

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+ (%)
7 Aug 2014	20:00	1	6916.0	Polymer Mud	9.8	10	9.1	N/A	2.0/90	Active Pit	1800	N/A
9 Aug 2014	20:00	2	10,835	Polymer Mud	9.4	12	9.1	N/A	2.0/90.5	Active Pits	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 (ft)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	10307183	Directional	62.48	6.750	3.250
1	SRIG	ZSGM5015	Gamma	59.10	6.750	3.250
2	DIR	11859501	Directional	62.13	4.750	2.750
2	SRIG	12816078	Gamma	59.09	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

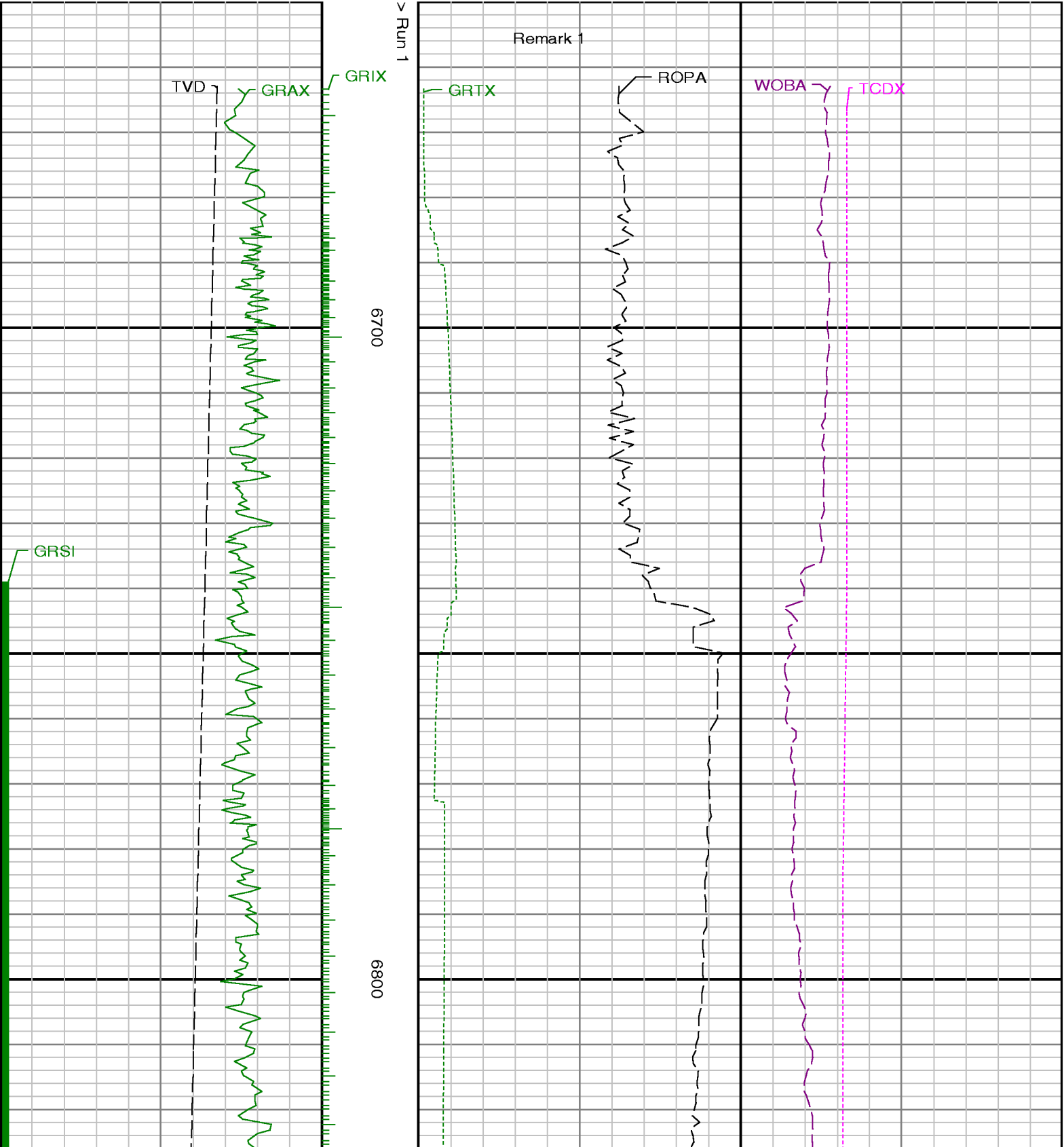
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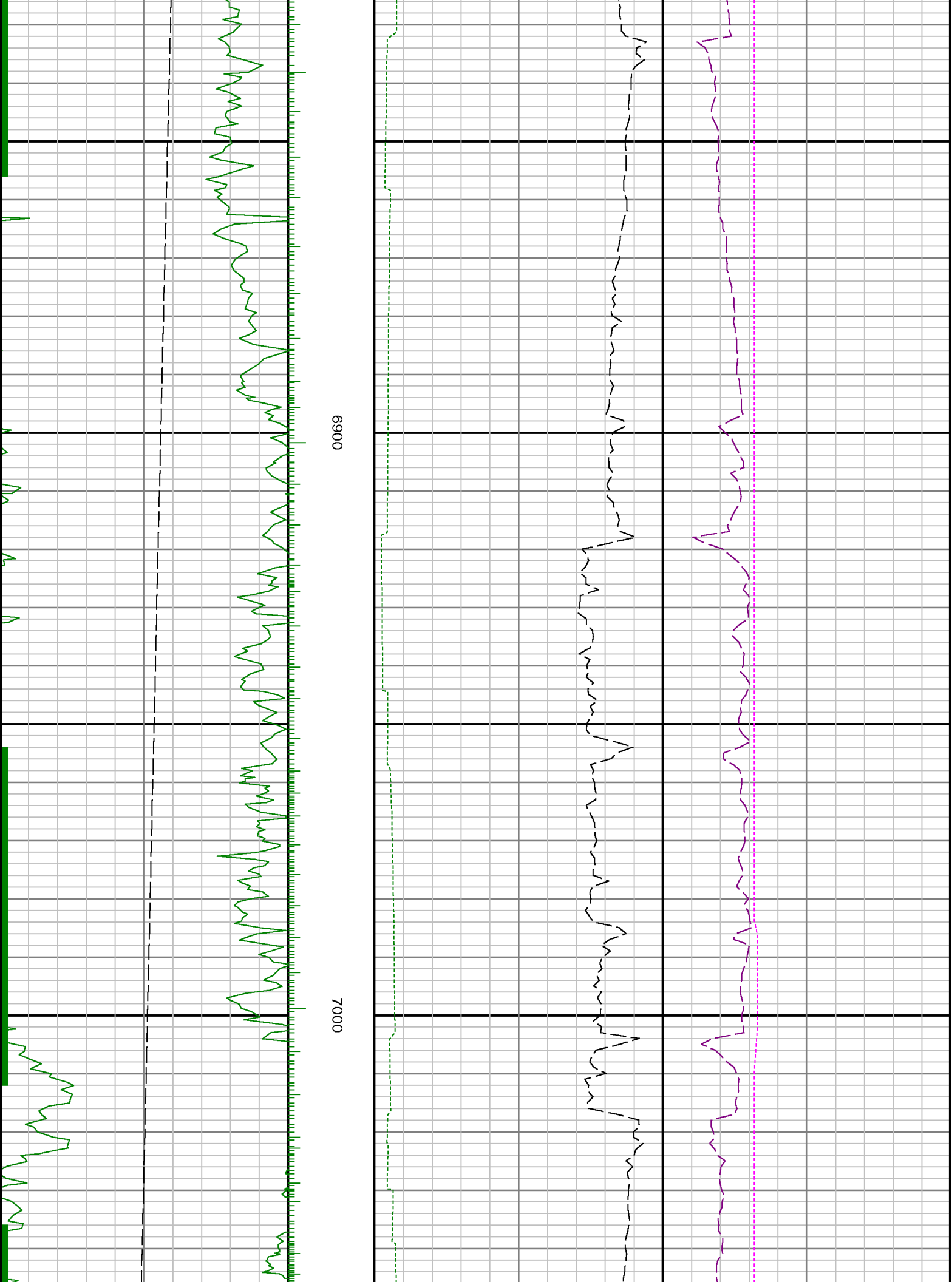
<p>1.) Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to represent logging data.</p> <p>2.) Baker Hughes Run 1 a 6 3/4 inch NaviGamma (Directional and Gamma Ray) tool behind an 8 3/4 inch bit and steerable assembly from 1244 to 7725 feet MD (1243.98 to 7333.03 feet TVD).</p> <p>3.) Baker Hughes Runs 2 utilized a 4 3/4 inch NaviGamma (Directional and Gamma Ray) tool behind a 6 1/8 inch bit and steerable assembly from 7725 to 14517 feet MD (1243.98 to 7299.54 feet TVD).</p> <p>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.</p>

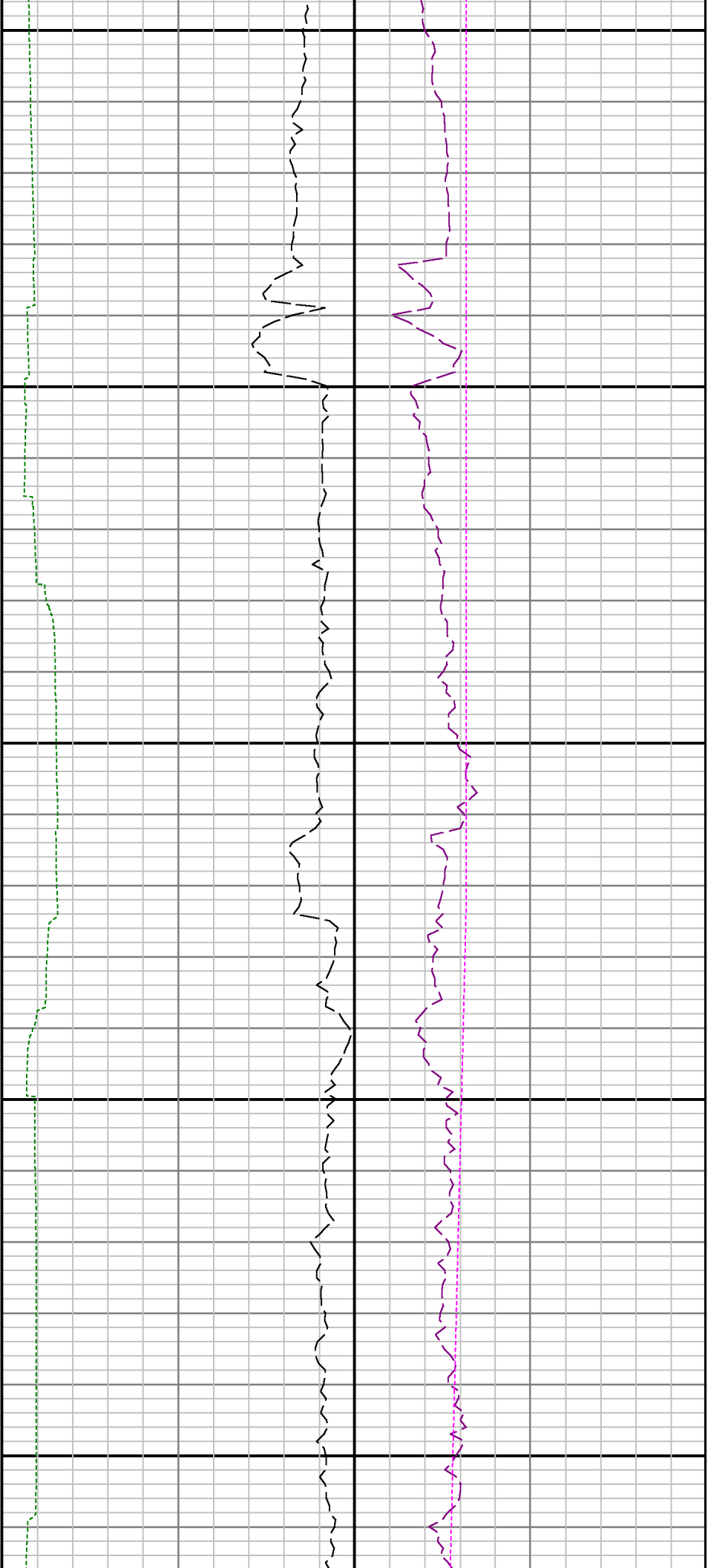
Remarks

Number	Measured Depth	Hole Section	LWD Run No.	Remark
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	(ft)	(in.)		
1	6663	8.750	1	Logging services began at 6663. No logging data prior to 6663 feet MD.(6652.71) feet TVD as per client request.
2	7669	8.750	1	The interval from 7669 to 7725 feet MD(7333.97 to 7333.03 feet TVD) was logged up to 35 hours after being drilled due to casing operations
3	14455	6.125	2	The interval from 14455 to 14517 feet MD(7297.71 to 7299.54 feet TVD) was not logged due to gamma sensor offset to bit at TD

