



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale: Company: Anadarko

1:240

Well: Cream State 2C-21HZ

Measured Depth

Field: Weld County

Region: Continental US Country: United States

Status: Surface Location: Other Services:

Final Print

Latitude: 40° 12' 9.097" N

API Number: 051 23409630000

Longitude: 104° 39' 51.444" W

Section: 28 TWN: 3N Range 65W

Directional
VSS

Permanent Datum (P.D.): Ground Level Elevation: 4824.00 ft.

Elevations: N/A

Log Measured From: Rig Floor 20.00 ft. Above P.D.

KB: 4844.00 ft.

Depth Reference: Drillers Depth

DF: 4824.00 ft.

GL:

Interval Logged Dates Magnetic Field Reference

Top: 6400.0 ft. Date From: 06/May/15 Dip Angle: 66.88° Azi Reference North: True

Bottom: 12669.0 ft. Date To: 12/May/15 Total Mag to Reference

Spud Date: 06/May/15 Field Strength: 52522.0 nT North Correction: 8.46°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
8.750 in.	1243.0 ft.	7557.0 ft.	9.600 in.	36.00 lb/ft	Surface	1206.0 ft.
6.125 in.	7557.0 ft.	12669.0 ft.	7.000 in.	26.00 lb/ft	Surface	7527.0 ft.

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	Surface	12669.0 ft.	8.750 in.	6314.0 ft.	11.1° / 243.2°	83.7° / 3.1°
			6.125 in.	5112.0 ft.	85.6° / 3.8°	89.2° / 0.4°
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Precision Drilling 462 / Precision
PAIS	6.4.1.34	Job No:	7217292
		District / Unit:	RMD / D & E

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
1	1	1	8.750	PDC	3.500	Mud Motor	6400.0	7512.0	1243.0	7557.0	06/May/2015 05:00	08/May/2015 08:45	34.88
2	2	2	6.125	PDC	6.500	Mud Motor	7512.0	12615.0	7557.0	12669.0	09/May/2015 08:30	12/May/2015 04:00	52.5

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Donald Delay	06/May/2015	12/May/2015	Andy King	11/May/2015	12/May/2015	Bill Herbers	06/May/2015	11/May/2015
Jake Miller	06/May/2015	11/May/2015	Mike Gurnsey	06/May/2015	12/May/2015	Ed Beaty	11/May/2015	12/May/2015

Mud Properties Record

Date / Time	LWD	Measured	Mud	Density	Viscosity	pH	Fluid	Oil /	Source	Total	K+
	Run No.	Depth	Type	(lb/gal)	(s/qt)		Loss	Water		Chlorides	
		(ft.)					(cc)			(mg/L)	(%)
07/May/2015 06:00	1	7238.0	Water Based	10.1	60	9.0	5.0	2/90	Suction	200	N/A
08/May/2015 18:00	1	7557.0	Water Based	10.0	55	9.2	5.0	2/90	Suction	200	N/A
09/May/2015 18:00	2	7630.0	Water Based	9.9	50	9.0	5.4	2/91	Suction	300	N/A
10/May/2015 18:00	2	9948.0	Water Based	9.9	72	9.3	4.8	3/90	Suction	300	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRTX	Gamma Ray Time Since Drilled	min.
GRIX	Gamma Ray Data Density	points
GRSI	Gamma Ray Slide Indicator	unitless
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	Deg. F
TVD	True Vertical Depth	Ft.
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	Klbs.

Equipment and Service Data

LWD	Tool	Serial	Measurement	Bit	Max	Min
Run		Number		Offset	O.D.	I.D.
No.				(ft.)	(in.)	(in.)
1	DIR	12373463	Directional	46.57	6.750	3.250
1	SRIG	12595022	Gamma	43.20	6.750	3.250
2	DIR	11924683	Directional	52.01	4.750	2.750
2	SRIG	12131406	Gamma	48.59	4.750	2.750

Service and Tool Mnemonics

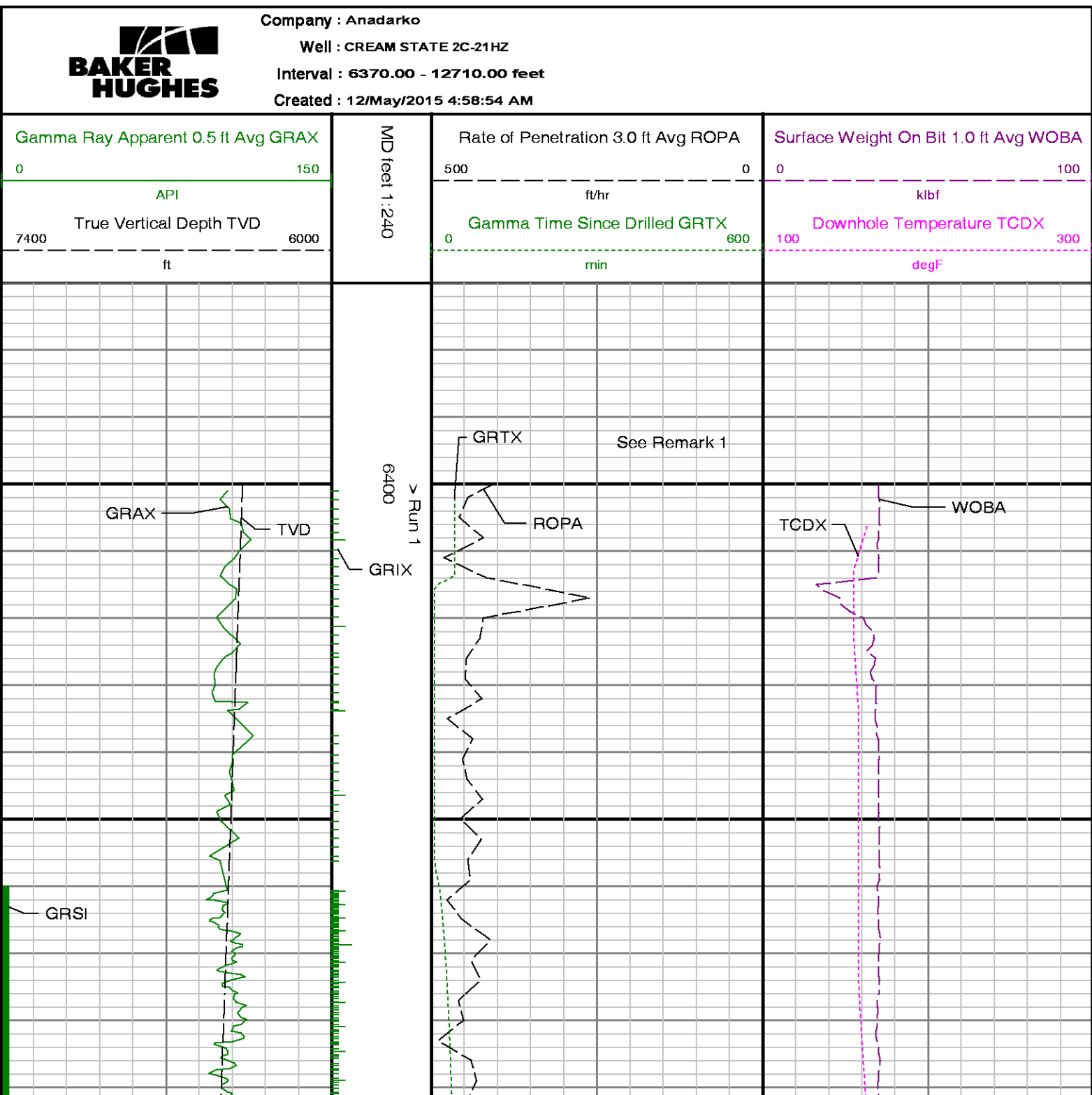
Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

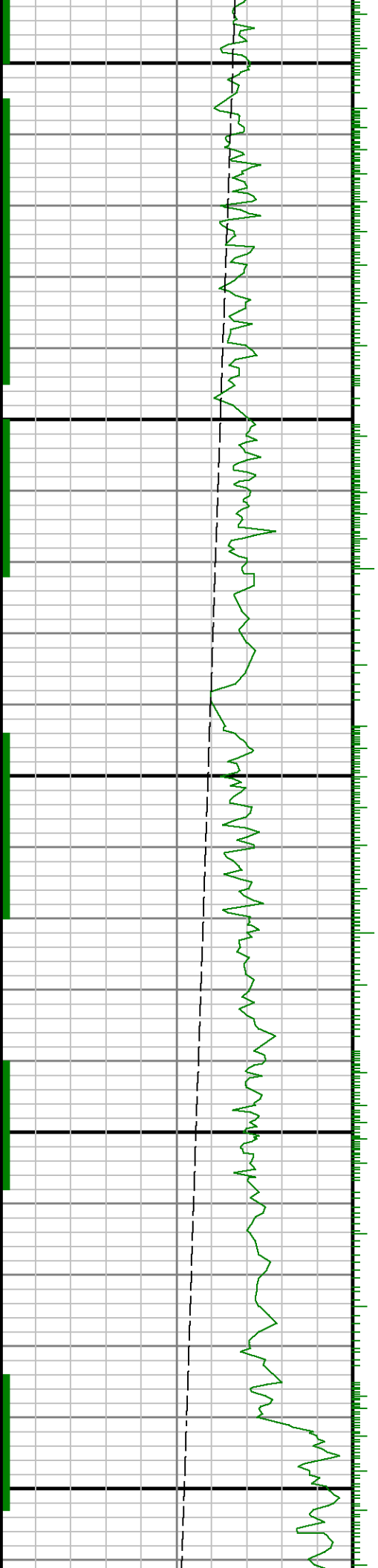
Comments

<p>1.) Baker Hughes Run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1243 to 7557 feet MD (1236.30 to 7143.02 feet TVD).</p> <p>2.) Baker Hughes Run 2 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7557 to 12669 feet MD (7143.02 to 7171.38 feet TVD).</p> <p>3.) 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.</p> <p>4.) A sliding indicator is shown on the left edge of track 1 as a heavy line. This indicator has been depth-shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data acquired while sliding.</p>
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Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	6400	8.750	1	Began logging Gamma above Build Section at 6400 feet MD (6377.04 feet TVD)
2	7540	8.750	1	The interval from 7520 to 7564 feet MD (7139.44 to 7143.63 feet TVD) was logged up to 30 hours after being drilled due to casing operations.
3	12650	6.125	2	The interval from 12627 to 12669 feet MD (7170.74 to 7171.38 feet TVD) has no logging data due to bit to sensor offset.



