



Real Time Log

Natural Formation Evaluation

Scale:

Company: Anadarko

1:240

Well: Badding 14N-2HZ

Measured Depth

Field: Weld County (Kerr McGee)

Region: RMD Country: U.S.A.

Status:

Final Print

Surface Location:

Latitude: 40° 5' 38.141" N

API Number:

05-123-38286

Longitude: 104° 44' 55.288" W

Other Services:

SEC: 35 TWN: 2N RNG: 66W

Directional VSS

Permanent Datum (P.D.):

Ground Level

Elevation:

5118.00 ft.

Kelly Bushing

13.00 ft.

Above P.D.

Elevations:

KB: 5131.00 ft.

DF: N/A

Log Measured From:

Drillers Depth

GL:

5118.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 6819.0 ft.

Date From:

08/Jan/2014

Dip Angle:

66.60 °

Azi Reference North:

True

Bottom: 15225.0 ft.

Date To:

16/Jan/2014

Total

Mag to Reference

8.30 °

Spud Date: 08/Jan/2014

Field Strength:

52946.0 nT

North Correction:

8.30 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1178.0 ft.	9.625 in.	36.00 lb/ft	Surface	1168.0 ft.
8.750 in.	1178.0 ft.	7814.0 ft.	7.000 in.	26.00 lb/ft	1168.0 ft.	7804.0 ft.
6.125 in.	7814.0 ft.	15274.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	1178.0 ft.	7814.0 ft.	8.750 in.	6636.0 ft.	0.6 ° / 350.0 °	82.9 ° / 181.2 °
Water Based	7814.0 ft.	15274.0 ft.	6.125 in.	7460.0 ft.	82.9 ° / 181.2 °	87.8 ° / 175.6 °
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Ensign 145	/ Ensign Drilling
PATS	6.4.1.34	Job No:	5994972	
		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	2	8.750	PDC	1.000	Steerable	6819.0	7759.0	1178.0	7814.0	09/Jan/2014 00:30	11/Jan/2014 03:00	31.1
2	2	3	6.125	PDC	3.000	Steerable	7759.0	14610.0	7814.0	14665.0	12/Jan/2014 02:10	15/Jan/2014 03:35	45.3
3	3	4	6.125	PDC	3.000	Steerable	14610.0	15225.0	14665.0	15274.0	15/Jan/2014 04:10	16/Jan/2014 12:00	8.7

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Donald Delay	08/Jan/2014	16/Jan/2014	Michael Gurnsey	08/Jan/2014	16/Jan/2014			
Thanh Hoang Nguyen	08/Jan/2014	16/Jan/2014	Alexander Janorschke	08/Jan/2014	16/Jan/2014			

			Peter Adebayo	08/Jan/2014	16/Jan/2014			
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Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc/30min)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
10/Jan/2014 06:50	2	7814.0	Water Based	9.8	41	8.5	5.0	1 / 92	Active Mud Pit	900	N/A
12/Jan/2014 06:52	2	9335.0	Water Based	9.3	44	8.5	4.0	1 / 94	Active Mud Pit	900	N/A
14/Jan/2014 06:53	2	12906.0	Water Based	9.2	43	8.5	5.0	2 / 92	Active Mud Pit	900	N/A
15/Jan/2014 17:45	3	14665.0	Water Based	9.6	42	8.5	5.2	3 / 90	Active Mud Pit	1500	N/A
16/Jan/2014 19:30	3	14890.0	Water Based	9.7	42	9.0	6.0	3 / 91	Active Mud Pit	1500	N/A

Mnemonics

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

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	12456788	Directional	56.41	6.750	2.875
1	SRIG	11714036	Gamma	53.04	6.750	2.875
2	DIR	11958754	Directional	54.53	4.750	2.625
2	SRIG	12613296	Gamma	51.15	4.750	2.625
3	DIR	11958754	Directional	52.60	4.750	2.625
3	SRIG	12613296	Gamma	49.22	4.750	2.625

Service and Tool Mnemonics

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

Comments

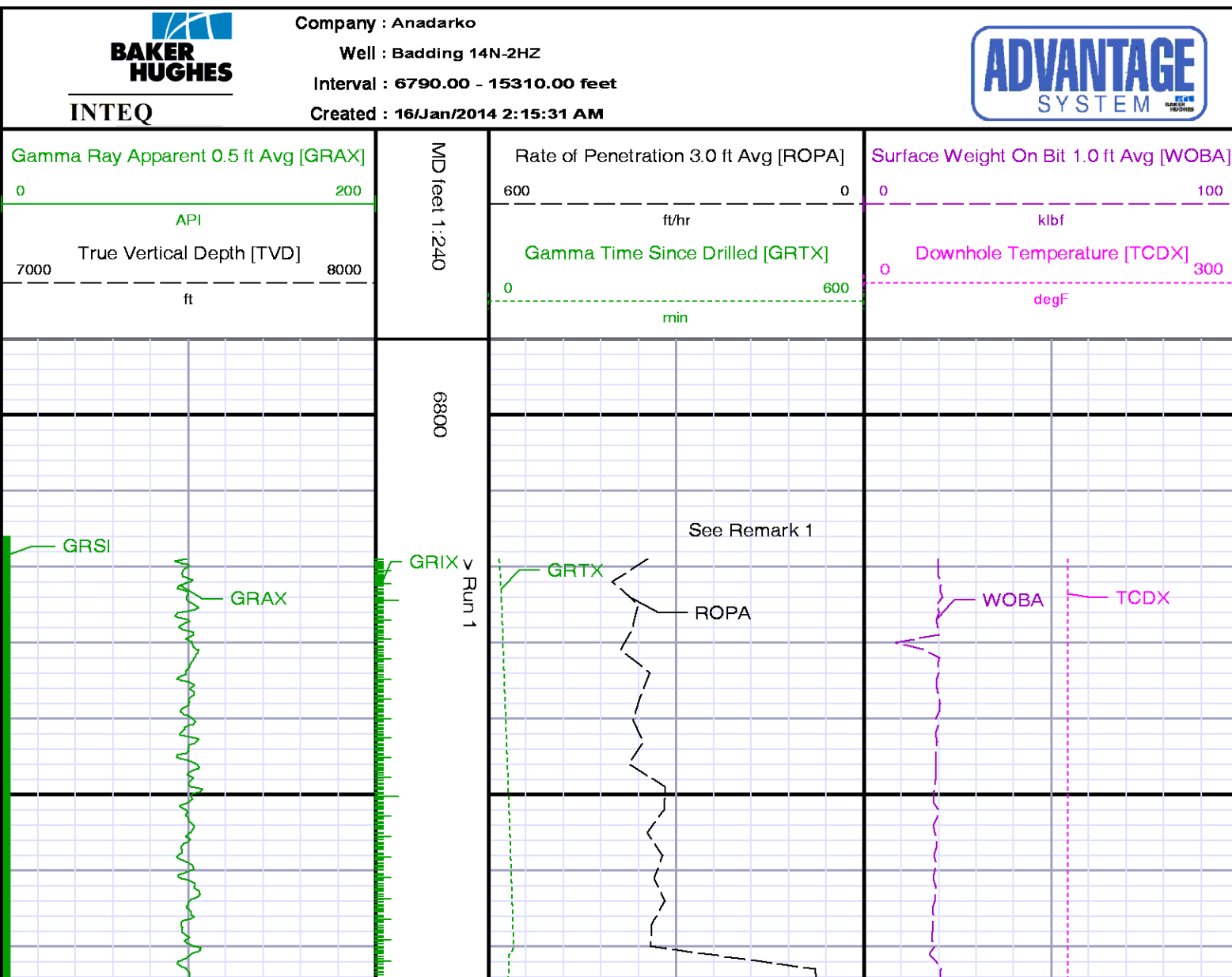
1.) Baker Hughes Run 1 utilized 6 1/2 inch NaviGamma (directional and gamma ray) services behind an 8 3/4 inch bit from 1178 to 7814 feet MD (1177.98 to 7407.48 feet TVD).
2.) Baker Hughes Run 2 utilized 4 3/4 inch NaviGamma (directional and gamma ray) services behind a 6 1/8 inch bit from 7814 to 14665 feet MD (7407.48 to 7407.75 feet TVD).

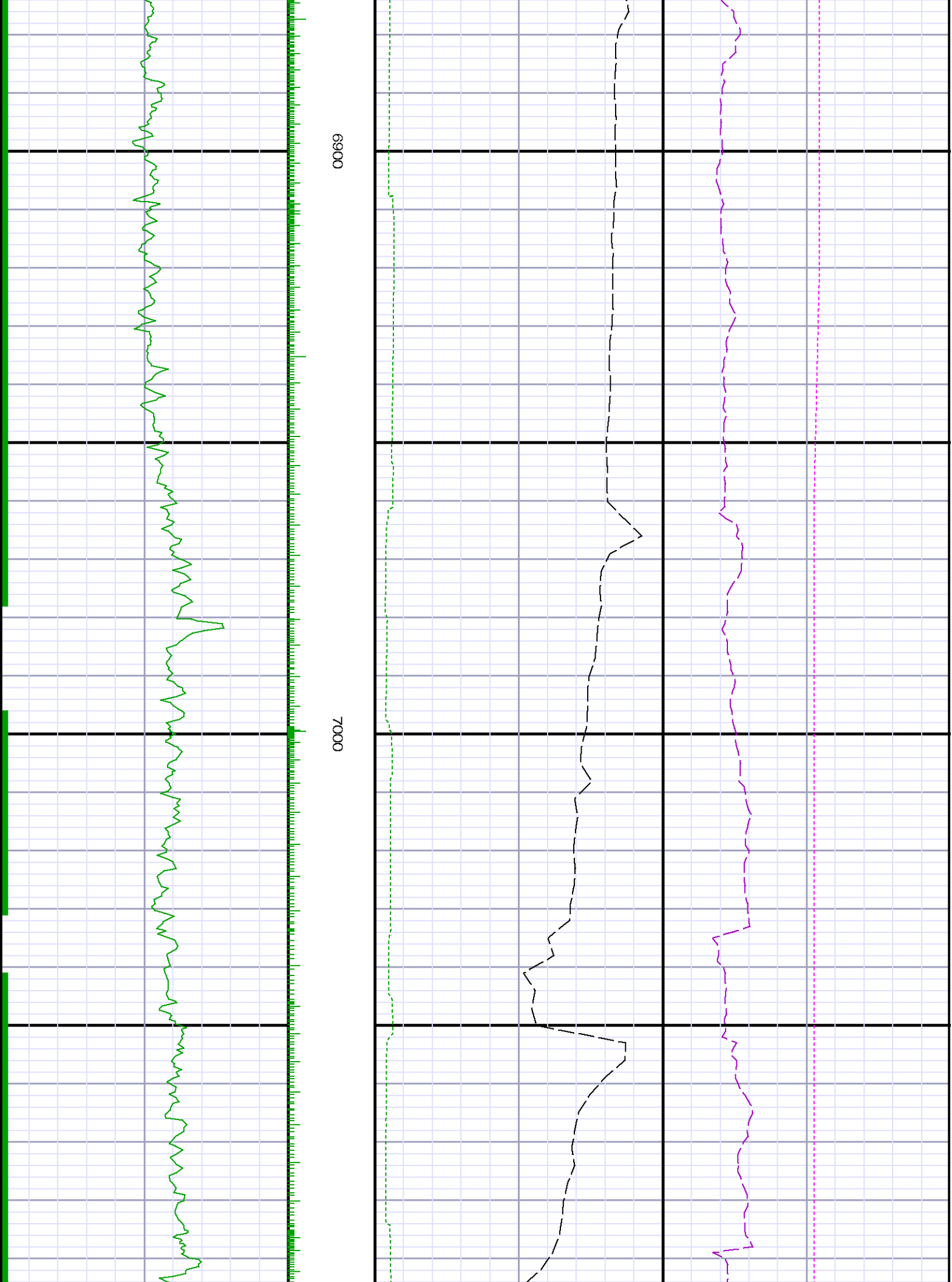
3.) Baker Hughes Run 3 utilized 4 3/4 inch NaviGamma (directional and gamma ray) services behind a 6 1/8 inch bit from 14665 to 15274 feet MD (7407.75 to 7419.53 feet TVD).

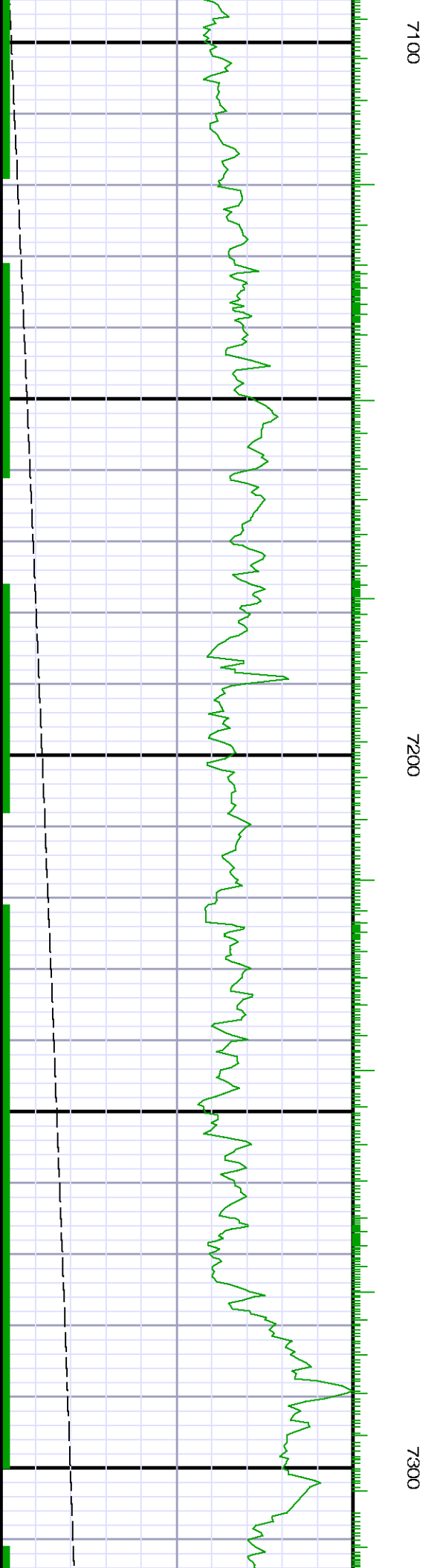
3.) A sliding indicator is shown on the left side of track 1 as a heavy line. This indicator has been shifted to the Gamma Ray sensor offset to correspond with data acquired while sliding.

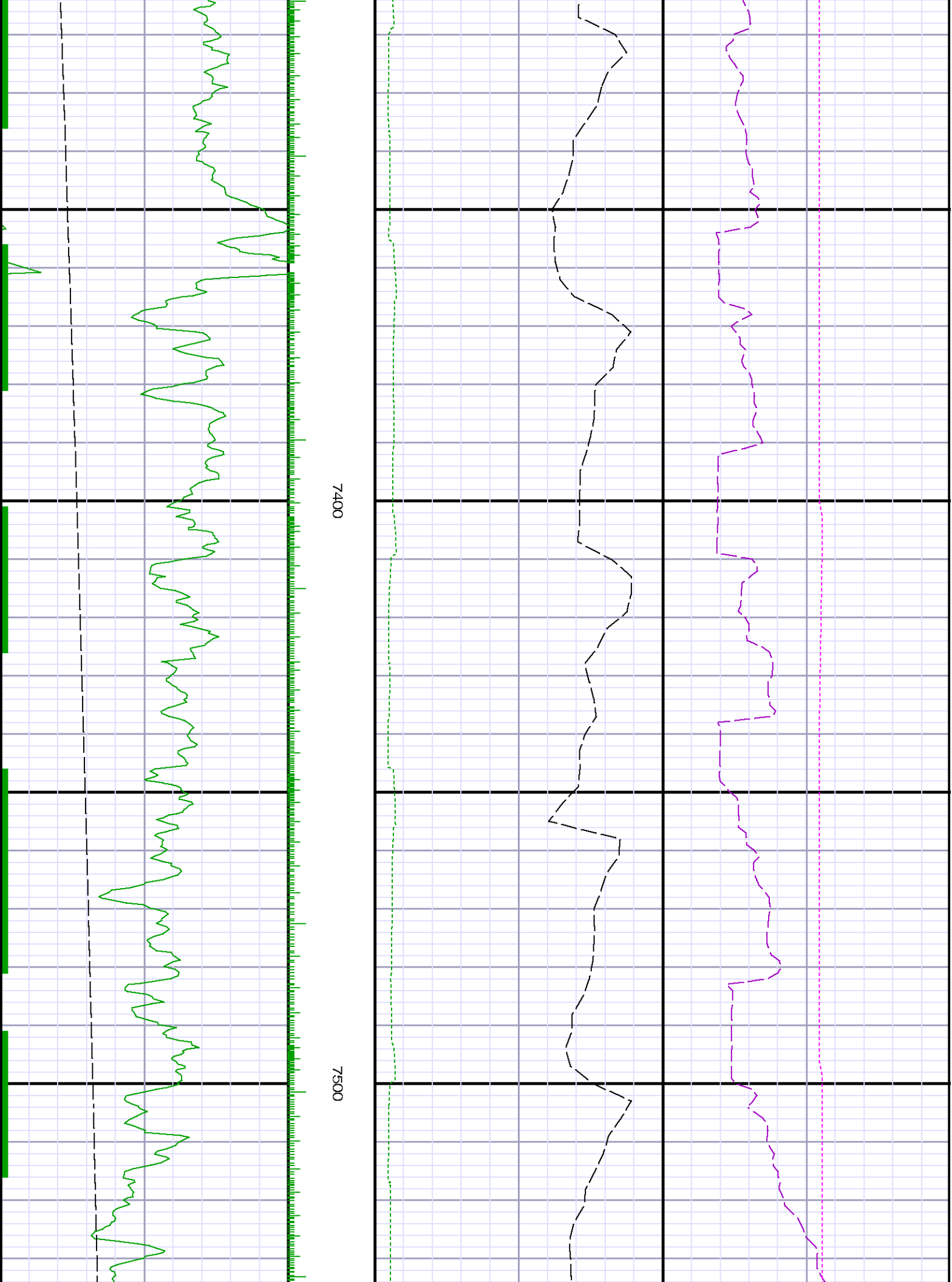
4.) Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes INTEQ. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified, and the unverified depths as supplied to INTEQ are being used to present logging data.

