



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale:

Company: Anadarko

Well: Kerbs 32C-14HZ

Field: Weld County (Kerr McGee)

County: Weld State: Colorado

Status: Surface Location: Other Services:

Latitude: 40° 13' 42.344" N

Longitude: 104° 56' 34.310" W

Directional VSS

Section: 13 TWN: 1N Range: 68E

Permanent Datum (P.D.): Mean Sea Level

Elevation: 4898.00 ft.

Rig Floor 4898.00 ft.

Above P.D.

Drillers Depth

Elevations: N/A

KB: 4898.00 ft.

DF: 4872.00 ft.

GL:

Interval Logged Dates Magnetic Field Reference

Top: 6500 ft. Date From: 06/Mar/14 Dip Angle: 66.89 ° Azi Reference North: True

Bottom: 17191 ft. Date To: 15/Mar/14 Total Mag to Reference

Spud Date: 03/Mar/14 Field Strength: 52600.0 nT North Correction: 8.71 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1105 ft.	9.600 in.	36.00 lb/ft	Surface	1094 ft.
8.750 in.	1105 ft.	7613 ft.	7.000 in.	26.00 lb/ft	Surface	7612 ft.
6.125 in.	7613 ft.	17191 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based Mud	Surface	17191 ft.	13.500 in.	Surface	0.0 ° / 202.1 °	1.2 ° / 255.9 °
			8.750 in.	Vert/Curve	0.9 ° / 236.1 °	83.0 ° / 268.6 °
			6.125 in.	Lateral	88.8 ° / 267.7 °	91.3 ° / 266.6 °
					/	/
					/	/
					/	/

Acquisition System

Software Version

Other

Advantage	2.20U4	Rig / Contractor:	H&P 307	/ Helmerich & Payne Drilling Co
PAIS	6.4.1.34	Job No:	6161750	
		District / Unit:	RMD	/ D & E

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
1	1	1	8.750	PDC		Steerable	6500	7555	1	7615	06/Mar/2014 01:06	06/Mar/2014 18:47	38.55
2	2	2	6.125	PDC		Steerable	7616	7873	7613	7933	08/Mar/2014 09:45	08/Mar/2014 21:46	5.82
3	3	3	6.125	PDC		Steerable	7881	12065	7935	12179	09/Mar/2014 10:05	11/Mar/2014 01:48	40.32
4	4	4	6.125	PDC		Steerable	12065	17128	12180	17191	12/Mar/2014 09:10	15/Mar/2014 10:54	71.6

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Andrew King	04/Mar/14	16/Mar/14	Nick Roosen	11/Mar/14	16/Mar/14	John Nguyen	04/Mar/14	11/Mar/14

Hans Cary	04/Mar/14	16/Mar/14	Bill Herbers	04/Mar/14	11/Mar/14	Scott Sanford	11/Mar/14	16/Mar/14
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Mnemonics		
Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRTX	Gamma Ray Time Since Drilled	Min.
GRIX	Gamma Ray Density, Points	unitless
GRSI	Gamma Ray Slide Indicator	unitless
ROPA	Rate of Penetration, 3.0 ft. Avg.	Ft./Hr.
TCDX	Downhole Temperature	Deg. F.
TVD	True Vertical Depth	Ft.
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	K. lbs.

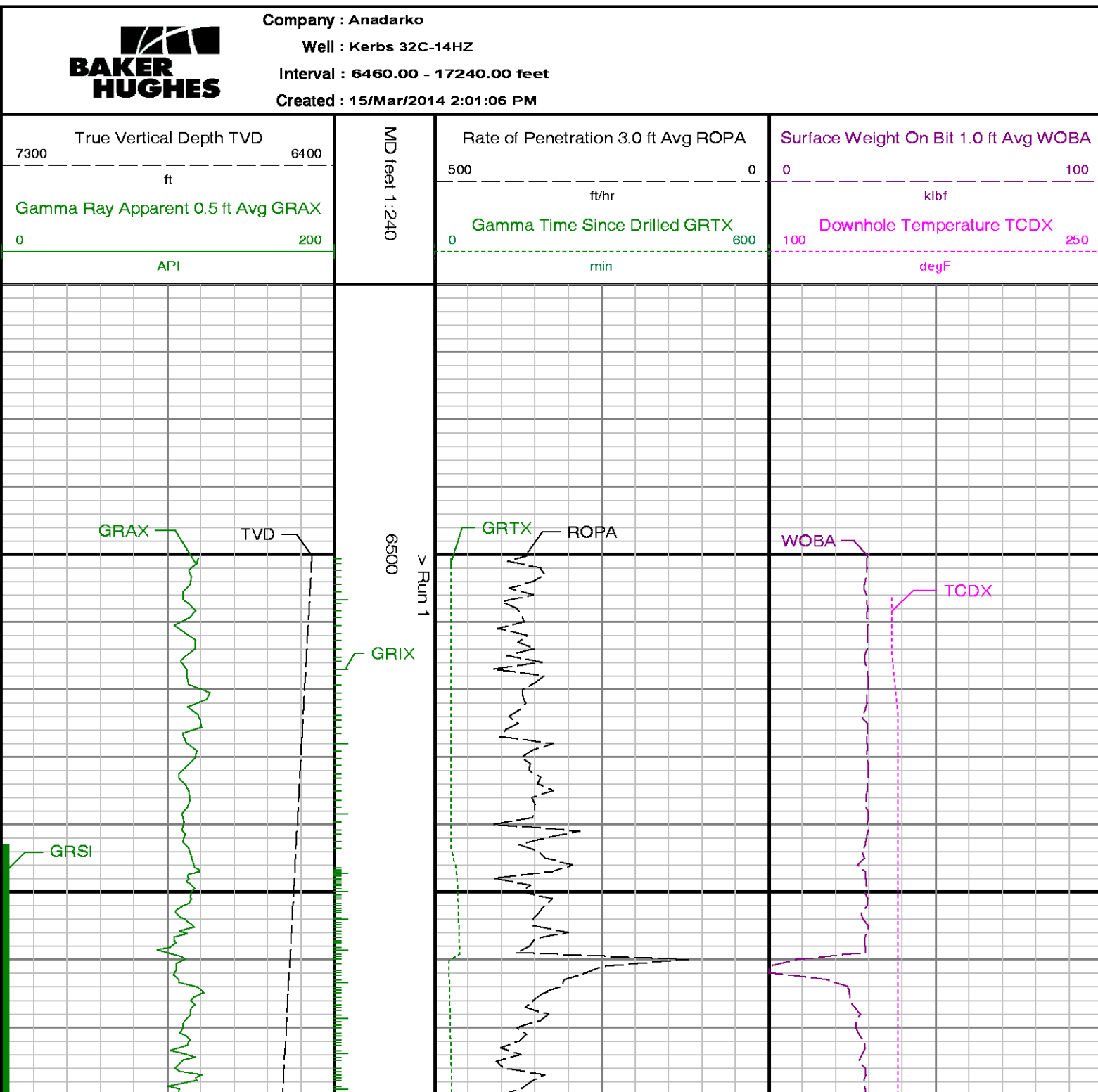
Equipment and Service Data						
LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11946290	Directional	64.03	6.750	3.250
1	SRIG	12416860	Gamma	60.66	6.750	3.250
2	DIR	10152197	Directional	62.57	4.750	2.625
2	SRIG	11814653	Gamma	59.15	4.750	2.625
3	DIR	10152197	Directional	62.62	4.750	2.625
3	SRIG	11814653	Gamma	59.20	4.750	2.625
4	DIR	10007388	Directional	66.17	4.750	2.750
4	SRIG	12131406	Gamma	61.79	4.750	2.750

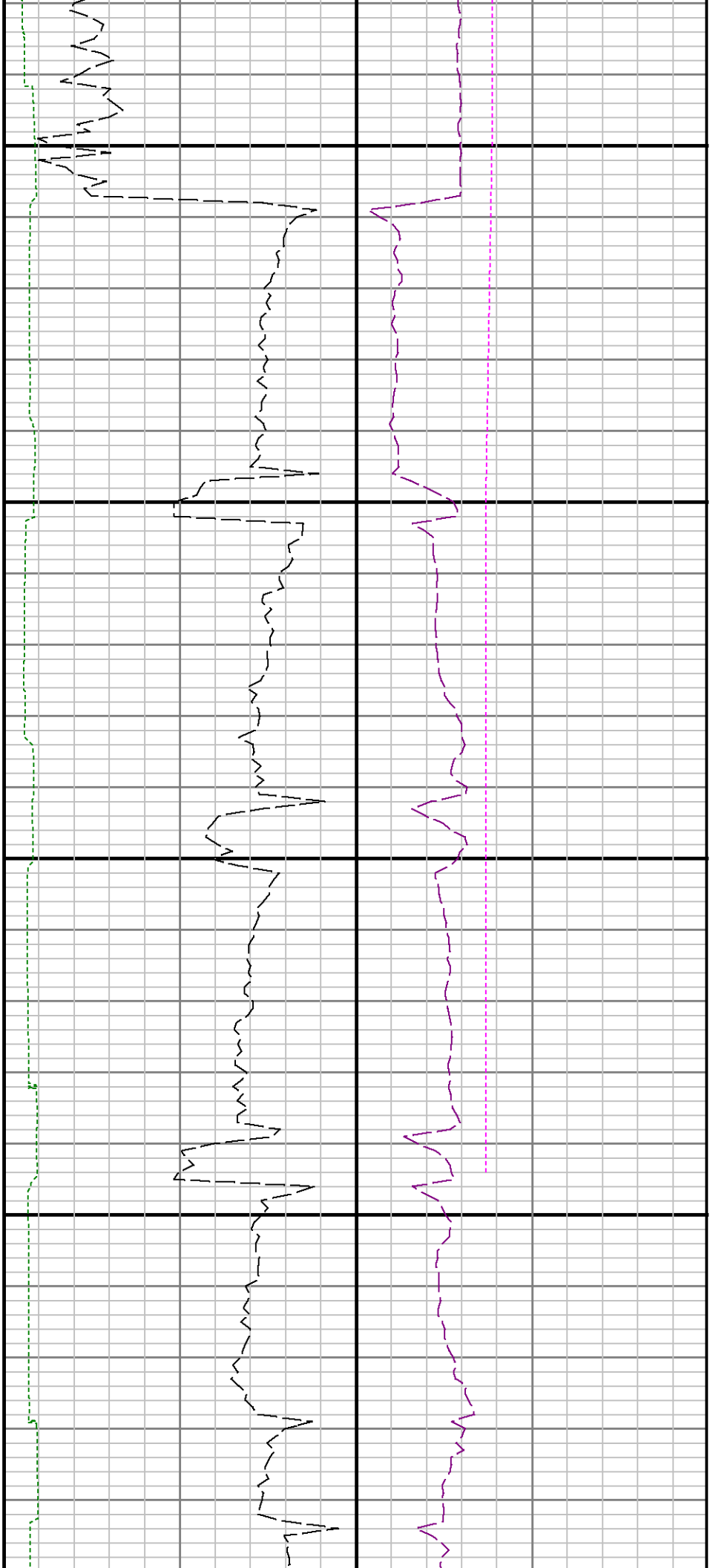
Service and Tool Mnemonics		
Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments				
(1) Baker Hughes INTEQ run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1105 to 7613 feet MD (1105 to 7230 feet TVD).				
(2) Baker Hughes INTEQ runs 2, 3, and 4 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7613 to 17191 feet MD (7230 to 7242 feet TVD).				
(3) Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.				
(4) A sliding indicator is shown to the right edge of track 1 as a heavy line.				

Remarks				
Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark

1	7570	6.250	2	The interval from 7555 to 7616 feet MD contains no logging data due to agitator interference while drilling out cement and casing shoe at the beginning of Run 2.
2	7570	6.250	2	The interval from 7555 to 7616 feet MD was logged up to 46 hours after being drilled due to casing and cement operations prior to the beginning of Run 2.
3	7890	6.250	3	The interval from 7874 to 7935 feet MD was logged up to 12.25 hours after being drilled due to a trip out of the hole to change BHA
4	12080	6.250	4	The interval from 12065 to 12179 feet MD was logged up to 31.5 hours after being drilled due to a trip out of the hole to lay down the agitator. Additionally the interval from 12065 to 12116 was re-logged due to inconsistent data after agitator failure.
5	17140	6.250	4	The interval from 17129 to 17191 feet MD contains no logging data due to sensor offset from the bit at well TD.

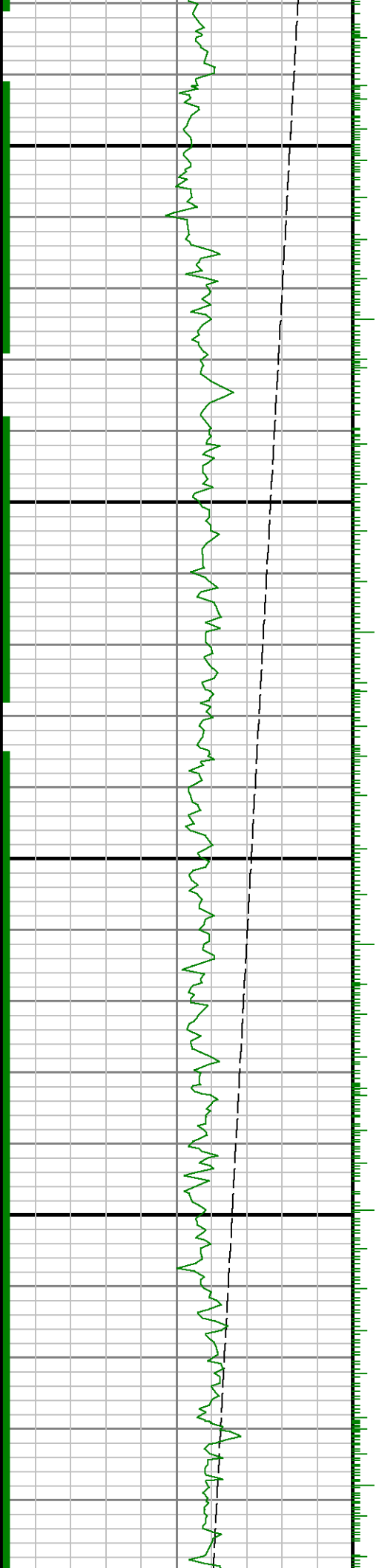


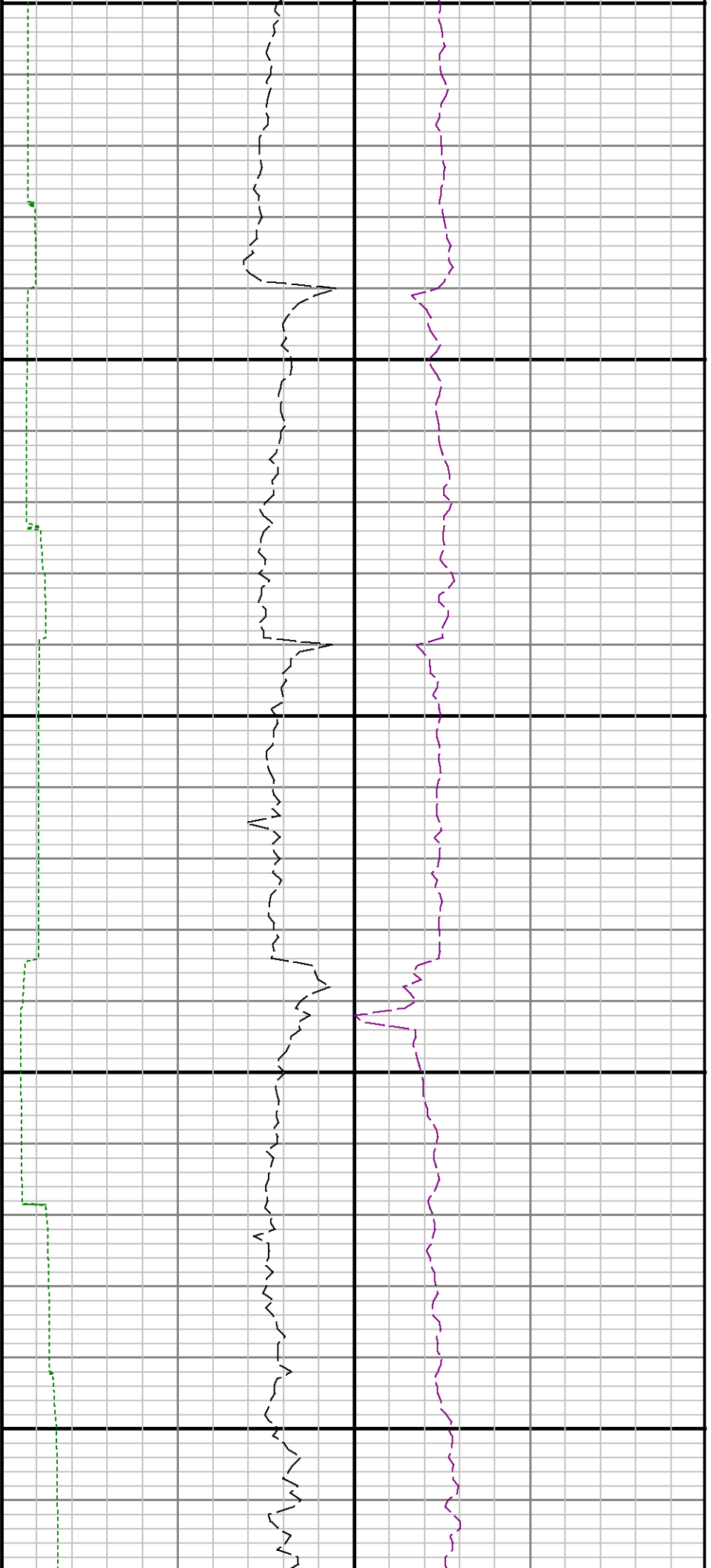


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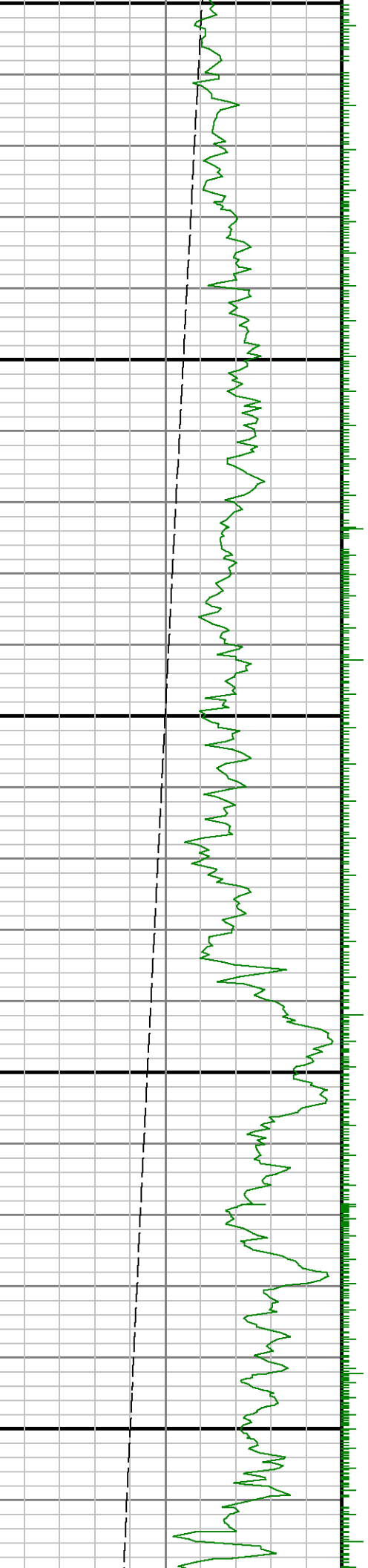


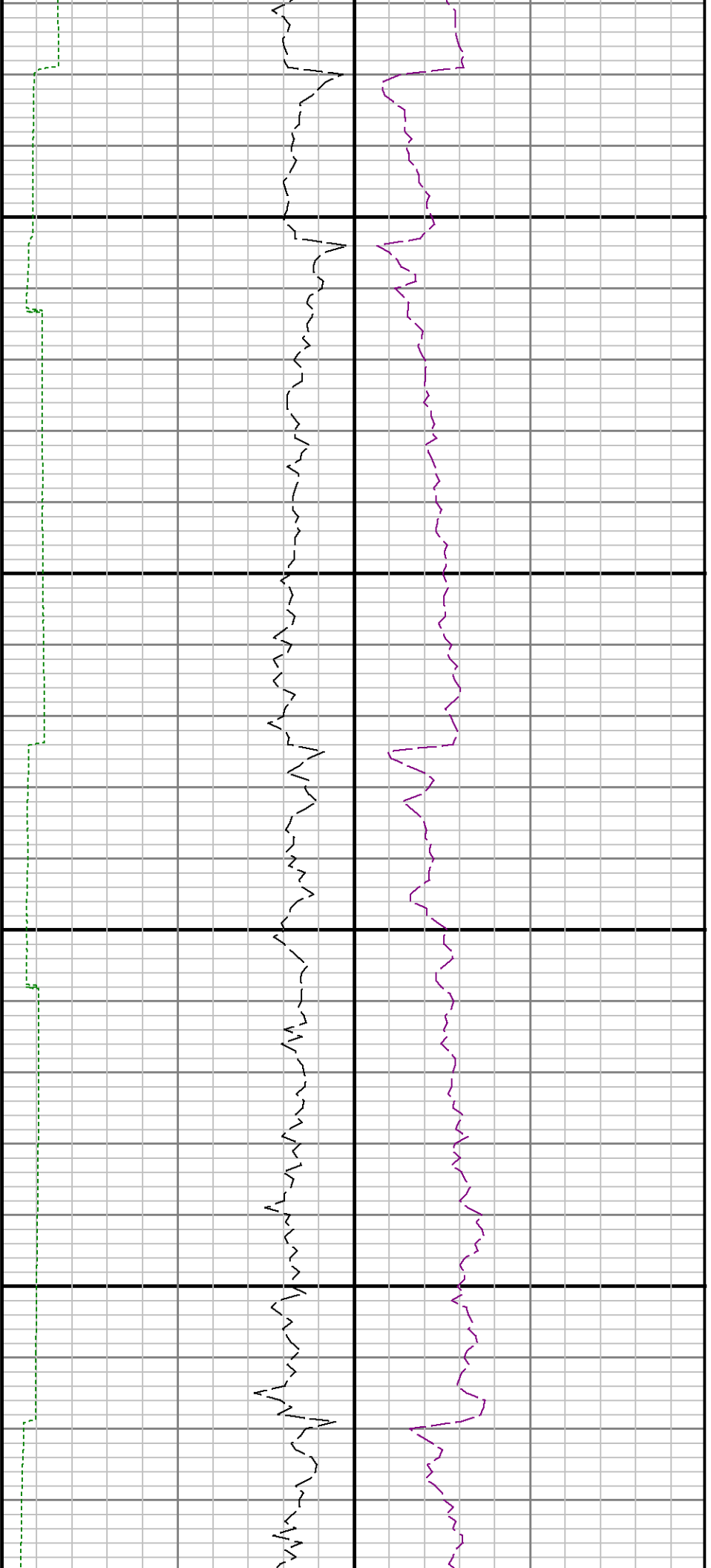


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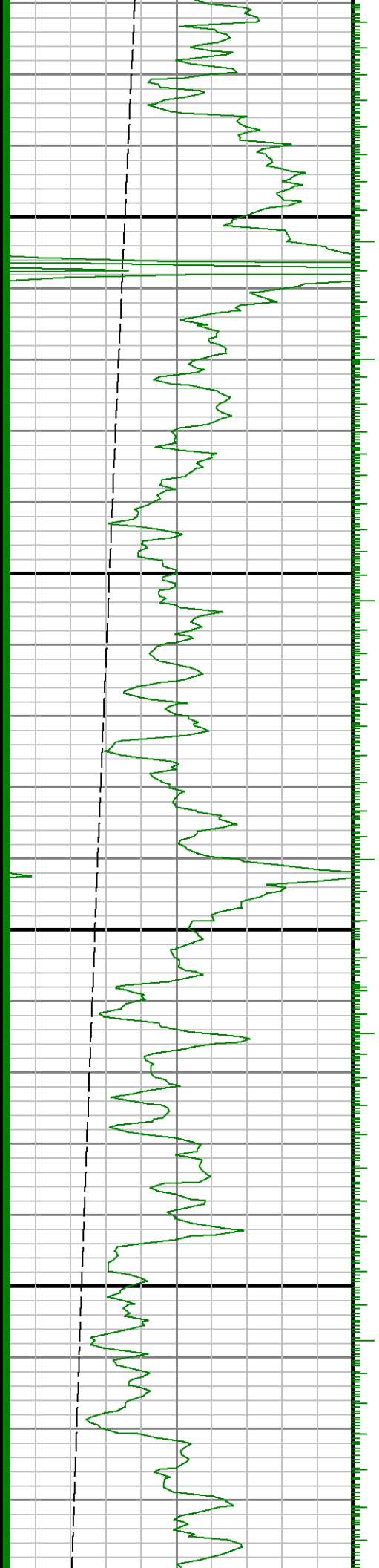
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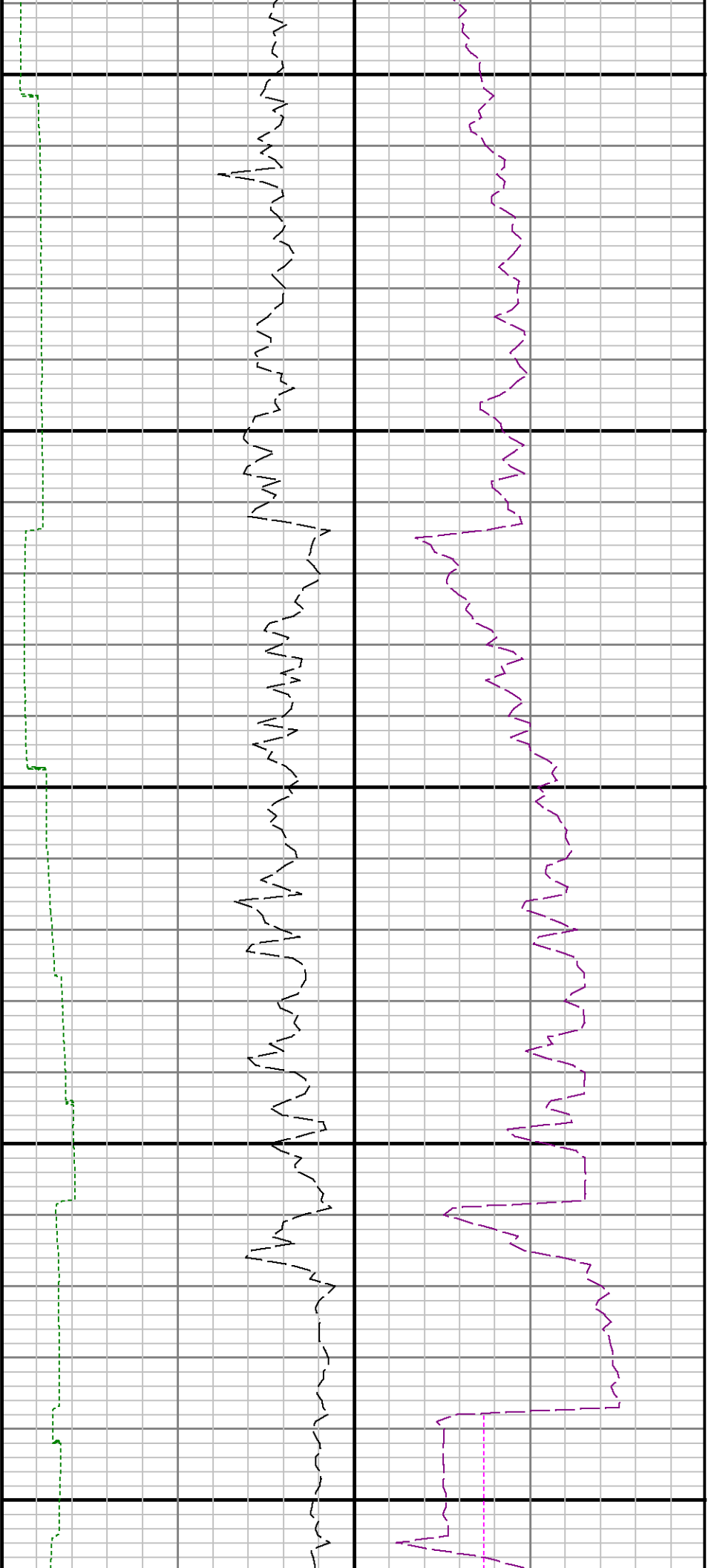