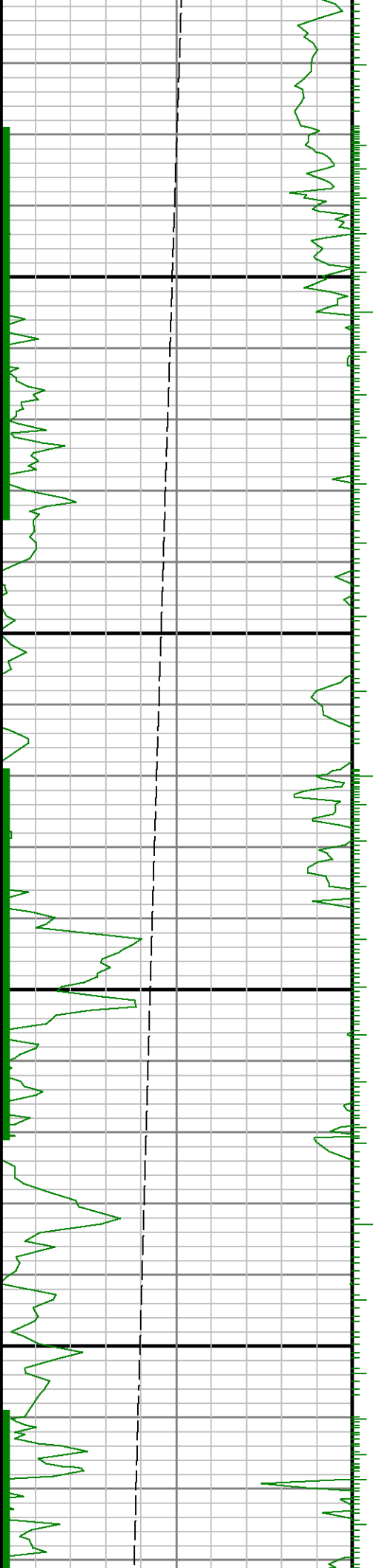


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6600

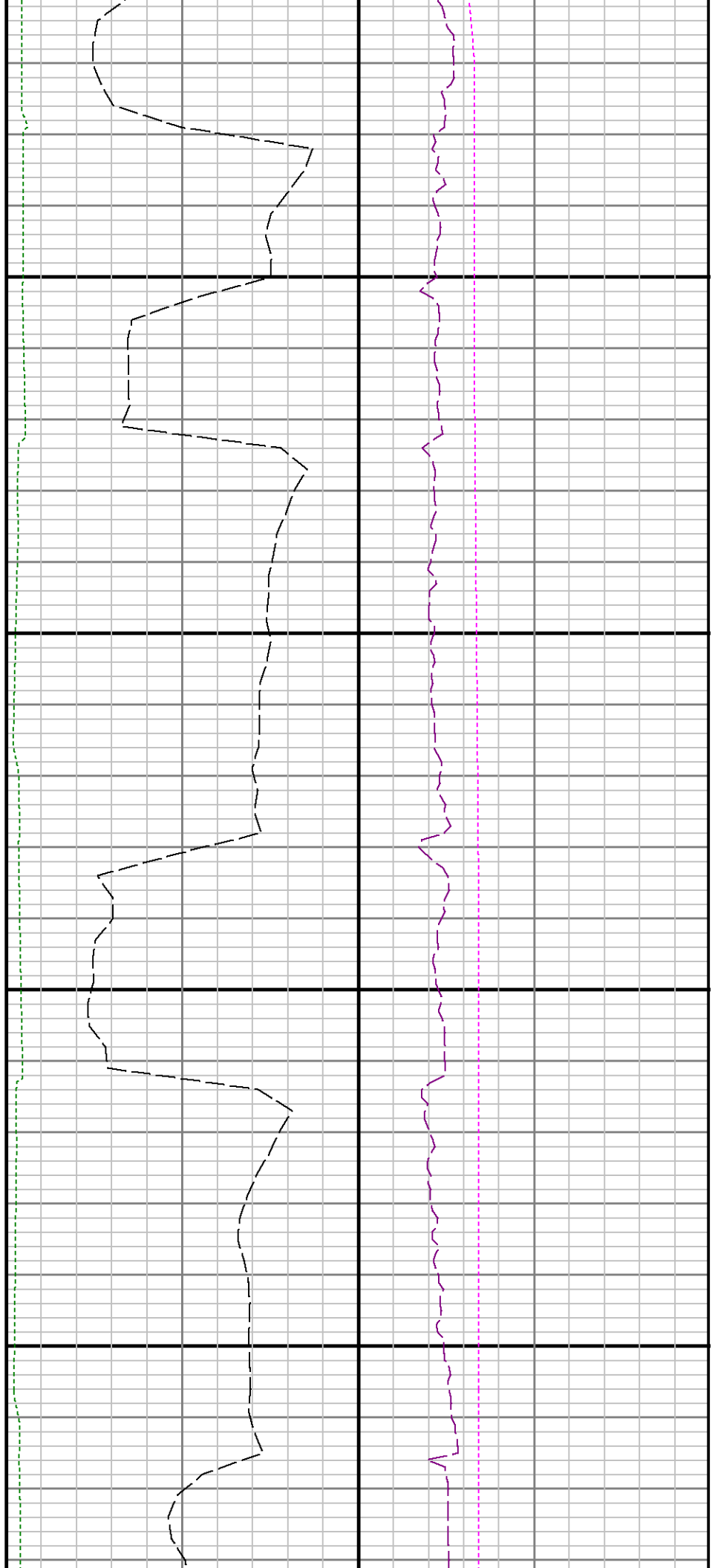
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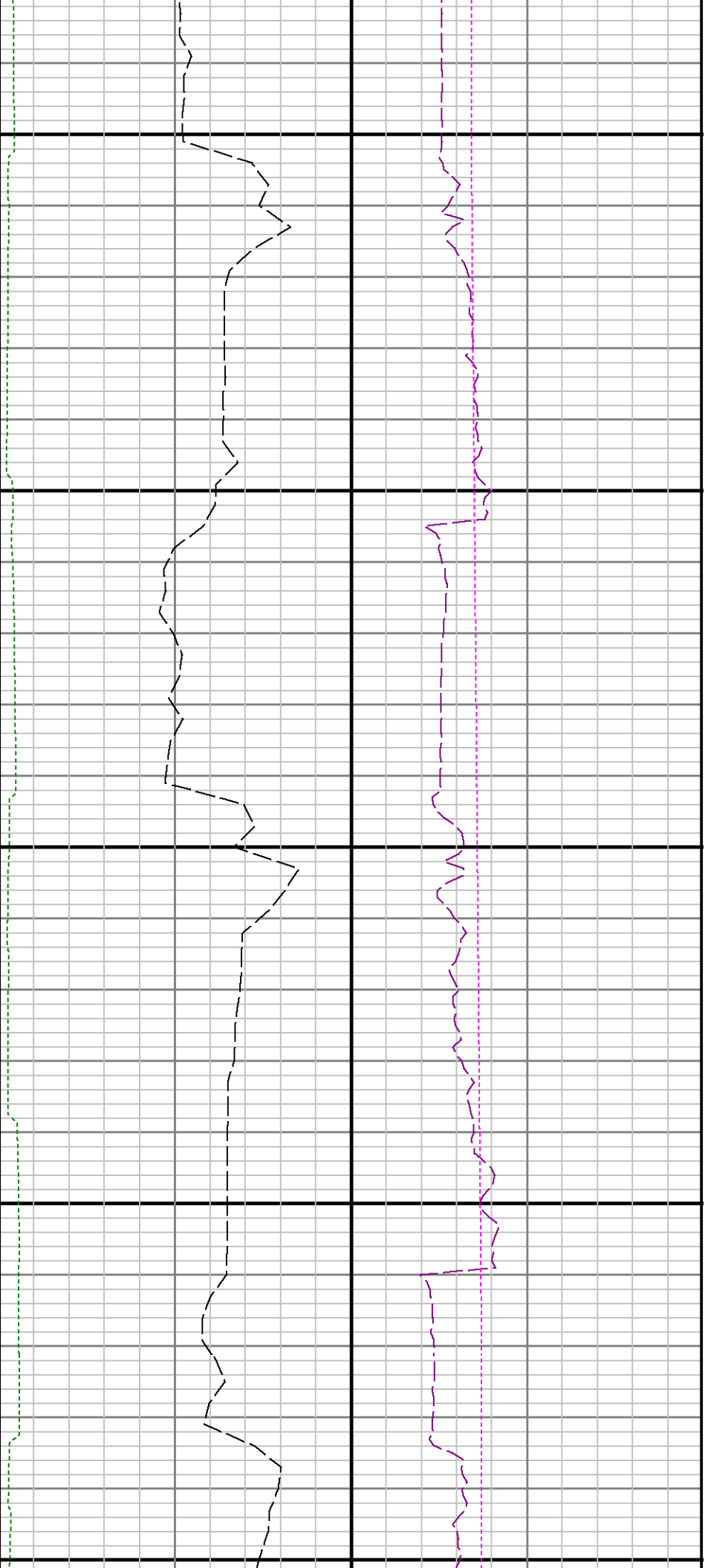




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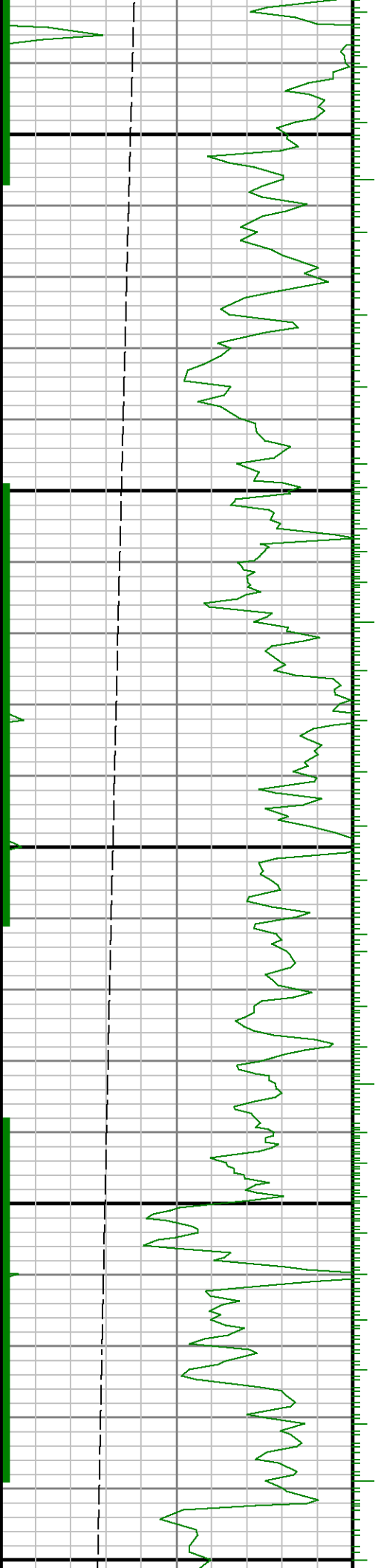
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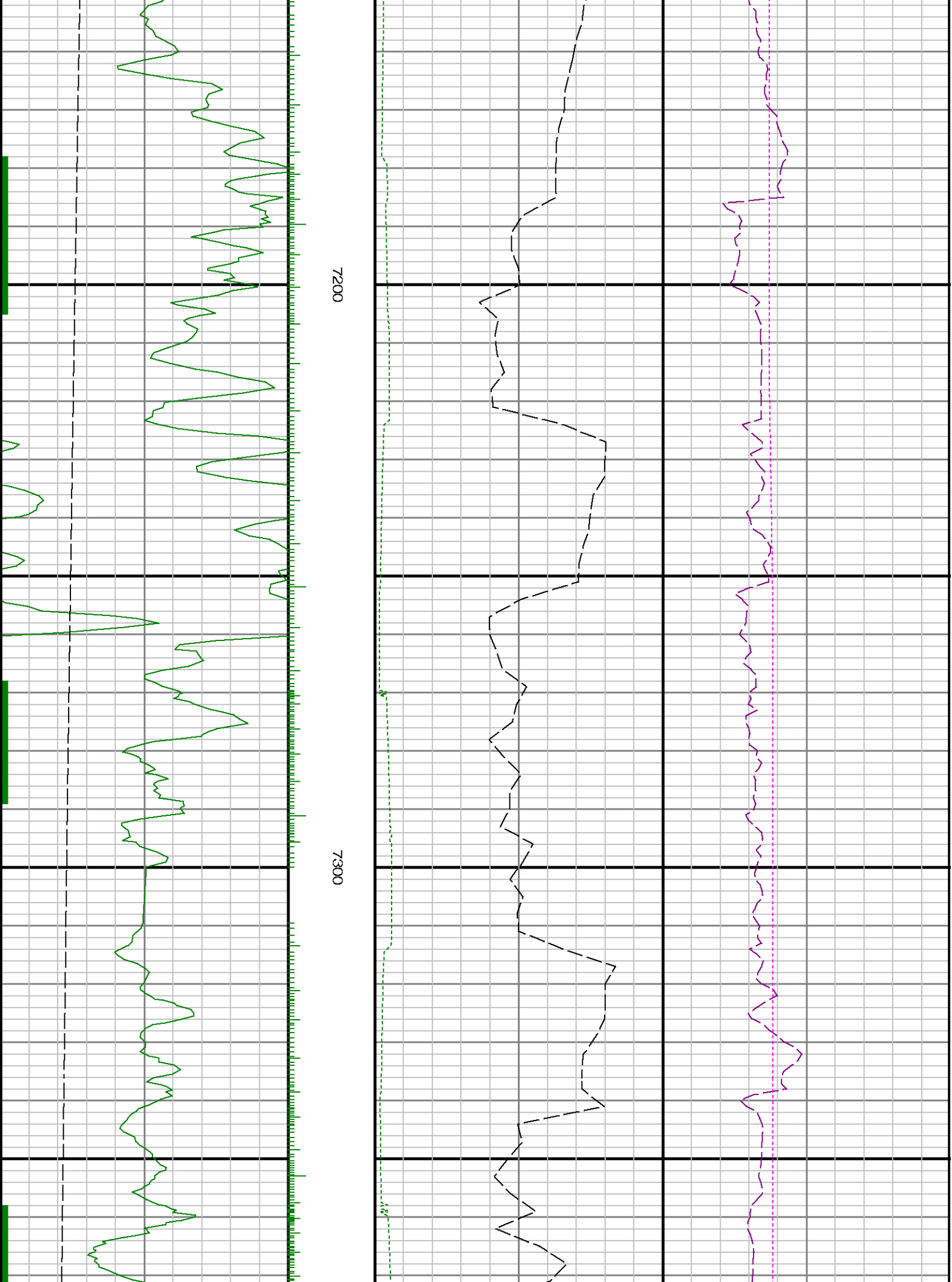


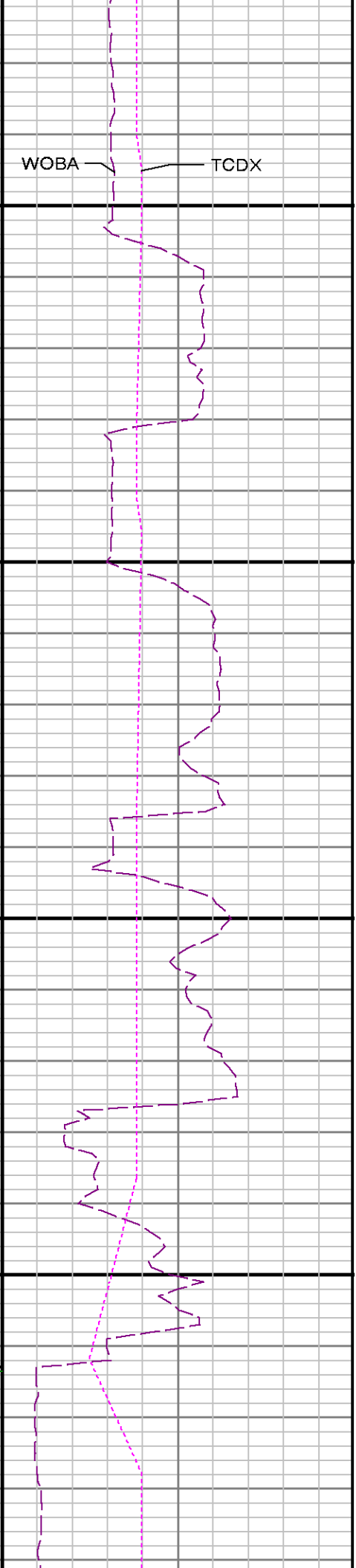
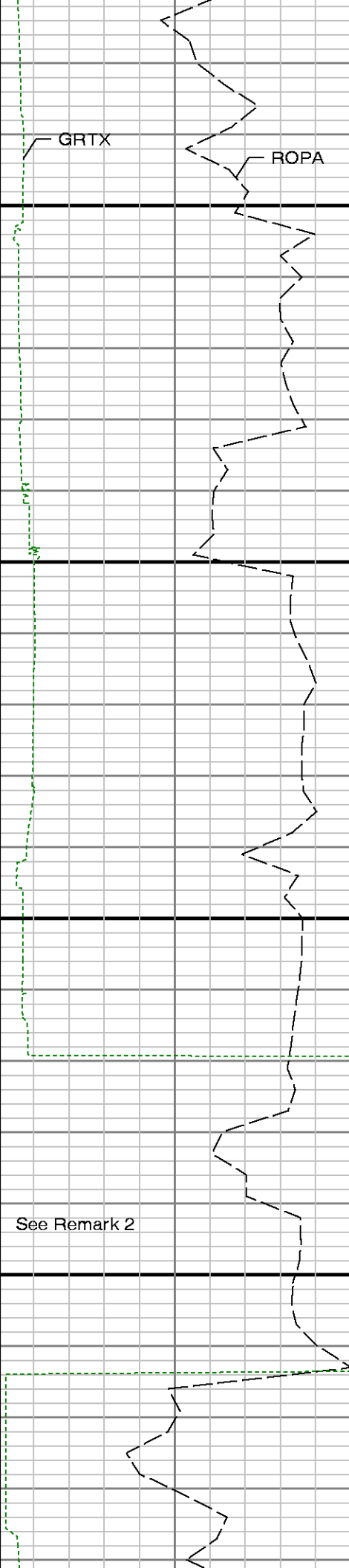
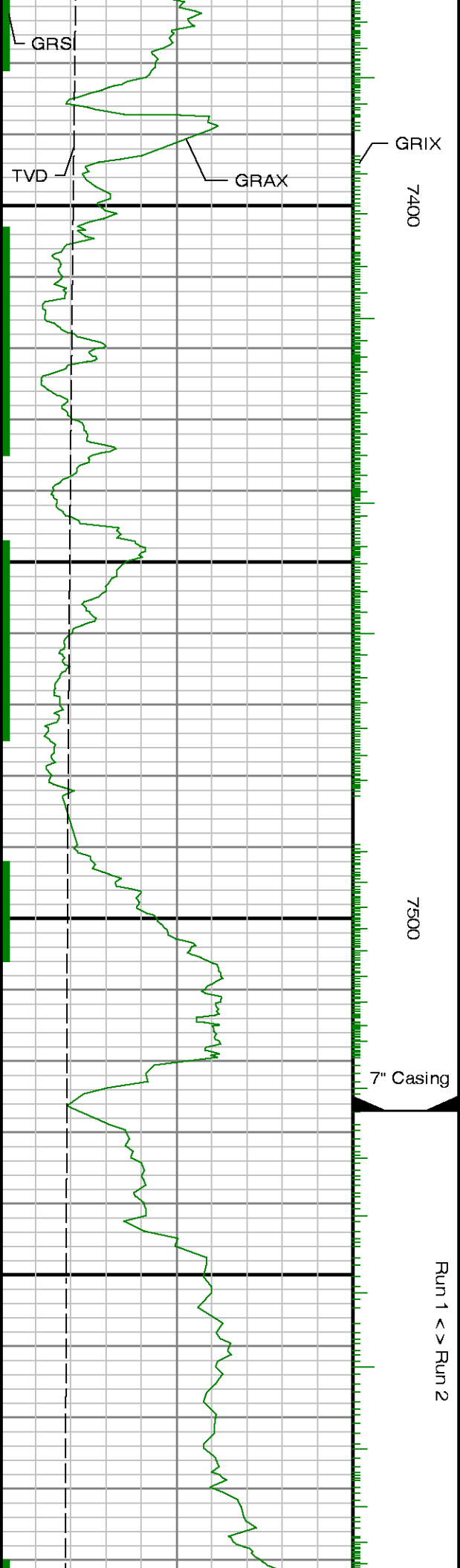


