



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale: Company: Anadarko

1:240

Well: Cream 37N-28HZ

MEASURED DEPTH

Field: Weld County

Region: Continental US Country: United States

Status: Surface Location: Other Services:

Final Print

Latitude: 40° 12' 9.097" N

Longitude: 104° 39' 51.059" W

API Number: 0512340964000

Section 28 TWN: 3N Range 65E

Directional VSS

Permanent Datum (P.D.): Mean Sea Level Elevation: 4844.00 ft.

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

Depth Reference: Drillers Depth

Elevations: KB: N/A
DF: 4864.00 ft.
GL: 4844.00 ft.

Interval Logged

Dates

Magnetic Field Reference

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

Bottom: 12694.0 ft. Date To: 25/Apr/15 Total Mag to Reference

Spud Date: 15/Apr/15 Field Strength: 52534.0 nT North Correction: 8.47 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
8.750 in.	1206.0 ft.	7360.0 ft.	9.600 in.	36.00 lb/ft	Surface	1192.0 ft.
6.125 in.	7360.0 ft.	12694.0 ft.	7.000 in.	26.00 lb/ft	Surface	7350.0 ft.

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	Surface	12694.0 ft.	8.750 in.	7360.0 ft.	13.2 ° / 6.8 °	84.6 ° / 176.7 °
			6.125 in.	12694.0 ft.	88.8 ° / 179.1 °	90.1 ° / 180.3 °
					/	/
					/	/
					/	/
					/	/

Acquisition System

Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Precision 462	/ Precision Drilling
PATS	6.4.1.34	Job No:	7192403	
		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	4706.0	1206.0	4708.0	15/Apr/15	03:30	17/Apr/15	16:45	21.6
2	2	2	8.750	PDC	3.500	Mud Motor	6400.0	7064.0	4708.0	7114.0	18/Apr/15	23:14	20/Apr/15	23:14	31
3	3	3	8.750	Tri cone	6.000	Mud Motor	7069.0	7311.0	7119.0	7361.0	20/Apr/15	06:00	21/Apr/15	22:25	15.7
4	4	4	6.125	PDC	6.500	Mud Motor	7361.0	12641.0	7361.0	12695.0	22/Apr/15	10:50	25/Apr/15	03:00	24

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Andy King	04/14/15	04/23/15	Jake Miller	04/14/15	04/25/15	Mike Gurnsey	04/14/15	04/22/15

Bill Herbers	04/23/15	04/25/15	Edward Beaty	04/14/15	04/25/15	Donald Delay	04/24/15	04/25/15
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Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (m.)	Mud Type	Density (sg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
04/15/15 18:00	1	6977.0	Water based	10.0	52	9.3	0.0	2/90	Active Pit	2400	0.0
04/17/15 19:00	2	9210.0	Water based	9.4	45	9.5	4.0	3/90	Active Pit	2100	0.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRTX	Gamma Ray Time Since Drilled	Min.
GRIX	Gamma Ray Density, Points	unitless
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.	K. lbs.

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (m.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	10073495	Directional	46.18	6.750	3.250
1	SRIG	5015	Gamma	42.81	6.750	3.250
2	DIR	10427973	Directional	46.44	6.750	3.250
2	SRIG	11801241	Gamma	43.07	6.750	3.250
3	DIR	12440863	Directional	39.49	6.750	3.250
3	SRIG	12613300	Gamma	36.12	6.750	3.250
4	DIR	11924683	Directional	51.62	4.750	2.750
4	SRIG	12041110	Gamma	48.20	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 LWD Run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1206 to 4708 ft MD (1198 to 4621 ft TVD).</p> <p>(2) Baker Hughes LWD Run 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 4708 to 7114 ft MD (4621 to 6951 ft TVD).</p> <p>(3) Baker Hughes LWD Run 3 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 7114 to 7360 ft MD (6951 to 7035 ft TVD).</p>

(4) Baker Hughes LWD Run 4 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7360 to 12694 ft MD (7035 to 7028 ft TVD).

(5) 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.

(6) 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.

Remarks

Number	Measured Depth (m.)	Hole Section (in.)	LWD Run No.	Remark
1	6400	8.750	1	Began logging Gamma above Build Section at 6400ft MD (6303 ft TVD).
2	4708	8.750	2	The interval from 4708 to 4752 ft MD (4621 to 4664 ft TVD) was logged up to 20 hours after being drilled due to a trip out of hole for new BHA because of lack of build rates.
3	7114	8.750	3	The interval from 7638 to 7682 ft MD (7207 to 7210 ft TVD) was logged up to 33 hours after being drilled due to a trip out of hole for casing and cement operations and to pick up Lateral BHA.
4	12694	6.125	4	The interval from 12641 to 12694 ft MD (7028 to 7236 ft TVD) contains no logging data due to sensor offset from the bit at TD.

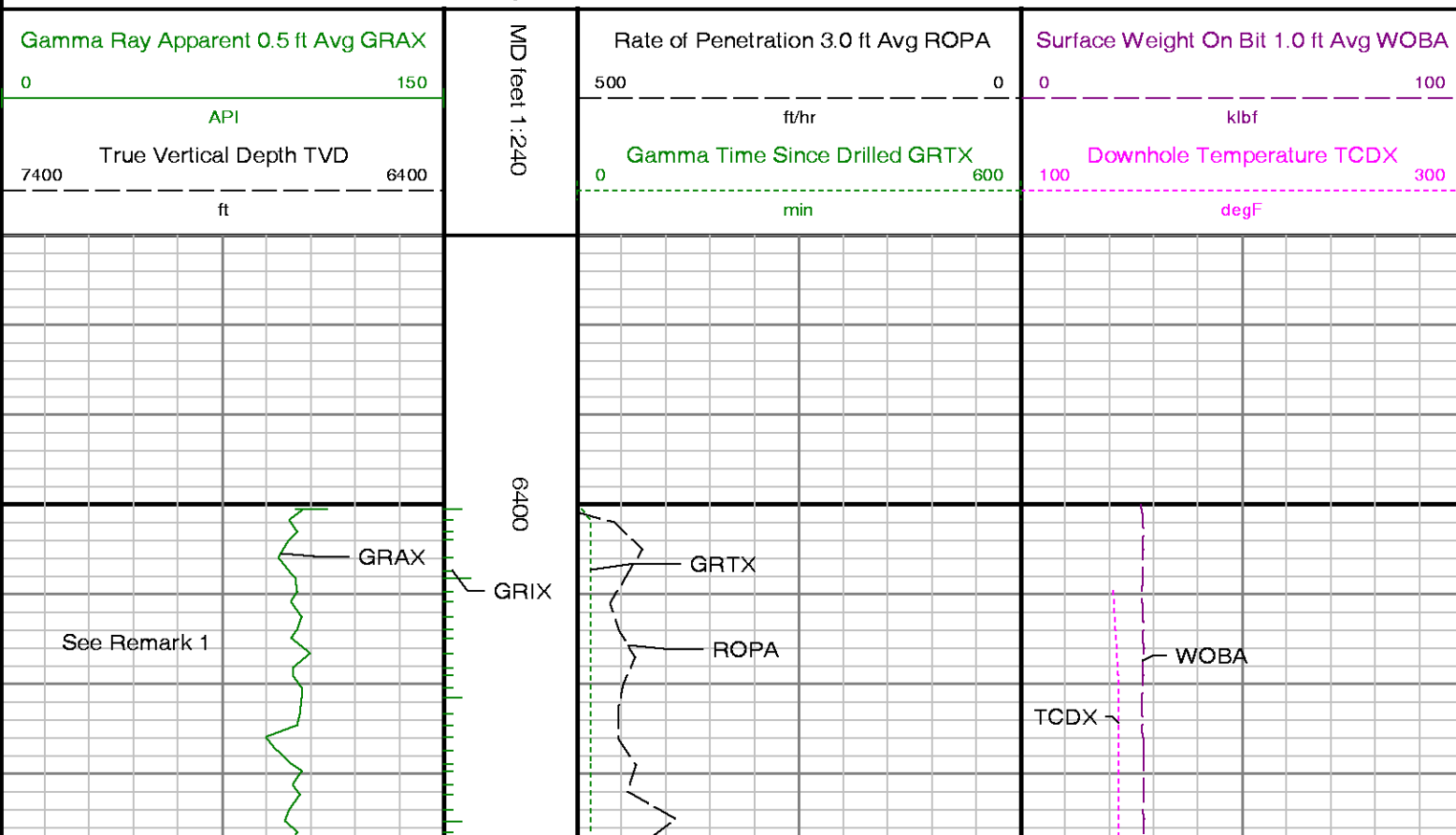


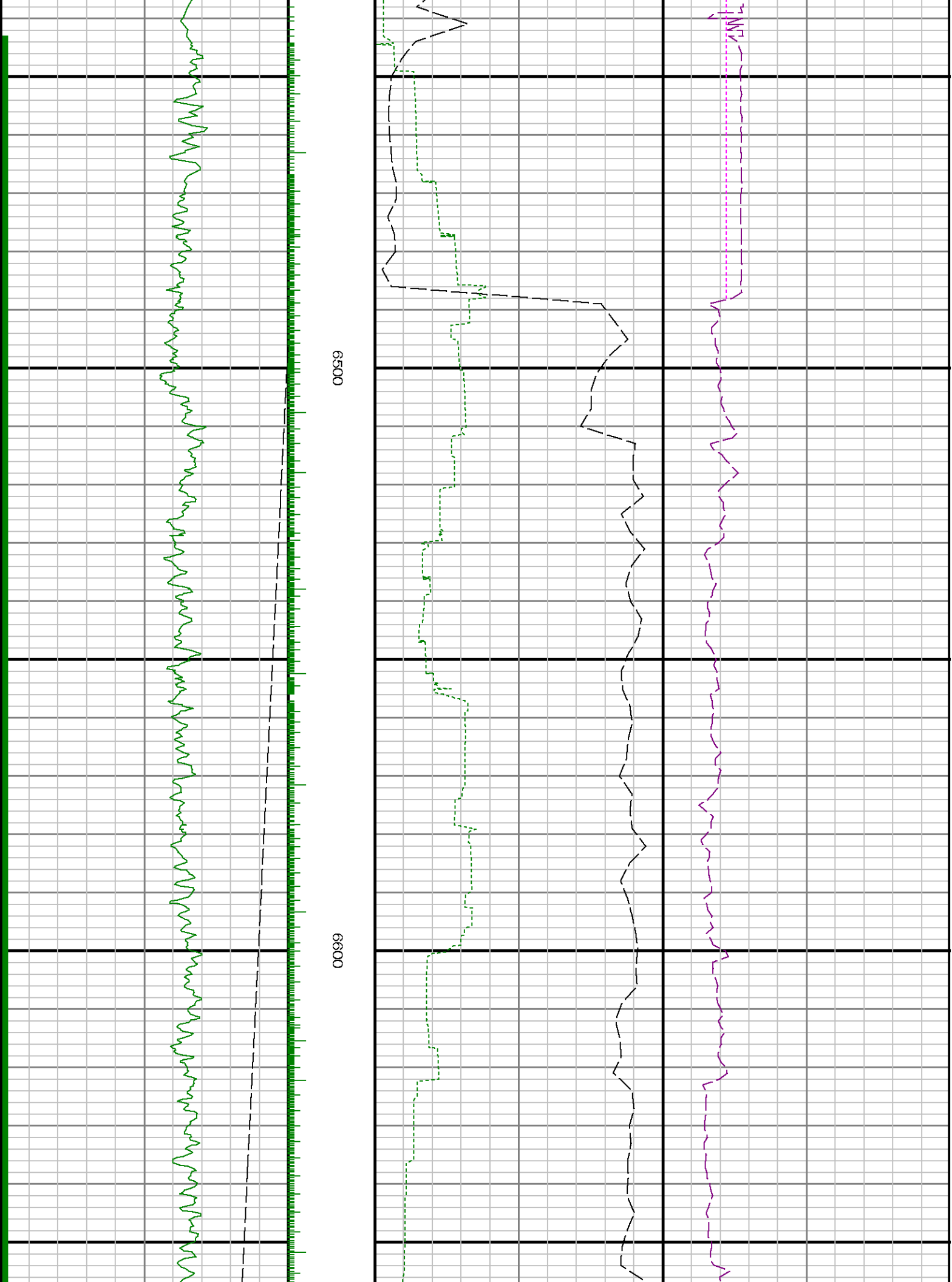
Company : Anadarko

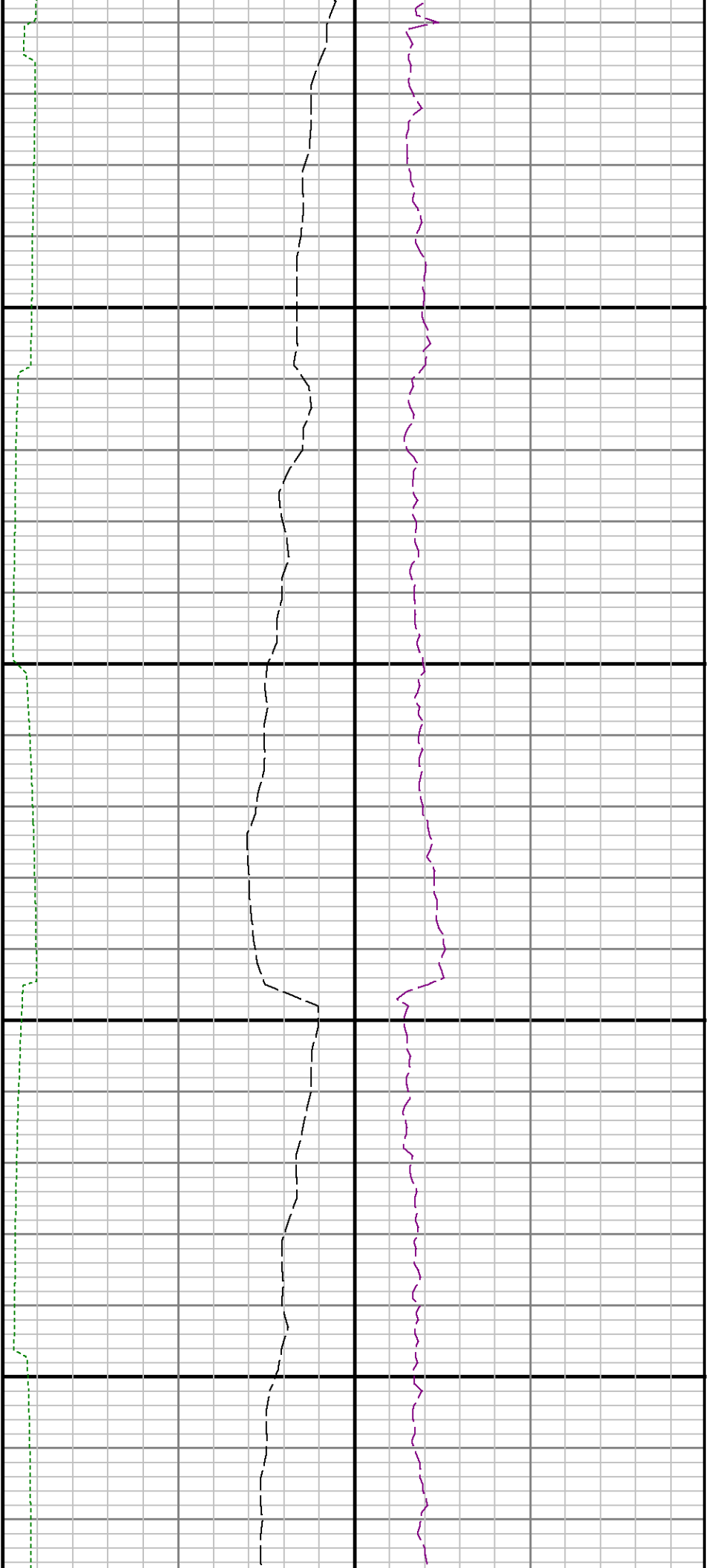
Well : Cream 37N-28HZ

Interval : 6370.00 - 12735.00 feet

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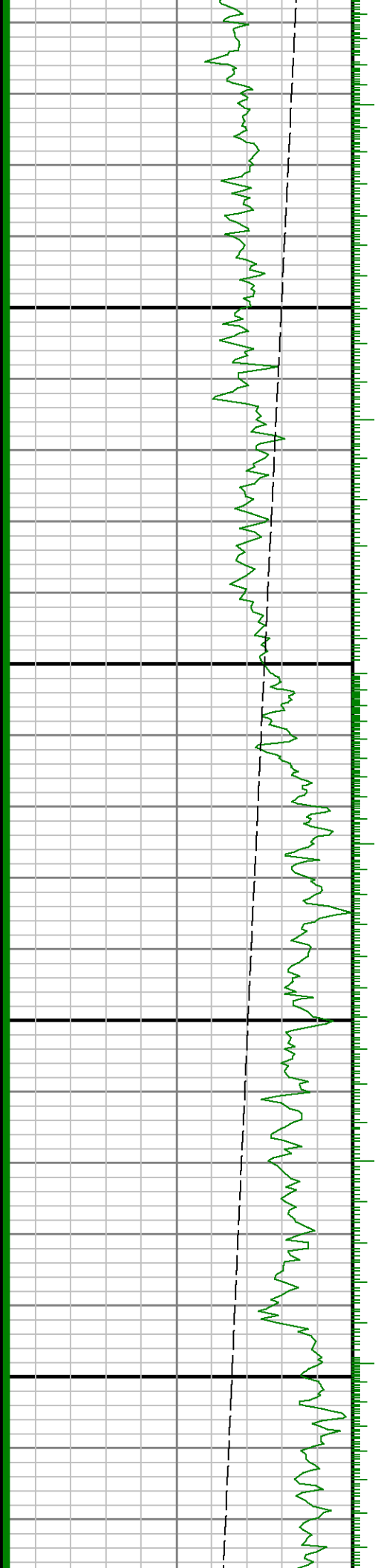


