



Gamma Ray

Scale:

Company: Anadarko

1:240 MD

Well: AZUL 13-28HZ

Depth Reference:

Field: WELD

Driller's Depth

County: WELD Country: United States

State: Colorado

Status:

Final Print

Surface Location:
Latitude: $\text{36}^{\circ} 46' 41'' \text{N}$
Longitude: $\text{105}^{\circ} 41' 41'' \text{W}$

Other Services:

API No: 512346109

Directional

Job ID: 9053233

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

Elevation:

0.00 ft

Elev. KB:

N/A

Log Measured From: Rig Floor

Above P.D.

5071.00 ft

Elev. DF:

5071.00 ft

Elev. GL:

21.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2018-03-29 Top: (ft) 1885.00

Azi Reference North: True

Dip Angle: (deg)

66.28

Date To: 2018-03-31 Bottom: (ft) 12857.00

Total Magnetic Field Strength: (nT)

52274

Spud Date: 2018-03-28

Mag to Reference North Correction: (deg)

7.83 E

Borehole Record

Casing Record

Hole Size (in) From (ft) To (ft)

Size (in)

Weight (lb/ft)

From (ft)

To (ft)

13.500 21.00 1885.00

9.625

36.00

21.00

1875.00

7.875 1885.00 12857.00

Mud Record

Deviation Record

Type From (ft) To (ft)

Hole Size (in)

Interval (ft)

Inc | Az (Start)

Inc | Az (End)

Oil Based Mud 1885.00 12857.00

7.875

10972.00

19.82 | 97.84

88.86 | 180.86

Acquisition System

Software Version

Other

Baker Hughes Cadence

RT4.1

Rig:

Precision 464

PlotStudio

4.1.7763.3

Contractor:

Anadarko

District: Precision 363

Unit:

N/A

©"4239"Dcmgt"JwiJgu."c"IG"eqorcp{."NNE"ó"Cnn"tkijvu"tgugtxgf0"Dcmgt"JwiJgu."c"IG"eqorcp{."NNE"cpf"kvu"chhknkcvgu"*ôDJIGö+"rtqxfkgu"vjku"kphqtocvkqp"qp"cp"ôcu"kuô"dcuku"hqt"igpgtcn"kphqtocvkqp" purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.

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	2.25	Steerable	1835.00	12801.00	1885.00	12857.00	2018-03-29 01:05	2018-03-31 01:32	41.32

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Alexis Bejarano	2018-03-29	2018-03-31	Wayne Burge	2018-03-29	2018-03-31			

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+ (%)
2018-03-28 18:42	1	1835.00	Oil Based Mud	8.9	21	N/A	0.0	80/20	Active Pit	28000	0.00
2018-03-31 03:34	1	12857.00	Oil Based Mud	9.1	23	N/A	0.0	80/20	Active Pit	29000	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	12366182	Directional (mag)	15.58	46.14	6.540	3.000
1	NaviGamma	12366182	VSS	15.58	46.14	6.540	3.000
1	NaviGamma	12366182	Gamma (single)	19.00	49.56	6.540	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 7 7/8 inch bit and steerable assembly from 1885 to 12857 feet MD (1826 to 7547 feet TVD).
4	Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request


Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1835.60	7.875	1	Baker Hughes began logging at 1835 feet MD (1779 feet TVD) as requested by the client

1	1855.00	7.875	1	Baker Hughes began logging at 1855 feet MD (1775 feet TVD) as requested by the client.
2	12857.00	7.875	1	The interval from 12801 to 12857 feet MD (7546 to 7547 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 13-28HZ

Date From:2018-03-29 01:05:51

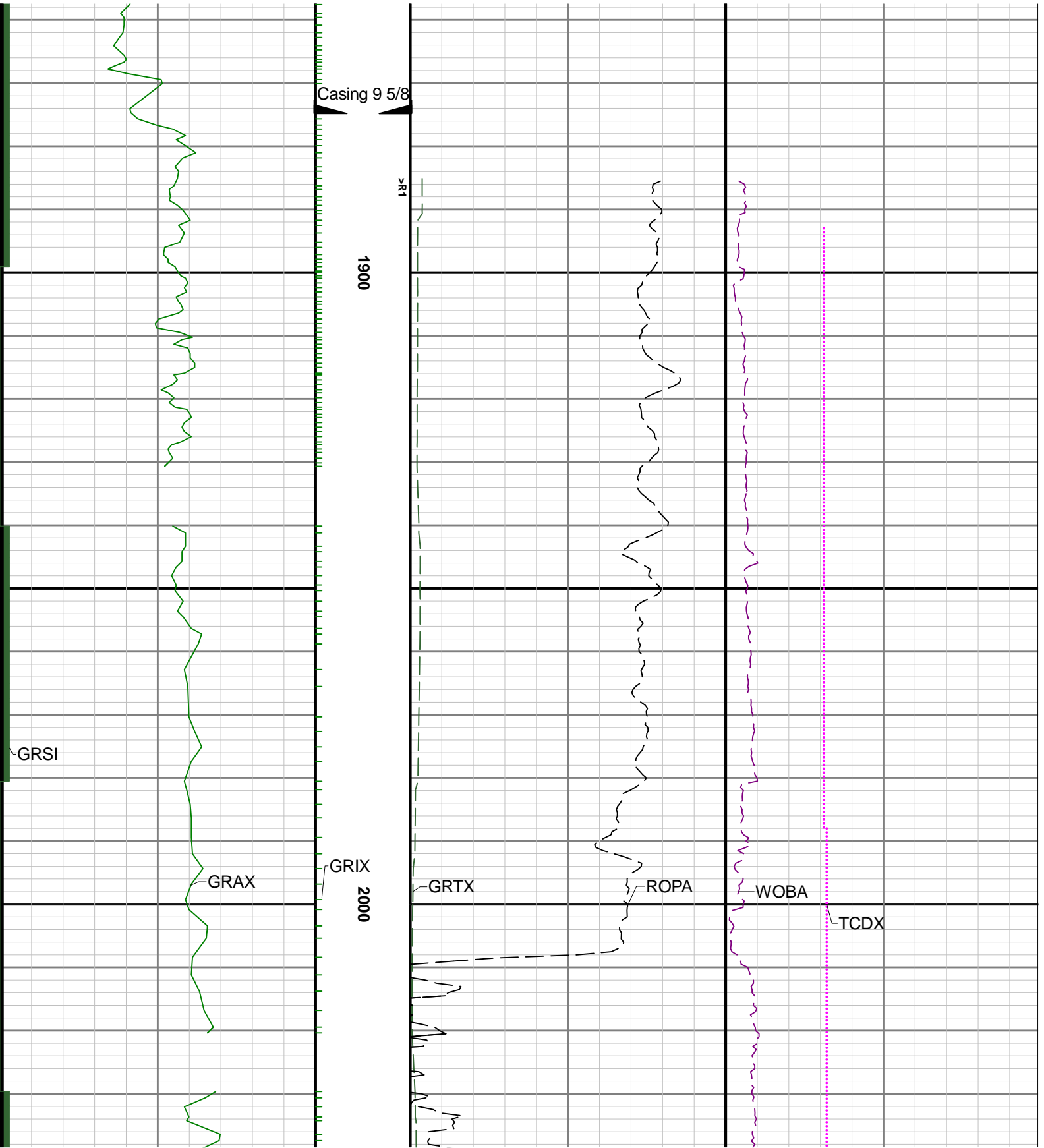
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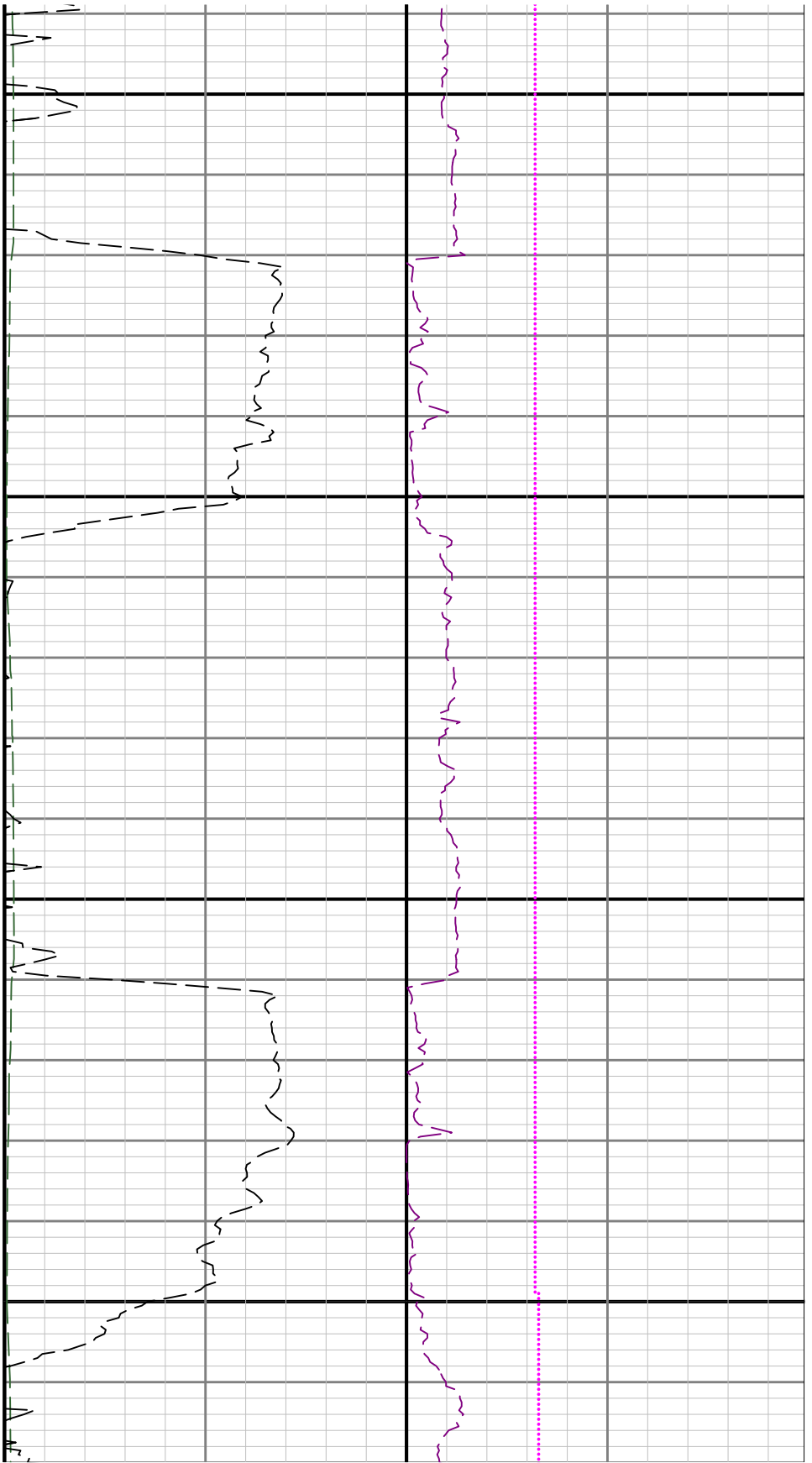
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Top:1800.00

Bottom:12857.00

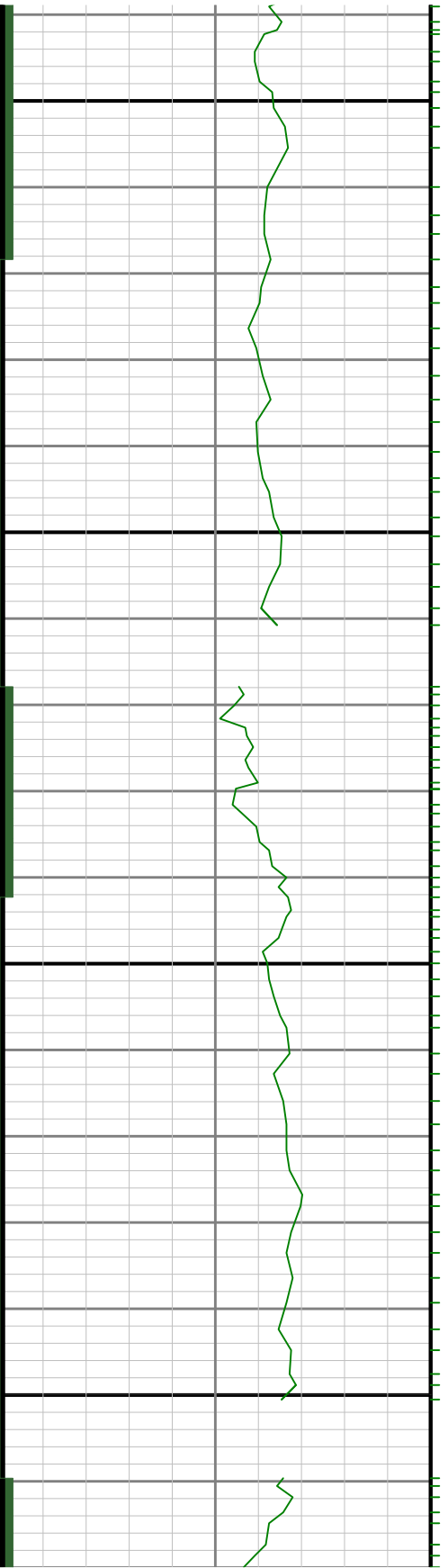
<div>Gamma Ray - Apparent 0.5 ft Average [GRAX]</div> <div>0200</div> <div>API</div> <div>True Vertical Depth [TVD]</div> <div>80006000</div> <div>ft</div>	<div>MD 1:240 feet</div> <div>1800</div>	<div>Gamma Time Since Drilled</div> <div>0600</div> <div>min</div> <div>Depth Averaged ROP 3 ft Average [ROPA]</div> <div>9000</div> <div>ft/h</div>	<div>Weight On Bit, Average 1 ft Average [WOBA]</div> <div>0150</div> <div>klb</div> <div>Downhole Temperature [TCDX]</div> <div>0300</div> <div>degF</div>
<div>See Remark 1</div>			

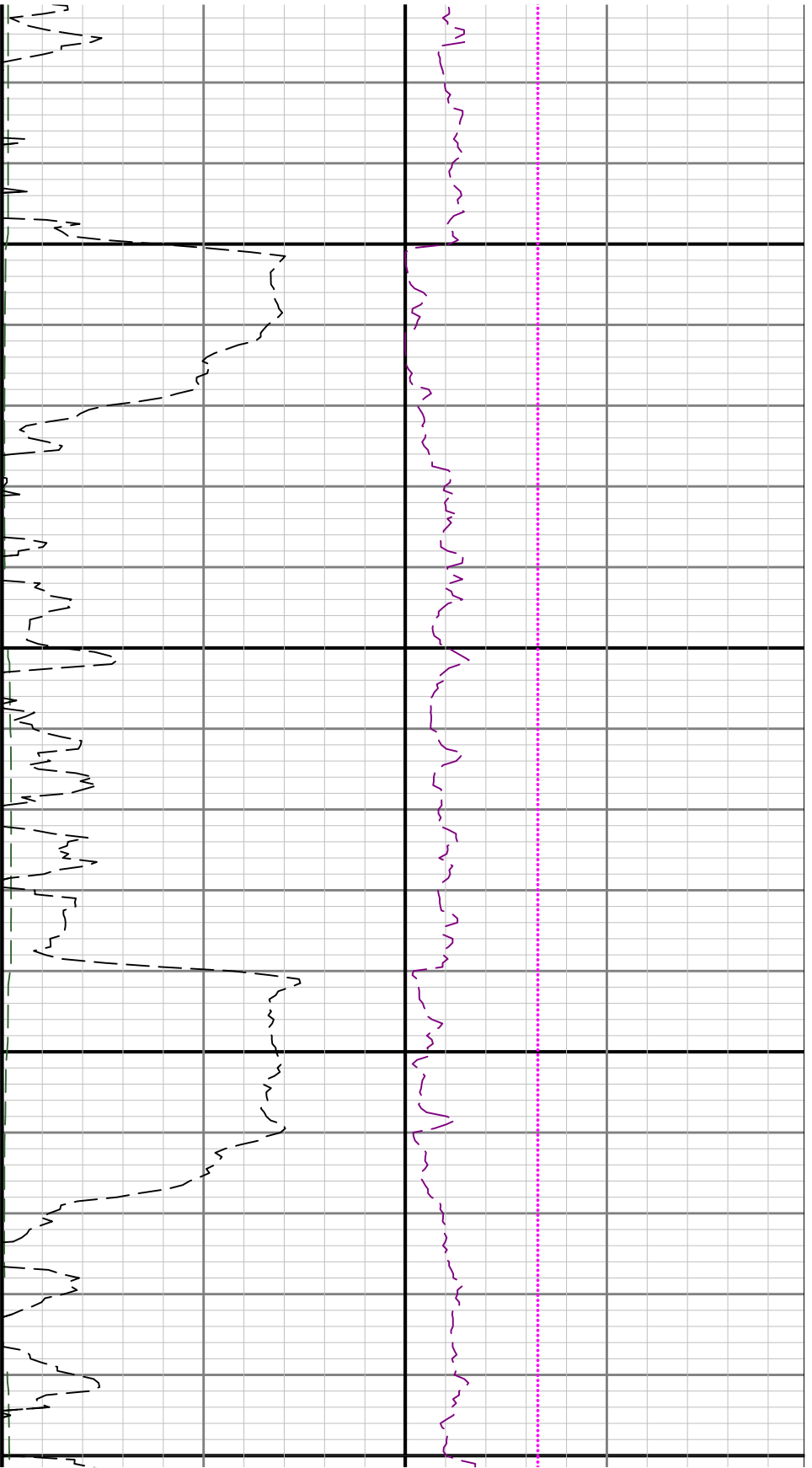




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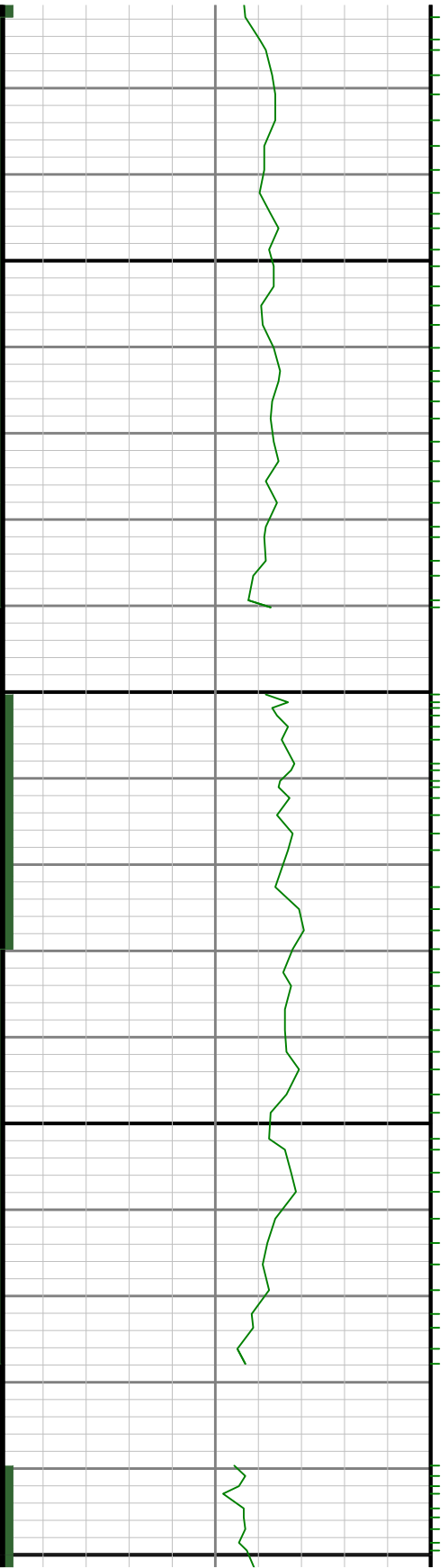
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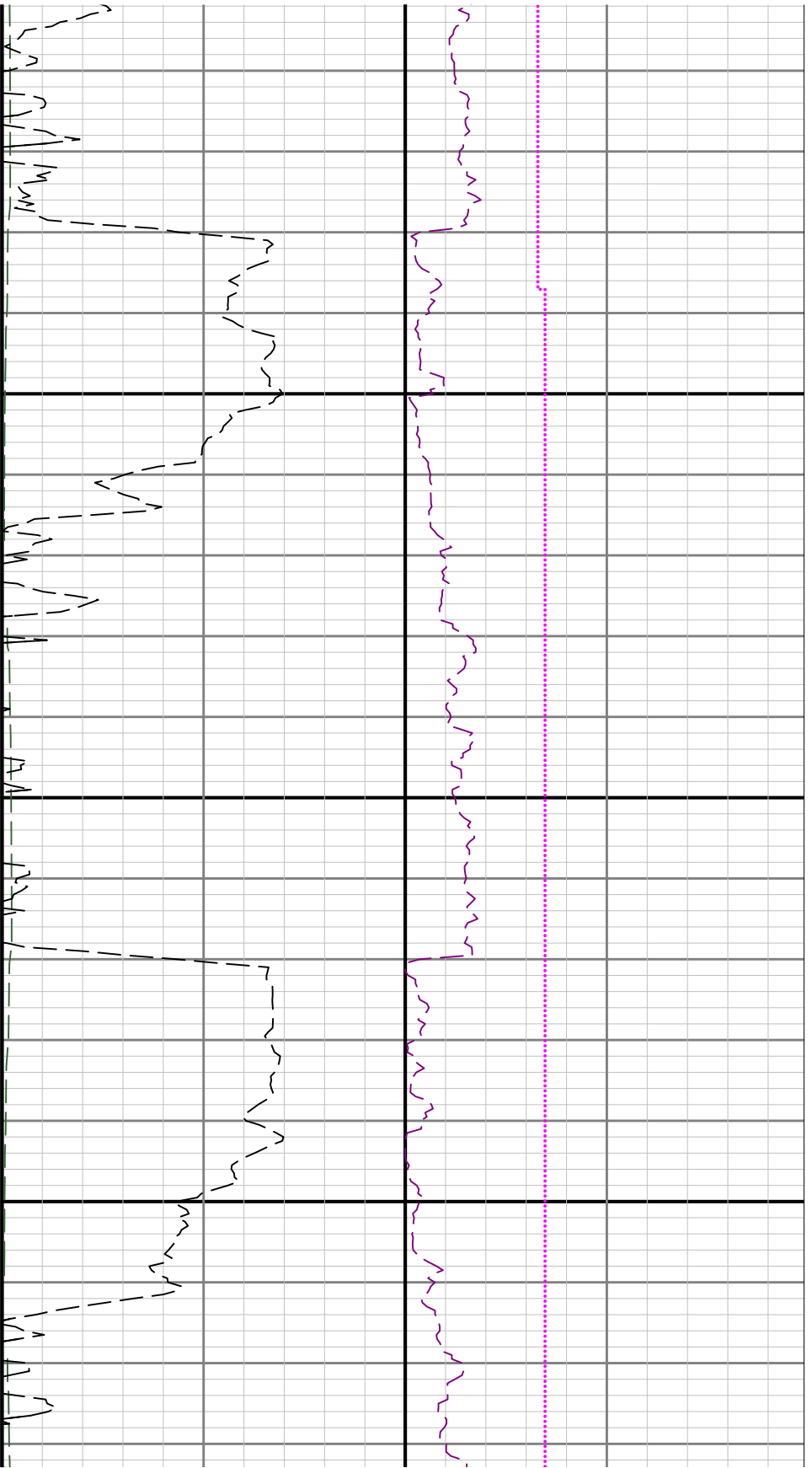




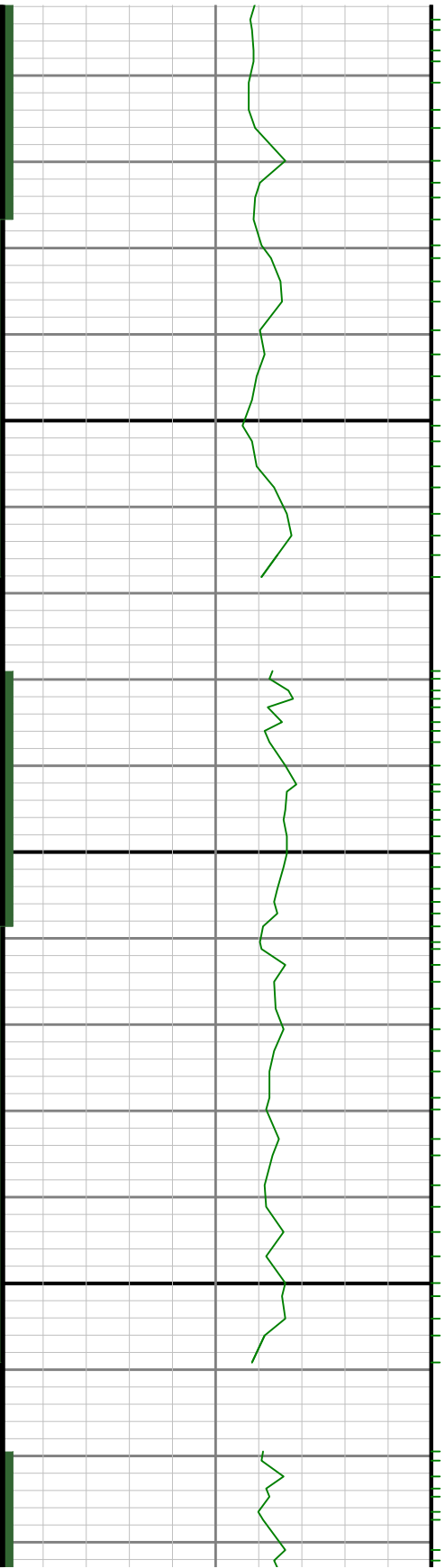
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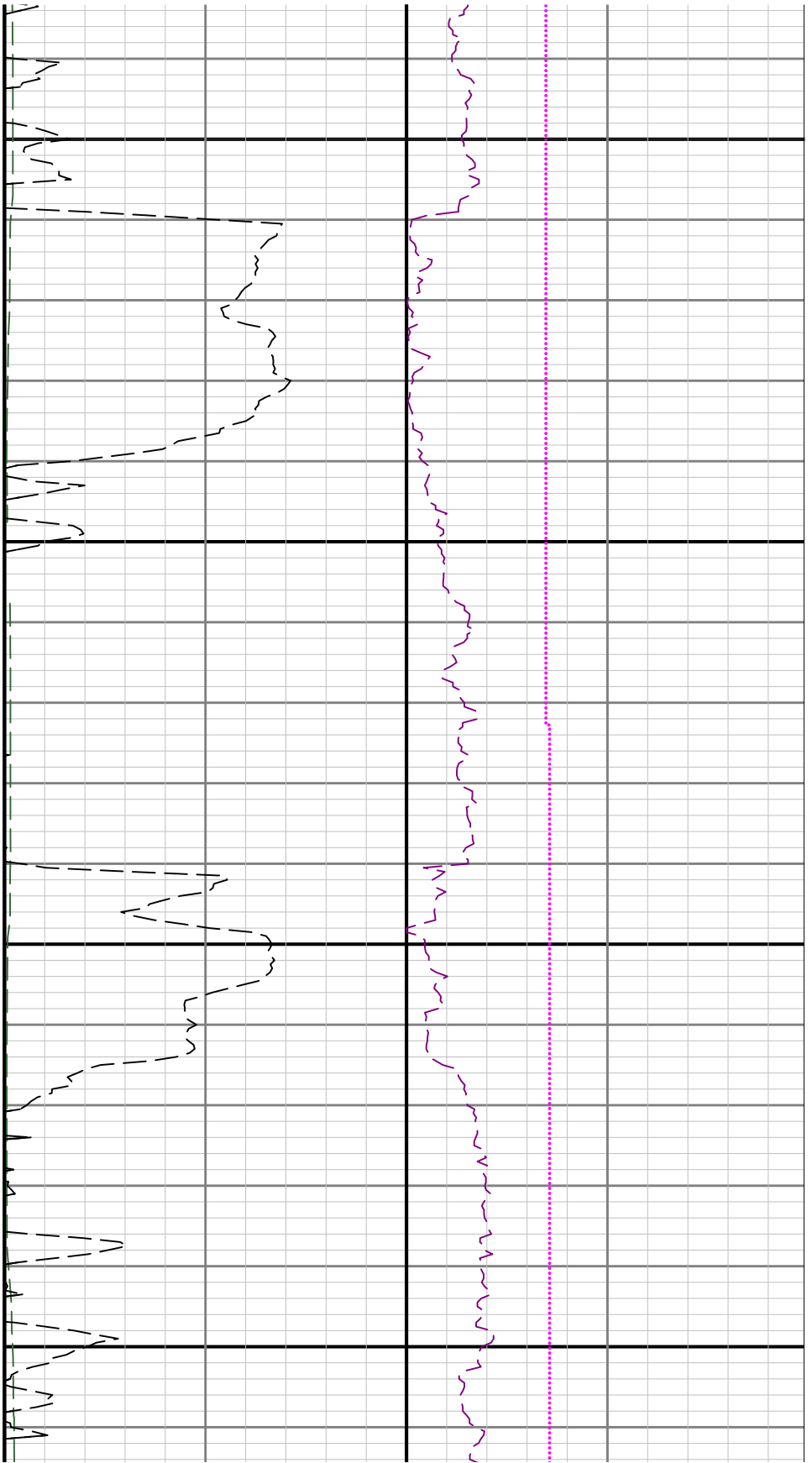
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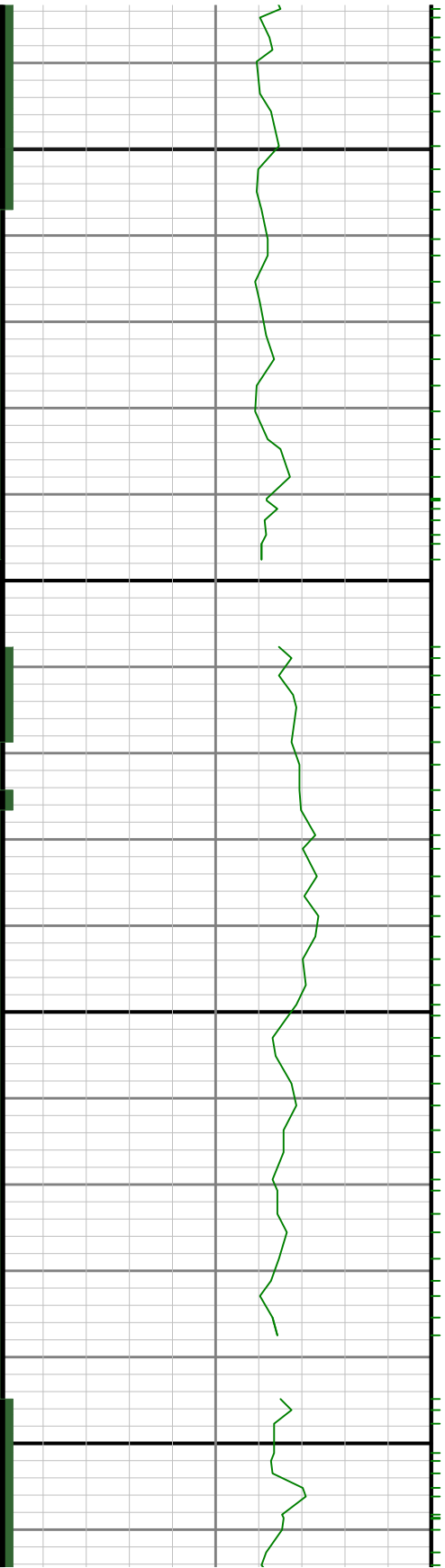
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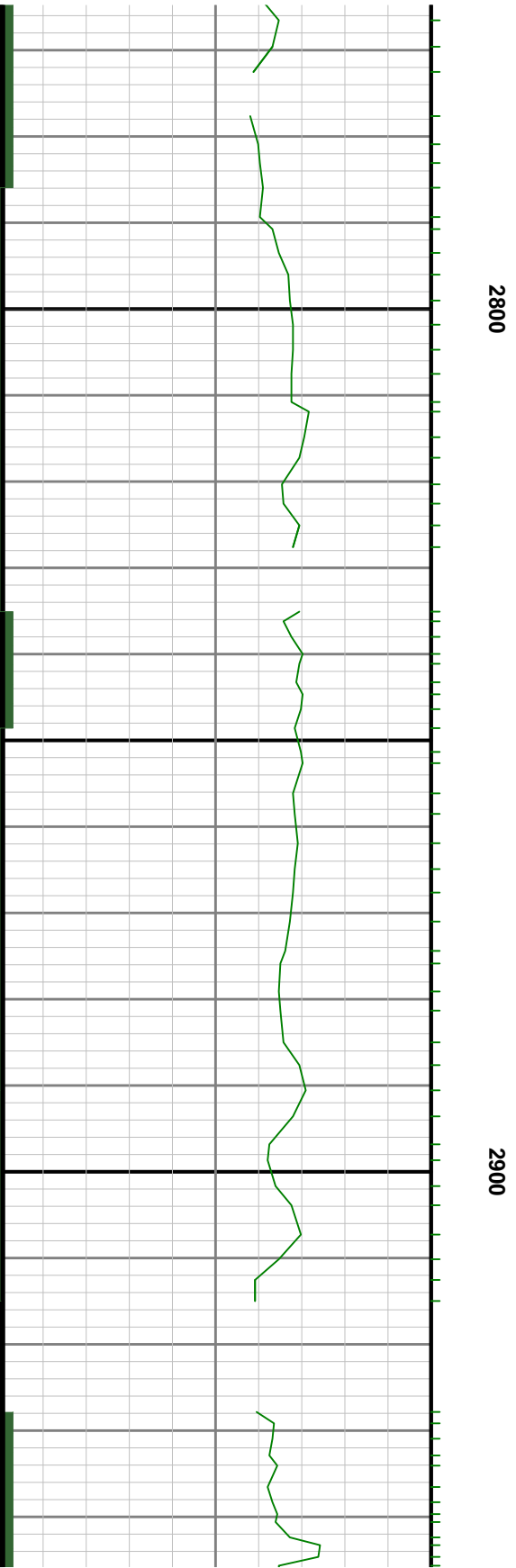
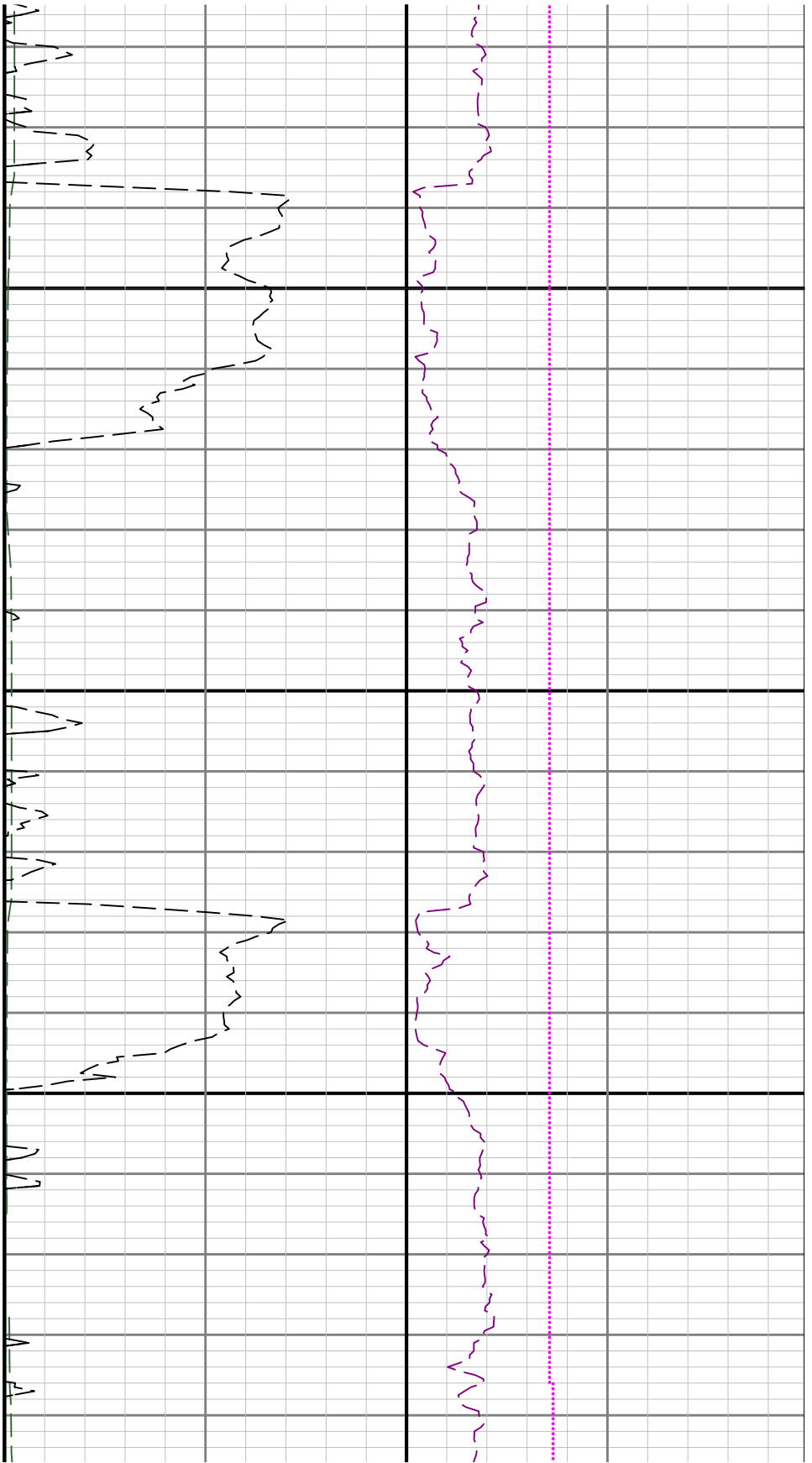


