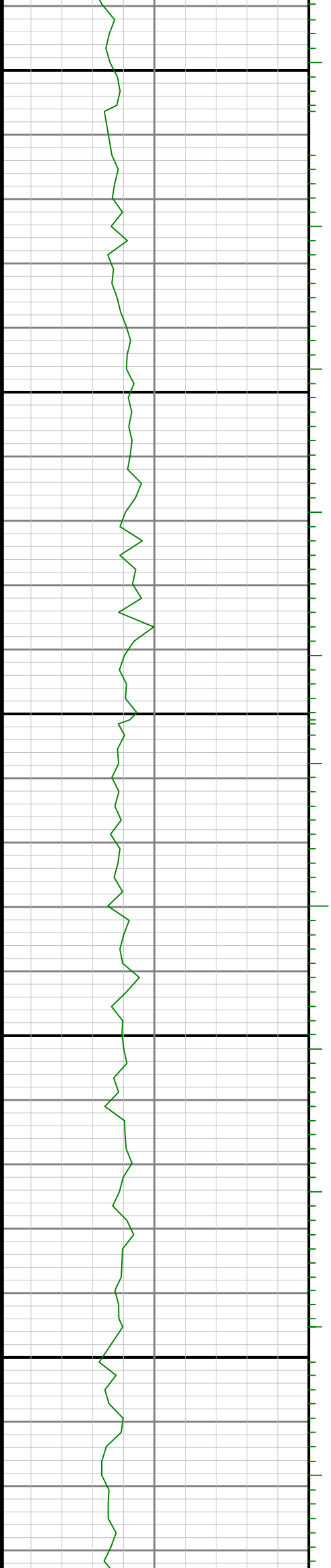


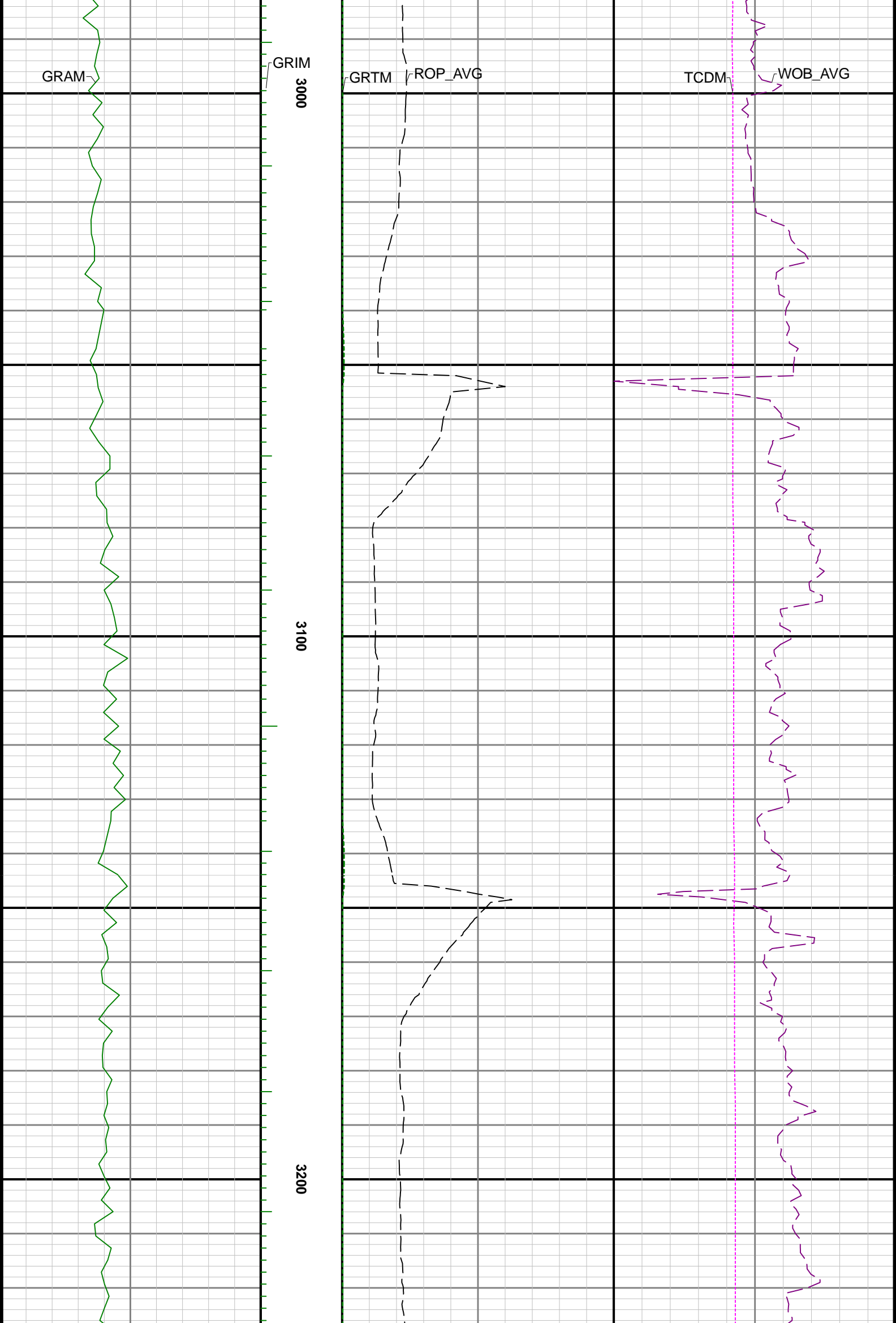


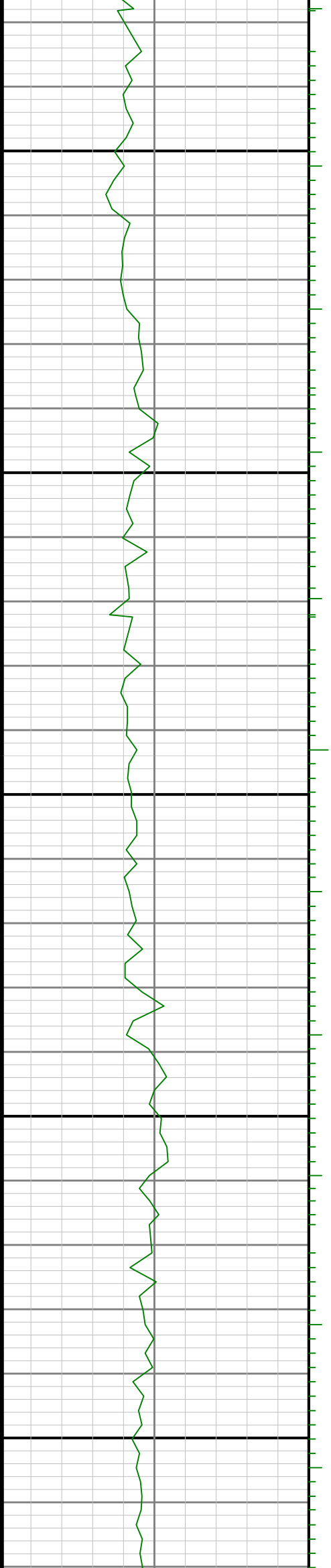
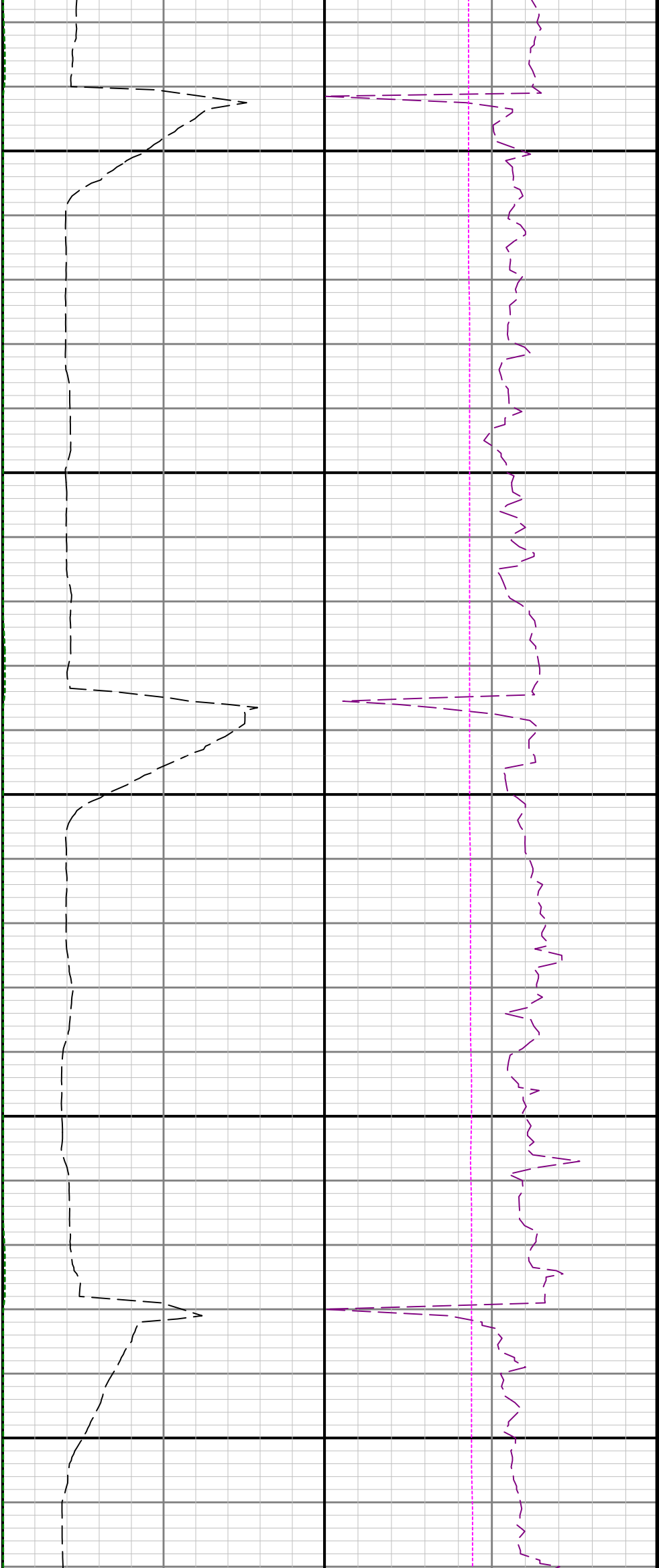


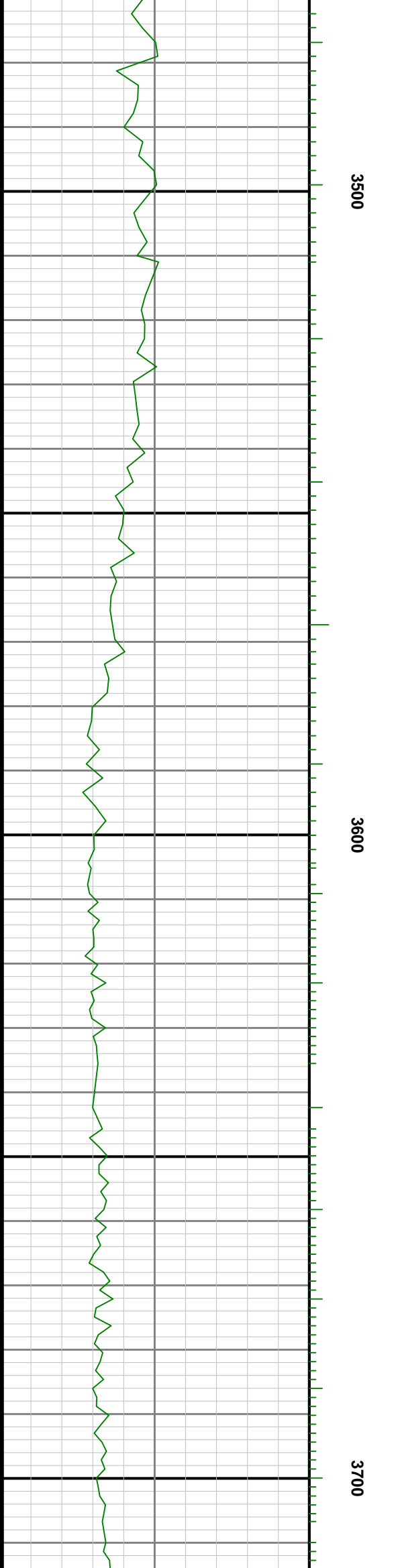
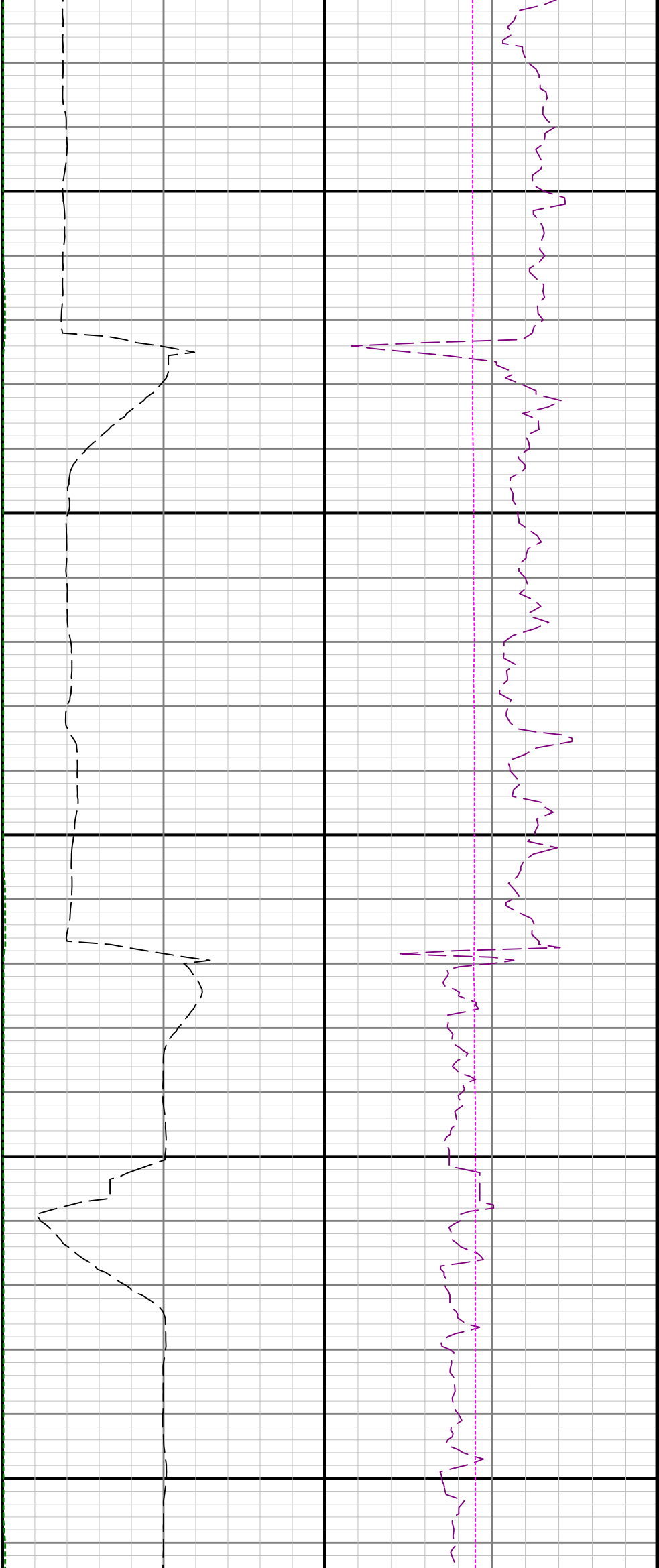
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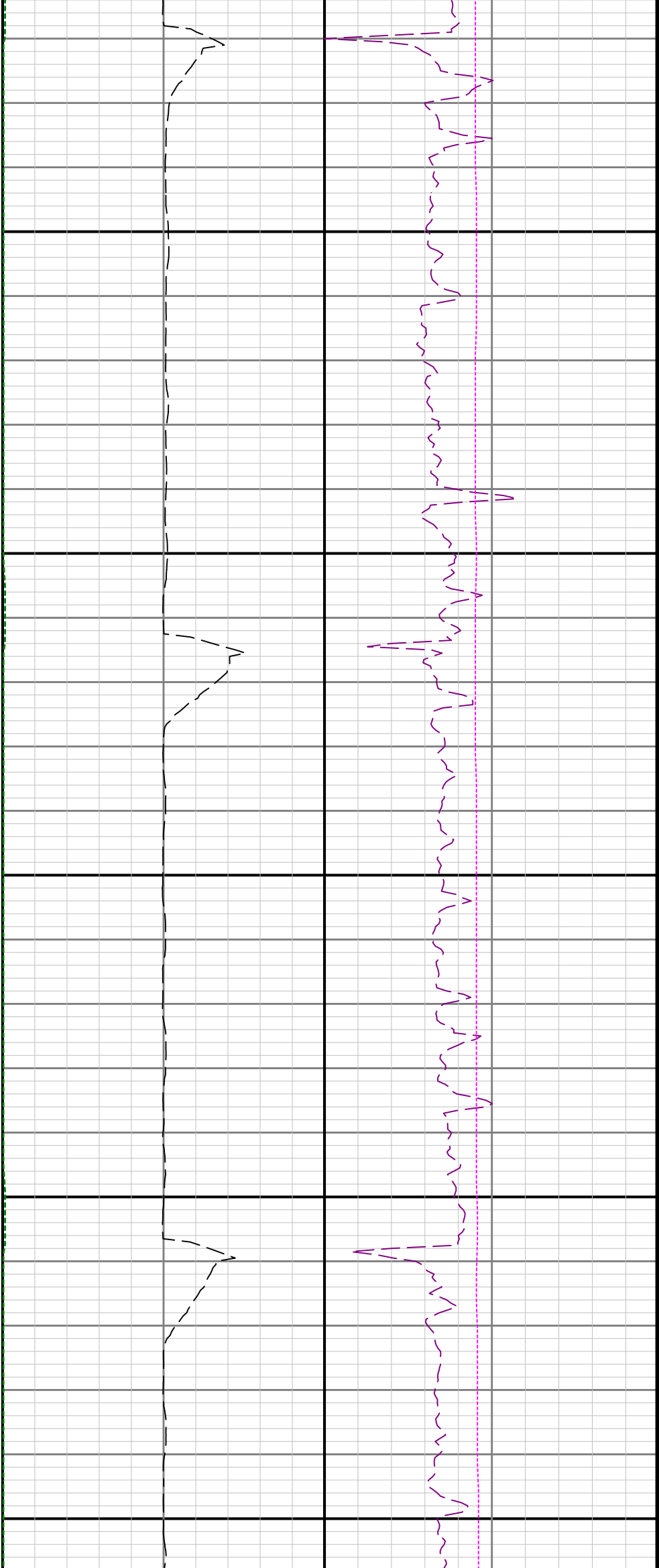
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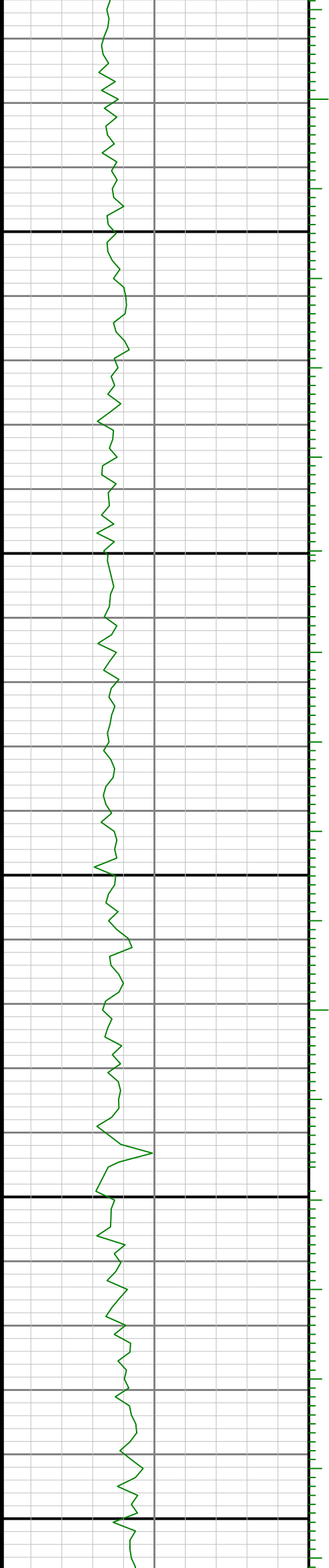


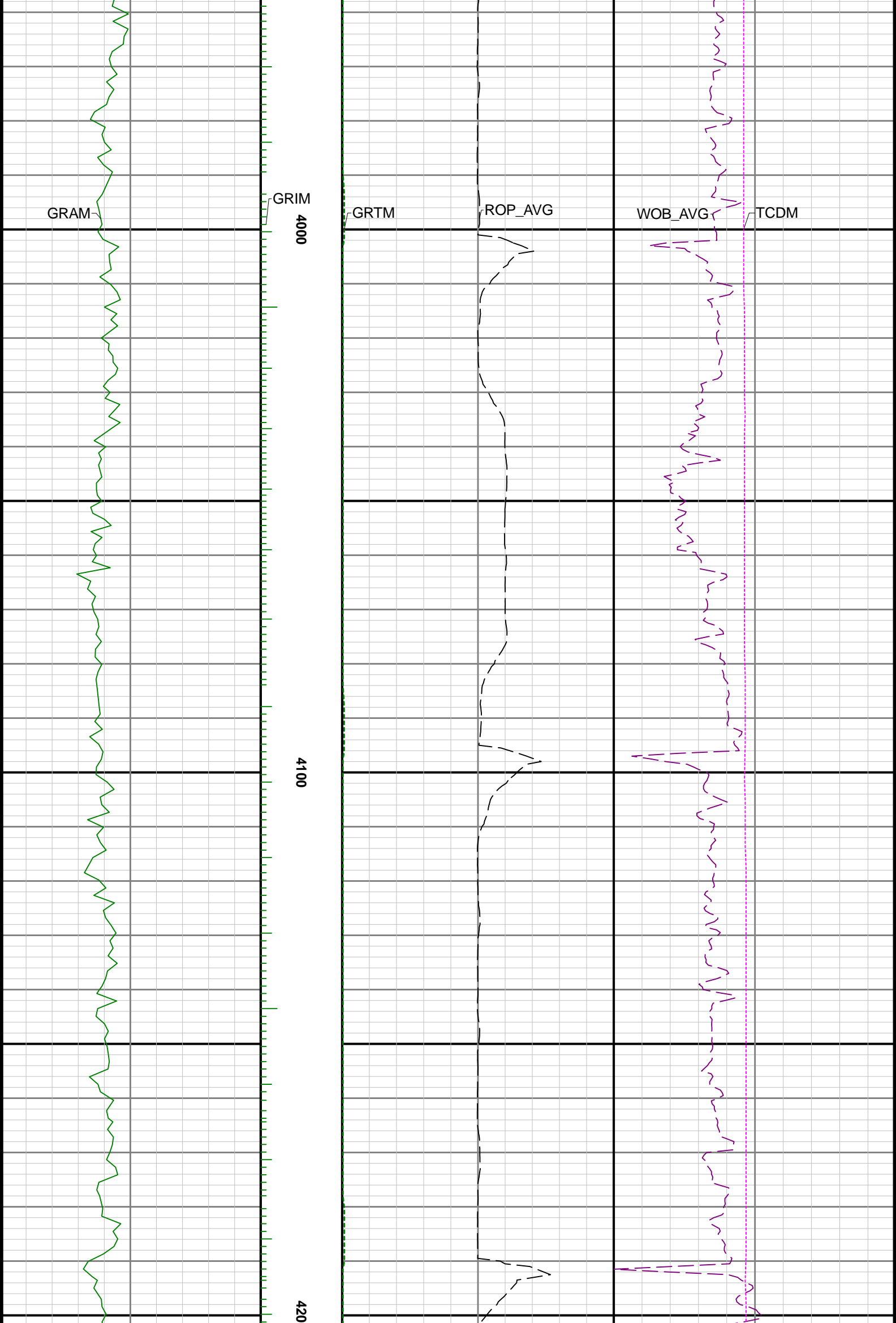


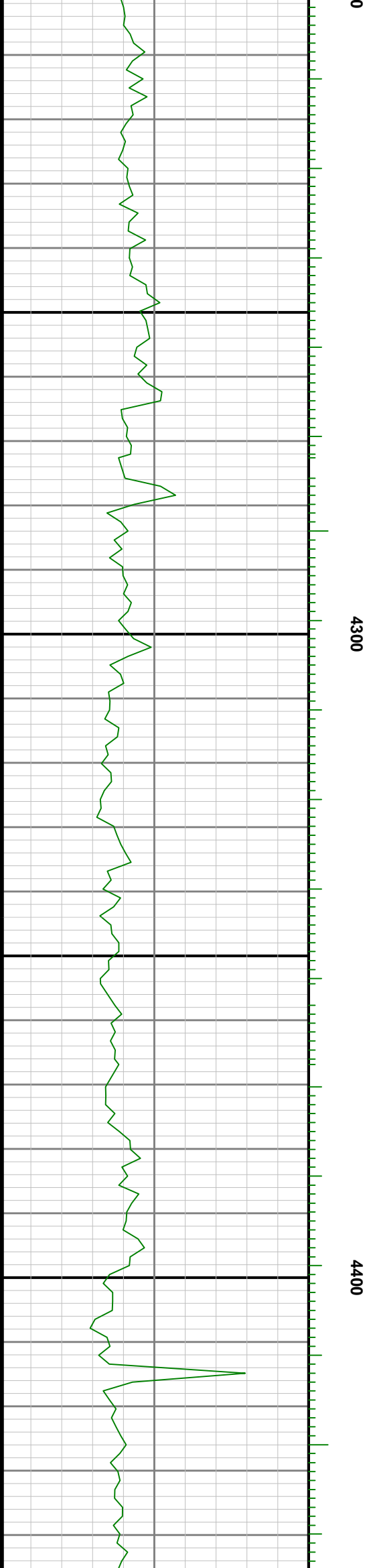
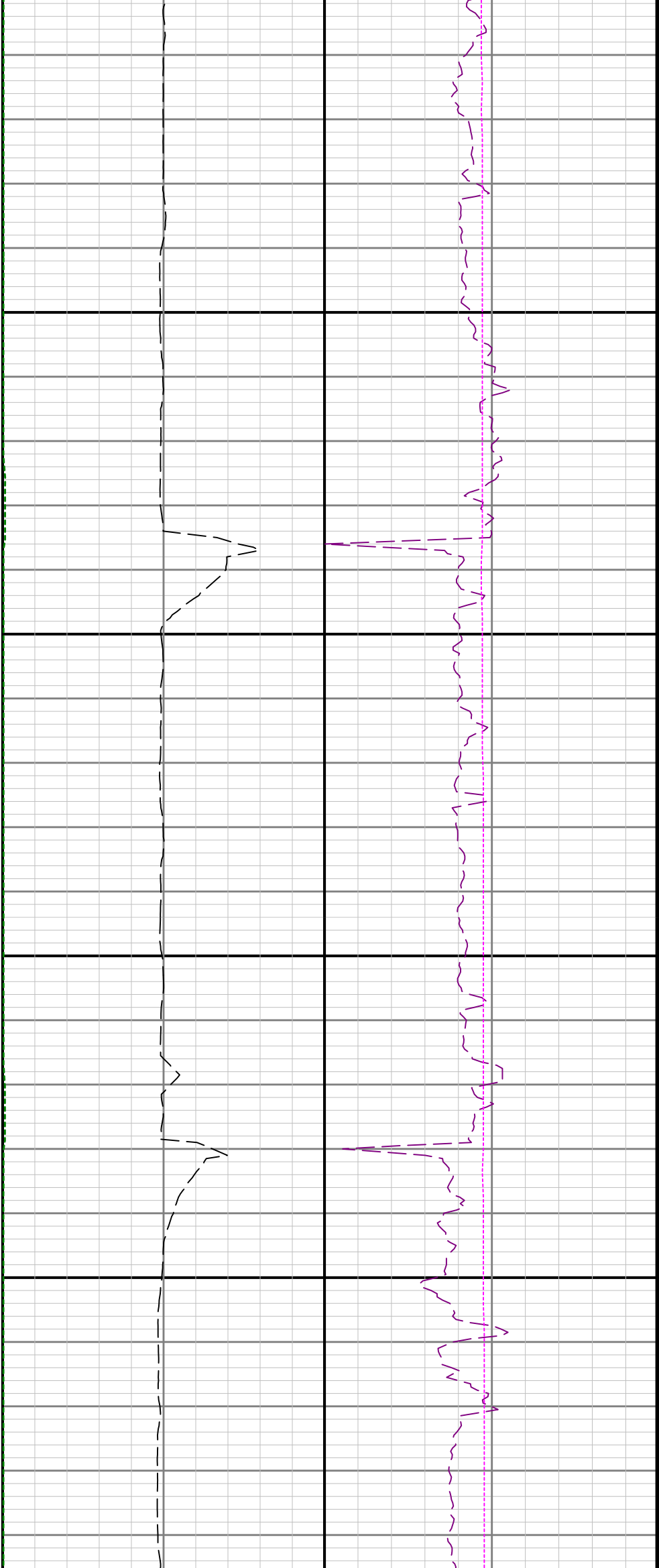


