



Natural Formation Evaluation
Gamma Ray

Real Time Log

Scale:

1:240
Measured Depth

Company: Anadarko
Well: Greenleaf 27N-2HZ
Field: Weld County(Kerr McGee)
County: Continental US State: United States

Status: FINAL PRINT
API Number: 05123406240000
Surface Location: Latitude: 40° 9' 42.026" N Longitude: 104° 37' 39.166" W
SEC: 2 TWP: 2S RNC: 65W
Other Services: Directional VSS

Permanent Datum (P.D.): Ground Level Elevation: 4862.00 ft.
Log Measured From: Rig Floor 16.00 ft. Above P.D.
Depth Reference: Driller's Depth
KB: N/A
DF: 4878.00 ft.
GL: 4862.00 ft.

Interval Logged Dates Magnetic Field Reference
Top: 1278.0 ft. Date From: 06/Feb/15 Date To: 11/Feb/15 Dip Angle: 66.87° Azi Reference North: True
Bottom: 11754.0 ft. Date To: 11/Feb/15 Total Mag to Reference
Spud Date: 06/Feb/15 Field Strength: 52616.0 nT North Correction: 8.43°

Borehole Record			Casing Record			
Hole Size	From	To	Size	Weight	From	To
8.750 in.	1324.0 ft.	7400.0 ft.	9.625 in.	26.00 lb/ft	Surface	1324.0 ft.
6.125 in.	7400.0 ft.	11754.0 ft.	7.000 in.	26.00 lb/ft	Surface	7390.0 ft.

Mud Record			Deviation Record			
Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based Mud	Surface	11754.0 ft.	8.750 in.	6076.0 ft.	0.3° / 132.2°	82.9° / 358.0°
			6.125 in.	4397.0 ft.	82.9° / 358.0°	89.7° / 0.0°
					/	/
					/	/
					/	/
					/	/

Acquisition System		Software Version		Other	
Advantage	2.20U4	Rig:	Xtreme 23	/ Advance Drilling	
PATS	6.4.1.34	Job No:	6975059	/ 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 (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
1	1	2	8.750	PDC	3.000	Steerable	1278.0	6301.0	1336.0	6347.0	06/Feb/2015 23:59	07/Feb/2015 23:05	21.68
2	2	3	8.750	PDC	3.000	Steerable	6301.0	7361.0	6347.0	7400.0	08/Feb/2015 03:25	08/Feb/2015 21:17	10.63
3	3	4	6.125	PDC	3.000	Steerable	7361.0	11708.0	7400.0	11754.0	10/Feb/2015 07:00	11/Feb/2015 10:37	27

Crew										
Name	Arrive	Depart		Name	Arrive	Depart		Name	Arrive	Depart
	Wellsite	Wellsite			Wellsite	Wellsite			Wellsite	Wellsite
Jason Williams	05 Feb 15	11 Feb 15		Sumanth Belawadi	5 Feb 15	11 Feb 15				

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
07/Feb/2015	20:00	1	5688.0	Water Based Mud	9.1	32	8.5	N/A	0.0/95	Halliburton	3600	N/A
08/Feb/2015	20:00	2	7280.0	Water Based Mud	10.0	41	8.5	N/A	1.5/88.8	Halliburton	3500	N/A
10/Feb/2015	20:00	3	8993.0	Water Based Mud	9.5	37	10.0	N/A	2.0/91.0	Halliburton	3700	N/A

Mnemonics

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

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	12093880	Directional	46.84	6.750	3.250
1	SRIG	12722372	Gamma	43.47	6.750	3.250
2	DIR	13108409	Directional	41.31	6.750	3.250
2	SRIG	12578112	Gamma	37.94	6.750	3.250
3	DIR	11941434	Directional	52.05	4.750	2.250
3	SRIG	12554657	Gamma	48.06	4.750	2.250

Service and Tool Mnemonics

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

Comments

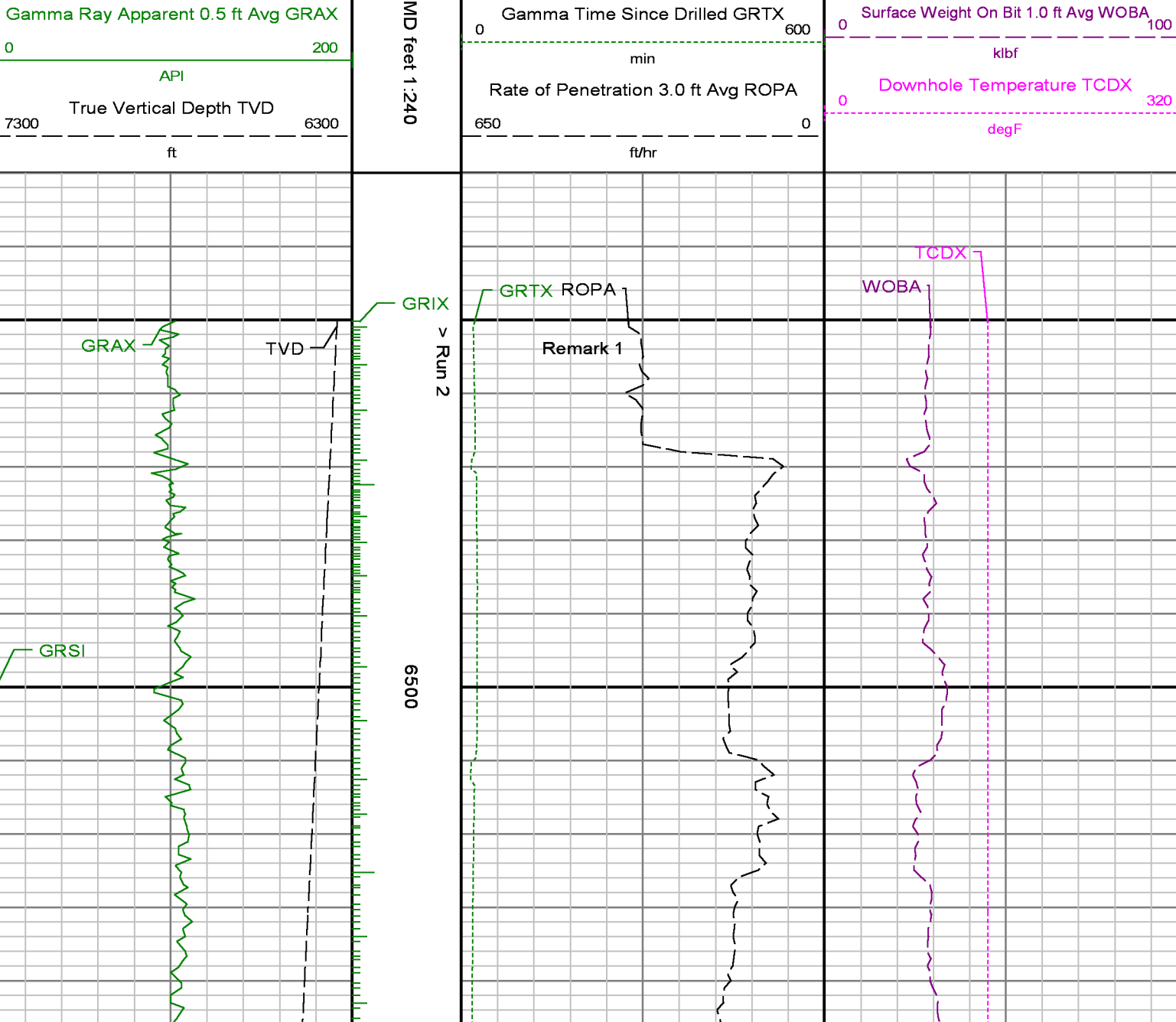
1.) Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to represent logging data.
2.) Baker Hughes Run 1 and Run 2 utilized a 6 3/4 inch NaviGamma (Directional and Gamma Ray) tool behind a 8 3/4 inch bit and steerable assembly from 6500 to 7400 feet MD (6391.67 to 6963.42 feet TVD)..
3.) Baker Hughes Run 3 utilized a 4 3/4 inch NaviGamma (Directional and Gamma Ray) tool behind a 6 1/8 inch bit and steerable assembly from 7400 to 11754 feet MD (6963.42 to 6992.11 feet TVD).
4.) A sliding indicator is shown on the left side 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.

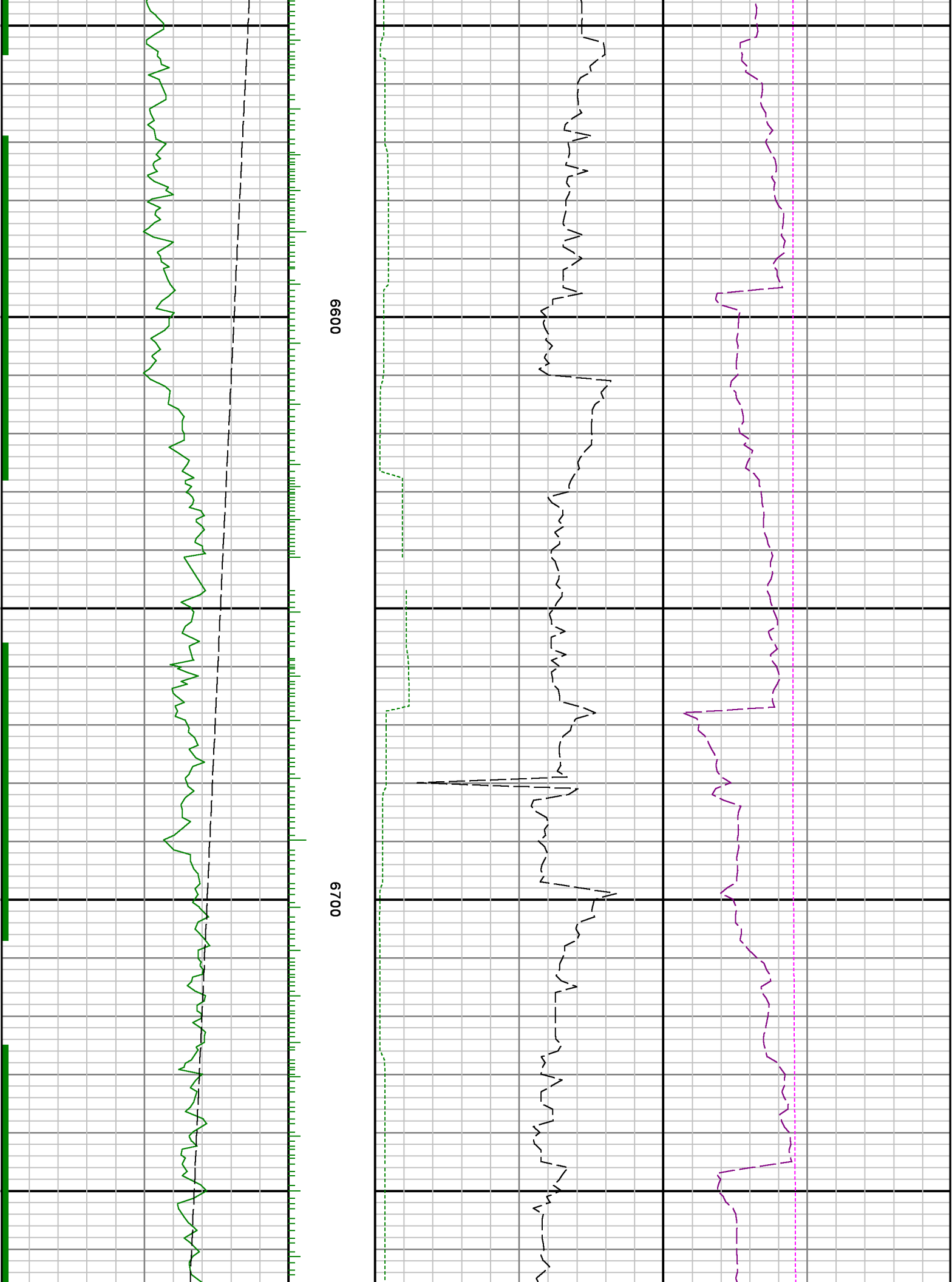
Remarks

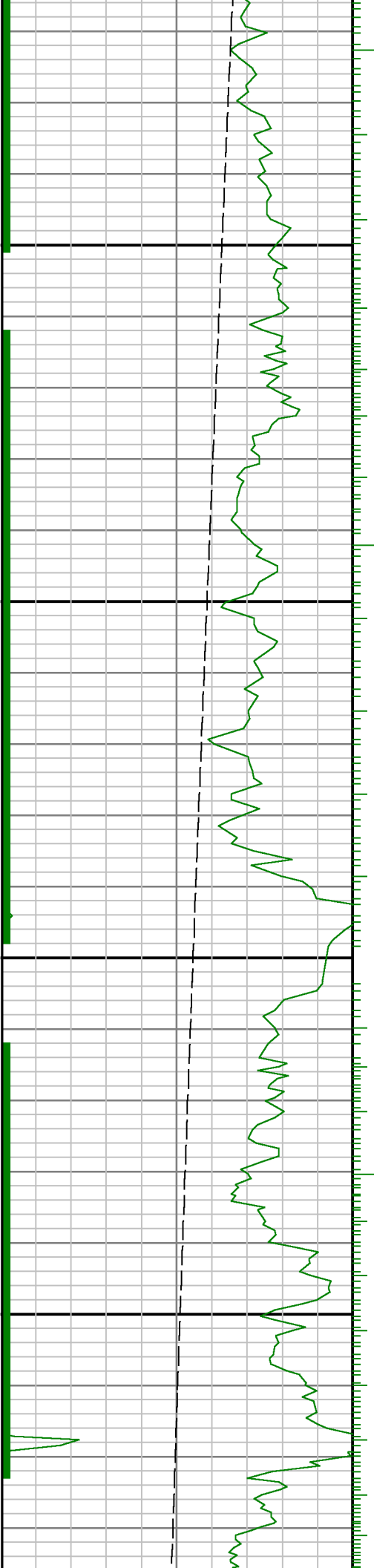
Number	Measured Depth (ft)	Hole Section (in.)	LWD Run No.	Remark
1	6500	8.750	1	No data prior to 6500 feet MD (6391.67 feet TVD) per Anadarko due to logging operations started at Kick off Point.
2	7360	6.125	2	GRAX, GRIX and GRTX API values from 7360 to 7402 ft. MD (6959.21 to 6963.59 ft. TVD) were logged up to 2080 minutes after being drilled due to a trip out of hole to run casing, pick up BHA 3 and trip back in to drill lateral section.
3	11708	6.125	3	GRAX, GRIX and GRTX API values were not logged from 11708 to 11754 ft. MD (6991.84 to 6992.11 ft. TVD) due to sensor offset to bit position in MWD tool at TD.