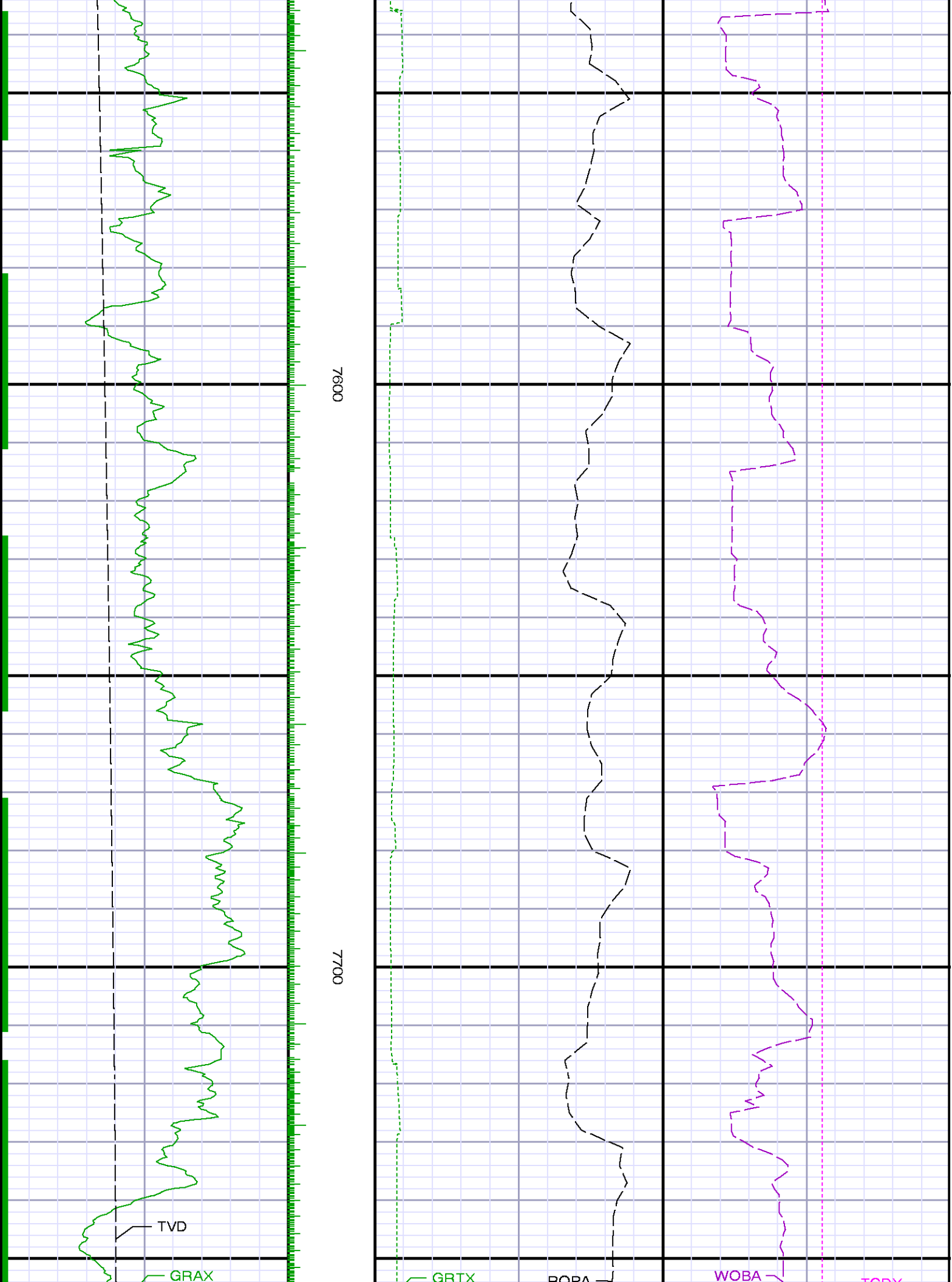
Remarks				
Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	6819	8.750	1	The interval from surface to 6819 feet MD (6759.36 feet TVD) was not logged since logging services began at curve kick off point during run 1.
2	7759	6.125	2	The interval from 7759 to 7814 feet MD (7403.30 to 7407.48 feet TVD) was logged up to 30 hours after being drilled due to casing and cement operations.
3	15225	6.125	3	The interval from 15225 to 15274 feet MD (7417.59 to 7419.53 feet TVD) has no GRAX or GRTX due to Gamma Ray sensor to bit offset upon completing the lateral section.

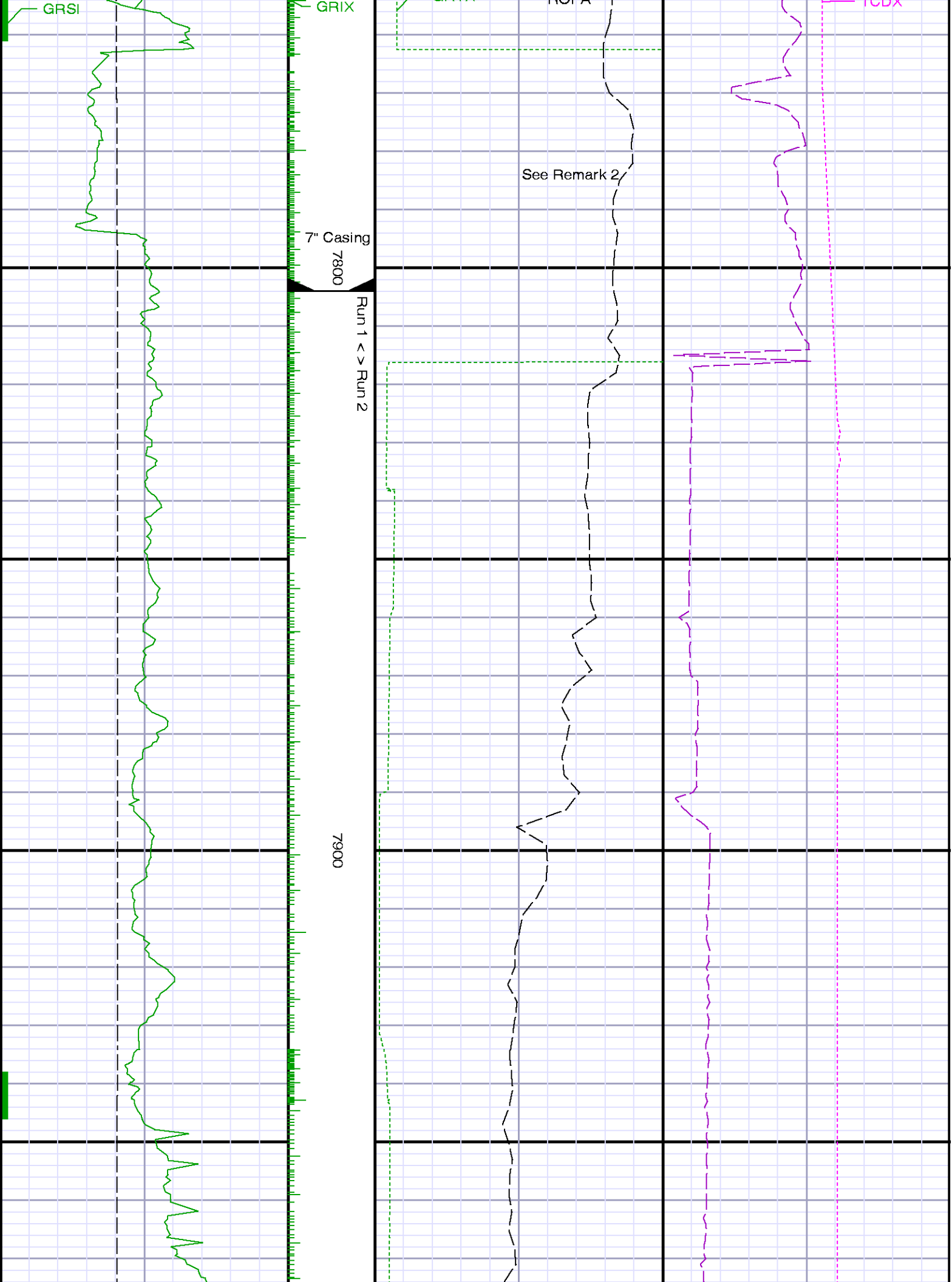


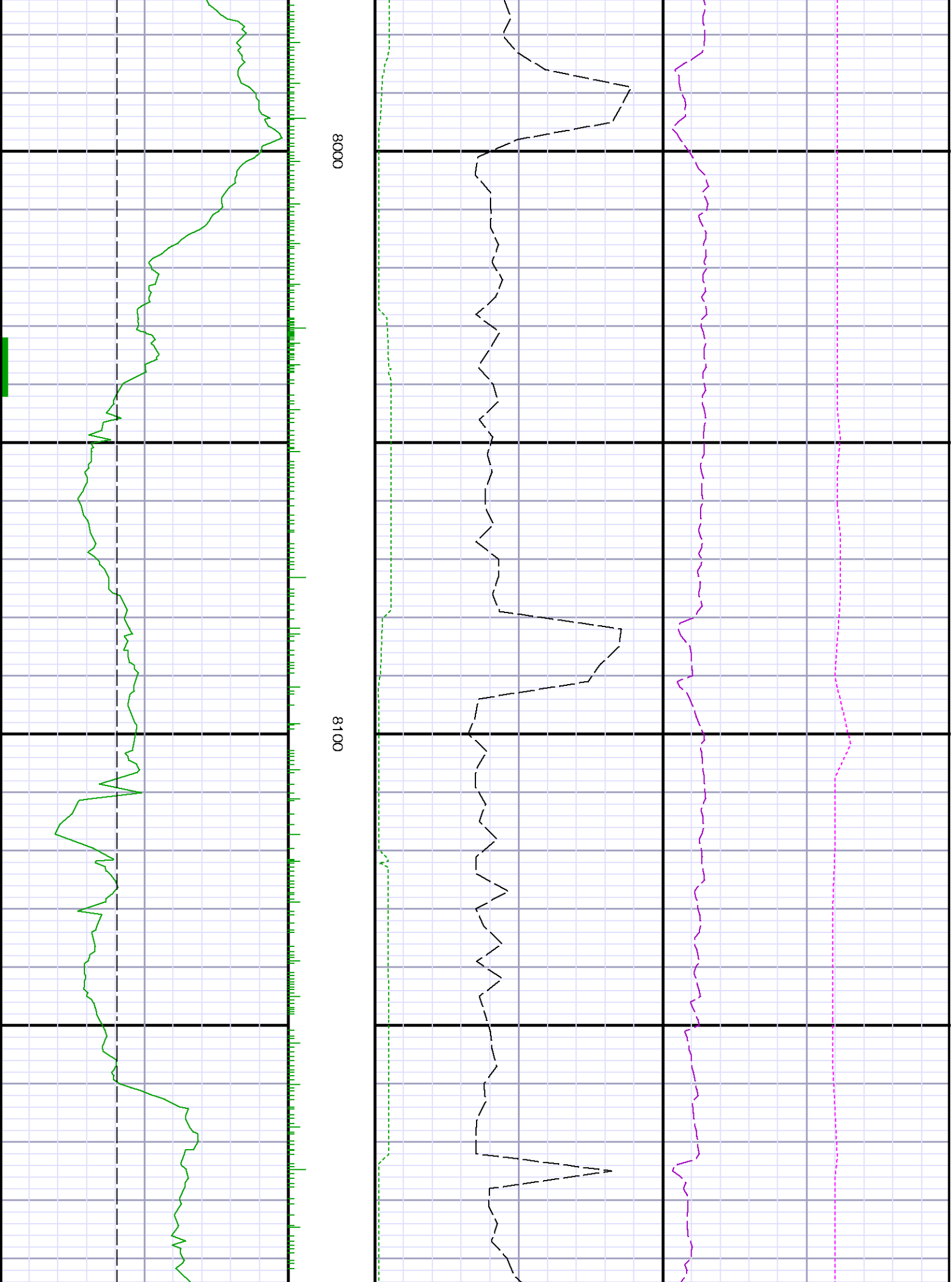


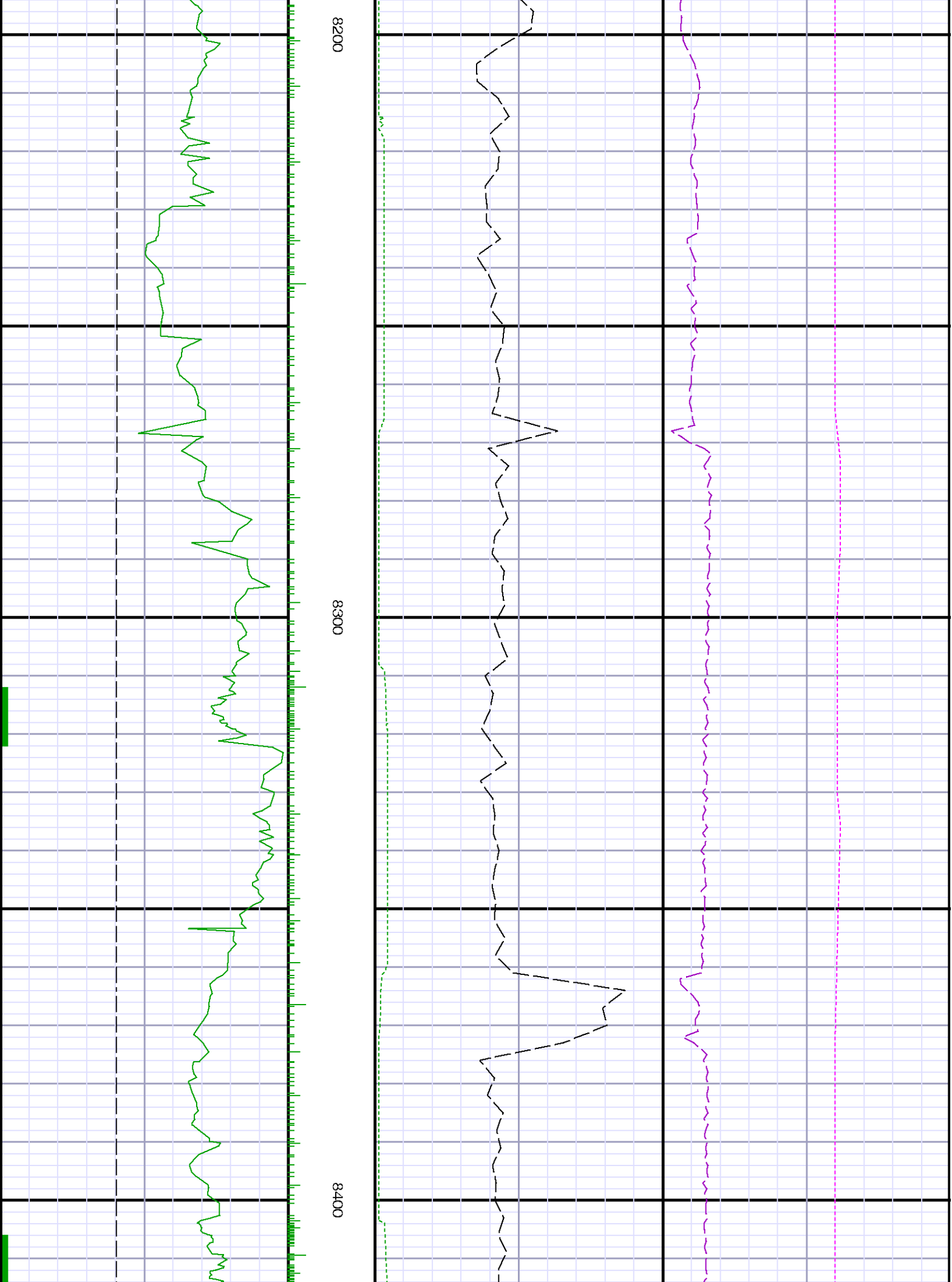


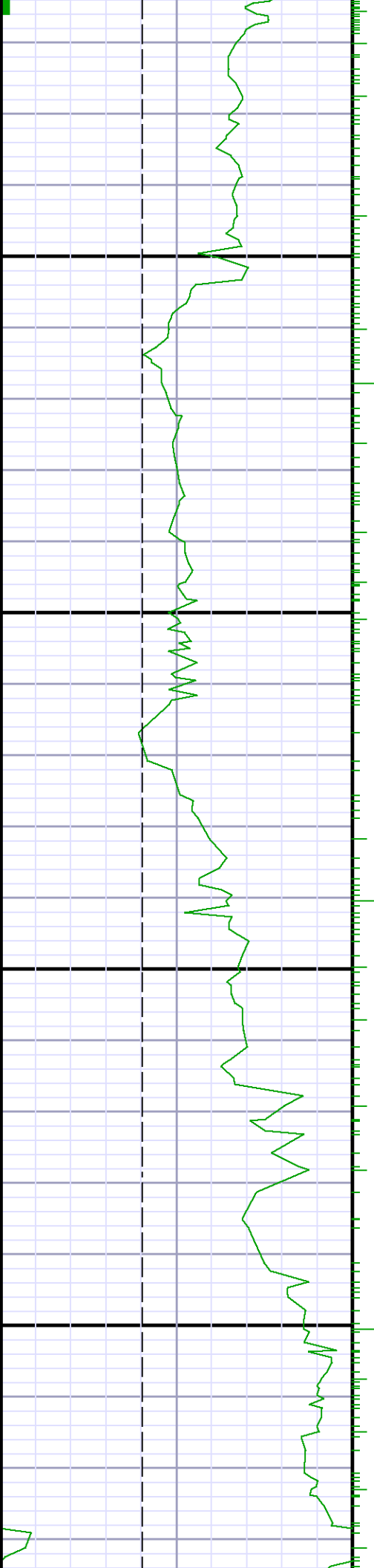






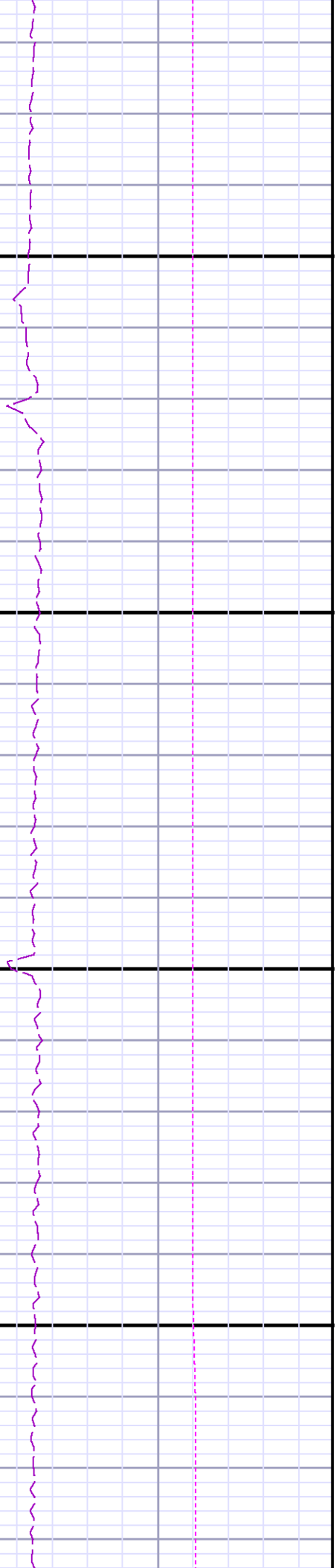
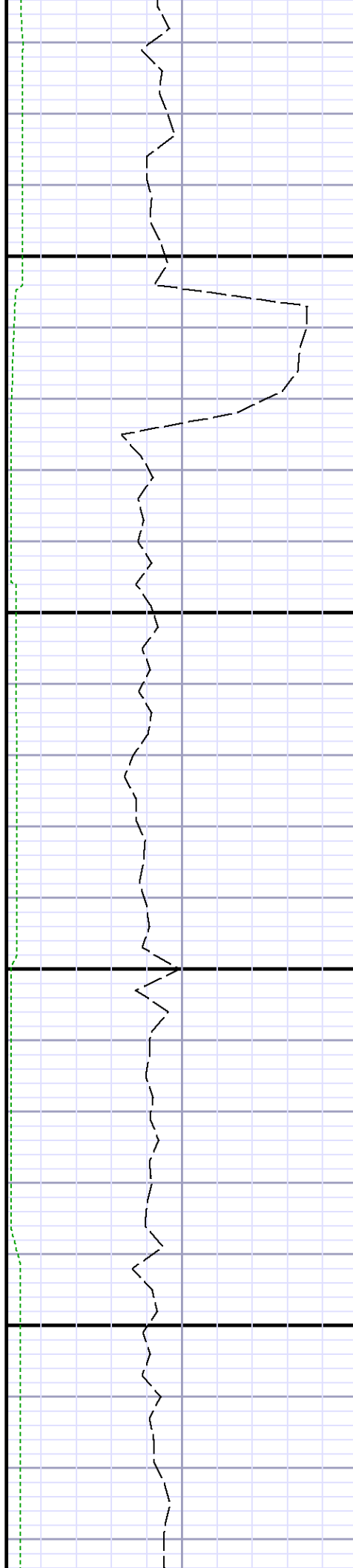


