



# LWD REALTIME LOG

# Gamma Ray

Scale:		Company: Anadarko	
1:240		Well:	
Measured Depth		Jodster South 25-11HZ	
Field:		Wattenberg	
Depth Reference:		County:	
Driller's Depth		State:	
Status:		Surface Location:	
Final Print		Latitude:	
API No: 050690651900		Longitude:	
Job ID: 110058899		SEC: 25 TWN: 5N RGE: 68W	
Permanent Datum (P.D.):		Ground Level	
Log Measured From:		Rig Floor	
Elevation:		Above P.D.:	
4861.00 ft		26.00 ft	
Elev. KB:		Elev. DF:	
Elev. GL:		4861.00 ft	
Other Services:		Directional Surveys	
Dates		Interval	
From: 2019-11-18		Drilled (ft)	
To: 2019-11-21		Logged (ft)	
Spud: 2019-11-18		Top: 1925.00	
Bottom: 18326.00		Top: 1925.00	
Bottom: 18268.00		Bottom: 18268.00	
Magnetic Field Reference		Azi Reference North: True Dip Angle: (deg)	
Total Magnetic Field Strength: (nT)		52156	
Mag to Reference North Correction: (deg)		7.98	
Borehole Record		Casing Record	
Hole Size (in)		From (ft)	
13.500		26.00	
7.875		1925.00	
18326.00		Size (in)	
9.625		Weight (lb/ft)	
36.00		From (ft)	
26.00		To (ft)	
1915.00		Deviation Record	
Type		From (ft)	
To (ft)		Hole Size (in)	
Interval (ft)		Inc   Az (Start)	
Inc   Az (End)		Oil Based Mud	
1925.00		18326.00	
7.875		7.875	
16401.00		23.02   179.99	
90.12   90.72		Type	
From (ft)		To (ft)	
Hole Size (in)		Interval (ft)	
Inc   Az (Start)		Inc   Az (End)	
Oil Based Mud		1925.00	
18326.00		7.875	
7.875		16401.00	
23.02   179.99		90.12   90.72	
Type		From (ft)	
To (ft)		Hole Size (in)	
Interval (ft)		Inc   Az (Start)	
Inc   Az (End)		Acquisition System	
Software Version		Other	
Cadence		RT 5.4	
Plot Studio		5.4.8632.4	
Rig:		Precision 564	
Contractor:		Precision Drilling	
District:		RMA	
Unit:		RMA	

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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	7.875	PDC	3.00	Steerable	1925.00	18268.00	1925.00	18326.00	2019-11-18 18:30	2019-11-21 08:50	54.20

## Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Joshua Monroe	2019-11-18	2019-11-21	Matt Yule	2019-11-18	2019-11-21			

## 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+ (%)
2019-11-19 16:00	1	7579.00	Oil Based Mud	9.0	19	N/A	N/A	72/18	Active Pit	34000	0.00
2019-11-20 06:00	1	11357.00	Oil Based Mud	9.3	21	N/A	N/A	67/22	Active Pit	33000	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	EvoOne	G650-0349	Gamma (single)	8.12	57.56	6.625	2.875
1	EvoOne	G650-0349	Directional (mag)	9.31	58.75	6.625	2.875

## Service and Tool Mnemonics

Mnemonic	Name	Description
MWD	EvoOne - Dir Gamma	EvoOne

## 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 logging engineers, depth calibrations and measurements could not be independently verified.
- 2 A sliding indicator is shown to the left edge of track 1 as a heavy line. The indicator has been depth-shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data acquired while sliding.

3 Baker Hughes run 1 utilized 6.50 inch NaviTrak UT services (Gamma Ray and Directional) behind a 7 7/8 inch bit and steerable assembly from 1925 to 18326 feet MD (1869 to 7073 feet TVD).

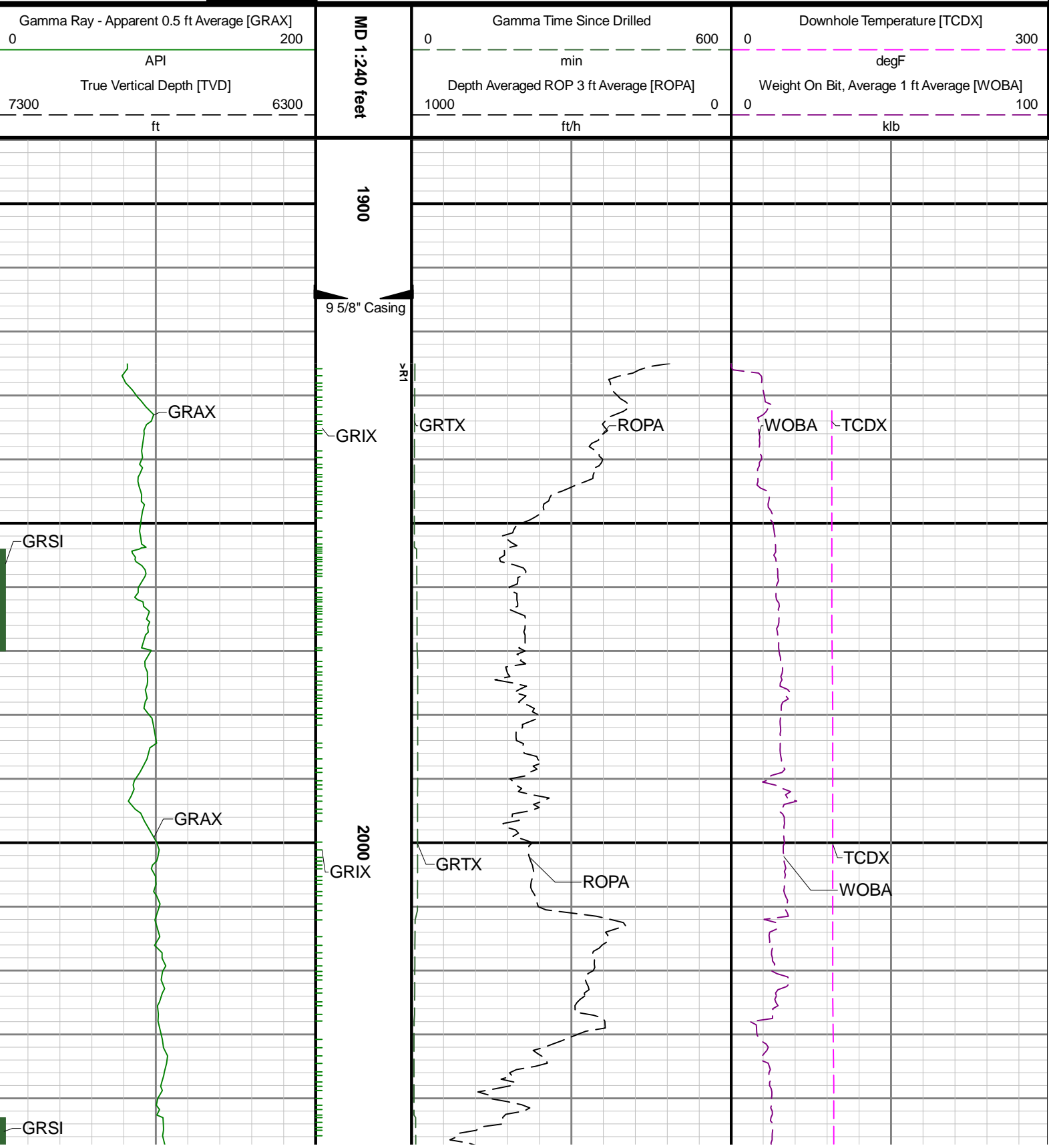
4 Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request.

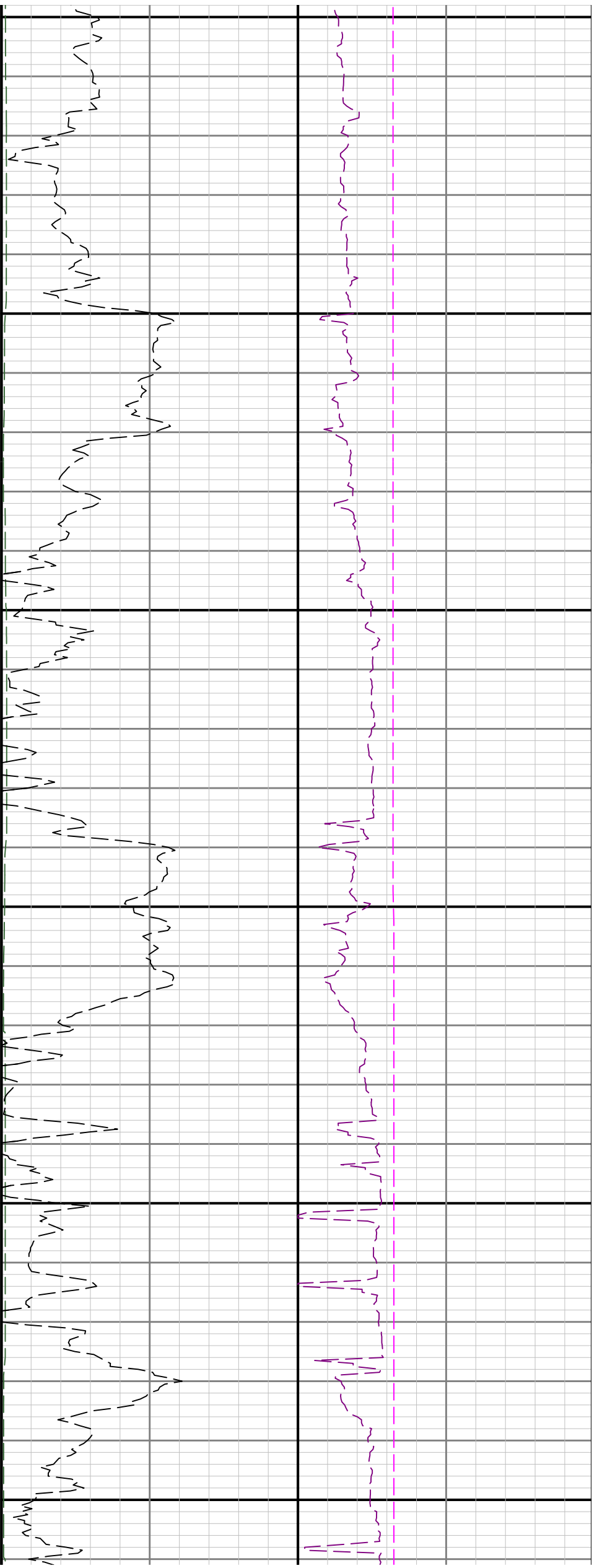
Remarks				
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	18268.00	7.875	1	The interval from 18268 to 18326 feet MD (7073 feet TVD) was not logged due to sensor to bit offset at the end of Run 1.

Curve Mnemonics

Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAX	Gamma Ray - Apparent - Real-Time 0.5 ft Average	API
GRIX	Gamma Ray - Data Point Indicator - Real-Time	unitless
GRTX	Gamma Ray - Time Since Drilled - Real-Time	min
GRSI	Sliding Indicator Flag	unitless

<div><div>BAKER HUGHES</div><div>a GE company</div></div> <div></div>	<b>Company</b>	Anadarko			
	<b>Well</b>	Jodster South 25-11HZ			
	<b>Interval</b>	<b>Date From:</b>	2019-11-18 18:30	<b>Interval Drilled: (ft)</b>	1925.00 - 18326.00
		<b>Date To:</b>	2019-11-21 08:50	<b>Interval Logged: (ft)</b>	1925.00 - 18268.00
	<b>Created</b>	2019-11-21 09:49:31			

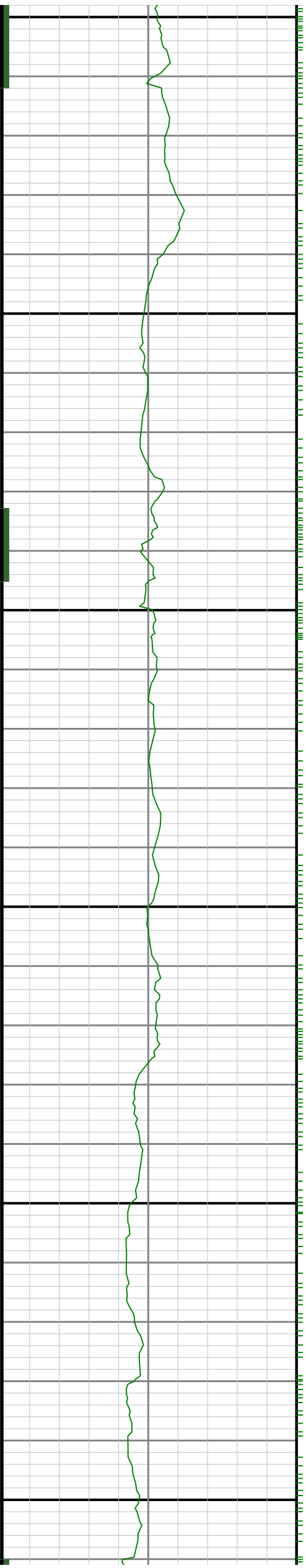


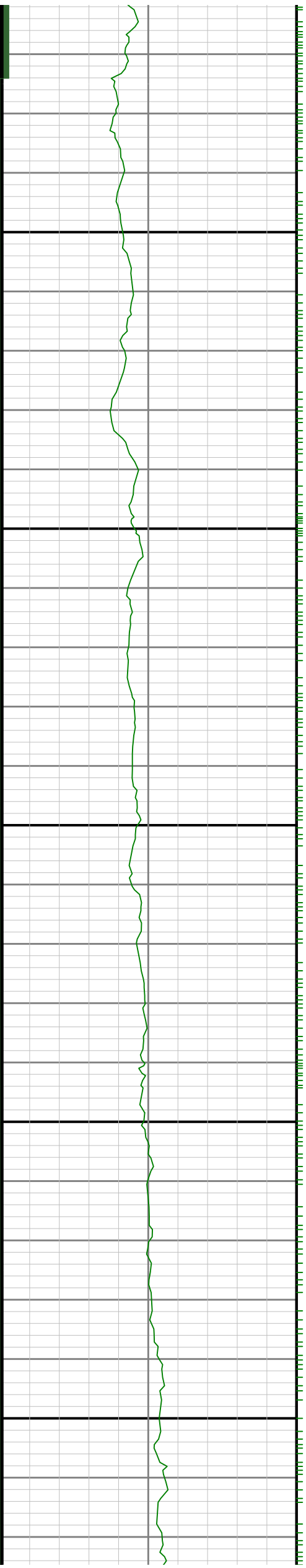
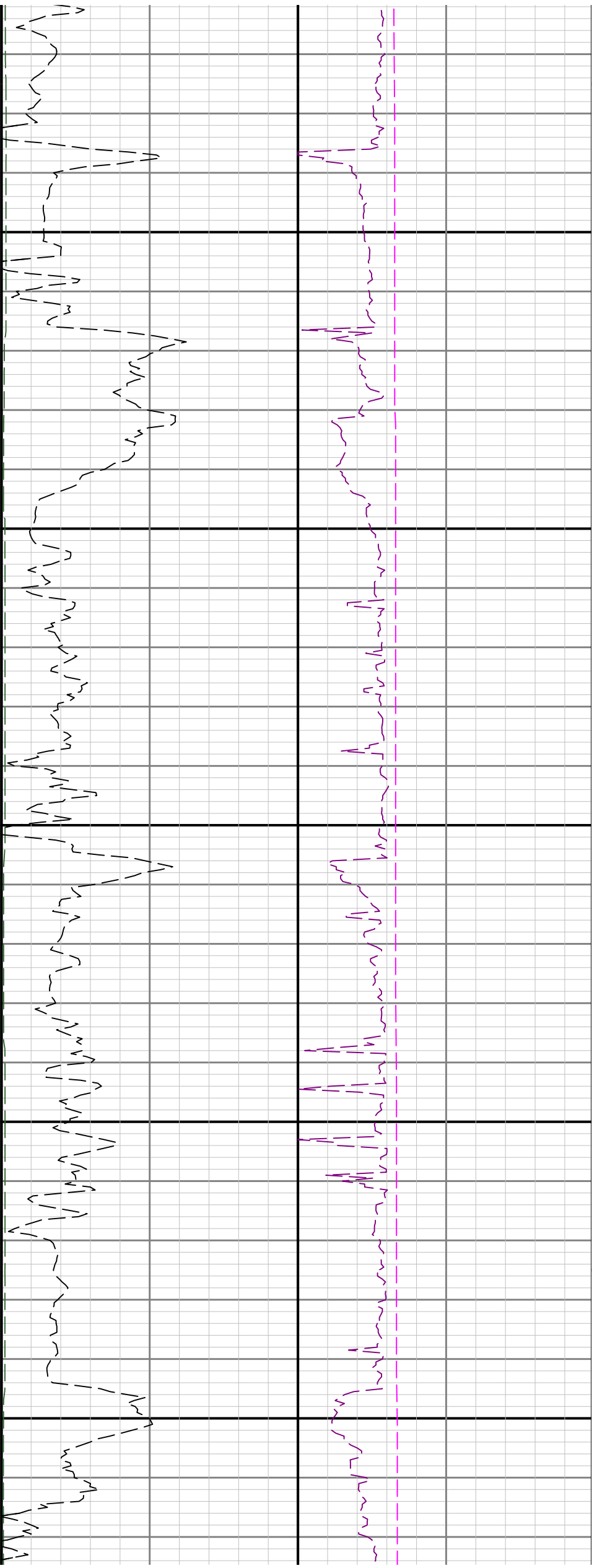


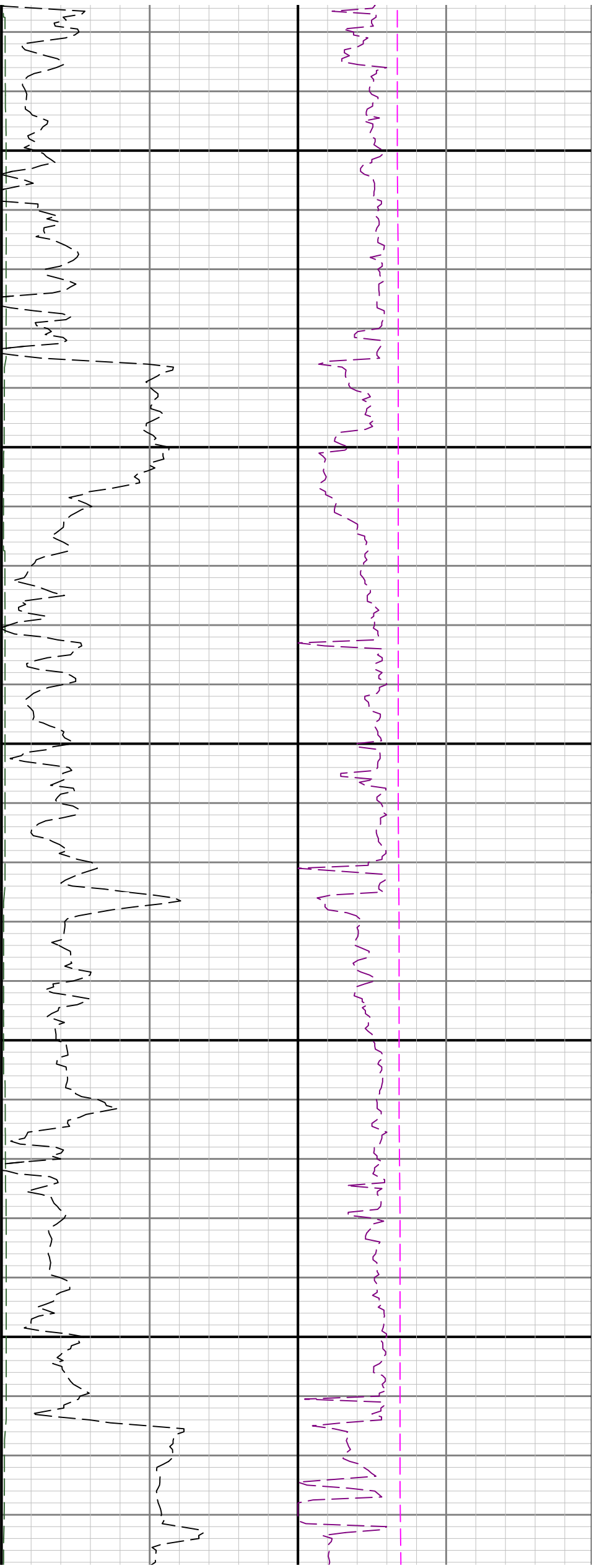
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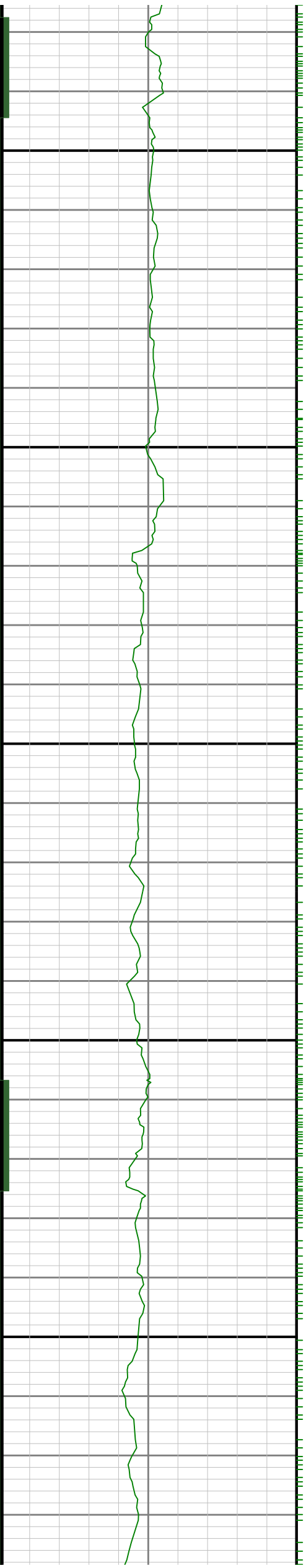


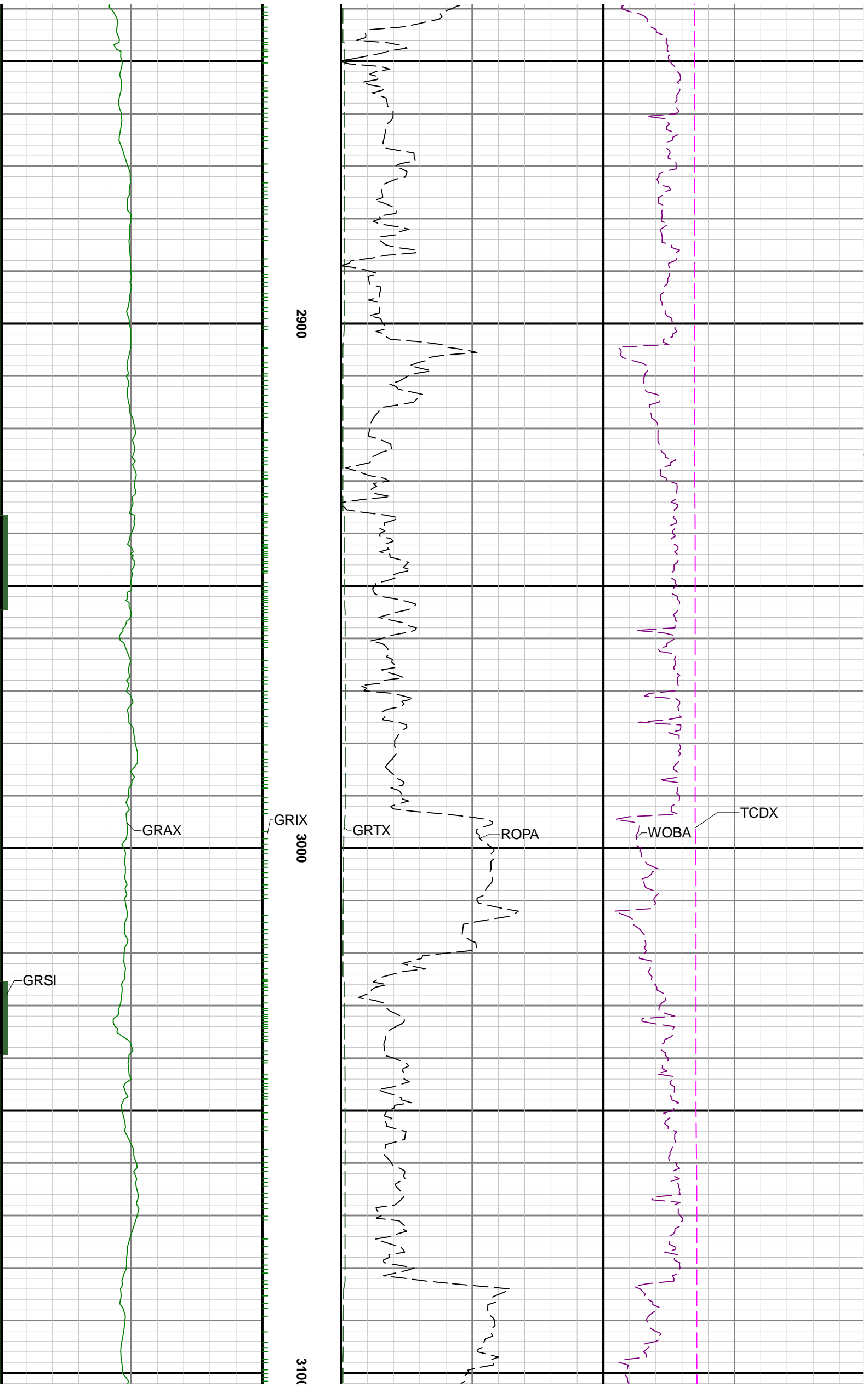


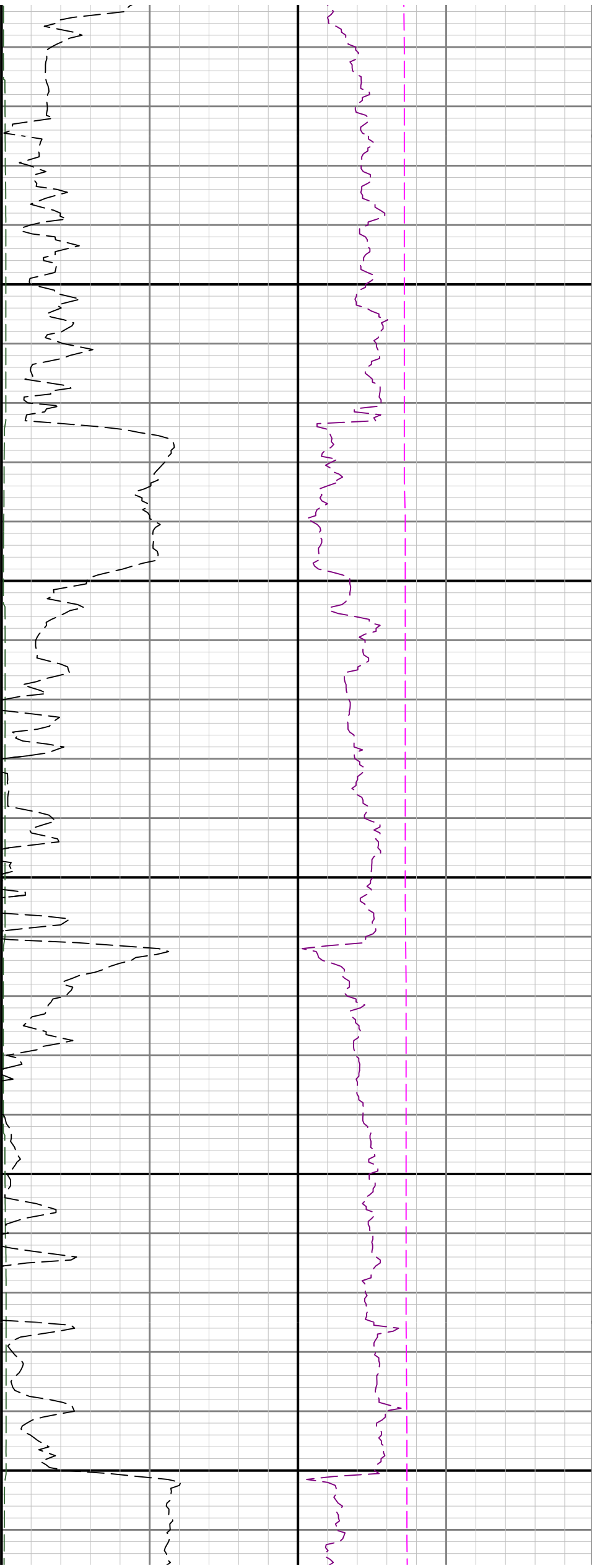
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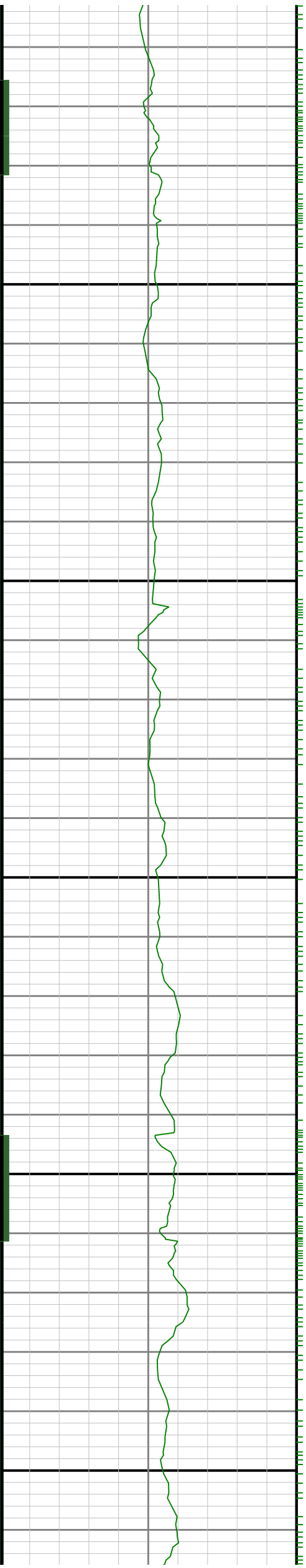


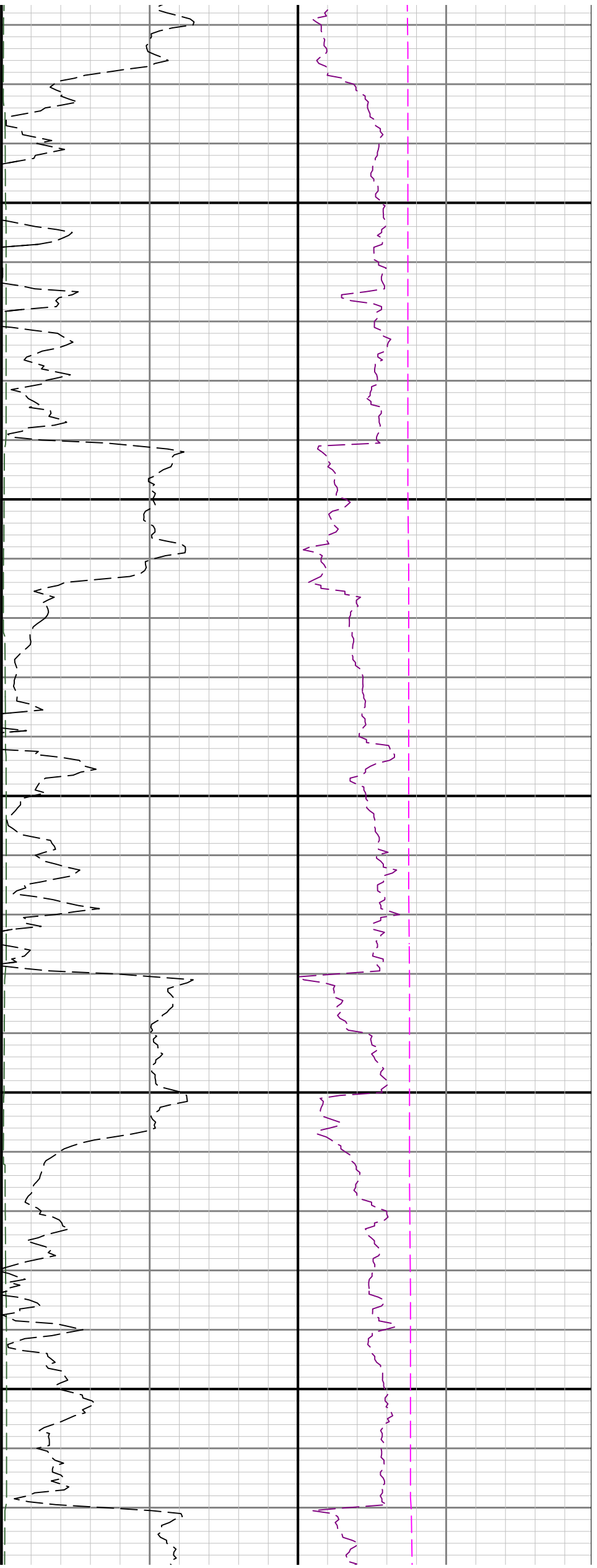




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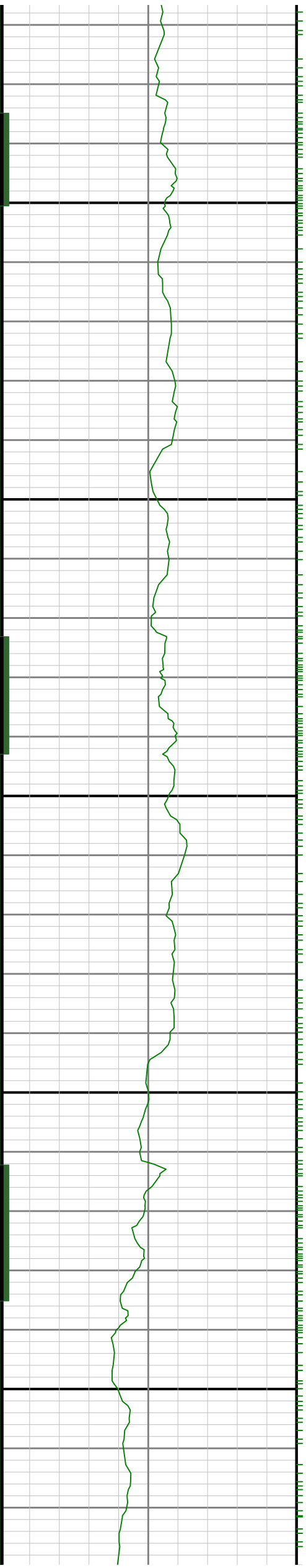