Company : Anadarko
Well : Greenleaf 27N-2HZ
Interval : 6430.00 - 11760.00 feet
Created : 11/Feb/2015 10:52:30 AM

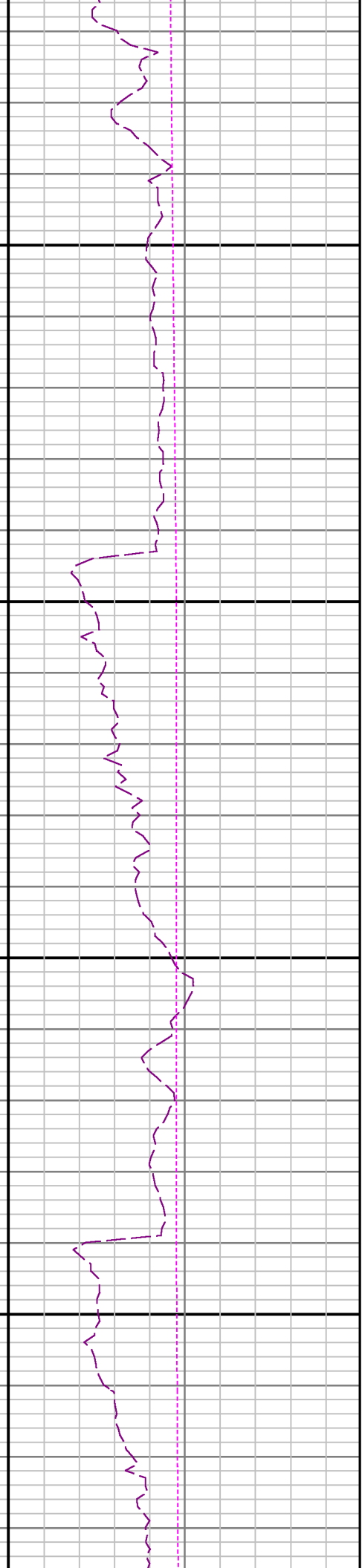
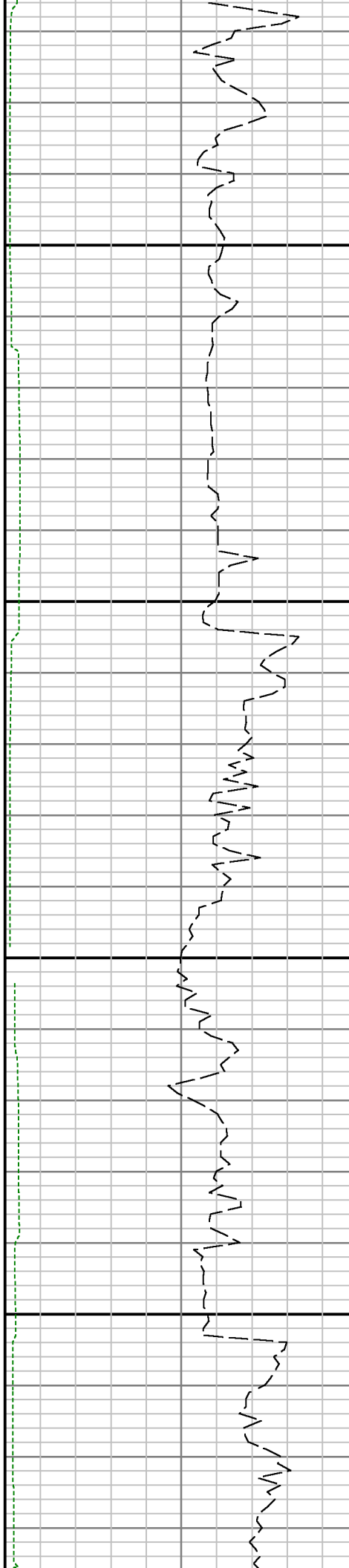


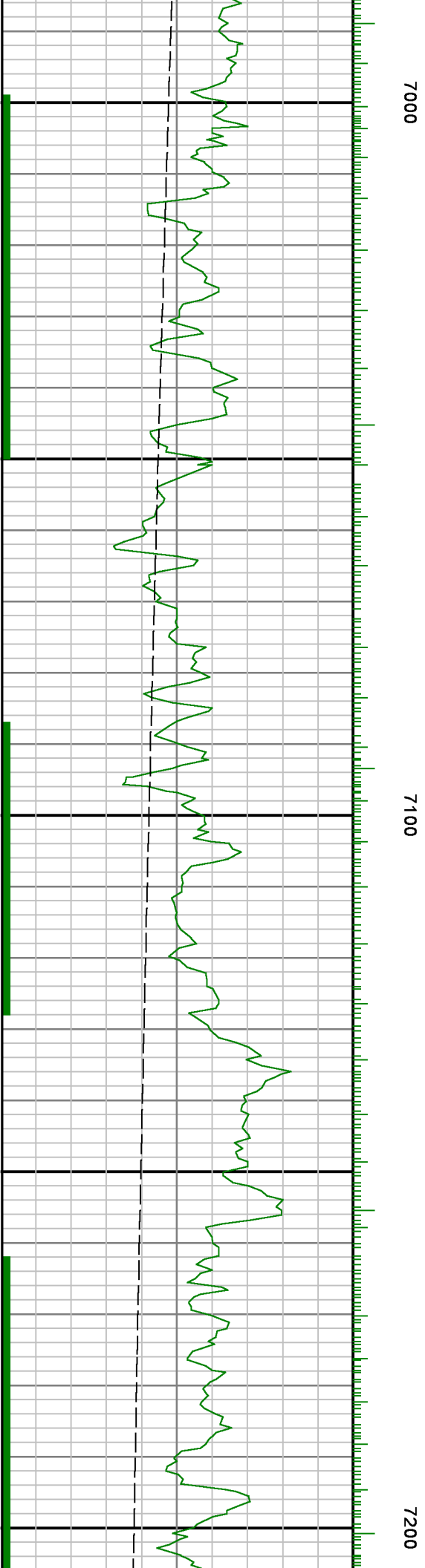
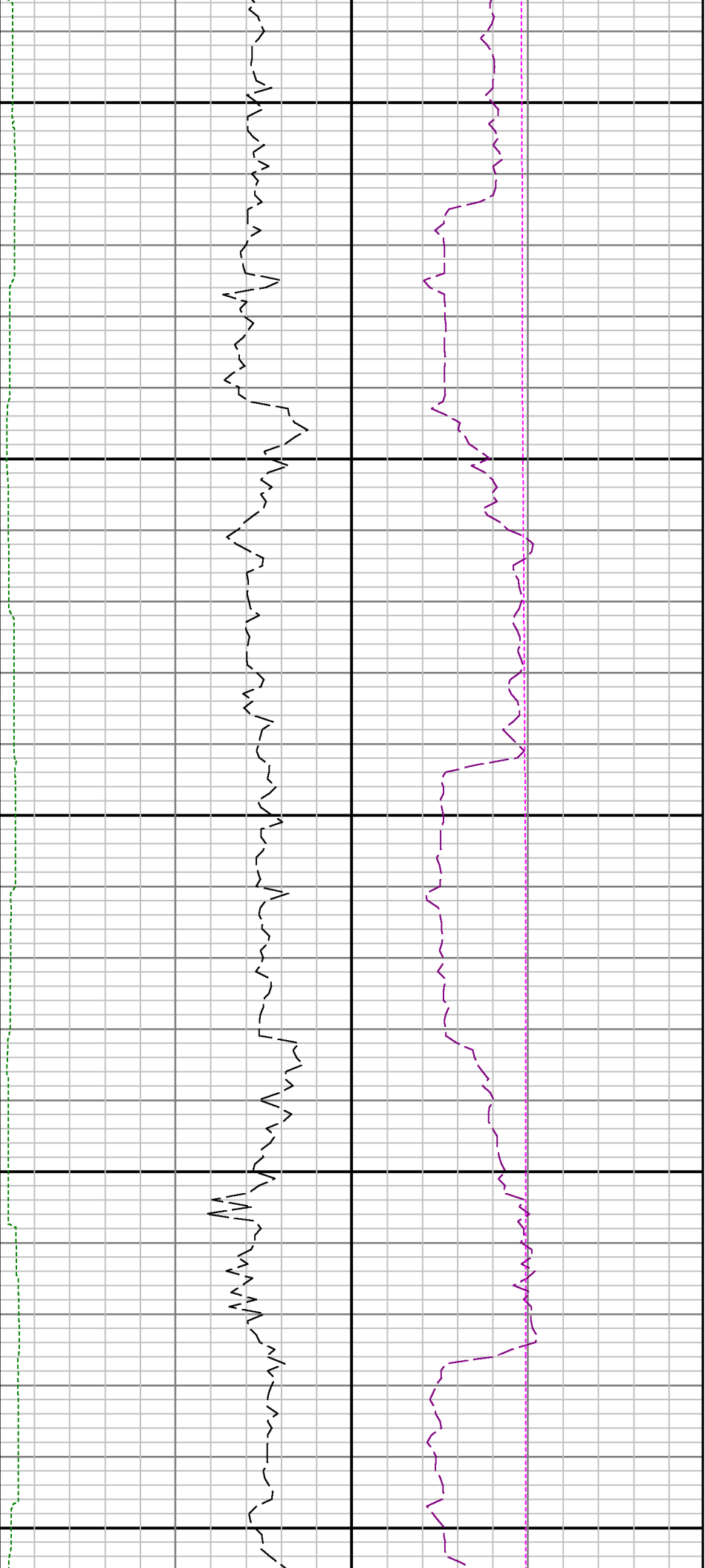