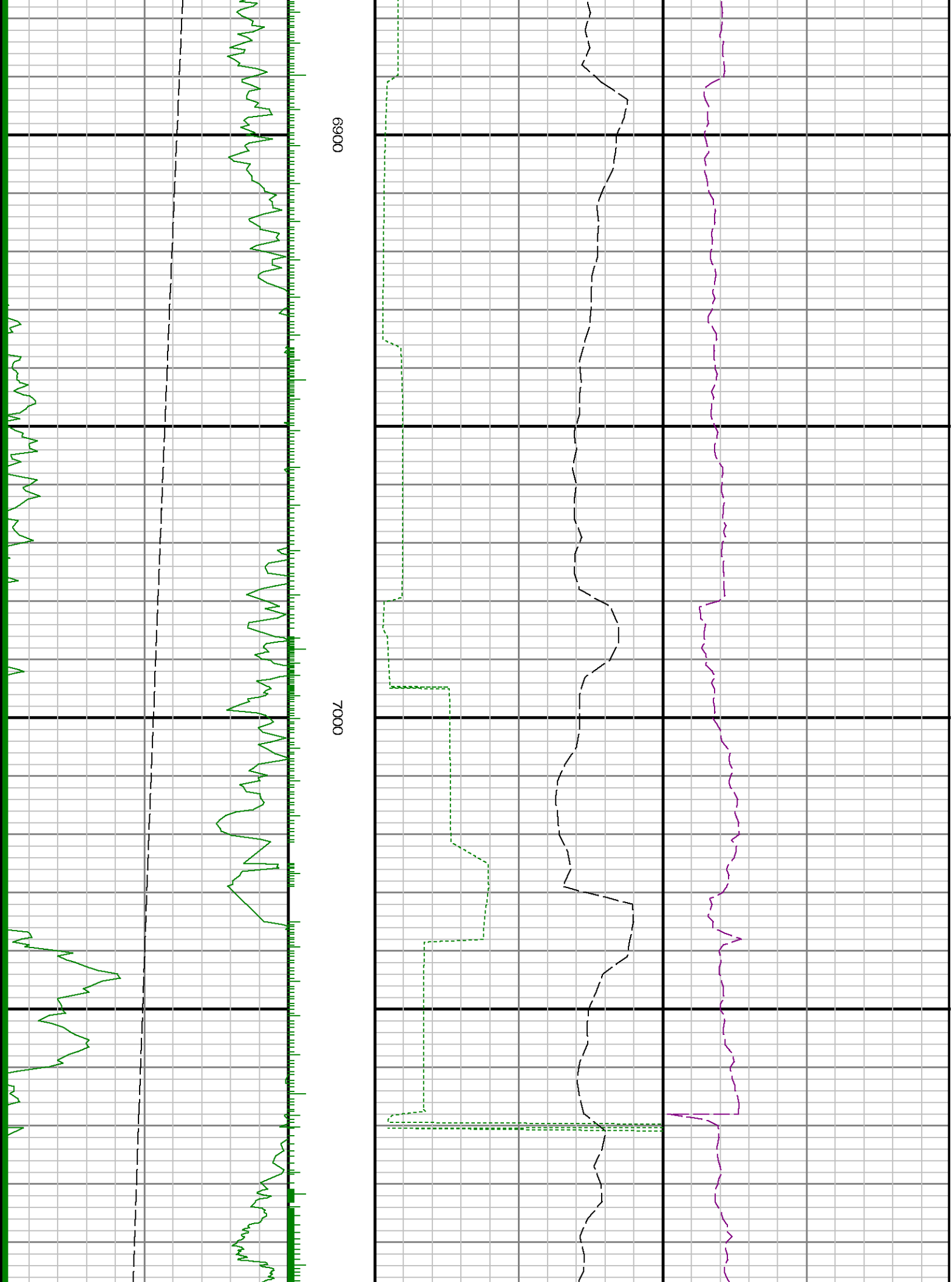


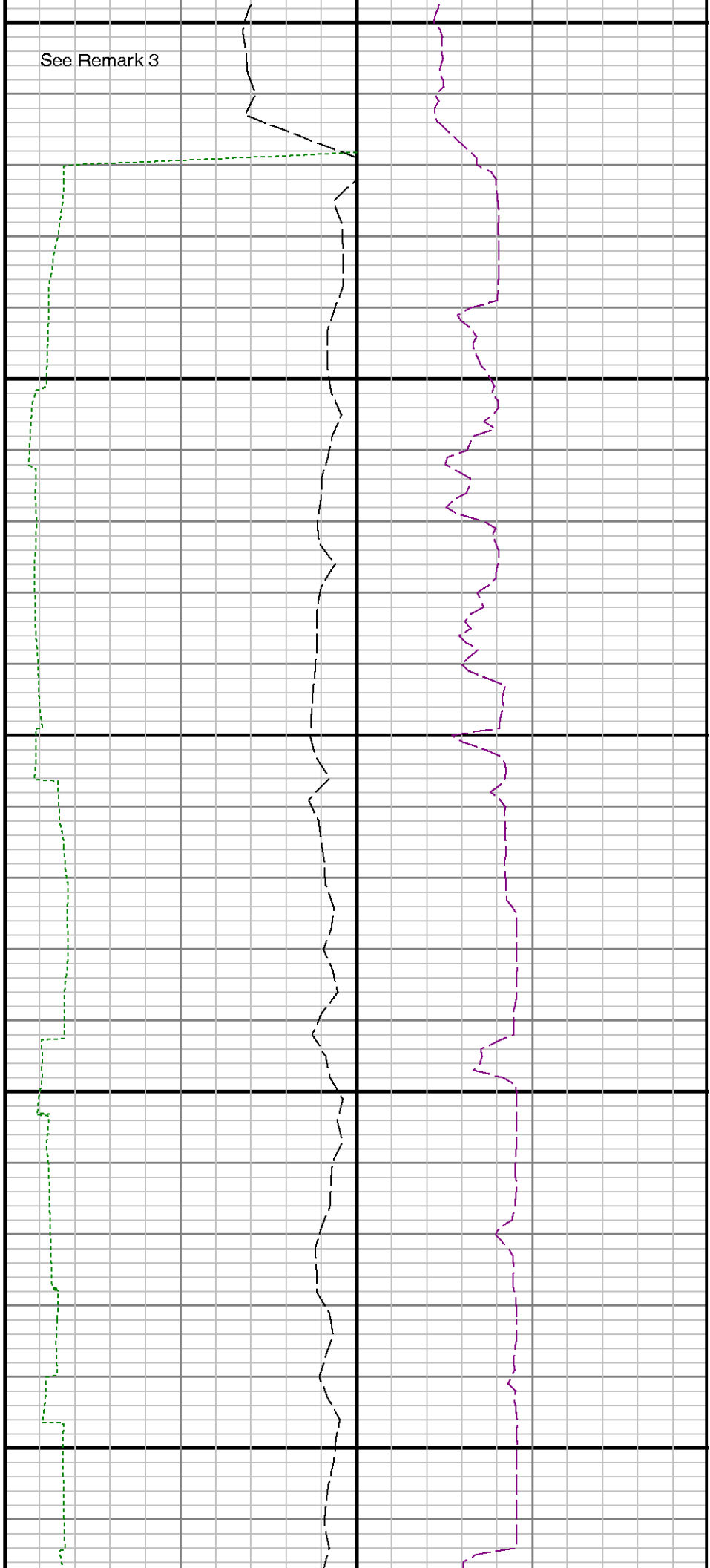


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6800





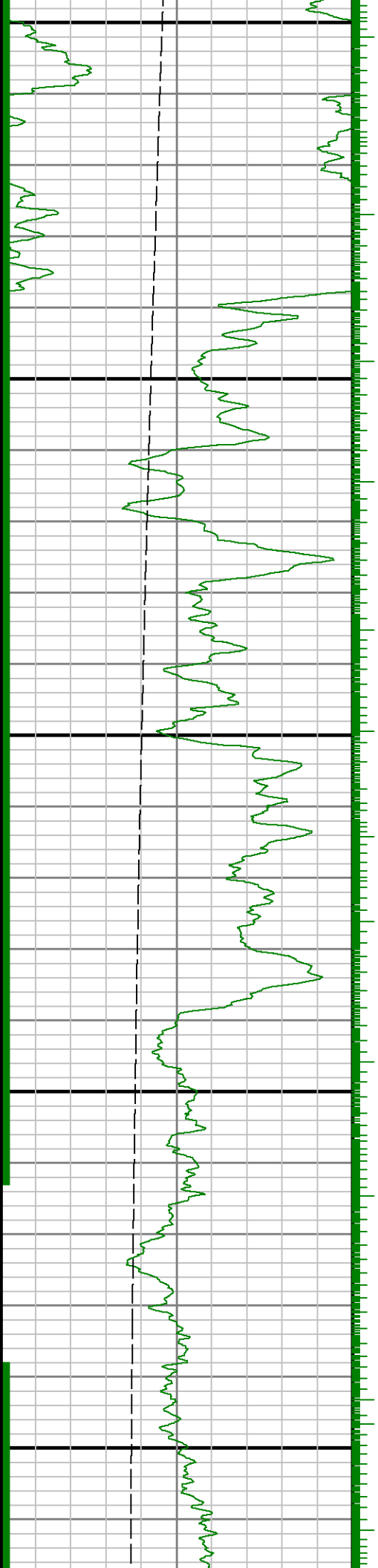


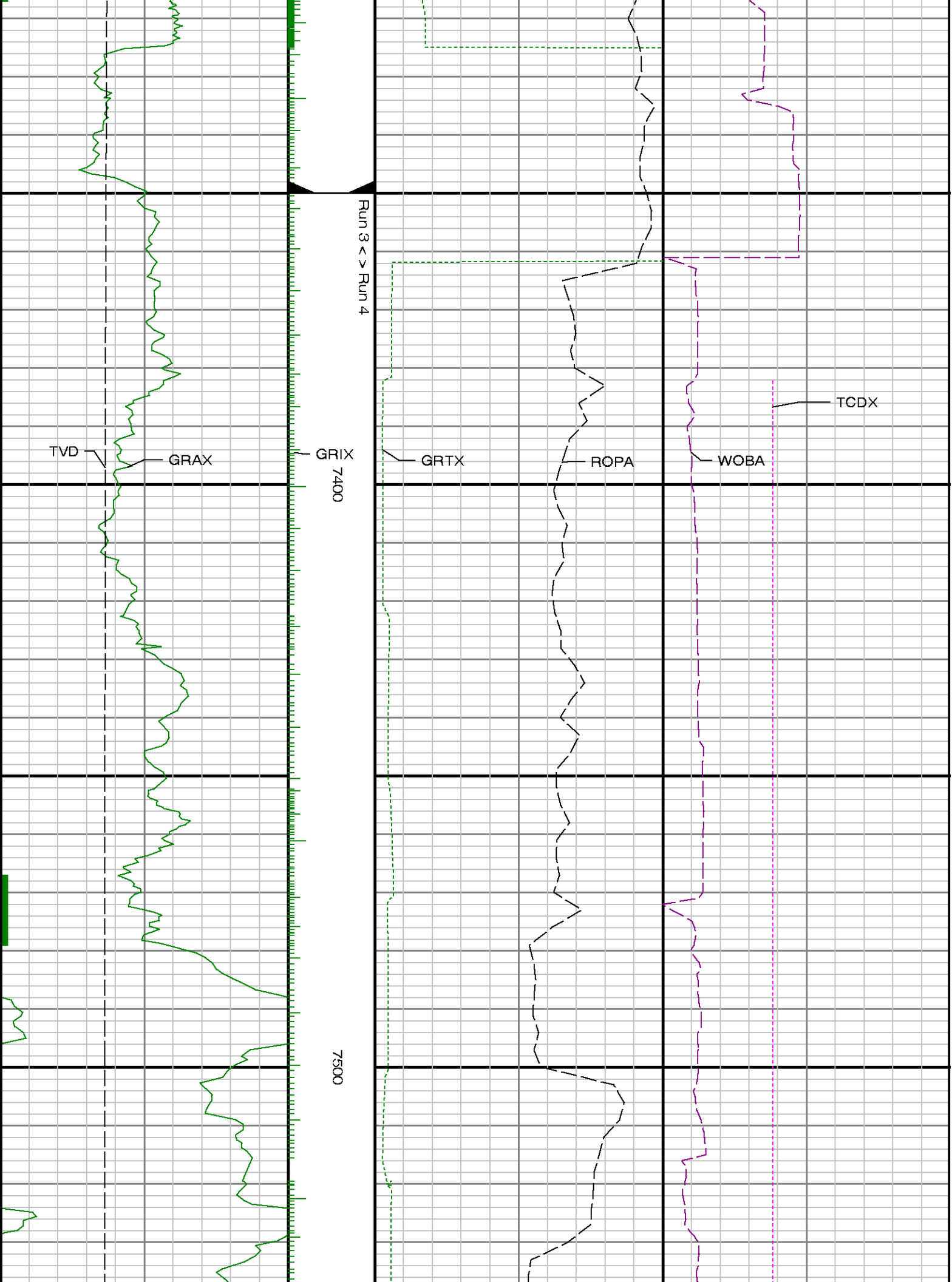
Run 2 <> Run 3

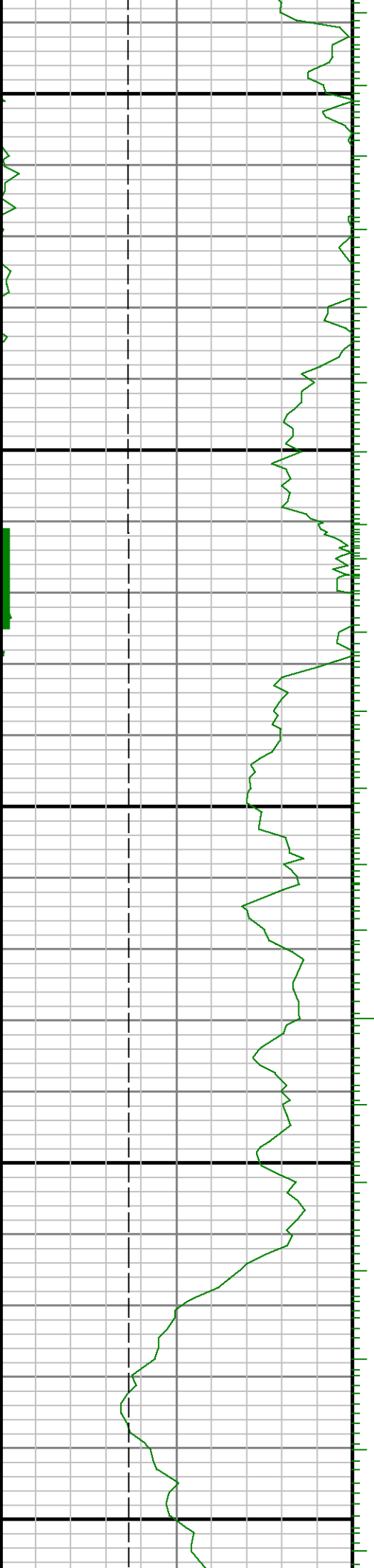
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7200

