



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale: 1:240

Measured Depth

Company: Kerr Mcgee Oil & Gas Onshore LP
Well: Benson Farms 25C-19HZ
Field: Weld County (Kerr Mcgee)
Region: Continental US Country: United States

Status: Final Print

API Number: 05123393960000

Surface Location:
Latitude: 40° 12' 37.109" N
Longitude: 104° 57' 38.005" W

Other Services:
Directional
VSS

Permanent Datum (P.D.): Ground Level Elevation: 4957.00 ft.
Log Measured From: Rig Floor 16.00 ft. Above P.D.
Depth Reference: Driller's Depth
KB: N/A
DF: 4973.00 ft.
GL: 4957.00 ft.

Interval Logged Dates Magnetic Field Reference
Top: 6620.0 ft. Date From: 24/Jul/14 Dip Angle: 66.92° Azi Reference North: True
Bottom: 14487.0 ft. Date To: 29/Jul/14 Total Mag to Reference
Spud Date: 24/Jul/14 Field Strength: 52617.3 nT North Correction: 8.68°

Borehole Record			Casing Record		
Hole Size	From	To	Size	Weight	From To
8.750 in.	1148.0 ft.	7705.0 ft.	9.265 in.	36.00 lb/ft	Surface 1236.0 ft.
6.125 in.	7705.0 ft.	14544.0 ft.	7.000 in.	26.00 lb/ft	Surface 7694.0 ft.

Mud Record			Deviation Record			
Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Drill Water	1148.0 ft.	7705.0 ft.	8.750 in.	85.0 ft.	0.6° / 309.6°	87.1° / 90.4°
LSND	7705.0 ft.	14544.0 ft.	6.125 in.	85.0 ft.	87.1° / 90.4°	90.2° / 87.4°
					/	/
					/	/
					/	/
					/	/

Acquisition System		Software Version		Other	
Advantage	2.20U4	Rig / Contractor:	Xtreme 24	/ Advance Drilling	
PATS	6.4.1.34	Job No.:	6450175	/ 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		
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start		End Time (hrs.)
1	1	1	8.750	PDC	2.000	Steerable	6620.0	7042.0	6678.0	7100.0	24/Jul/14 07:51	25/Jul/14 16:00	24.1
2	2	2	8.750	PDC	2.000	Steerable	7048.0	7653.0	7100.0	7705.0	25/Jul/14 17:00	26/Jul/14 12:00	10.9
3	3	3	6.125	PDC	6.000	Steerable	7648.0	14487.0	7705.0	14544.0	27/Jul/14 08:00	29/Jul/14 23:59	46.1

Crew								
Name			Arrive	Depart	Name			Arrive
			Wellsite	Wellsite				Wellsite
Osagie Otoikhine			23/Jul/14	30/Jul/14	Robert Roberson			23/Jul/14
								30/Jul/14

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (sec/qt)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
24/Jul/14	18:00	1	3315.0	Drill Water	8.7	31	8.6	N/A	1.0/96.5	Active Pits	1600	N/A
26/Jul/14	18:00	3	7705.0	LSND	9.8	45	9.3	N/A	1.0/91.0	Flowline	1800	N/A
28/Jul/14	18:00	3	12168.0	LSND	9.6	45	9.7	N/A	4.0/89.0	Flowline	1800	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 (m.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	13134419	Directional	61.28	6.750	2.813
1	SRIG	12673191	Gamma	57.89	6.750	2.813
2	DIR	13134419	Directional	54.87	6.750	2.813
2	SRIG	12673191	Gamma	51.48	6.750	2.813
3	DIR	12815870	Directional	59.83	4.750	2.813
3	SRIG	12600743	Gamma	56.45	4.750	2.813

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 and Run 2 utilized a 6 1/2 inch NaviGamma (Directional and Gamma Ray) tool behind an 8 3/4 inch bit and steerable assembly from 6620 feet to 7705 feet MD (6598 feet to 7333 feet TVD).
2.) 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 7705 feet to 14544 feet MD (7333 feet to 7287 feet TVD).
3.) 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	Hole	LWD	Remark
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	Depth (ft.)	Section (in.)	Run No.	
1	6608	8.750	1	The interval from surface to 6620 feet MD (6598 feet TVD) was not logged since logging services began at kick off point.
2	7057	8.750	1	The Interval from 7048 feet to 7105 feet MD (7017 feet to 7069 feet TVD) was logged more than 9 hours after drilling due to tripping to change motor in order to achieve higher build rates during the curve section.
3	7663	8.750	2	The Interval from 7646 feet to 7707 feet MD (7331 feet to 7333 feet TVD) was logged more than 9 hours after drilling due to tripping for casing and picking up lateral BHA.
4	14496	6.125	3	The interval from 14487 feet to 14544 feet MD (7287 feet to 7287 feet TVD) was not logged due to bit sensor offset at TD.

Curve Mnemonics

Curve	Description	Units
GRAX	Gamma Ray - Apparent	API
GRIX	Gamma Ray - Data Point Indicator	unitless
GRSI	Gamma Slide Ind.	
GRTX	Gamma Ray Time Since Drilled	min
ROP_AVG	Depth Averaged ROP	ft/hr
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft
WOB_AVG	AVERAGE Weight On Bit	klbf

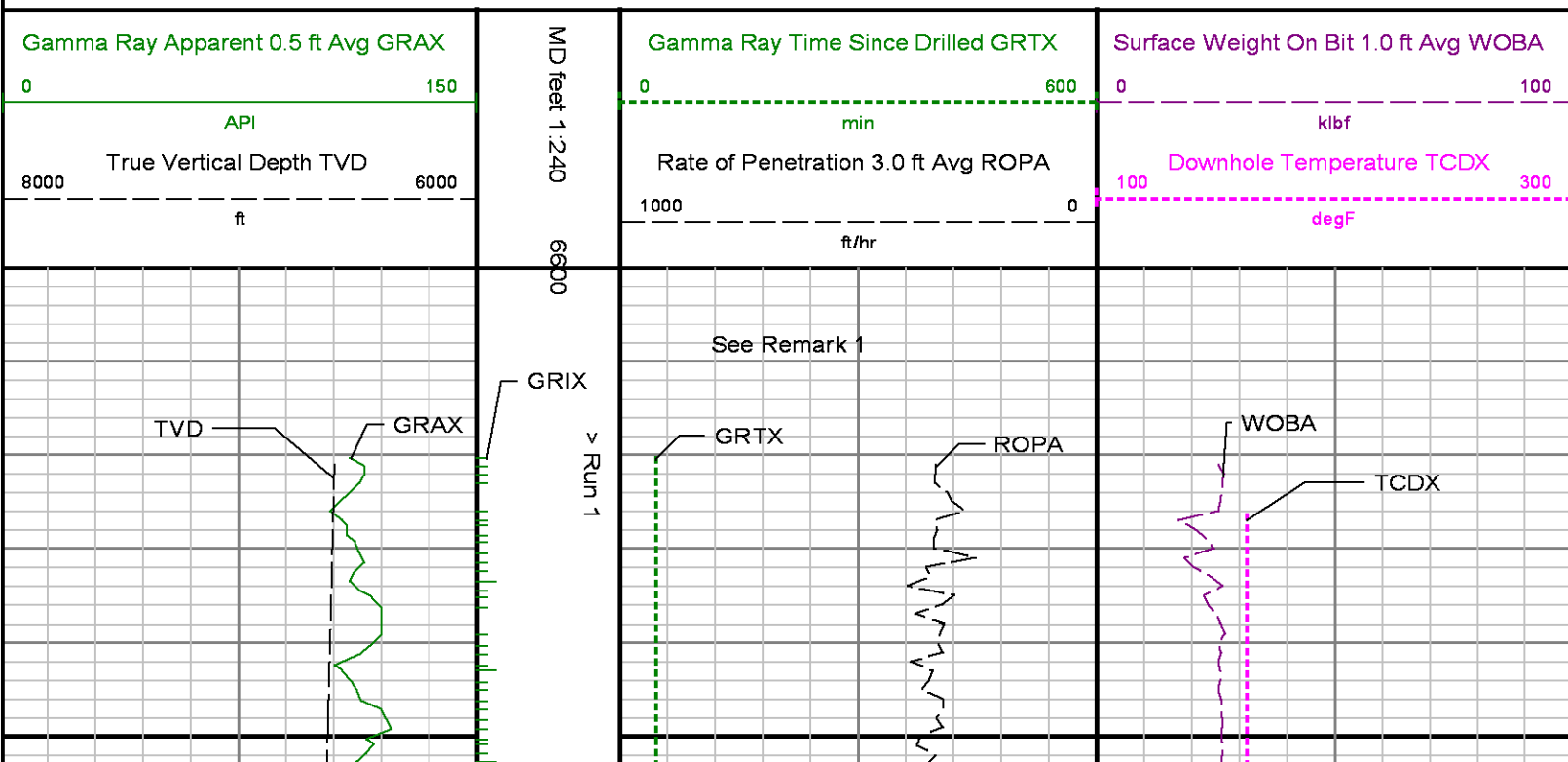


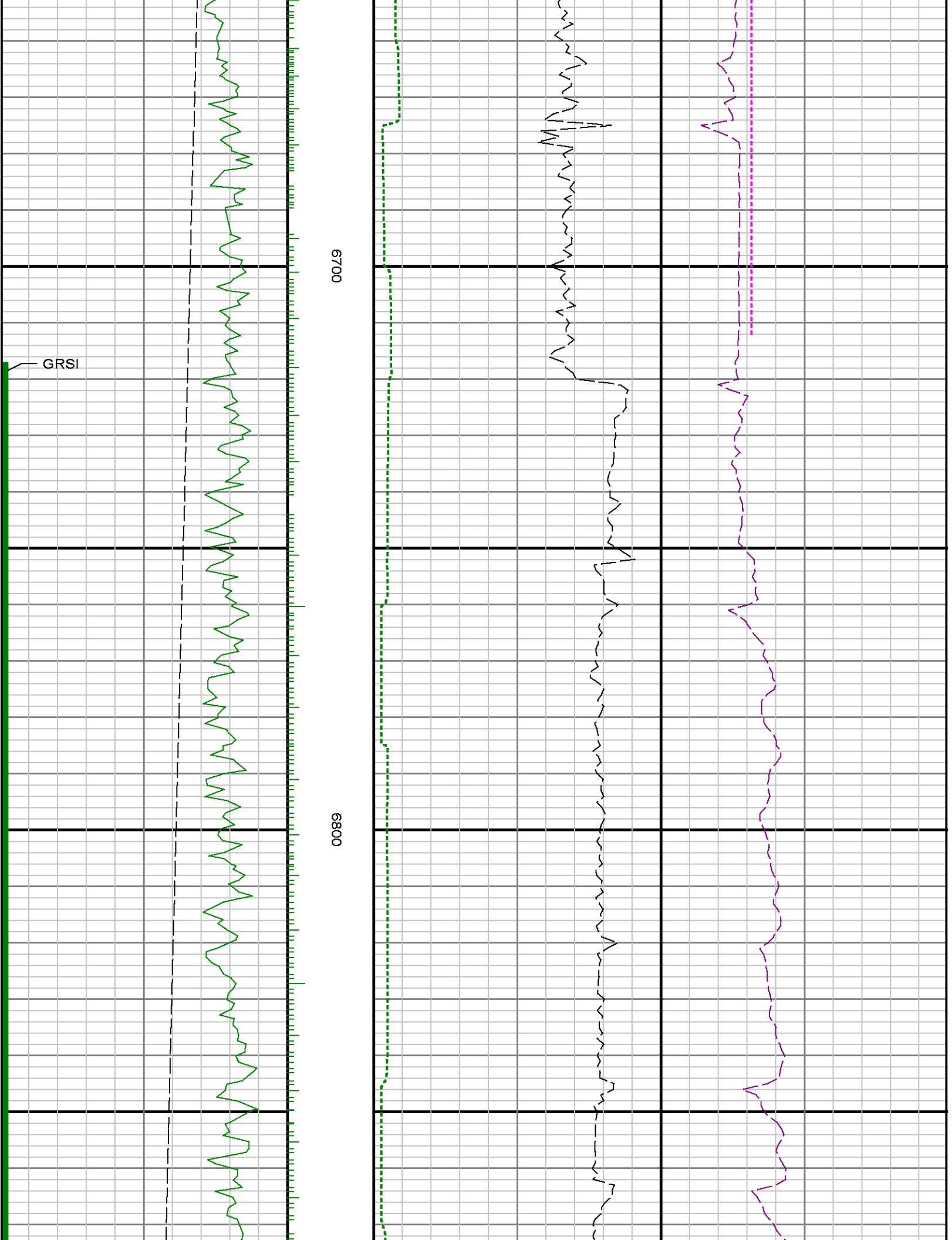
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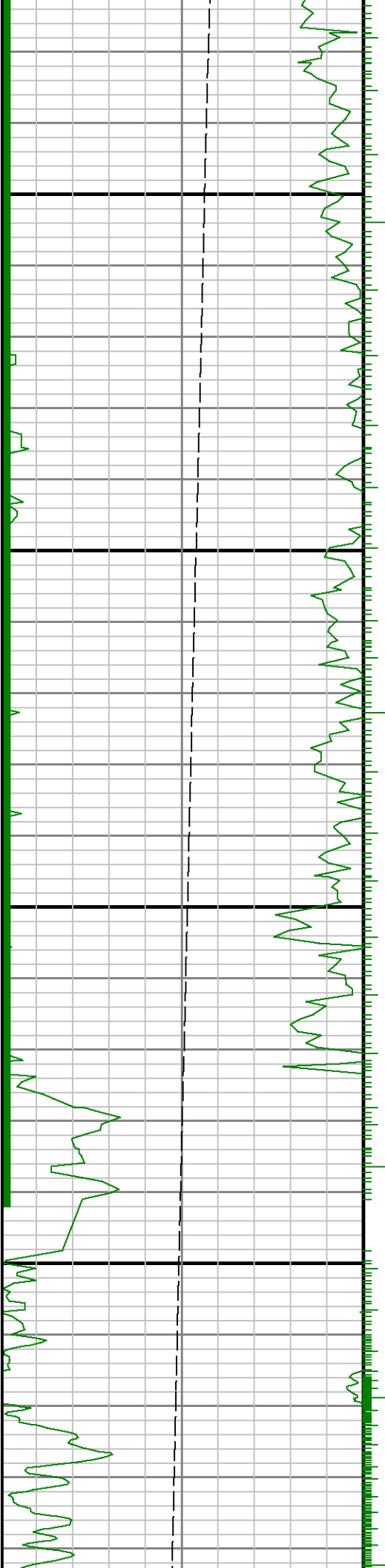
Well : Benson Farms 25C-19HZ

