



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale: Company: Anadarko

1:240 Well: Vollmar 4N-11HZ

Measured Depth Field: Weld County (Kerr McGee)

County: Weld County State: Colorado

Status: Surface Location: Other Services:

Final Print

Latitude: 40° 8' 30.998" N

Longitude: 104° 51' 38.560" W

Directional VSS

API Number: 05-123-40536-00

SEC: 14 TWP: 2N RNG: 67W

Permanent Datum (P.D.): Ground Level Elevation: 4945.00 ft.

Rig Floor 16.00 ft. Above P.D.

Elevations: N/A

Log Measured From: Drillers Depth KB: 4961.00 ft. DF: 4945.00 ft. GL:

Interval Logged

Dates

Magnetic Field Reference

Top: 6900.0 ft. Date From: 02/Mar/15 Dip Angle: 66.89° Azi Reference North: True

Bottom: 13131.0 ft. Date To: 09/Mar/15 Total Mag to Reference

Spud Date: 02/Mar/15 Field Strength: 52701.6 nT North Correction: 8.58°

Borehole Record

Casing Record

Hole Size From To Size Weight From To

13.500 in. Surface 1225.0 ft. 9.625 in. 36.00 lb/ft. Surface 1215.0 ft.

8.750 in. 1225.0 ft. 7.000 in. 26.00 lb/ft. Surface 7785.0 ft.

6.125 in. 7795.0 ft. 13131.0 ft.

Mud Record

Deviation Record

Type From To Hole Size Interval Inc / Az (Start) Inc / Az (End)

Water Based Mud 1225.0 ft. 13131.0 ft. 13.500 in. 1225.0 ft. 0.0° / 122.4° 0.3° / 227.4°

8.750 in. 6570.0 ft. 0.1° / 266.6° 87.5° / 359.3°

6.125 in. 5336.0 ft. 91.9° / 0.7° 88.8° / 3.5°

Acquisition System Software Version Other

Advantage 2.20U4 Rig: Xtreme 6 / Anadarko

PATS 6.4.1.34 Job No: 7046592 / D&E District / Unit: RMD

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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	Bottom	From	To	Start		End		
1	1	1	8.750	PDC	6.000	Steerable	6900.0	7224.0	1225.0	7265.0	02/Mar/2015	09:00	04/Mar/2015	04:30	30.1
2	2	2	8.750	PDC	6.000	Steerable	7225.0	7434.0	7266.0	7475.0	04/Mar/2015	07:00	05/Mar/2015	01:15	5.7
3	3	3	8.750	Tri-Cone	6.000	Steerable	7435.0	7753.0	7476.0	7794.0	05/Mar/2015	02:00	06/Mar/2015	07:45	17.4
4	4	3	6.125	PDC	6.000	Steerable	7754.0	13084.0	7794.0	13131.0	07/Mar/2015	05:00	09/Mar/2015	03:00	41

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Donald Delay	02/Mar/2015	09/Mar/2015	Ryan Kielian	02/Mar/2015	09/Mar/2015			

services (VSS, Directional, Gamma Ray) from 6900 to 7263 feet MD (6737.20 to 7093.12 feet TVD) behind an 8 3/4 inch bit and steerable assembly.

2.) Baker Hughes LWD run 2 utilized 6 3/4 inch NaviGamma Services (VSS, Directional, Gamma Ray) from 7263 to 7475 feet MD (7093.12 to 7275.84 feet TVD) behind an 8 3/4 inch bit and steerable assembly.

3.) Baker Hughes LWD run 3 utilized 6 3/4 inch NaviGamma Services (VSS, Directional, Gamma Ray) from 7475 to 7795 feet MD (7275.84 to 7391.47 feet TVD) behind an 8 3/4 inch bit and steerable assembly.

4.) Baker Hughes LWD run 4 utilized 4 3/4 inch NaviGamma Services (VSS, Directional, Gamma Ray) from 7795 to 13131 feet MD (7391.47 to 7316 feet TVD) behind a 6 1/8 inch bit and steerable assembly.

5.) 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.

6.) Depth measurements 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.

Remarks

Number	Measured Depth (ft)	Hole Section (in.)	LWD Run No.	Remark
1	7245	8.750	2	The Interval from 7220 to 7265 feet MD was logged up to 24 hours after being drilled due to a trip out of the hole to replace the motor.
2	7460	8.750	3	The interval from 7440 to 7475 feet MD was logged up to 24 hours after being drilled due to a trip out of the hole to replace the motor.
3	7780	8.750	4	The interval from 7760 to 7795 feet MD was logged up to 30 hours after being drilled due to casing operations.
4	13084	6.125	4	The interval from 13084 to 13131 feet MD does not contain GRAX, GRIX, or GRTX due to the bit to sensor offset.