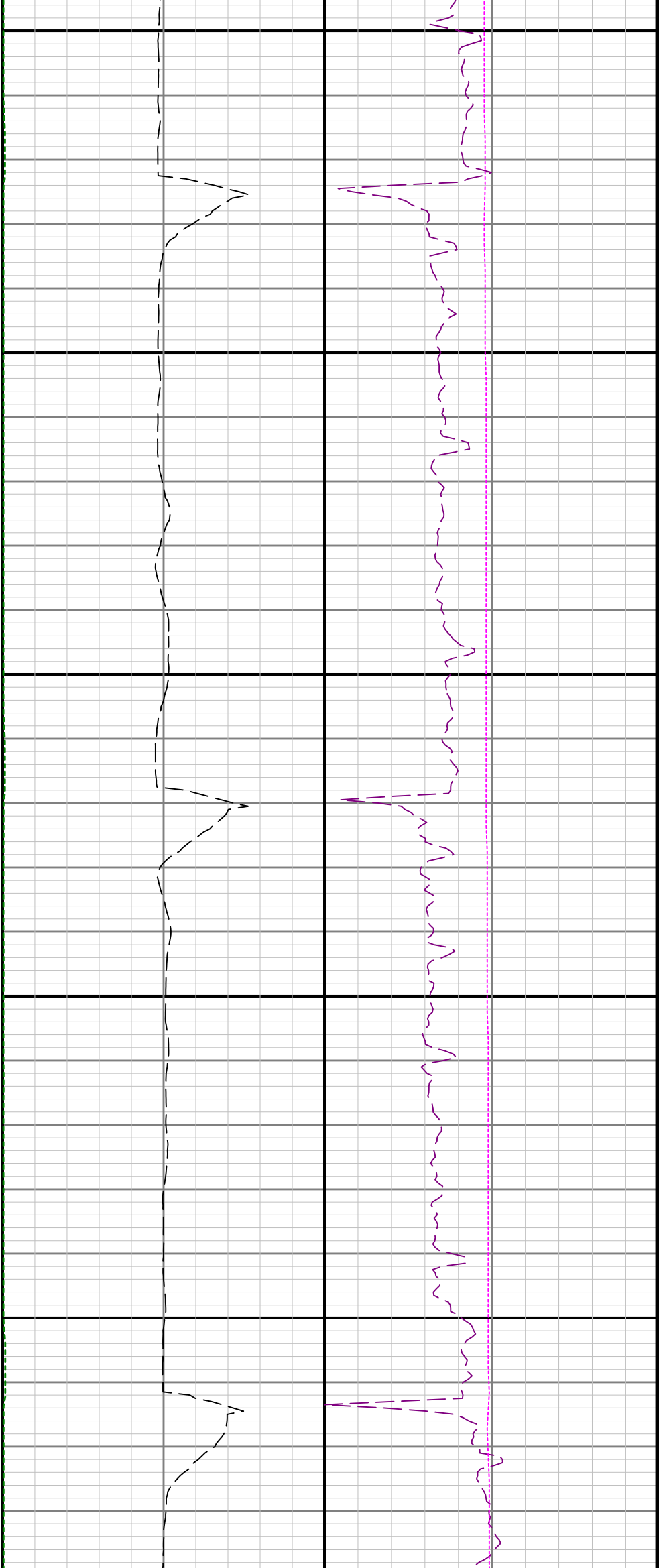
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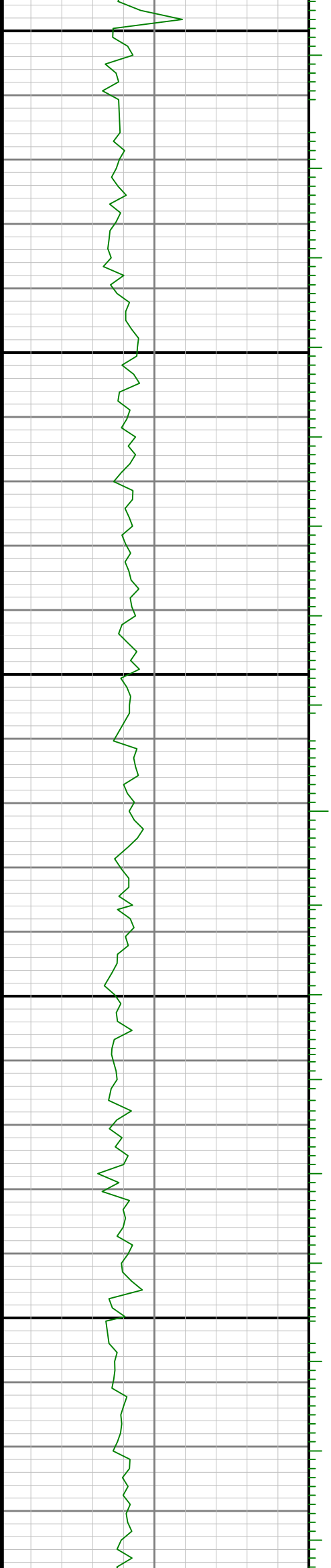


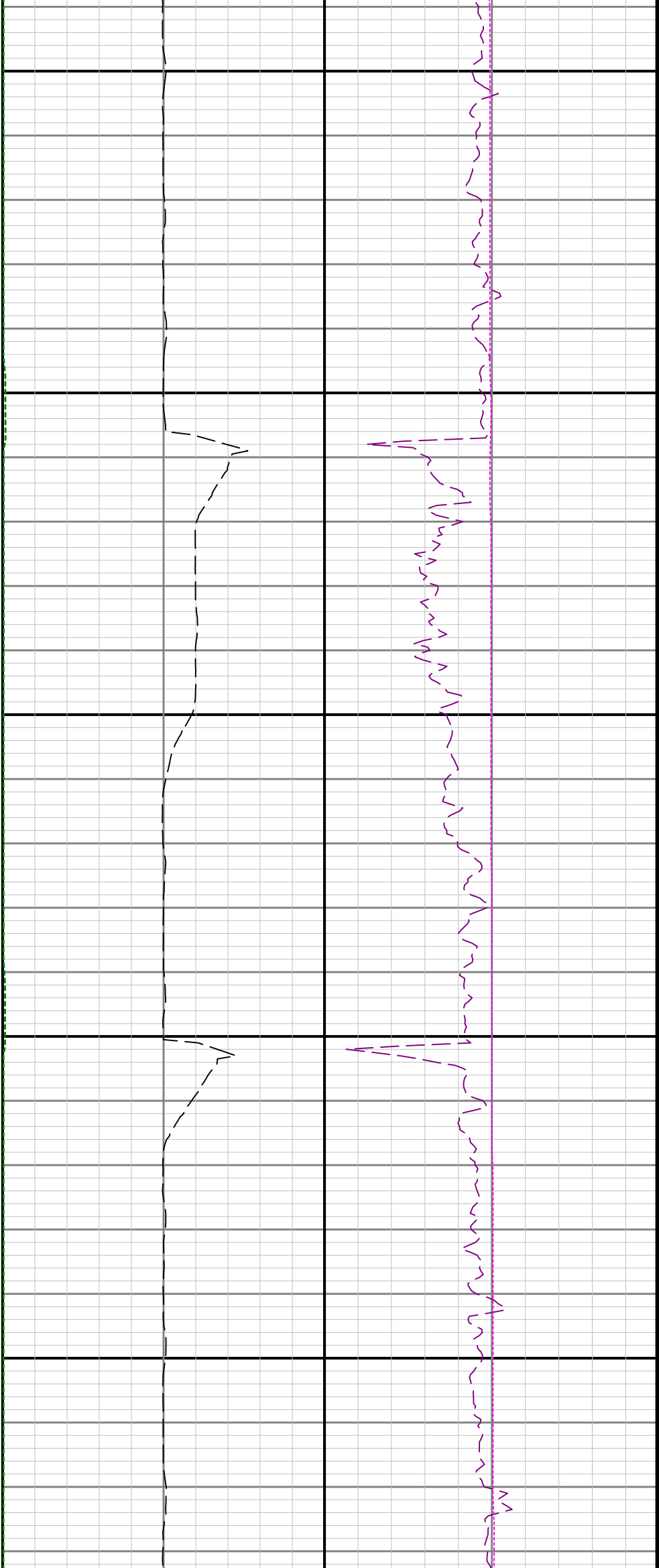




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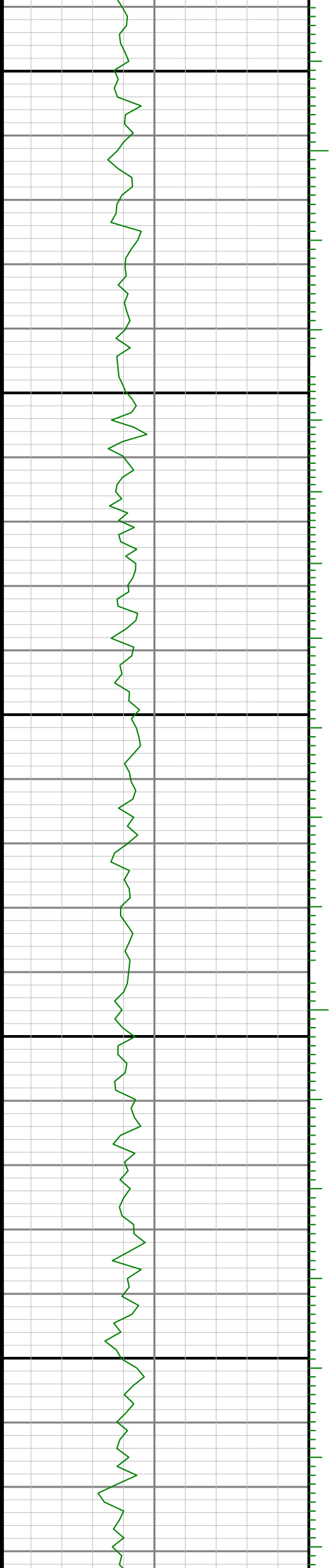


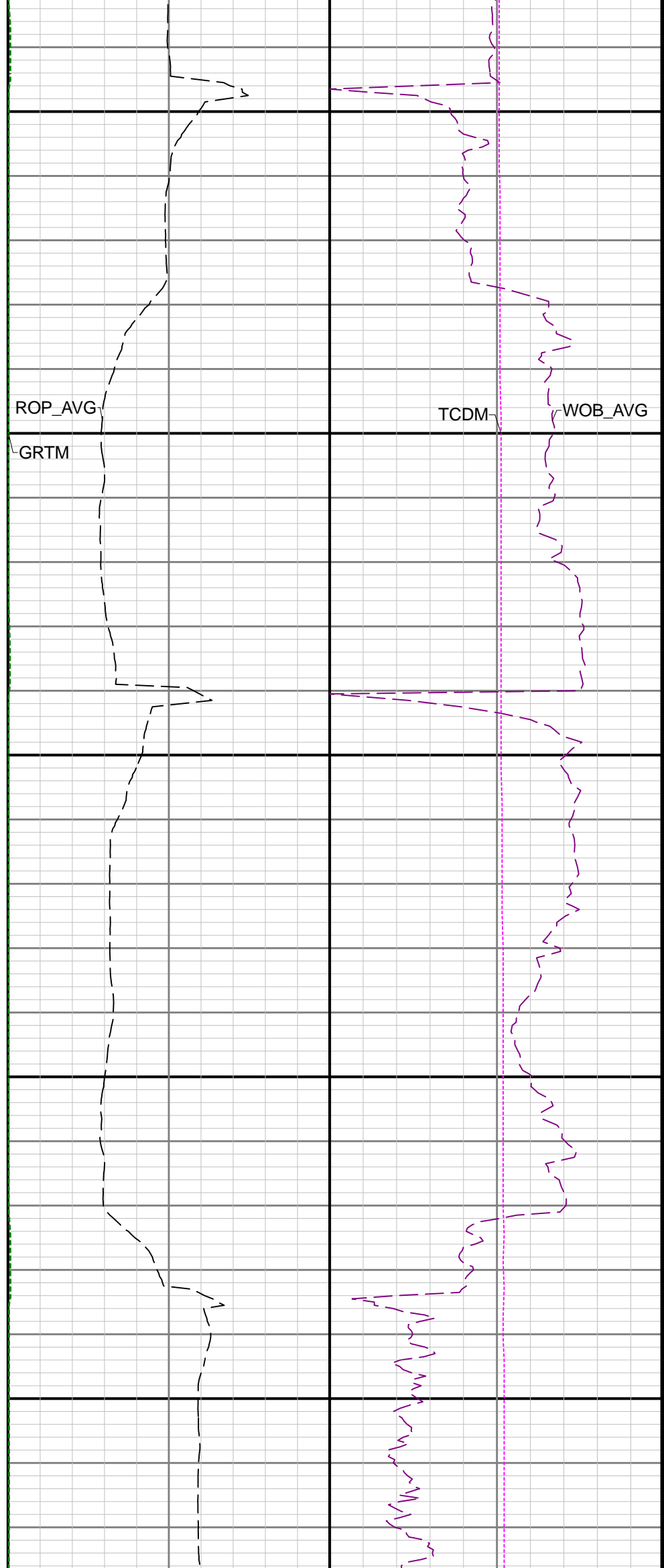
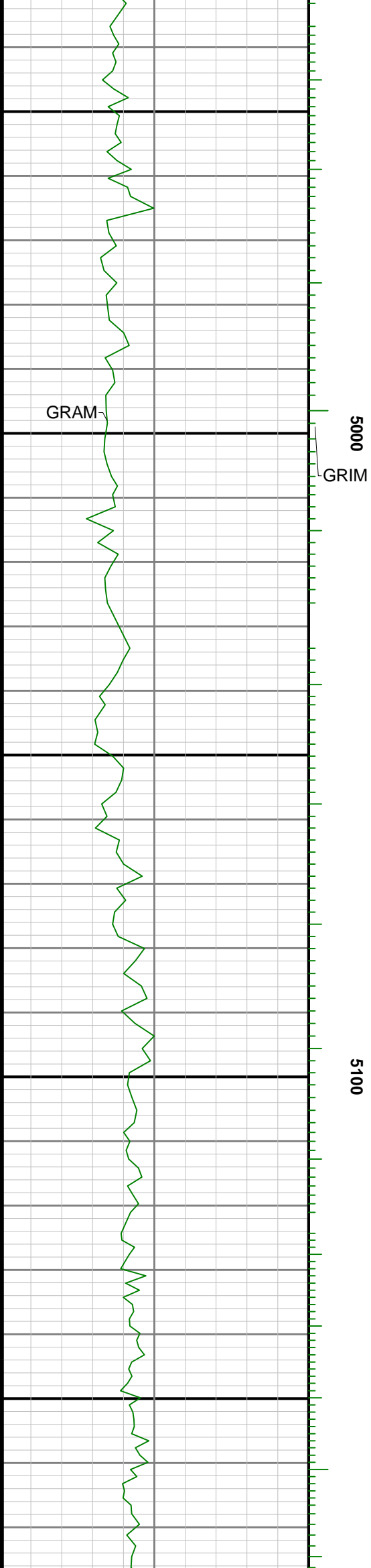


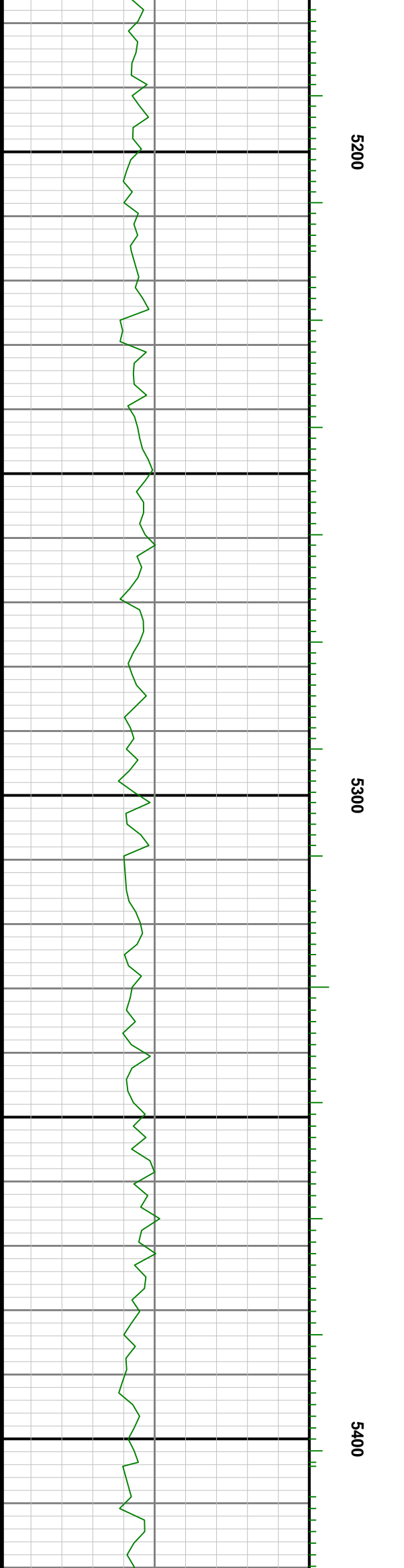
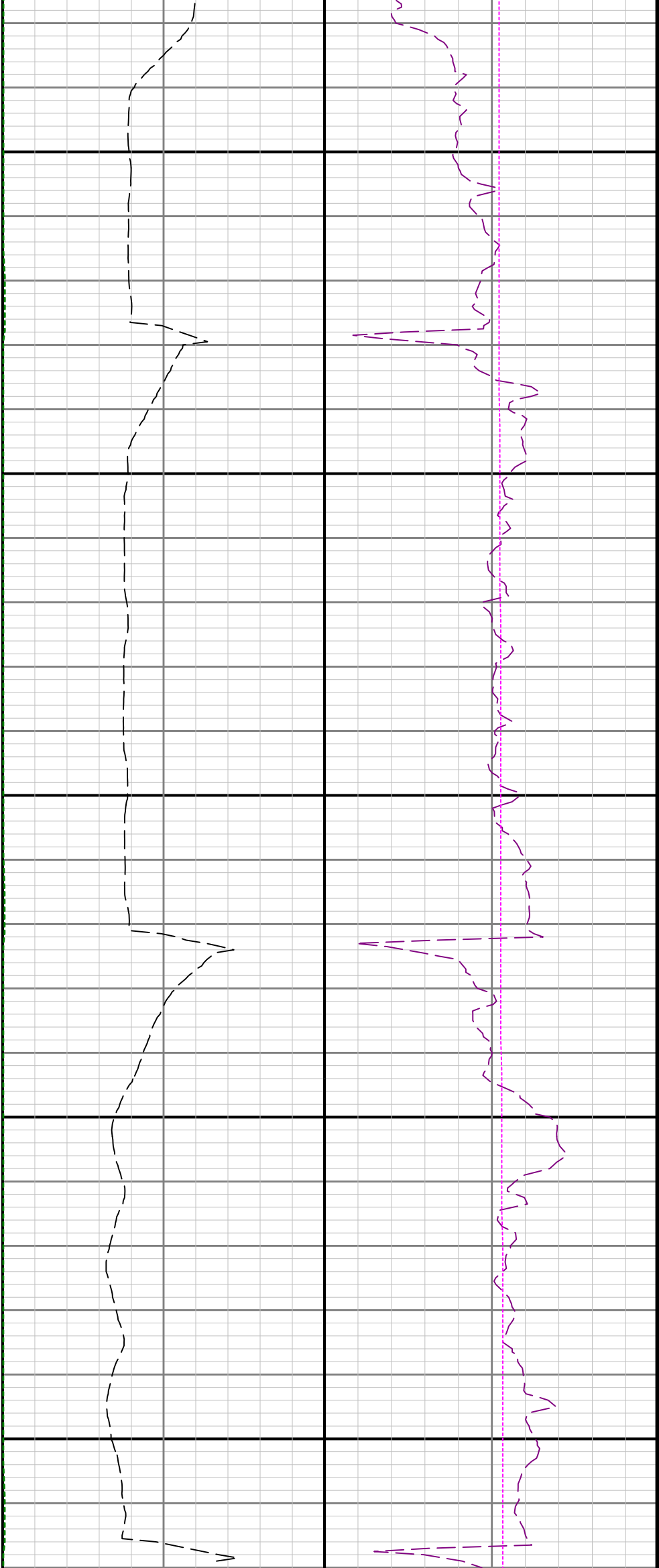
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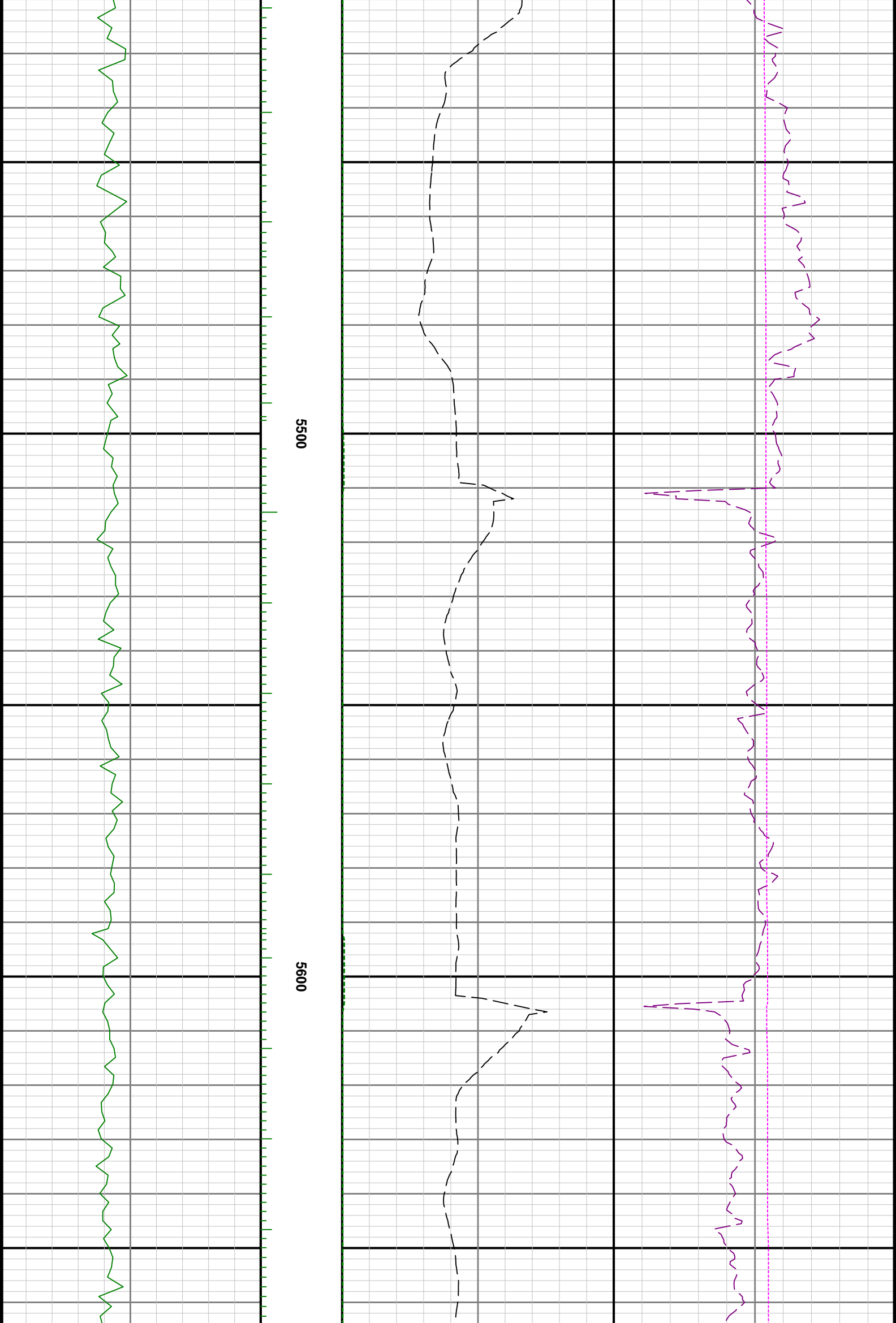
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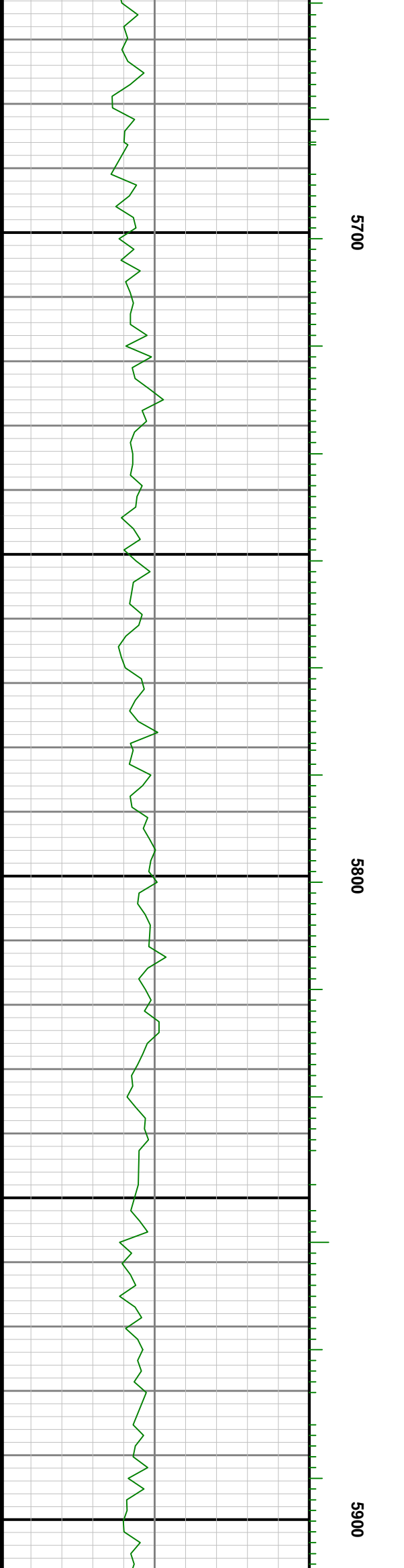
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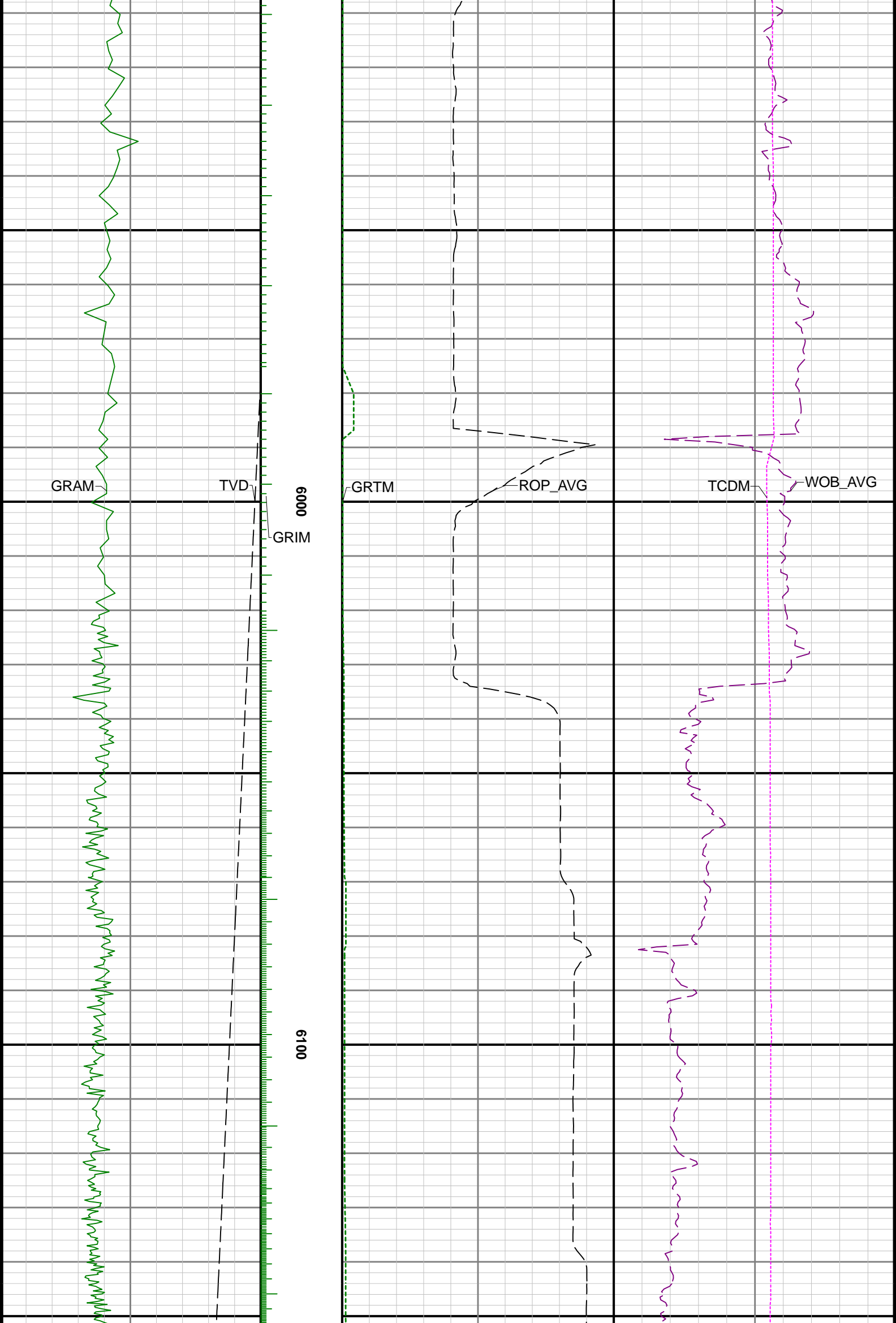