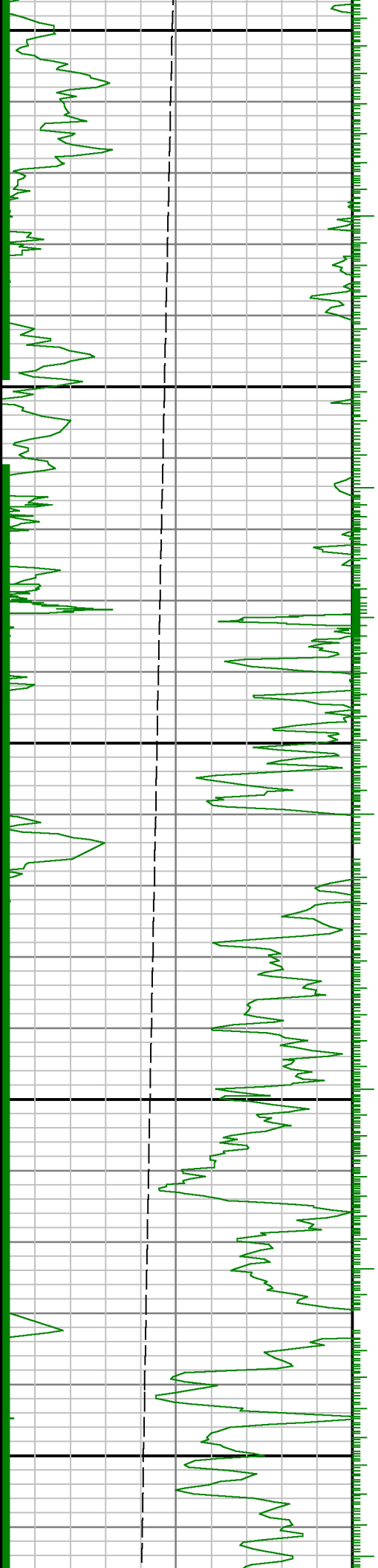


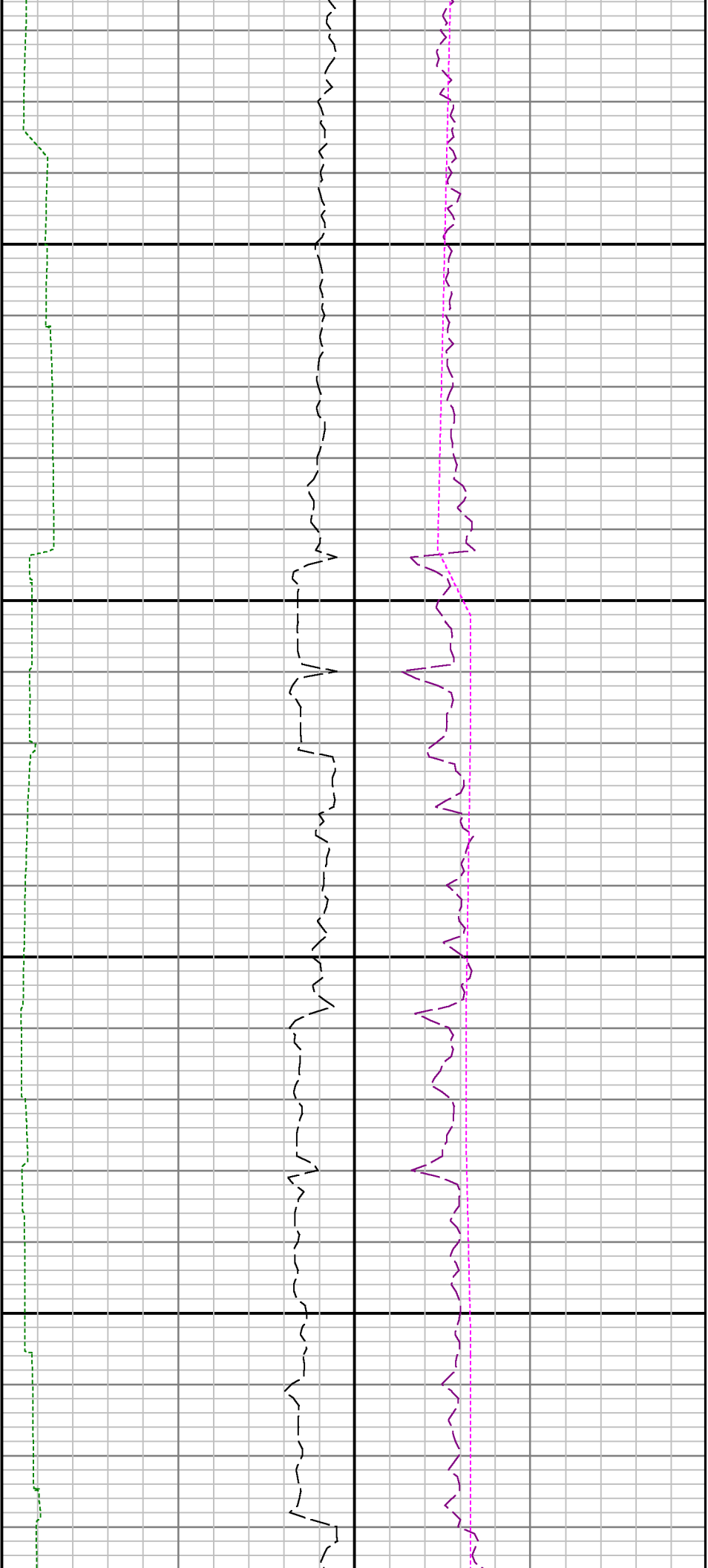




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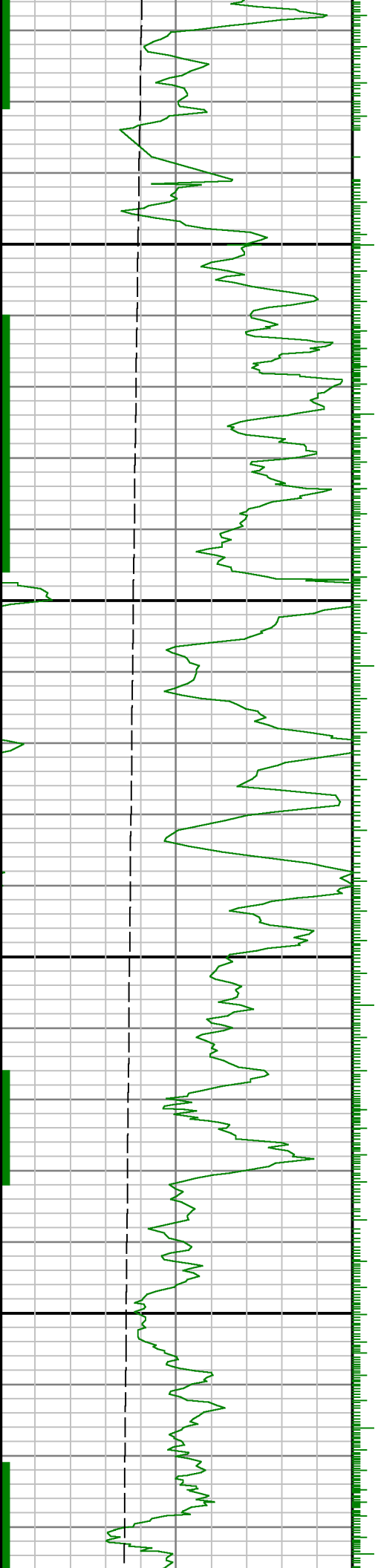
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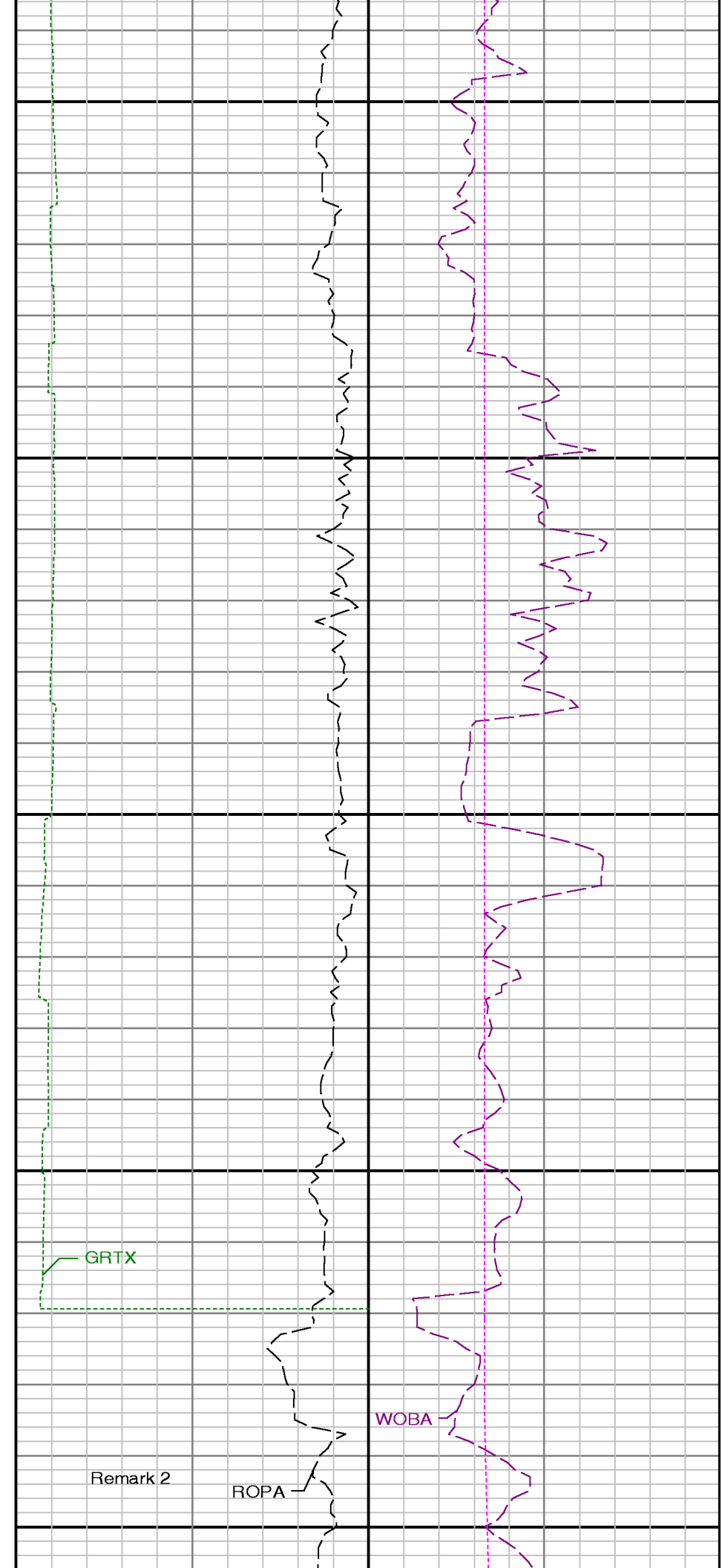
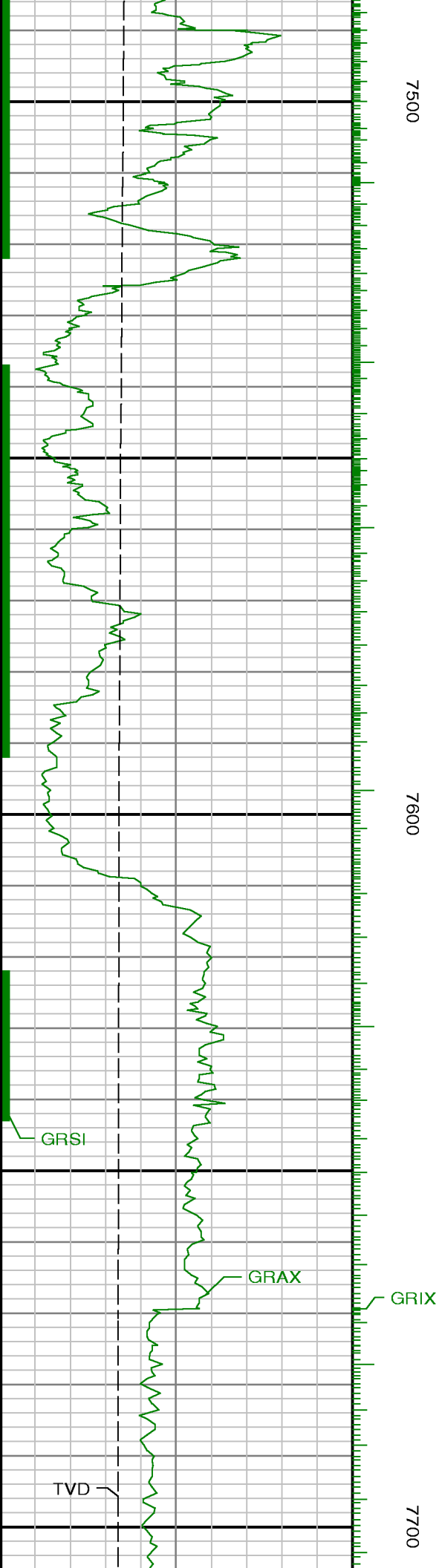


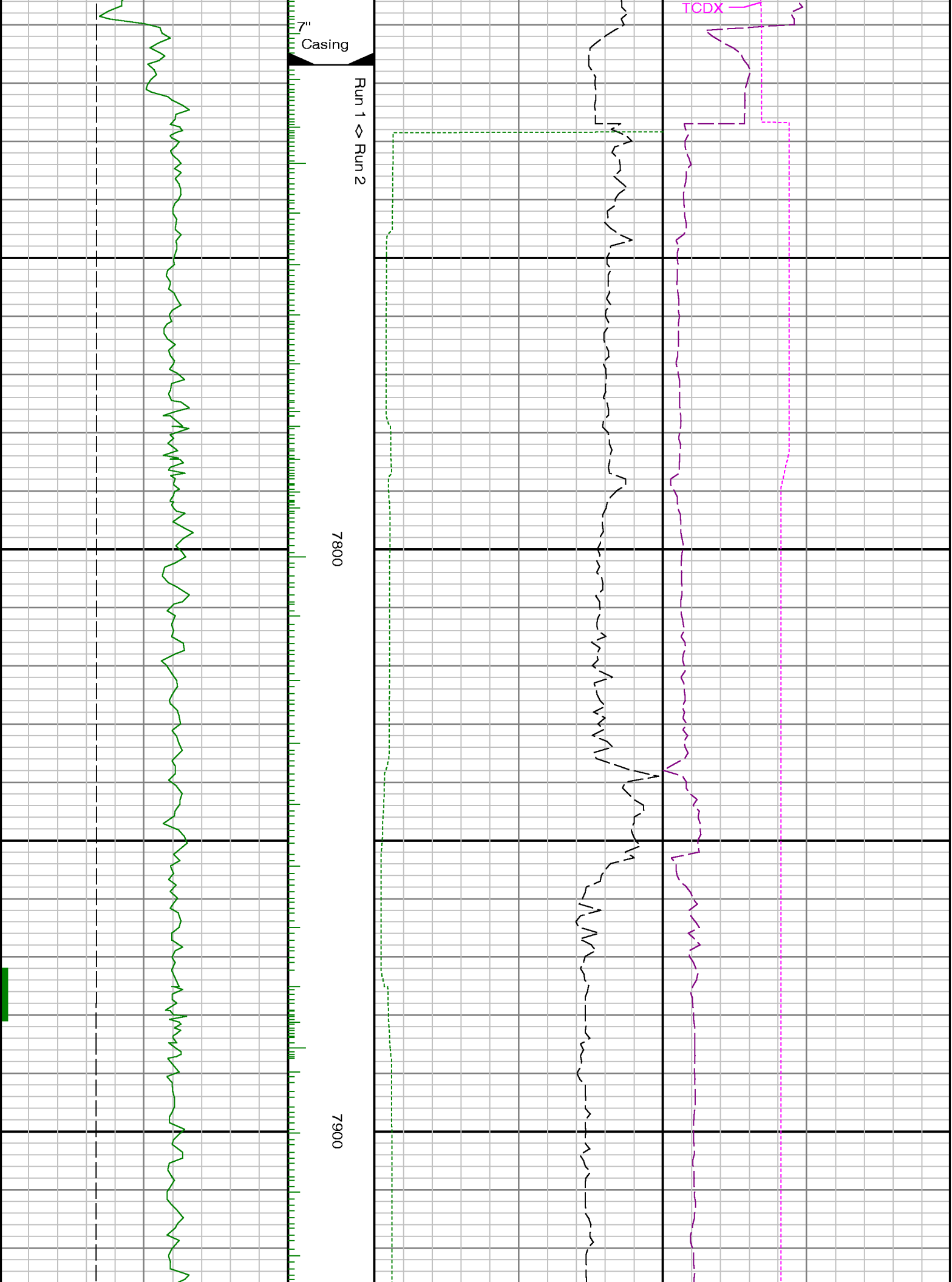


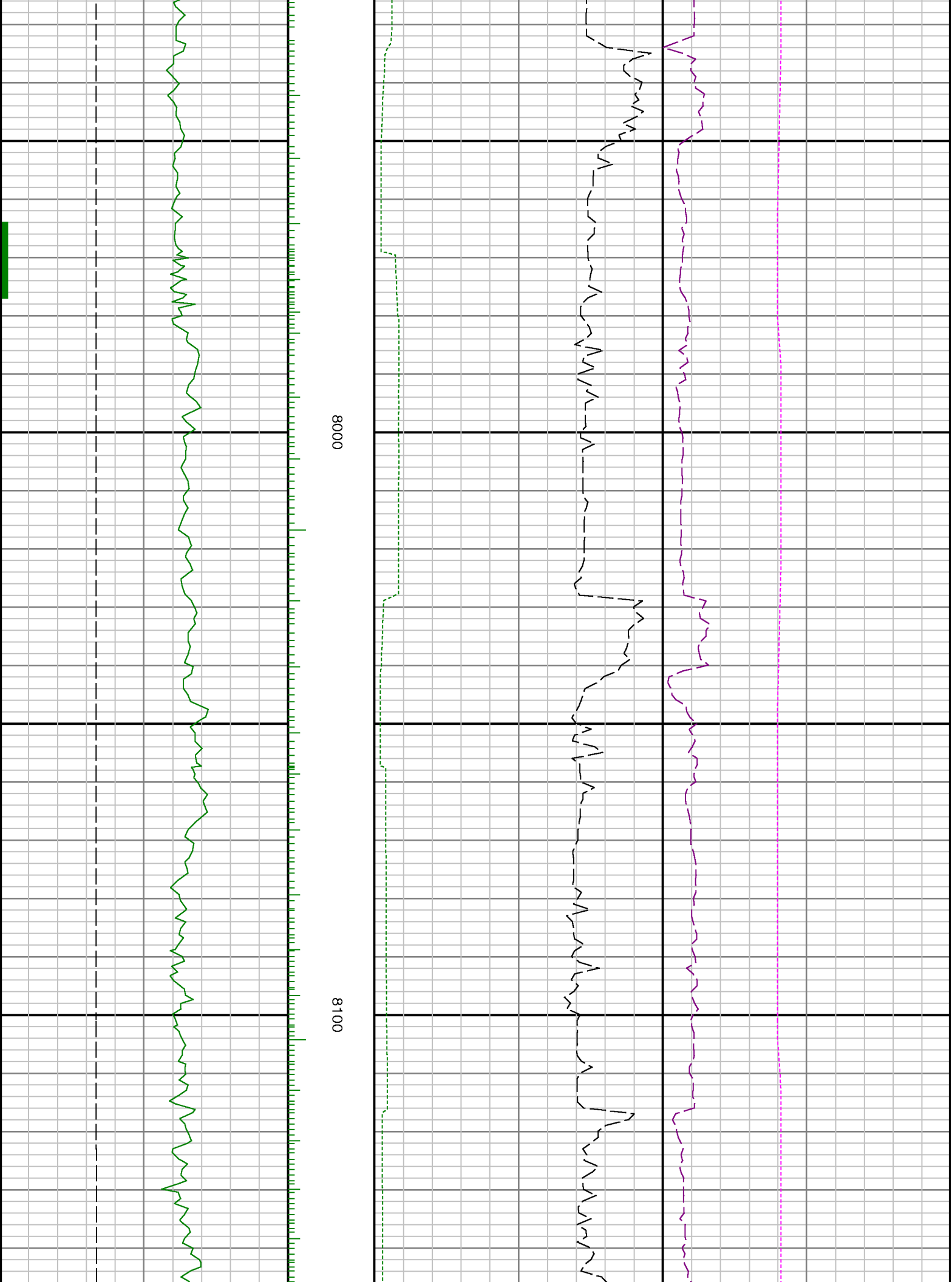
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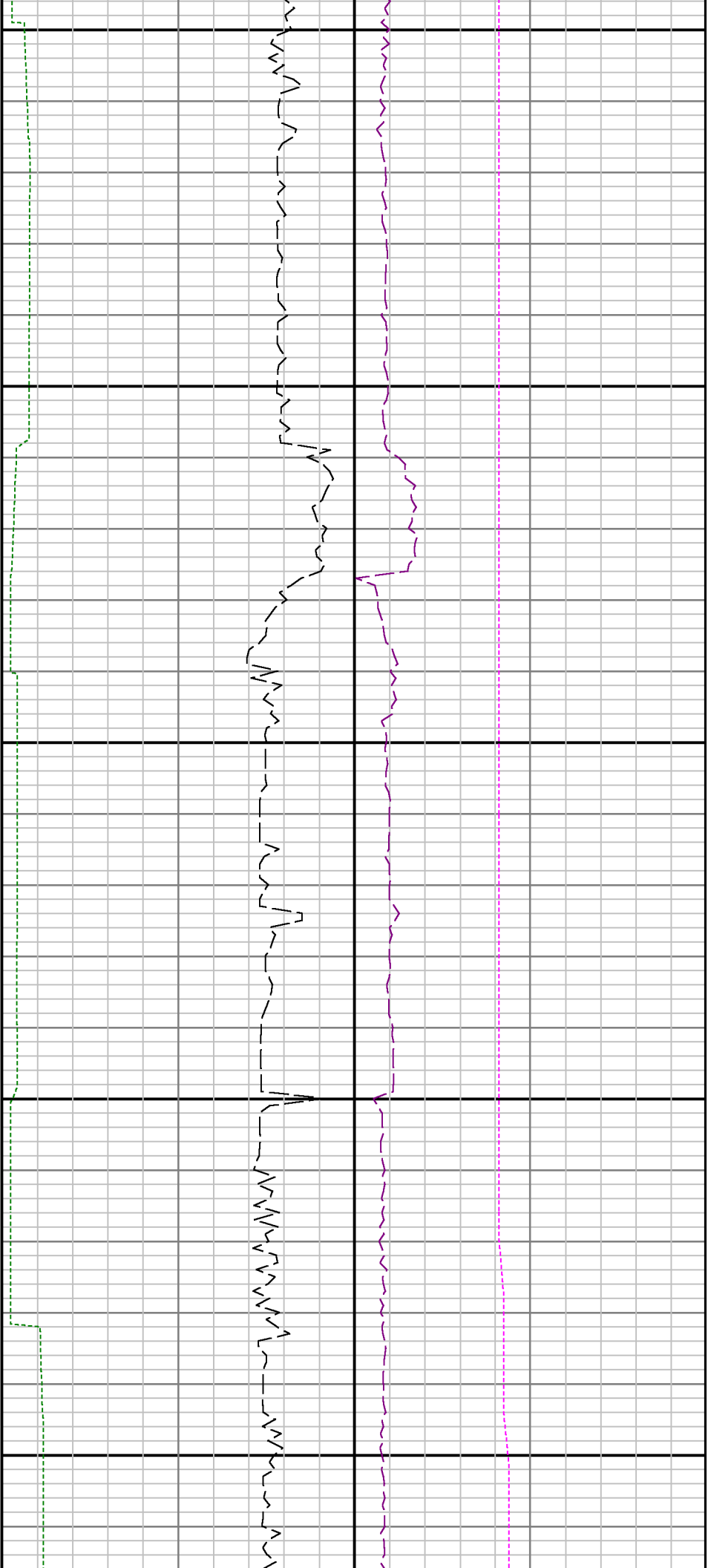
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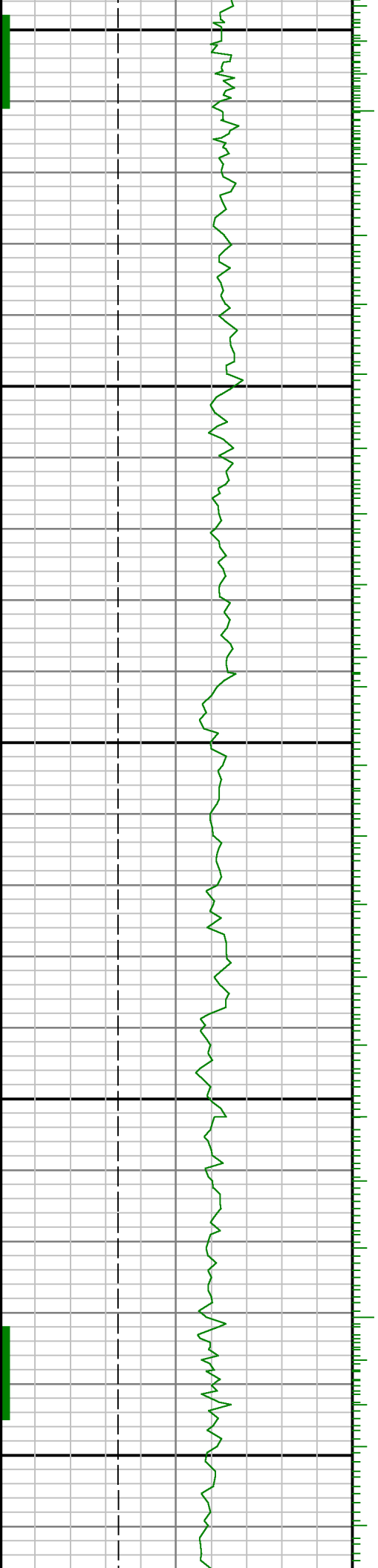