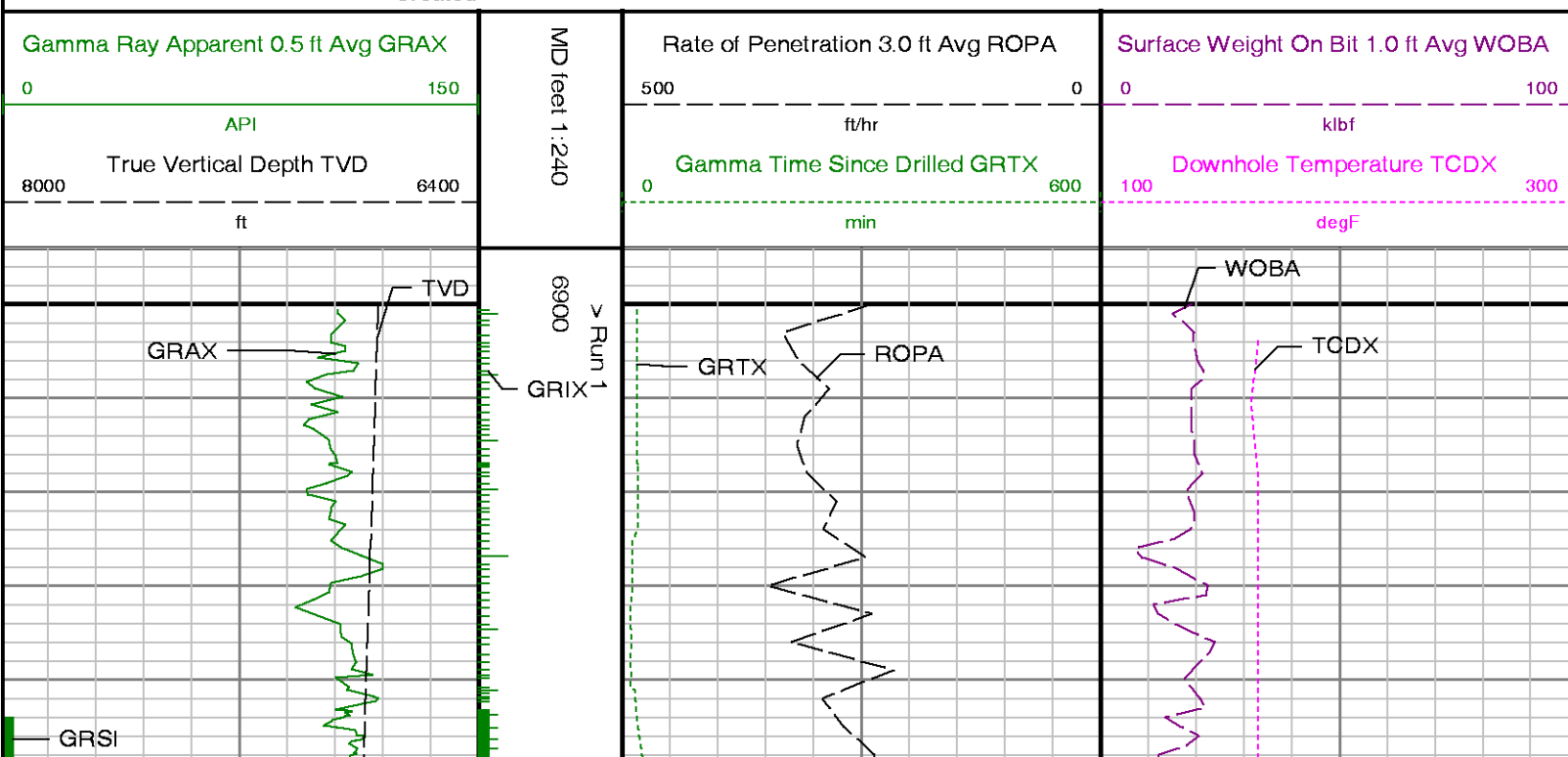


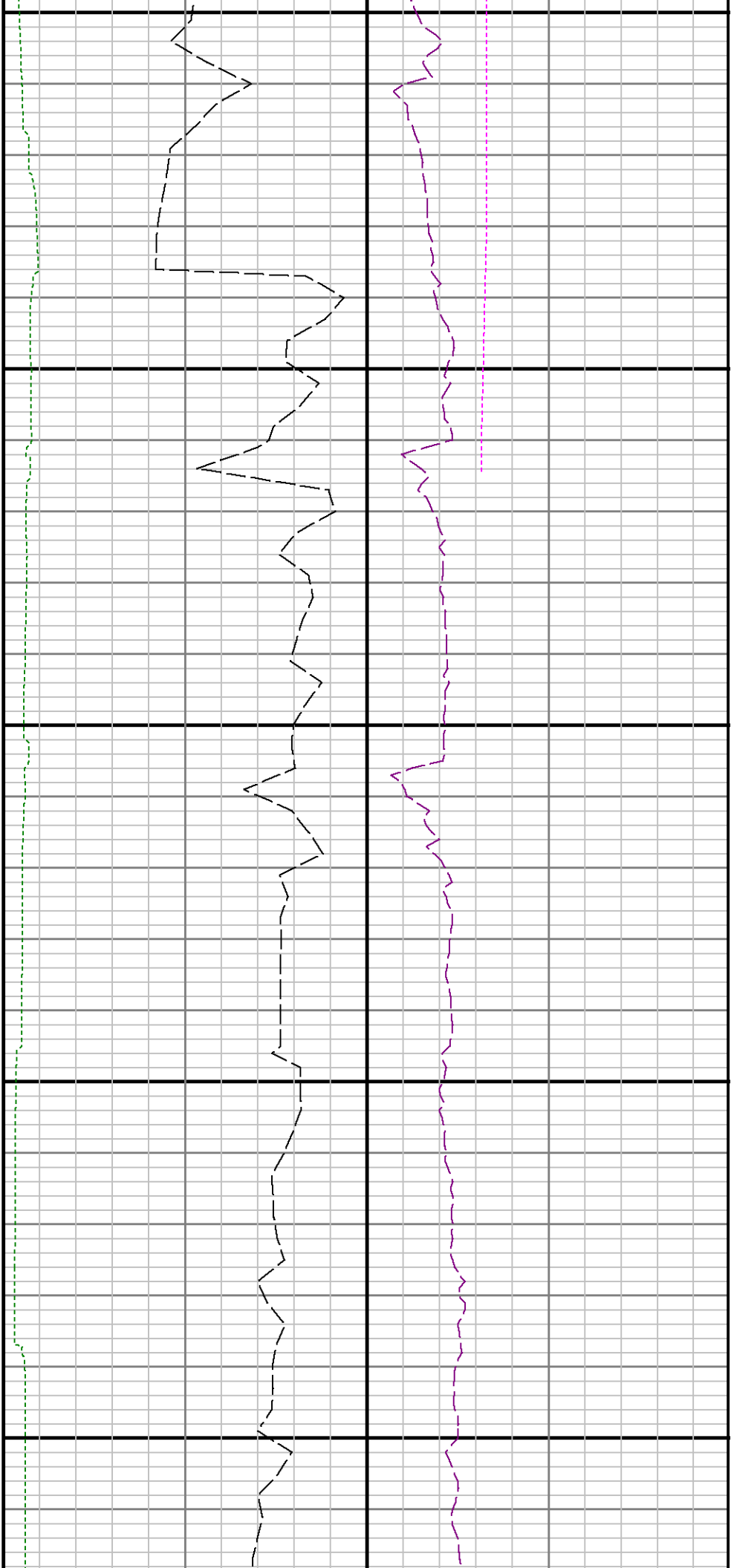
Company : Anadarko

Well : Vollmar 4N-11HZ

Interval : 6894.00 - 13132.00 feet

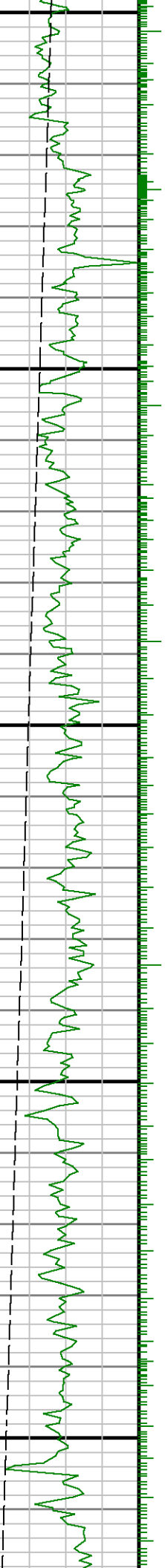
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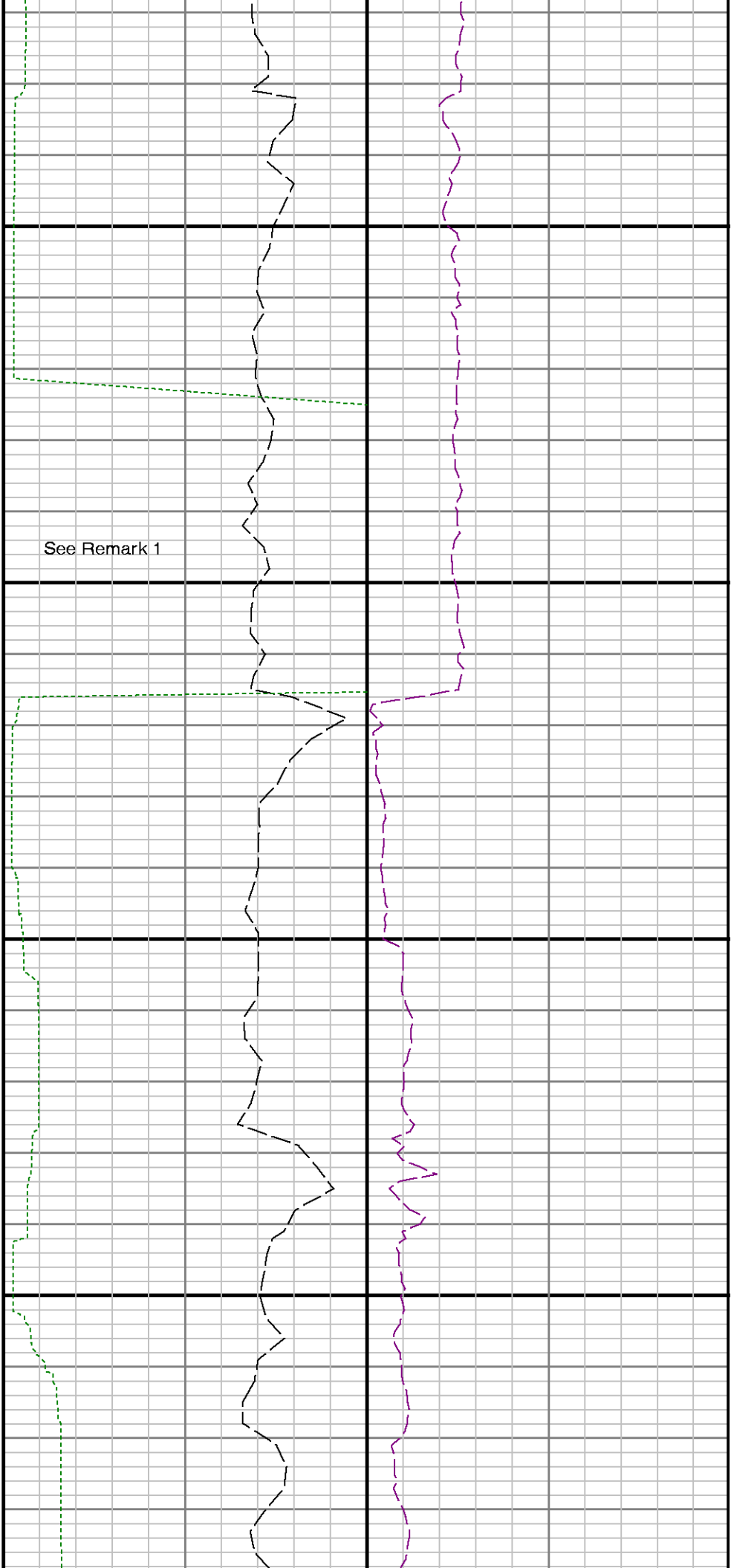




