

LWD MEMORY COMPOSITE LOG



Gamma Ray

Scale: 1:240 Measured Depth	Company: Noble Energy Inc
	Well: GIG-EM STATE Y9-719
	Field: Weld County
Depth Reference: Driller's Depth	County: Weld Country: United States
	State: Colorado
Status: Final Print	Surface Location: Latitude: 40° 08' 38.796" N Longitude: 104° 33' 01.404" W Other Services: Directional
API: 05123518380000	
Job ID: 111683785	

Operational Summary

Rig & Elevations

Dates	Drilled (ft)	Logged (ft)	Rig Contractor: Patterson-UTI	Rig: Patterson 268	Elev. KB: (ft)	4972.00
From: 2023-03-05	Top: 109.00	Top: 2057.00	Permanent Datum (P.D.): Mean Sea Level	Elevation: (ft) 4943.00	Elev. DF: (ft)	4972.00
To: 2023-03-22	Bottom: 17315.00	Bottom: 17302.00	Log Measured From: Rig Floor	Above P.D.: (ft) 4972.00	Elev. GL: (ft)	4943.00

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Log Run Summary

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 (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	13.500	PDC	4.00	Rotary	N/A	N/A	109.00	2070.00	2023-03-05 15:05	2023-03-06 15:05	2.30
2	2	8.500	PDC	2.50	AutoTrak Curve	2057.00	17302.00	2070.00	17315.00	2023-03-20 09:05	2023-03-22 09:04	42.01

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Jacob Johnson	2023-03-04	2023-03-22	Jason Wiley	2023-03-04	2023-03-22	Jeremiah Samson	2023-03-04	2023-03-22
Marcos Favela	2023-03-04	2023-03-22	Adam Schlenz	2023-03-20	2023-03-21			

Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2023-03-05 05:00	1	2069.00	Water Based Mud	8.4	1	8.7	N/A	0/100	Active Pit	596	N/A
2023-03-20 05:00	2	2069.00	Oil Based Mud	9.3	11	N/A	17.6	73/17.8	Active Pit	25267	N/A
2023-03-21 05:00	2	8606.00	Oil Based Mud	9.9	11	N/A	18.0	68.7/18.3	Active Pit	26725	N/A
2023-03-22 05:00	2	16558.00	Oil Based Mud	10.4	17	N/A	20.5	67.2/17	Active Pit	24295	N/A

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	EvoOne	15069834G8000133	Gamma (single)	9.40	21.32	8.000	3.250
1	EvoOne	15069834G8000133	Directional (mag)	10.40	22.32	8.000	3.250
2	AutoTrak Curve Steering Unit	15899429	Near Bit Inclination	5.93	6.78	7.000	4.330
2	AutoTrak Curve Steering Unit	15899429	Near Bit VSS	5.93	6.78	7.000	4.330
2	AutoTrak Curve MWD	14322606	Gamma (single)	2.20	13.10	7.000	3.250
2	AutoTrak Curve MWD	14322606	Directional (mag)	12.27	23.17	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
MWD	EvoOne - Dir Gamma	EvoOne
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit

ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

Comments


- 1 Baker Hughes Company run 001 utilized 8" EVO (Directional-only) services behind a 13 1/2" bit from 109 to 2070 feet MD (109 to 2069 feet TVD). This Run was directional only, therefore no logging data was acquired.
- 2 Baker Hughes Company run 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch PDC bit and rotary steerable assembly from 2070 to 17315 feet MD (2069 to 6962 feet TVD)
- 3 Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to a lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to present logging data

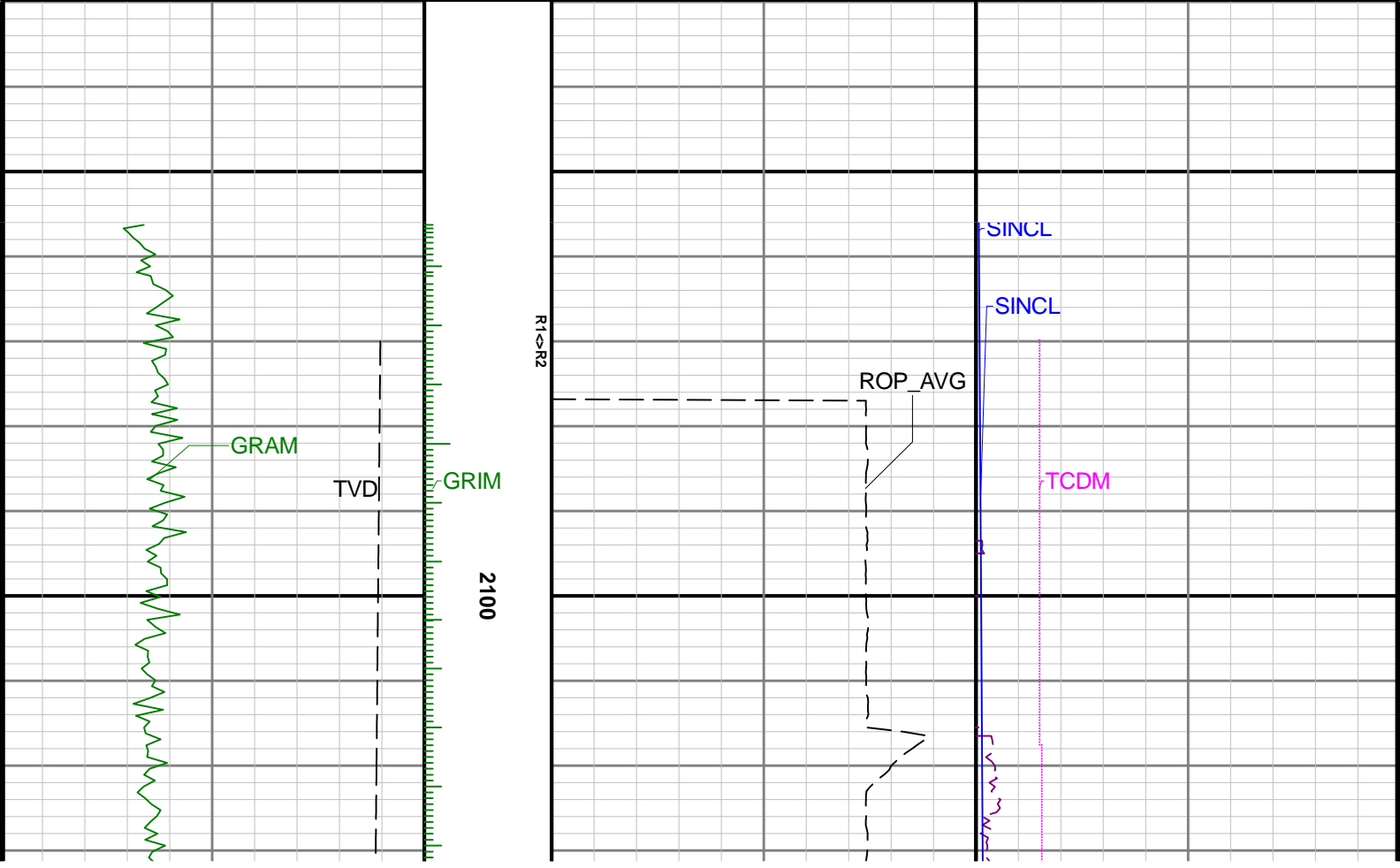
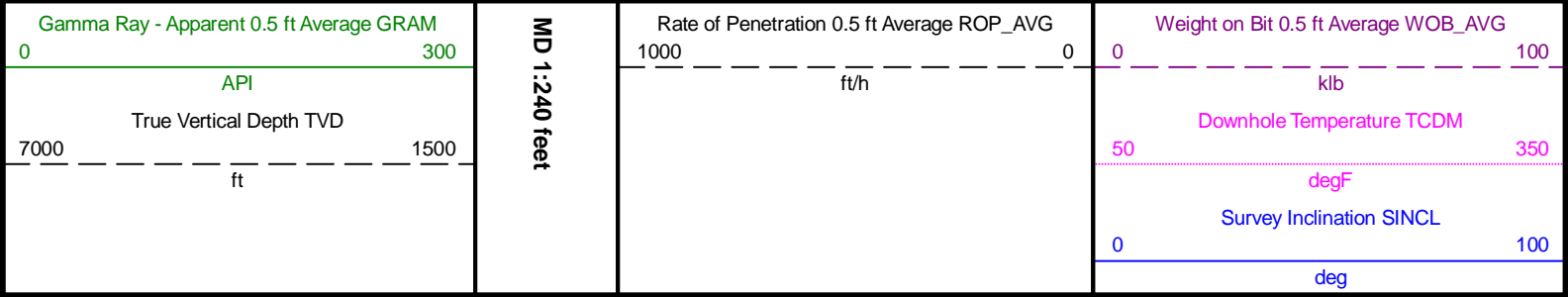
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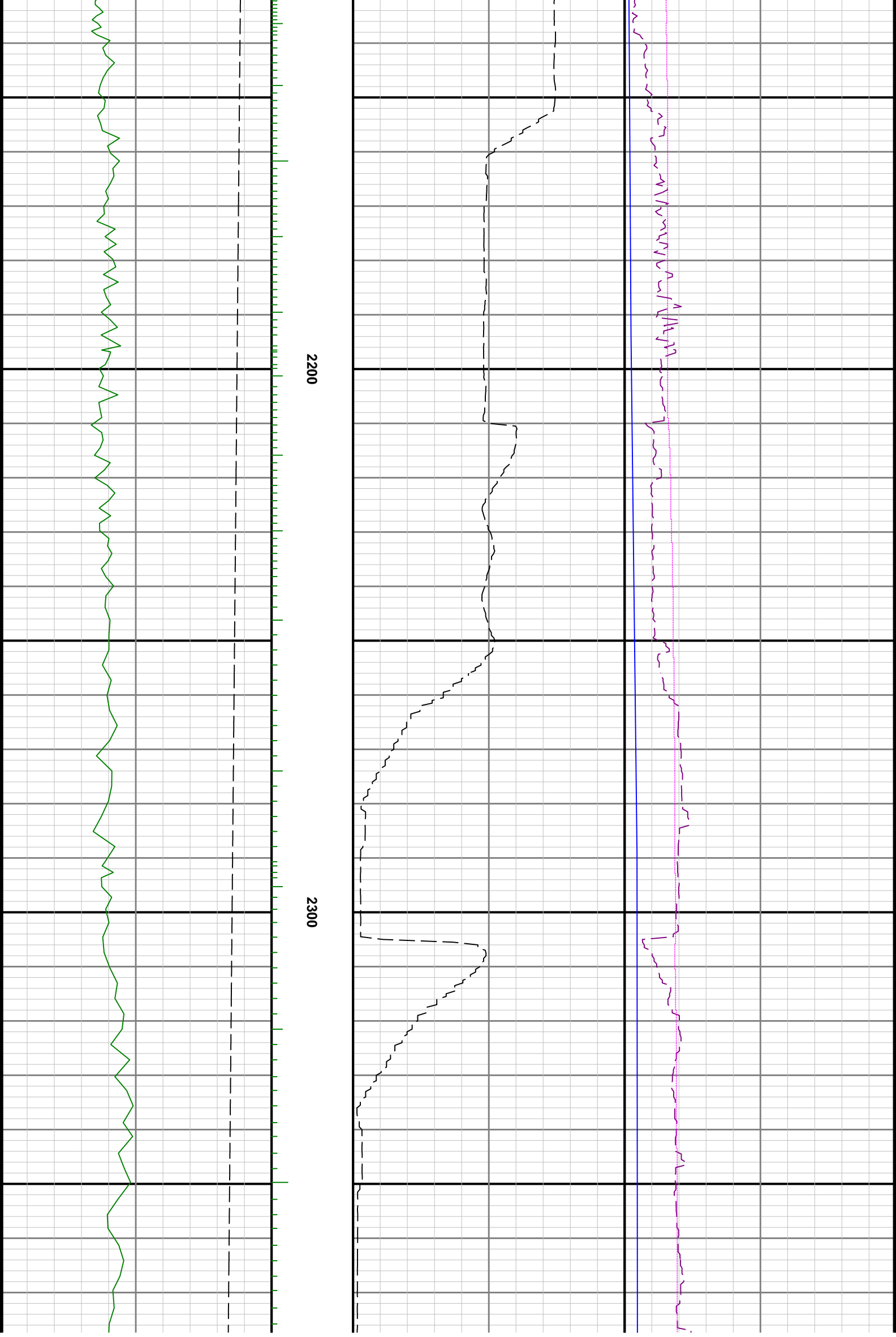
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	3282.00	8.500	2	The interval from 3282 to 3407 feet MD (3278 to 3403 feet TVD) was not logged due to a temporary failure of third party depth tracking system therefore, no drilling data was acquired
2	17302.00	8.500	2	The interval from 17302 to 17315 feet MD (6962 to 6962 feet TVD) was not logged due to sensor to bit offset at well TD

Curve Mnemonics

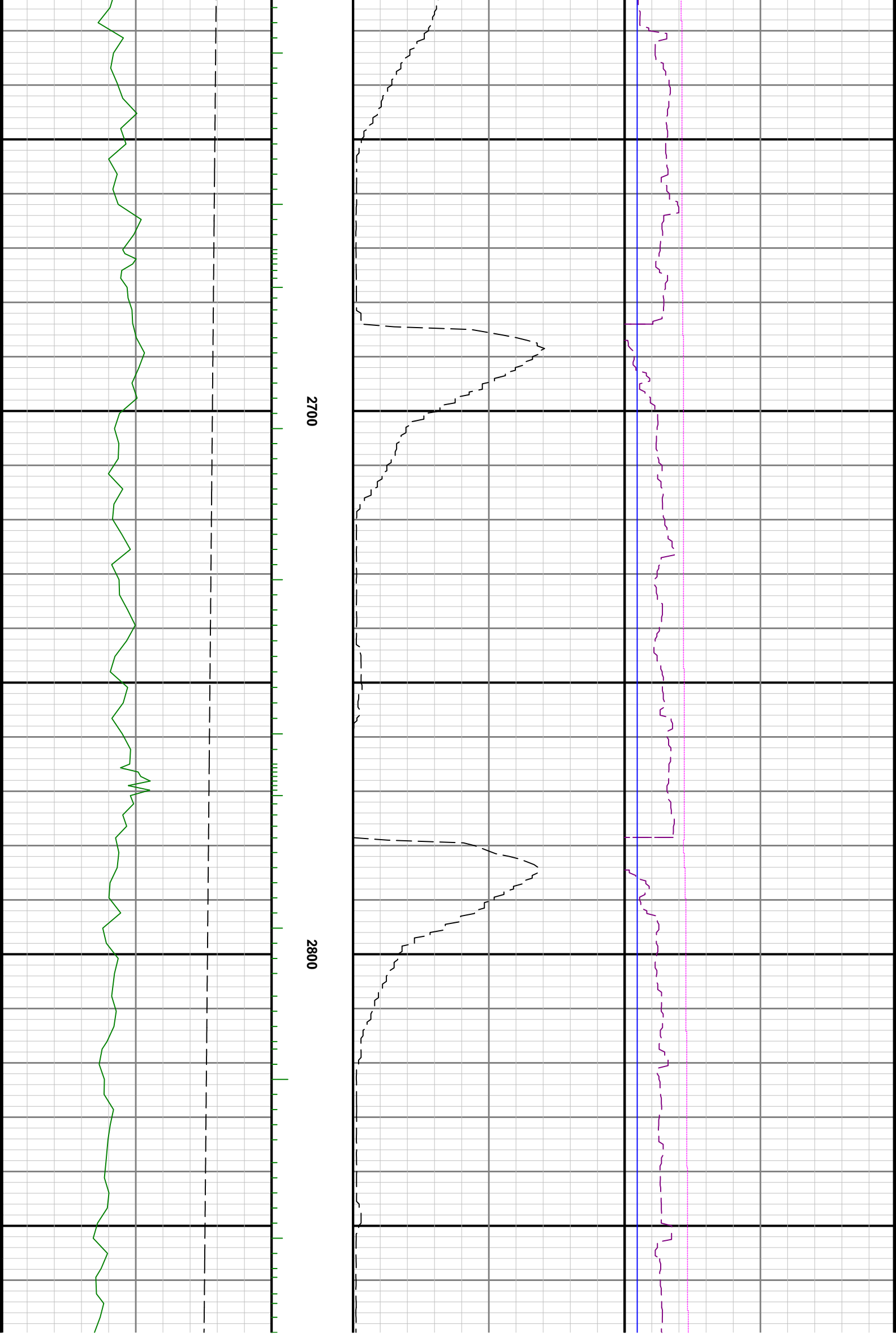
Presented Curves	Description	Units
ROP_AVG	Rate of Penetration of bit, Average	ft/h
TVD	True Vertical Depth	ft
WOB_AVG	Weight On Bit, Average	klb
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	Gamma Ray - Data Point Indicator - Memory	unitless
TCDM	Directional Real-Time Survey Temperature	degF
SINCL	Survey Inclination	deg

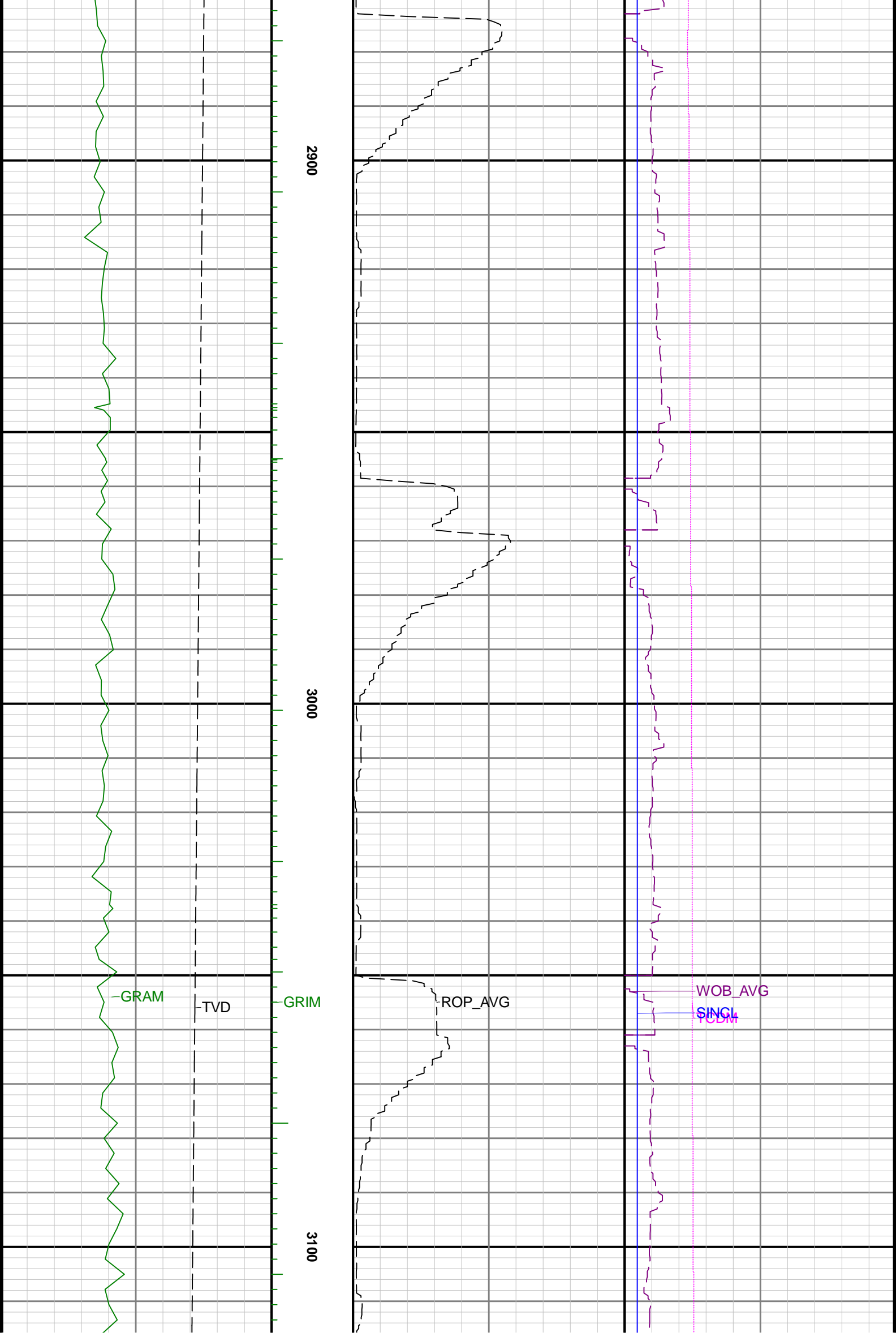
	Company	Noble Energy Inc		
	Well	GIG-EM STATE Y9-719		
	Interval	Date From: 2023-03-05 09:05	Interval Drilled: (ft)	109.00 - 17315.00
	Created	Date To: 2023-03-22 09:04	Interval Logged: (ft)	2057.00 - 17302.00
		Created	2023-03-23 08:32:50	

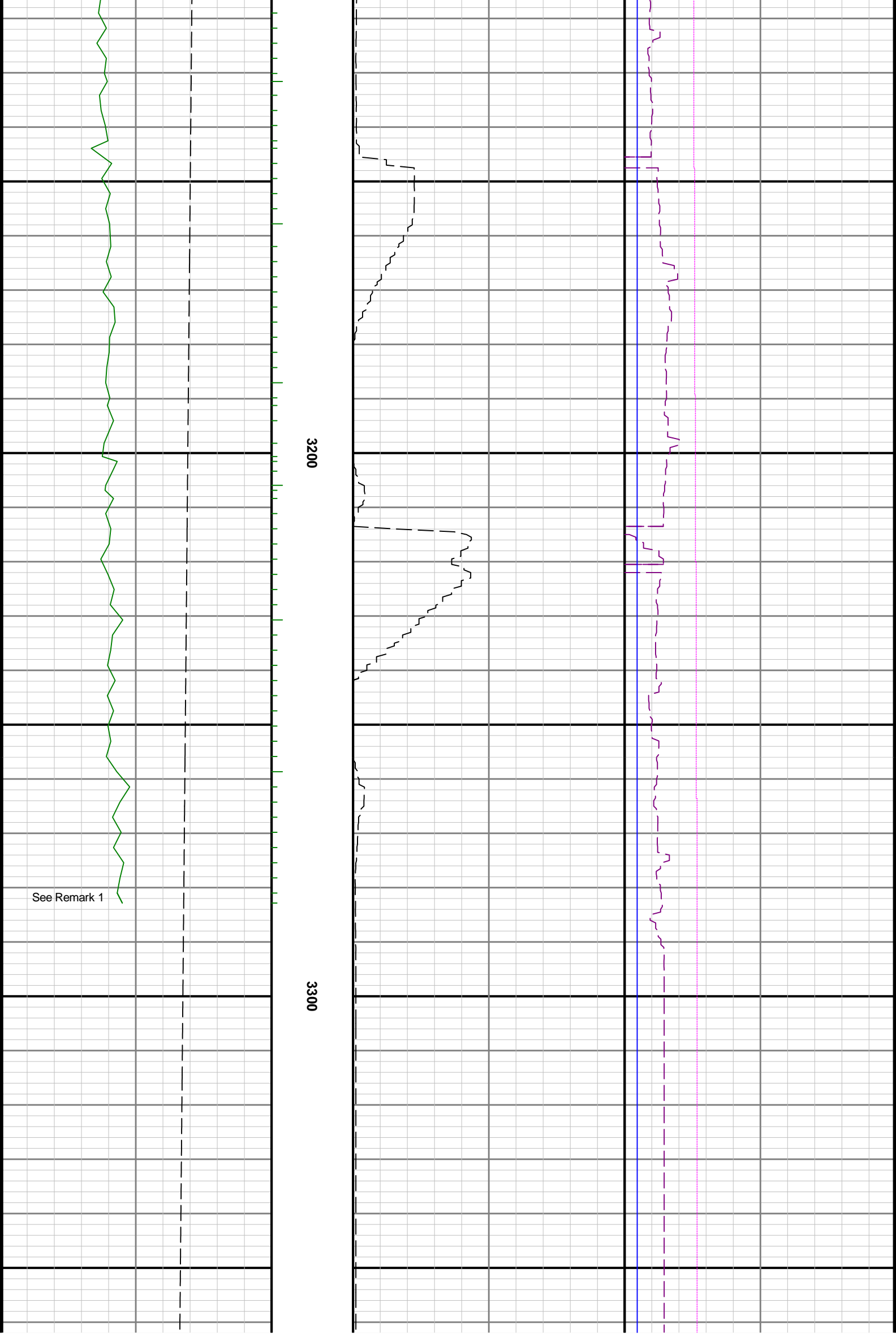


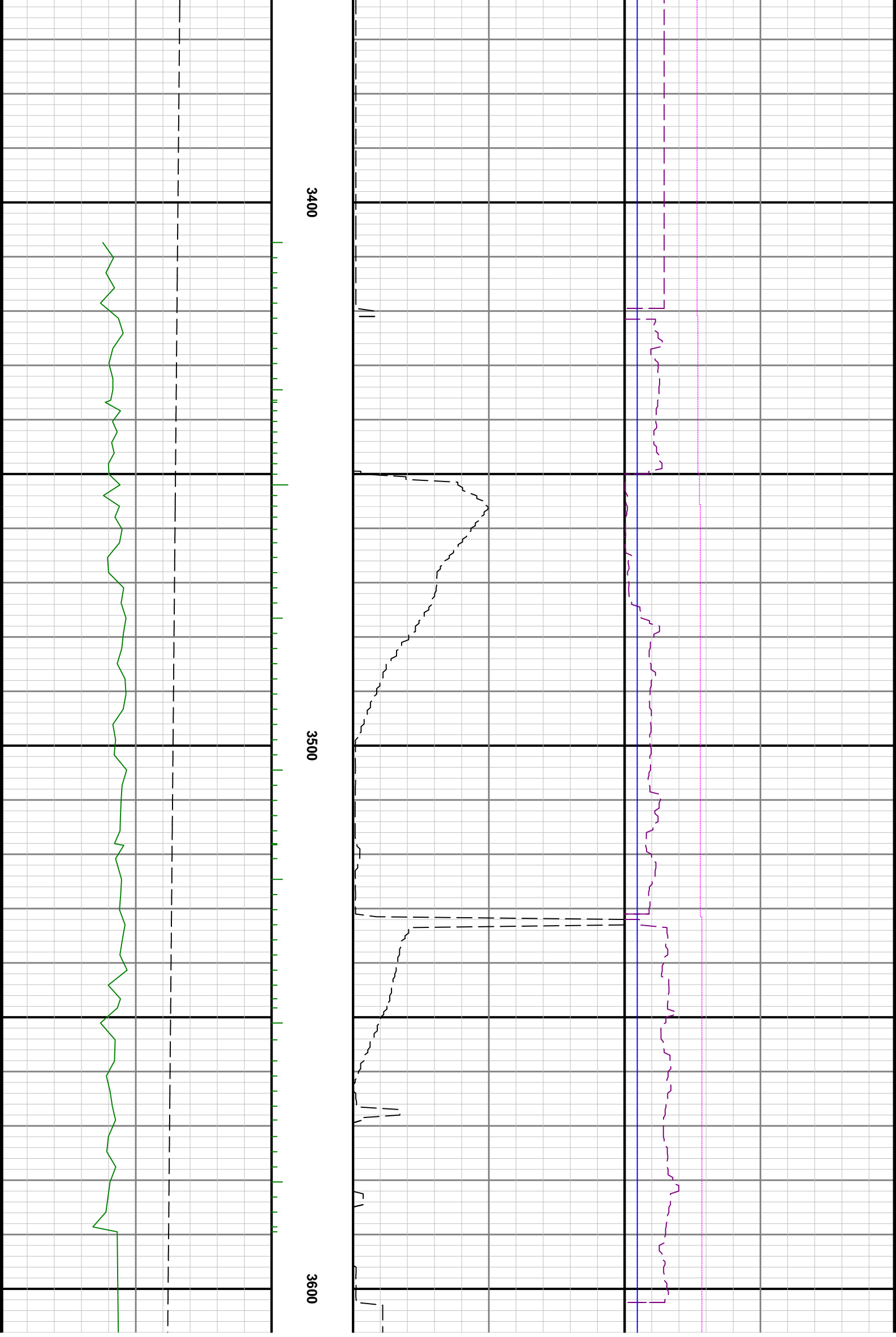


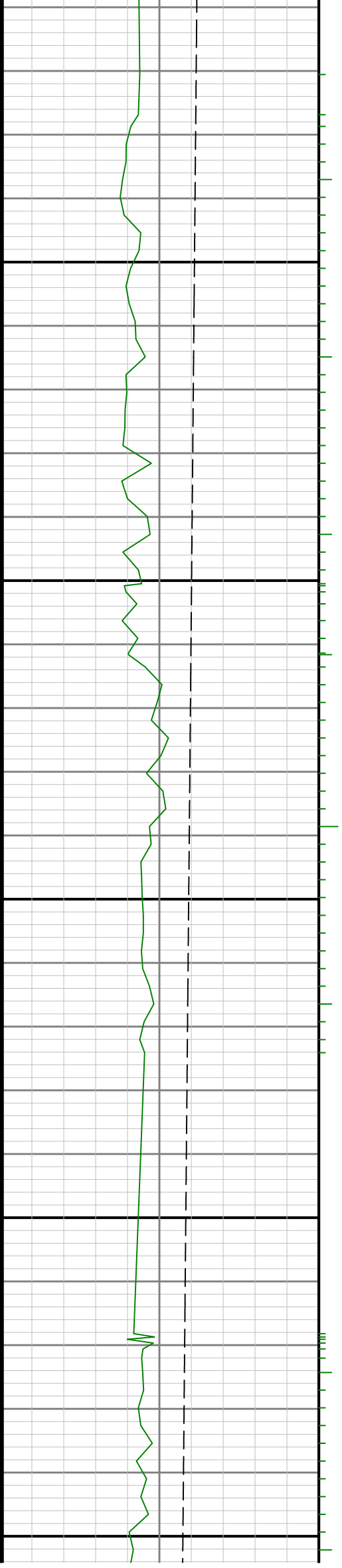






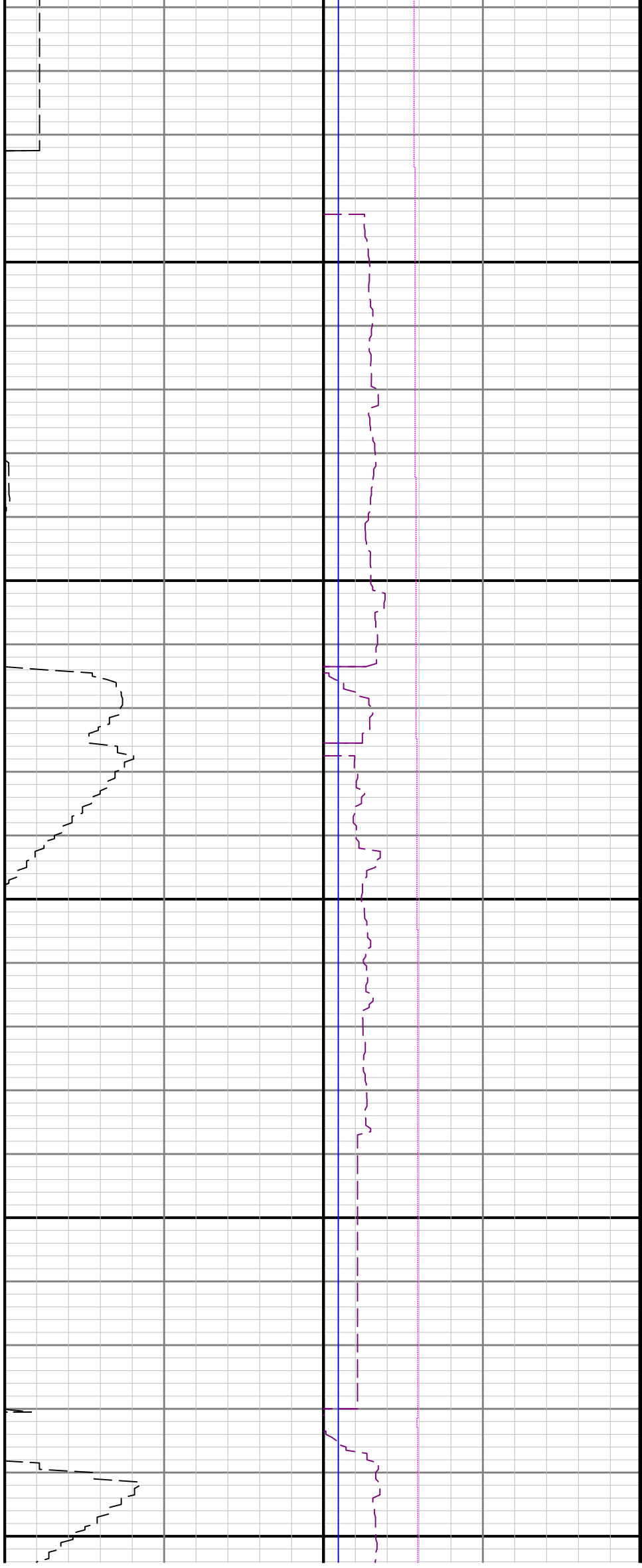


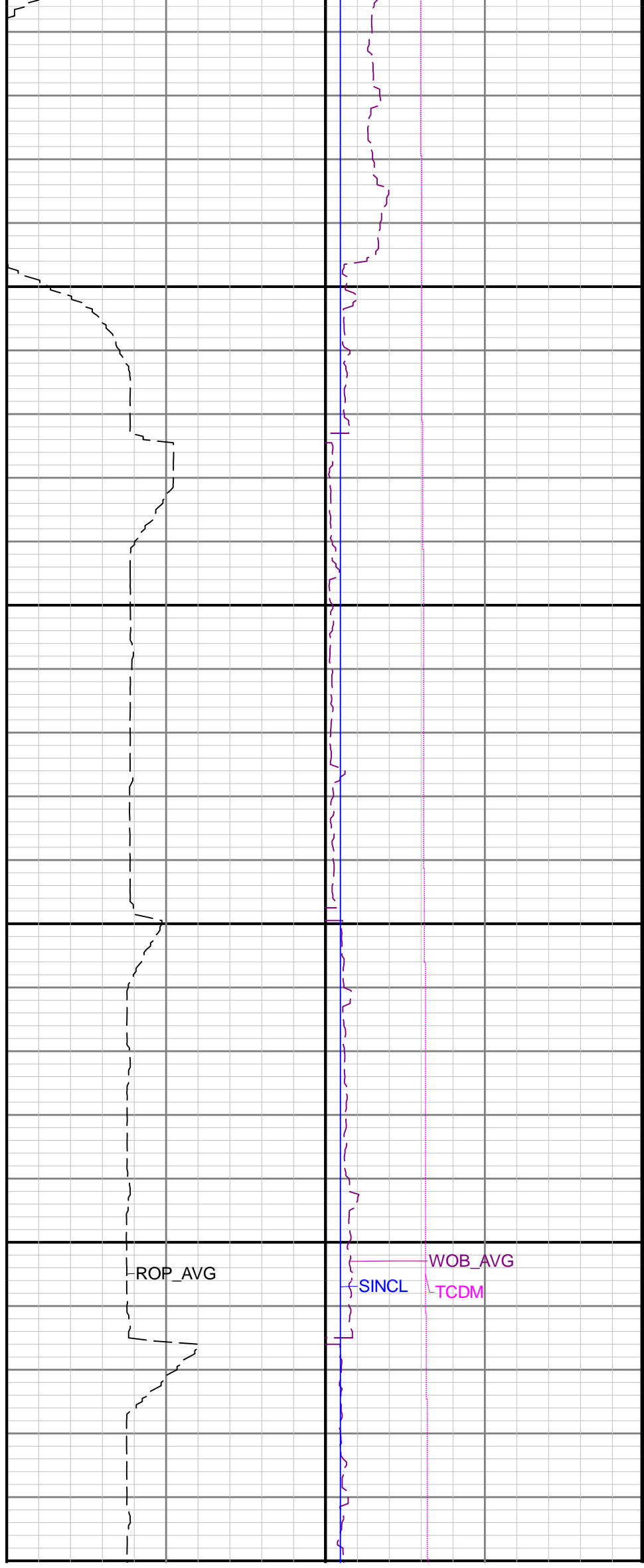
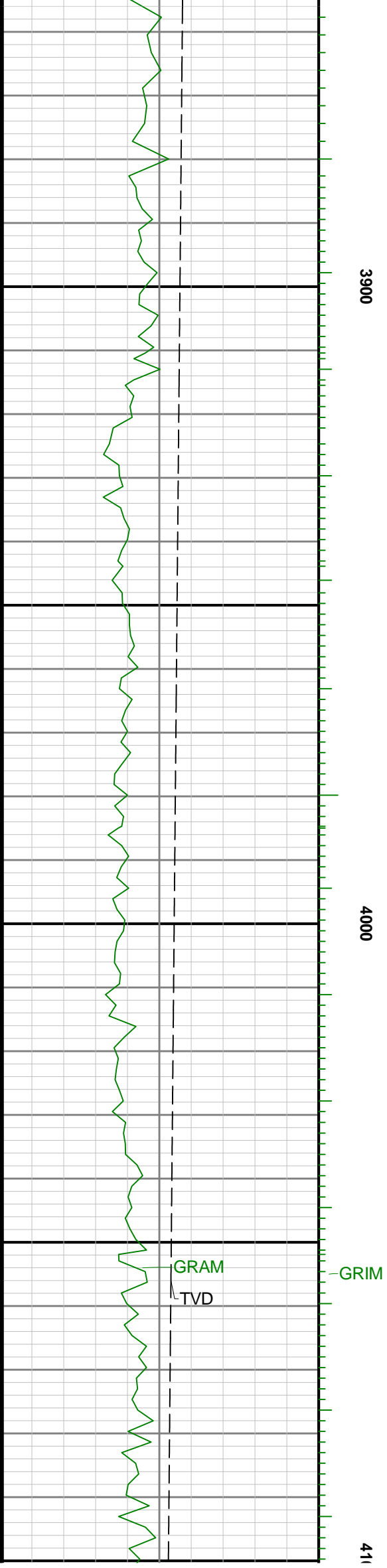


