



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale:

1:240

MEASURED DEPTH

Company: Anadarko

Well: Cream 15N-B28HZ

Field: Weld County (Kerr McGee)

Region: Continental US State: Colorado

Status:

Final Print

Surface Location:

Latitude: 40° 12' 9.101" N

Longitude: 104° 39' 51.833" W

Other Services:

API Number:

051234096500

Section: 28

TWN: 3S

Range 65W

Permanent Datum (P.D.):

Mean

Sea Level

Elevation: 4844.00 ft.

Elevations:

Log Measured From:

Rig Floor

20.00 ft.

Above P.D.

KB:

DF:

GL:

N/A

Depth Reference:

Driller's Depth

GL:

4824.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 6400.0 ft.

Date From: 23/May/15

Dip Angle: 66.88°

Azi Reference North:

True

Bottom: 12676.0 ft.

Date To: 27/May/15

Total

Mag to Reference

8.46°

Spud Date: 22/May/15

Field Strength: 52520.0 nT

North Correction:

8.46°

Borehole Record

Casing Record

Hole Size

From

To

Size

Weight

From

To

8.750 in.

1238.0 ft.

7563.0 ft.

9.600 in.

36.00 lb/ft

Surface

1226.0 ft.

6.125 in.

7563.0 ft.

12676.0 ft.

7.000 in.

26.00 lb/ft

Surface

7553.0 ft.

Water Based

Surface

12676.0 ft.

8.750 in.

7563.0 ft.

13.1° / 337.9°

84.5° / 178.7°

6.125 in.

12676.0 ft.

90.1° / 179.7°

89.6° / 178.8°

Inc / Az (Start)

Inc / Az (End)

Water Based

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Inc / Az (End)

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (lb/gal)	Viscosity (s/qt)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (mg/L)	K+ (%)
23/May/15	18:00	1	6999.0	Poly-Plus	10.0	65	9.5	4.8	2/90	Suction	600	N/A
26/May/15	06:00	2	9620.0	Poly-Plus	9.7	54	9.5	4.8	2/90	Suction	400	N/A
26/May/15	18:00	2	11436.0	Poly-Plus	9.8	49	9.5	4.6	3/90	Suction	400	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRTX	Gamma Ray Time Since Drilled	min.
GRIX	Gamma Ray Data Density	points
GRSI	Gamma Ray Slide Indicator	unitless
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	Deg. F
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	12456787	Directional	45.78	6.910	3.250
1	SRIG	12622668	Gamma	42.41	6.910	3.250
2	DIR	11866045	Directional	50.00	4.750	2.688
2	SRIG	12131406	Gamma	46.58	4.750	2.688

Service and Tool Mnemonics

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

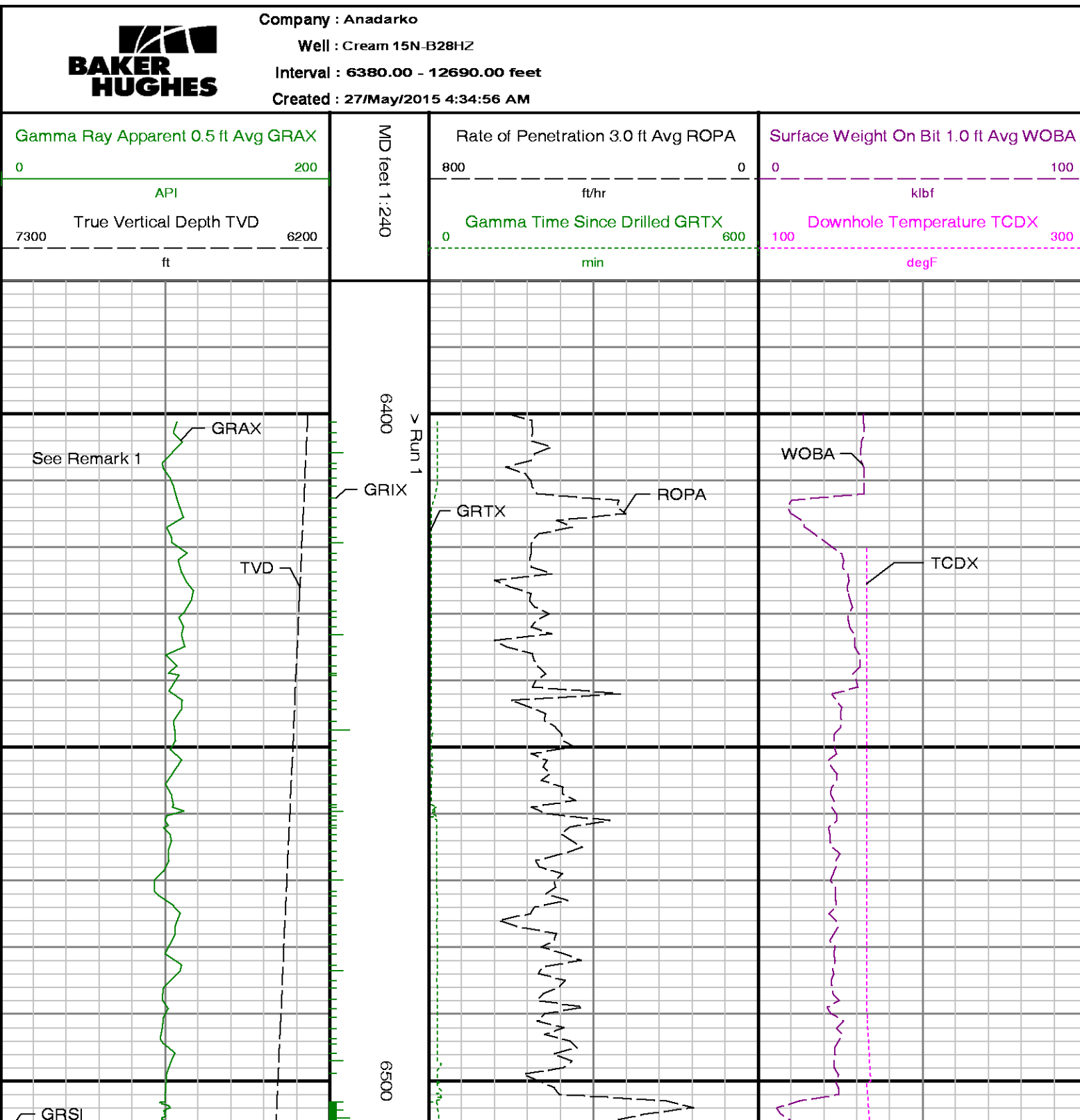
Comments

1.) Baker Hughes Run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1238 to 7563 feet MD (1229 to 7044 feet TVD).
2.) Baker Hughes Run 2 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7563 to 12676 feet MD (7044 to 7023 feet TVD).
3.) Depth measurements were 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.
4.) A sliding indicator is shown on the left edge 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.

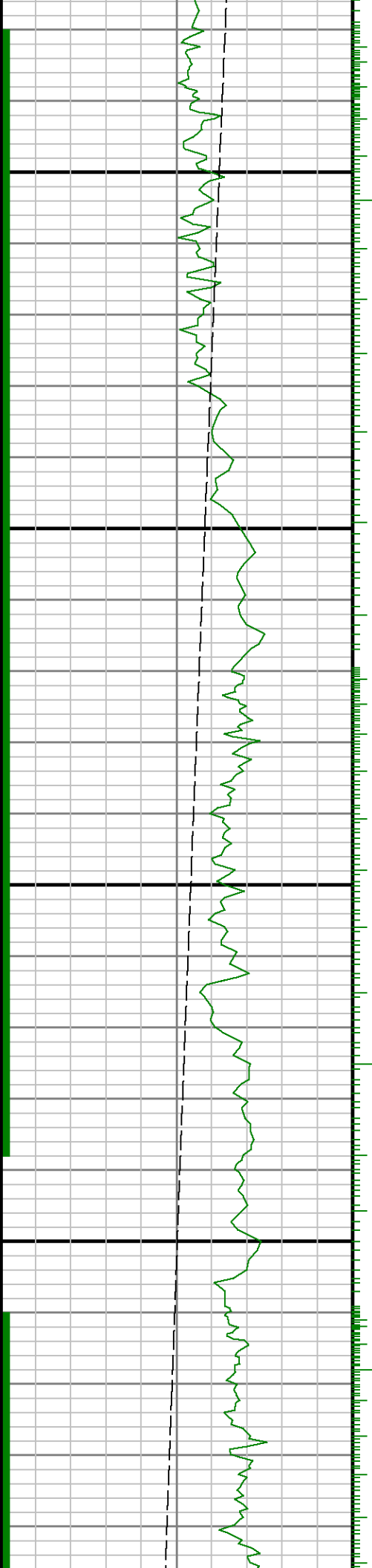
Remarks

Number	Measured	Hole	LWD	Remark
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	Depth (ft.)	Section (in.)	Run No.	
1	6410	8.750	1	Began logging Gamma above Build Section at 6400 feet MD (6273 feet TVD)
2	7540	8.750	1	The interval from 7523 to 7566 feet MD (7041 to 7044 feet TVD) was logged up to 42 hours after being drilled due to casing operations.
3	12650	6.125	2	The interval from 12630 to 12676 feet MD (7022 to 7023 feet TVD) has no logging data due to sensor to bit offset.

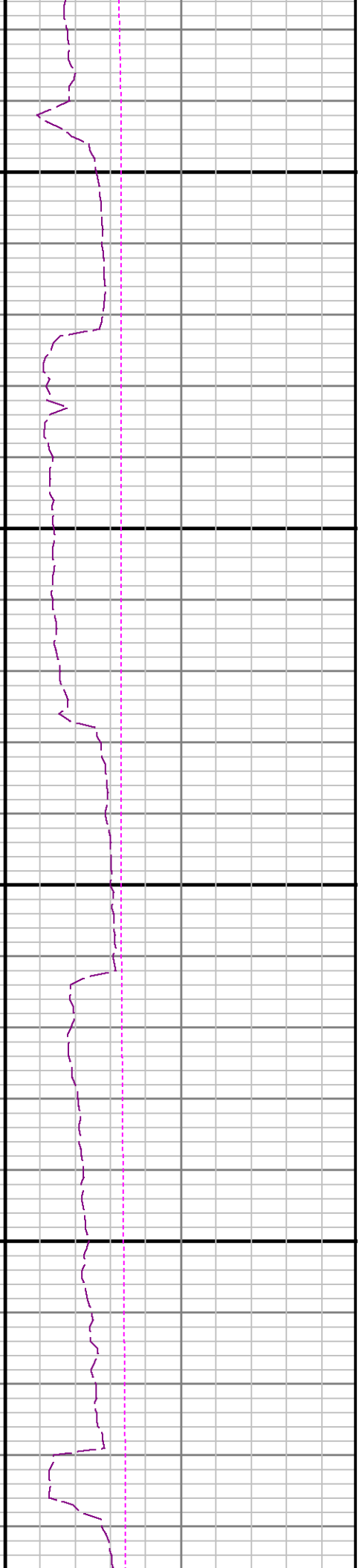
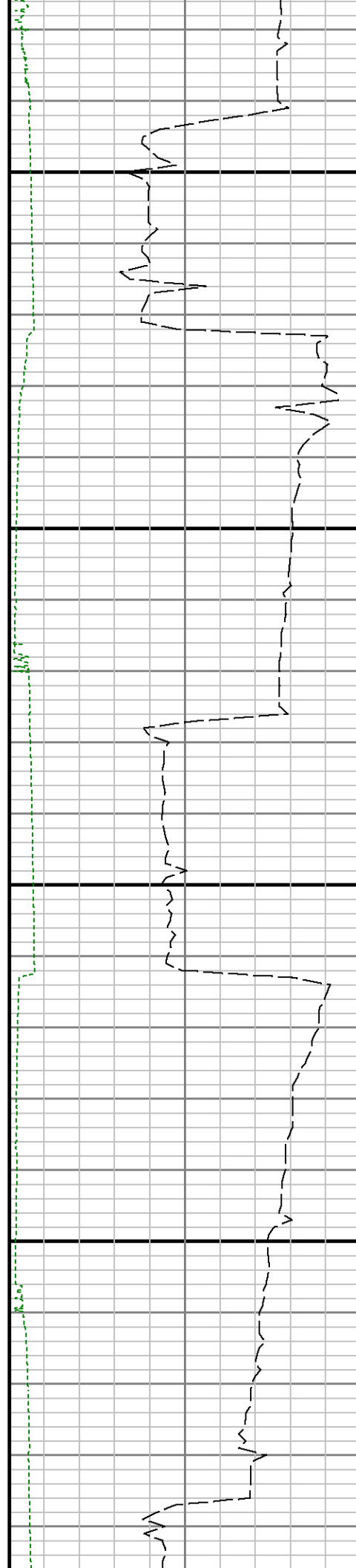


