

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	NaviTrak	8042	VSS	16.09	52.68	8.000	0.000
1	NaviTrak	8042	Directional (mag)	16.09	52.68	8.000	0.000
2	AutoTrak Curve Steering Unit	14236901	Near Bit VSS	5.93	6.73	7.000	4.330
2	AutoTrak Curve Steering Unit	14236901	Near Bit Inclination	5.93	6.73	7.000	4.330
2	AutoTrak Curve MWD	14307439	Gamma (single)	2.04	12.90	7.000	3.250
2	AutoTrak Curve MWD	14307439	Directional (mag)	12.27	23.13	7.000	3.250
3	AutoTrak Curve Steering Unit	14547137	Near Bit Inclination	5.93	6.73	7.000	4.330
3	AutoTrak Curve Steering Unit	14547137	Near Bit VSS	5.93	6.73	7.000	4.330
3	AutoTrak Curve MWD	12304786	Gamma (single)	2.08	12.90	7.000	3.250
3	AutoTrak Curve MWD	12304786	Directional (mag)	12.27	23.09	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional Module, NaviTrak Platform
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

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, depth calibrations and measurements could not be independently verified.
- 2
- Baker Hughes LWD Run 1 used the 8 inch NaviTrak service (Directional) behind a 13 1/2 inch bit and steerable assembly to drill from 17 to 1646 feet MD (17 to 1613 feet TVD). No logging data was acquired throughout this run.
- 3
- Baker Hughes LWD Run 2 and 3 used the 6 3/4 inch NaviGamma service (Azimuthal Gamma Ray and Directional) behind an 8 1/2 inch bit and rotary steerable assembly to drill from 1646 to 11574 feet MD (11613 to 6157 feet TVD).
- 4
- The Gamma Ray Apparent (GRAM) data is presented from 0 to 200 API, per customer's request.

Remarks

Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	5300.00	8.500	3	The Gamma Ray Apparent (GRAM) log starts at 5000 feet, per customer's request.
2	11567.00	8.500	3	The interval from 11561 to 11574 feet MD (6157 feet TVD) was not logged due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
WOBA	Weight On Bit	klb
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	Gamma Ray - Time Since Drilled - Memory	min
GRADM	Gamma Ray - Apparent - Down Quadrant - Memory 0.5 ft Average	API
GRAUM	Gamma Ray - Apparent - Up Quadrant - Memory 0.5 ft Average	API
TCDM	Directional Real-Time Survey Temperature	degF



Company

Well

Interval

Created

Bonanza Creek Energy

State Antelope X44-D14-13HNC

Date From: 2020-01-07 16:03

Date To: 2020-01-18 21:35

Interval Drilled: (ft) 17.00 - 11574.00

Interval Logged: (ft) 5000.00 - 11561.00

2020-01-19 12:44:49

Gamma Ray - Apparent 0.5 ft Average GRAM

0200

API

Azimuthal Gamma Ray - Apparent - Up Quadrant 0.5 ft Average GRAUM

0200

API

Azimuthal Gamma Ray - Apparent - Down Quadrant 0.5 ft Average GRADM

0200

API

True Vertical Depth TVD

62004750

ft

MD 1:240 feet

Depth Averaged ROP 3 ft Average ROPA

10000

ft/h

Gamma Time Since Drilled GRTM

0600

min

Downhole Temperature TCDM

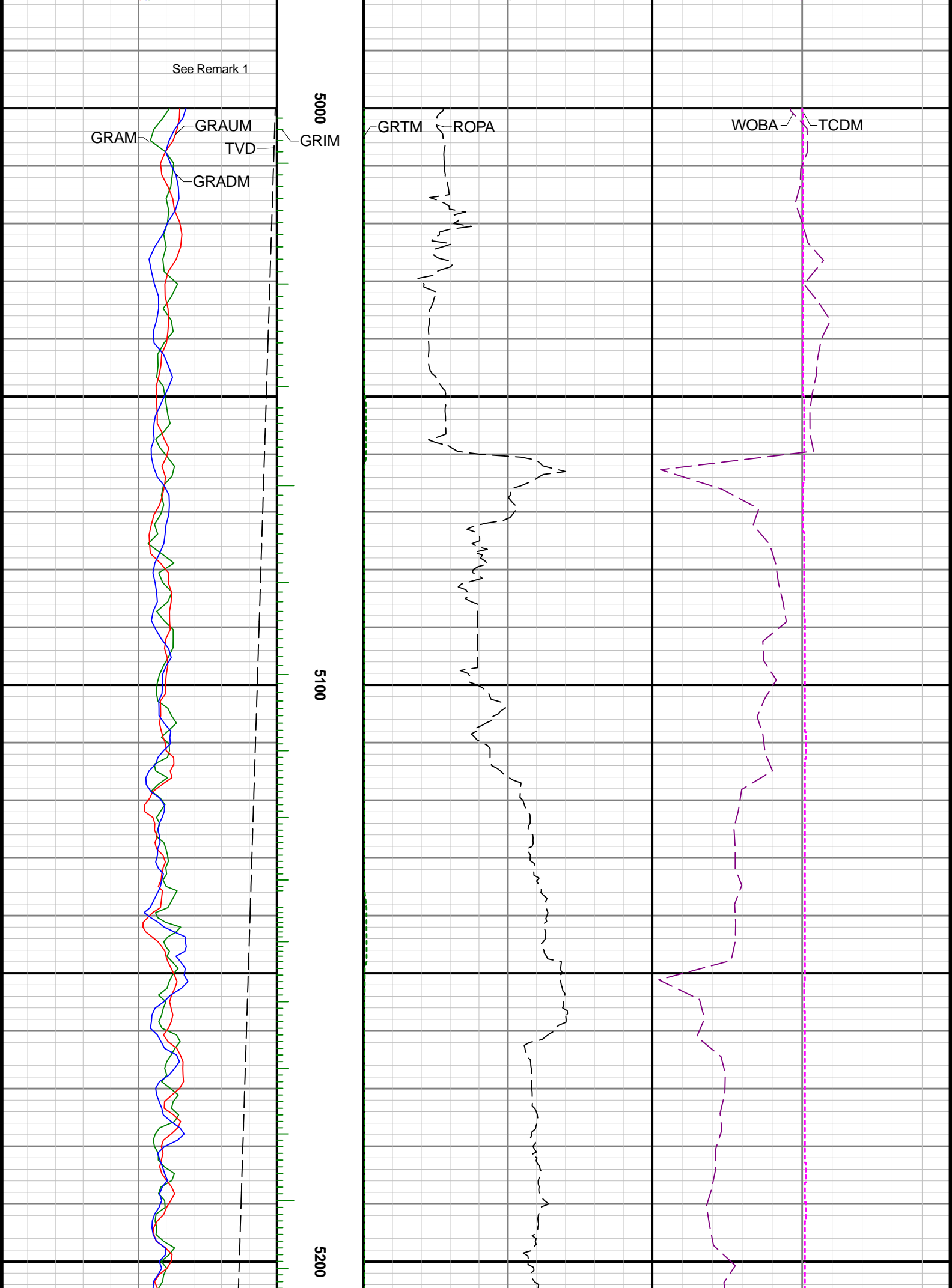
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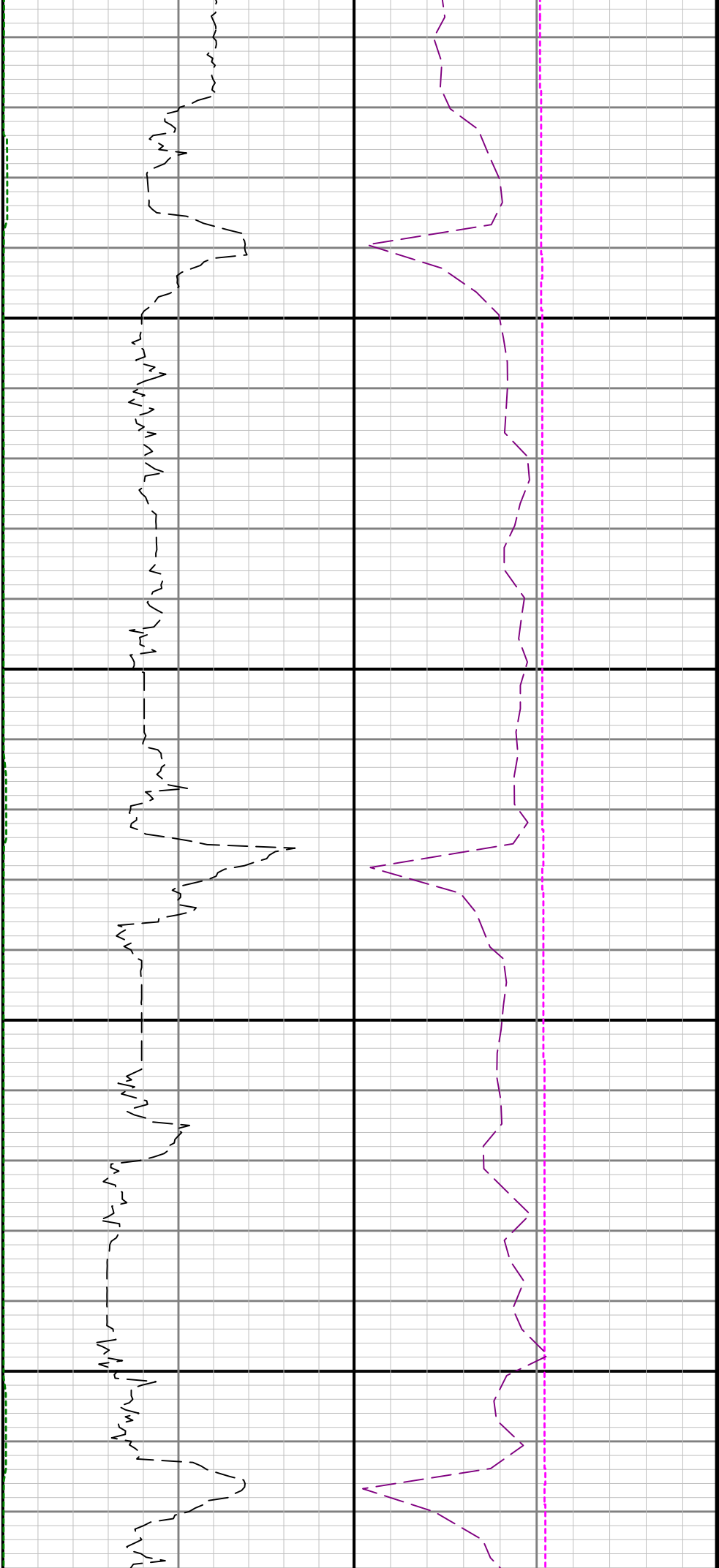
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Weight On Bit, Average WOBA