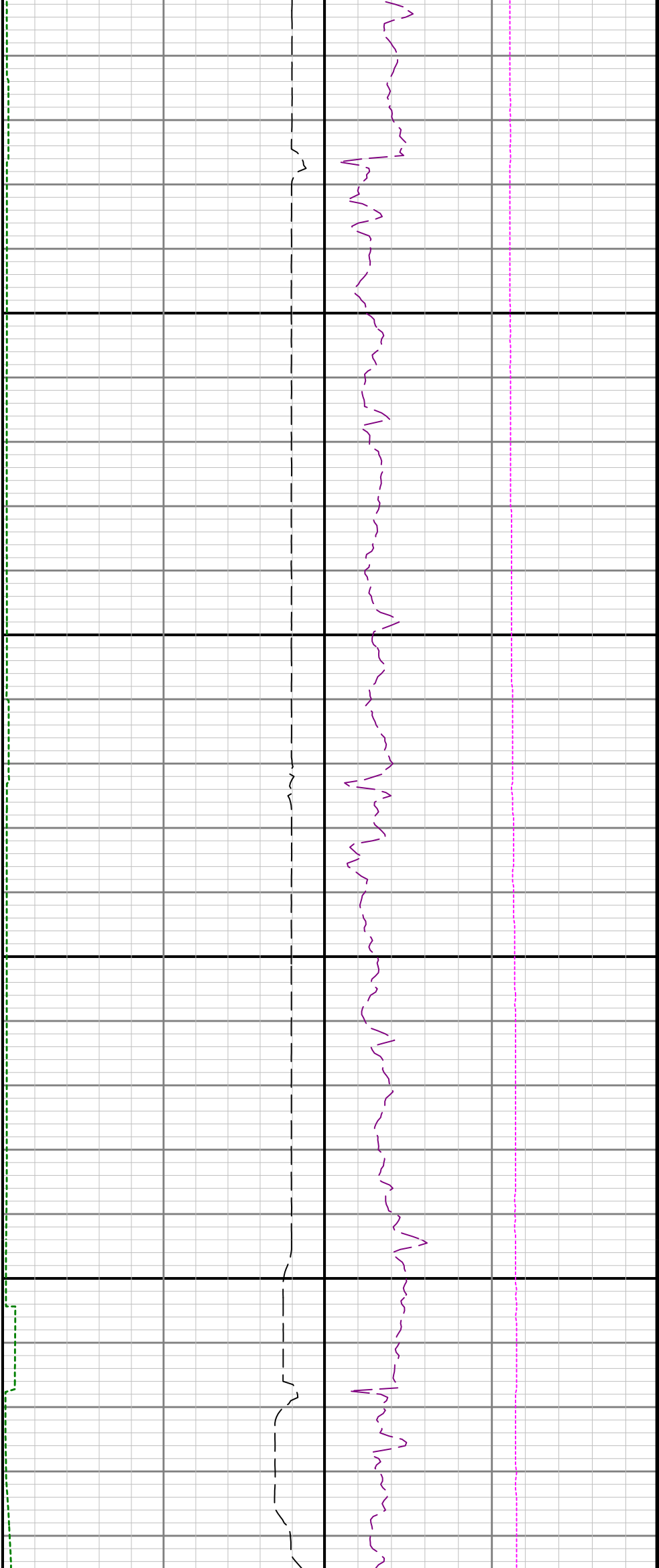






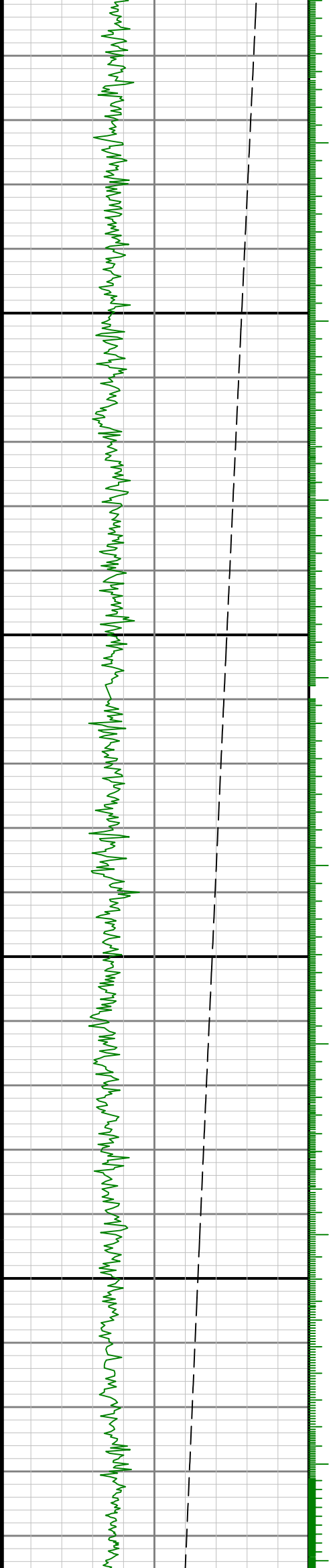


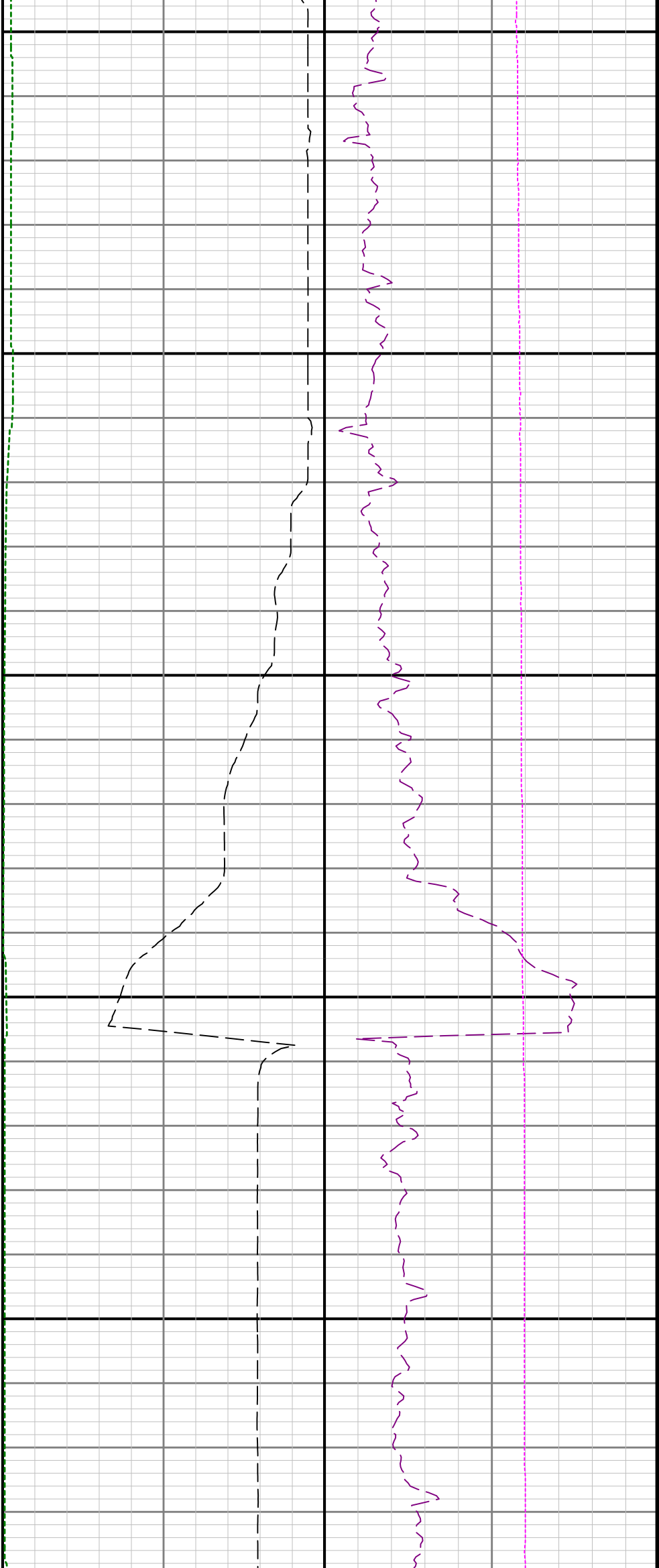




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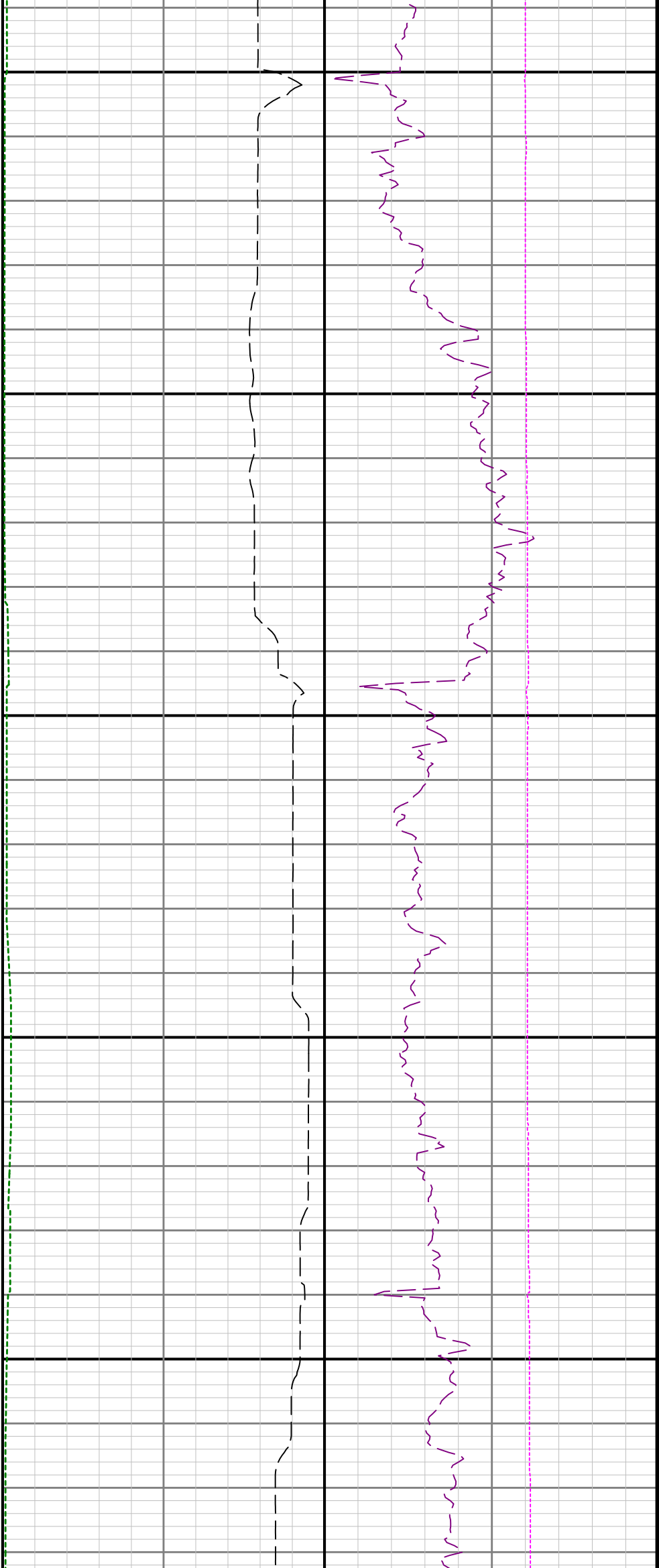




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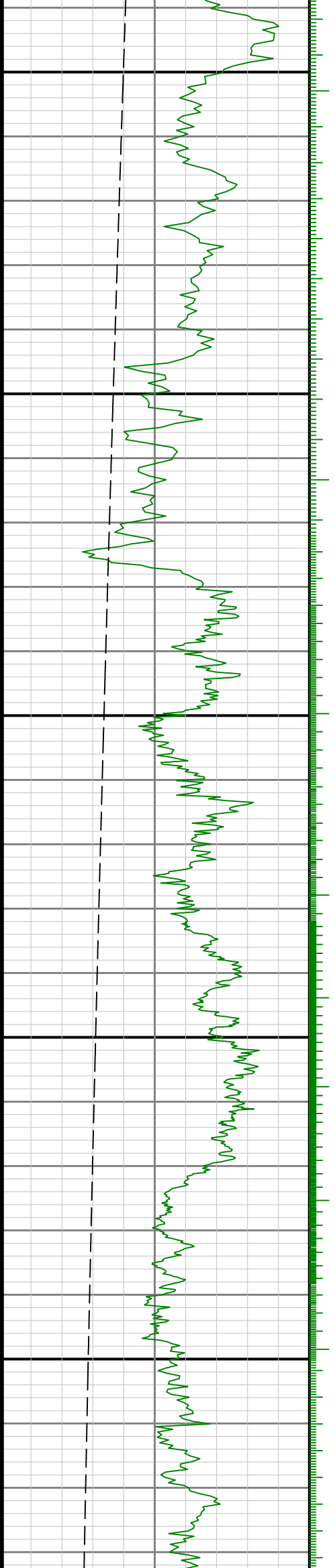
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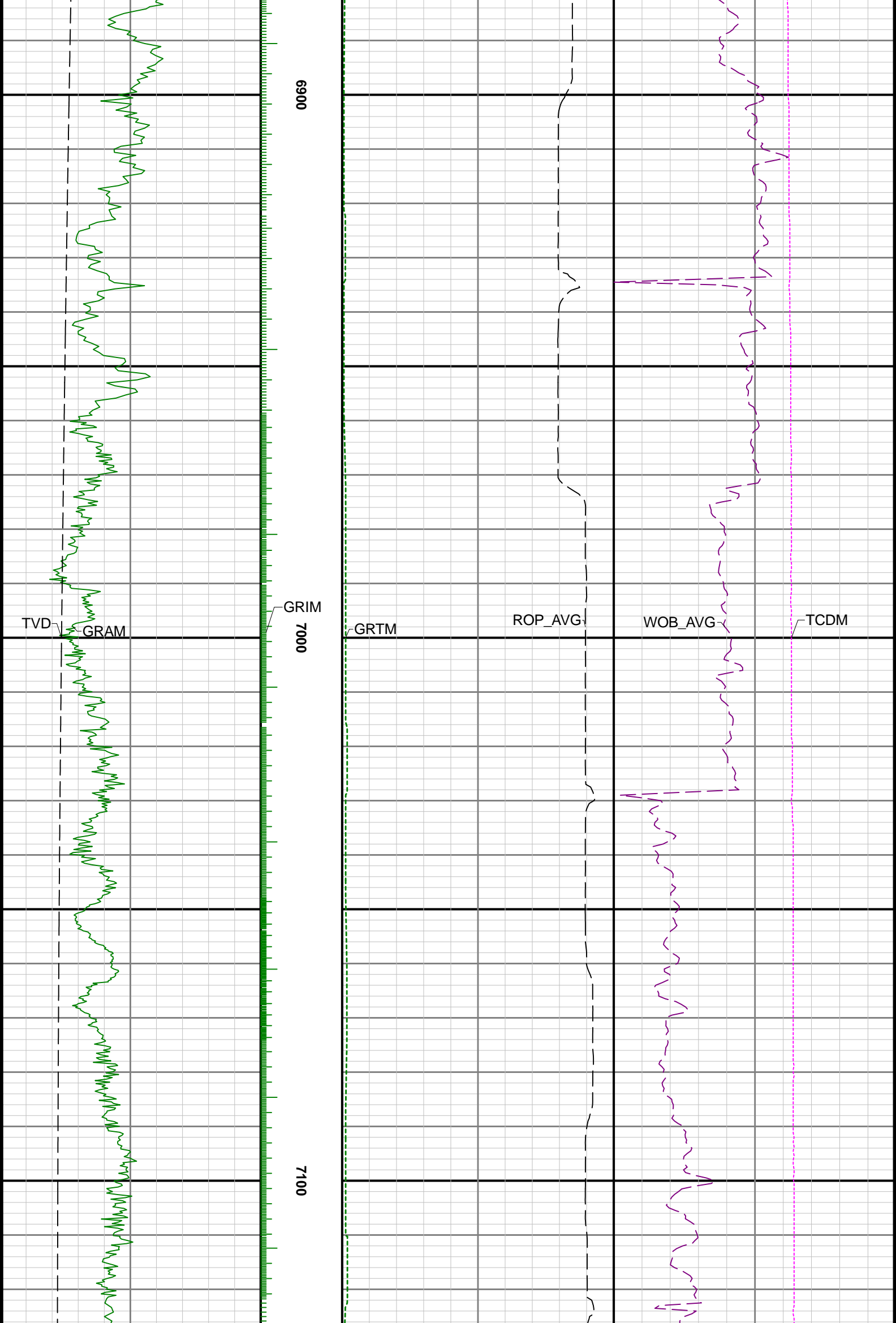
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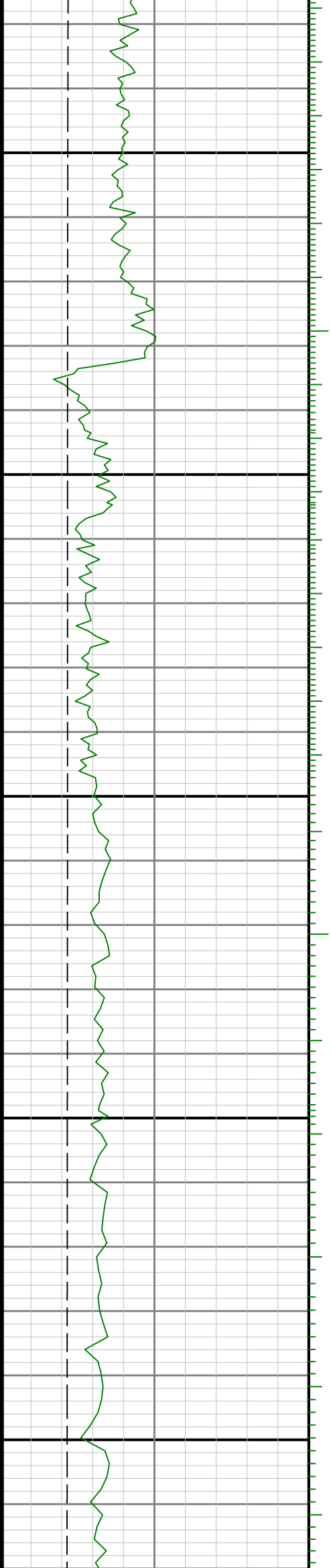


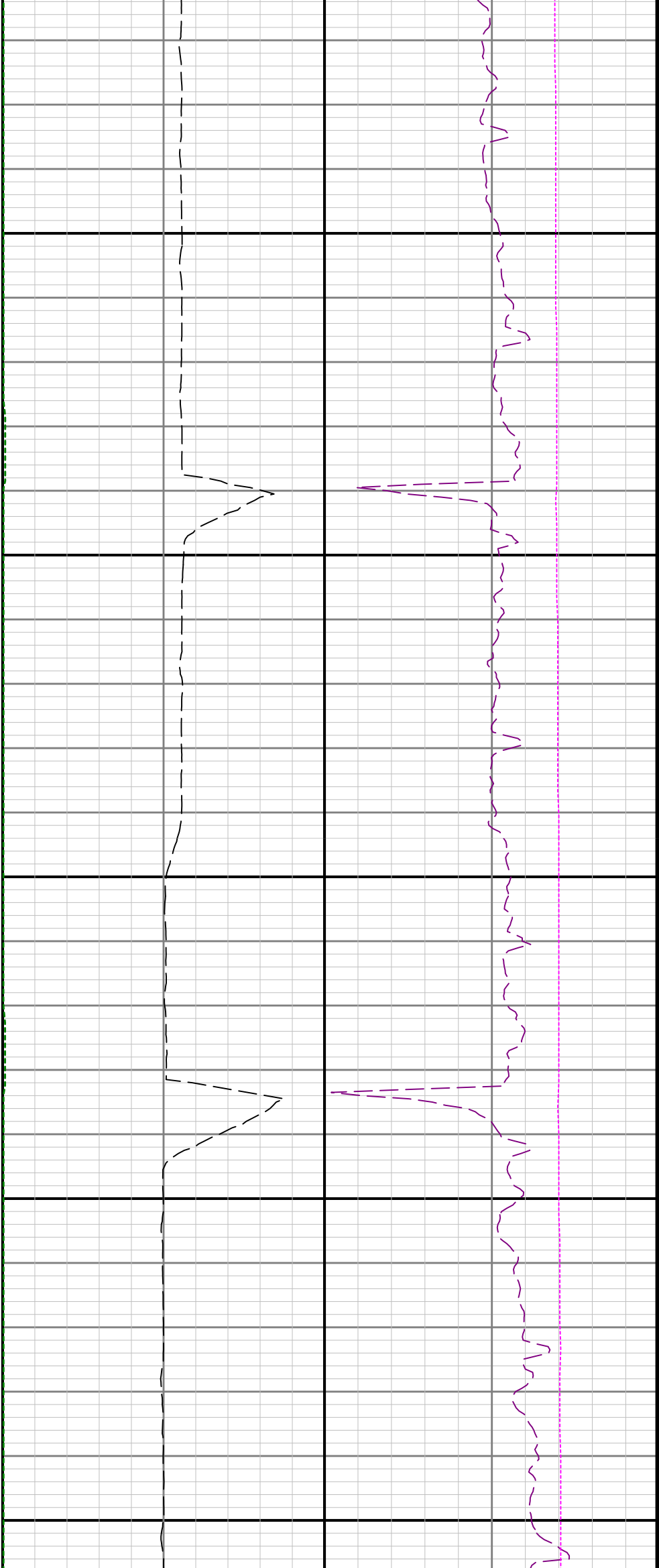




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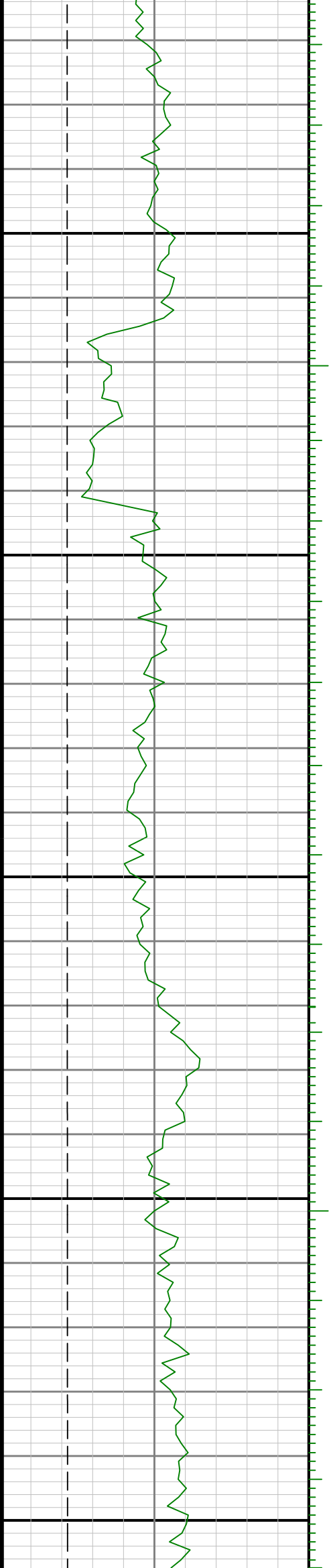
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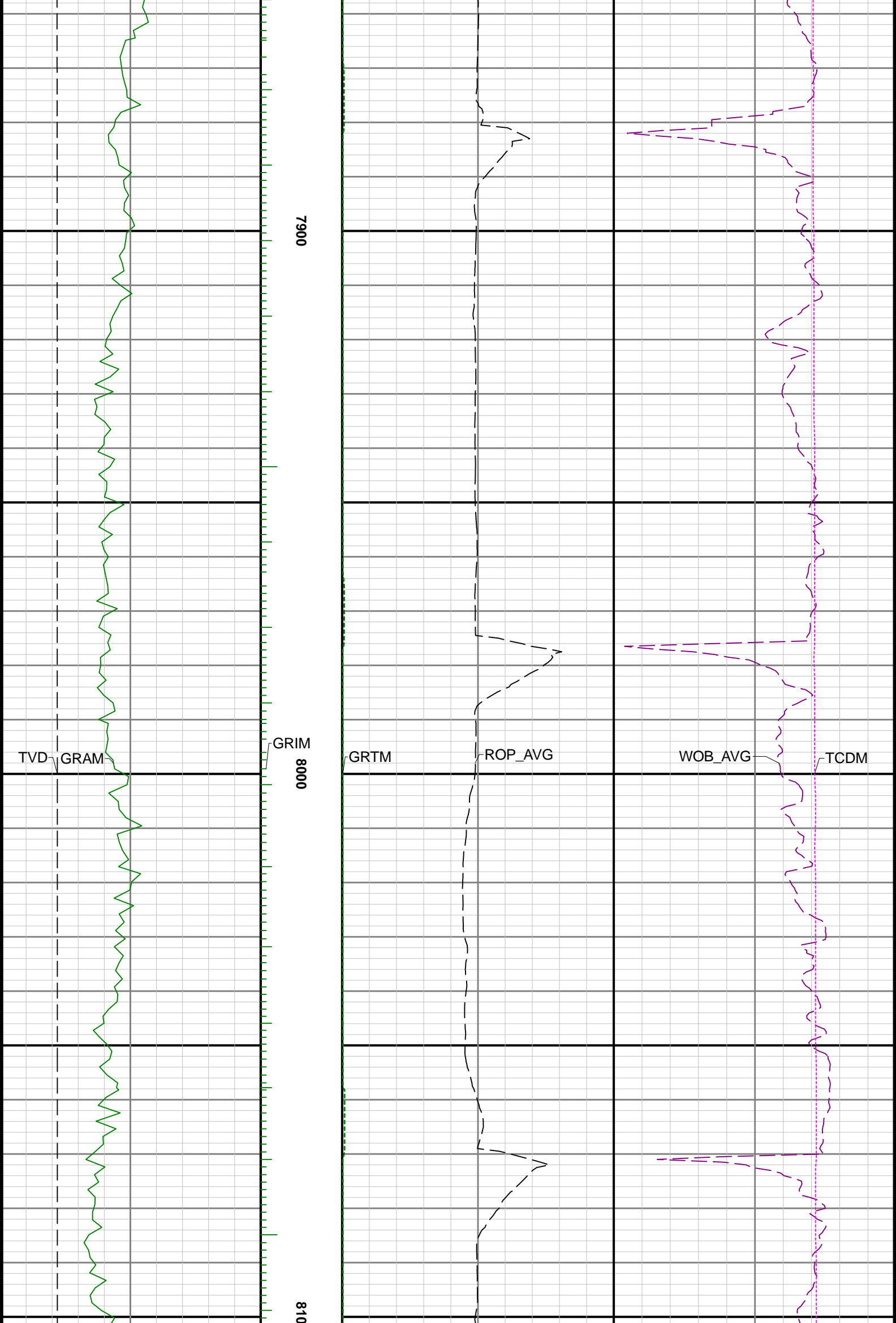


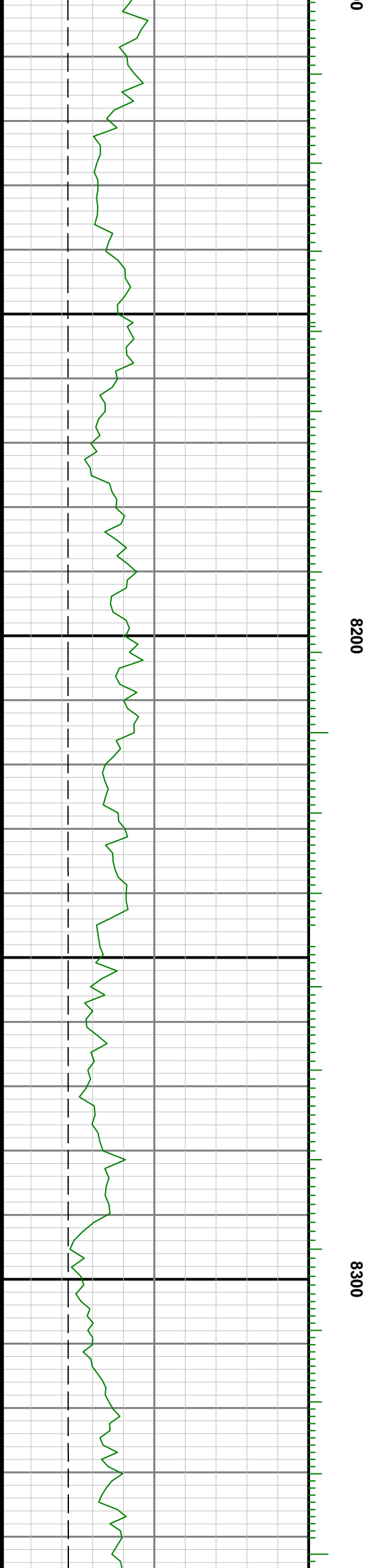
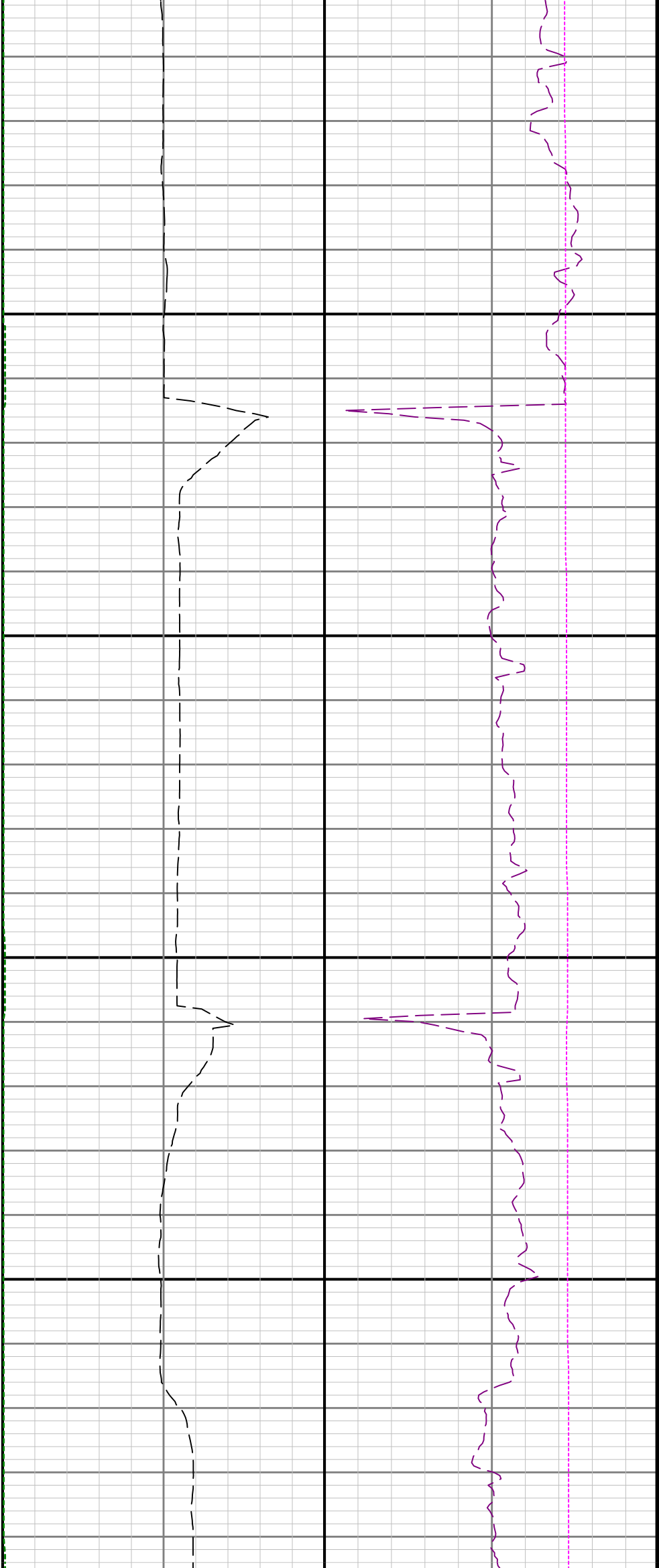