Interval : 6600.00 - 14570.00 feet

Created : 29/Jul/2014 10:09:17 AM





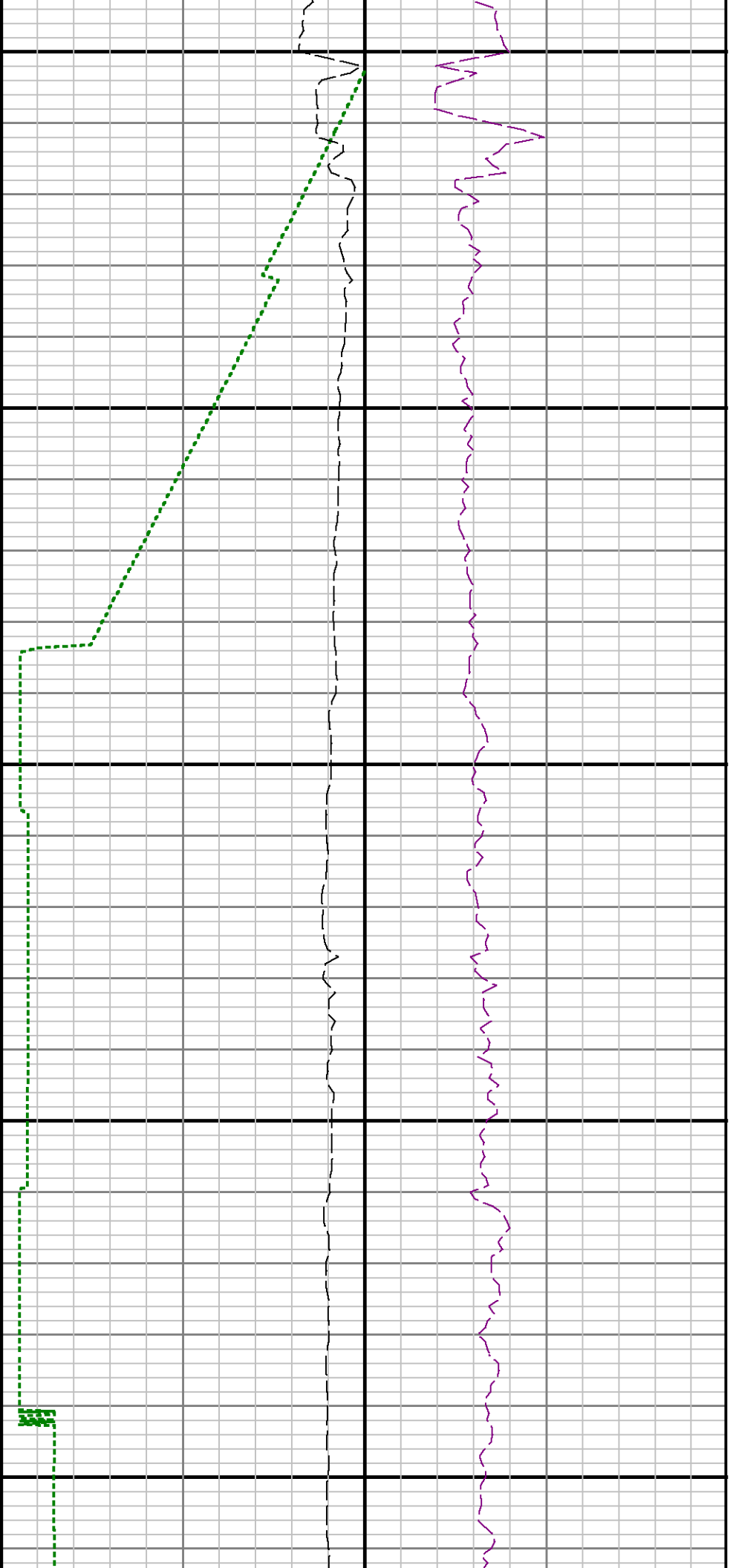


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7000



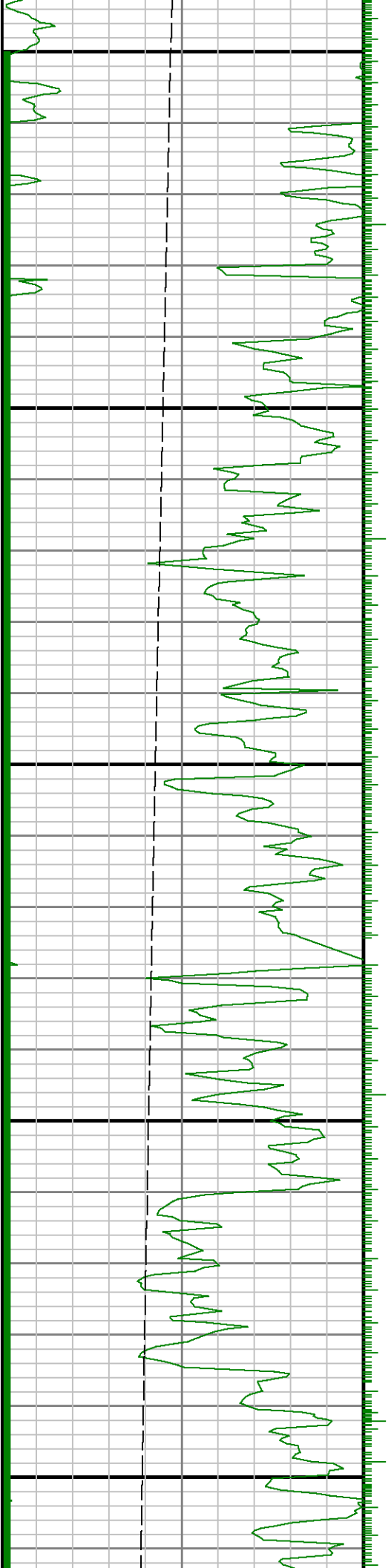
See Remark 2



Run 1 <=> Run 2
7100

7200

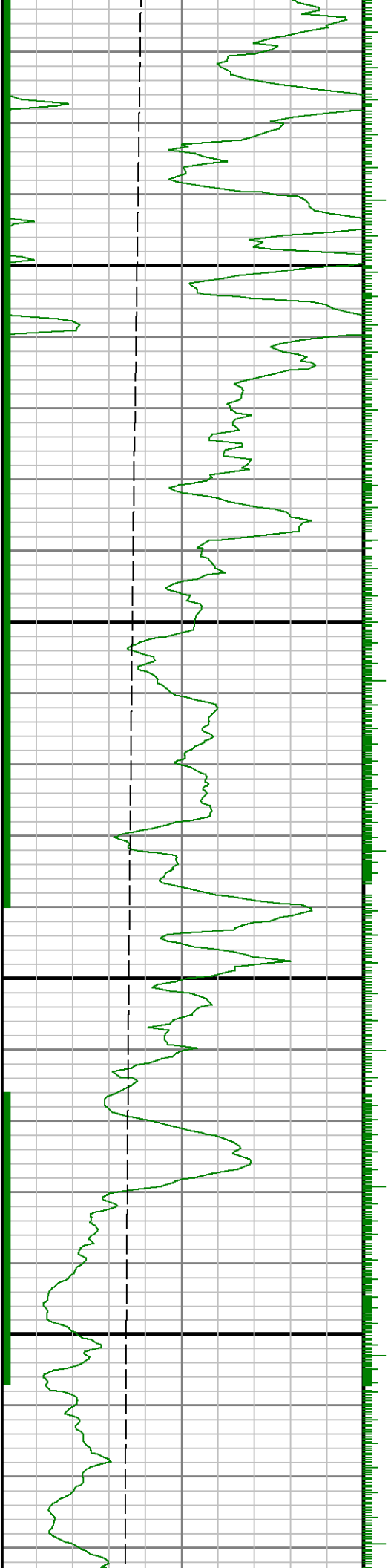
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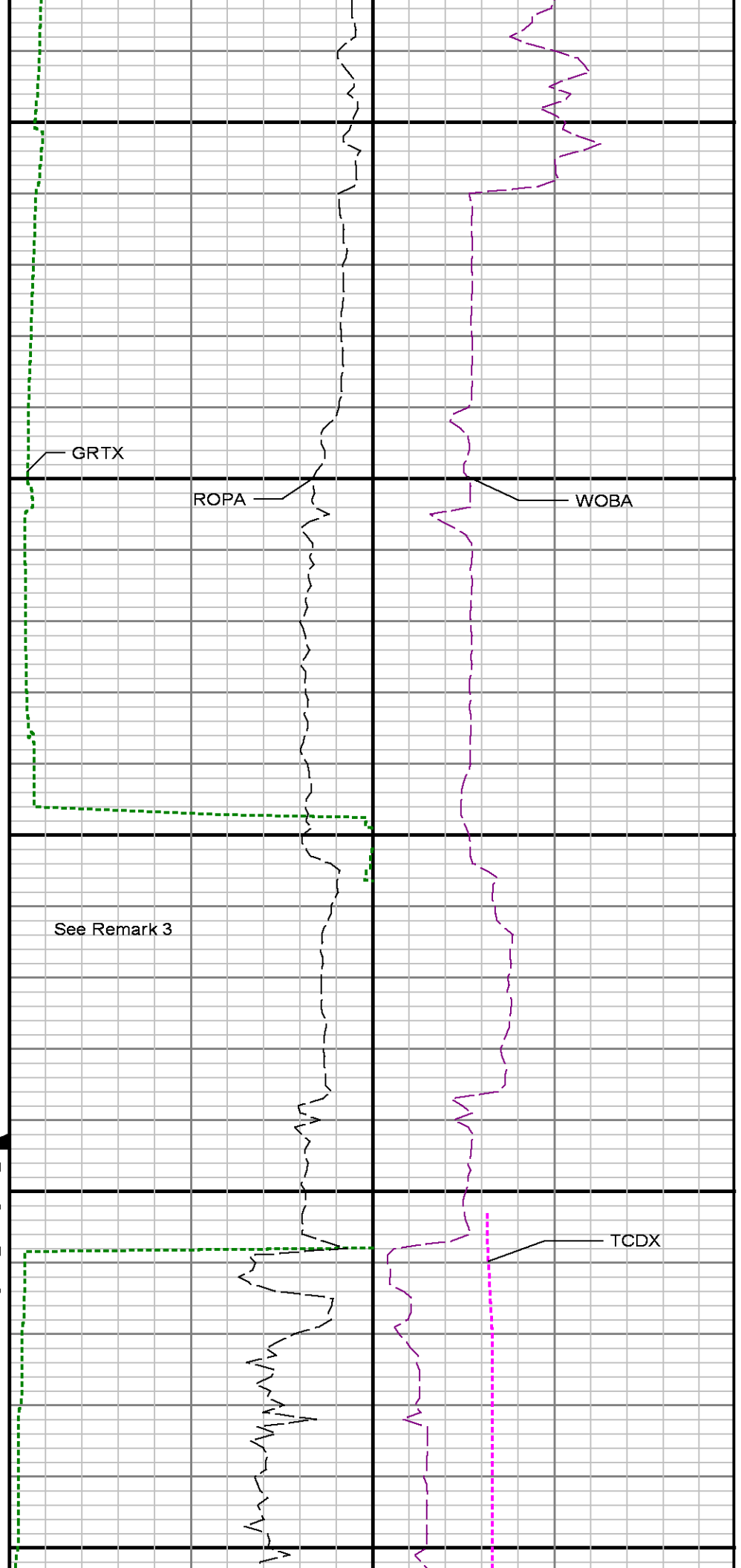
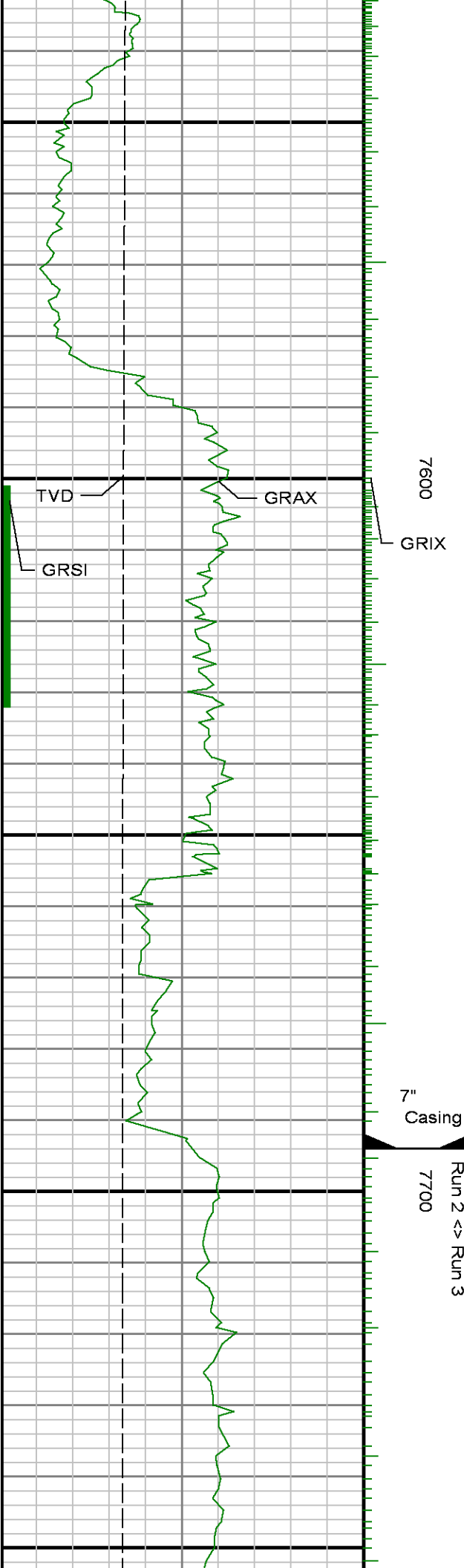


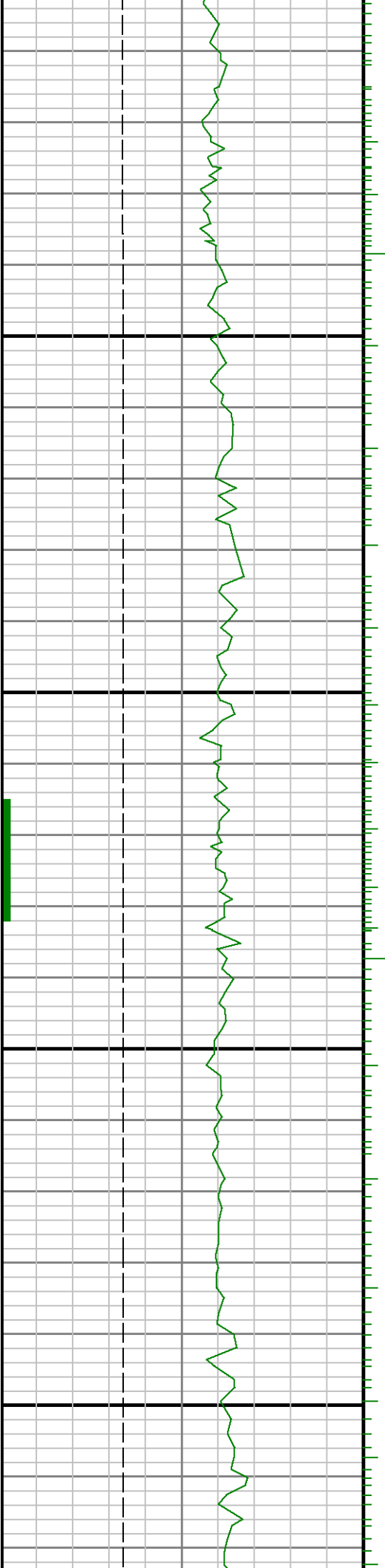


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7500

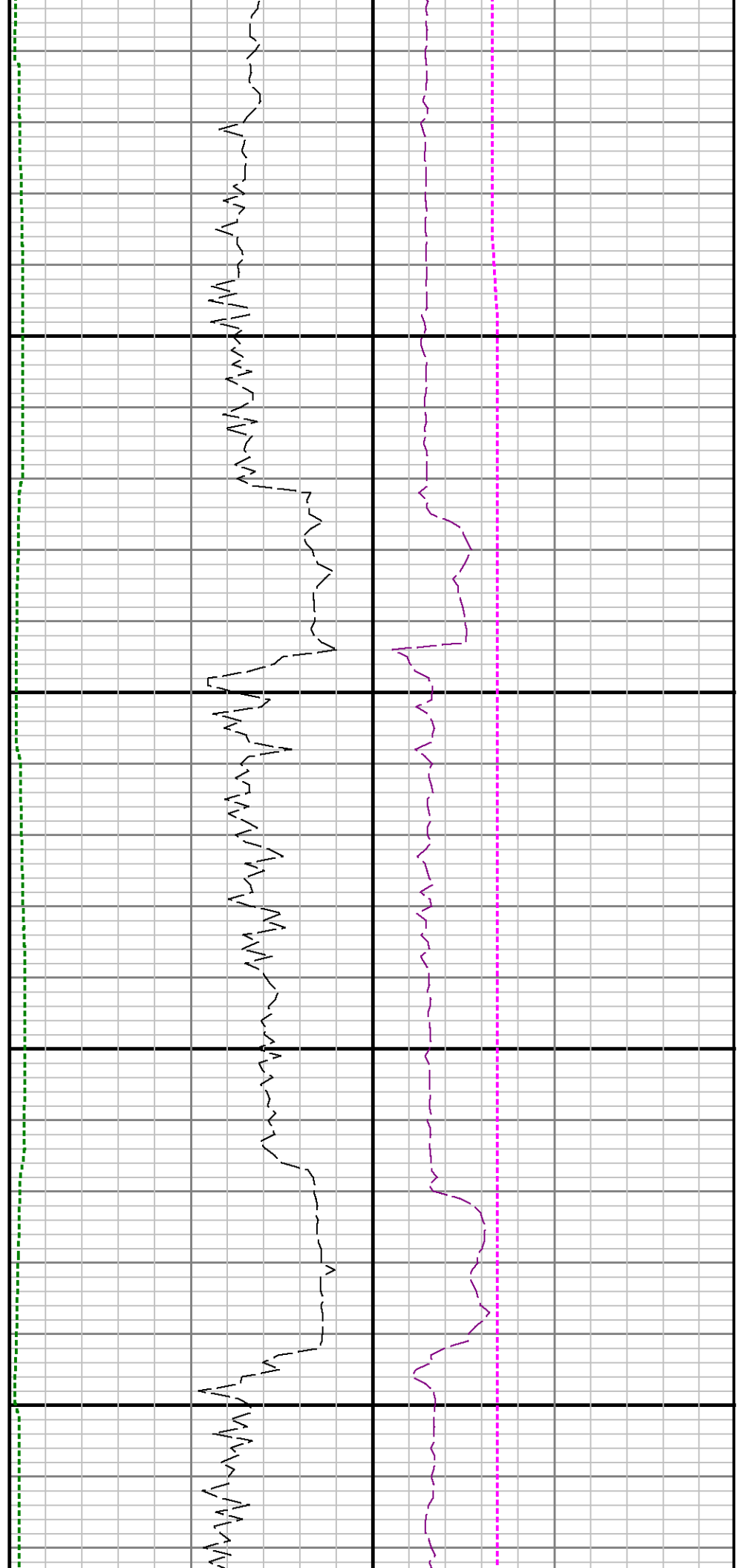


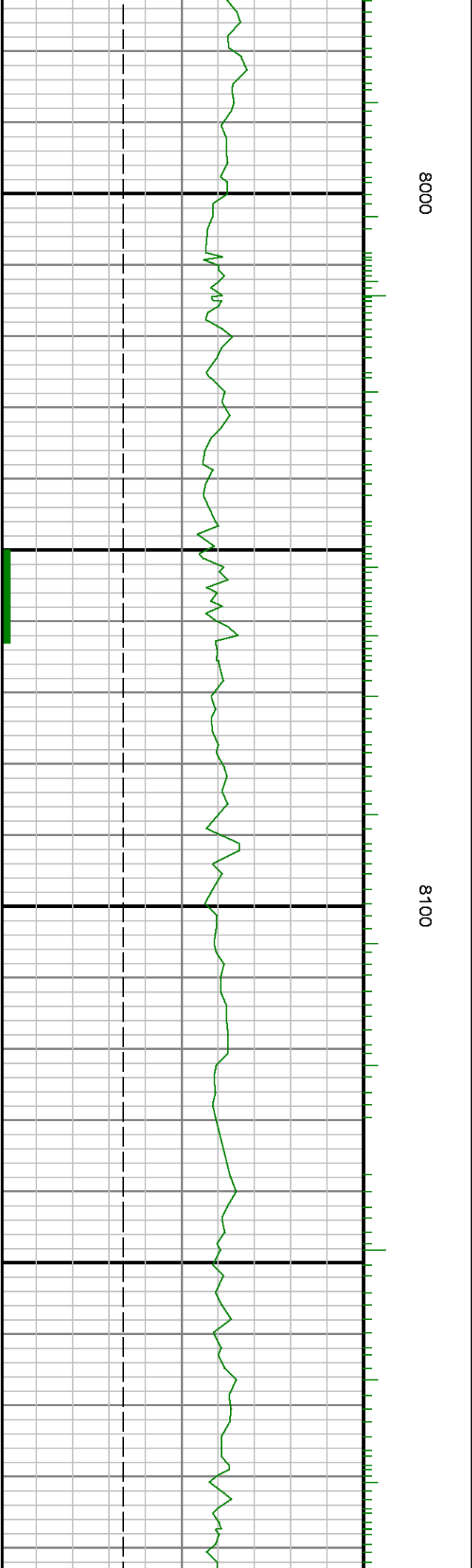
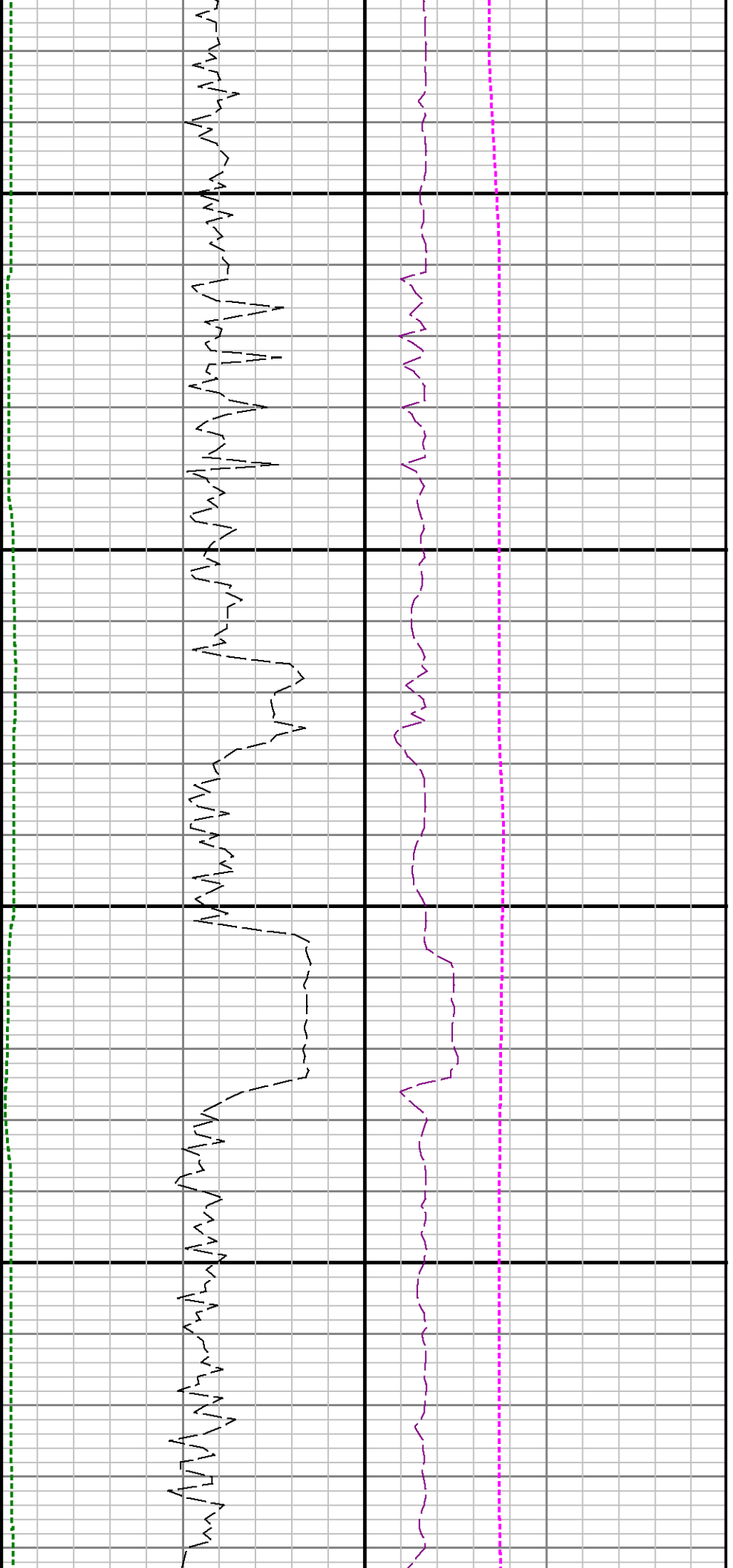


