



Realtime Logs

Natural Formation Evaluation
Gamma Ray

Scale: **Company: Anadarko**

1:240
Well: Dugite 13N-35HZ

MEASURED DEPTH
Field: Weld County (KERR MCGEE)

Status: FINAL PRINT
County: Weld State: Colorado

Surface Location: **Other Services:**

Latitude: 40° 7' 9.134" N

Longitude: 104° 51' 56.063" W

API Number: 051 23393290000

Section: 23 TWIN: 2S Range: 67W

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

Elevation: 0.00 ft.

Elevations: N/A

Log Measured From: Rig Floor

4994.00 ft. Above P.D.

KB: N/A
DF: 4994.00 ft.
GL: -26.00 ft.

Depth Reference: Driller's Depth

Interval Logged Dates Magnetic Field Reference

Top: 6500.0 ft. Date From: 06/Jun/14 Date To: 17/Jun/14 Dip Angle: 66.75° Azi Reference North: True

Bottom: 17732.0 ft. Date To: 17/Jun/14 Total Mag to Reference

Spud Date: 06/Jun/14 Field Strength: 52836.0 nT North Correction: 8.62°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1349.0 ft.	9.600 in.	36.00 lb/ft	Surface	1338.0 ft.
8.750 in.	1349.0 ft.	7683.0 ft.	7.000 in.	26.00 lb/ft	Surface	7677.0 ft.
6.125 in.	7683.0 ft.	17782.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based Mud	Surface	17782.0 ft.	13.500 in.	Surface	0.0° / 0.0°	0.6° / 289.5°
			8.750 in.	Vert/Curve	0.4 / 320.3°	83.5° / 180.7°
			6.125 in.	Lateral	88.6° / 180.0°	91.6° / 179.2°
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	H&P 307	/ Helmerich & Payne Drilling Co
PATS	6.4.1.34	Job No:	6433201	
		District / Unit:	Rocky Mountains	/

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Log Run Summary

LWD	BHA	Bit	Bit	Bit	Bit	Assembly	Logged Interval		Bit Depth Interval		Date / Time				Circ.
Run	Run	Run	Size	Type	Gauge	Type	Top	Bottom	From	To	Start		End		Time
No.	No.	No.	(in.)		(in.)		(ft.)	(ft.)	(ft.)	(ft.)					(hrs.)
1	1	1	8.750	PDC		Steerable	6500.0	7490.0	1349.0	7531.0	08/Jun/2014	01:50	09/Jun/2014	07:50	45
2	2	2	8.750	PDC		Steerable	7490.0	7646.0	7532.0	7683.0	09/Jun/2014	22:44	10/Jun/2014	11:55	16
3	3	3	6.125	PDC		Steerable	7646.0	17732.0	7684.0	17782.0	12/Jun/2014	08:05	17/Jun/2014	23:15	118

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Andrew King	05/Jun/14	18/Jun/14	Nicholas Roosen	10/Jun/14	18/Jun/15	John Nguyen	05/Jun/15	10/Jun/15

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	12168813	Directional	46.84	6.750	3.250
1	SRIG	12131429	Gamma	43.47	6.750	3.250
2	DIR	12168813	Directional	40.15	6.750	3.250
2	SRIG	12131429	Gamma	36.78	6.750	3.250
3	DIR	12042365	Directional	53.11	4.750	2.625
3	SRIG	12041109	Gamma	49.74	4.750	2.625

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

Comments
<p>(1) Baker Hughes INTEQ run 1 and 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1349 to 7683 feet MD (1348 to 7385 feet TVD).</p> <p>(2) Baker Hughes INTEQ runs 3 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7684 to 17782 feet MD (7385 to 7396 feet TVD).</p> <p>(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.</p> <p>(4) A sliding indicator is shown to the right edge of track 1 as a heavy line.</p>

Remarks				
Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	7500	8.750	1	The interval from 7490 to 7531 feet MD (7333 to 7352 feet TVD) was logged up to 17 hours due to trip out to pick up new motor and bit to achieve higher build rates.
2	7670	6.125	2	The interval from 7646 to 7683 feet MD (7382 to 7385 feet TVD) was logged up to 45 hours after being drilled due to casing and cement operations prior to the beginning of Run 3.
3	15980	6.125	3	The interval from 15938 to 15988 feet MD (7383 to 7384 feet TVD) was logged up to 12 hours after being drilling due to short trip

3	15960	6.125	3	to clean out hole, high torque and drag.
4	17750	6.125	3	The interval from 17732 to 17782 feet MD (7398 to 7396 feet TVD) contains no logging data due to sensor offset from the bit at well TD.

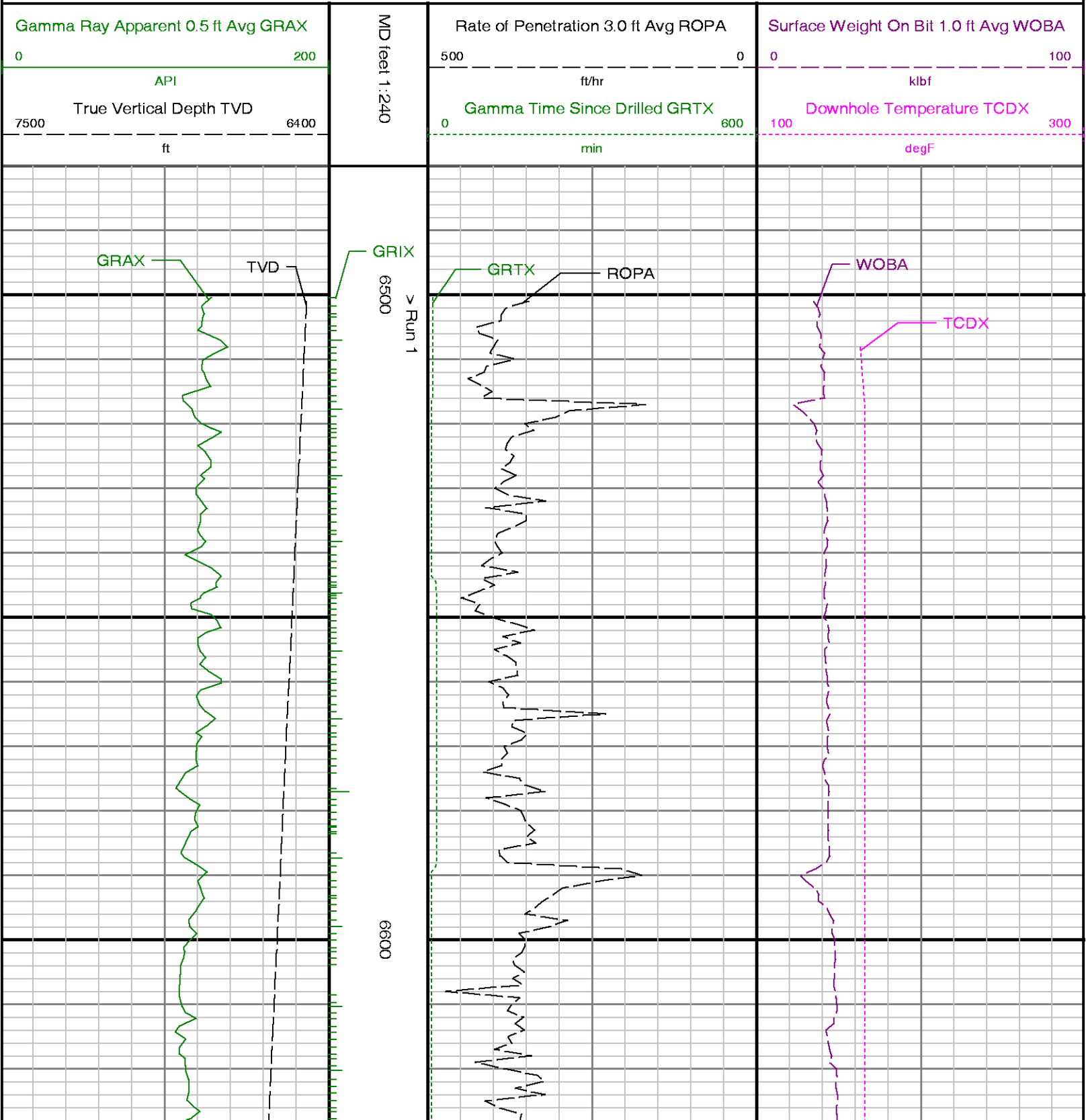


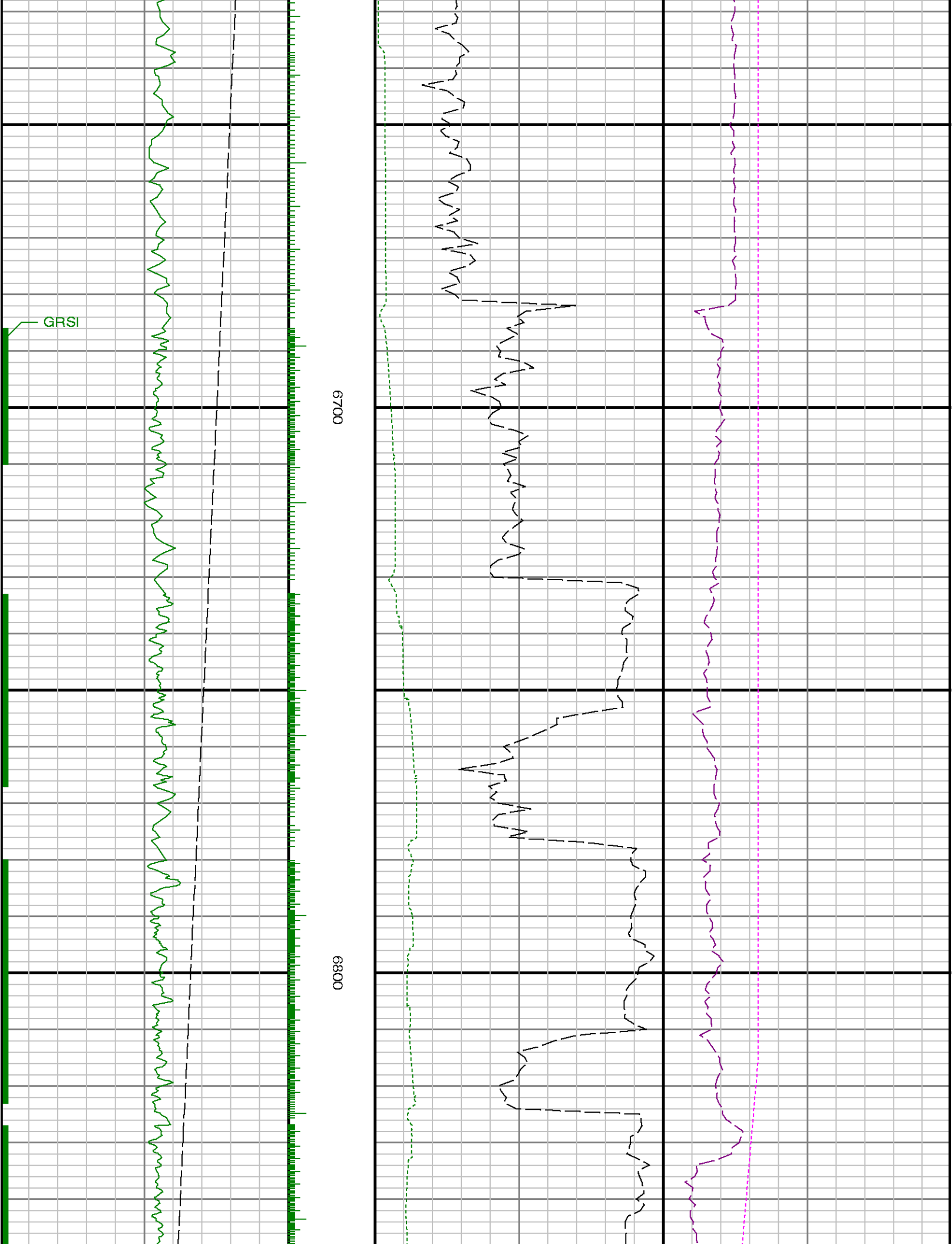
Company : Anadarko

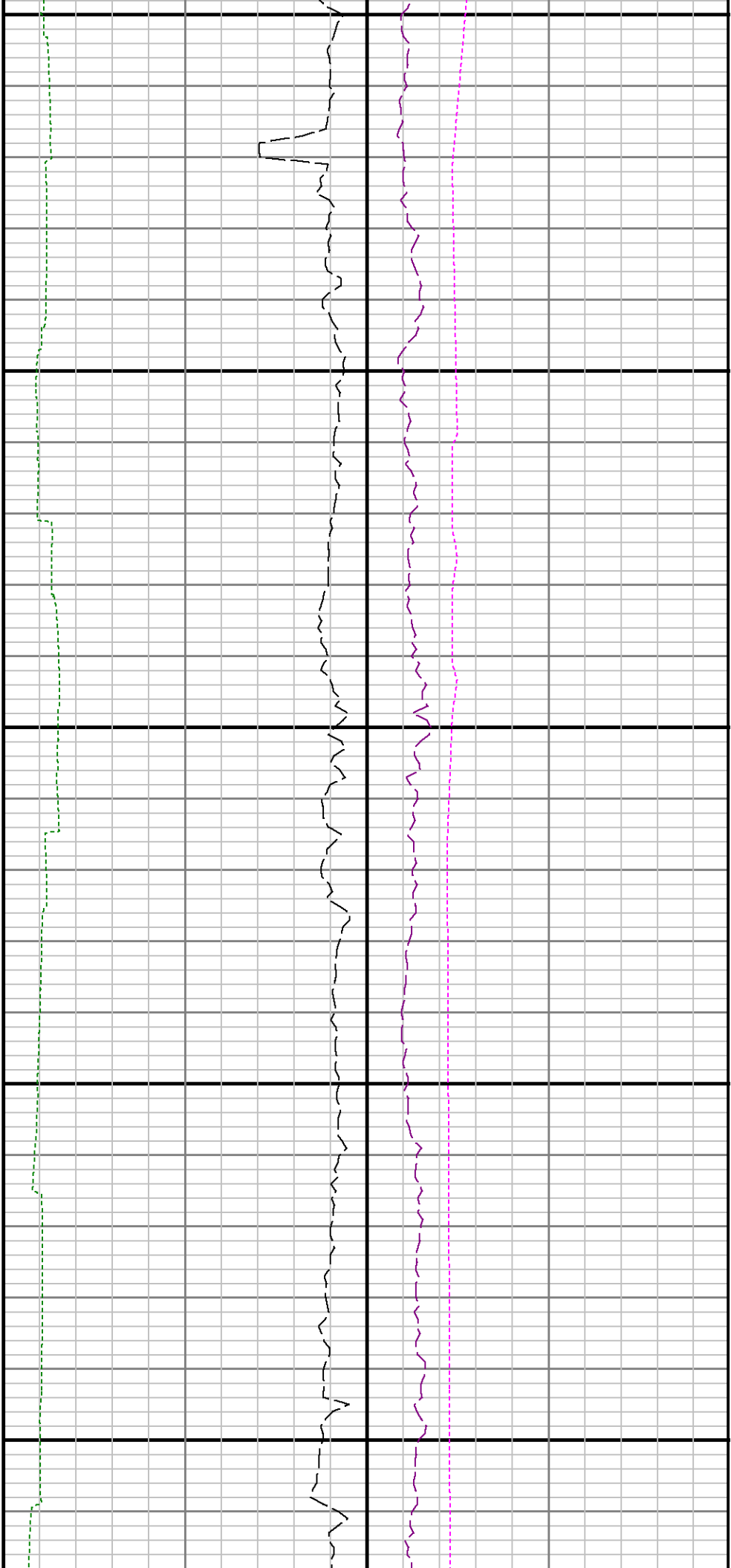
Well : Dugite 13N-35HZ

Interval : 6480.00 - 17800.00 feet

Created : 17/Jun/2014 11:06:03 PM

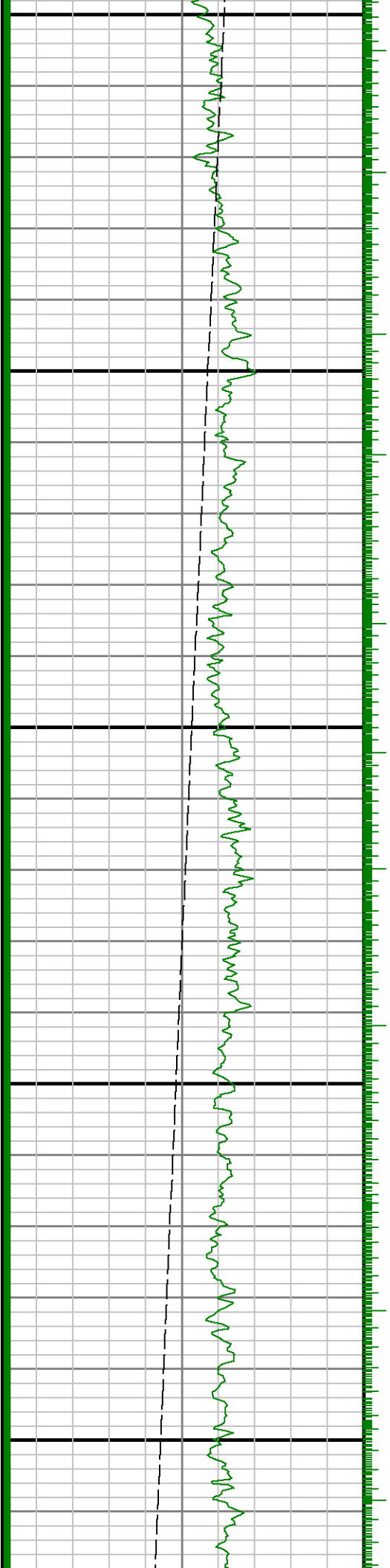






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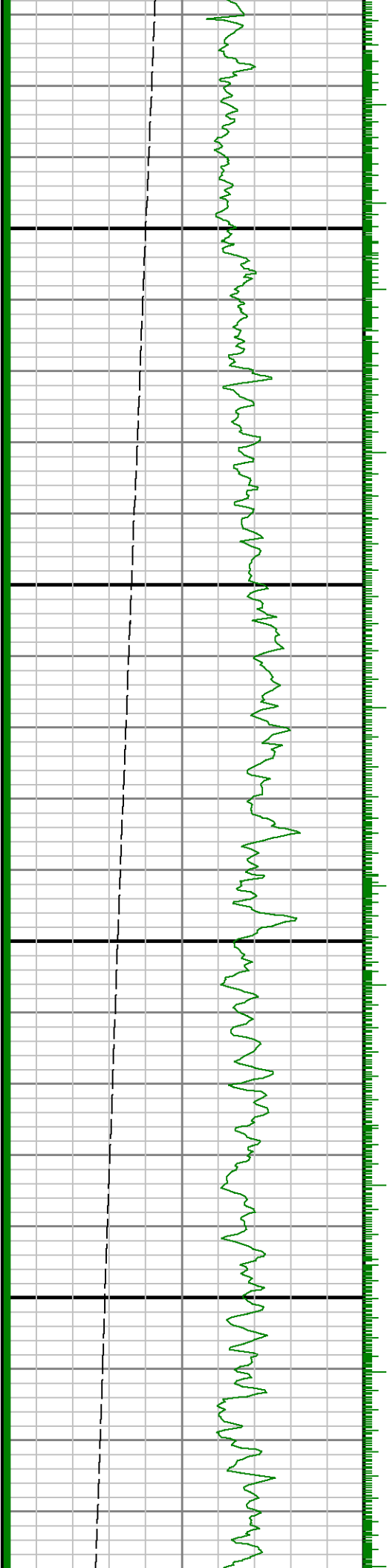
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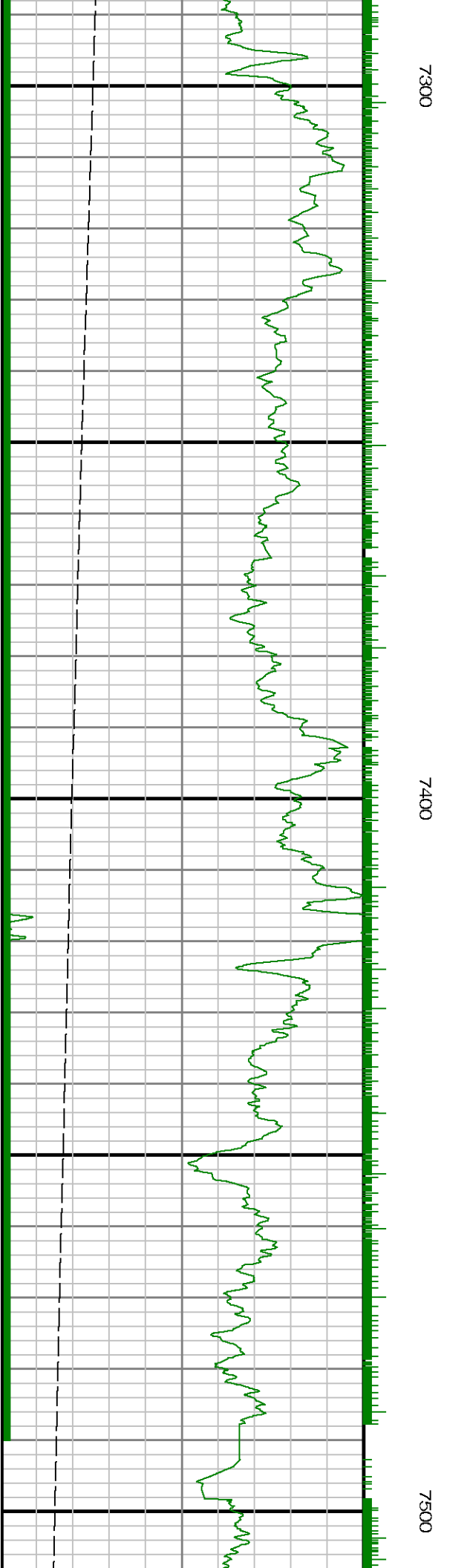
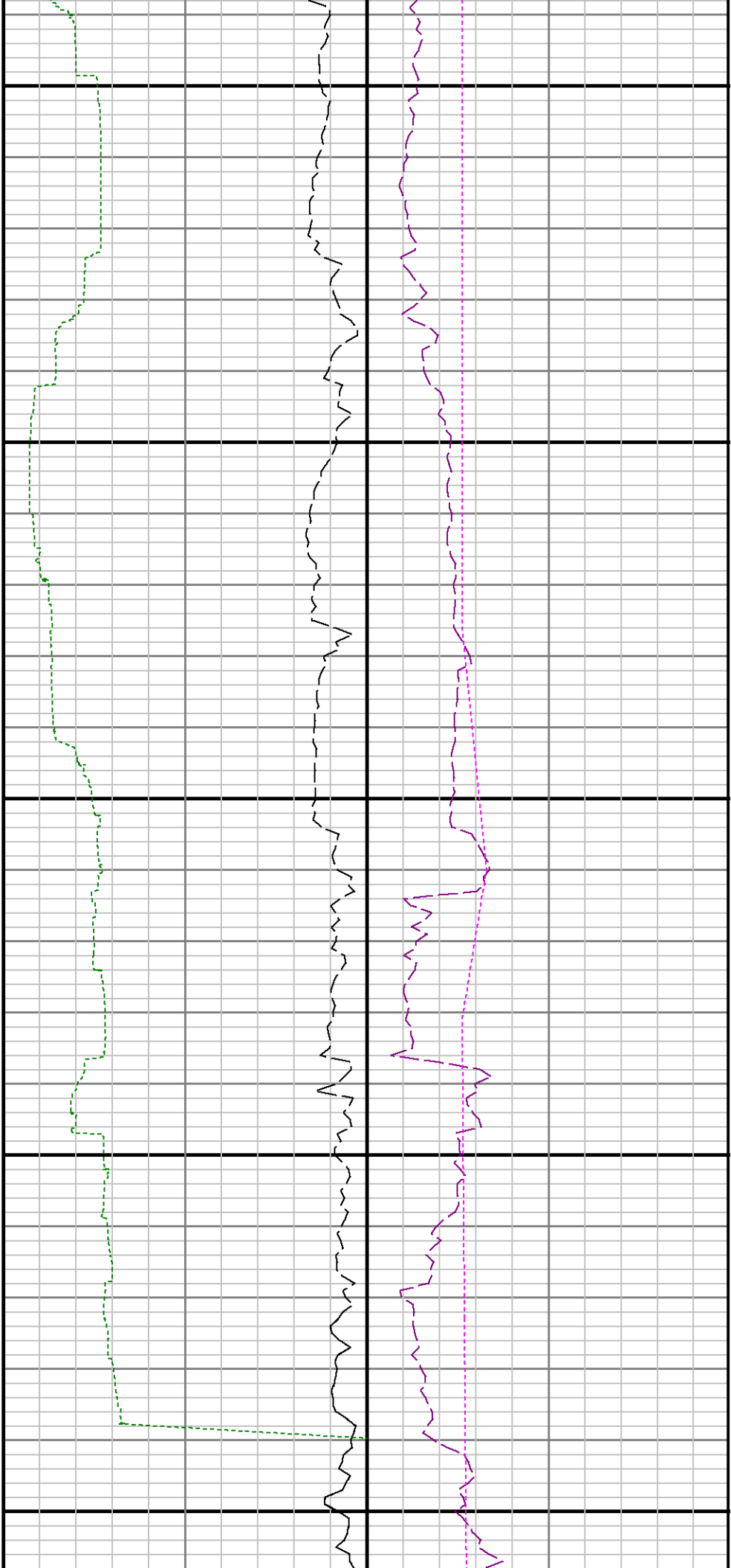