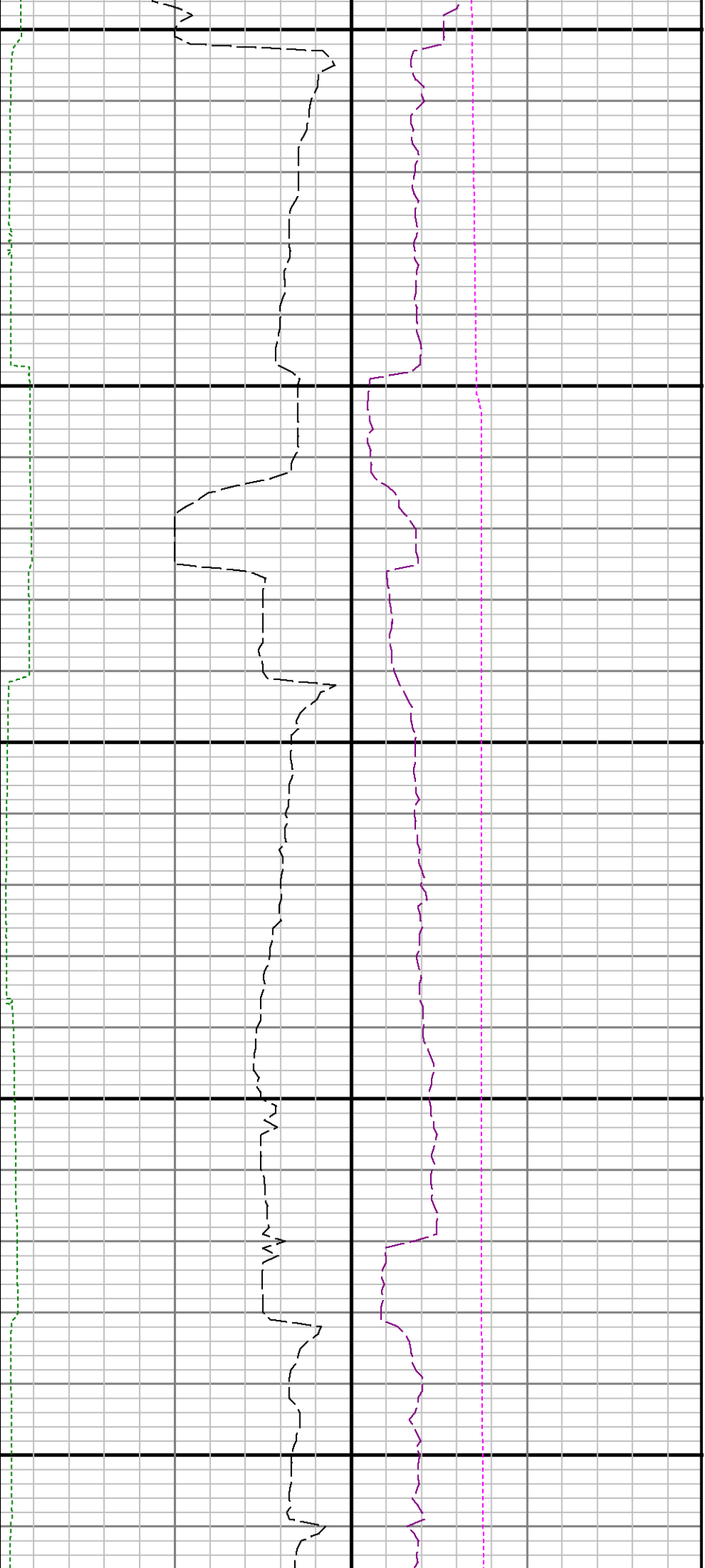




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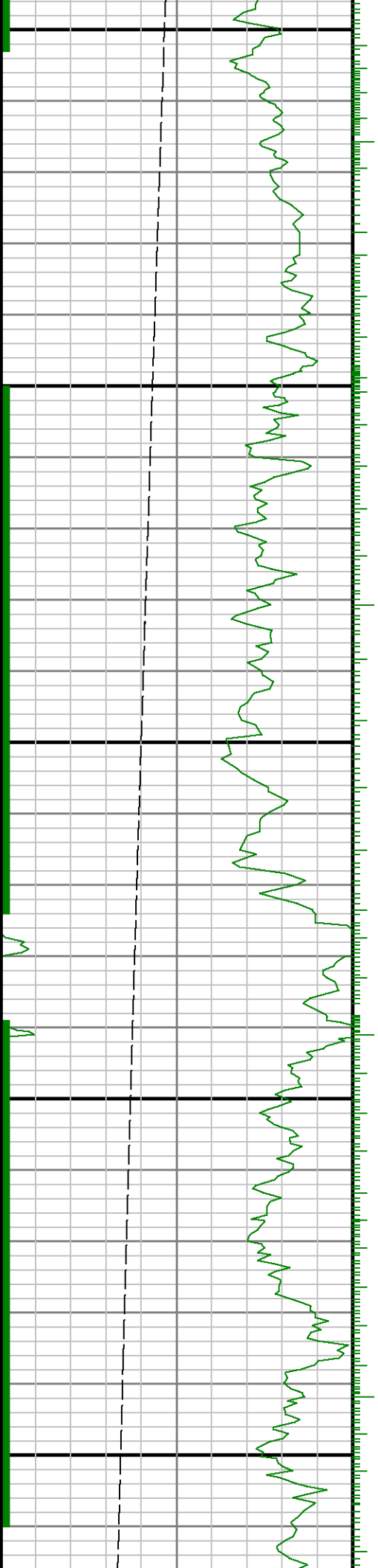
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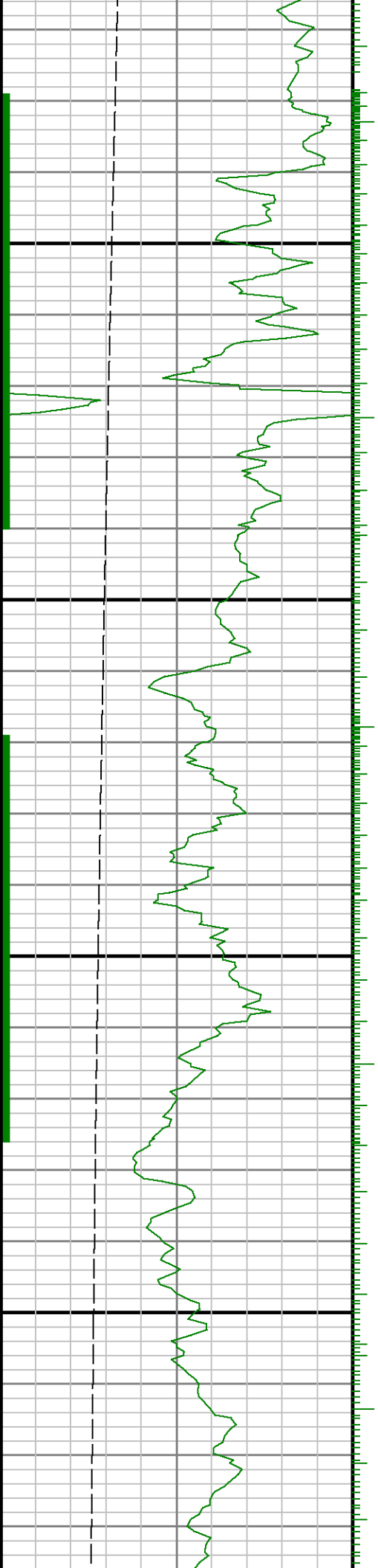
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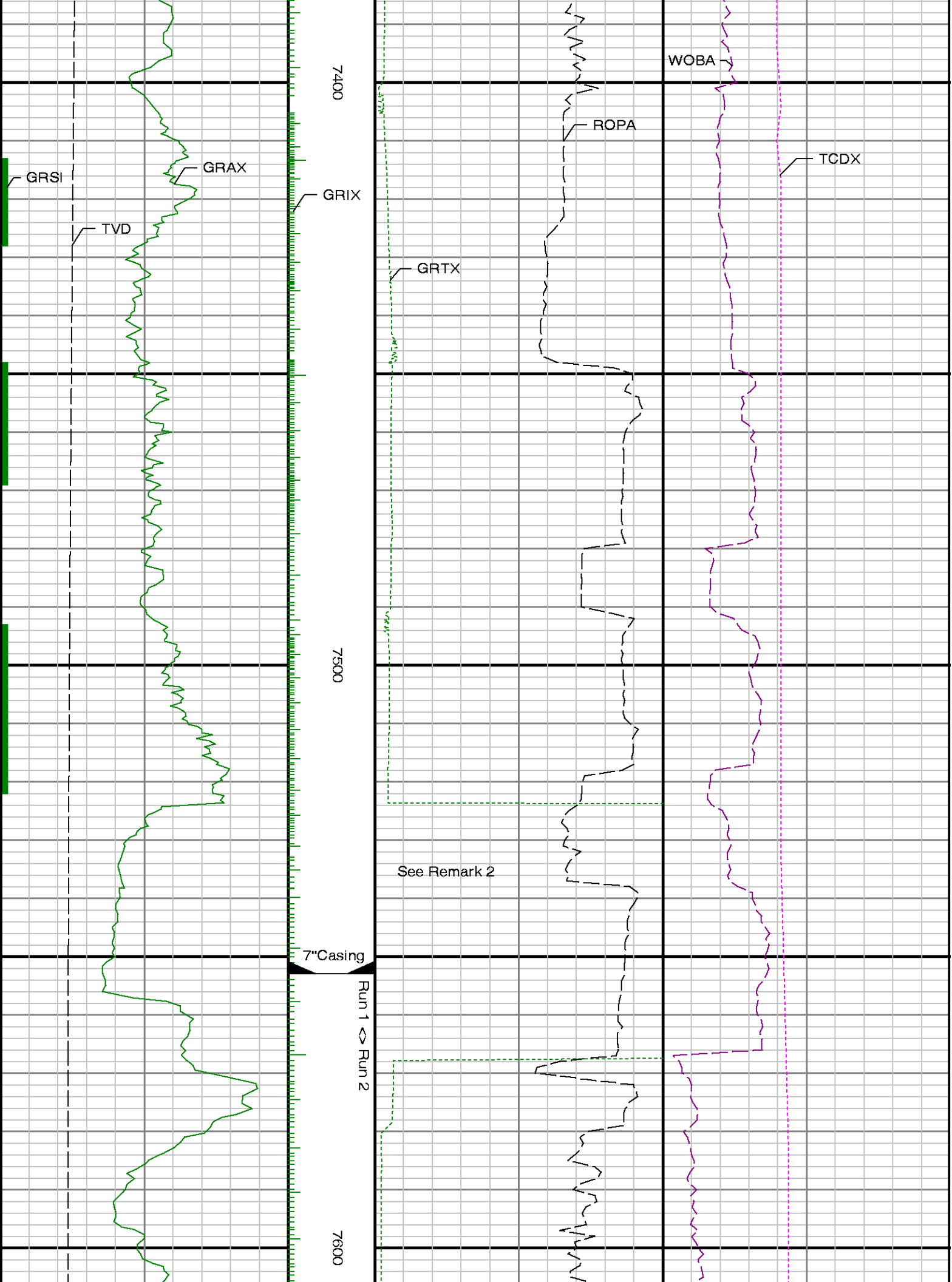


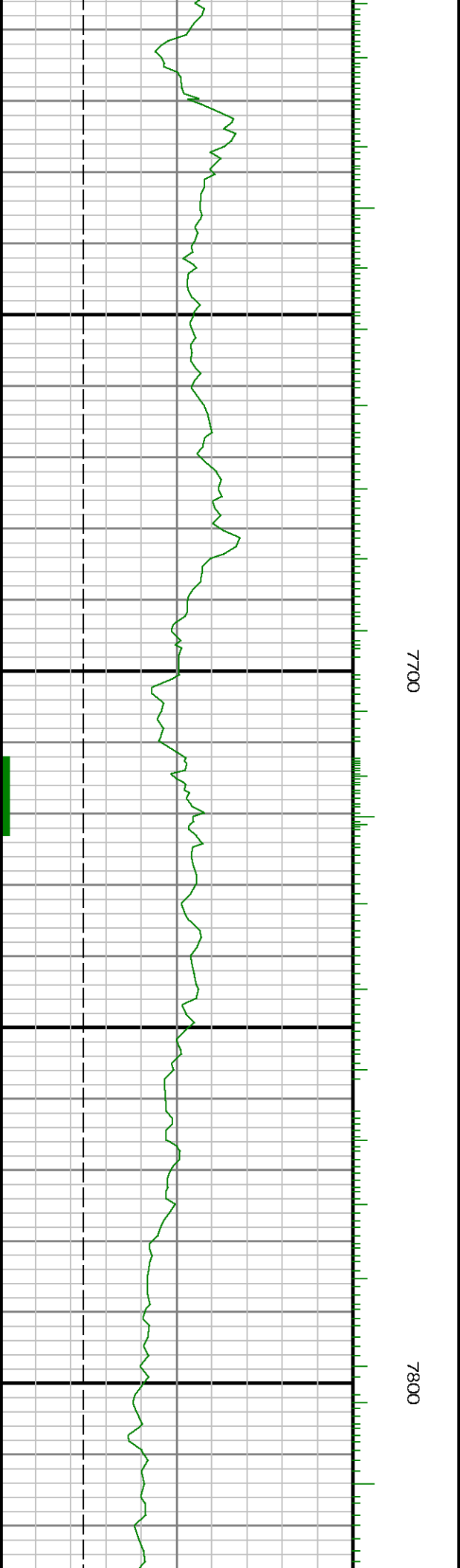
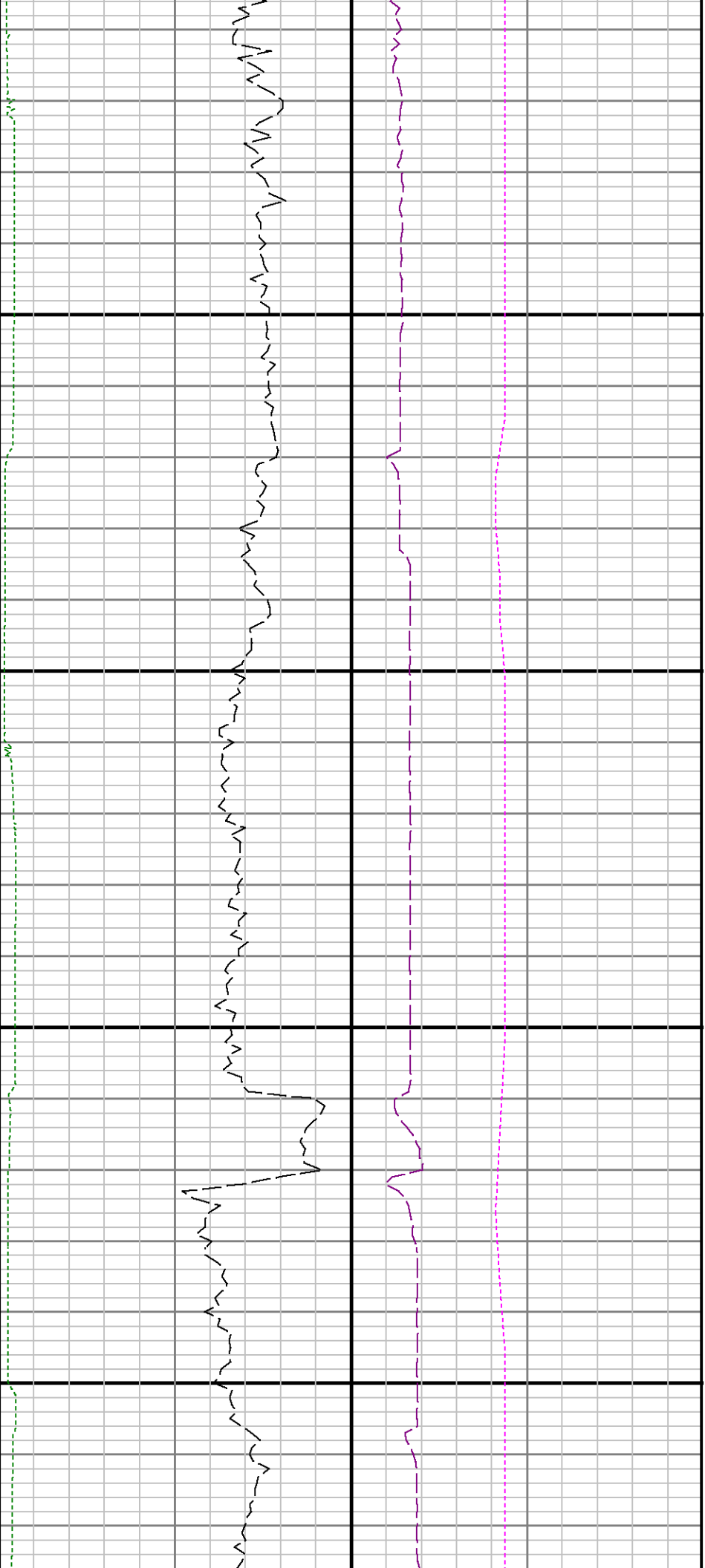