050

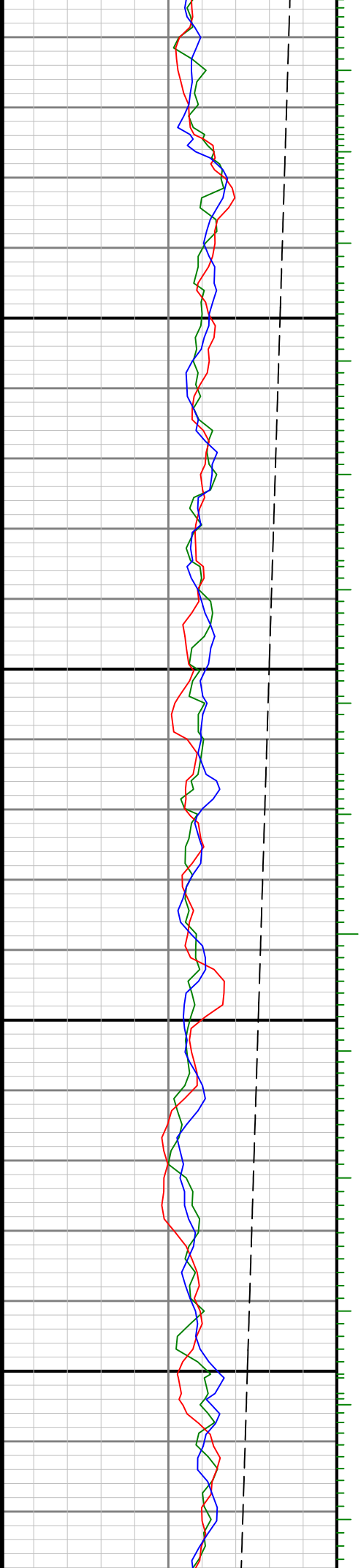
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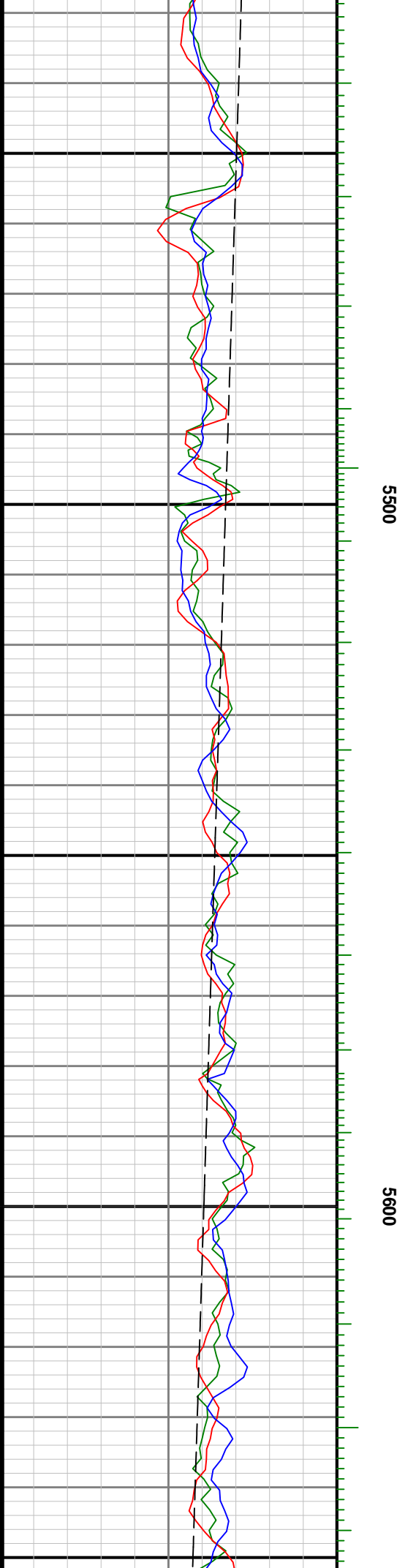


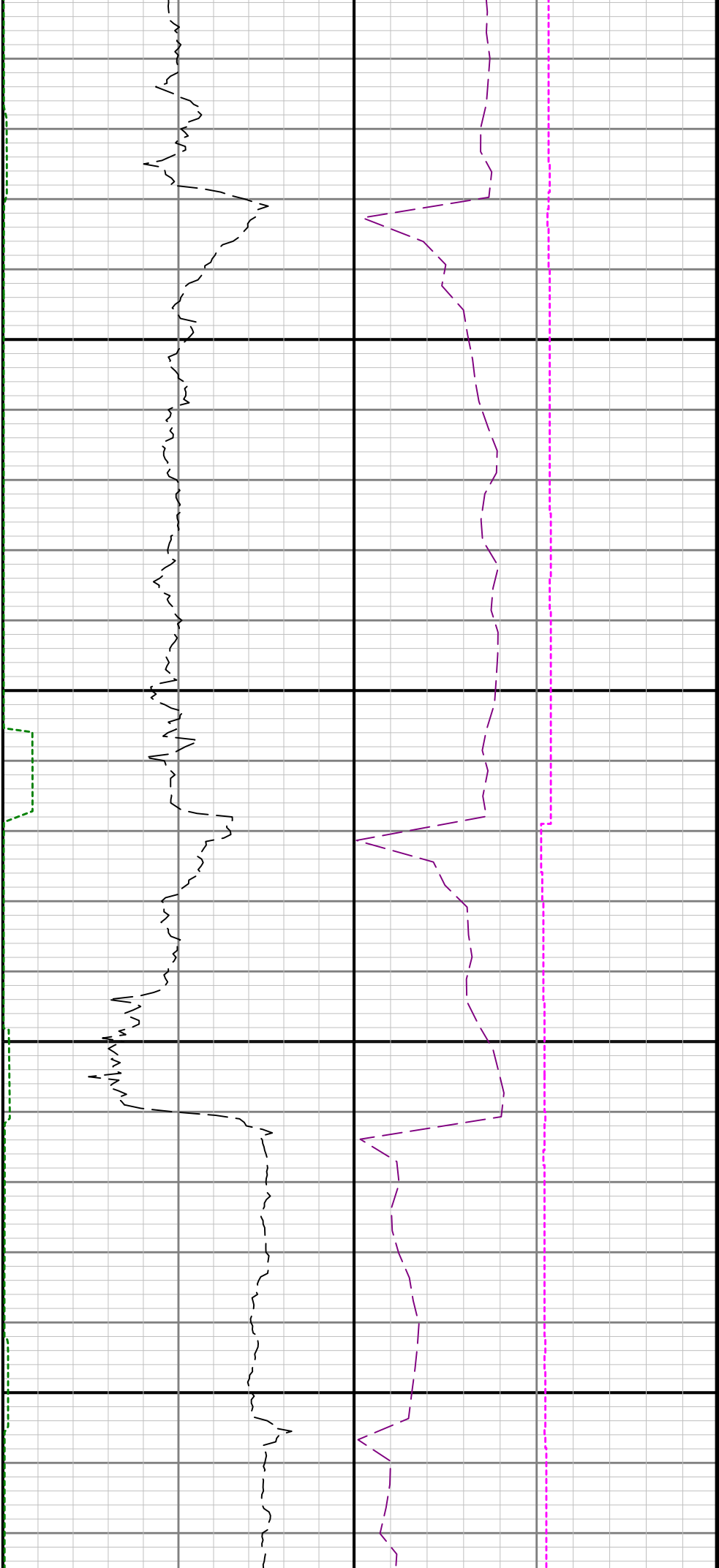


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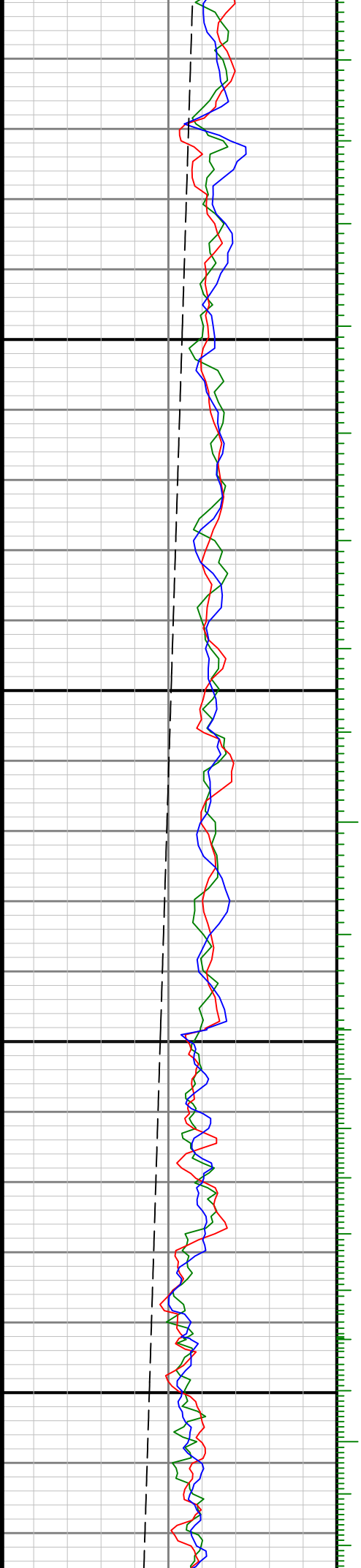