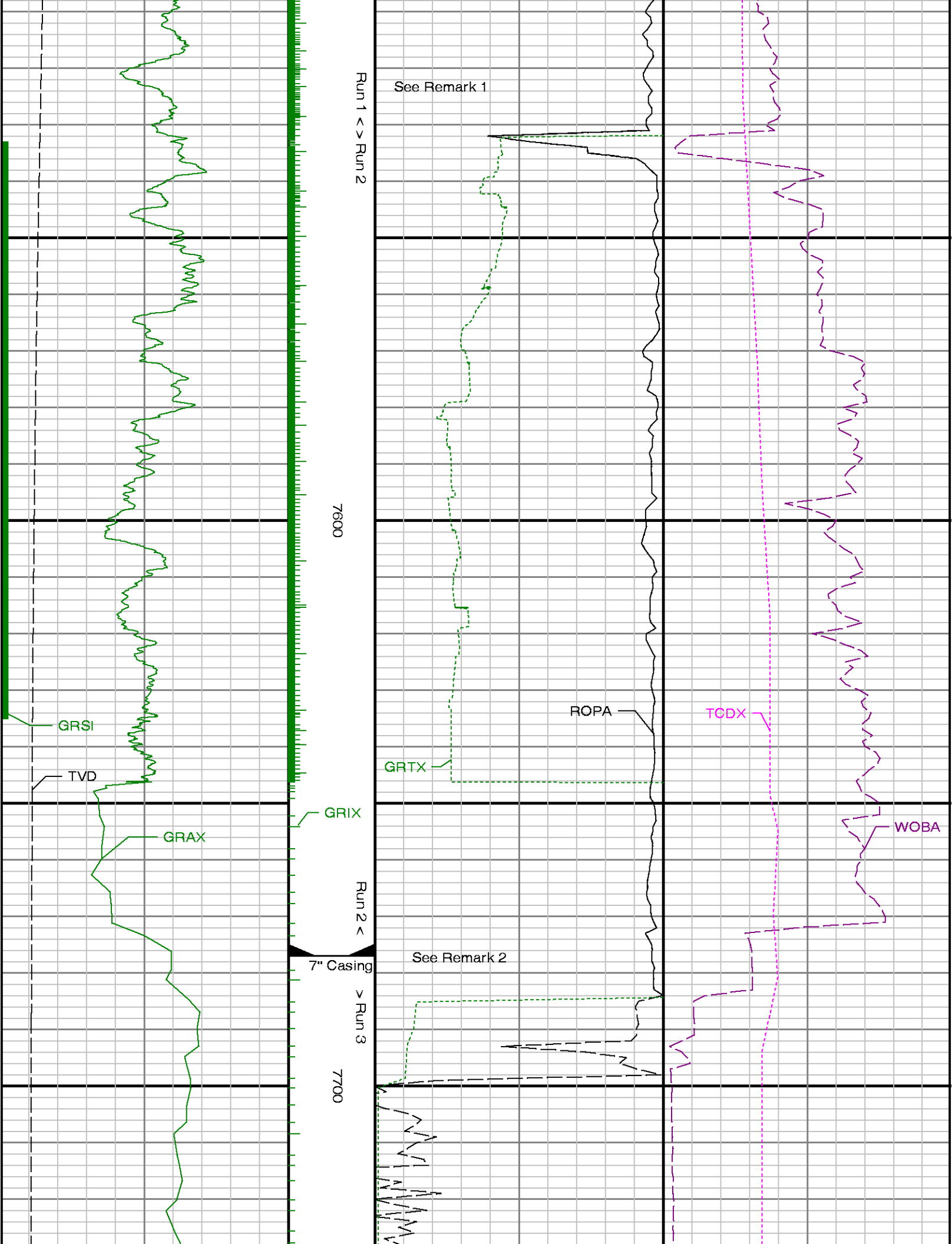


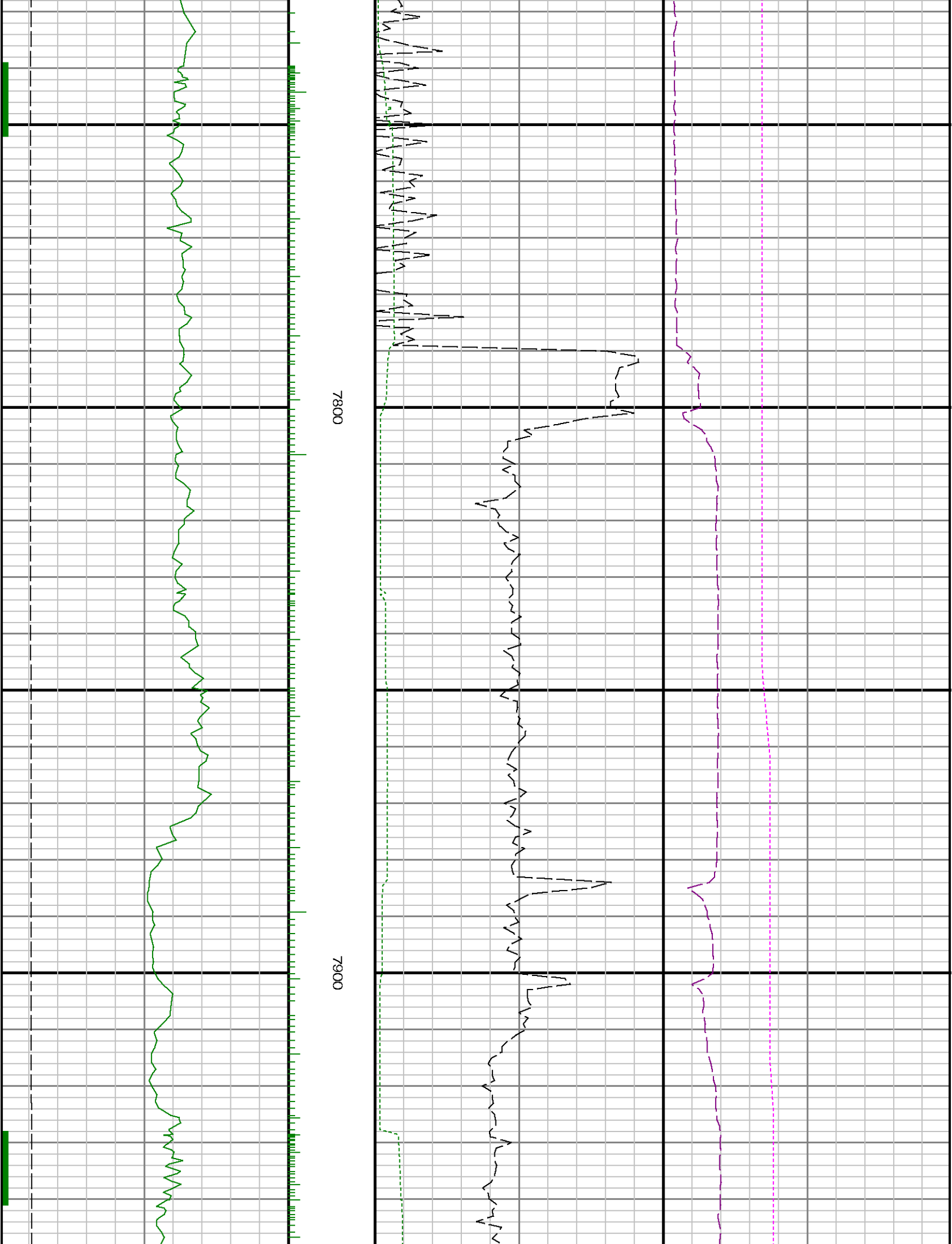
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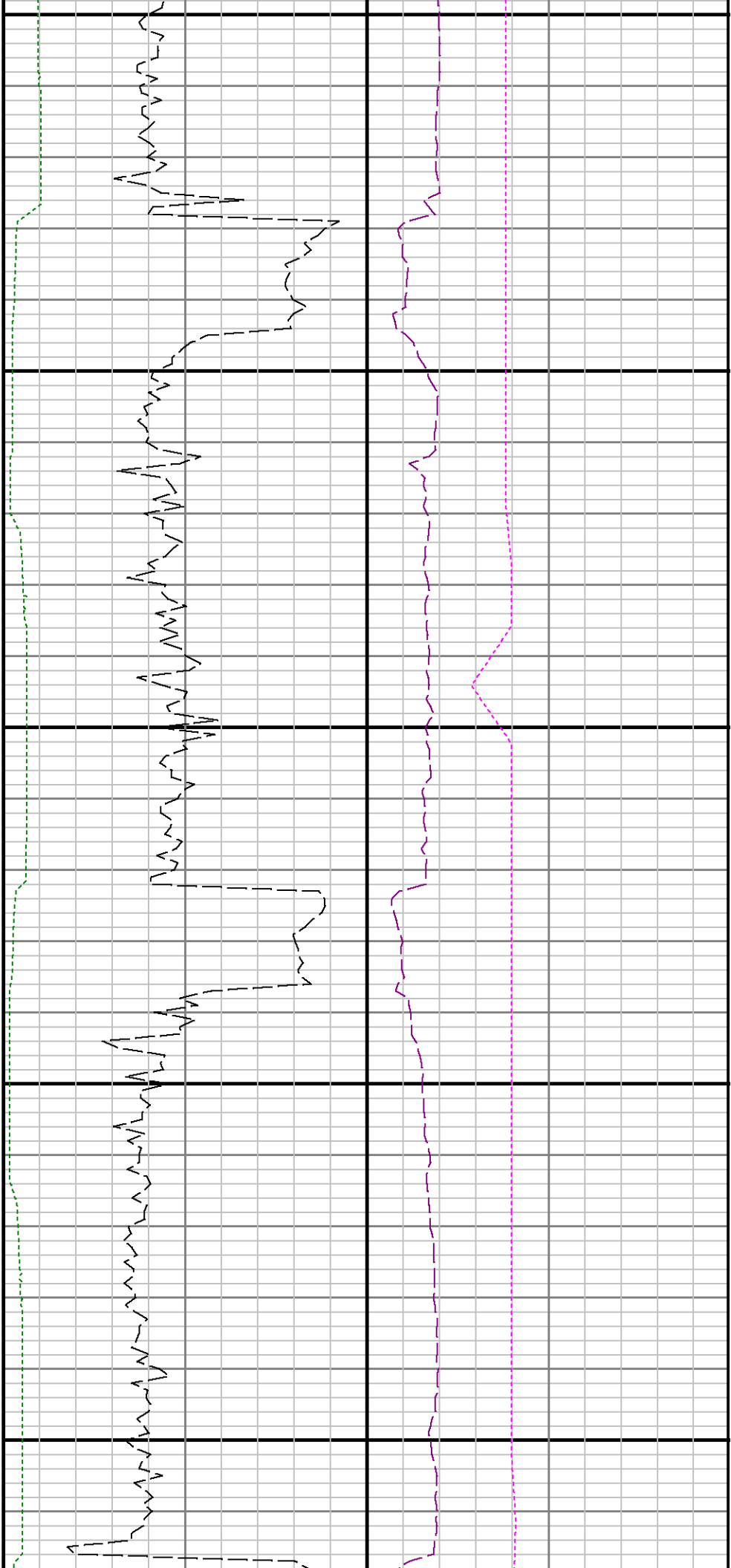
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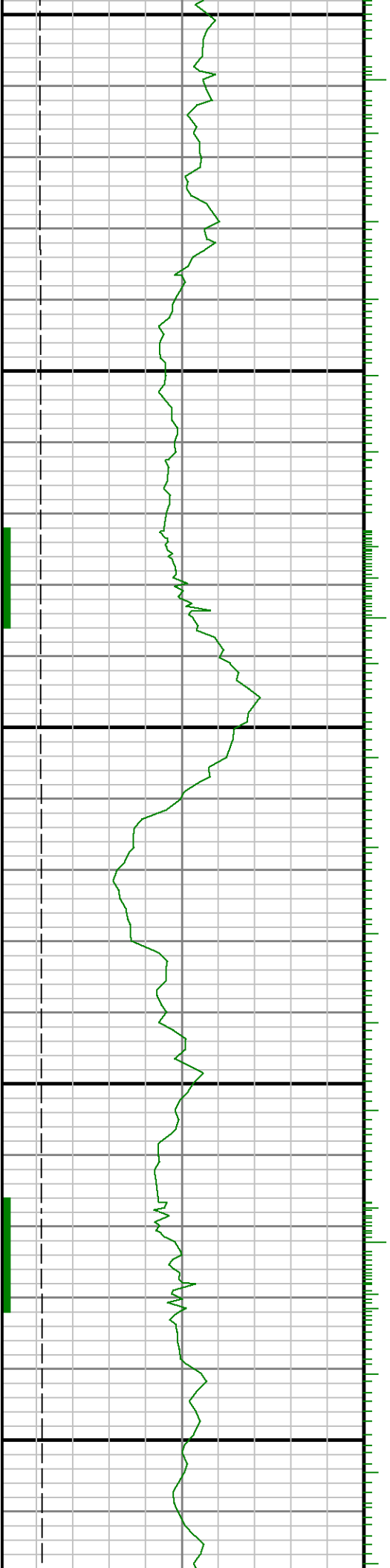


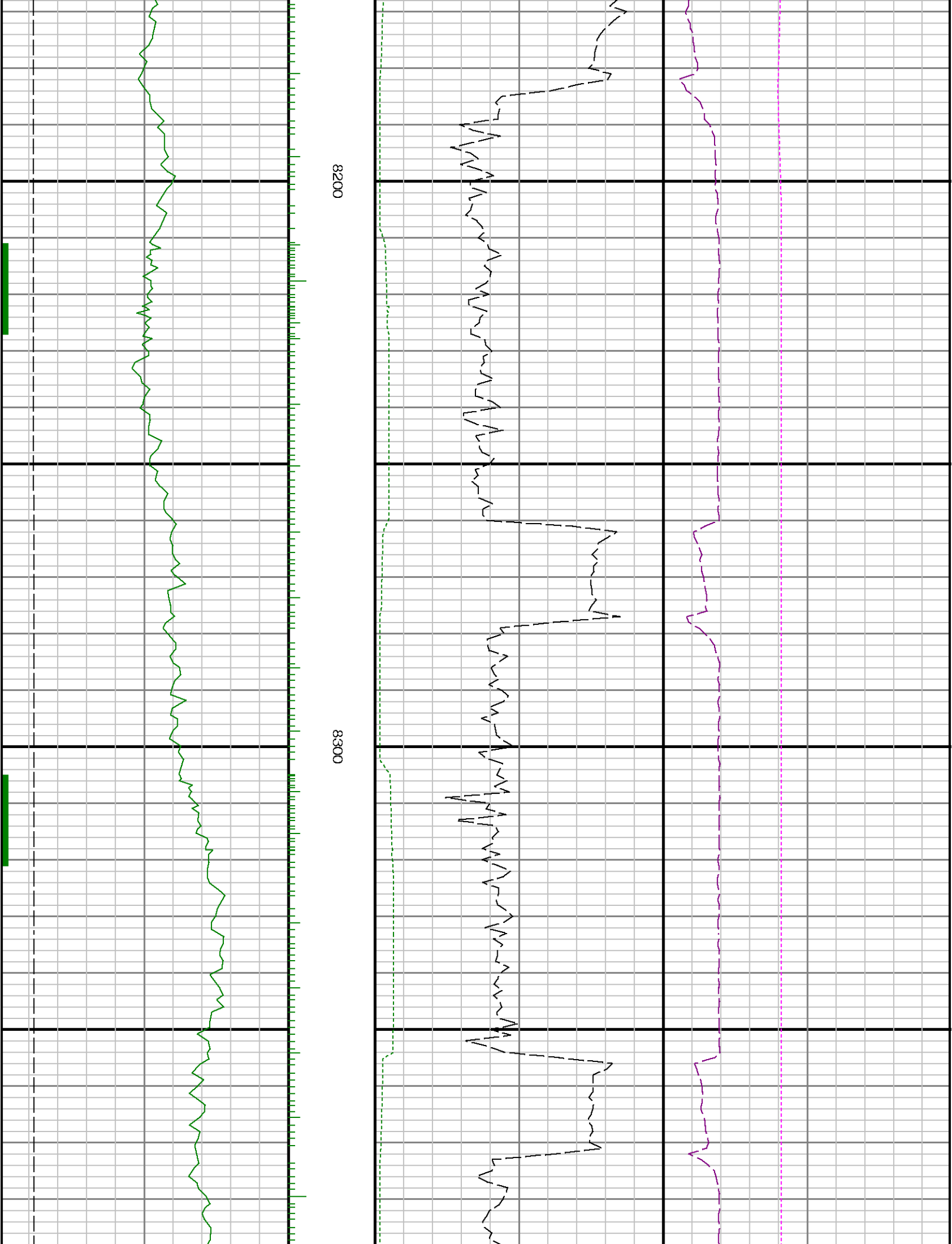


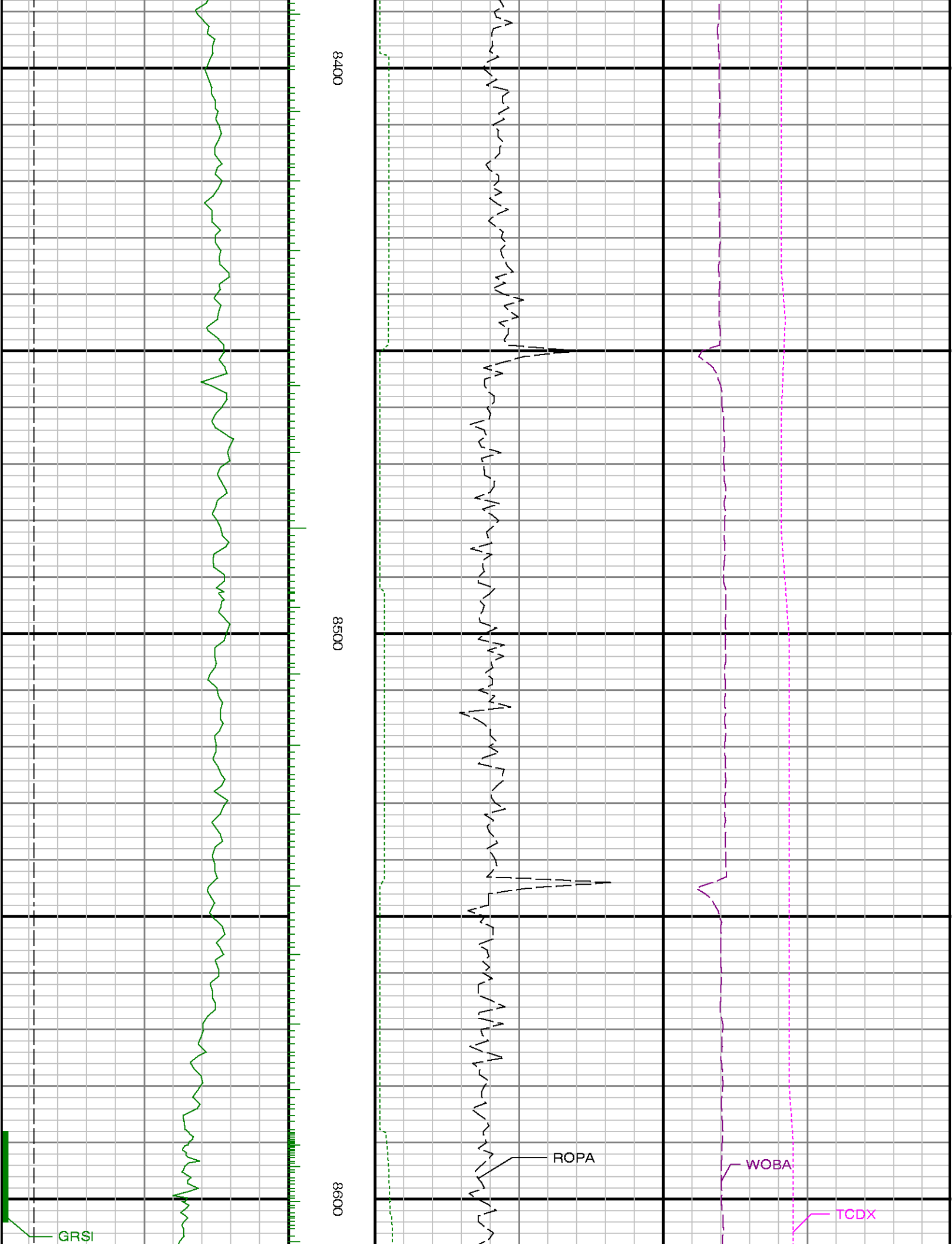


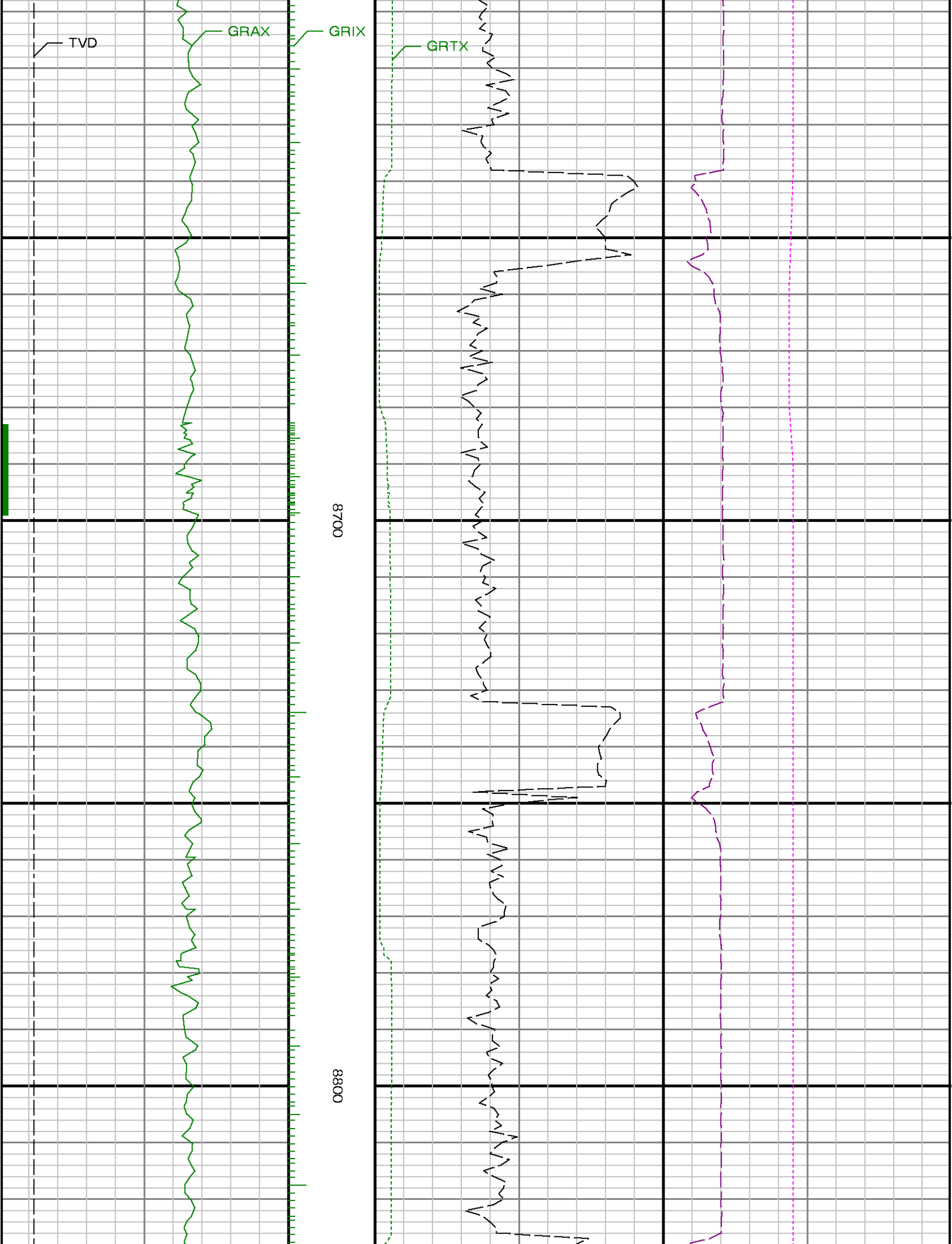
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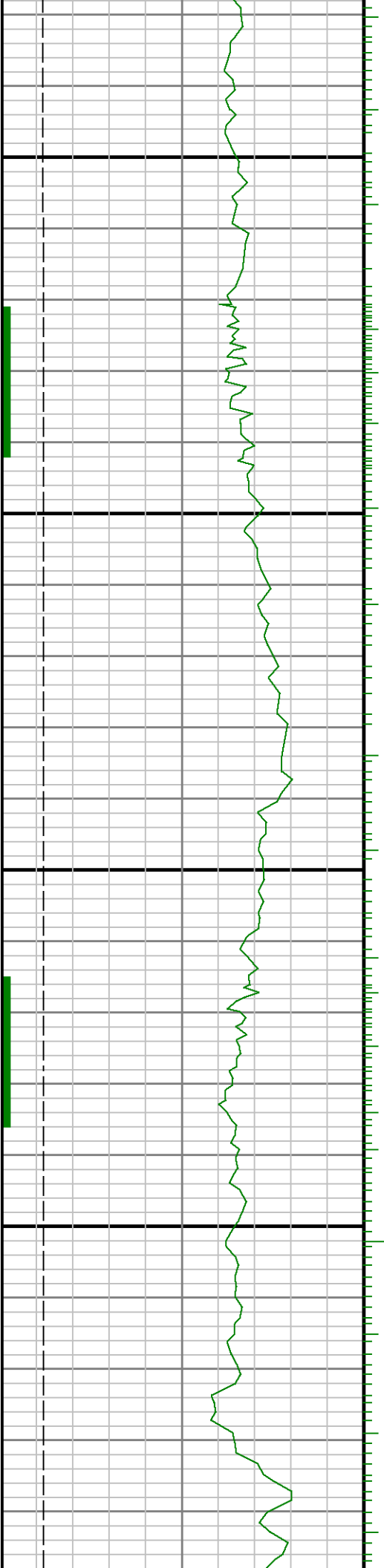
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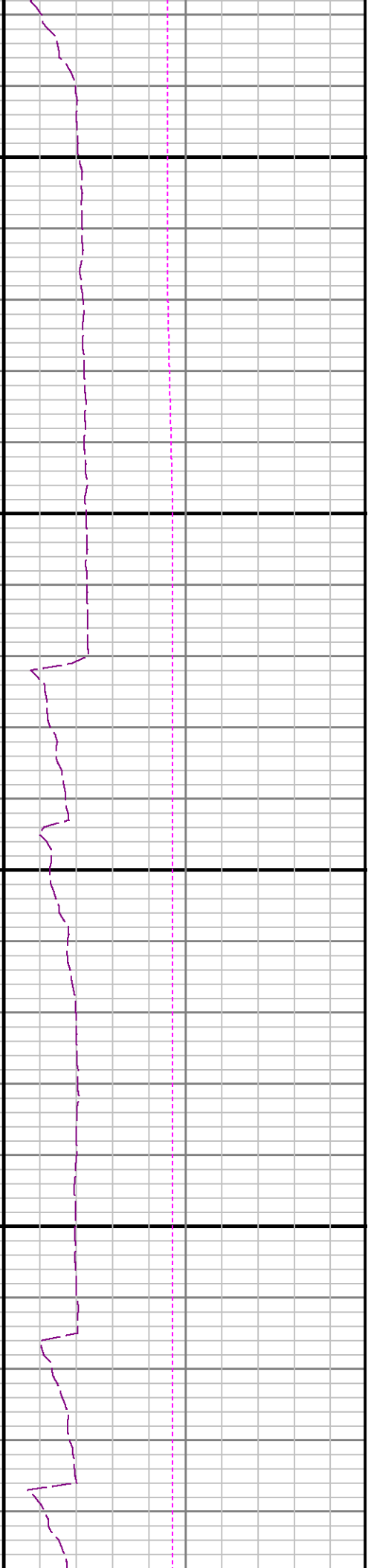


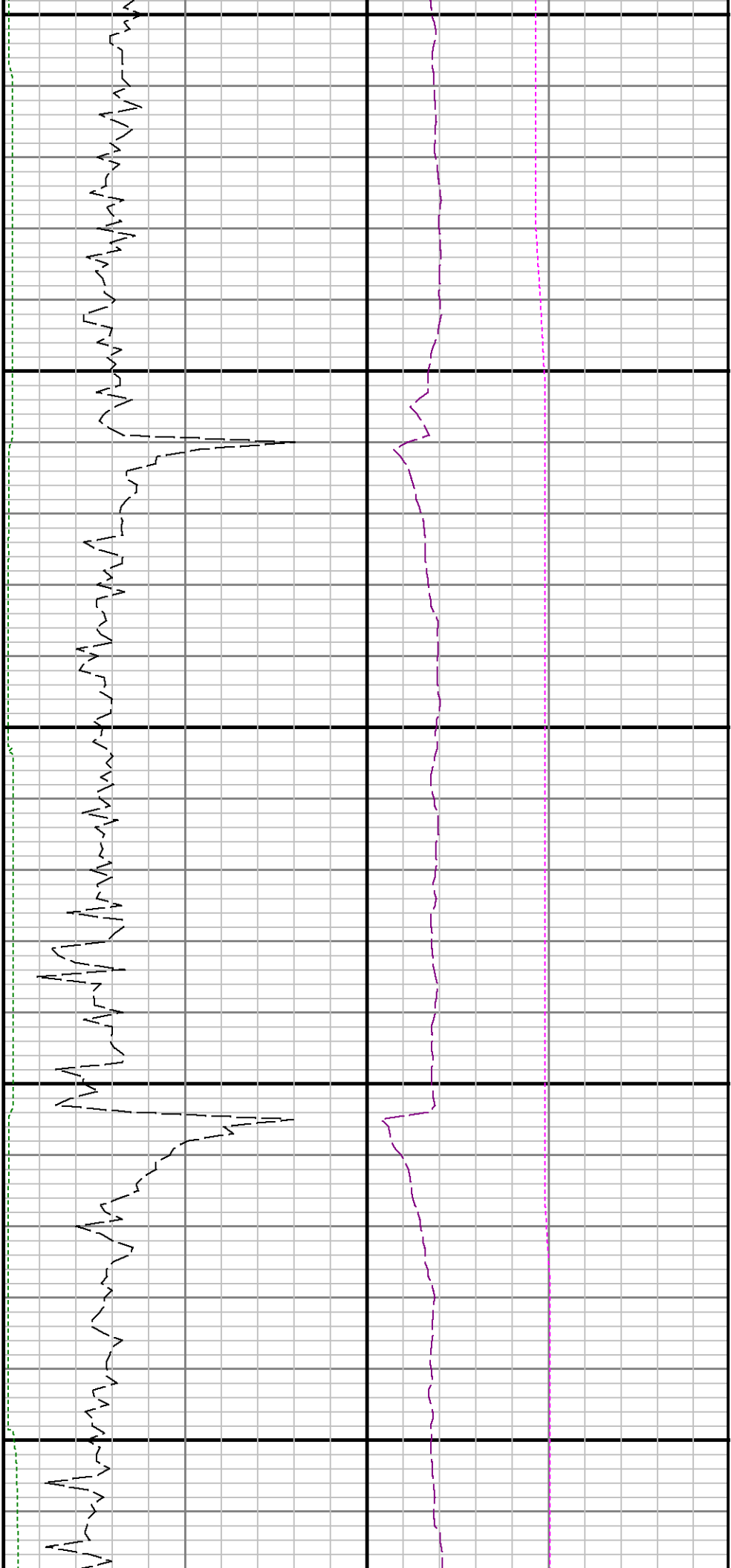




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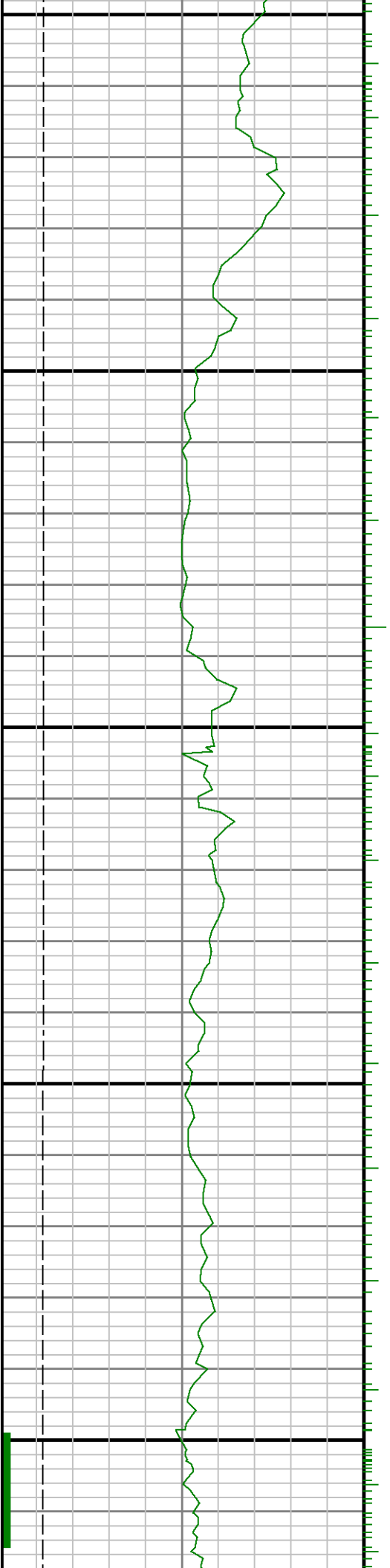
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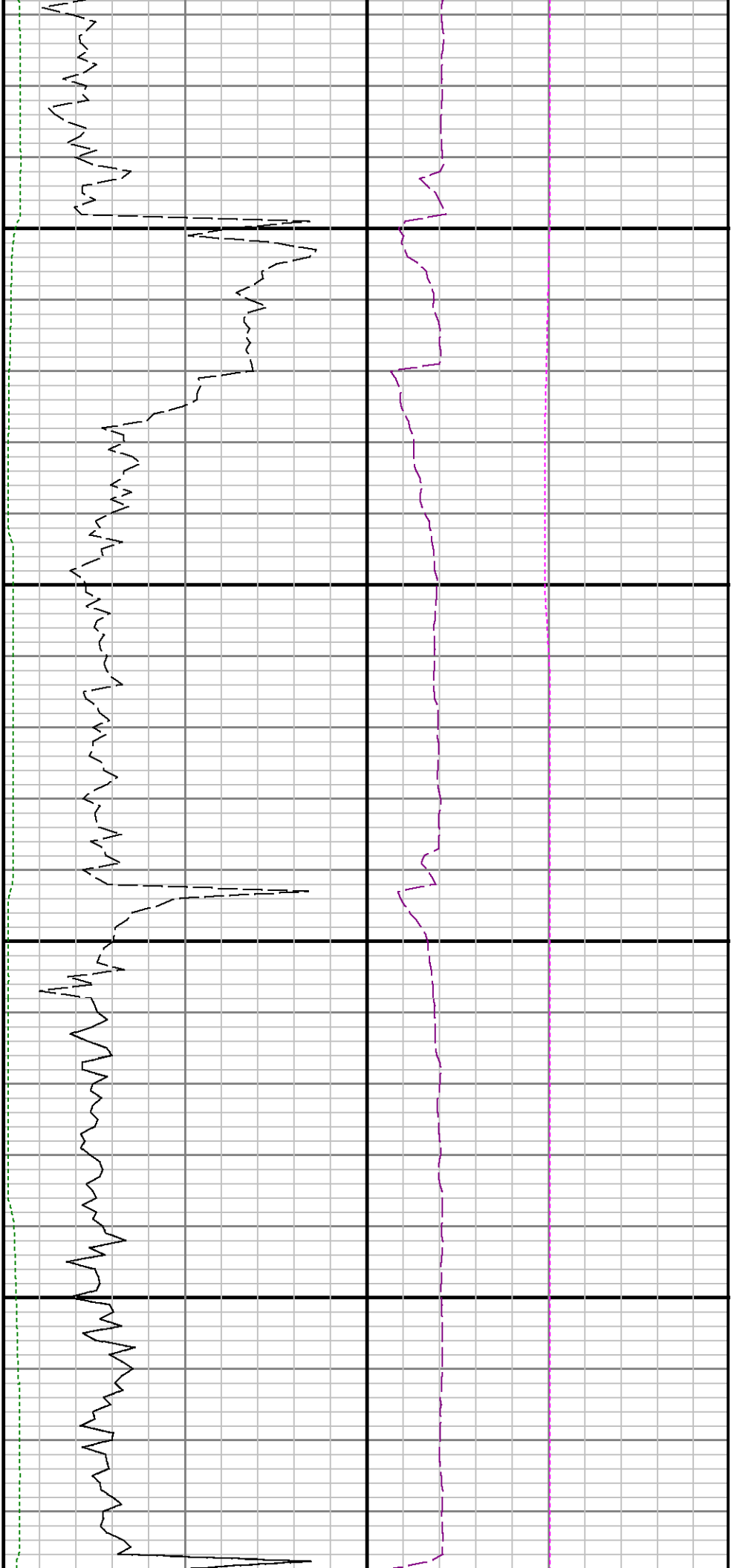