7000

7100

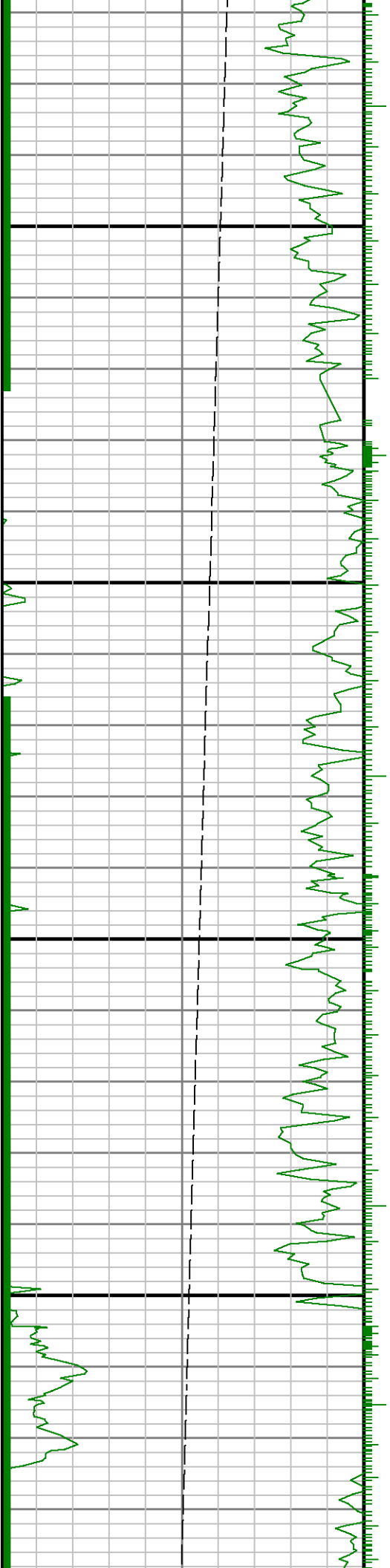


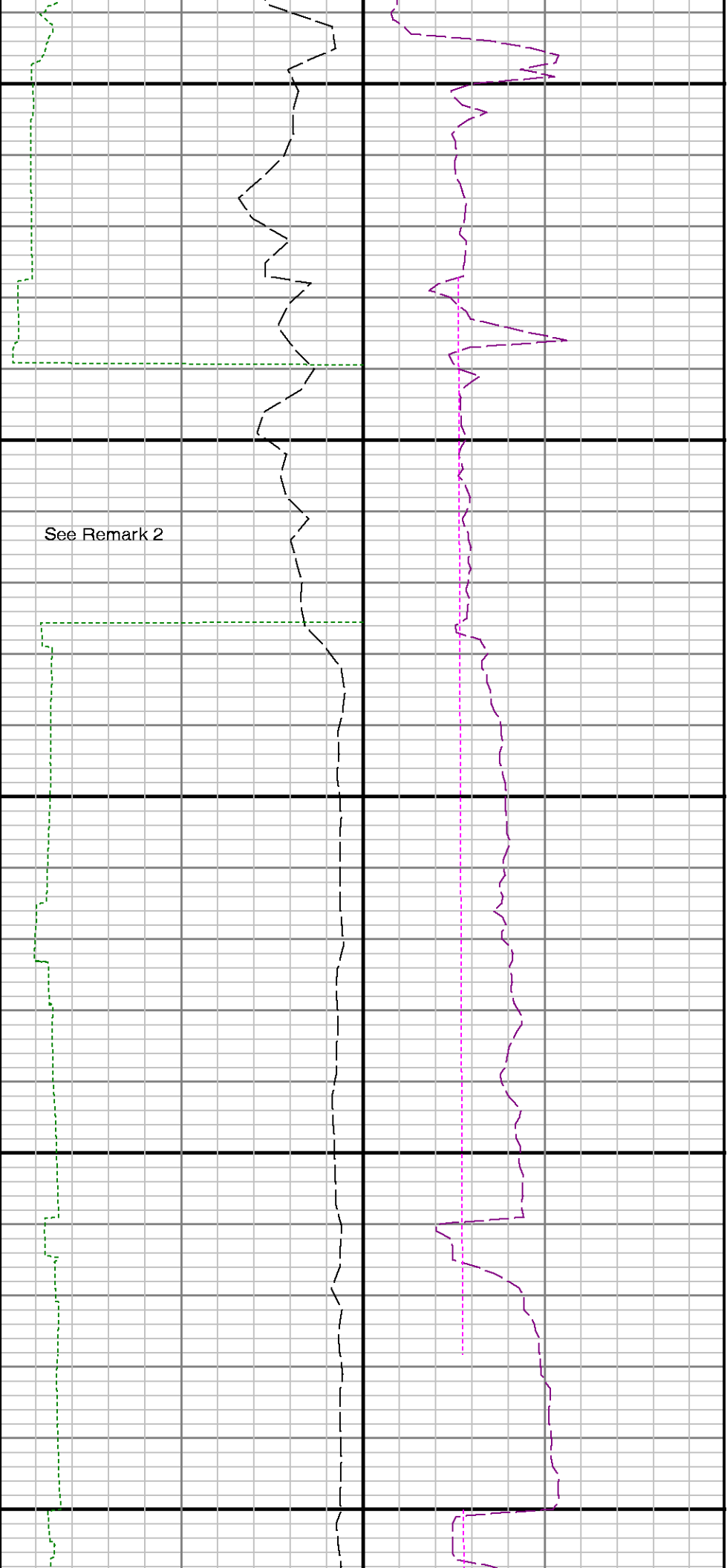


7200

Run 1 ↔ Run 2

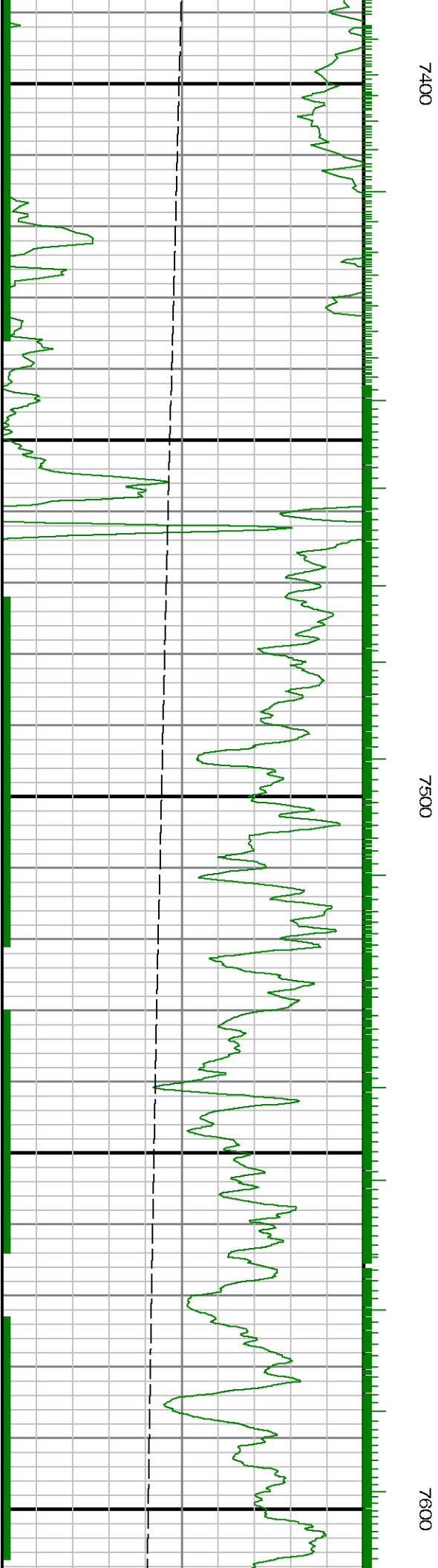
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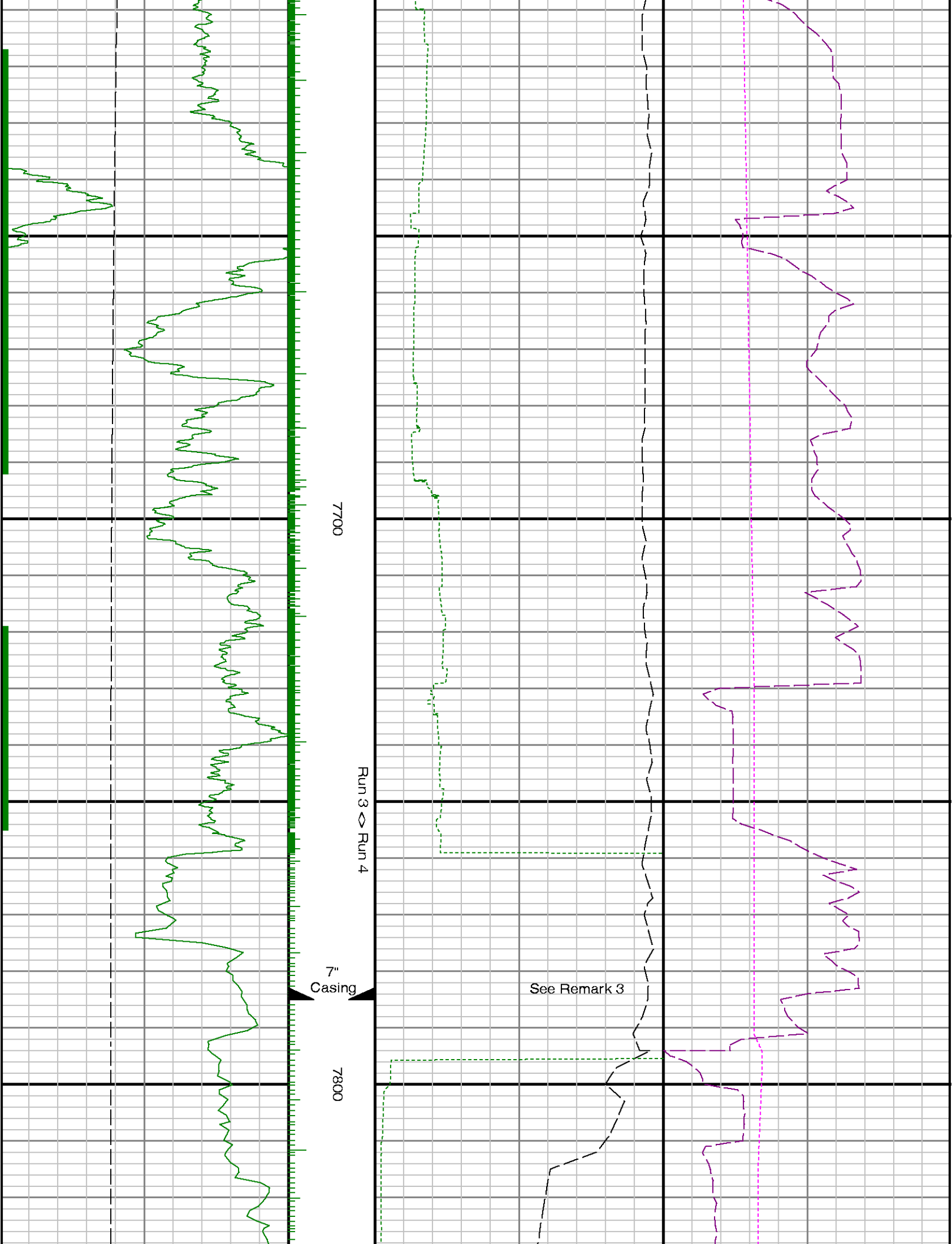