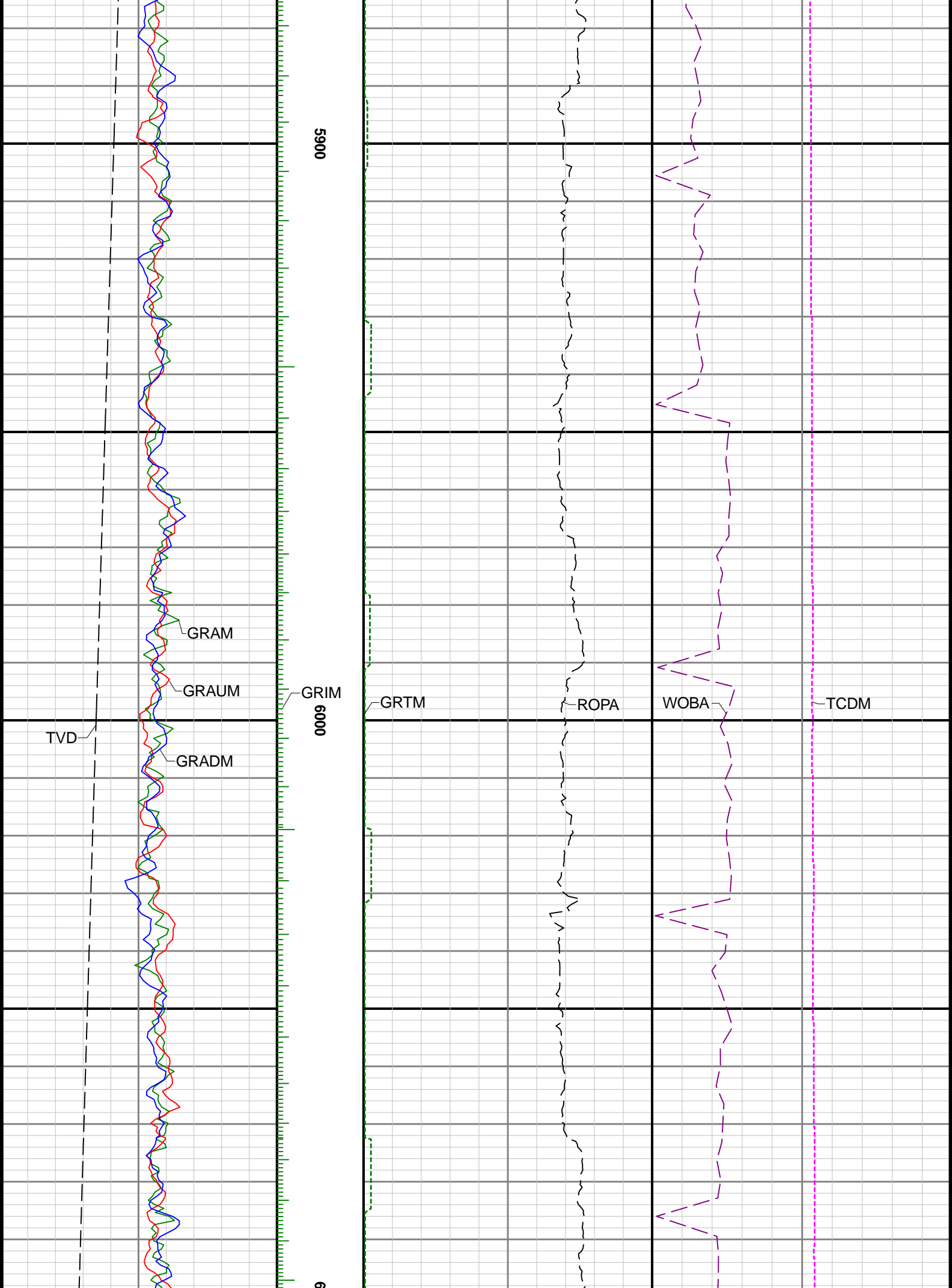


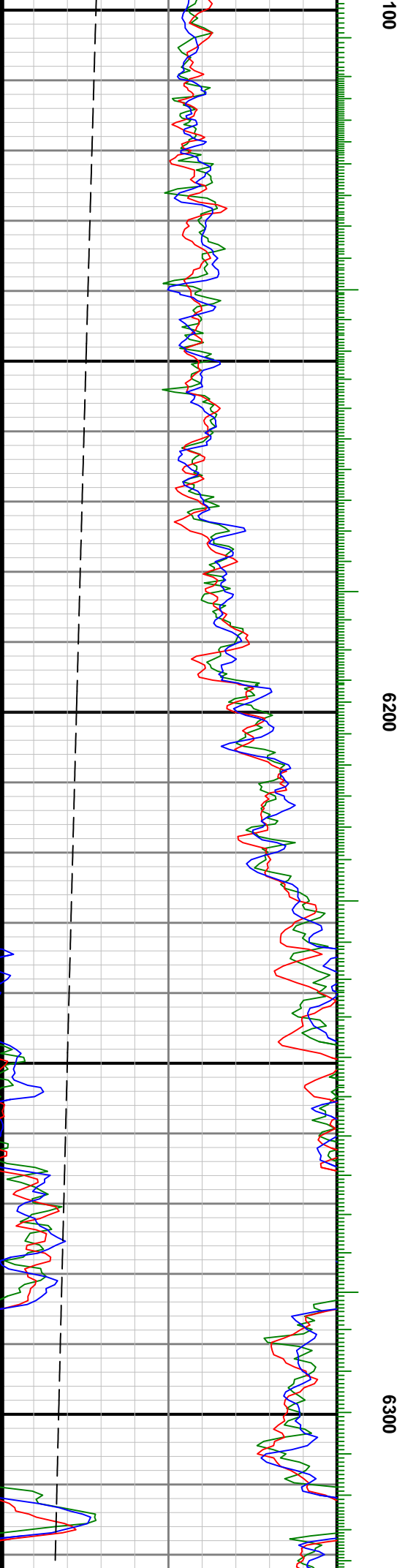


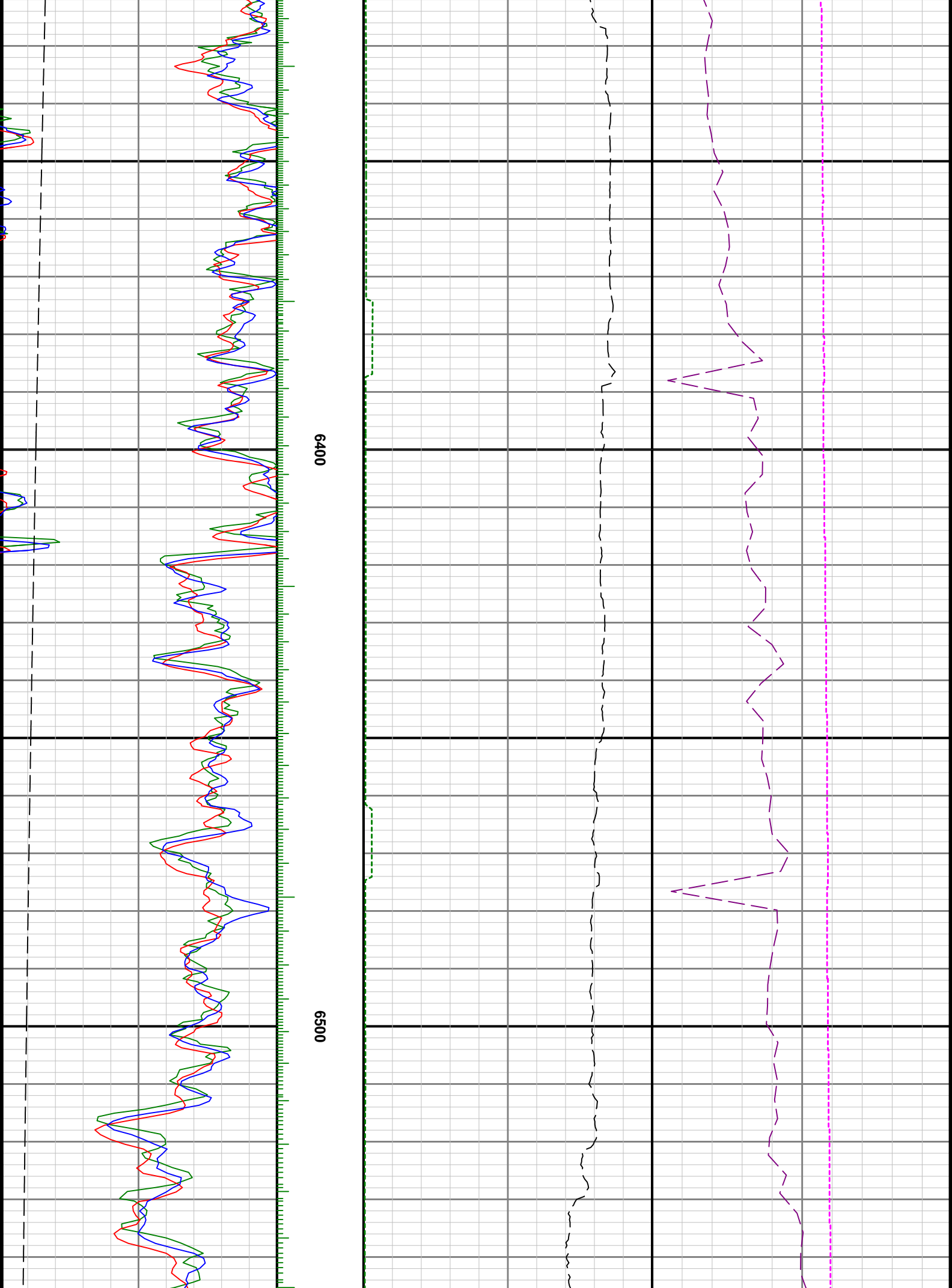
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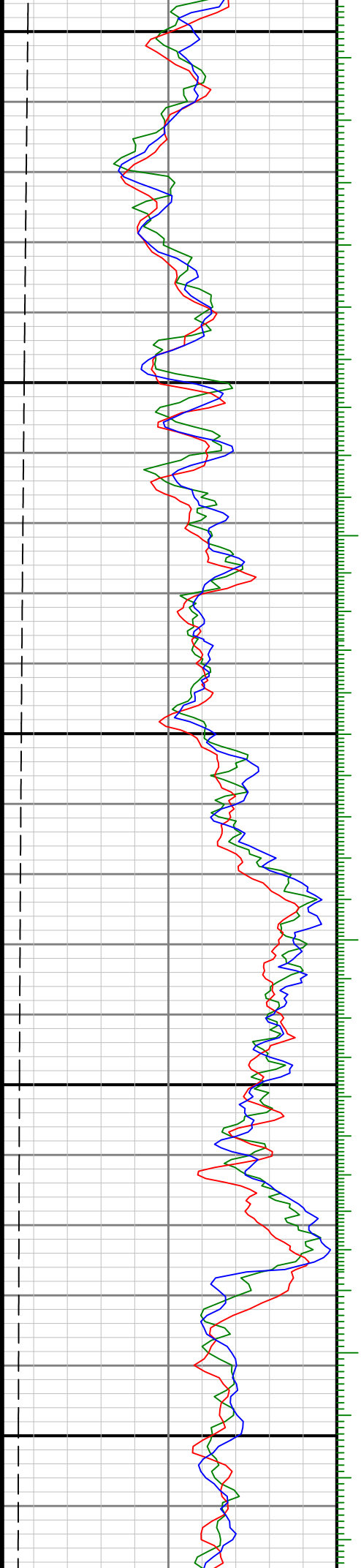
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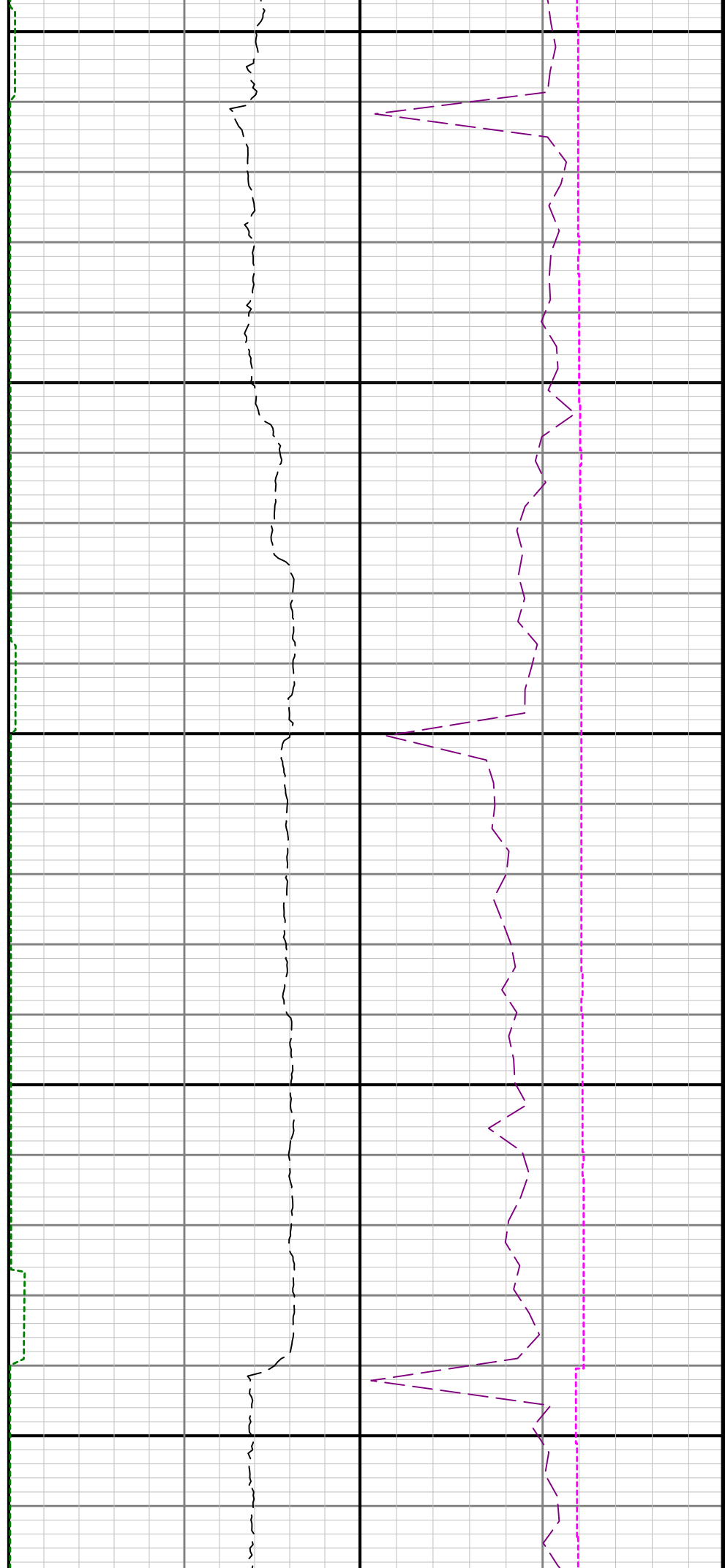