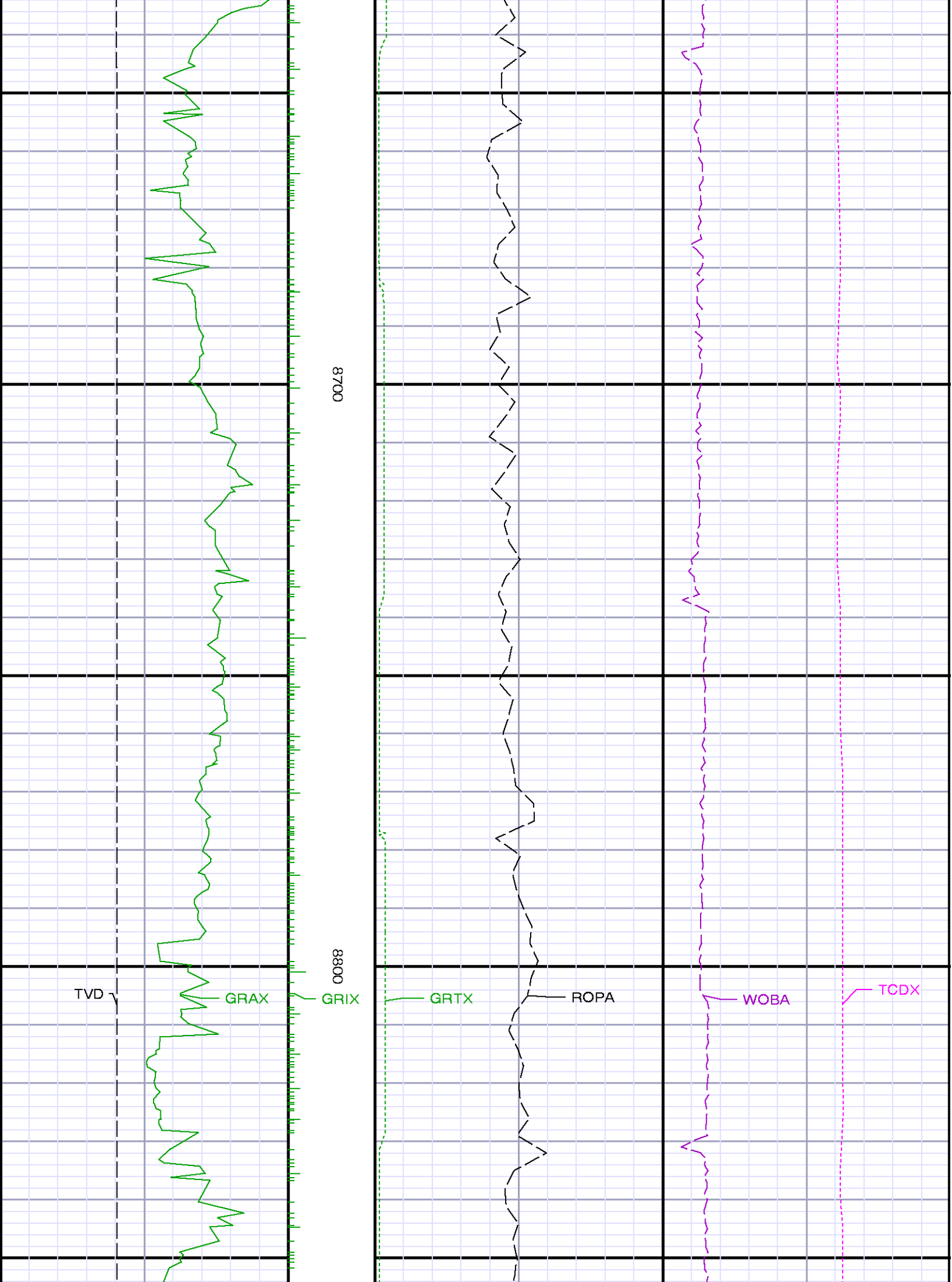


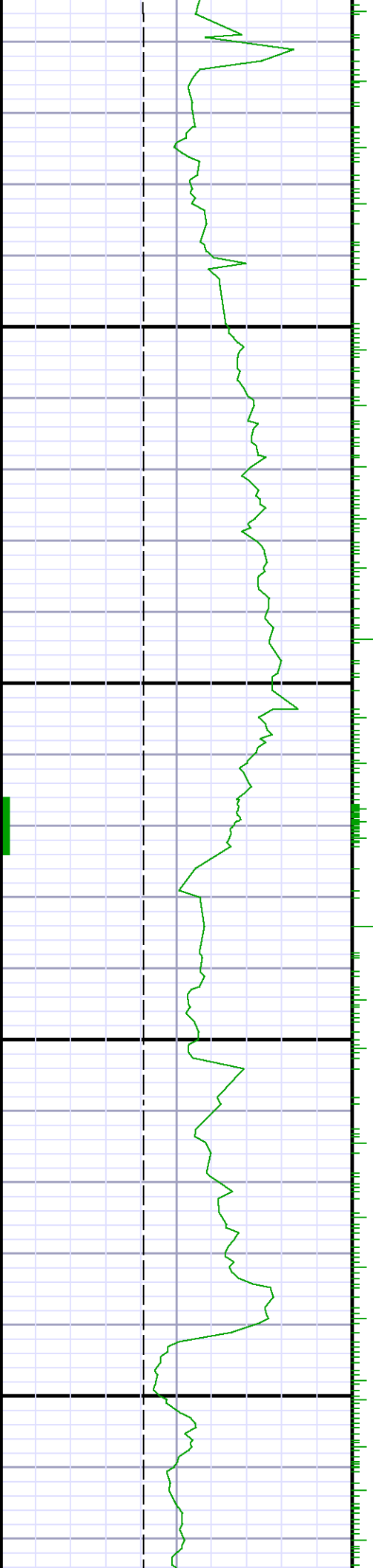


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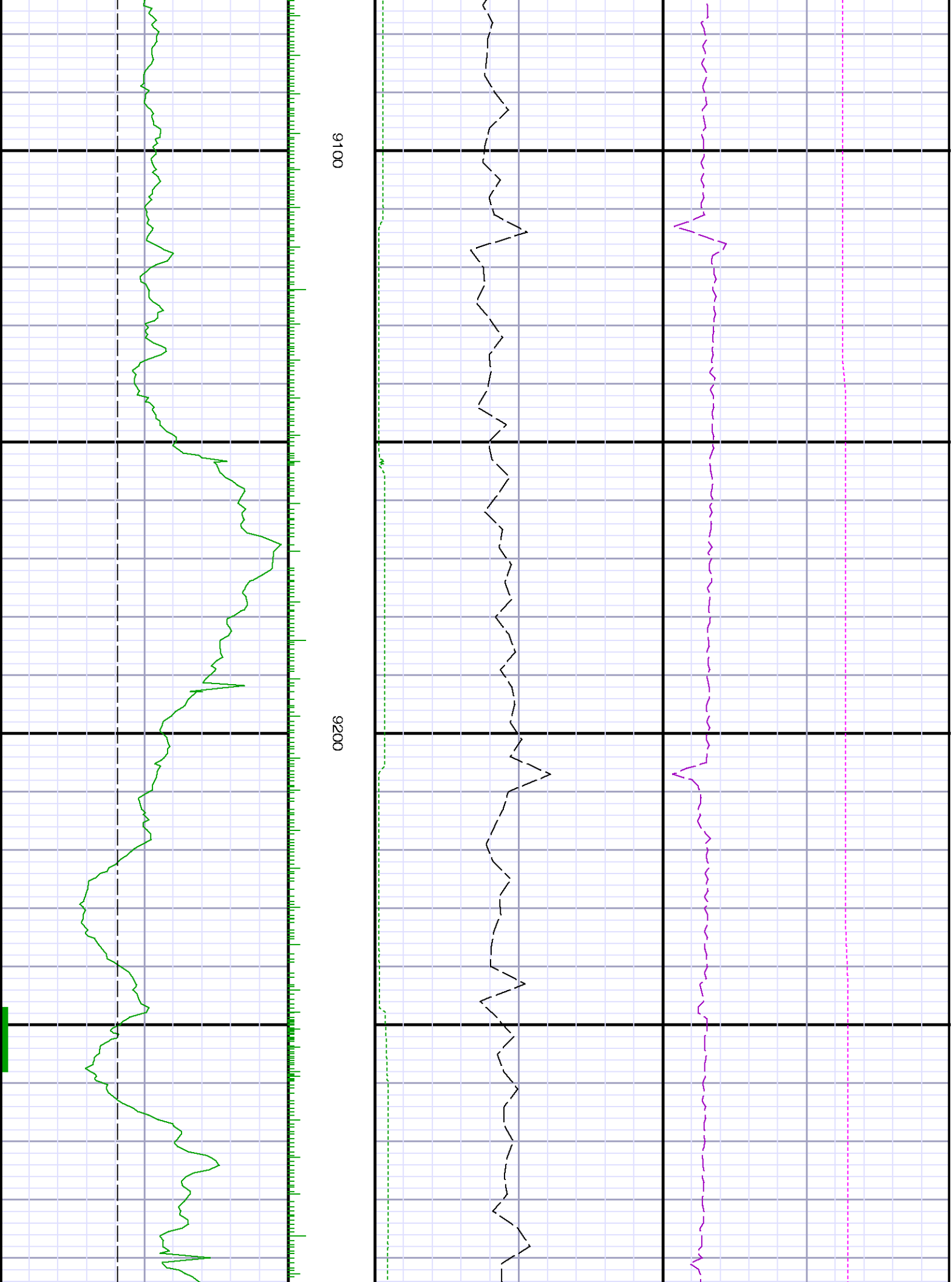