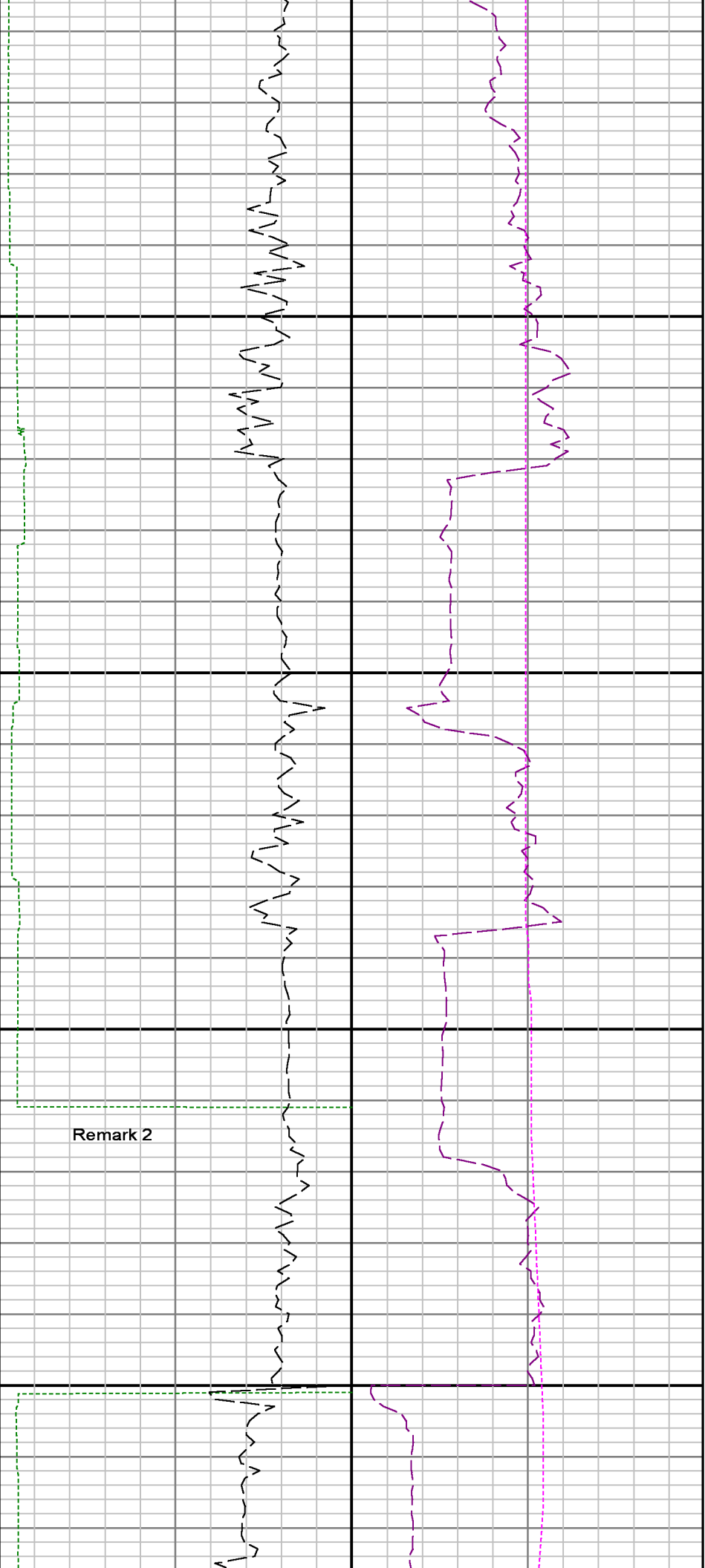


00800

00900





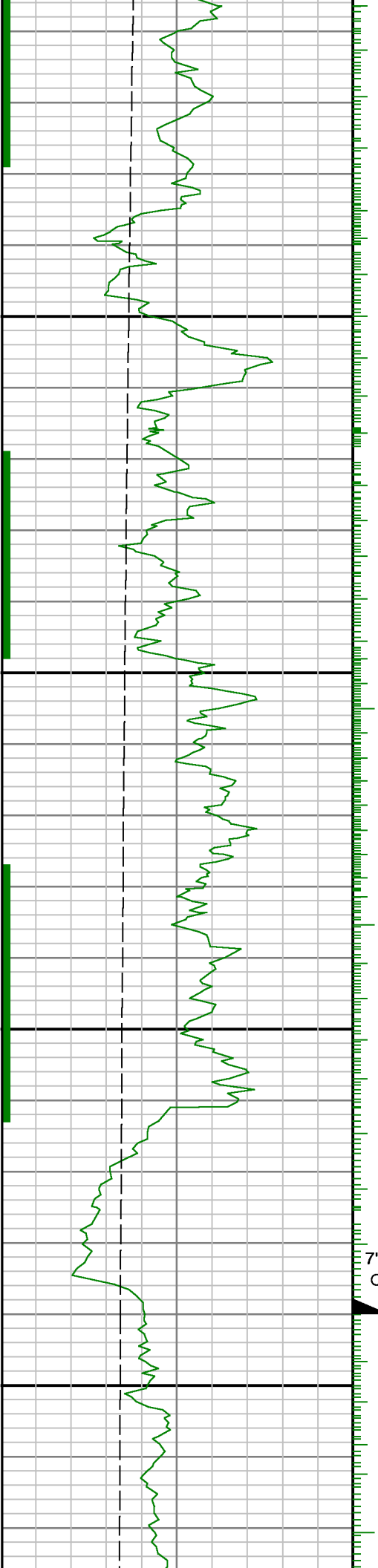


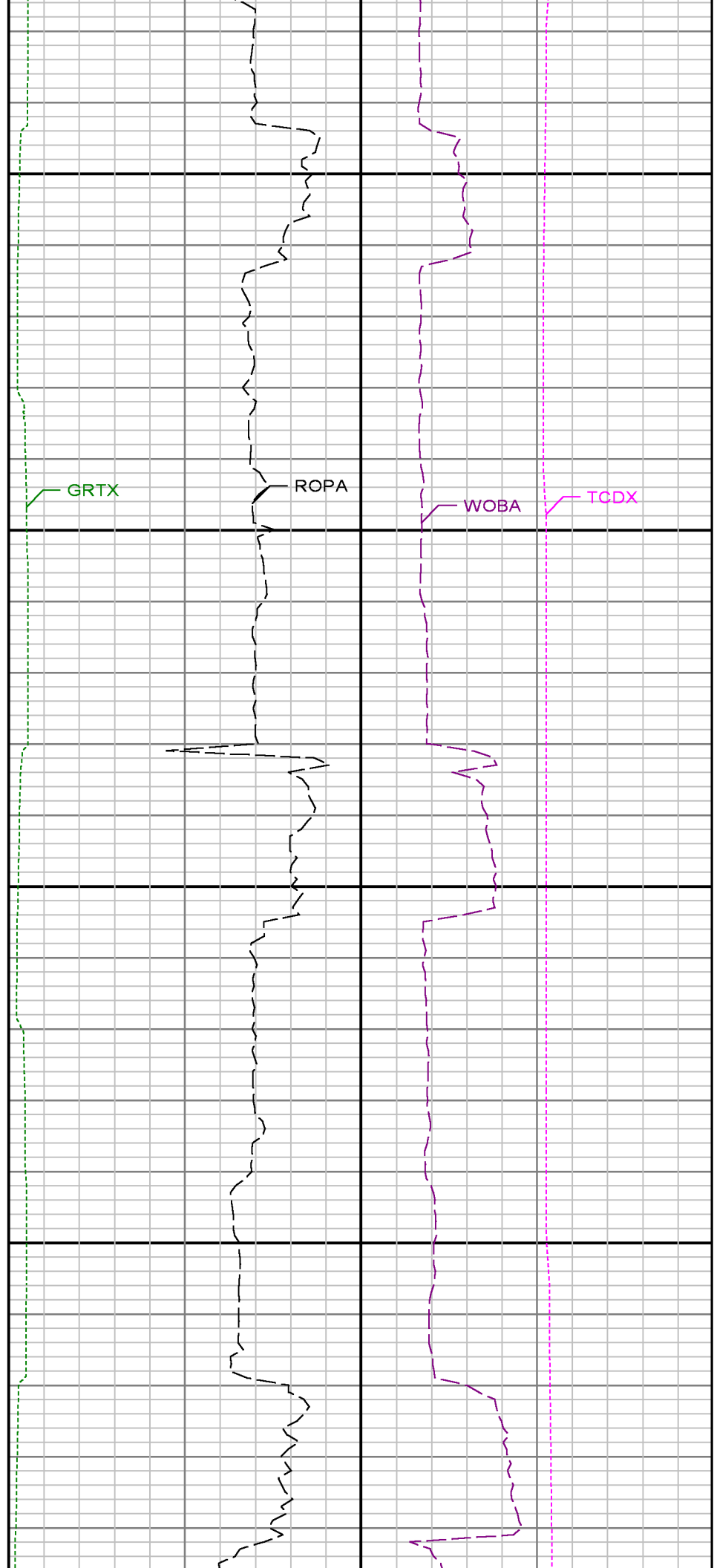
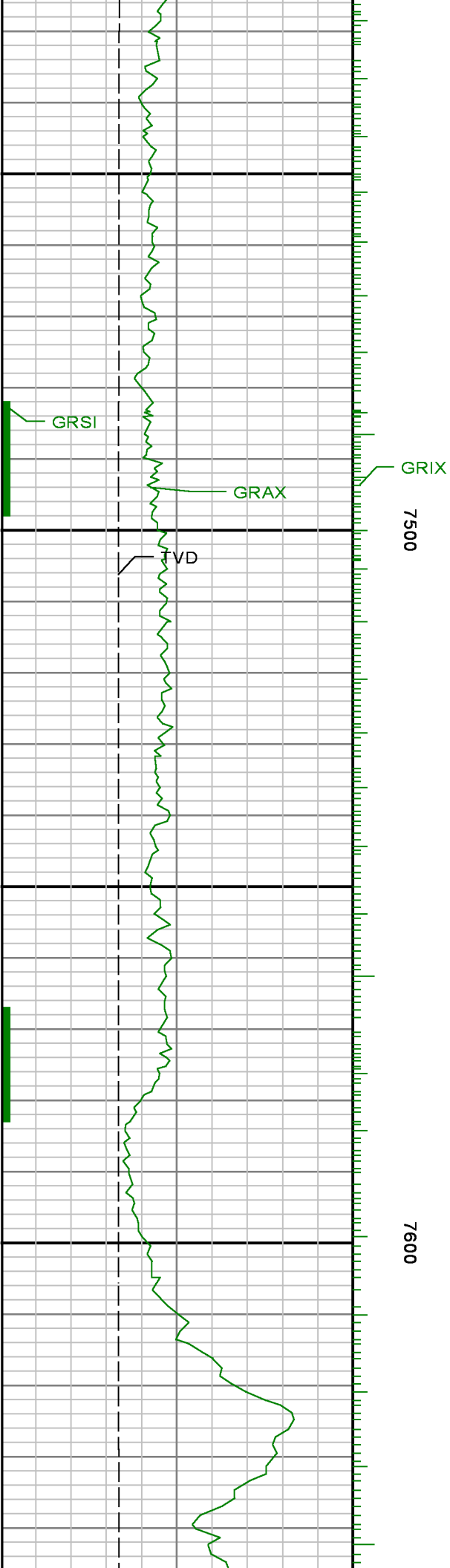
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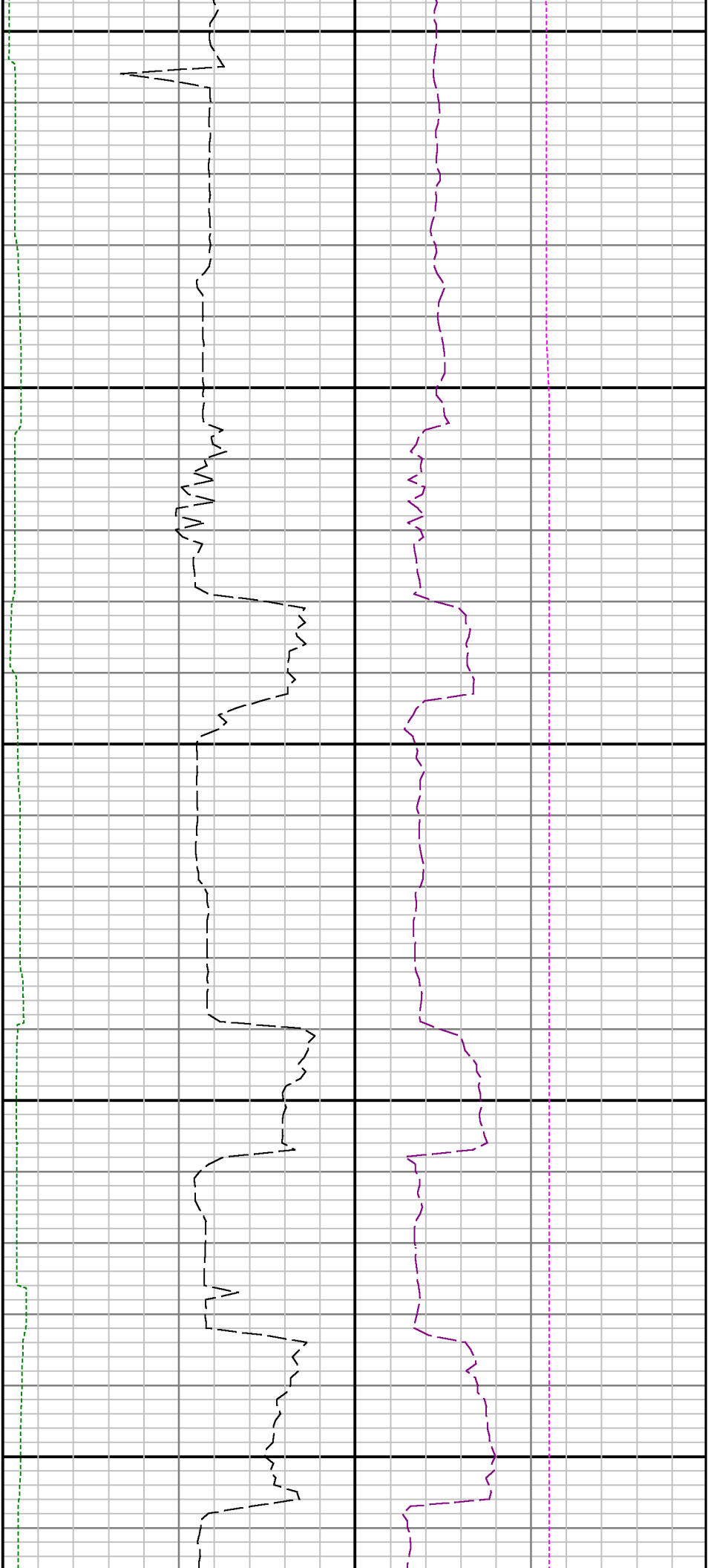
7300