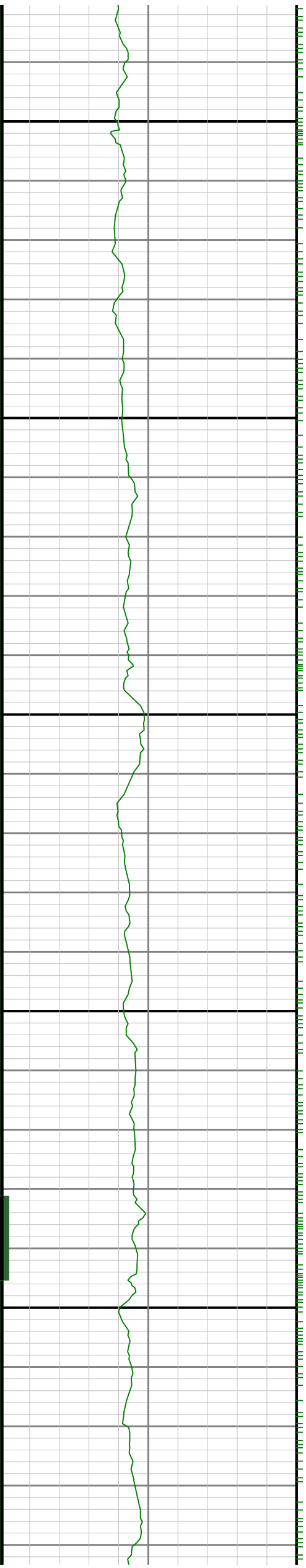
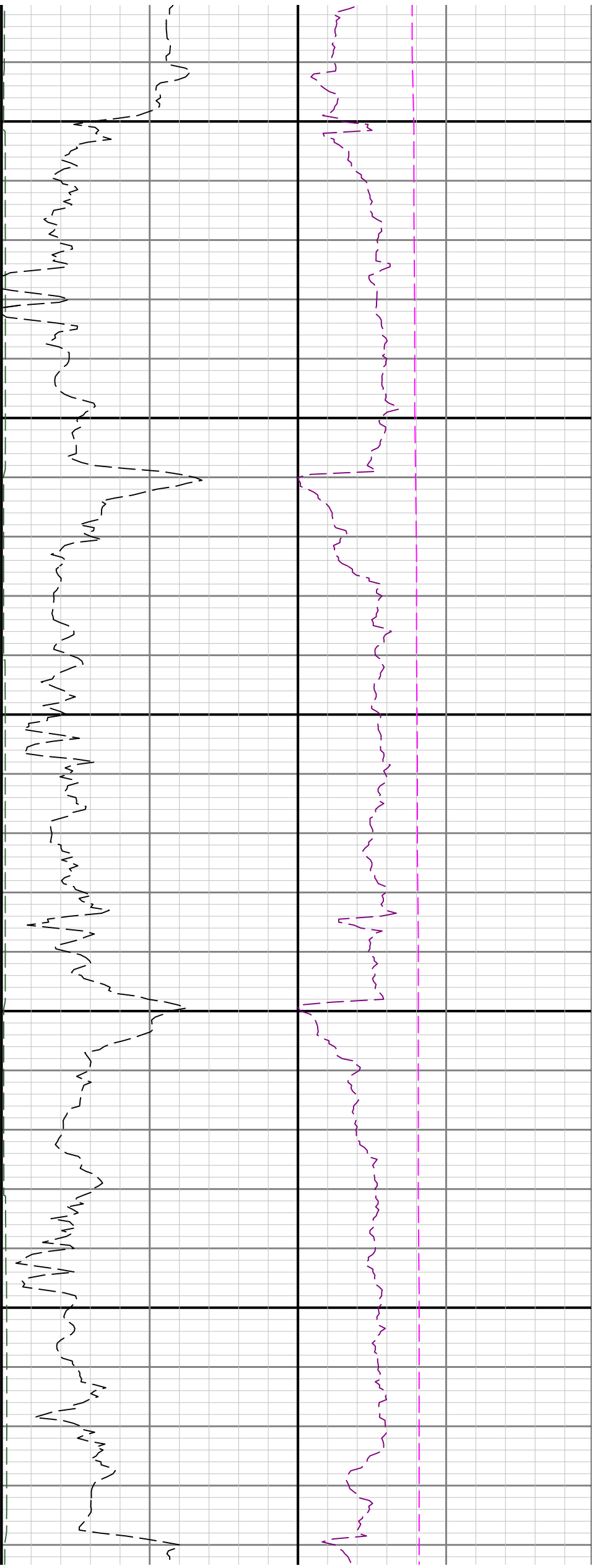
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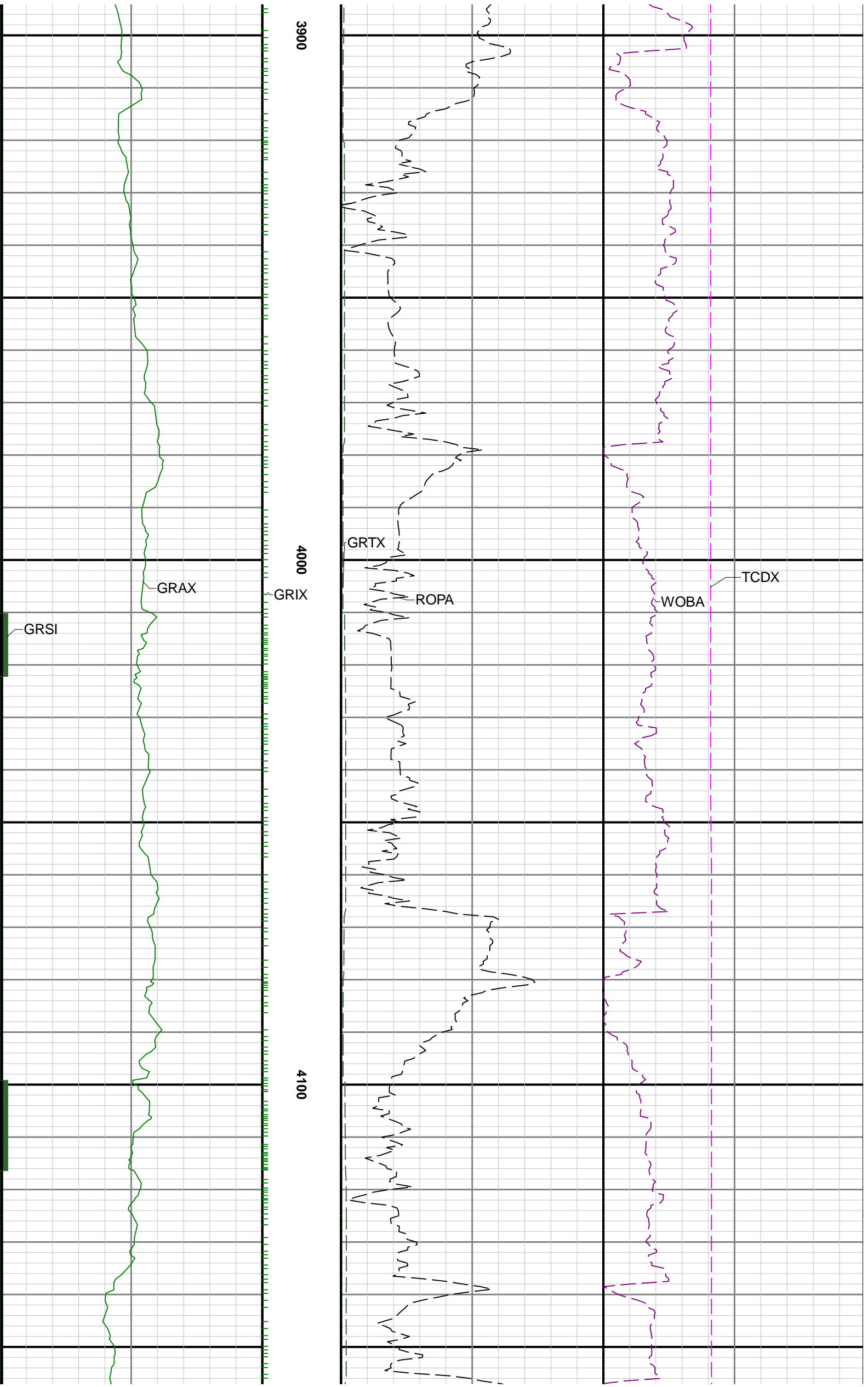
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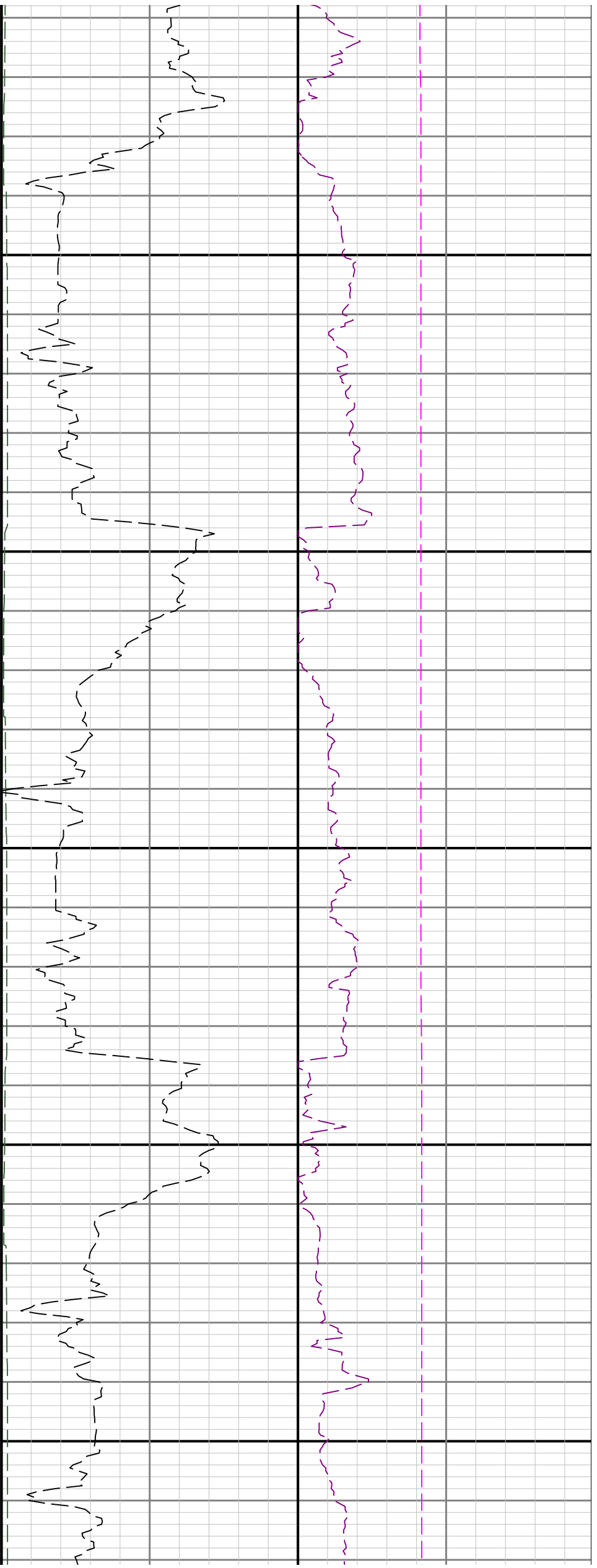
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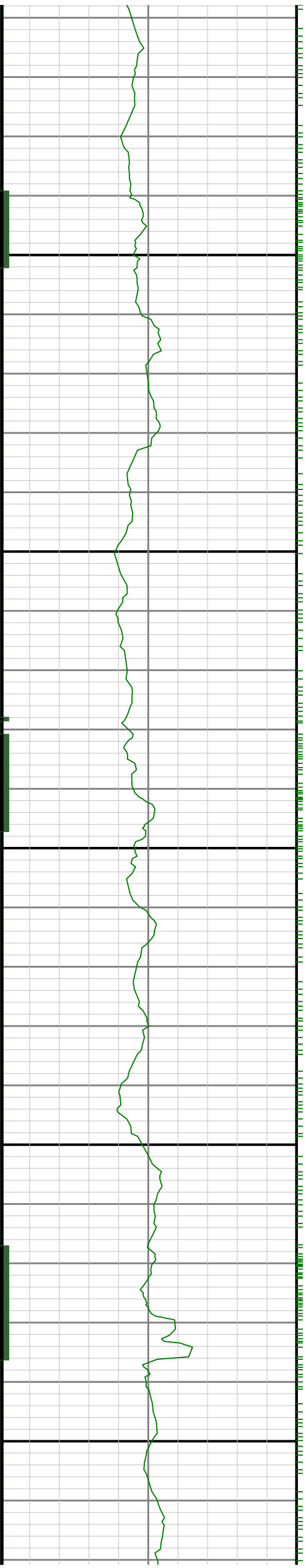


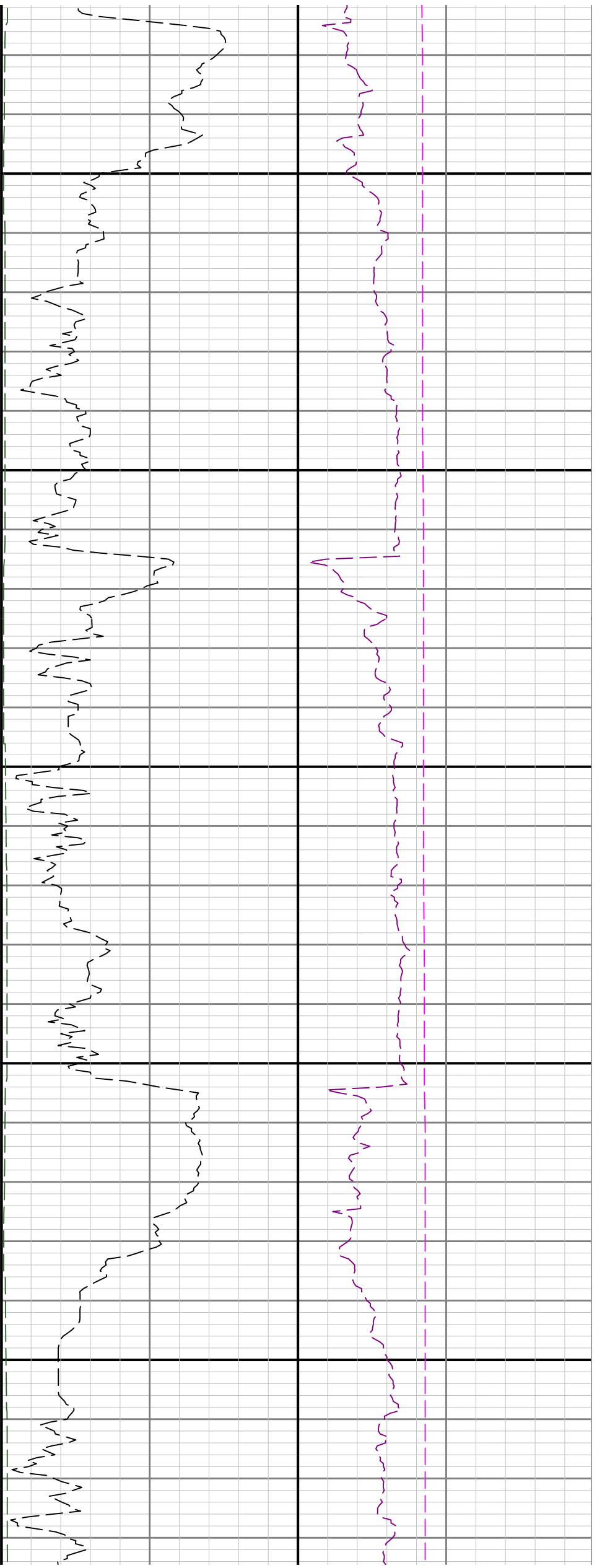


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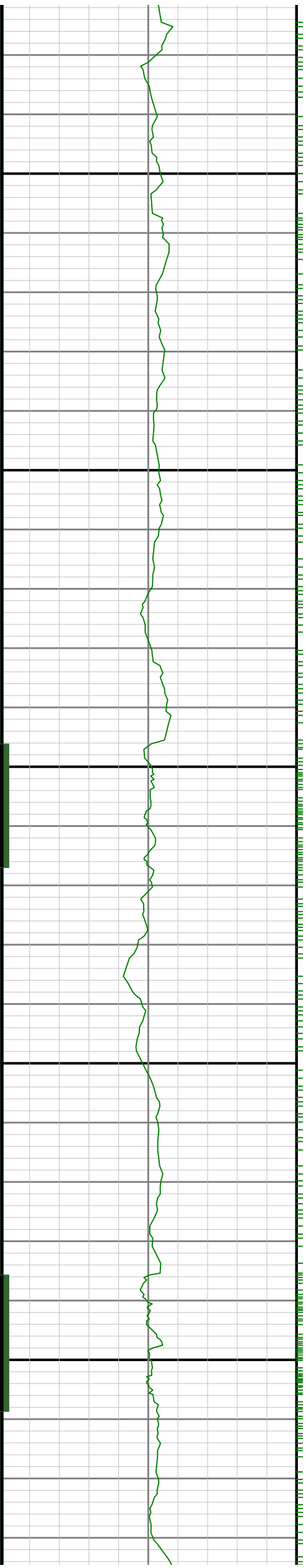
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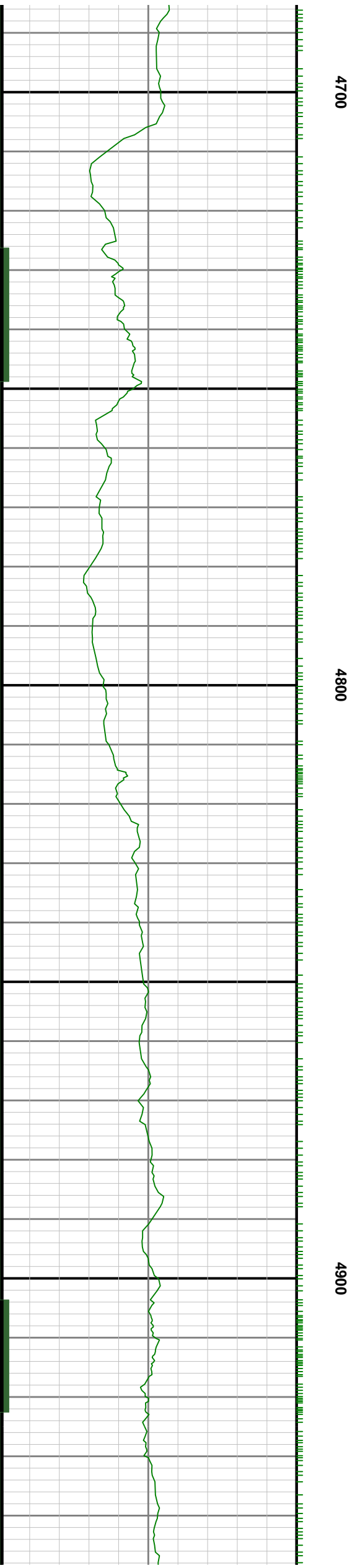
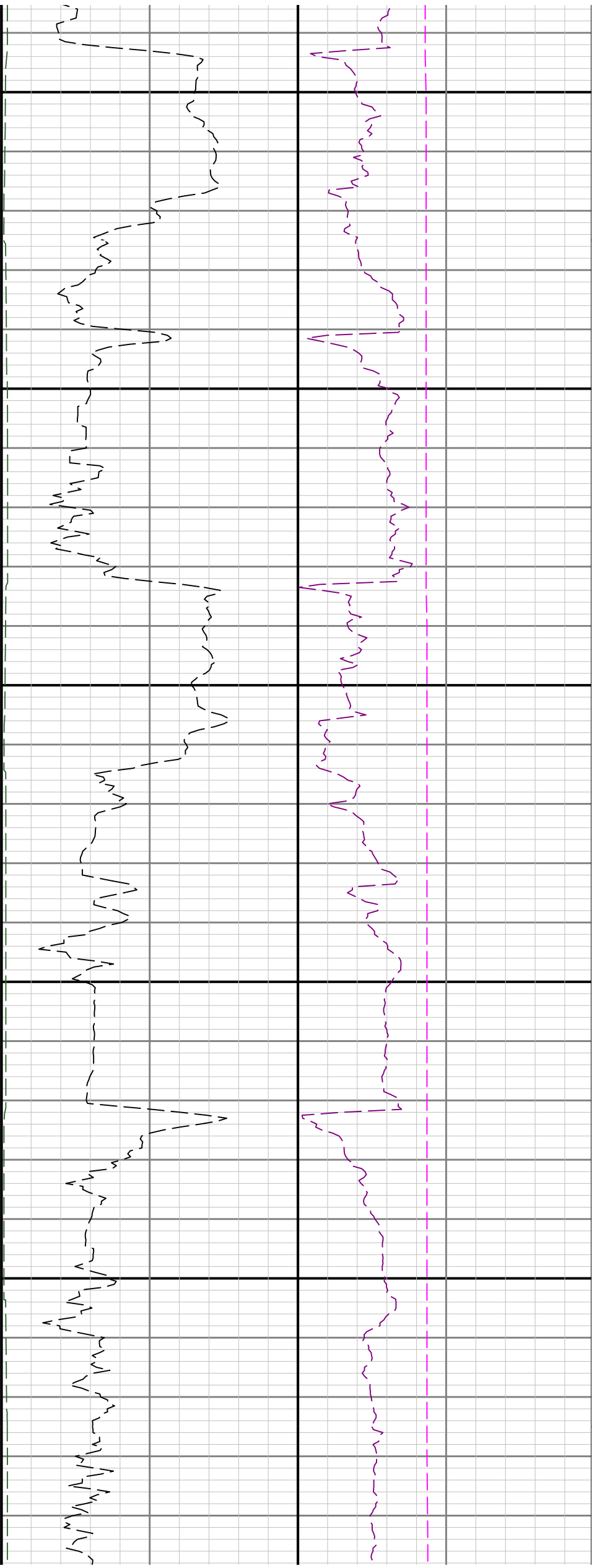




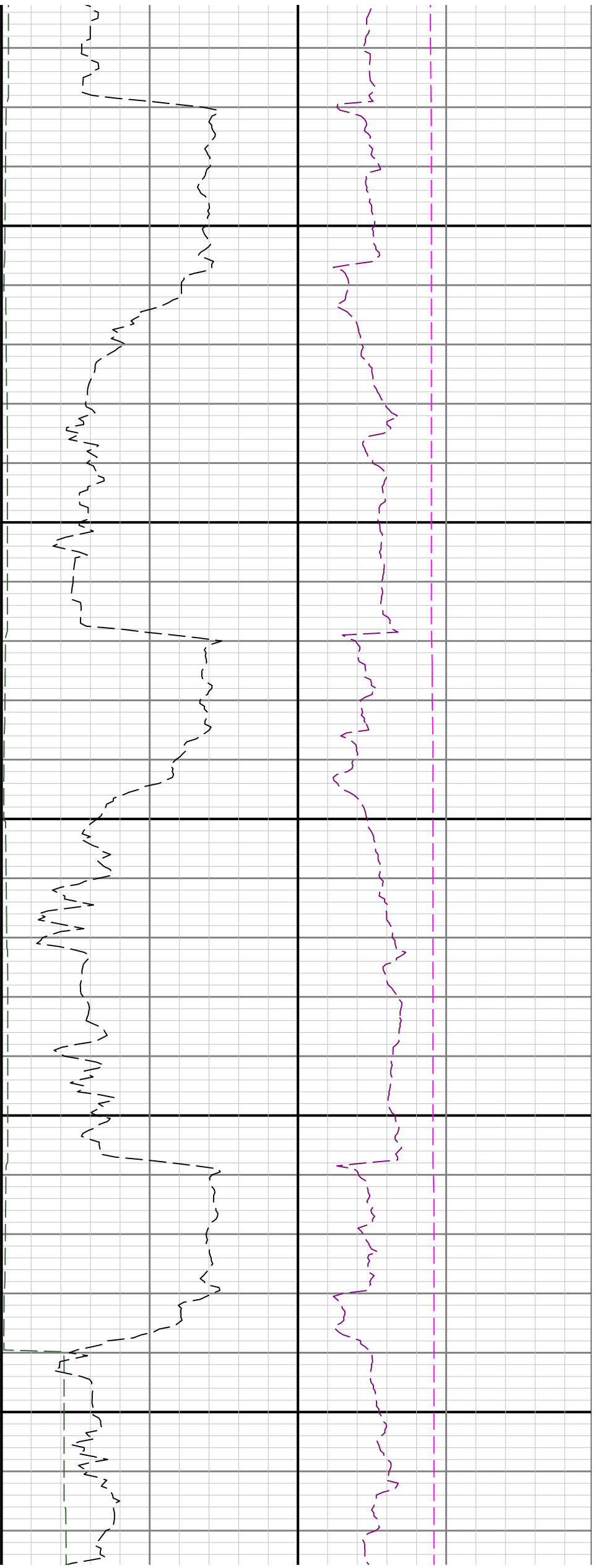
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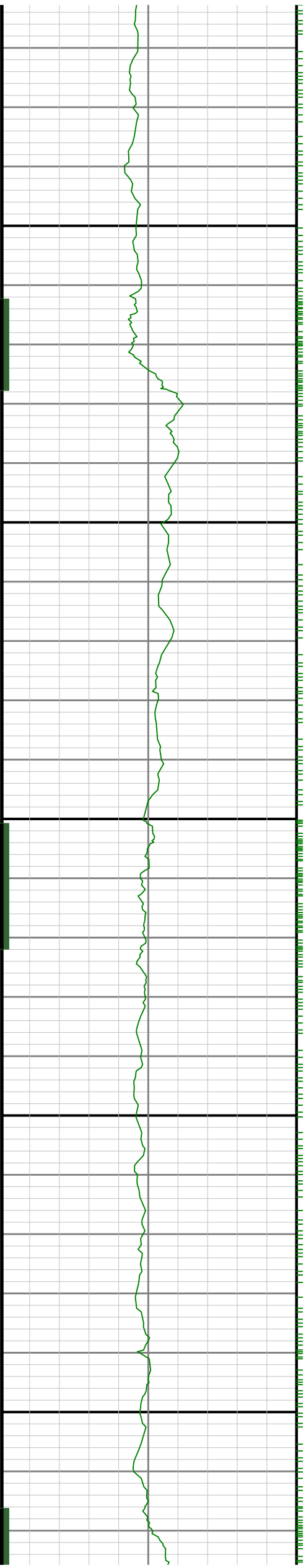


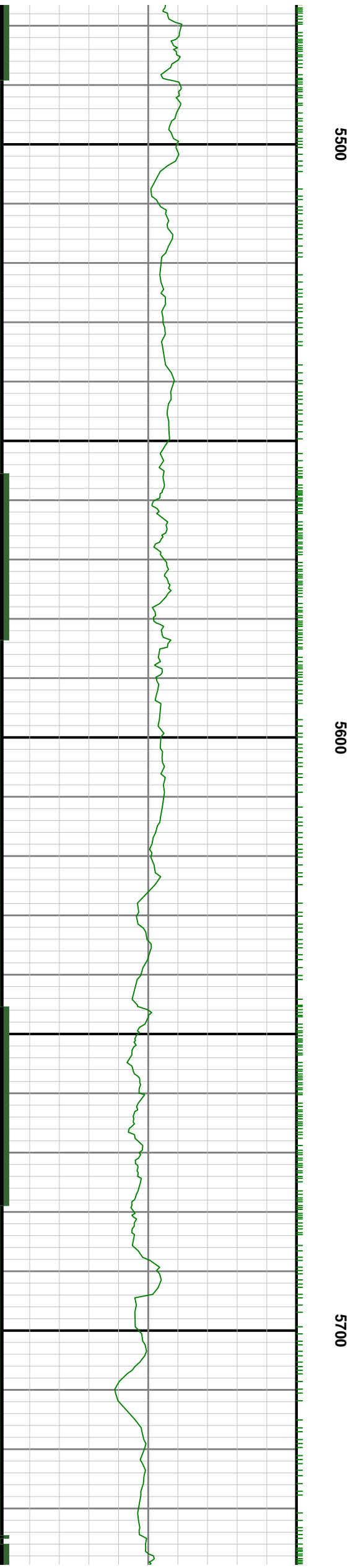
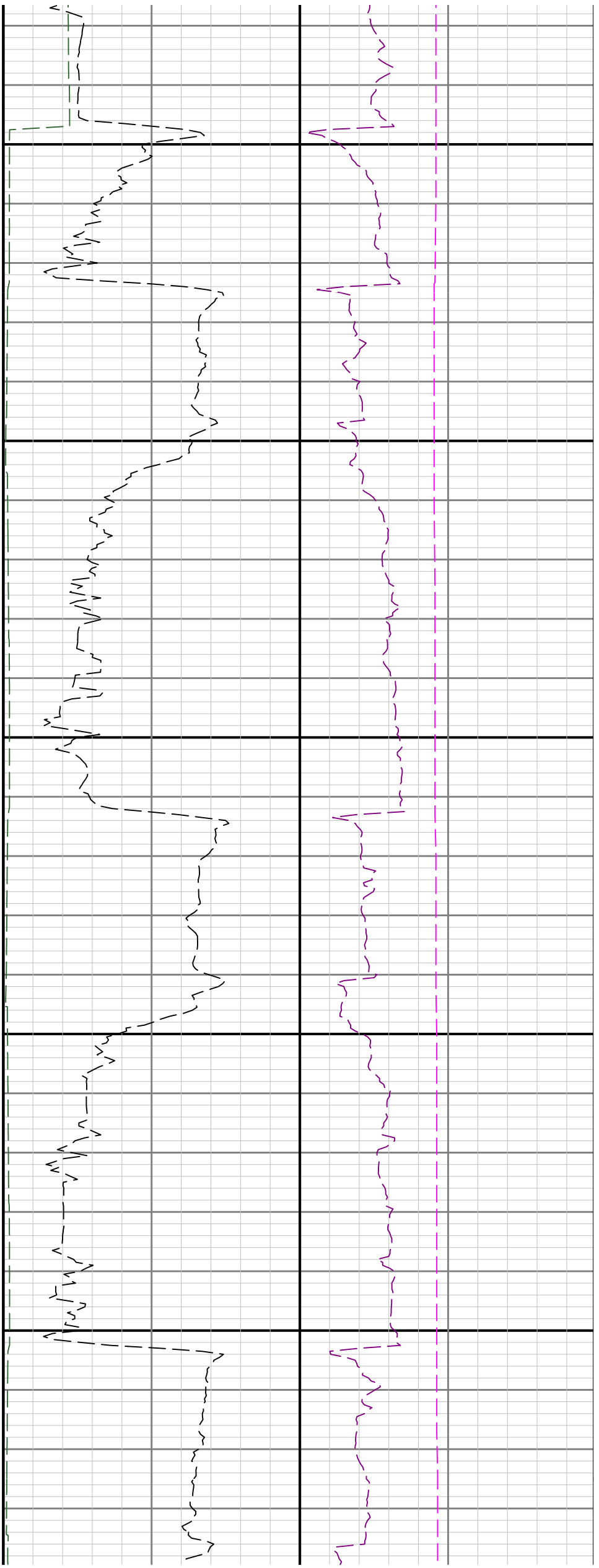