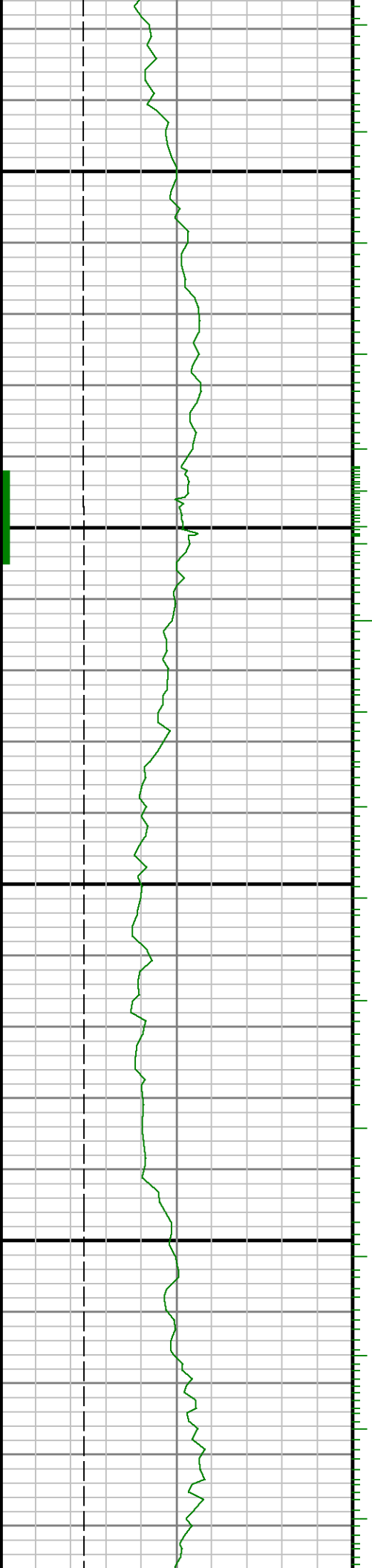
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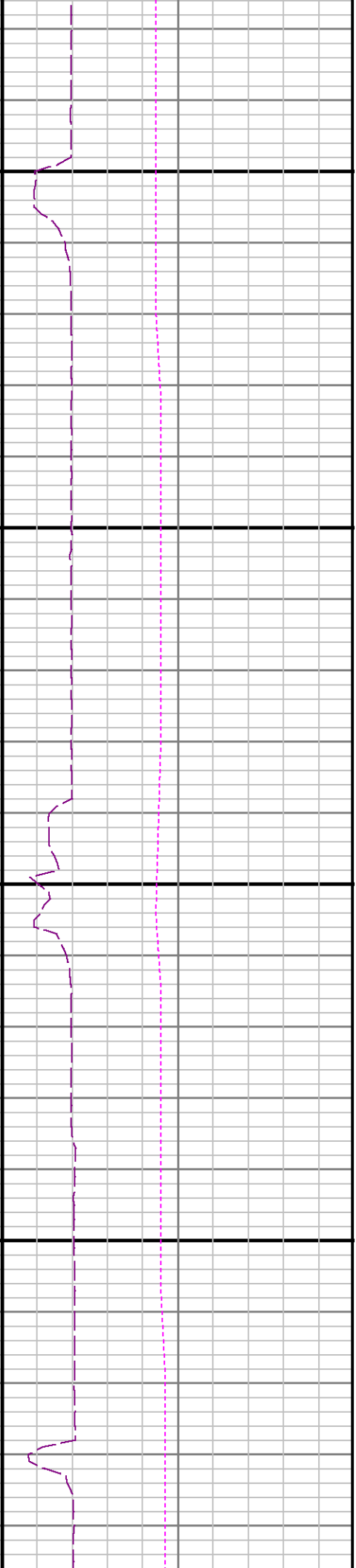
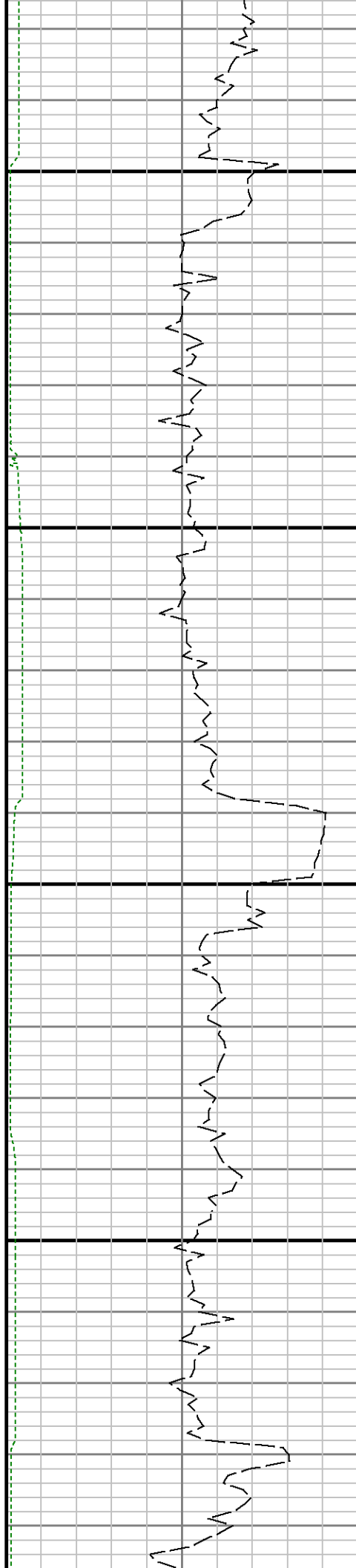


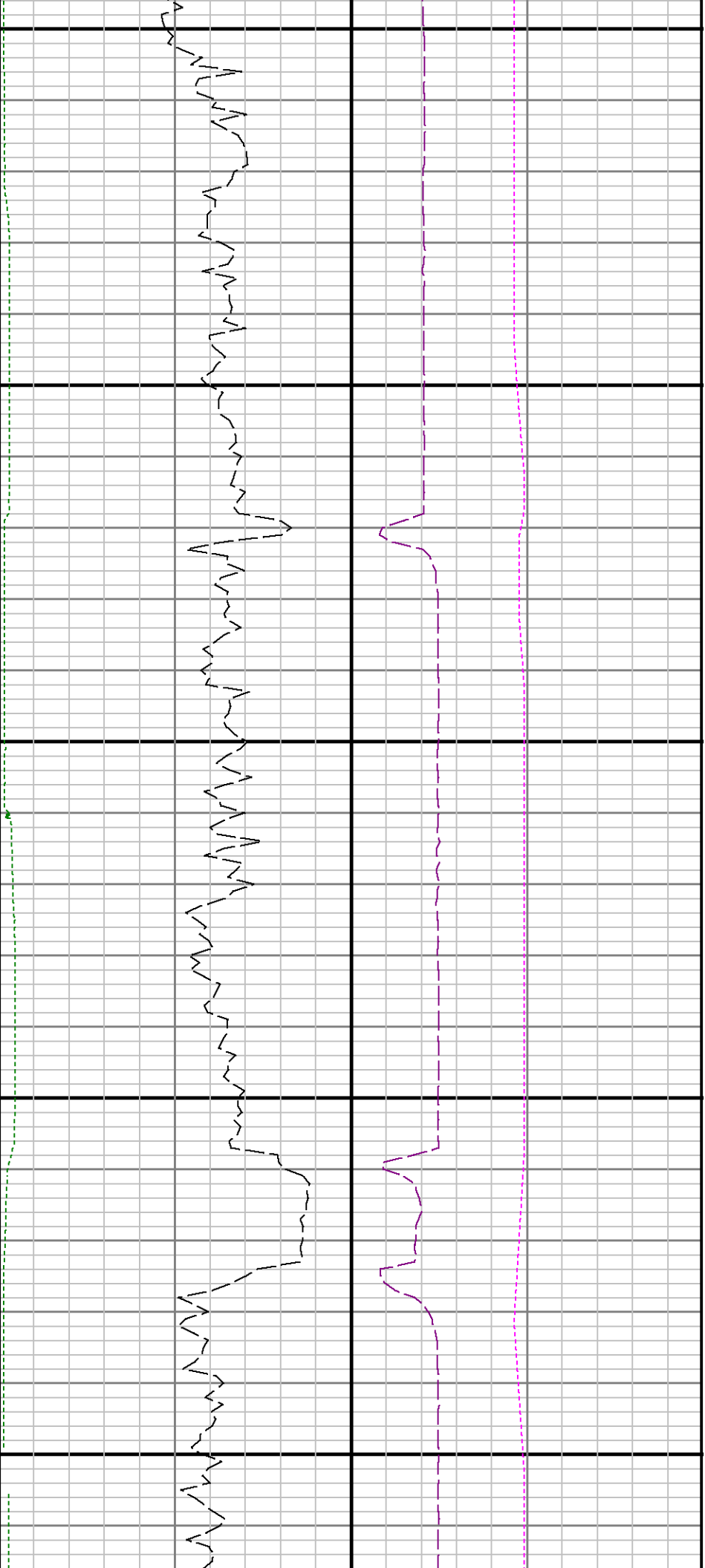




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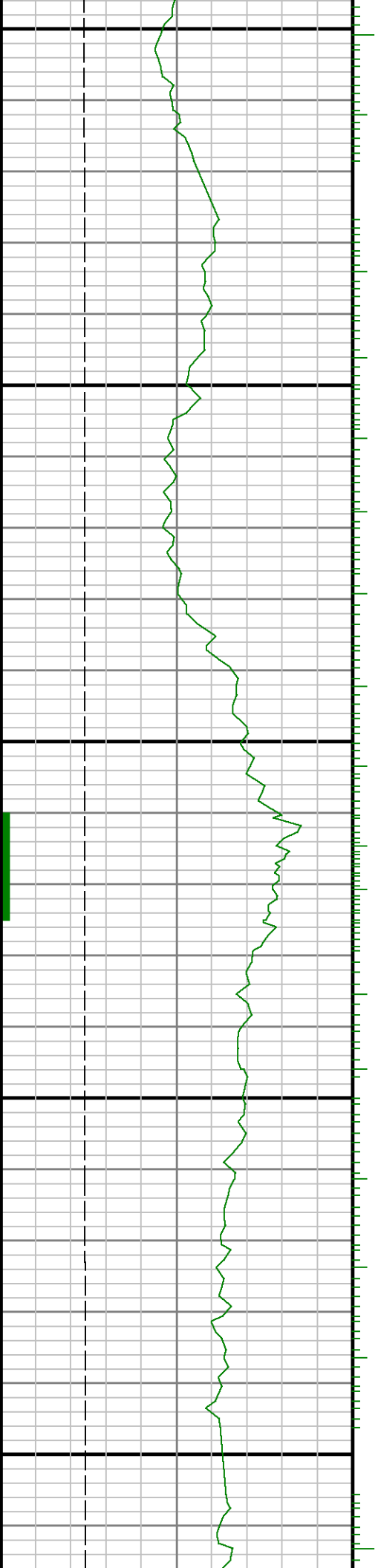
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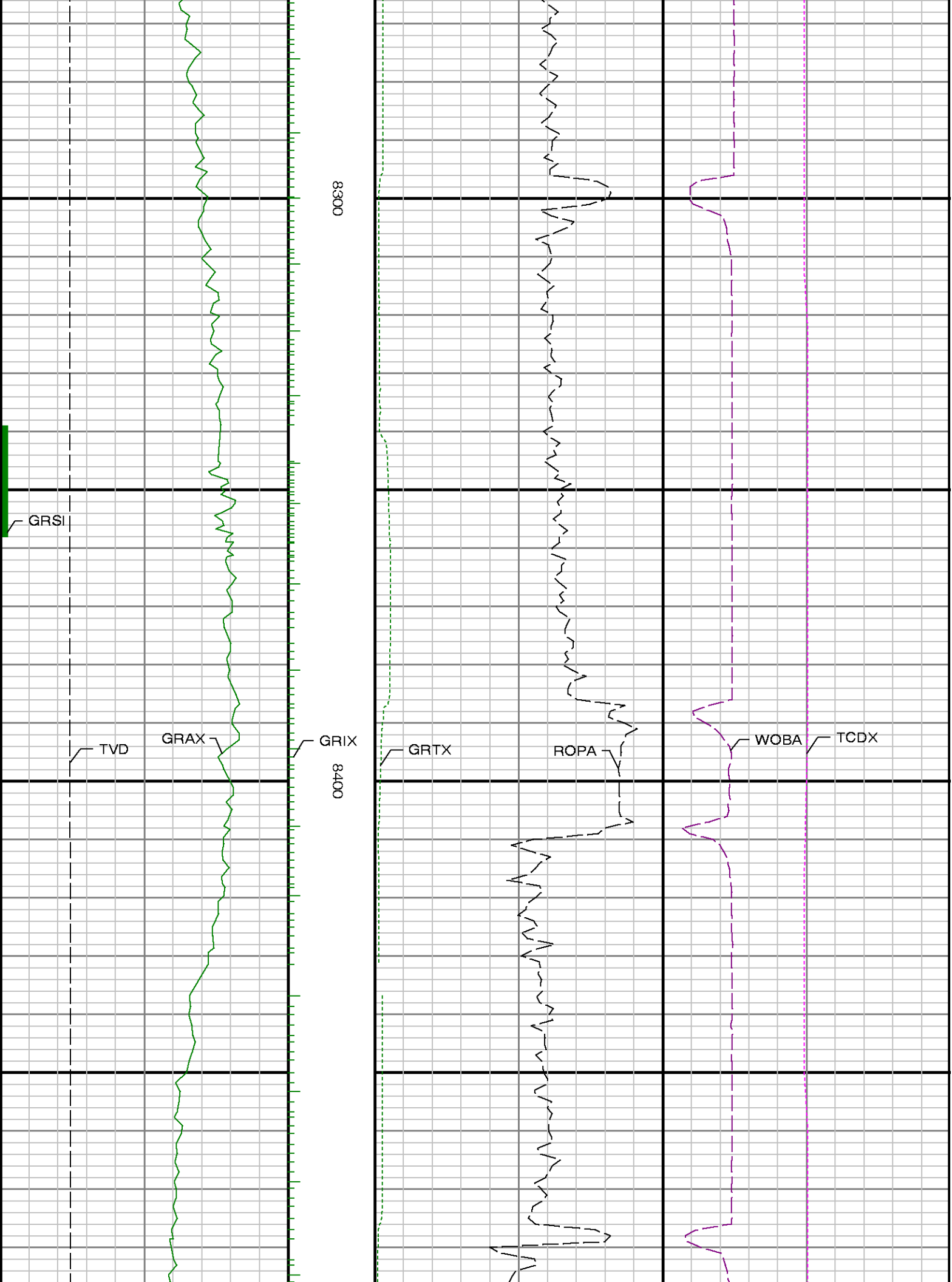