7" Casing

Run 2 ⇨ Run 3
7400

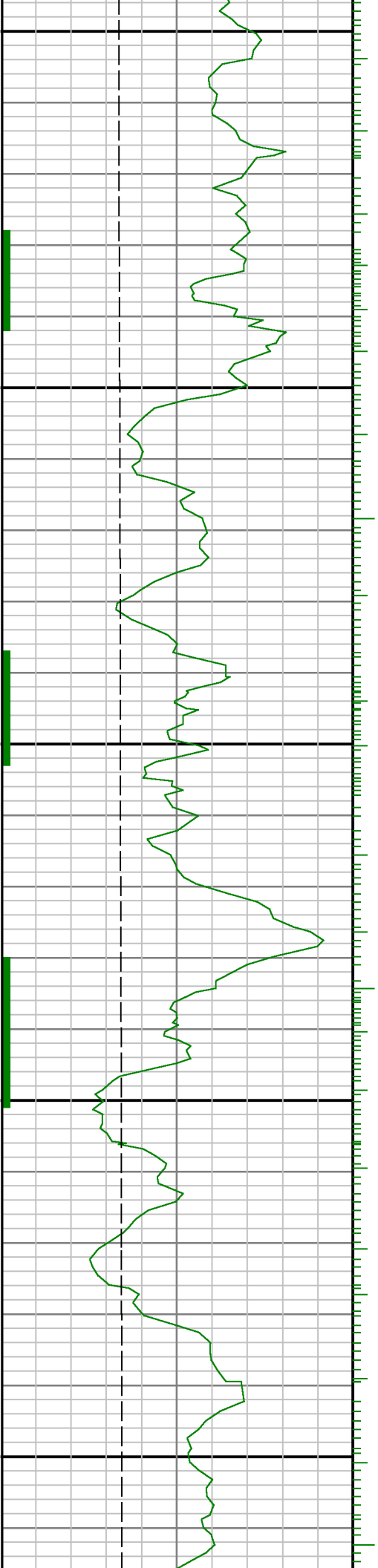


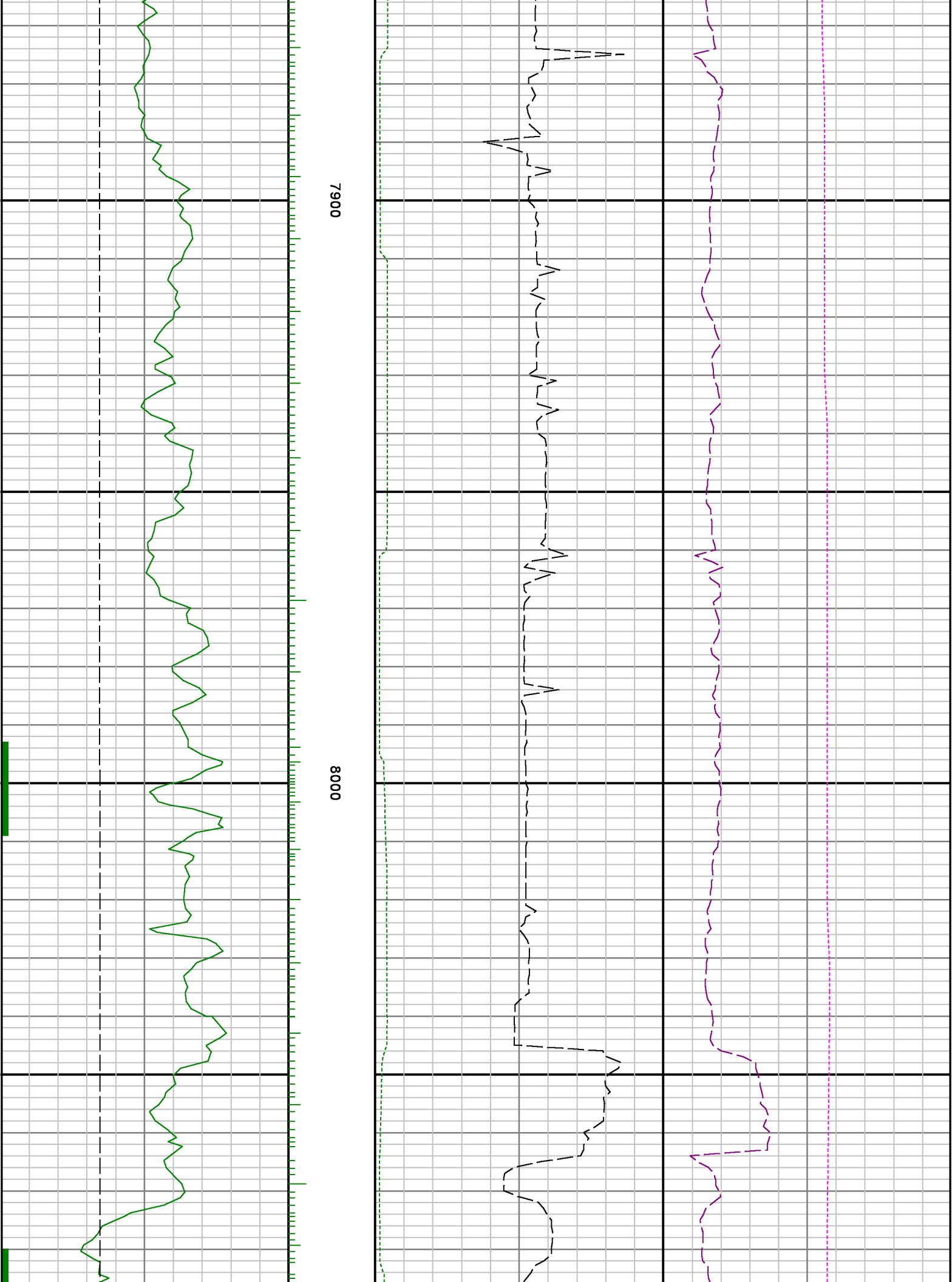


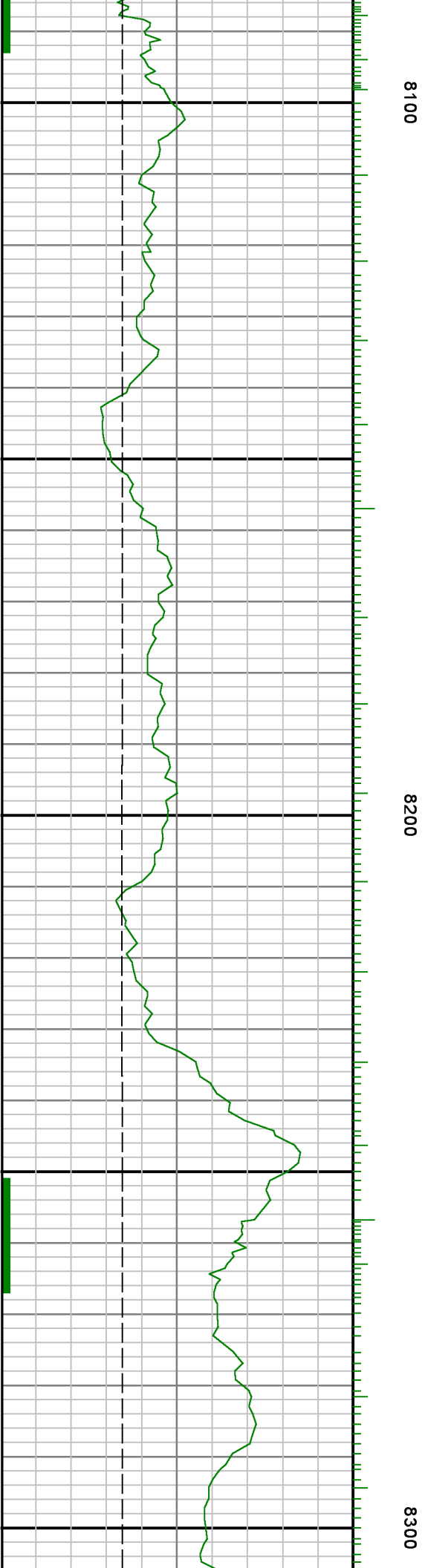
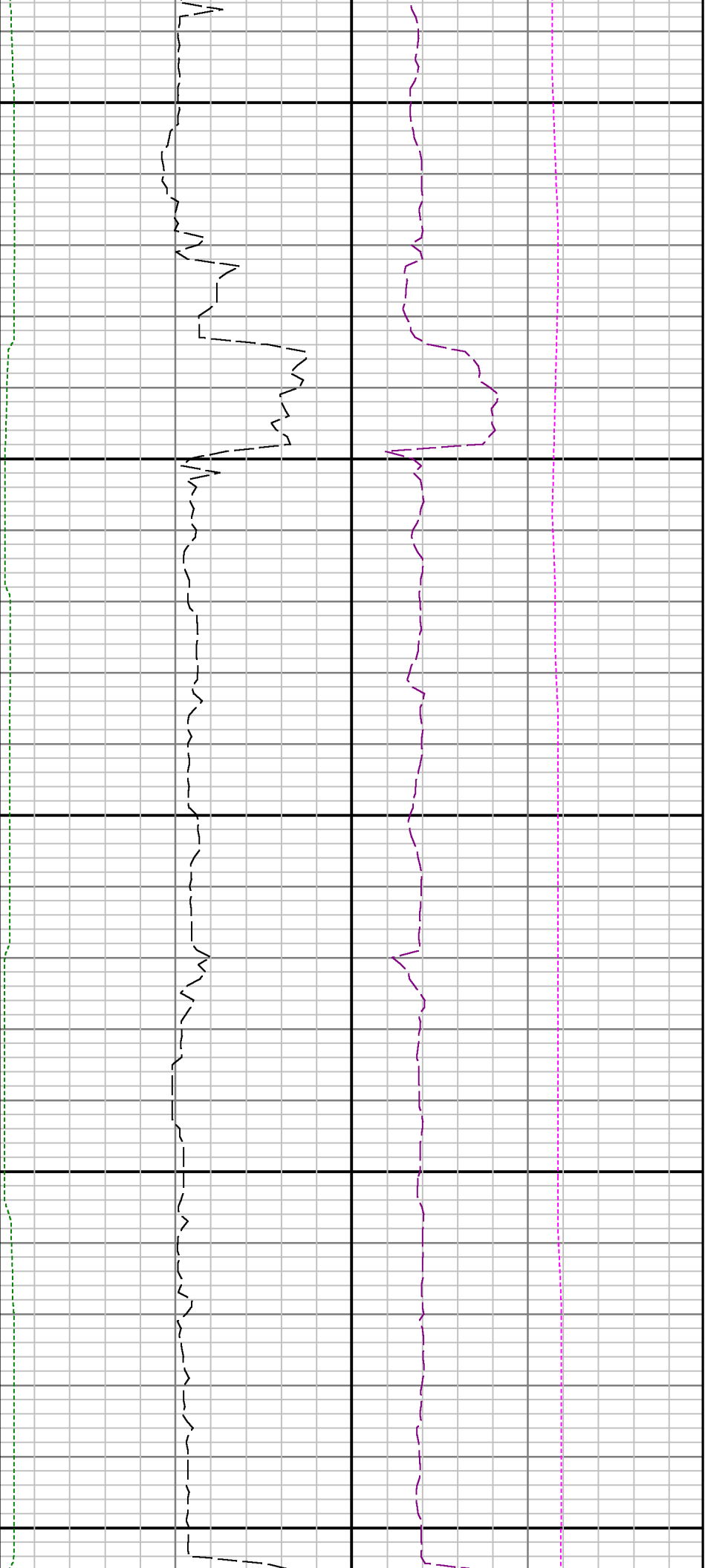