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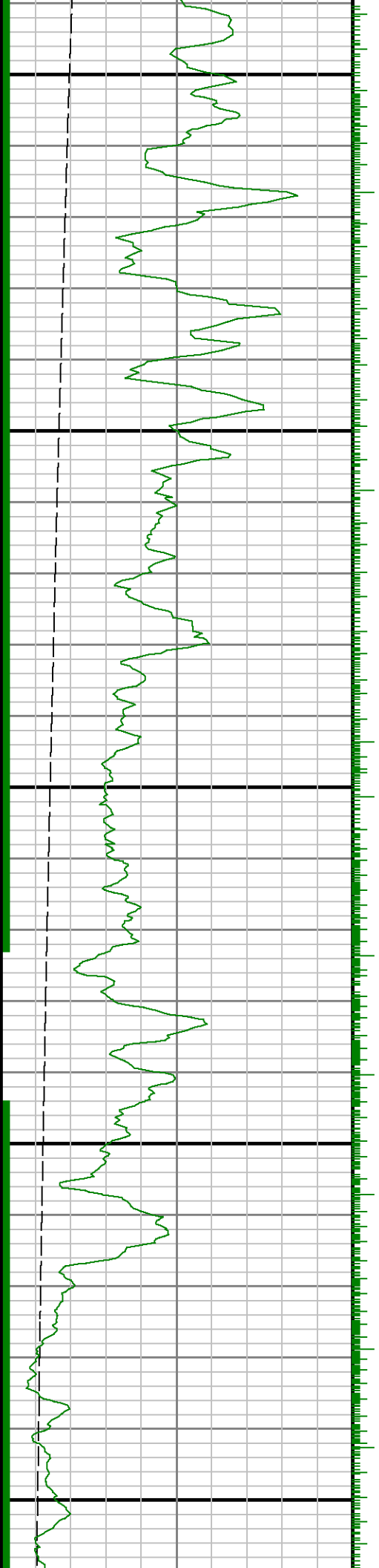
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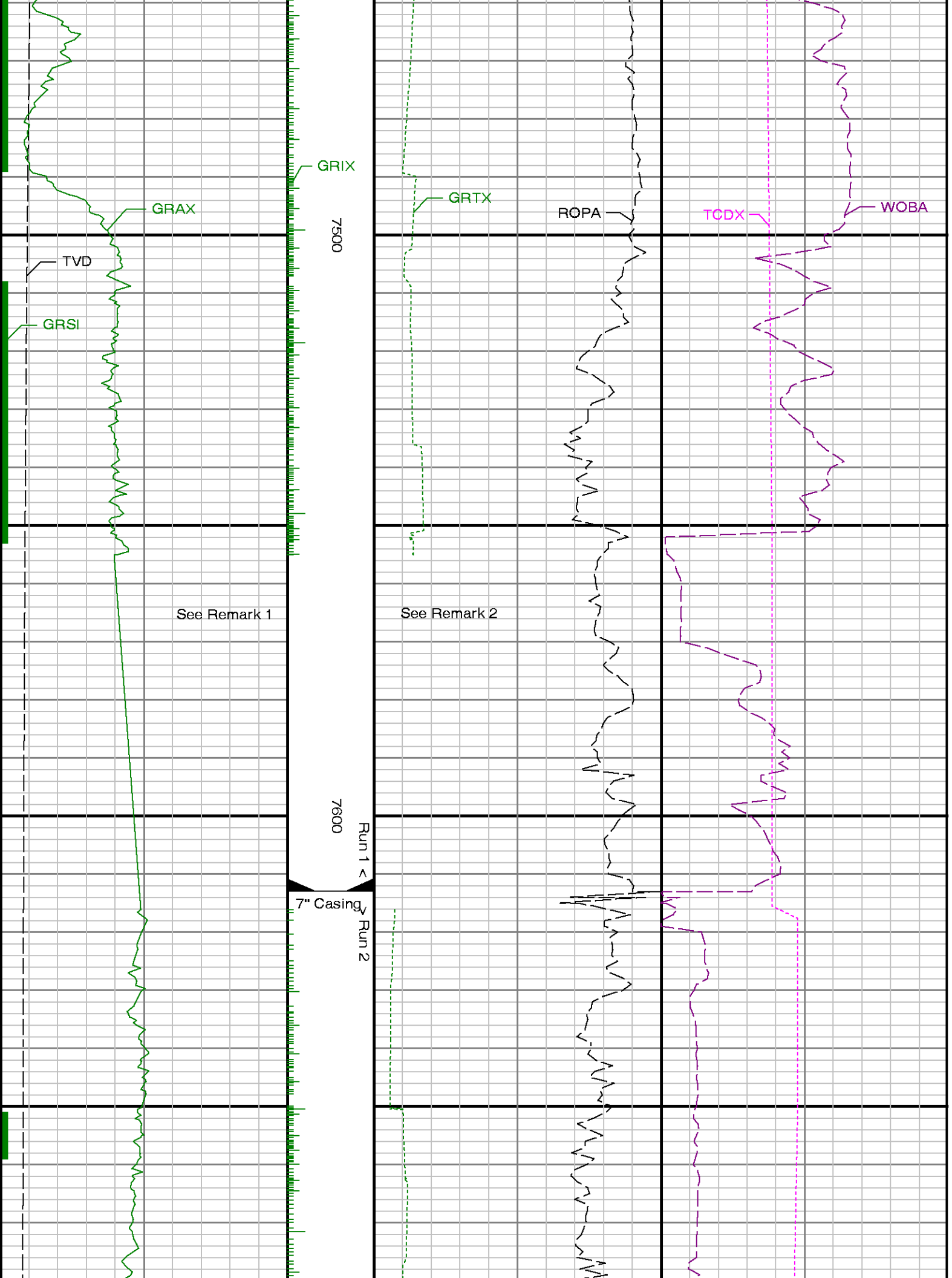


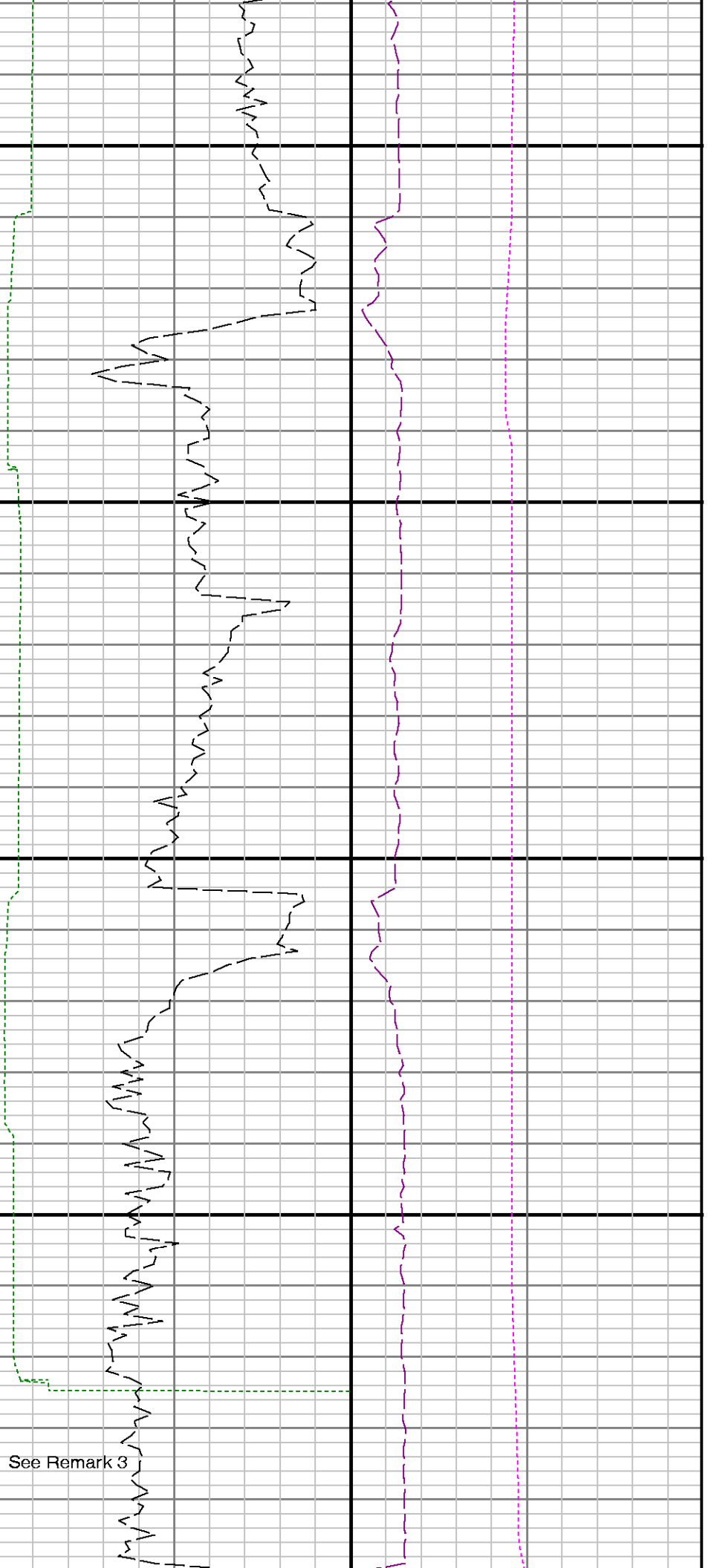


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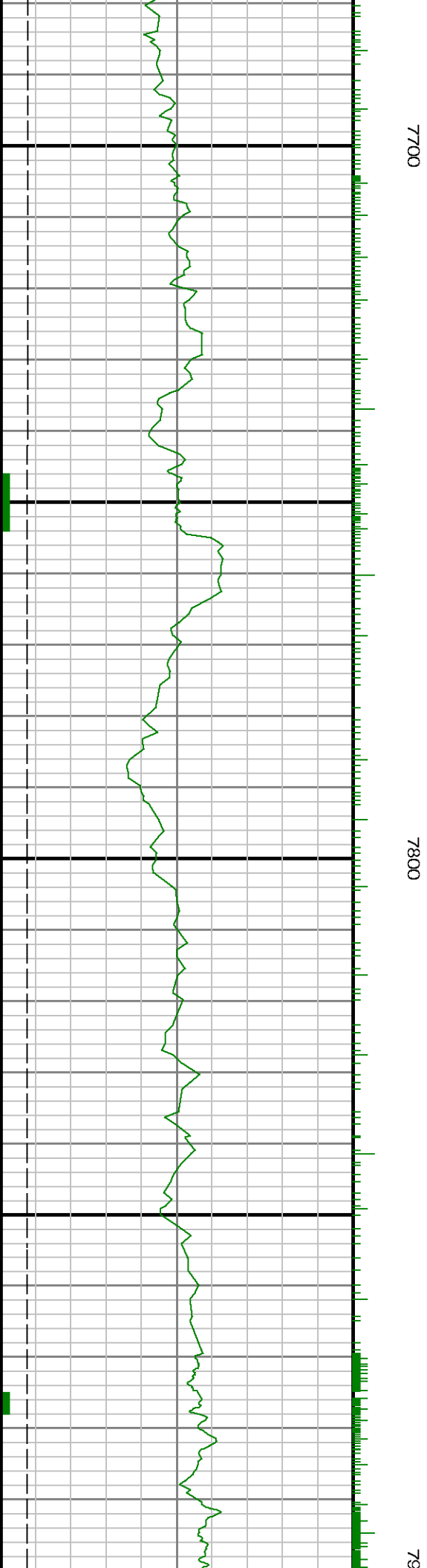
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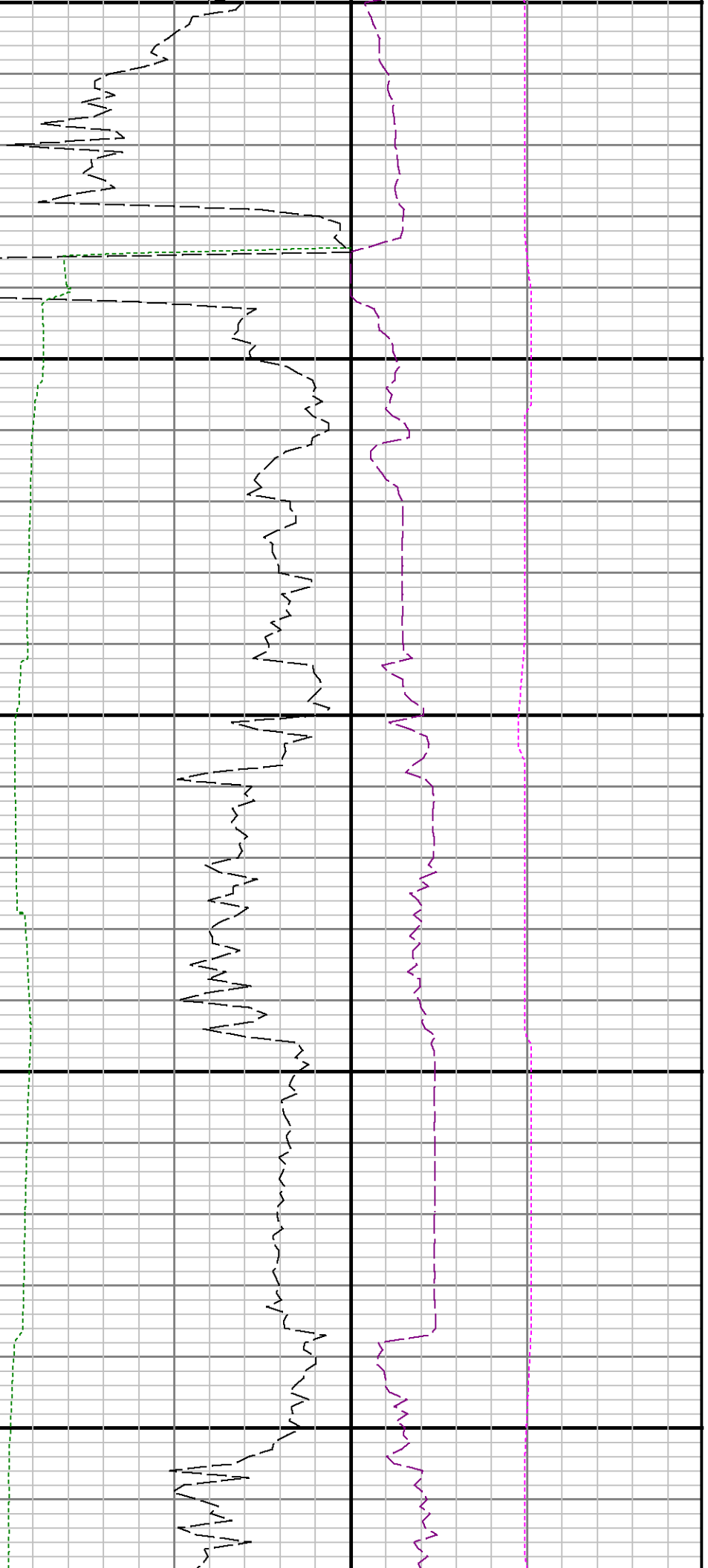






See Remark 3

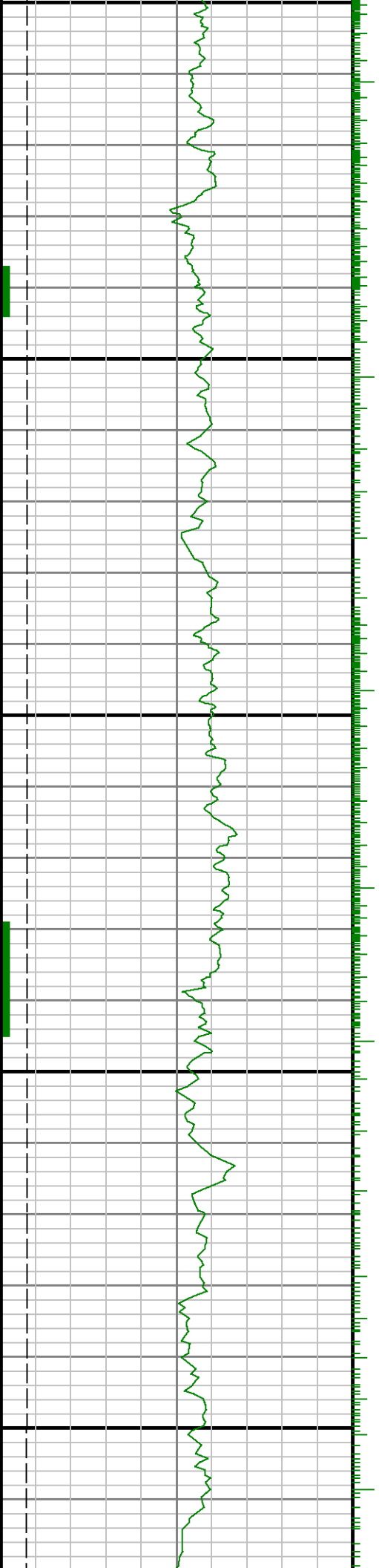


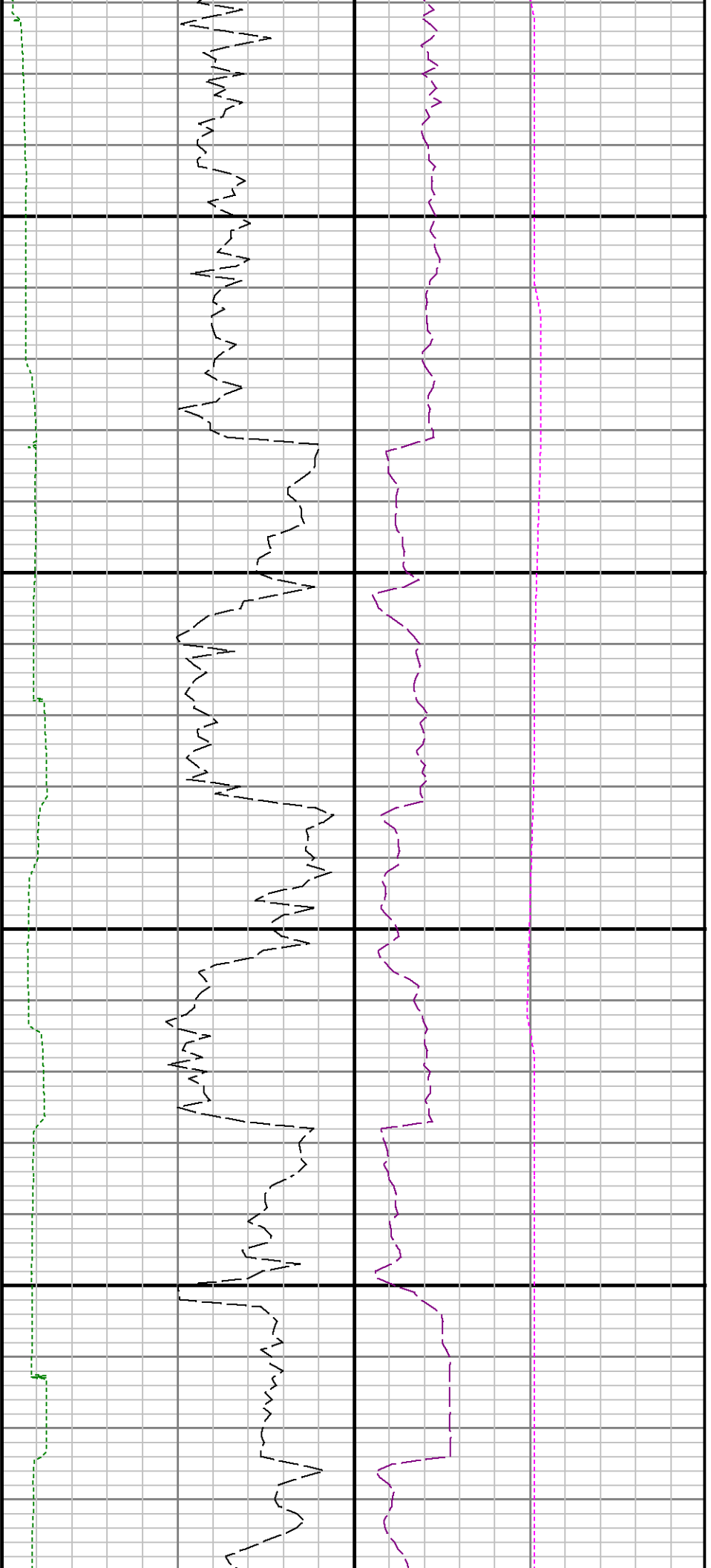


Run 2 <> Run 3

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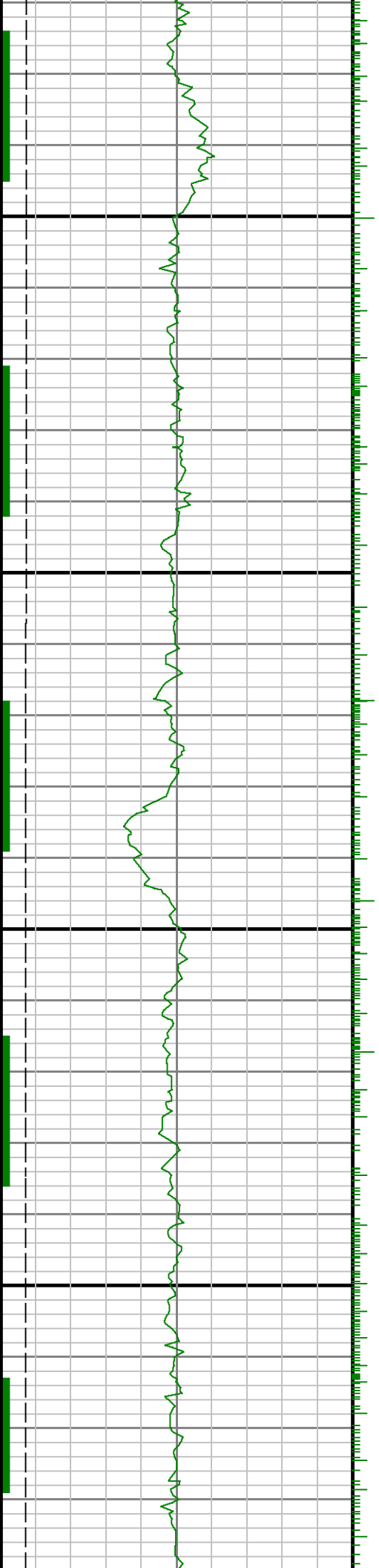
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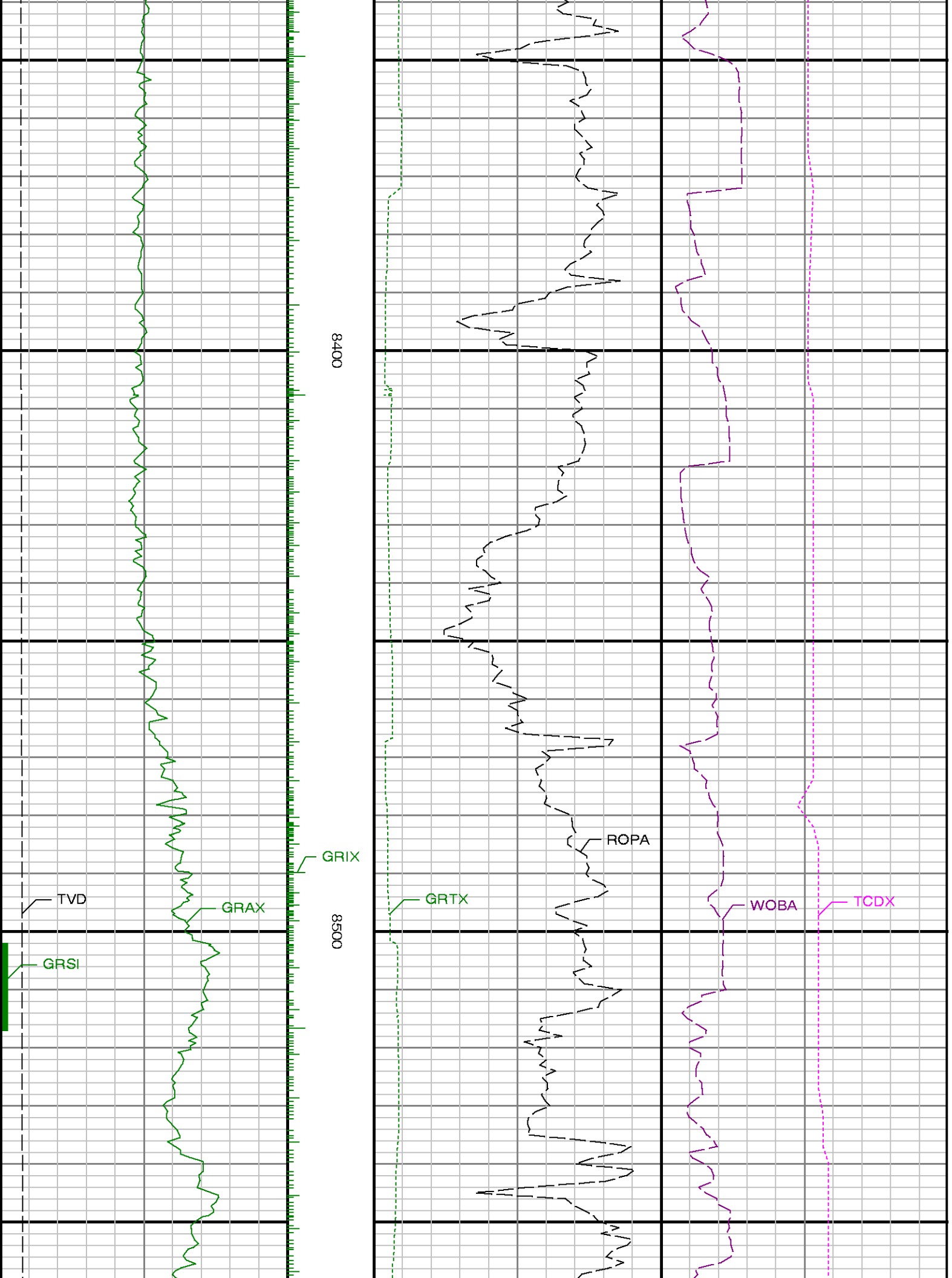