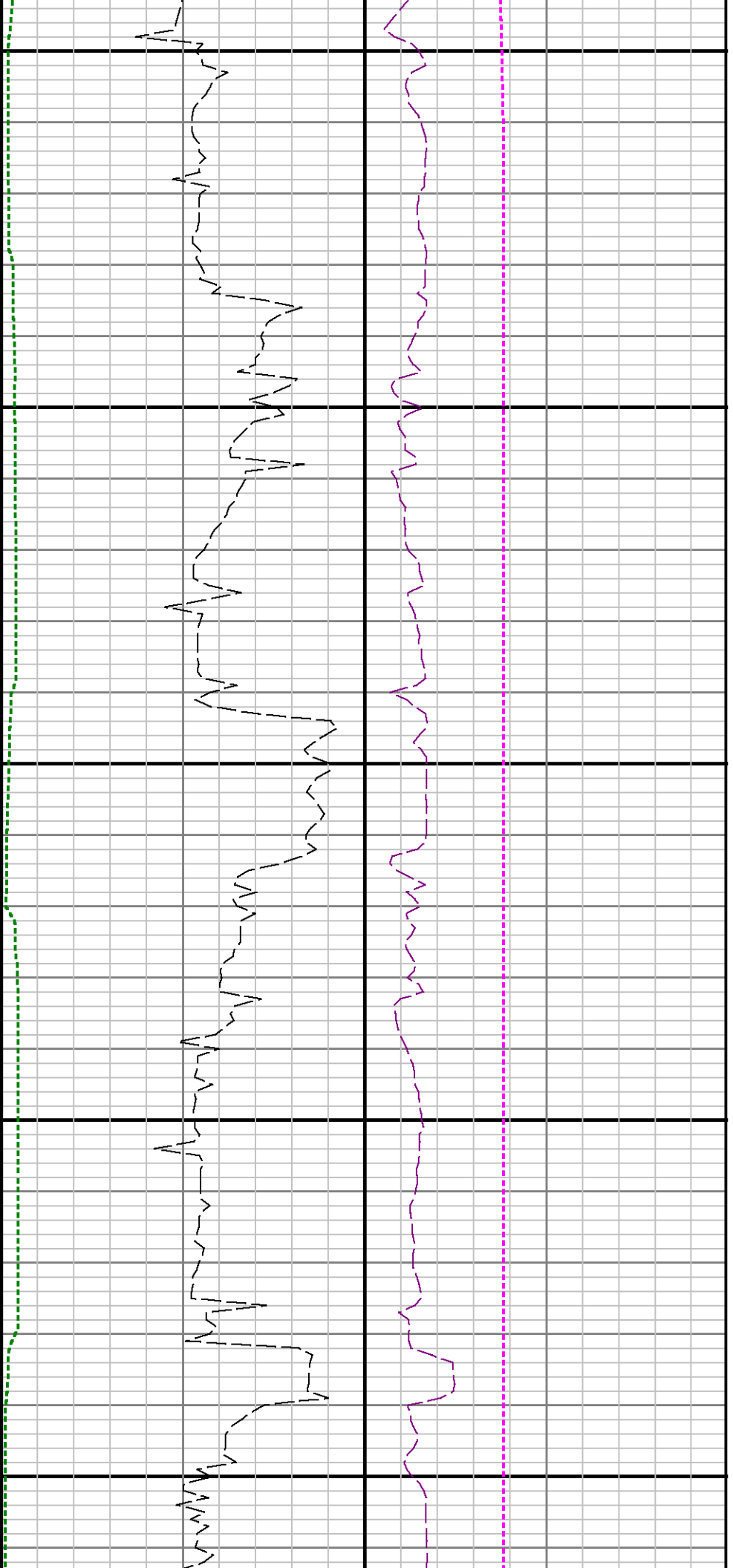


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7900



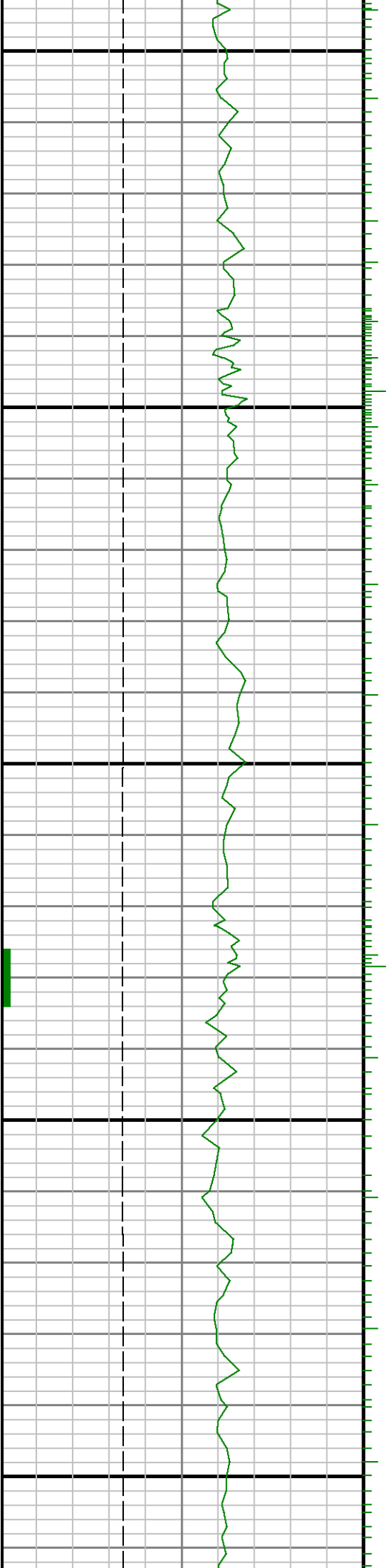


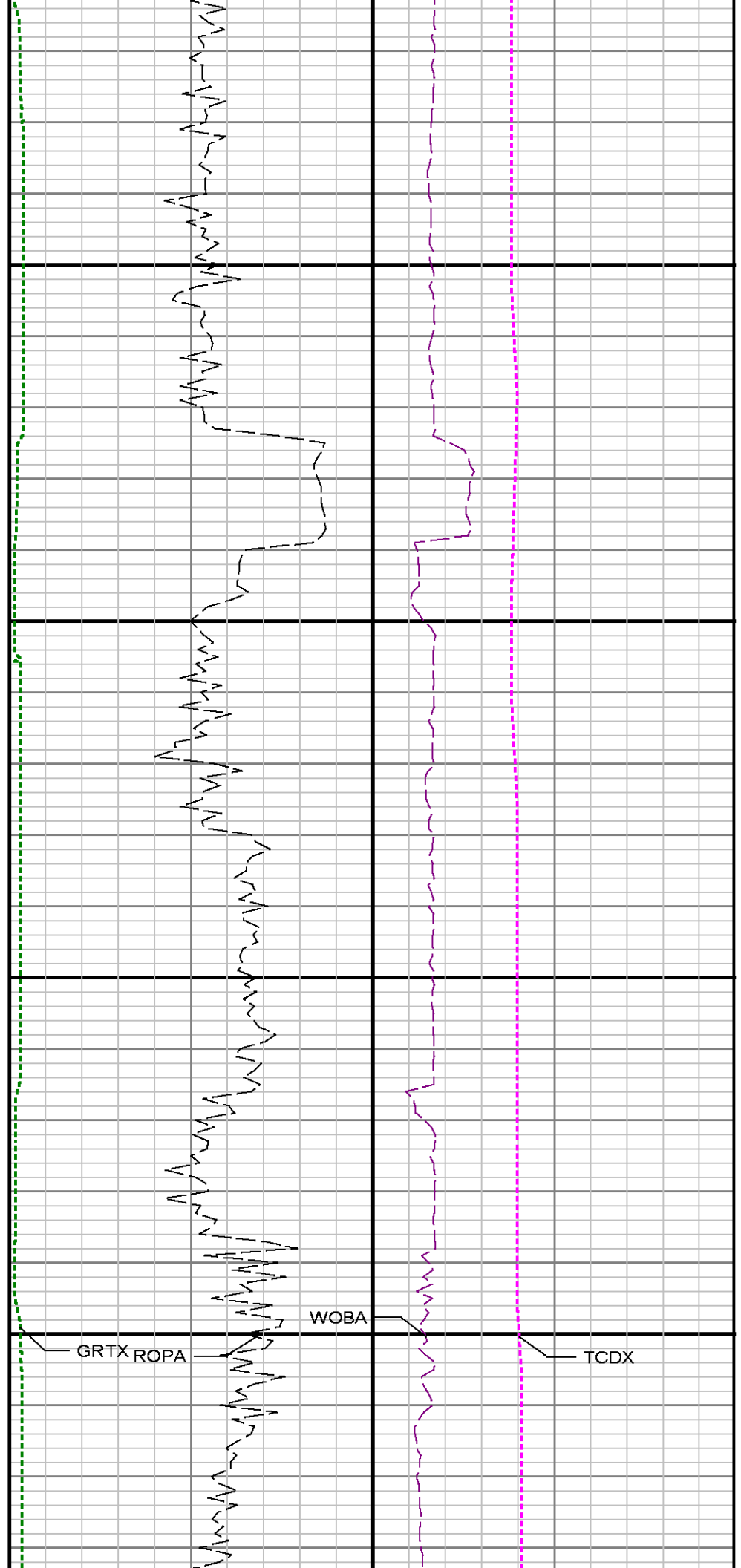
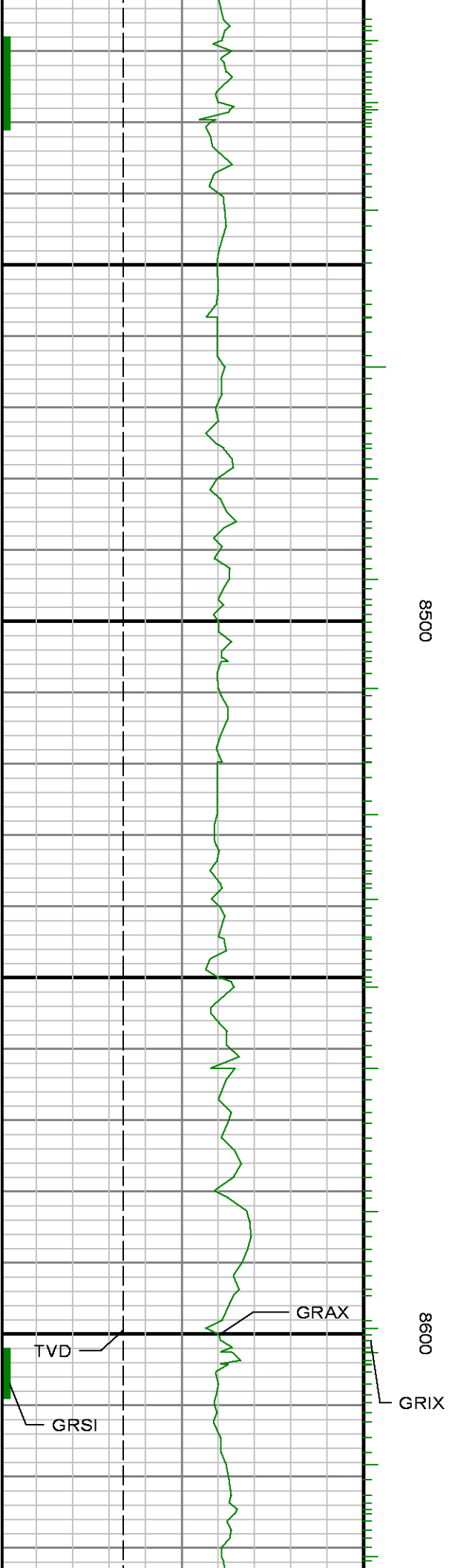


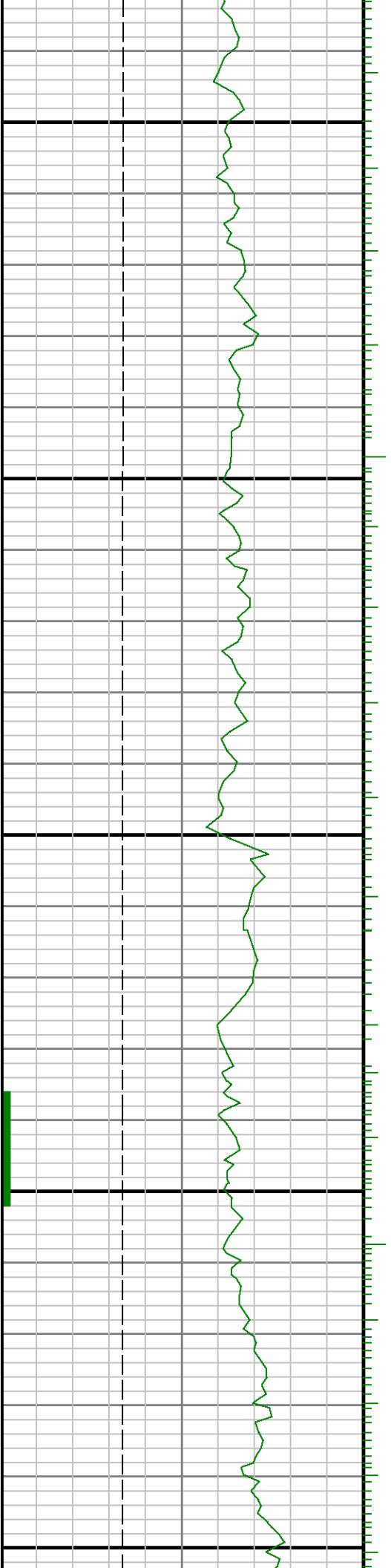
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8300

8400

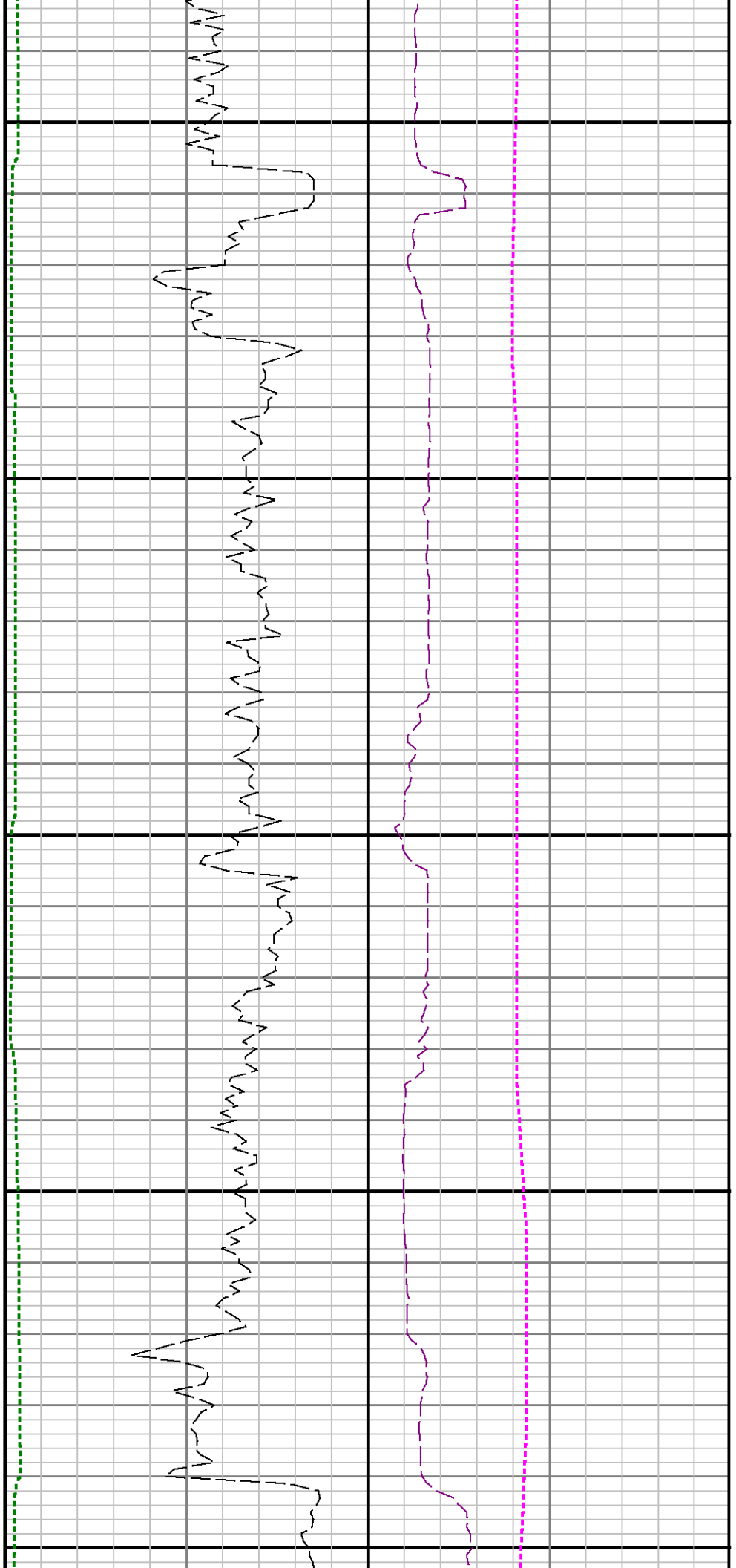


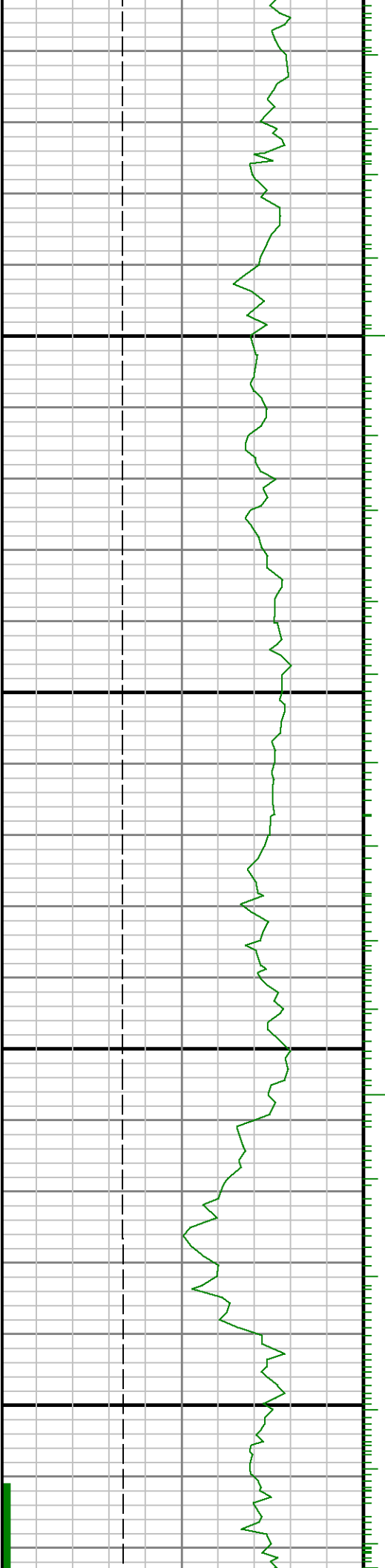




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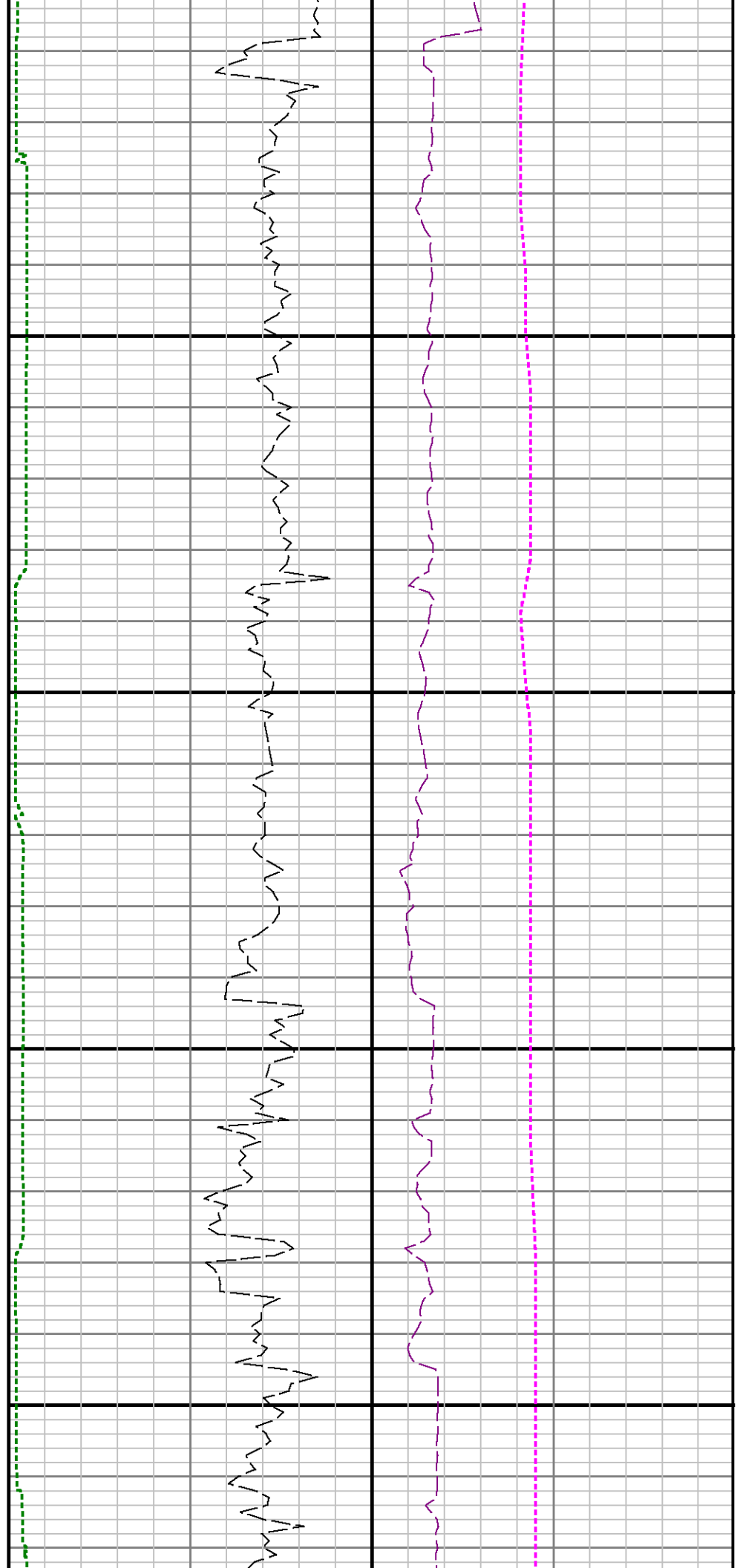
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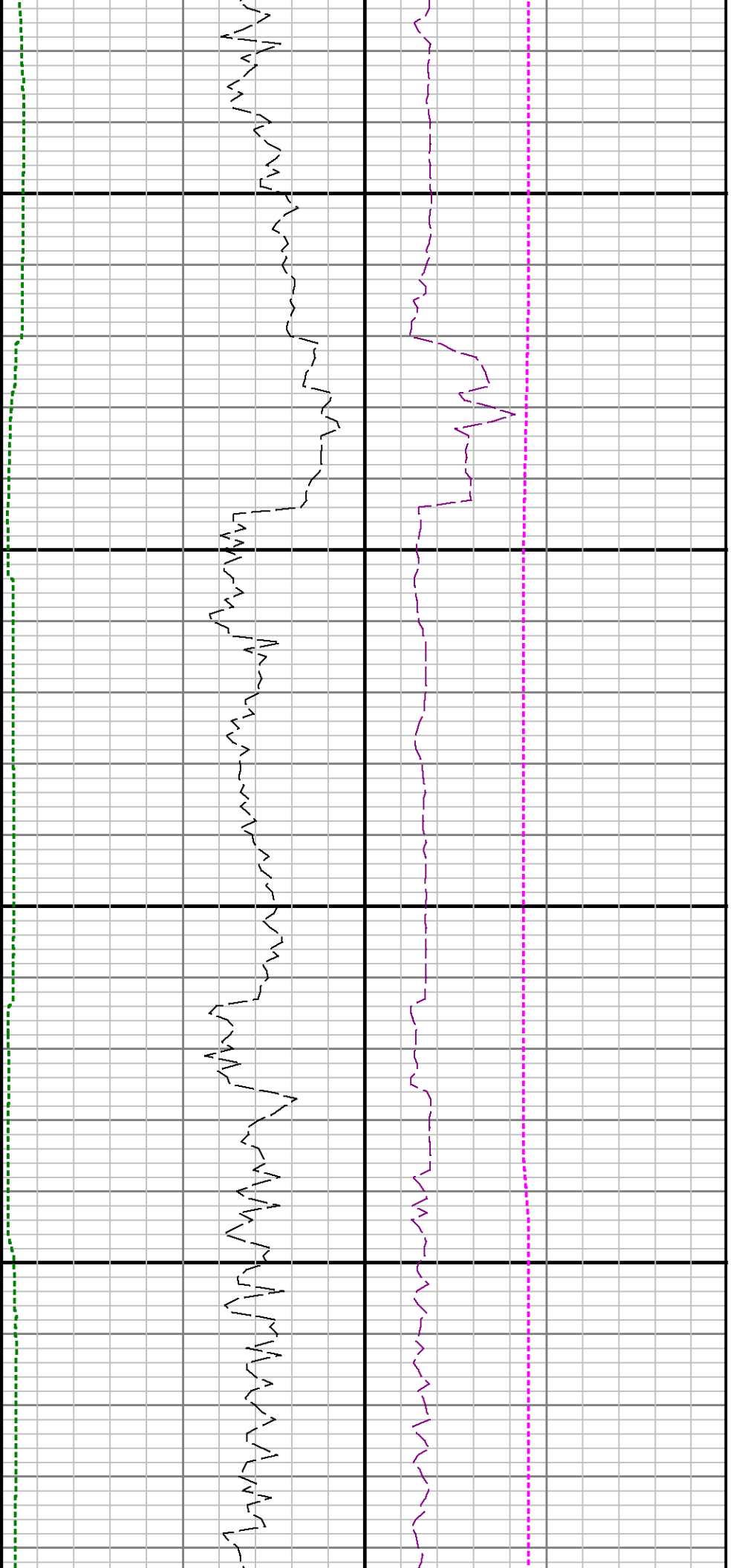