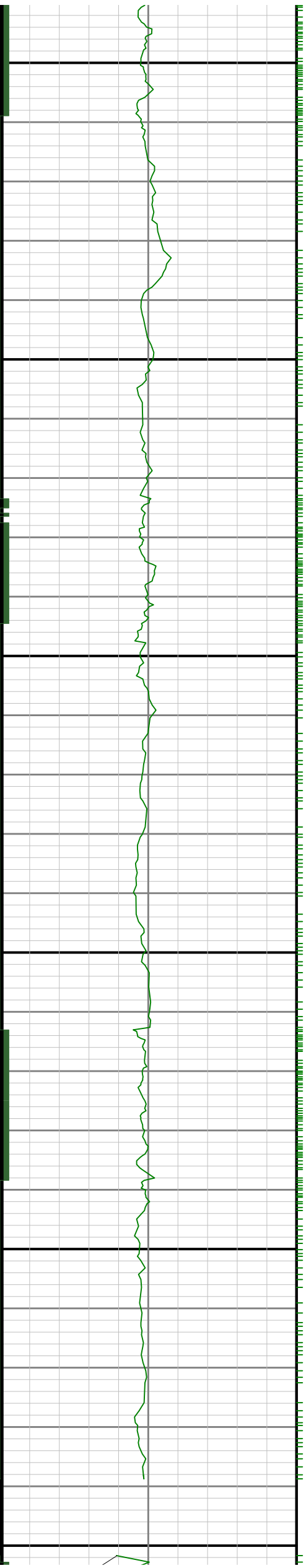
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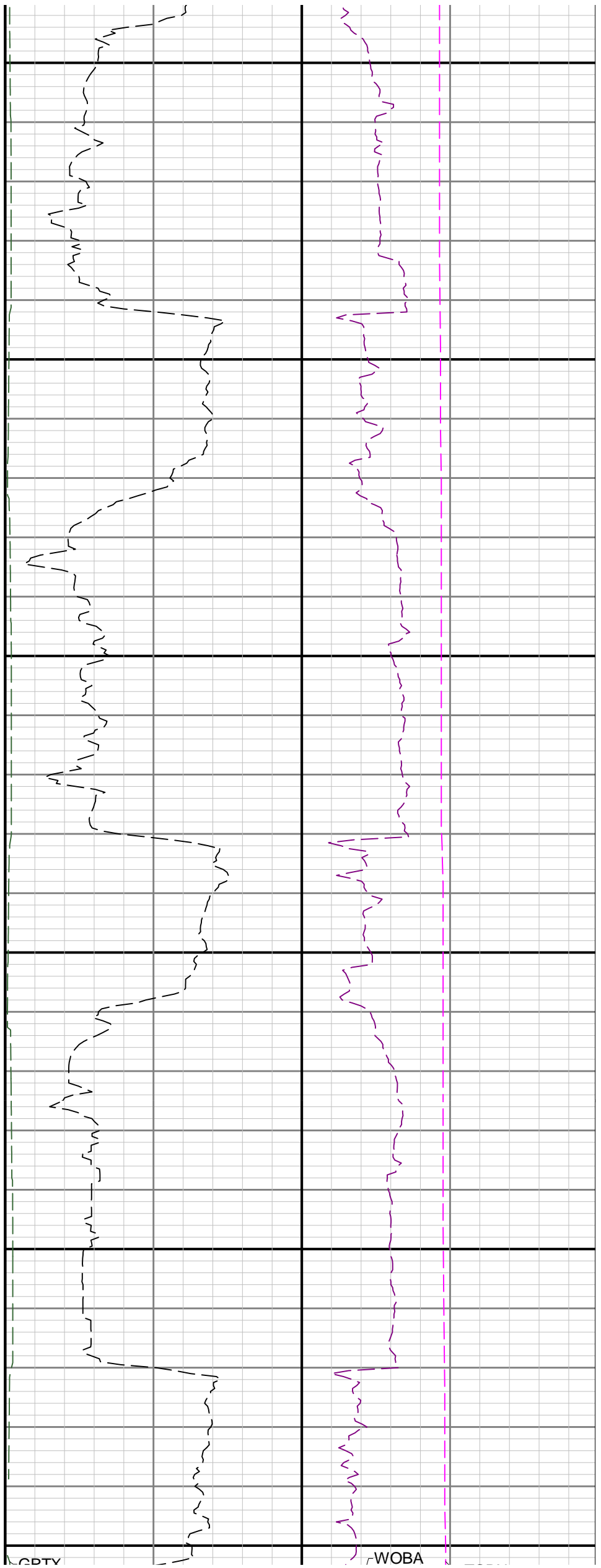




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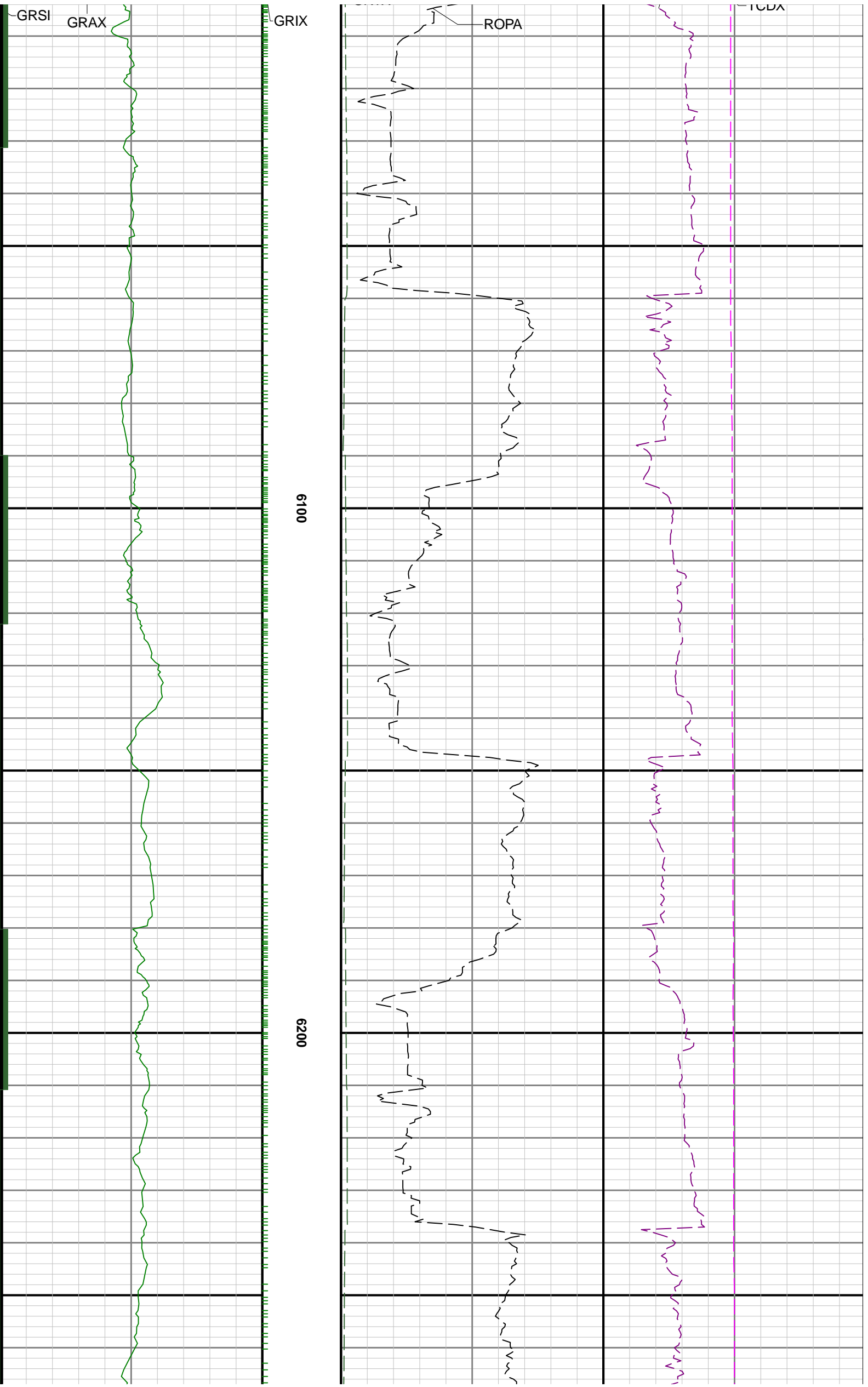
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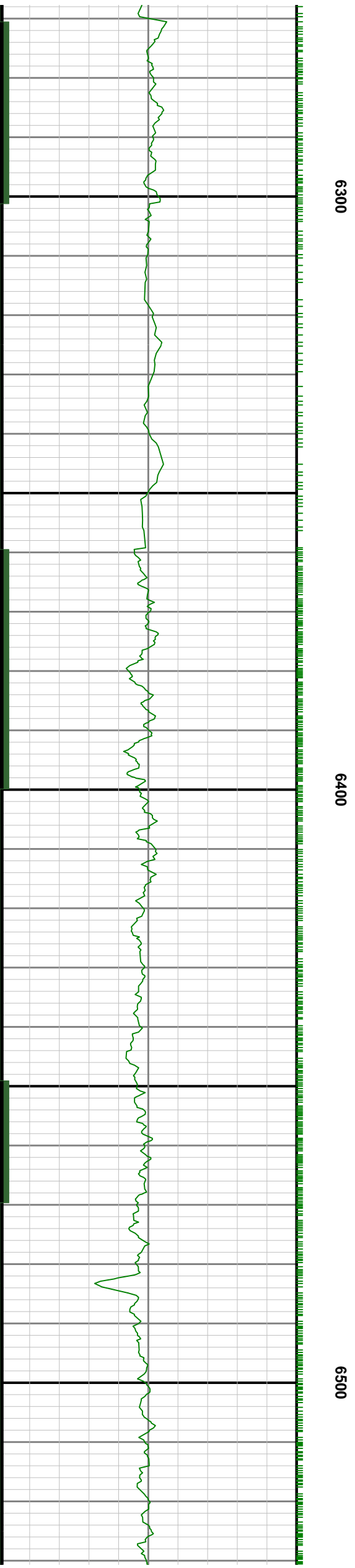
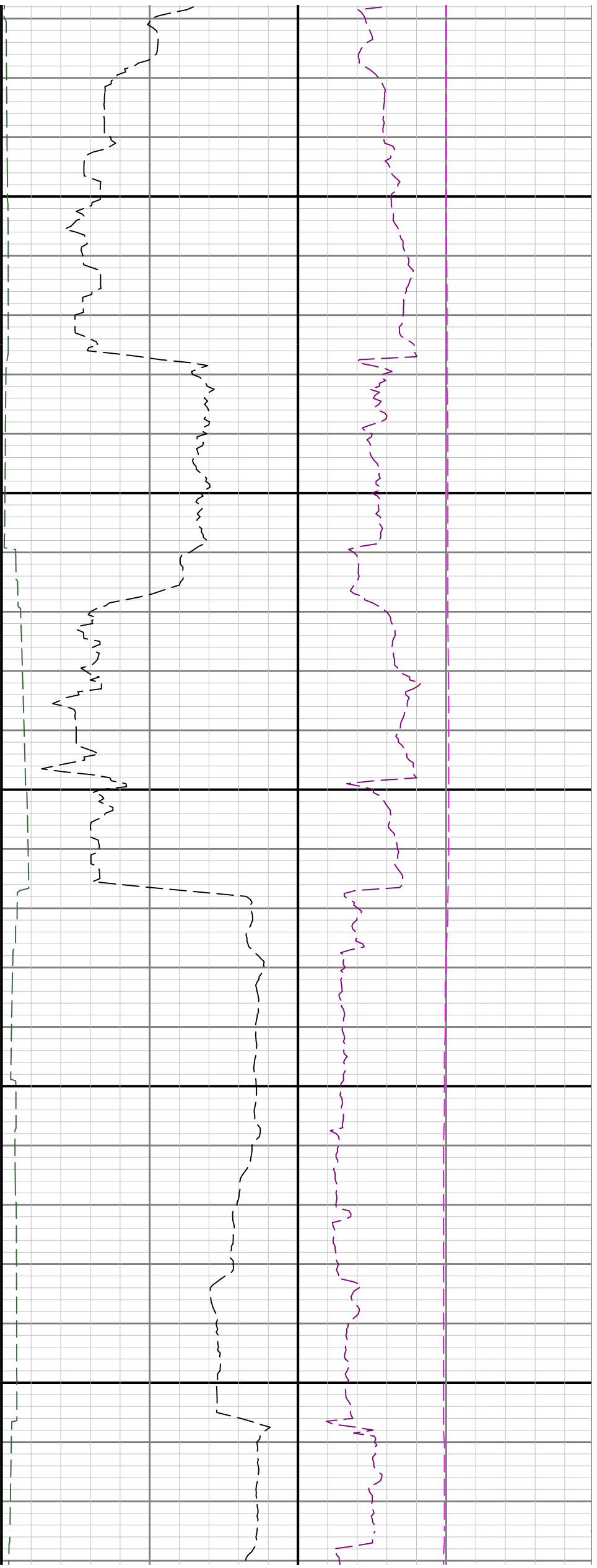
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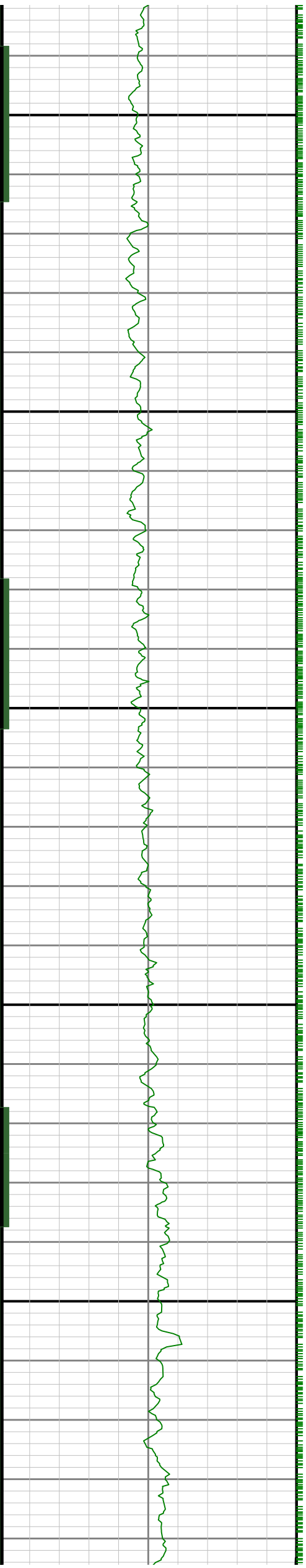


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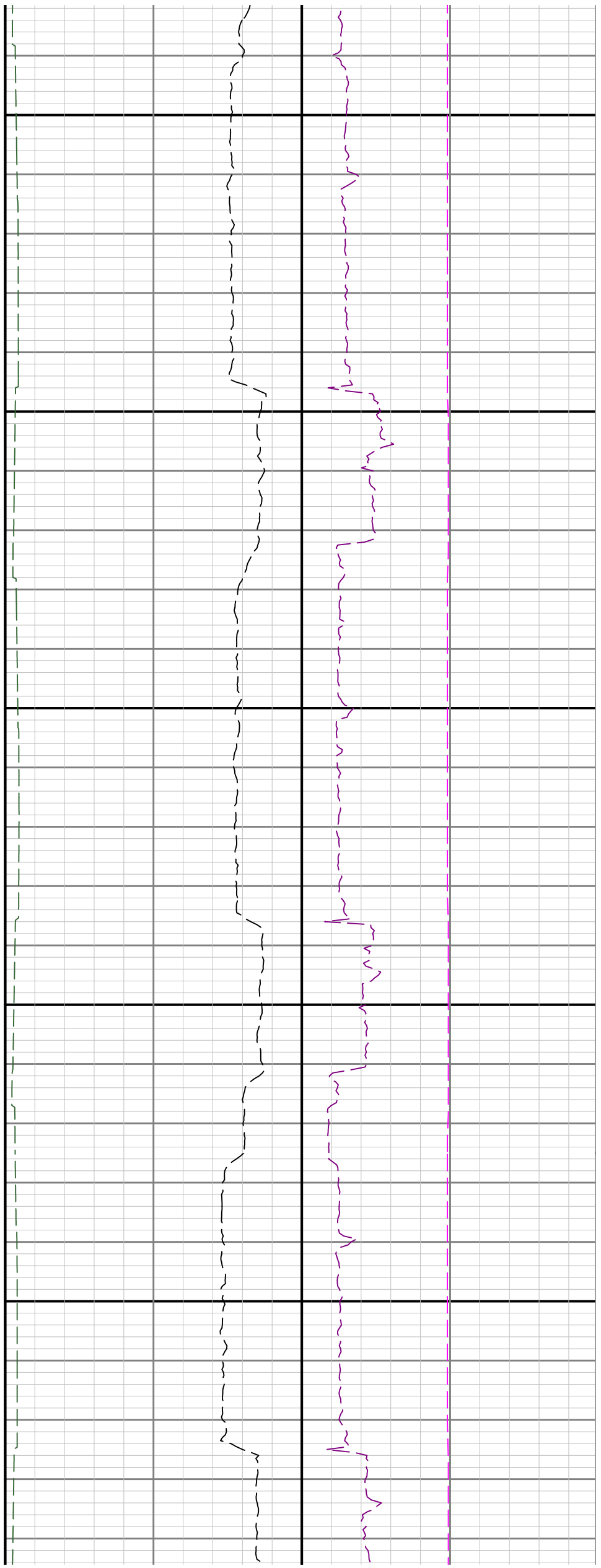


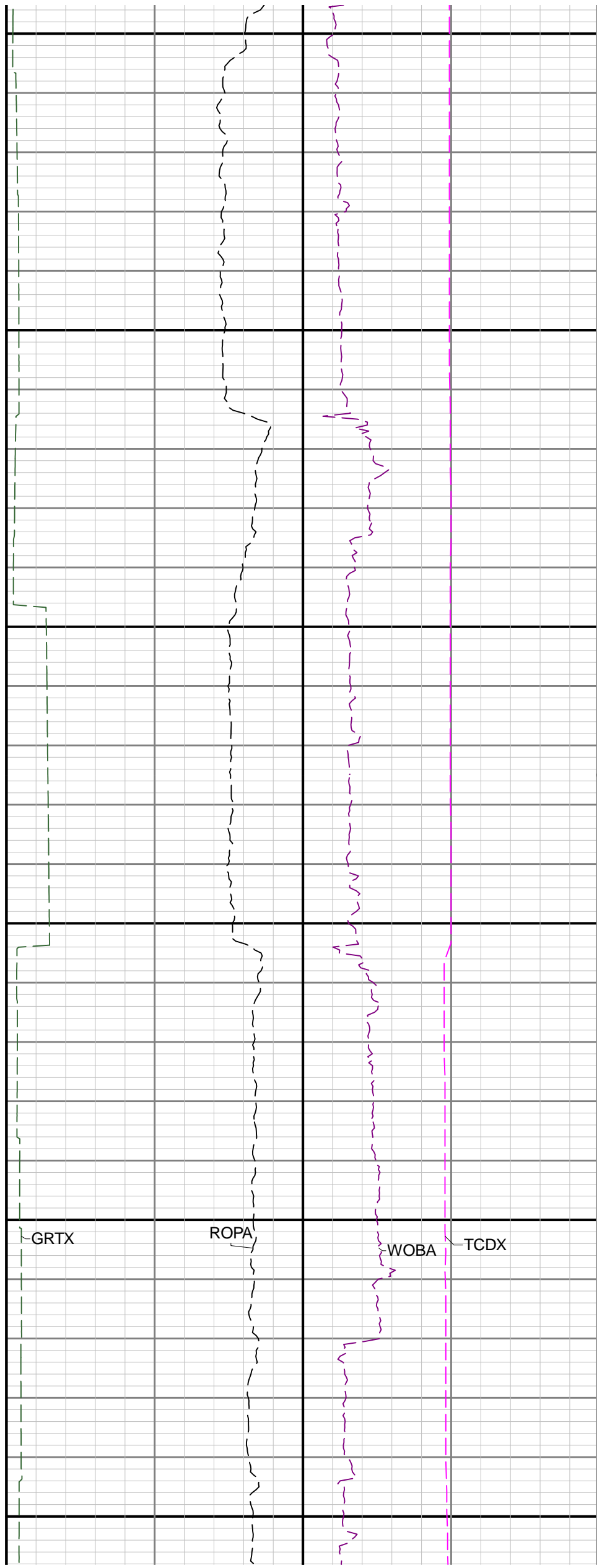
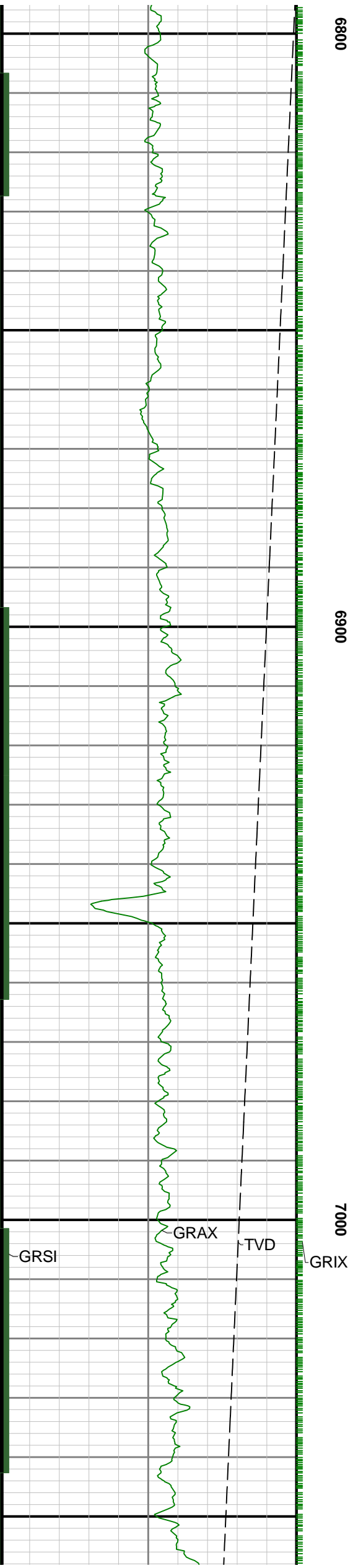


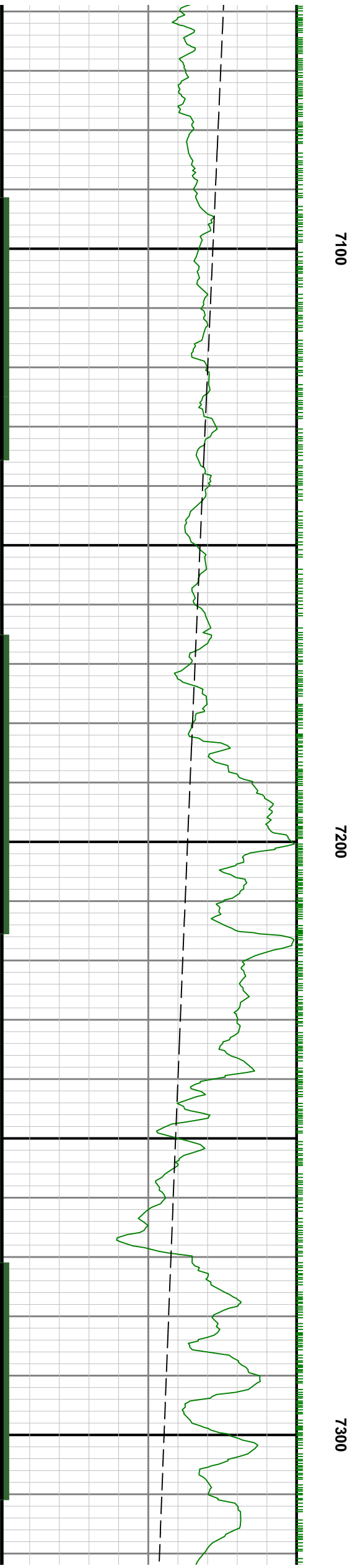
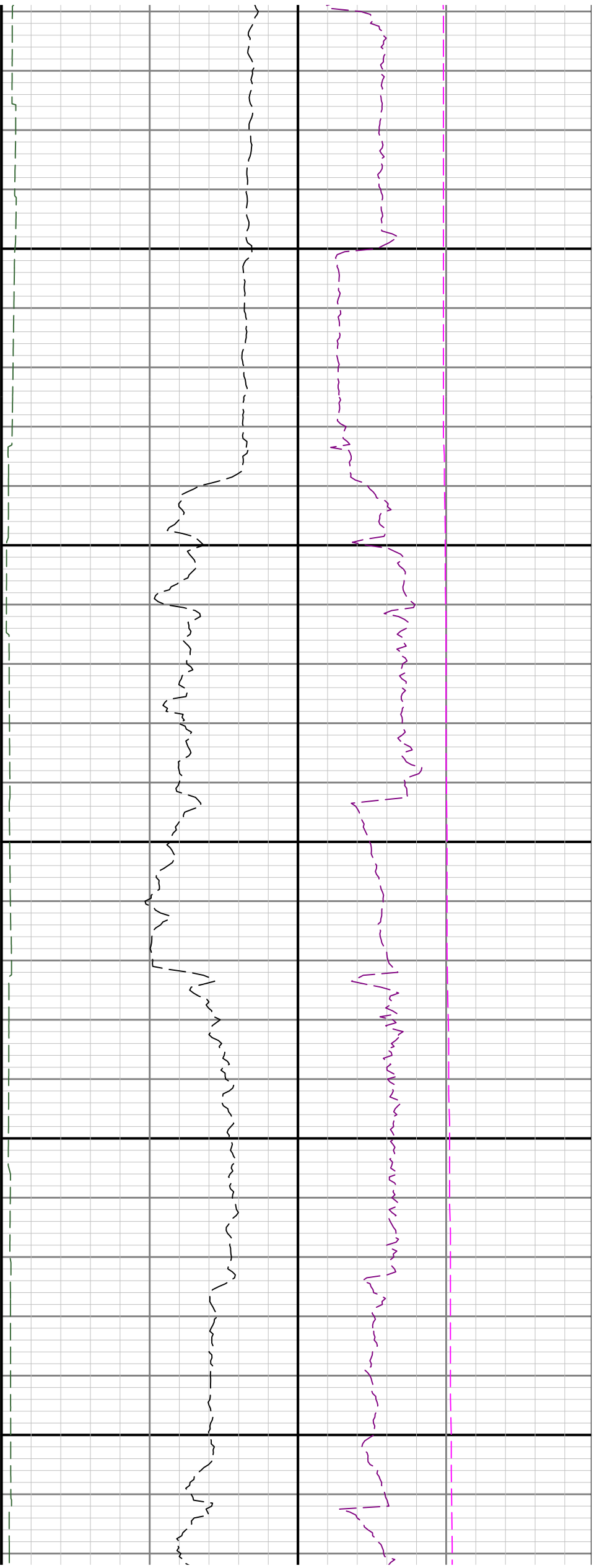