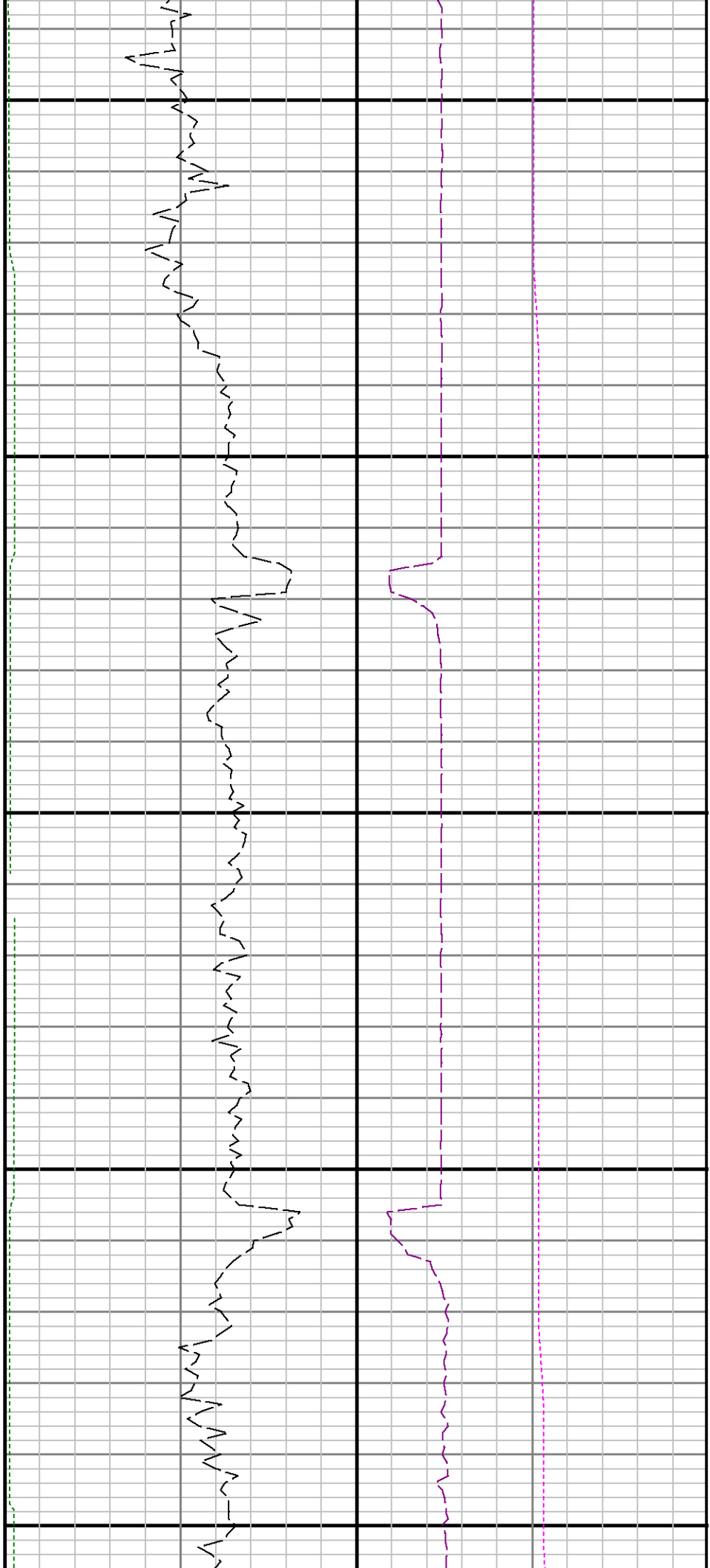


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8200



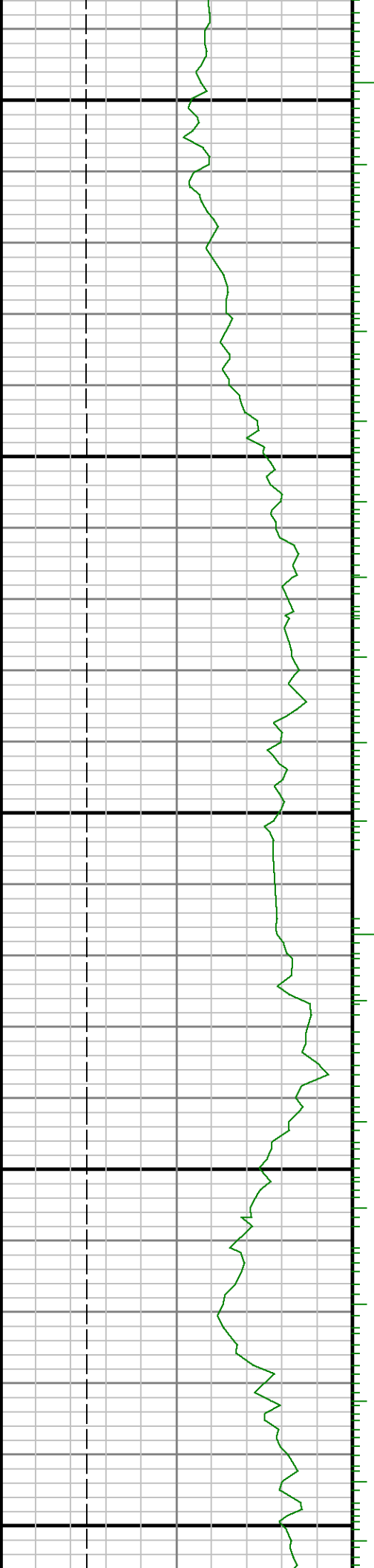


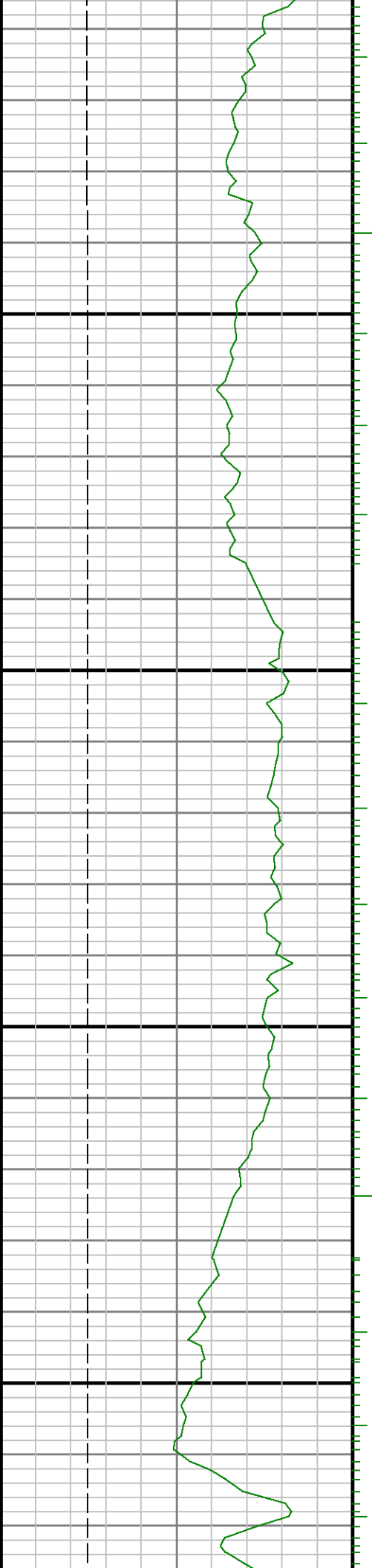


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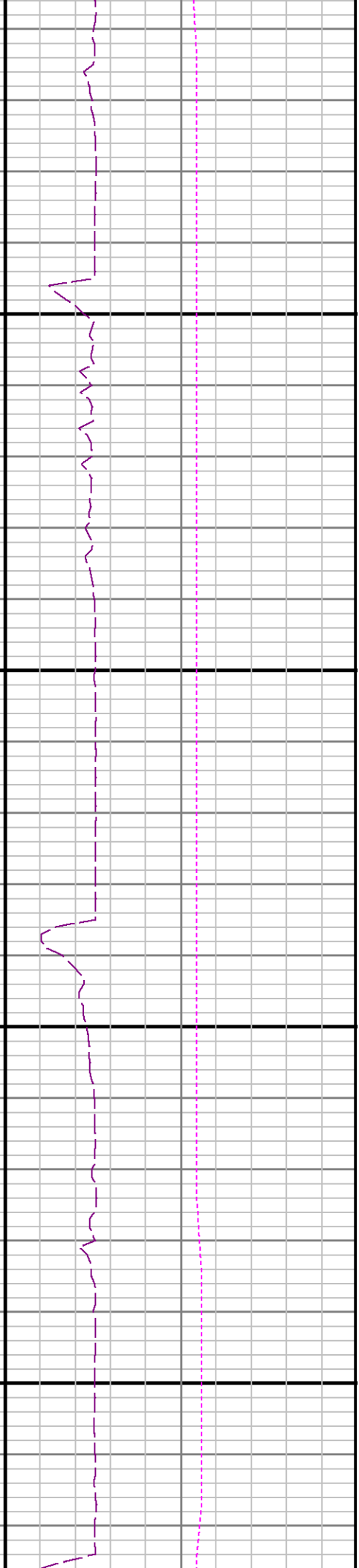
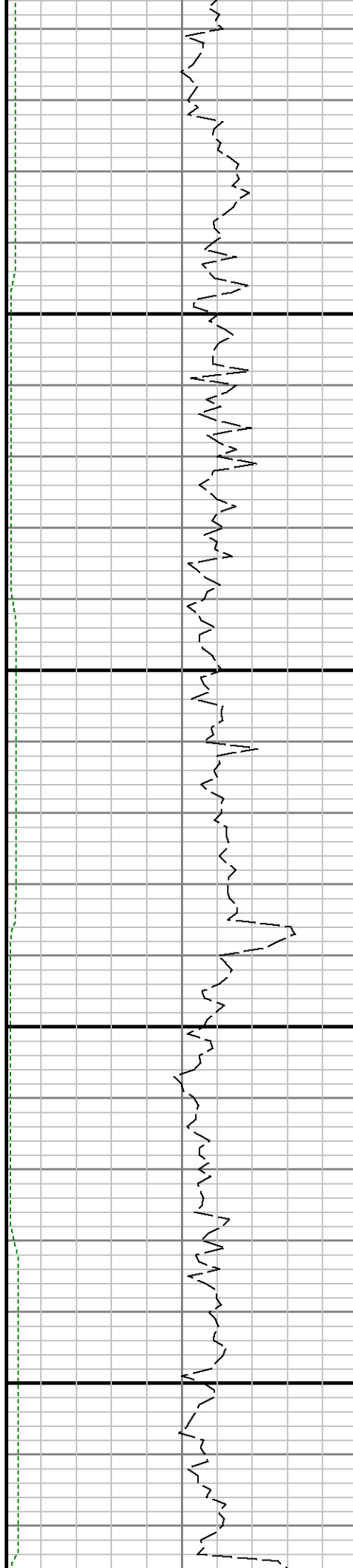
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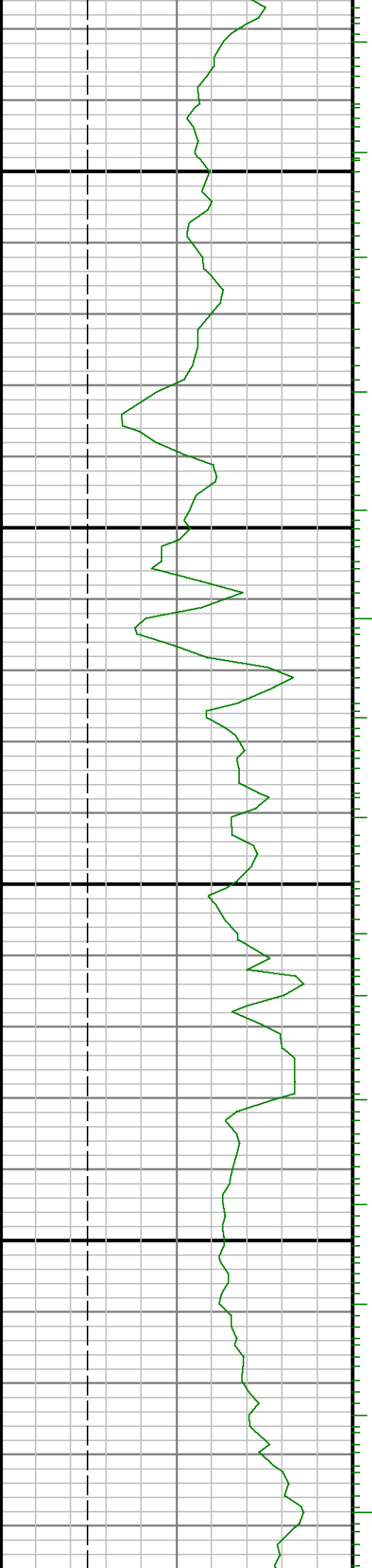