7300

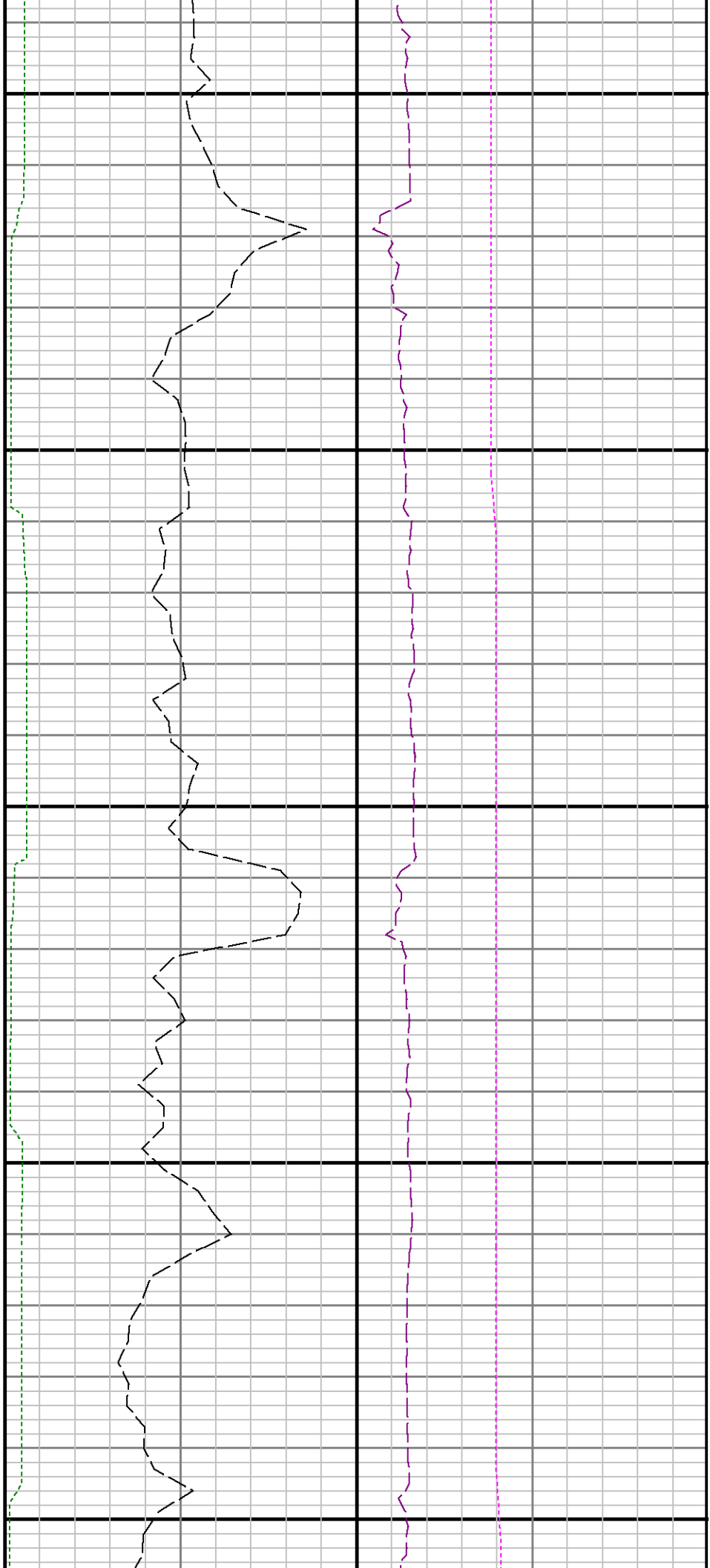


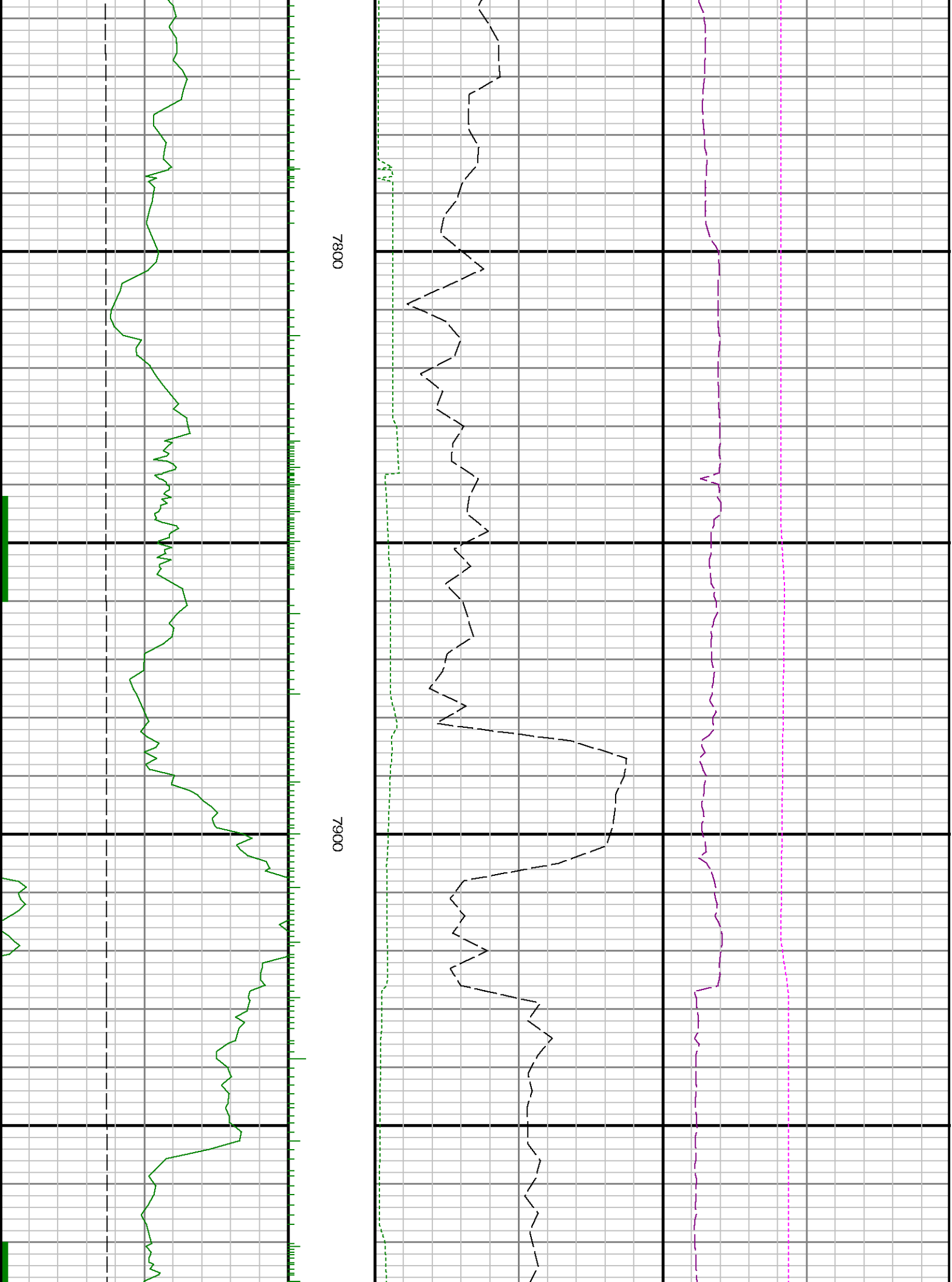


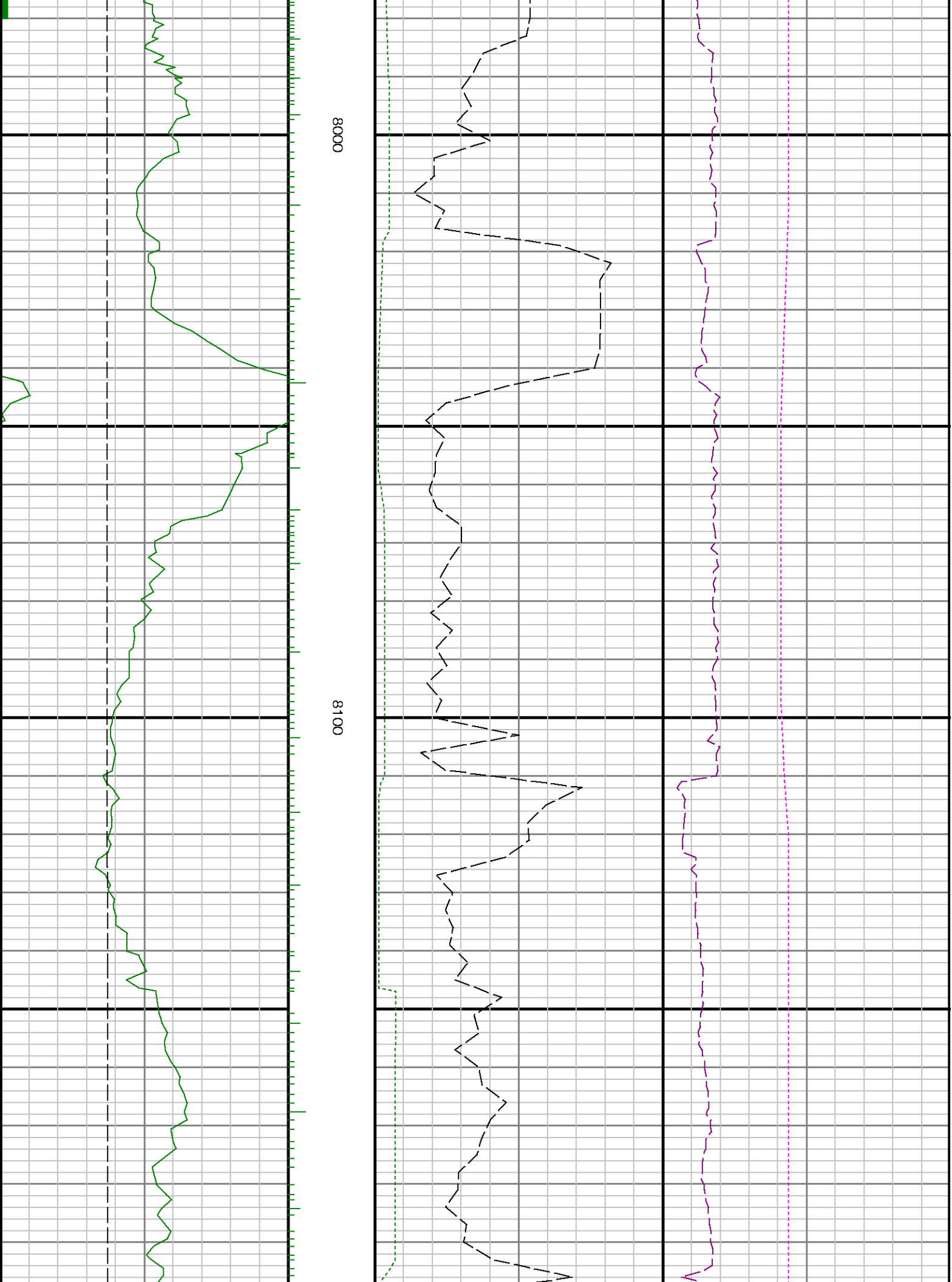


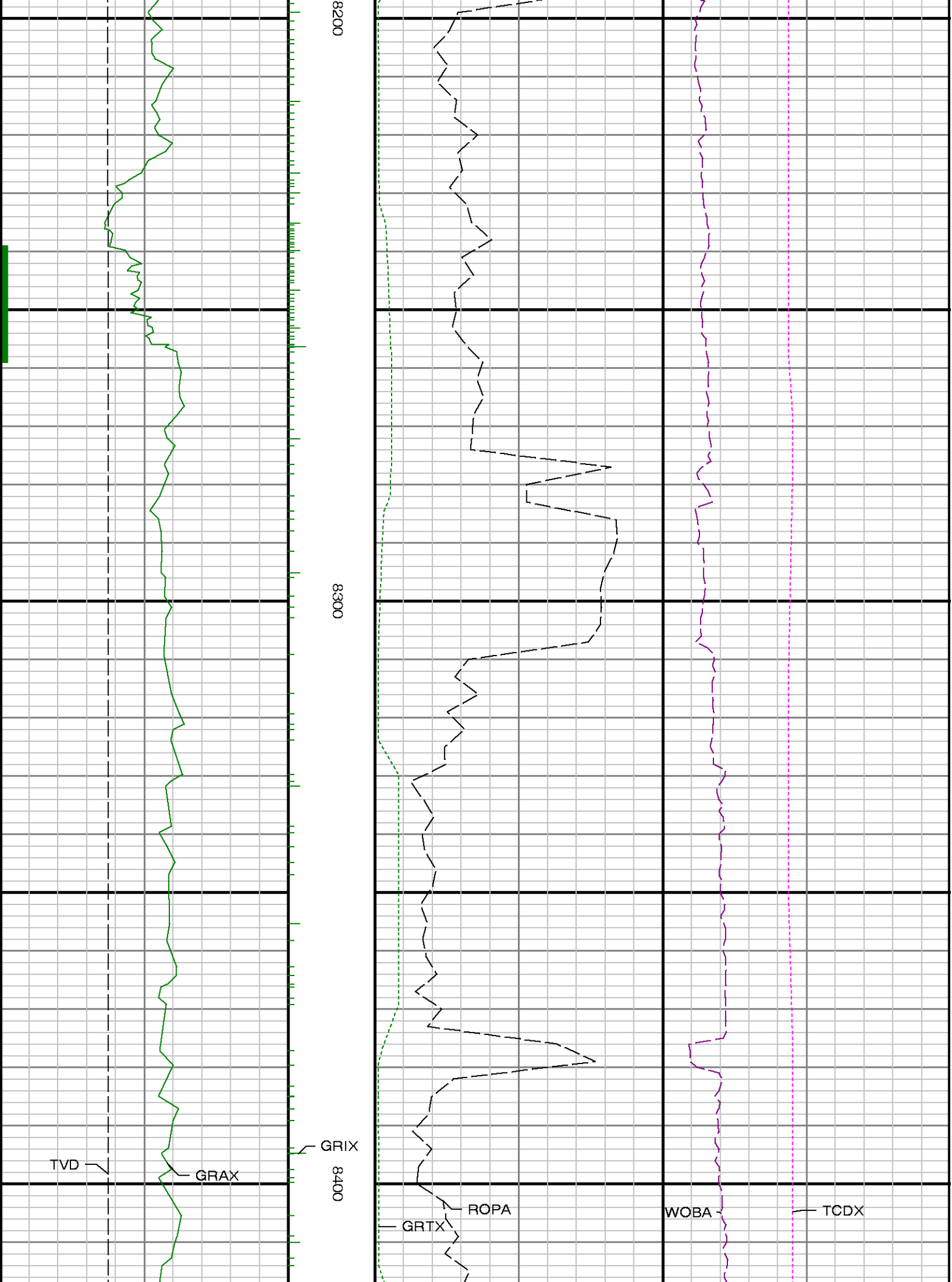
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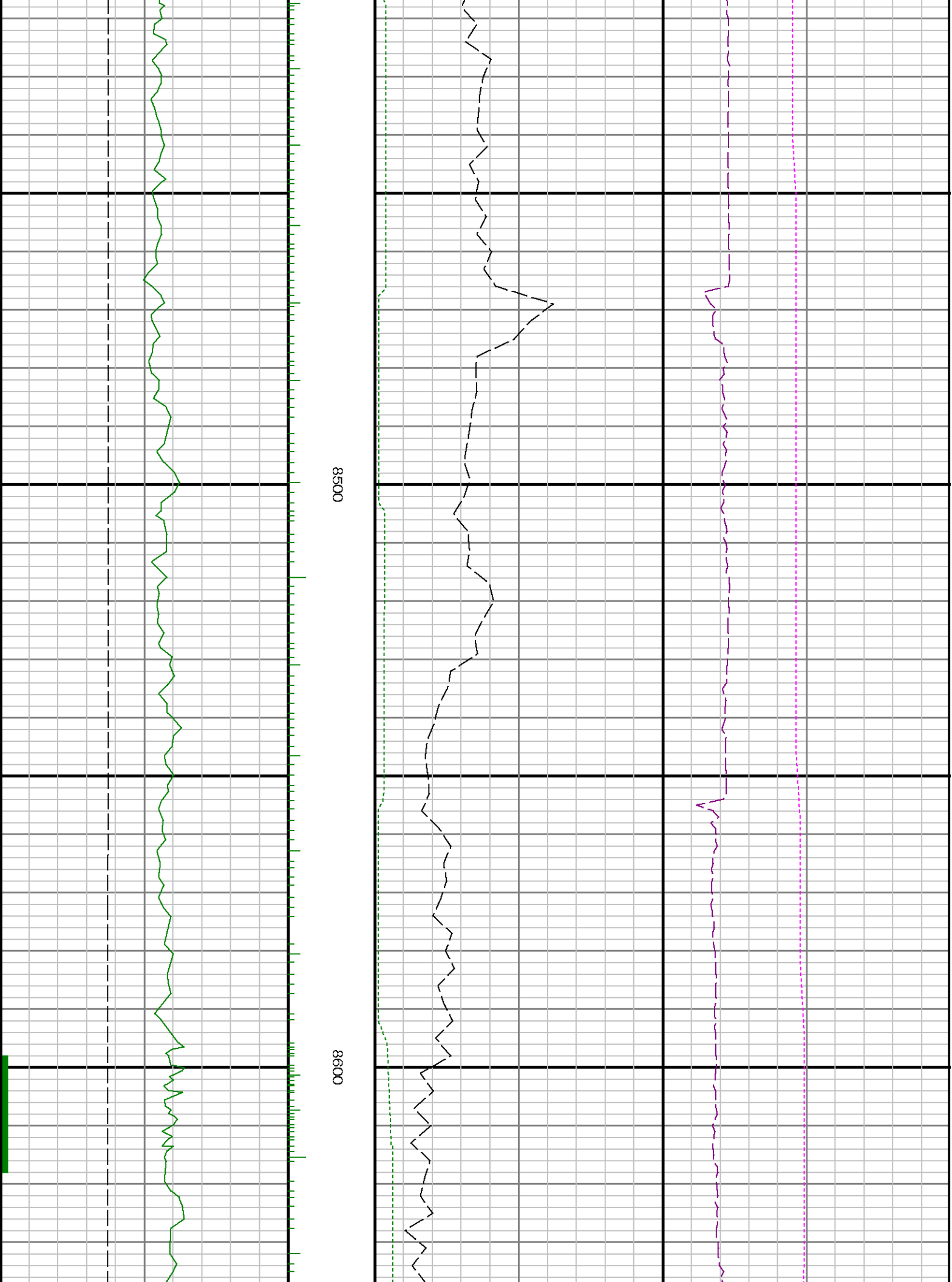
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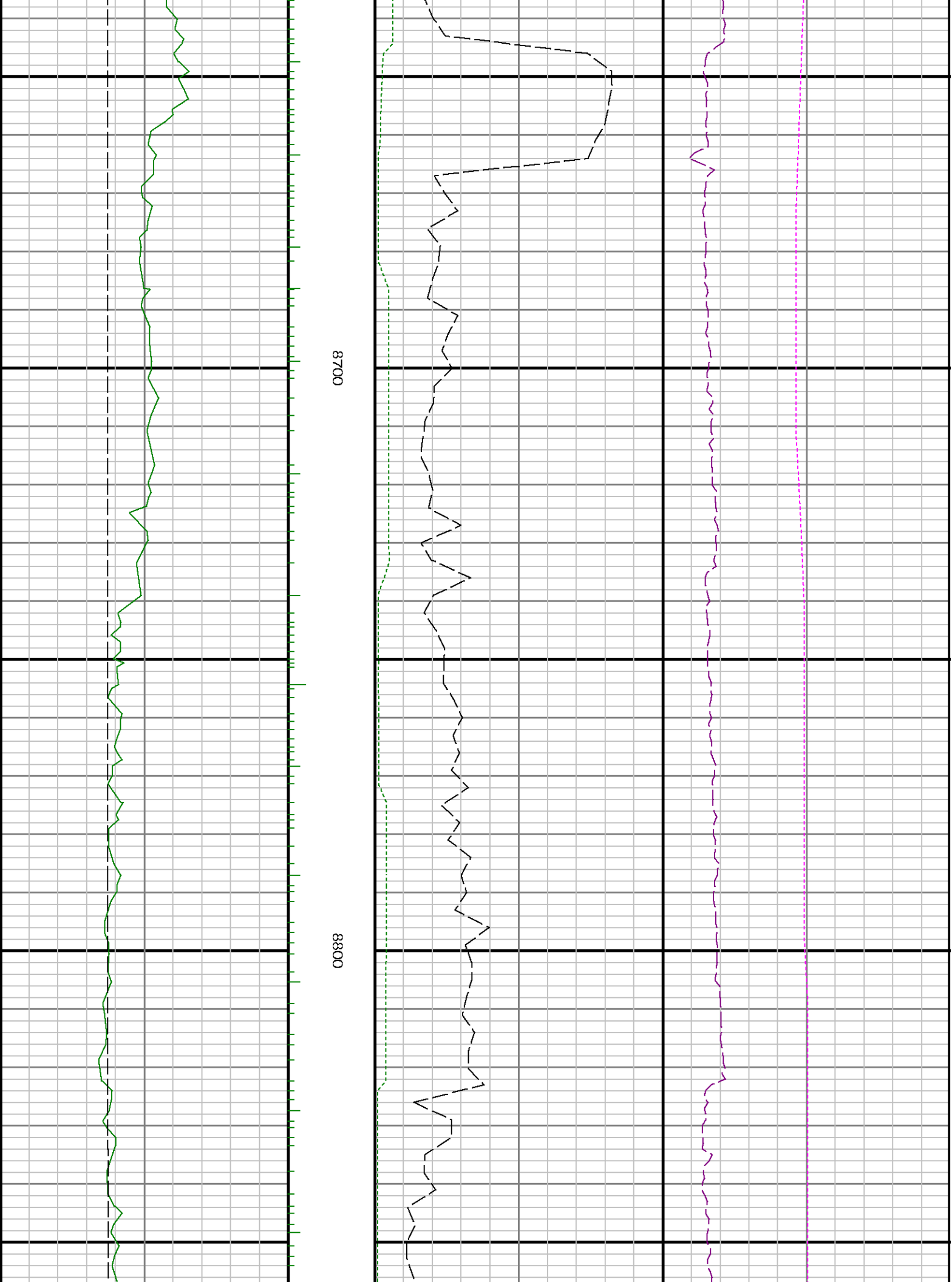