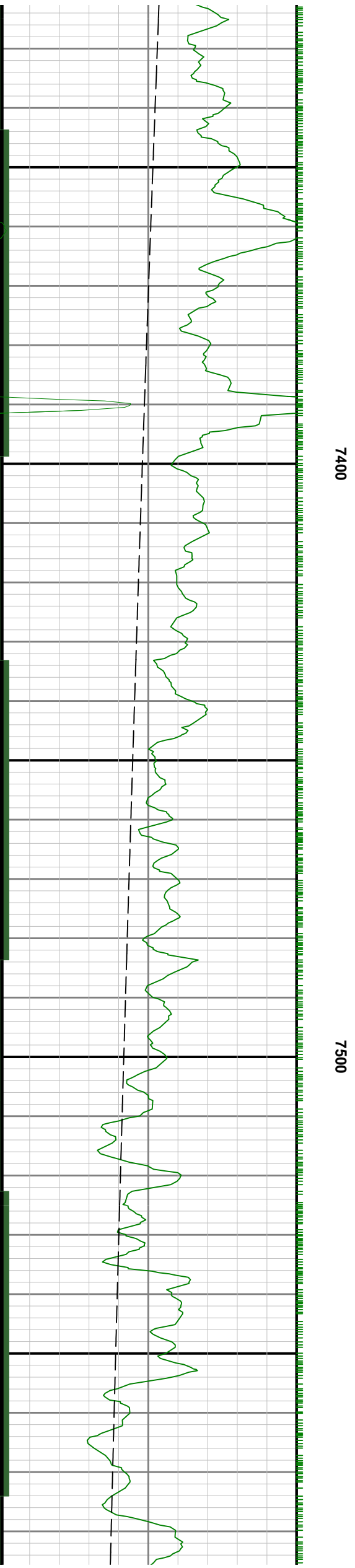
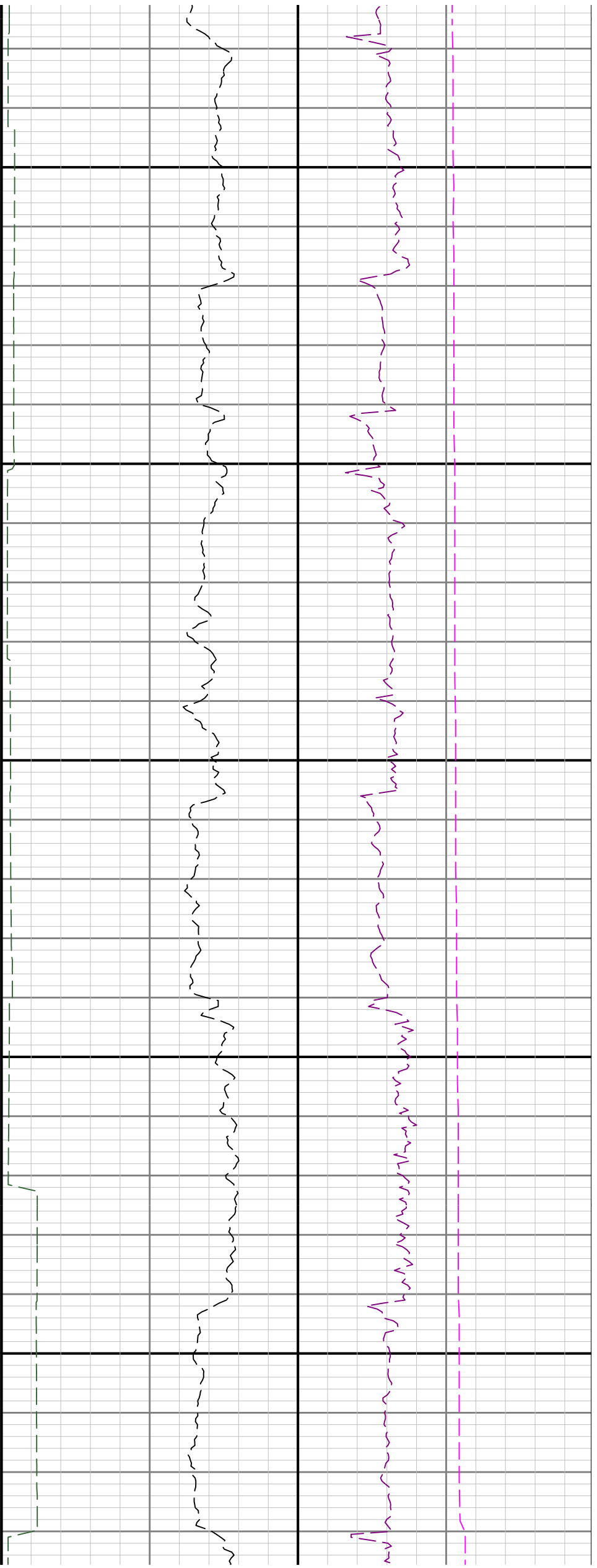
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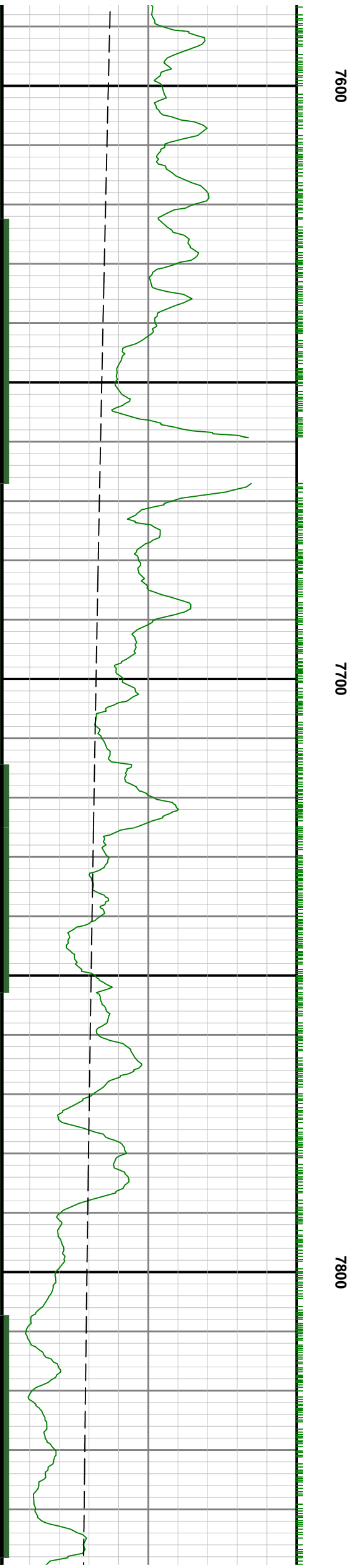
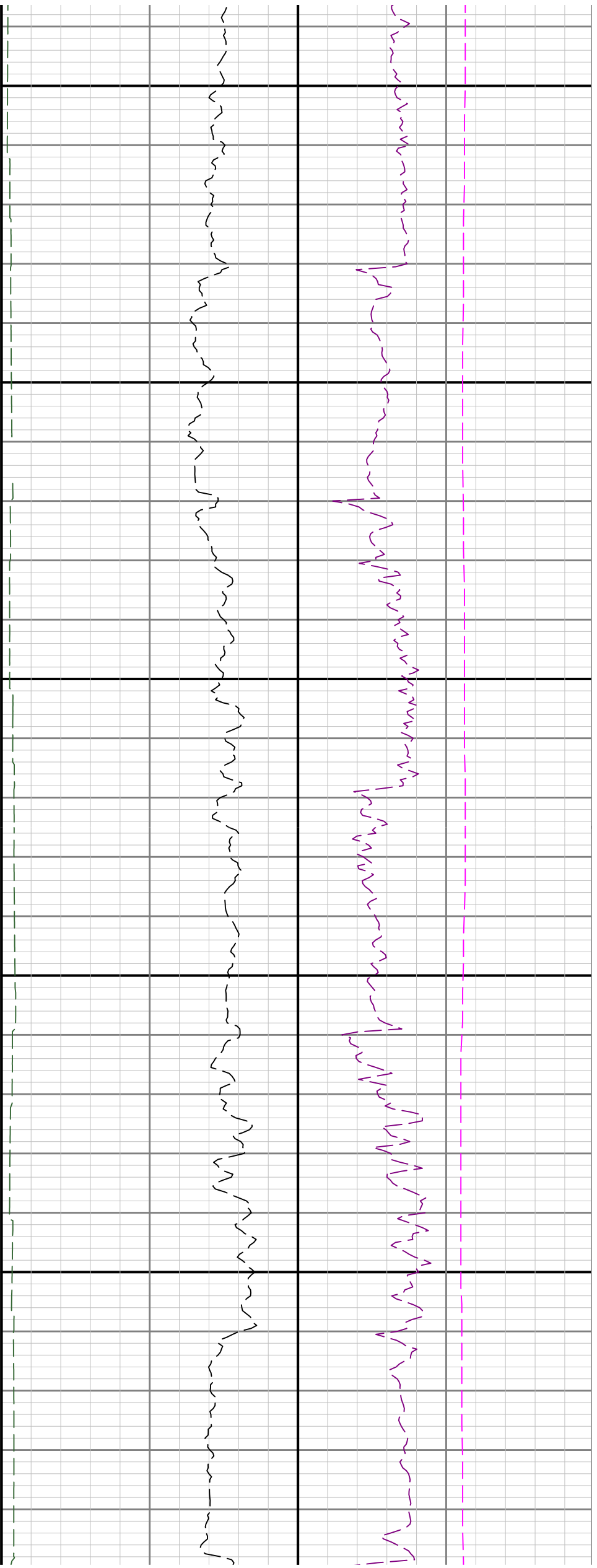
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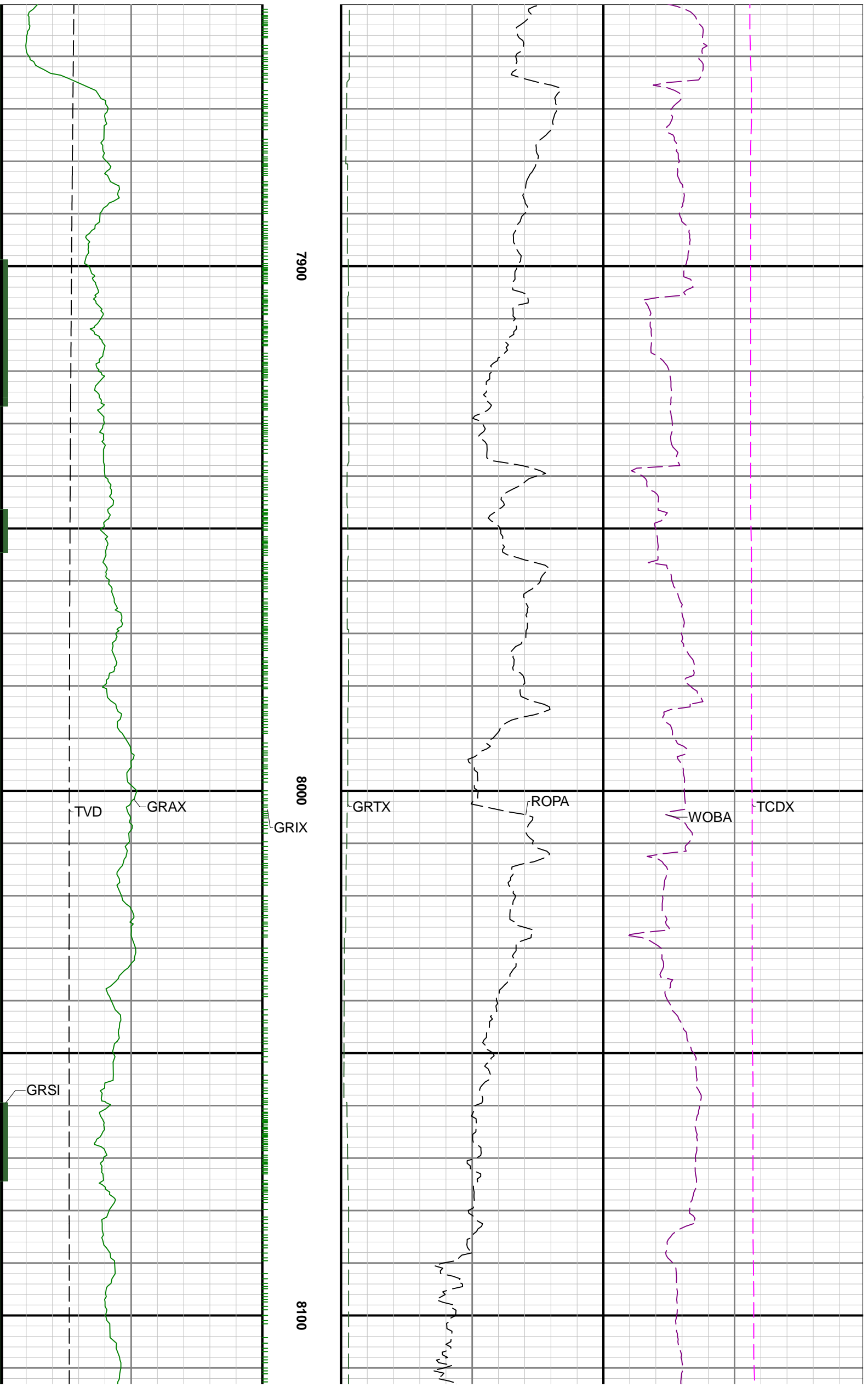


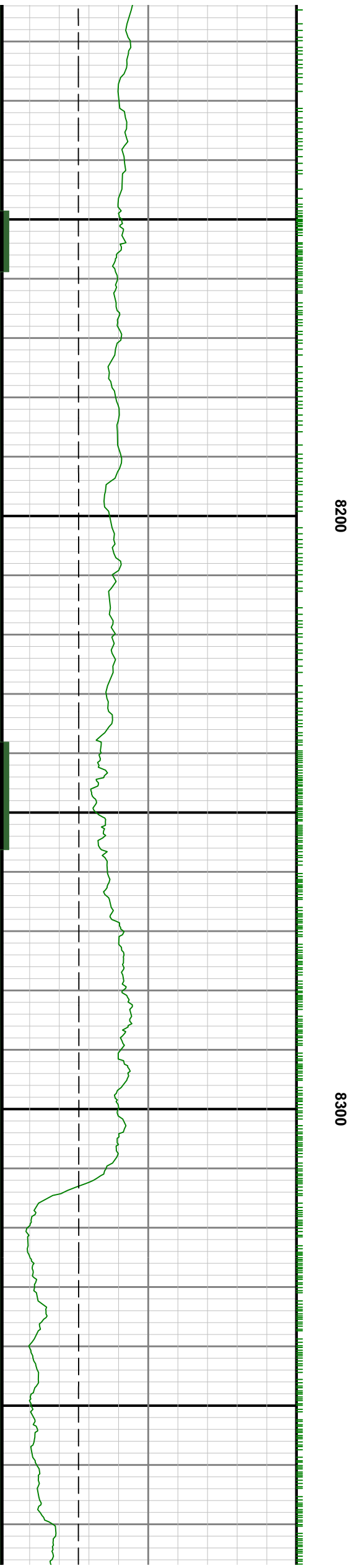
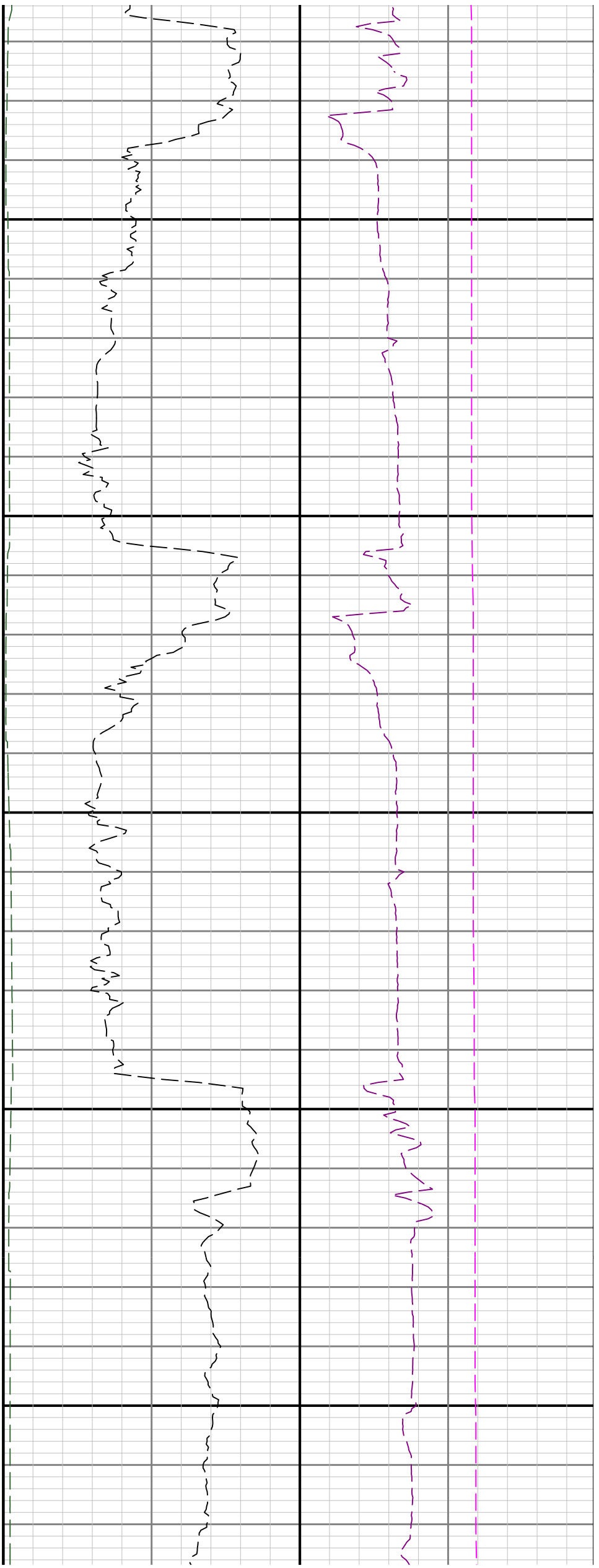


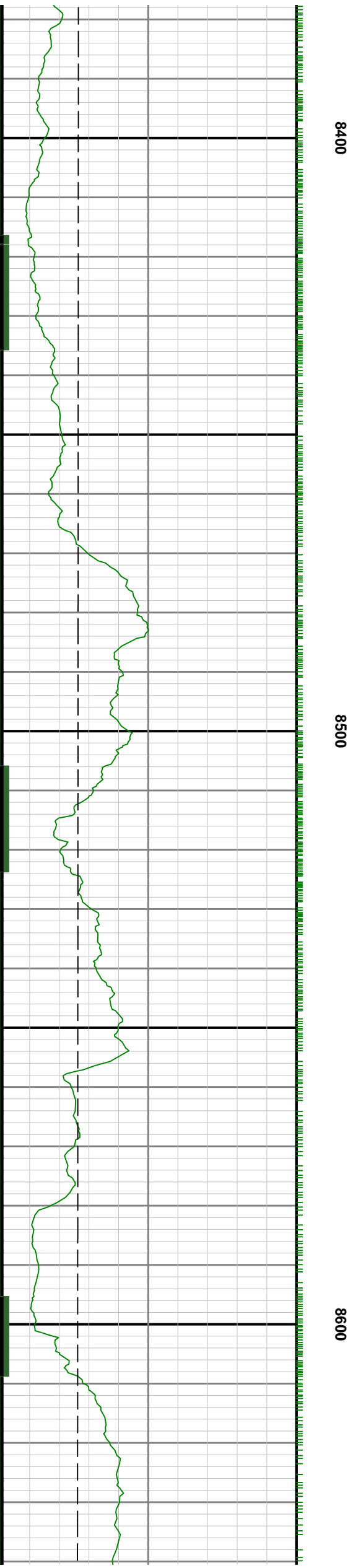
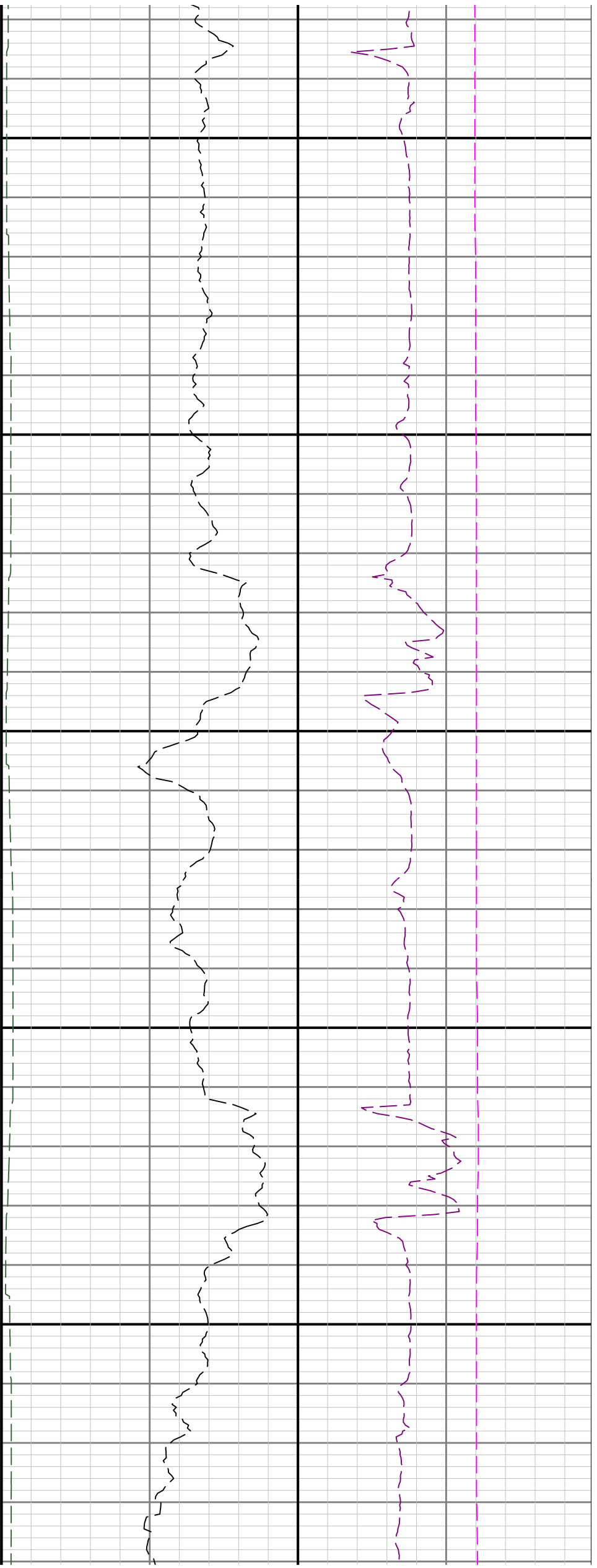


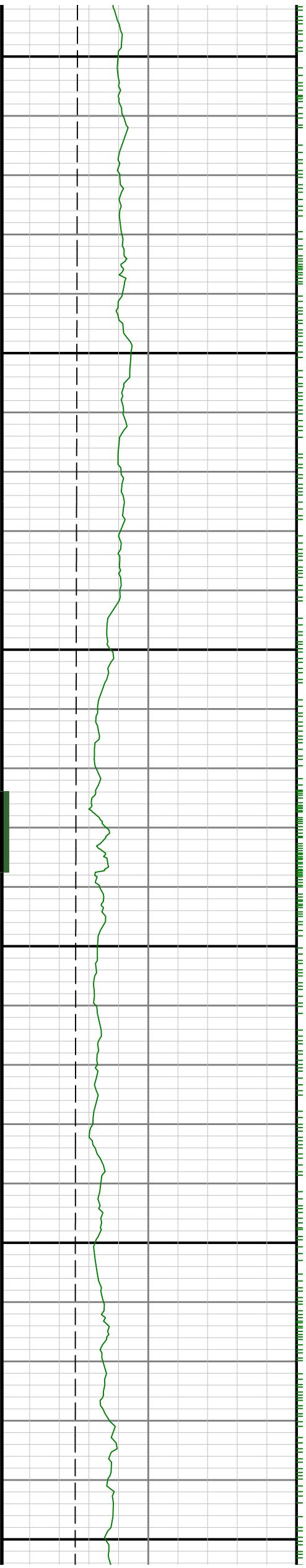








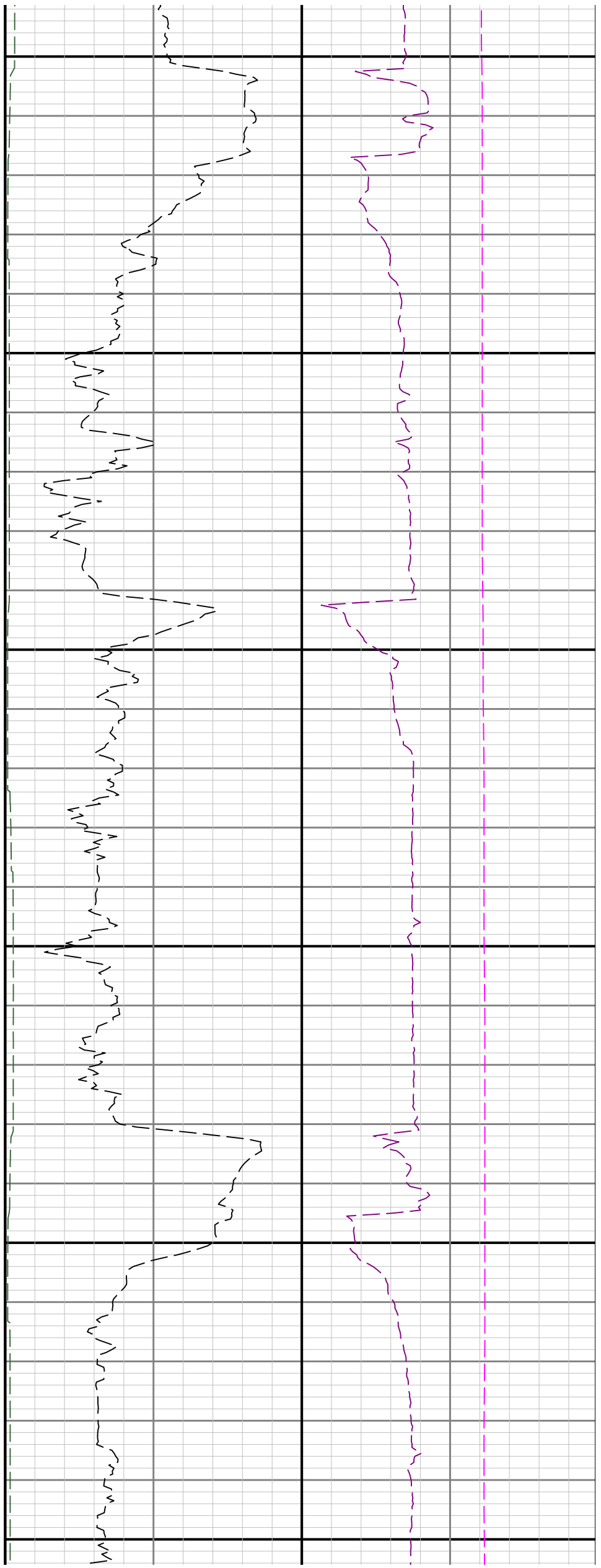


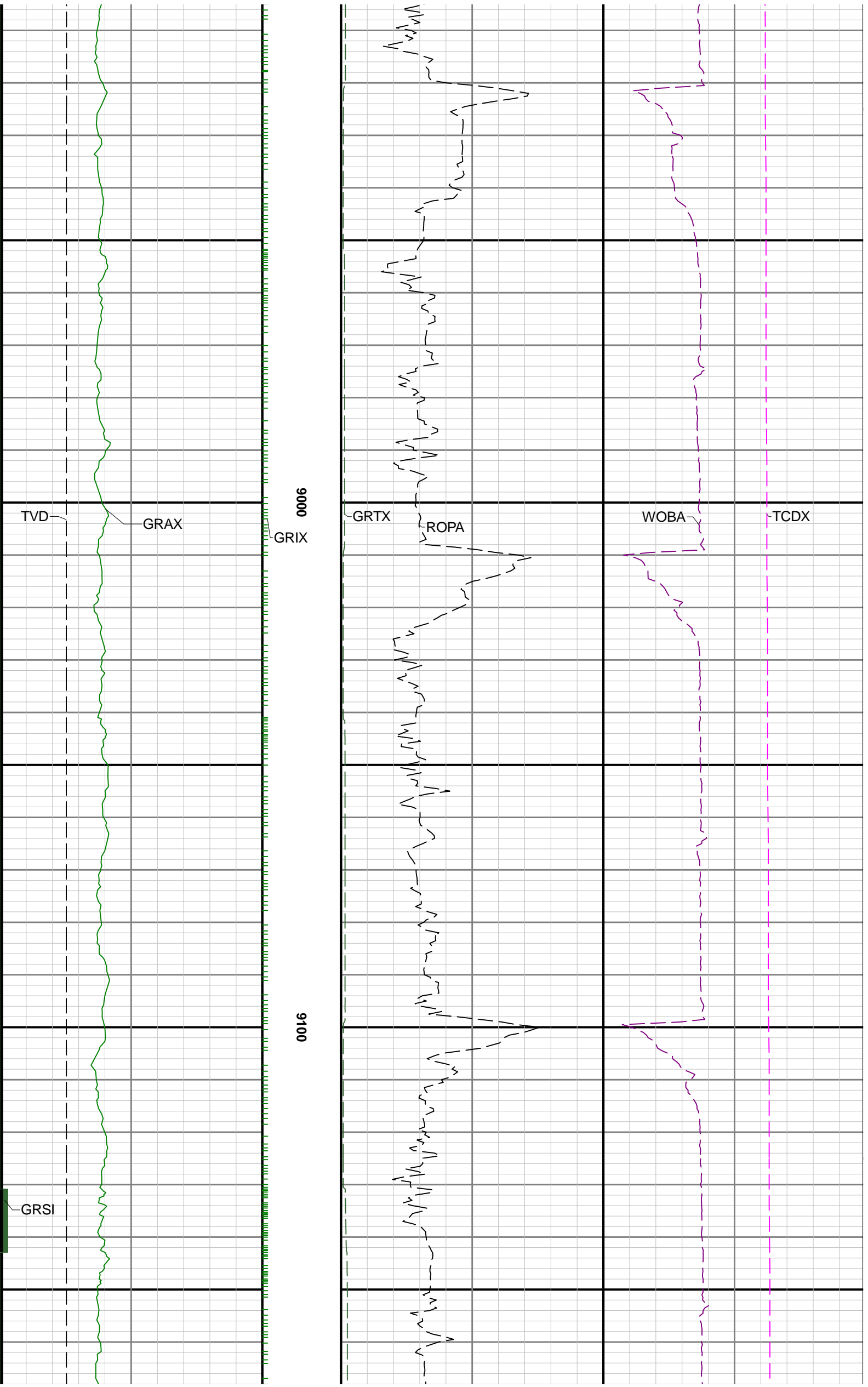


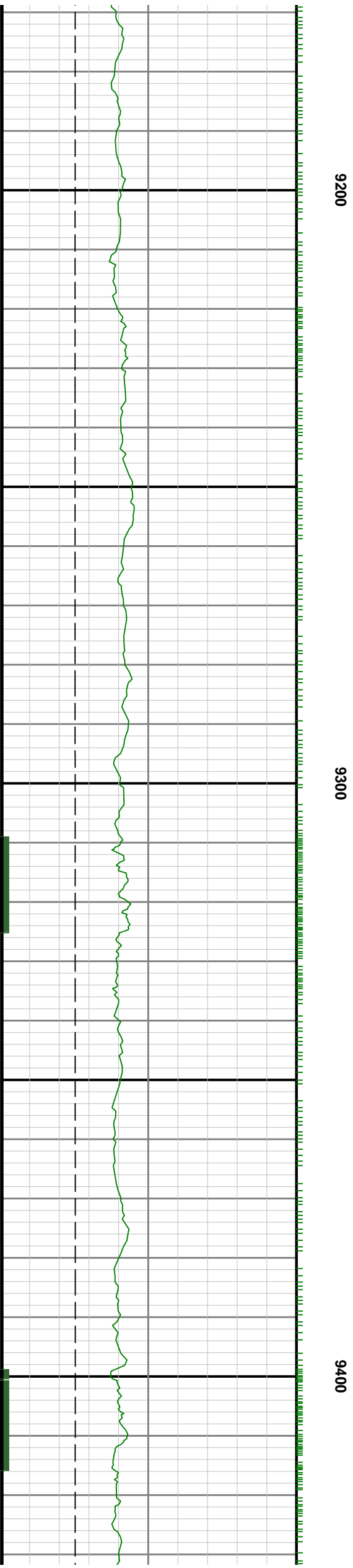
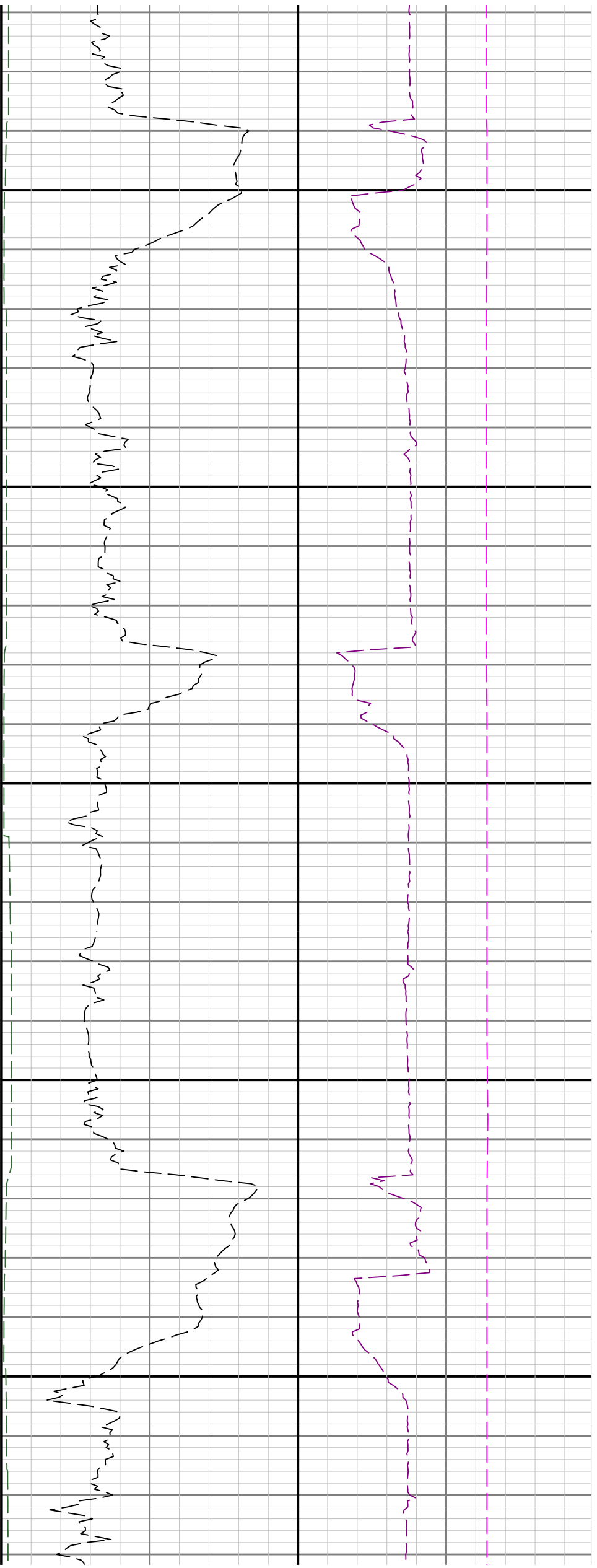
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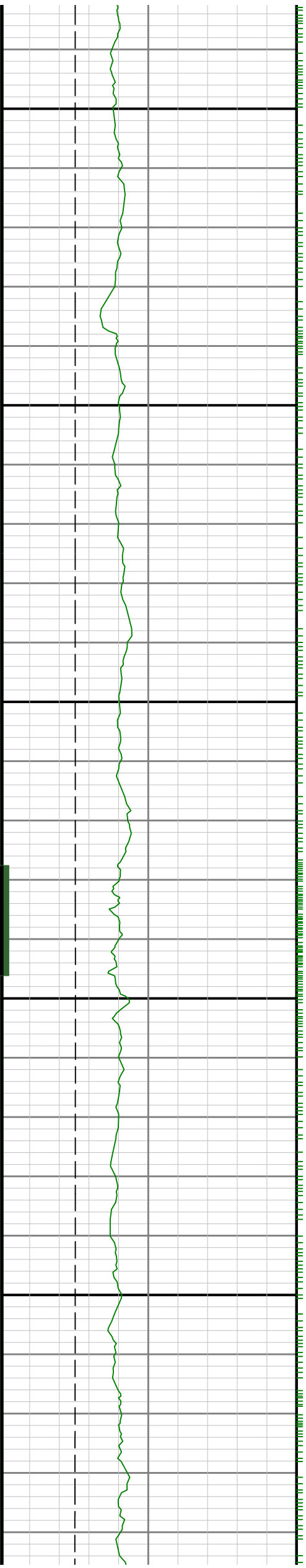
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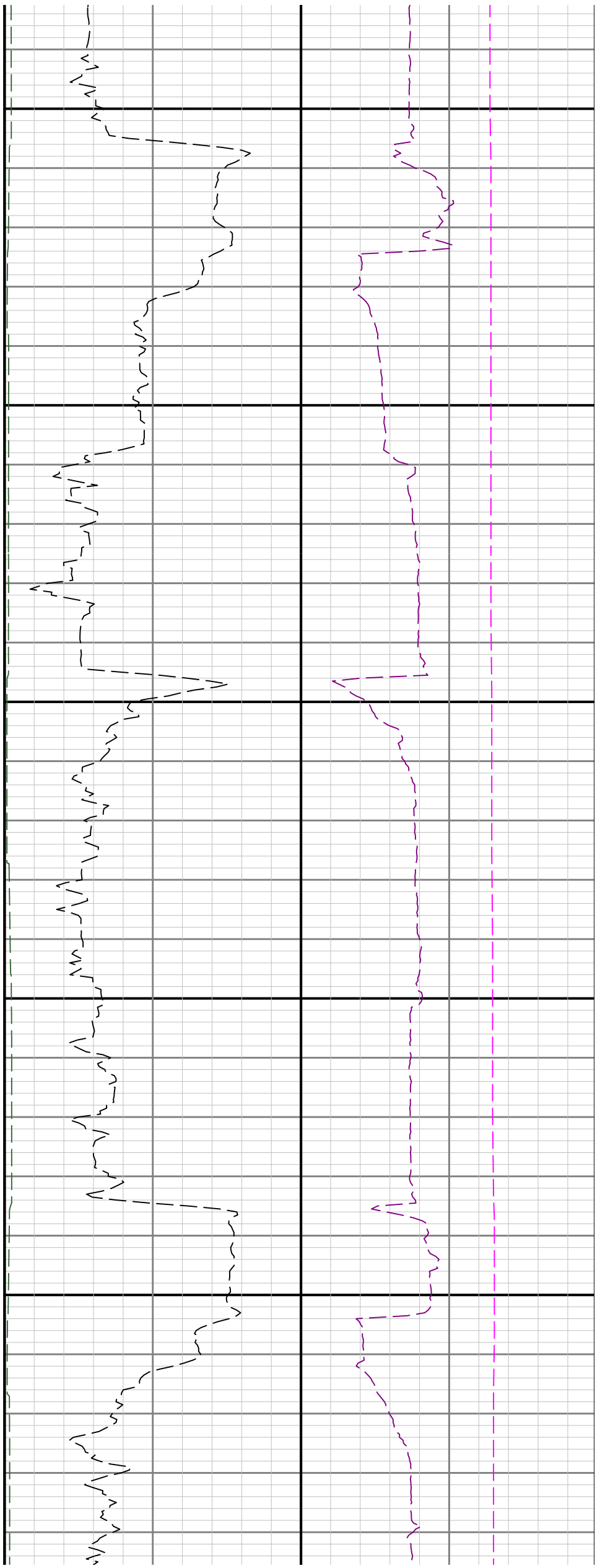