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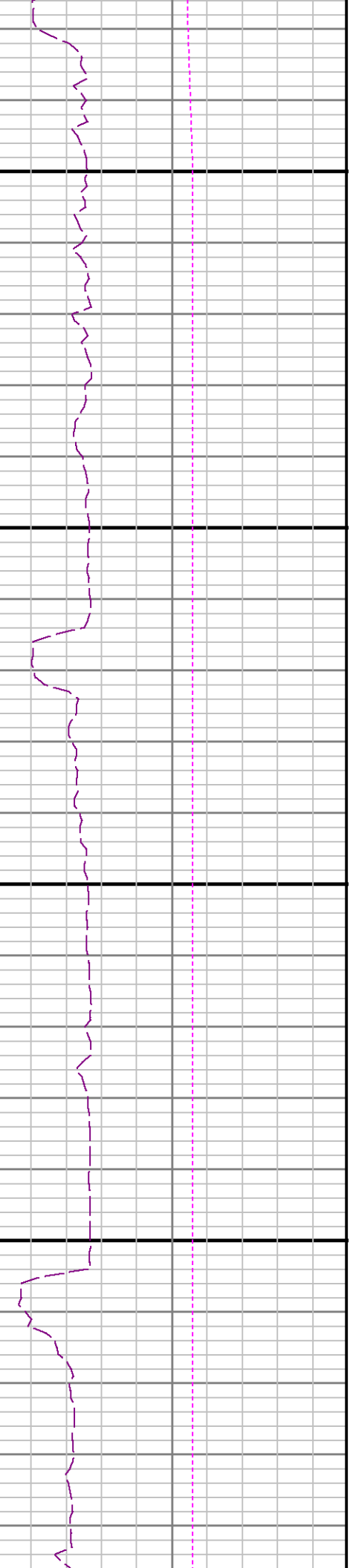
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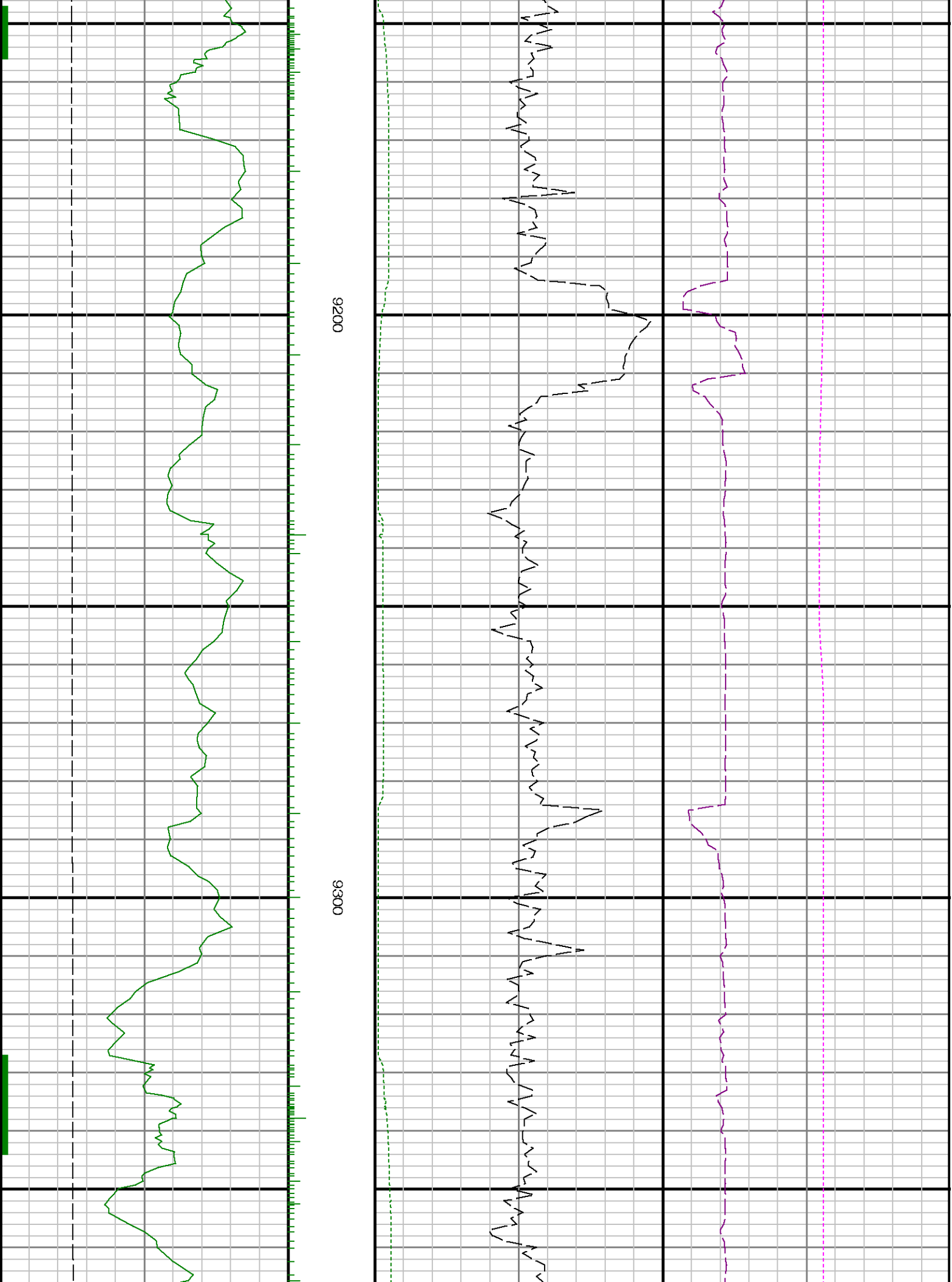


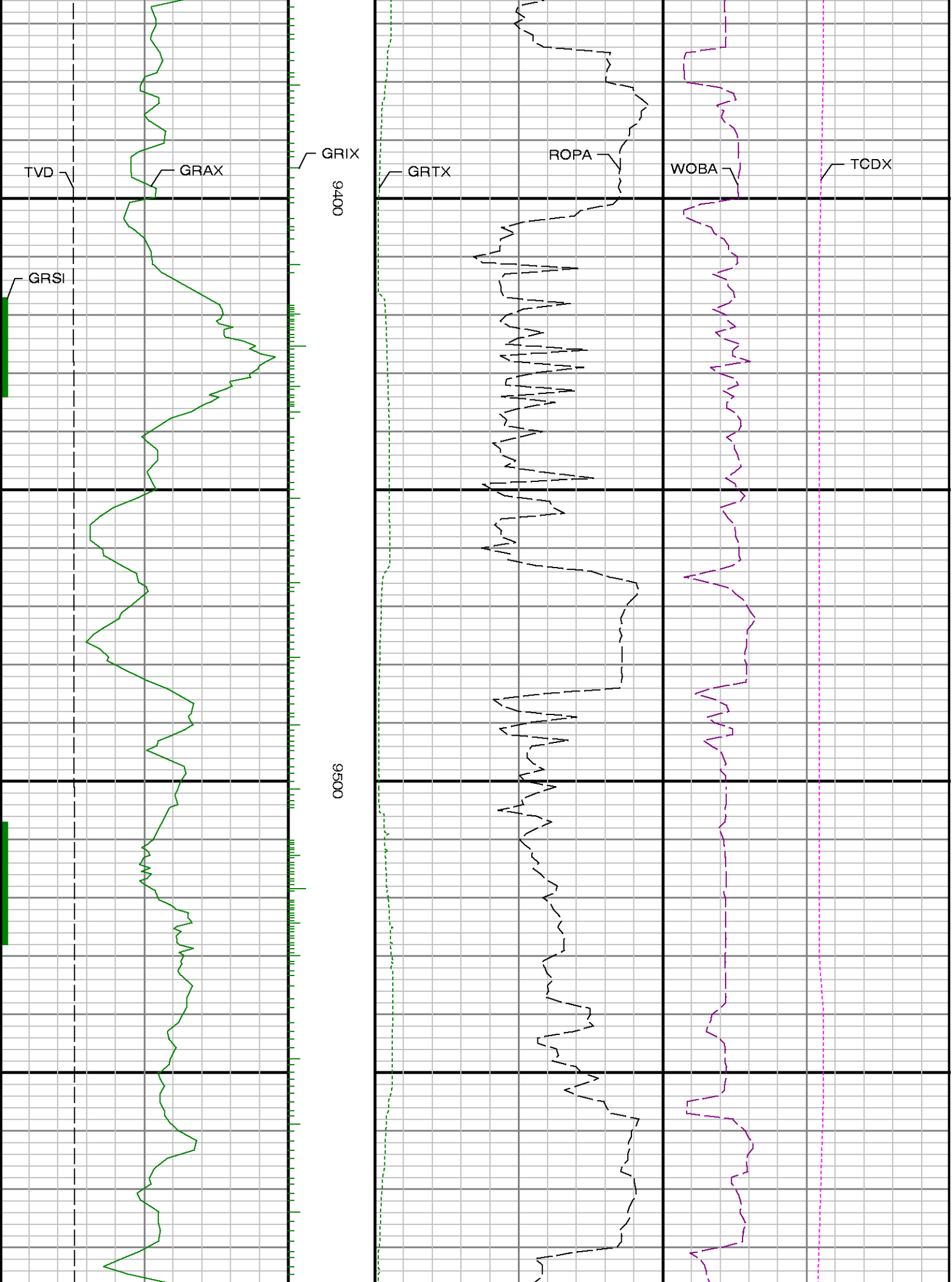


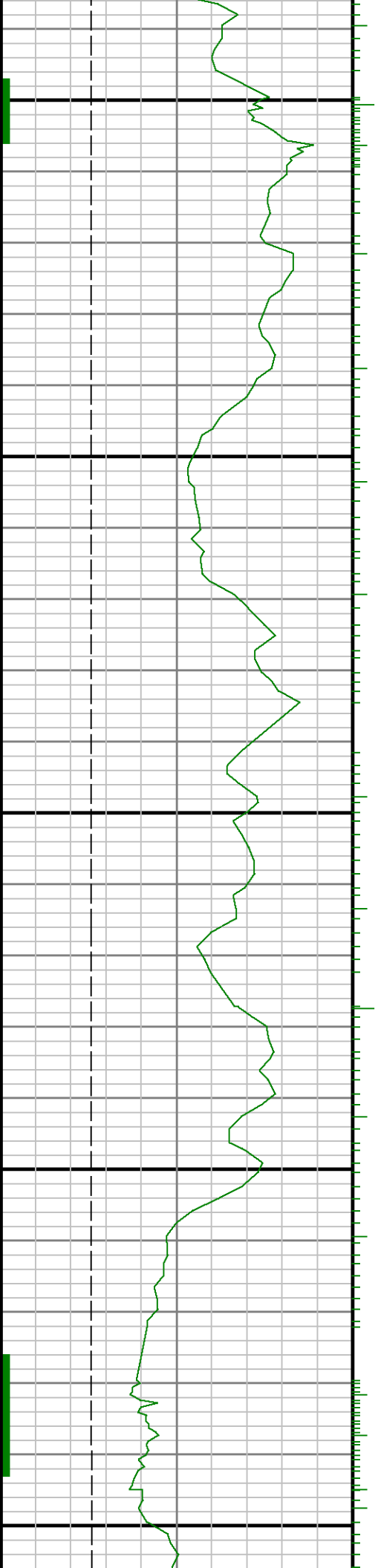
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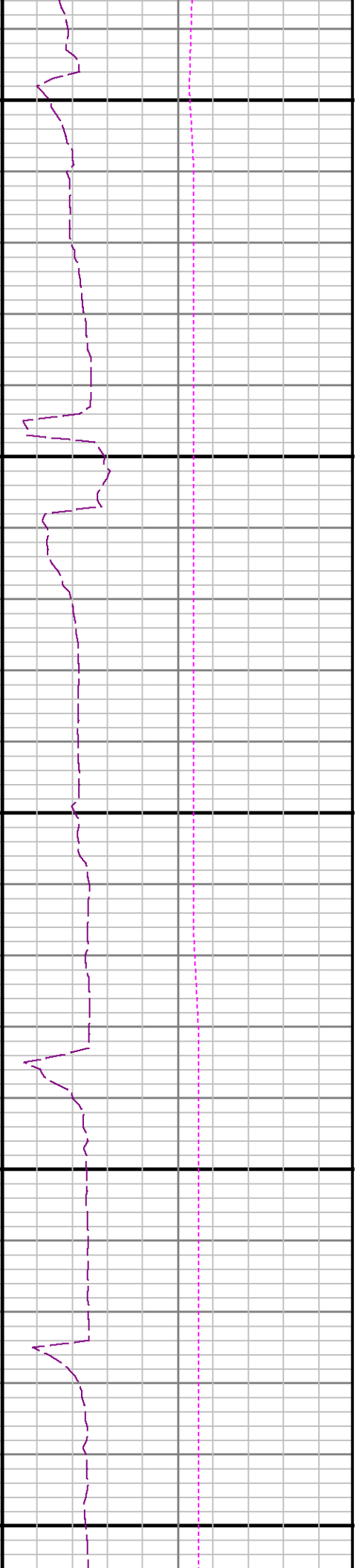