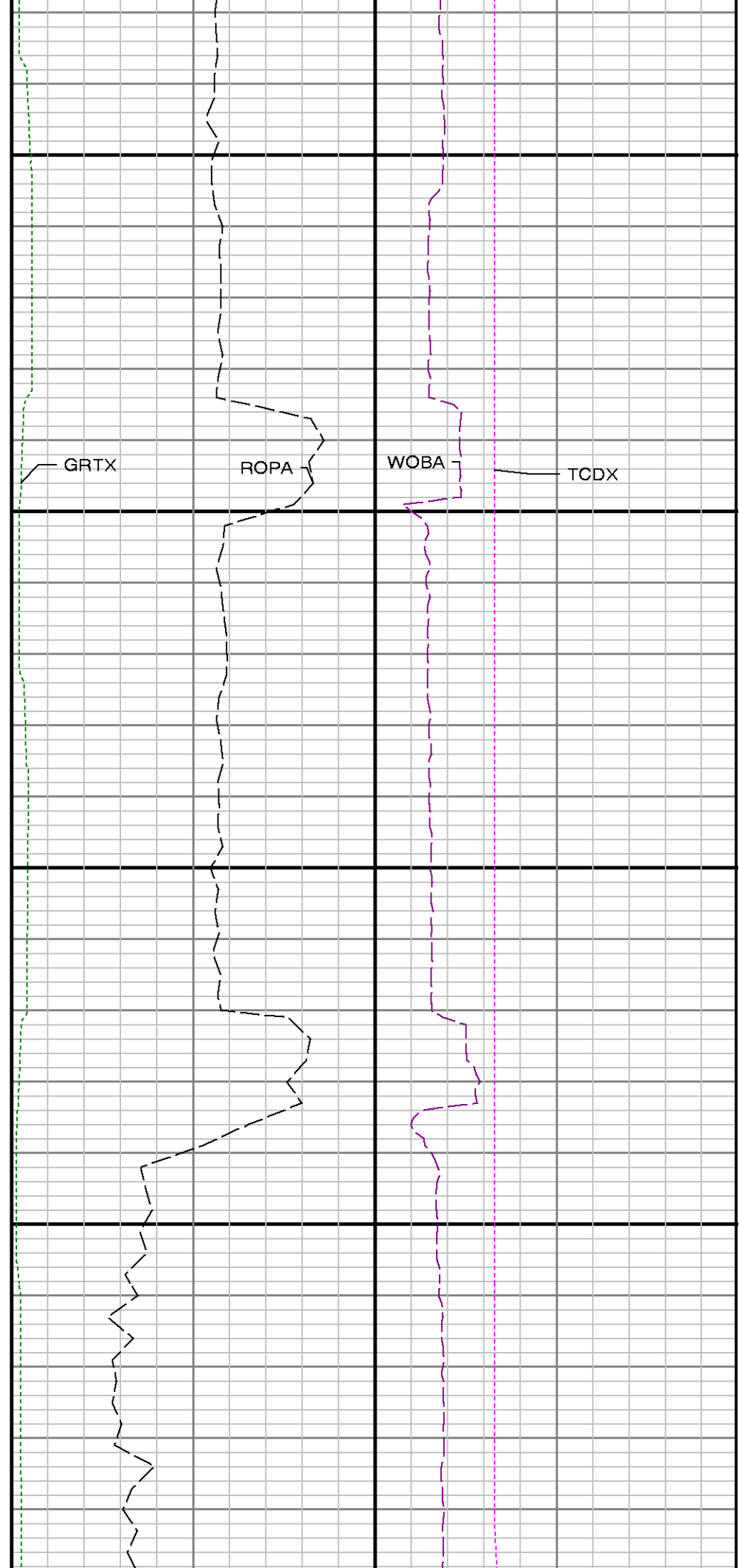
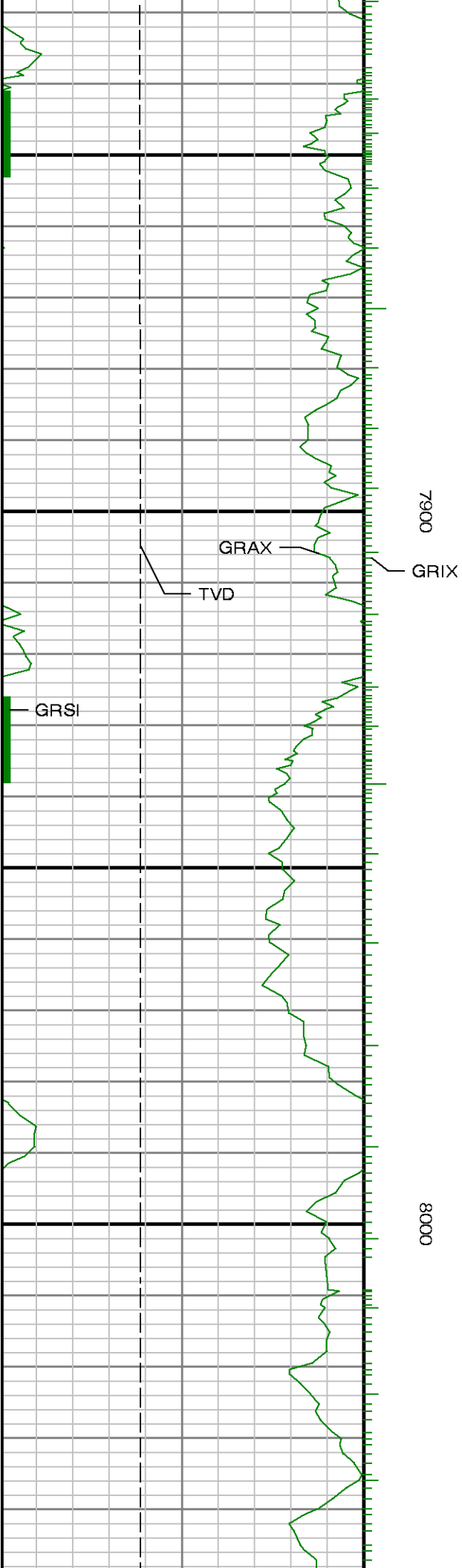