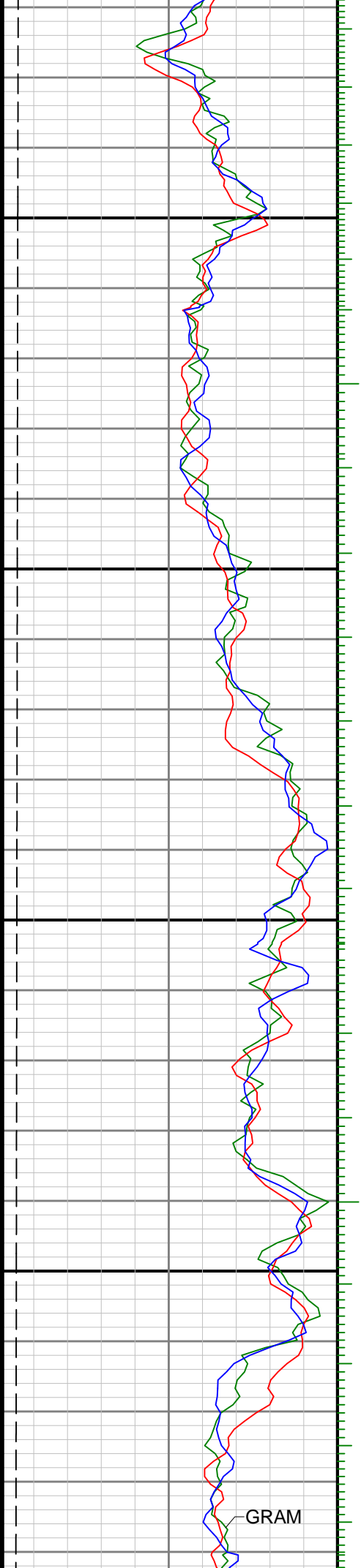




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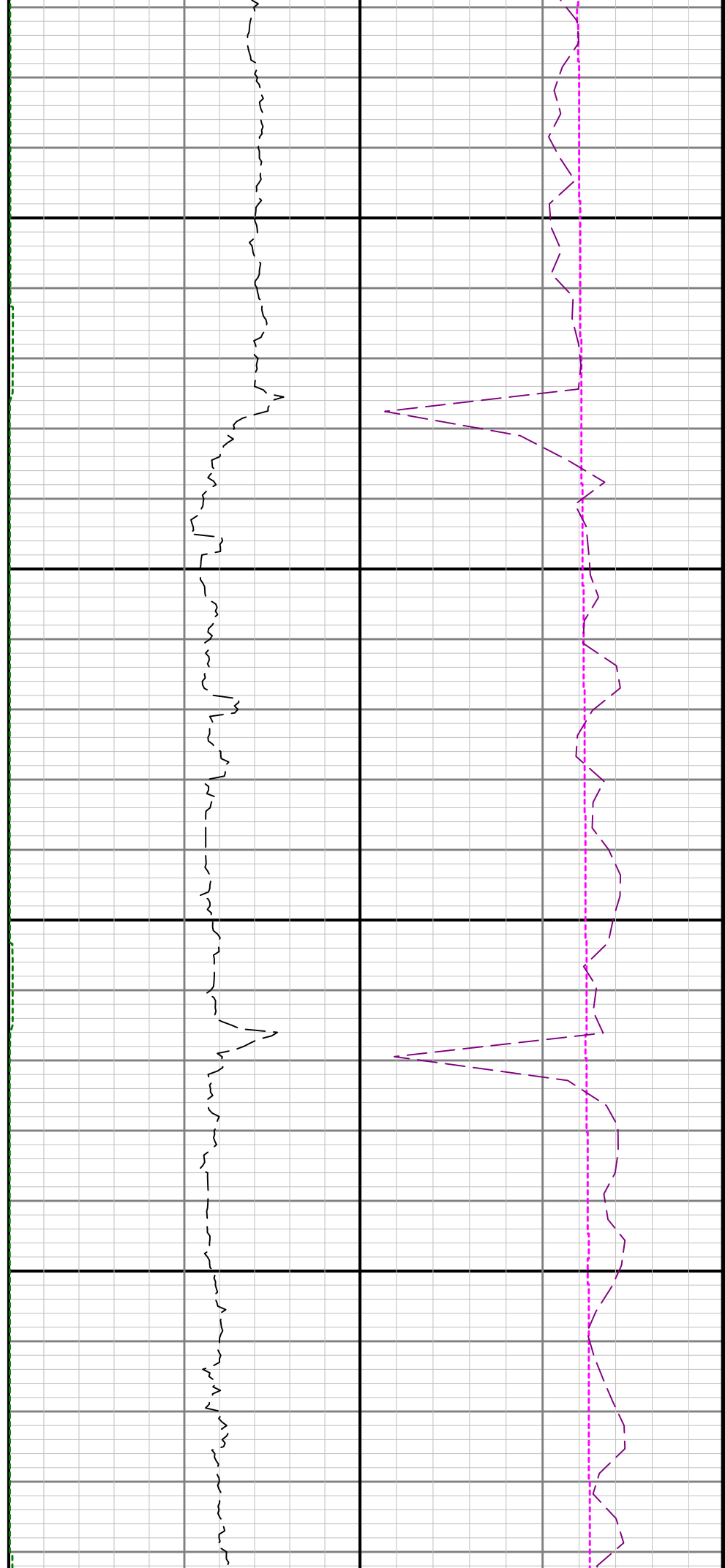
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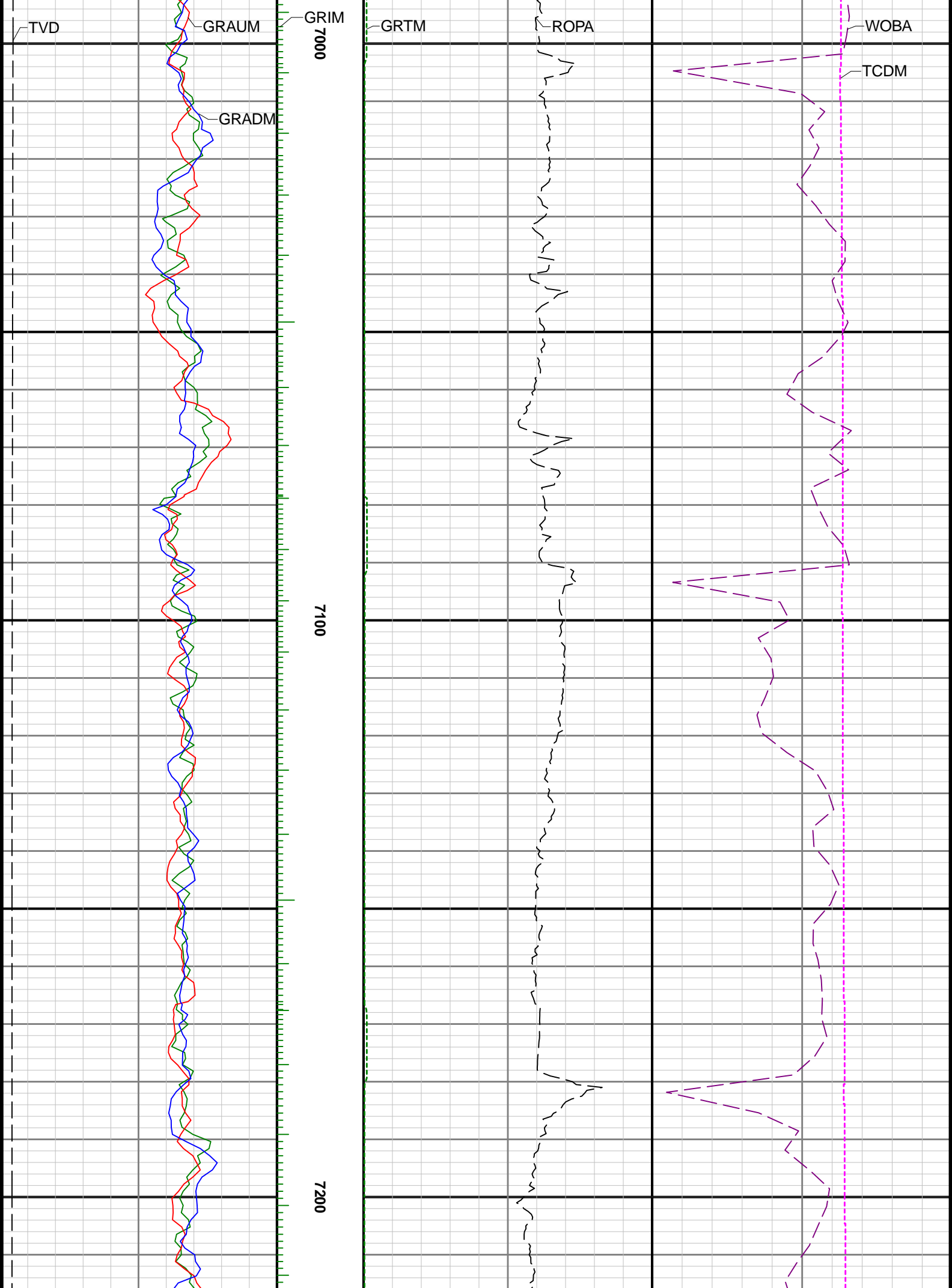


