



REALTIME LOG

Gamma Ray

Scale: Company: Anadarko

1:240 MD Well: Robin 9-8HZ

Depth Reference: Field: Wattenburg

Driller's Depth County: Weld Country: United States

State: Colorado

Status: Surface Location: Other Services:

Final Print

Latitude: Longitude: Directional

API No: 05123451560000 SEC: 9 TWN: 1N RGE: 65W

Job ID: 8814347

Permanent Datum (P.D.): Ground Level Elevation: 4930.00 ft Elev. KB: N/A

Log Measured From: Rig Floor Above P.D. 17.00 ft Elev. DF: 4947.00 ft

Elev. GL: 4930.00 ft

Dates Interval Logged Magnetic Field Reference

Date From: 2017-11-26 Top: (ft) 6400.00 Azi Reference North: True Dip Angle: (deg) 66.40

Date To: 2017-11-30 Bottom: (ft) 18216.00 Total Magnetic Field Strength: (nT) 52346

Spud Date: 2017-11-26 Mag to Reference North Correction: (deg) 7.89 E

Borehole Record

Casing Record

Hole Size (in) From (ft) To (ft) Size (in) Weight (lb/ft) From (ft) To (ft)

13.500 17.00 1849.00 9.875 25.00 17.00 1838.00

7.875 1849.00 18257.00

Mud Record

Deviation Record

Type From (ft) To (ft) Hole Size (in) Interval (ft) Inc | Az (Start) Inc | Az (End)

Diesel-Oil Based Mud 1849.00 18257.00 7.875 16408.00 16.69 | 284.37 90.71 | 178.75

N/A N/A N/A

Acquisition System Software Version

Other

Baker Hughes Cadence

RT4.1

PlotStudio 4.1.7763.3

Rig: XTreme 22

Contractor: Extreme Drilling

District: RMD

Unit: D & E

©"4239"Dcmgt"Jwiijgu."c"IG"eqorcp{."NNE"ó"Cnn"tkijvu"tgugtngxgf0"Dcmgt"Jwiijgu."c"IG"eqorcp{."NNE"cpf"kvu"chhknkcvgu"~0DJIGö+~rtqxkfgu"vjku"kphqtocvkqp"qp"cp"ôcu"kuö"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.

Log Run Summary

Run No	Bit Run No	Bit Size	Bit Type	Bit Gauge Length	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours
						Top	Bottom	From	To	Start Logging	End Logging	

No.		(in)		Length (in)		(ft)	(ft)	(ft)	(ft)			(h)
1	1	7.875	PDC	2.00	Steerable	6400.00	18216.00	1849.00	18257.00	2017-11-26 13:55	2017-11-30 05:39	76.77

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Teni Onafowokan	2017-11-26	2017-11-30	Will Roth	2017-11-26	2017-11-30			

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+ (%)
2017-11-25 03:14	1	1849.00	Diesel-Oil Based Mud	9.2	19	N/A	0.0	74.2/25.8	Active Pit	36000	0.00
2017-11-26 19:00	1	3450.00	Diesel-Oil Based Mud	9.1	19	N/A	N/A	71.1/28.9	Active Pit	37000	0.00
2017-11-27 19:36	1	8665.00	Diesel-Oil Based Mud	9.0	18	N/A	N/A	66.5/33.5	Active Pit	39000	0.00
2017-11-29 19:58	1	16740.00	Diesel-Oil Based Mud	9.2	17	N/A	N/A	67/33	Active Pit	36000	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	12527585	Gamma (single)	10.55	40.98	6.500	3.250
1	NaviGamma	12546336	Directional (mag)	13.97	44.40	6.500	3.250
1	NaviGamma	13065785	VSS	13.97	44.40	6.500	3.250

Service and Tool Mnemonics

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

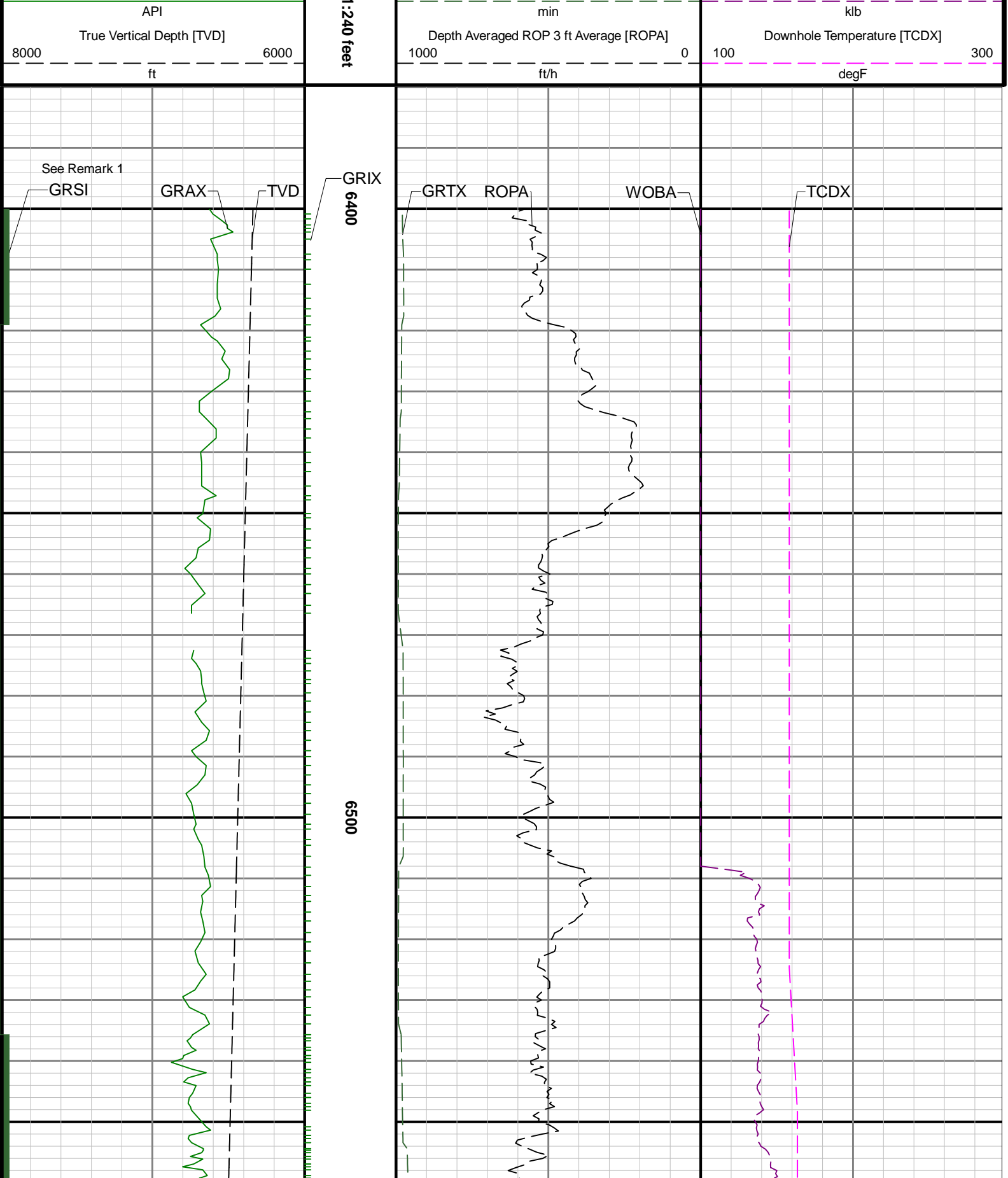
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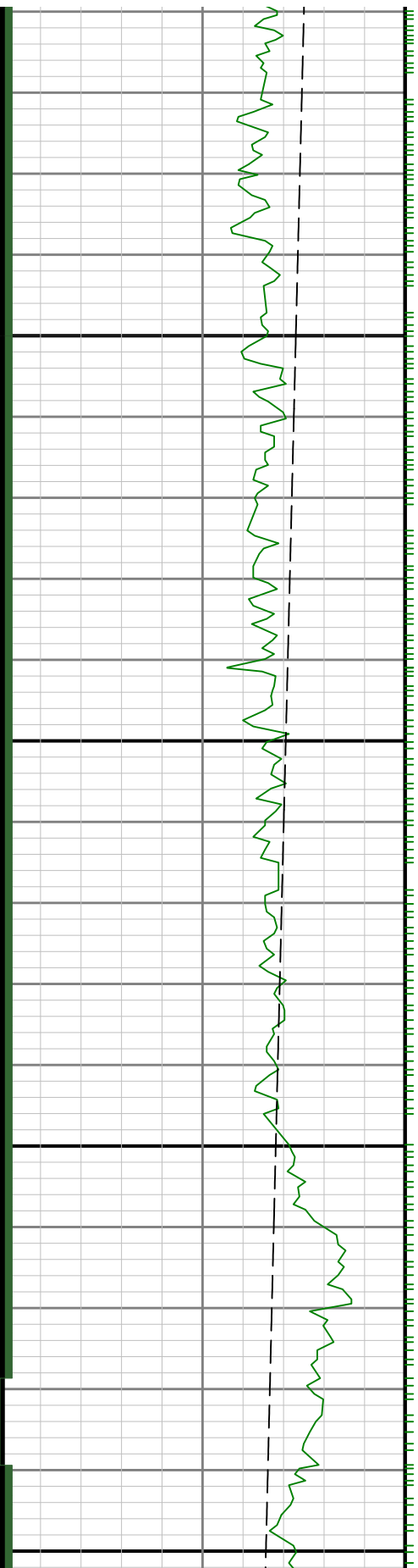
1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	A sliding indicator is shown to the left edge of track 1 as 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 NaviGamma services (Gamma Ray and Directional) behind a 7 7/8 inch bit and steerable assembly from 1849 to 18257 feet MD (1834 to 7336 feet TVD).
4	Numerous gaps are present throughout the log due to surveying while on bottom drilling ahead and intermittent tool failure.
5	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	6400.00	7.875	1	Baker Hughes logging services began 6400 feet MD (6339 feet TVD) per customer request.
2	18220.00	7.875	1	The interval from 18180 to 18257 feet MD (7336 feet TVD) was not logged due to tool not decoding while drilling ahead and sensor to bit offset at the end of Run 1.

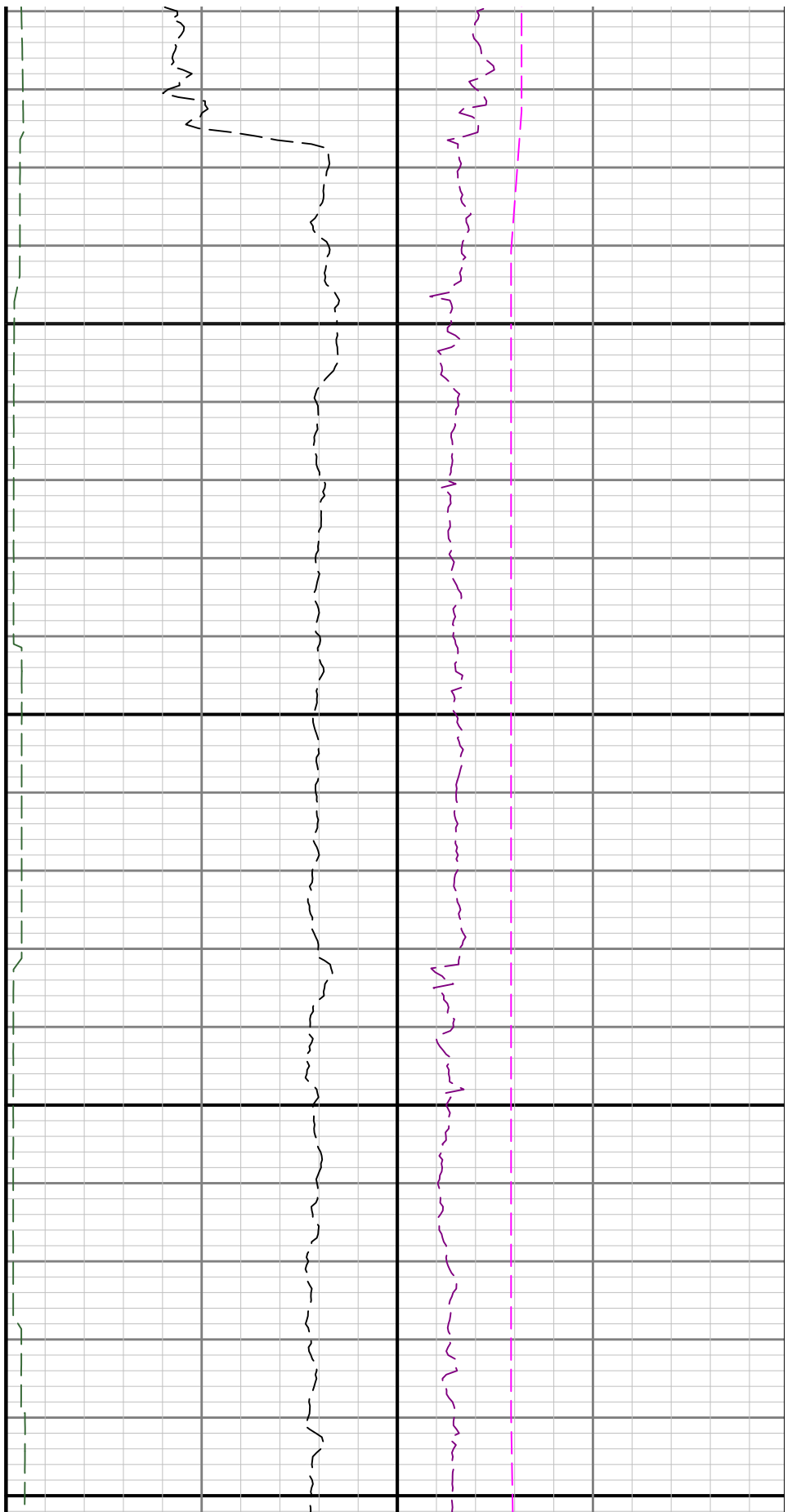
Gamma Ray - Apparent 0.5 ft Average [GRAX]	MD 1	Gamma Time Since Drilled	Weight On Bit, Average 1 ft Average [WOBA]
0200		0600	0100

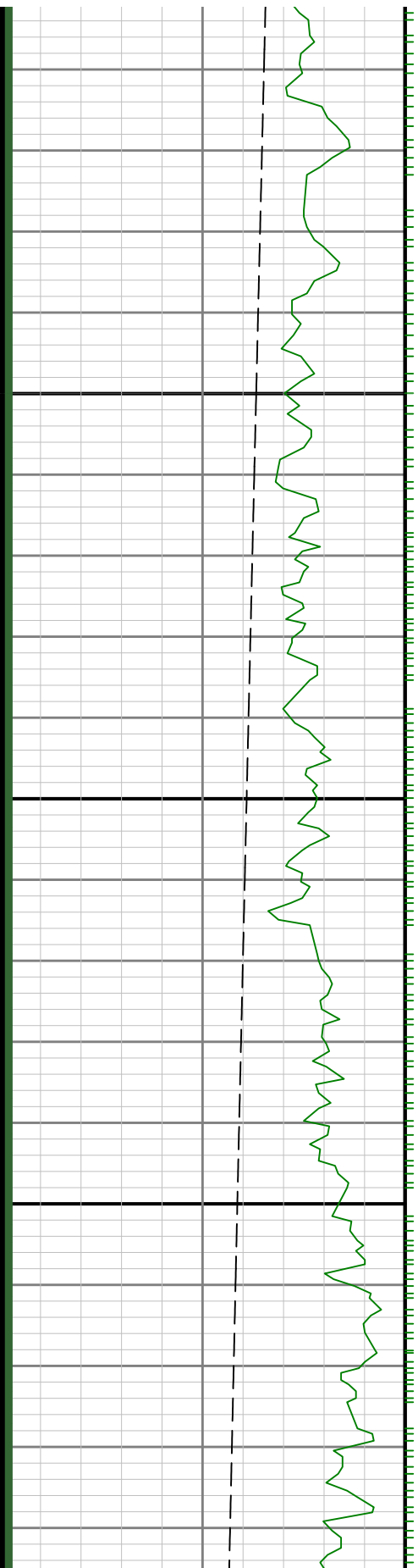




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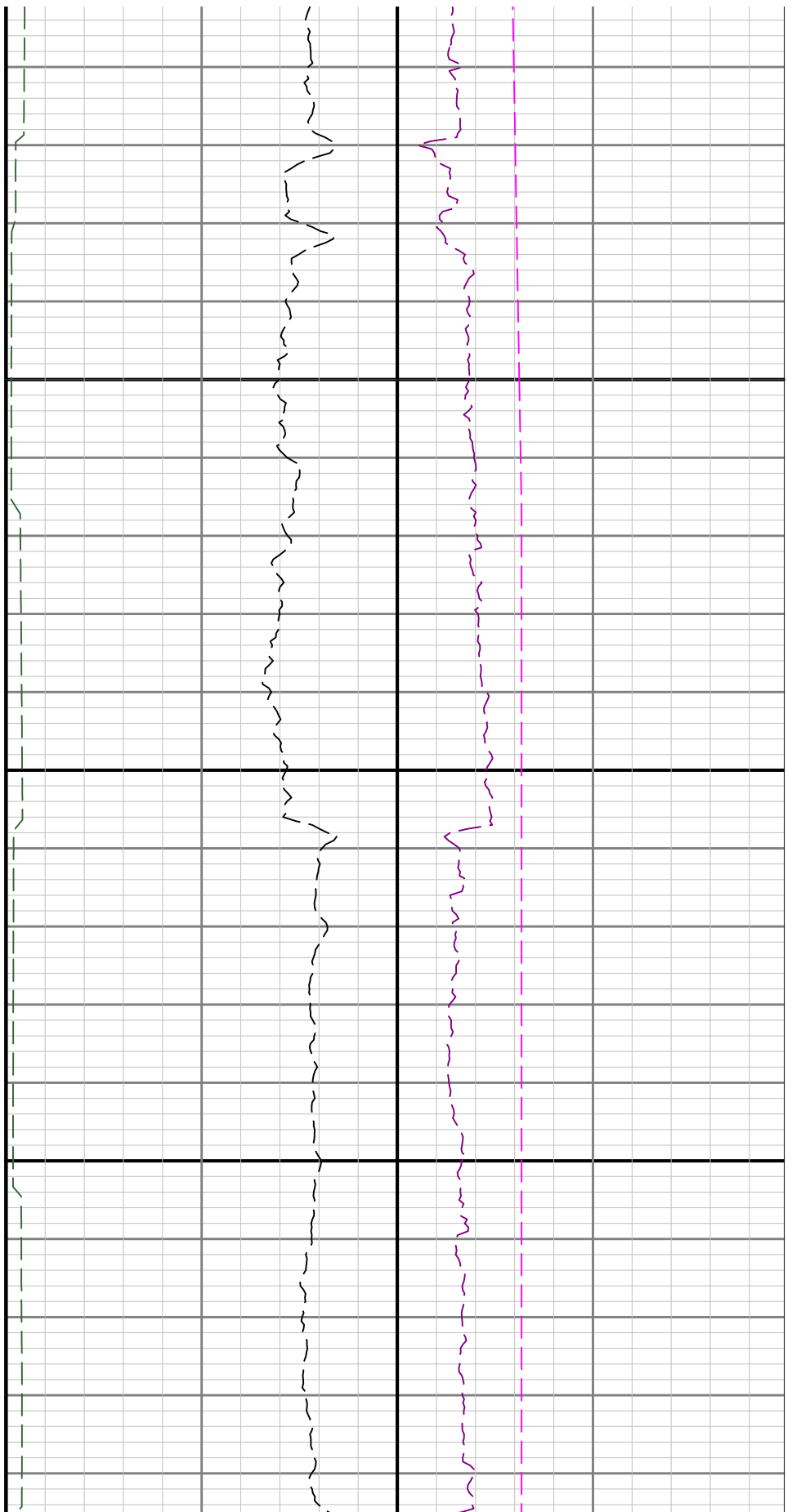
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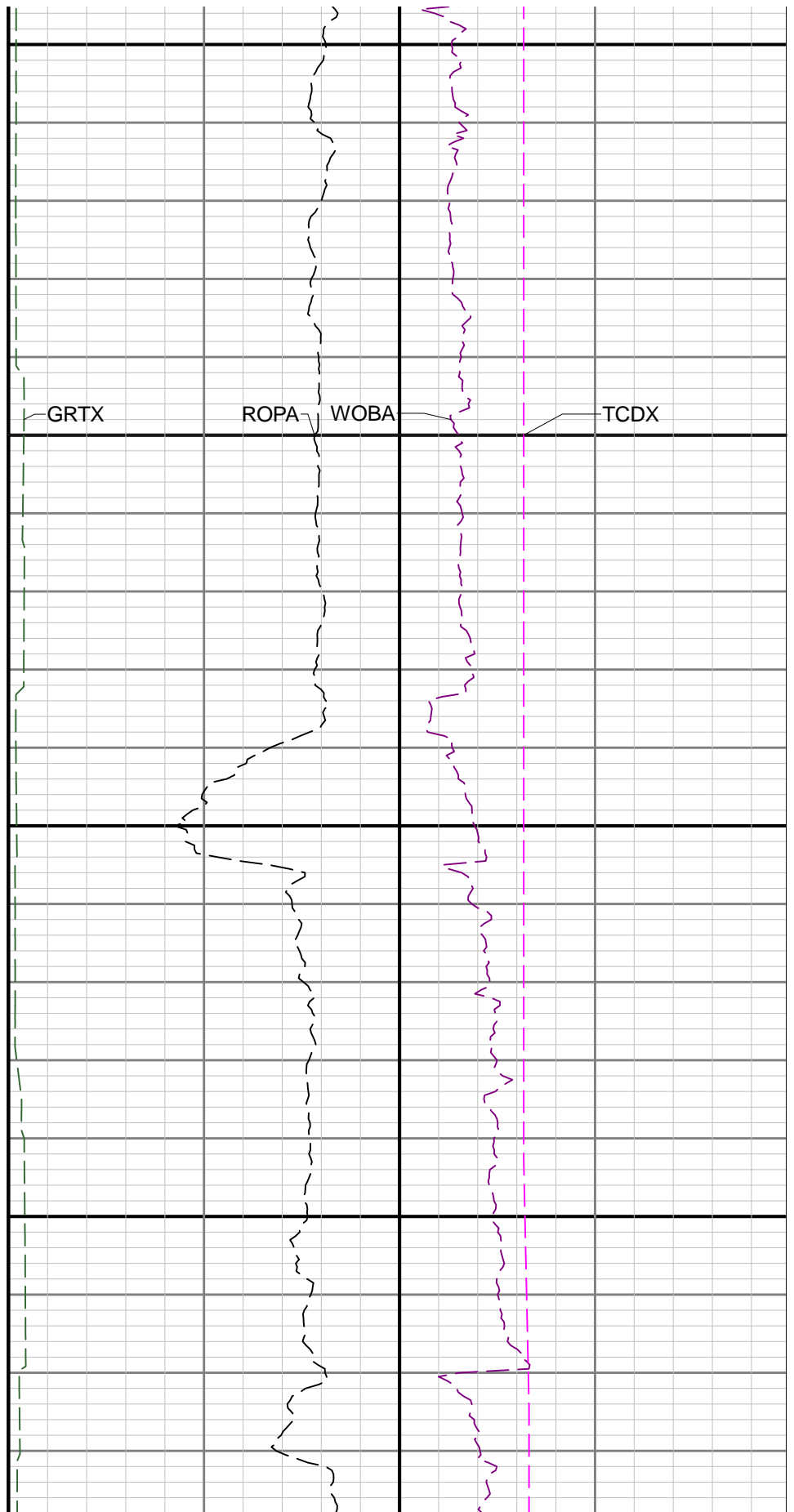
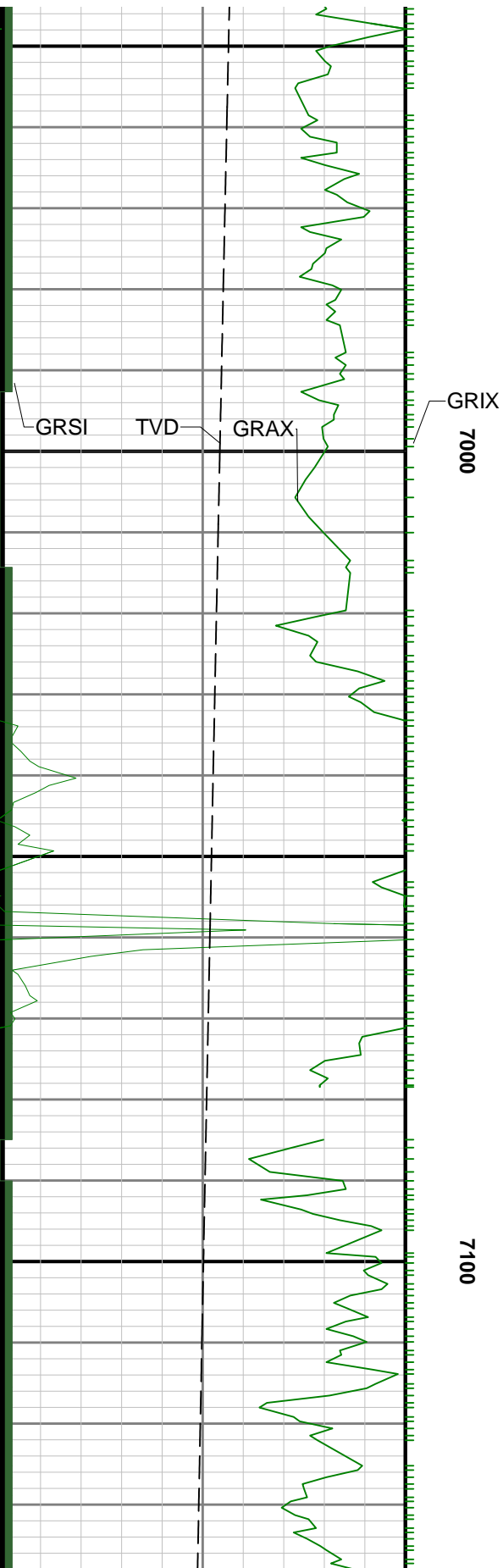


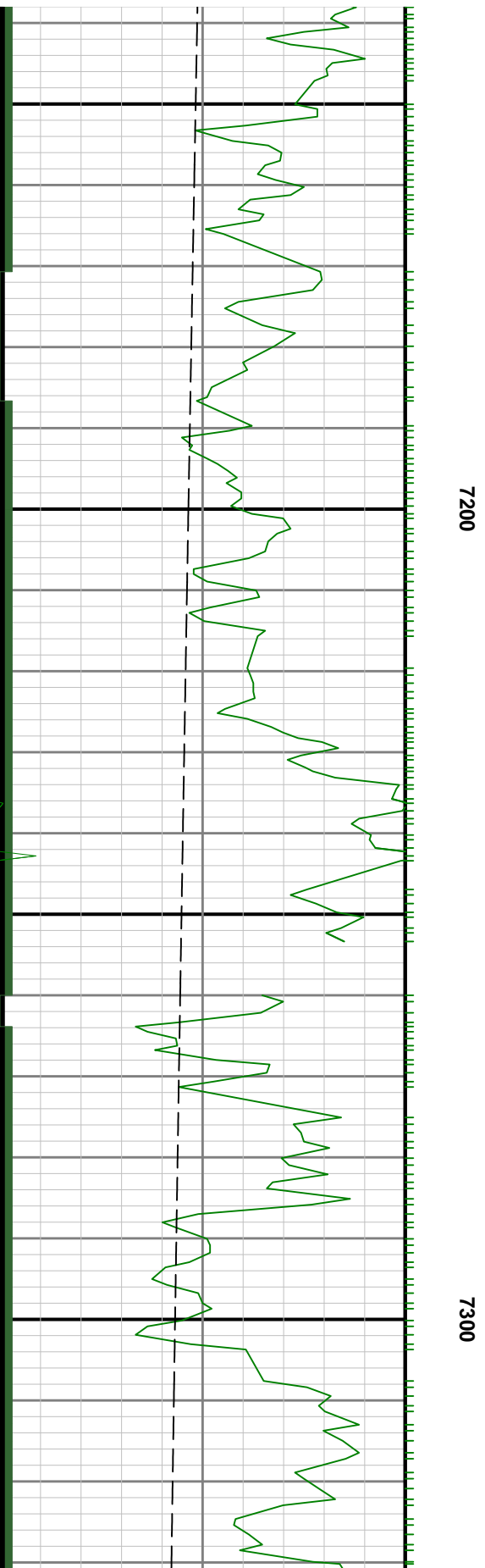
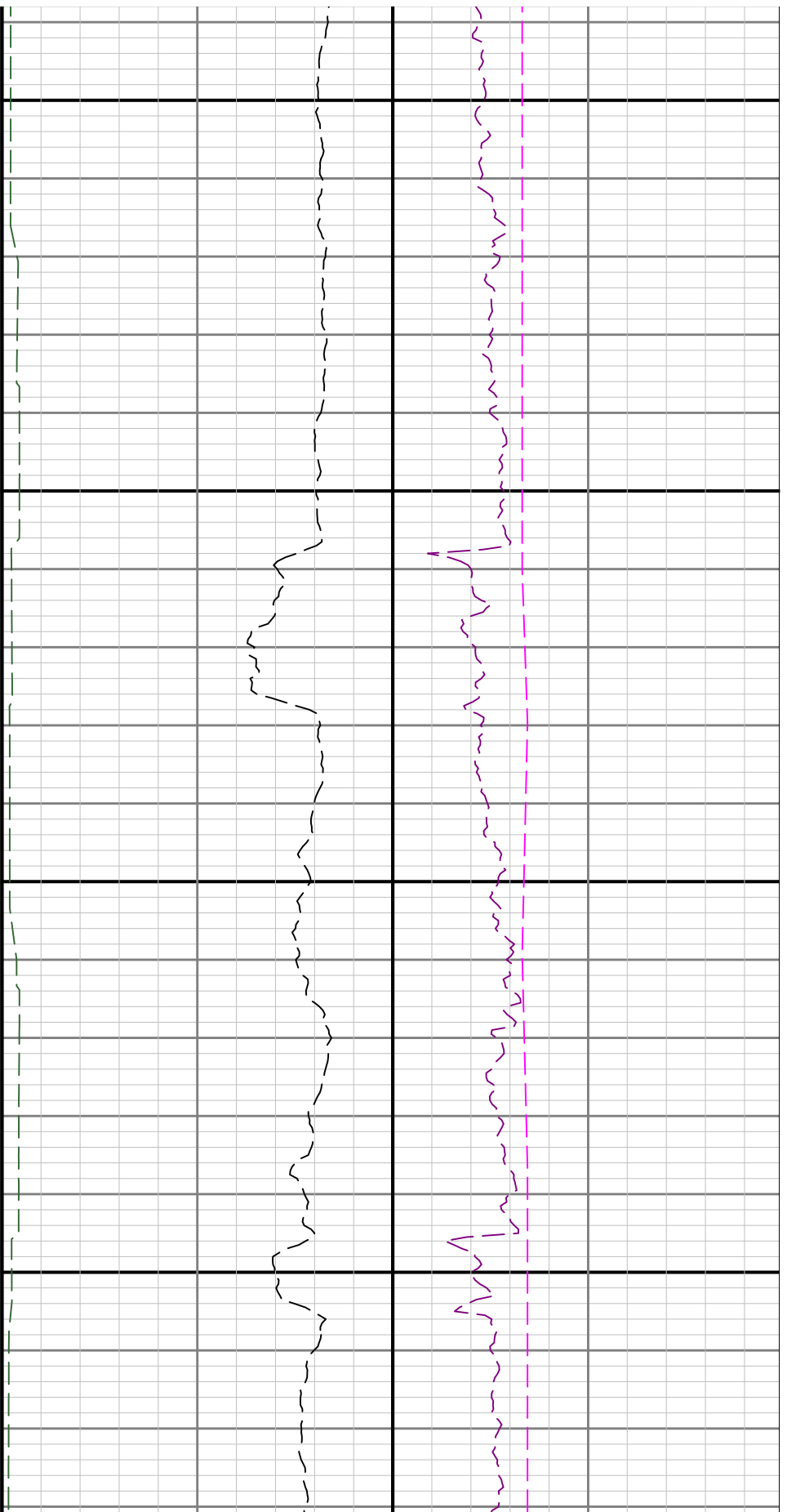


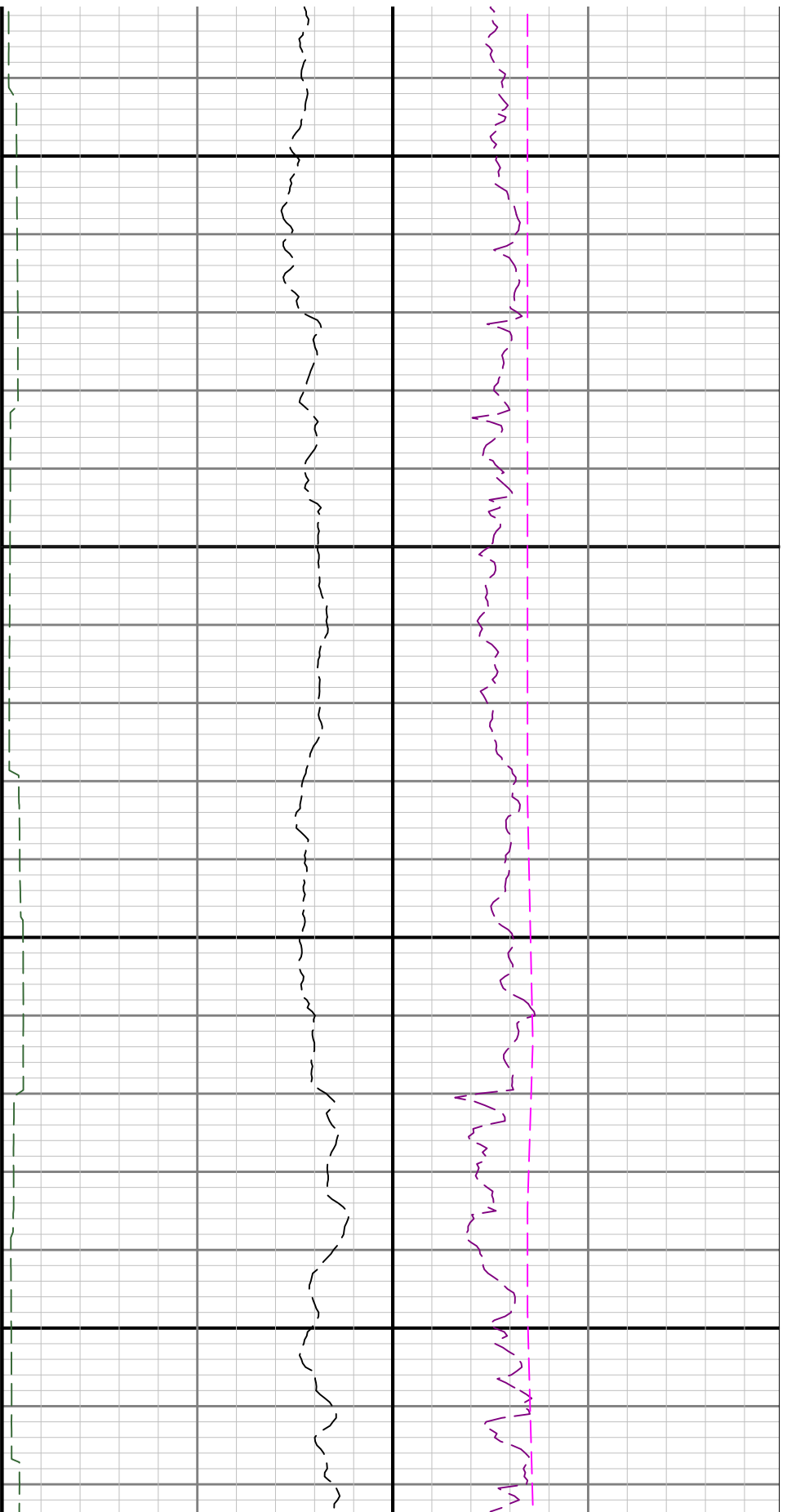
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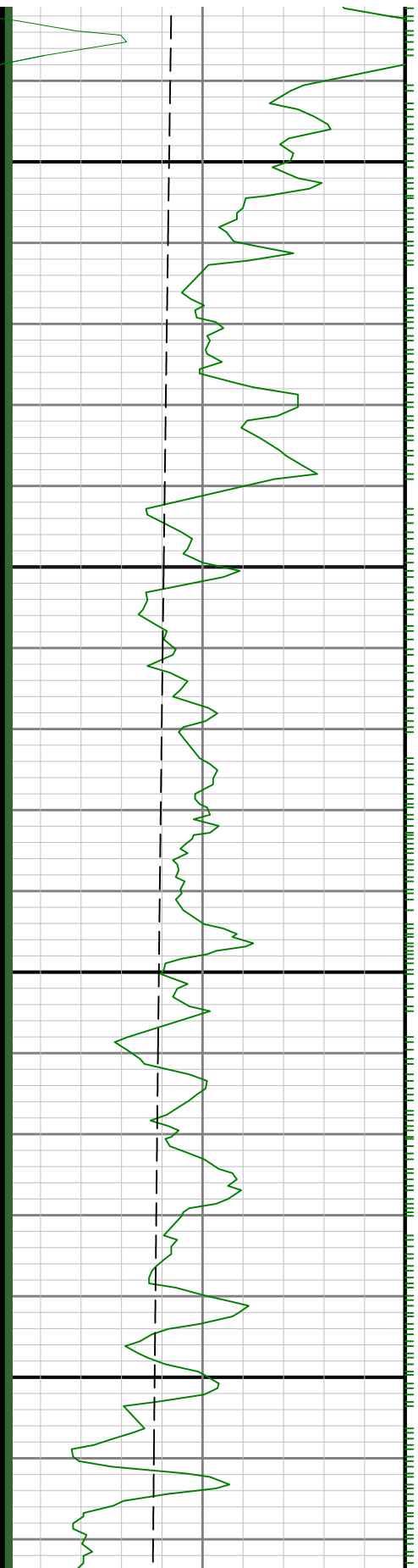


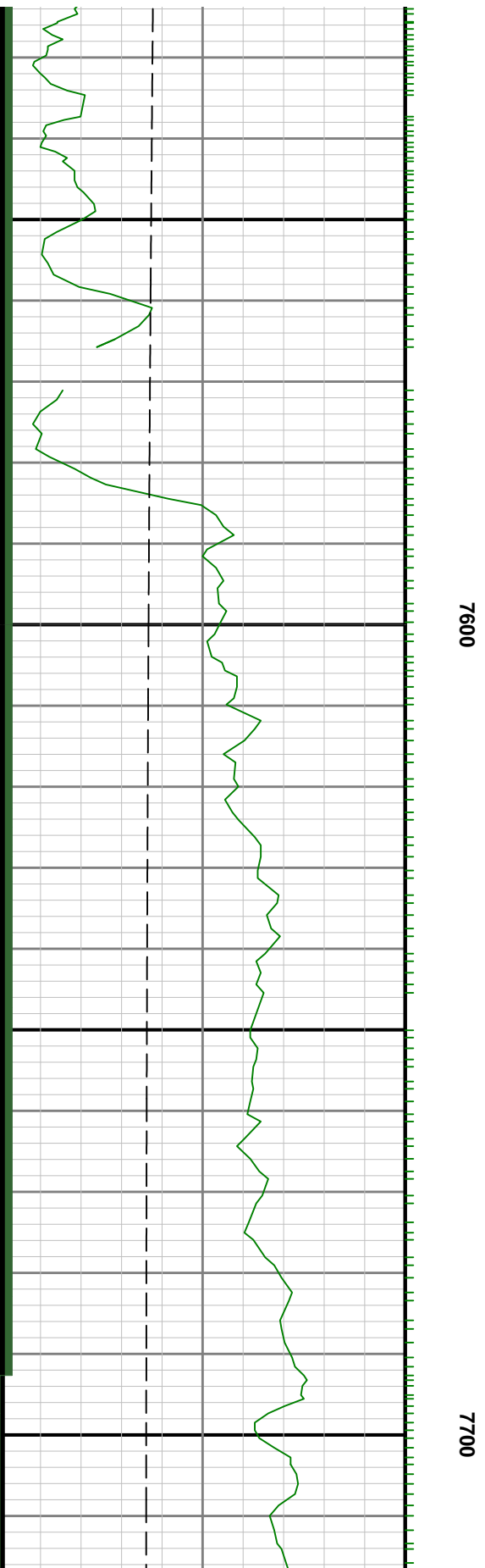
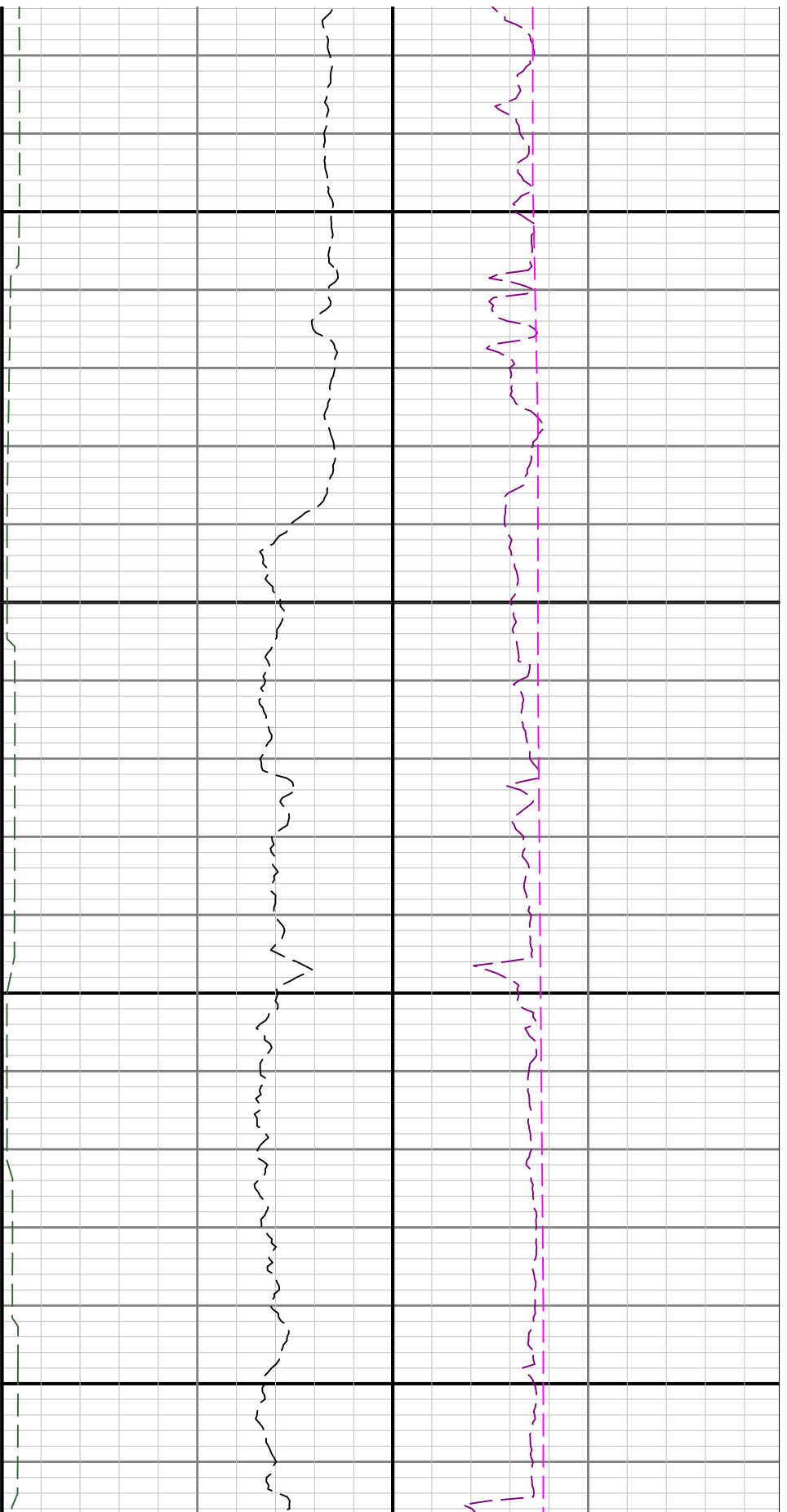