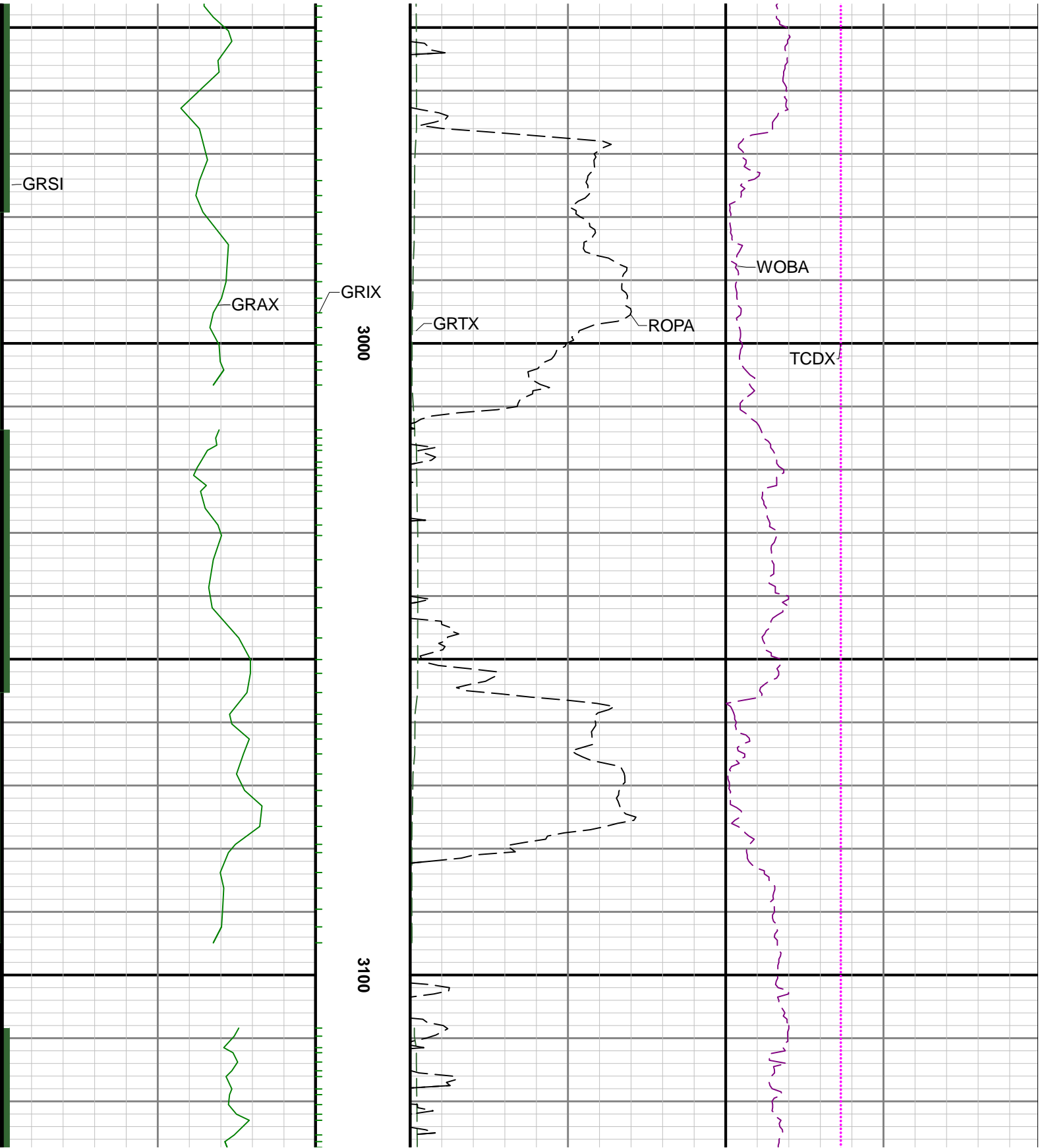


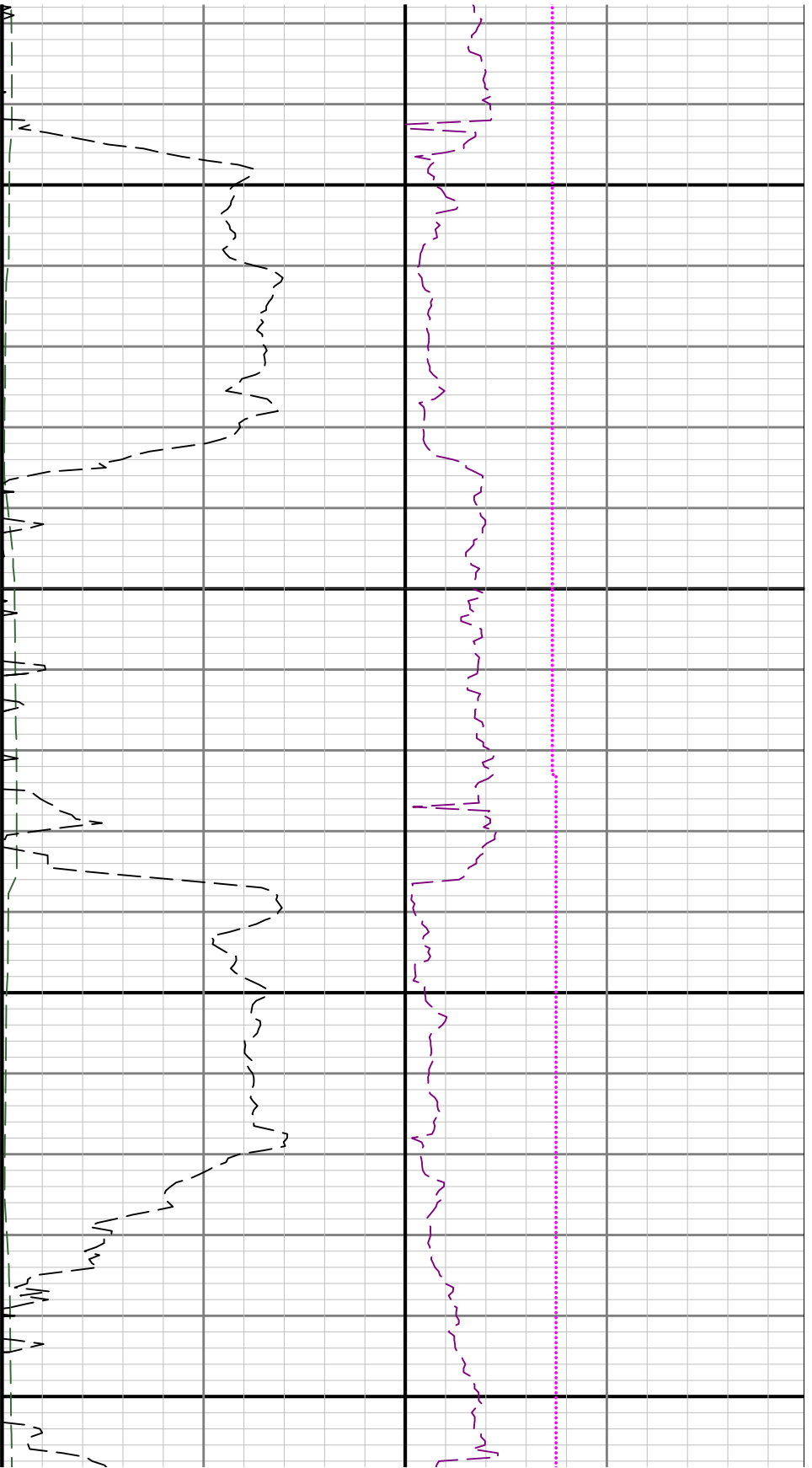
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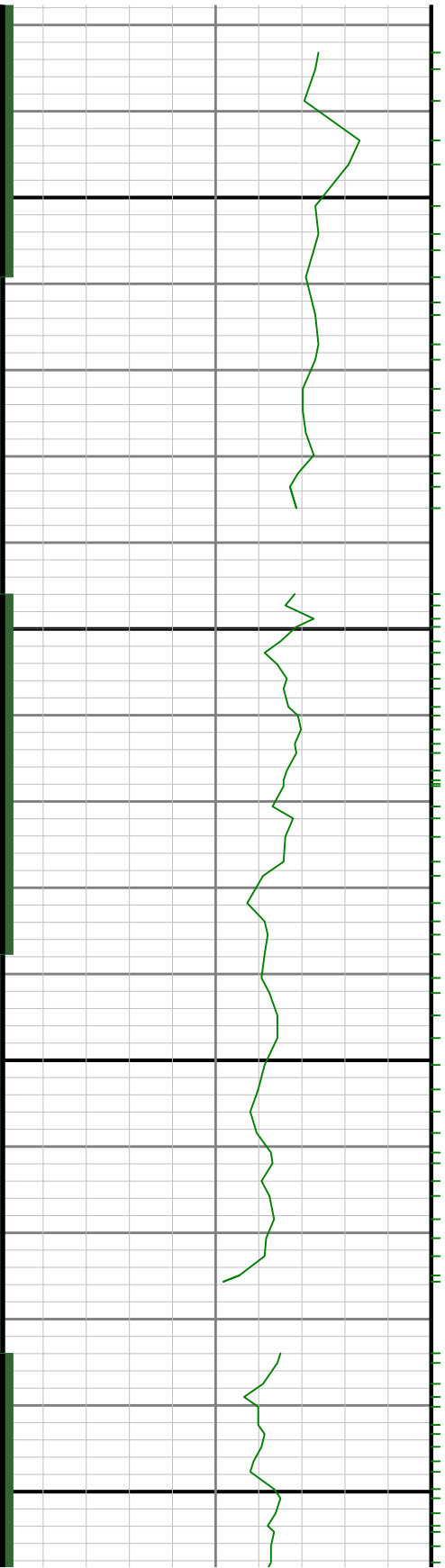


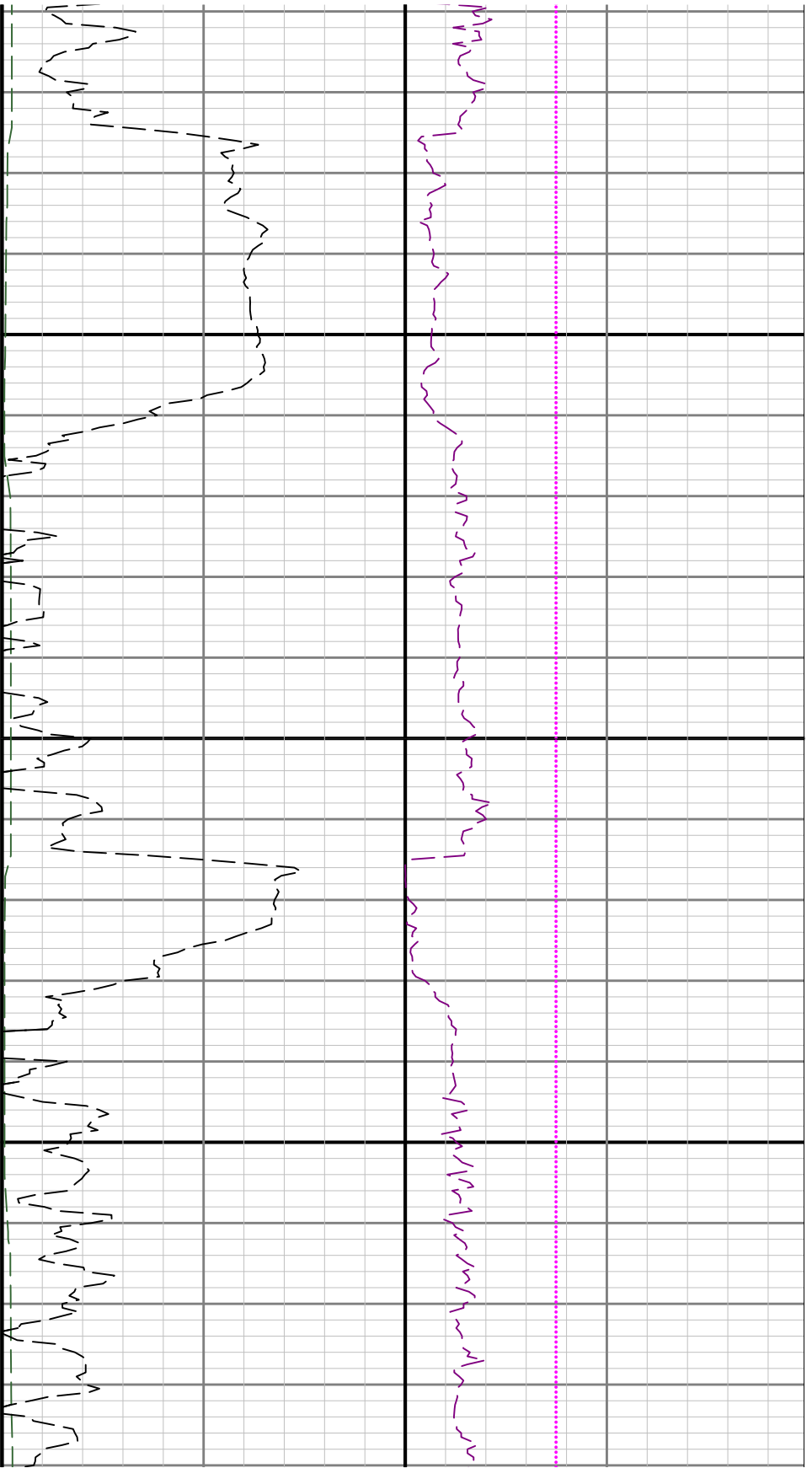




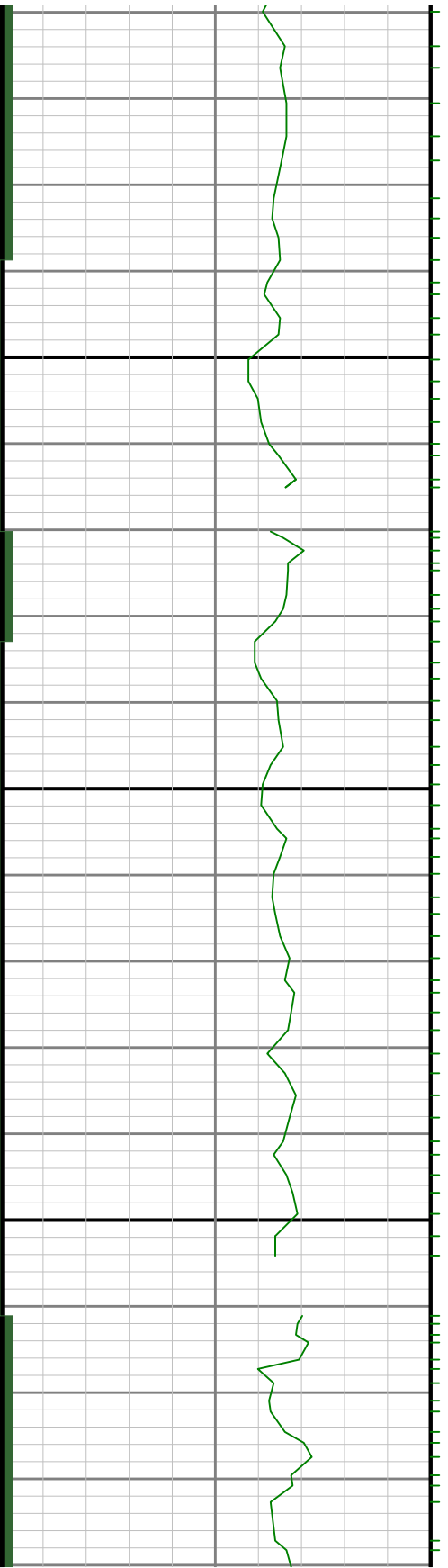
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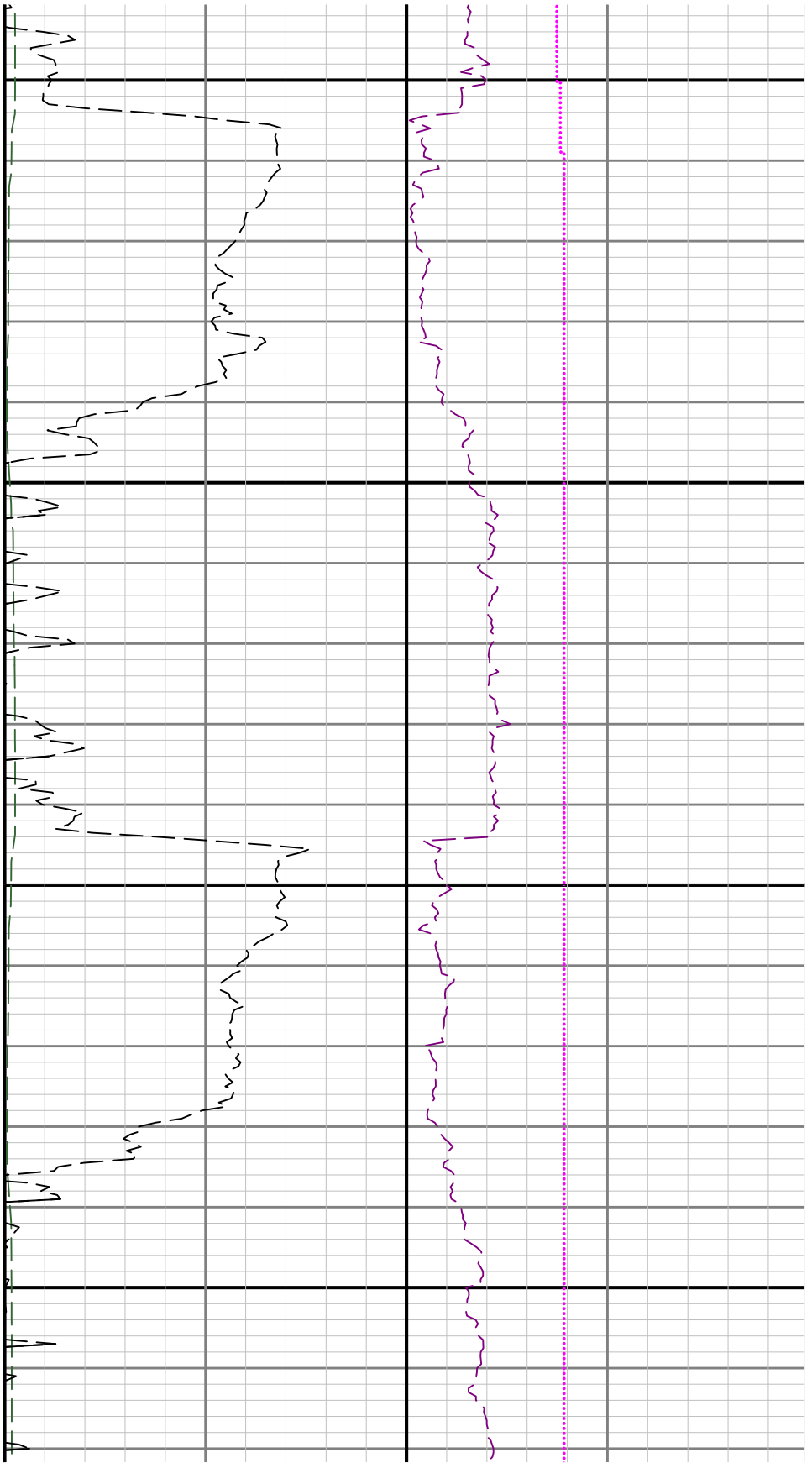
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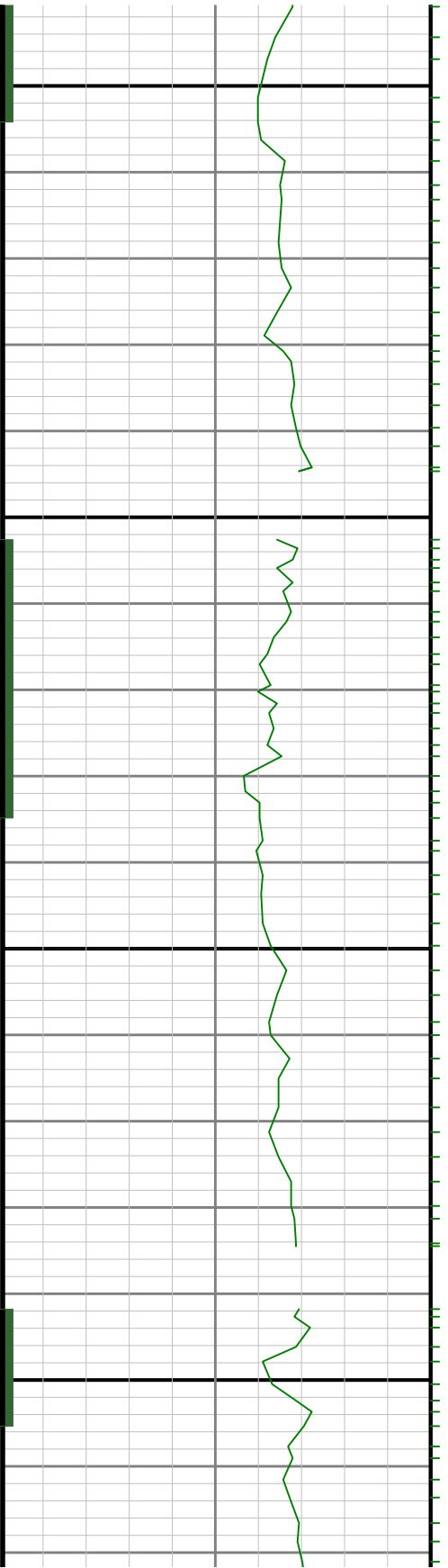
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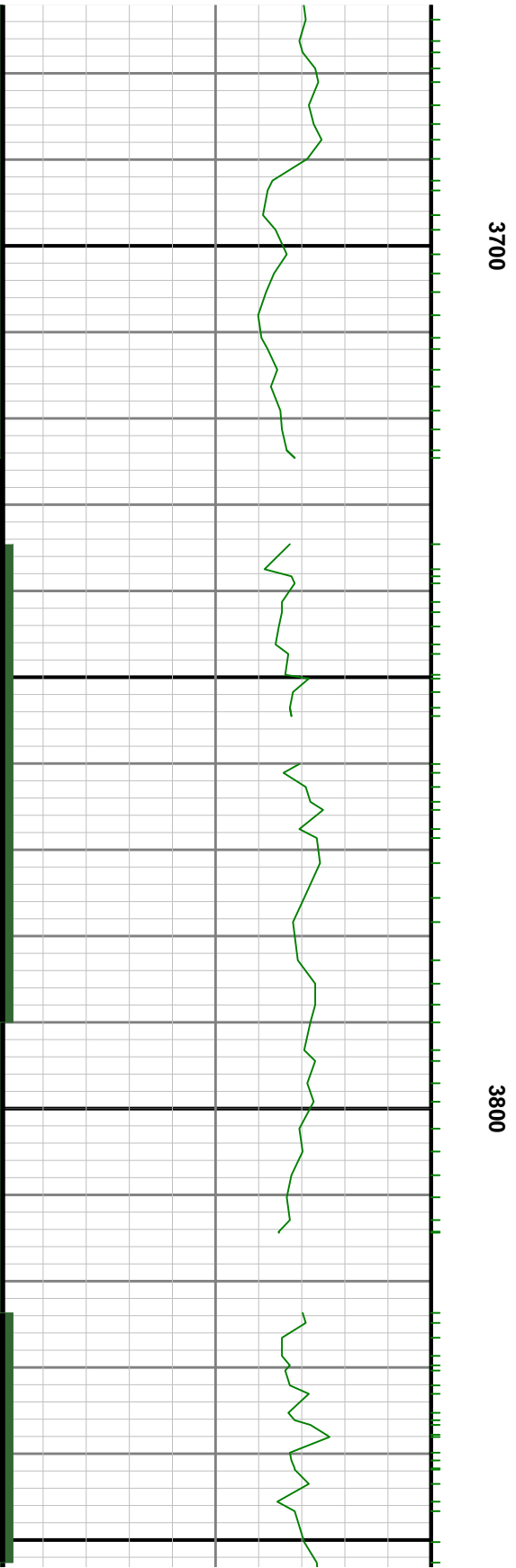
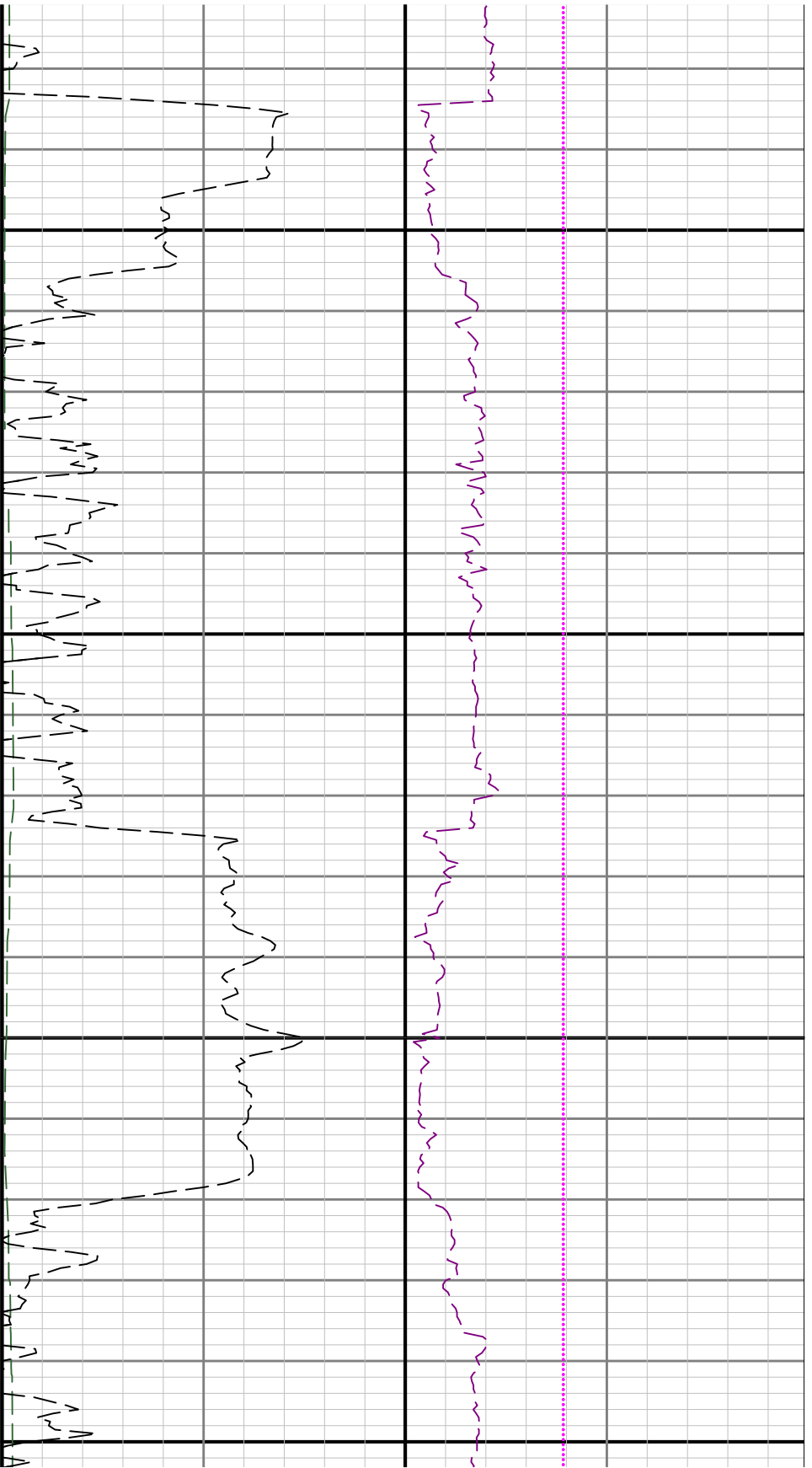


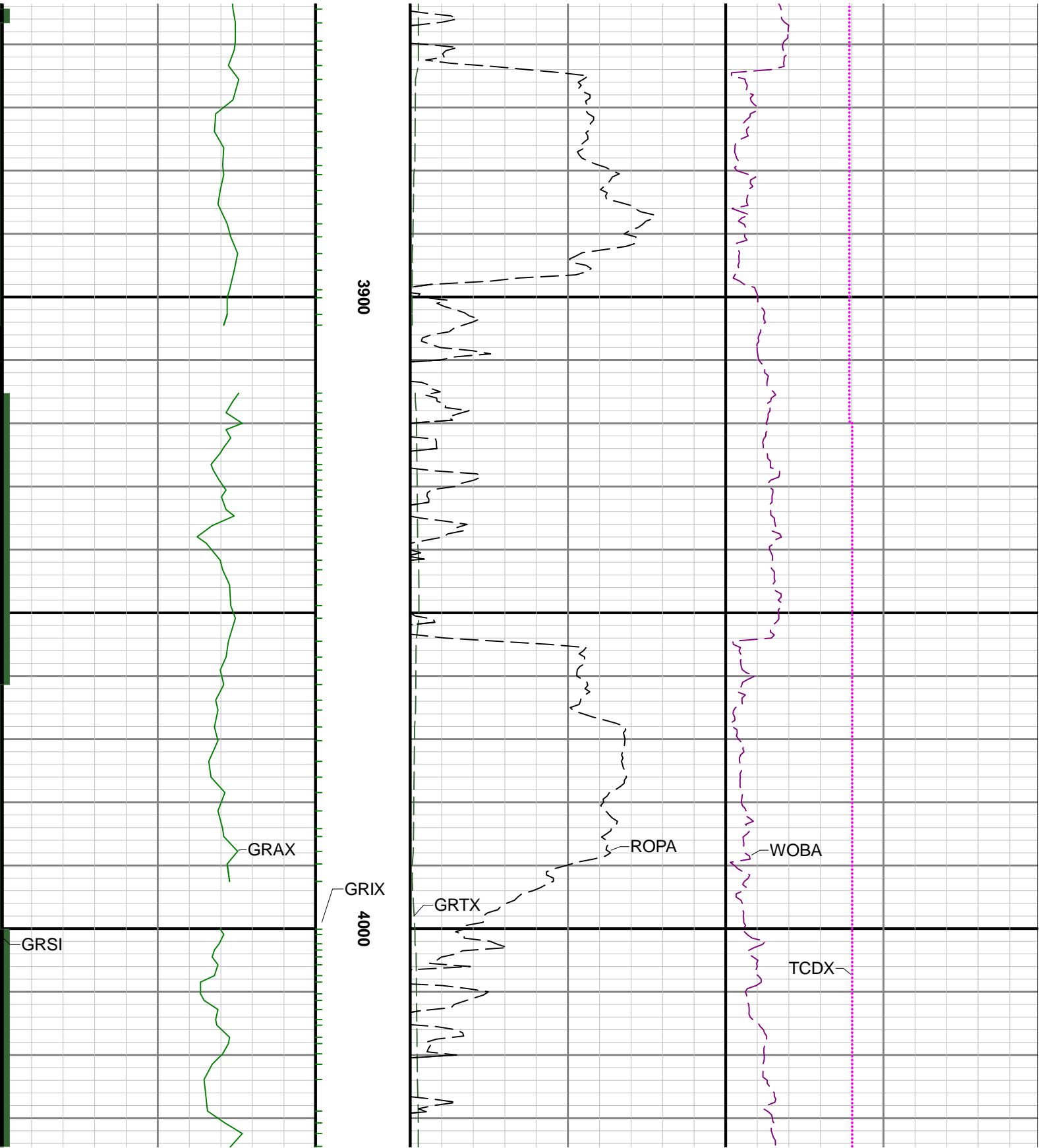


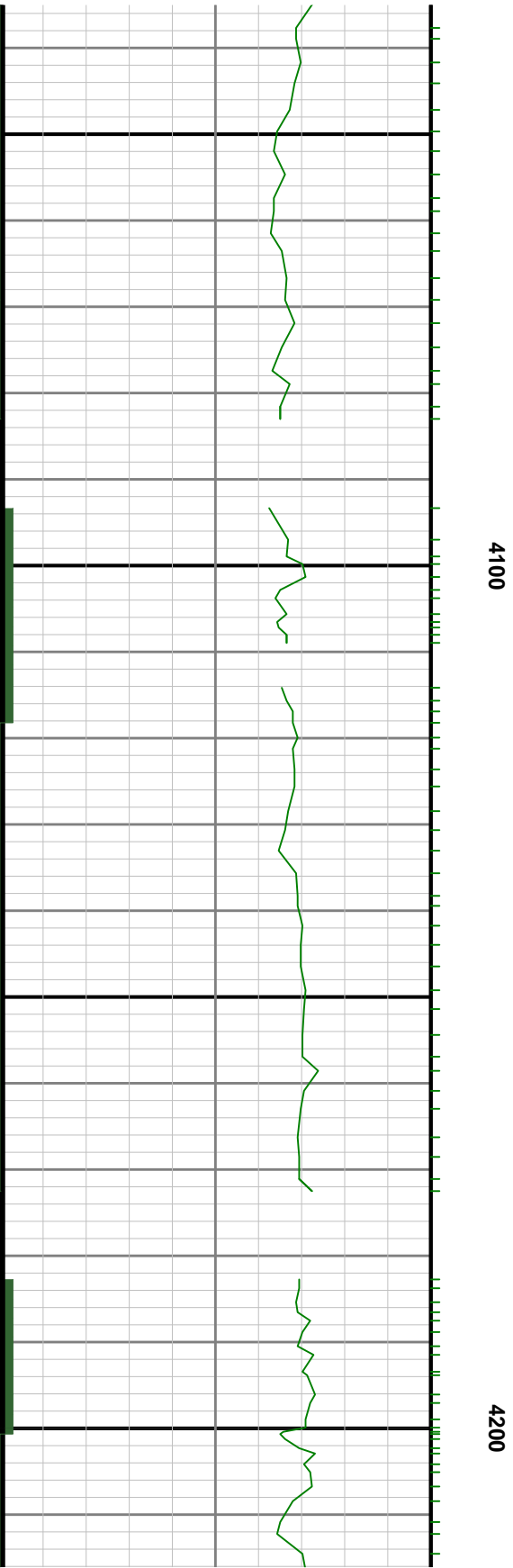
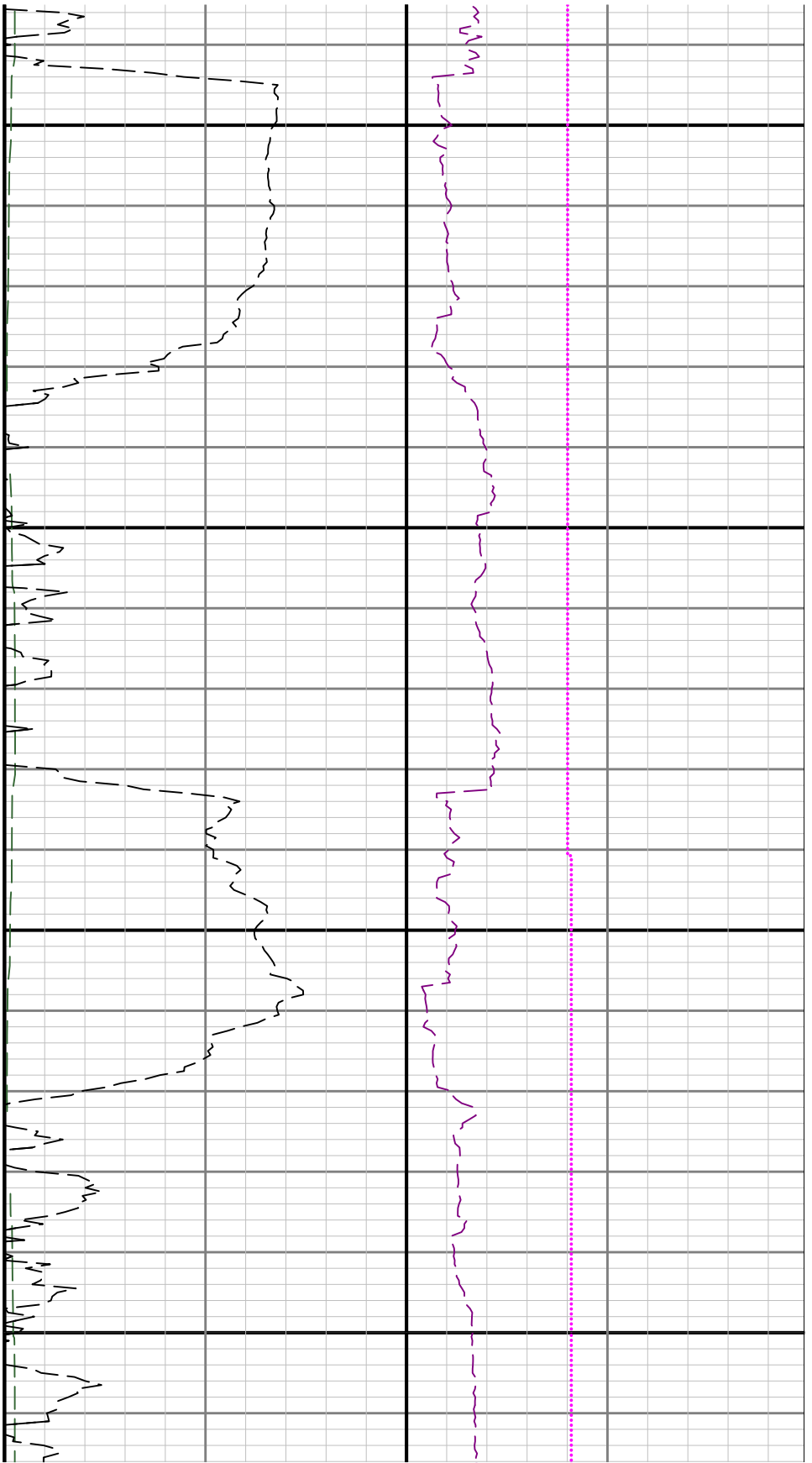
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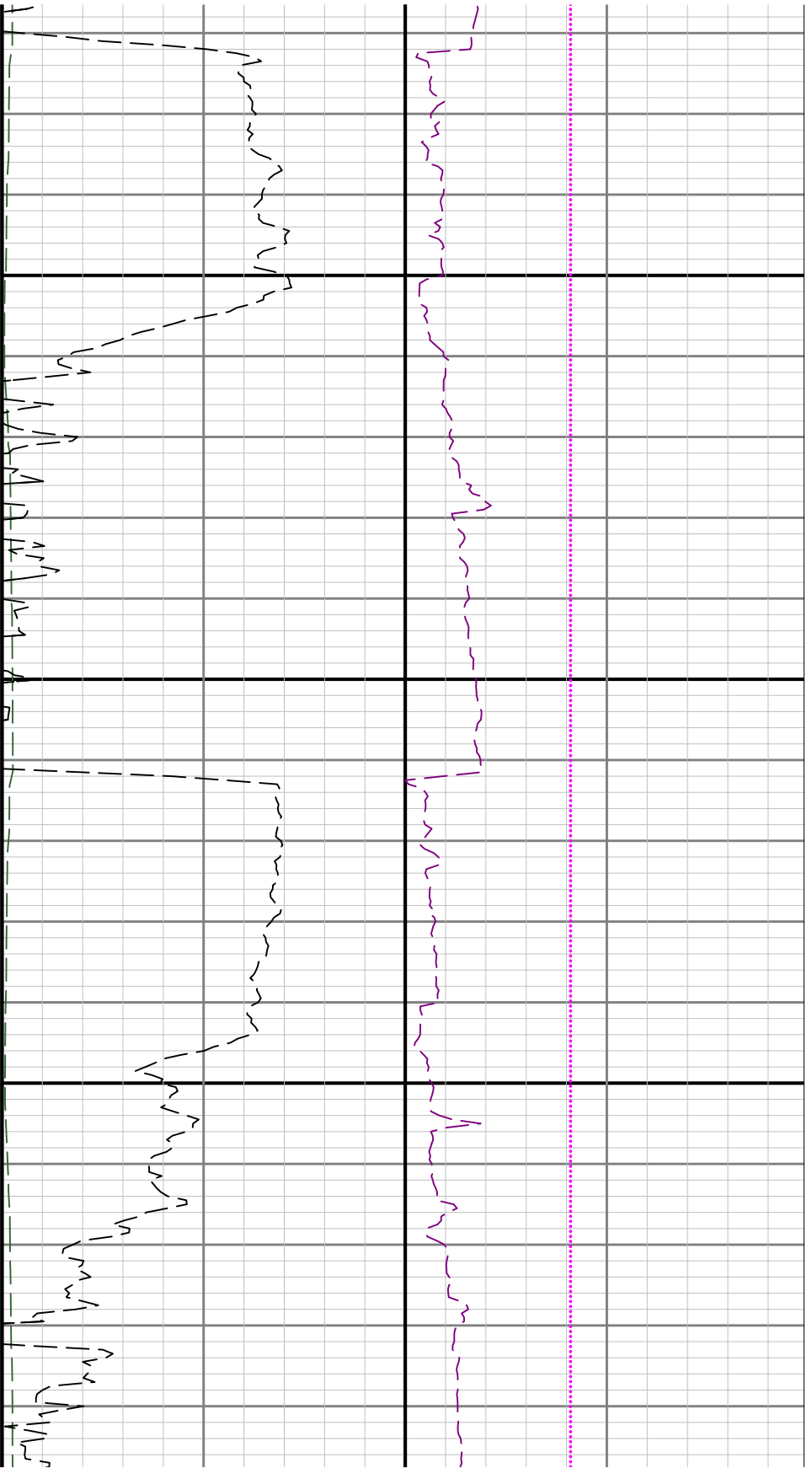
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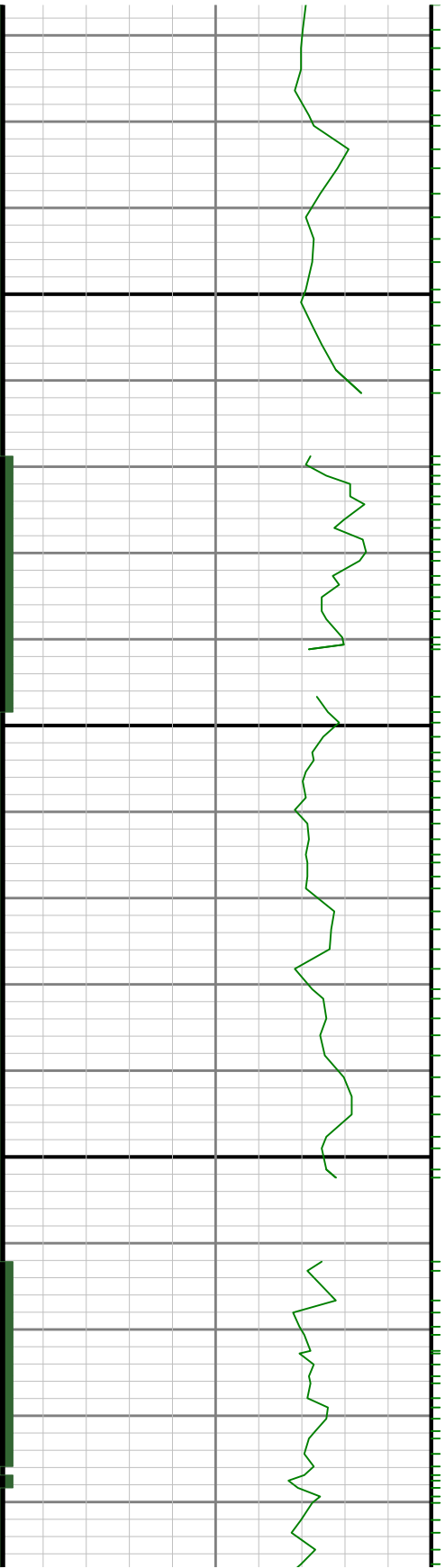