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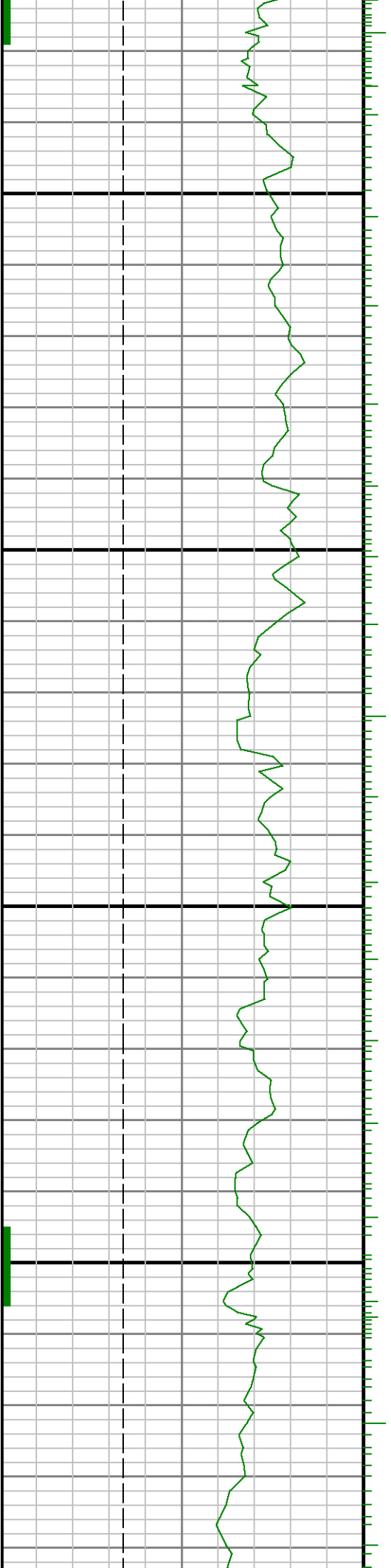
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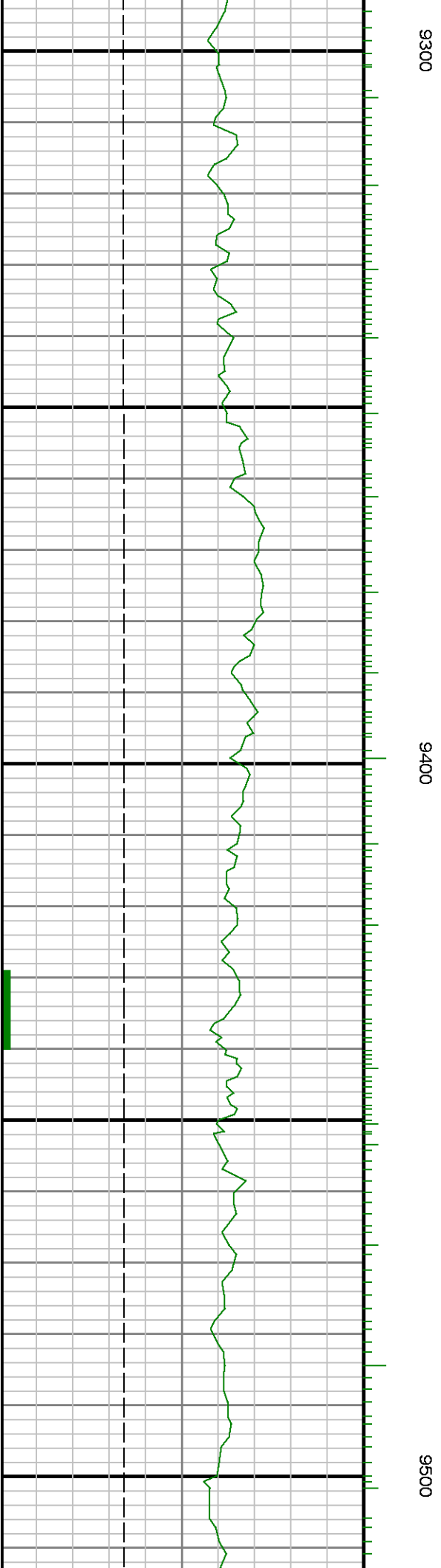
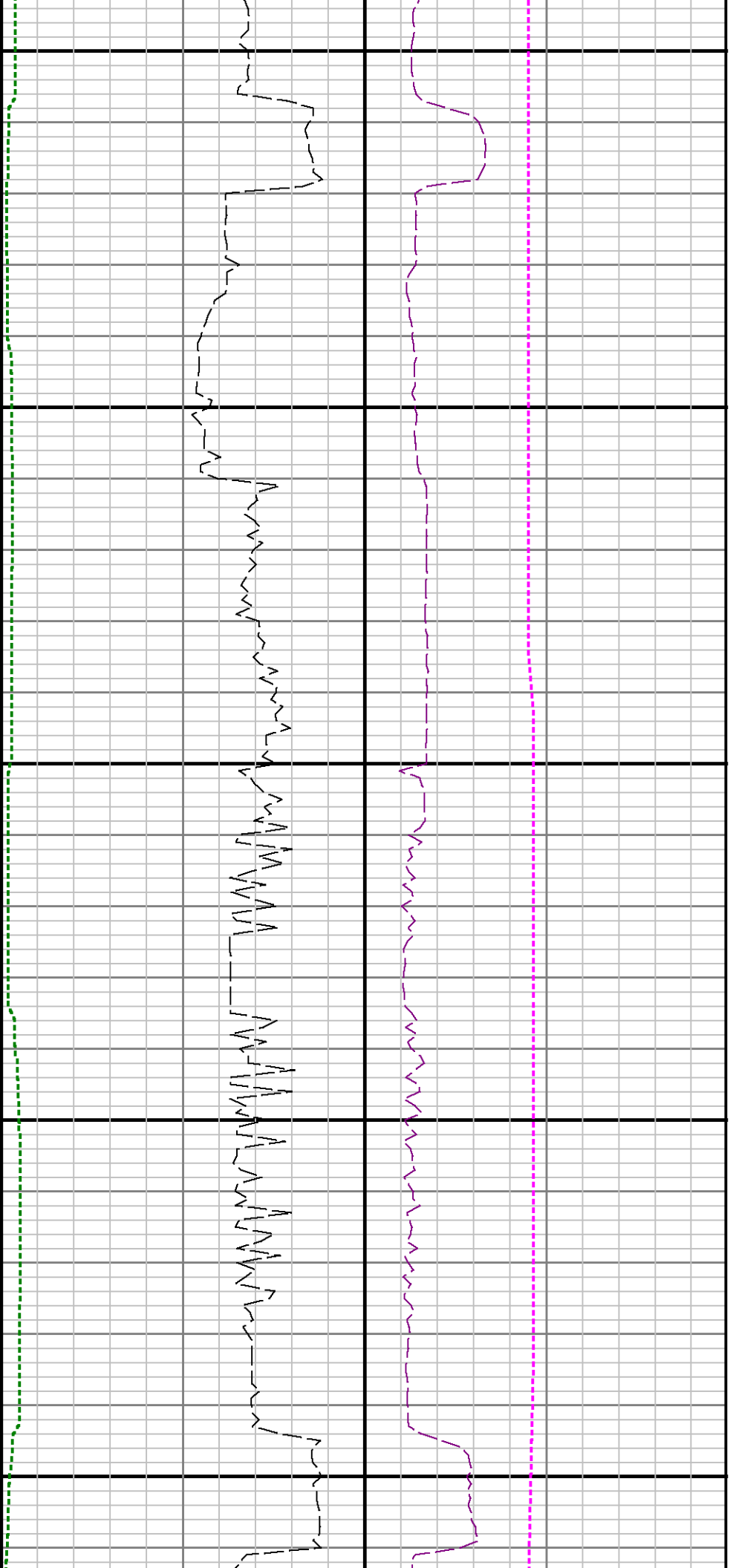


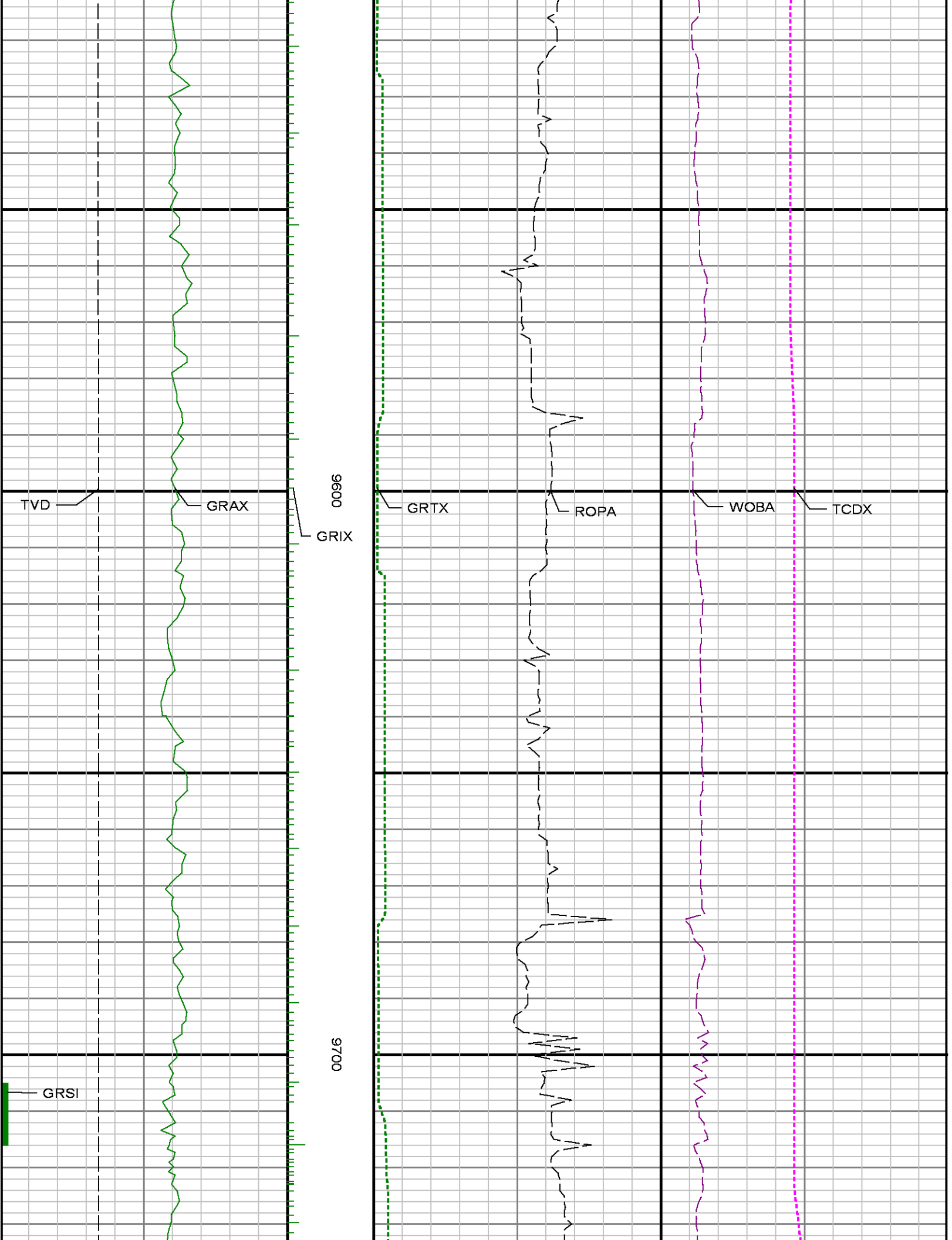


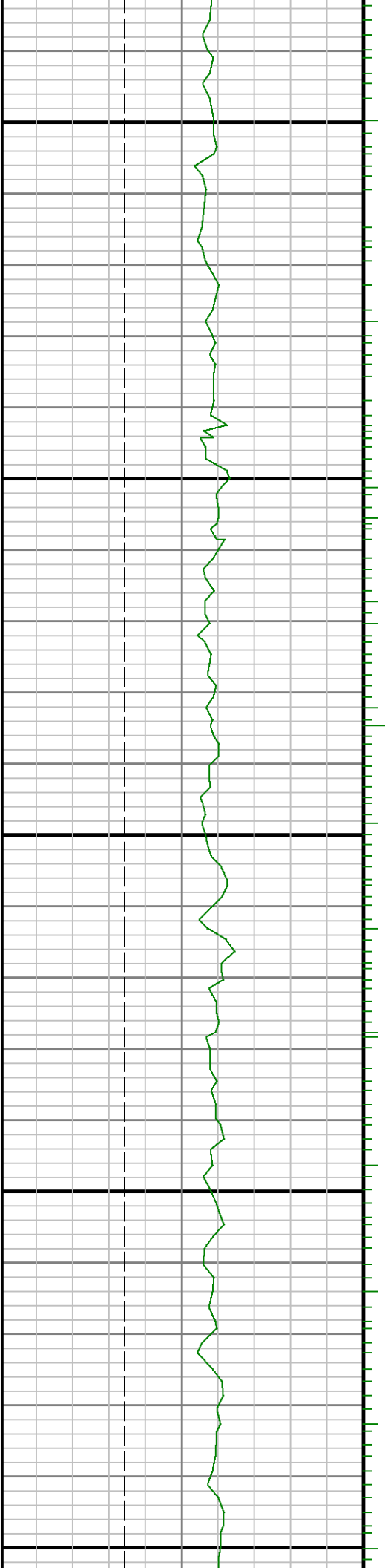
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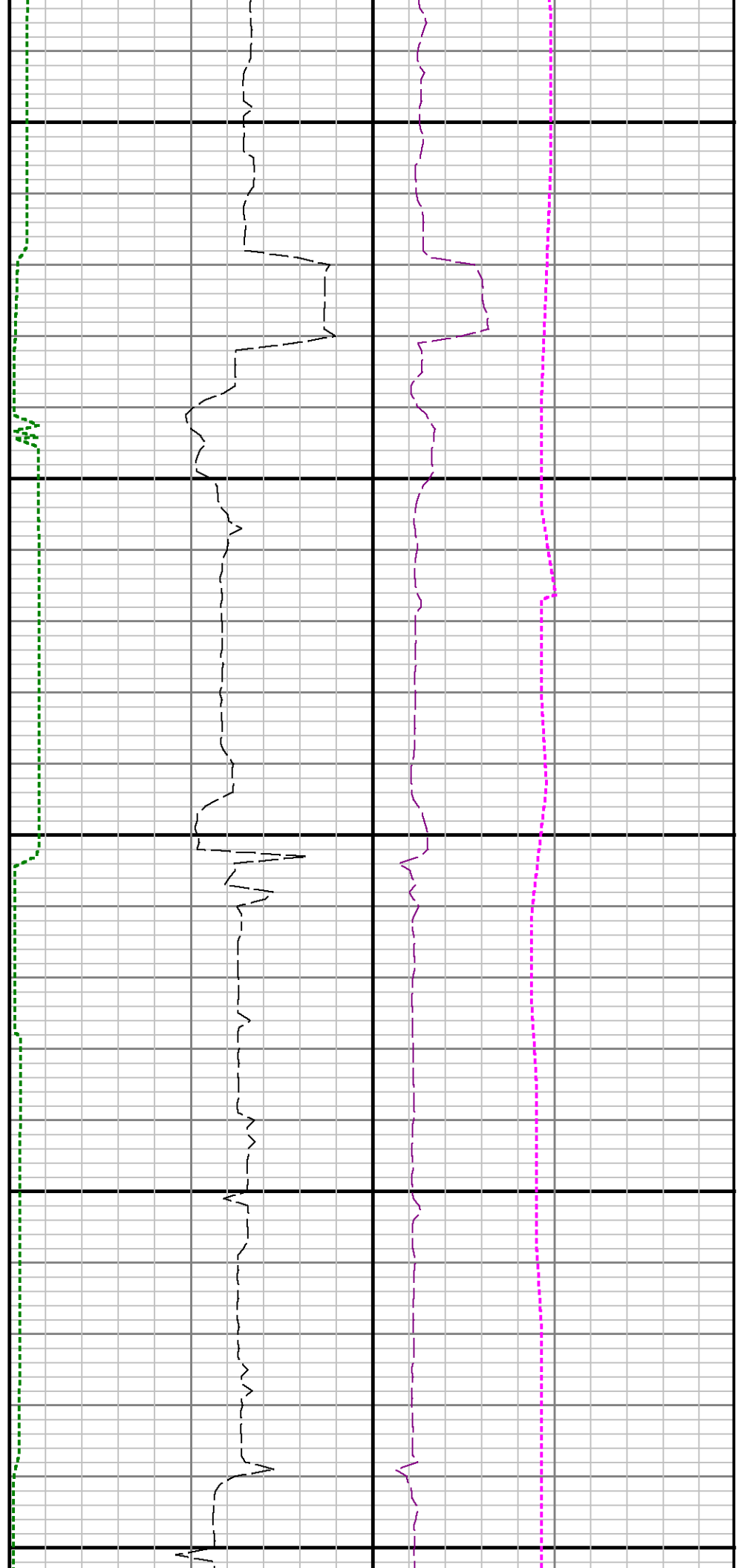