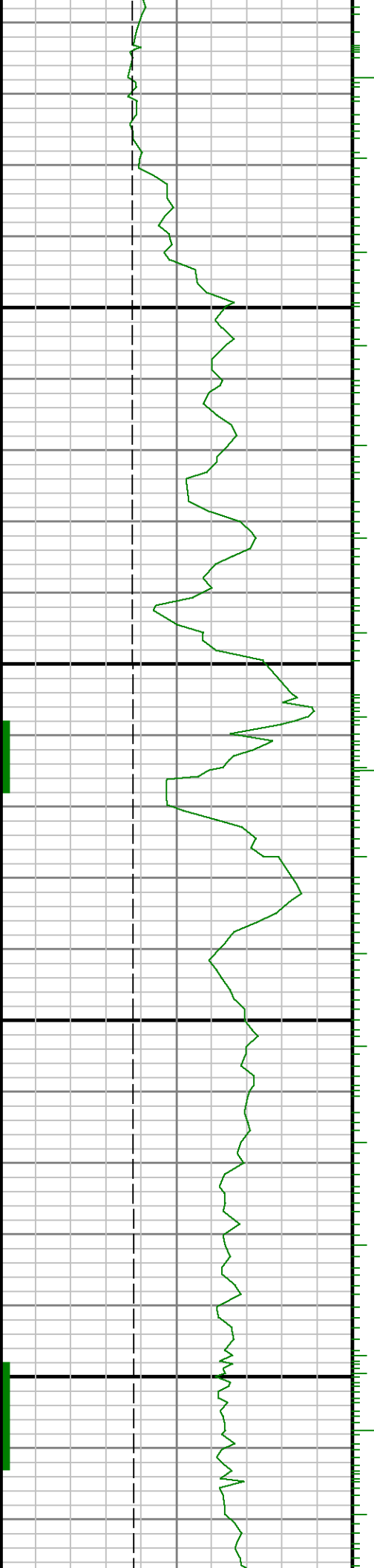






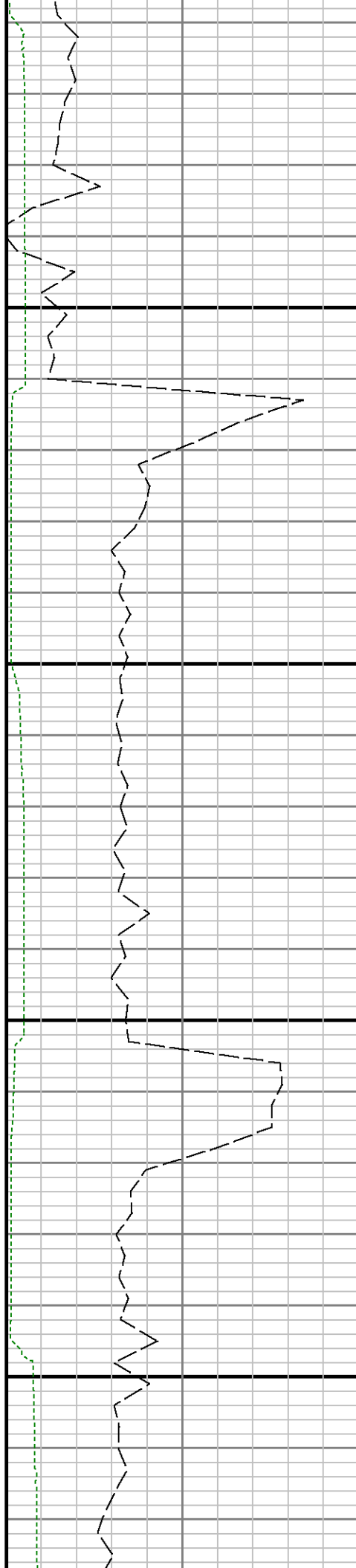


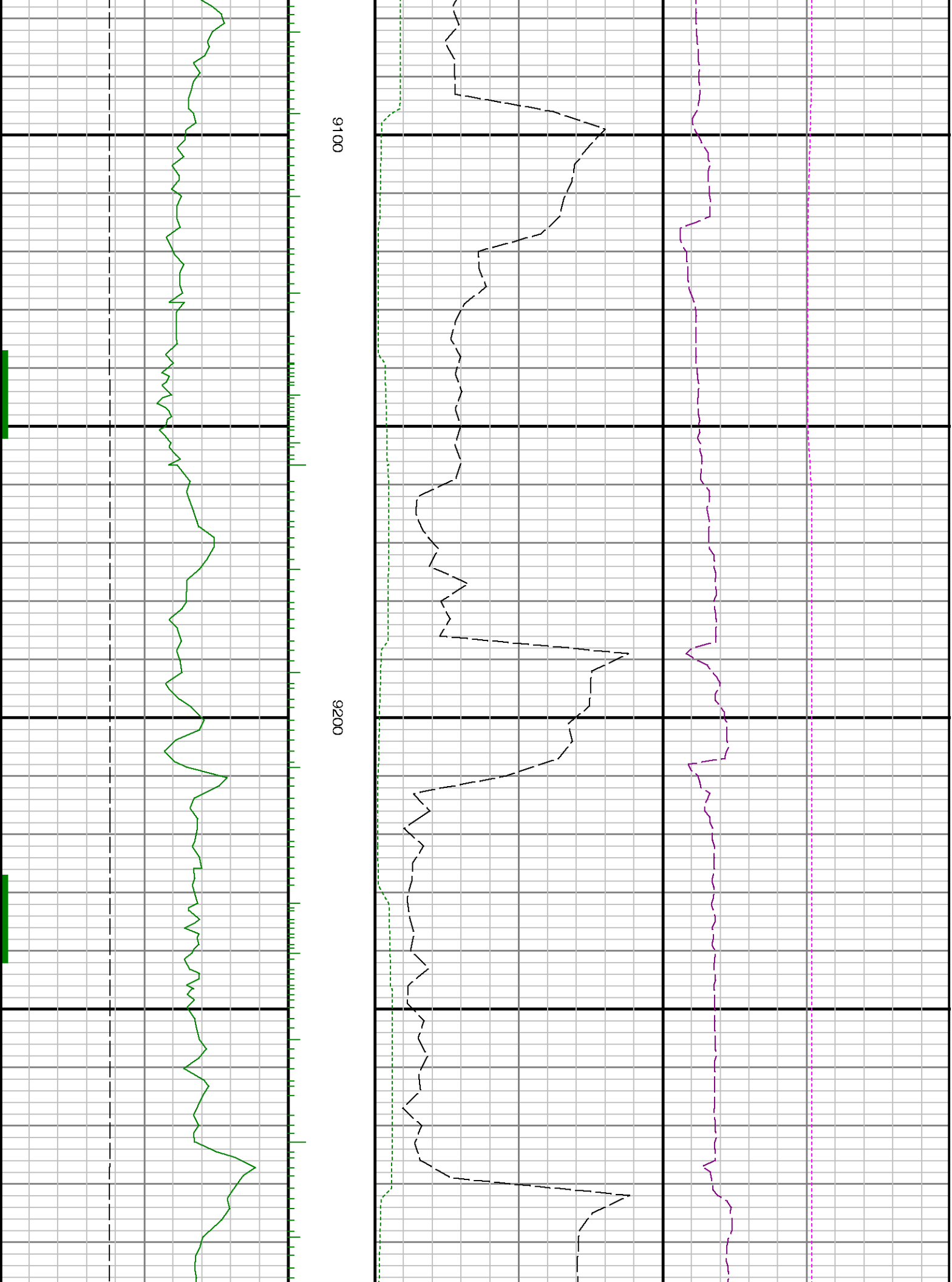


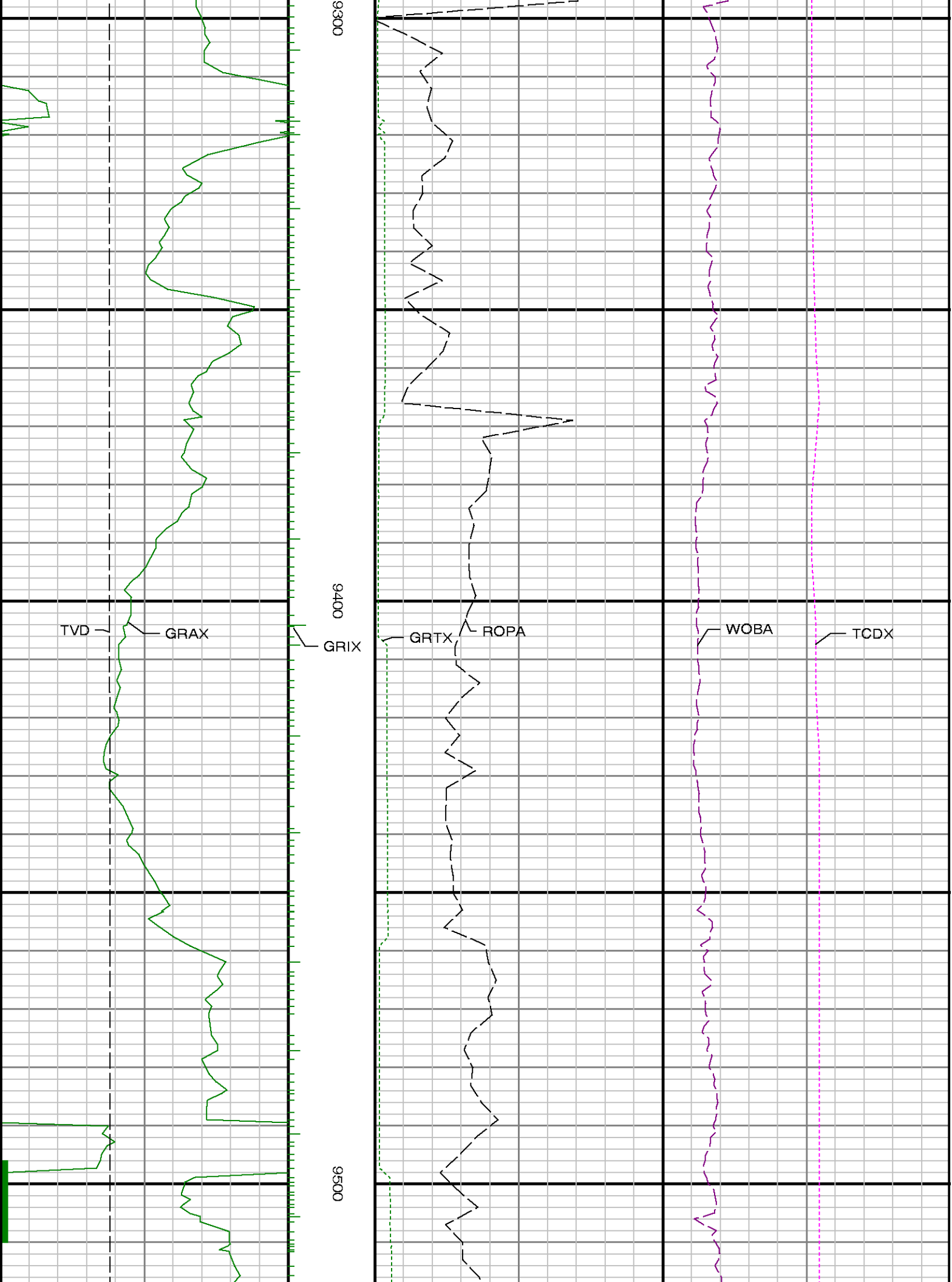


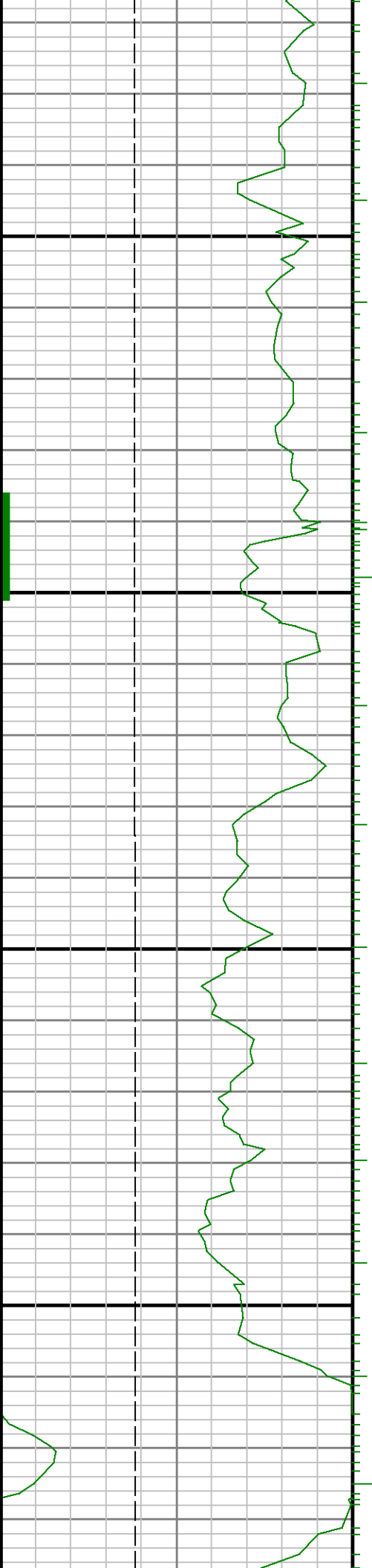
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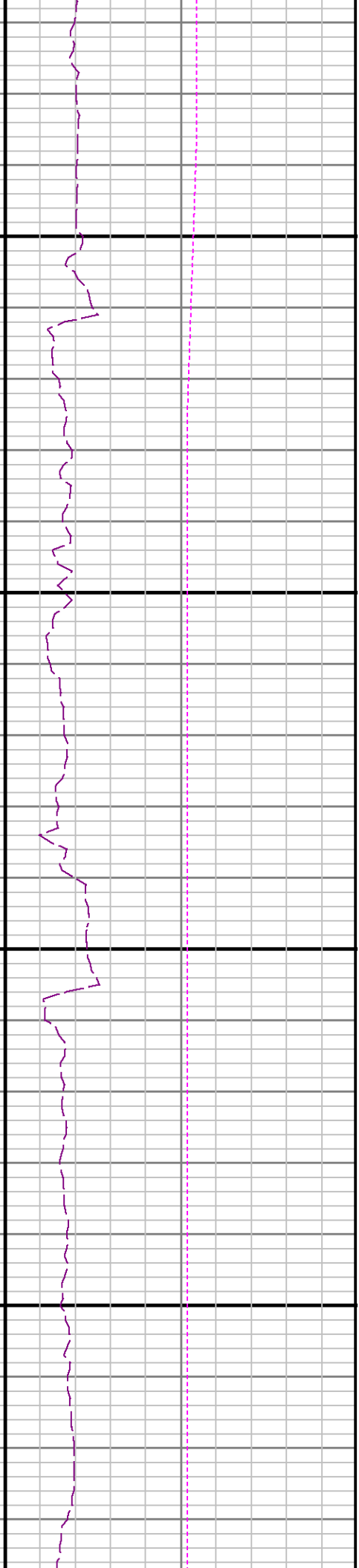
