



BAKER
HUGHES

LWD REALTIME LOG

Gamma Ray

Scale:

1-240 MD

Depth Reference:

Driller's Depth

Company: Anadarko

Well: AZUL 13-26HZ

Field: Weld County

County: Weld Country: United States

State: Colorado

Status:

Final Print

Surface Location:
Latitude: 40° 53' 11" N
Longitude: 106° 41' 55" W

Other Services:

API No: 0512346105

Job ID: 9053319

Permanent Datum (P.D.): Ground Level

Log Measured From: Rig Floor

Elevation: Above P.D.

5050.00 ft
21.00 ft

Elev. KB:
Elev. DF:
Elev. GL:

N/A
5071.00 ft
5050.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2018-03-21 Top: (ft) 1900.00

Date To: 2018-03-23 Bottom: (ft) 12966.02

Spud Date: 2018-03-20

Azi Reference North: True Dip Angle: (deg) 66.29

Total Magnetic Field Strength: (nT) 52268

Mag to Reference North Correction: (deg) 7.84 E

Borehole Record

Casing Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
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13.500	21.00	1900.00	9.625	36.00	21.00	1900.00
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7.875	1900.00	12966.00				
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Mud Record

Deviation Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
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Oil Based Mud	1900.00	12966.00	7.875	11066.00	23.48 96.38	87.10 178.09
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Acquisition System	Software Version	Other
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Baker Hughes Cadence

RT4.1

PlotStudio 4.1.7763.3

Rig: Precision 464

Contractor: Precision Drilling

District: RMA

Unit: D&E

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Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	7.875	PDC	2.50	Steerable	1858.00	12924.00	1900.00	12966.00	2018-03-21 00:45	2018-03-23 00:04	40.54

Crew

Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite
Alexis Bejarano		2018-03-20	2018-03-23	Wayne Burje		2018-03-20	2018-03-23				

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2018-03-20 19:07	1	1851.00	Oil Based Mud	9.2	15	N/A	0.0	80/20	Active Pit	25027	0.00
2018-03-21 15:00	1	5781.00	Oil Based Mud	8.9	16	N/A	3.4	79/21	Active Pit	27211	0.00
2018-03-22 15:00	1	11566.00	Oil Based Mud	9.0	19	N/A	3.0	78/22	Active Pit	27992	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	NaviGamma	12366170	Gamma (single)	11.34	41.77	6.500	3.000
1	NaviGamma	12366170	Directional (mag)	14.76	45.19	6.500	3.000
1	NaviGamma	12366170	VSS	14.76	45.19	6.500	3.000

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform

Comments

1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to 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 1/2 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/2 inch bit and steerable assembly from 1900 to 12966 feet MD (1830 to 7359 feet TVD).
4	Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request.
5	There are numerous gaps throughout the log due to surveying while on bottom drilling ahead.


Remarks

	Measured	Hole	Run	
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Number	Depth (ft)	Section (in)	No.	Remark
1	1910.00	7.875	1	Baker Hughes began logging at 1900 feet MD (1830 feet TVD) as requested by the client.
2	12923.00	7.875	1	The interval from 12923 to 12966 feet MD (7356 to 7359 feet TVD) was not logged due to sensor offset from the bit.

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



Company Well

Interval

Created

Anadarko

AZUL 13-26HZ

Date From: 2018-03-21 00:45:42

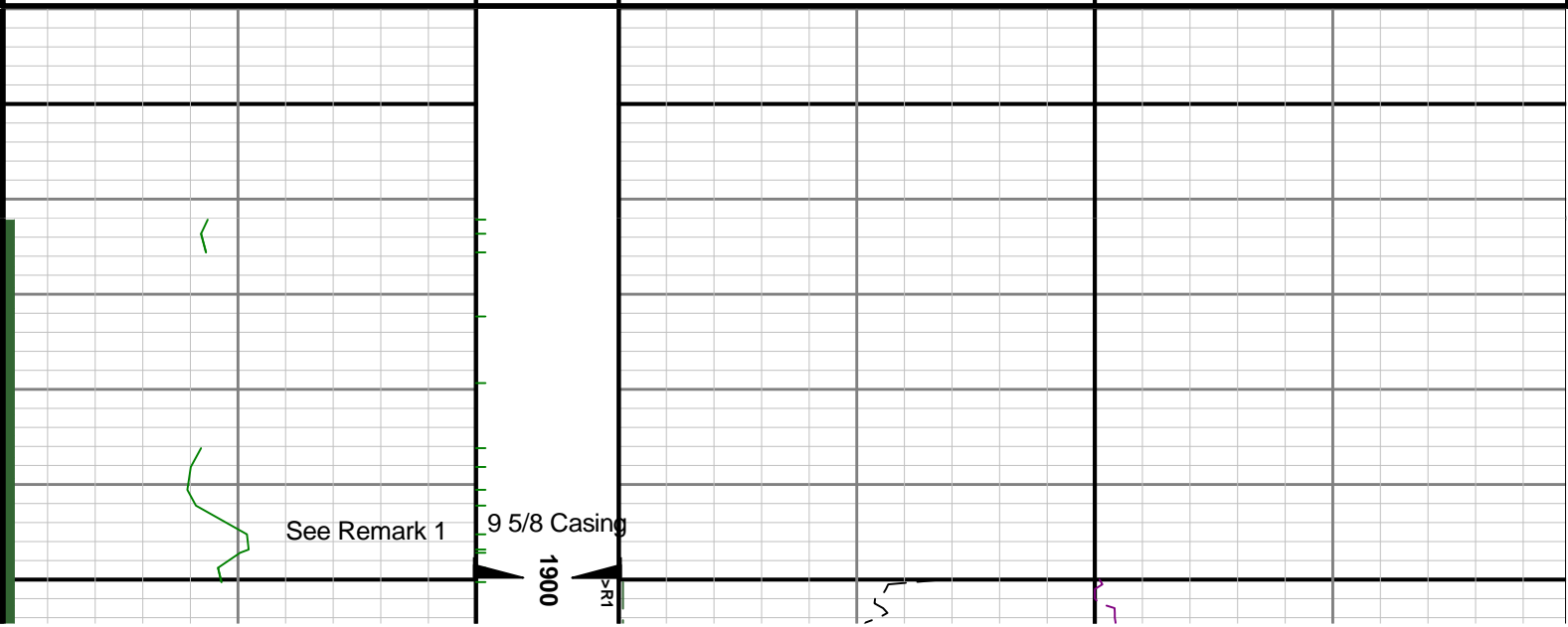
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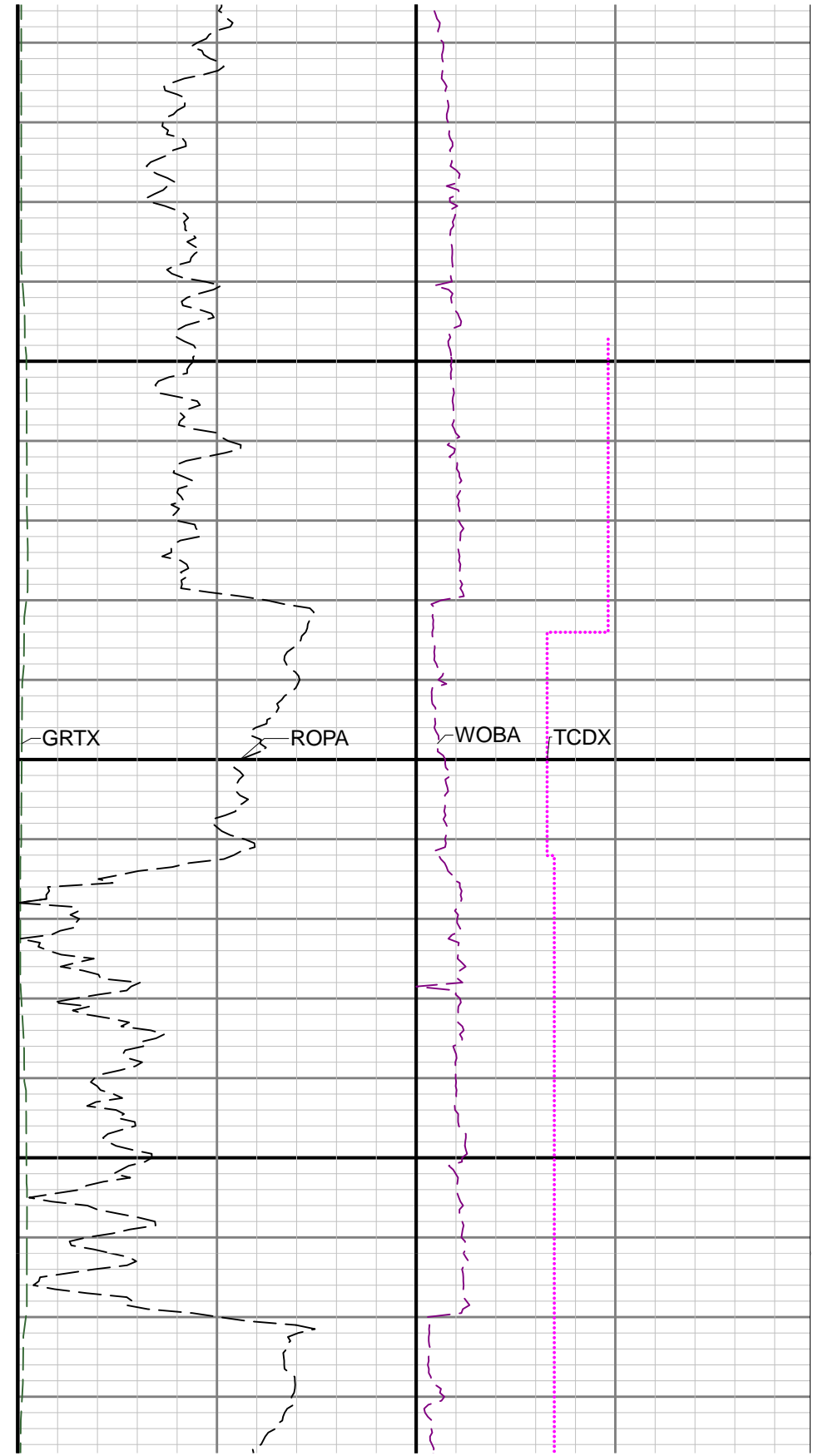
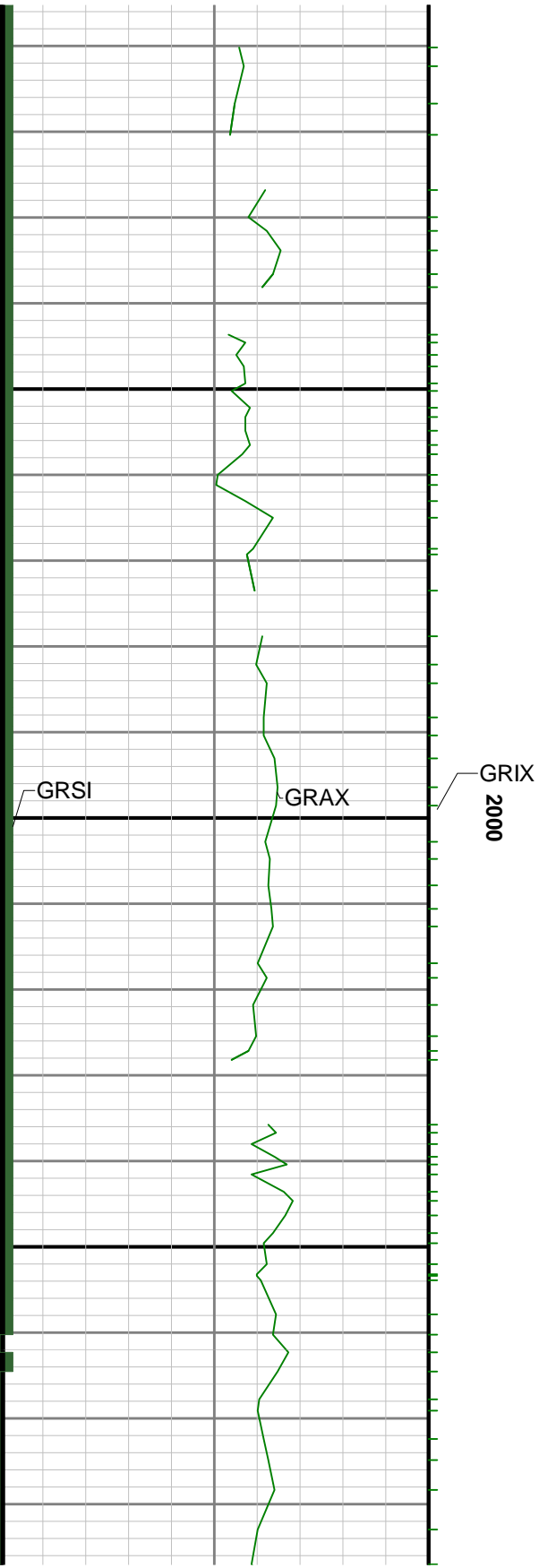
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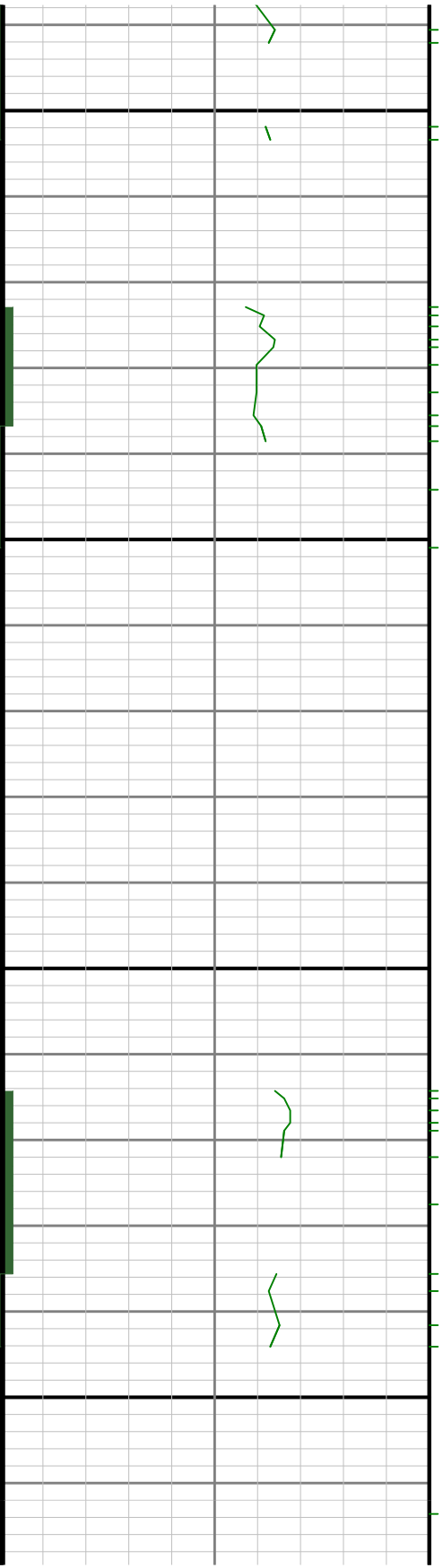
Top: 1862.00

Bottom: 12966.00

Gamma Ray - Apparent 0.5 ft Average [GRAX]	MD 1:240 feet	Gamma Time Since Drilled	Weight On Bit, Average 1 ft Average [WOBA]
0 200		0 600	0 150
API		min	klb
True Vertical Depth [TVD]		Depth Averaged ROP 3 ft Average [ROPA]	Downhole Temperature [TCDX]
8000 6000		900 0	0 300
ft		ft/h	degF

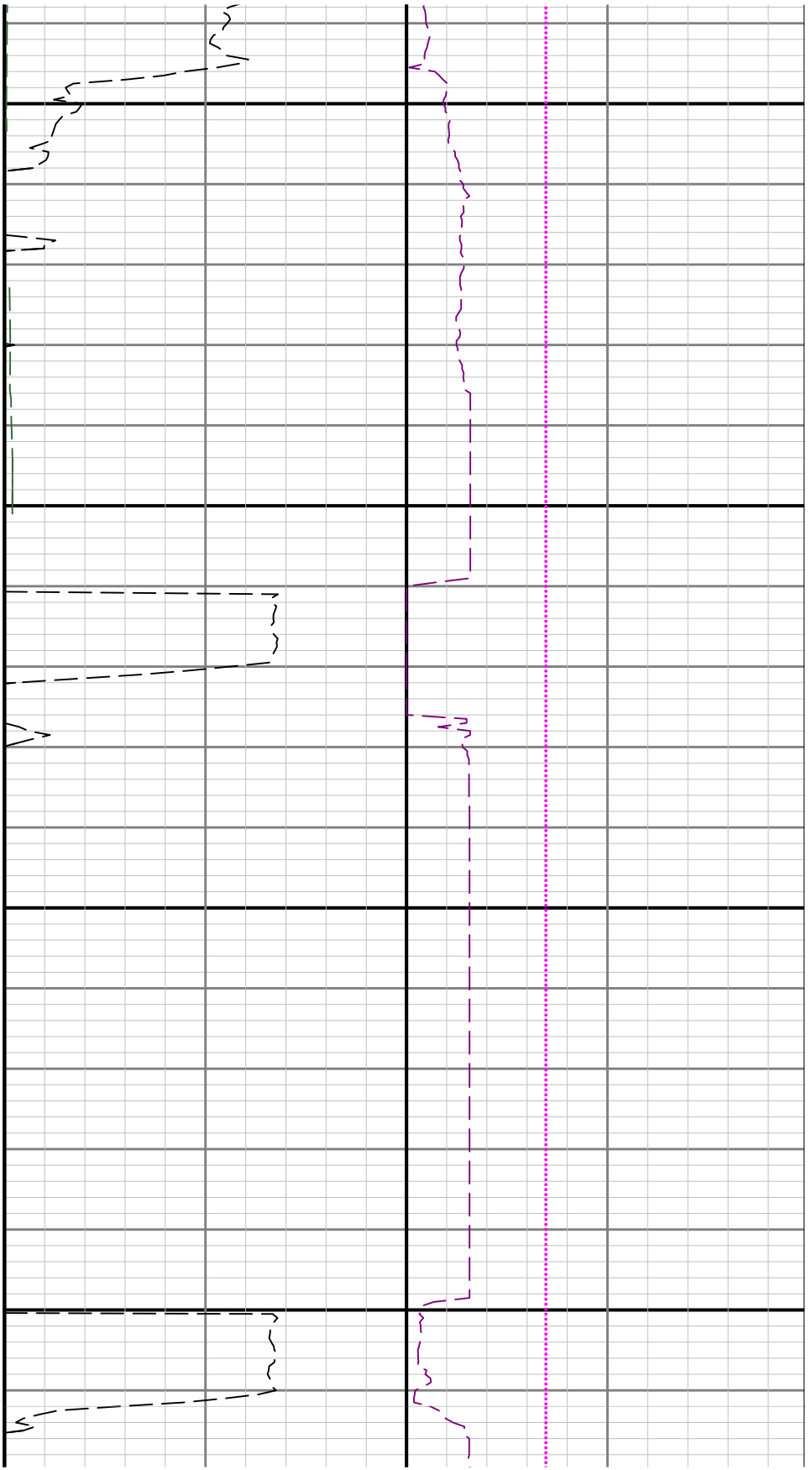






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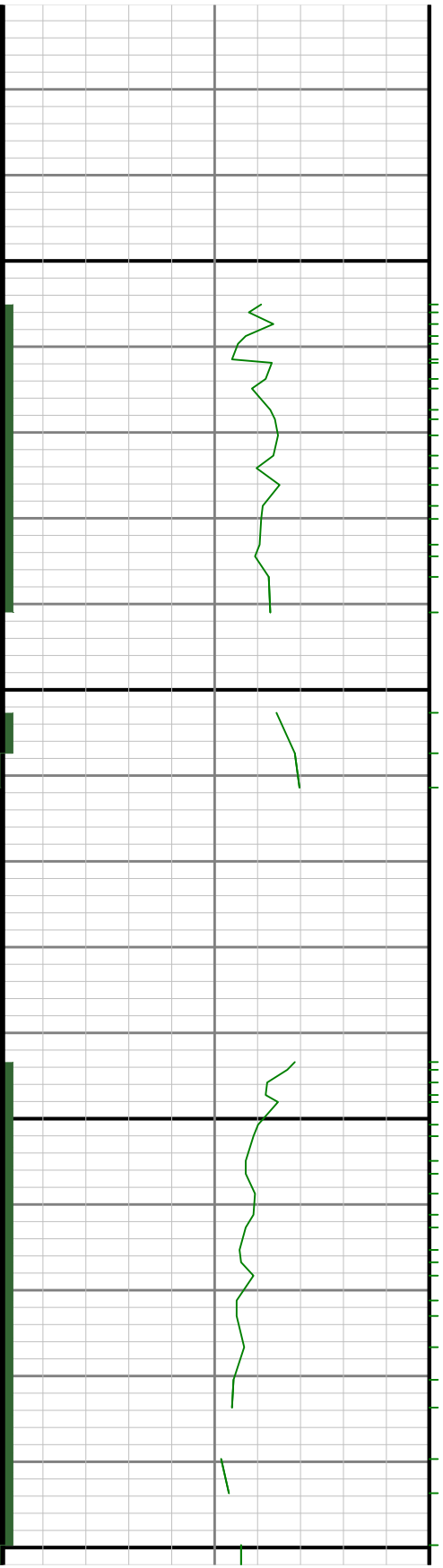
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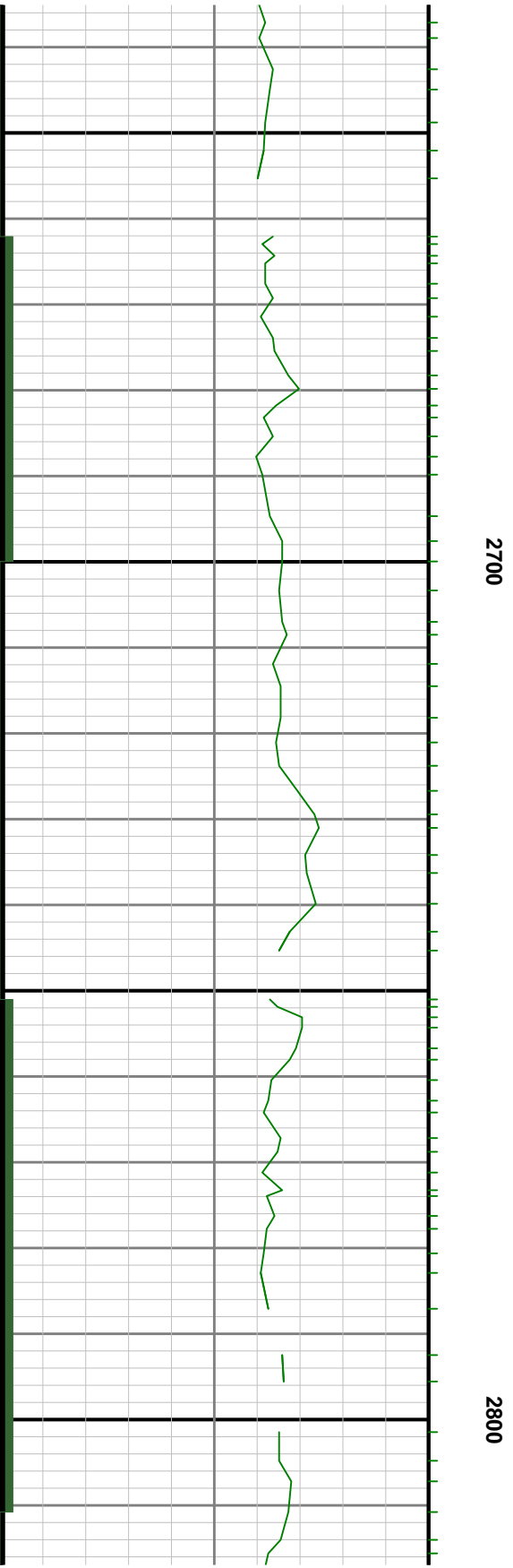


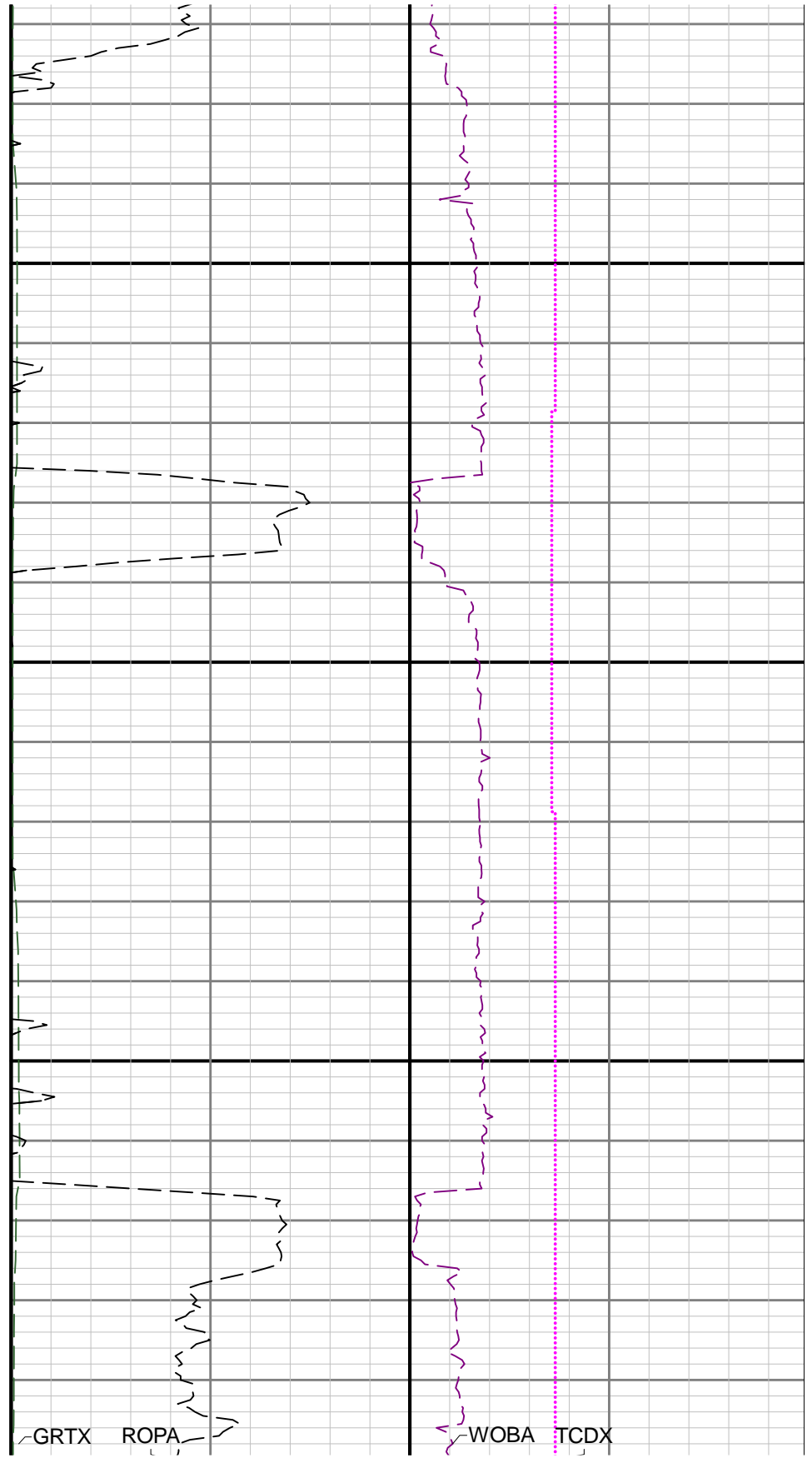
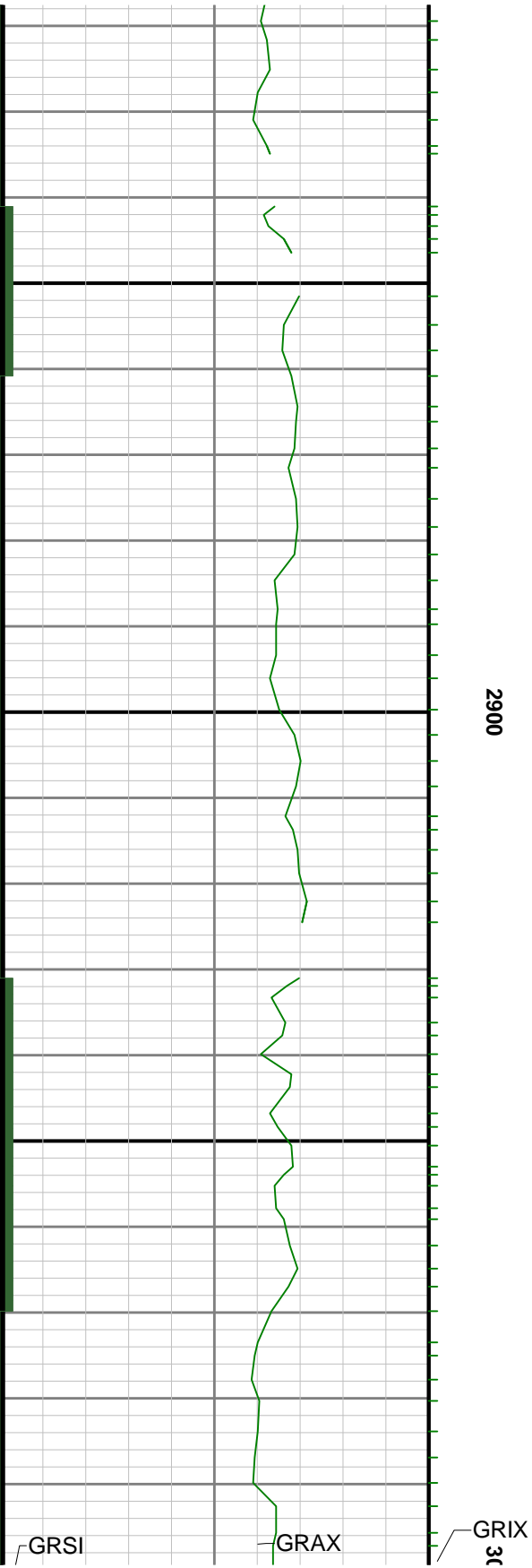


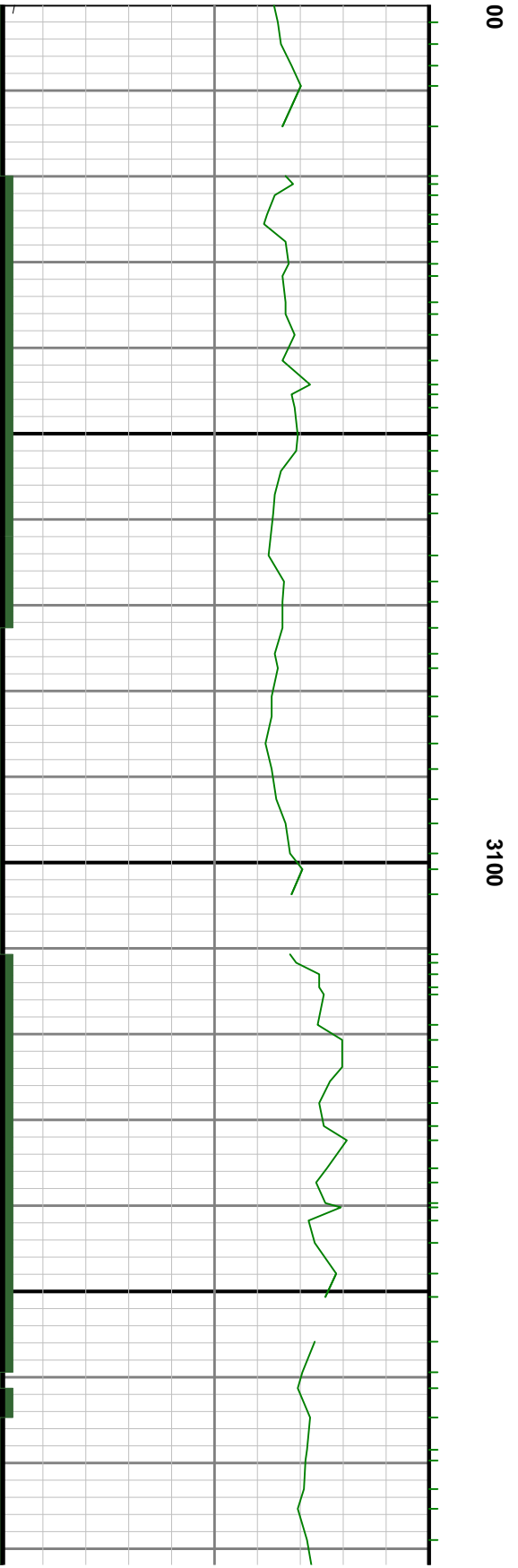
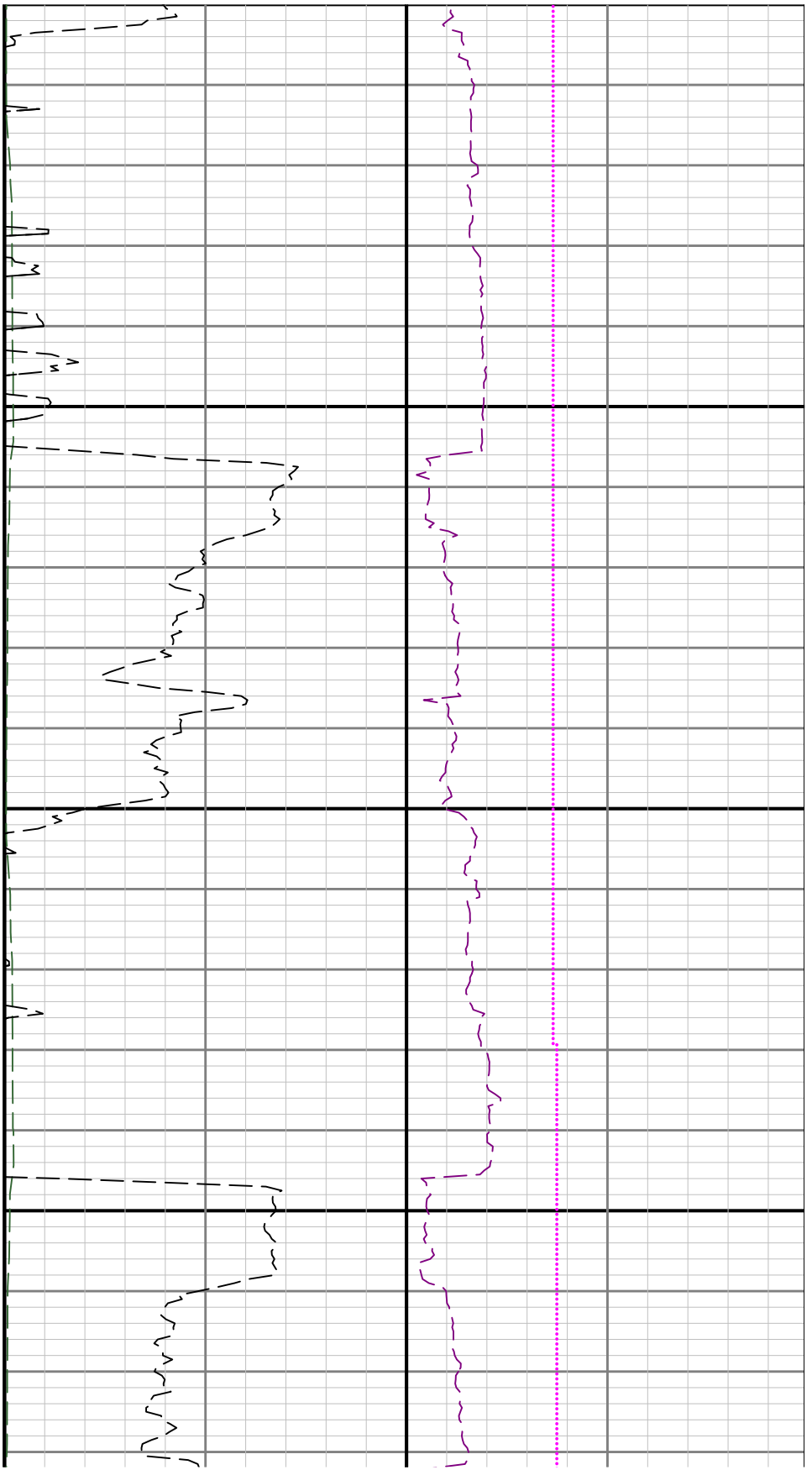
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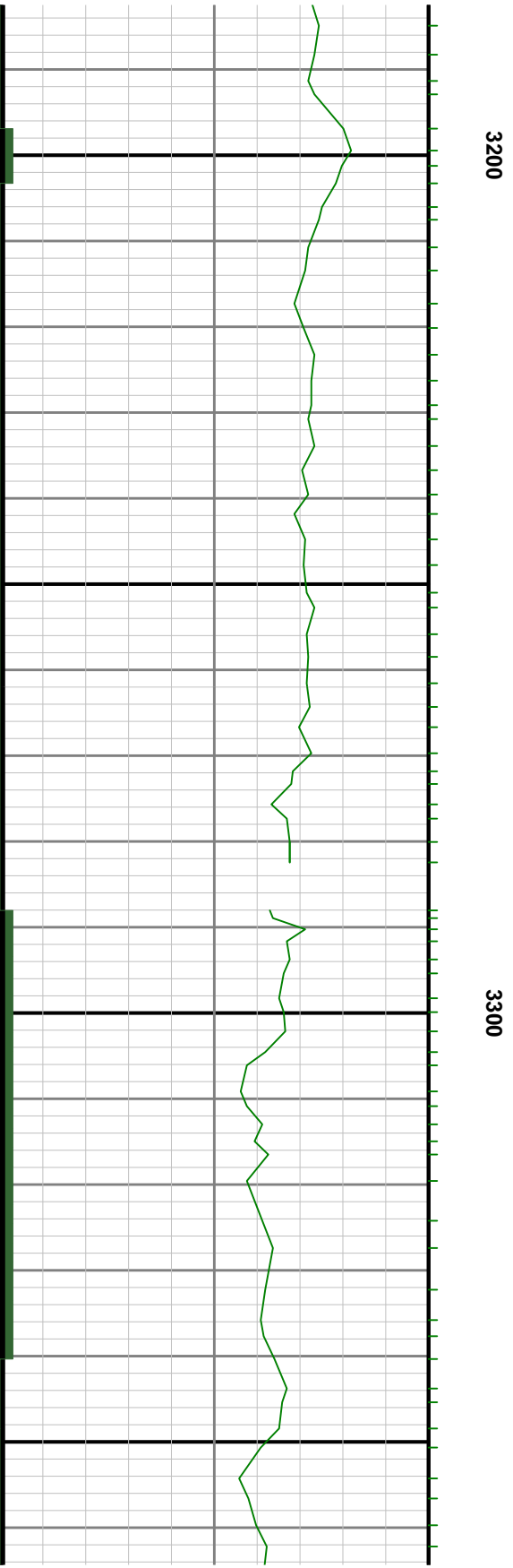
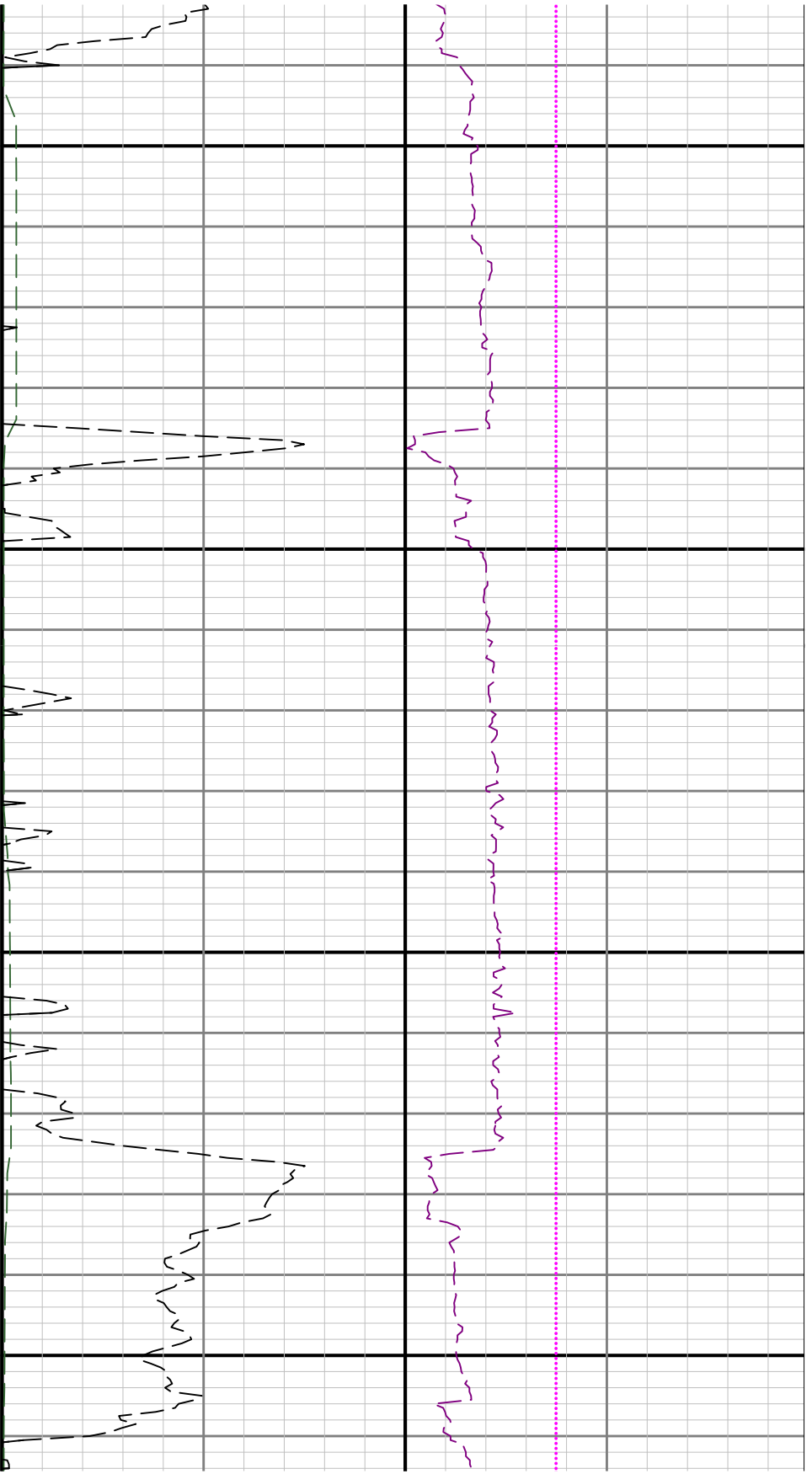
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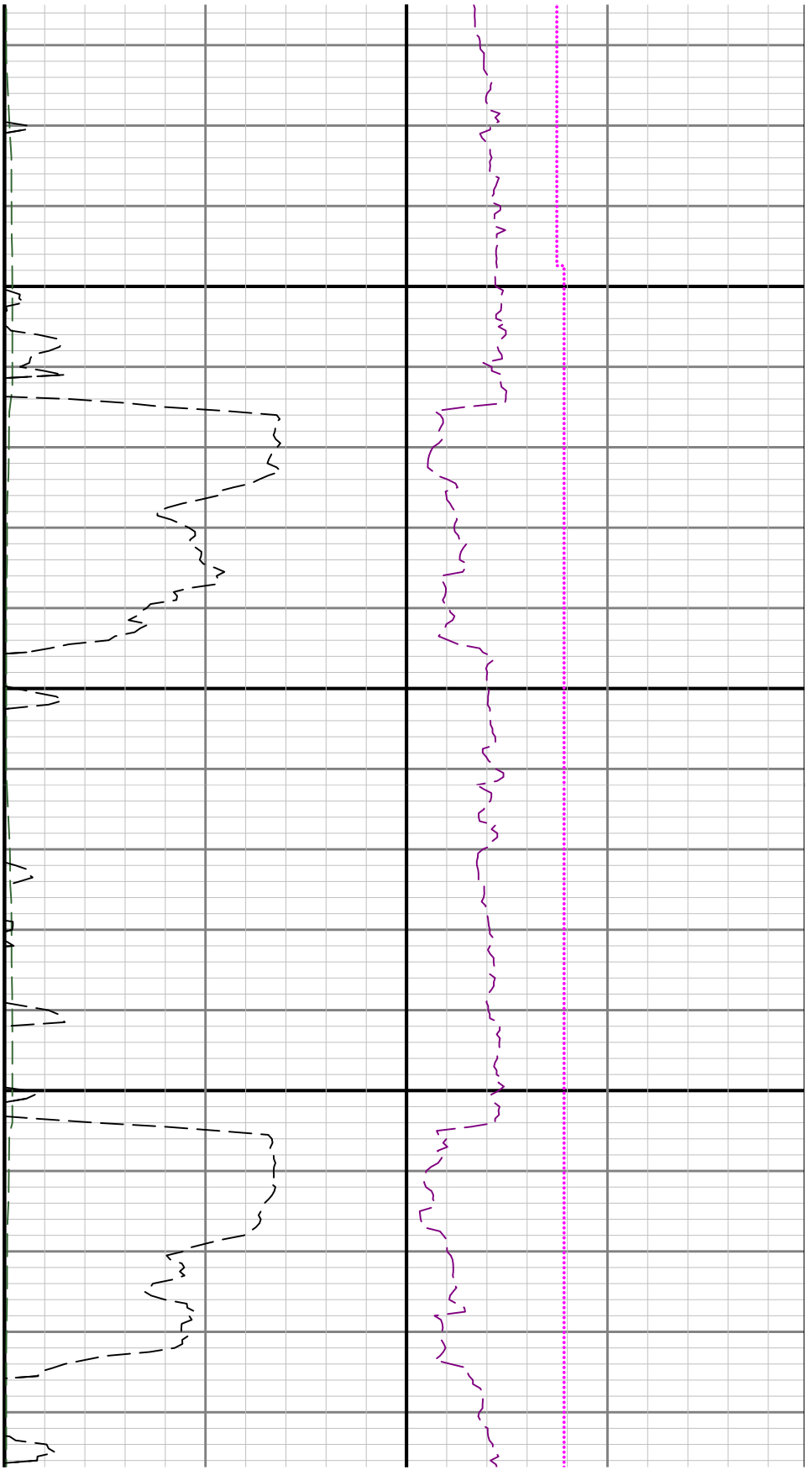