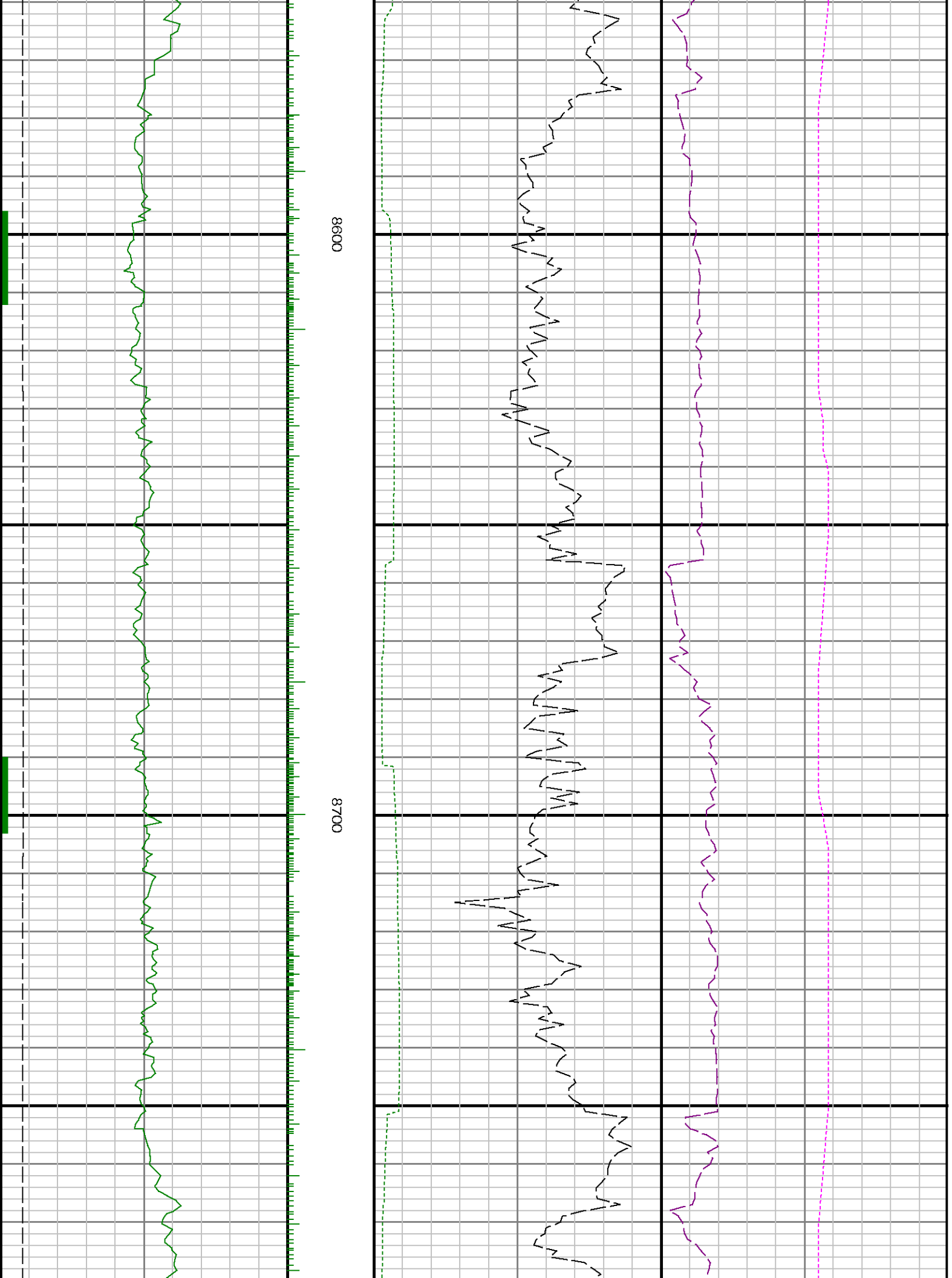


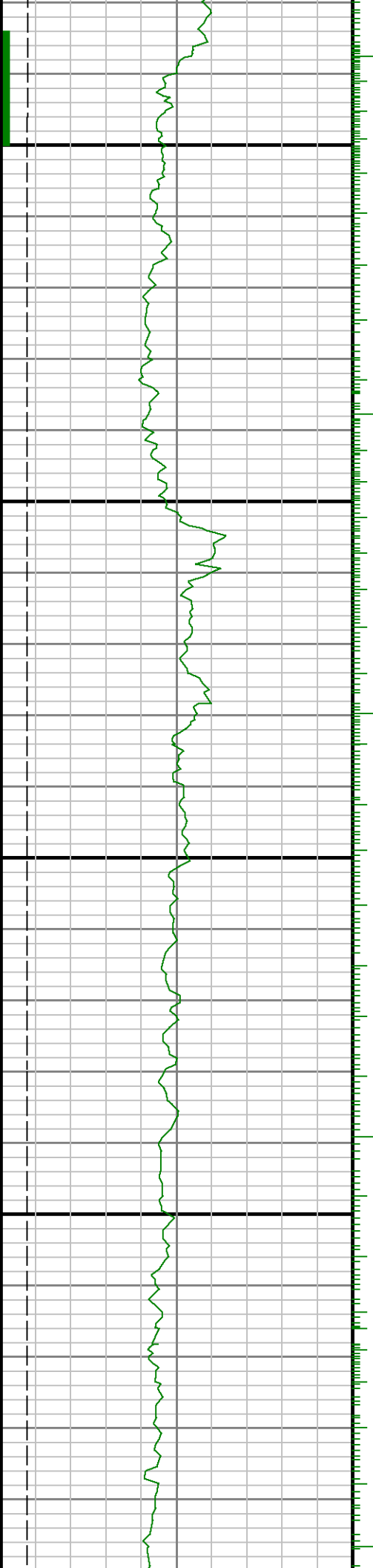
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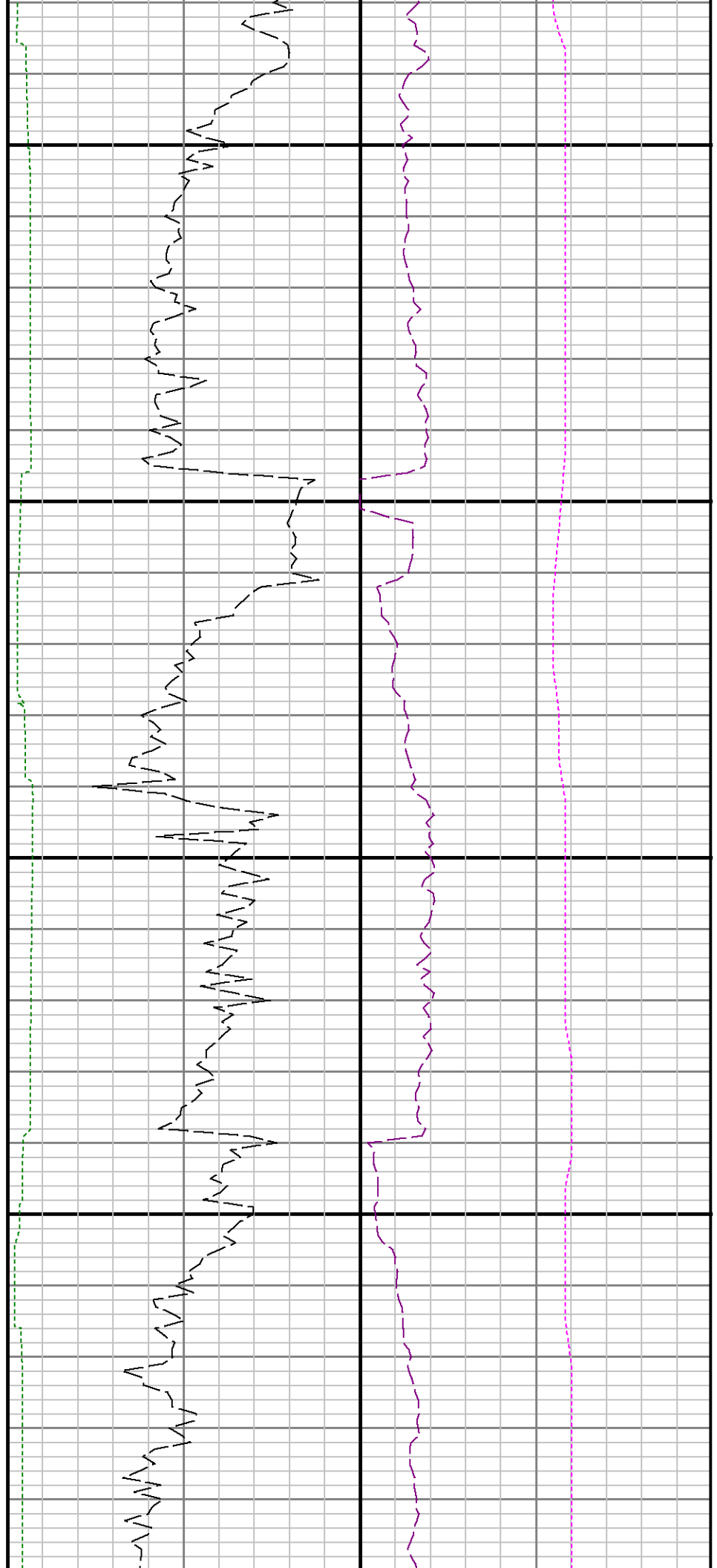


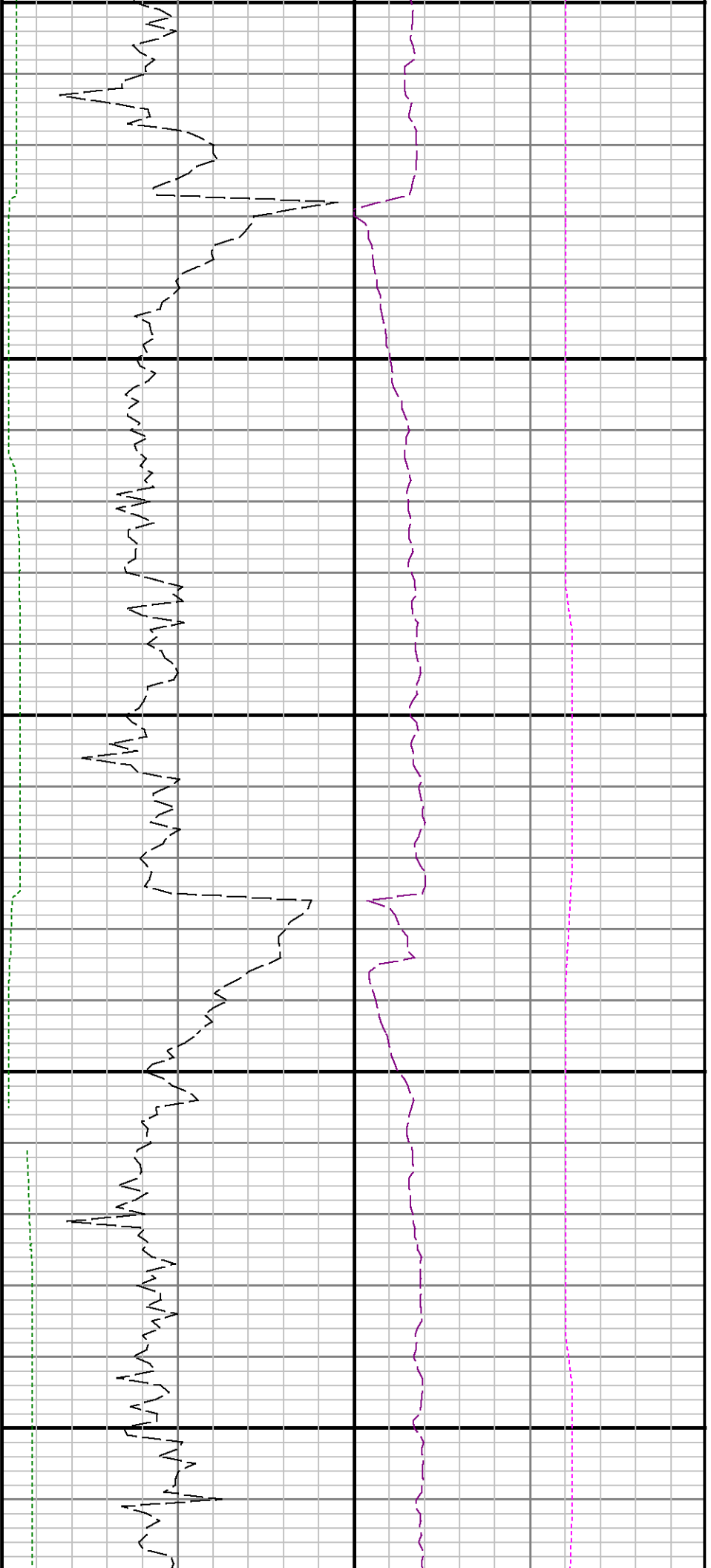


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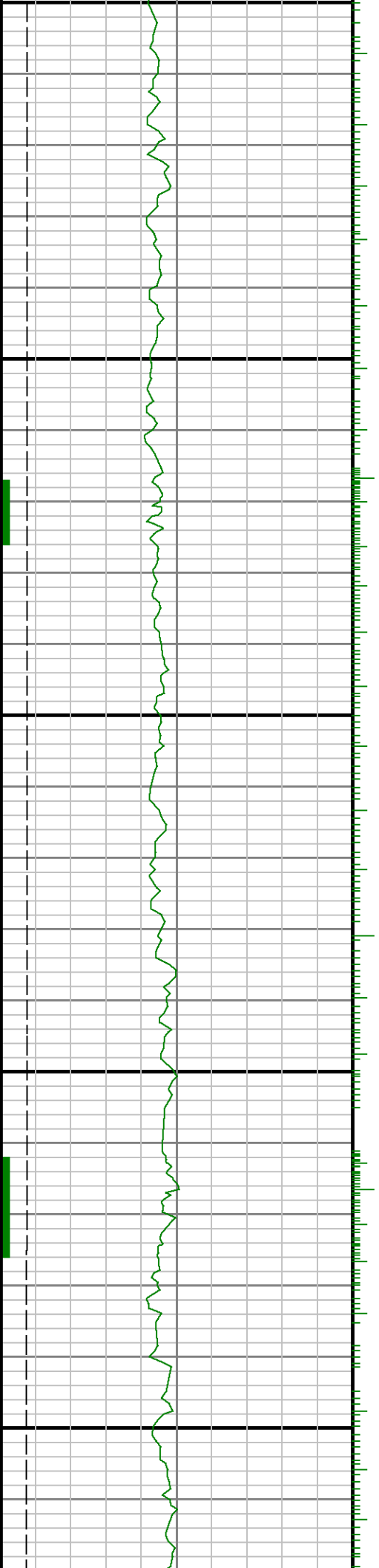


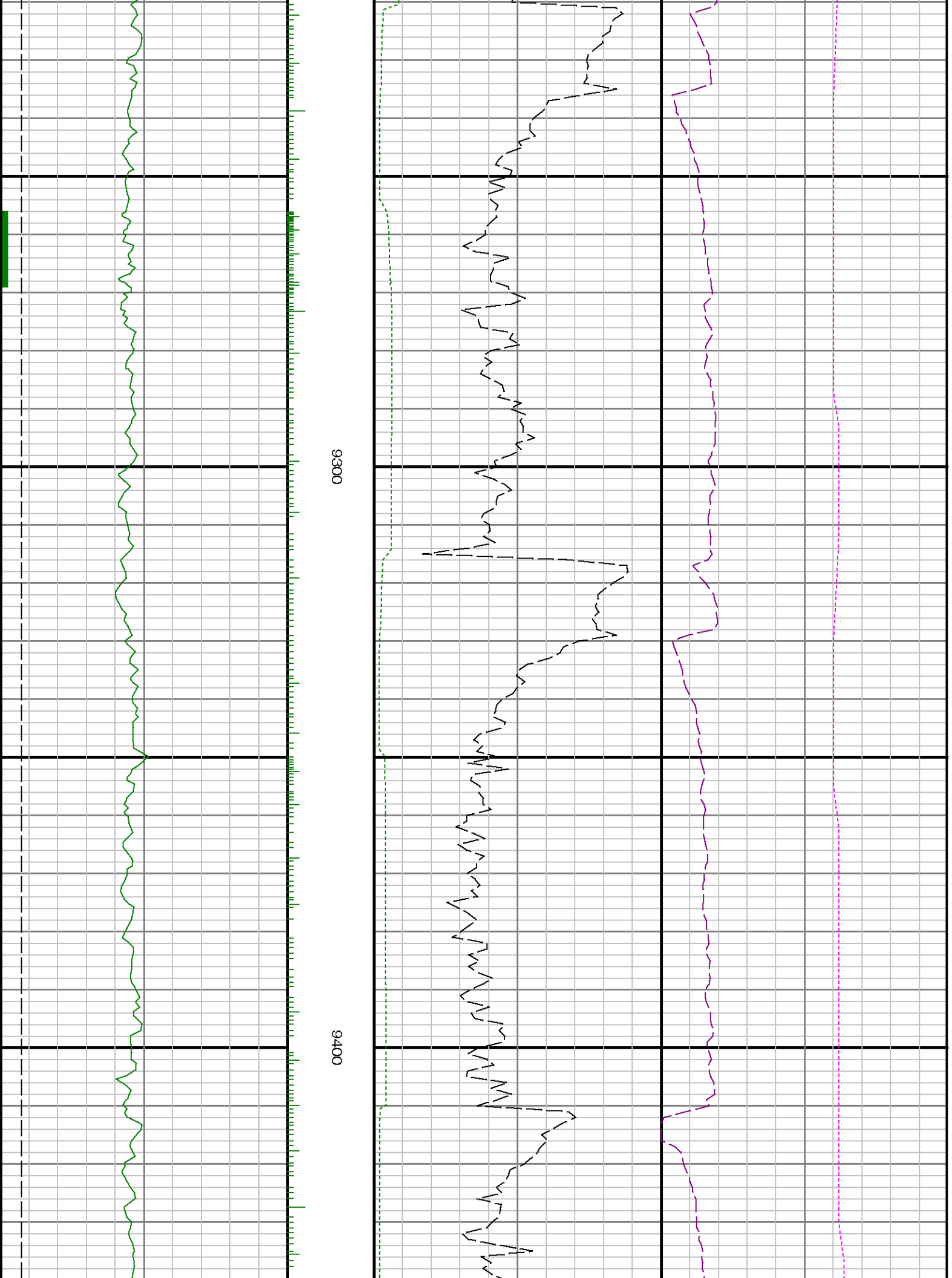


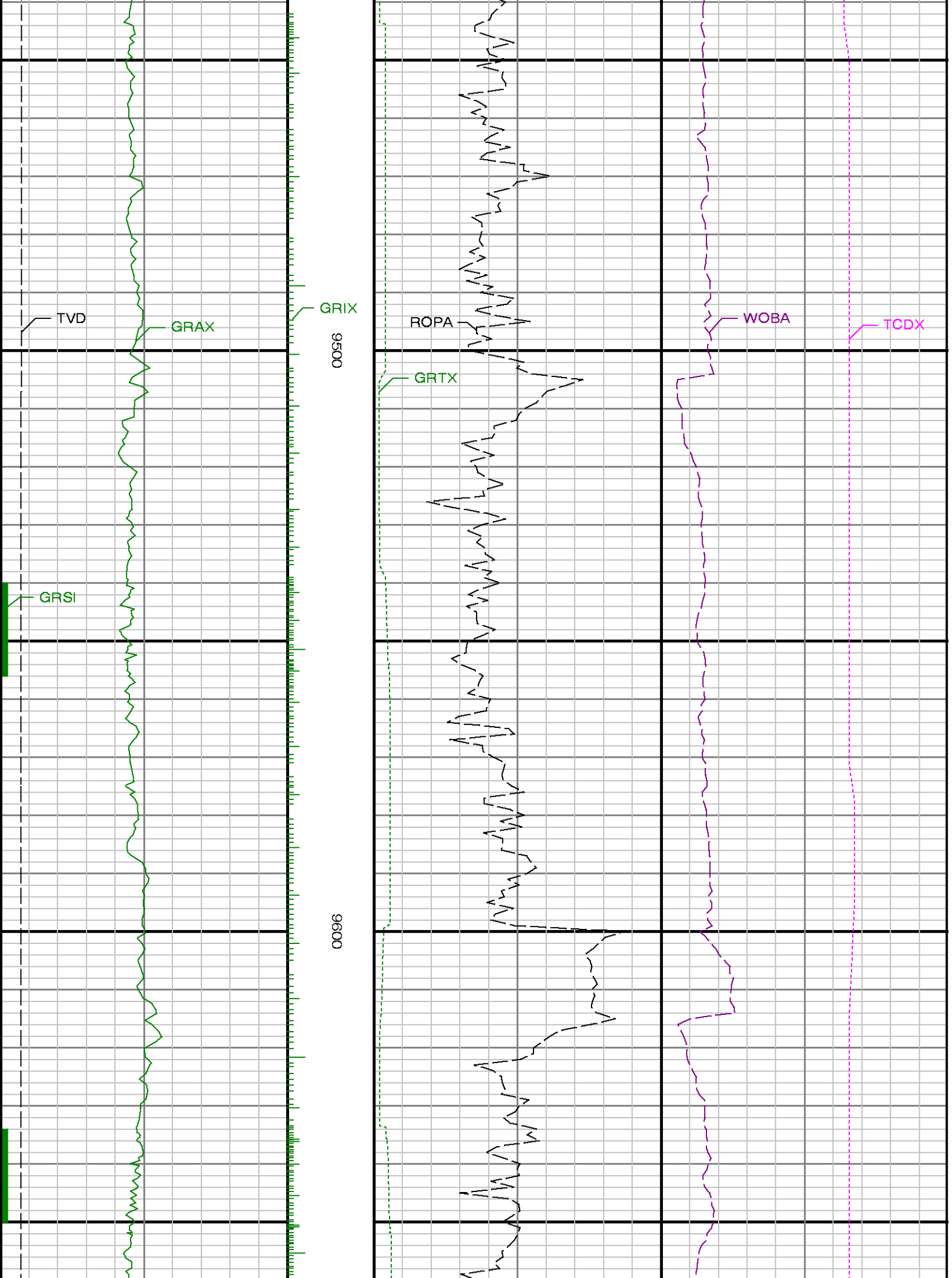
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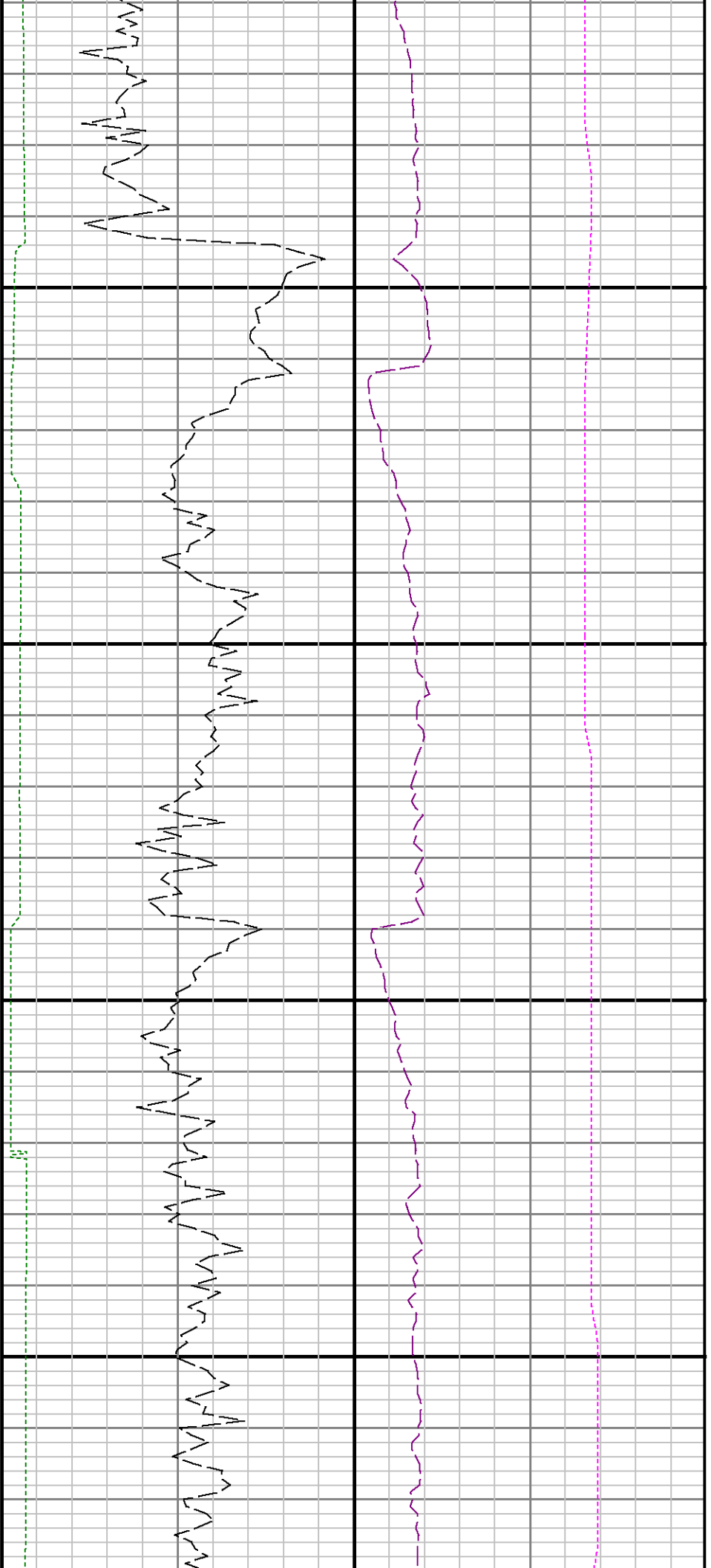
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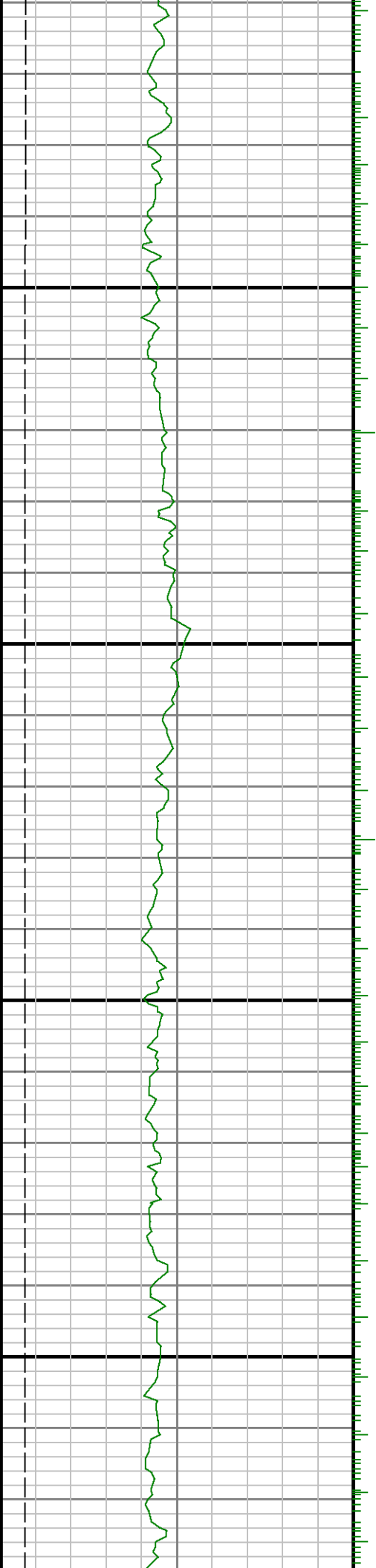