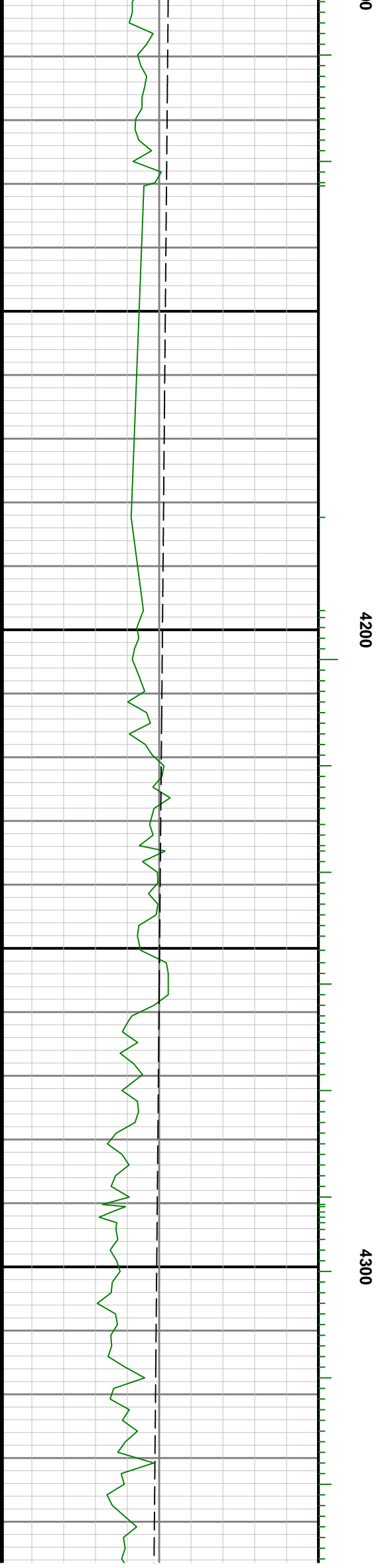
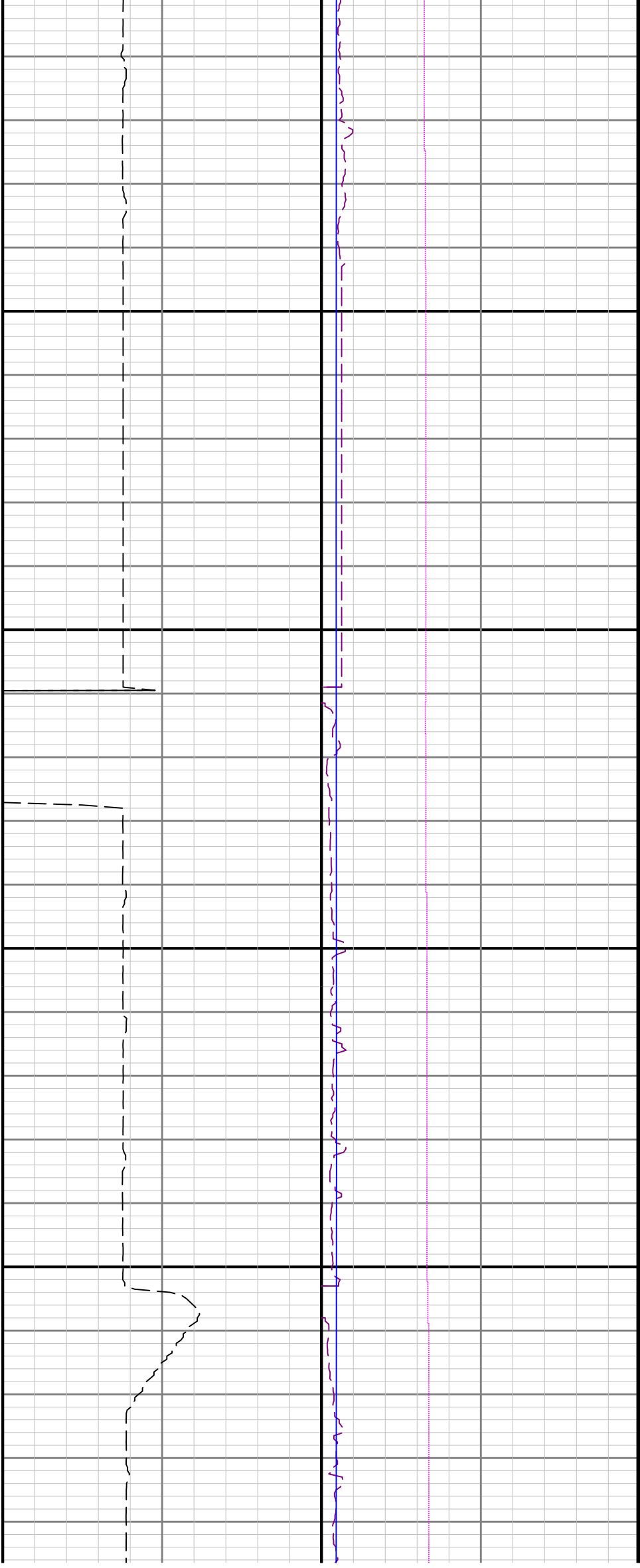


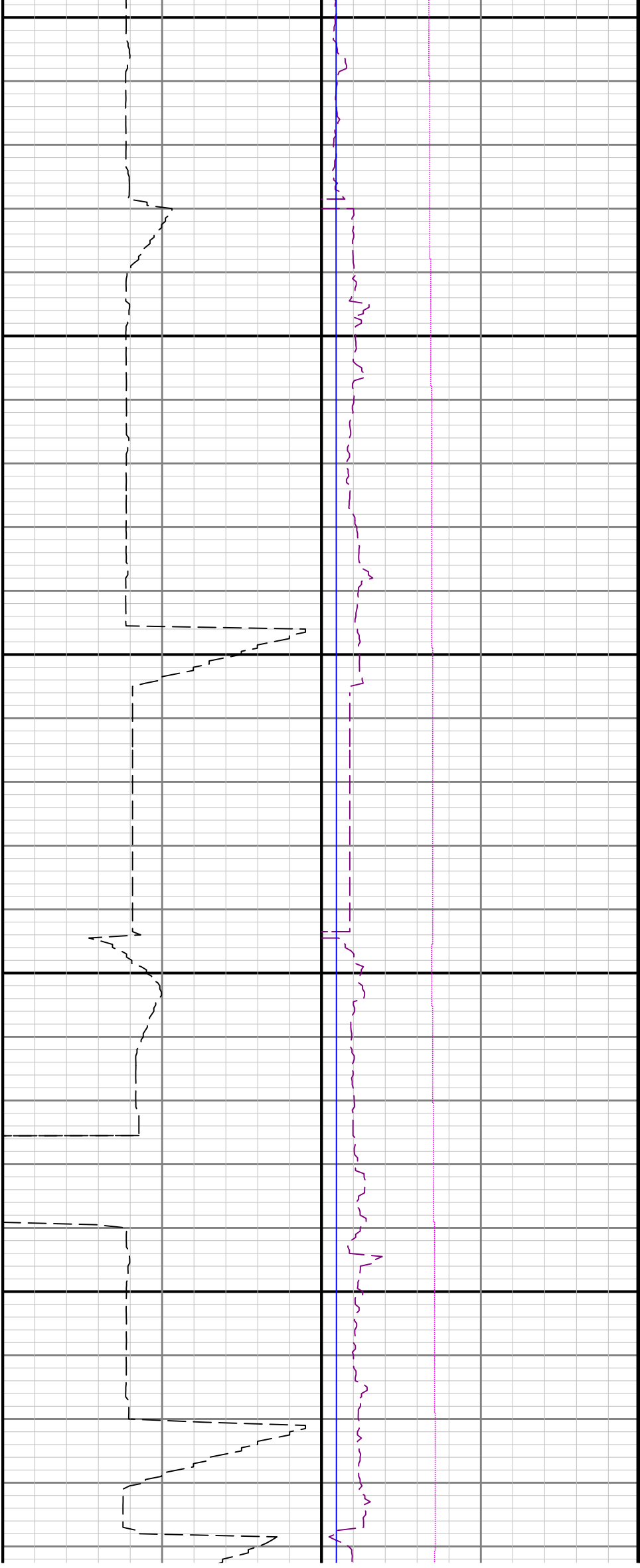
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3800



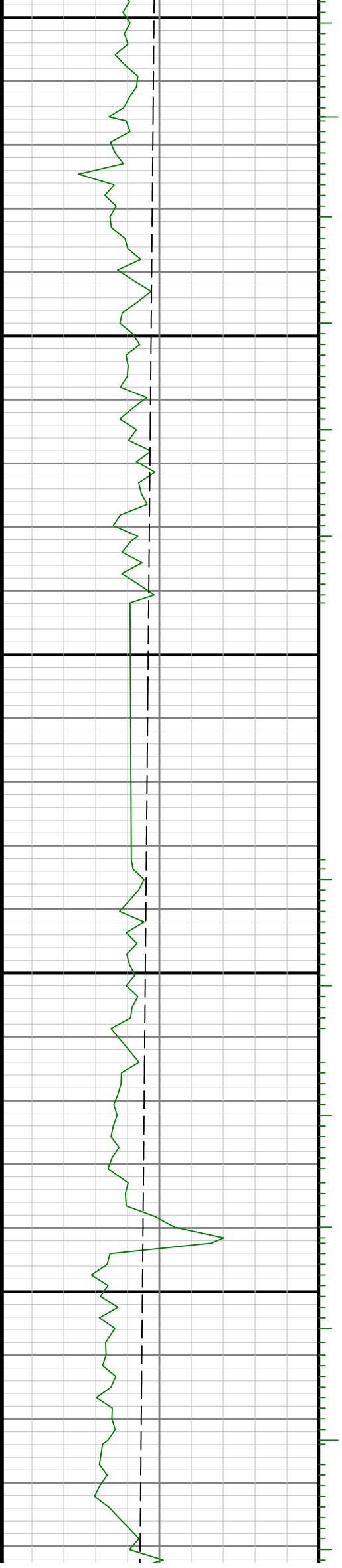


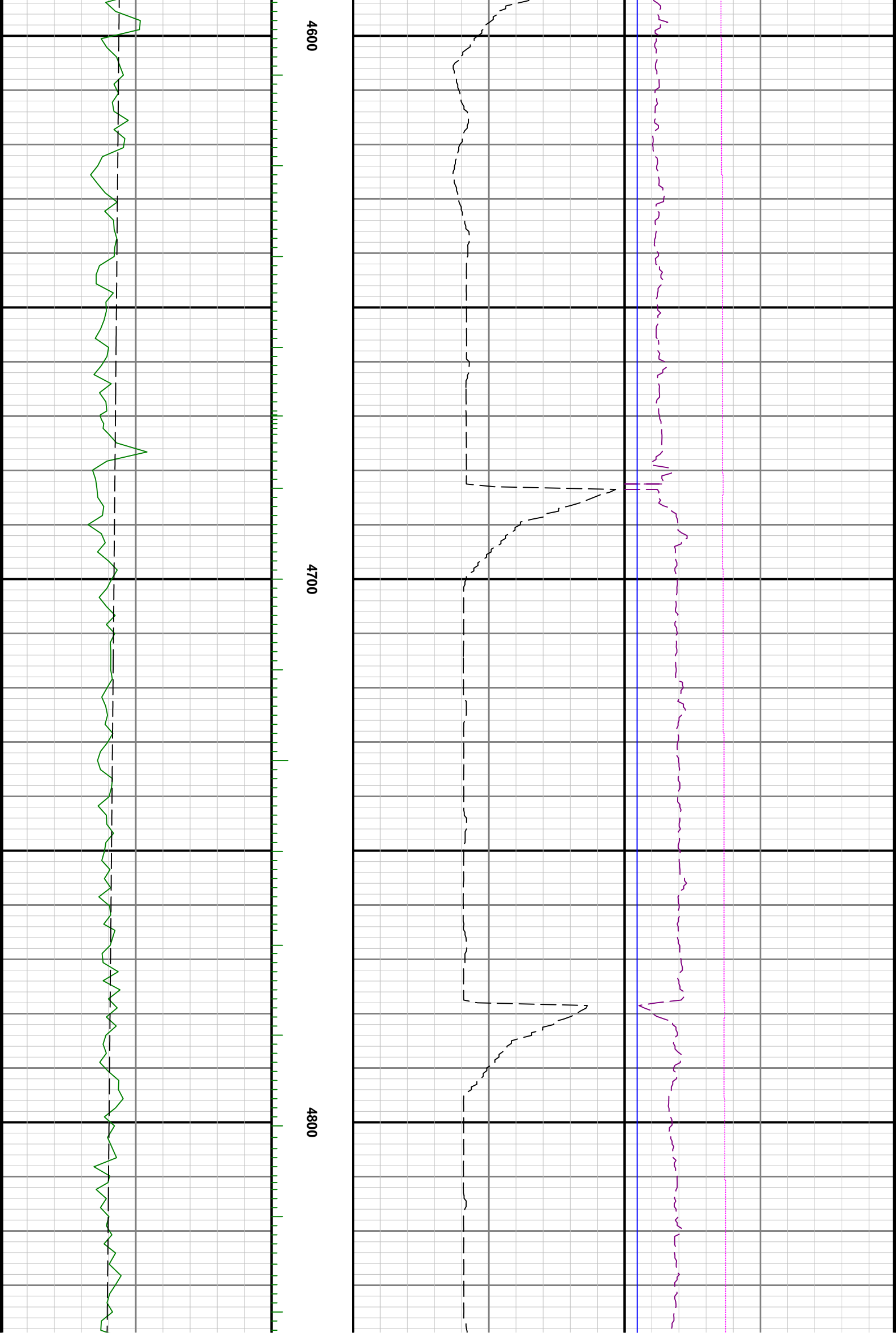


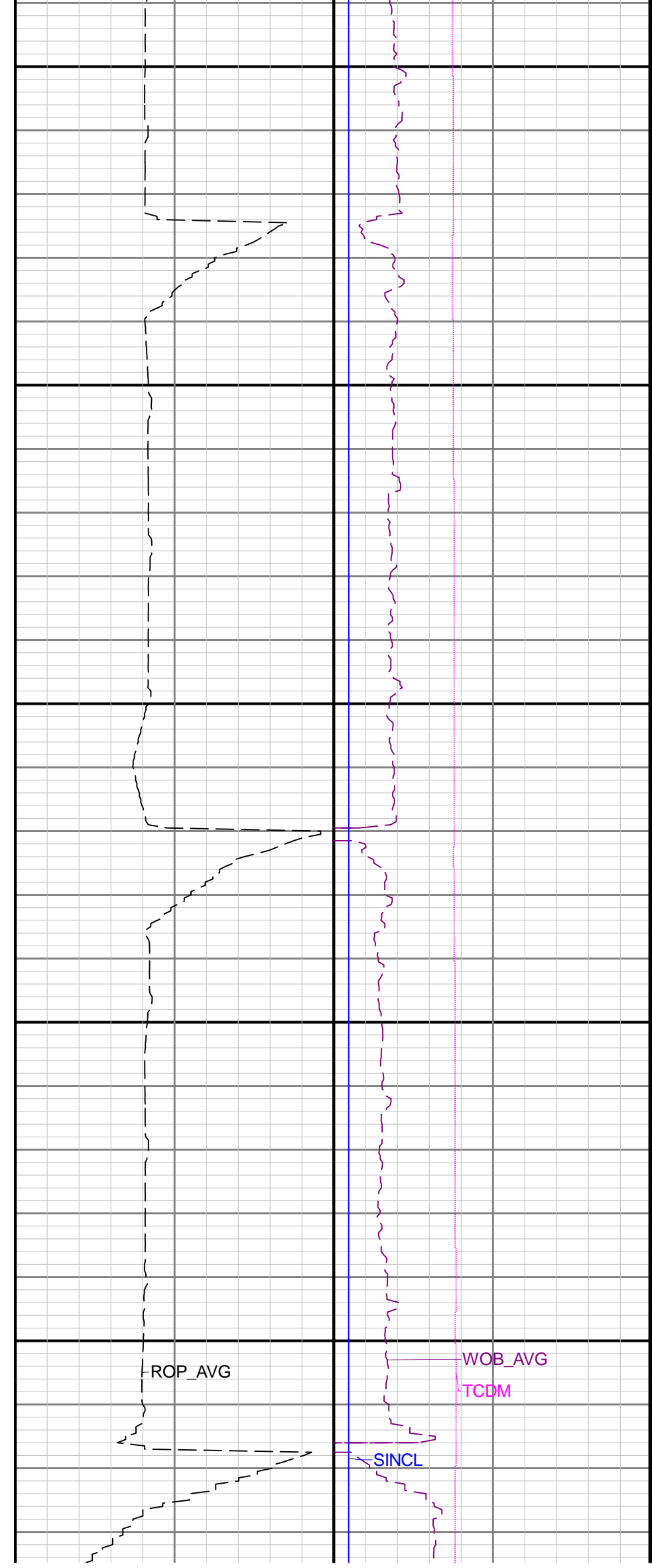
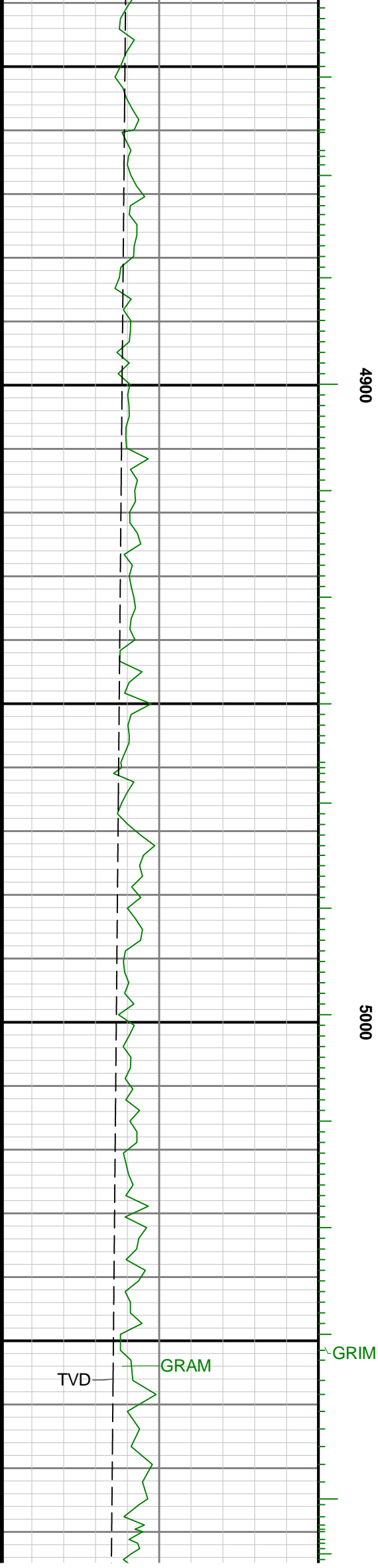


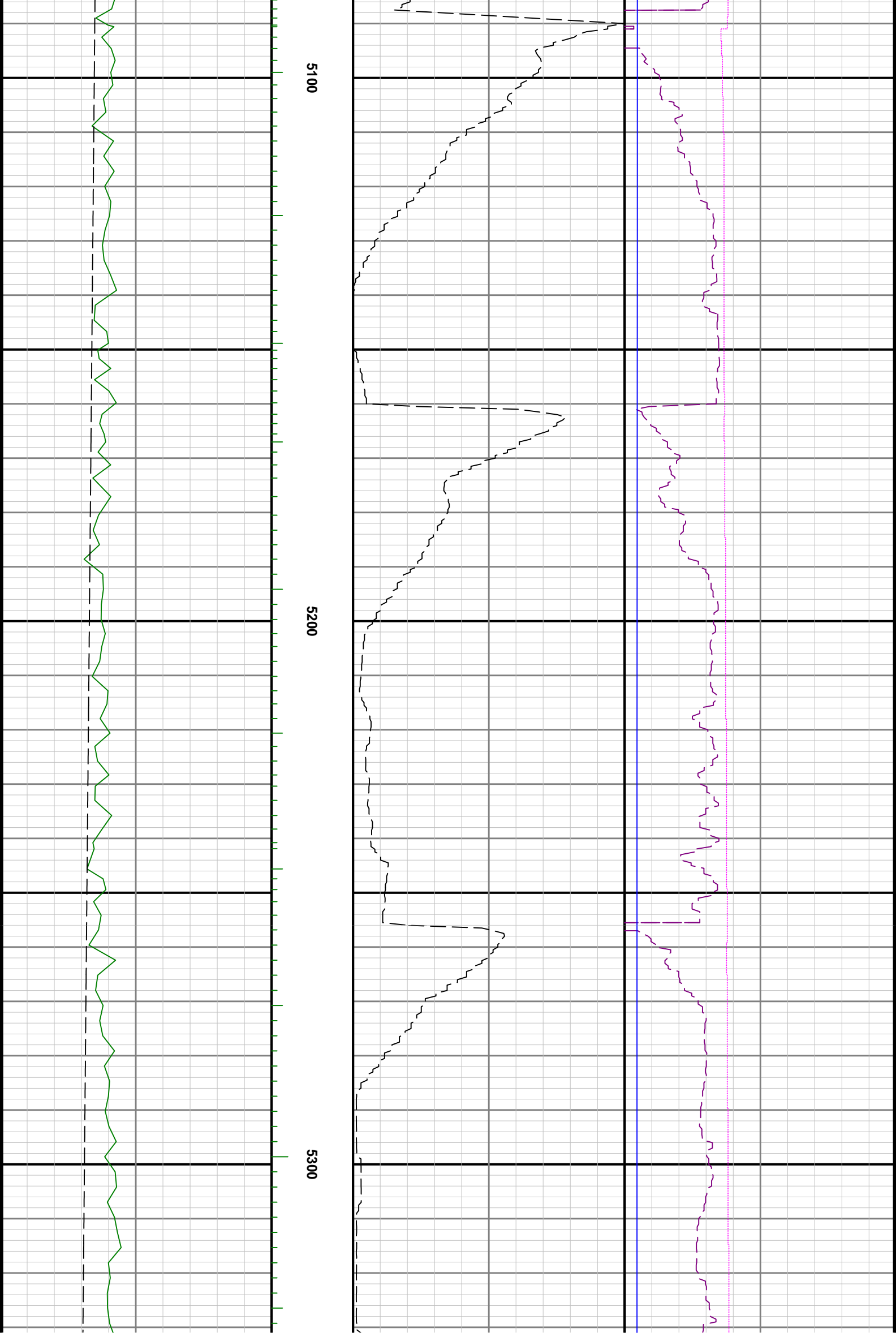
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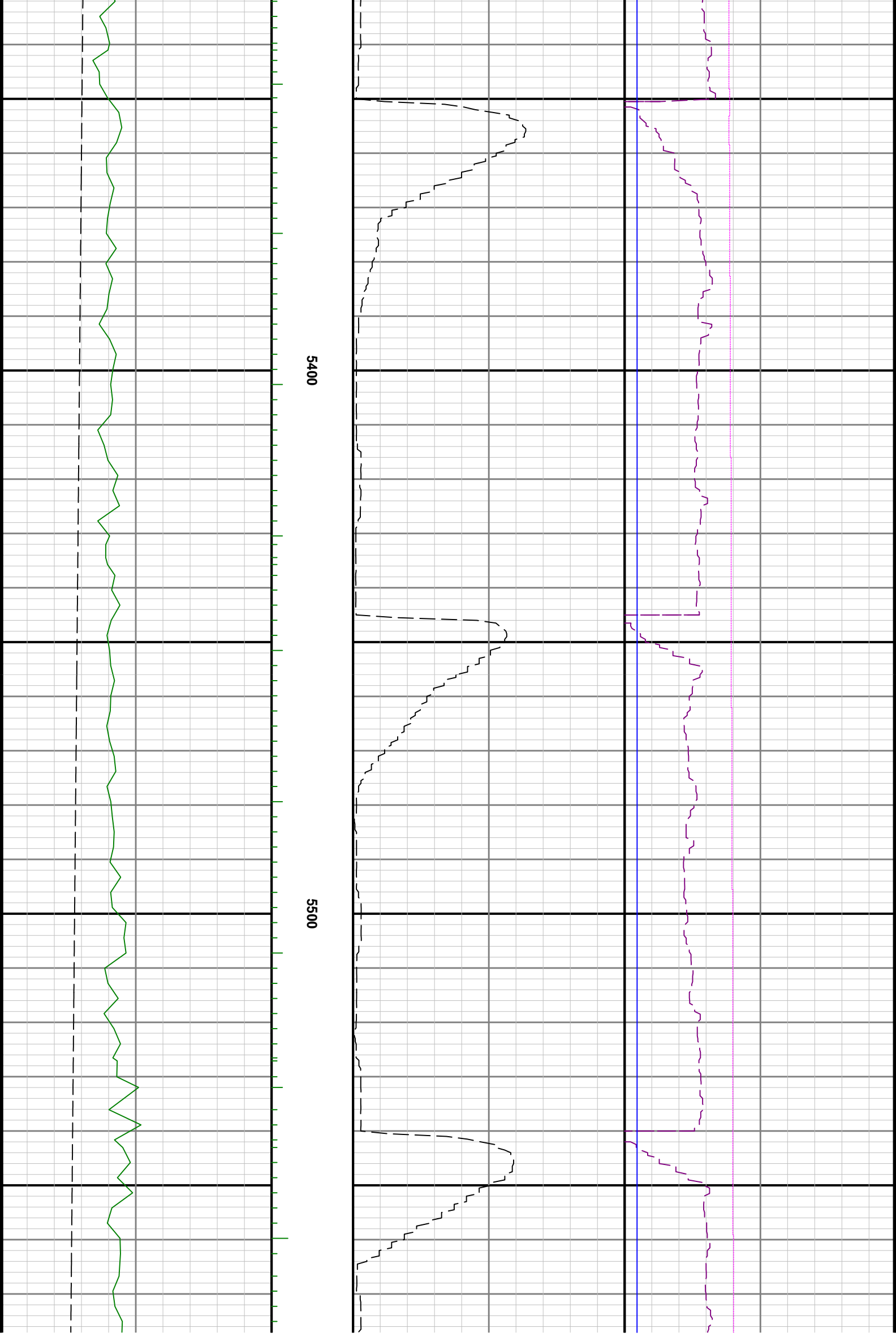
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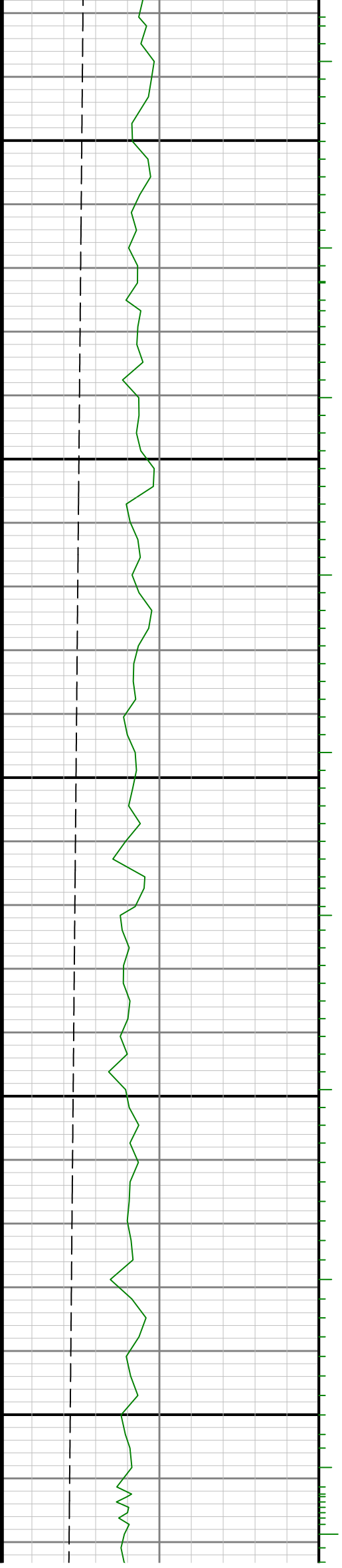