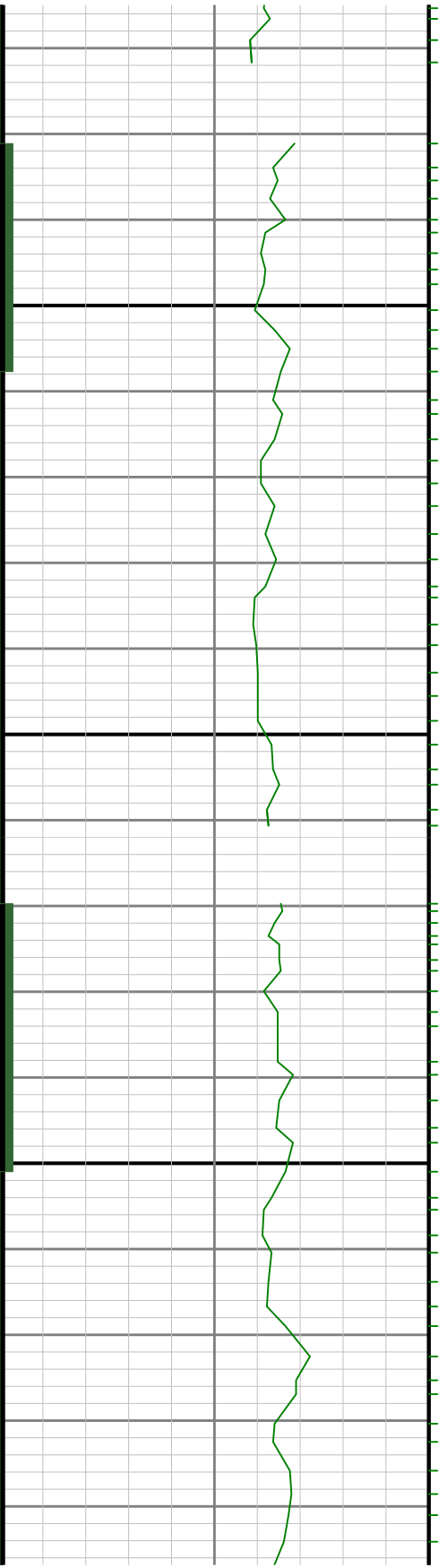


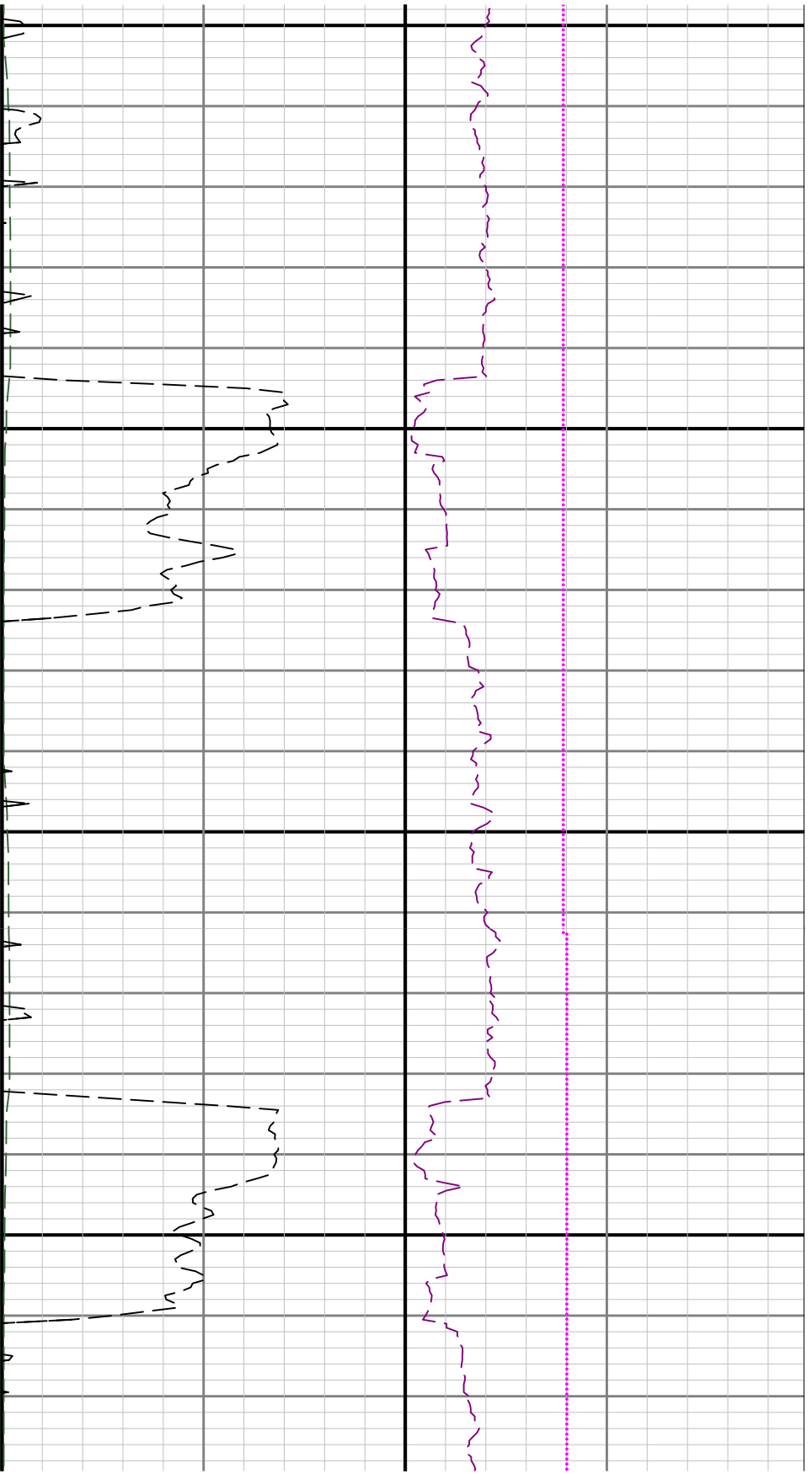




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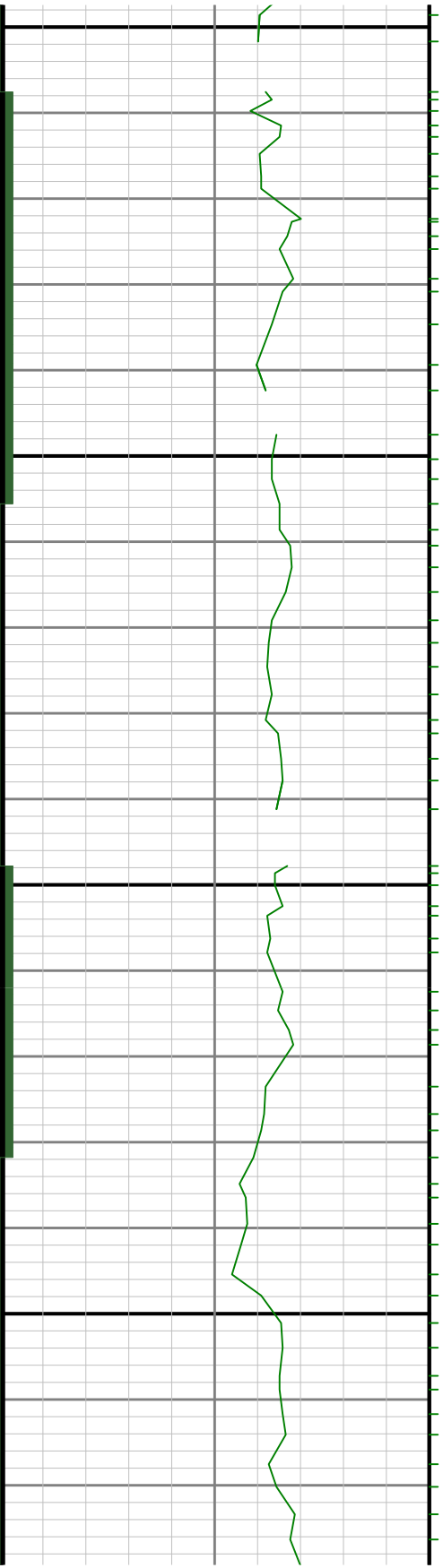
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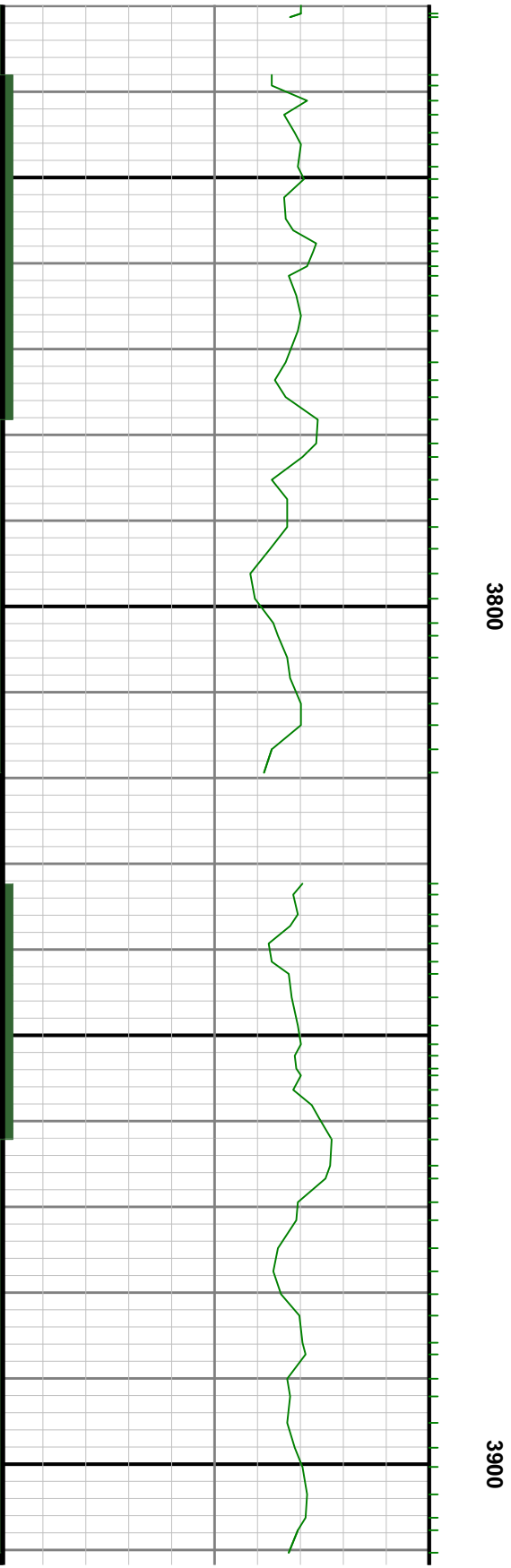
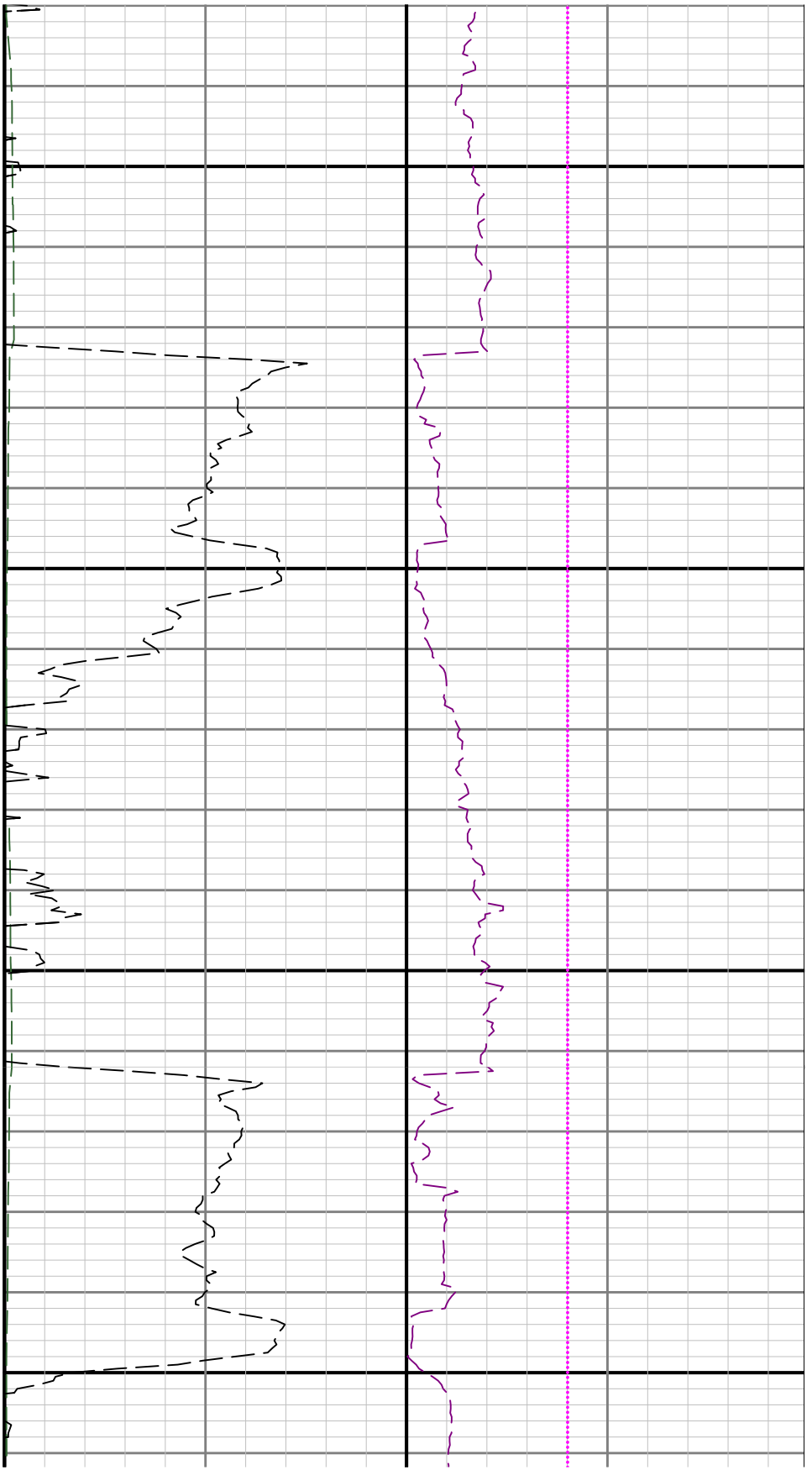


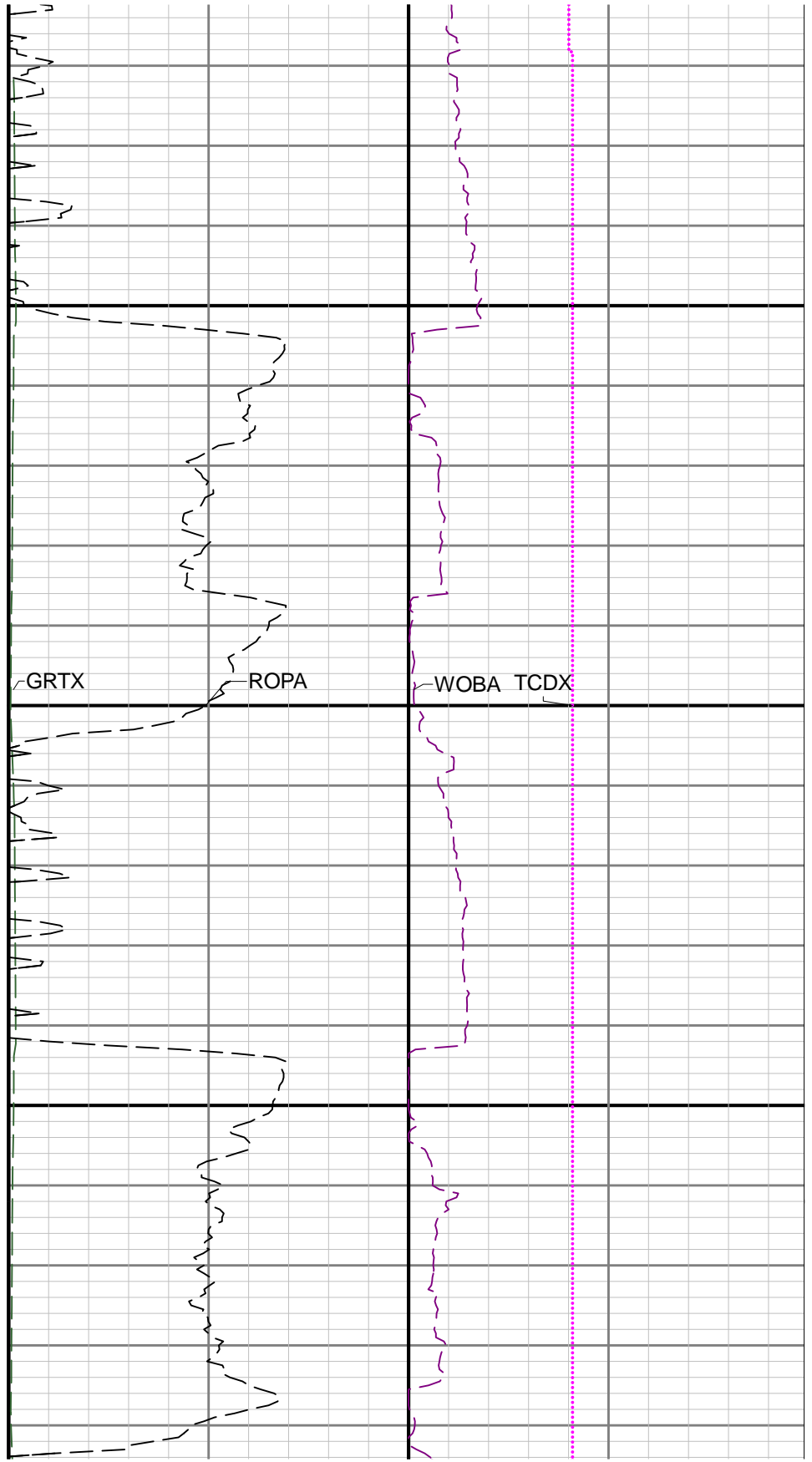
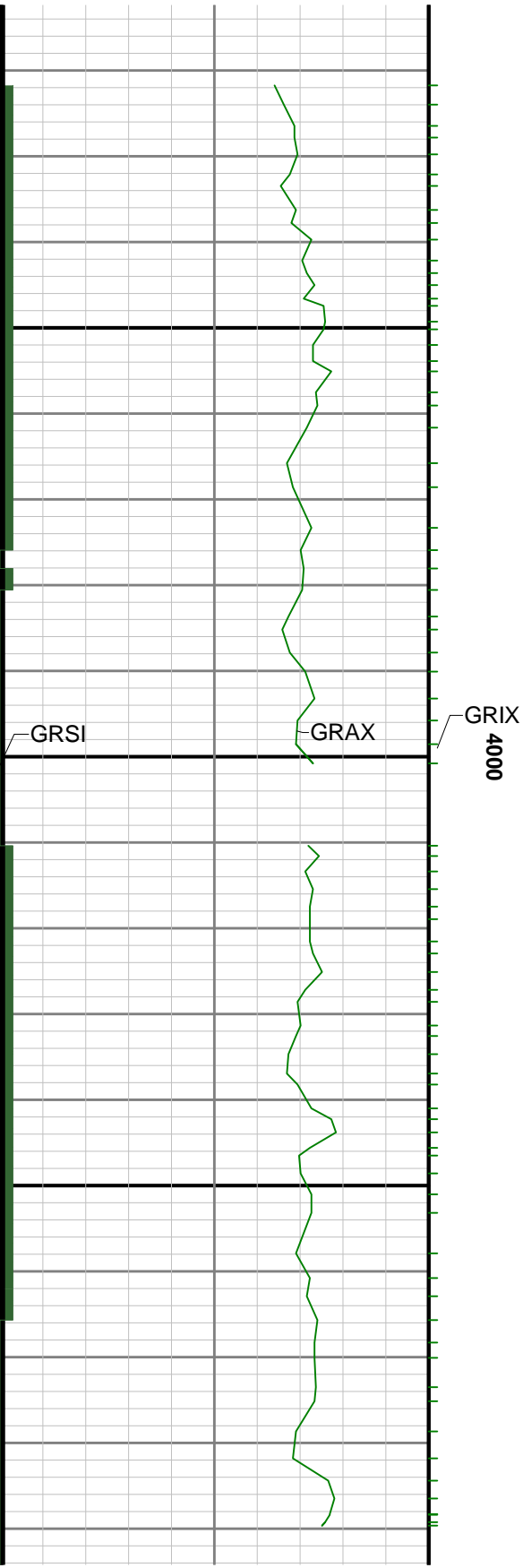


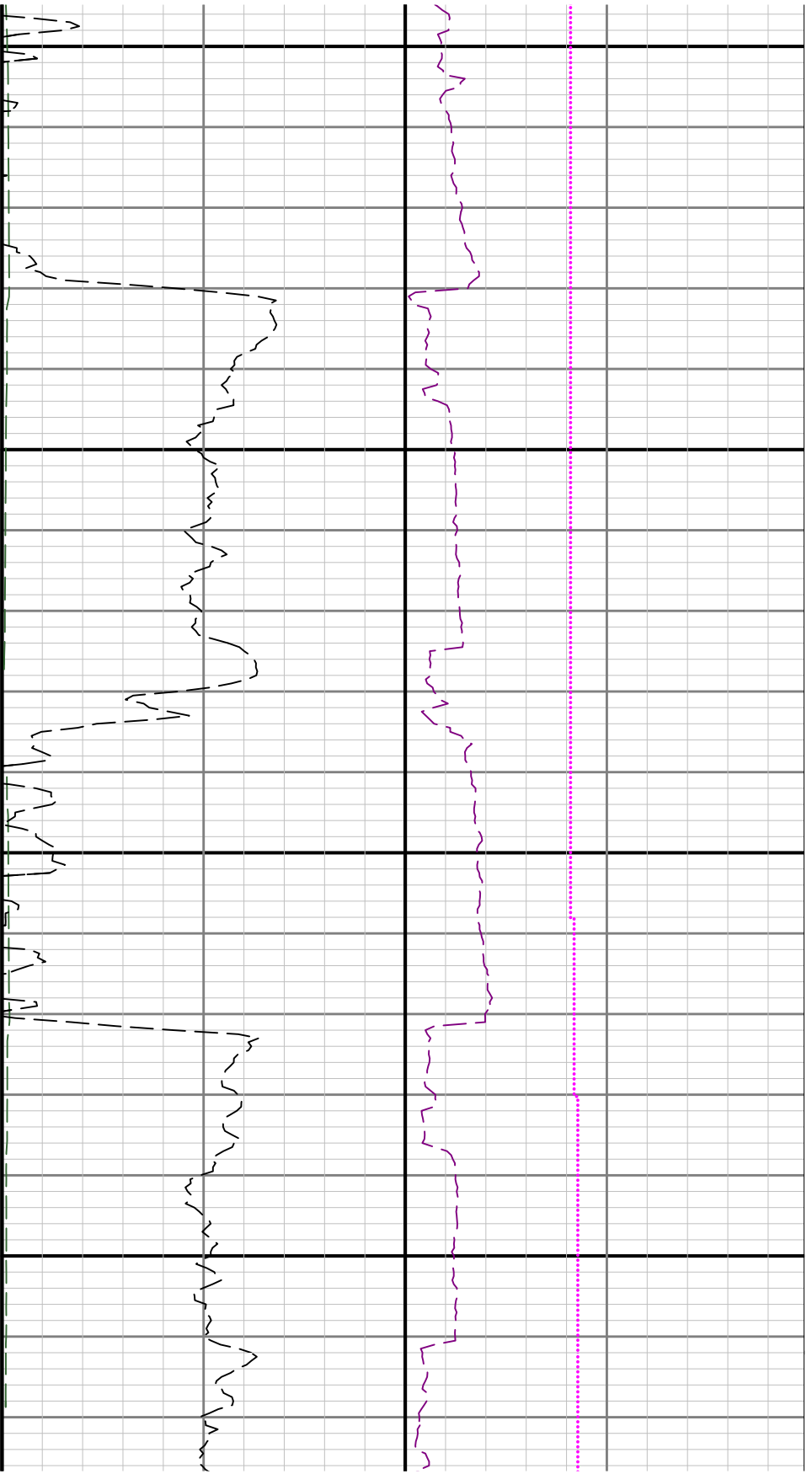
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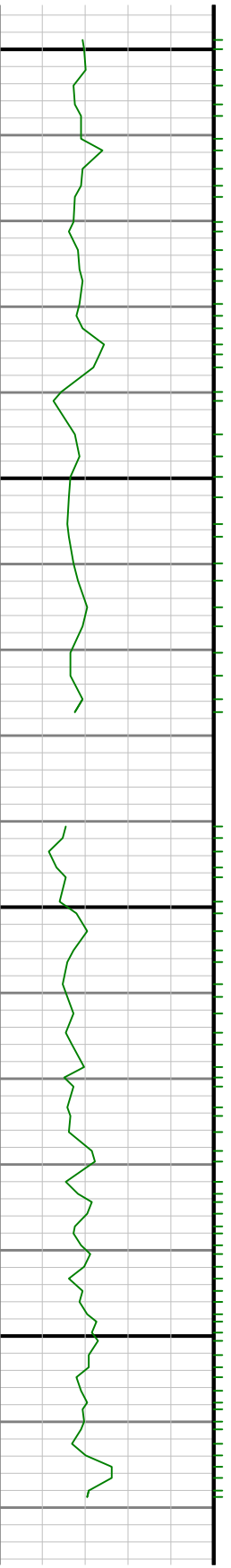


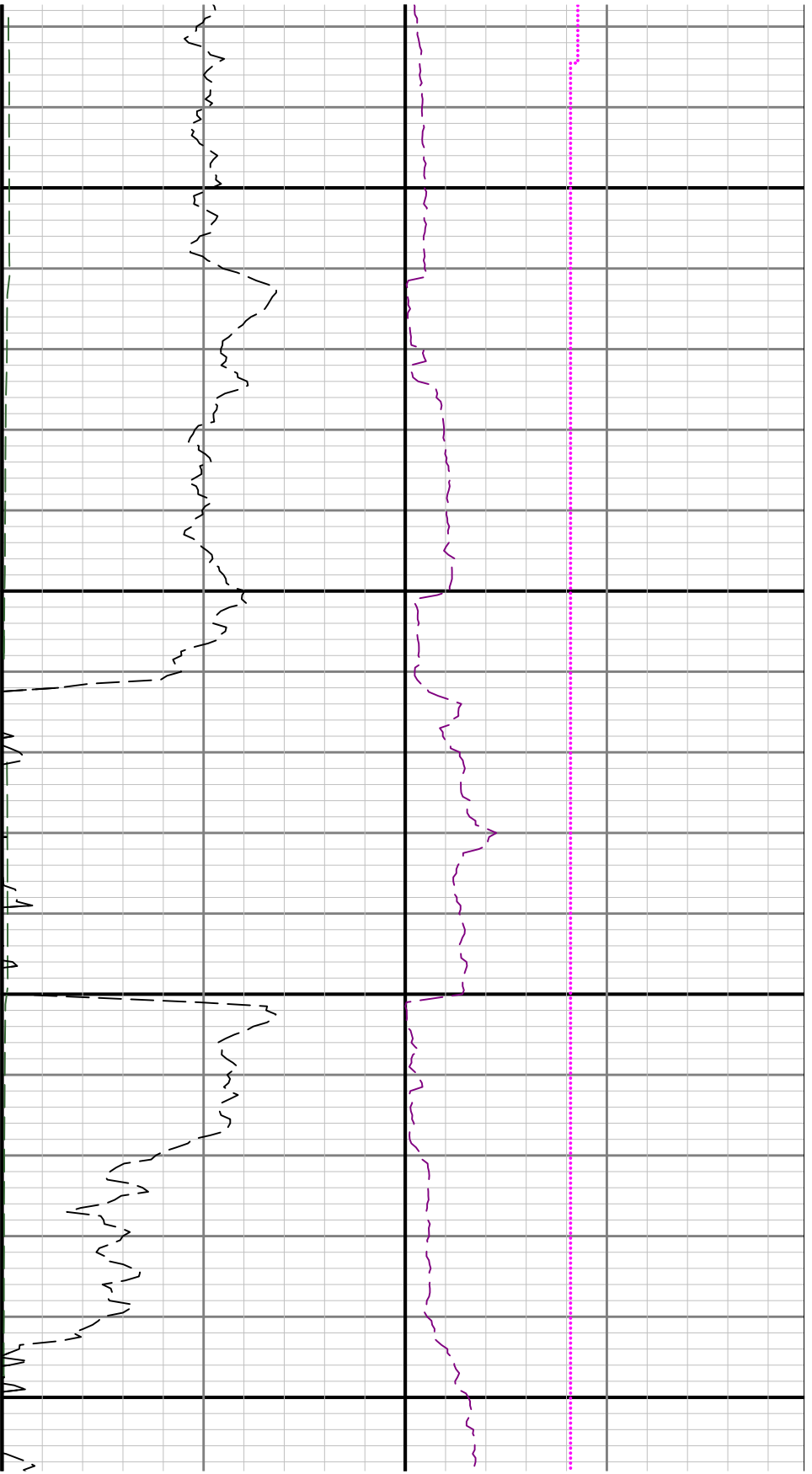




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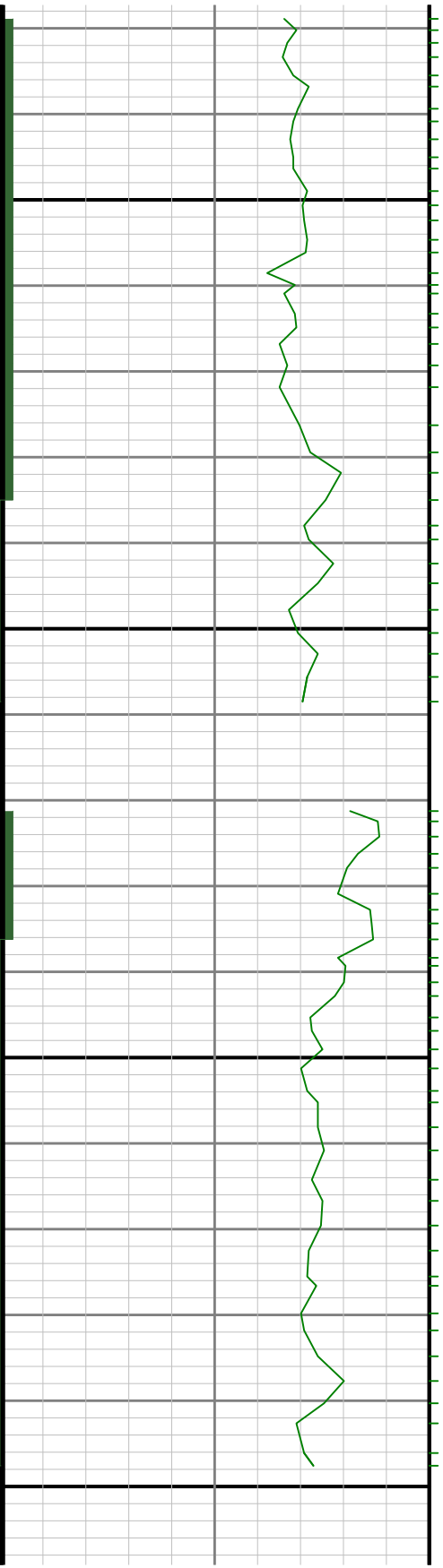
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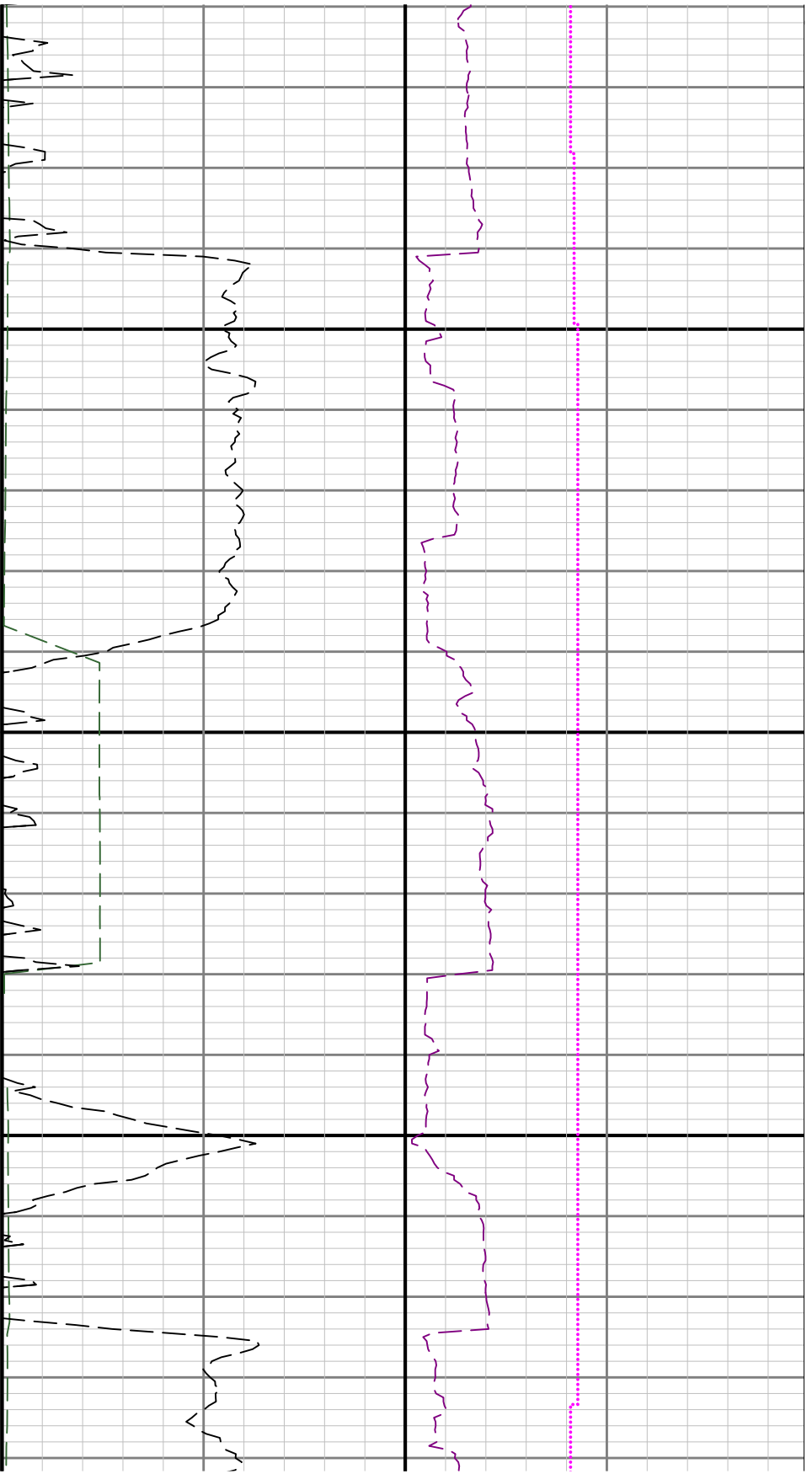