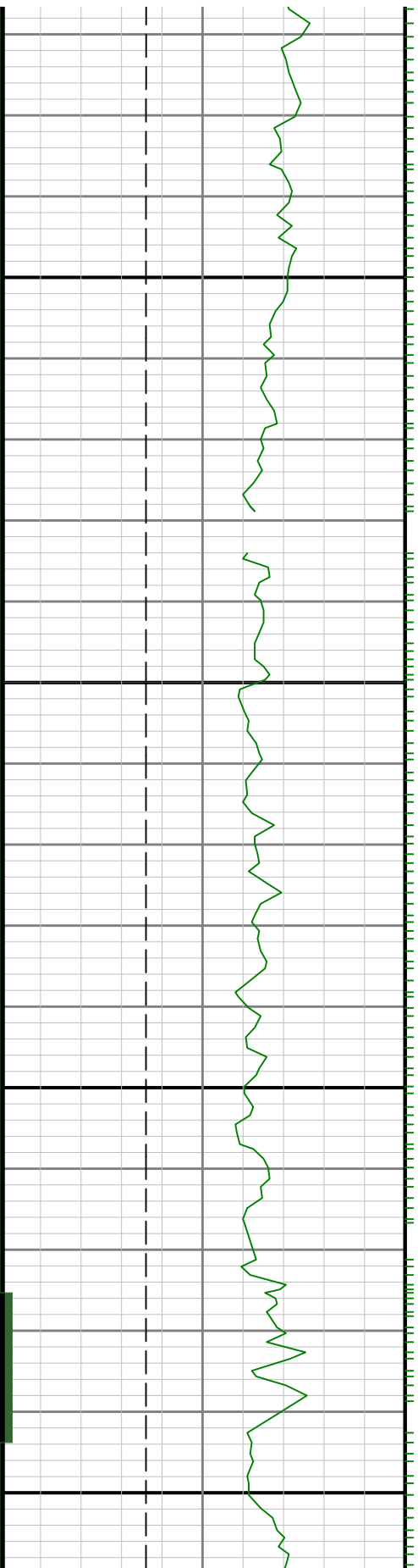


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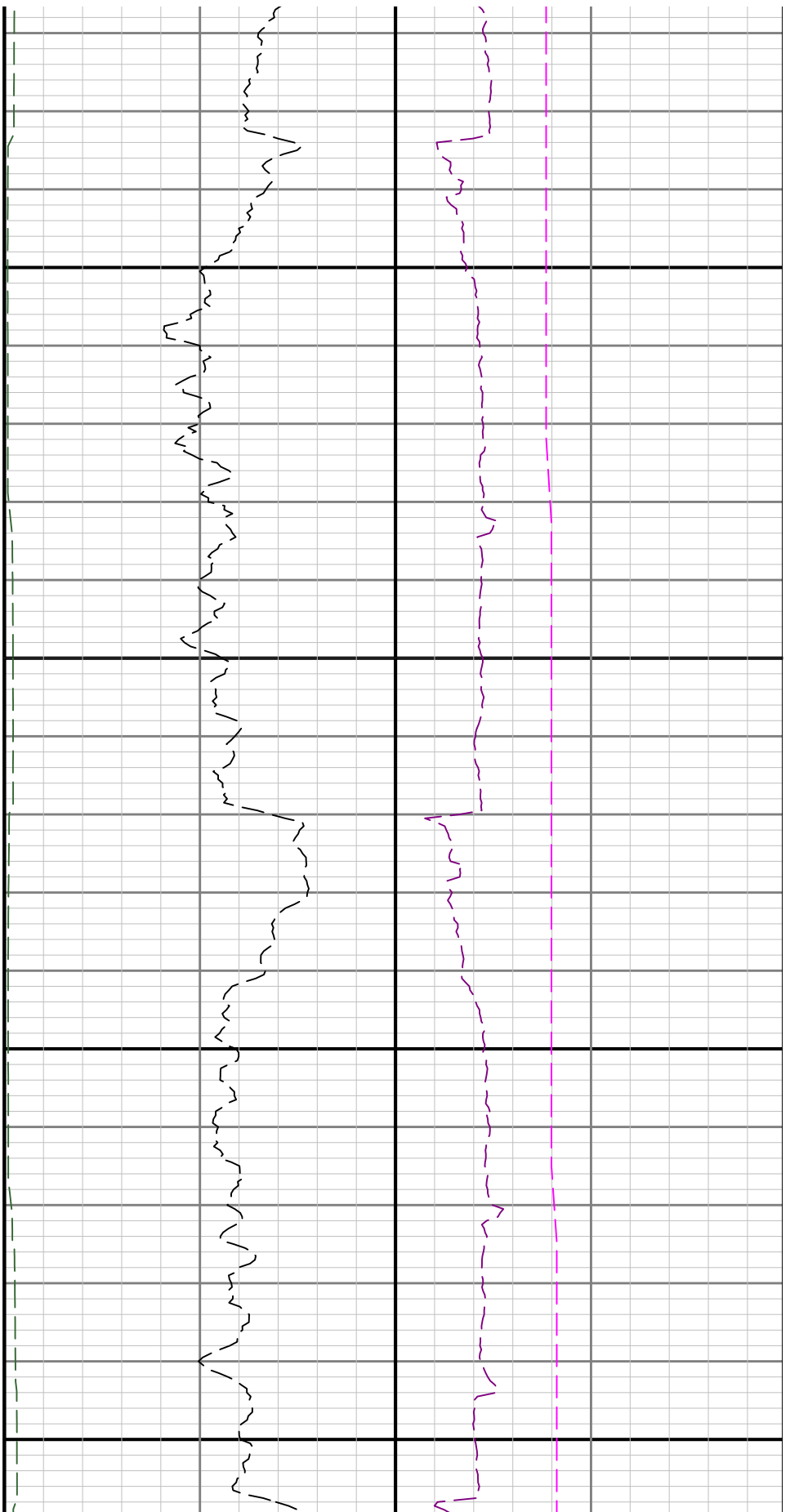


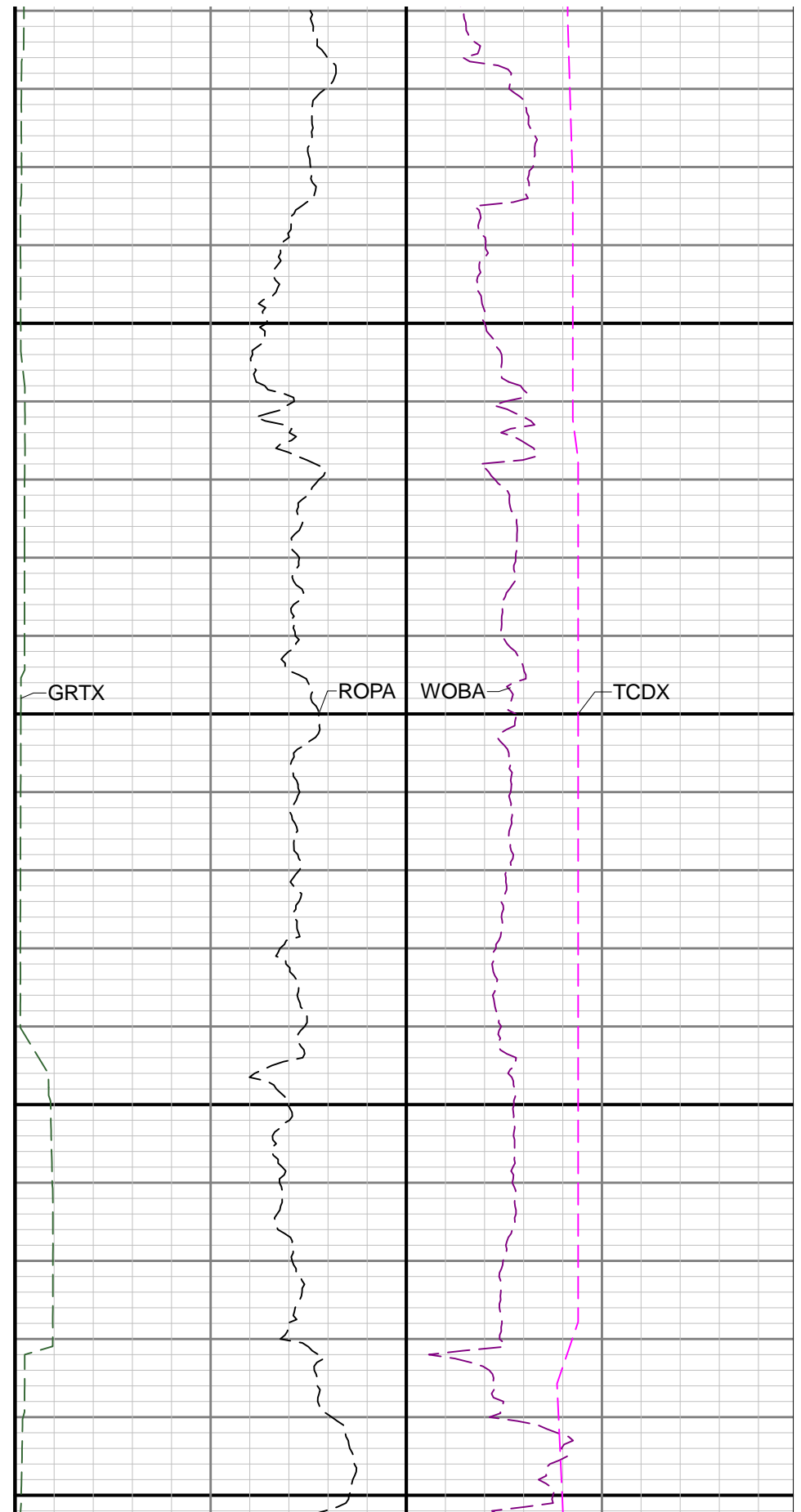
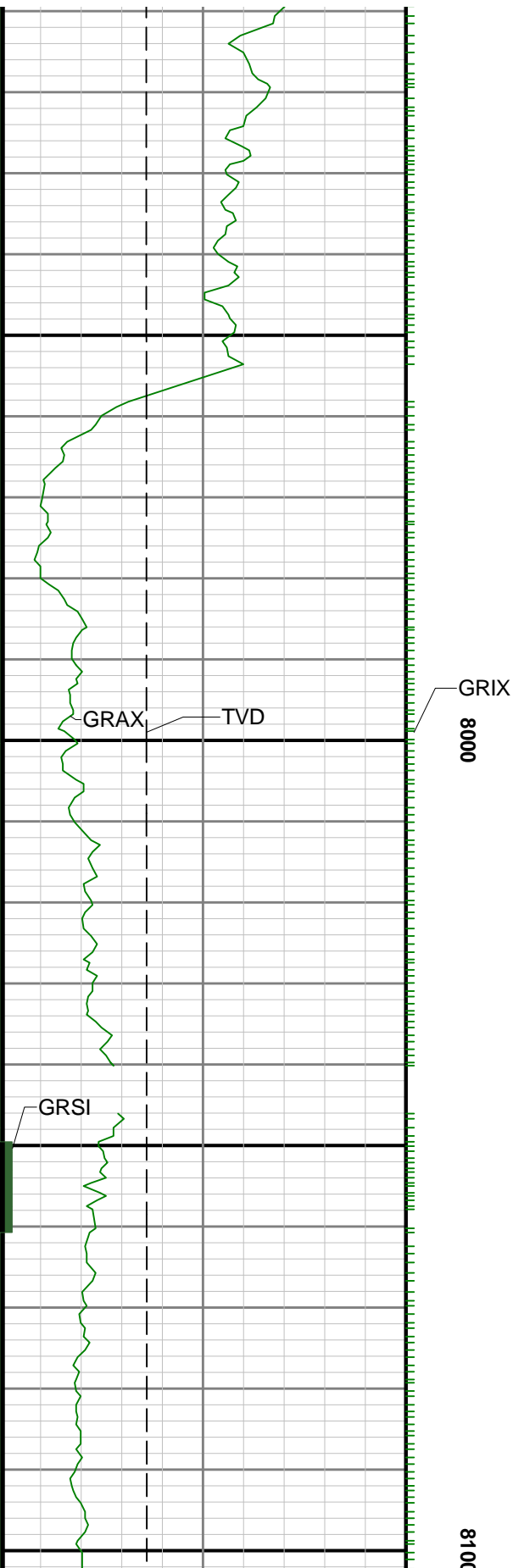


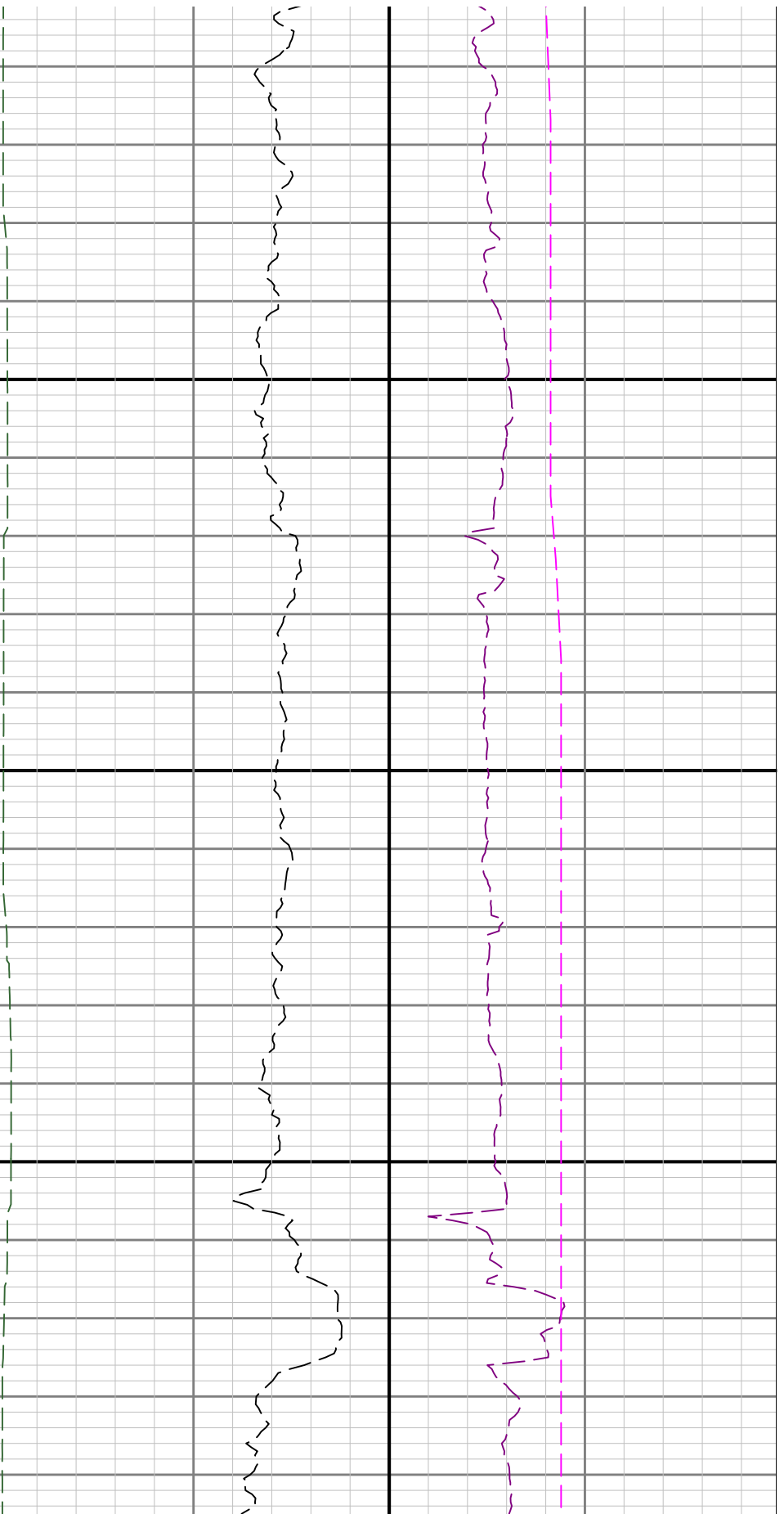


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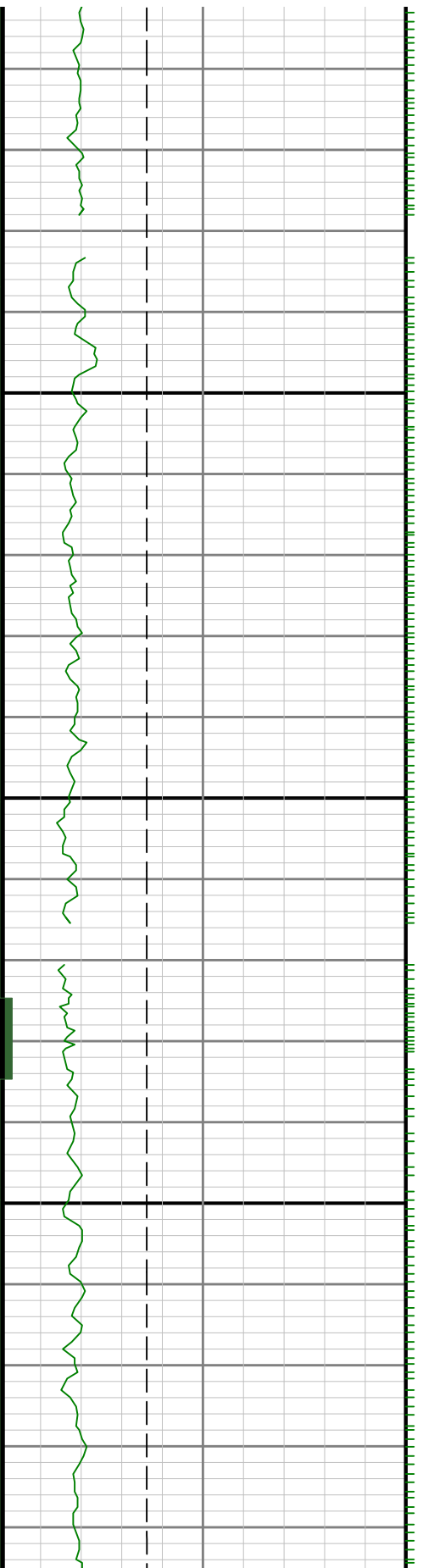
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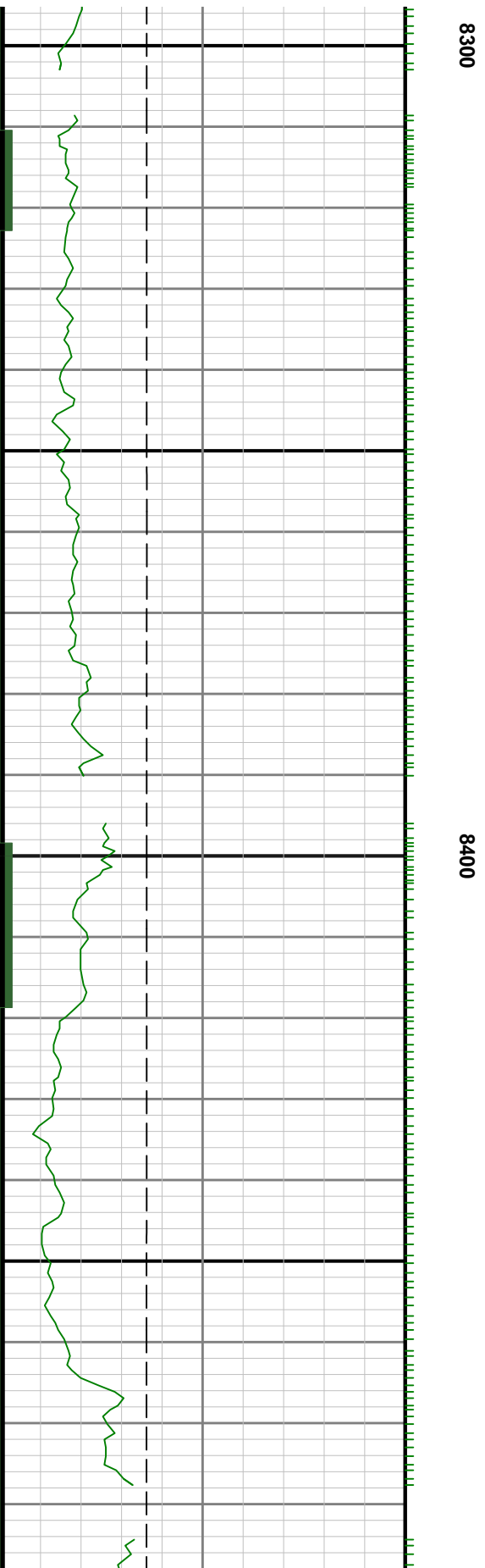
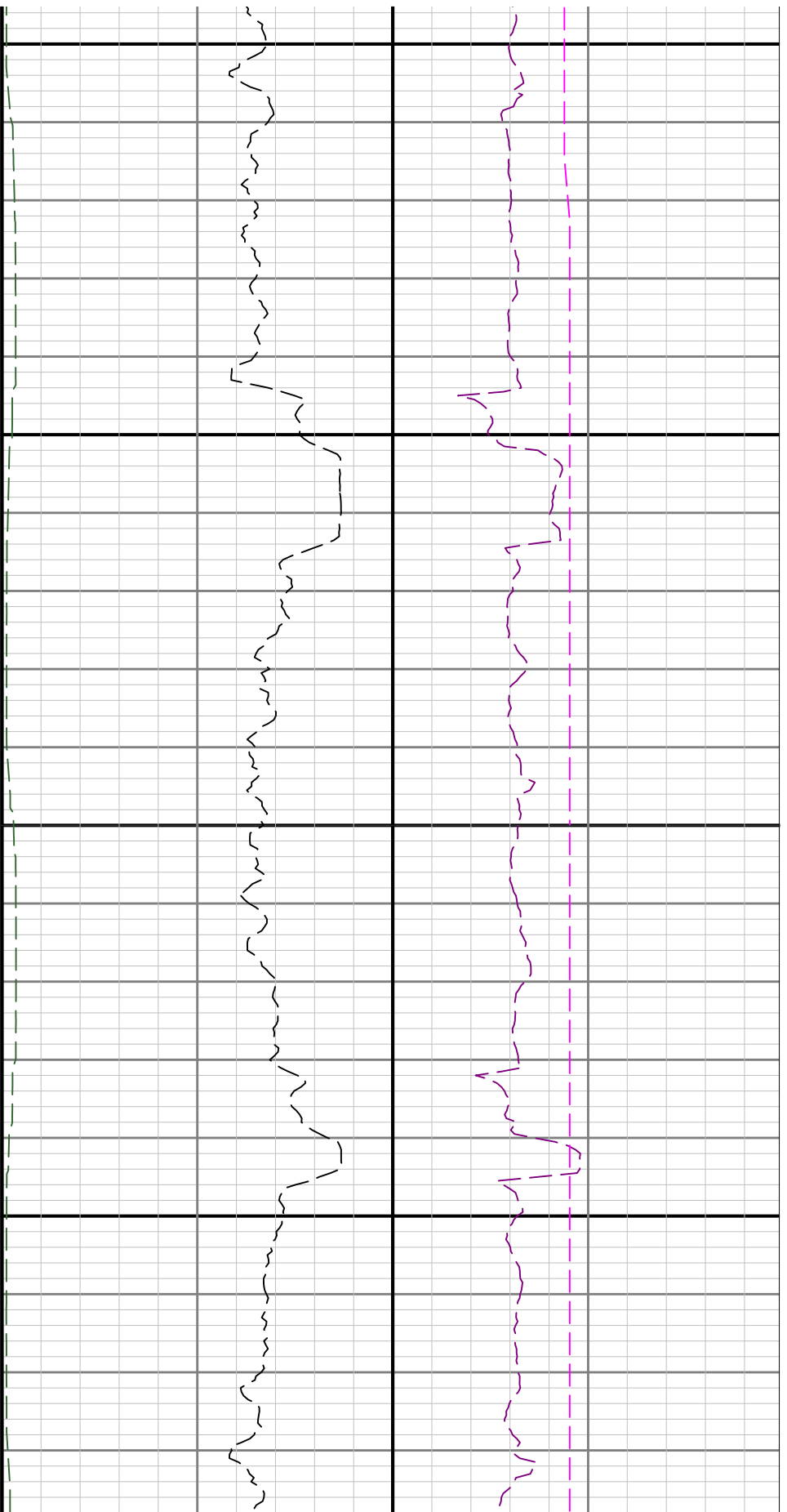


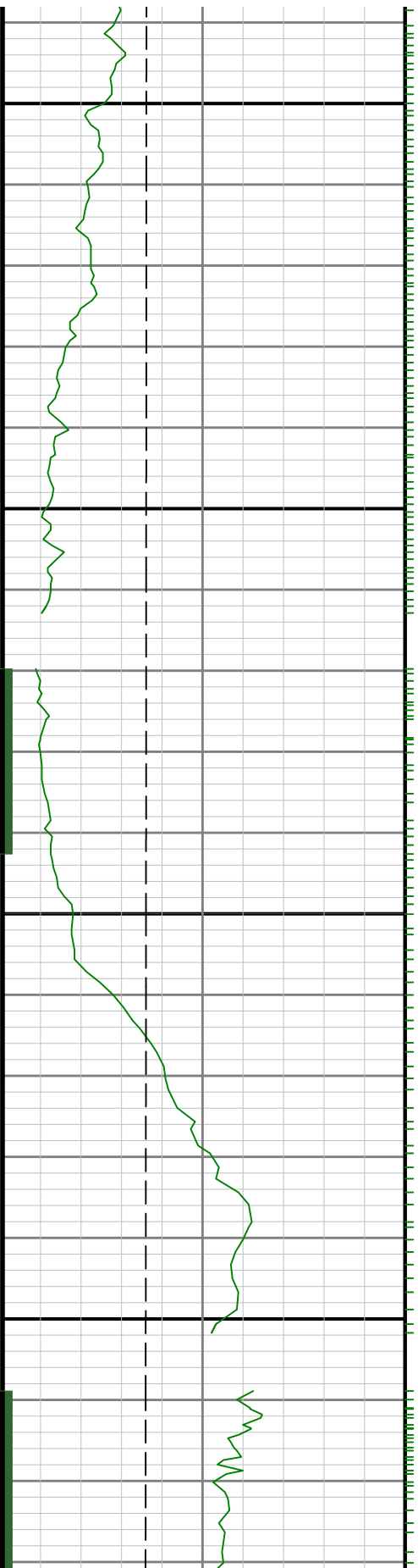




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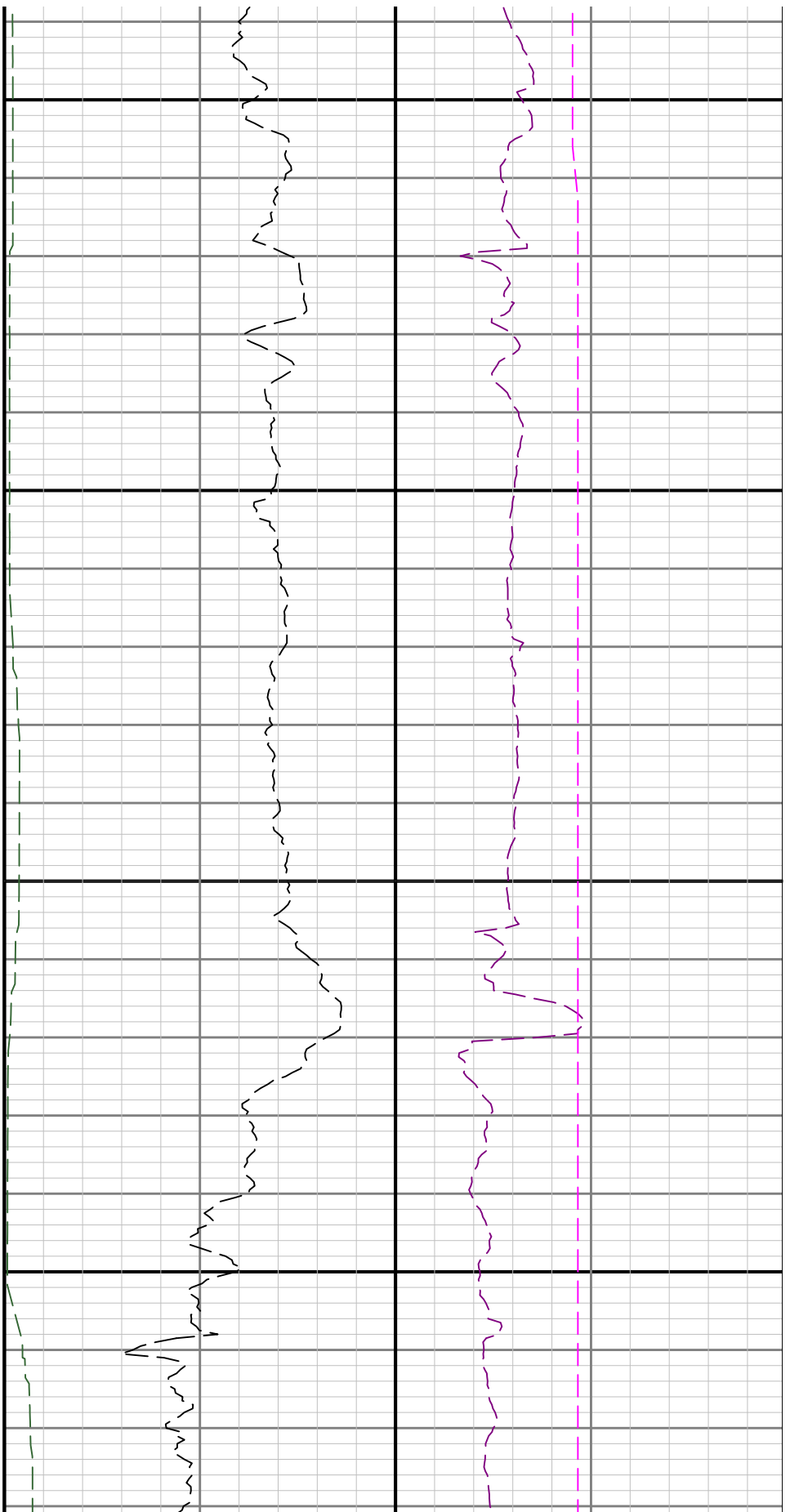


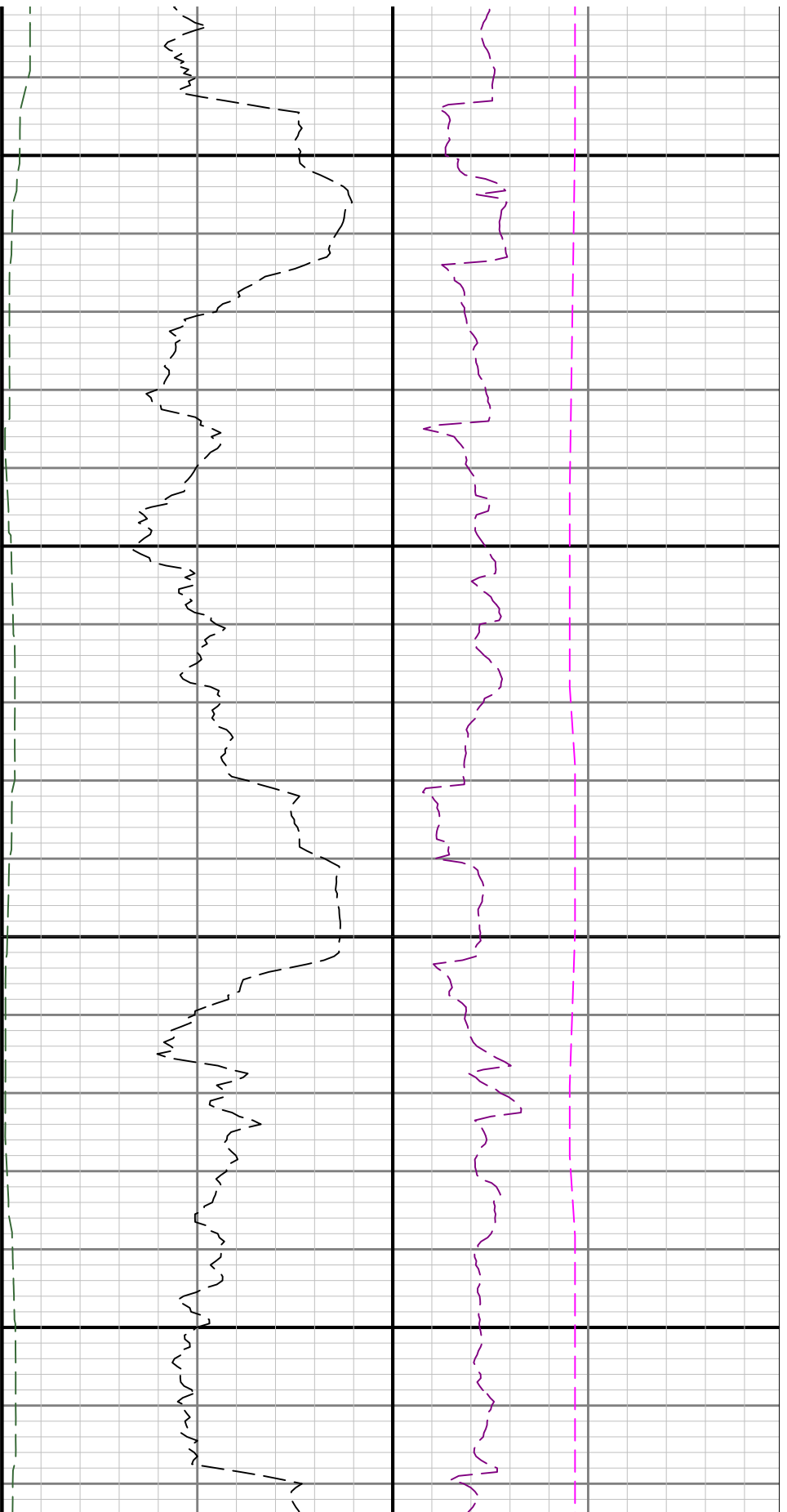




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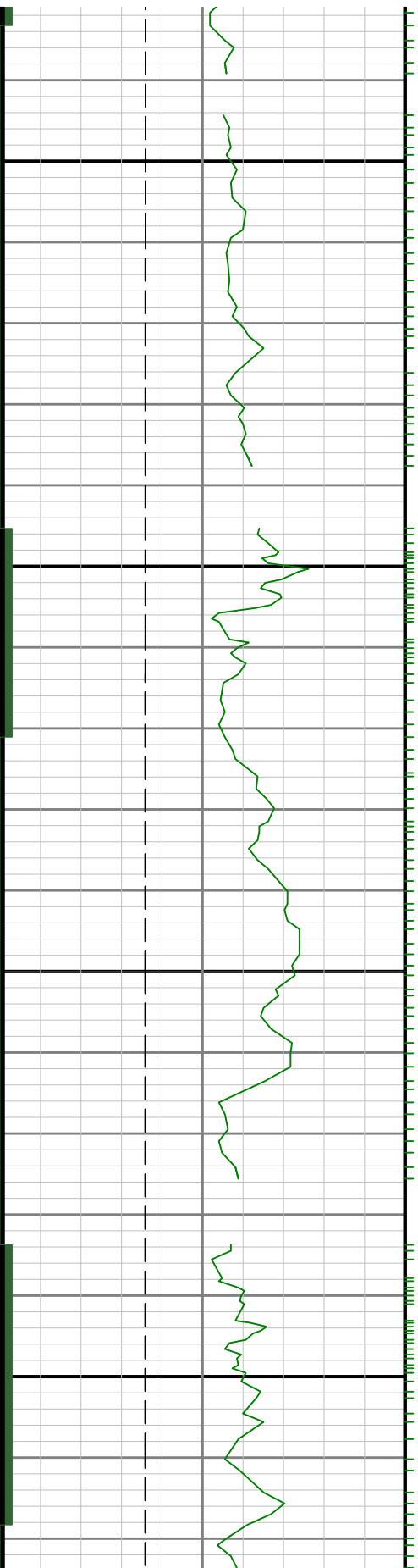
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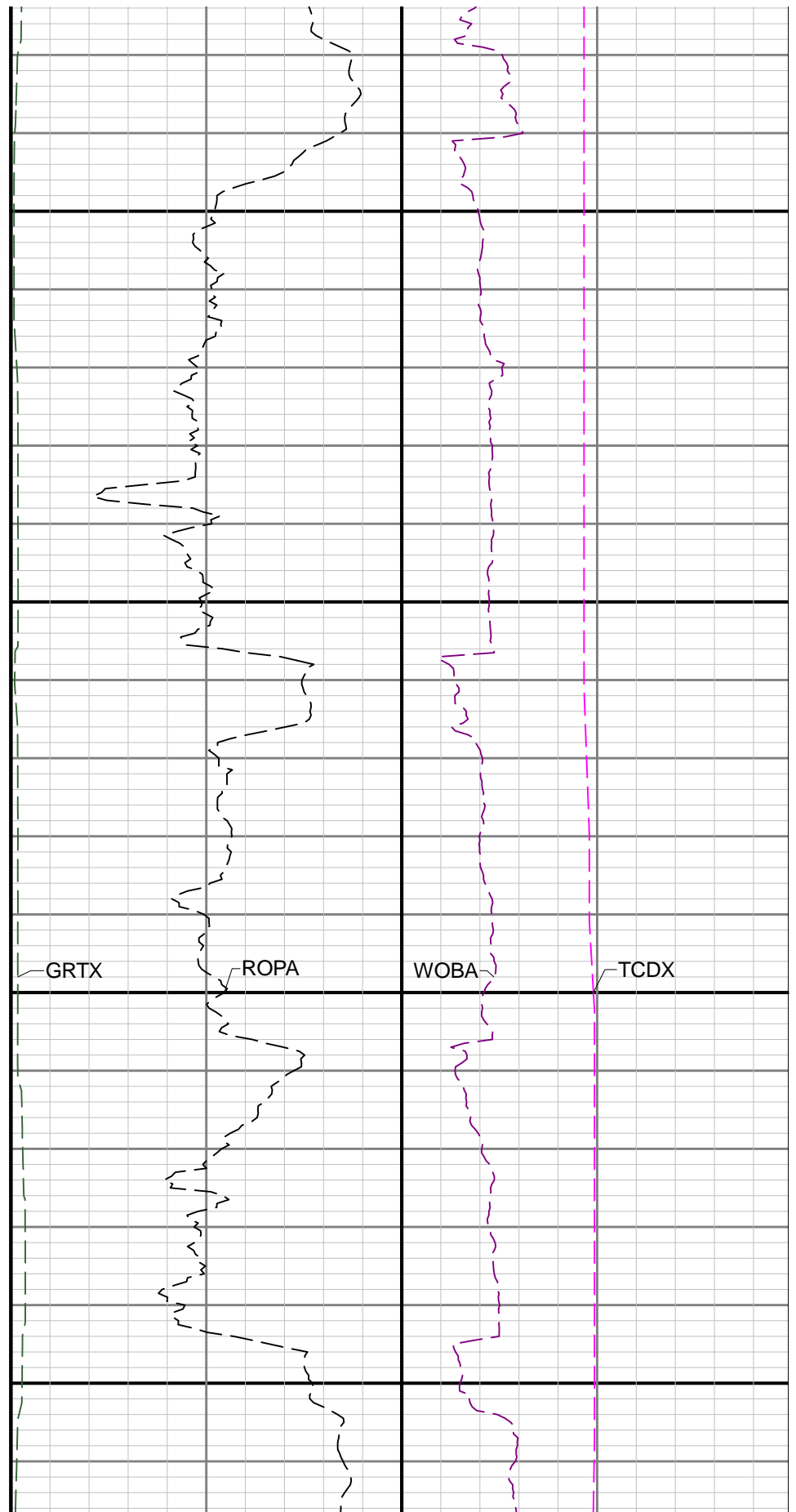
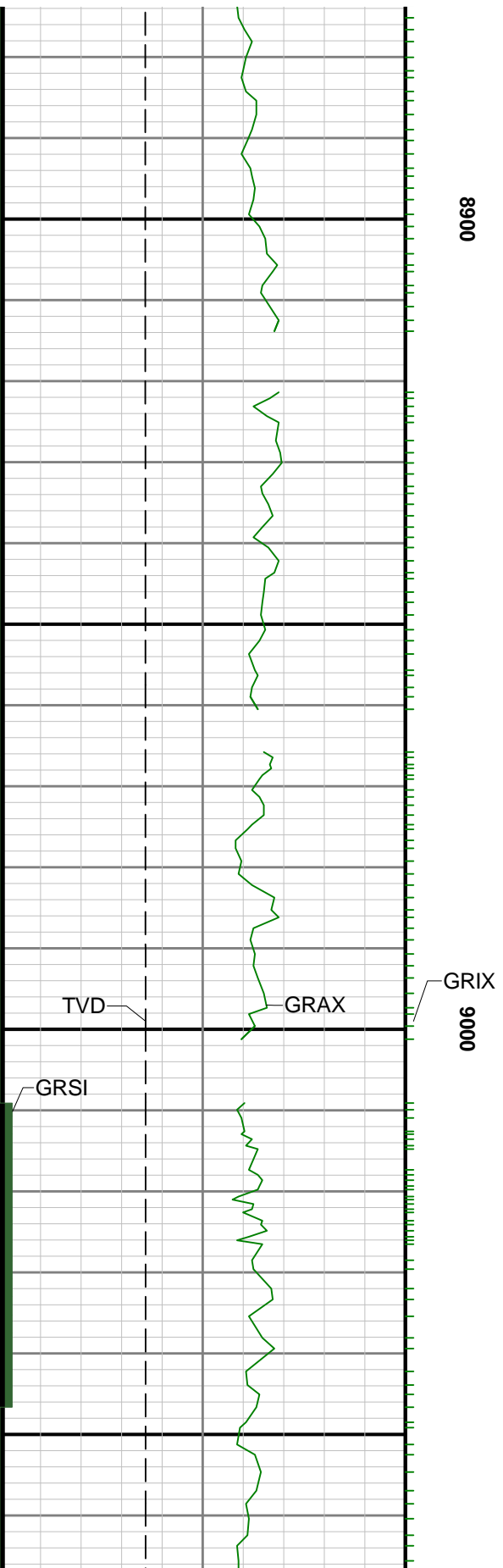