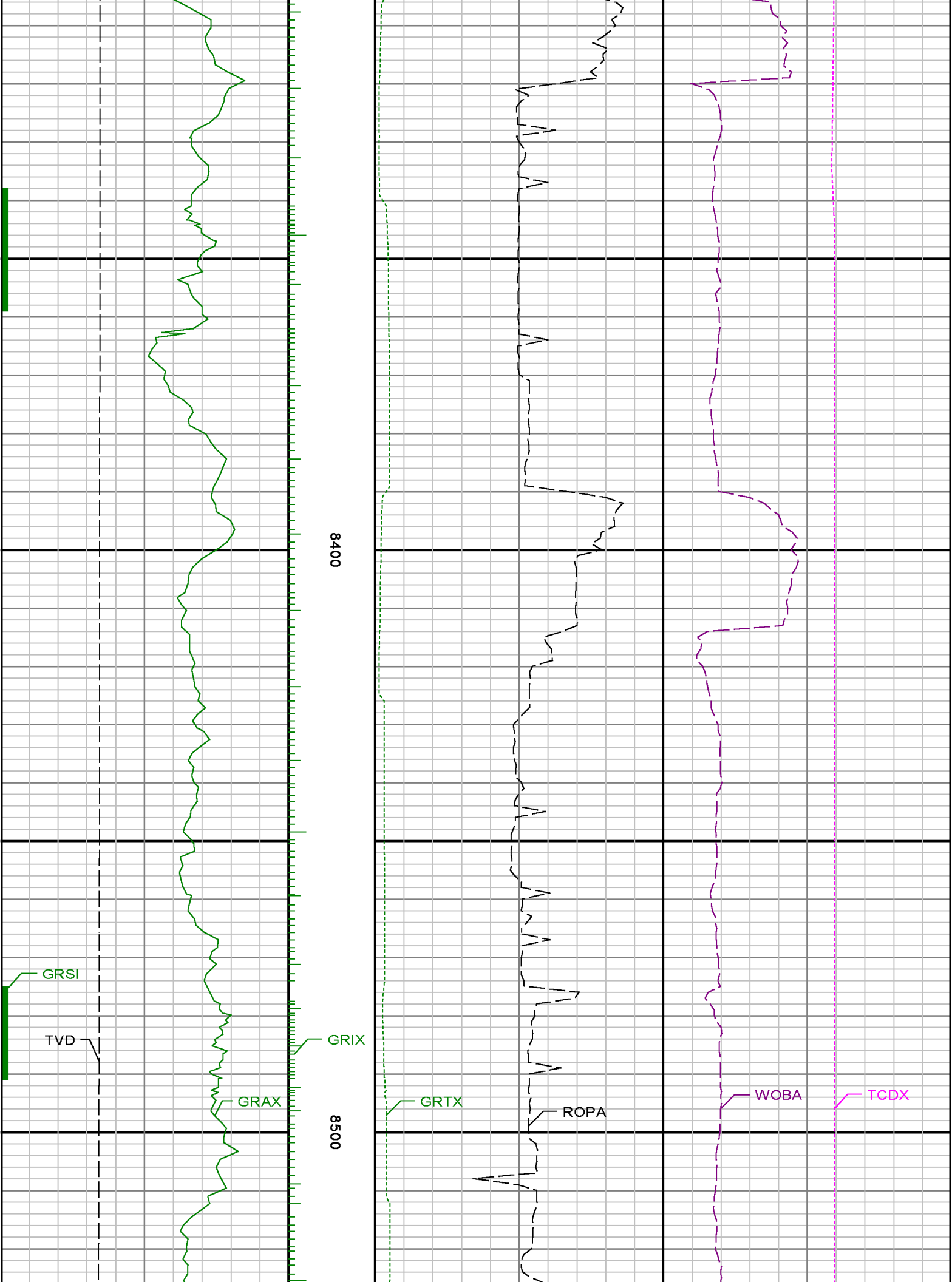
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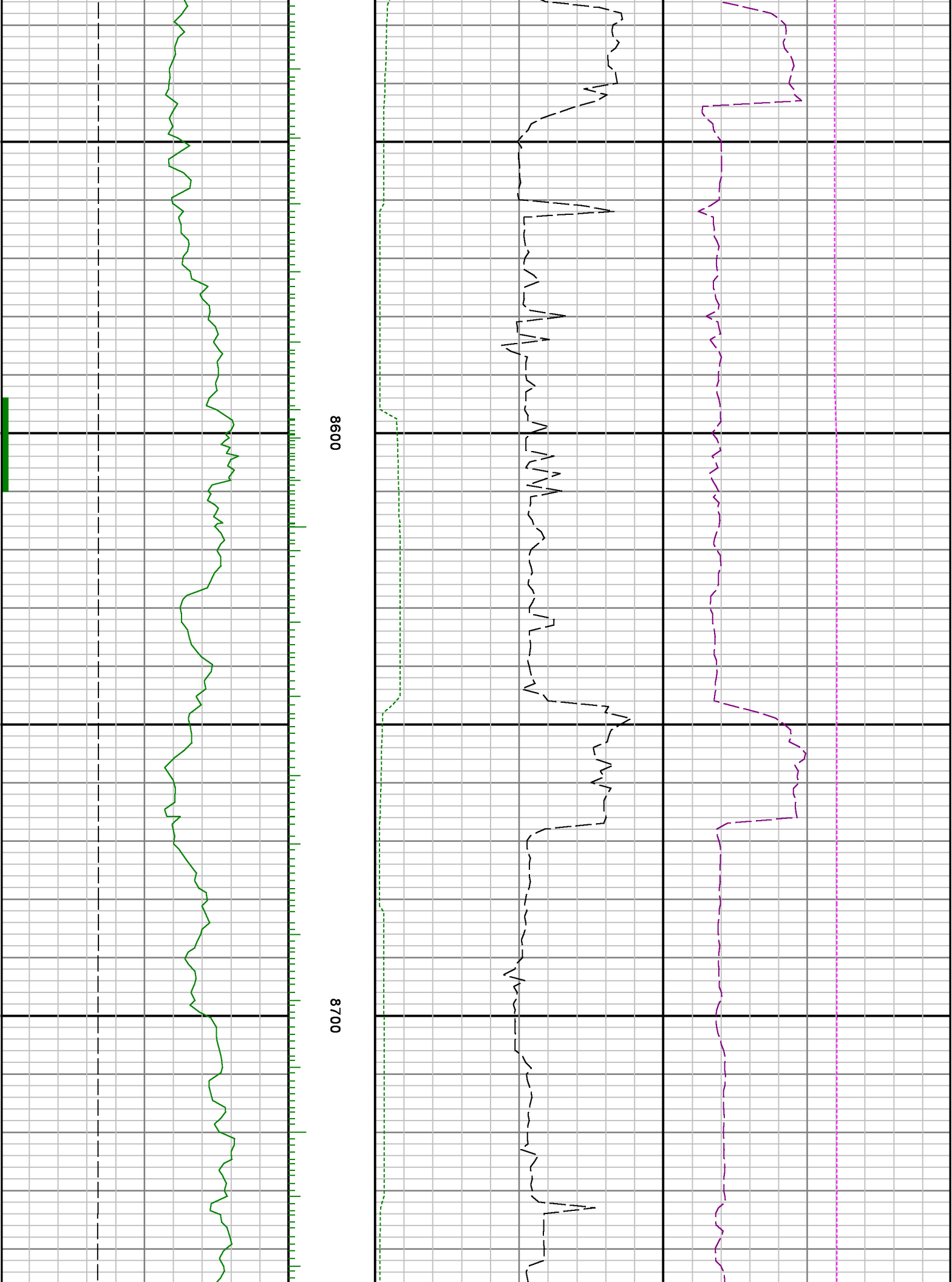
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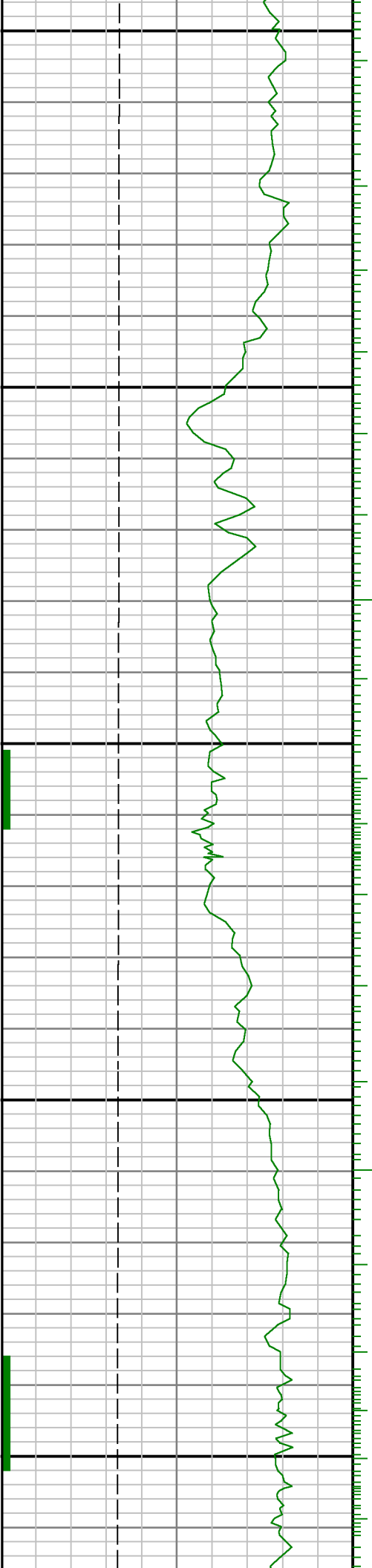






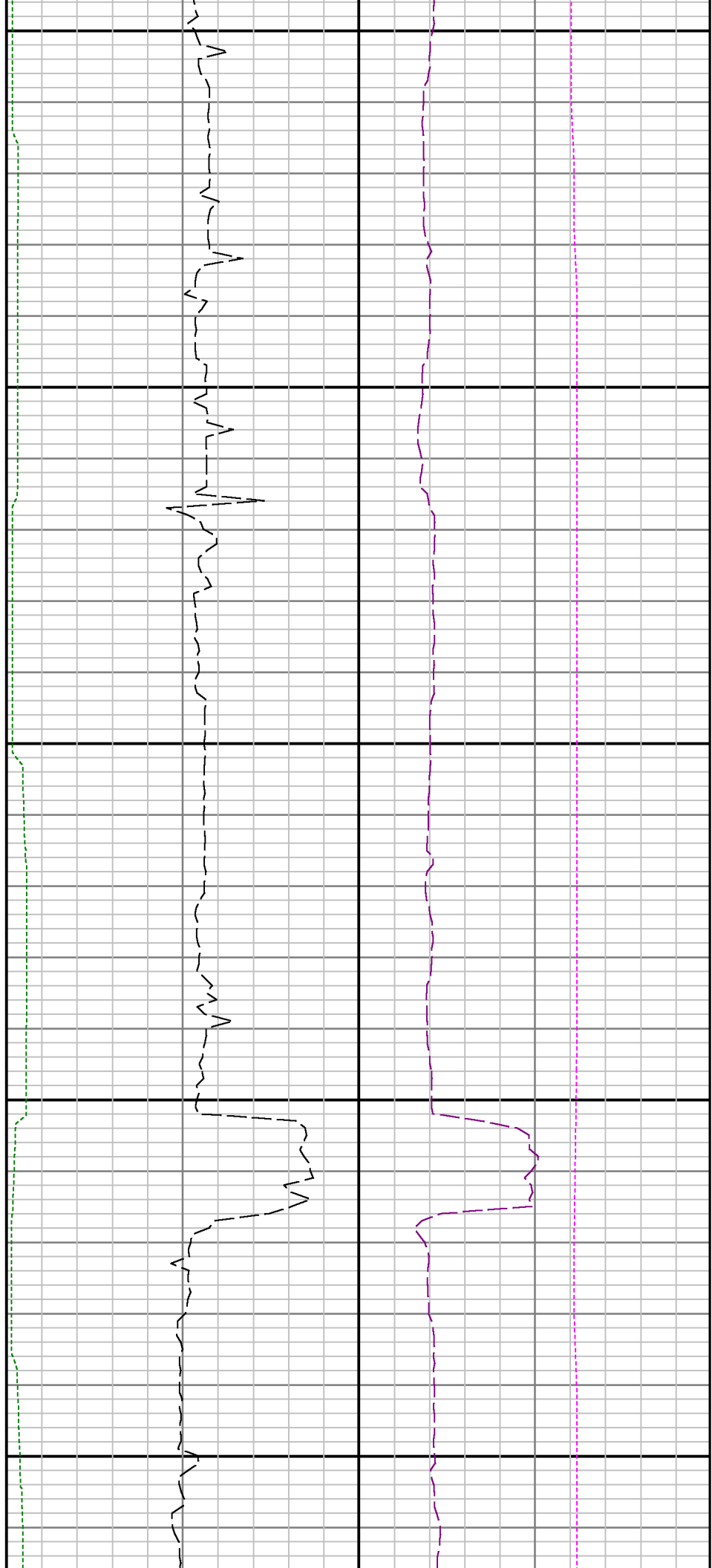






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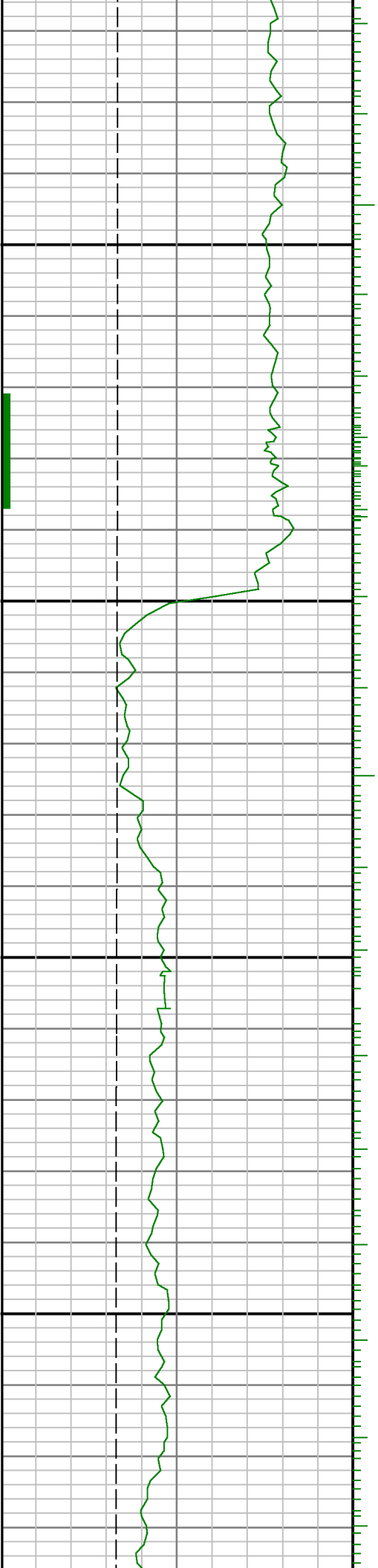
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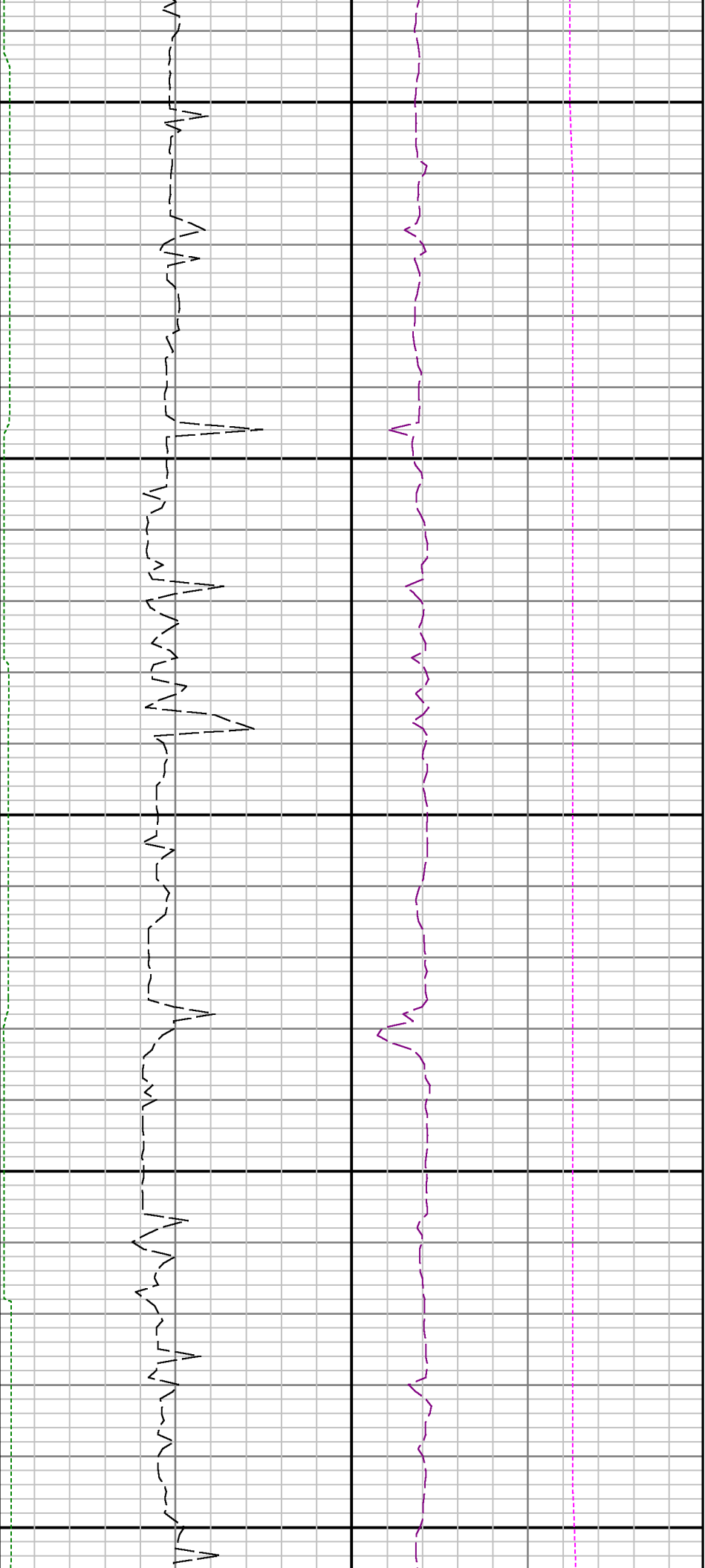