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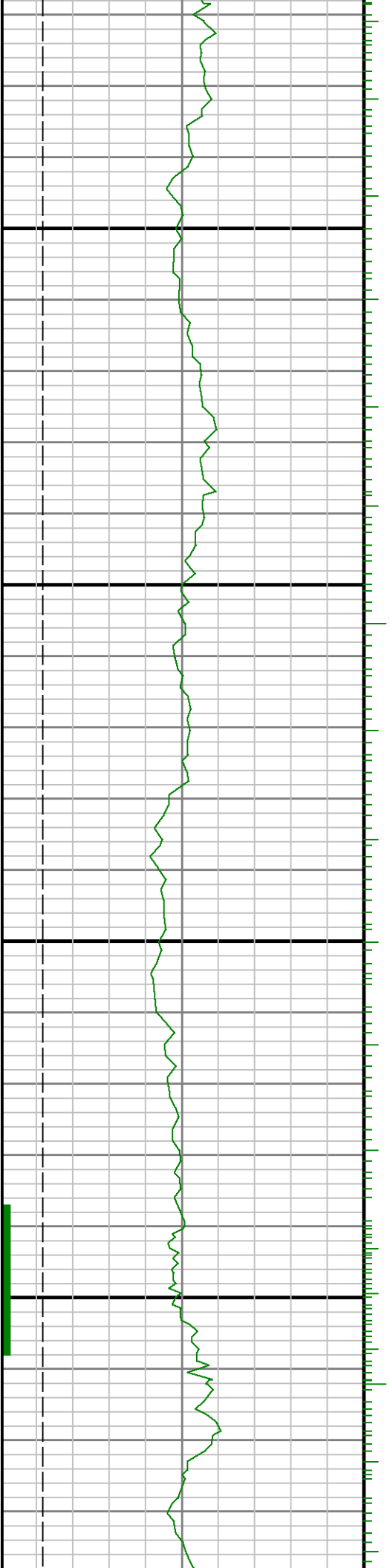
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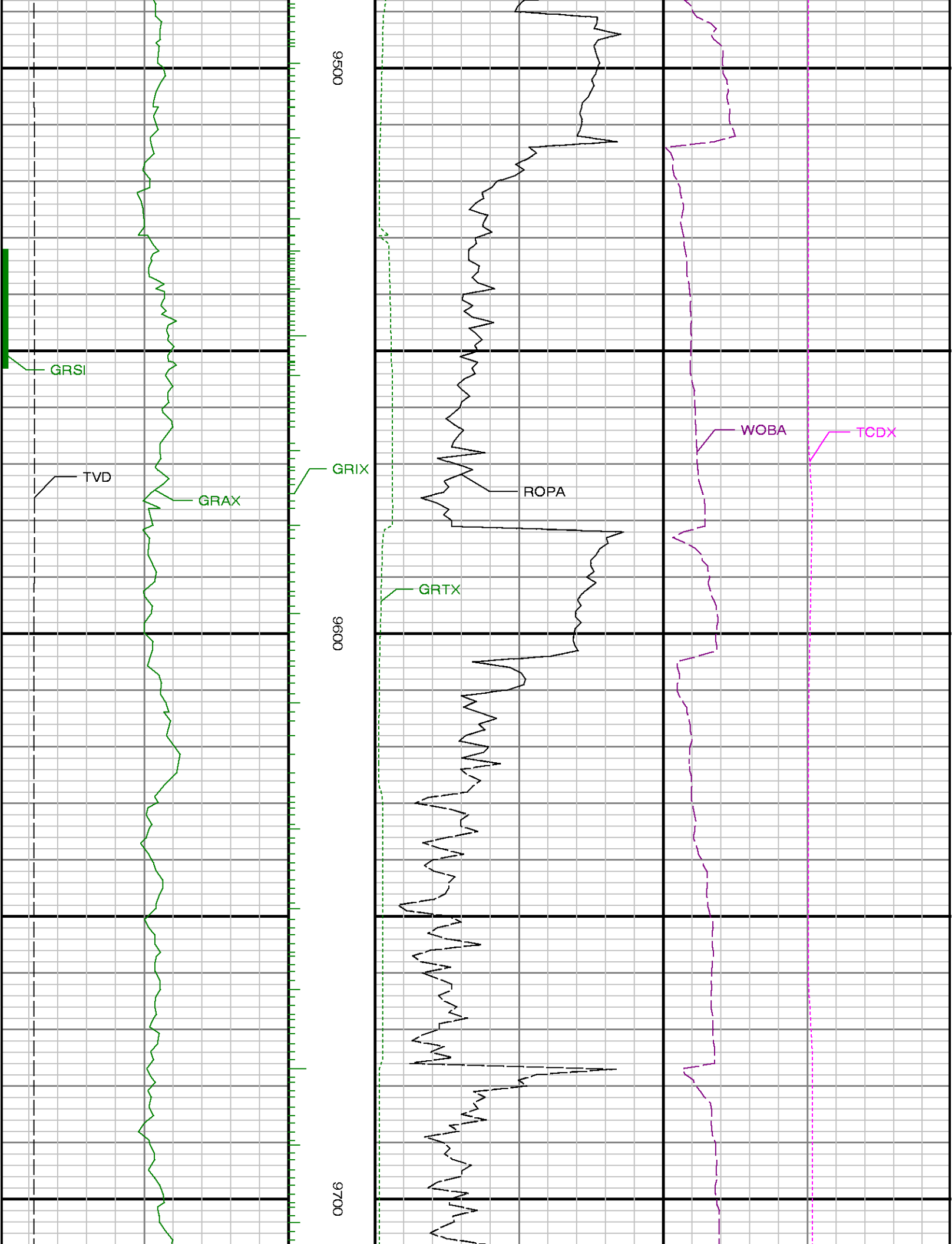


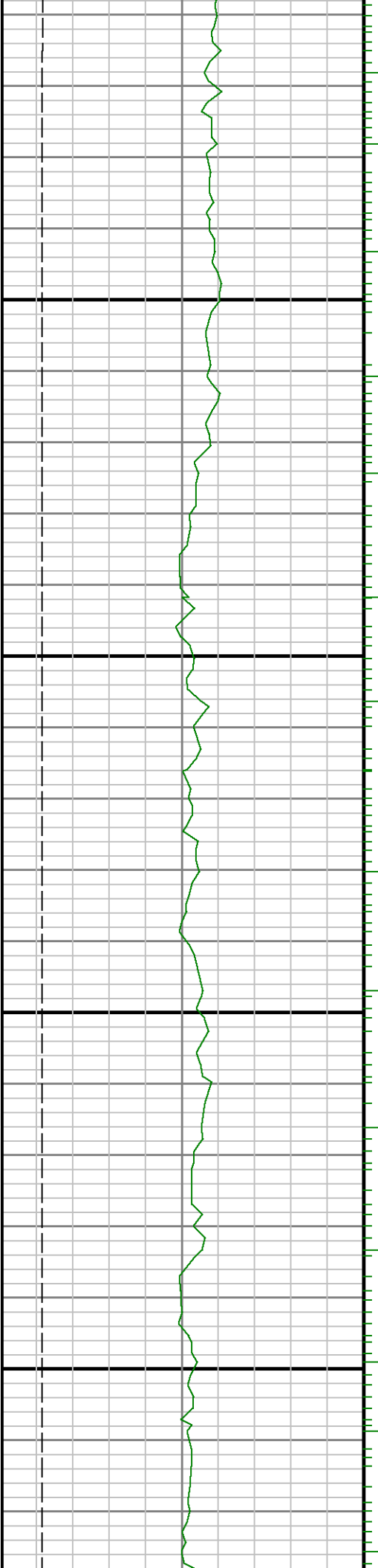


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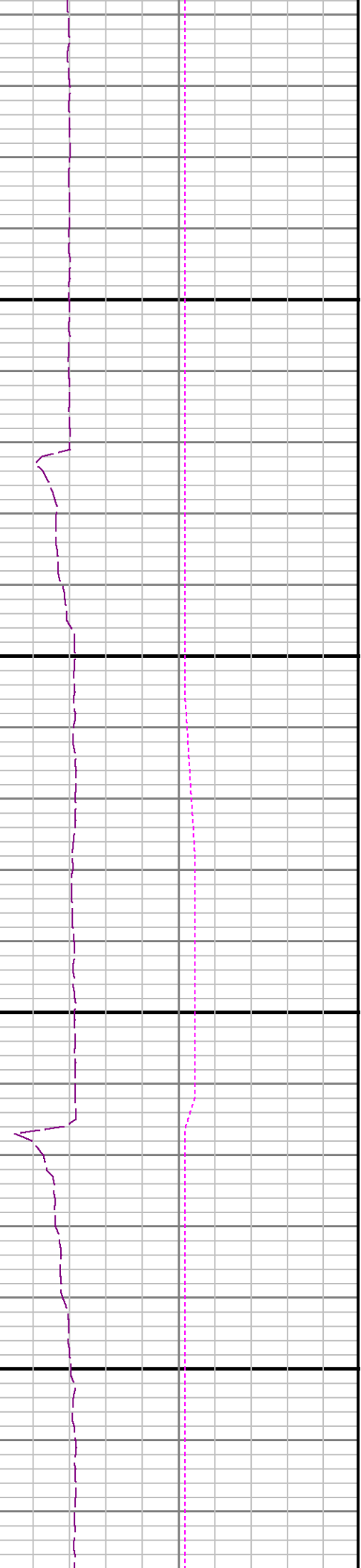


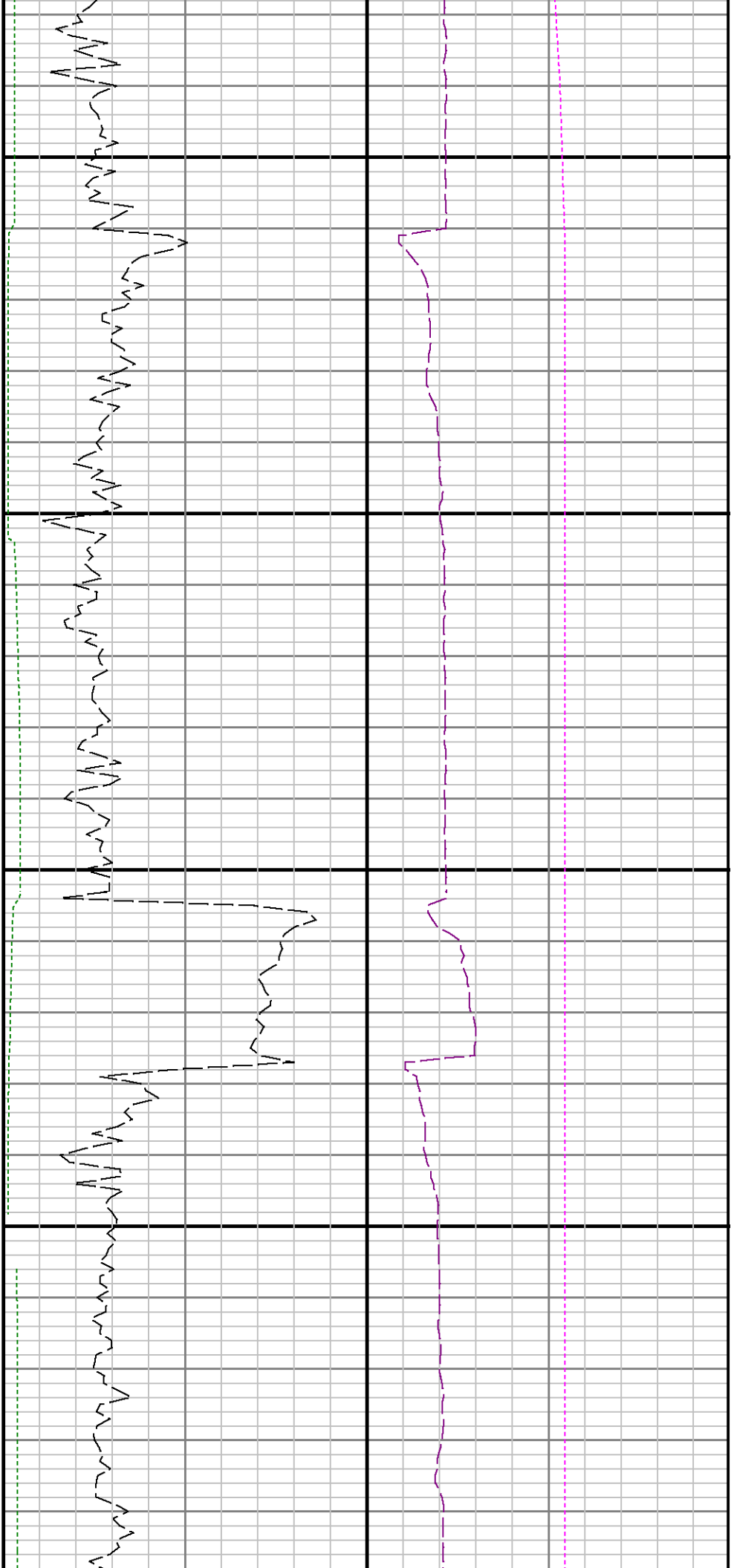




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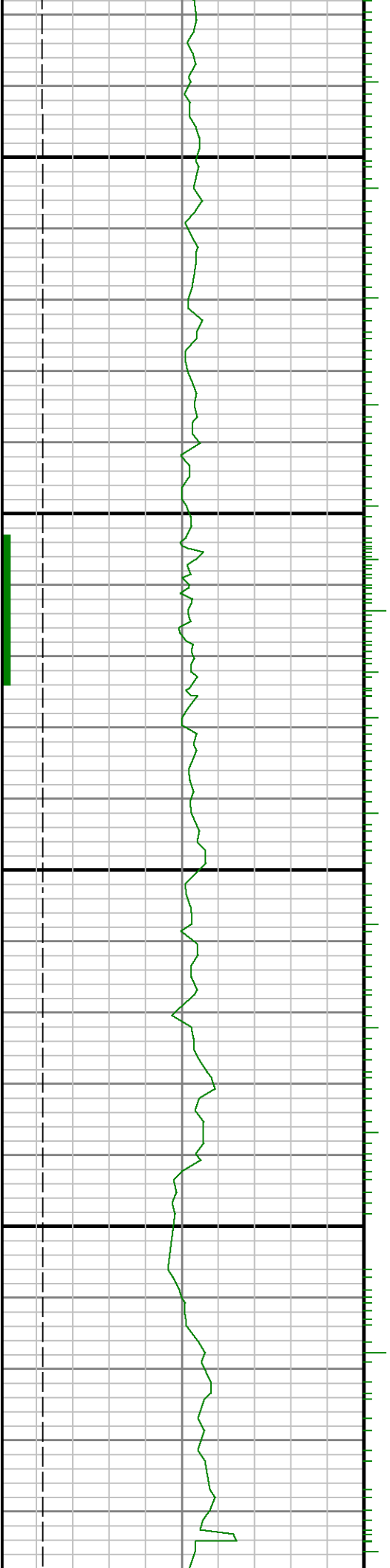
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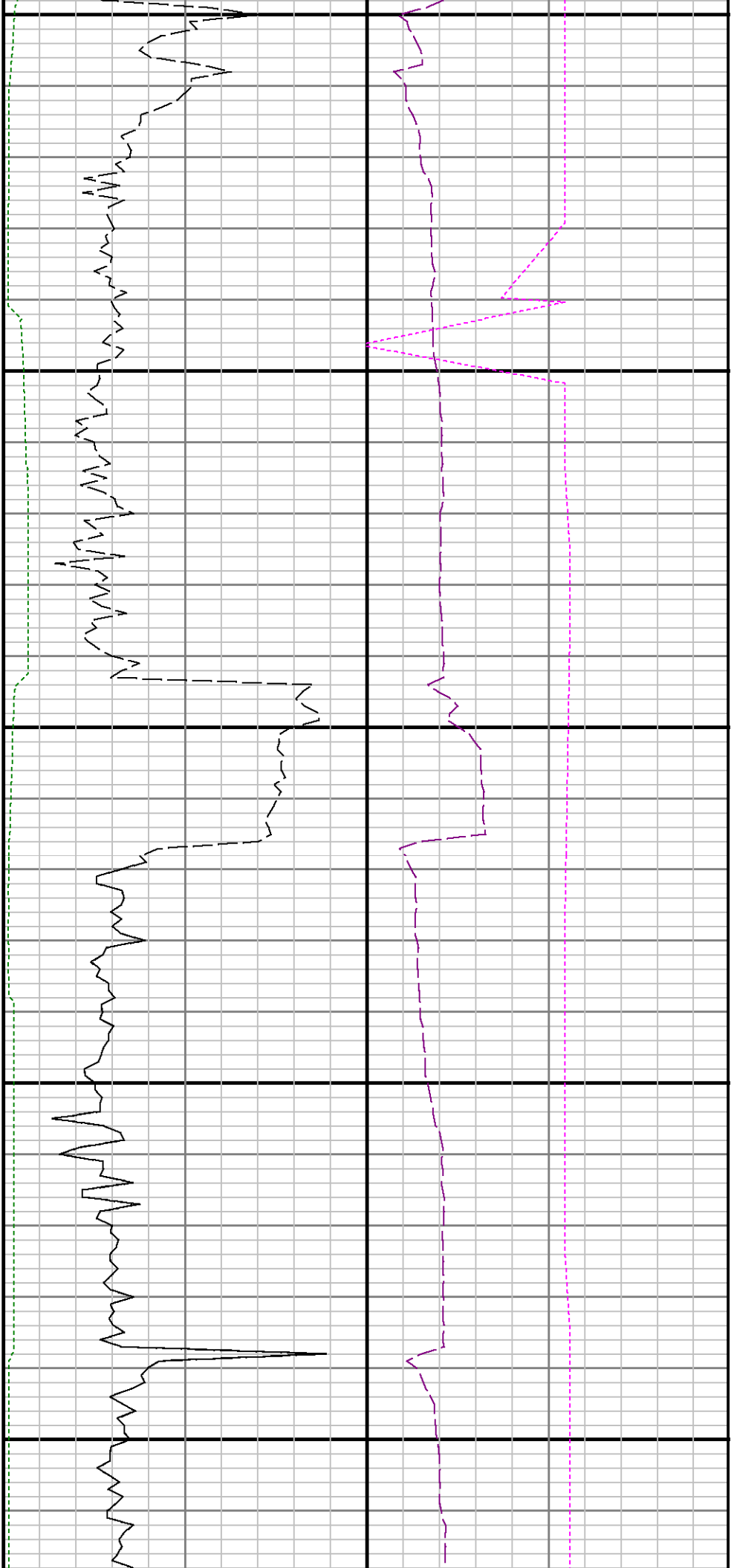




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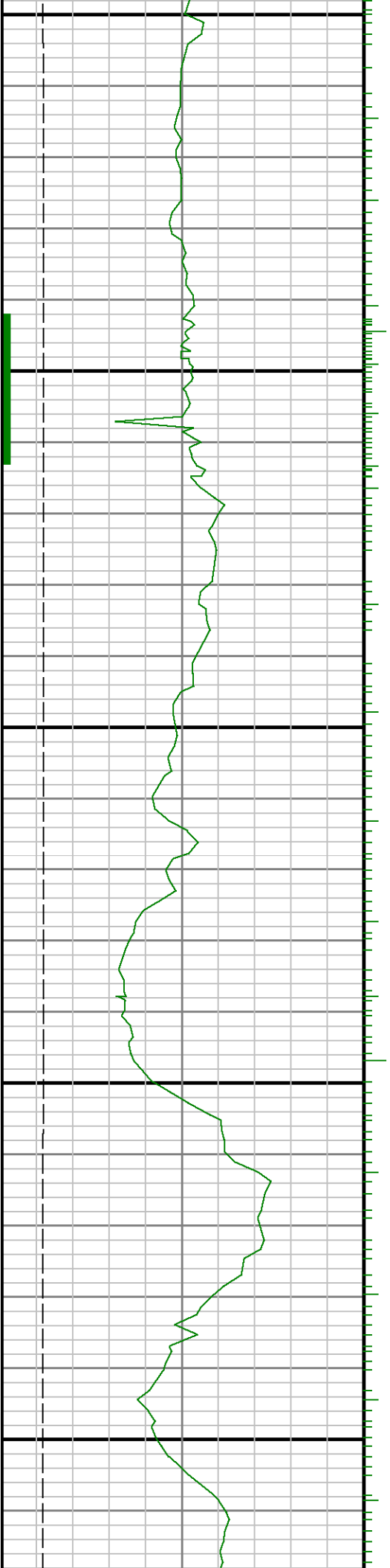
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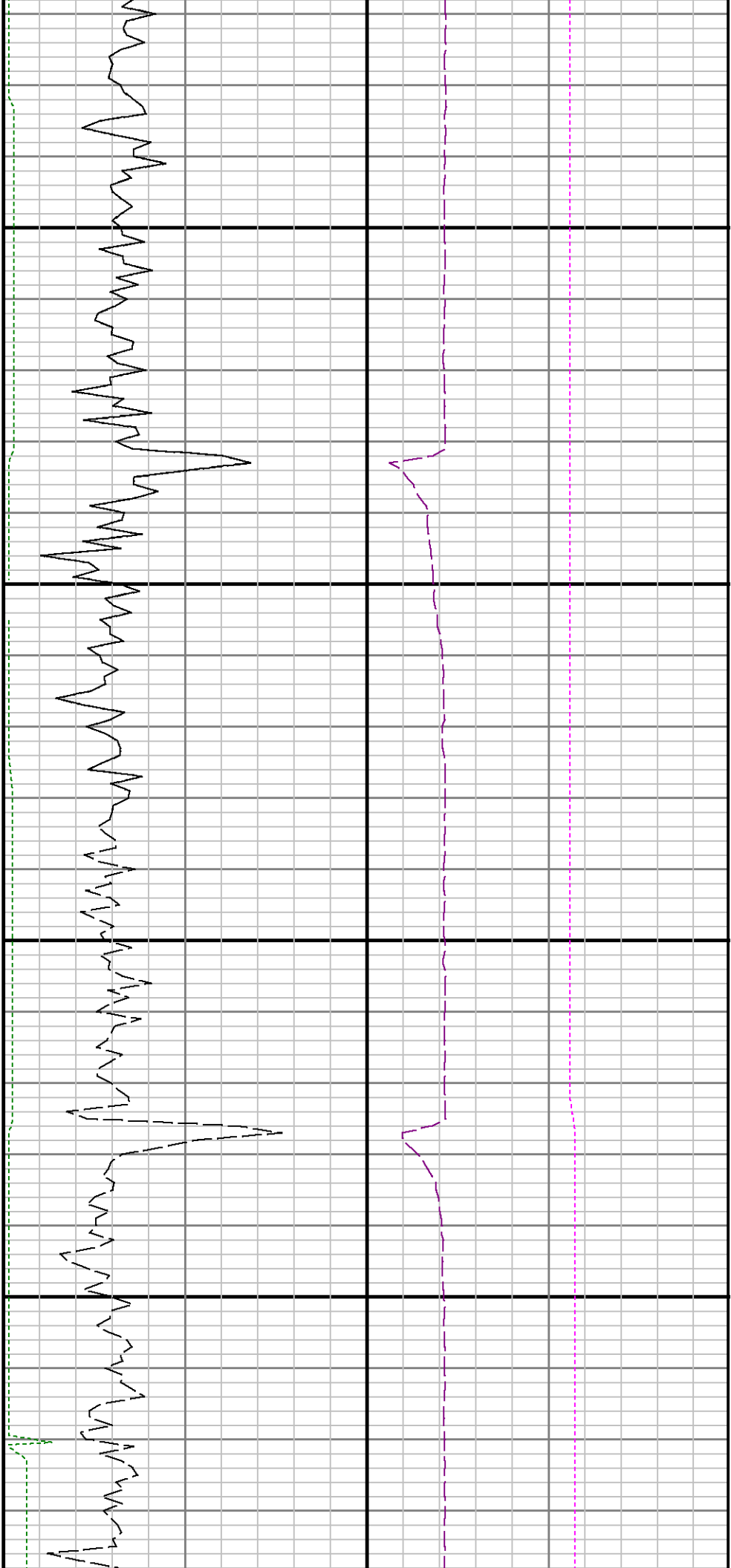




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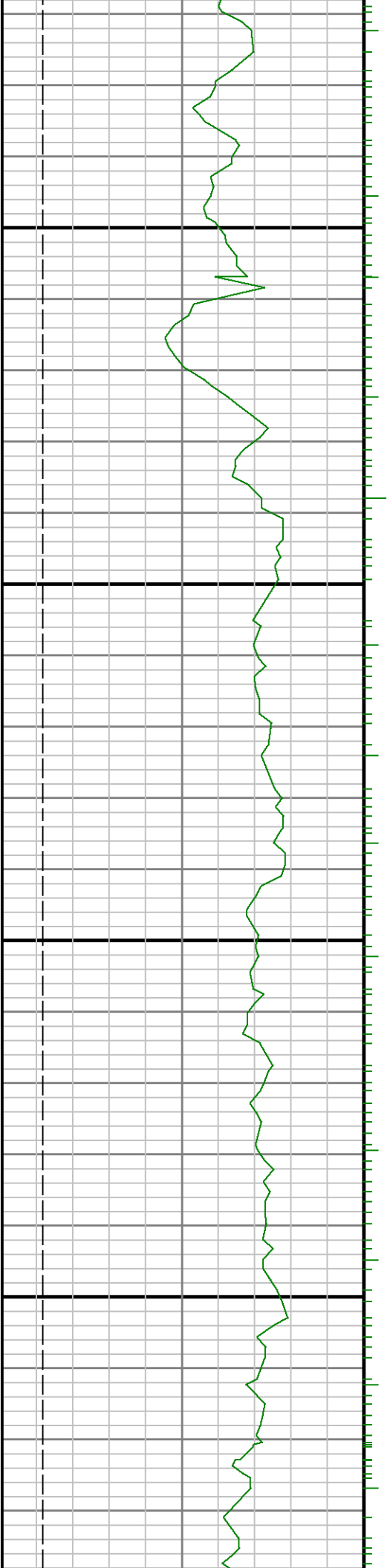
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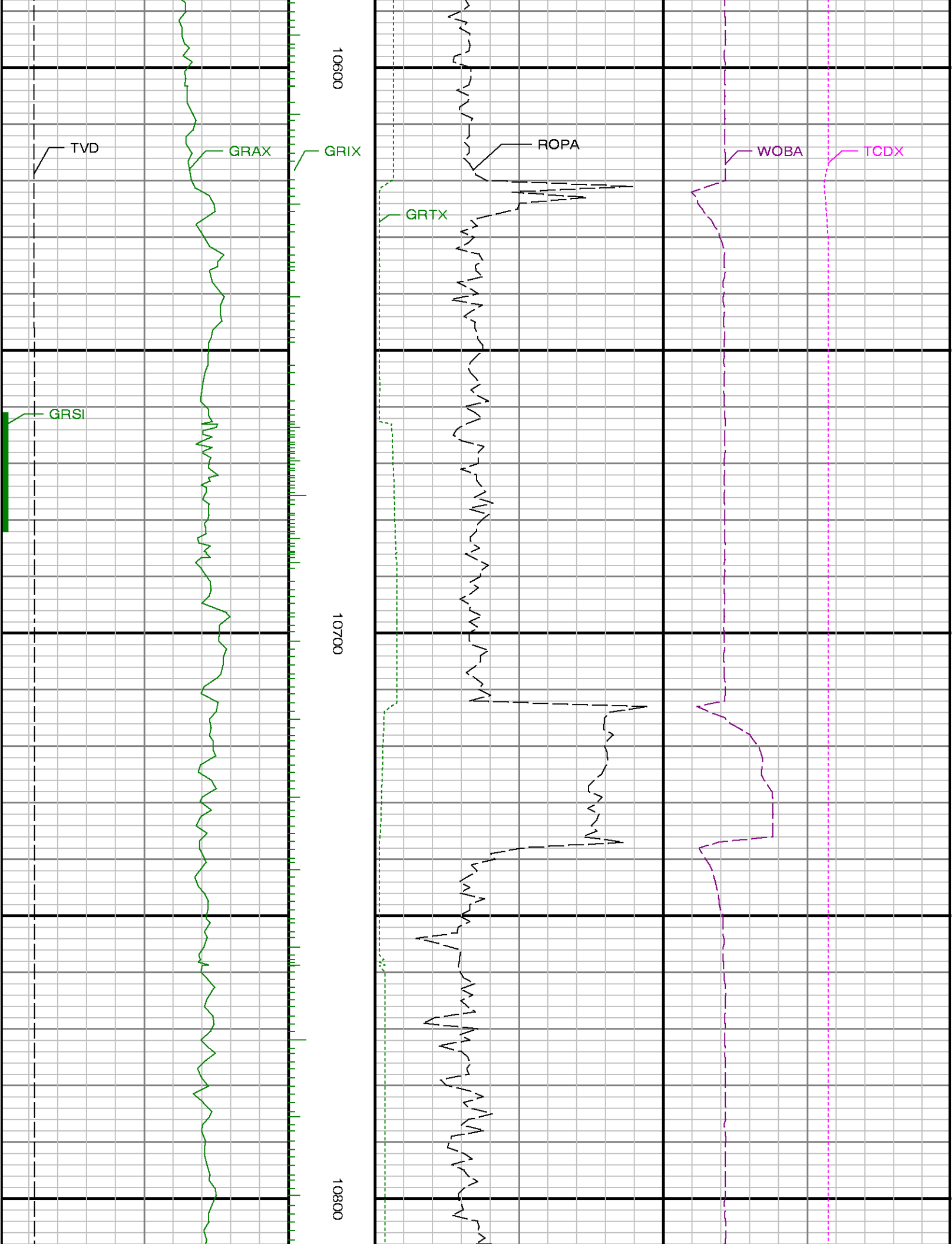