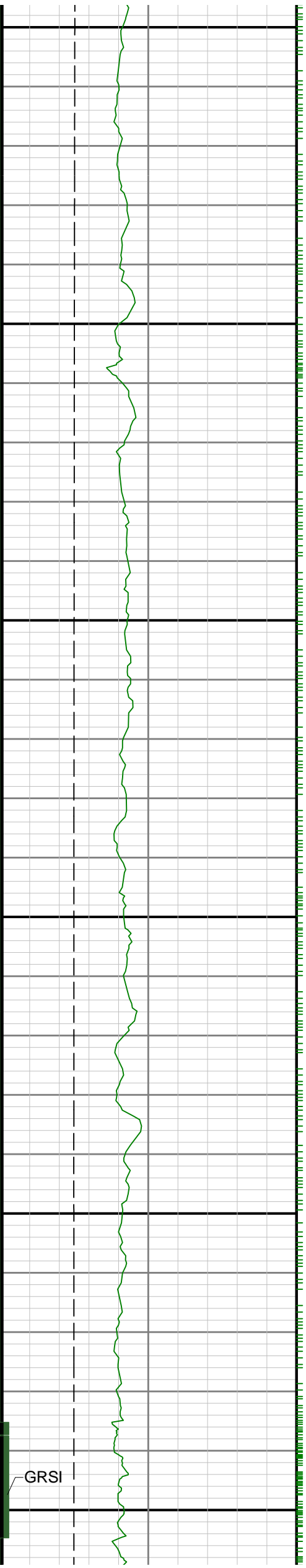




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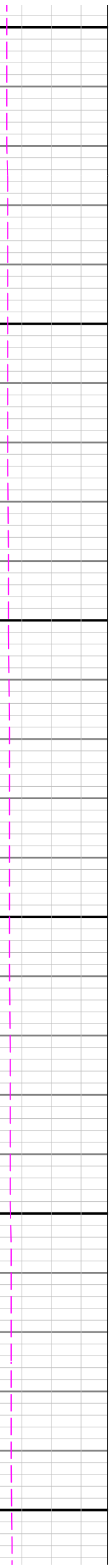
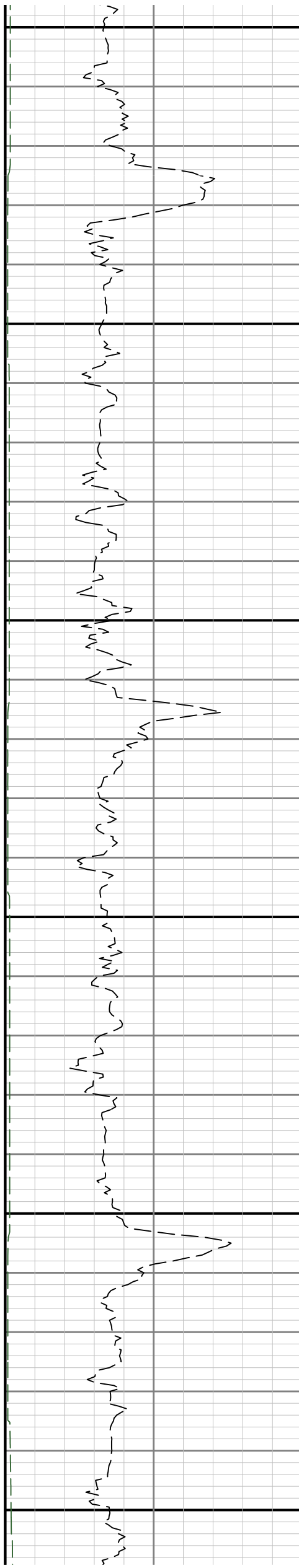




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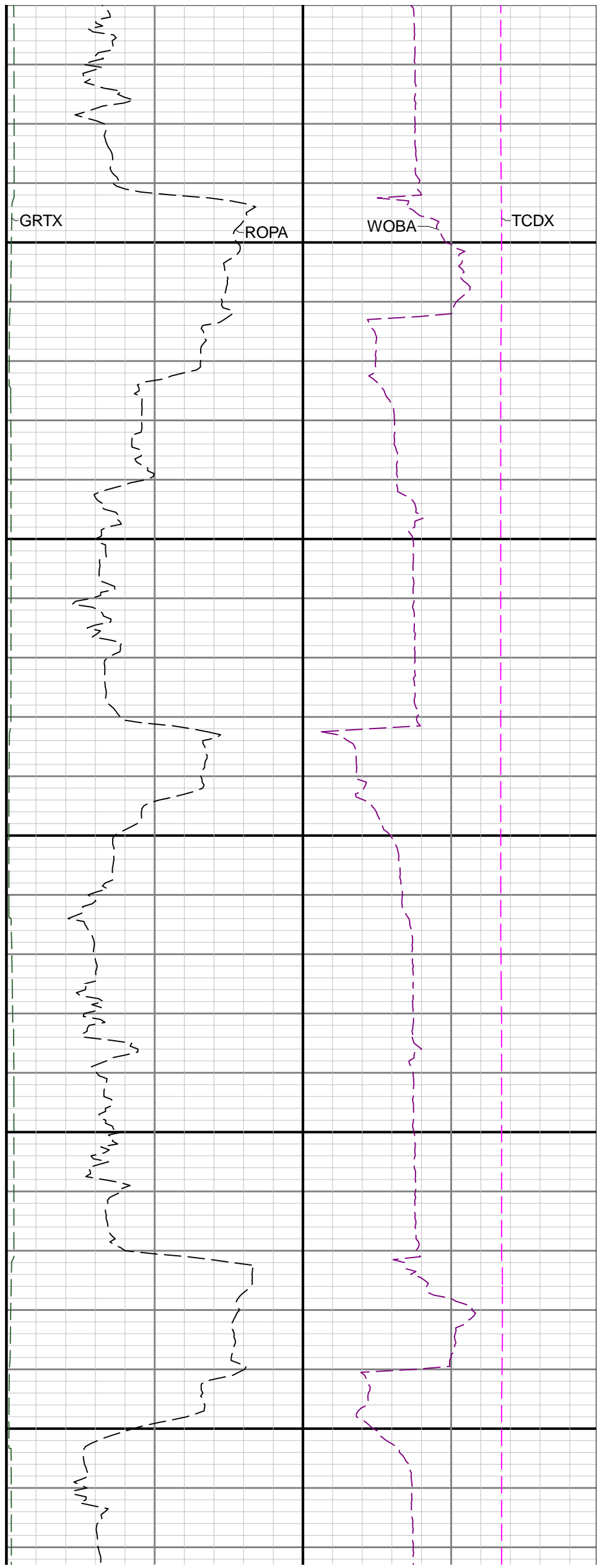
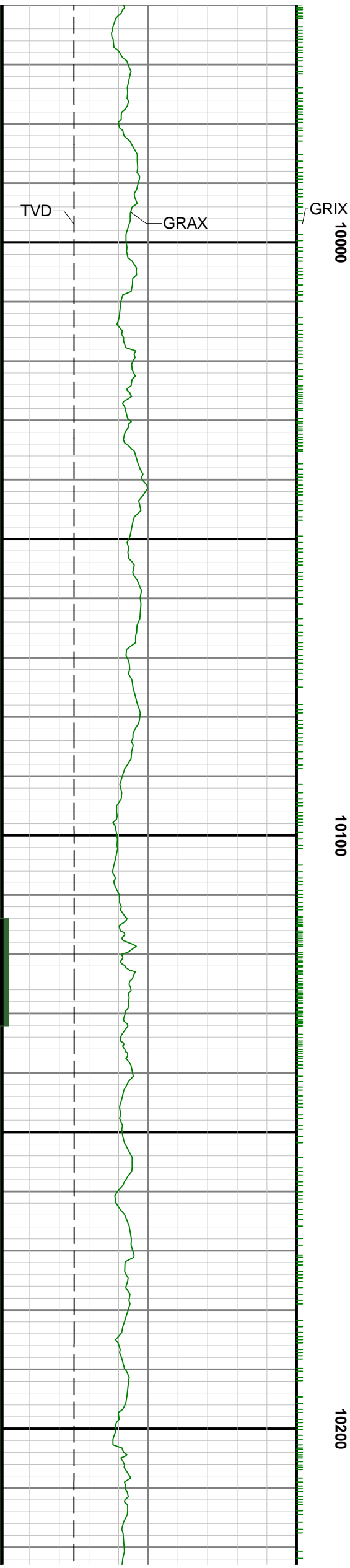
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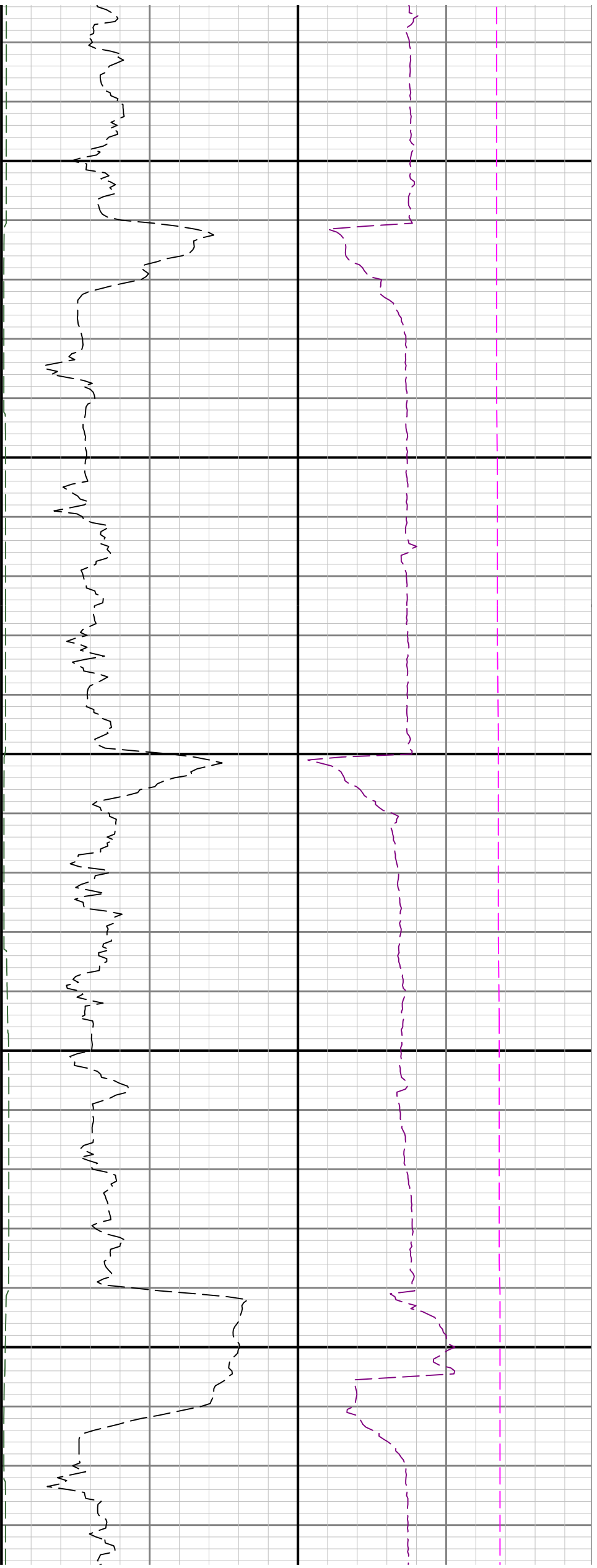
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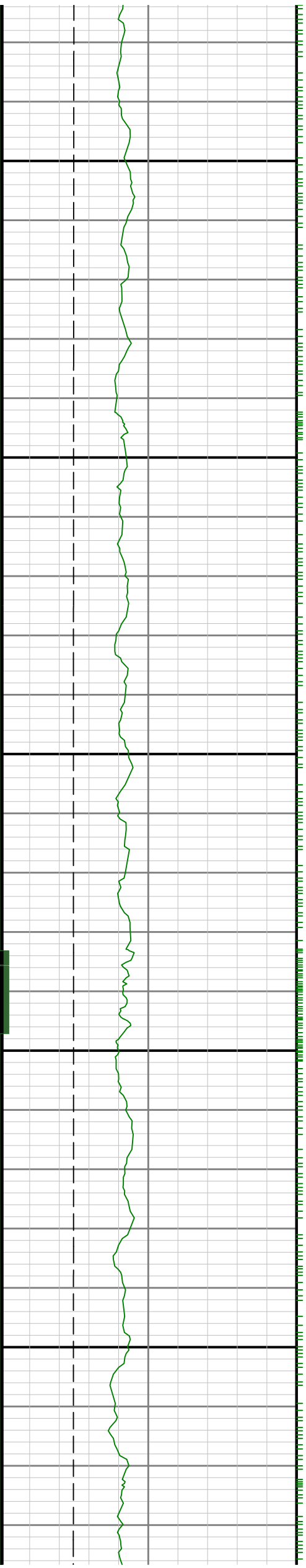


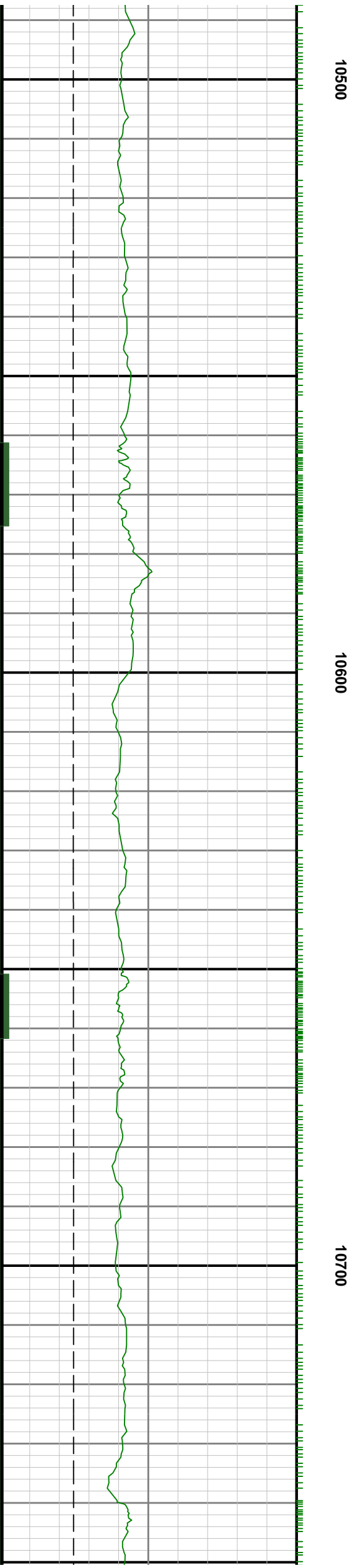
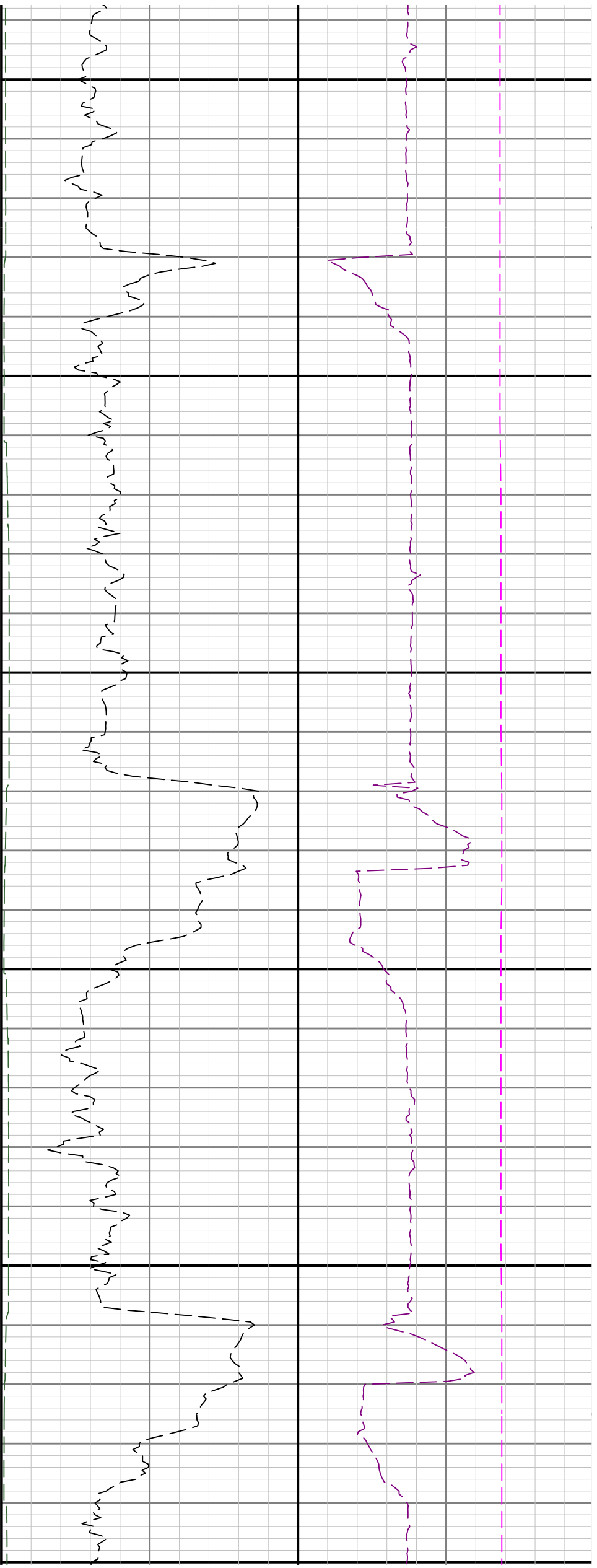




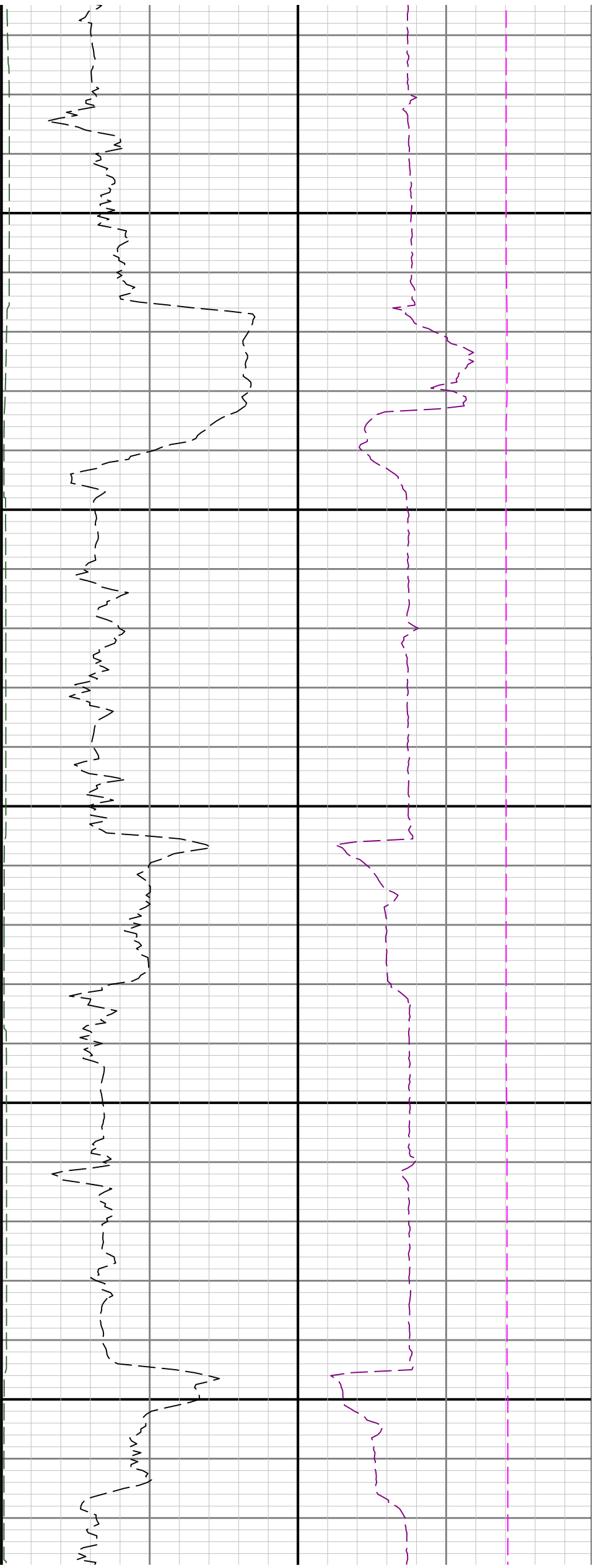
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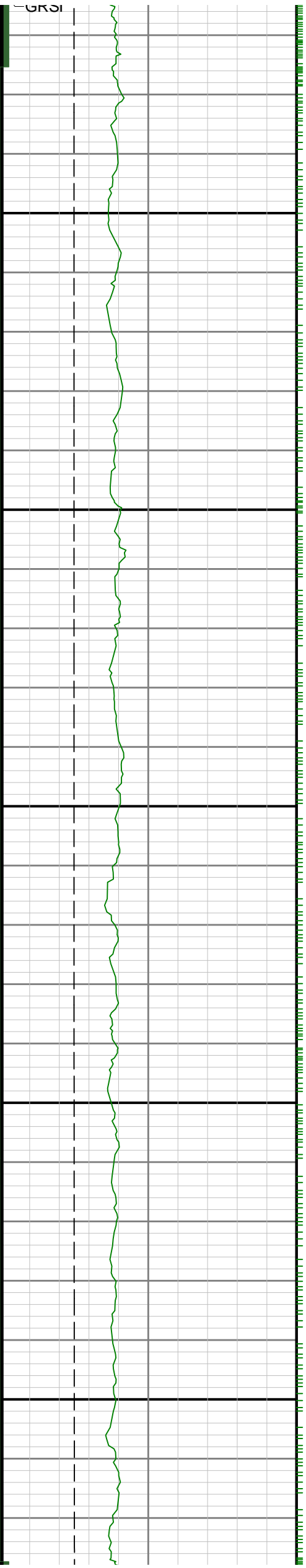


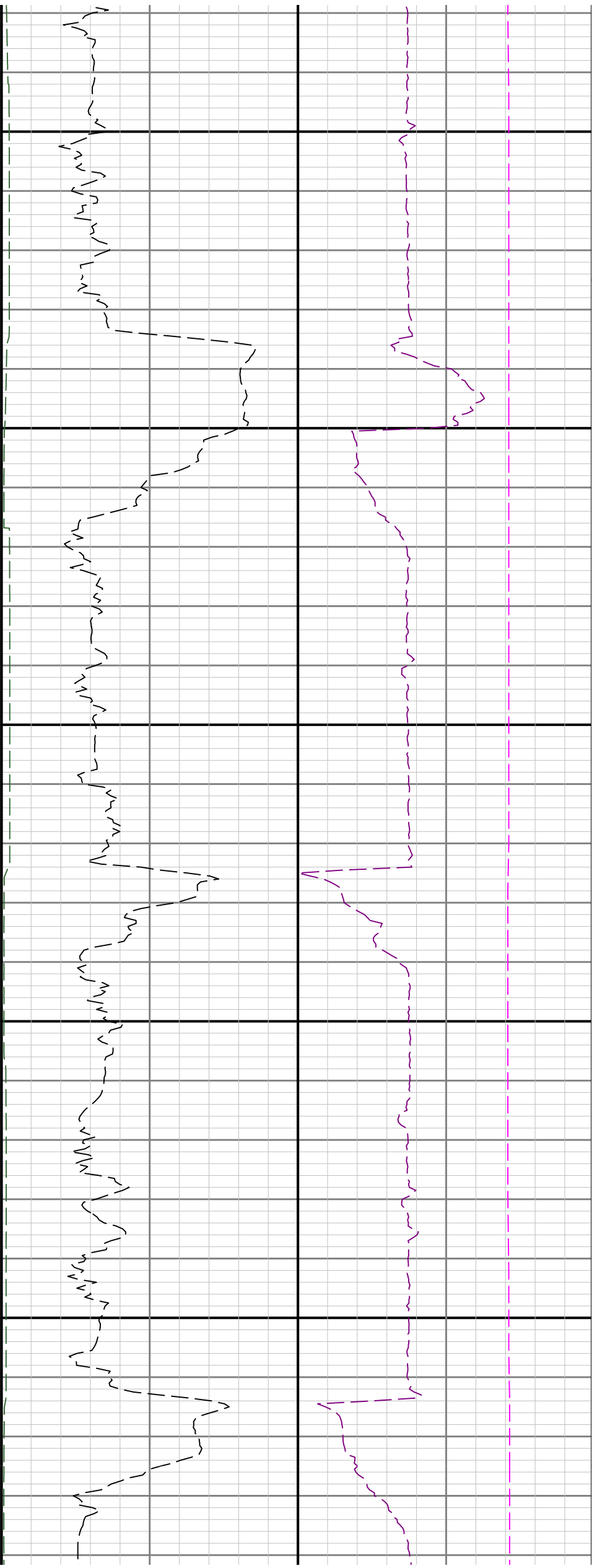




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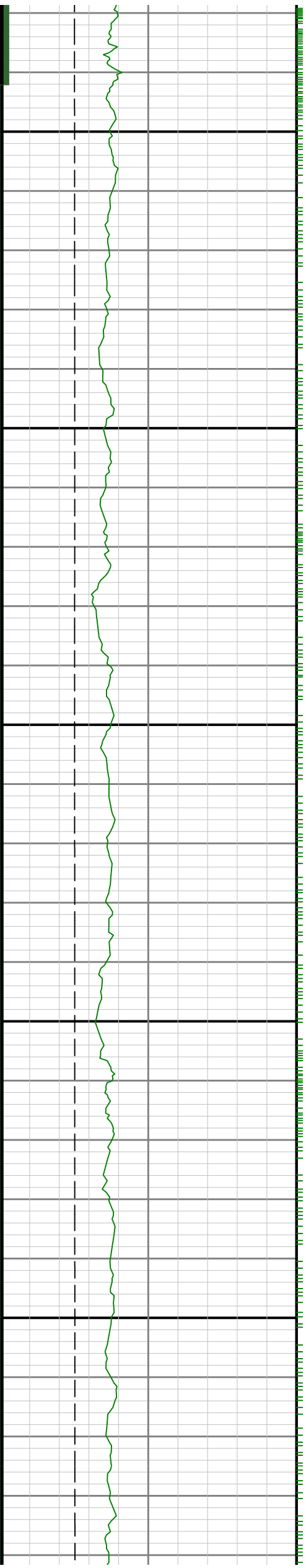


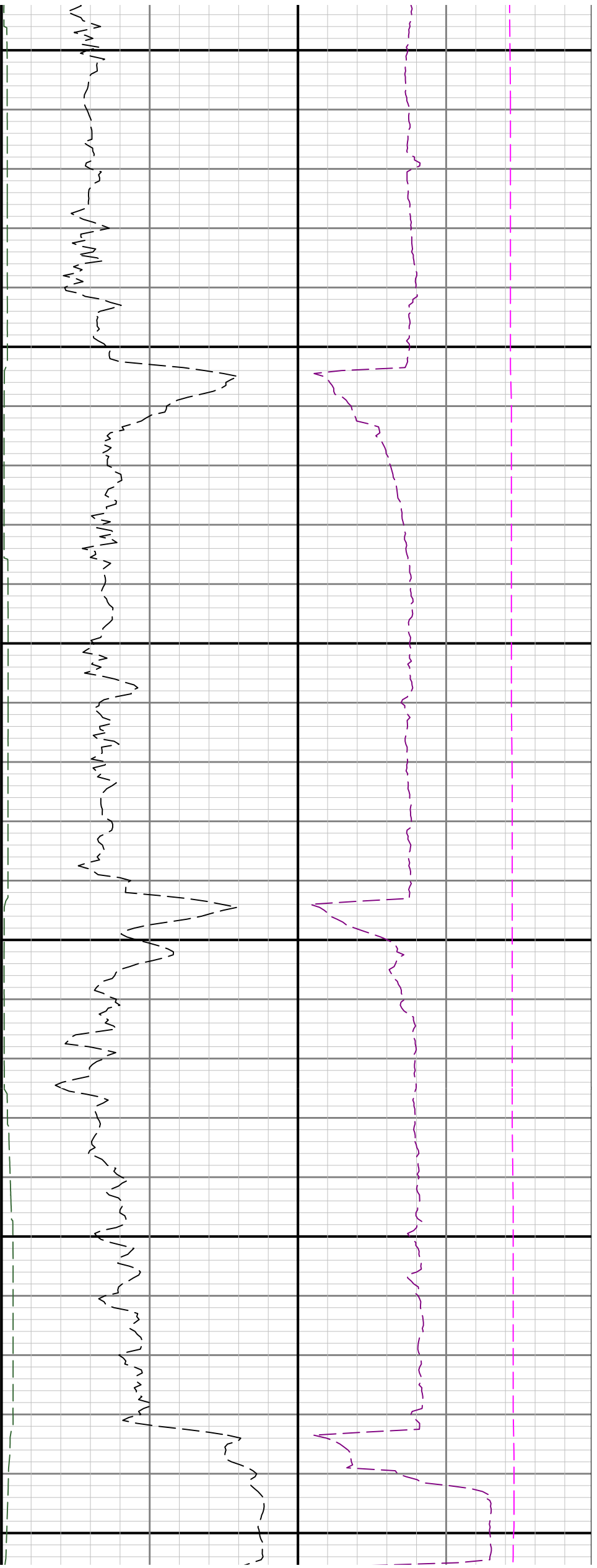


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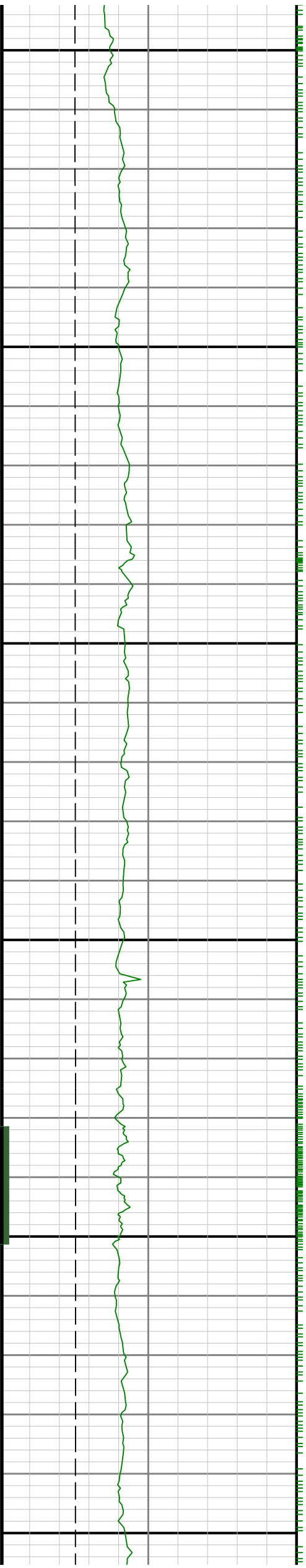