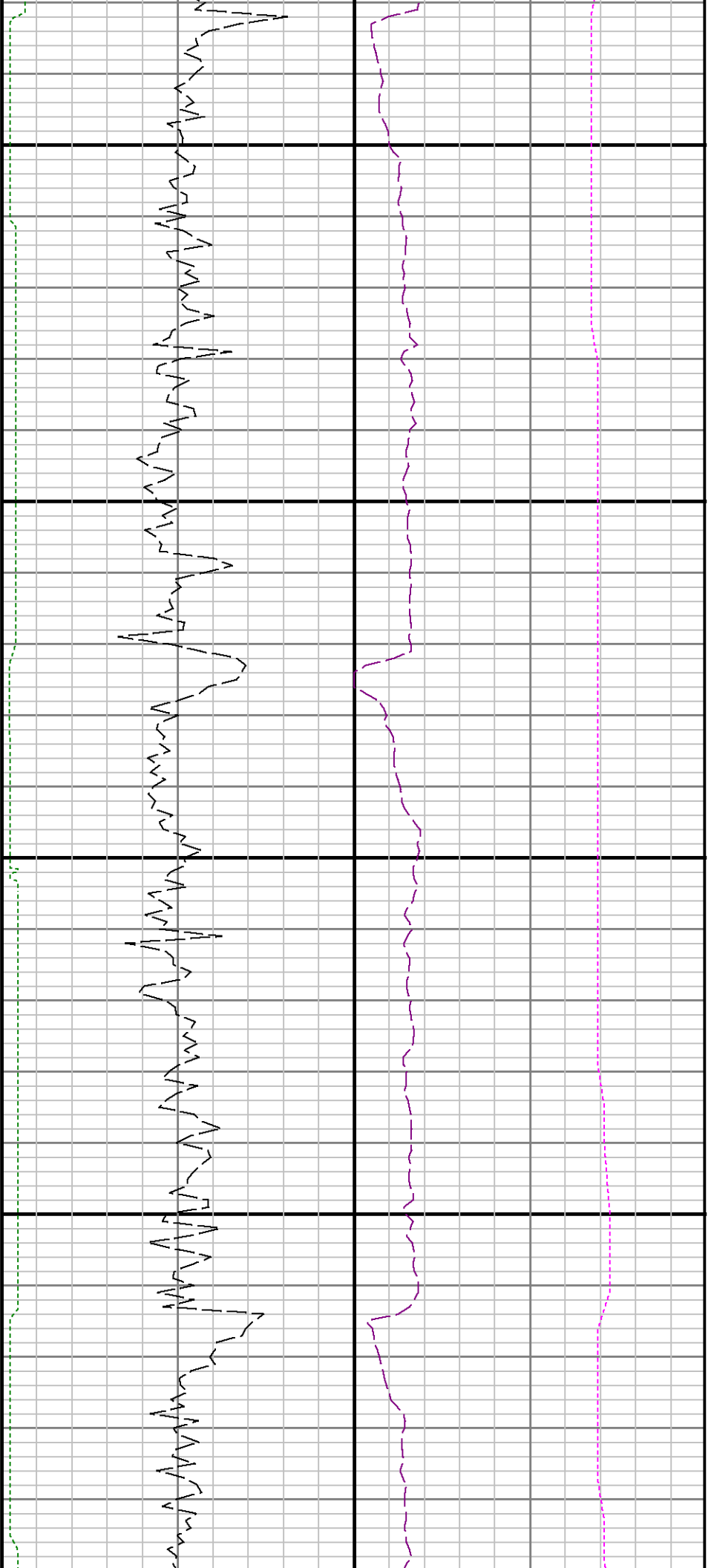




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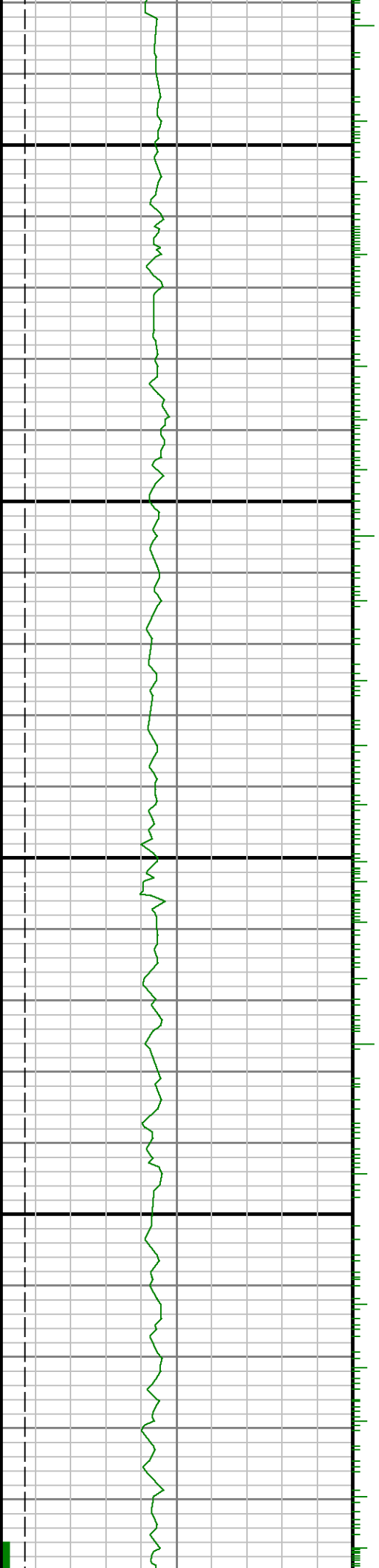


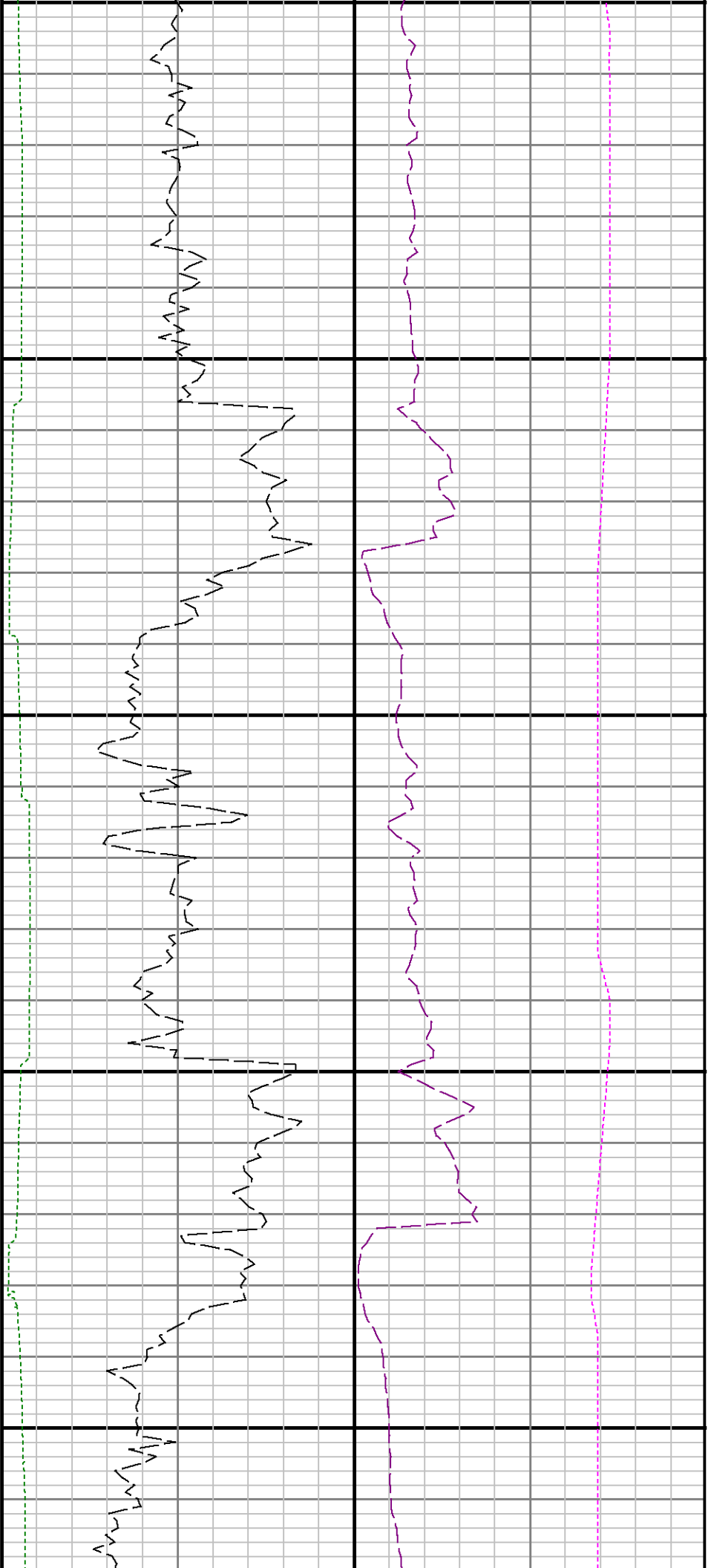


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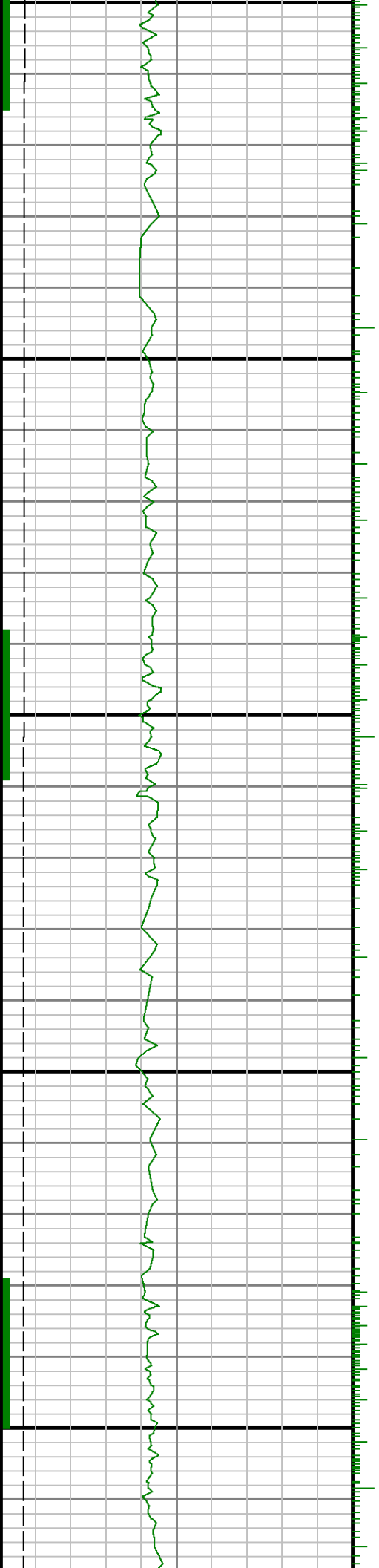


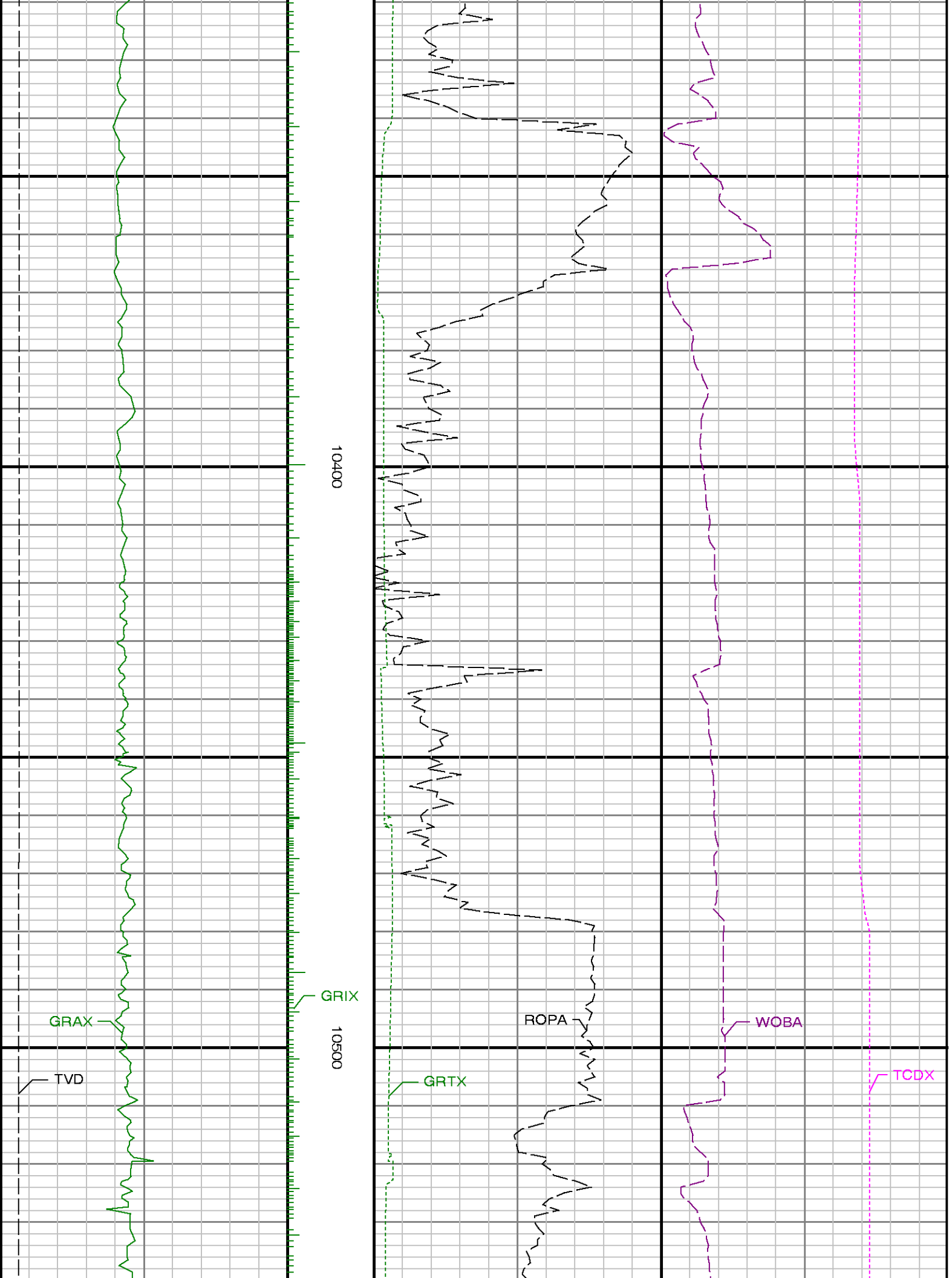


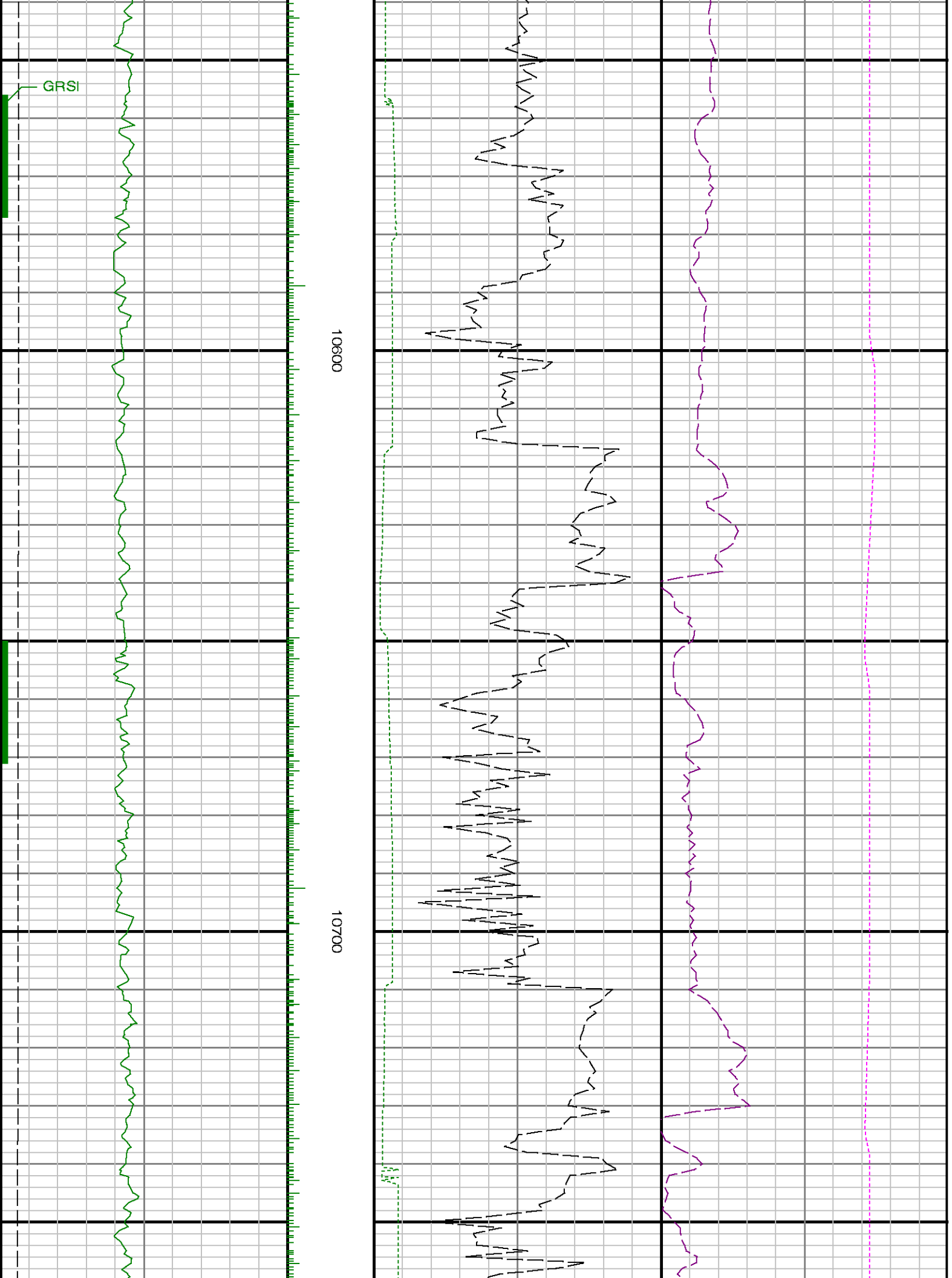
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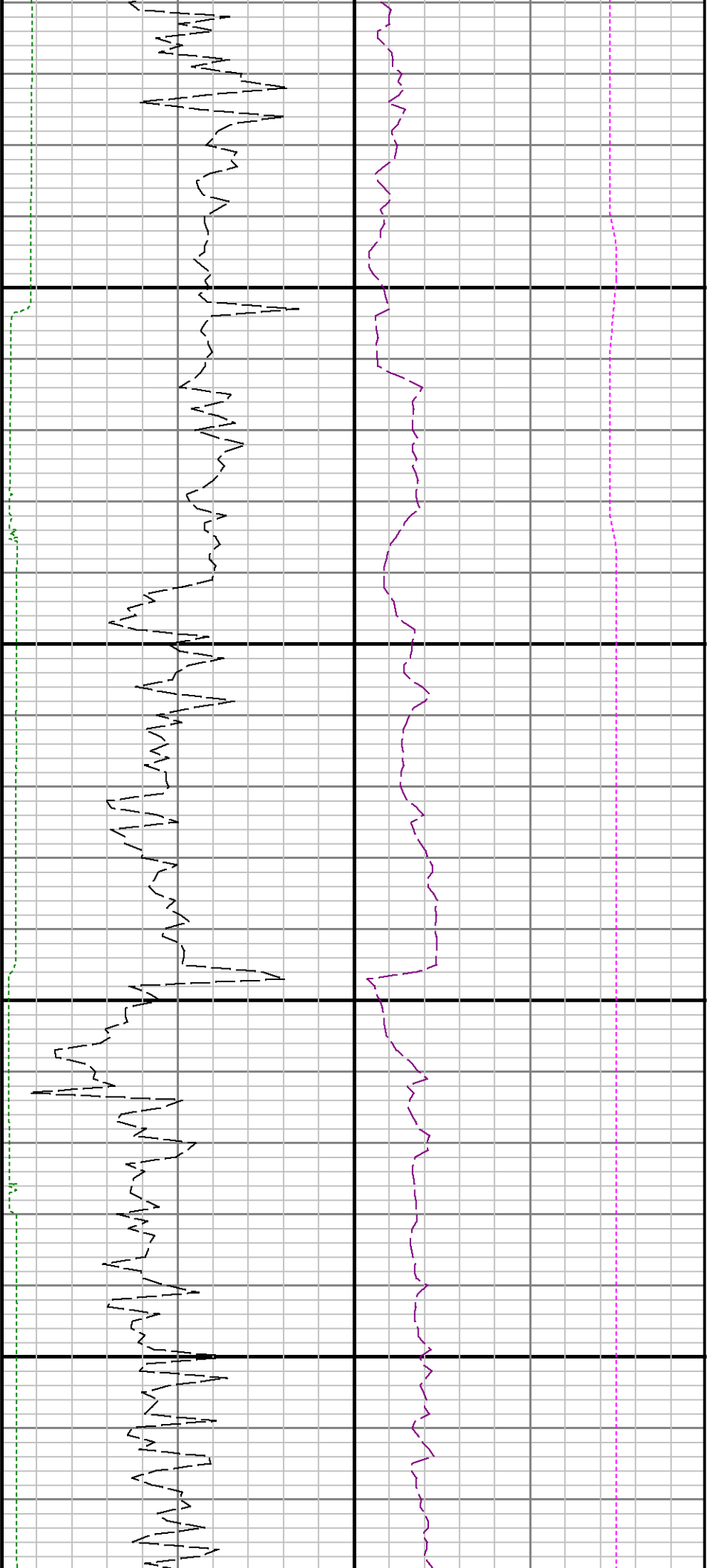
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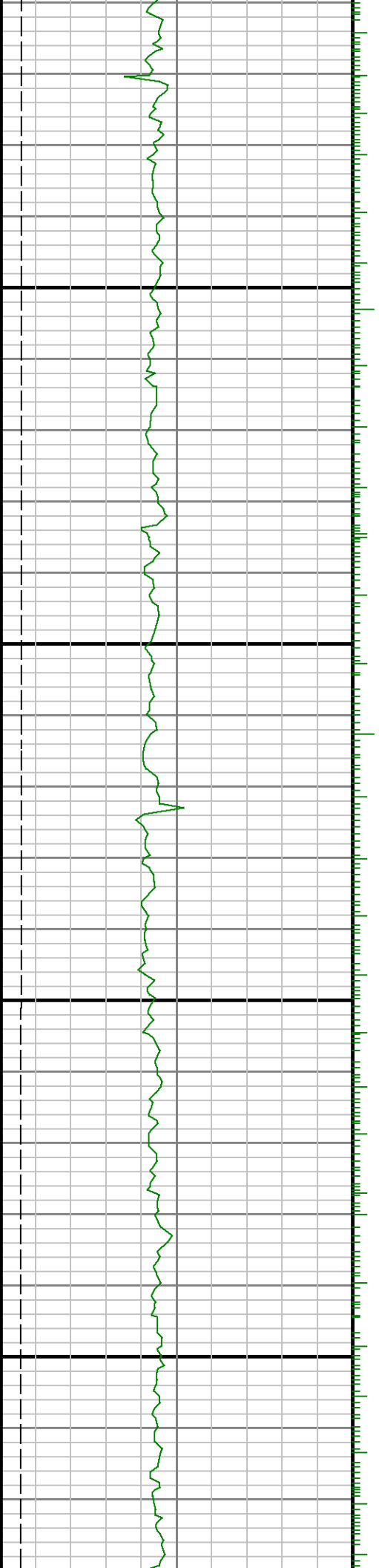


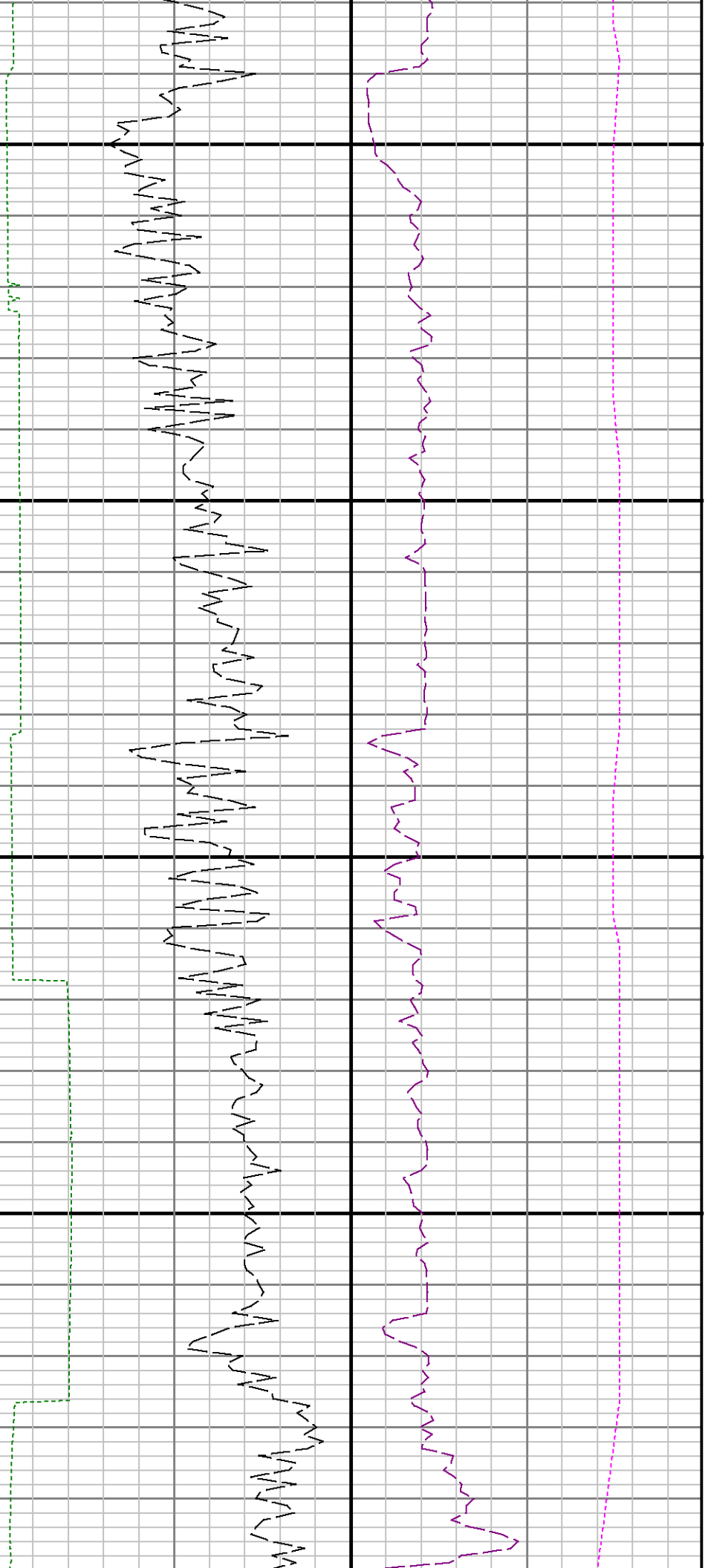




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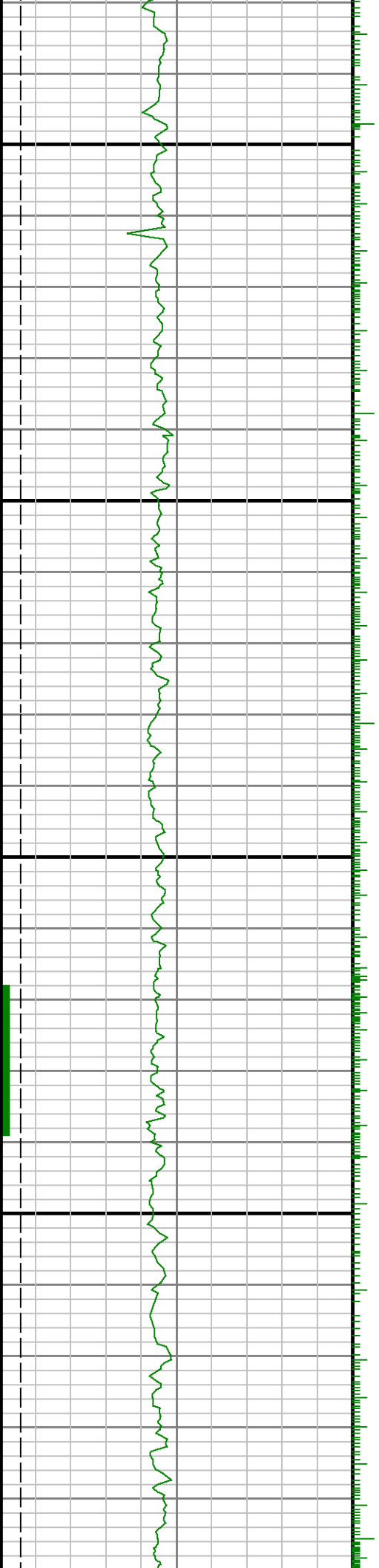