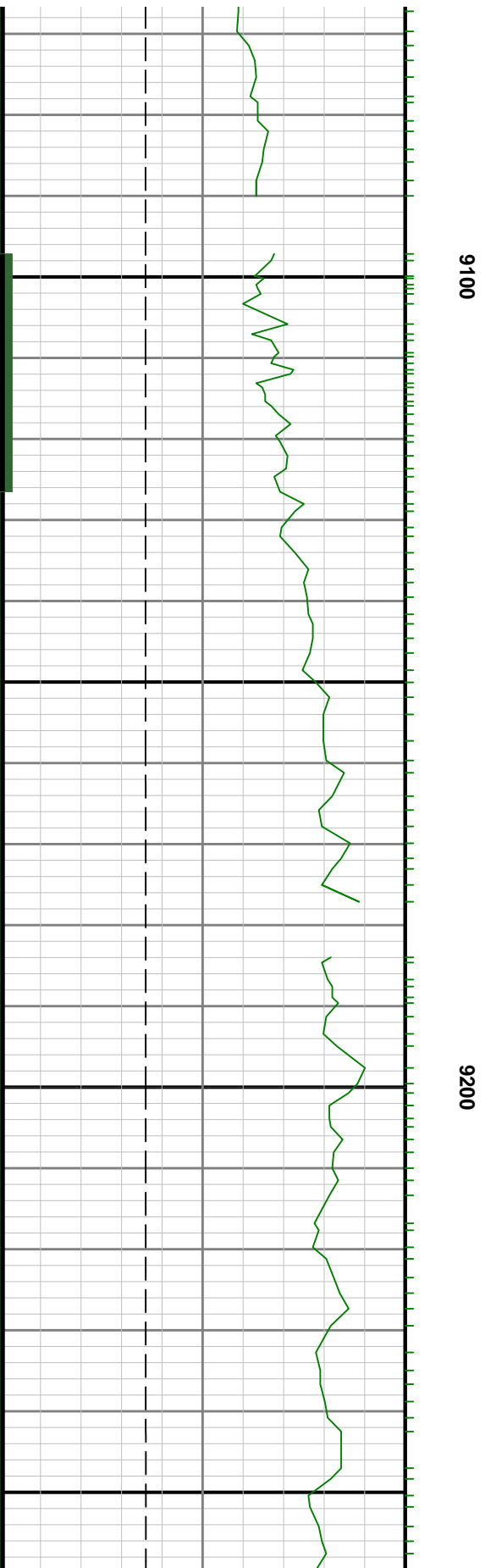
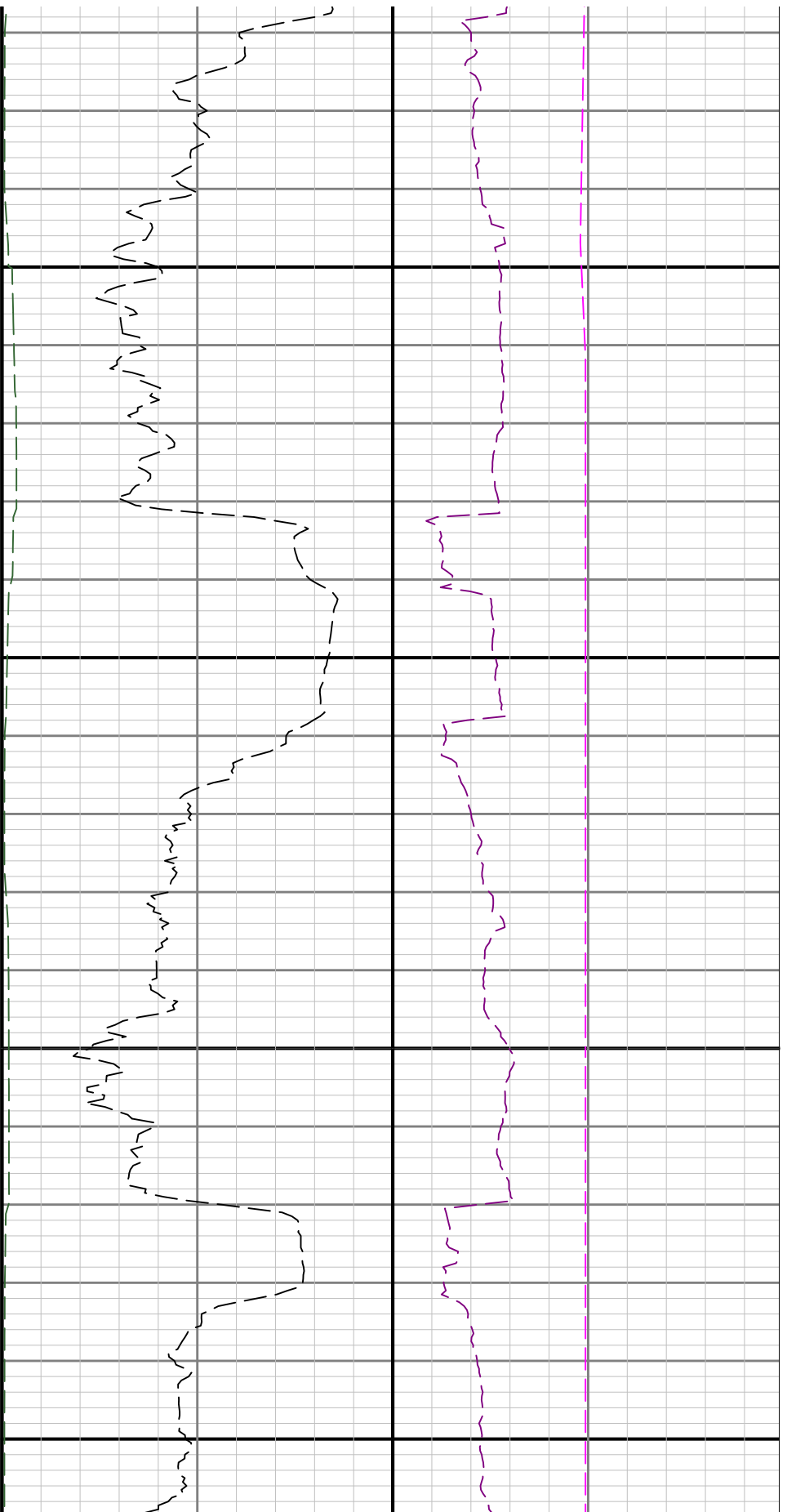


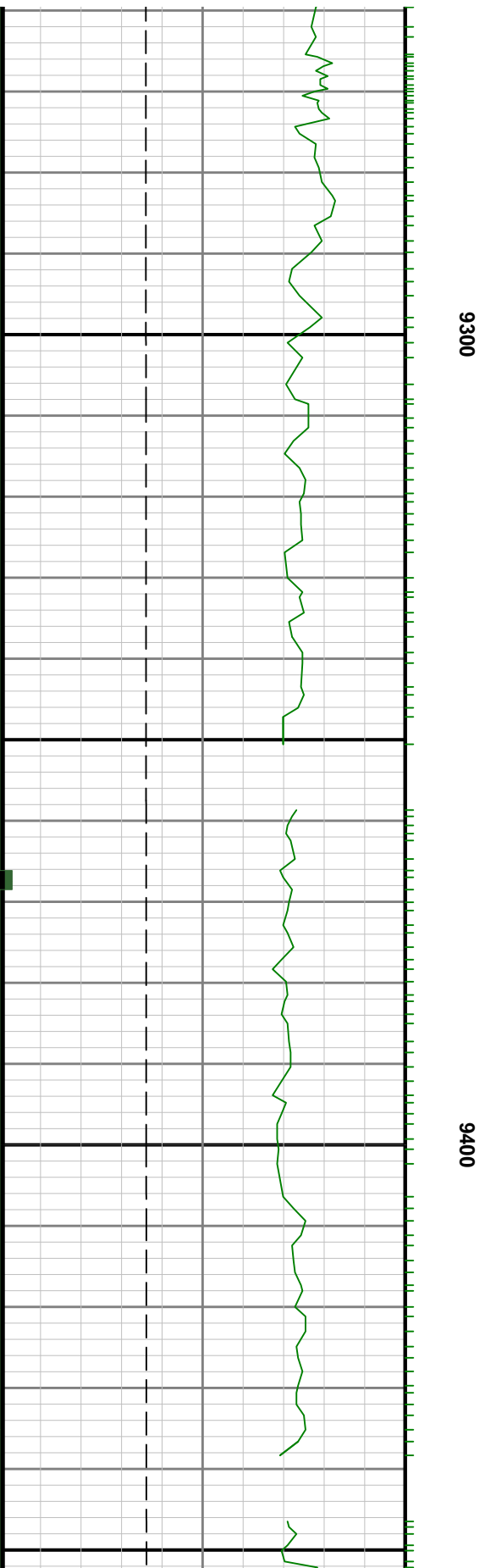
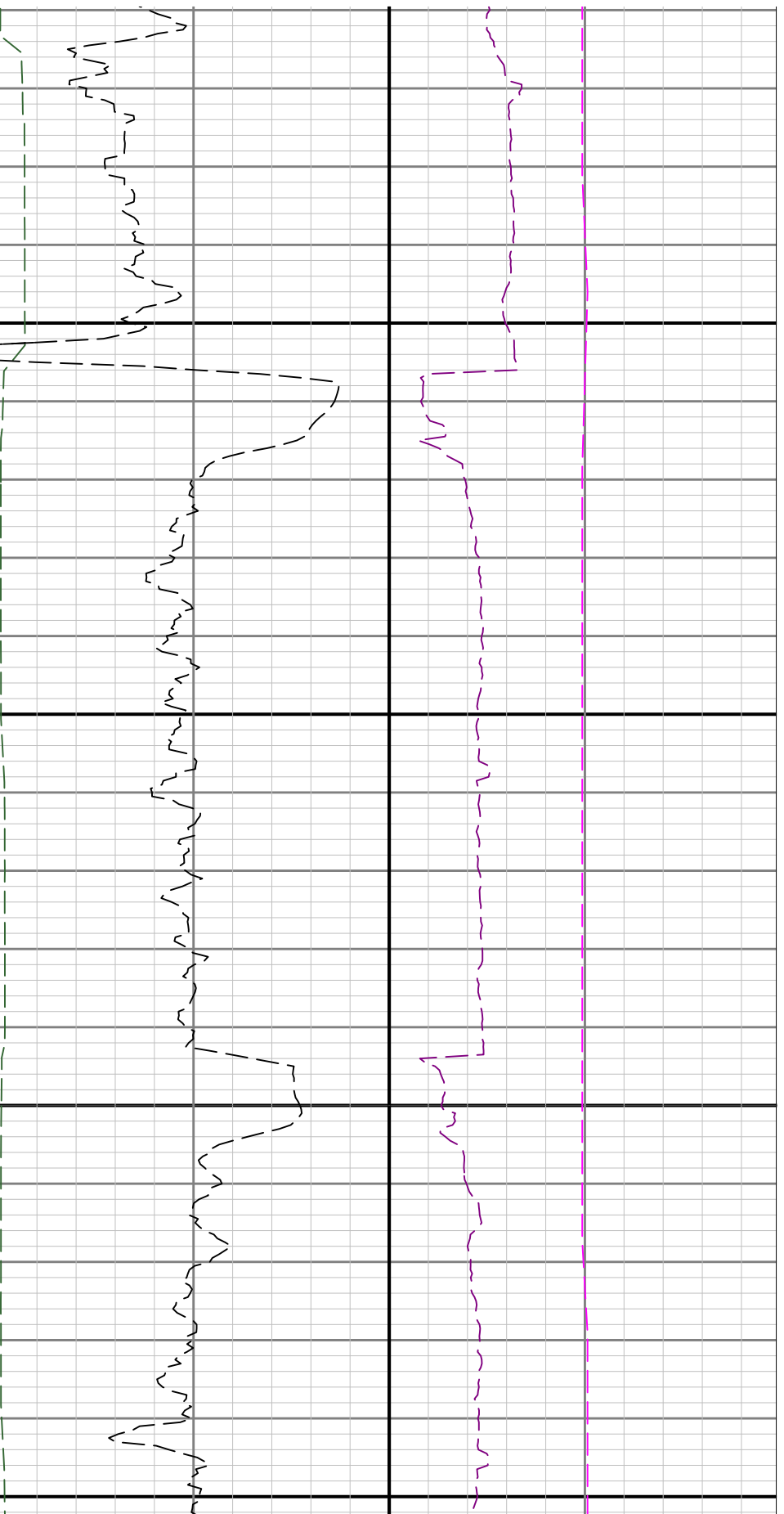
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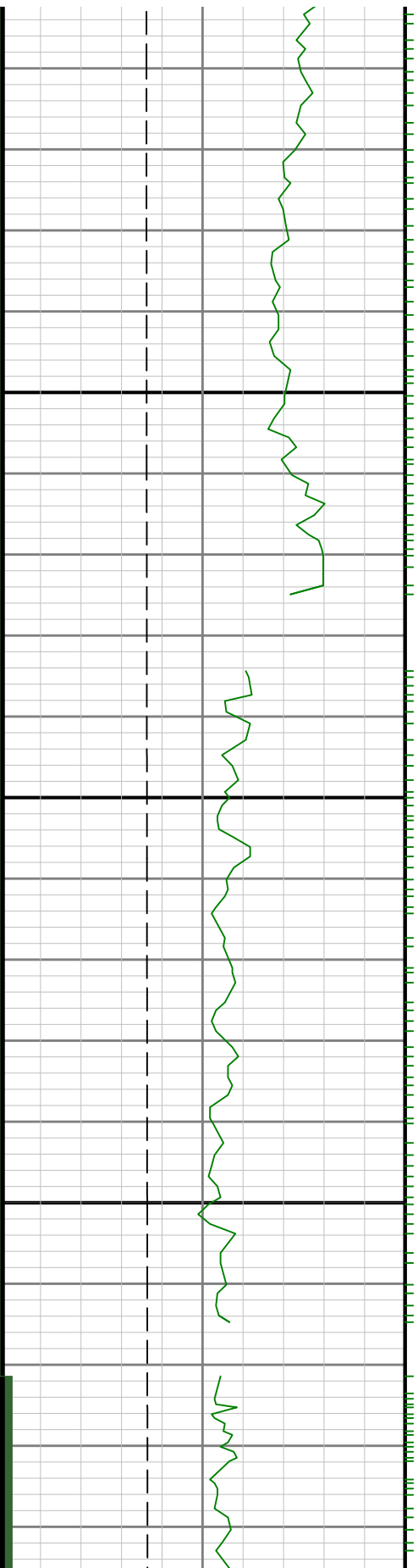
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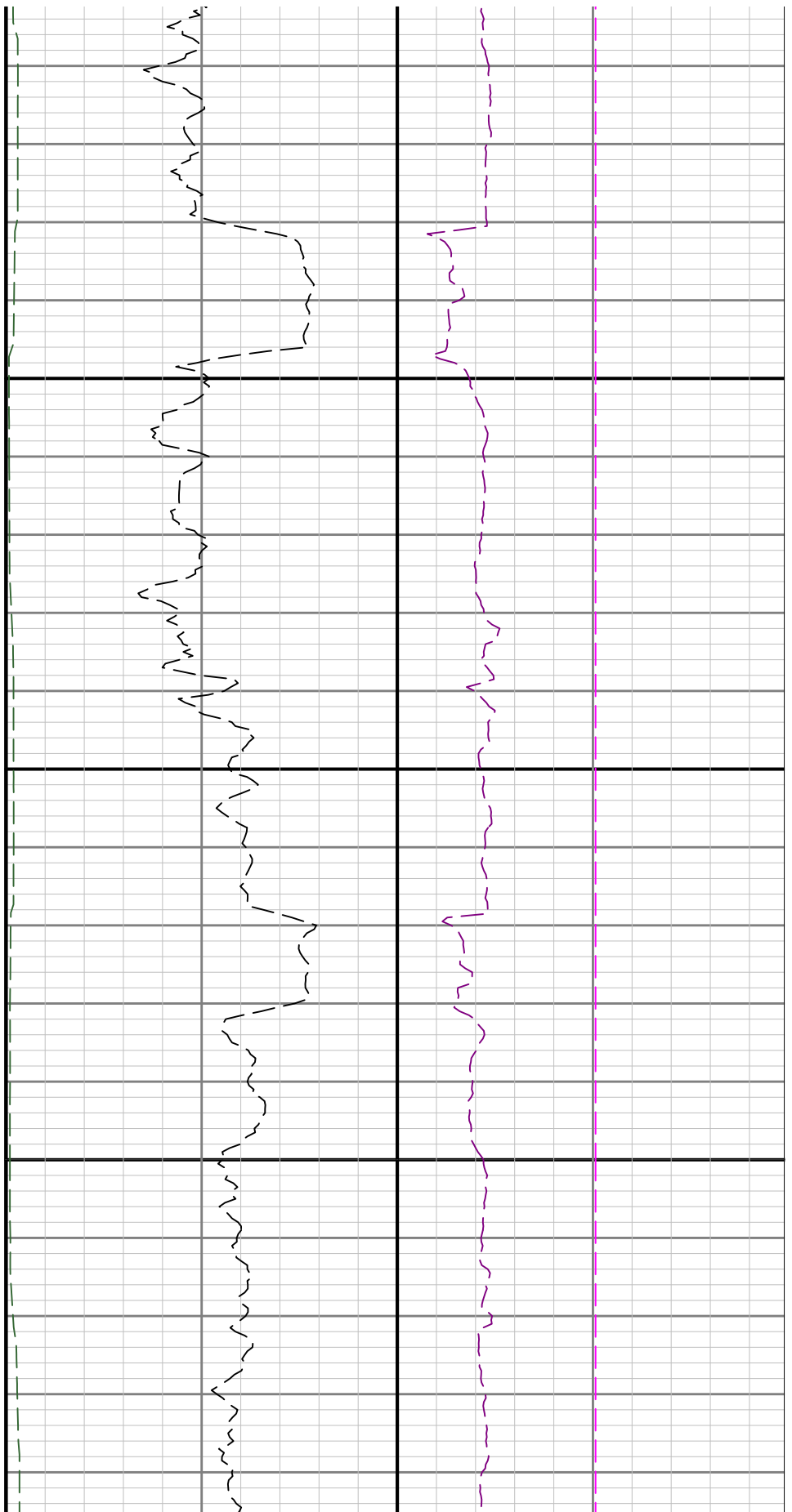


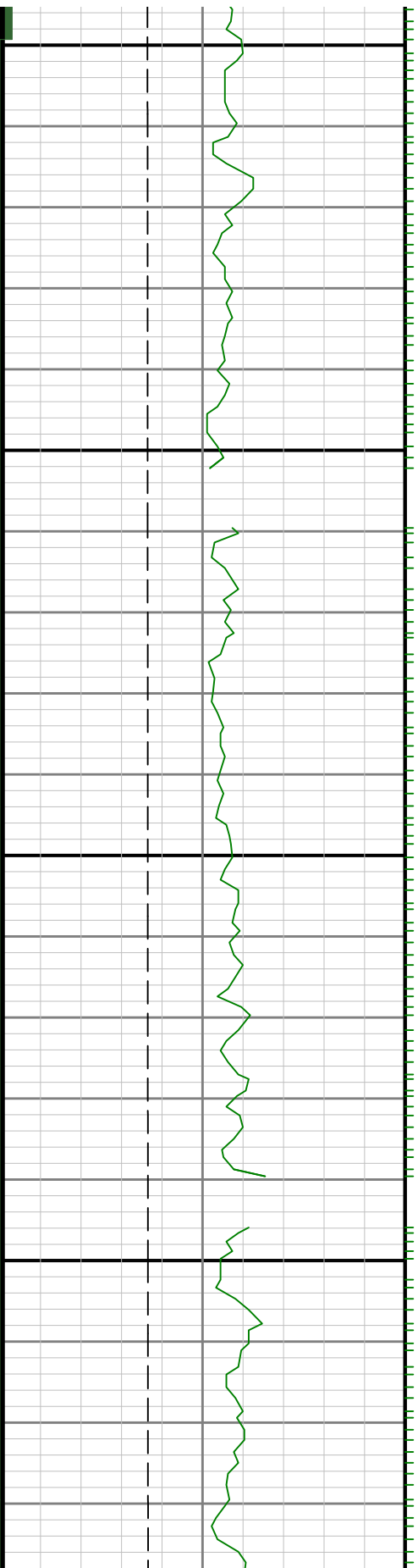




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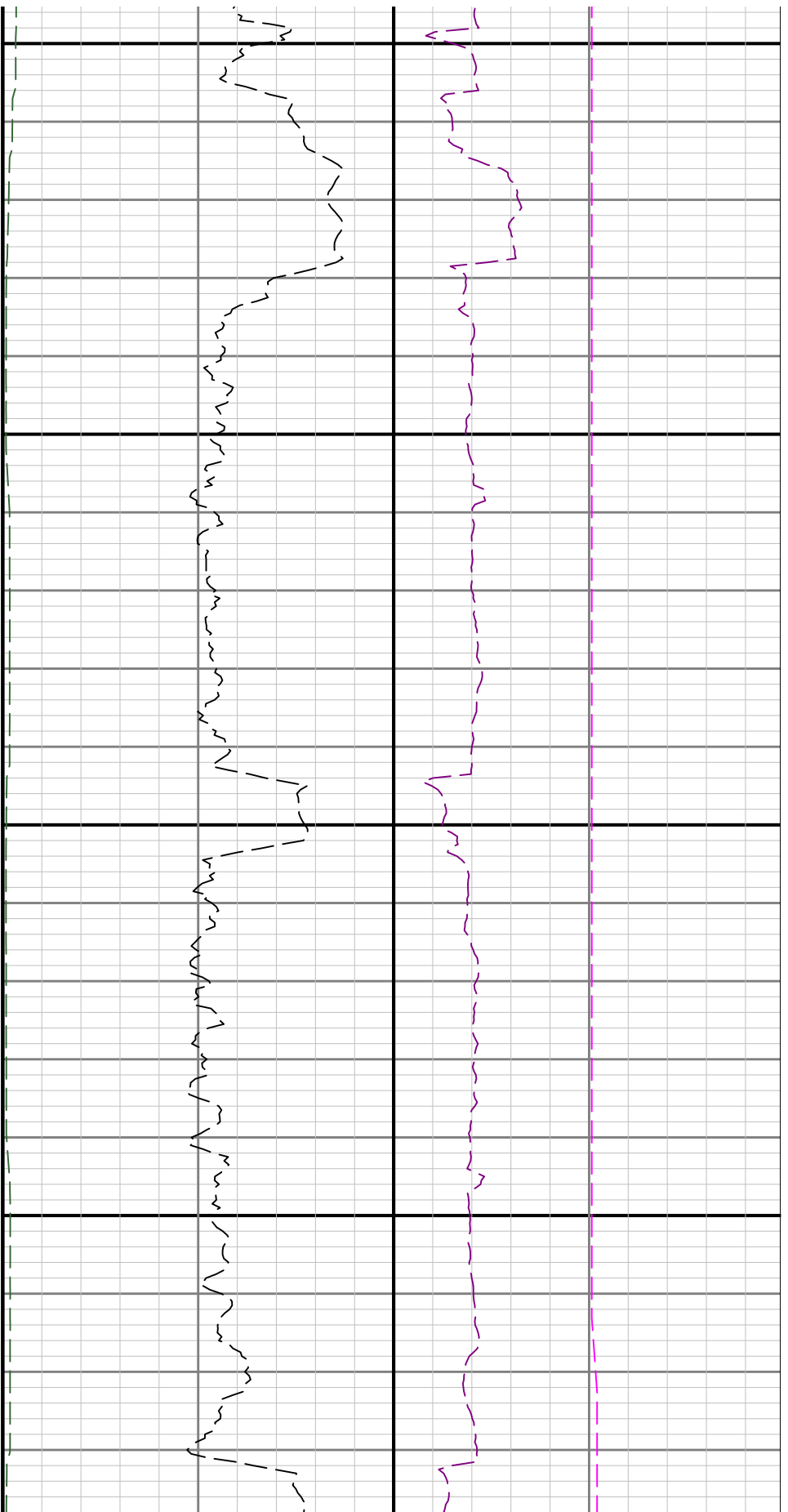
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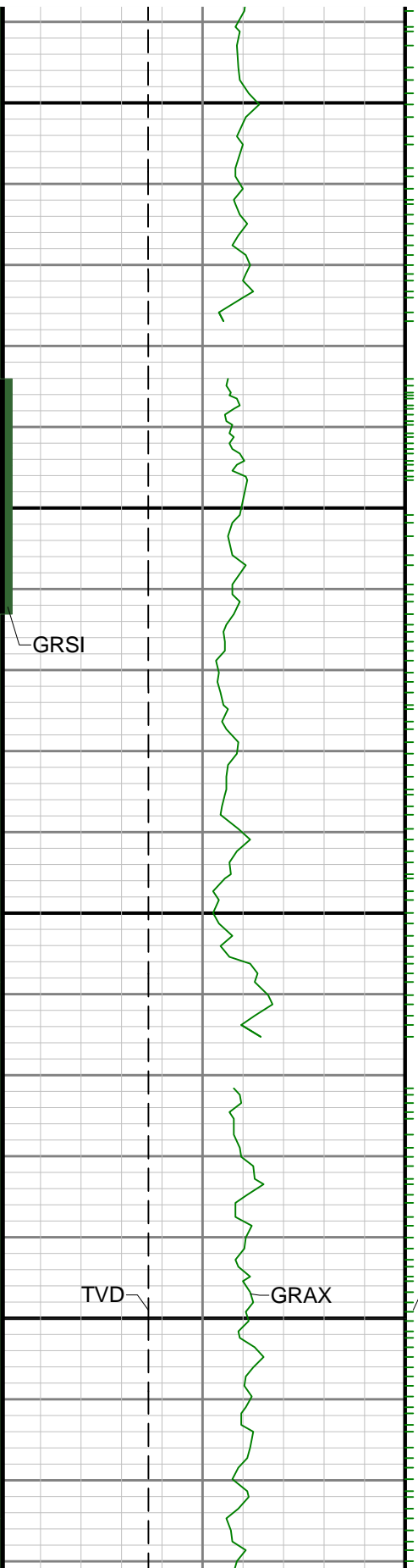




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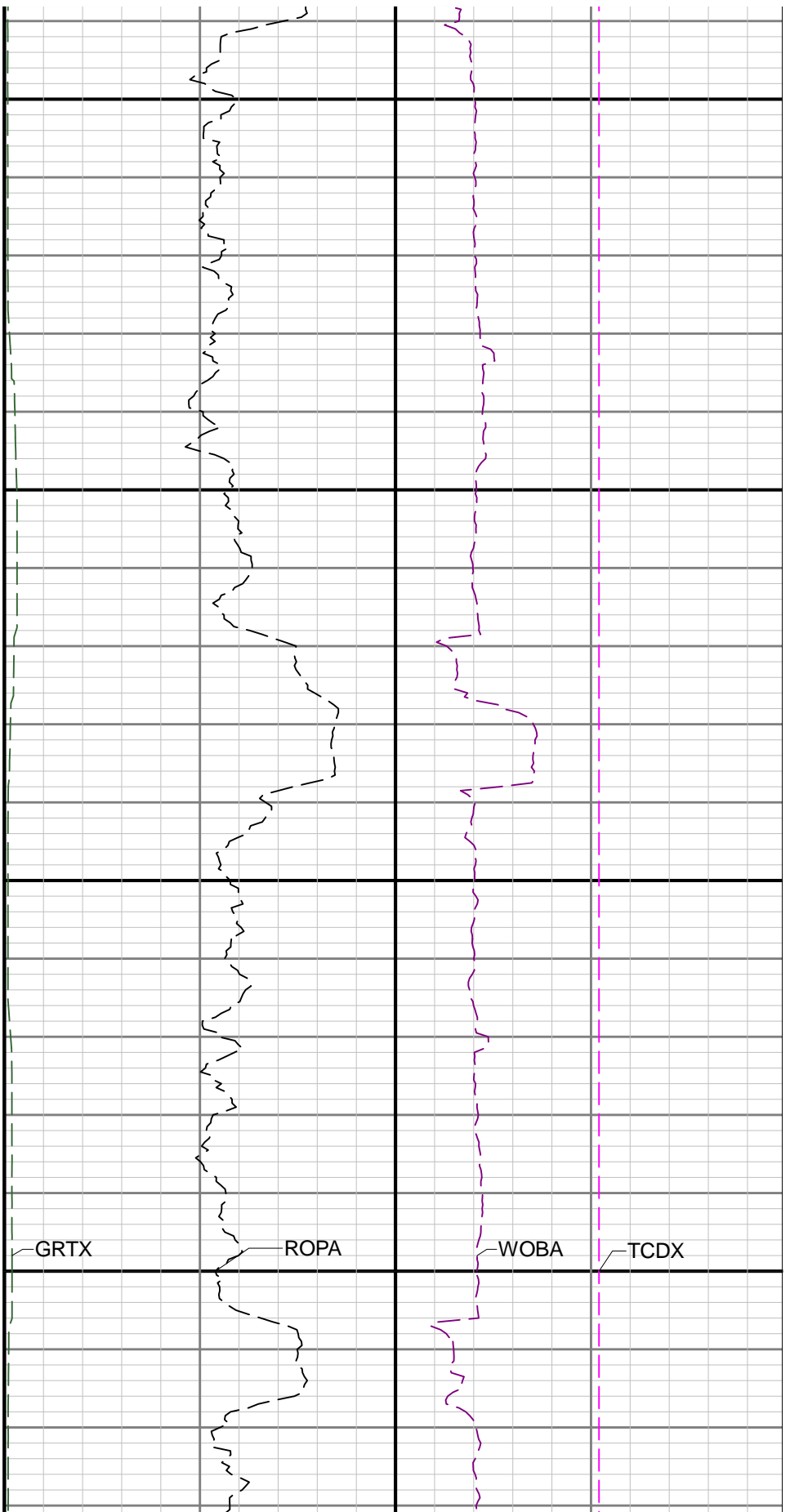
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GRAX
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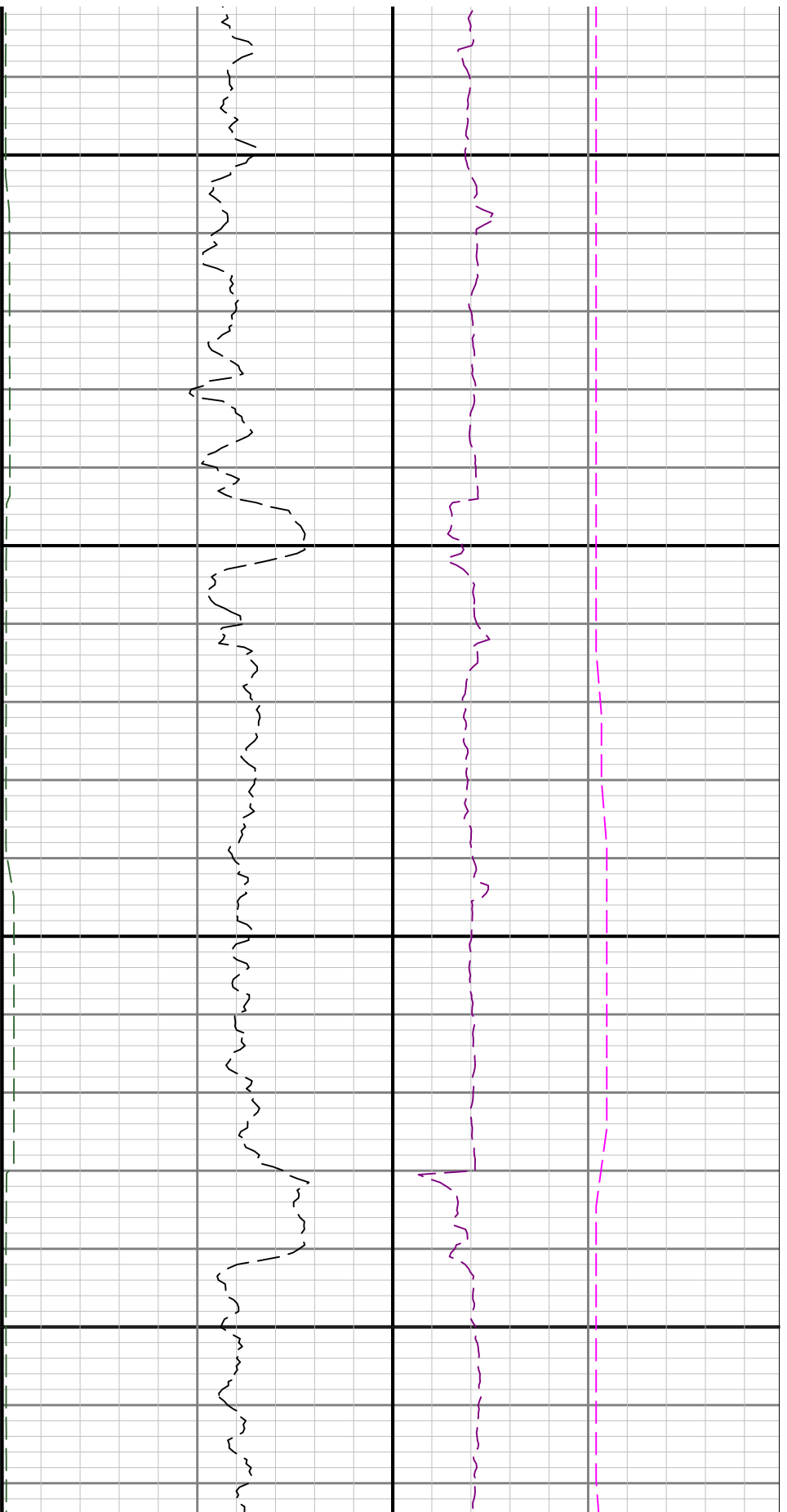


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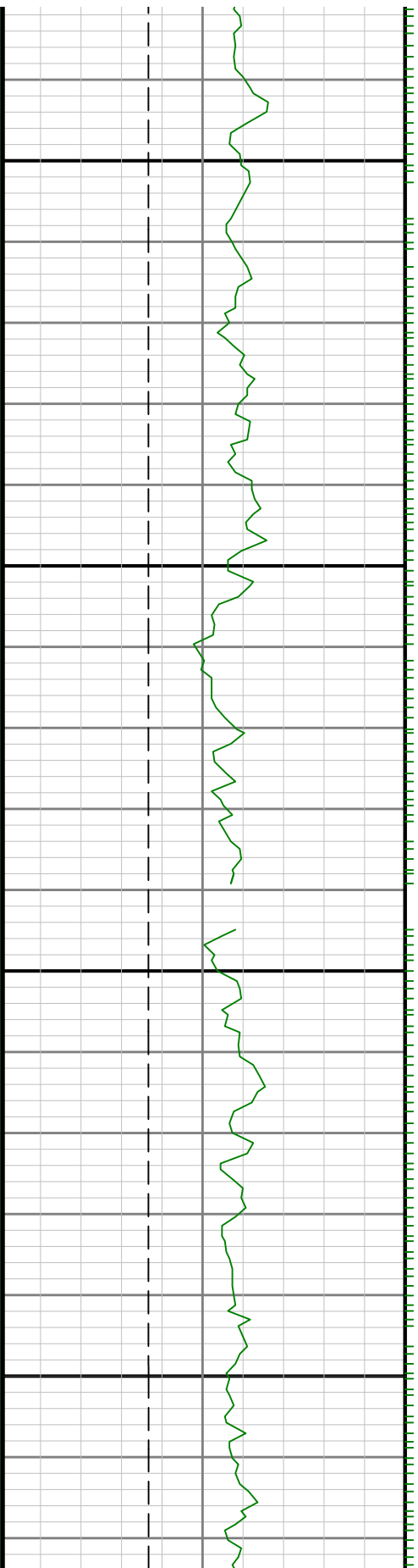
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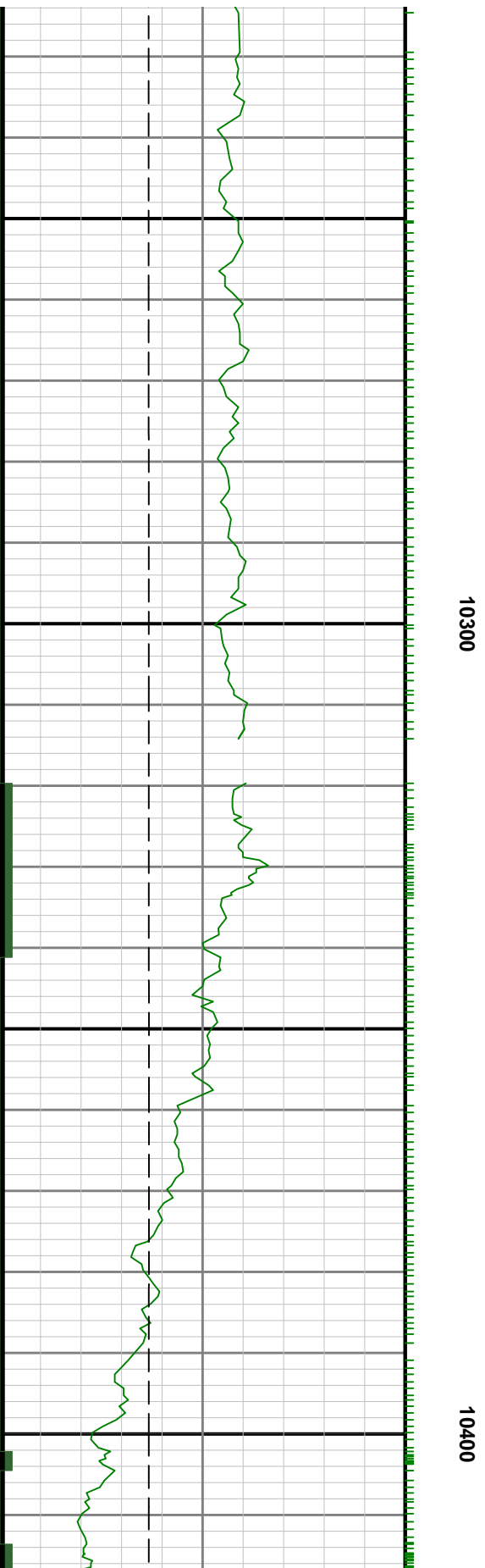
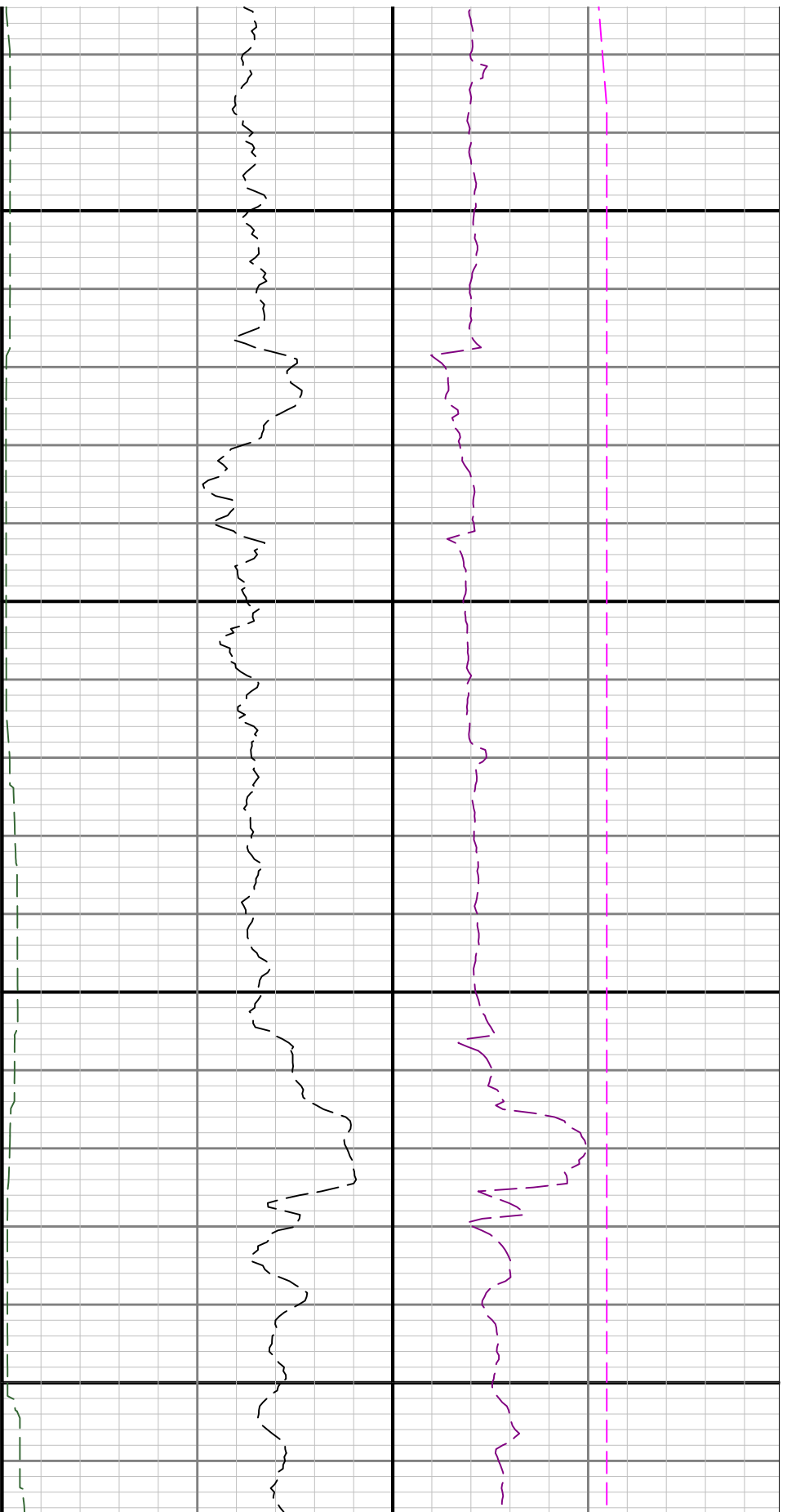
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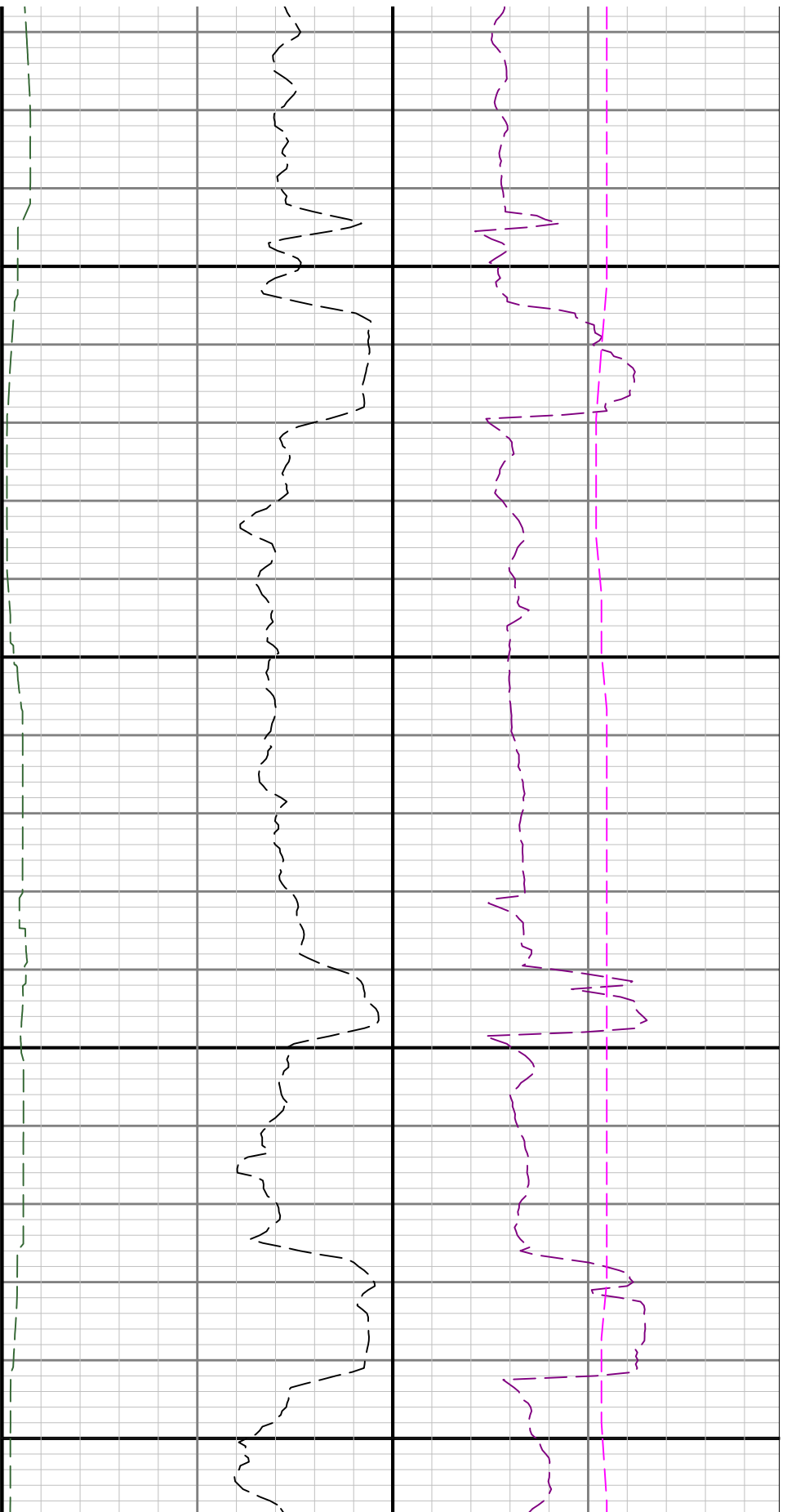


