



Name	LWD Run Number
Charlie Daigle	1,2

Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (sg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
15/Feb/2014 11:00	1	7289	Water Based - Fresh	10.0	15	9.0	N/A	1/89	Active Mud Pit	900	N/A
15/Feb/2014 22:00	1	7631	Water Based - Fresh	10.0	14	9.3	N/A	1/88.5	Active Mud Pit	900	N/A
16/Feb/2014 11:00	1	7631	Water Based - Fresh	10.3	14	9.1	N/A	1/87.5	Active Mud Pit	900	N/A
16/Feb/2014 22:00	1	7631	Water Based - Fresh	10.3	13	9.3	N/A	1/87.5	Active Mud Pit	1000	N/A
17/Feb/2014 11:00	2	7631	Water Based - Fresh	9.7	9	9.3	N/A	1/90	Active Mud Pit	1000	N/A
17/Feb/2014 22:00	2	7849	Water Based - Fresh	9.7	13	10.0	N/A	2/89.5	Active Mud Pit	1000	N/A
18/Feb/2014 11:00	2	8802	Water Based - Fresh	9.7	16	9.0	N/A	2/89.5	Active Mud Pit	1000	N/A
18/Feb/2014 22:00	2	9714	Water Based - Fresh	9.8	17	10.0	N/A	2/89	Active Mud Pit	1000	N/A
19/Feb/2014 11:00	2	10580	Water Based - Fresh	9.7	18	9.9	N/A	2.3/89	Active Mud Pit	1000	N/A
19/Feb/2014 22:00	2	11550	Water Based - Fresh	9.7	17	9.7	N/A	2.5/88.4	Active Mud Pit	1000	N/A
20/Feb/2014 08:00	2	10580	Water Based - Fresh	9.8	16	9.0	N/A	2.3/88.1	Active Mud Pit	1000	N/A
20/Feb/2014 22:00	2	13270	Water Based - Fresh	9.9	16	9.0	N/A	3.1/87.4	Active Mud Pit	1000	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Data Density	point
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	12497612	Directional	46.85	6.750	3.250
1	SRIG	11801241	Gamma	43.40	6.750	3.250
2	DIR	12373467	Directional	54.35	4.750	2.250
2	SRIG	12499232	Gamma	50.97	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 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.
- 2.) Baker Hughes run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1045 to 7630 feet MD (1044 to 7204 feet TVD).
- 3.) Baker Hughes run 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 6 1/8 inch bit and steerable assembly from 7630 to 14683 feet MD (7204 to 7210 feet TVD).
- 4.) The interval from 1045 to 6720 feet MD (1044 to 6636 feet TVD) was not logged due to directional only services being provided through the straight-hole and nudge section for Baker Hughes runs 1.
- 5.) The solid line on the left side of the gamma ray track indicates the interval over which data was collected while not rotating.

Remarks

Number	Measured Depth (m.)	Hole Section (in.)	LWD Run No.	Remark
1	6720	8.750	1	Gamma ray logging operations began at 6720 feet MD (6636 feet TVD).
2	7630	8.750	1	The interval from 7586 to 7630 feet MD ( 7201 to 7204 feet TVD) was logged more than 10 hrs after being drilled due to a trip out of the hole for casing and cement operations.
3	8126	6.125	2	Data not available due to decoding problems from 8126 to 8154 feet MD (7204 feet TVD).
4	14632	6.125	2	No sensor data logged from 14632 to 14683 feet MD (7210 feet TVD) due to sensor to bit offset at well TD.



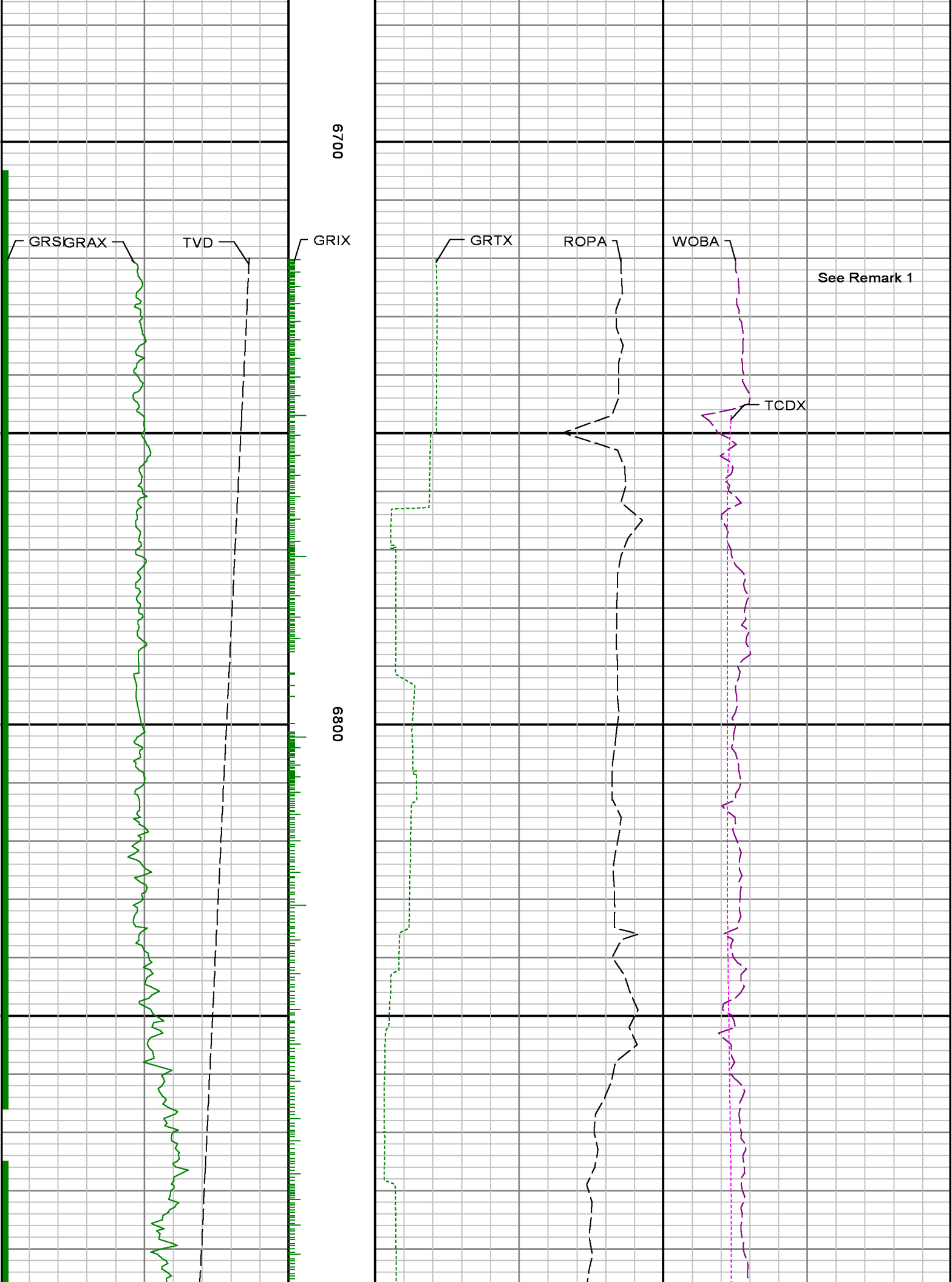
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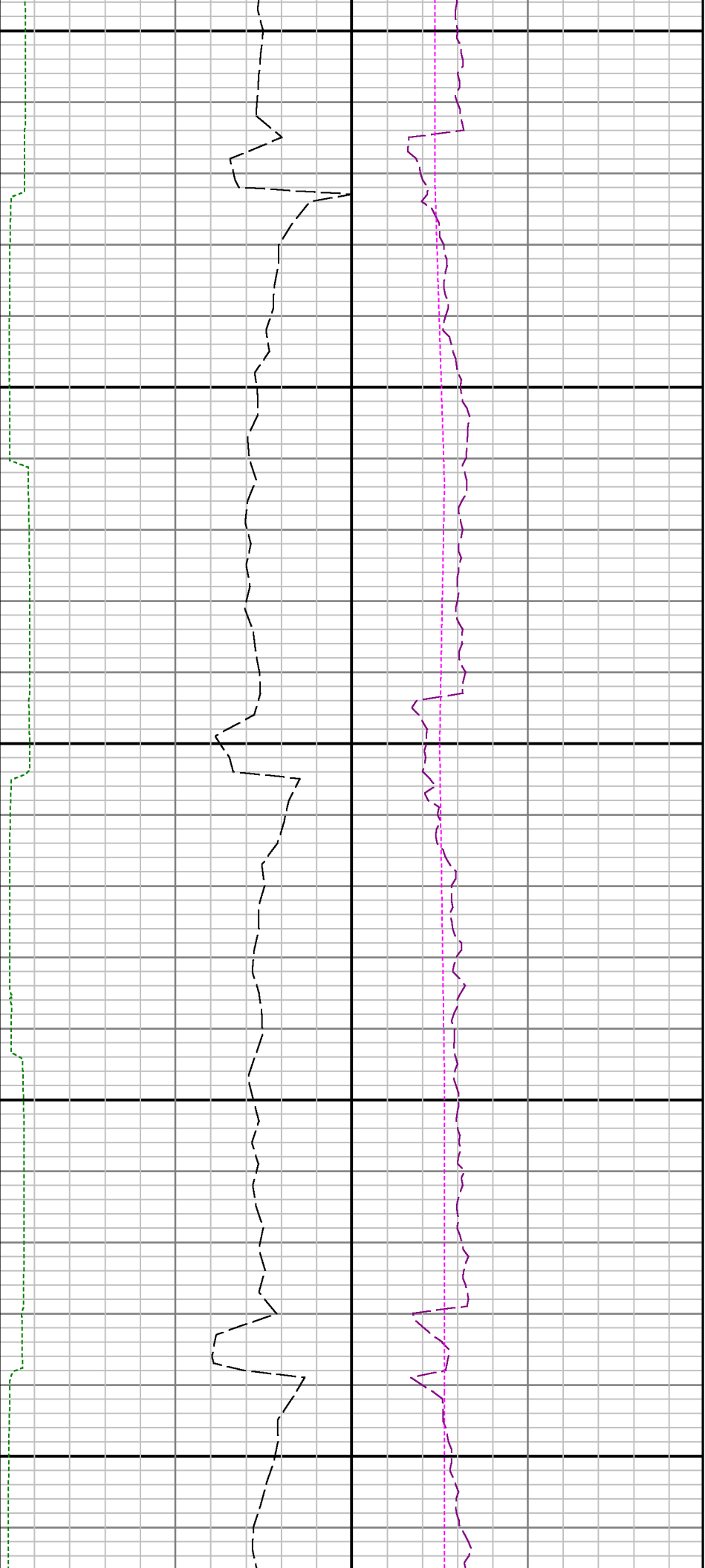
Well : AGGREGATE STATE 36N-16HZ

Interval : 6650.00 - 14750.00 feet

Created : 21/Feb/2014 10:53:47 PM

<div>Gamma Ray Apparent 0.5 ft Avg GRAX</div> <div>0200</div> <div>API</div> <div>True Vertical Depth TVD</div> <div>75006500</div> <div>ft</div>	MD feet 1:240	<div>Rate of Penetration 3.0 ft Avg ROPA</div> <div>5000</div> <div>ft/hr</div> <div>Gamma Time Since Drilled GRTX</div> <div>0600</div> <div>min</div>	<div>Surface Weight On Bit 1.0 ft Avg WOBA</div> <div>0100</div> <div>klbf</div> <div>Downhole Temperature TCDX</div> <div>100300</div> <div>degF</div>