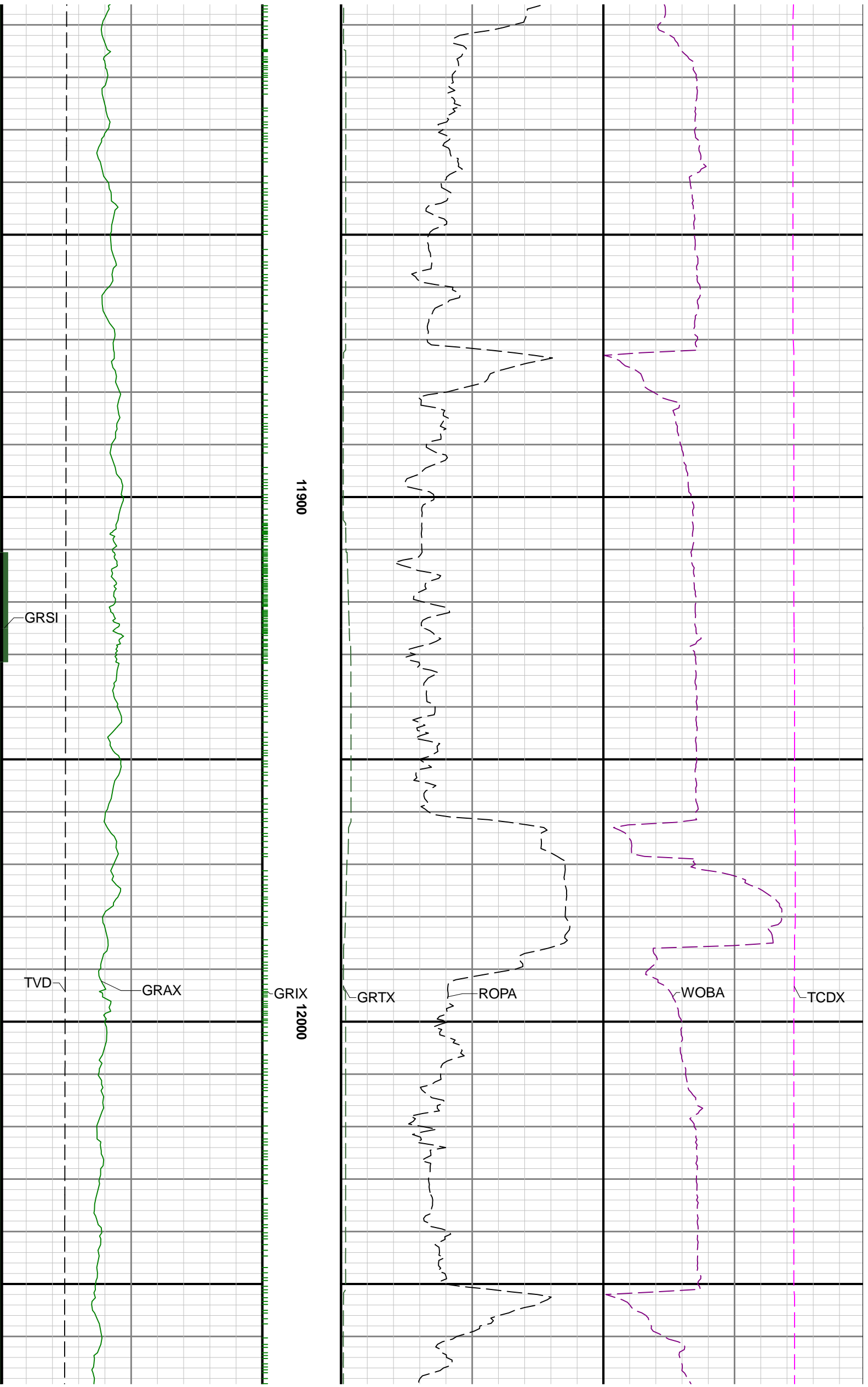


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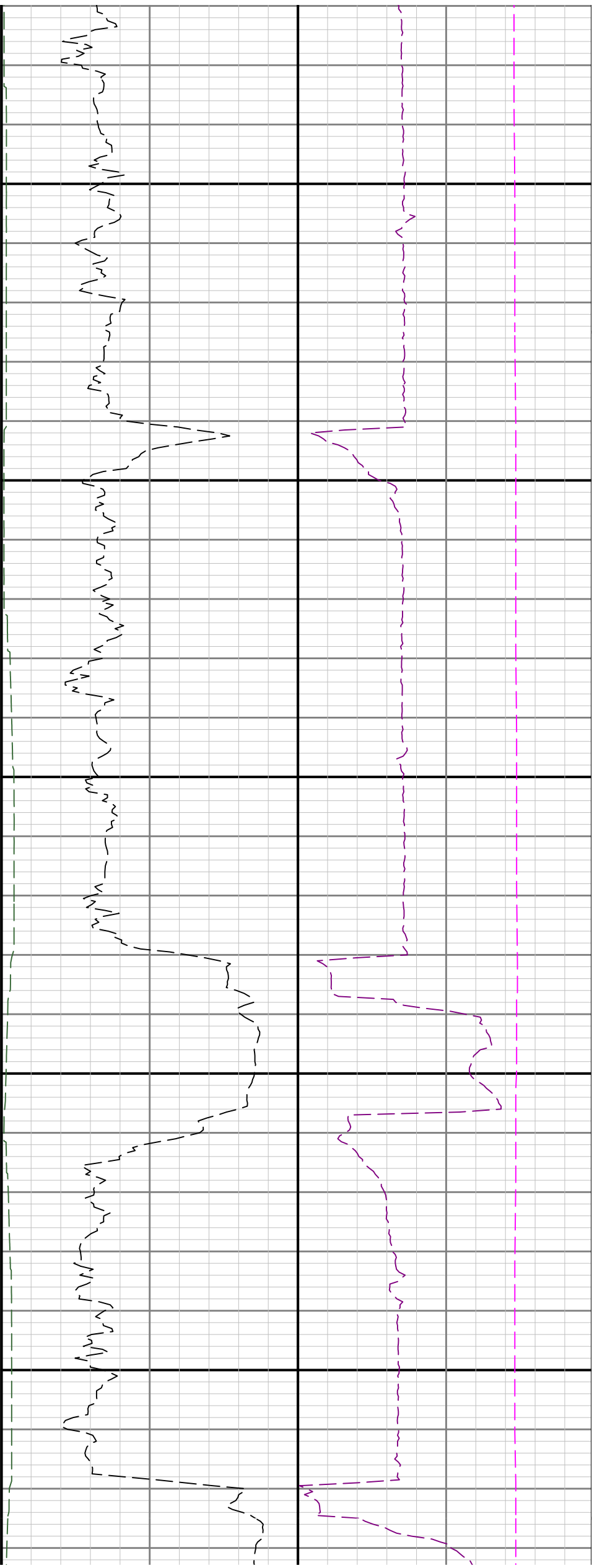
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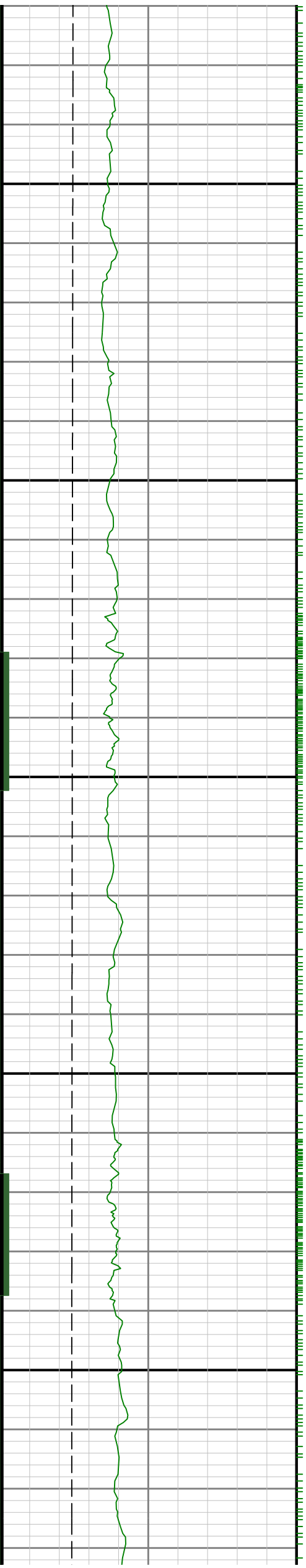


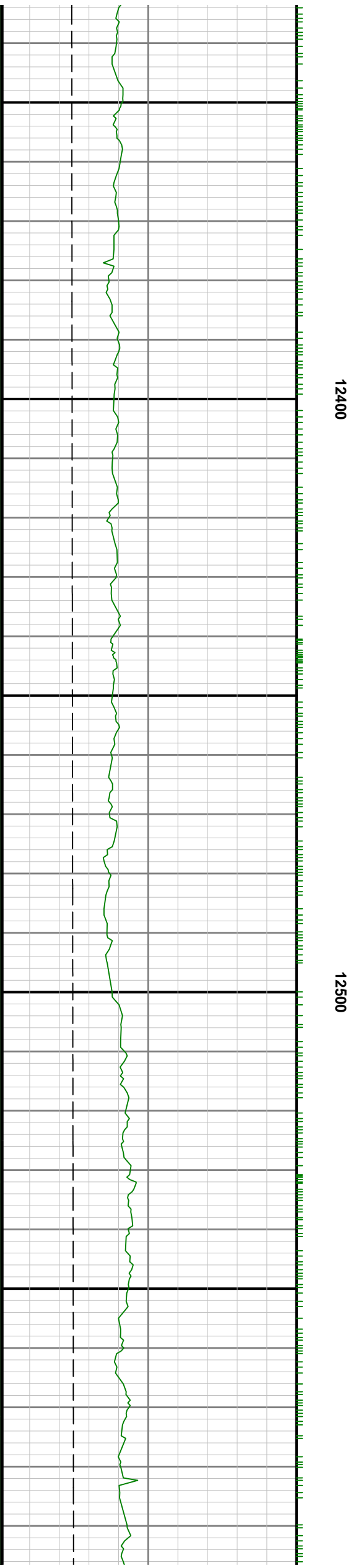
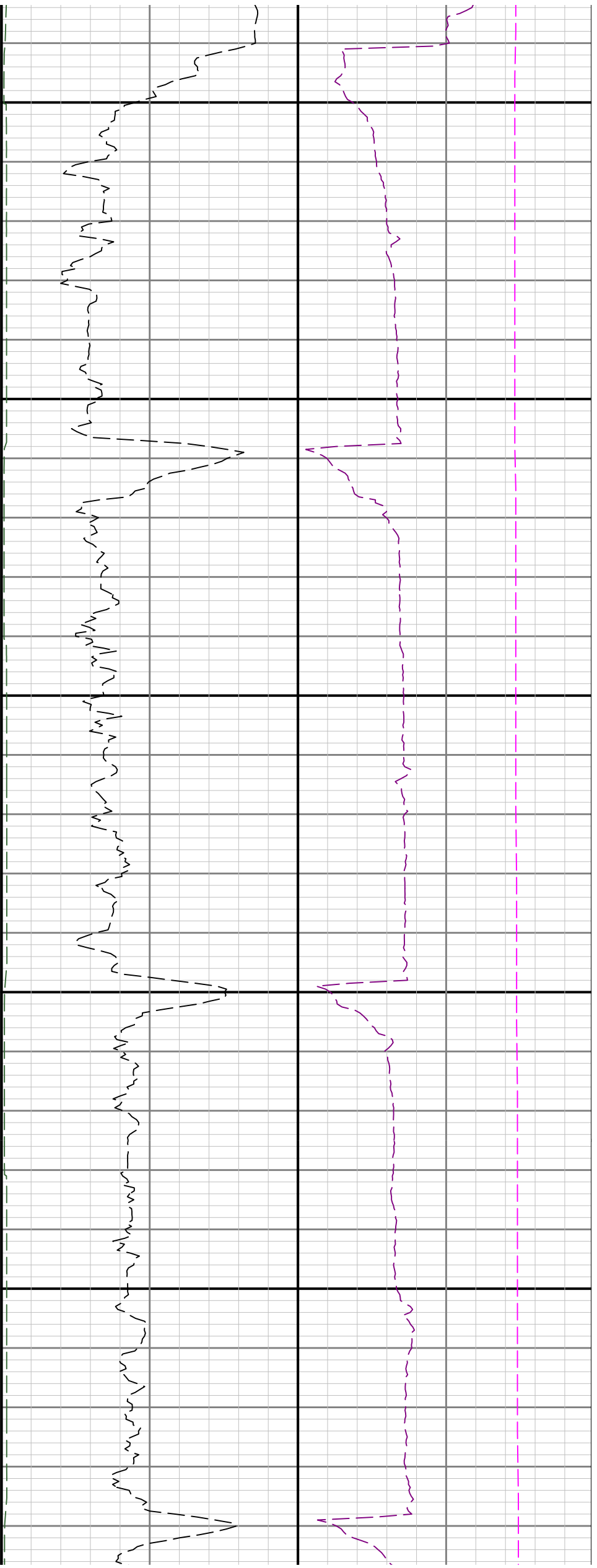


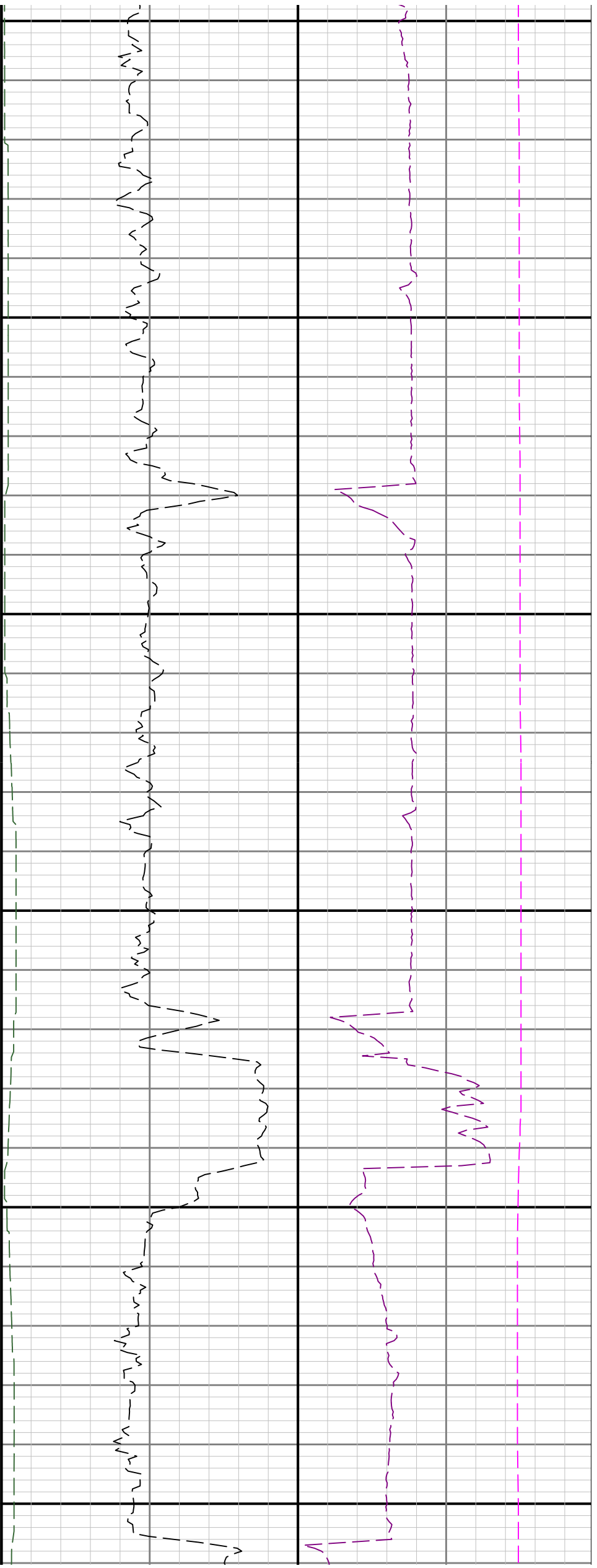
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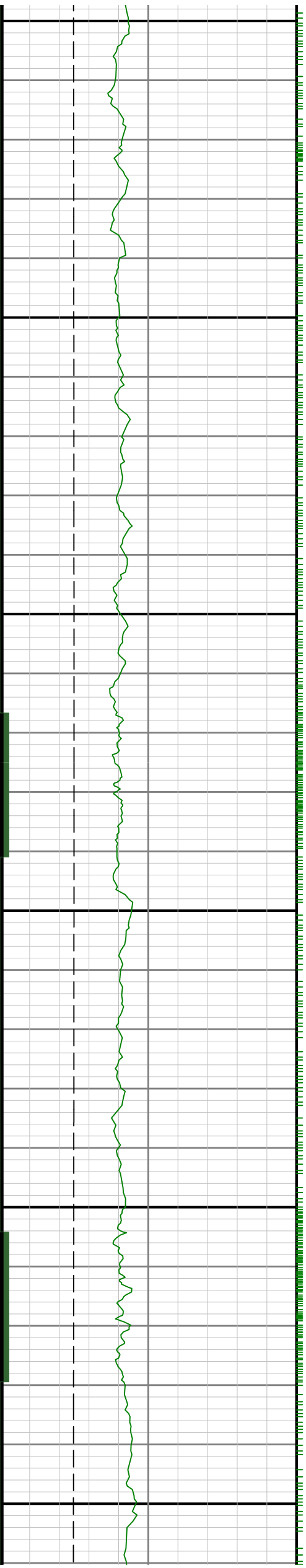


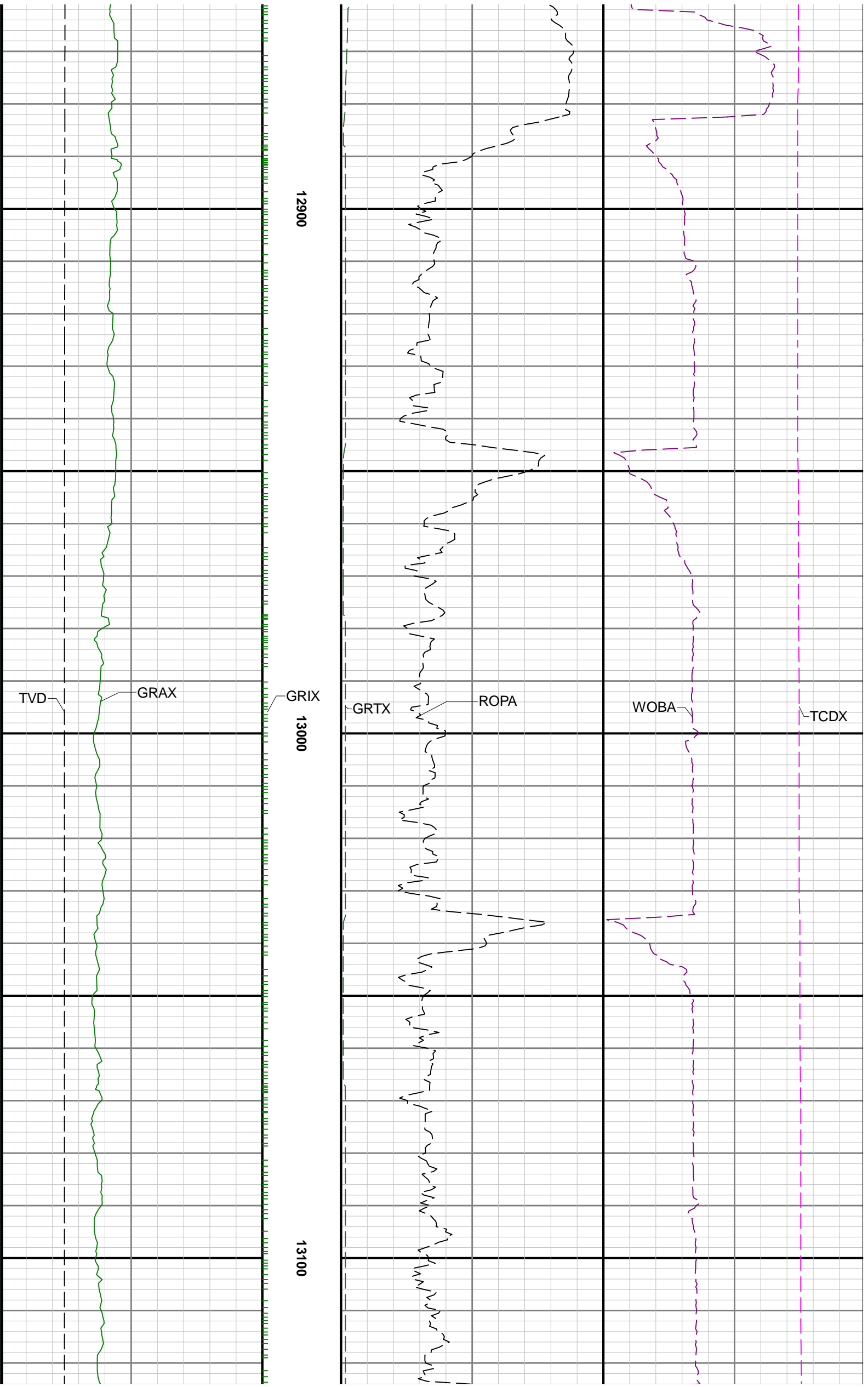


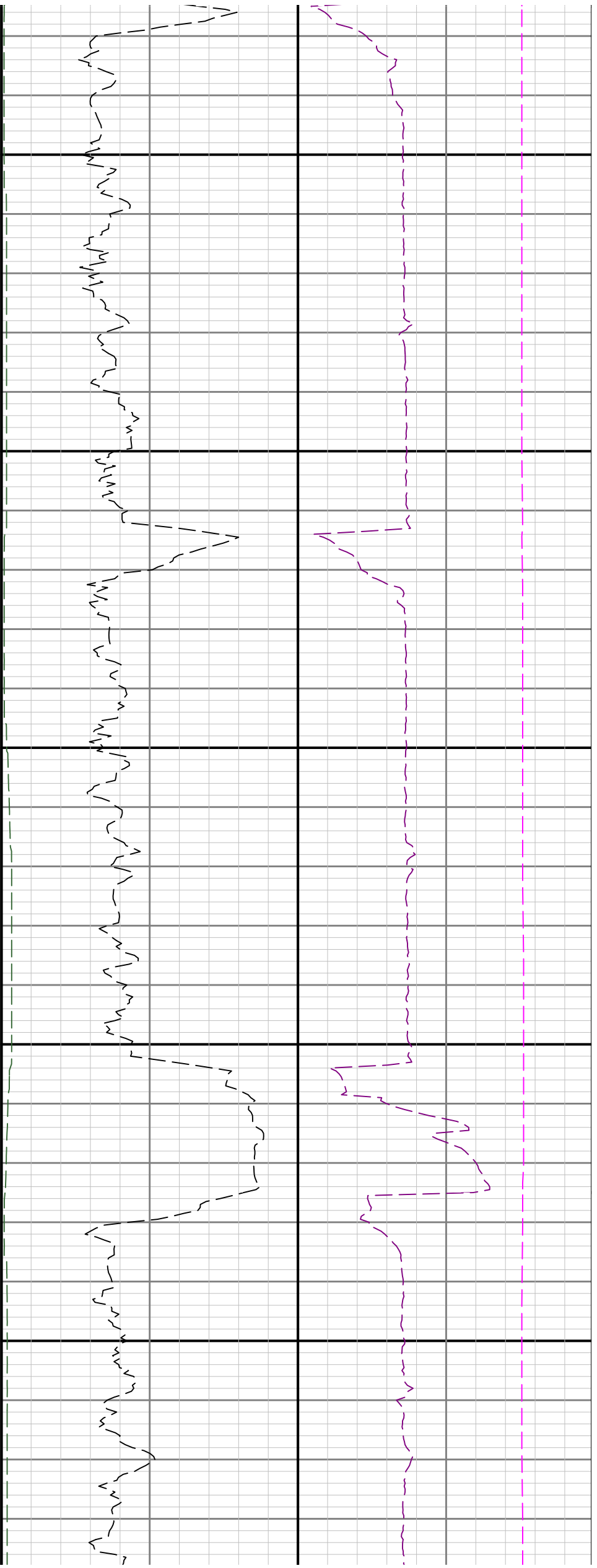
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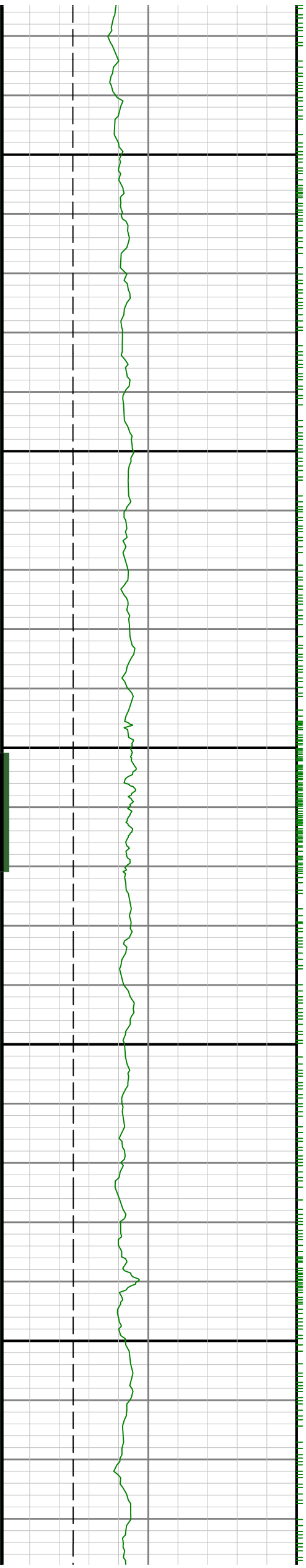


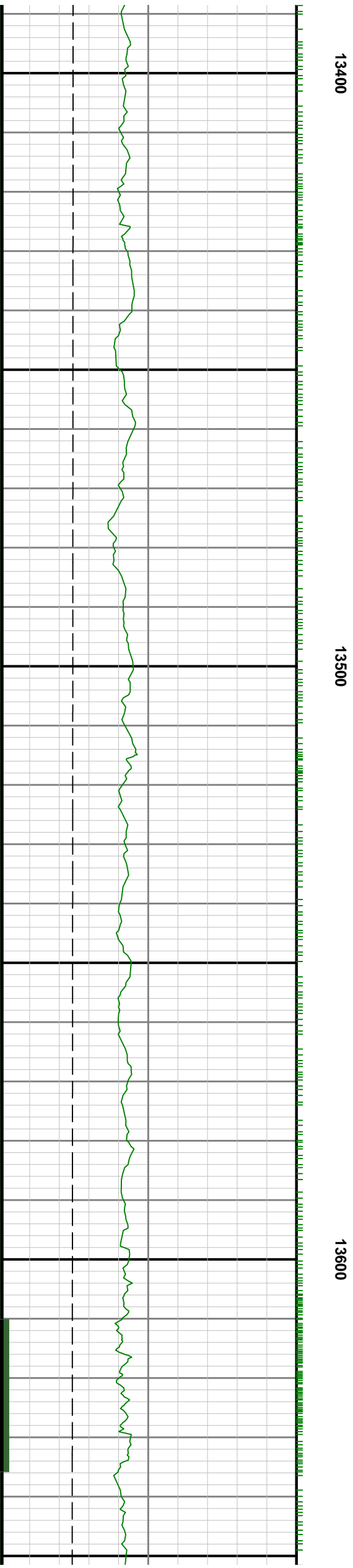
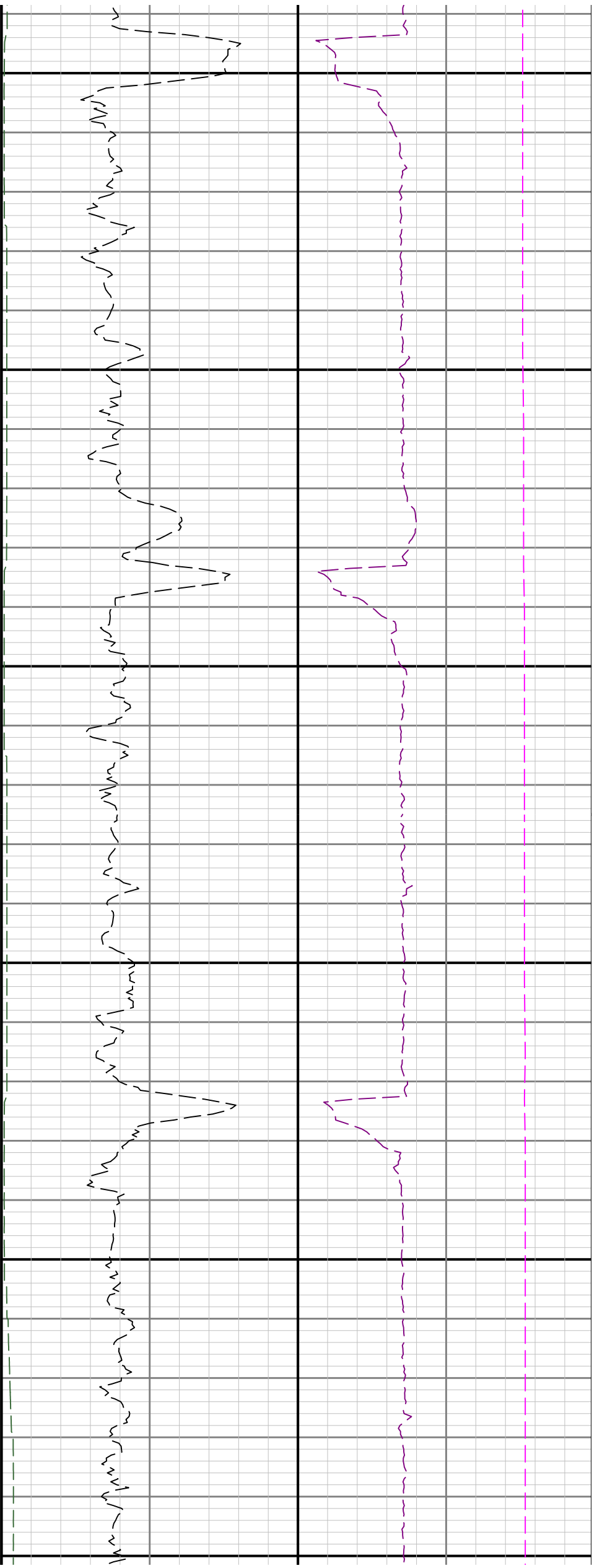