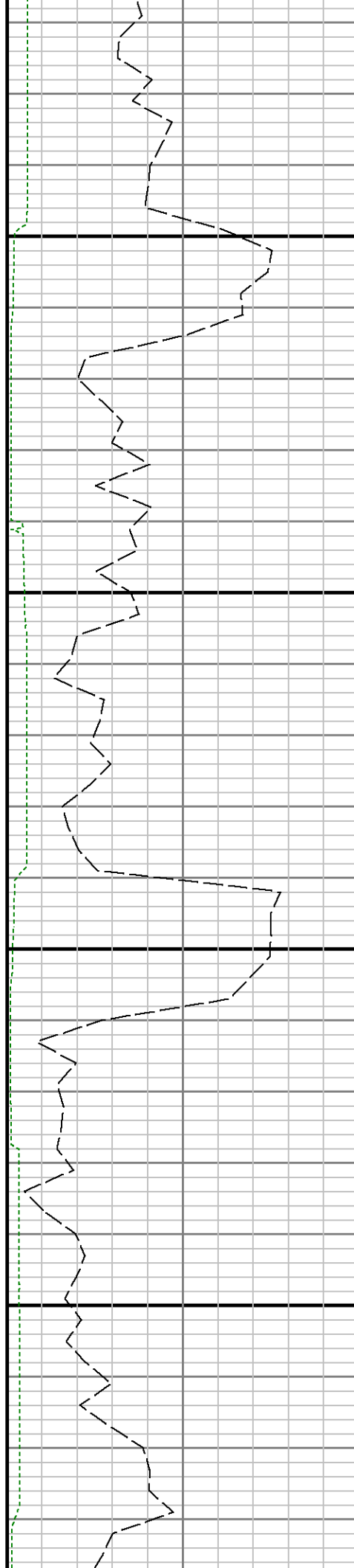


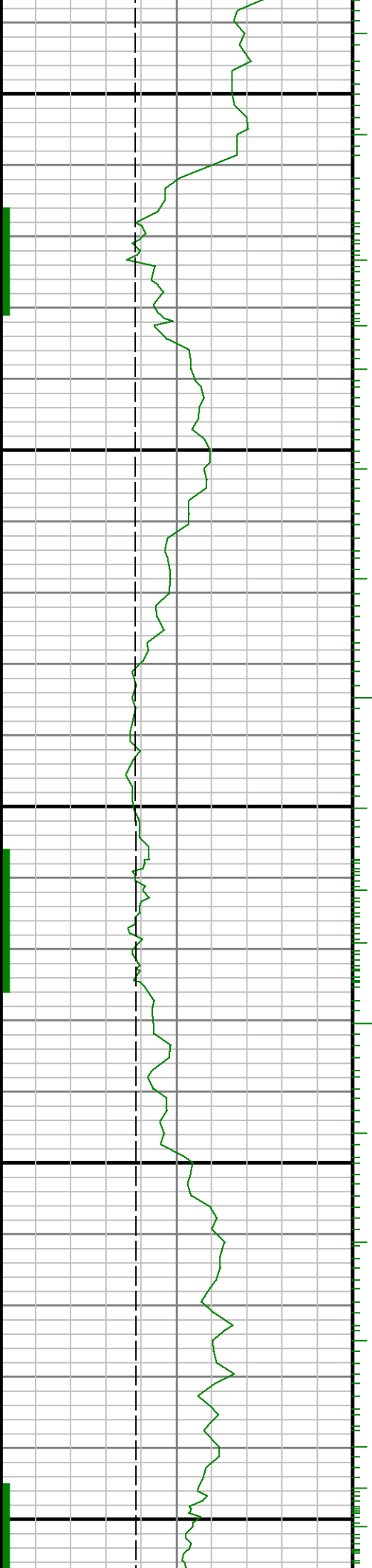




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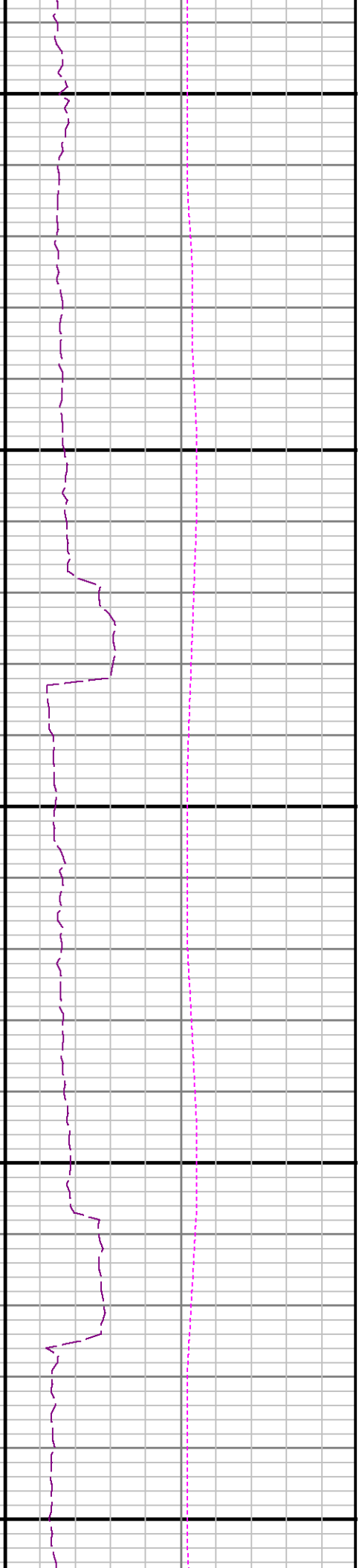
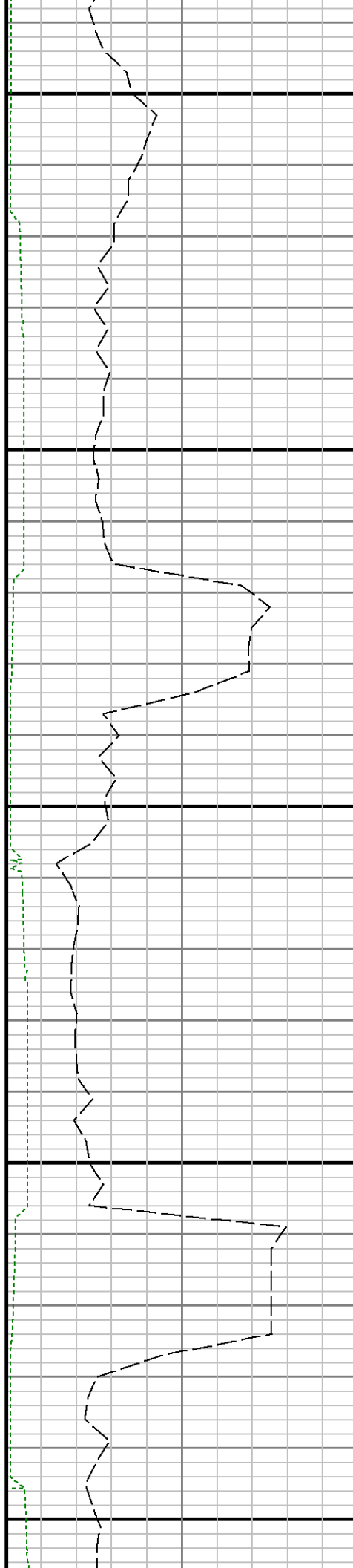
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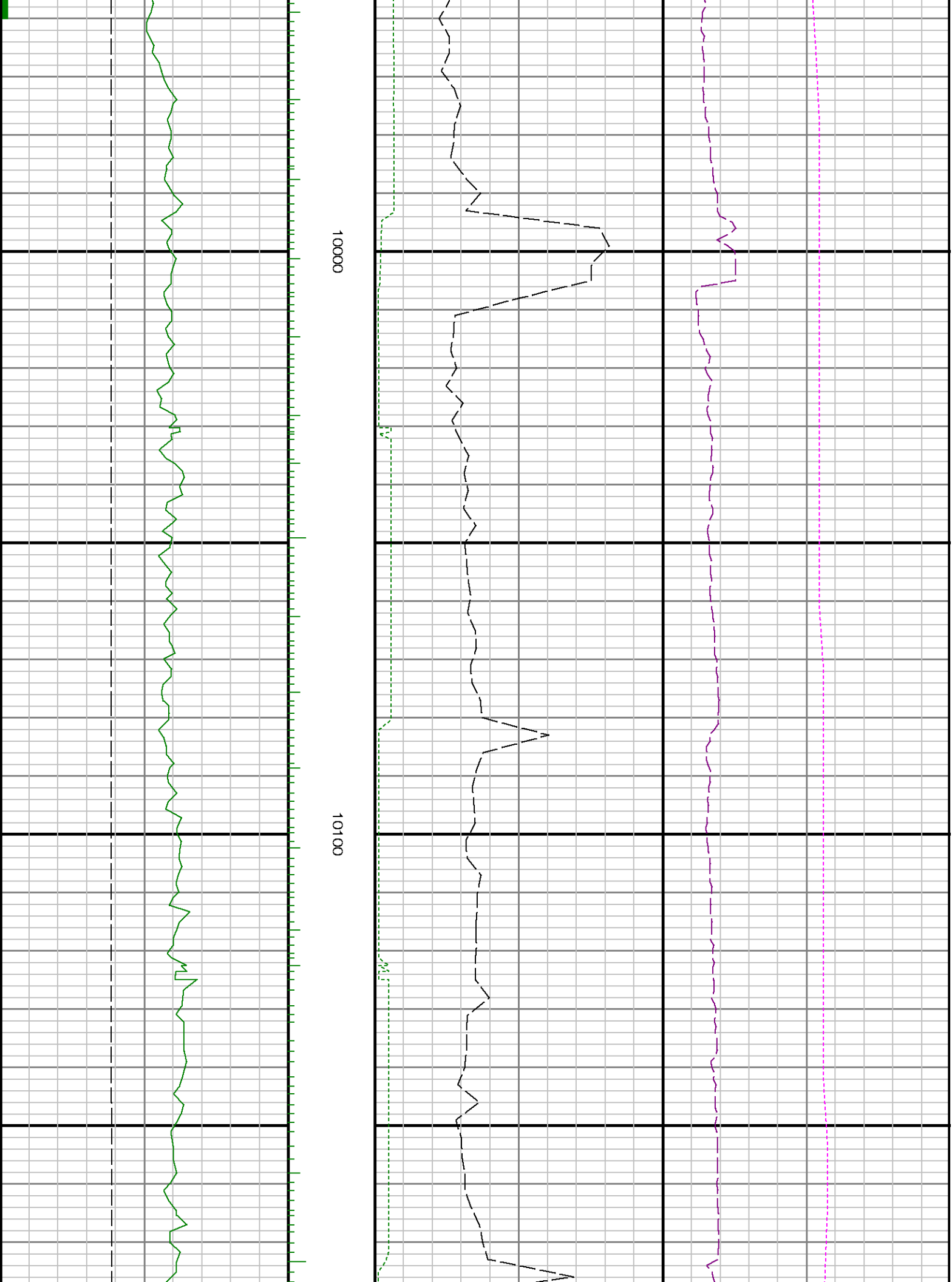