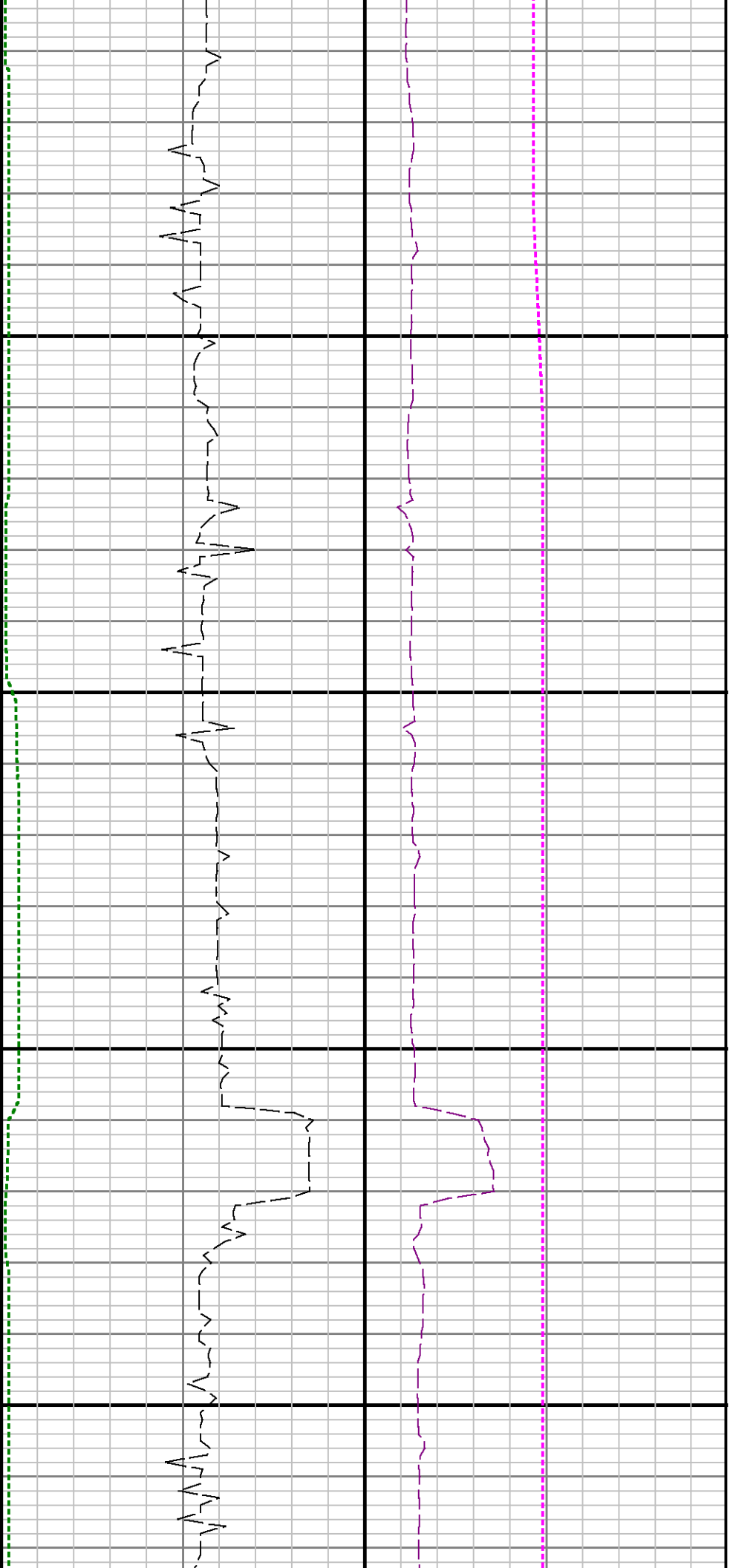




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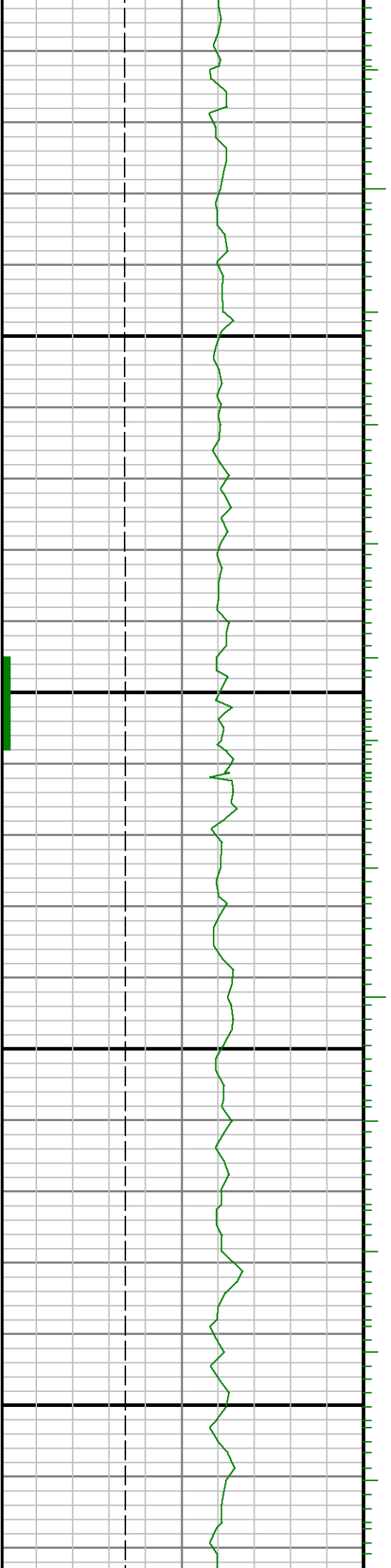
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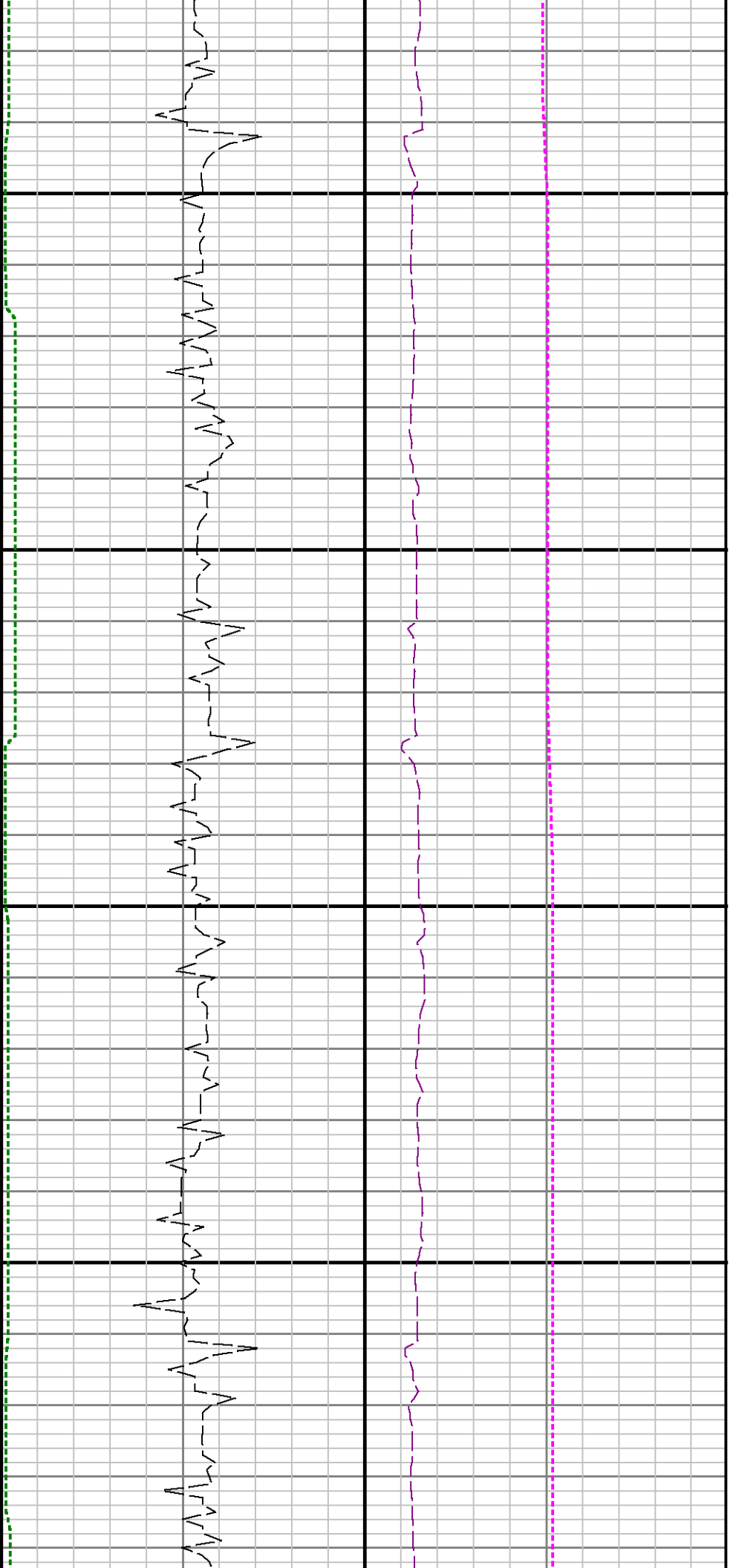




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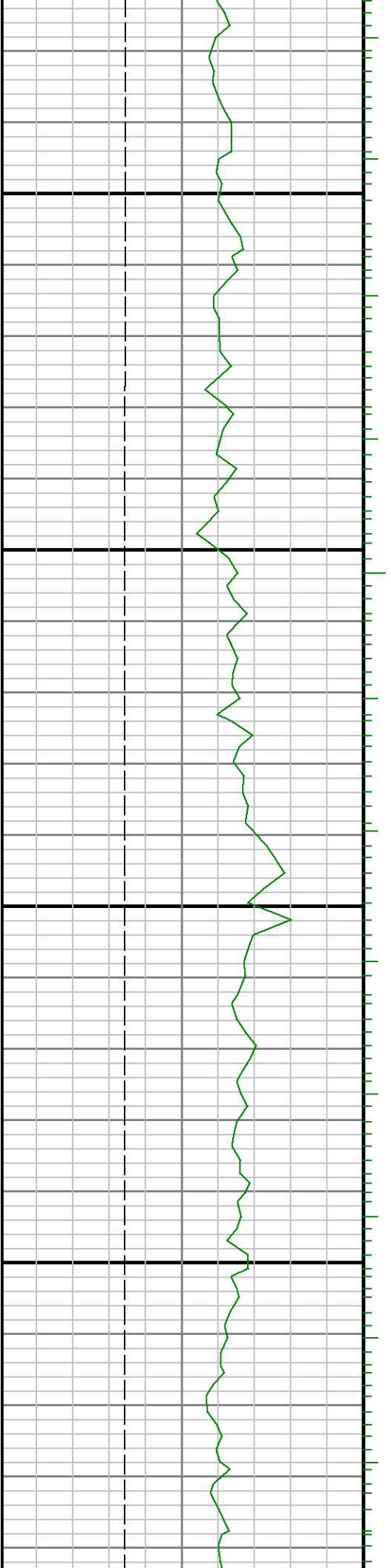
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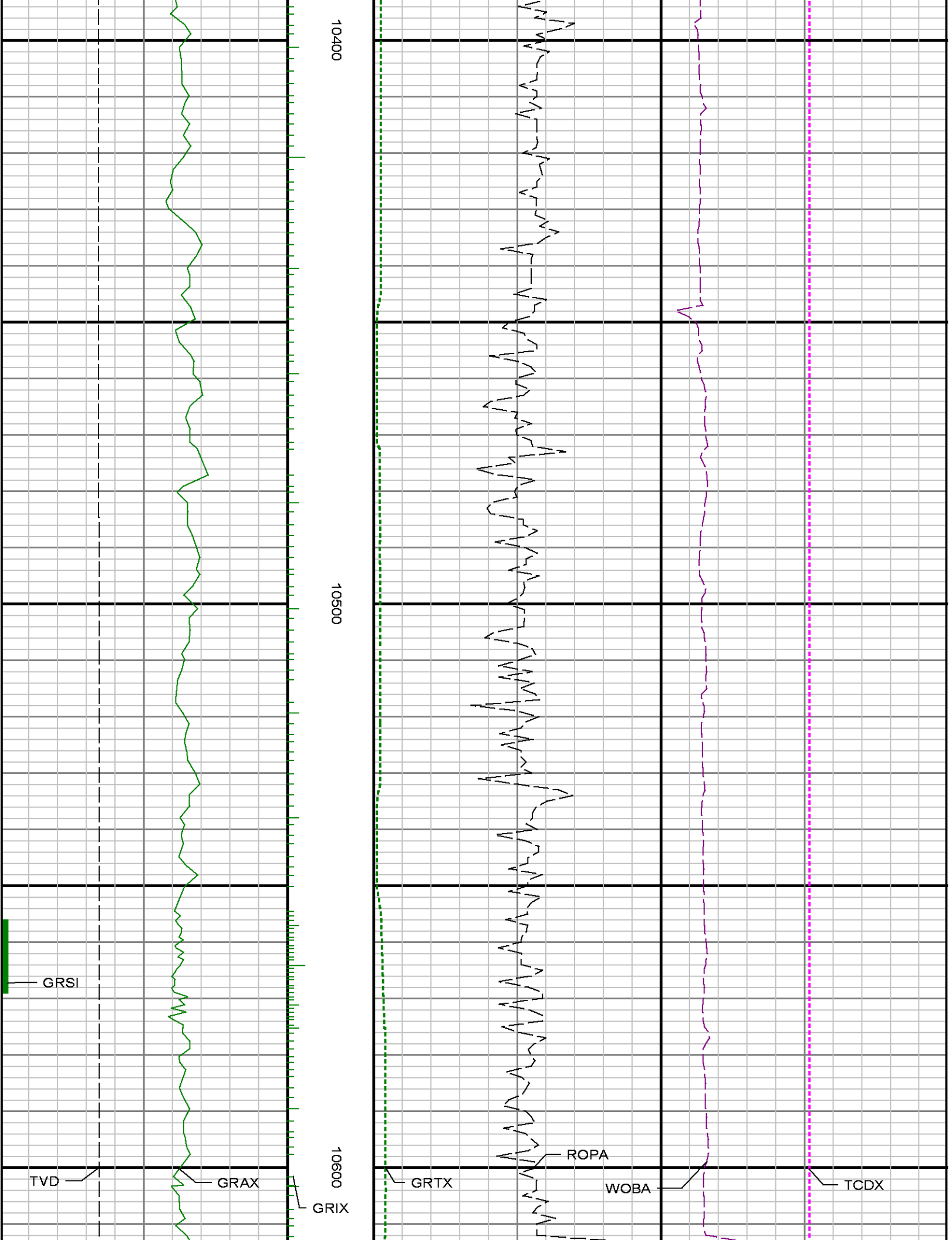


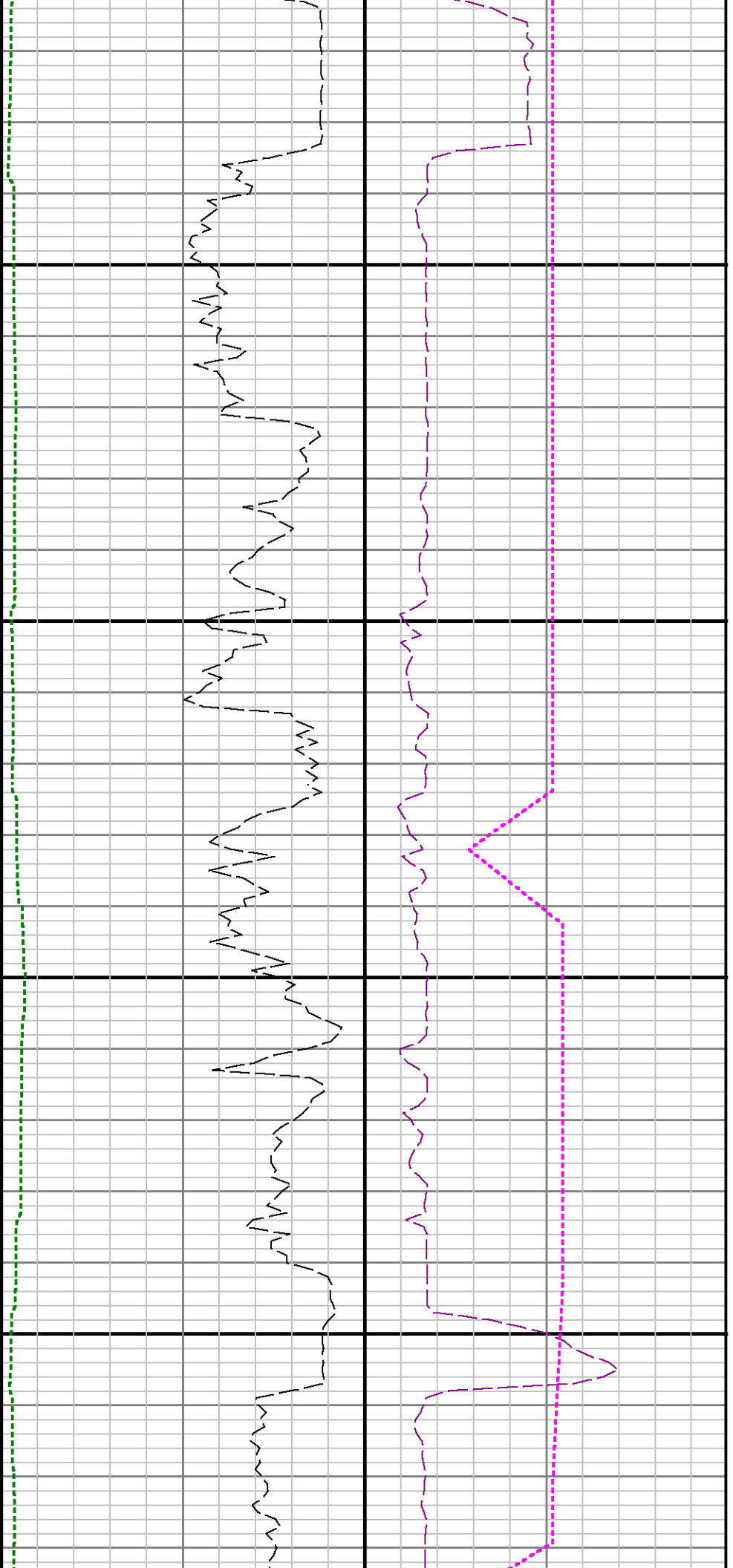


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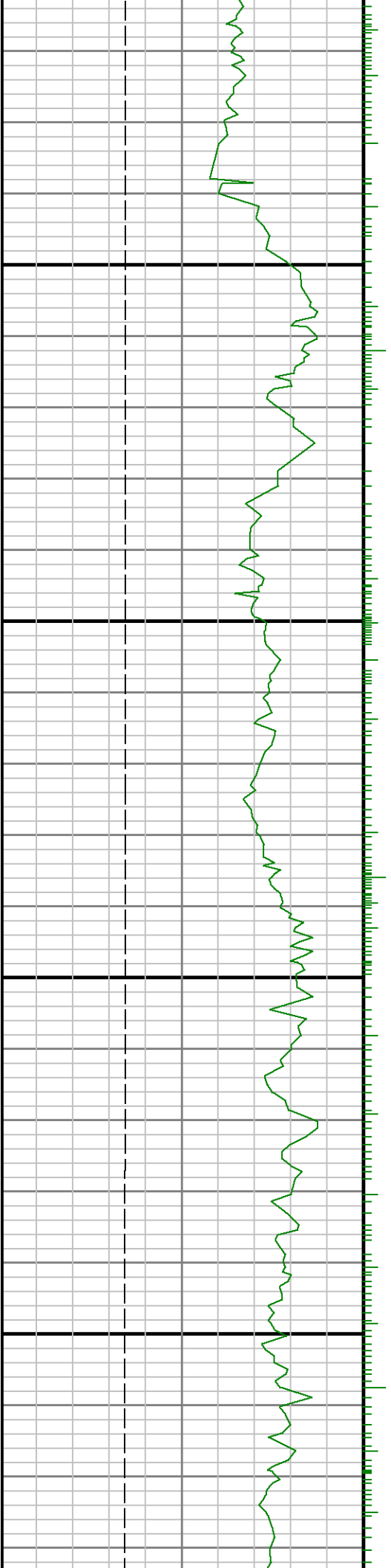