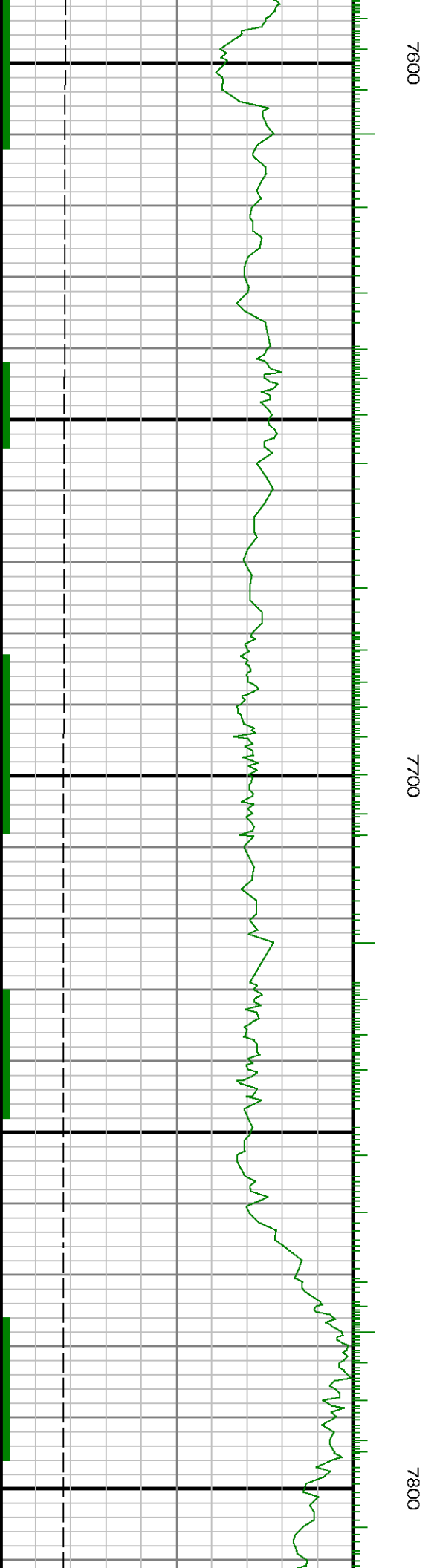
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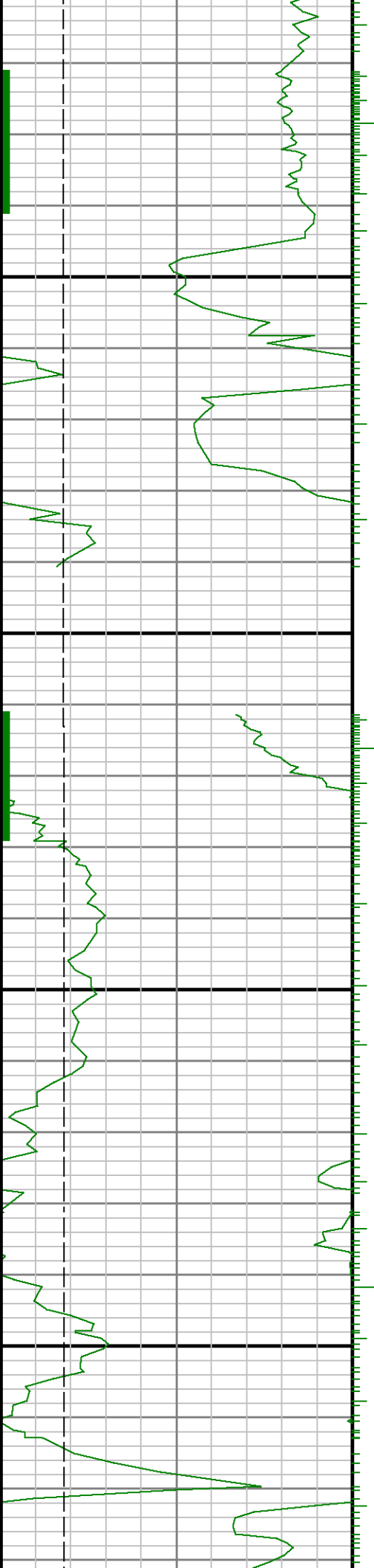
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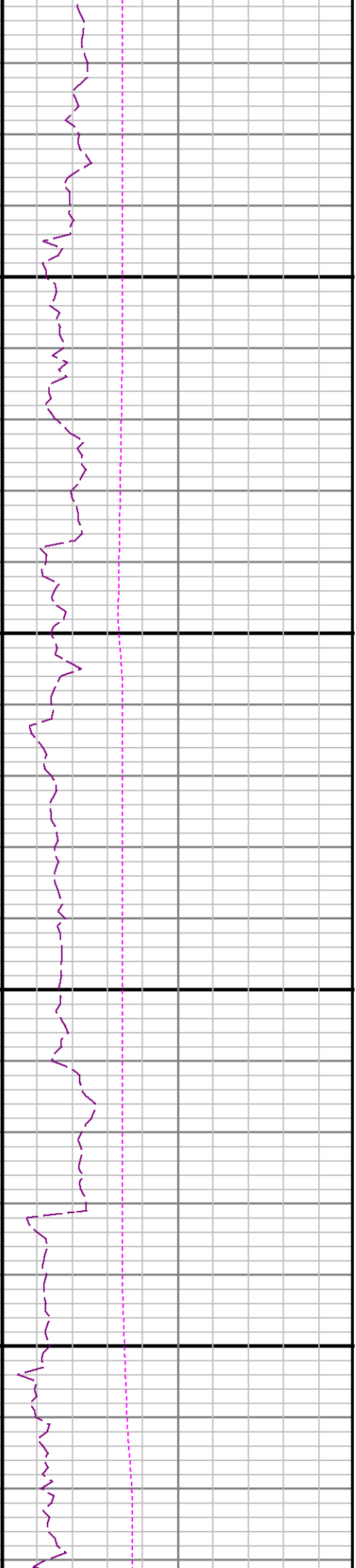
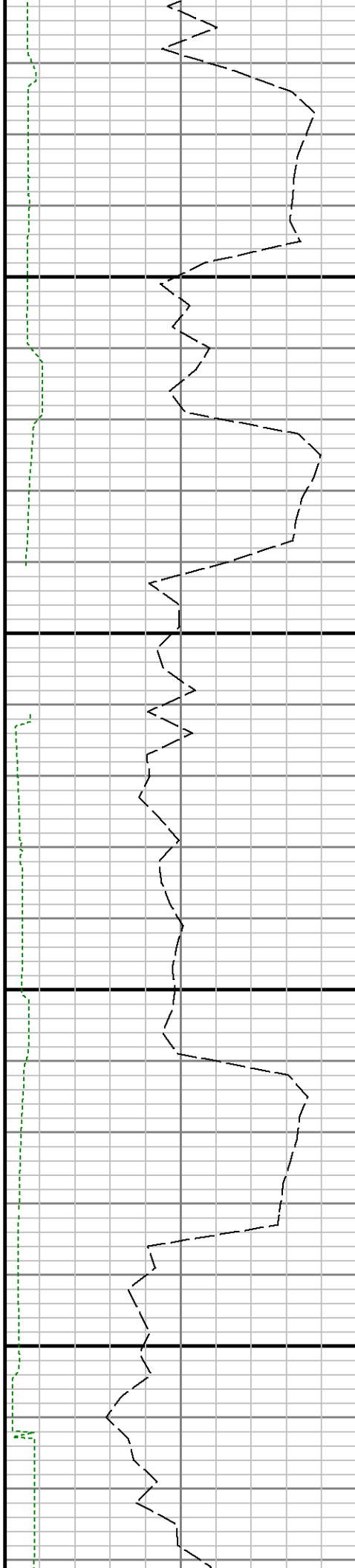


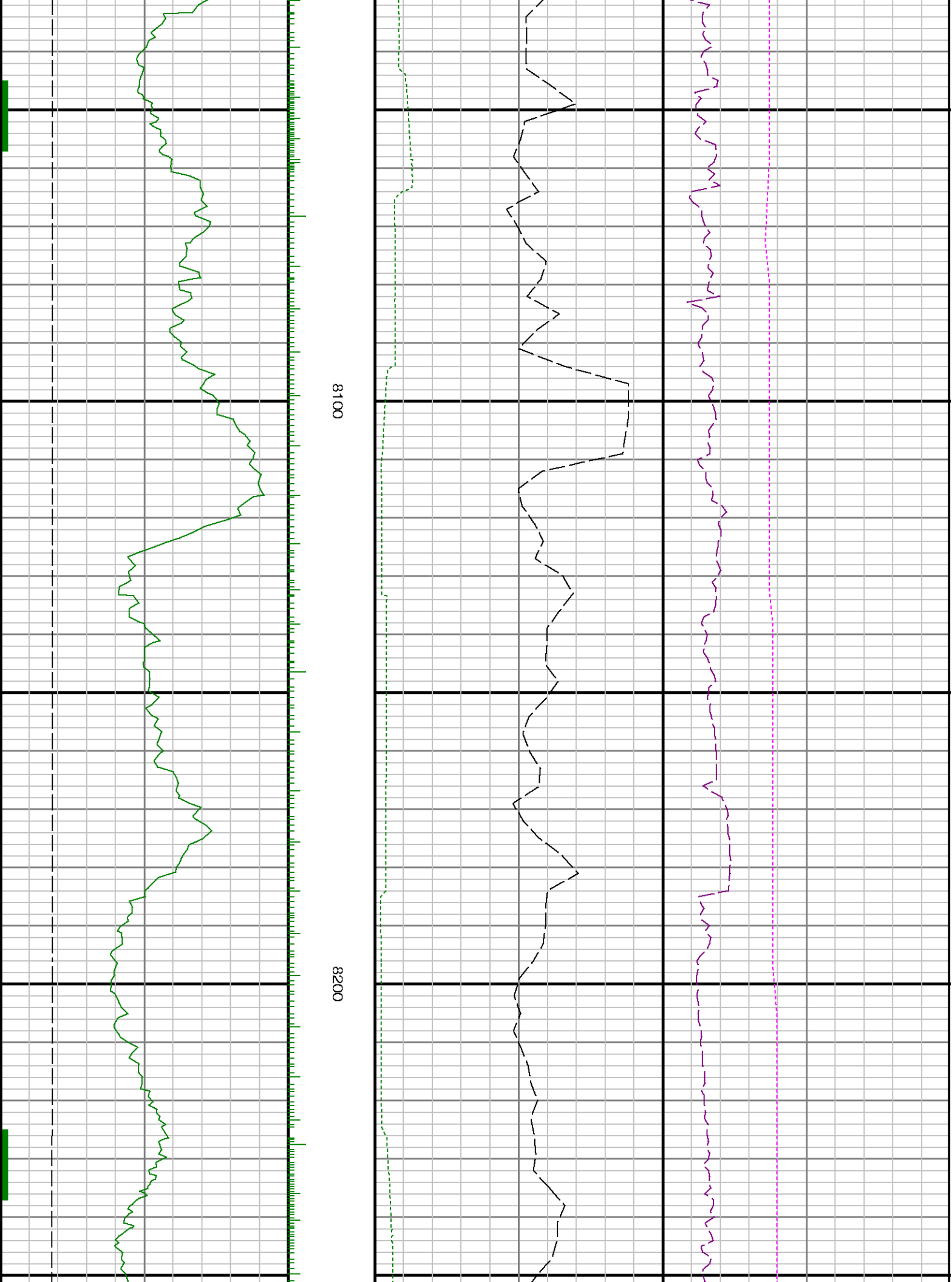


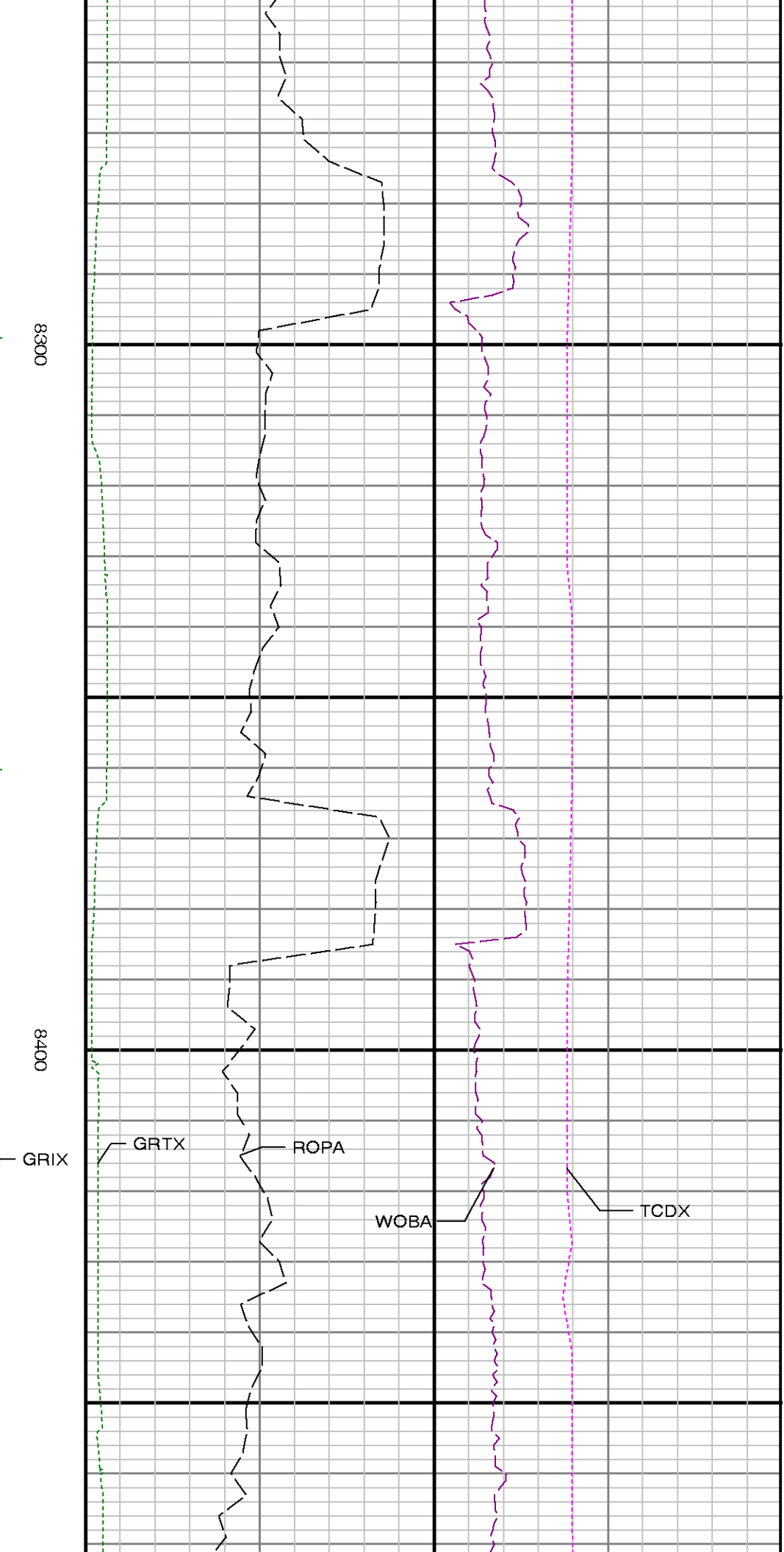
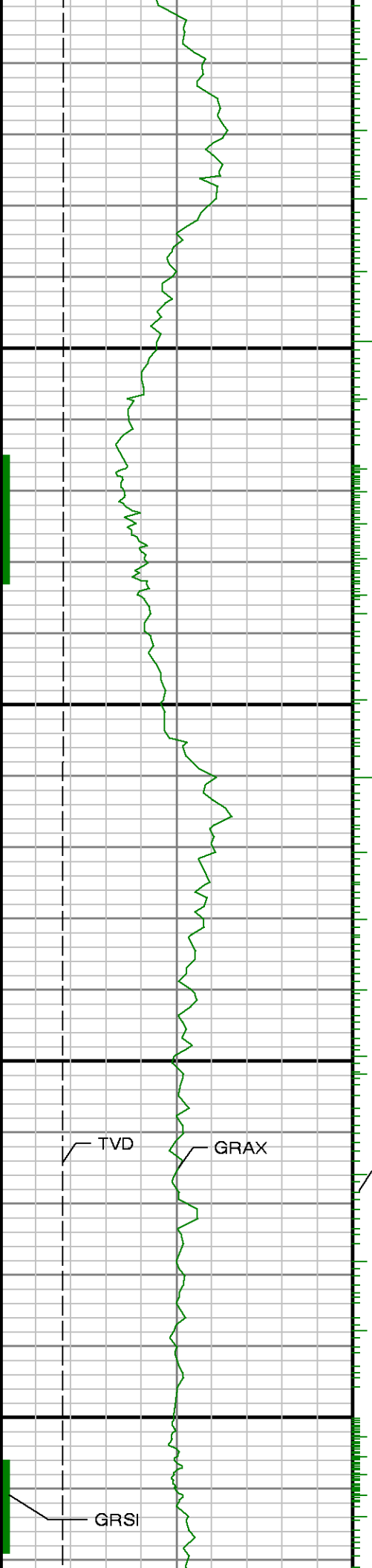