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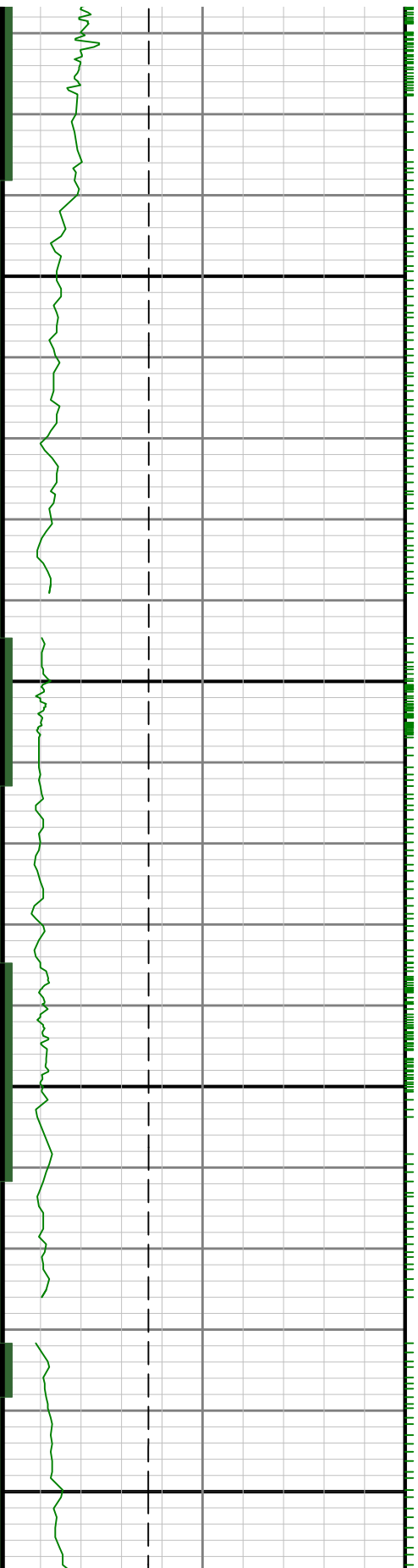


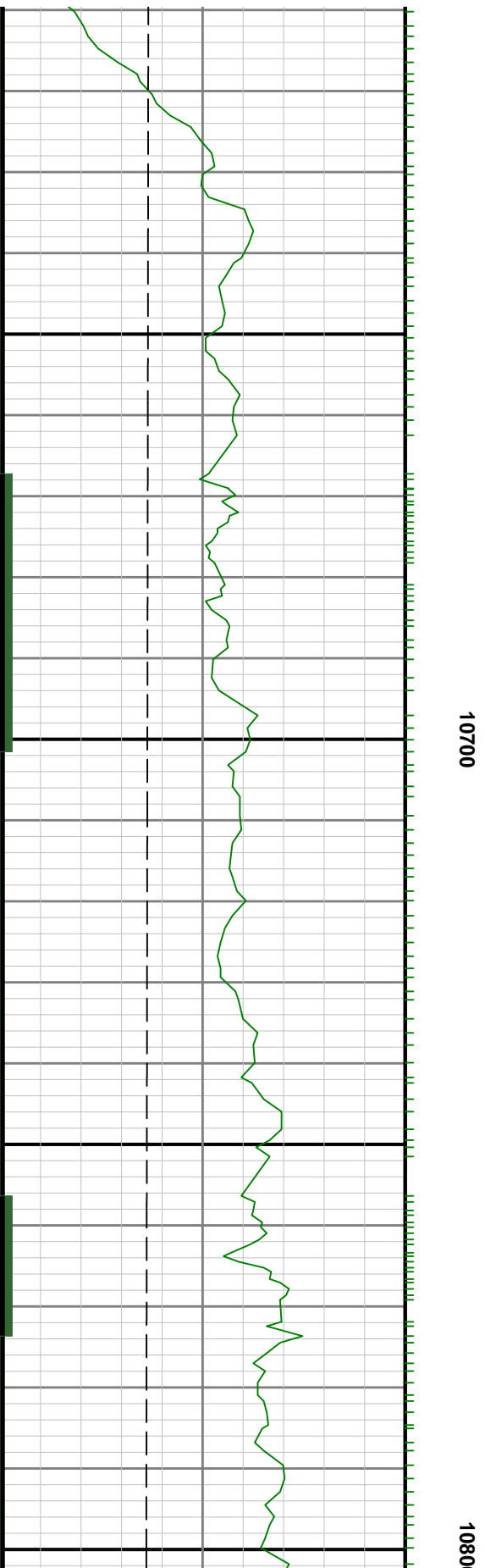
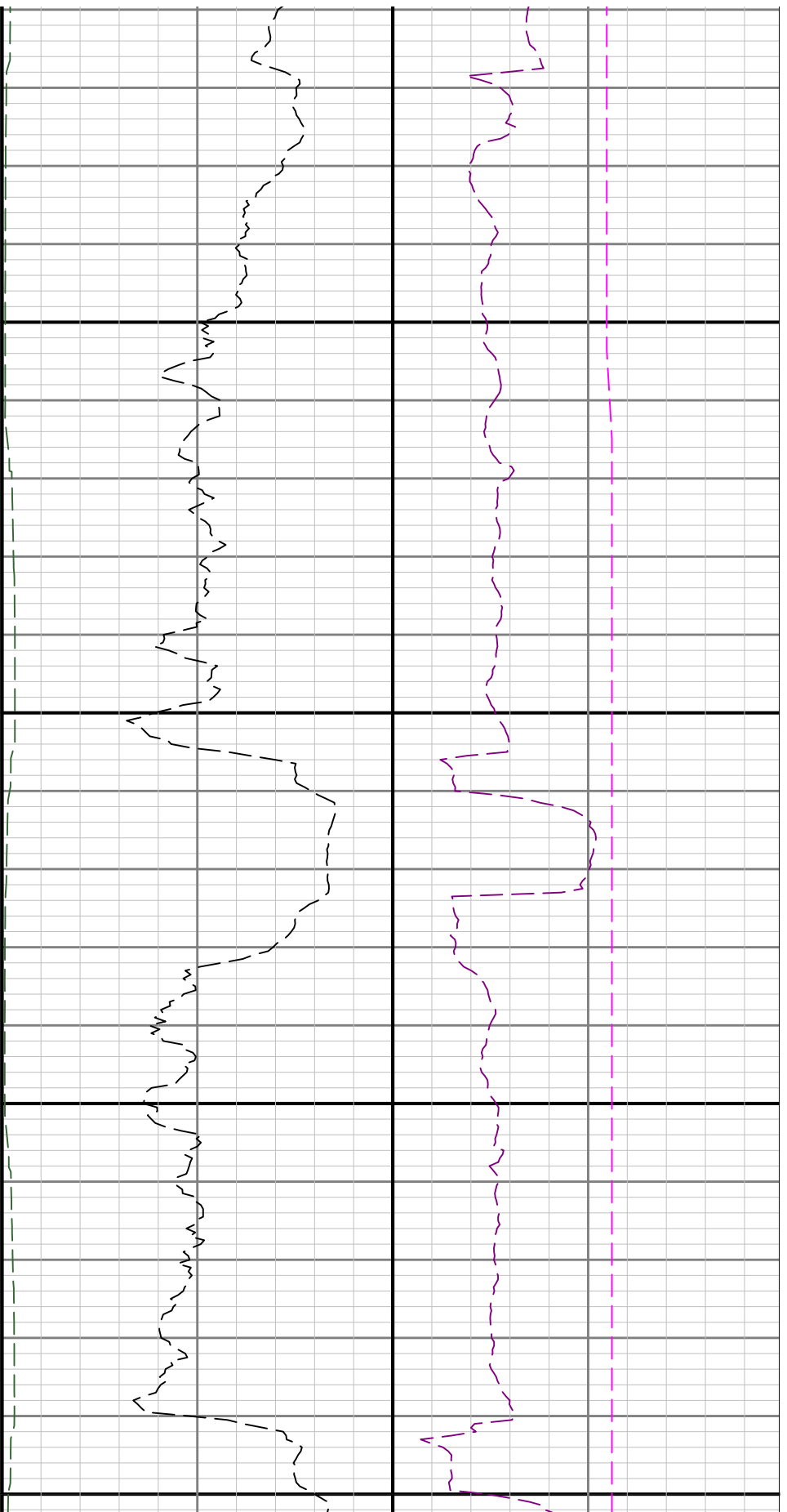


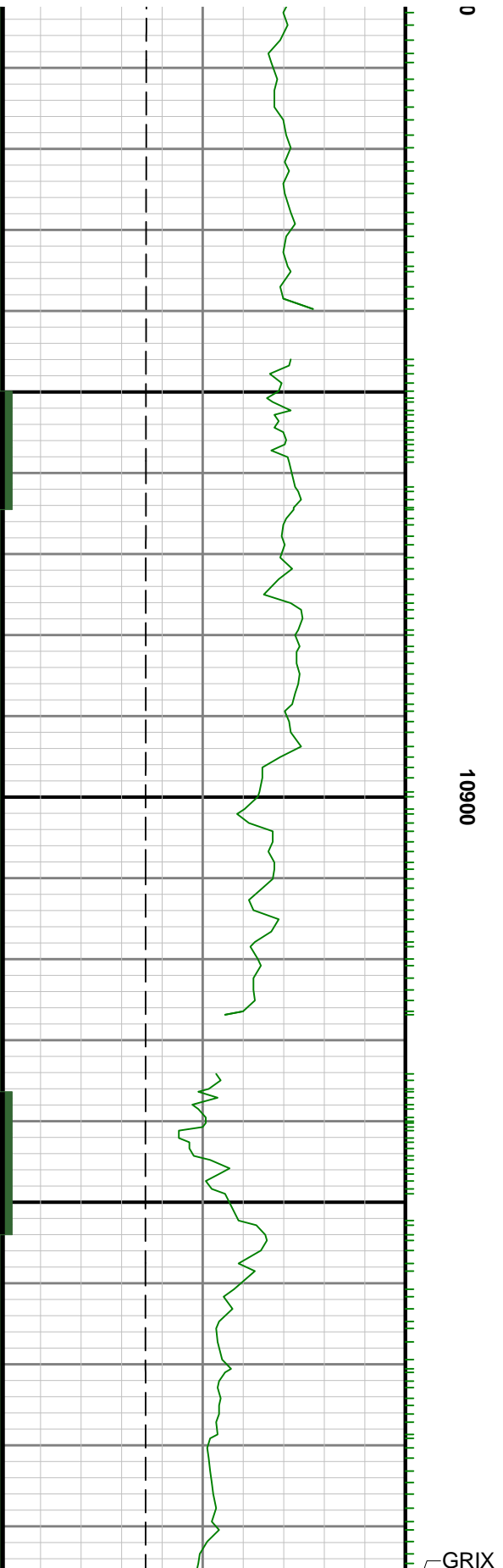
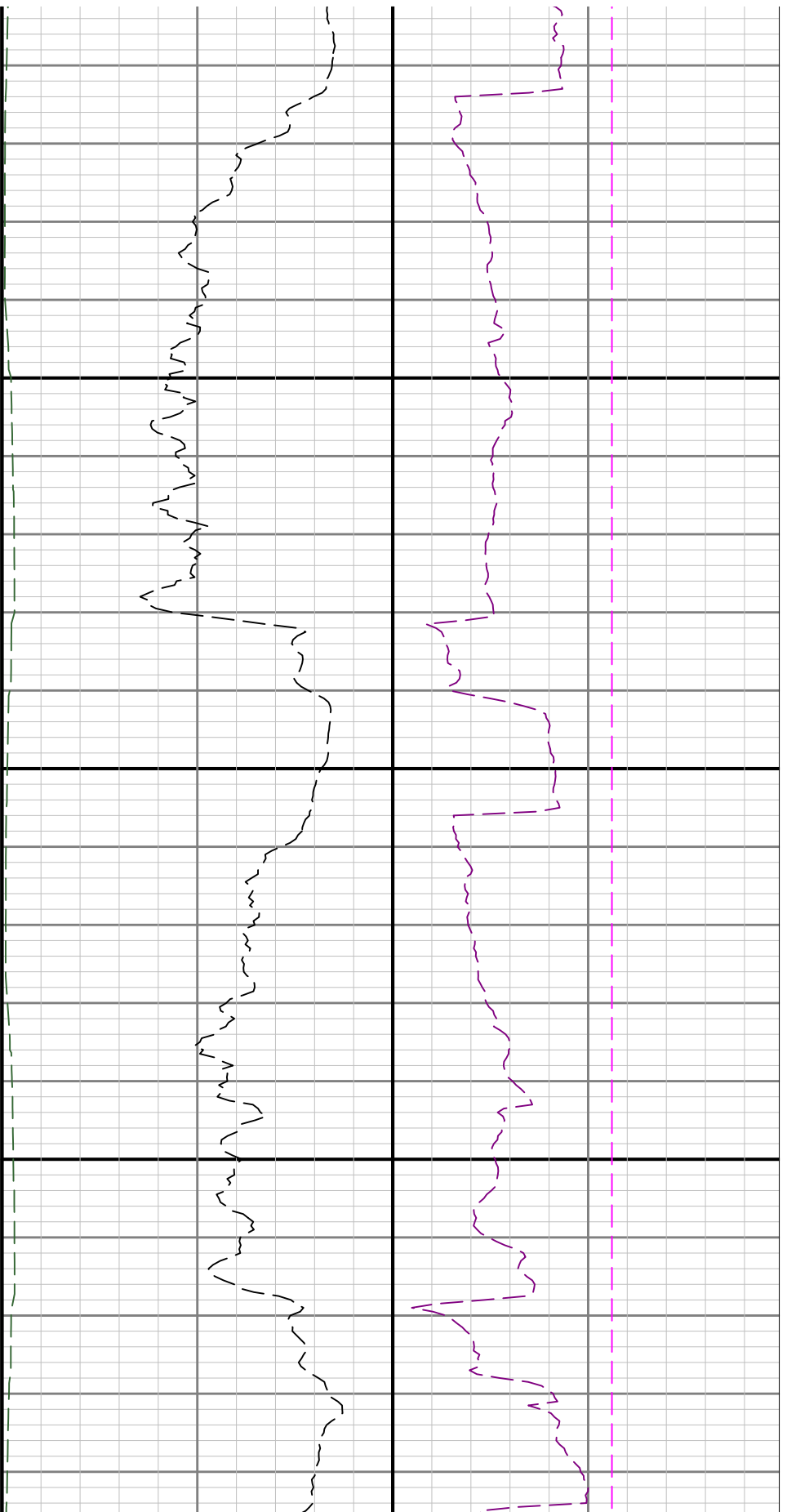


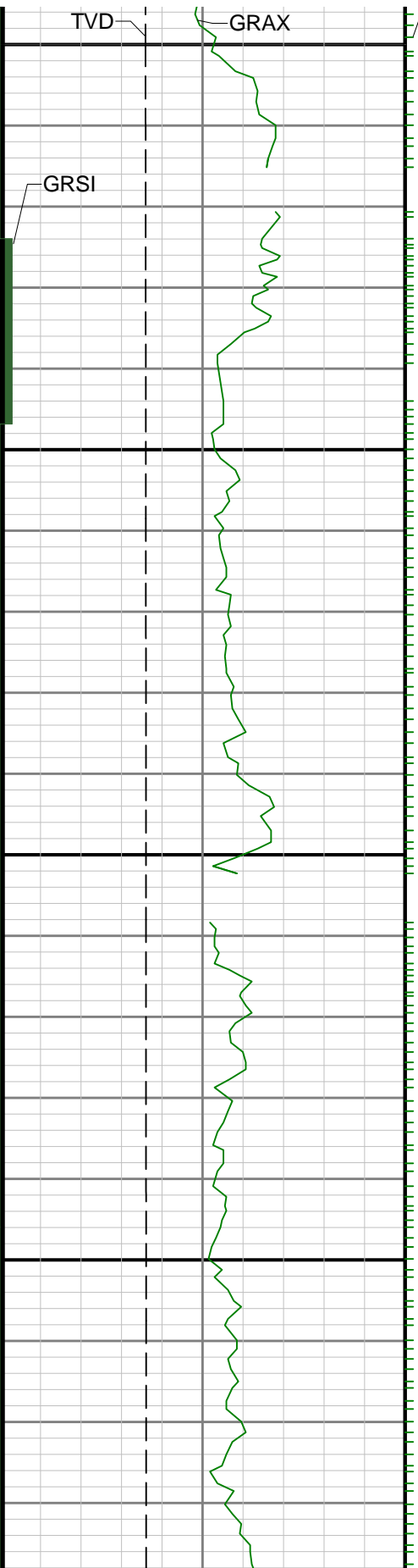
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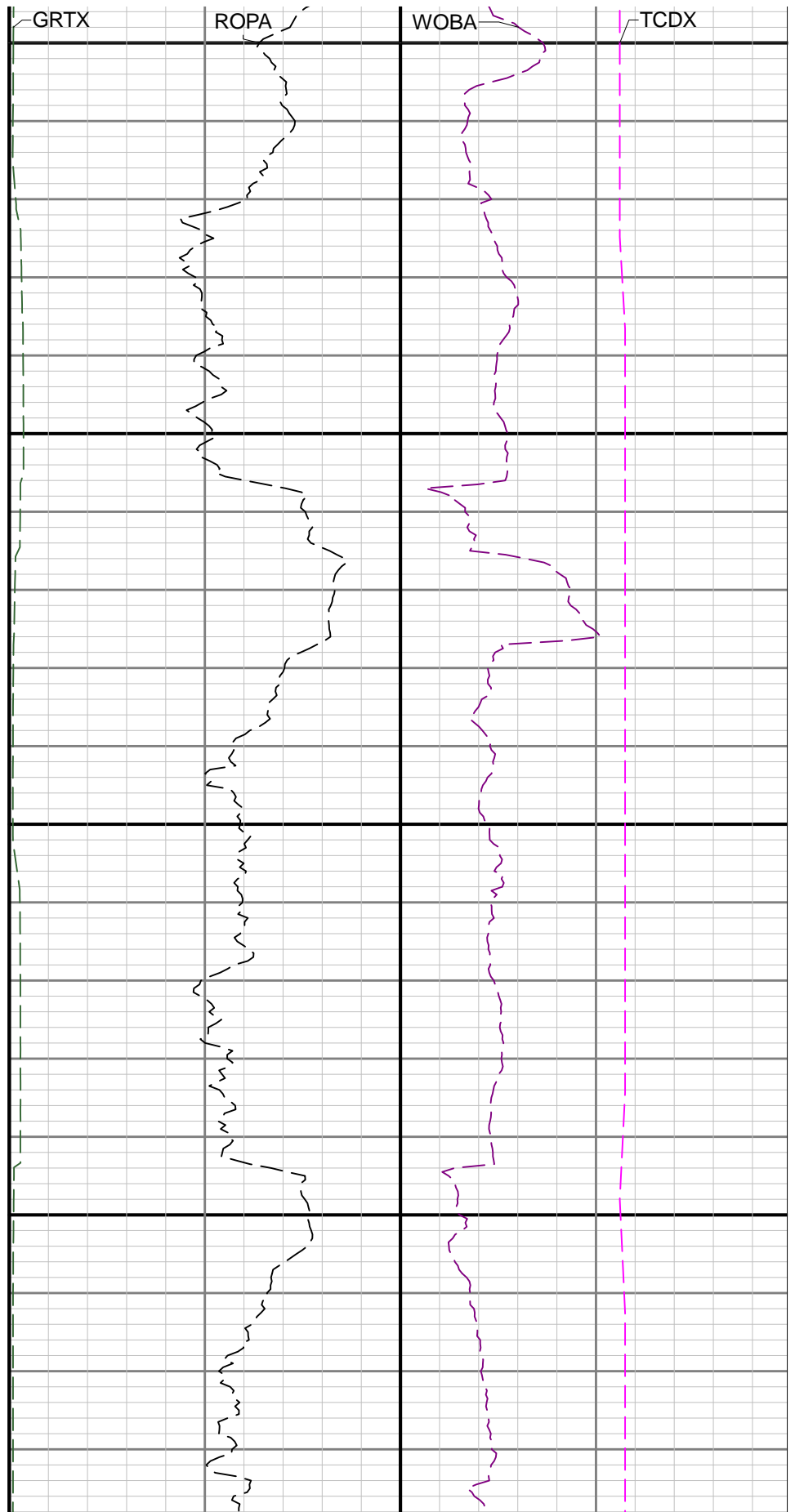


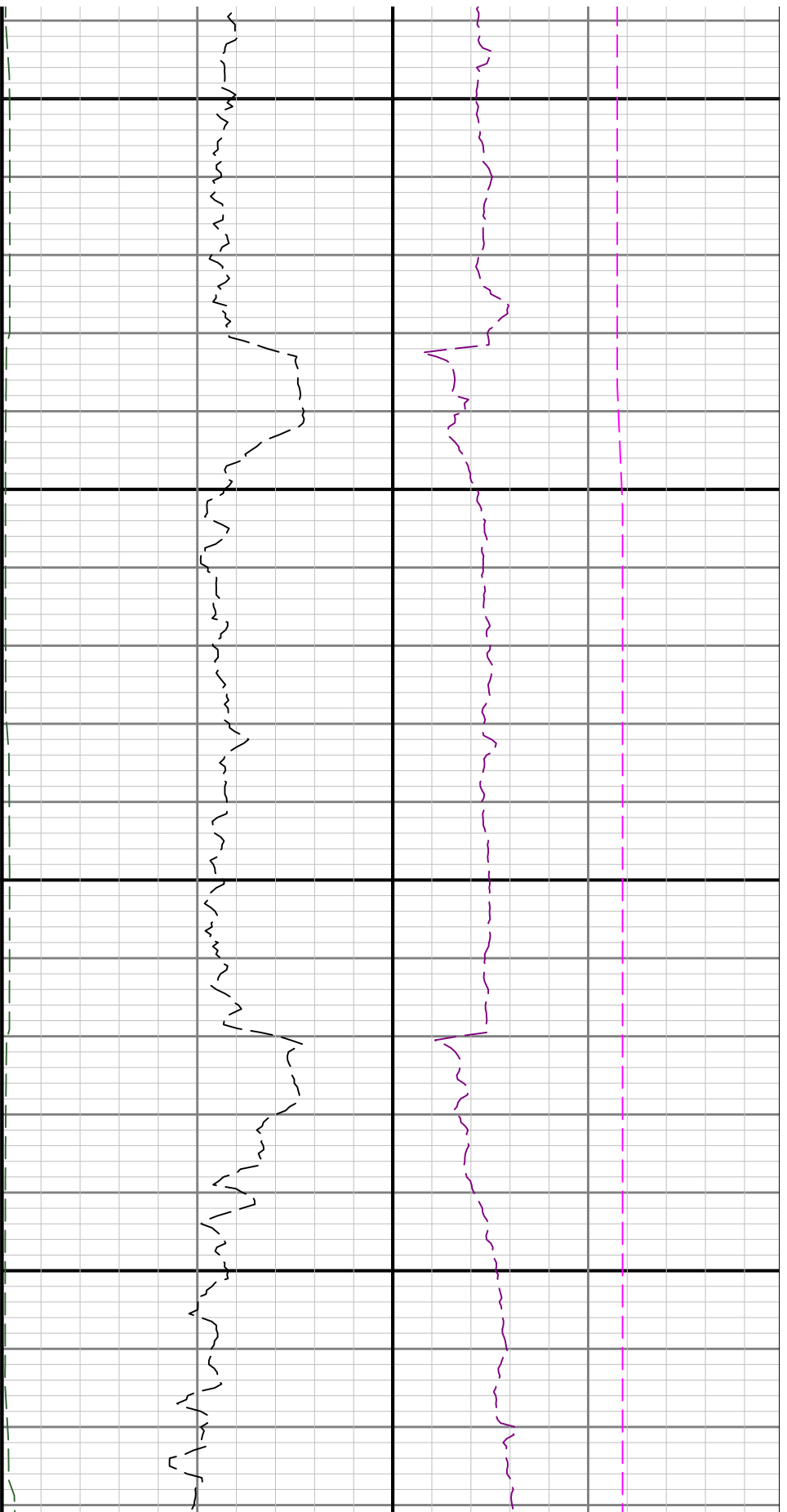




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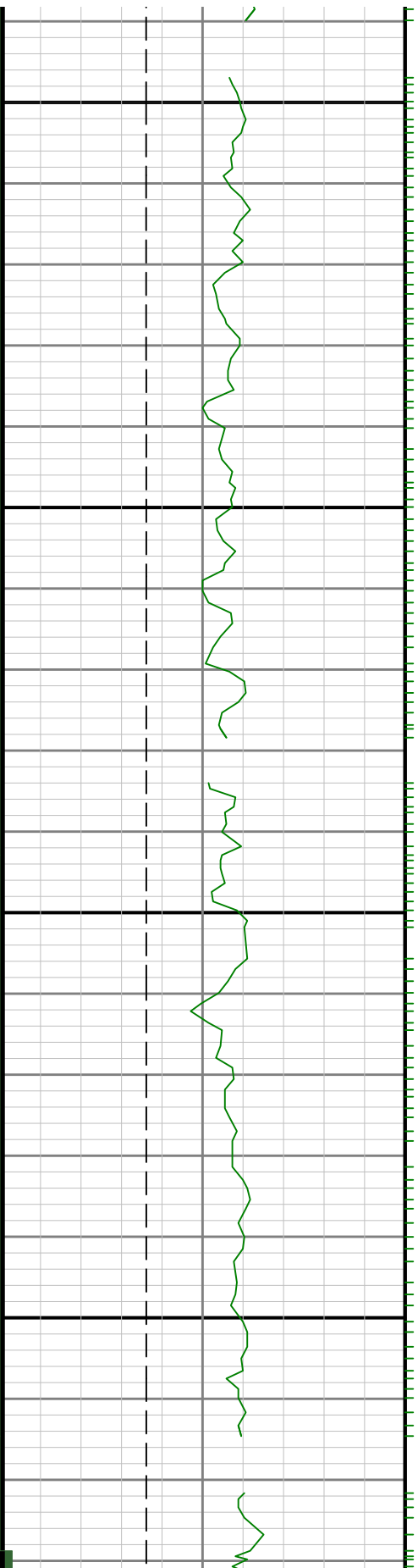
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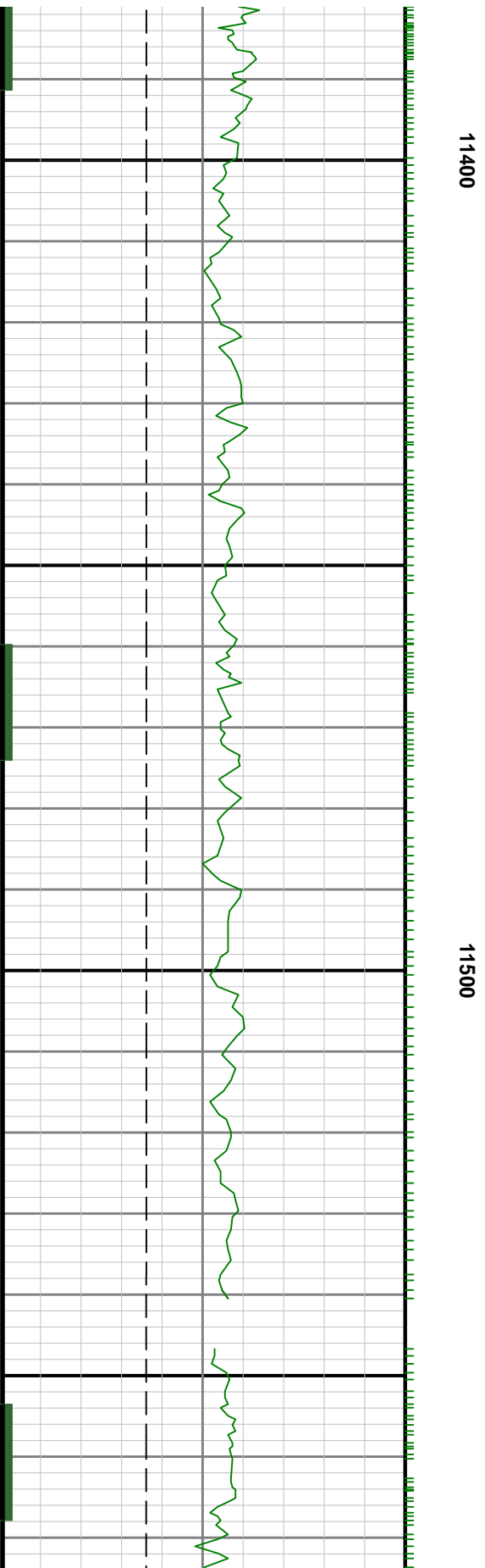
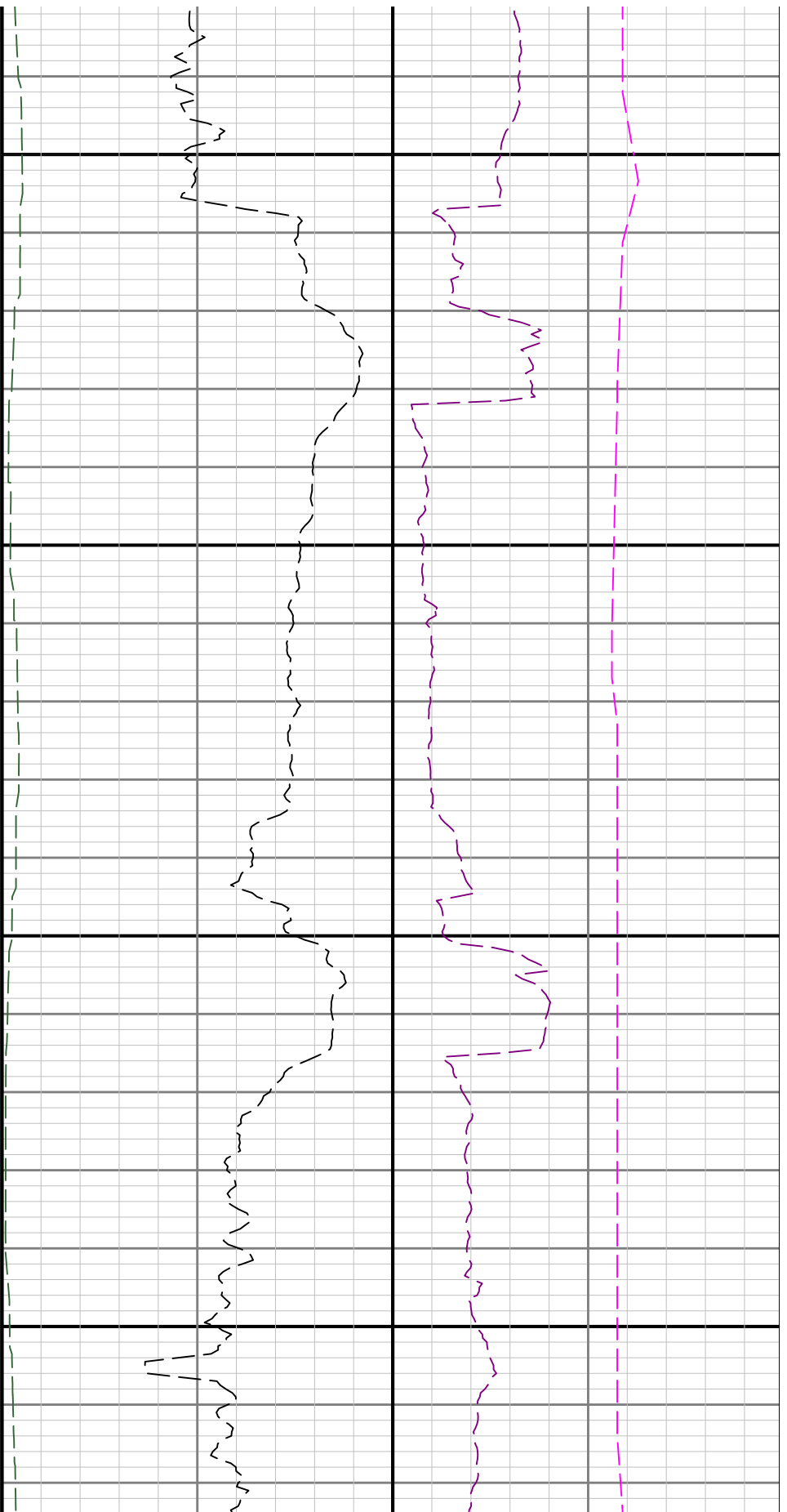


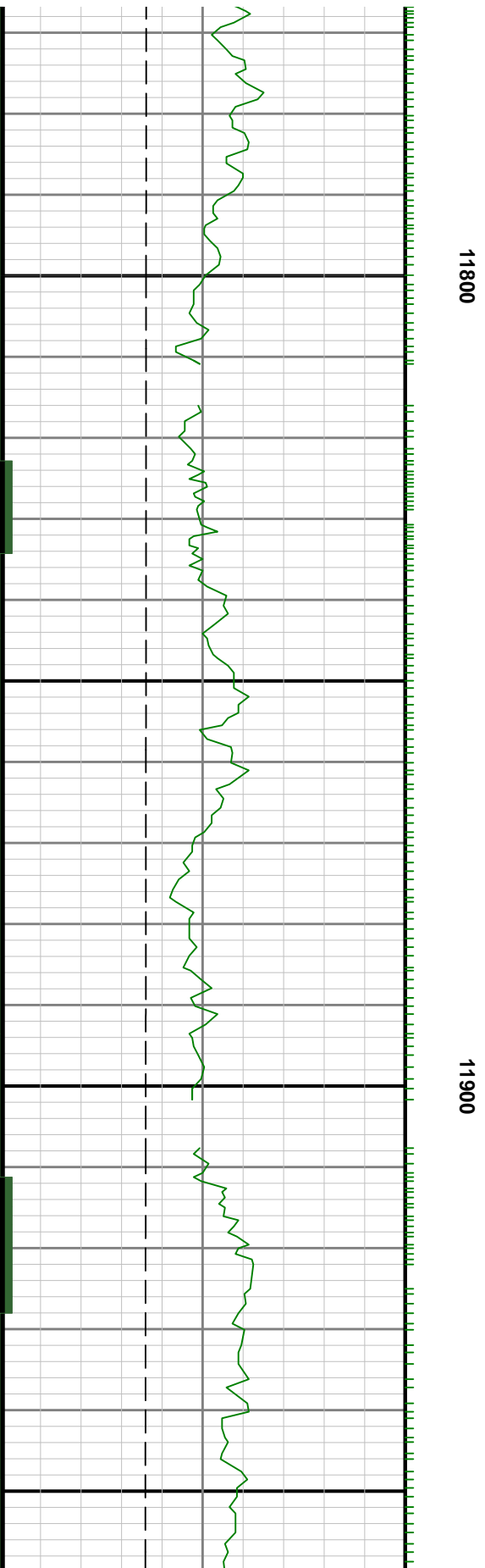
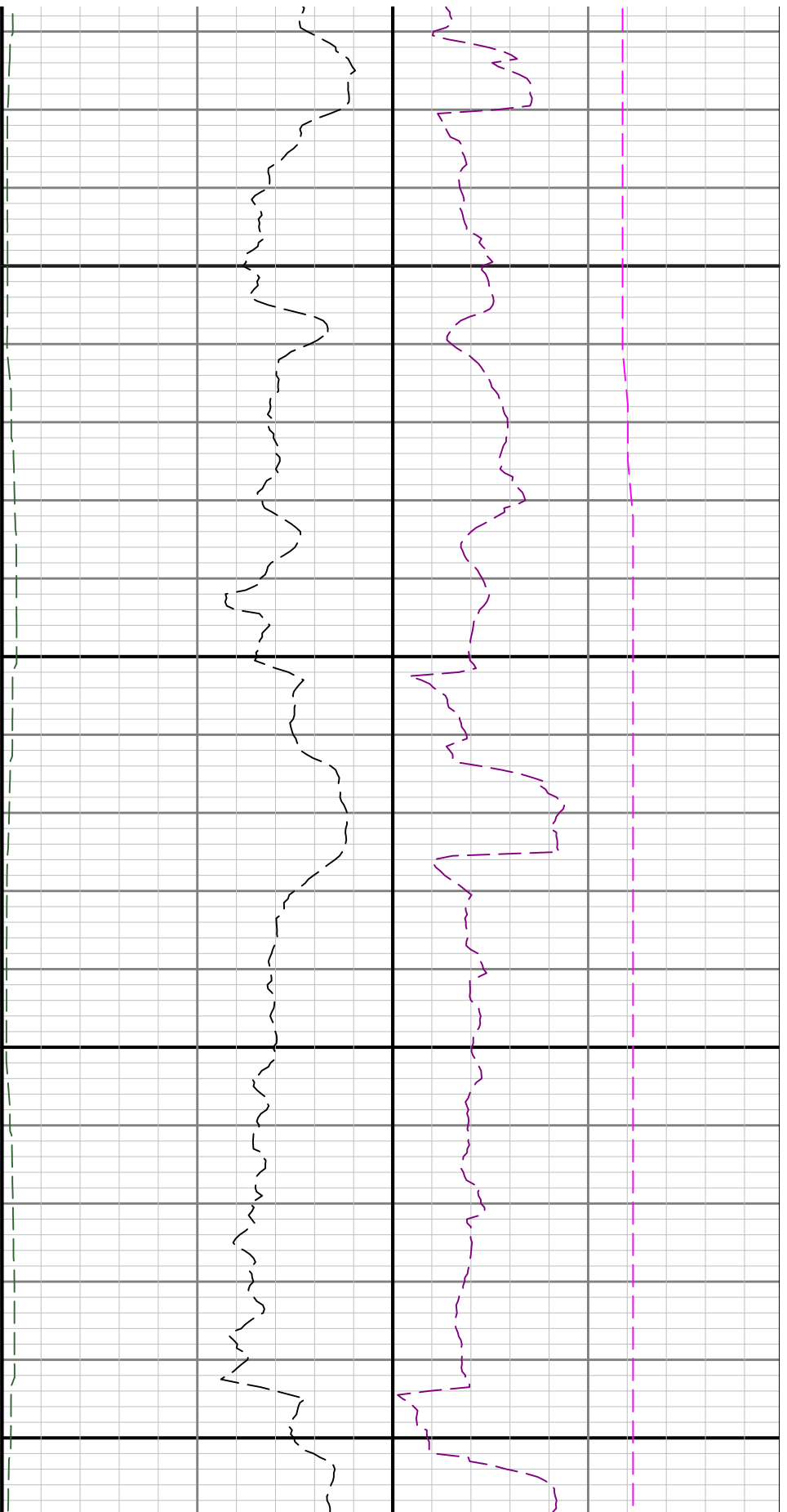