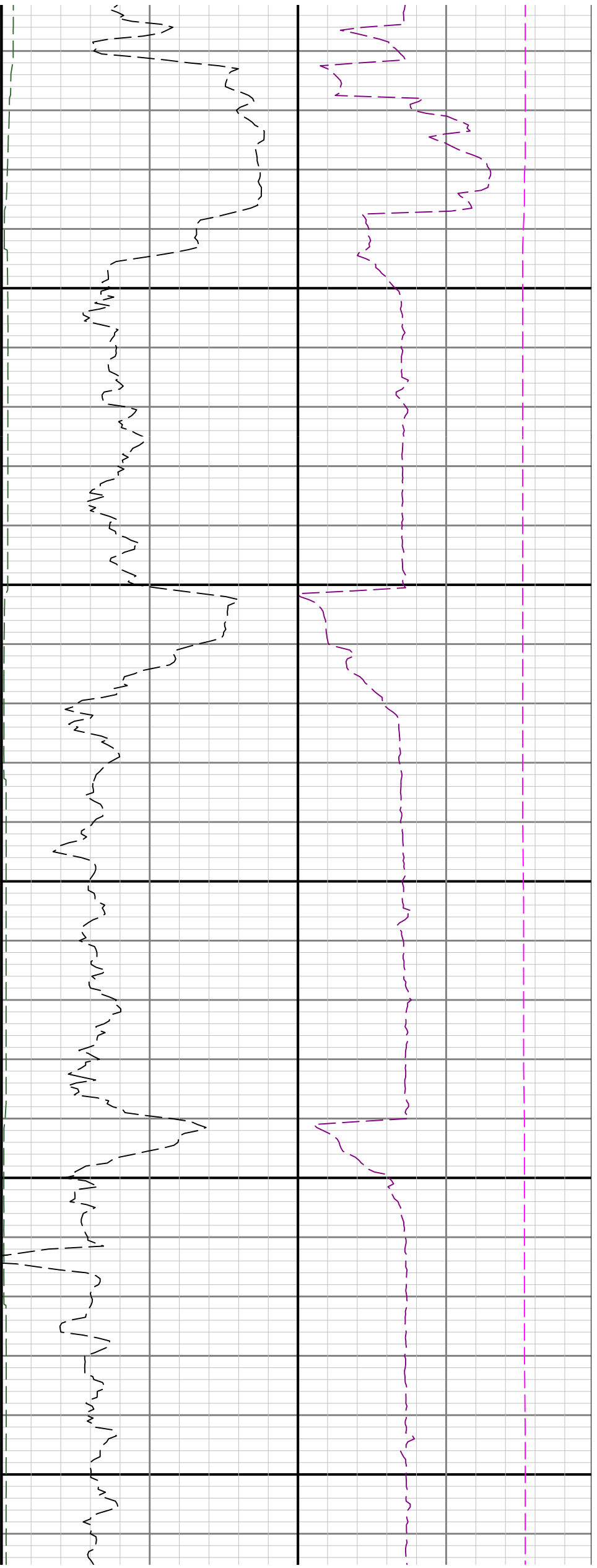


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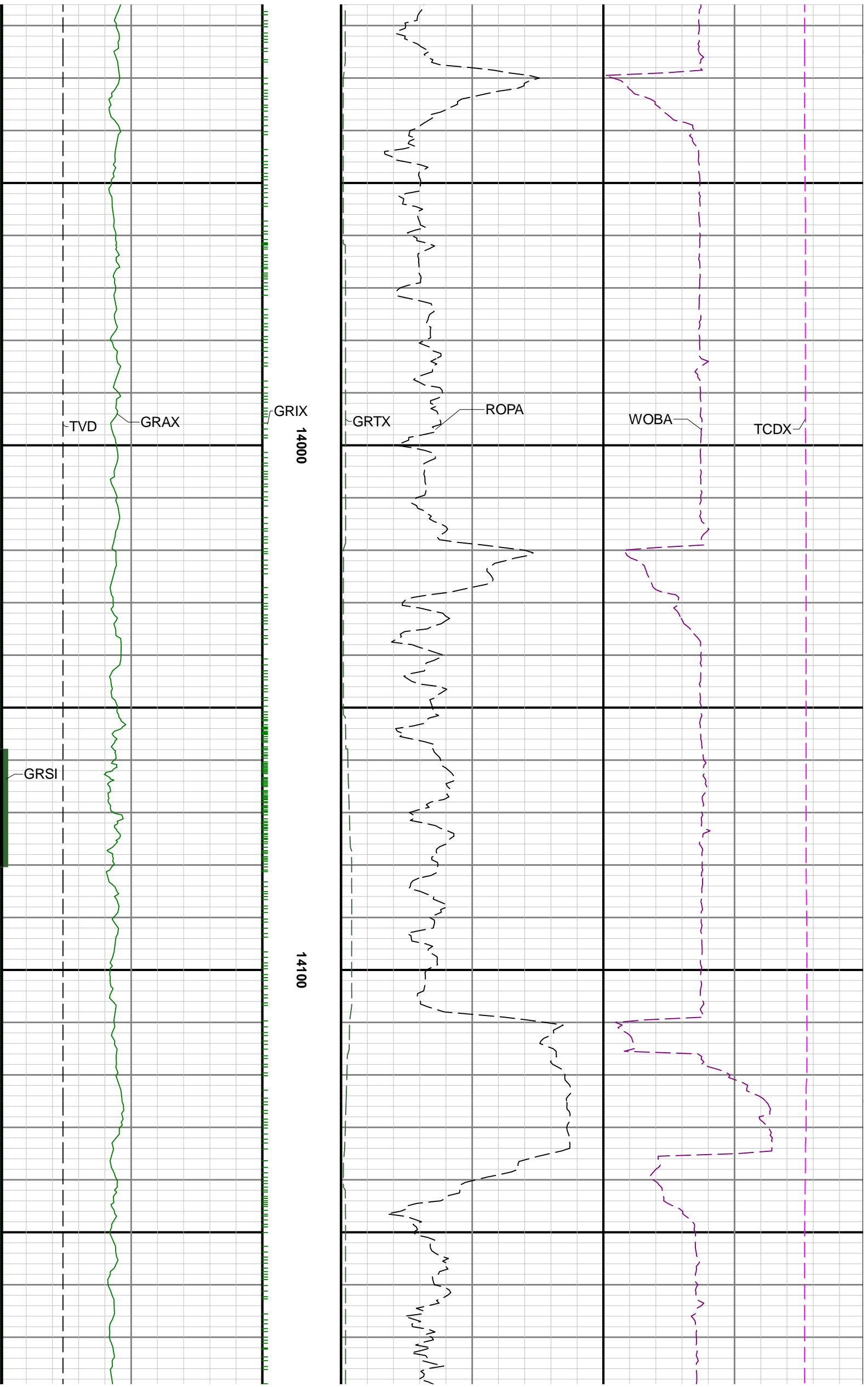




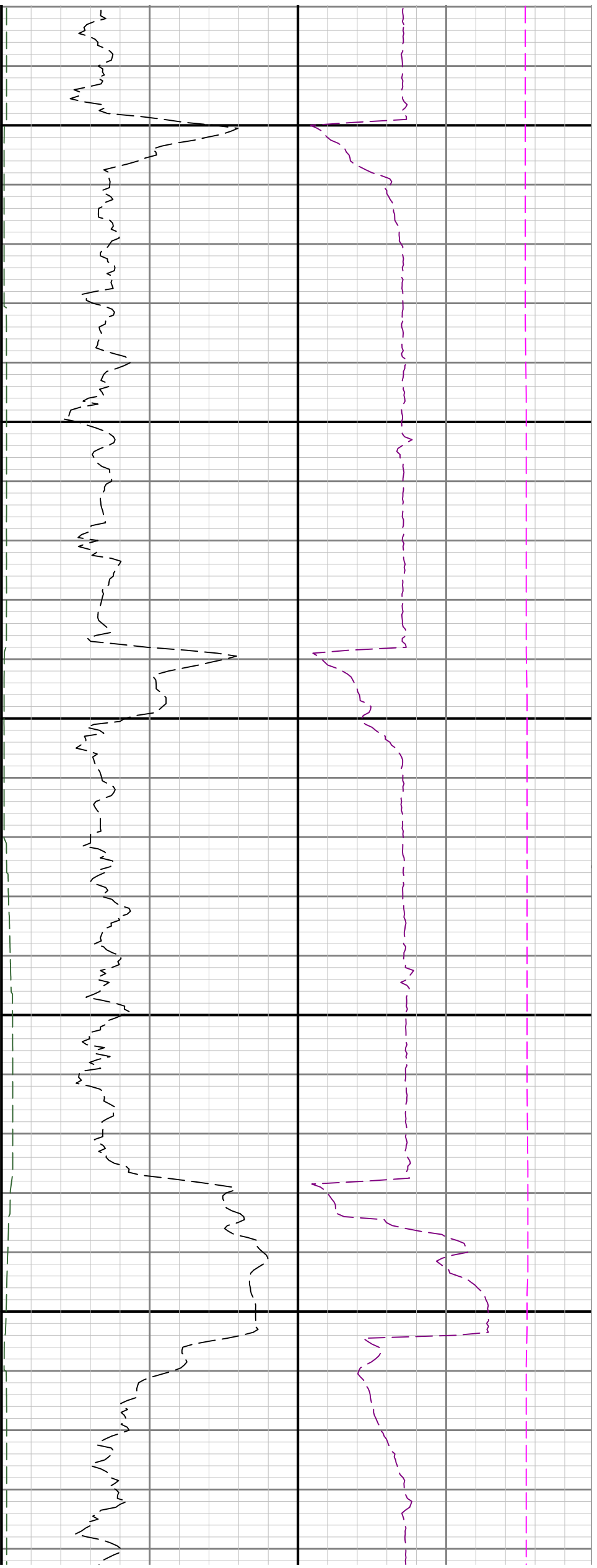
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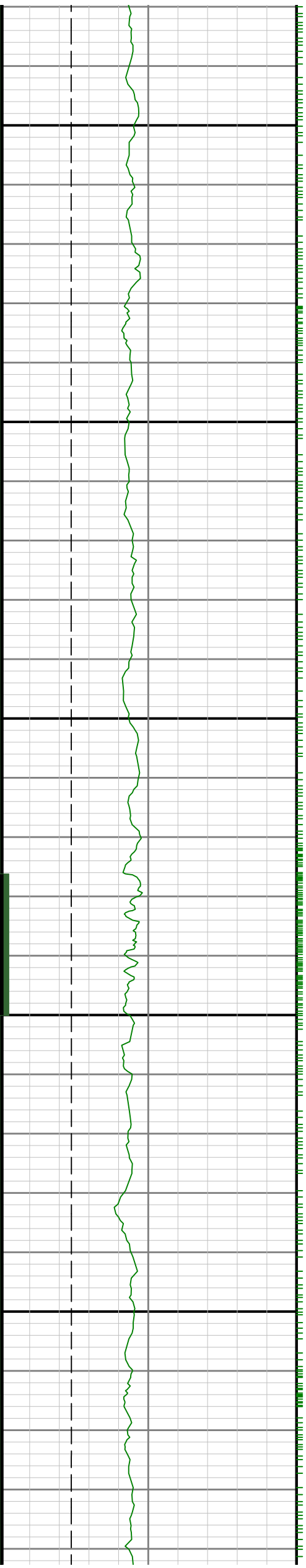


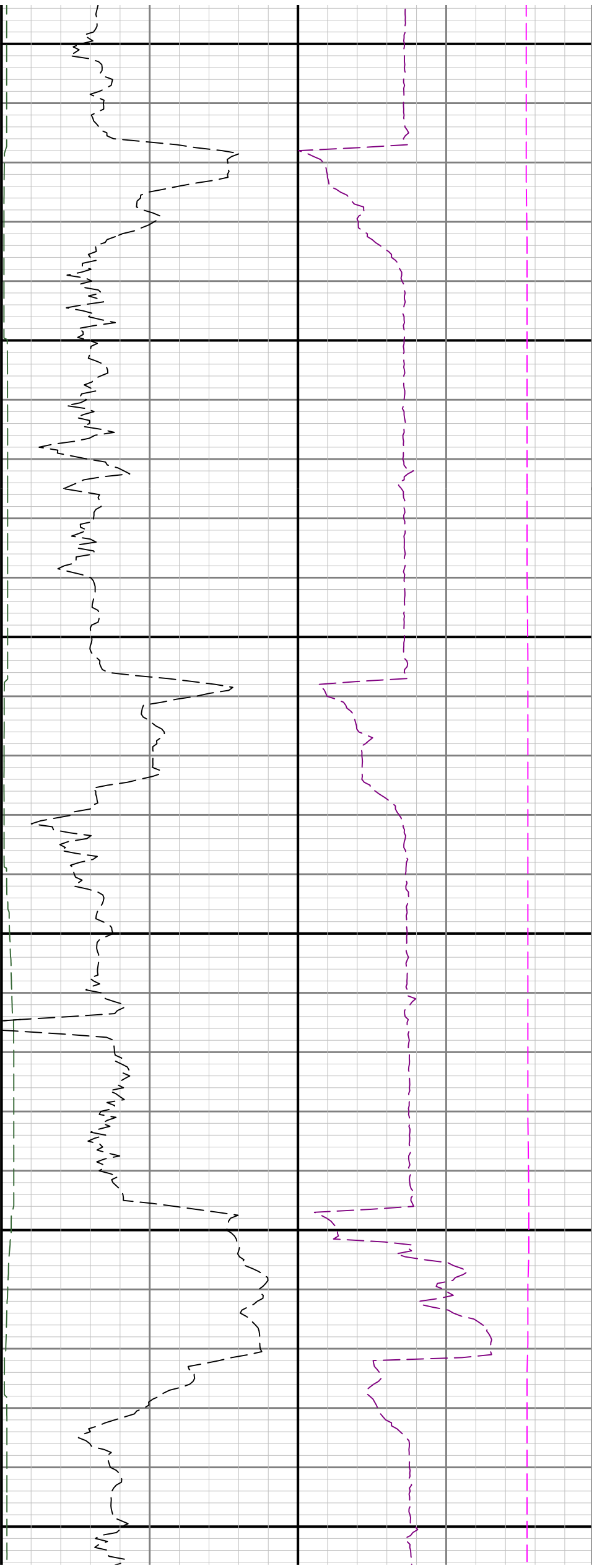


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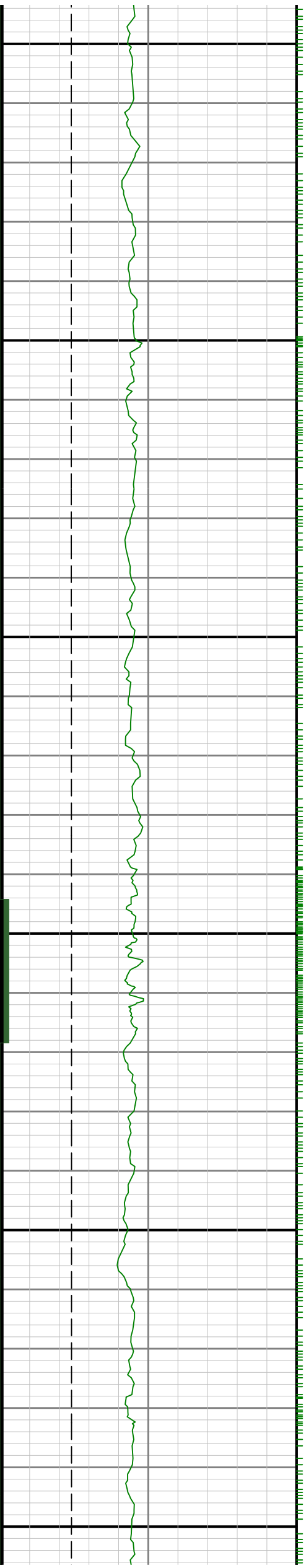


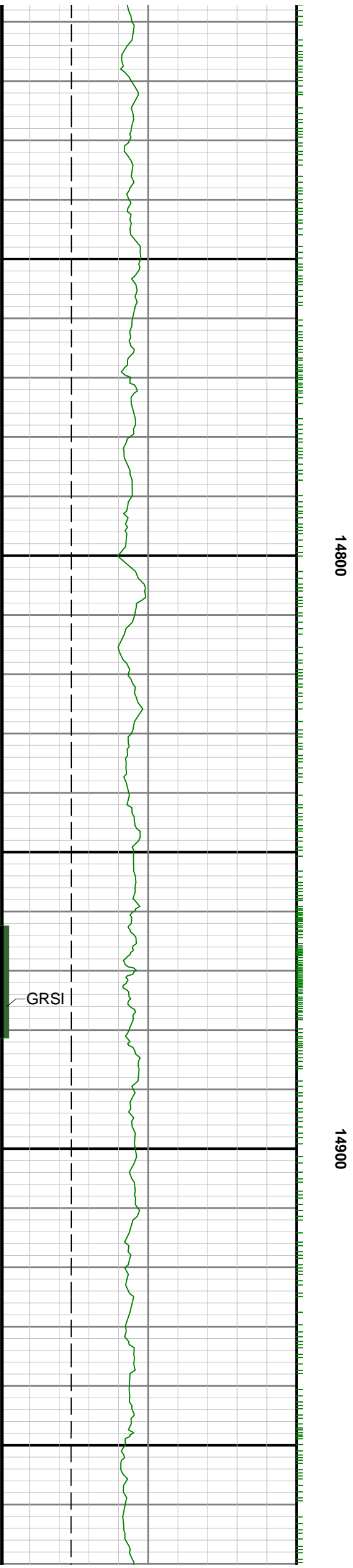
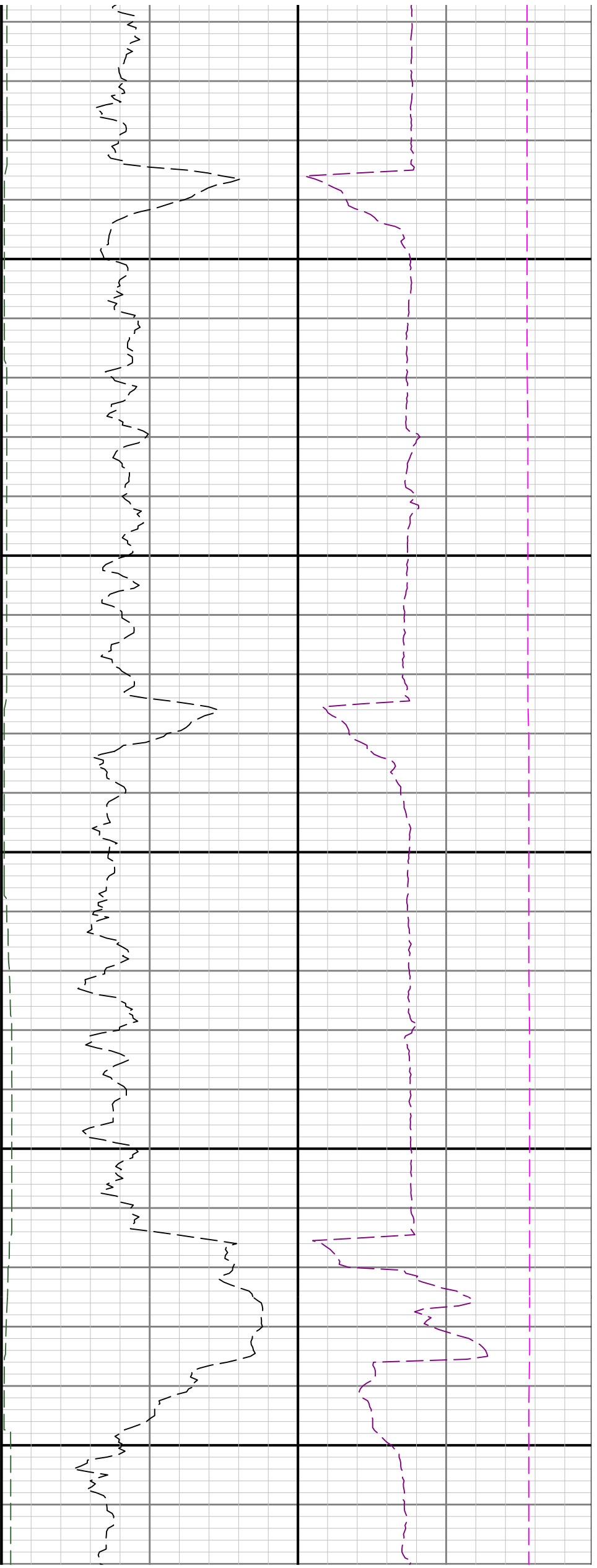


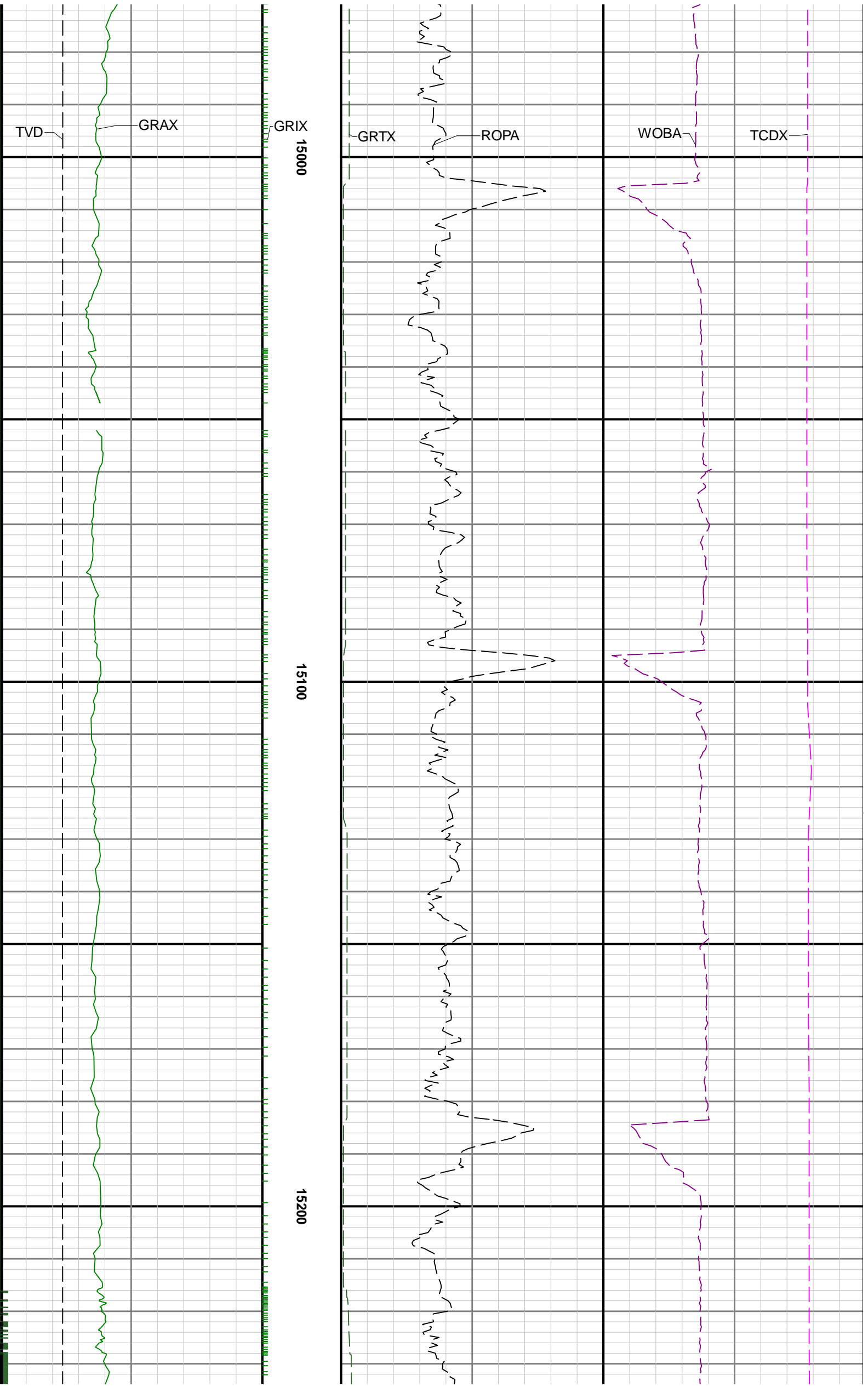
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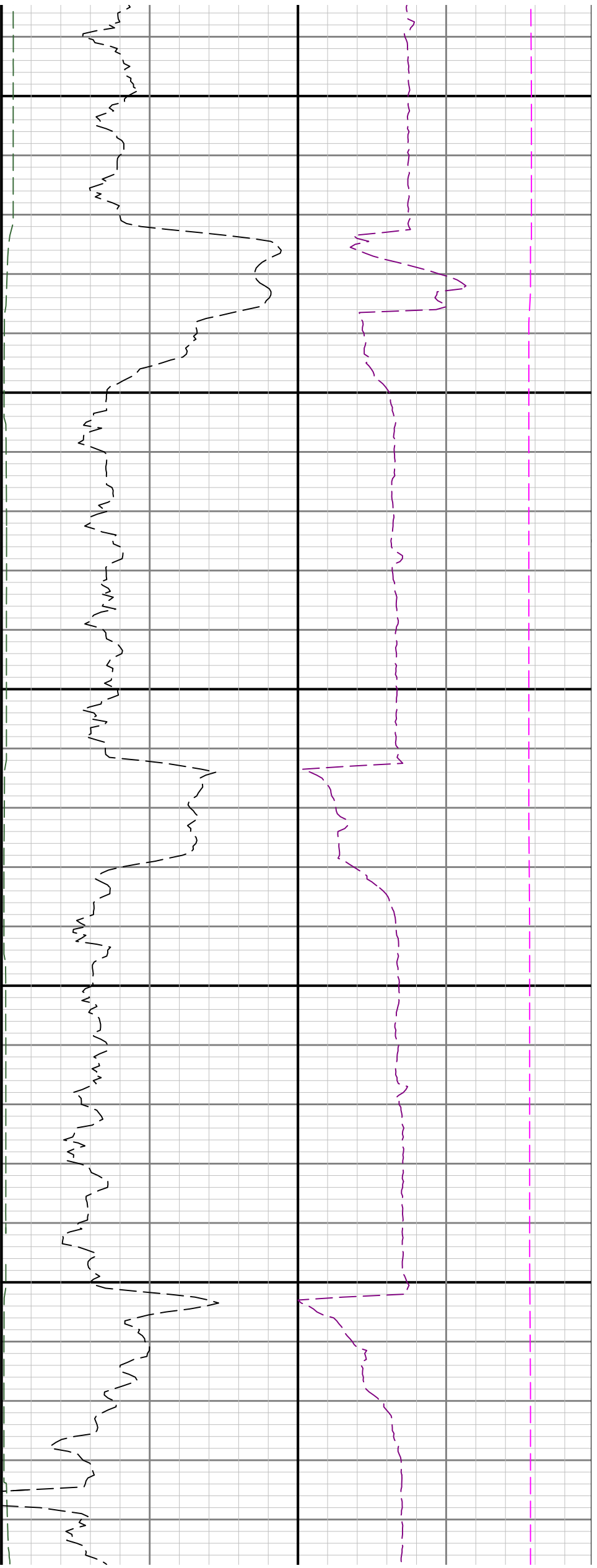
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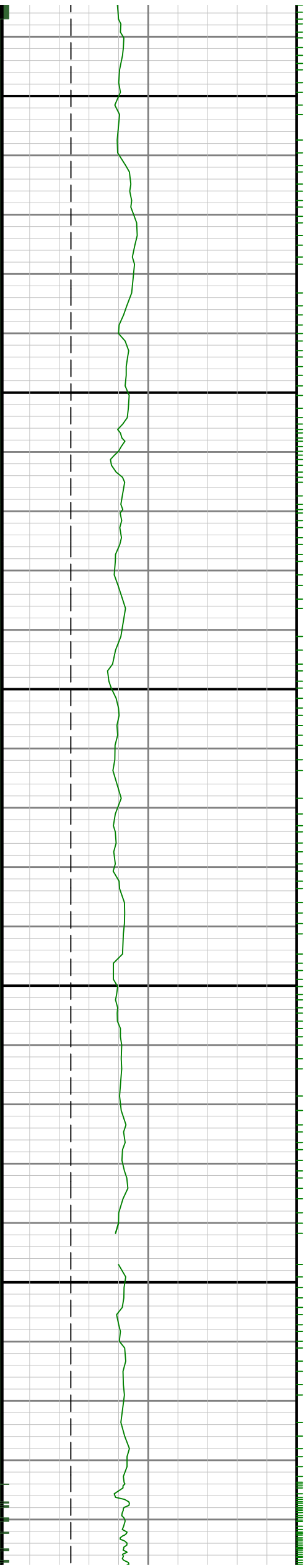


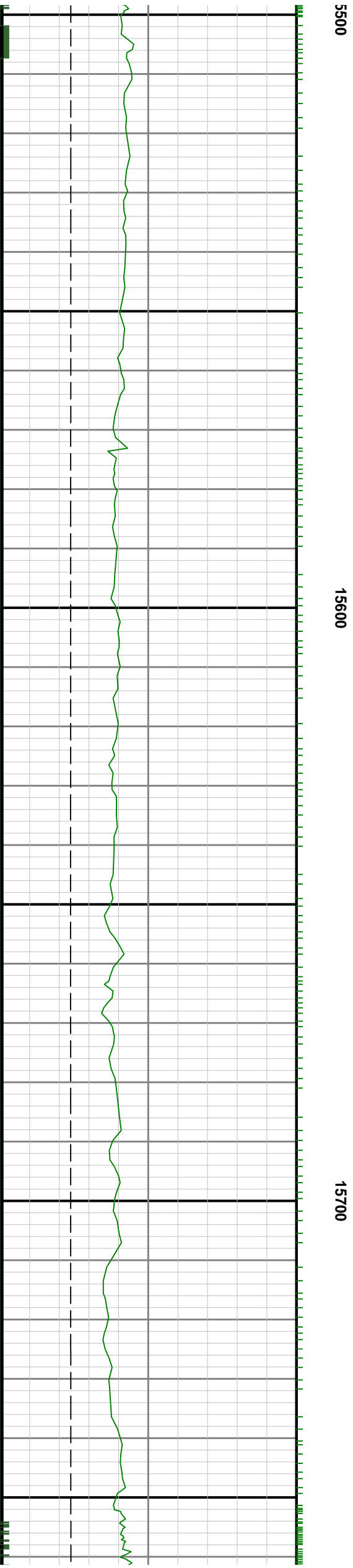
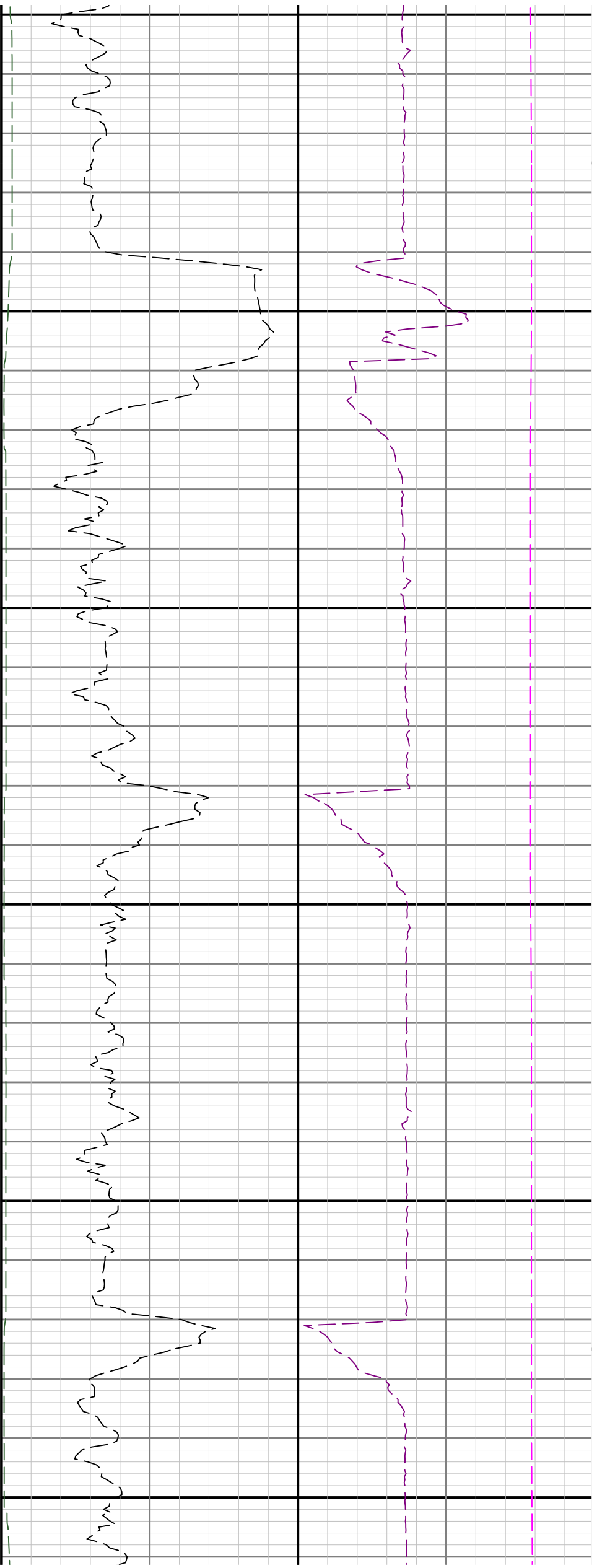