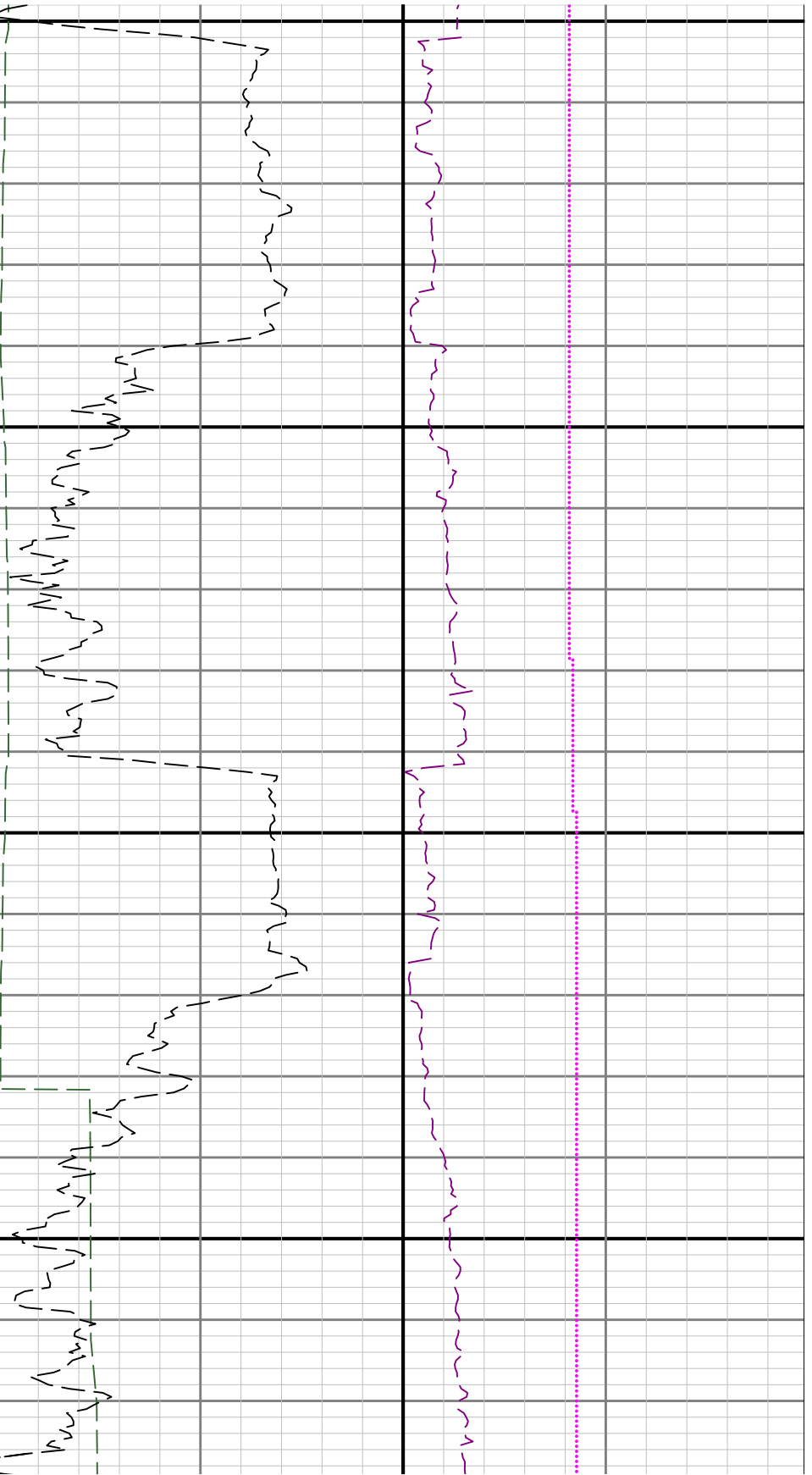






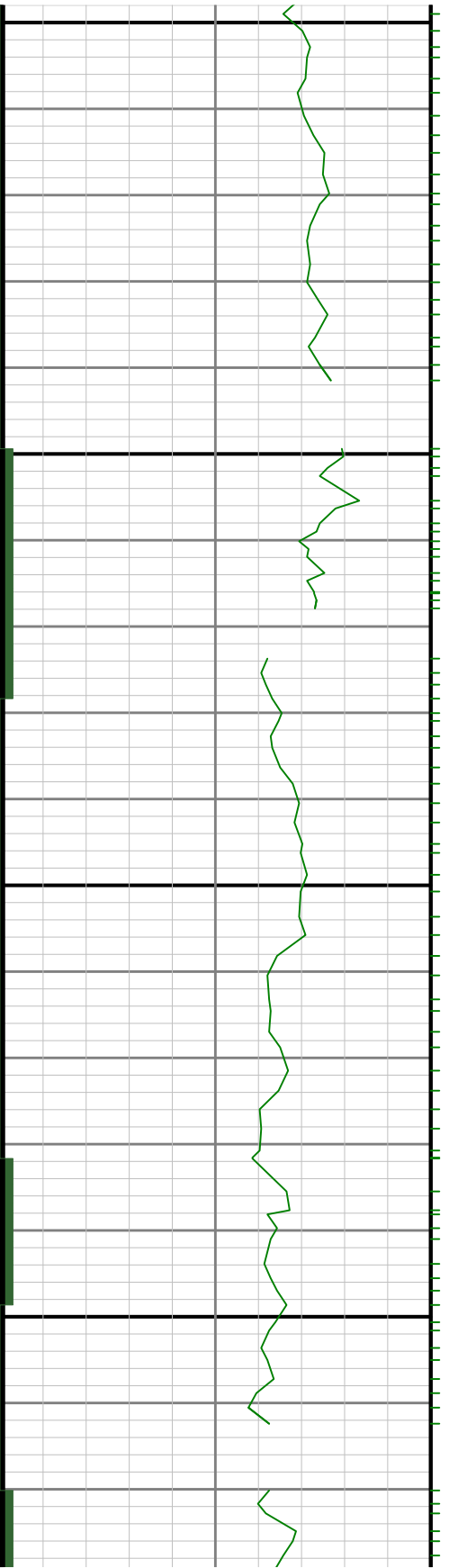
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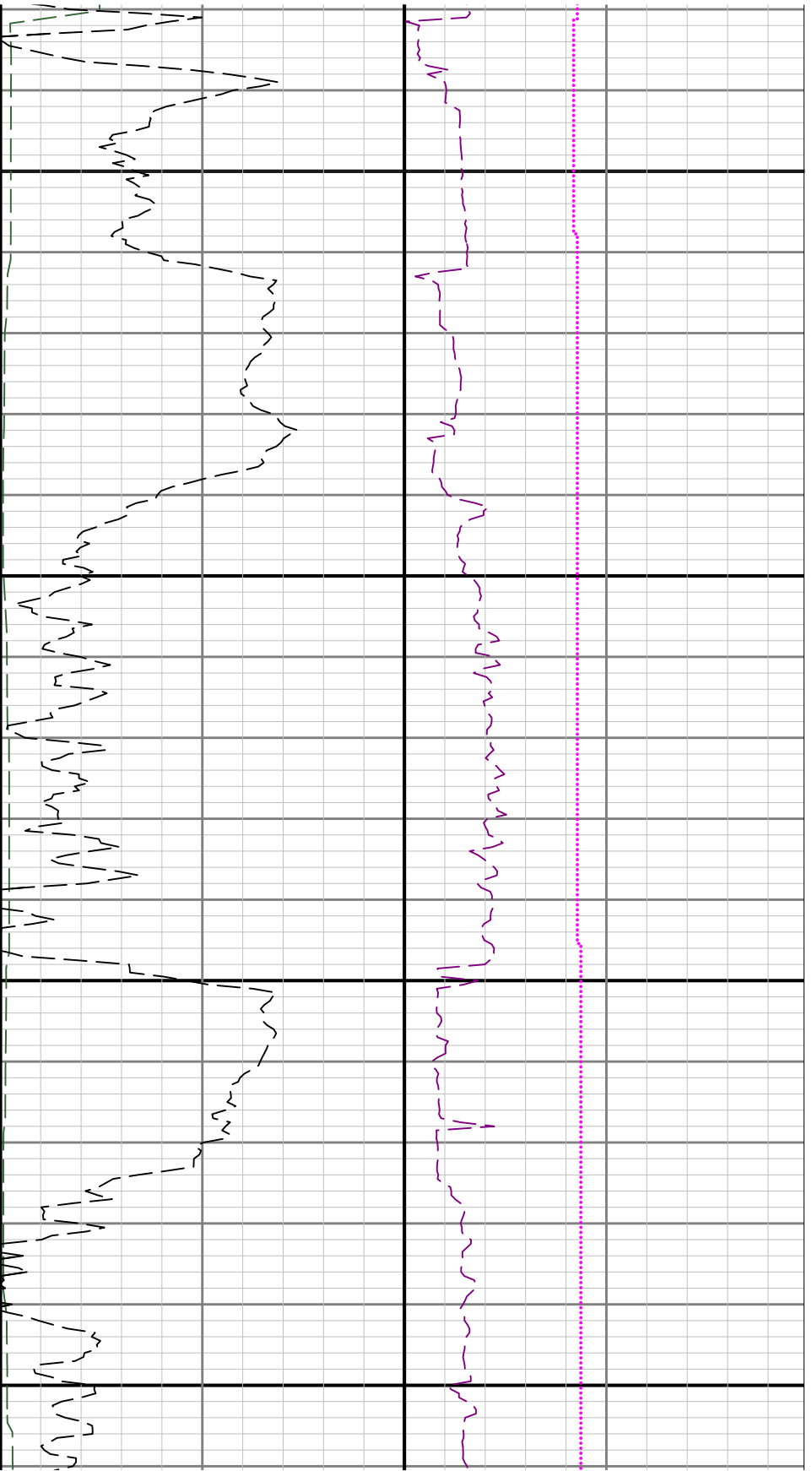




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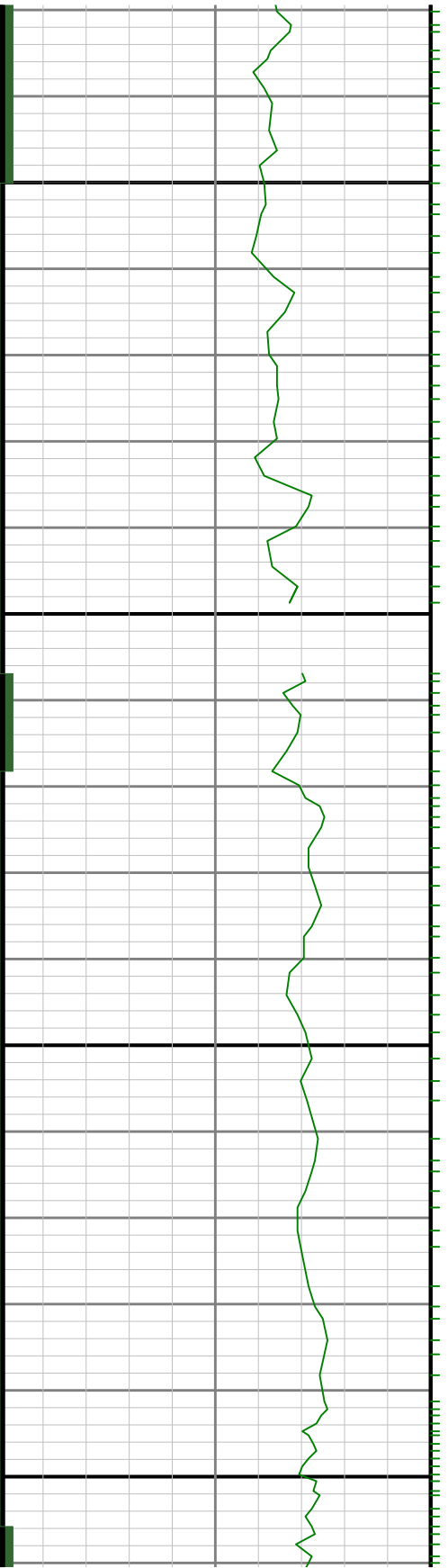
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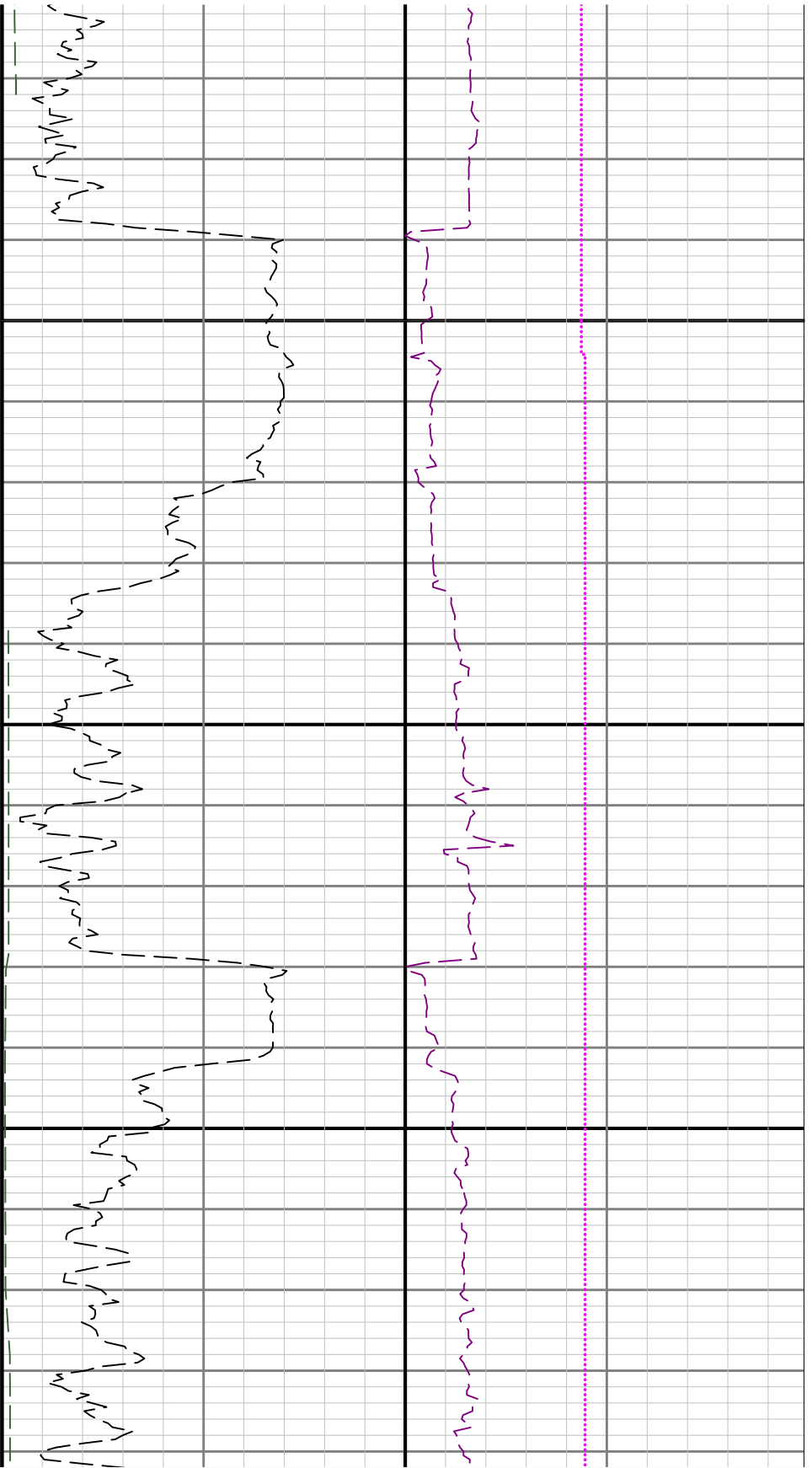




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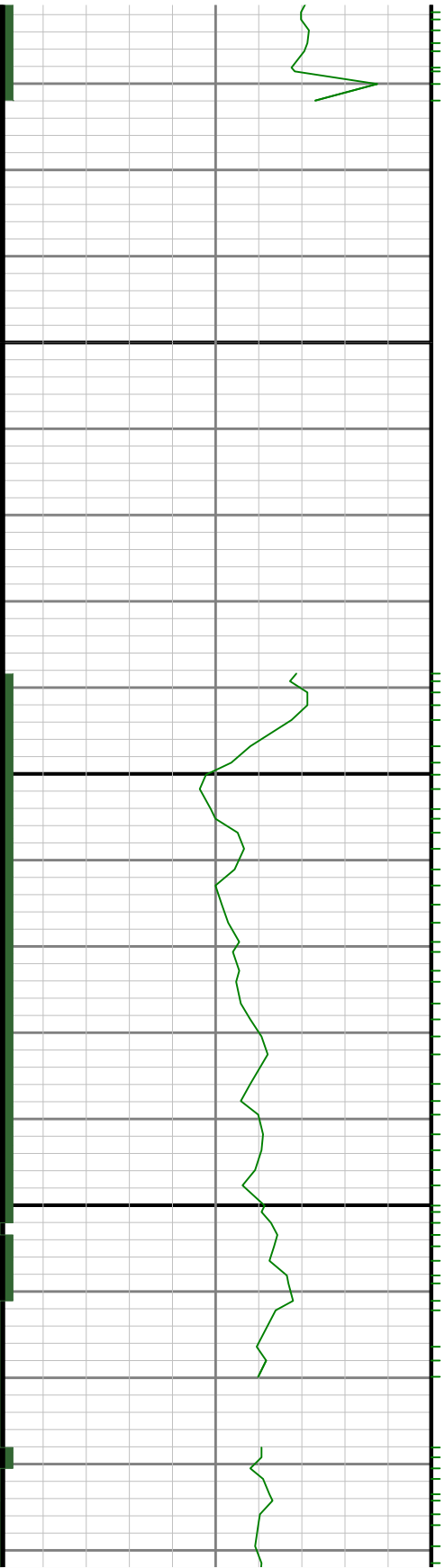
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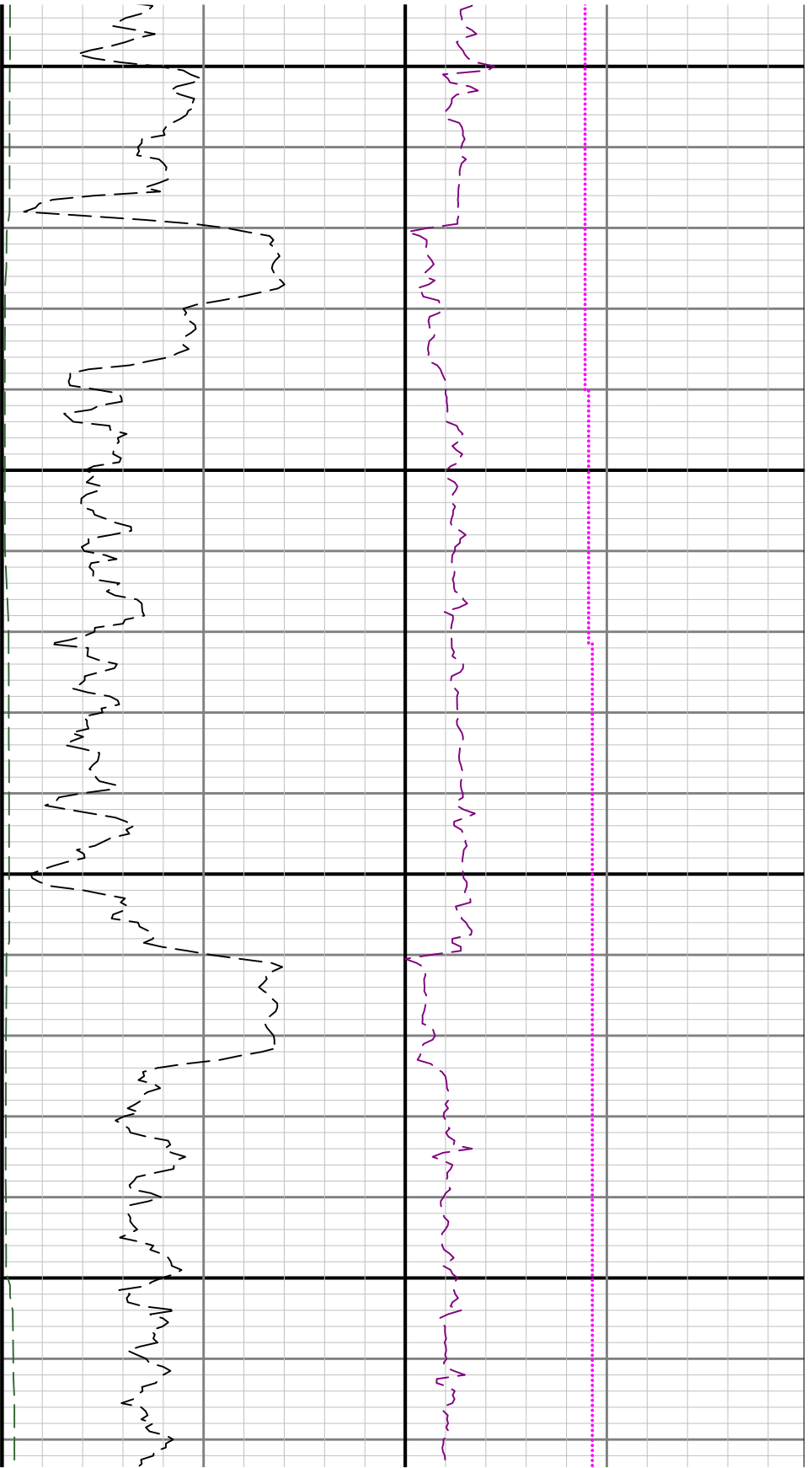




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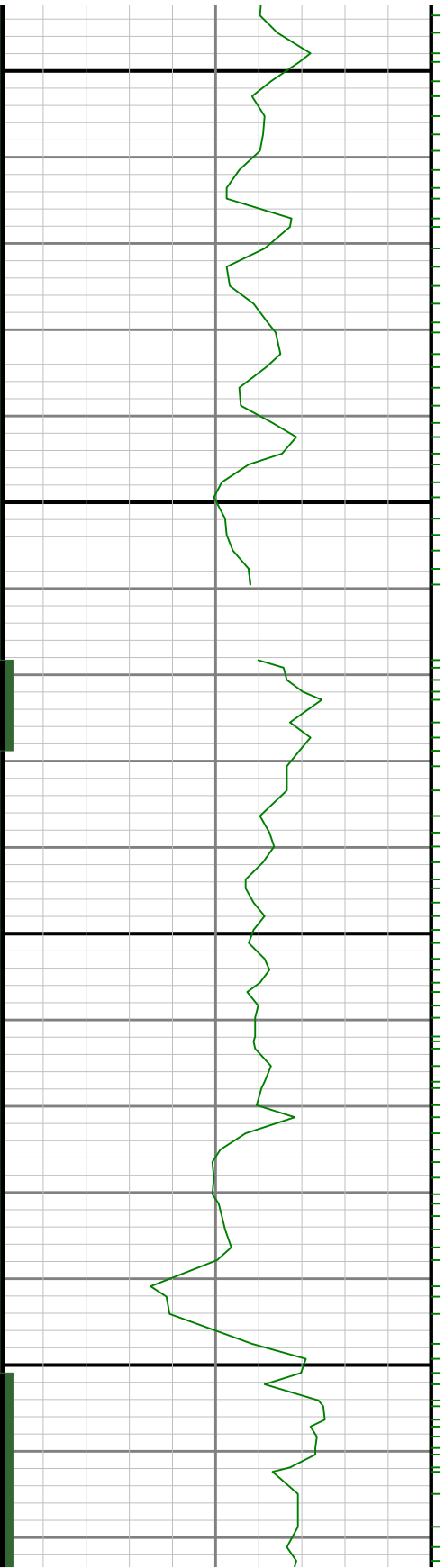
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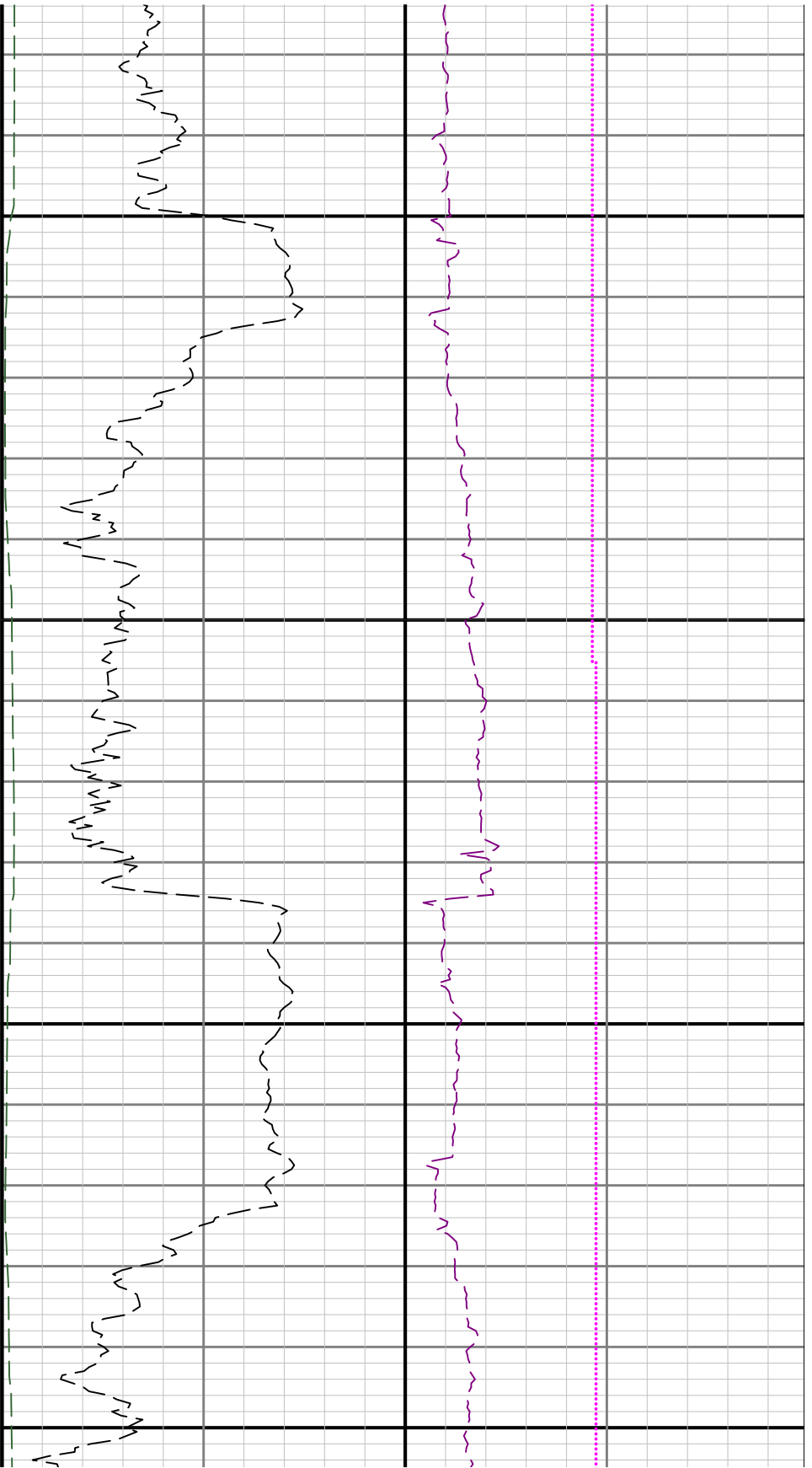




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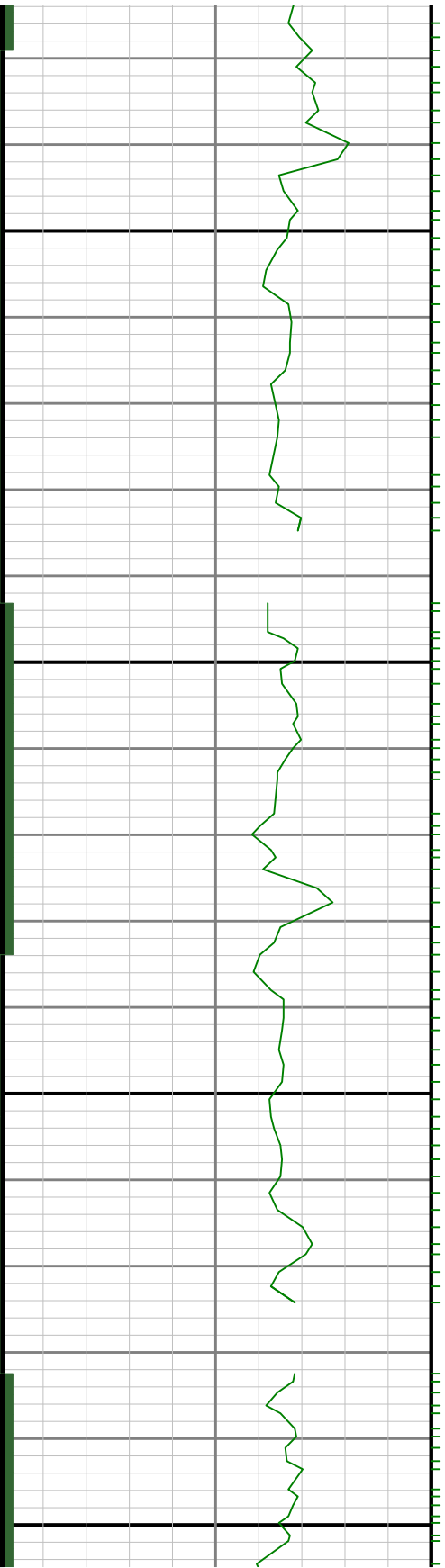
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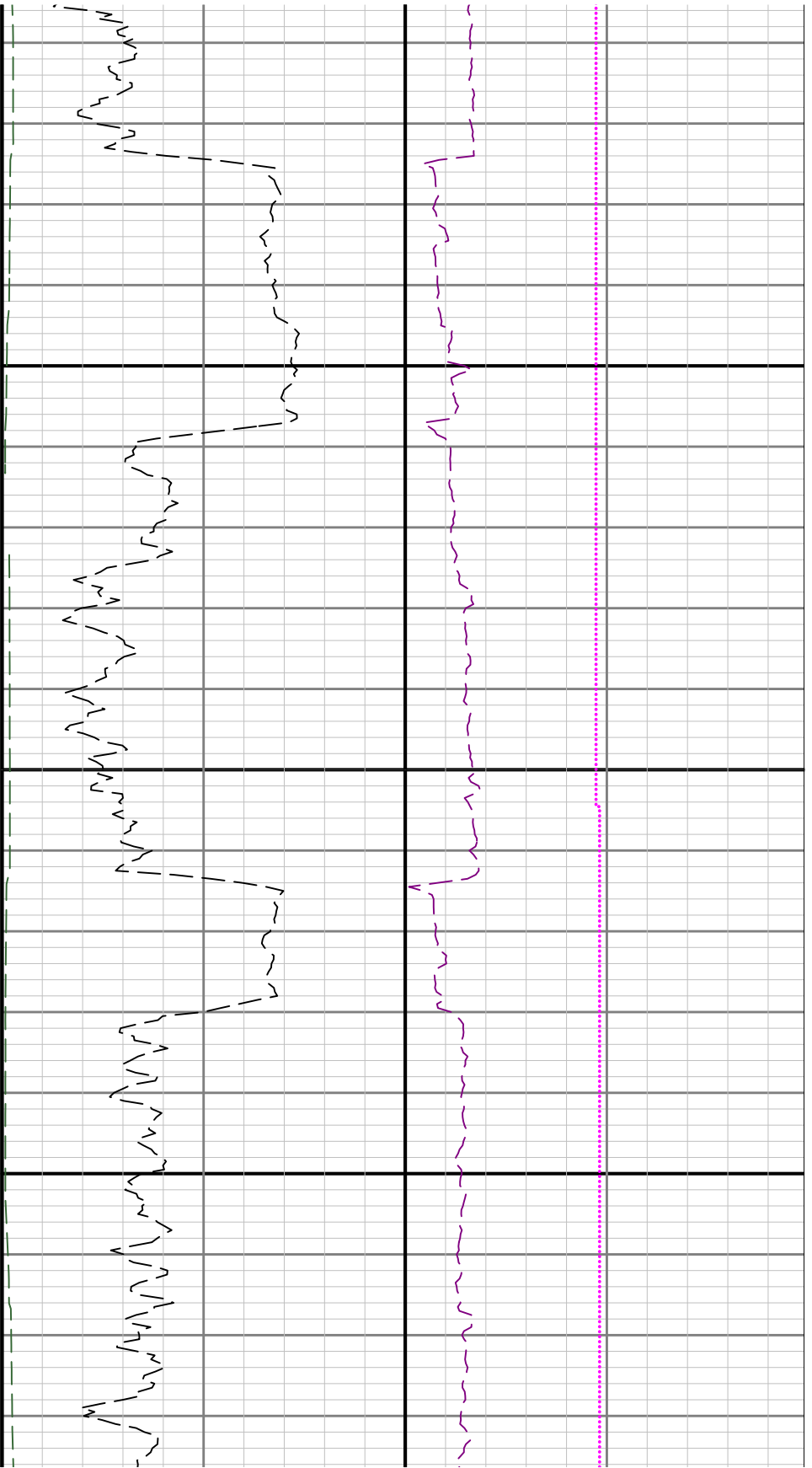




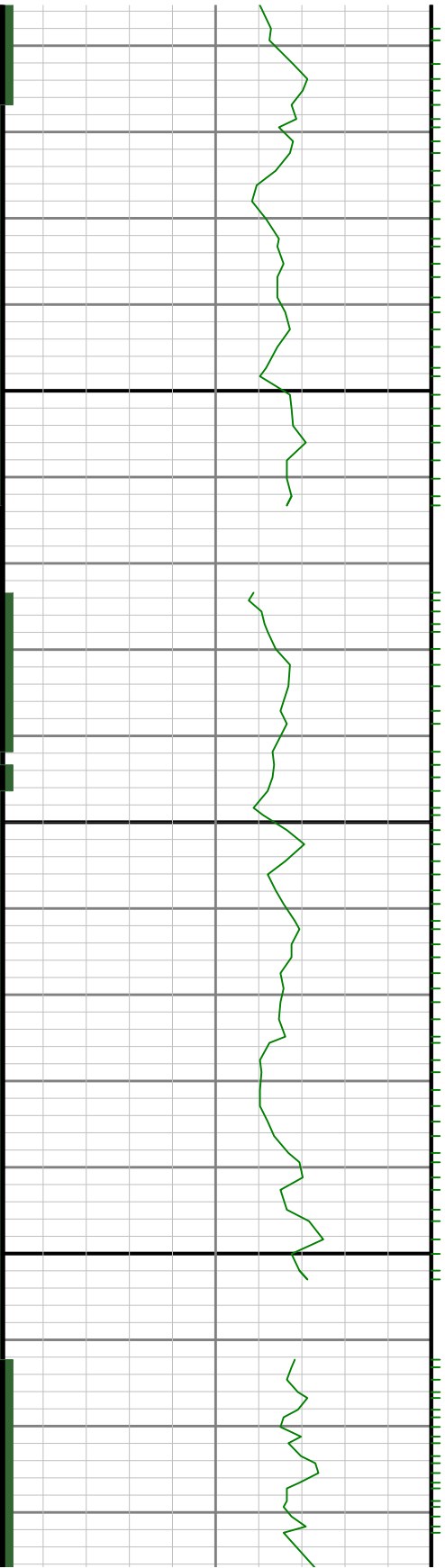
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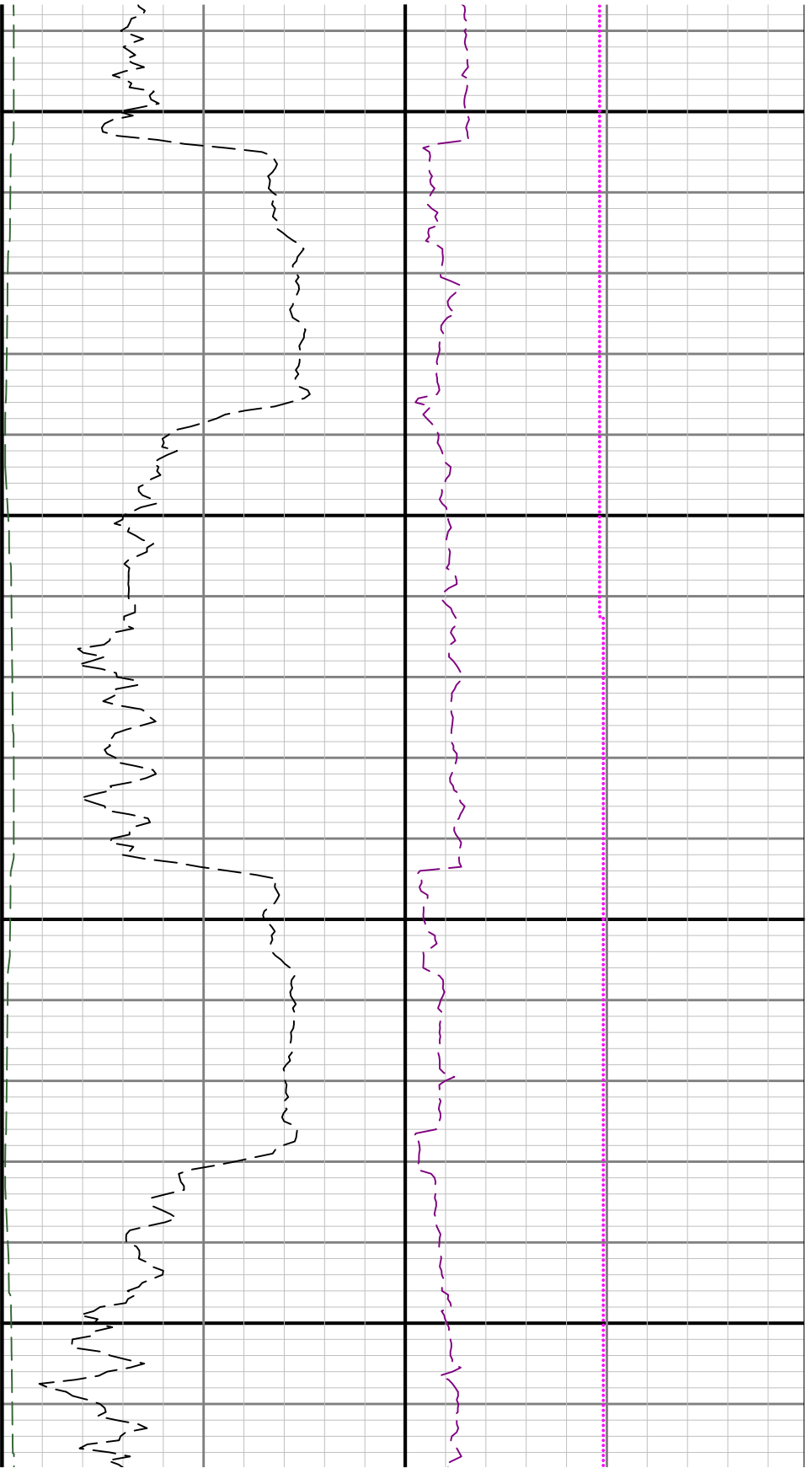
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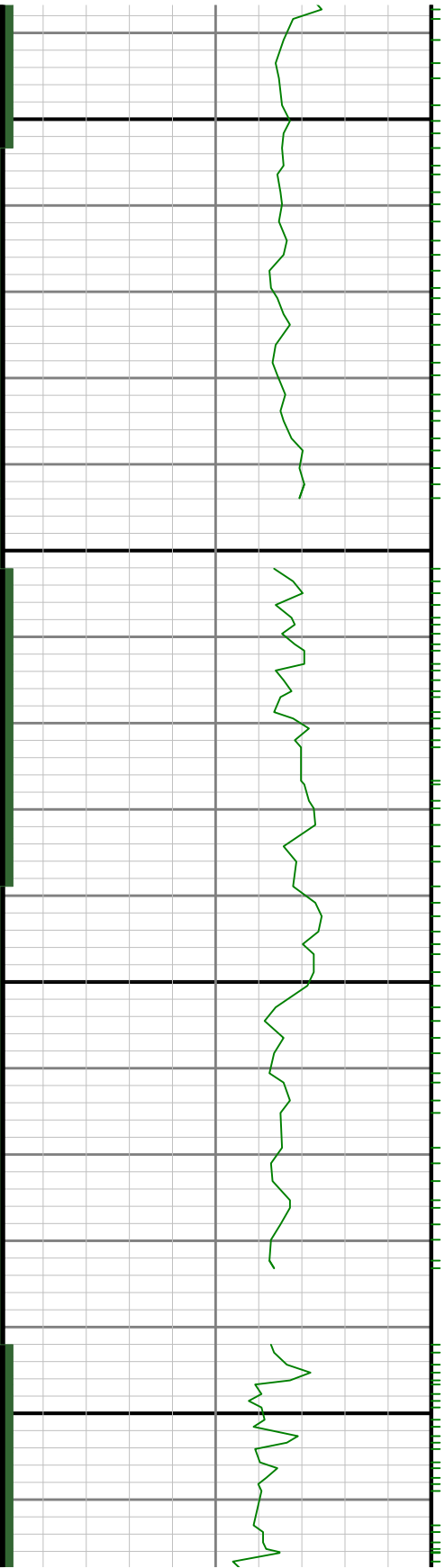
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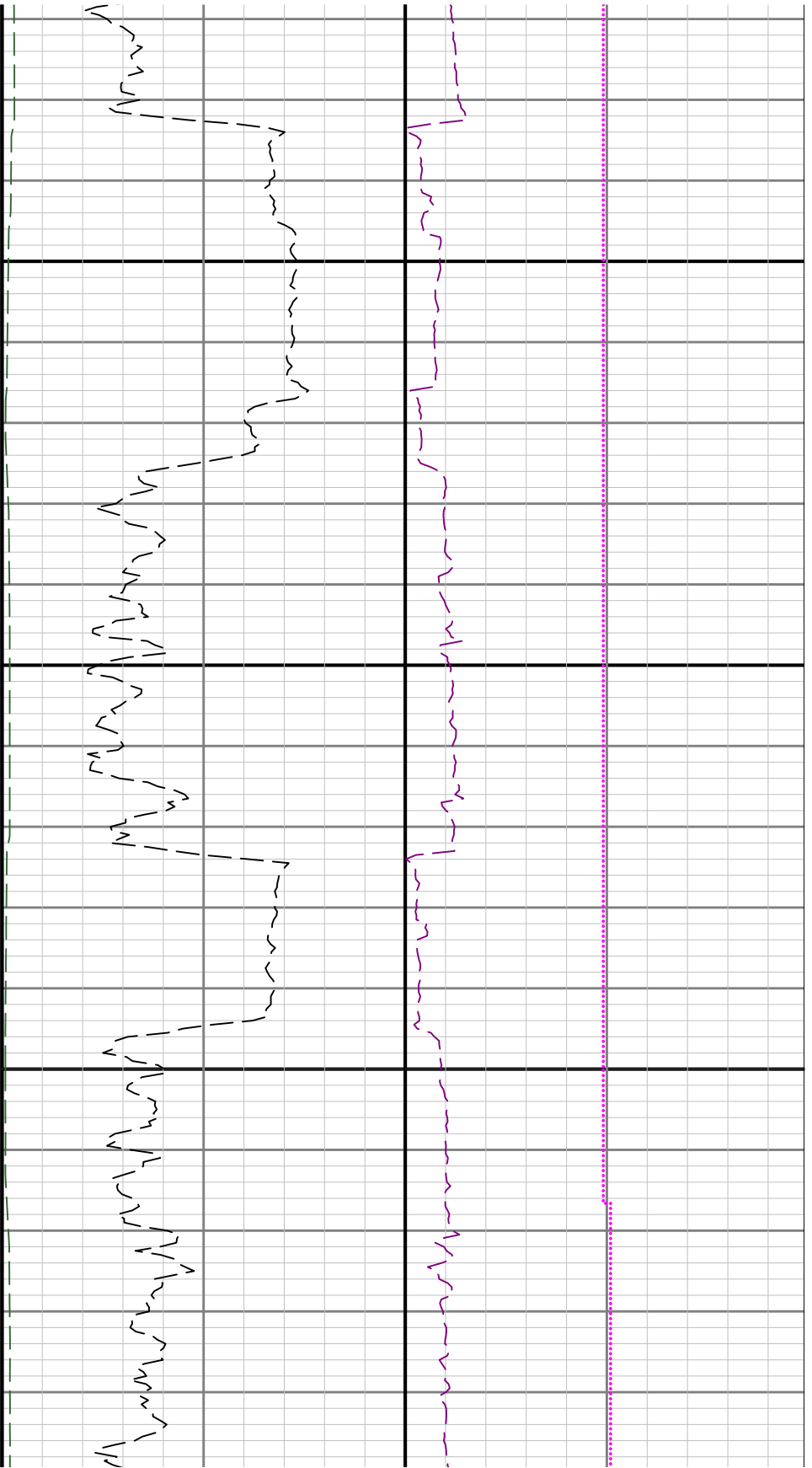