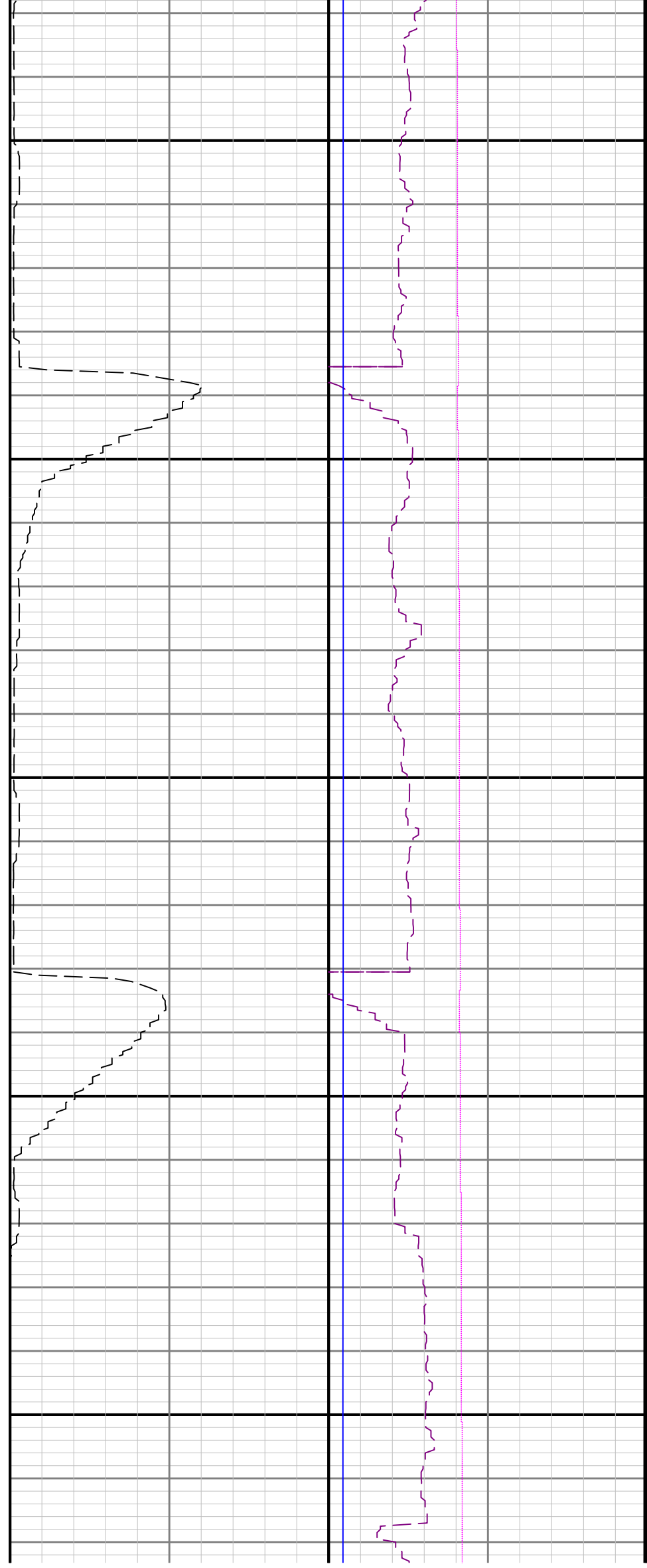


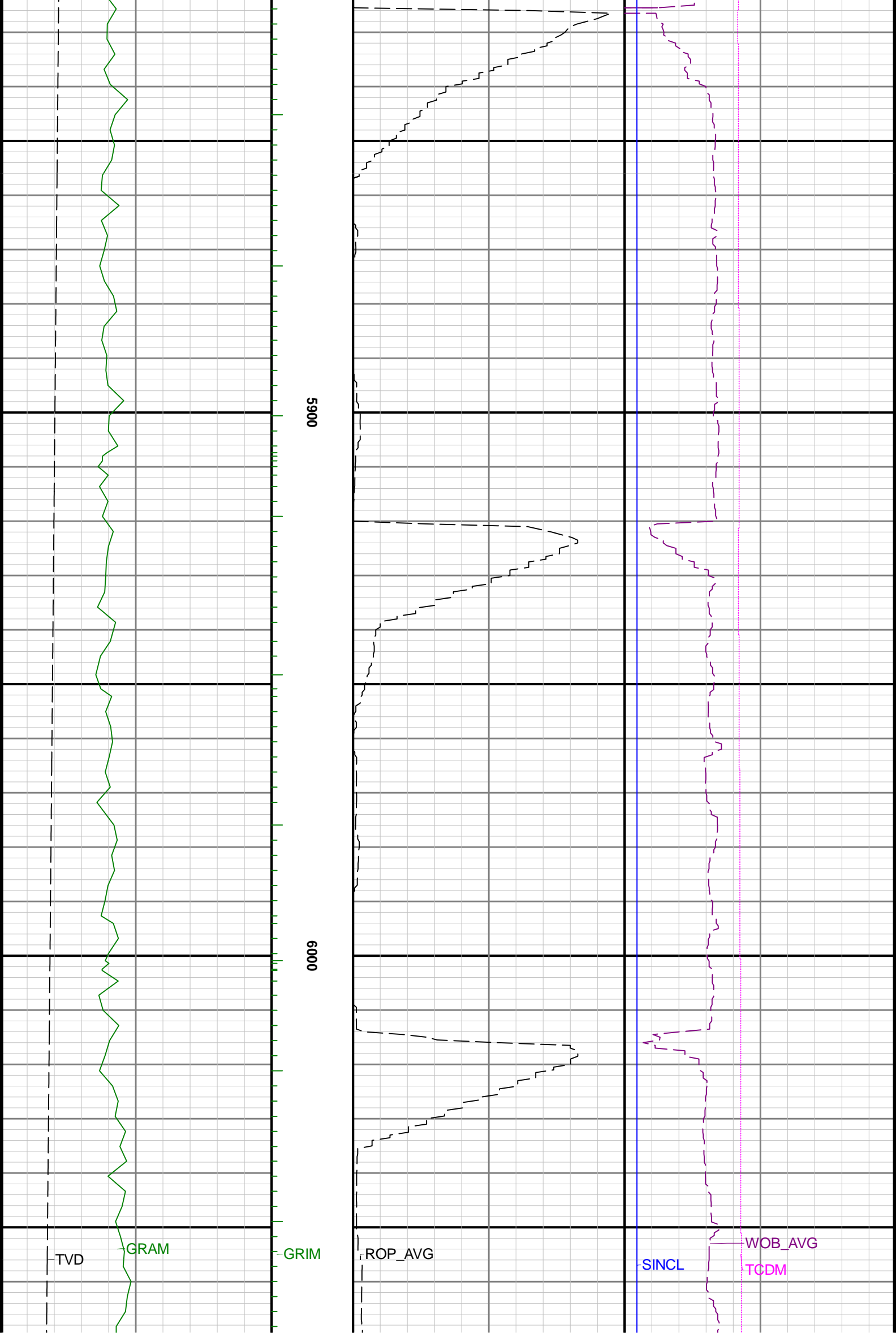


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5700

5800





TVD

GRAM

GRIM

5900

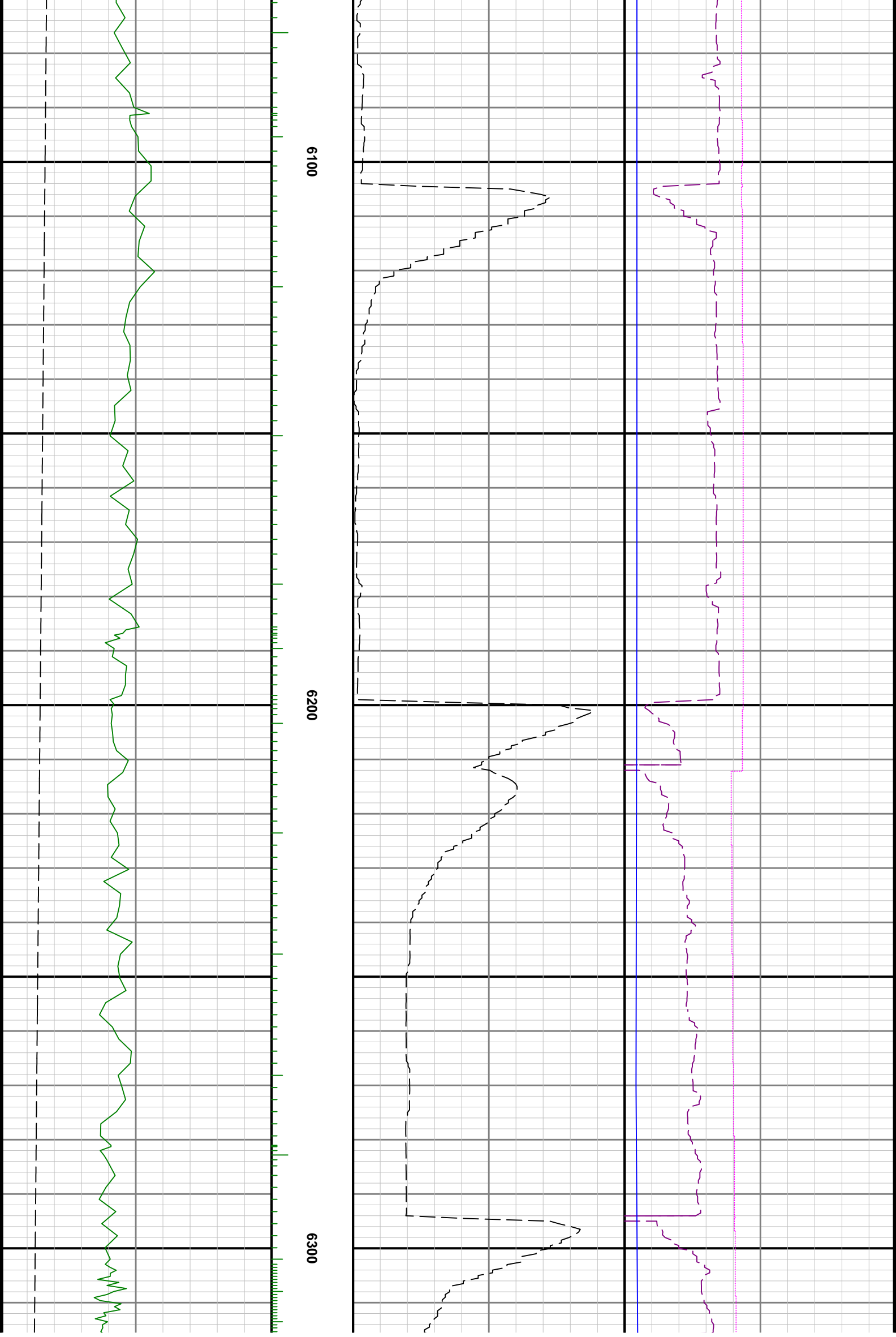
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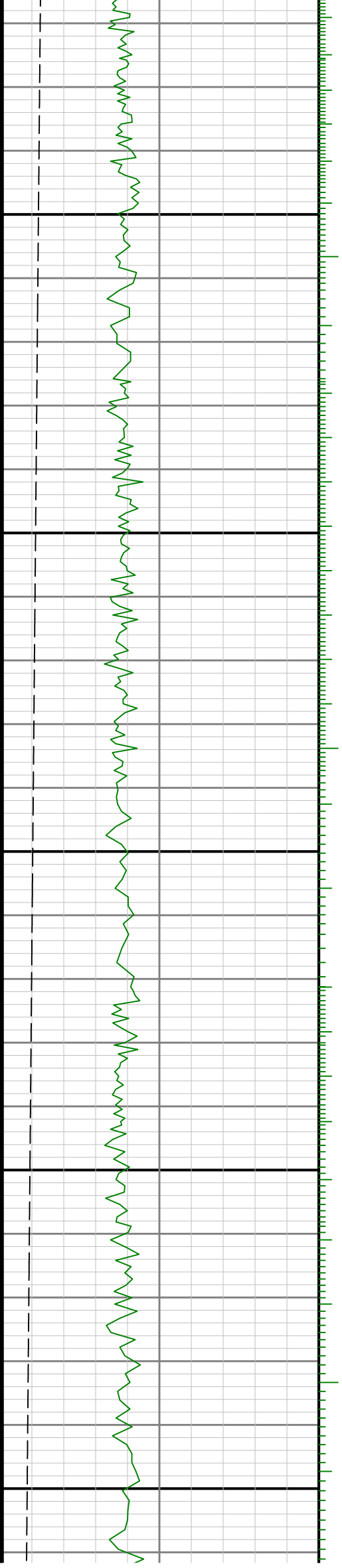
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SINCL

WOB_AVG

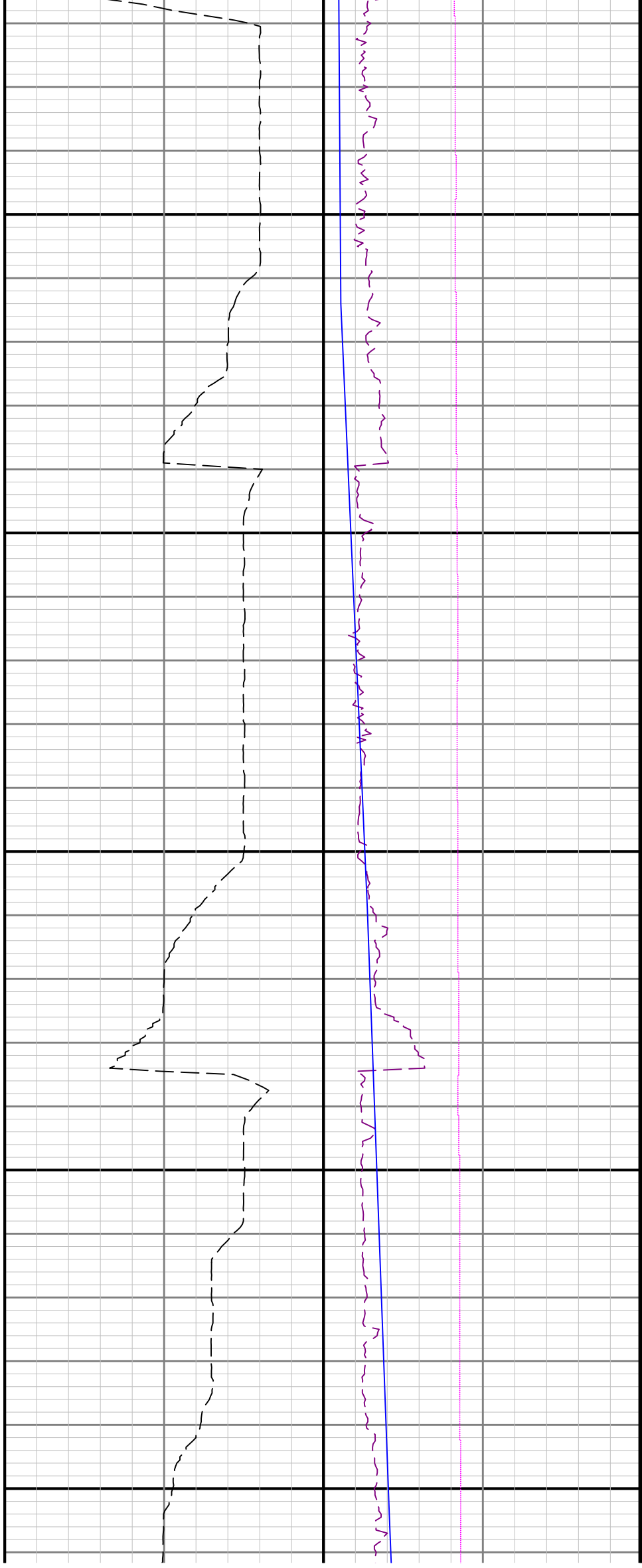
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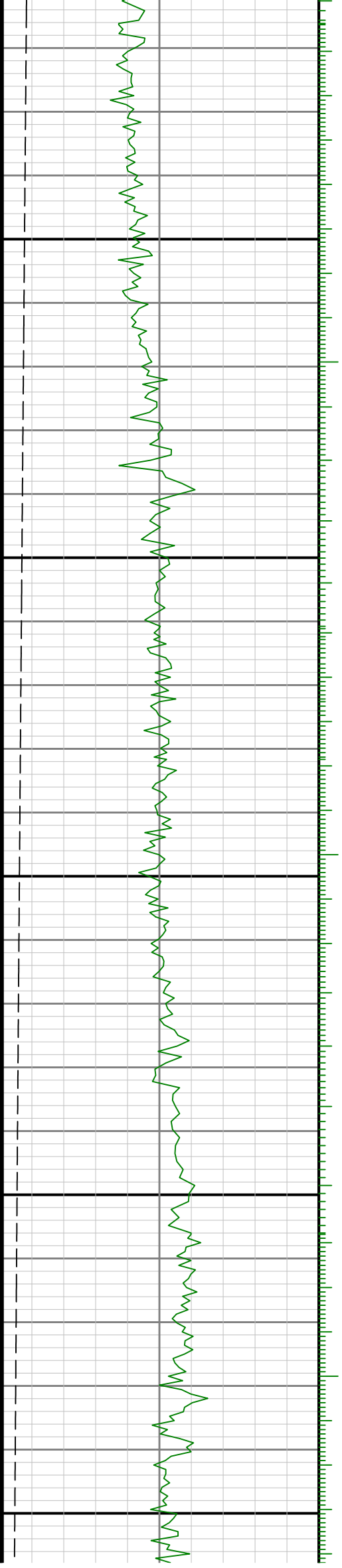




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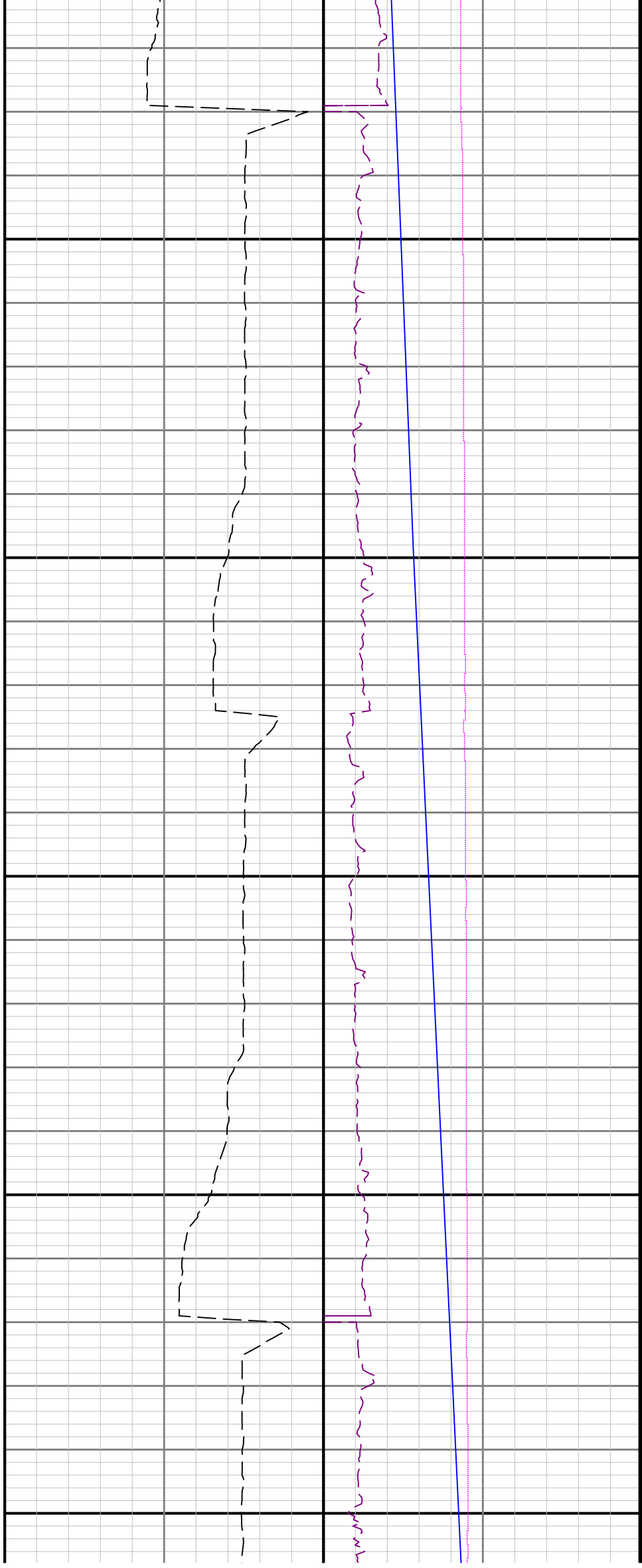


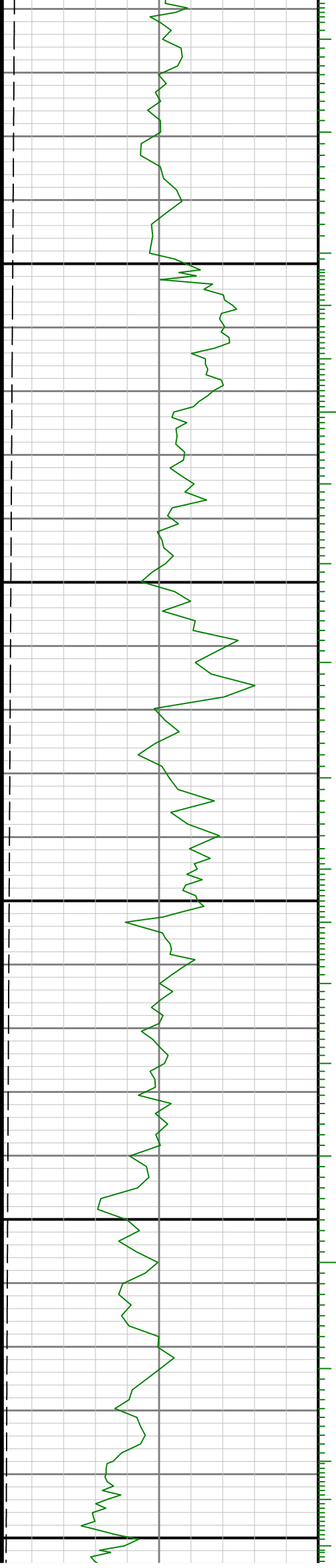


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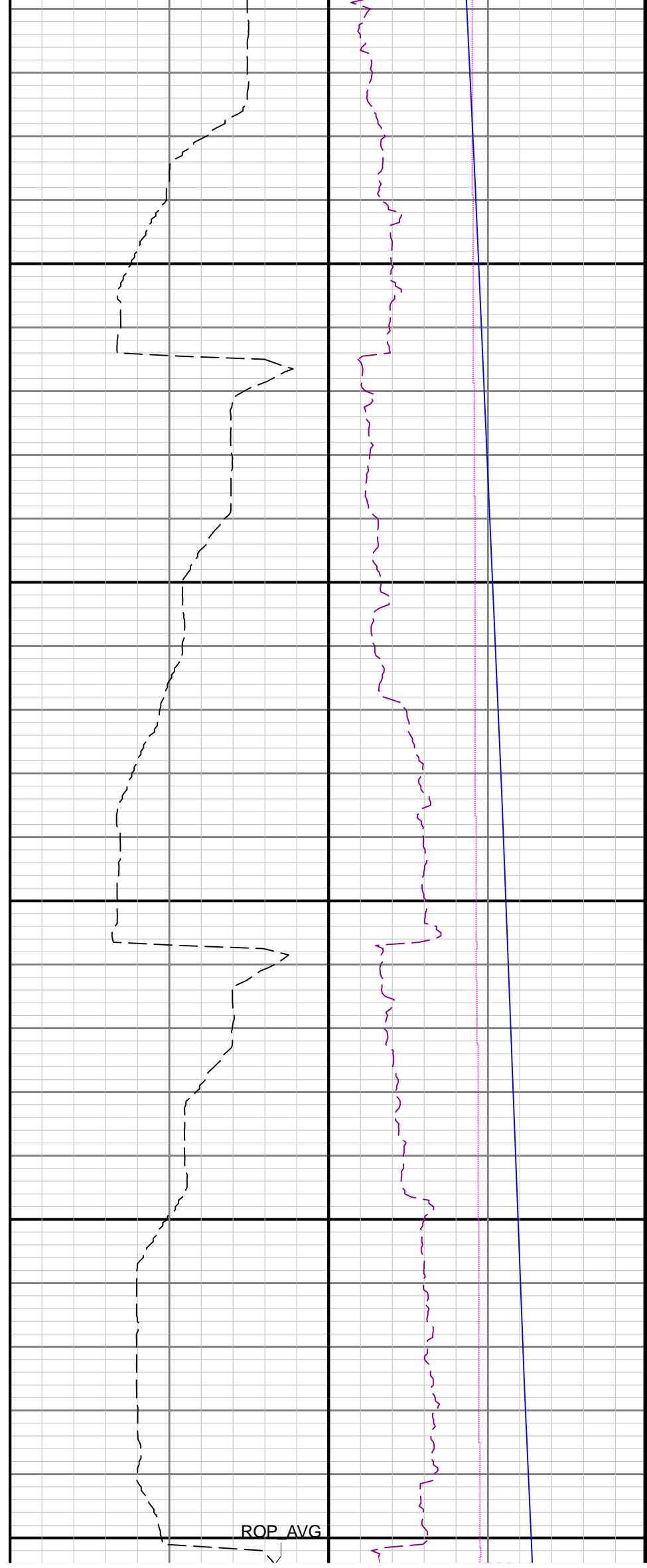
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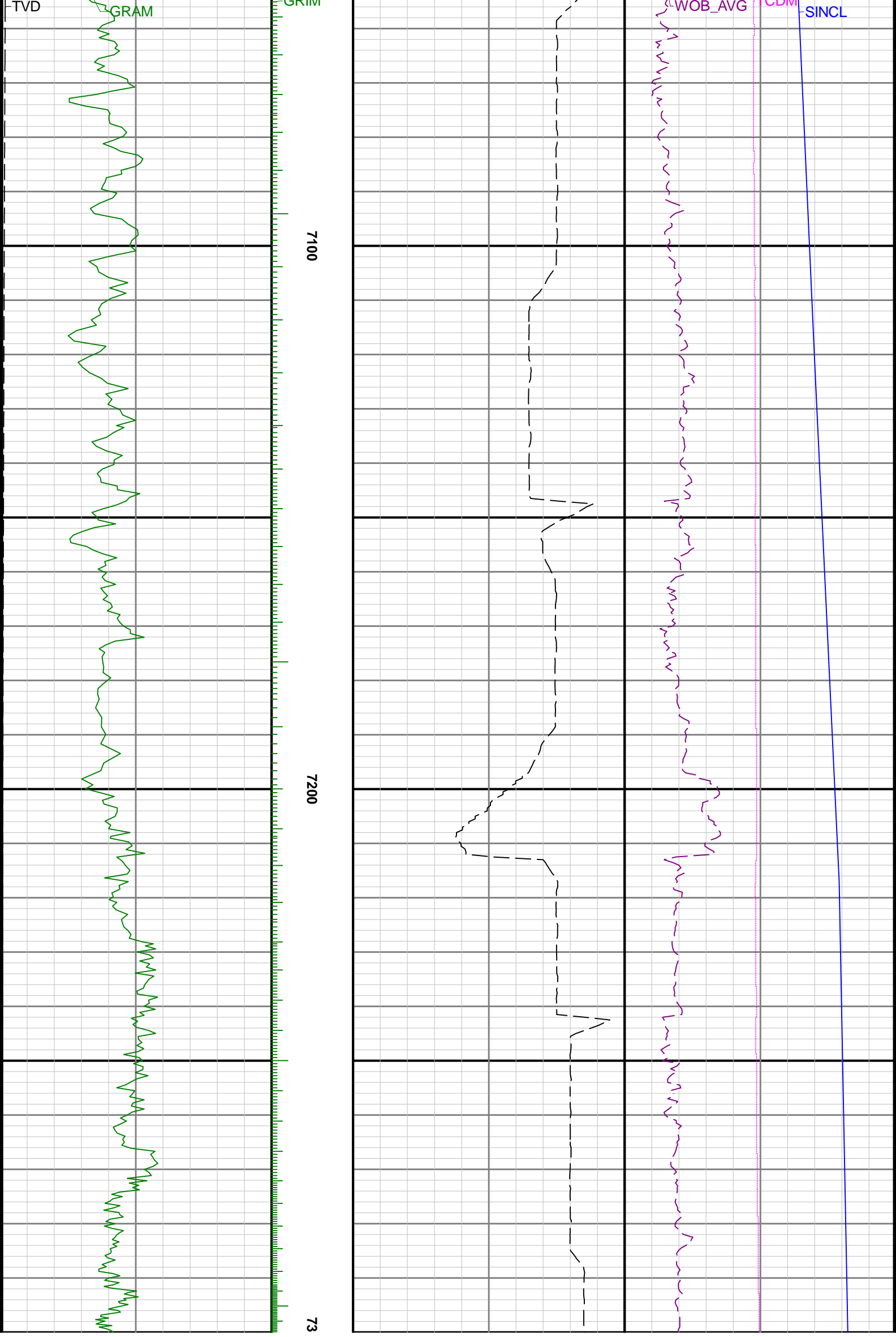


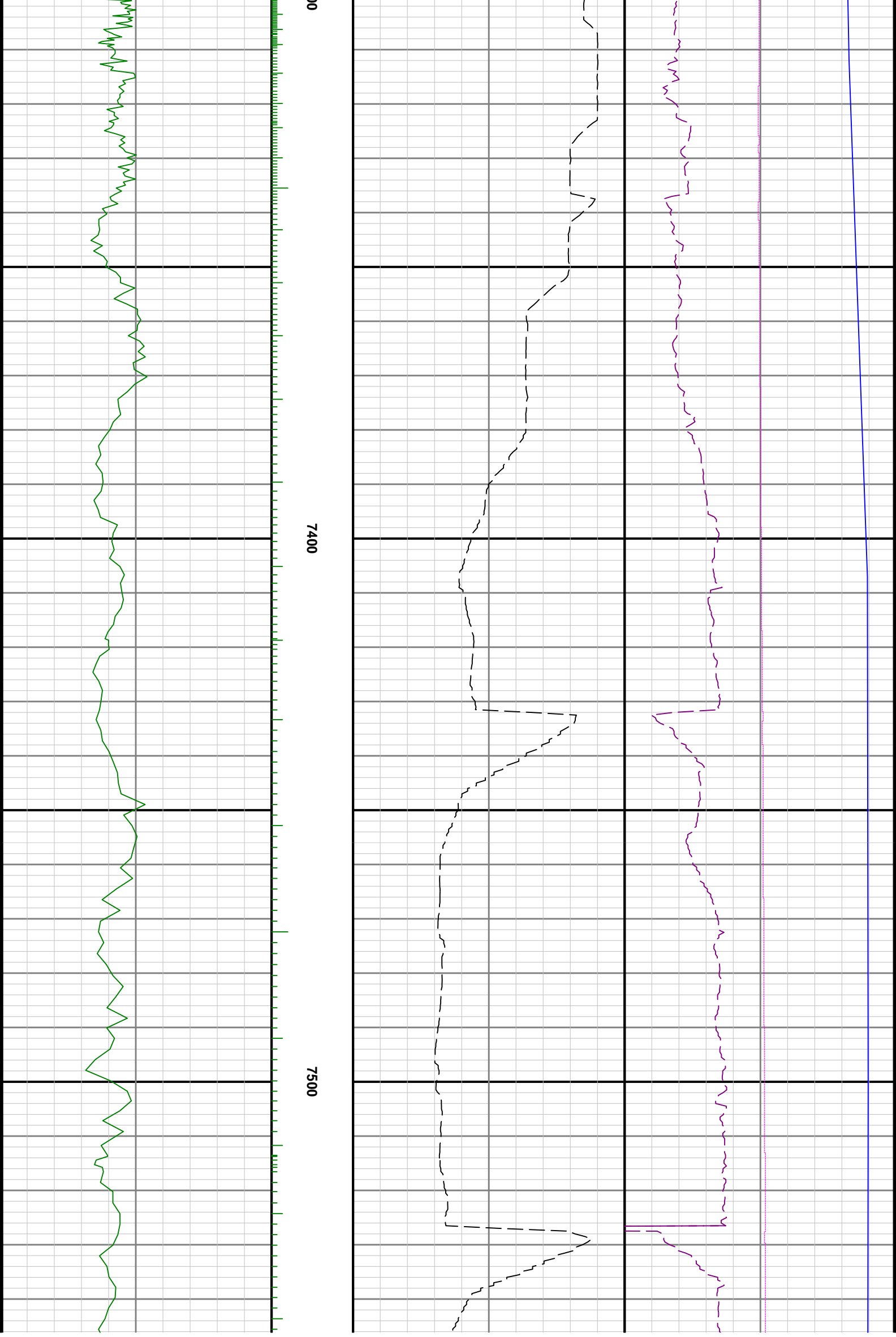
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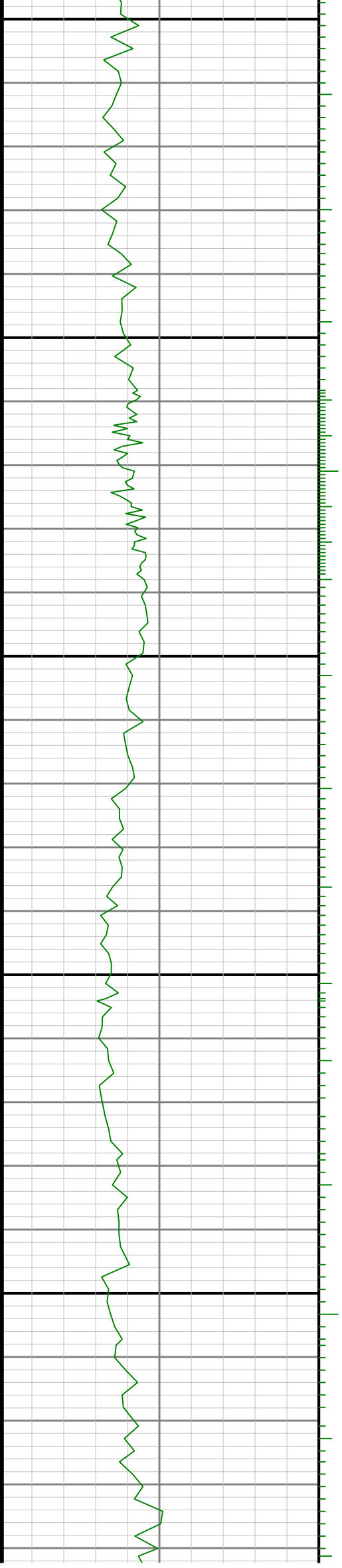
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ROP_AVG