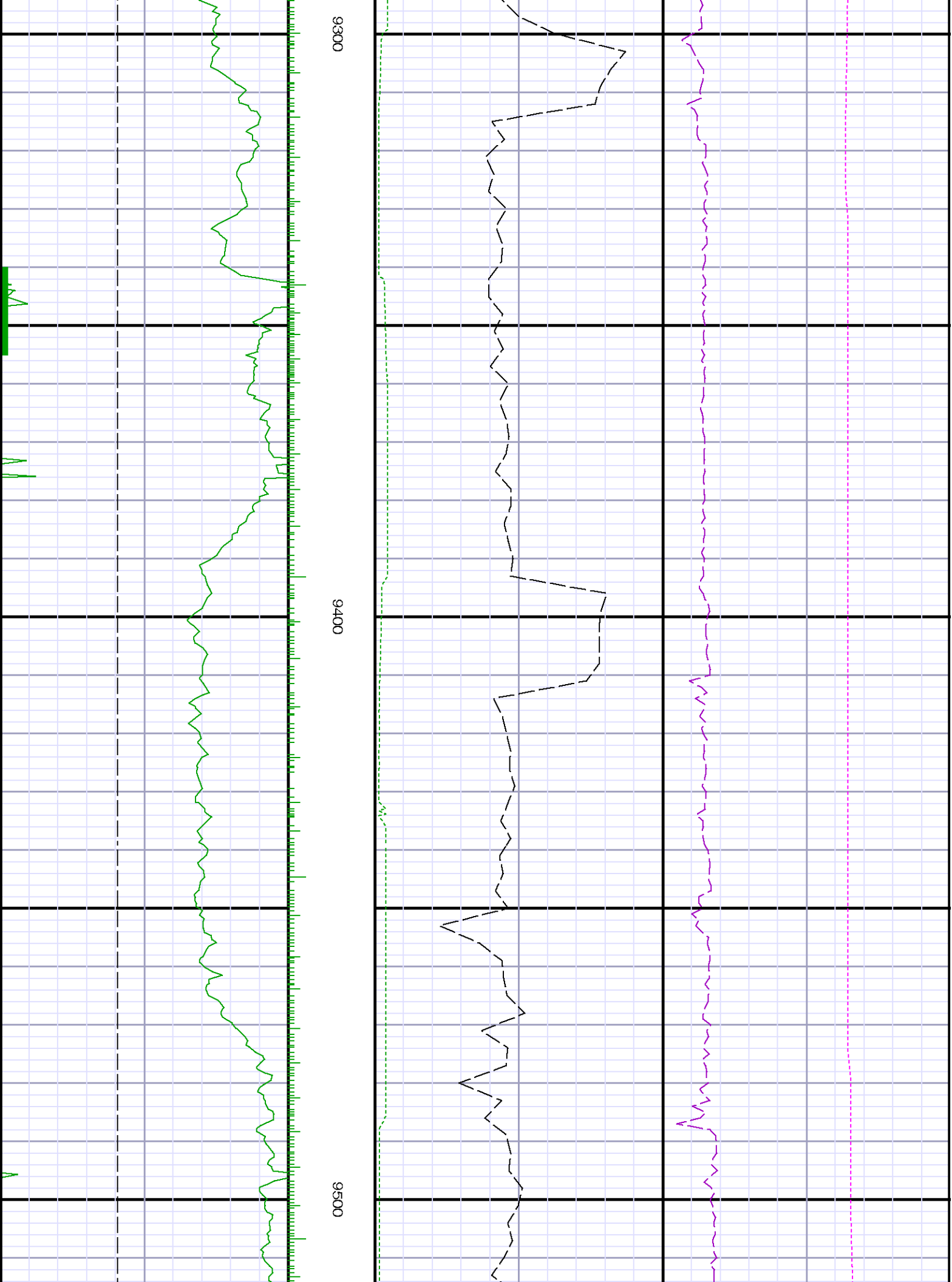


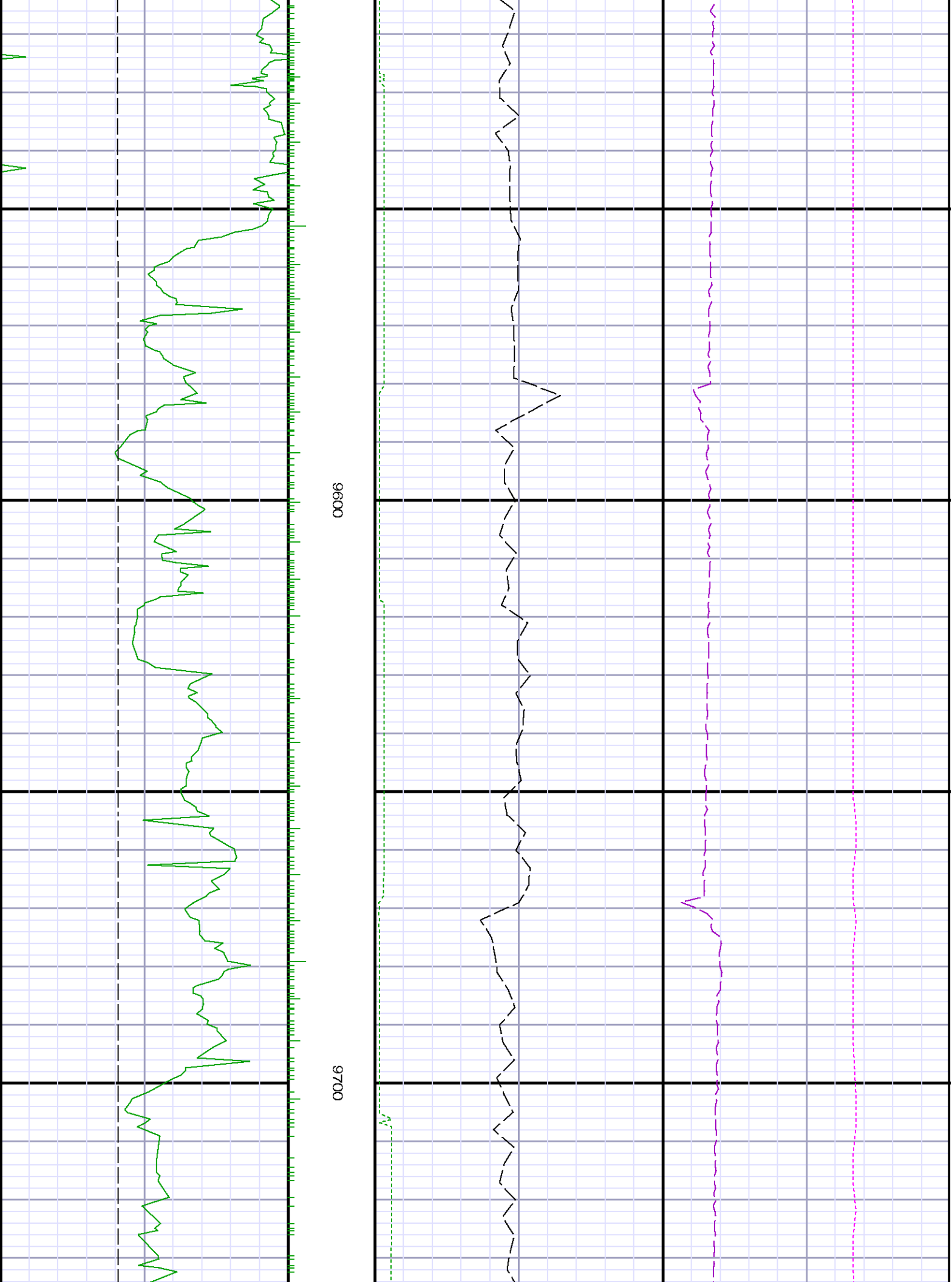
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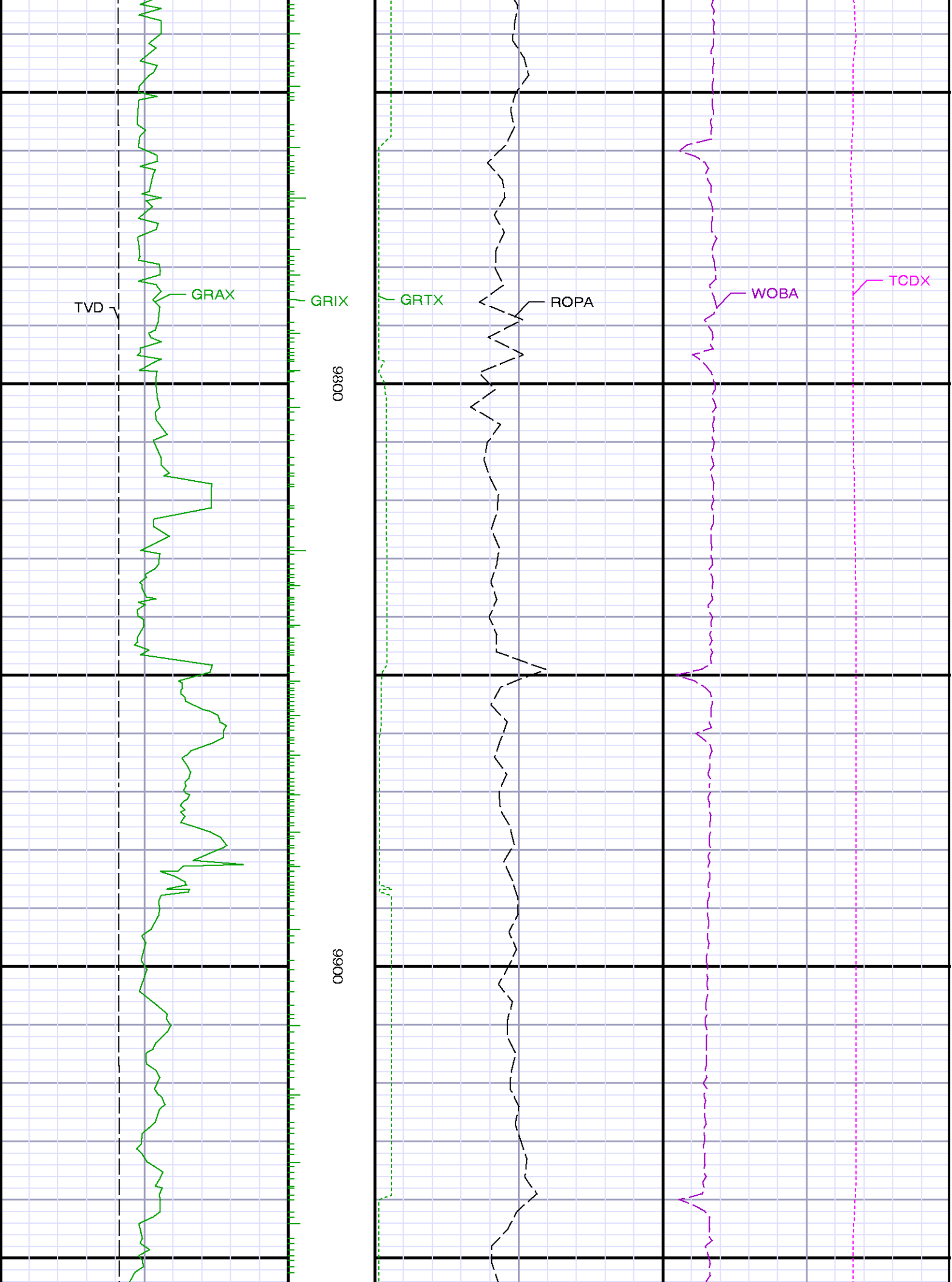
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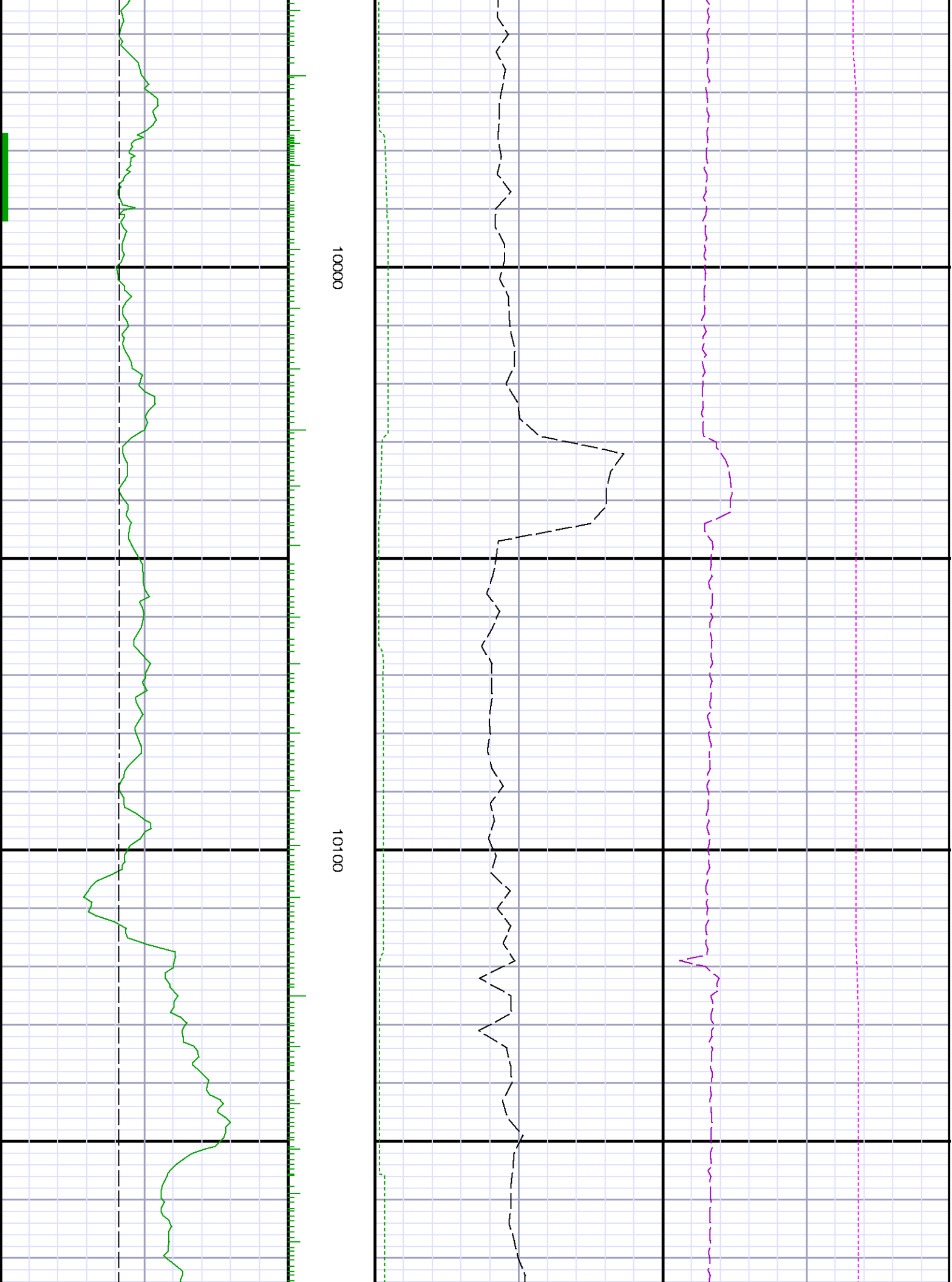