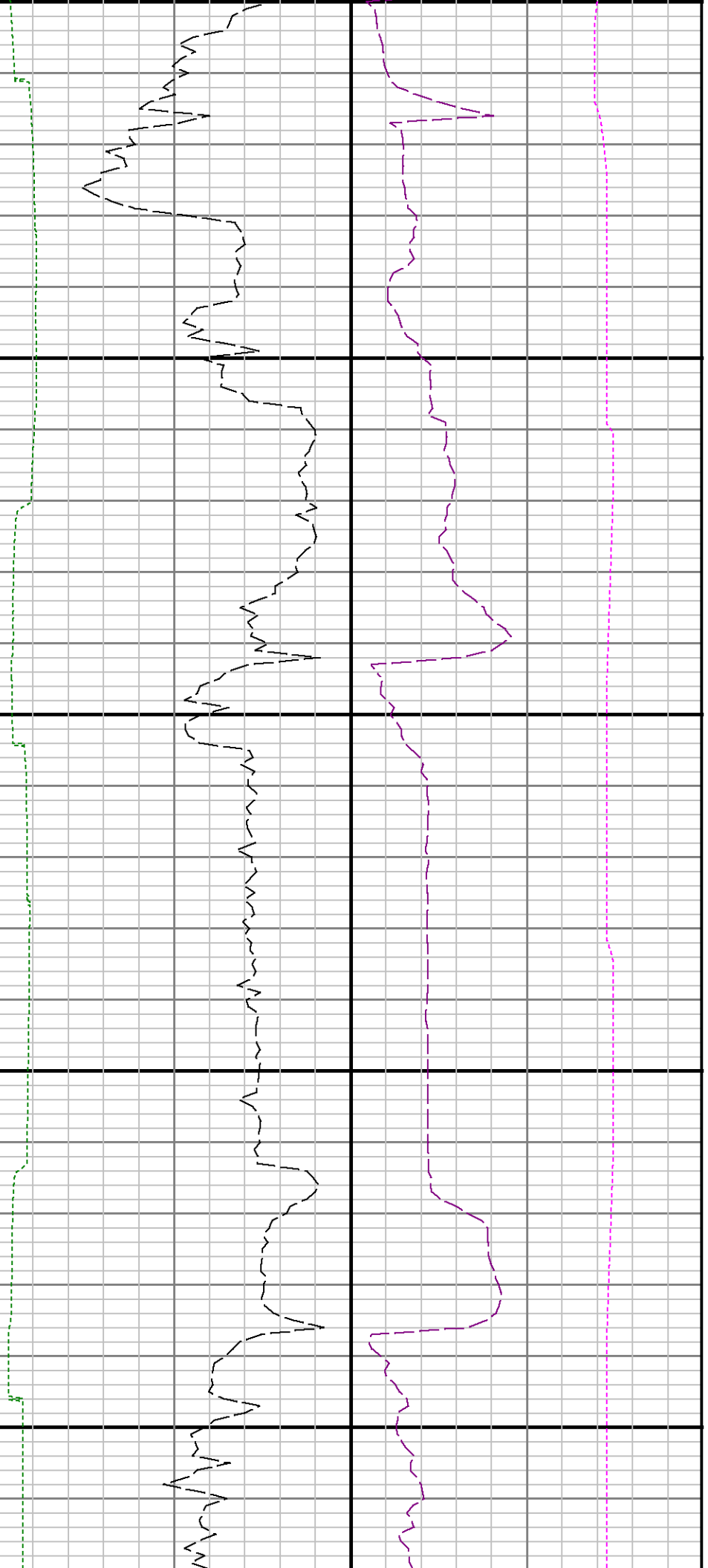


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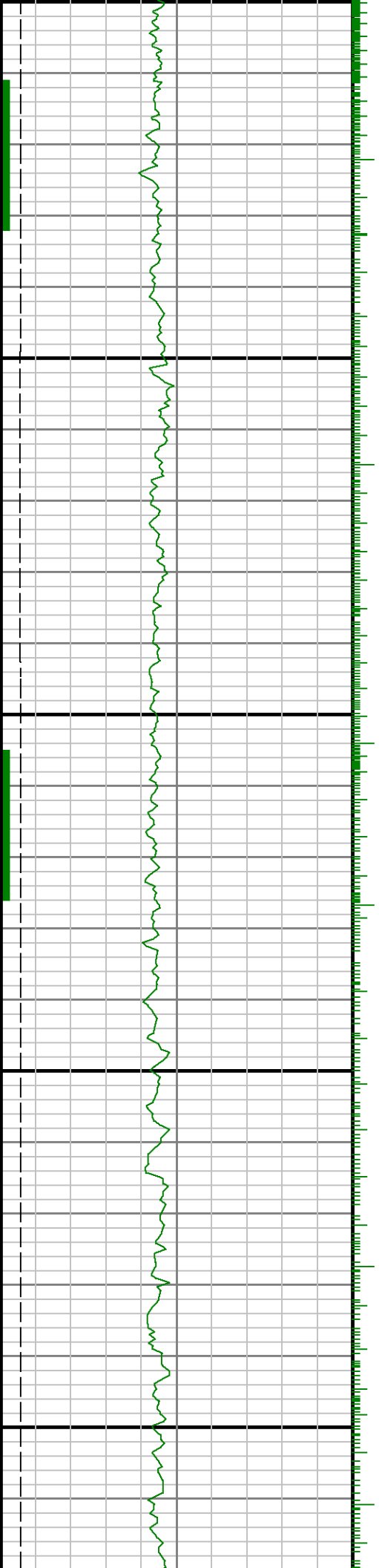


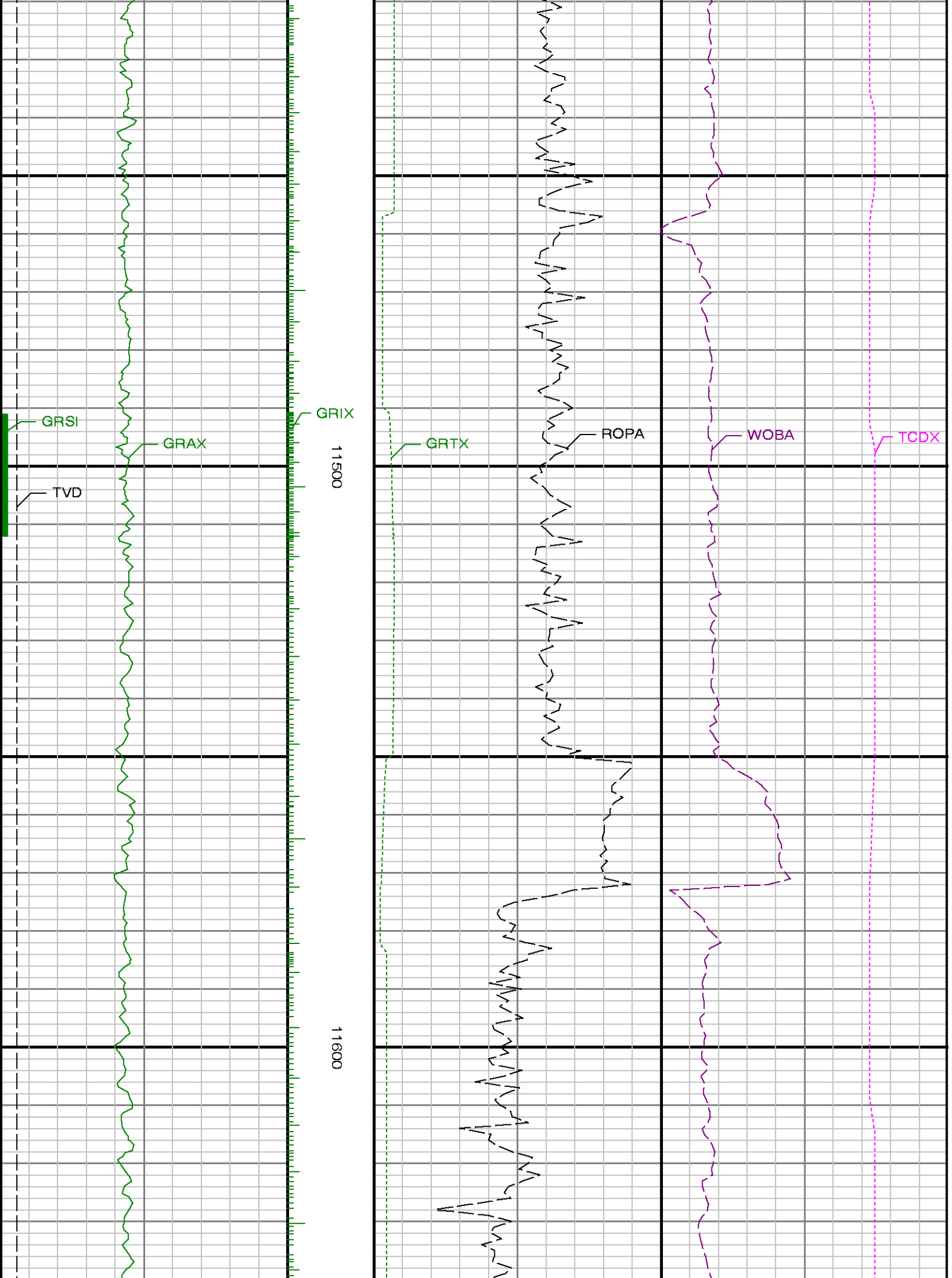


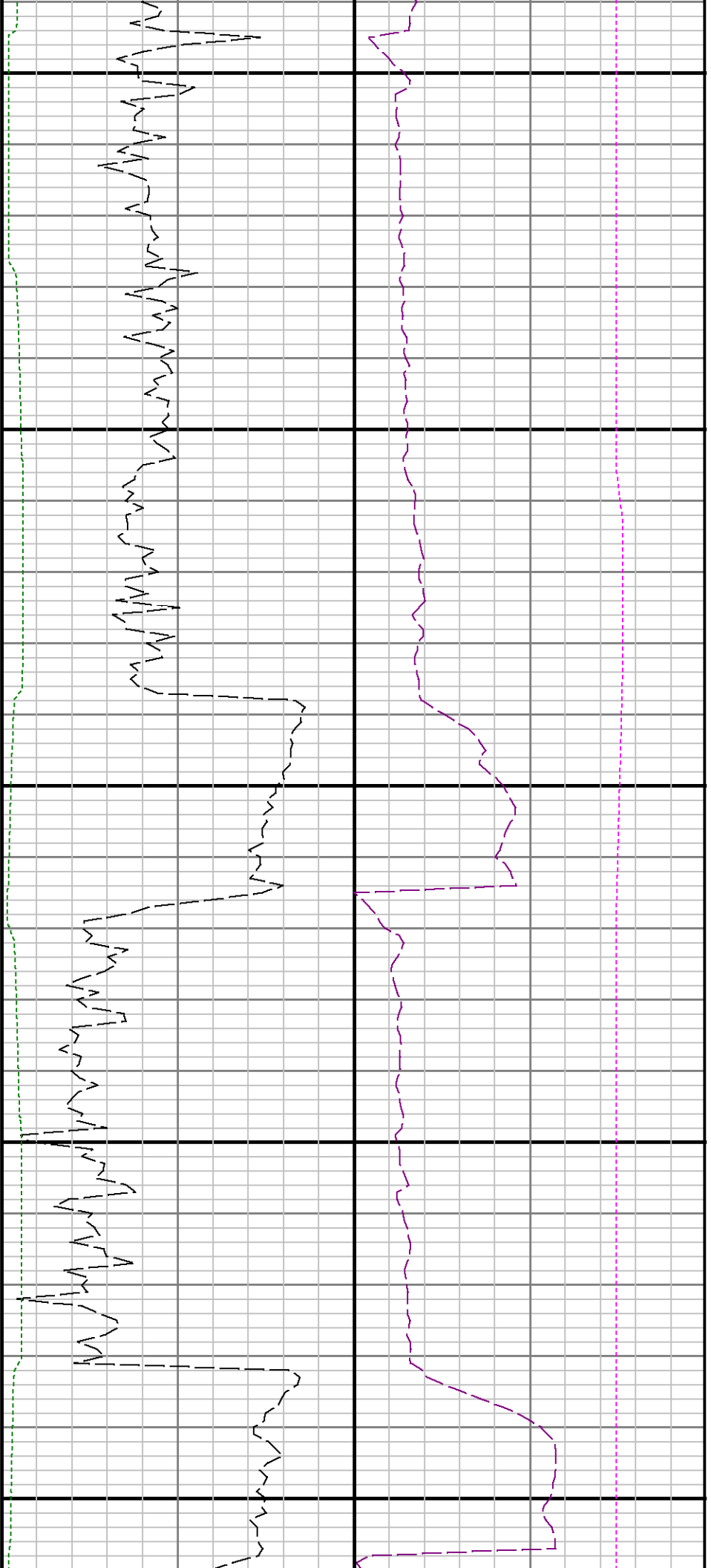
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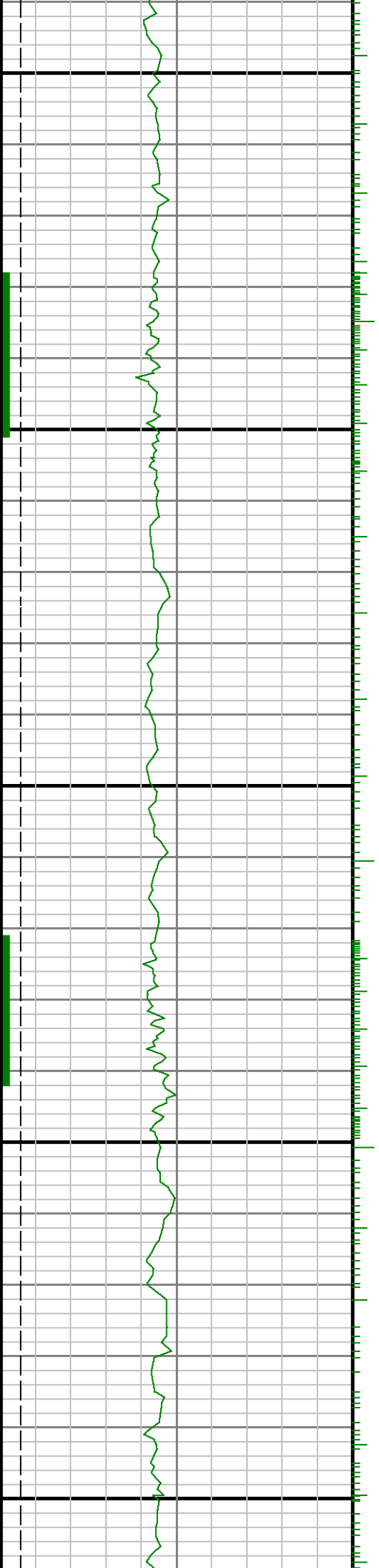


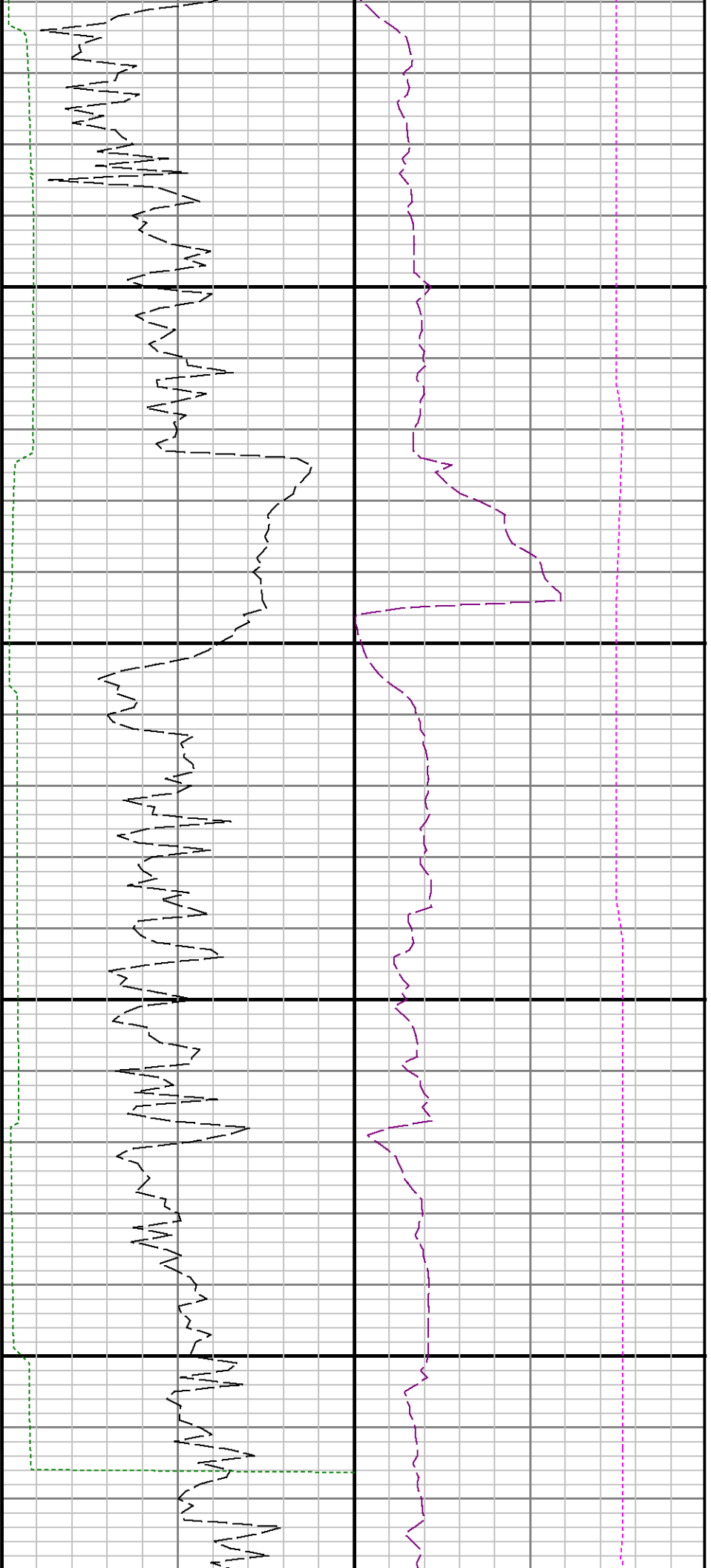




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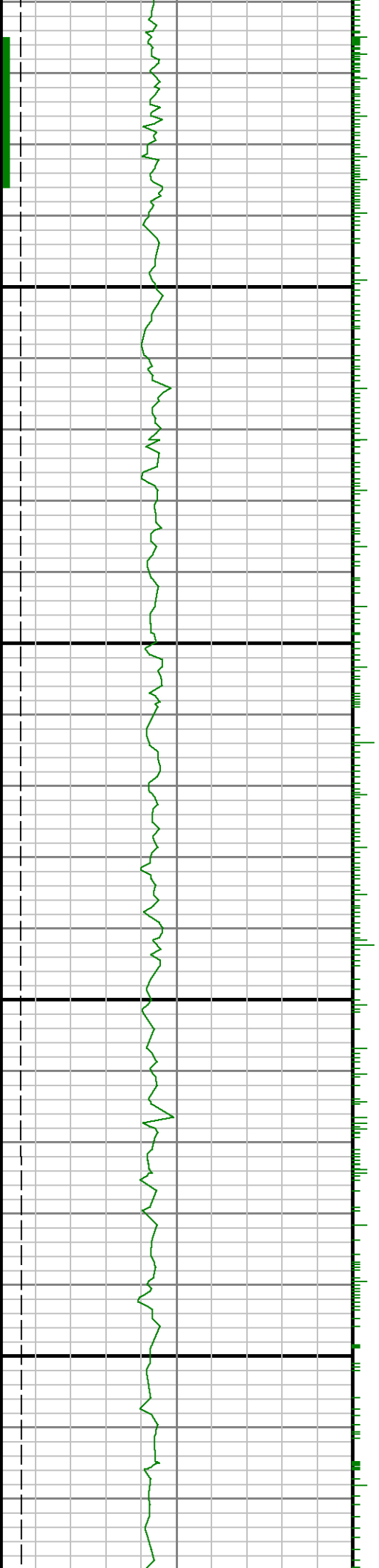
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See Remark 4

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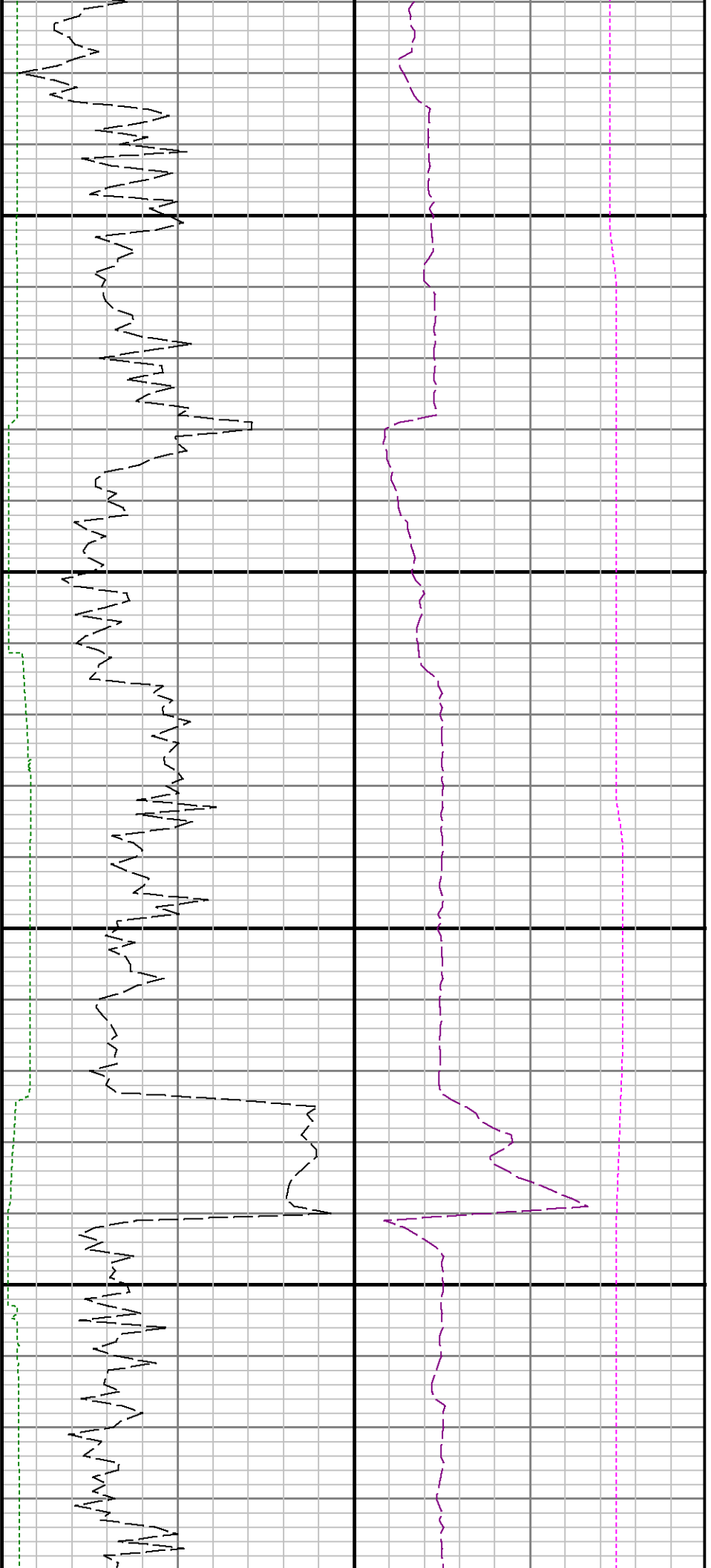
Run 3 <> Run 4

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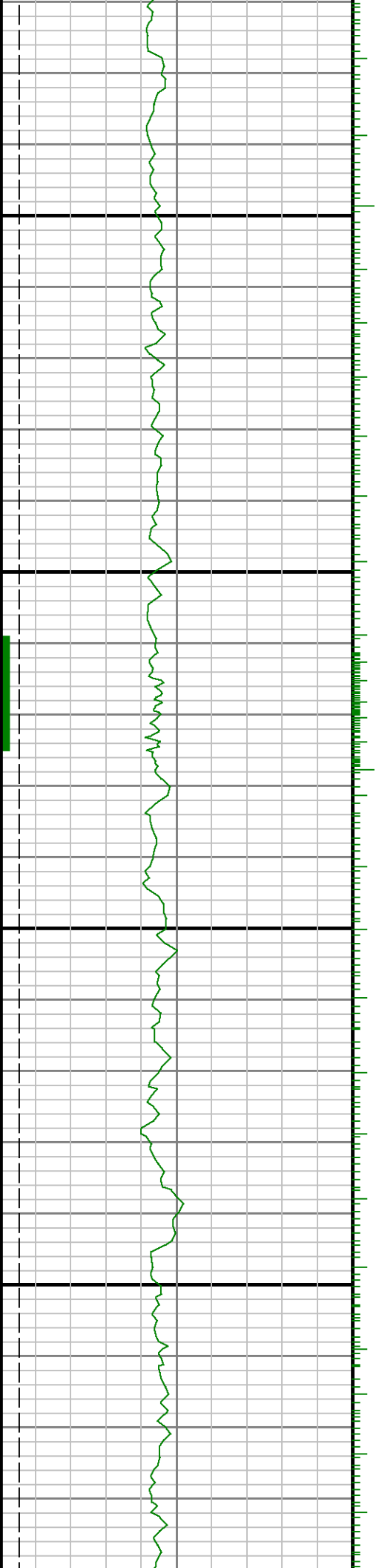