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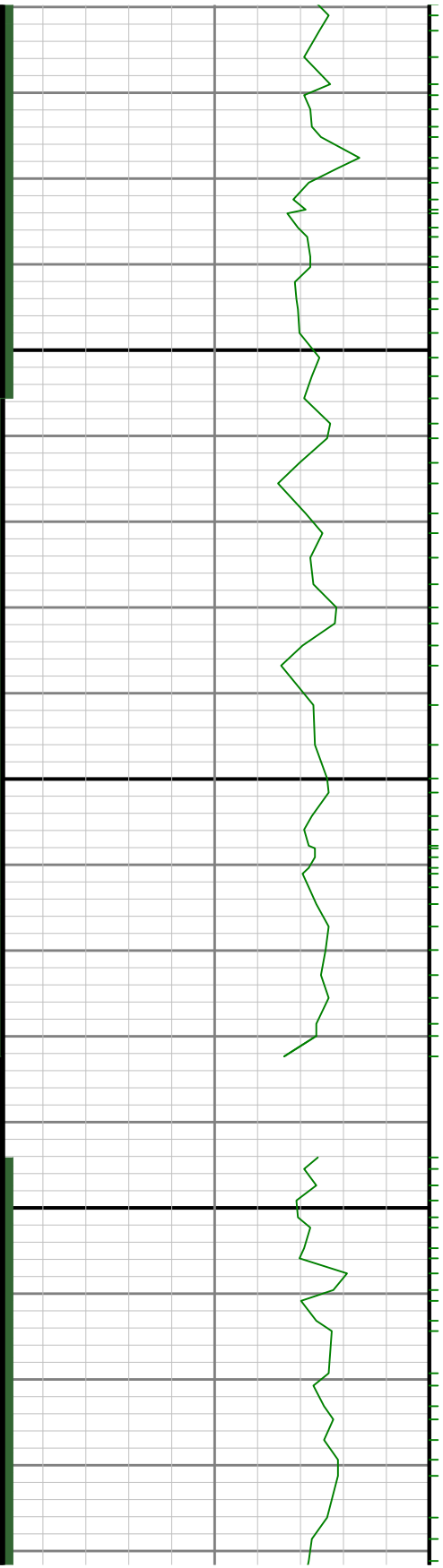
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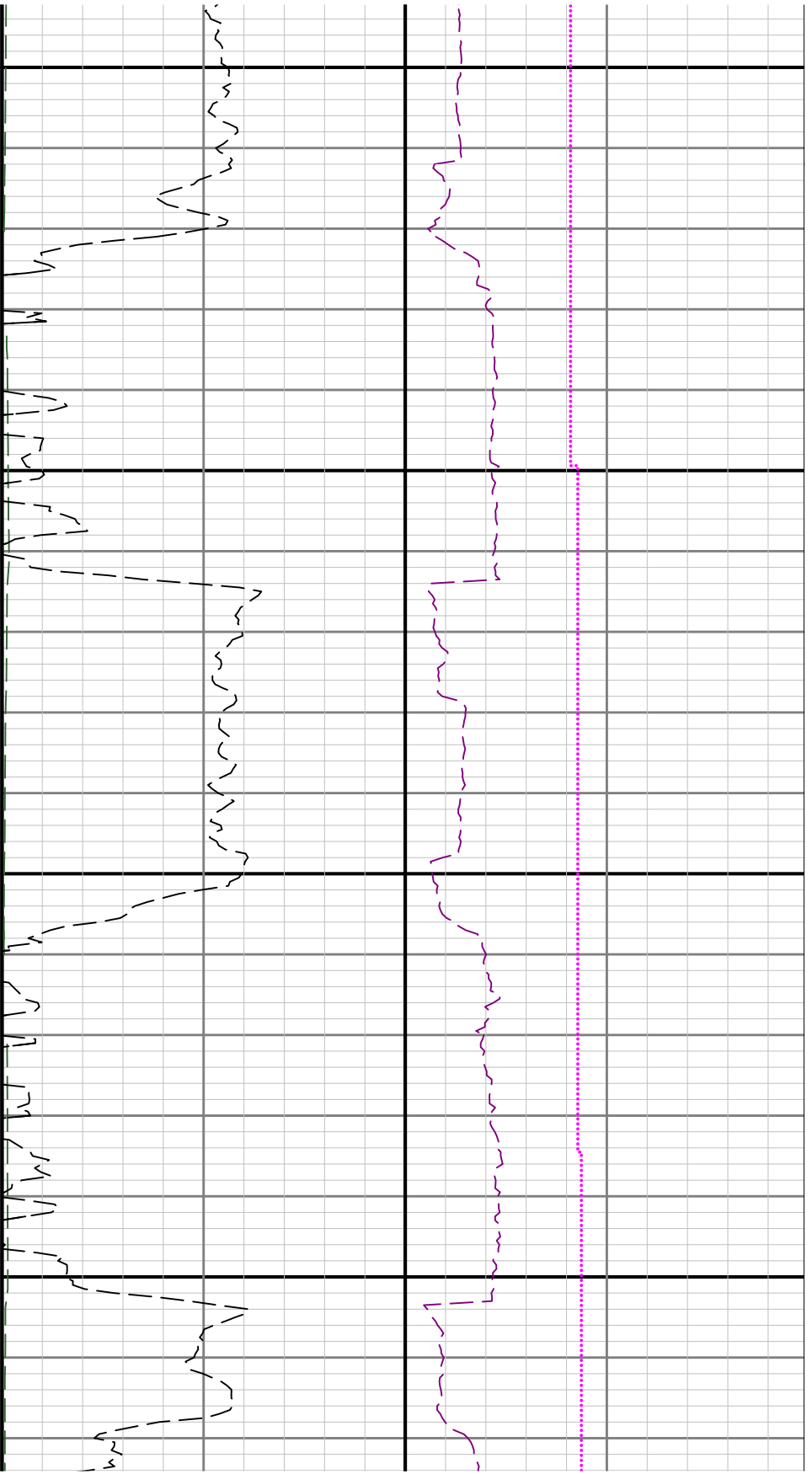




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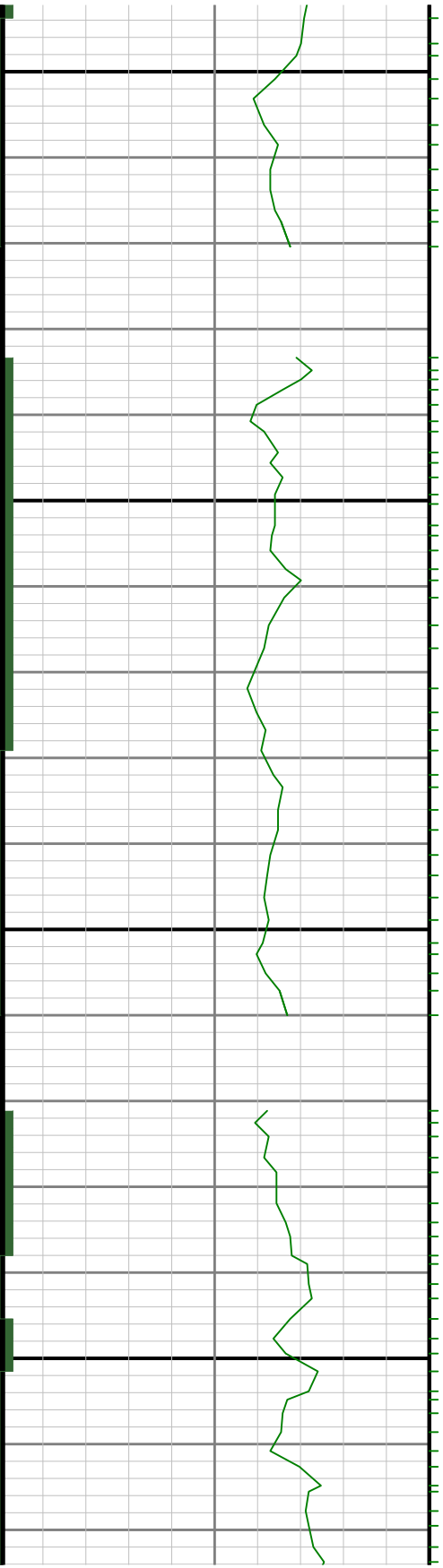
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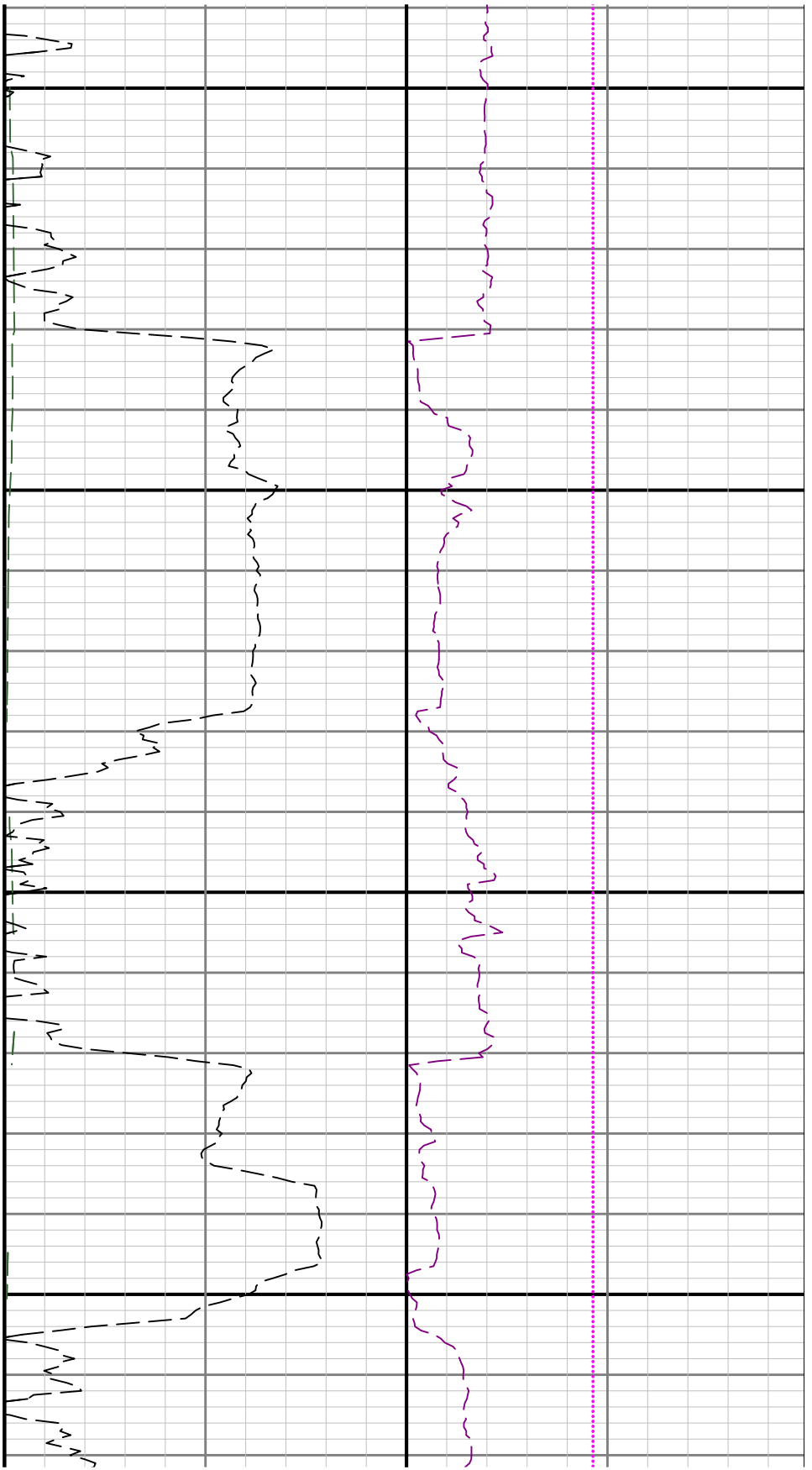


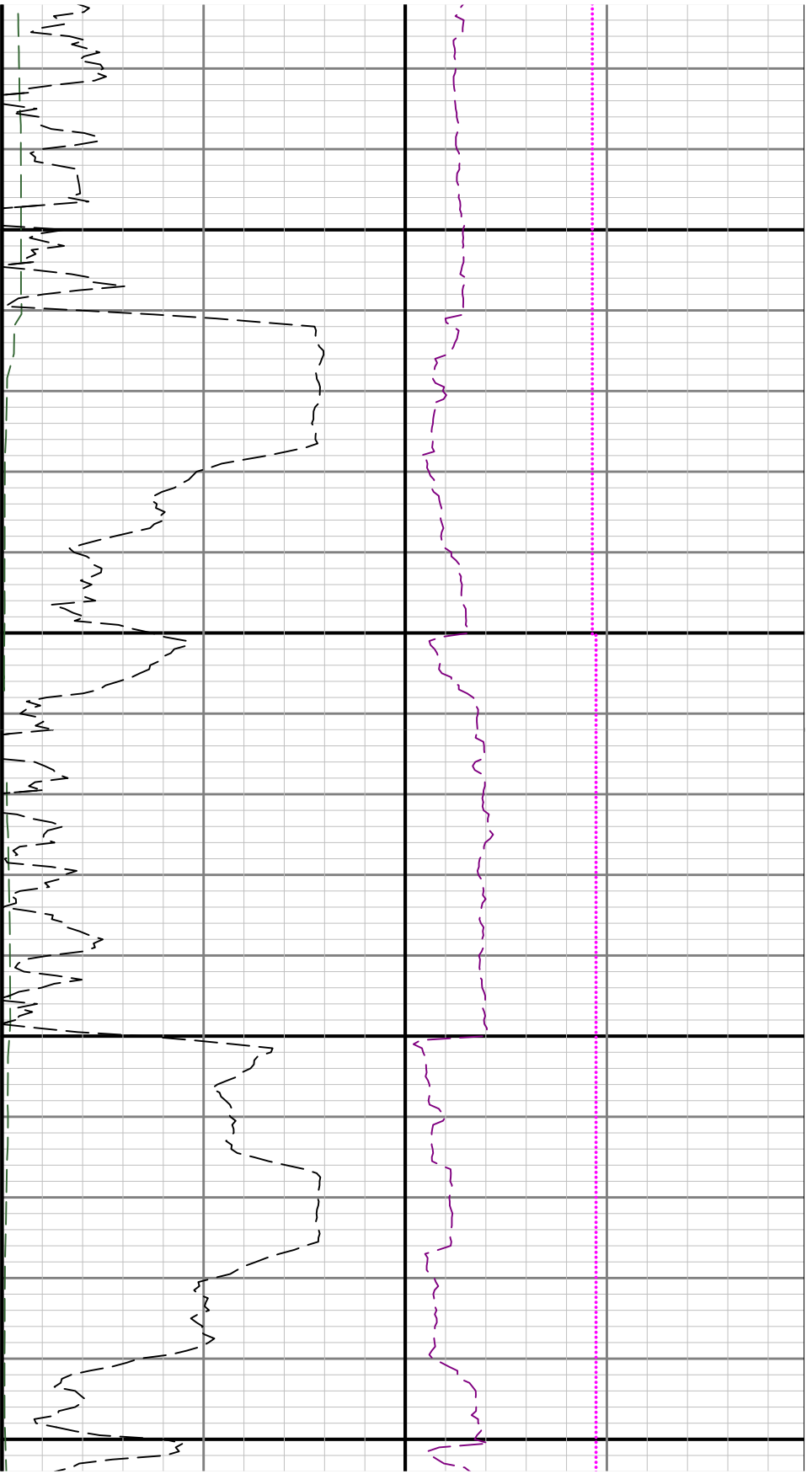


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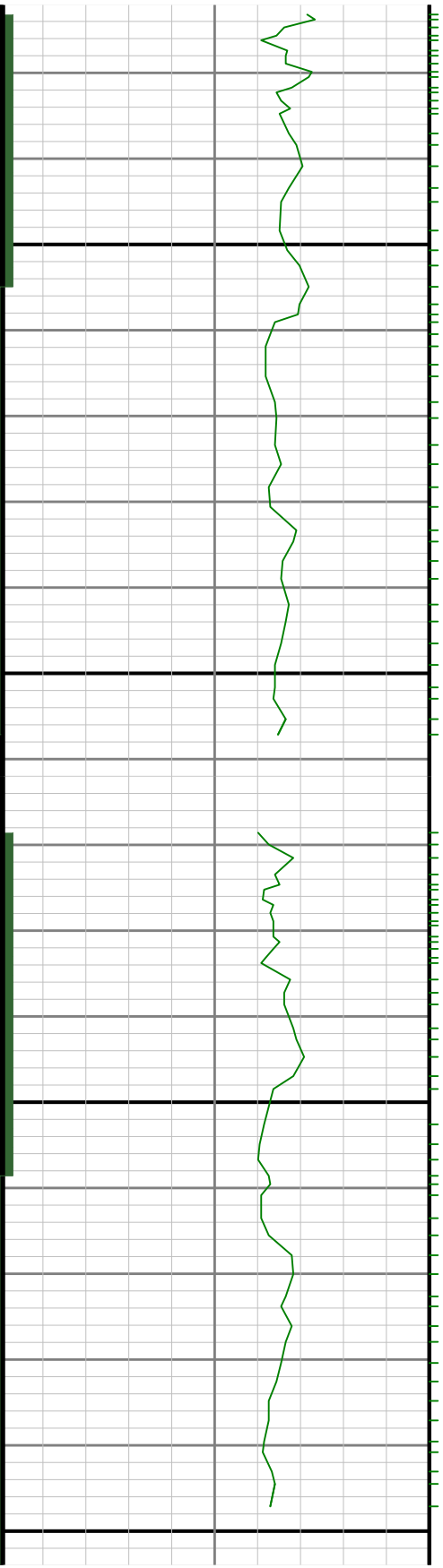


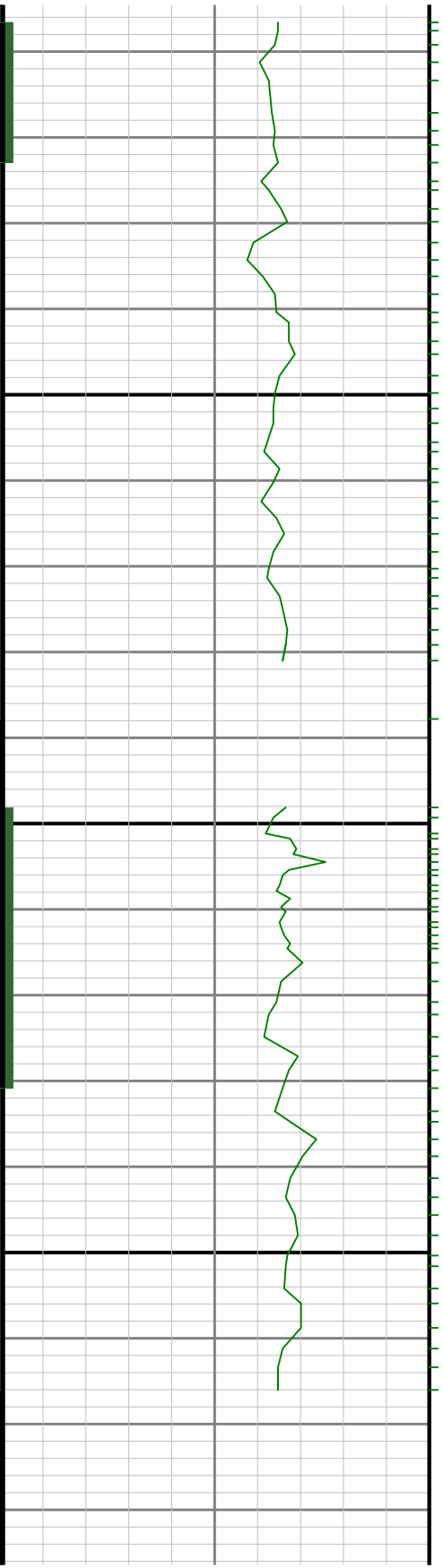




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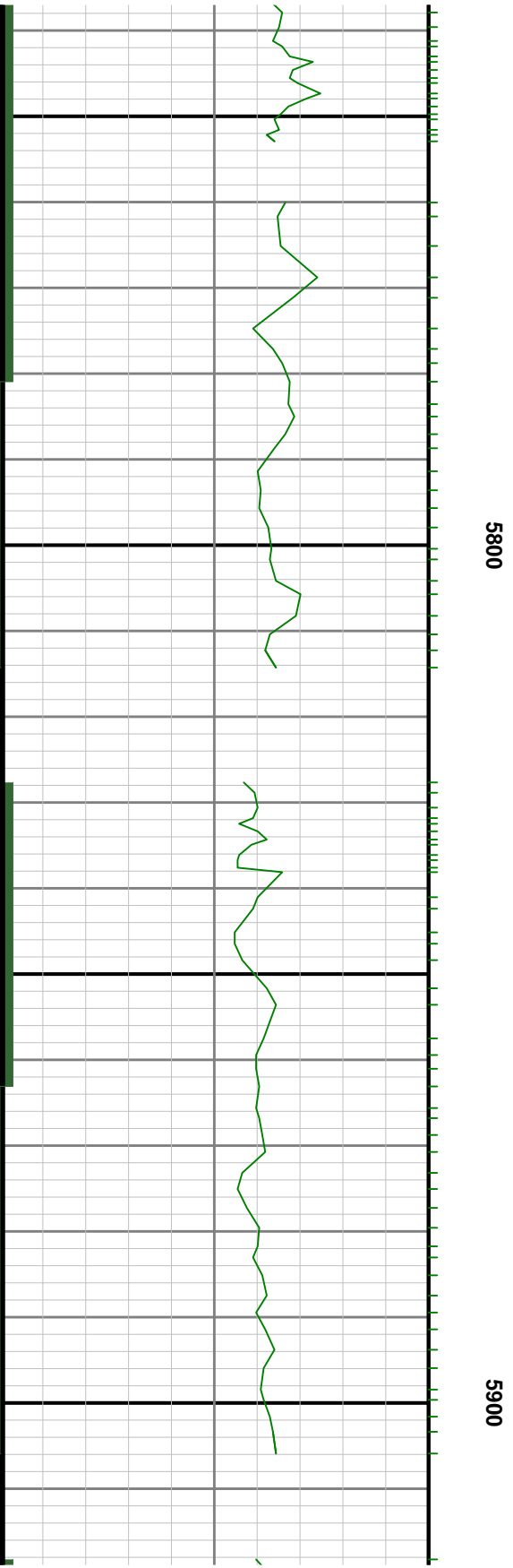
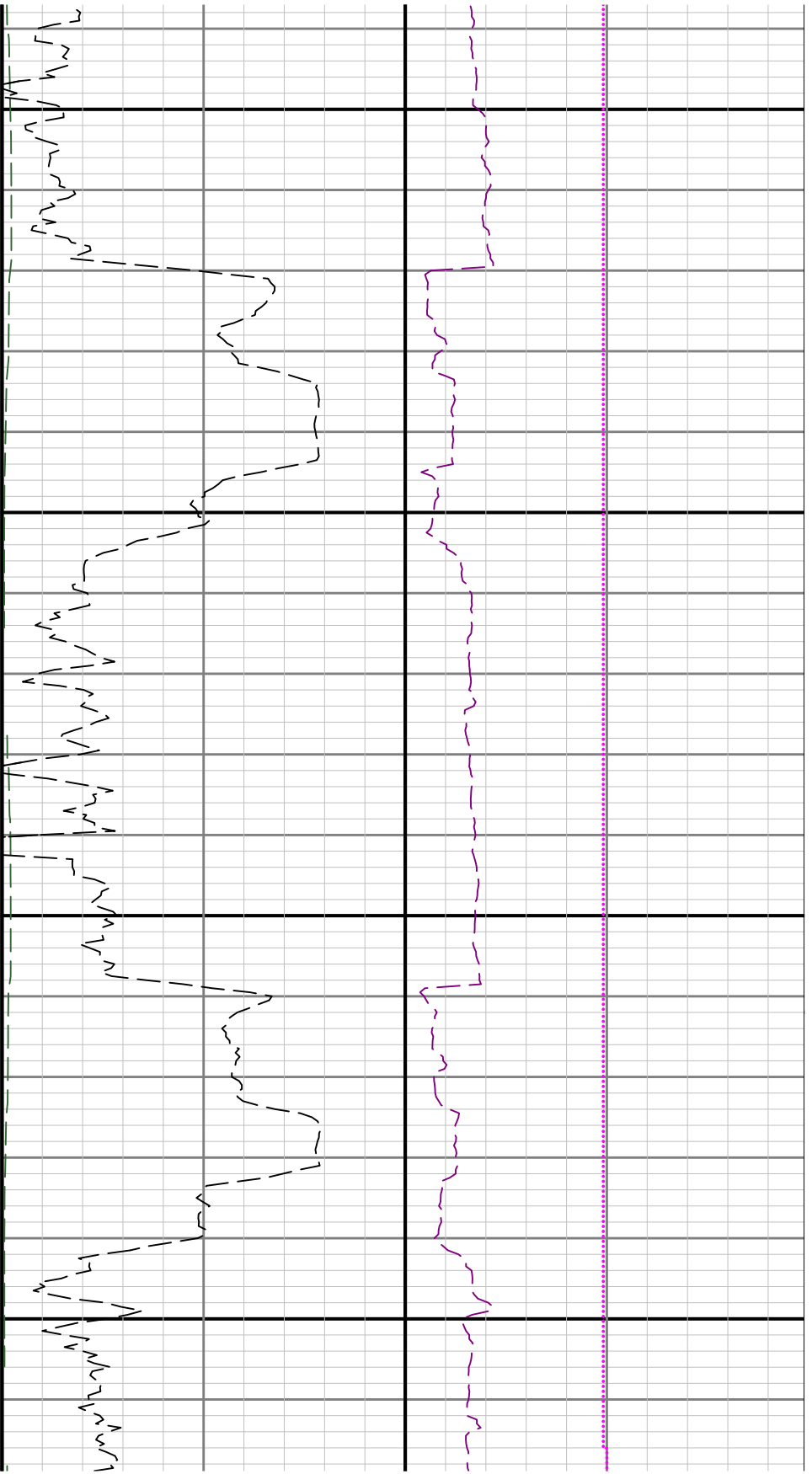


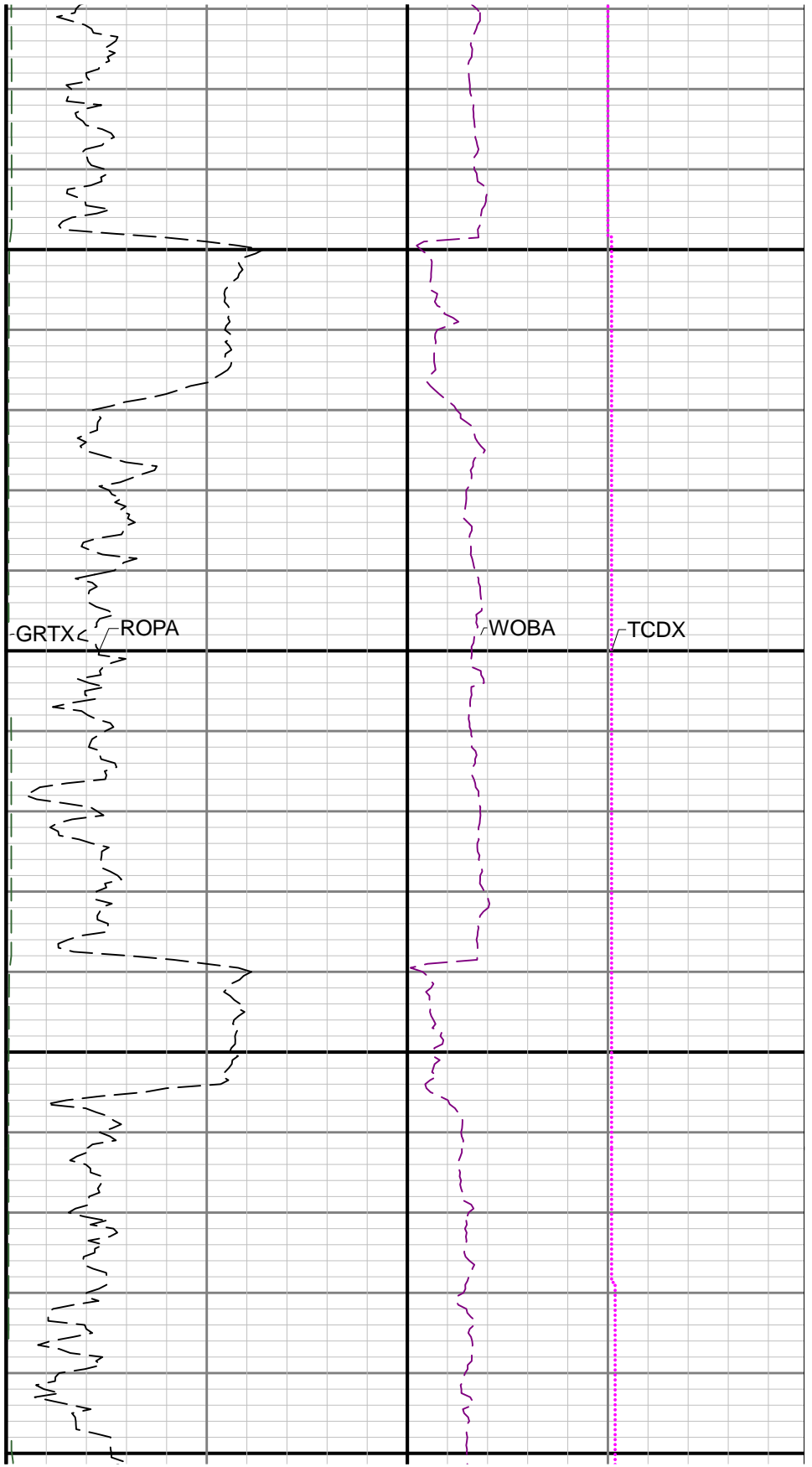
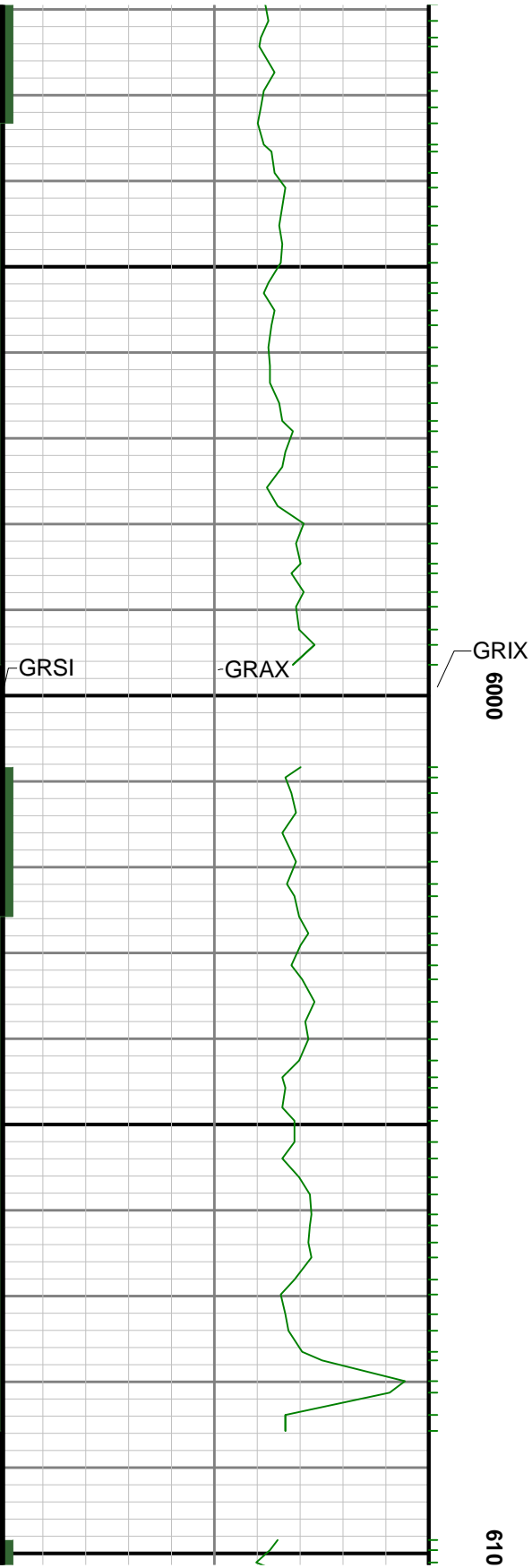


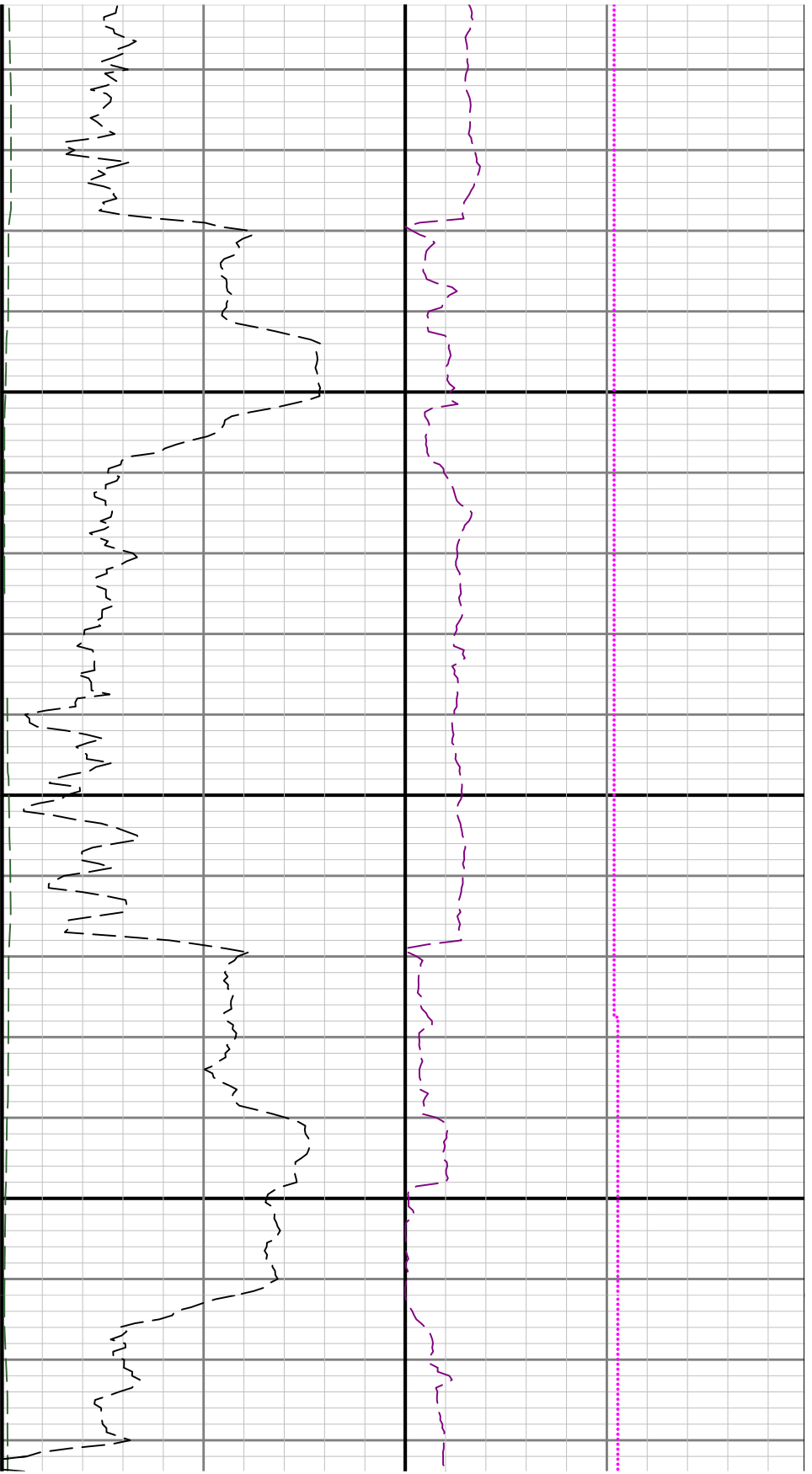
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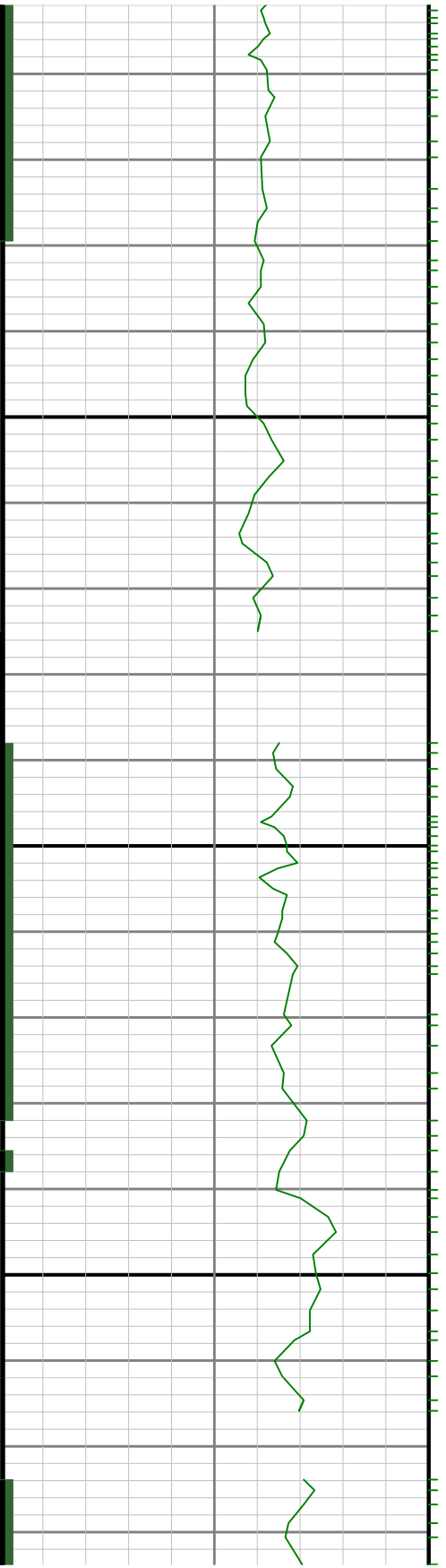