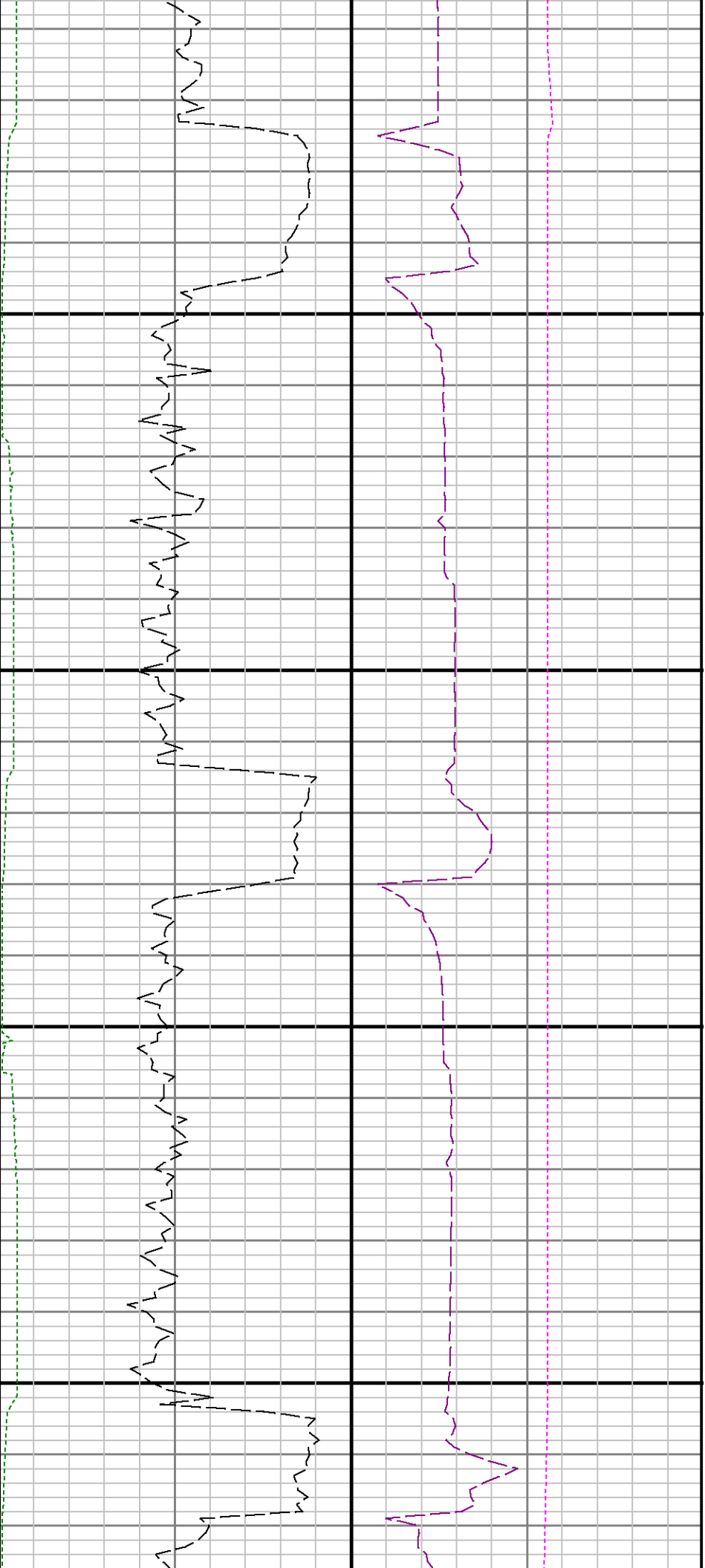


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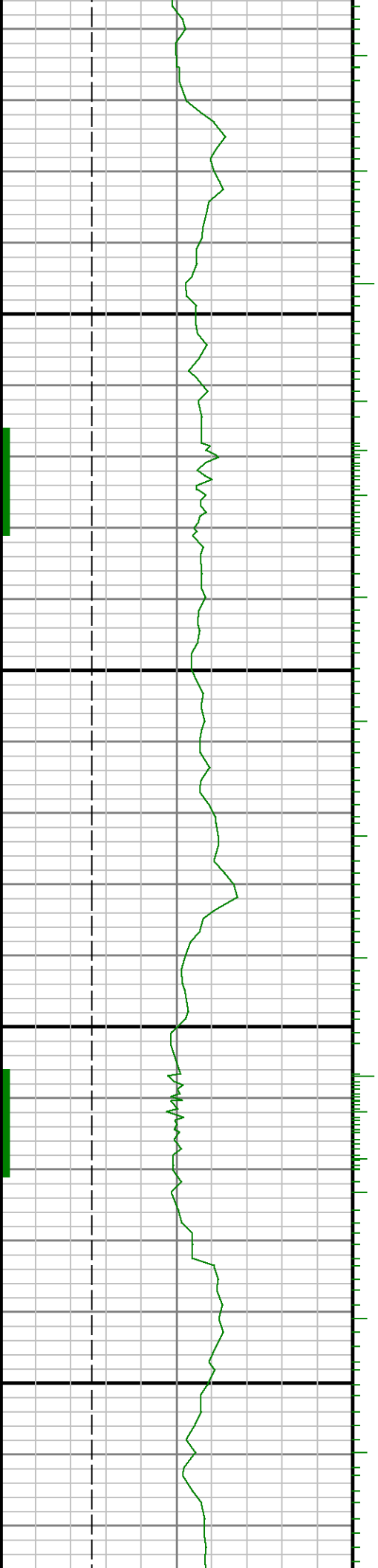
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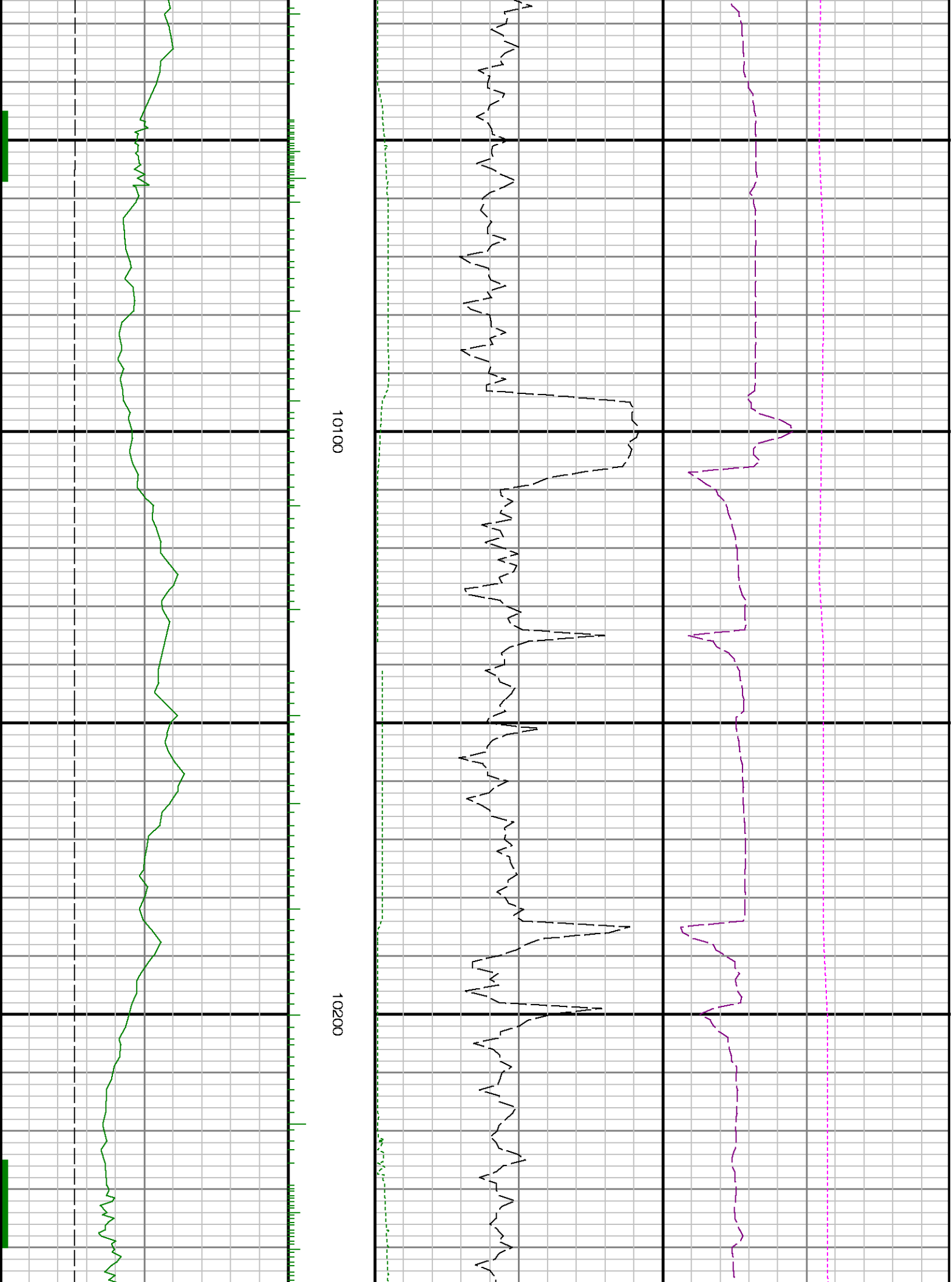


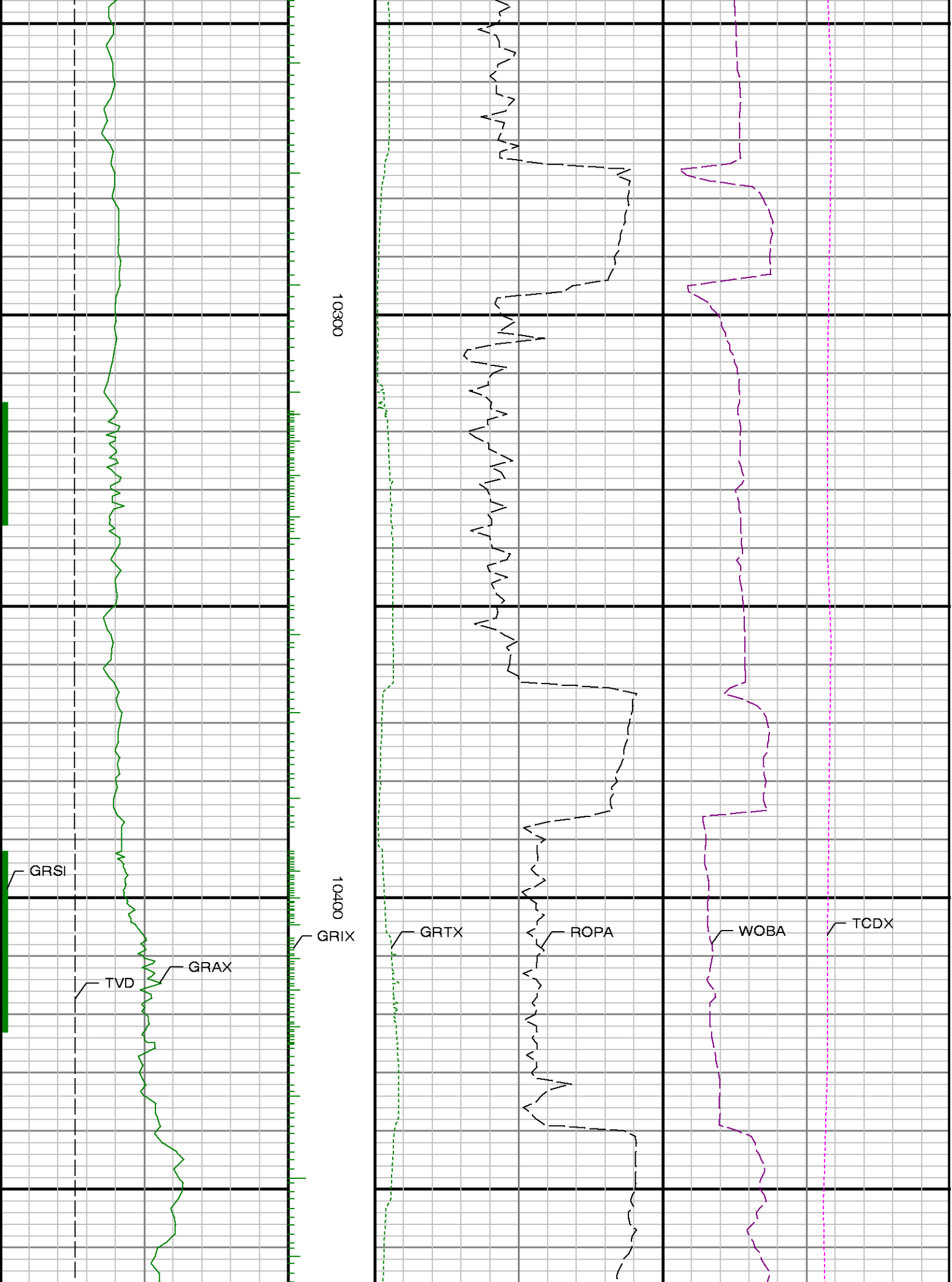


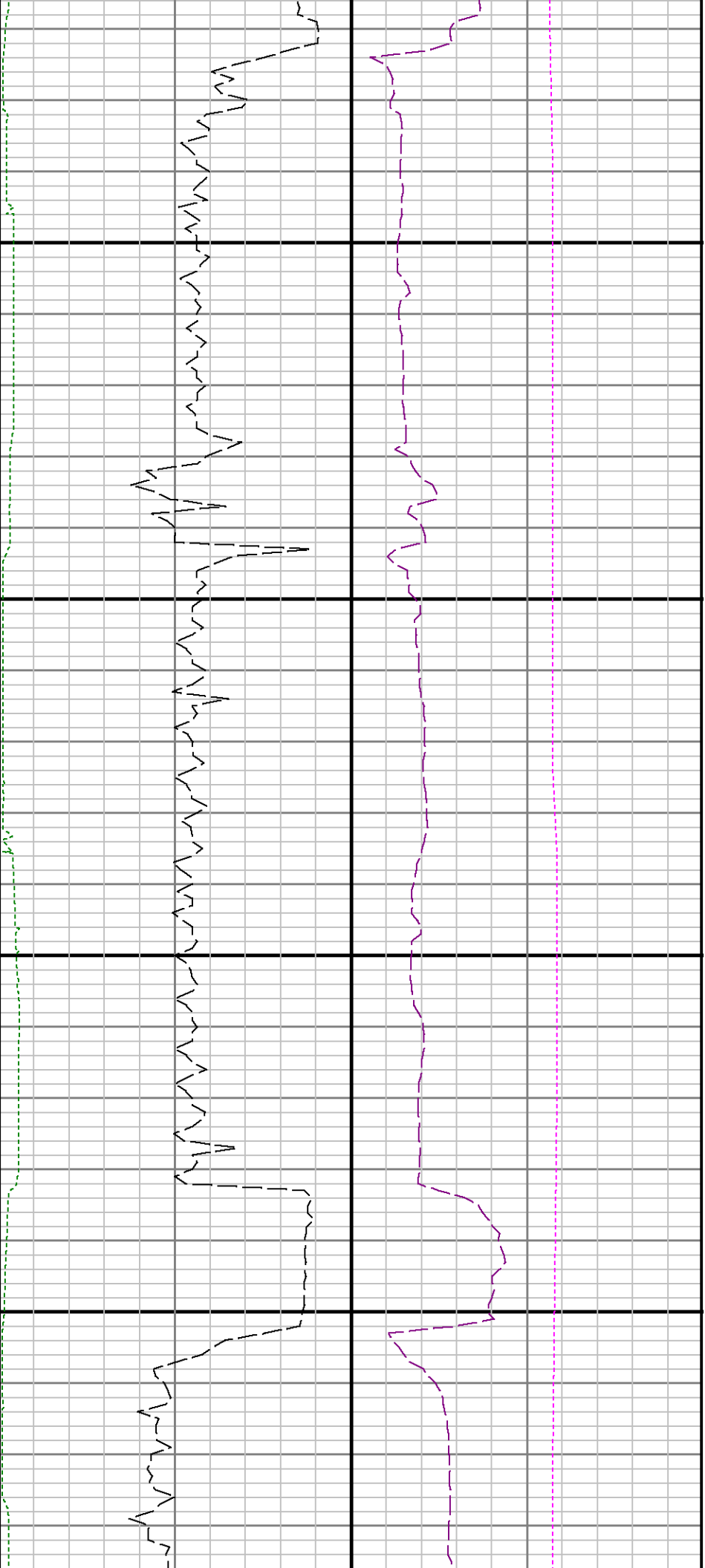
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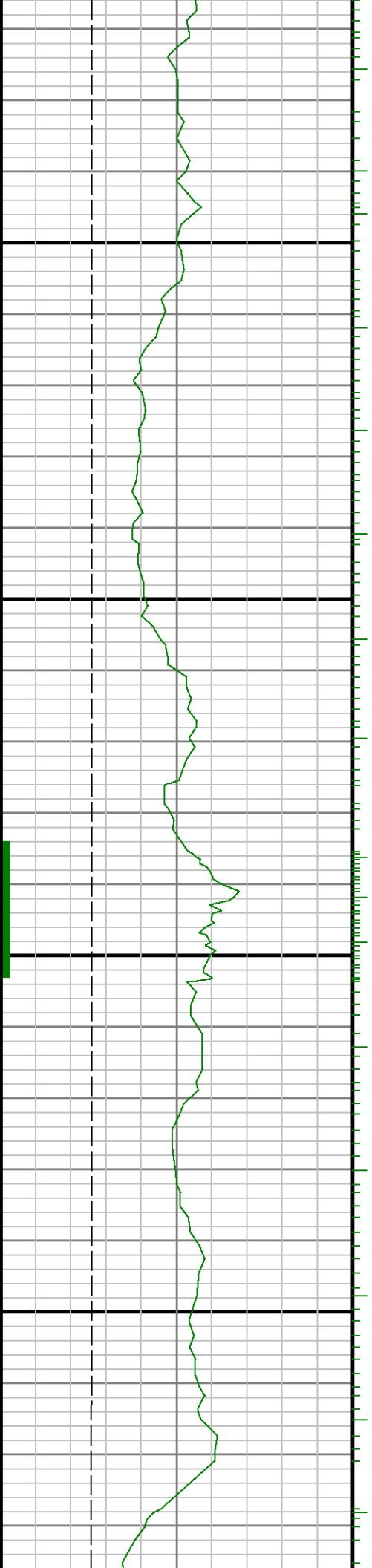