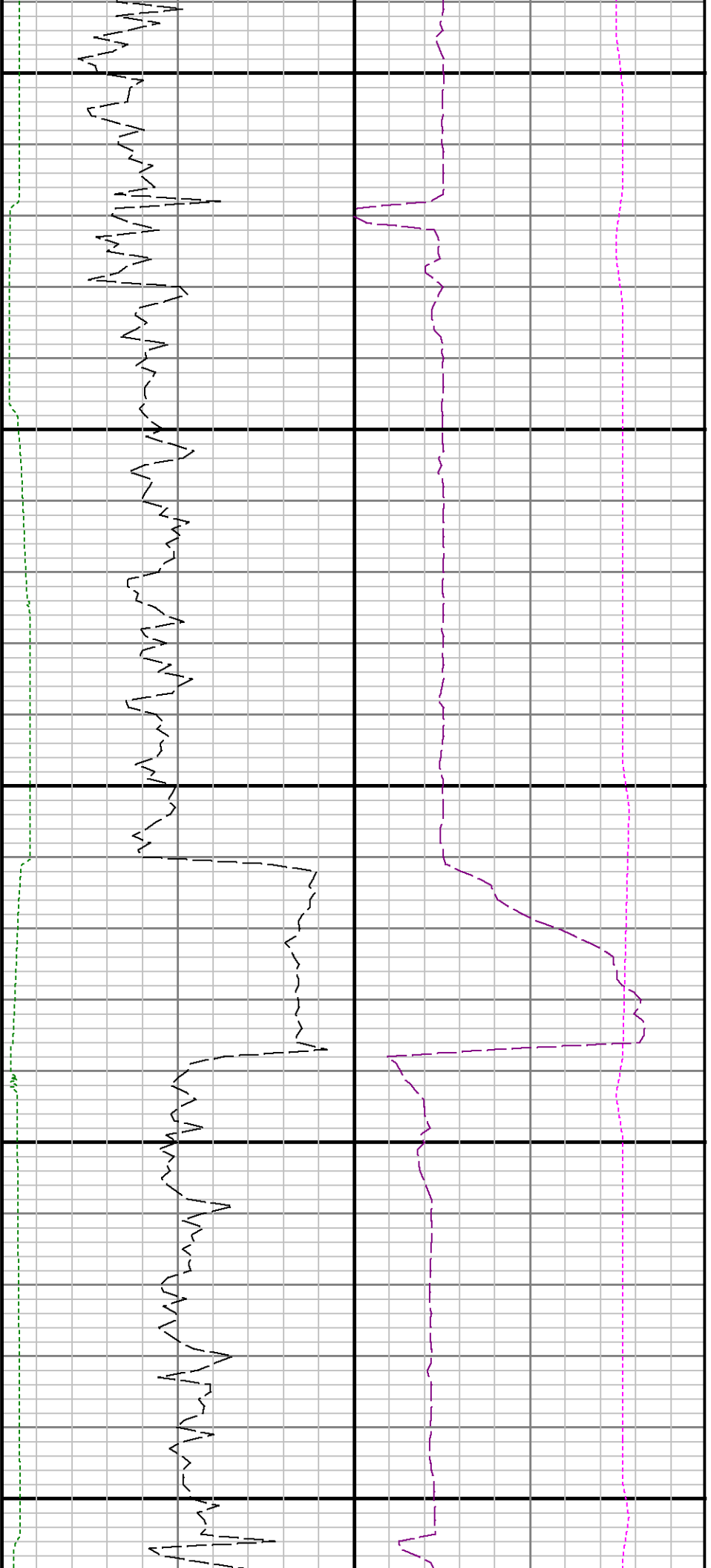




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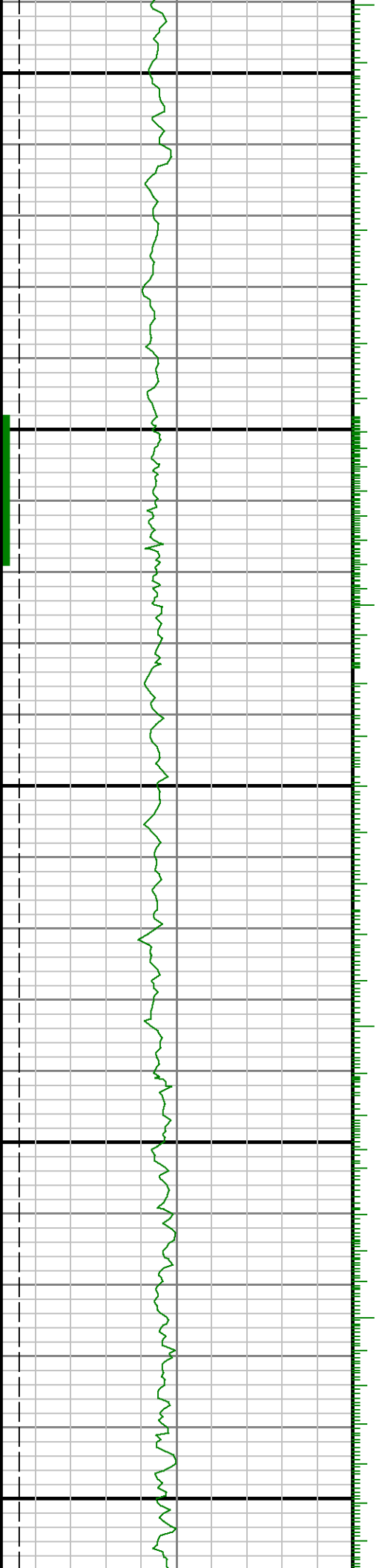
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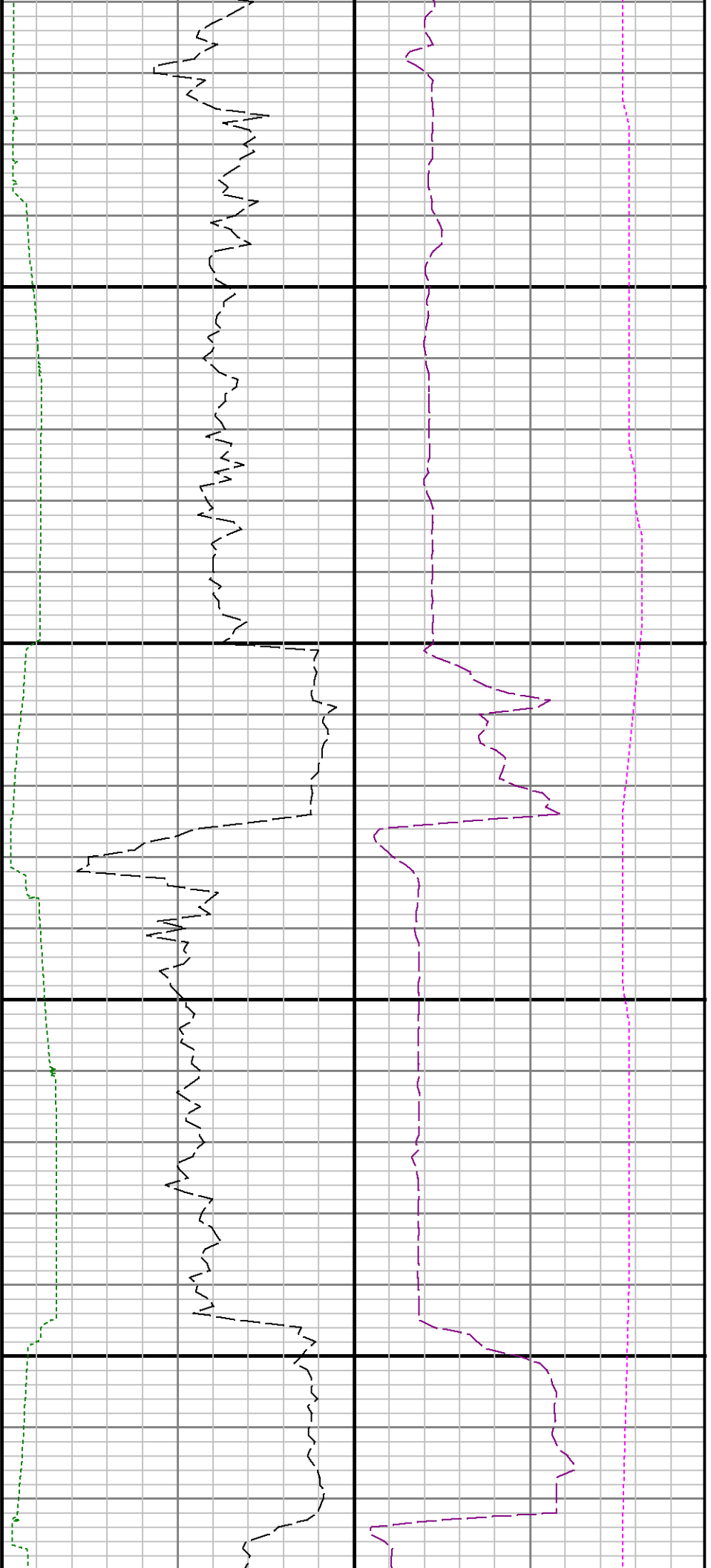




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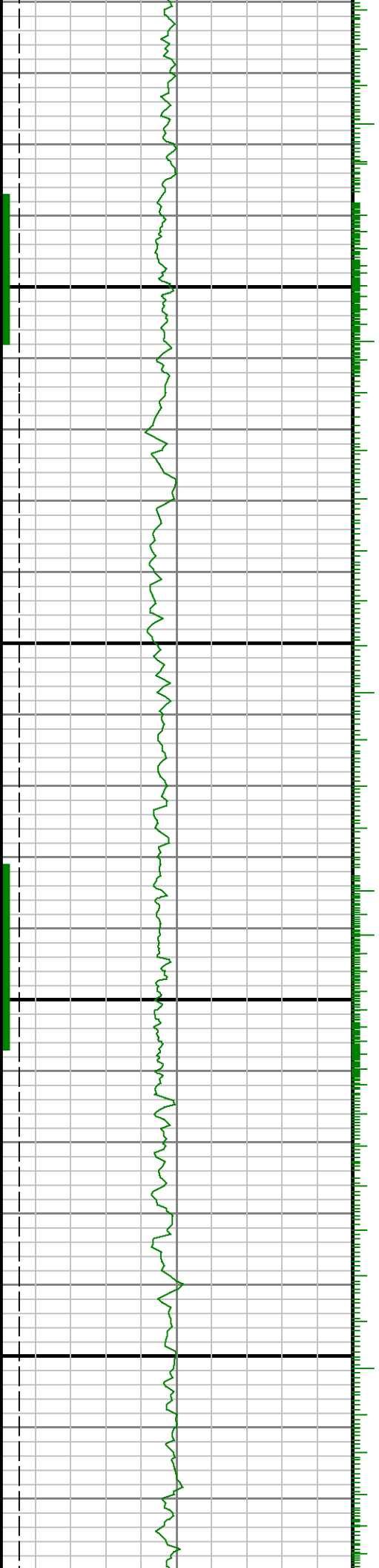
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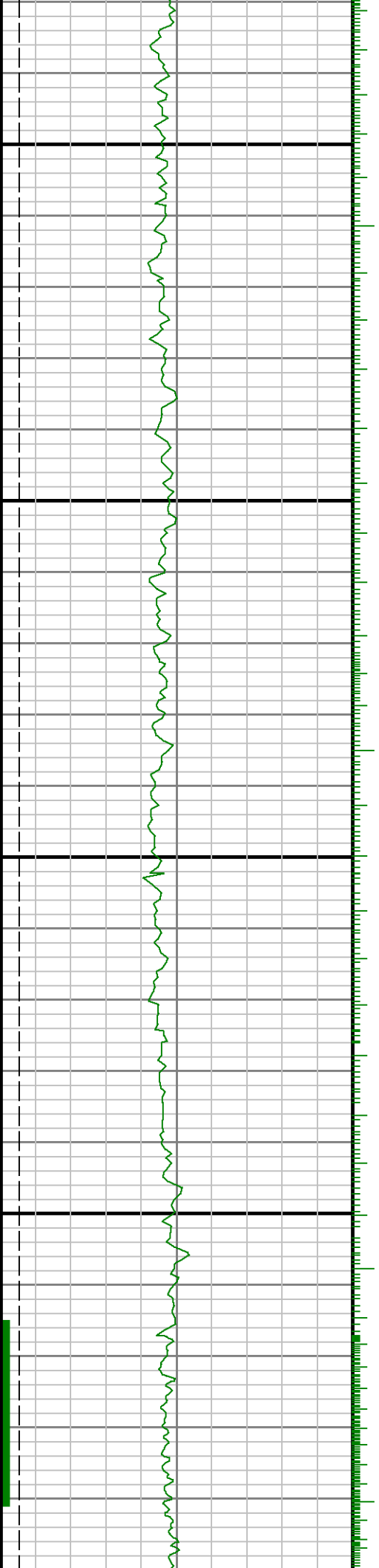


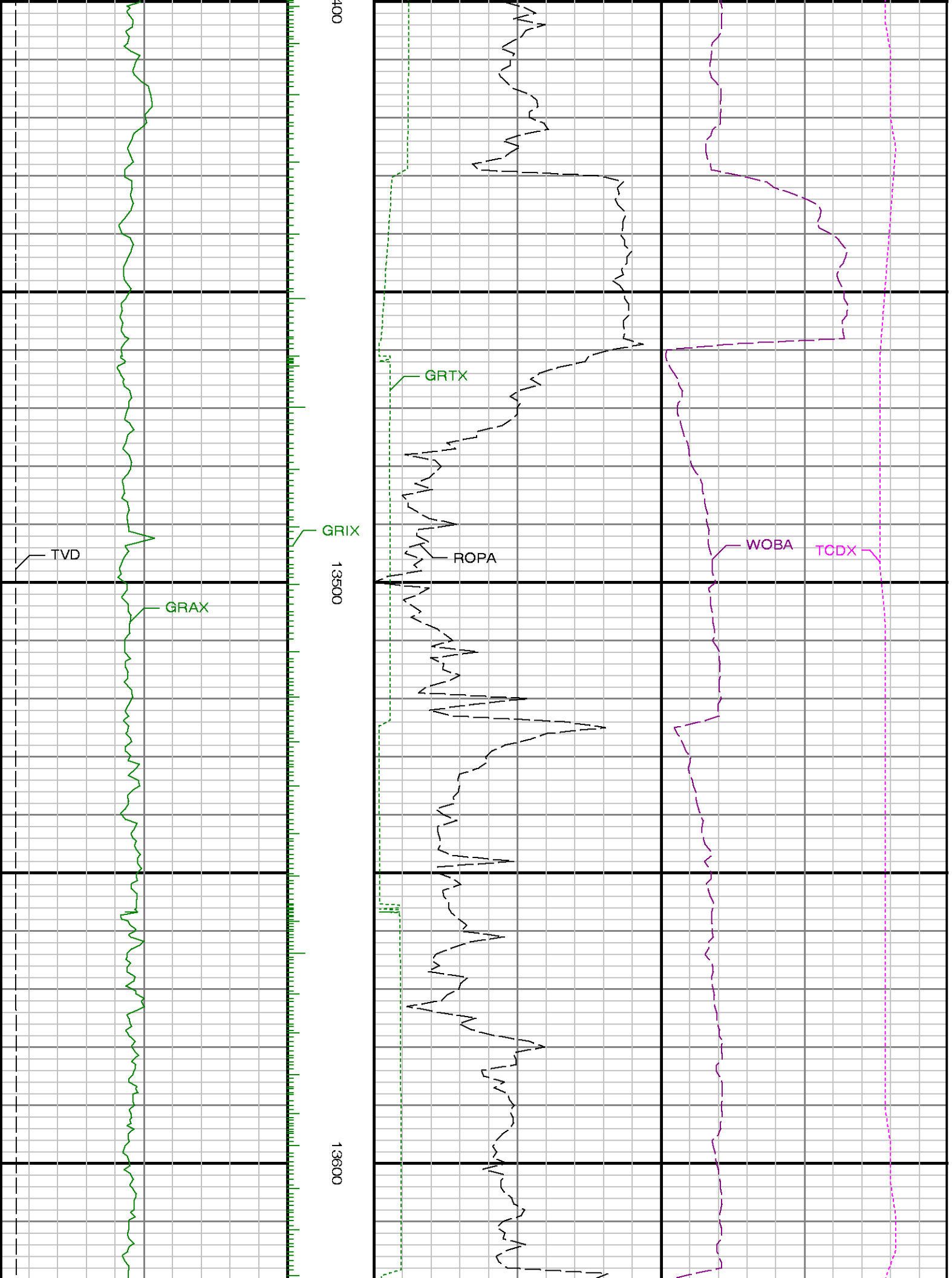


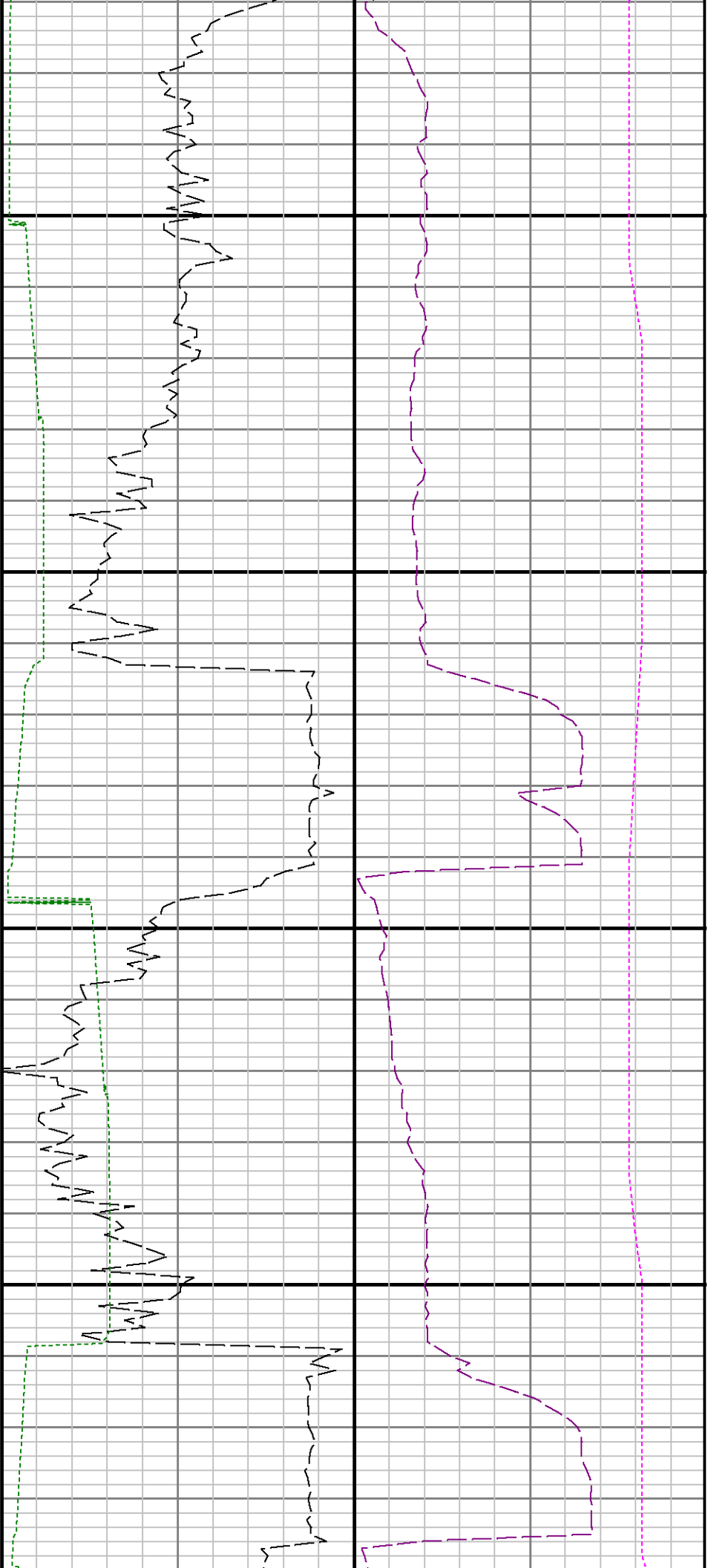
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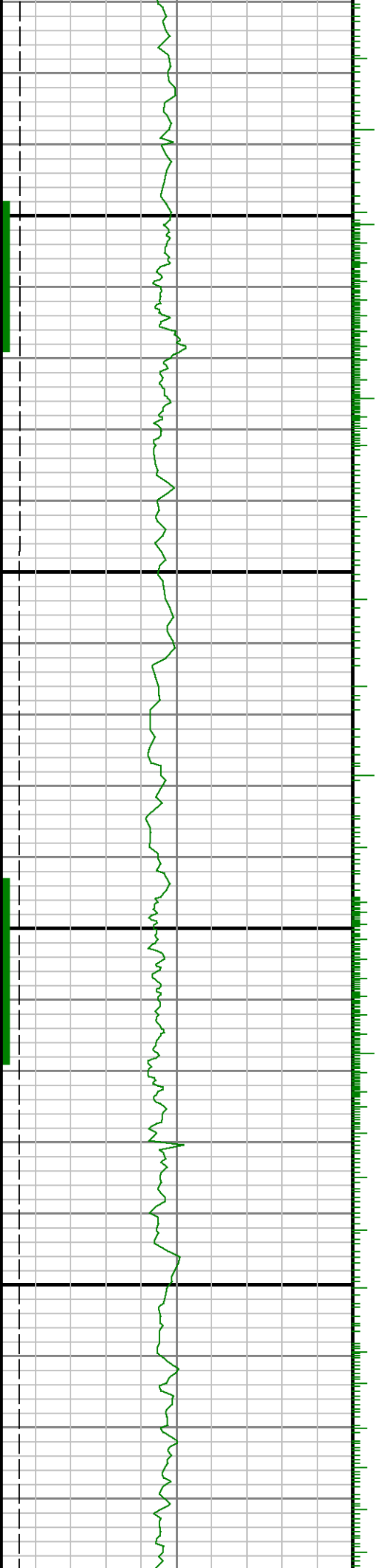


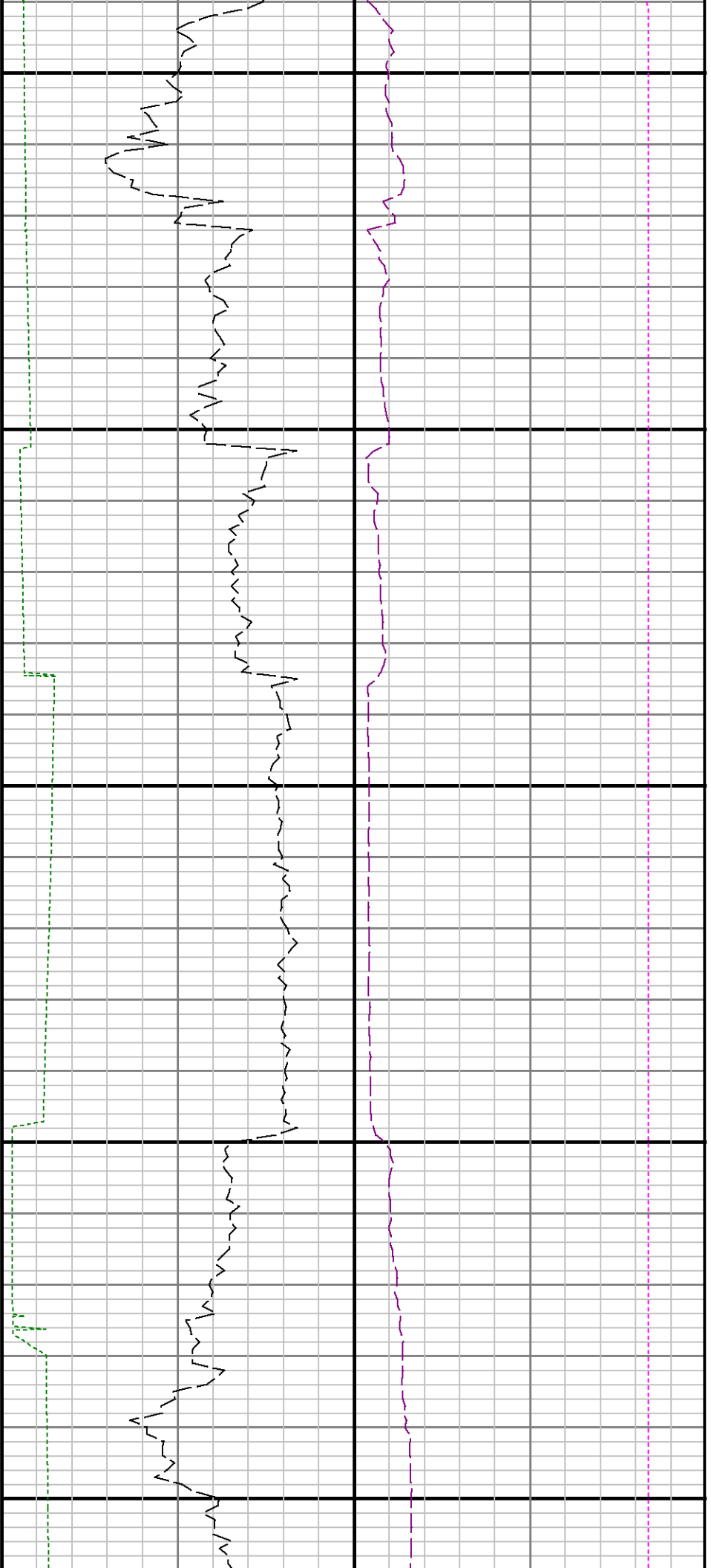




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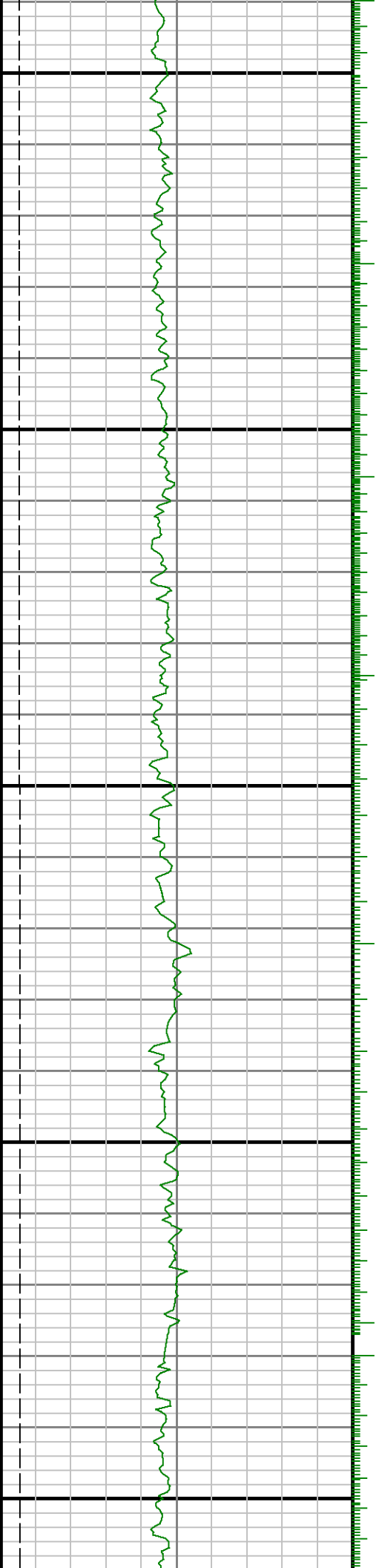
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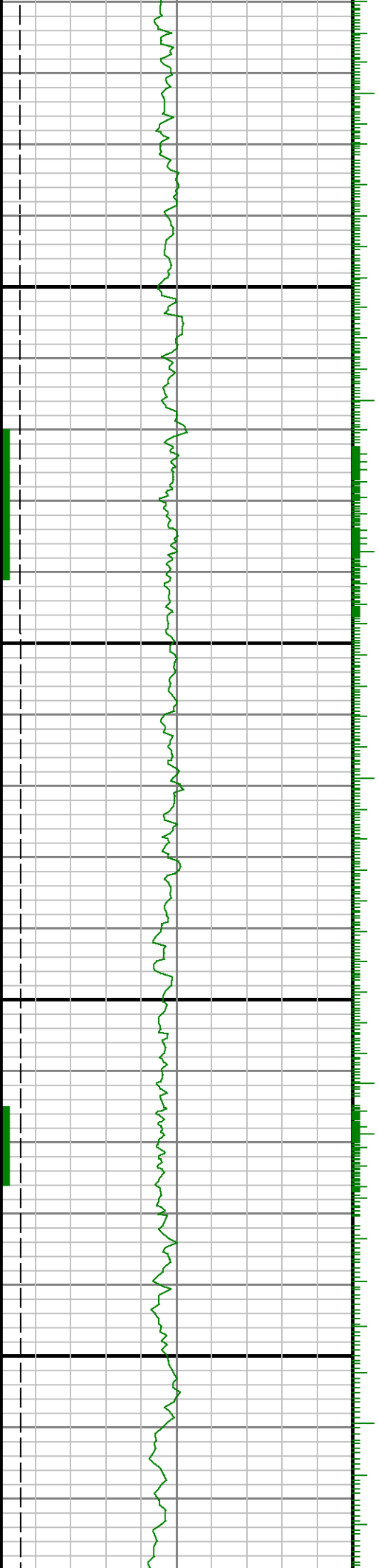
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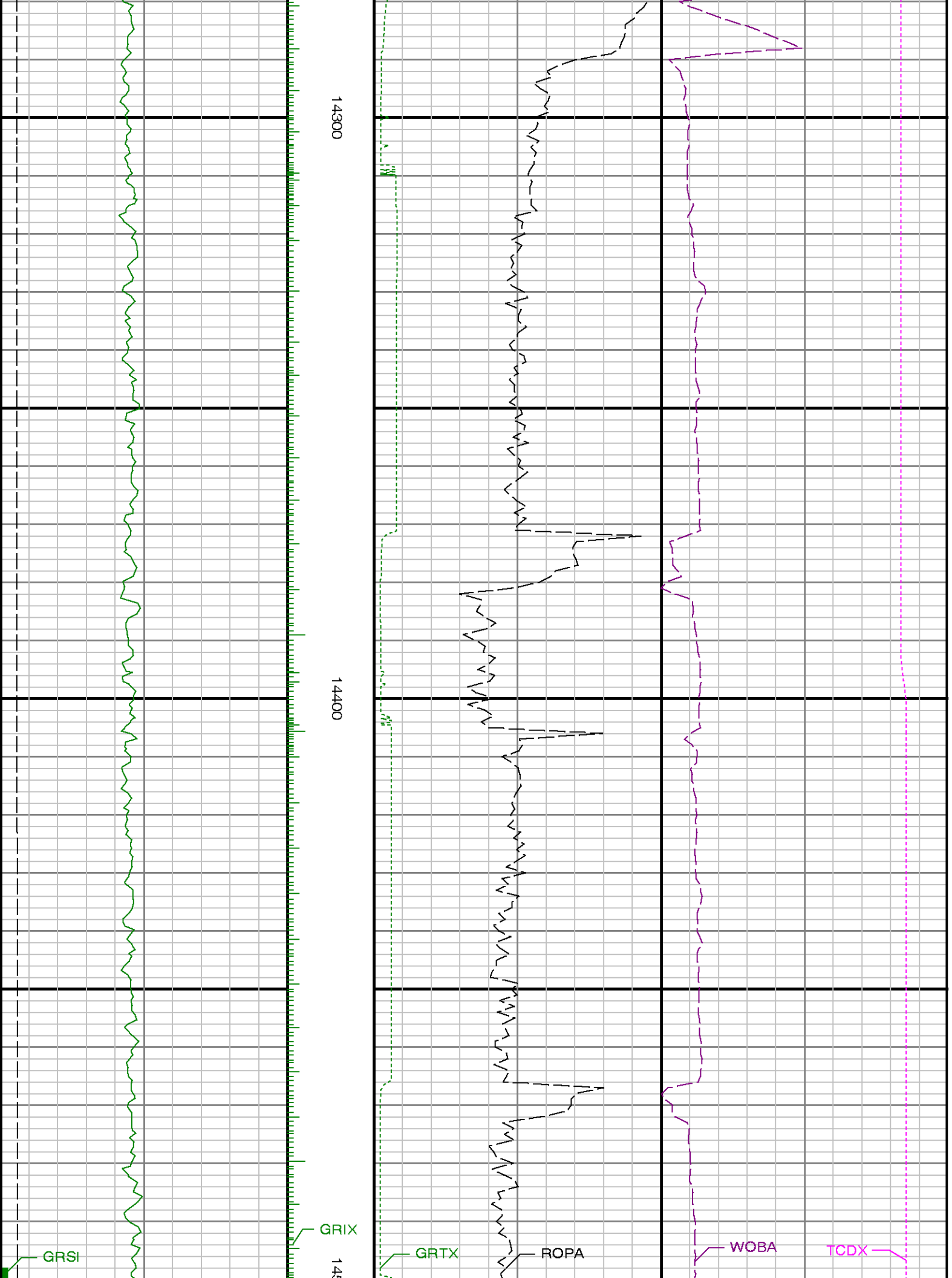