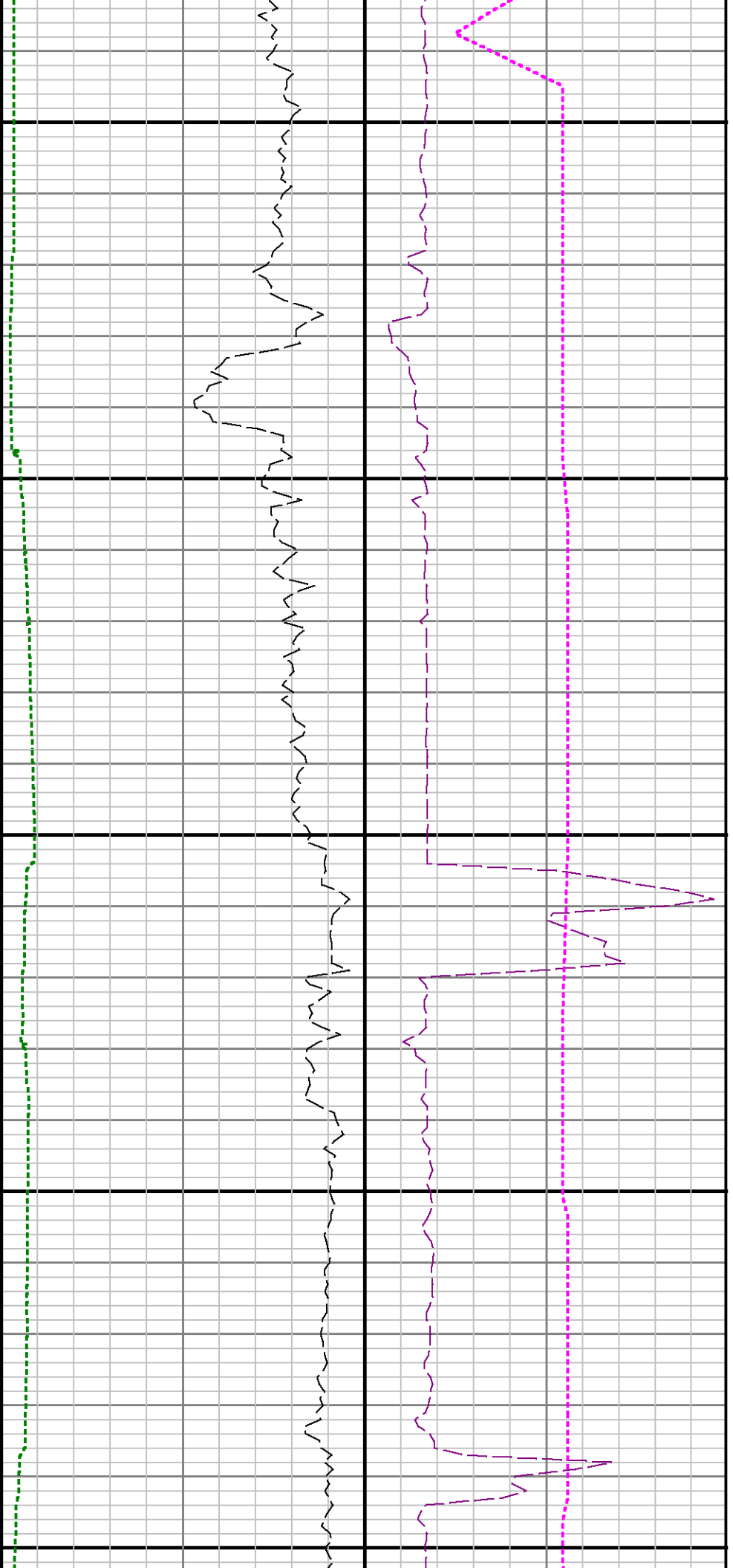




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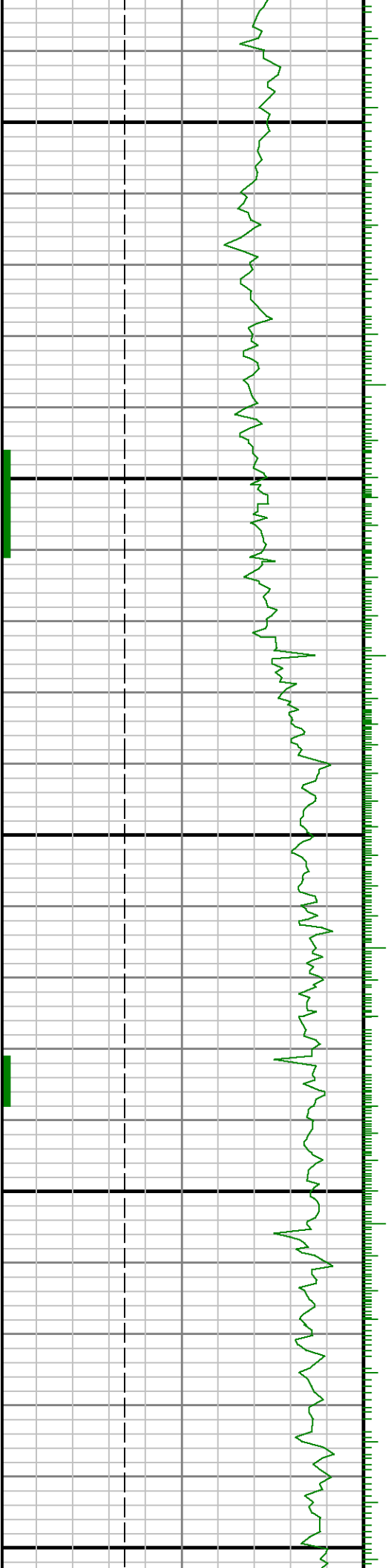
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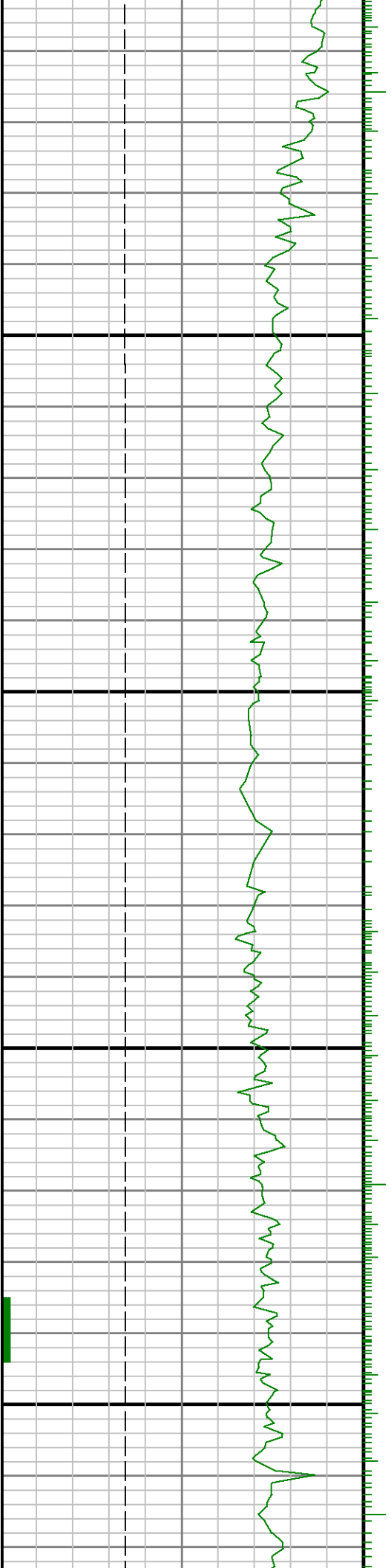
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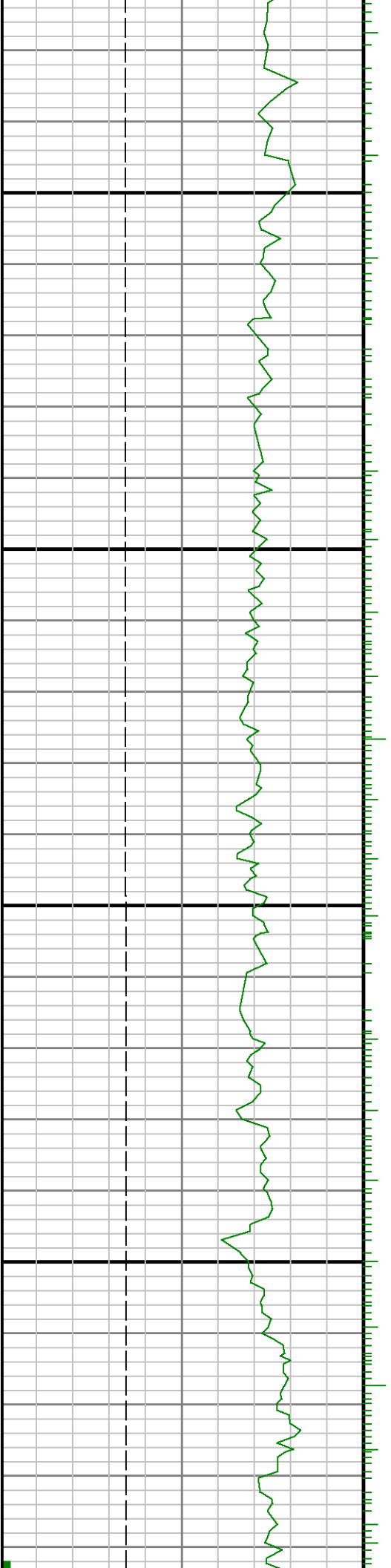
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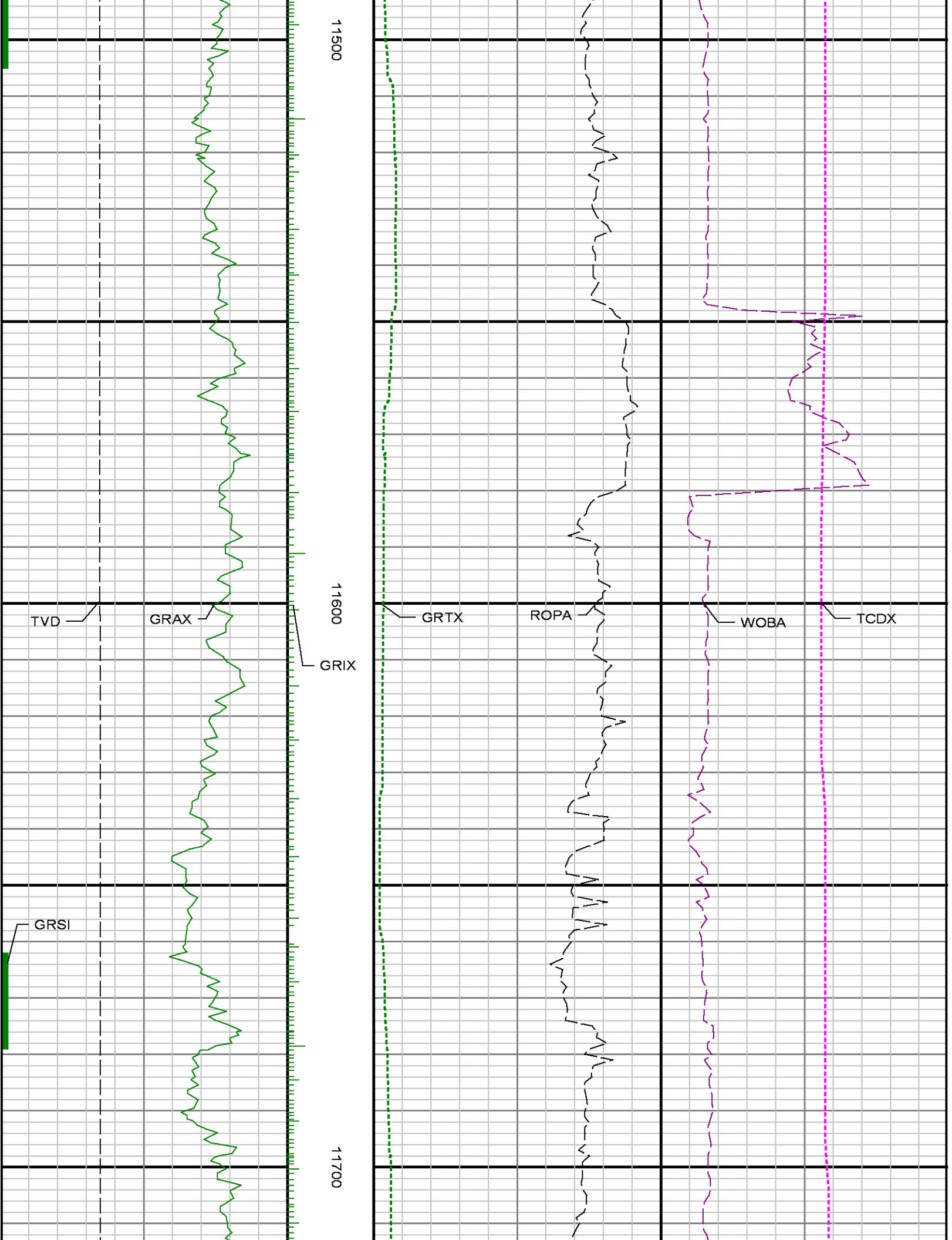


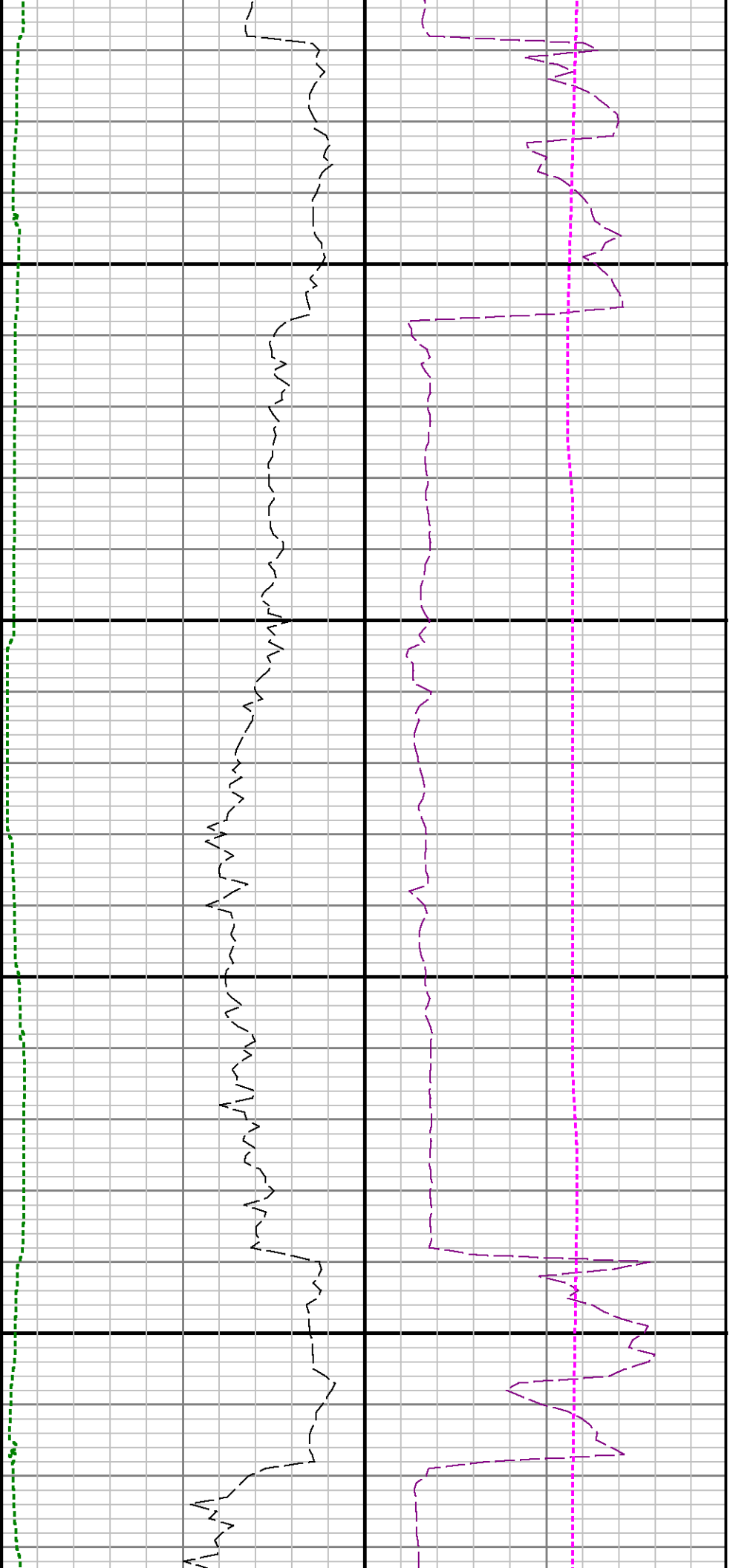


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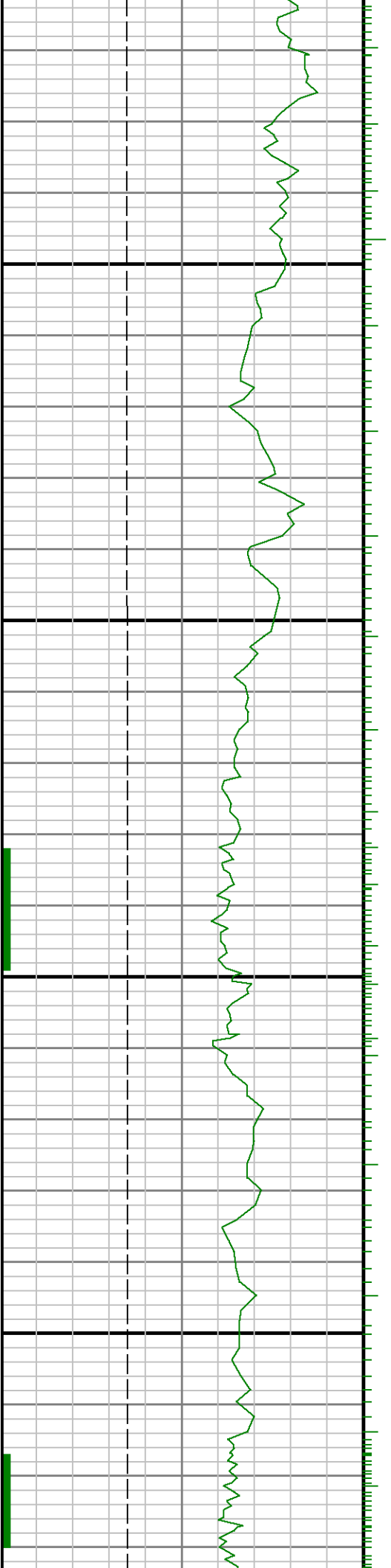