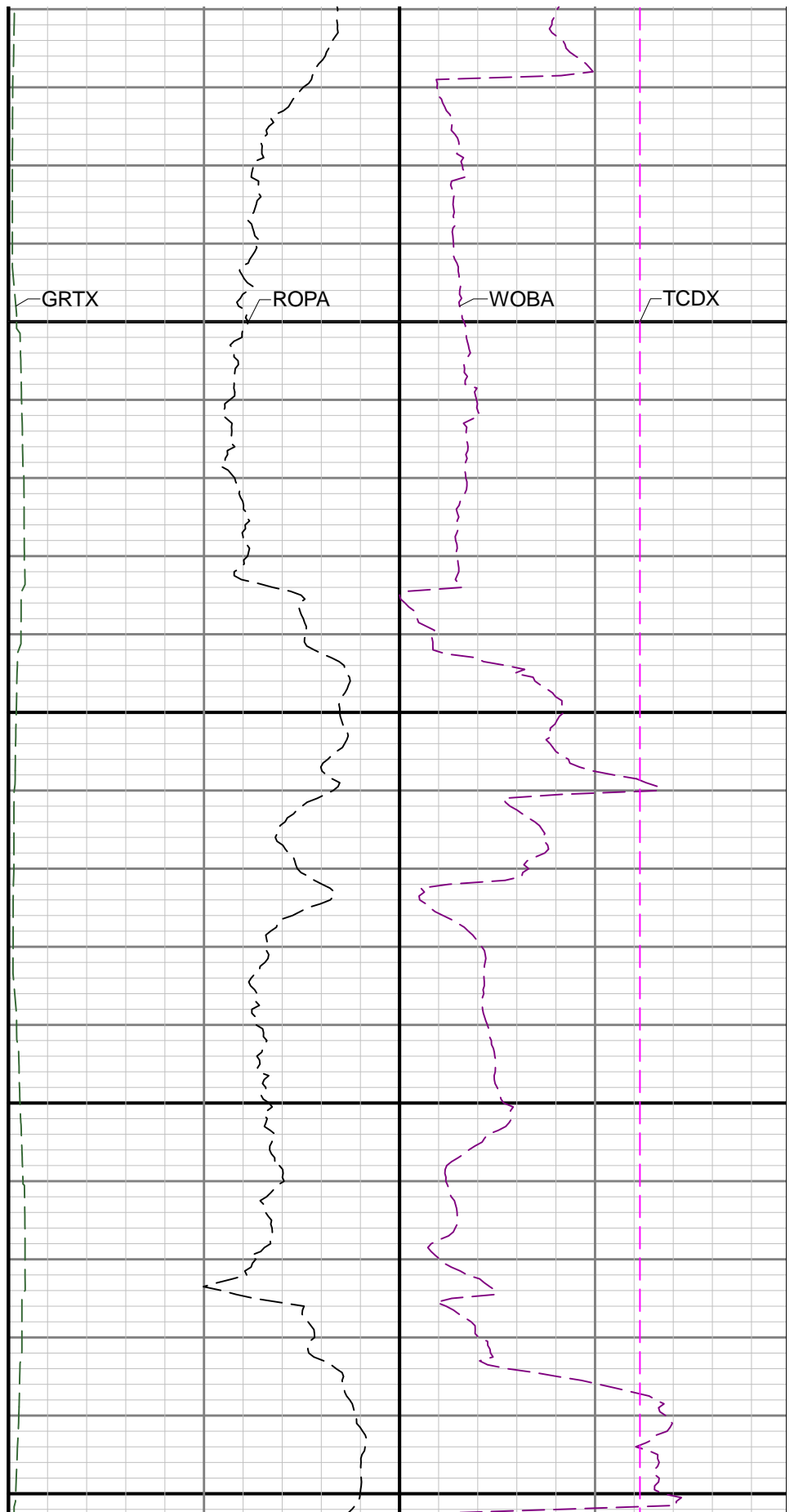
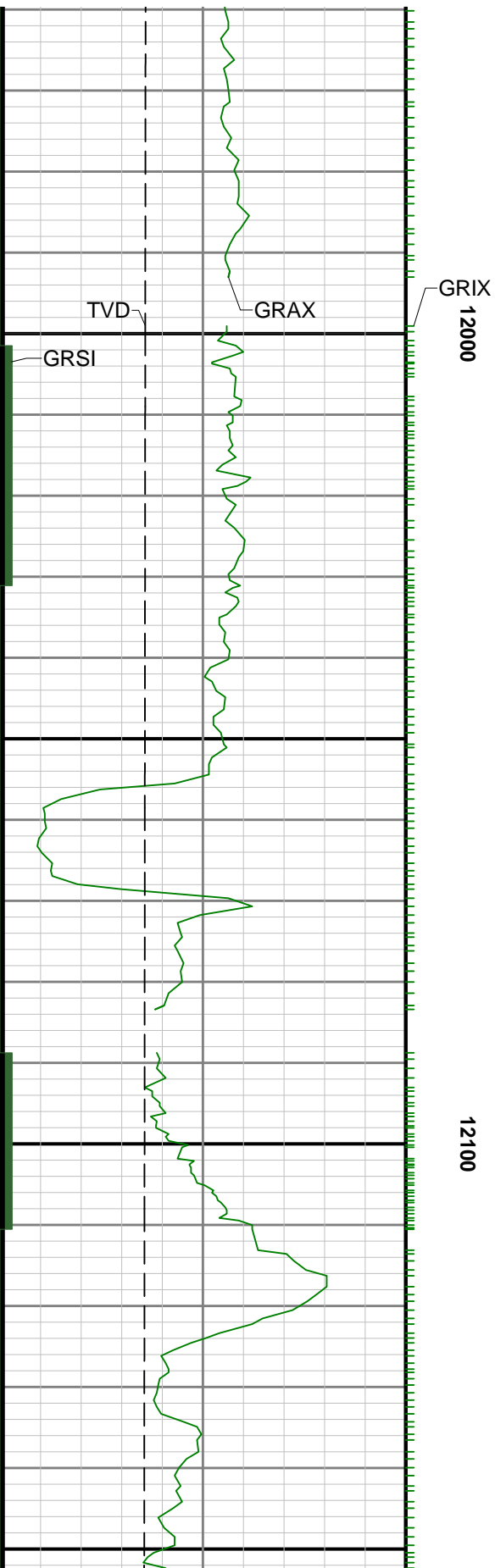
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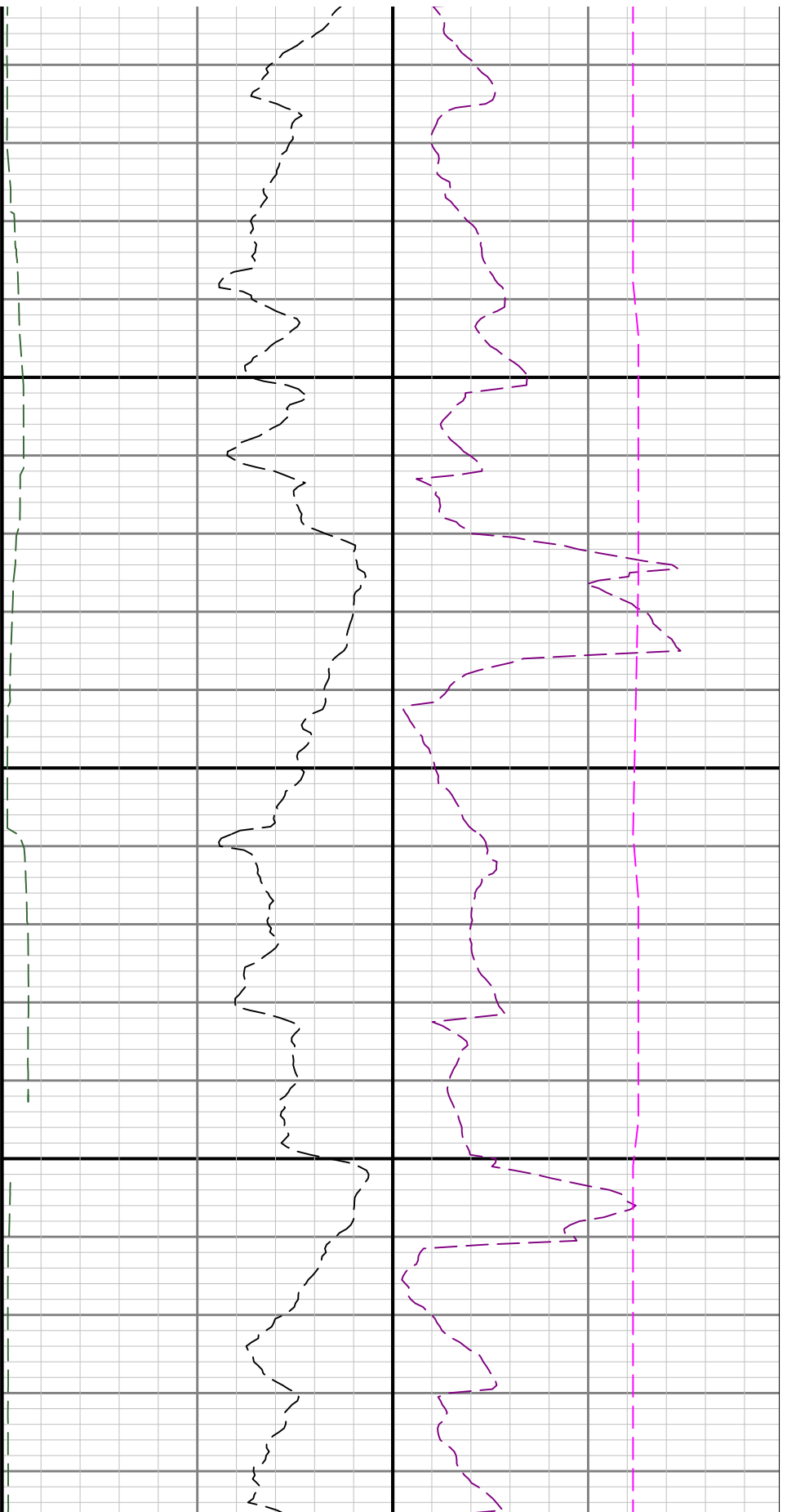
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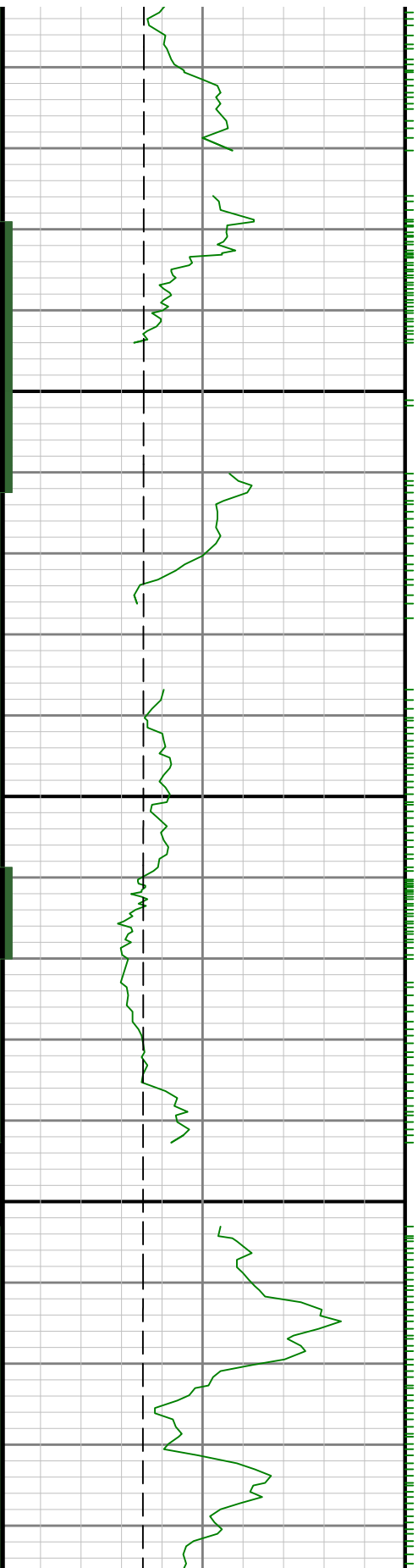


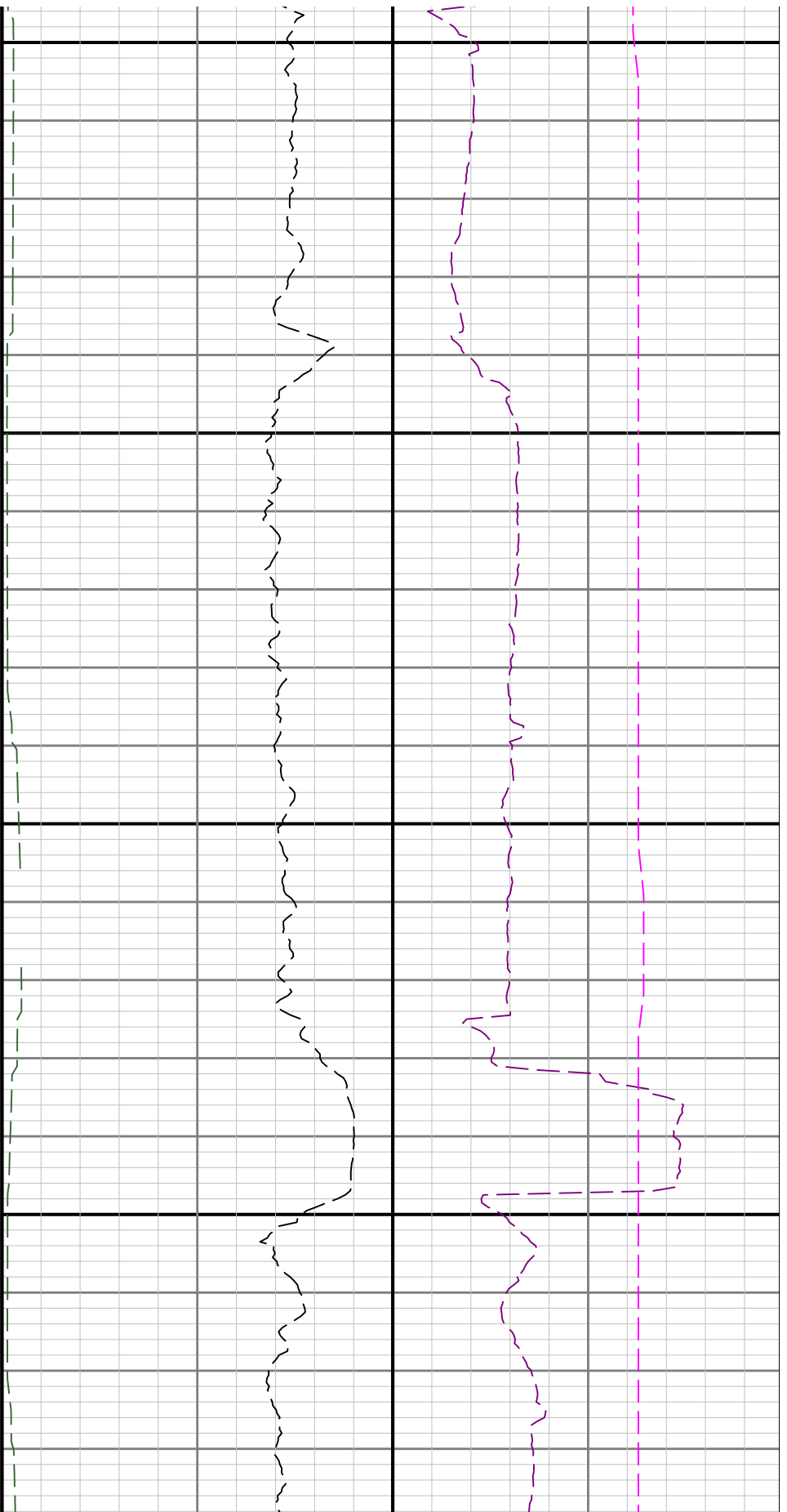




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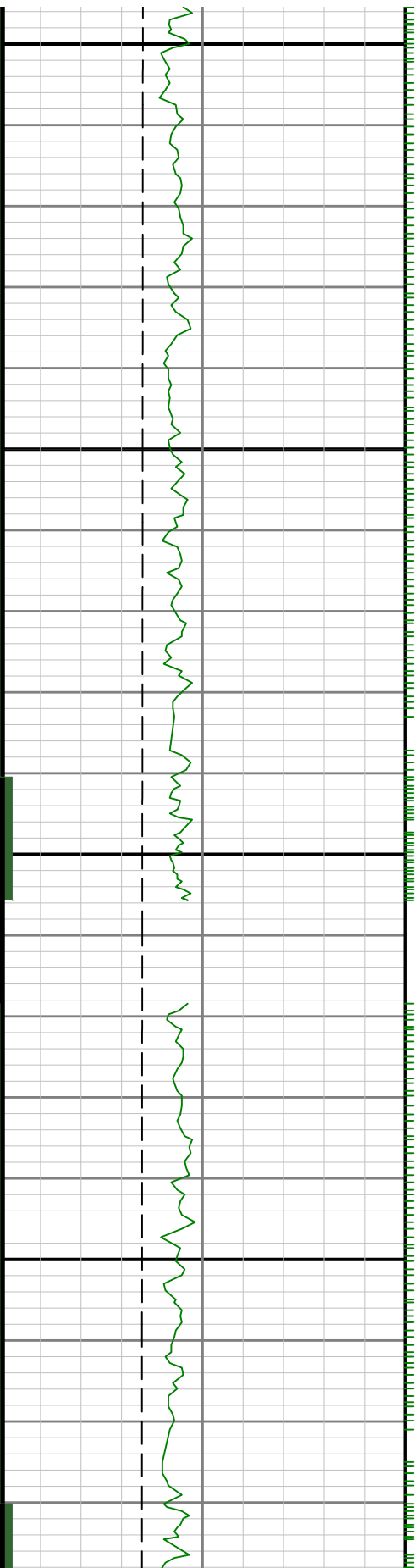
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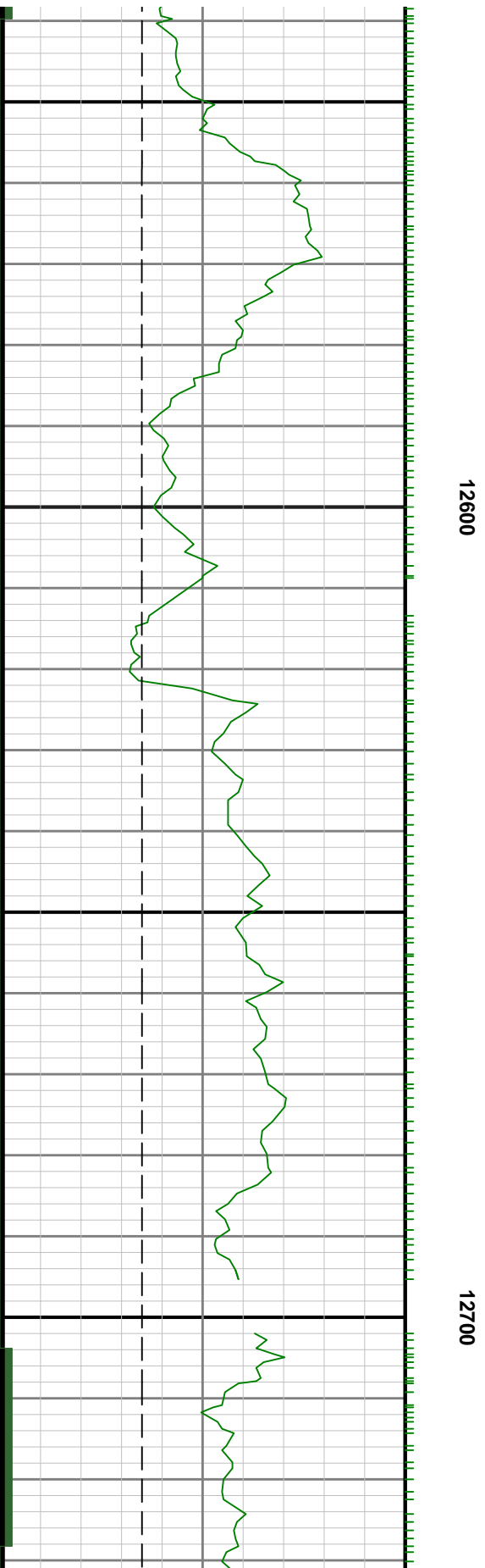
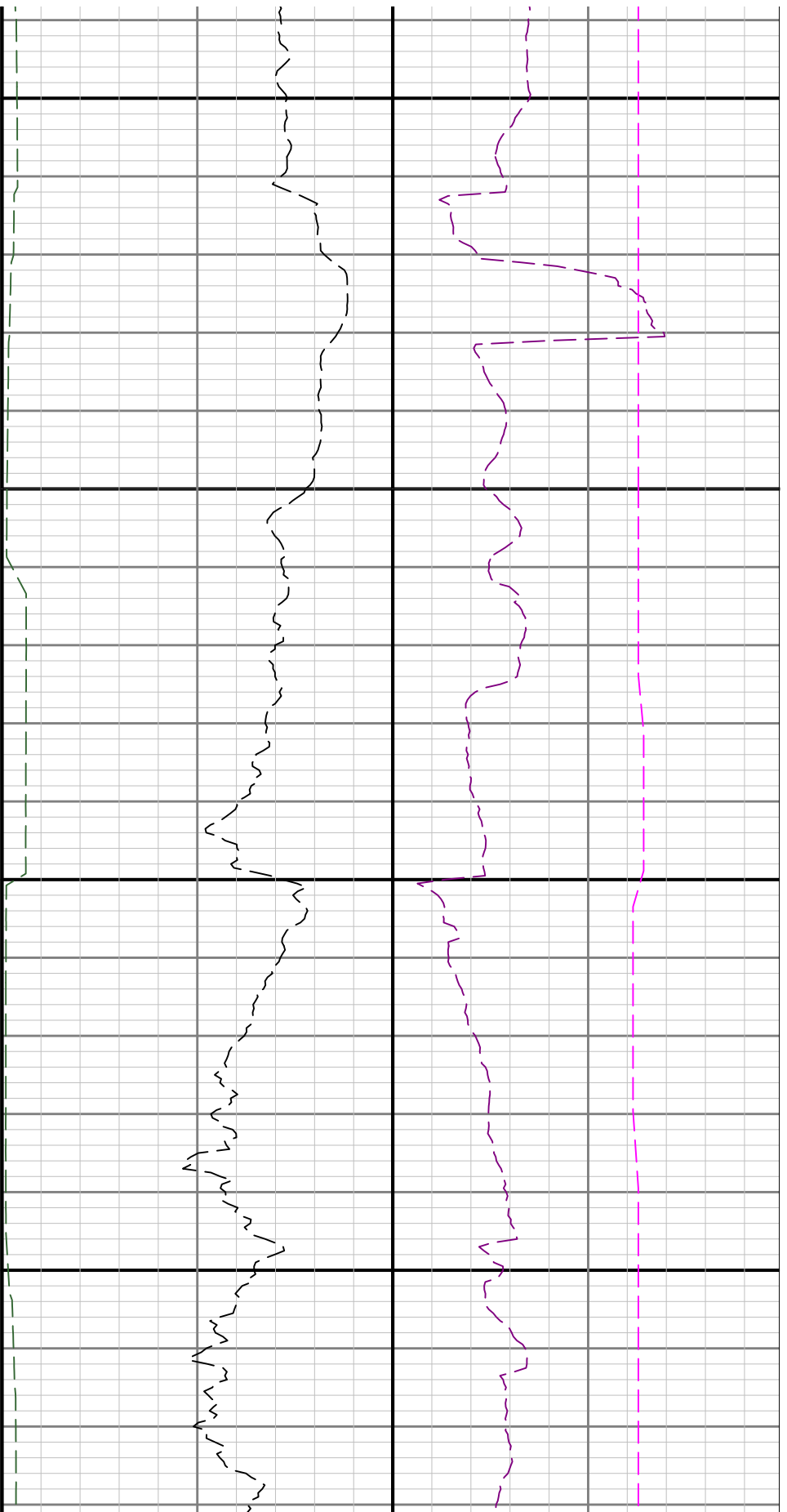


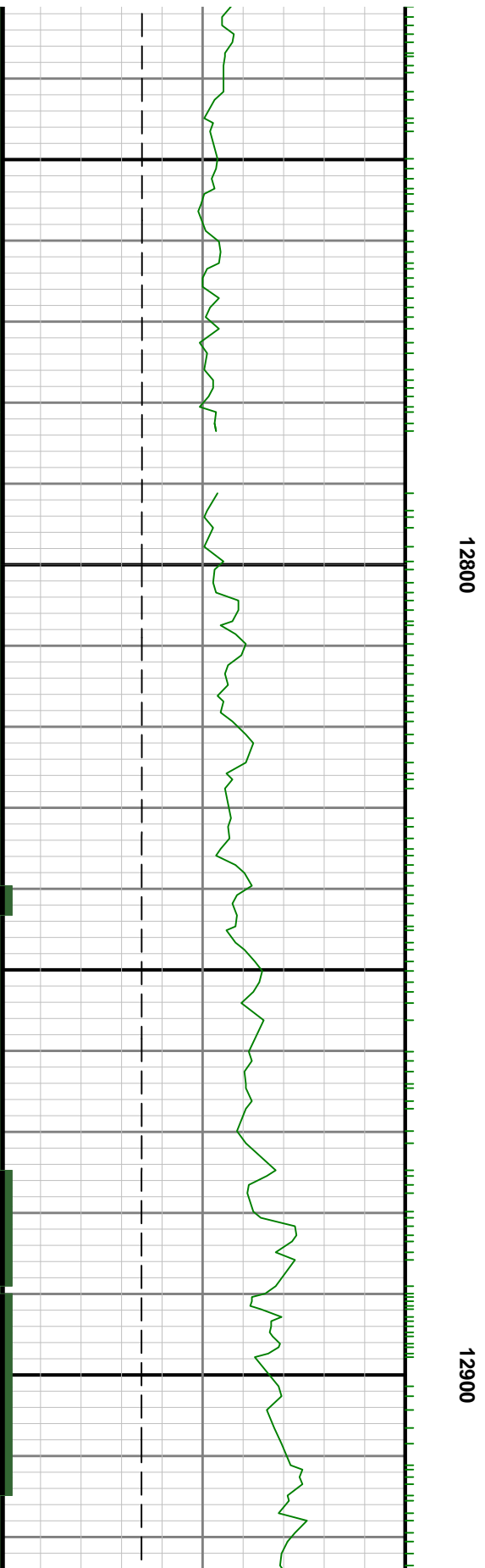
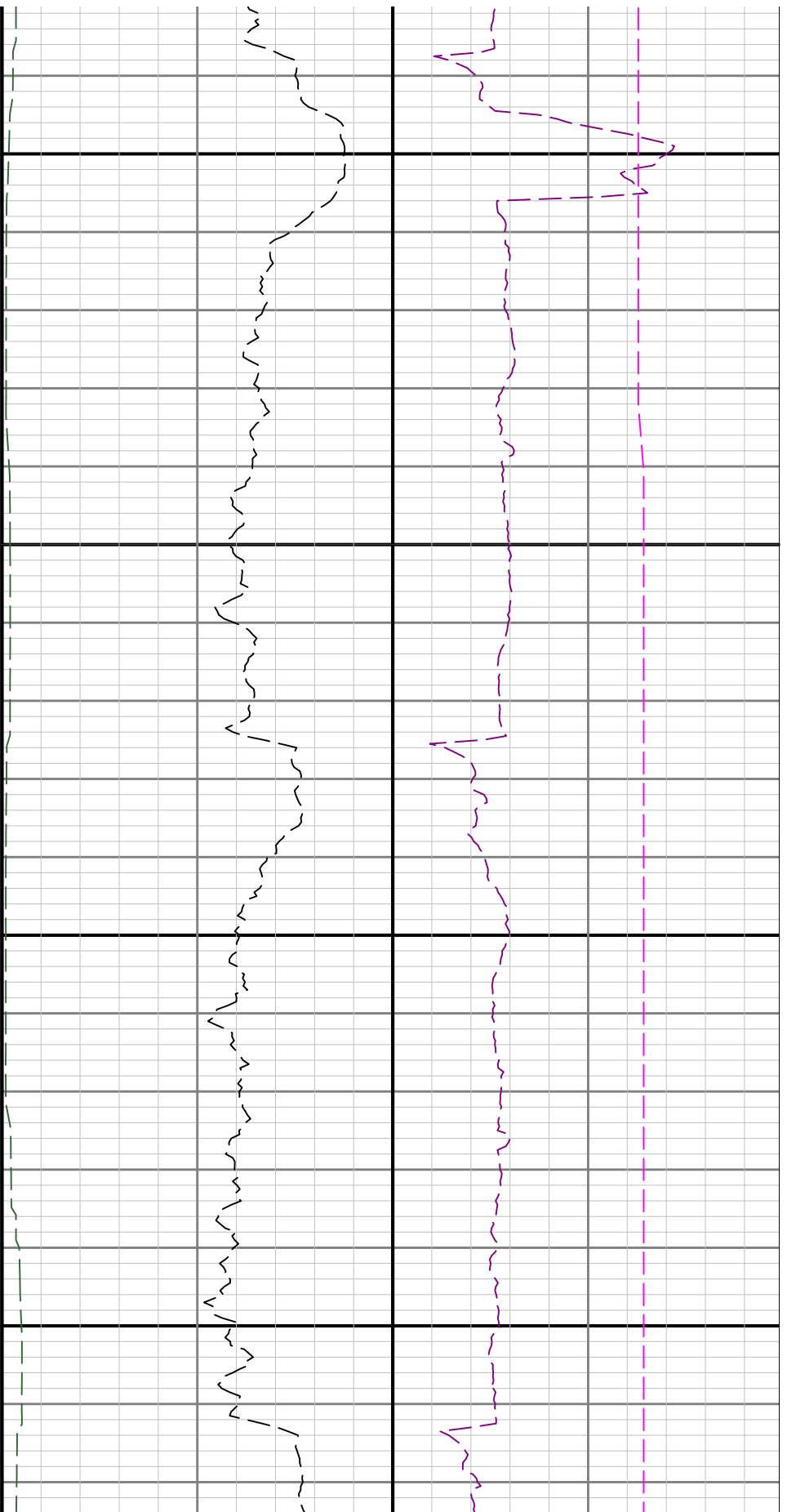


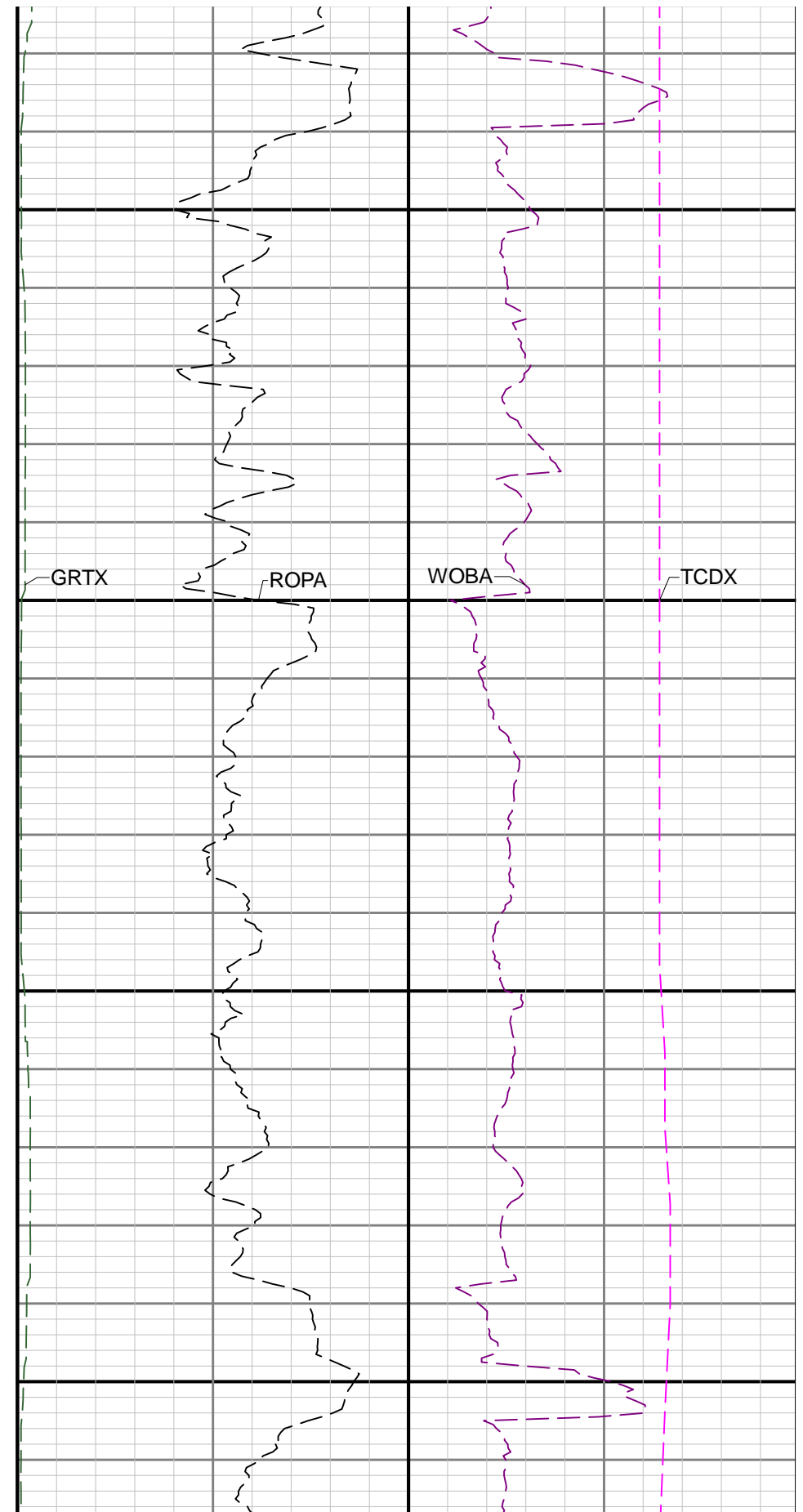
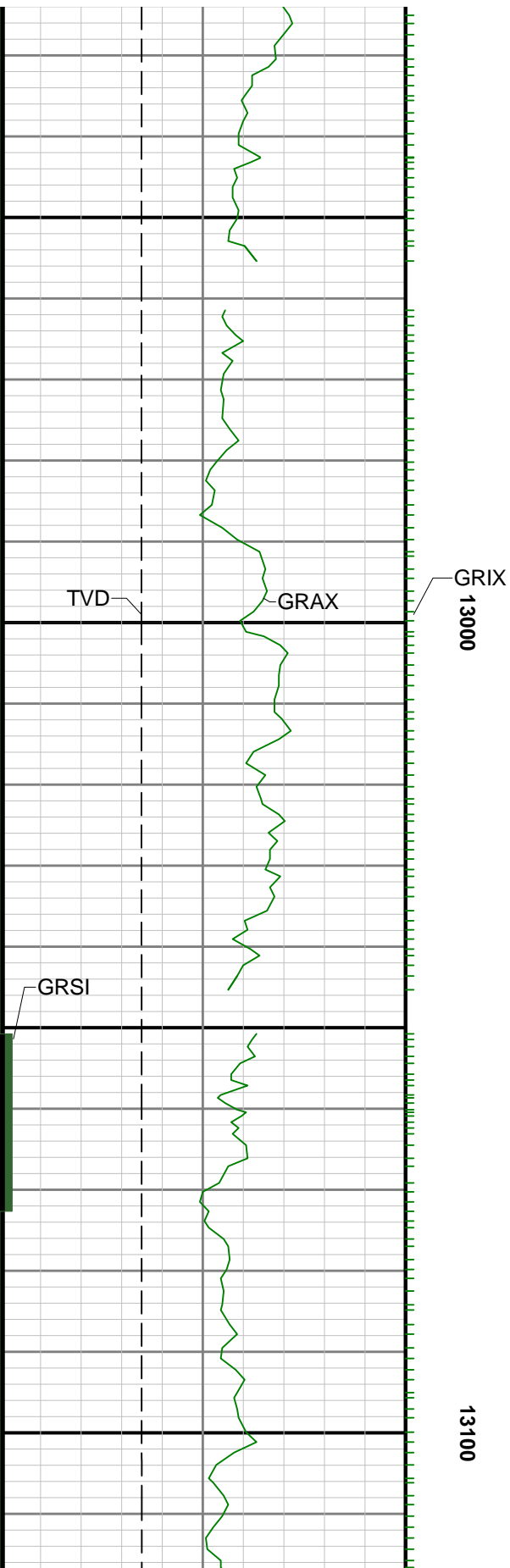
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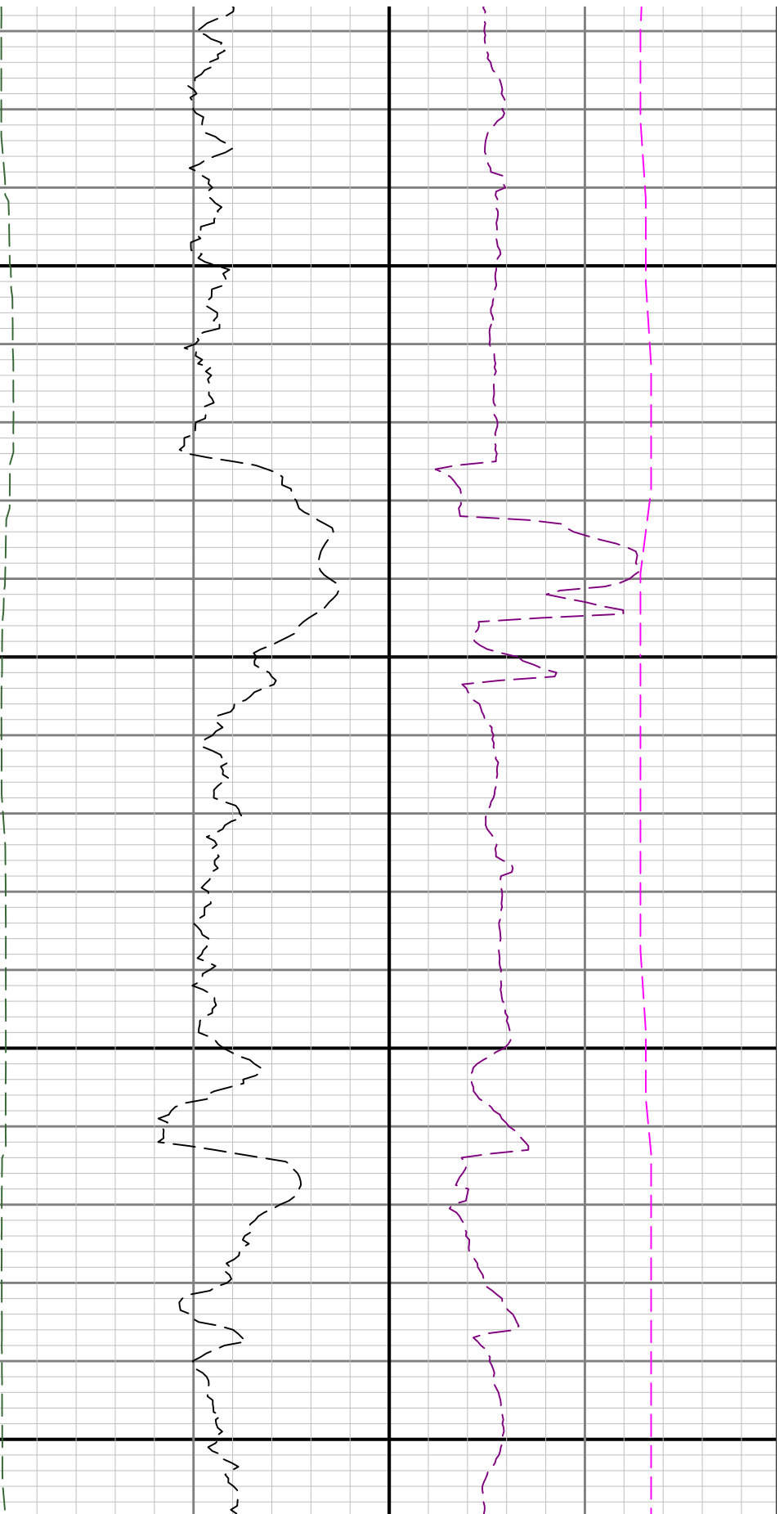
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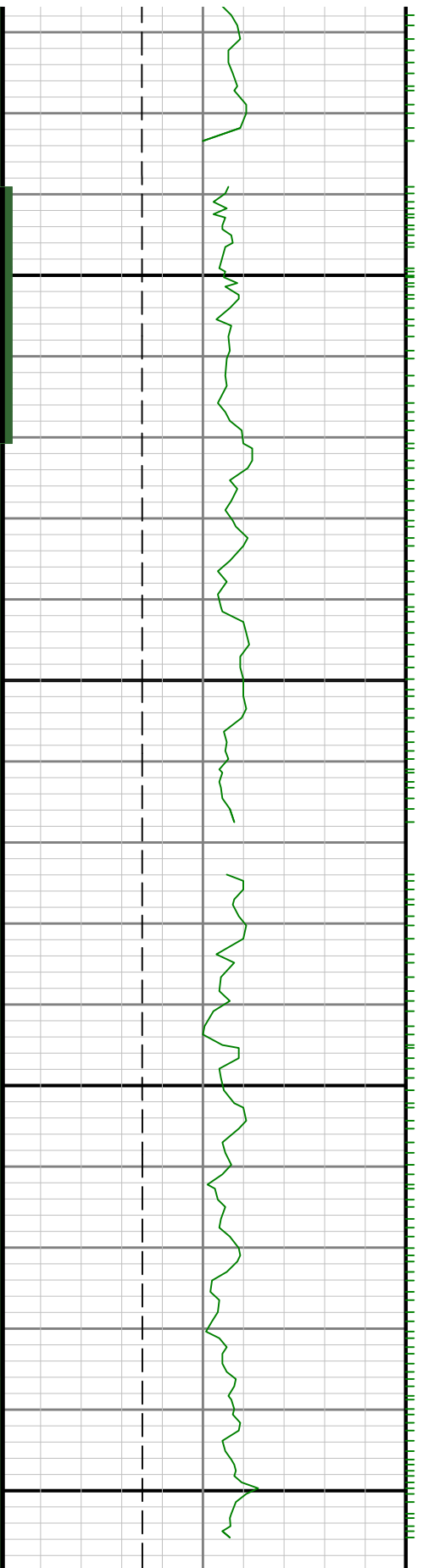