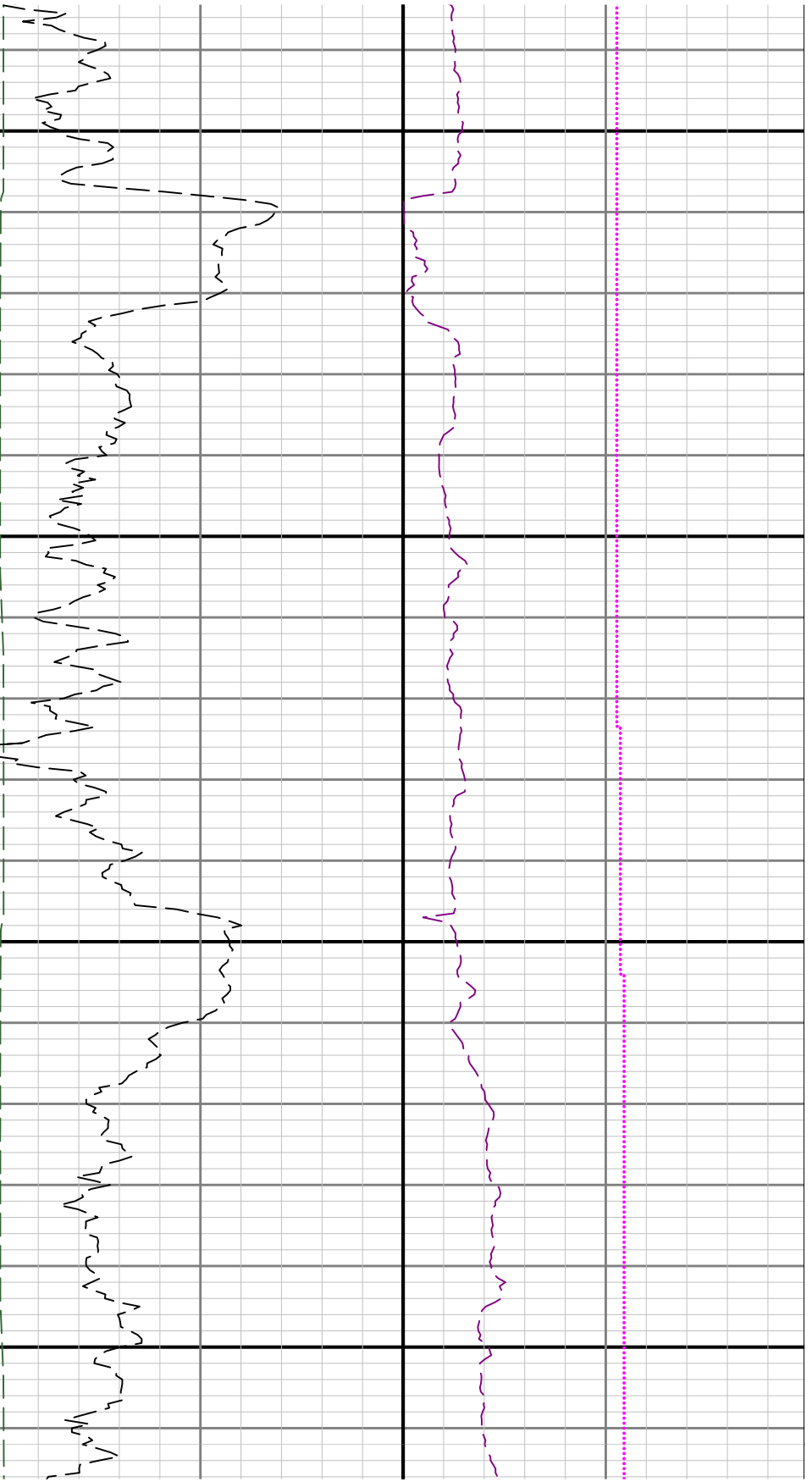




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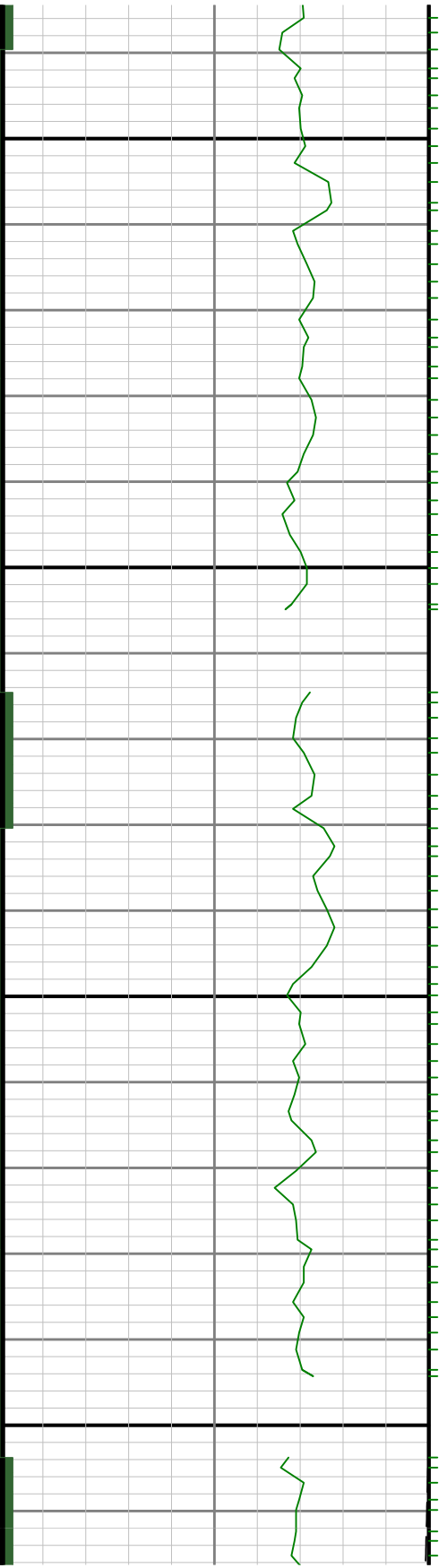
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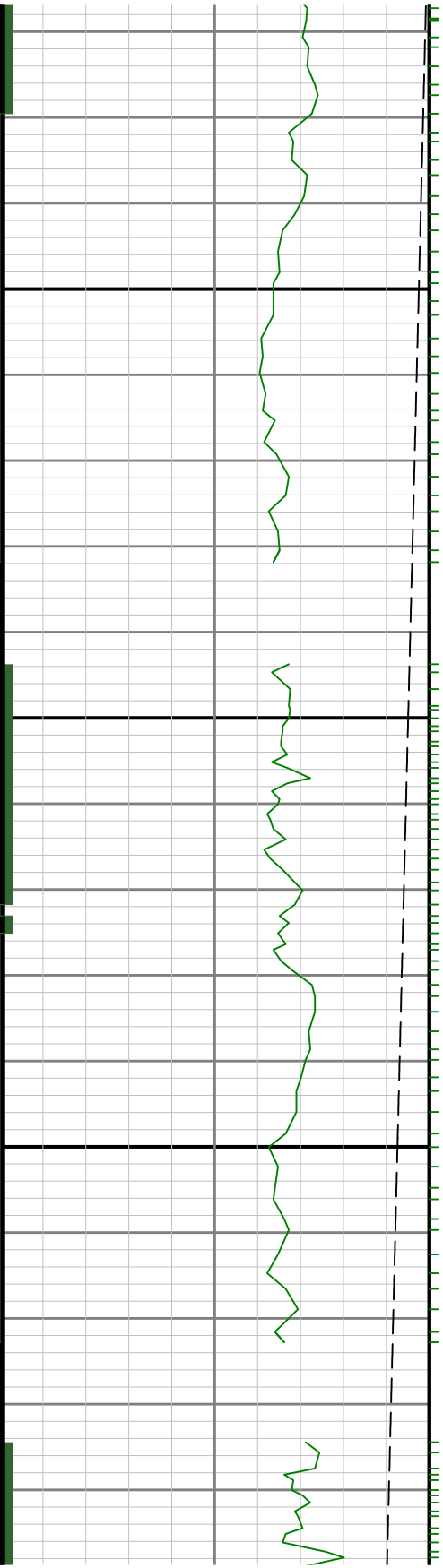




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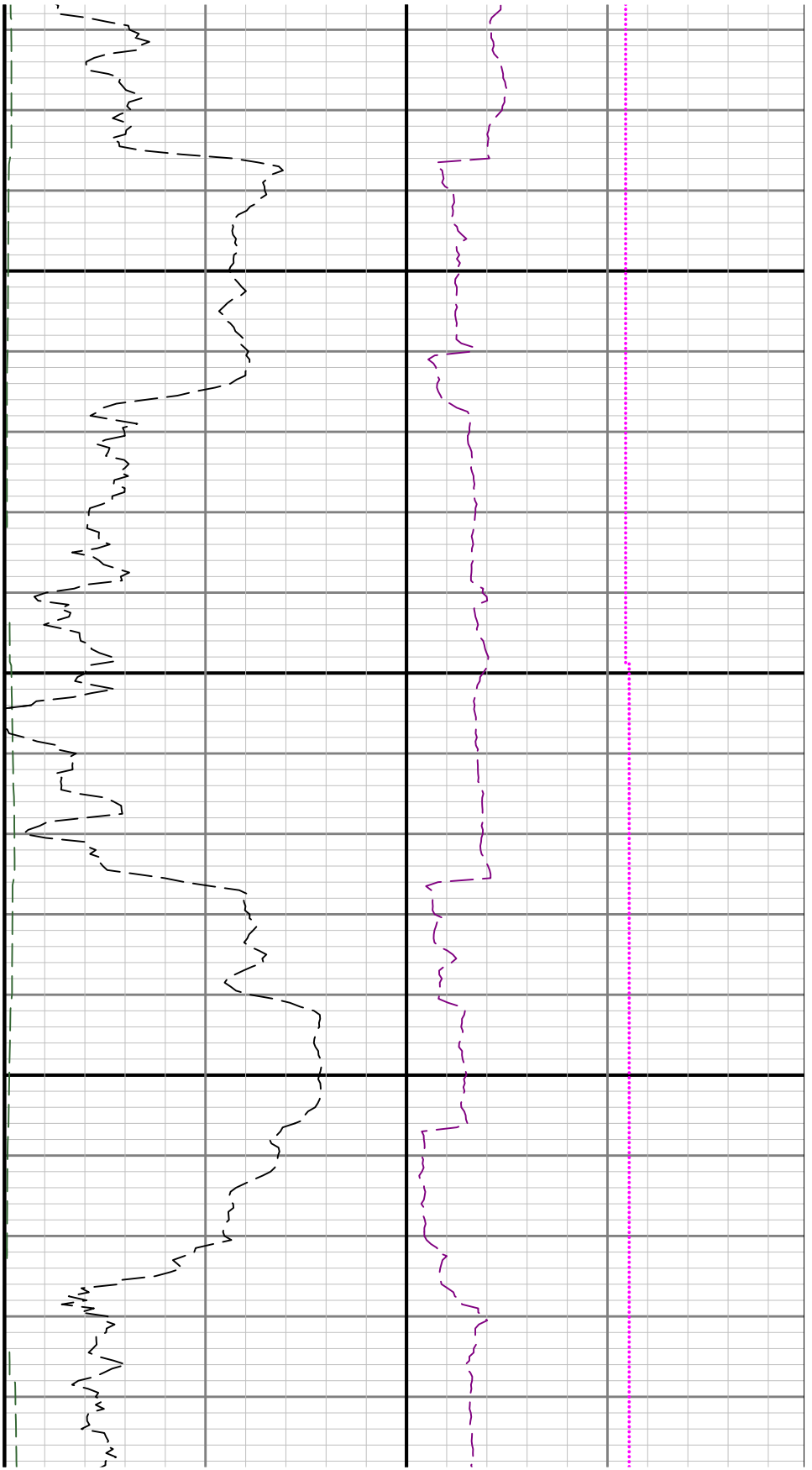
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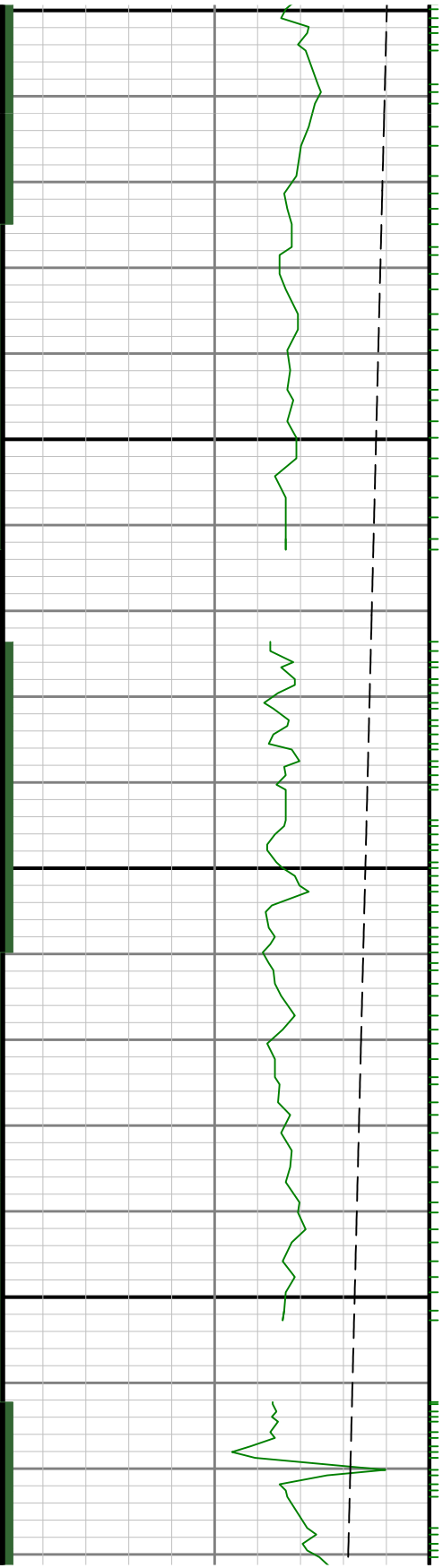




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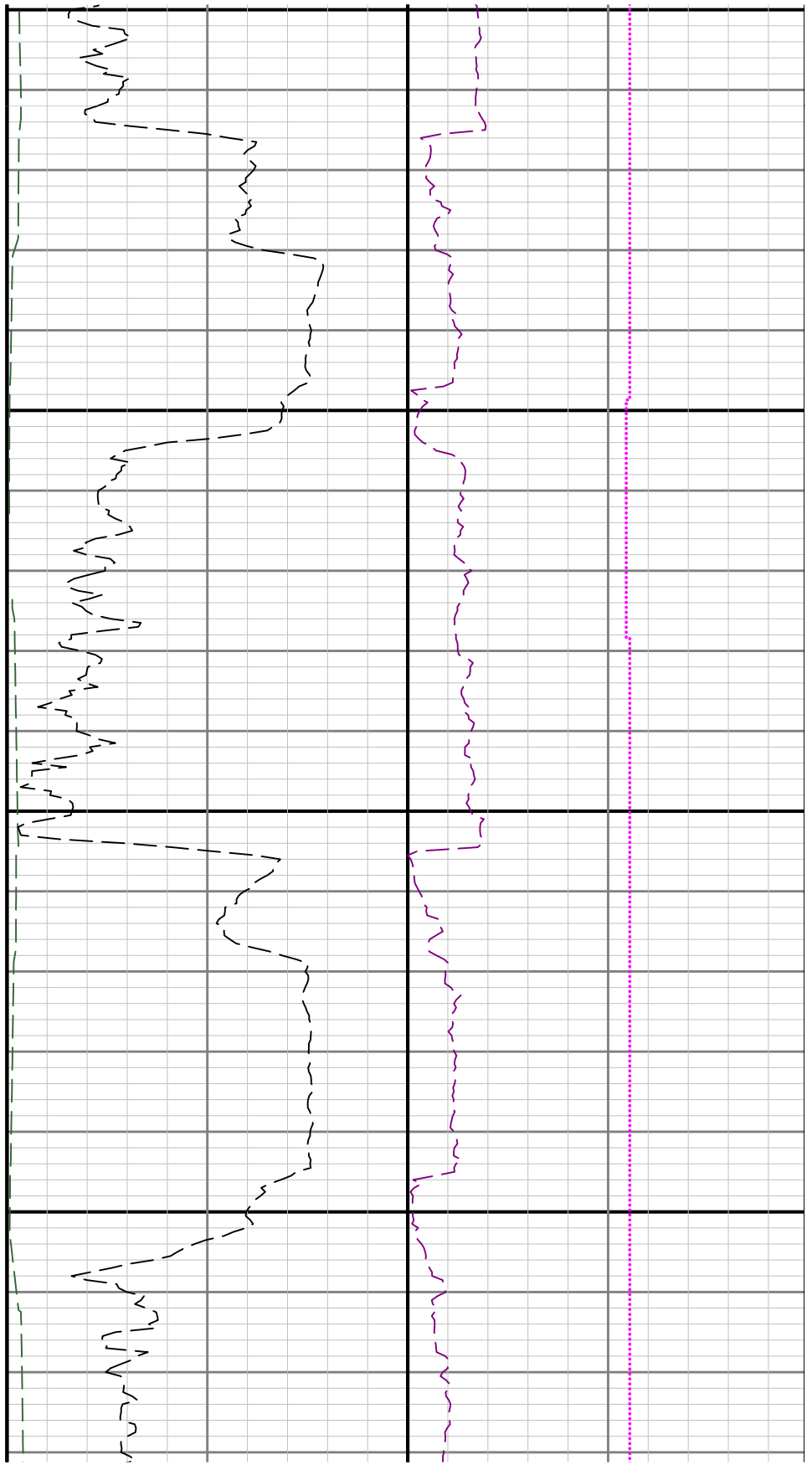
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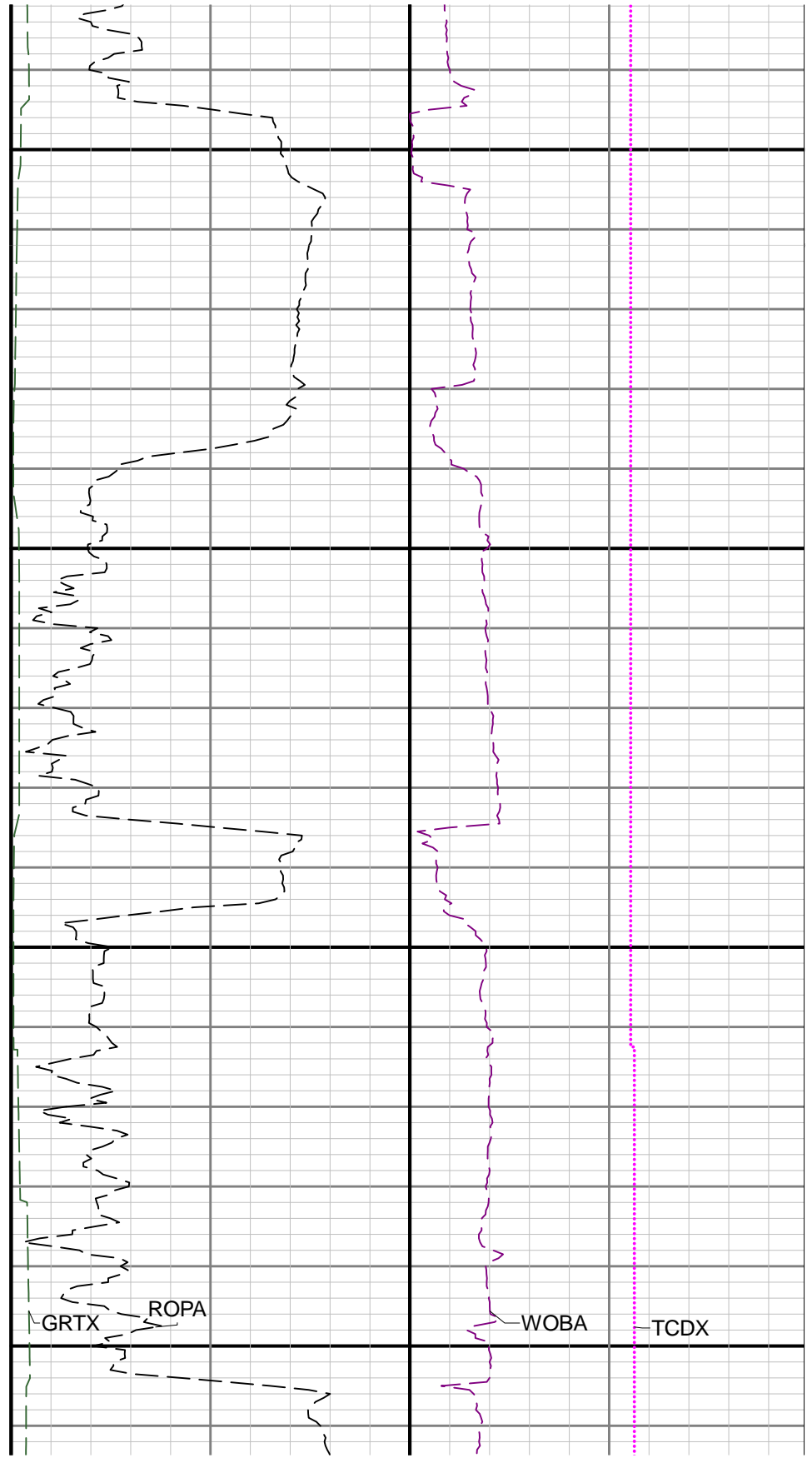
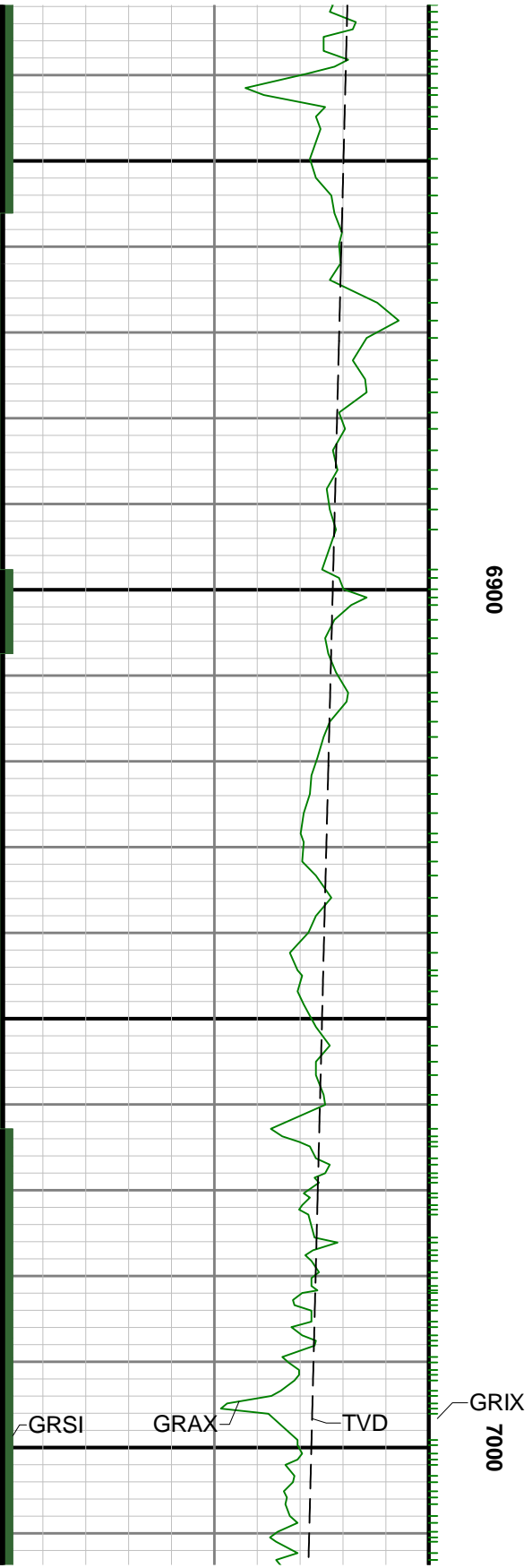


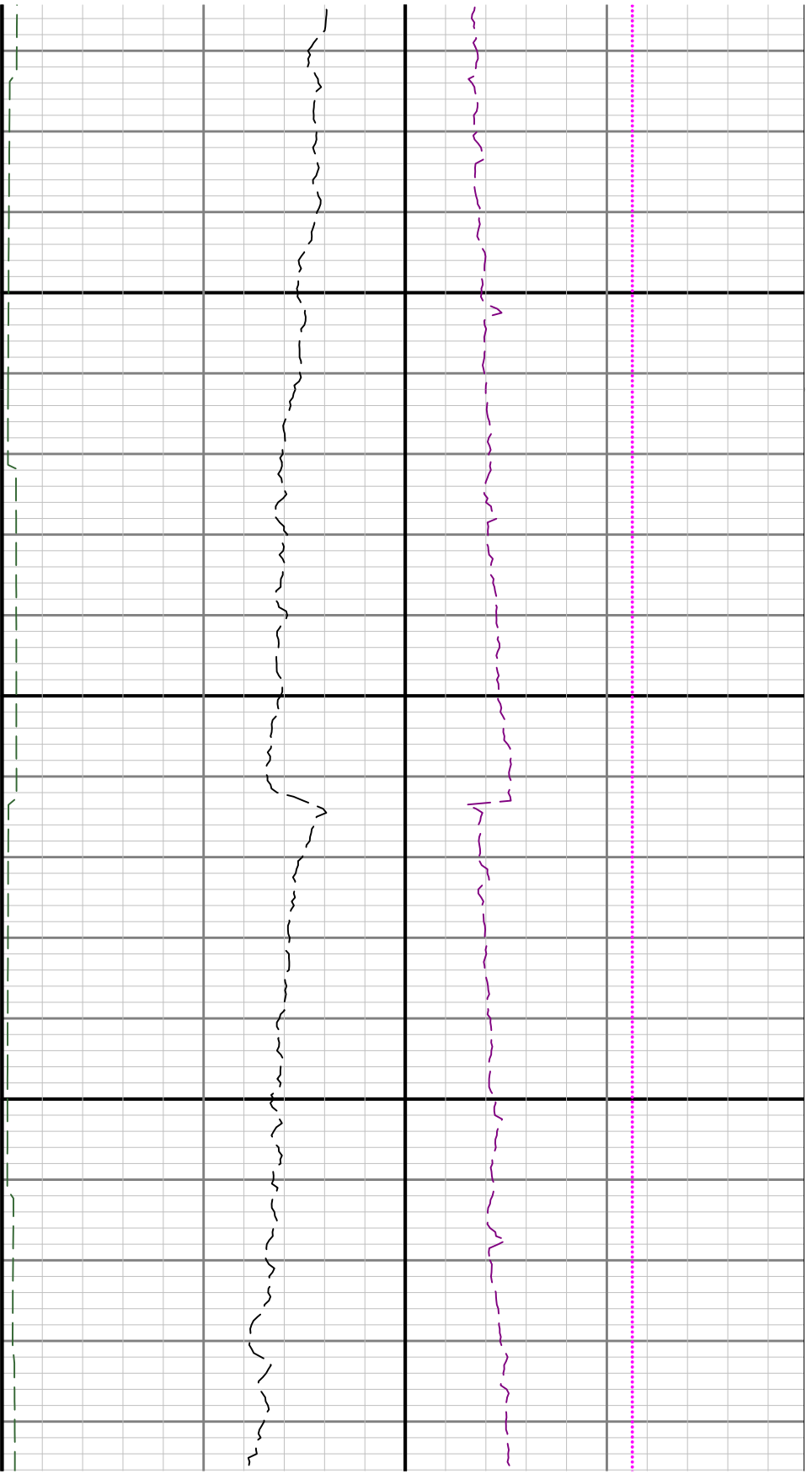


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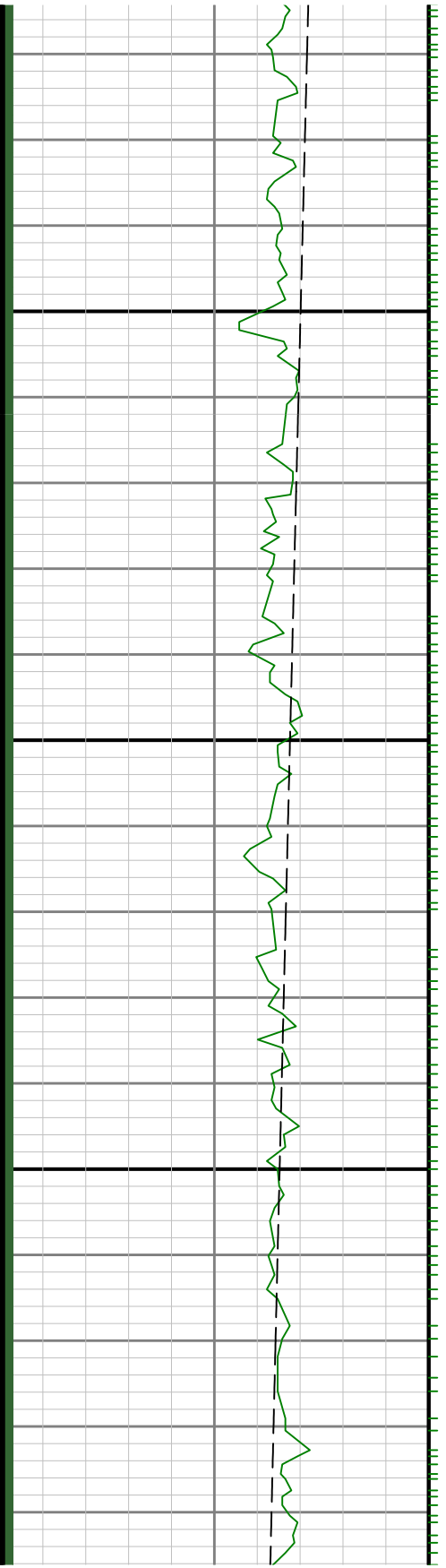
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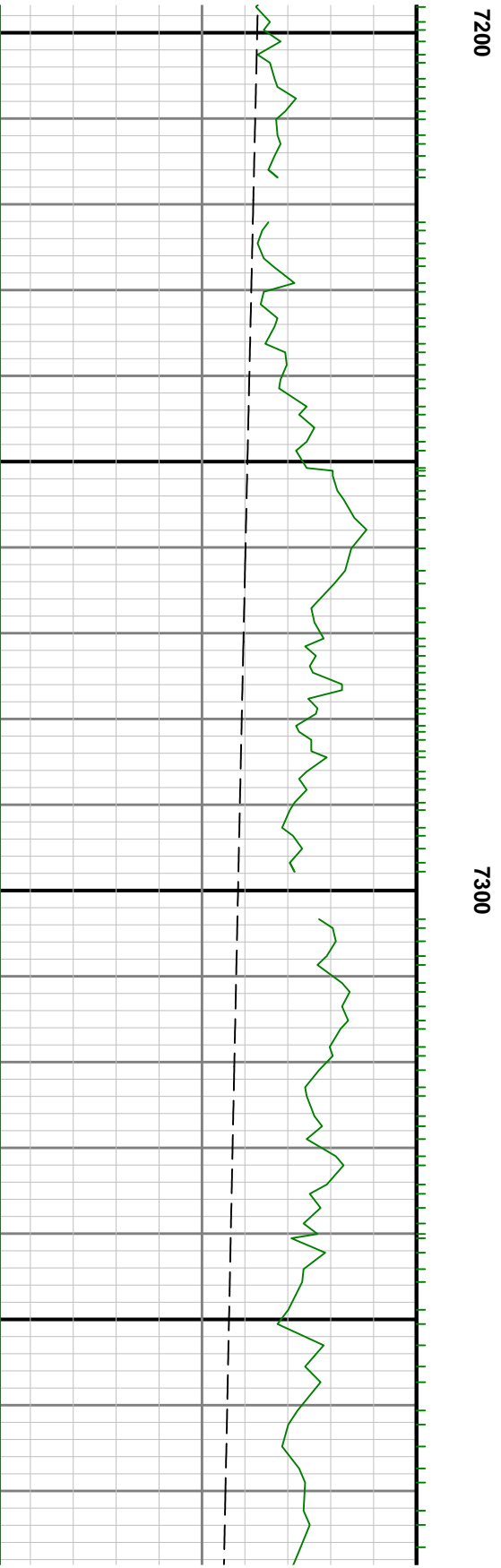
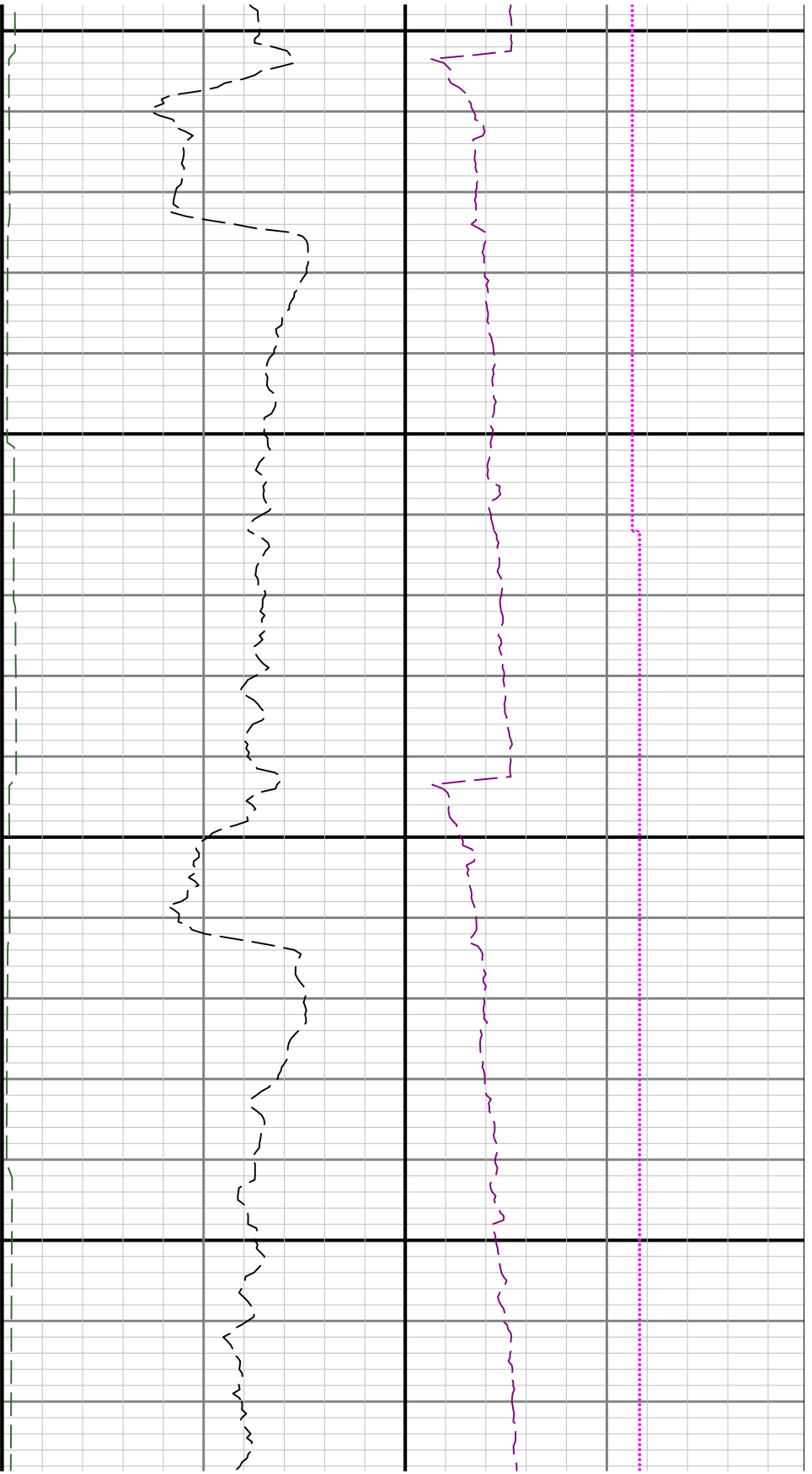


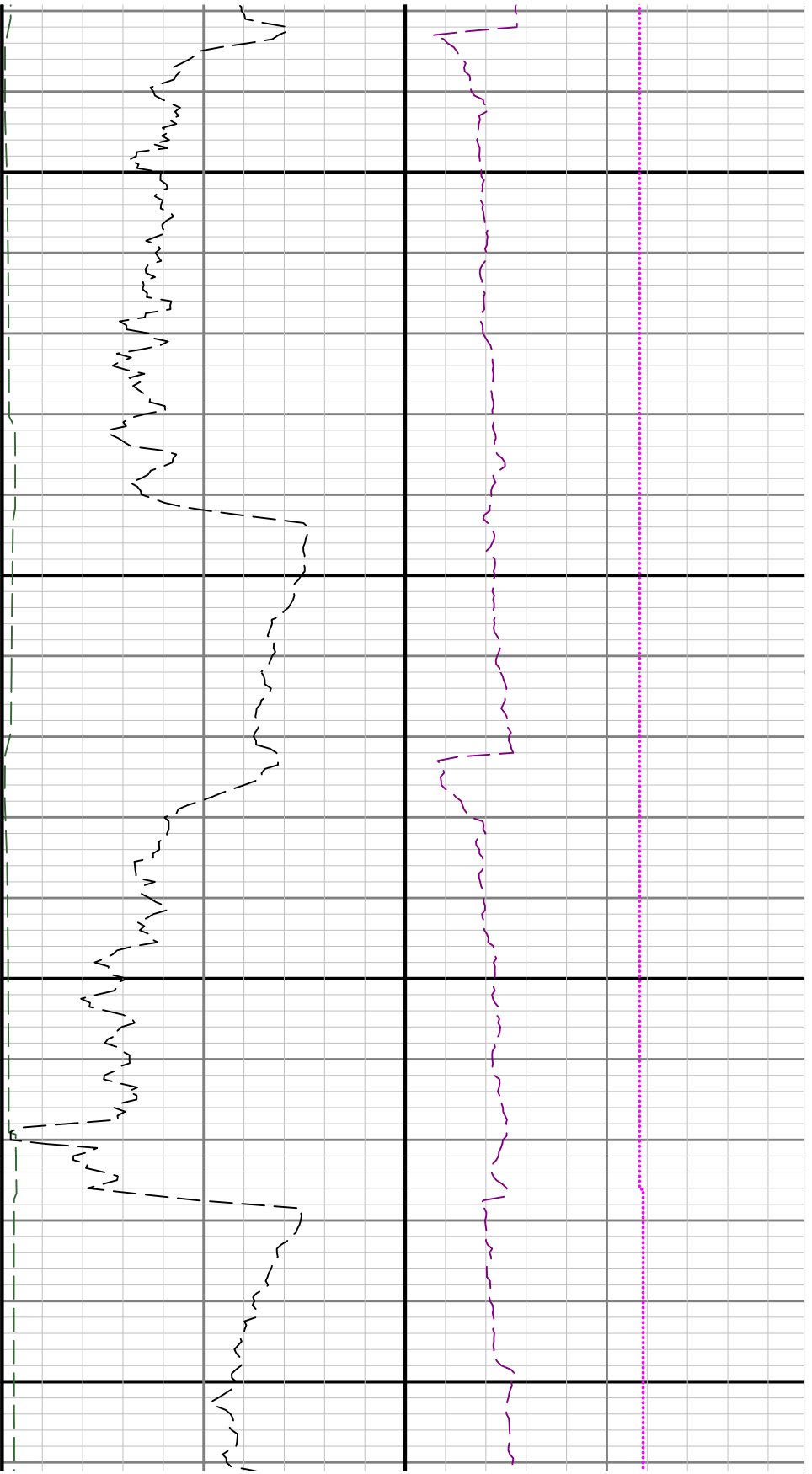




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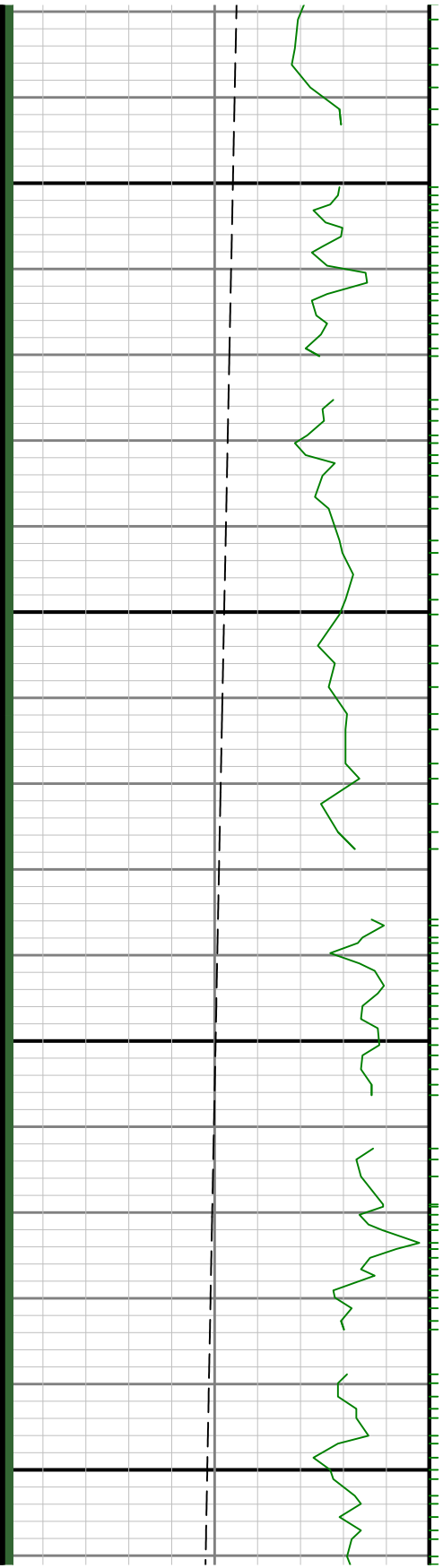


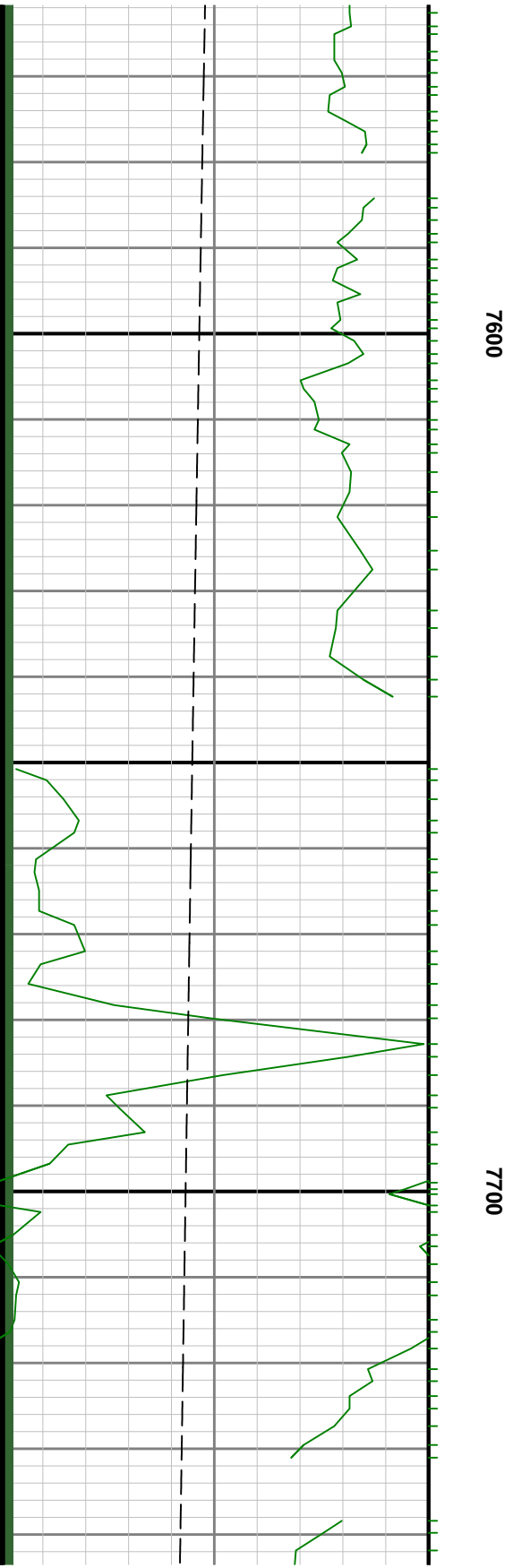
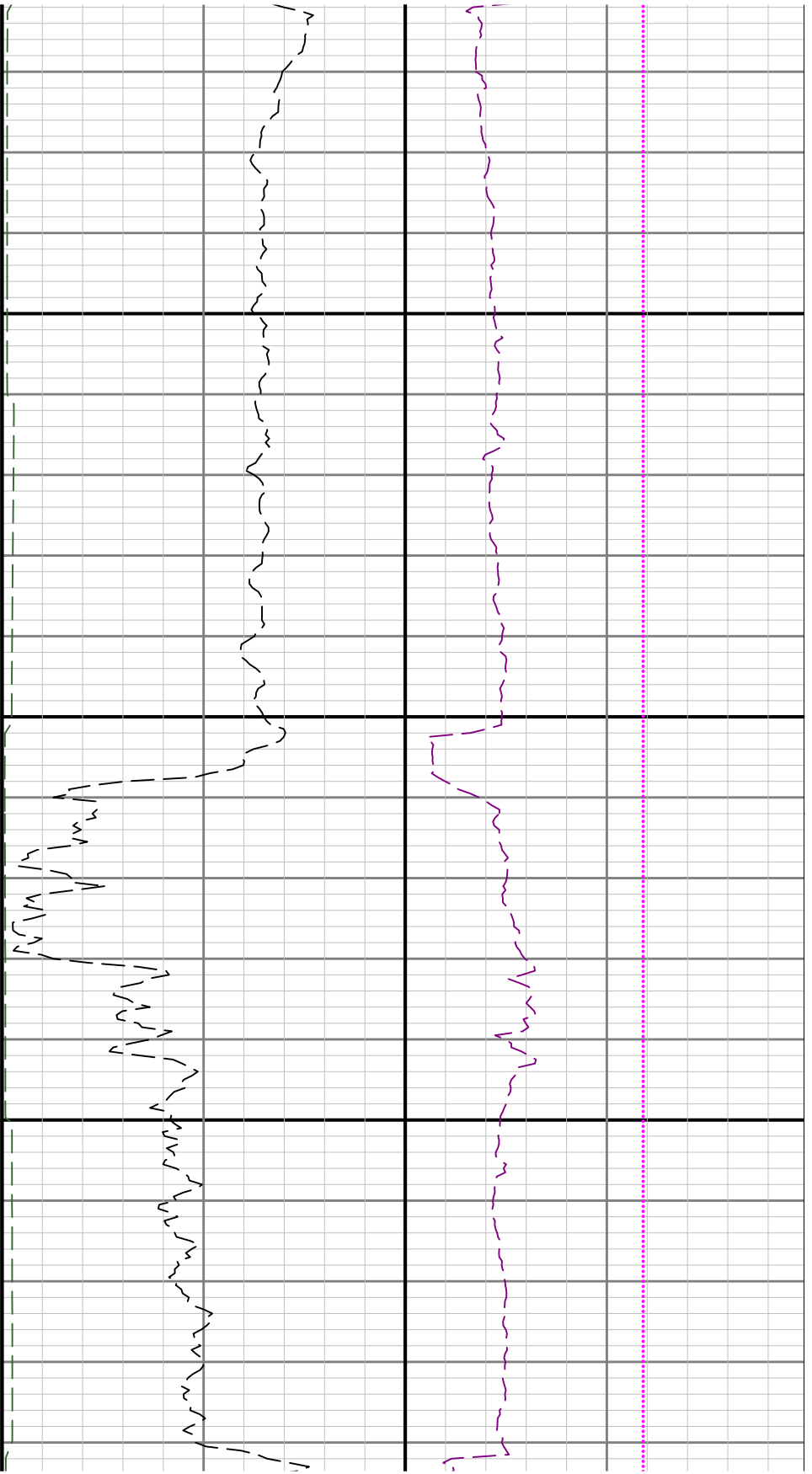