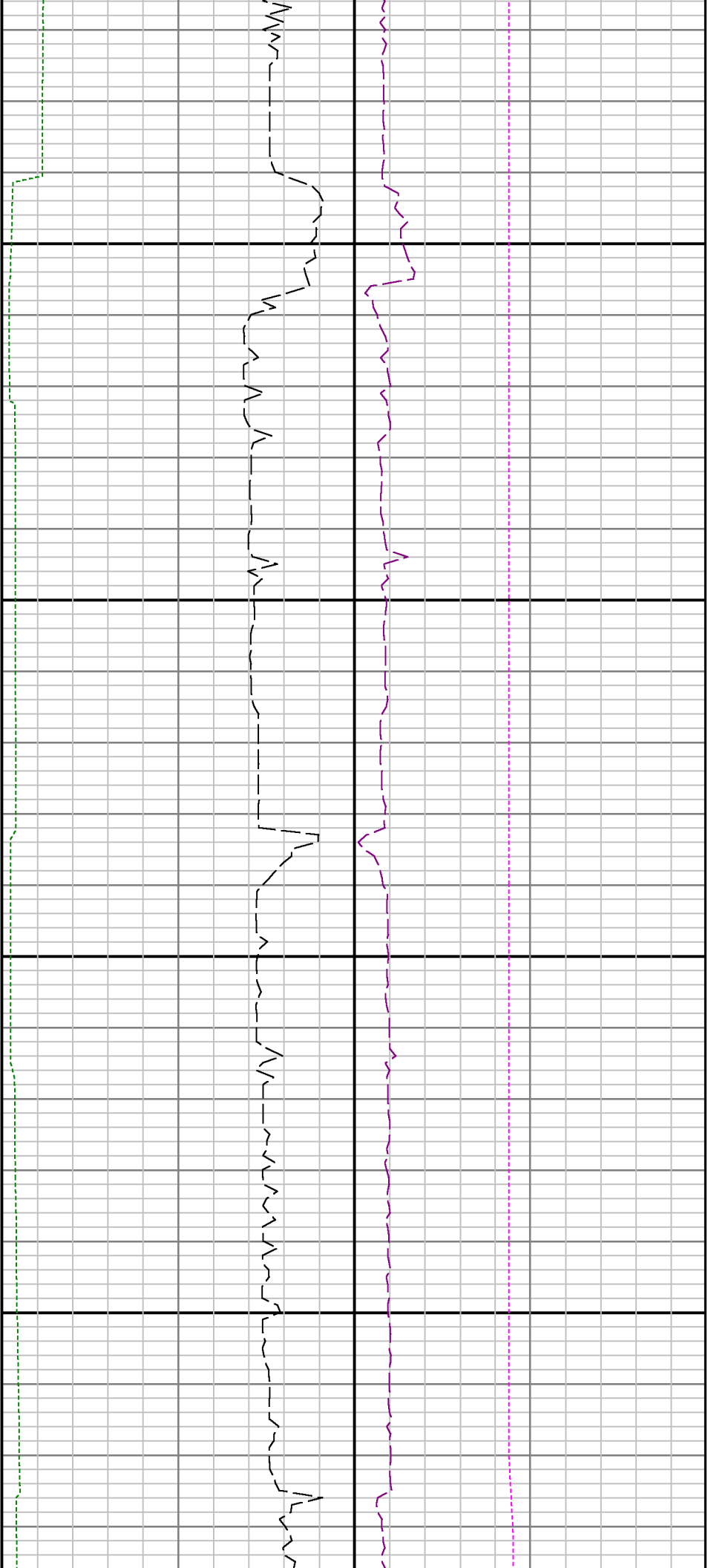




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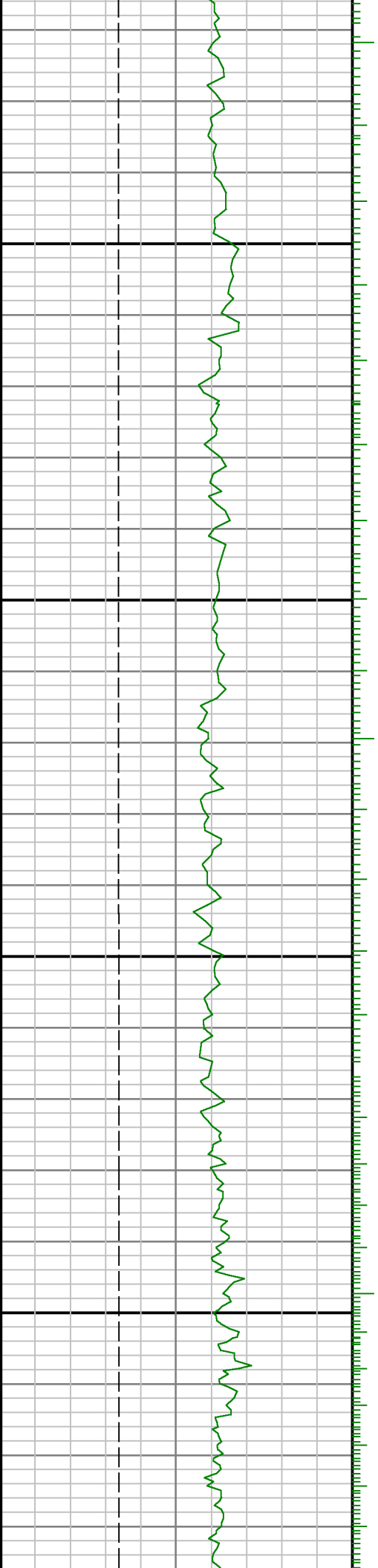
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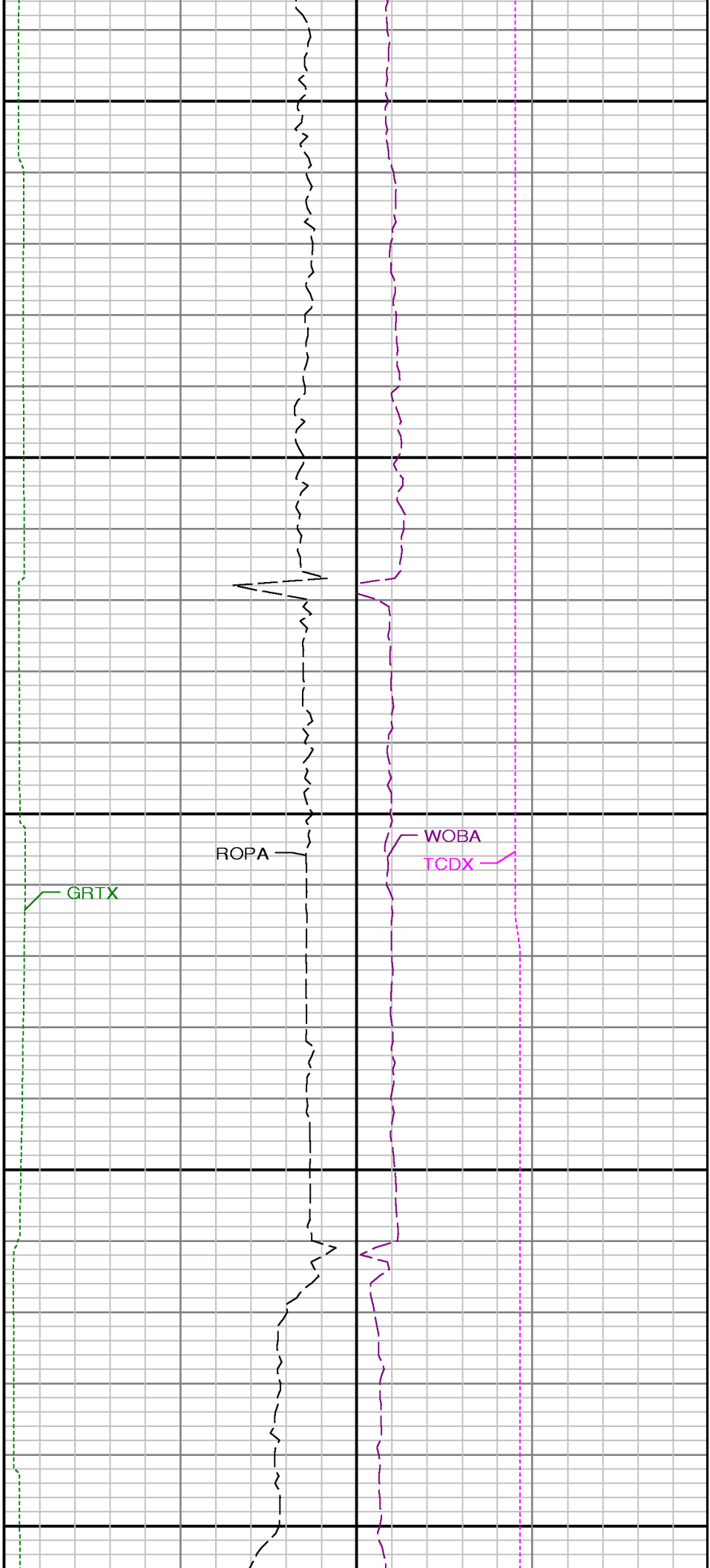
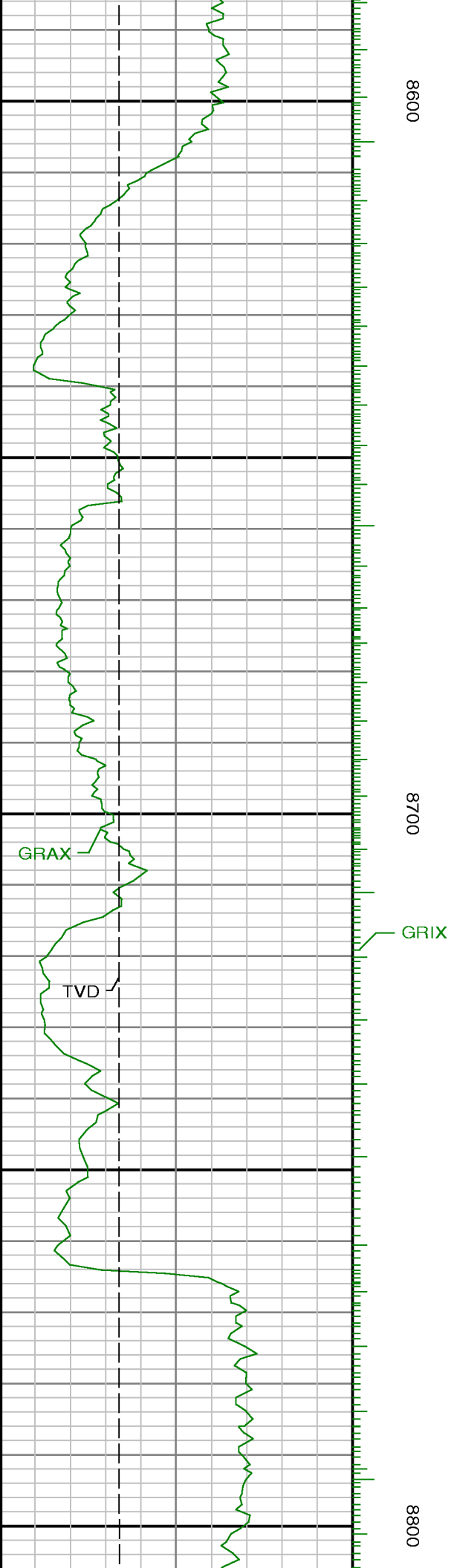


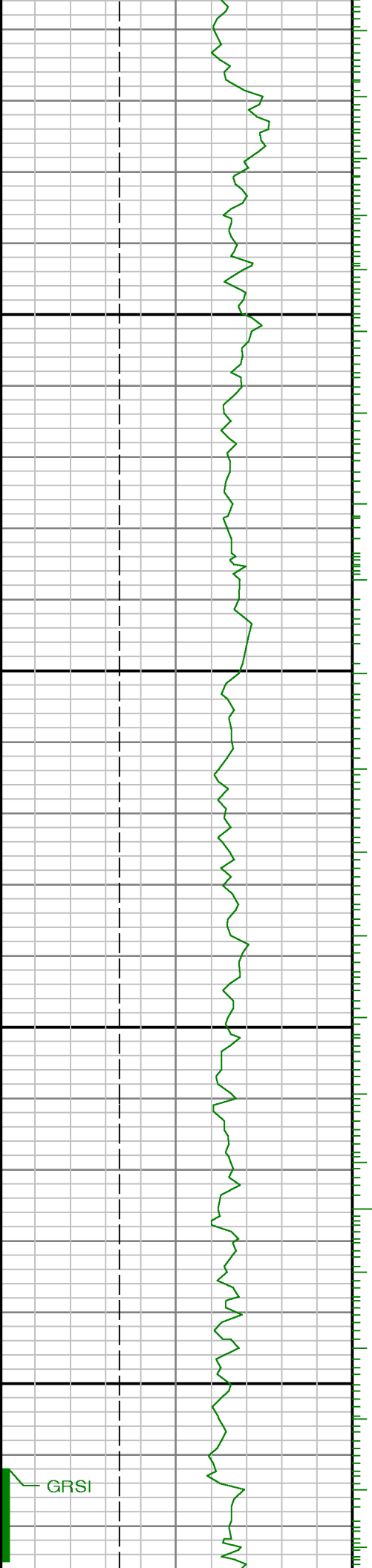


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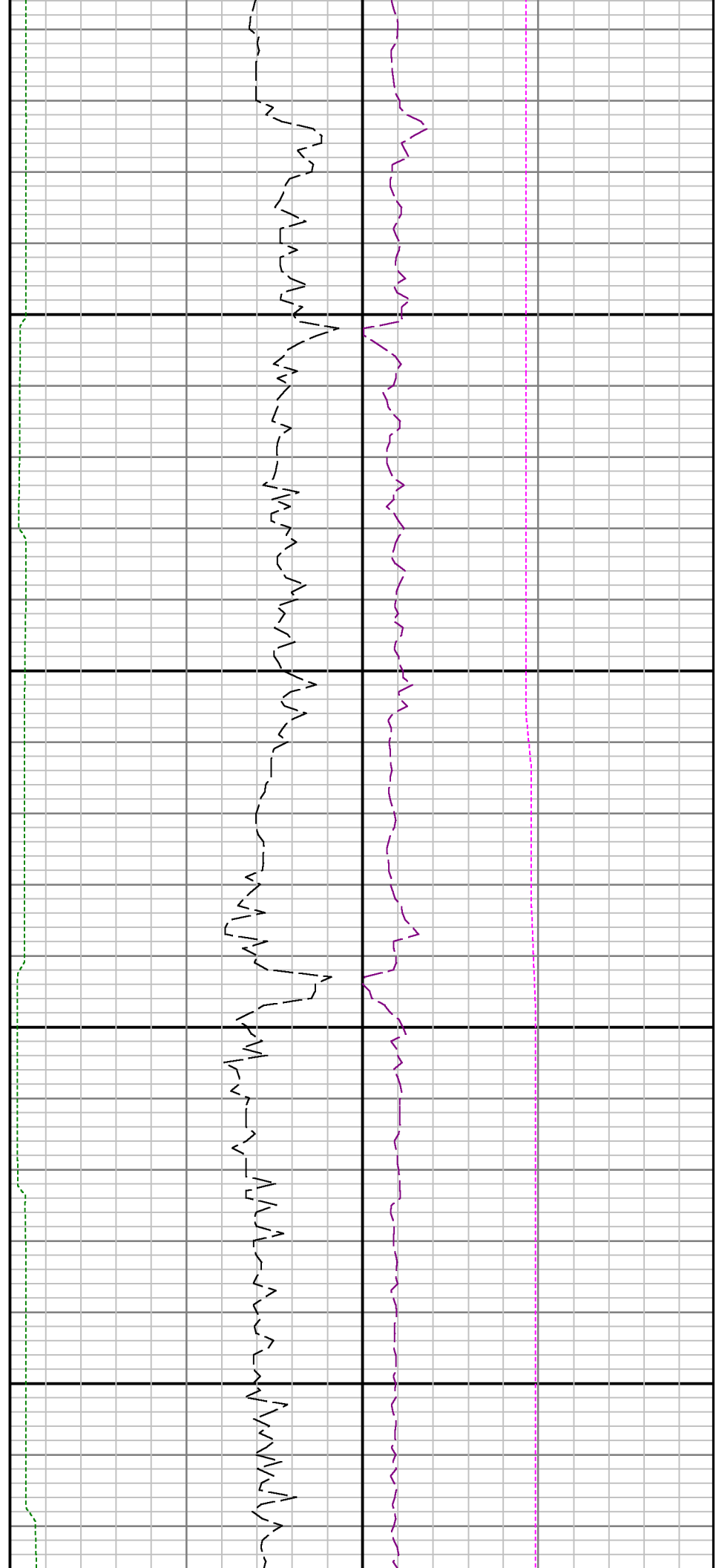


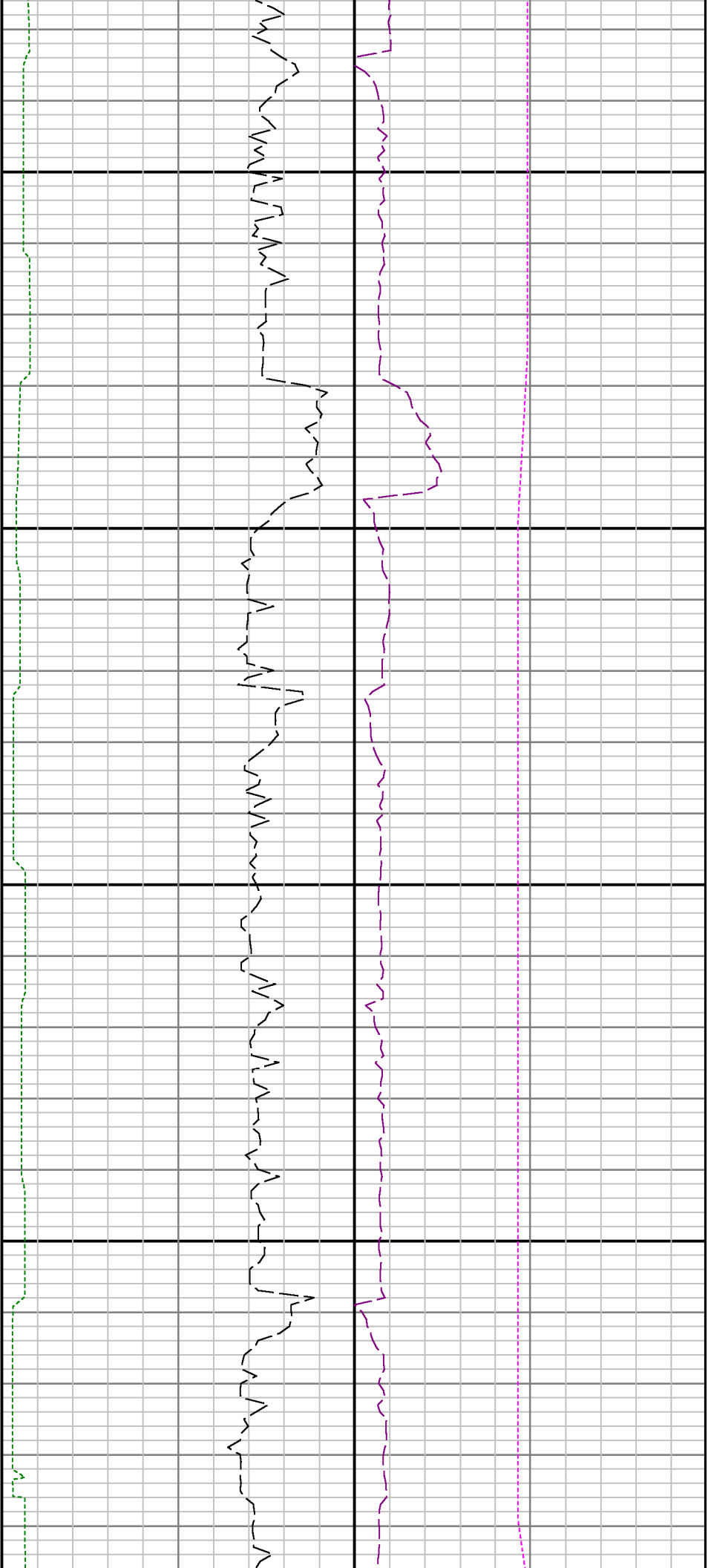




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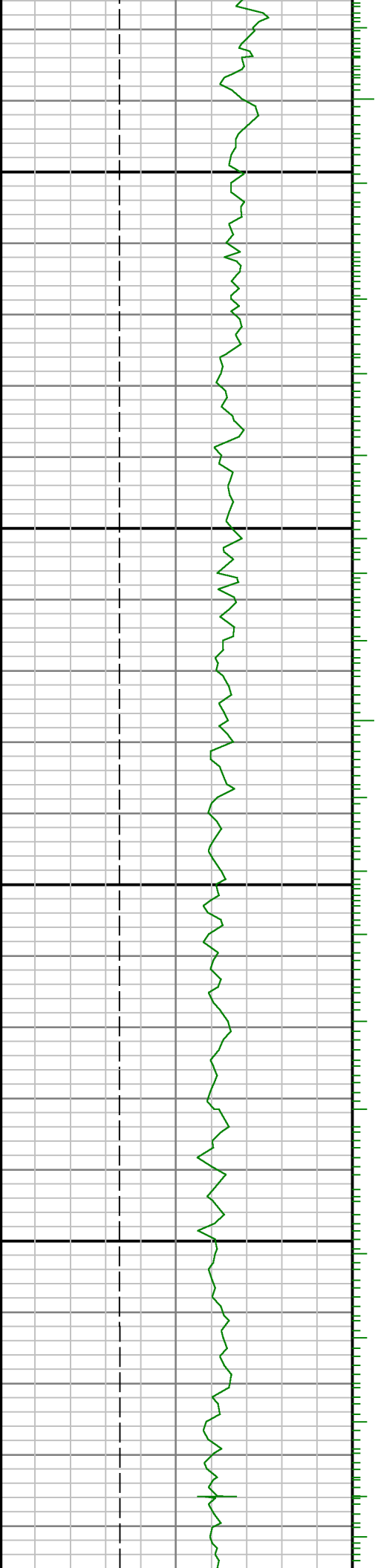
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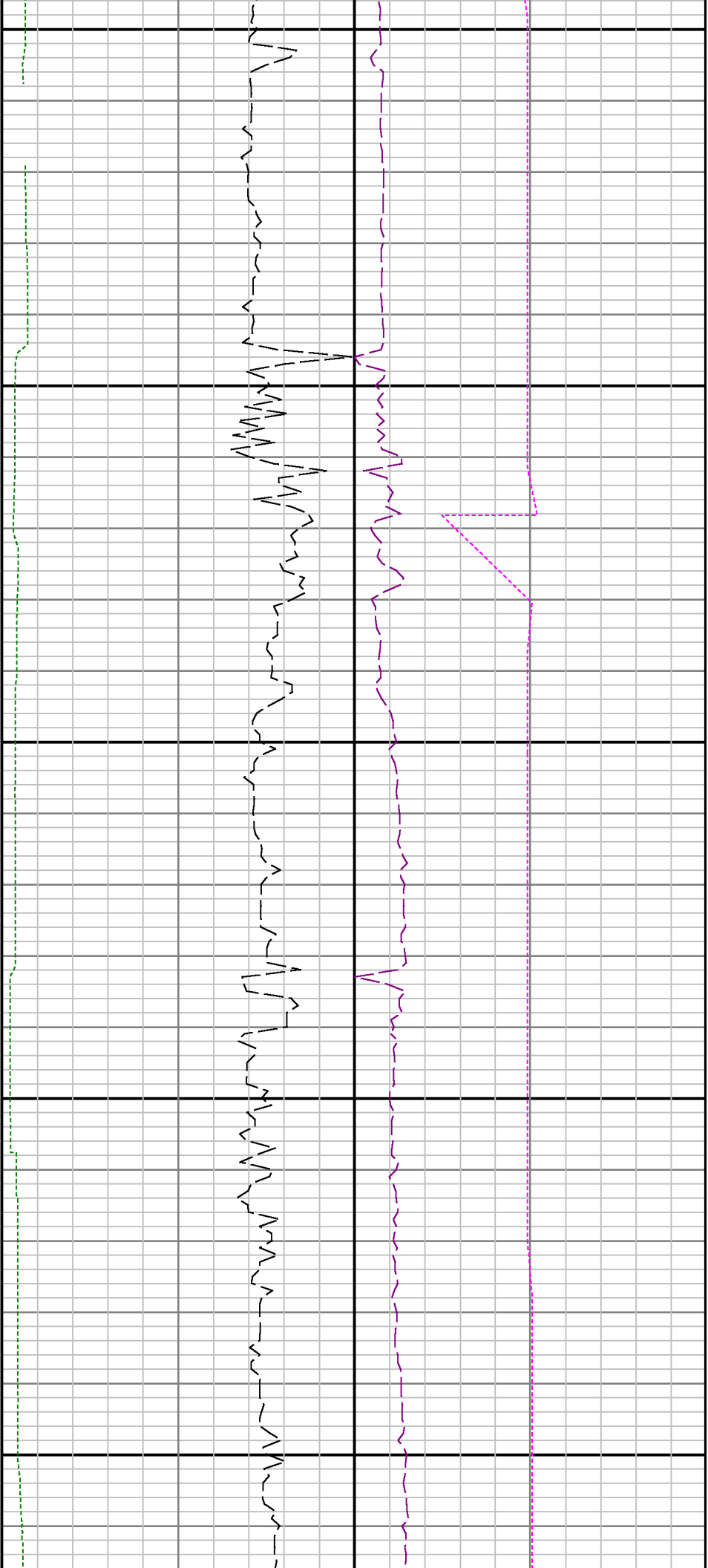