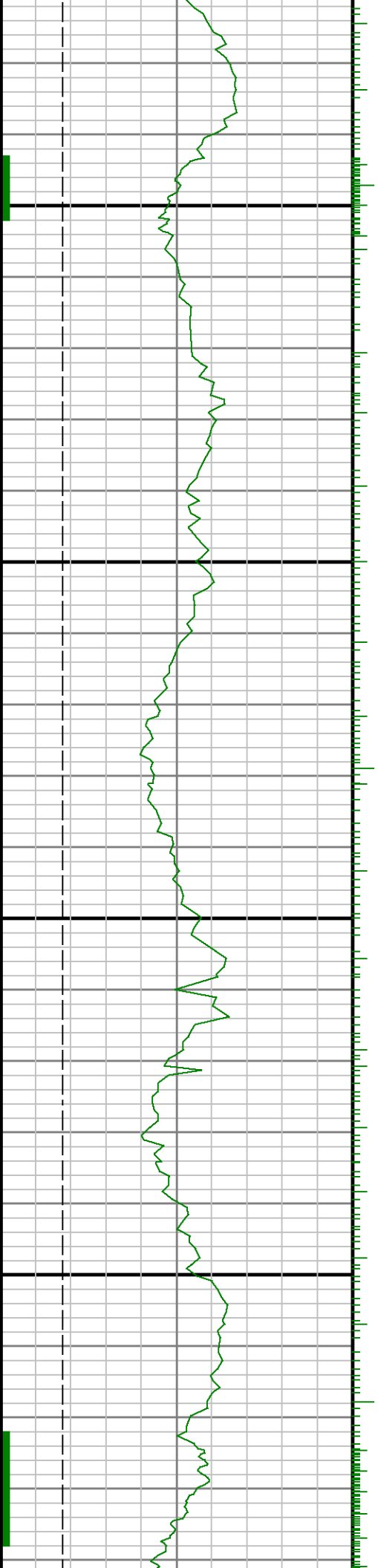
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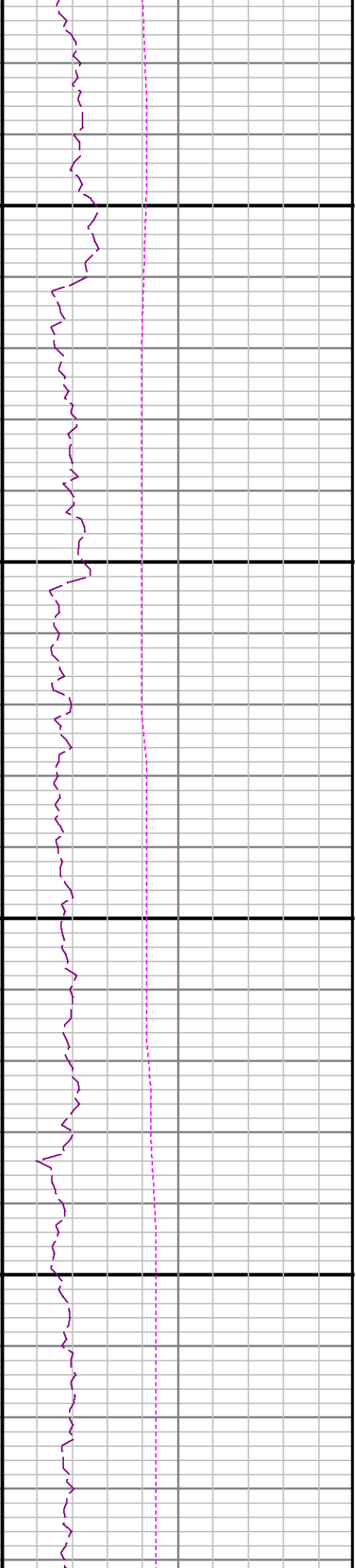
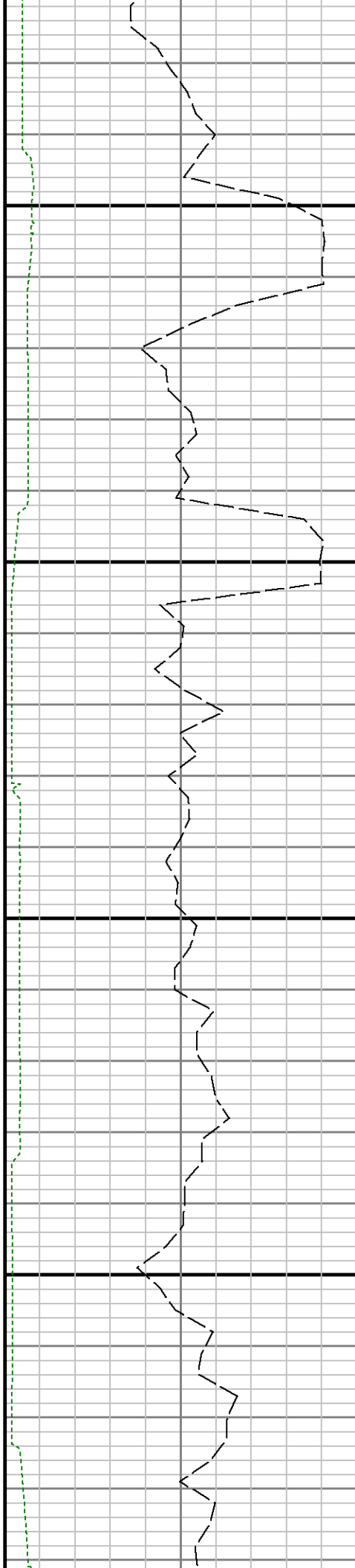


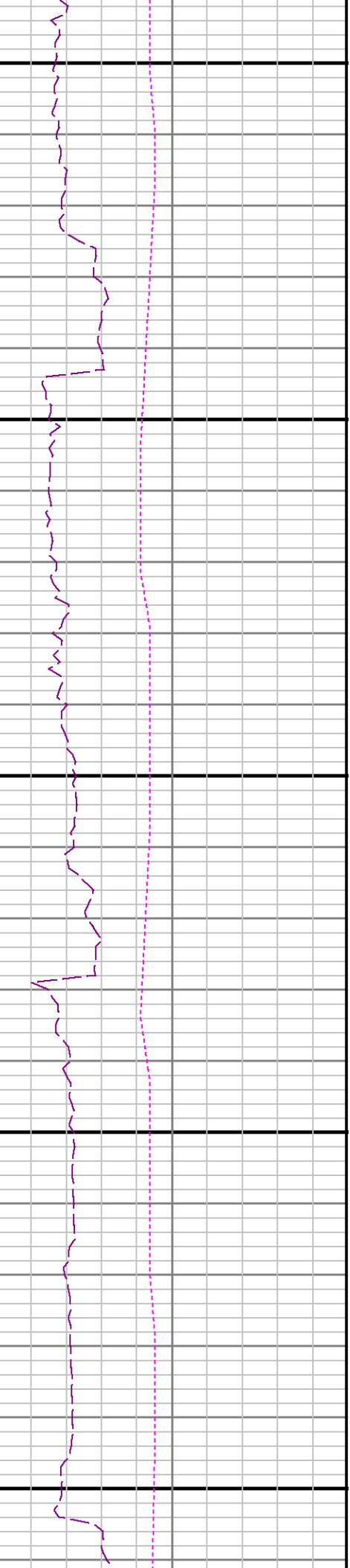
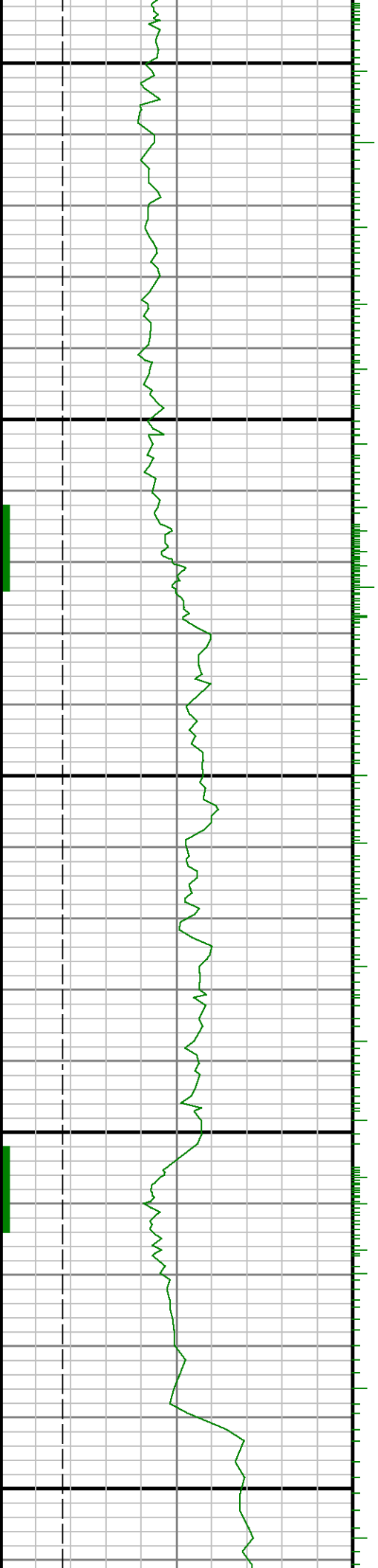