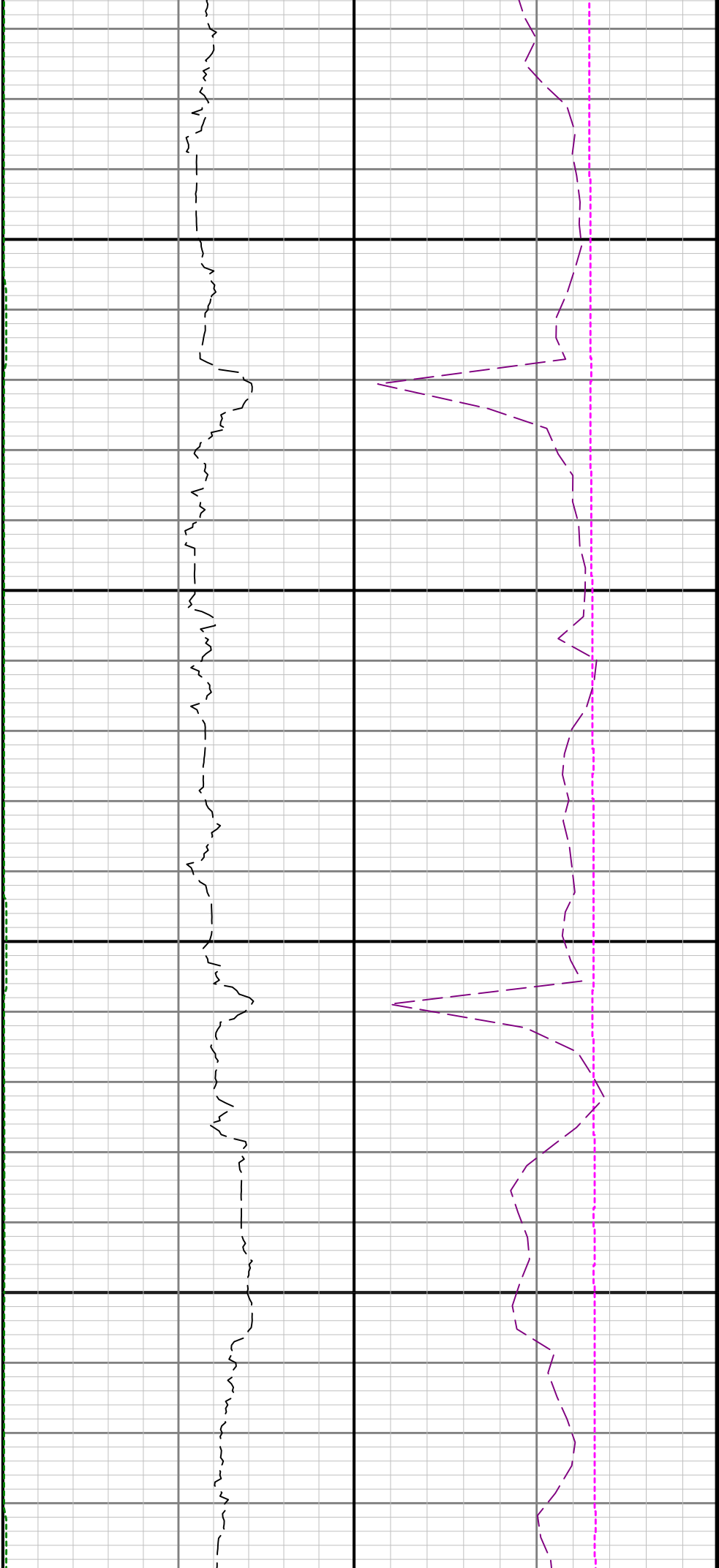


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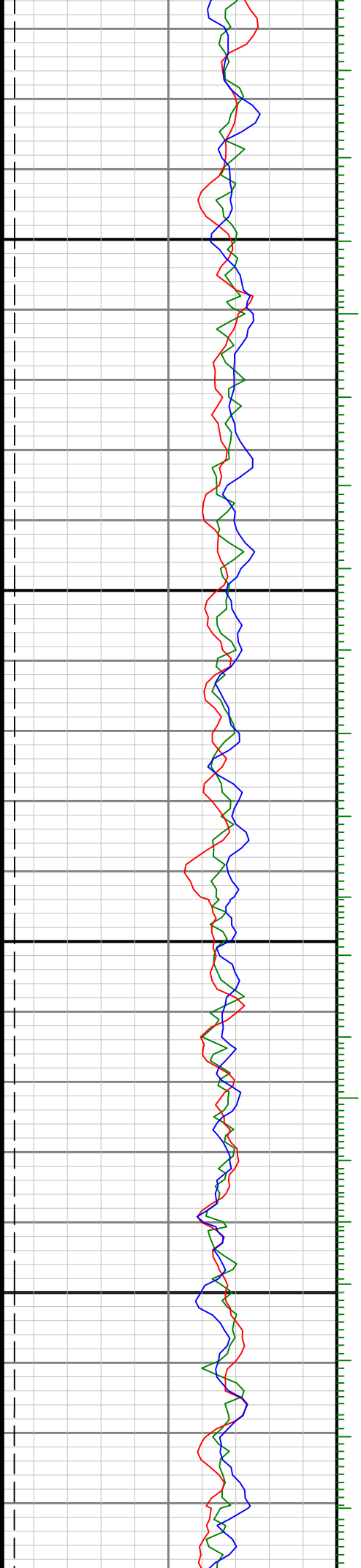