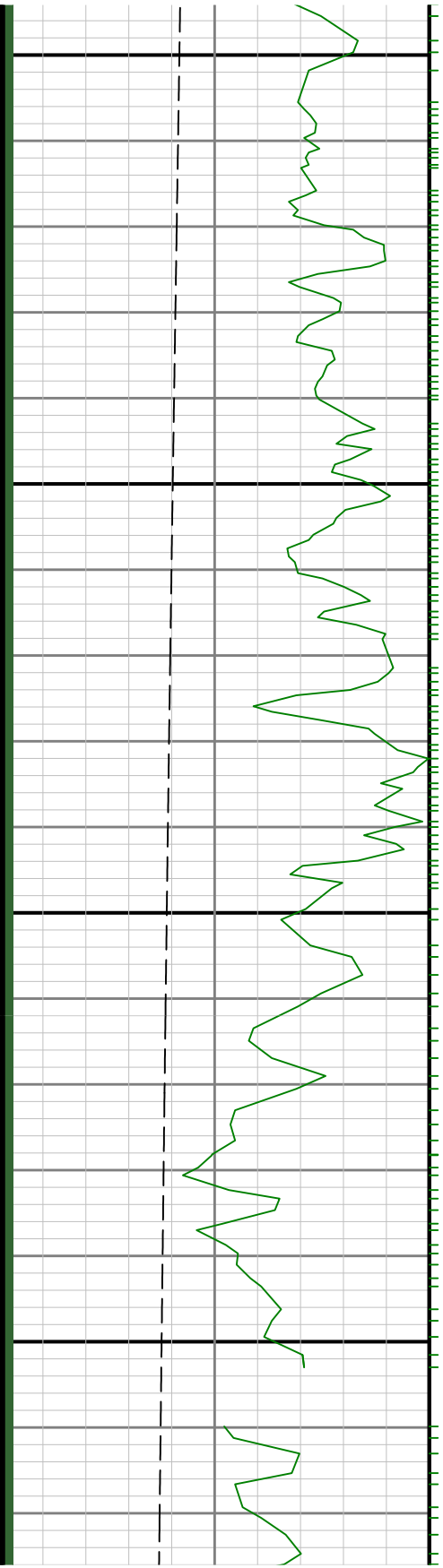


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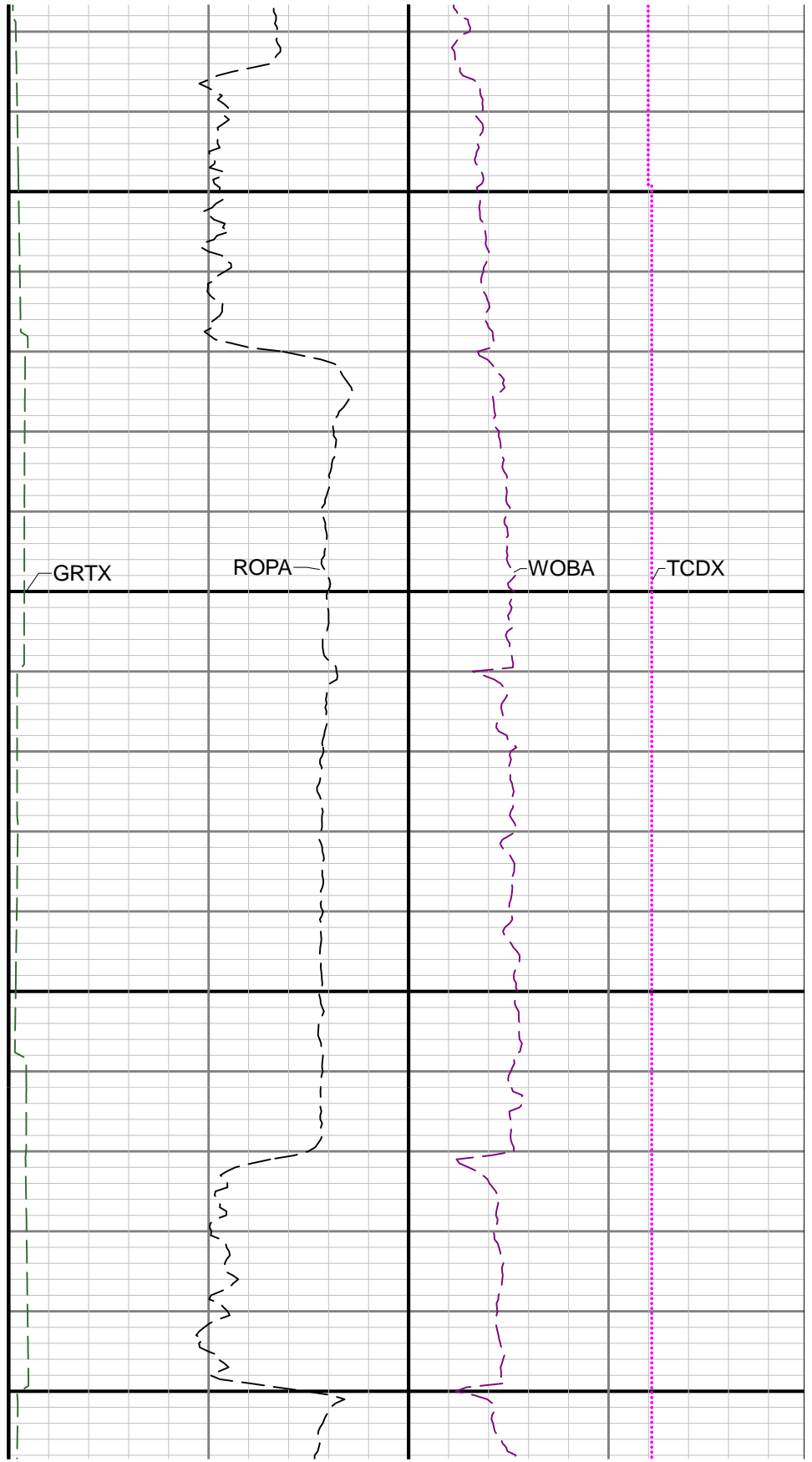
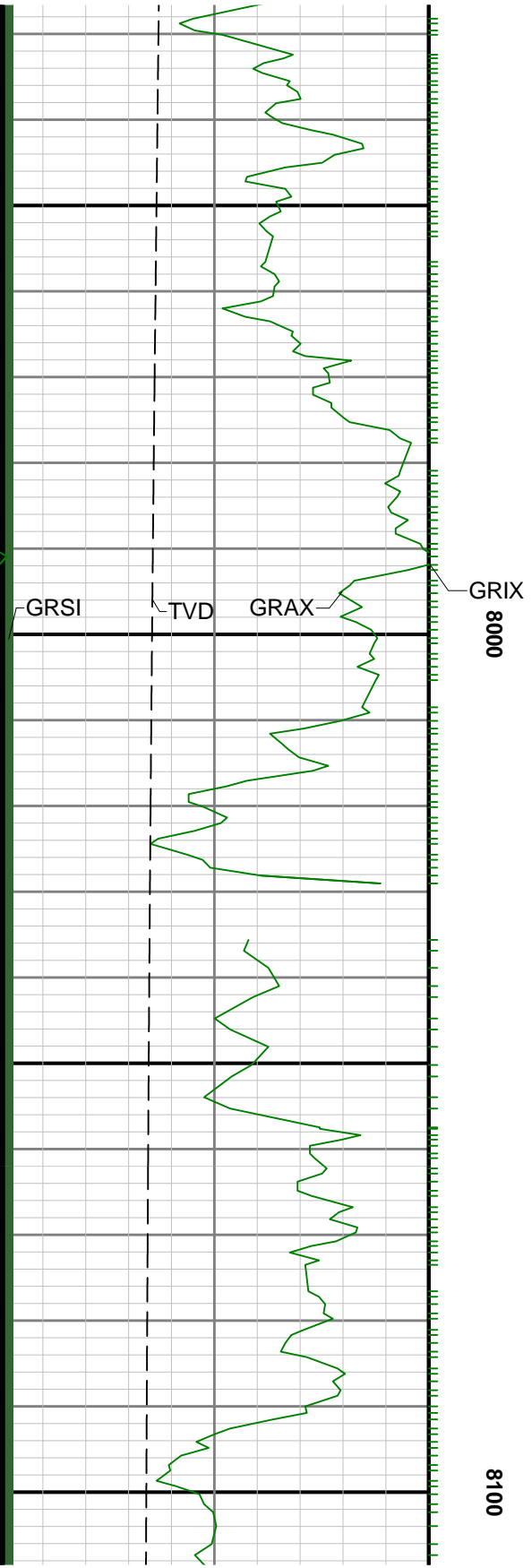


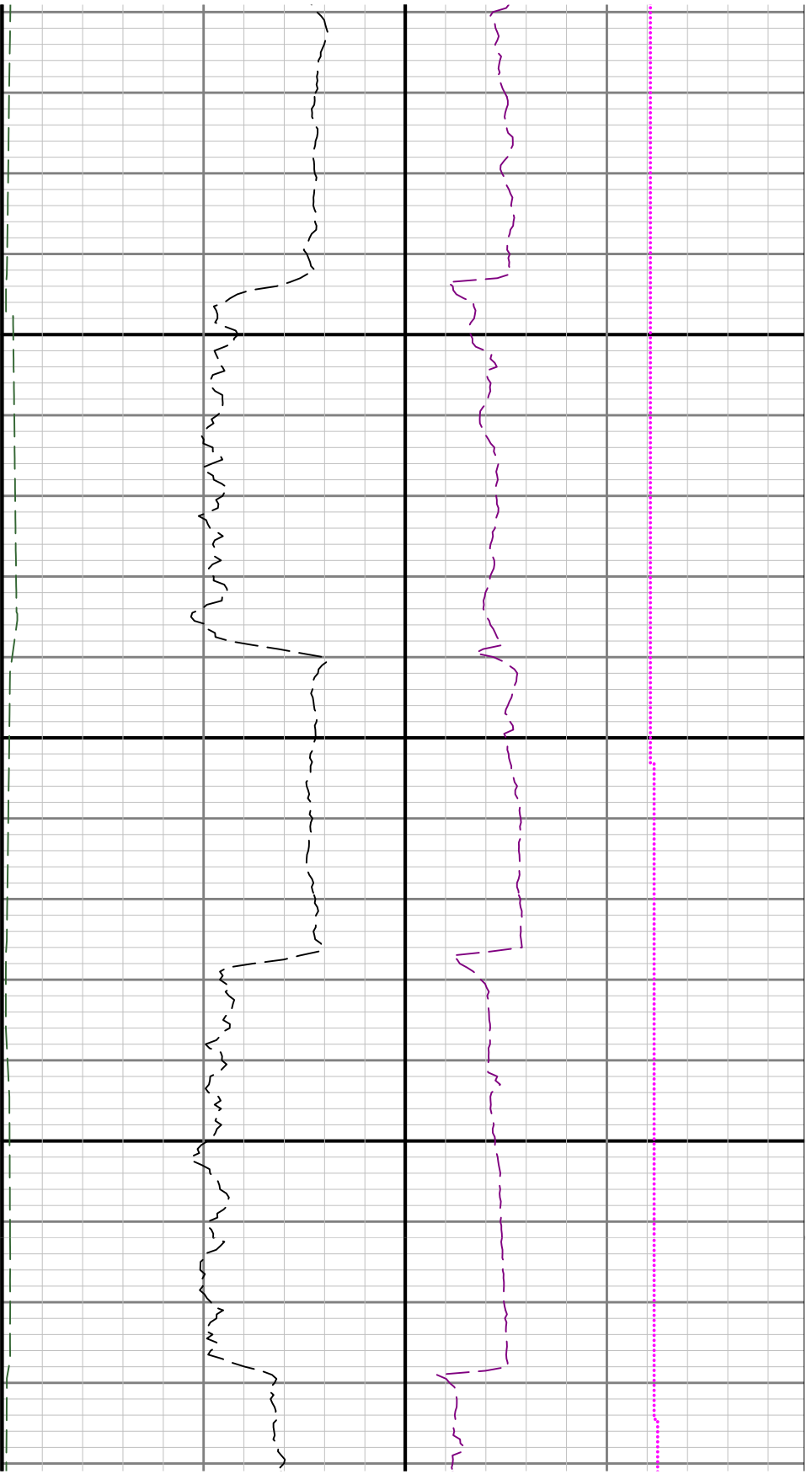


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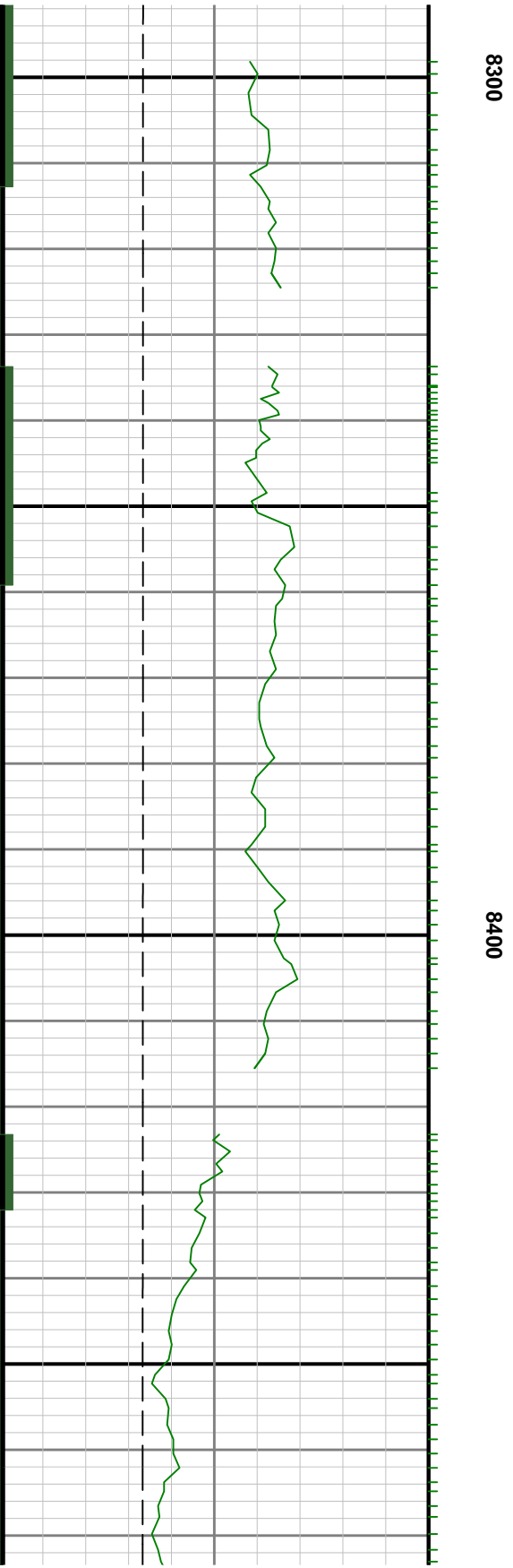
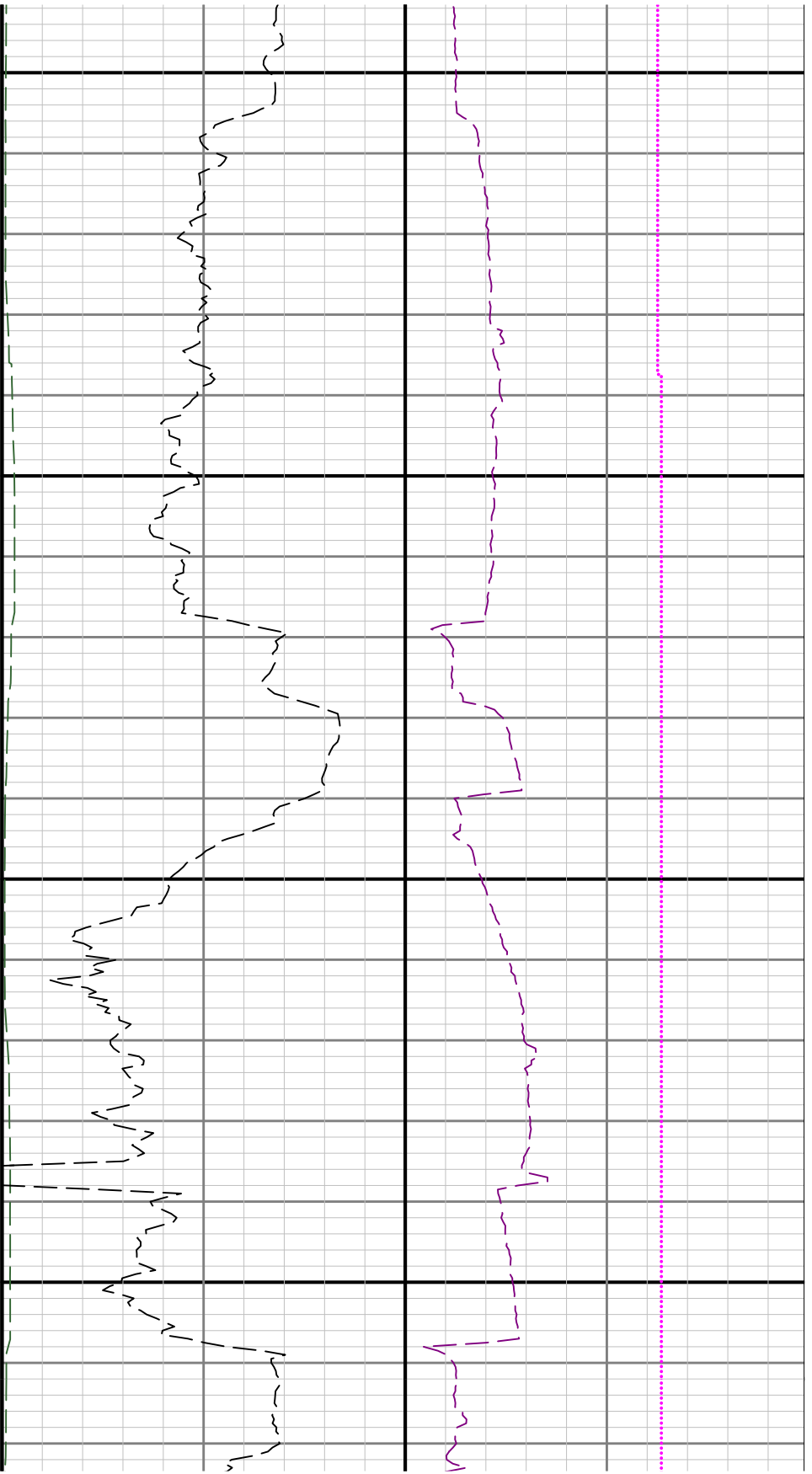


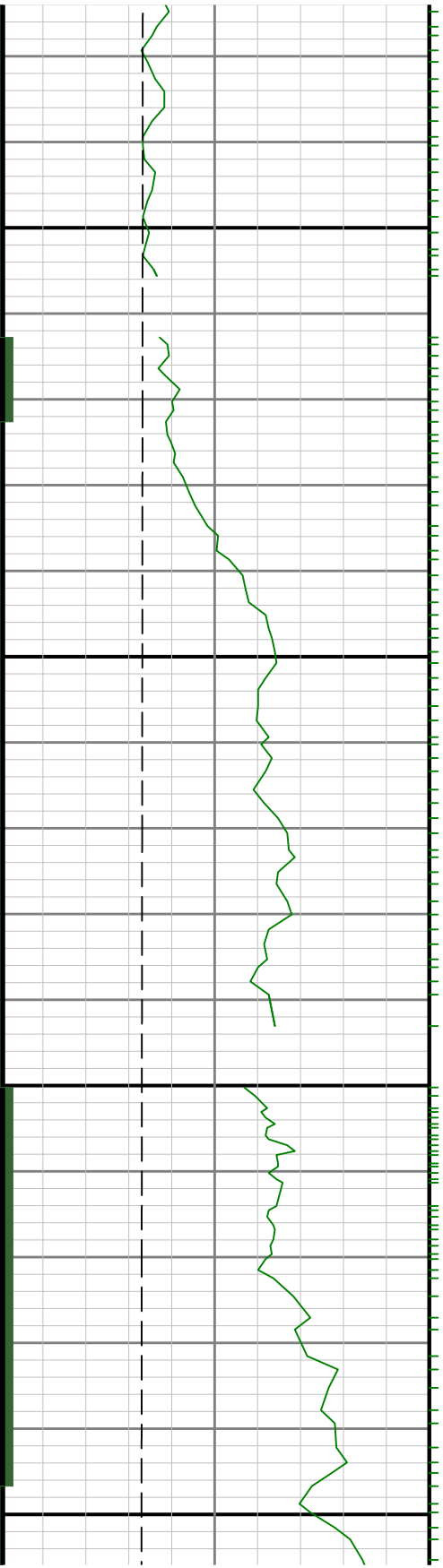




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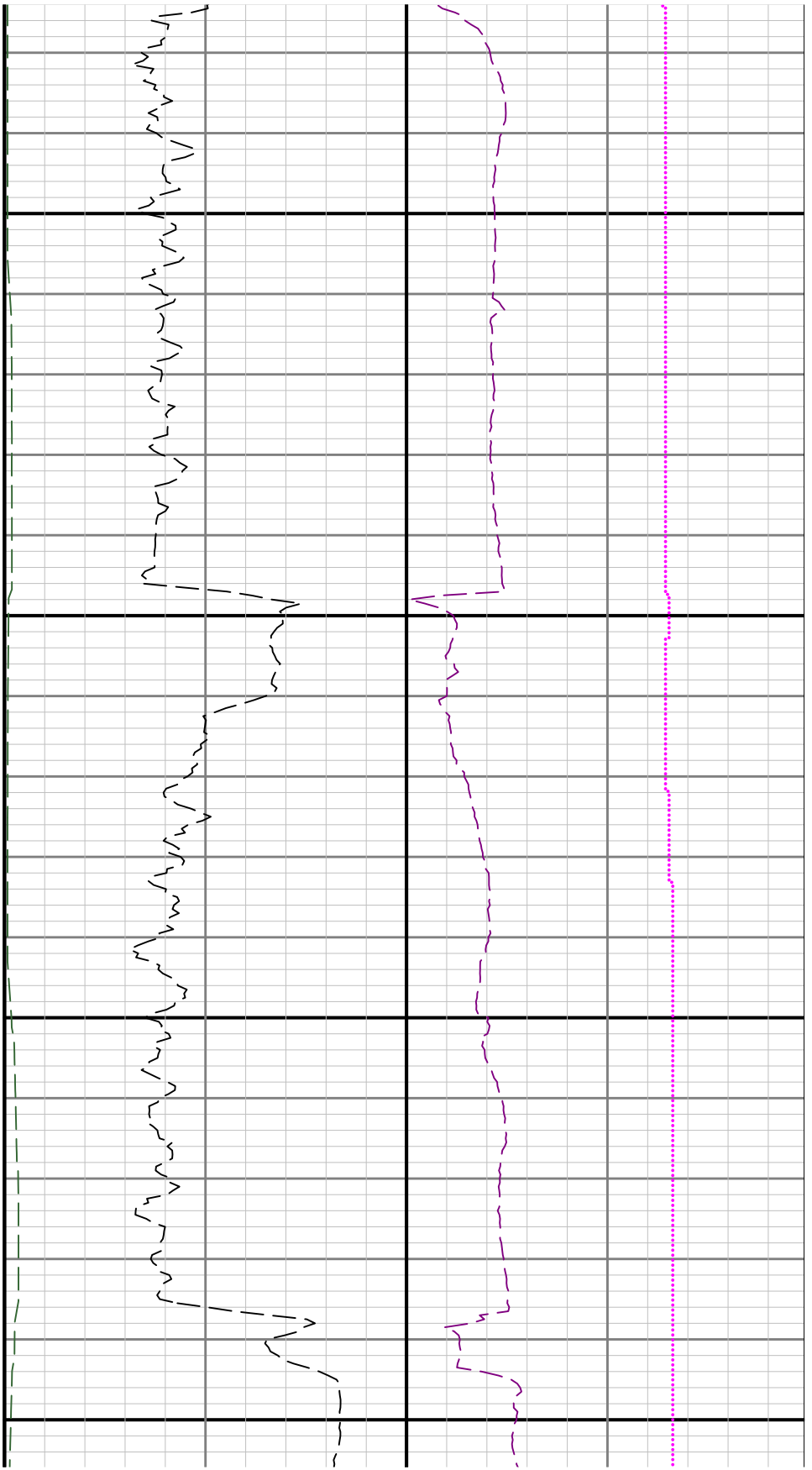


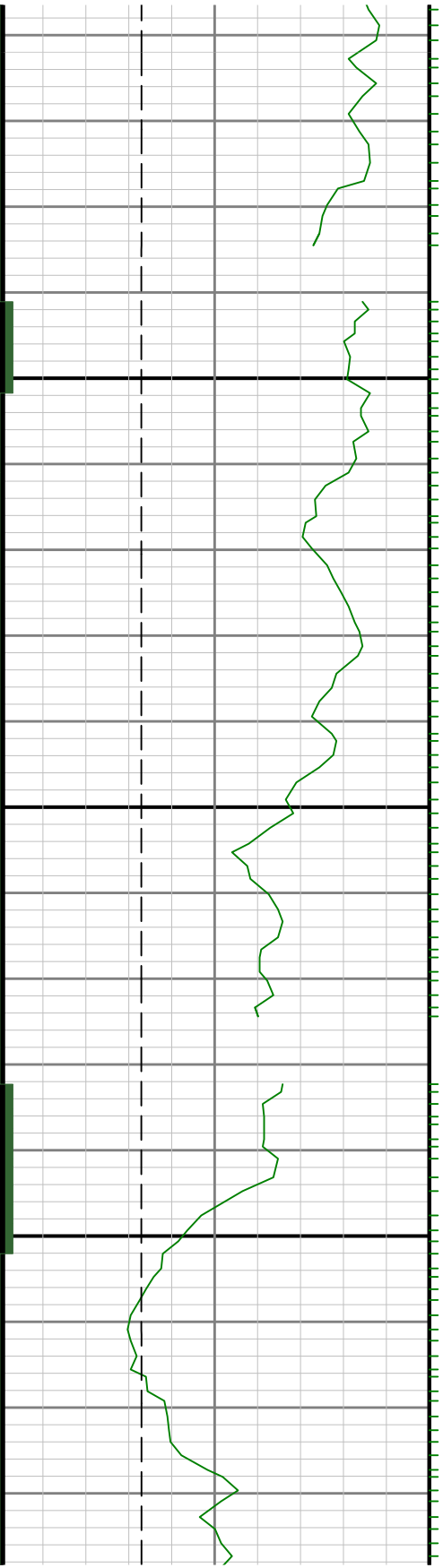




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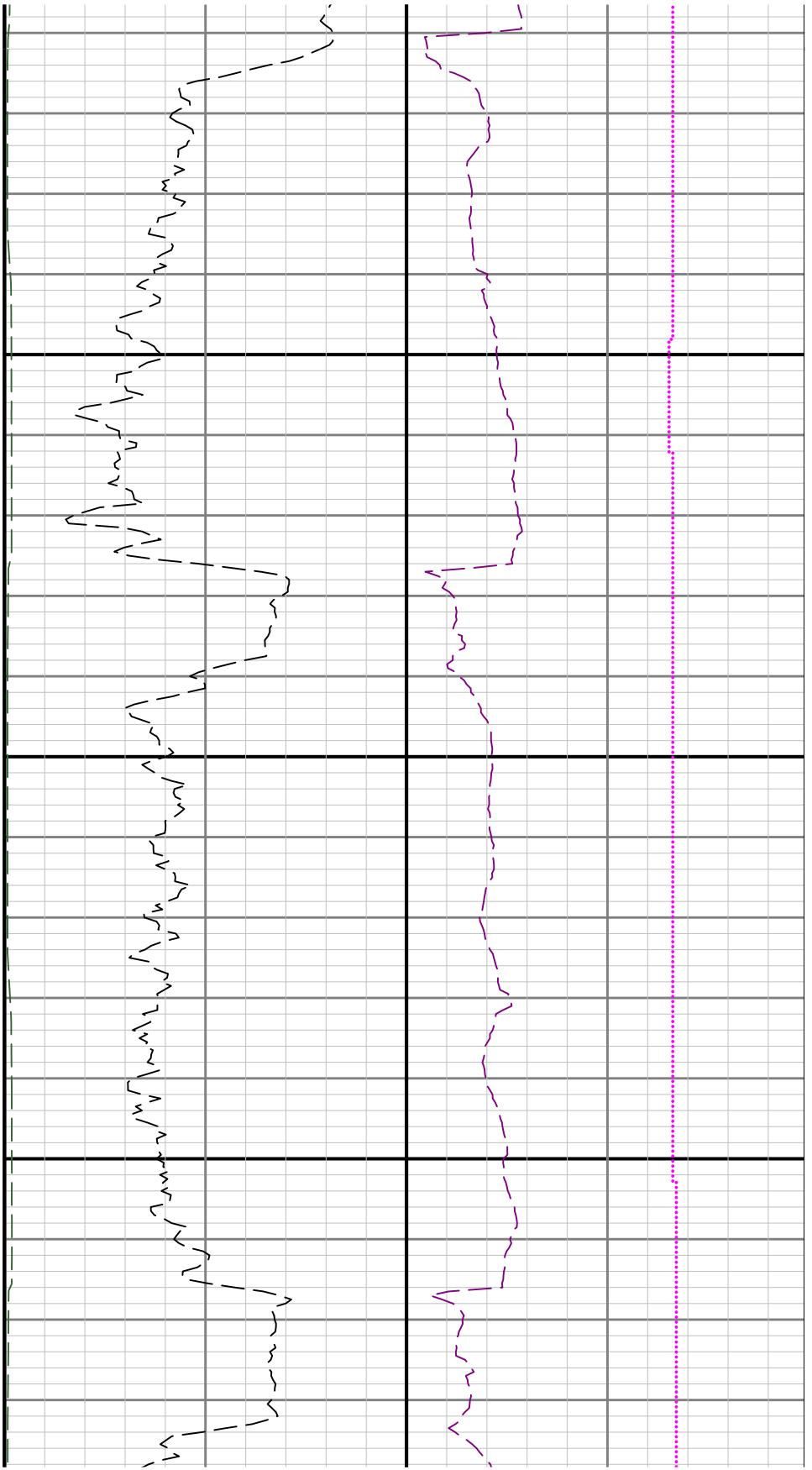
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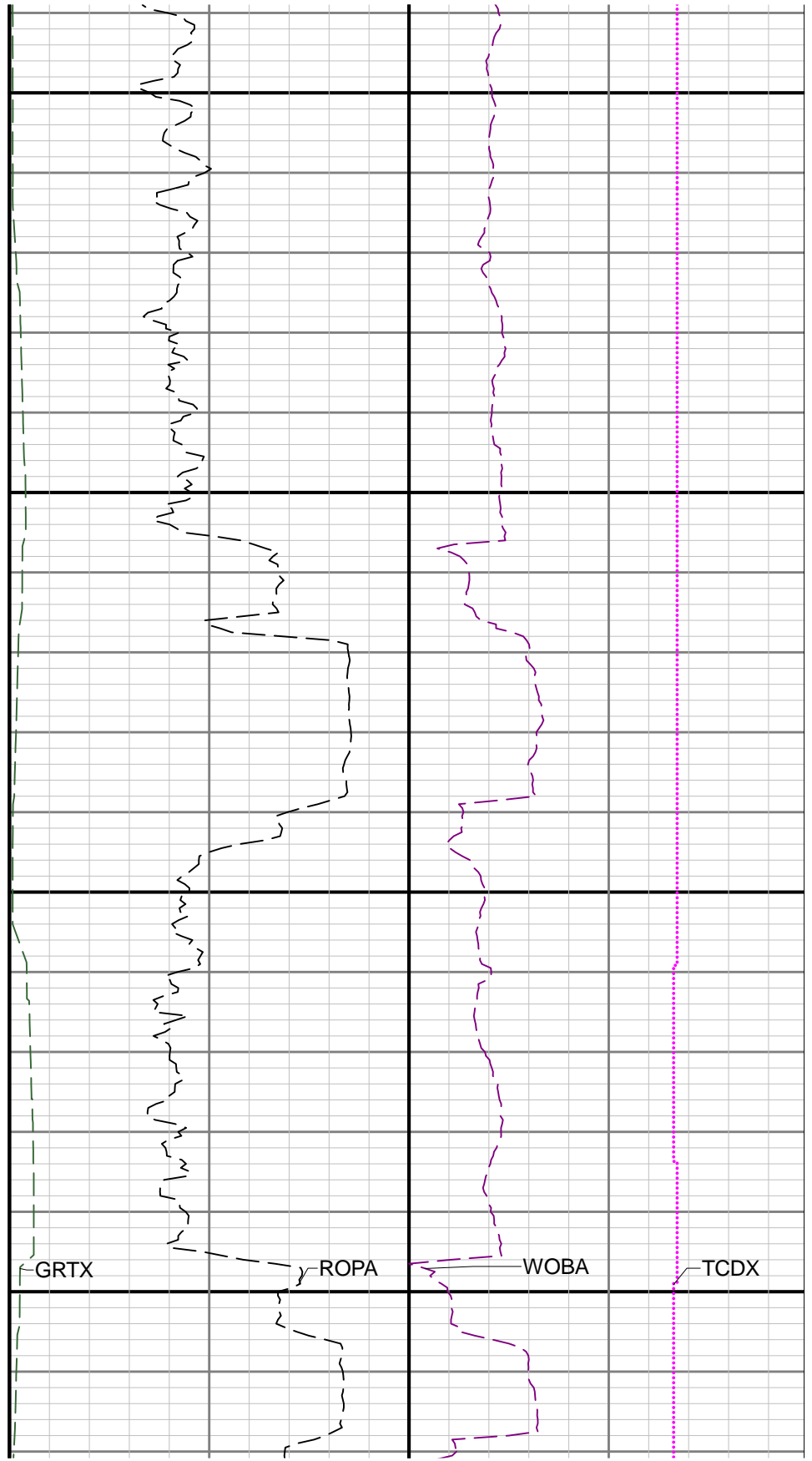
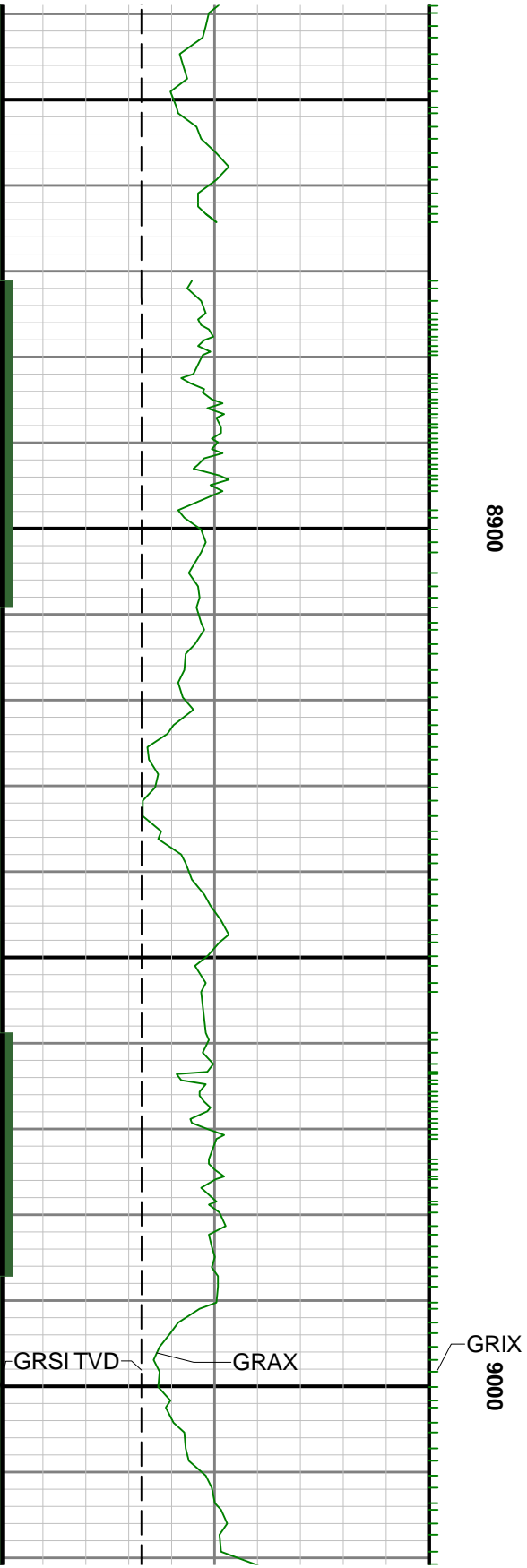