See Remark 2

Run 2 \diamond Run 3



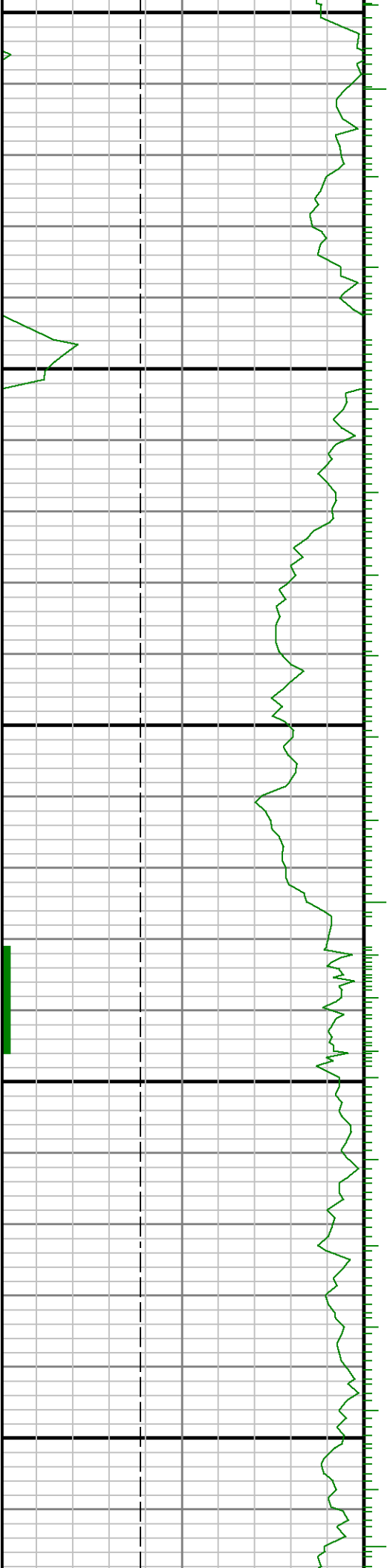


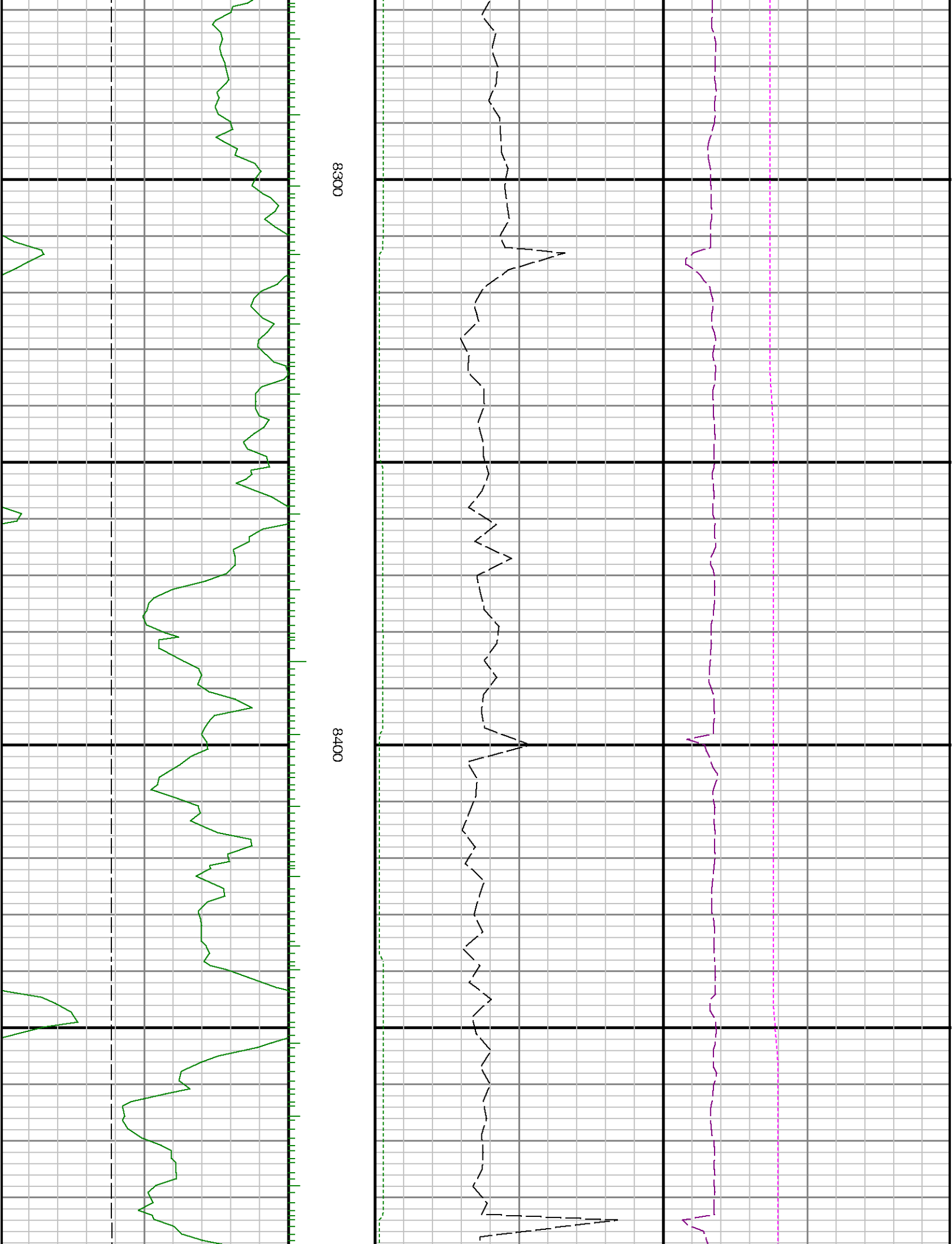


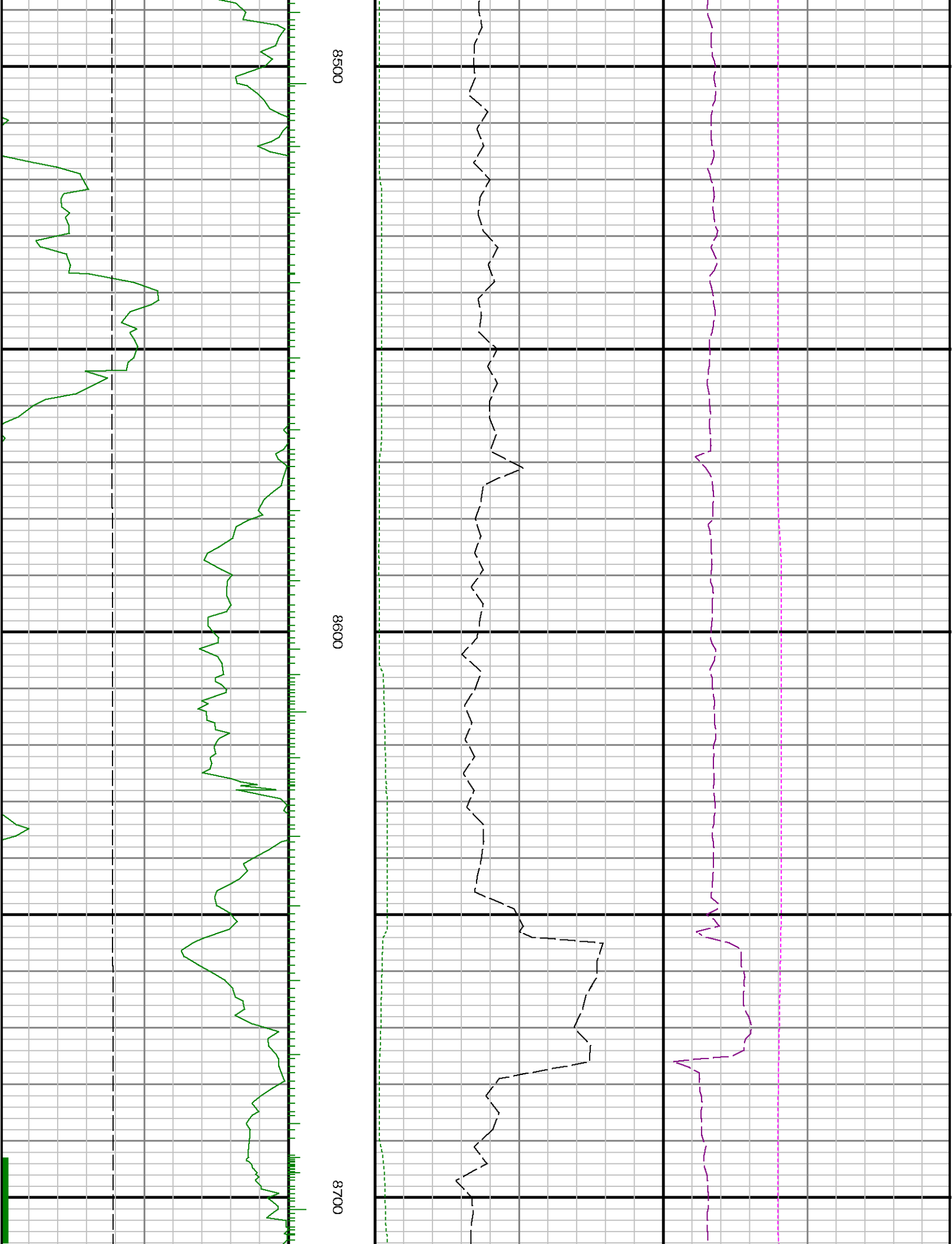


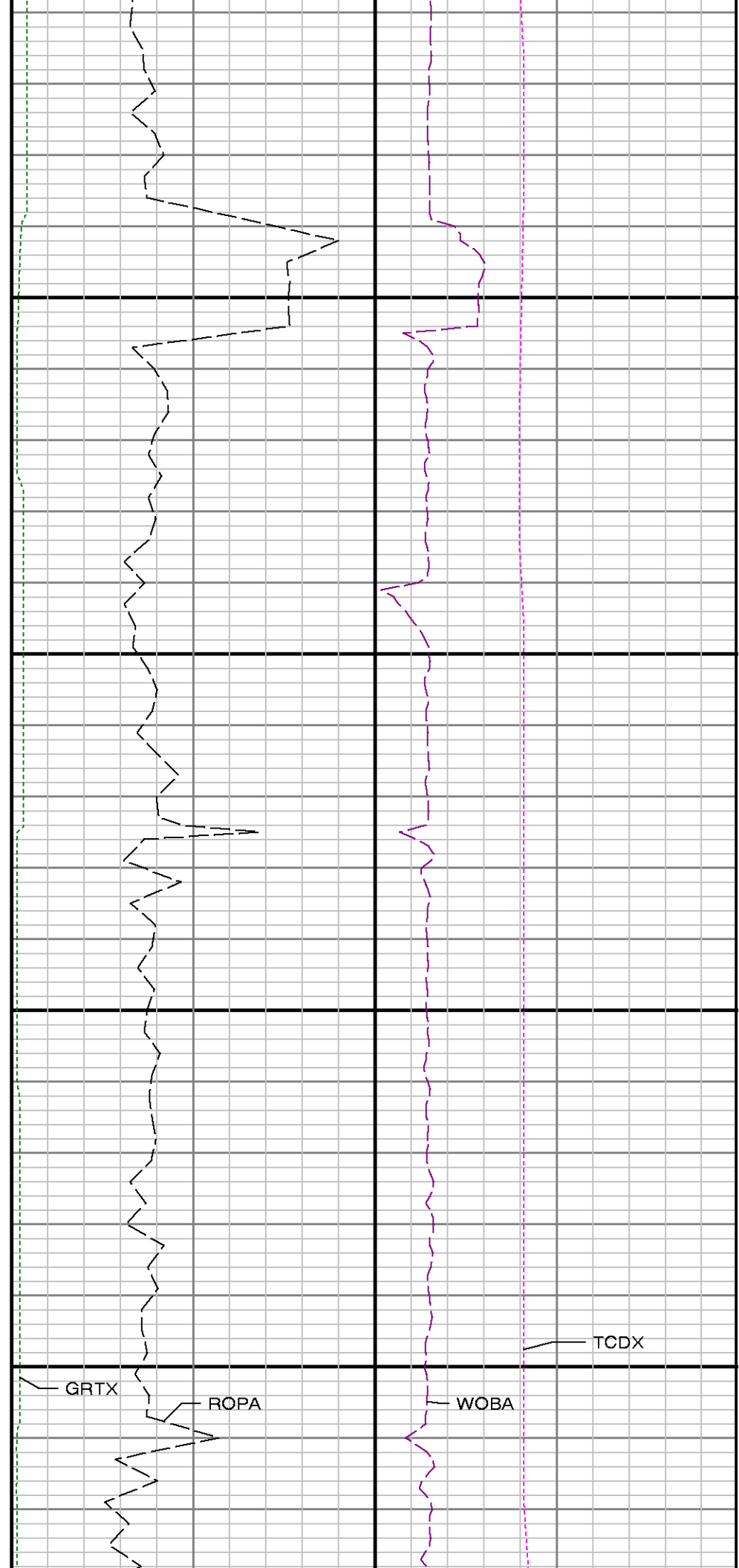
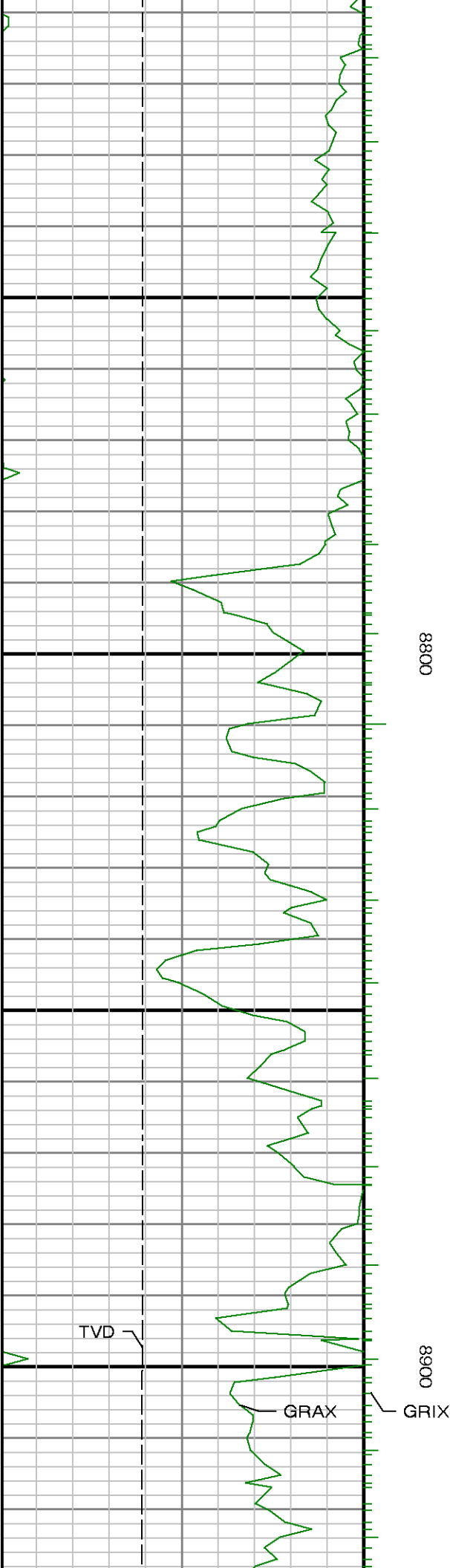
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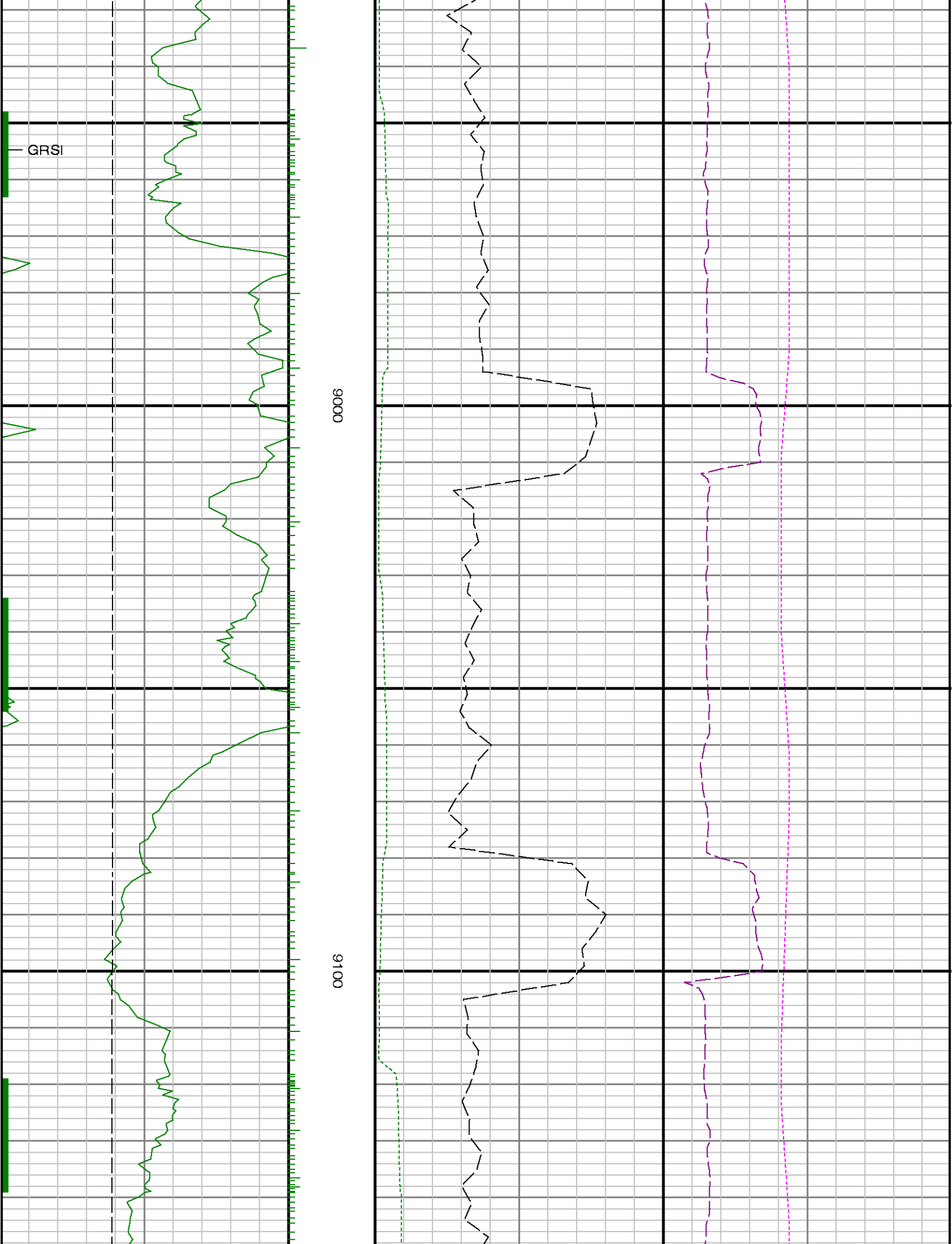
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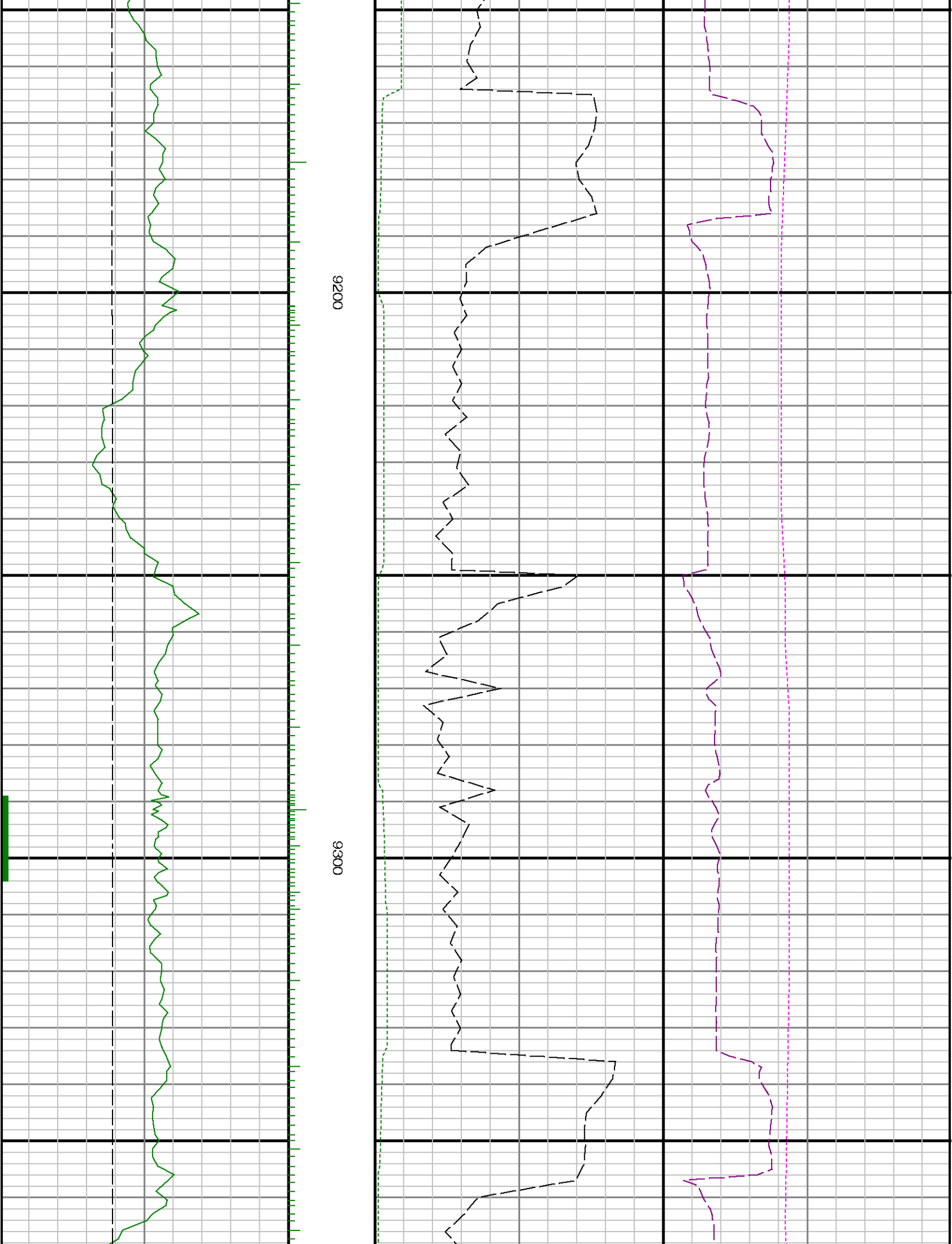