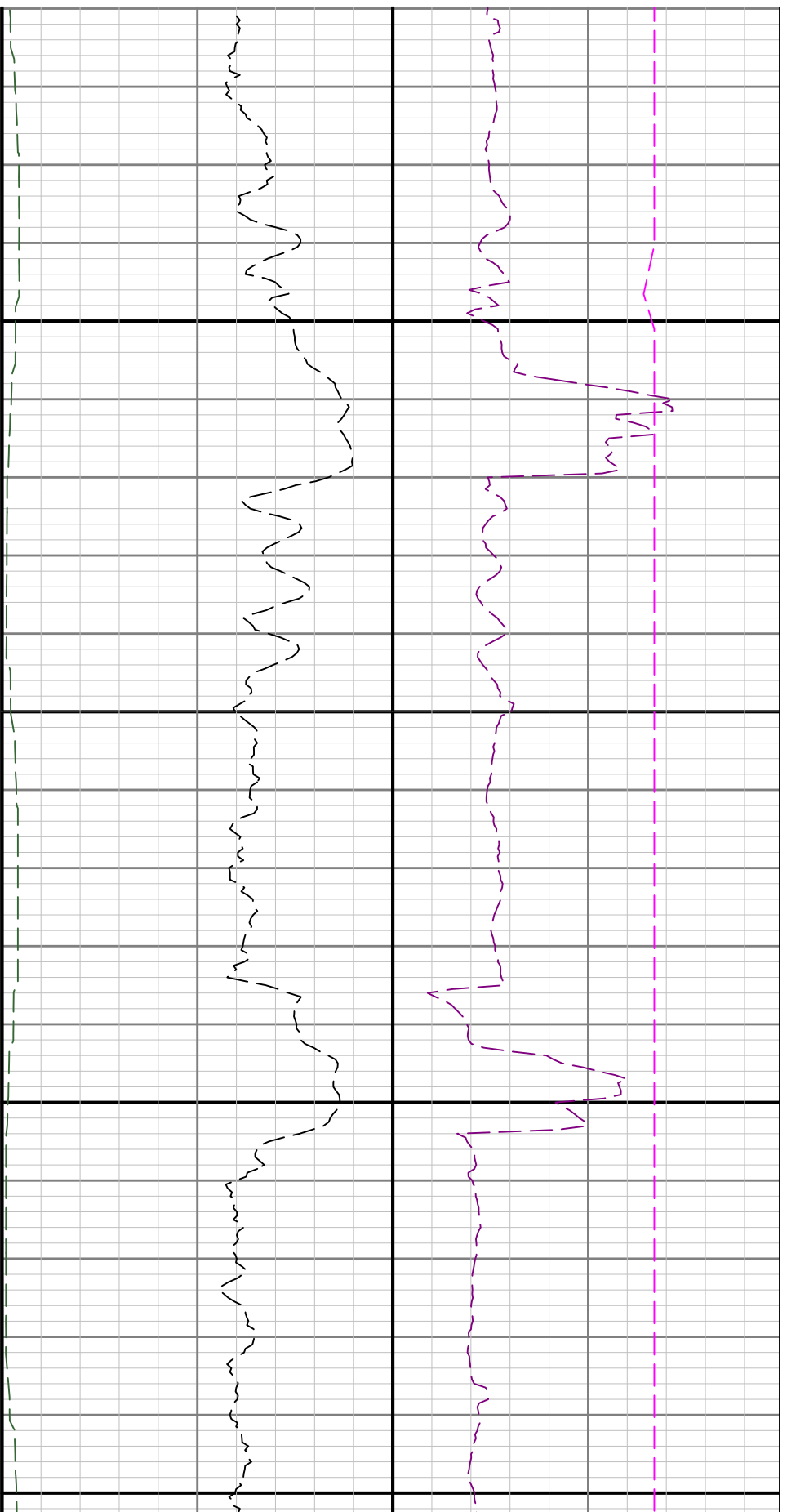




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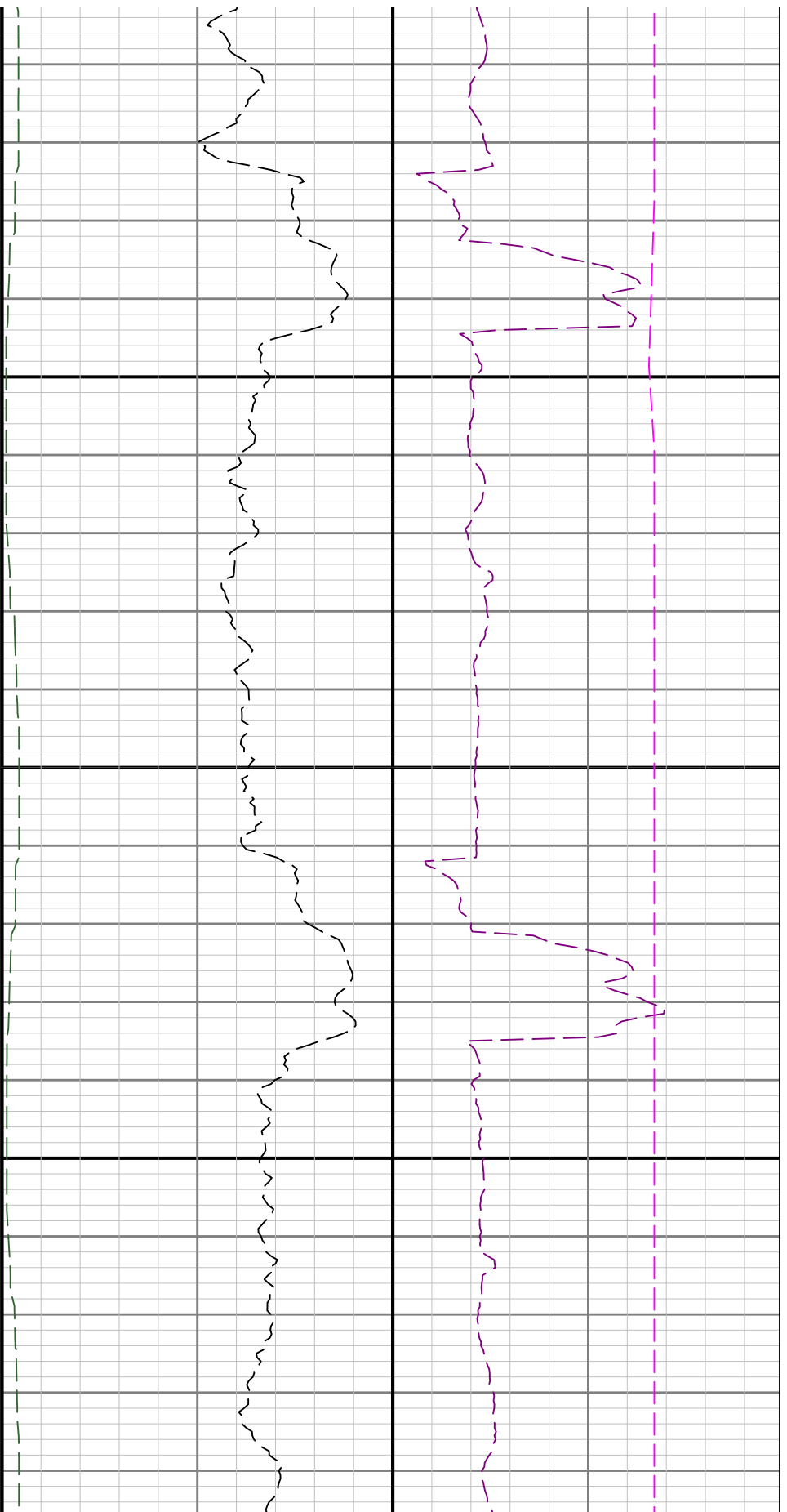
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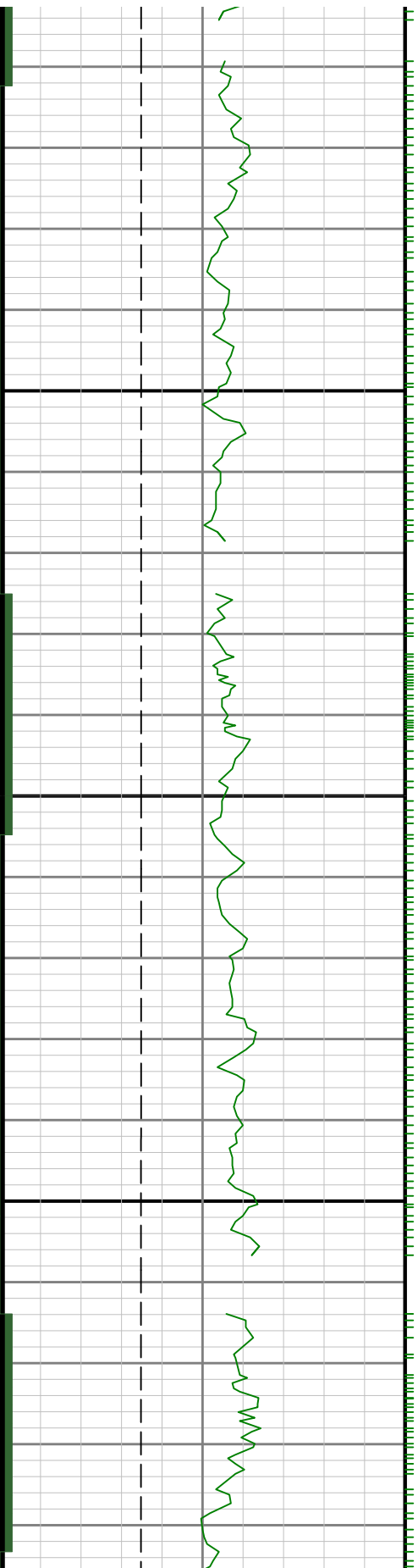


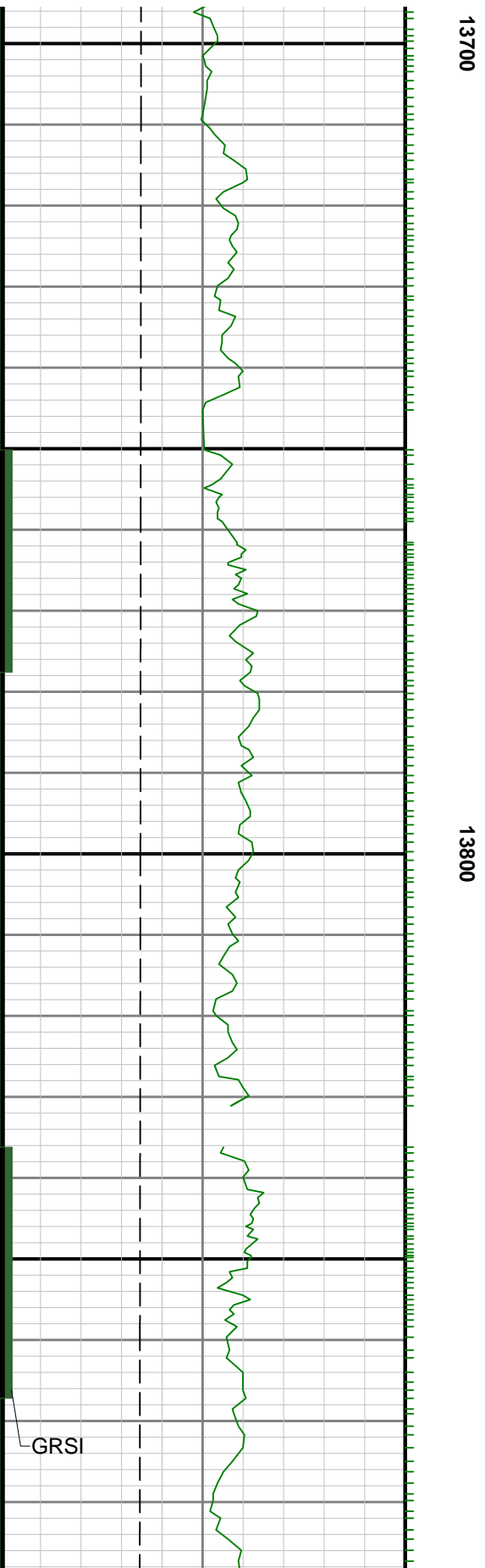
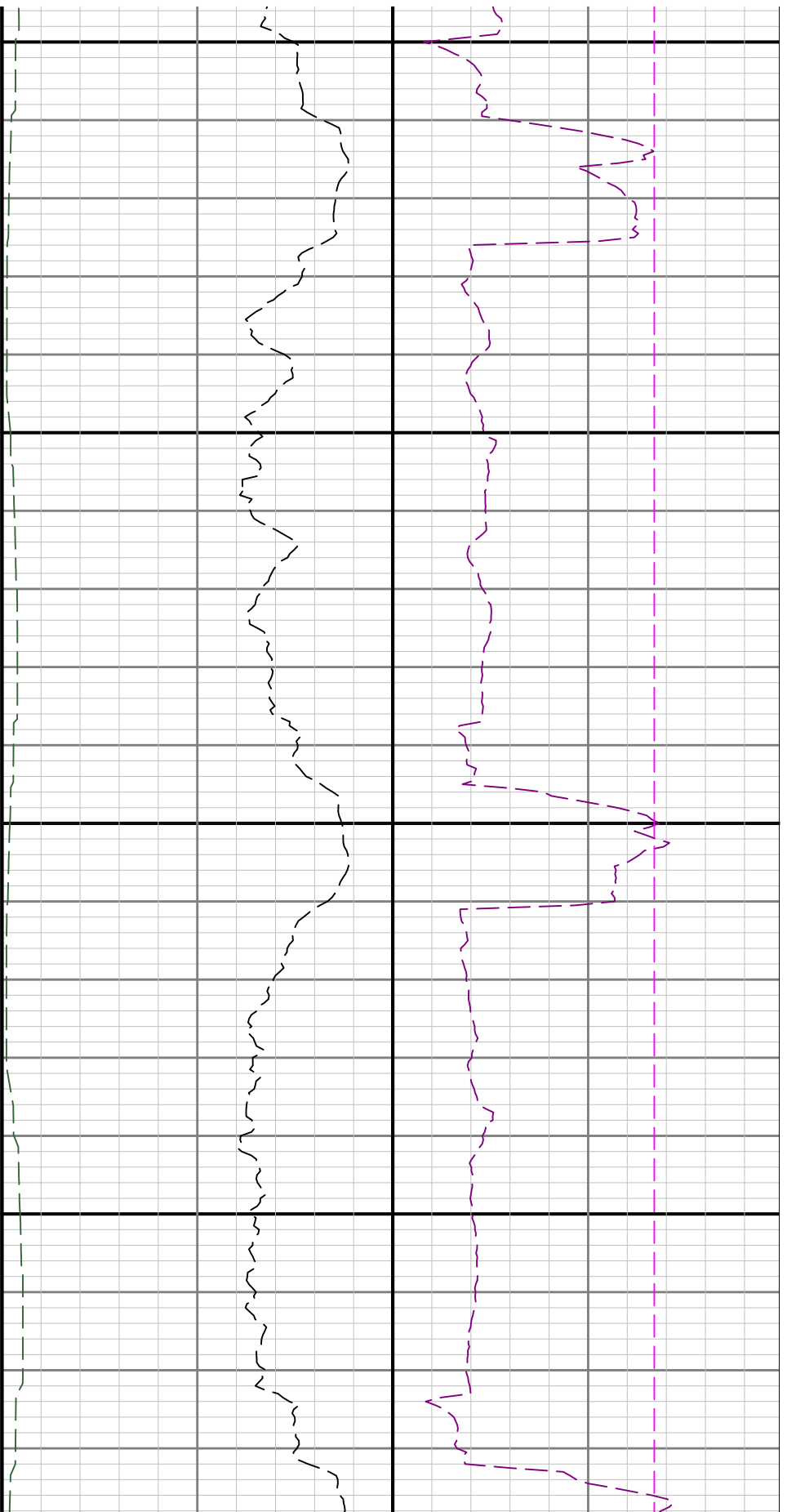
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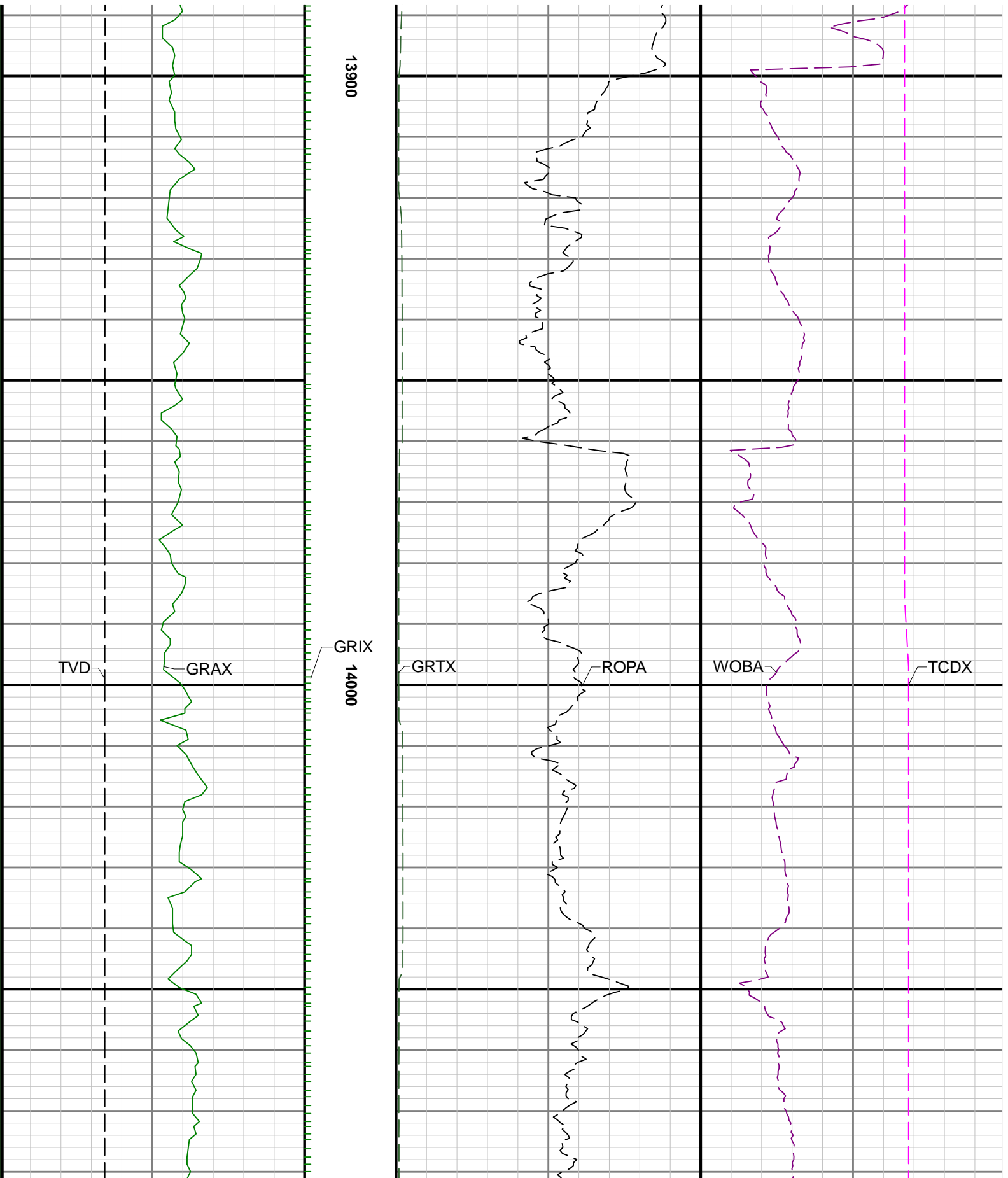
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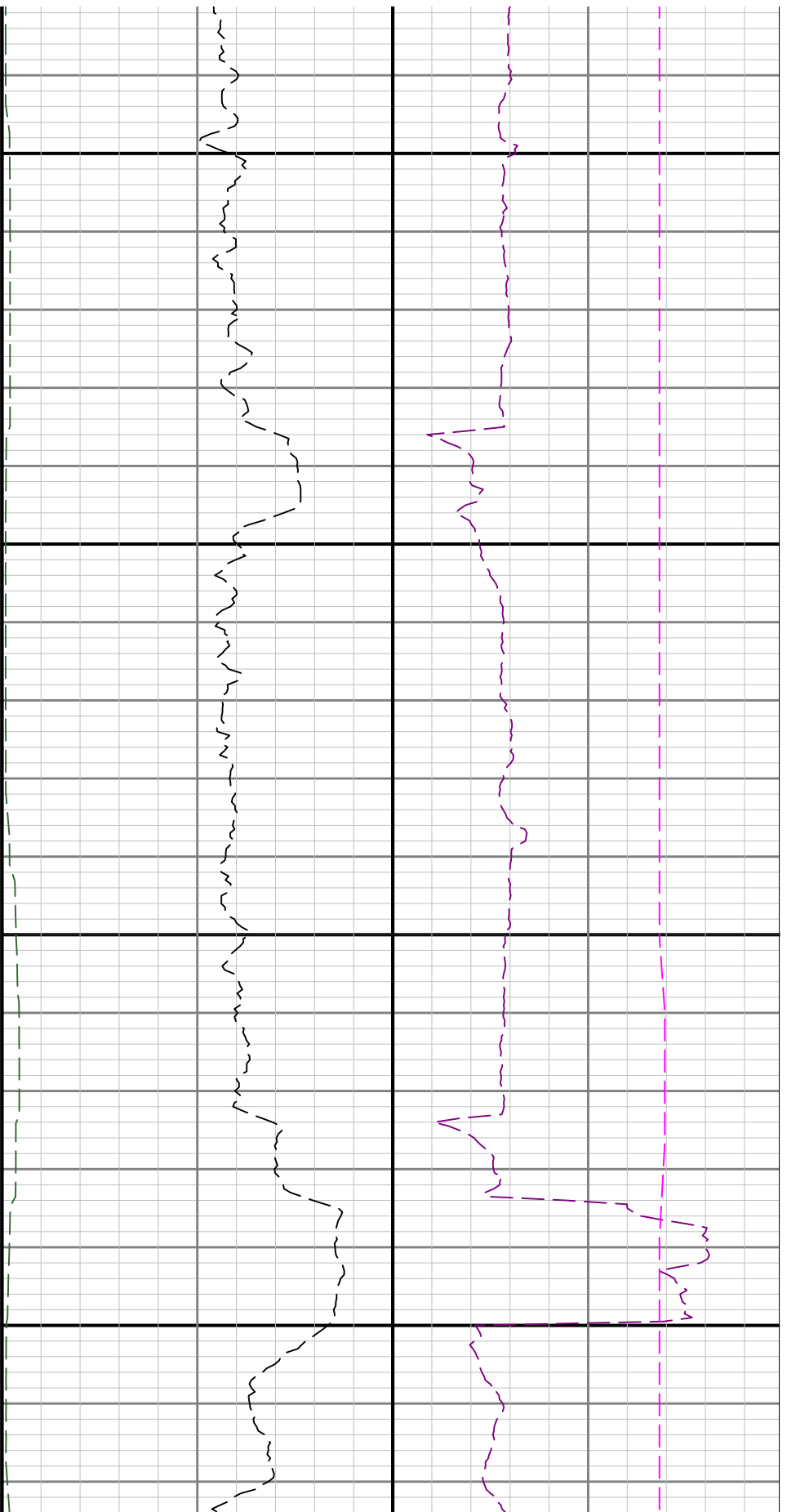


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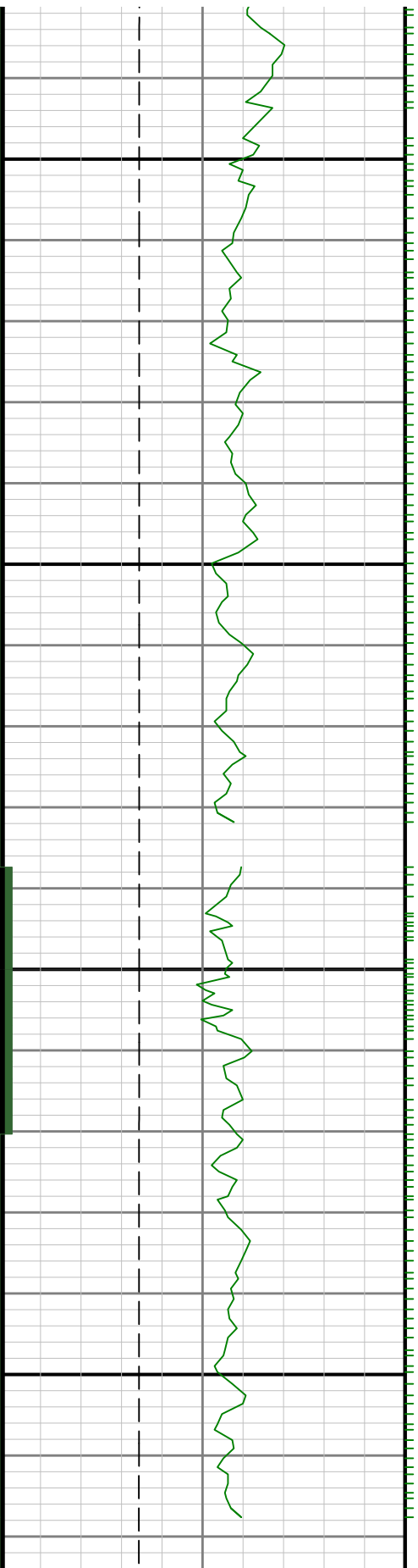


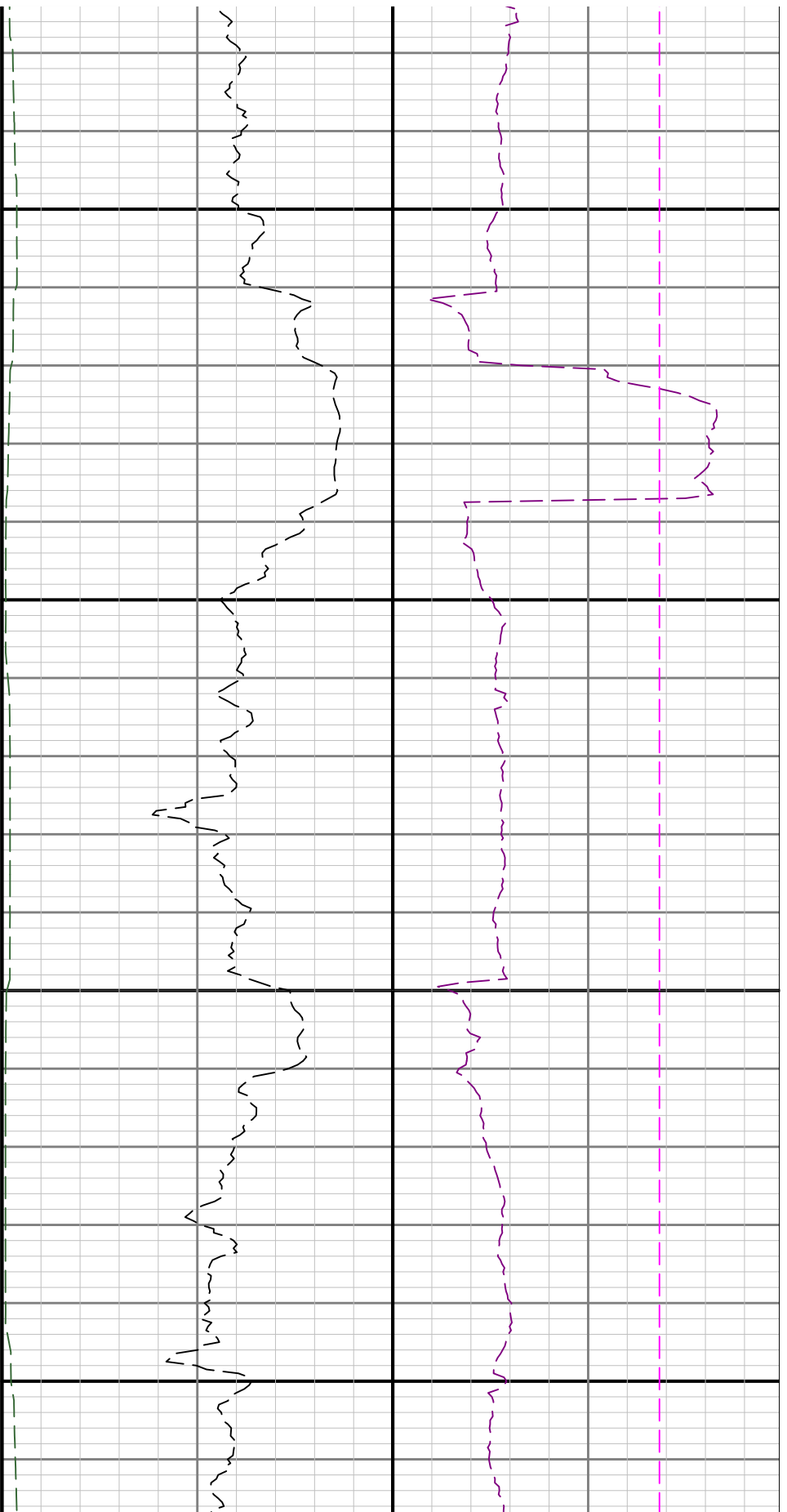




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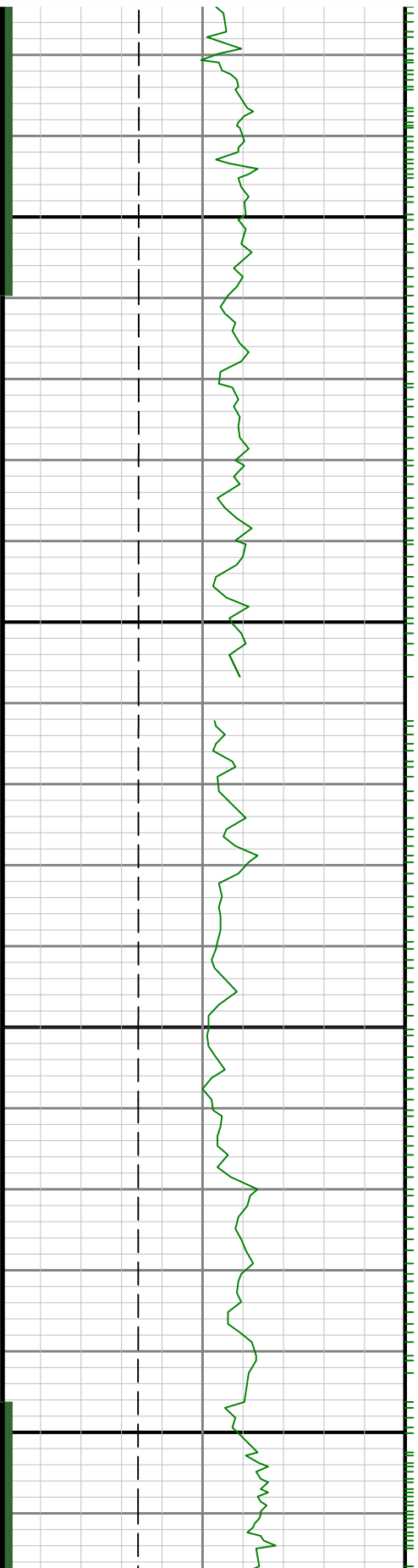
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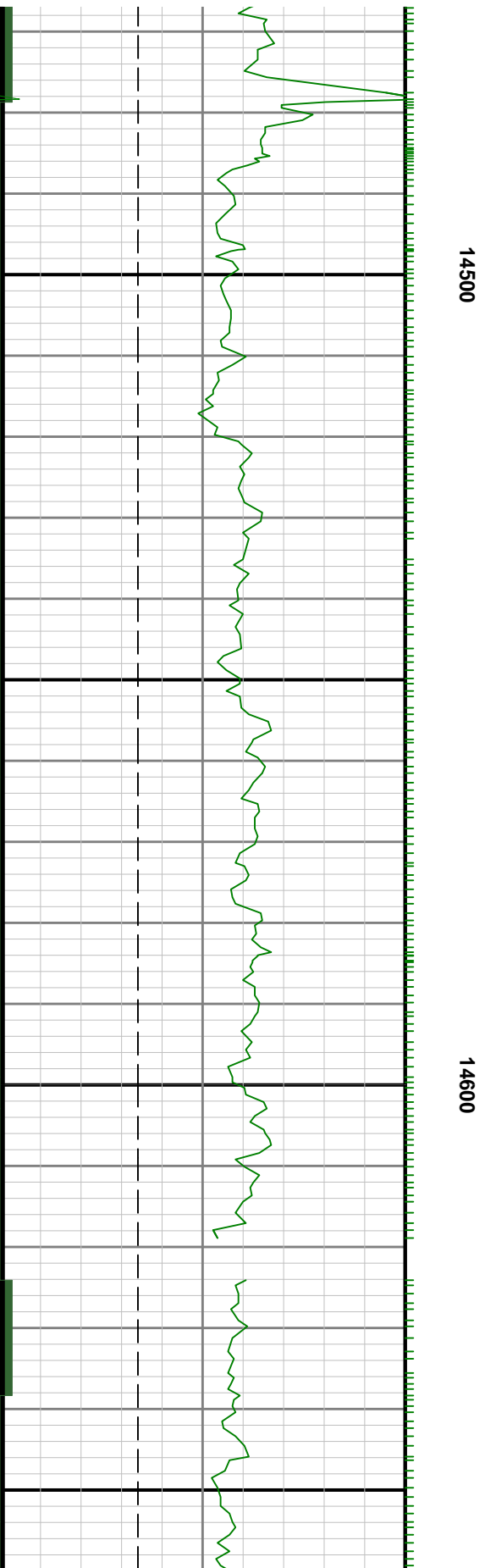
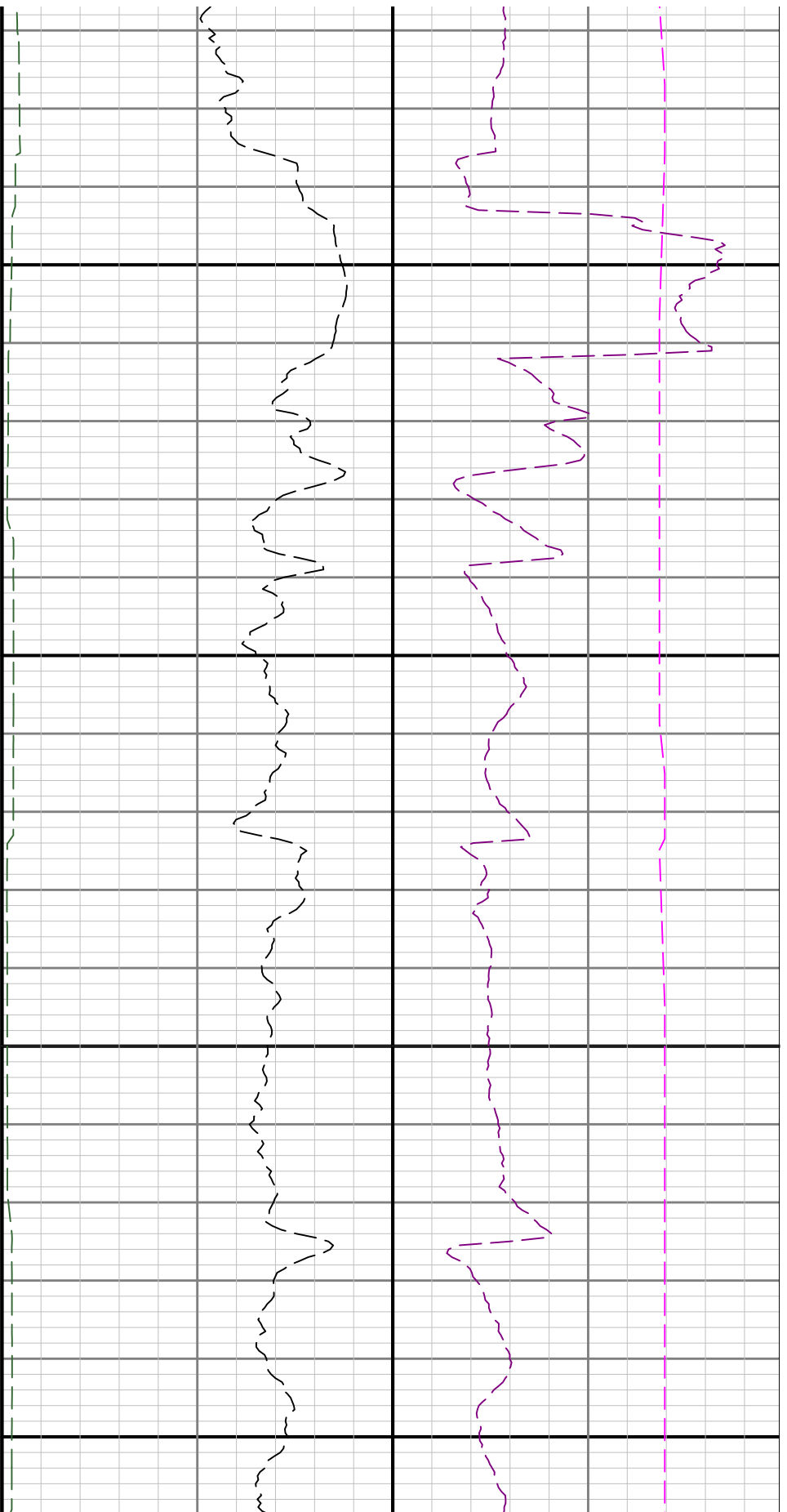


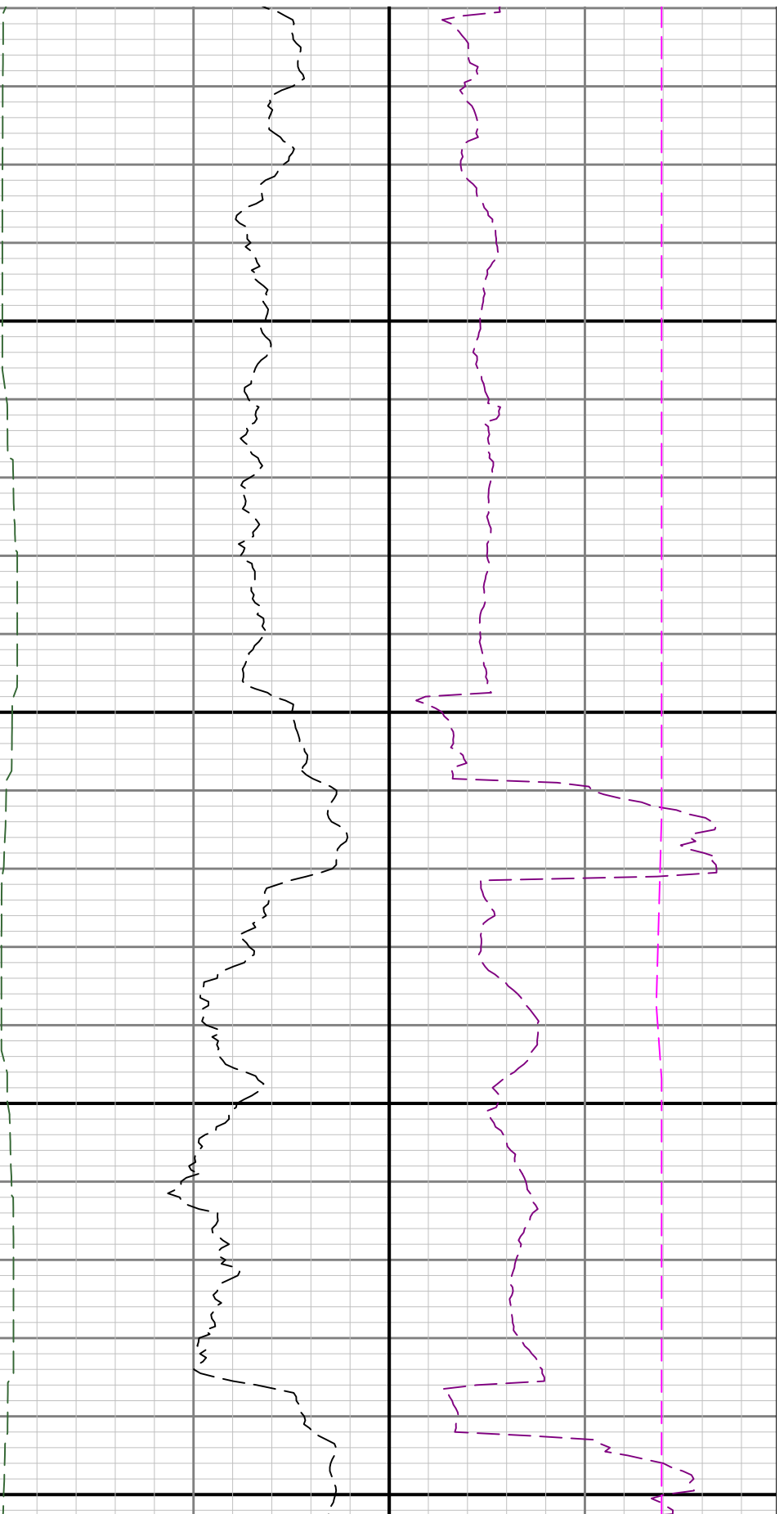


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14400

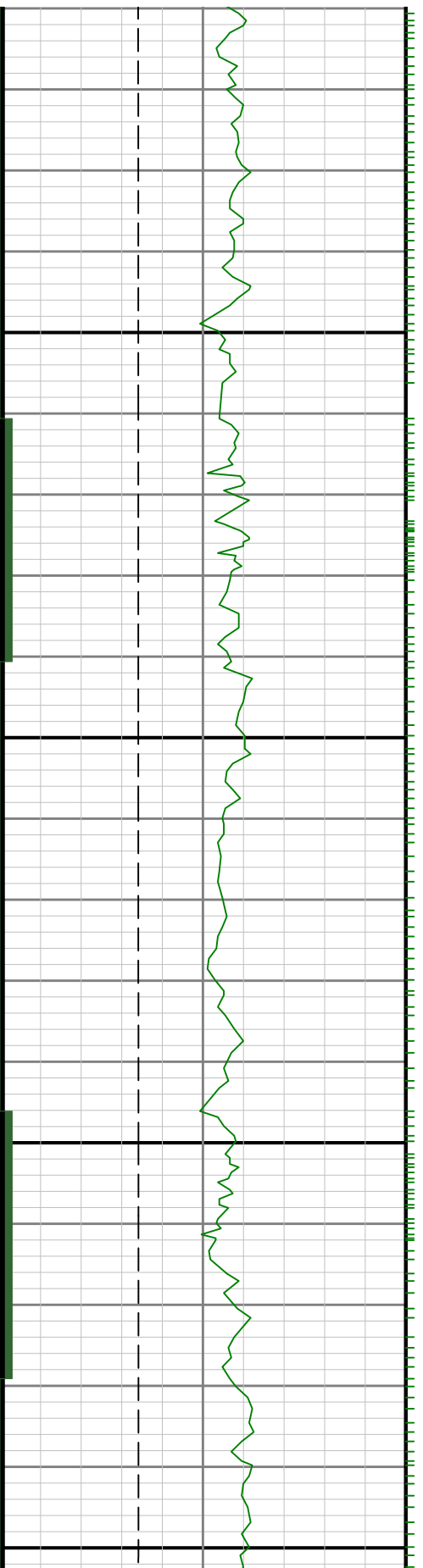


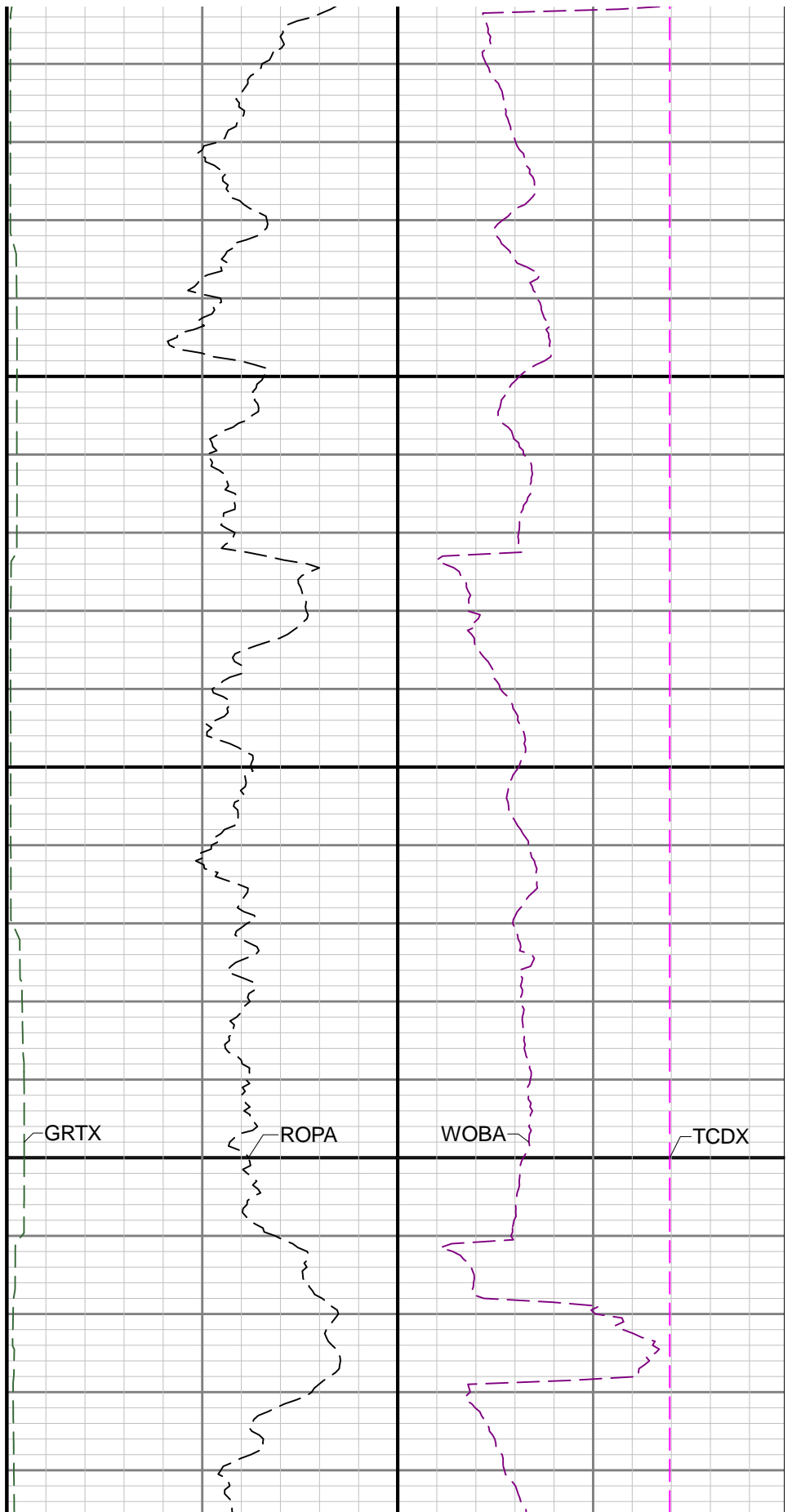
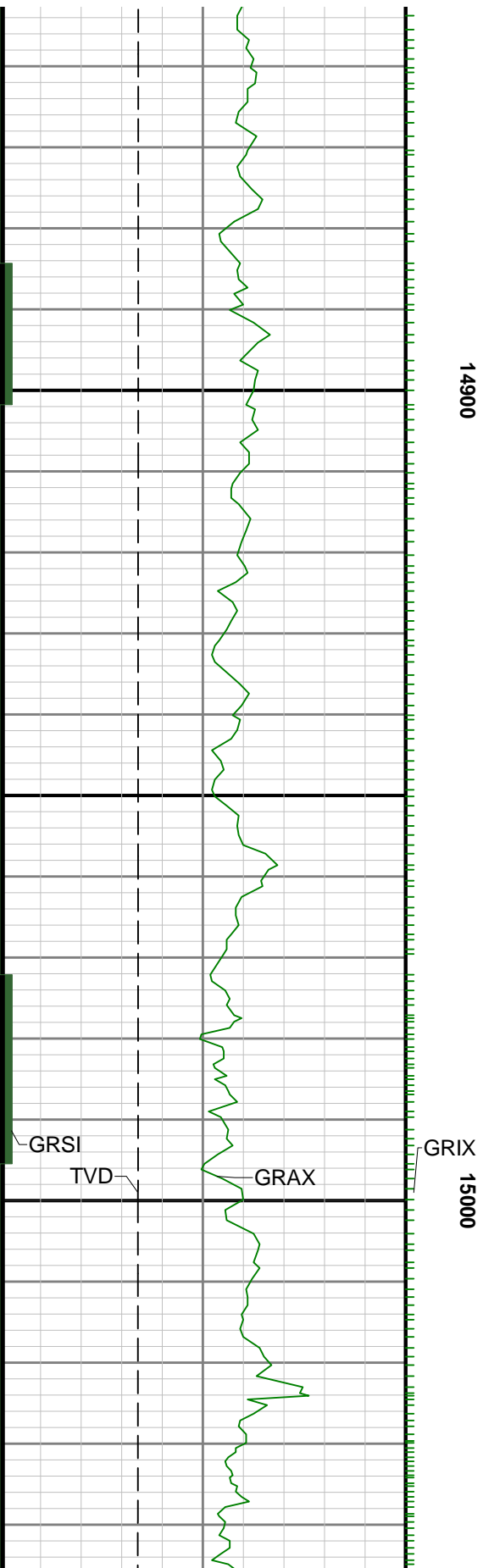