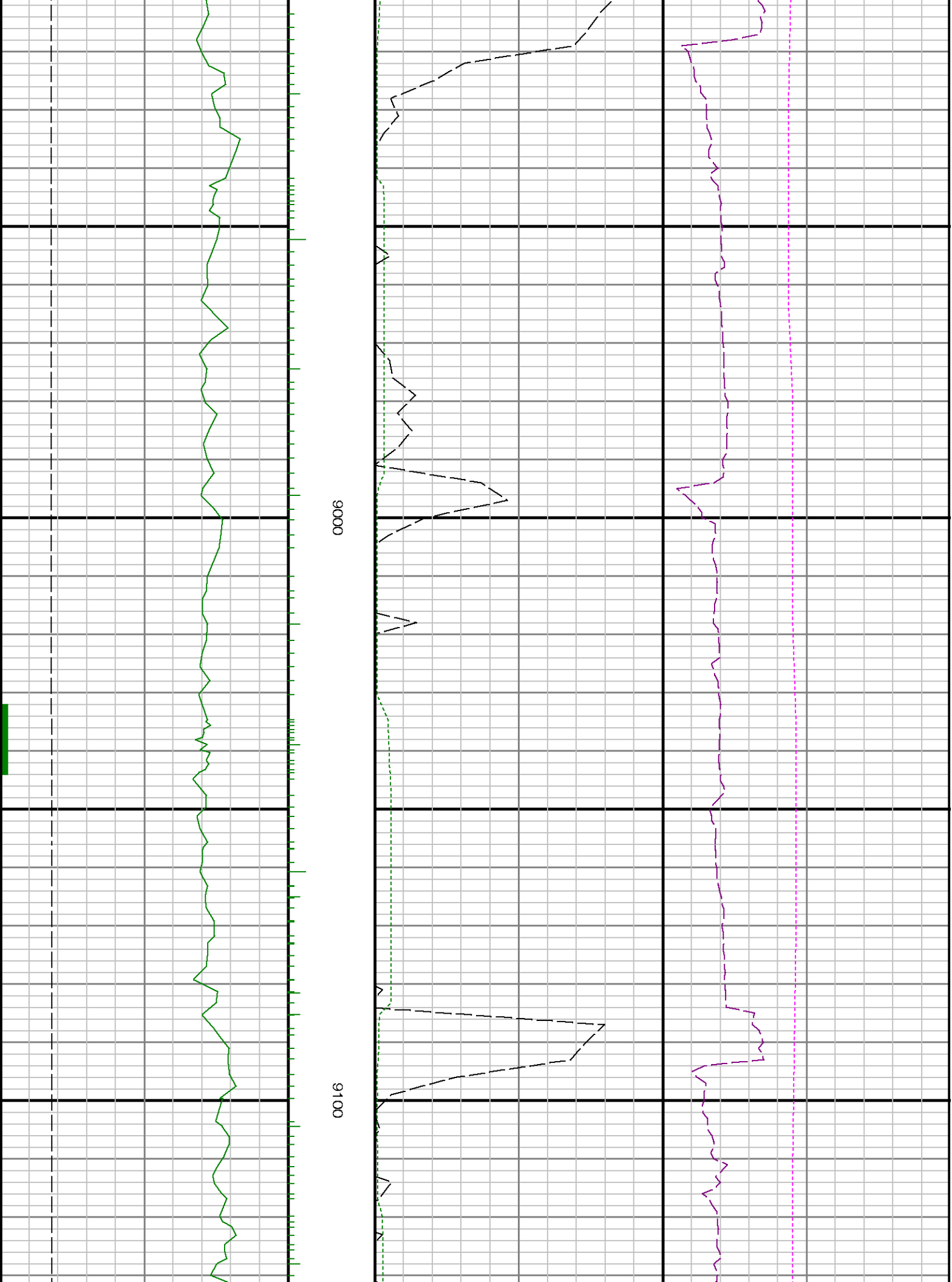


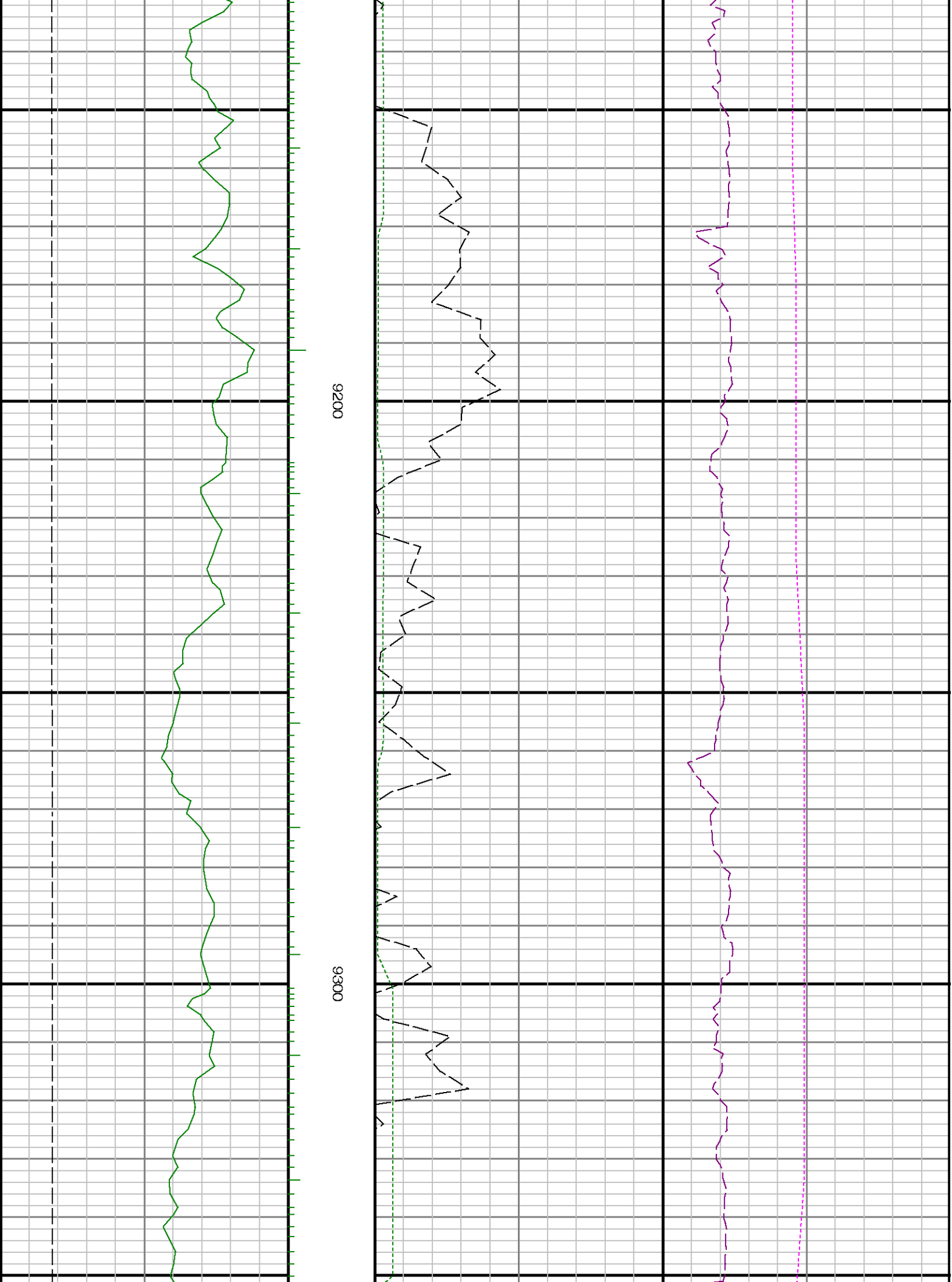
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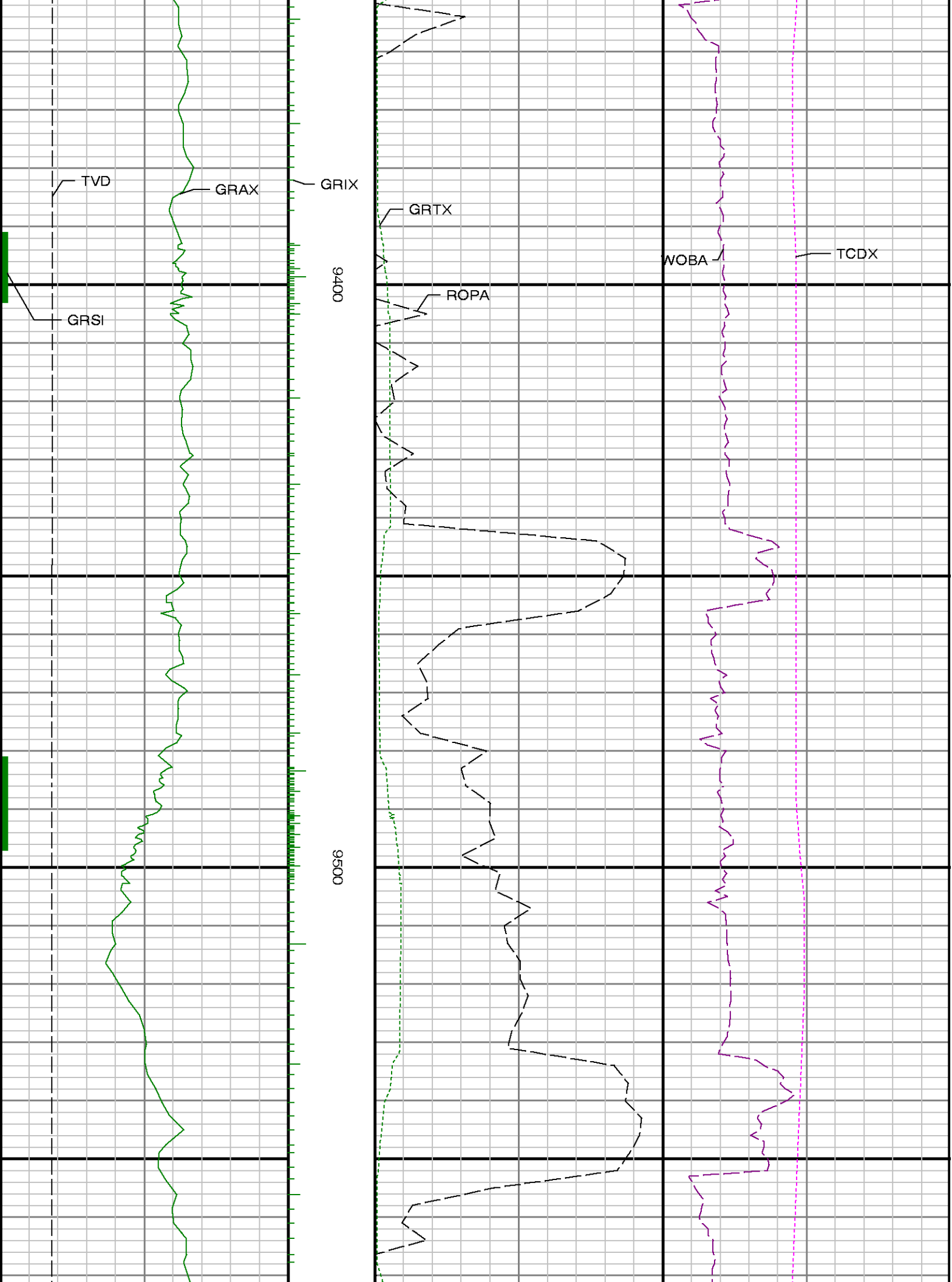
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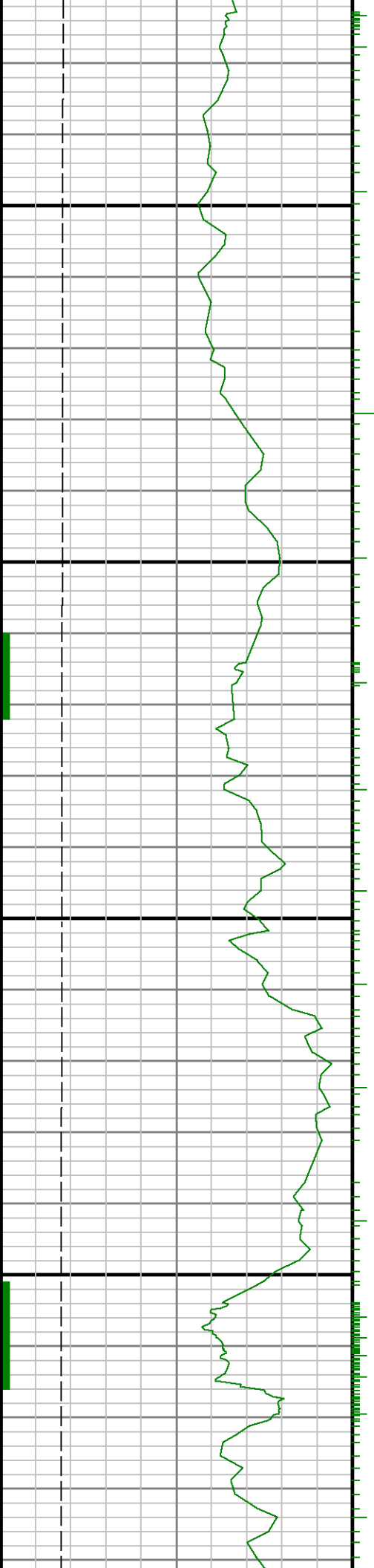






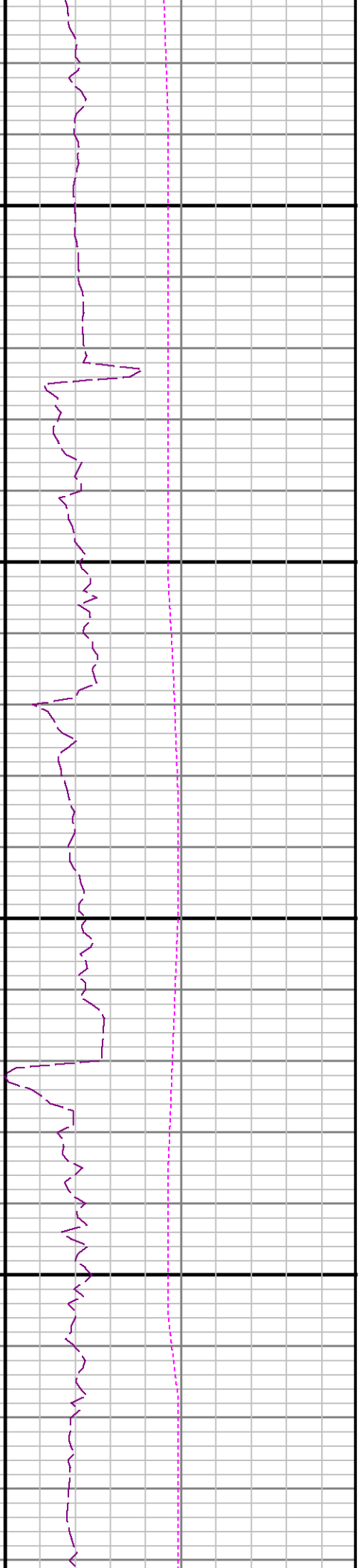
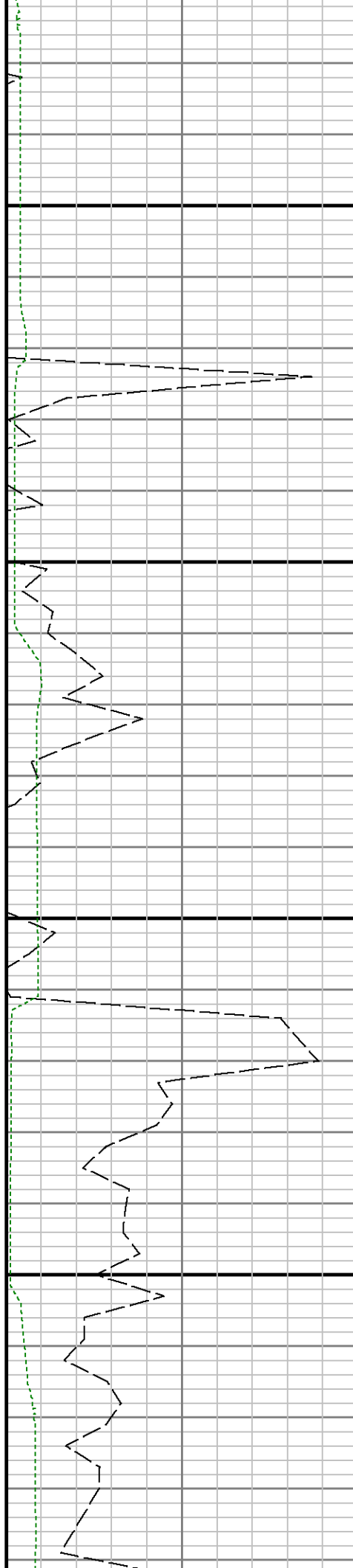