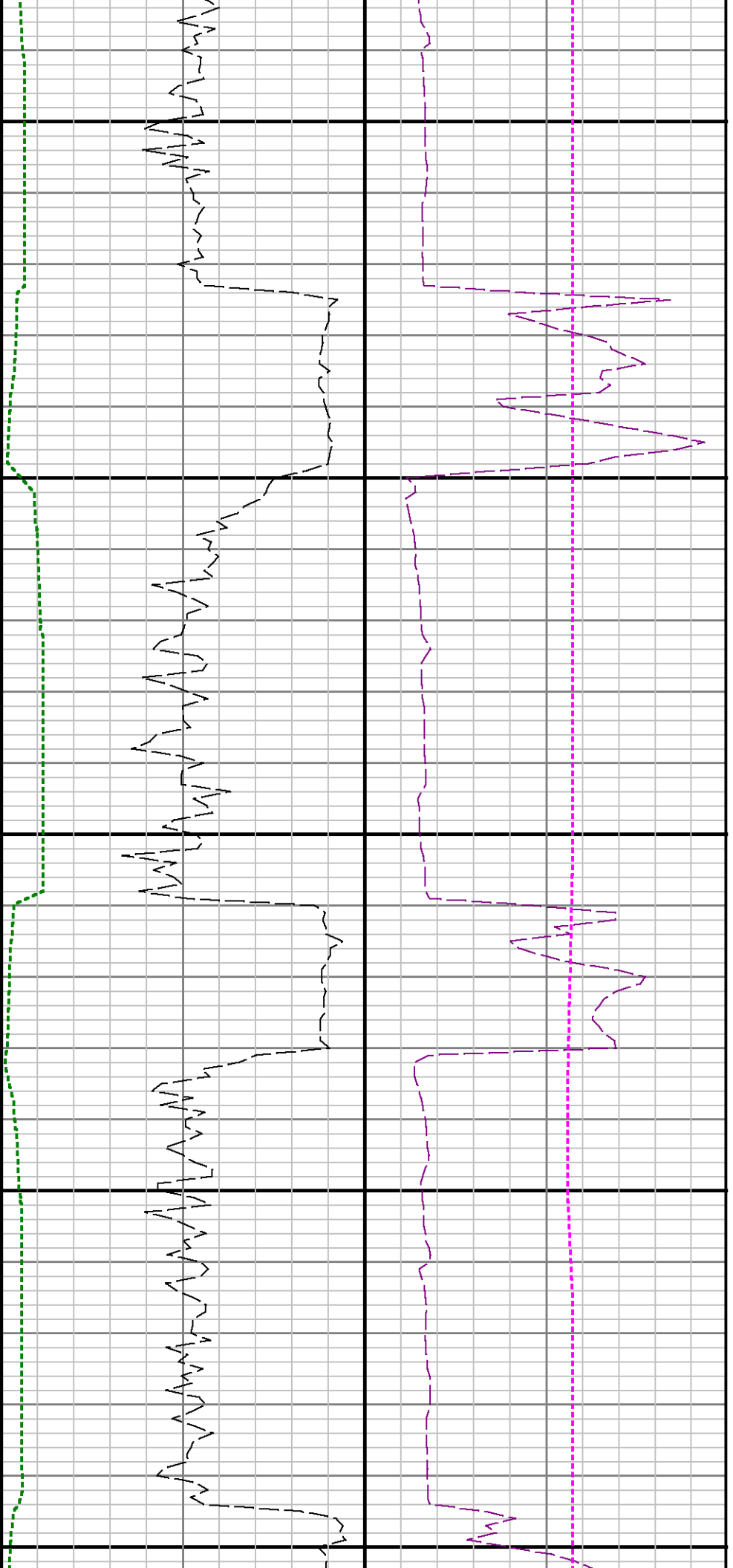




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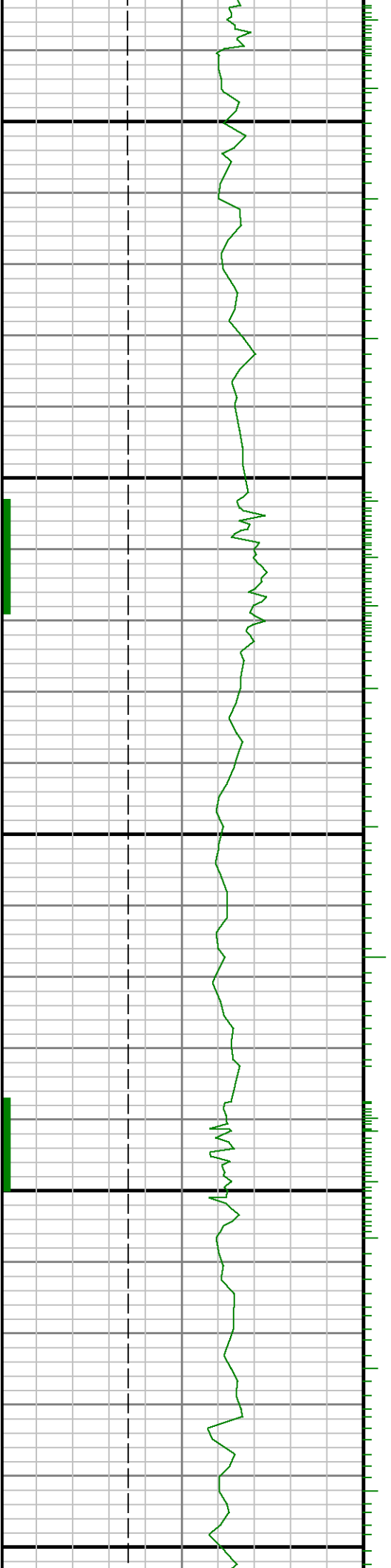
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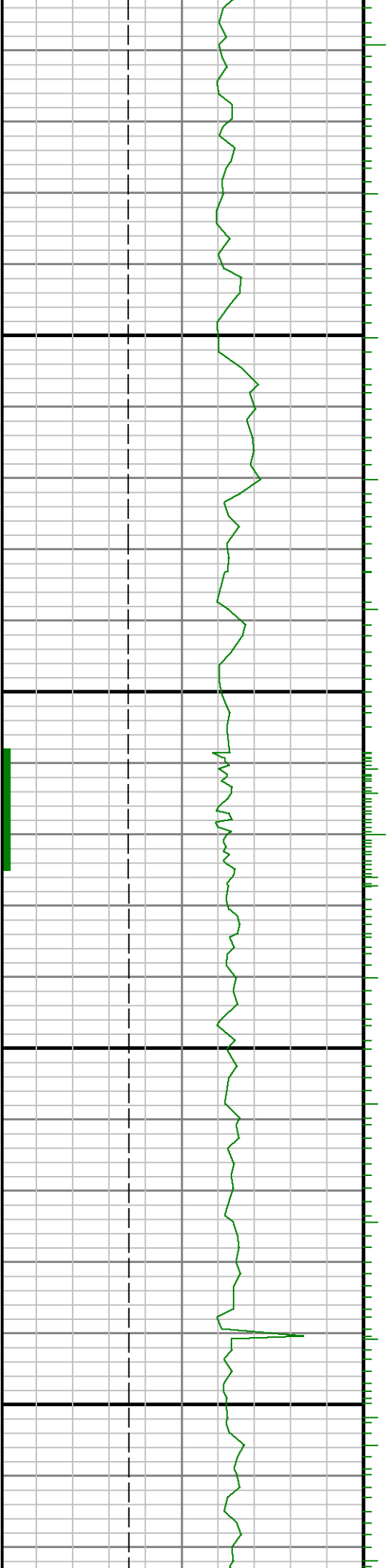
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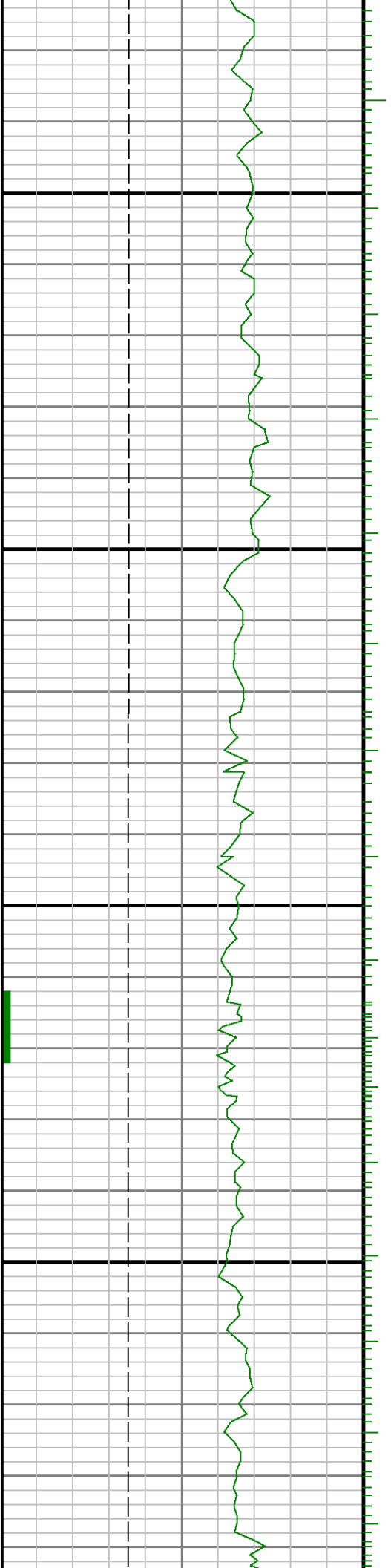
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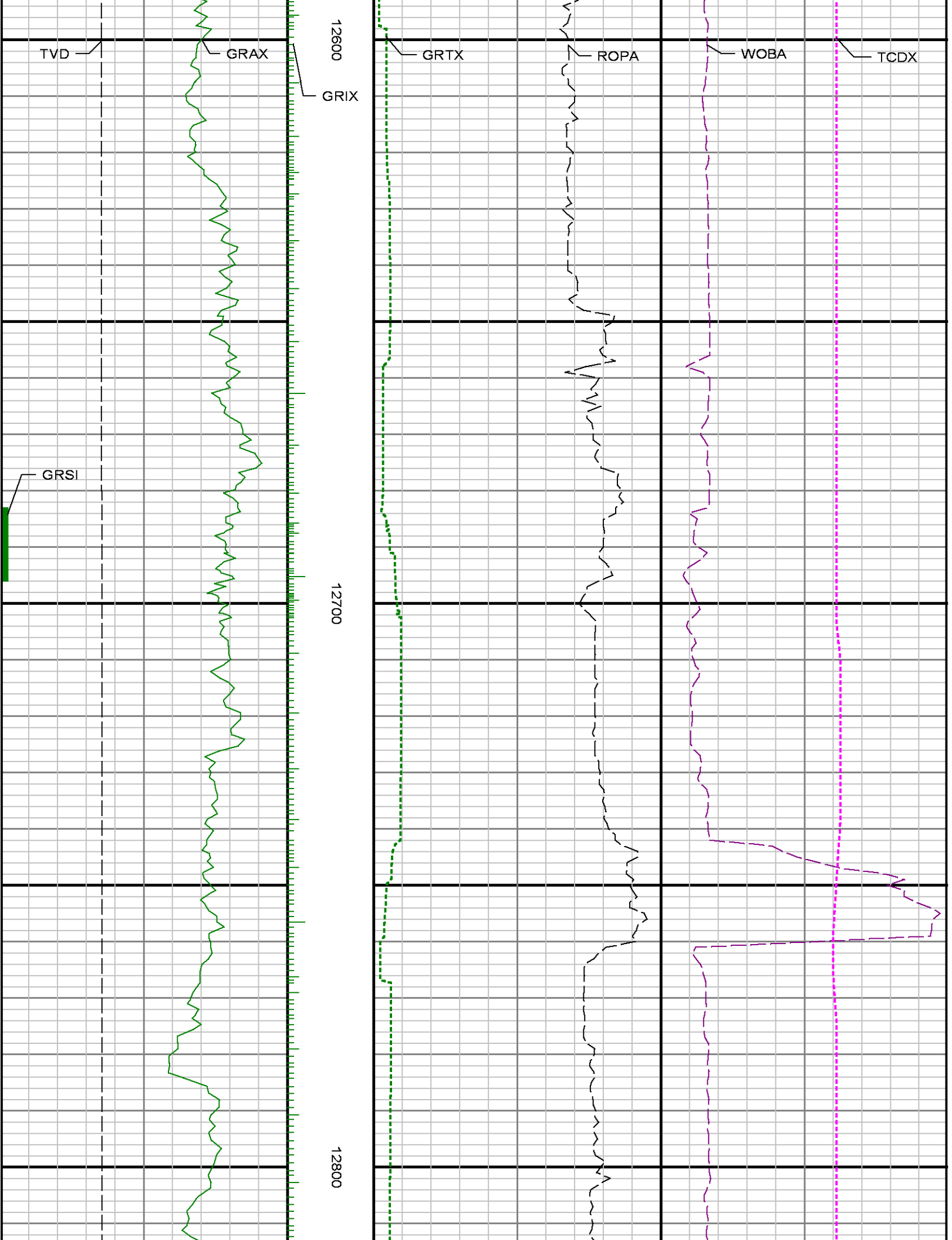


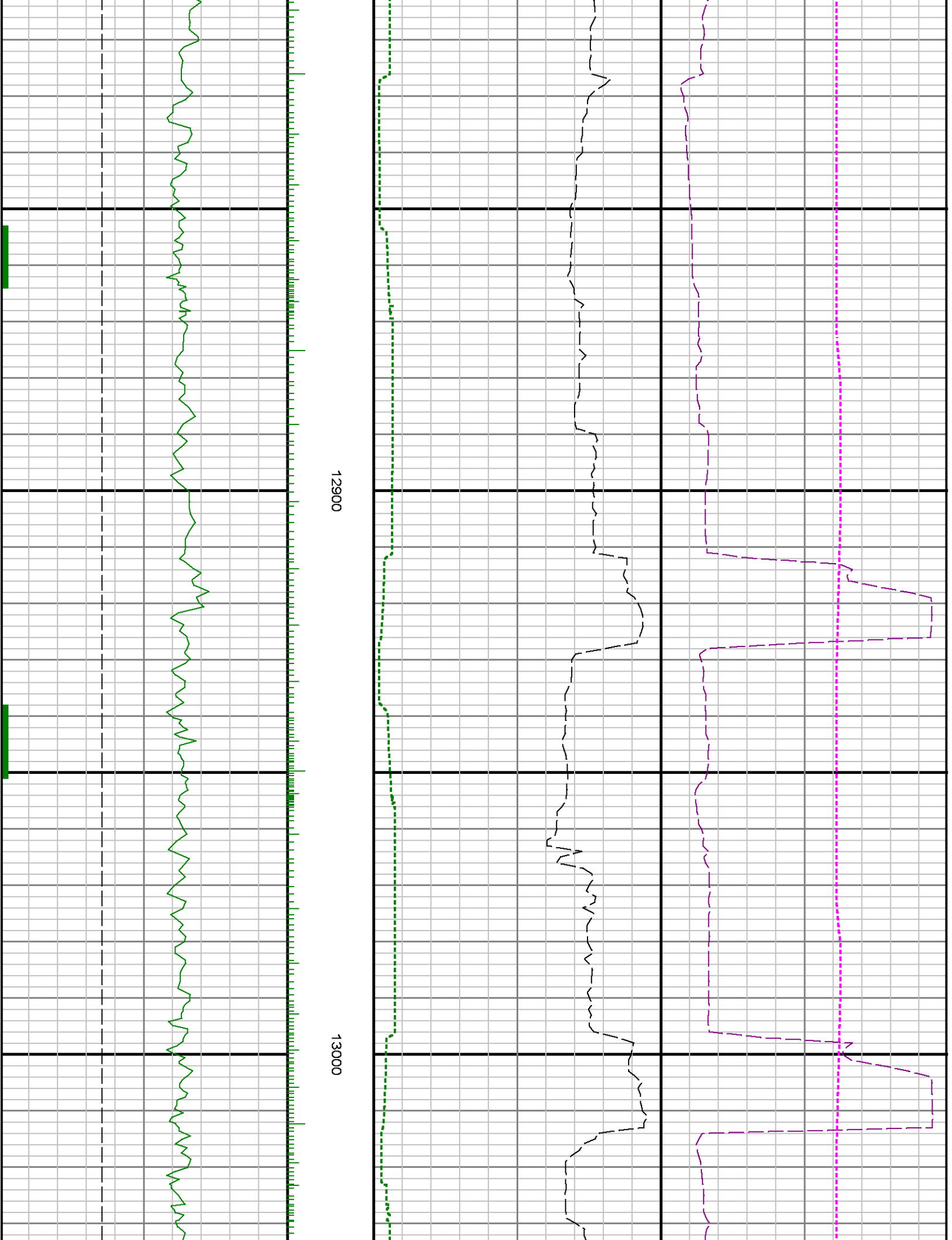


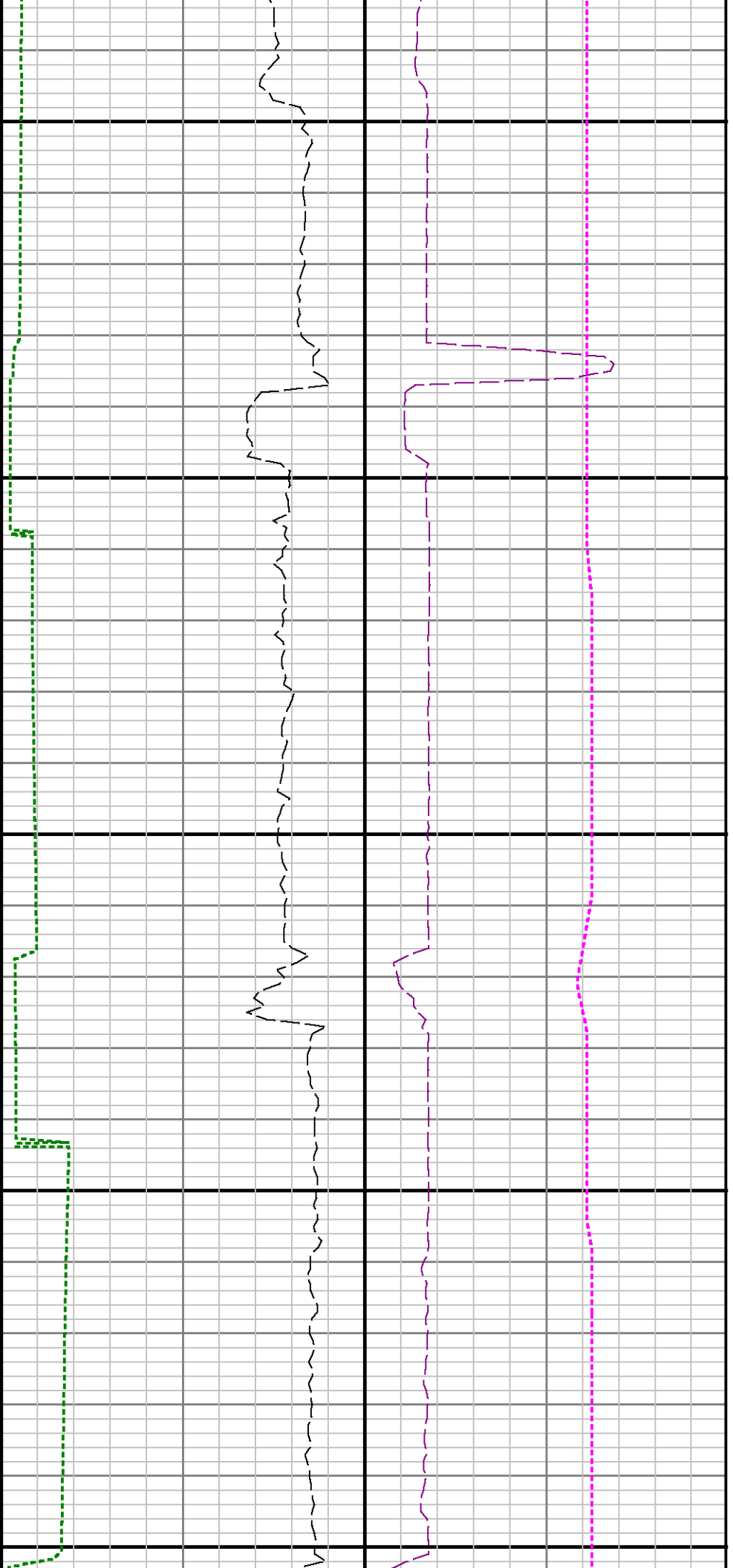
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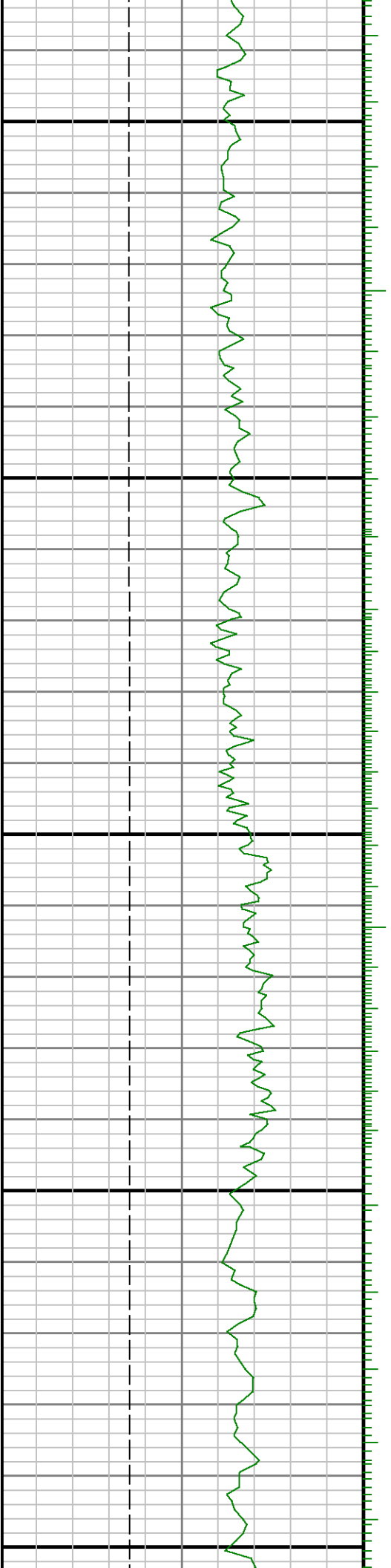


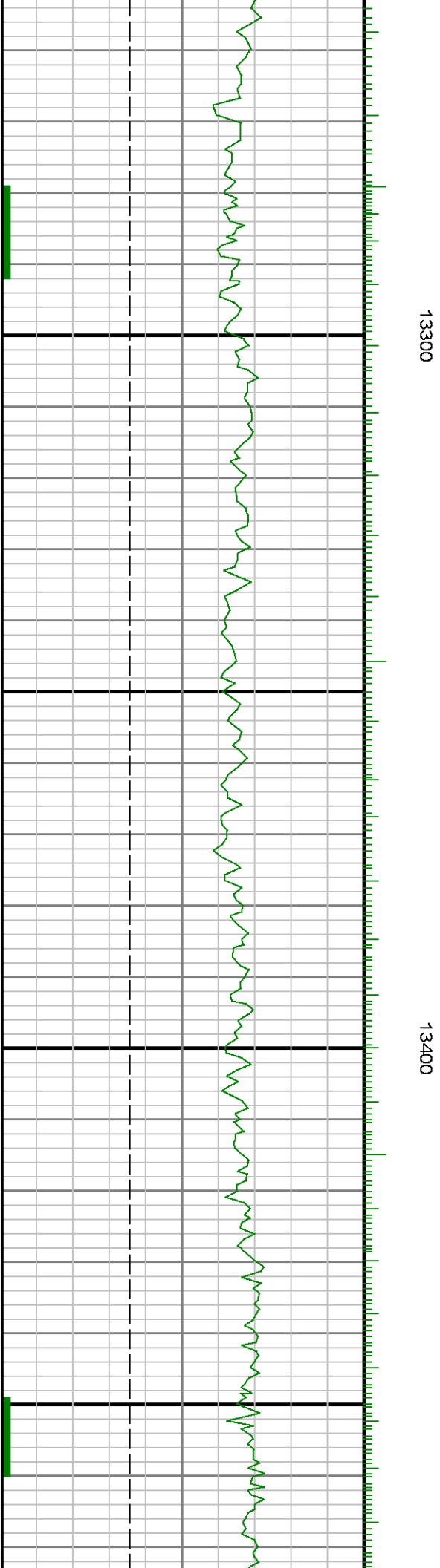
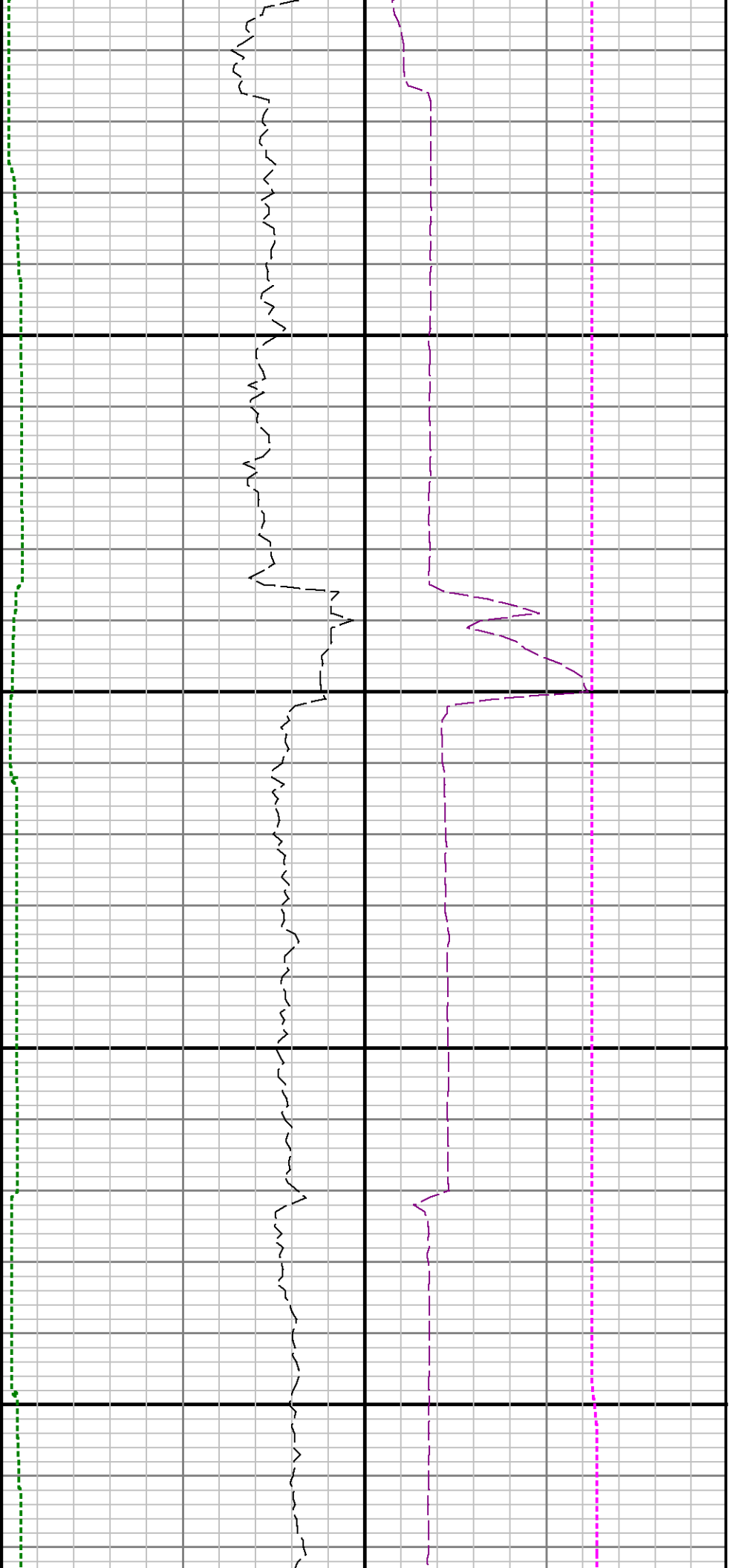