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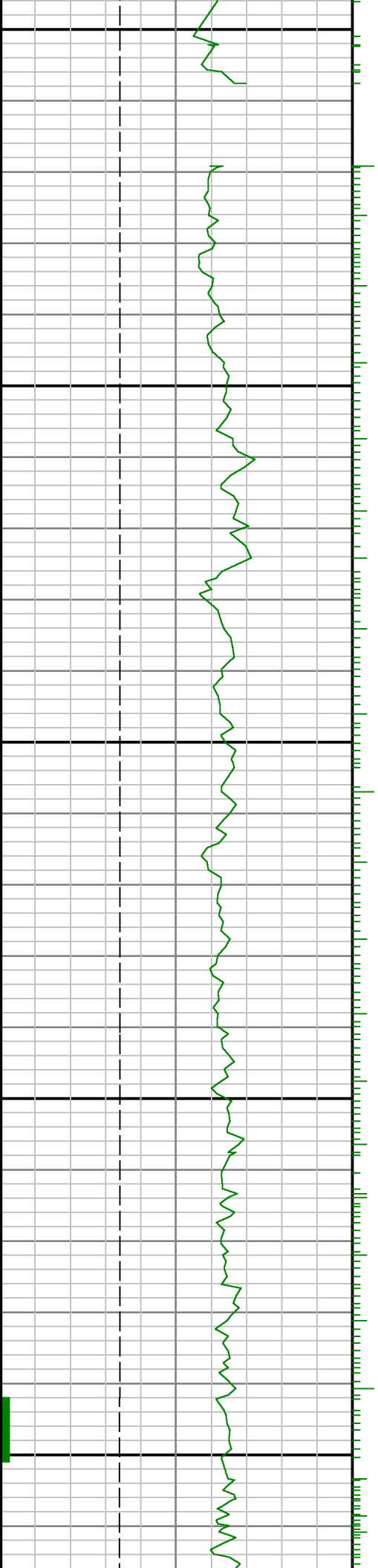
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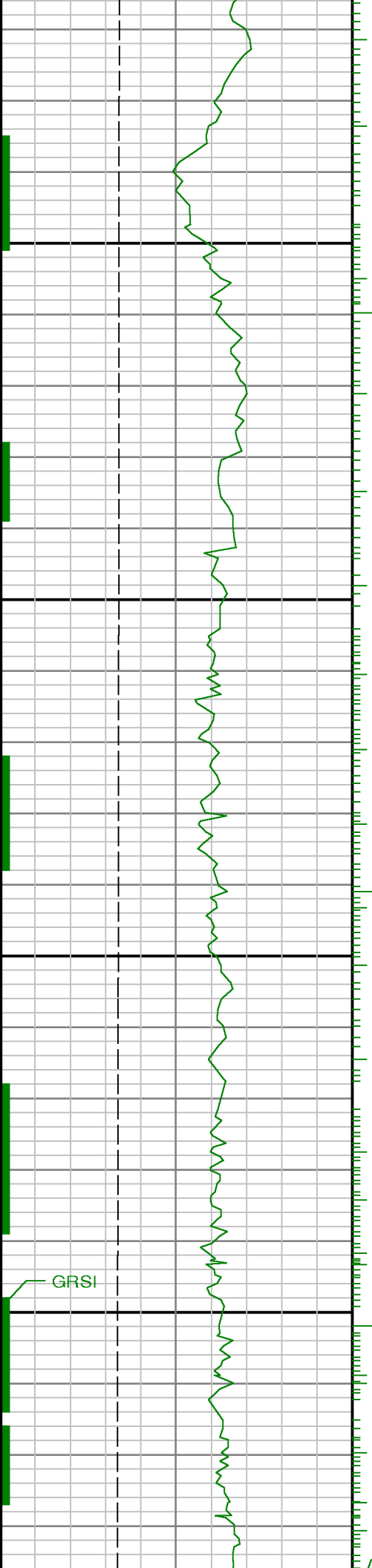




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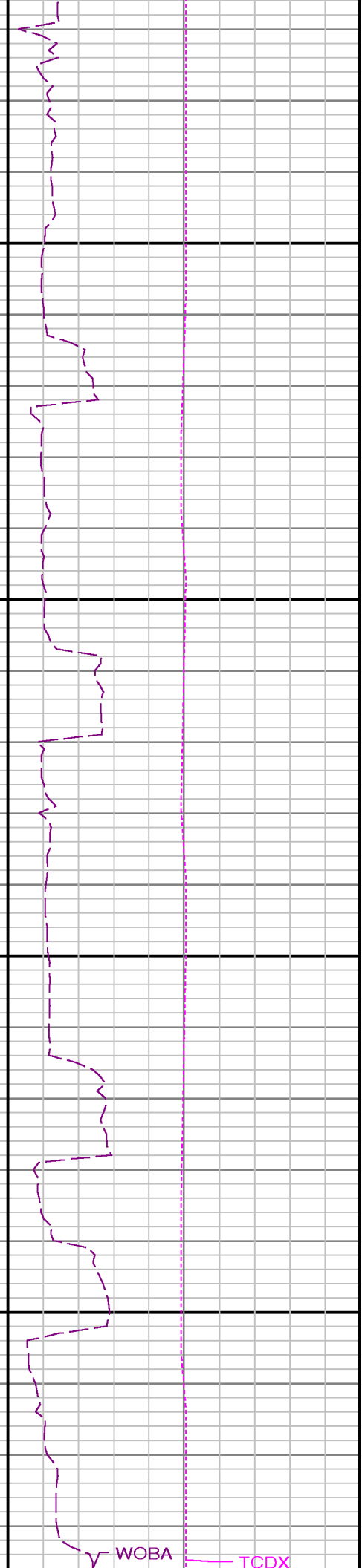
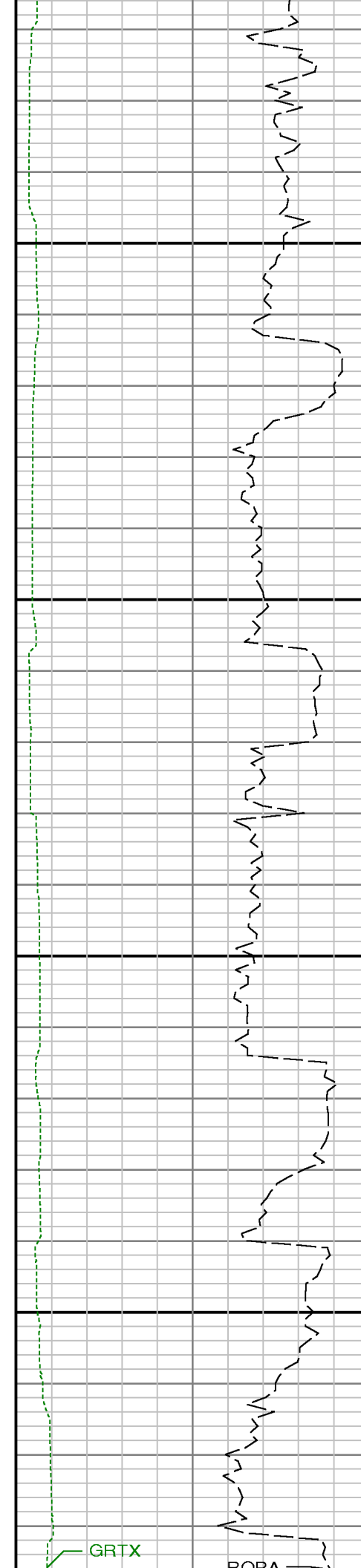
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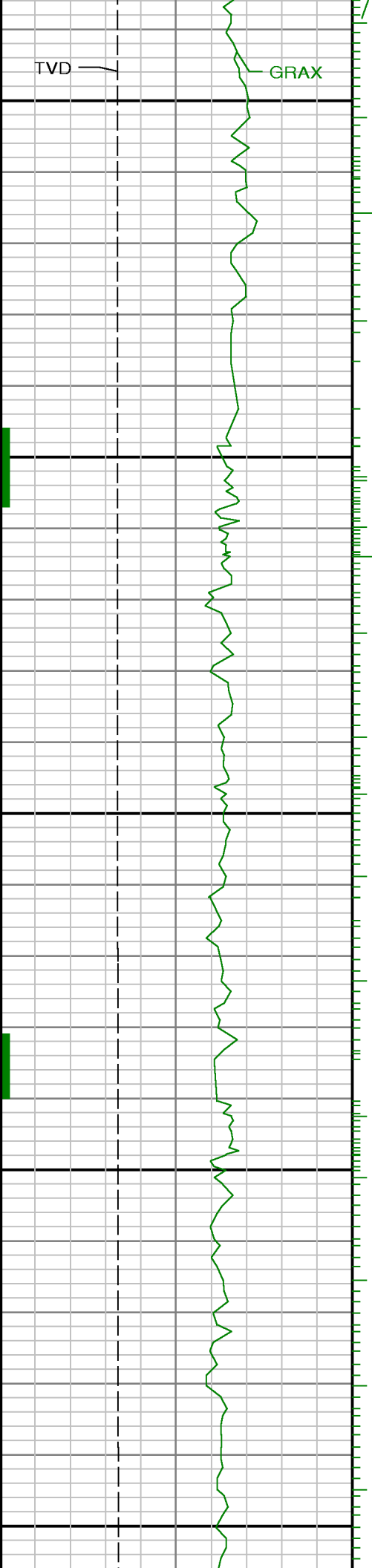




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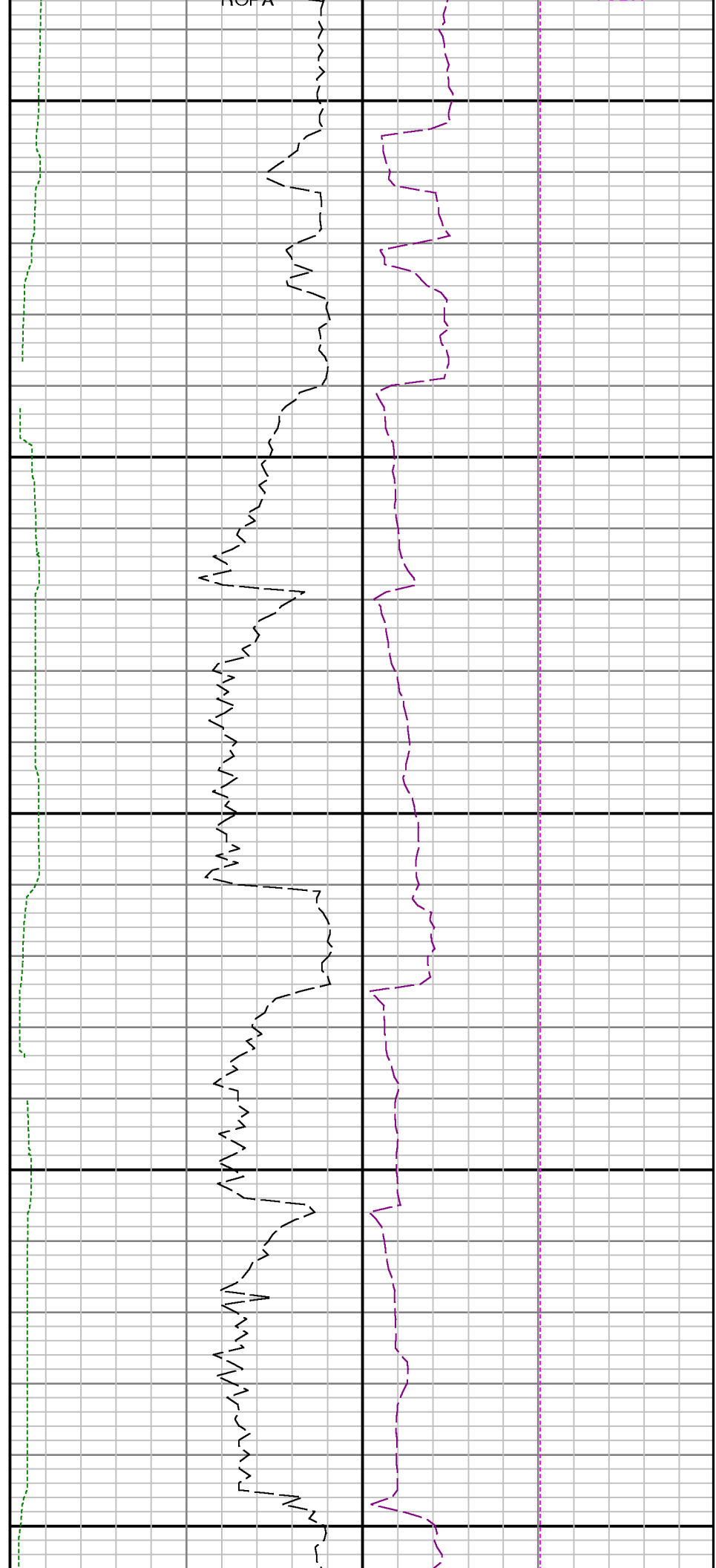




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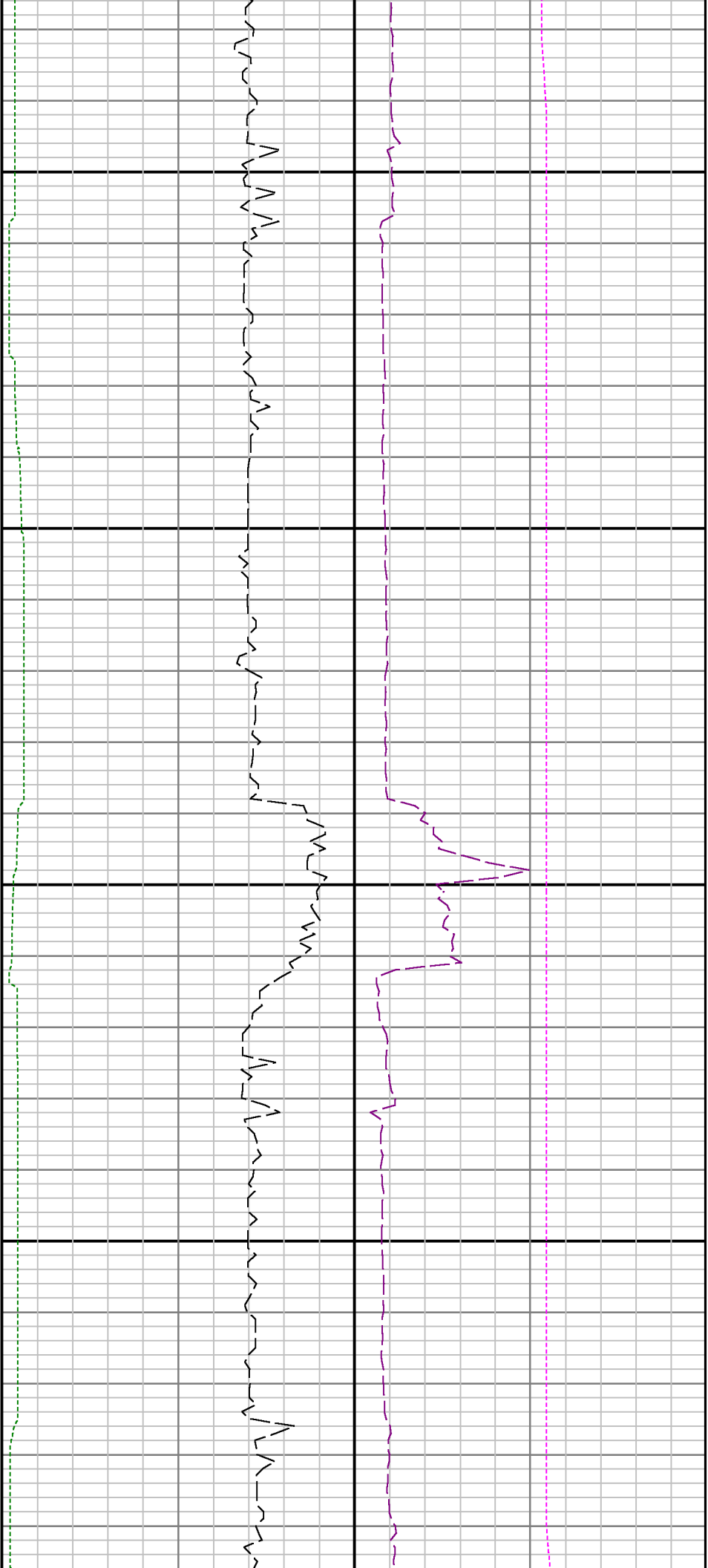
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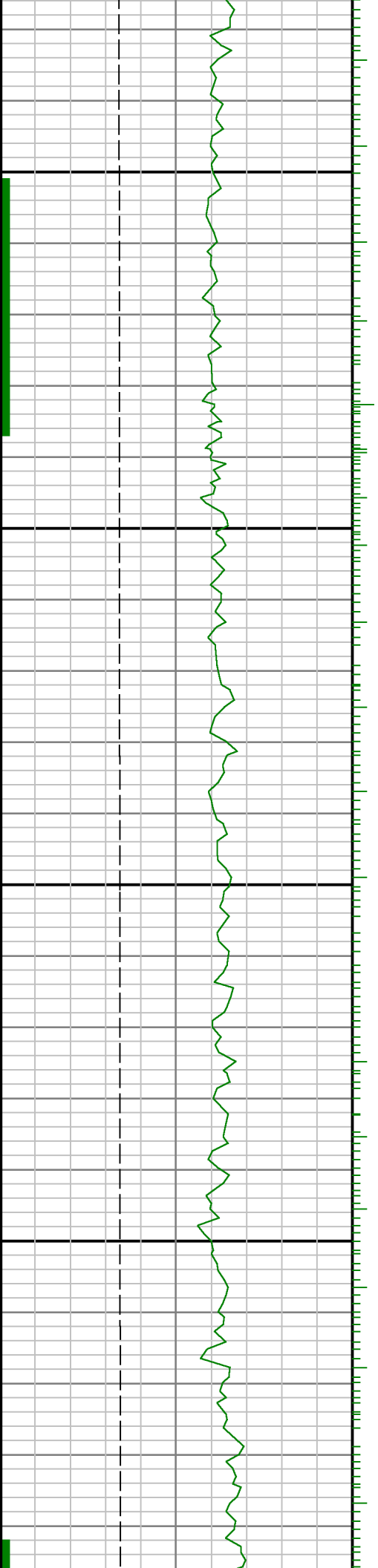
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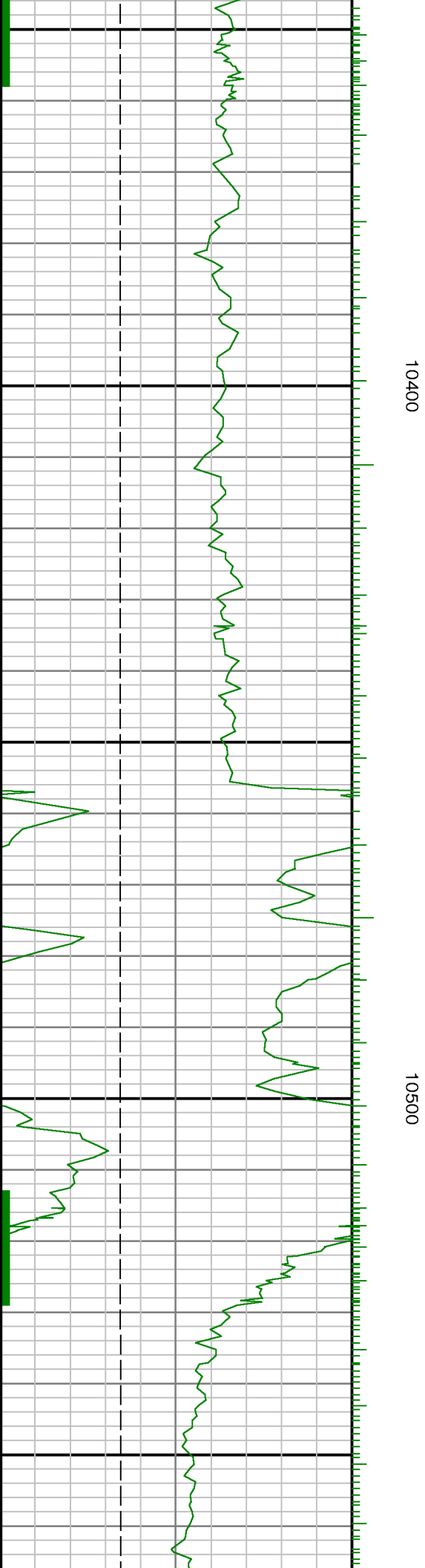
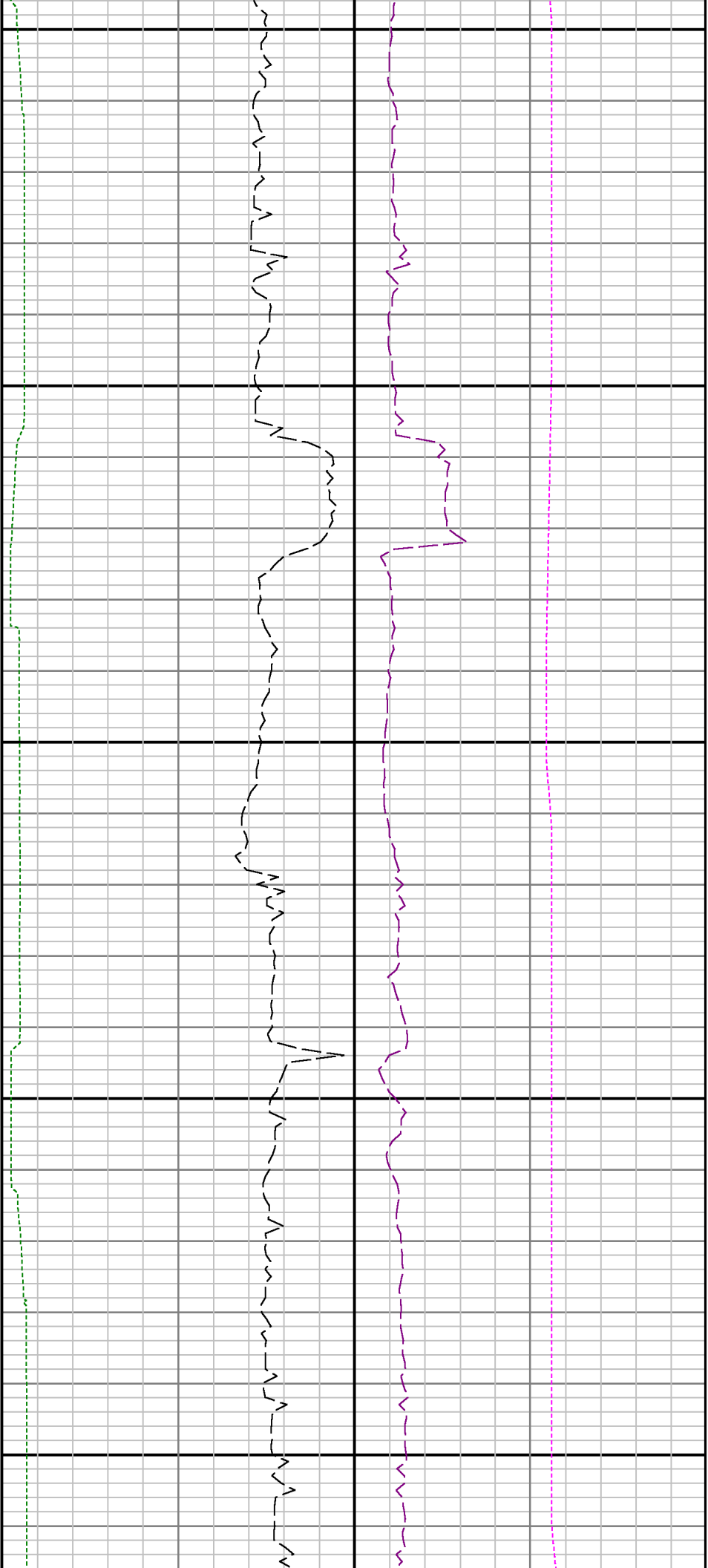
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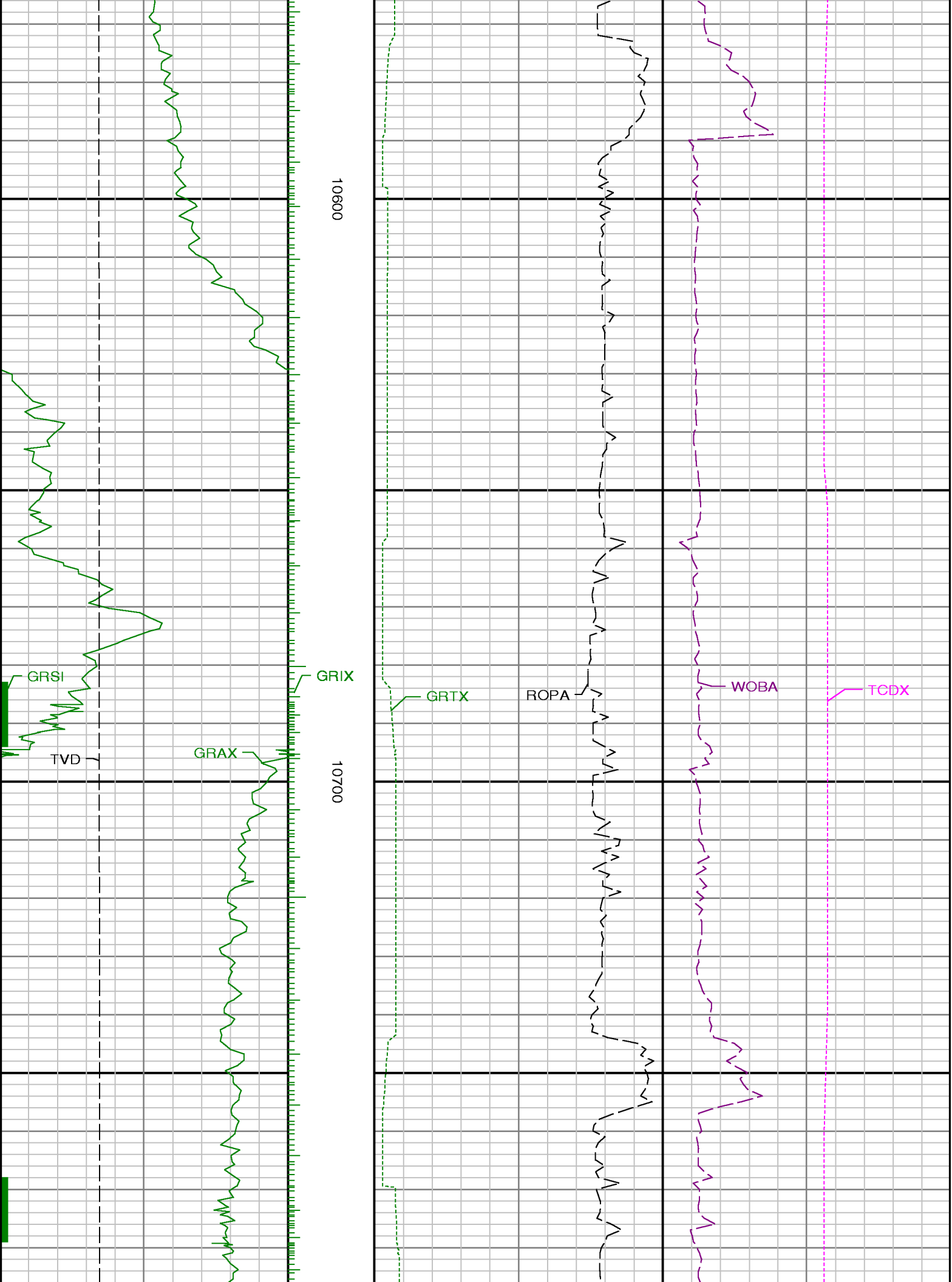