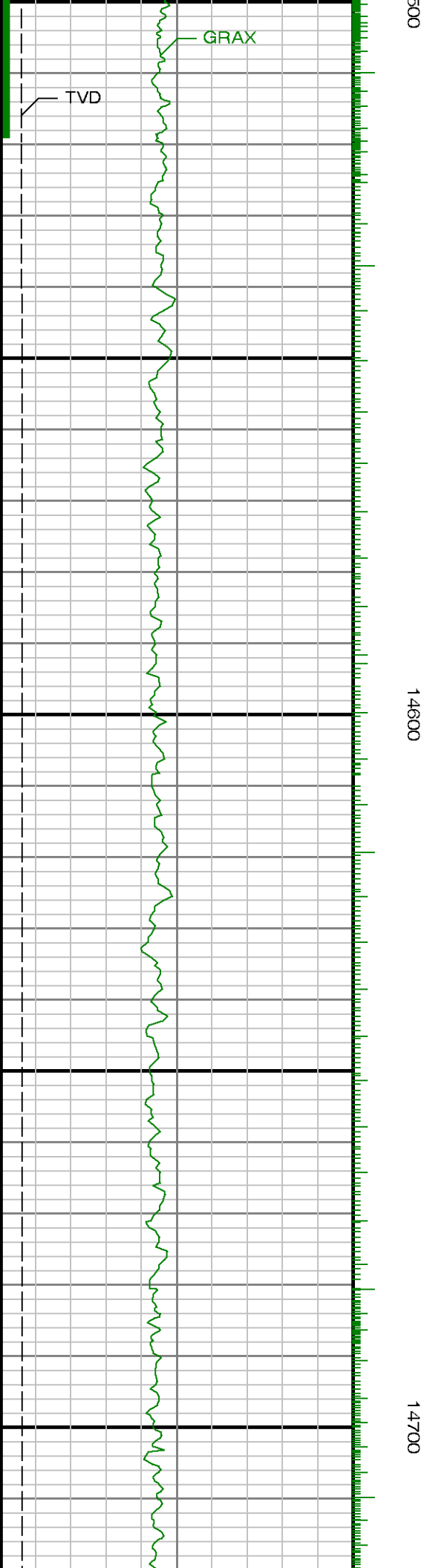
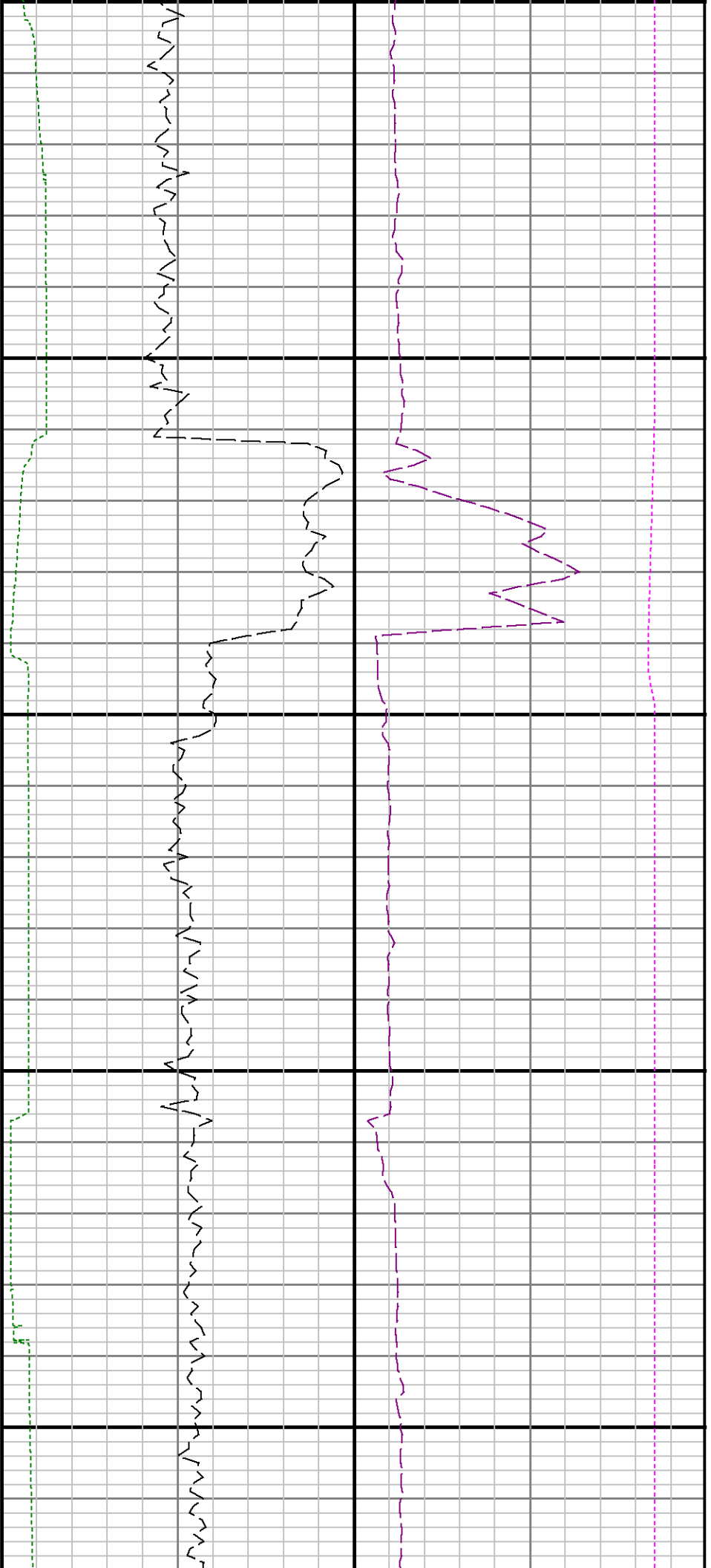


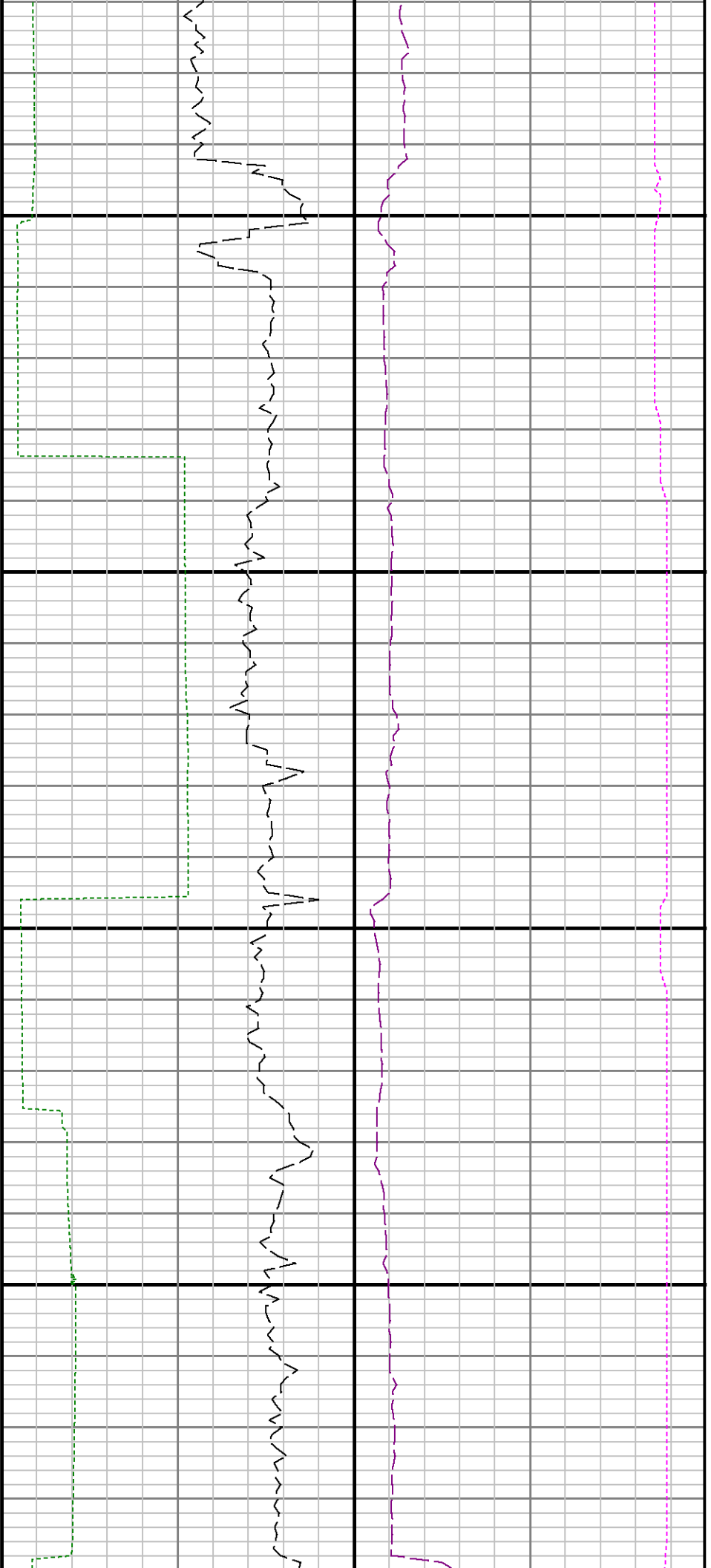
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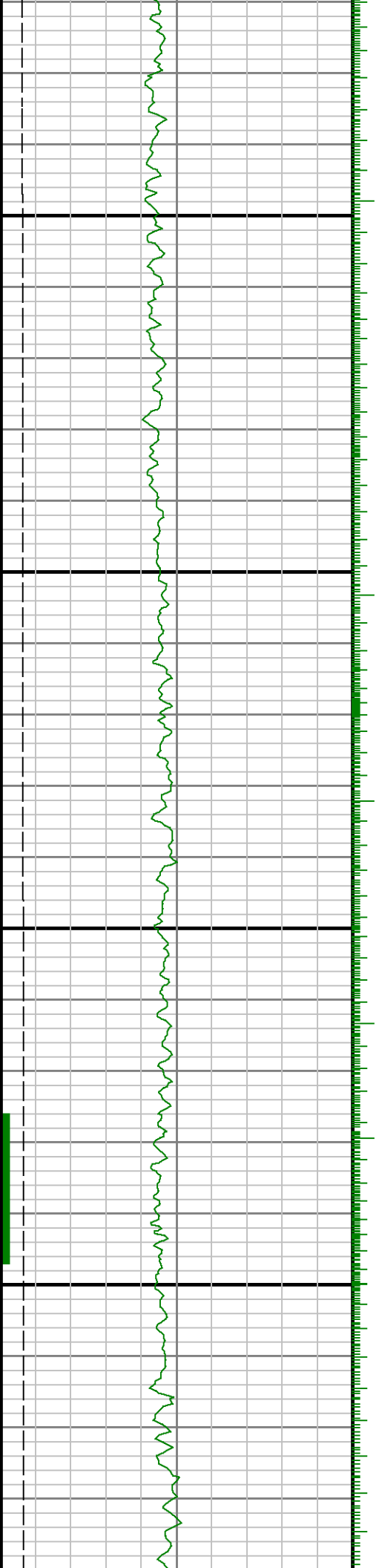


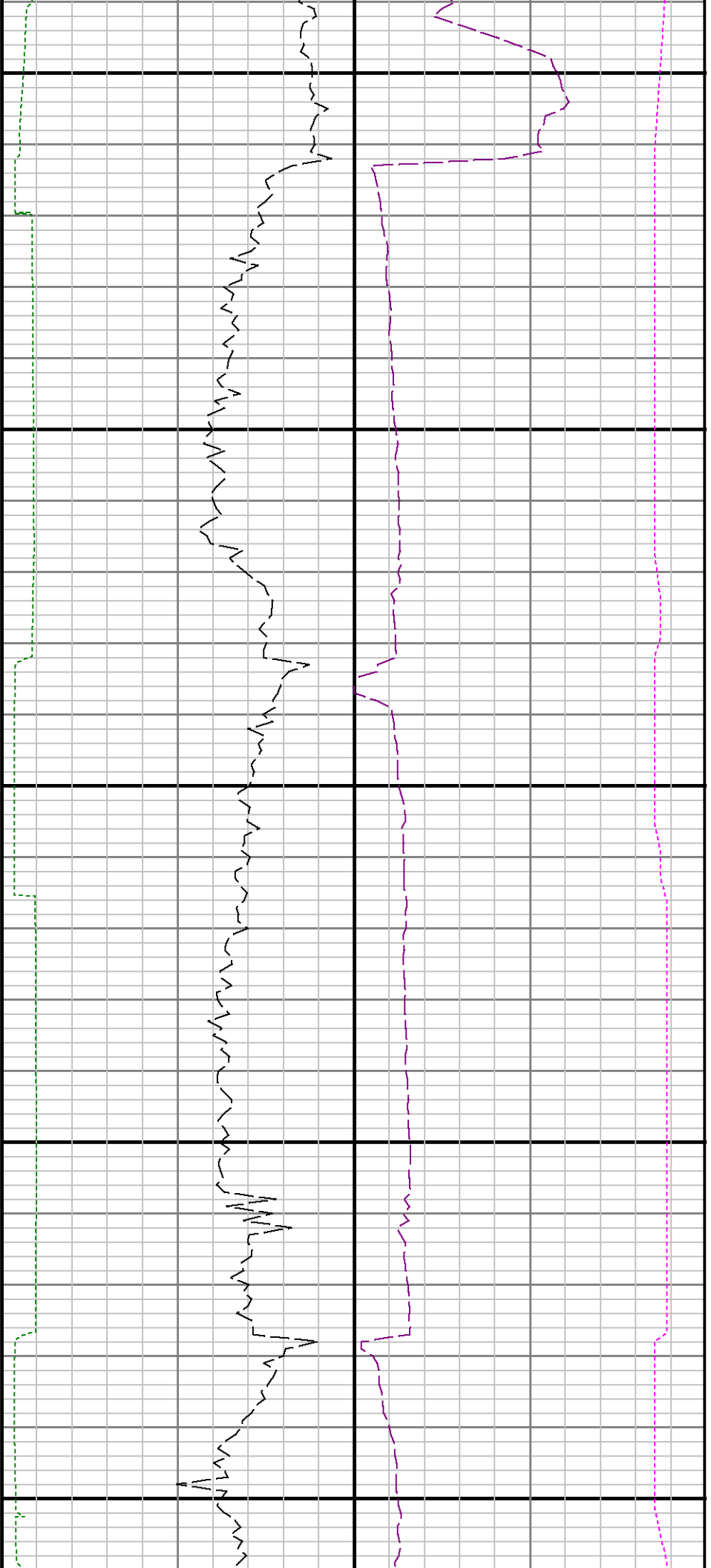




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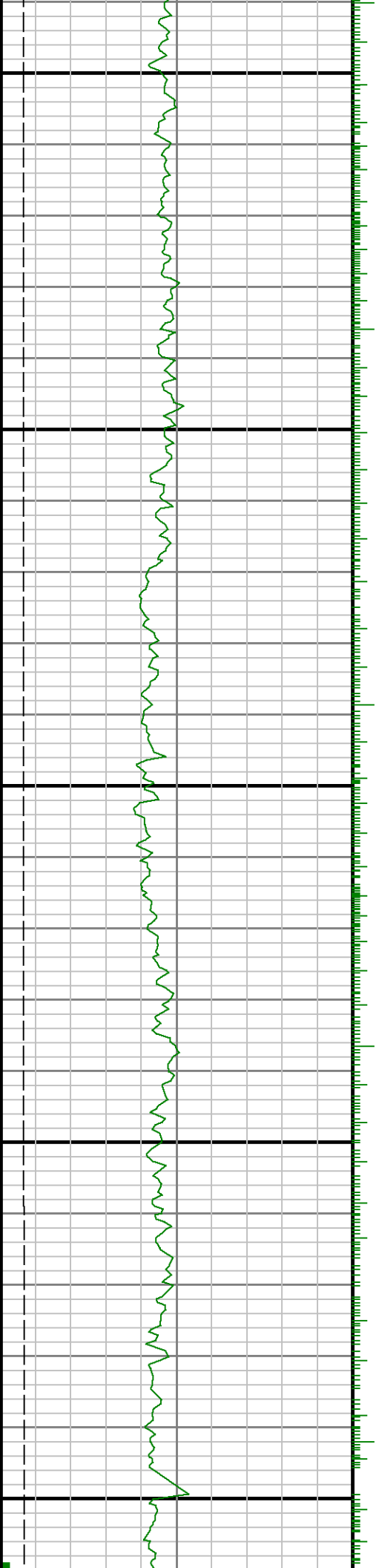
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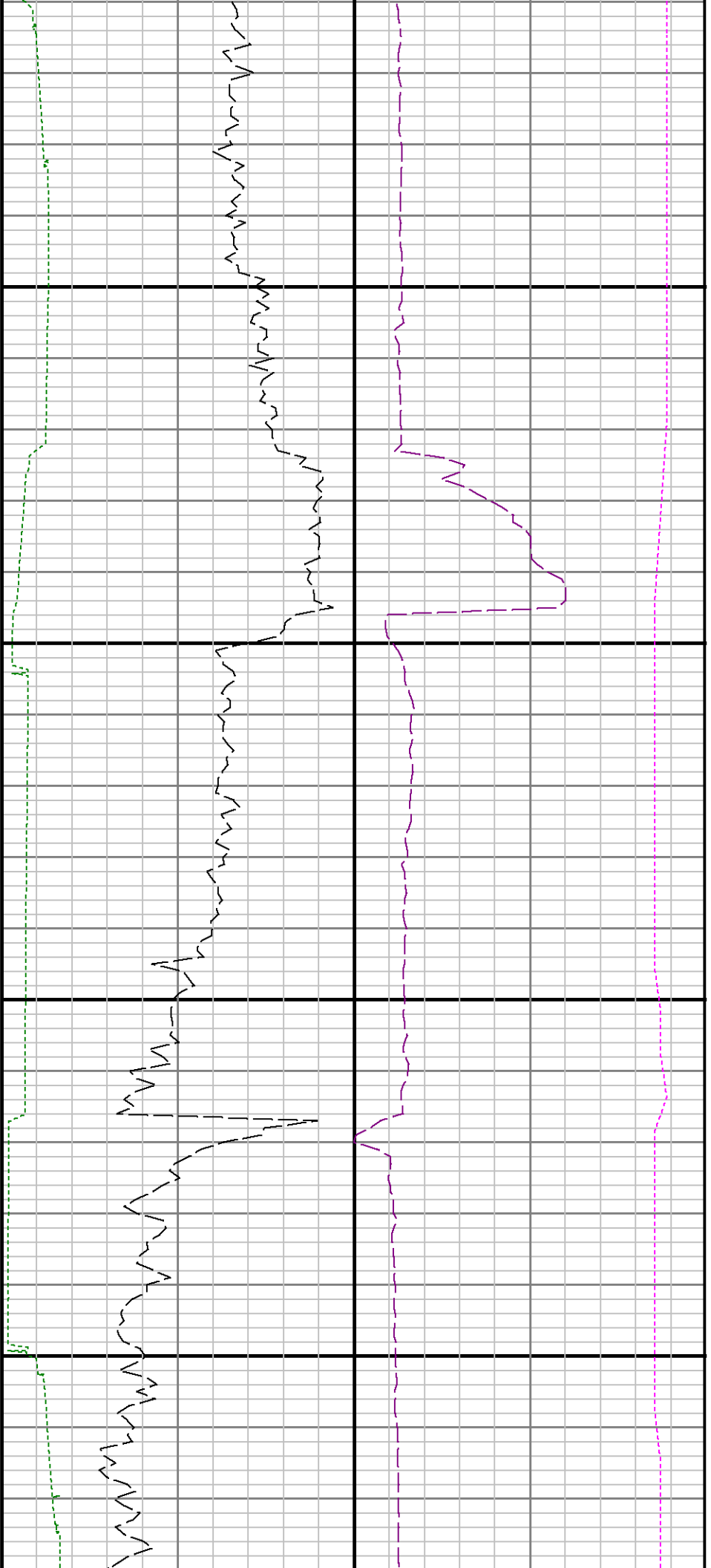




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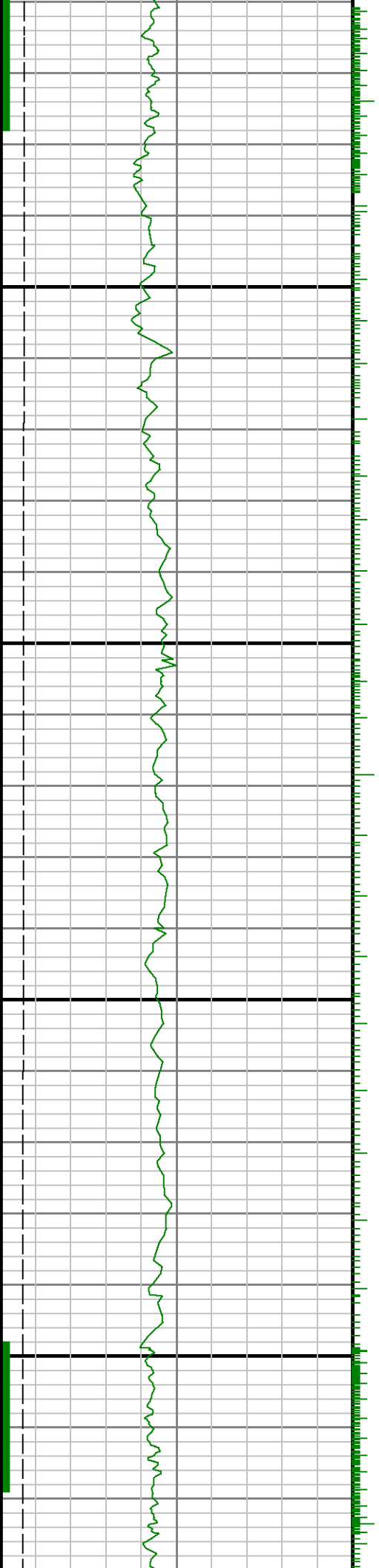
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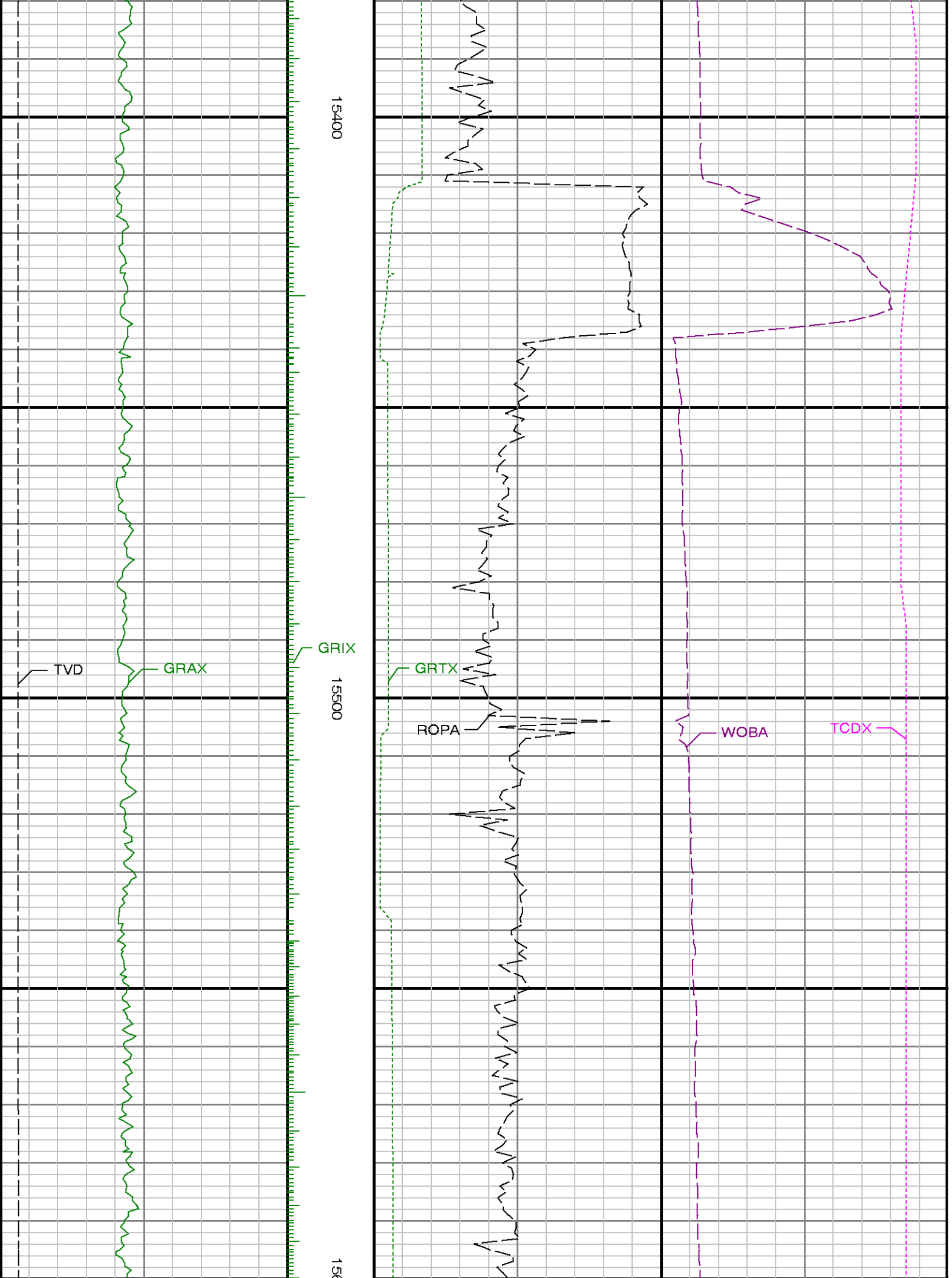