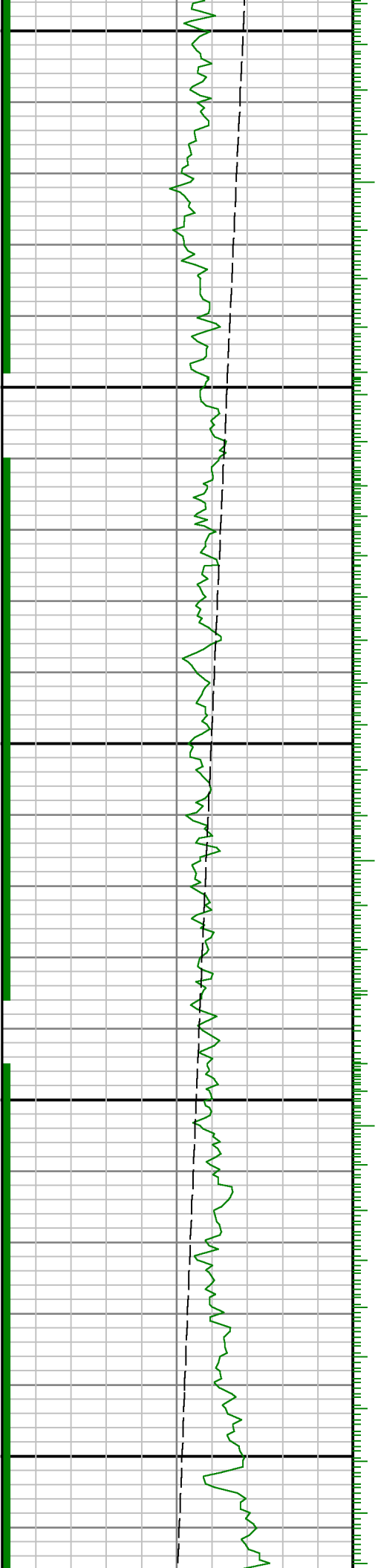


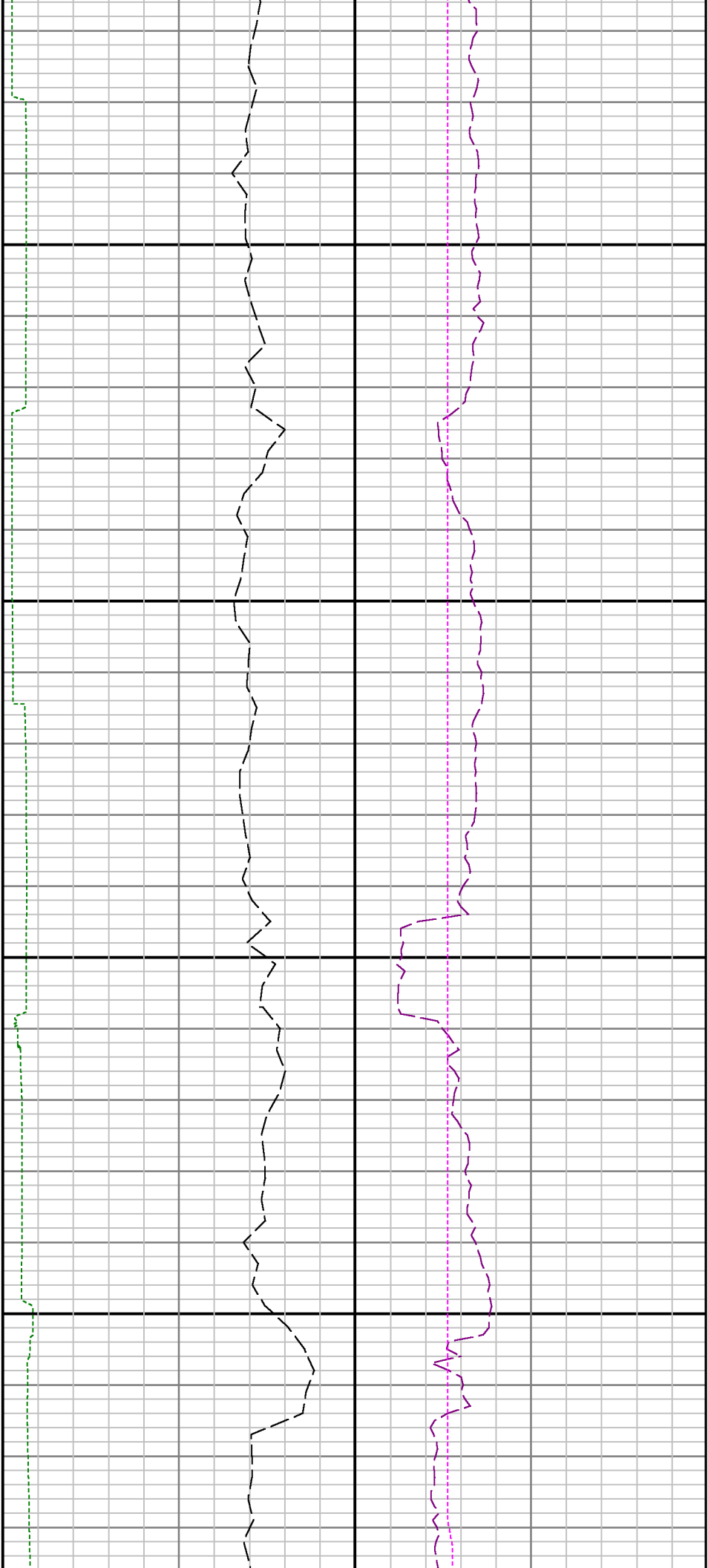


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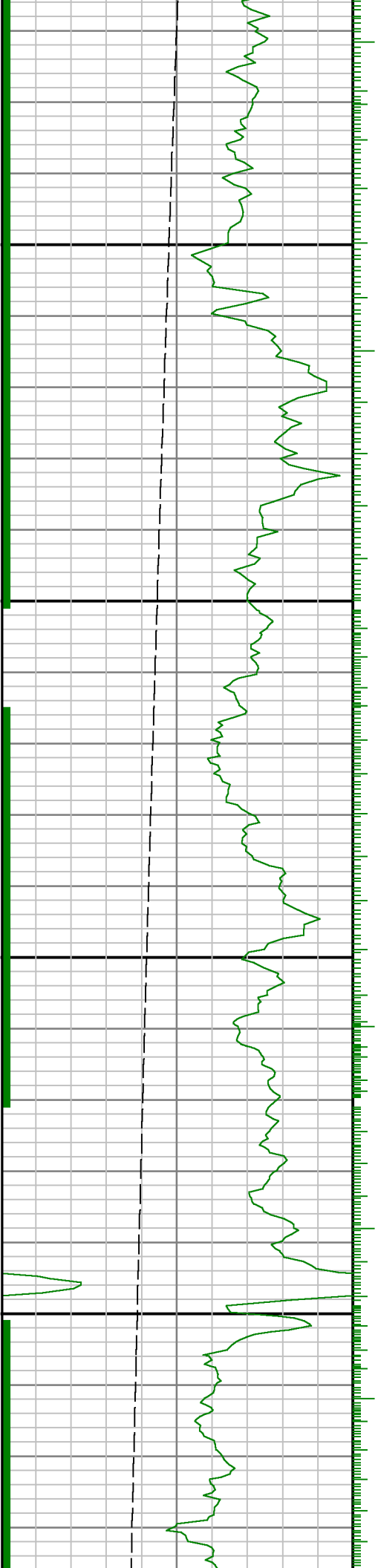
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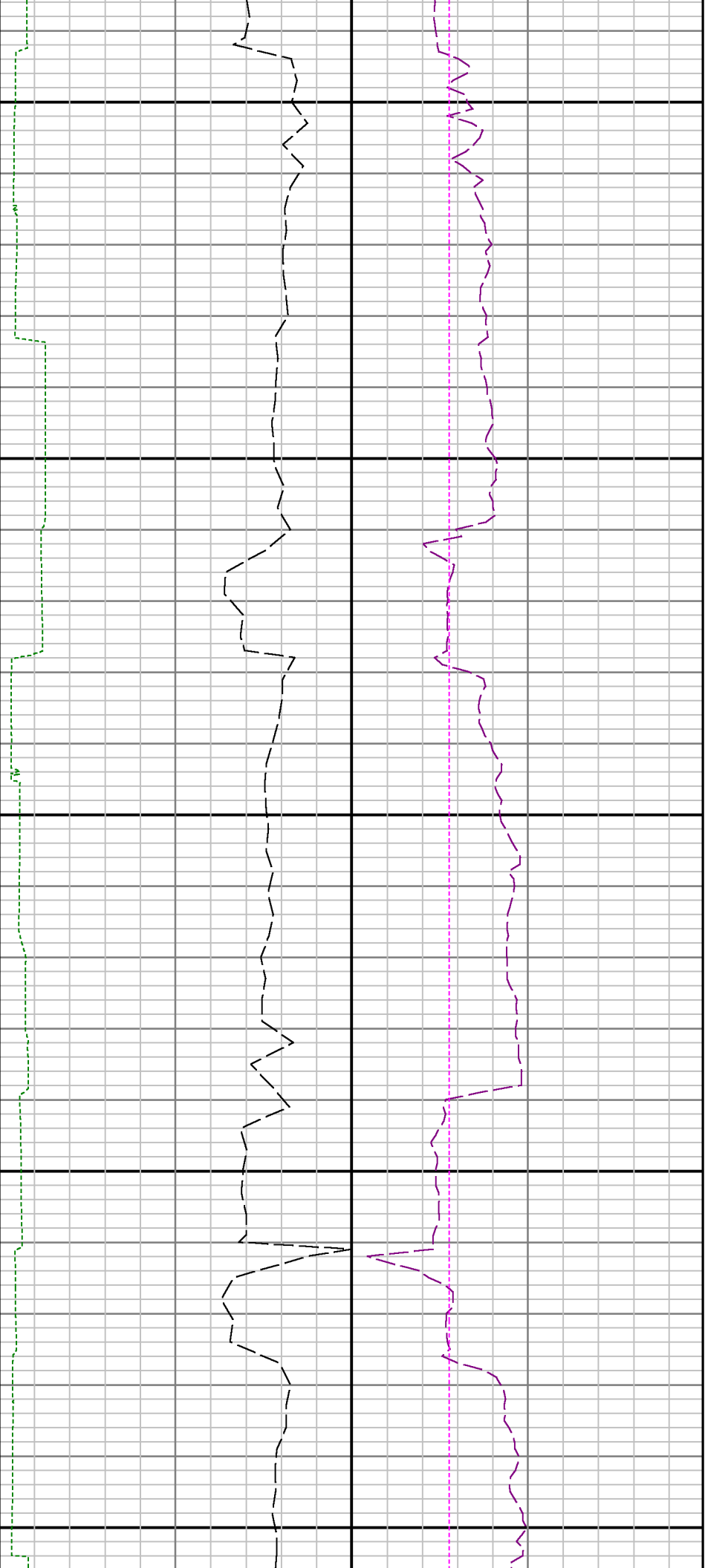




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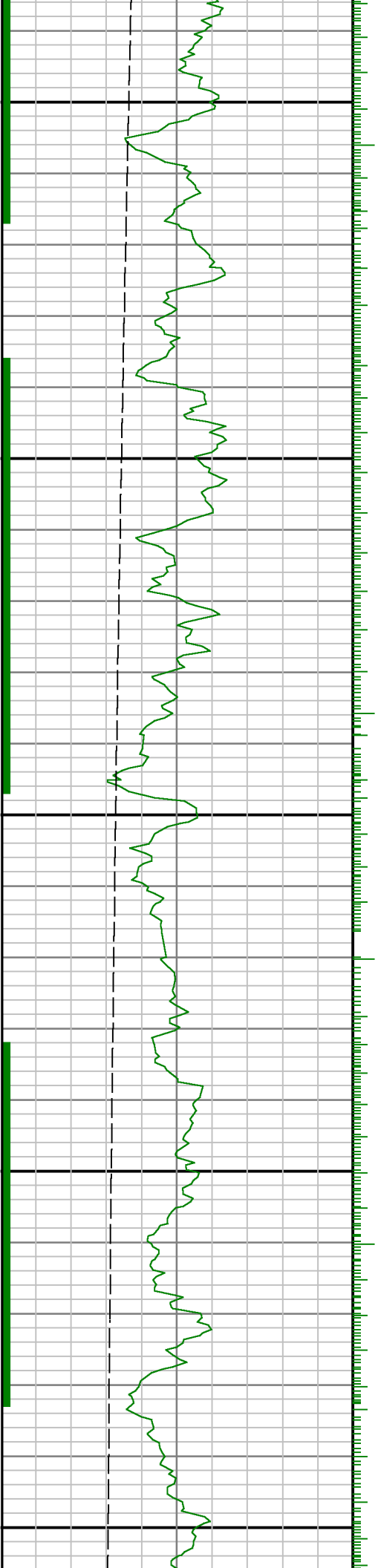
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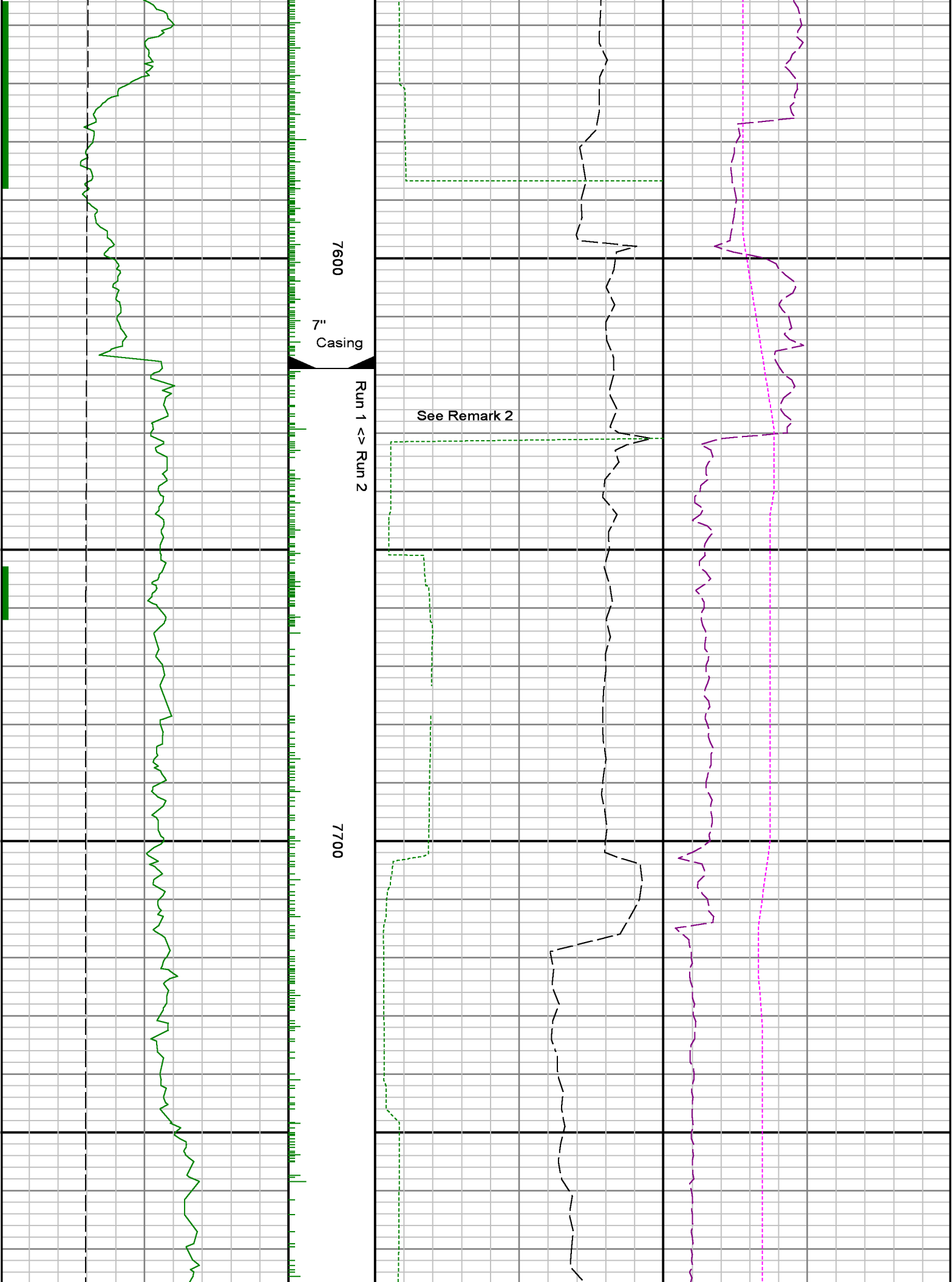




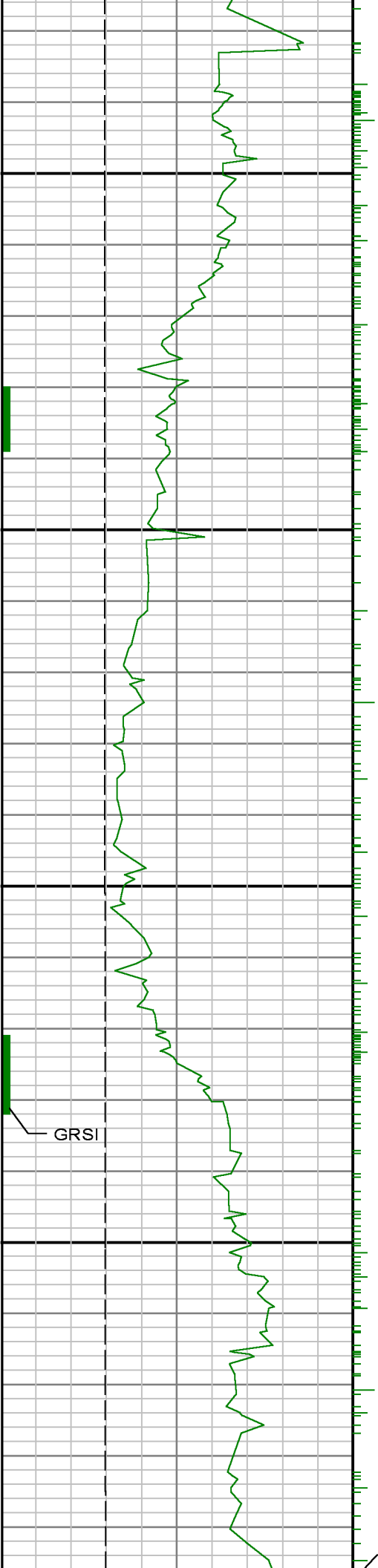
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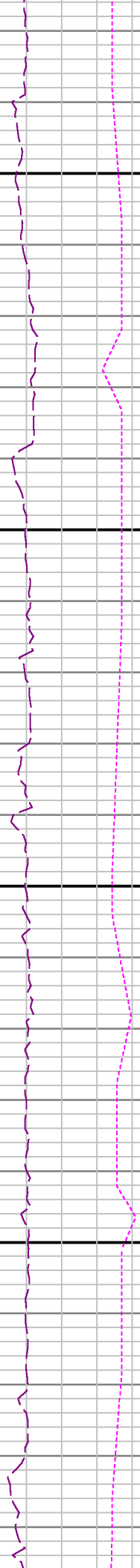


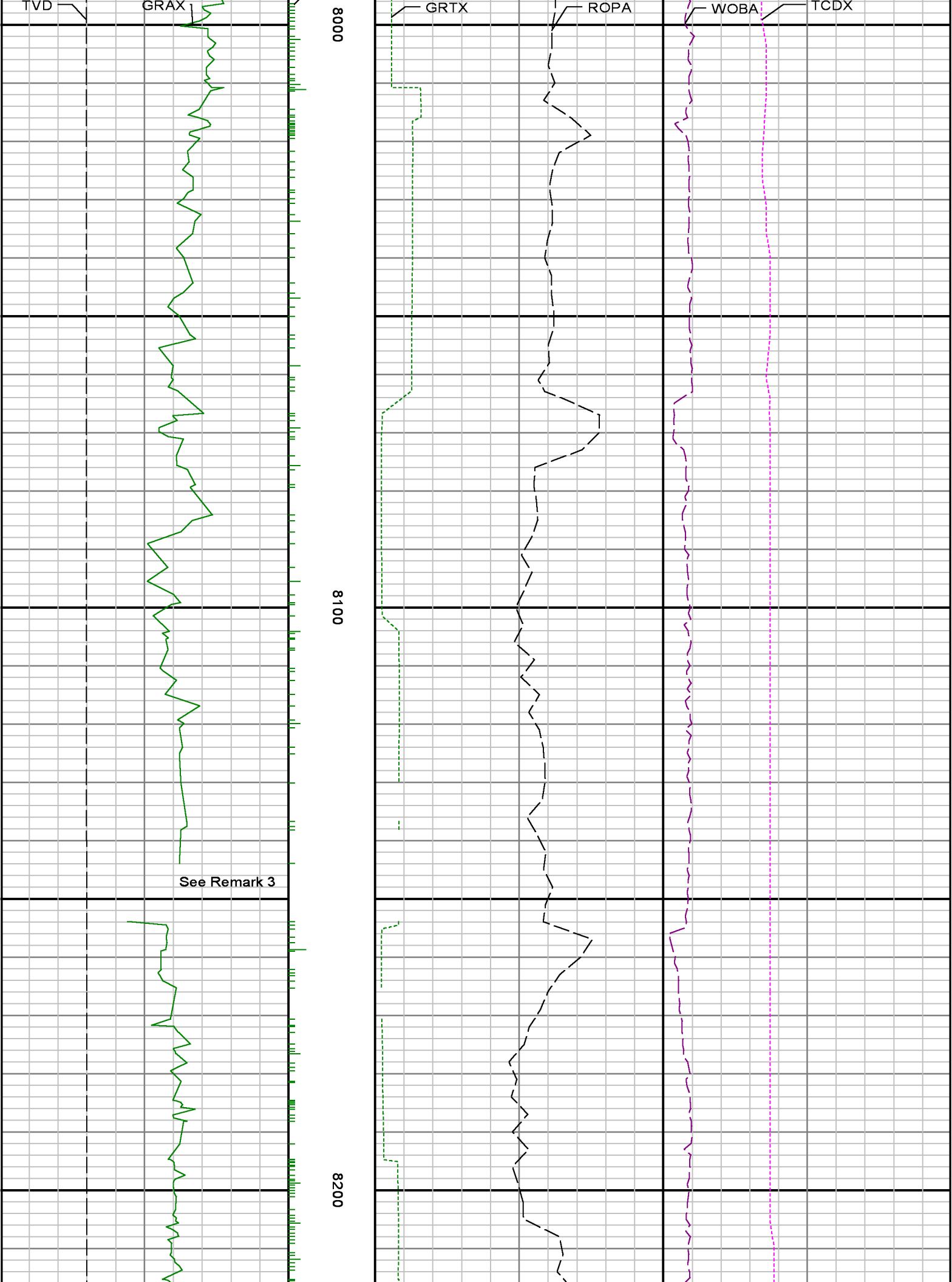
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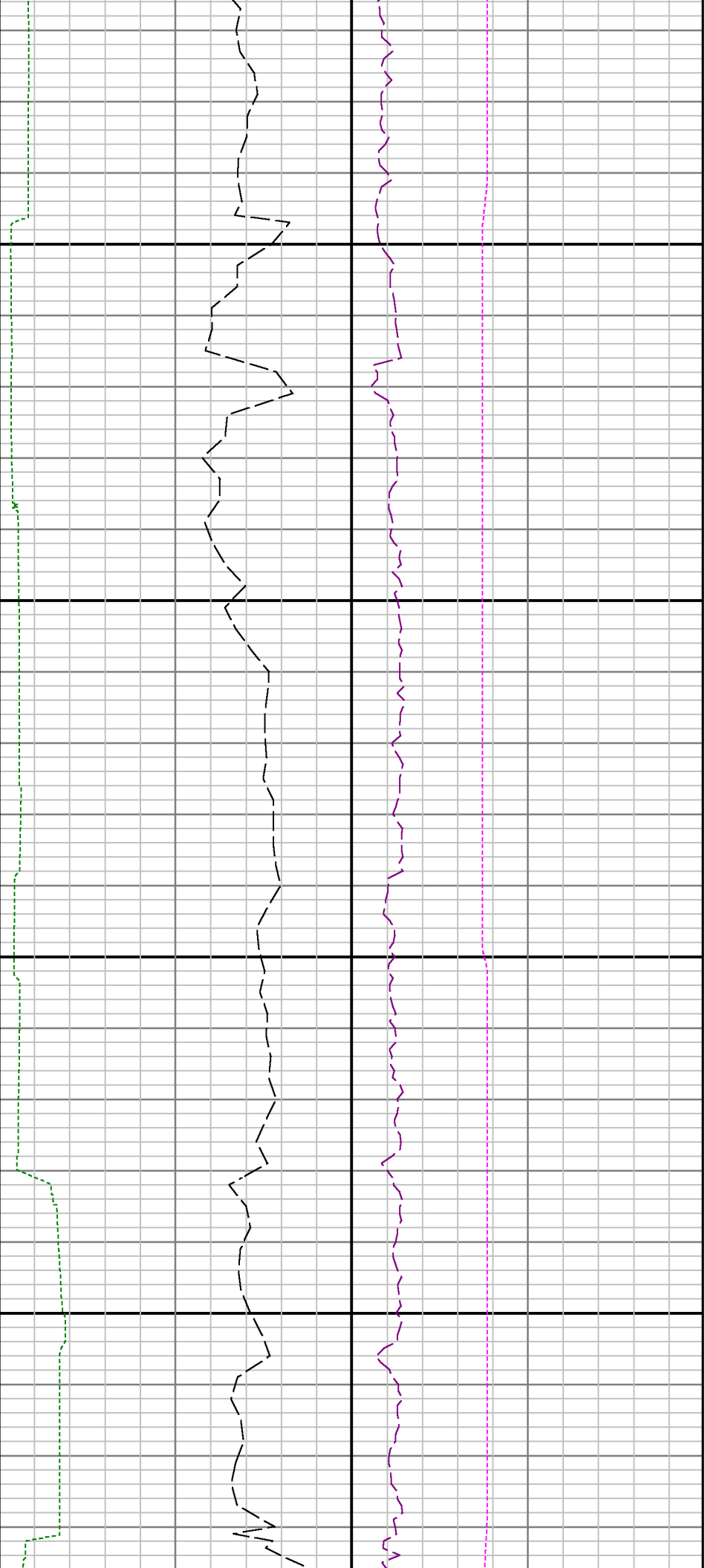
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GRSI