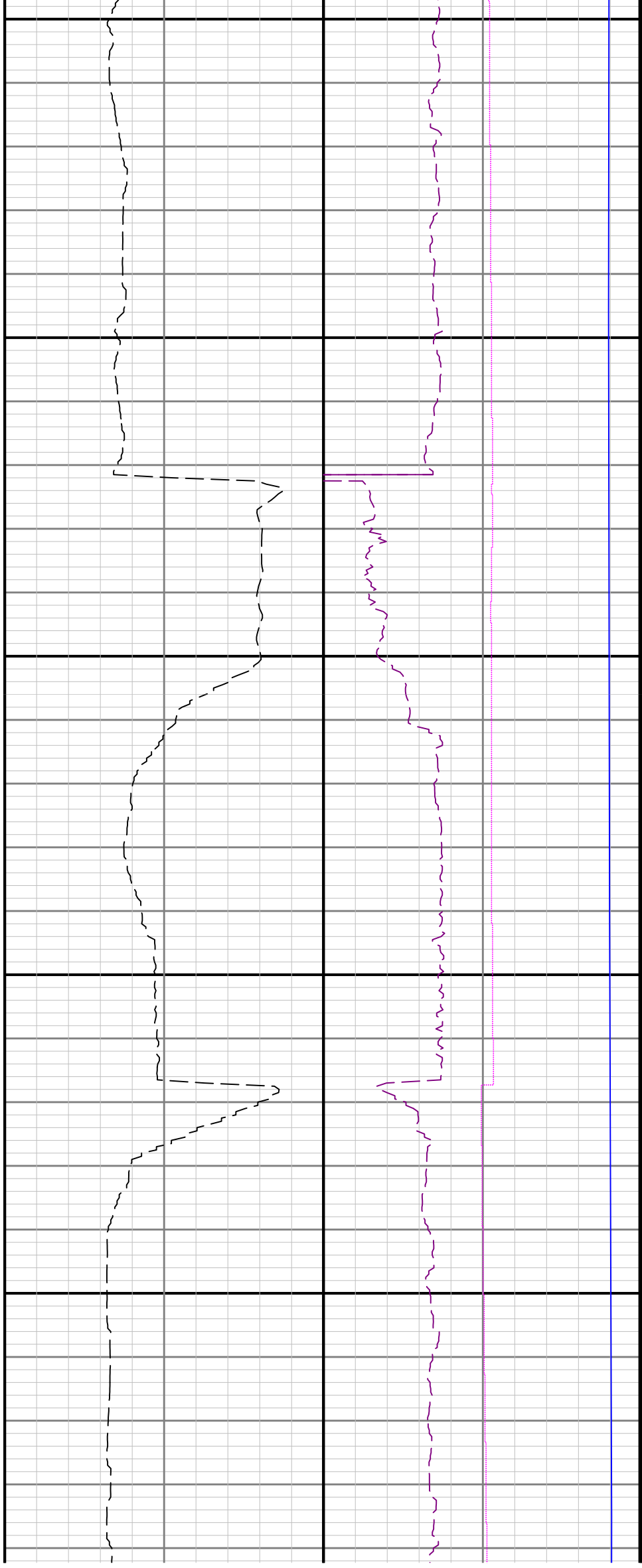


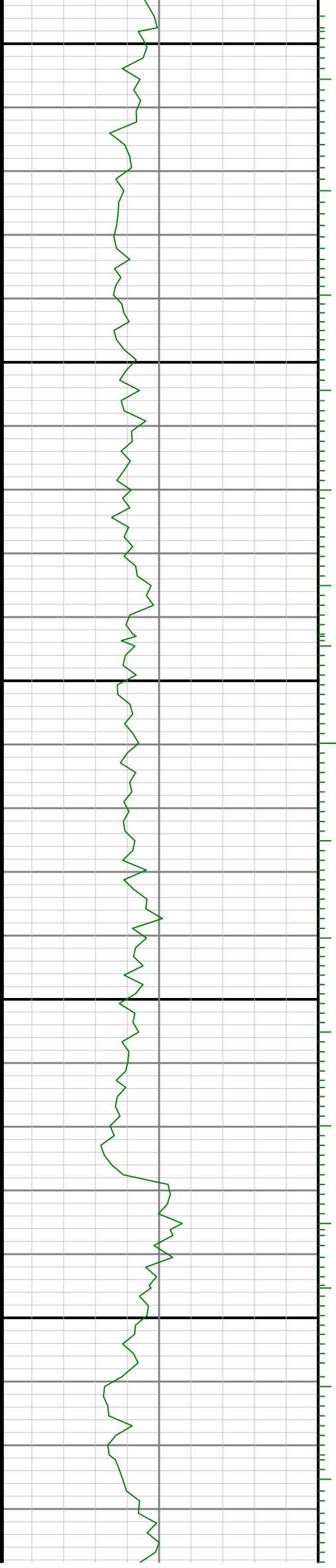




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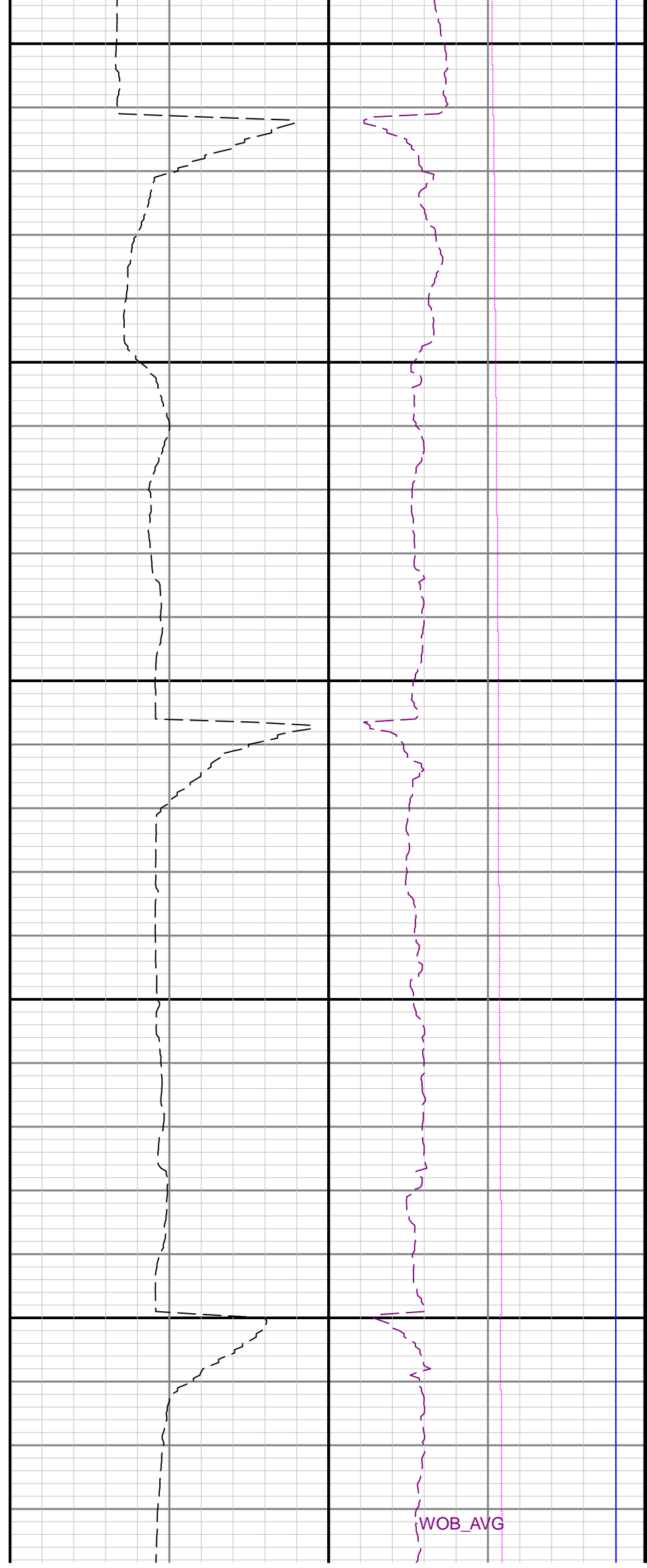




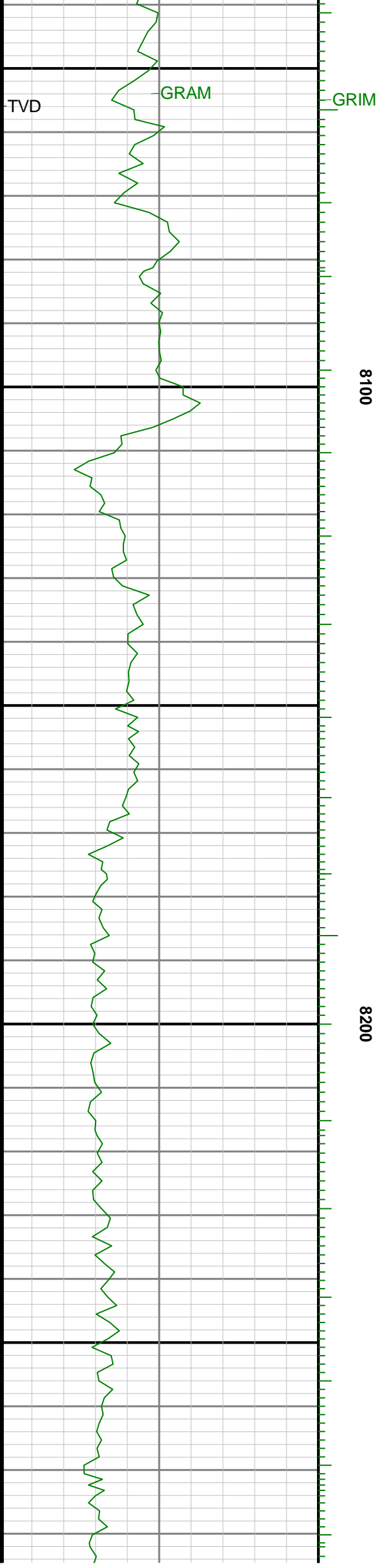
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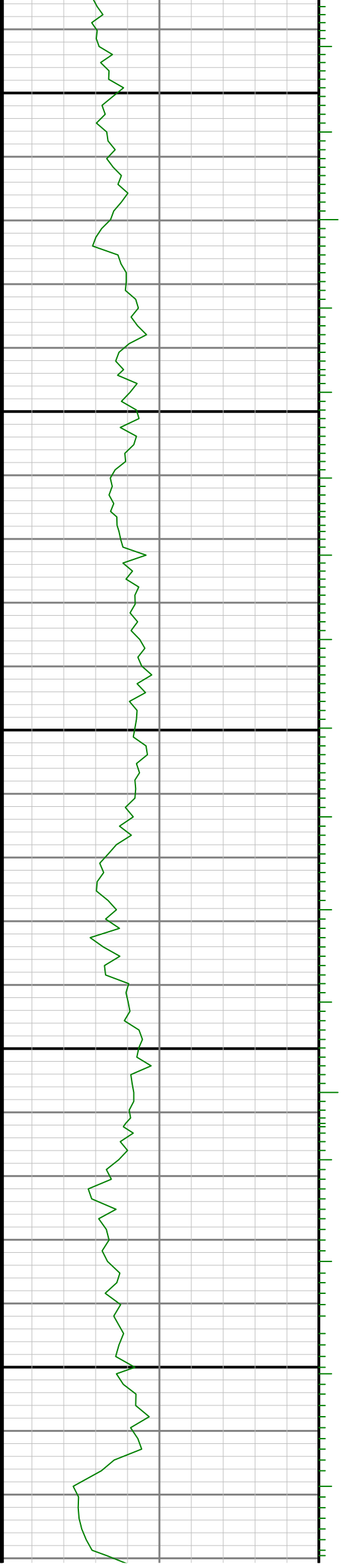
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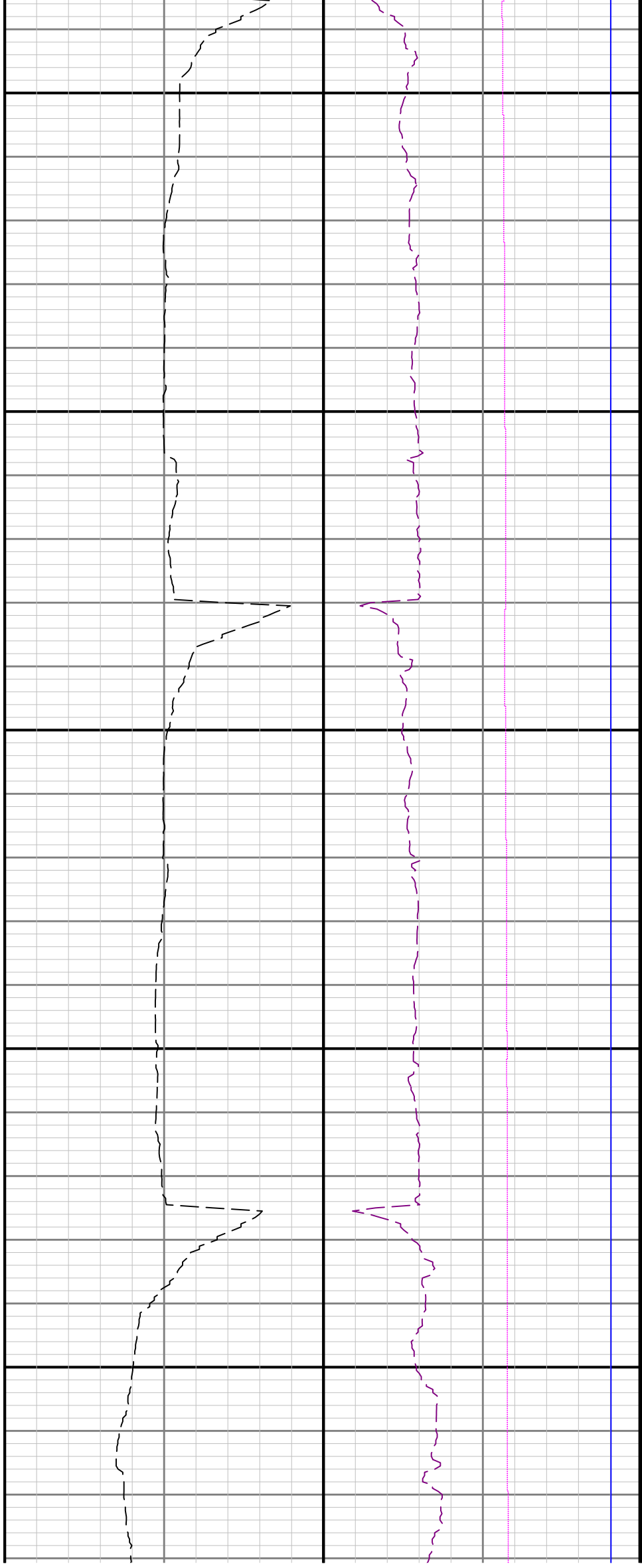


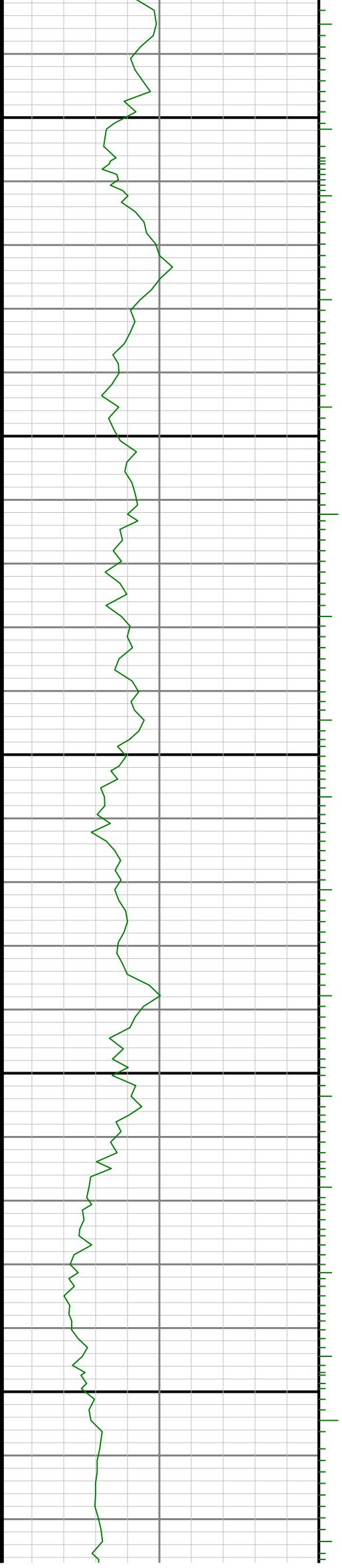


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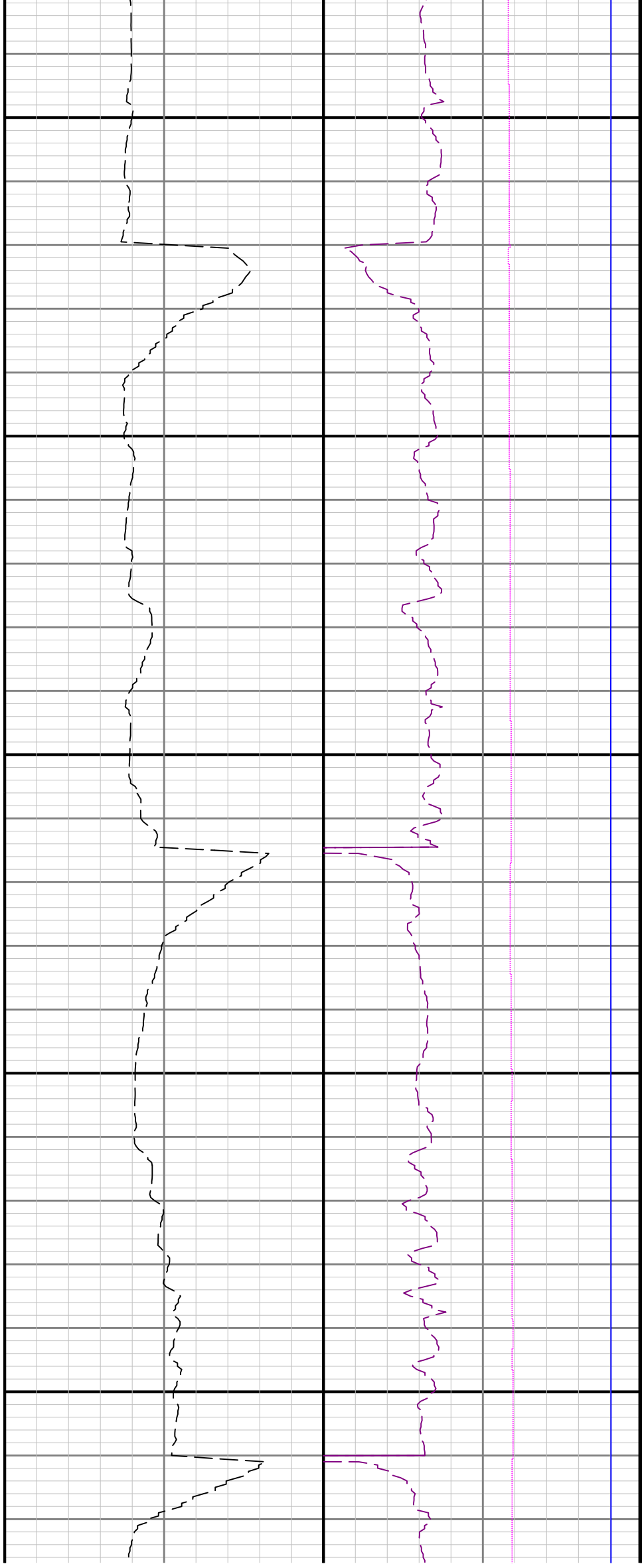
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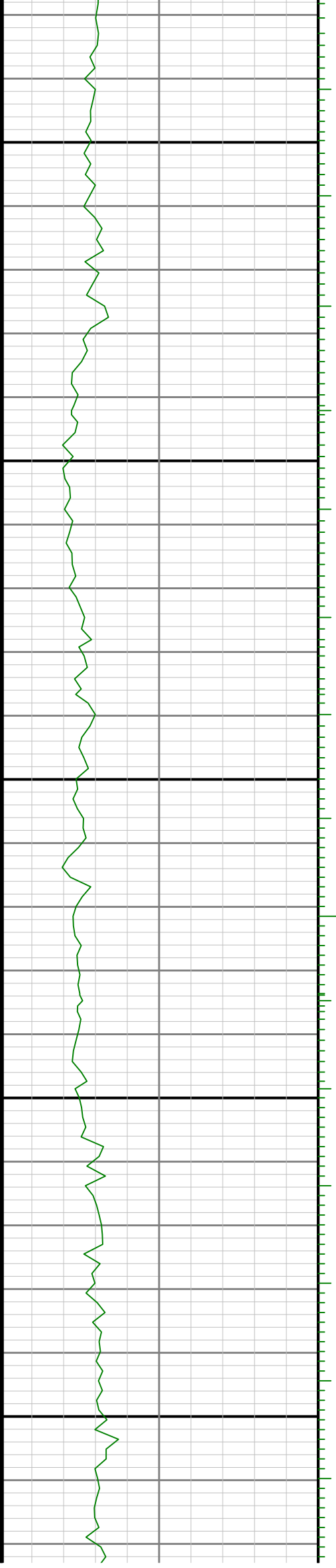




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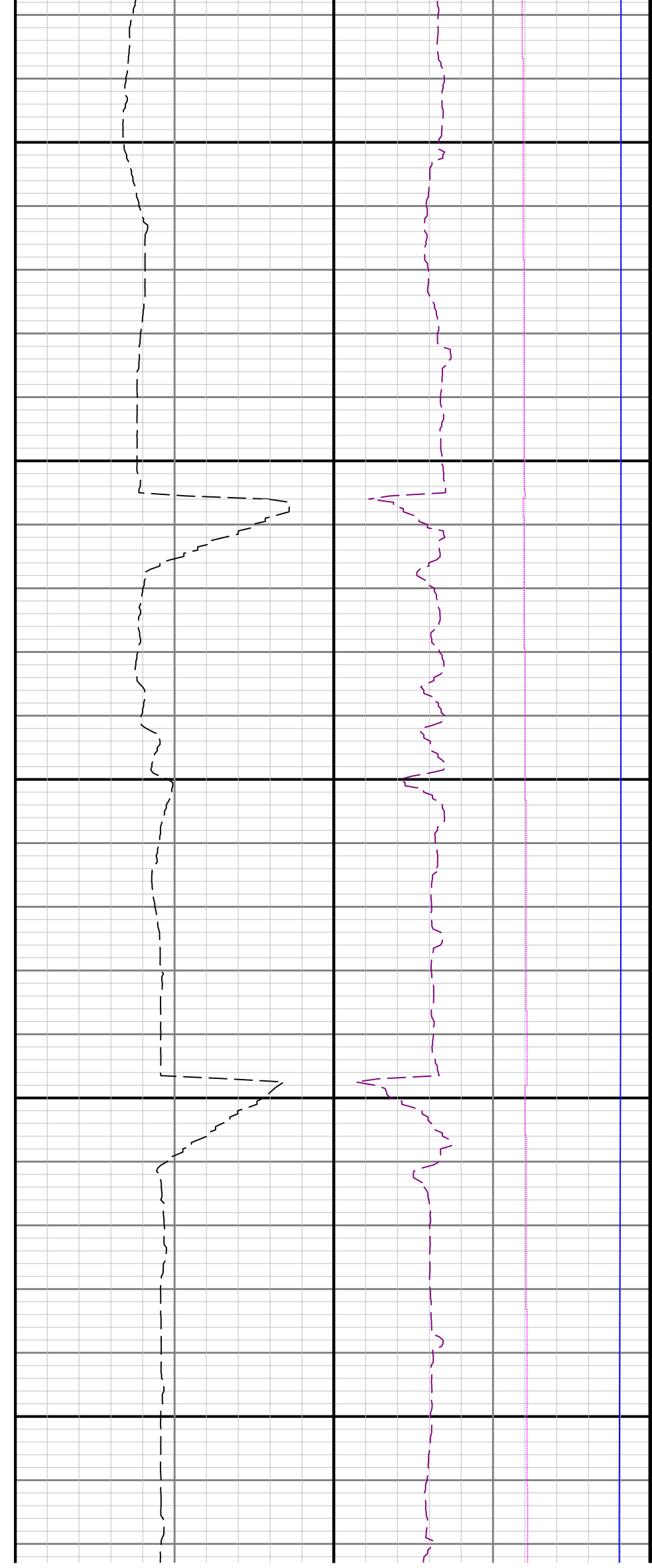


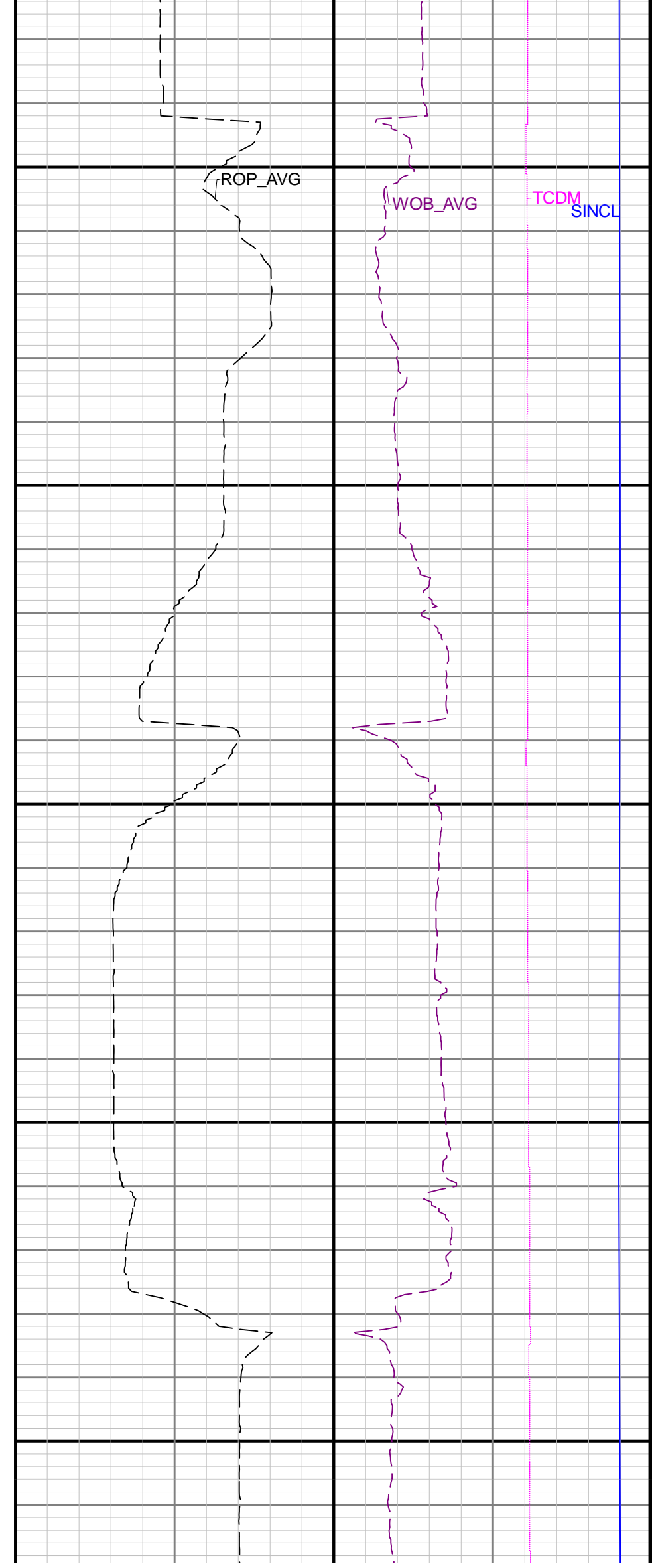
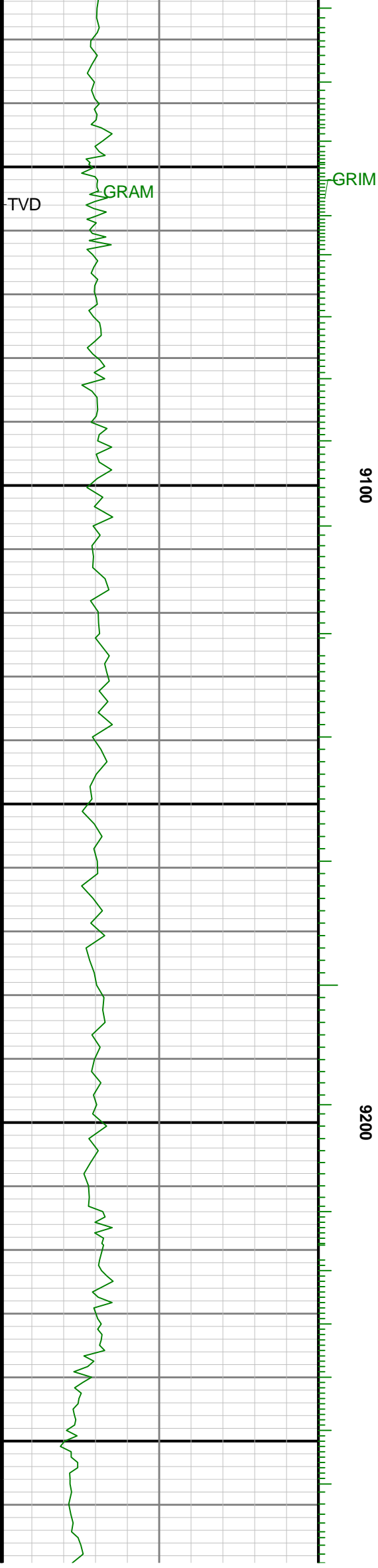