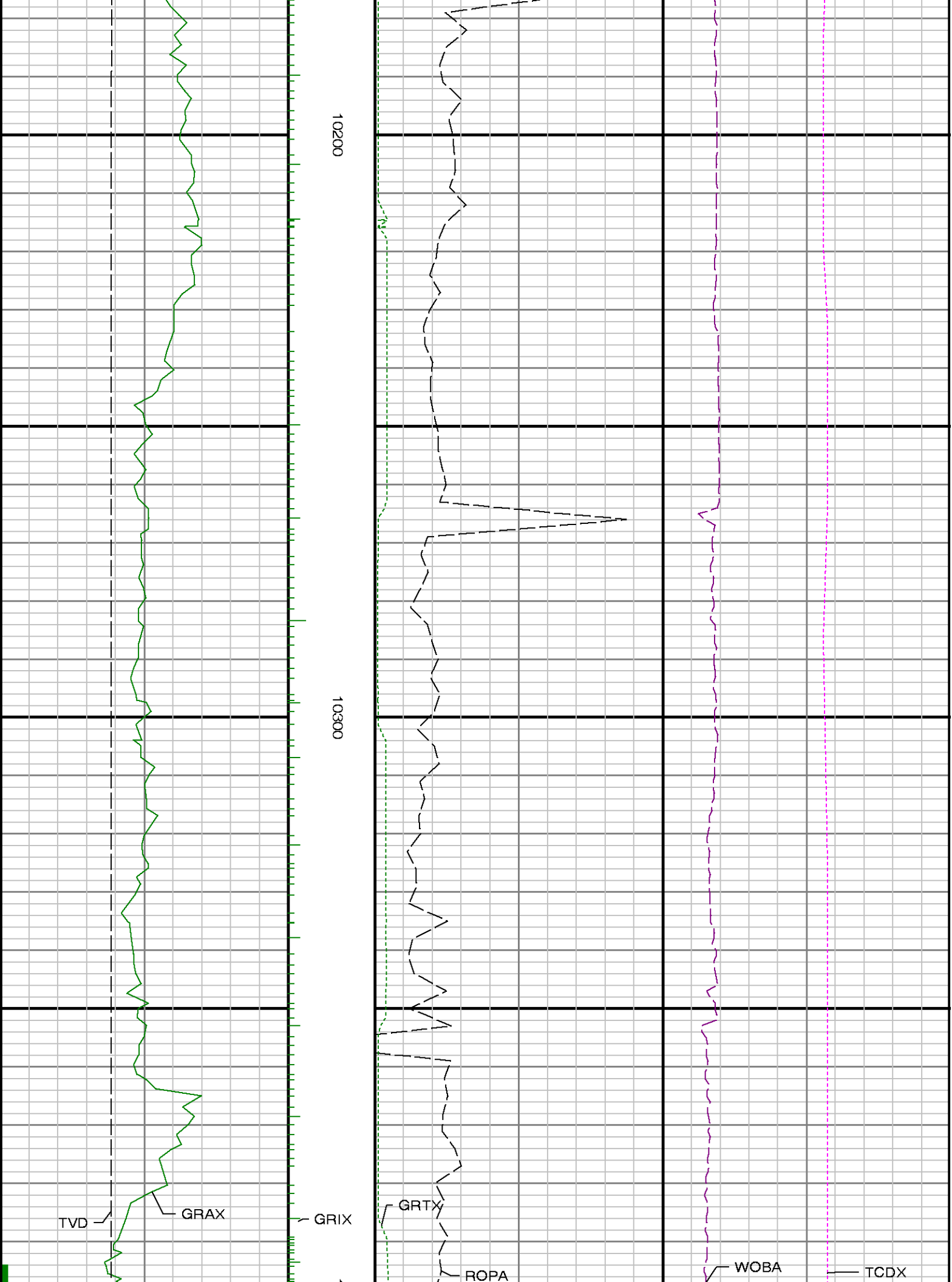


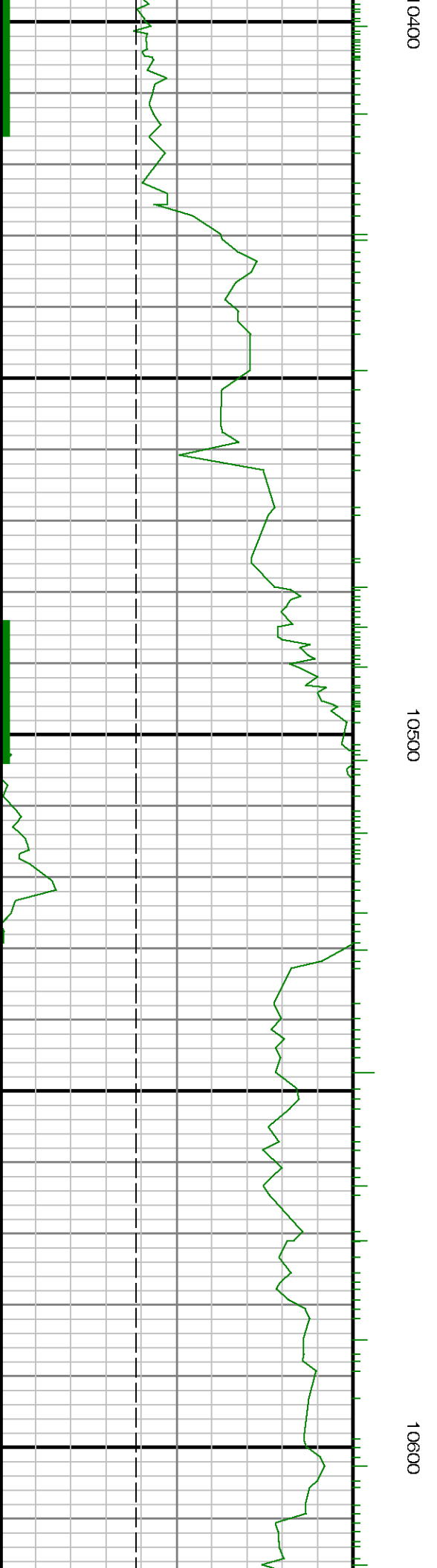
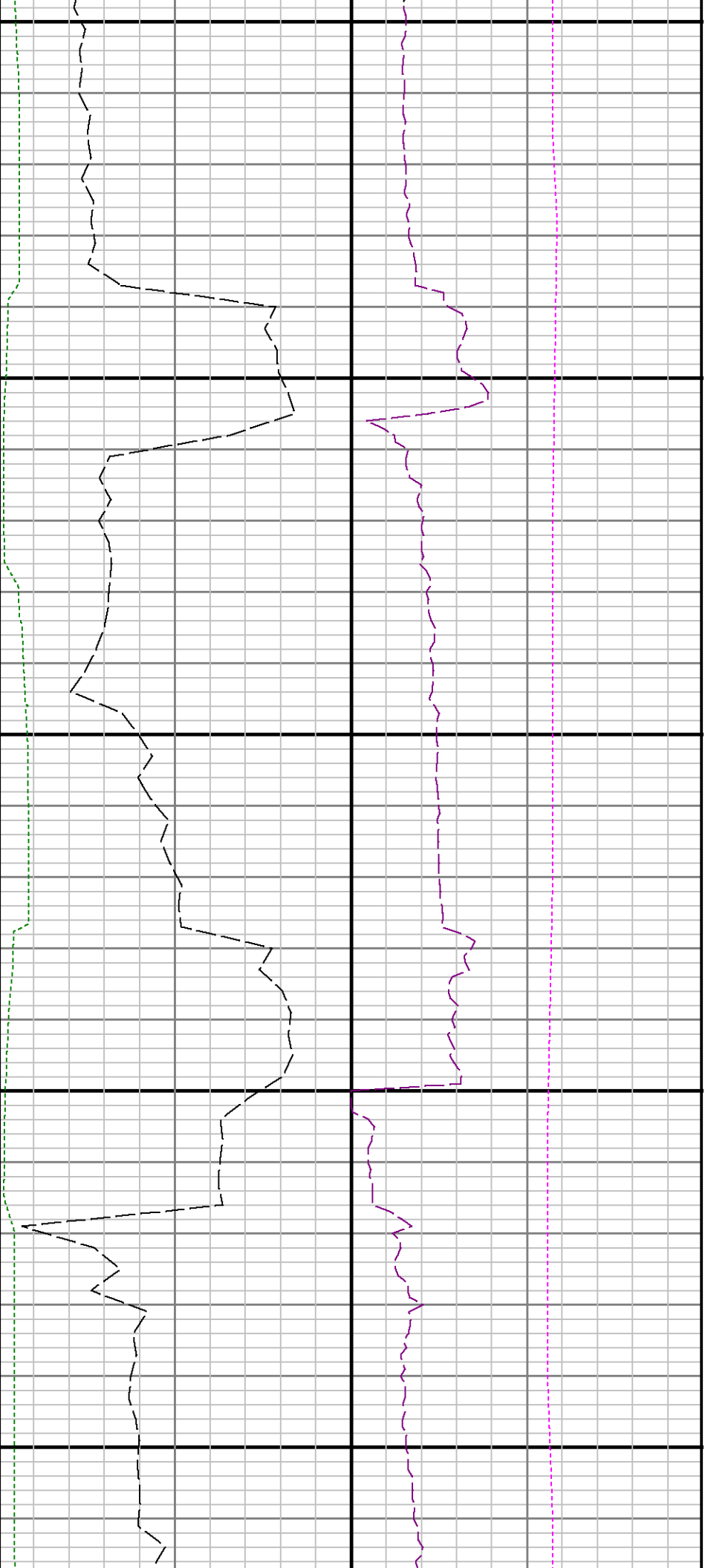
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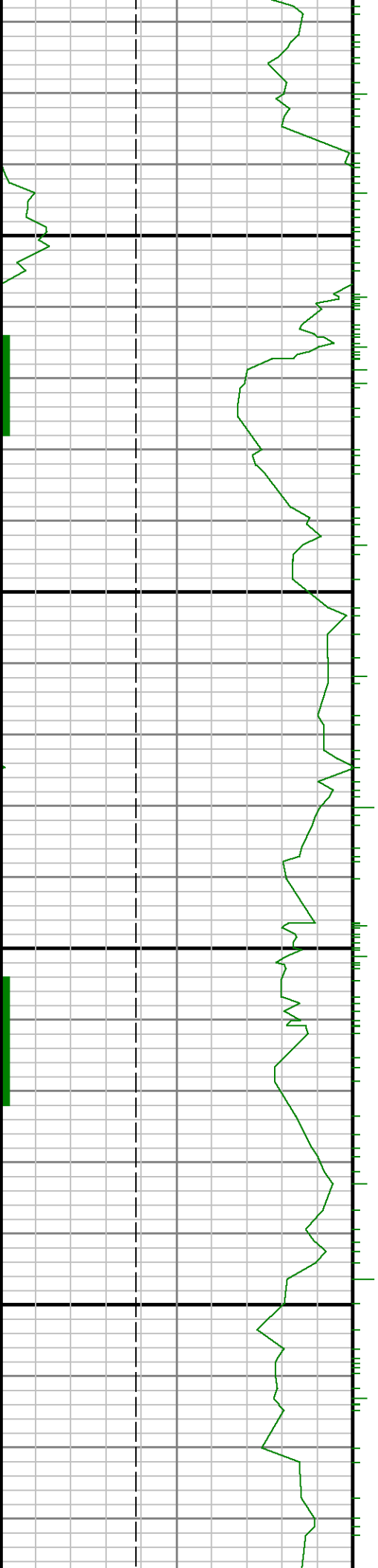