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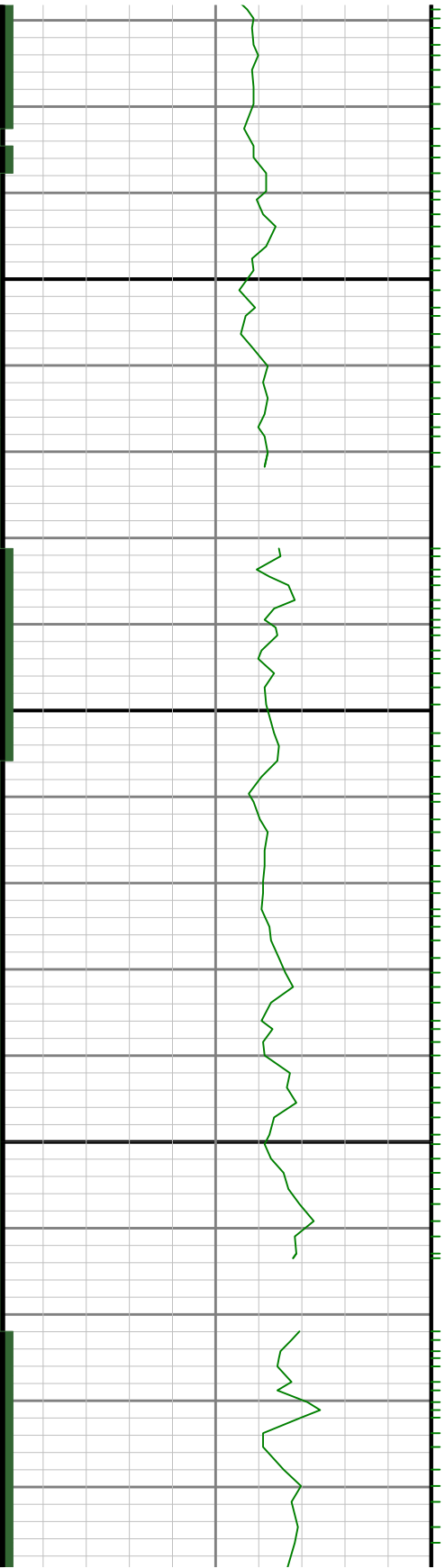
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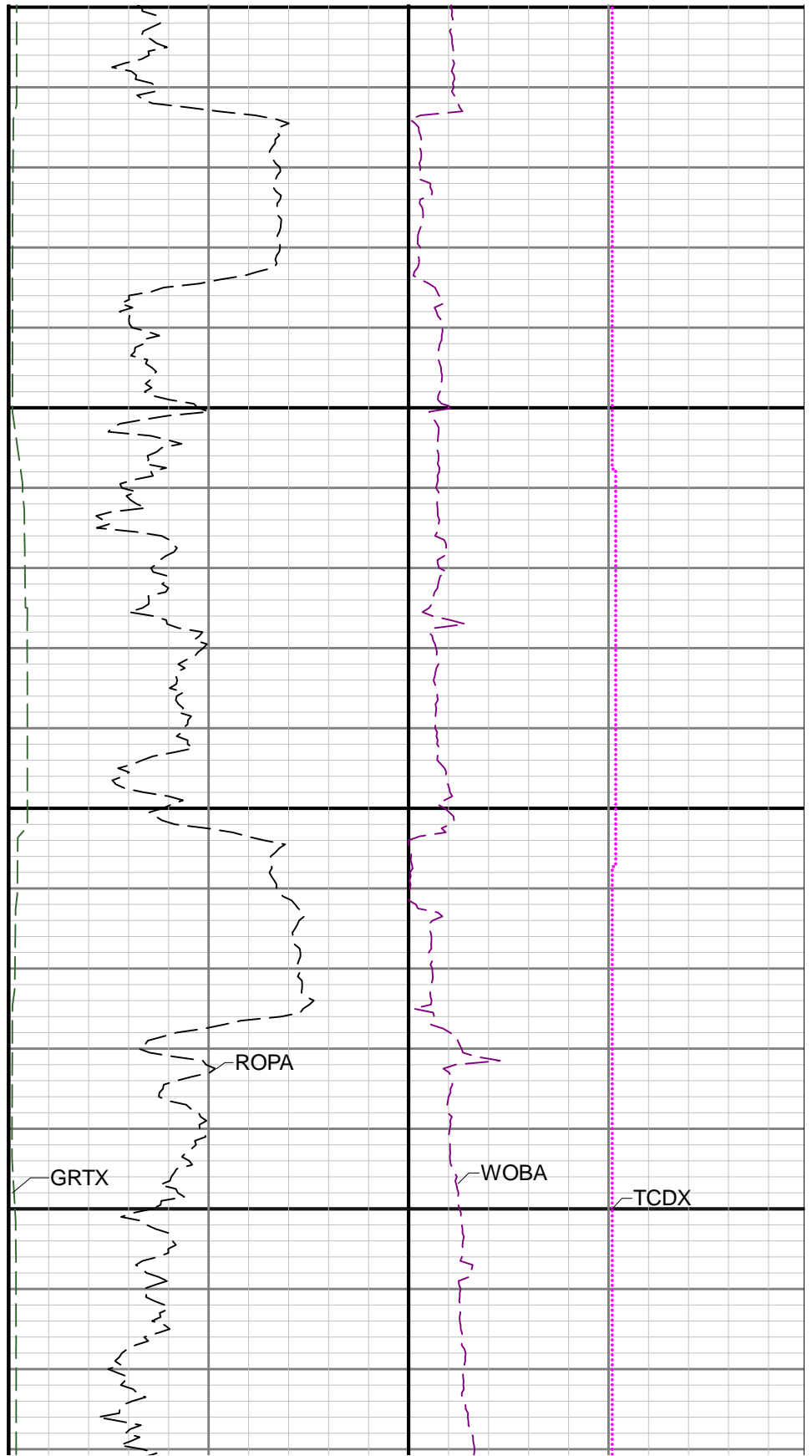
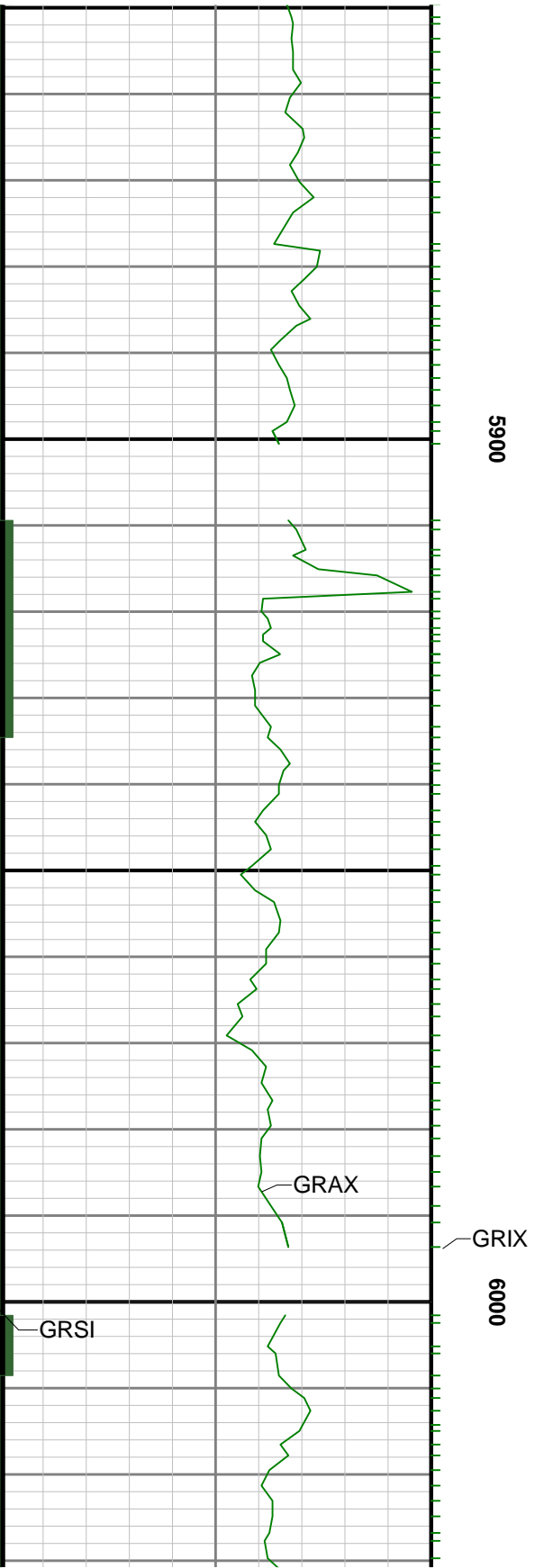


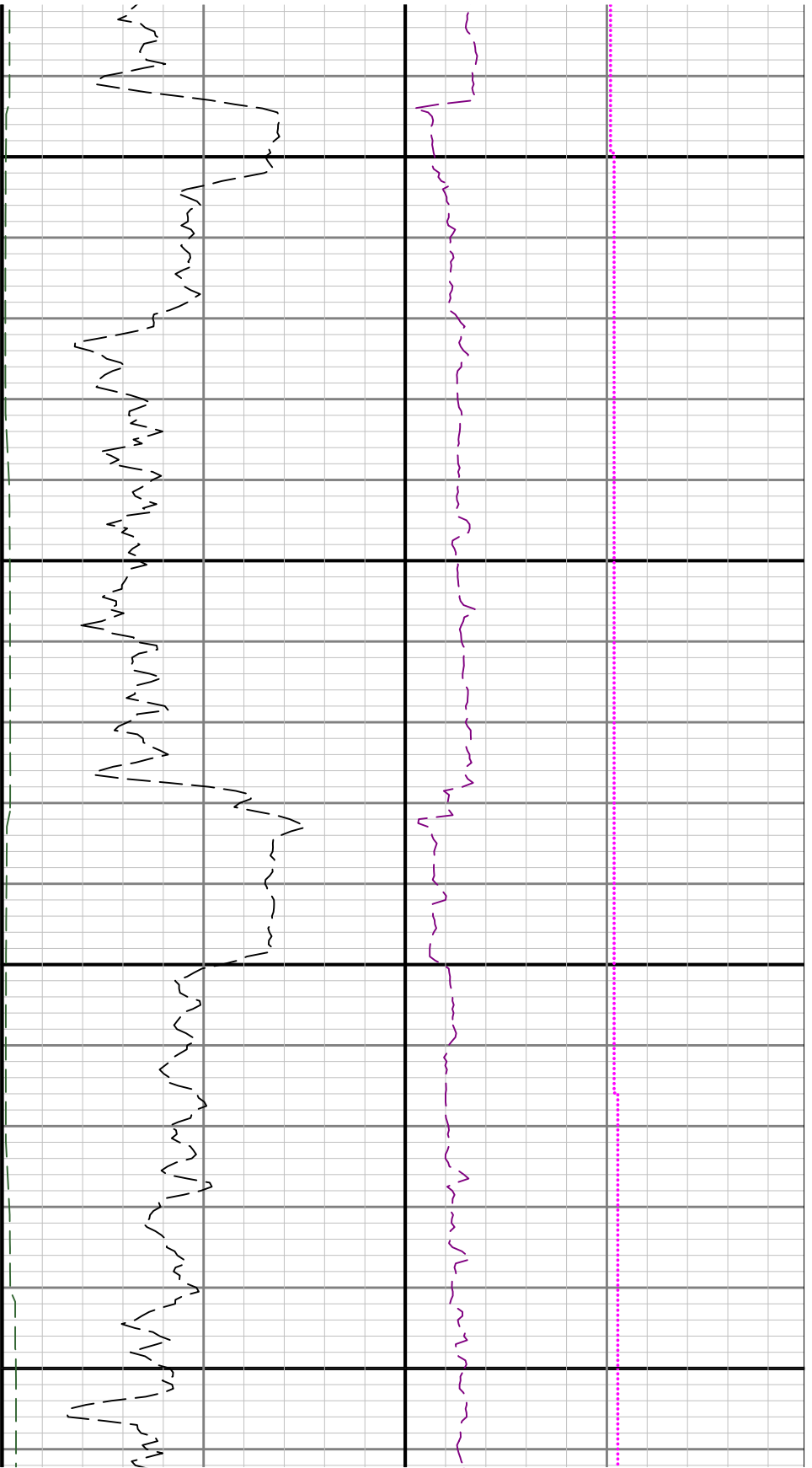


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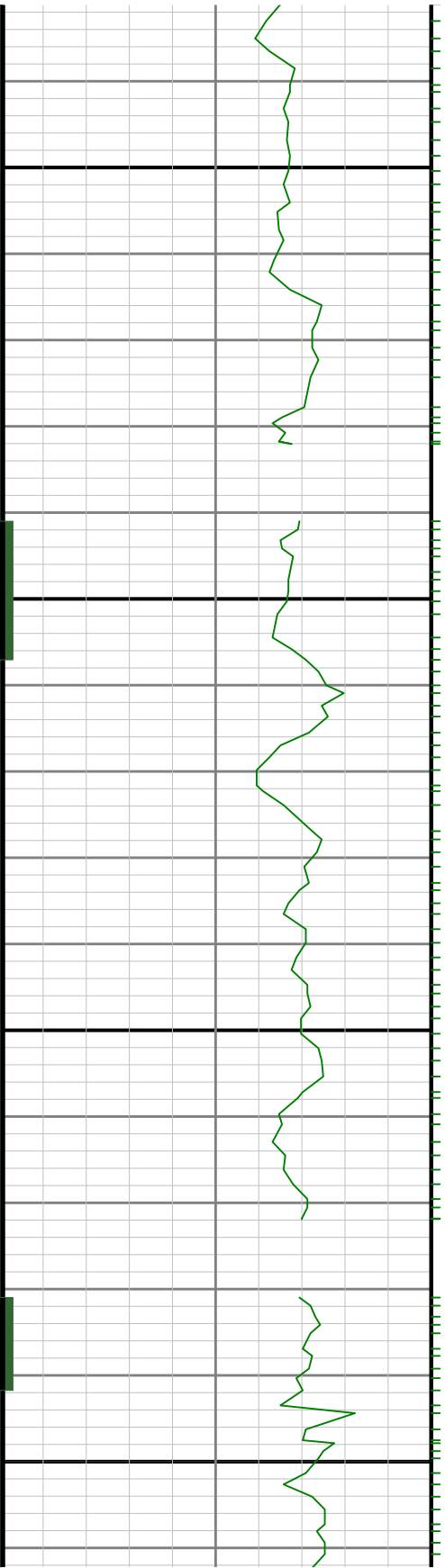


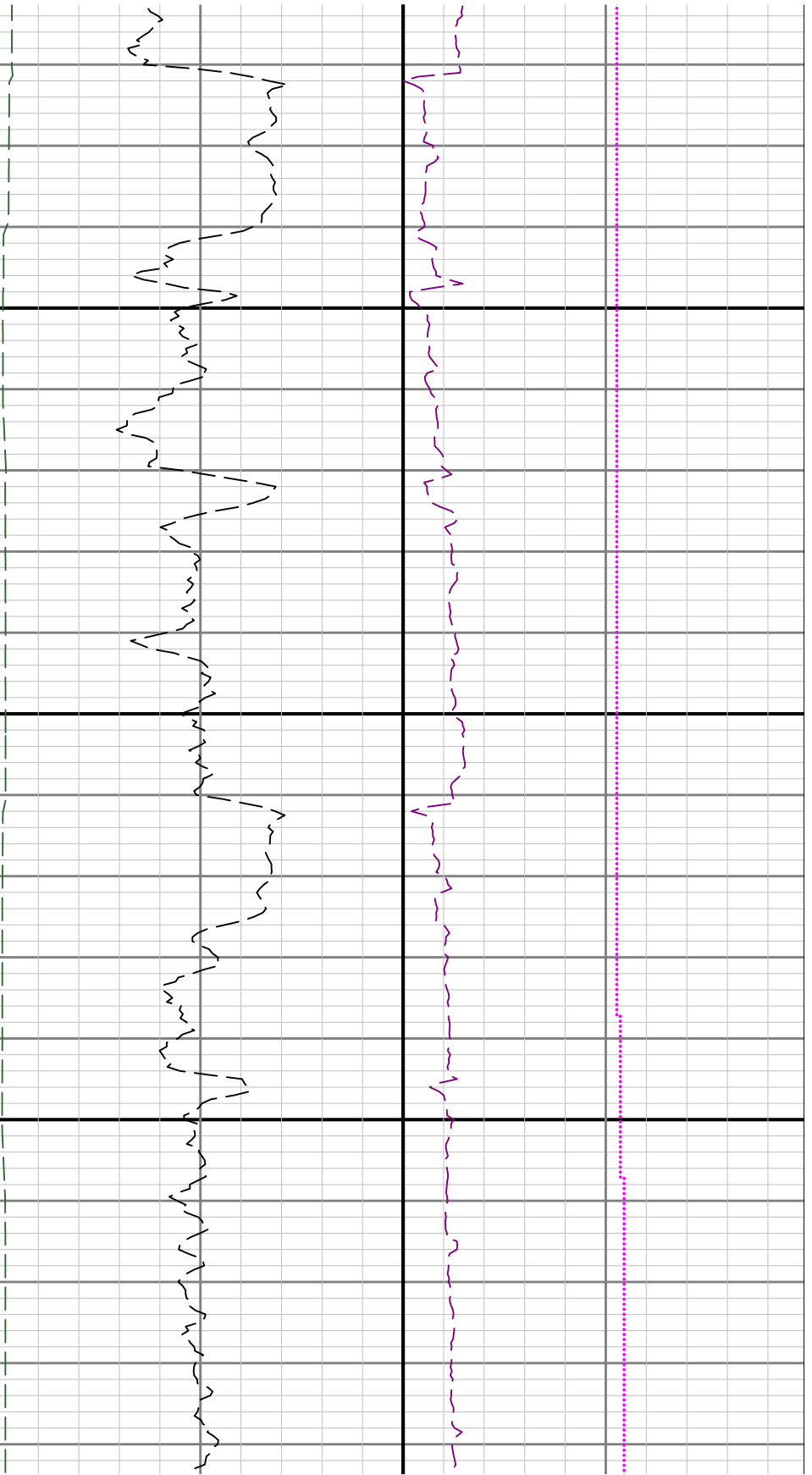




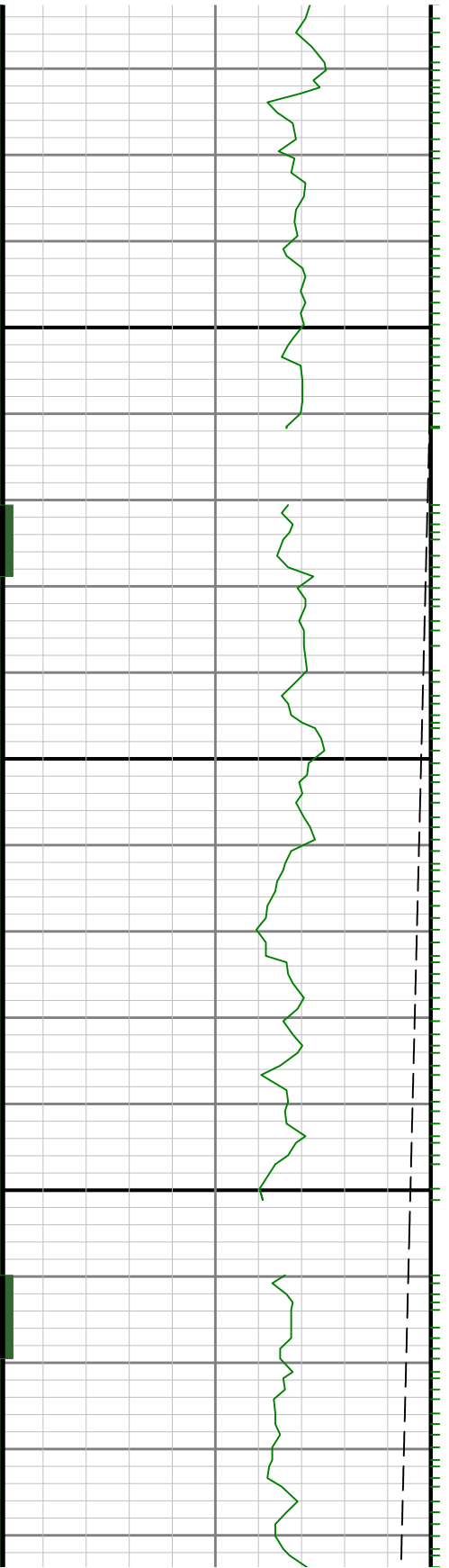
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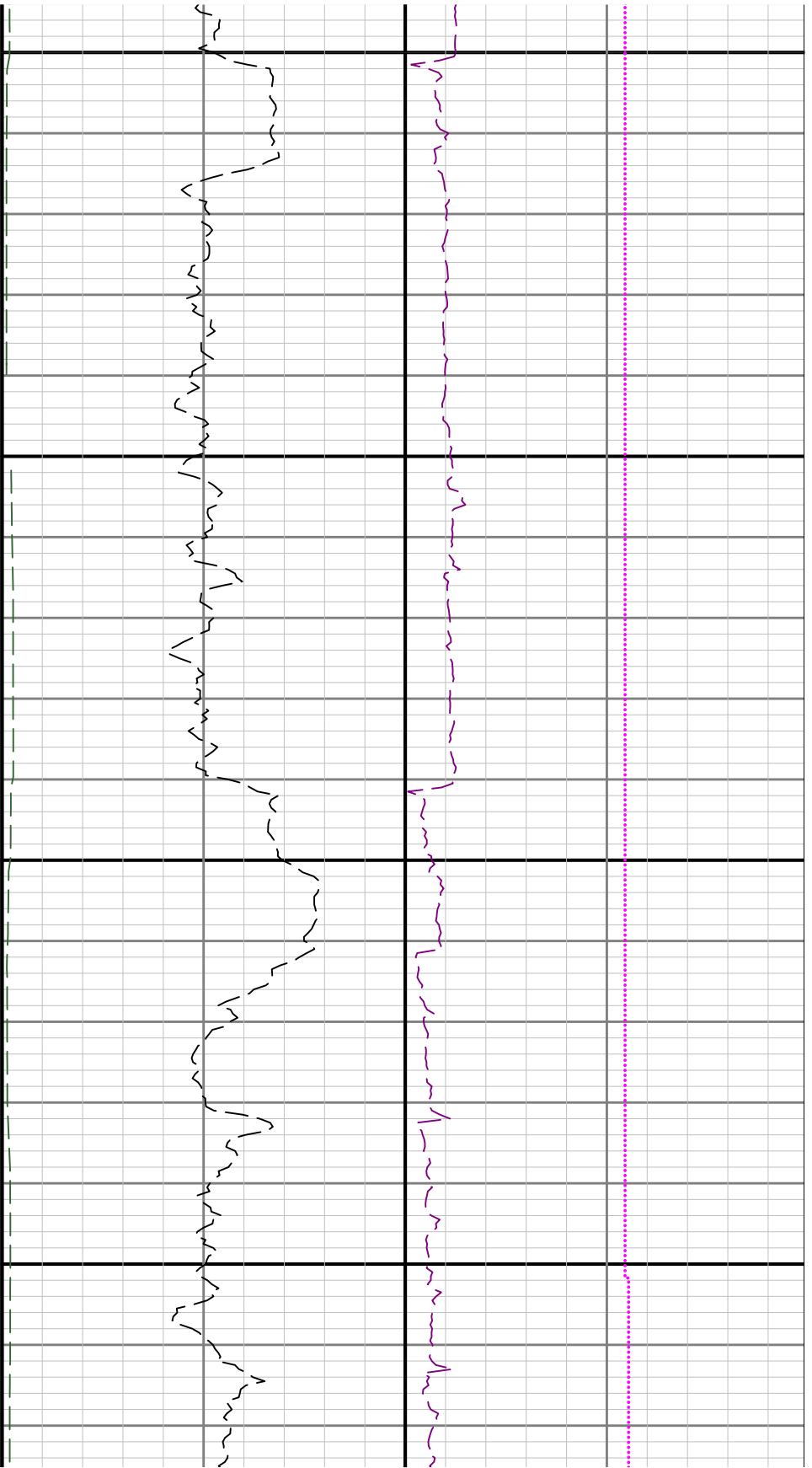
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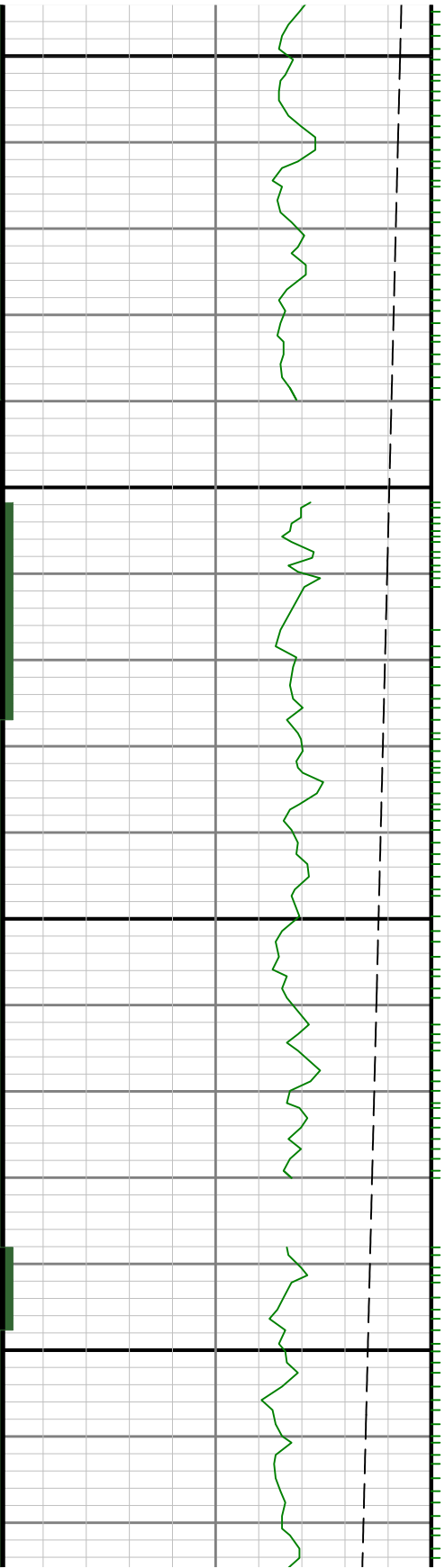
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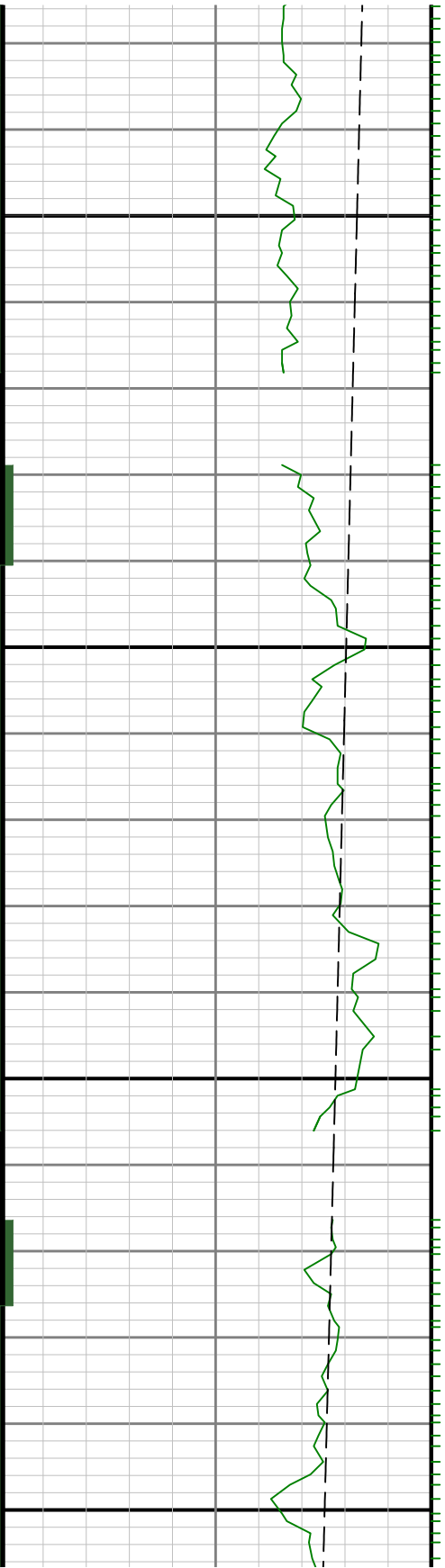




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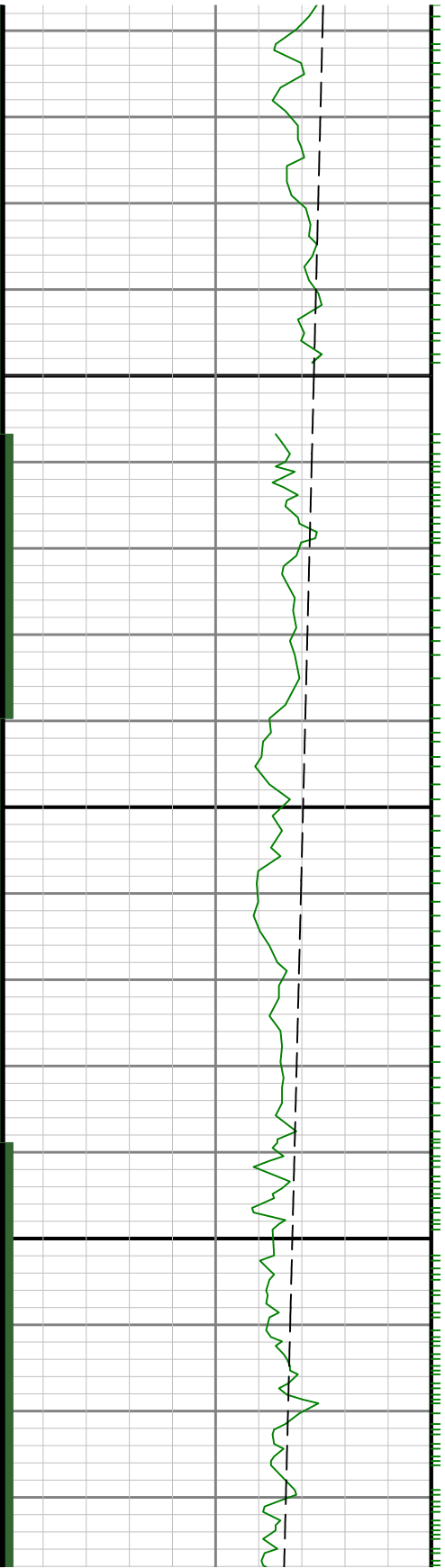




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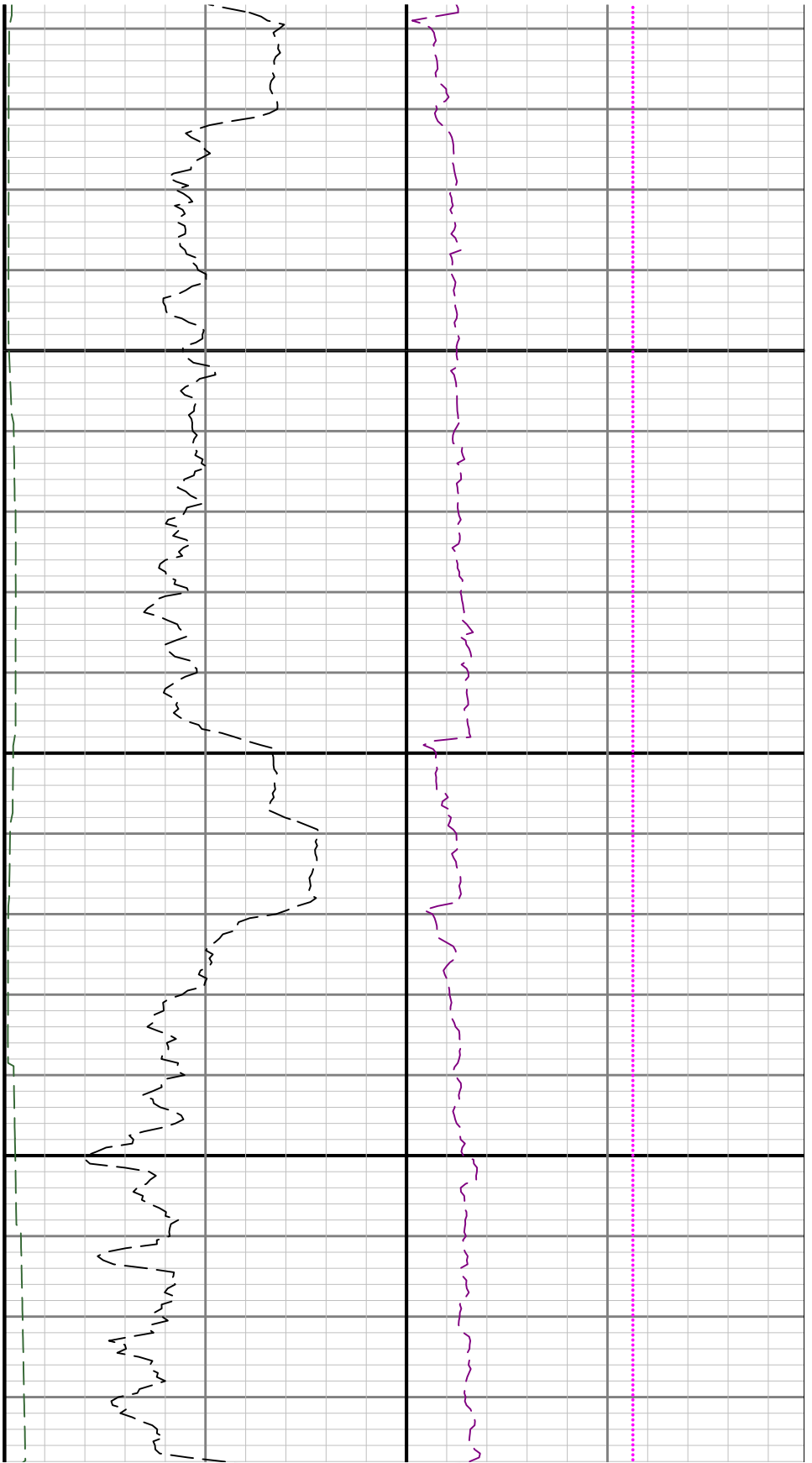
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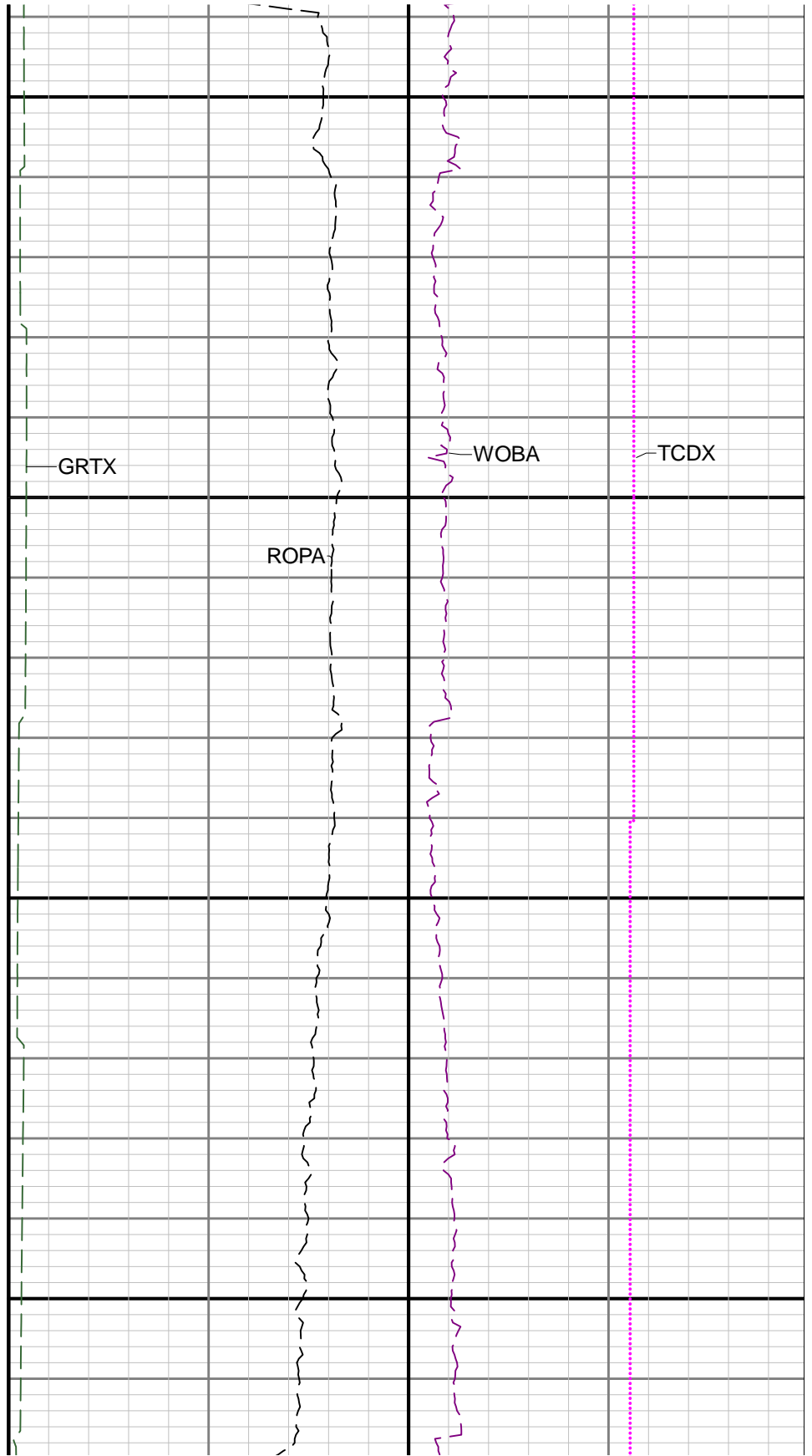
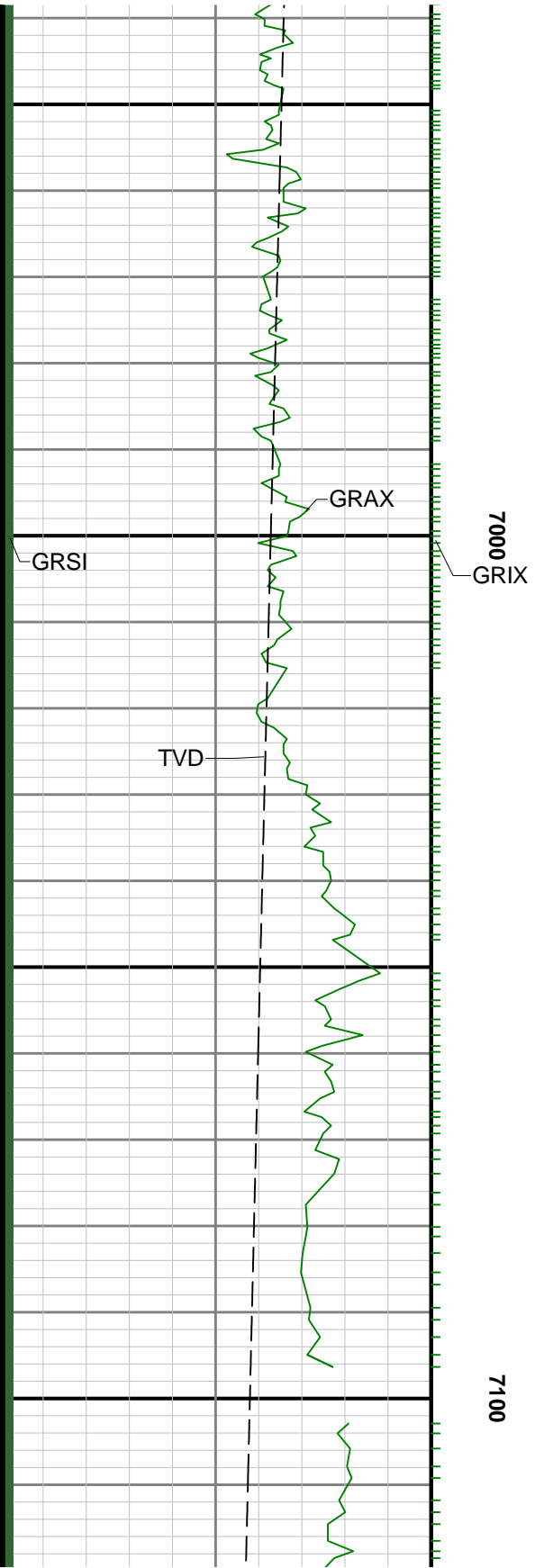