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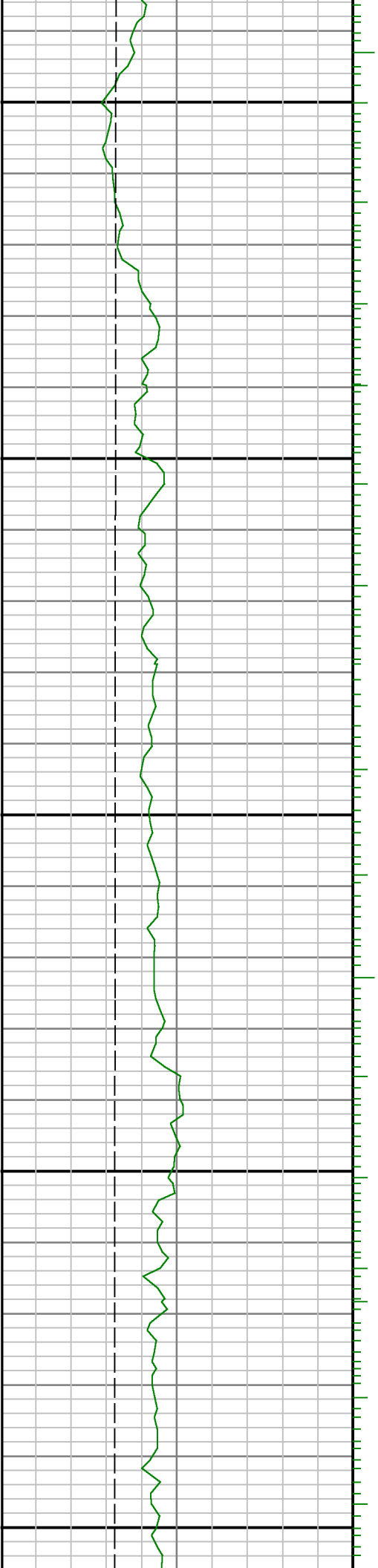