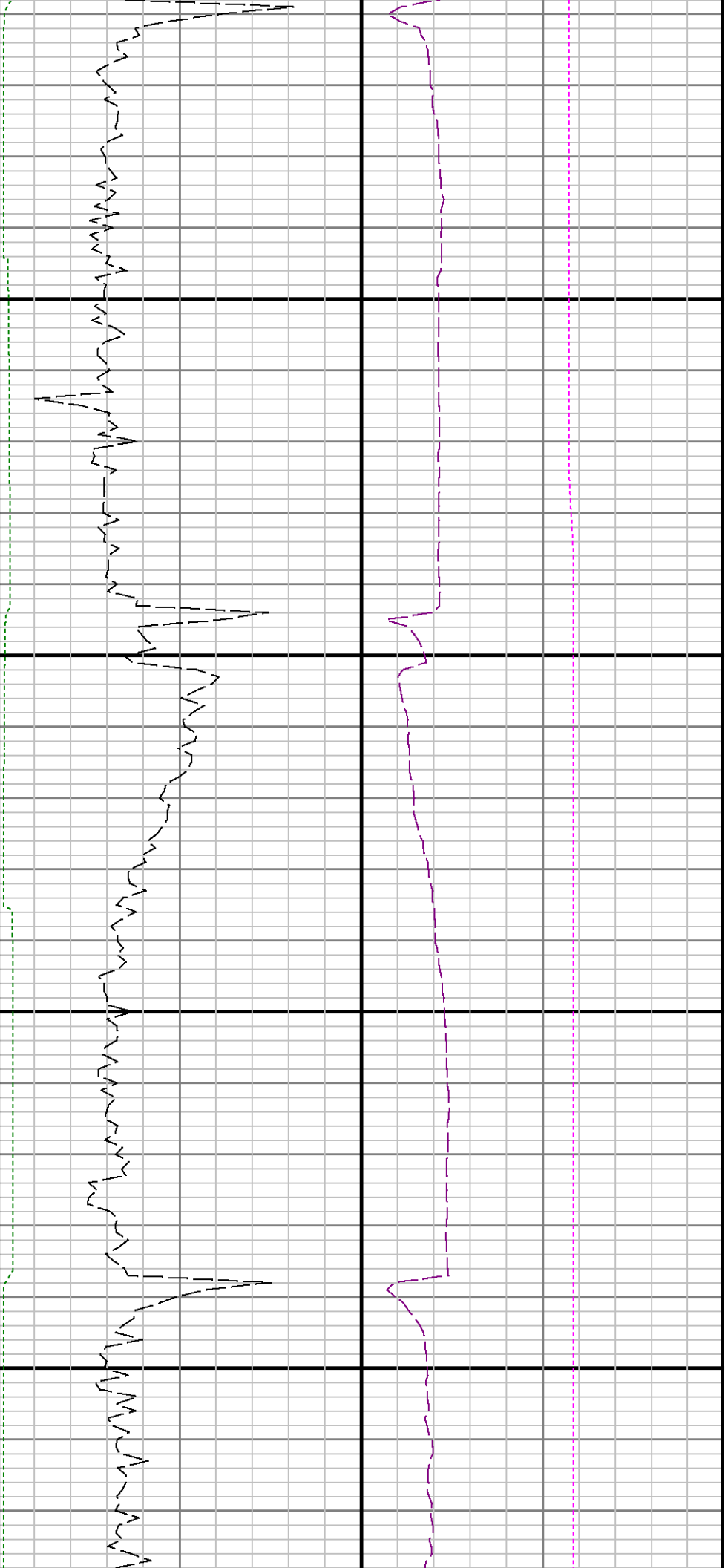


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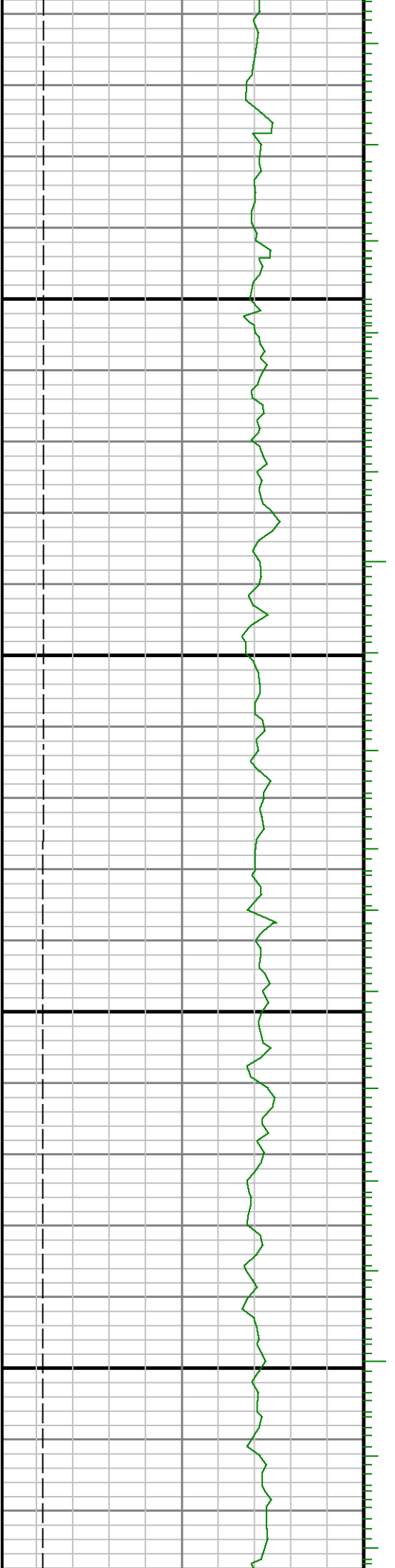


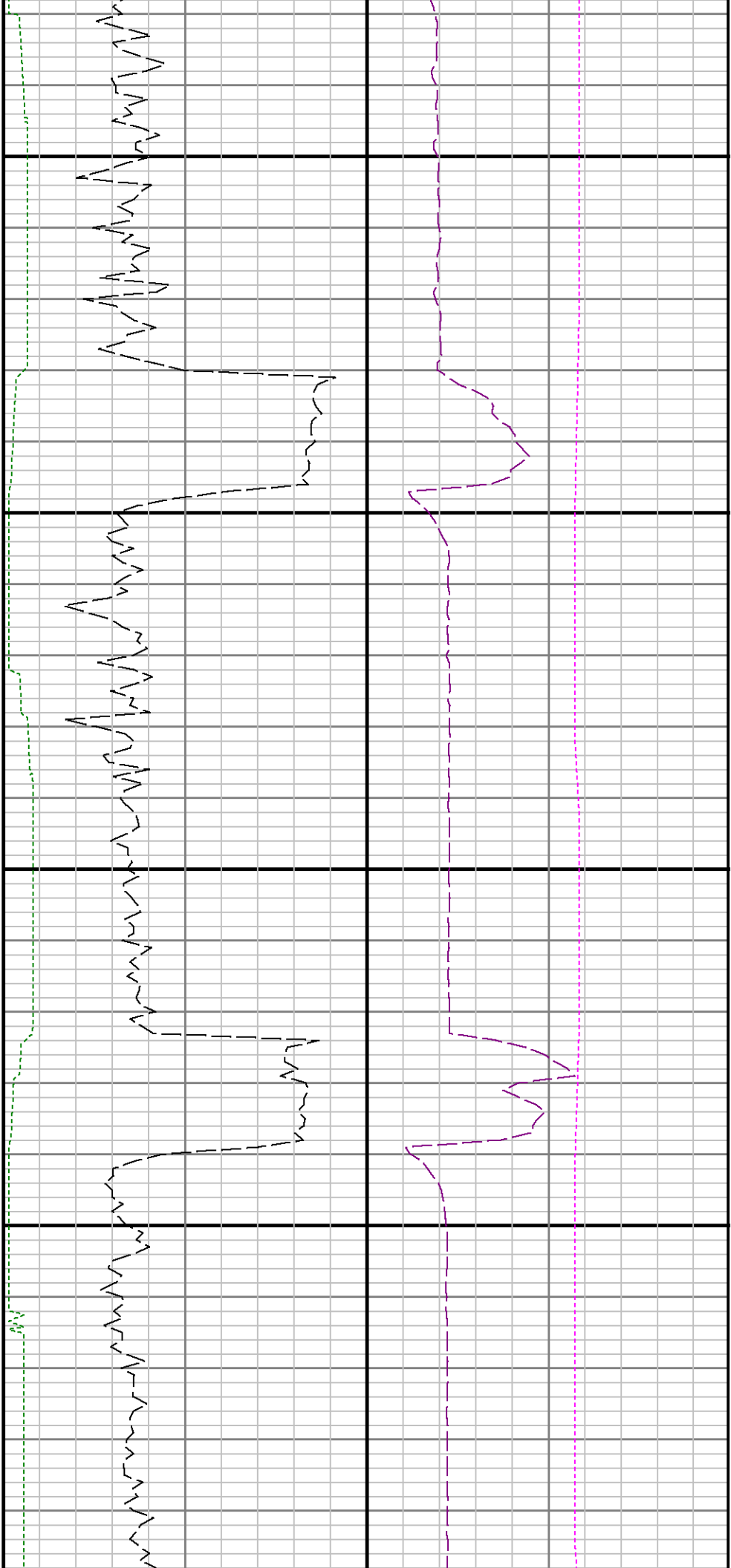




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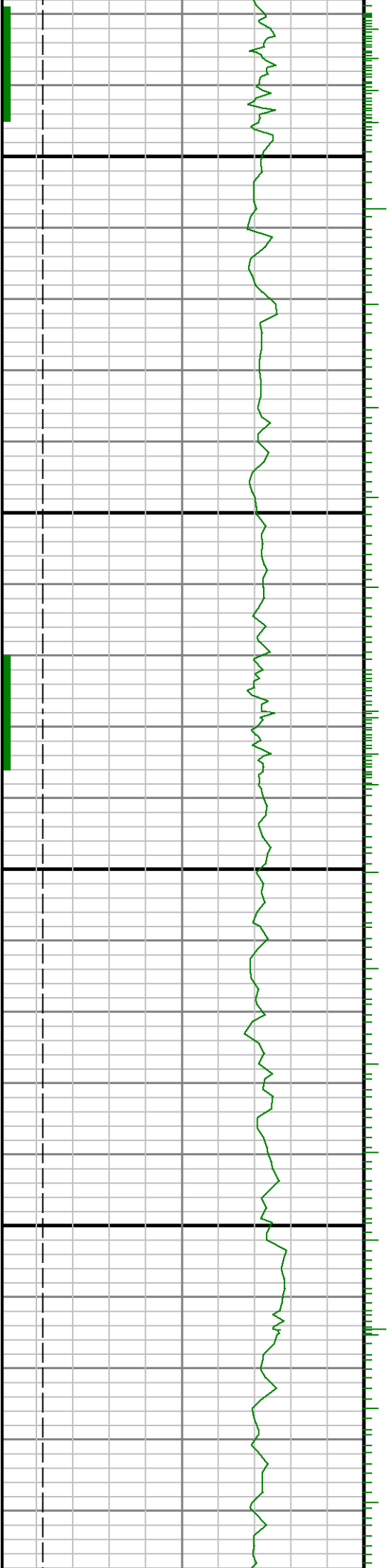
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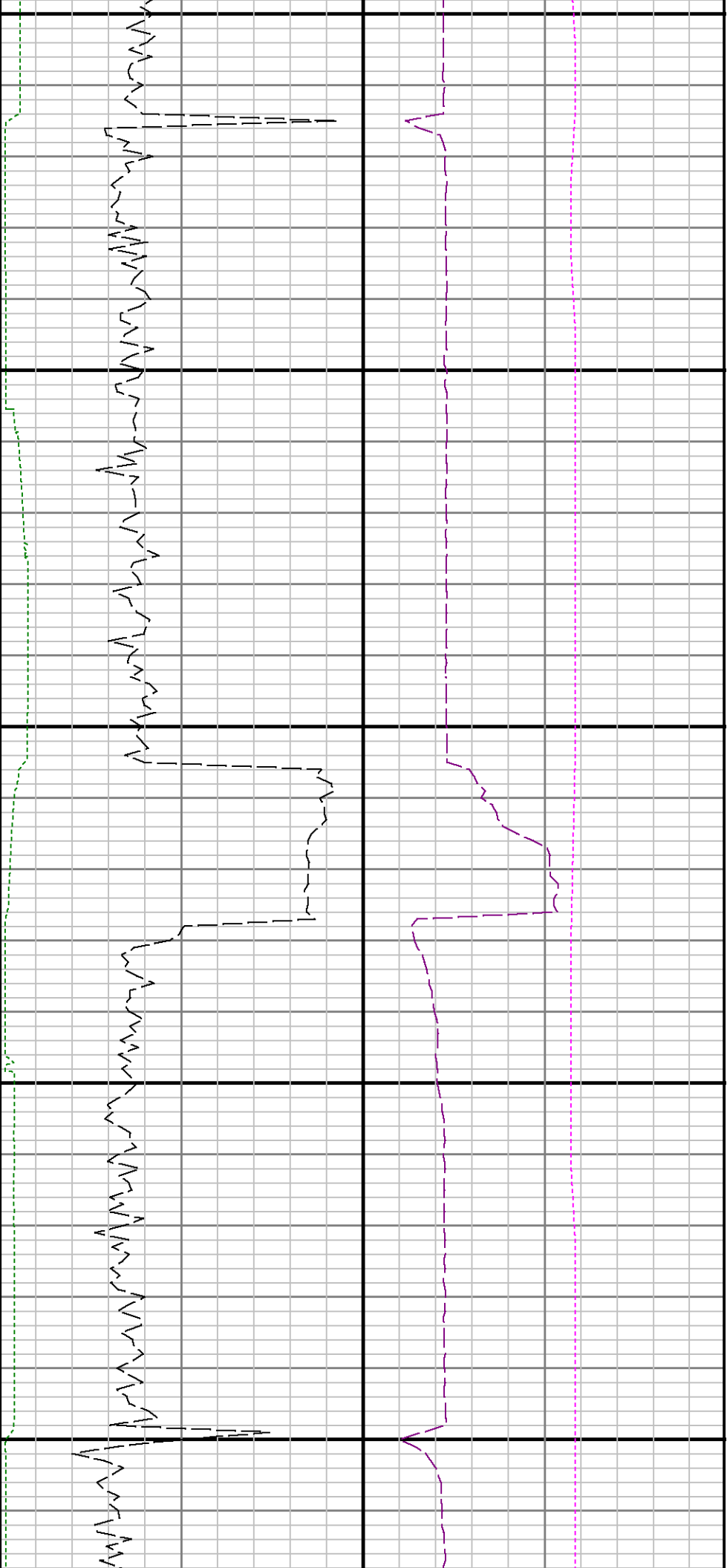




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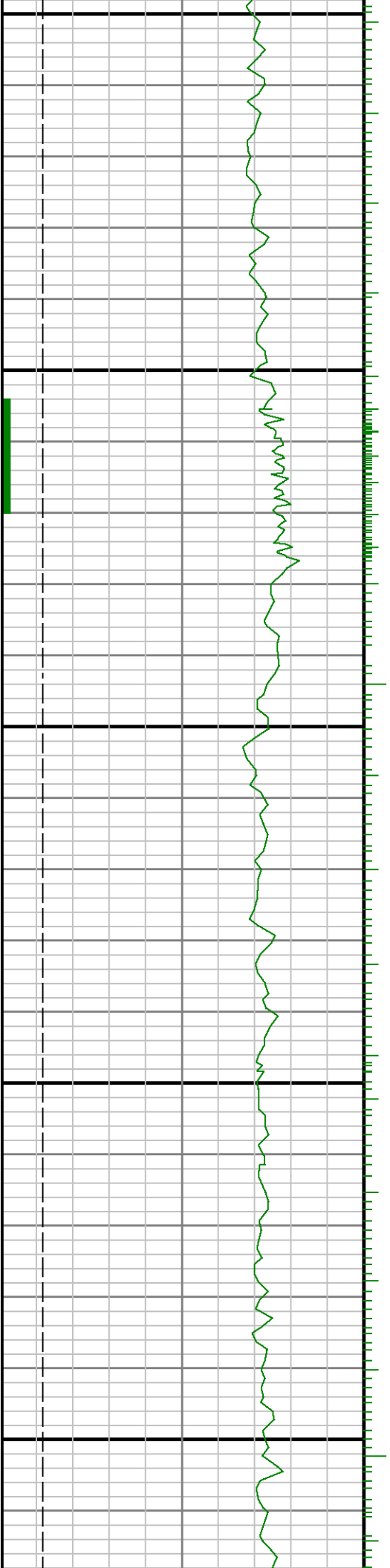
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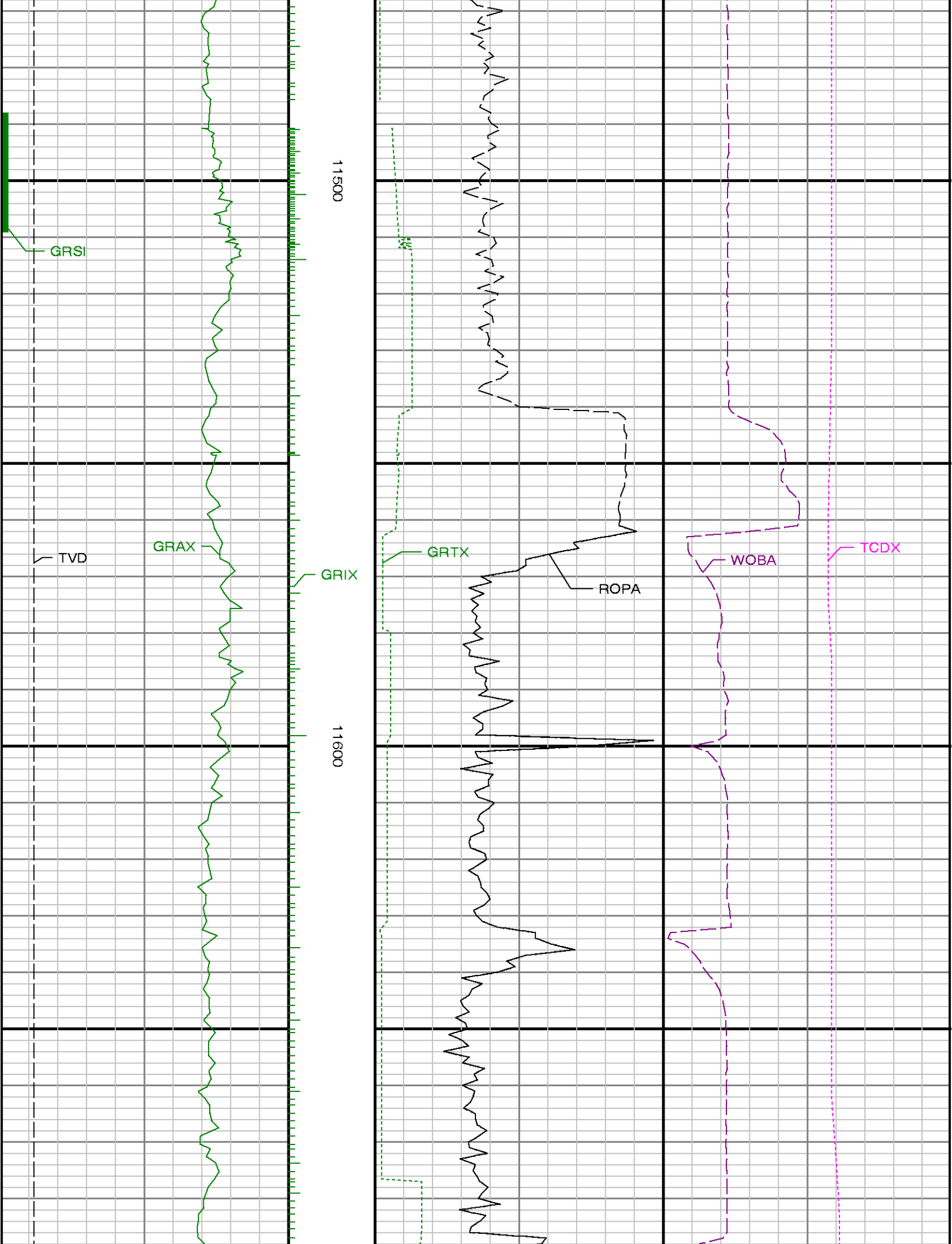


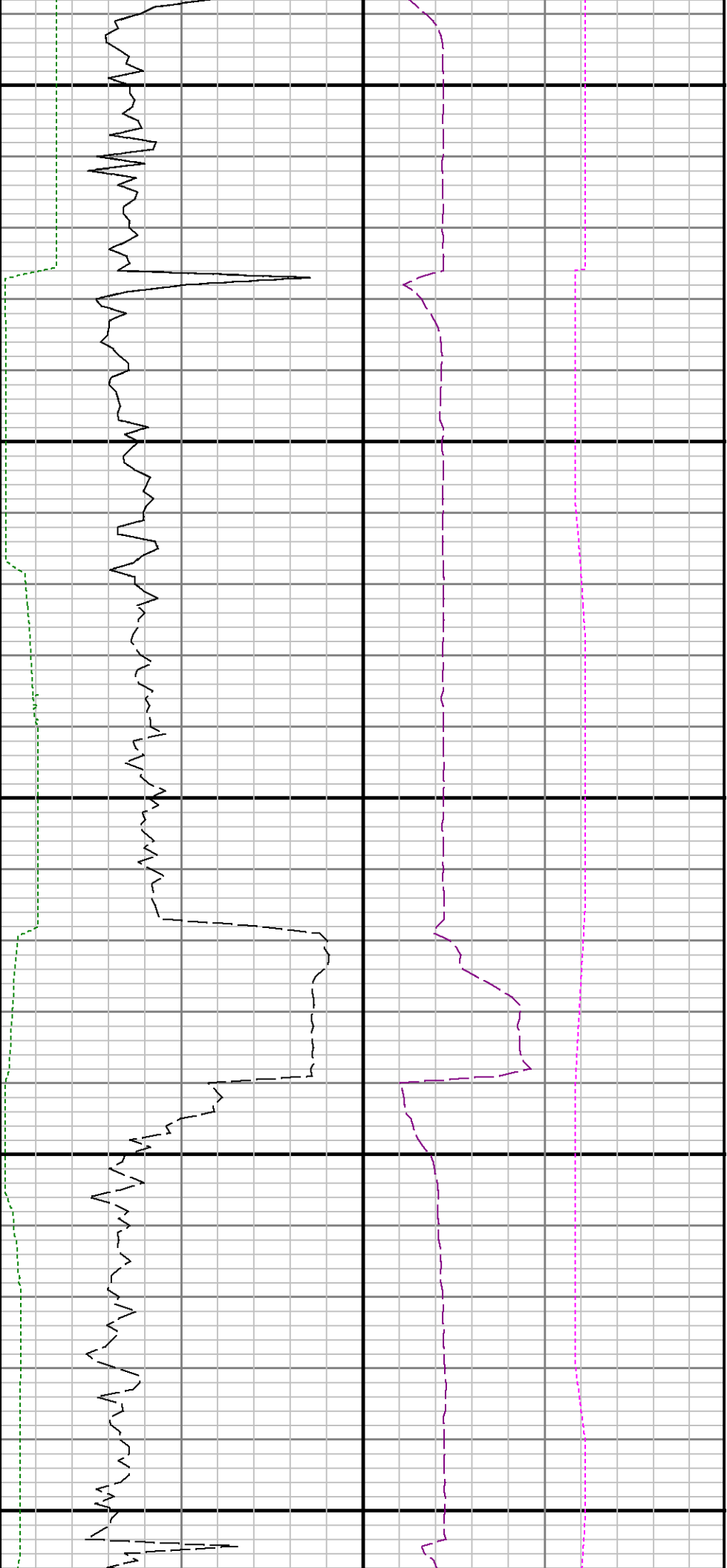


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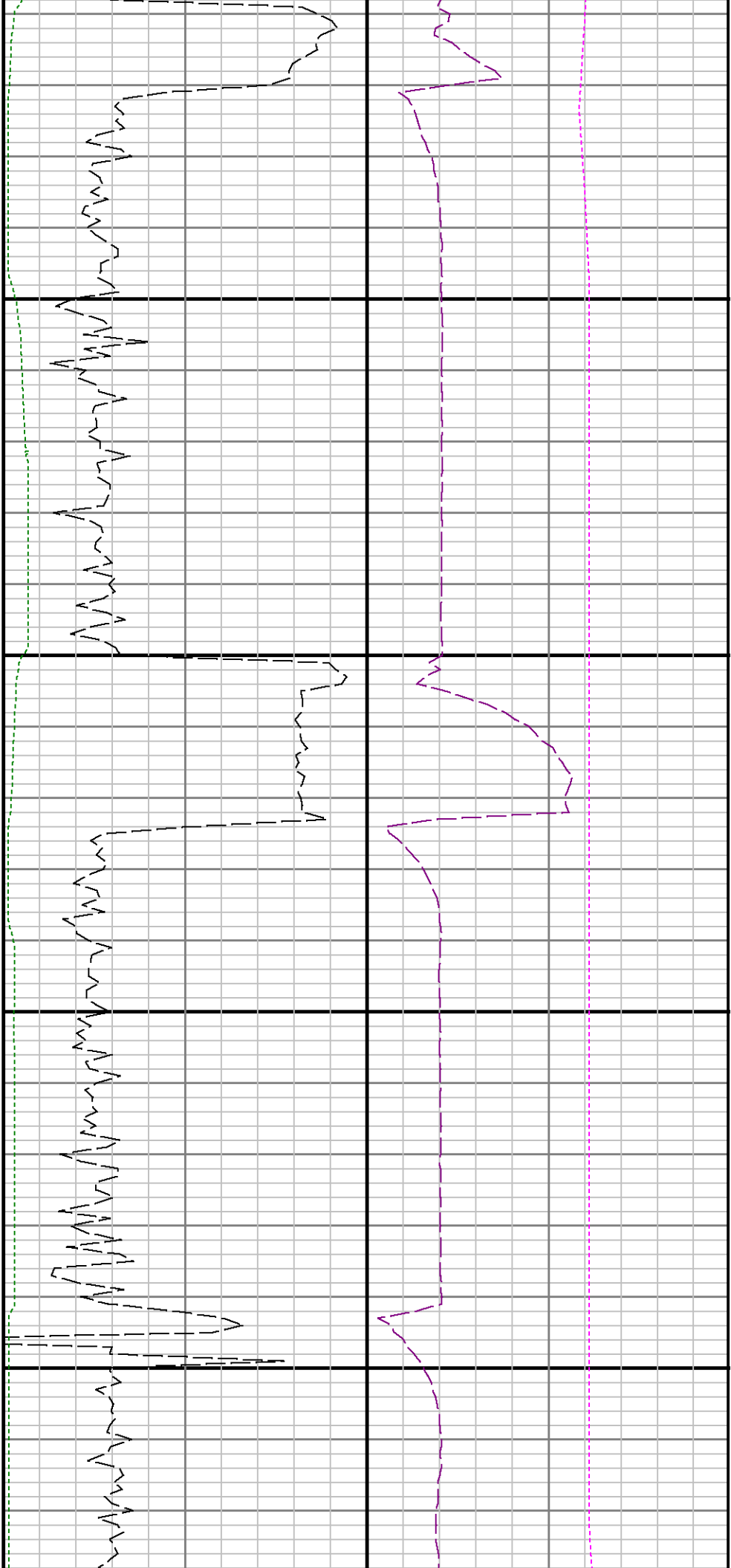