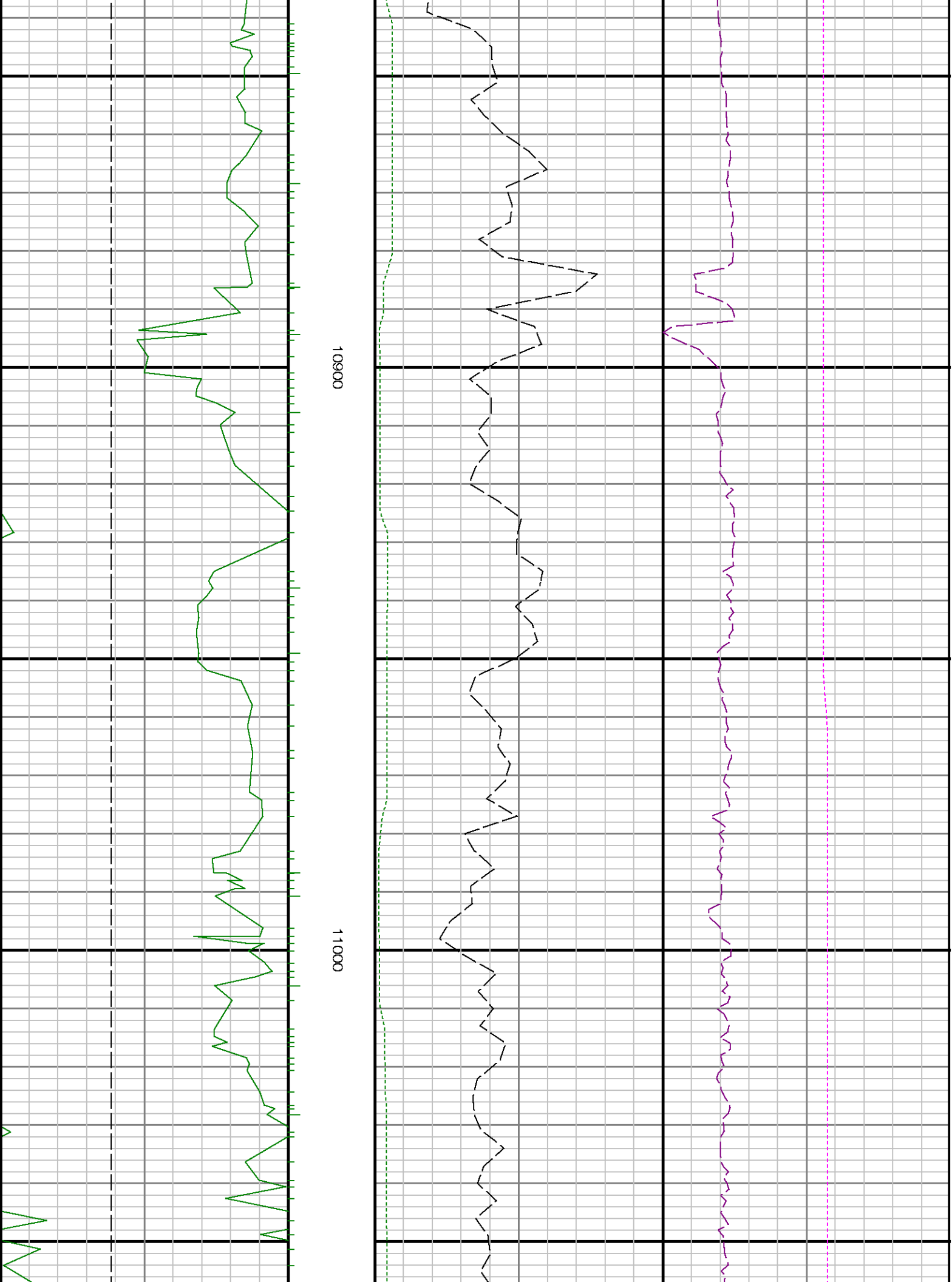


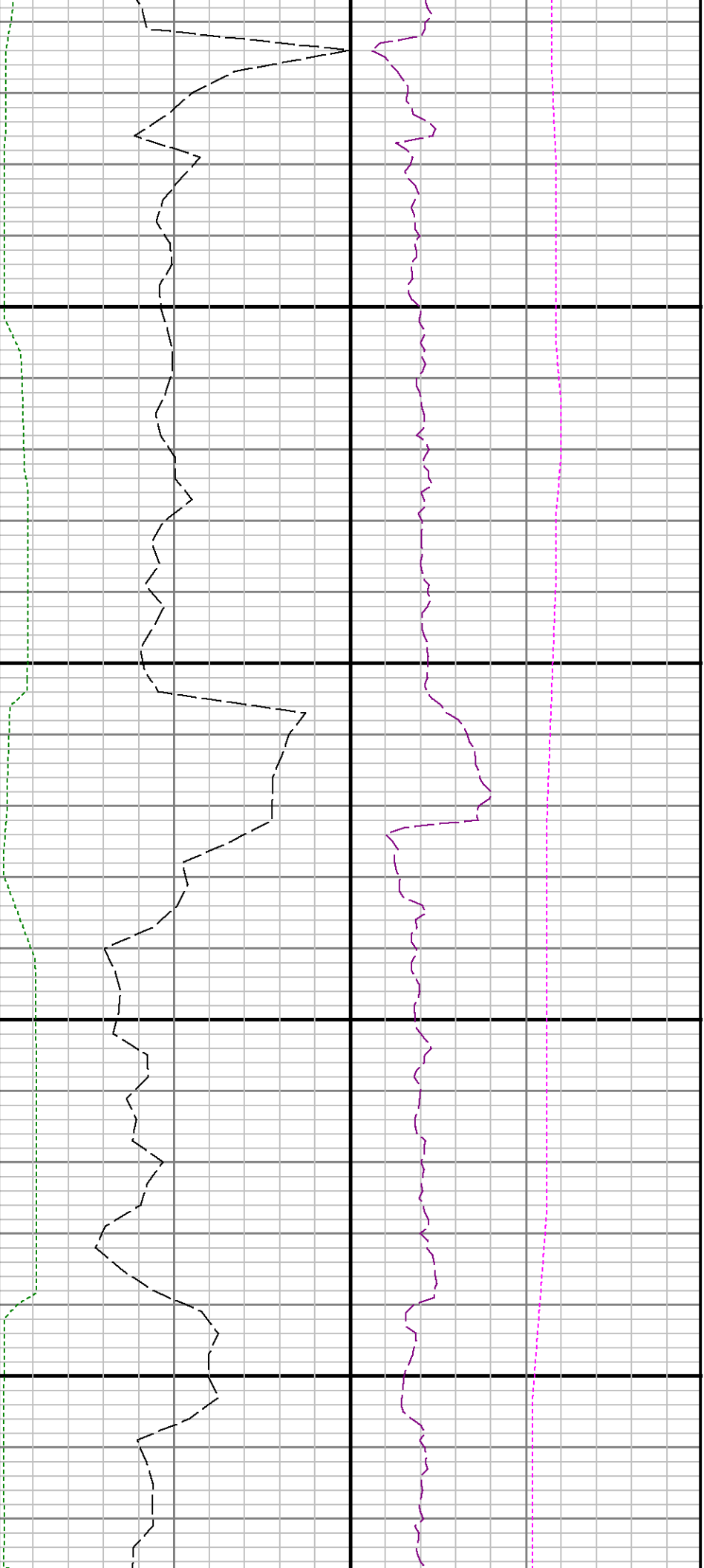


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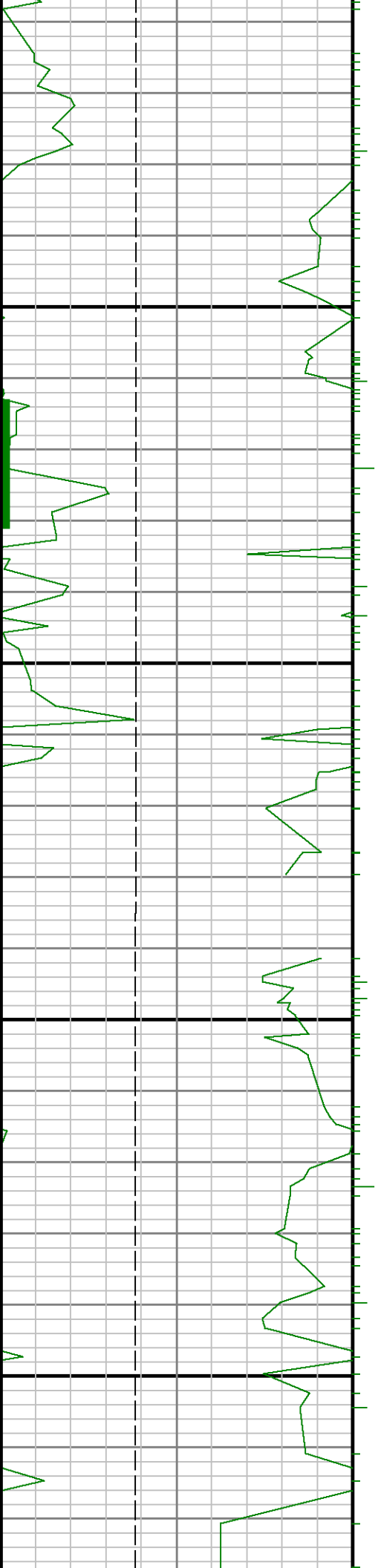


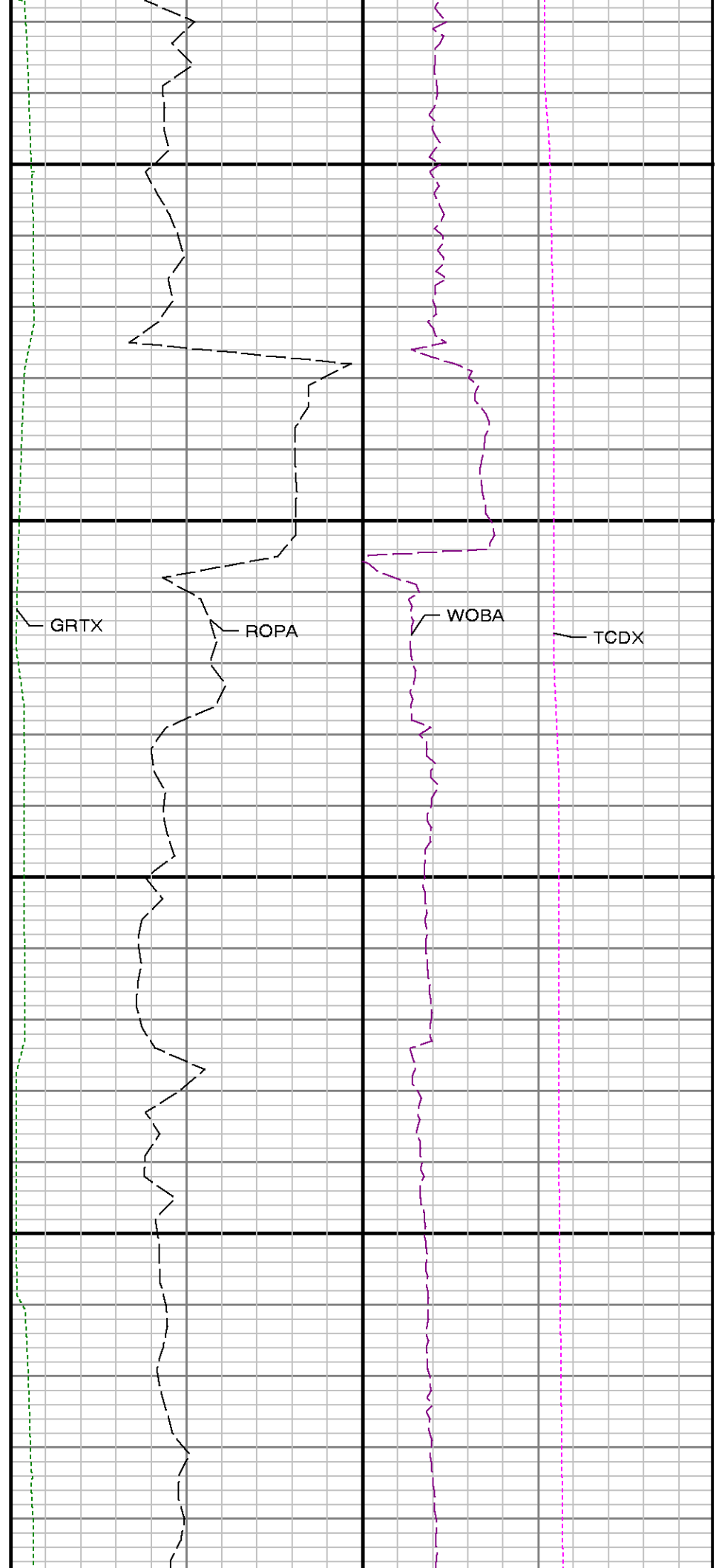
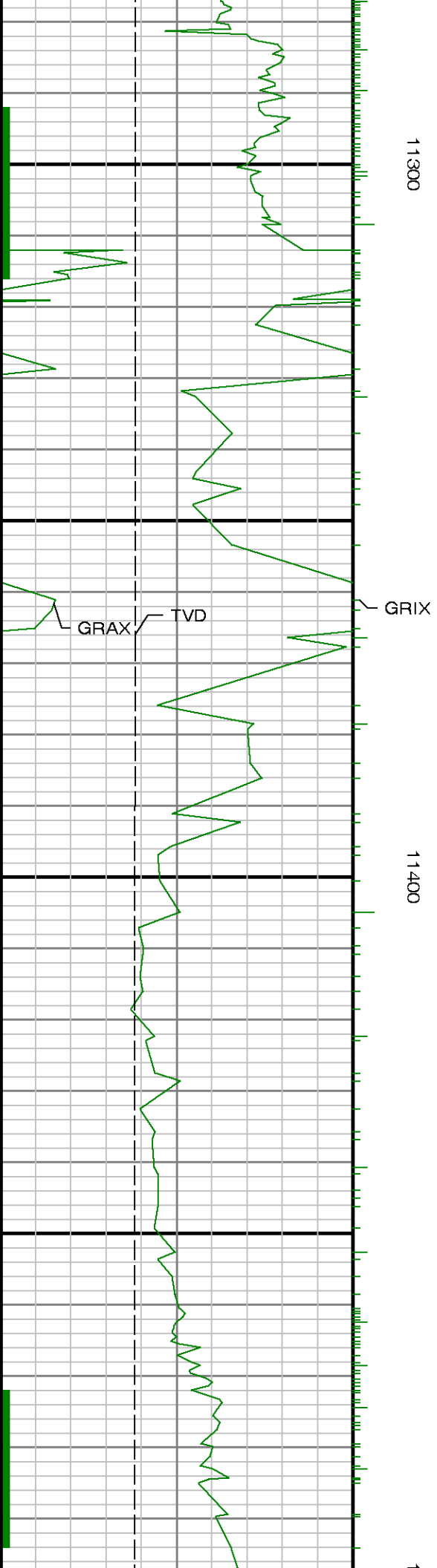


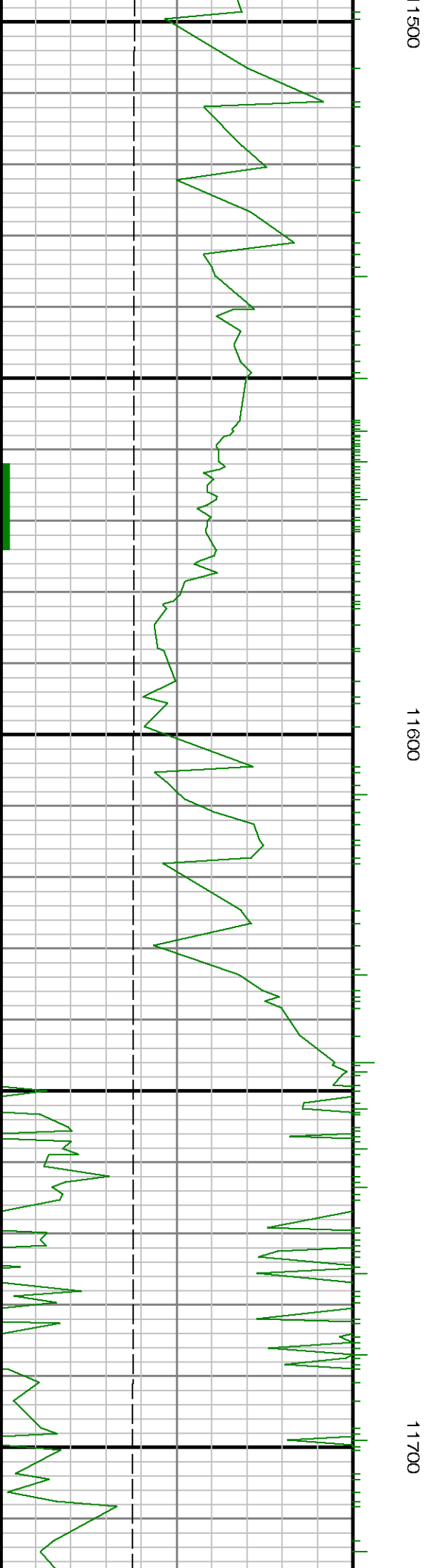
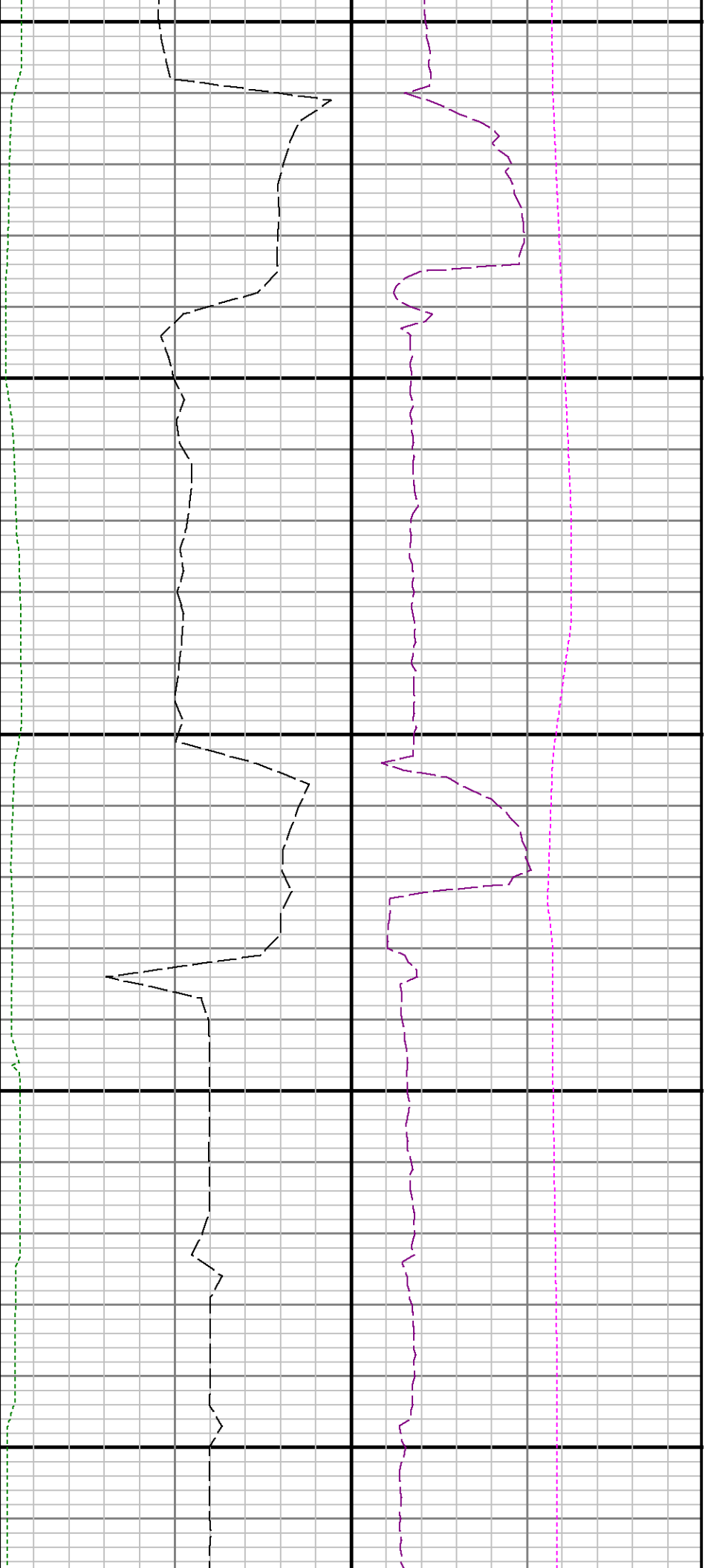