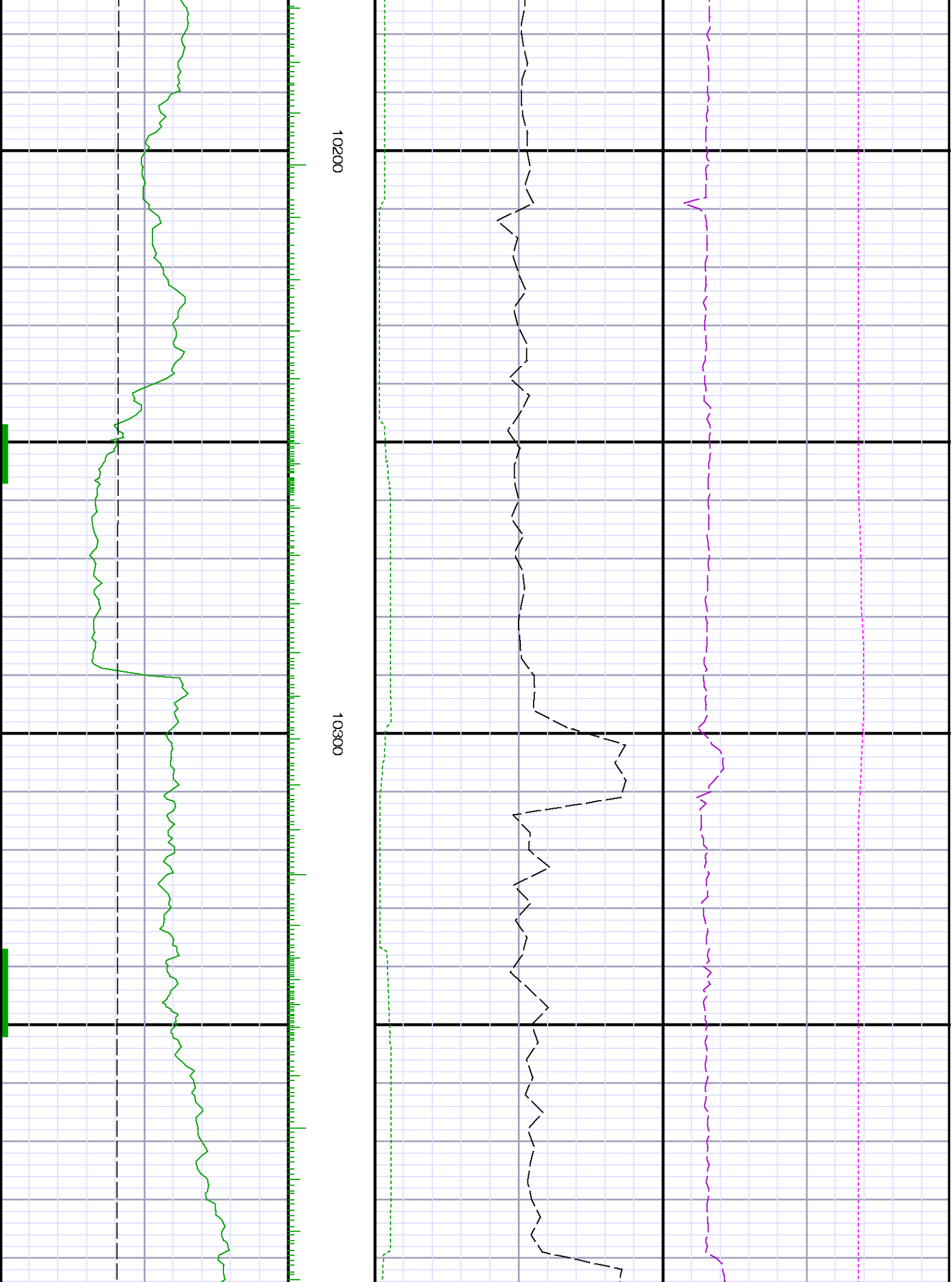


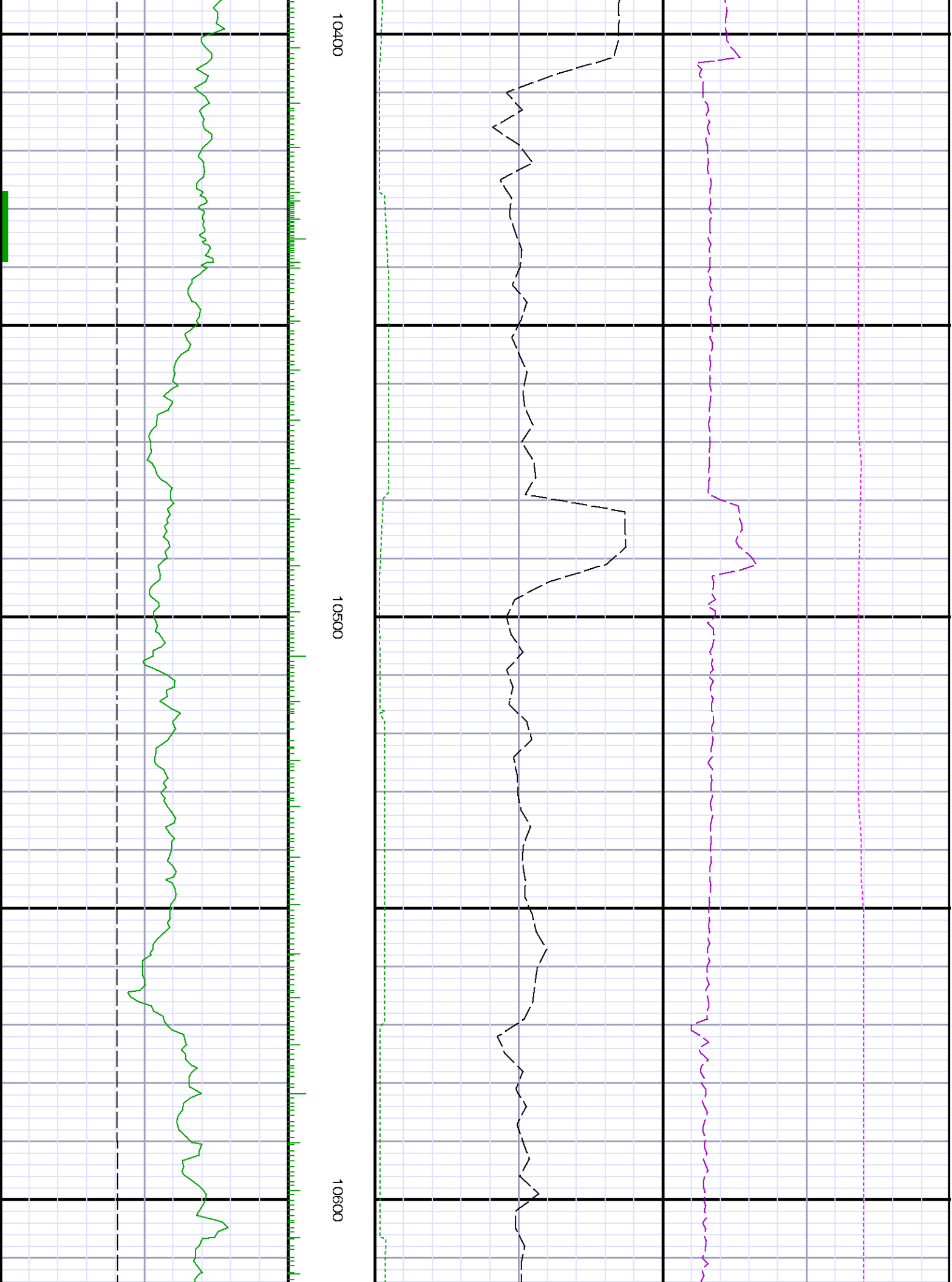


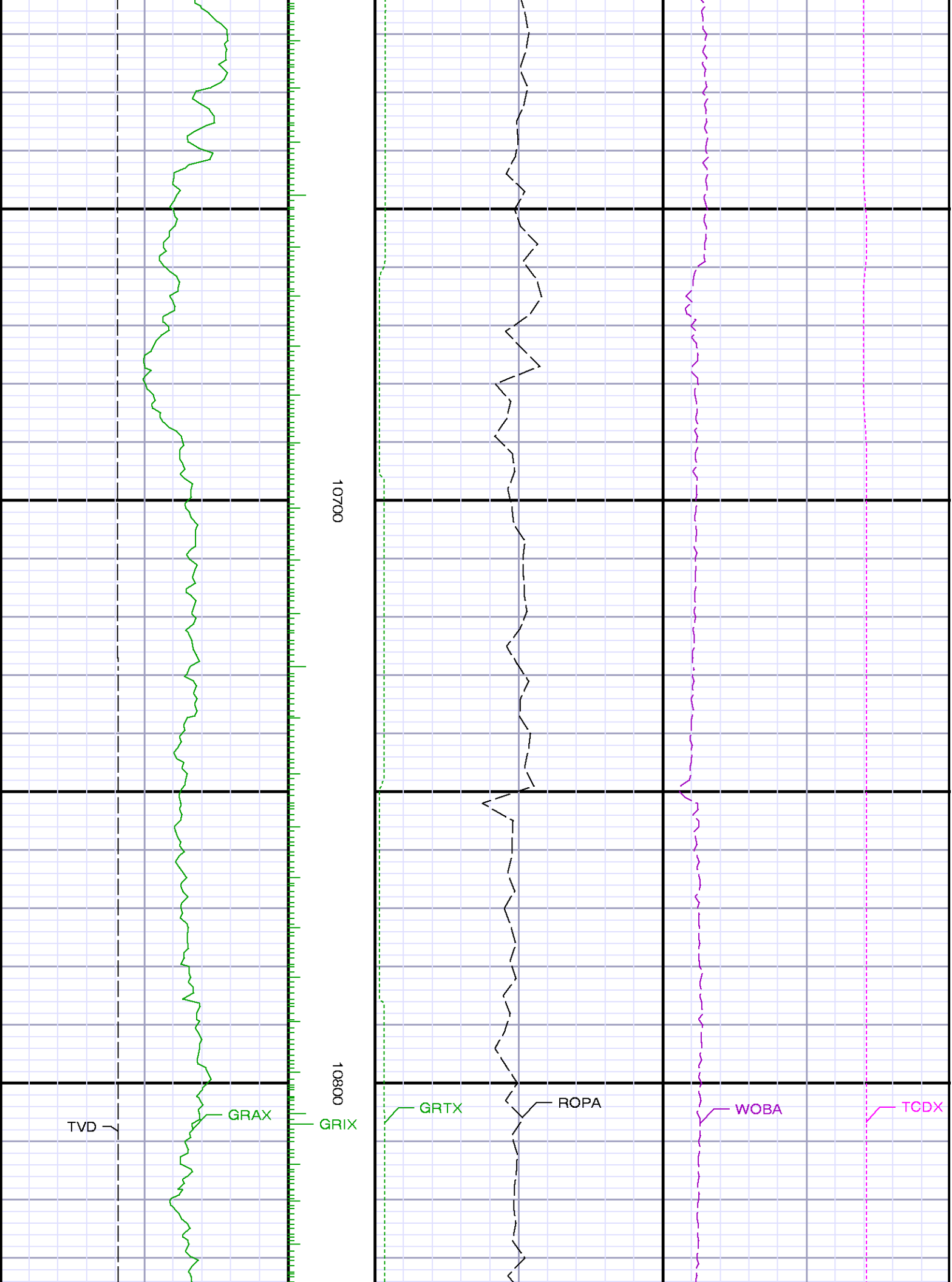


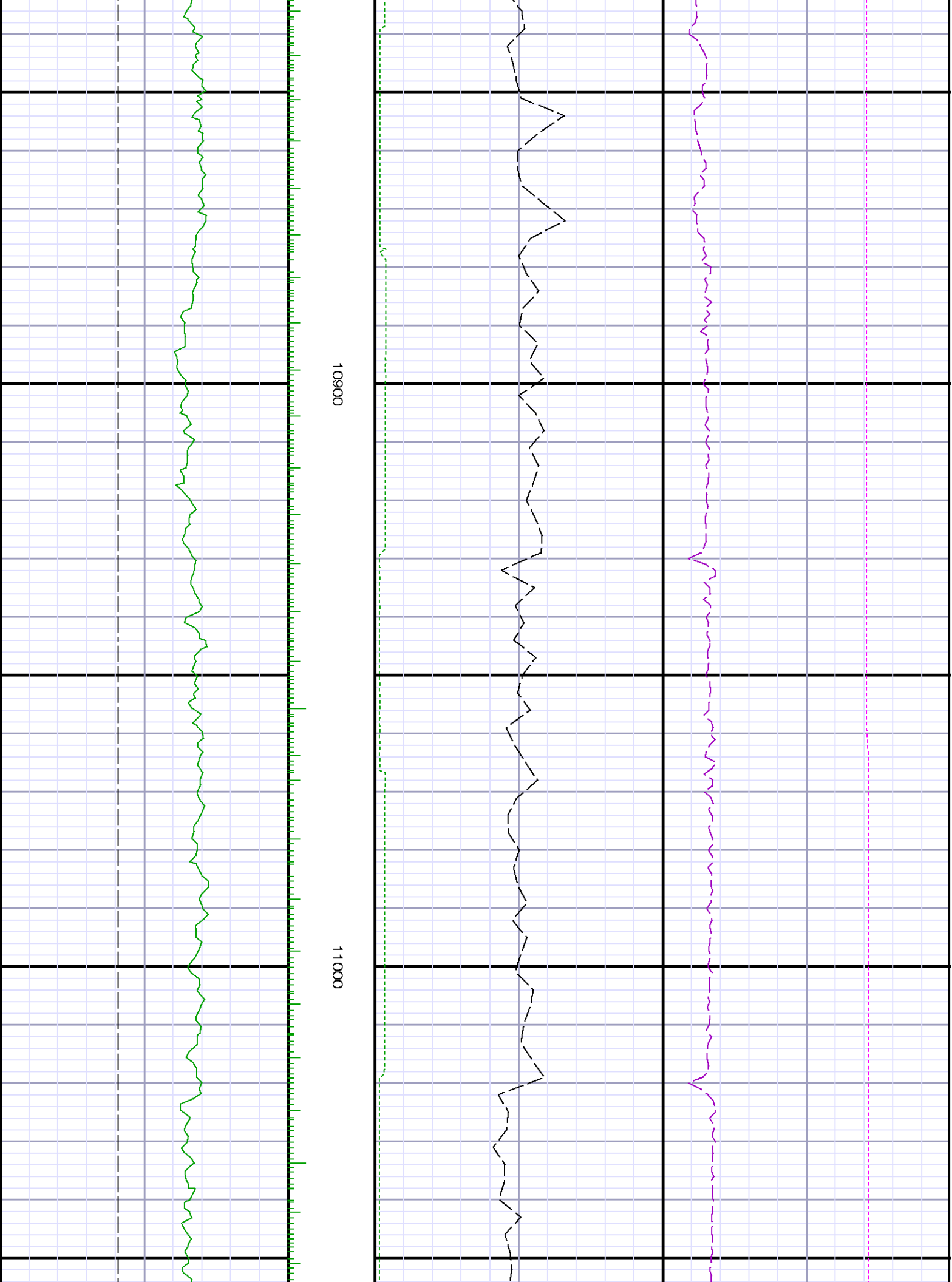








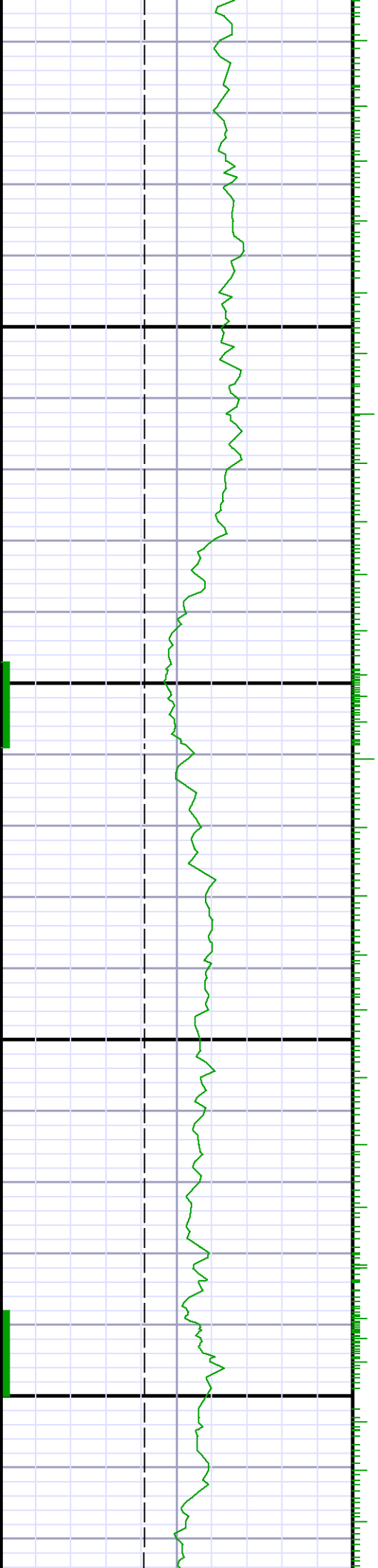


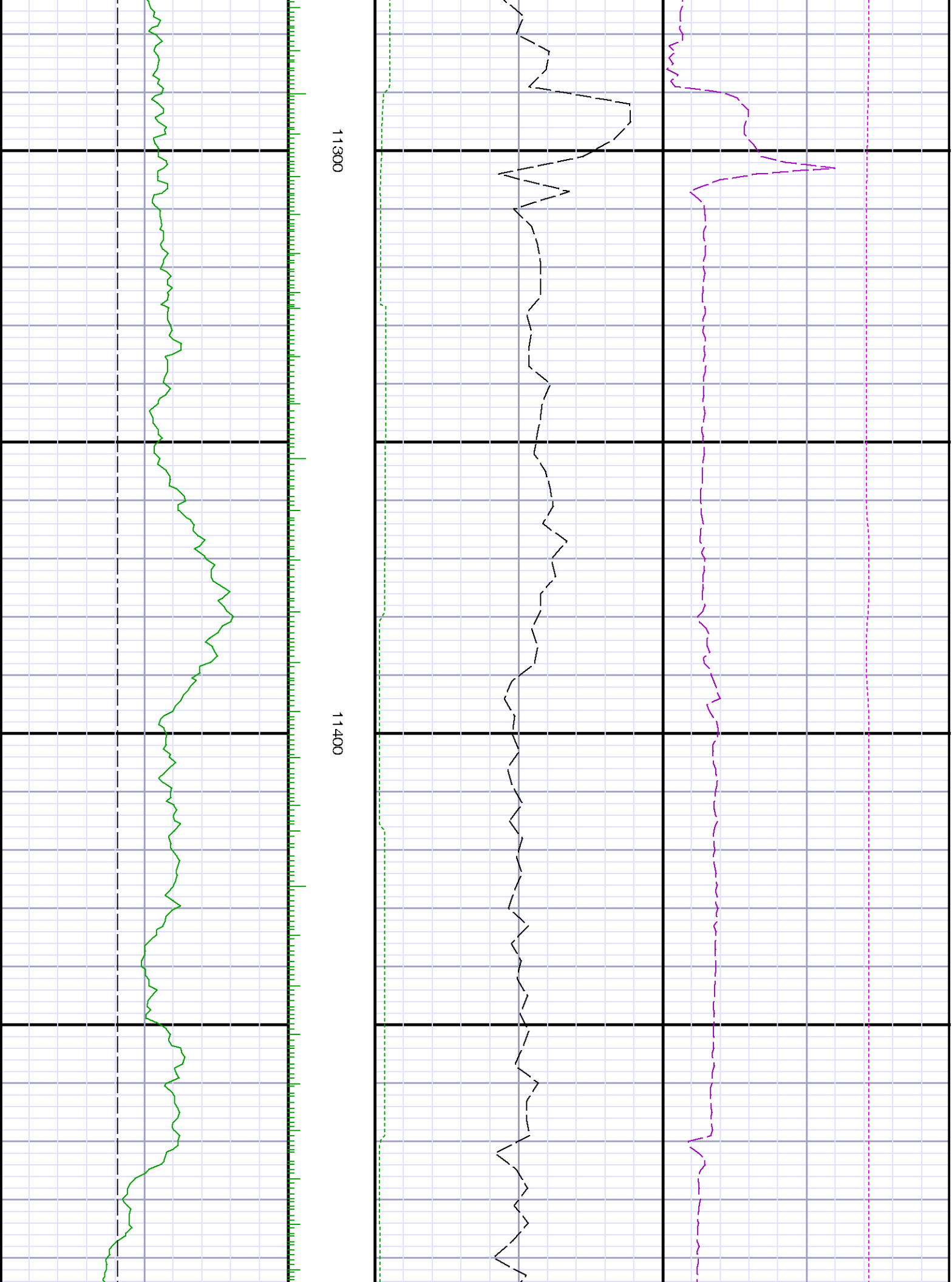


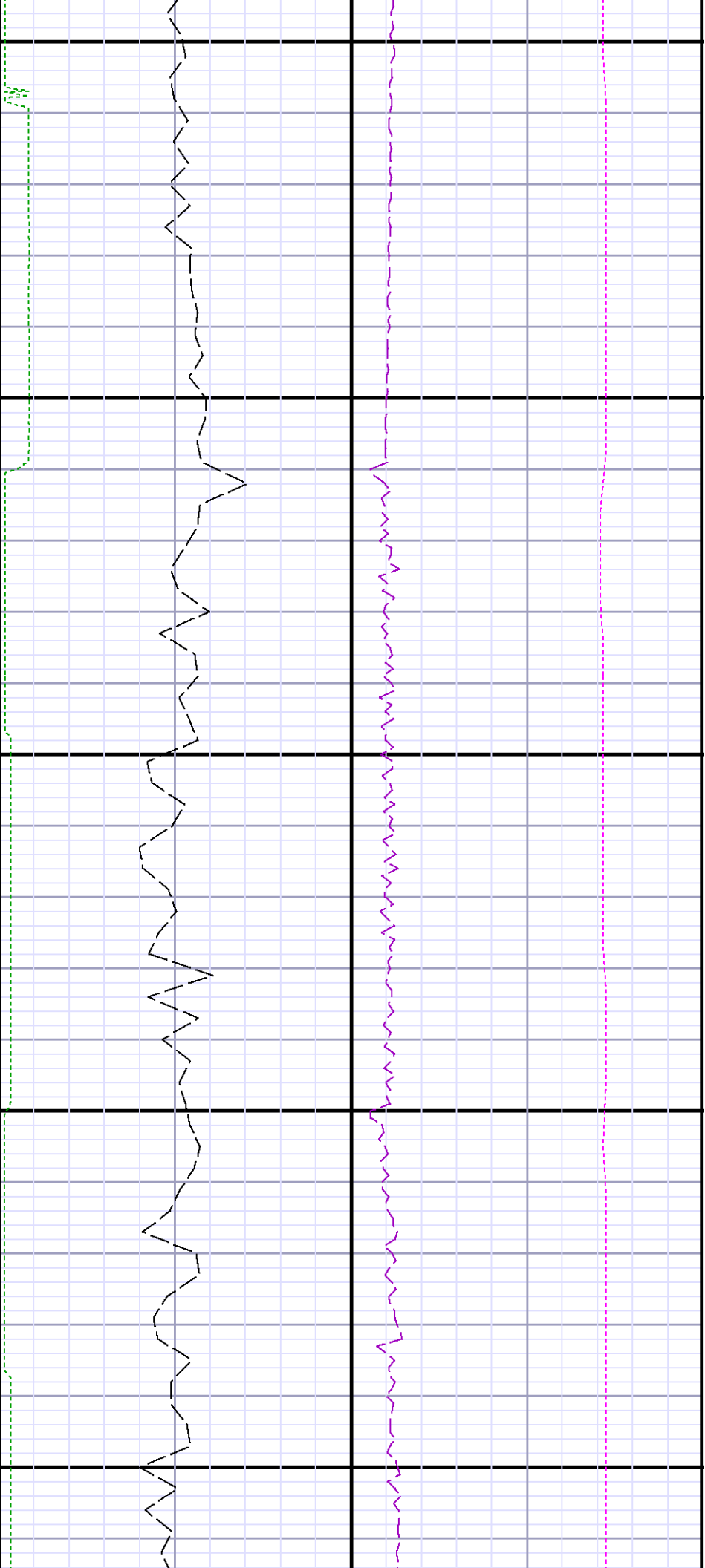


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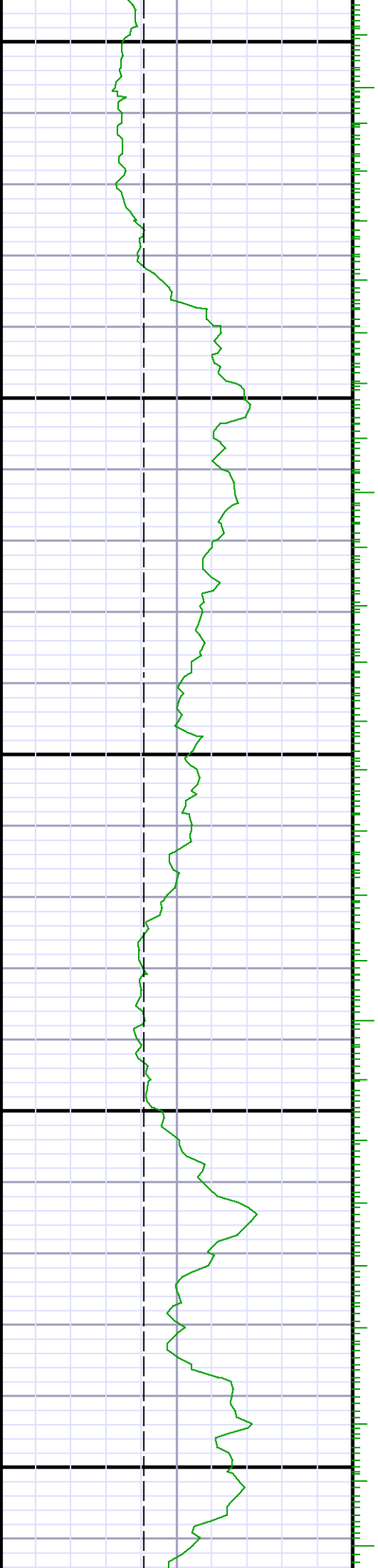