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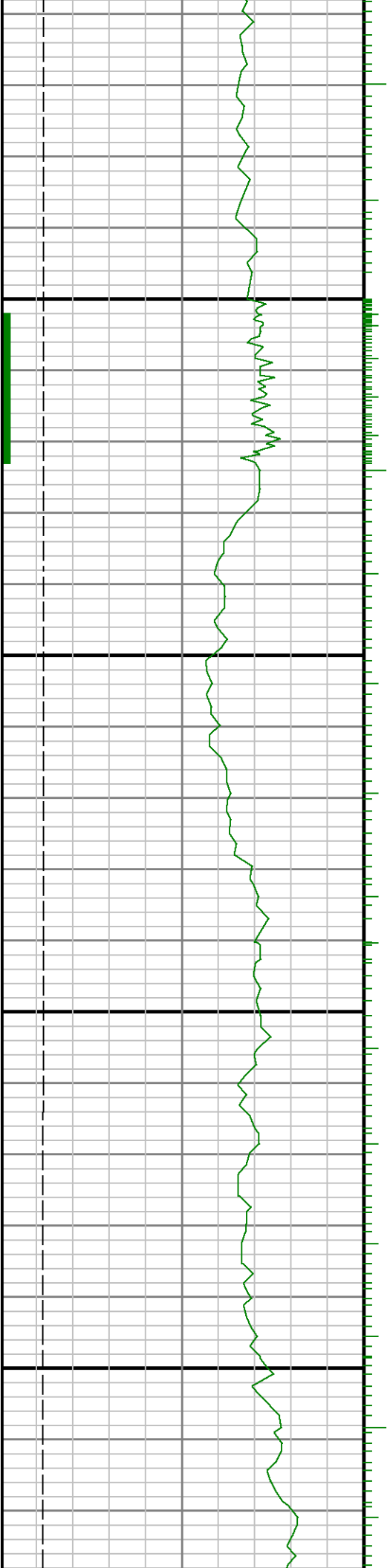
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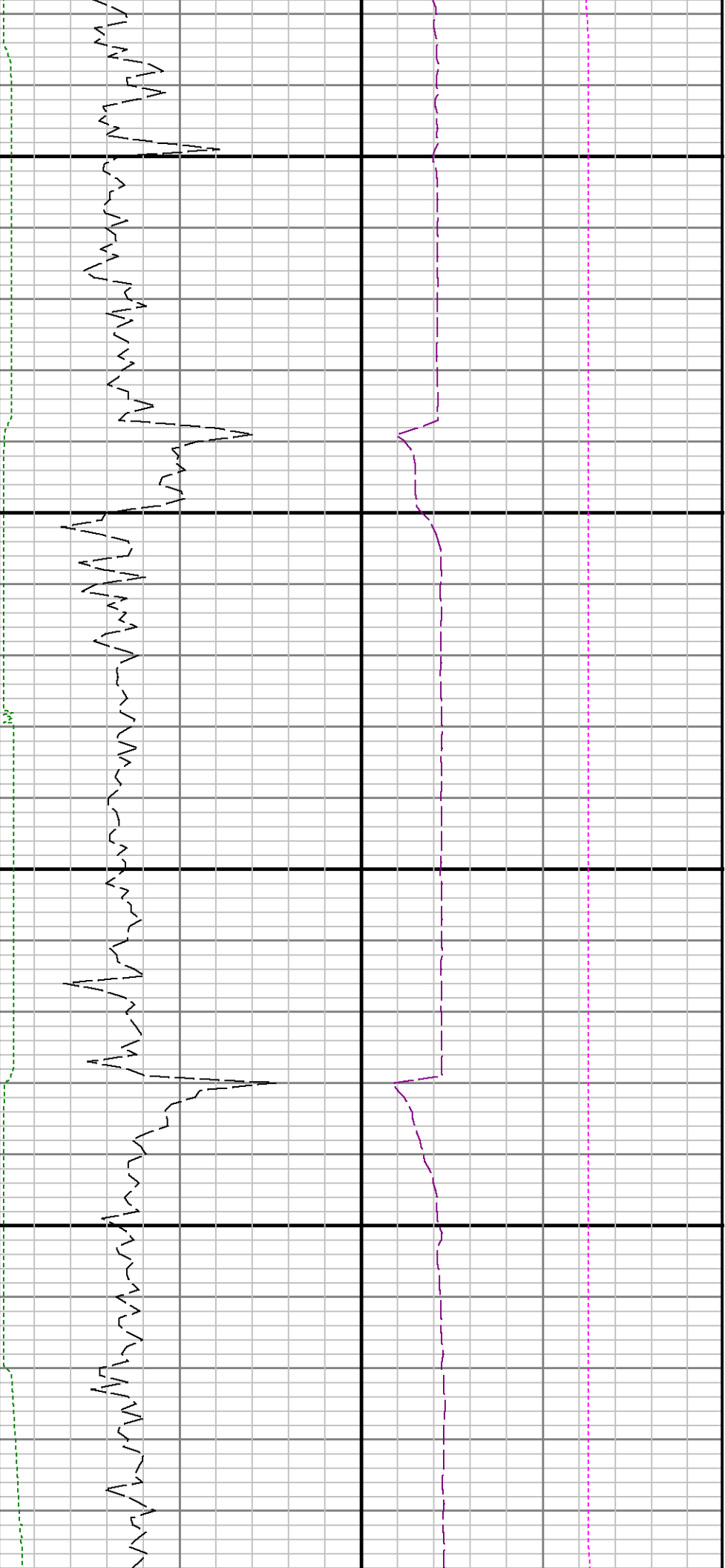
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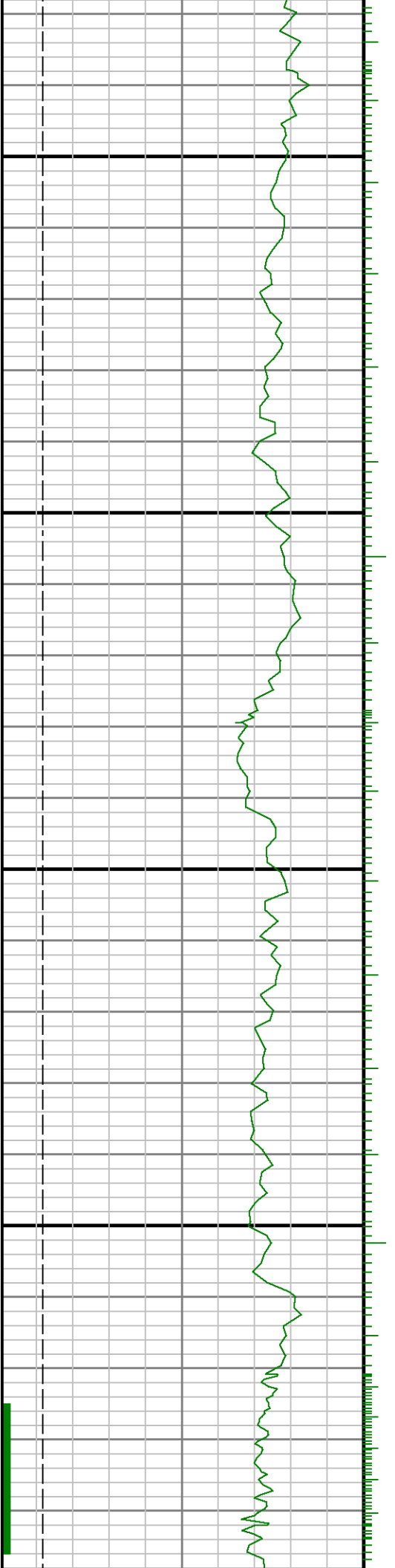
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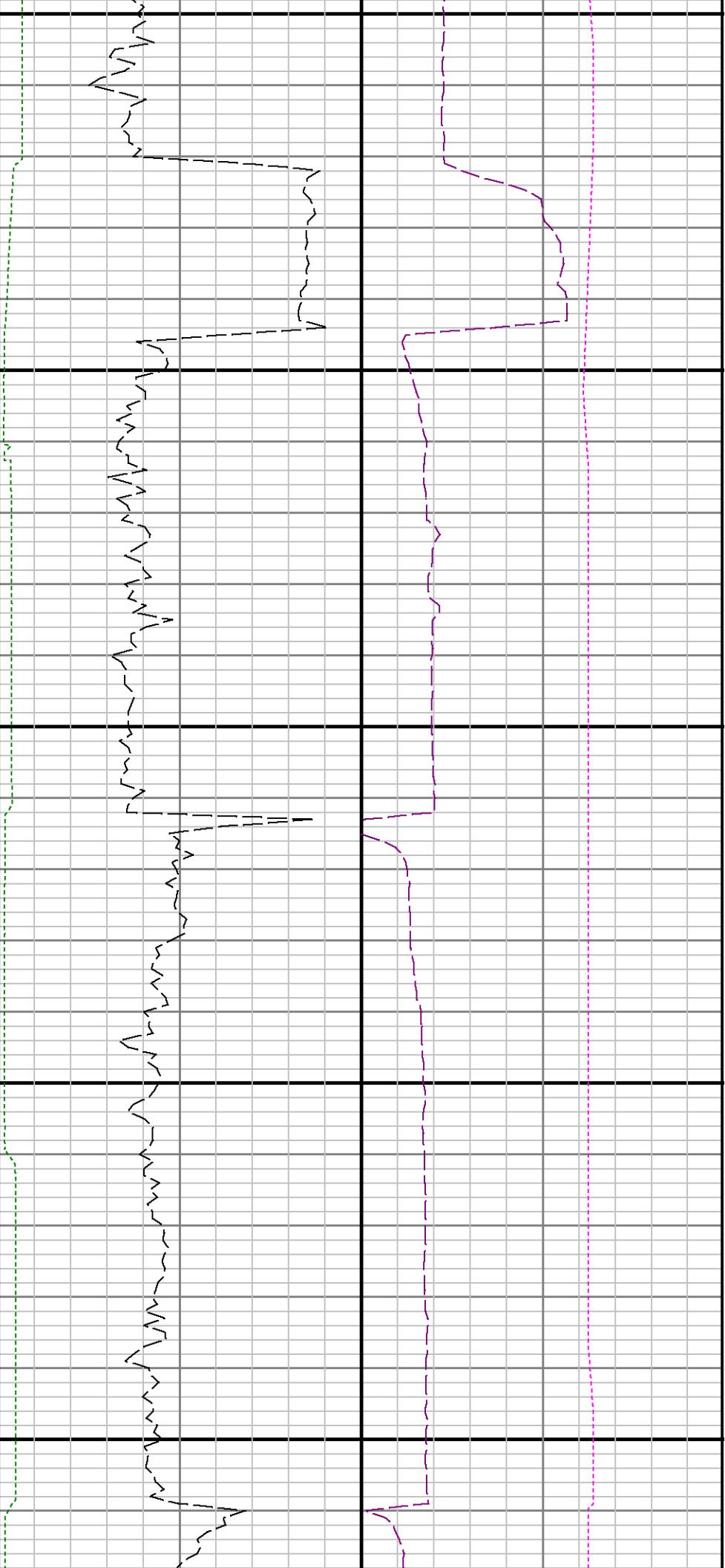




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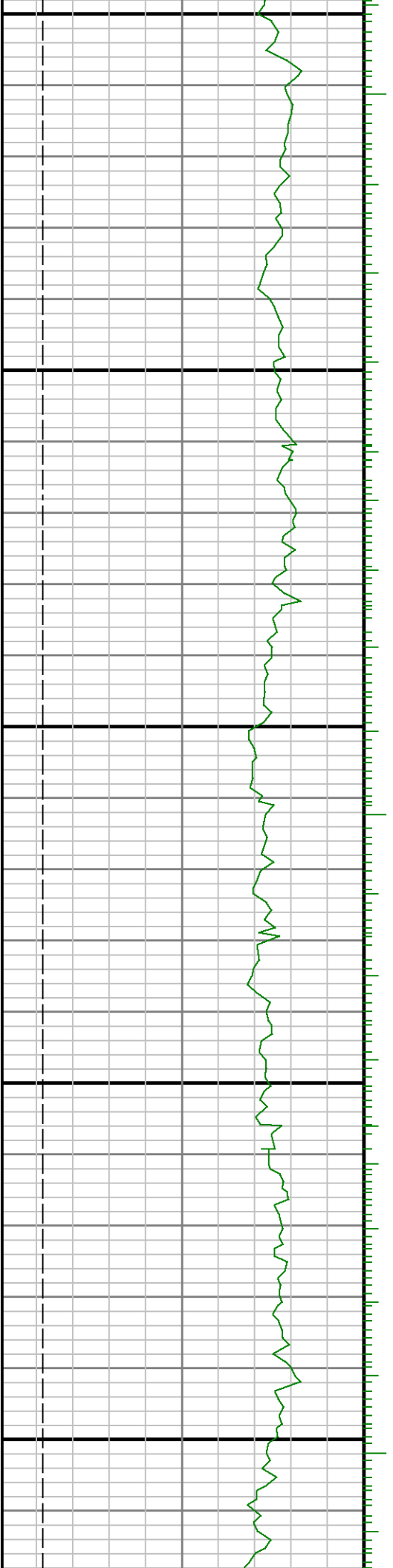
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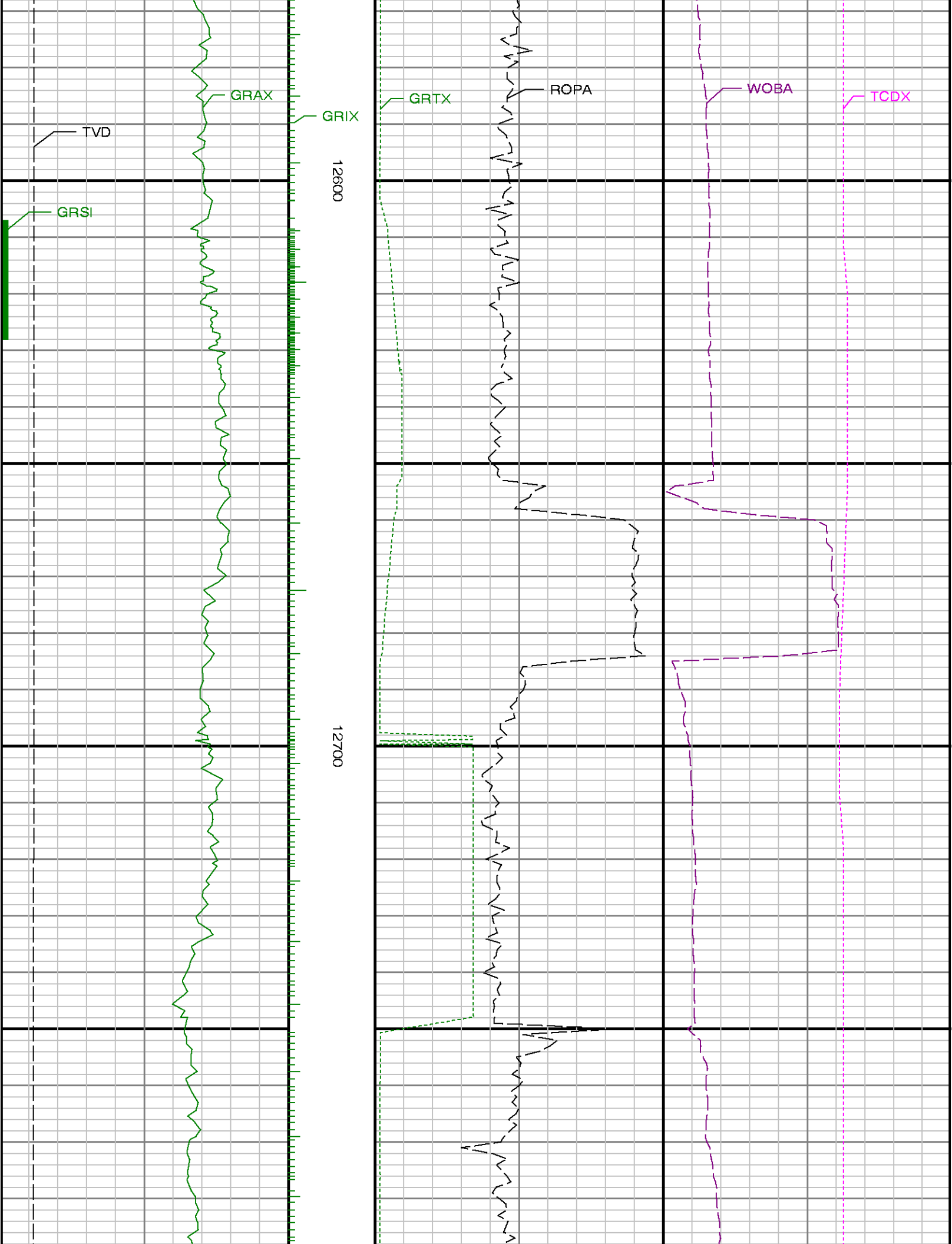


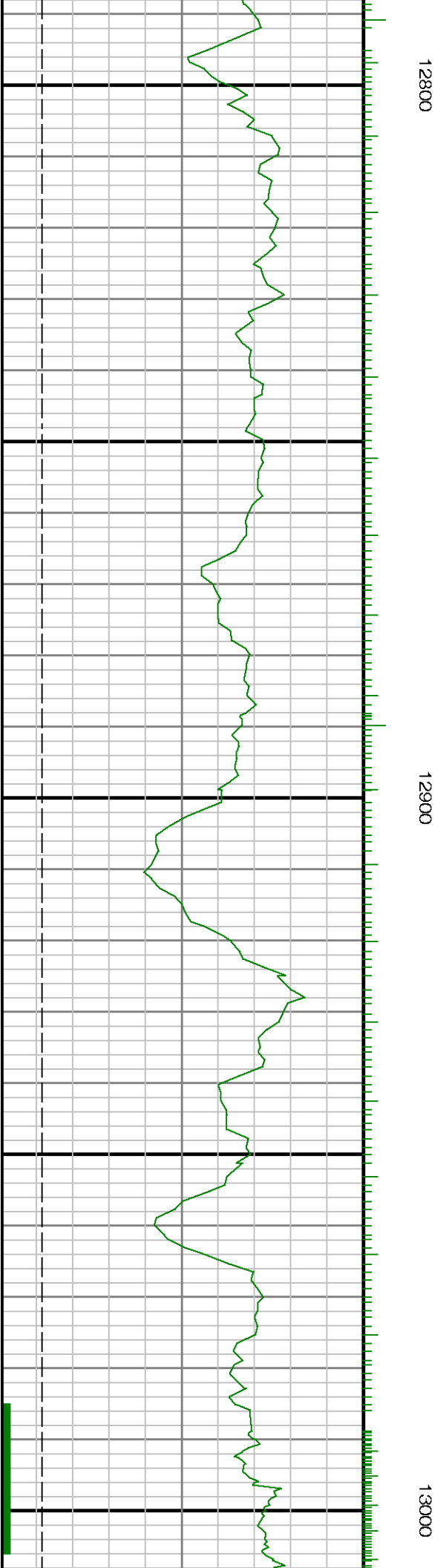
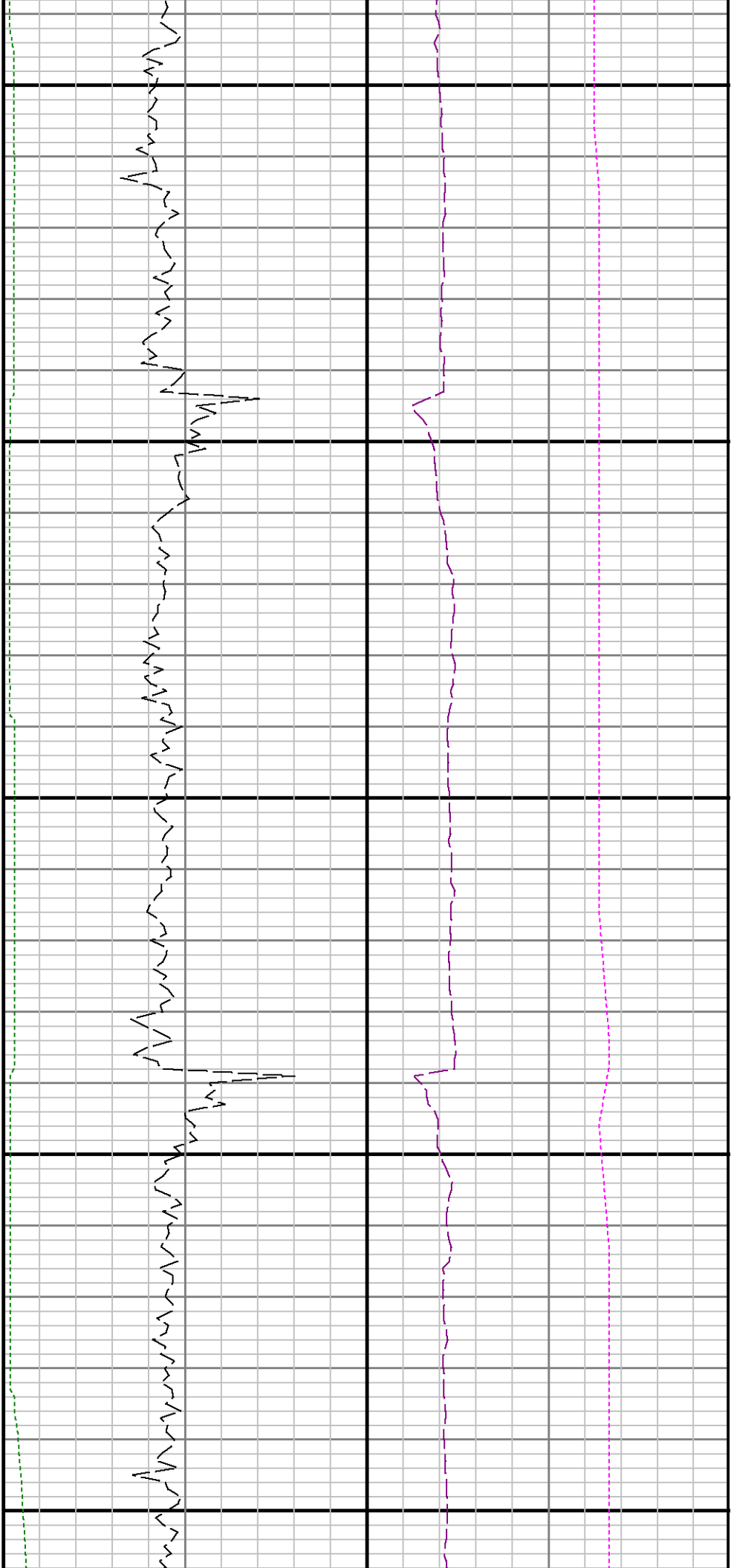


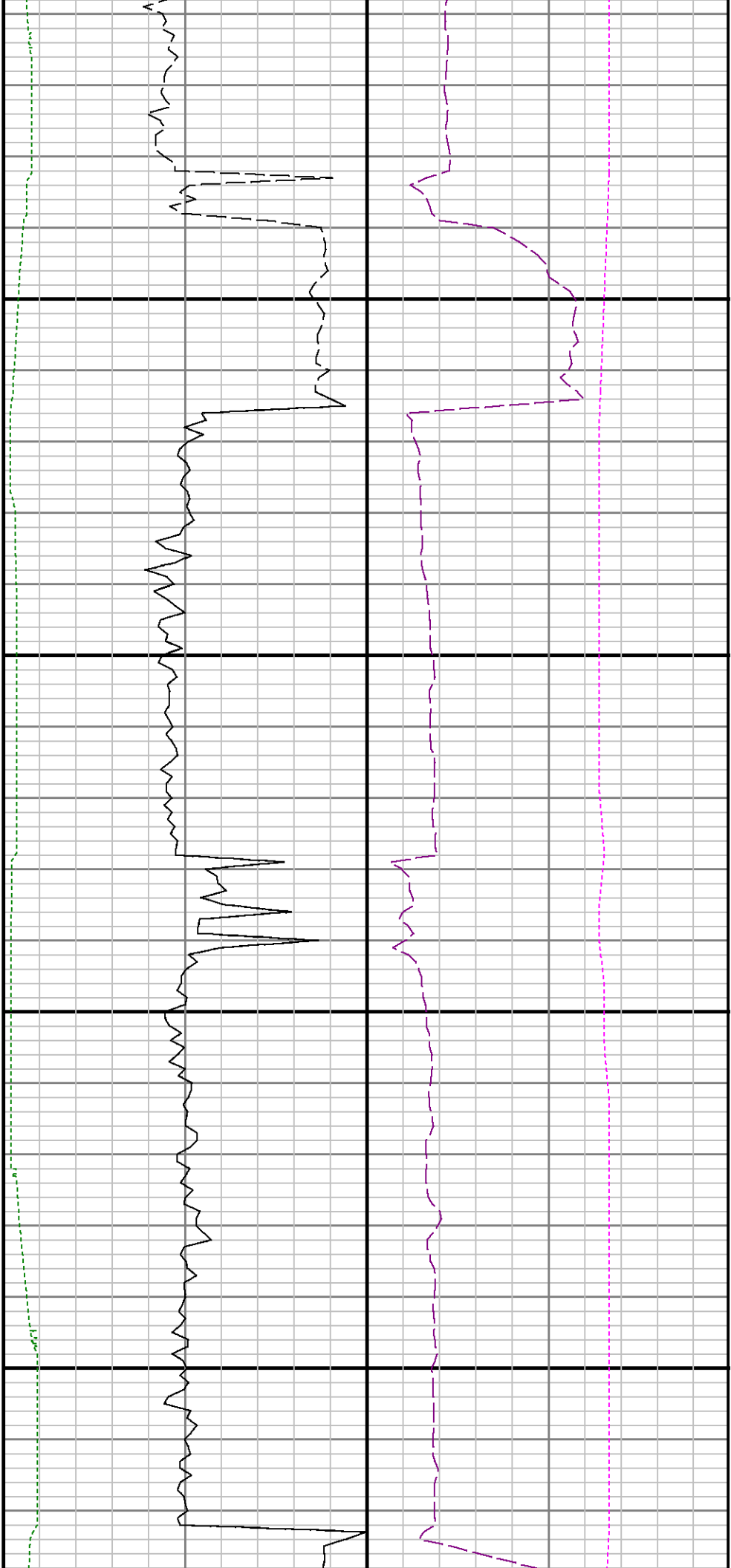
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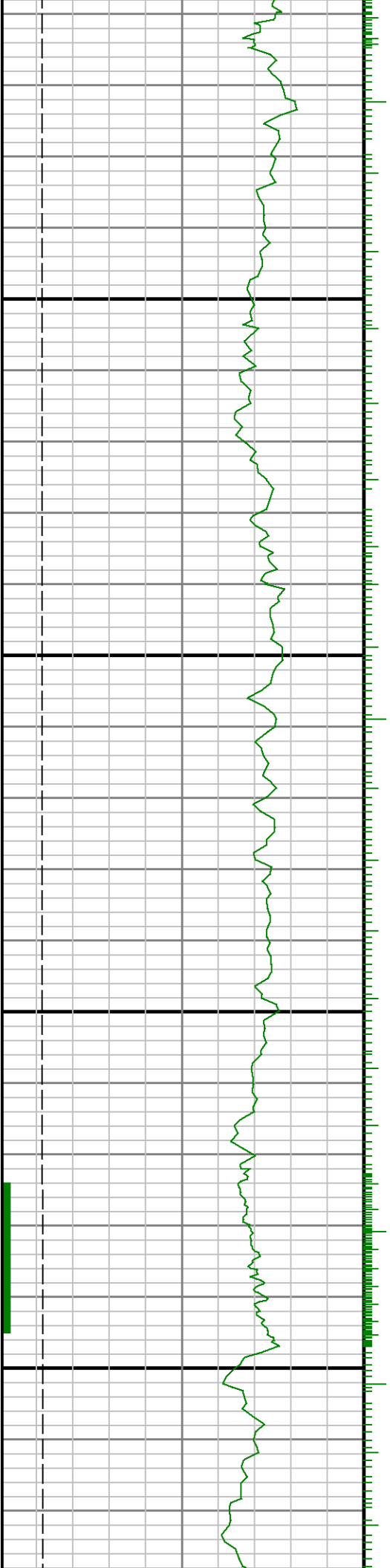