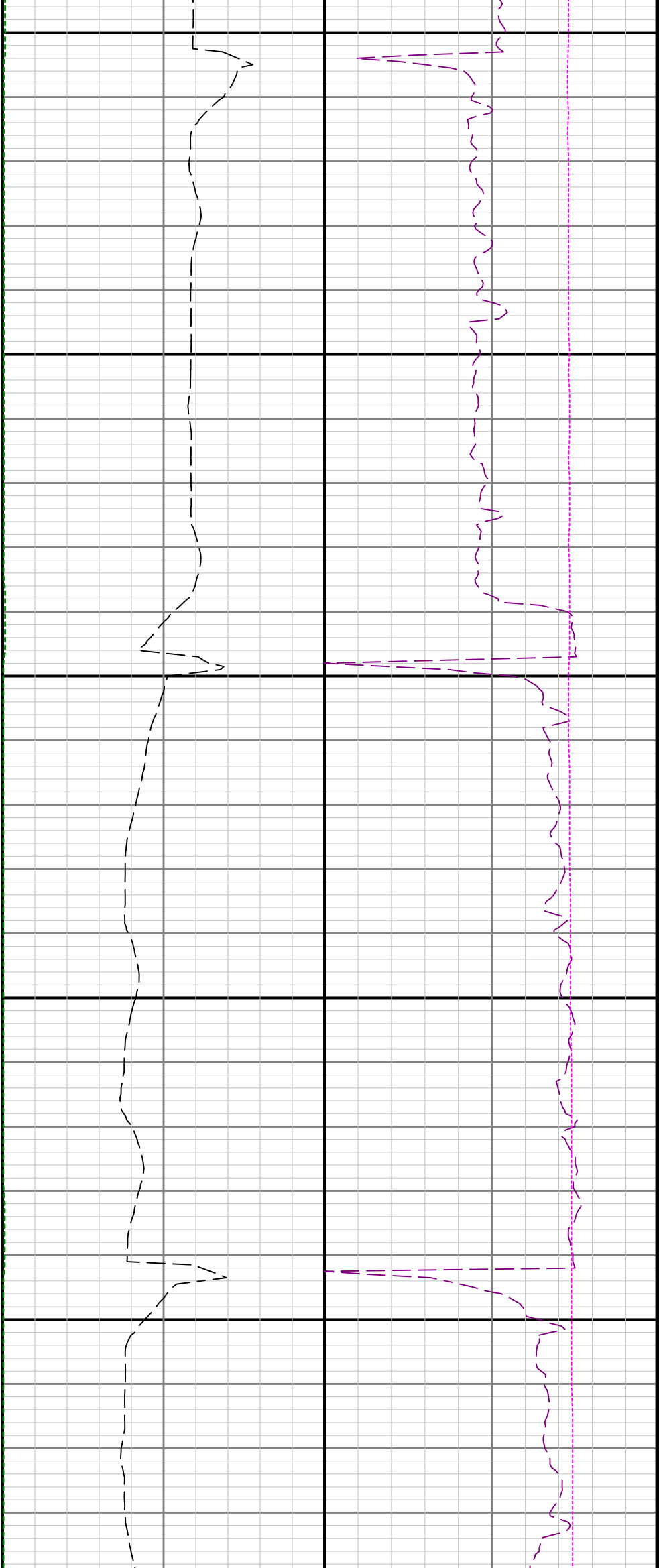
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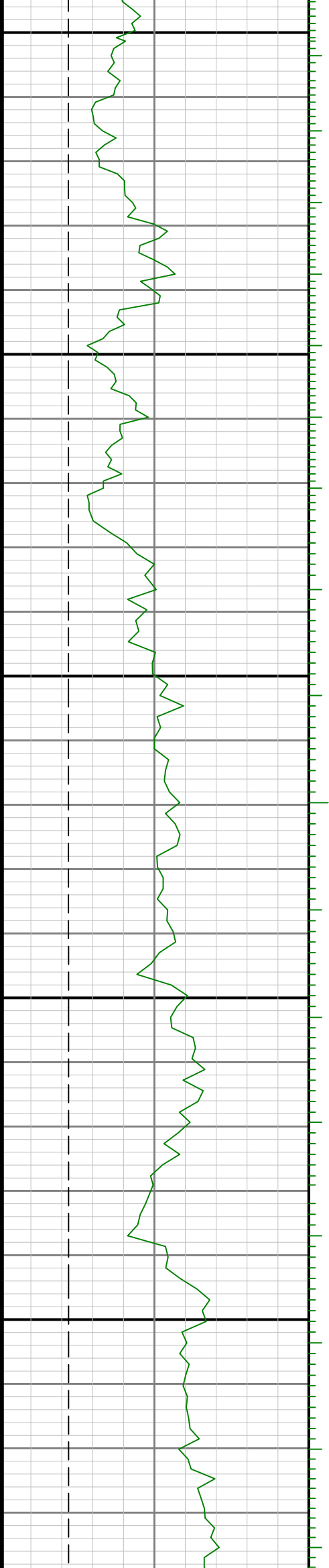


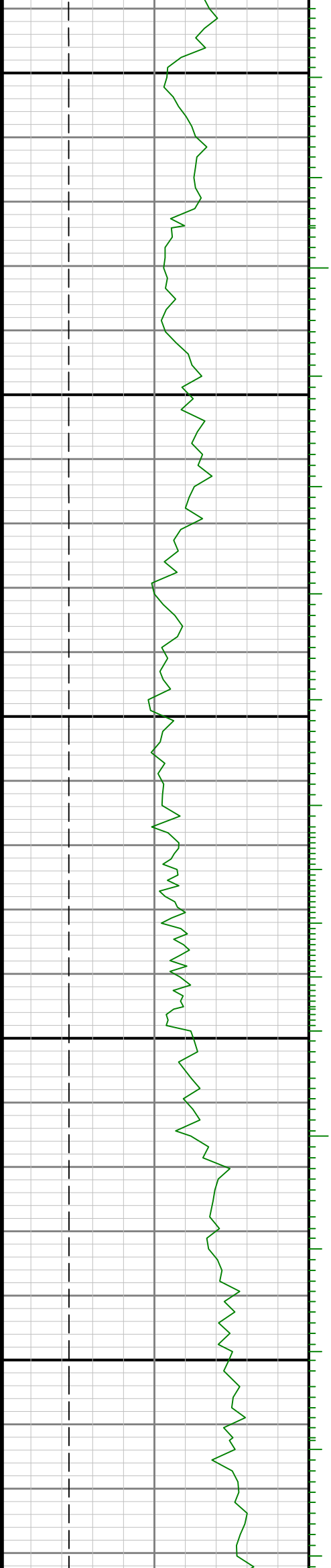




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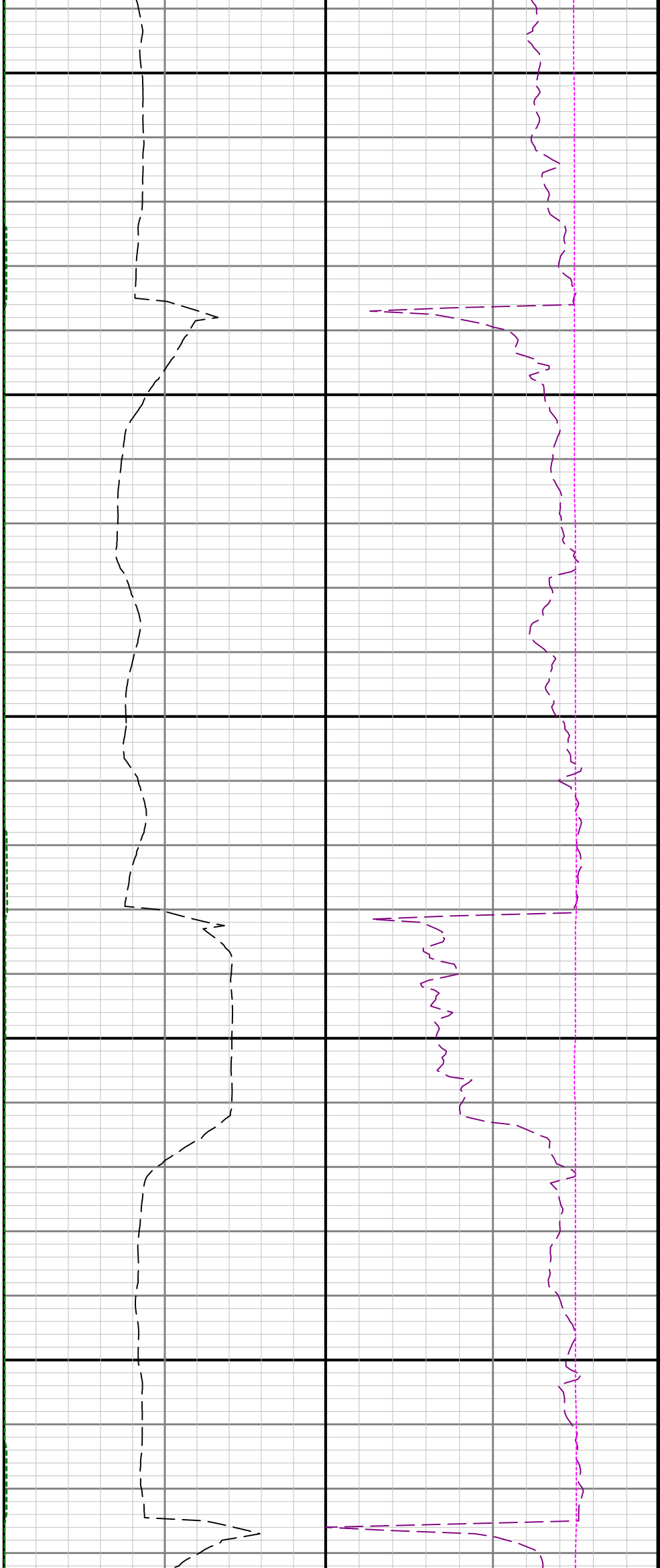


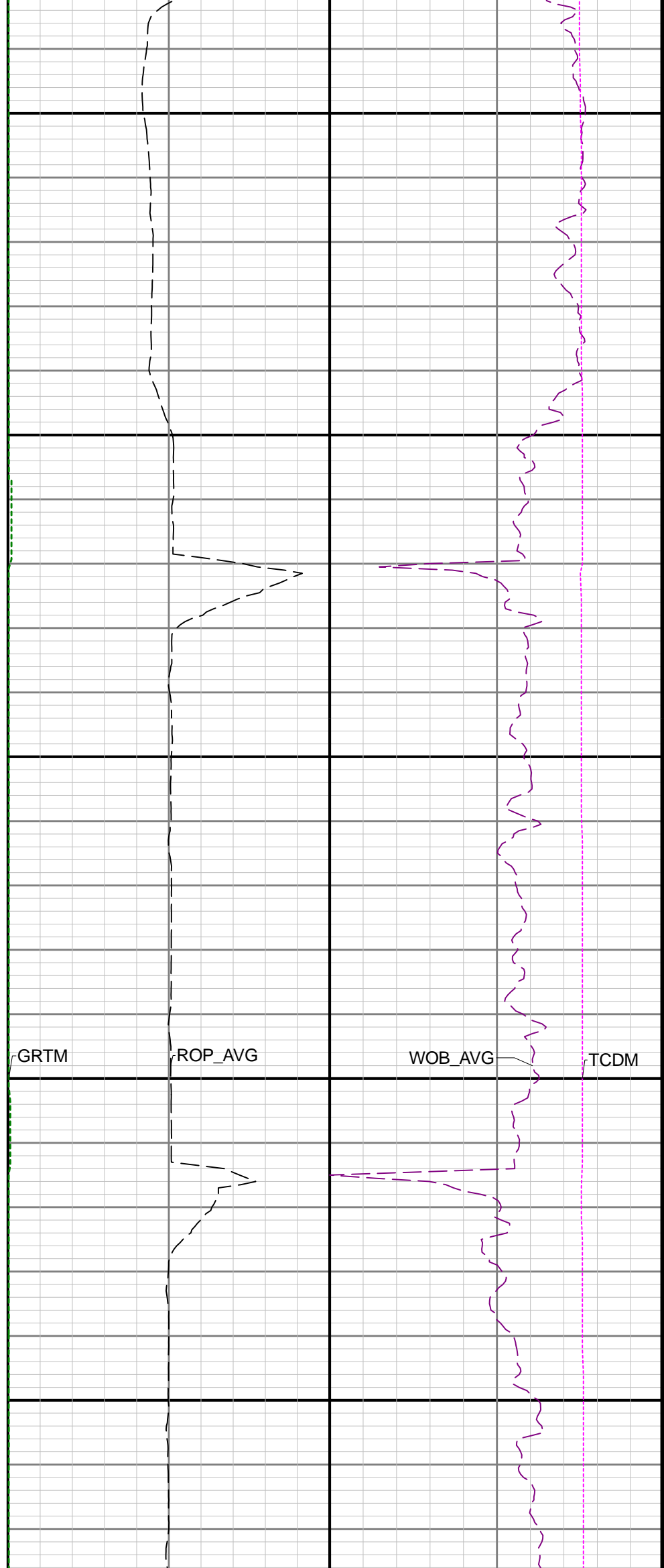
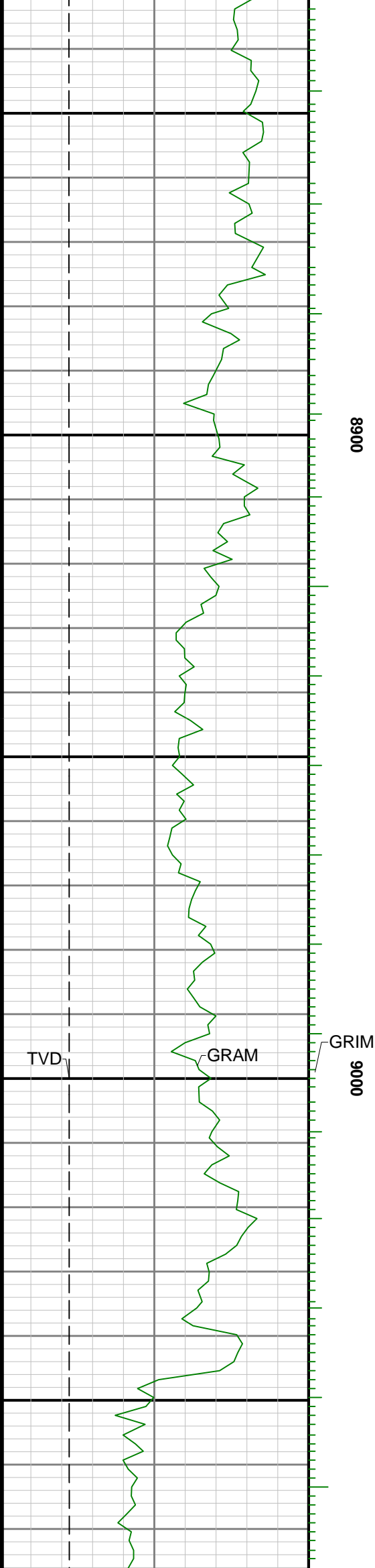


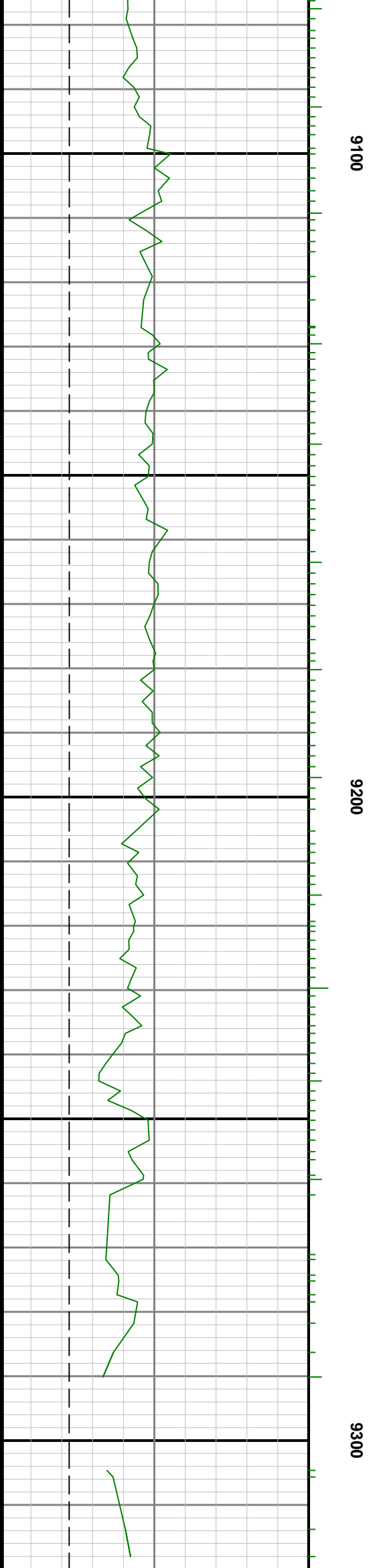
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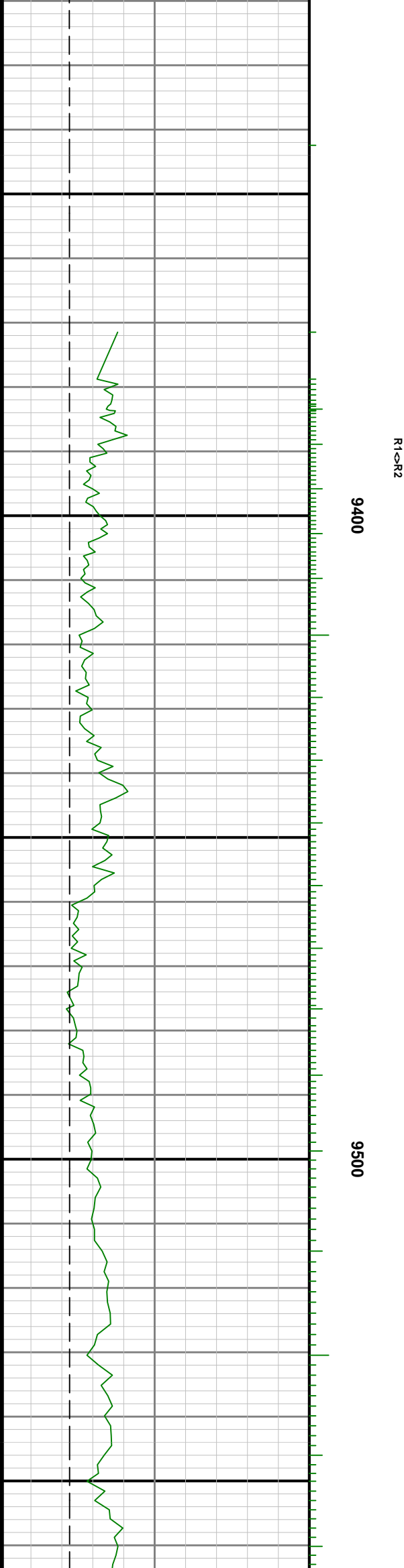
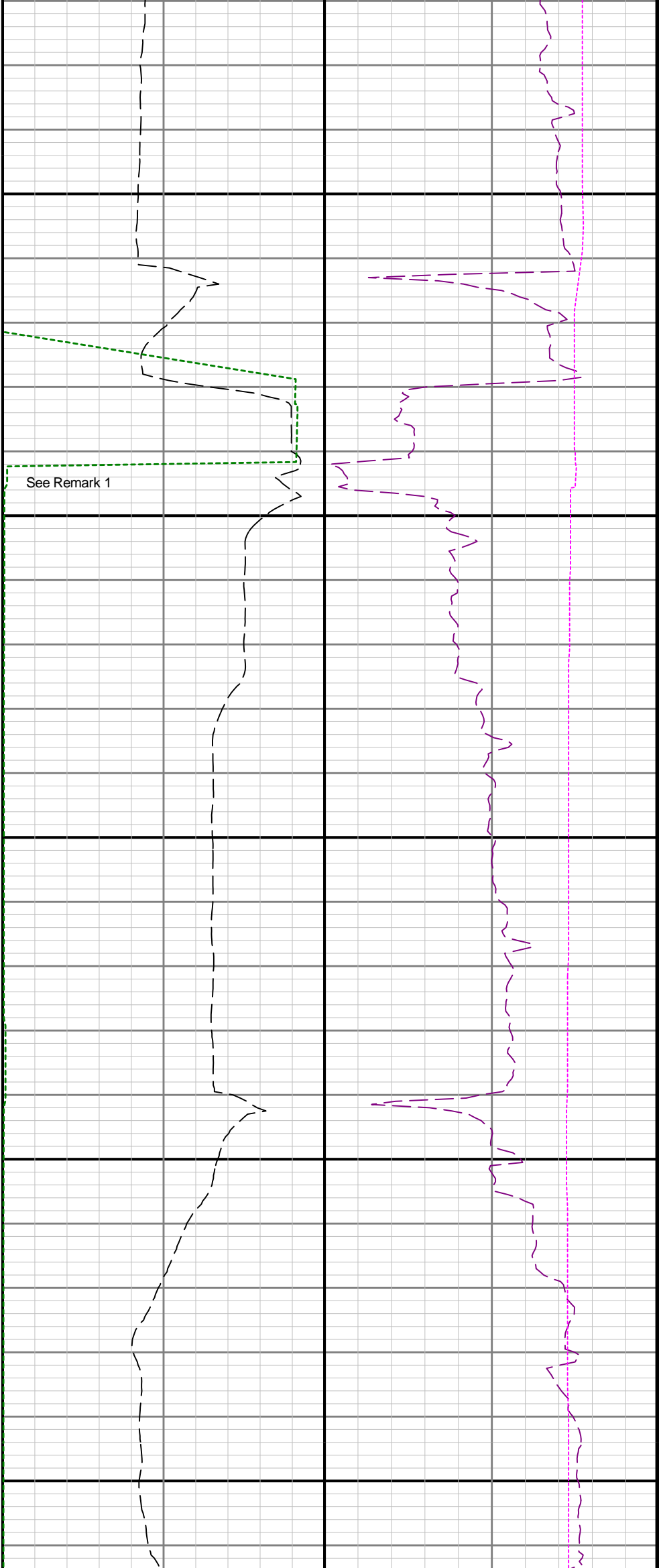
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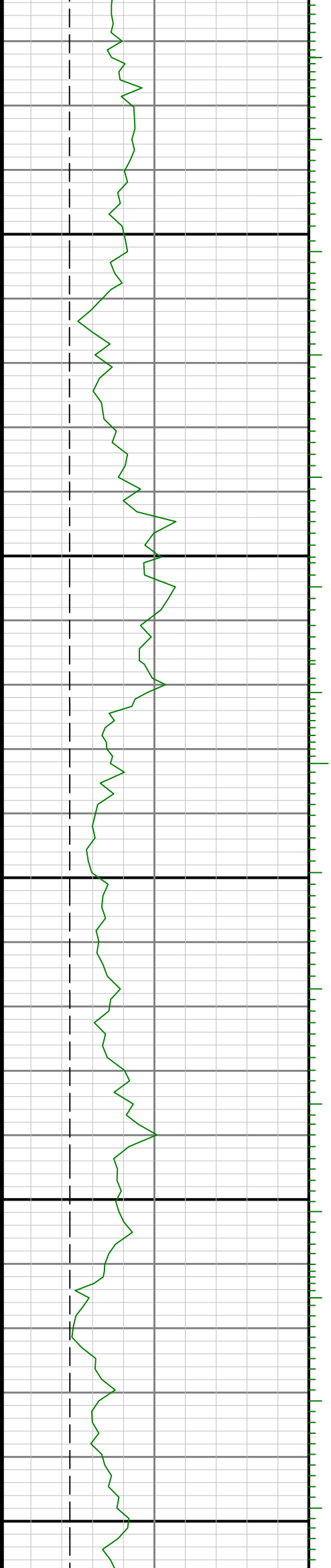
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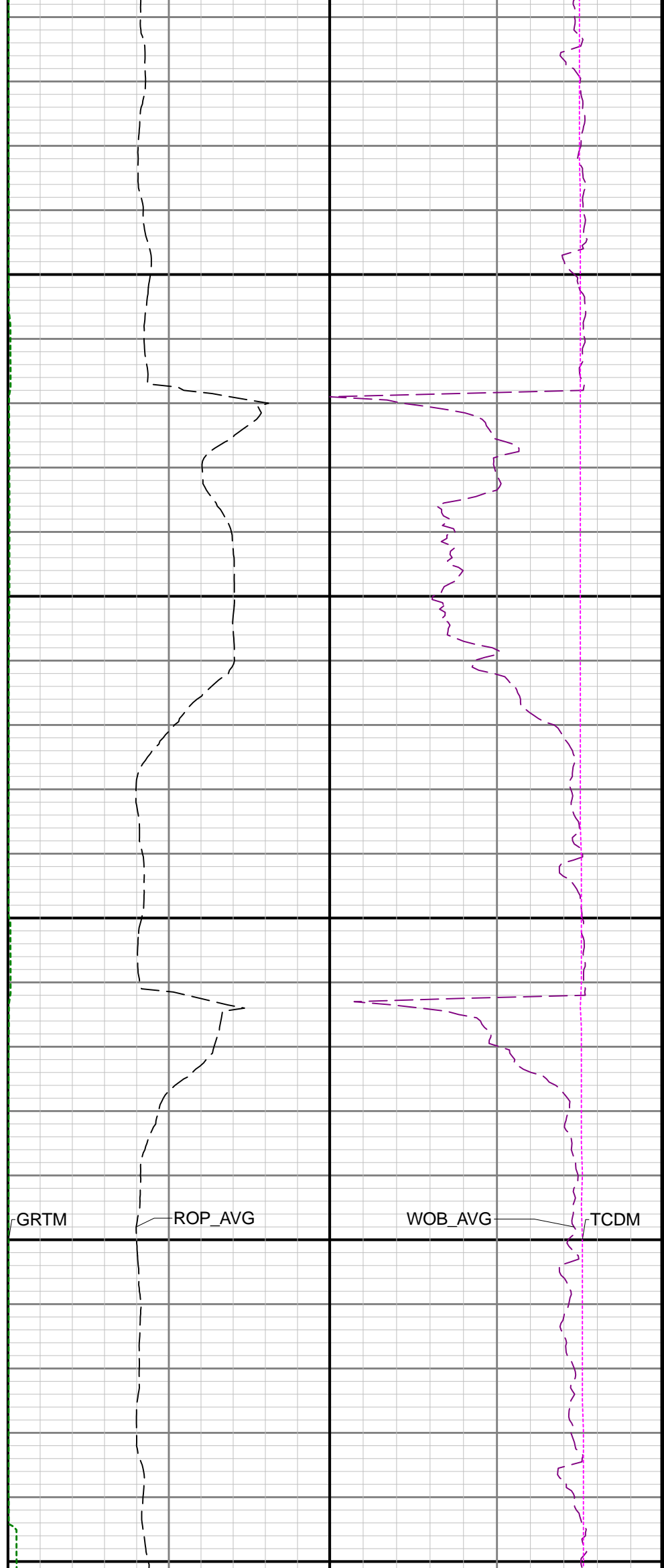
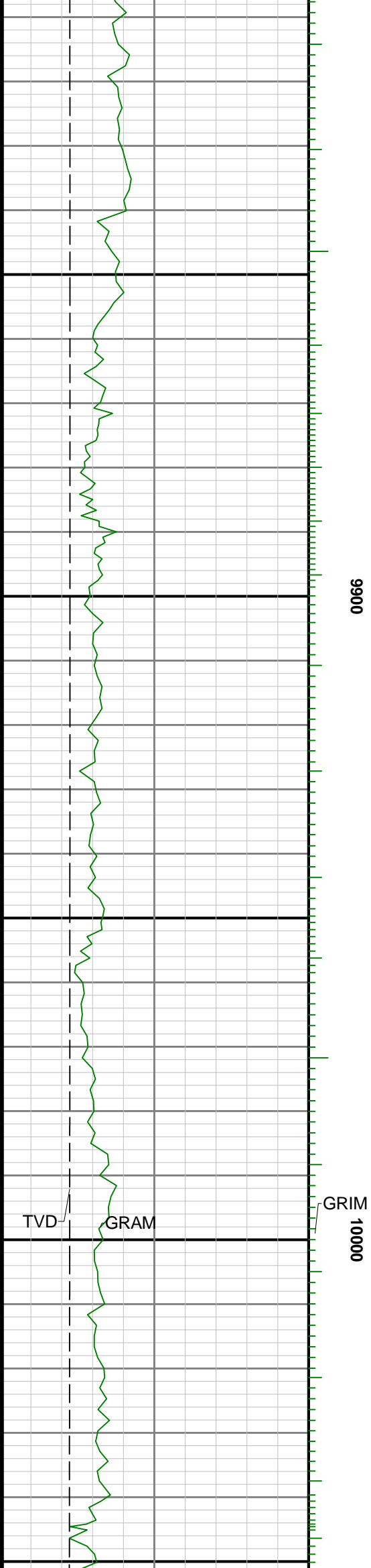