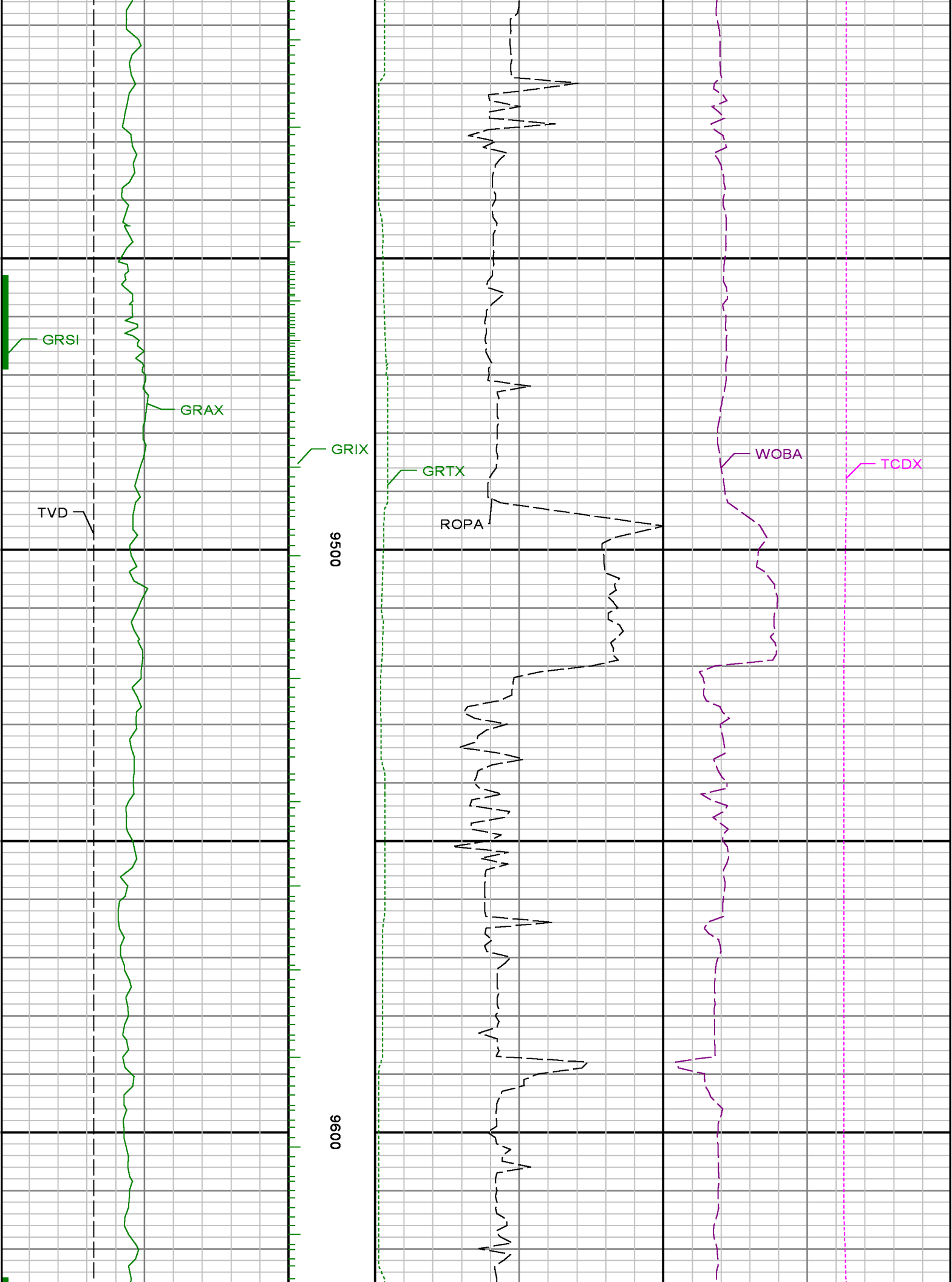


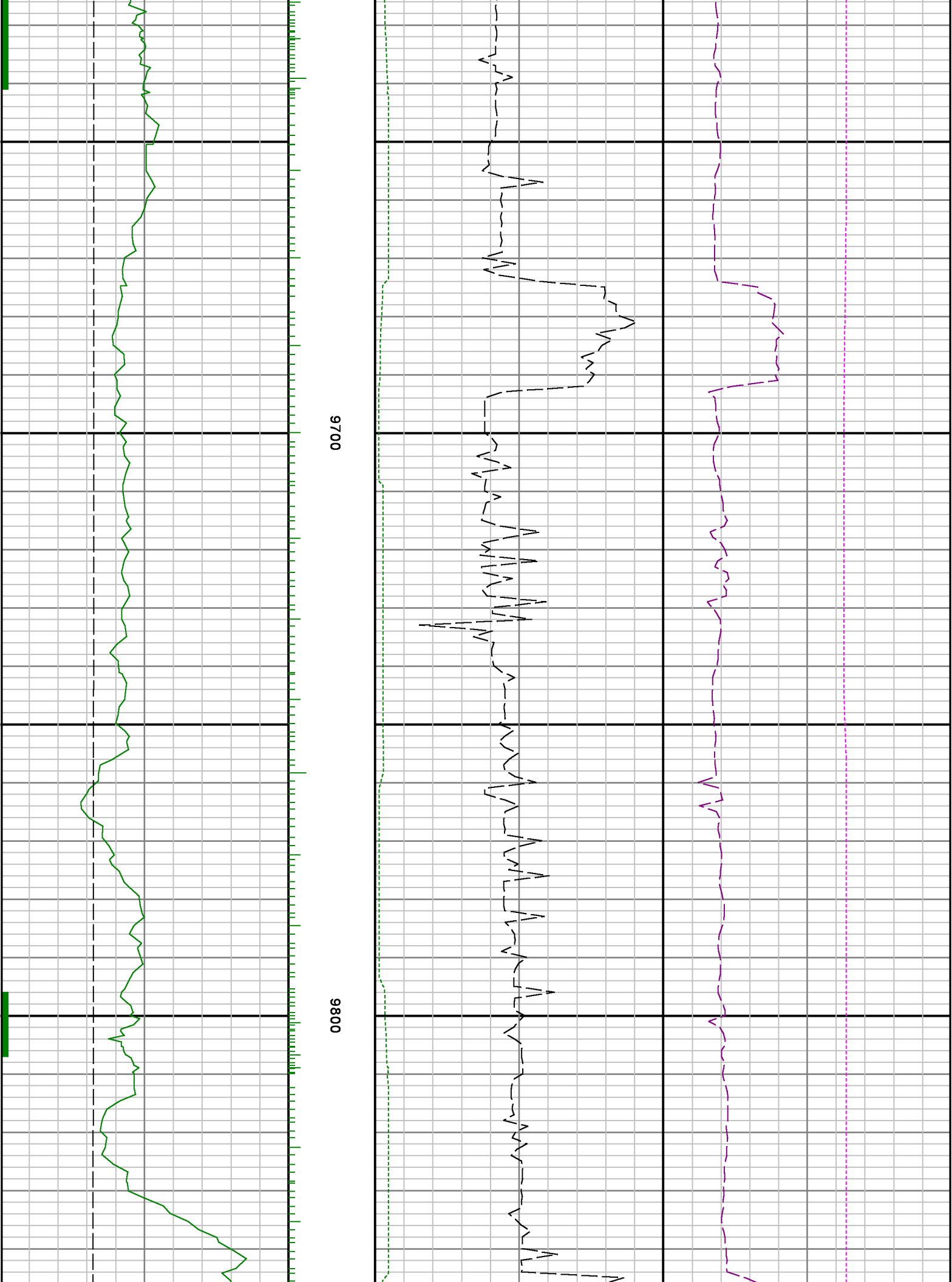
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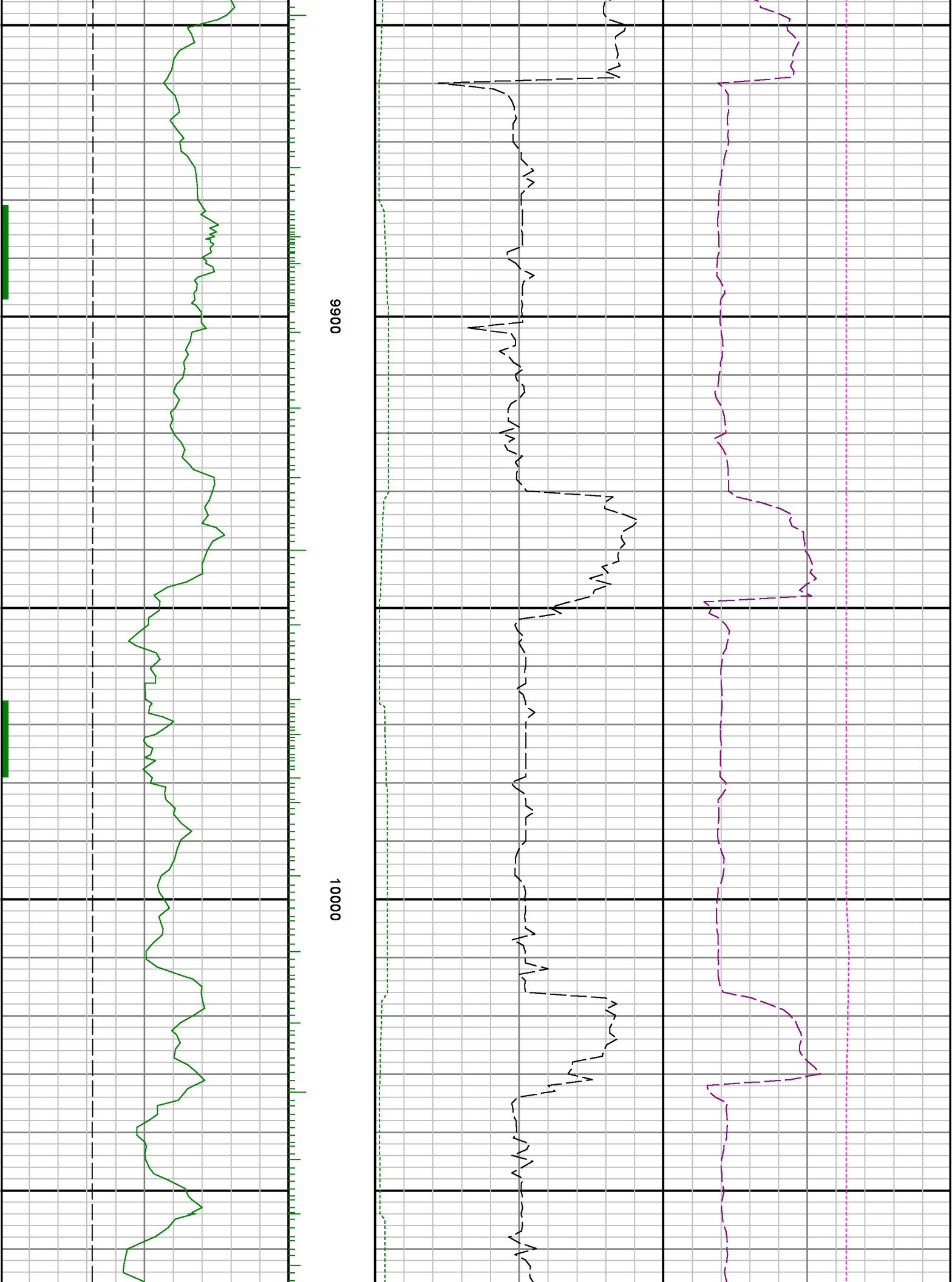
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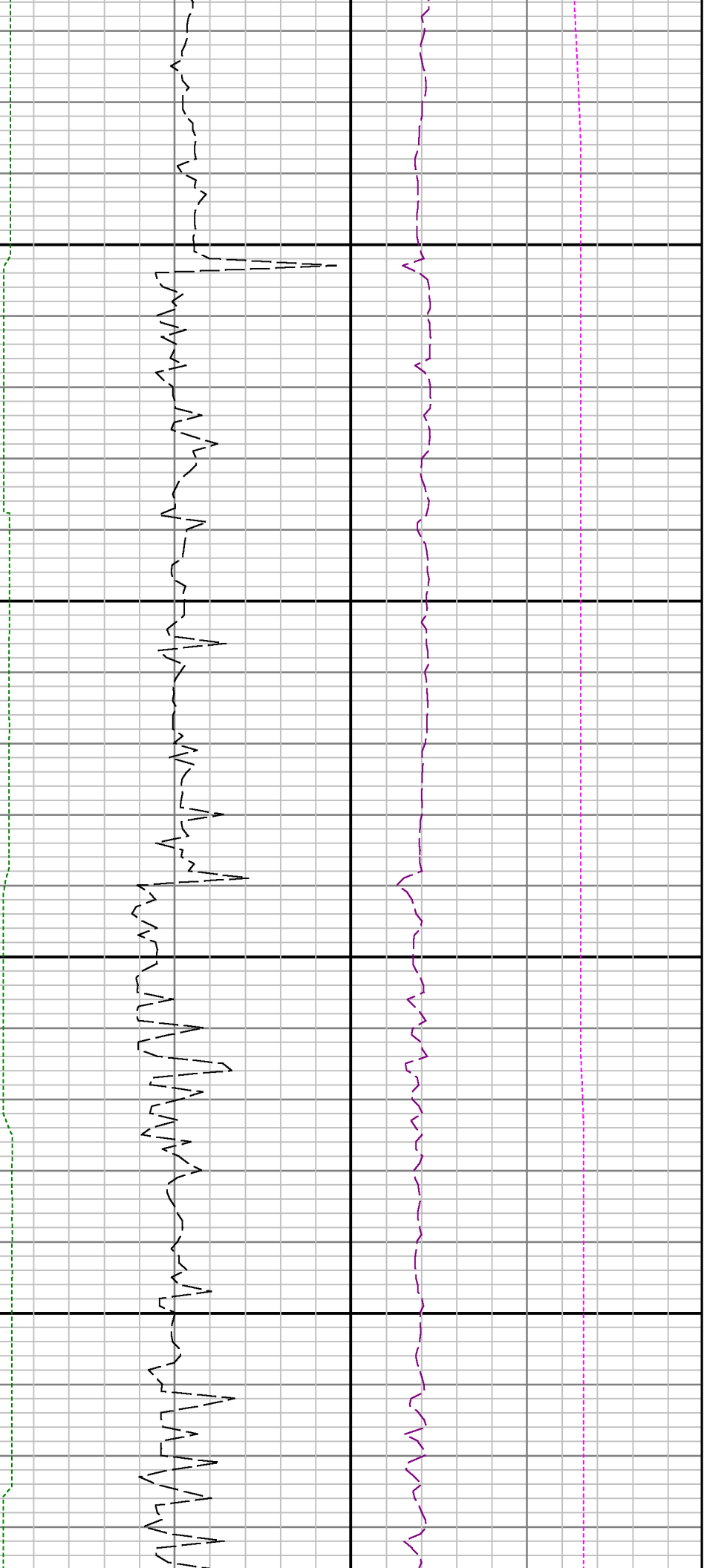
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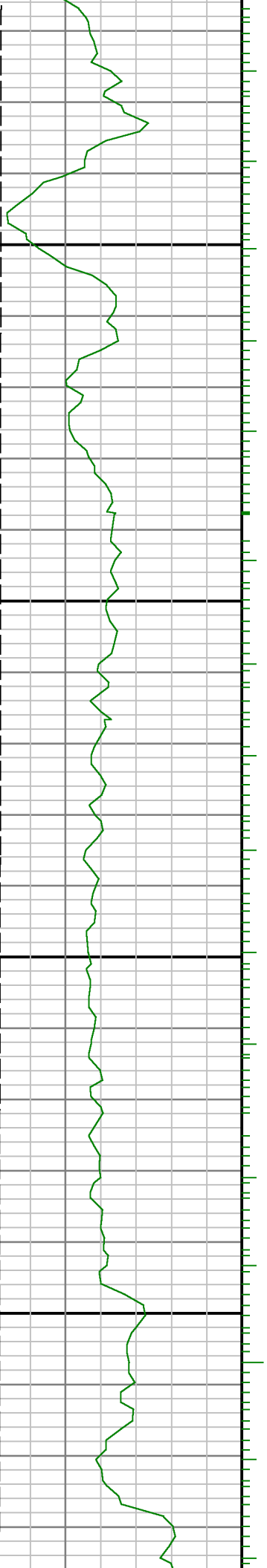