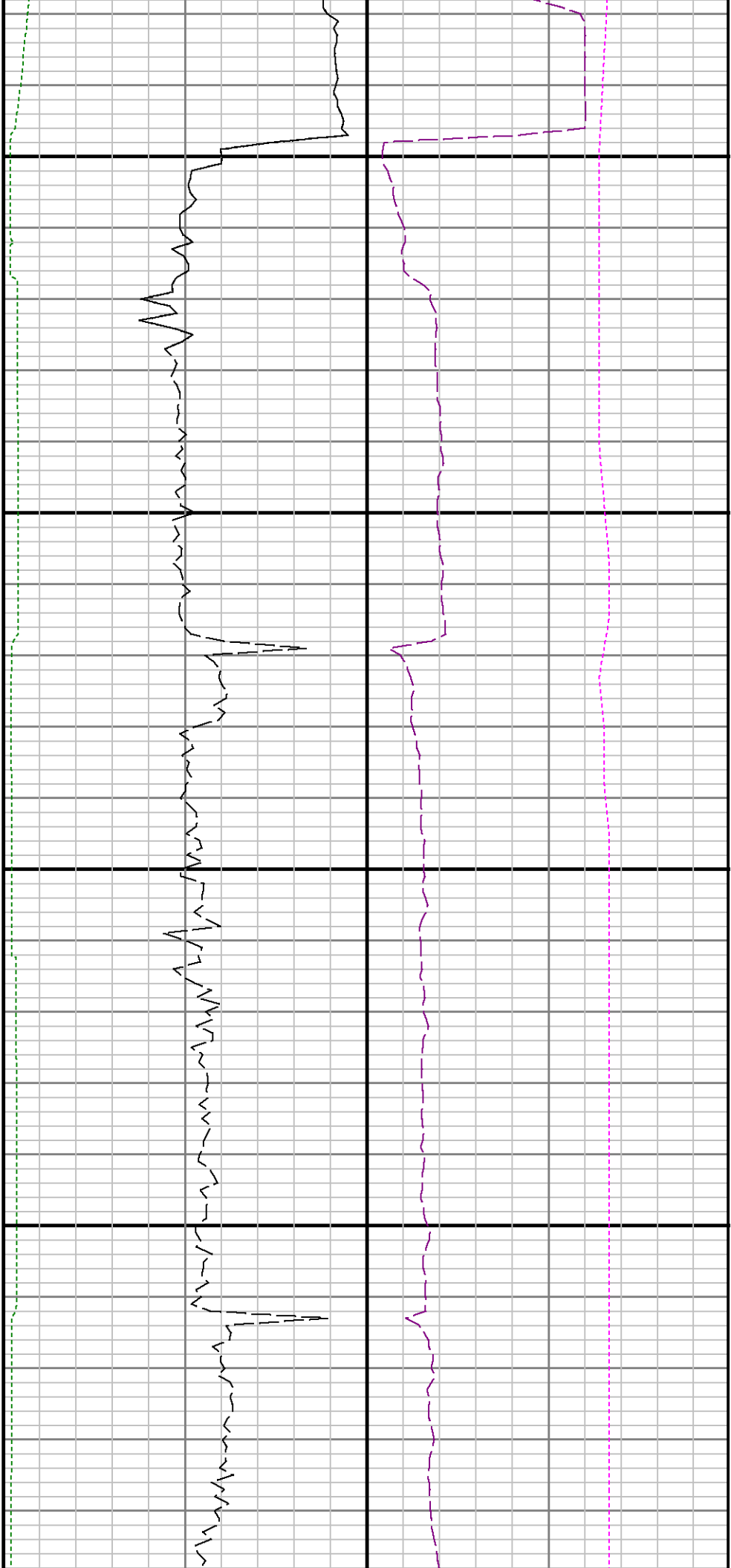




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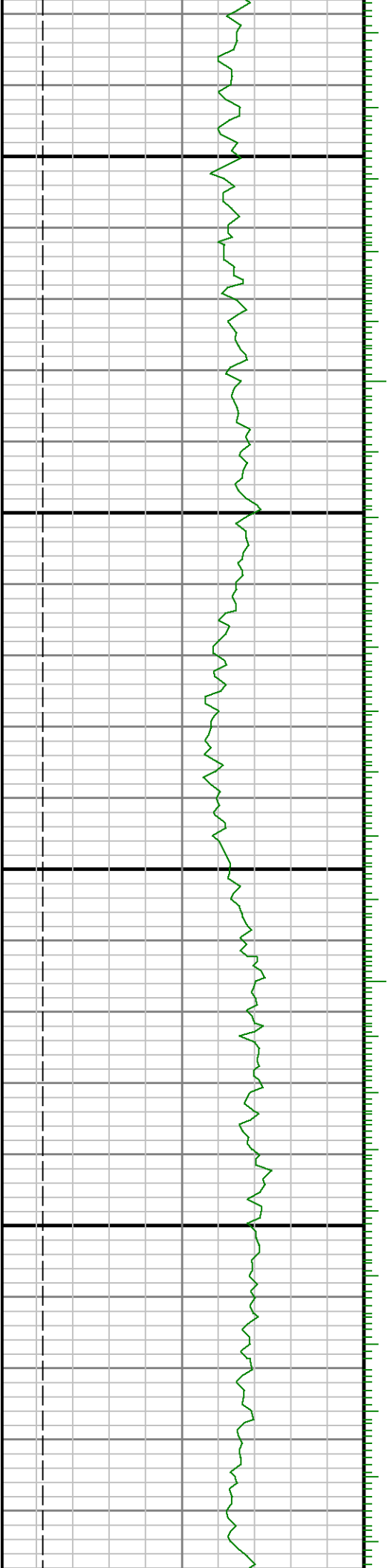
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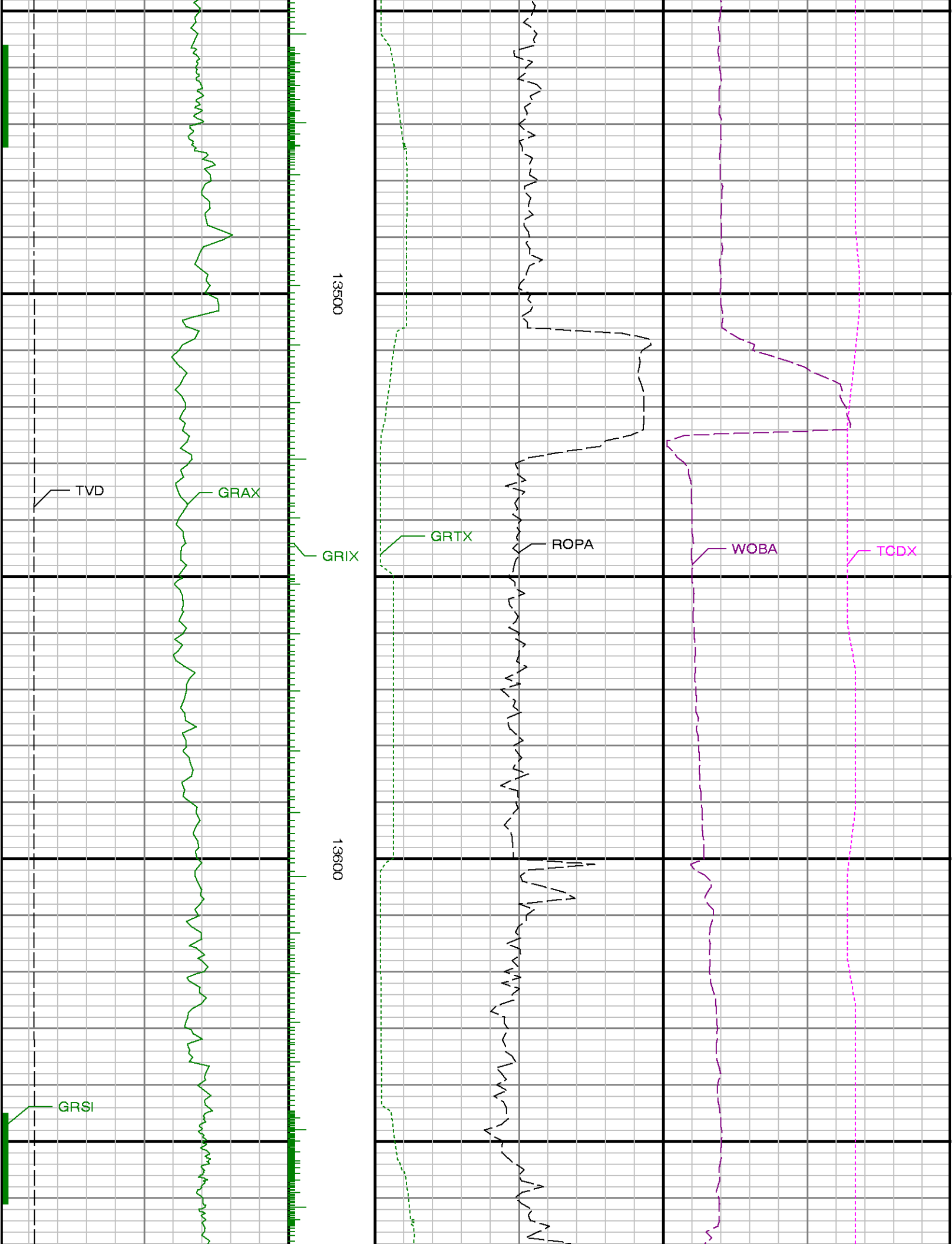


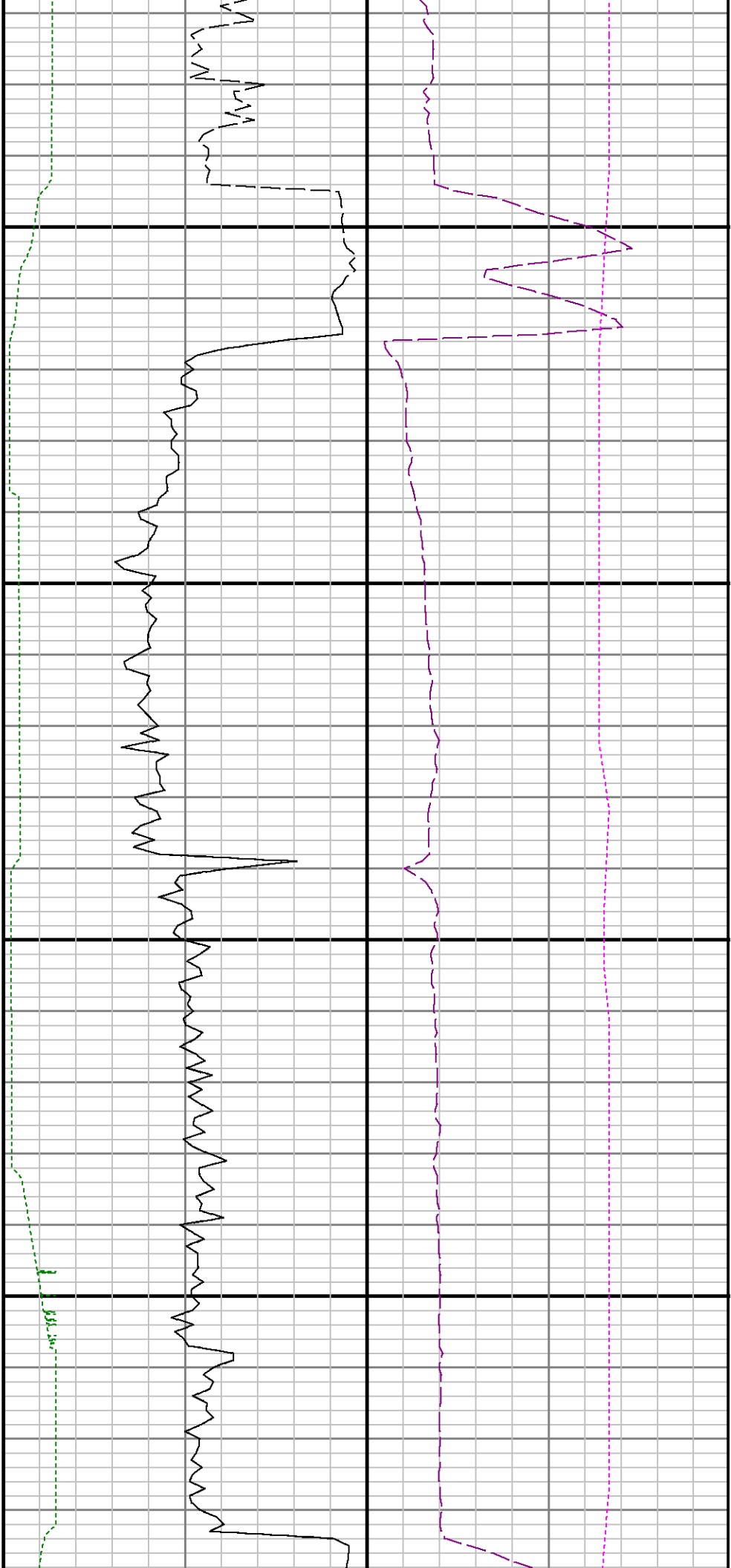


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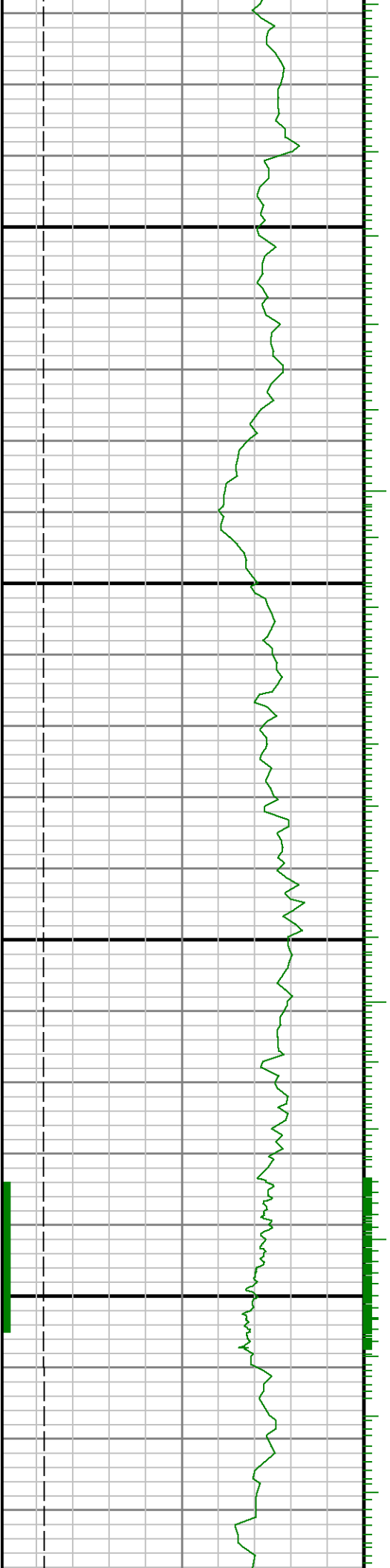


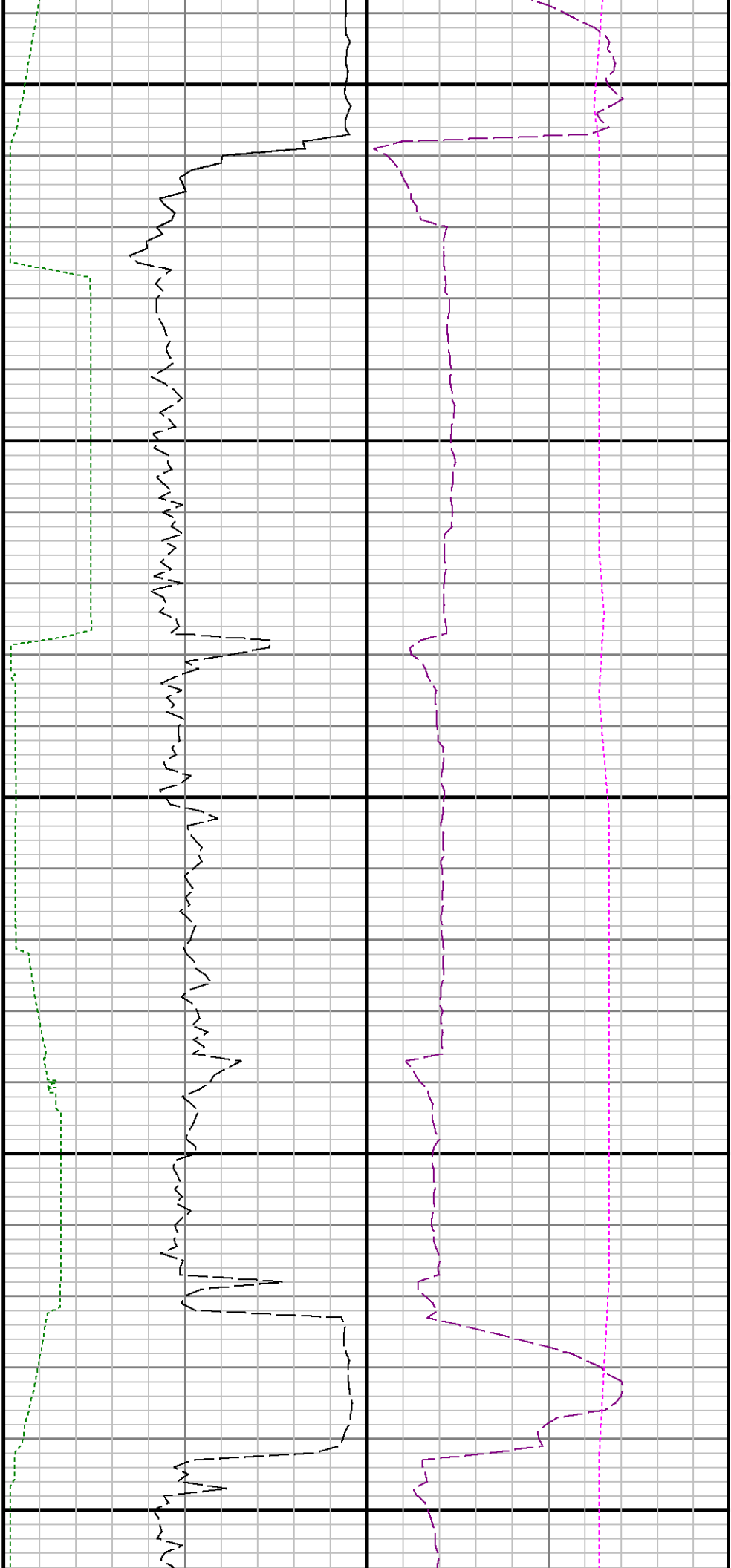




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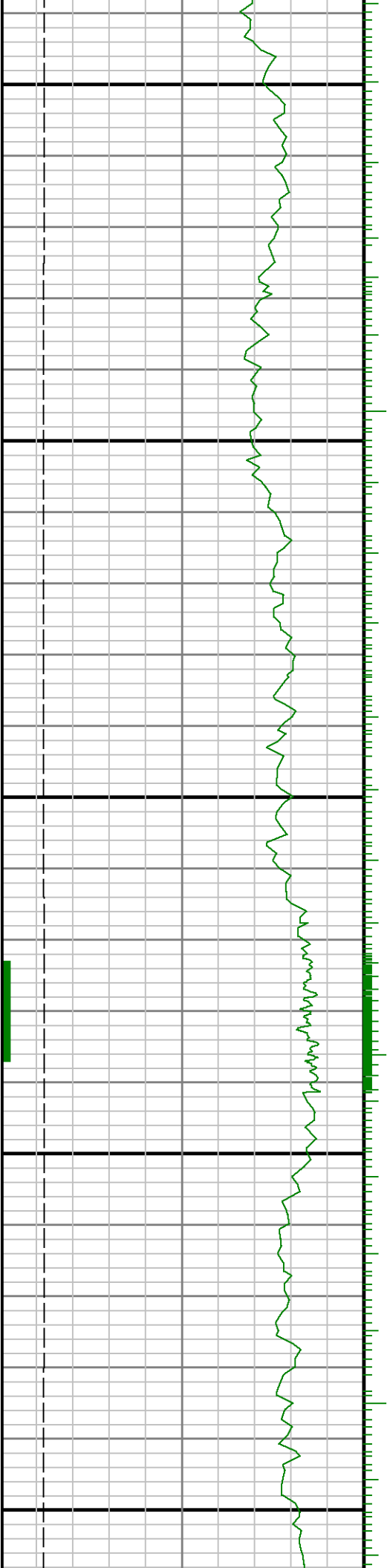


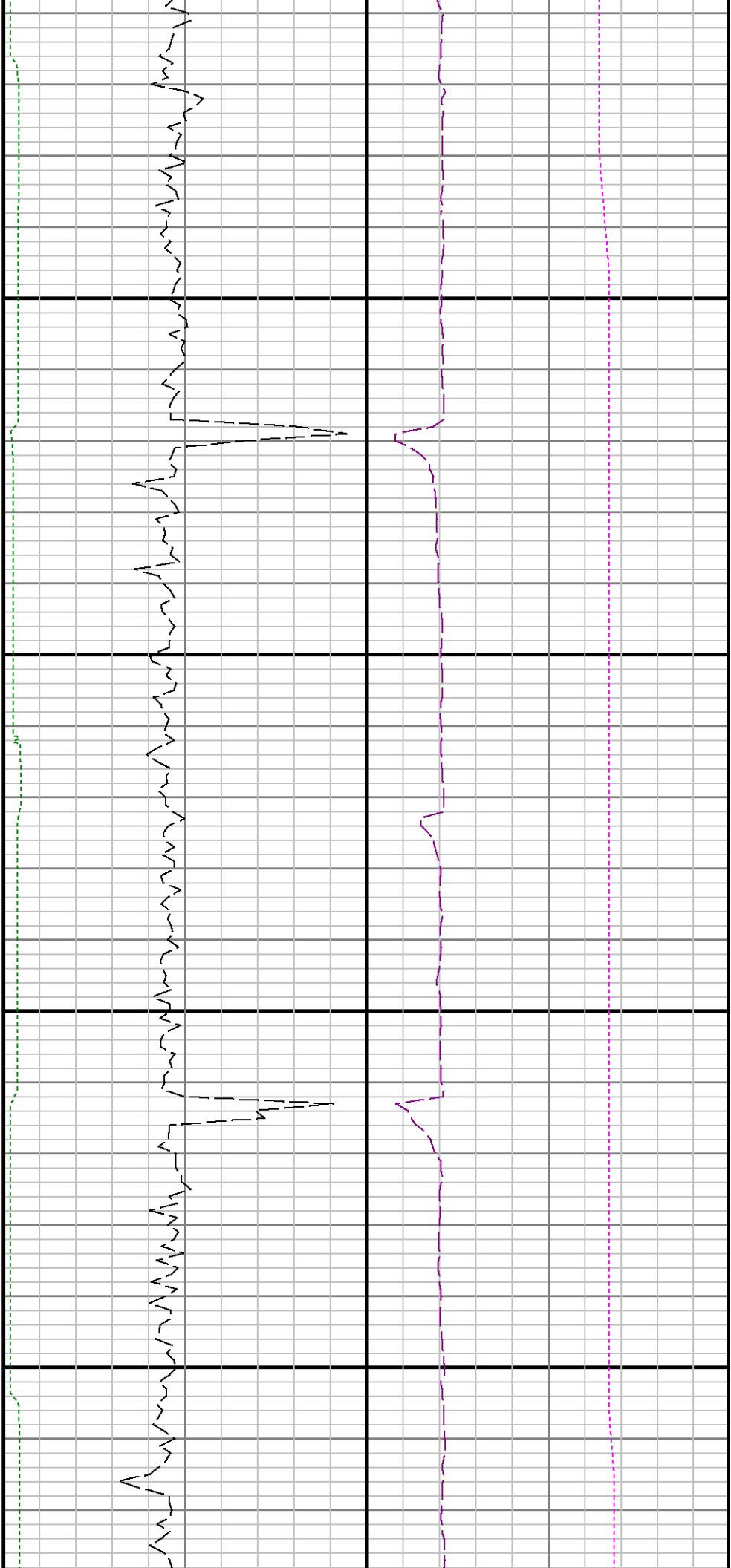


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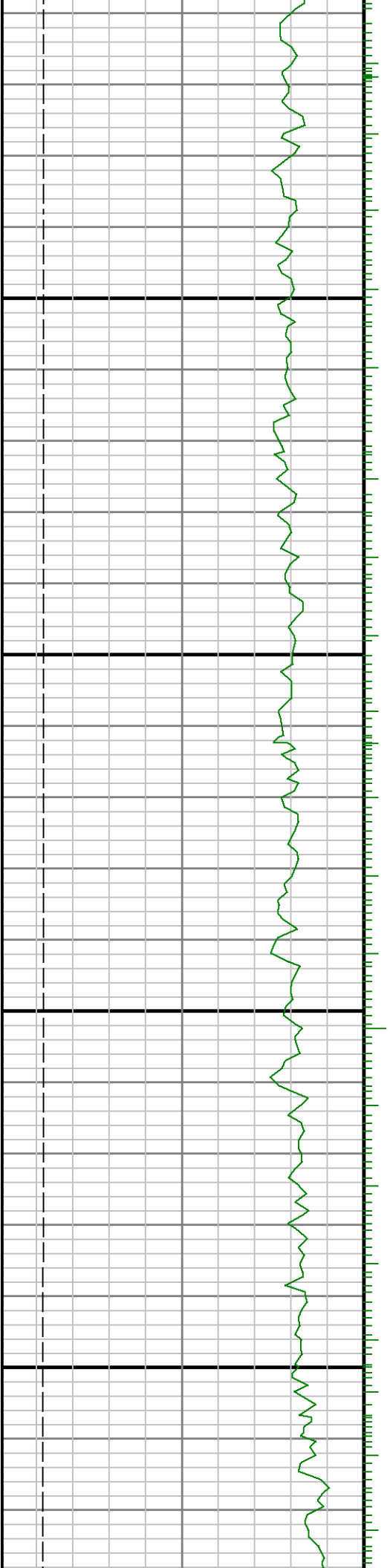
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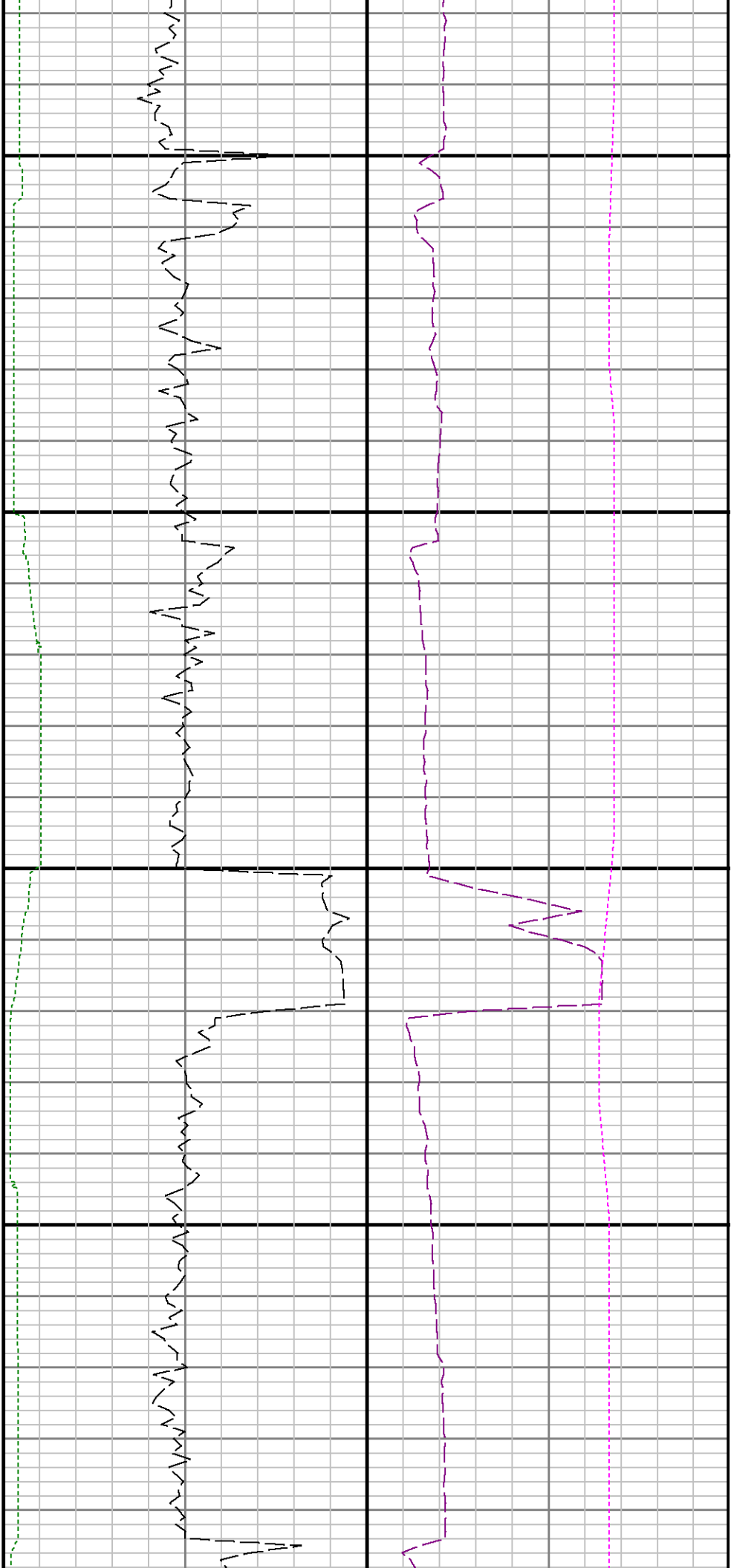




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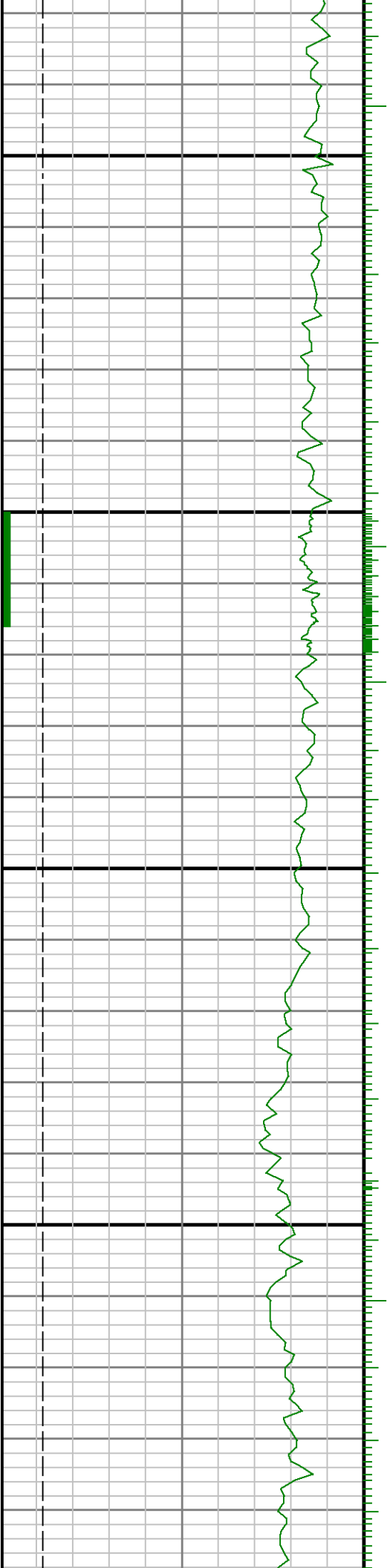
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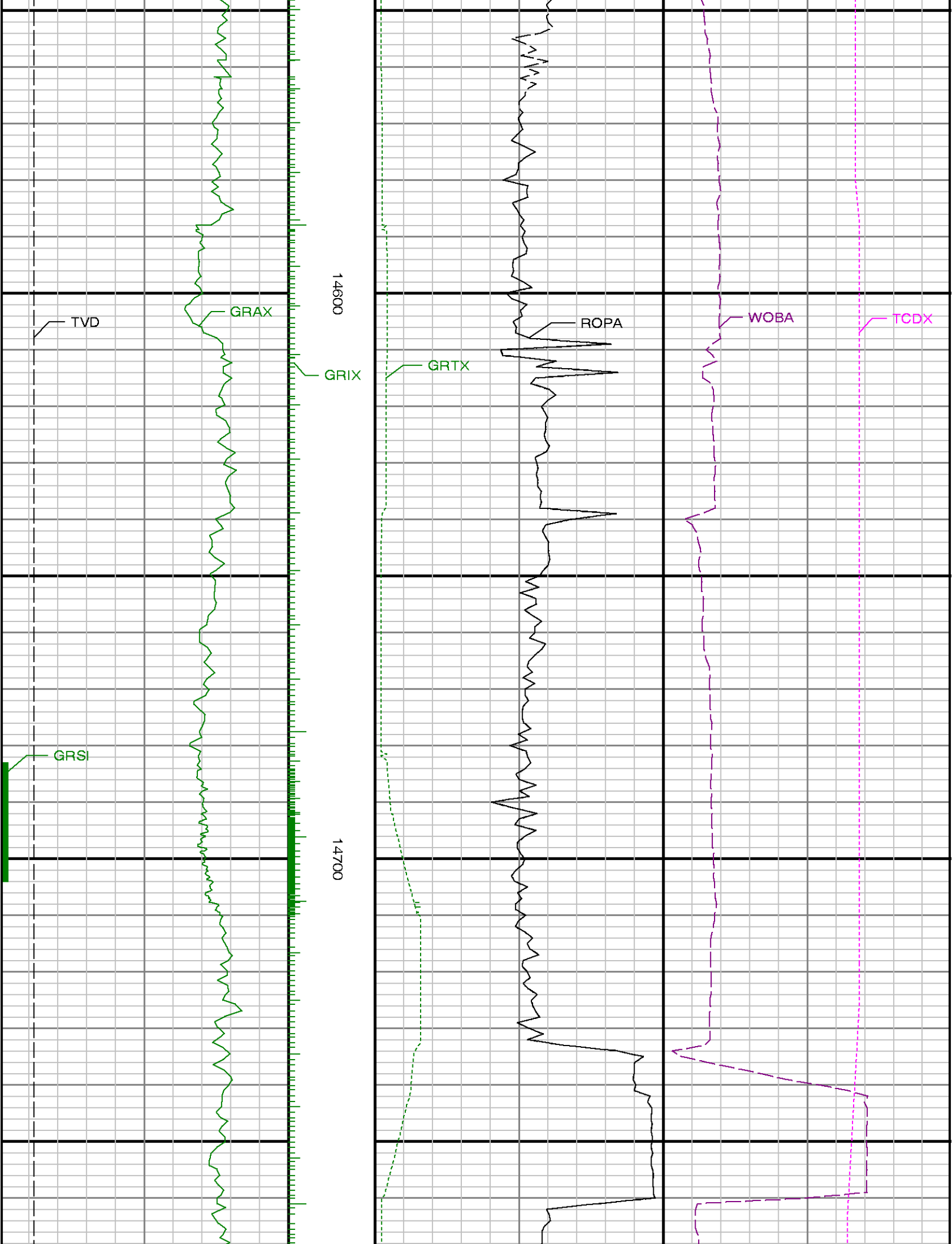