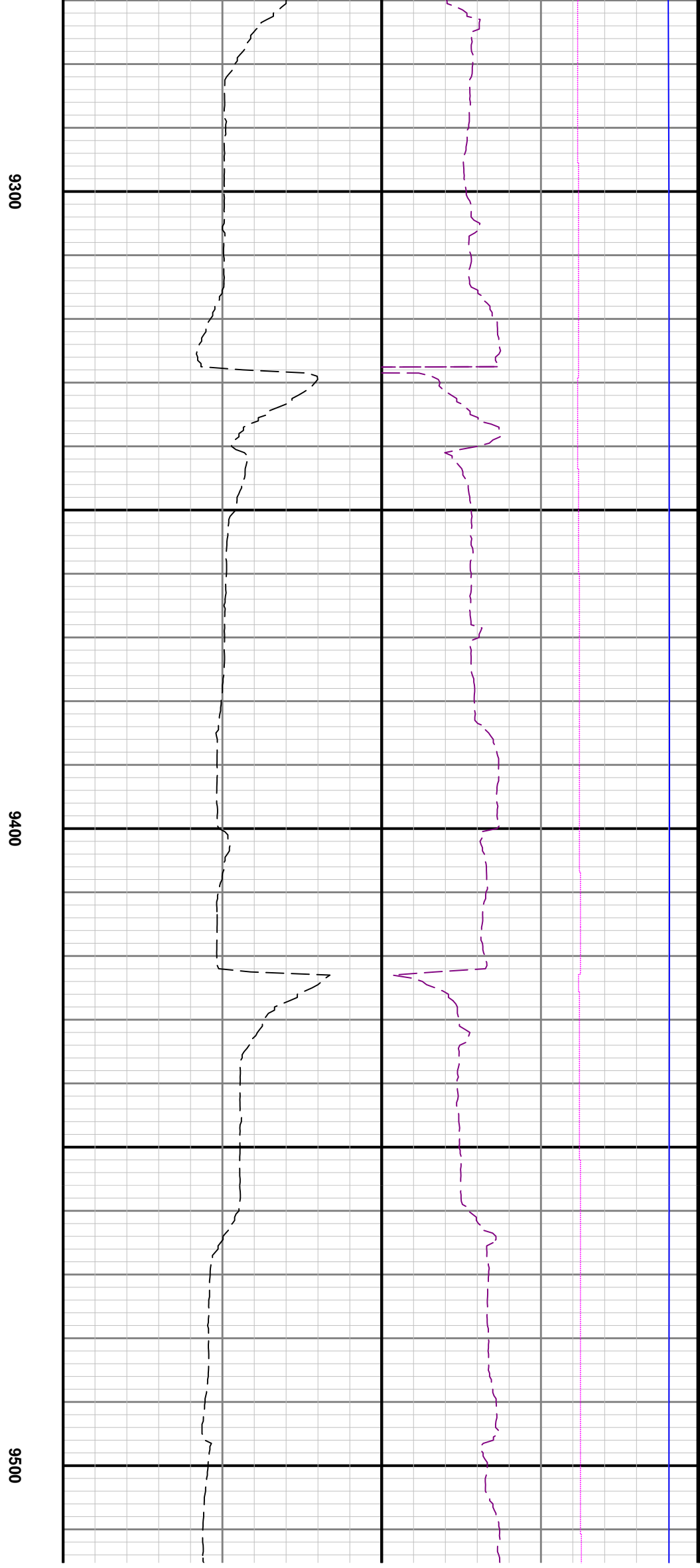
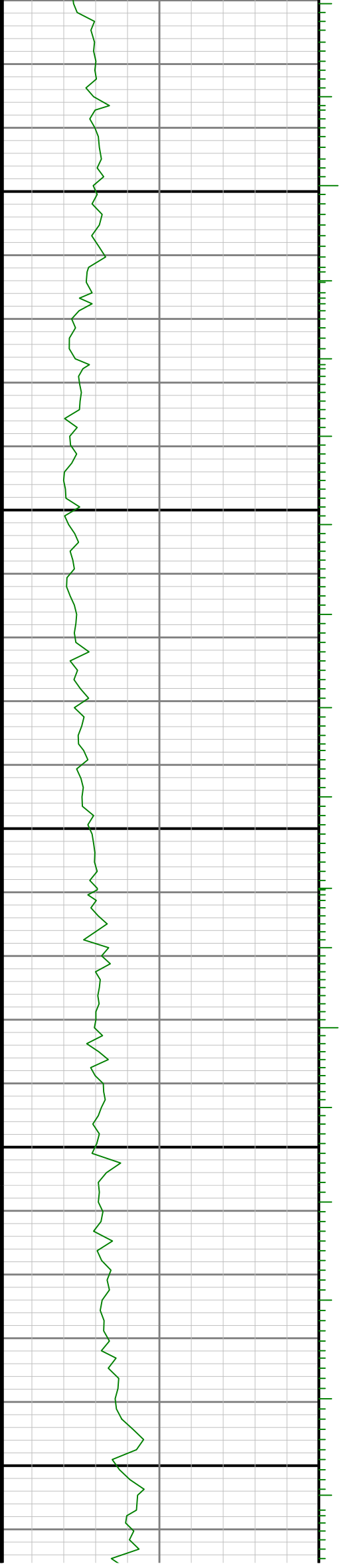
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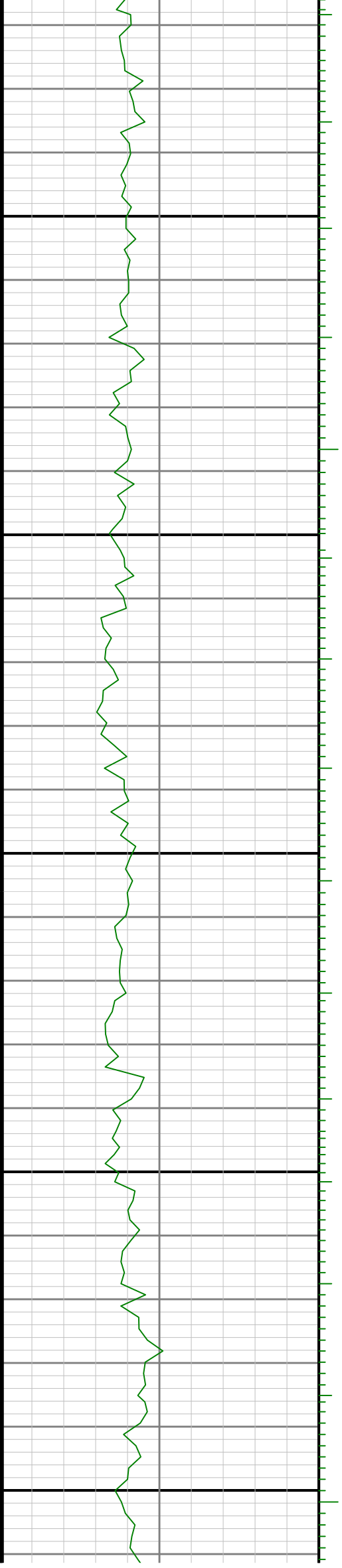
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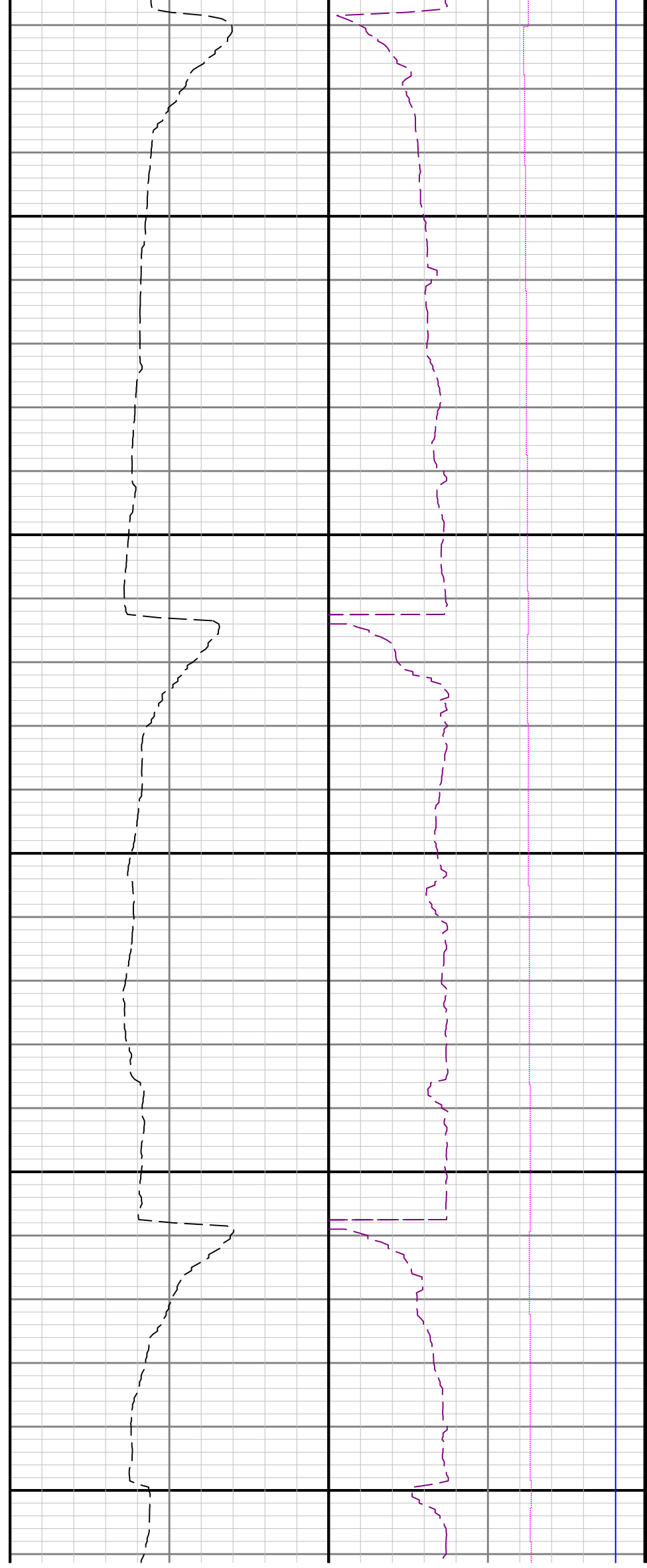


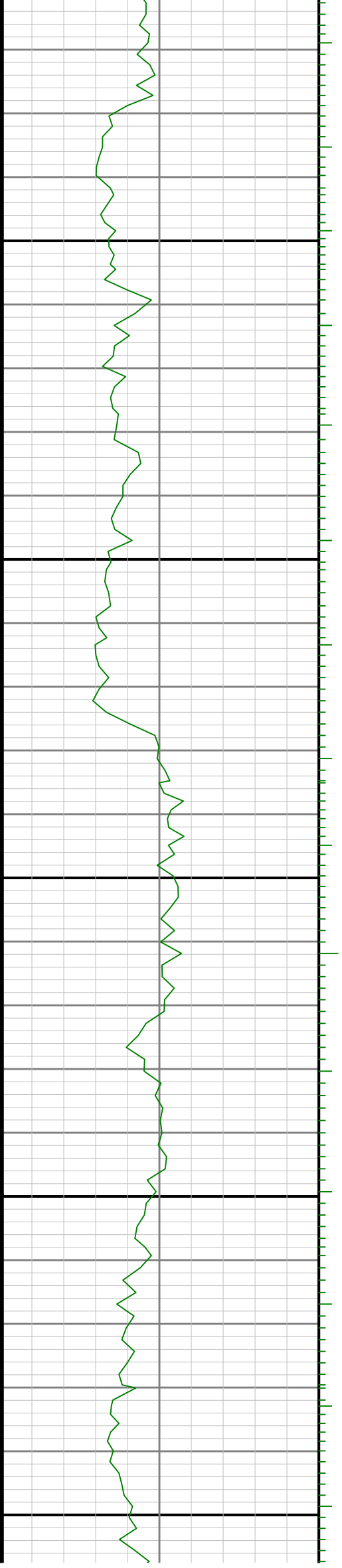




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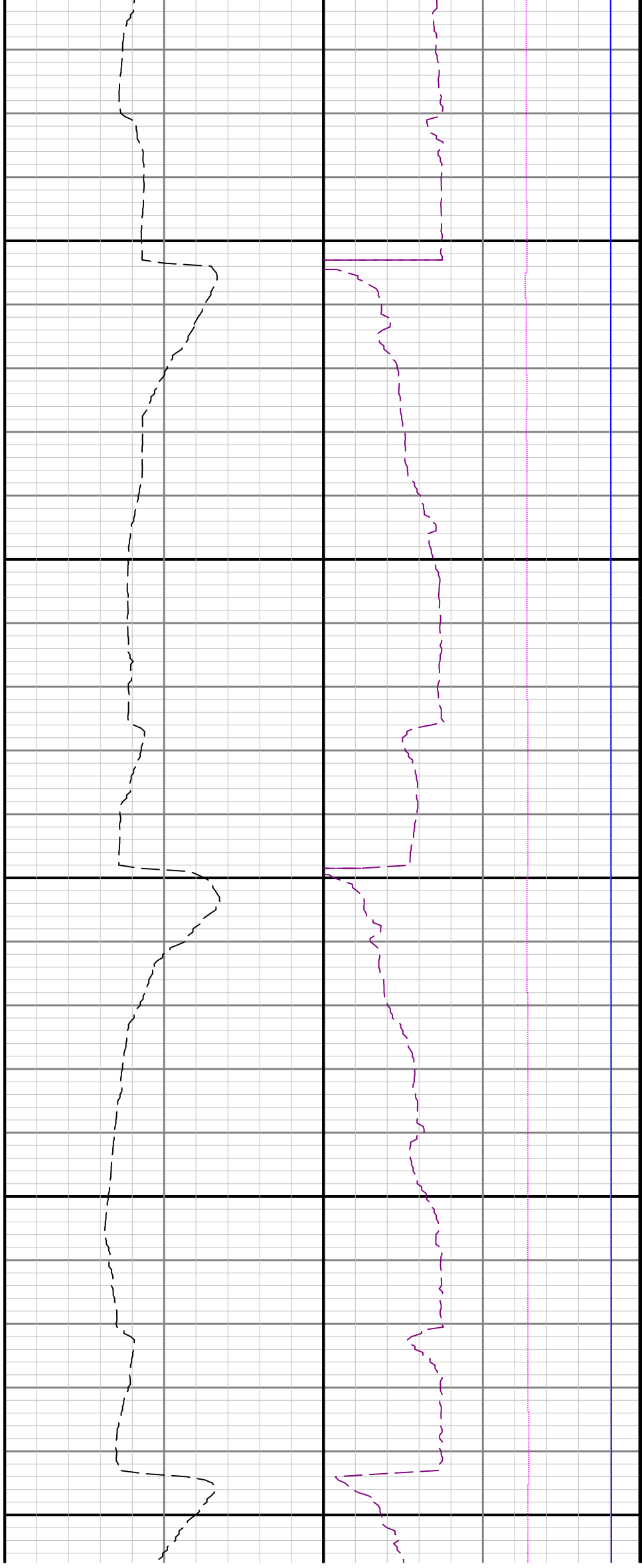


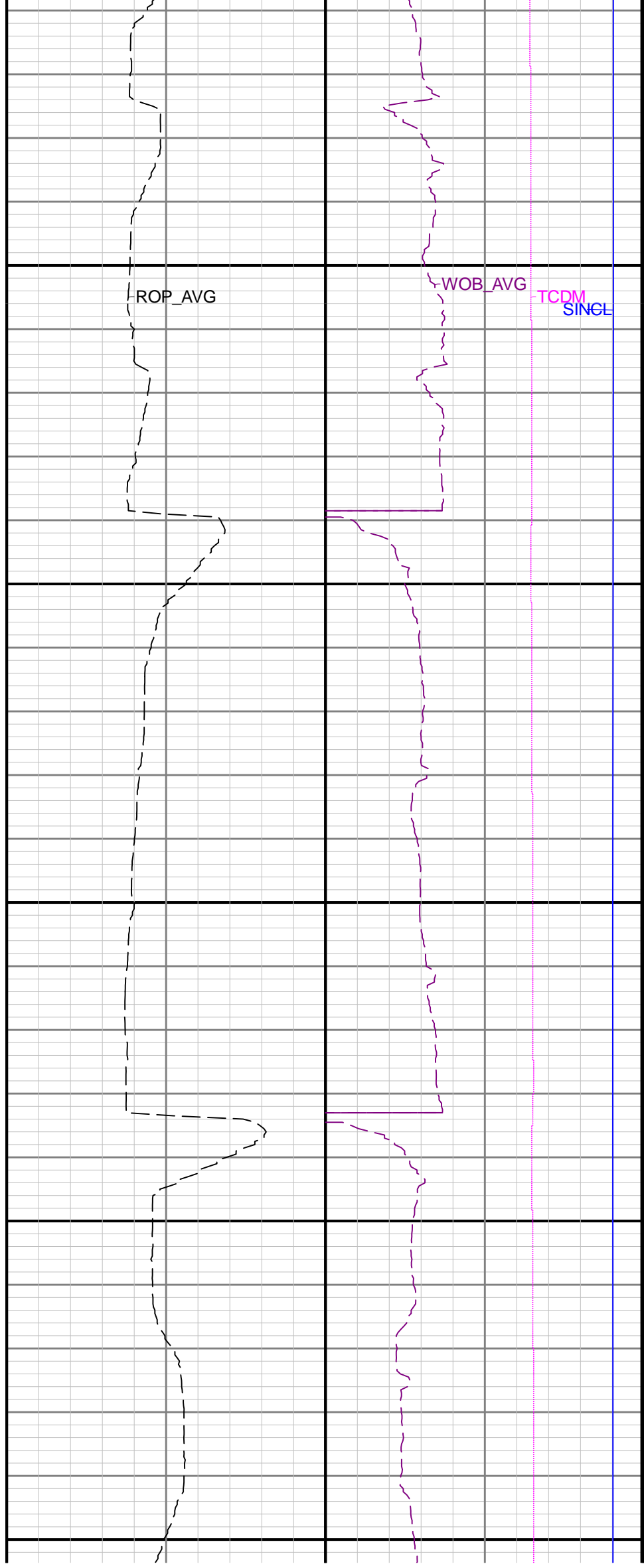
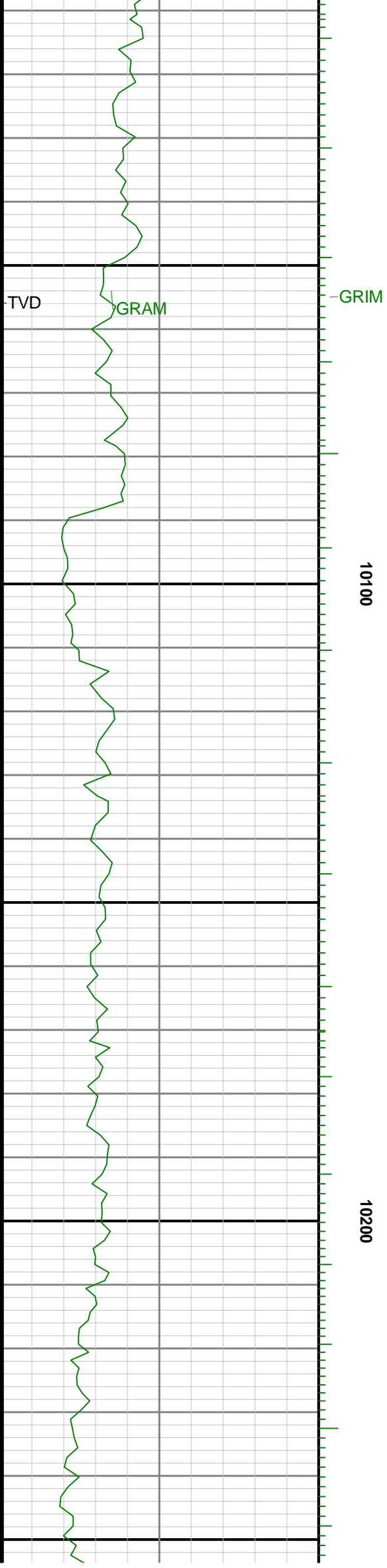


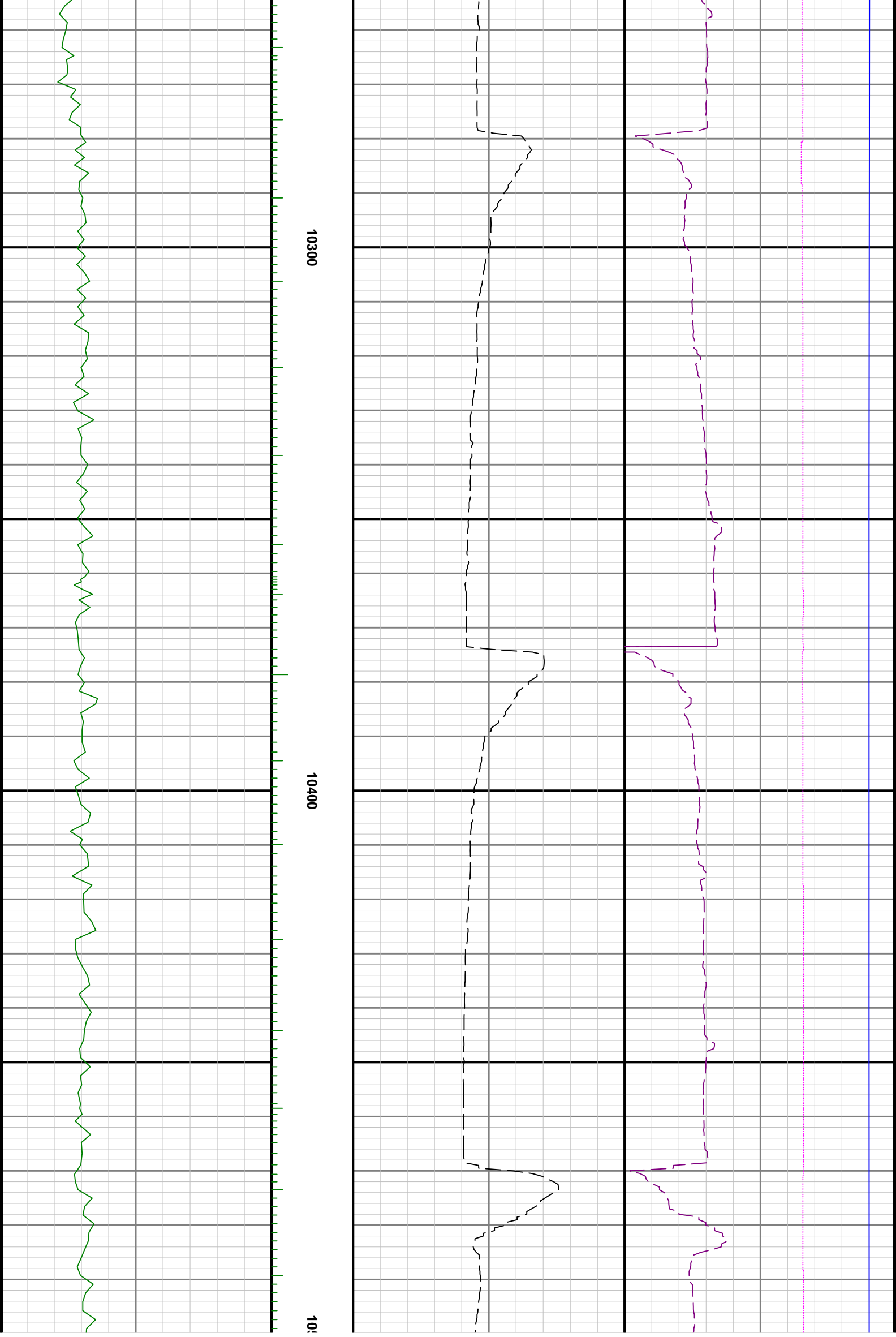
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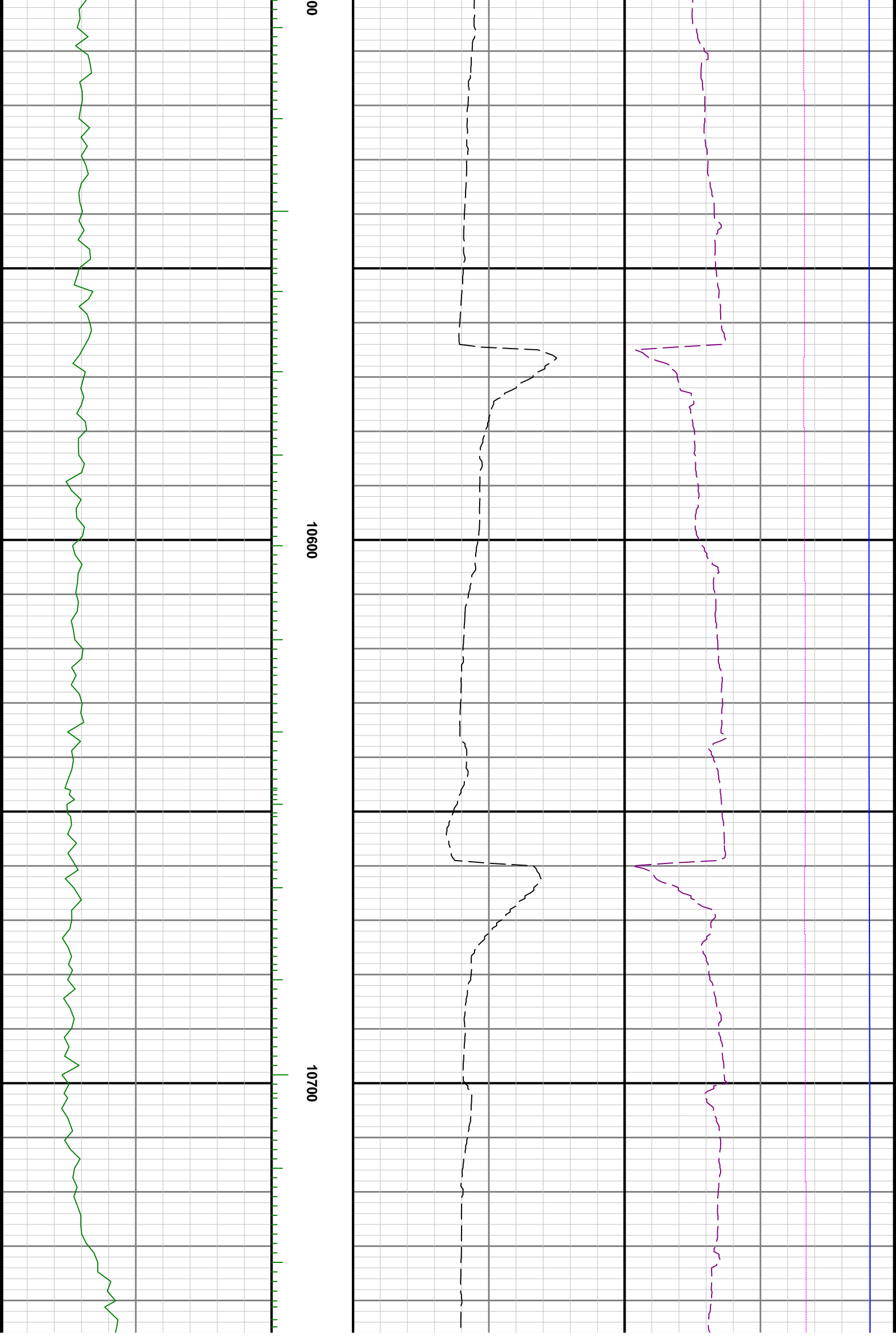
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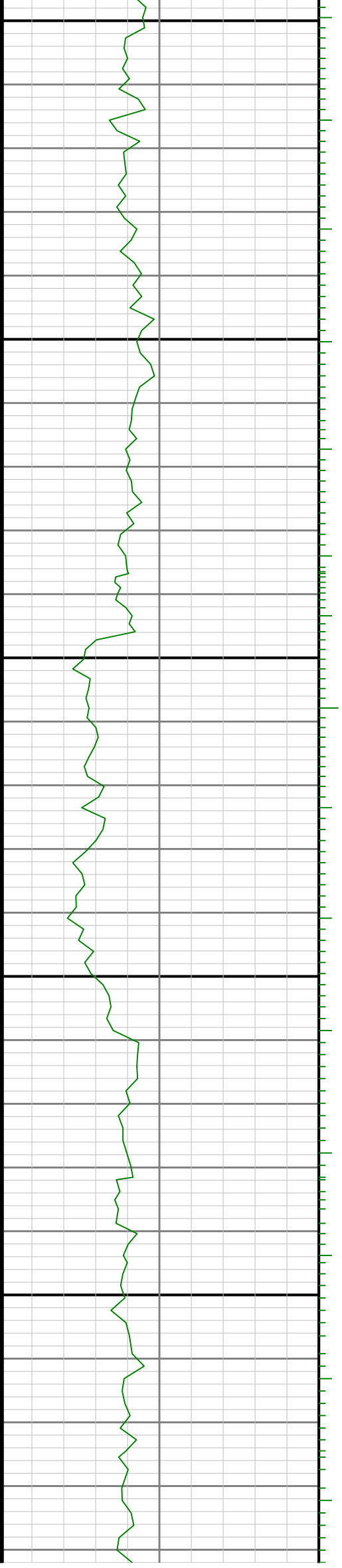
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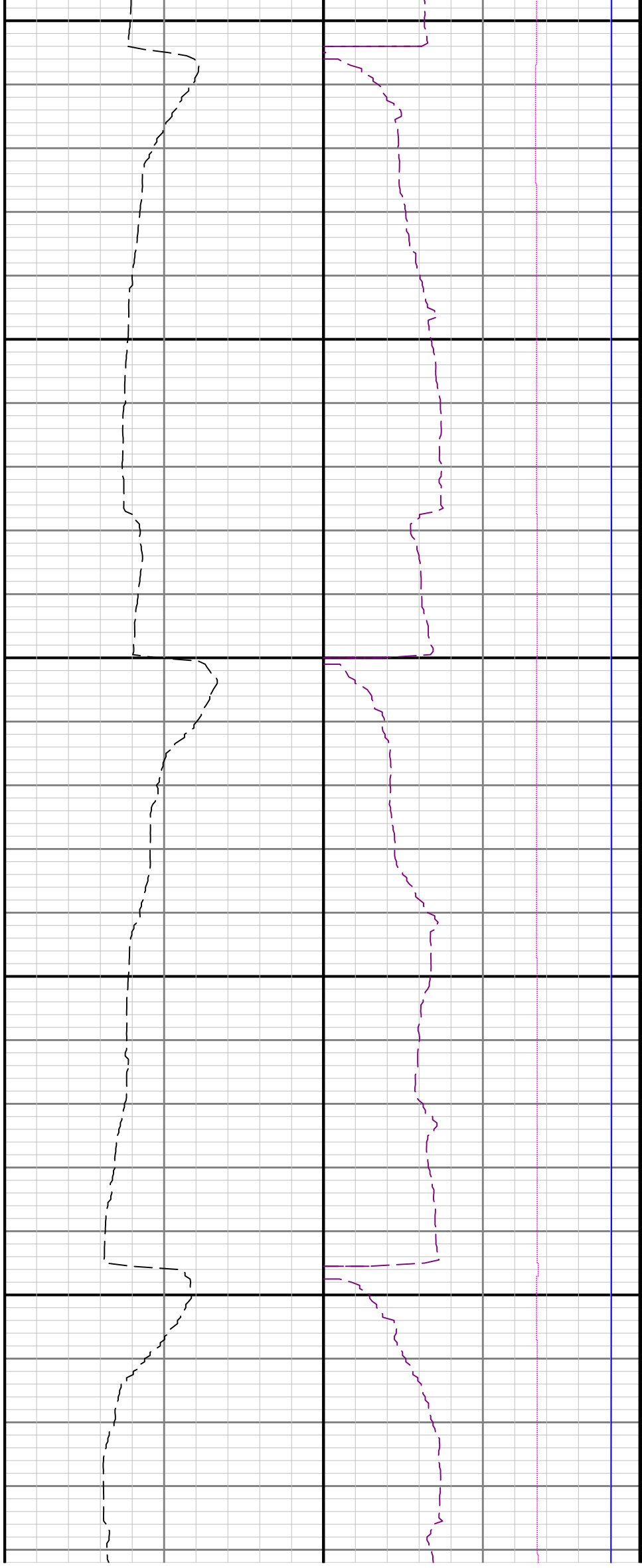


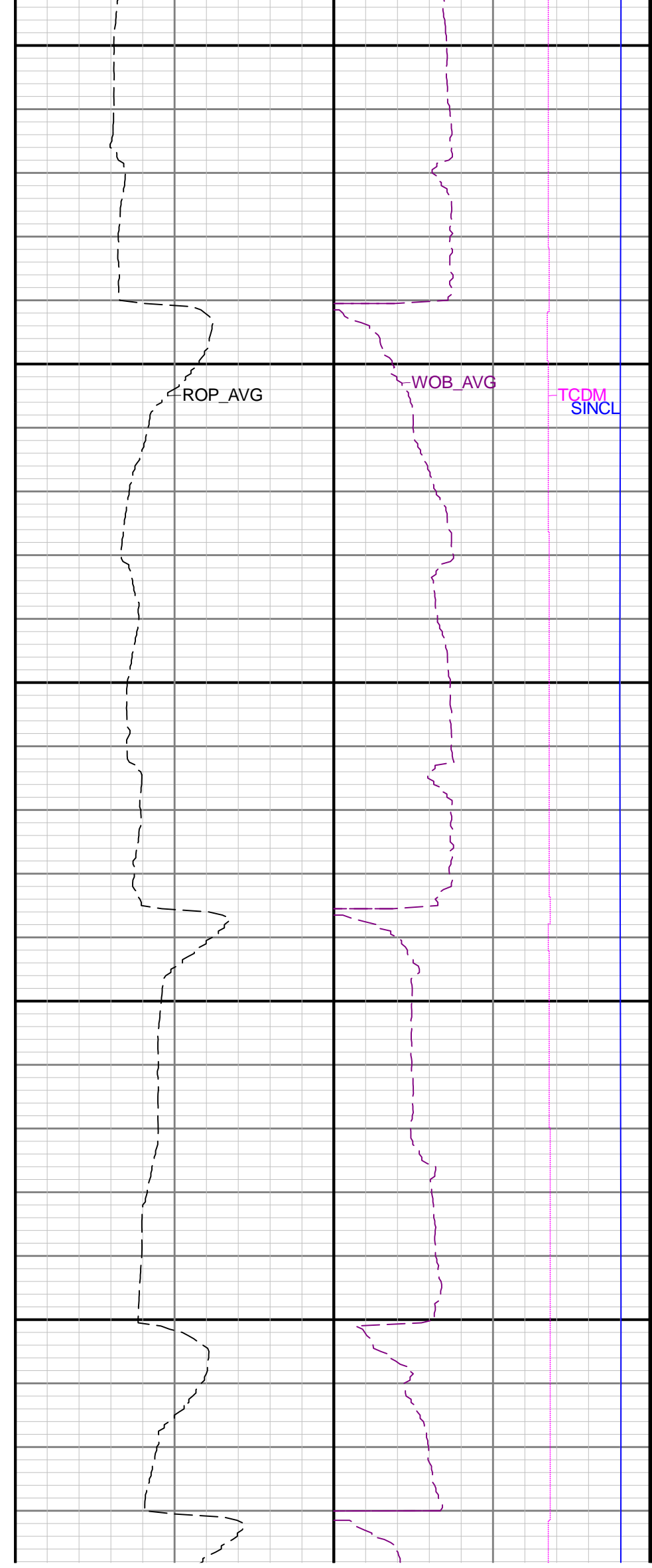
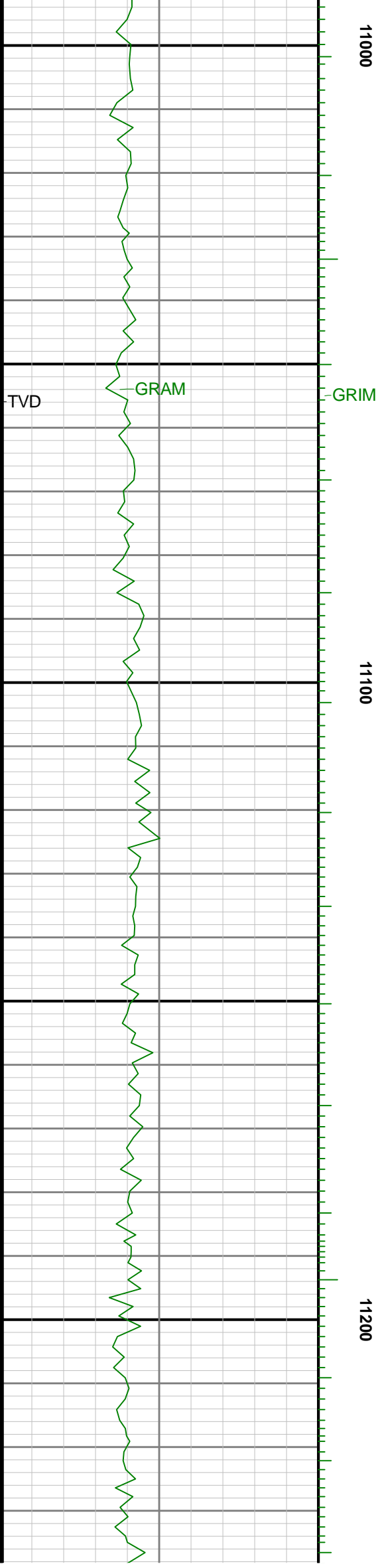