GRIX

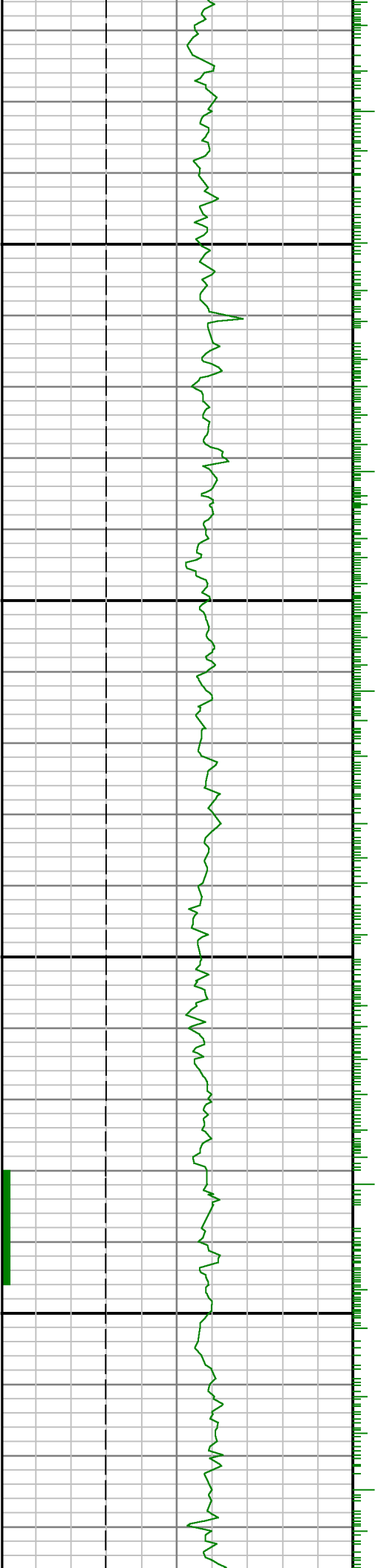


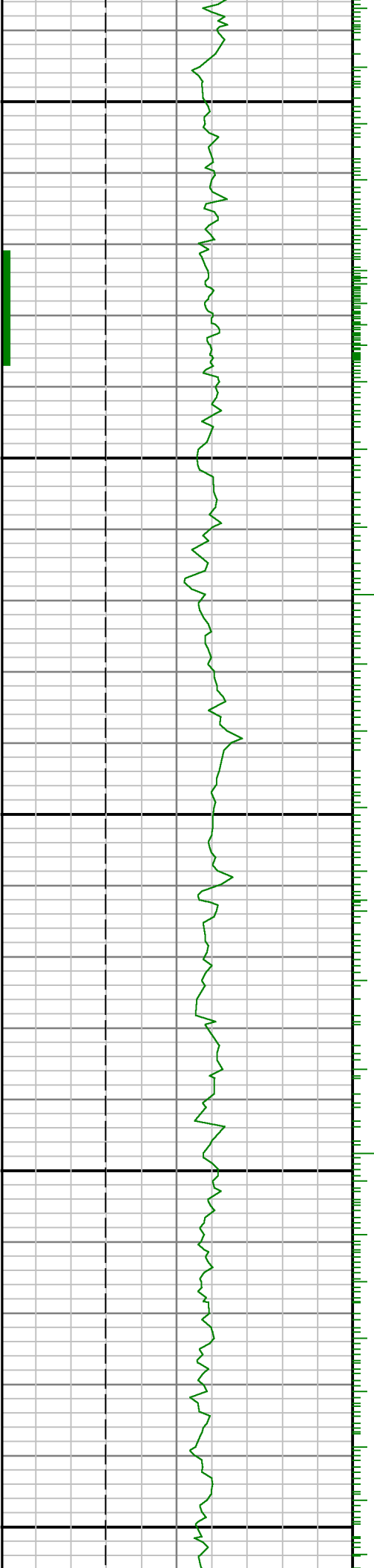




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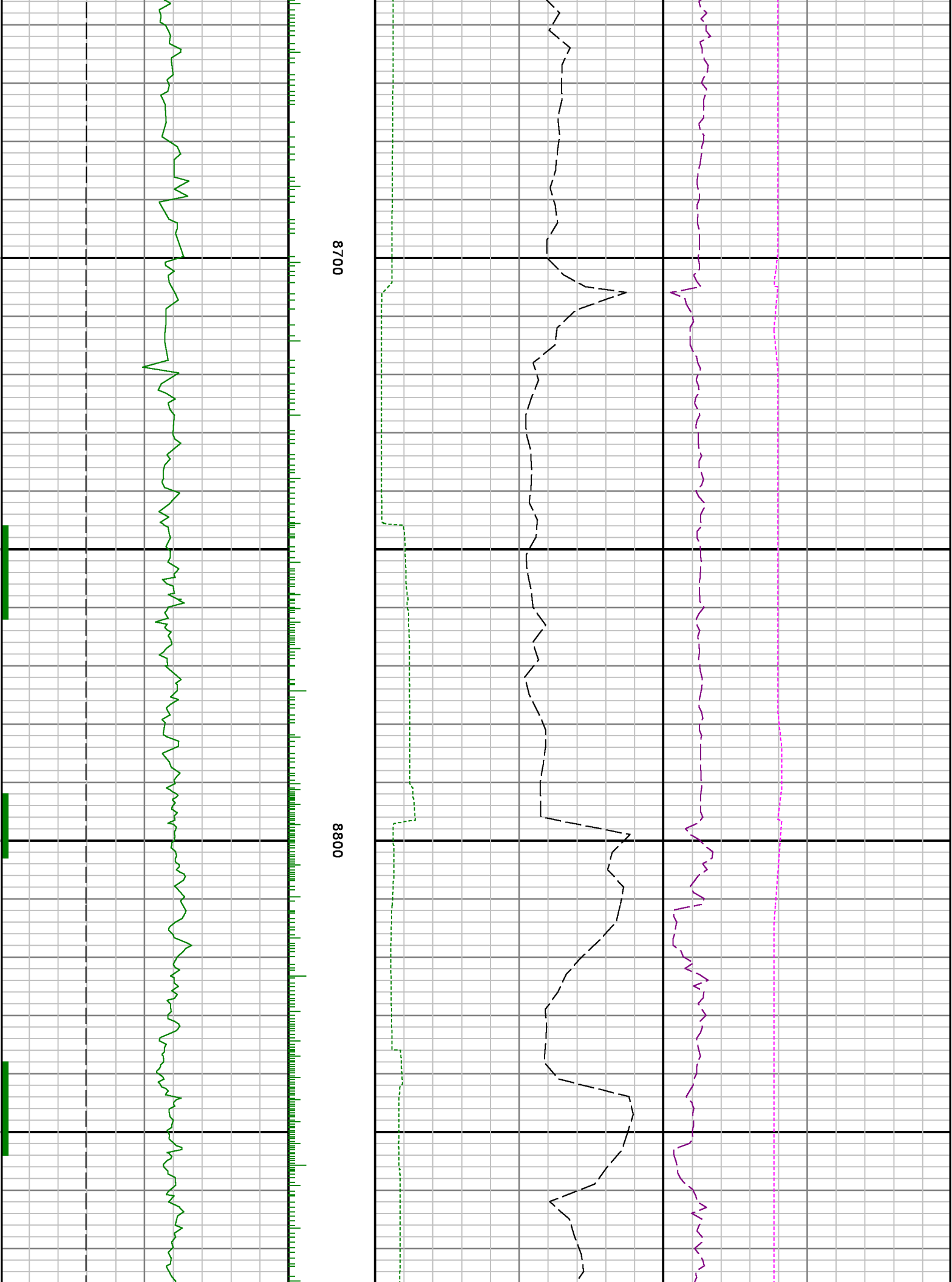


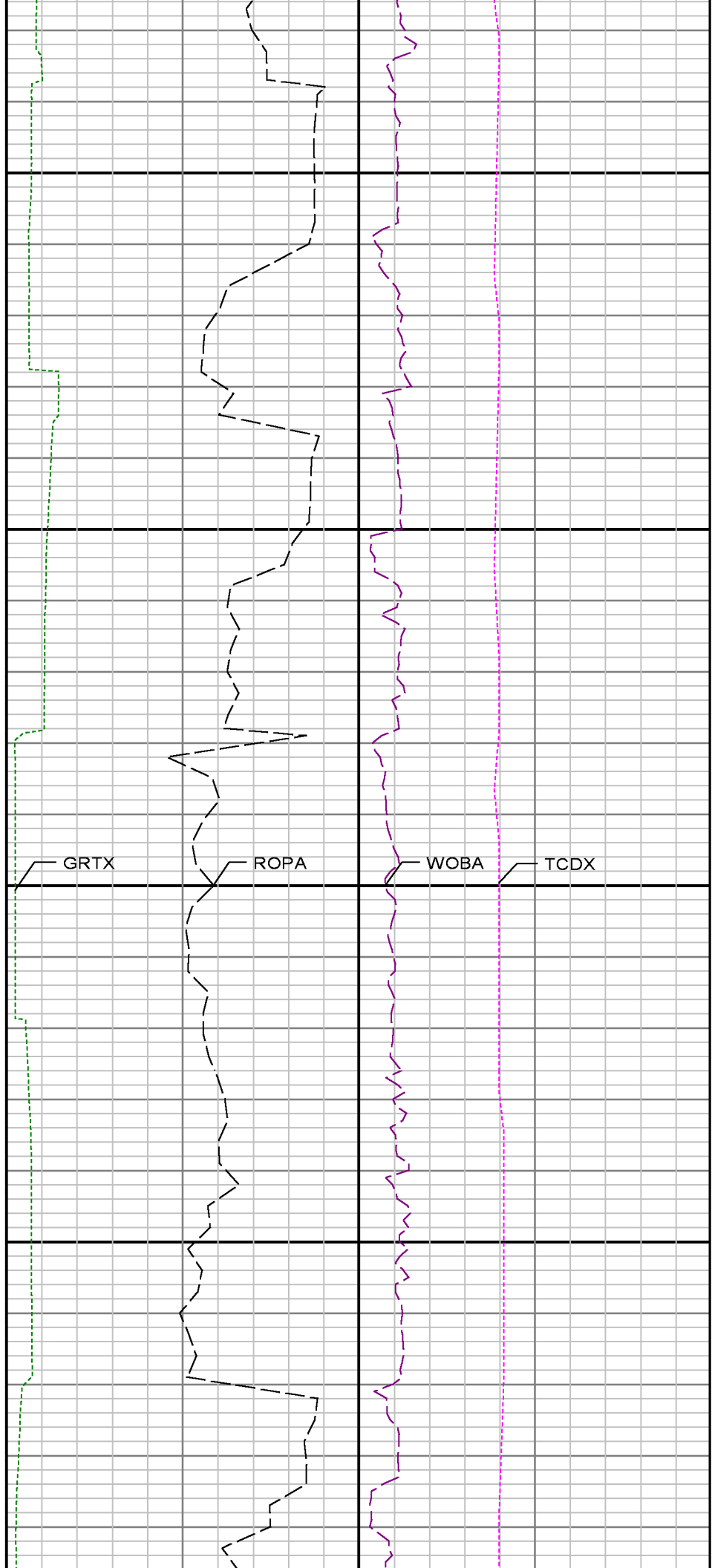
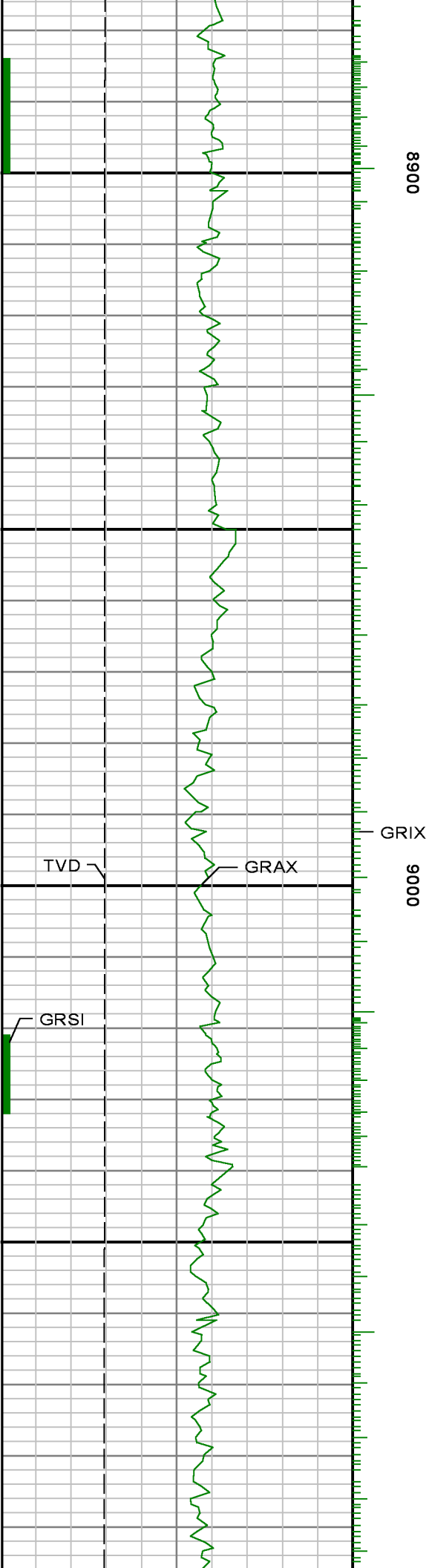


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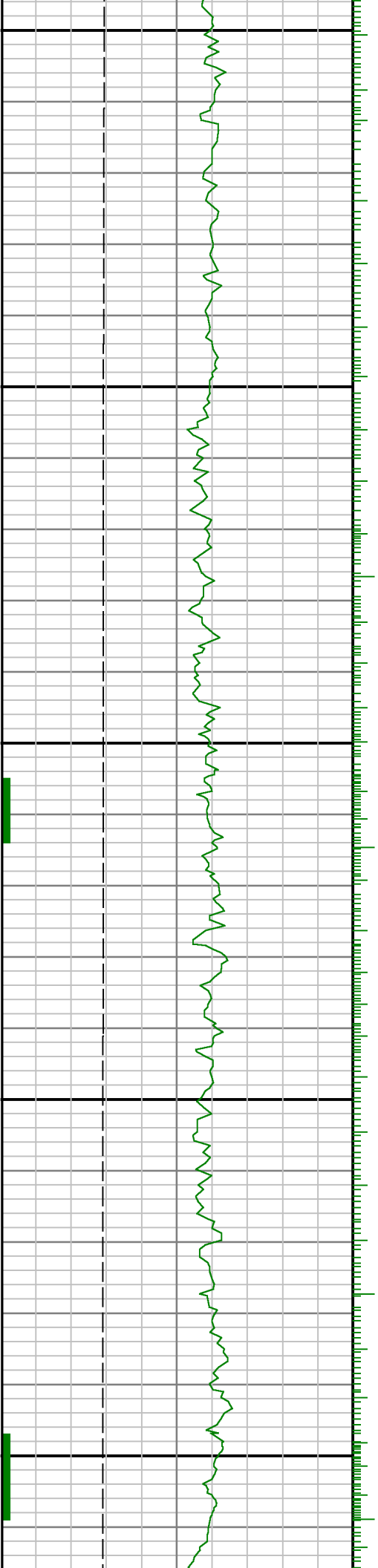




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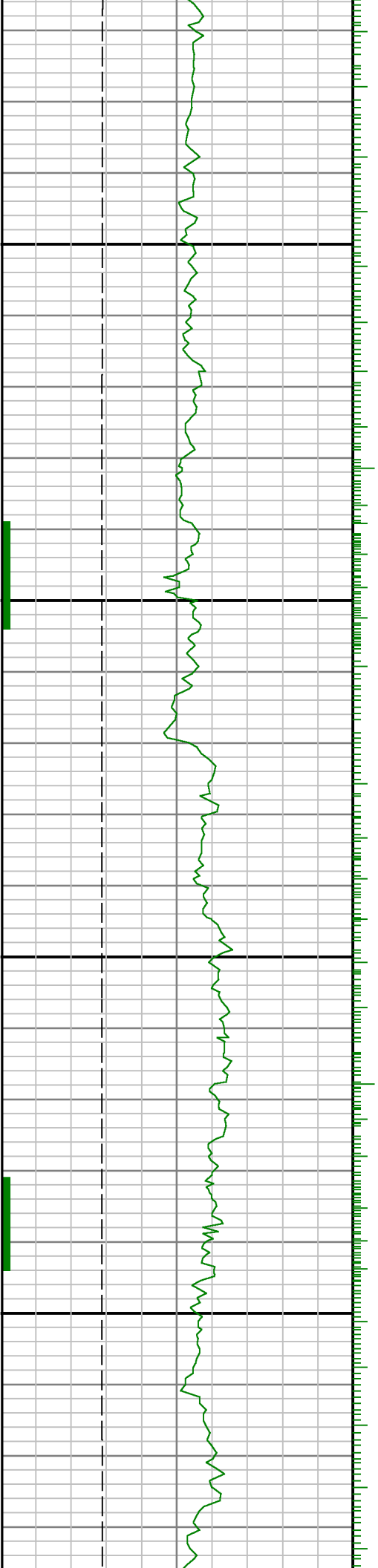
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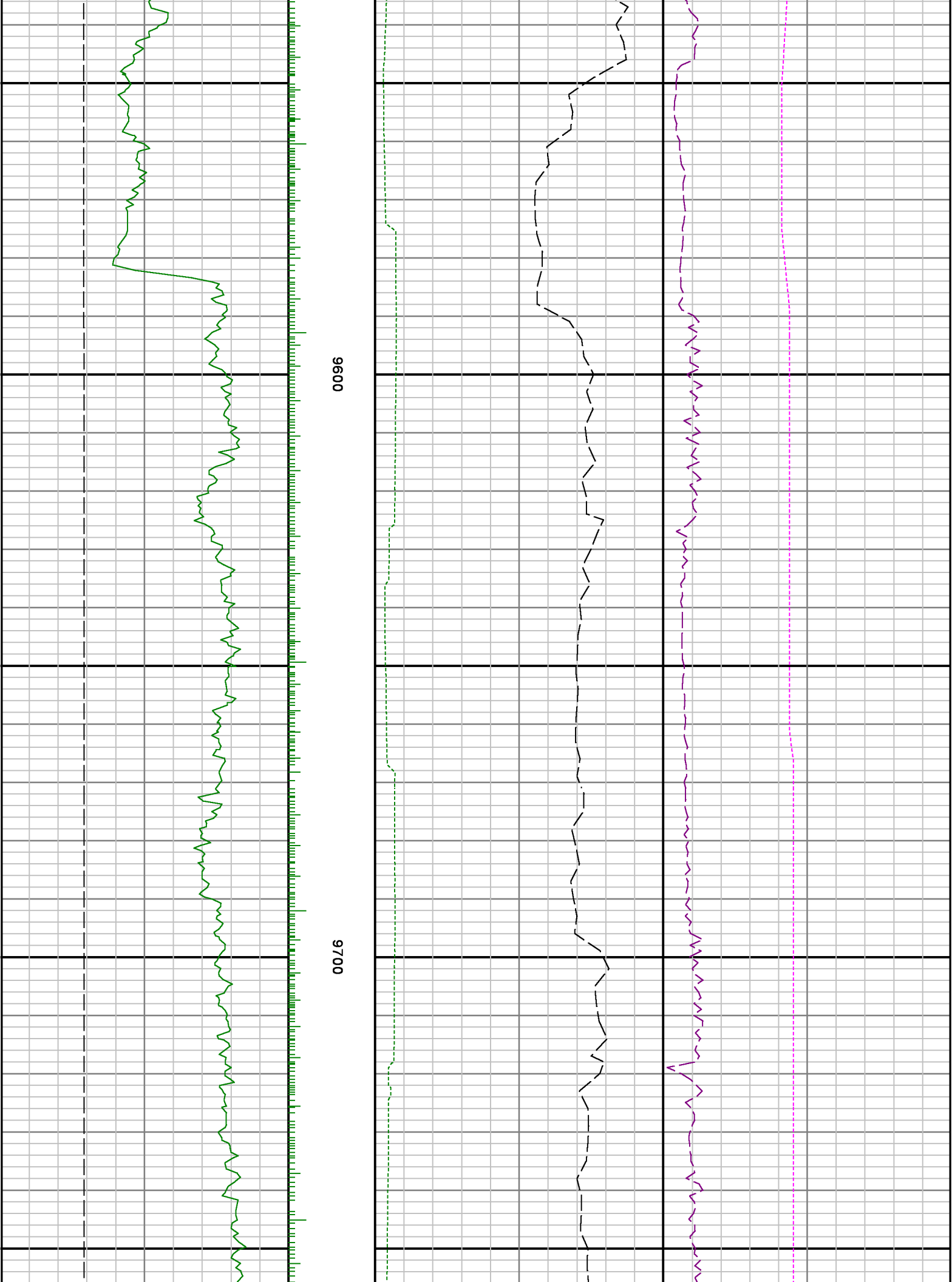