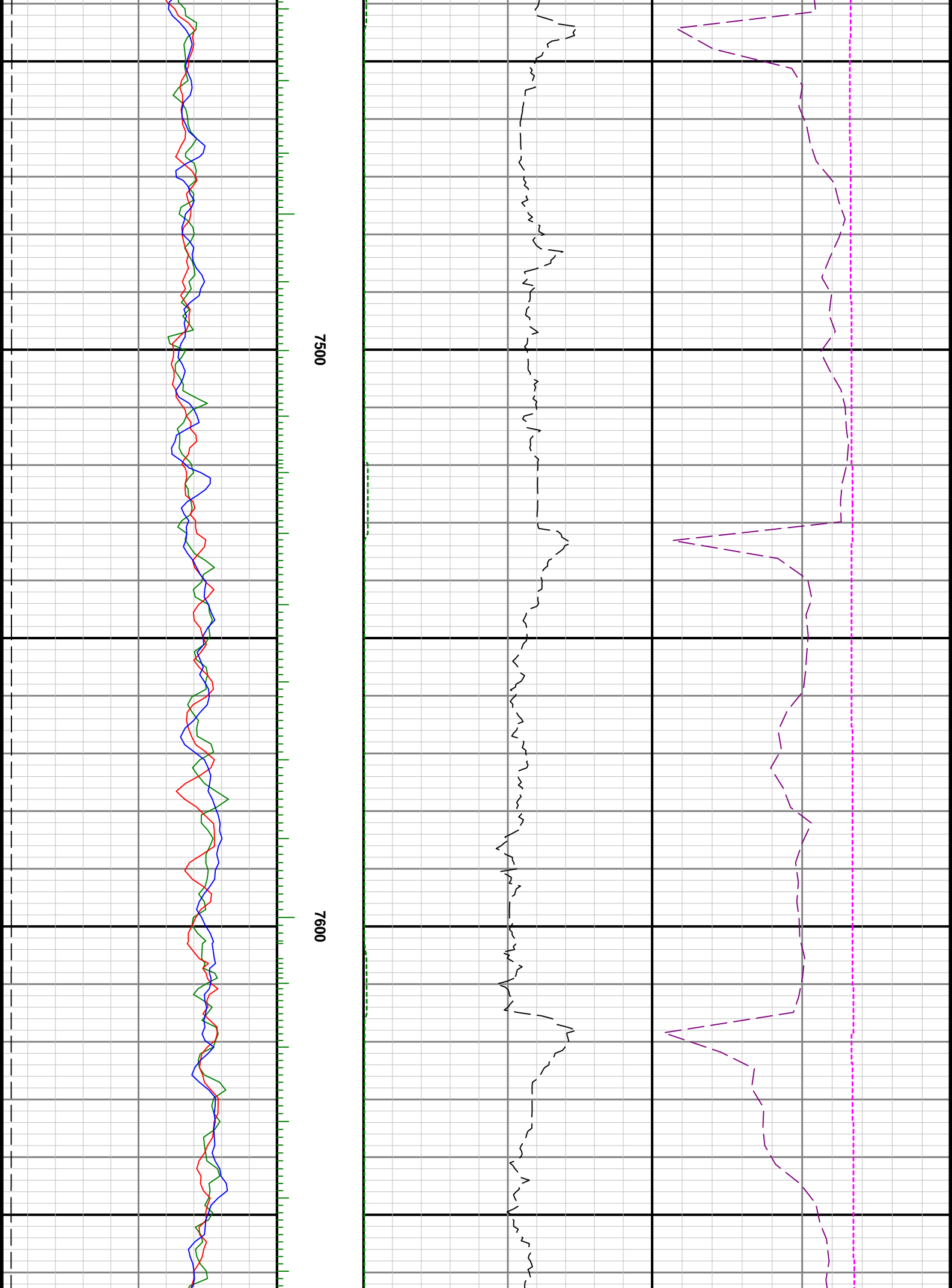


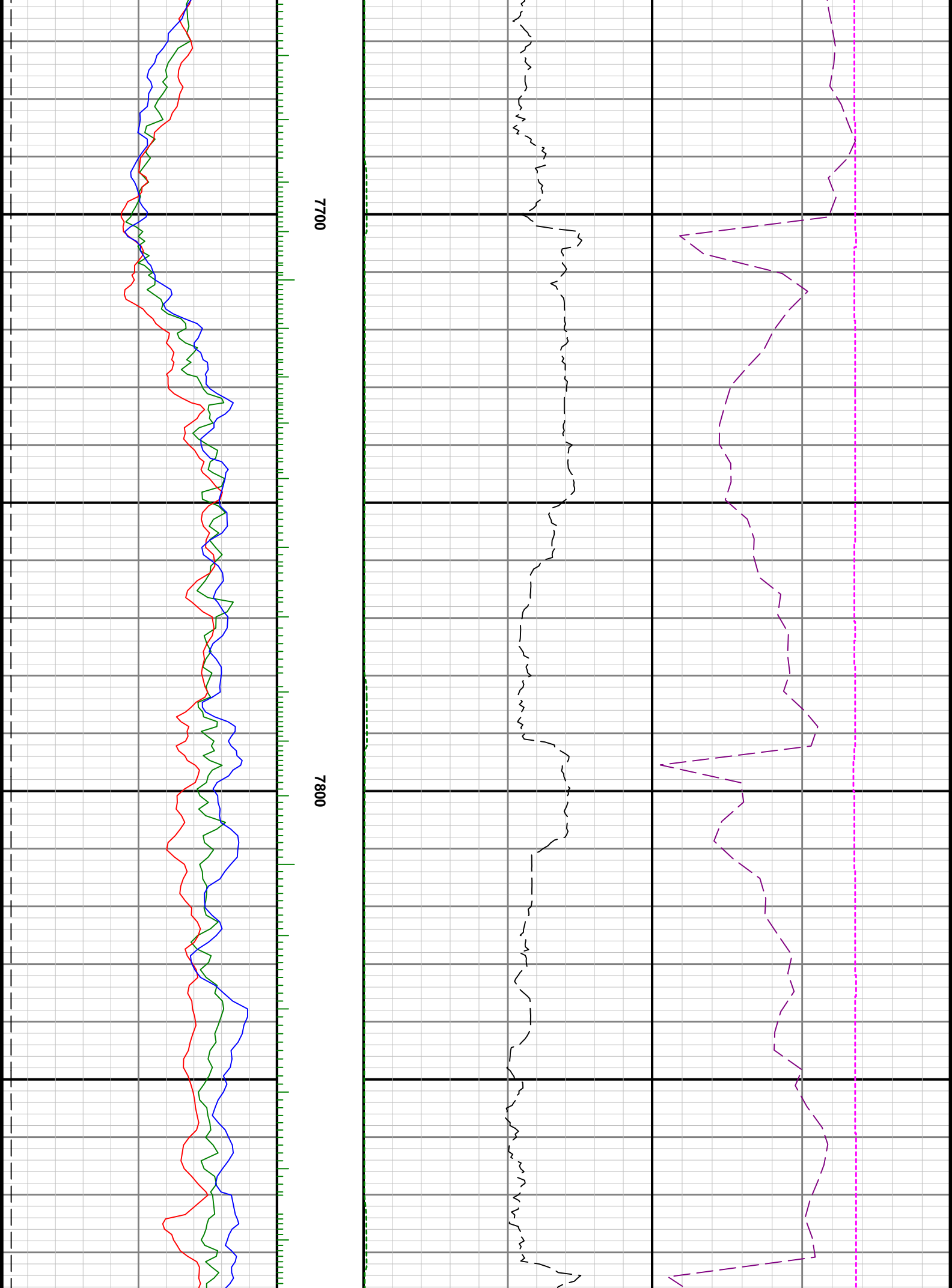


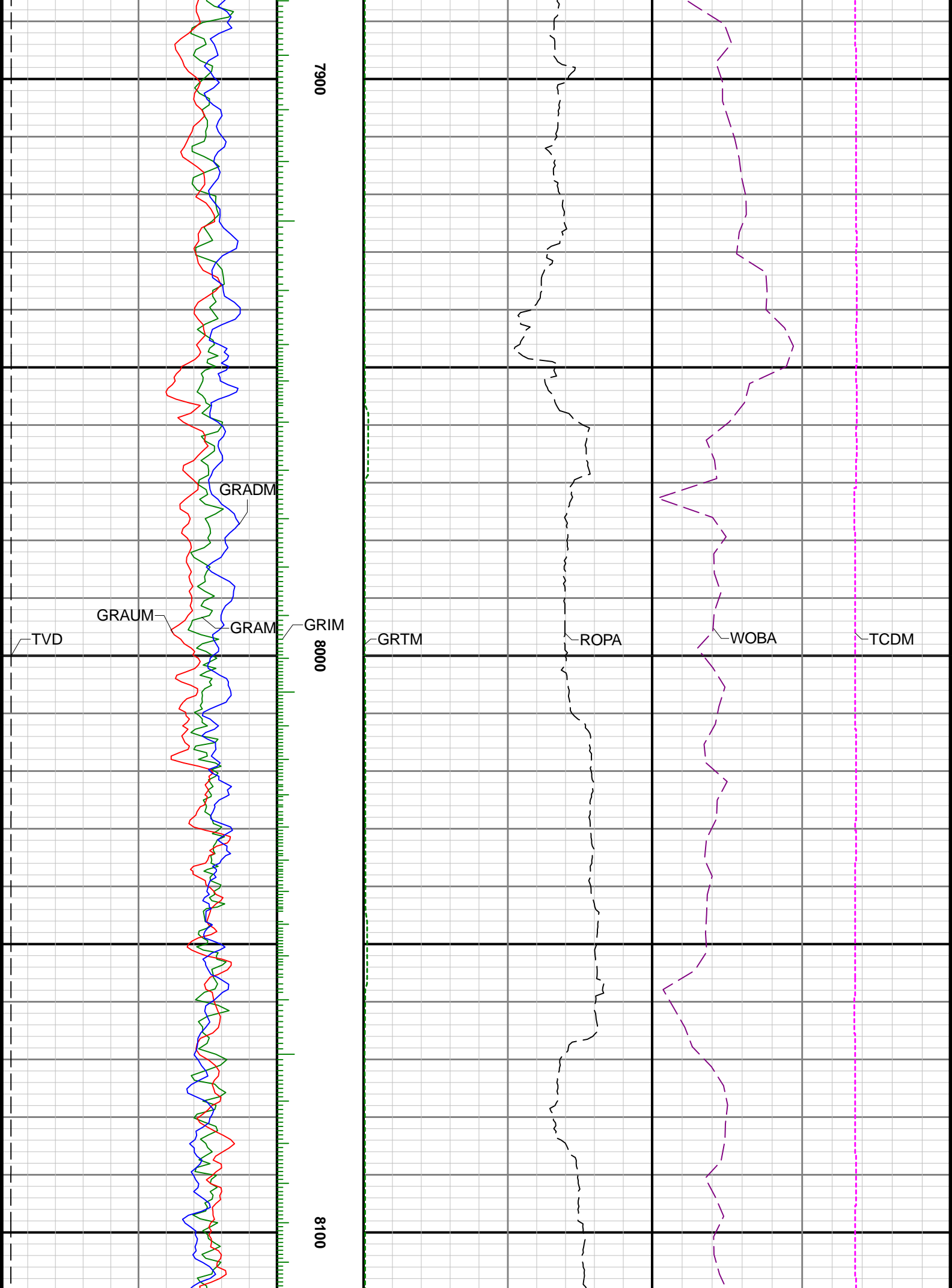
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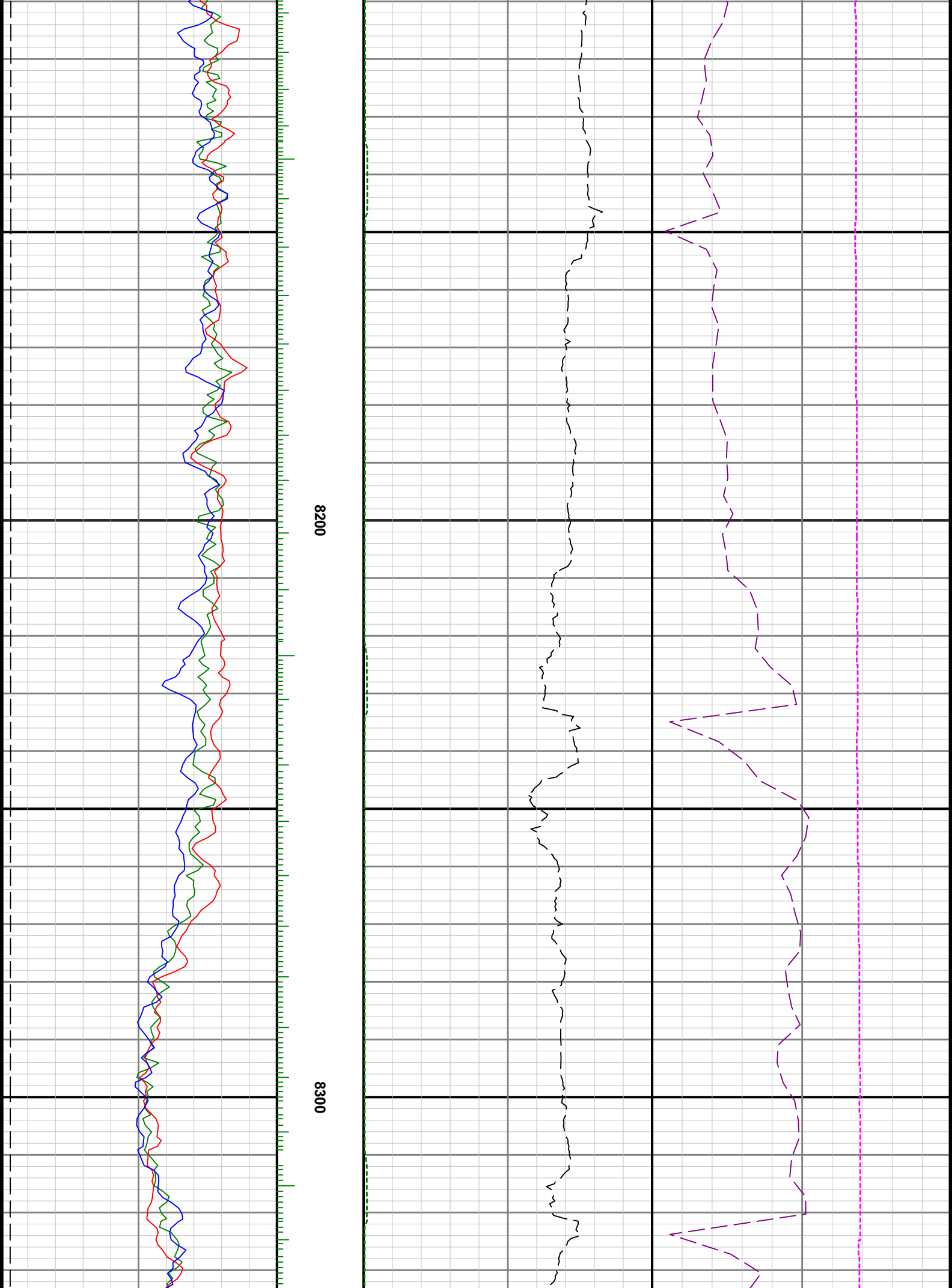
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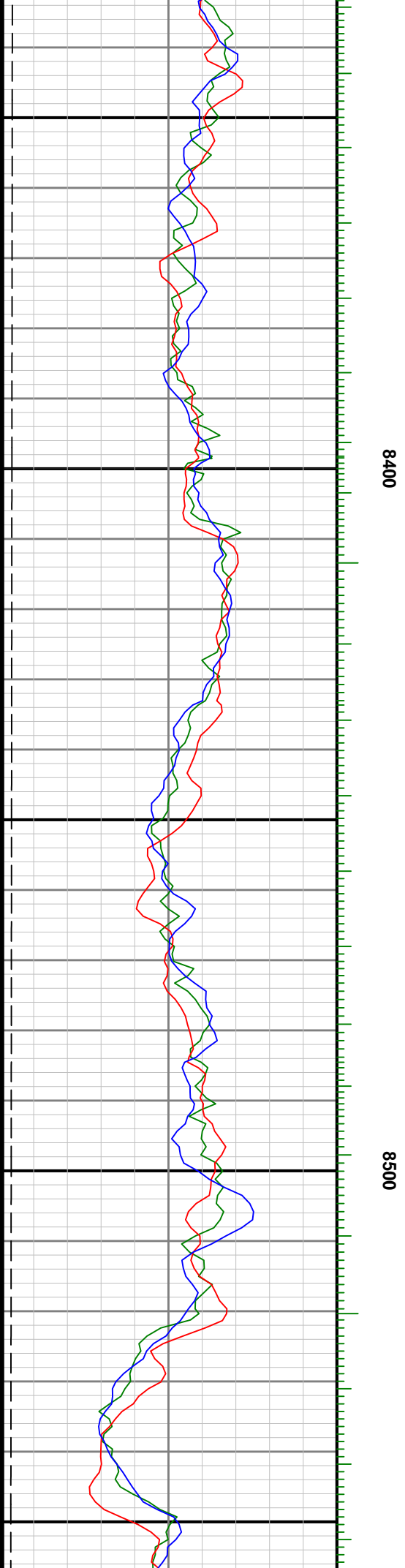
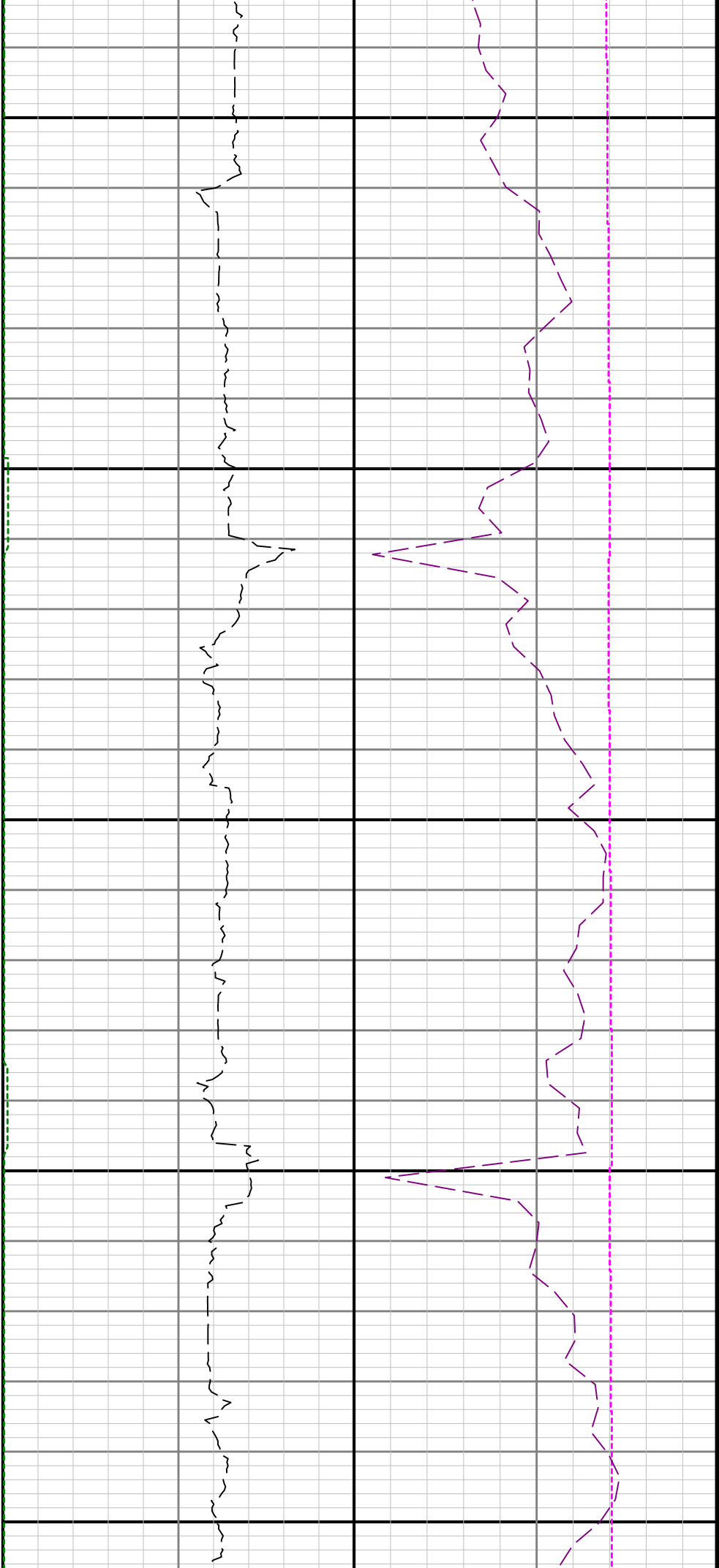