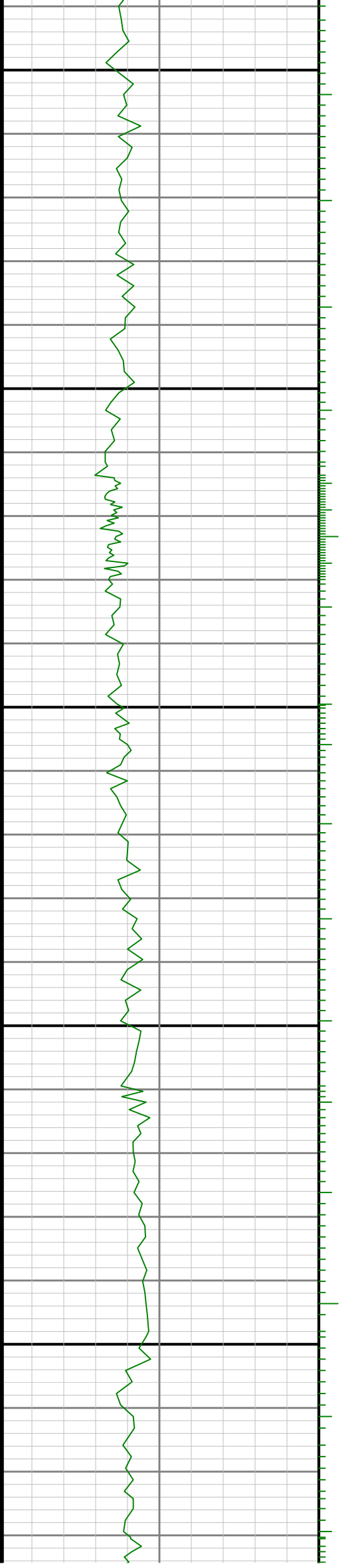


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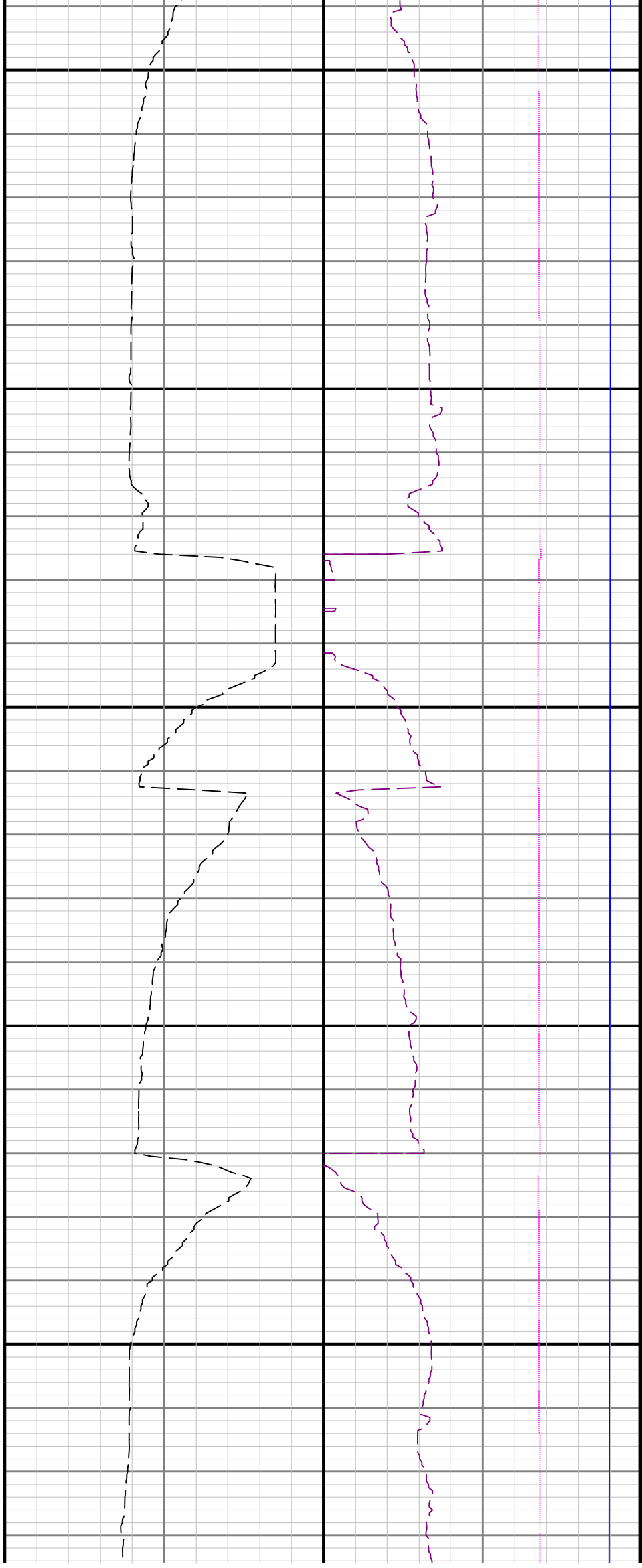


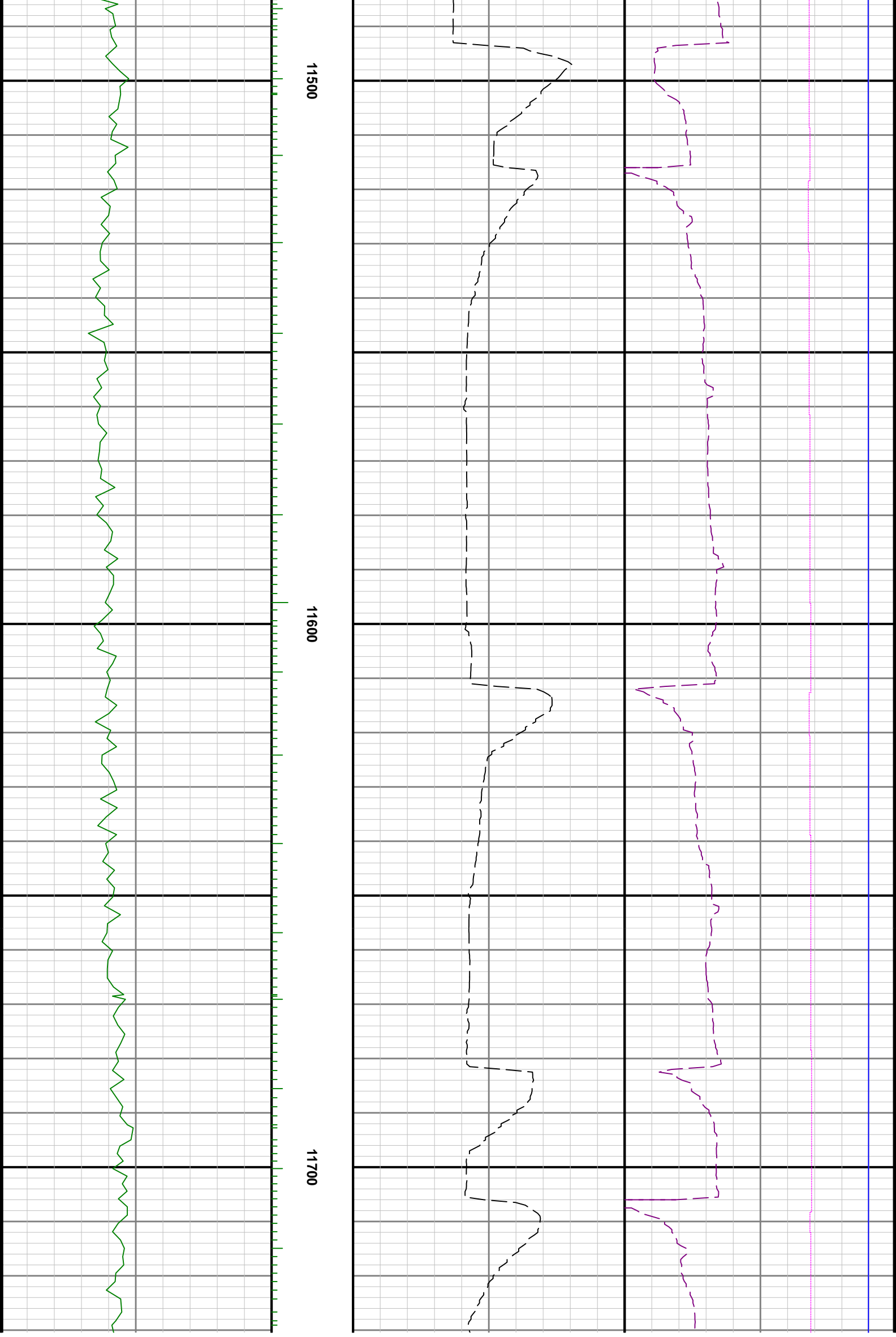


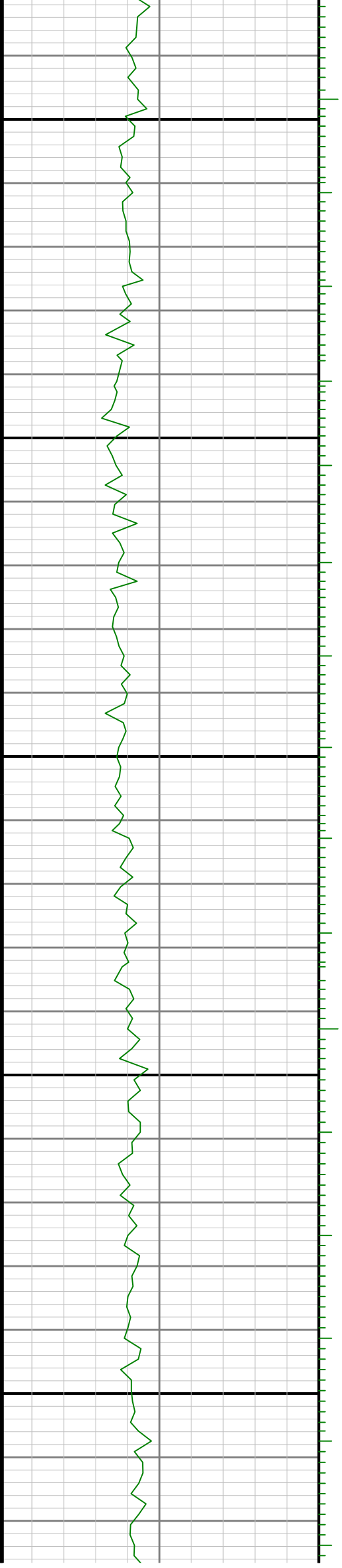


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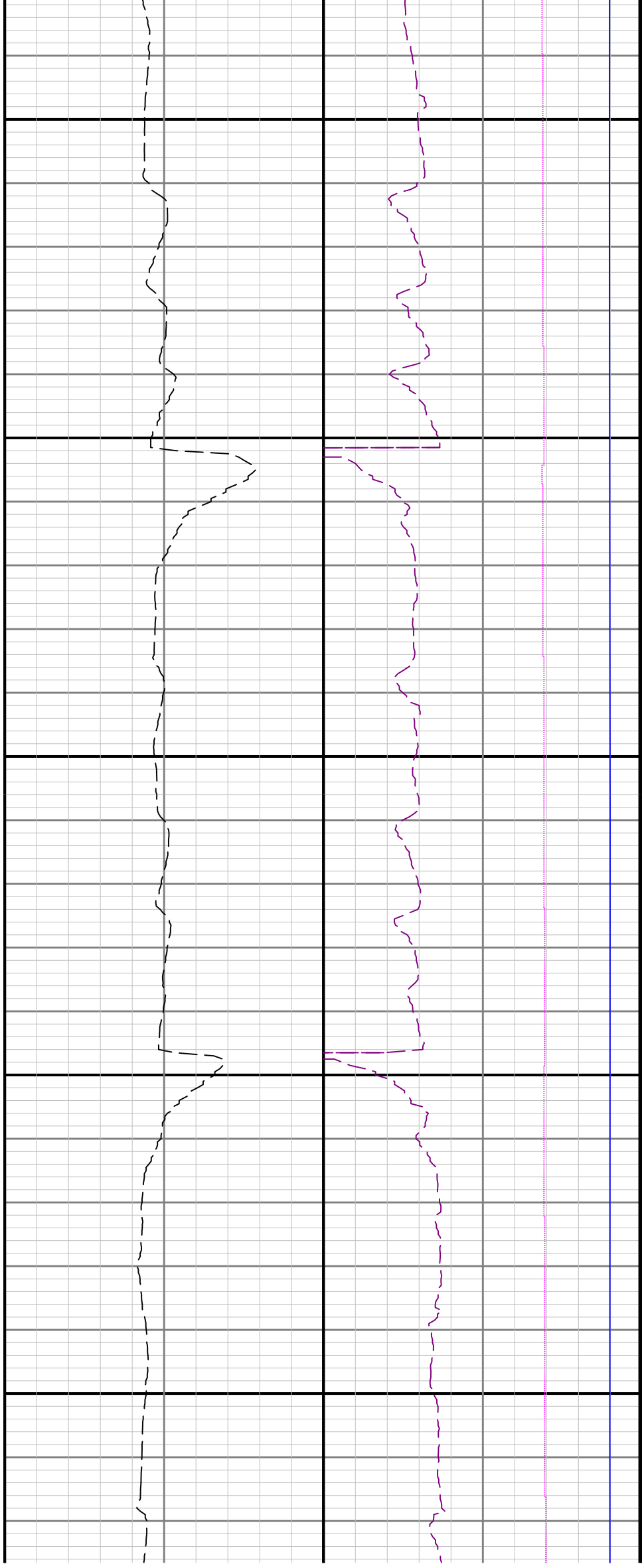


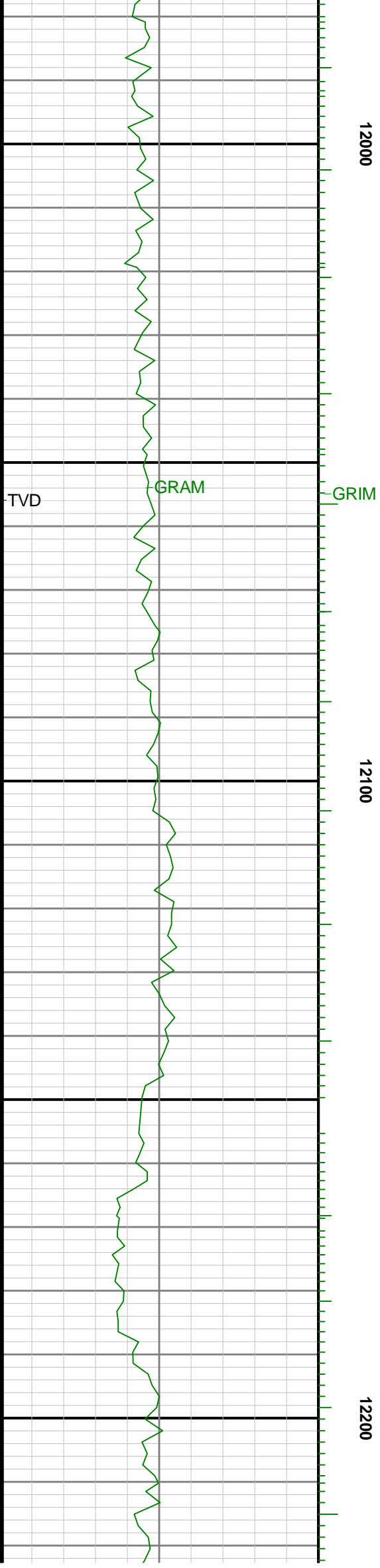




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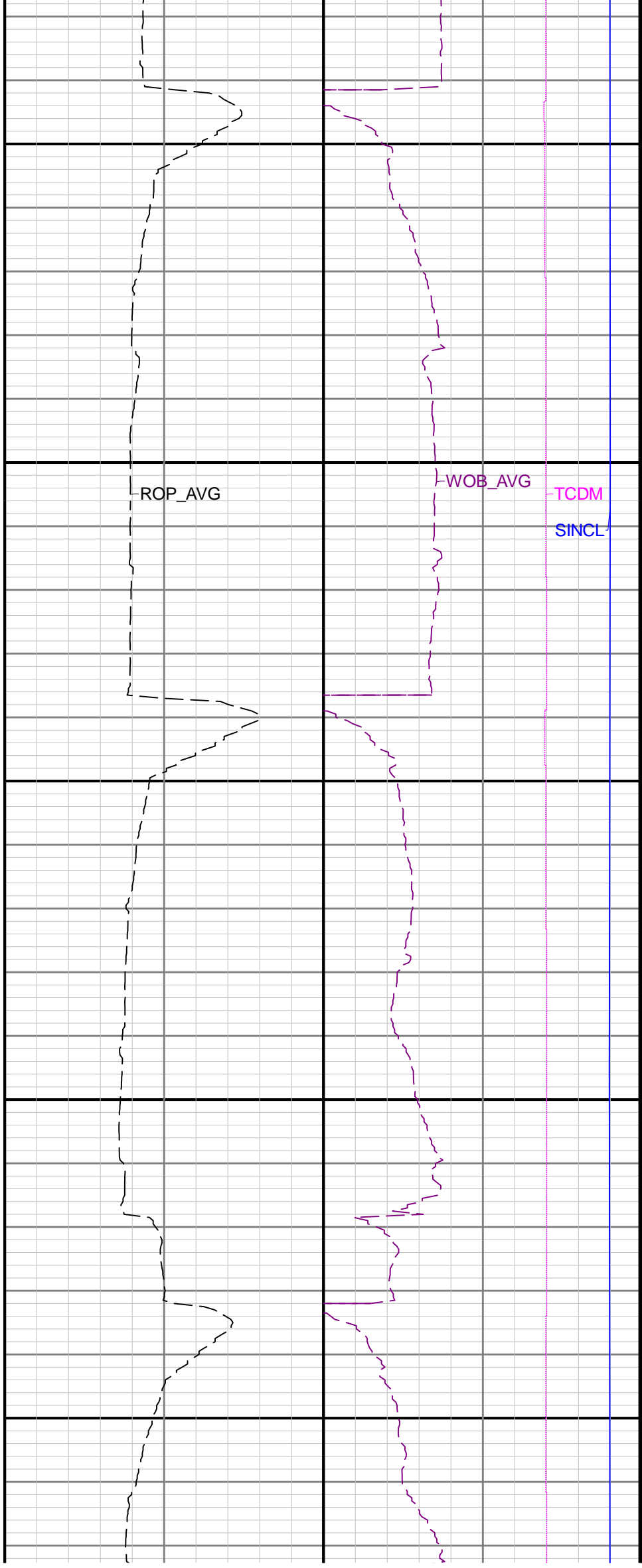




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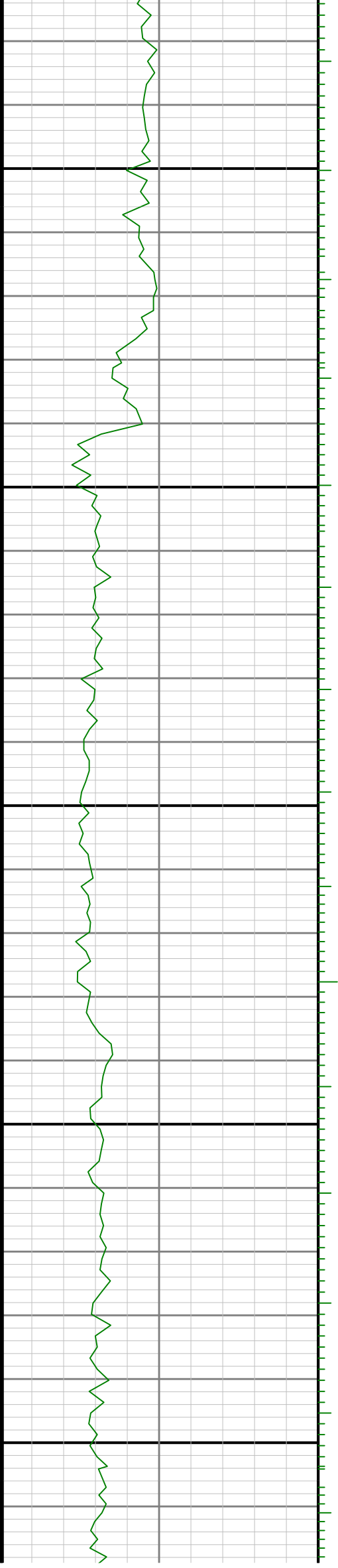


ROP_AVG

WOB_AVG

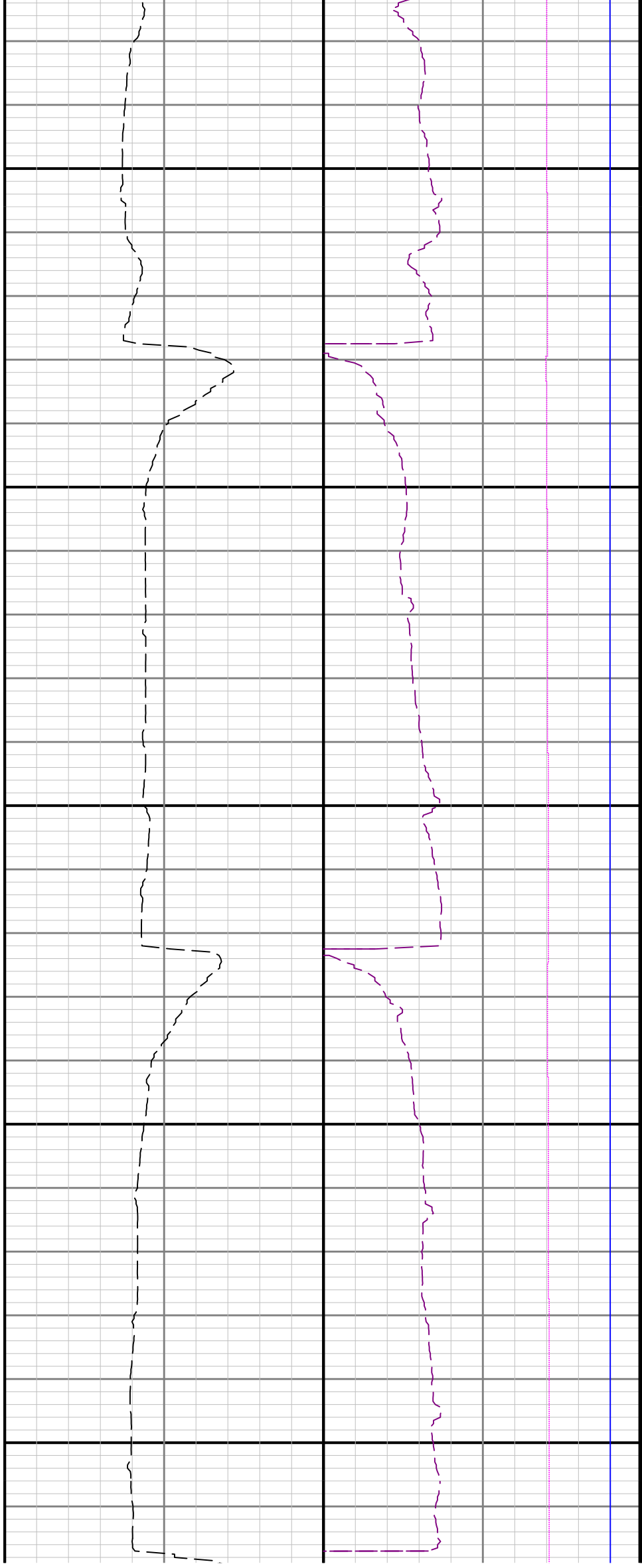
TCDM

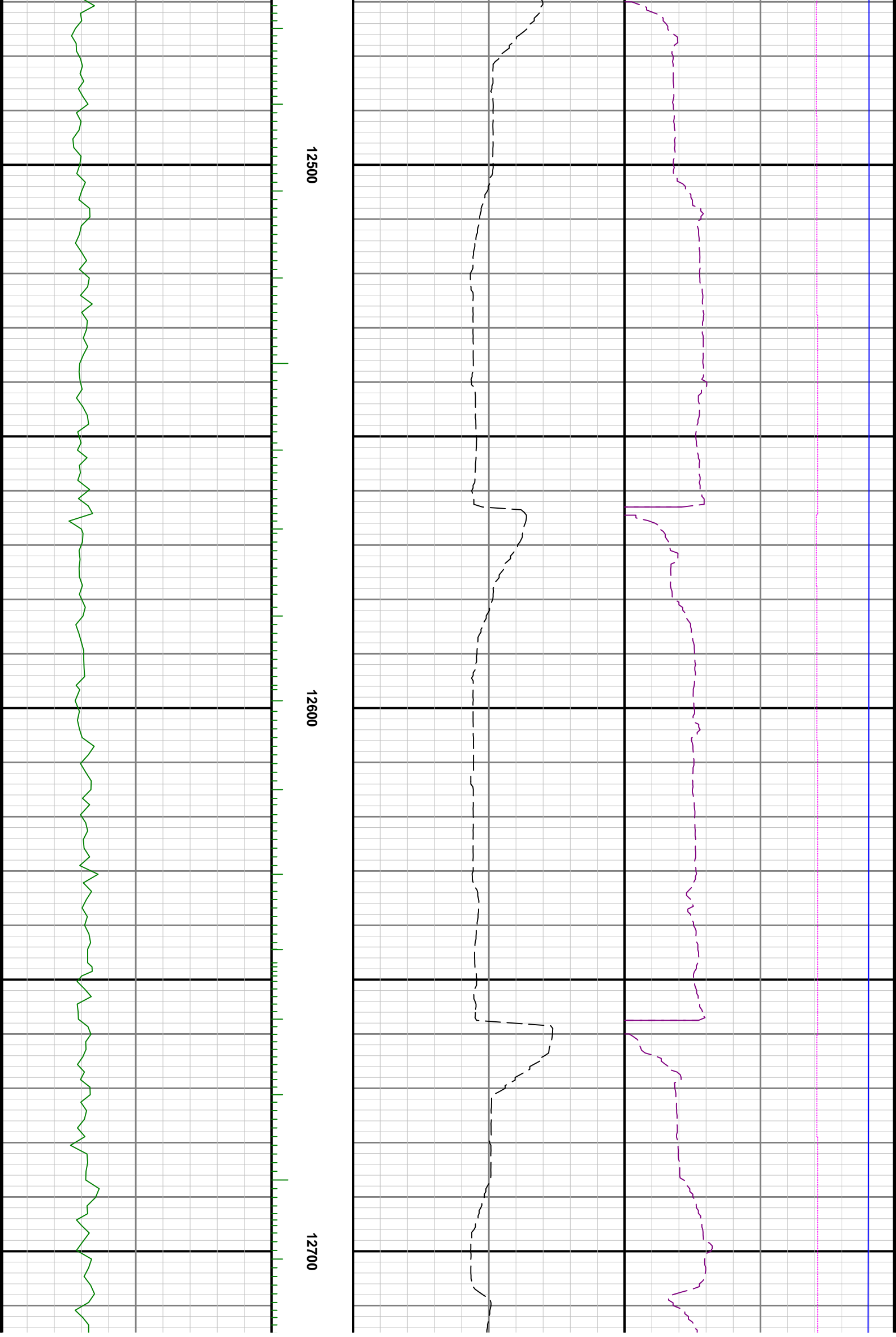
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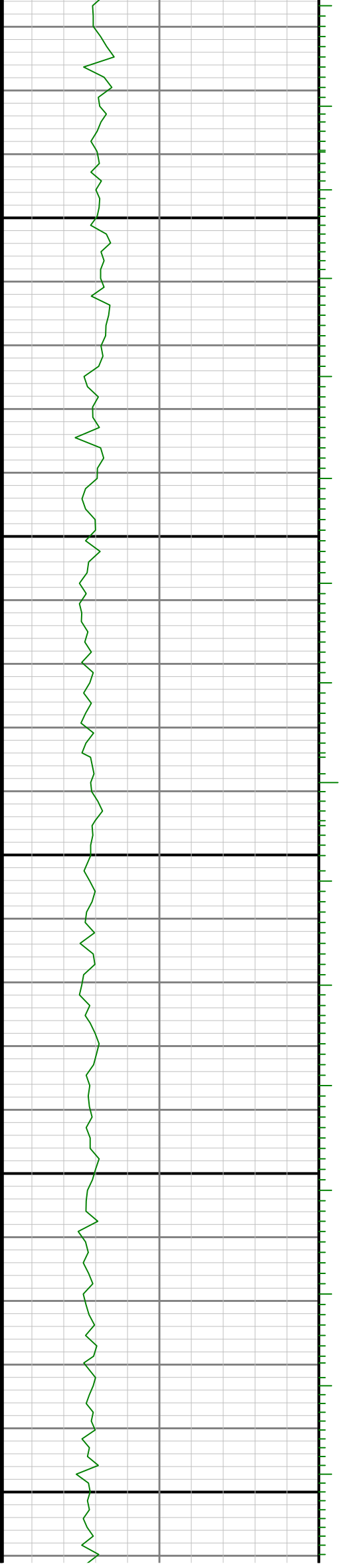


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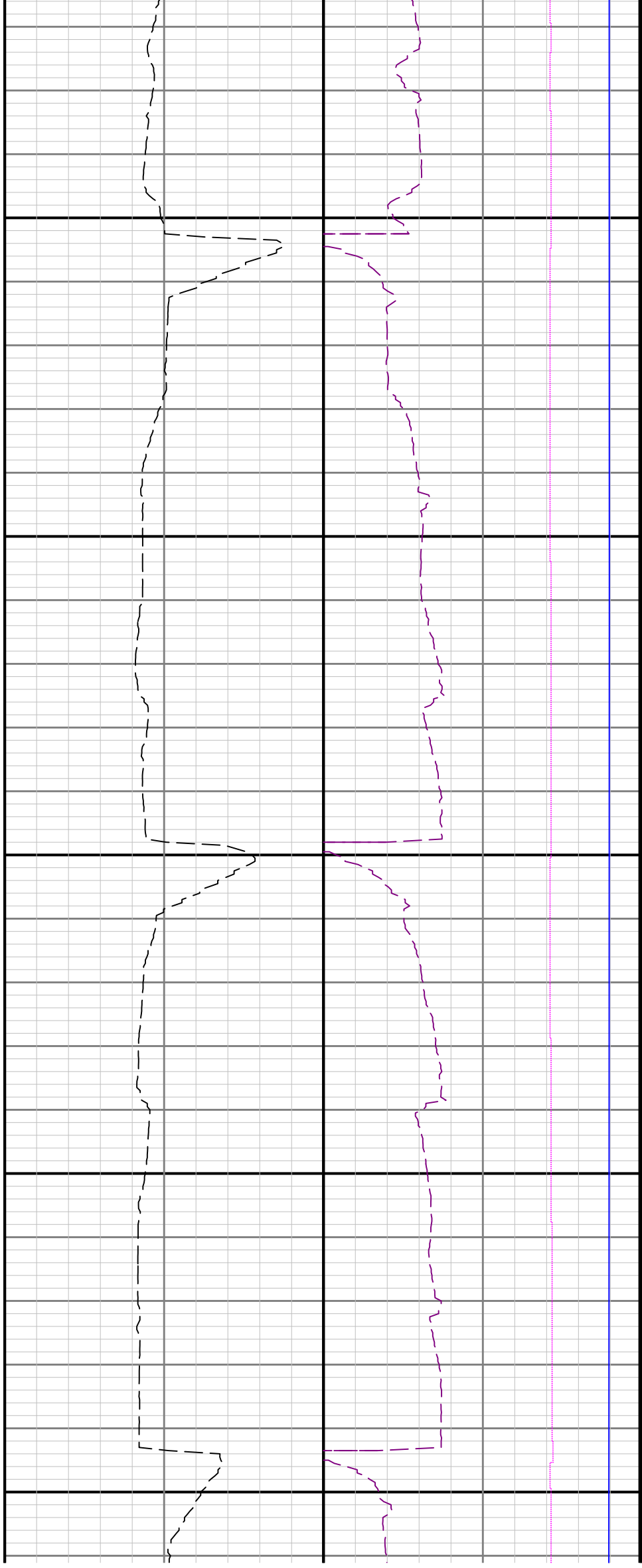