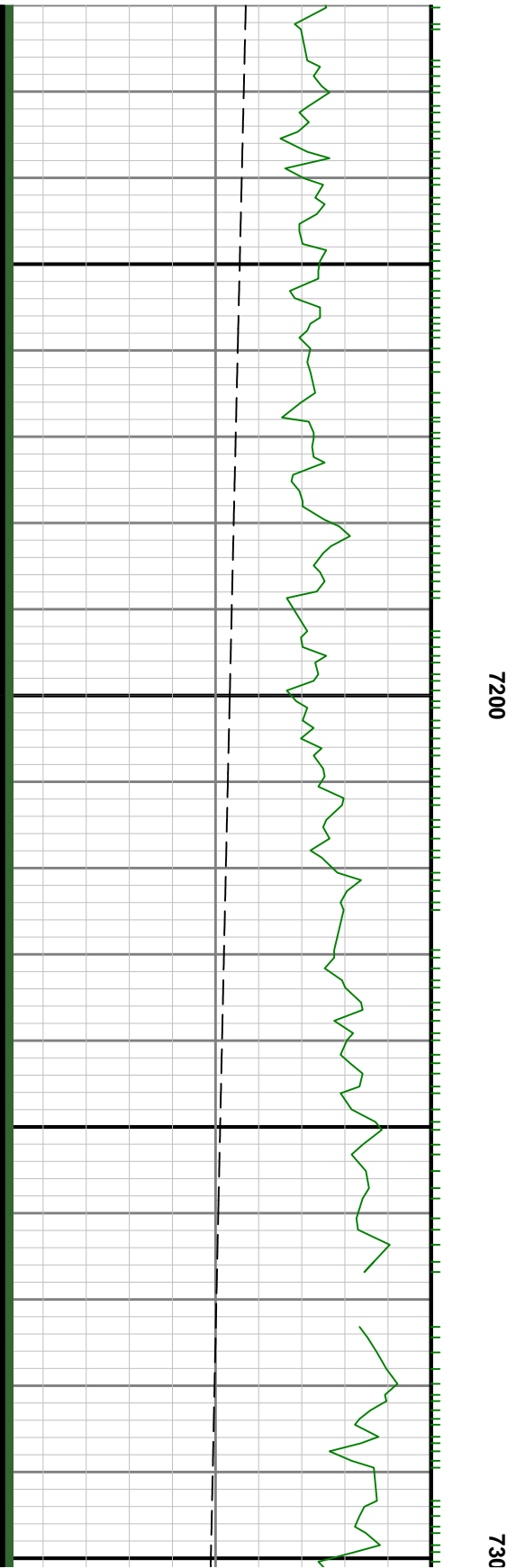
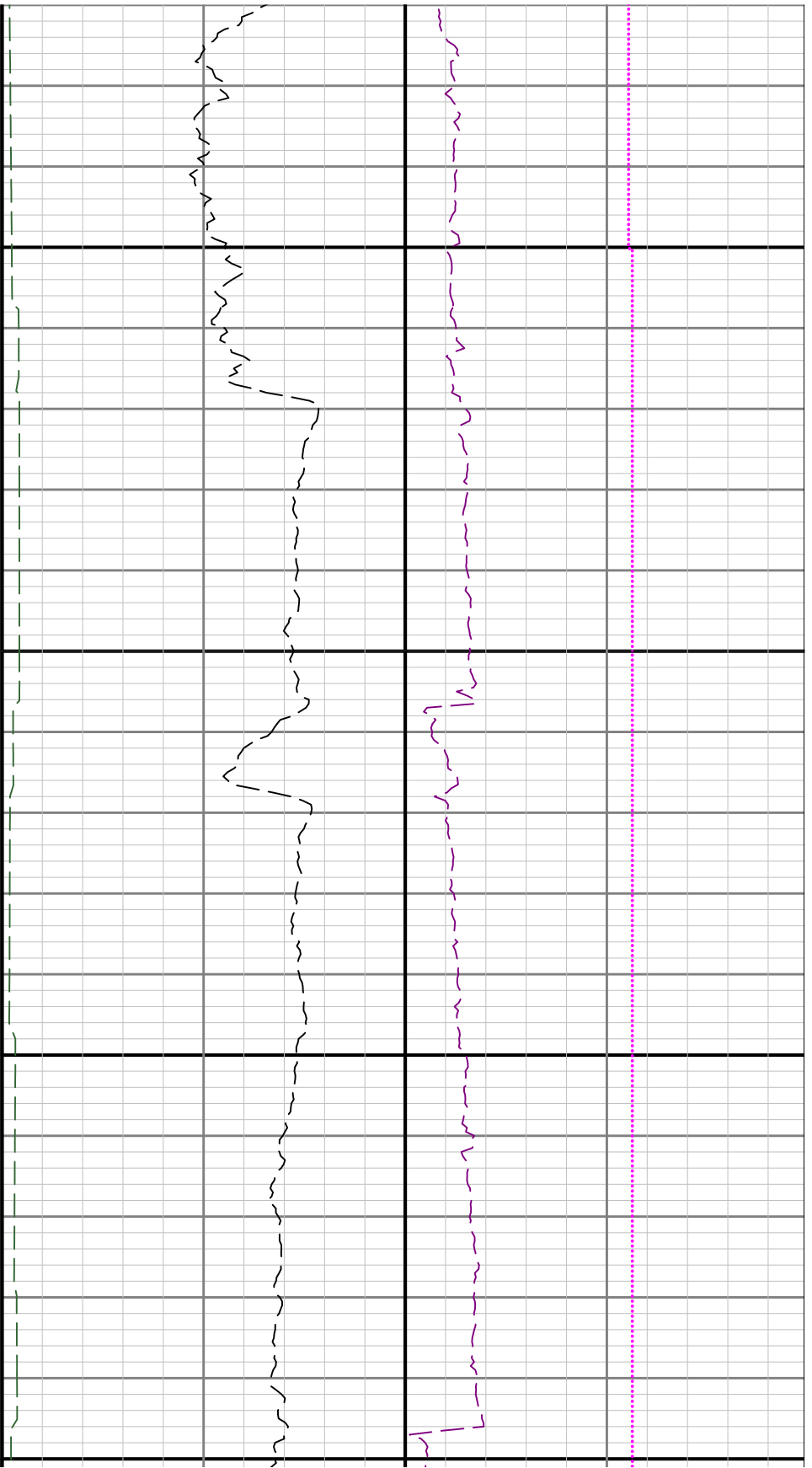


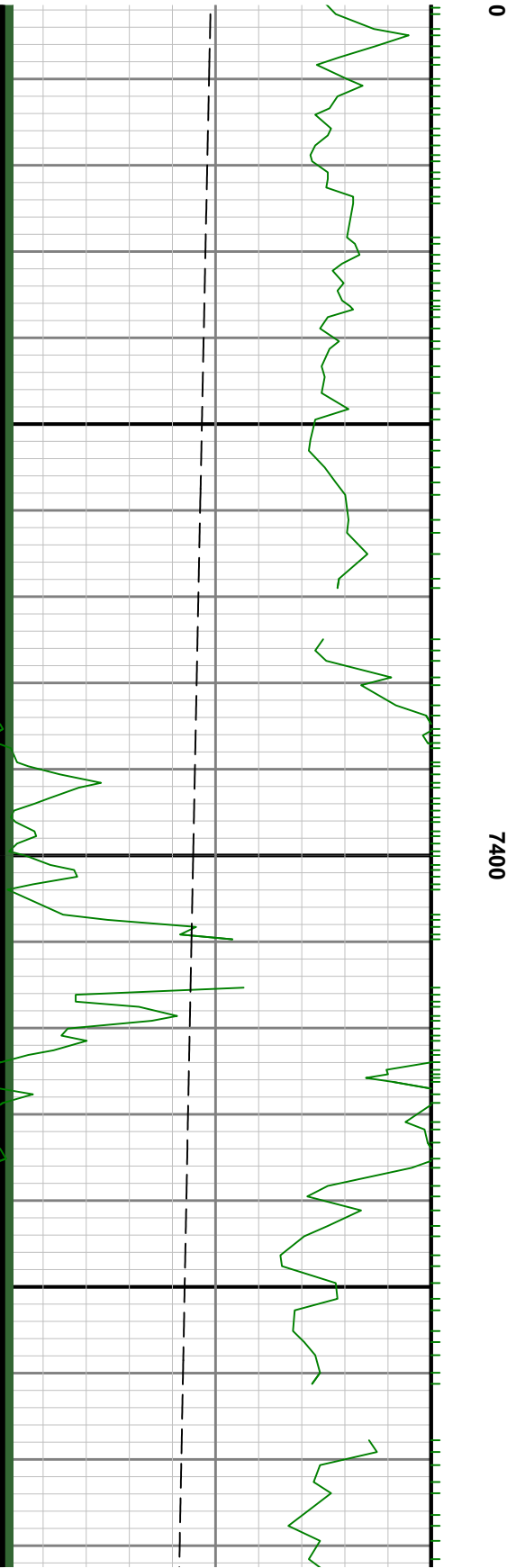
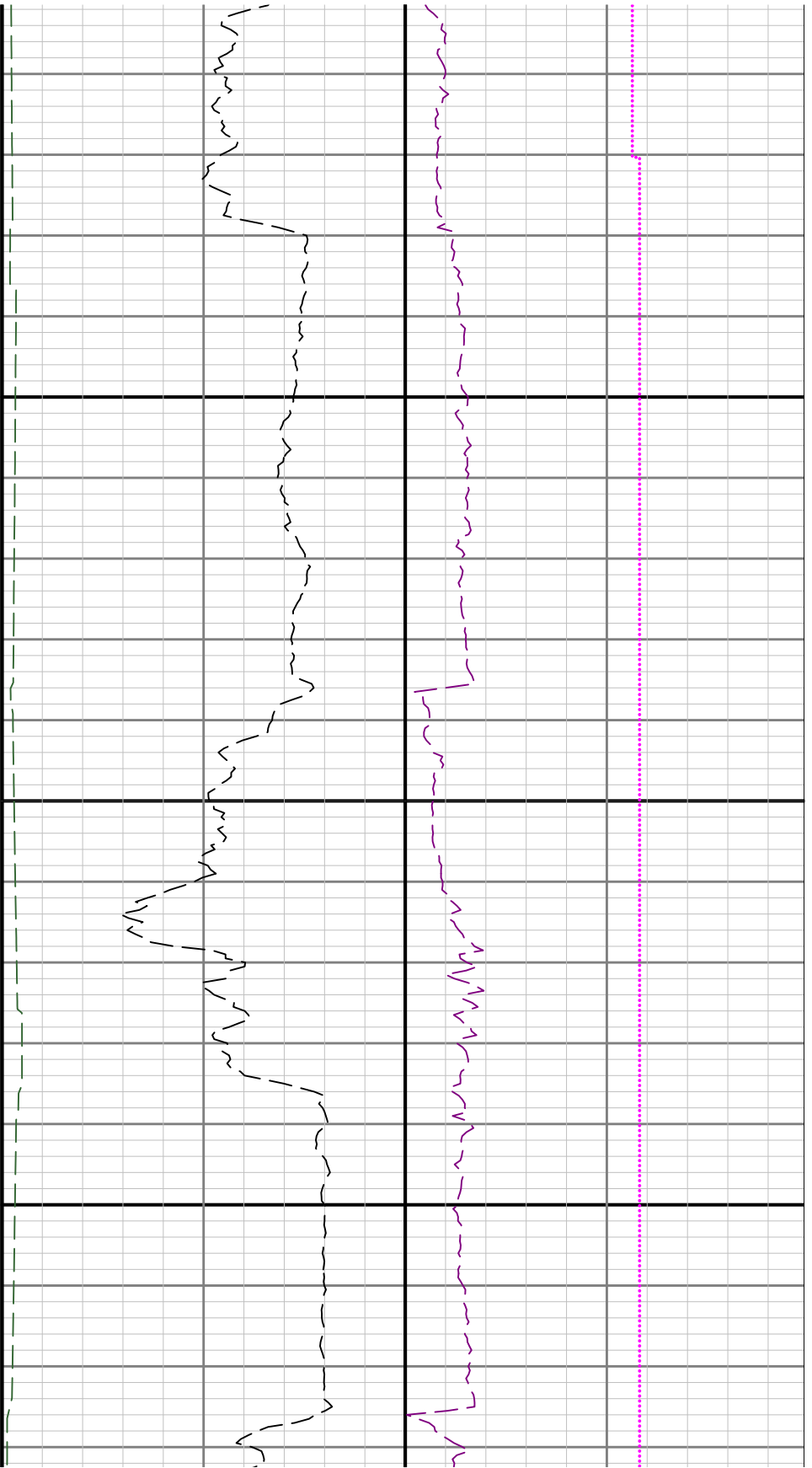
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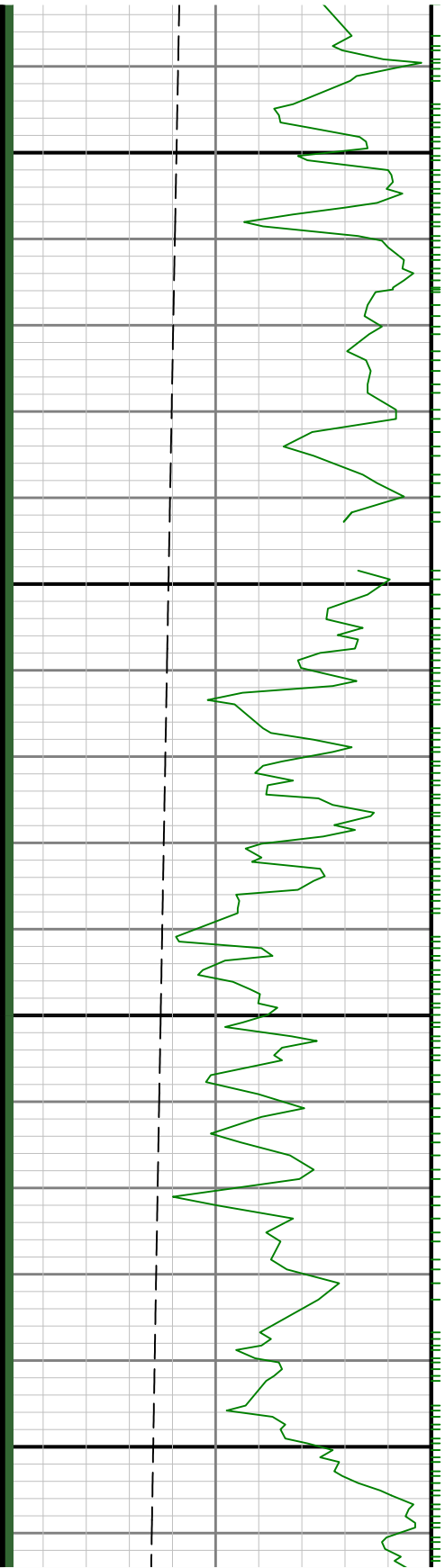
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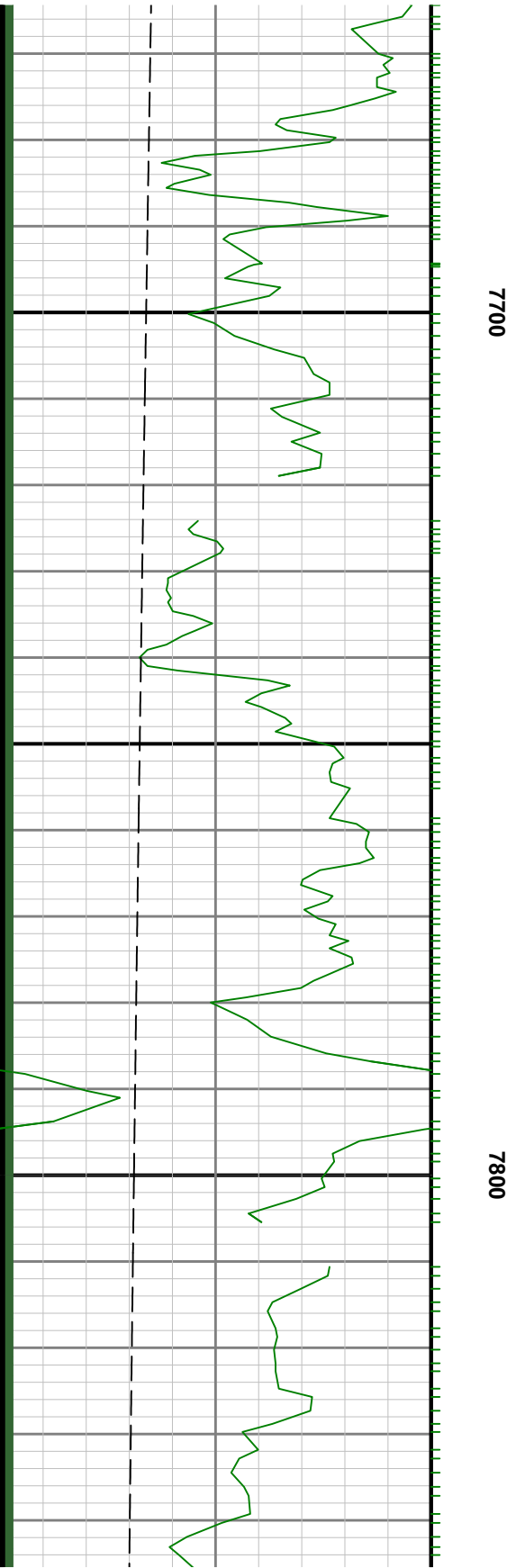
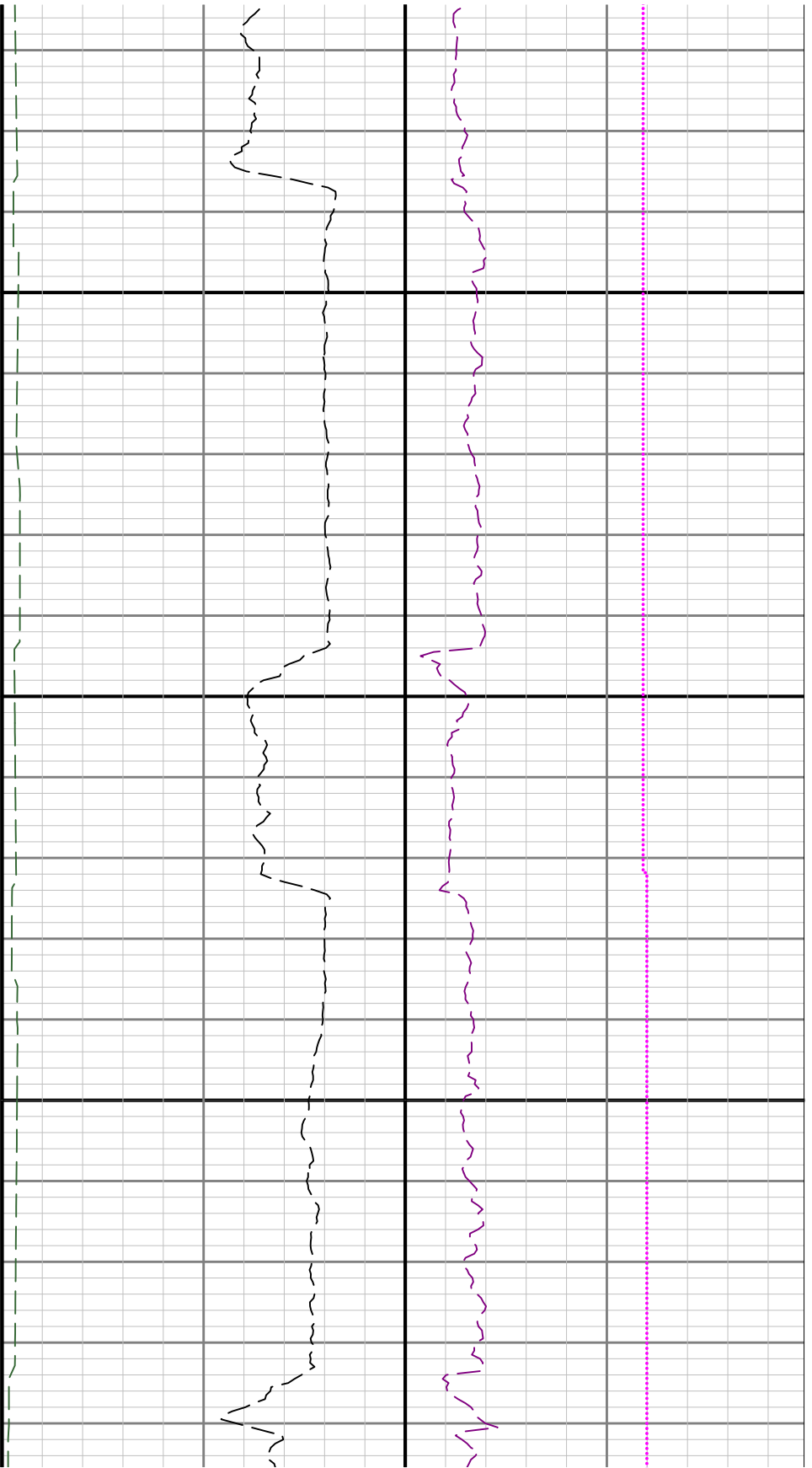


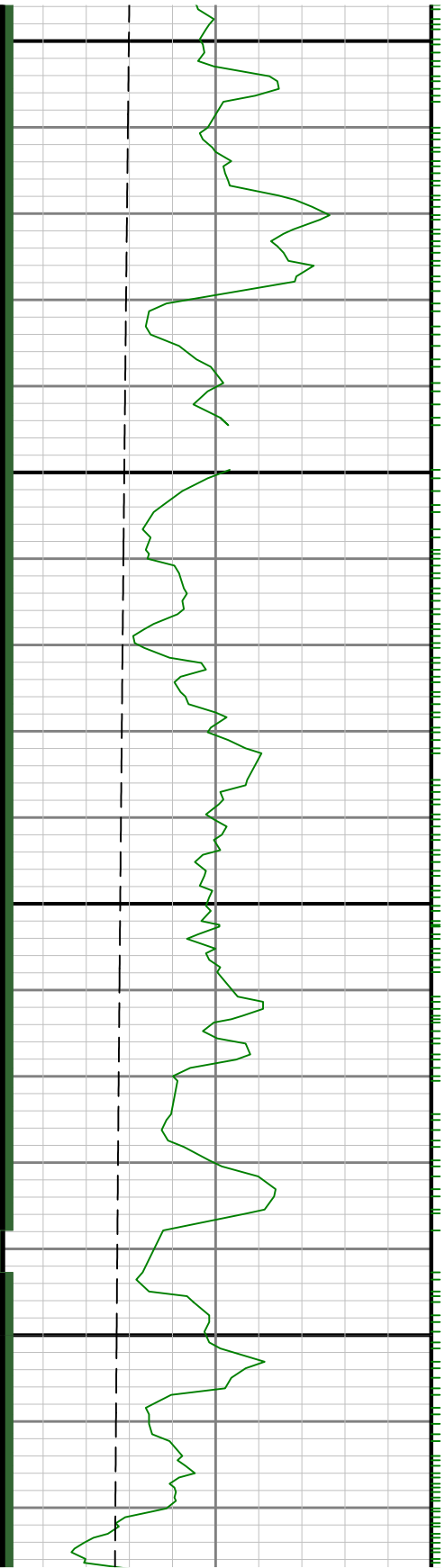


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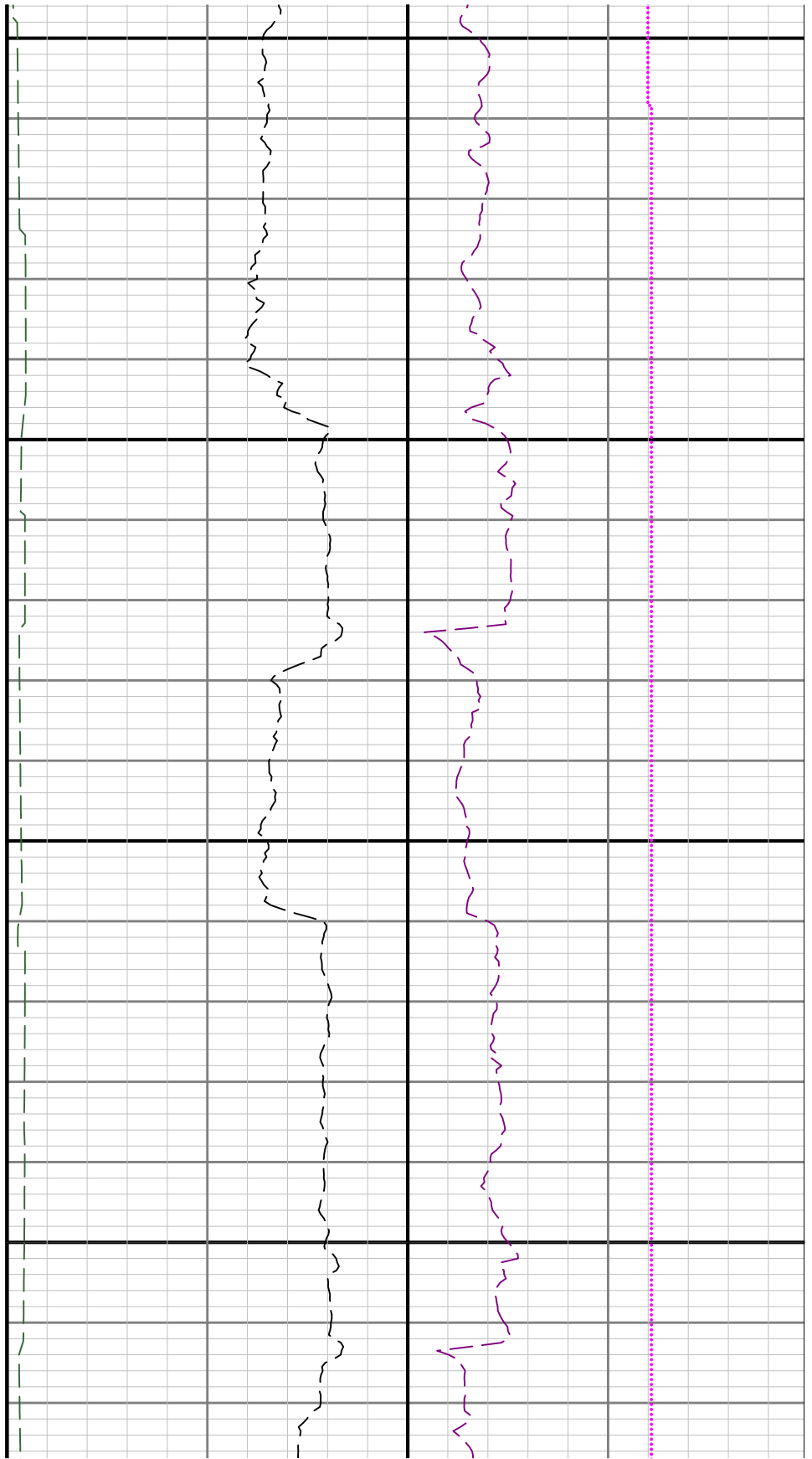


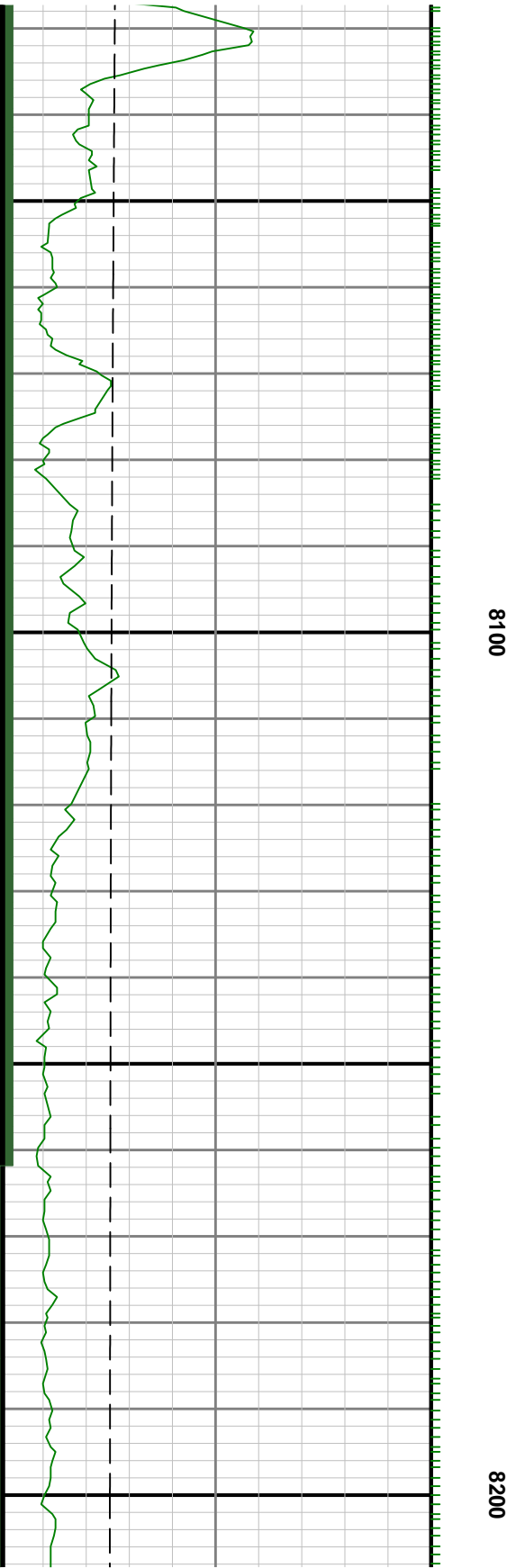


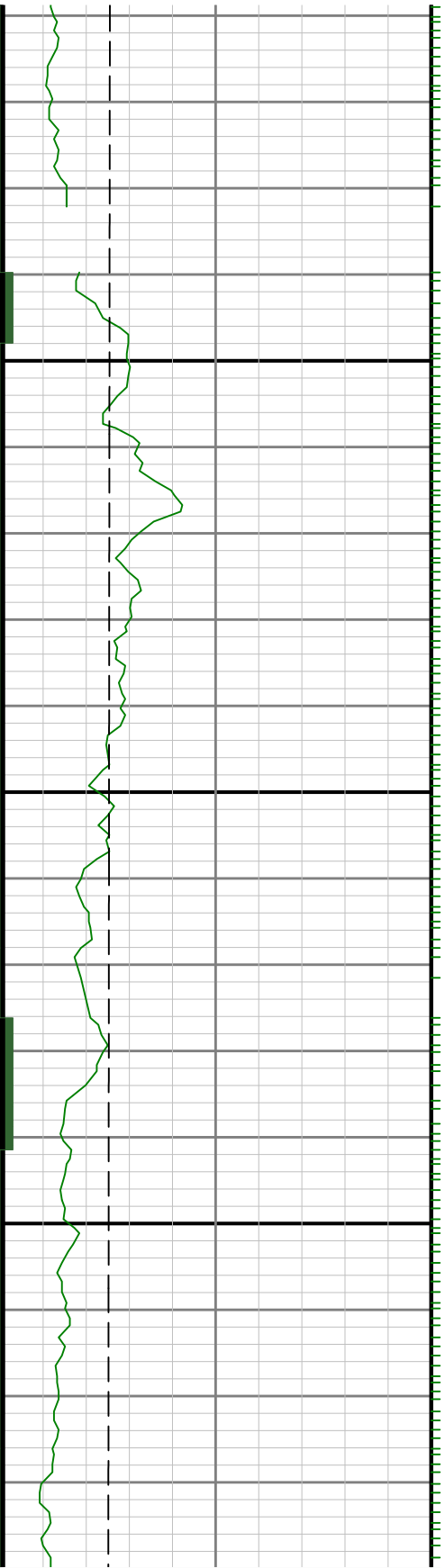


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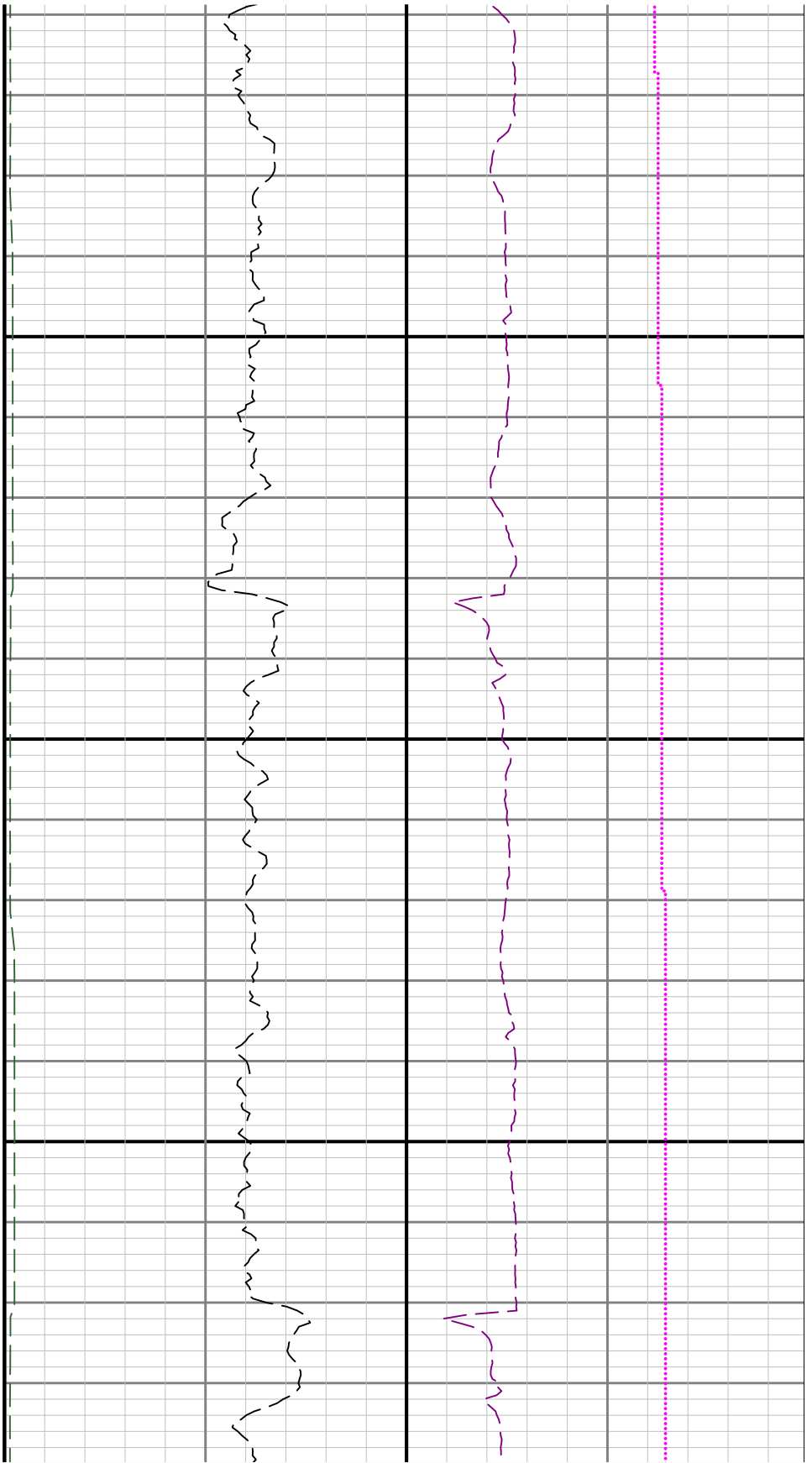
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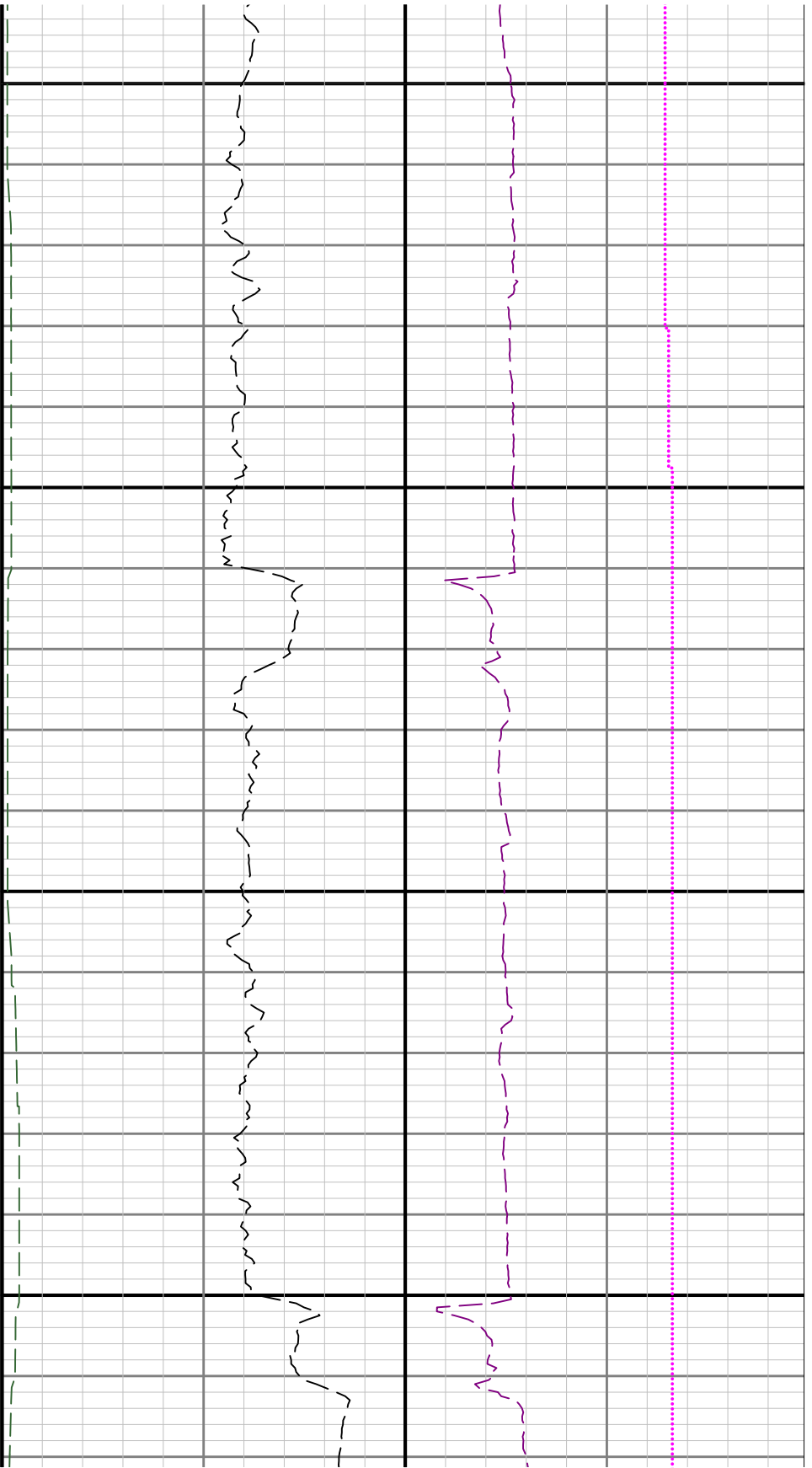






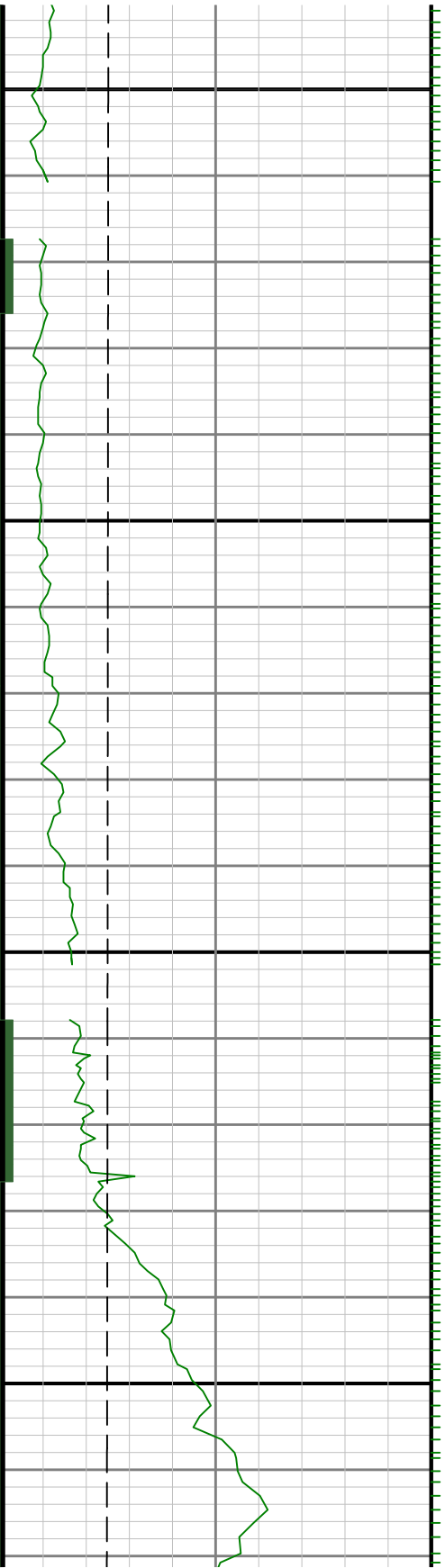
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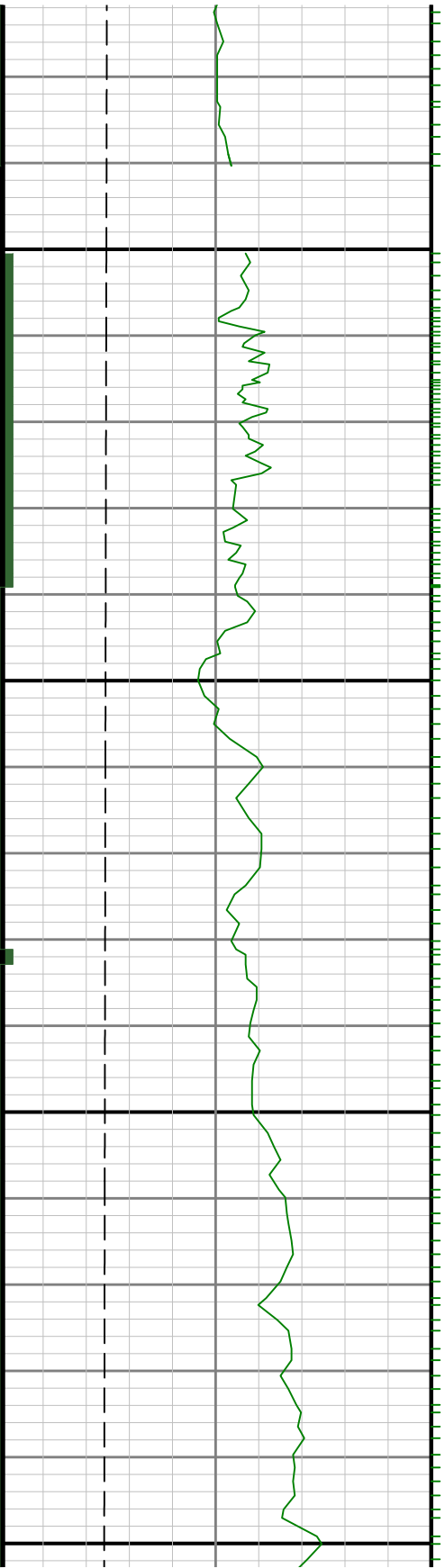