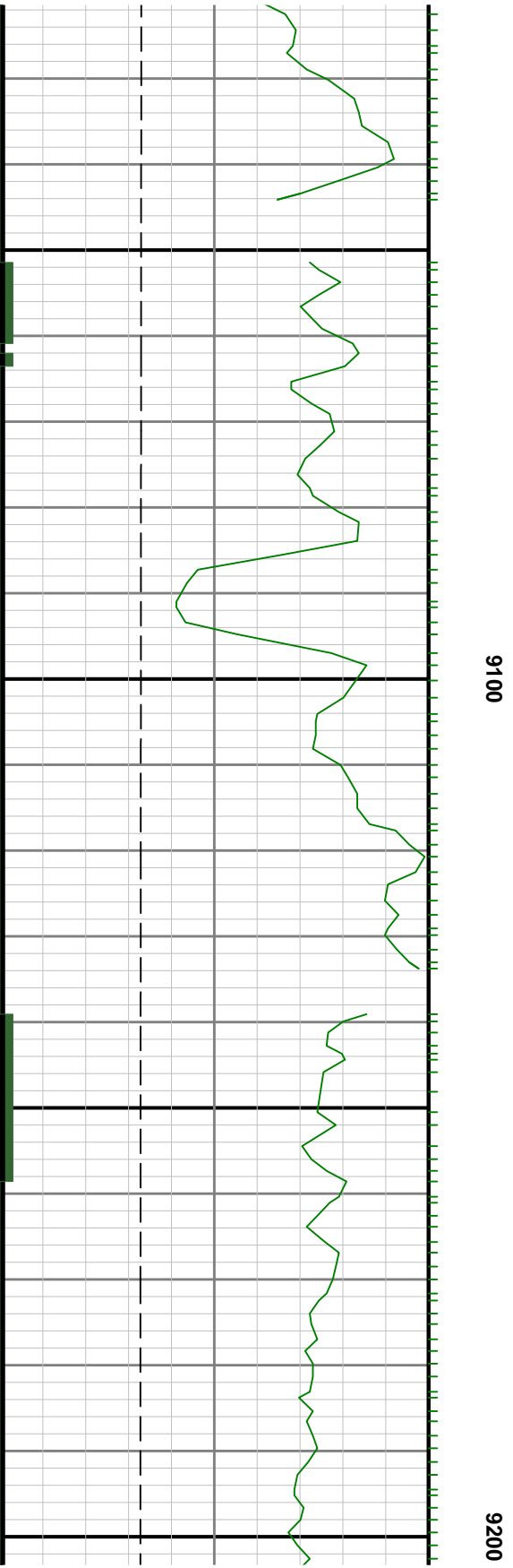
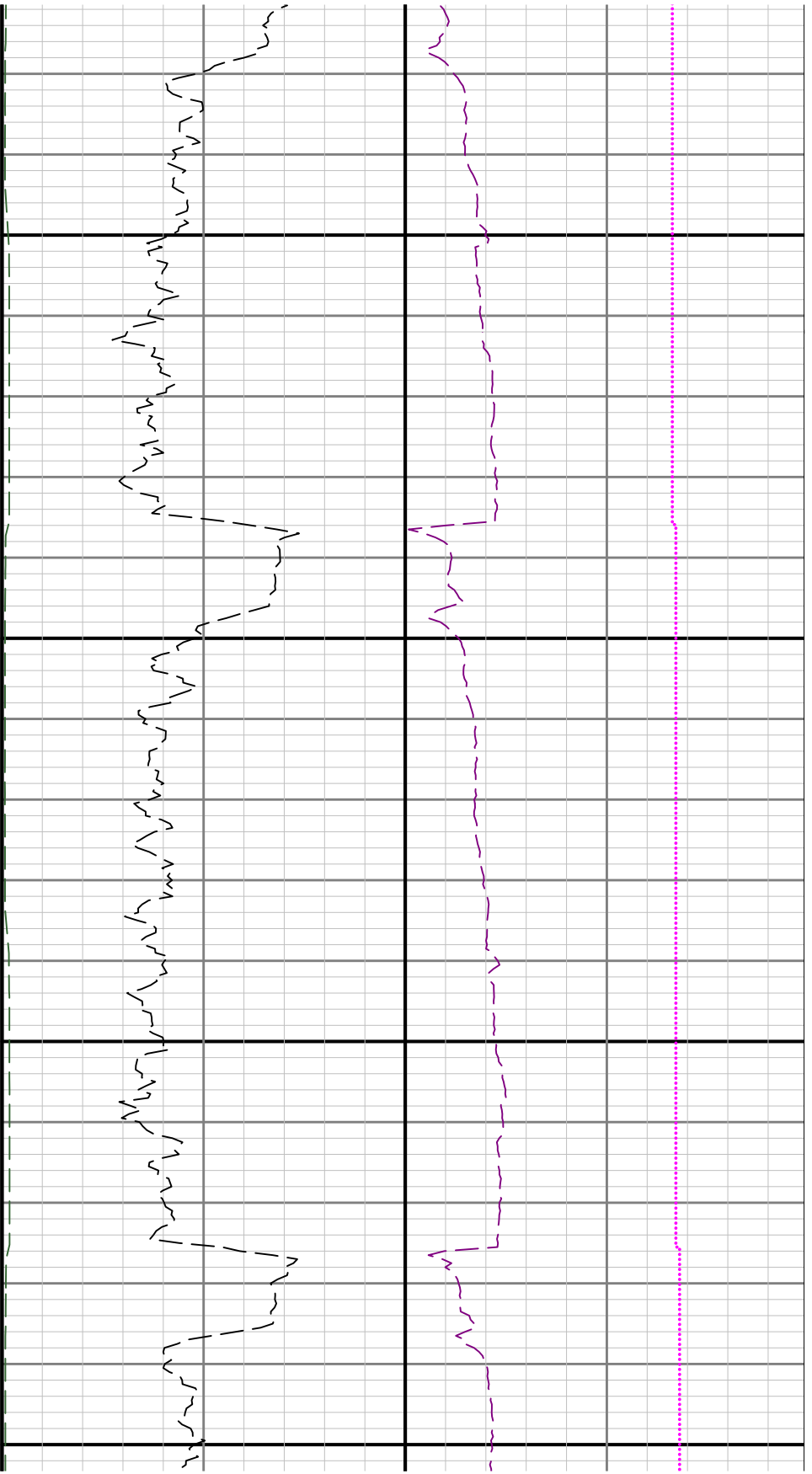


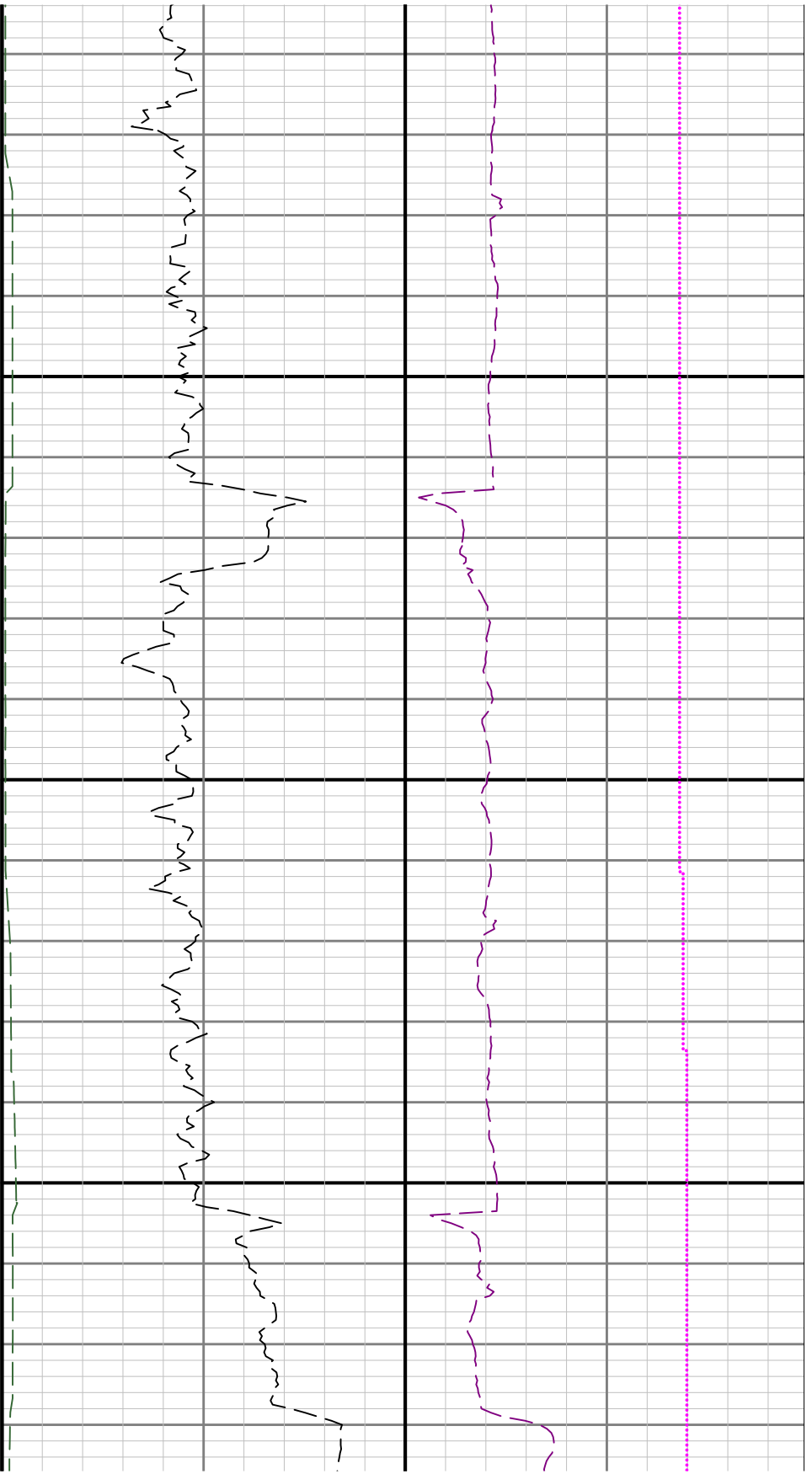
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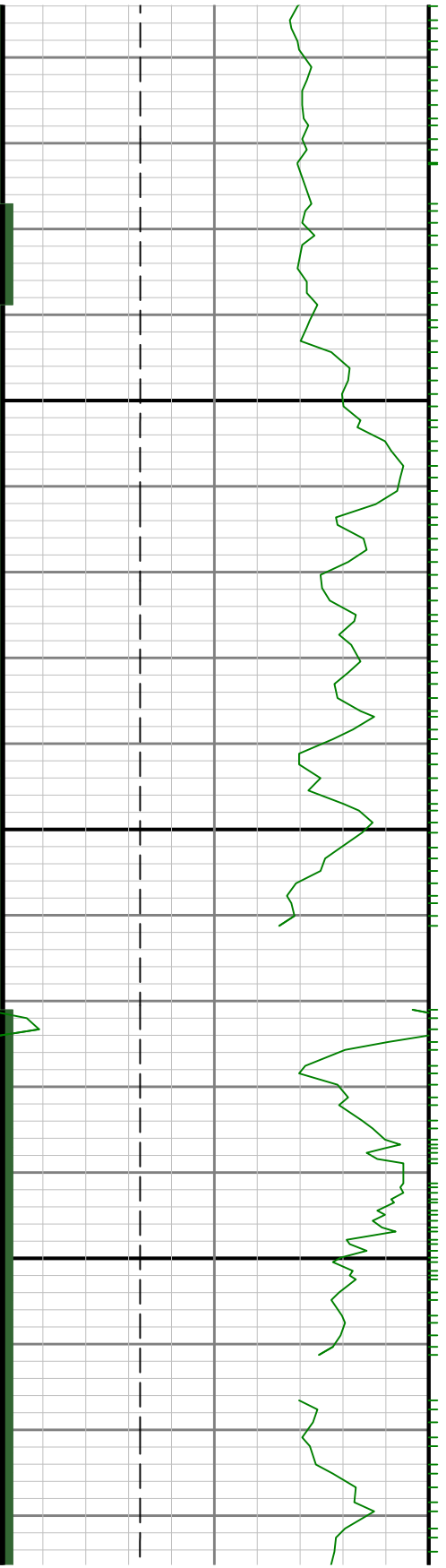


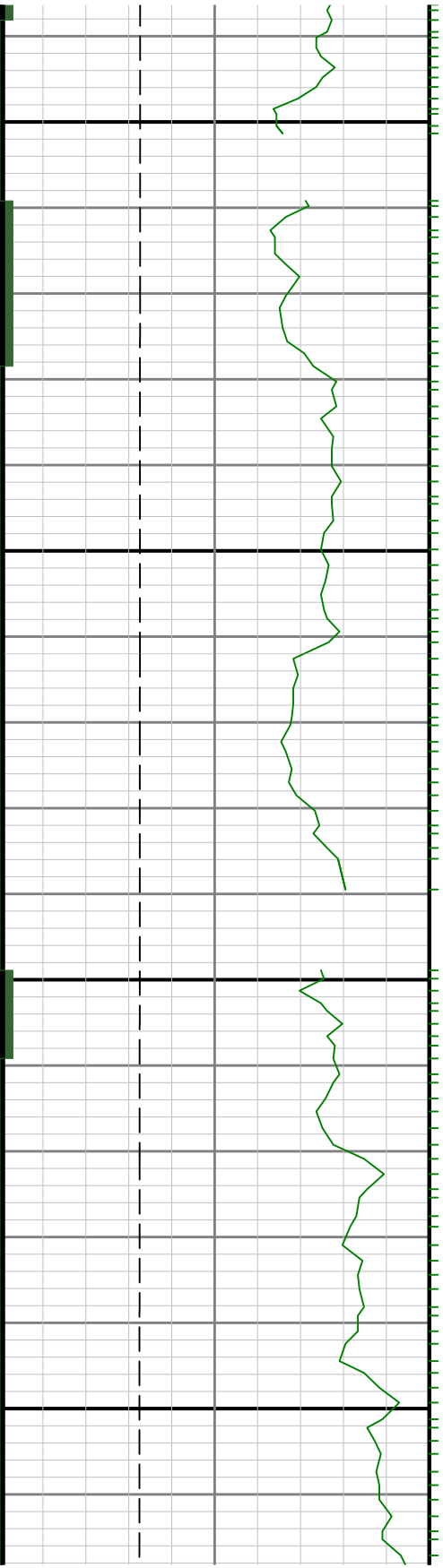






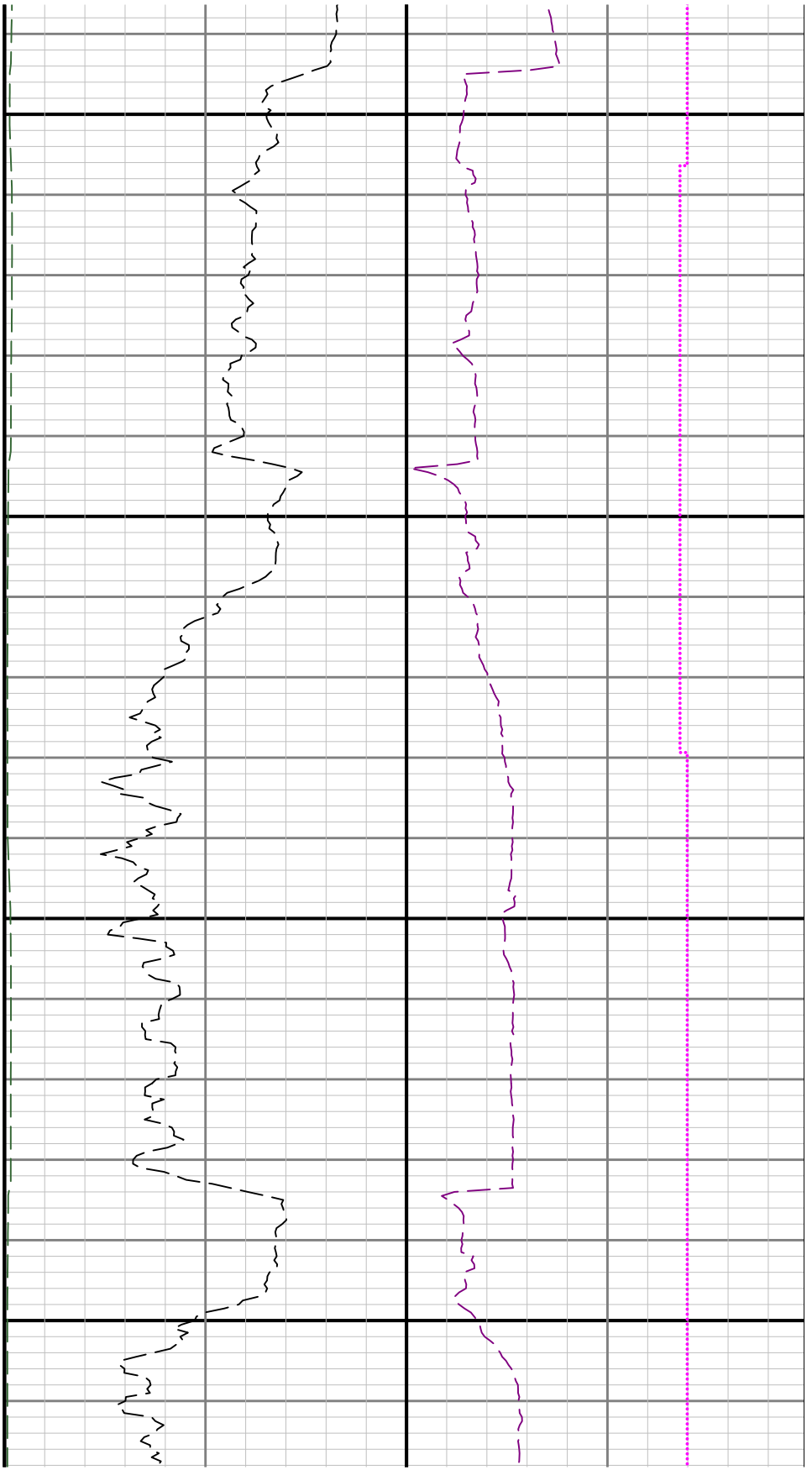
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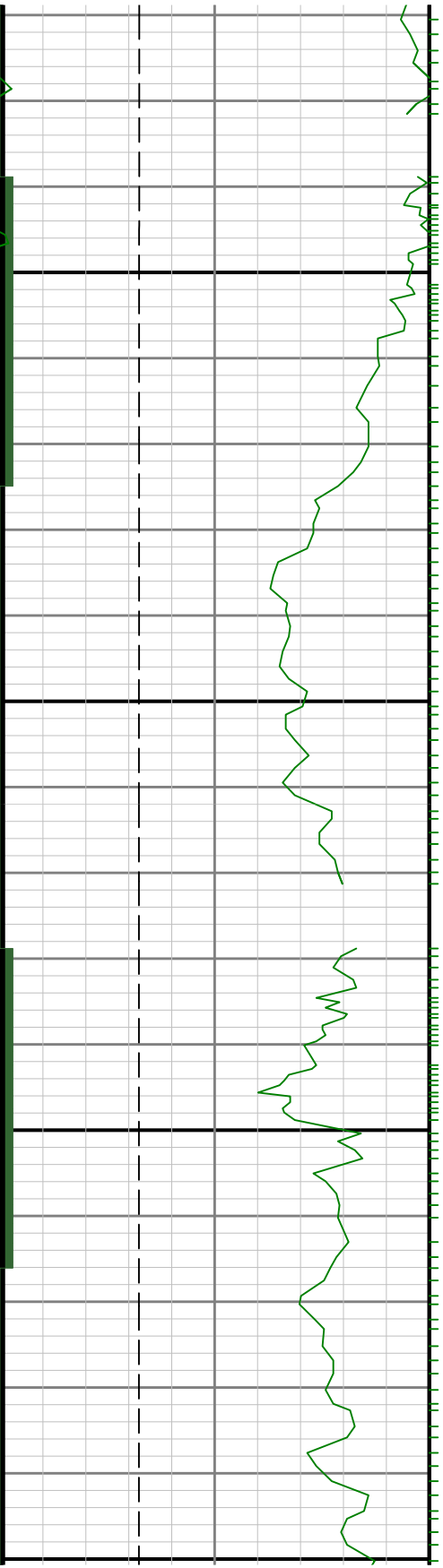




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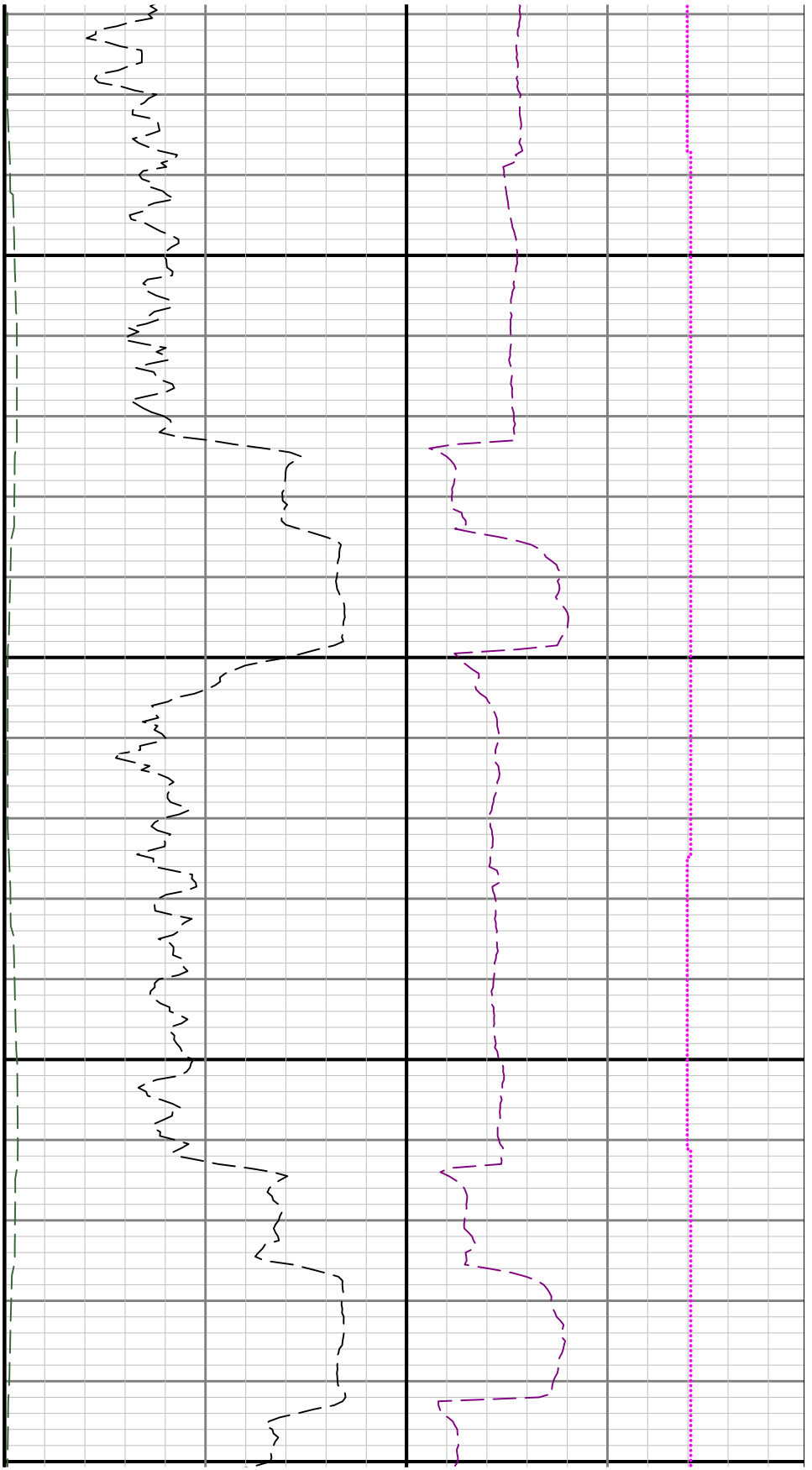
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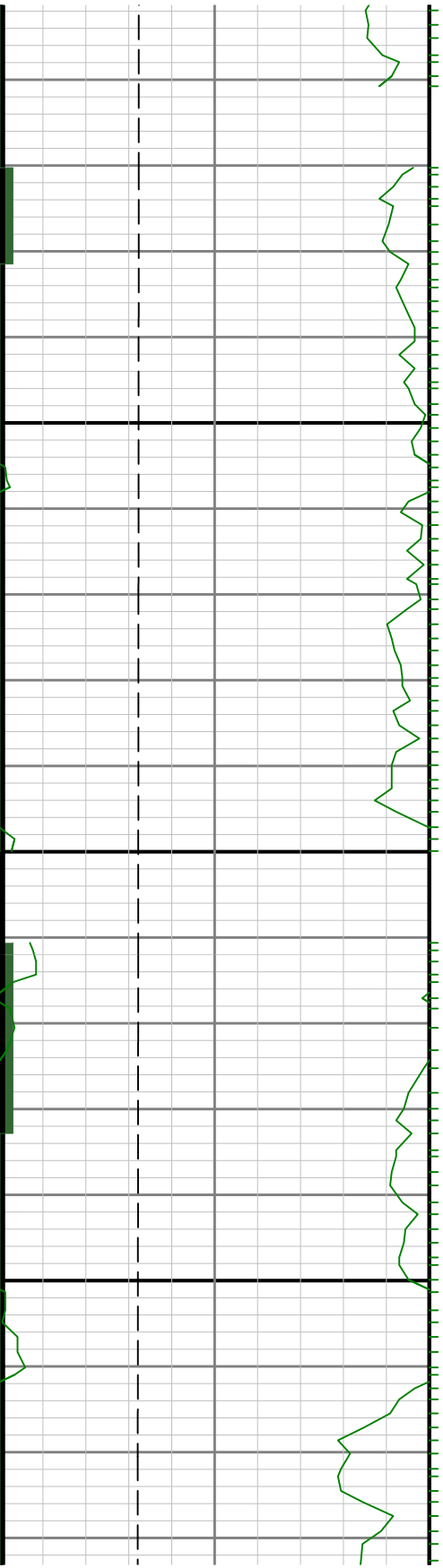




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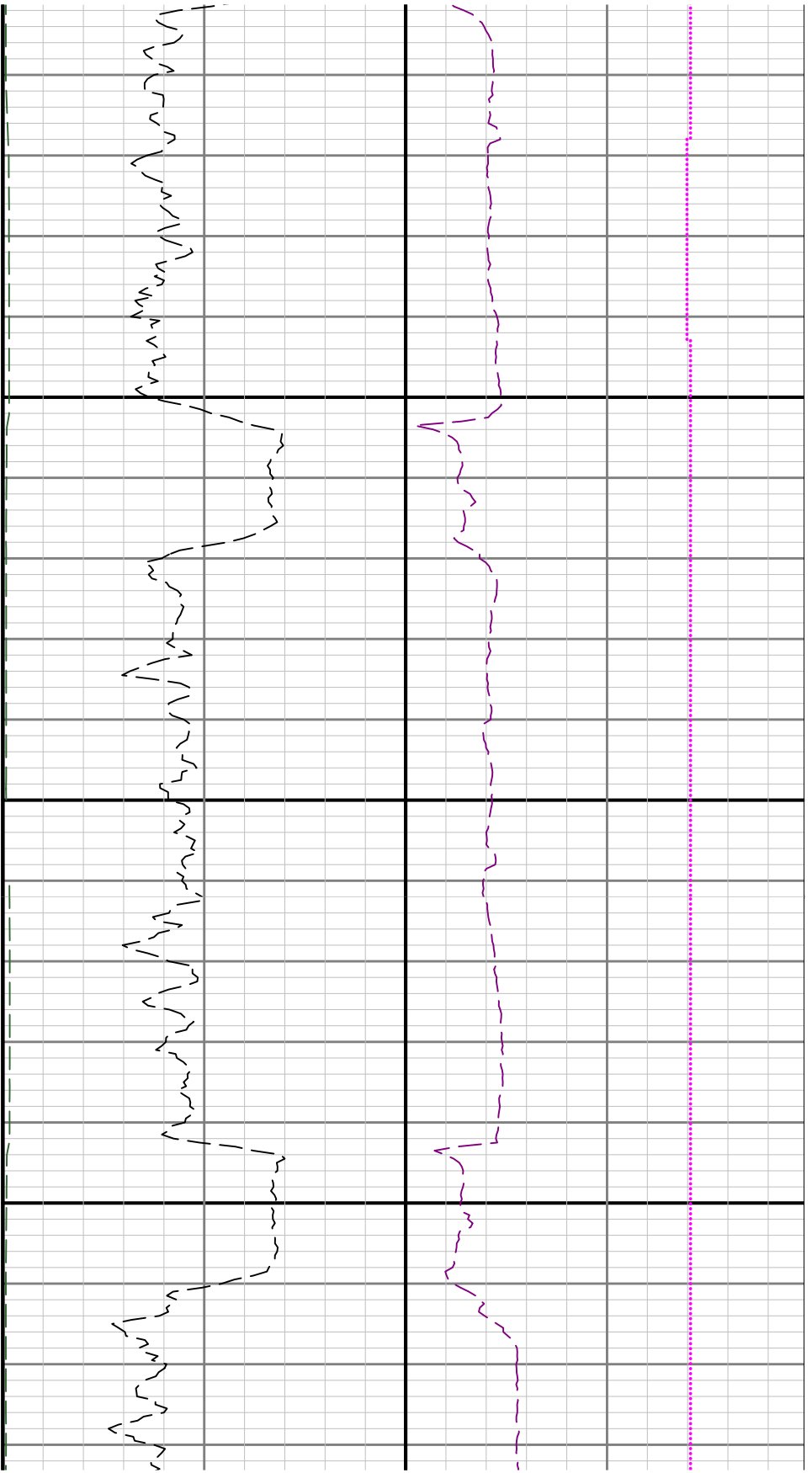
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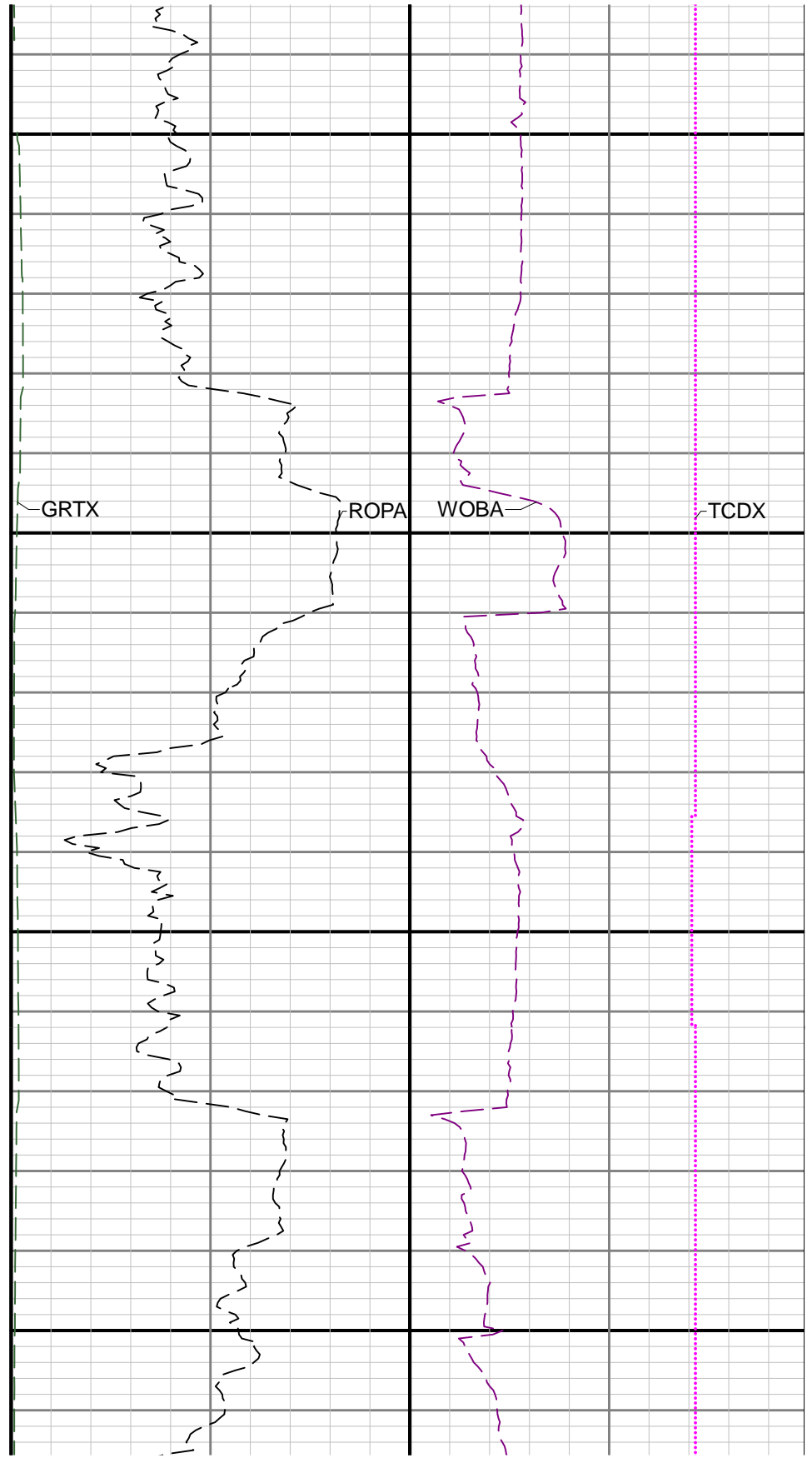
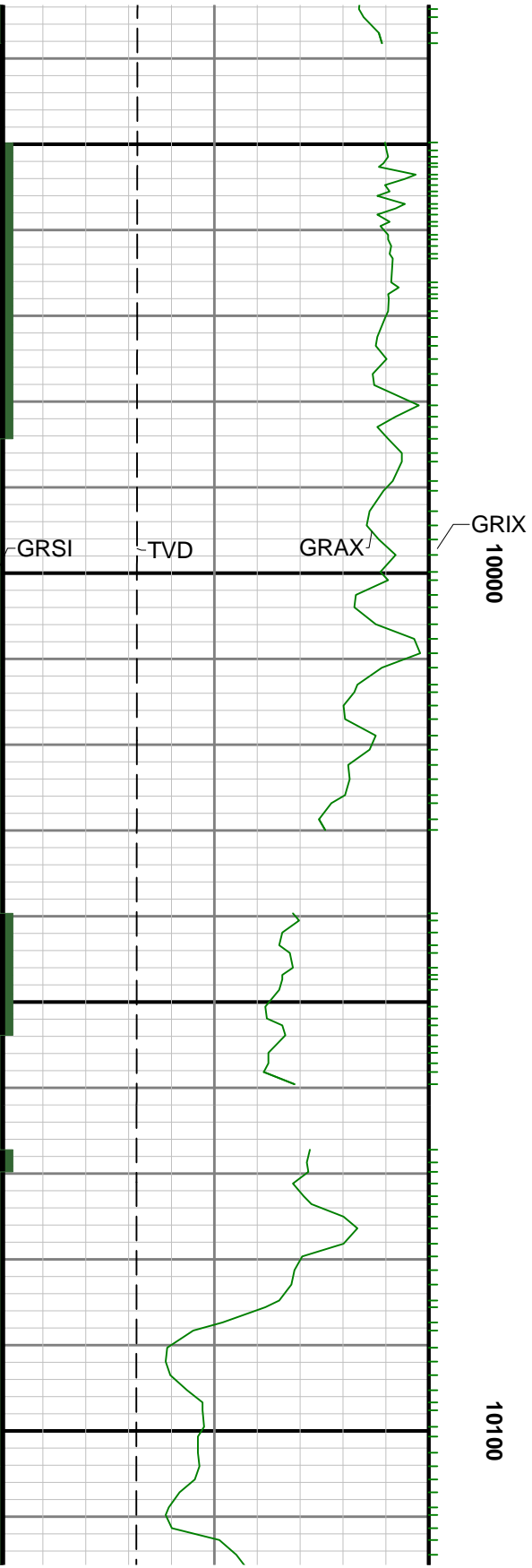


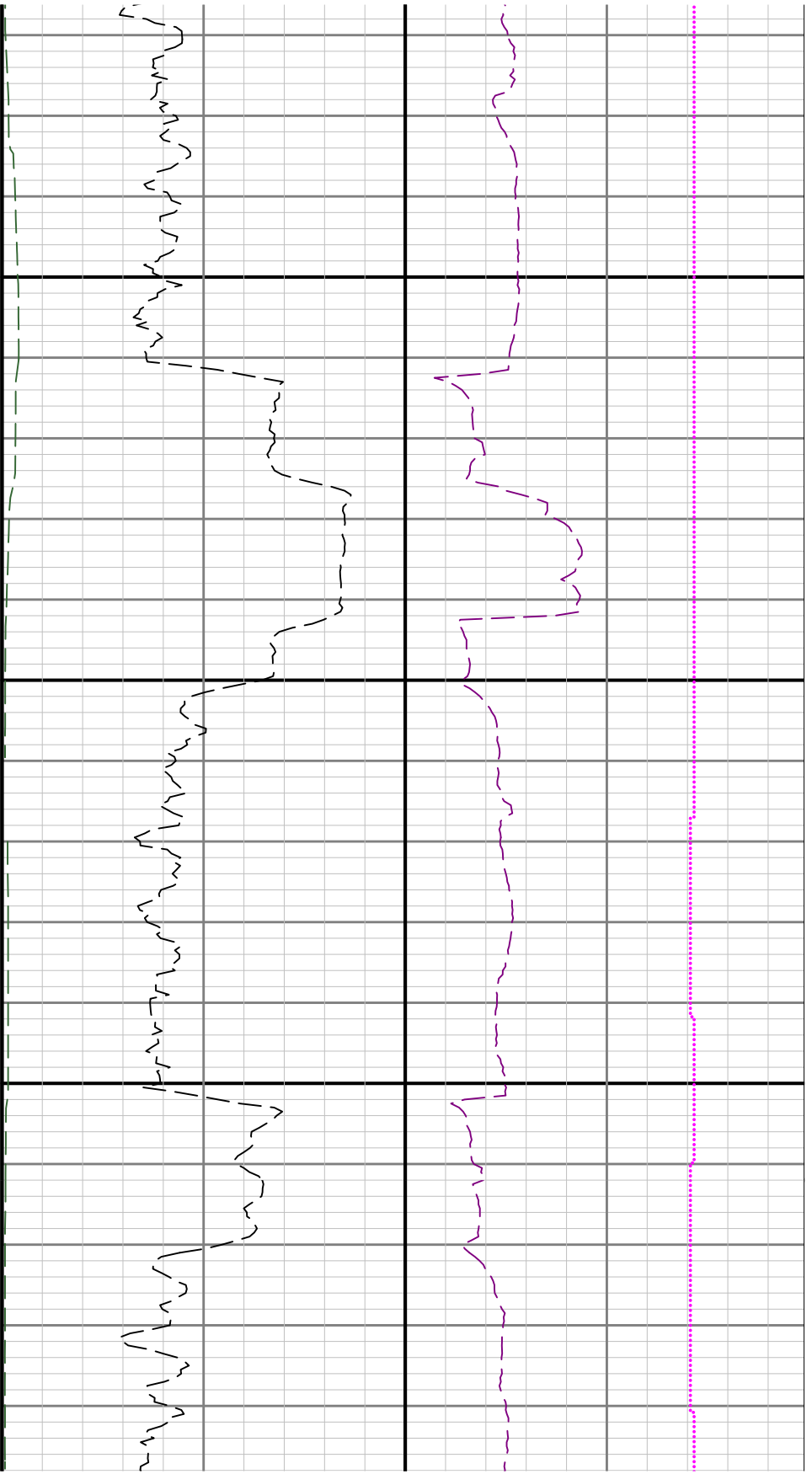


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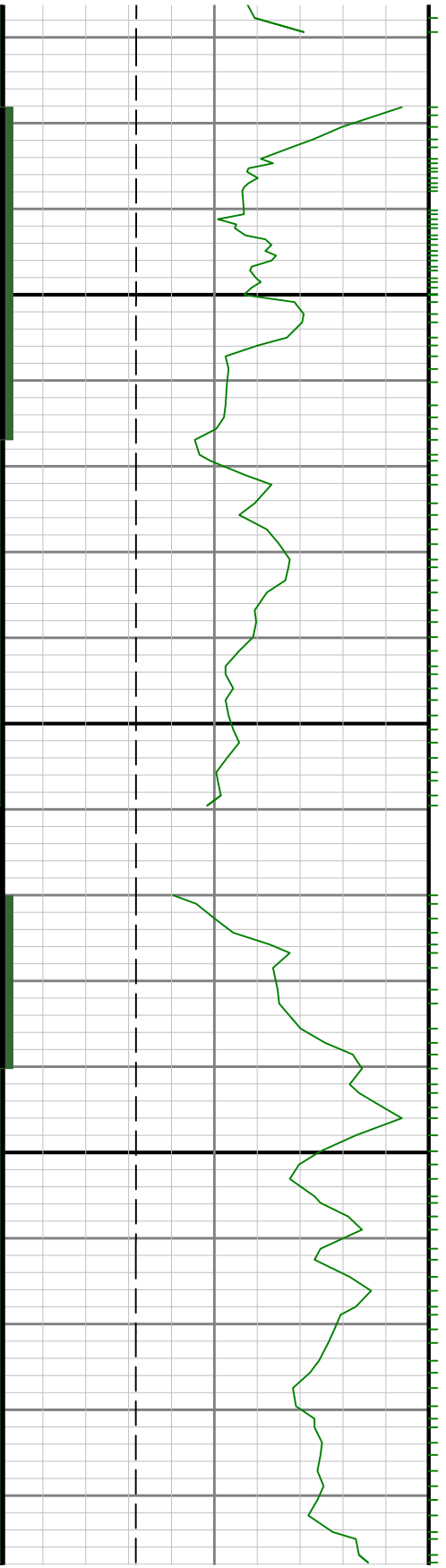