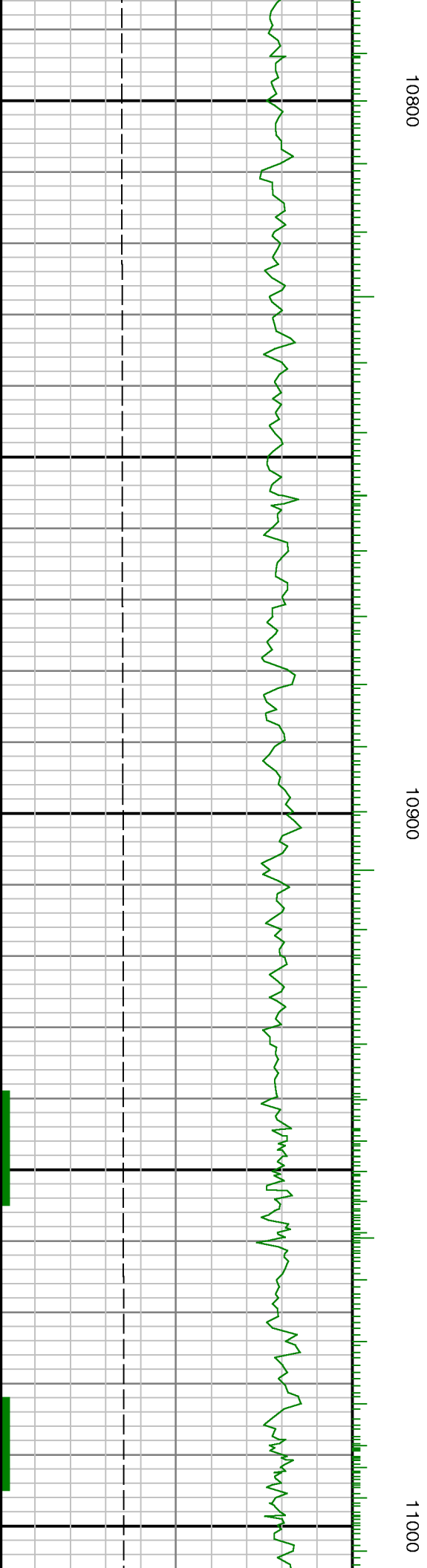
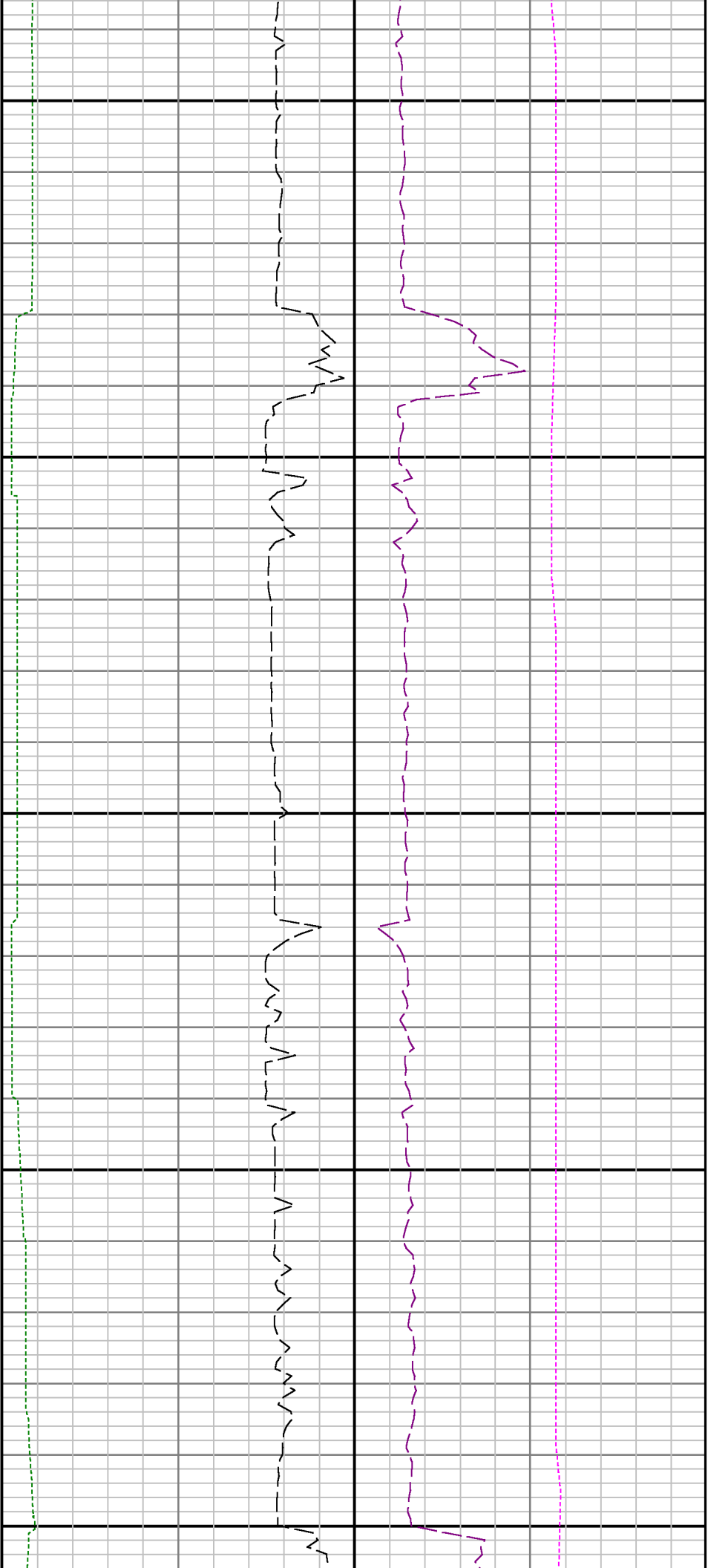
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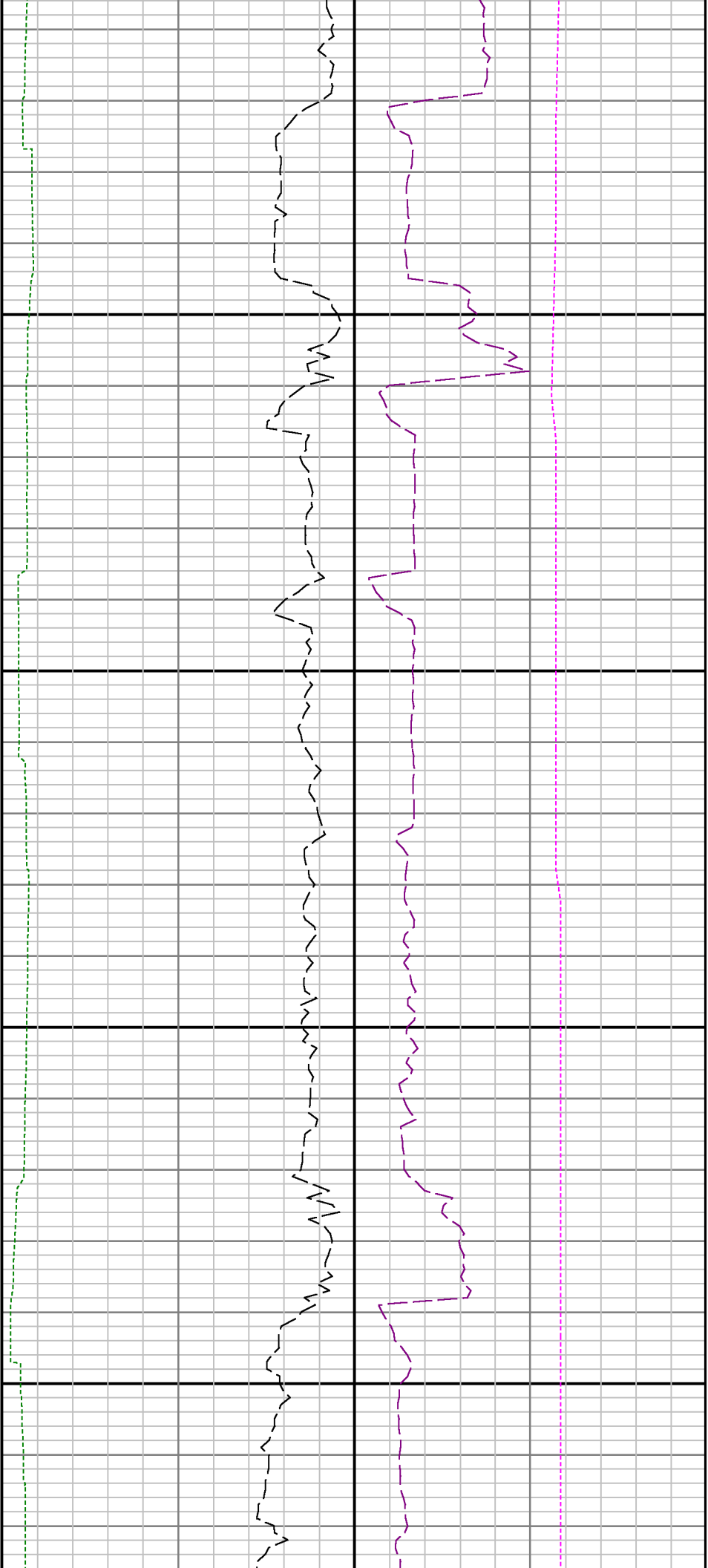
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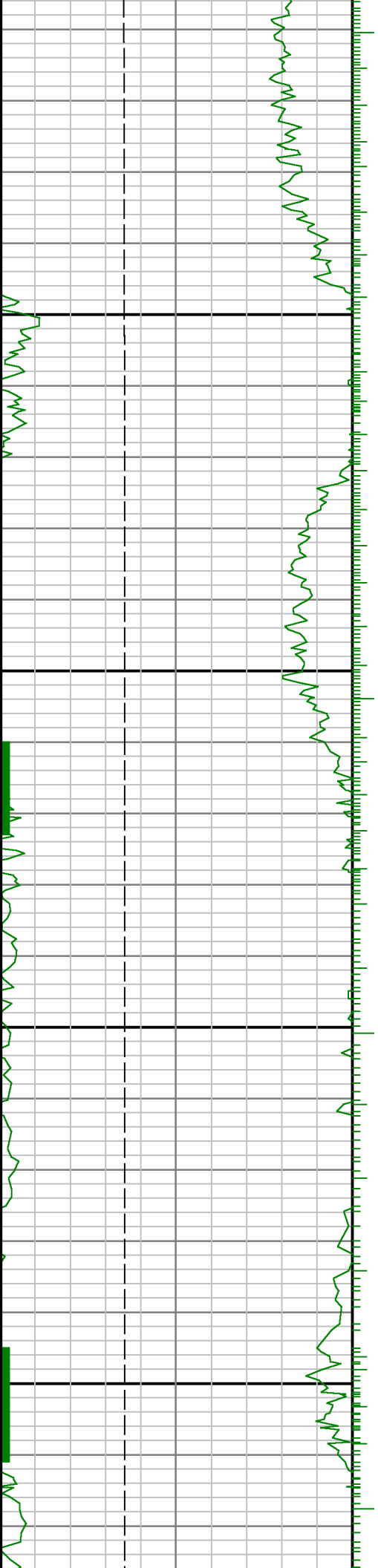


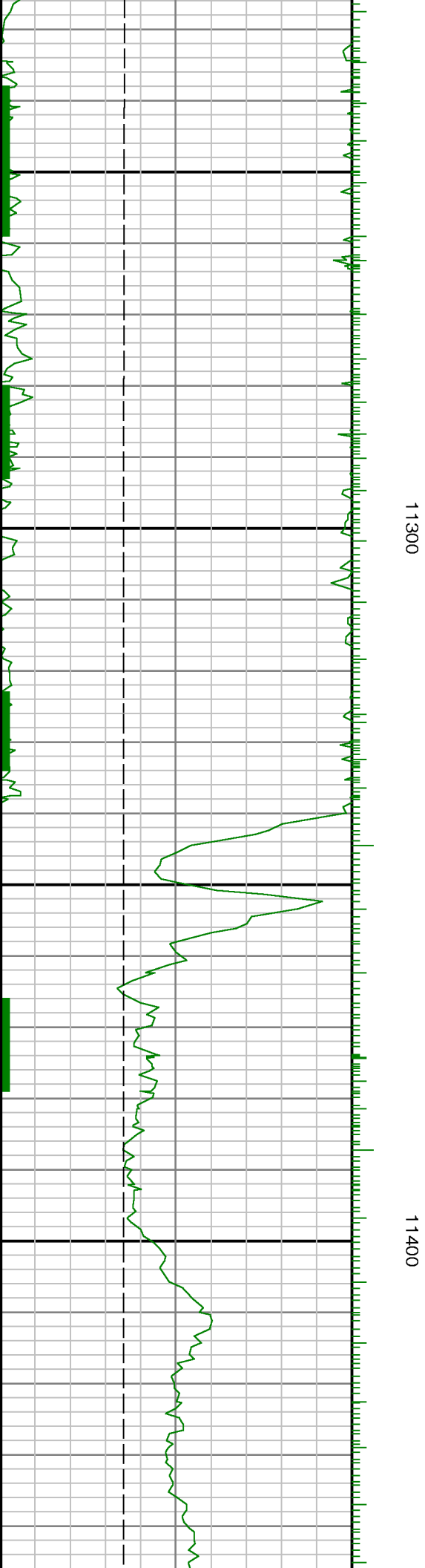
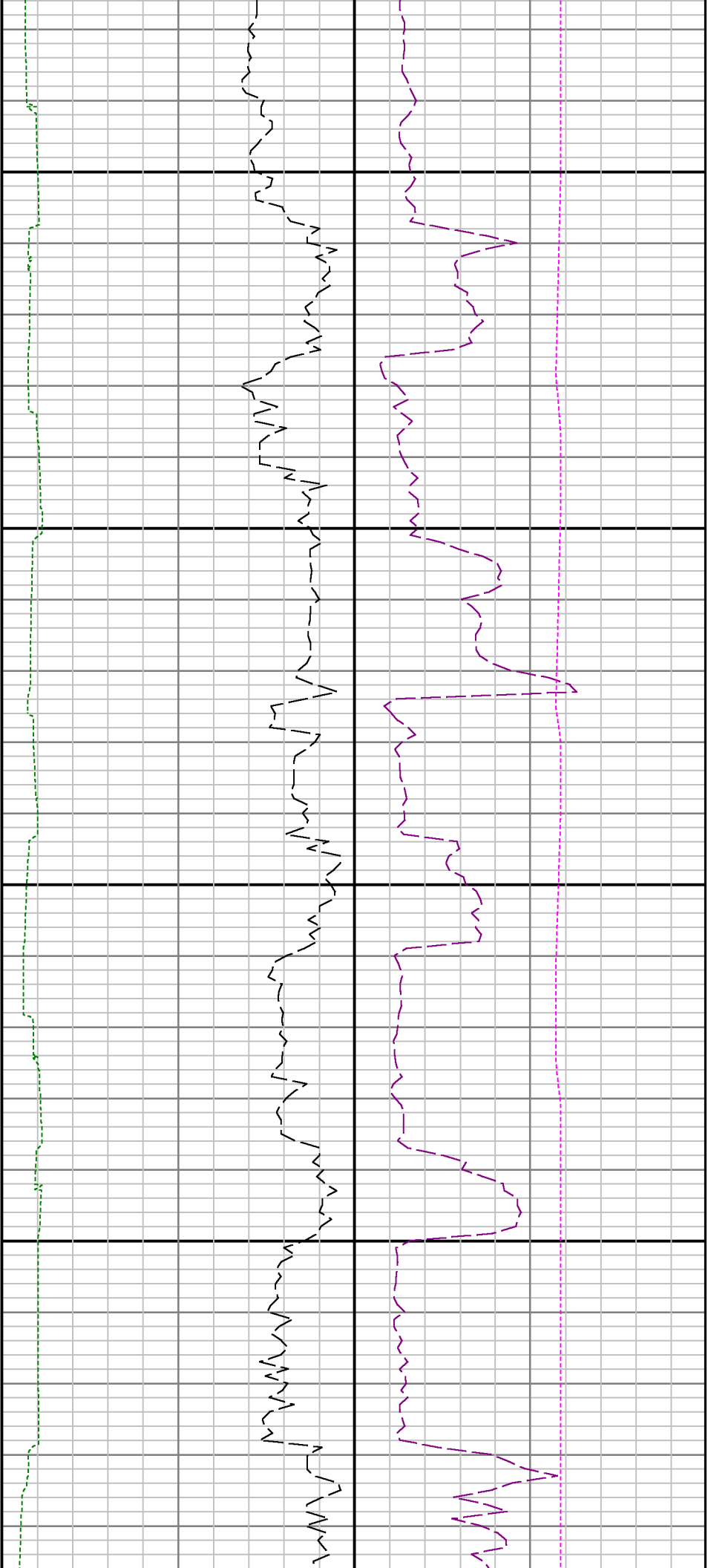