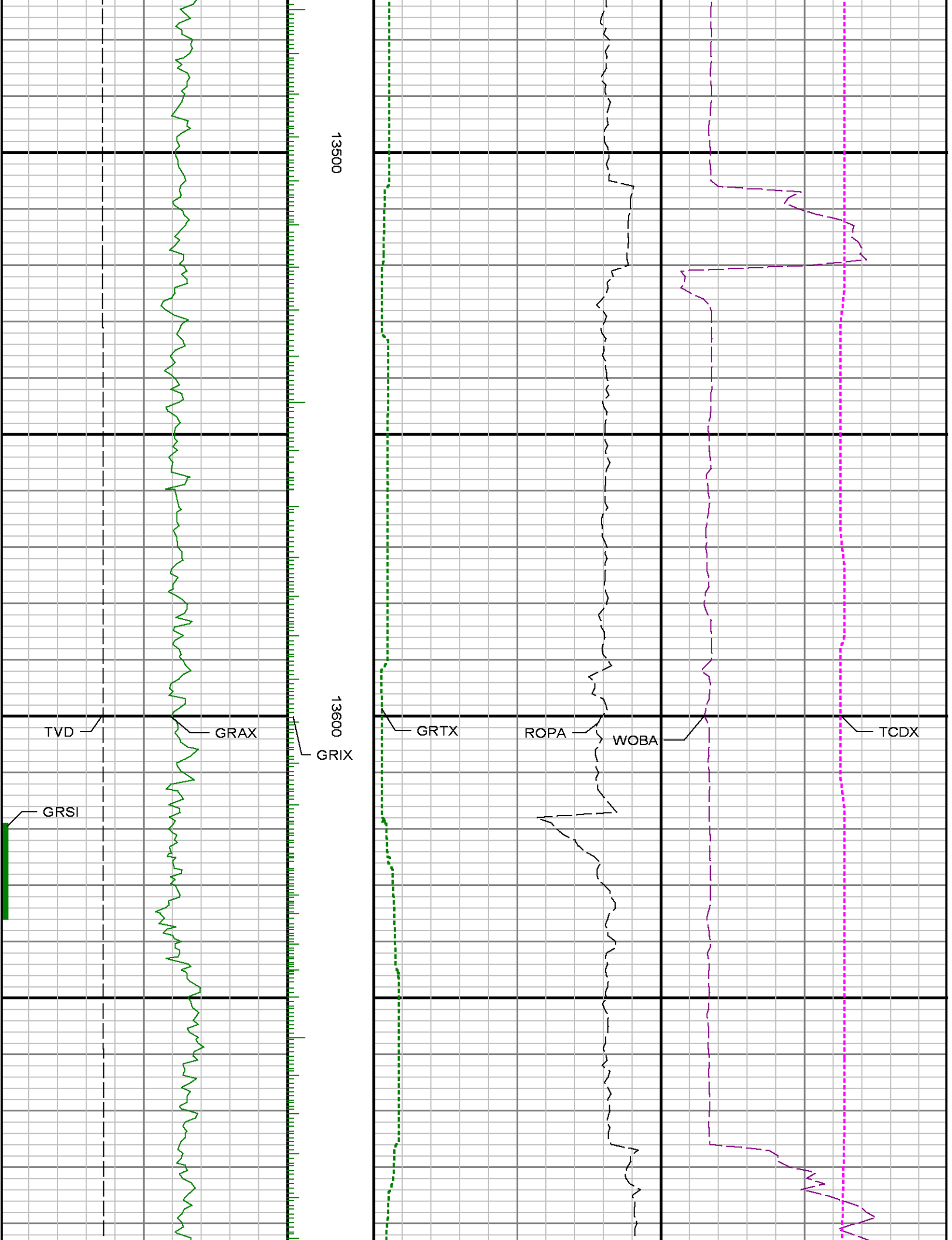


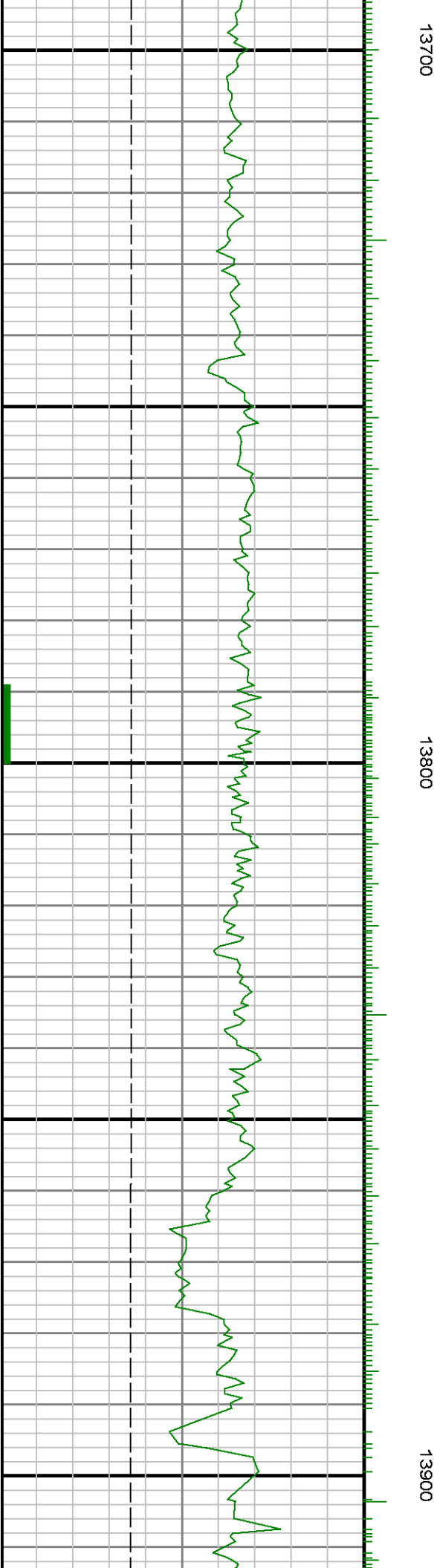
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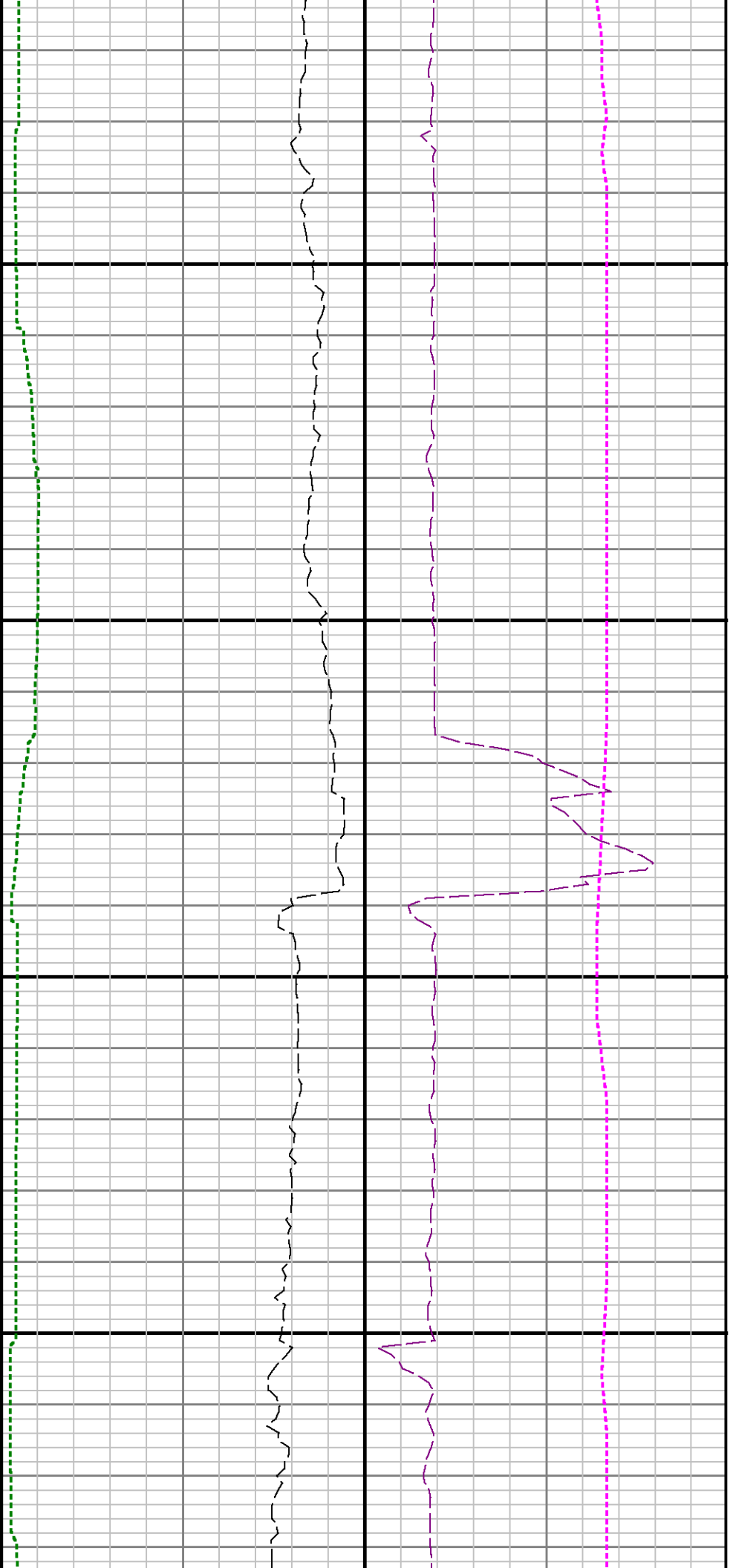
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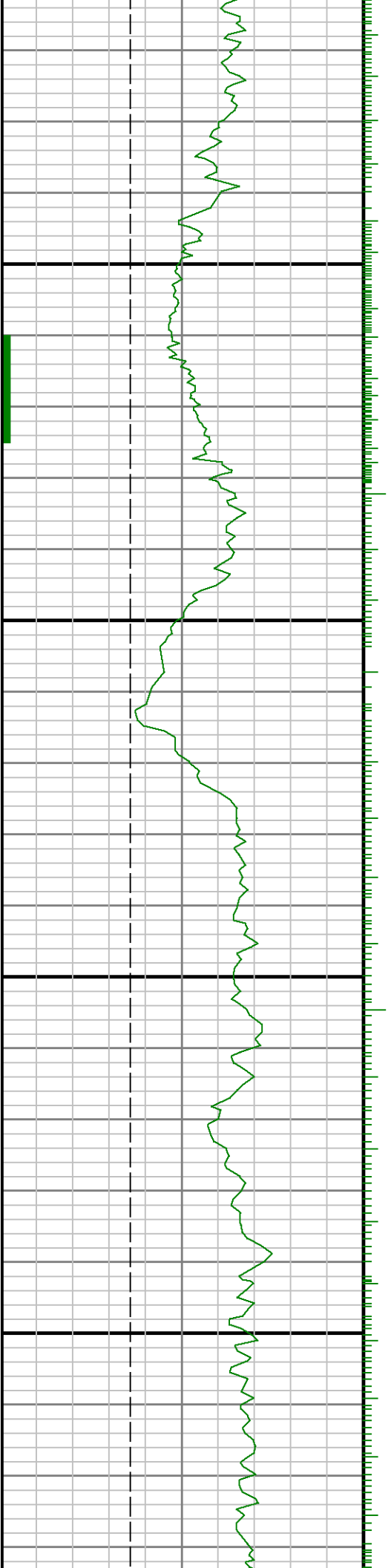


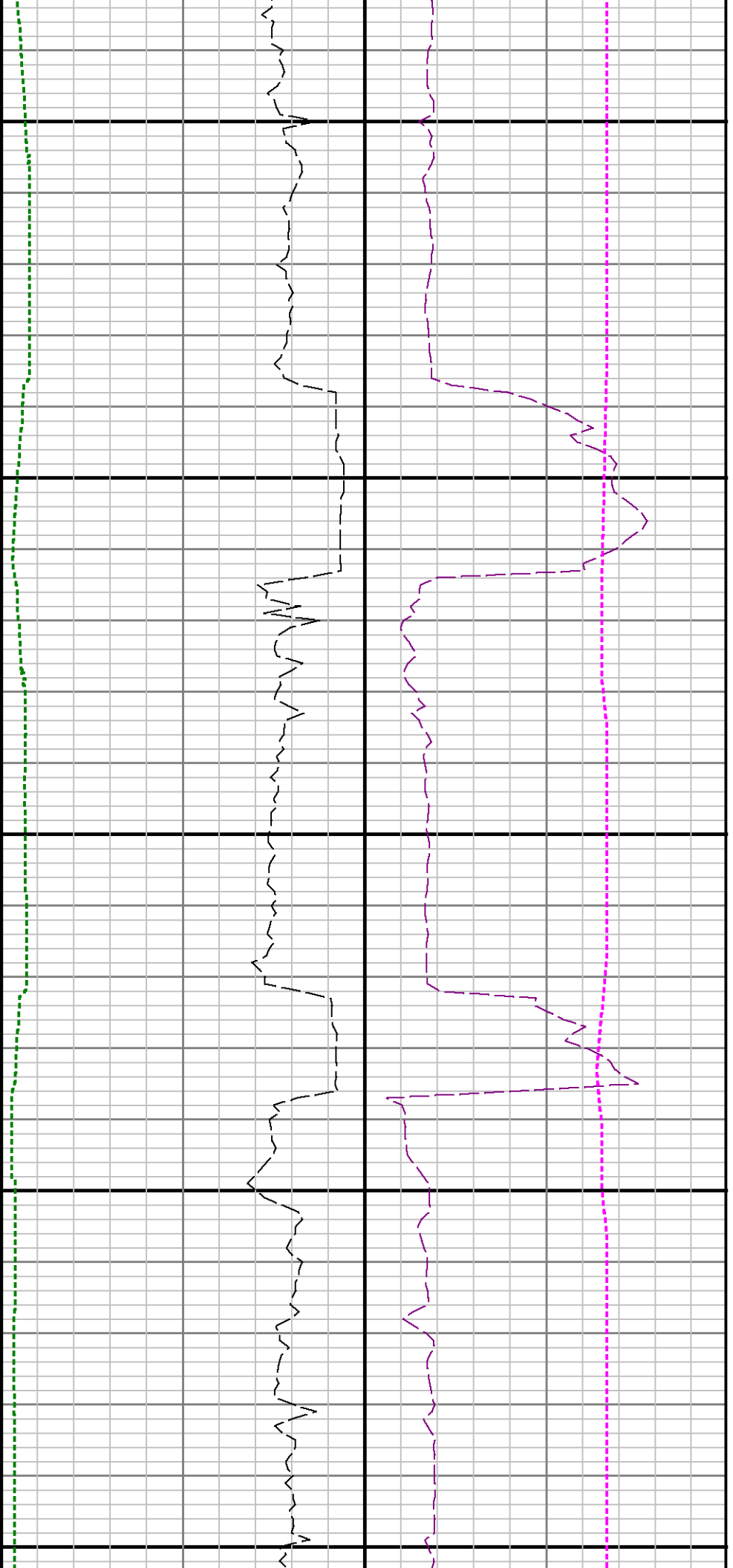




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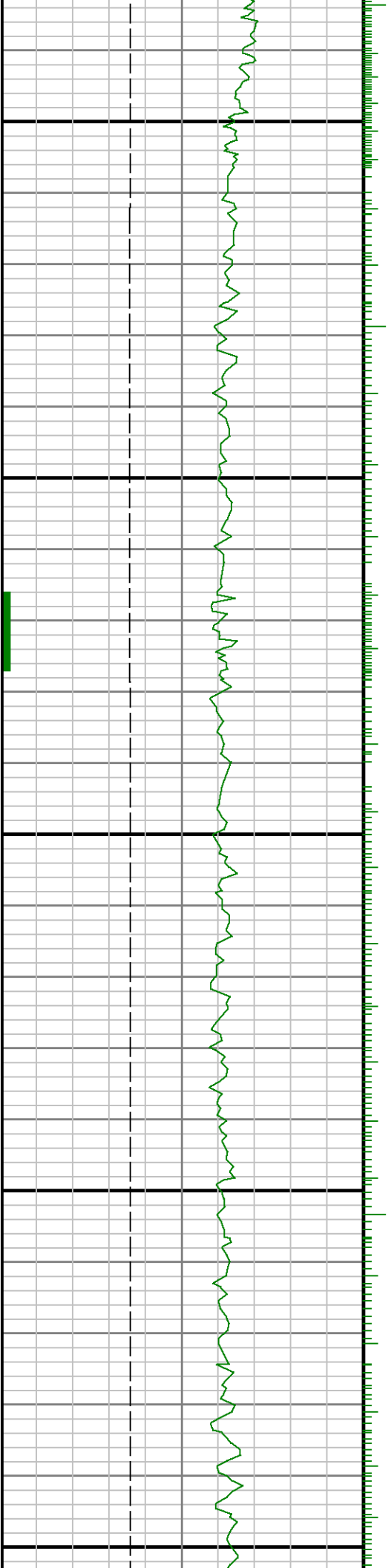
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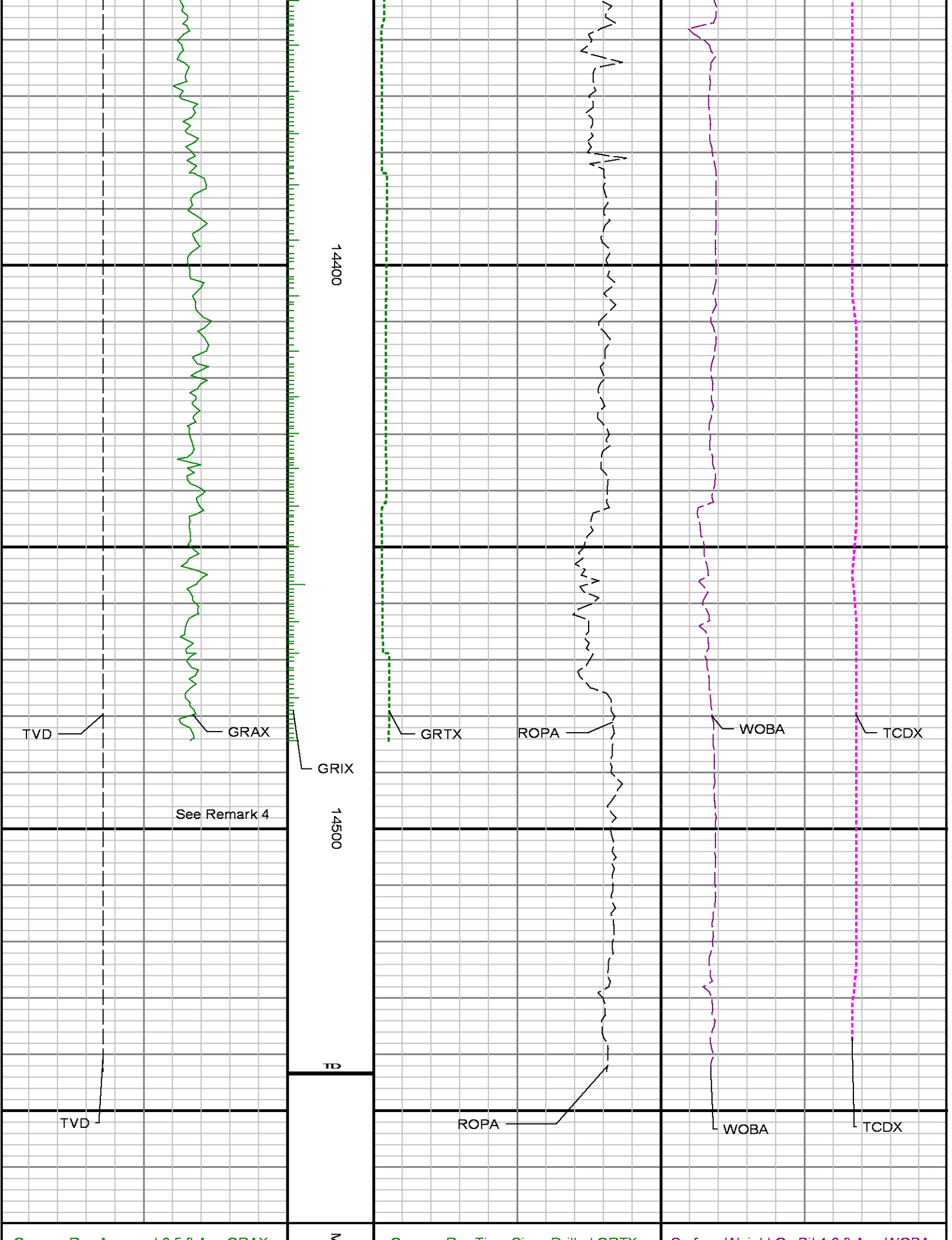




14200

14300





Gamma Ray Apparent 0.5 ft Avg GRAX	MD feet 1:240	Gamma Ray Time Since Drilled GR TX	Surface Weight On Bit 1.0 ft Avg WOBA
0150		0600	0100
API		min	klbf
True Vertical Depth TVD		Rate of Penetration 3.0 ft Avg ROPA	Downhole Temperature TCDX
80006000		10000	100300
ft		ft/hr	degF