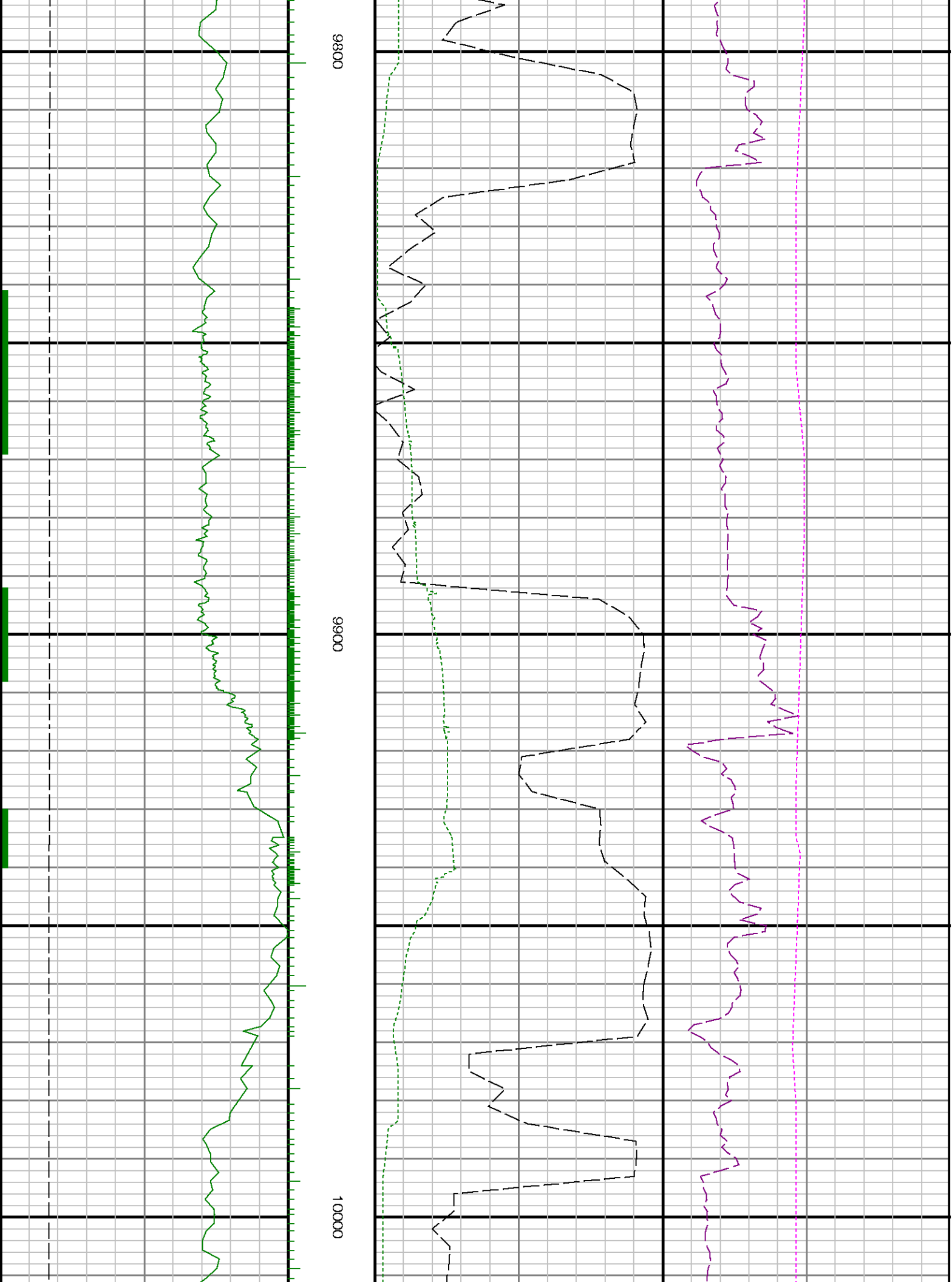


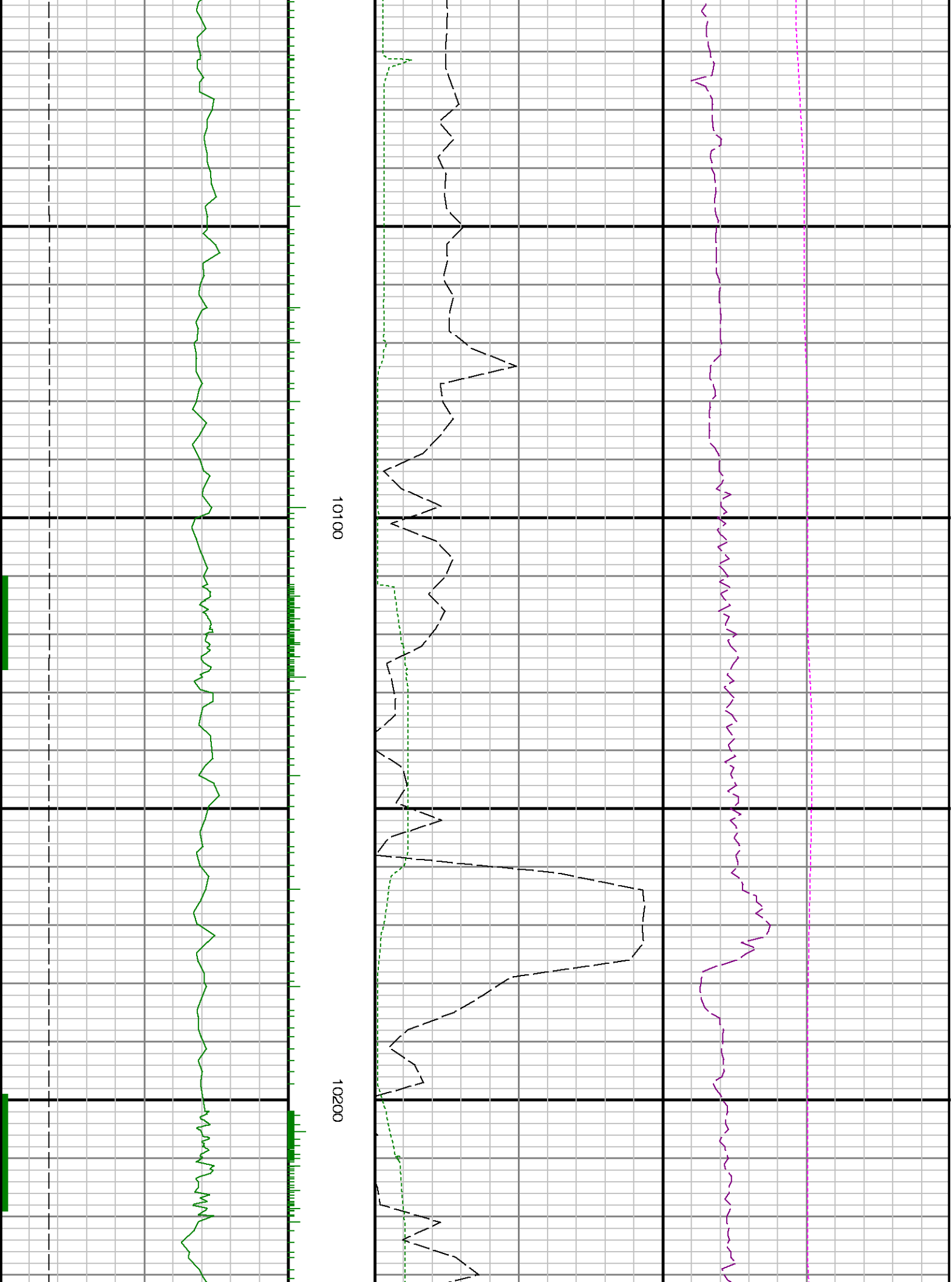


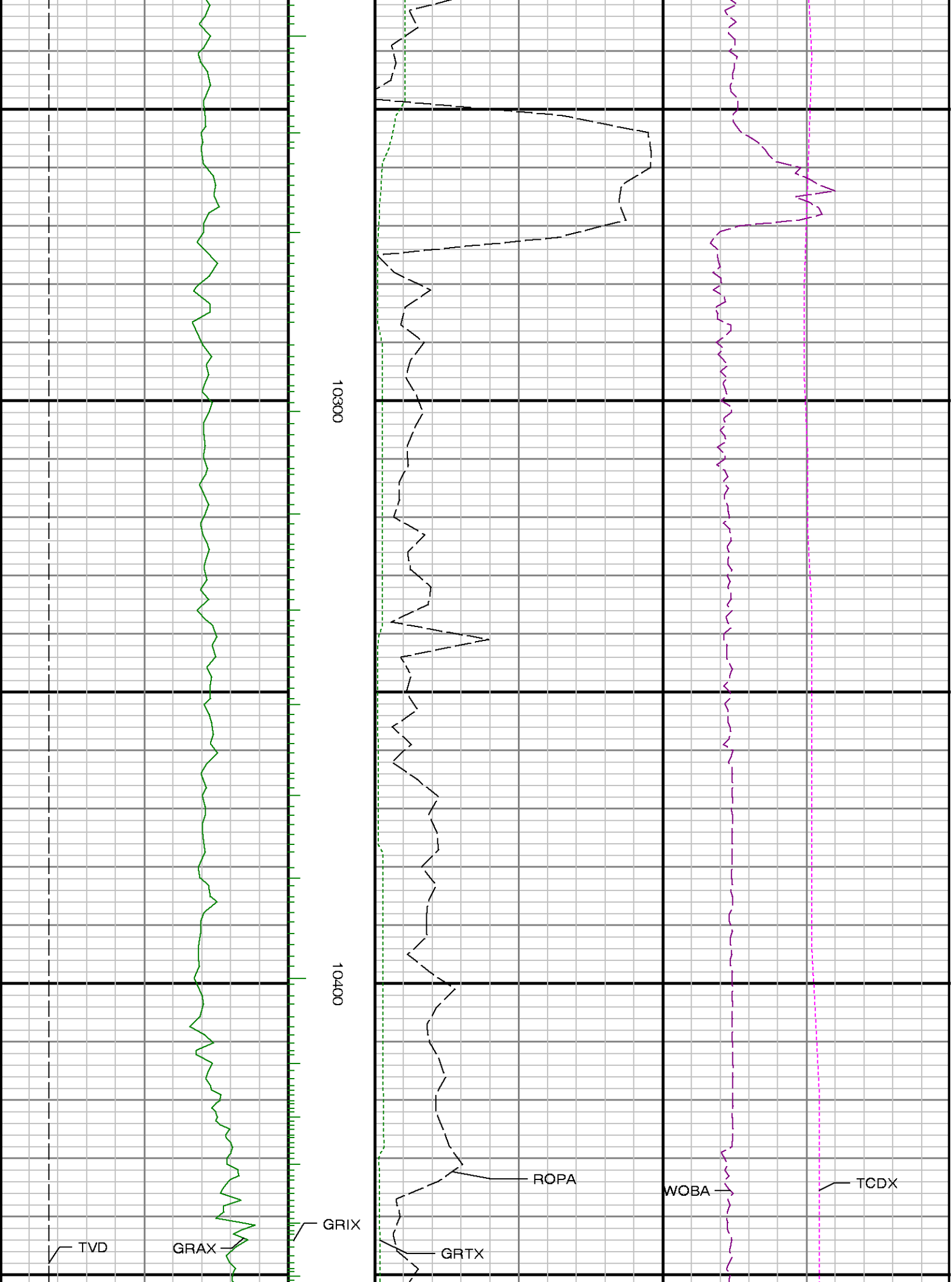
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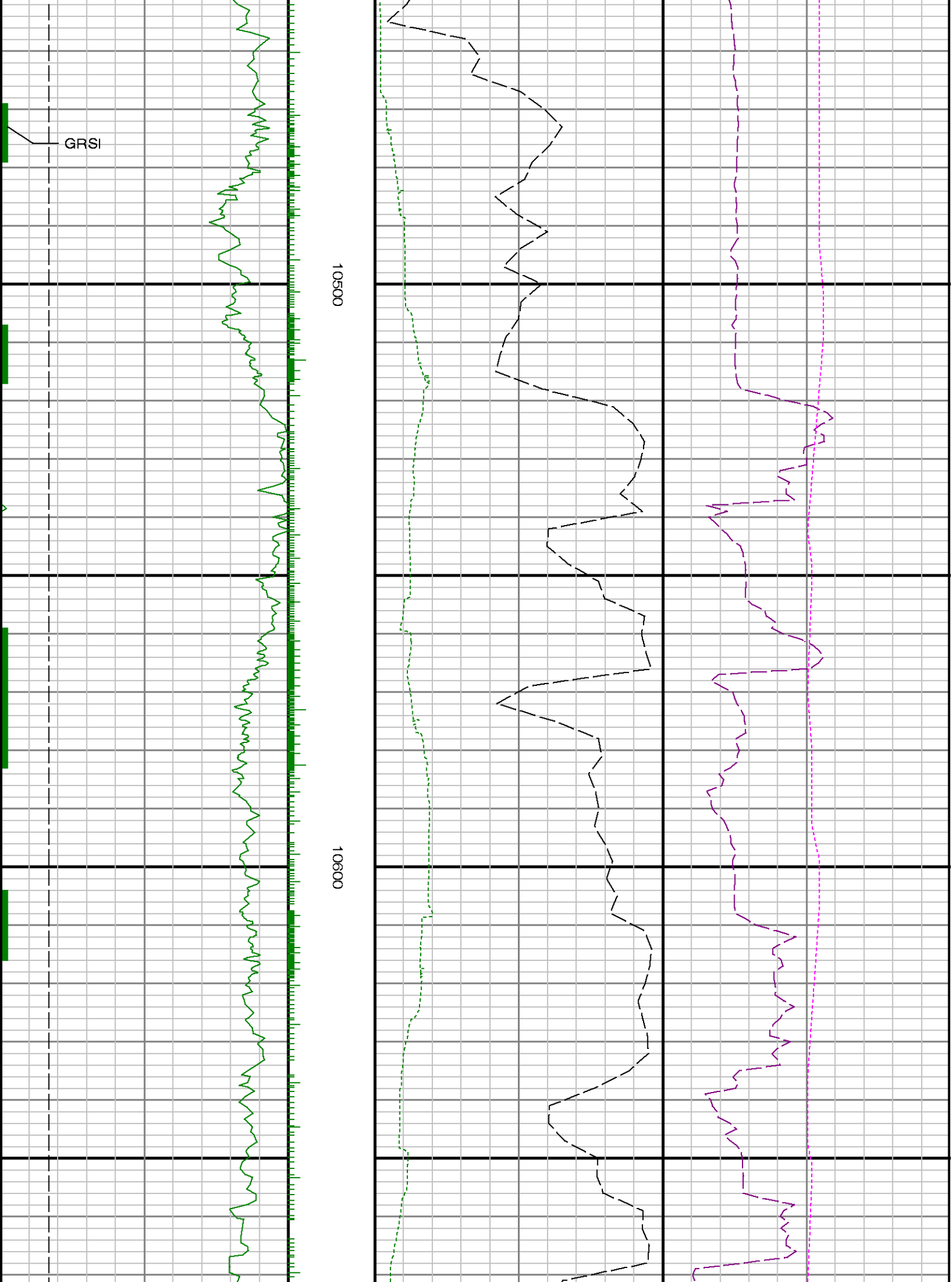
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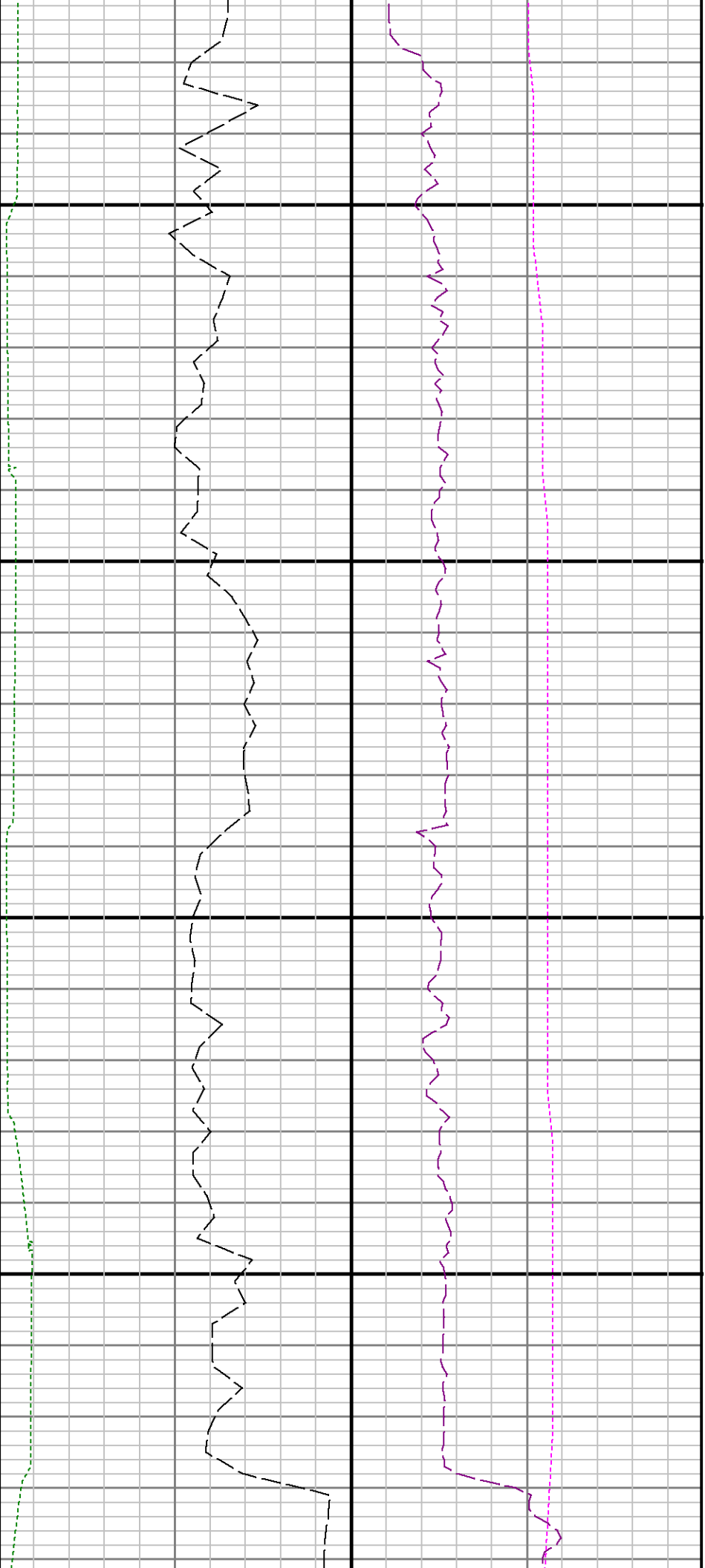