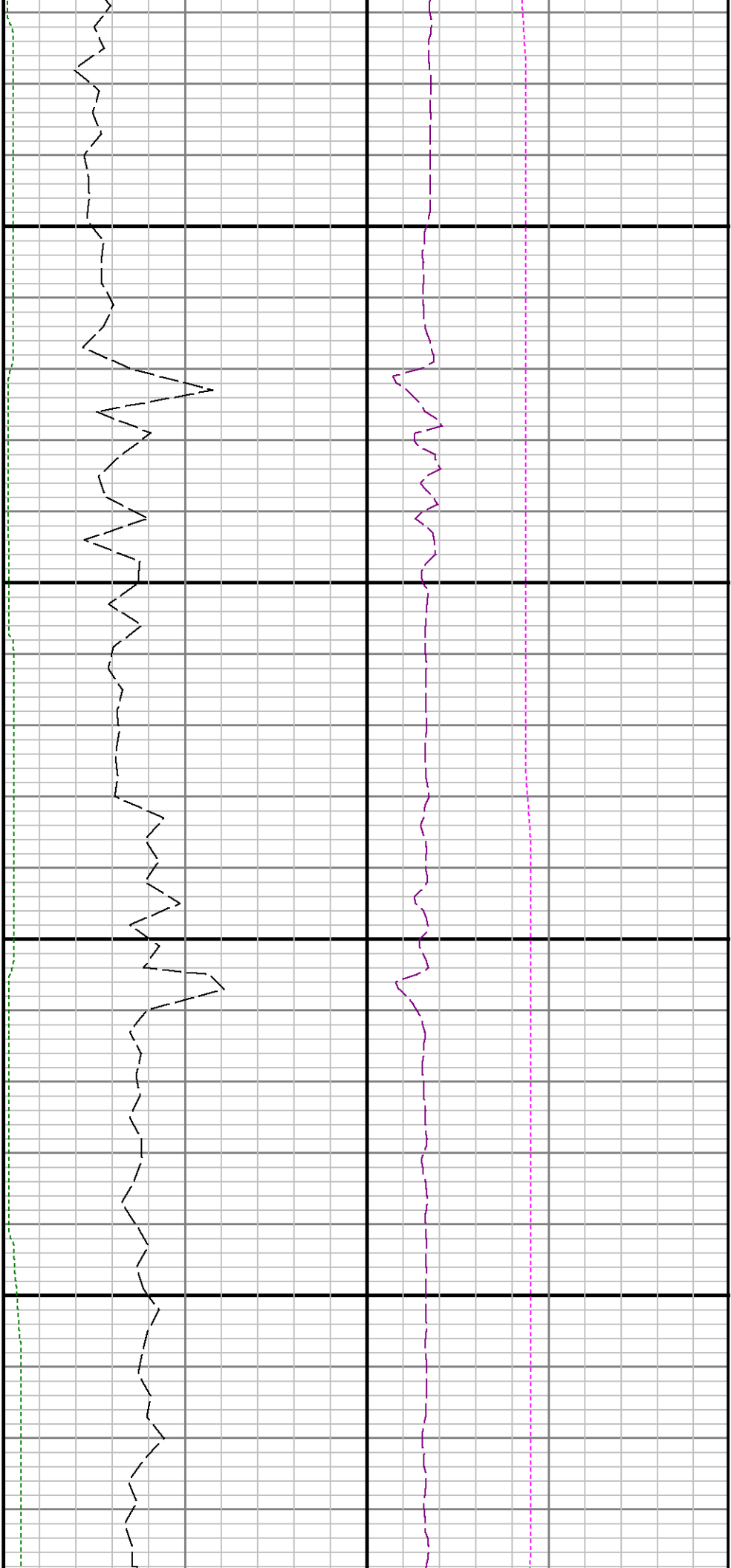






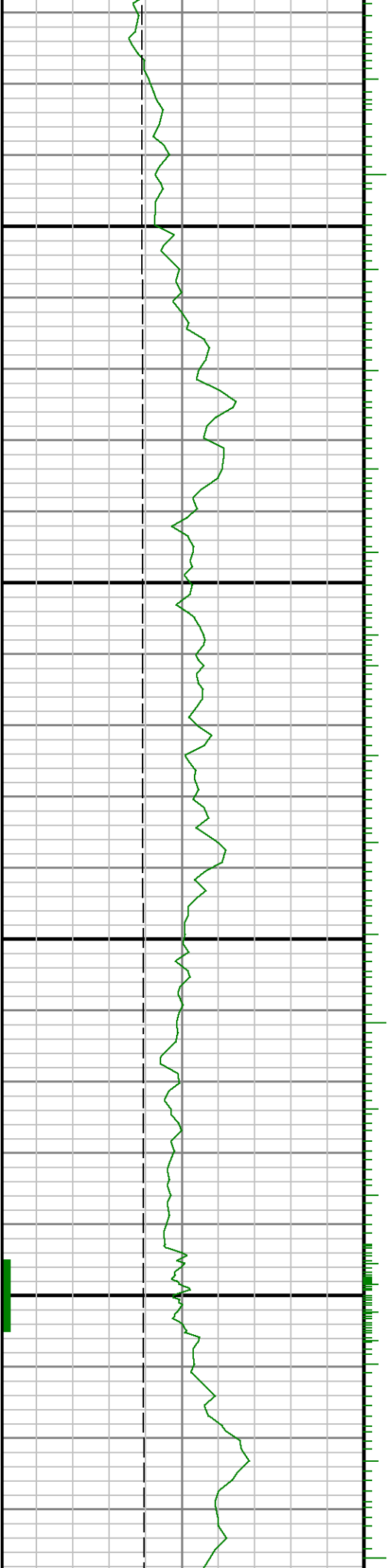


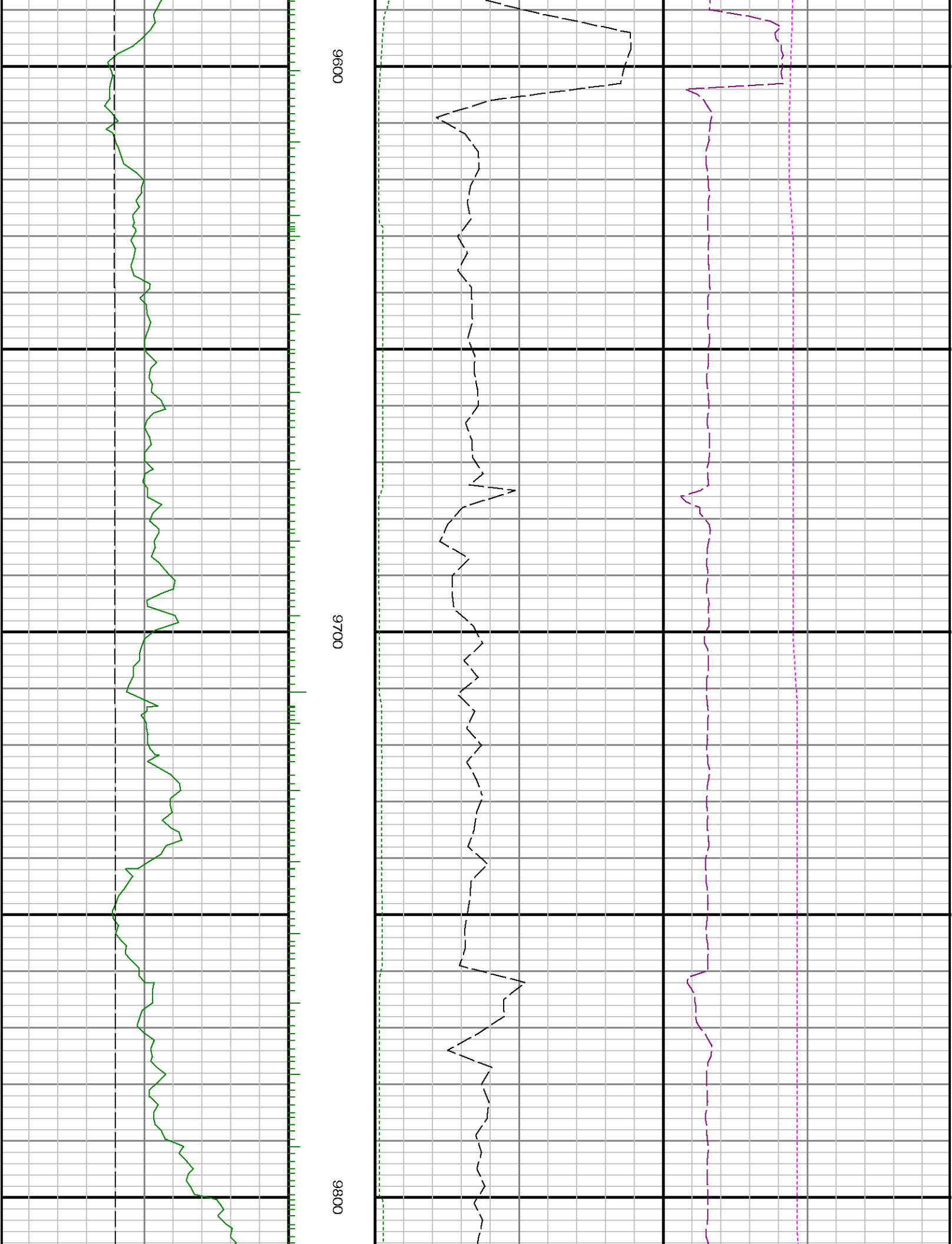


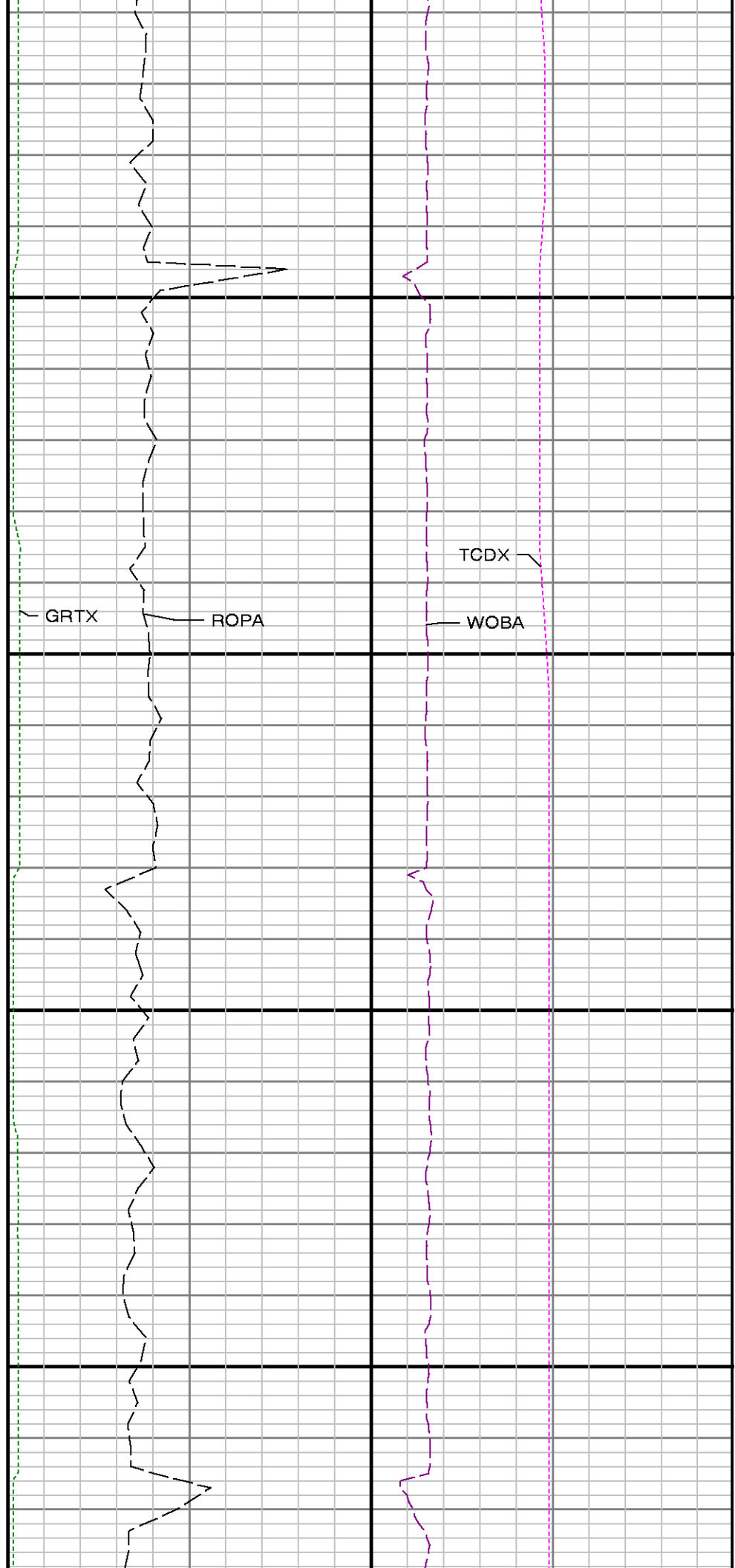
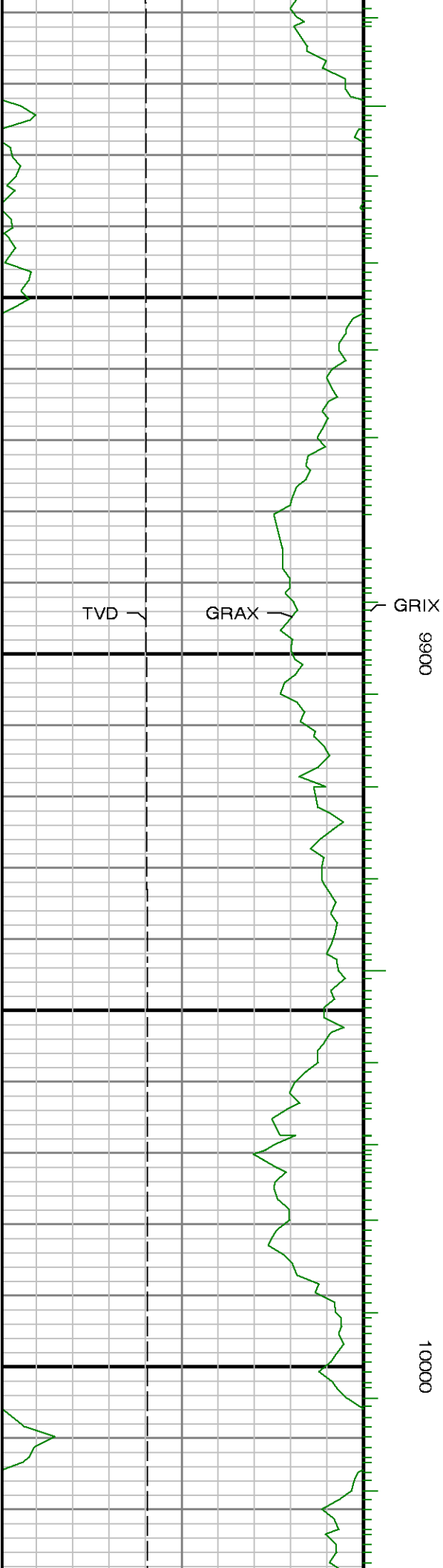


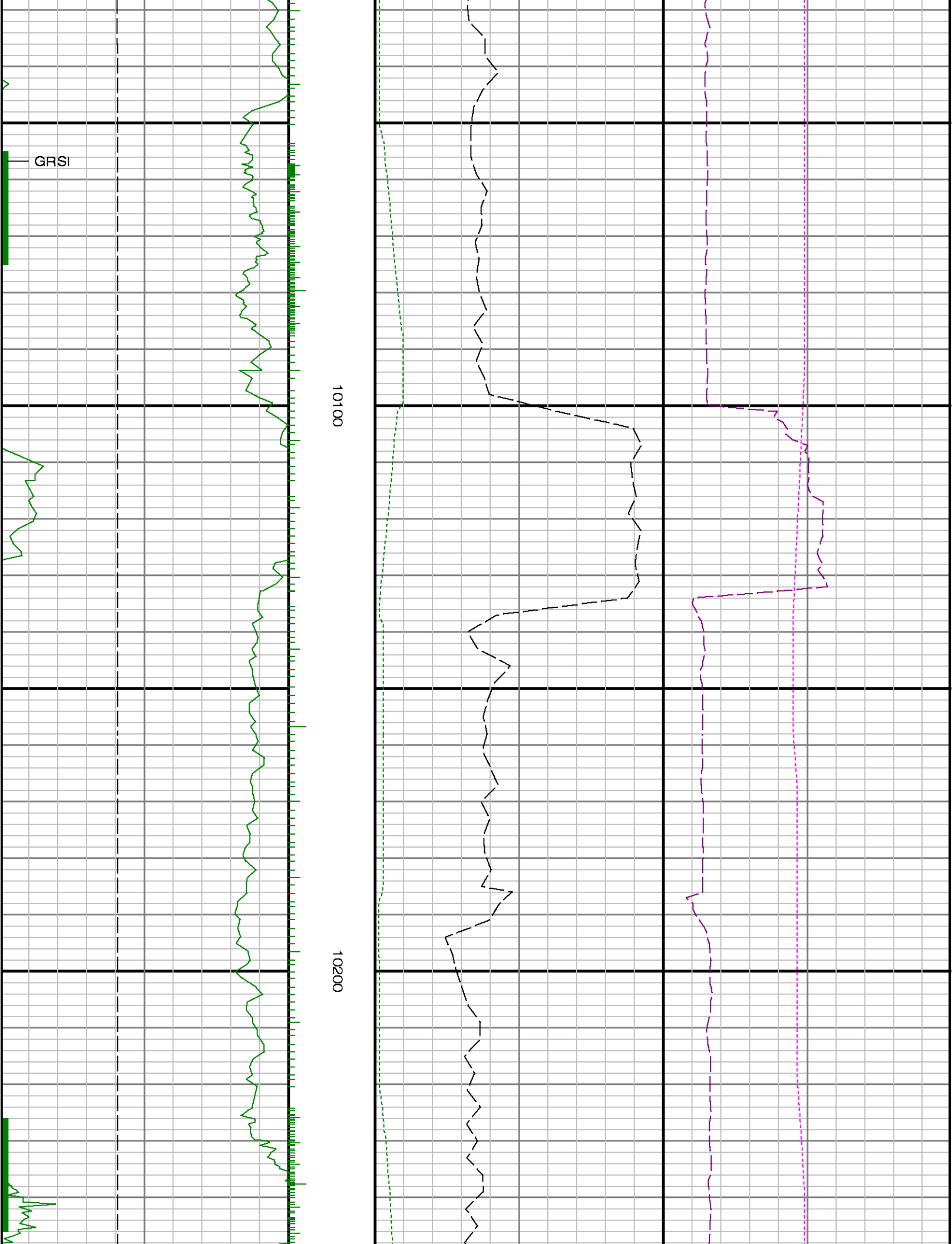
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9500