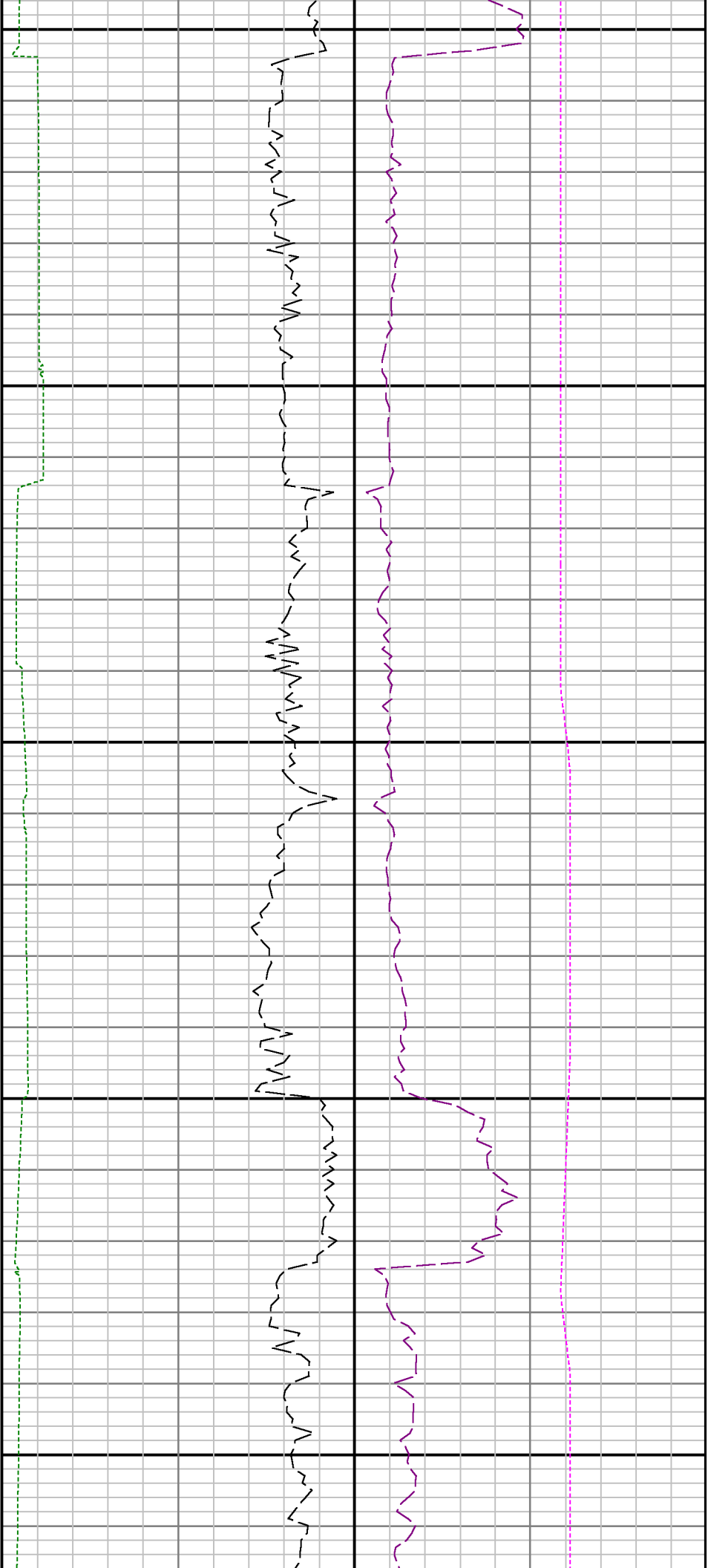


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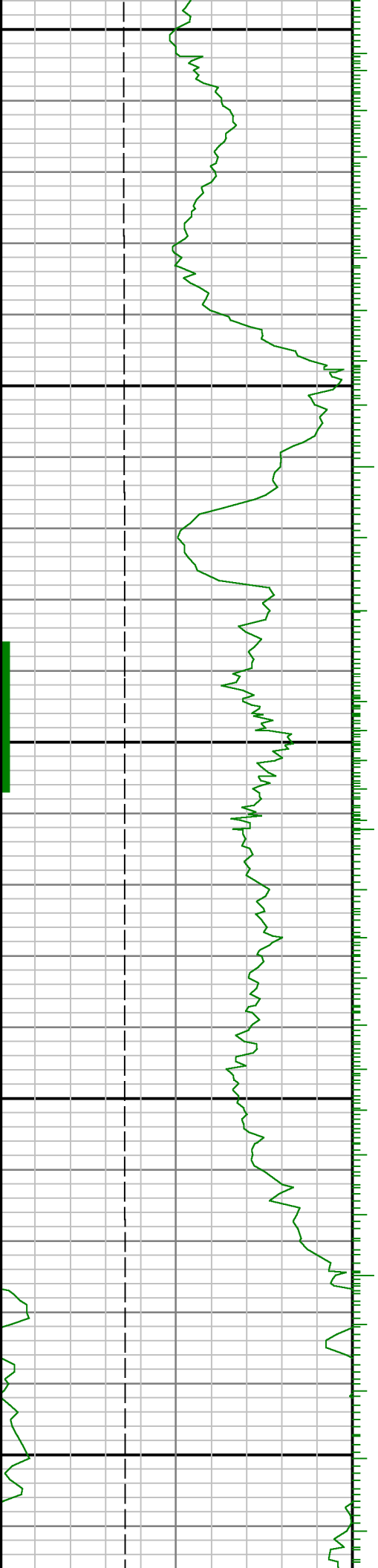


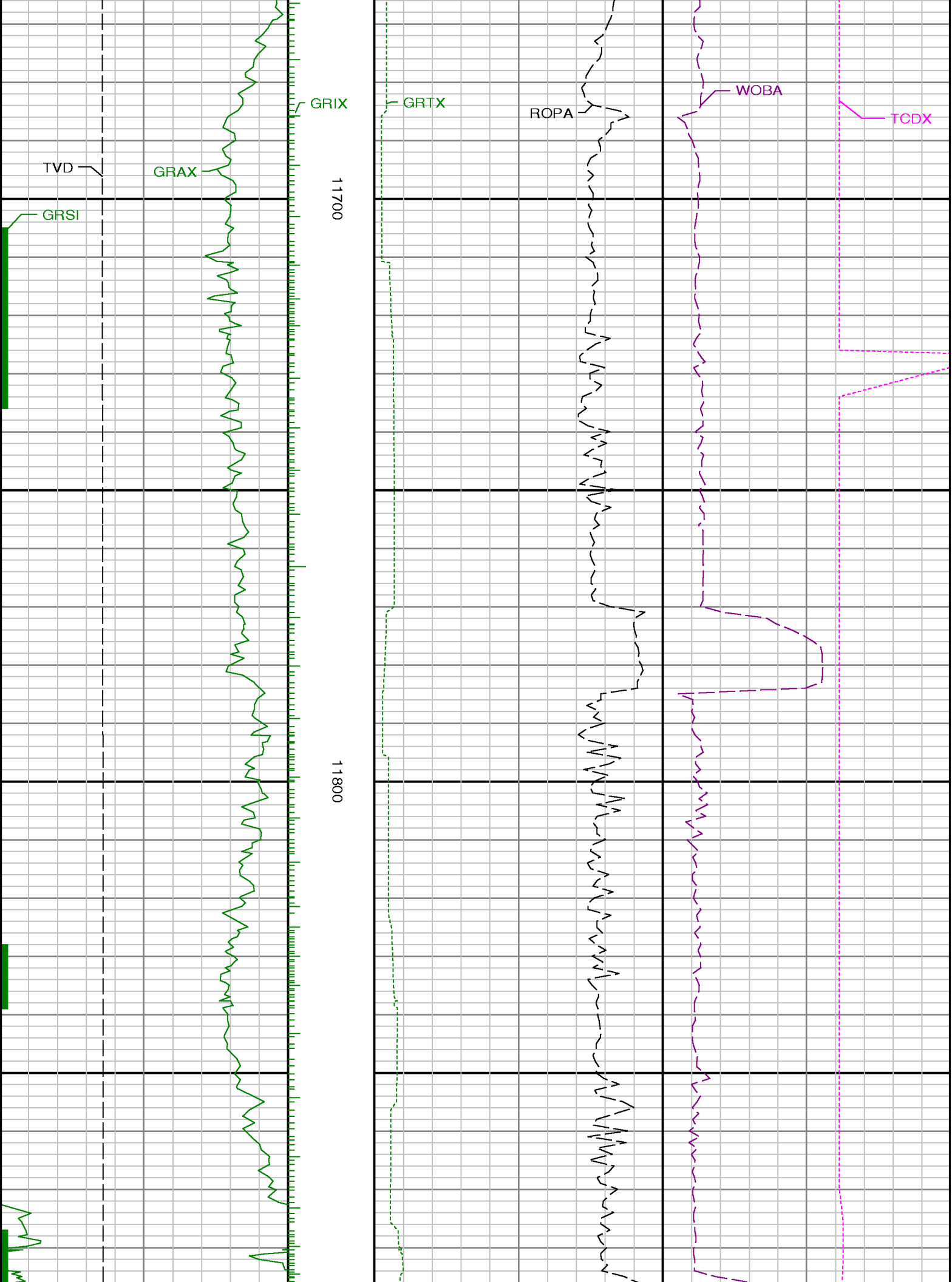


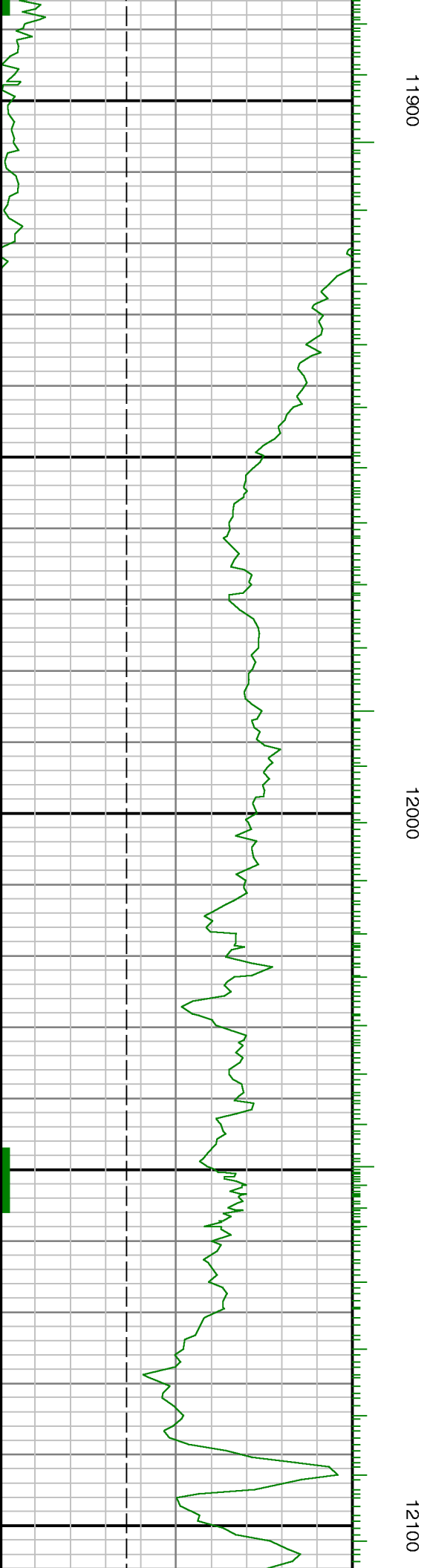
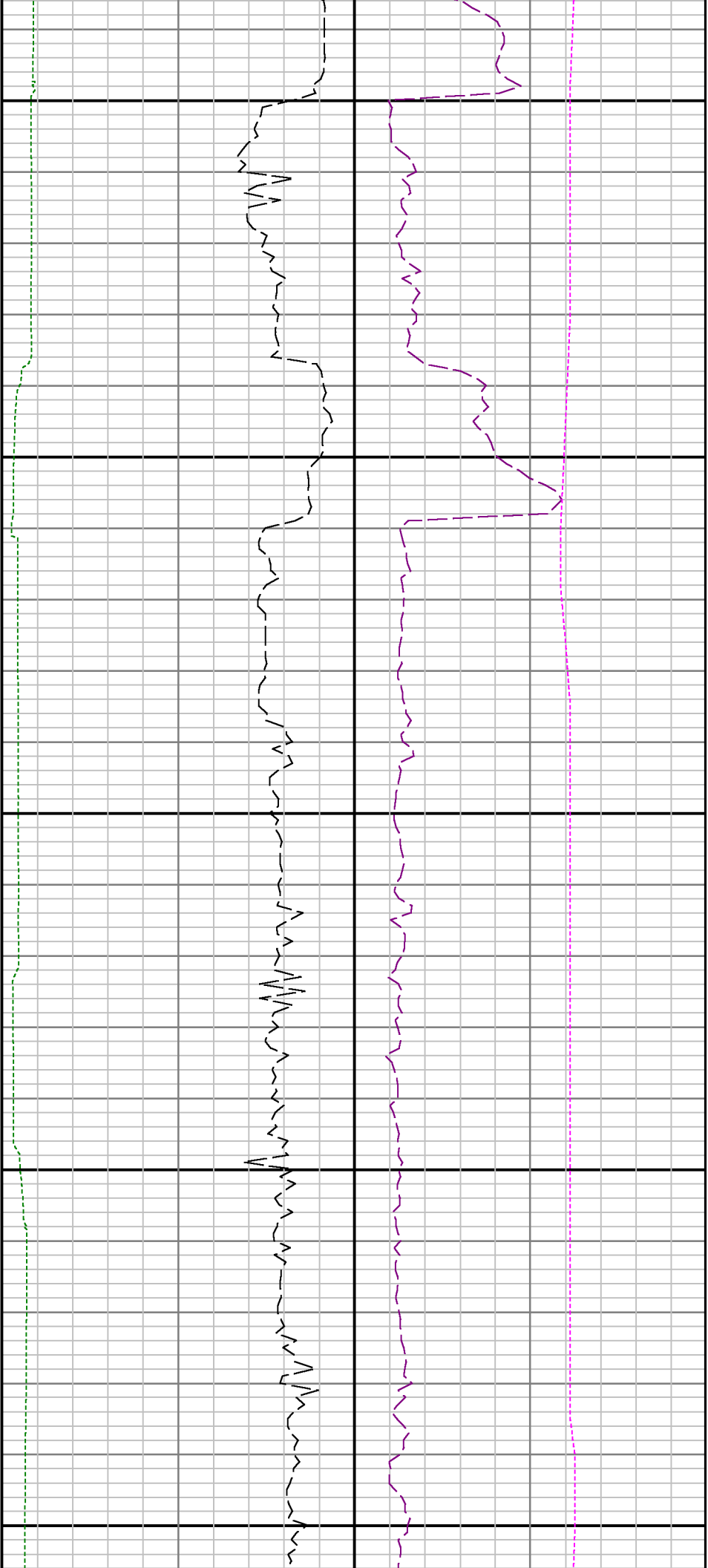


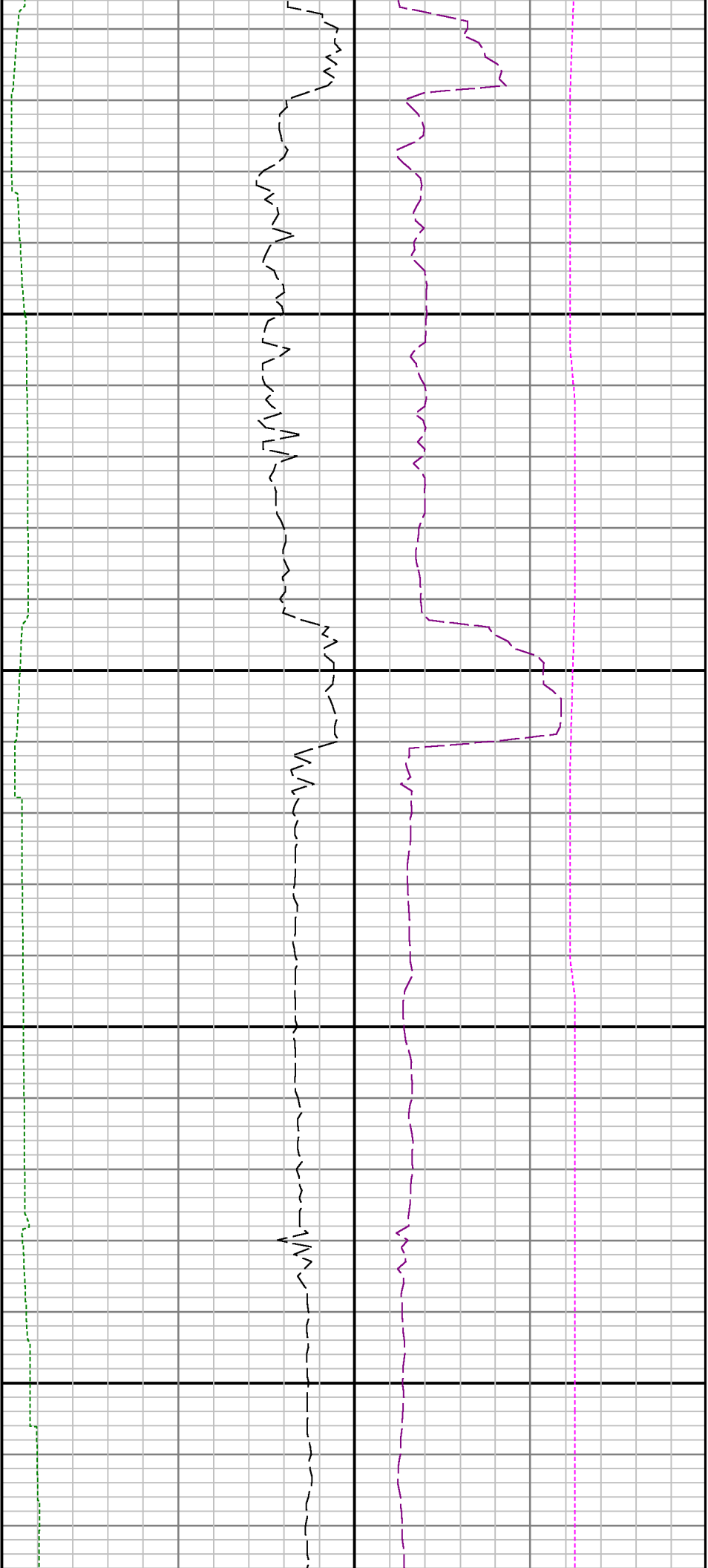
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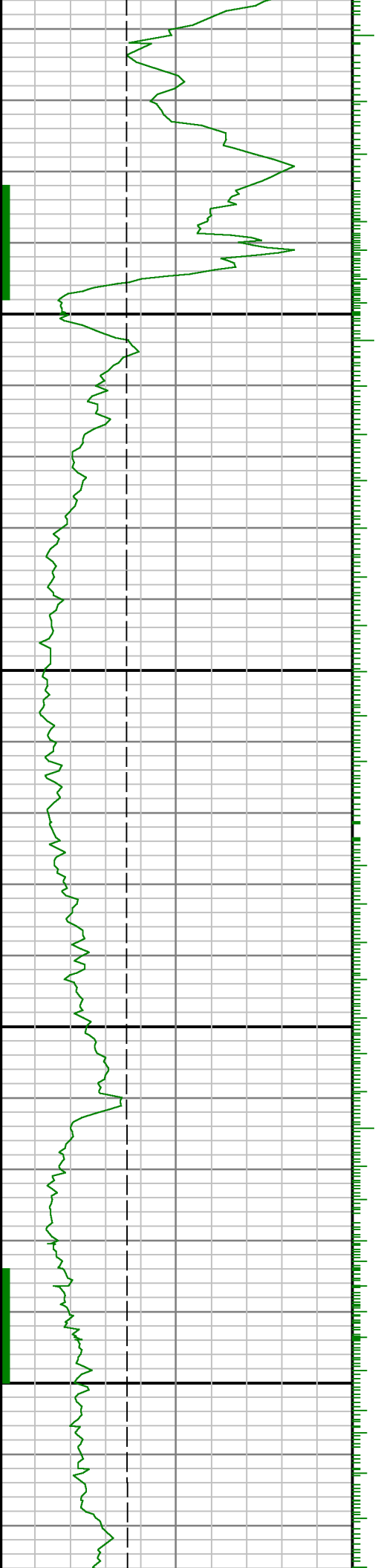