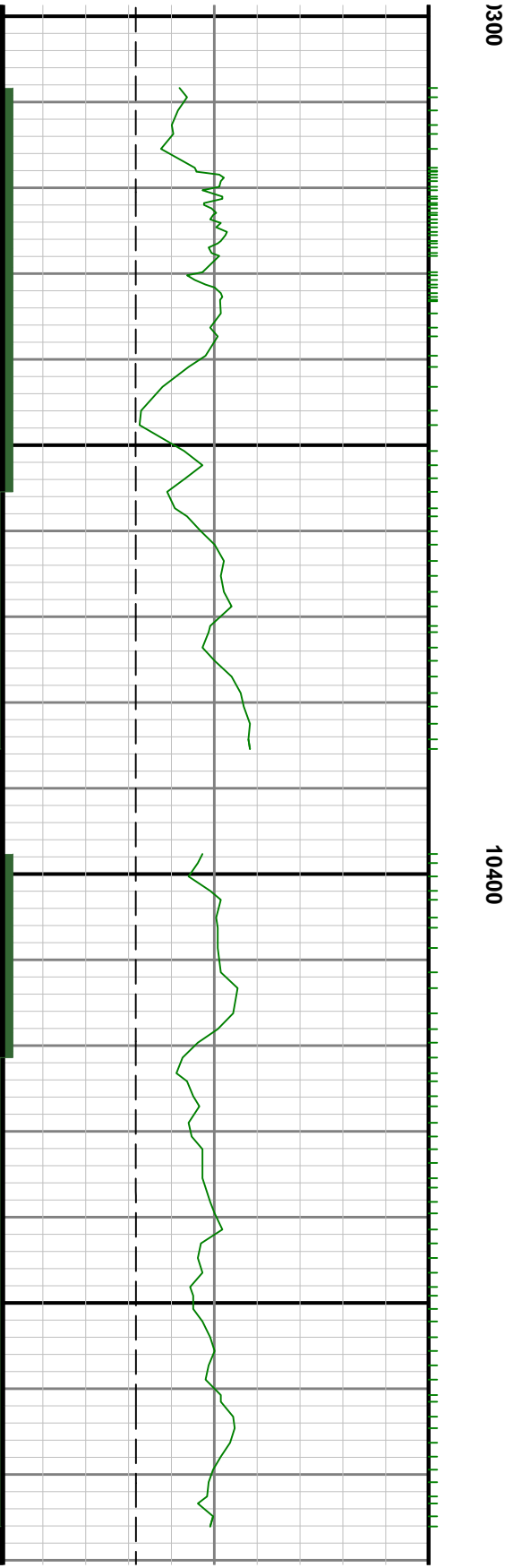
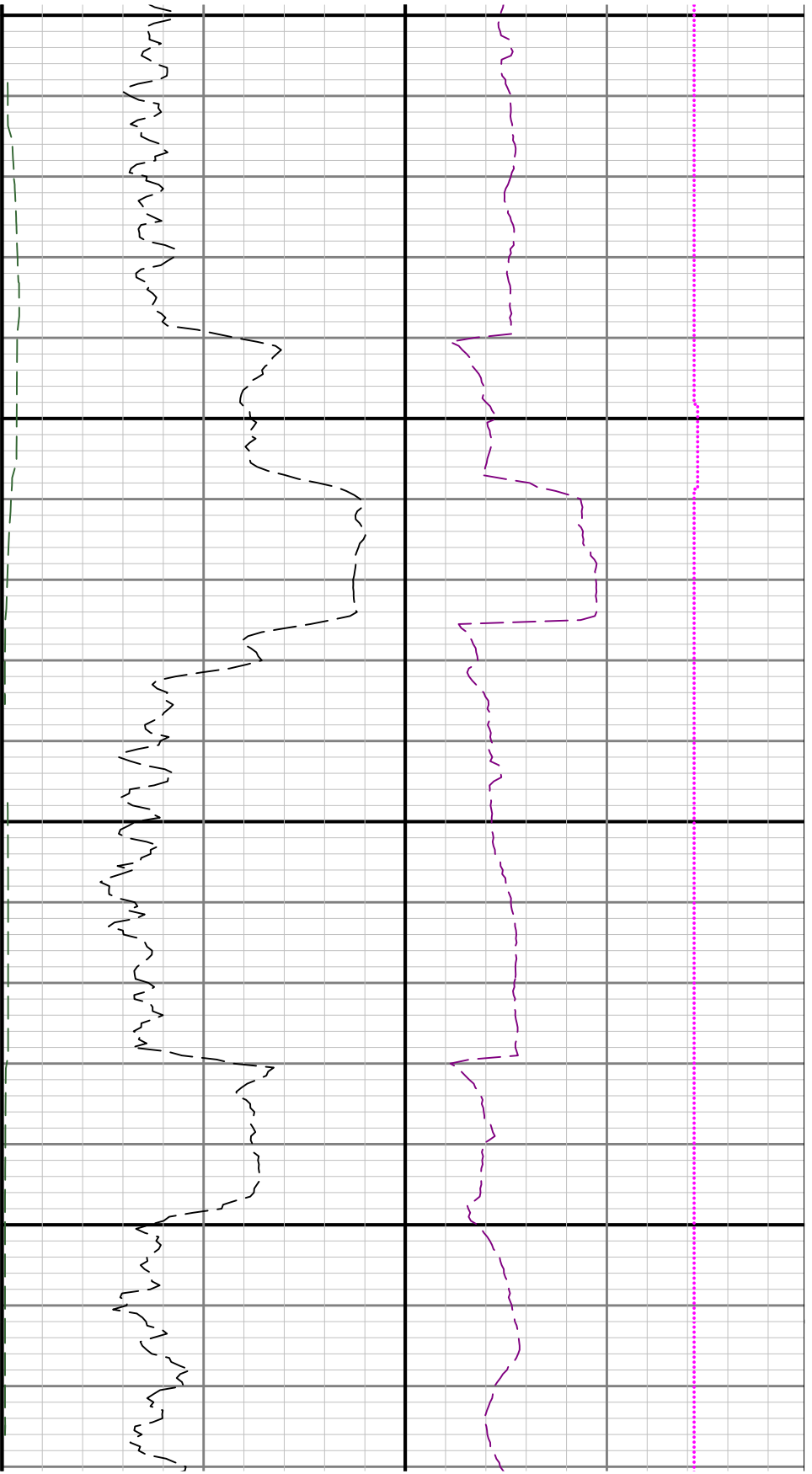


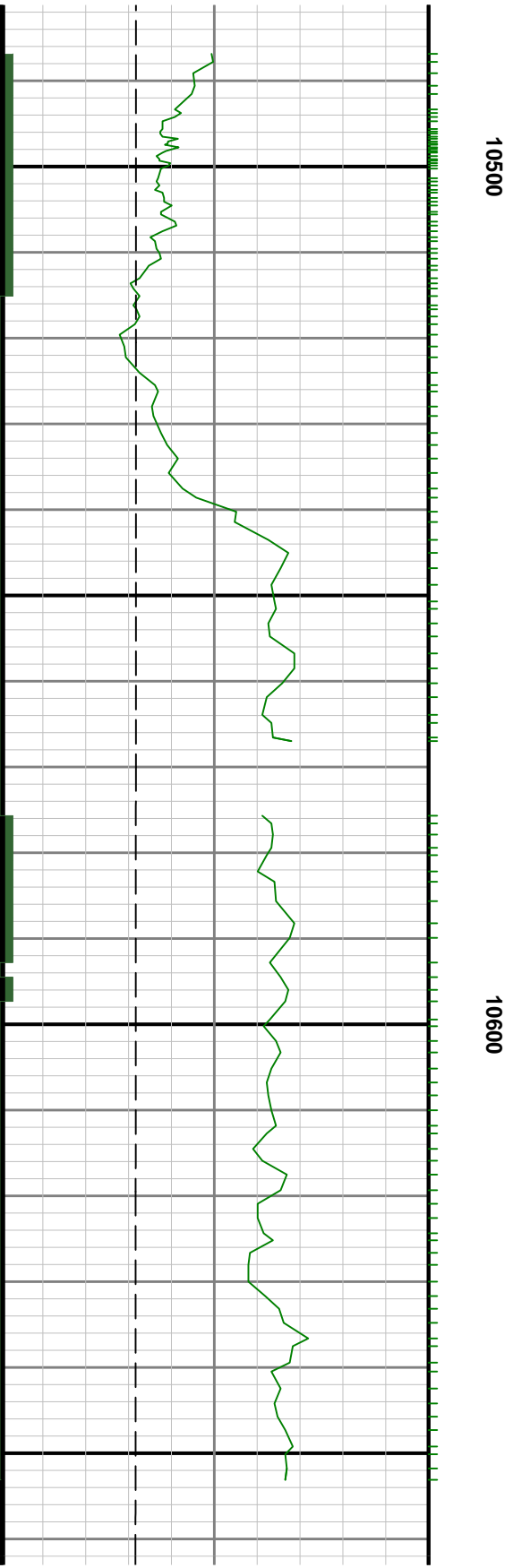
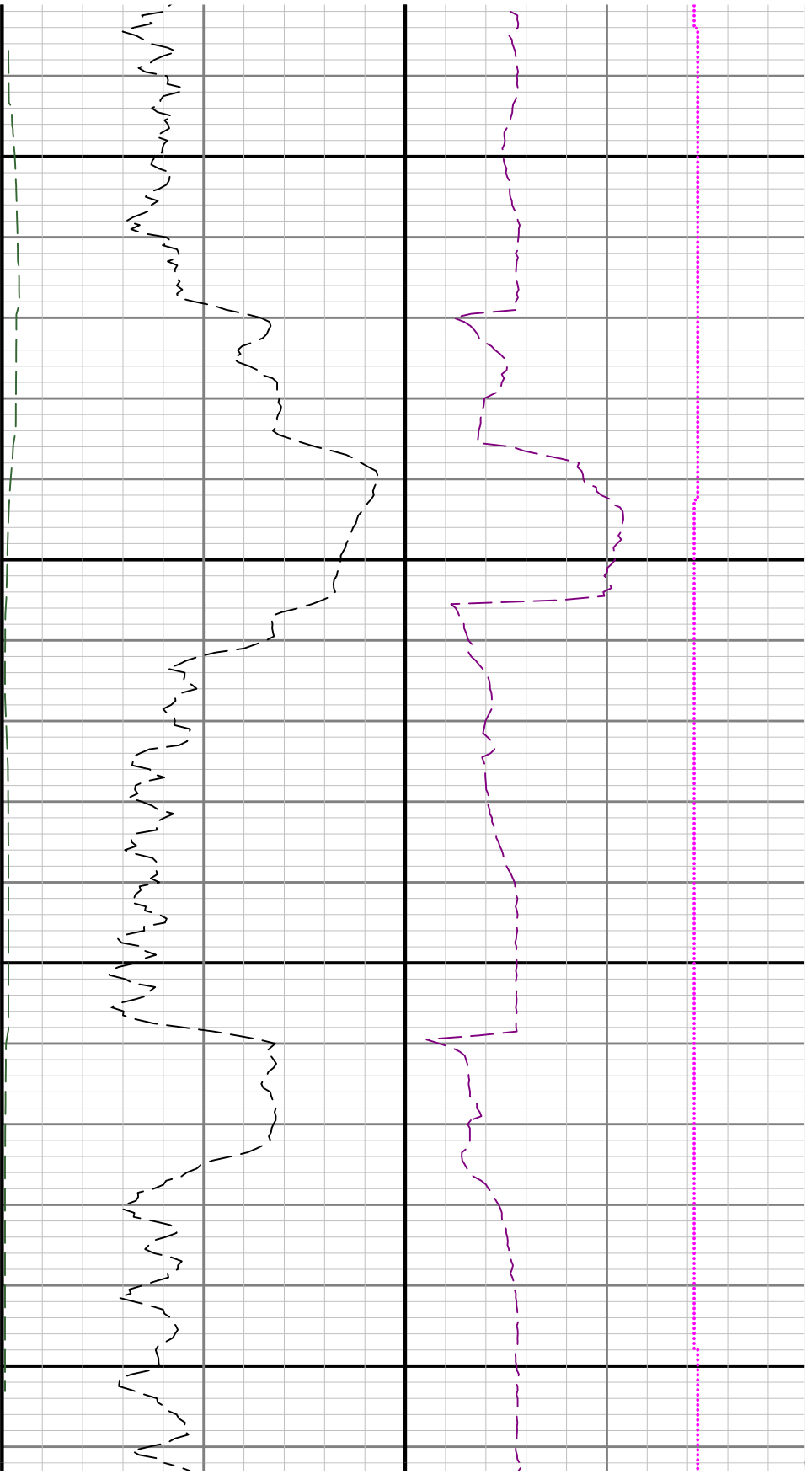


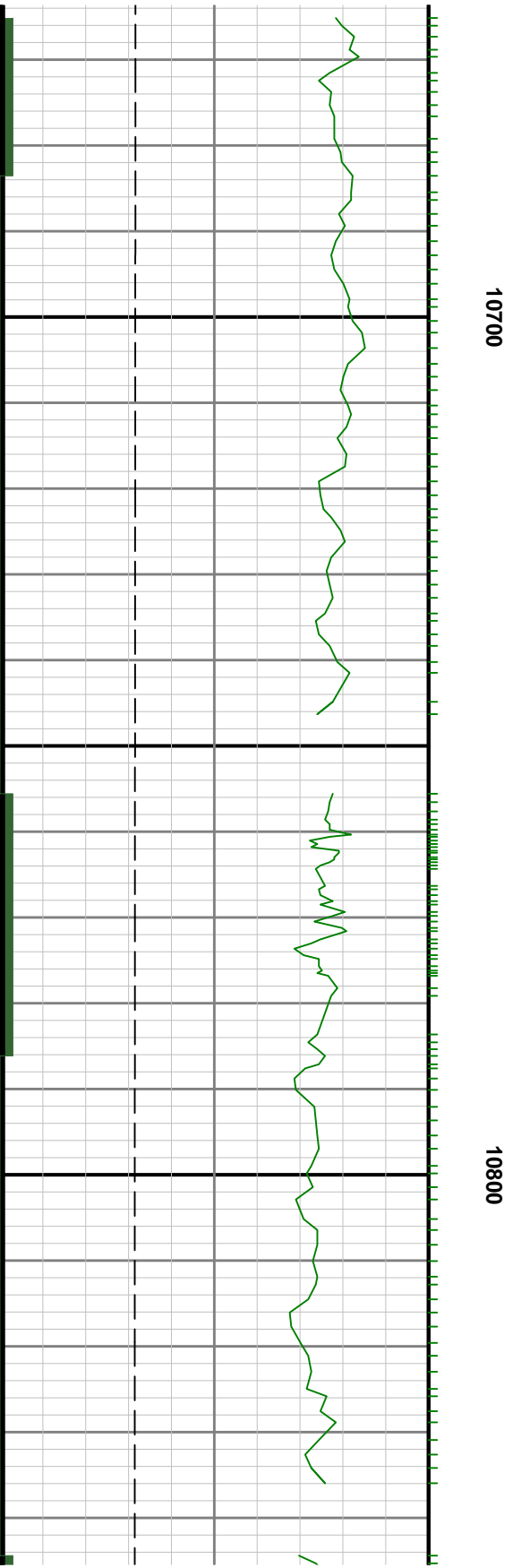
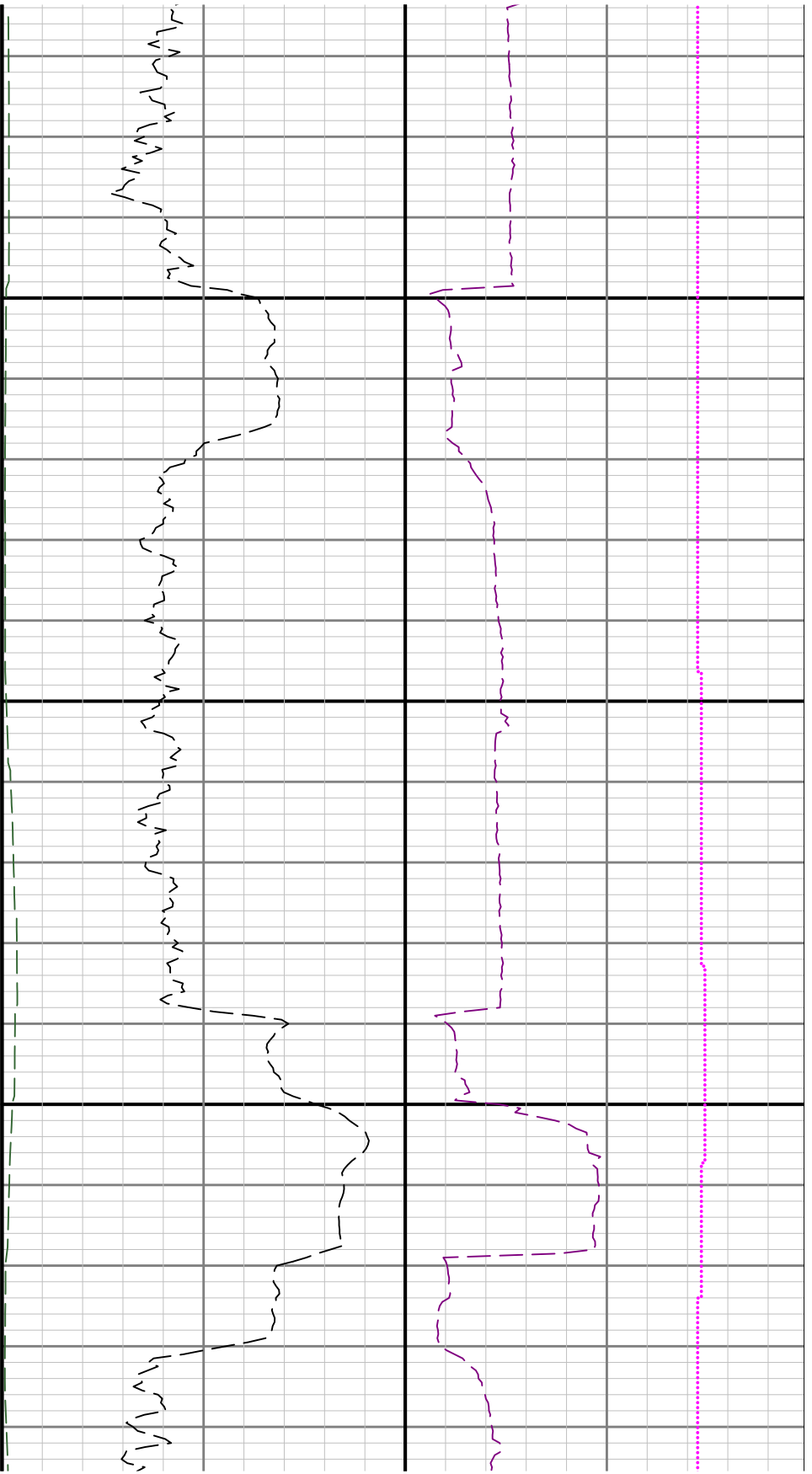
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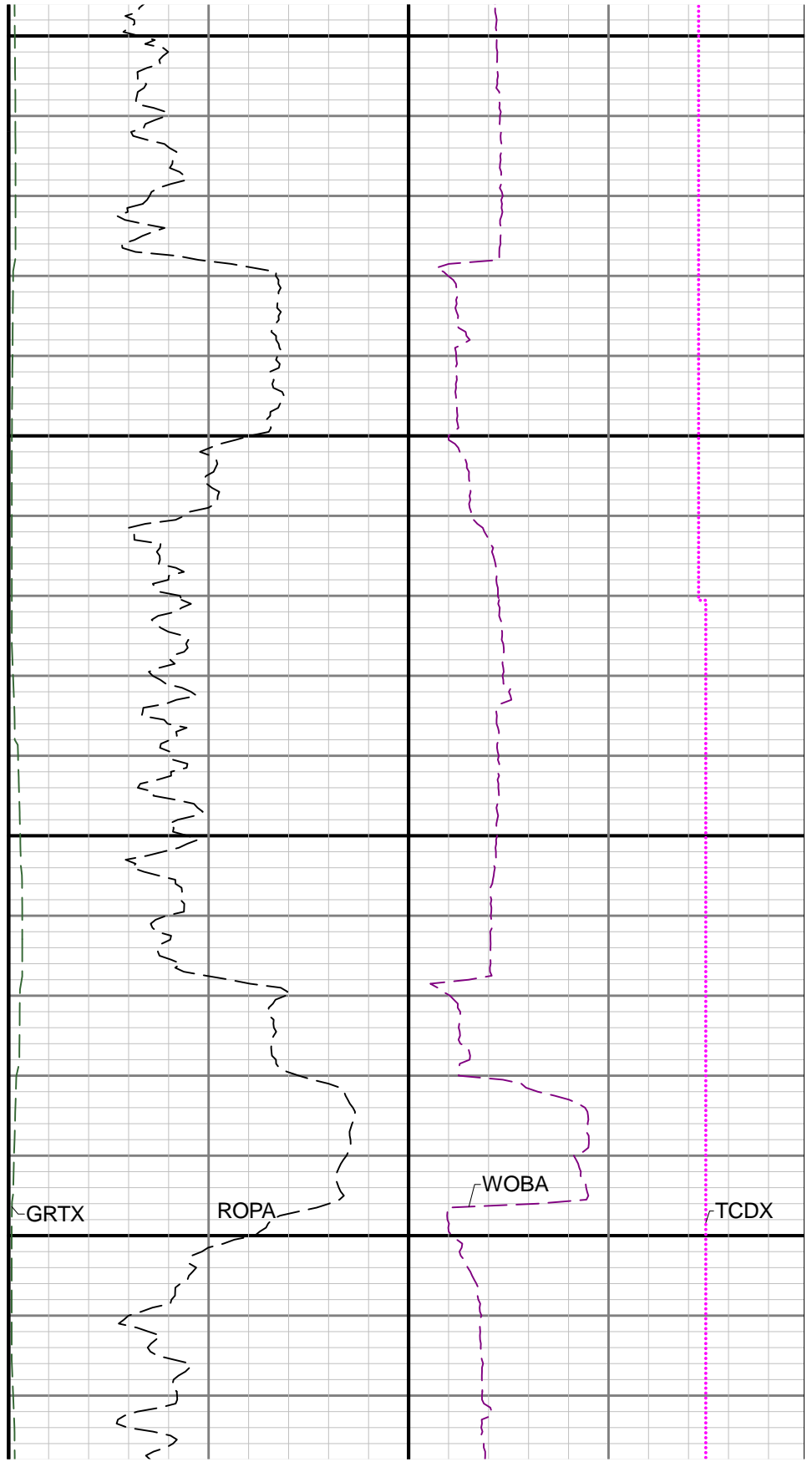
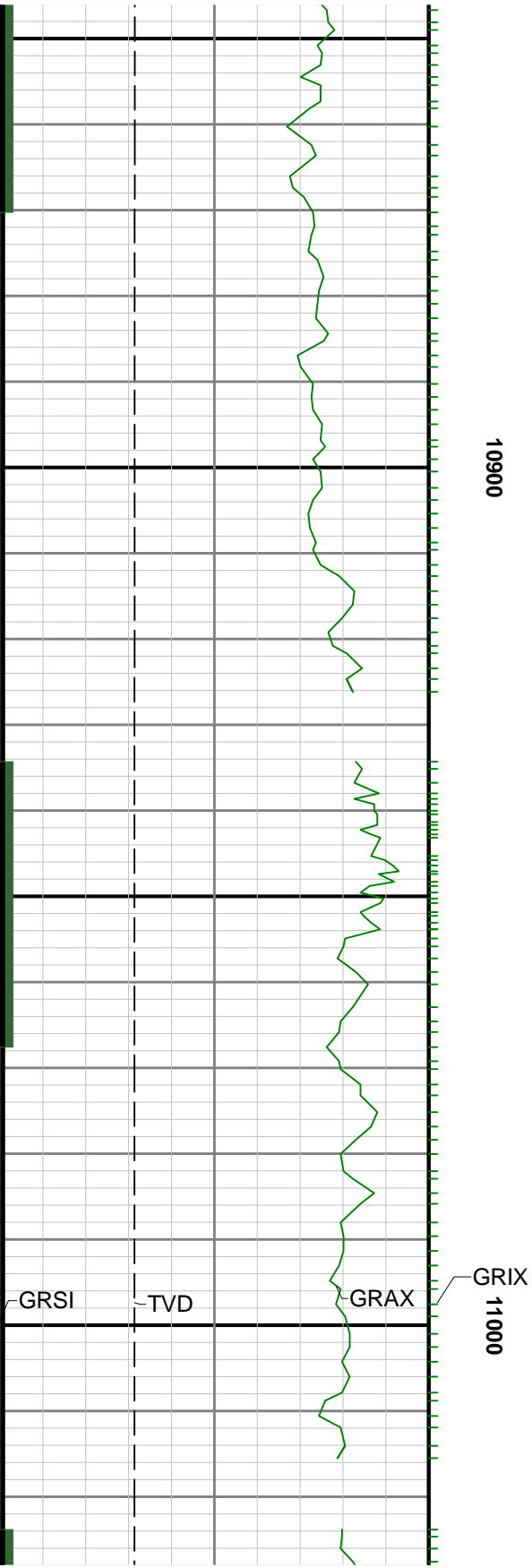
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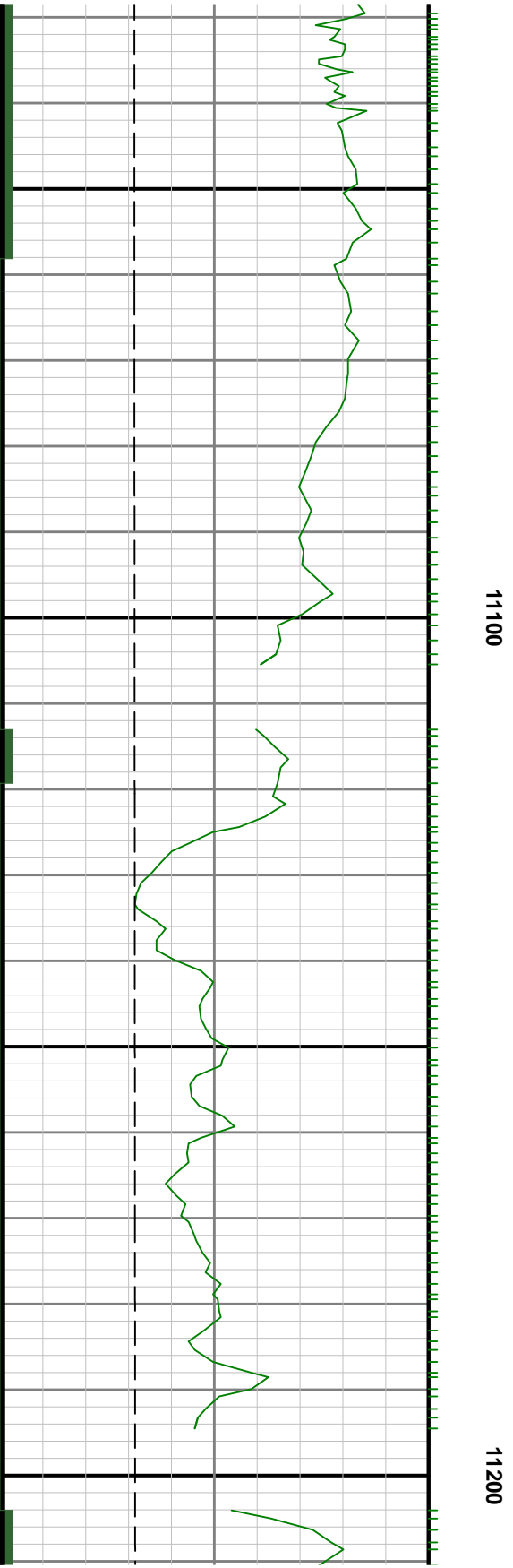
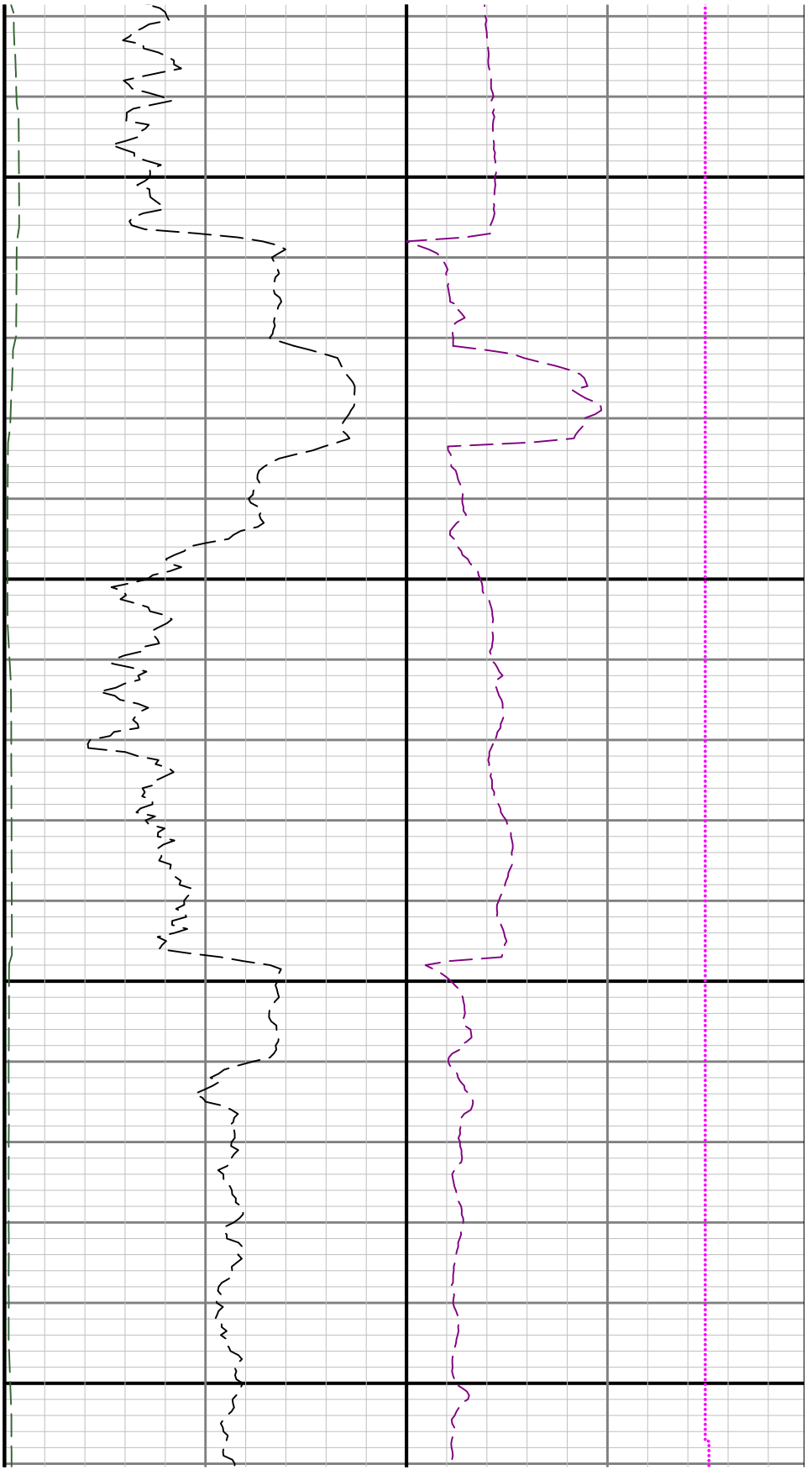


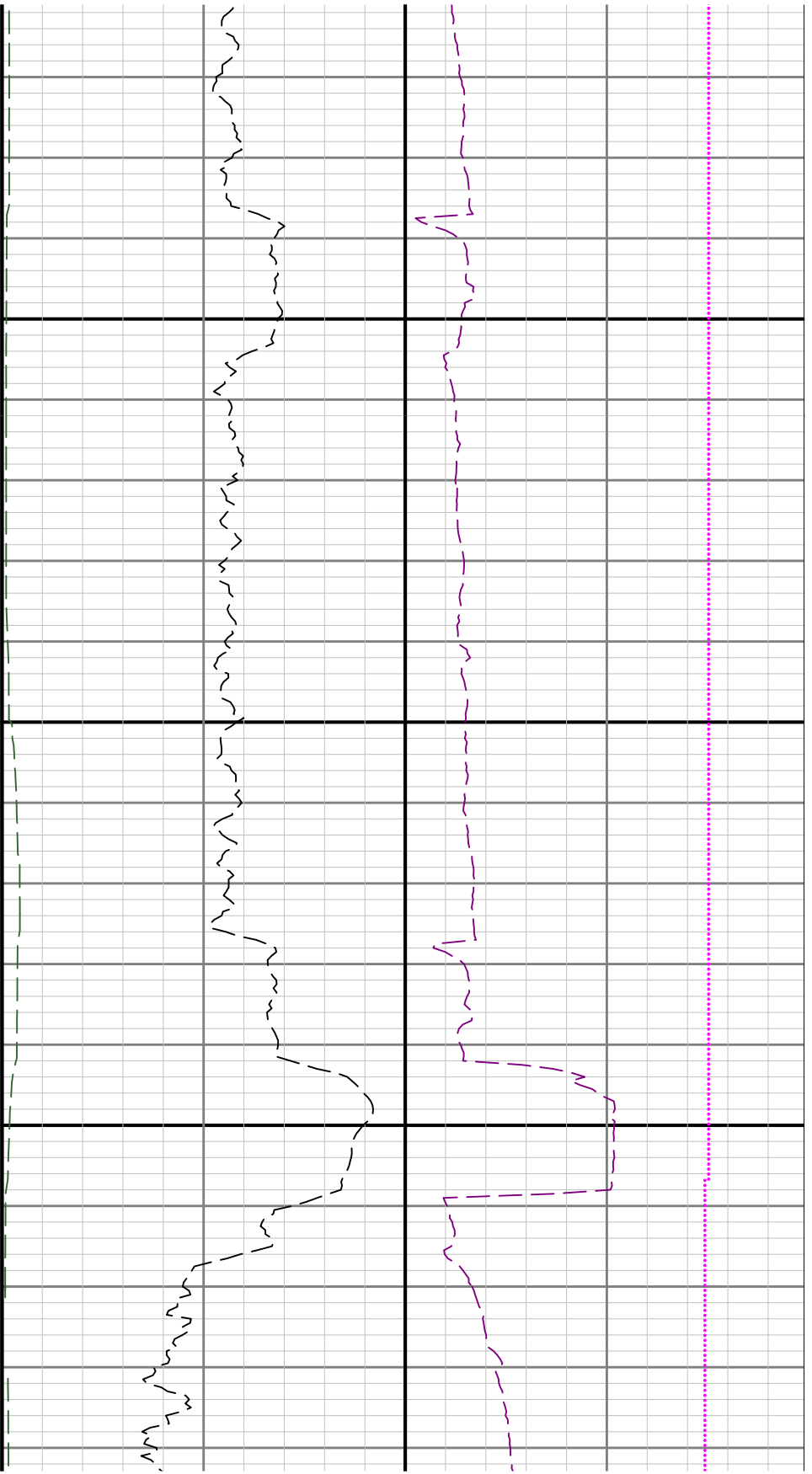




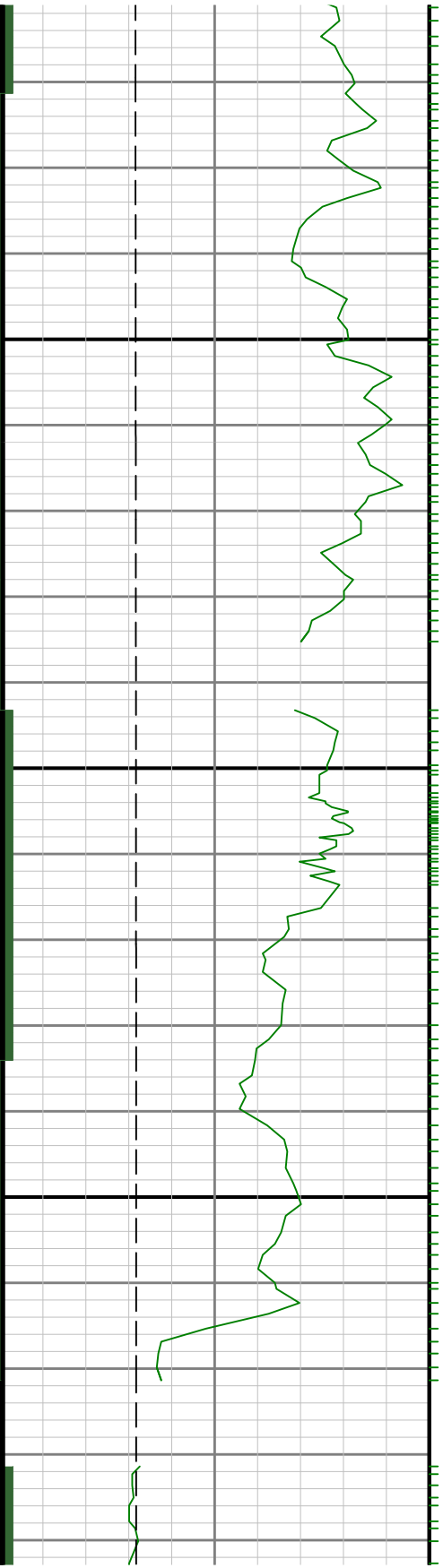


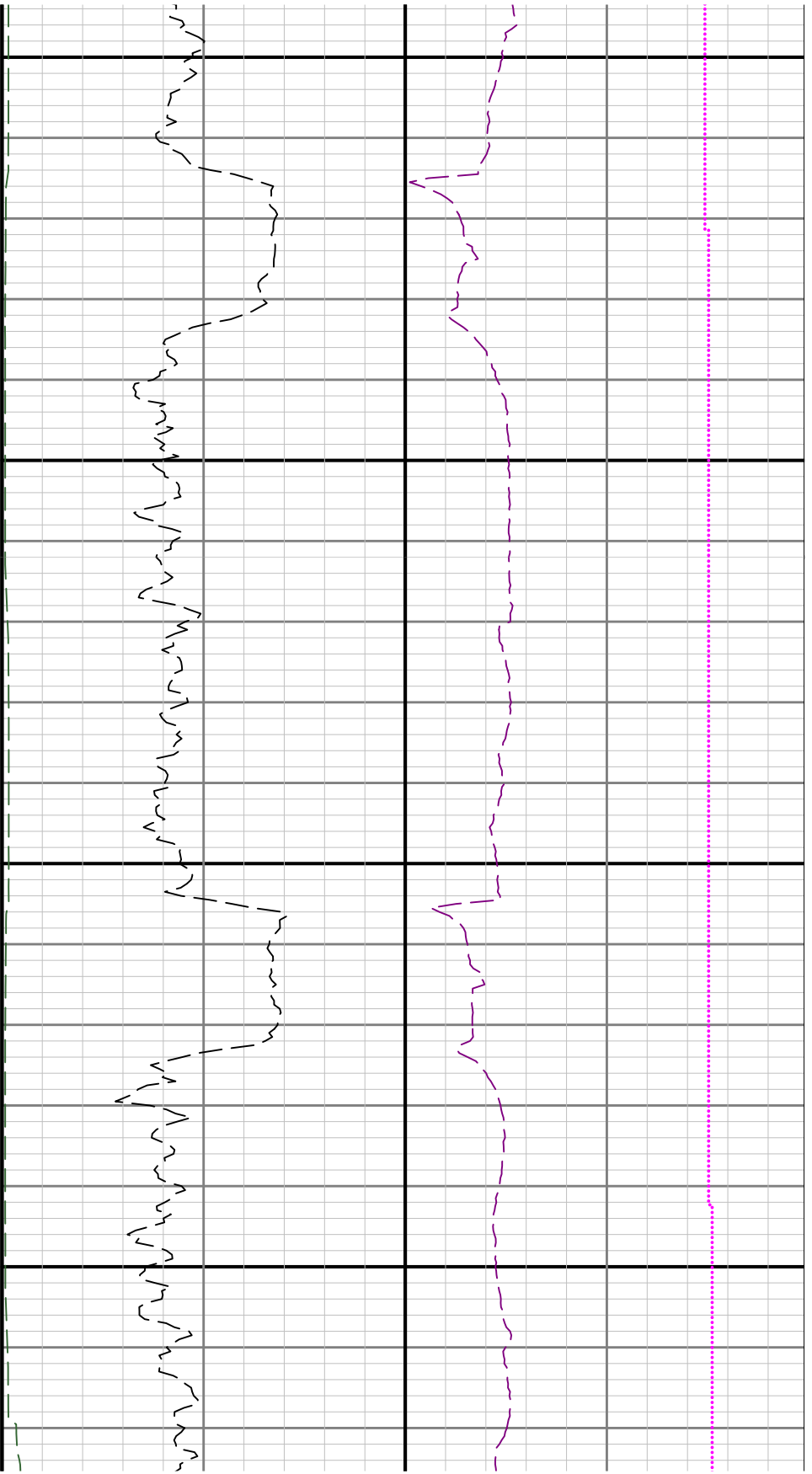






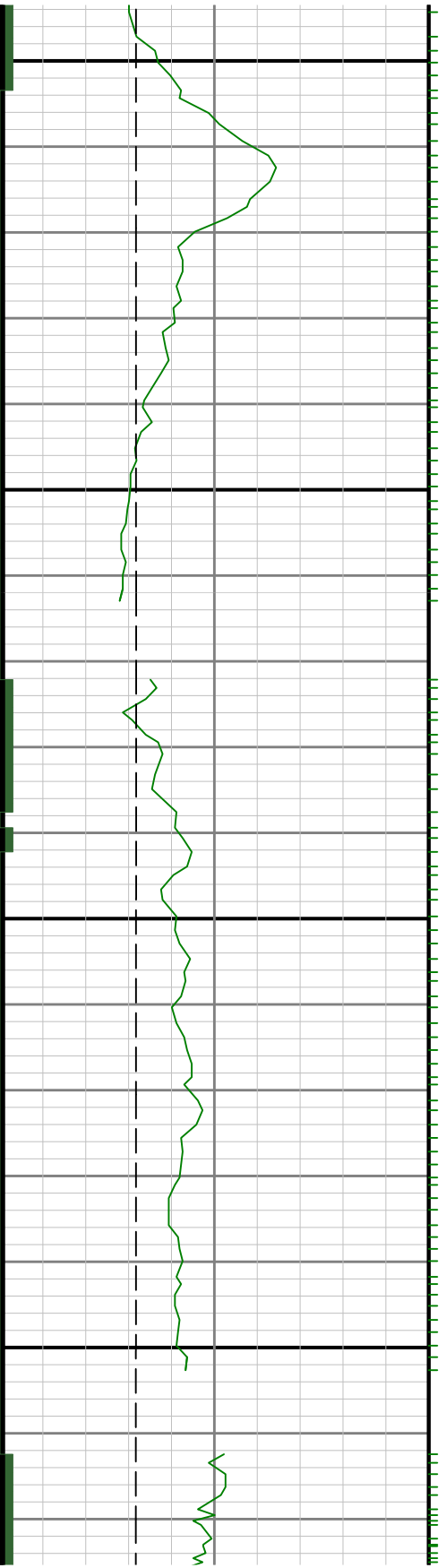
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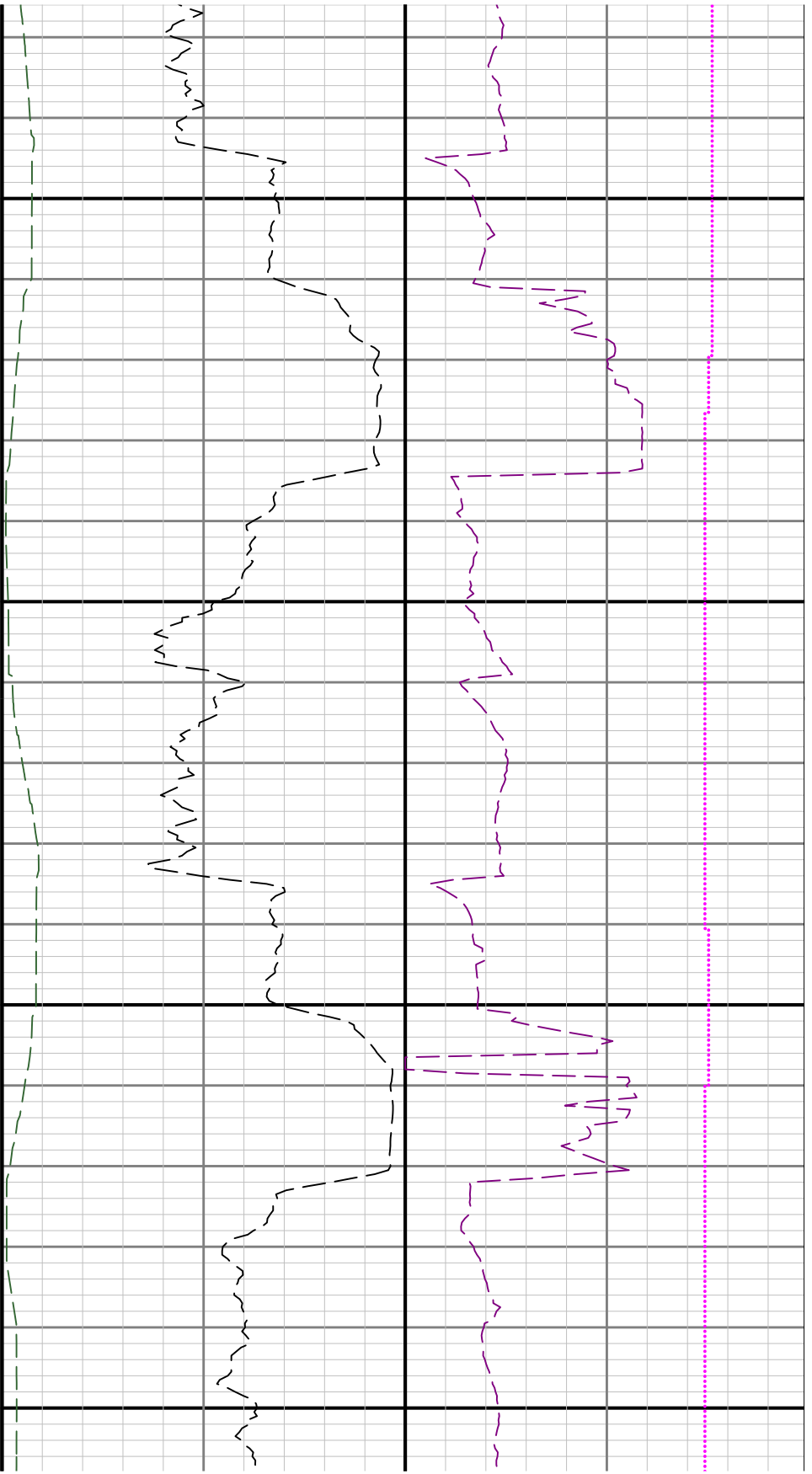