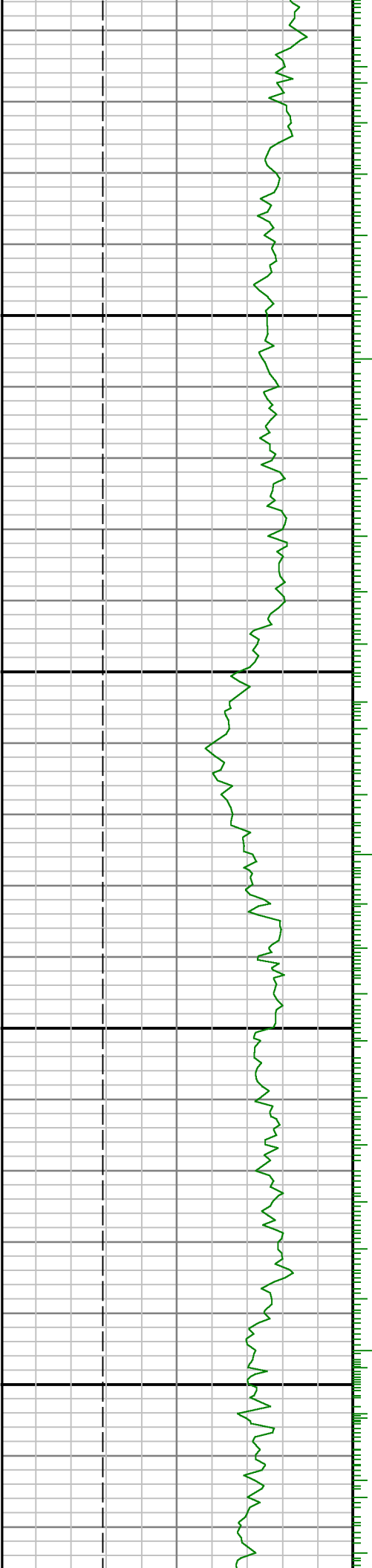
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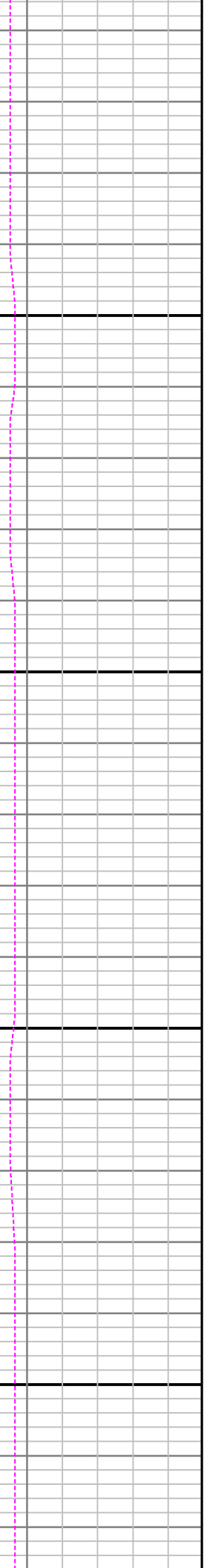
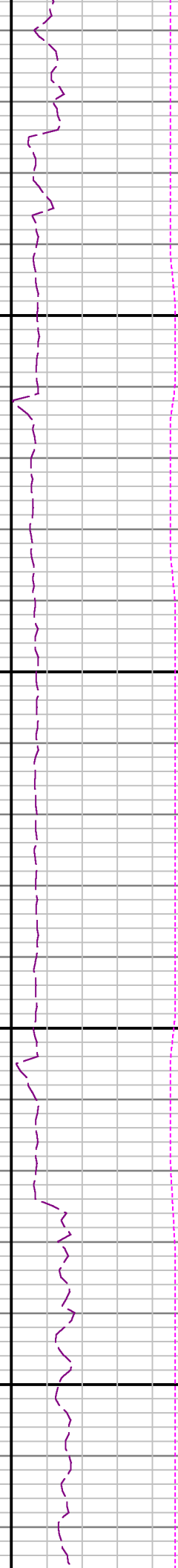
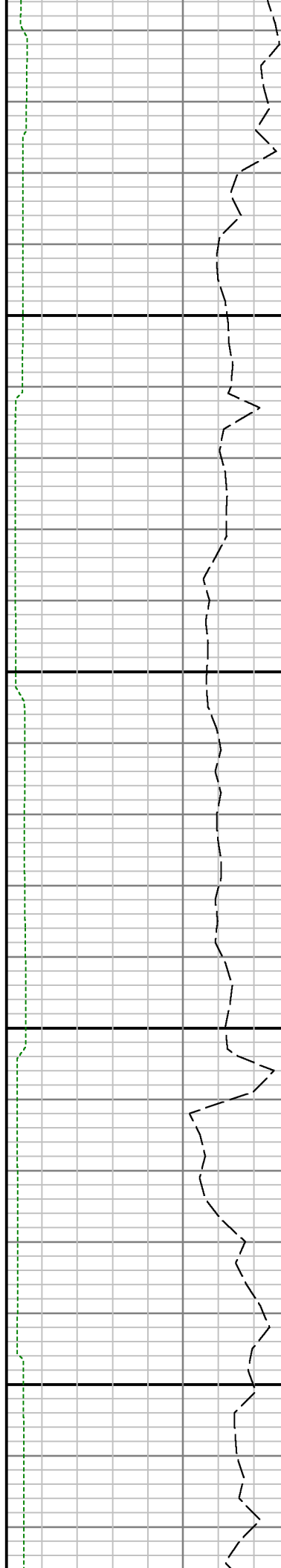


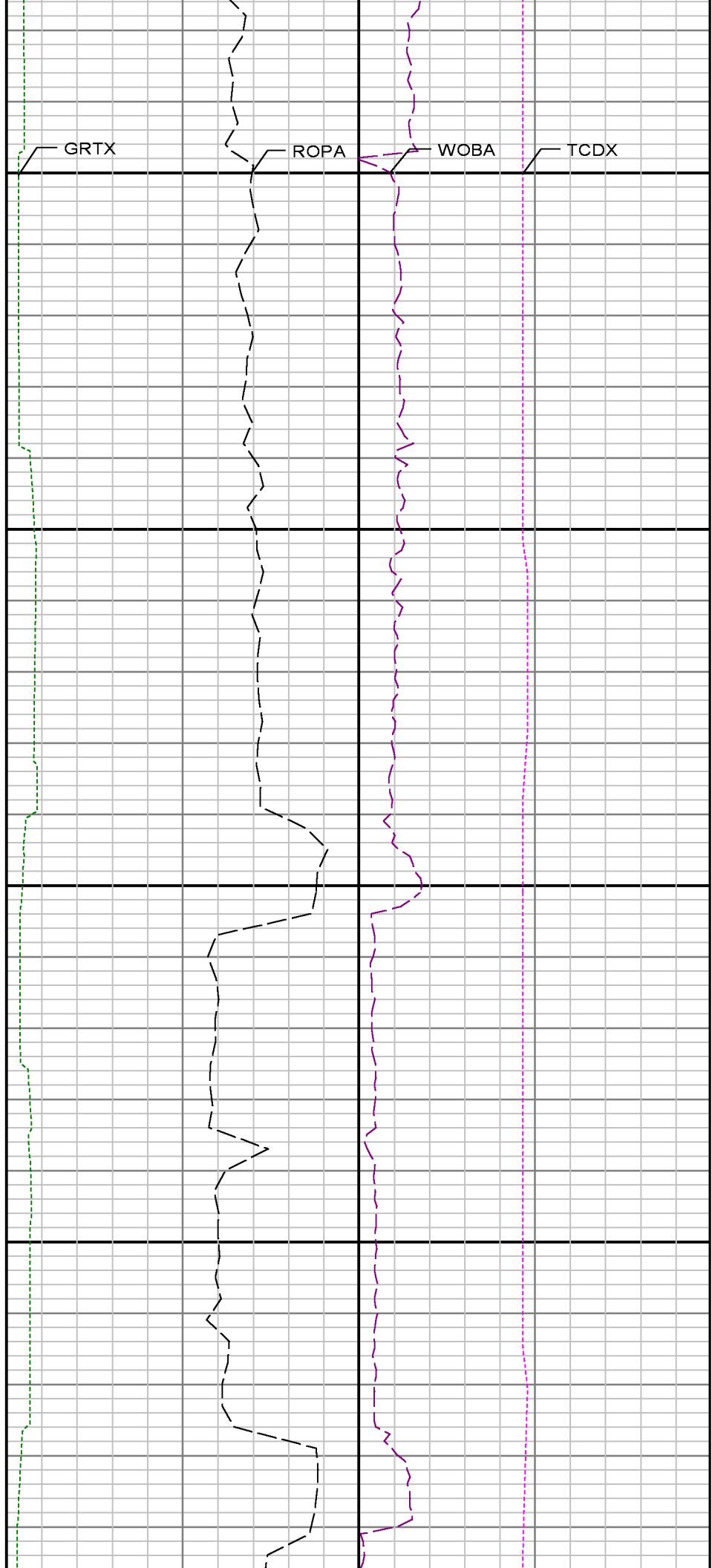
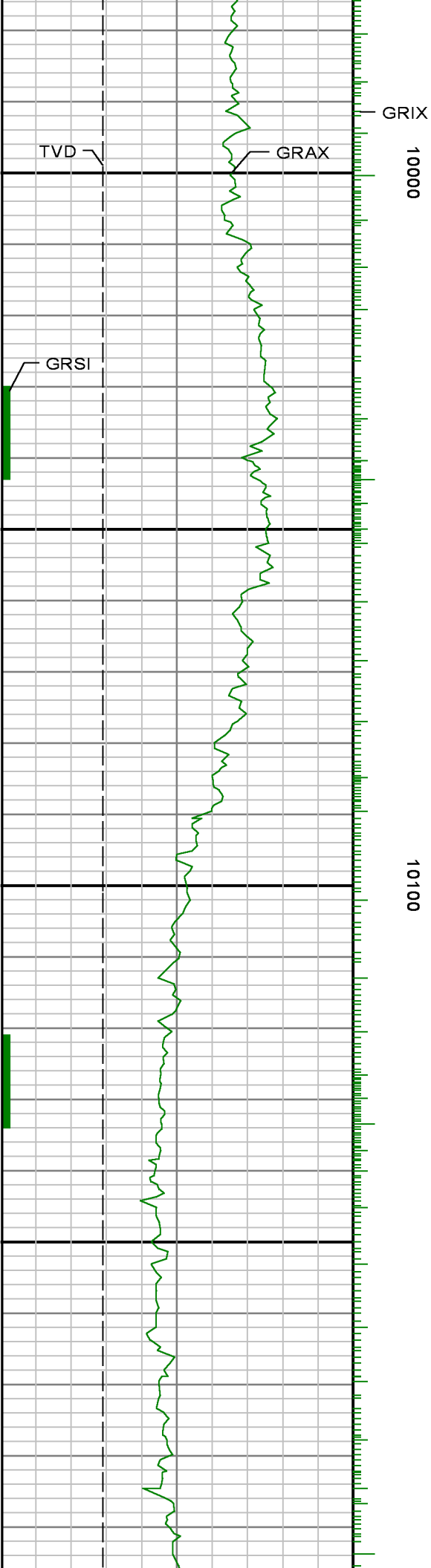


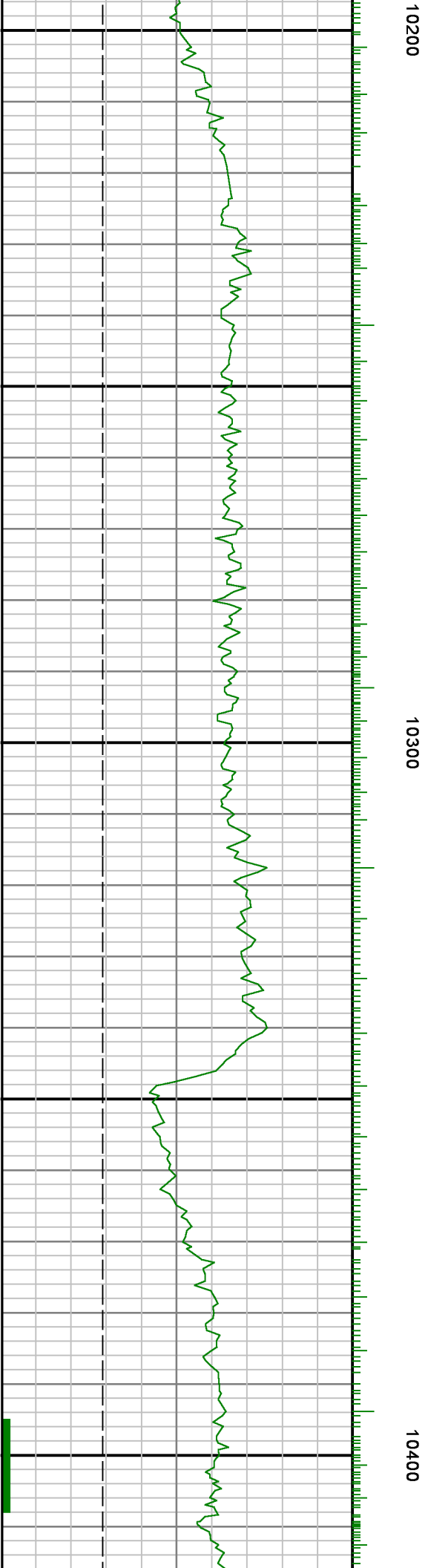
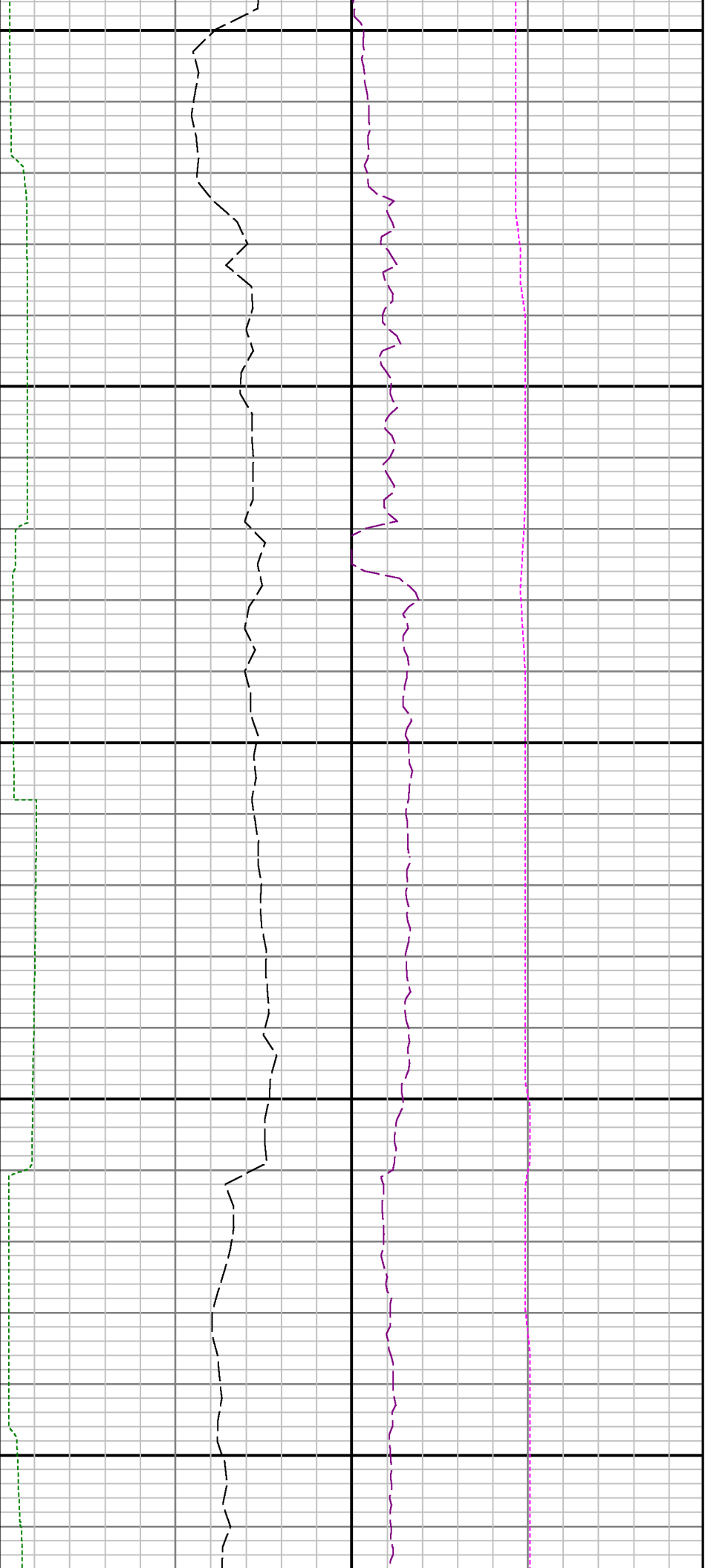