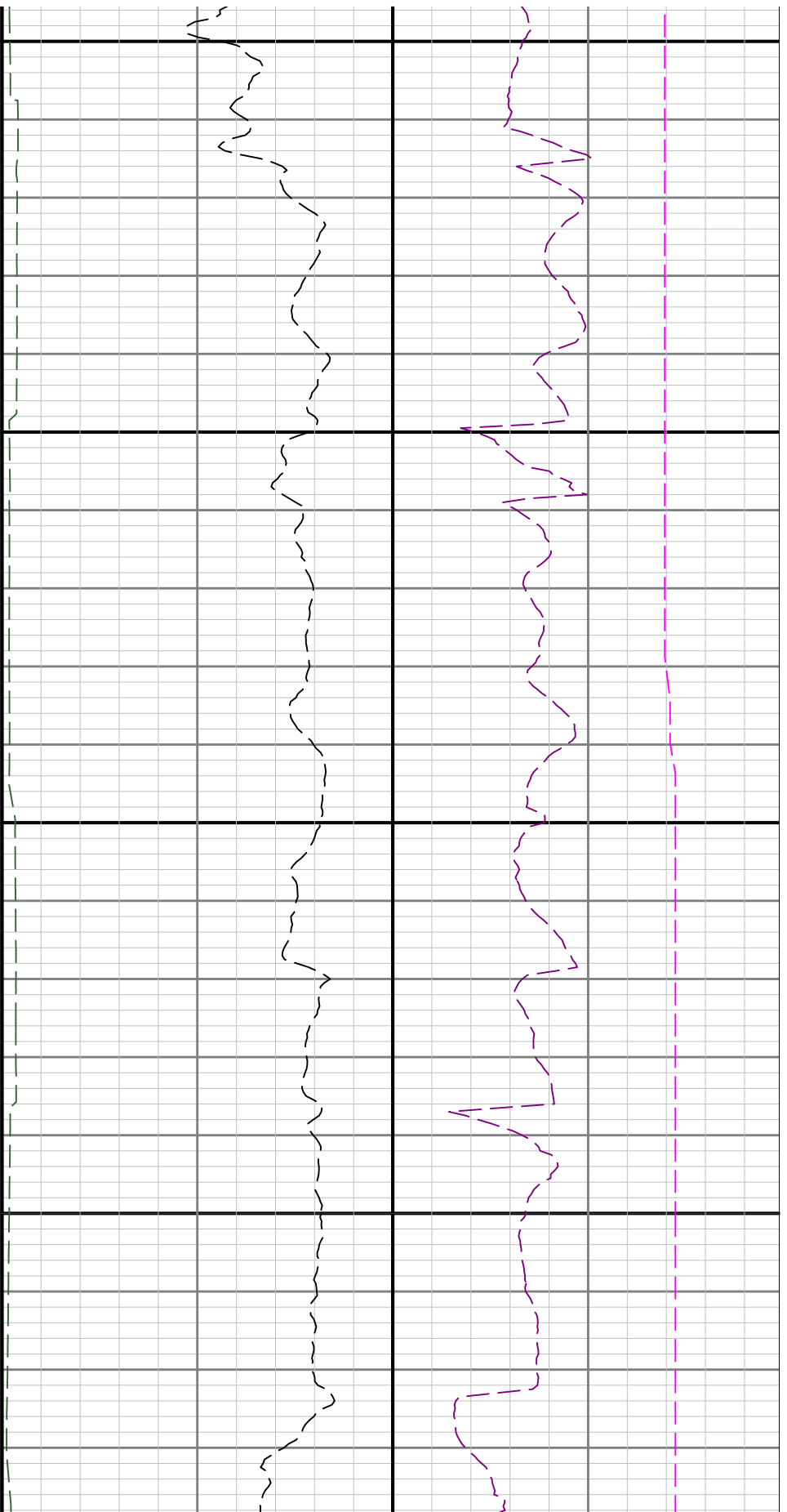


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14800

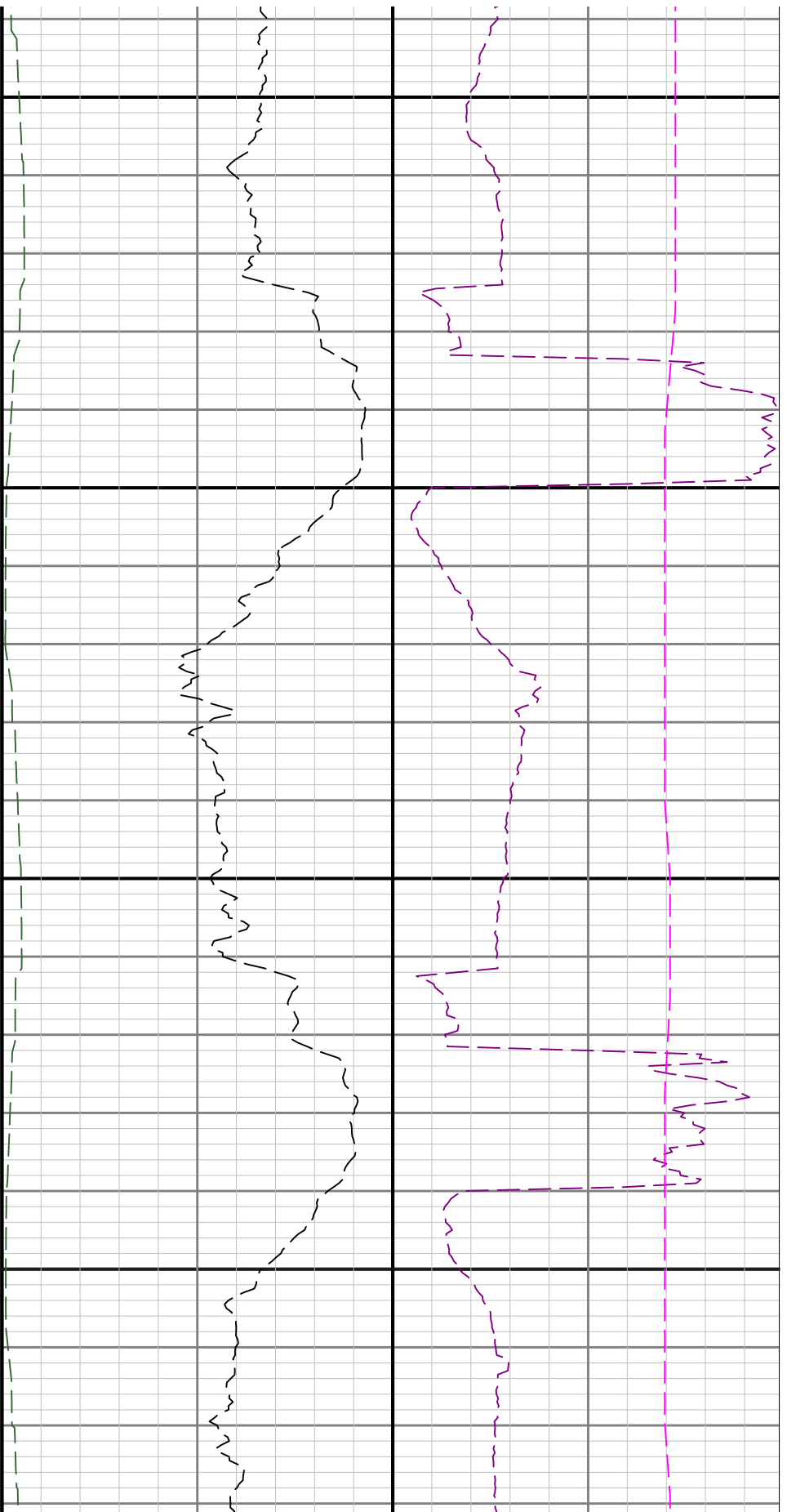






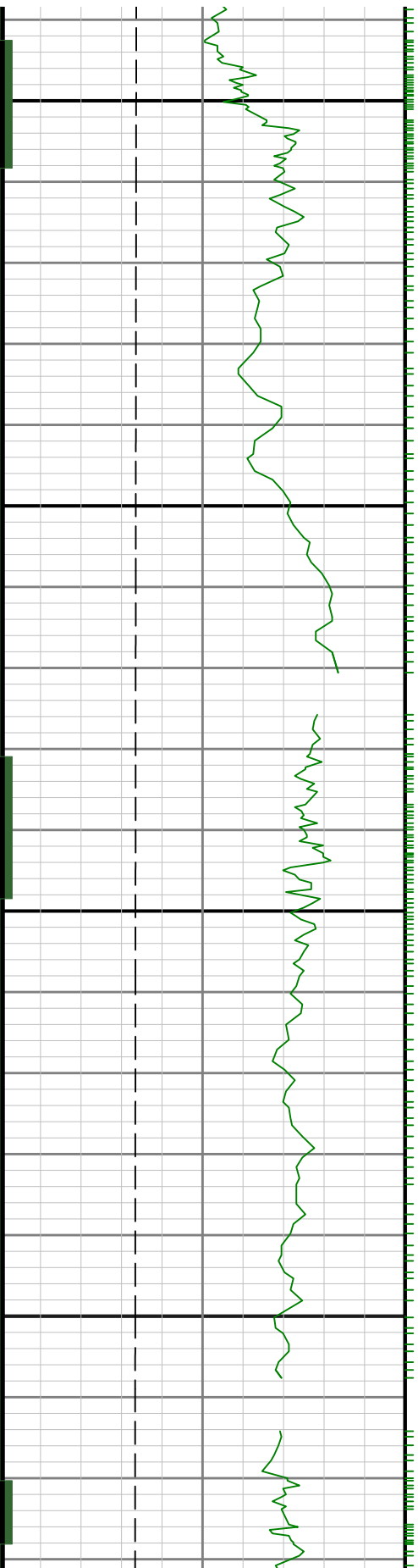
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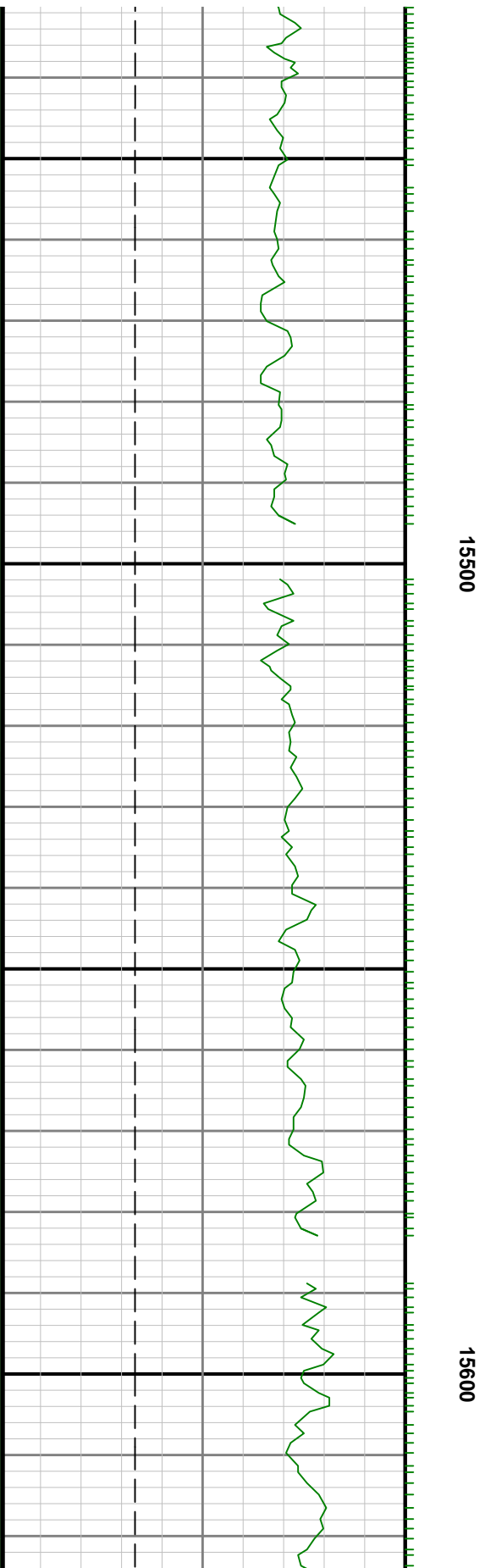
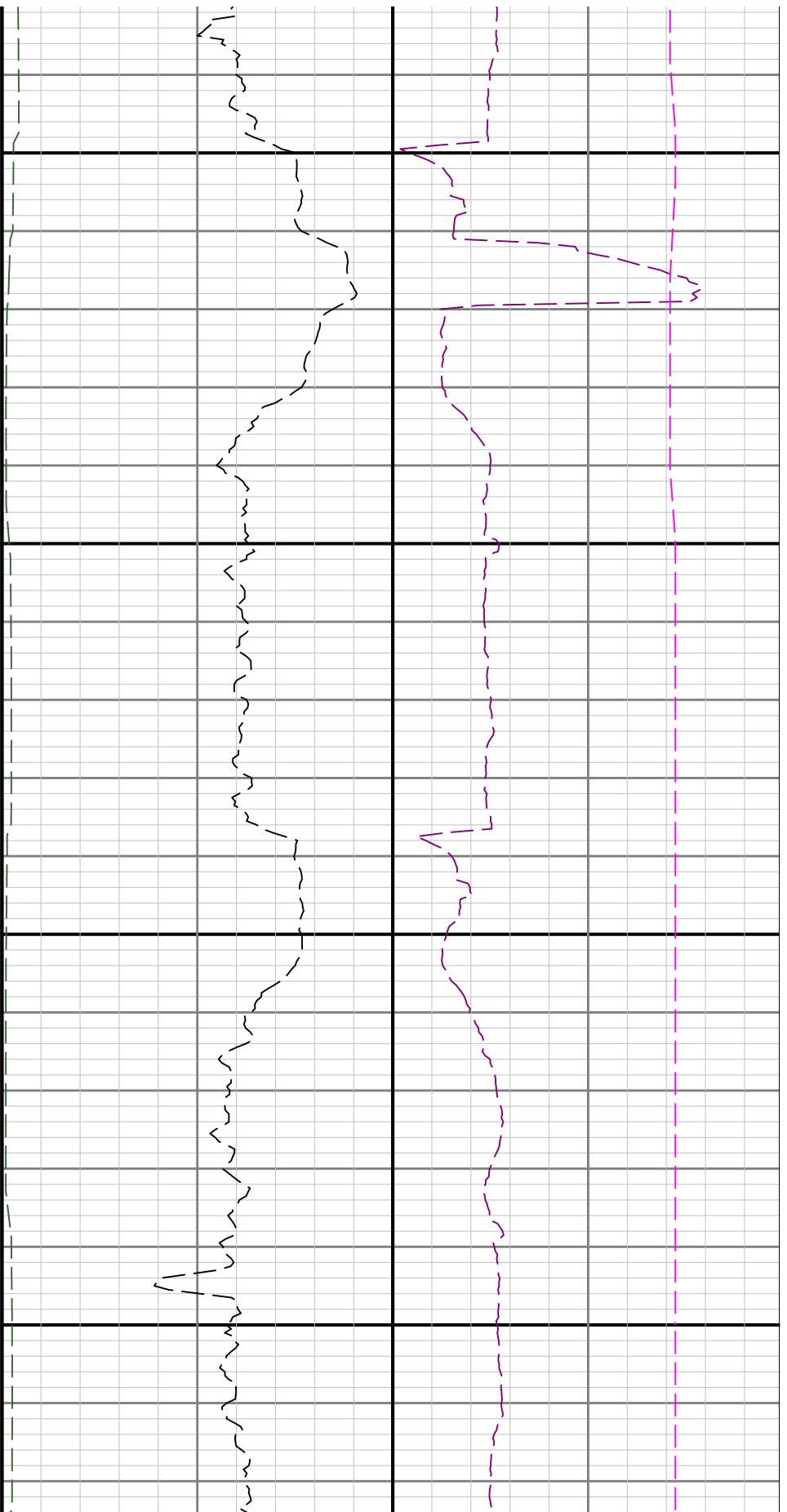
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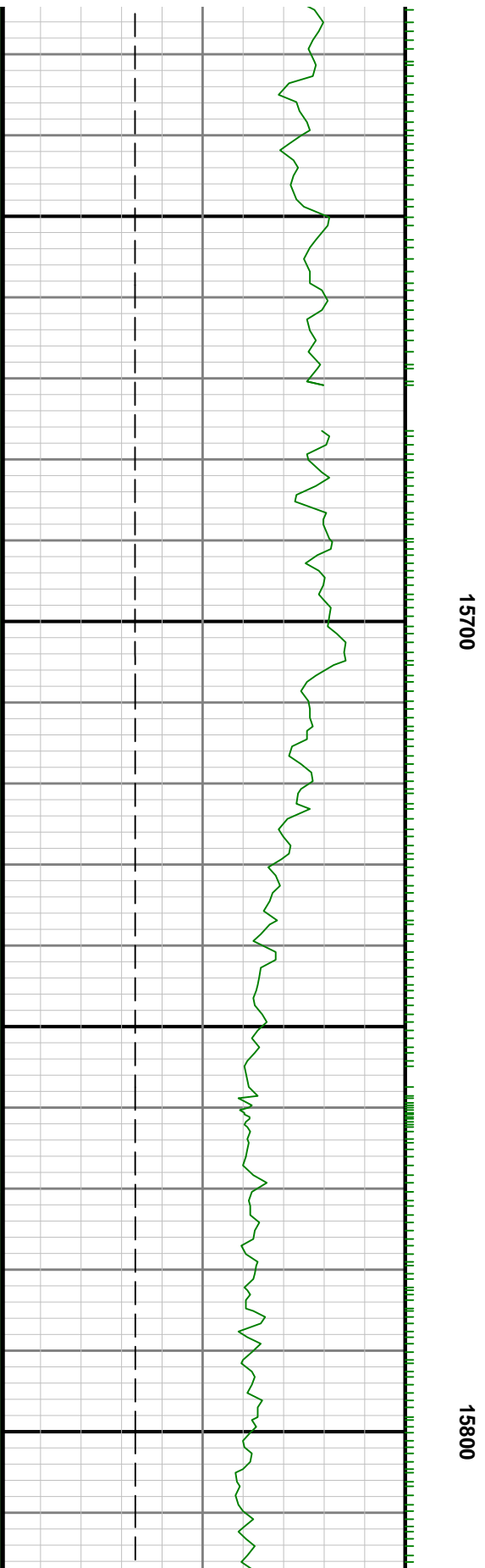
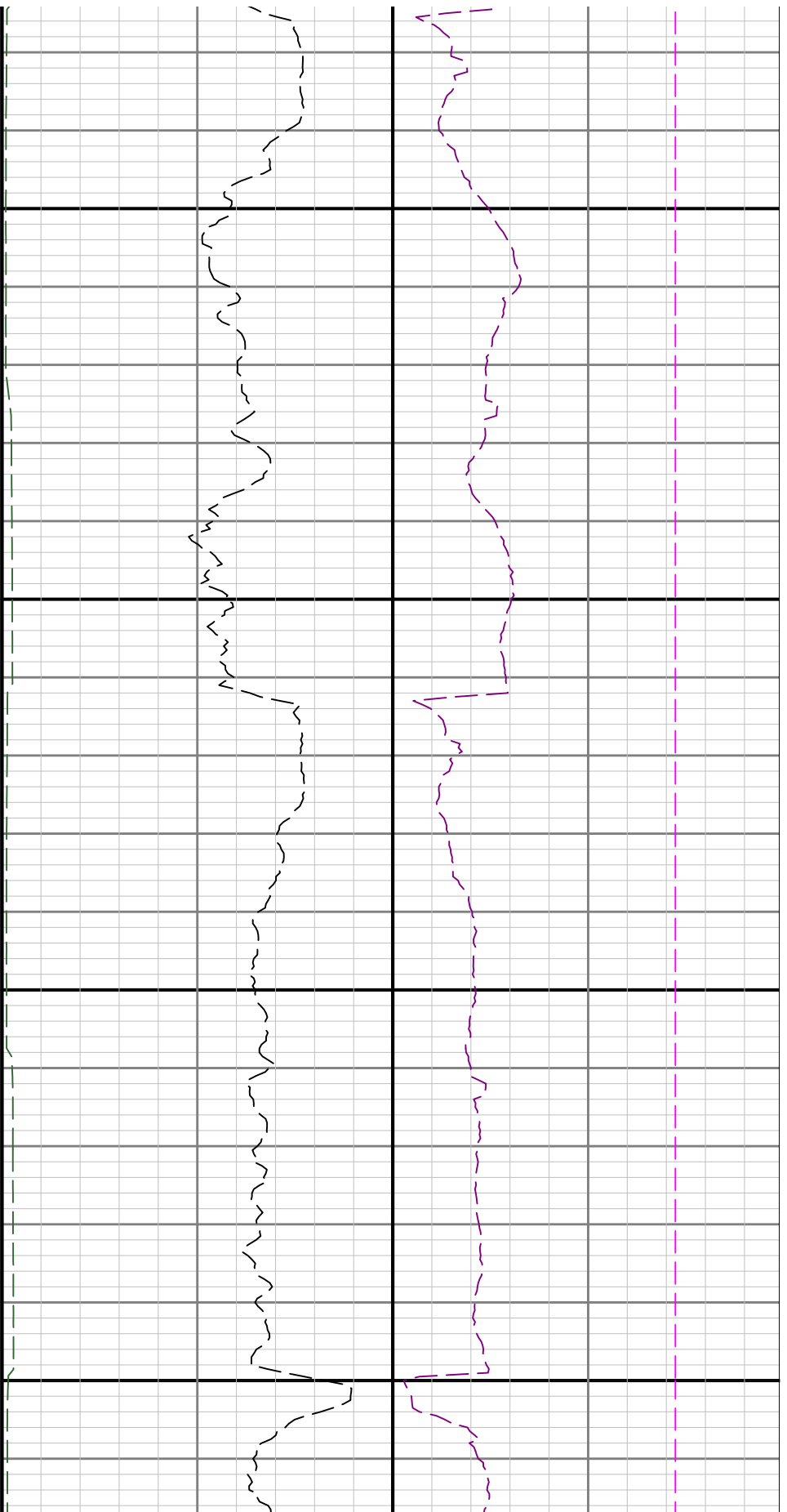


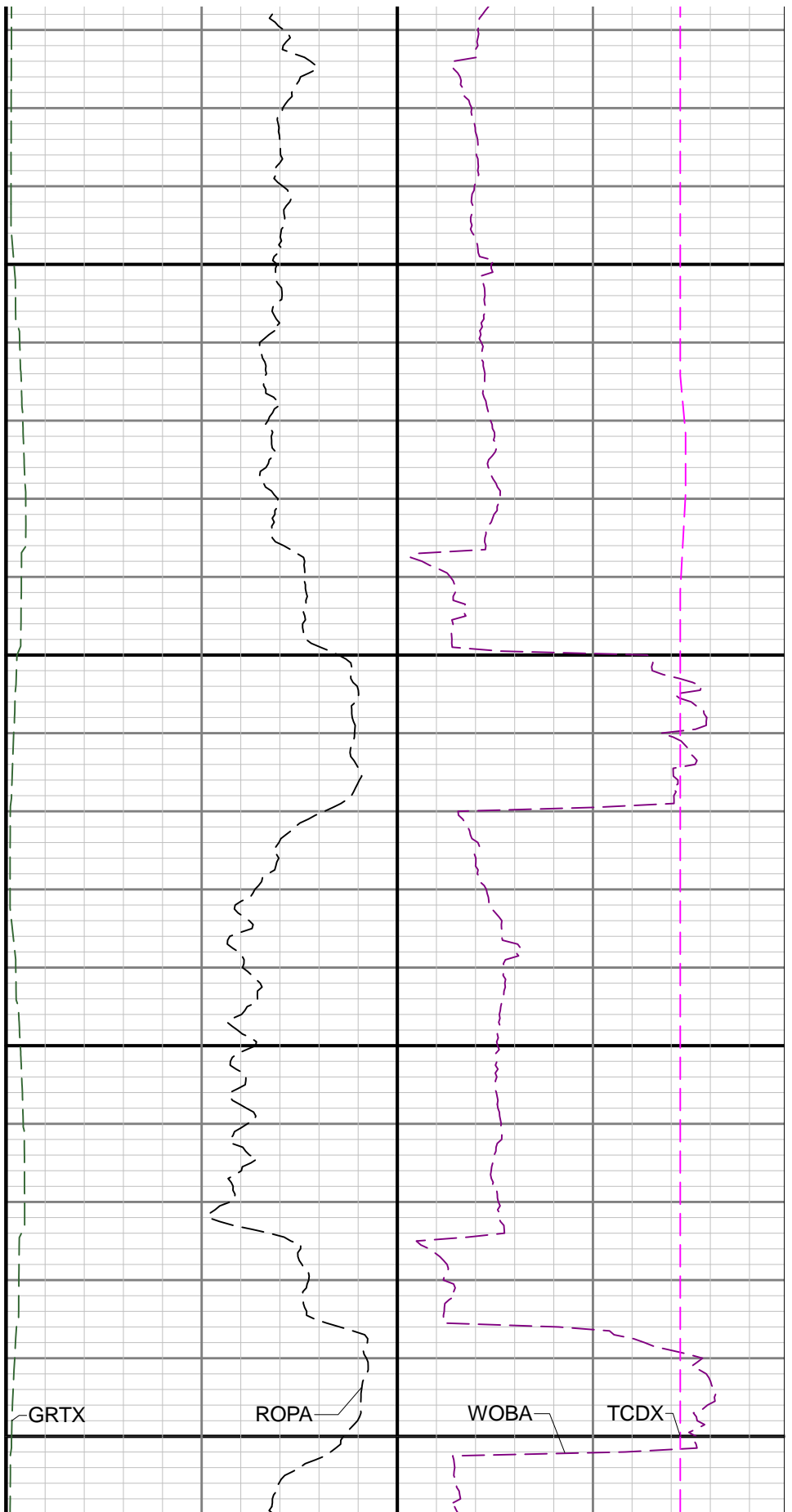
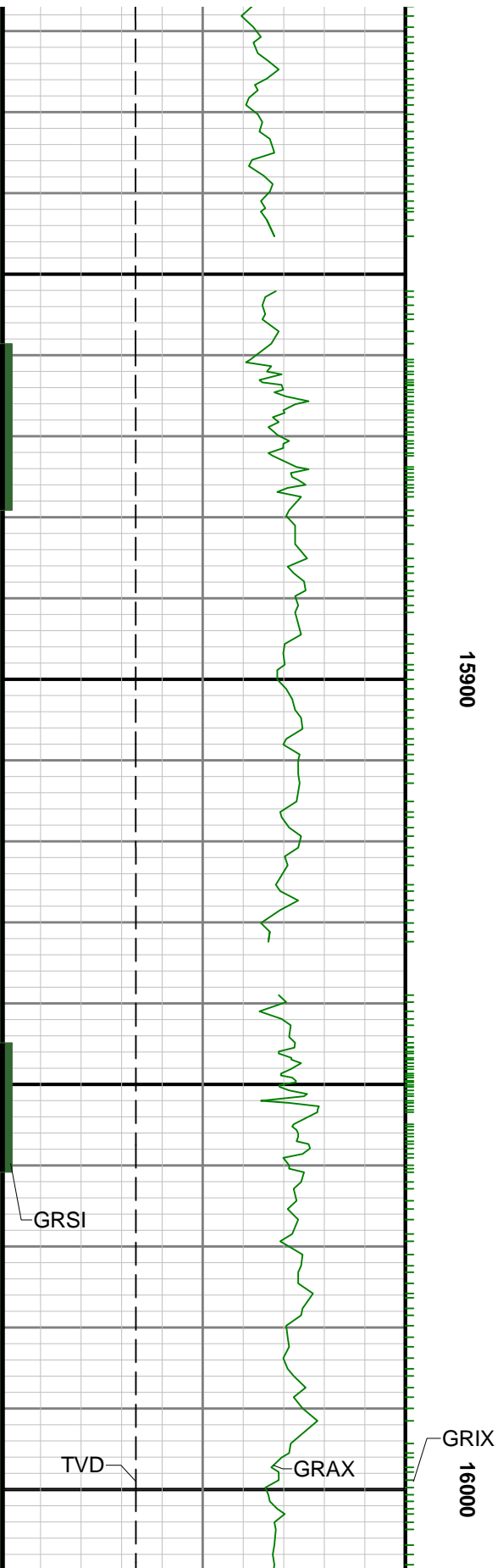
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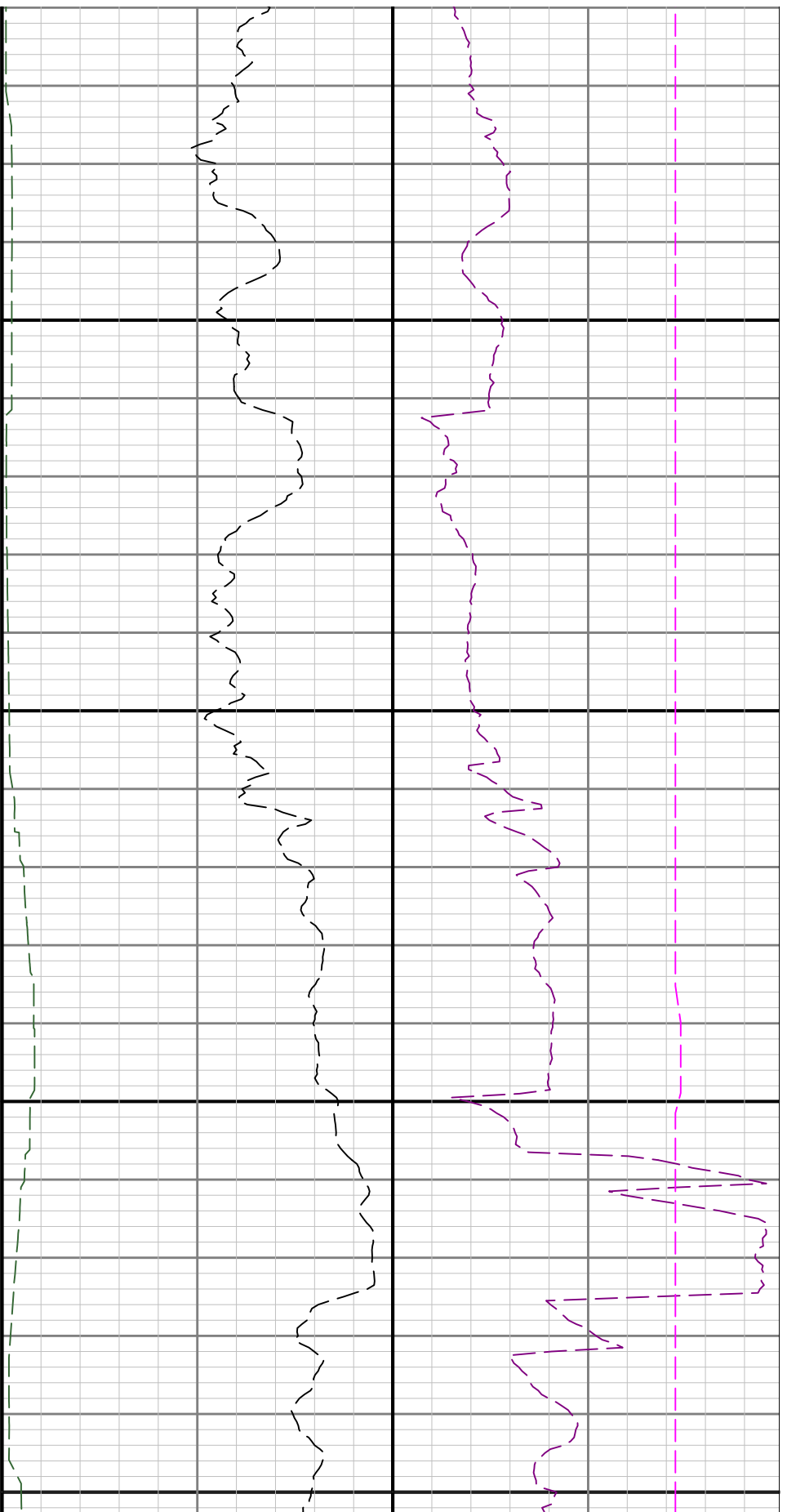
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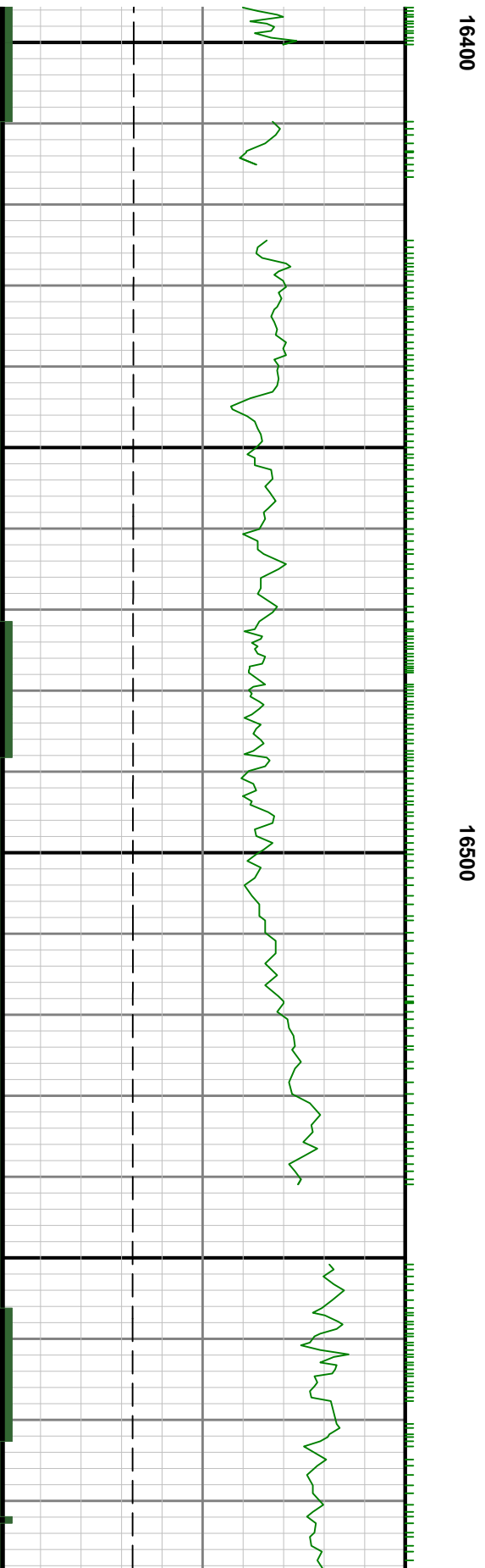
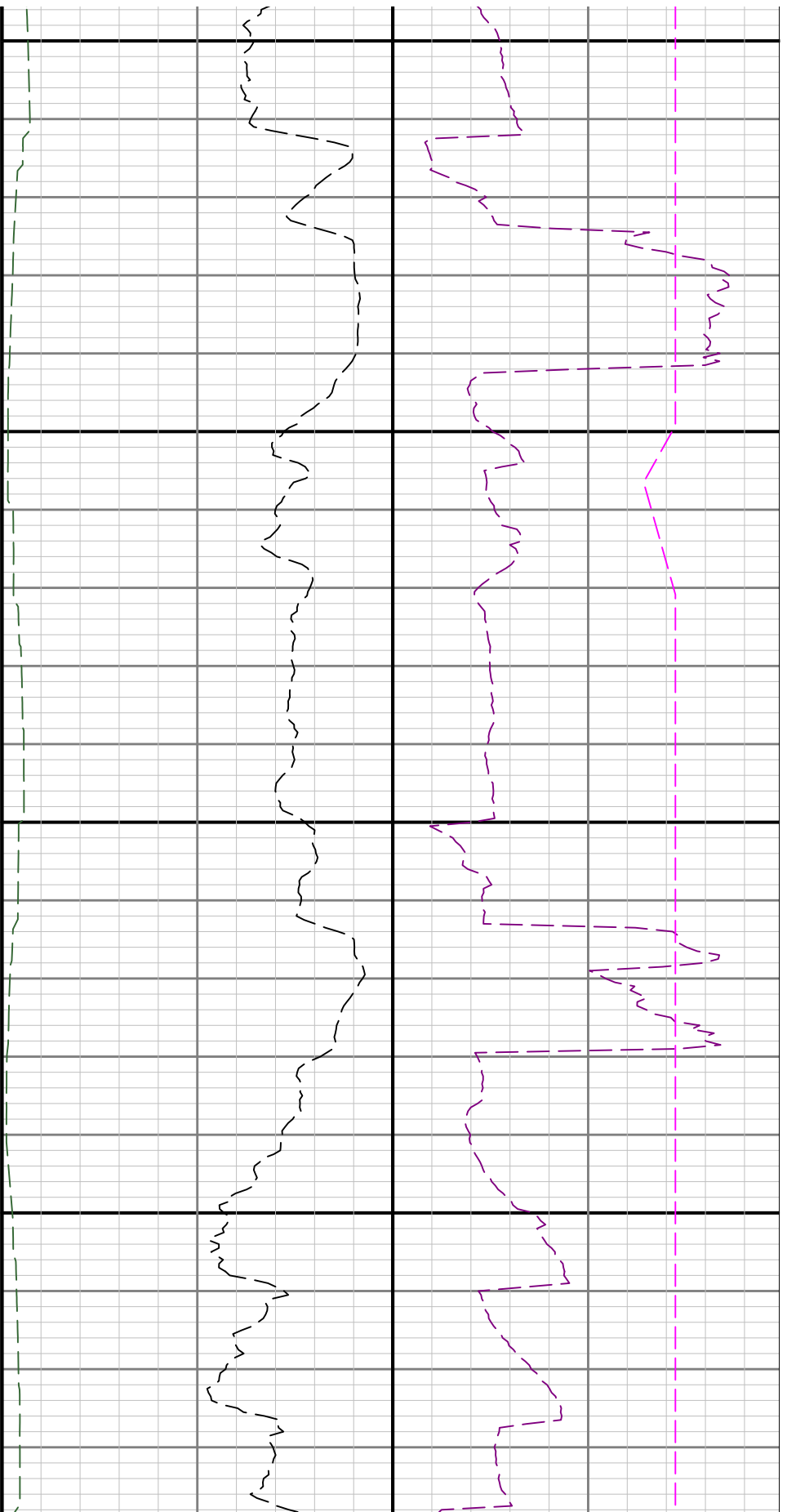