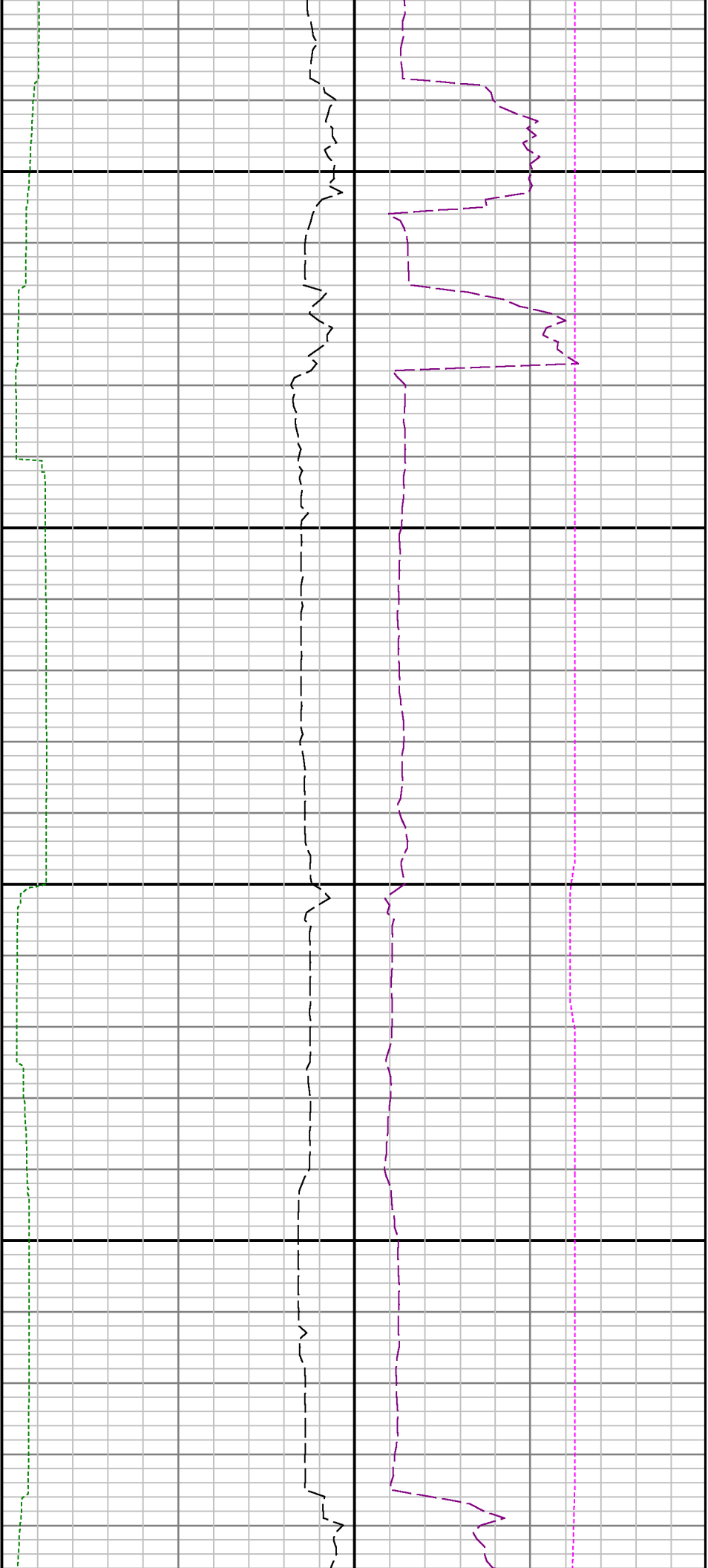




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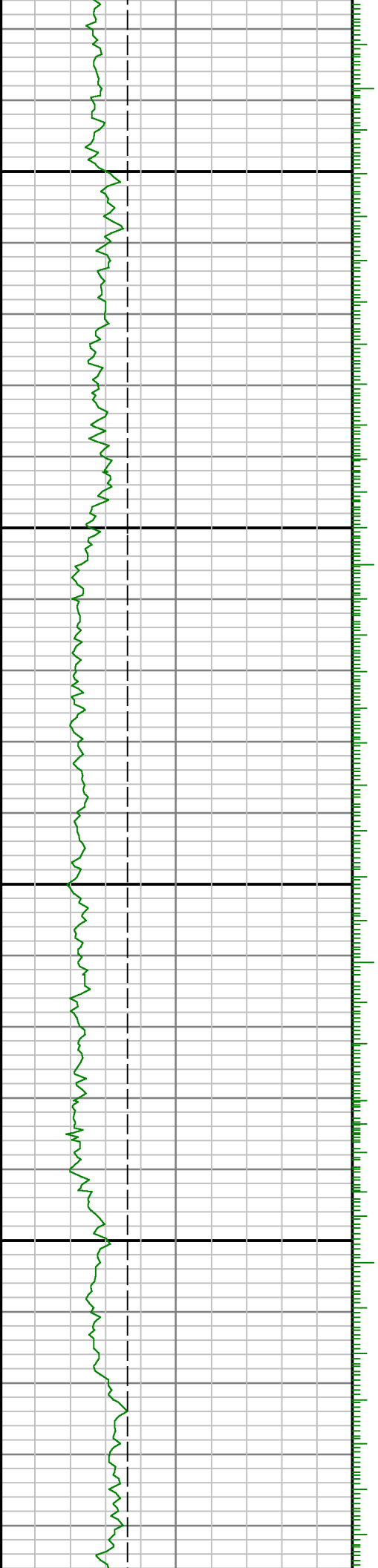
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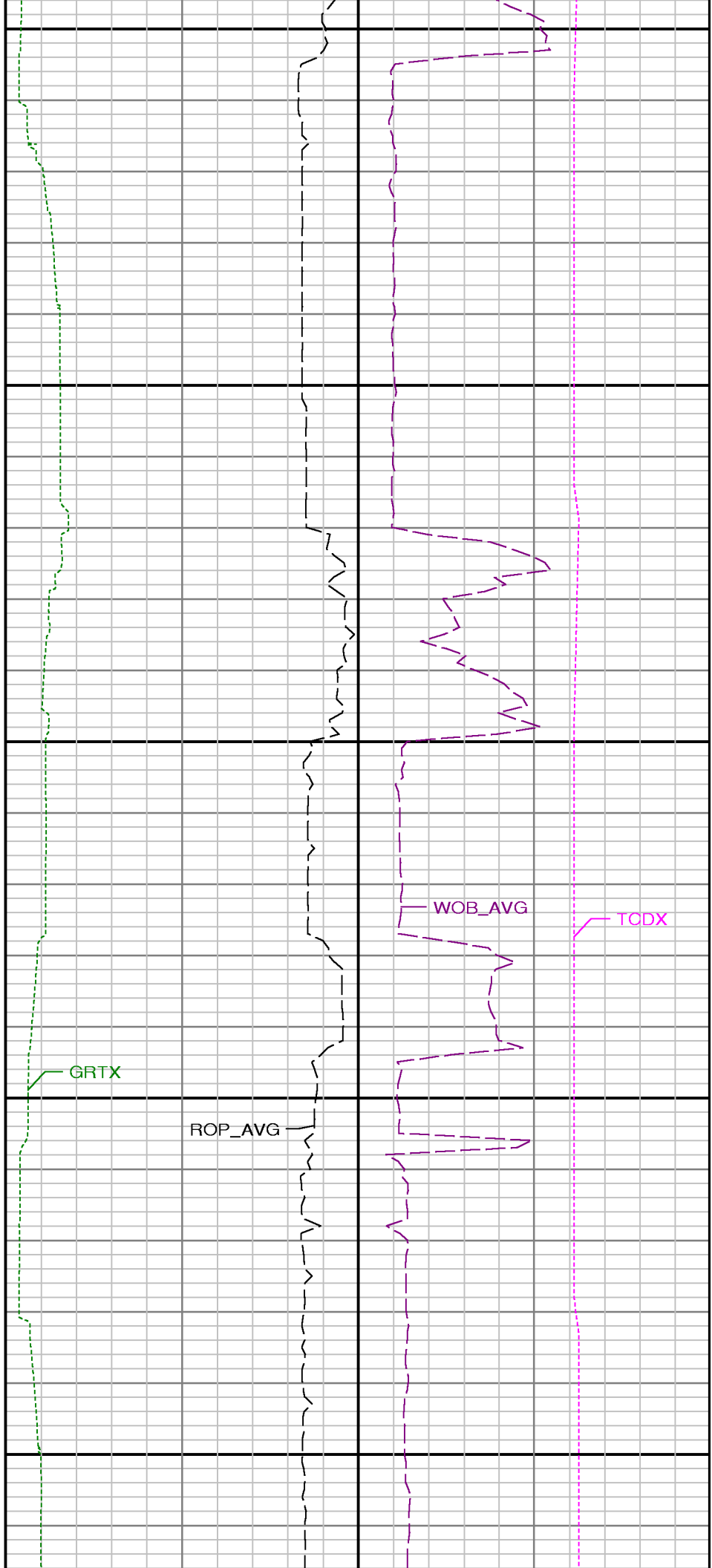
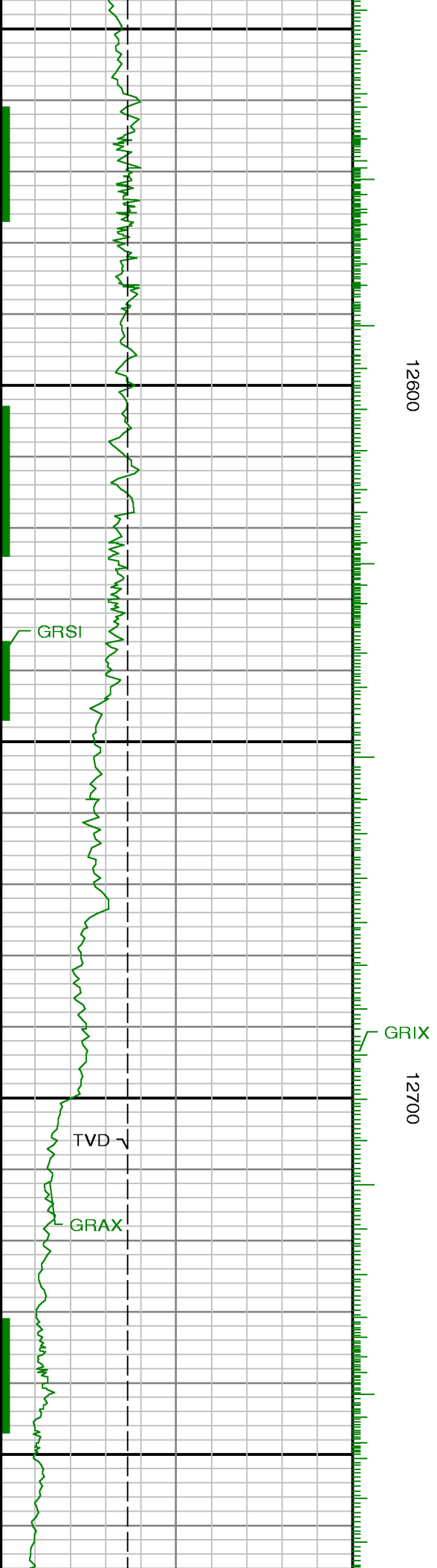


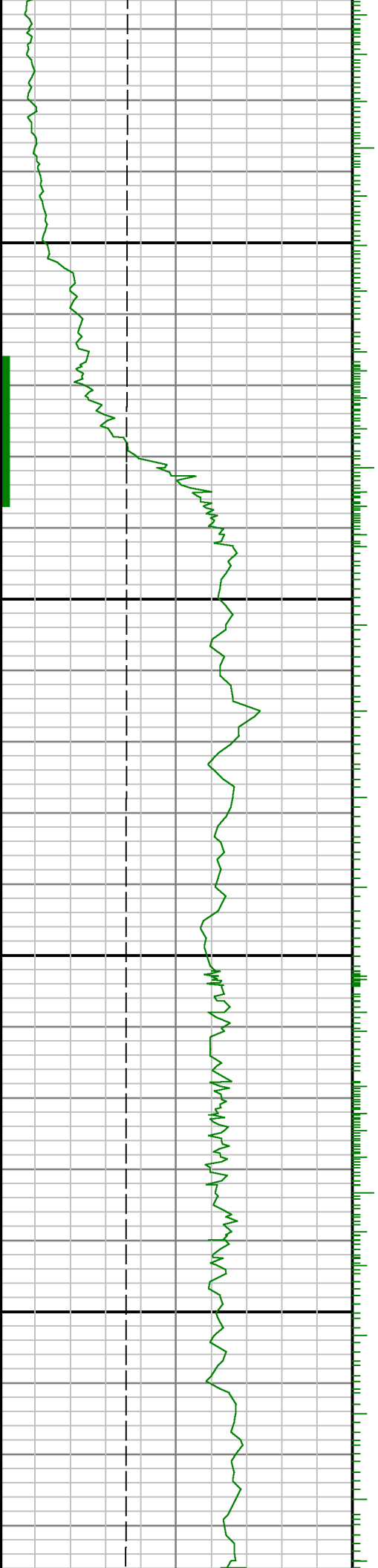
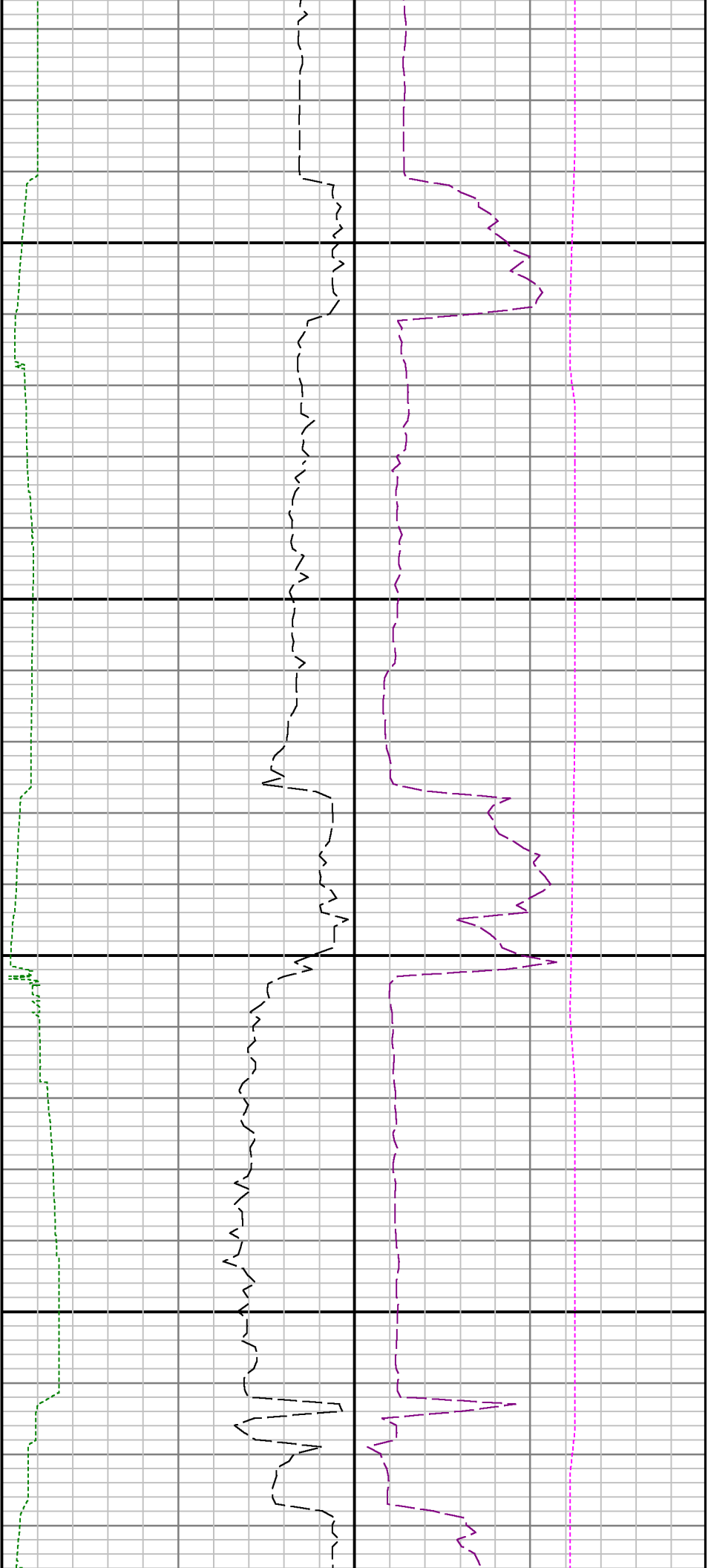


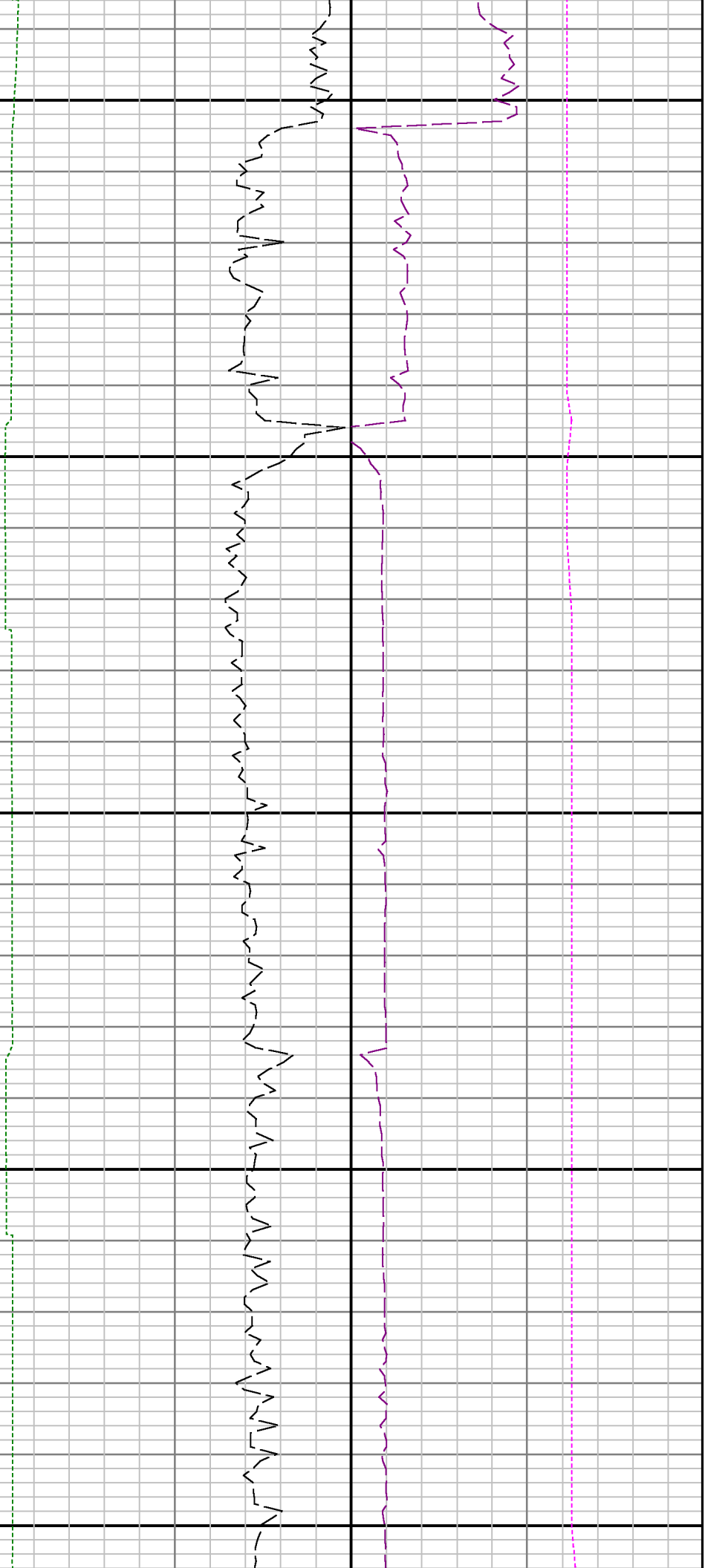
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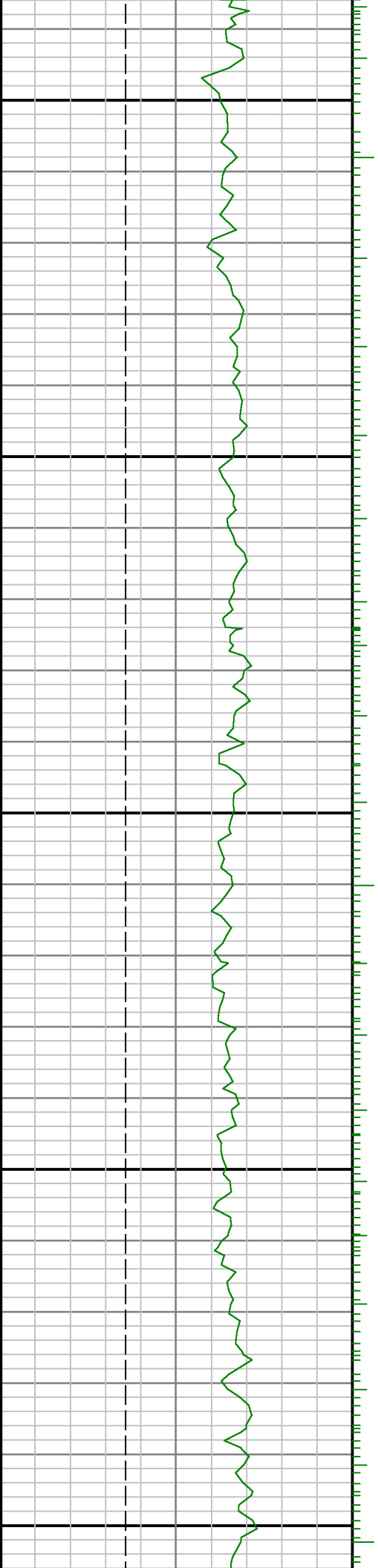