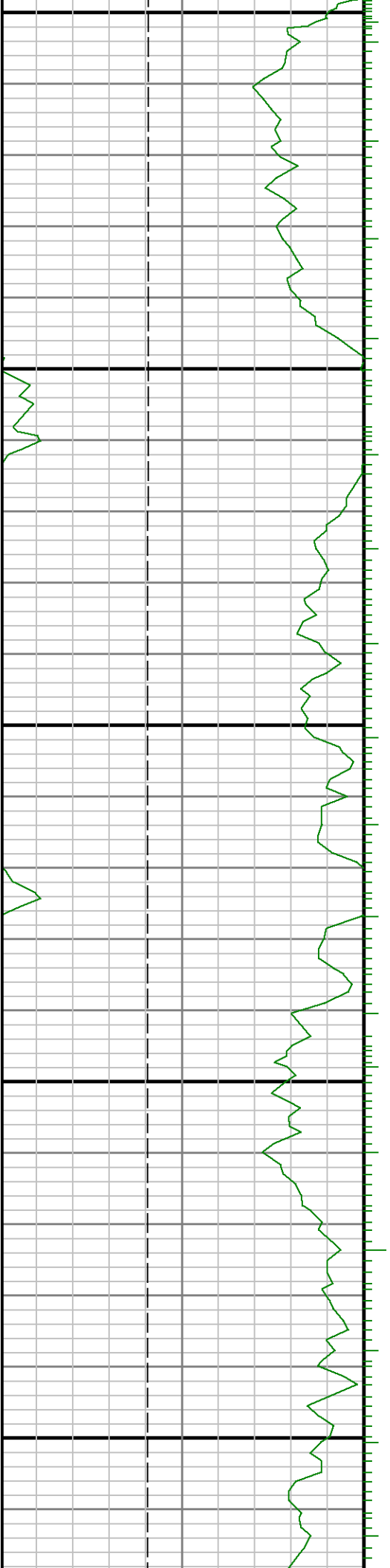


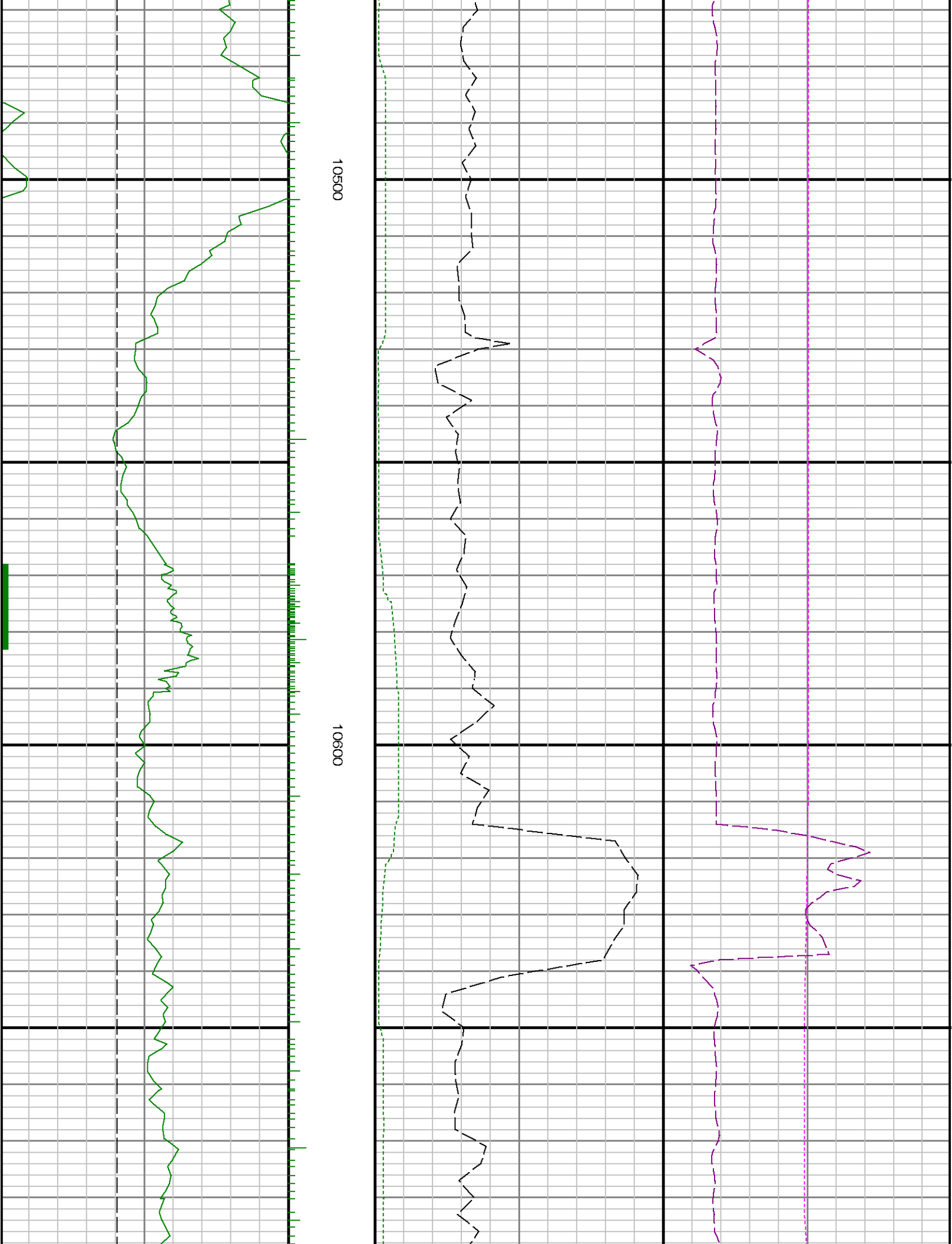


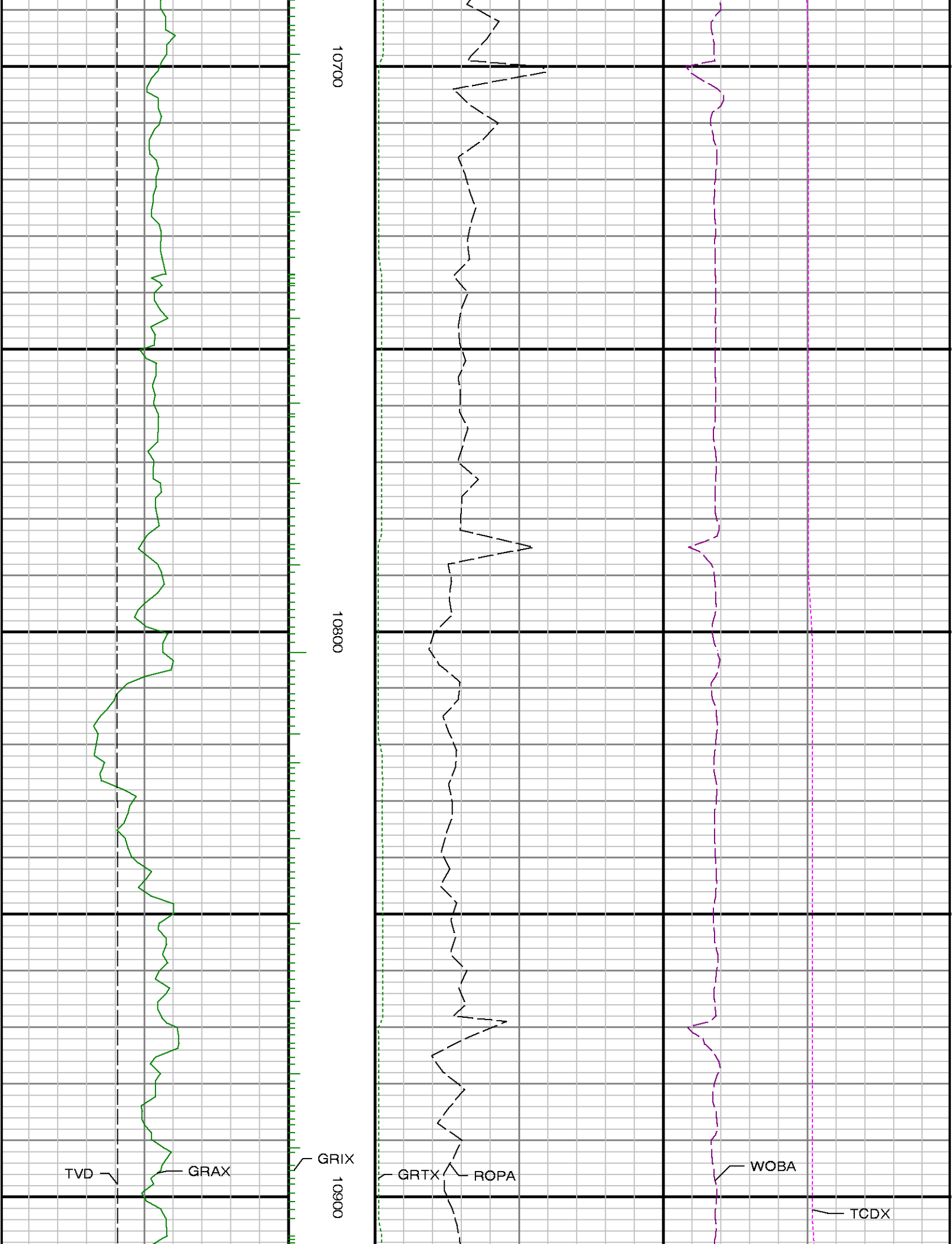


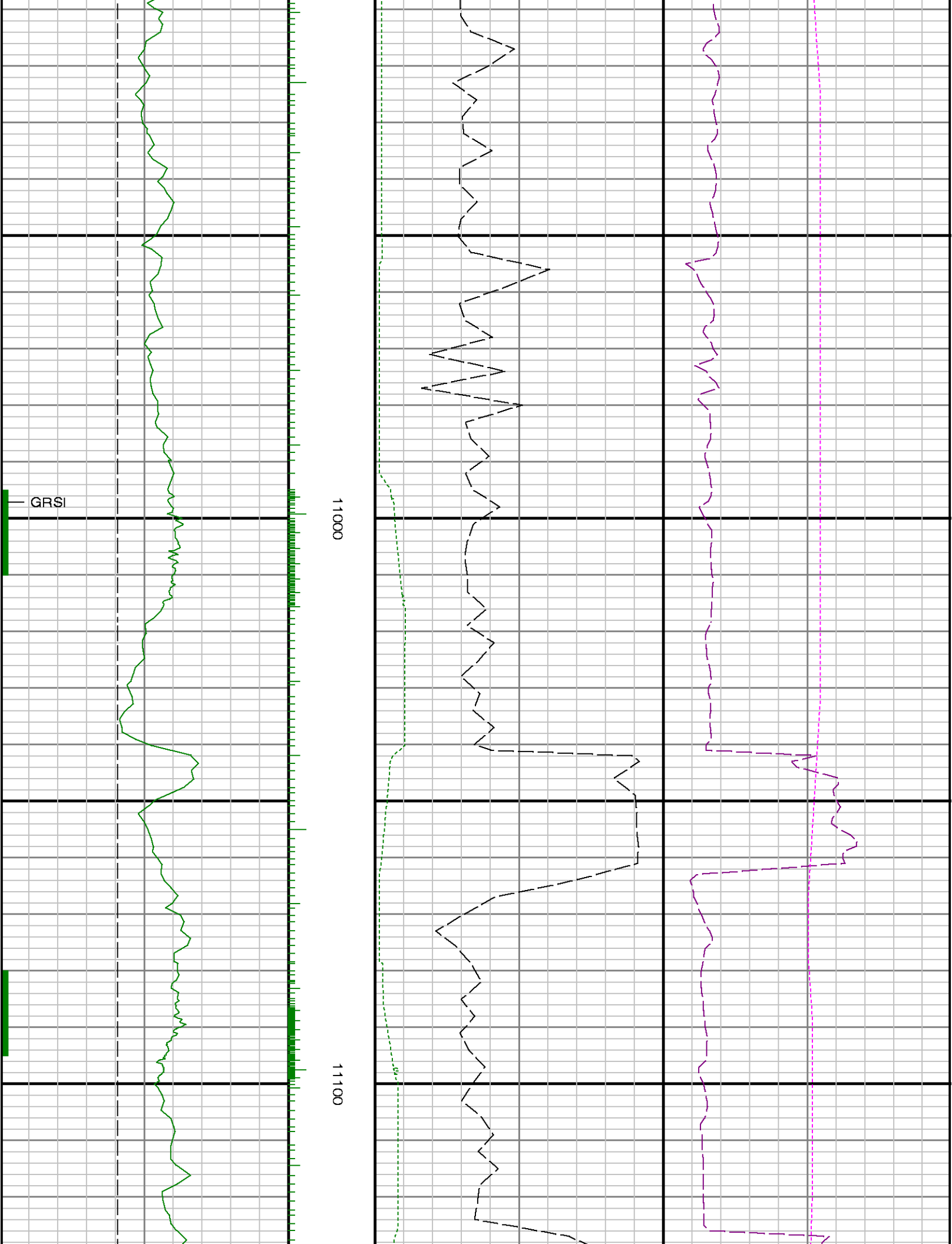
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10400