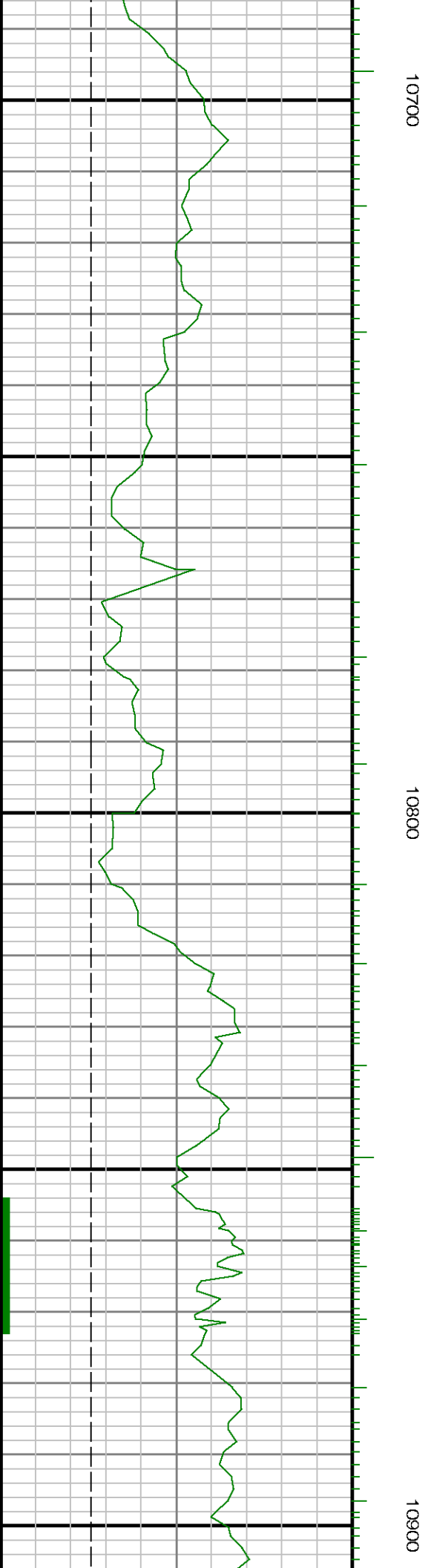
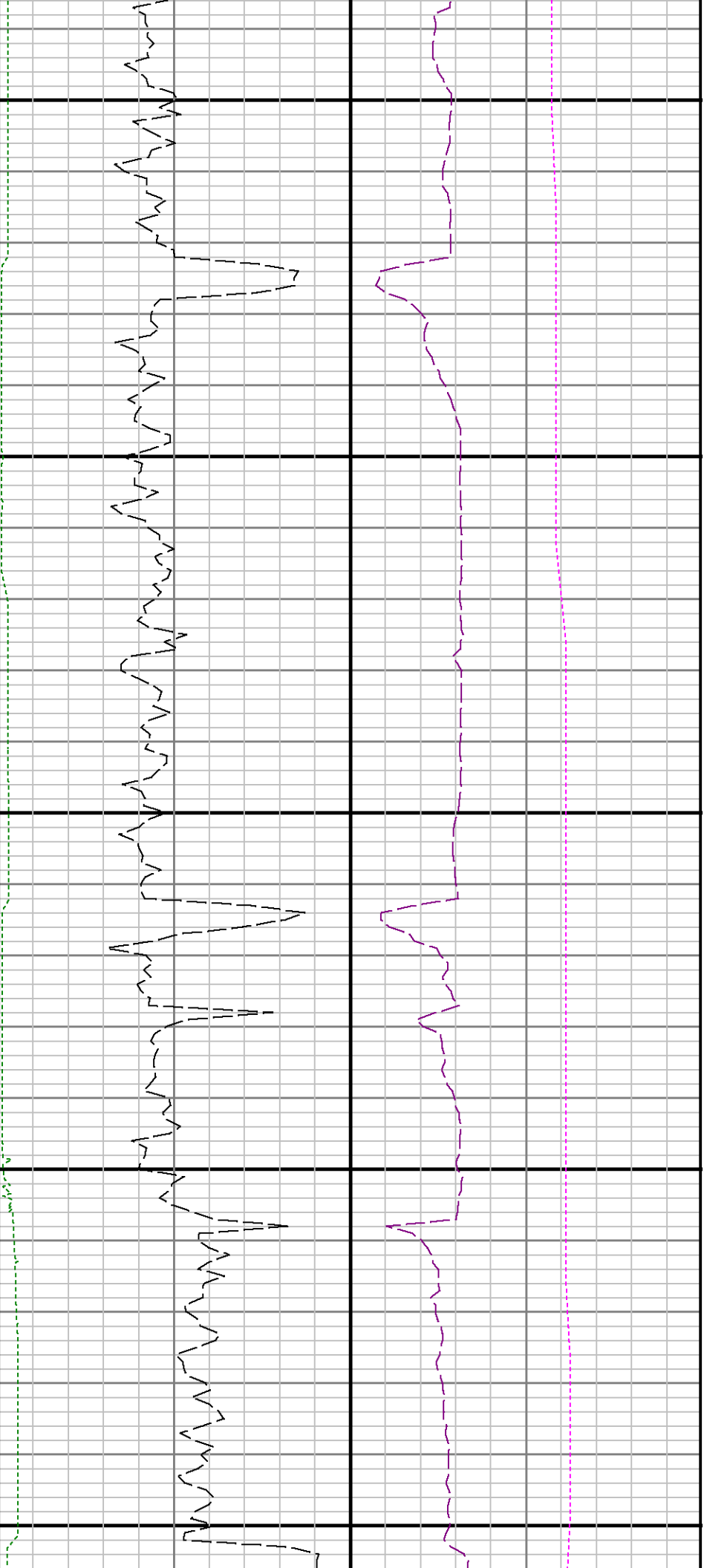




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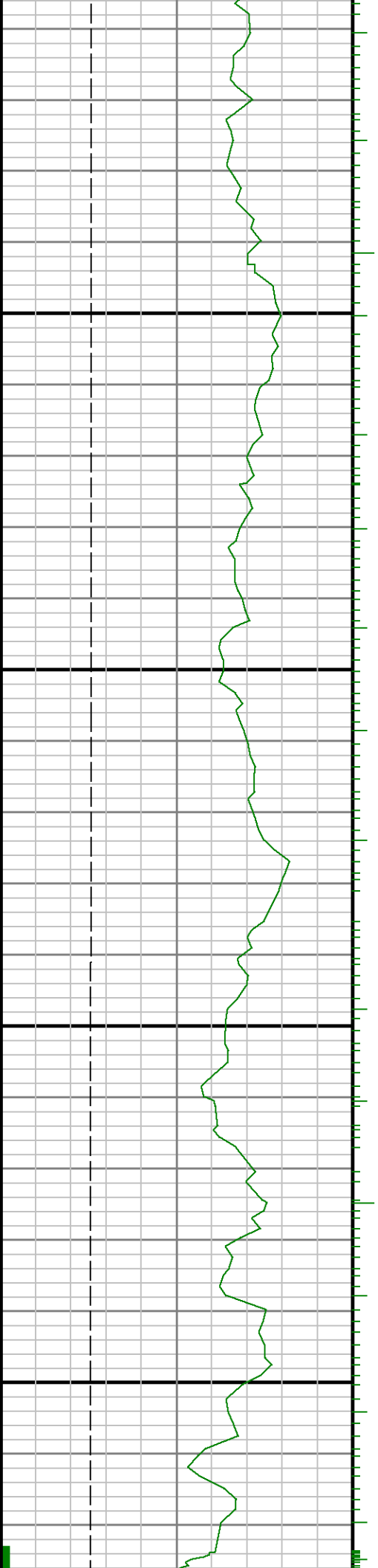






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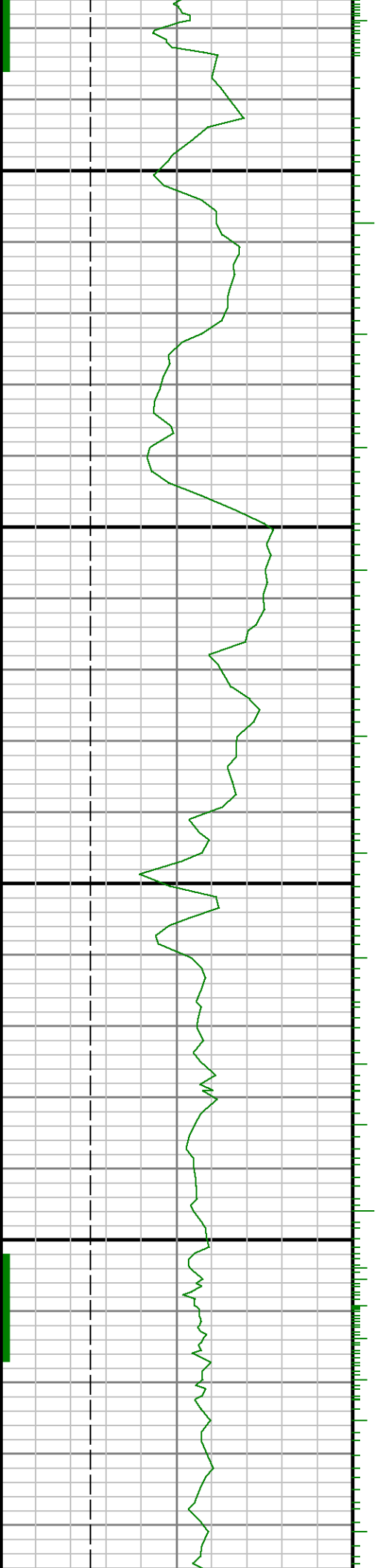
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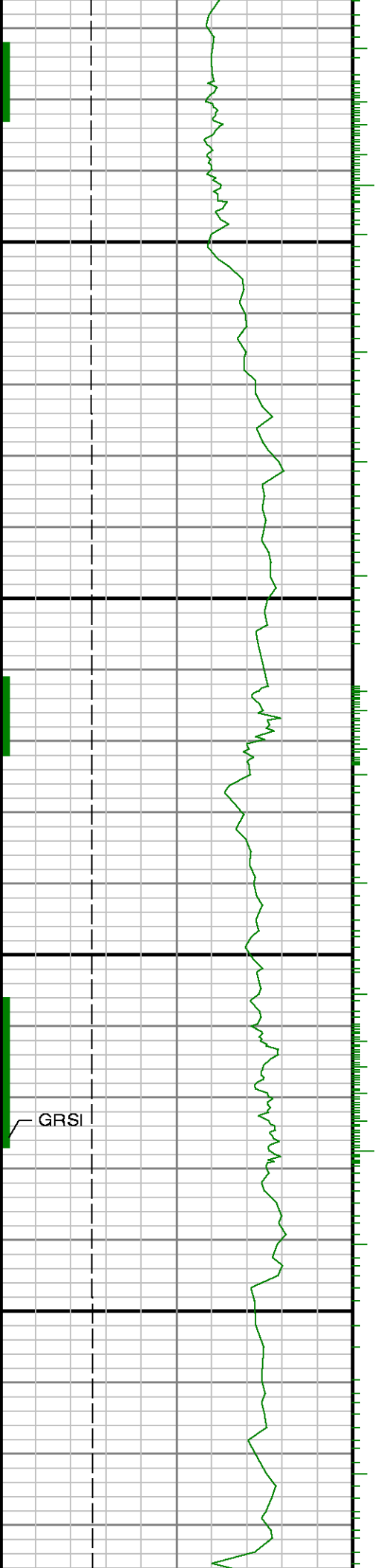