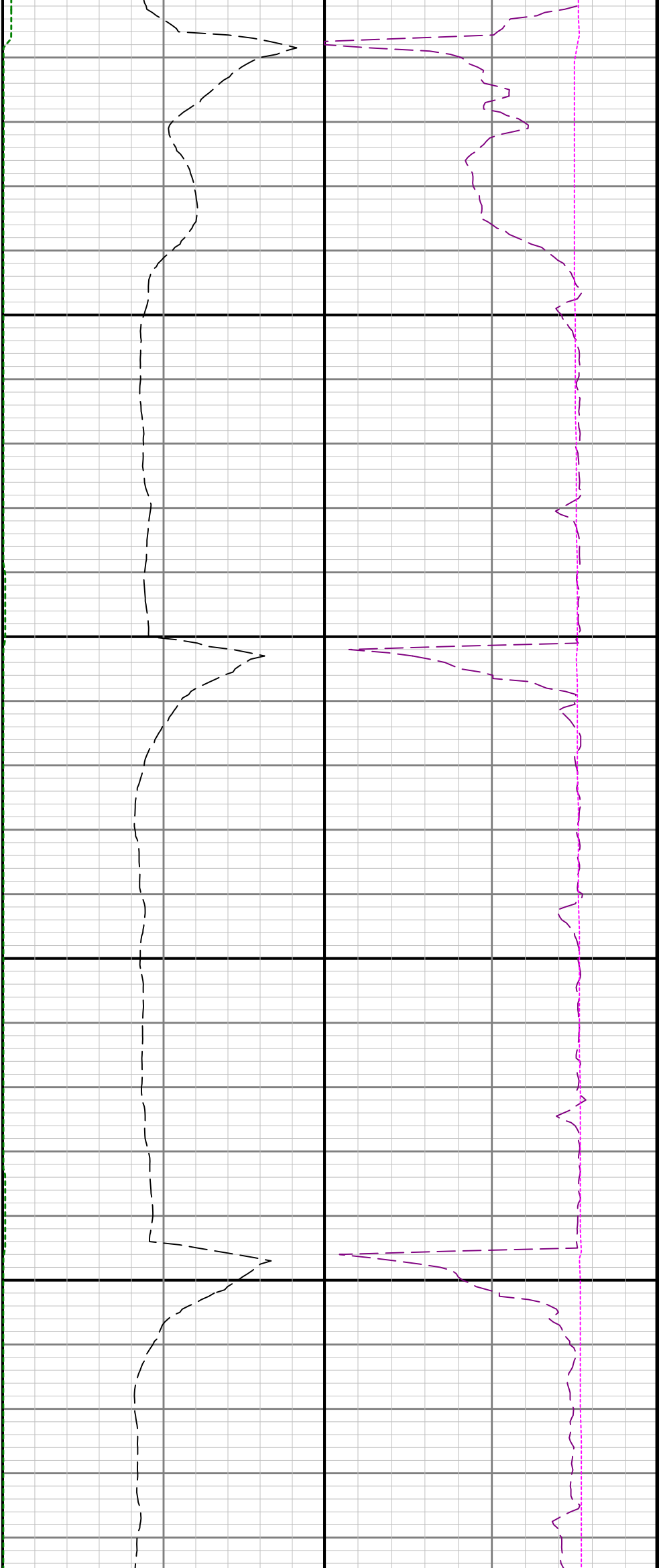






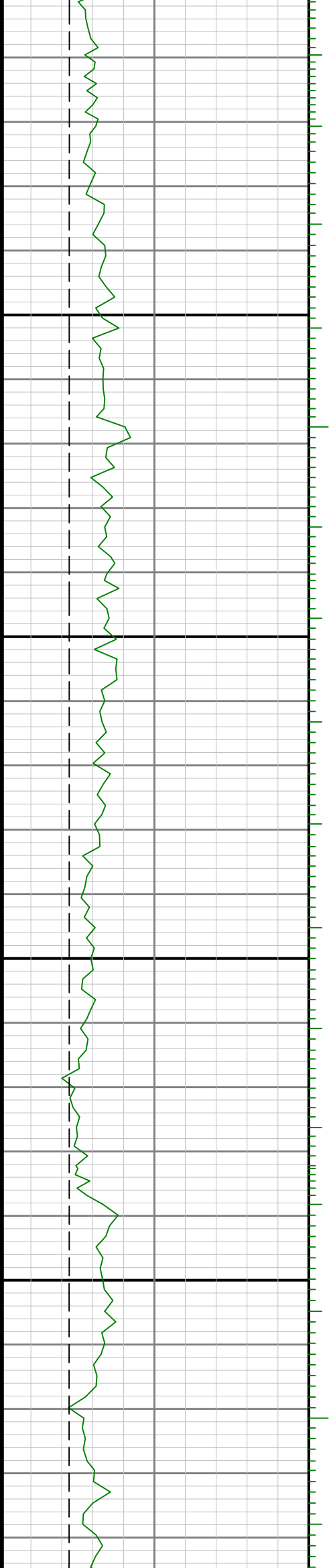


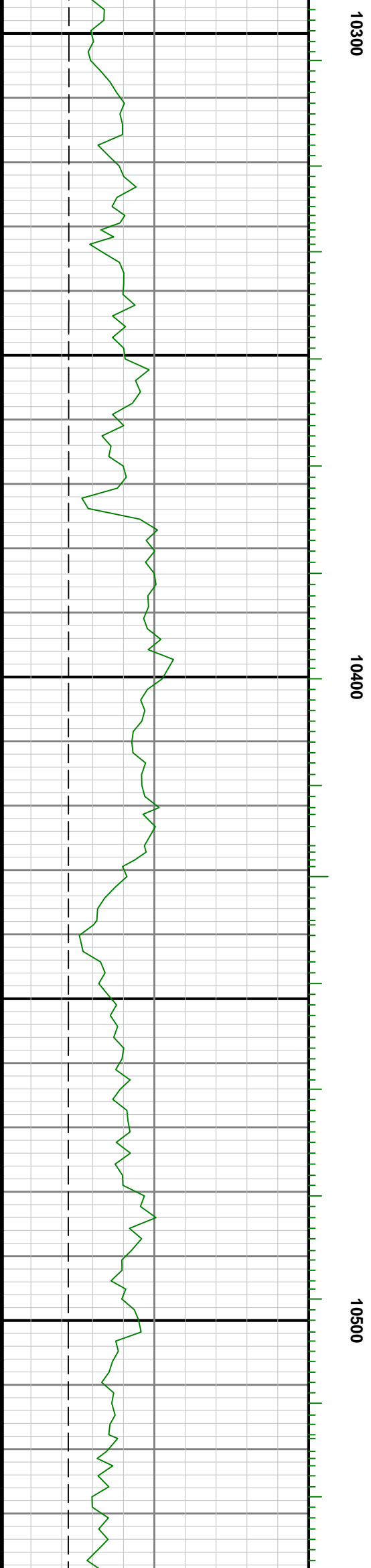
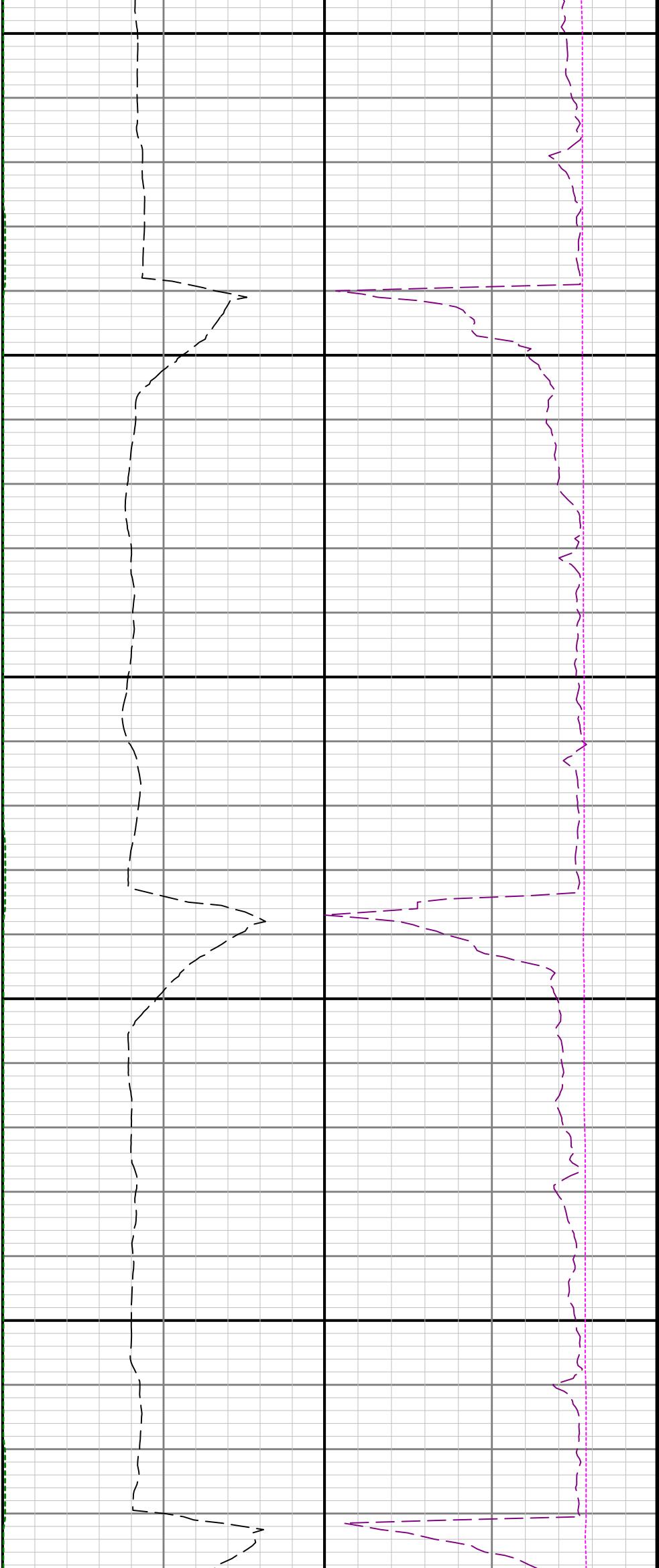


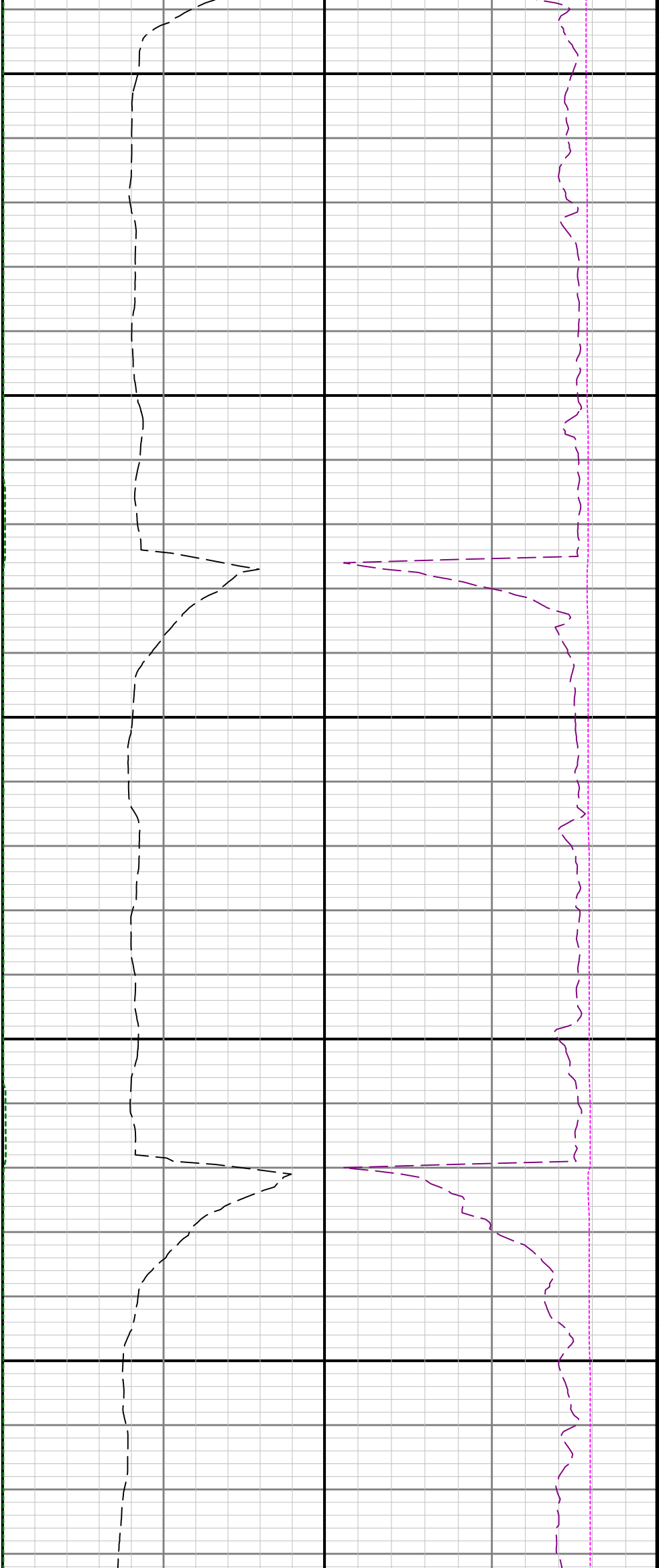


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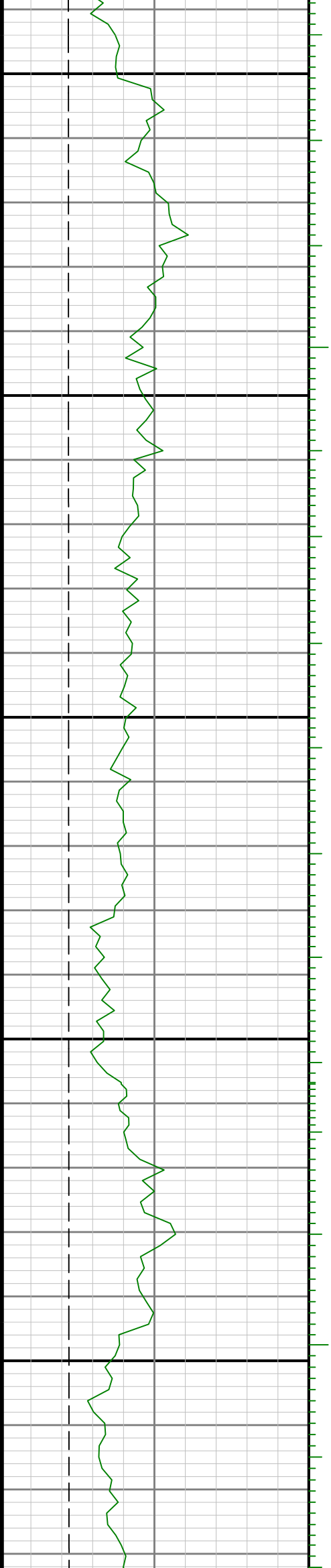


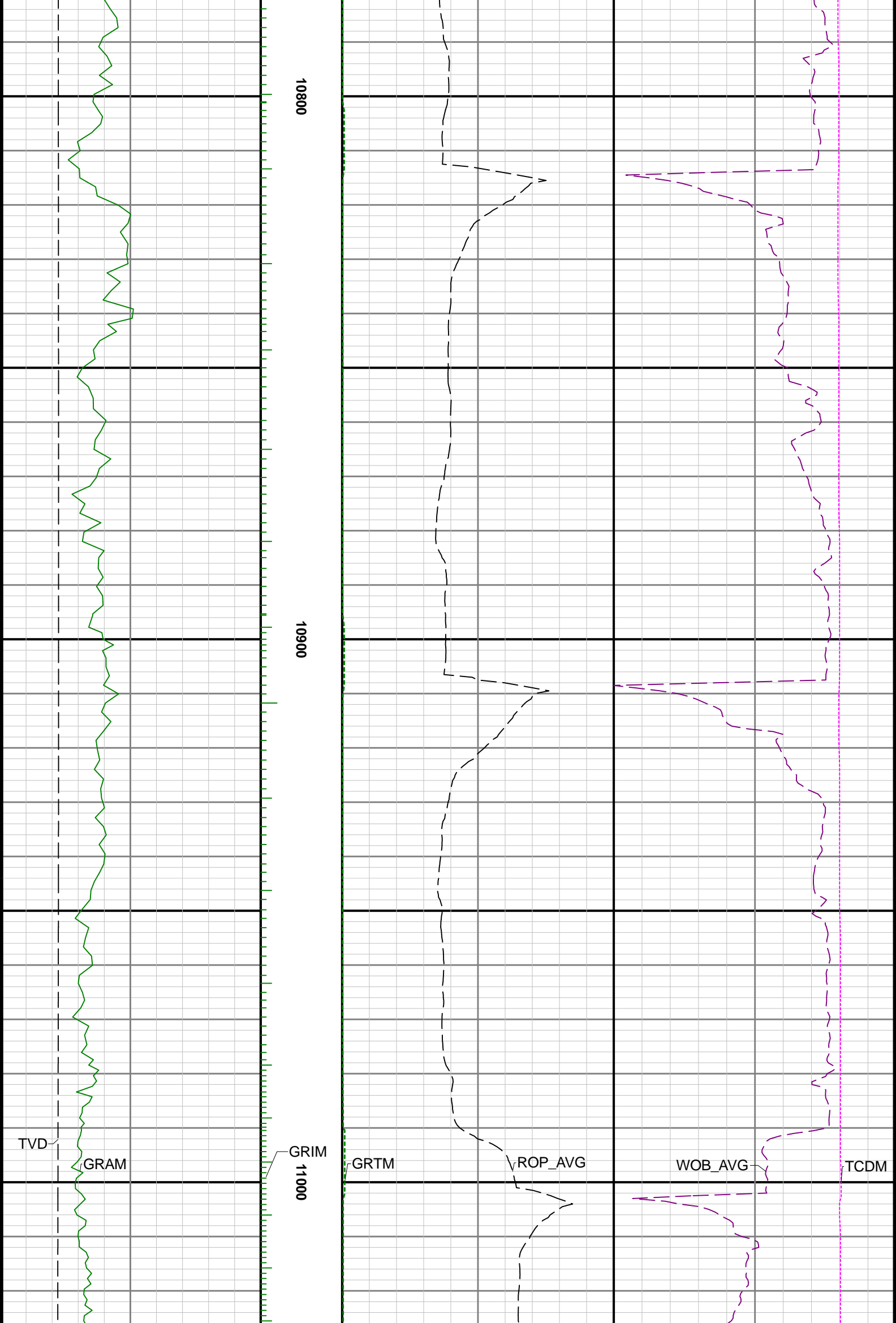


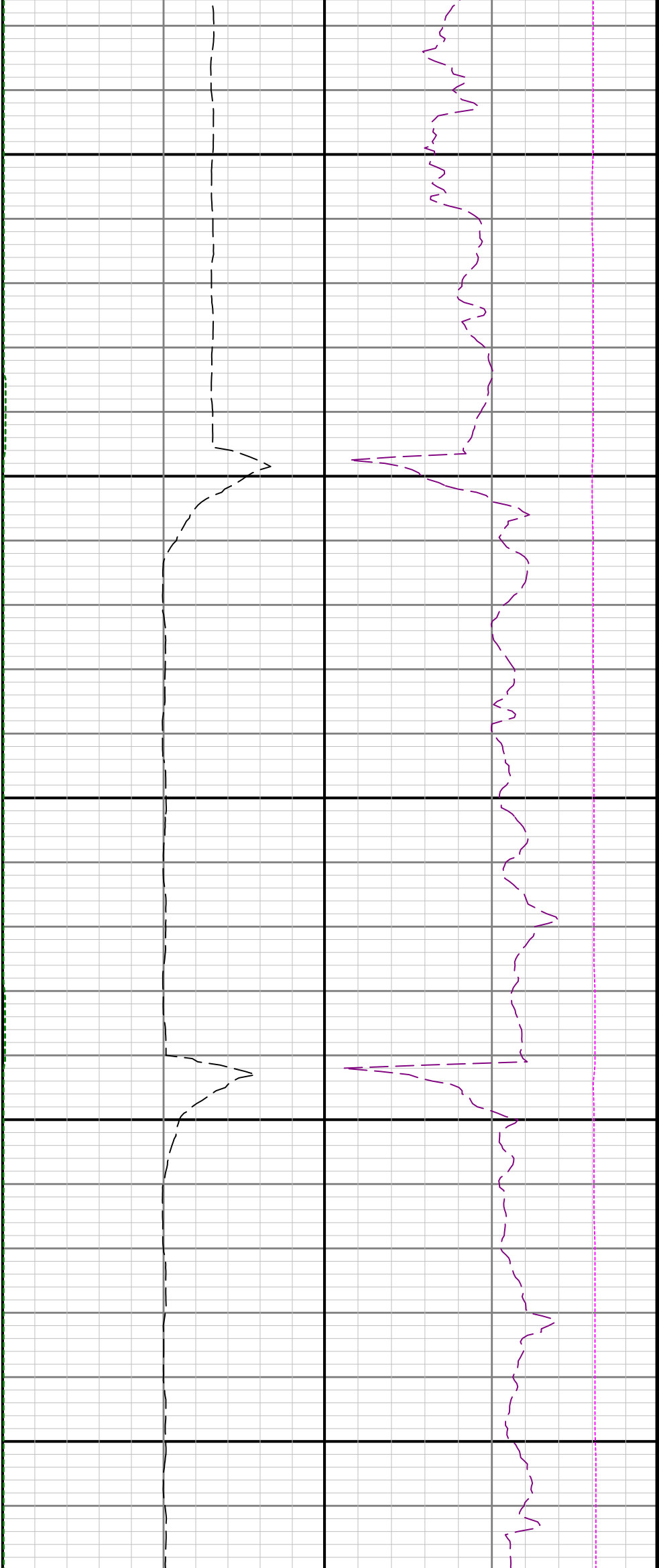


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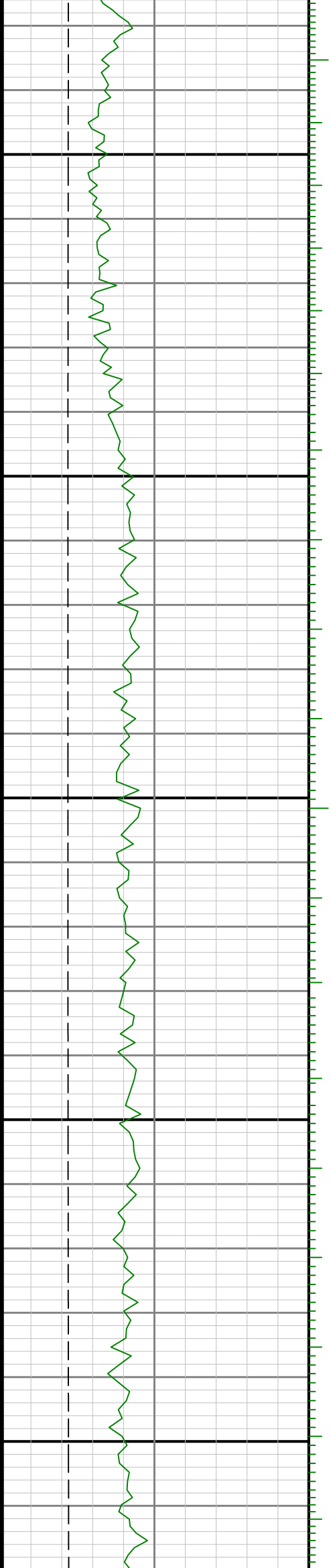


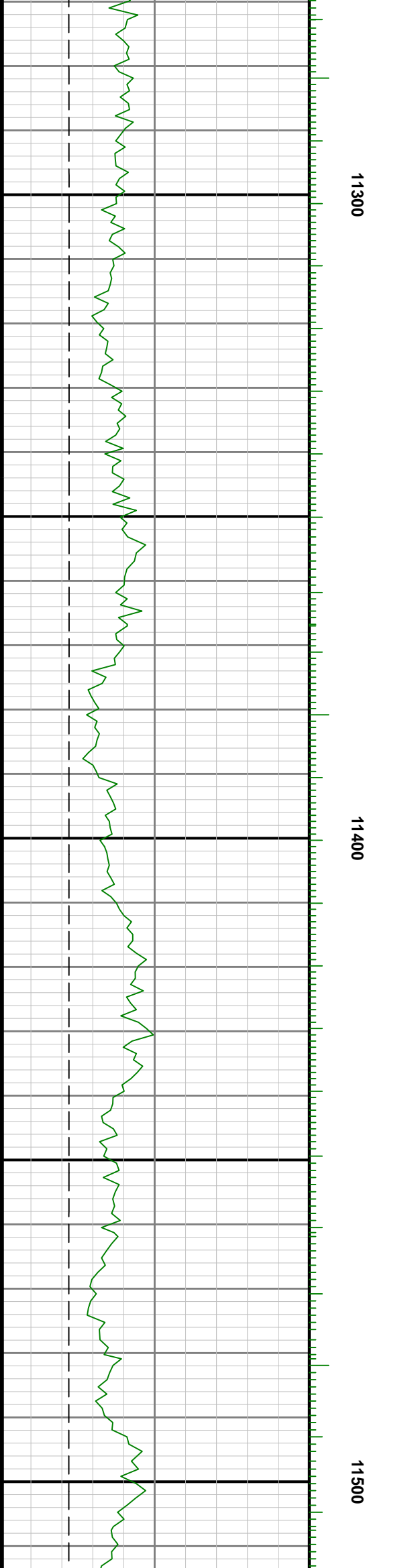
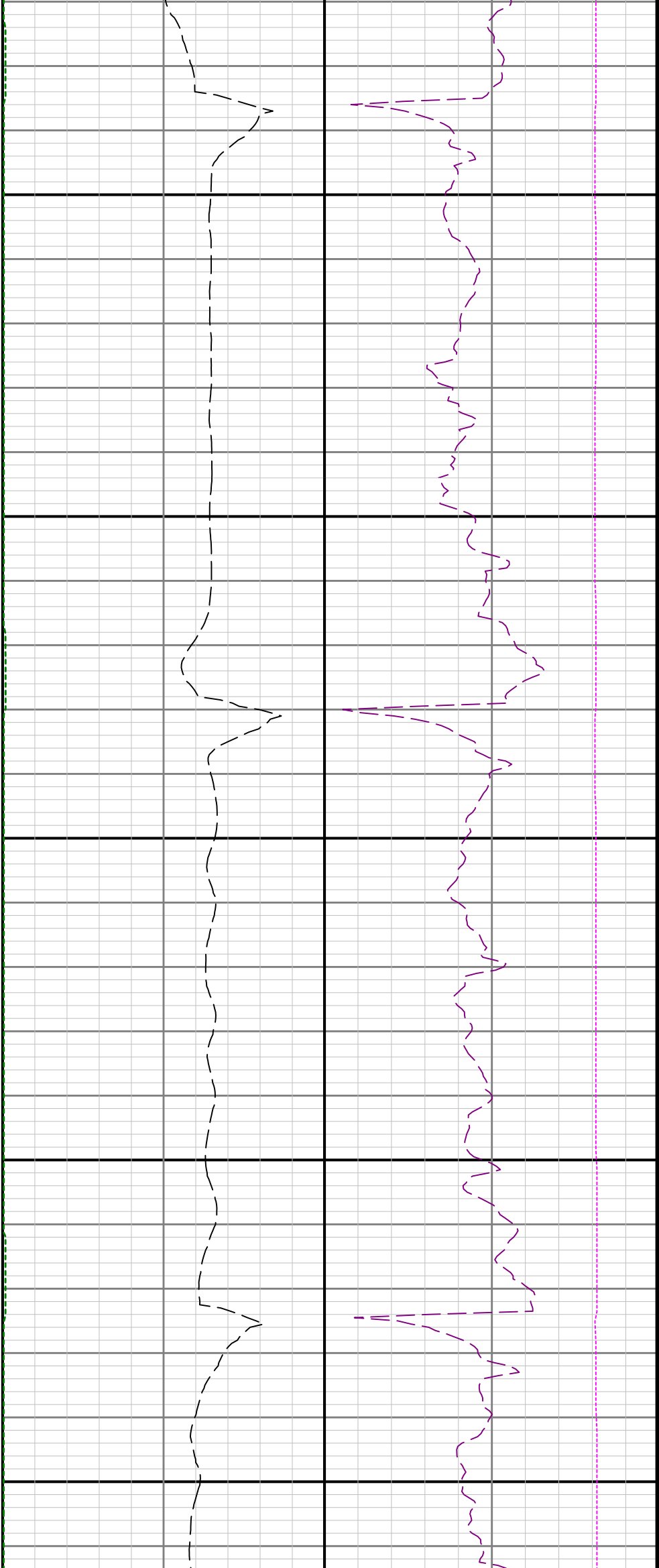


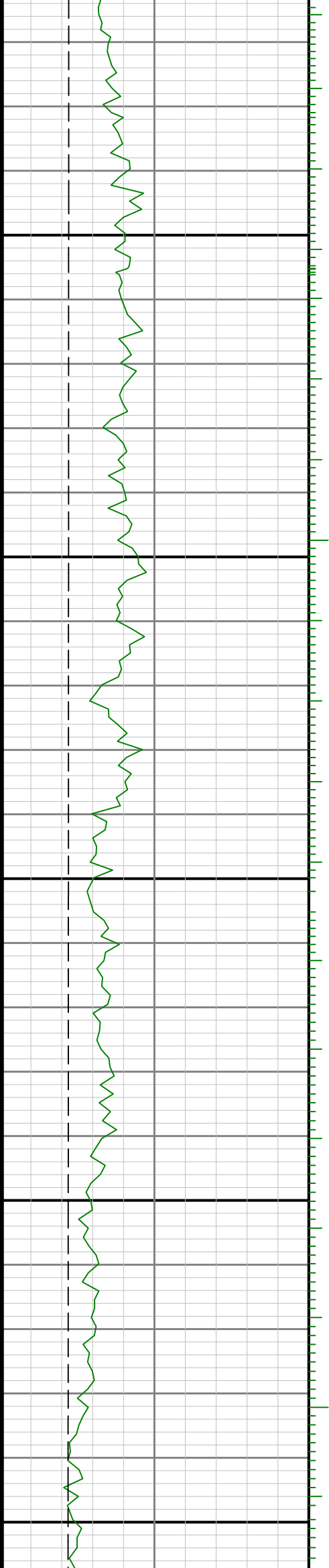
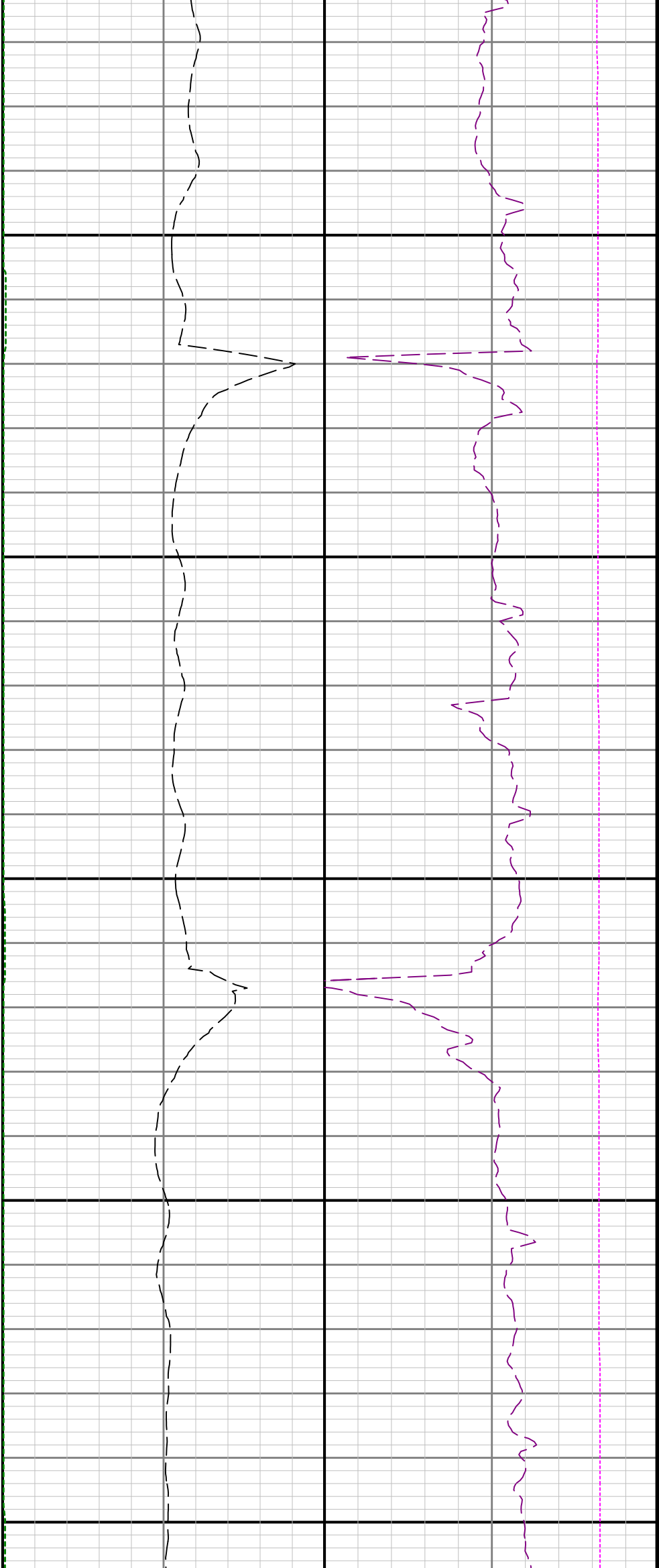