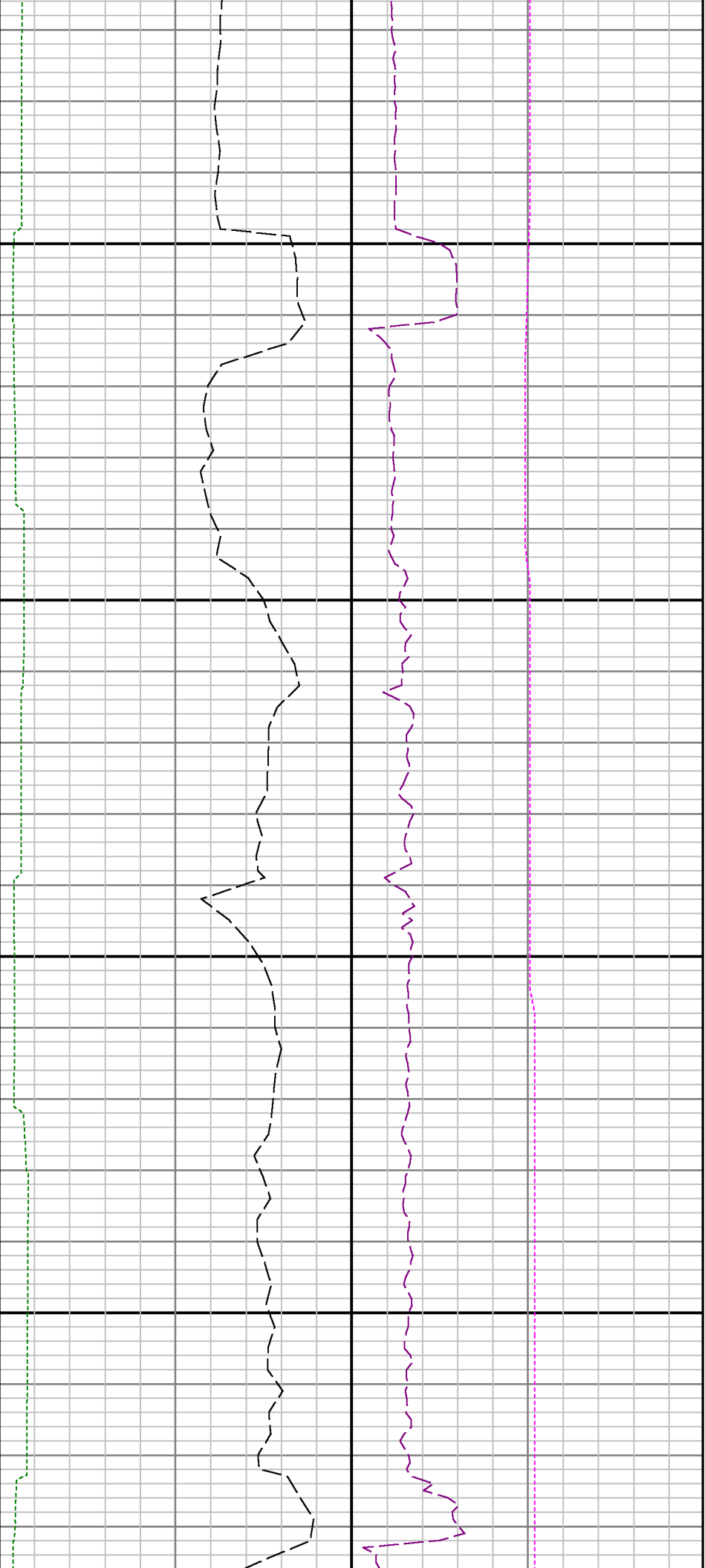
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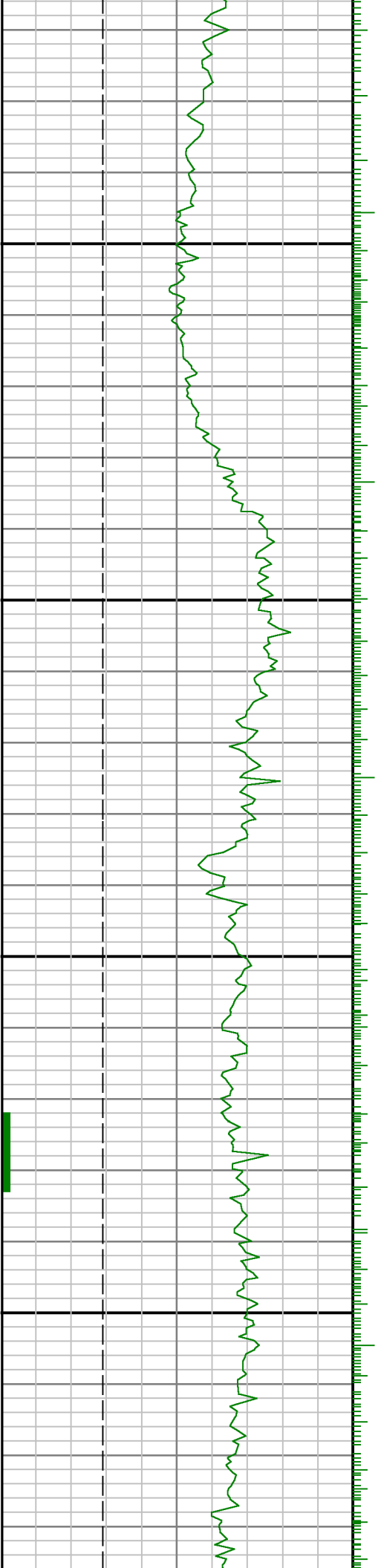


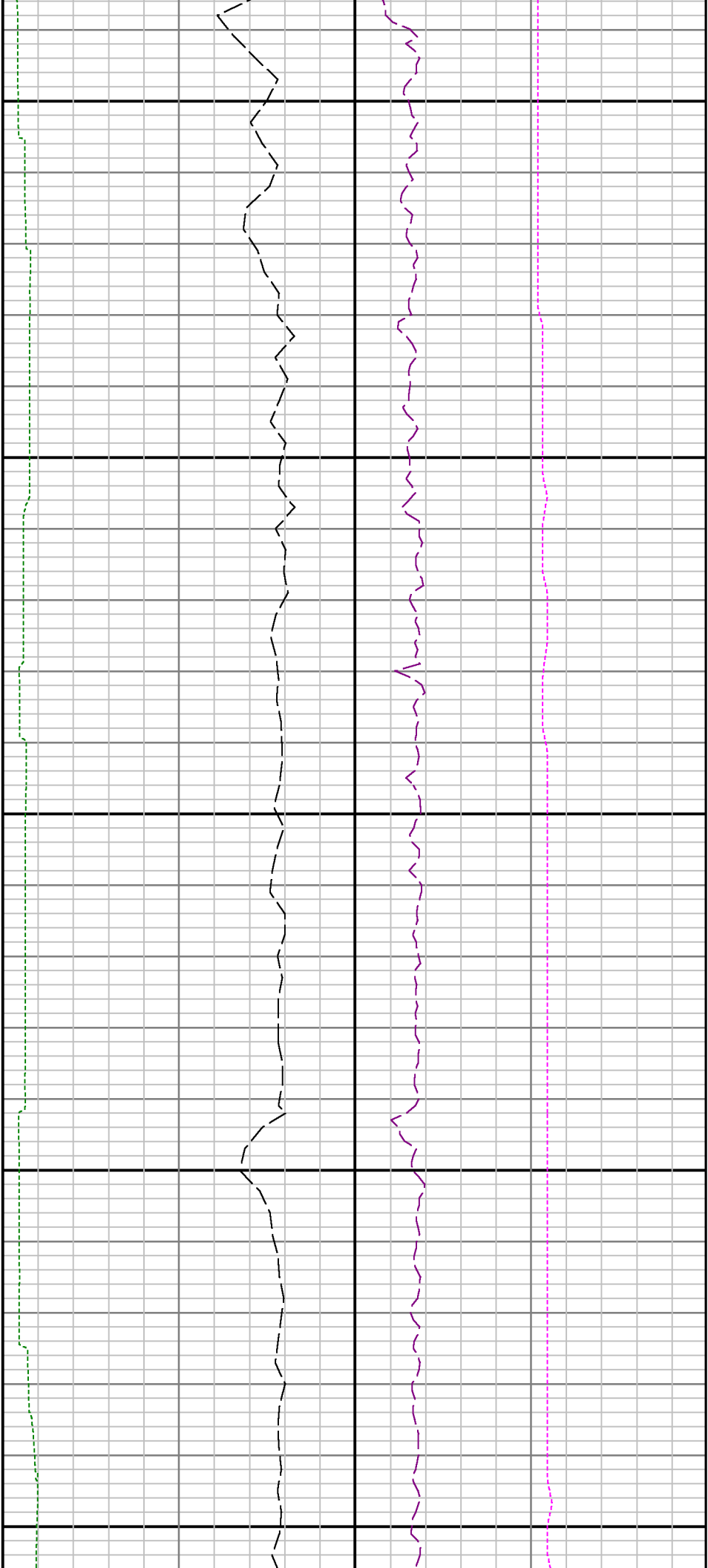




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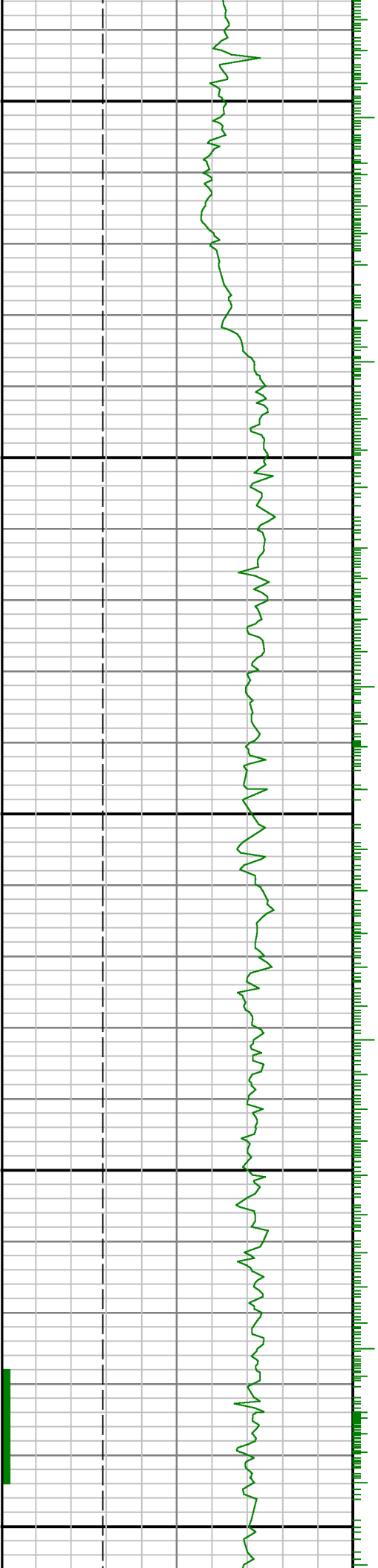
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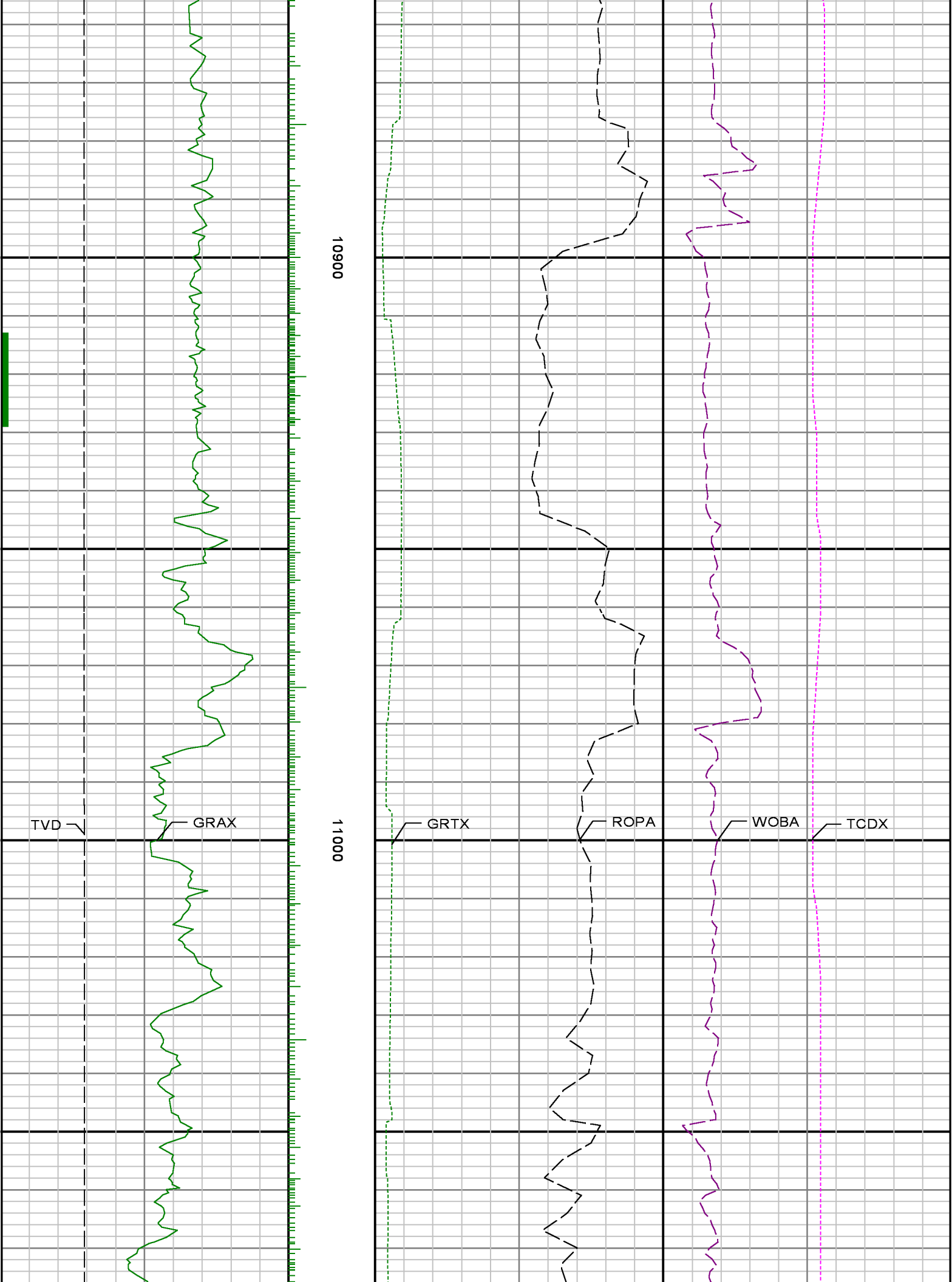


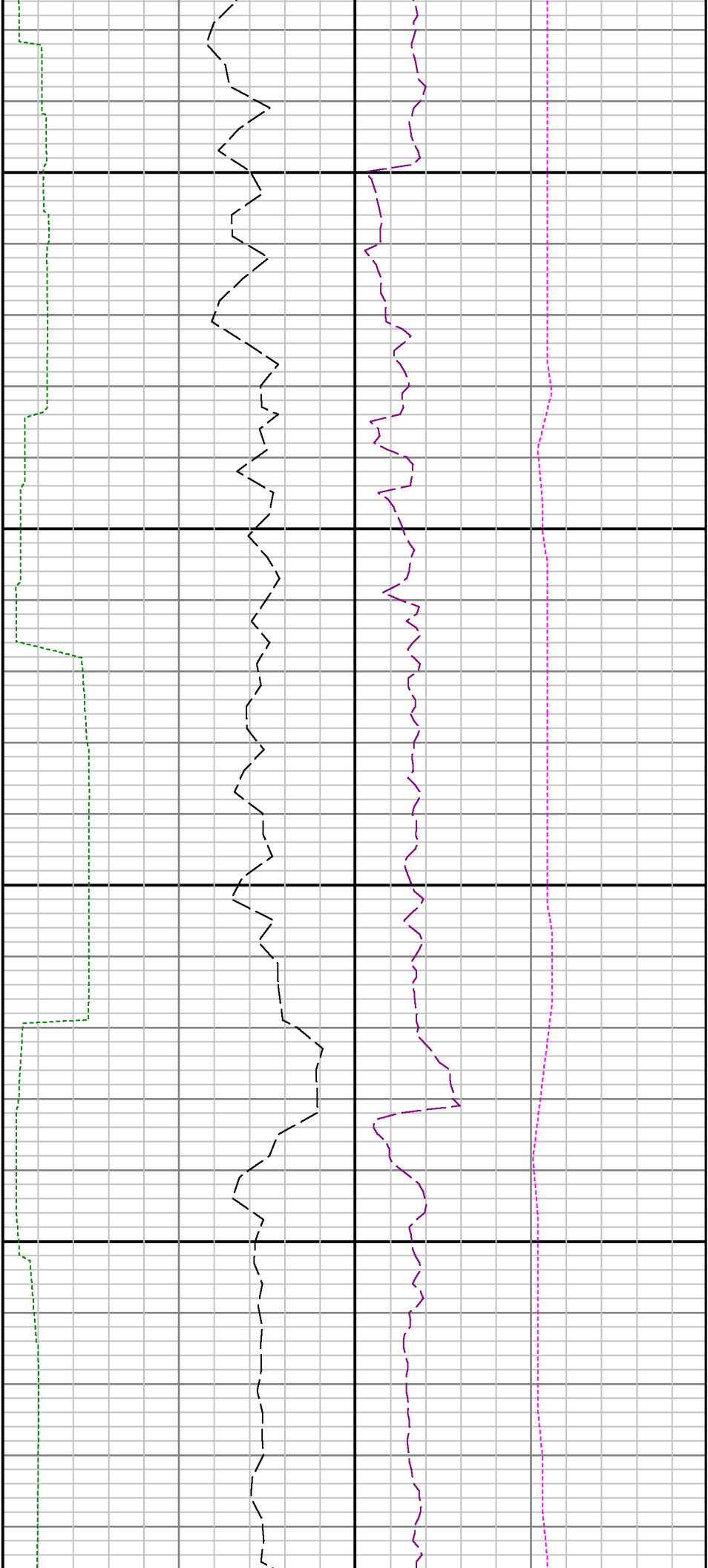


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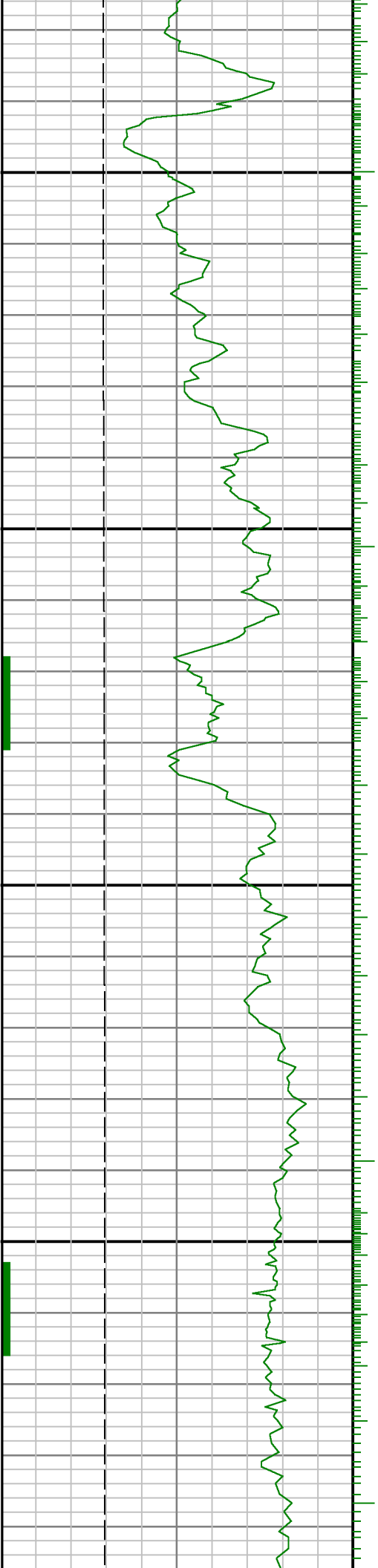