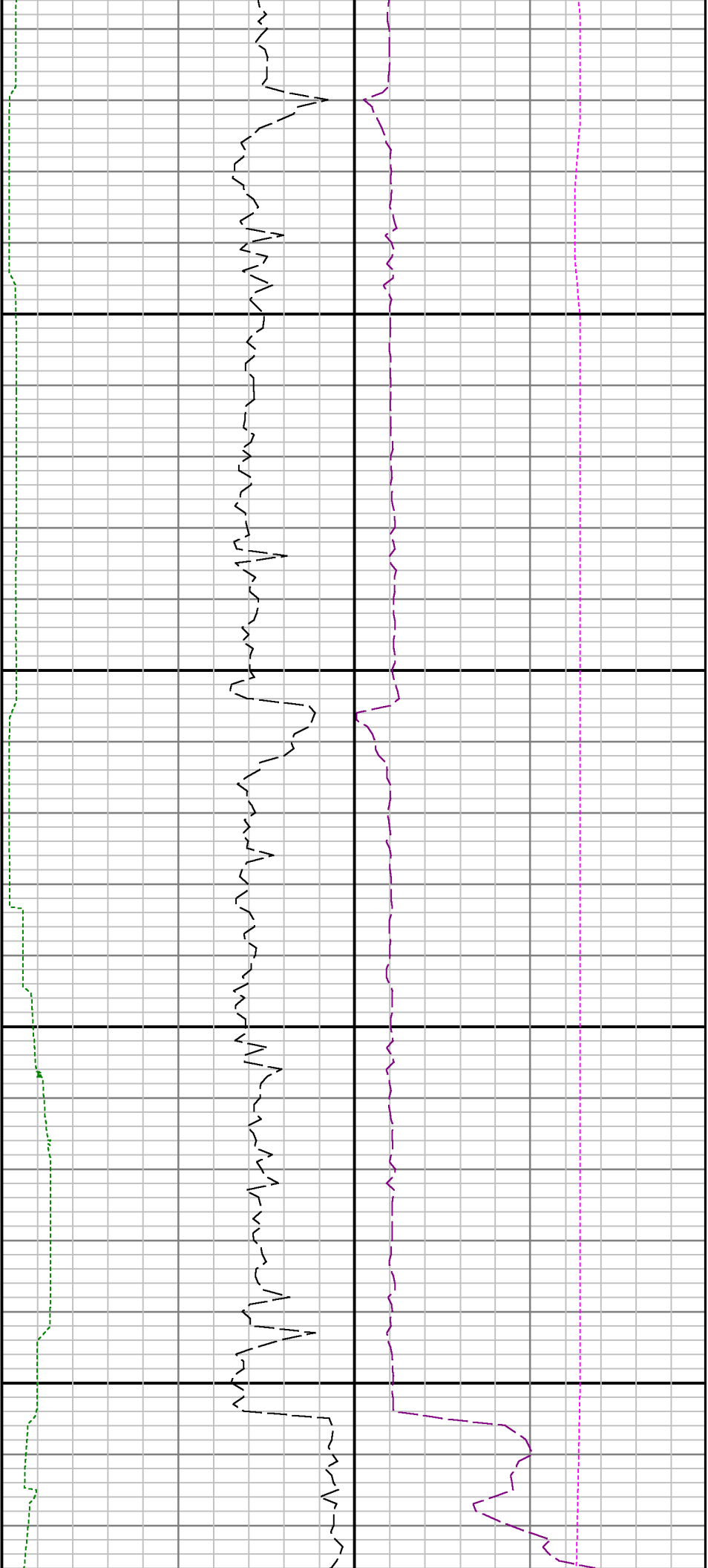


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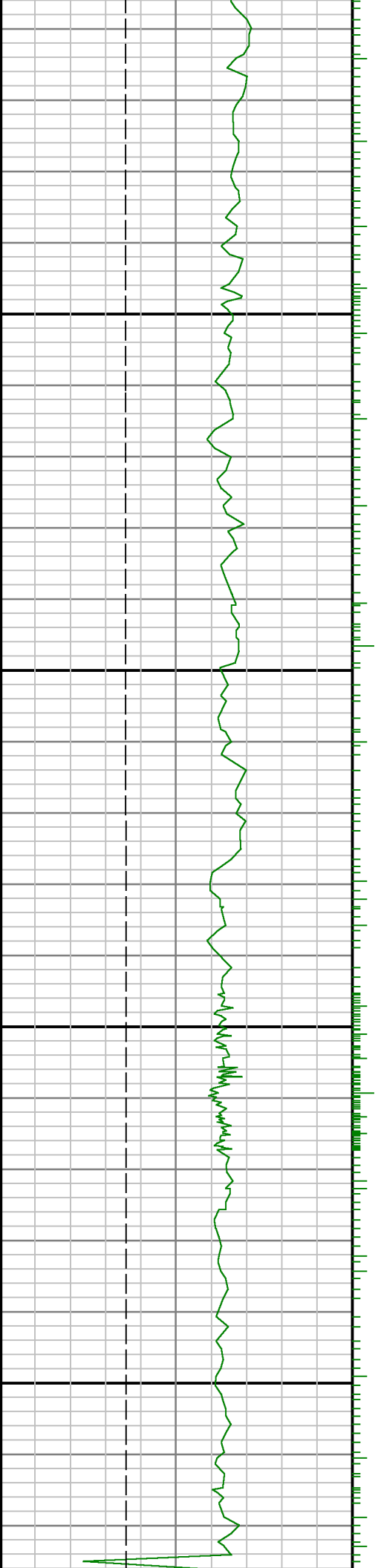
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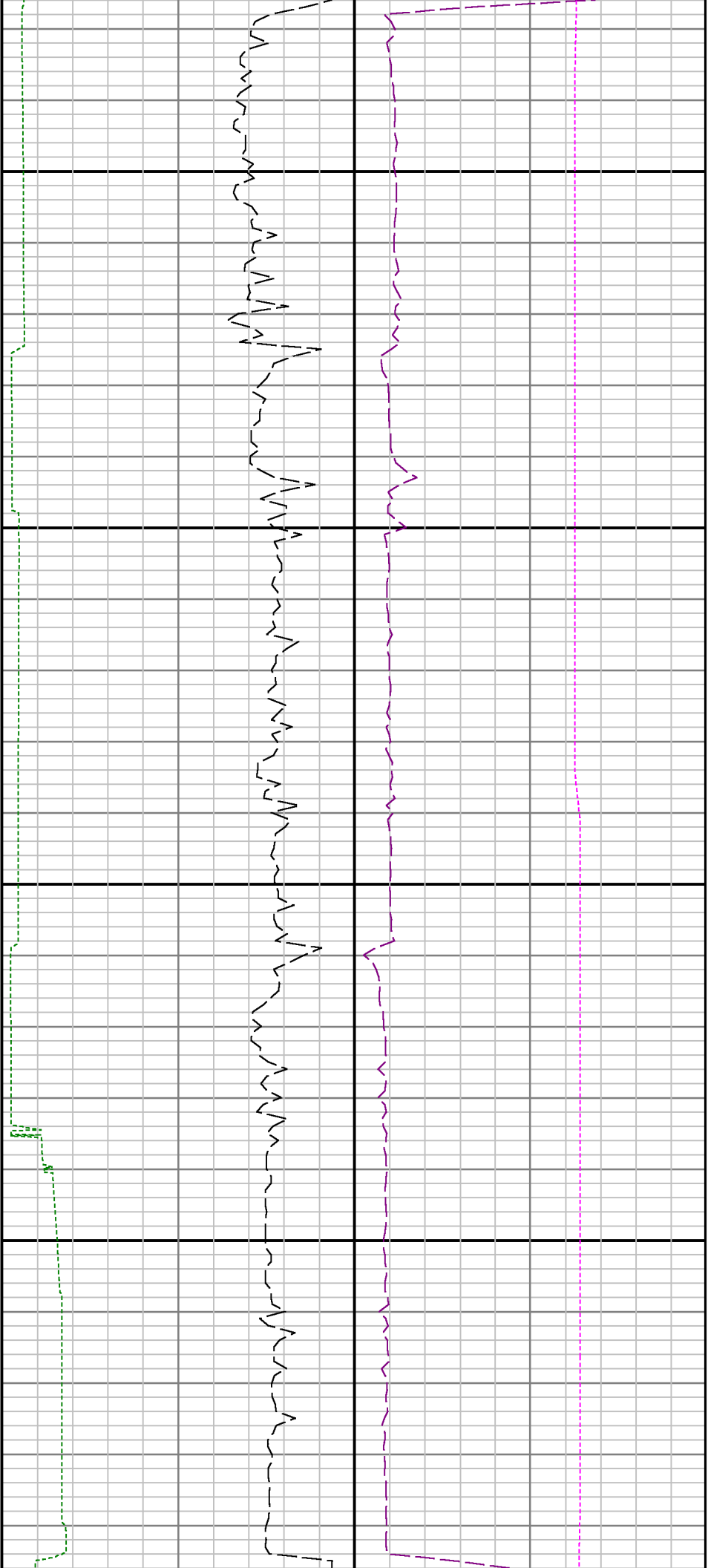




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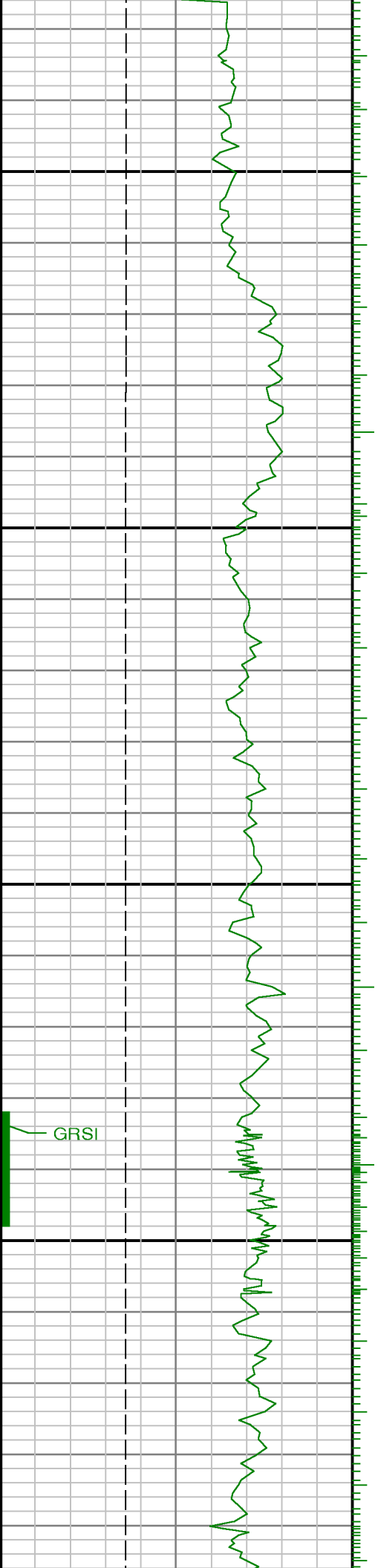
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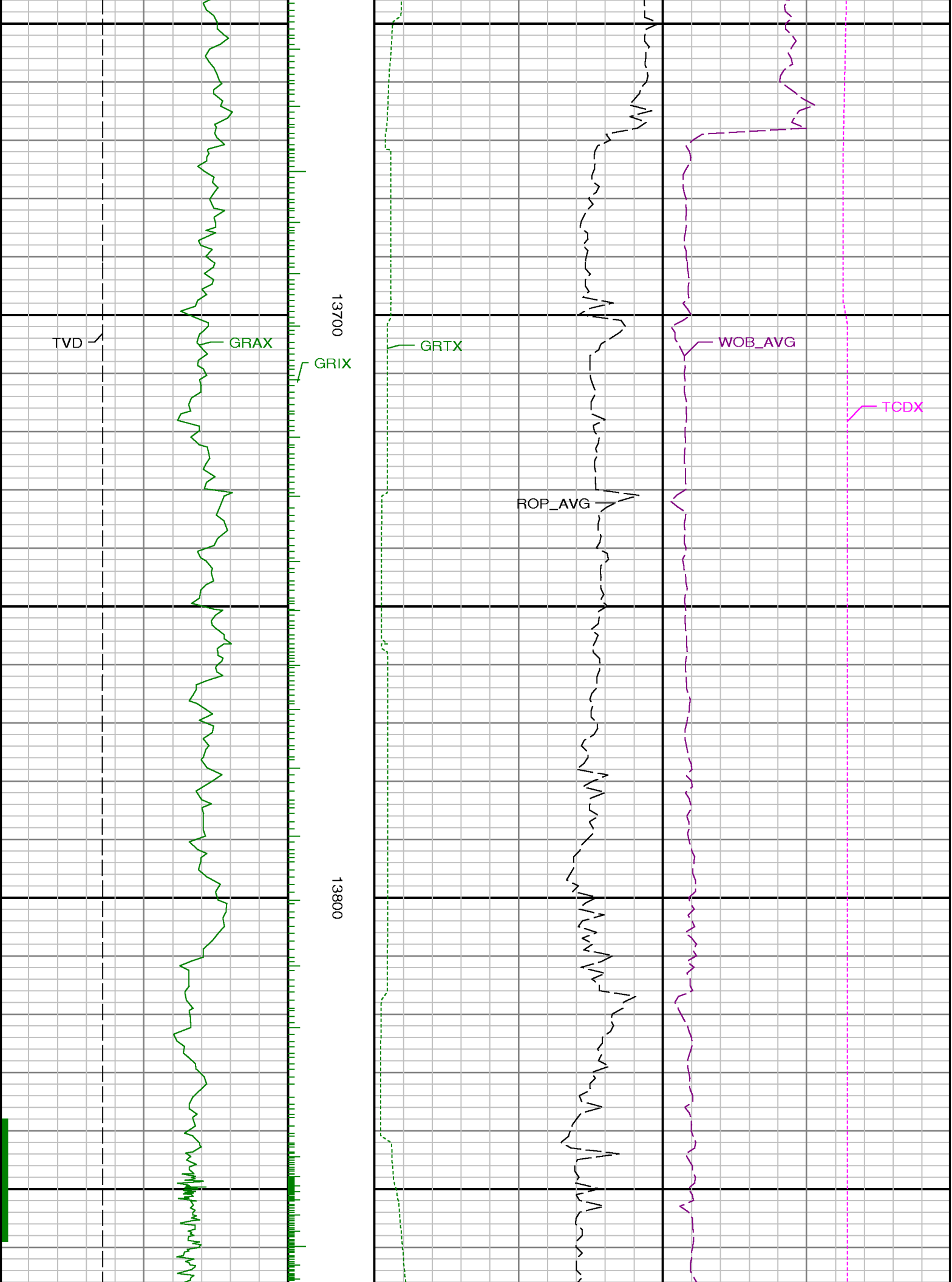


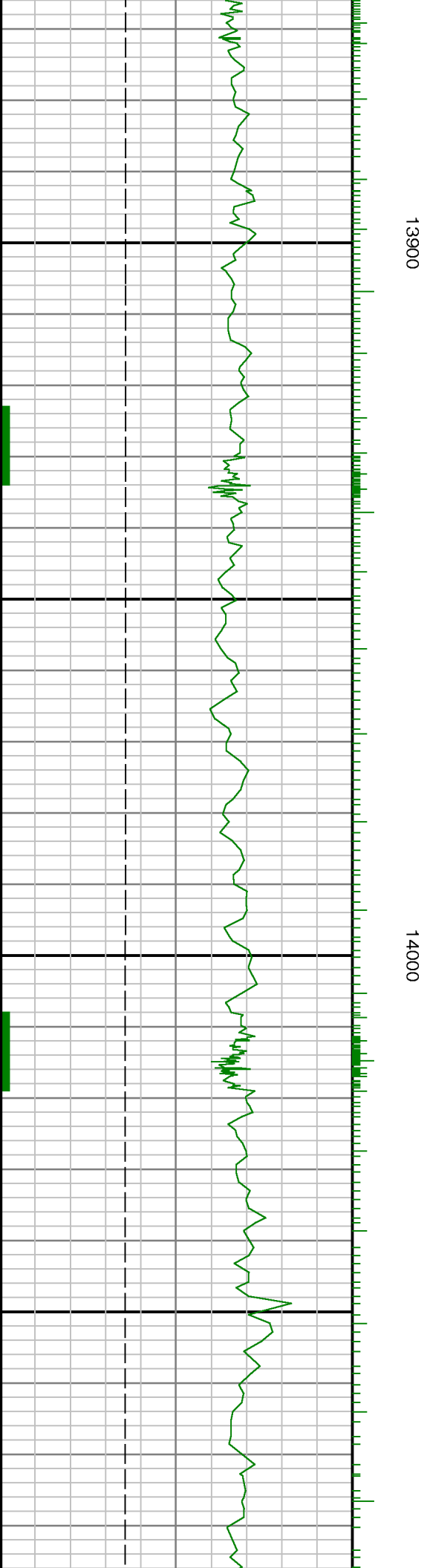
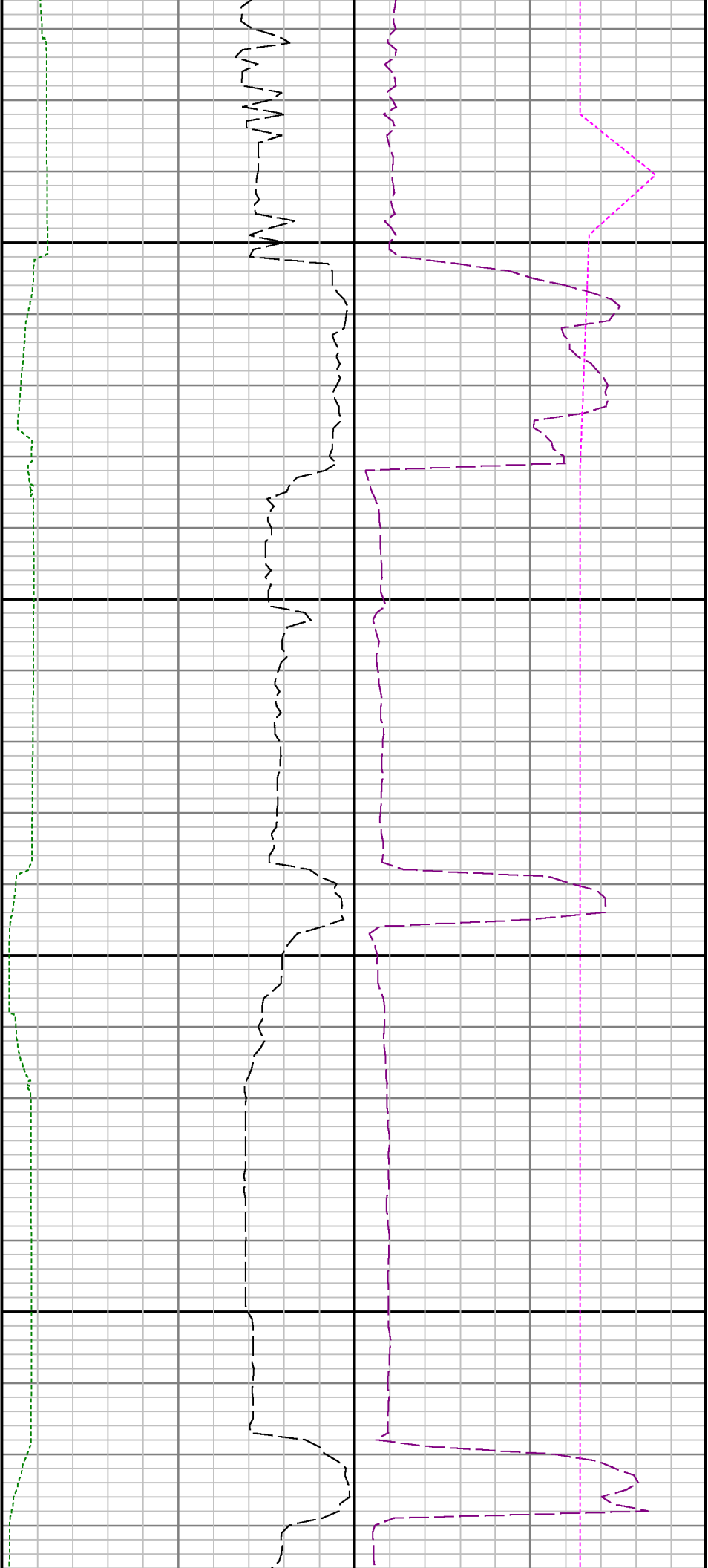
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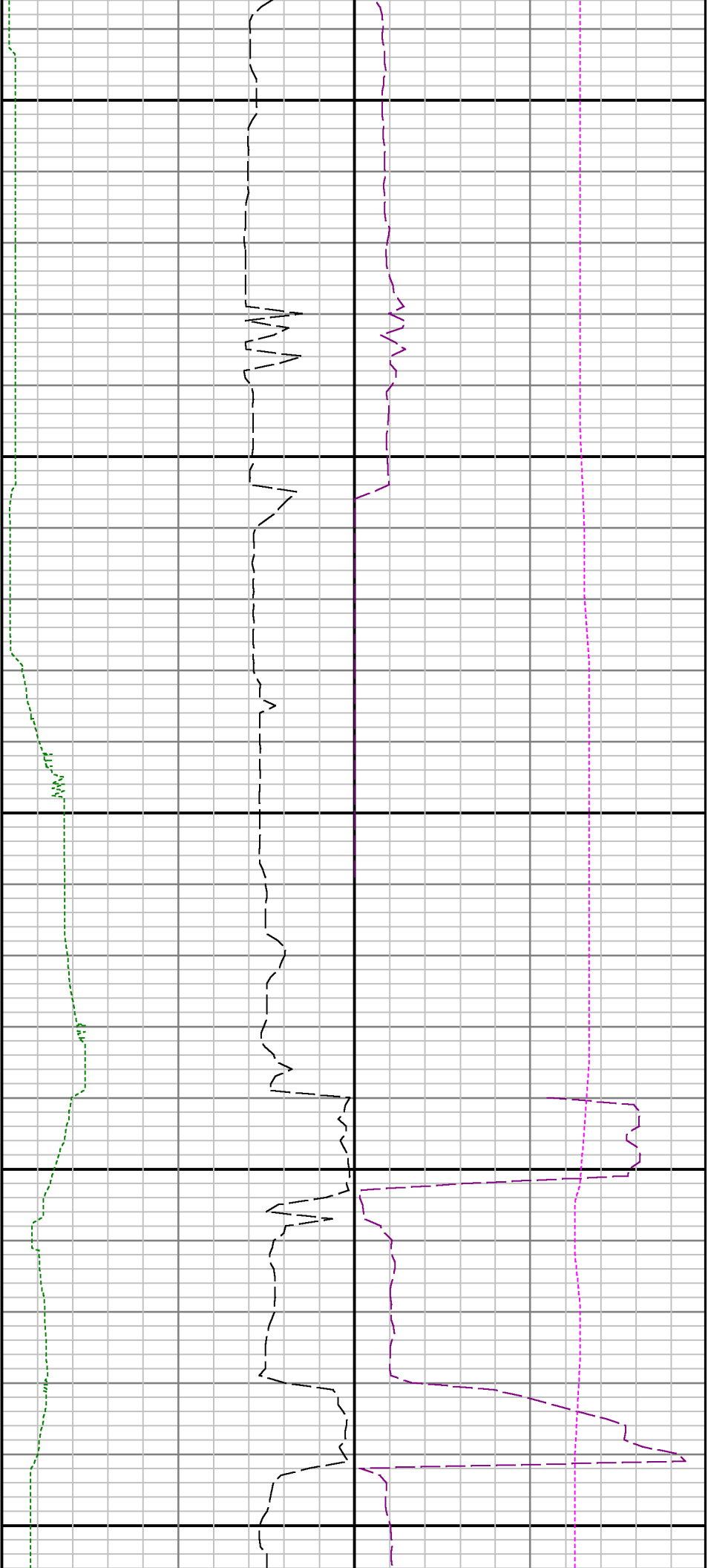
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GRSI







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