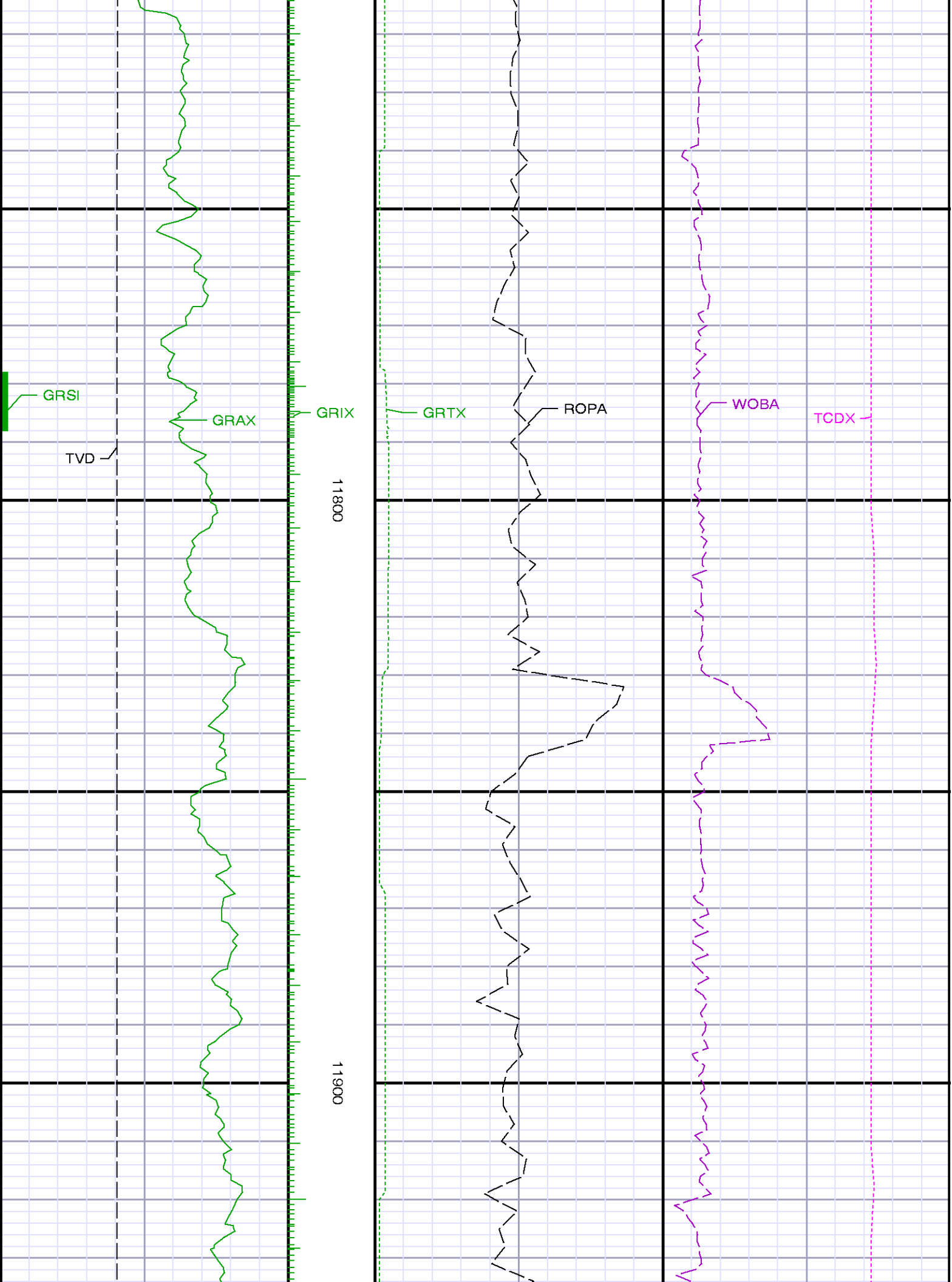


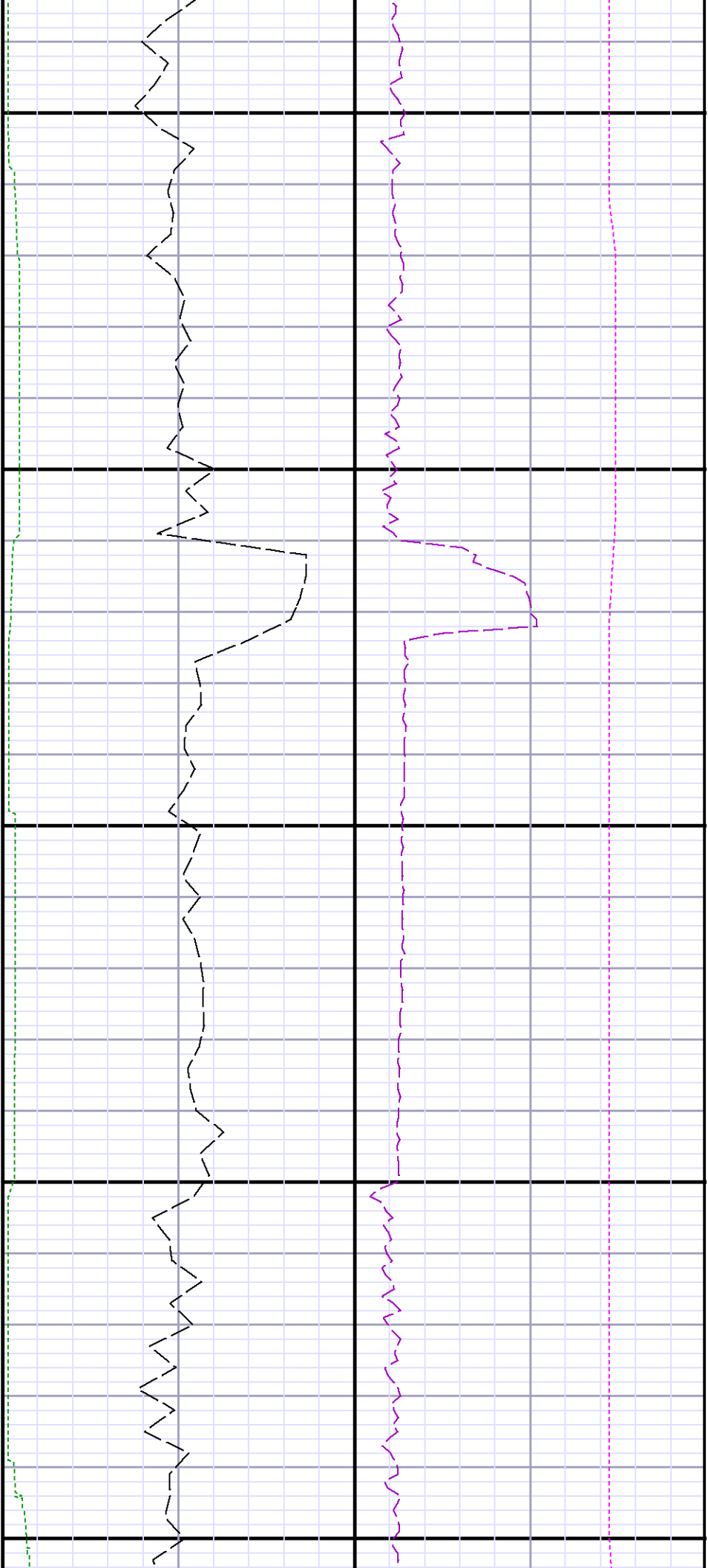
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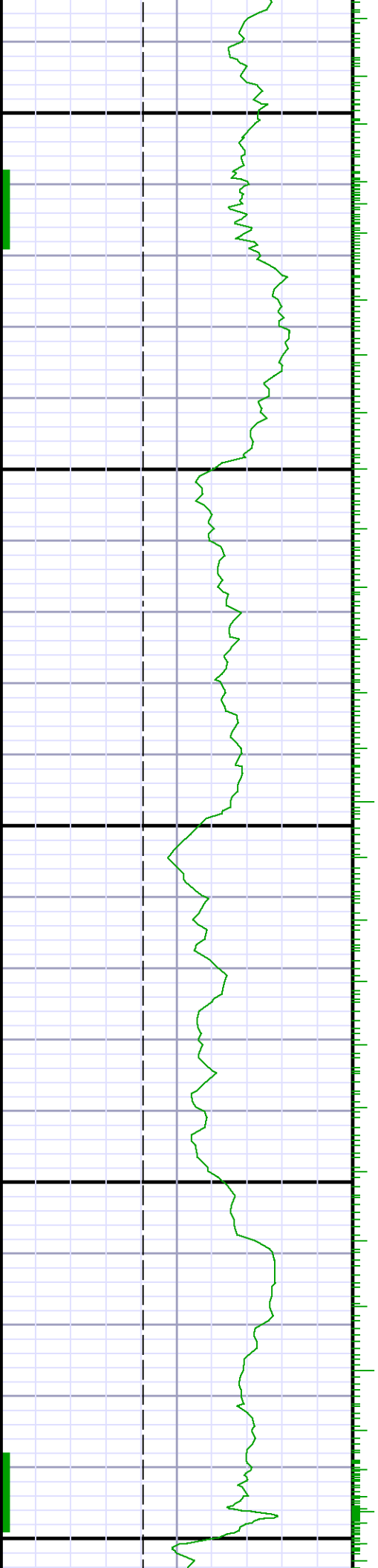


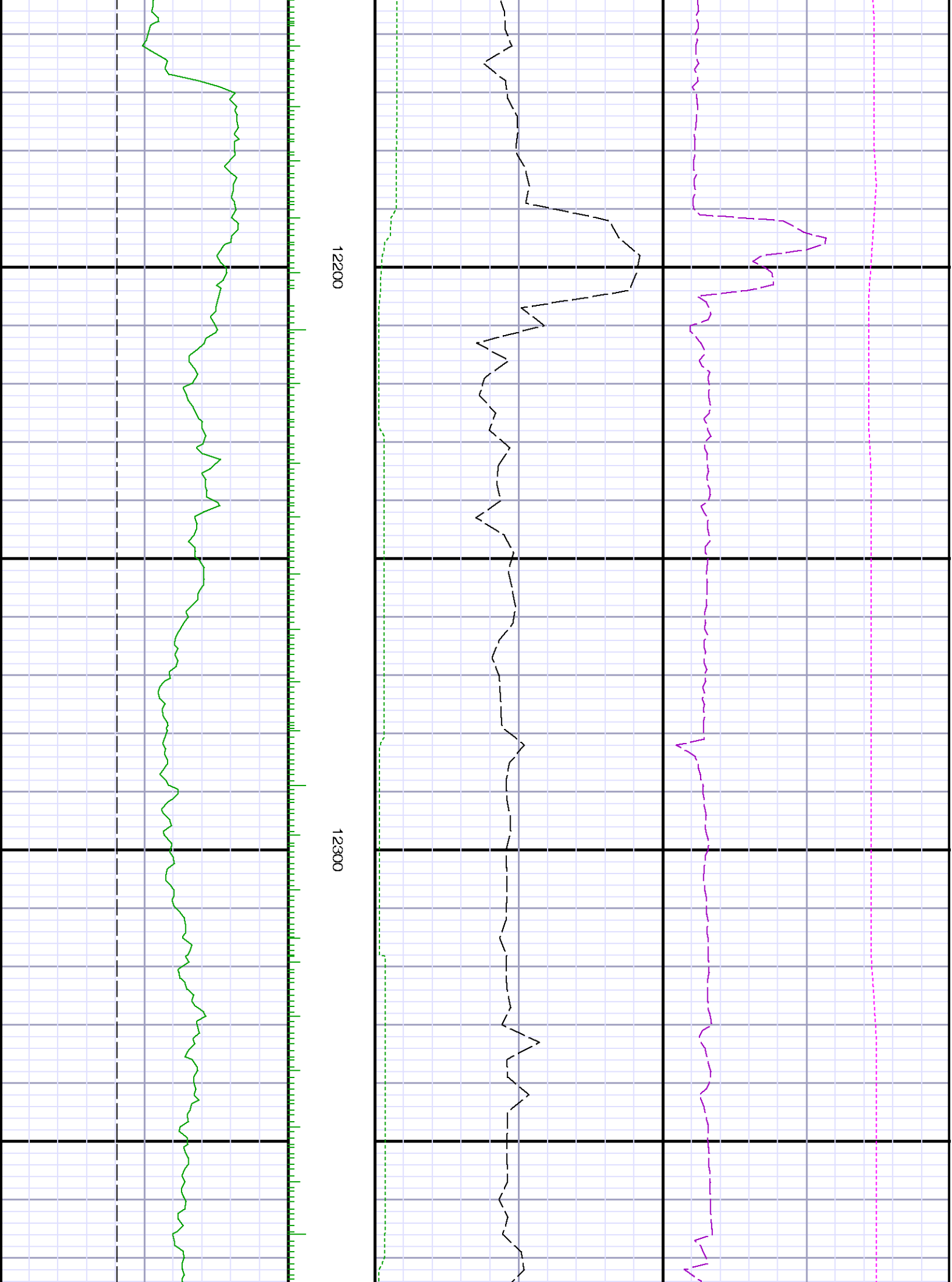


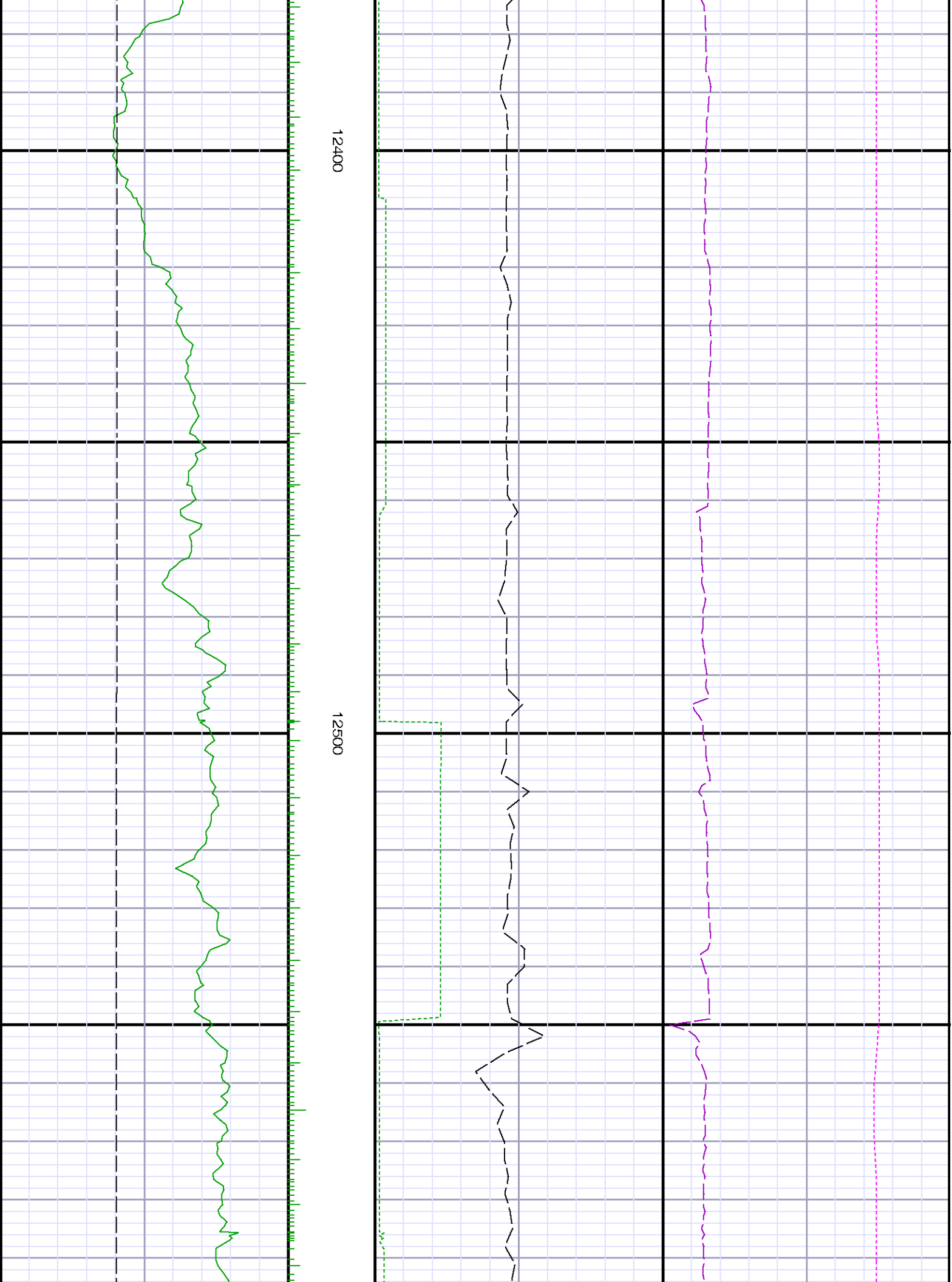


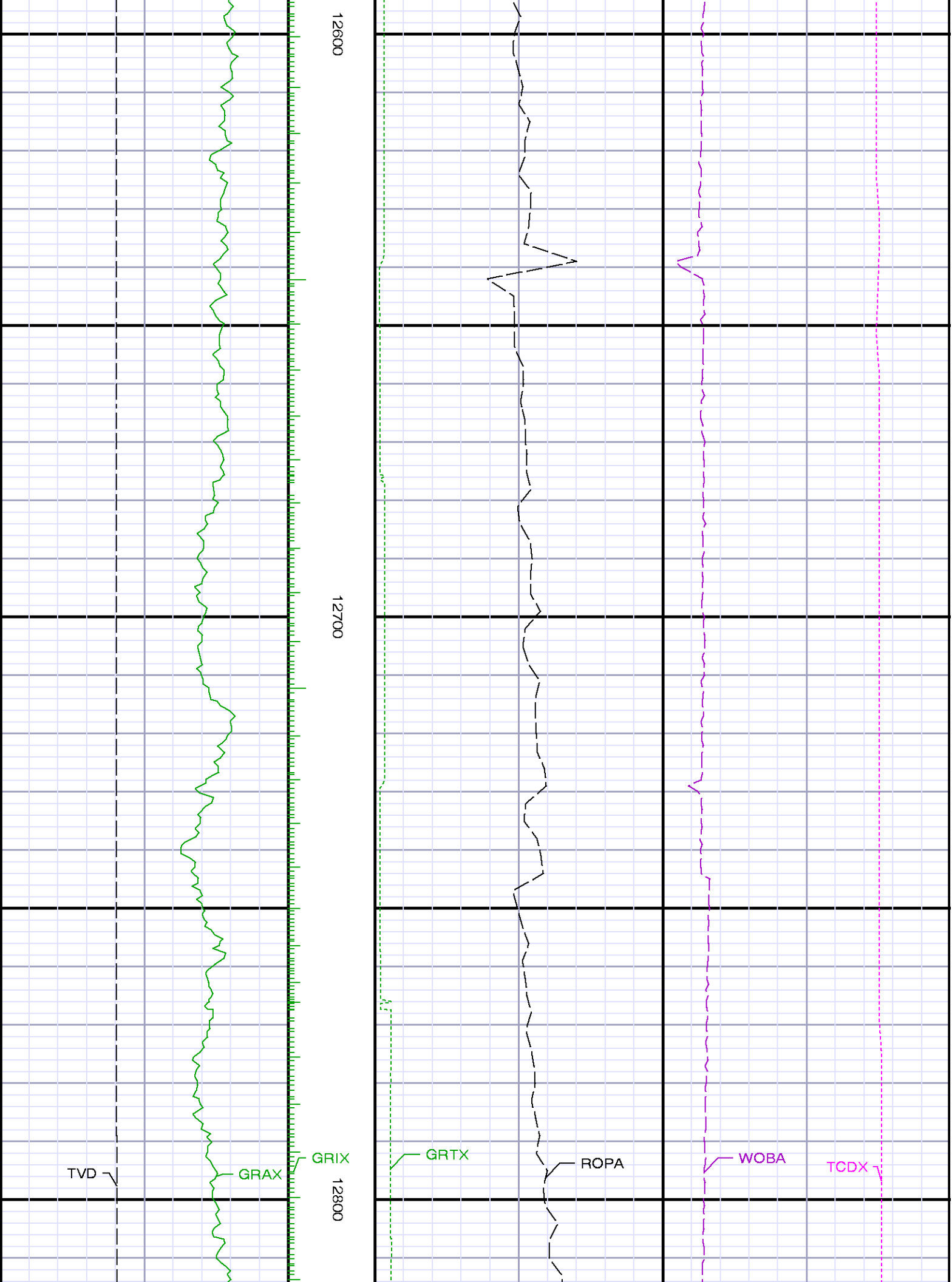
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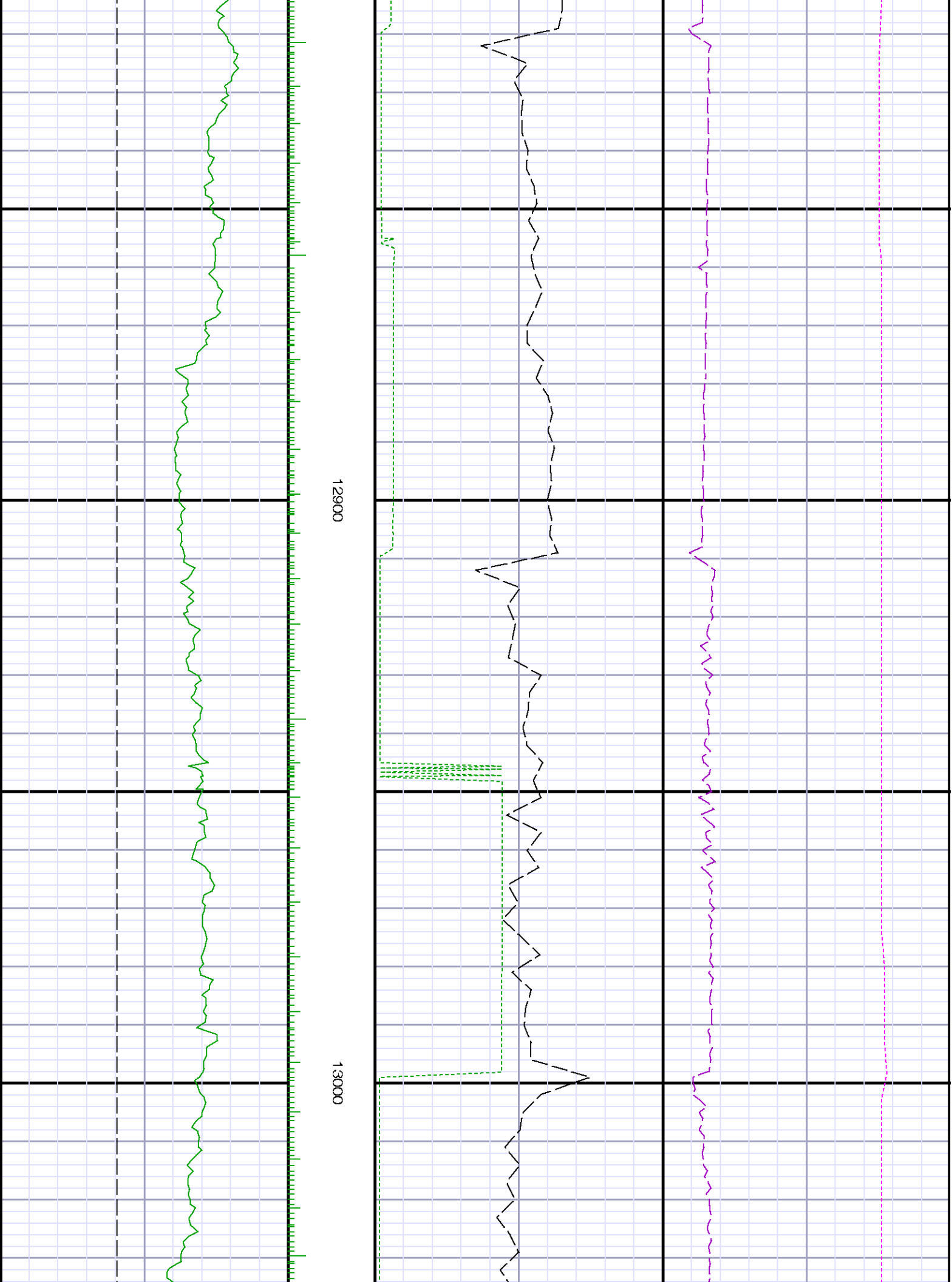
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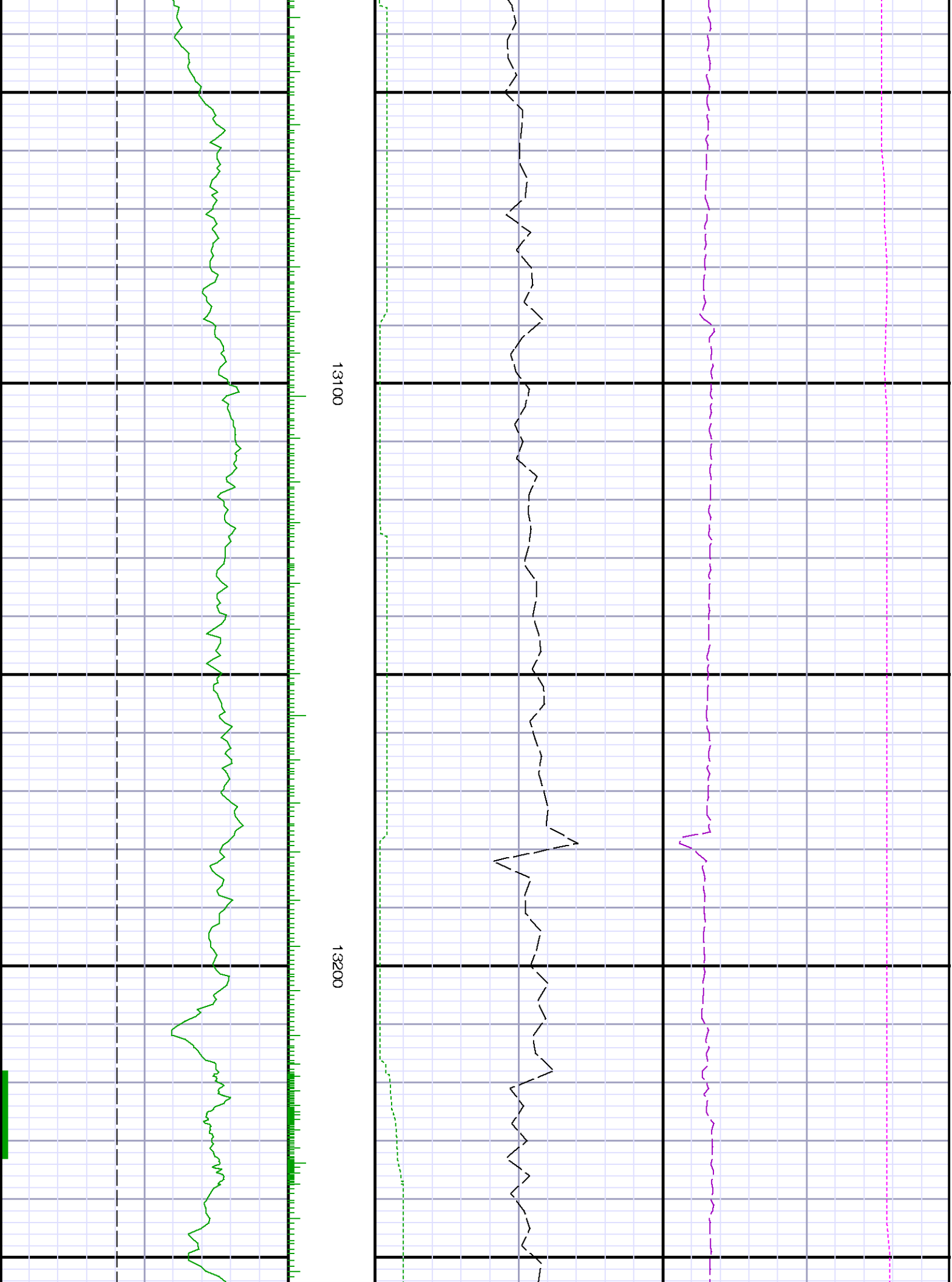