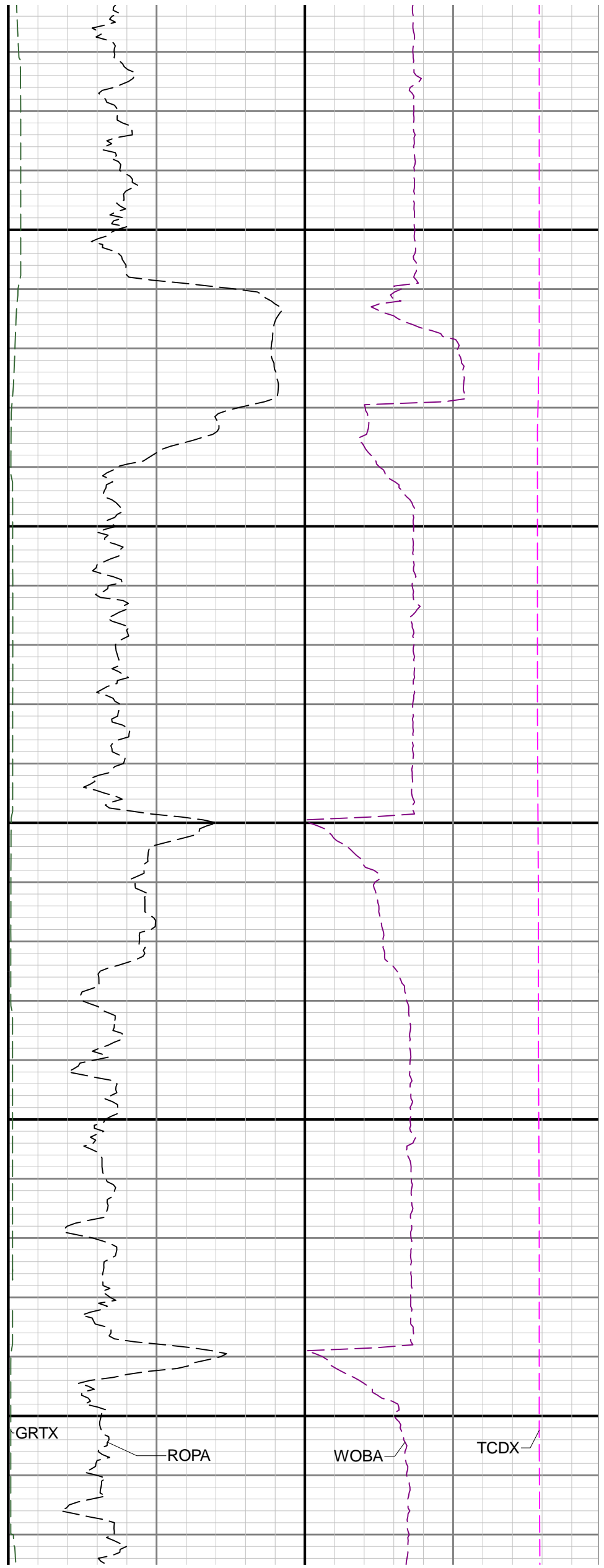
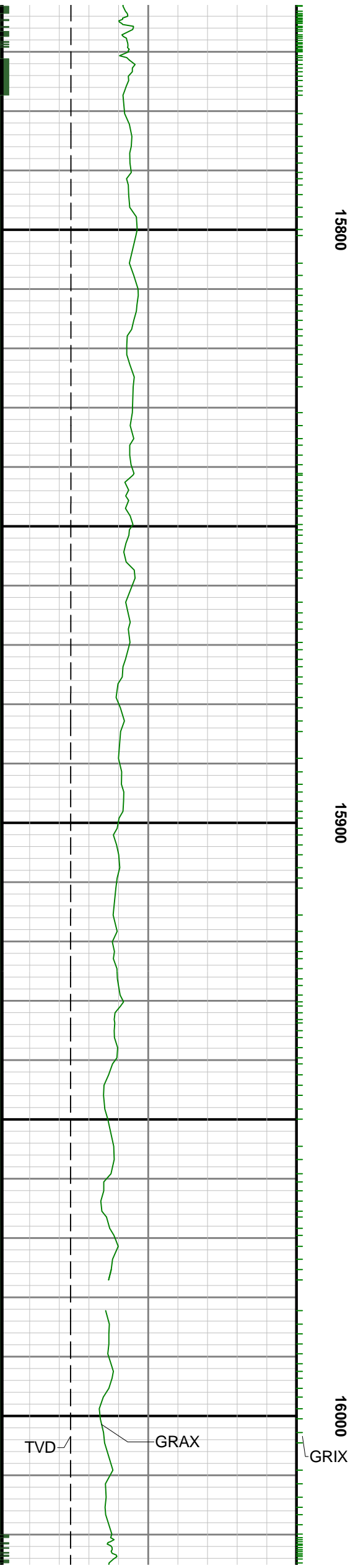
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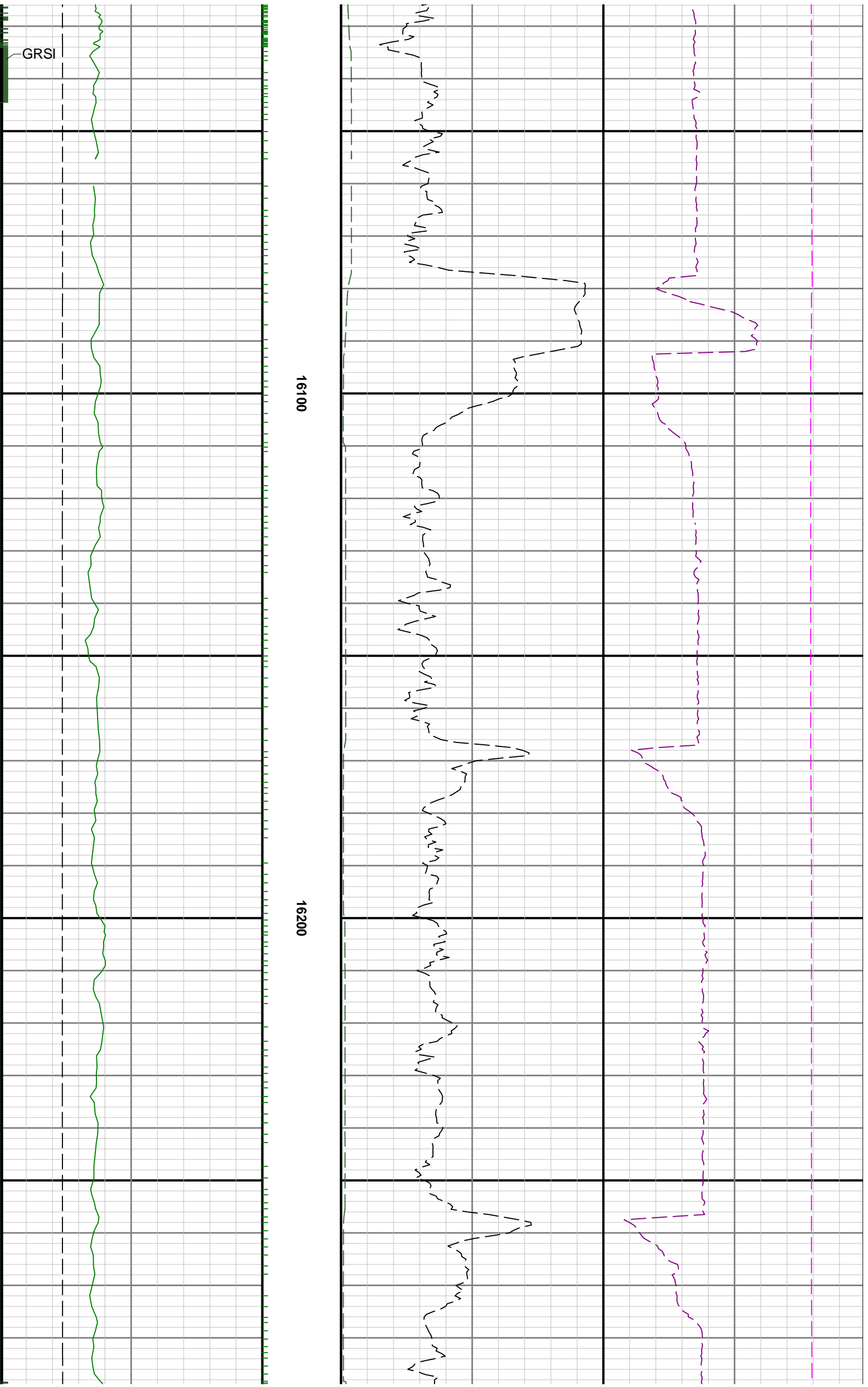
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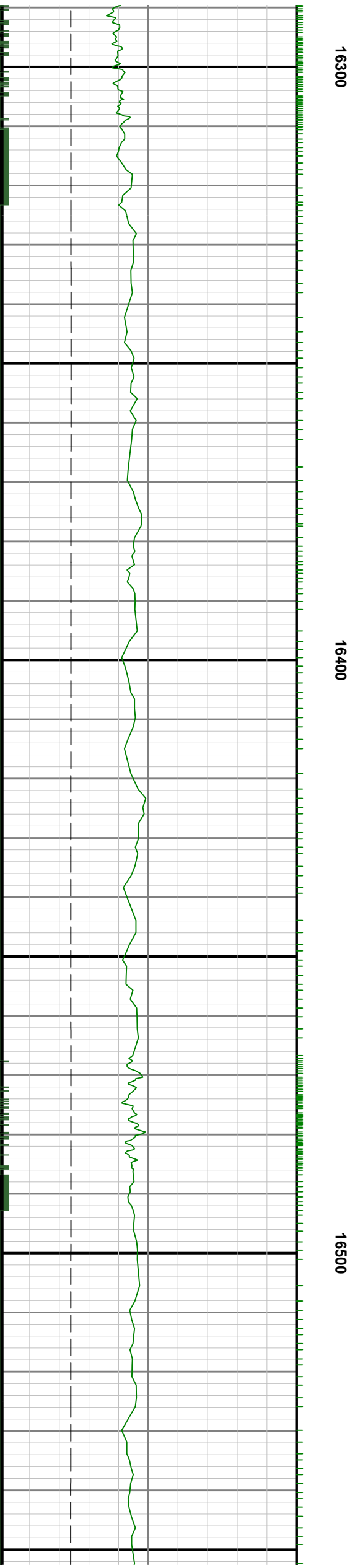
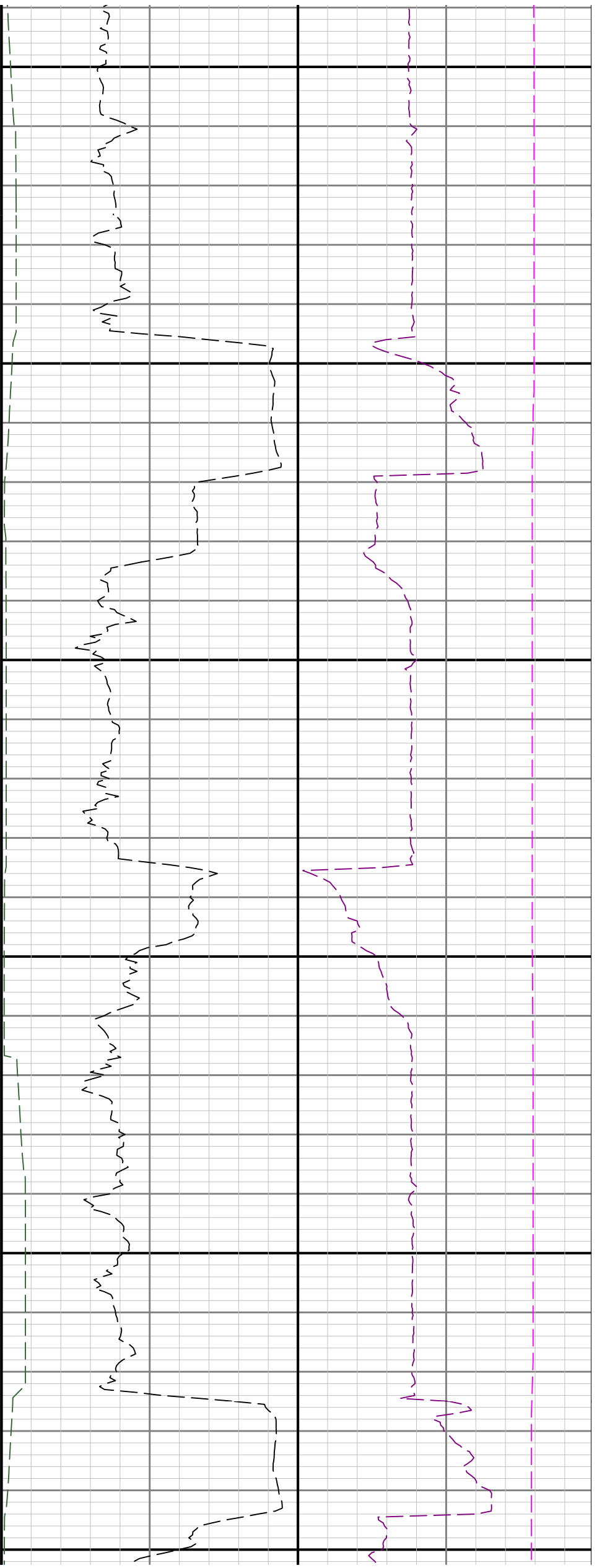


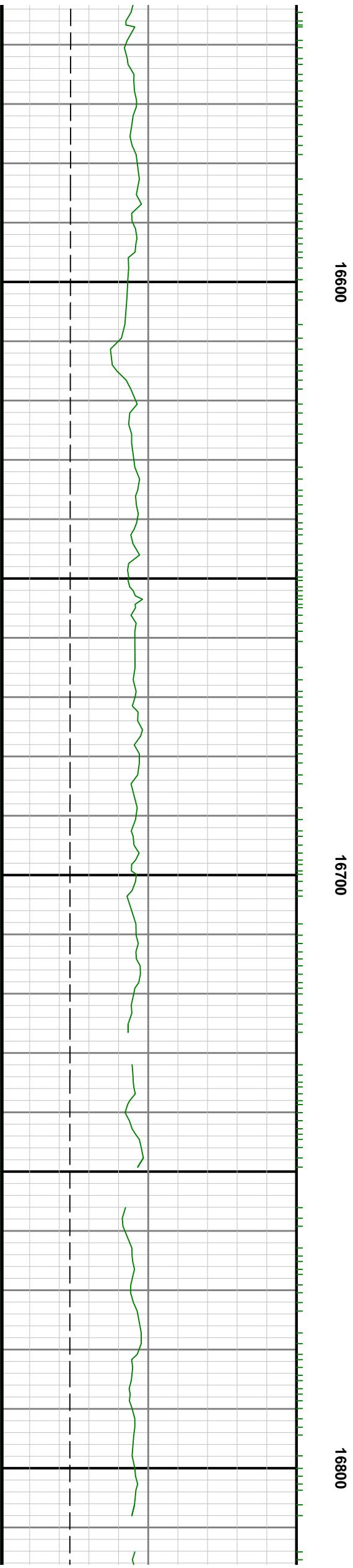
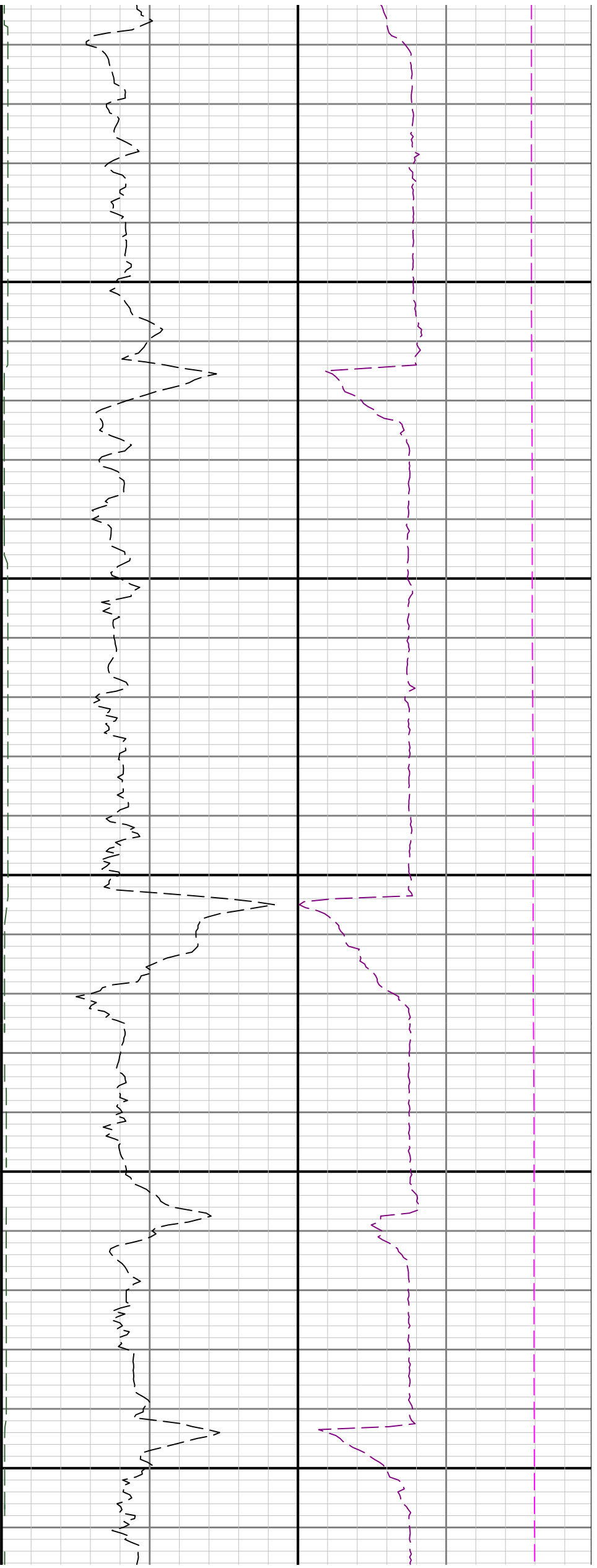


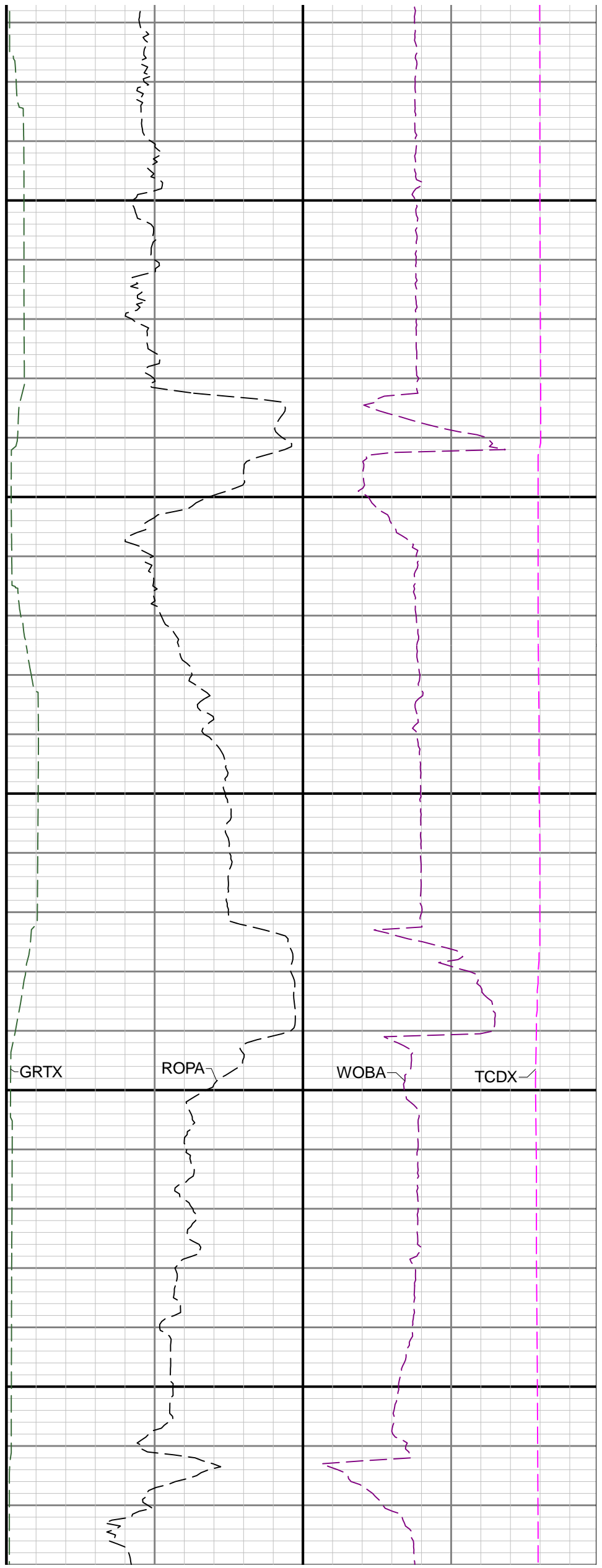
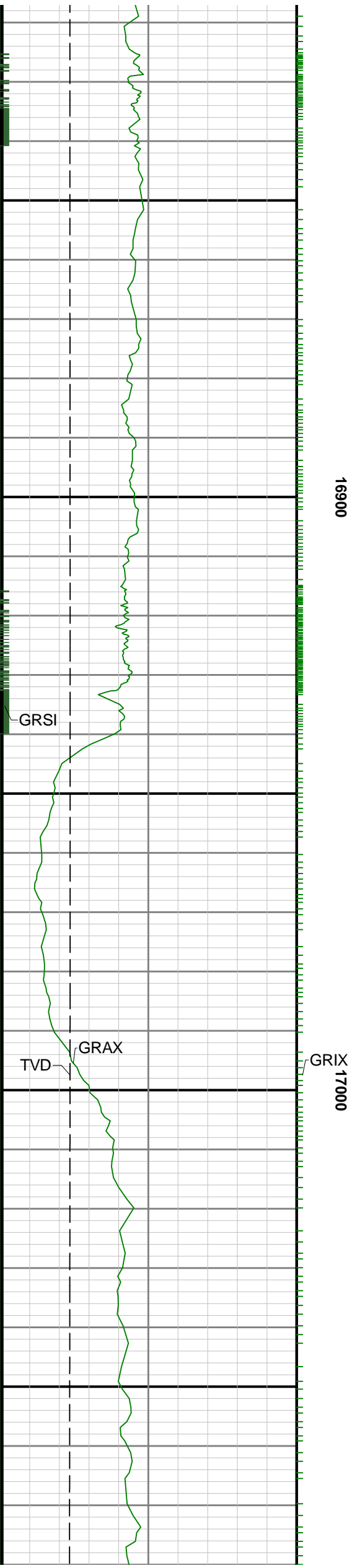


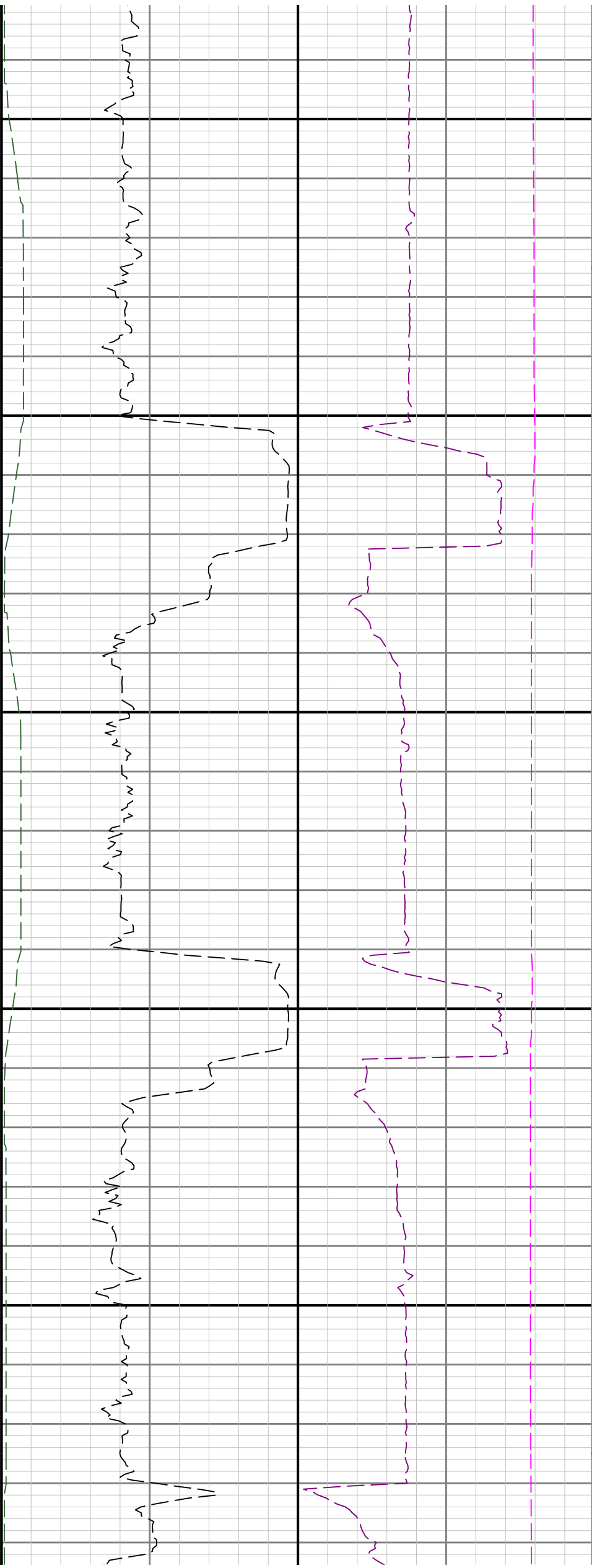








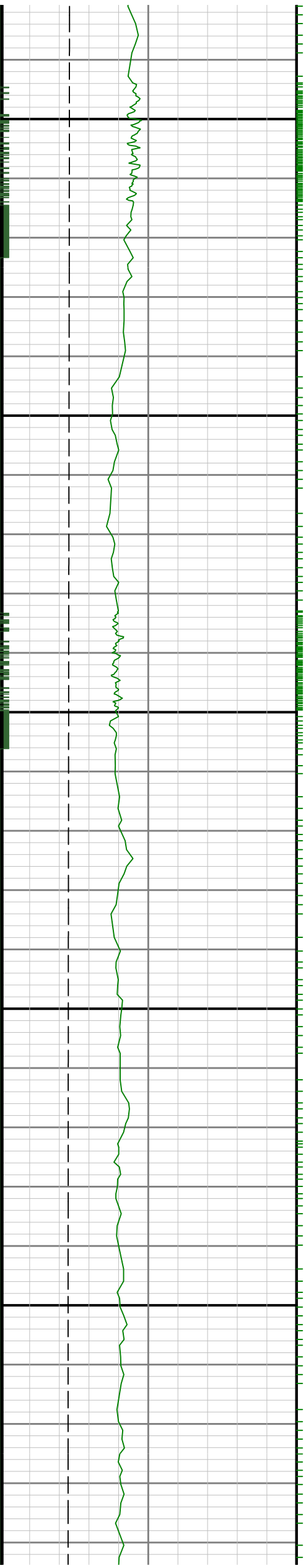


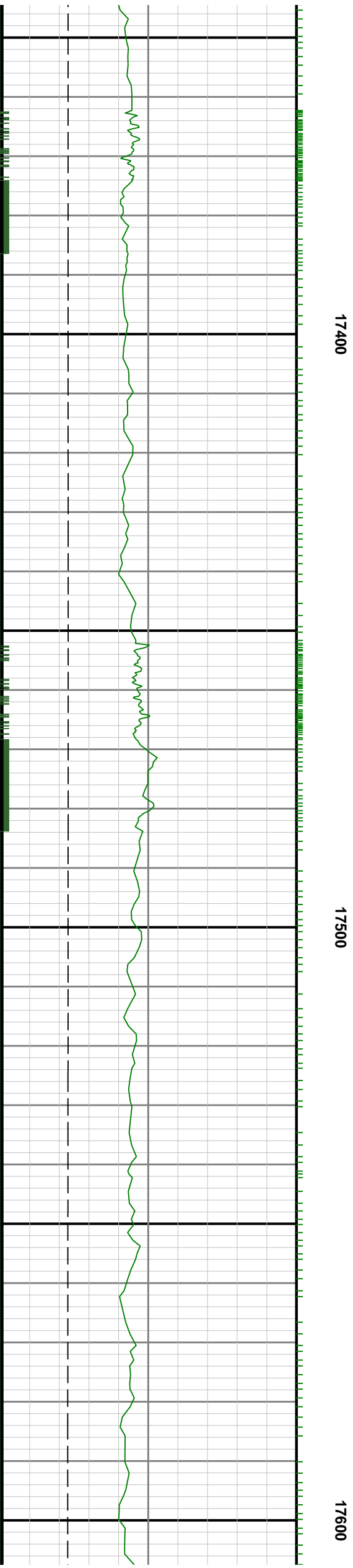
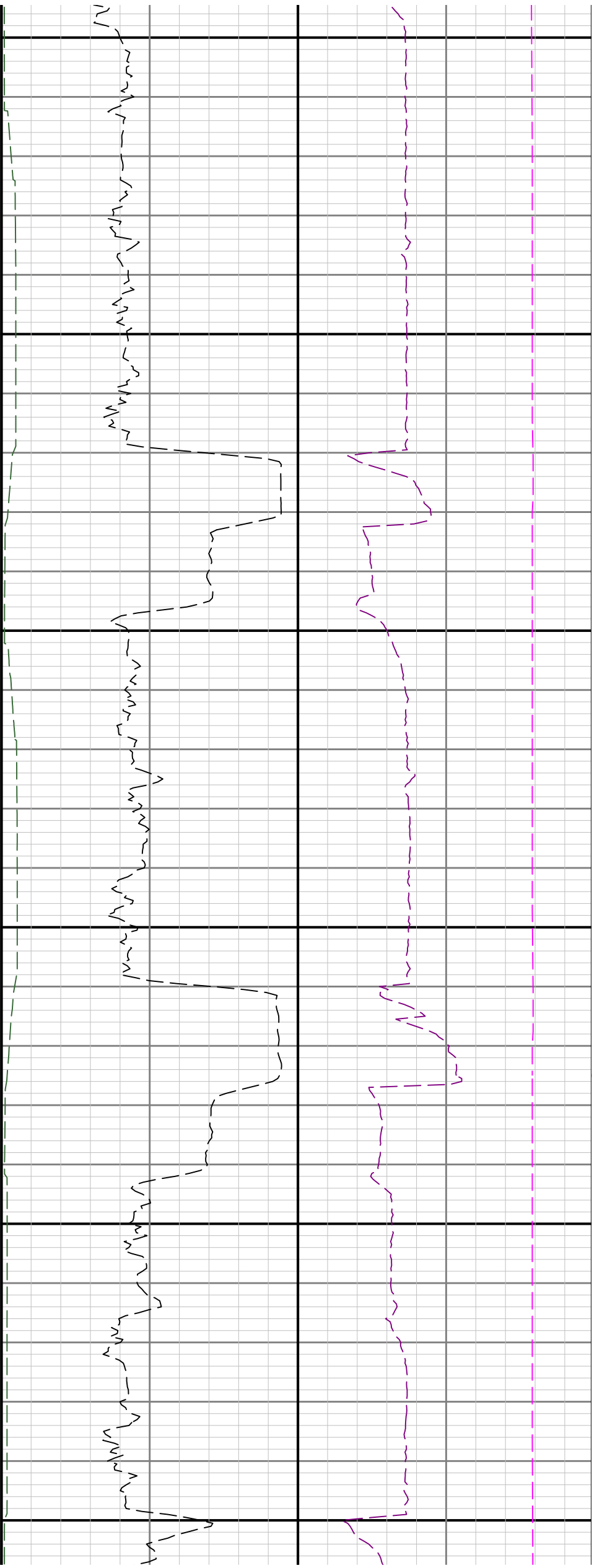


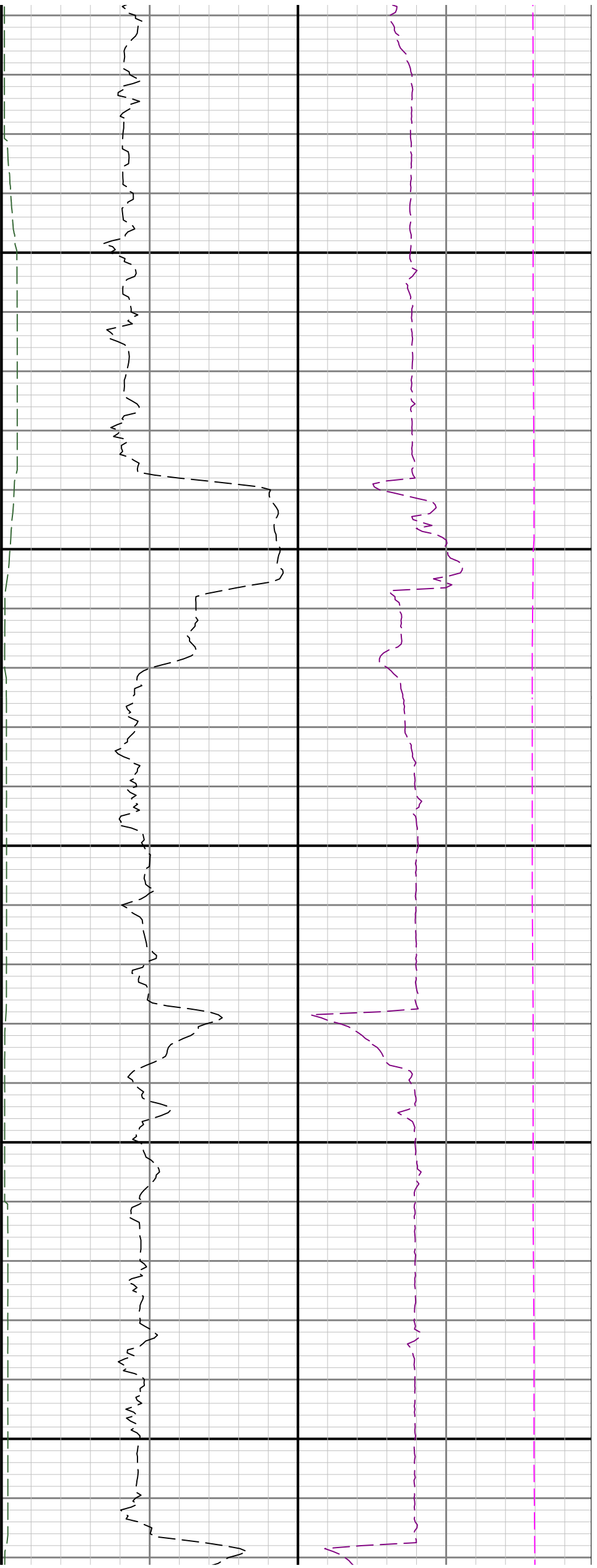
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