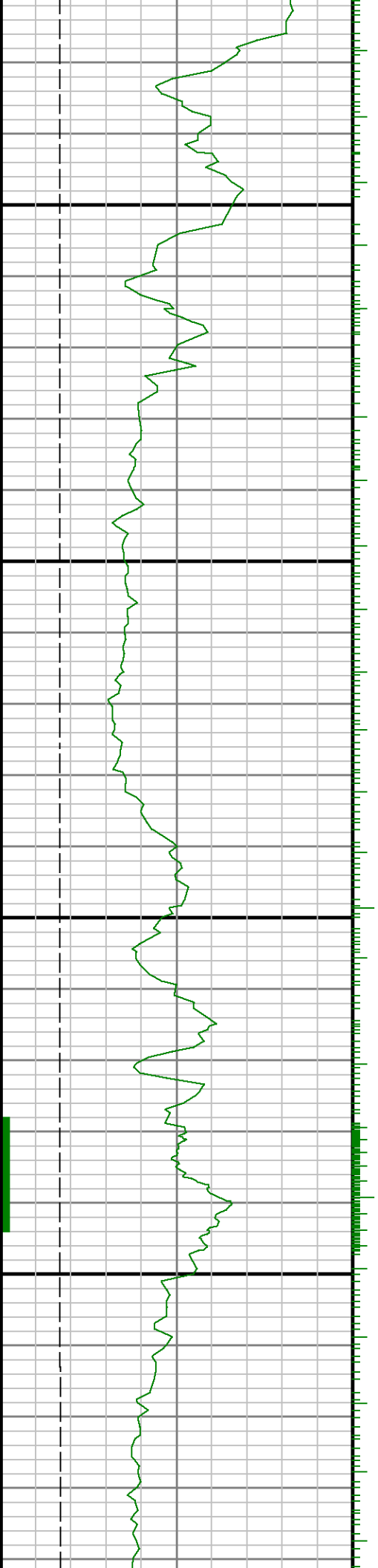


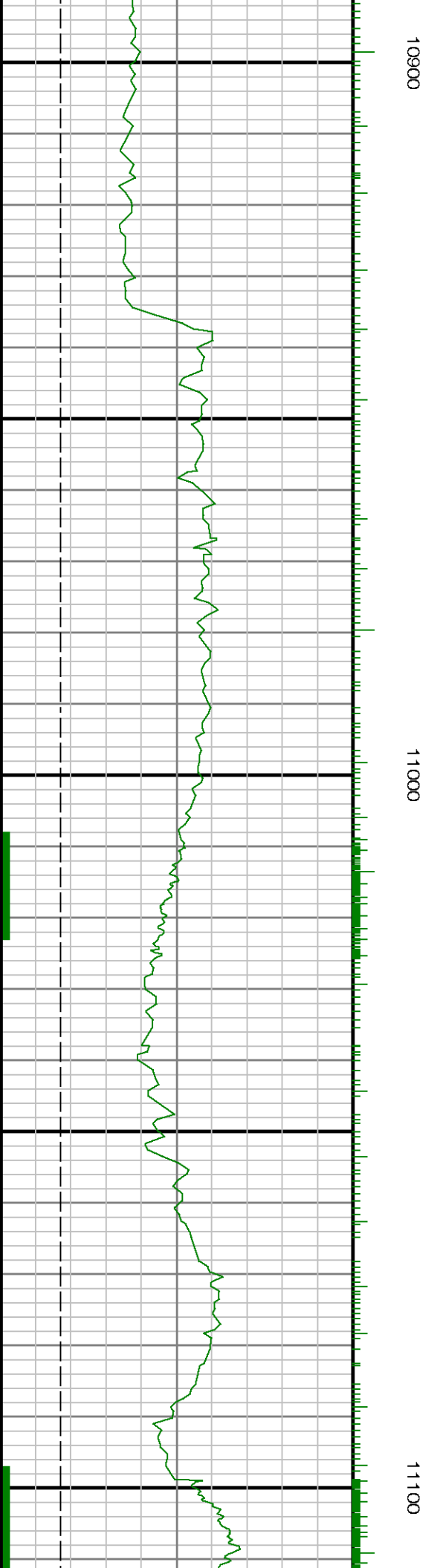
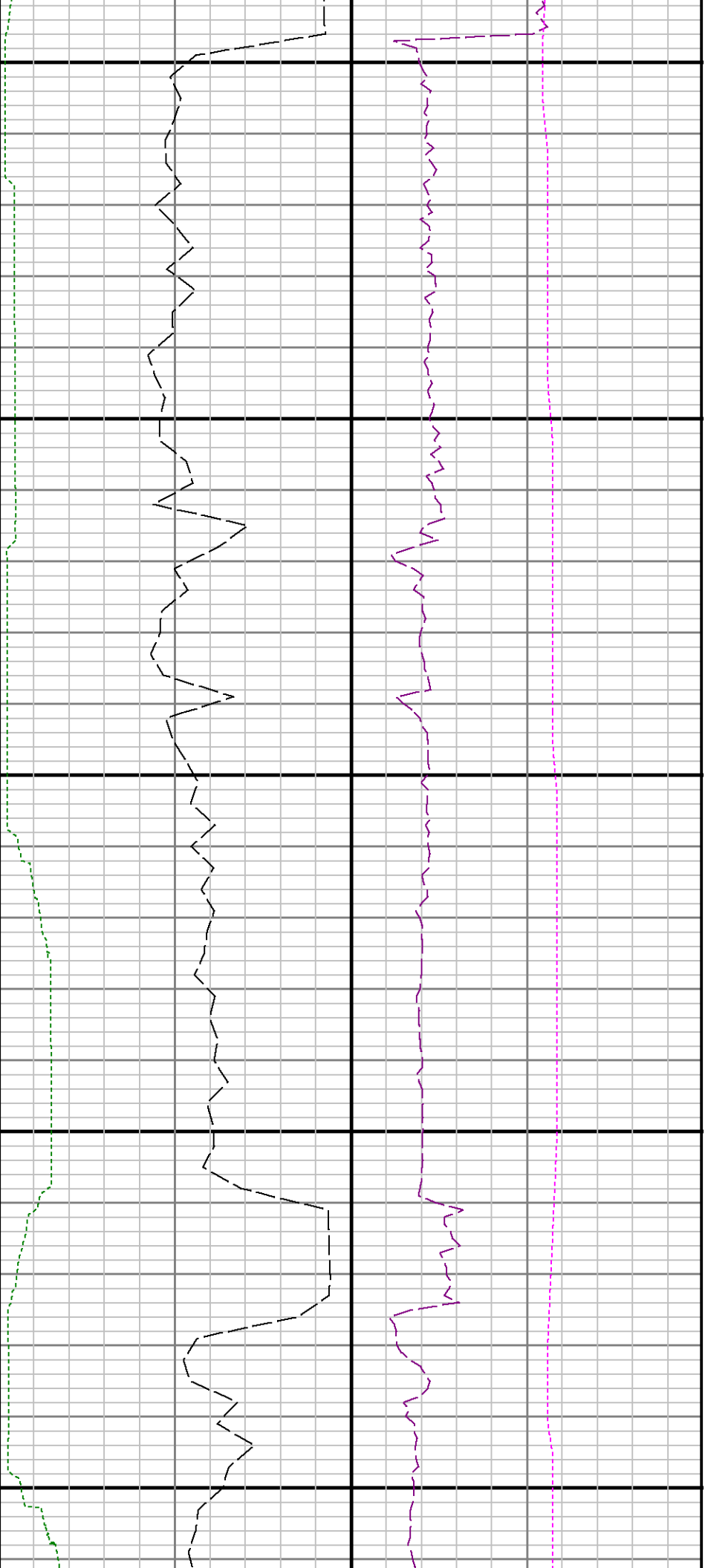