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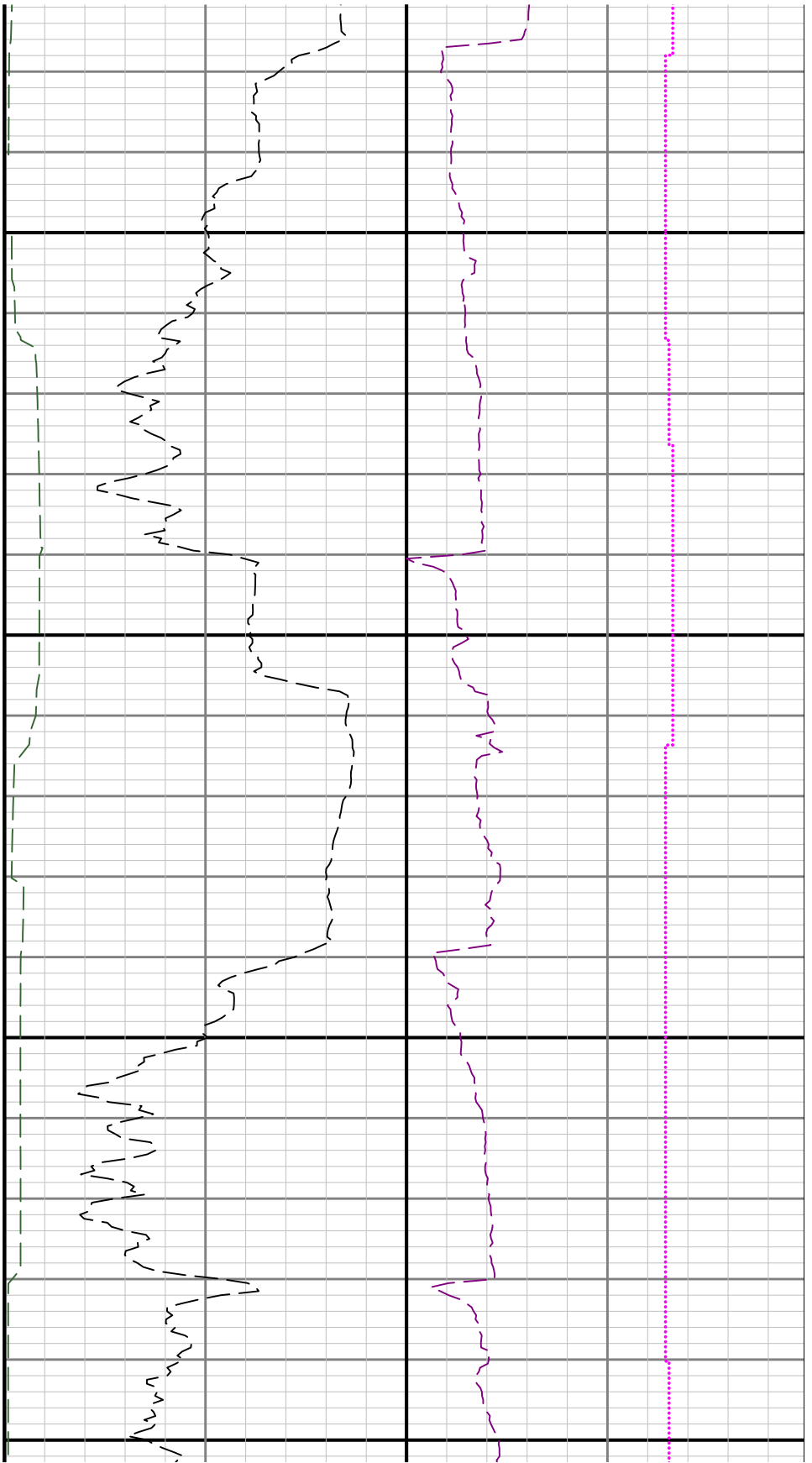
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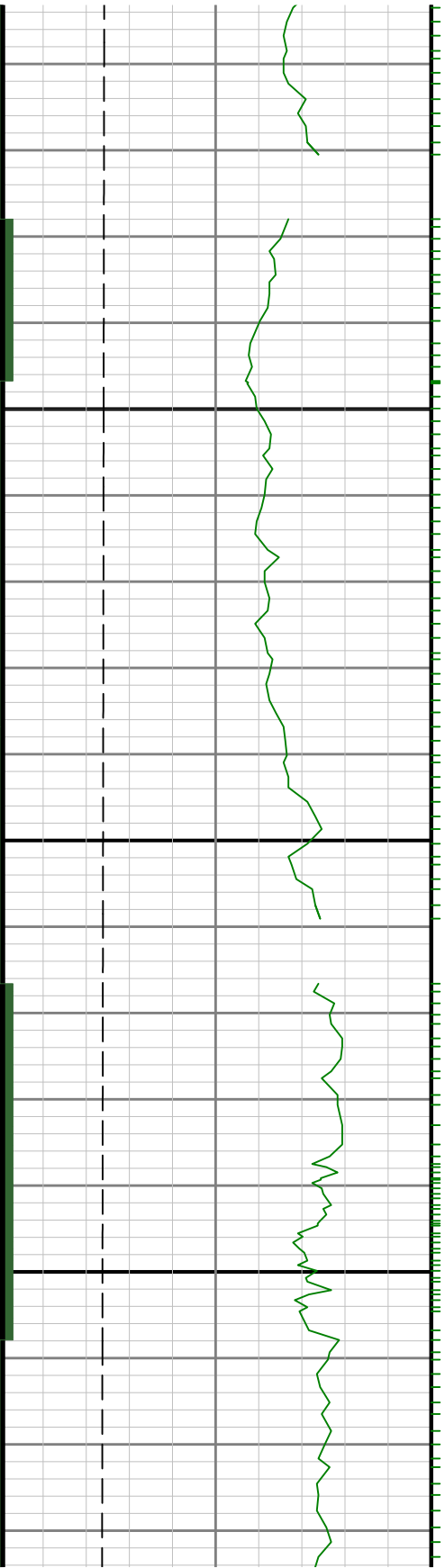




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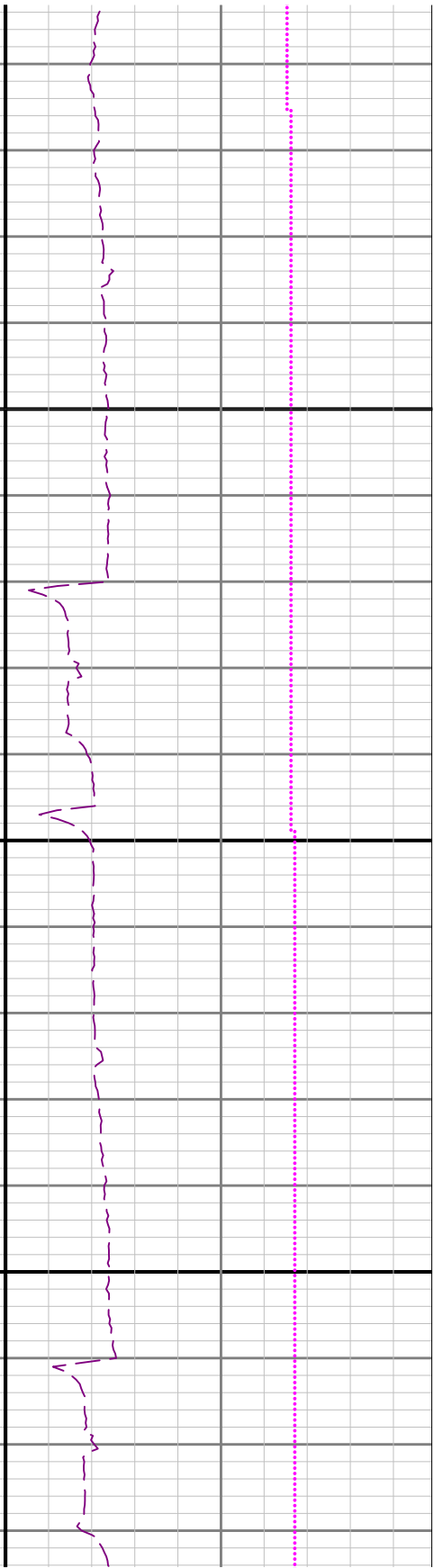
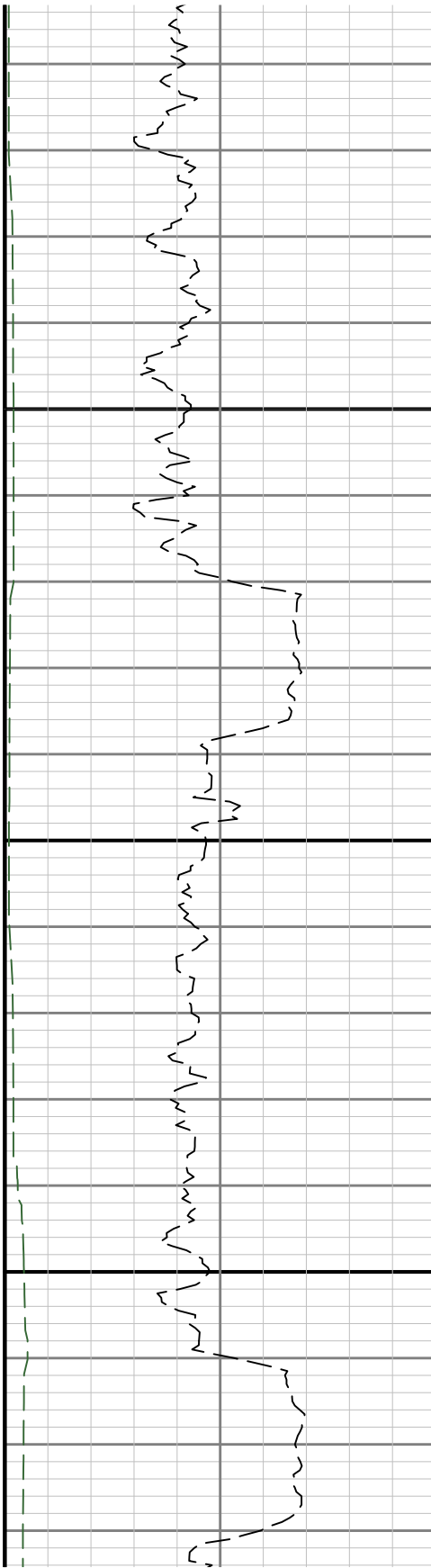
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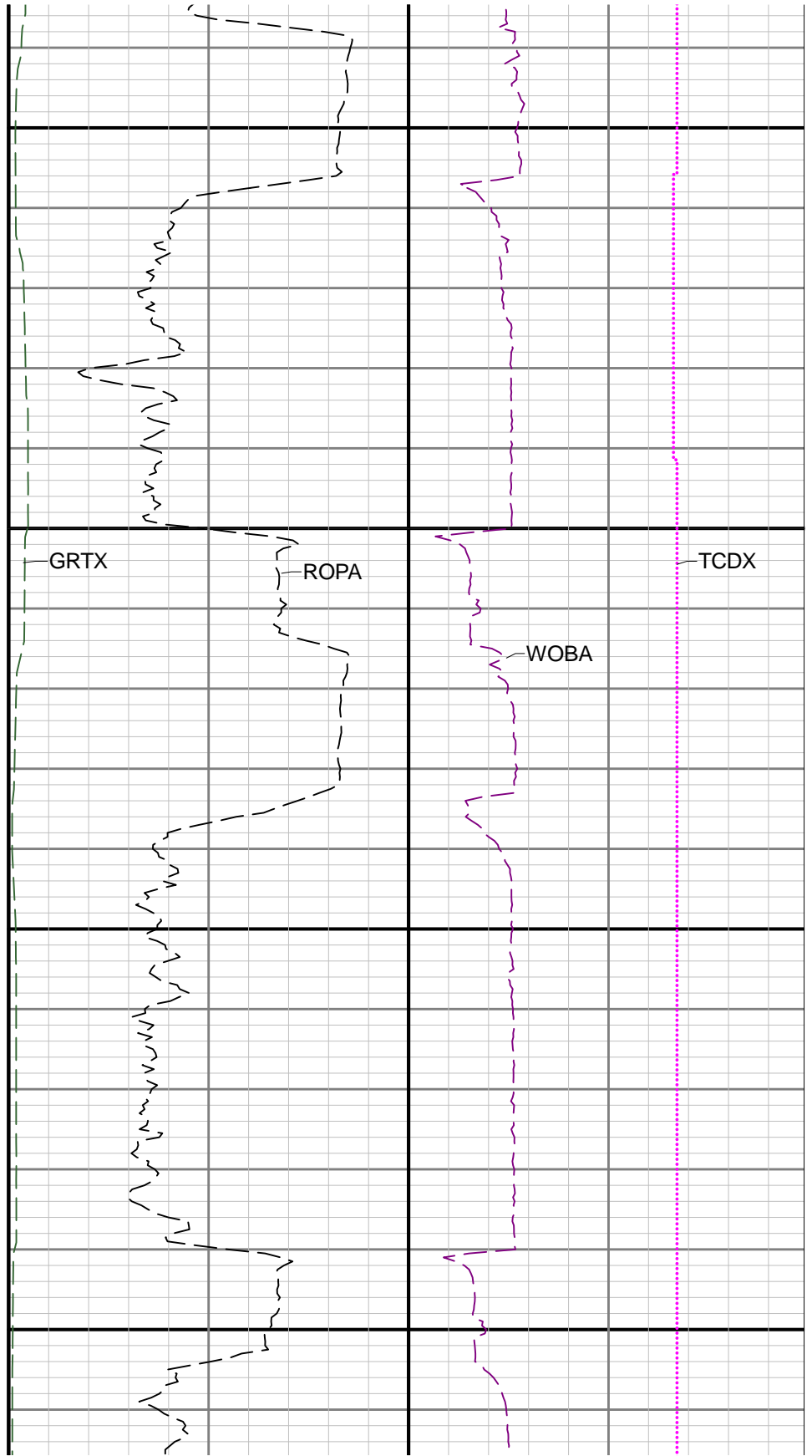
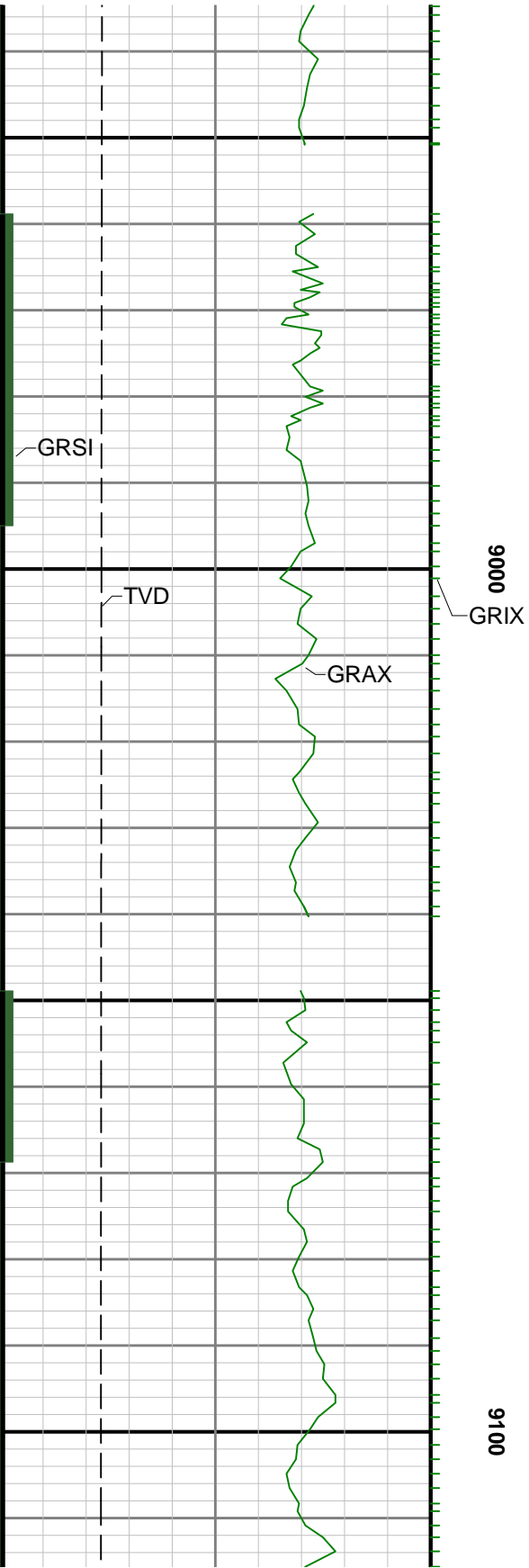


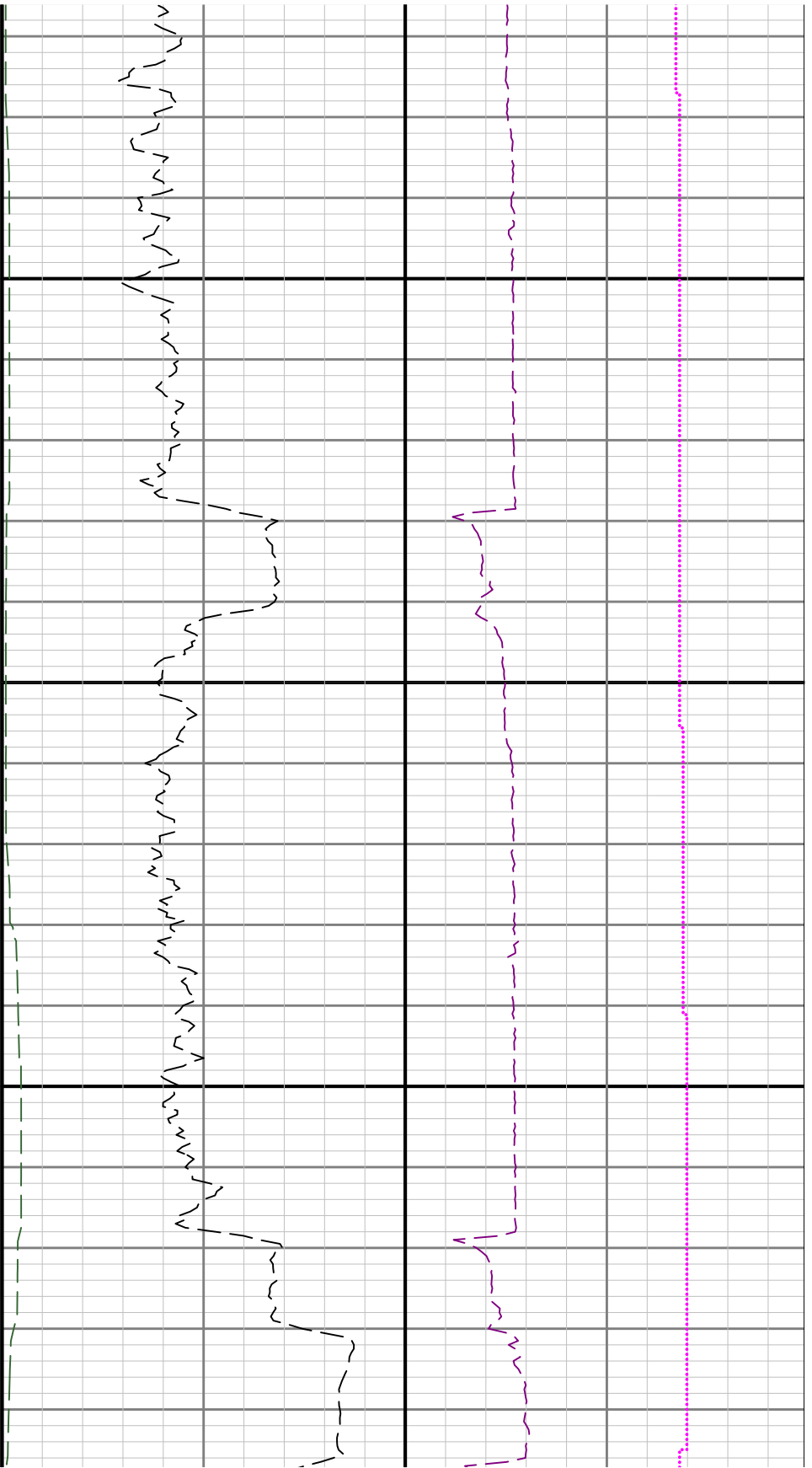


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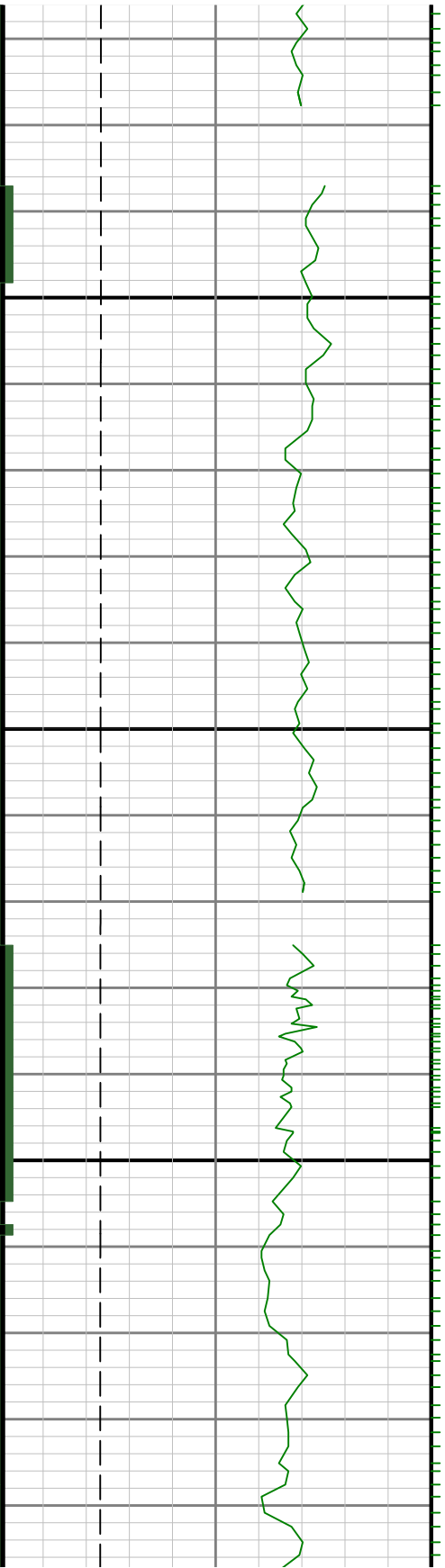
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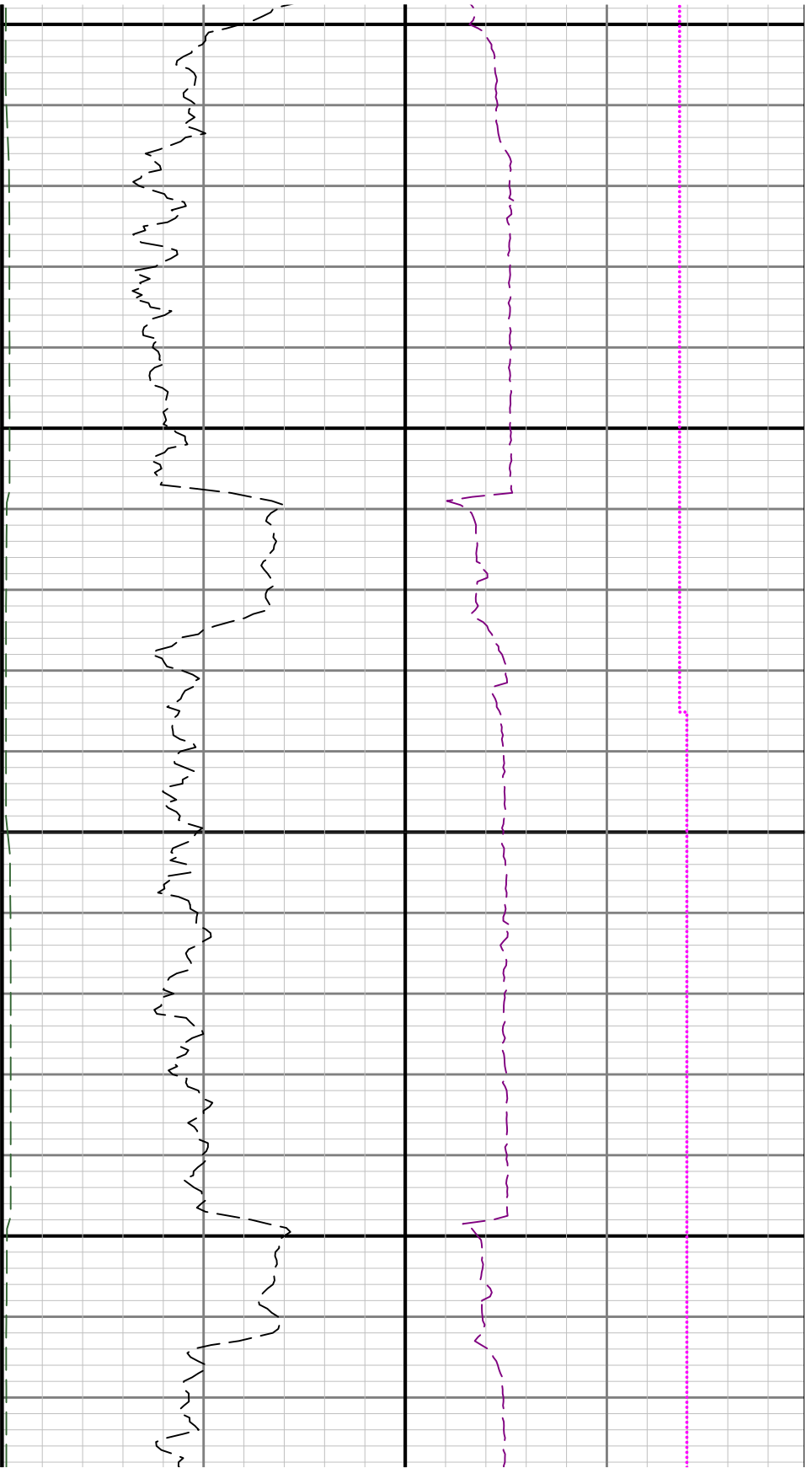






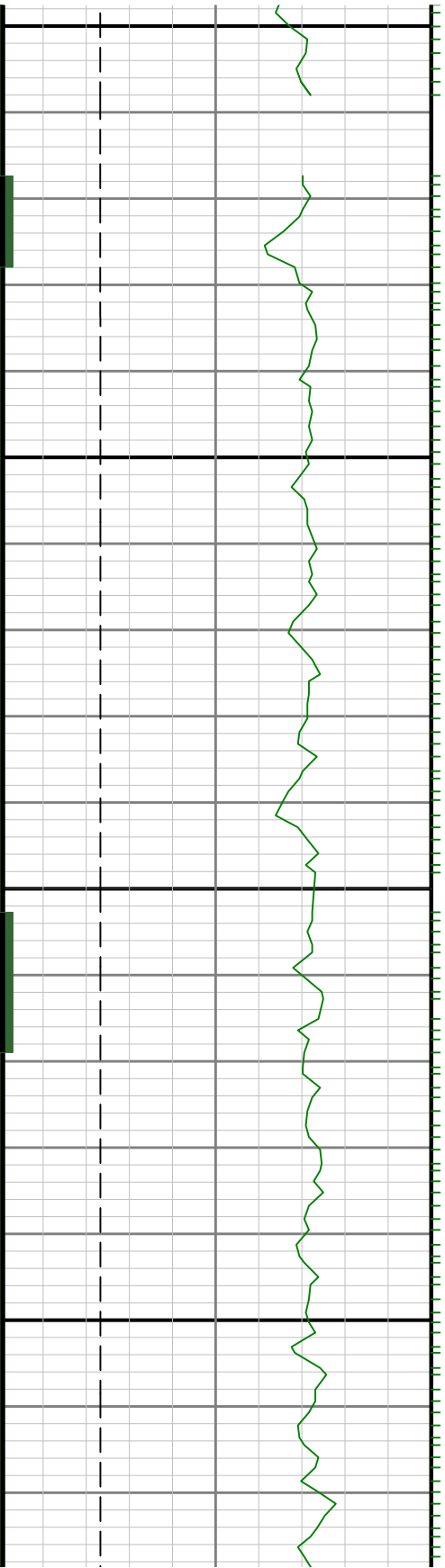
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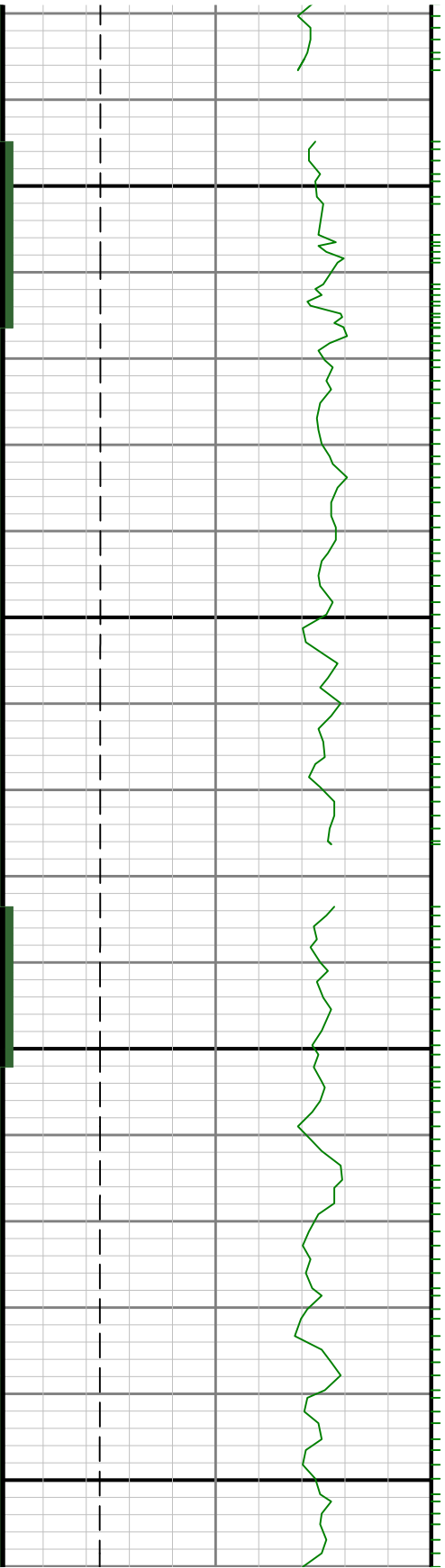




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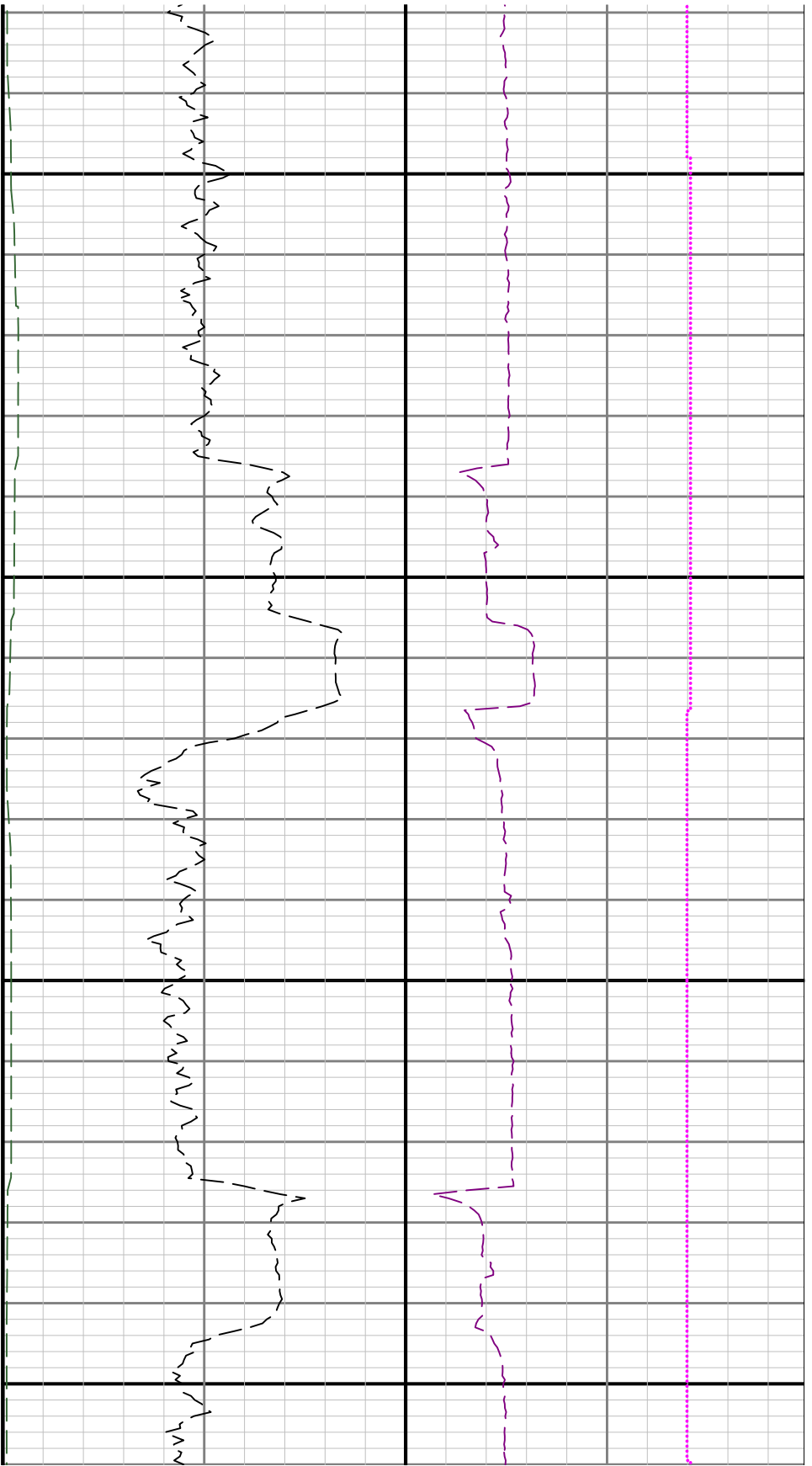
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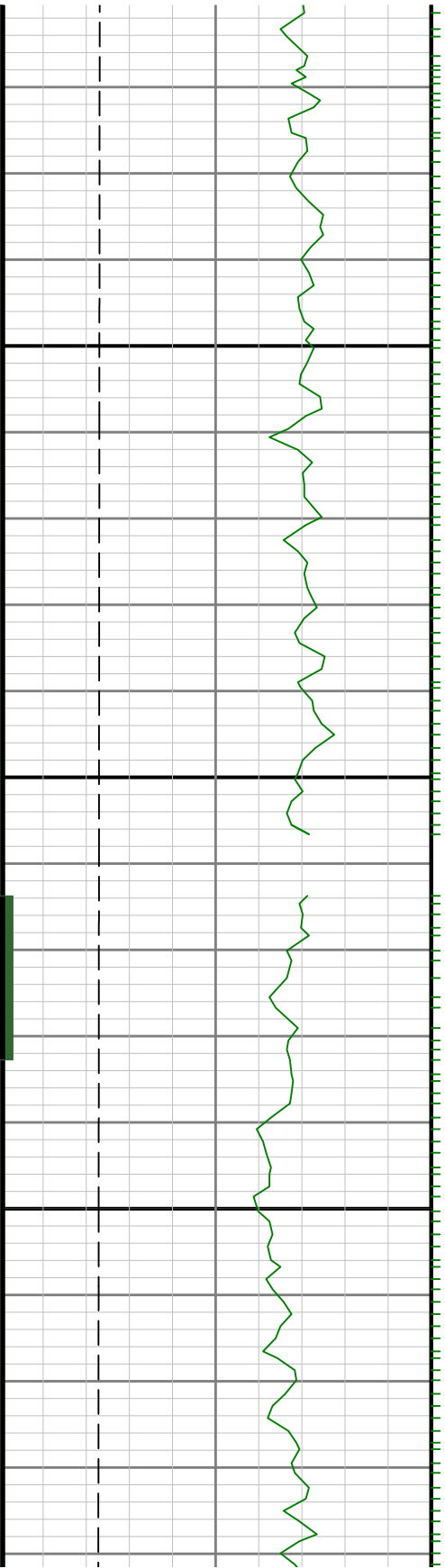




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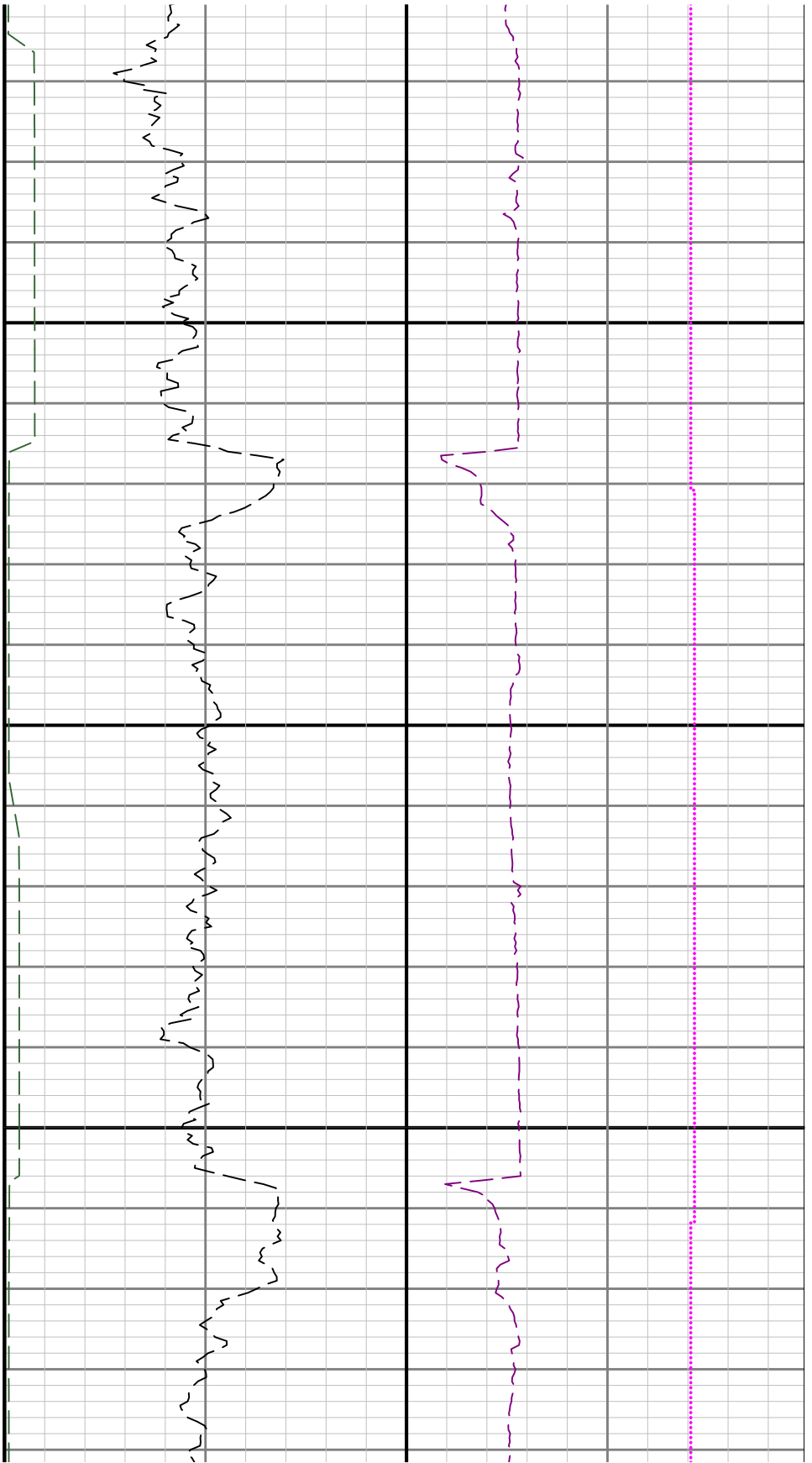
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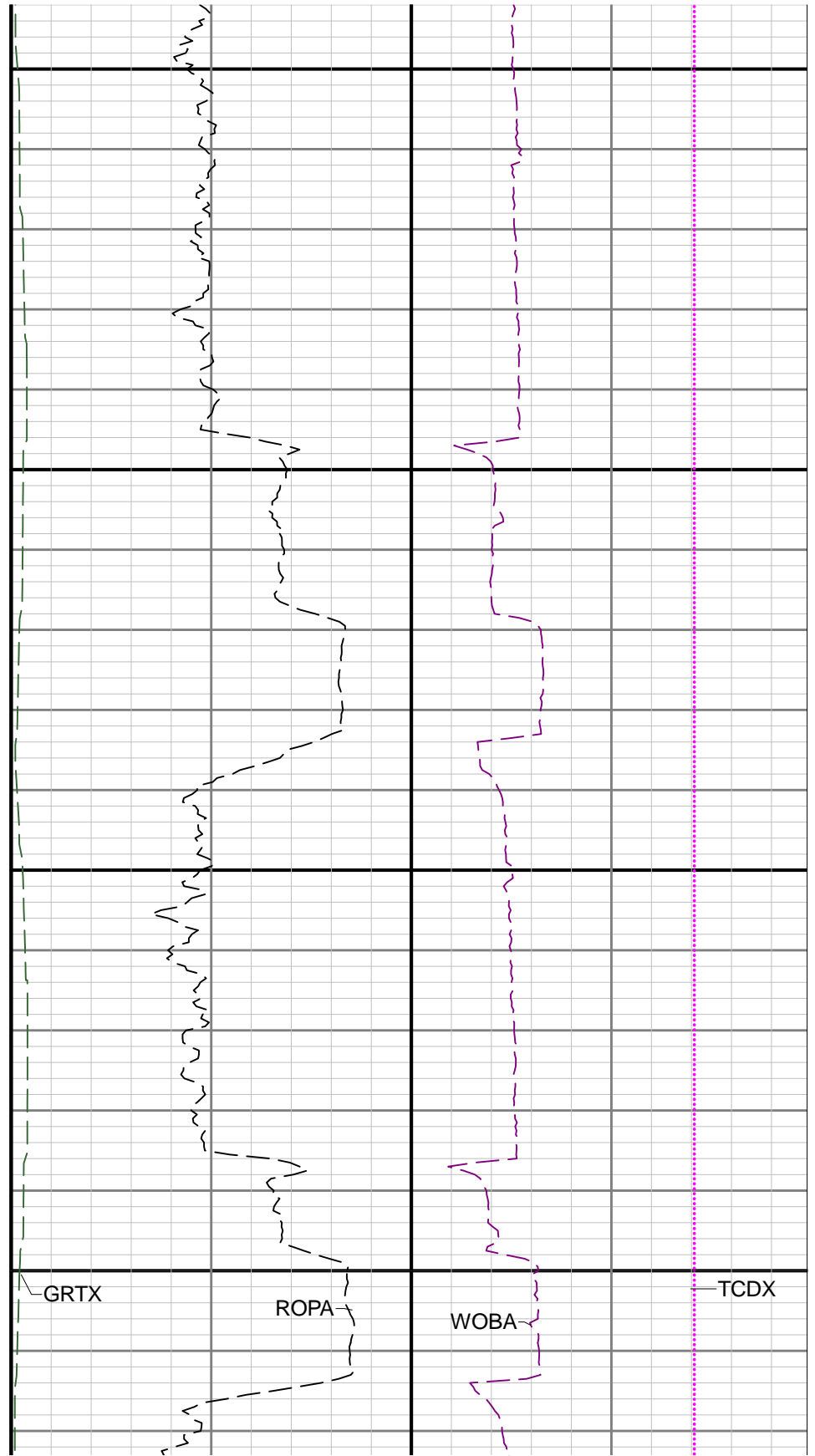
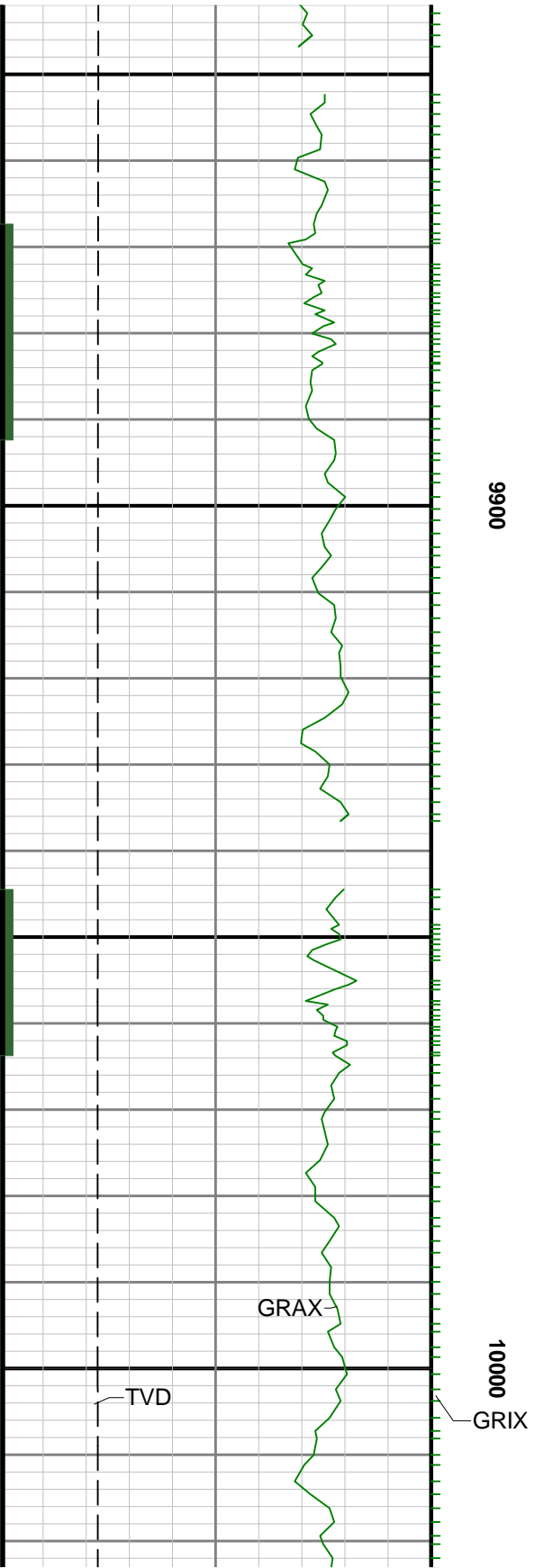