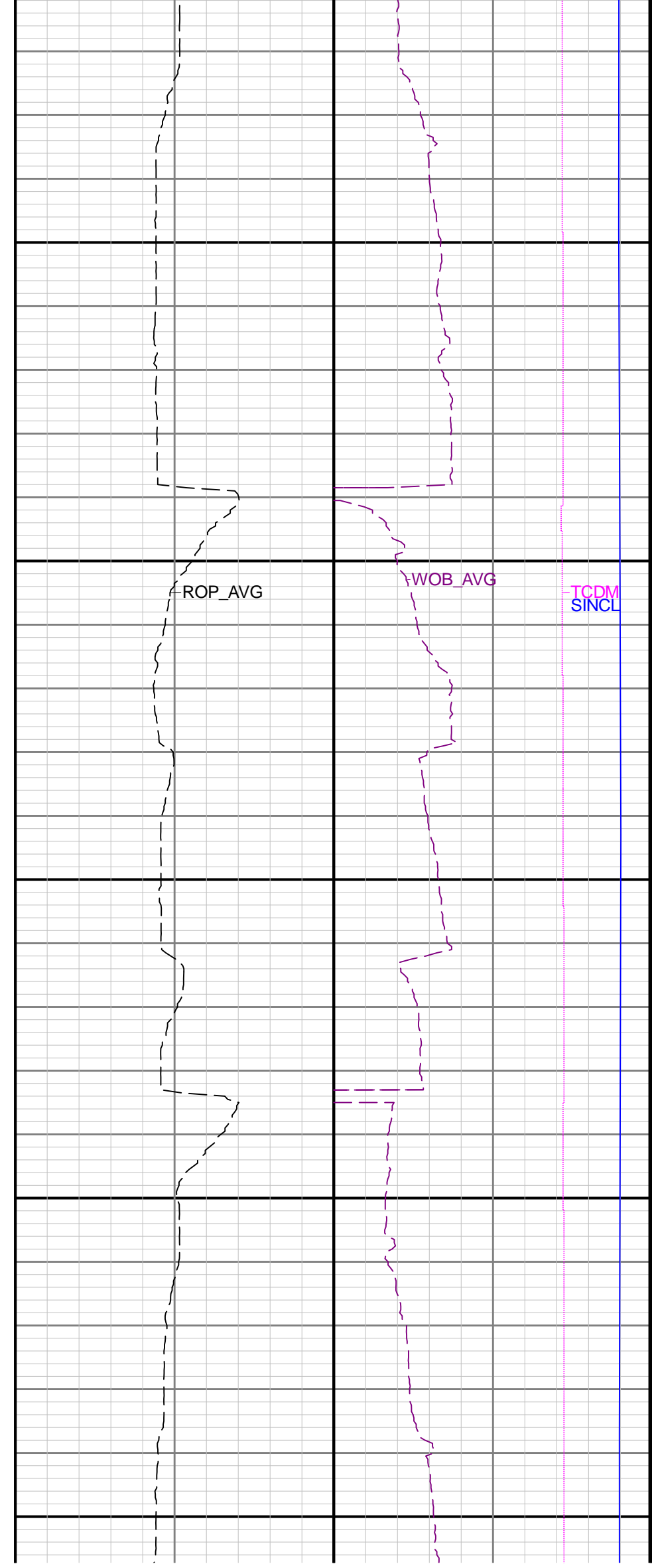
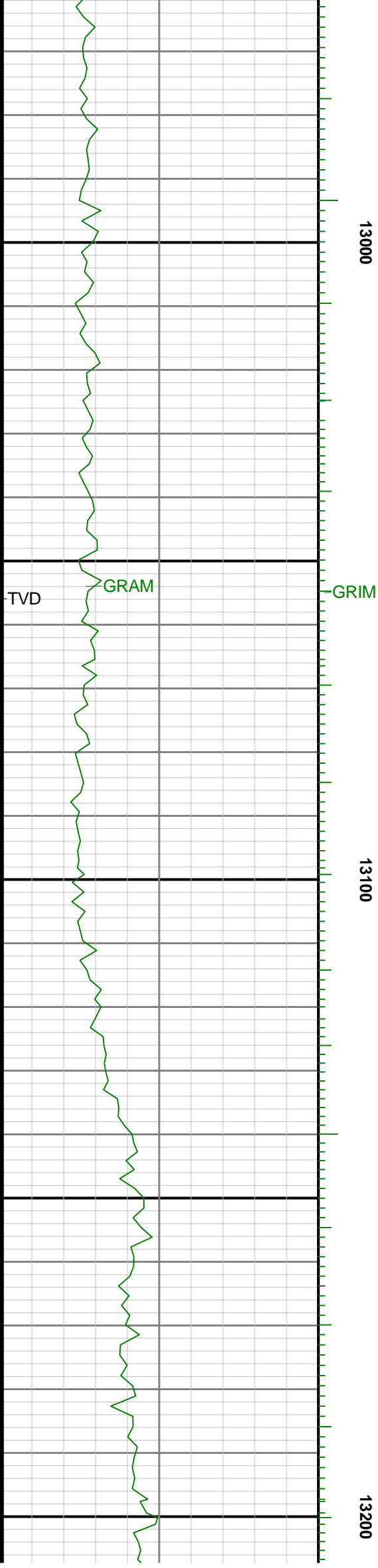


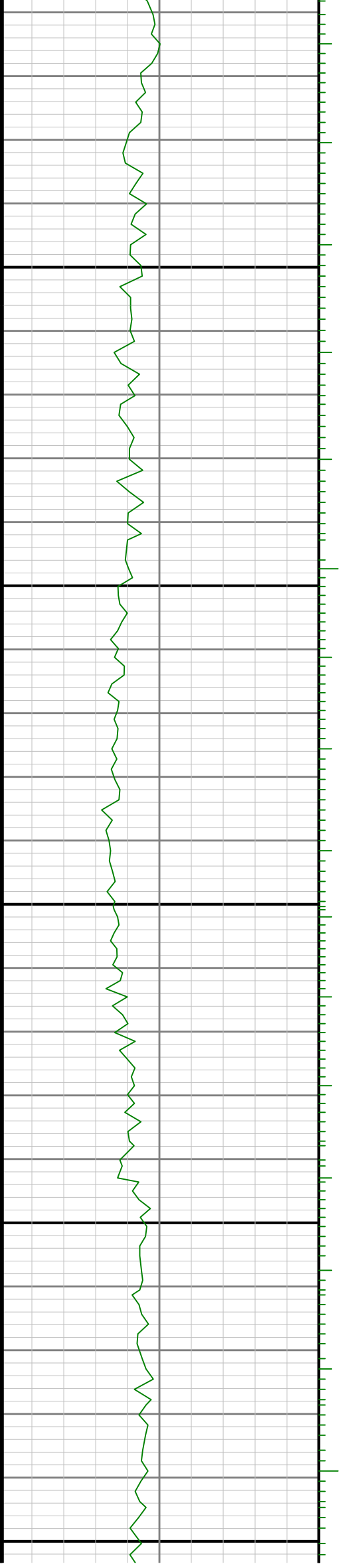


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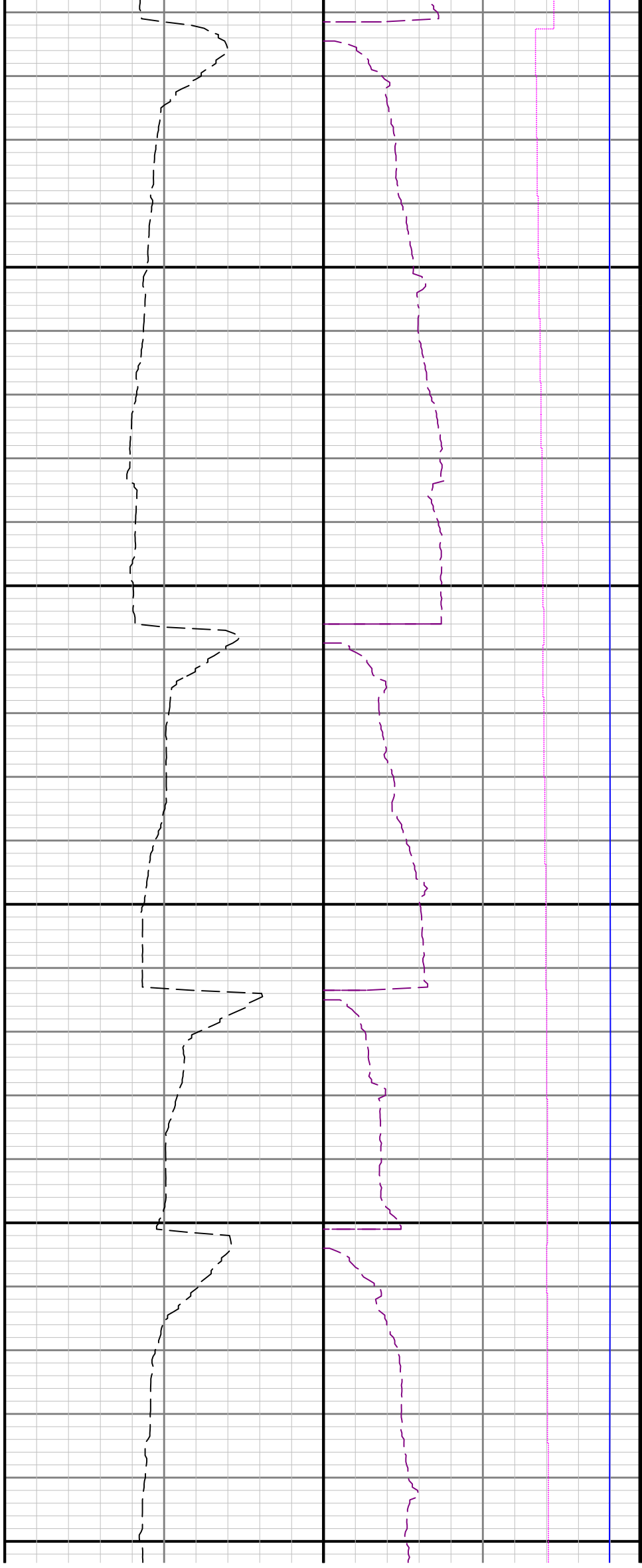


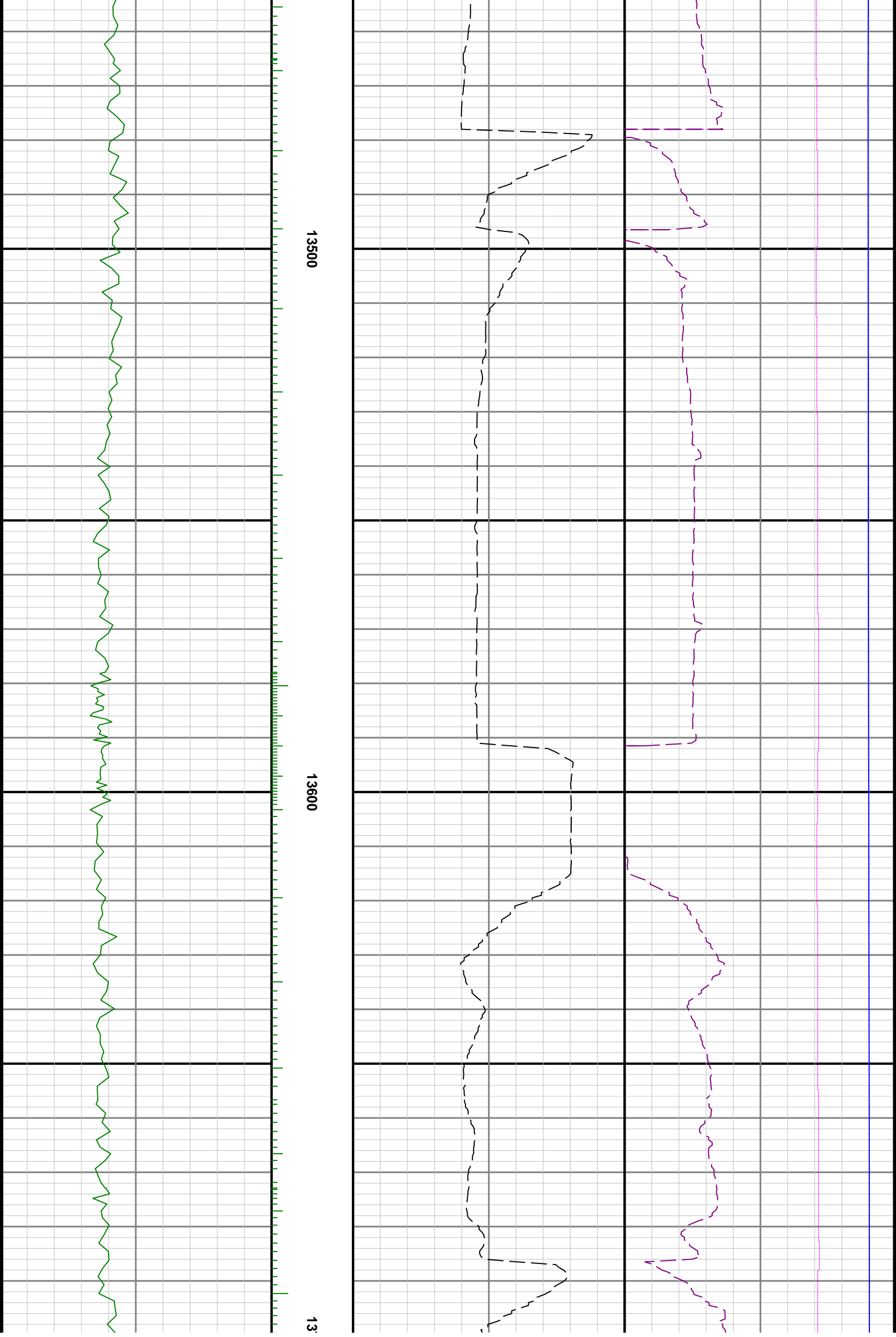


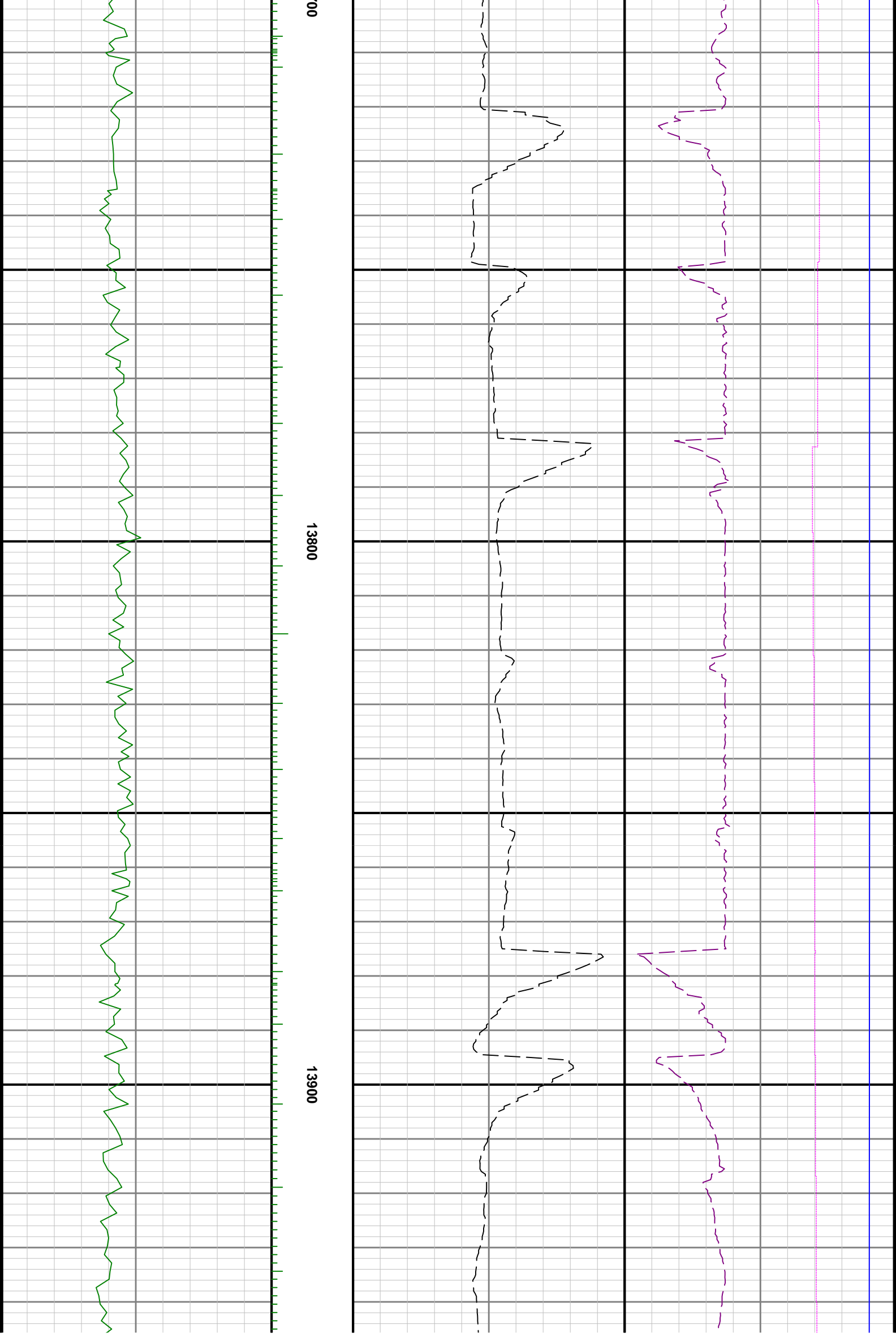


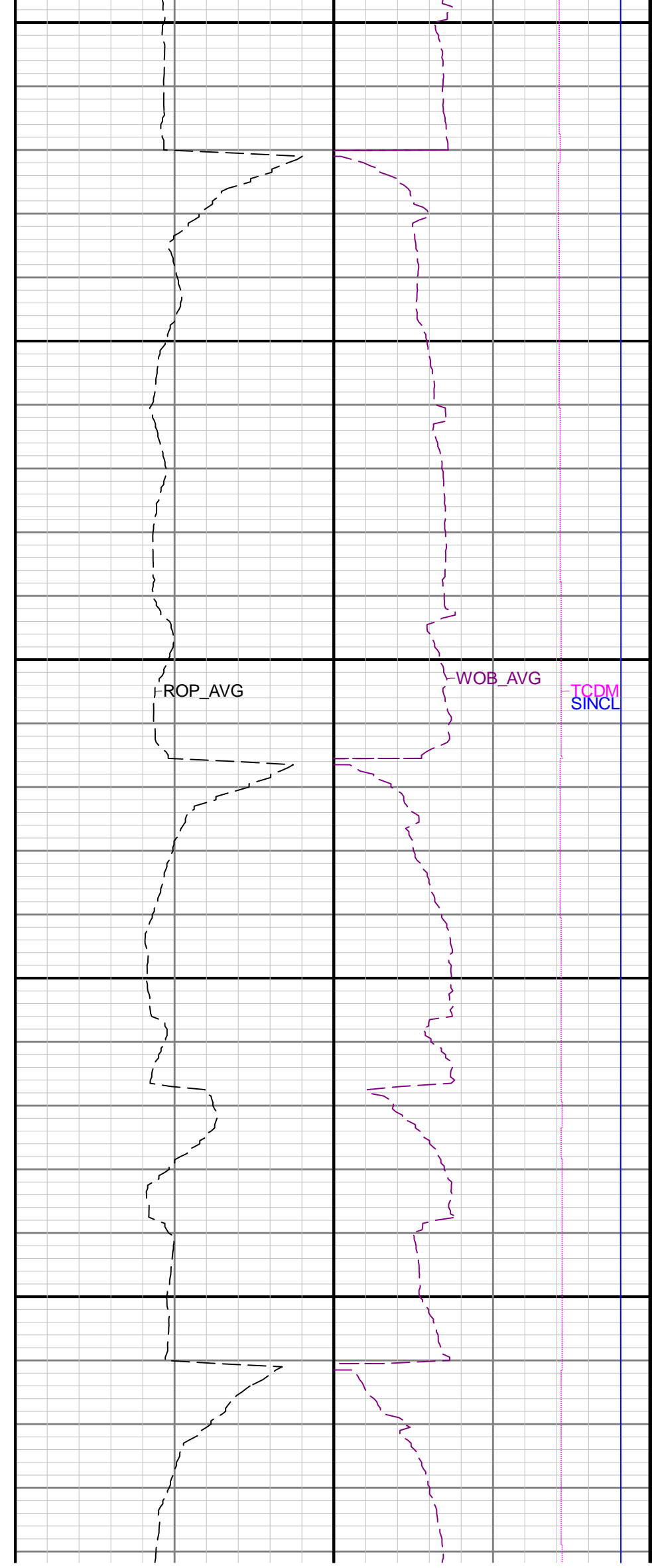
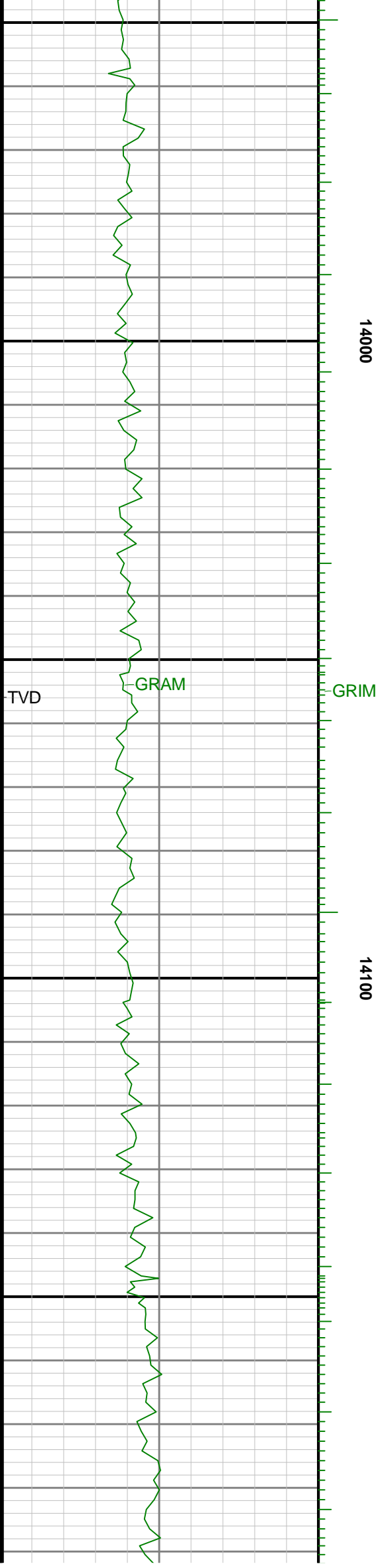
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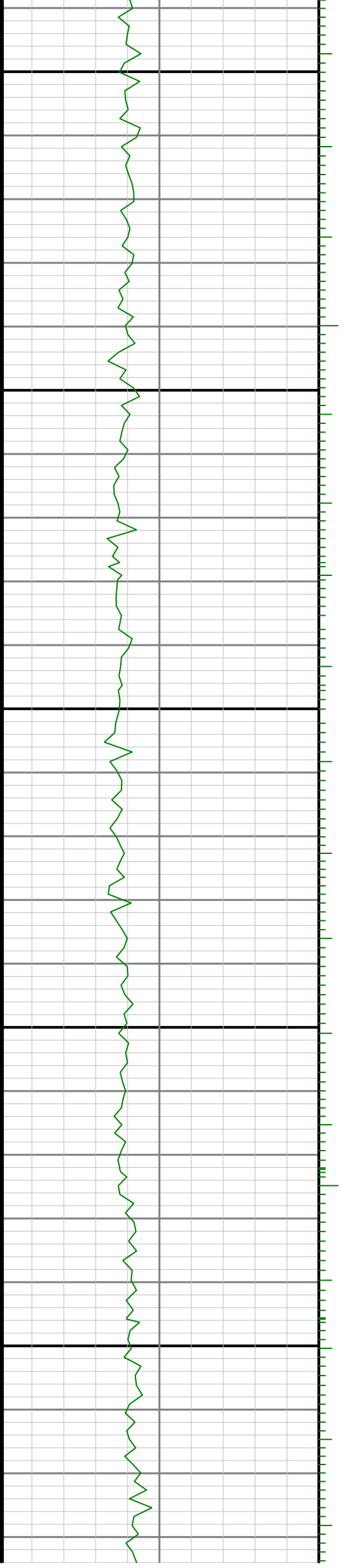






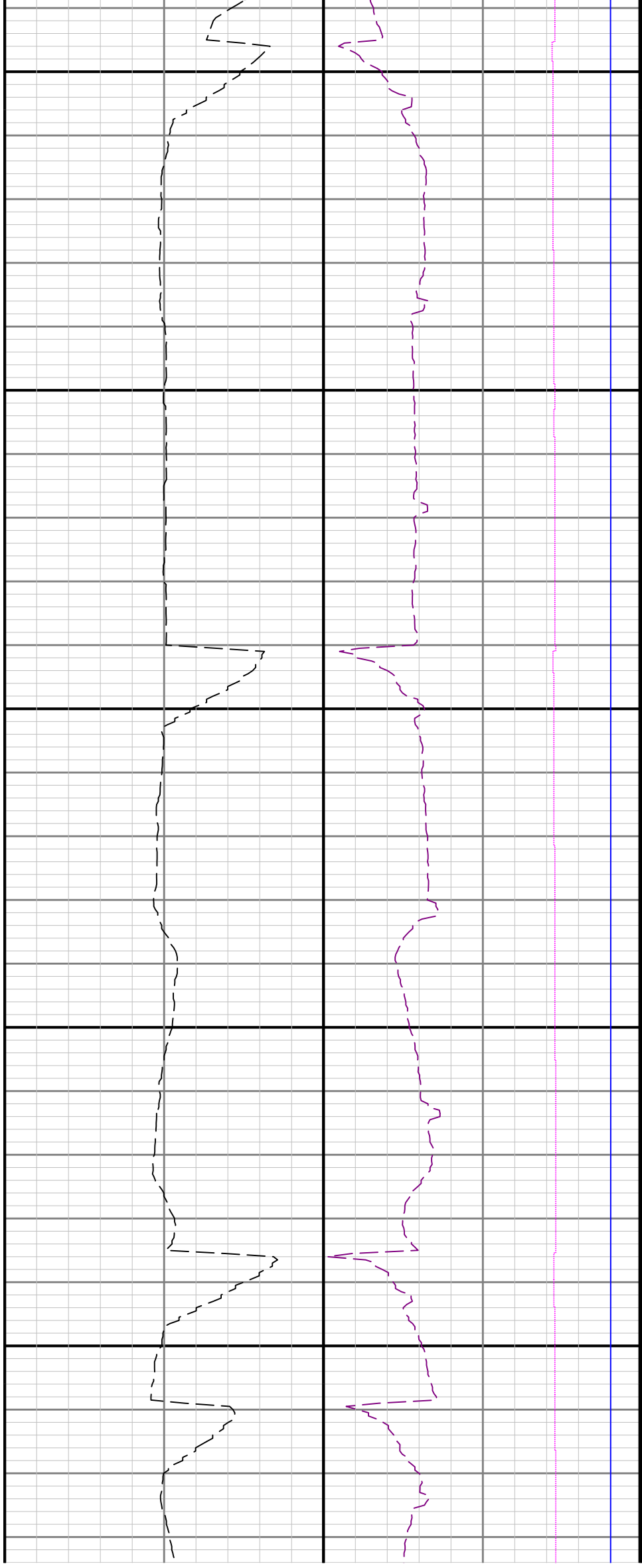






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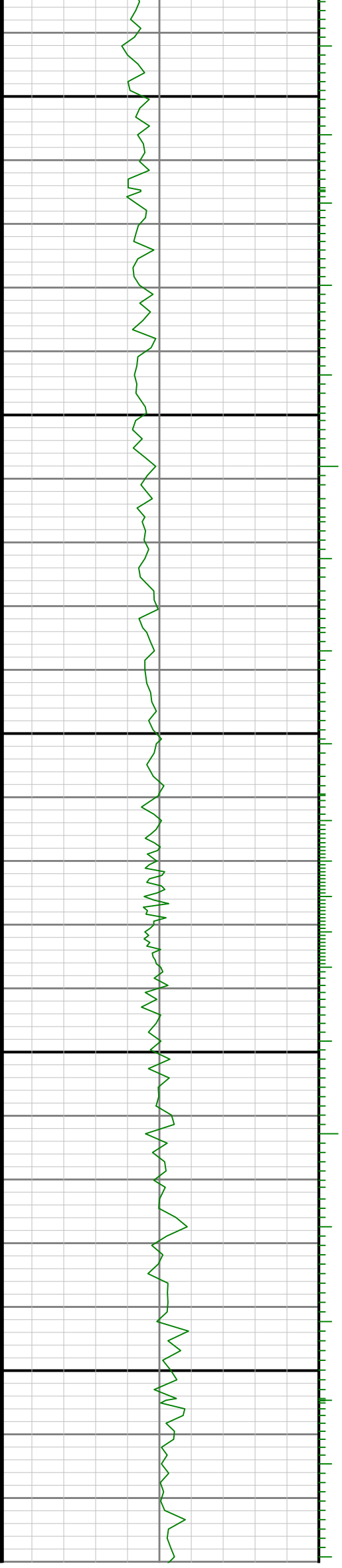


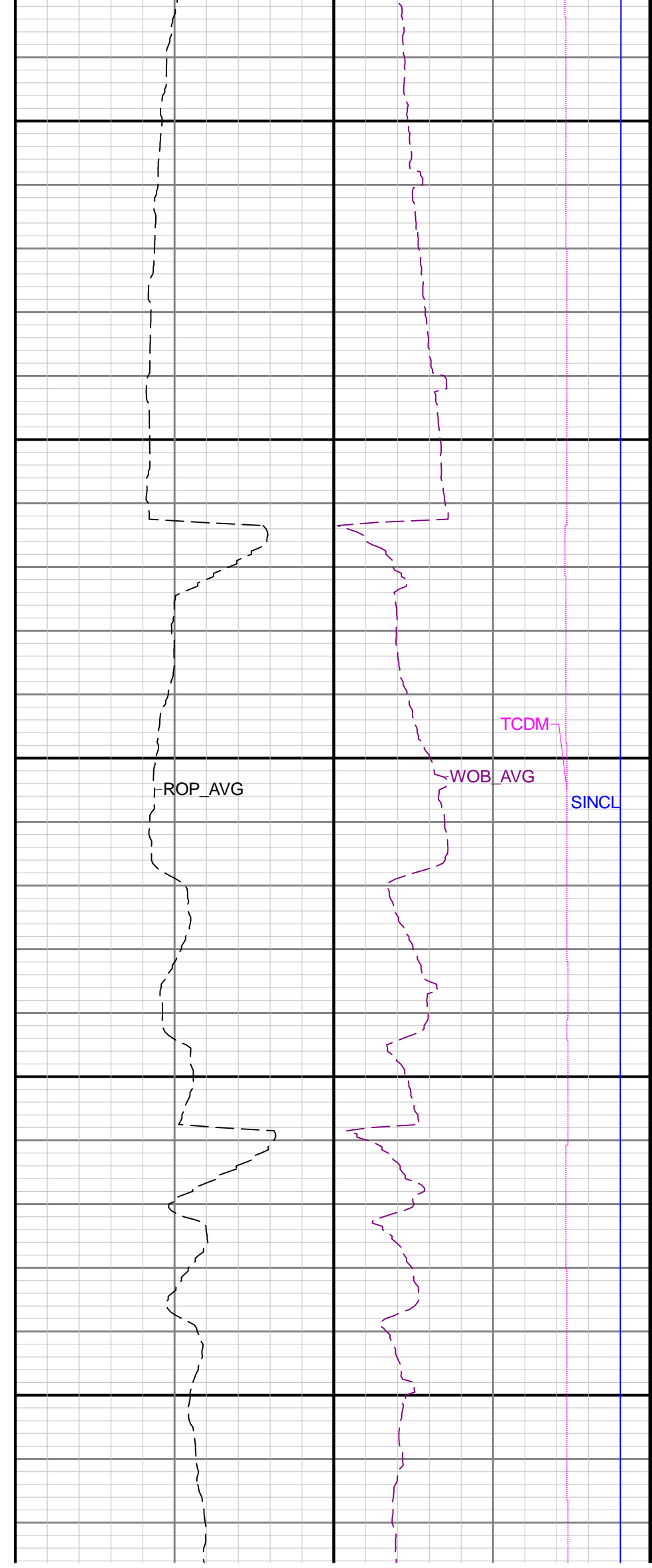
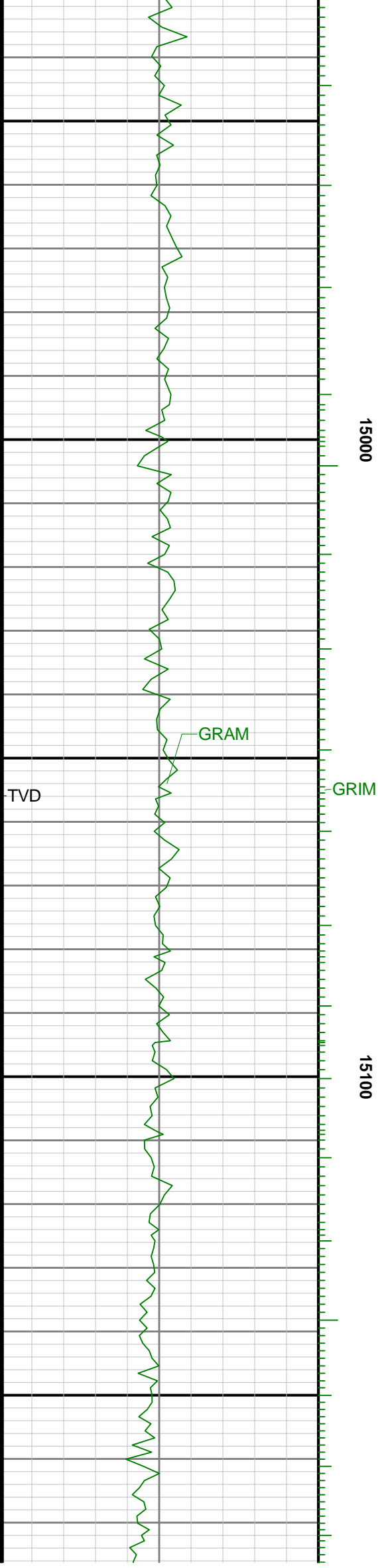