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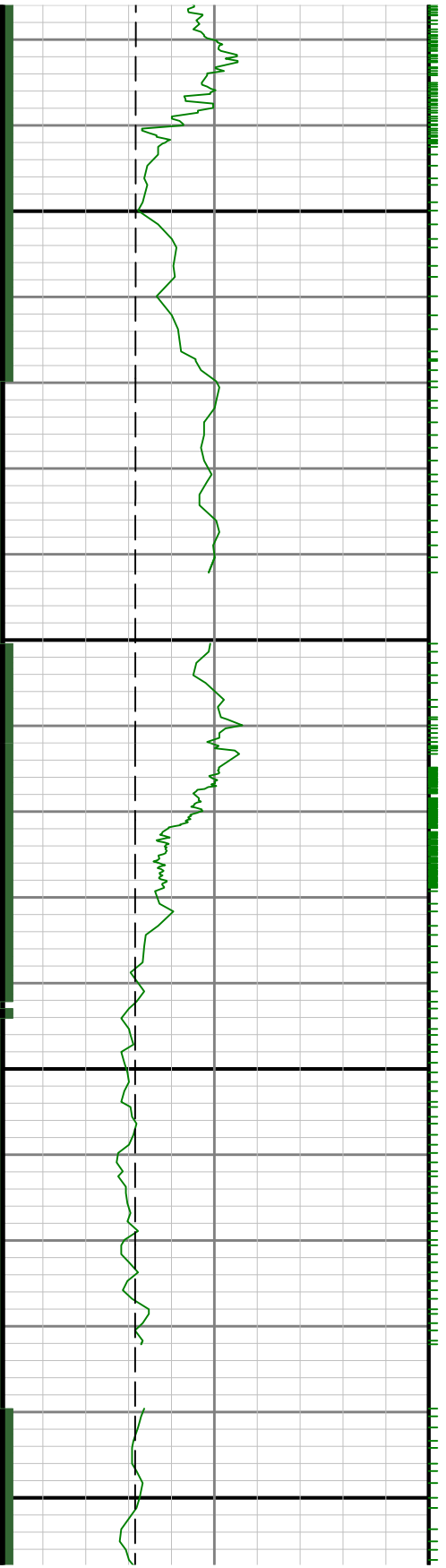
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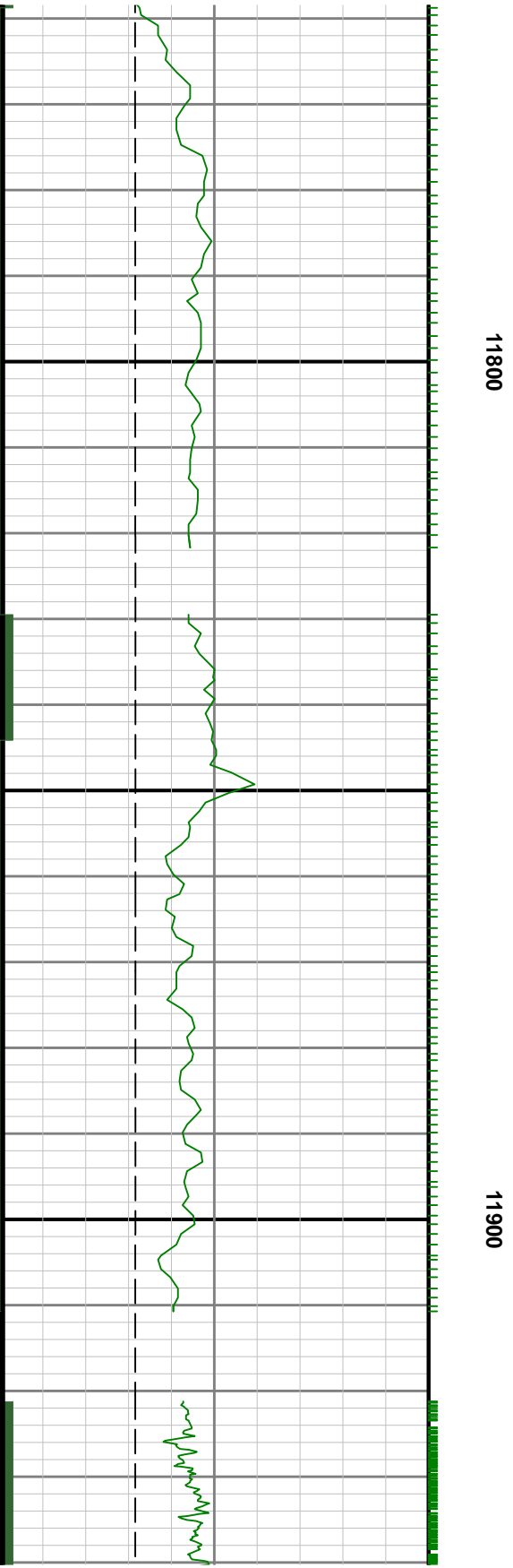
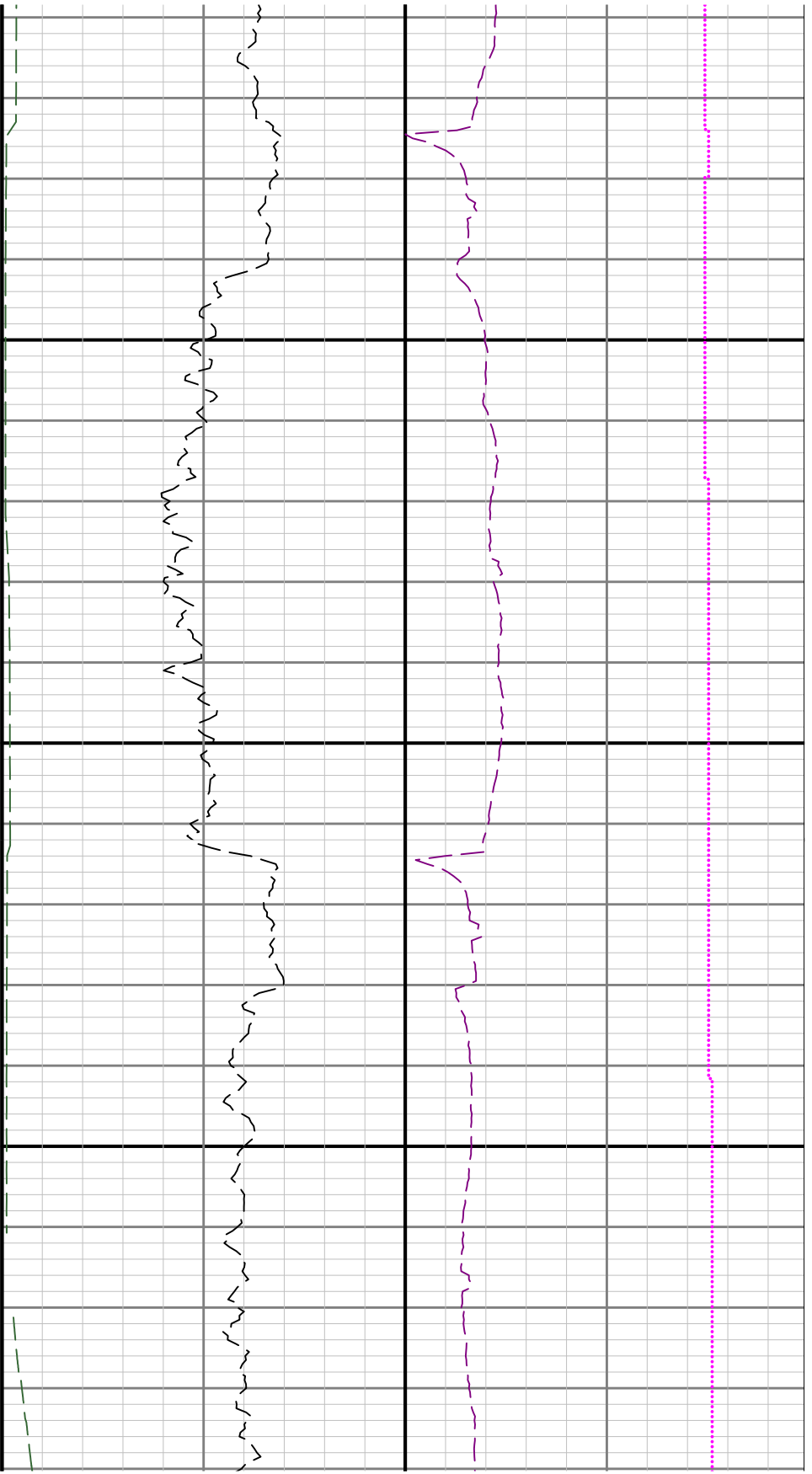


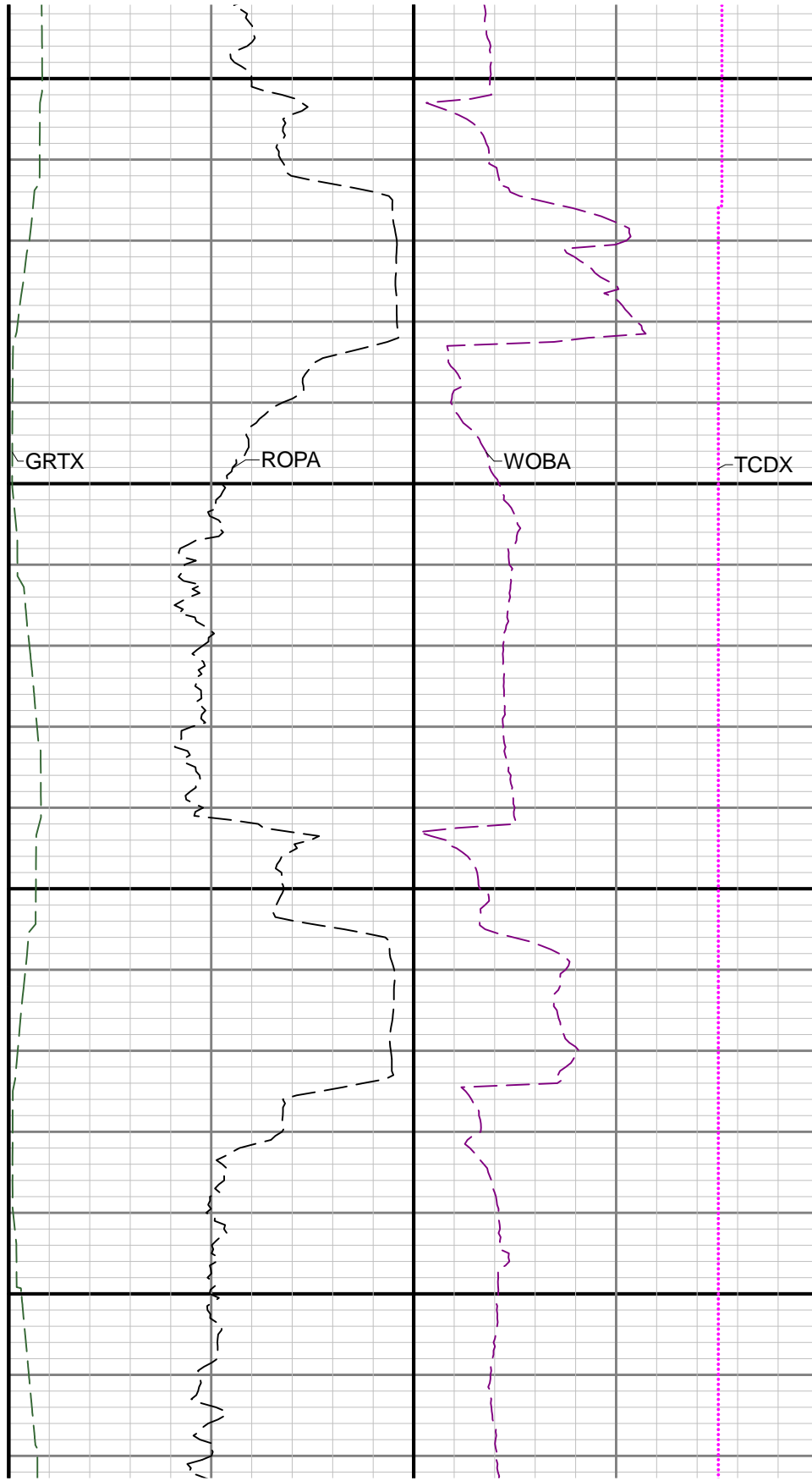
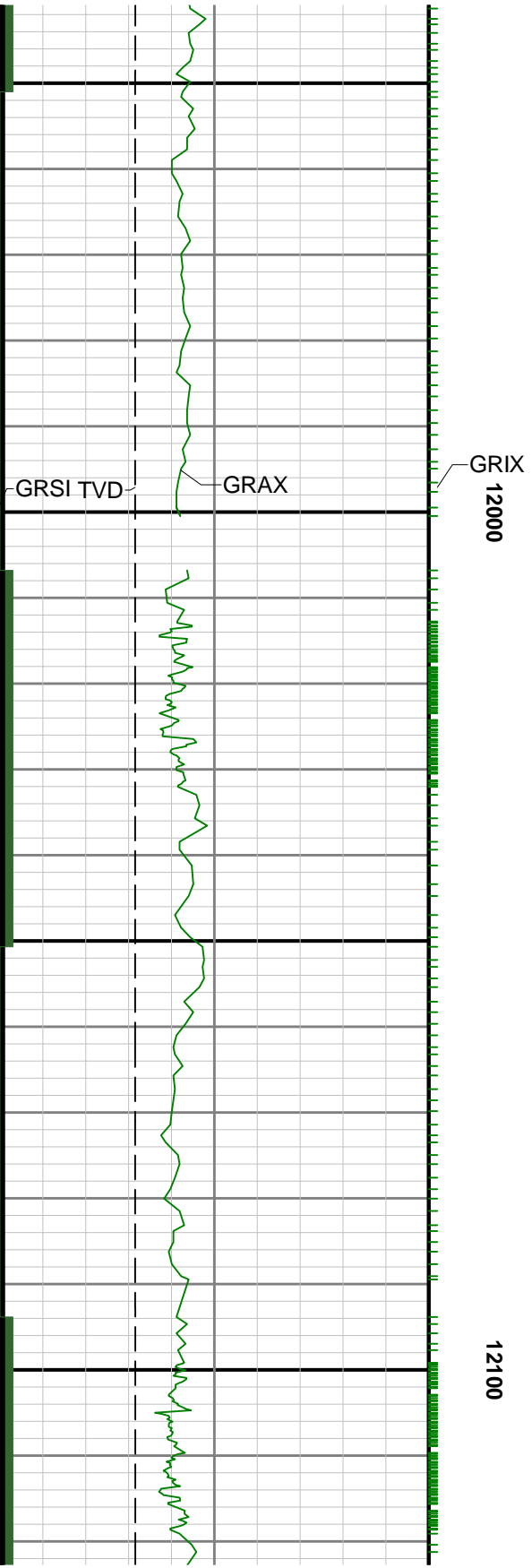


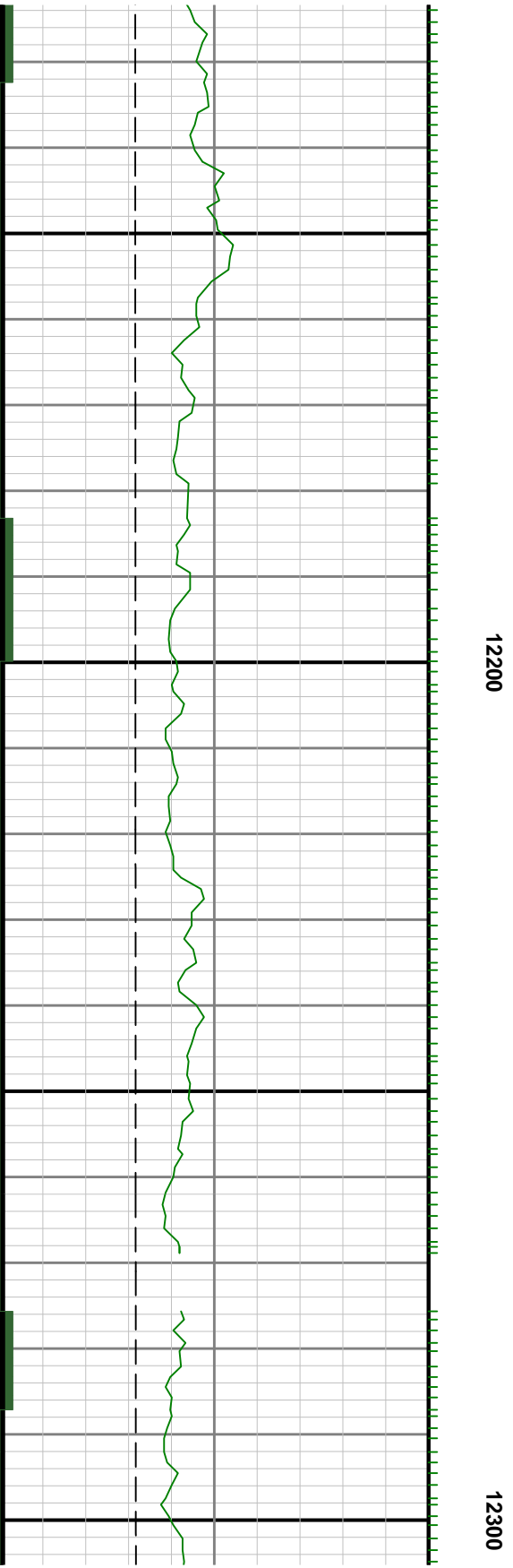
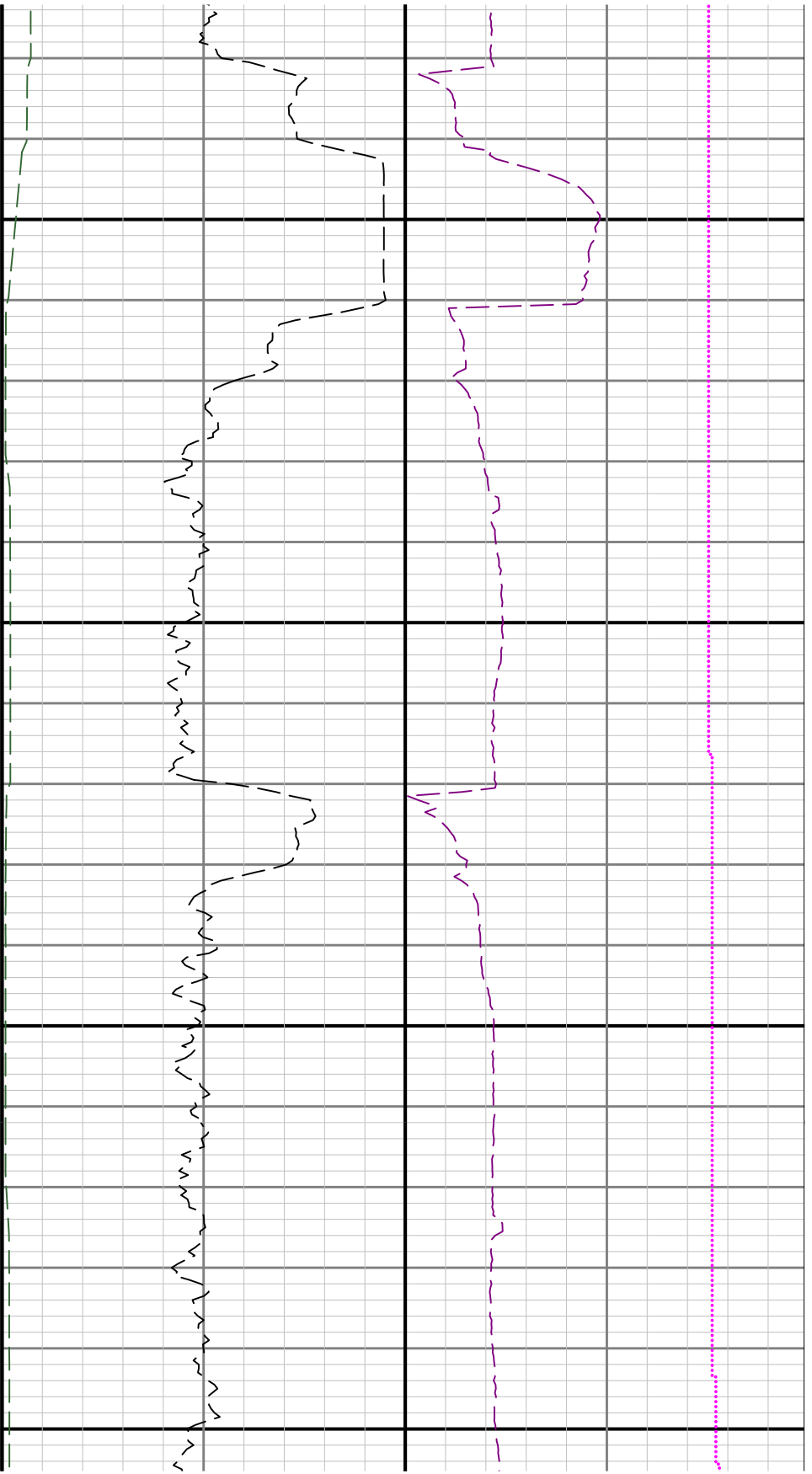
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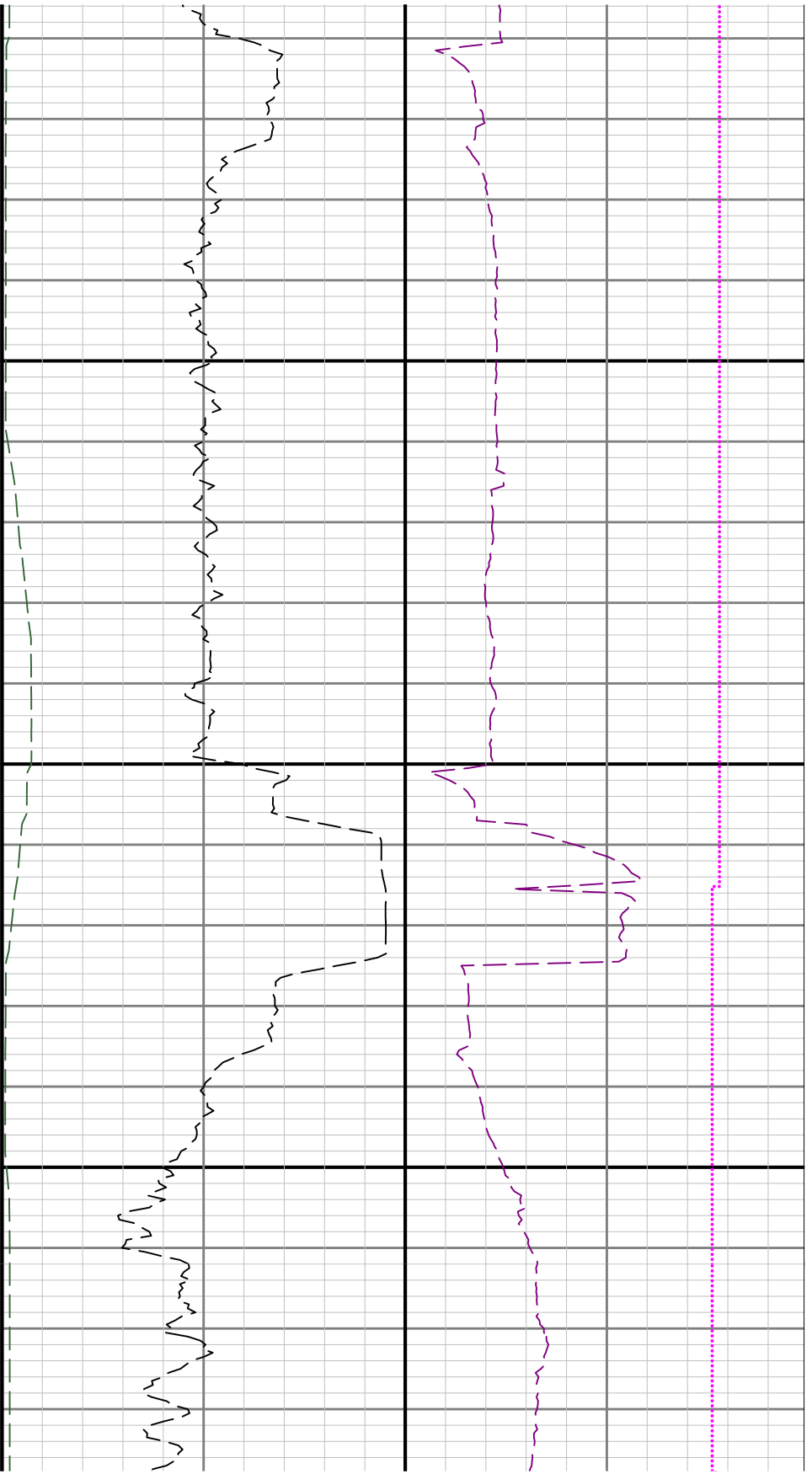
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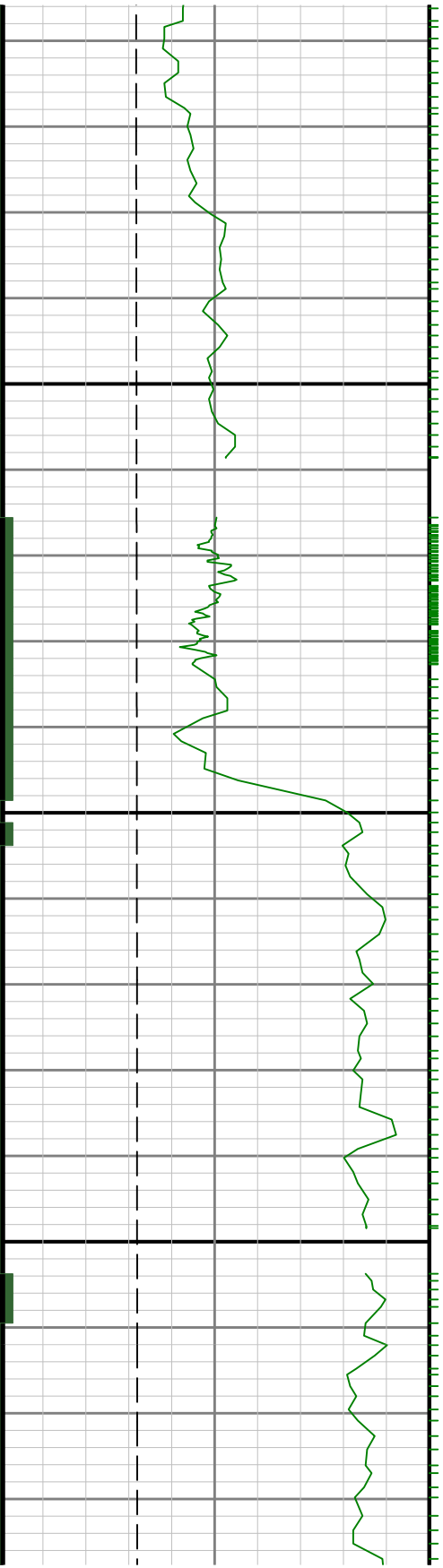


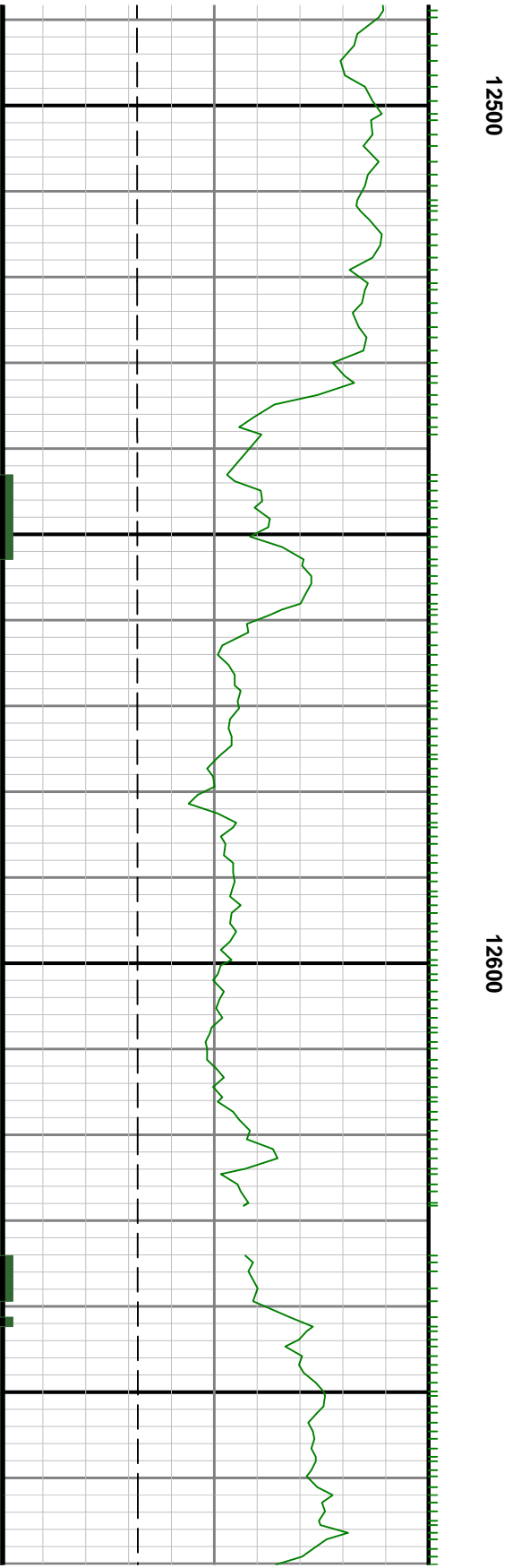
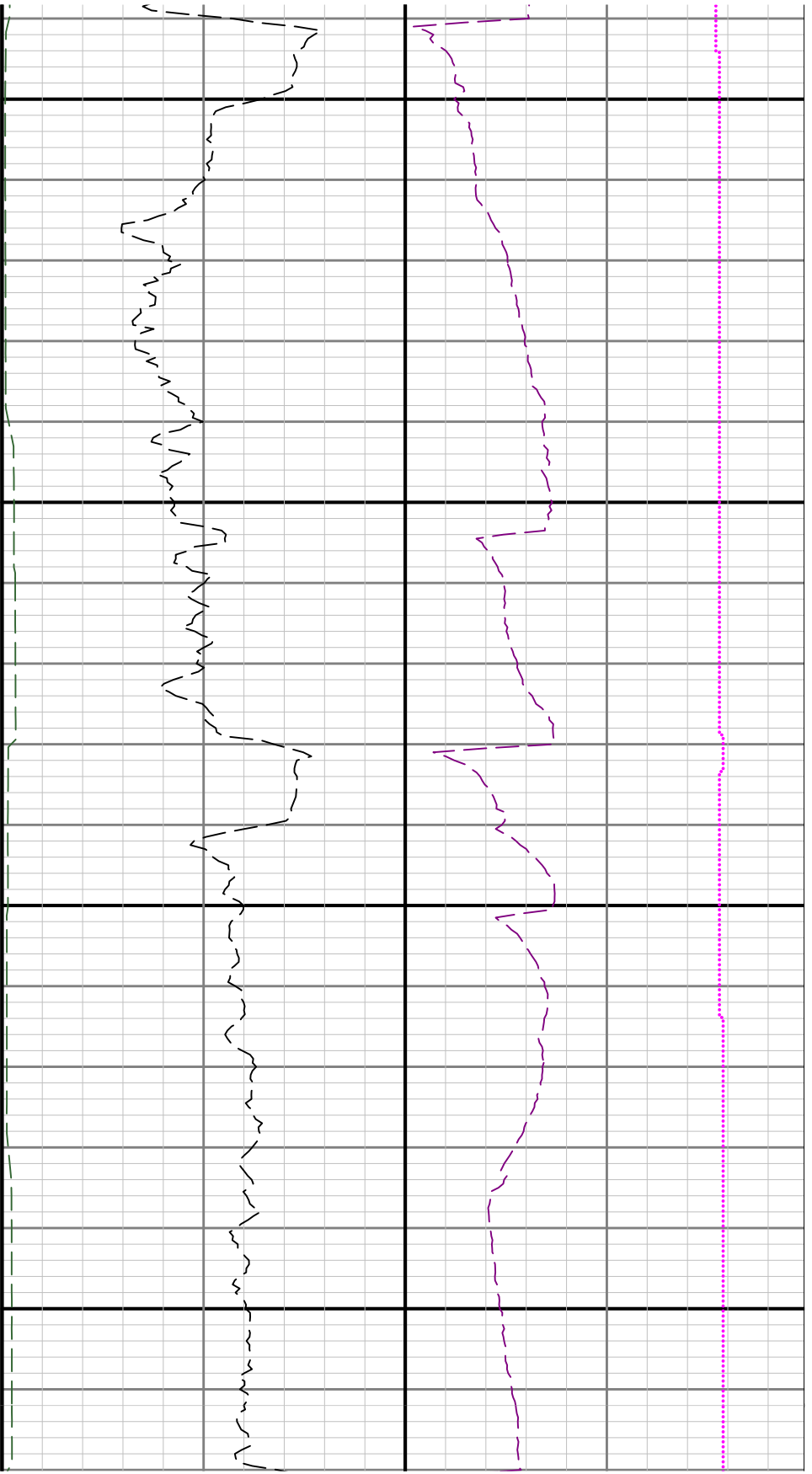


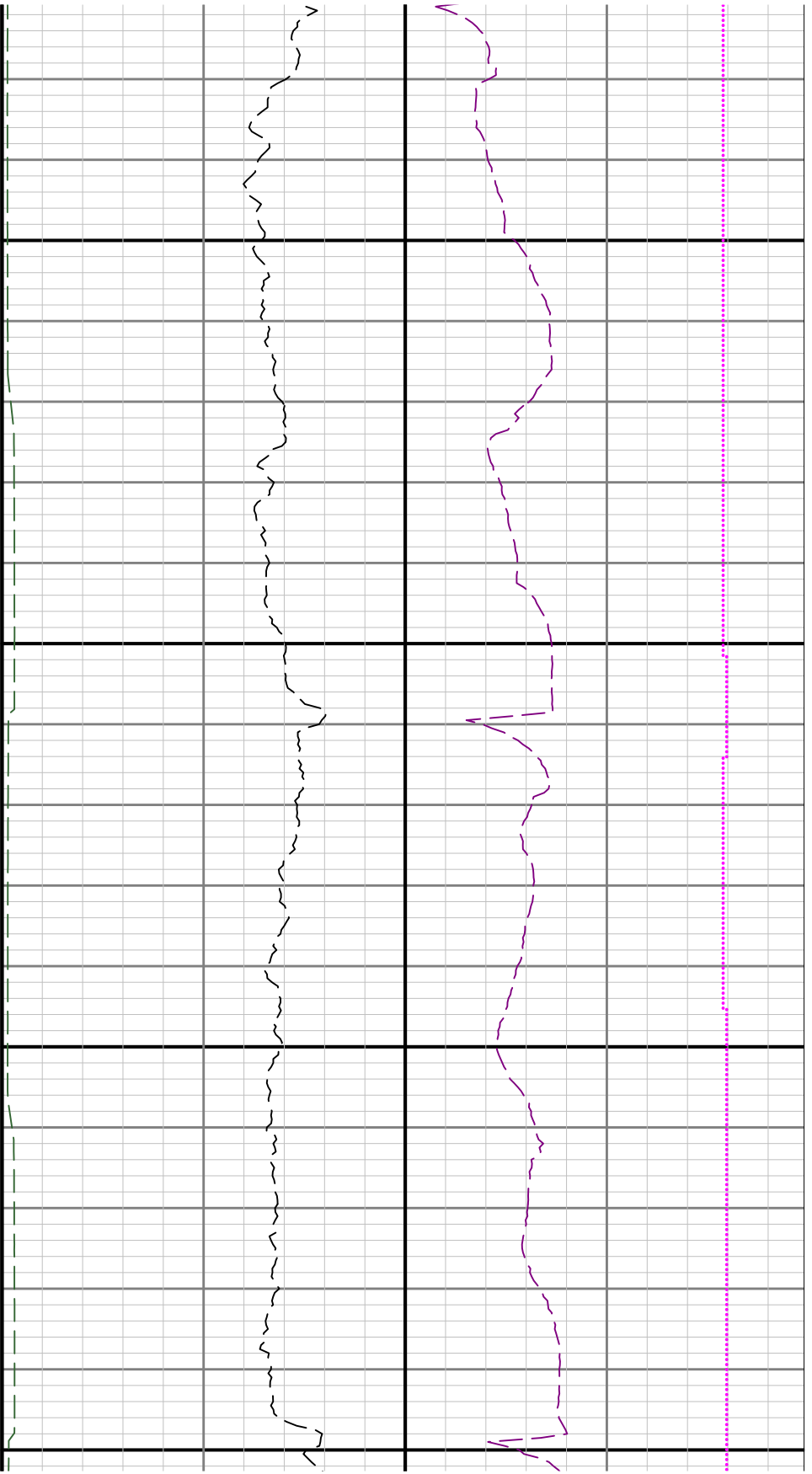




12400







12700

12800