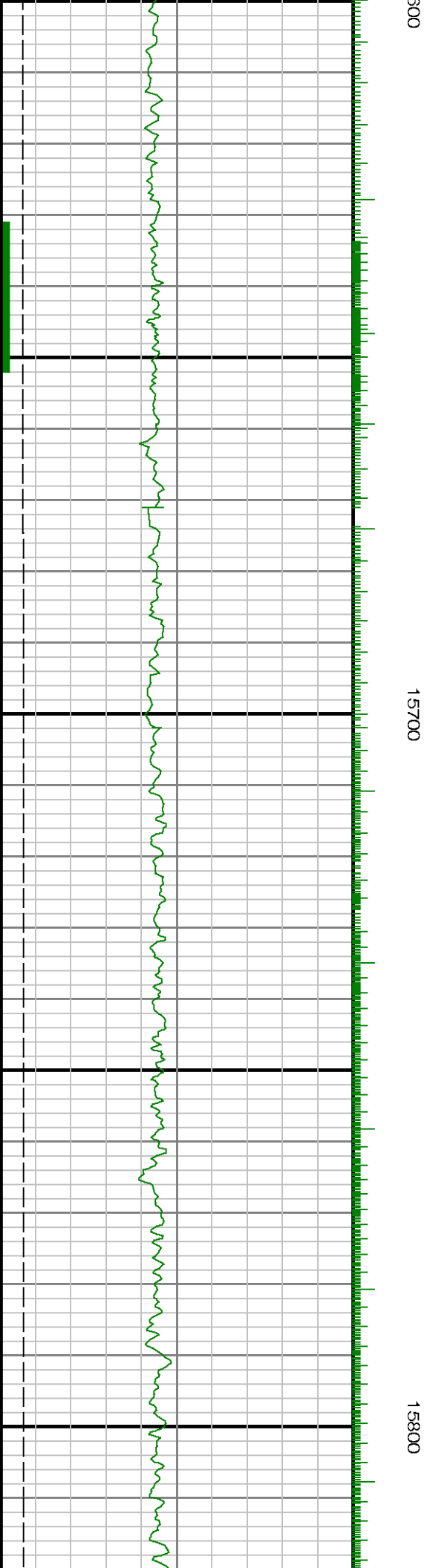


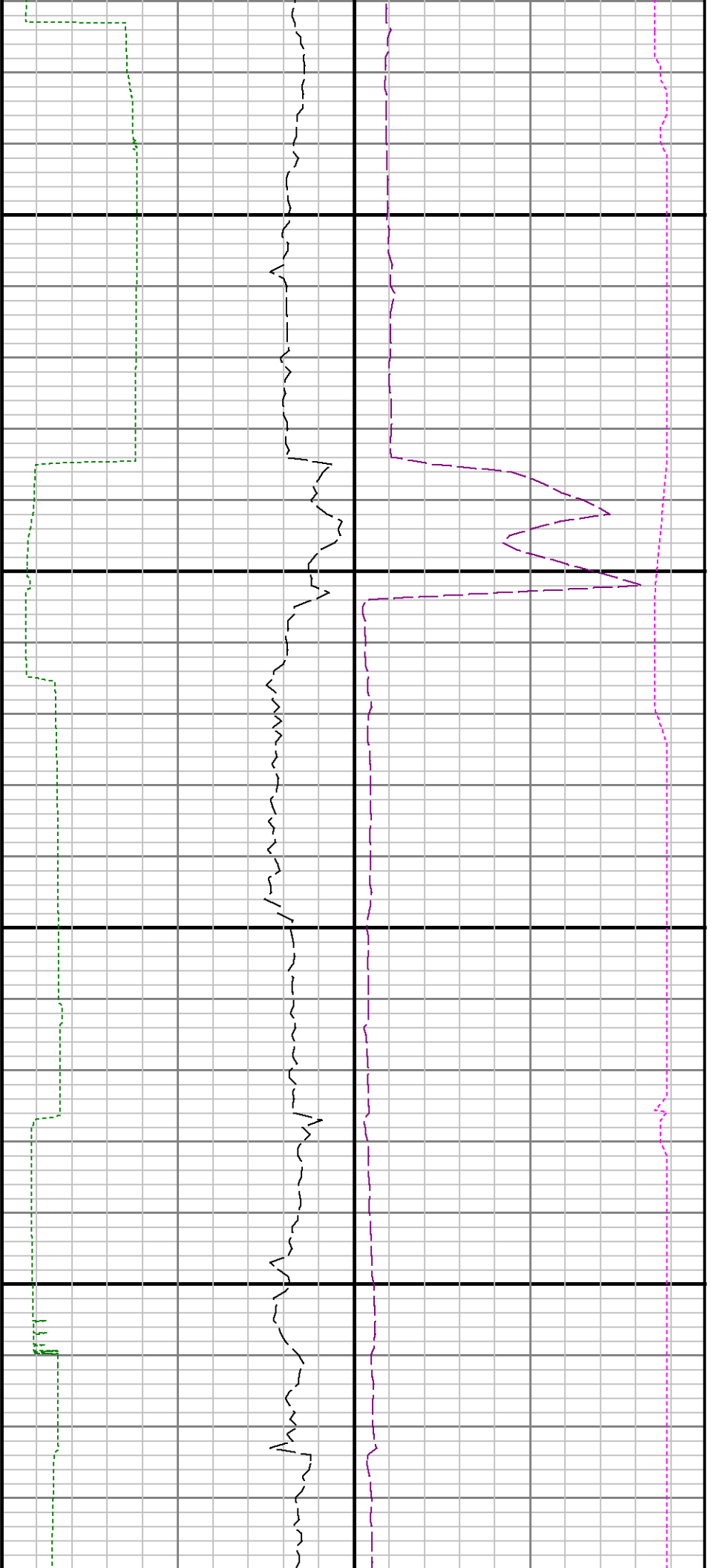
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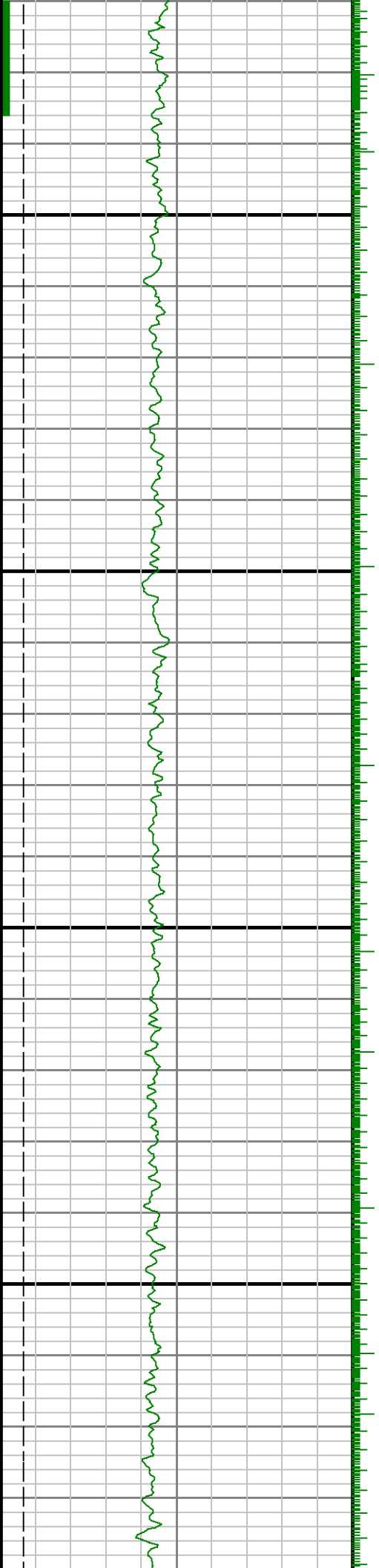


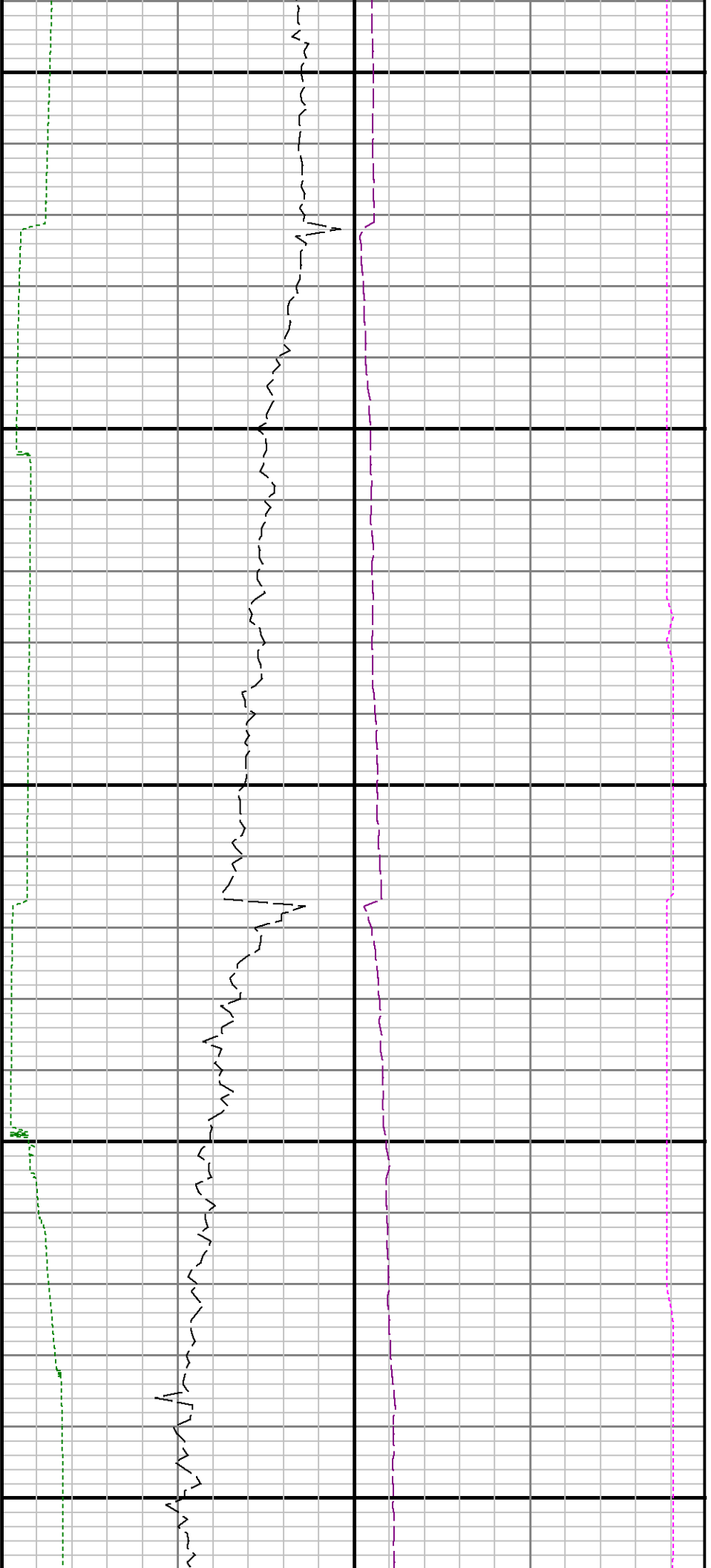




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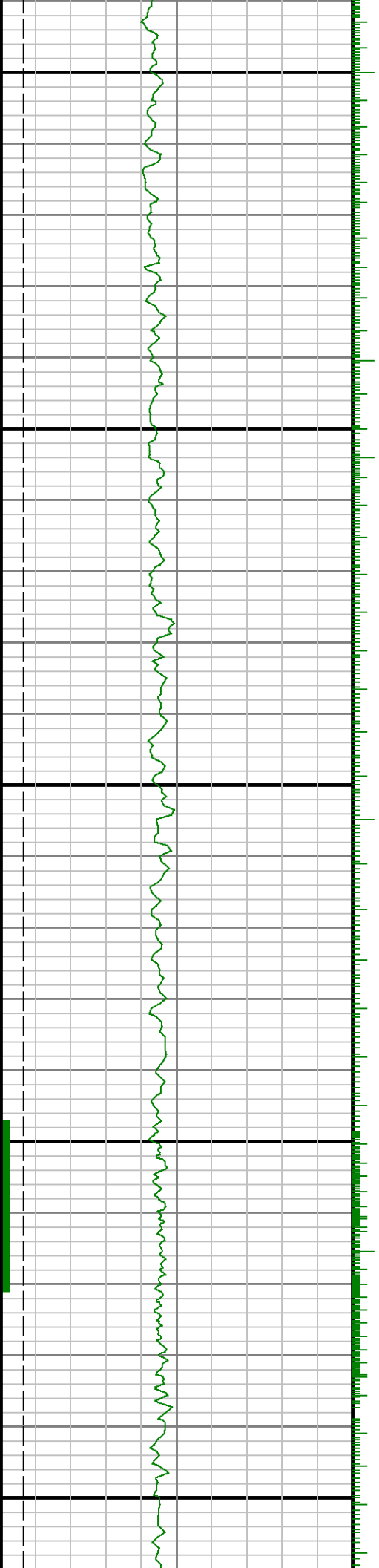
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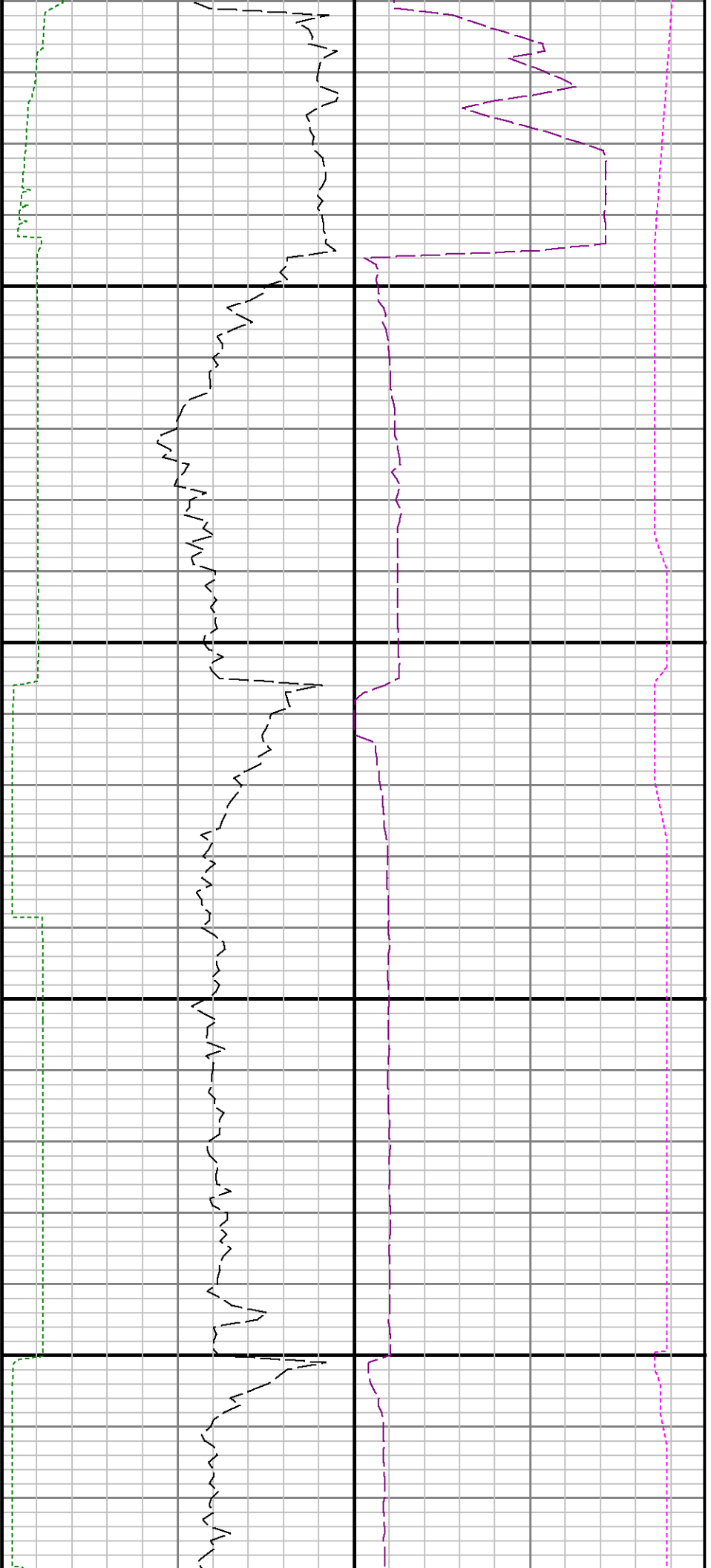




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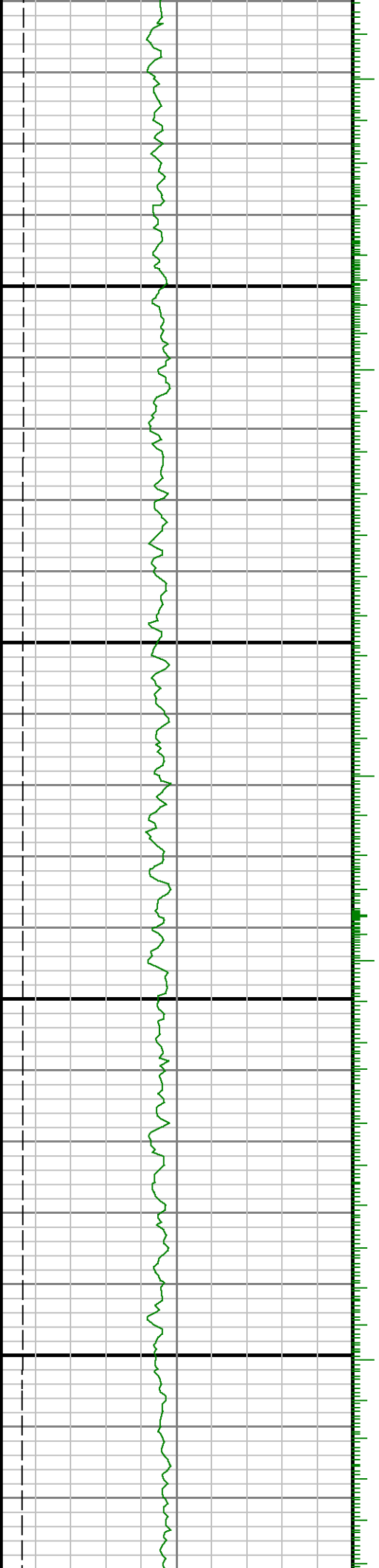
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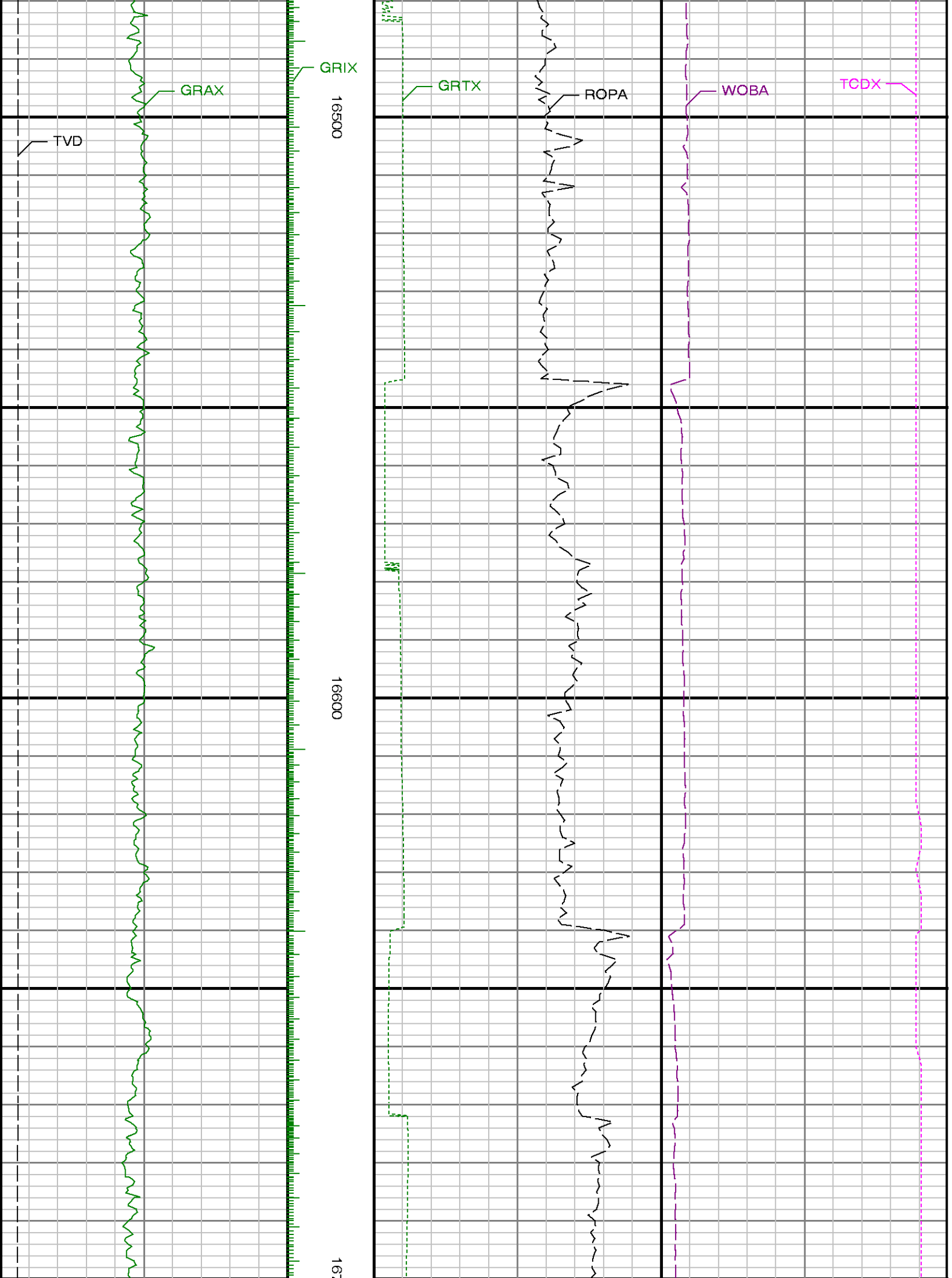


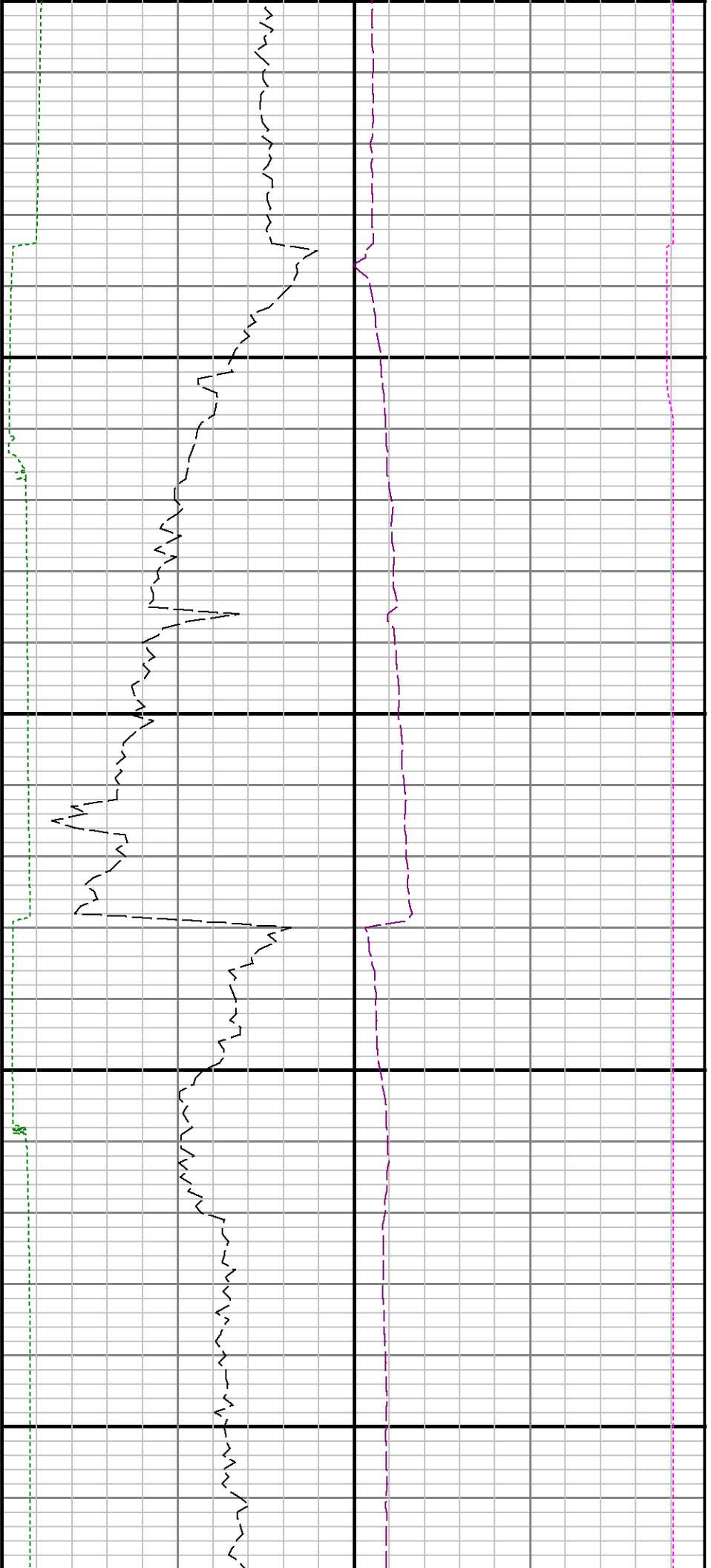


16300

16400







700

16800

16900