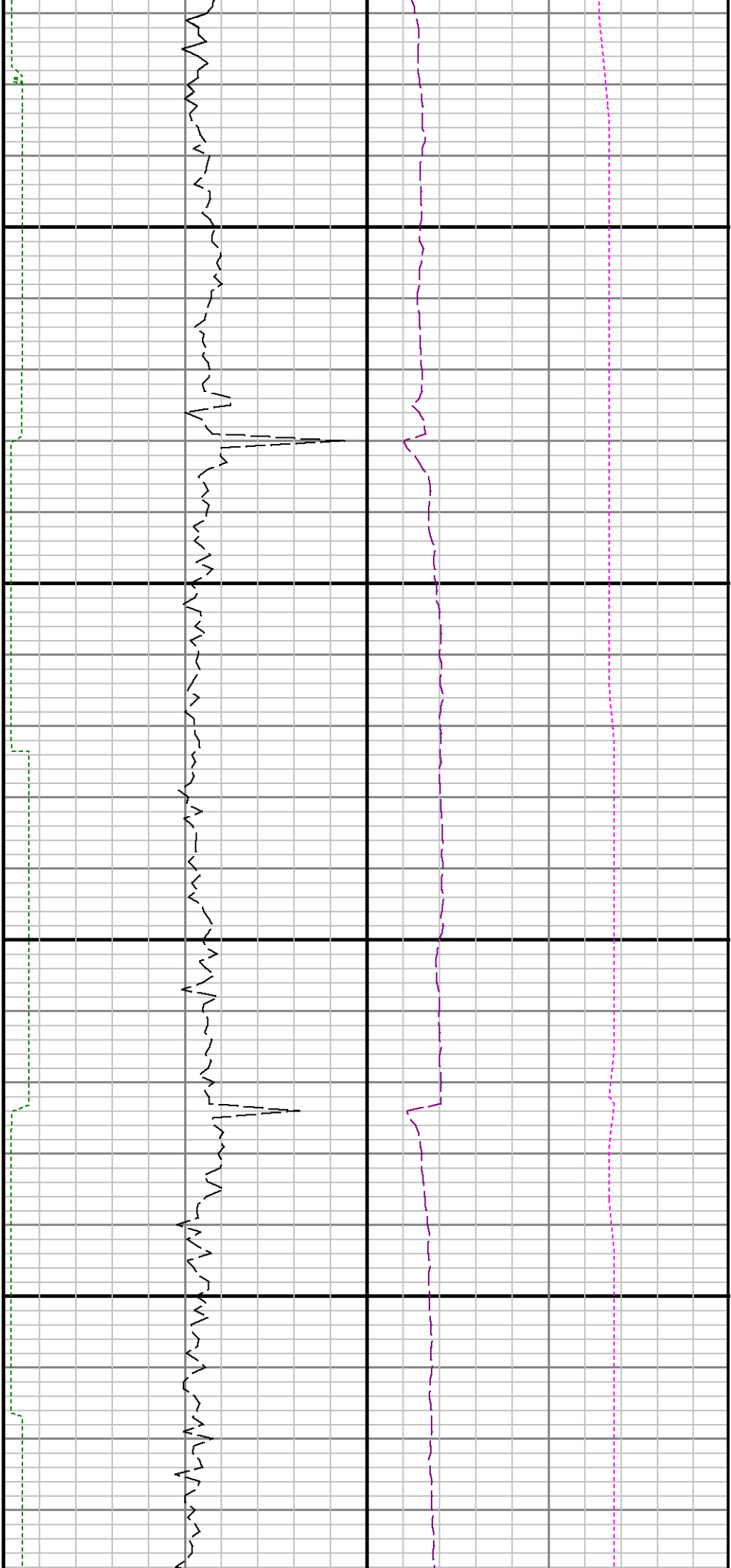


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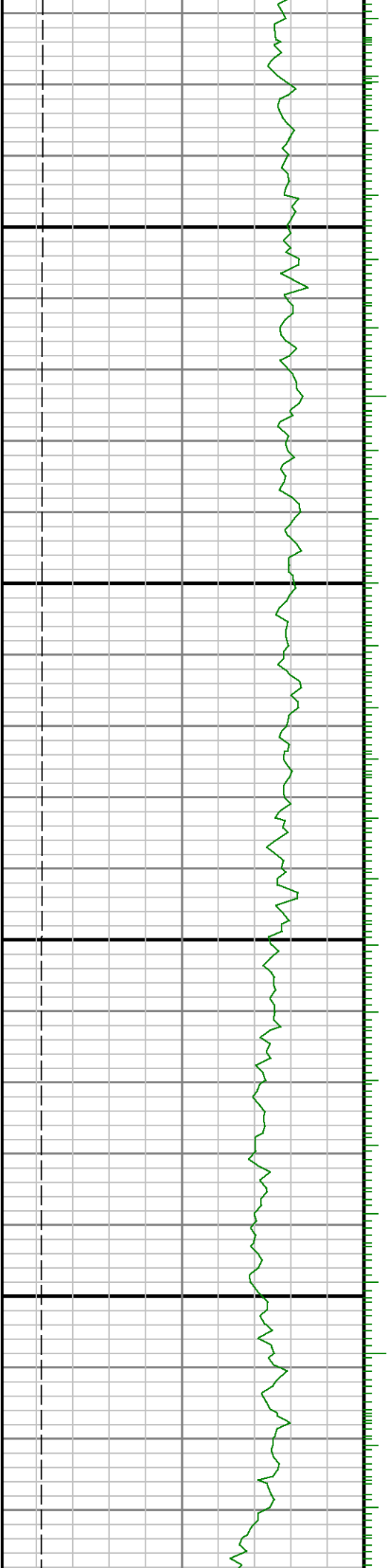


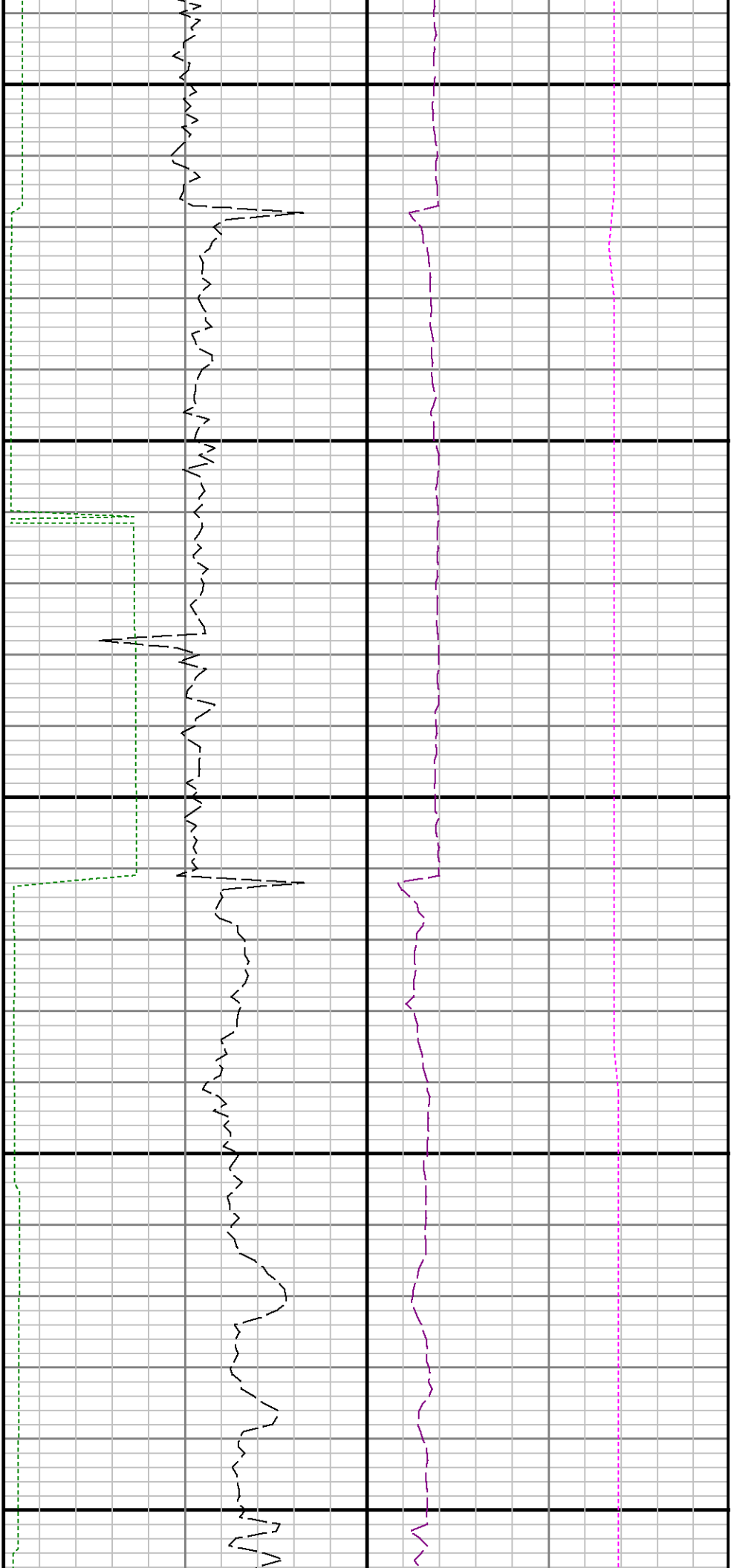




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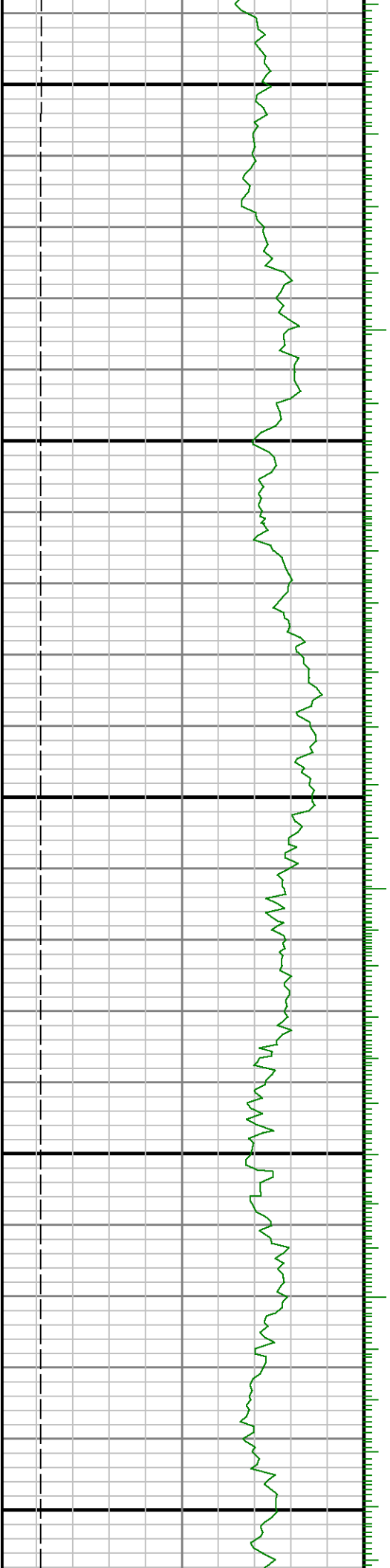




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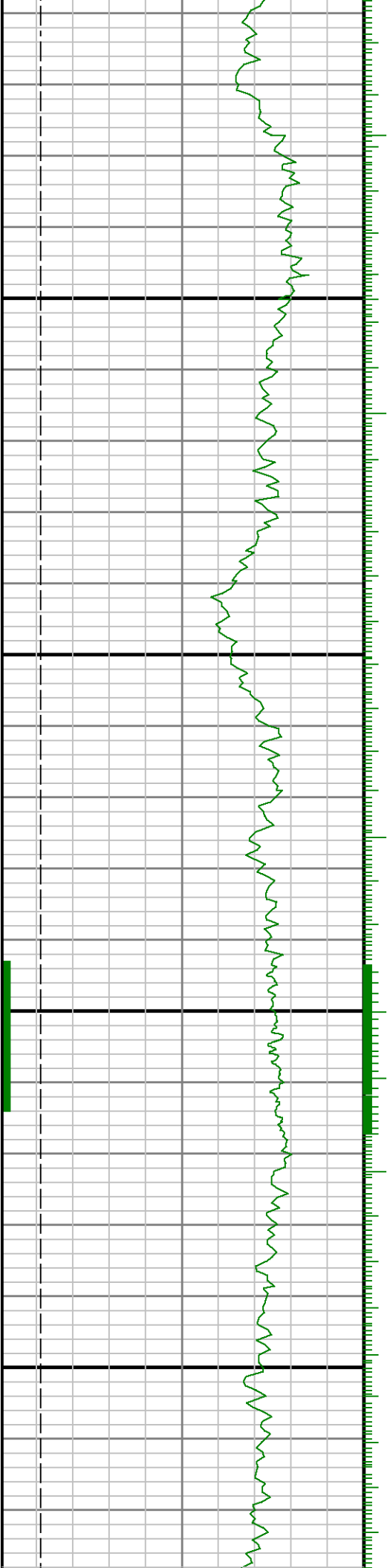
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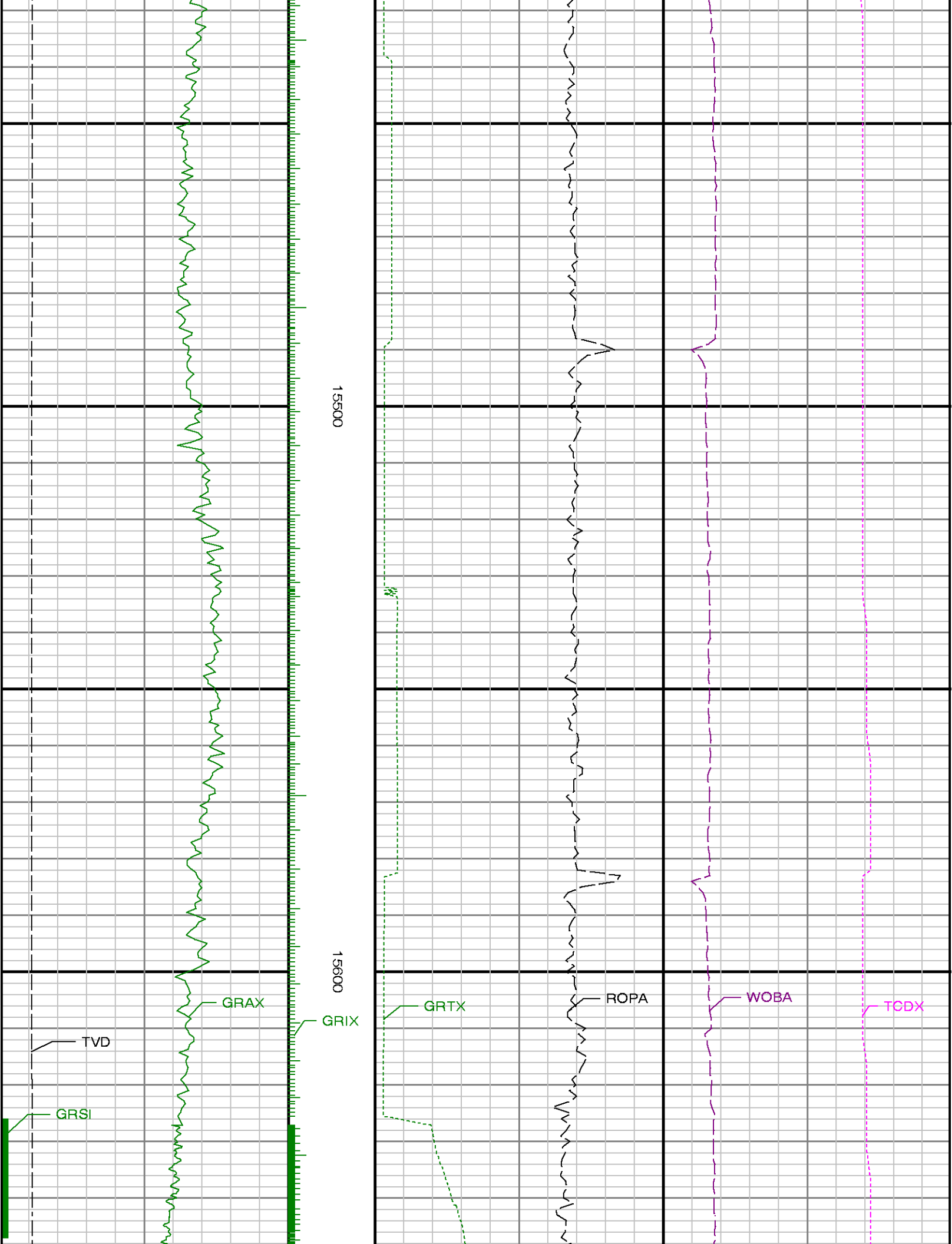


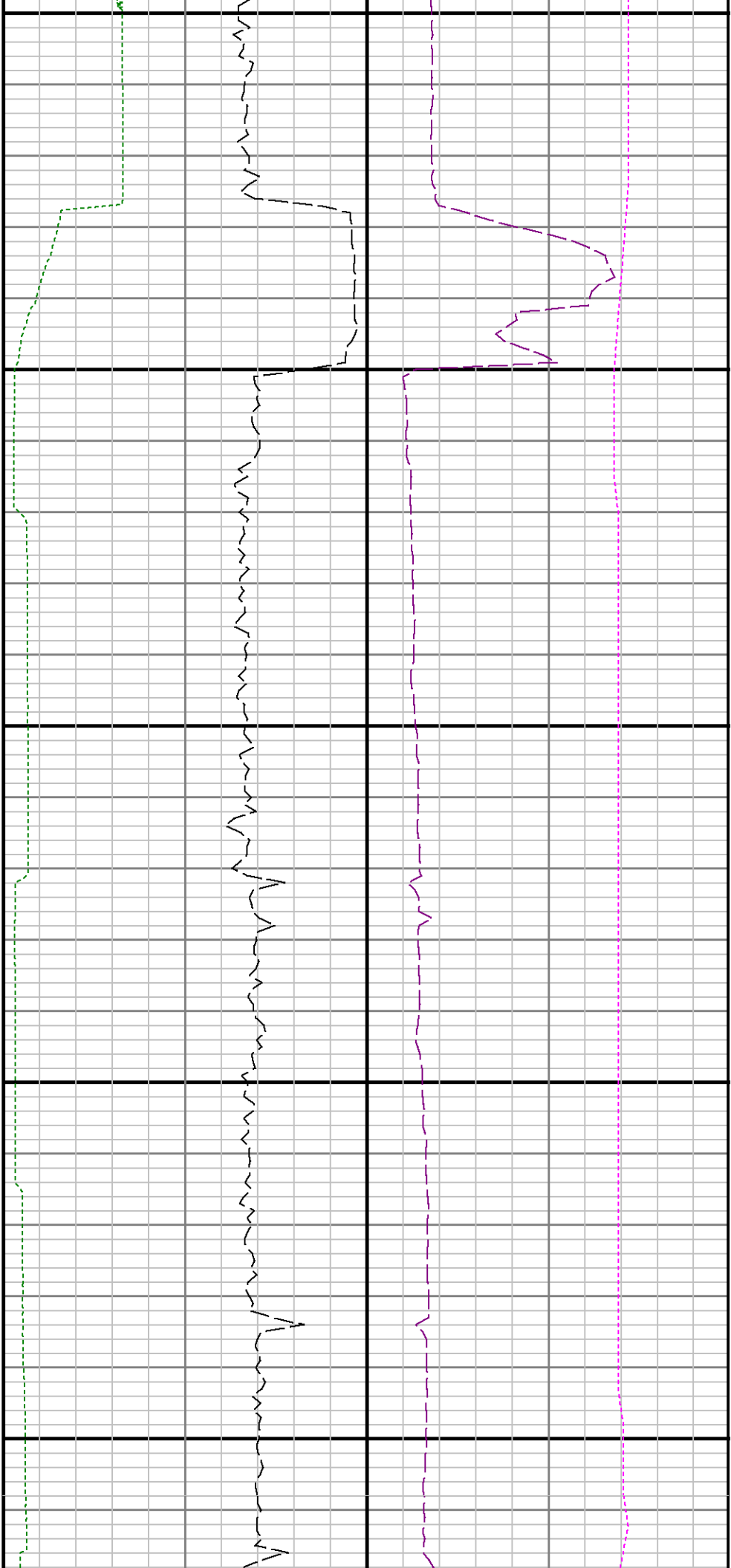


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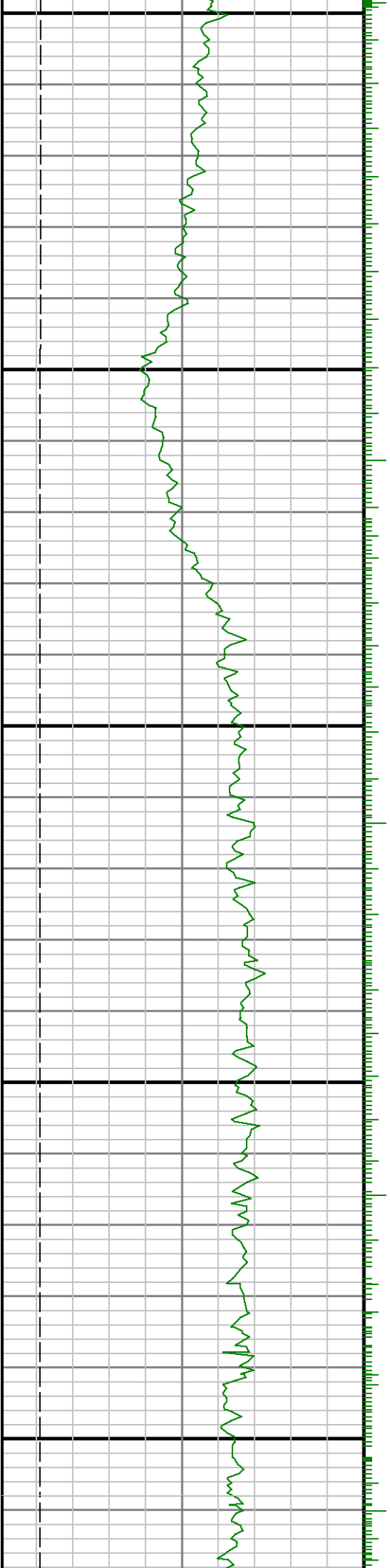


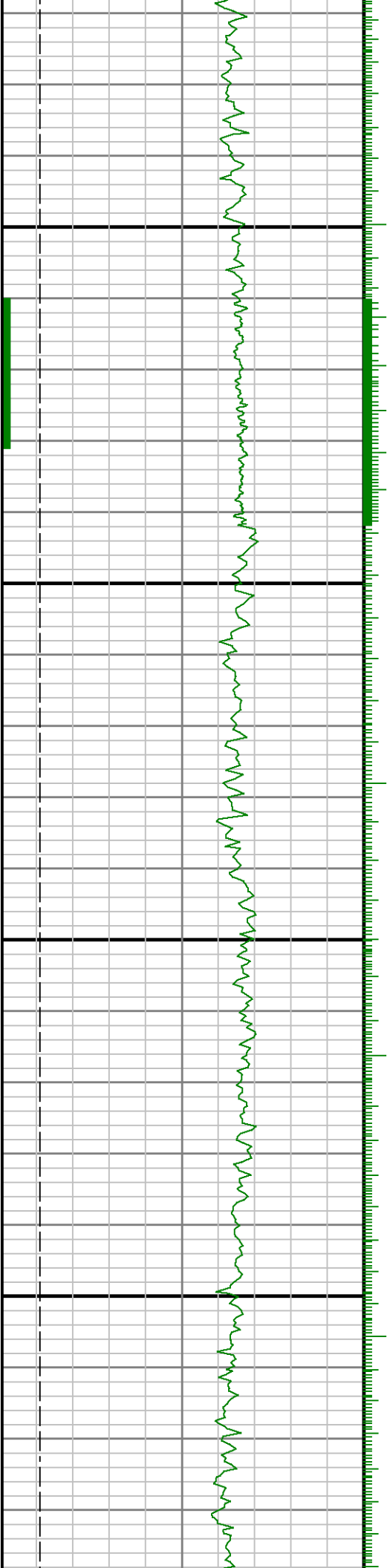
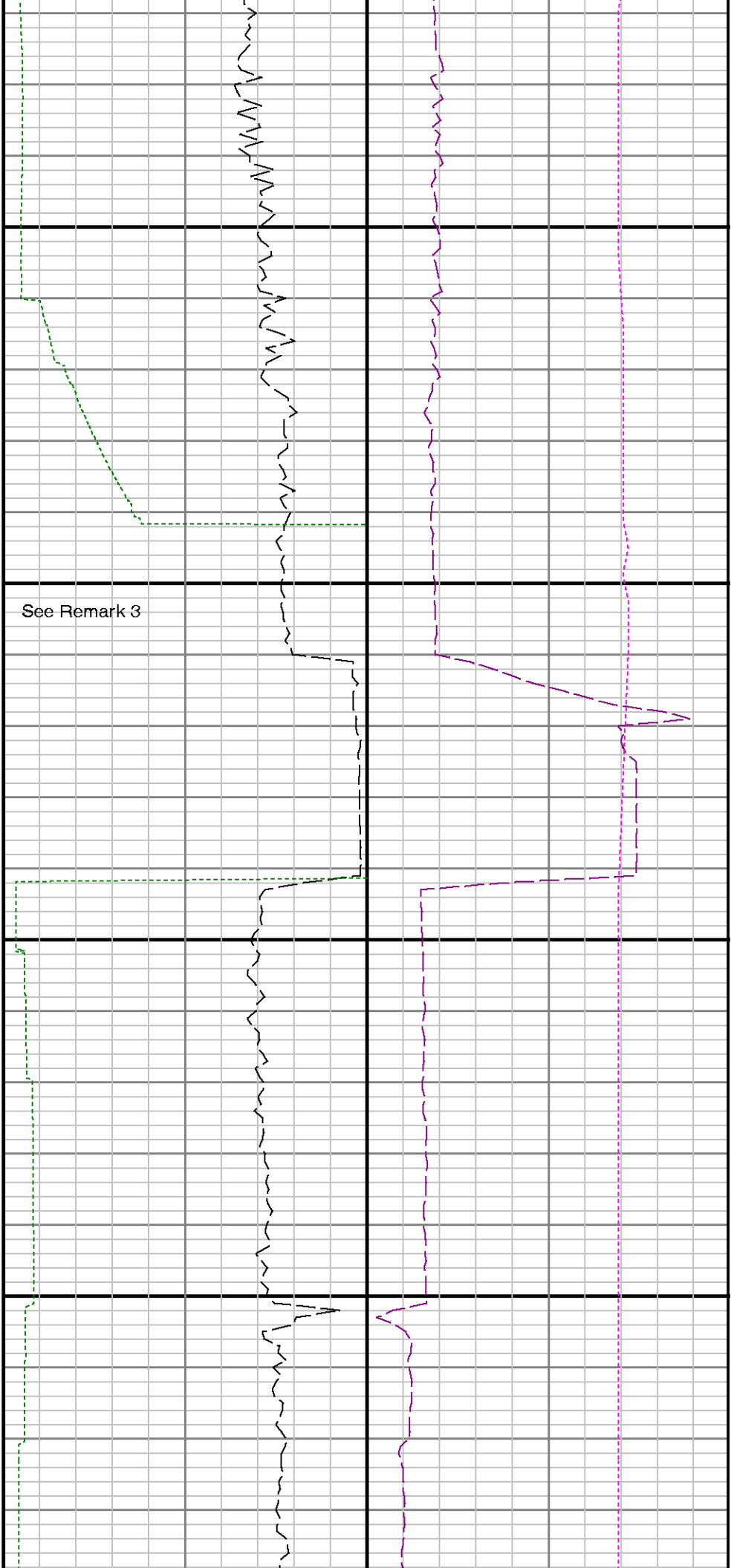