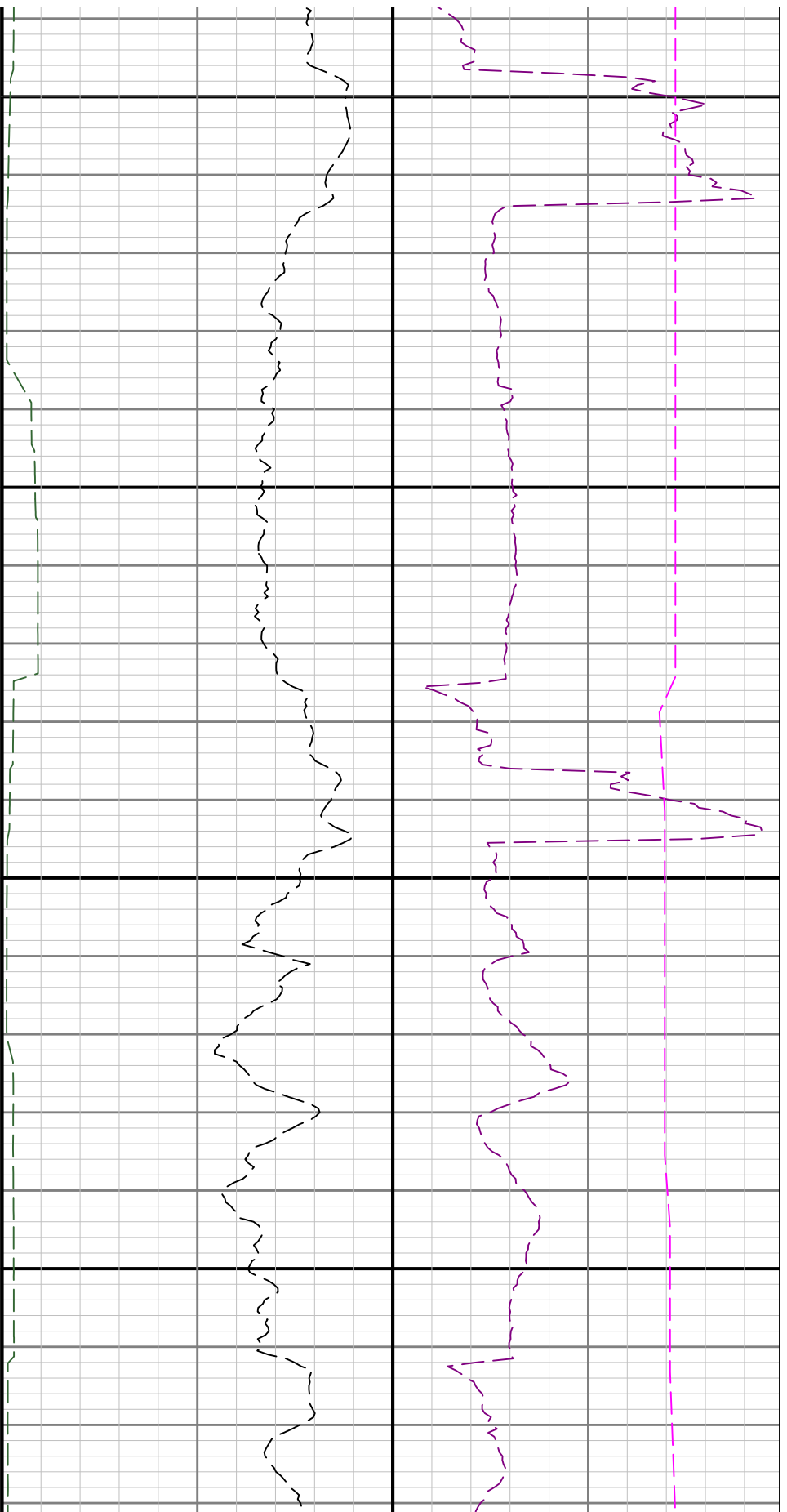






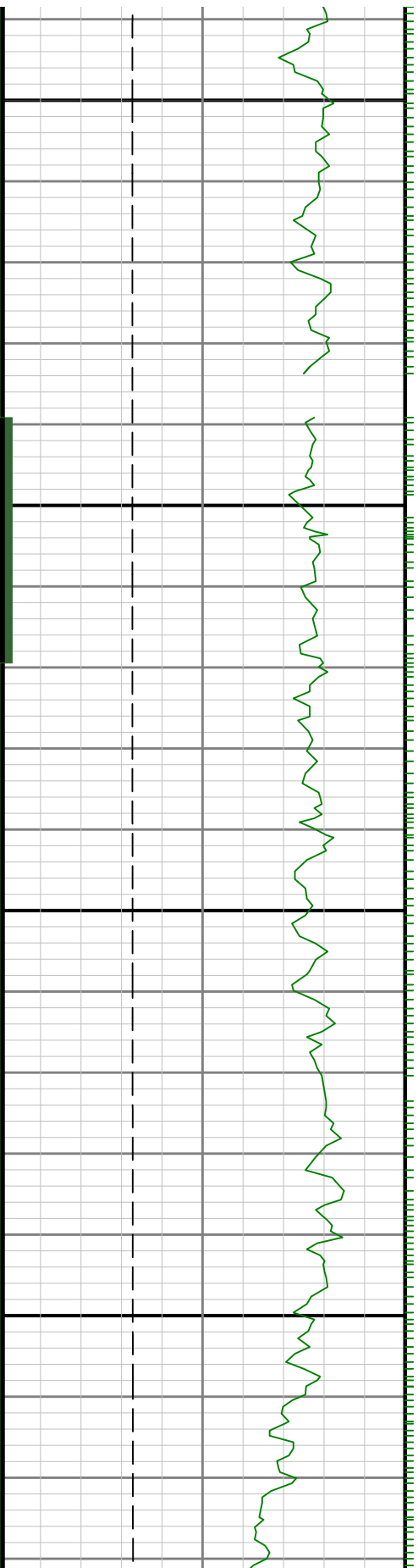


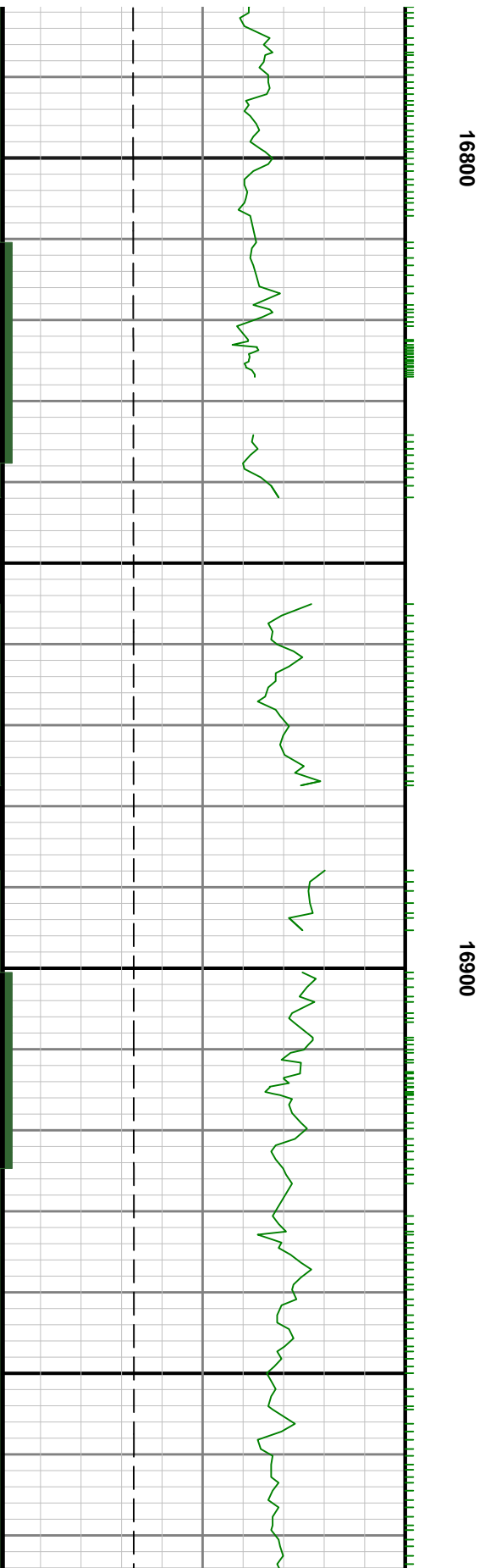
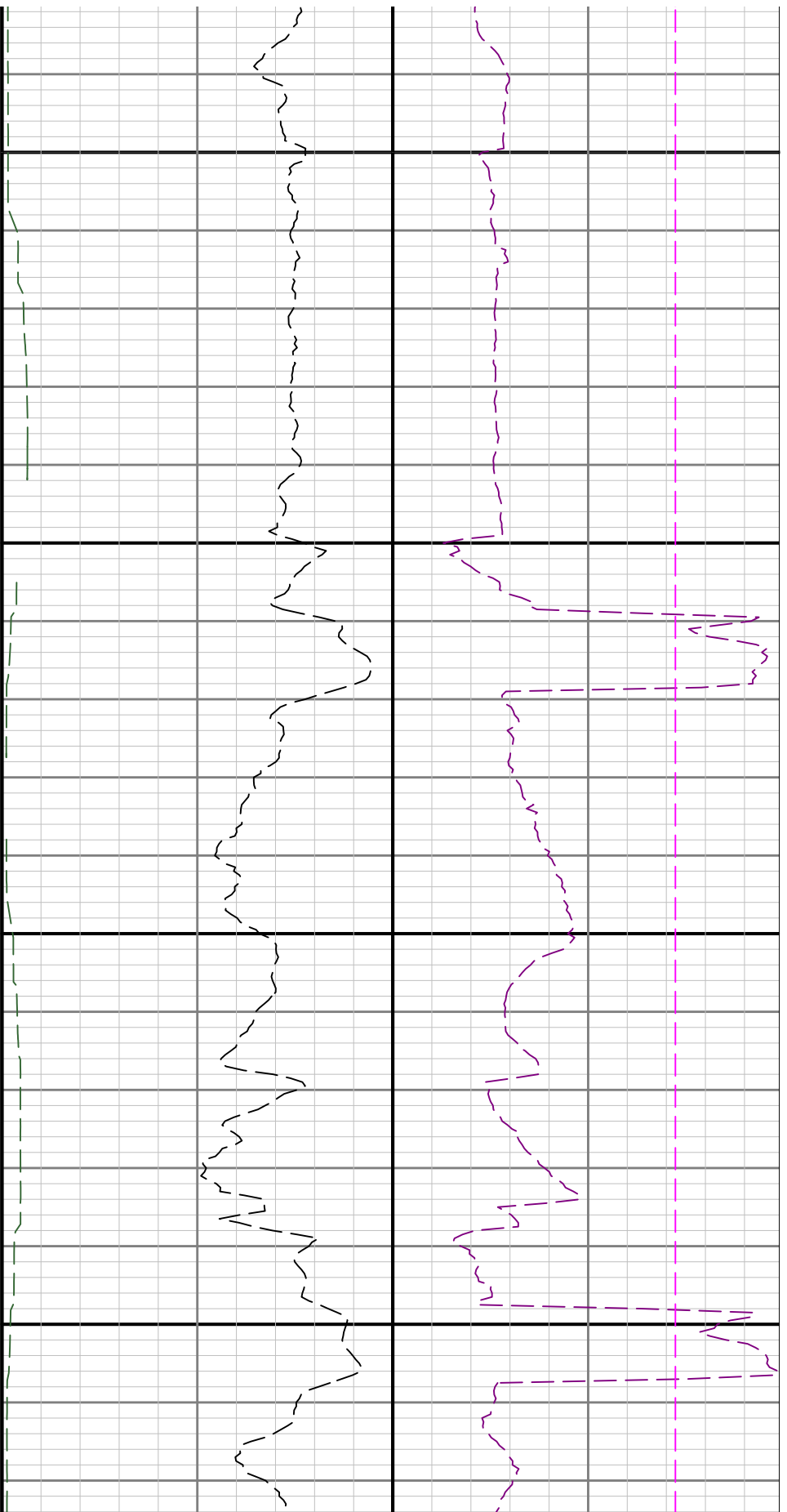


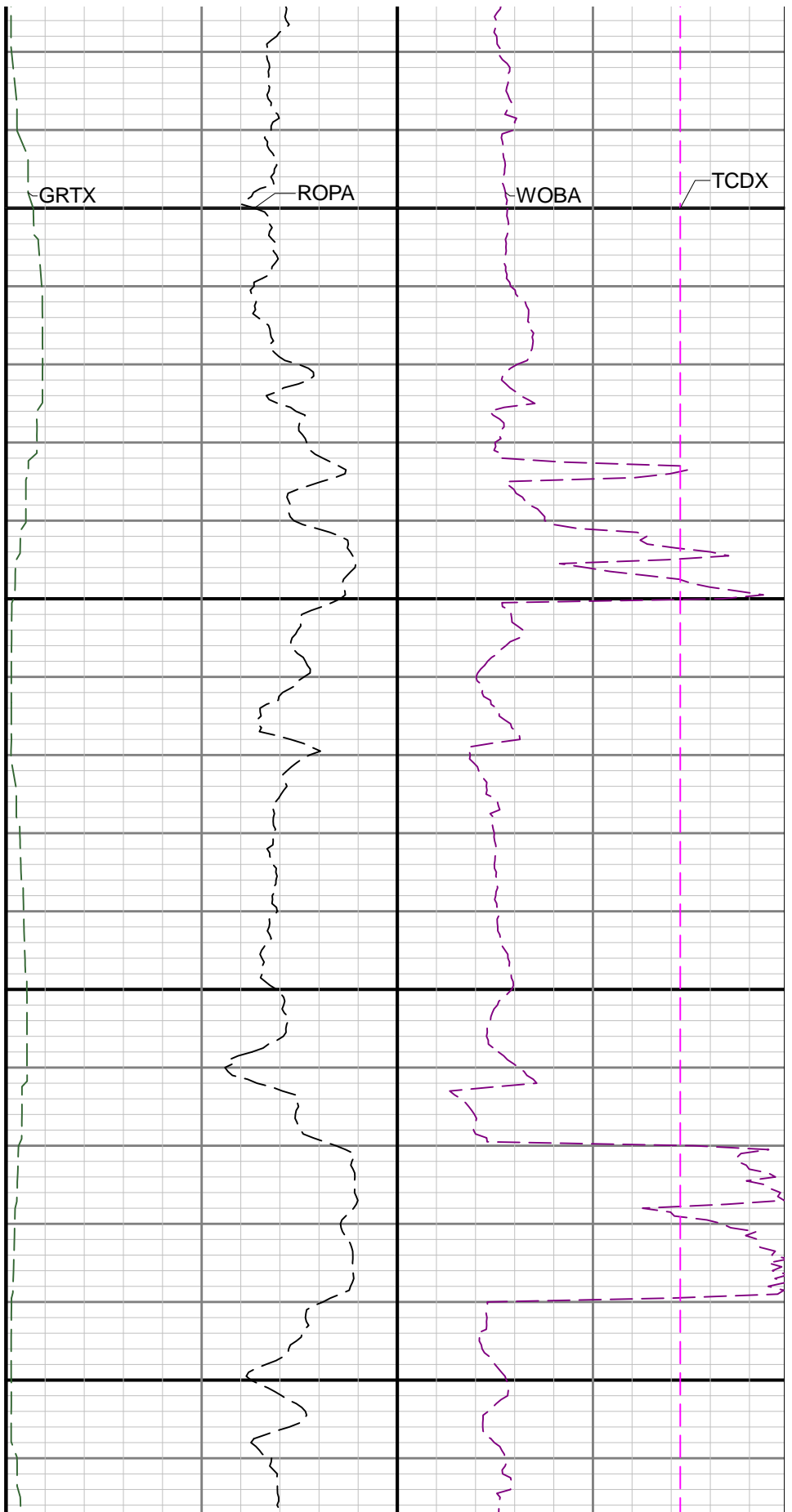
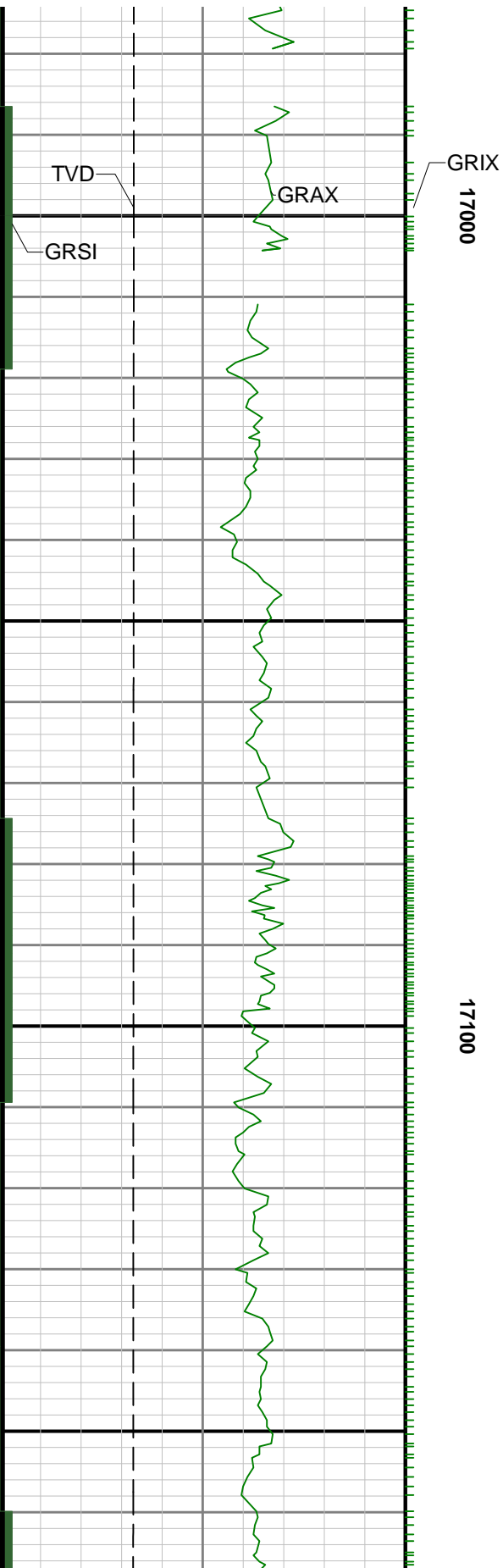


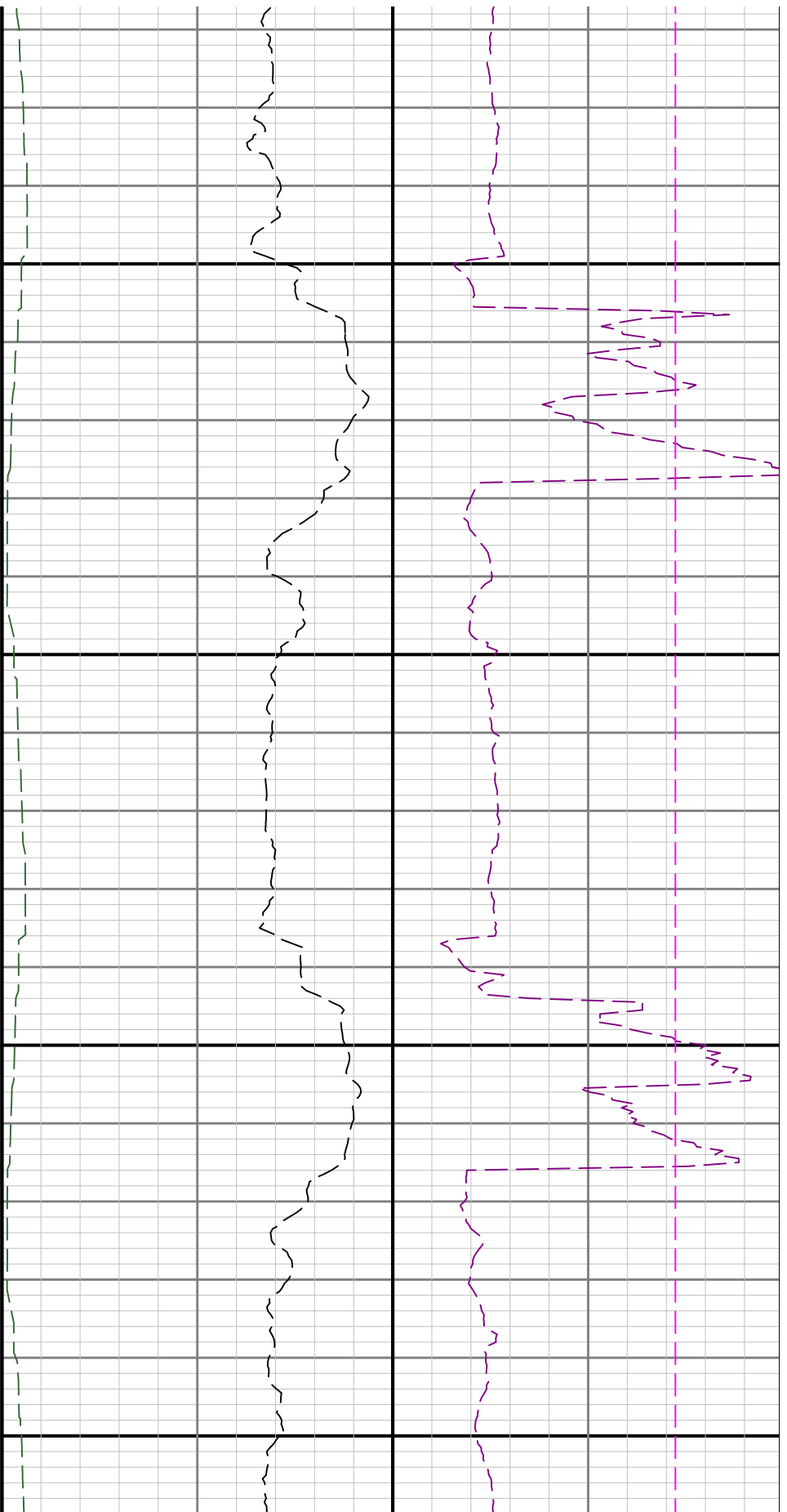
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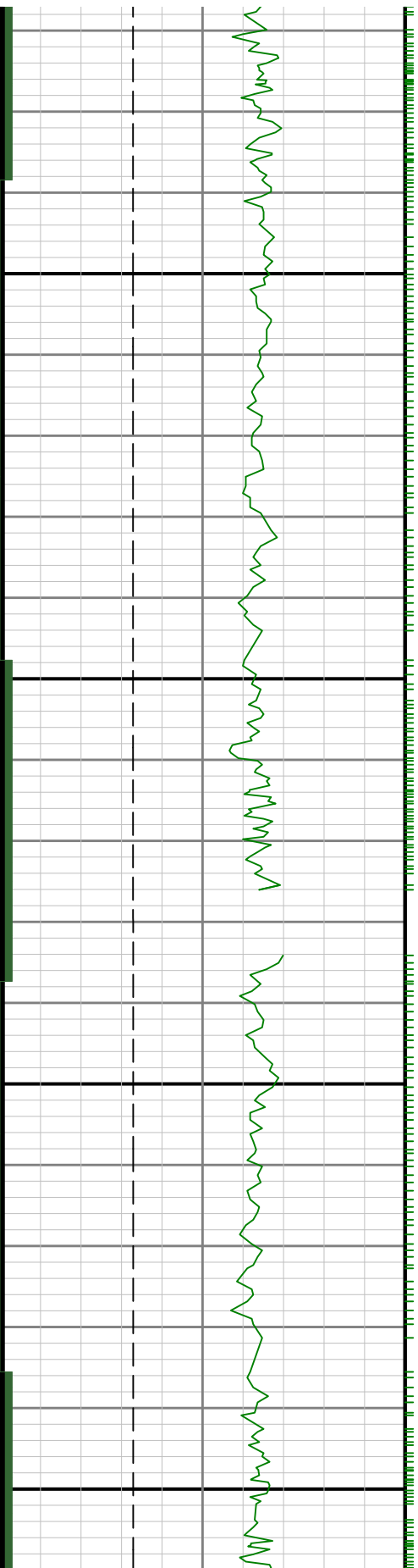


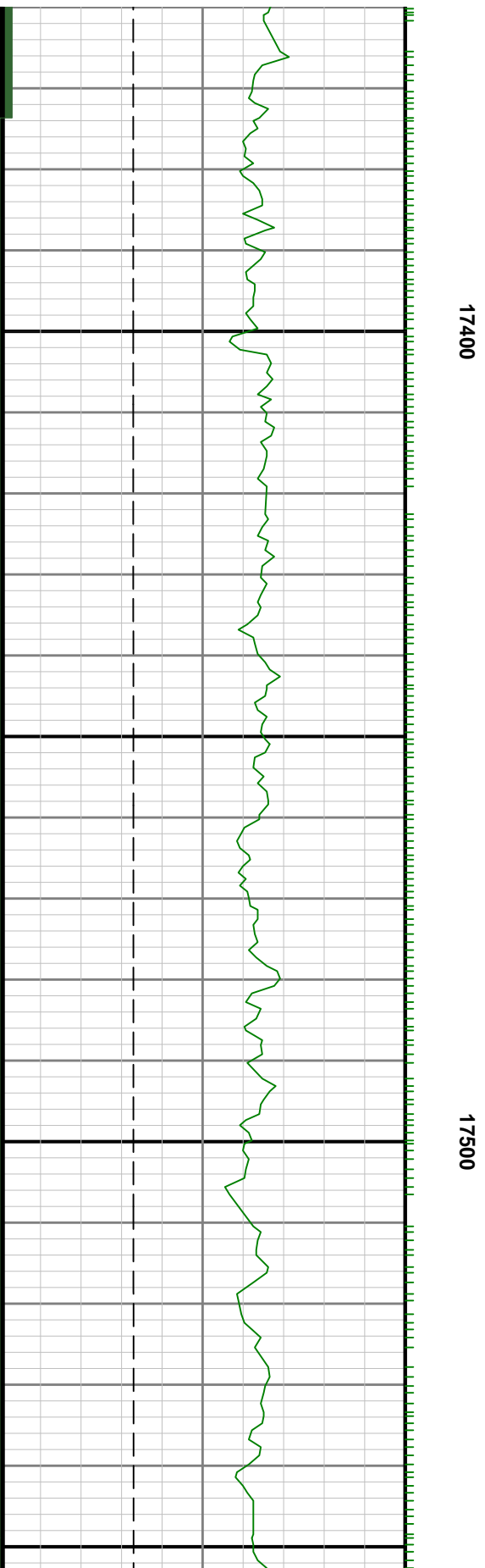
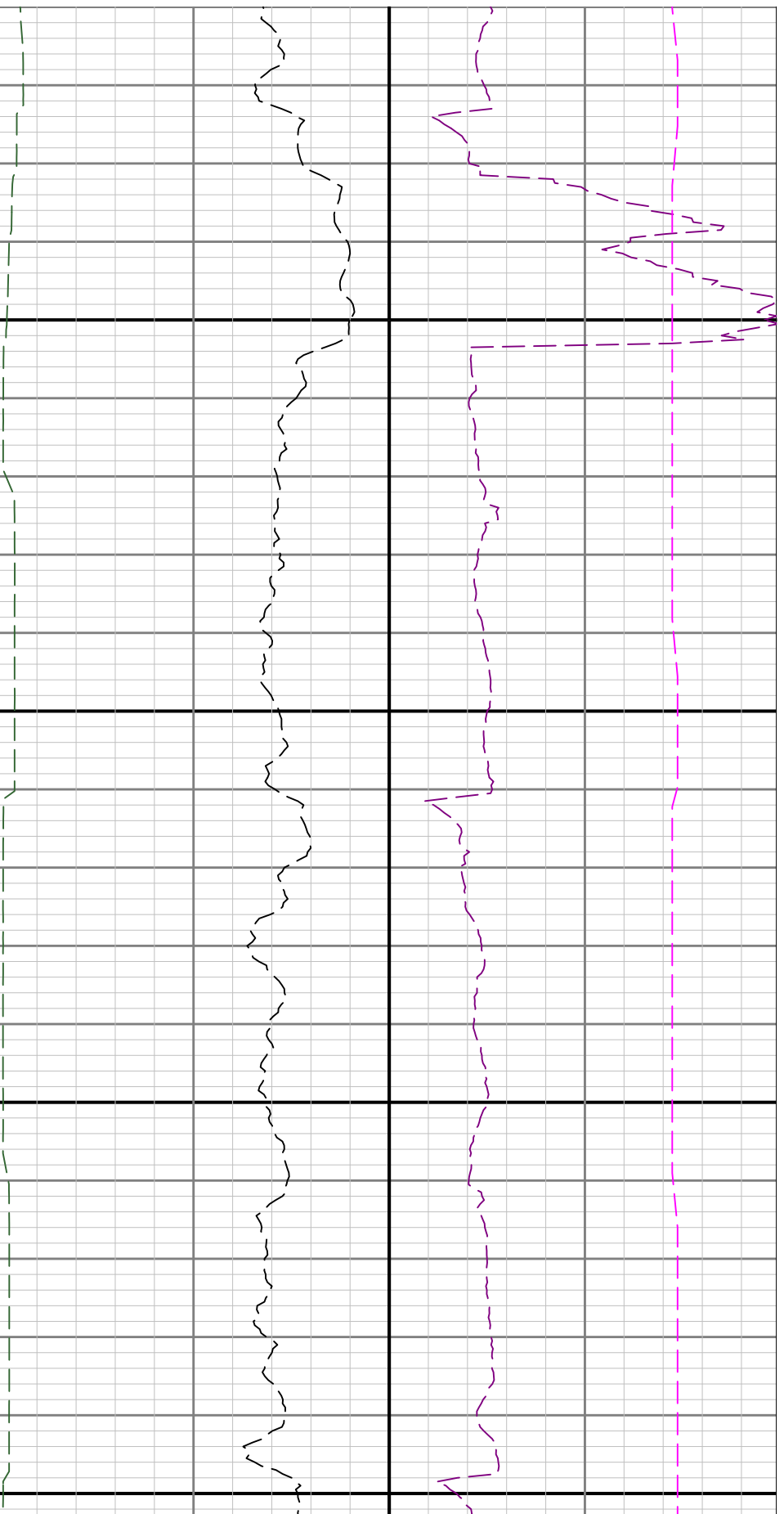


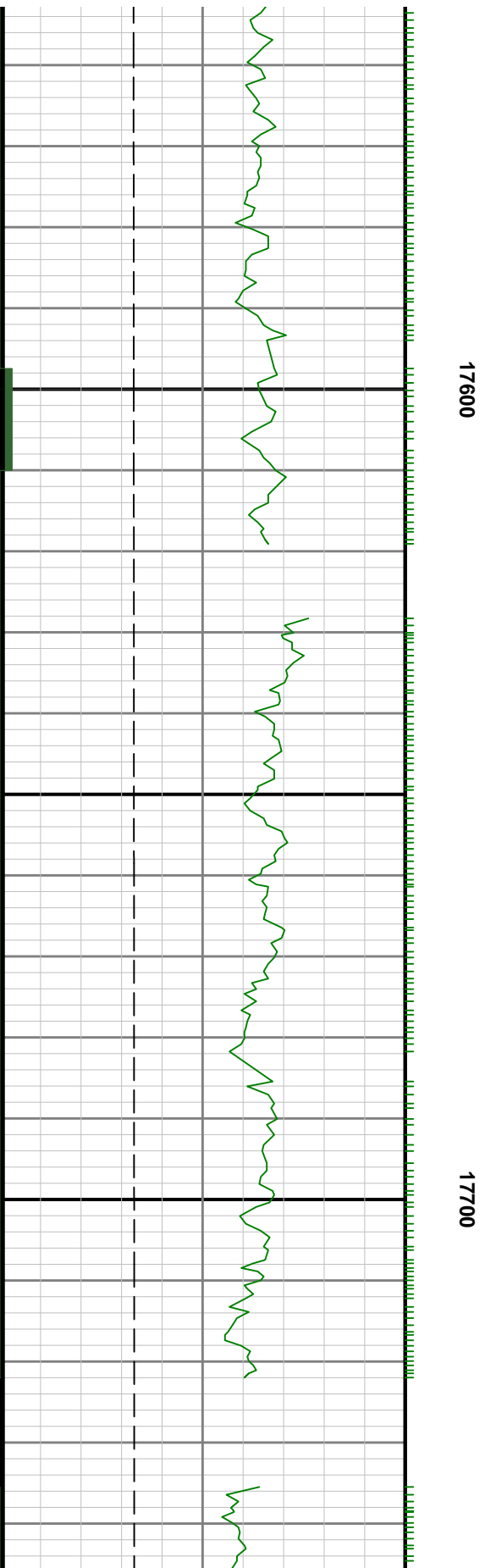
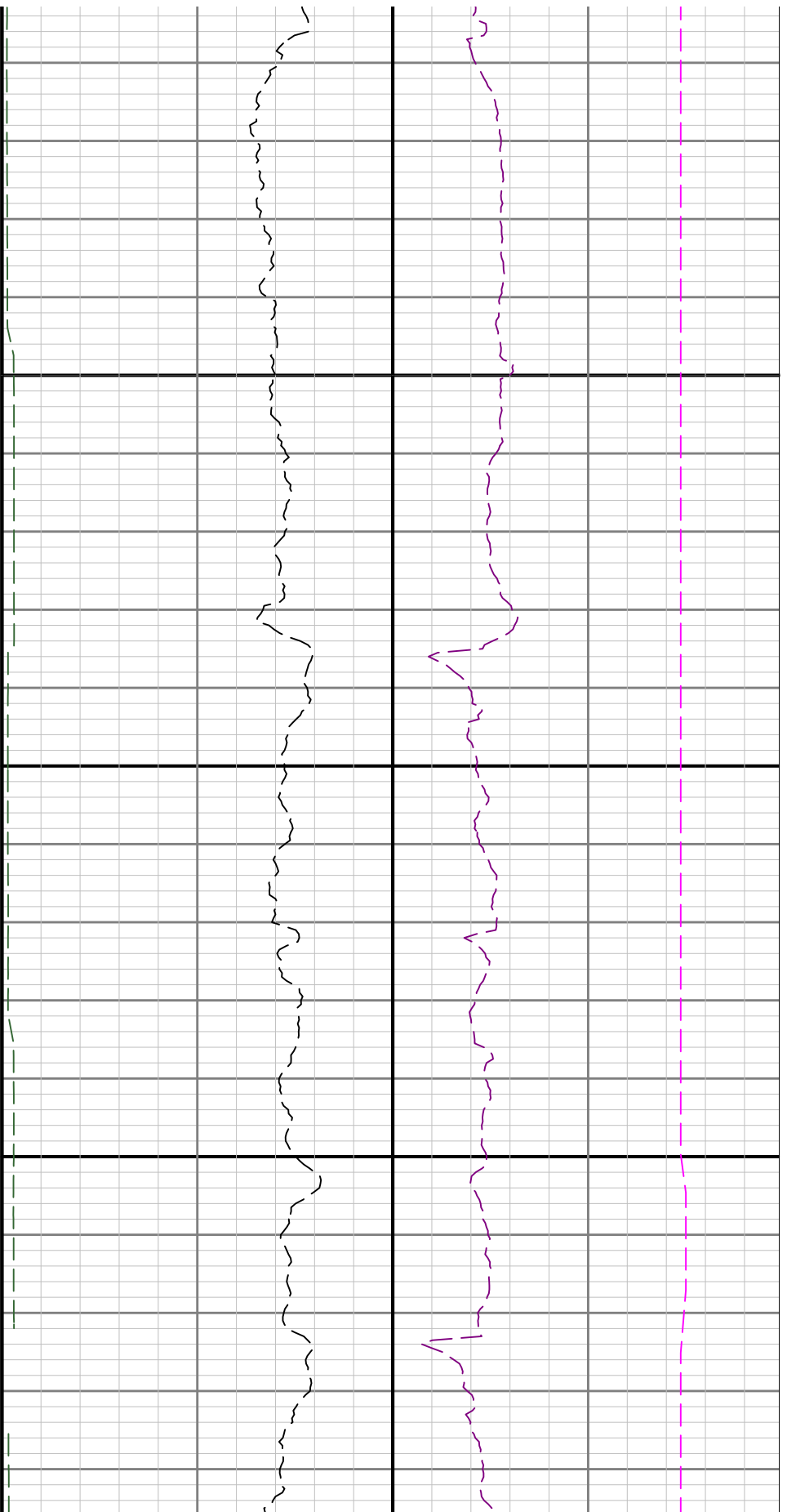


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17300



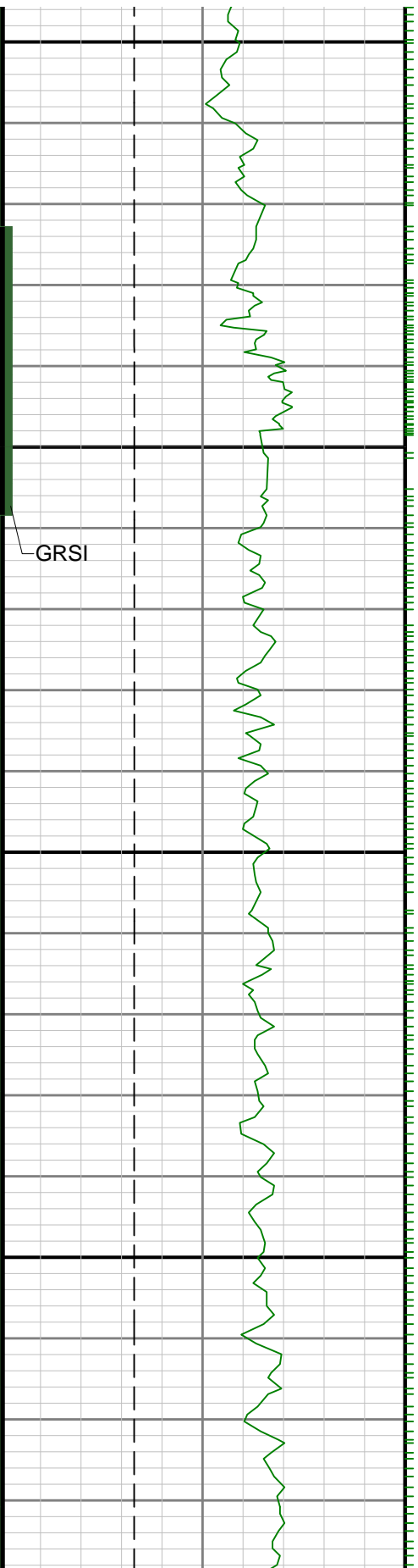


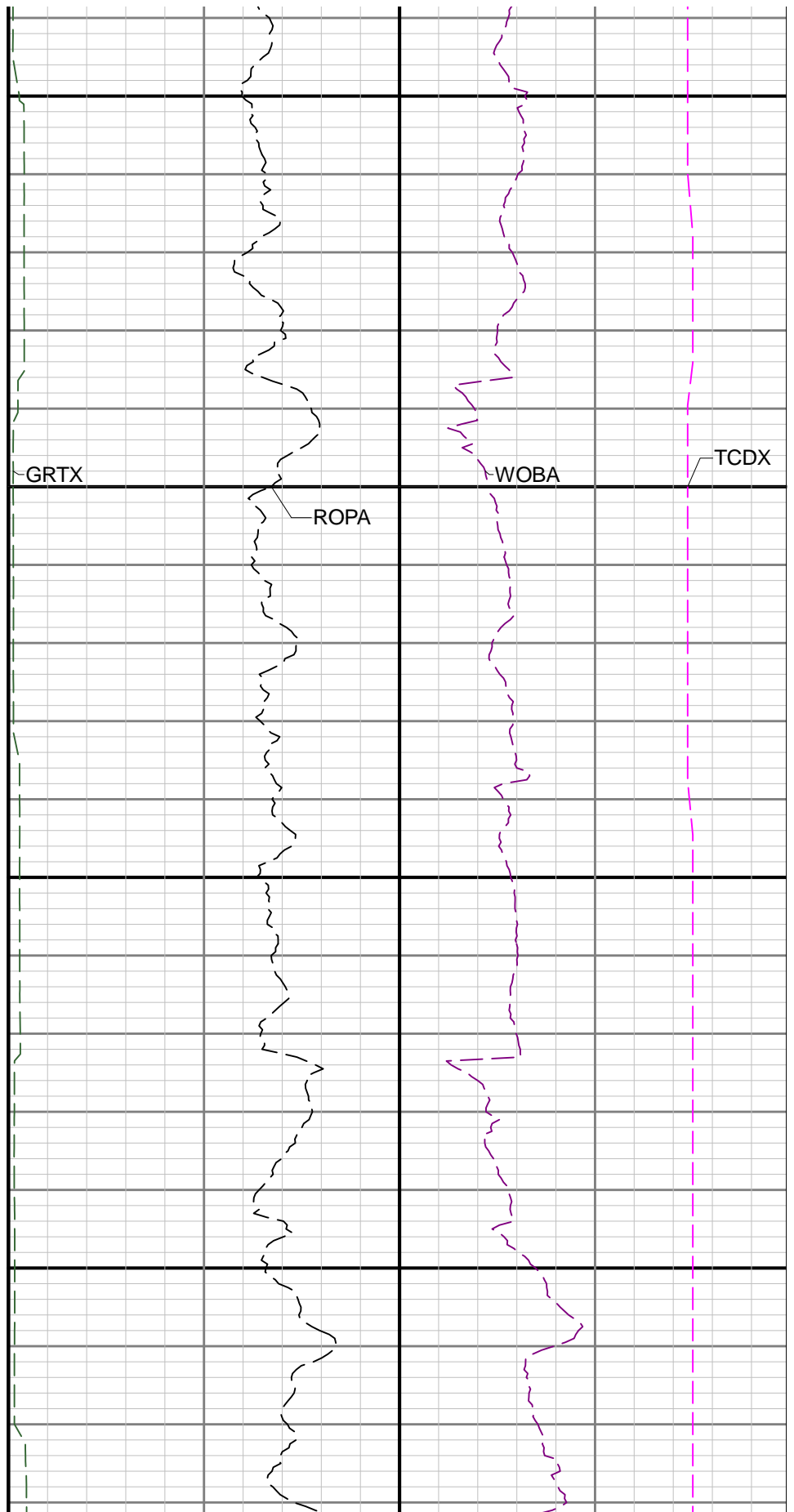
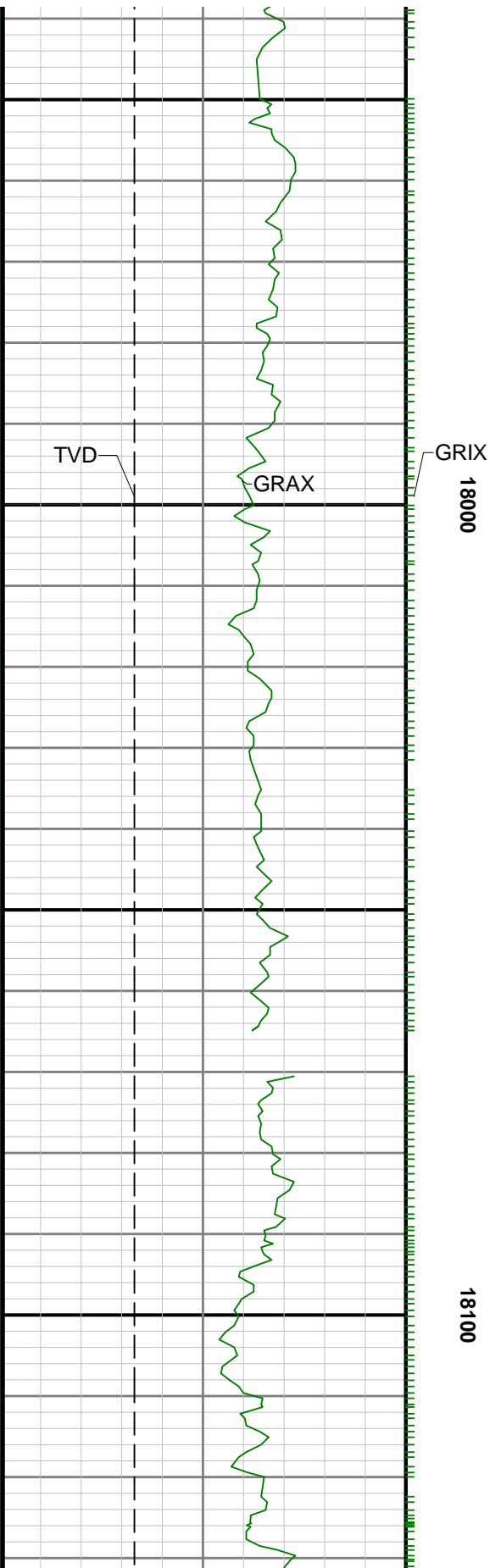


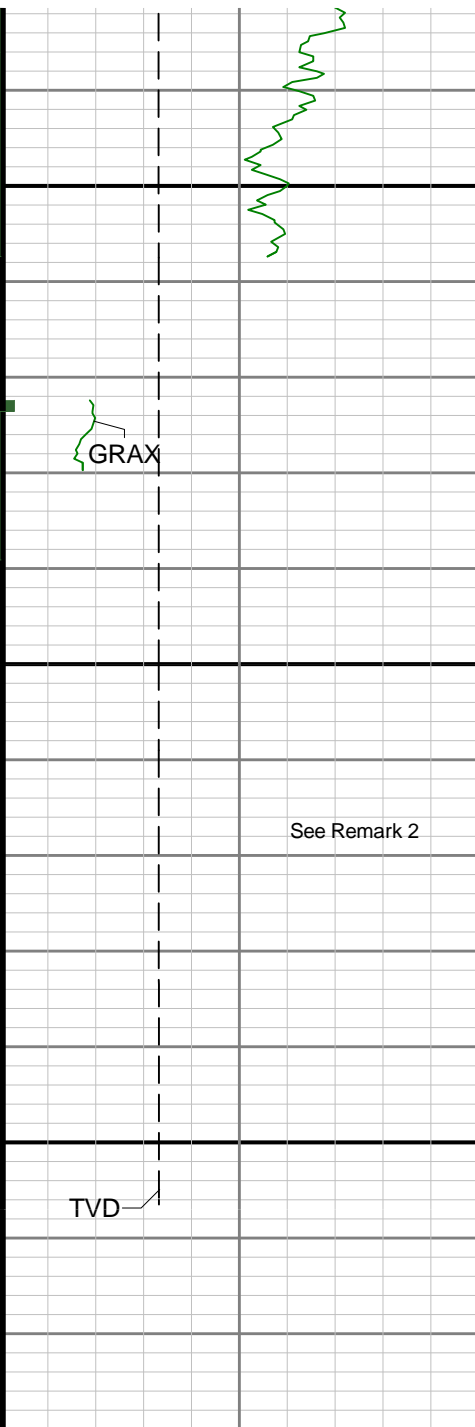


17800

17900







GRAX

GRIX

18200

See Remark 2

TVD

TD