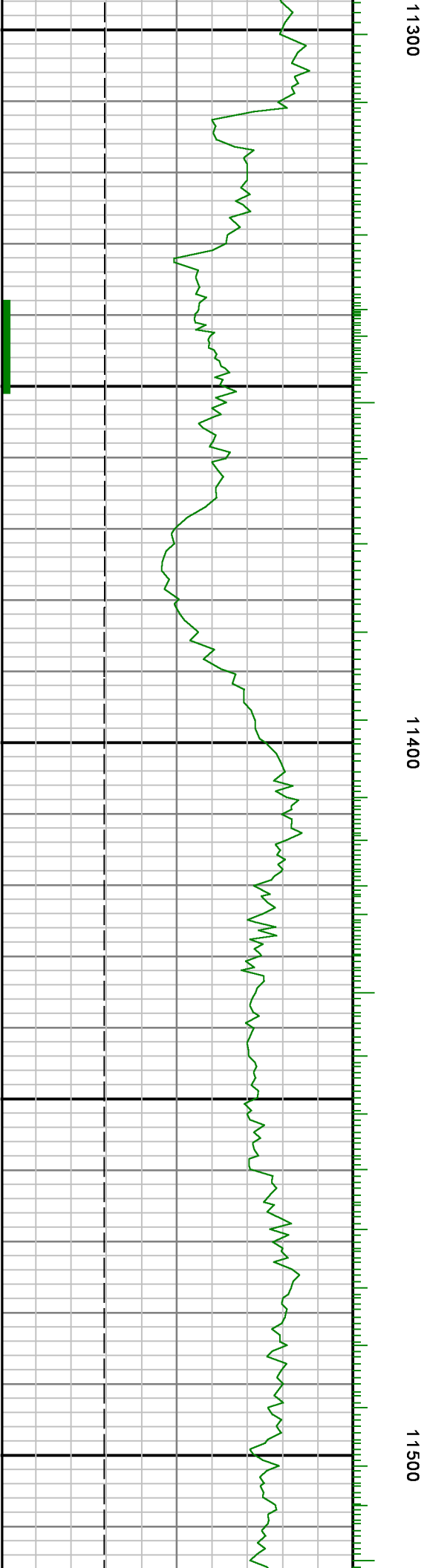


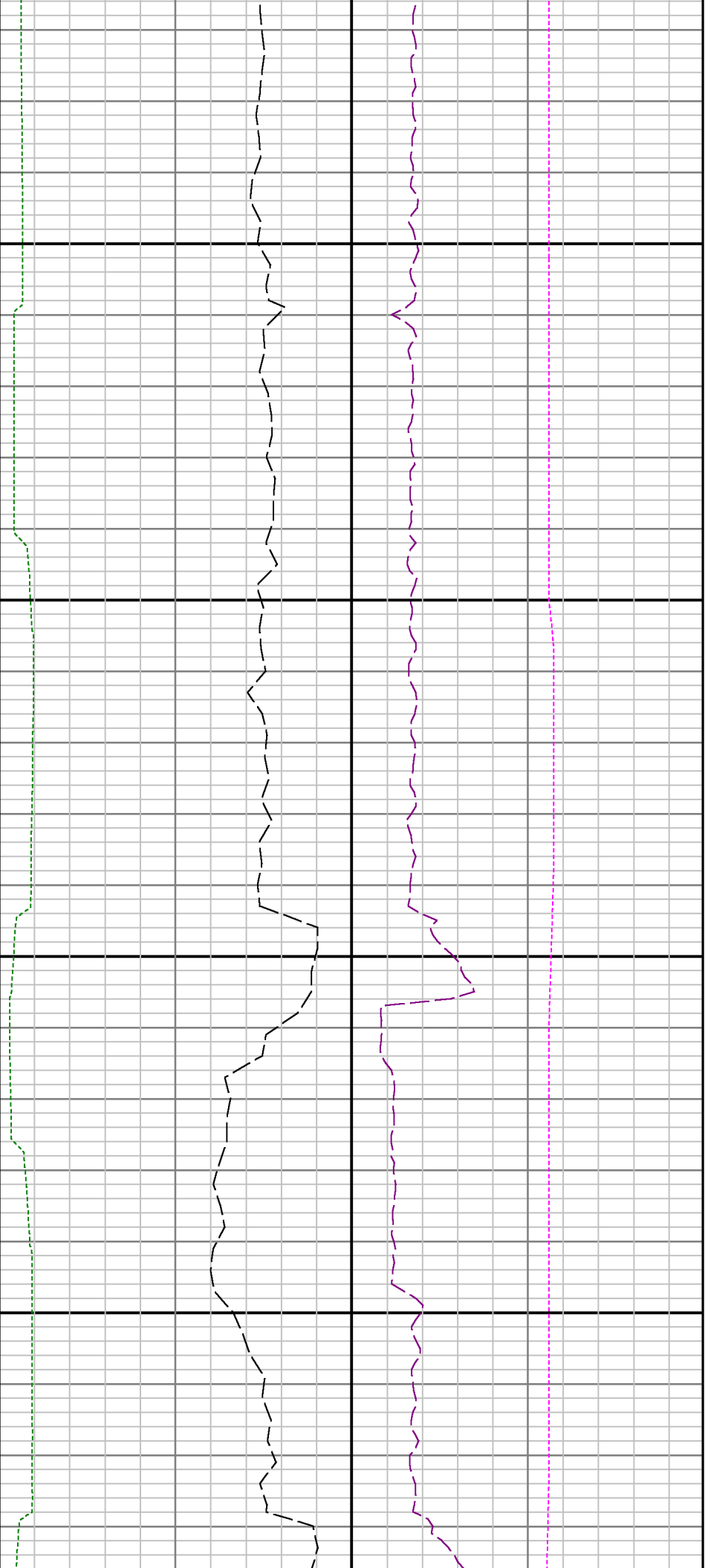
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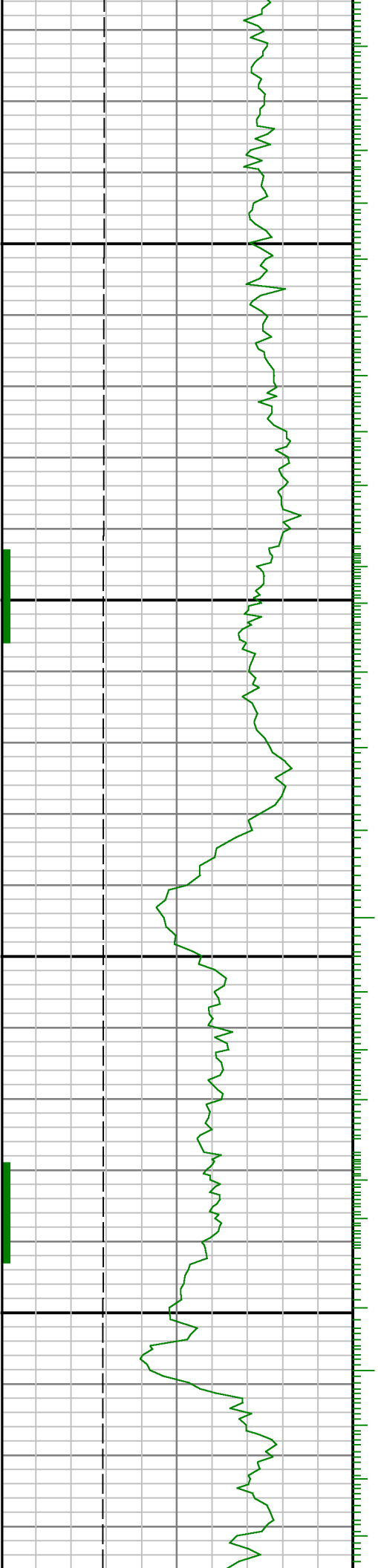


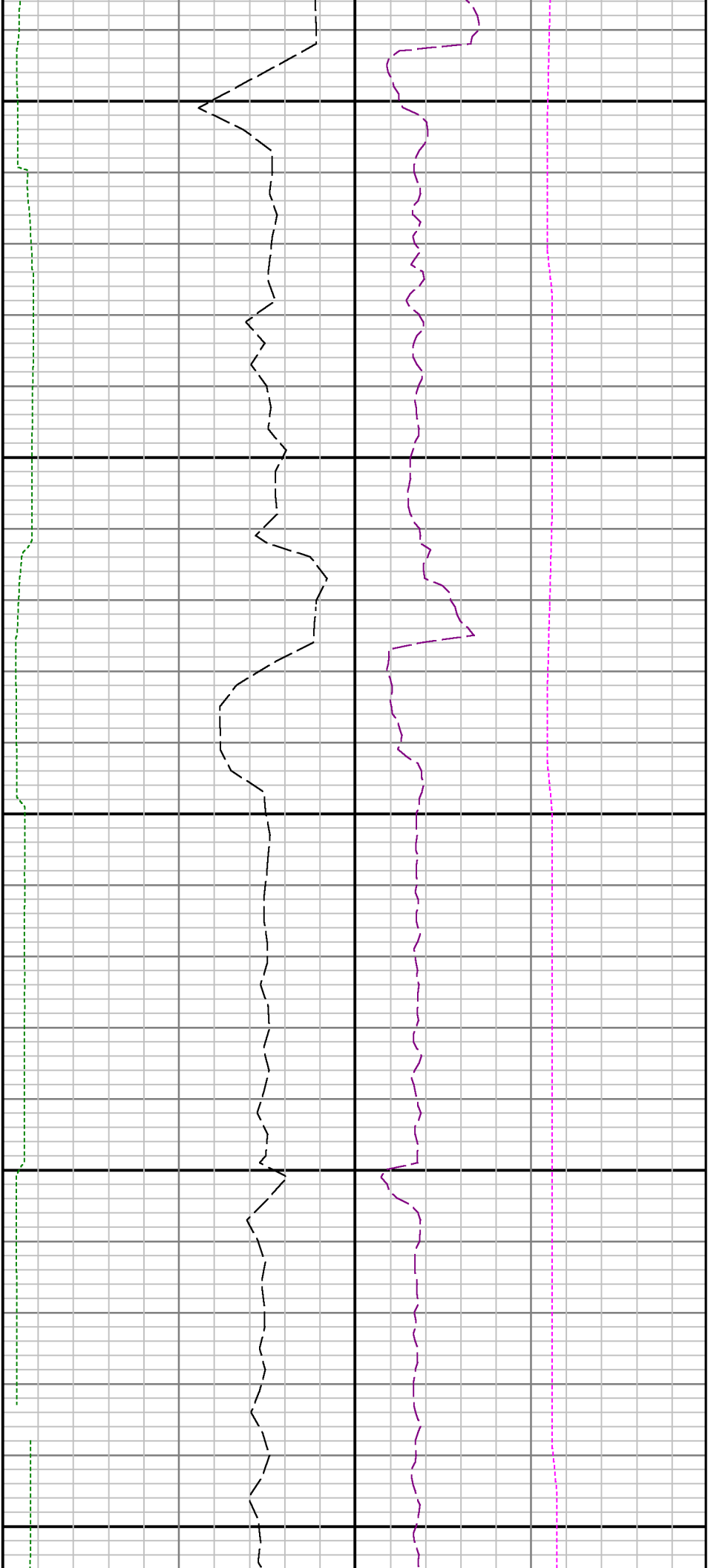




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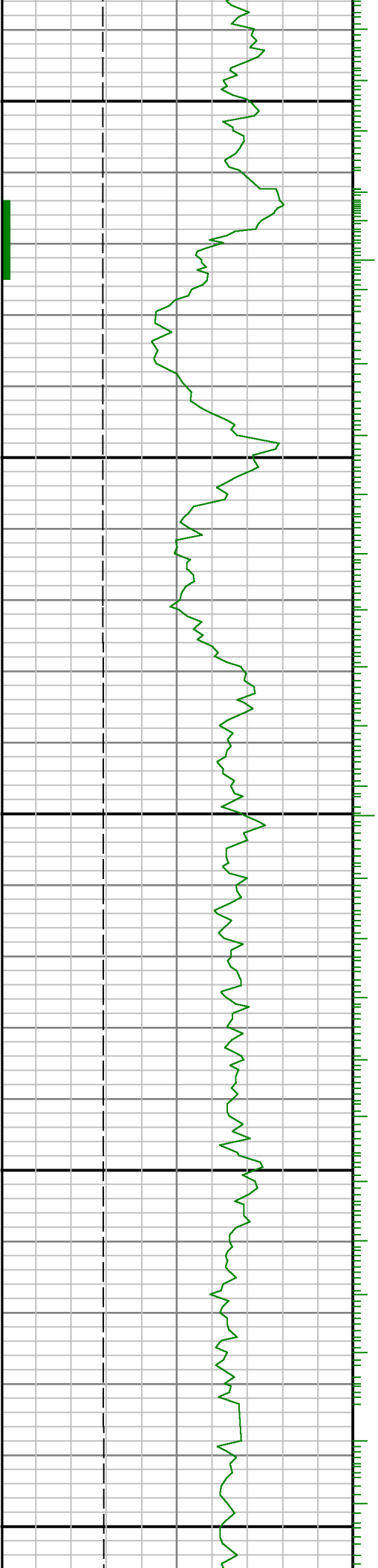
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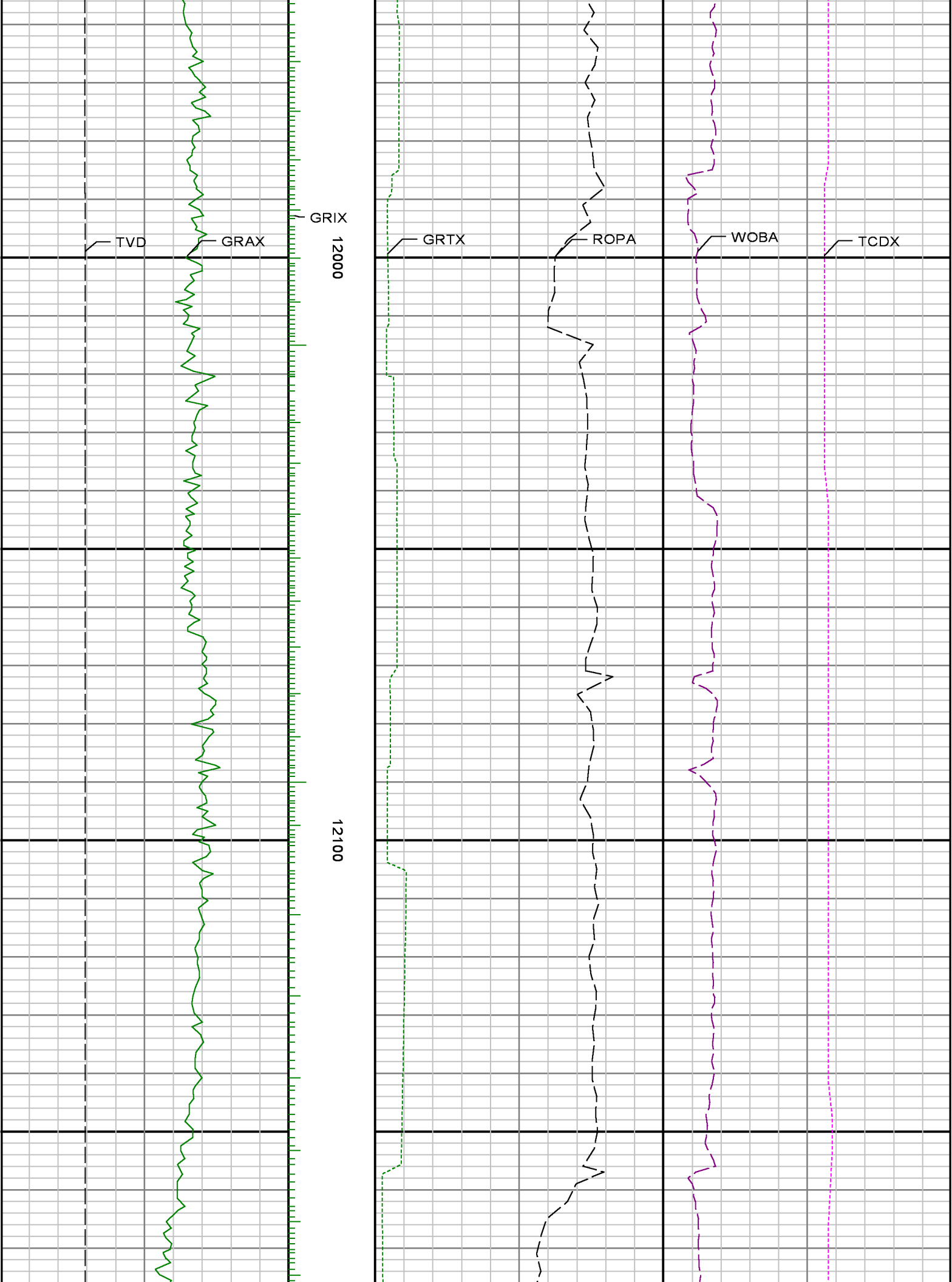


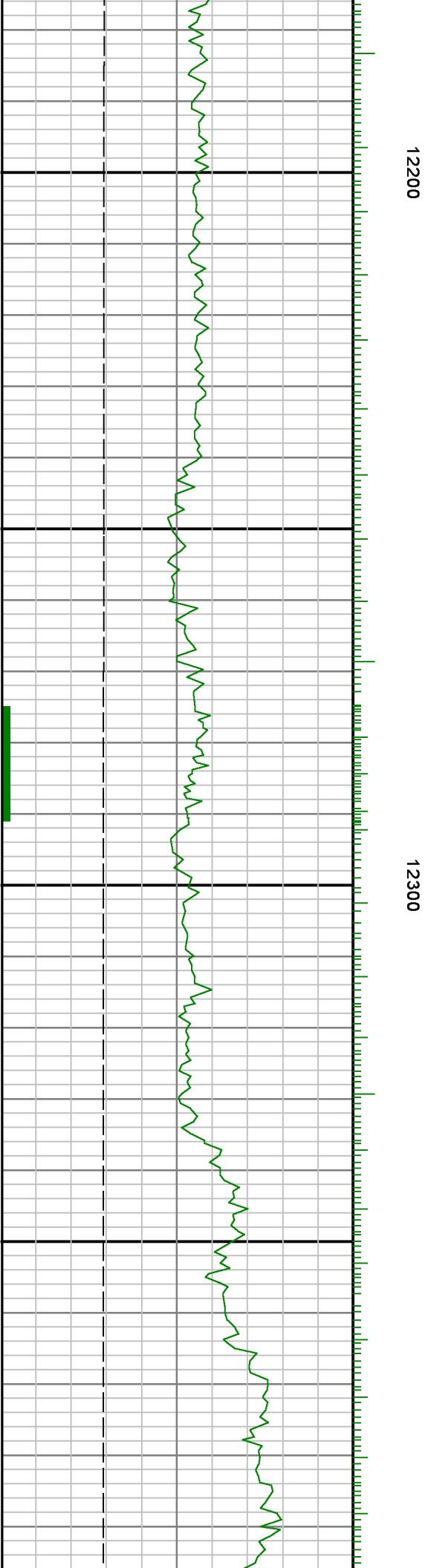
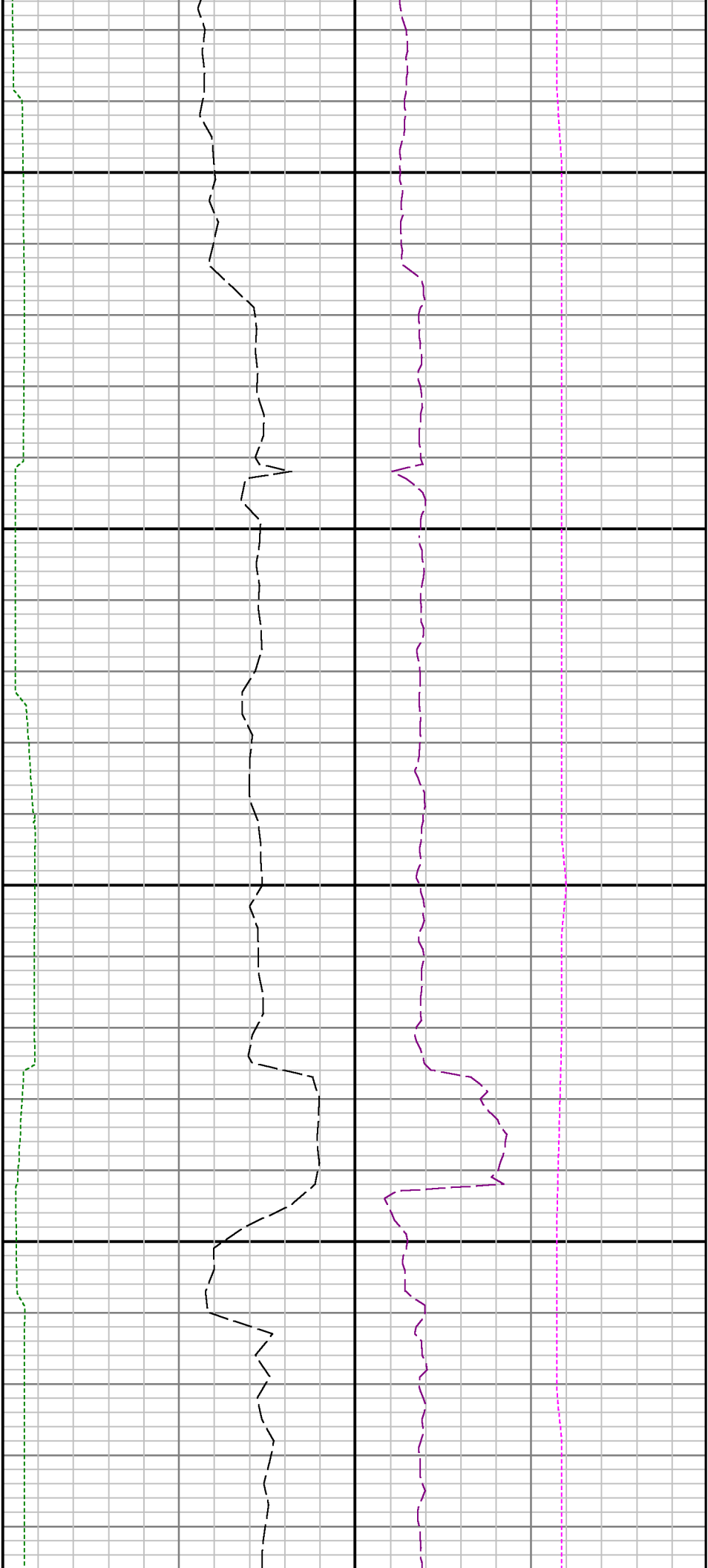