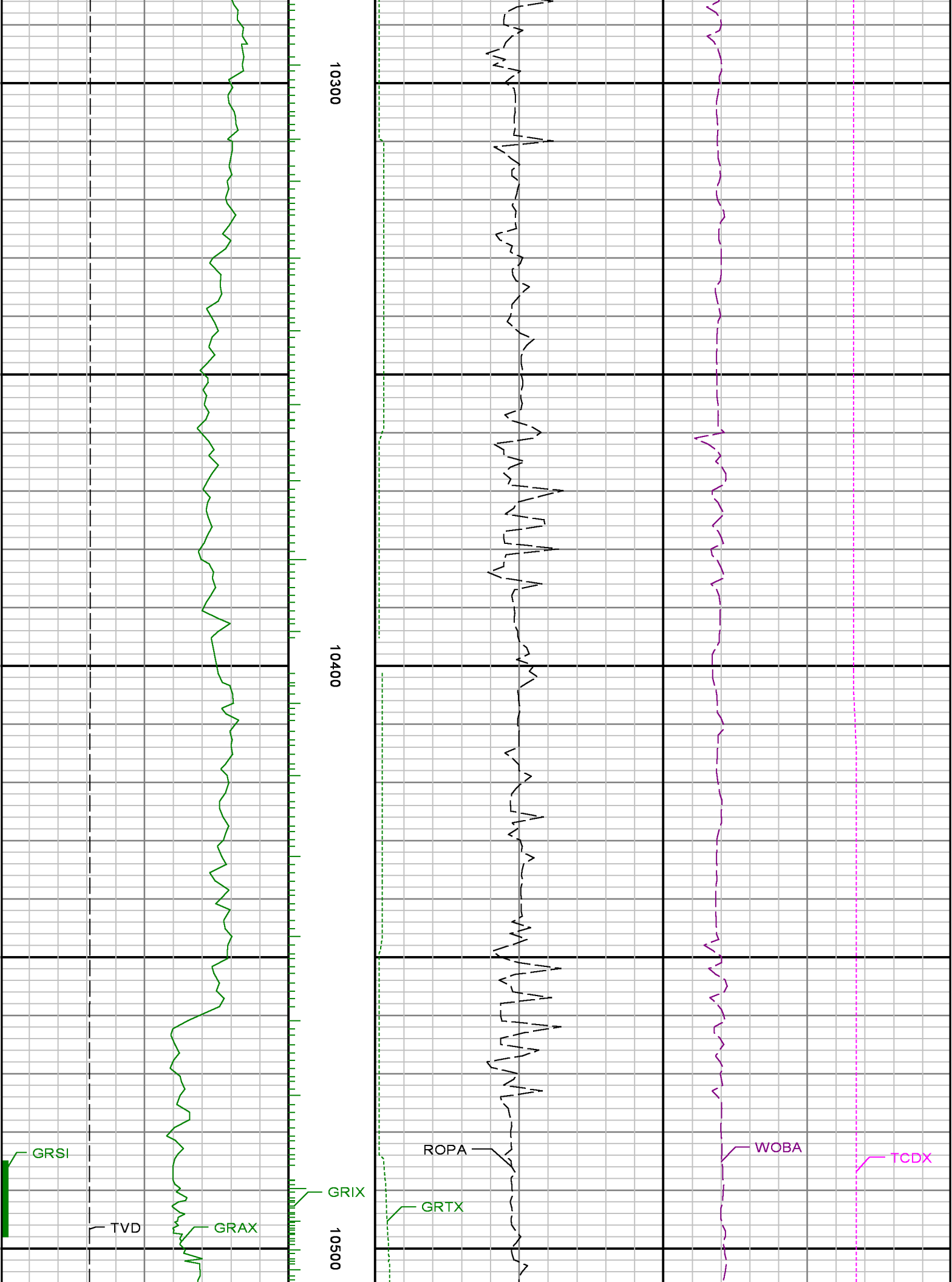


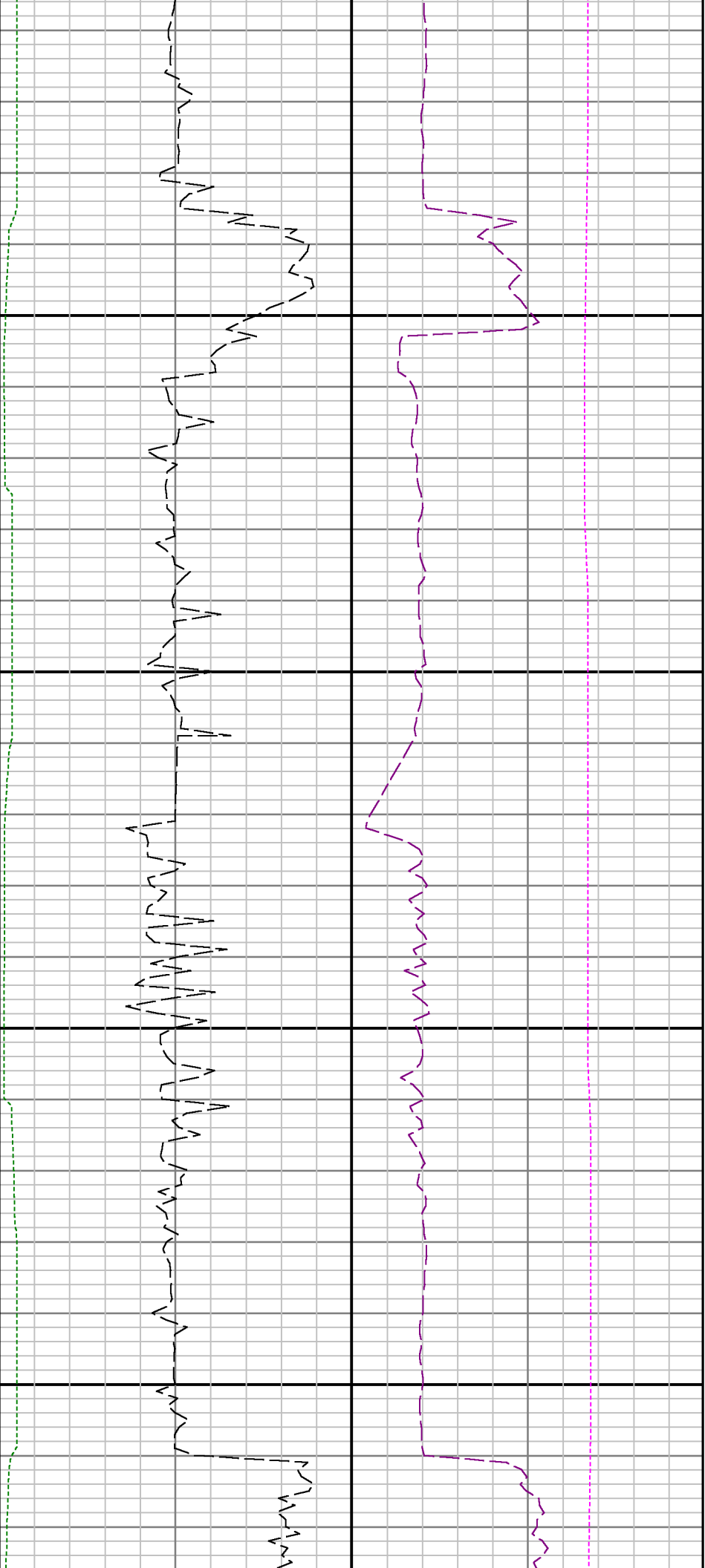


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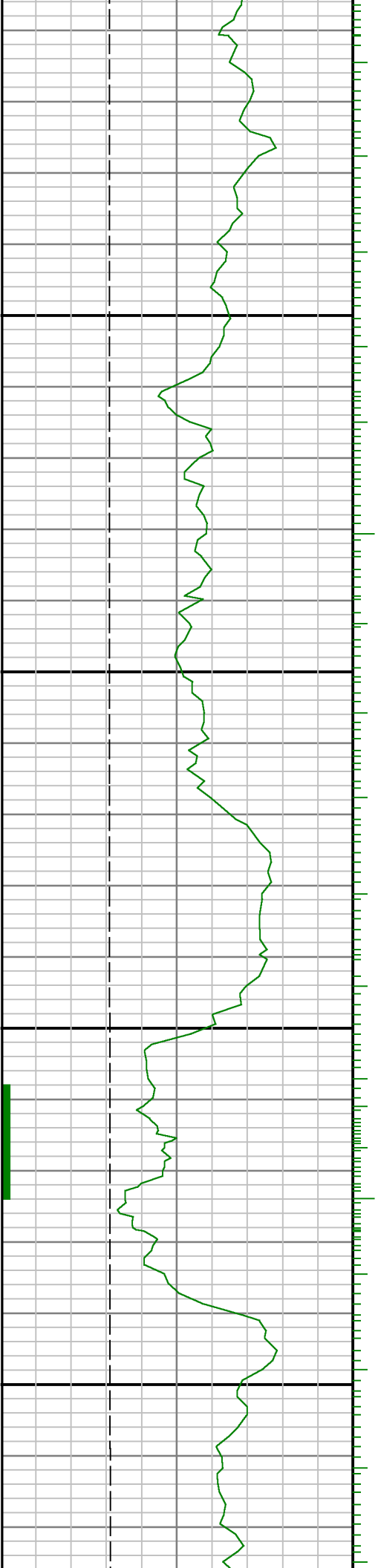


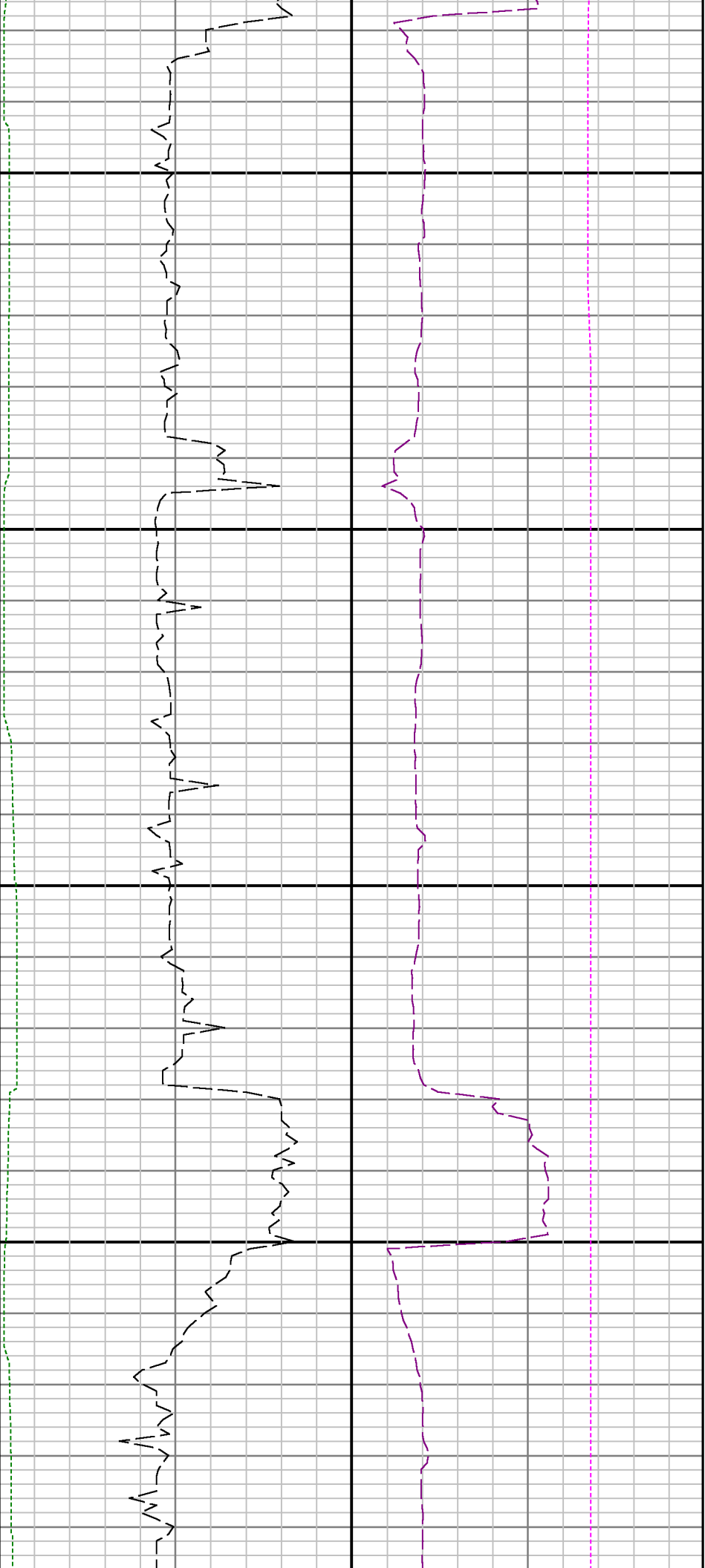




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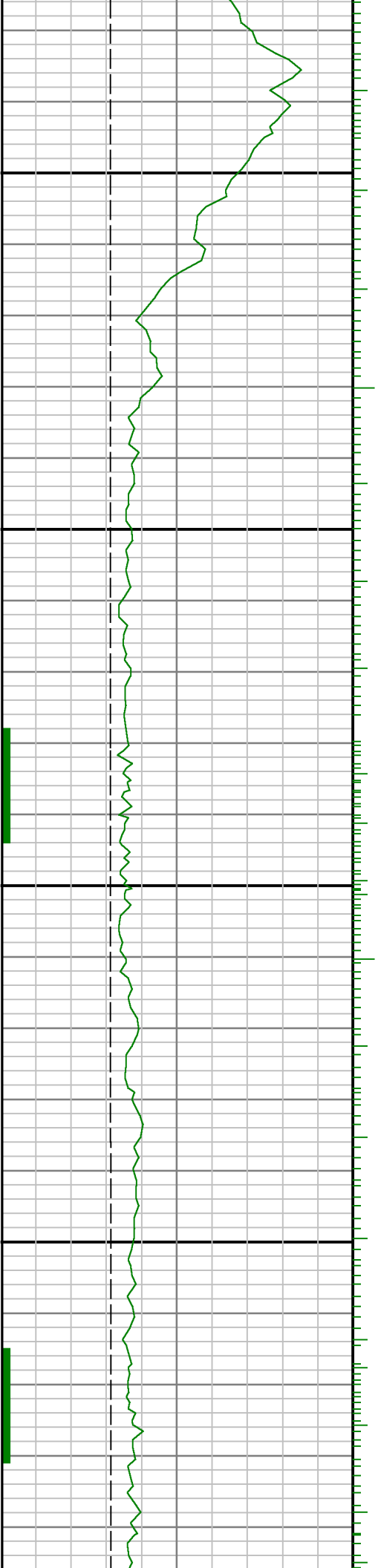
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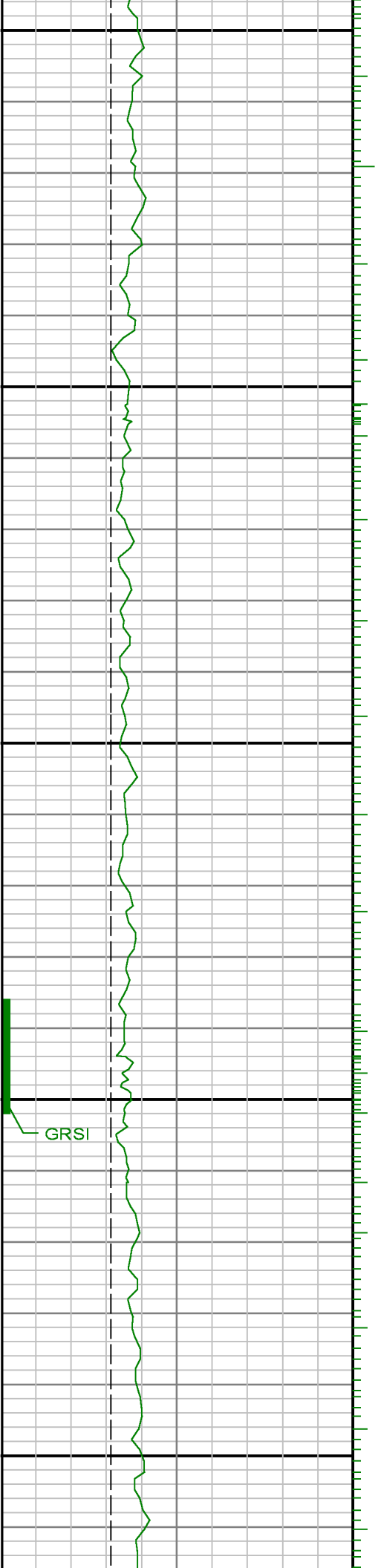
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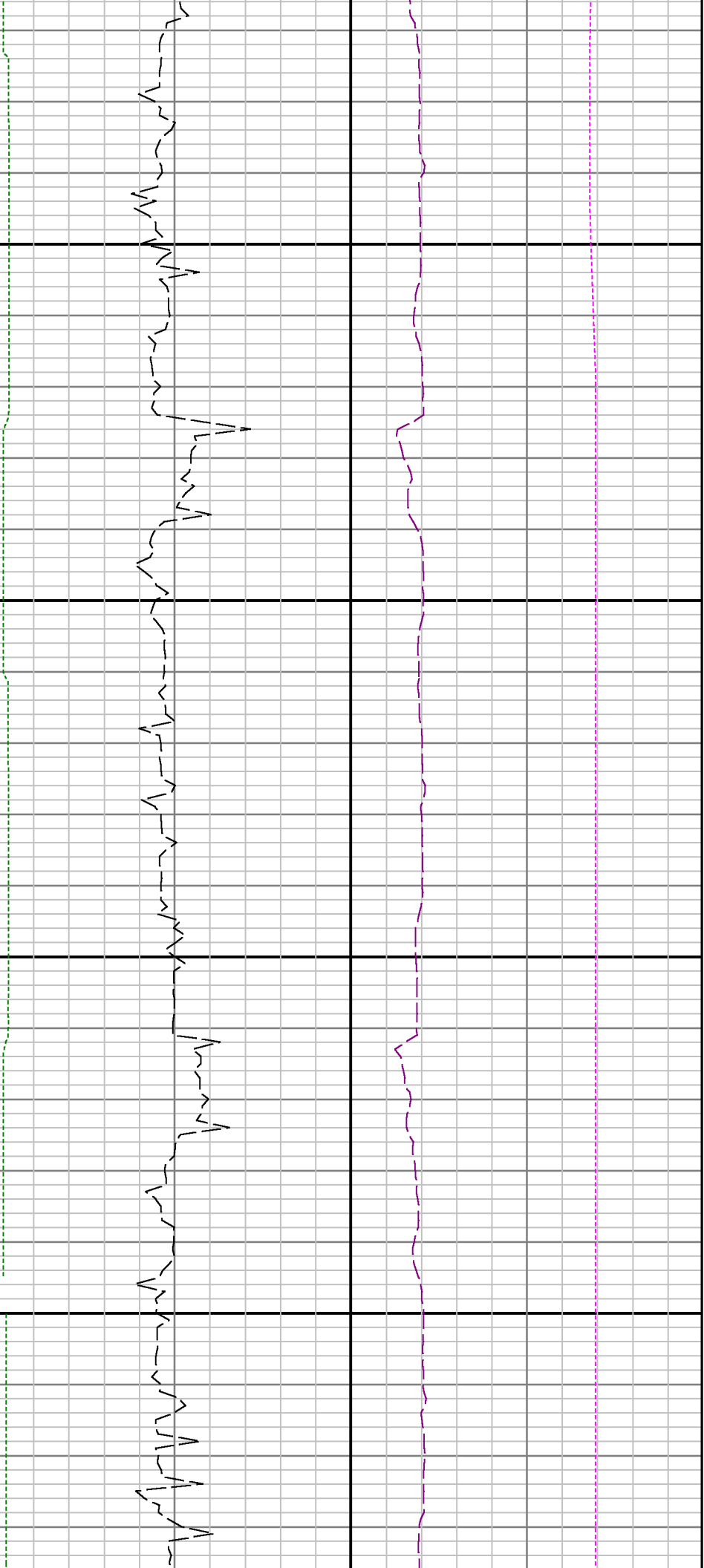




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