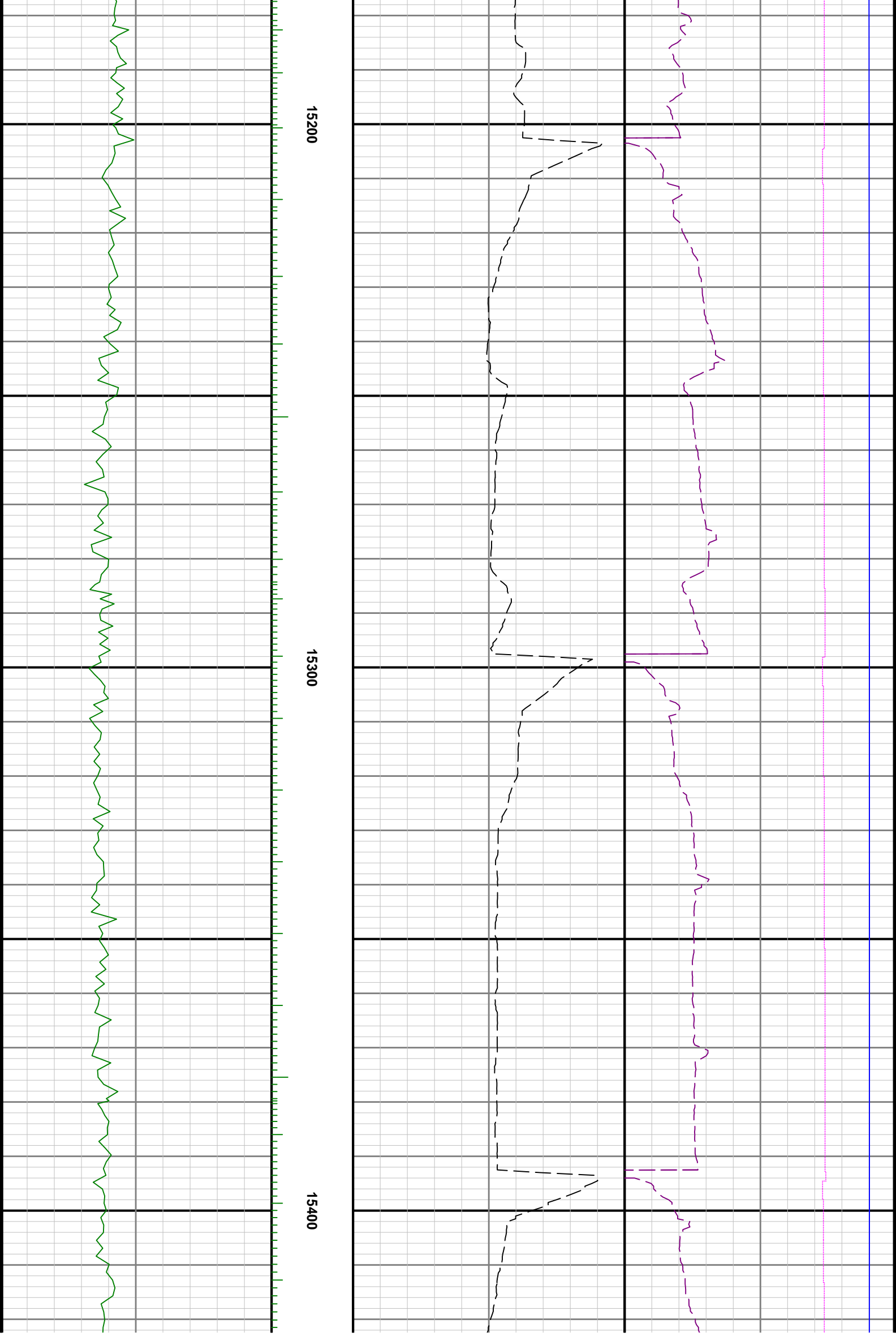
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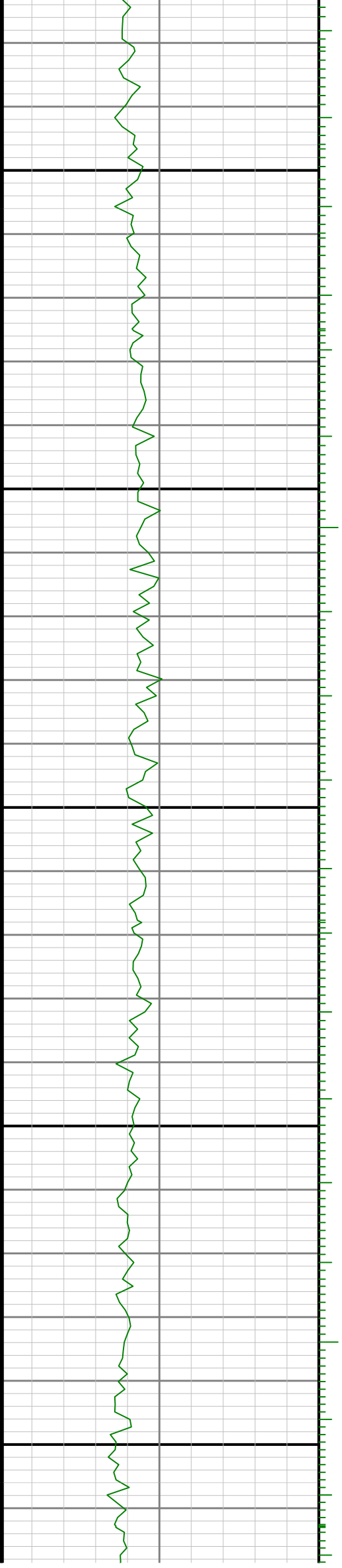
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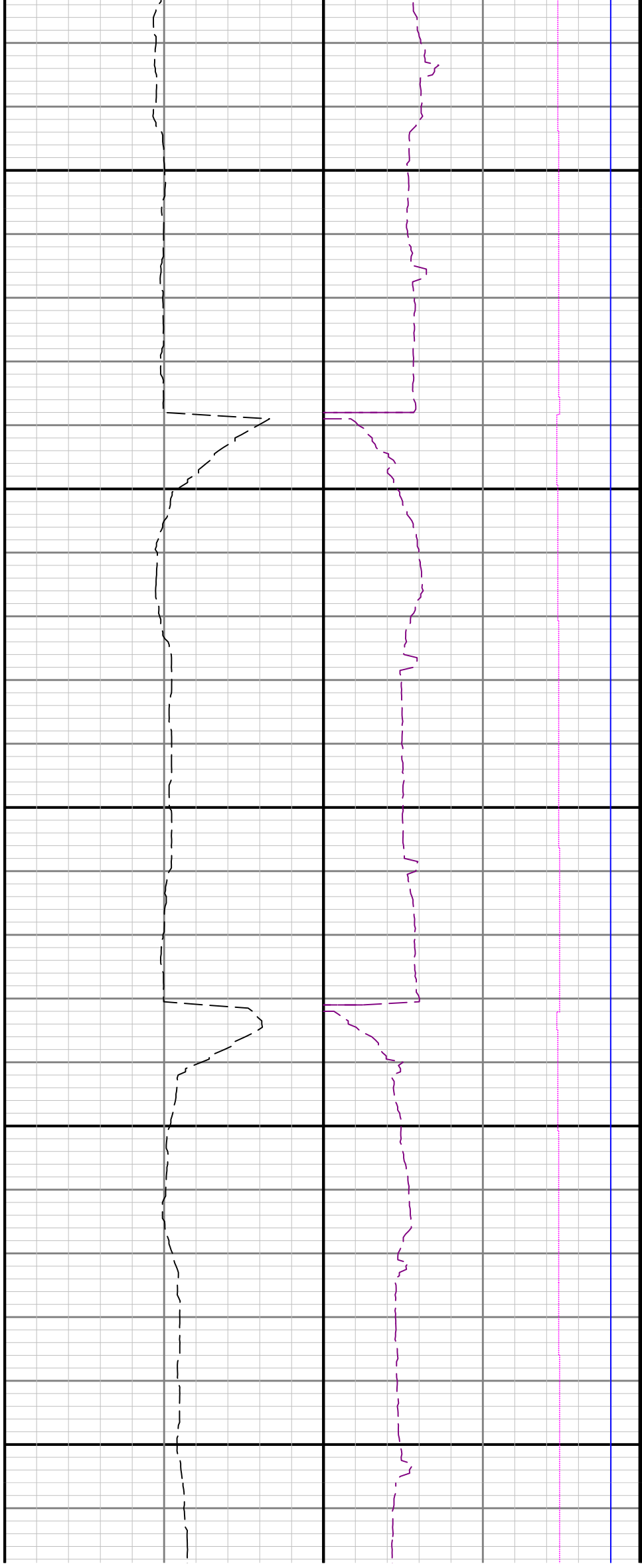


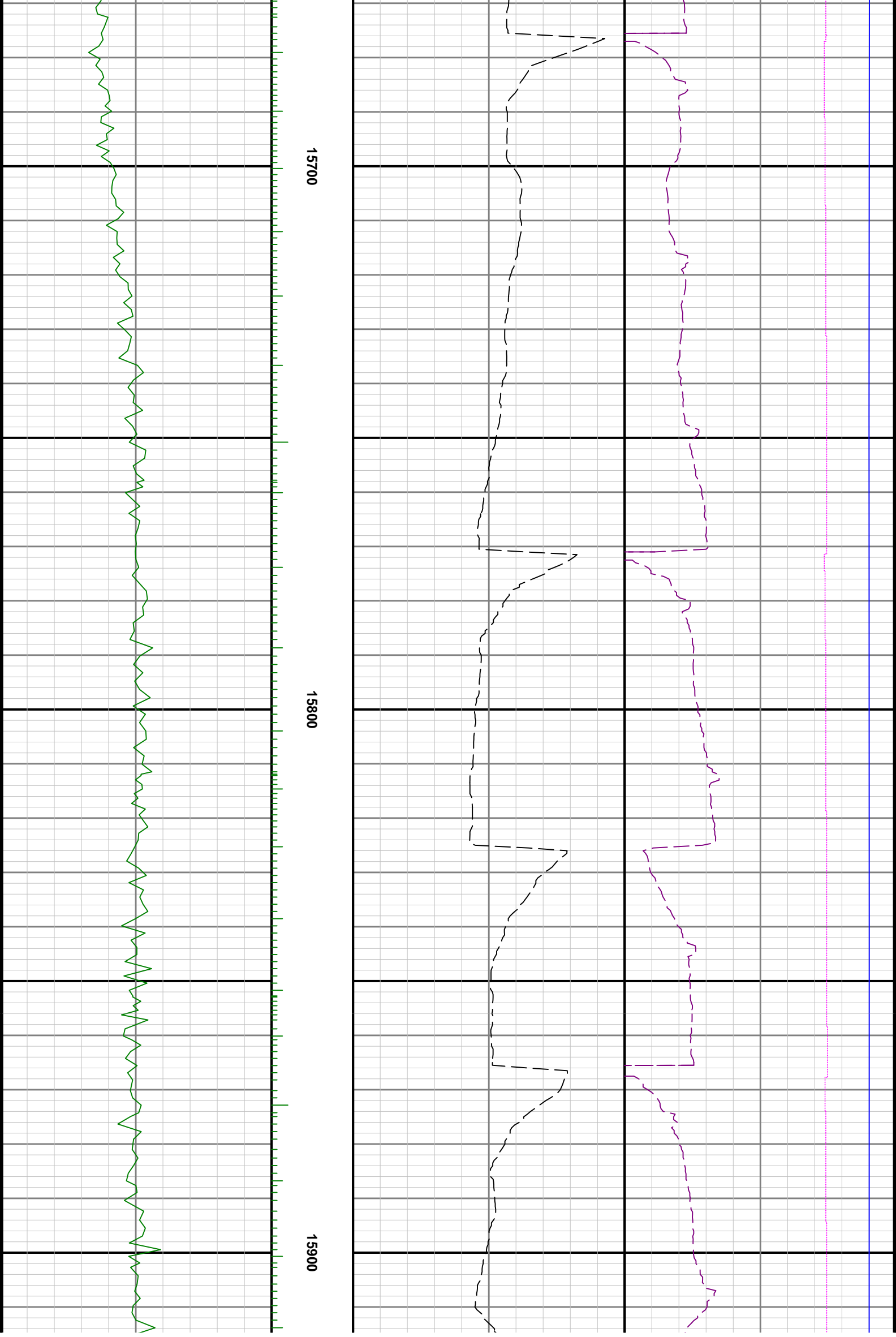


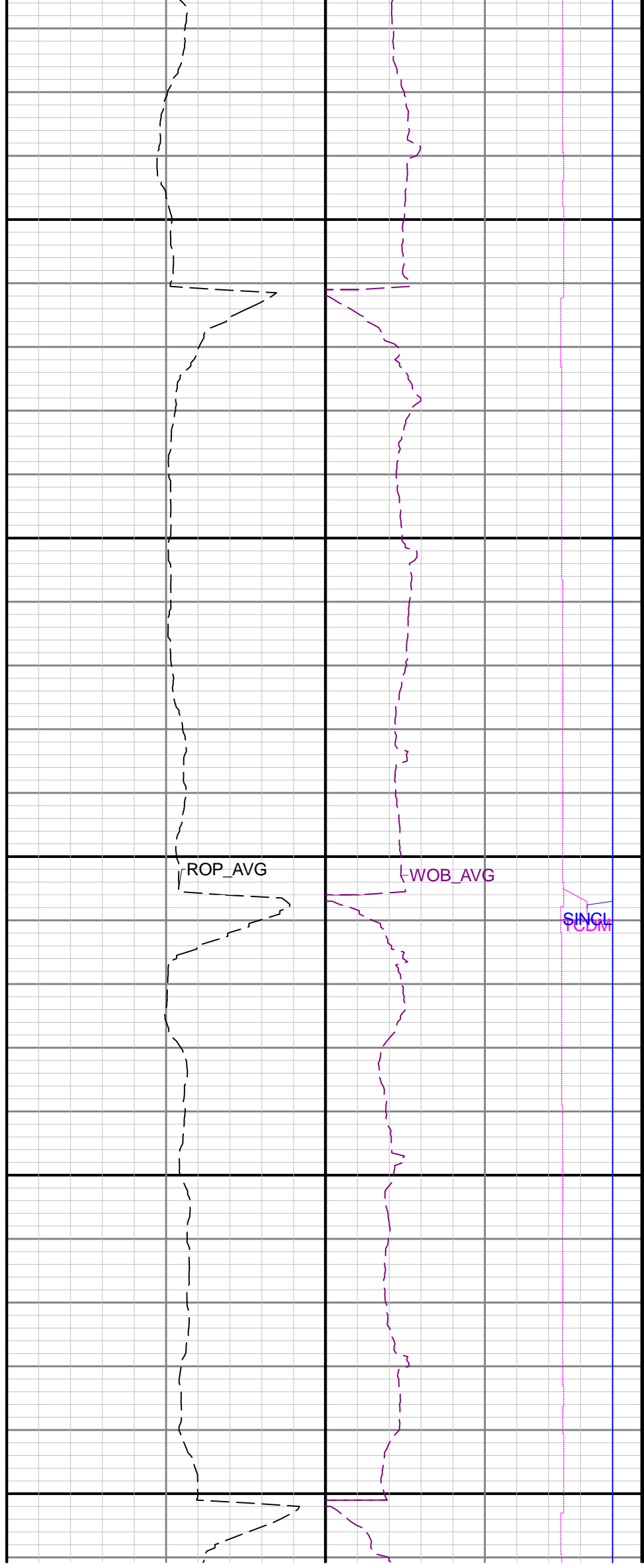
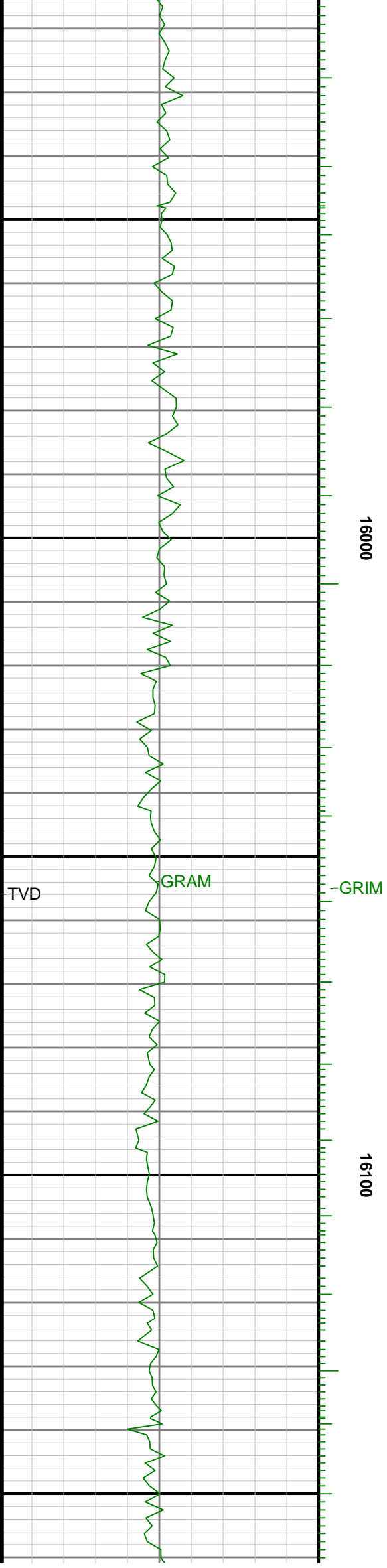


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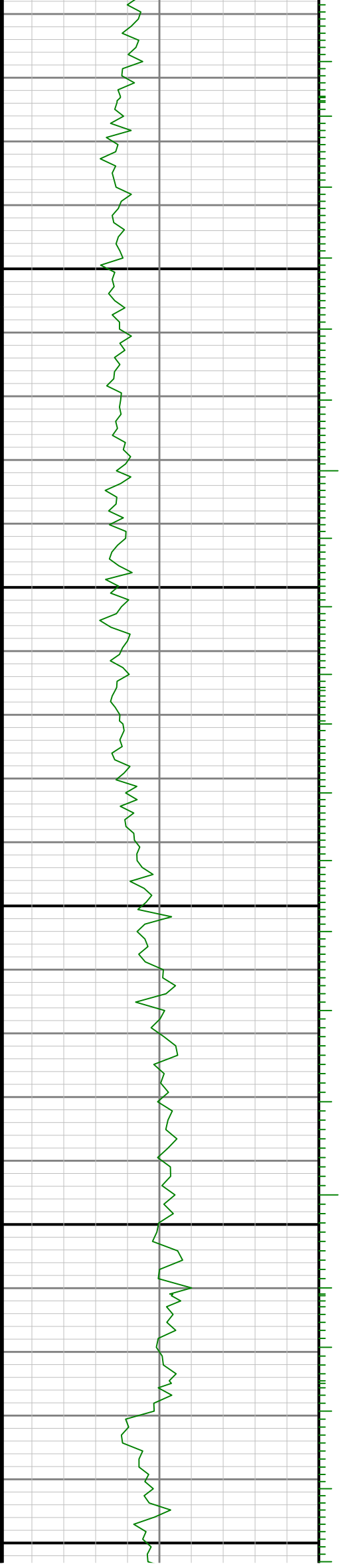
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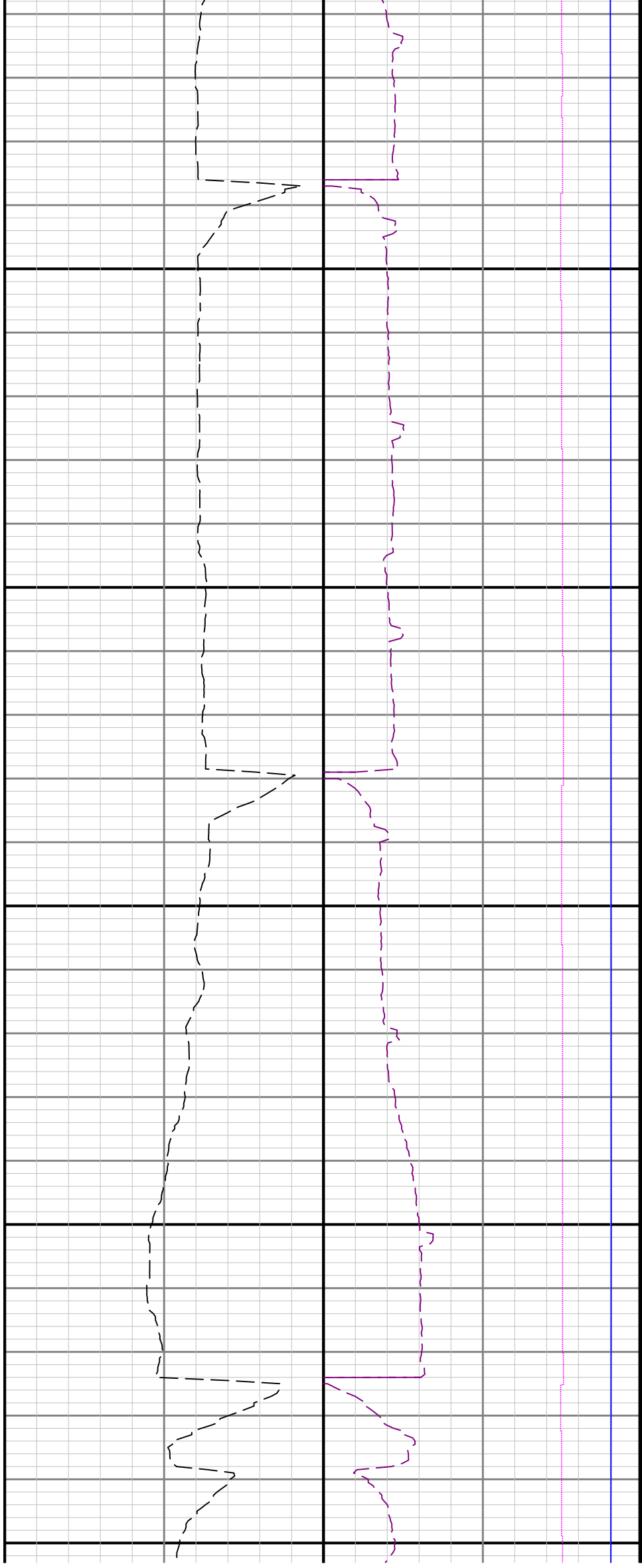


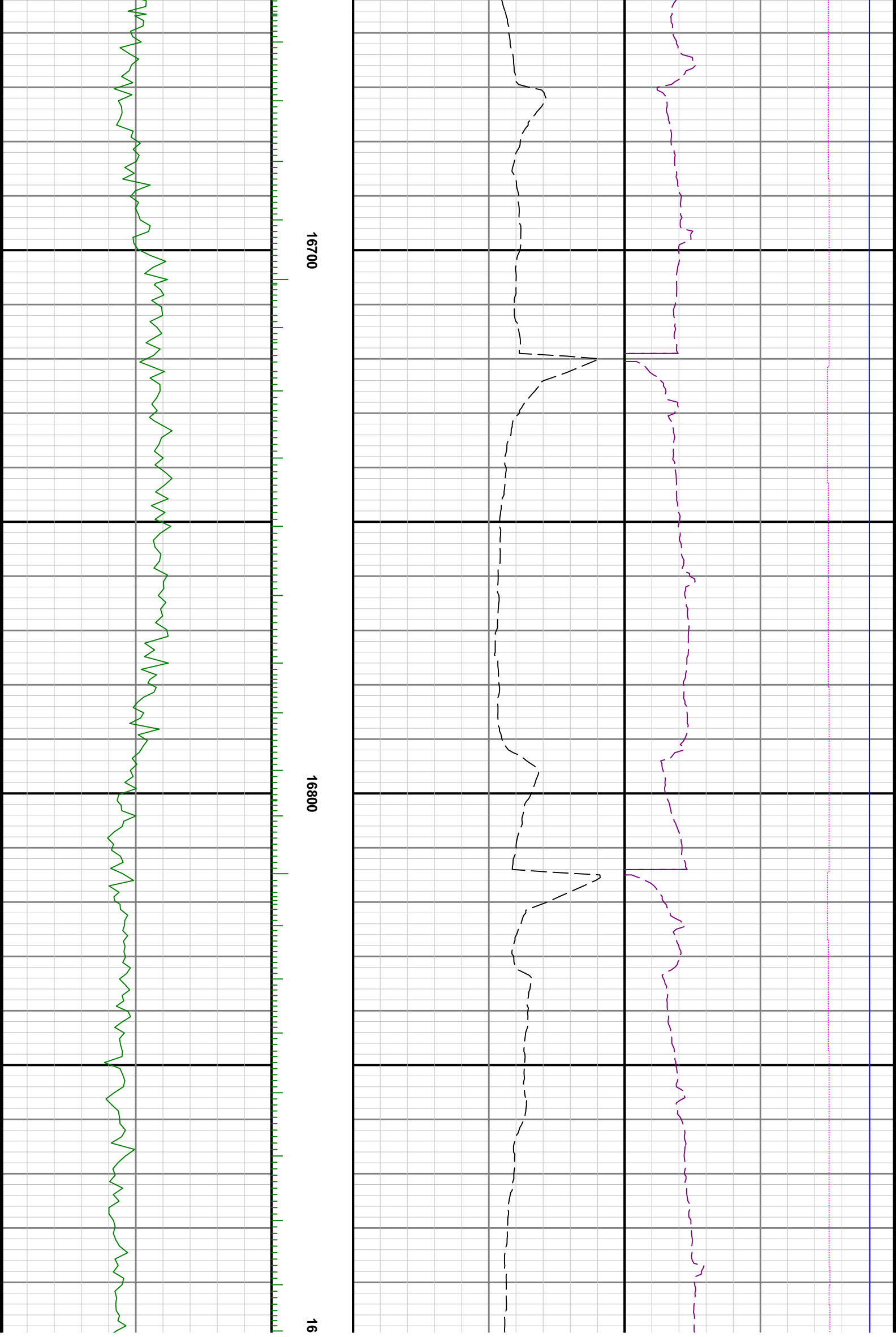


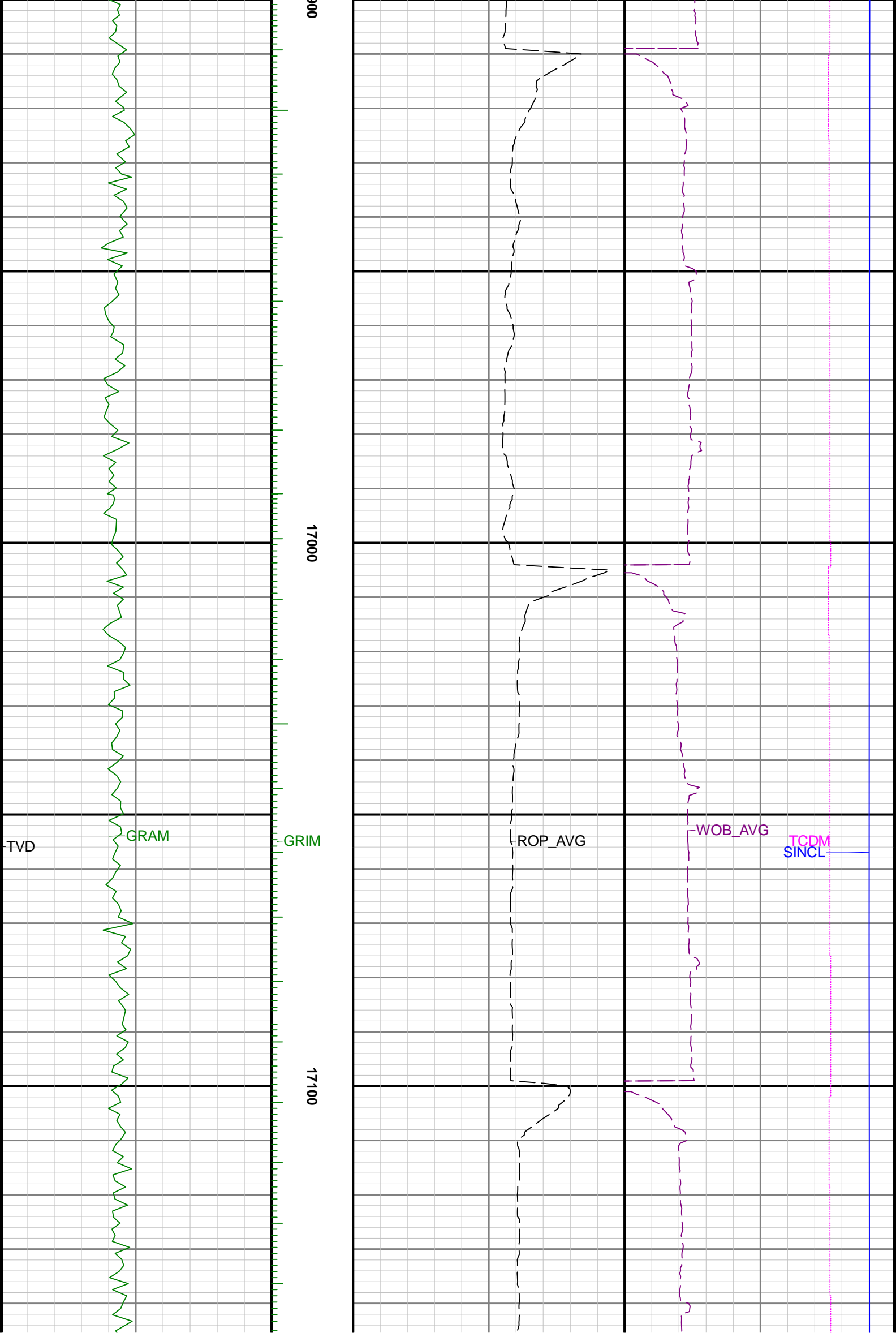


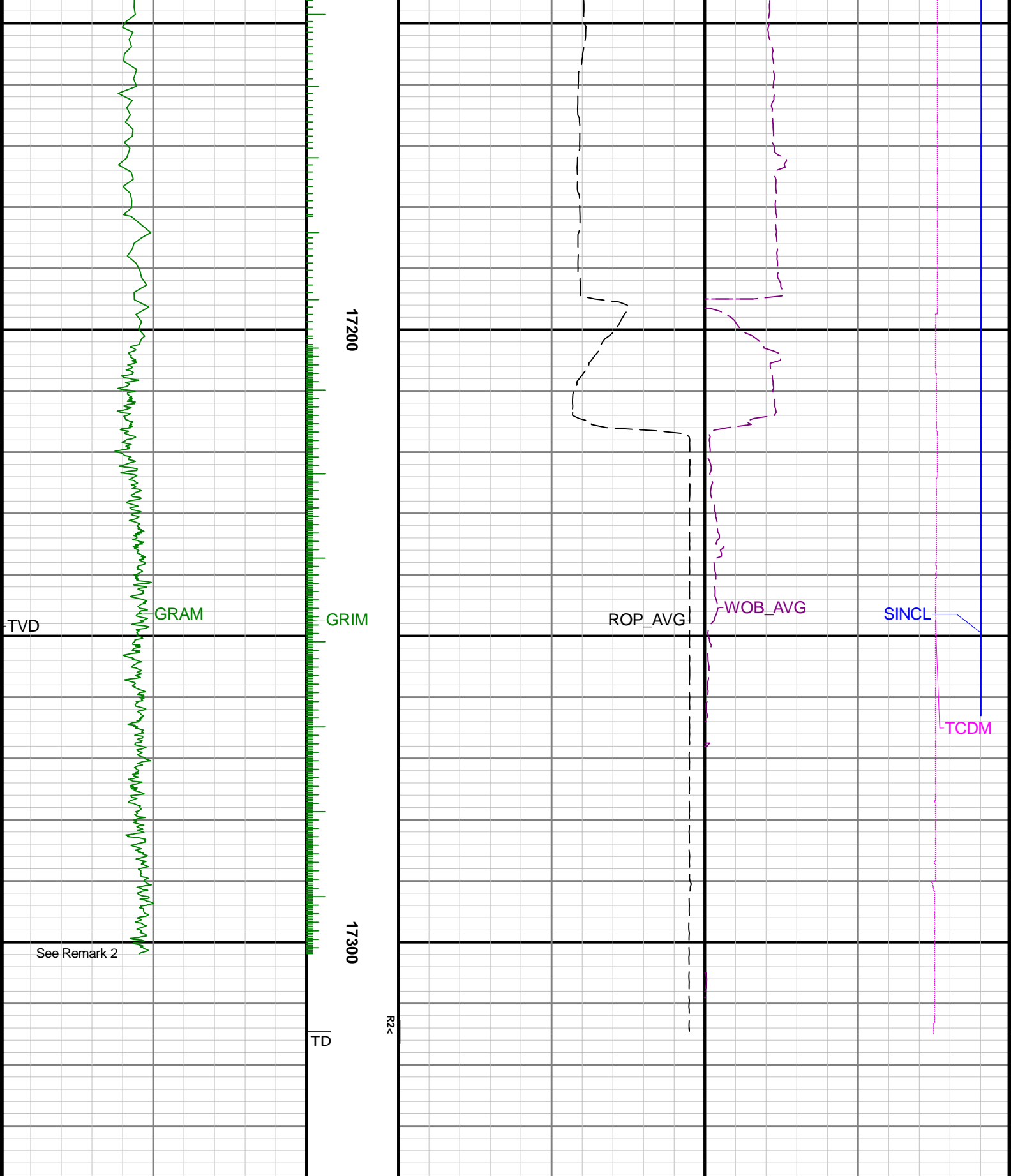
16500

16600









See Remark 2

17200

17300

TVD

GRAM

GRIM

ROP_AVG

WOB_AVG

SINCL

TCDM

TD

R2<

Gamma Ray - Apparent 0.5 ft Average GRAM	
0	300
API	
True Vertical Depth TVD	
7000	1500
ft	

MD 1:240 feet

Rate of Penetration 0.5 ft Average ROP_AVG	
1000	0
ft/h	

Weight on Bit 0.5 ft Average WOB_AVG	
0	100
klb	
Downhole Temperature TCDM	
50	350
degF	
Survey Inclination SINCL	
0	100
deg	