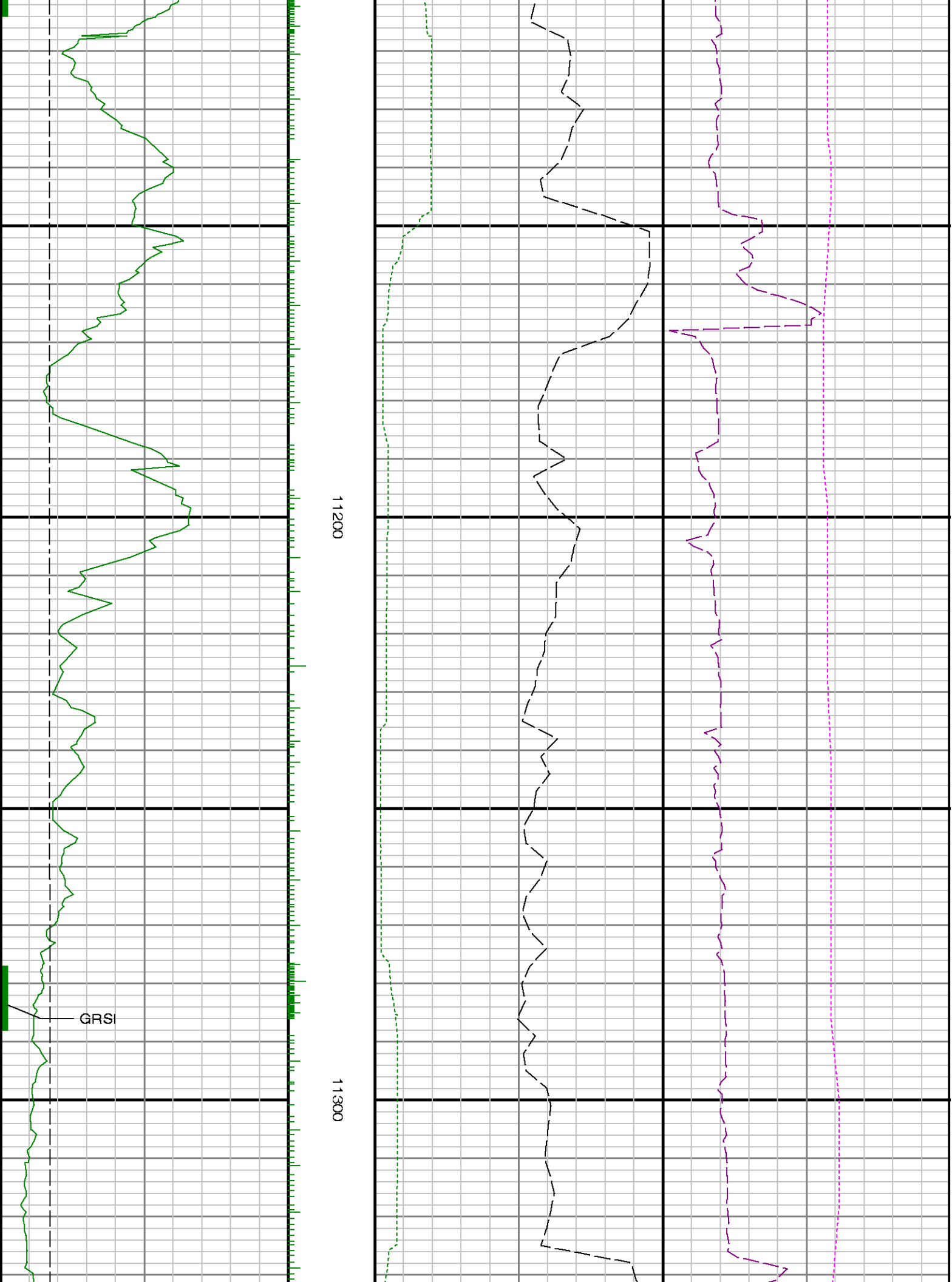


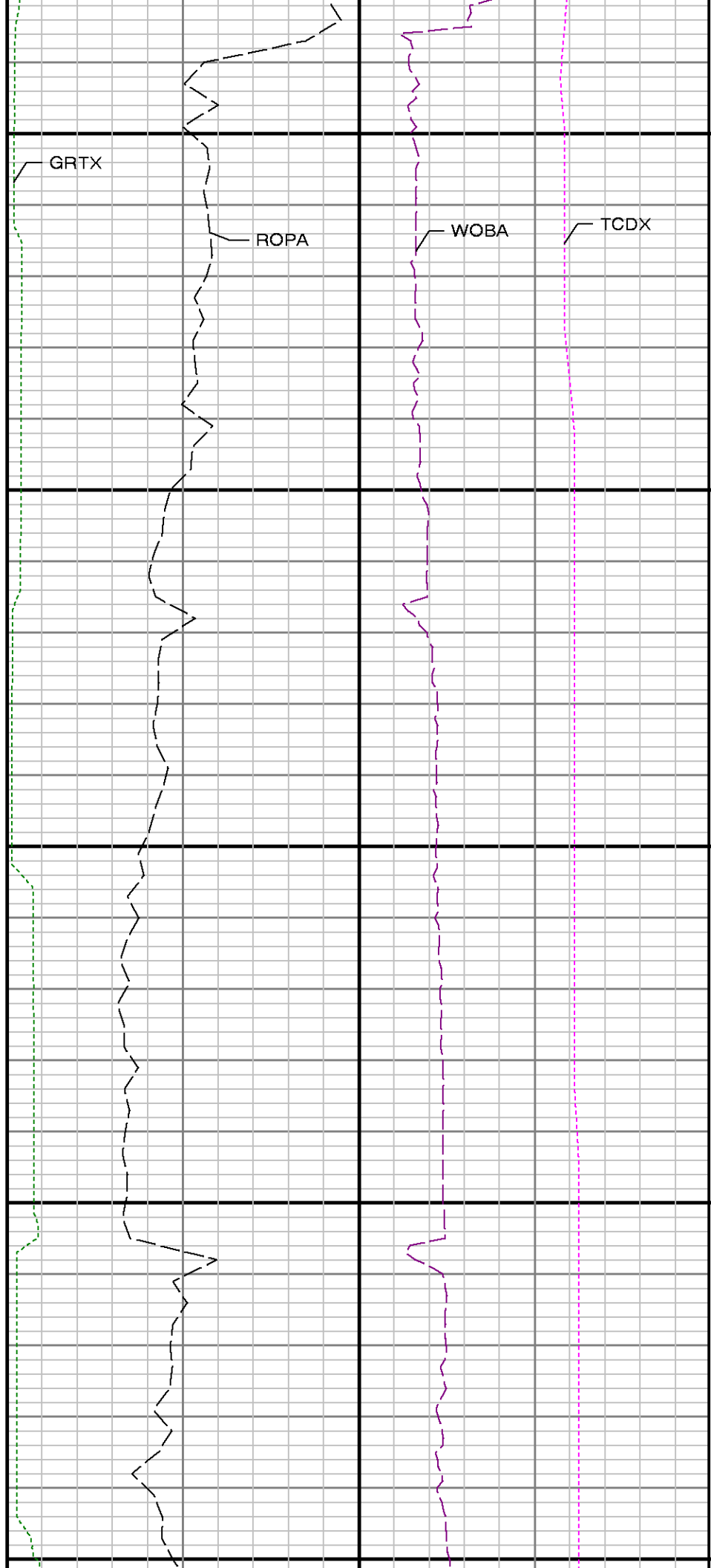
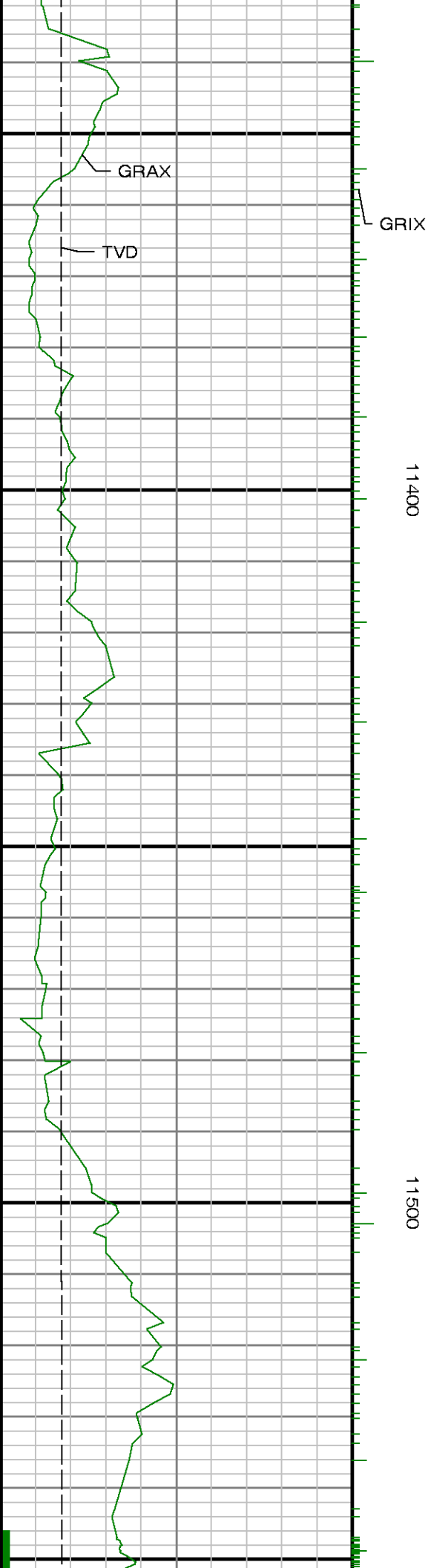
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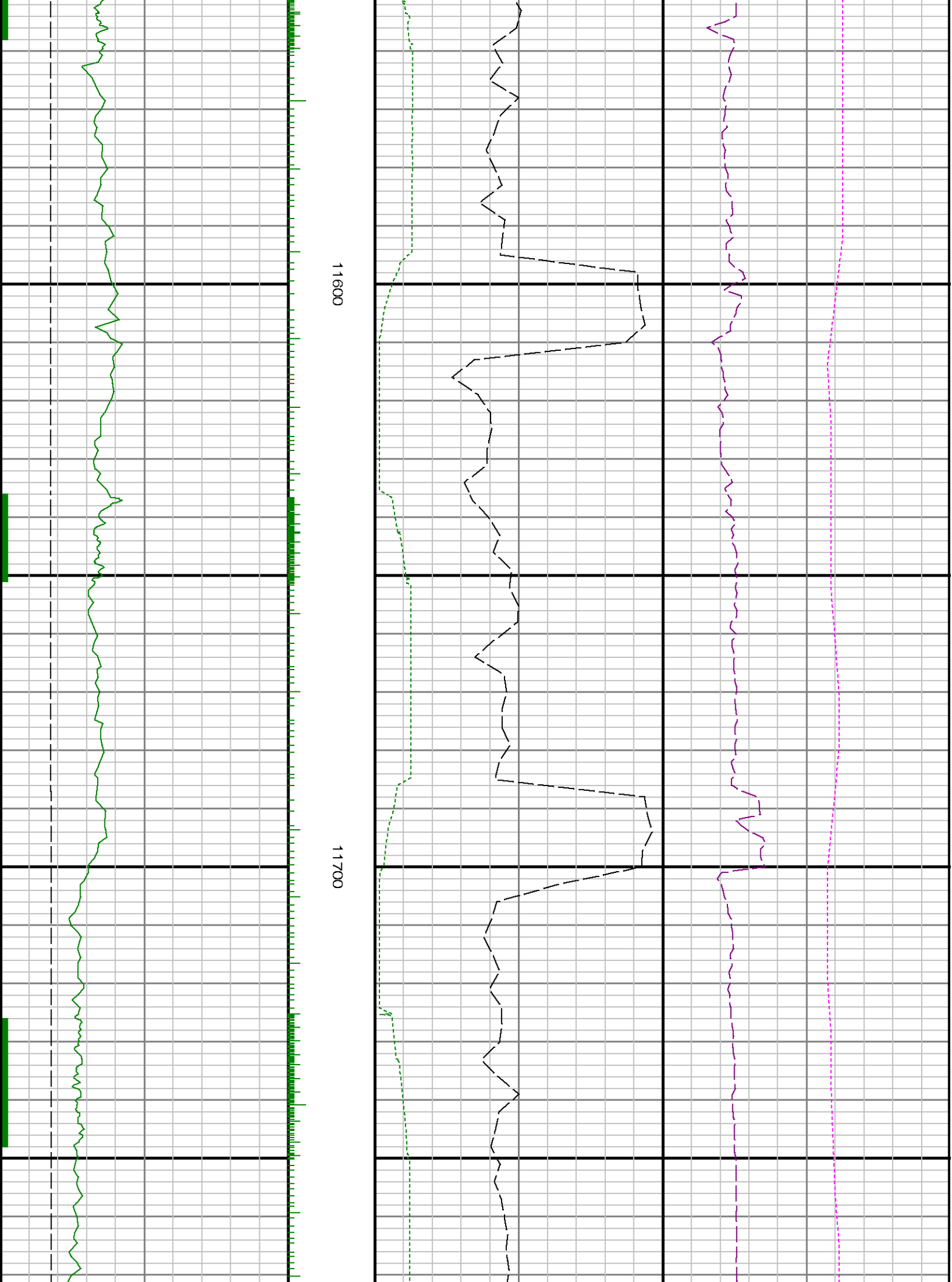
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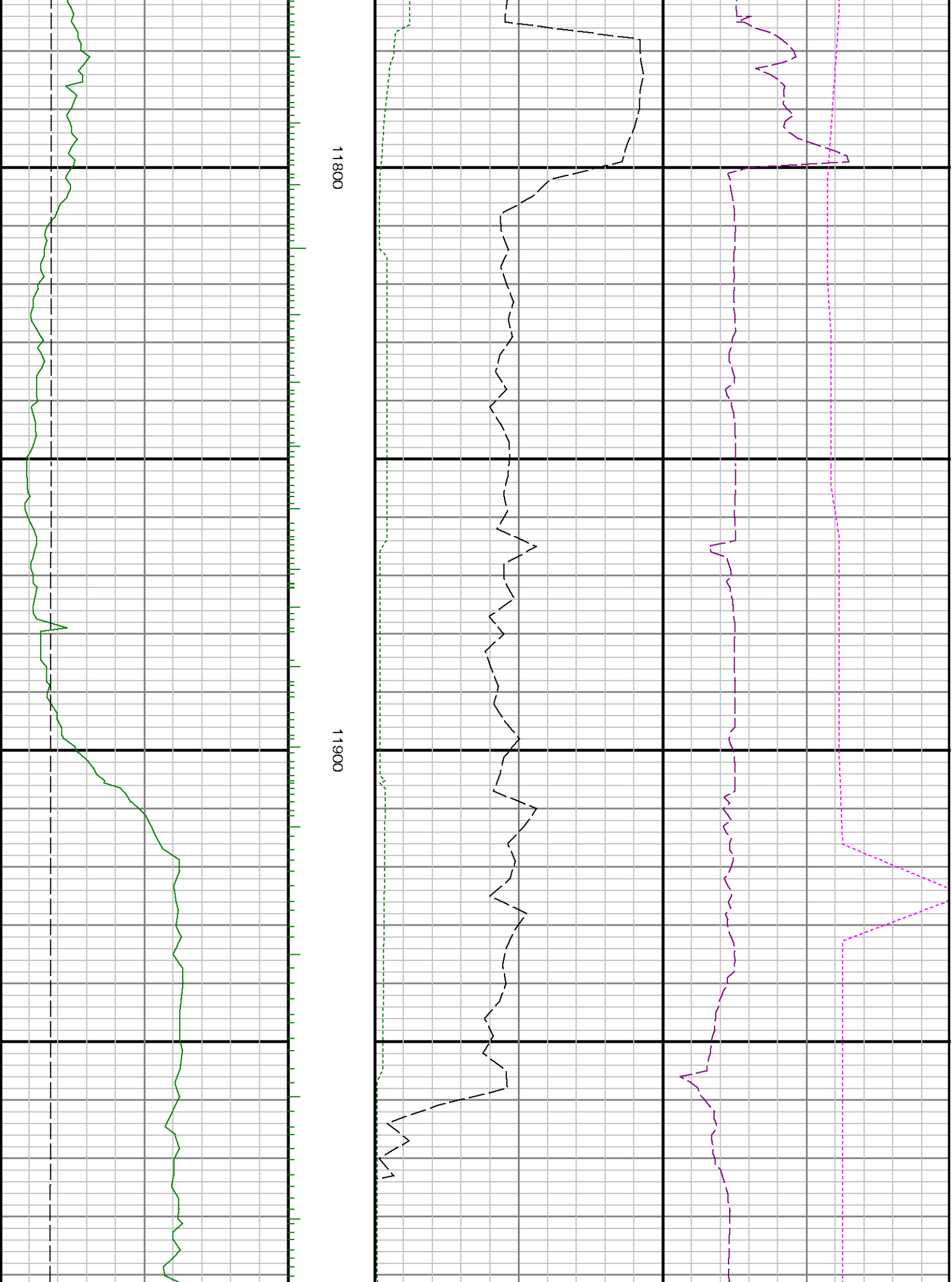


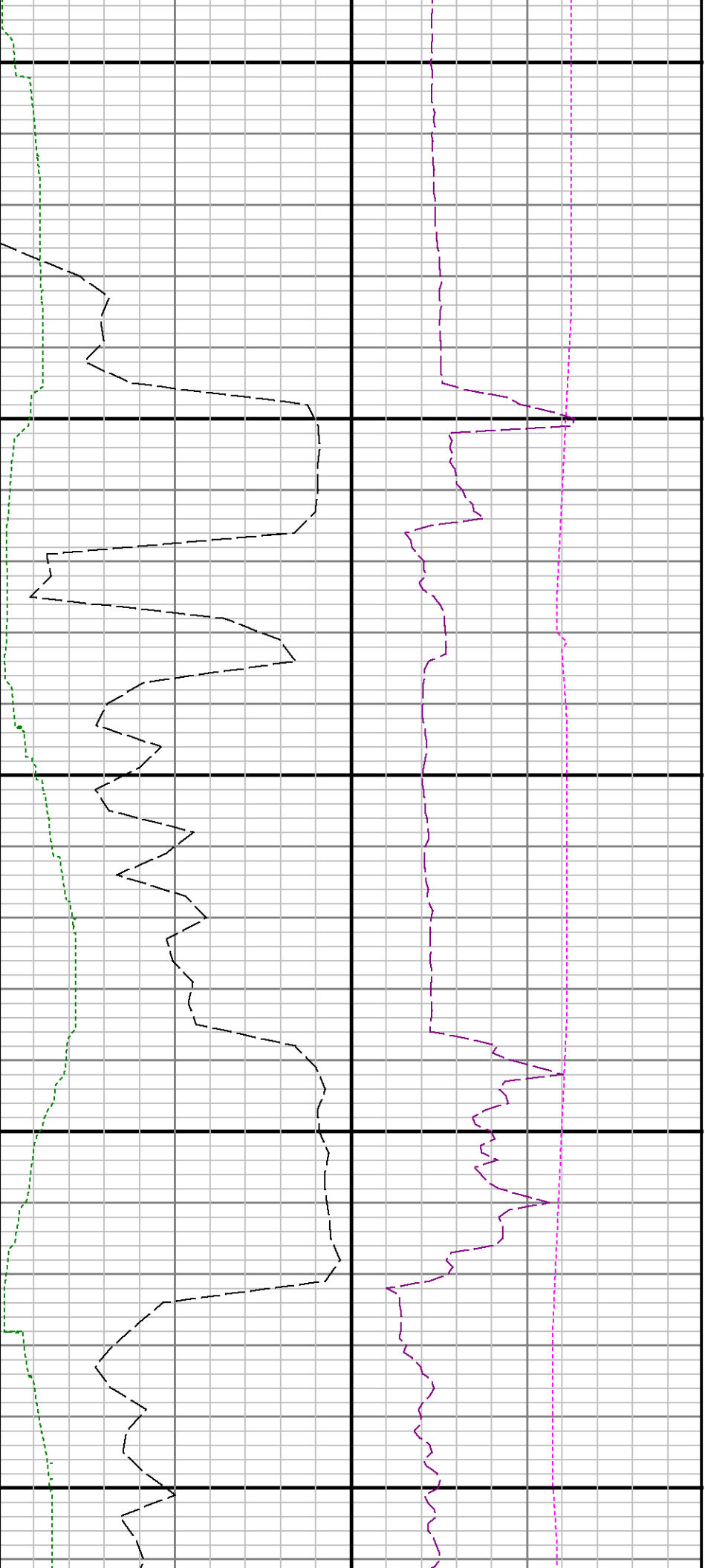












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