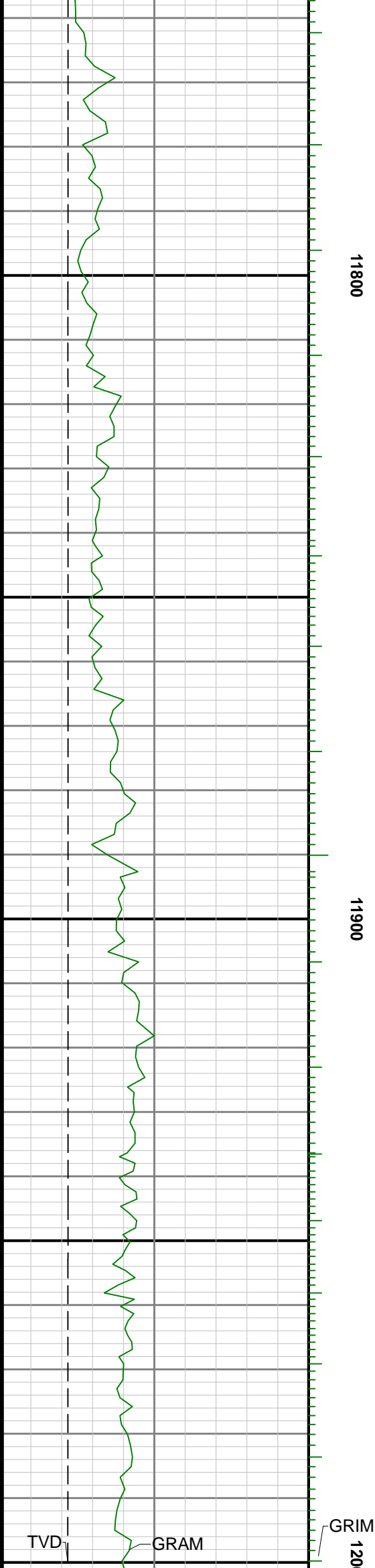
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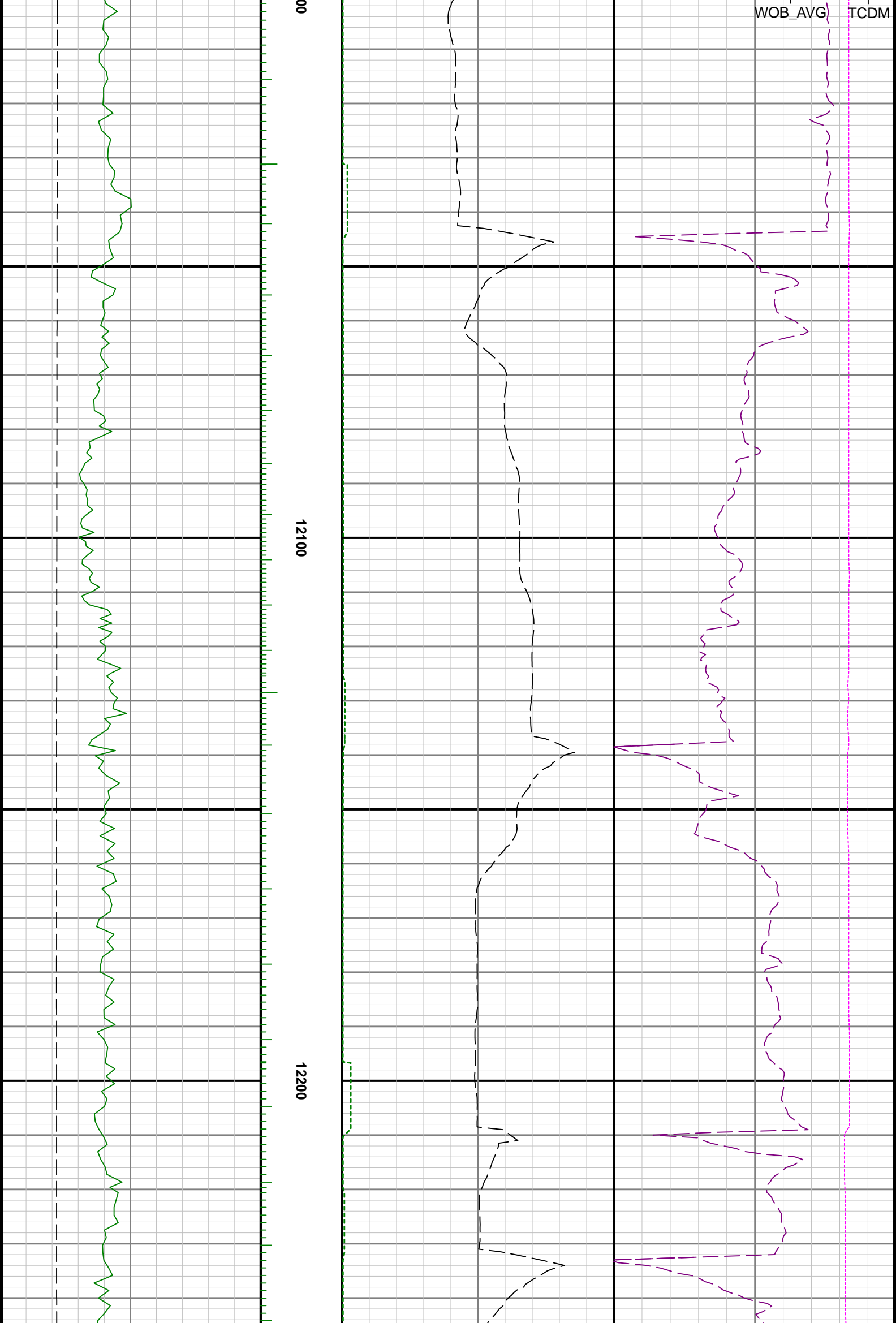
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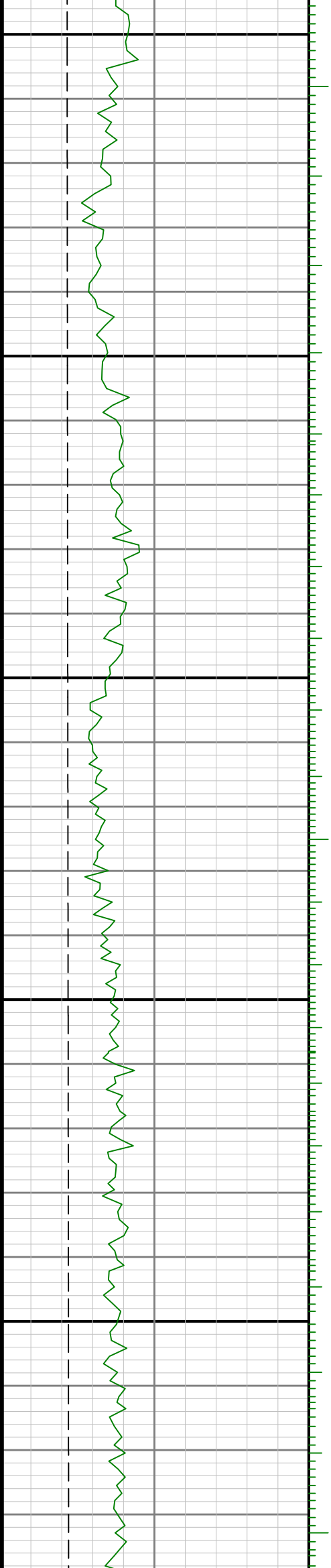


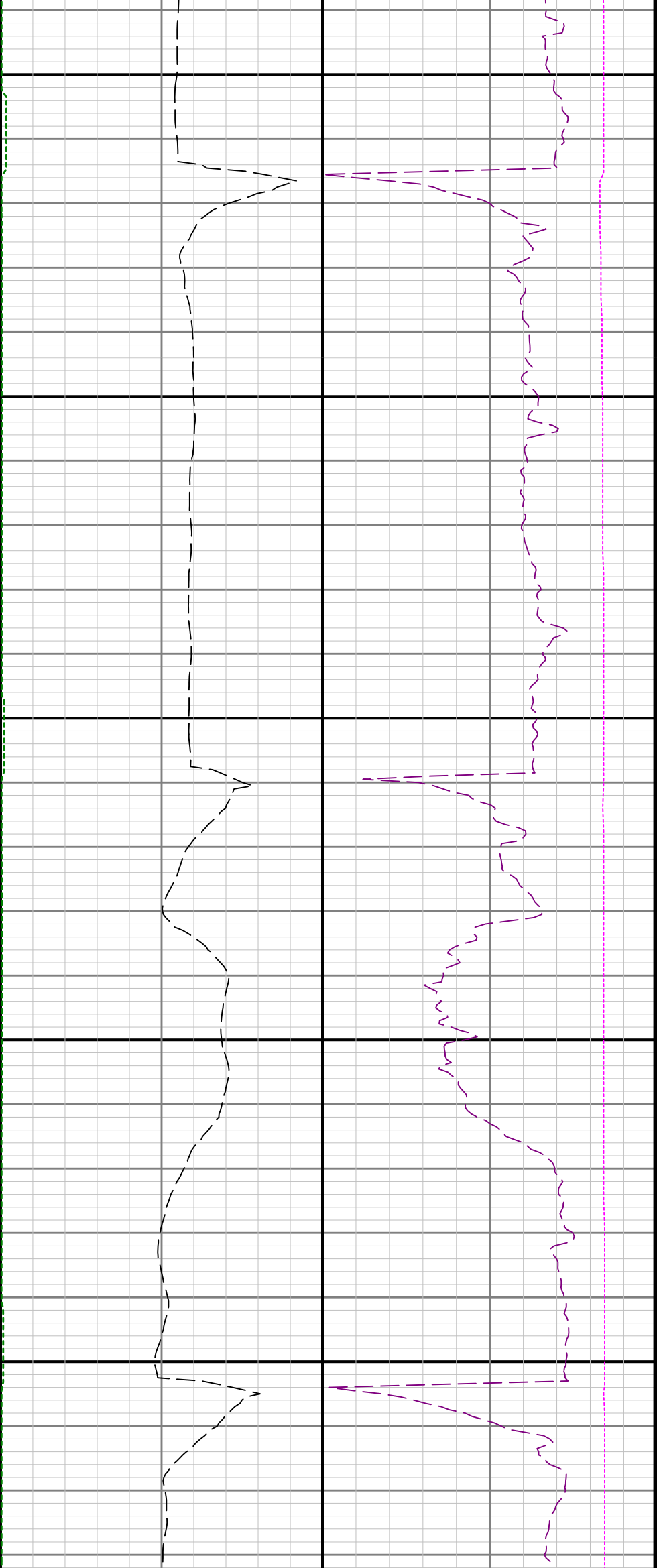




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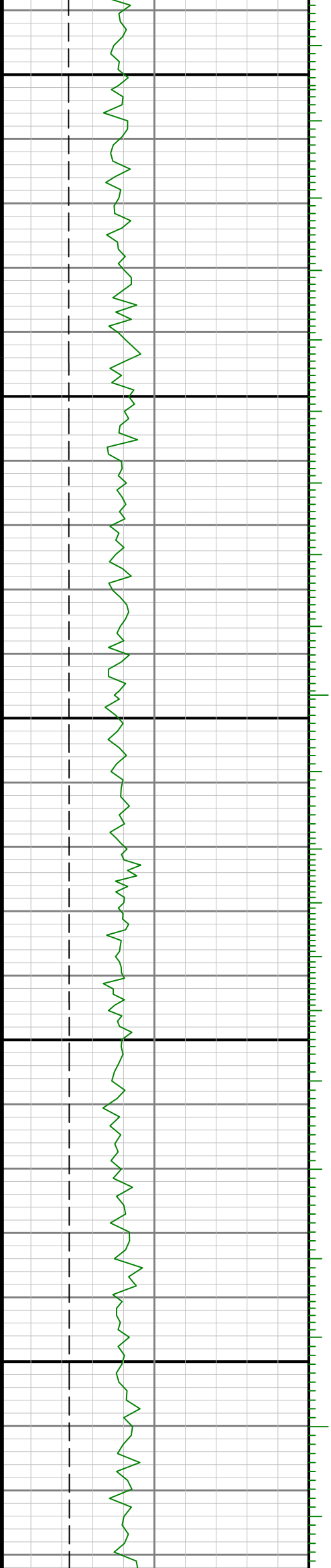


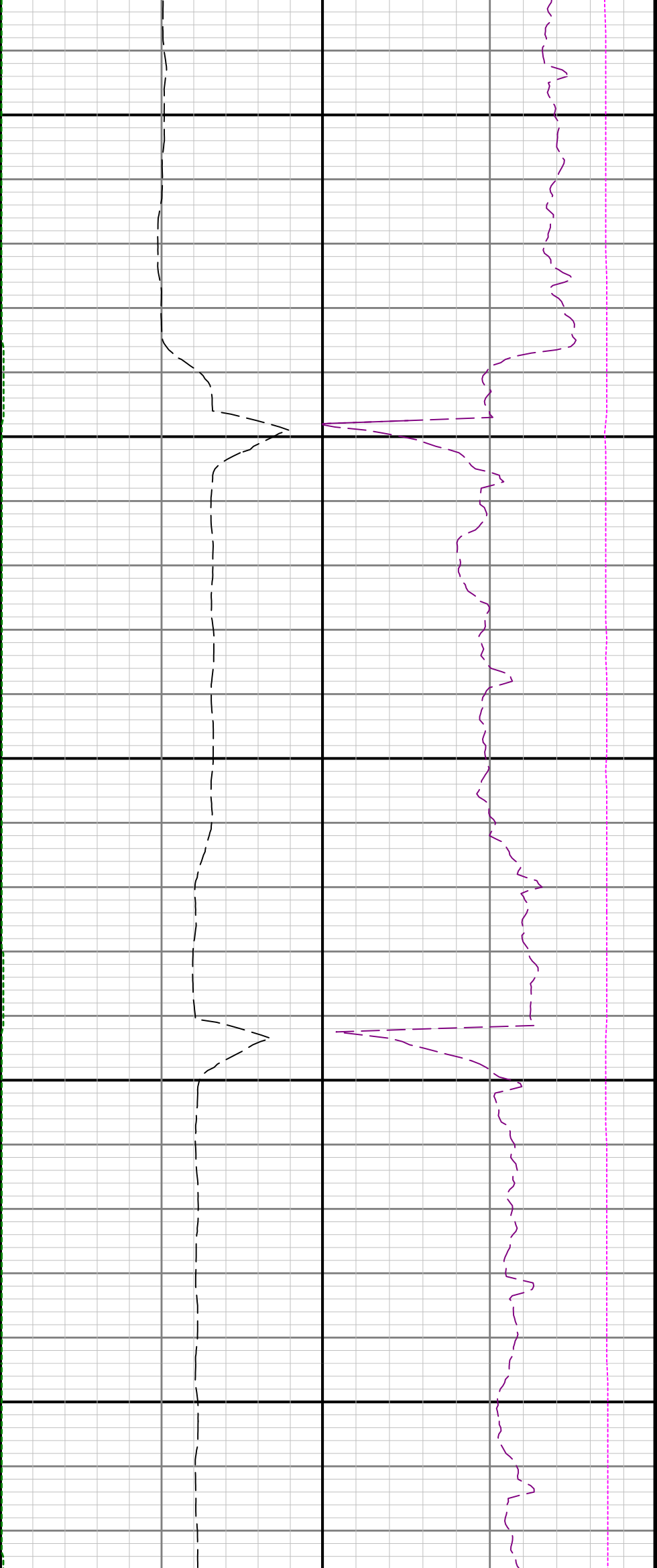


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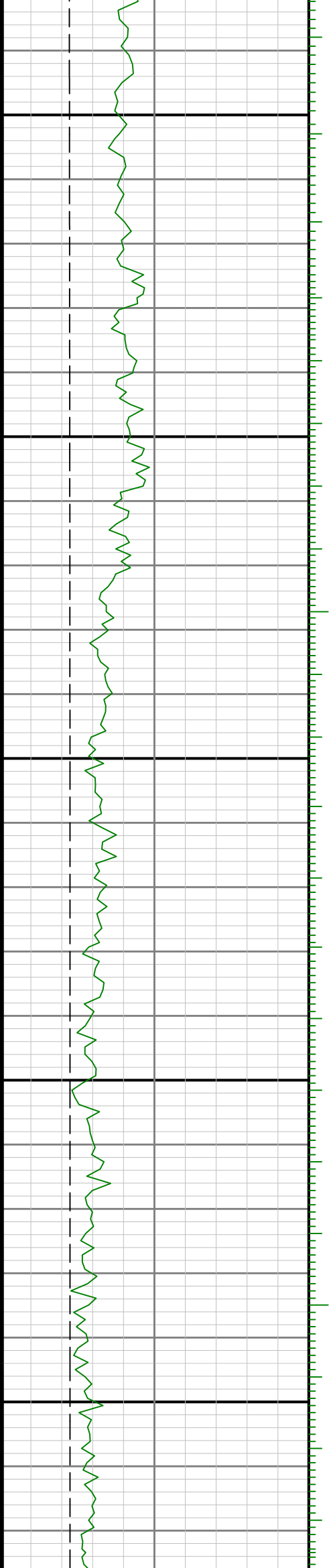
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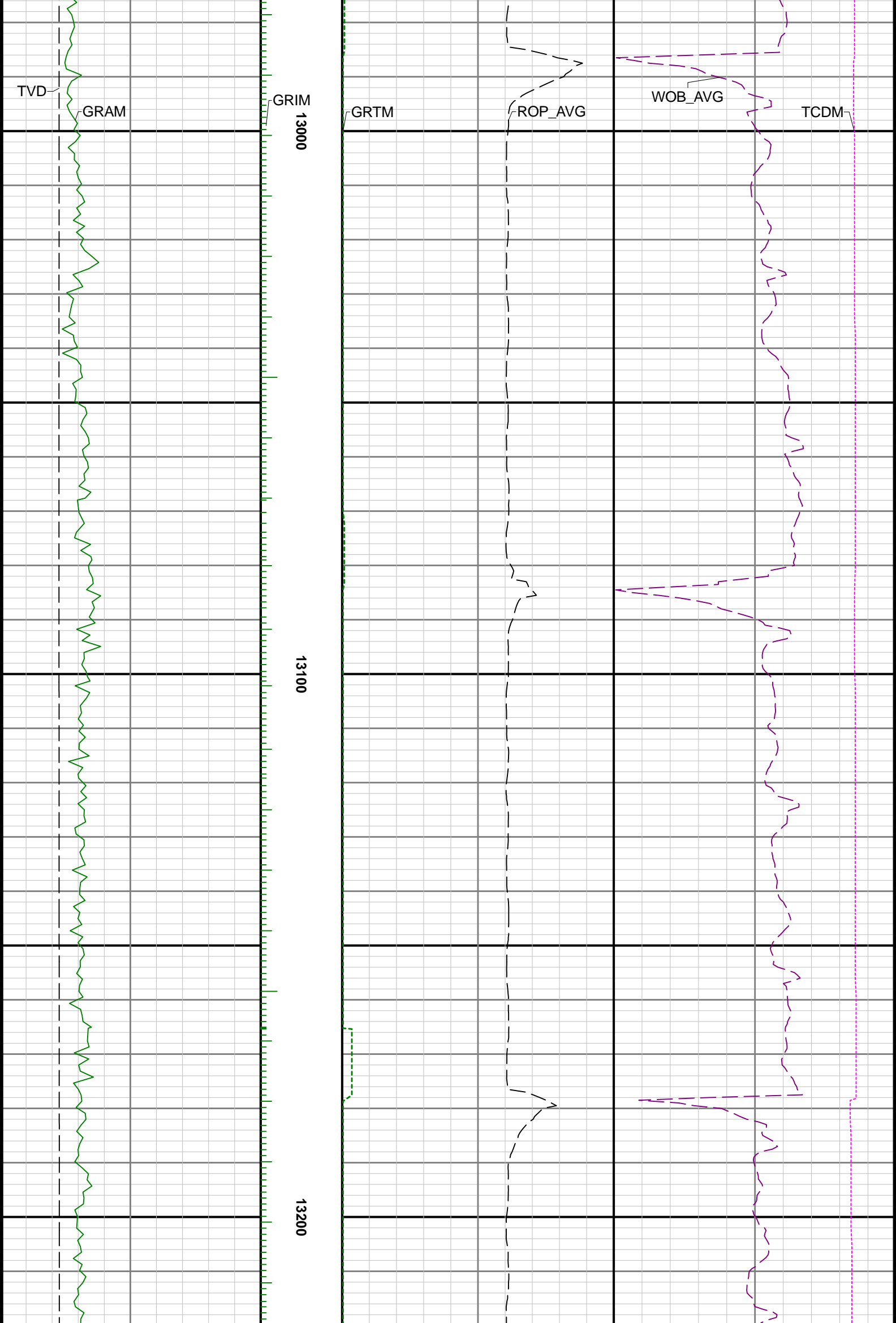


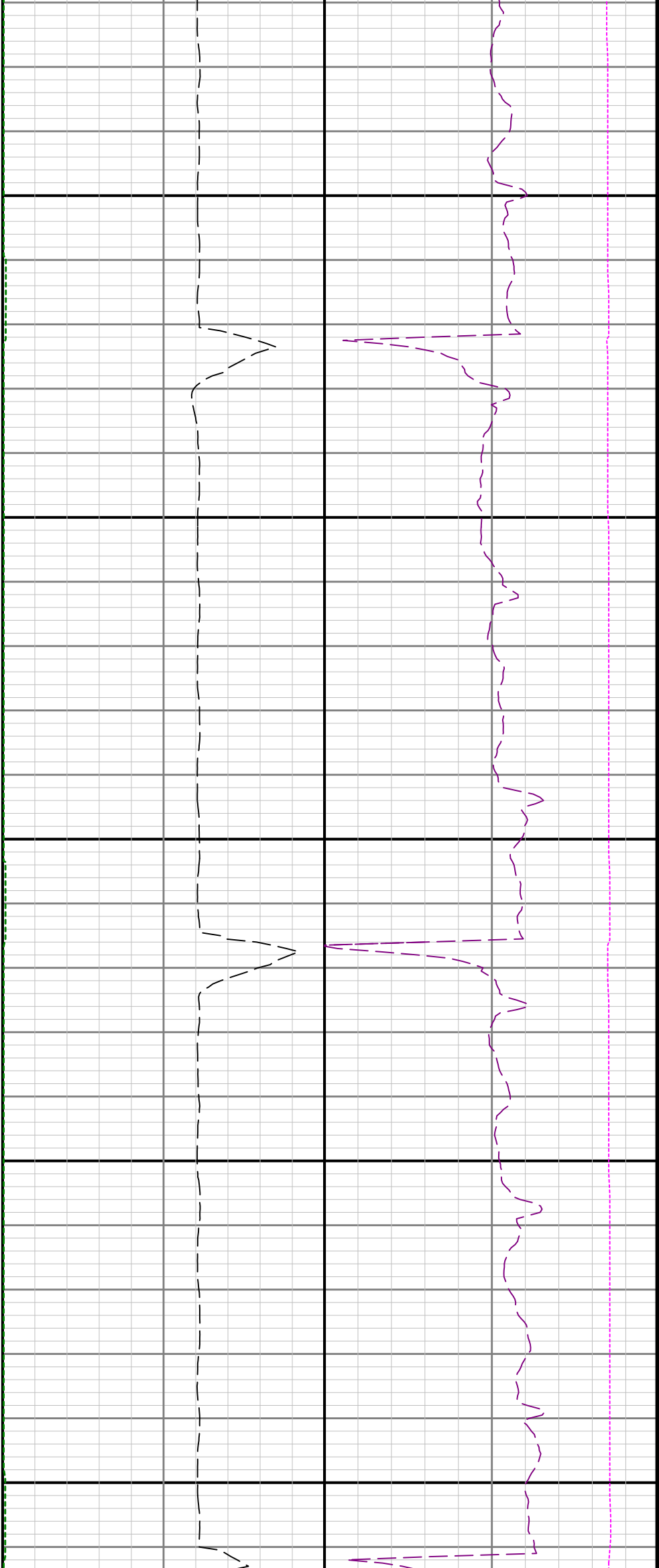


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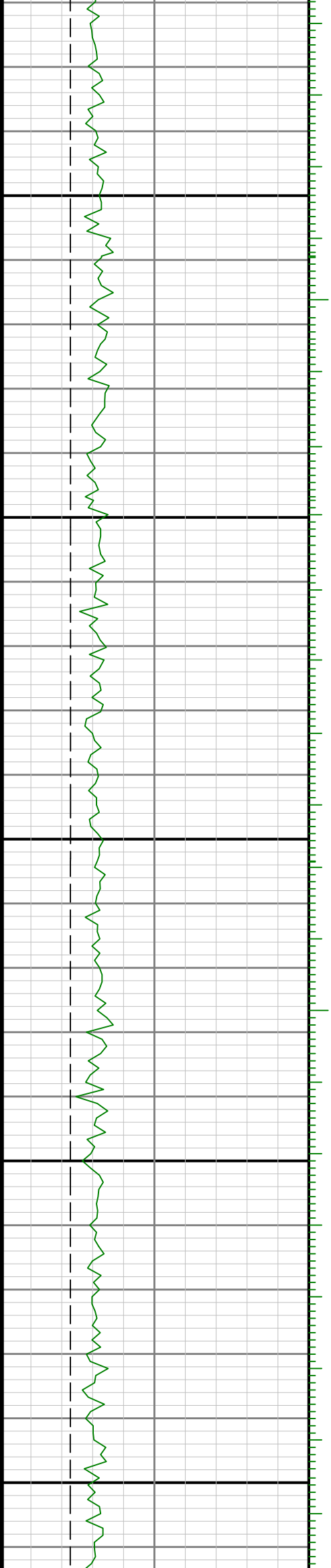


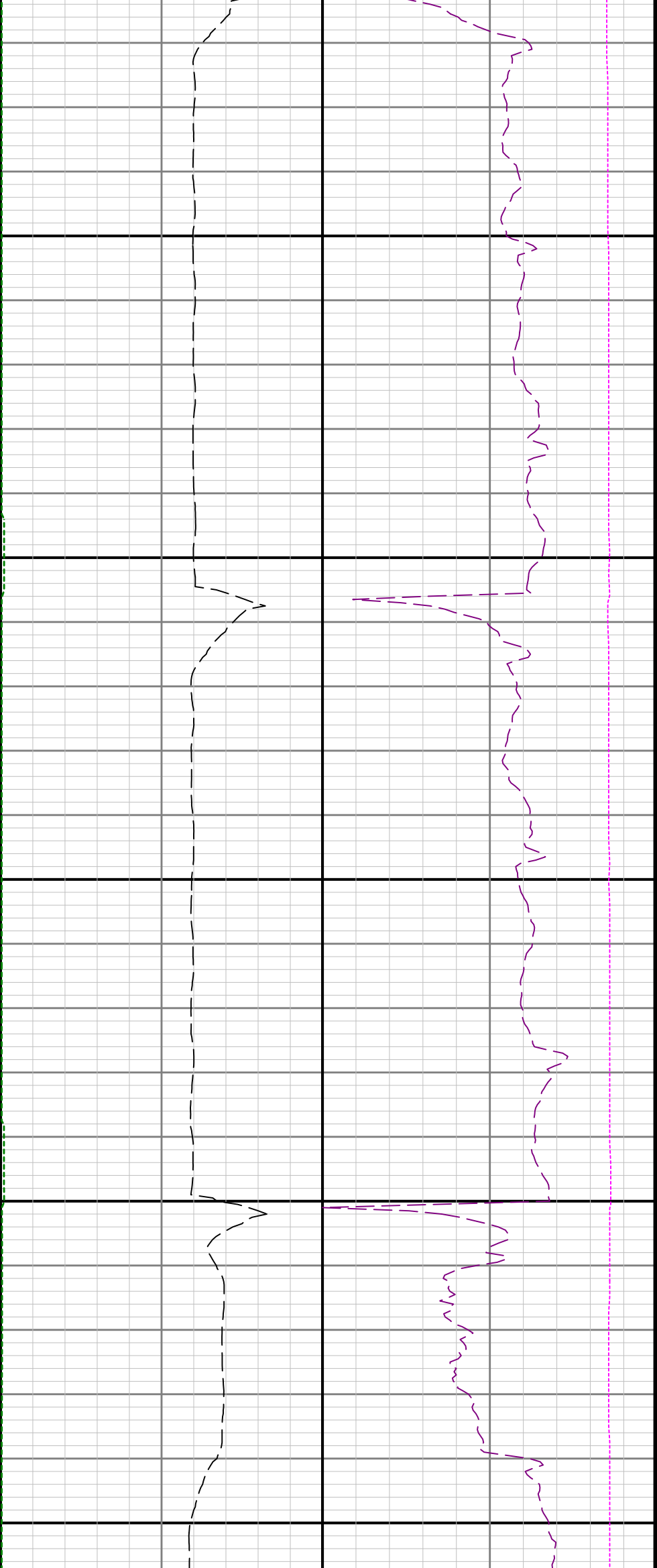




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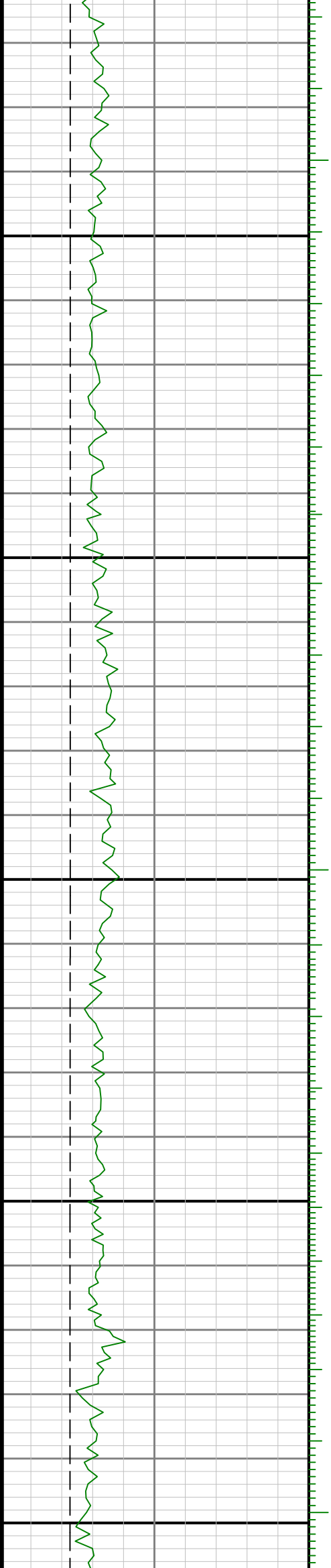