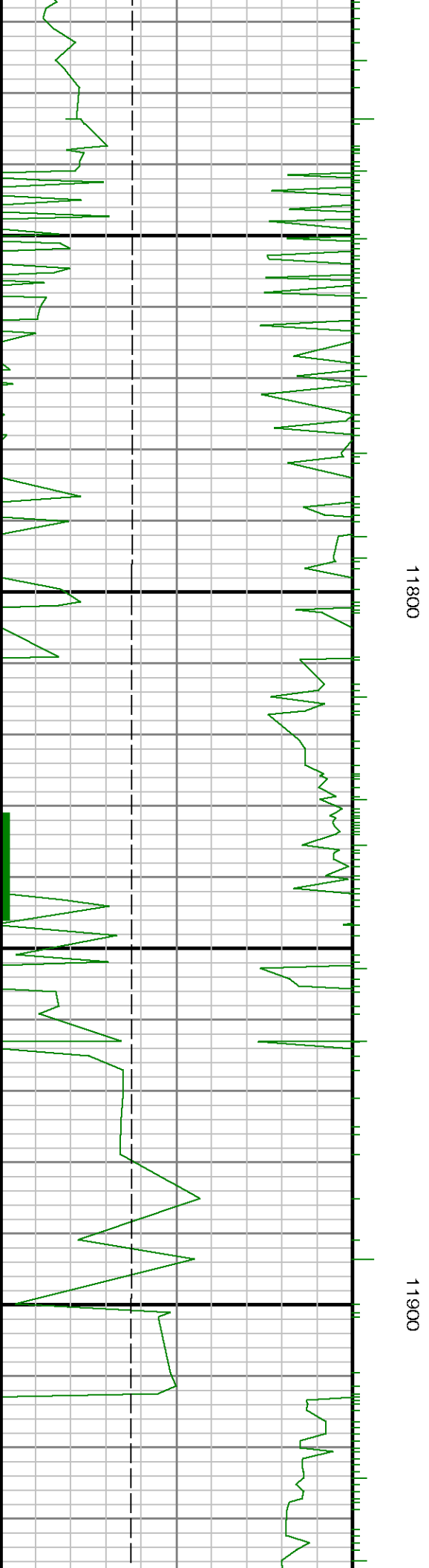
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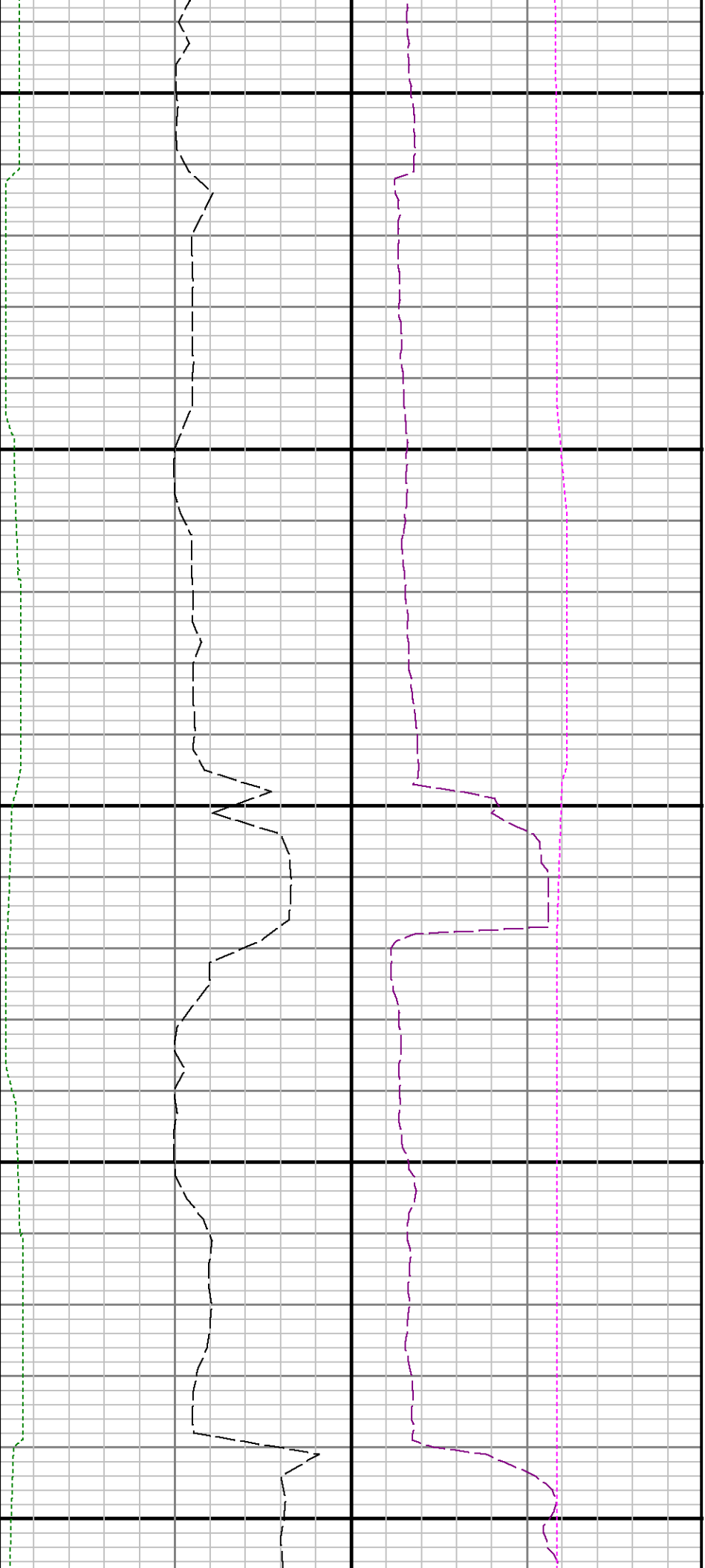
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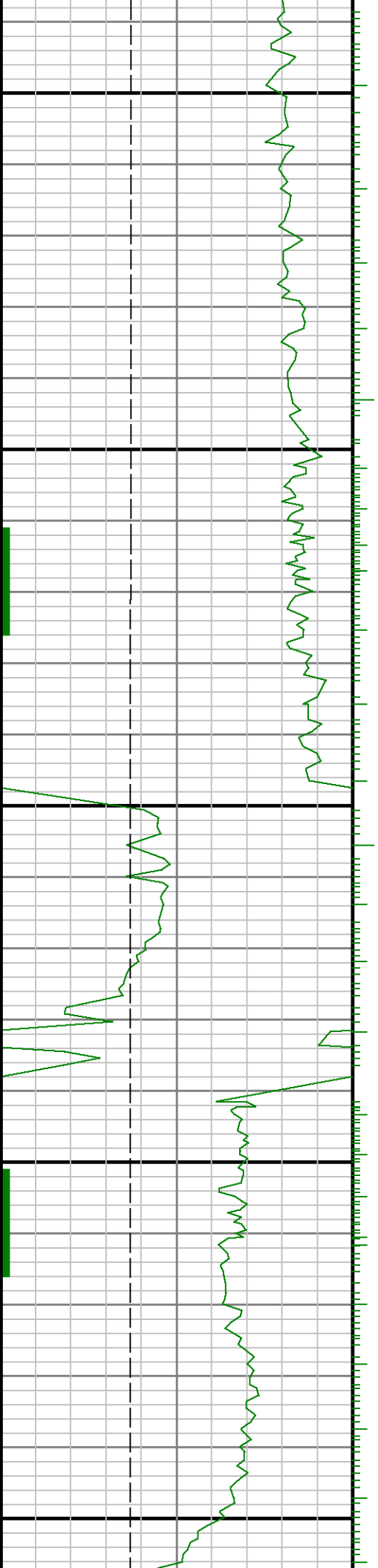






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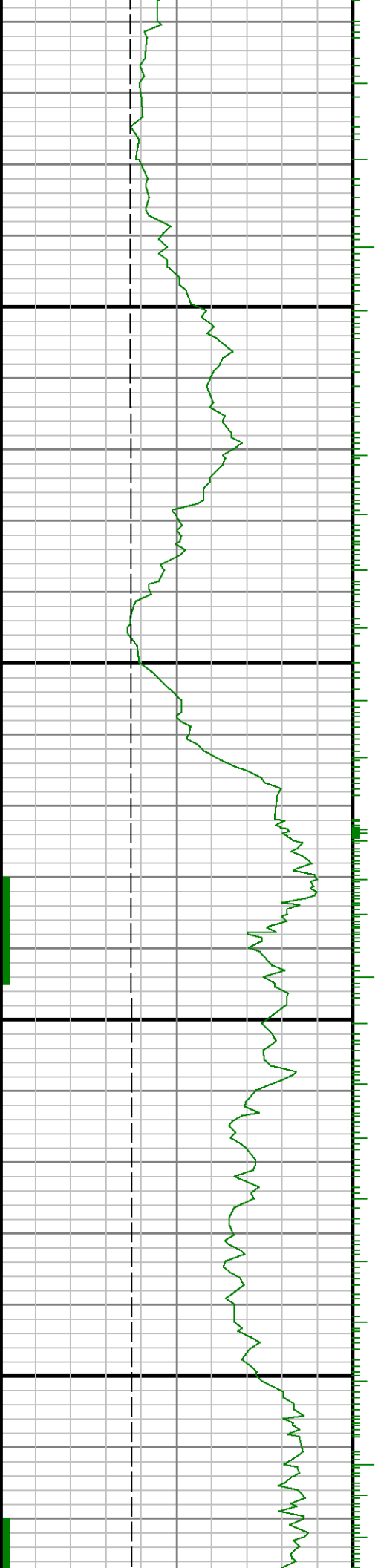
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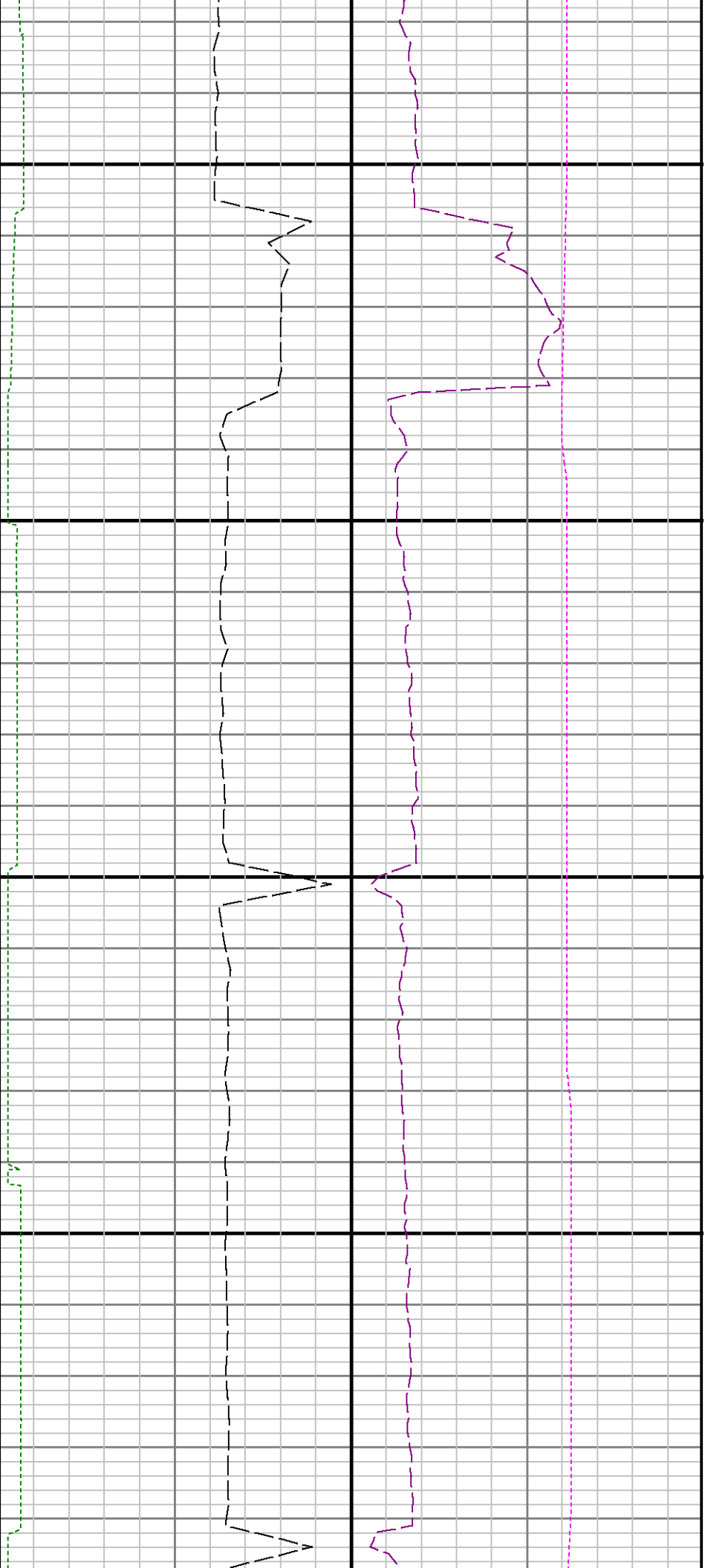




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12300





12400

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