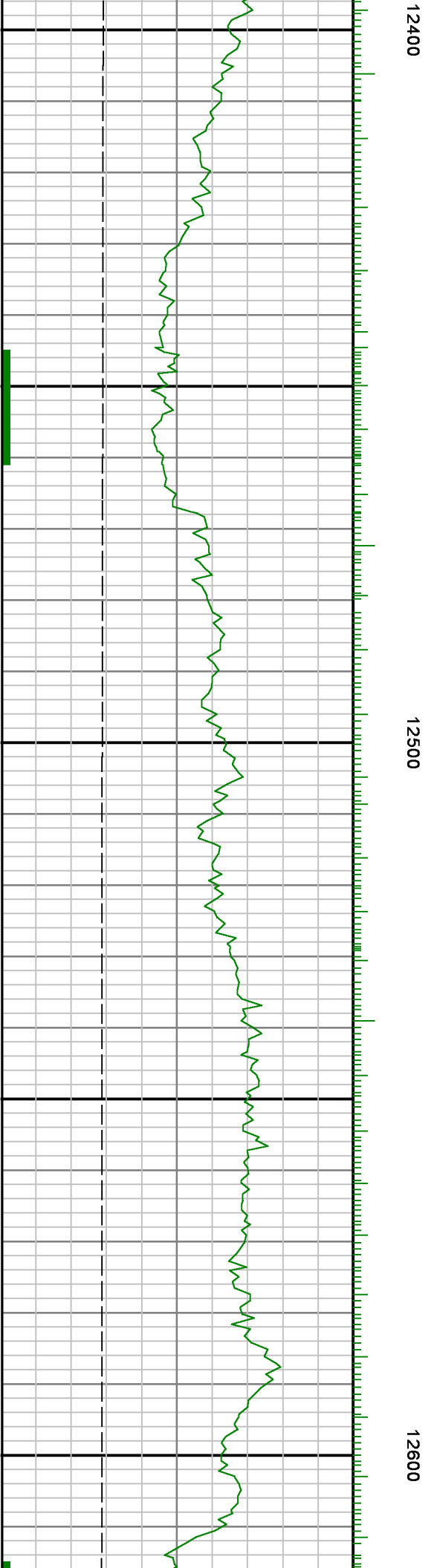
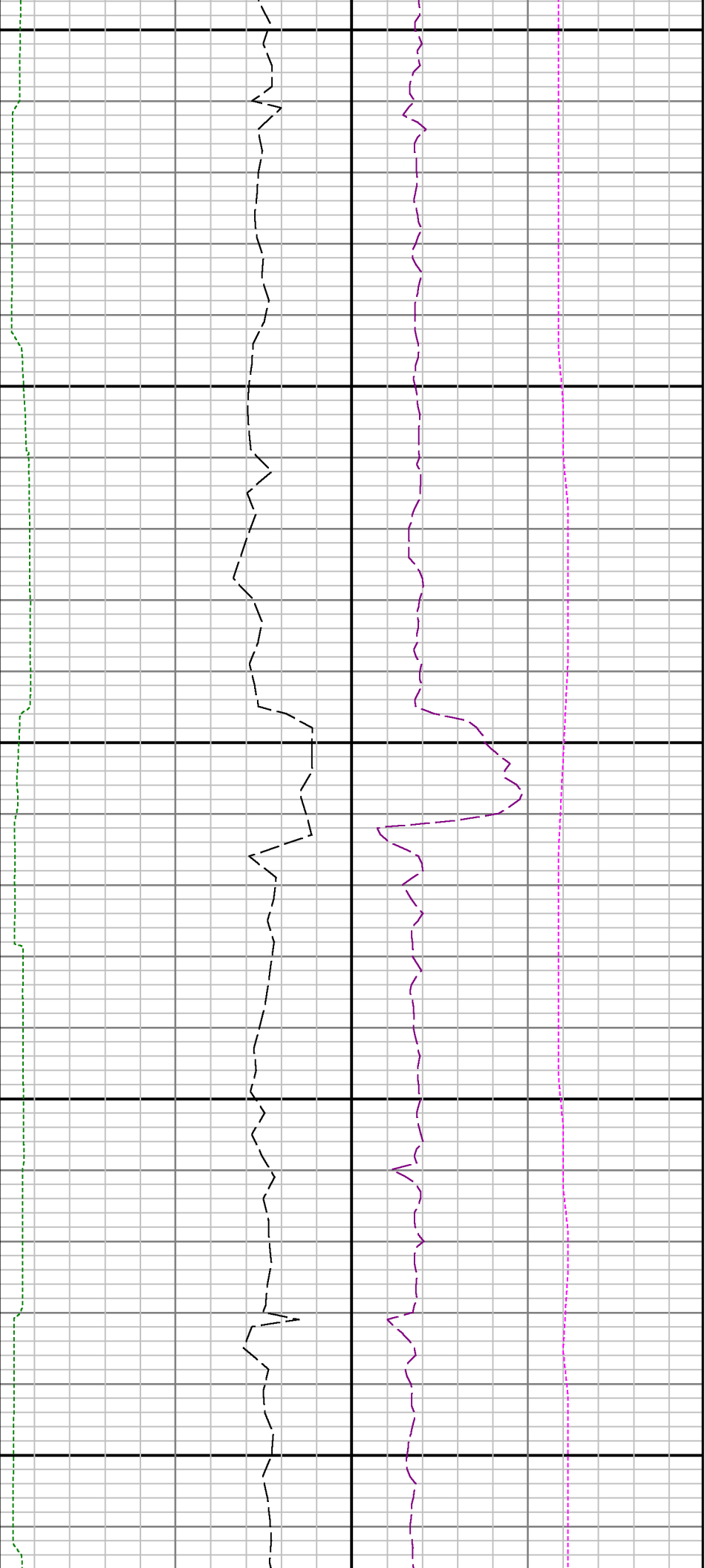
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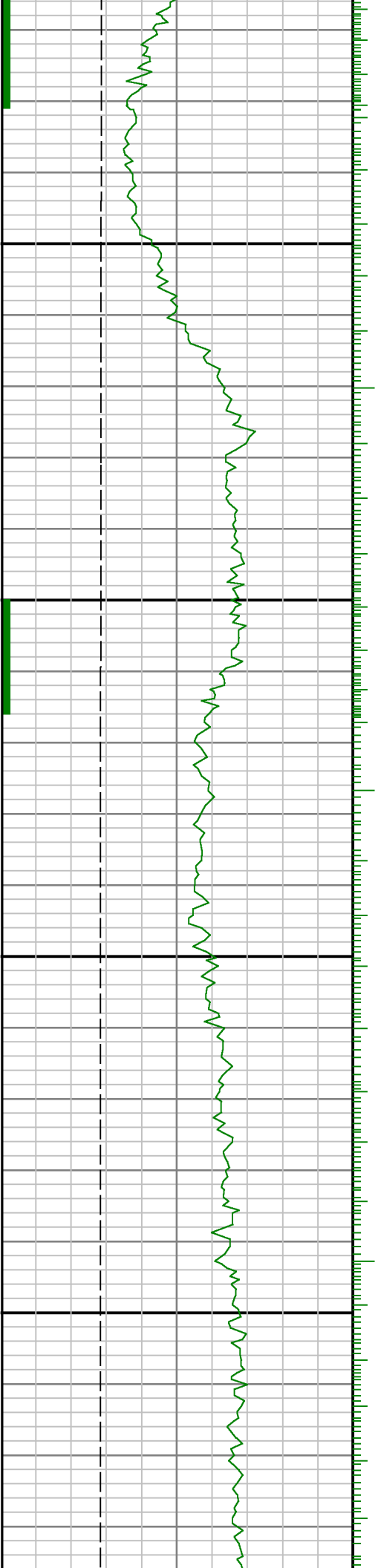


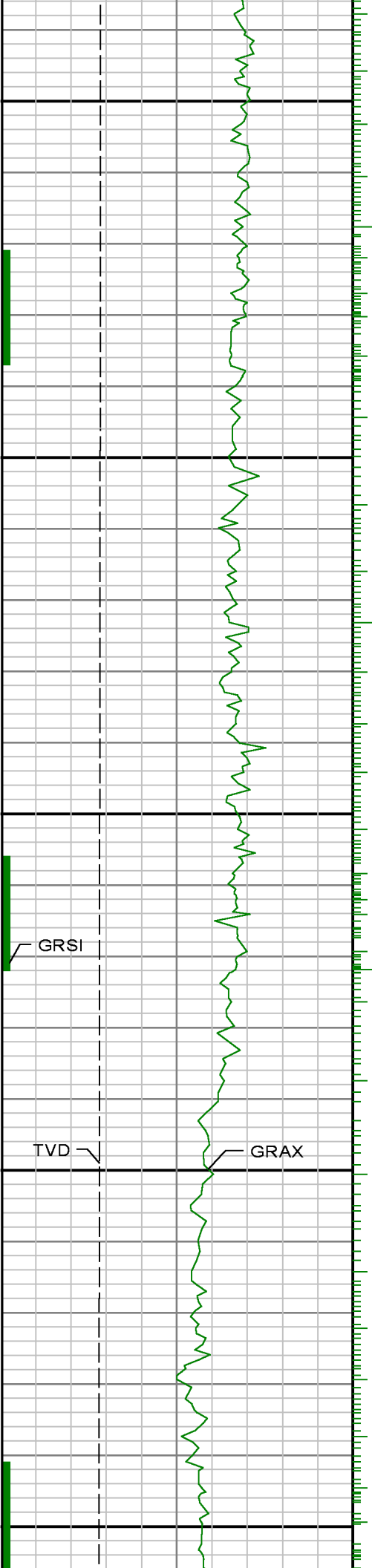




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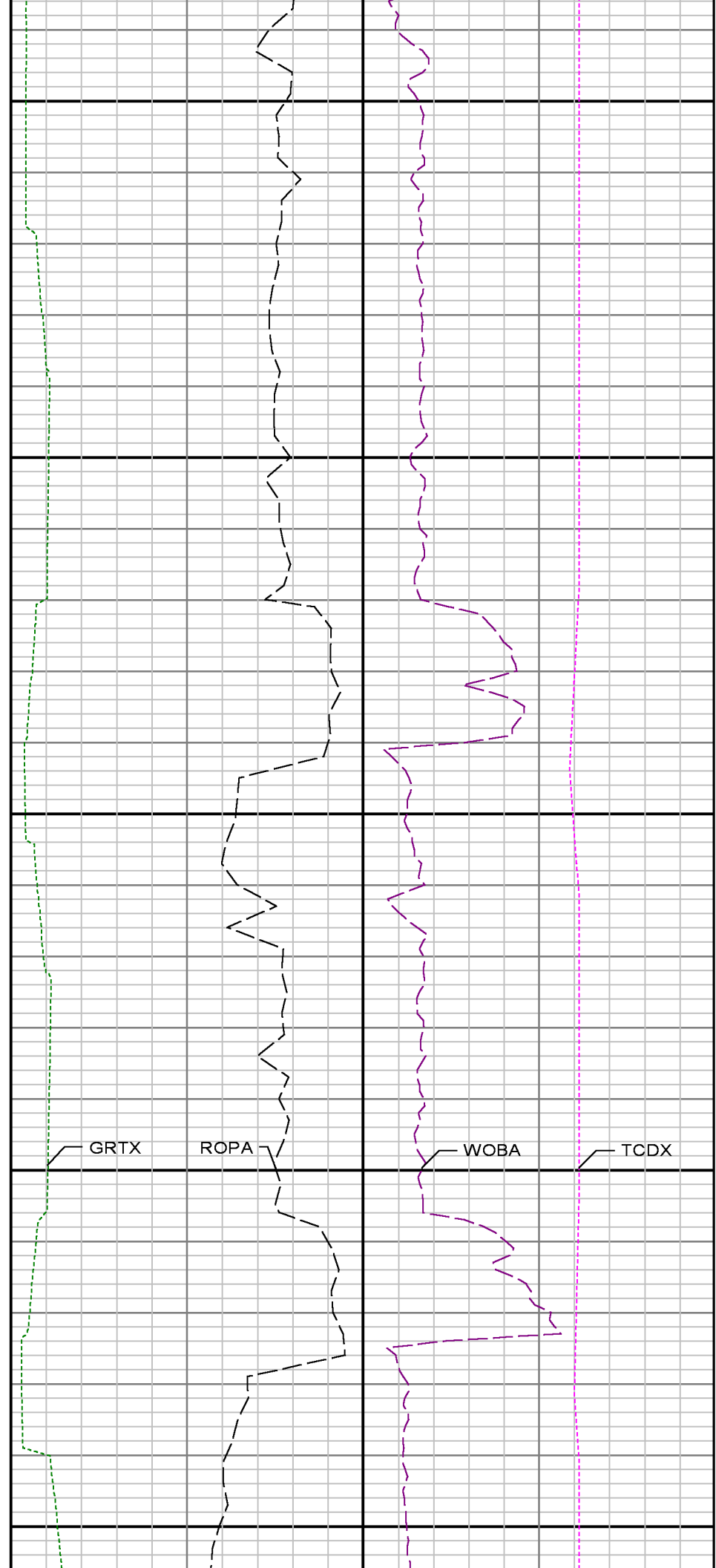
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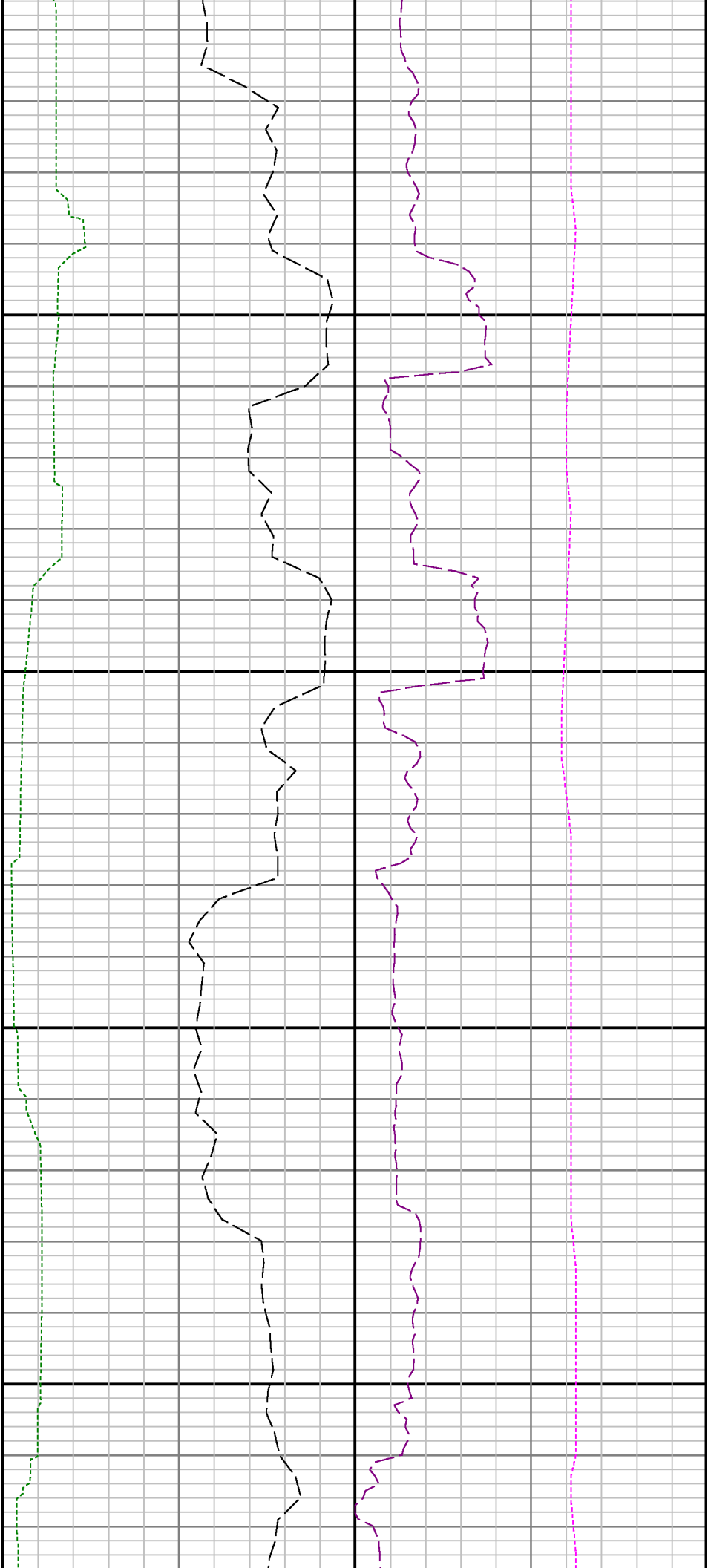