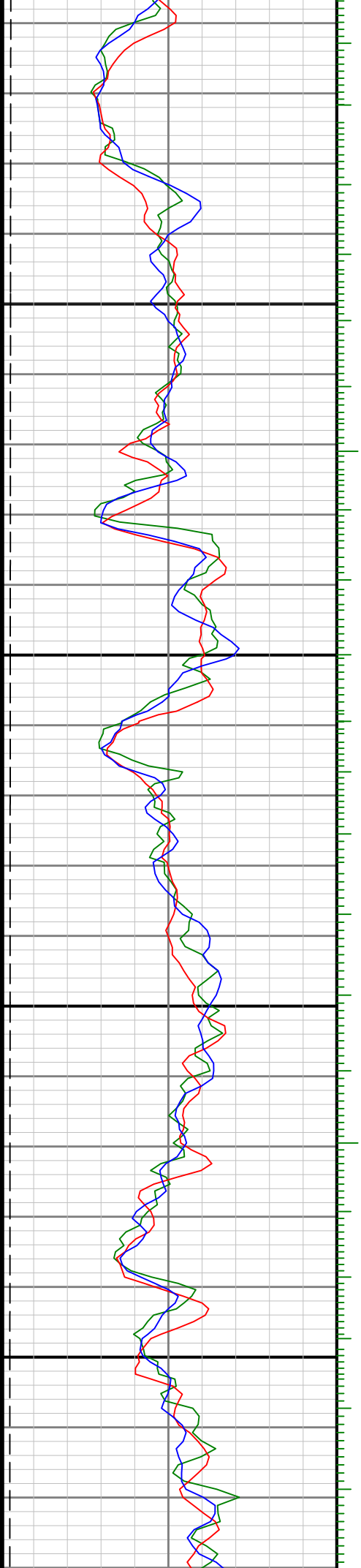






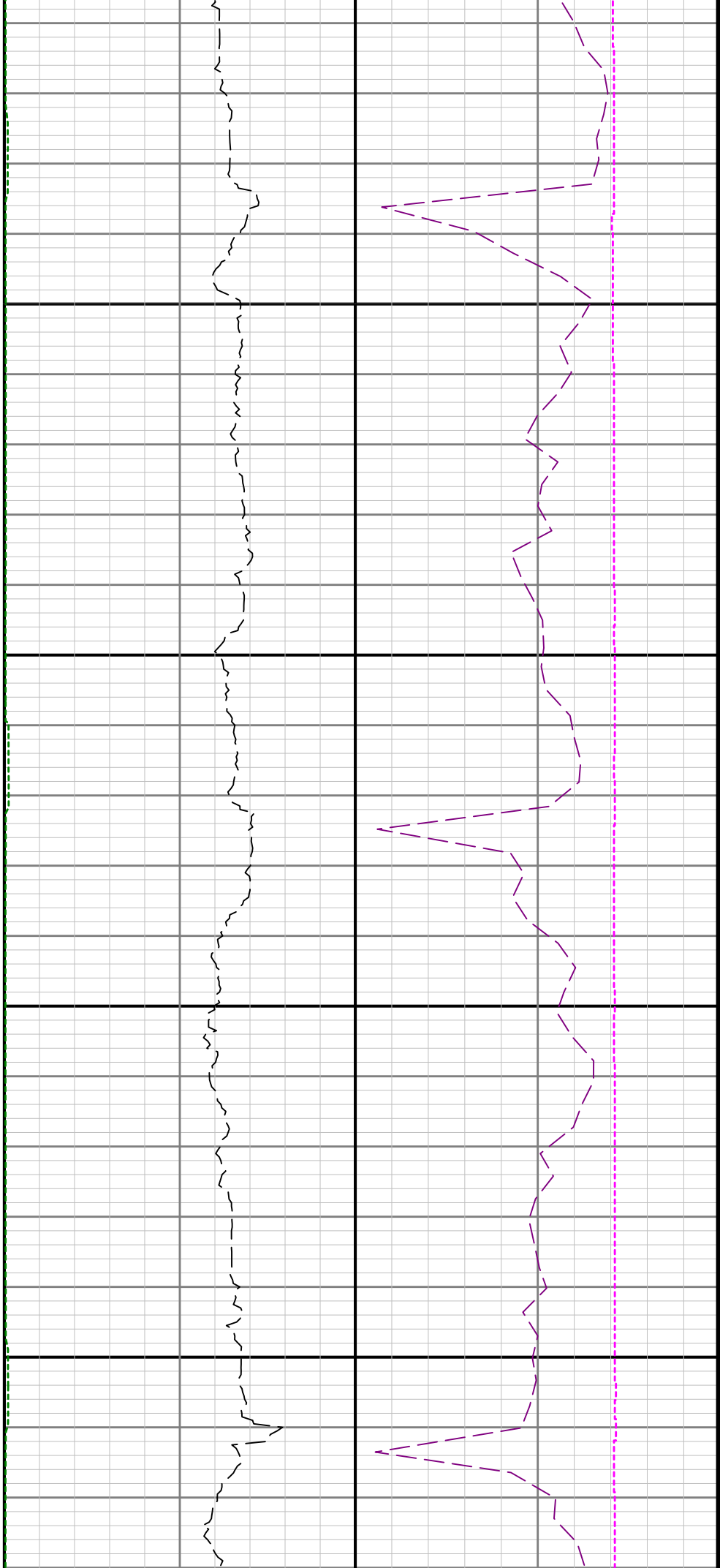


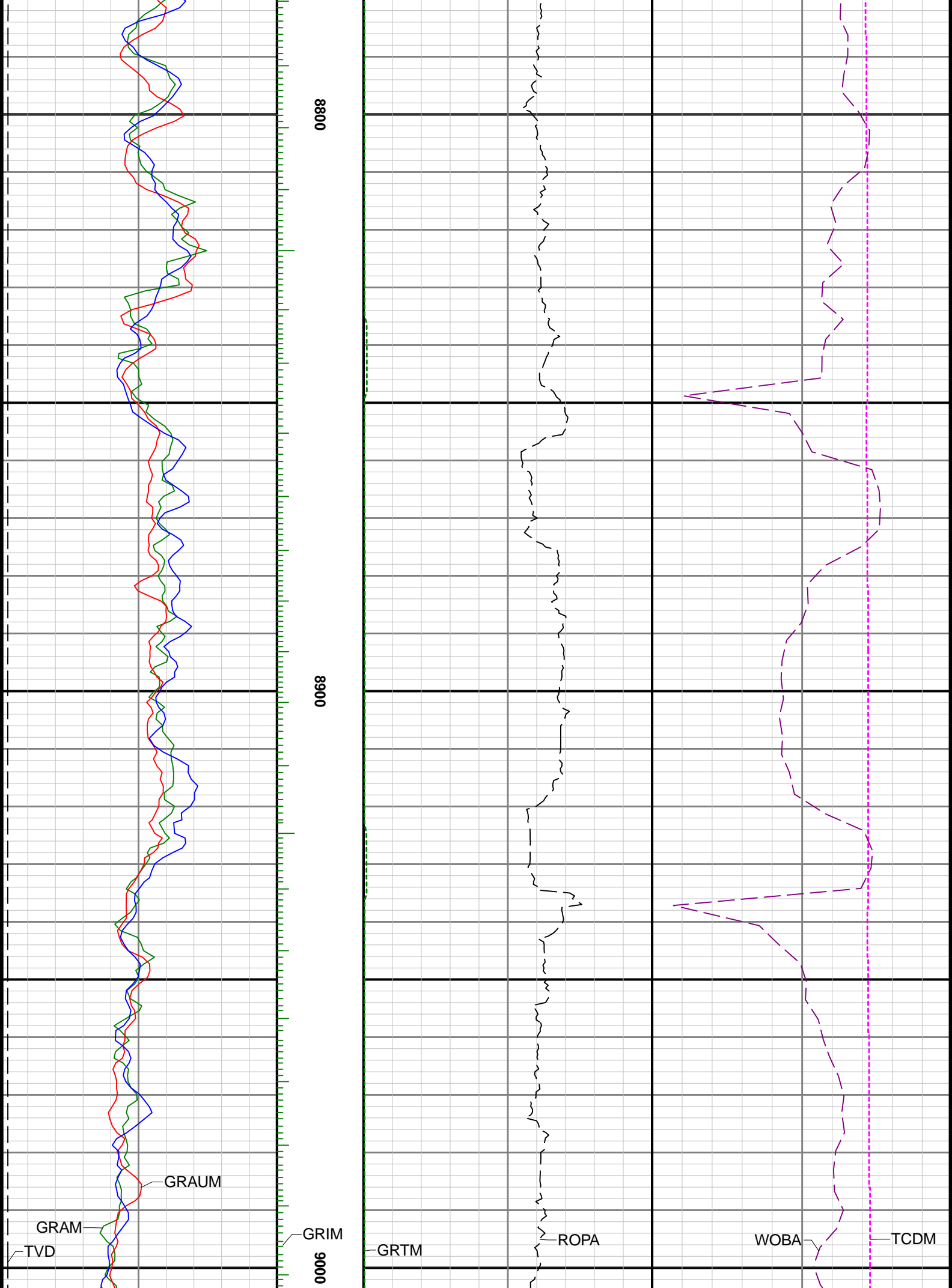


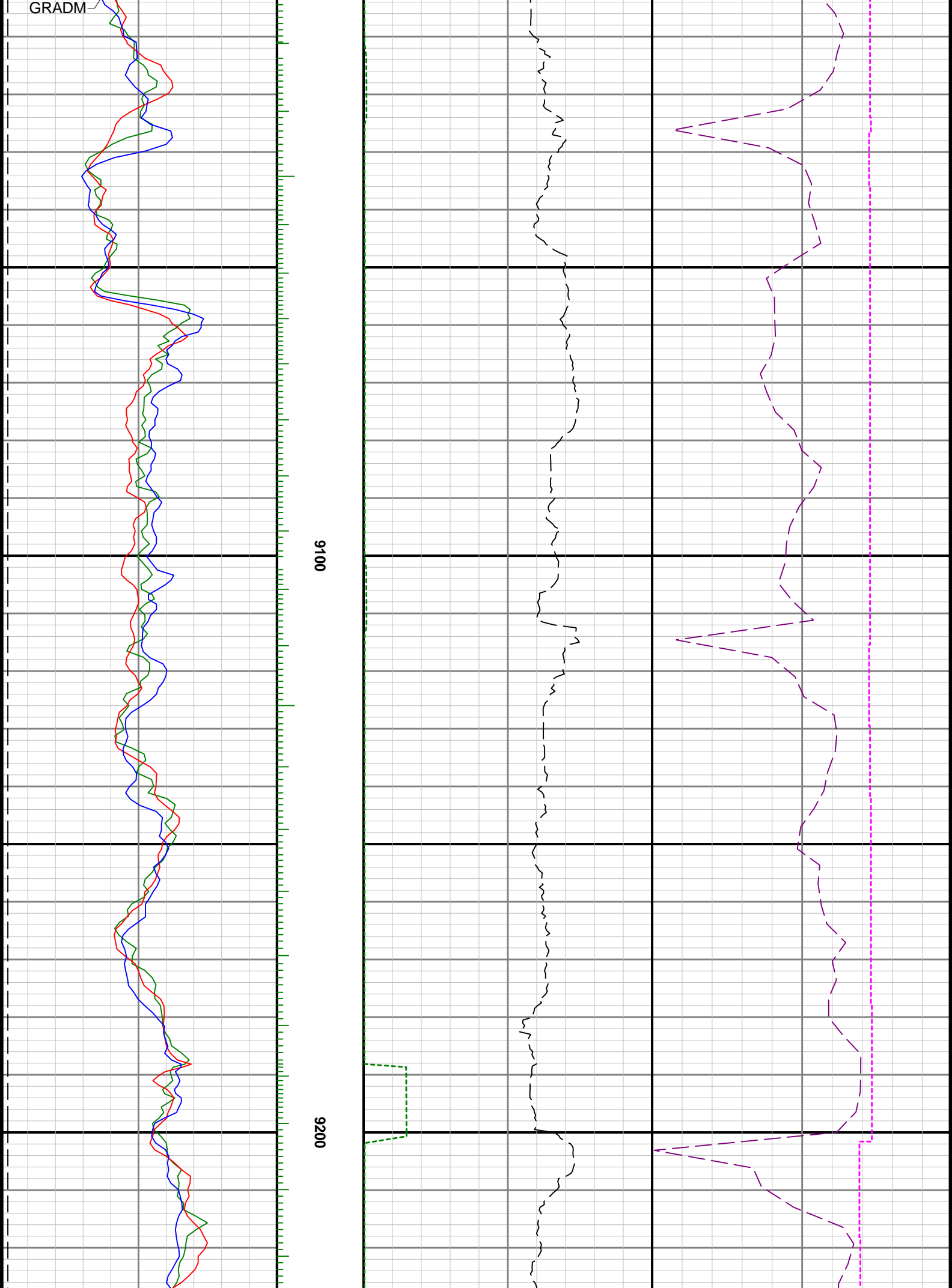


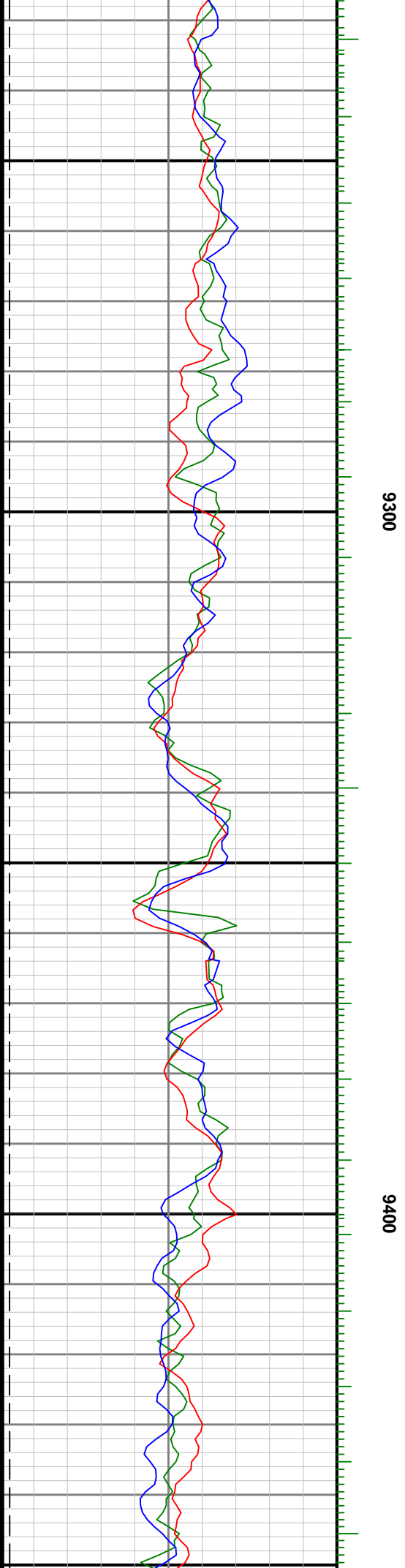