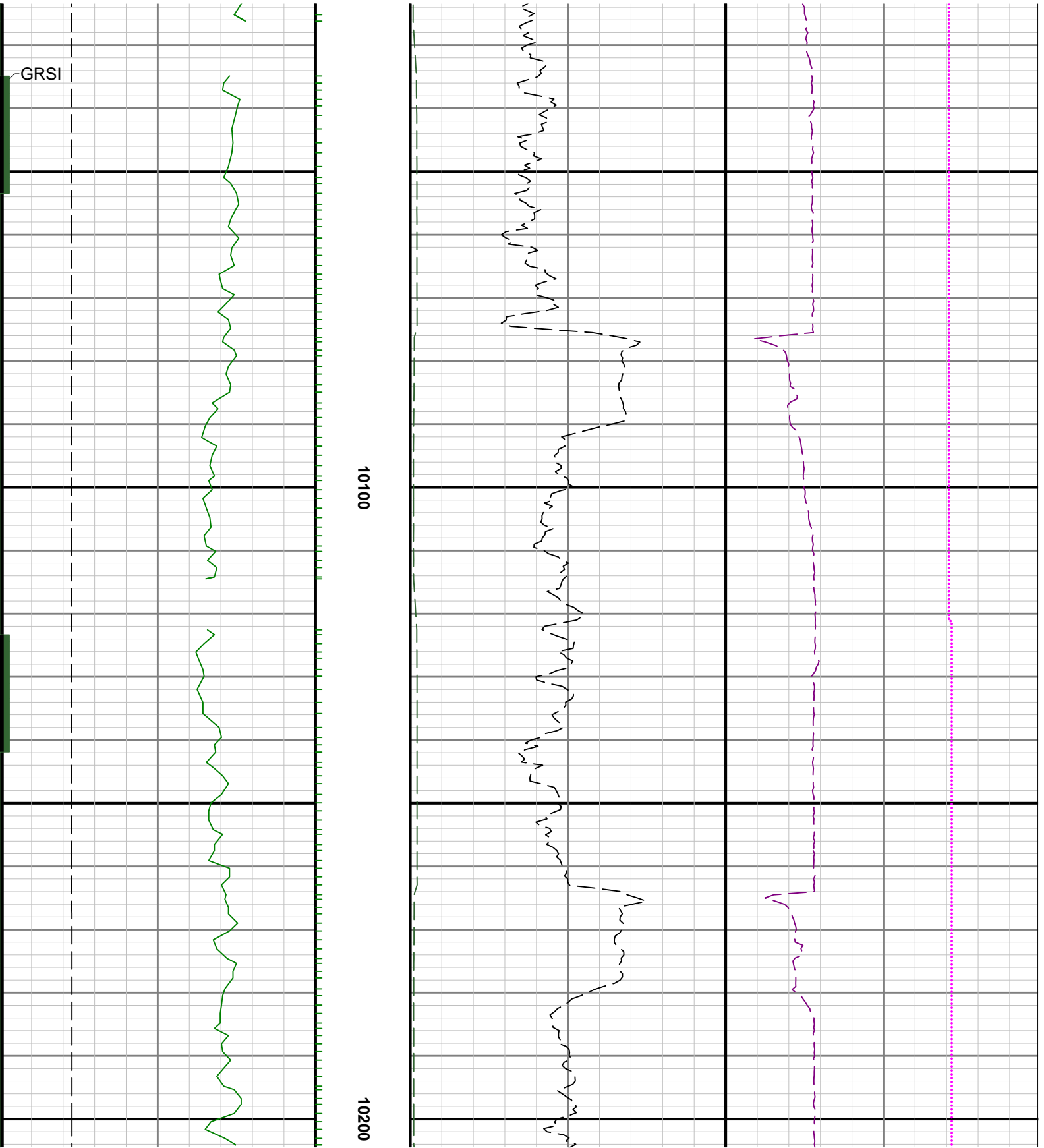


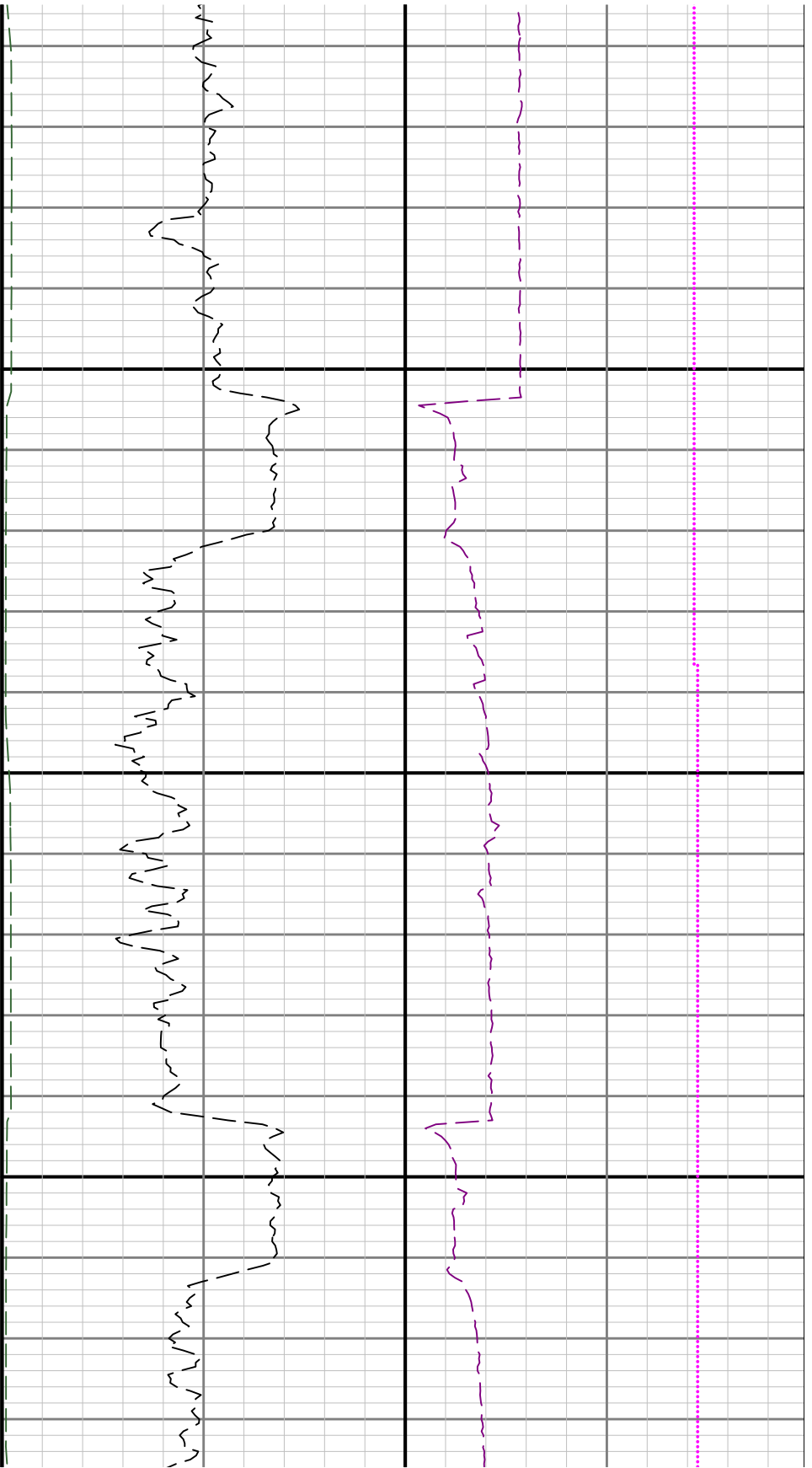
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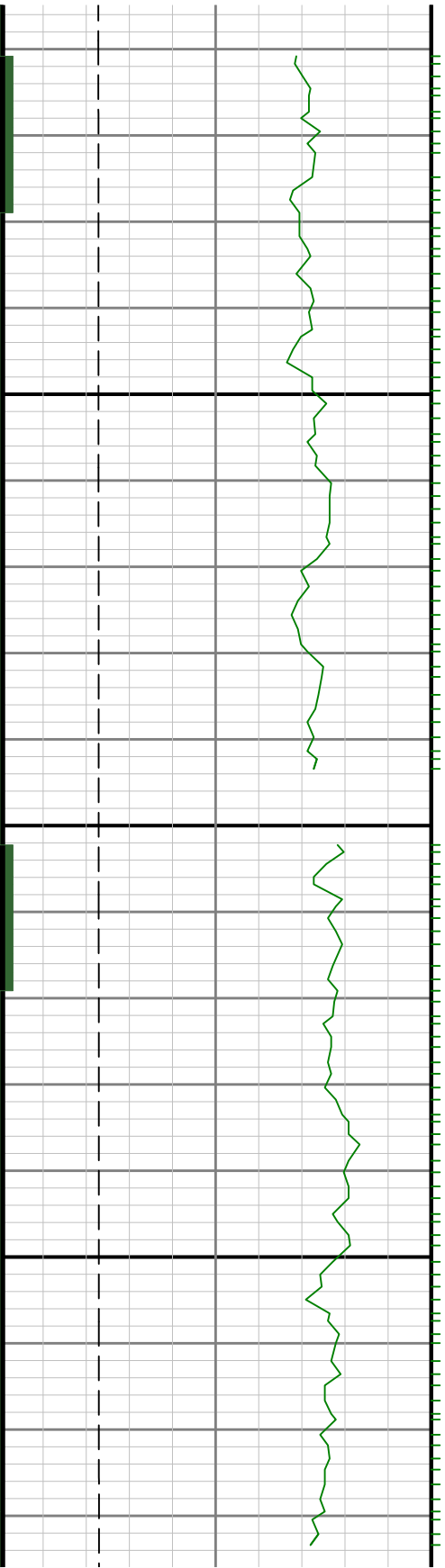


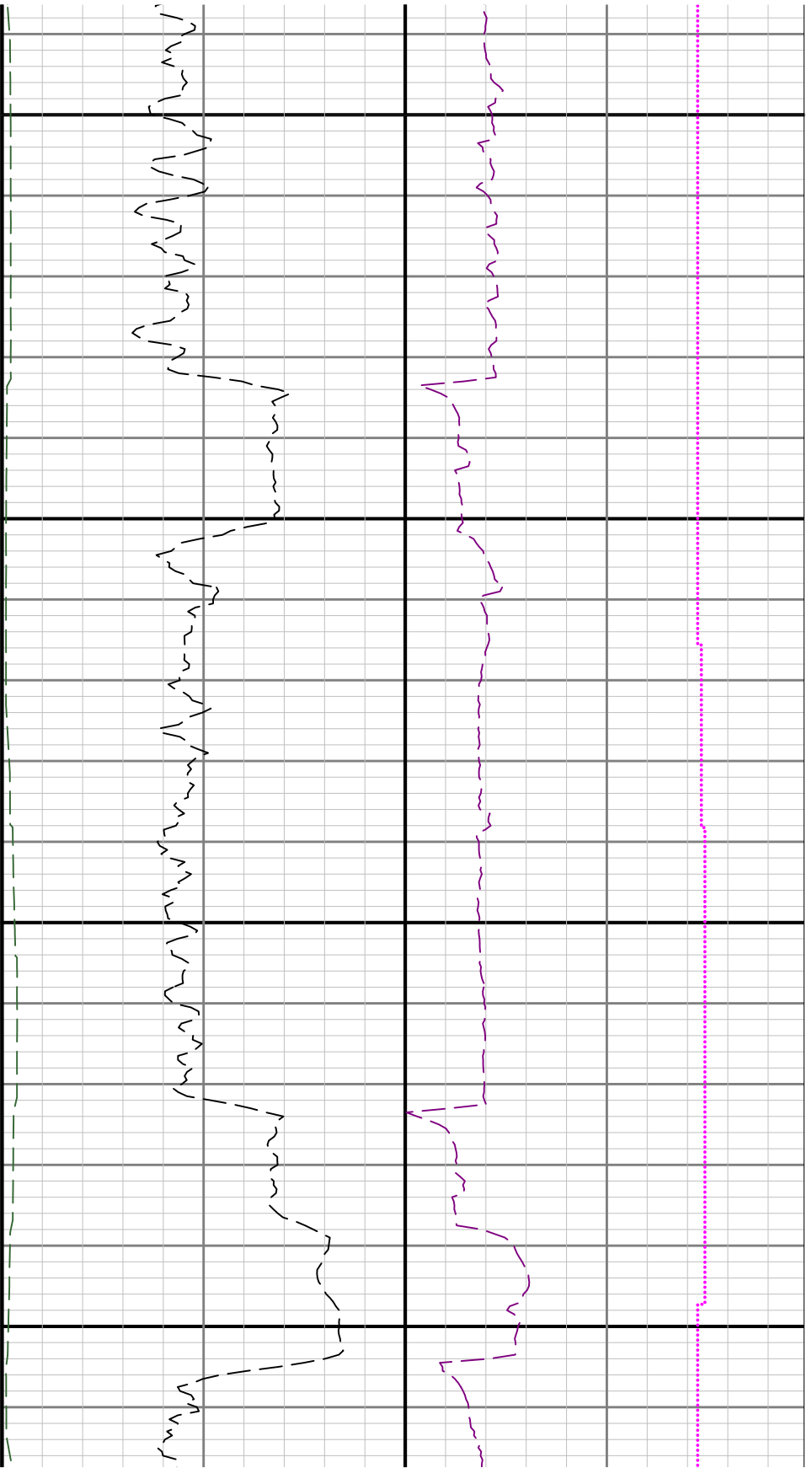






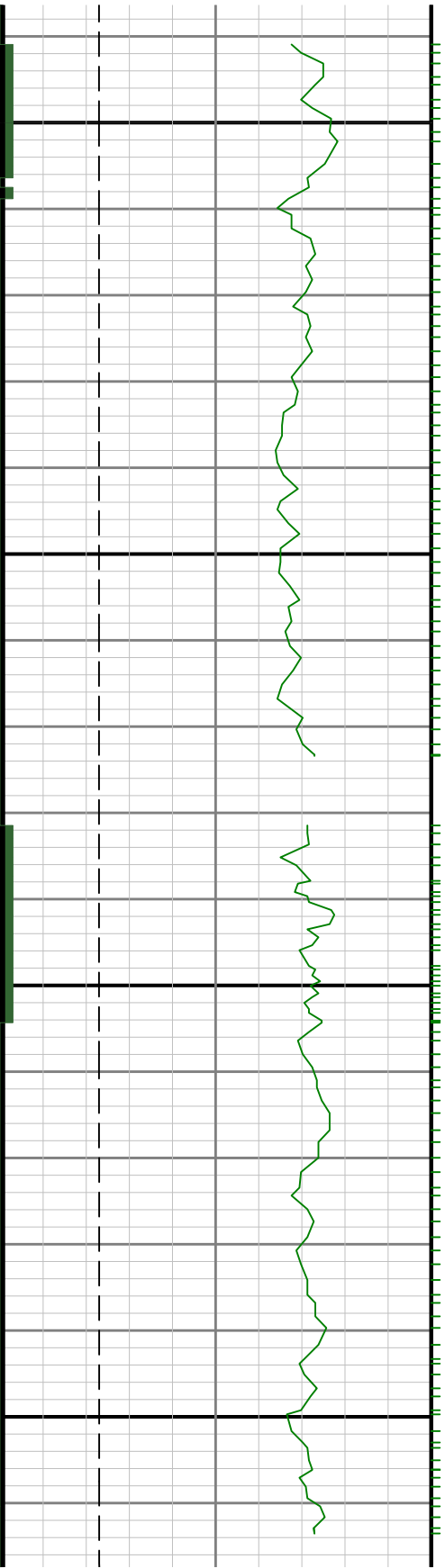
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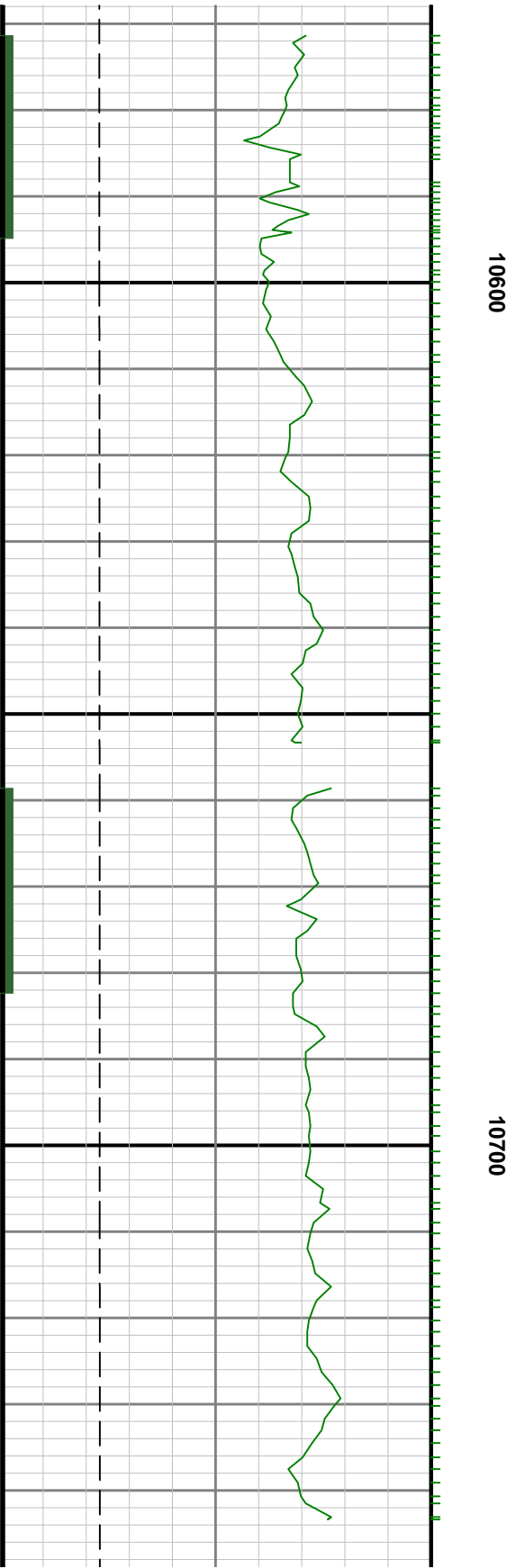
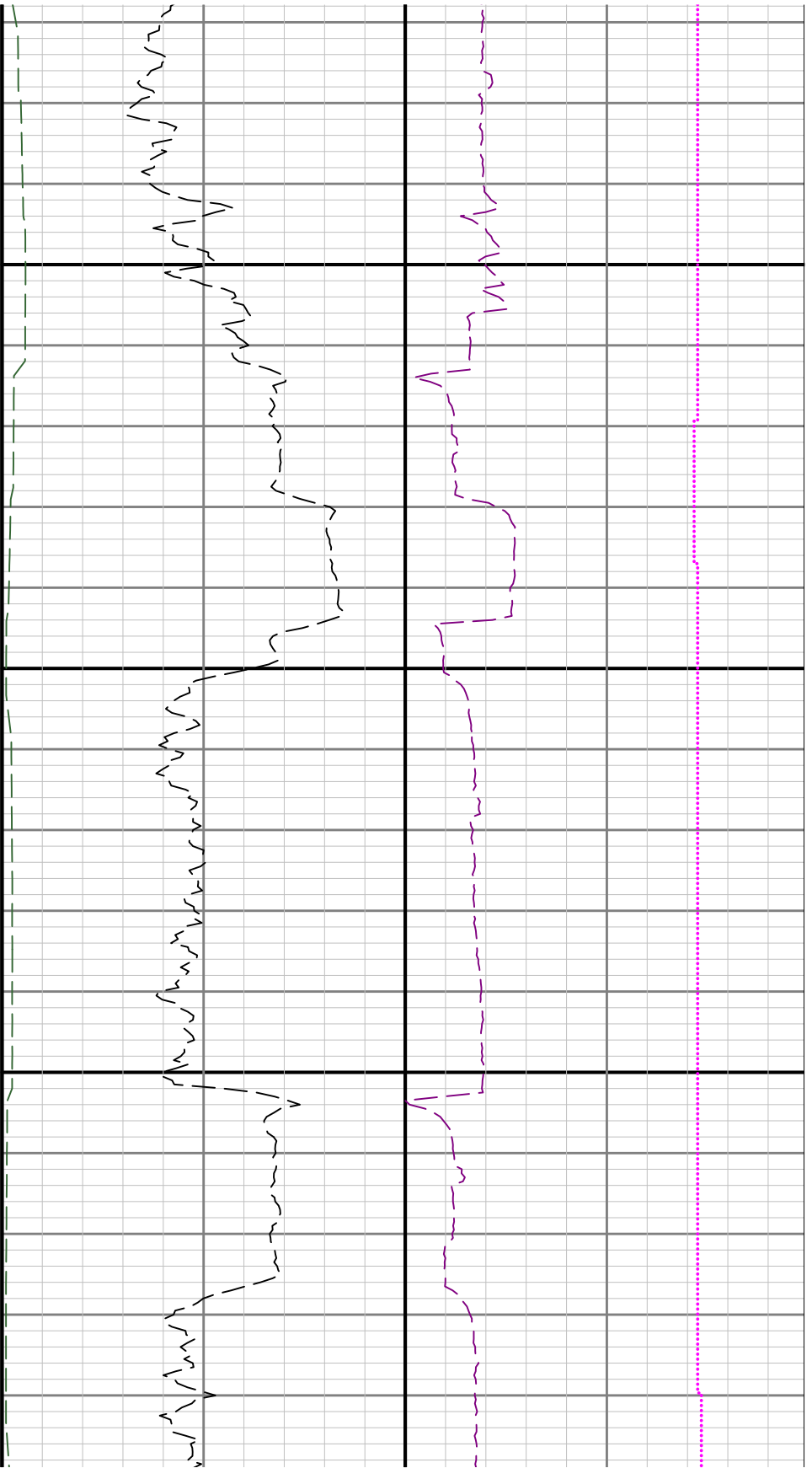


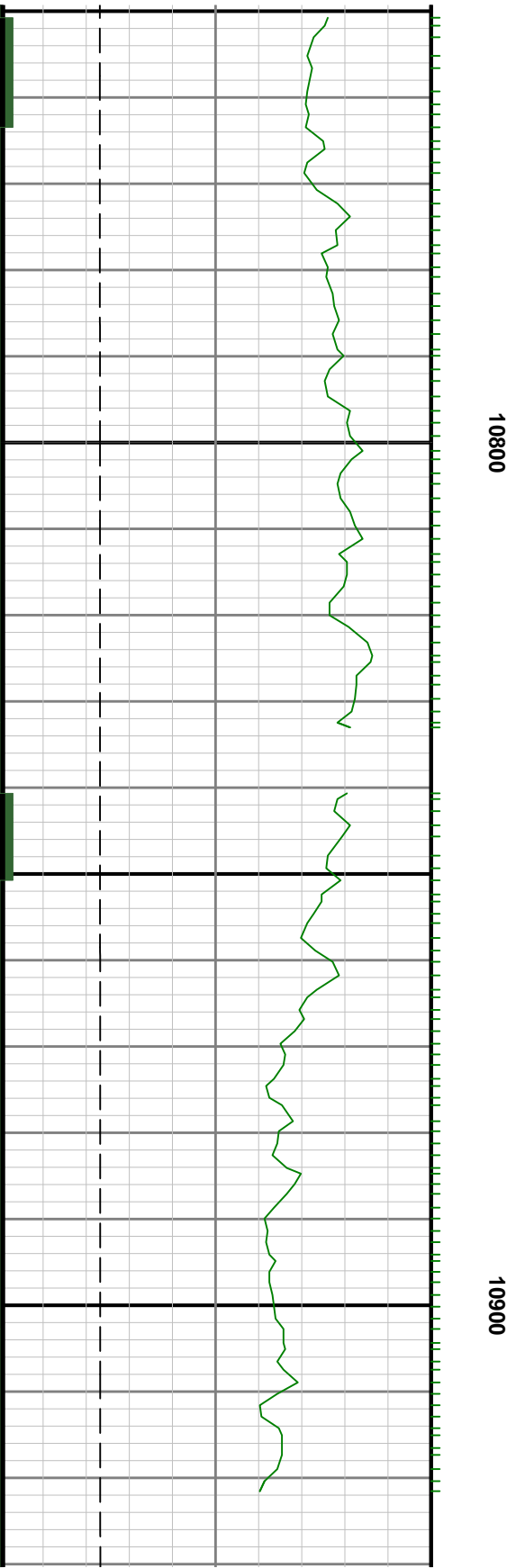
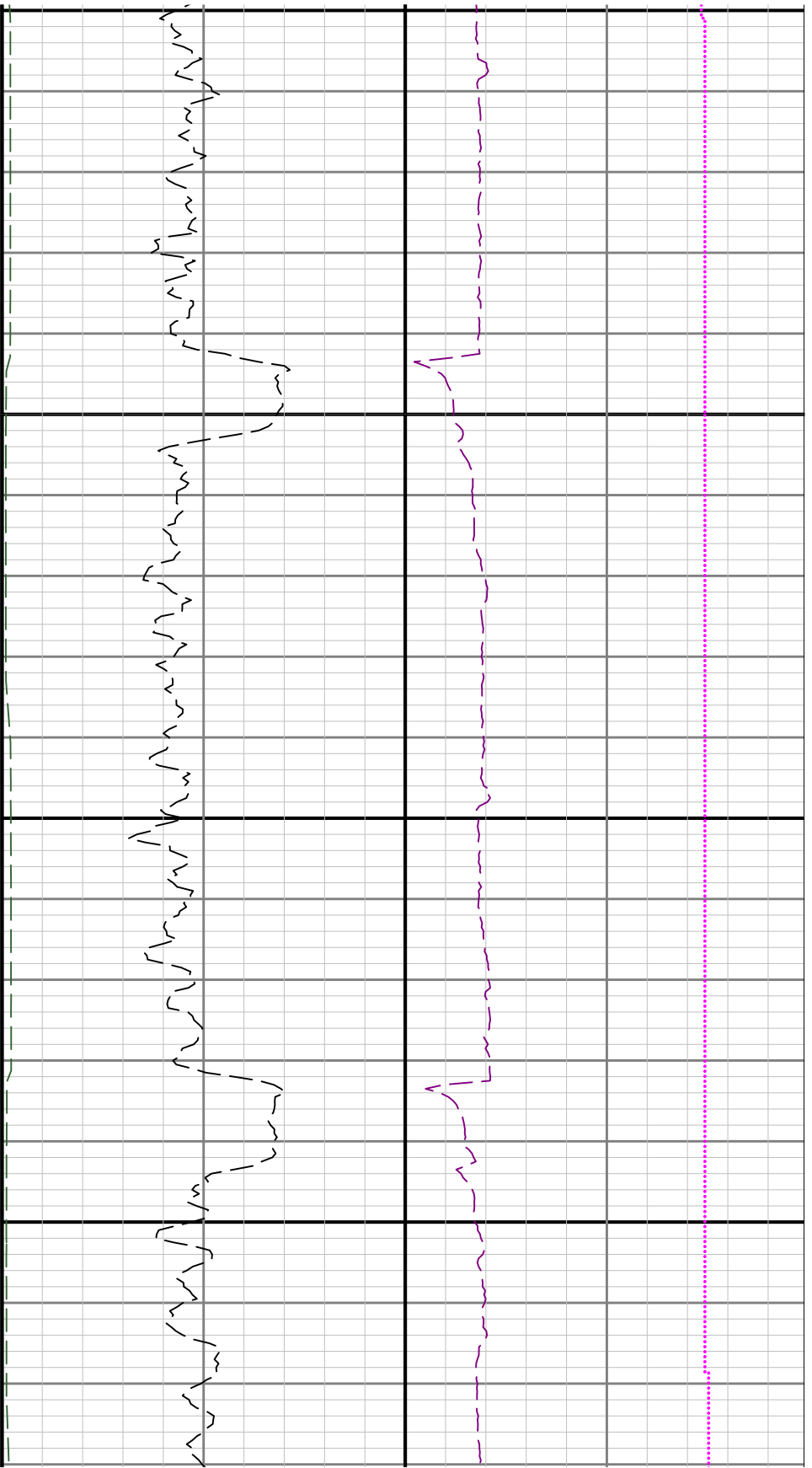


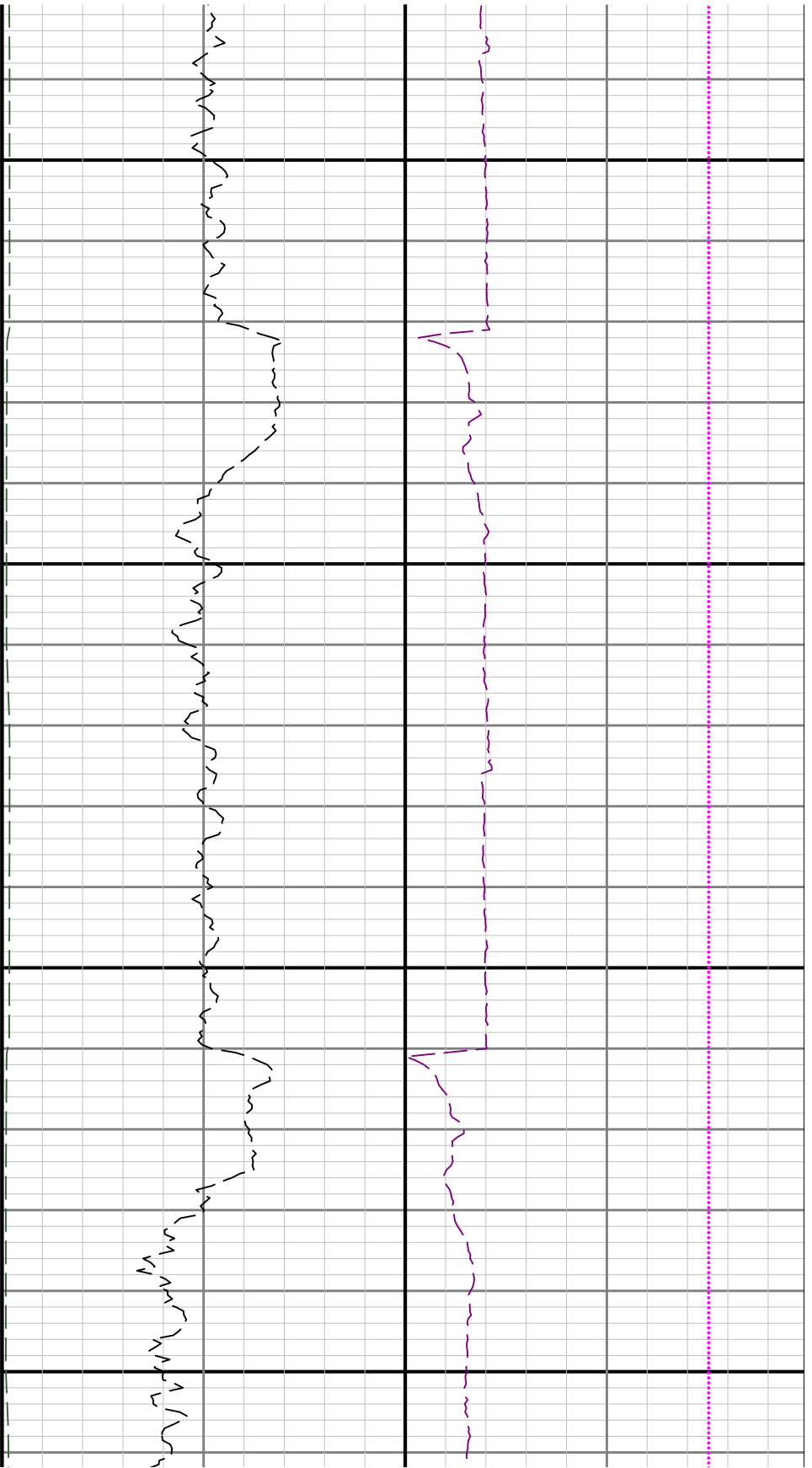
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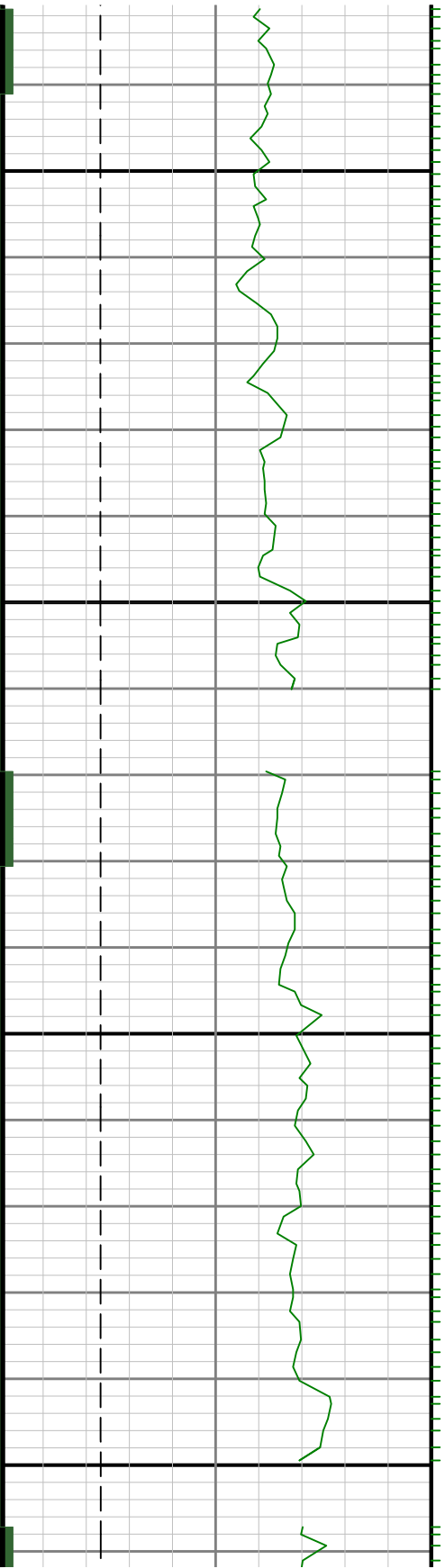