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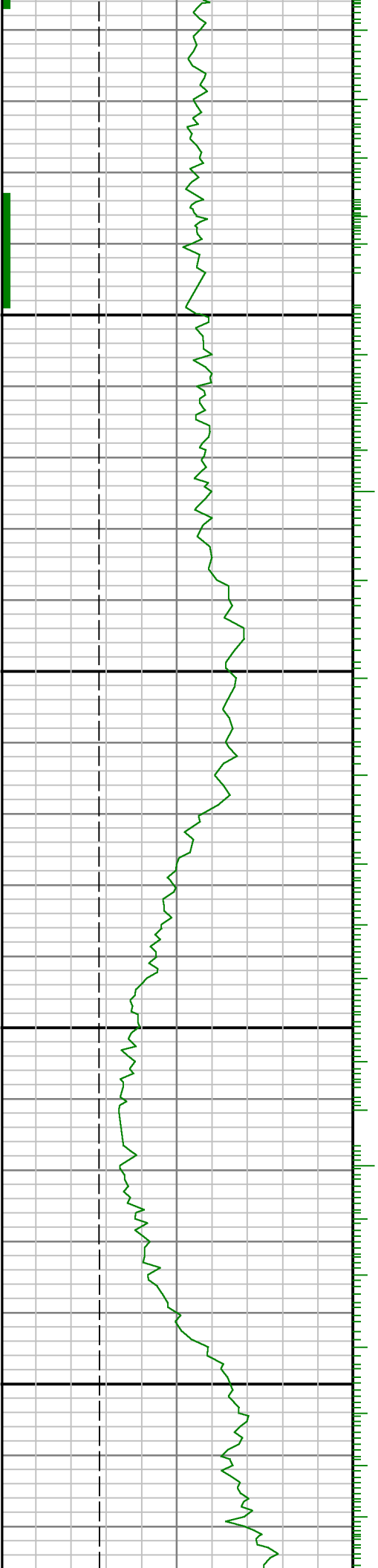






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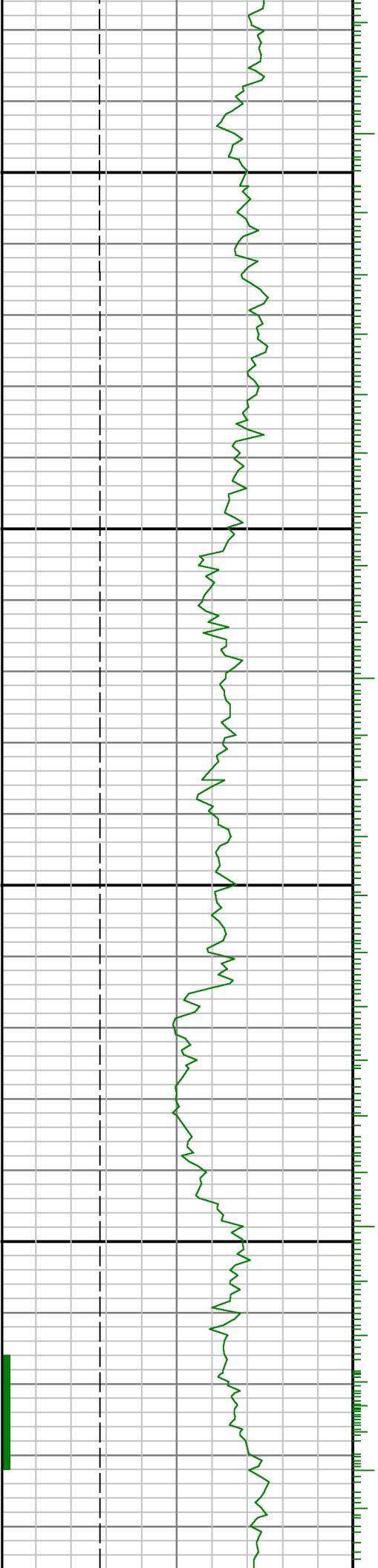
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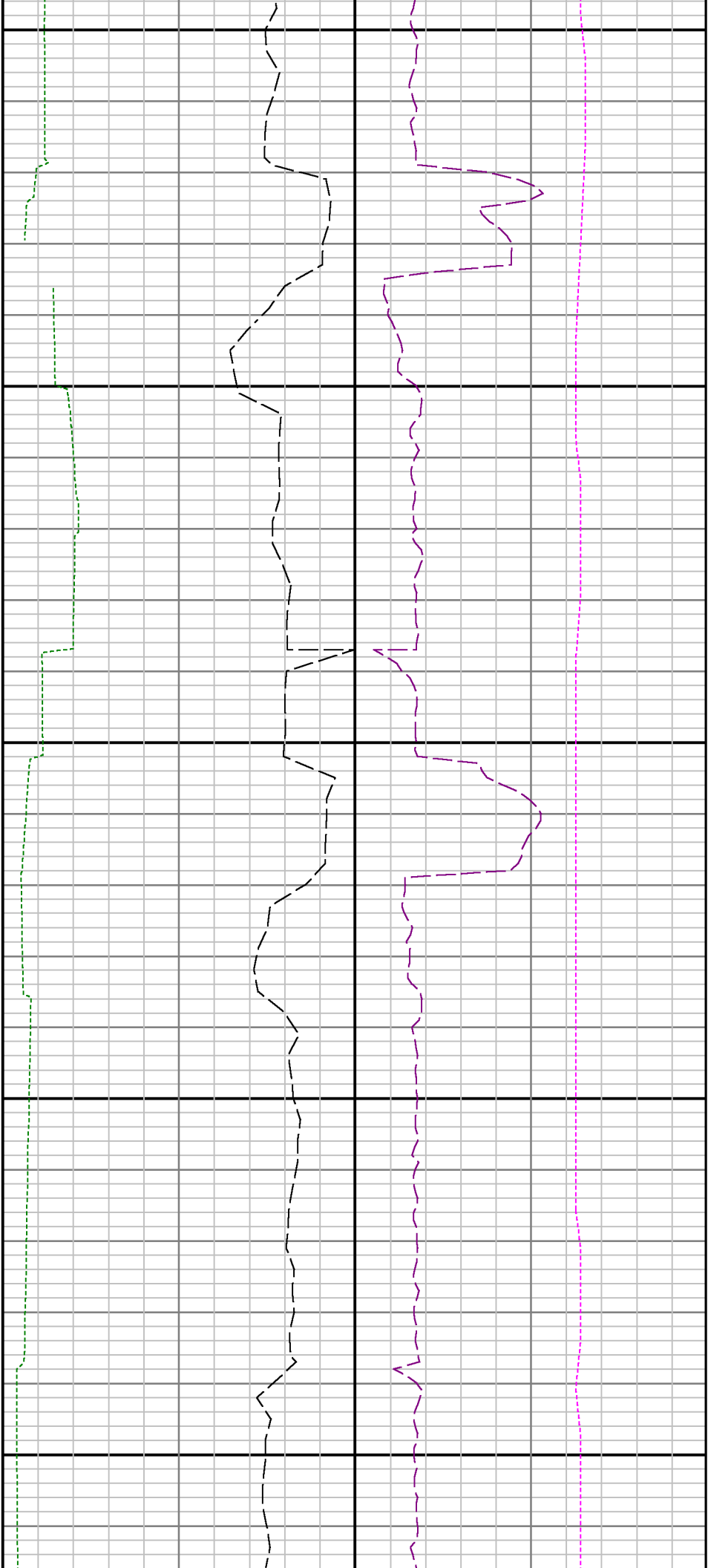




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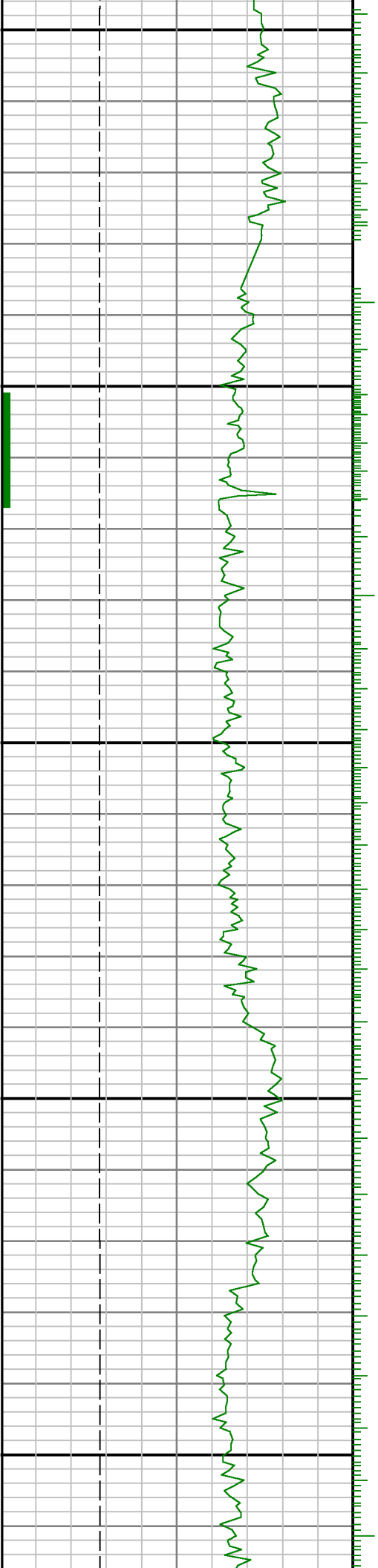


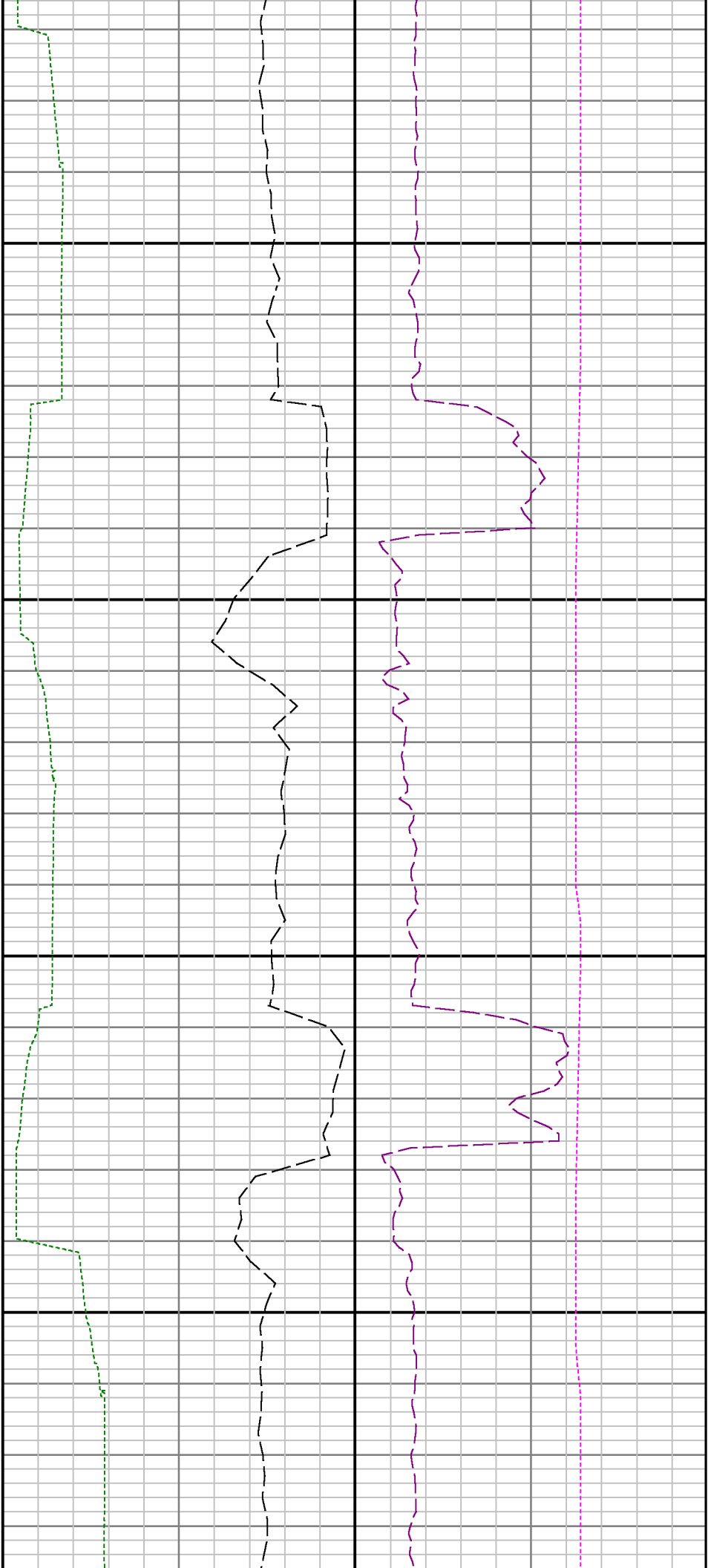


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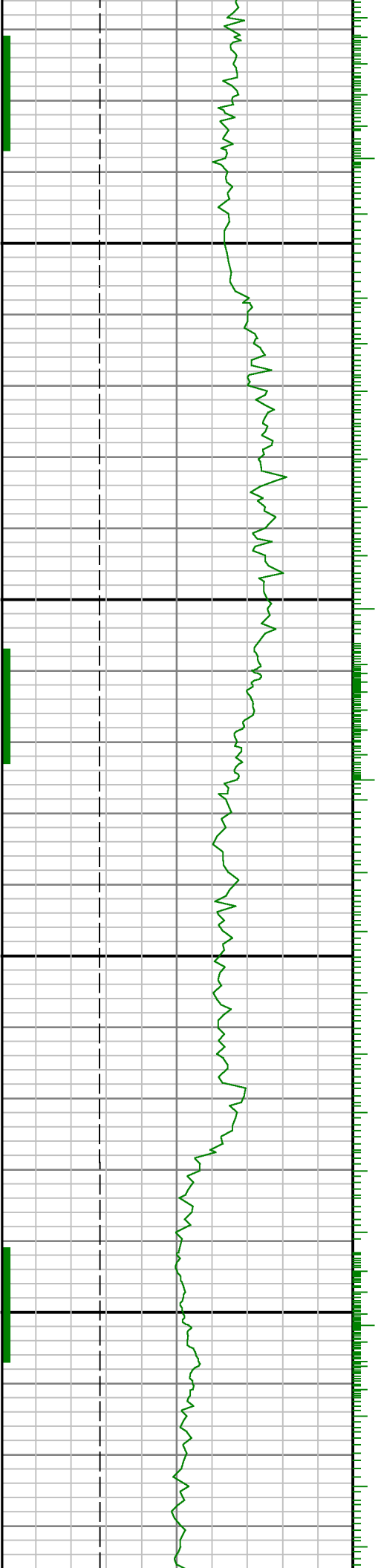
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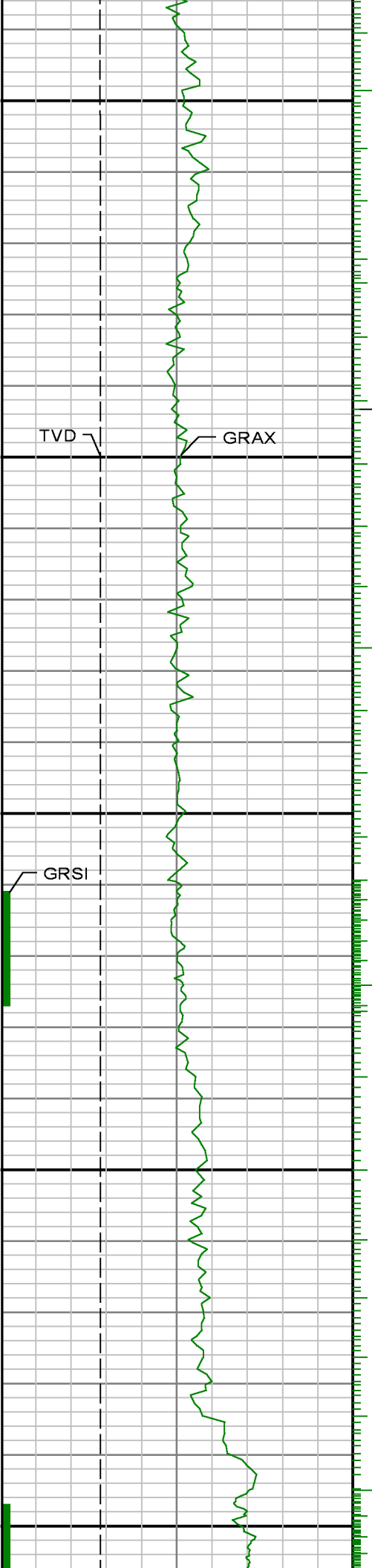




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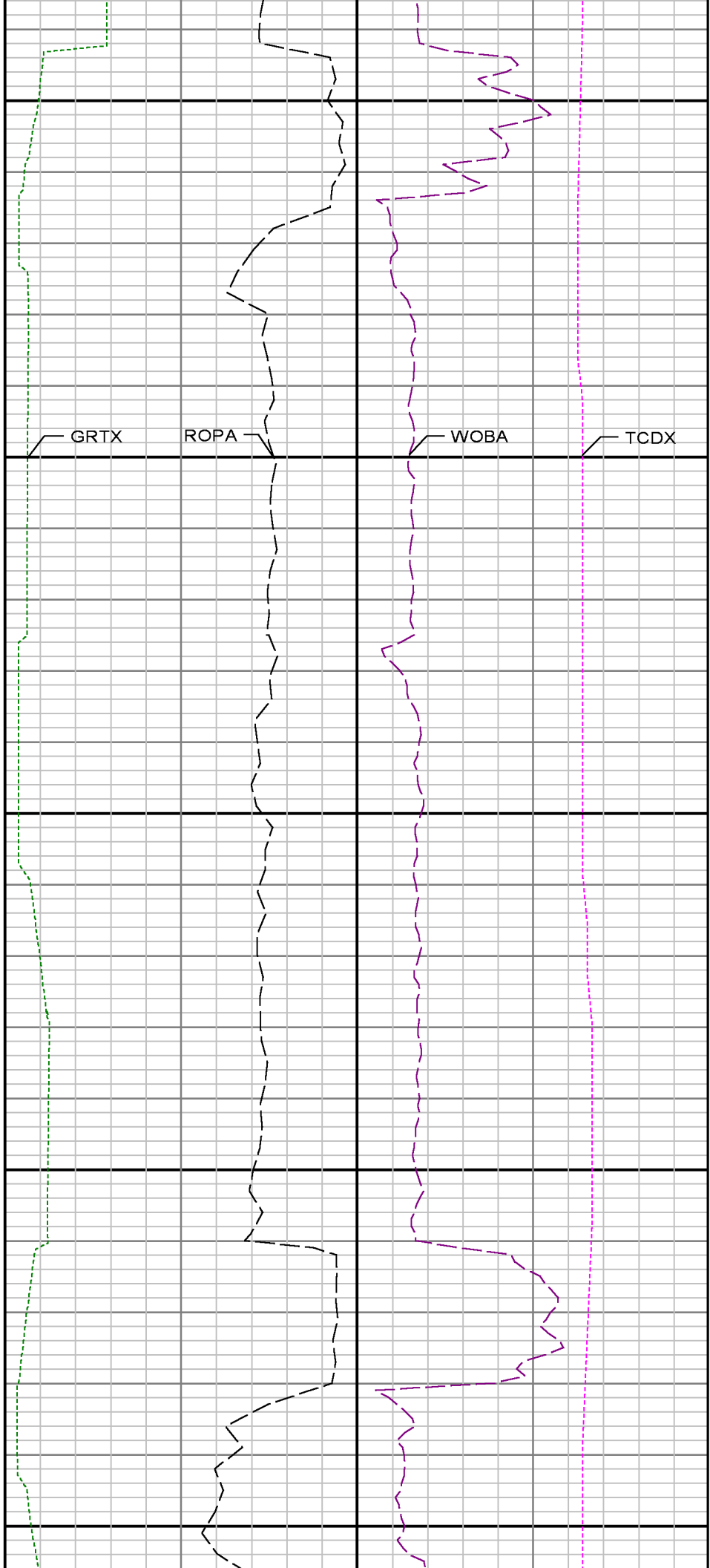
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