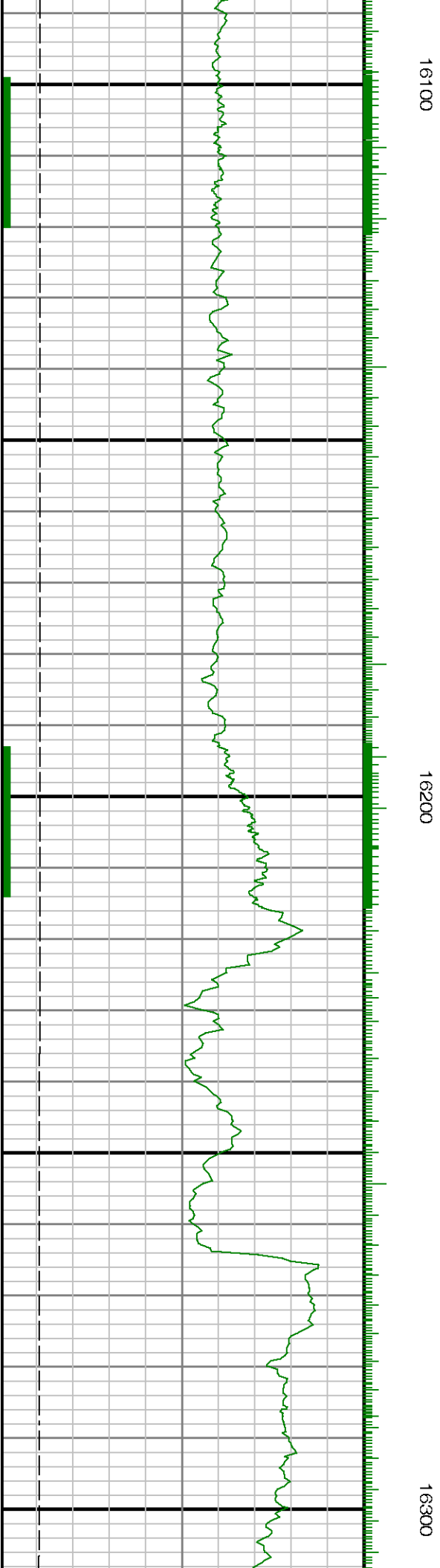


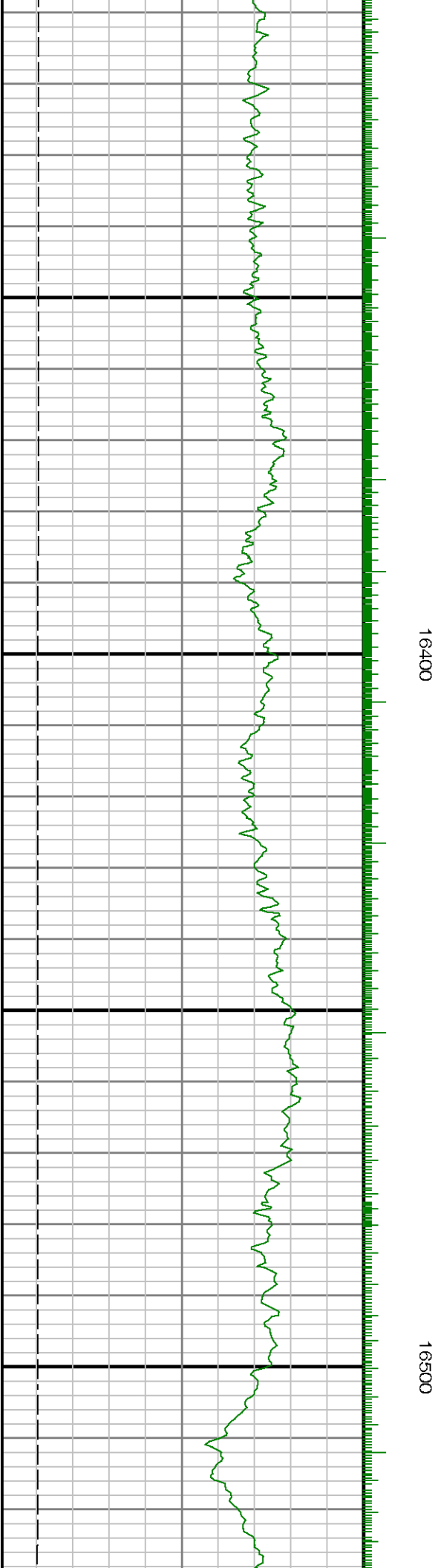
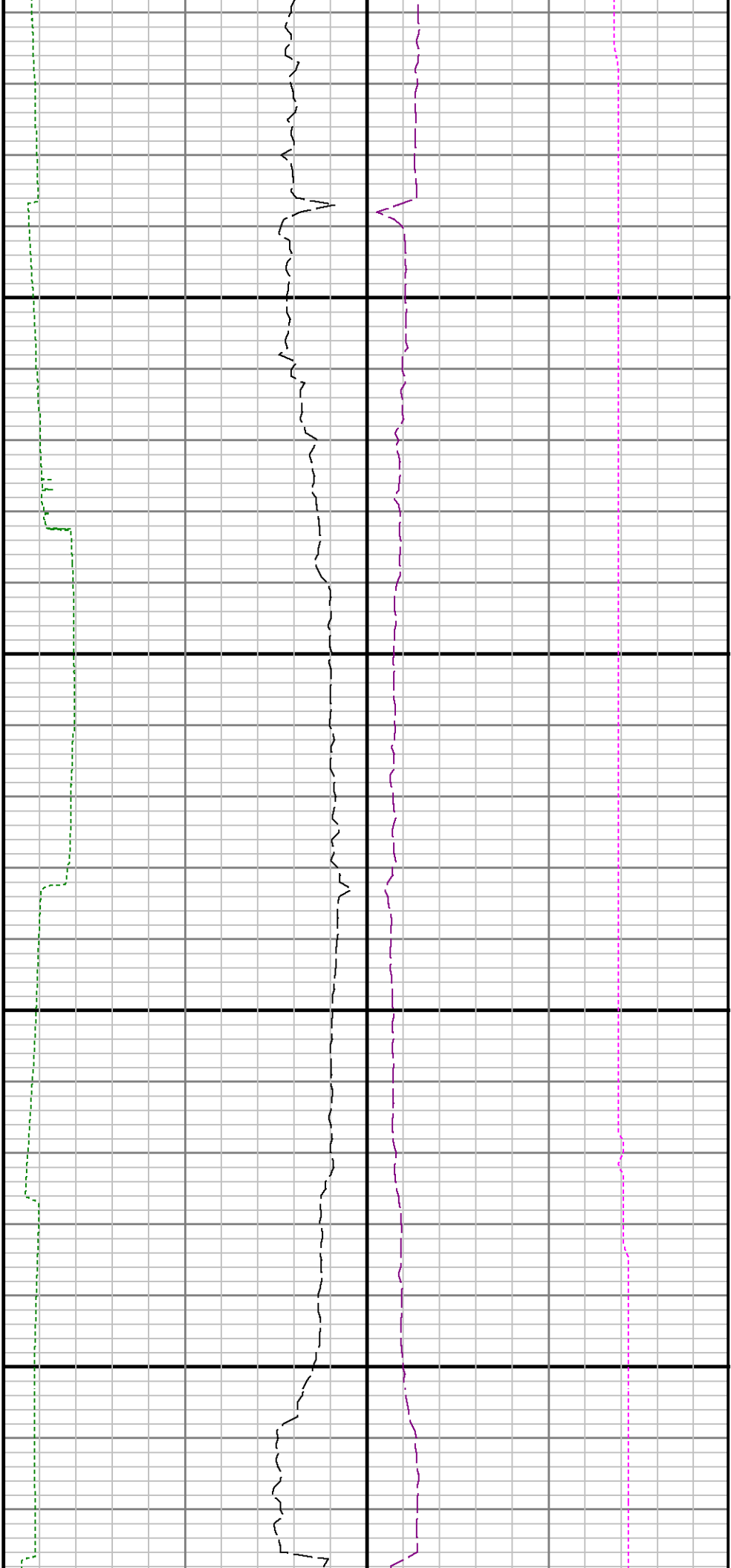
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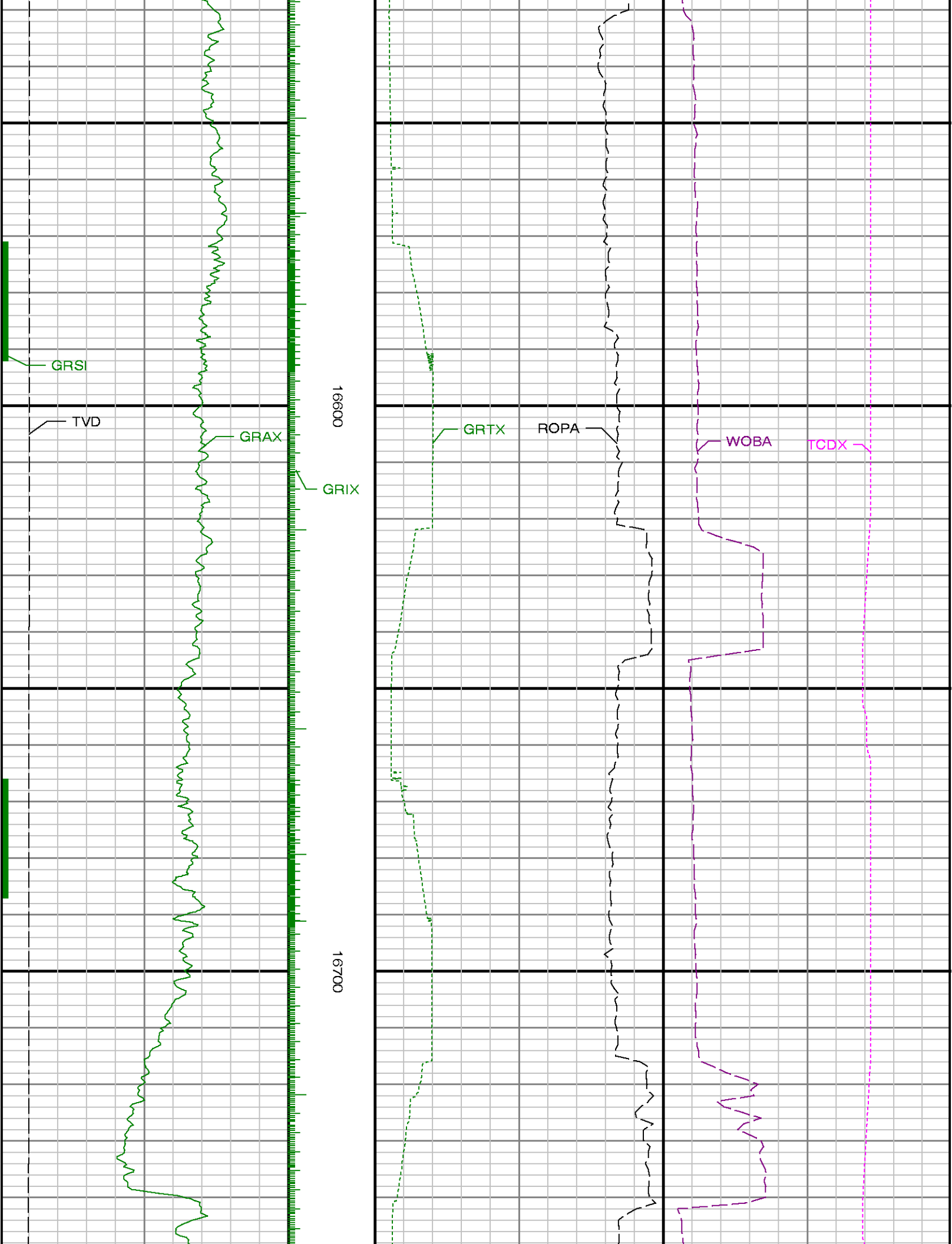
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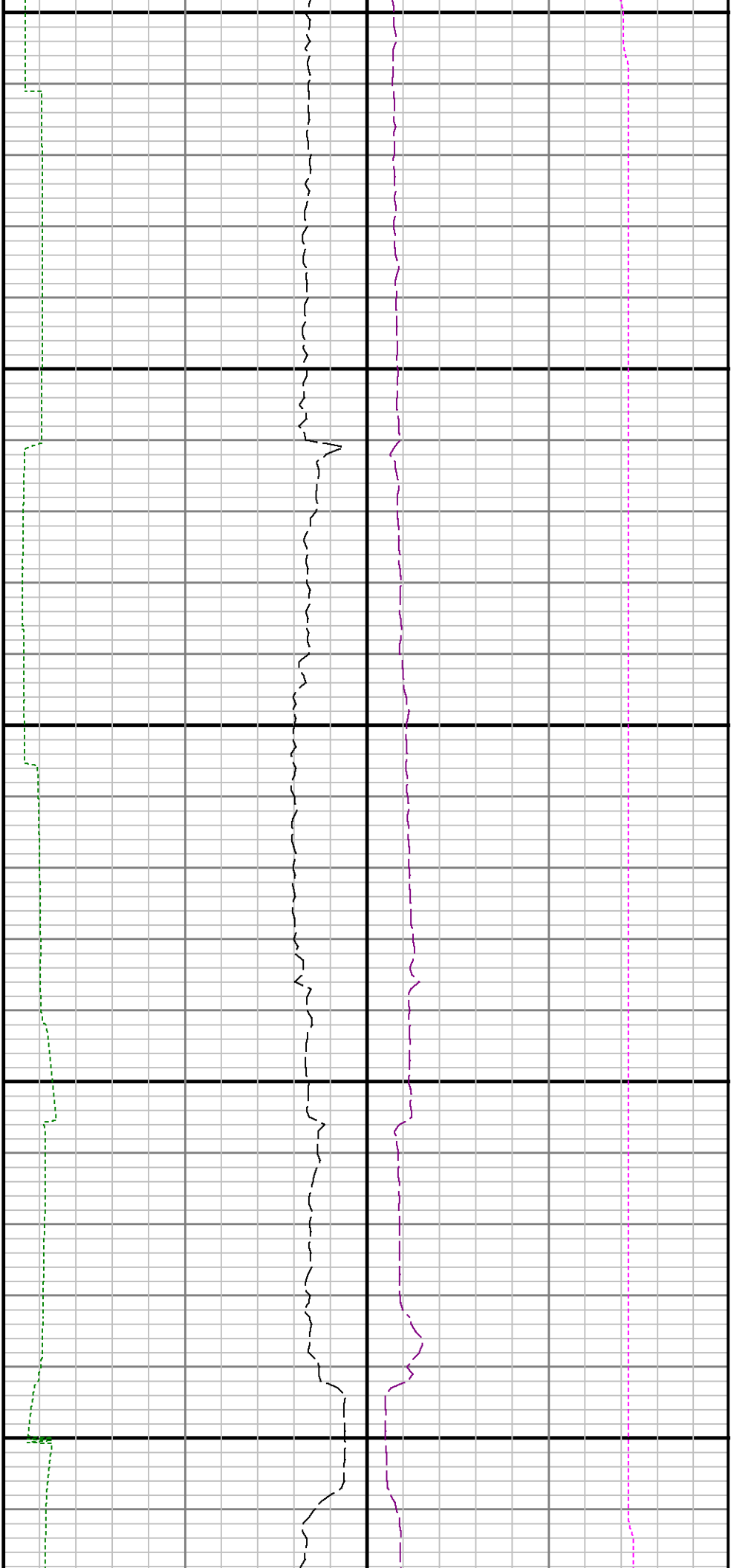






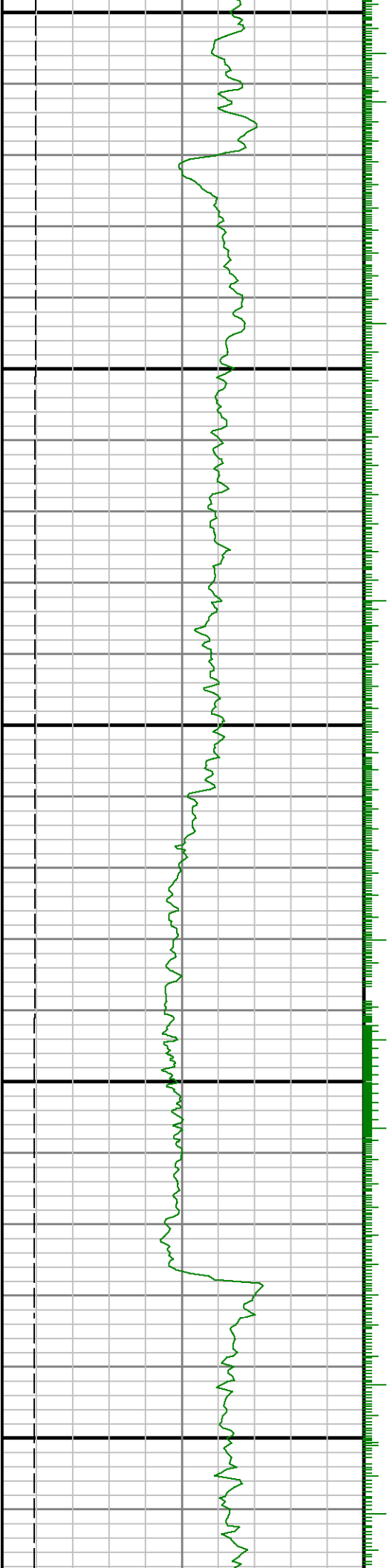


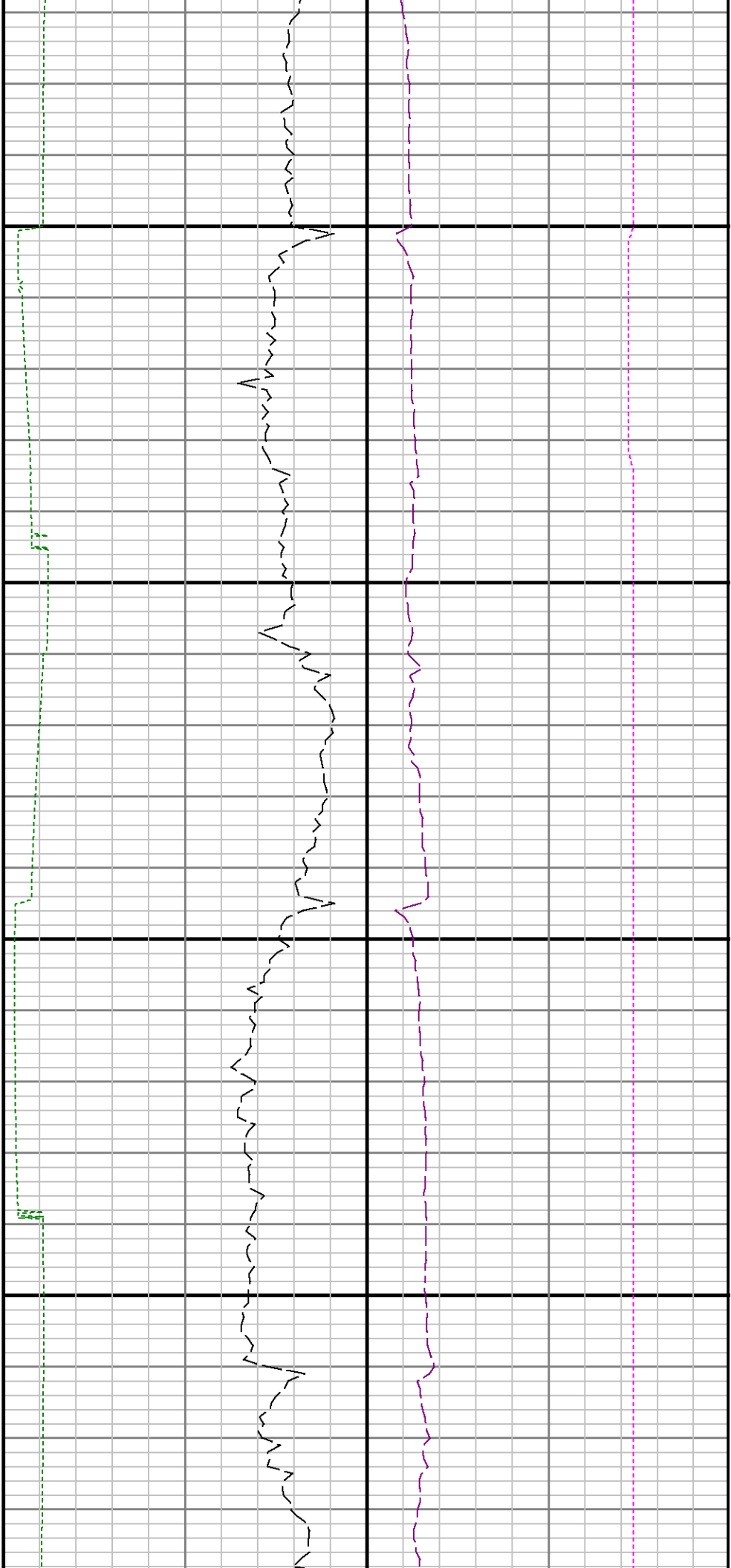




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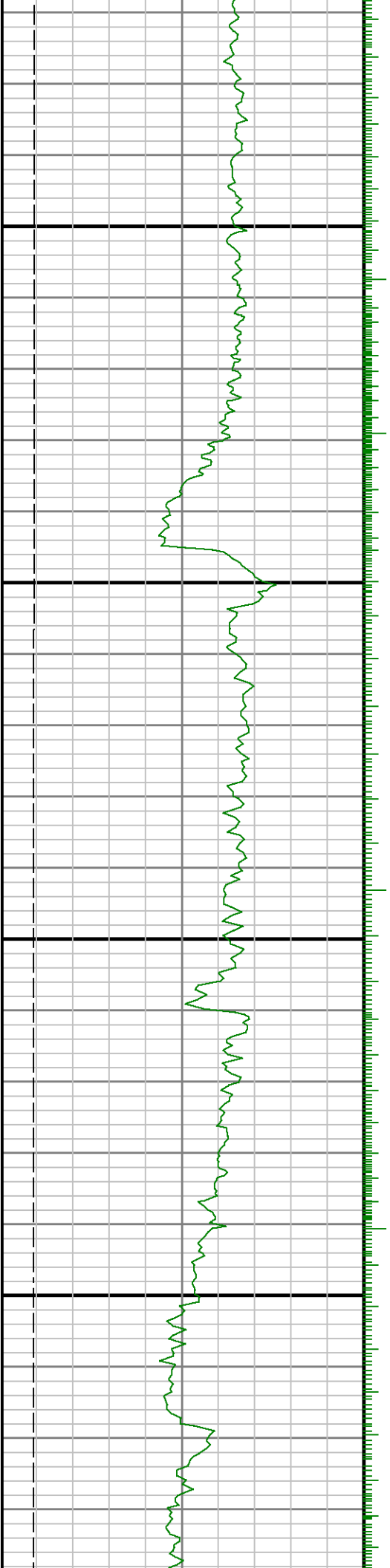
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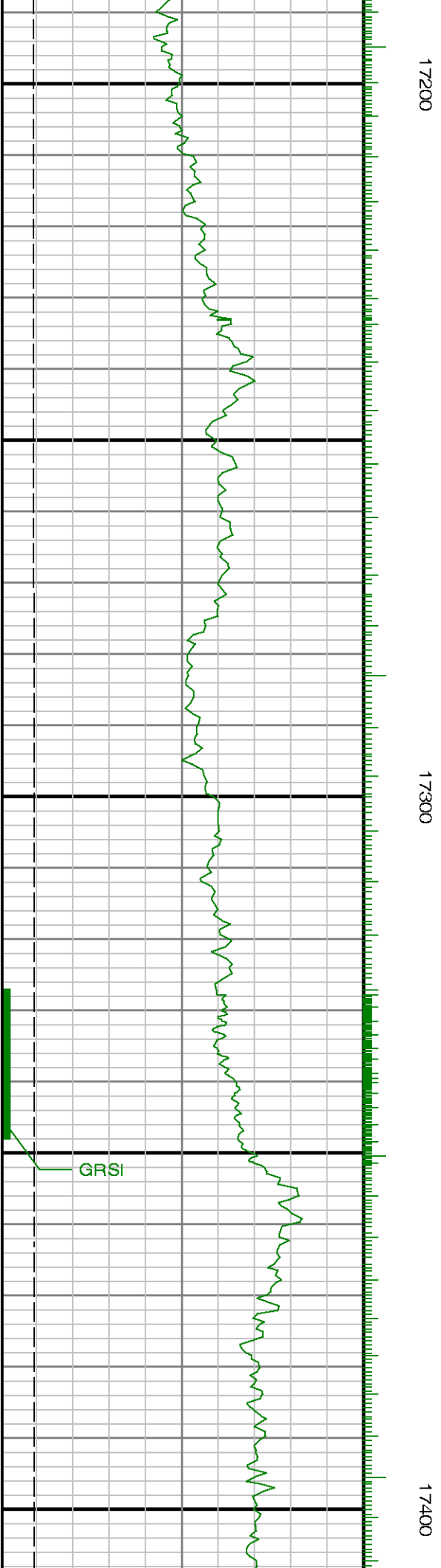
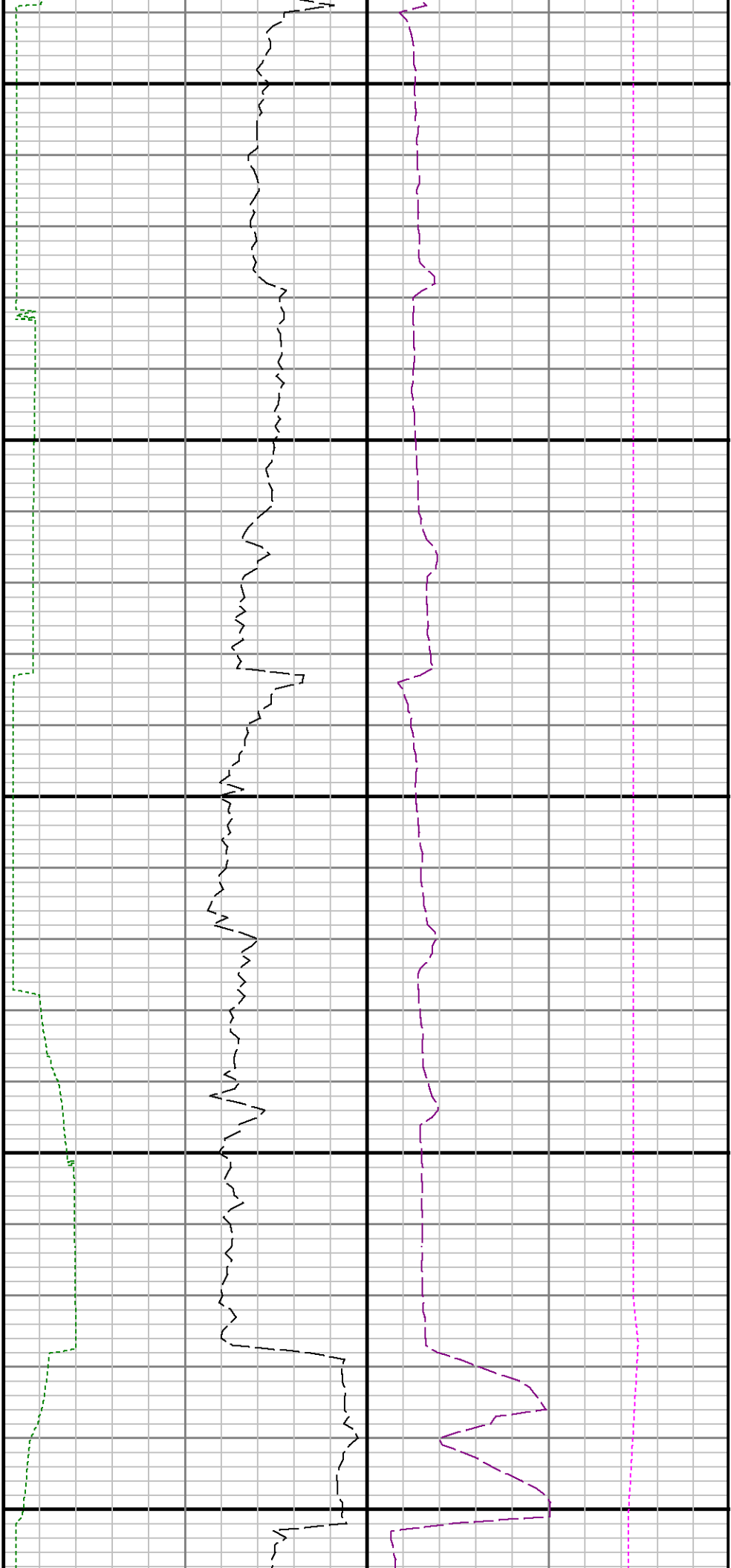


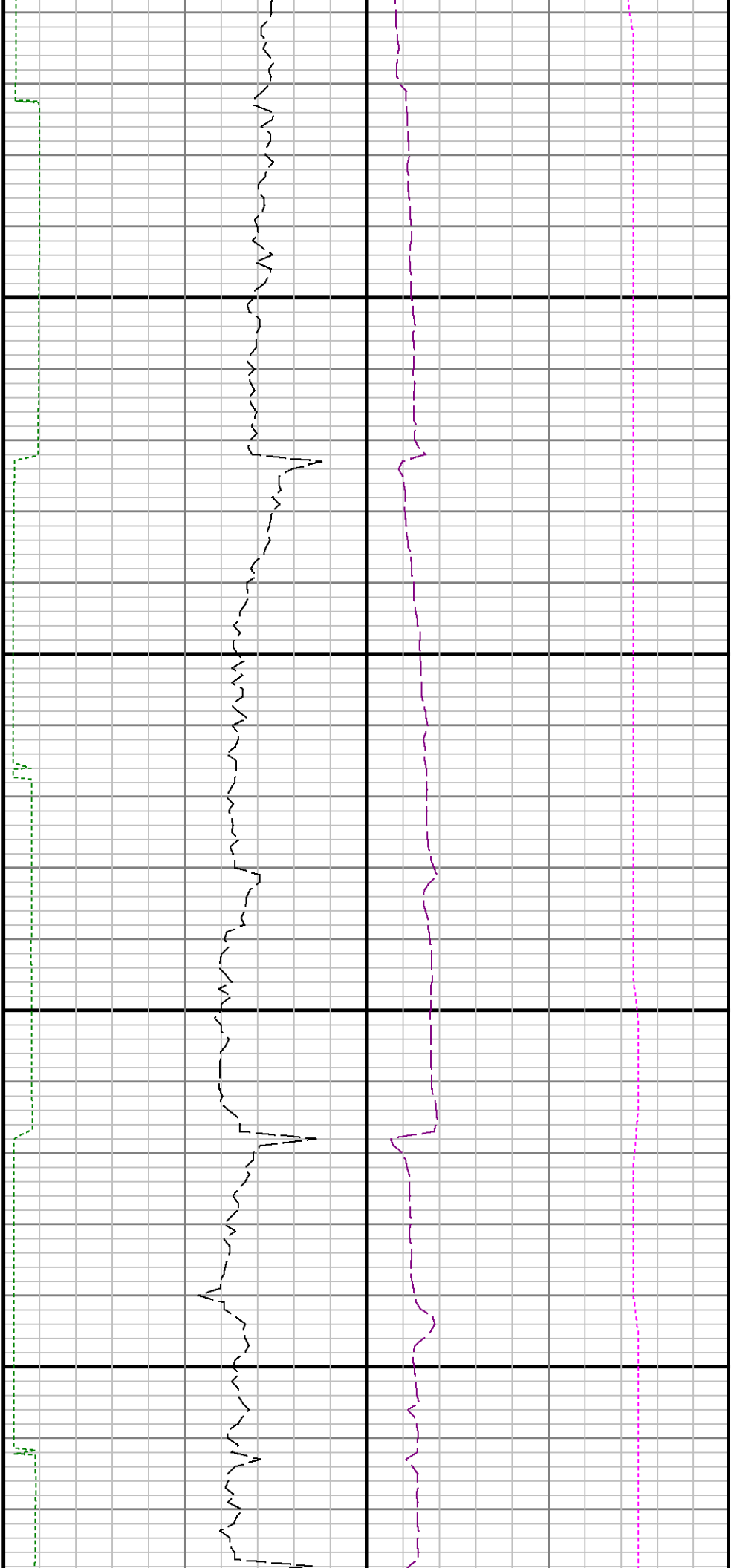


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17500

17600