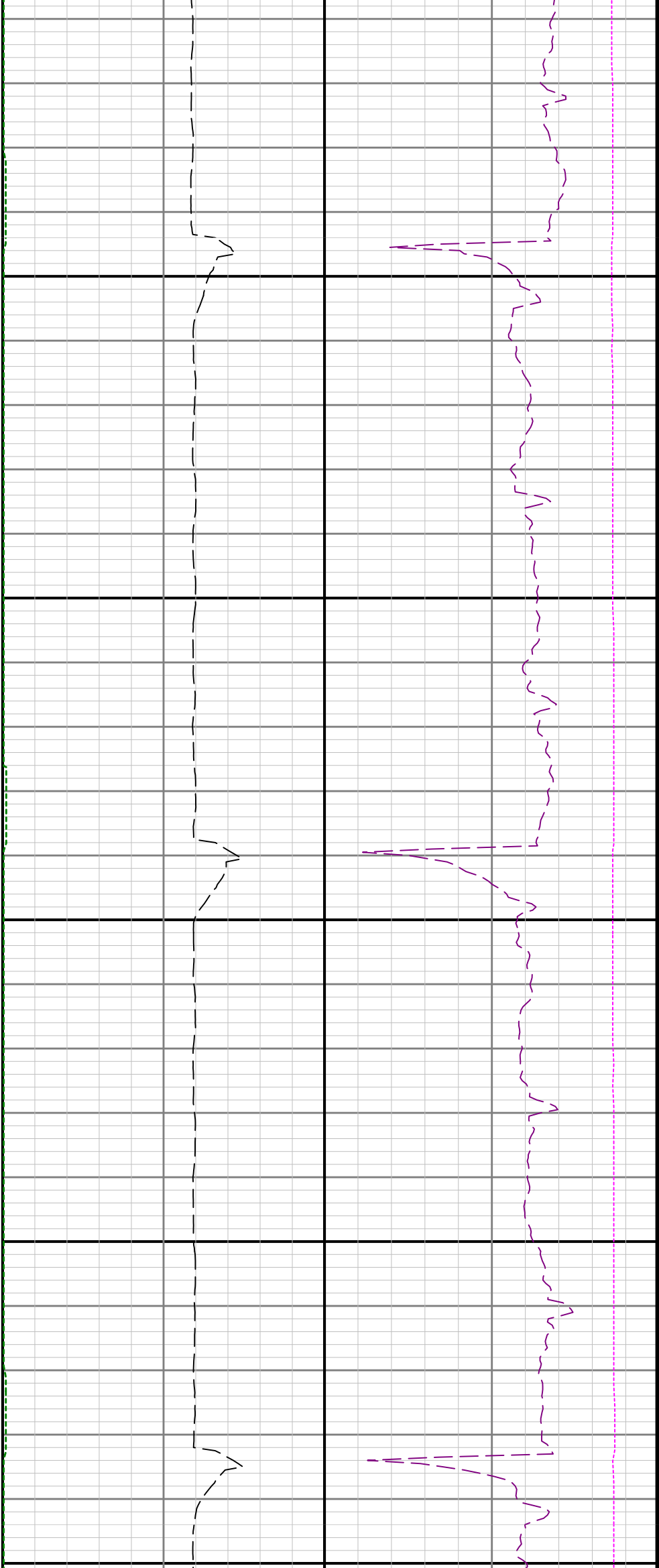


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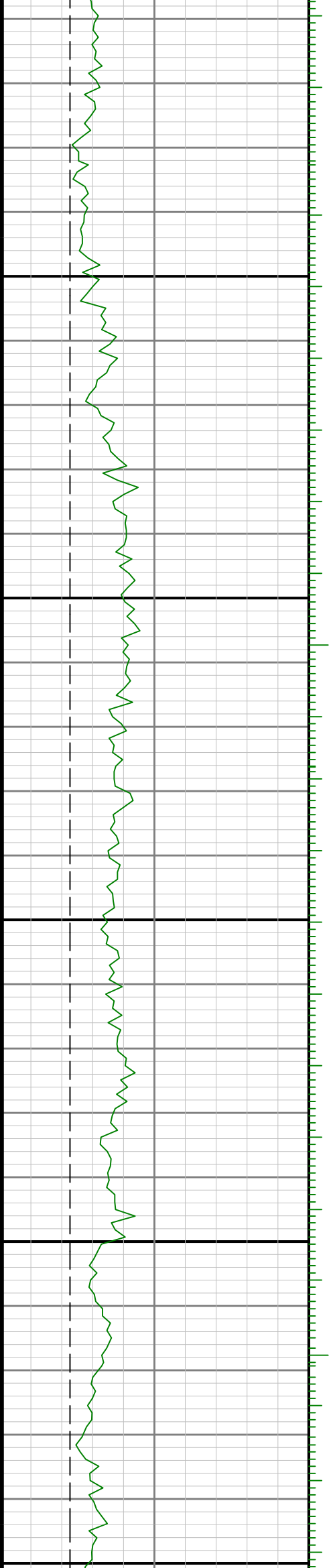
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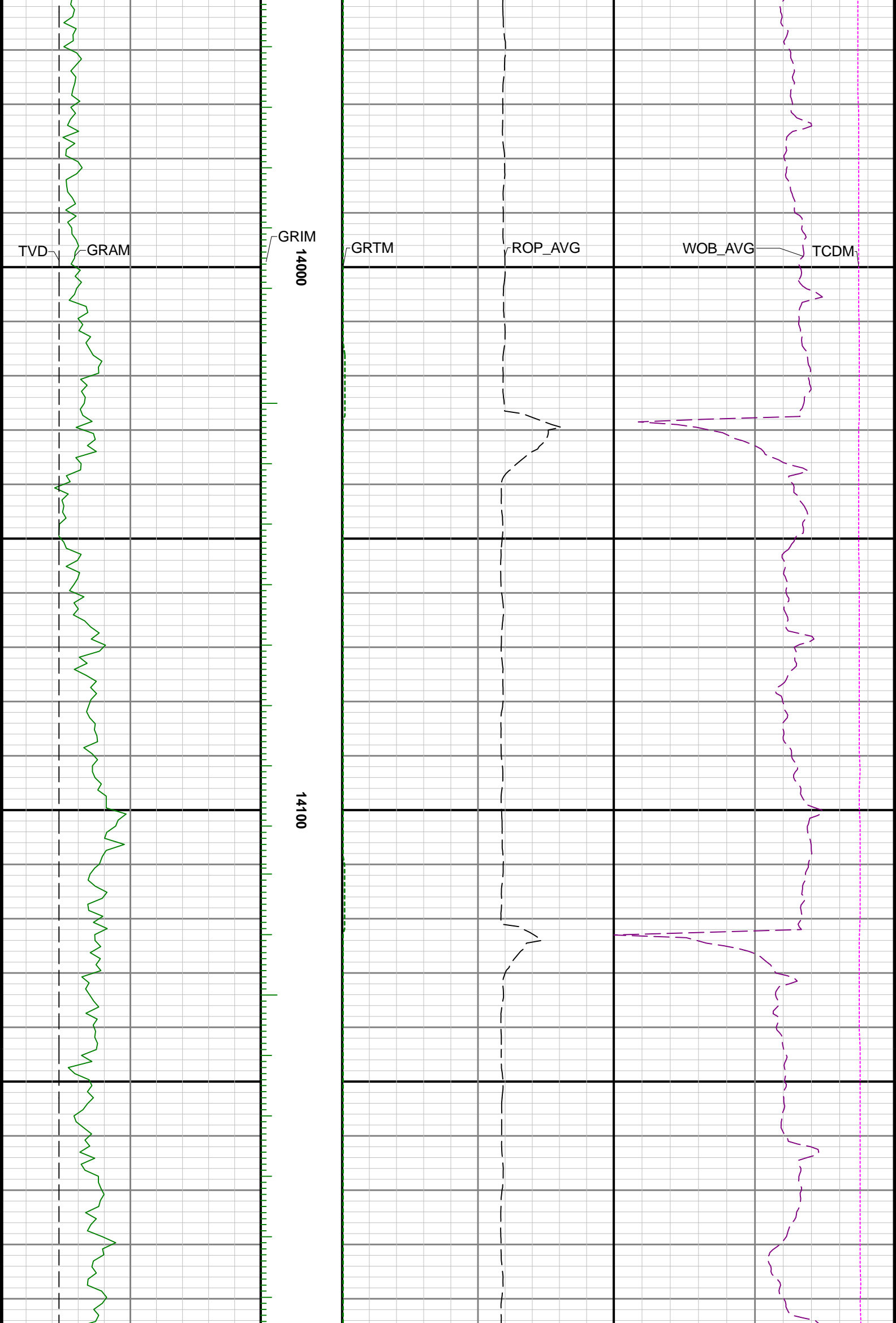


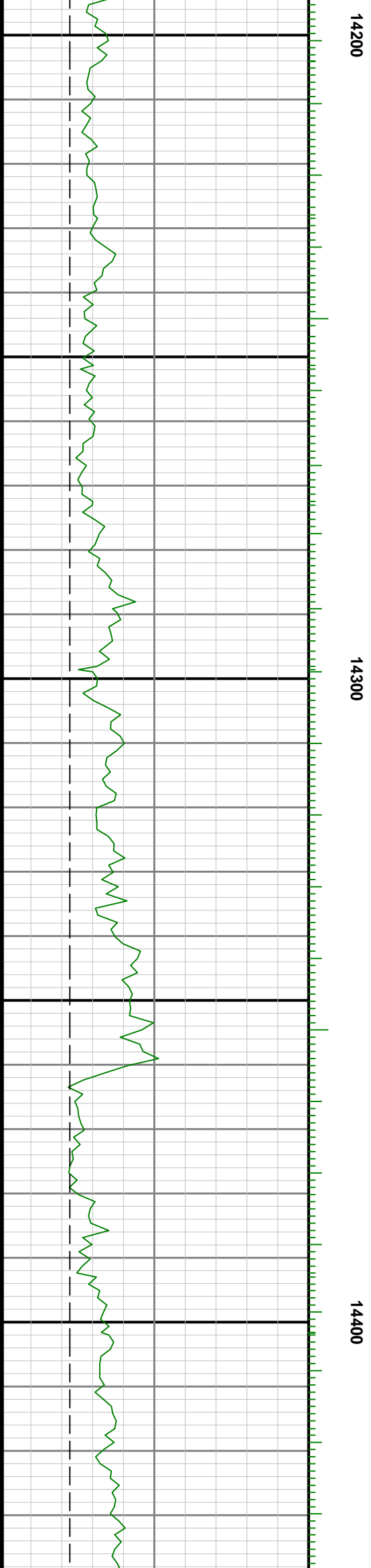
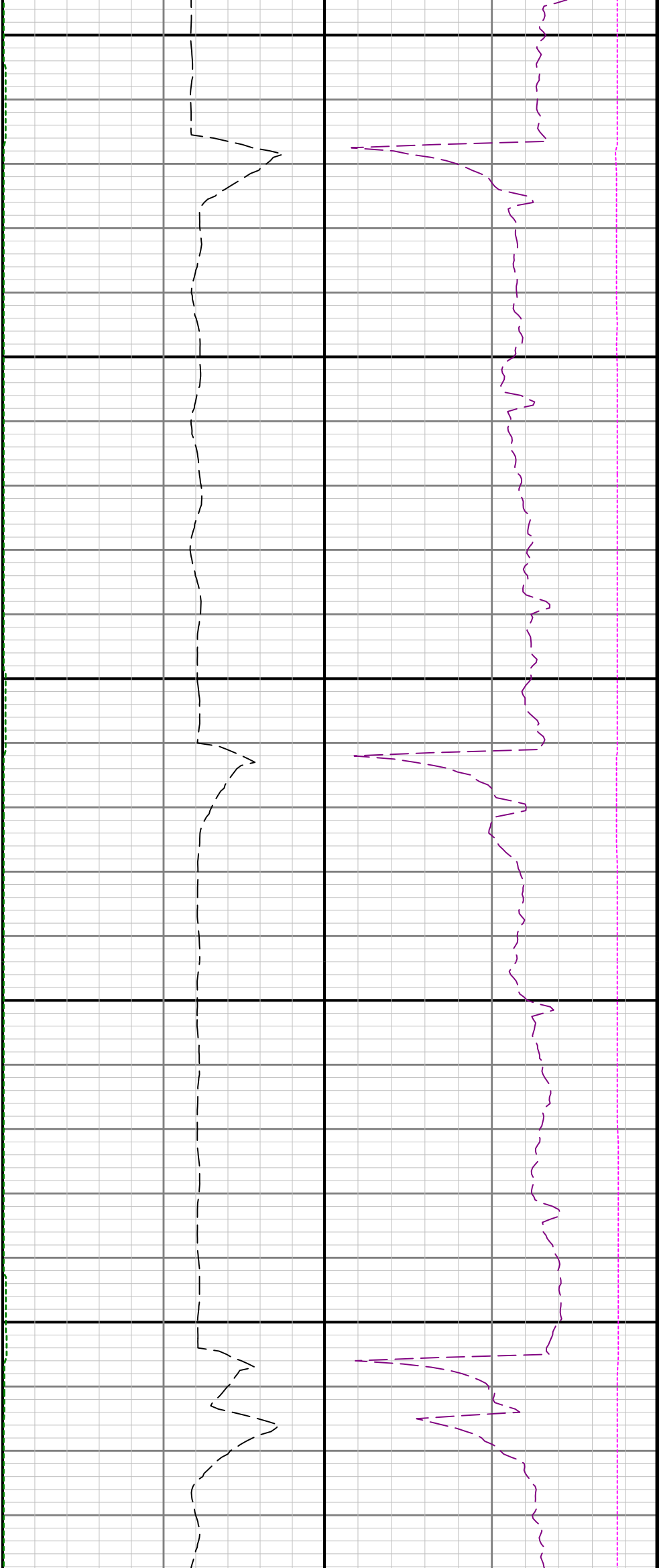


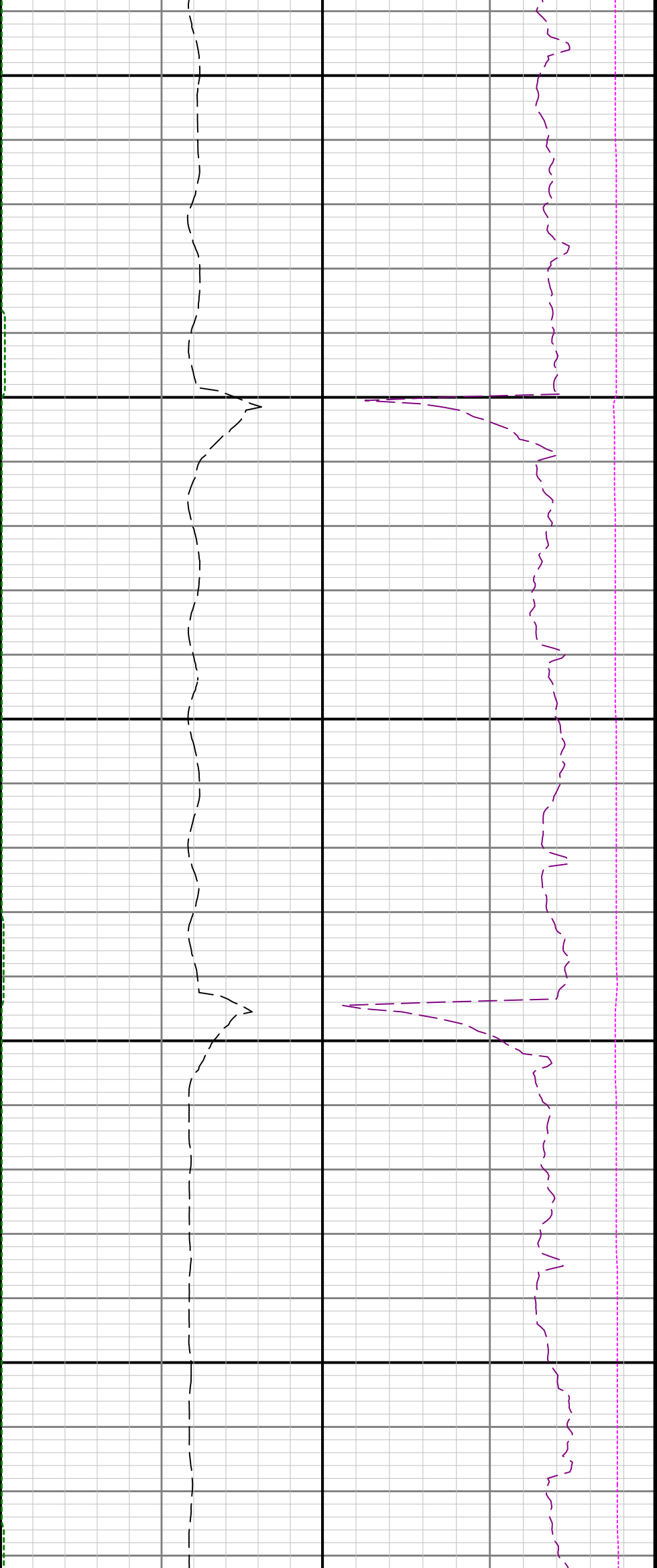
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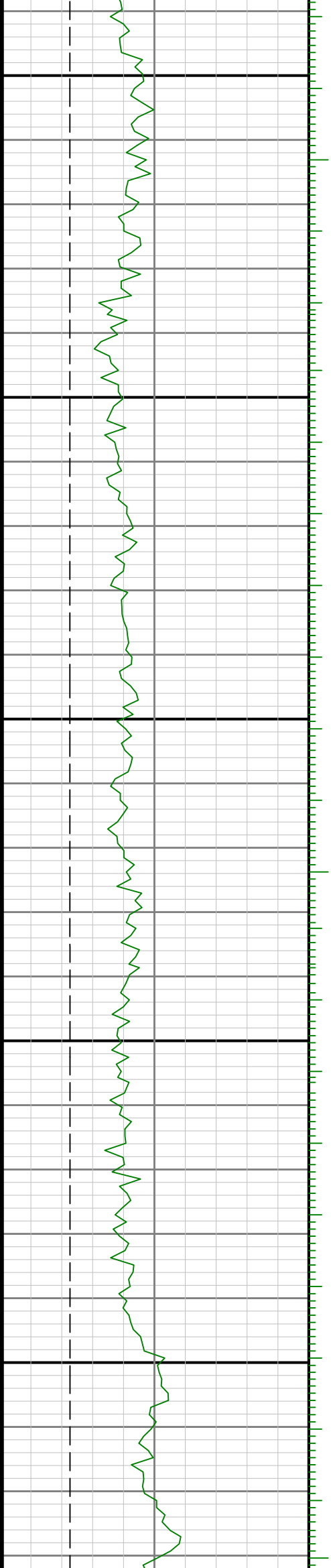


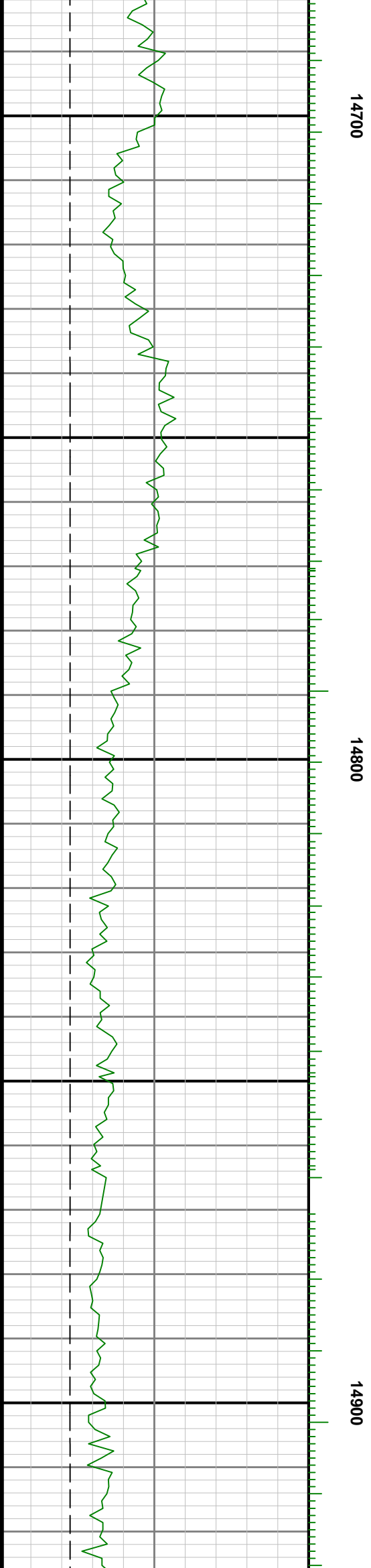
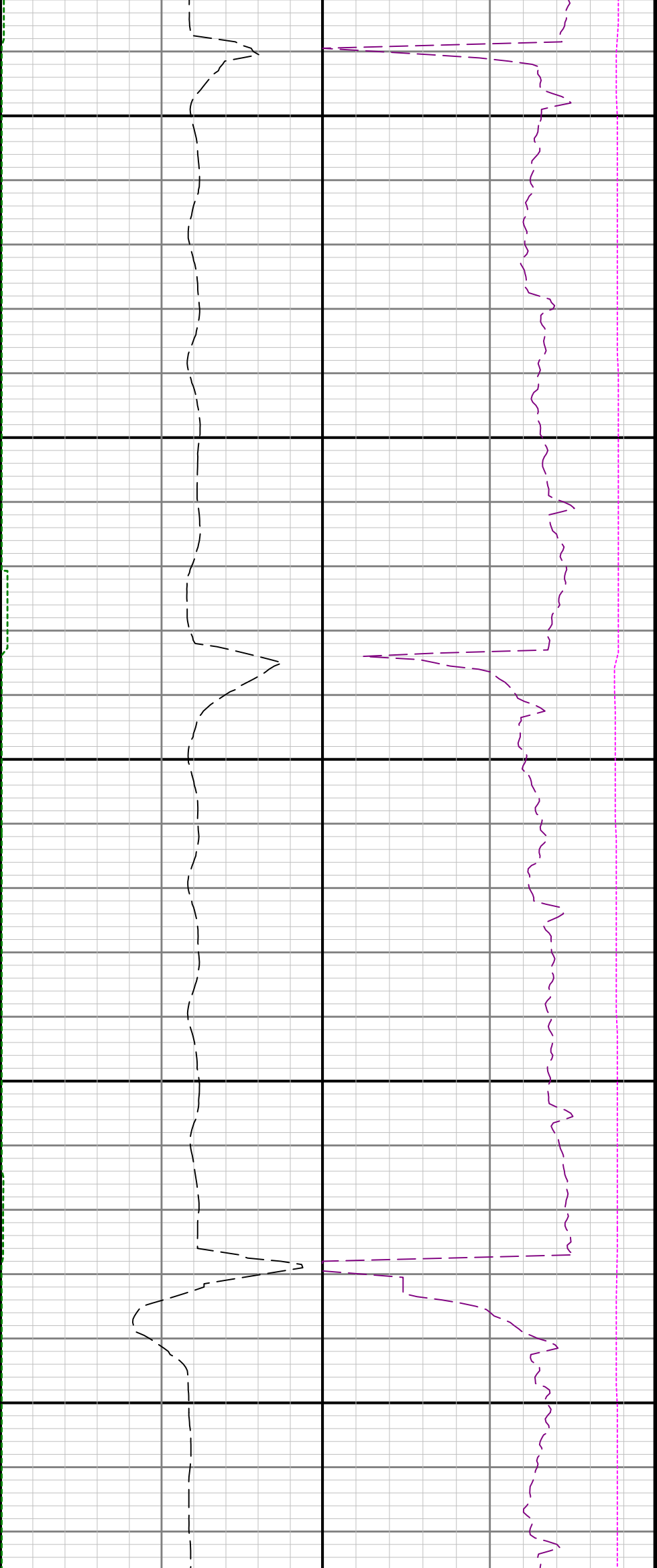


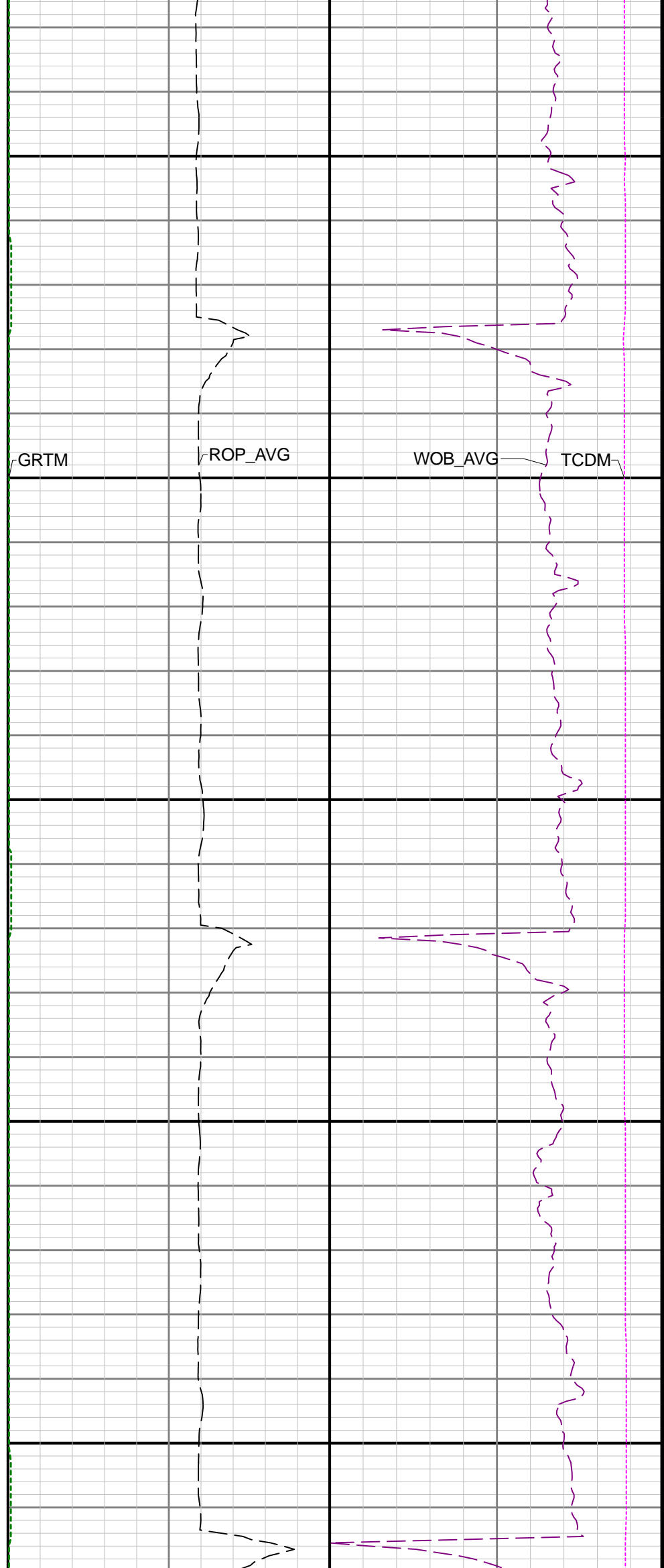
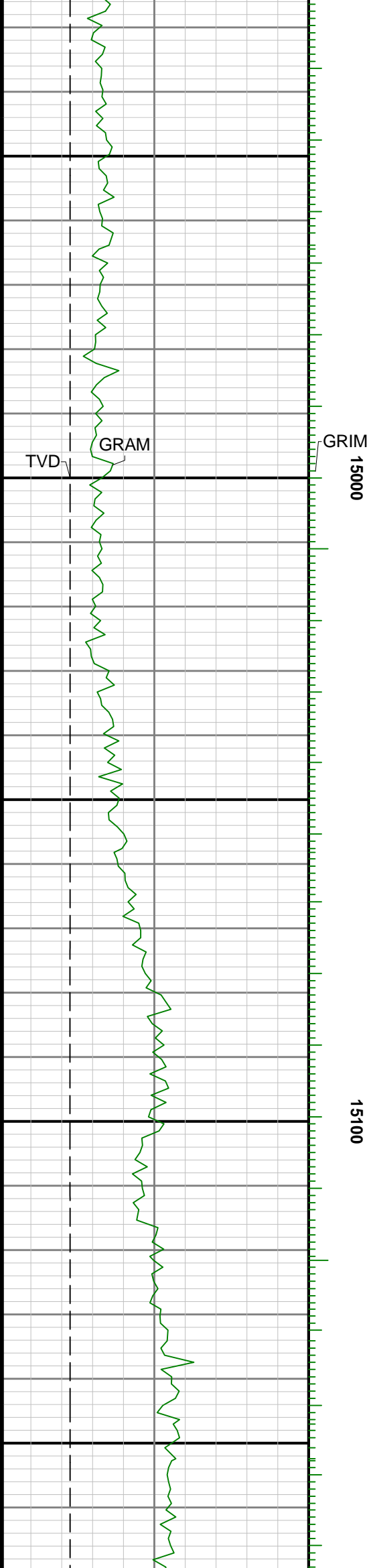