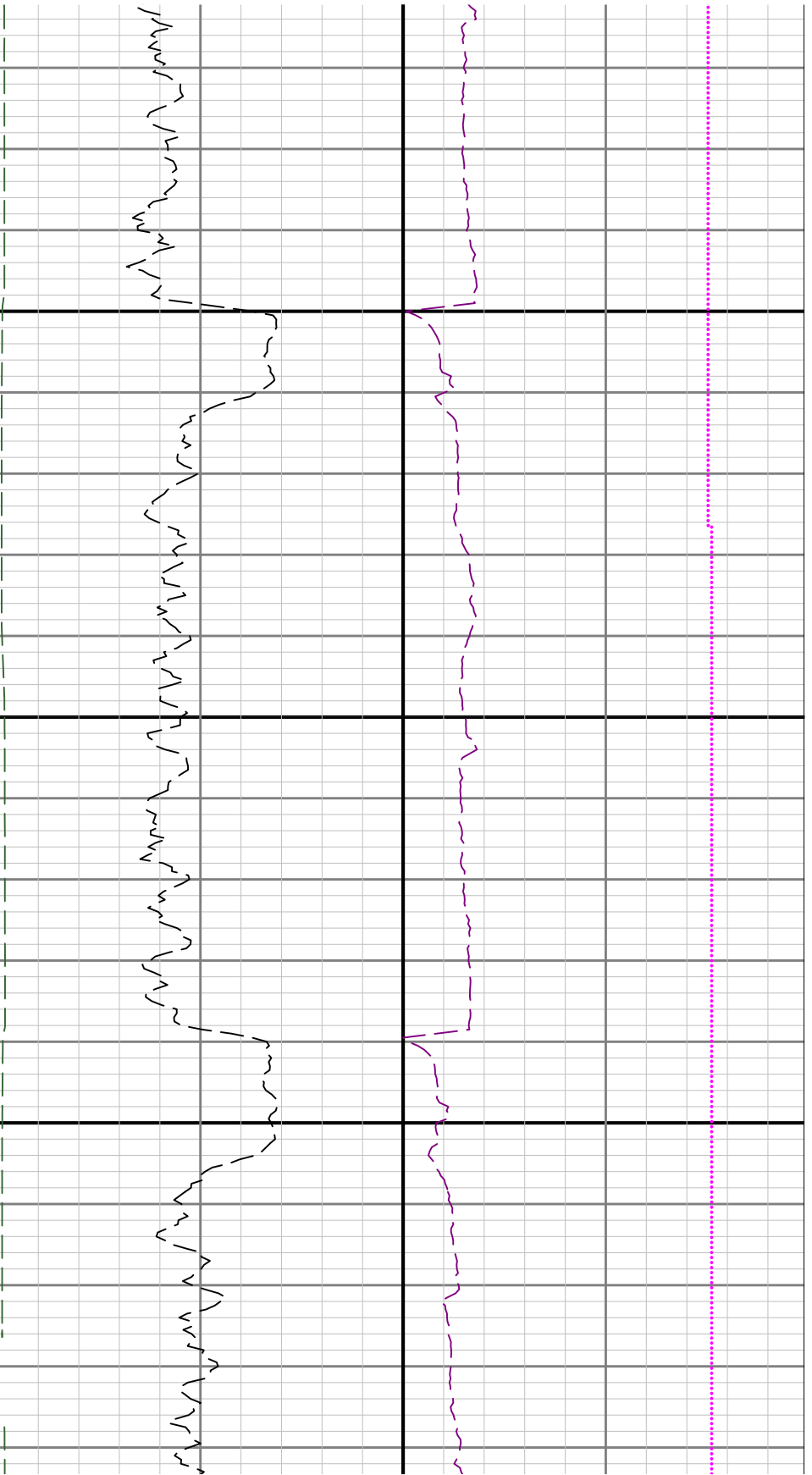




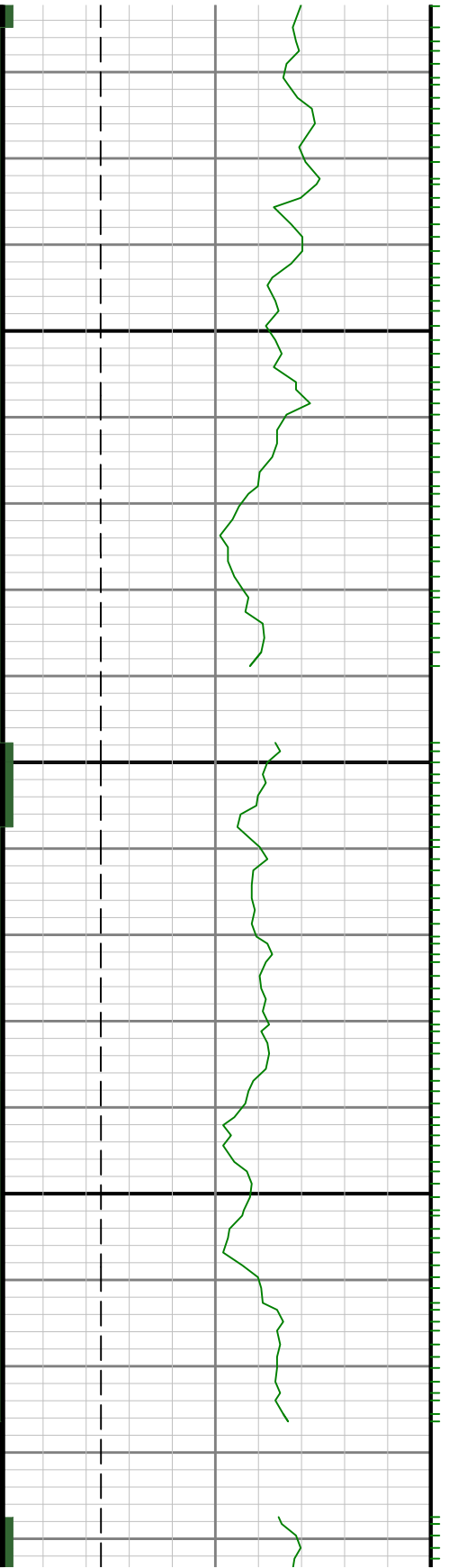
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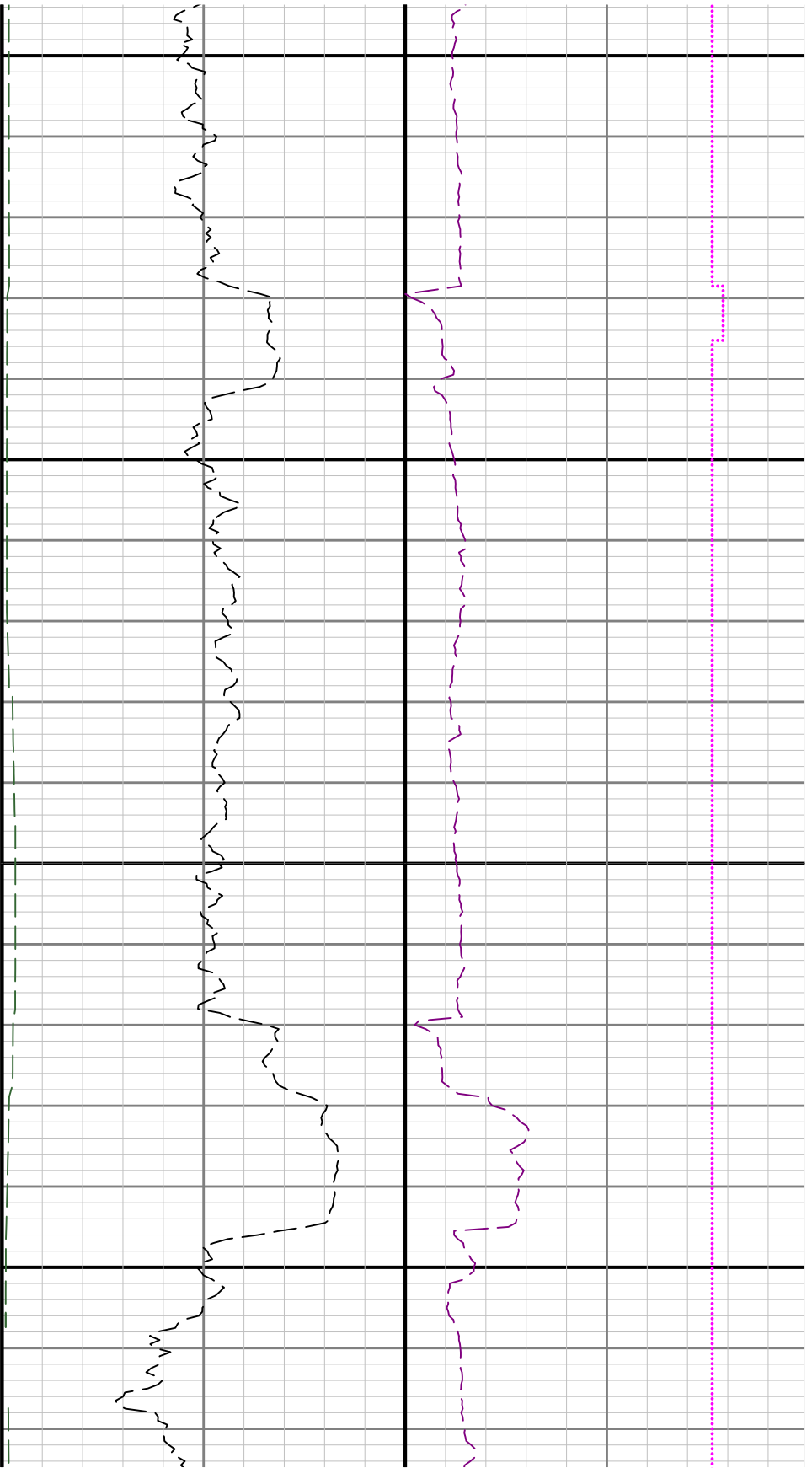
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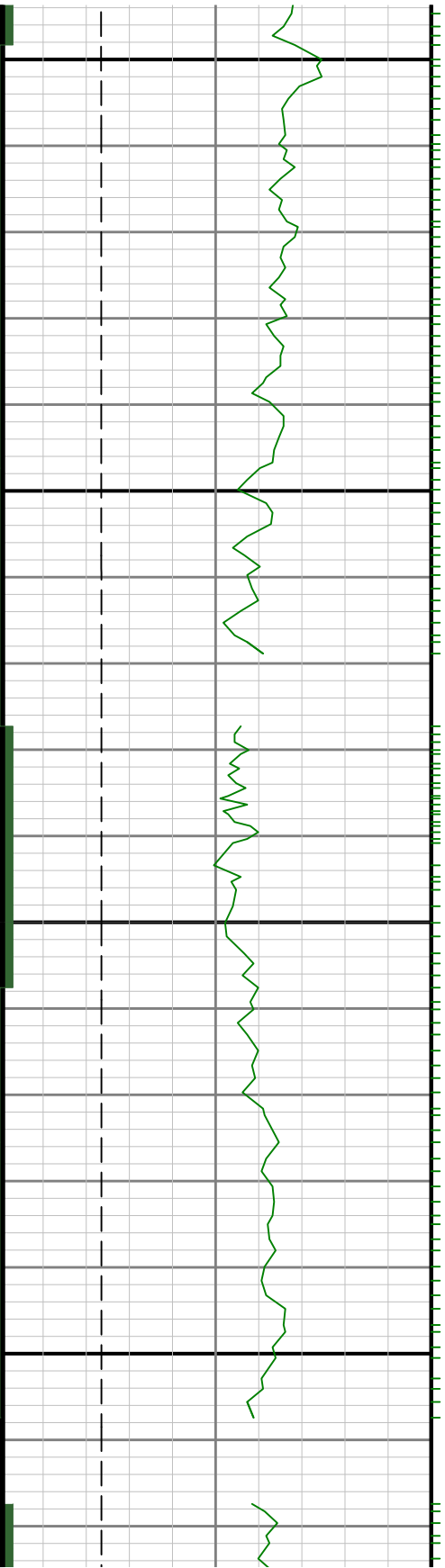
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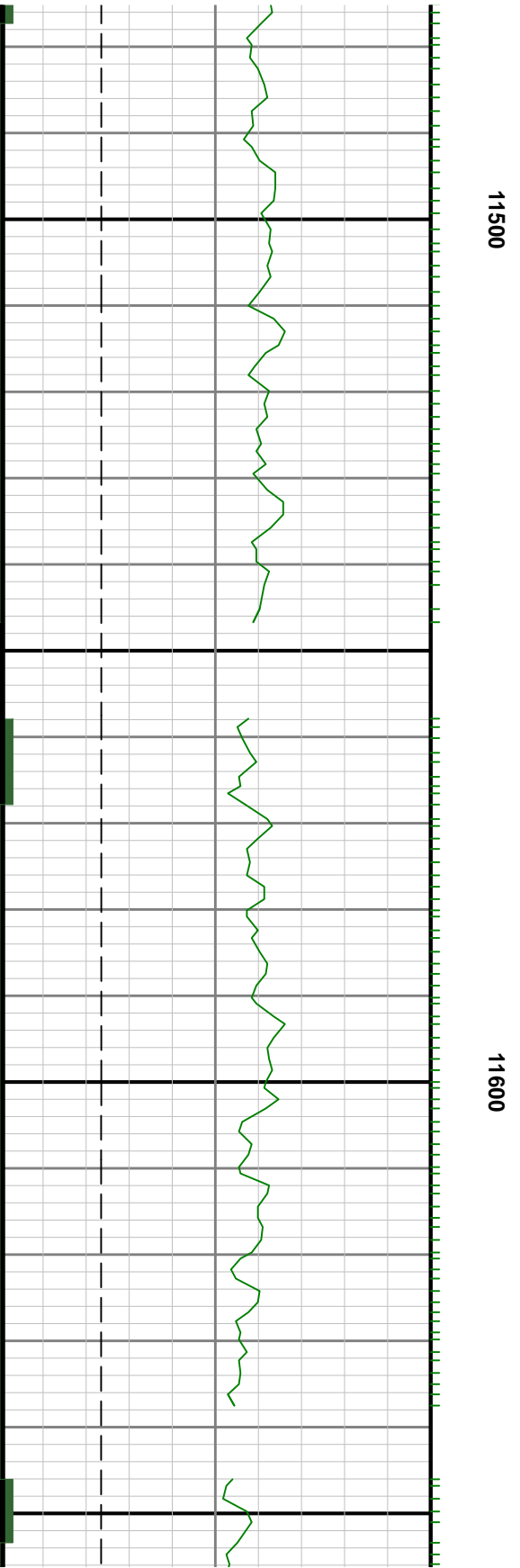


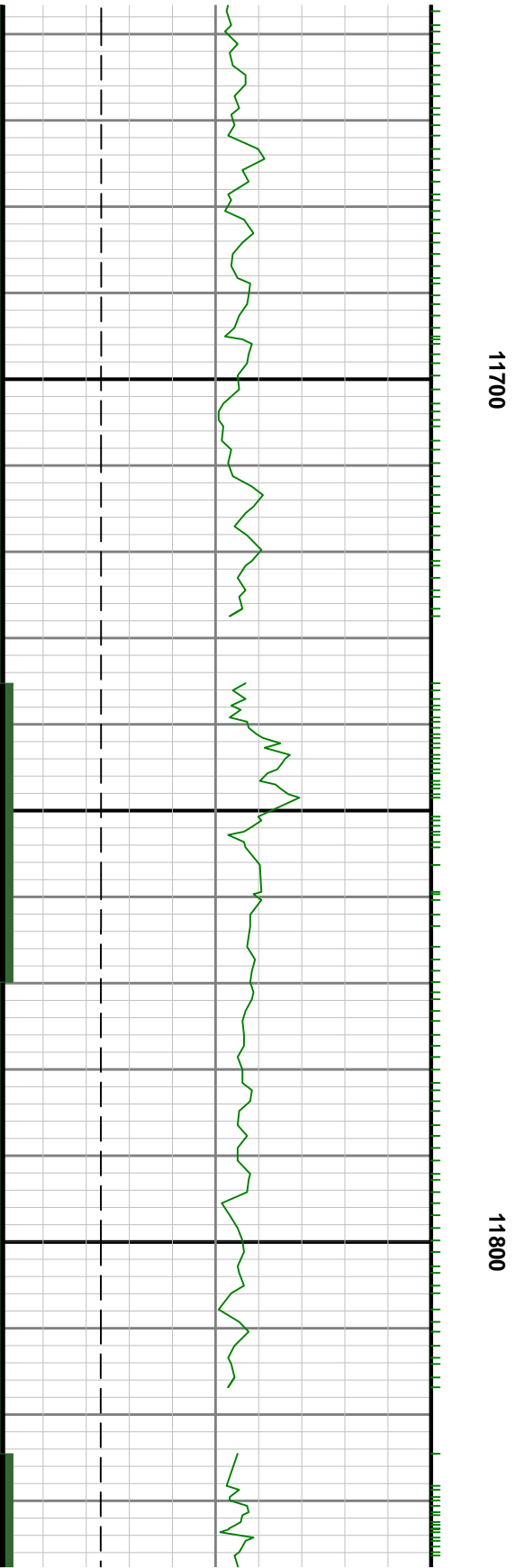
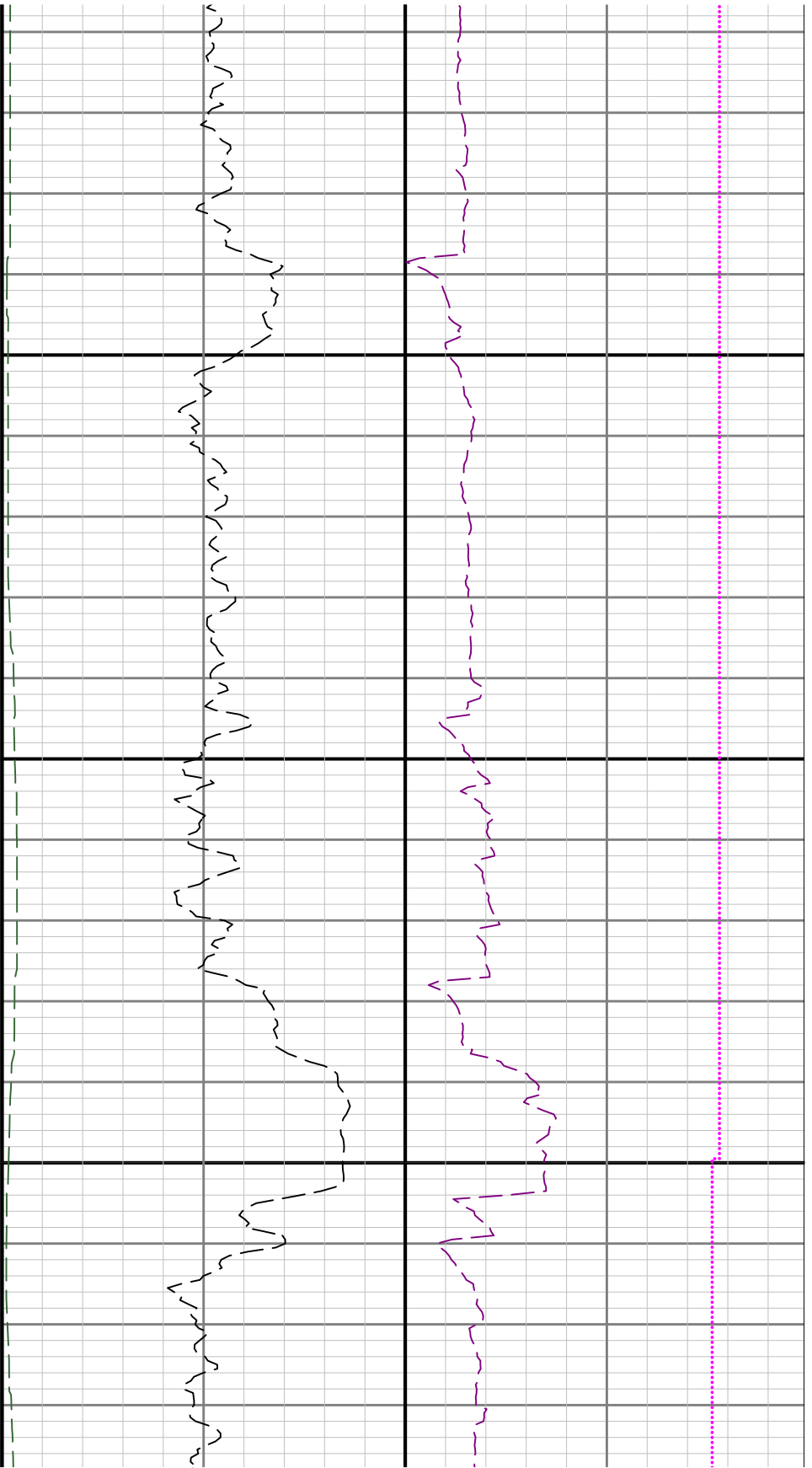


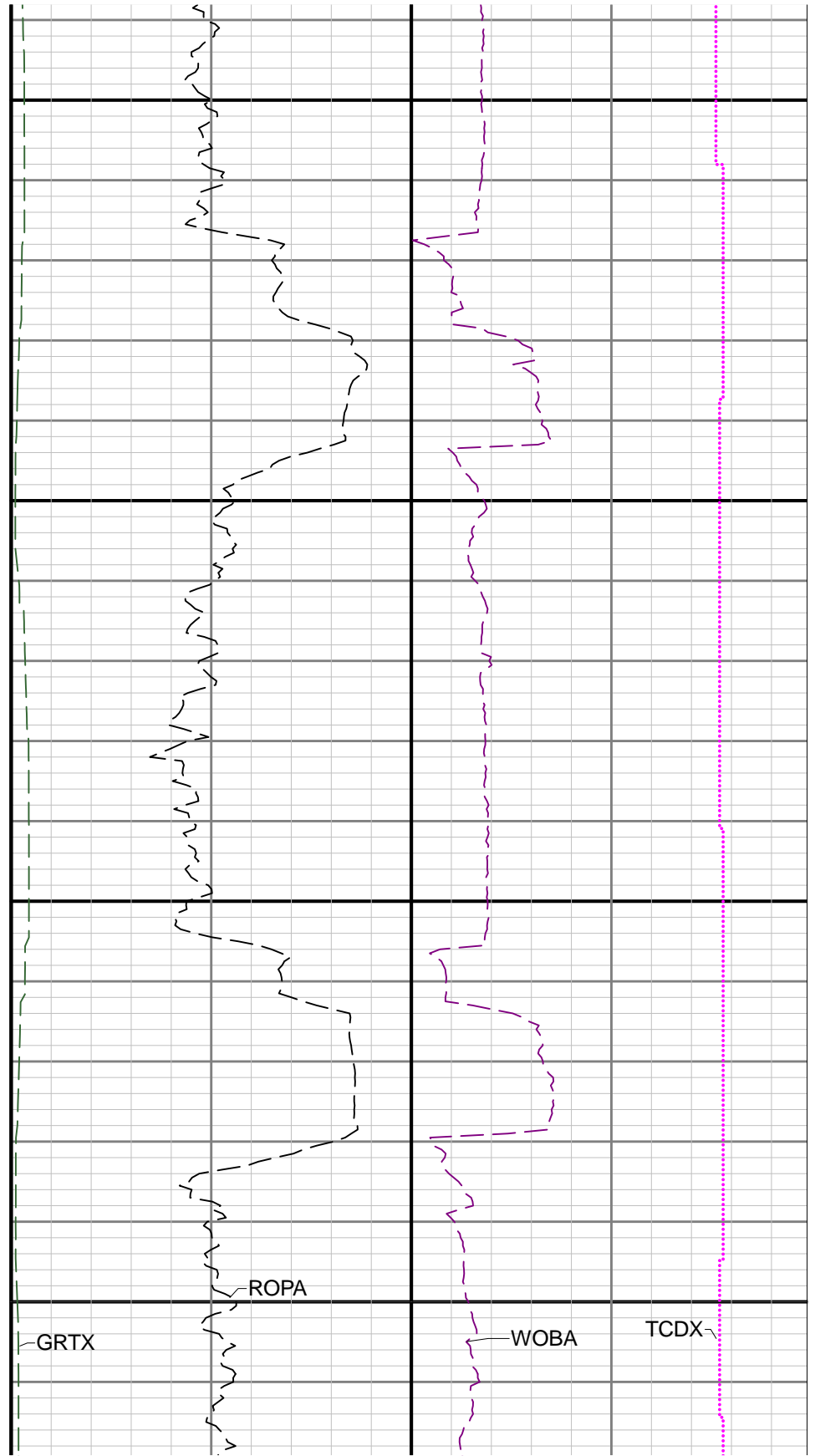
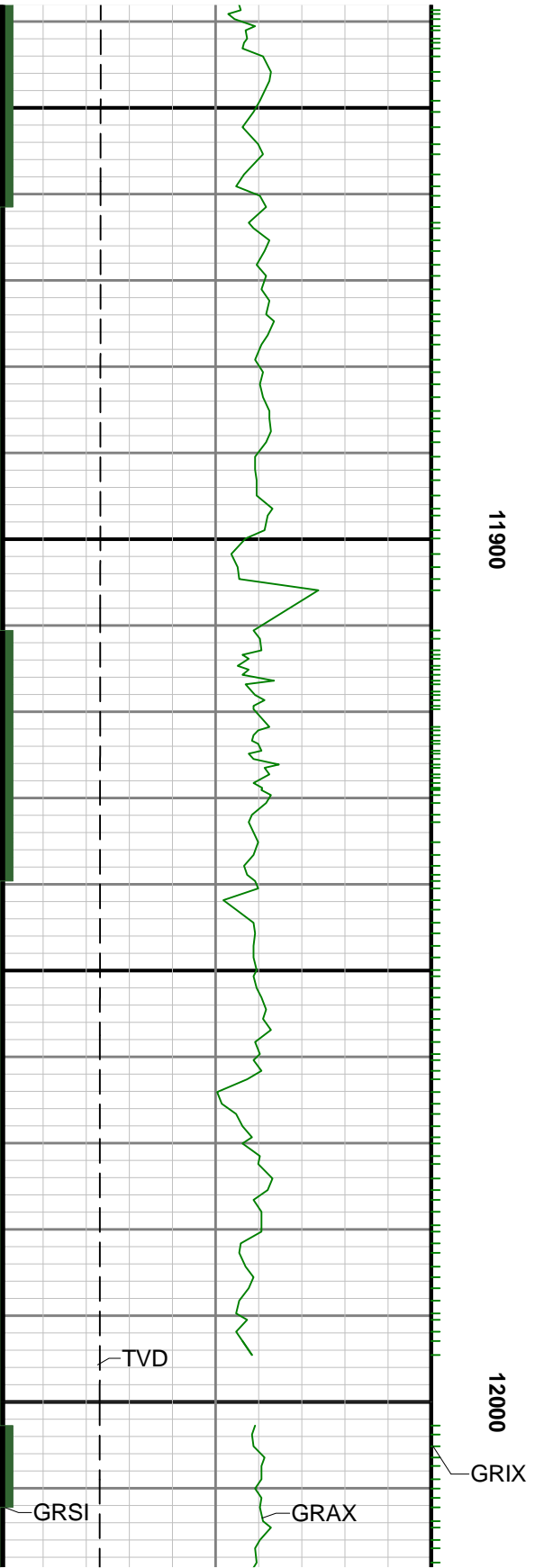
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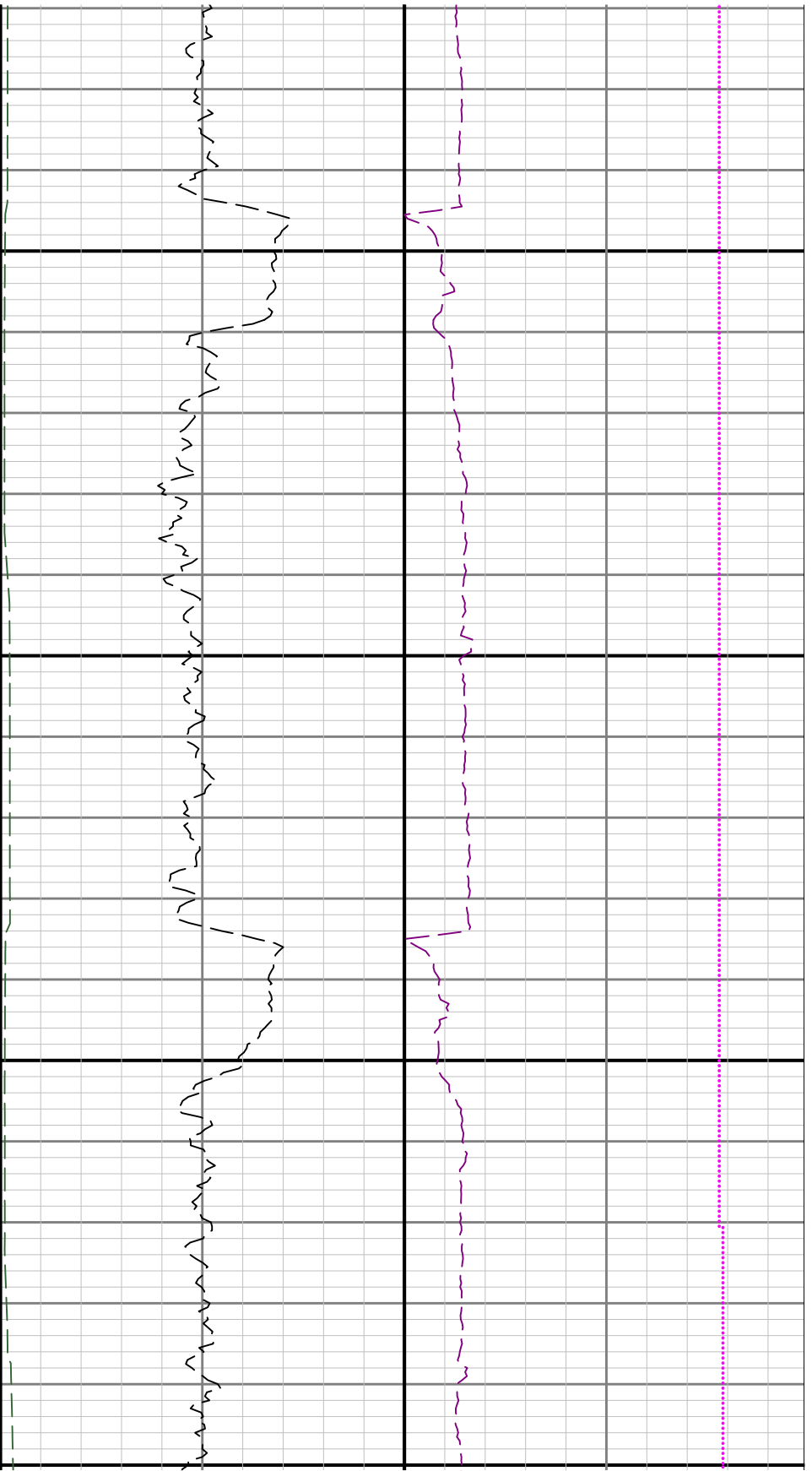
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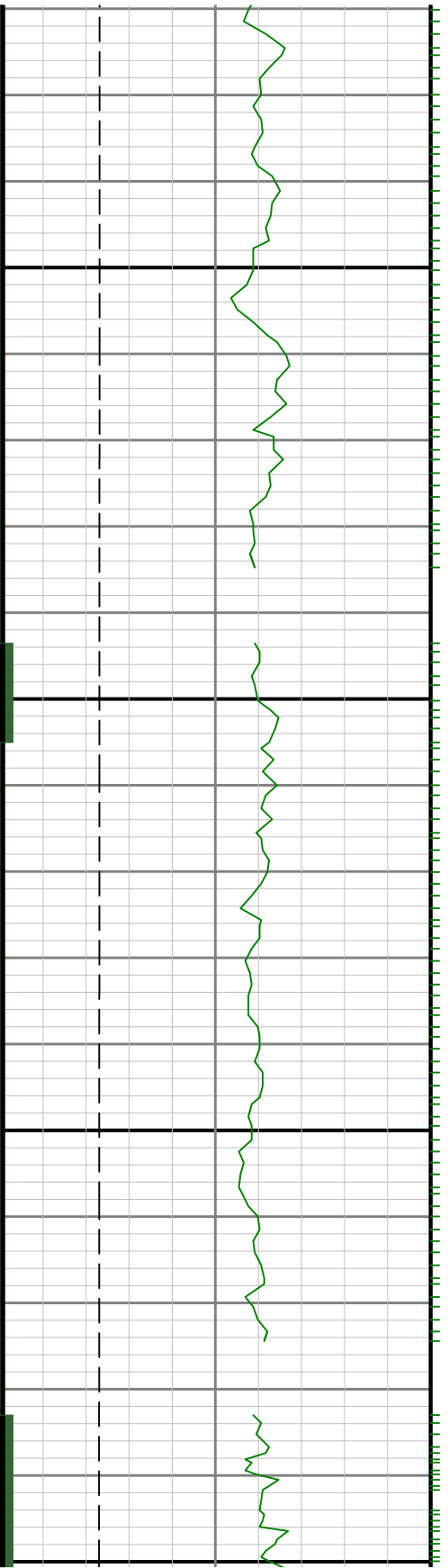


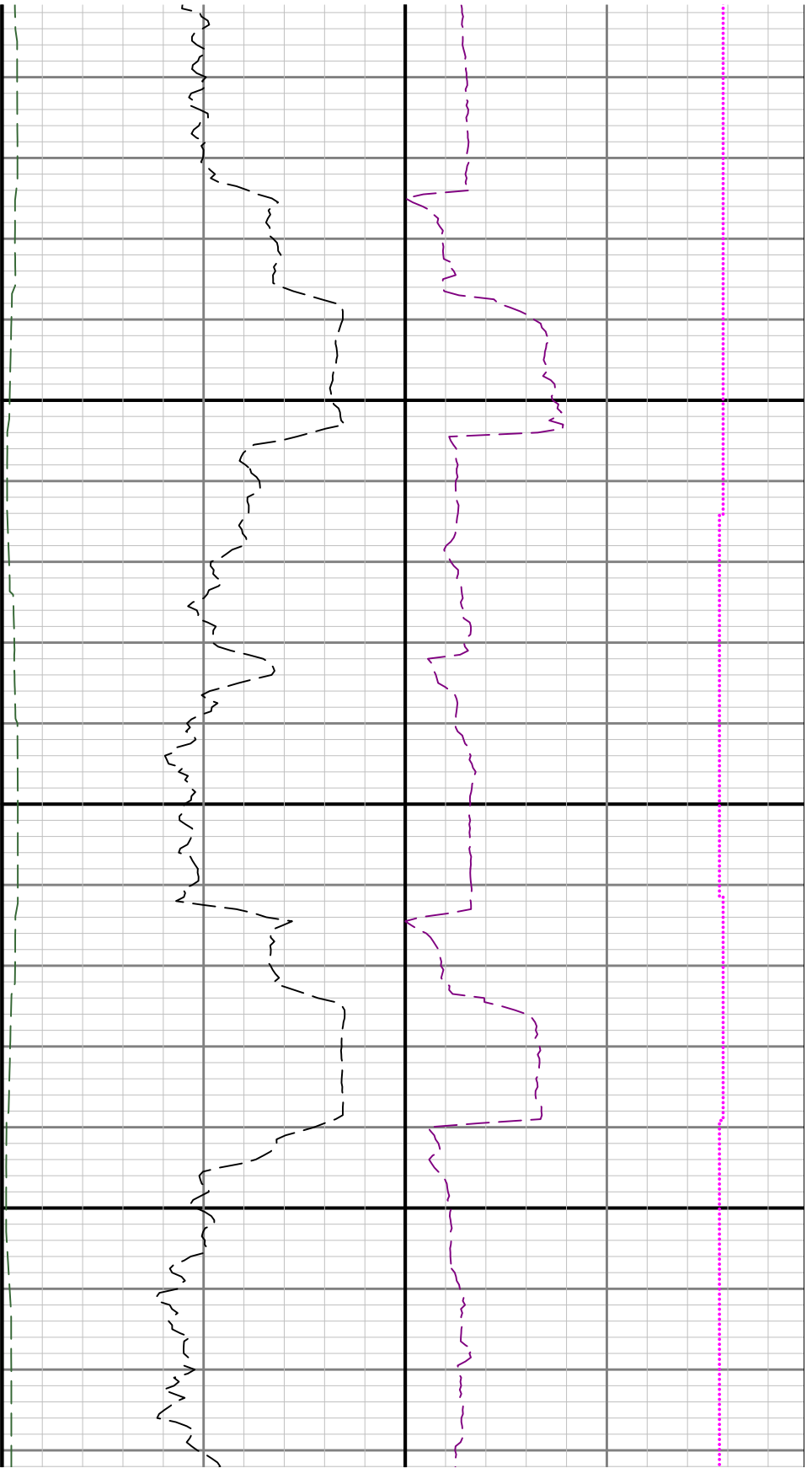




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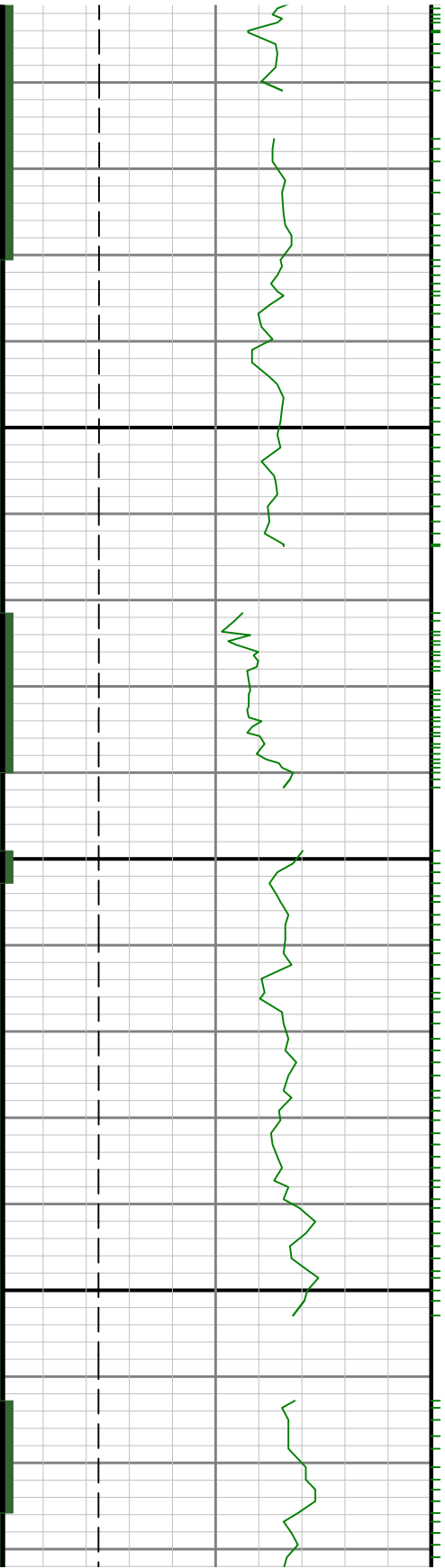
122





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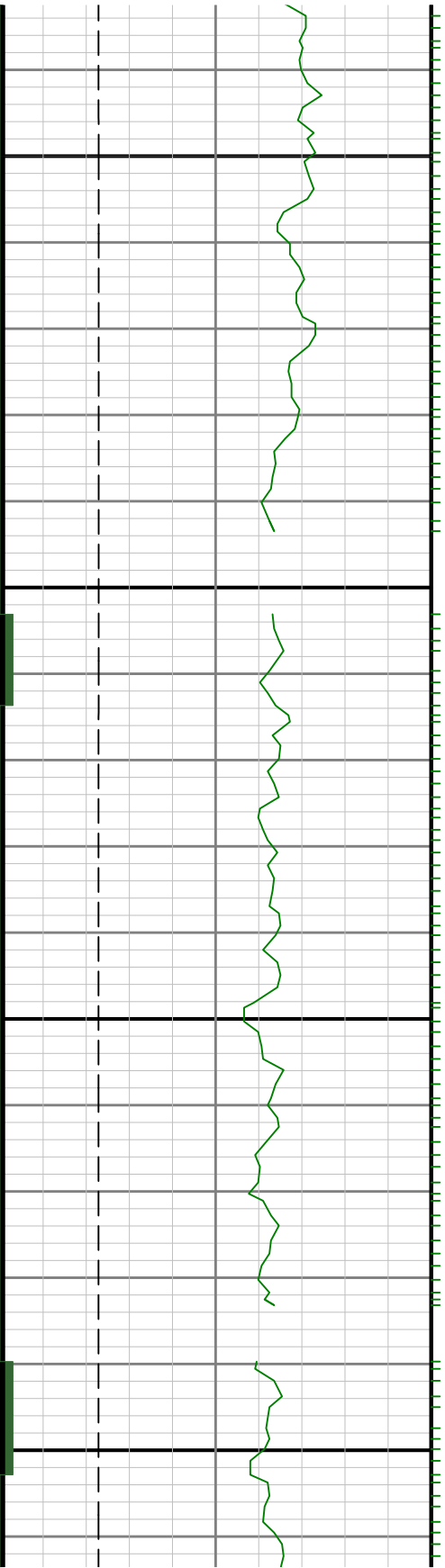
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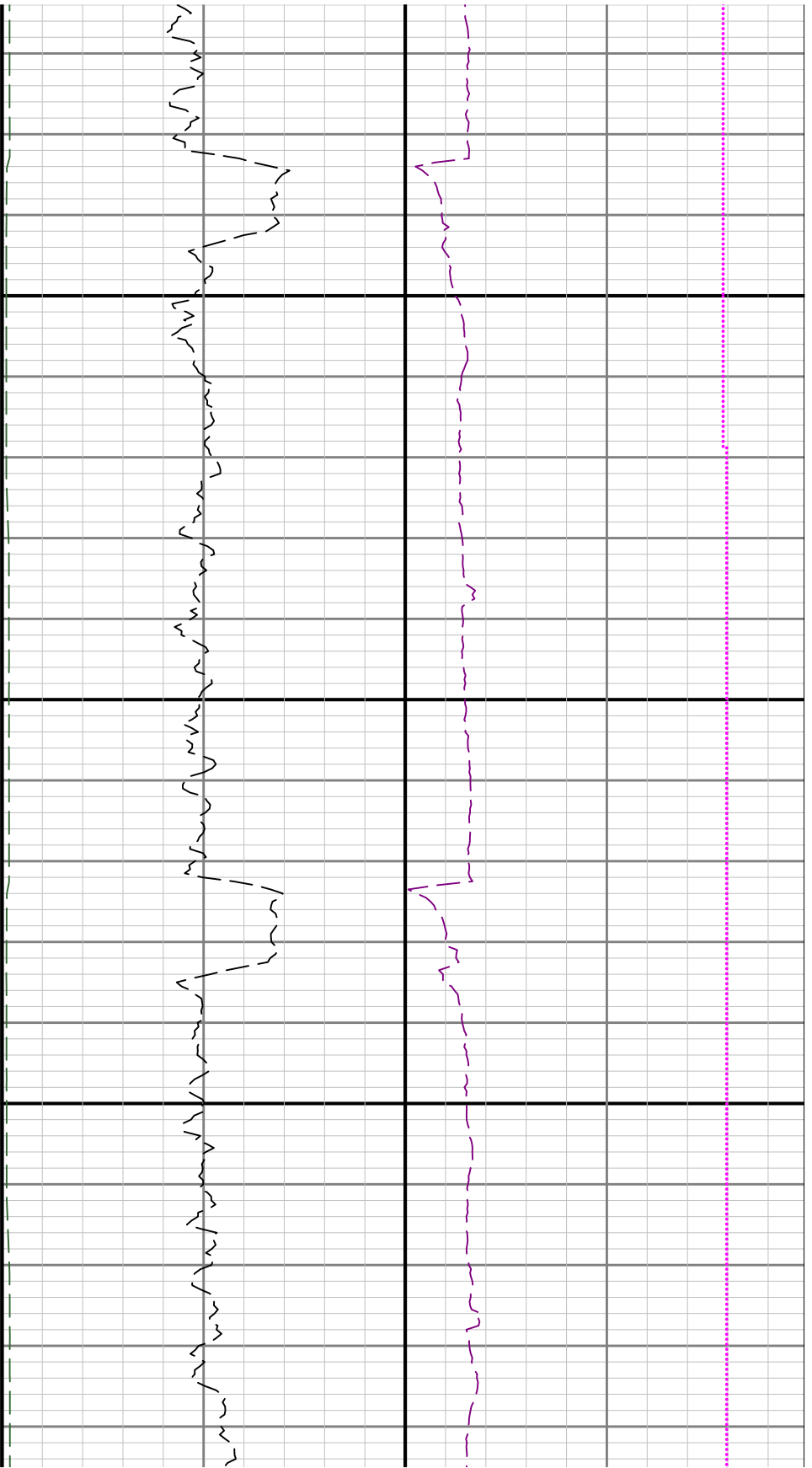




12400

12500





12600

12700