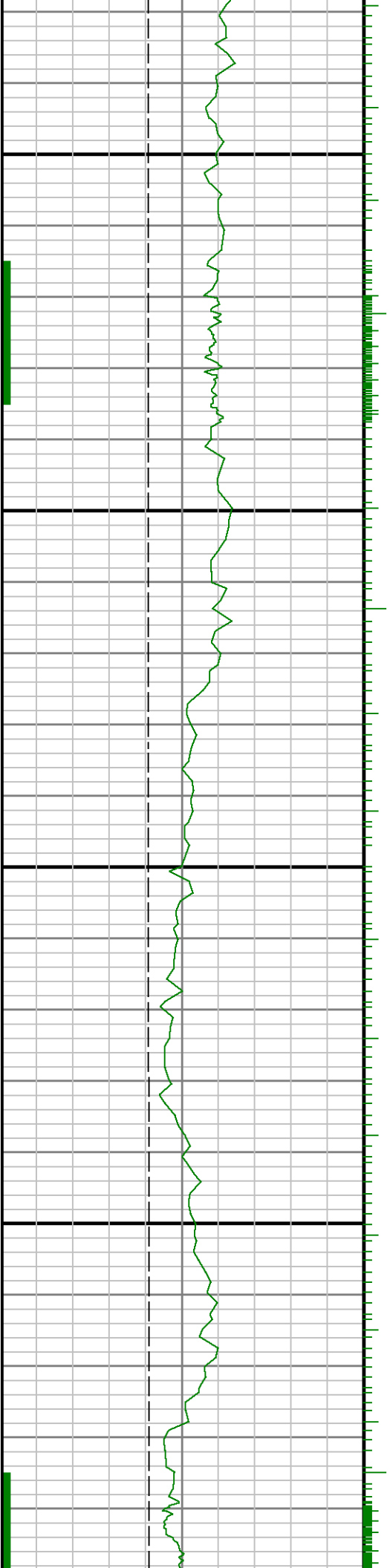


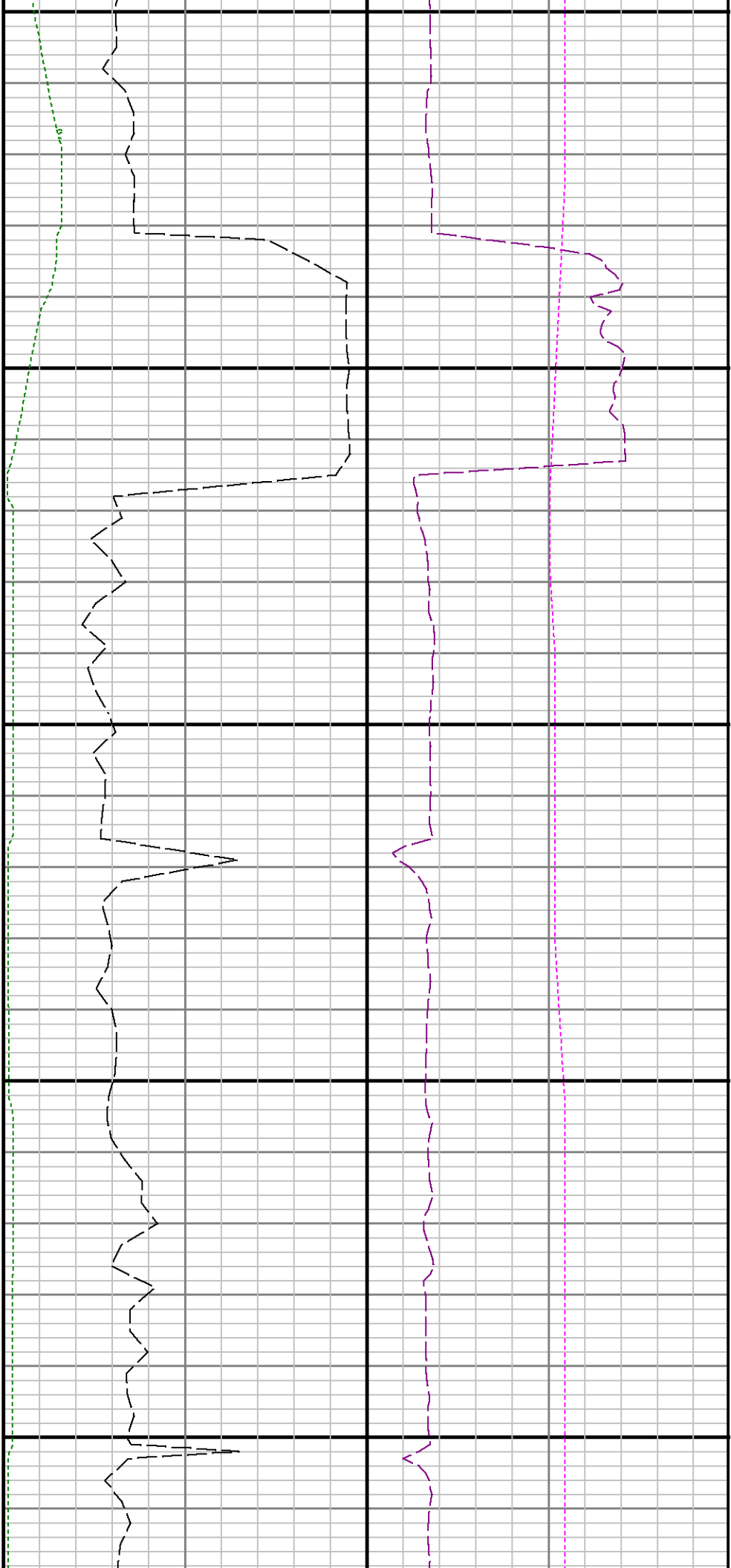




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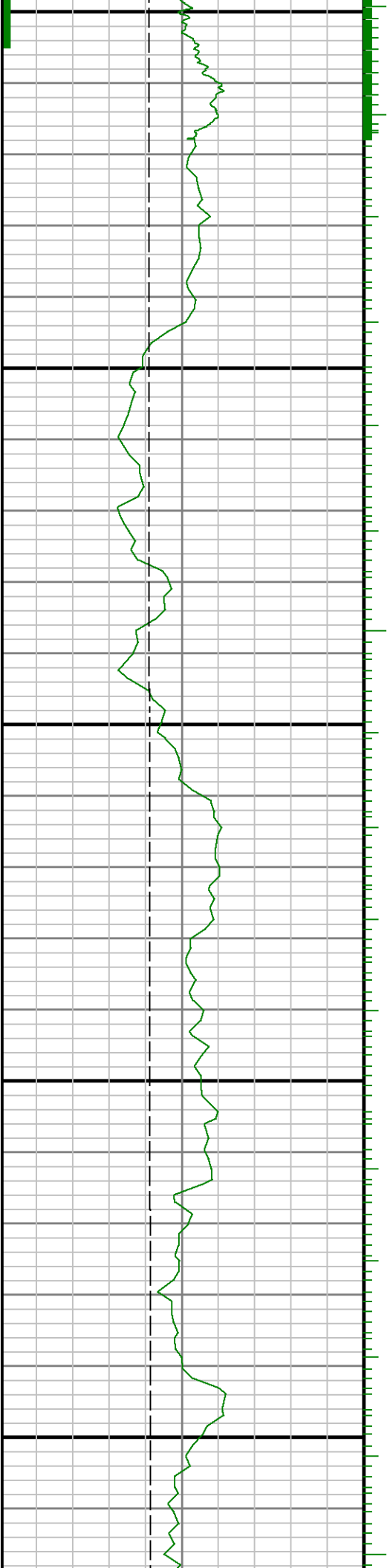
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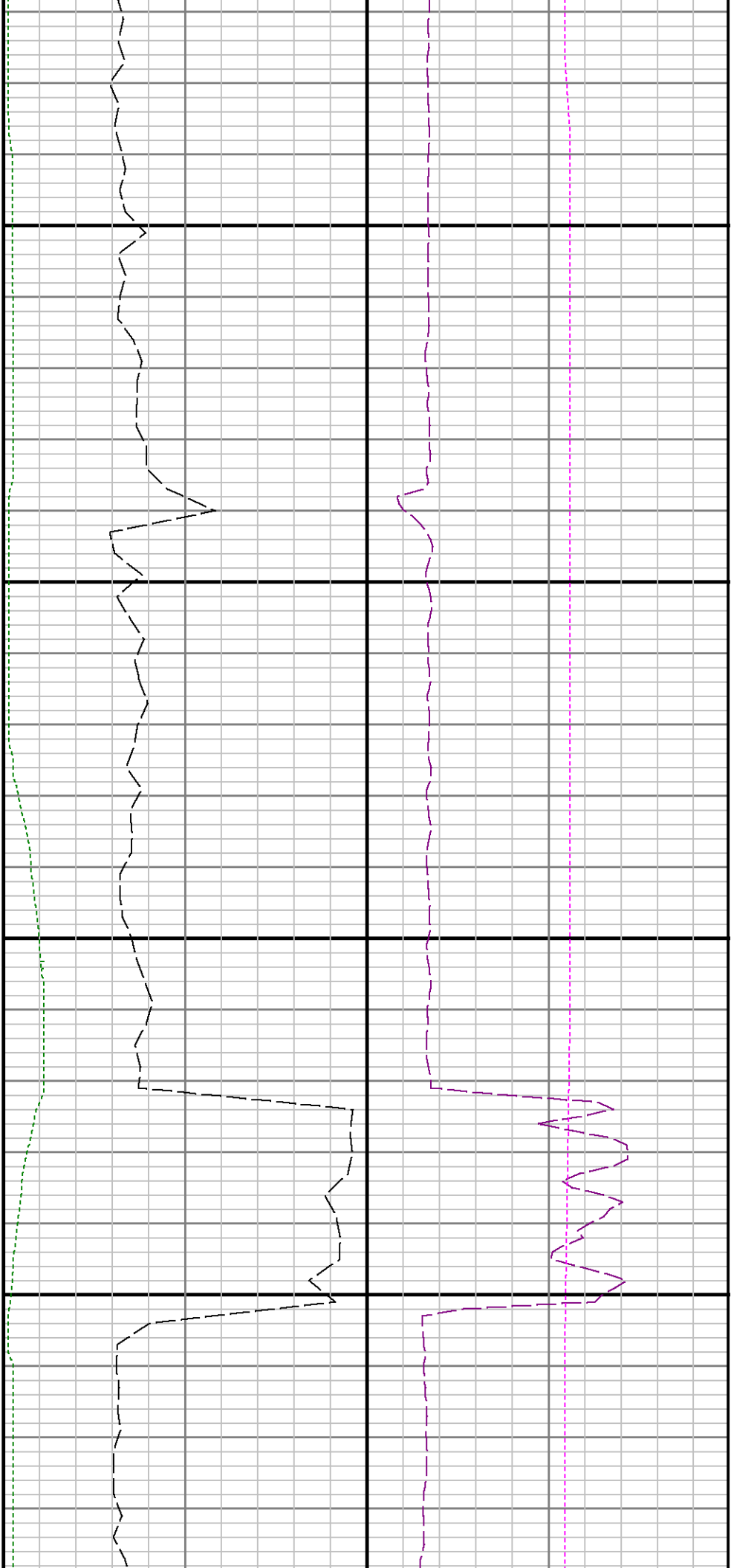




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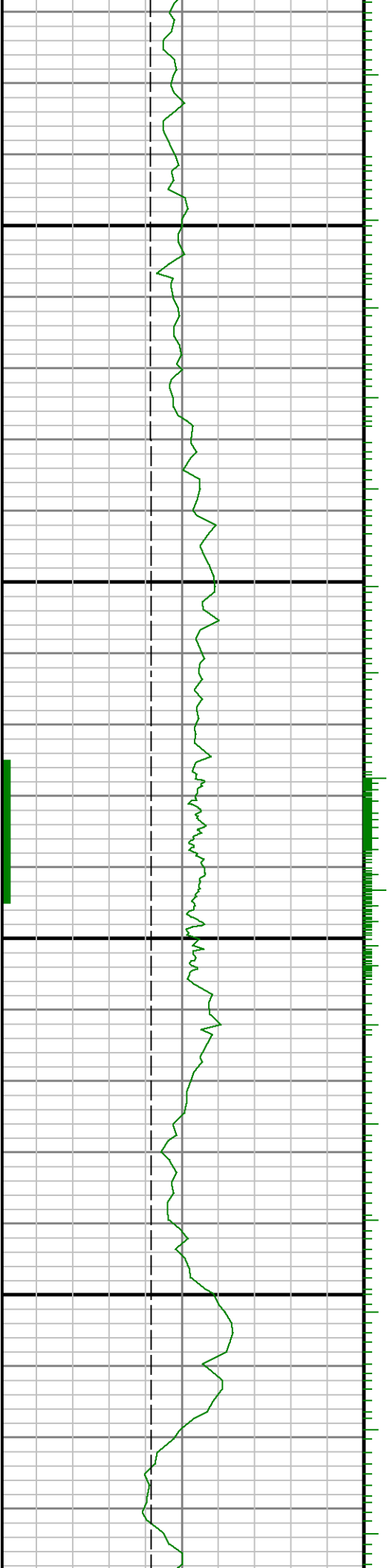
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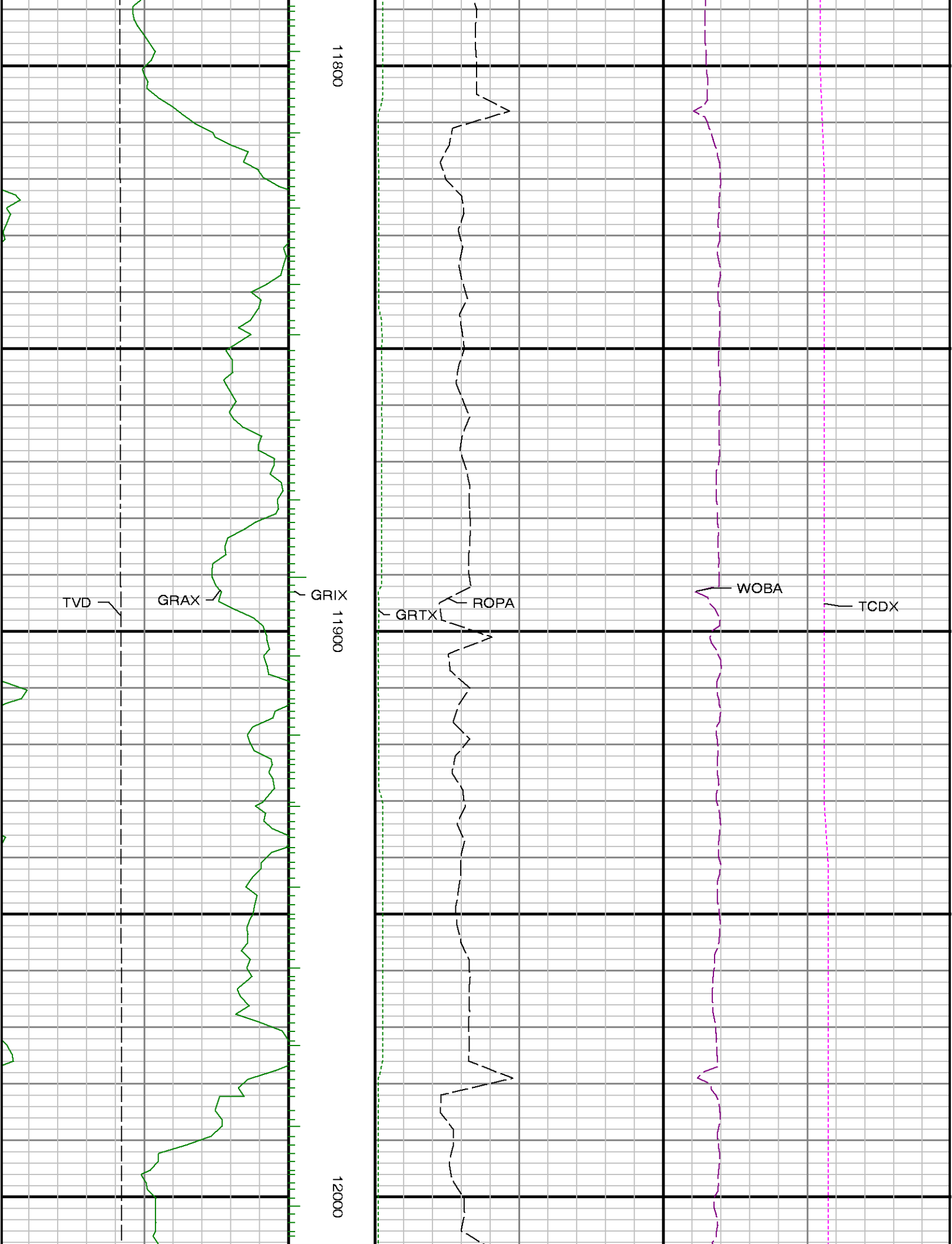


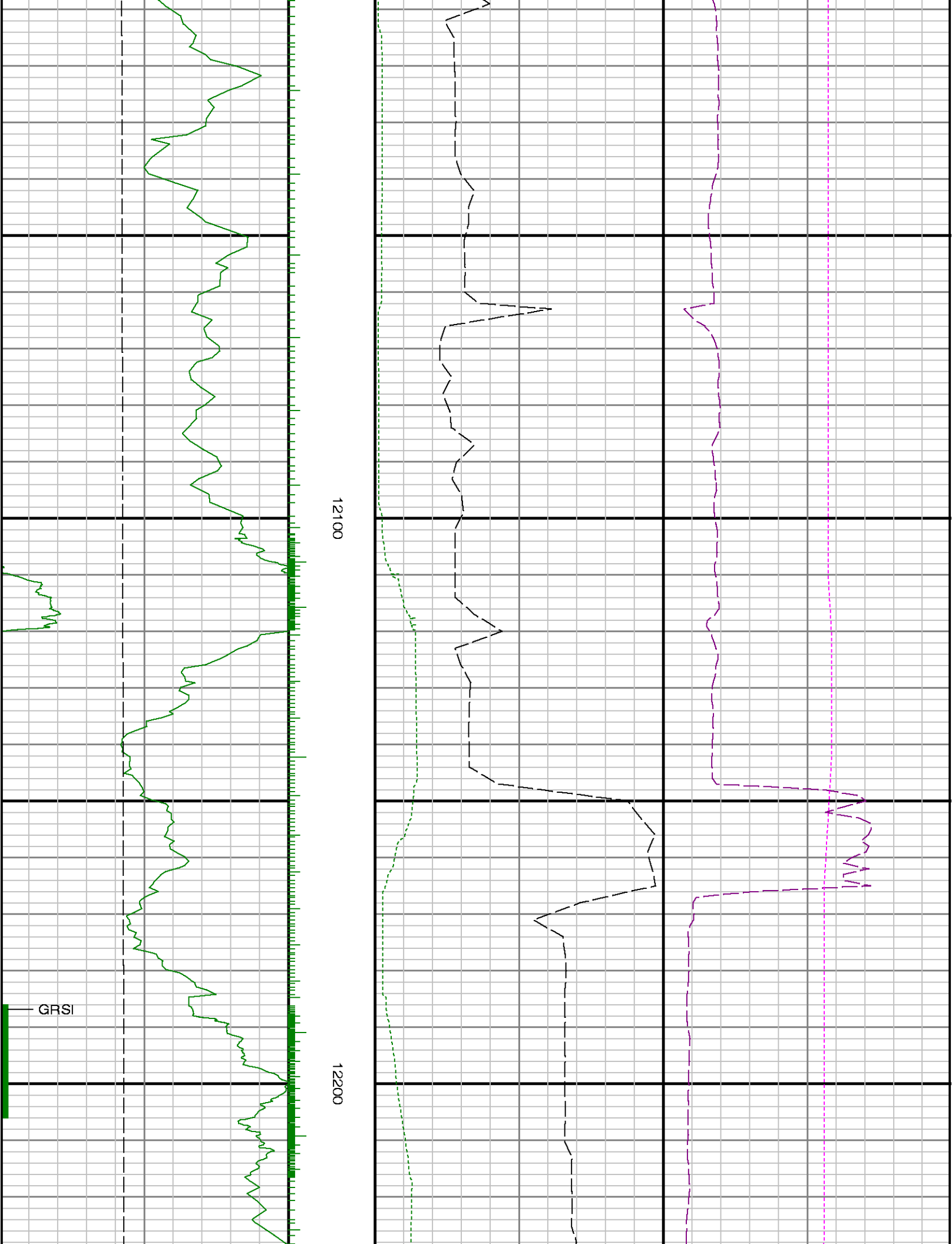


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