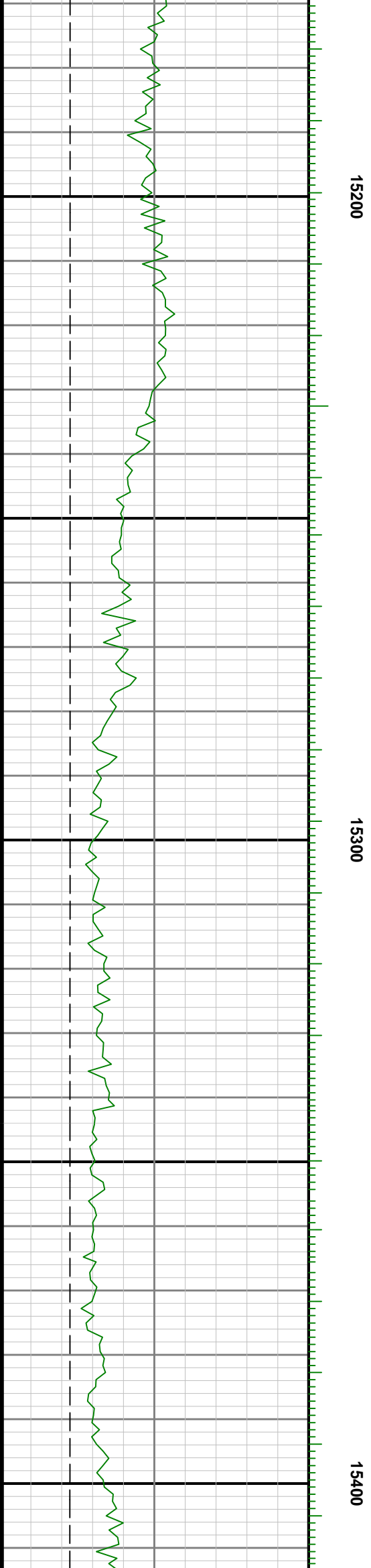
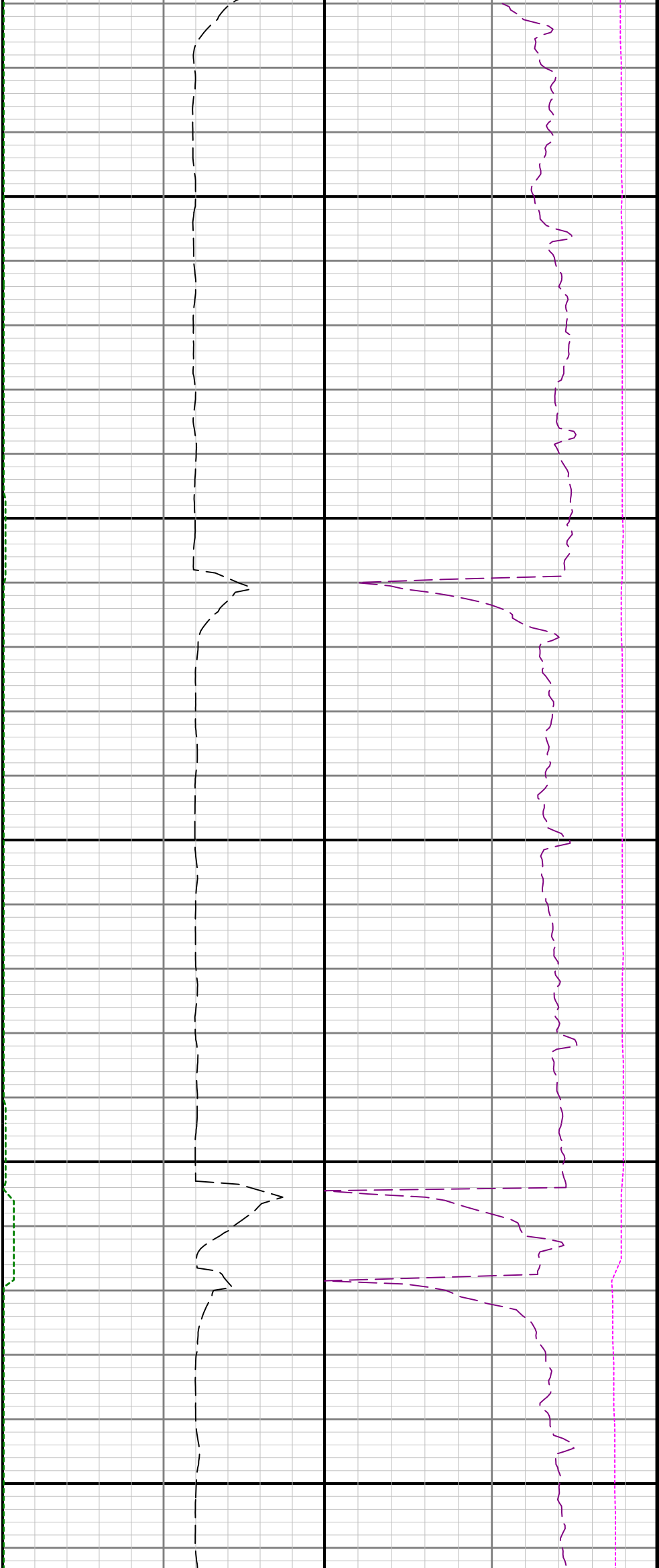
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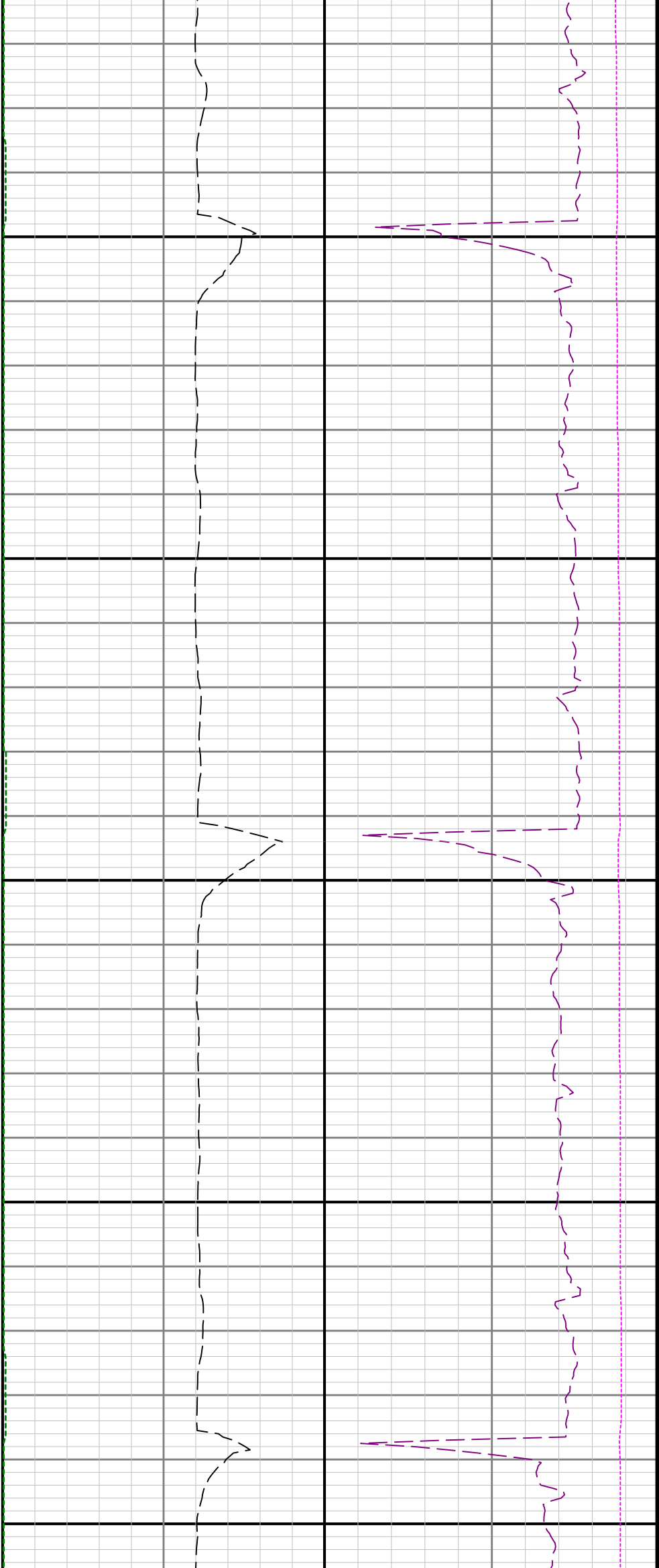
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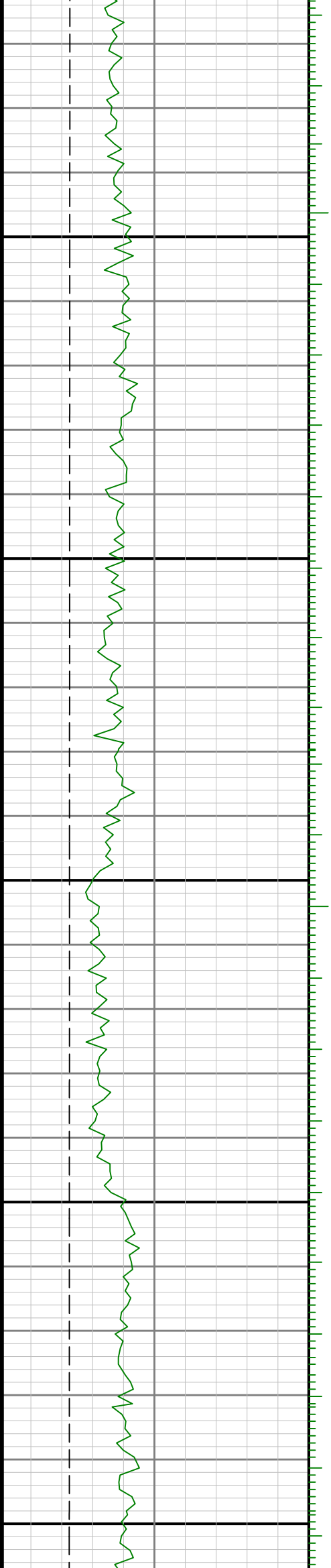


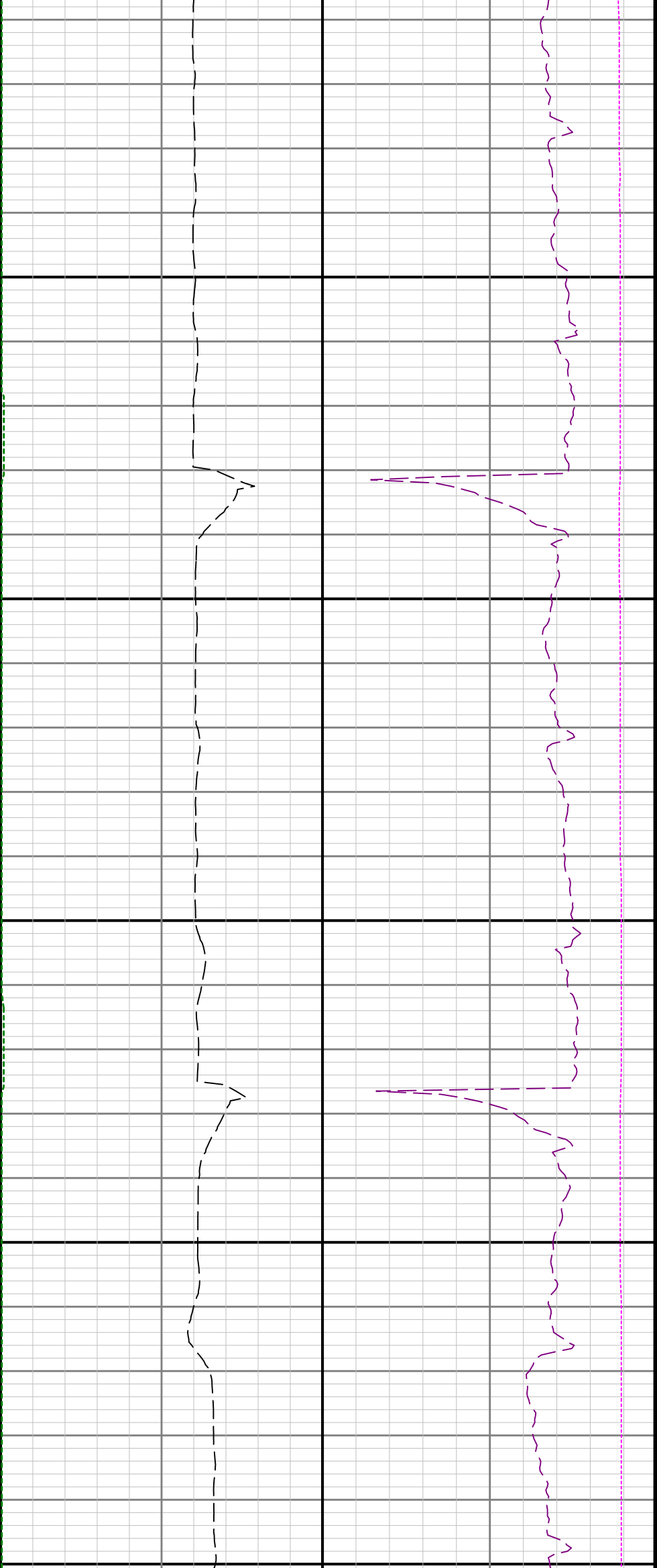




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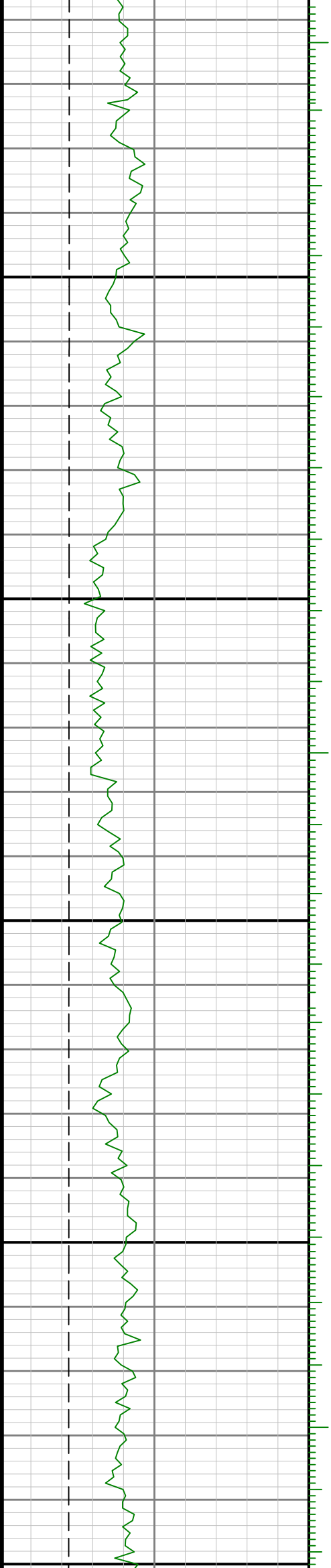


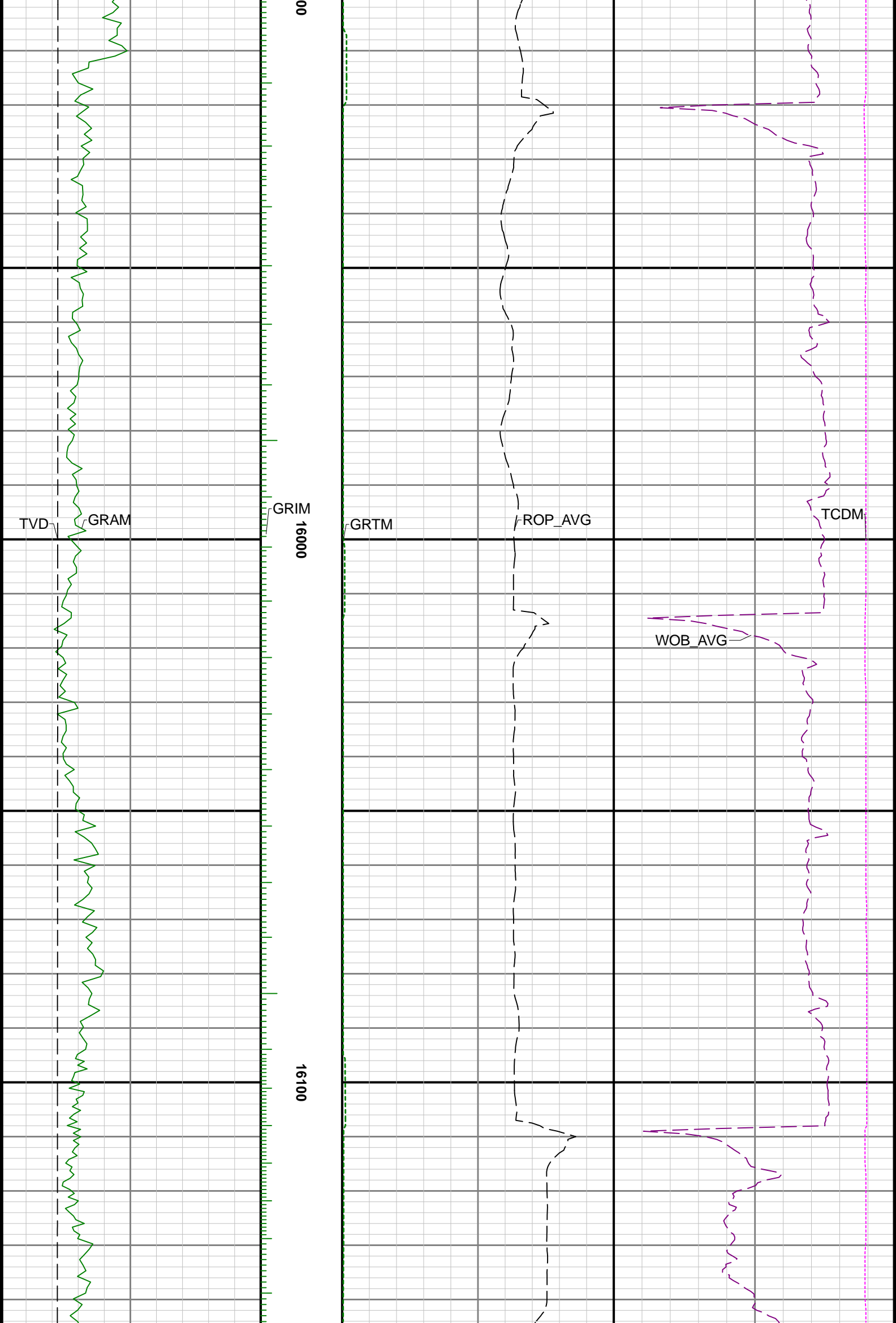


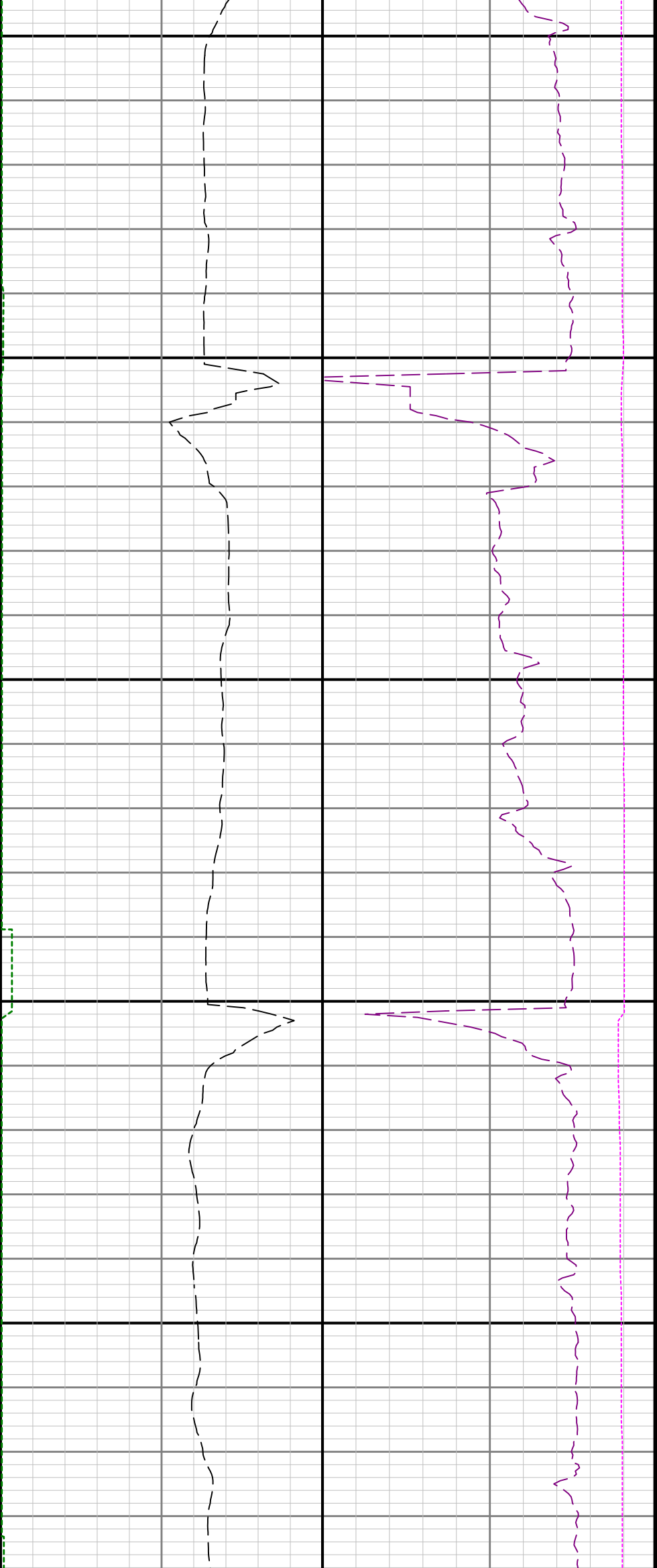
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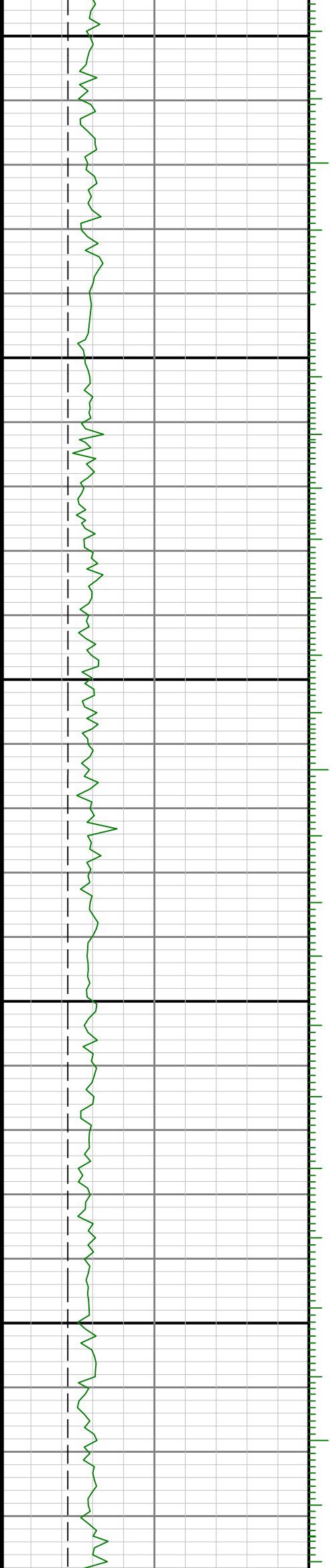


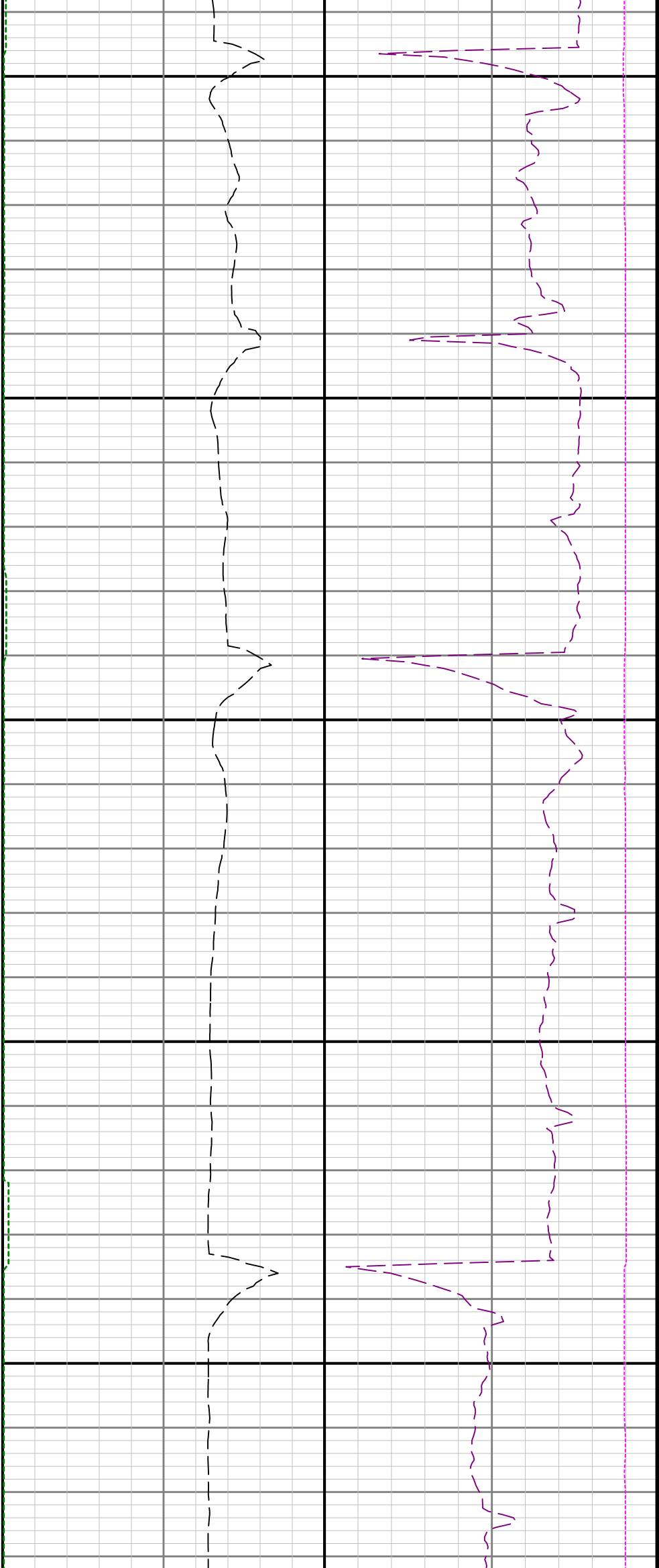




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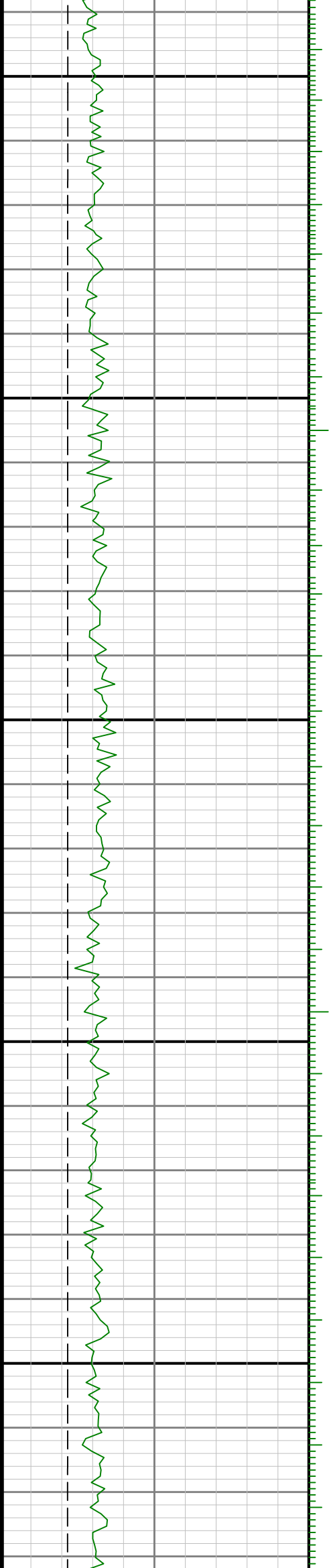


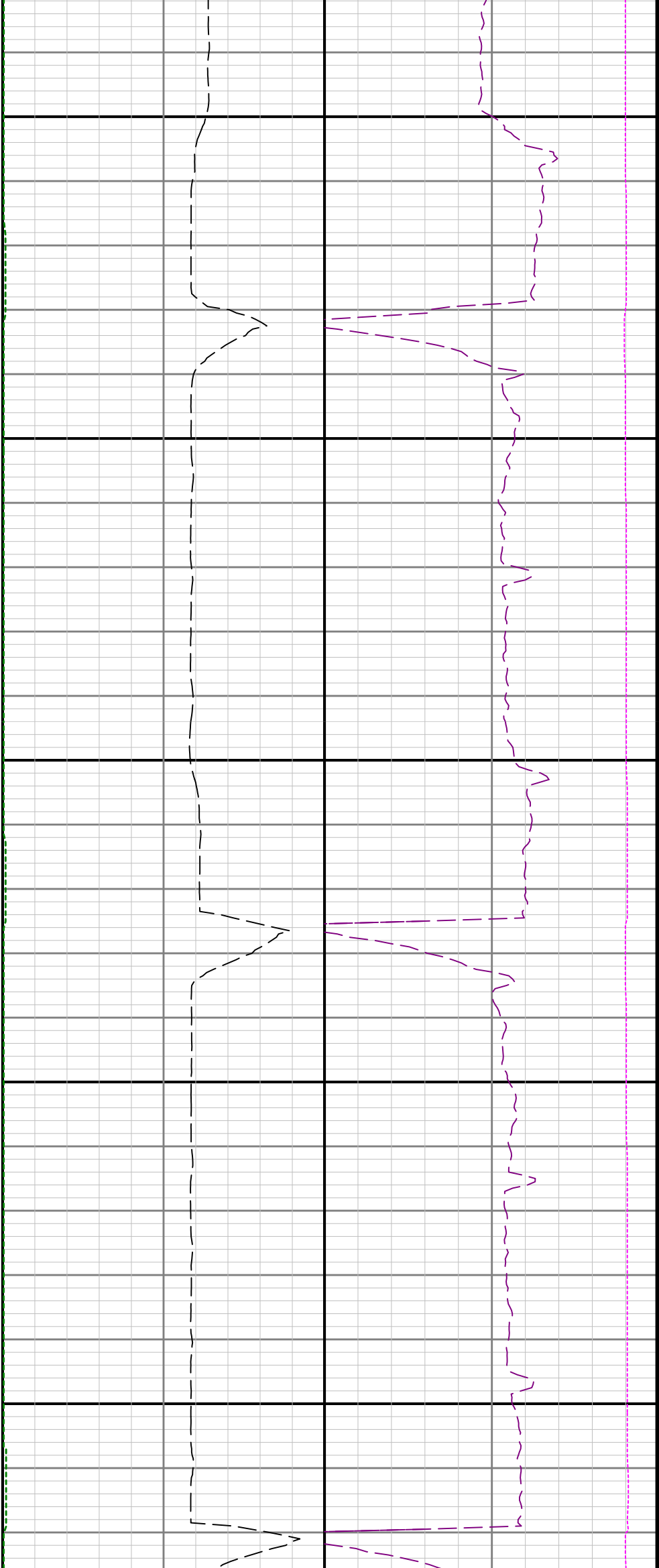


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