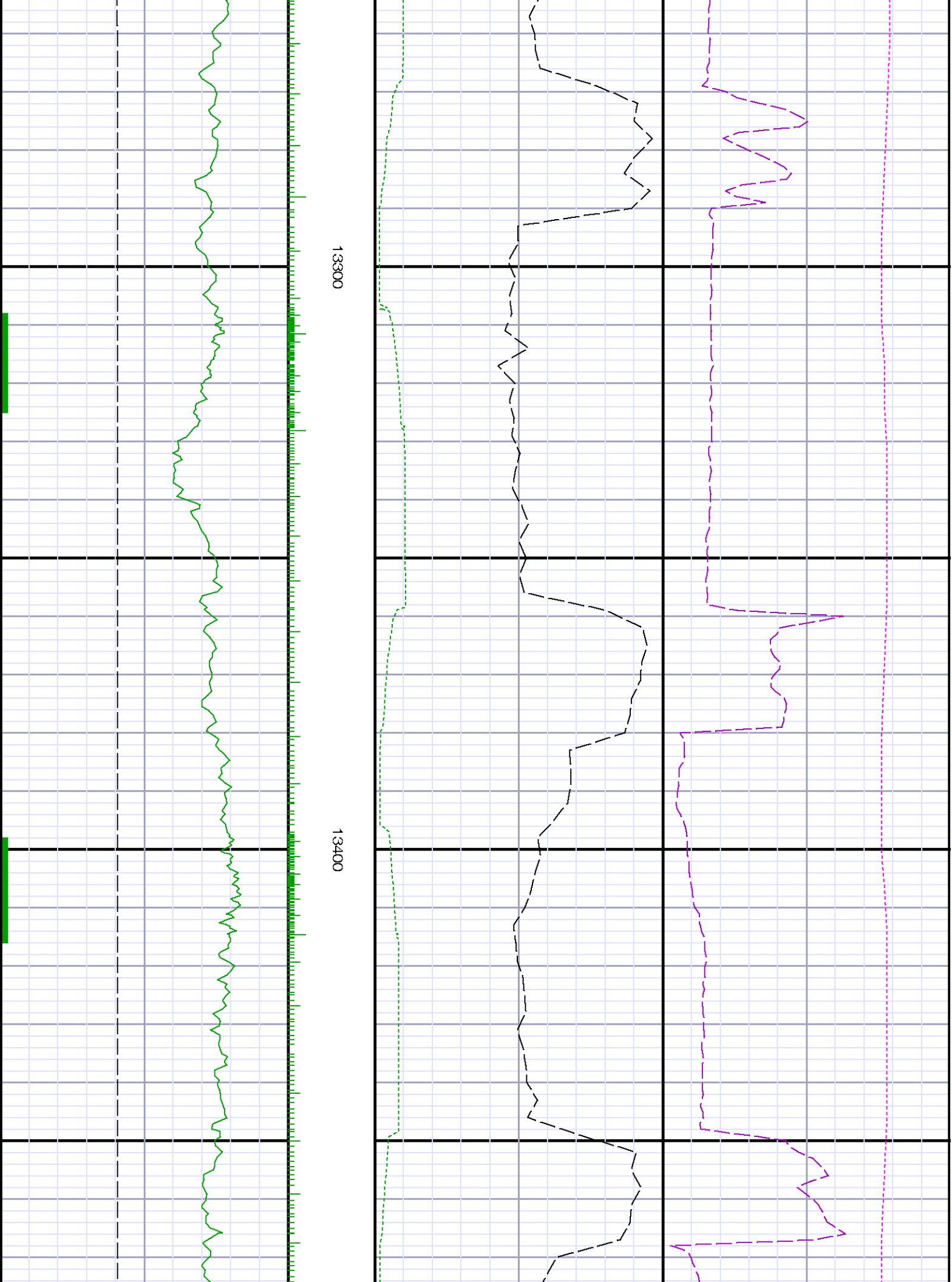


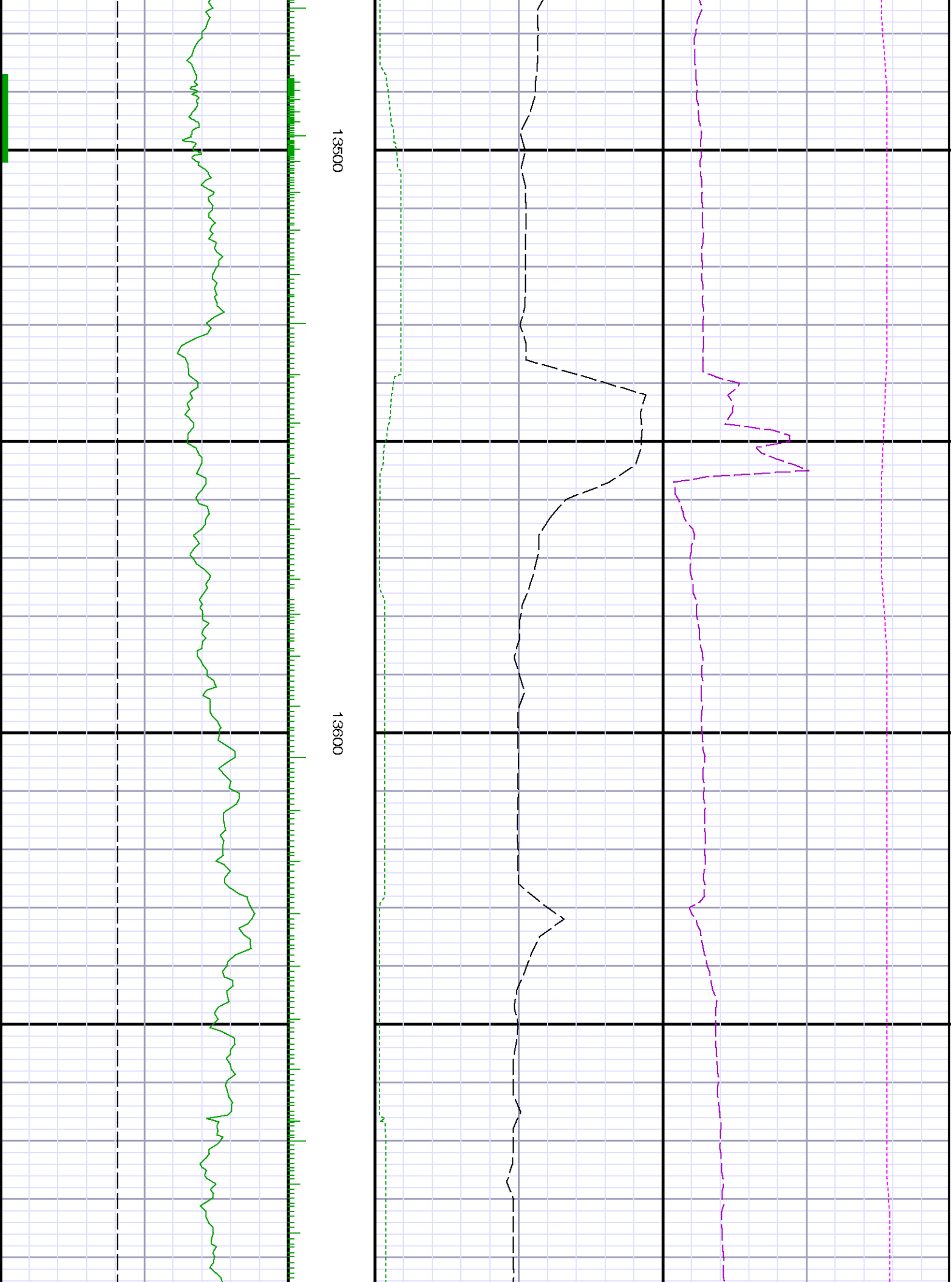


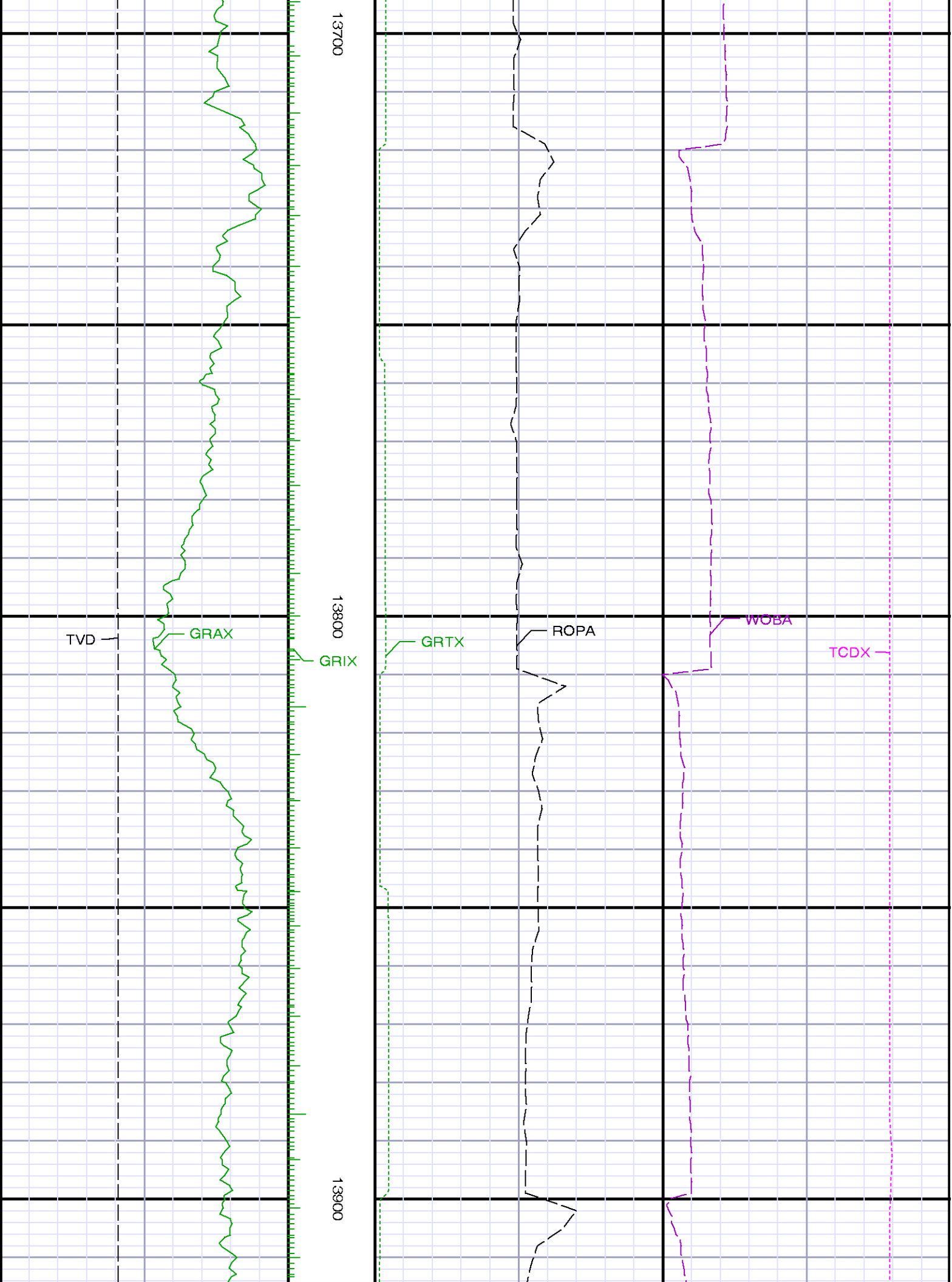


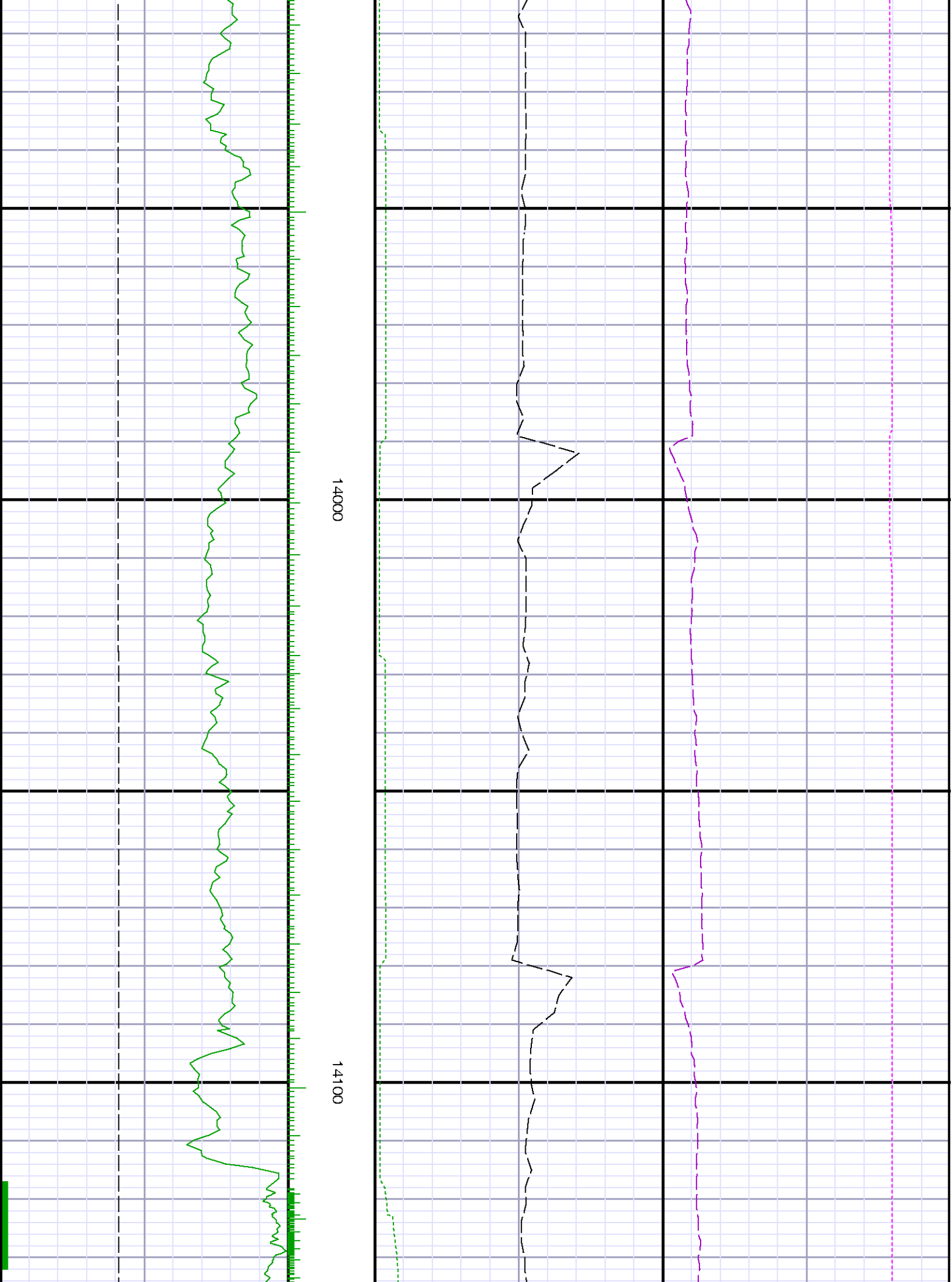


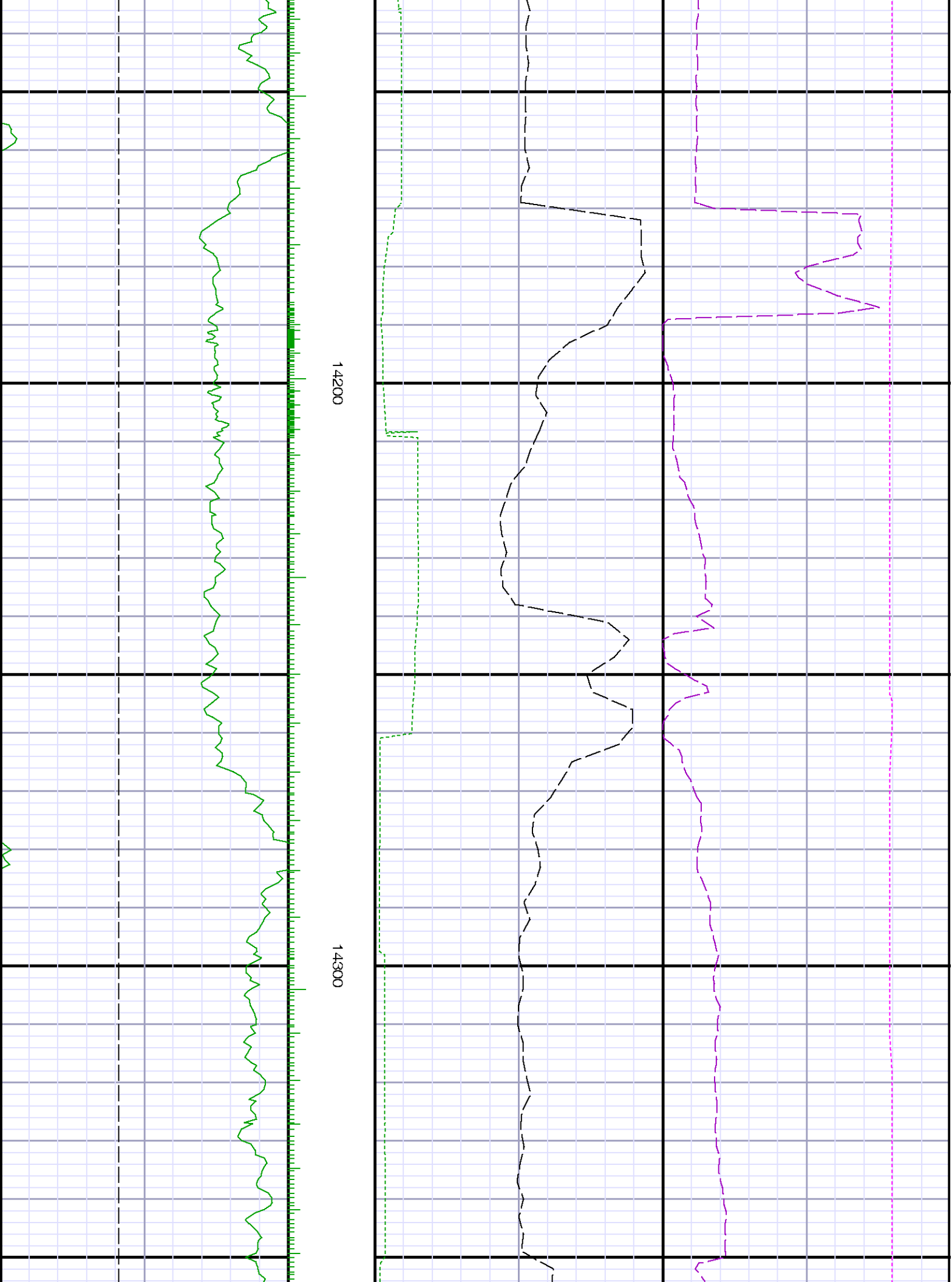


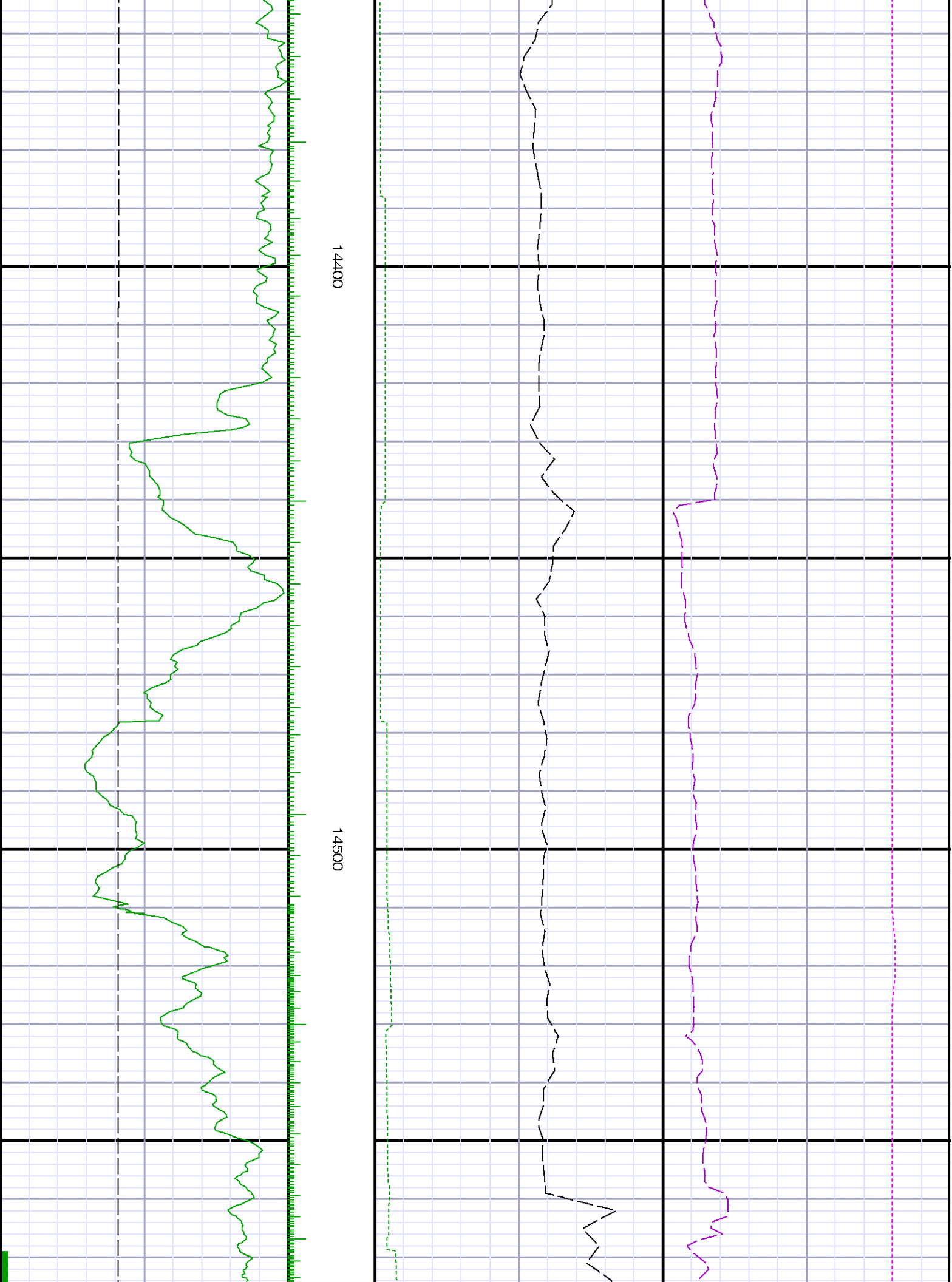


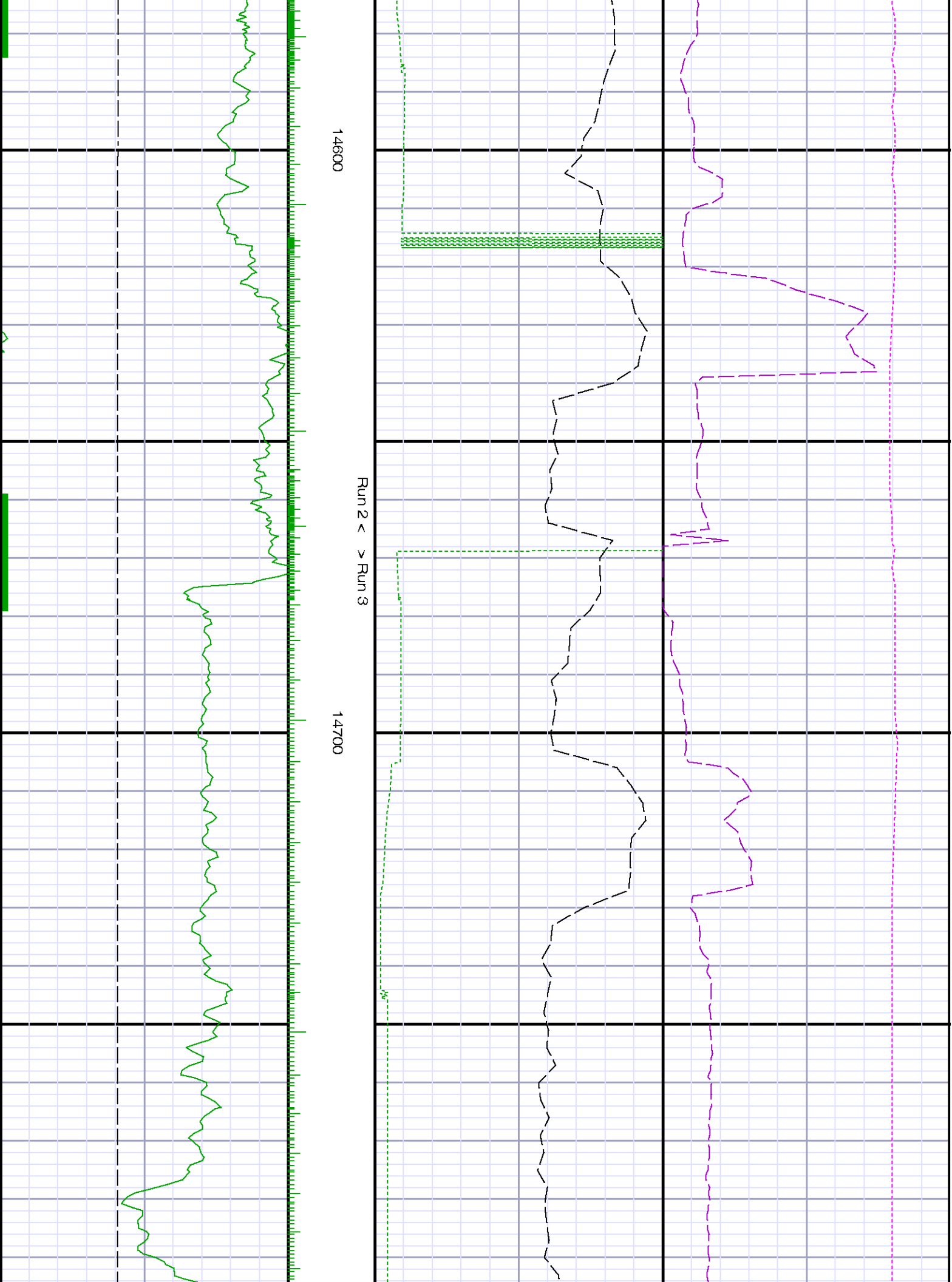


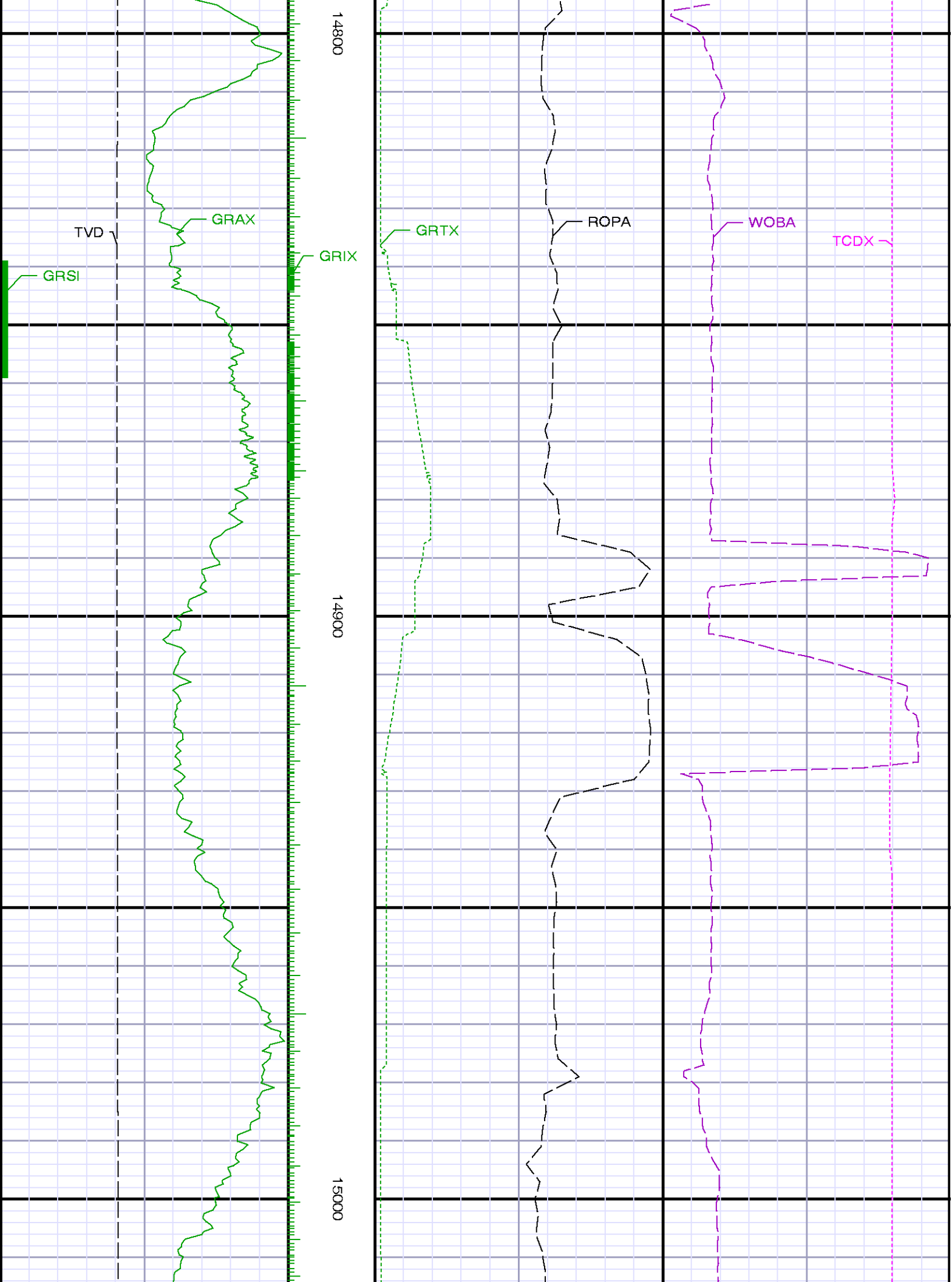


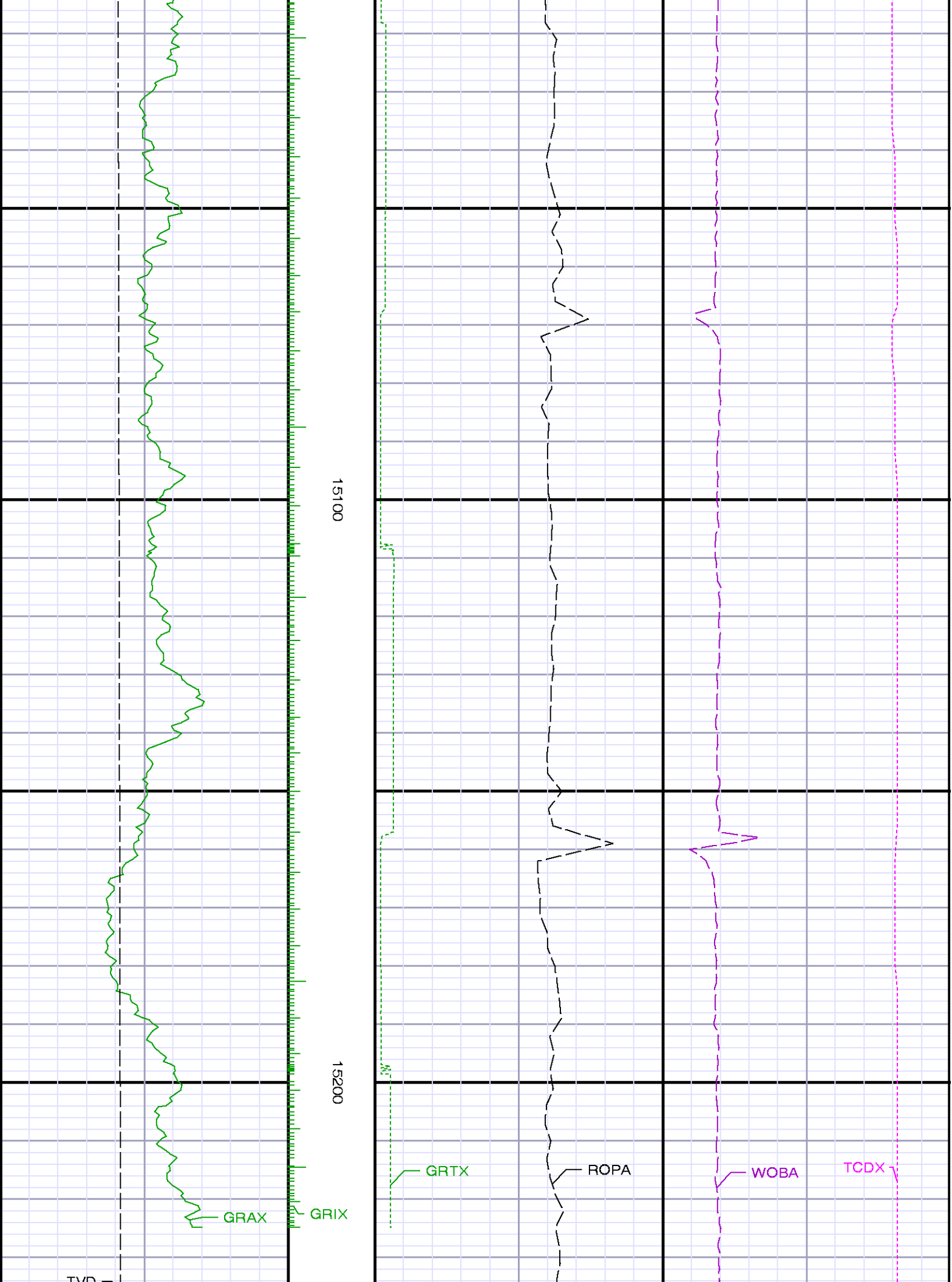












<div>True Vertical Depth [TVD]</div> <div><div></div></div>		Run 3 < 15300	<div>See Remark 3</div> <div><div></div></div>		<div></div> <div><div></div></div>	
		15300				
<div>Gamma Ray Apparent 0.5 ft Avg [GRAX]</div> <div><div>0</div><div>200</div></div> <div>API</div> <div>True Vertical Depth [TVD]</div> <div><div>7000</div><div>8000</div></div> <div>ft</div>		MD feet 1:240	<div>Rate of Penetration 3.0 ft Avg [ROPA]</div> <div><div>600</div><div>0</div></div> <div>ft/hr</div> <div>Gamma Time Since Drilled [GRTX]</div> <div><div>0</div><div>600</div></div> <div>min</div>		<div>Surface Weight On Bit 1.0 ft Avg [WOBA]</div> <div><div>0</div><div>100</div></div> <div>klbf</div> <div>Downhole Temperature [TCDX]</div> <div><div>0</div><div>300</div></div> <div>degF</div>	