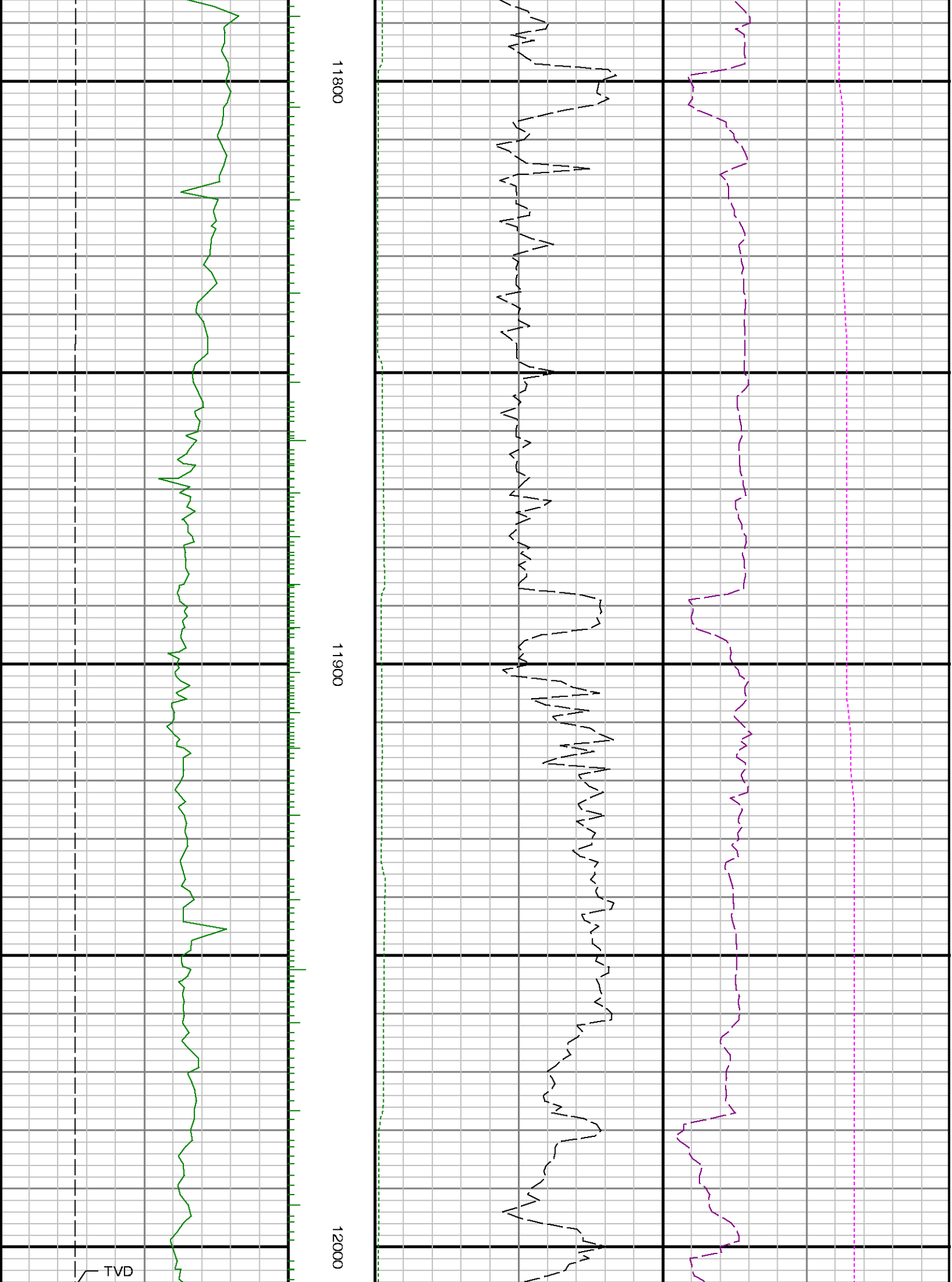


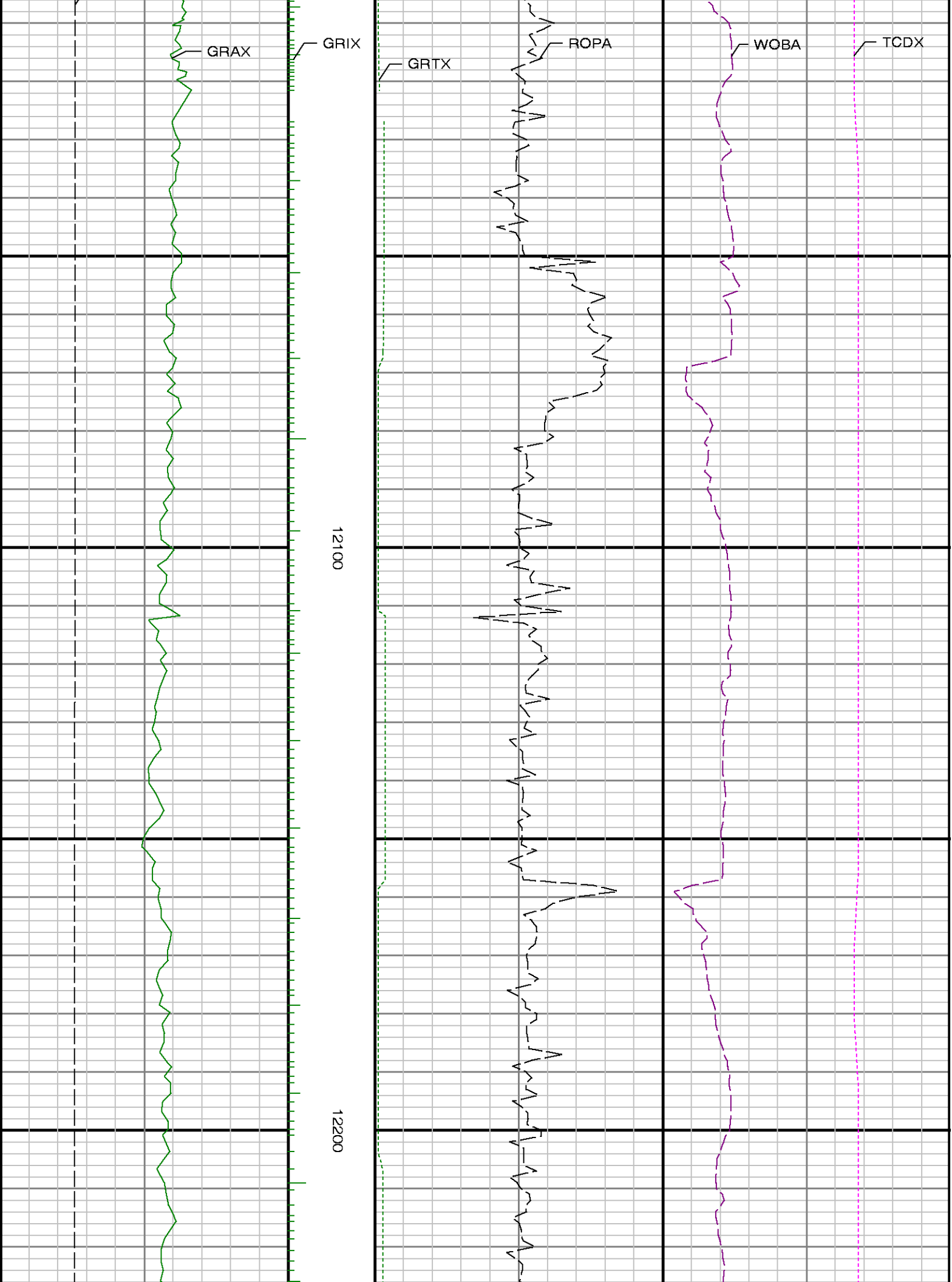
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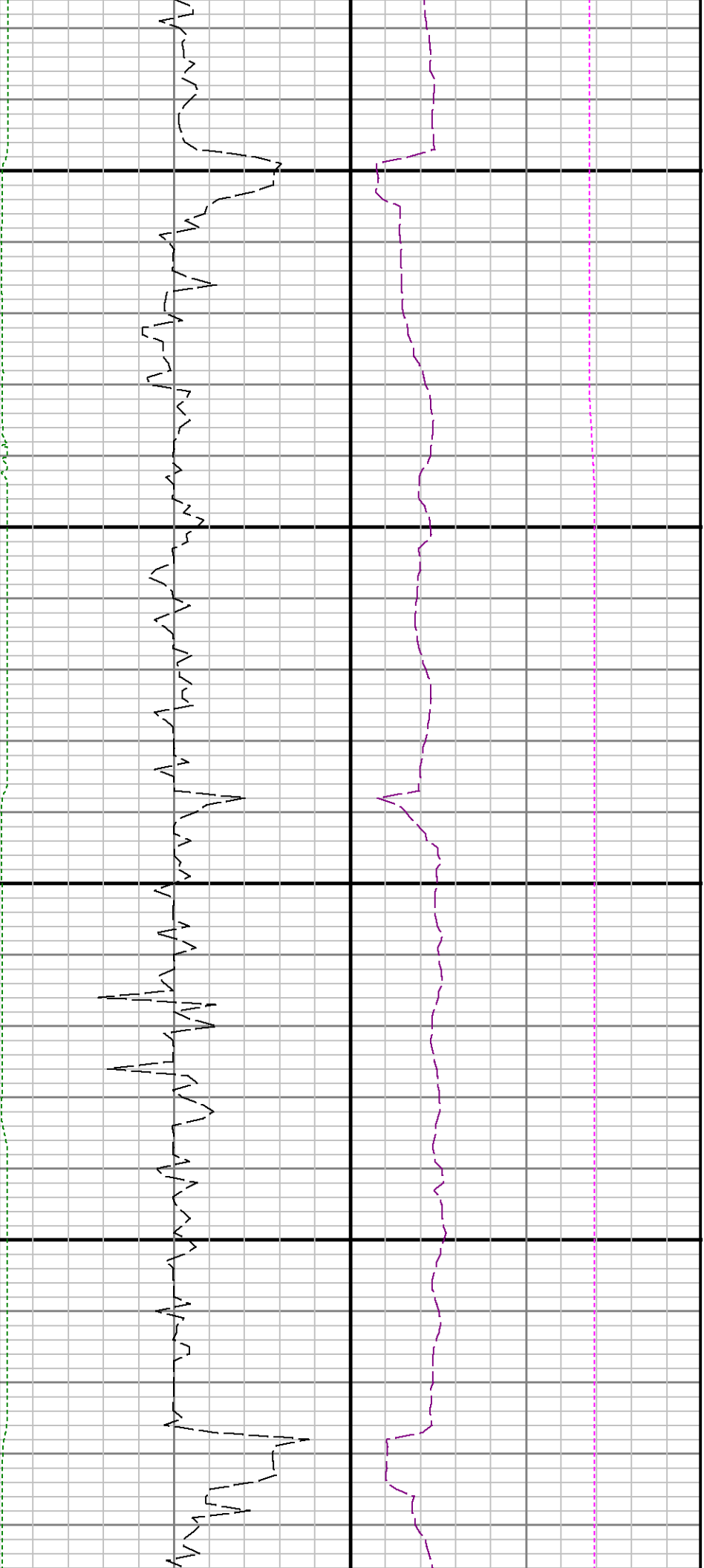
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GRSI

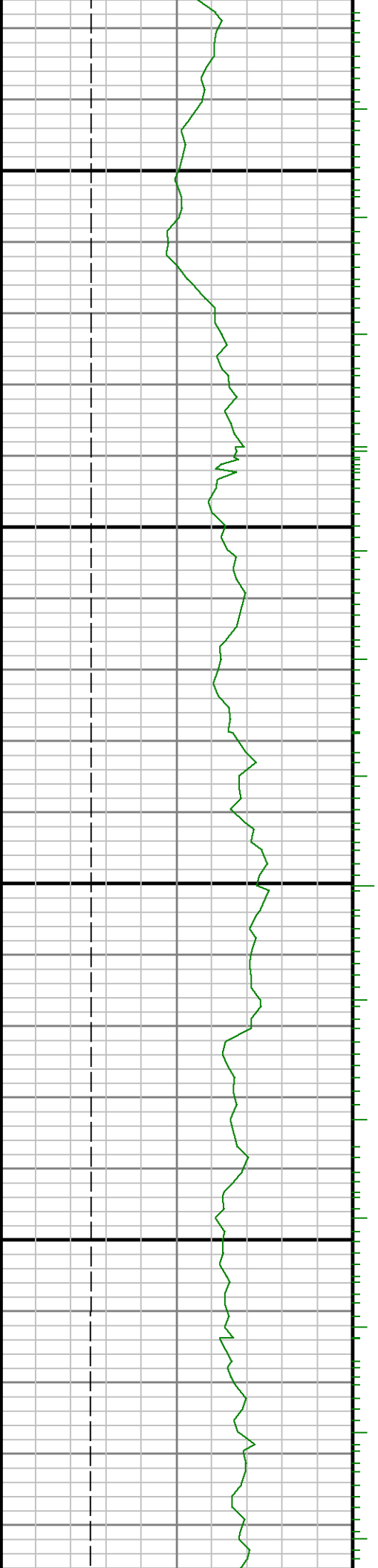


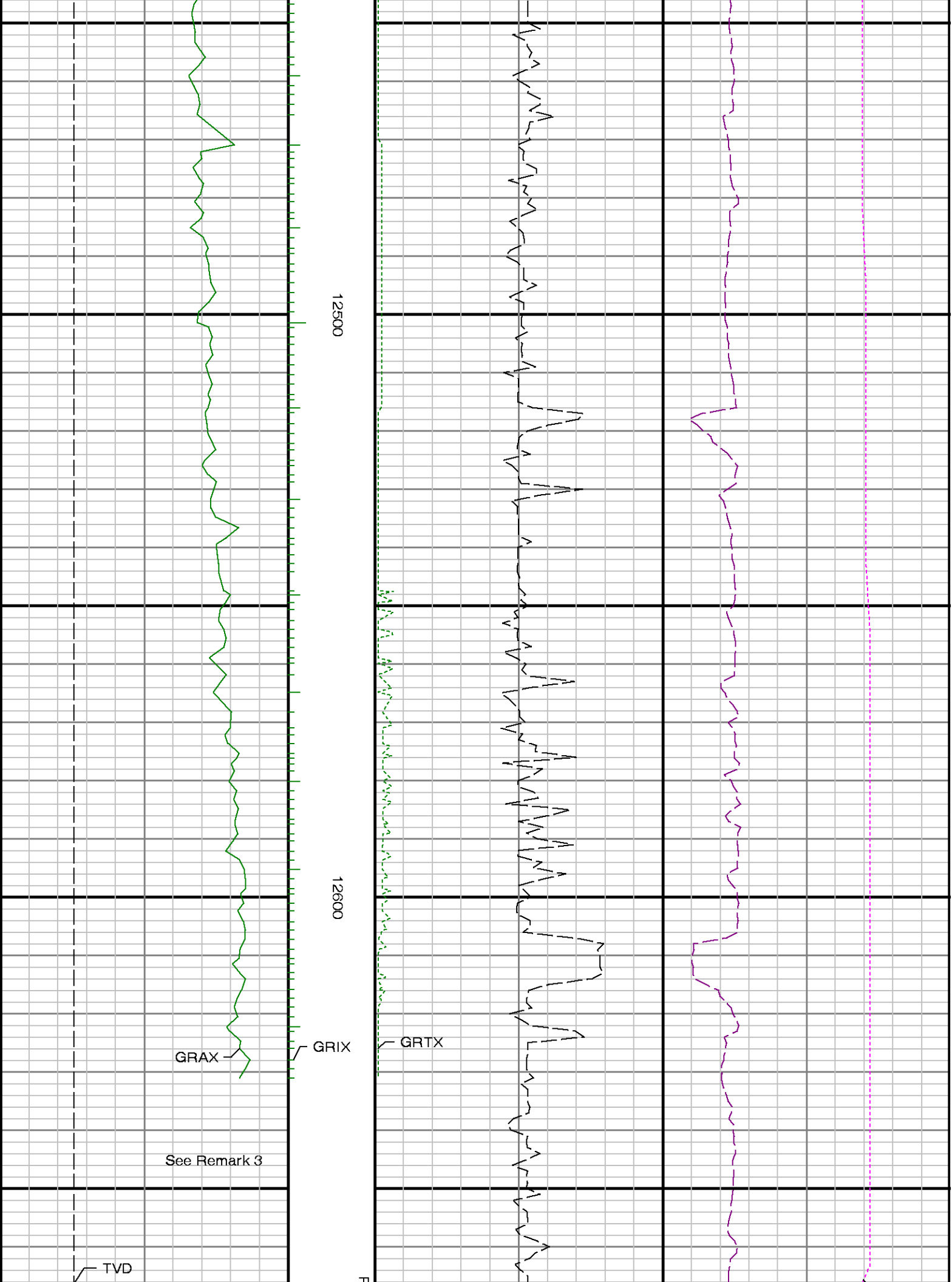




12300

12400





	<p>Run 2 ></p>		
<p>Gamma Ray Apparent 0.5 ft Avg GRAX</p> <p>API</p> <p>True Vertical Depth TVD</p> <p>ft</p>	<p>MD feet 1:240</p>	<p>Rate of Penetration 3.0 ft Avg ROPA</p> <p>ft/hr</p> <p>Gamma Time Since Drilled GRTX</p> <p>min</p>	<p>Surface Weight On Bit 1.0 ft Avg WOBA</p> <p>klbf</p> <p>Downhole Temperature TCDX</p> <p>degF</p>