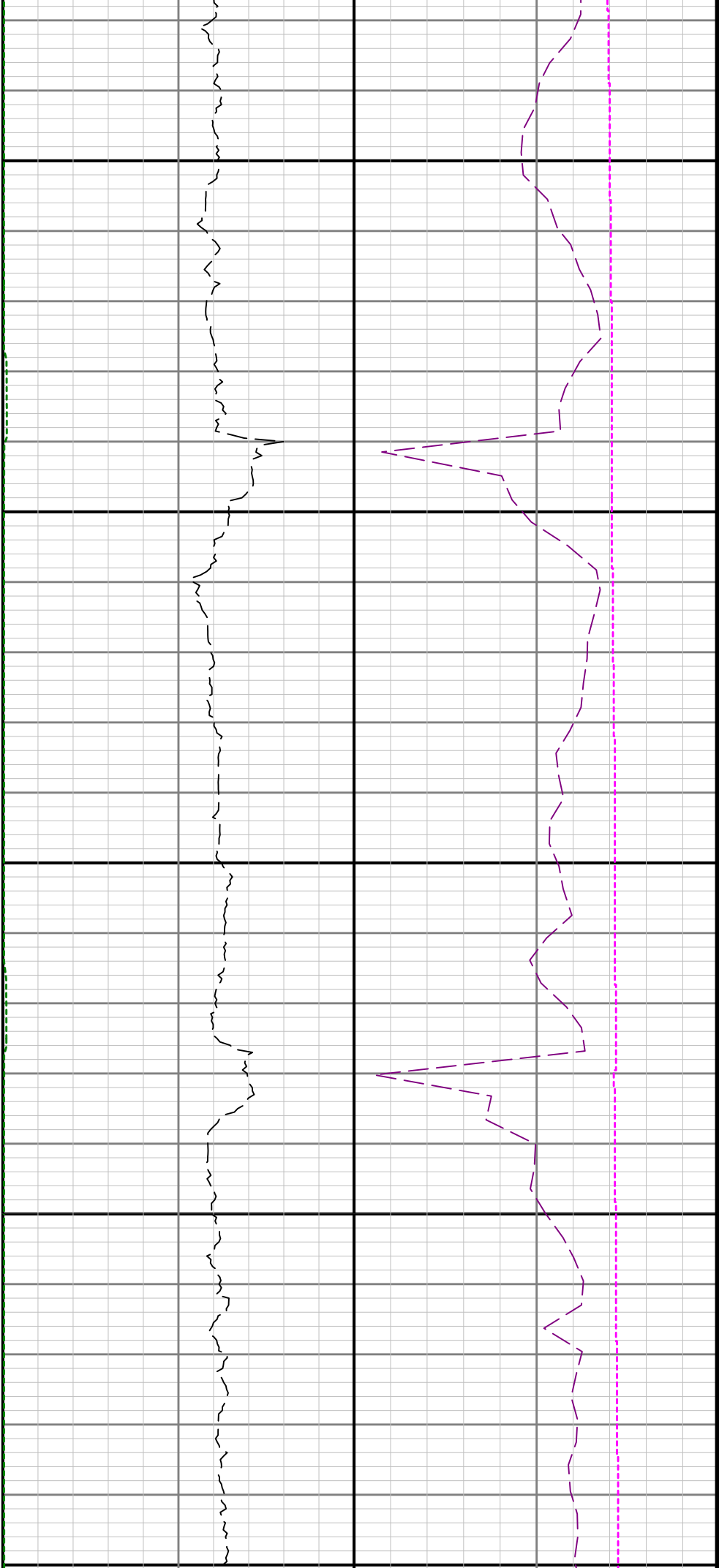
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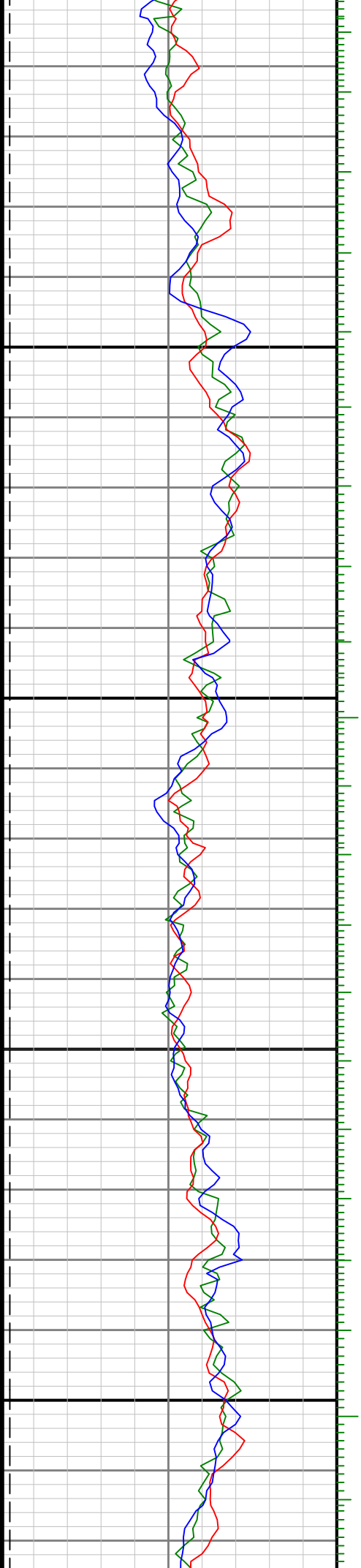
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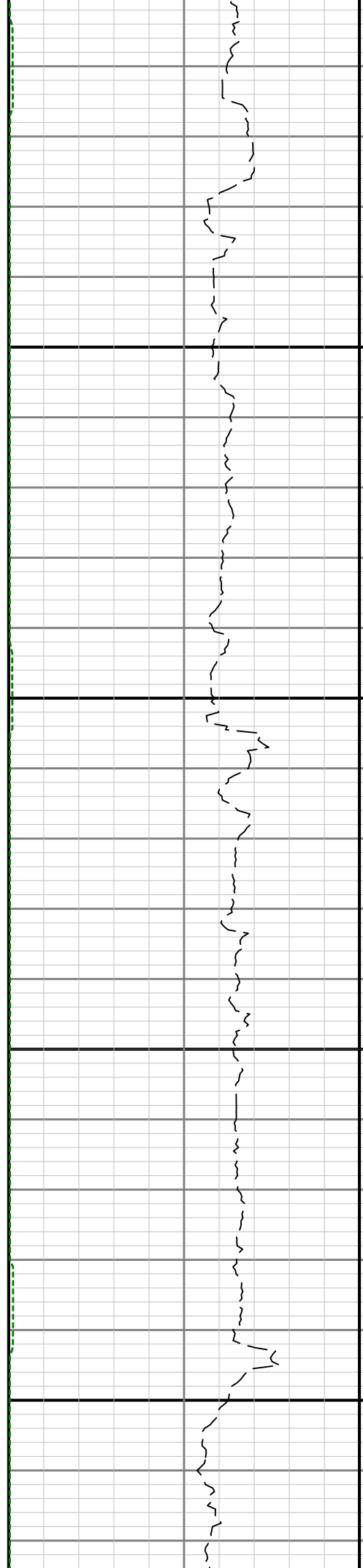


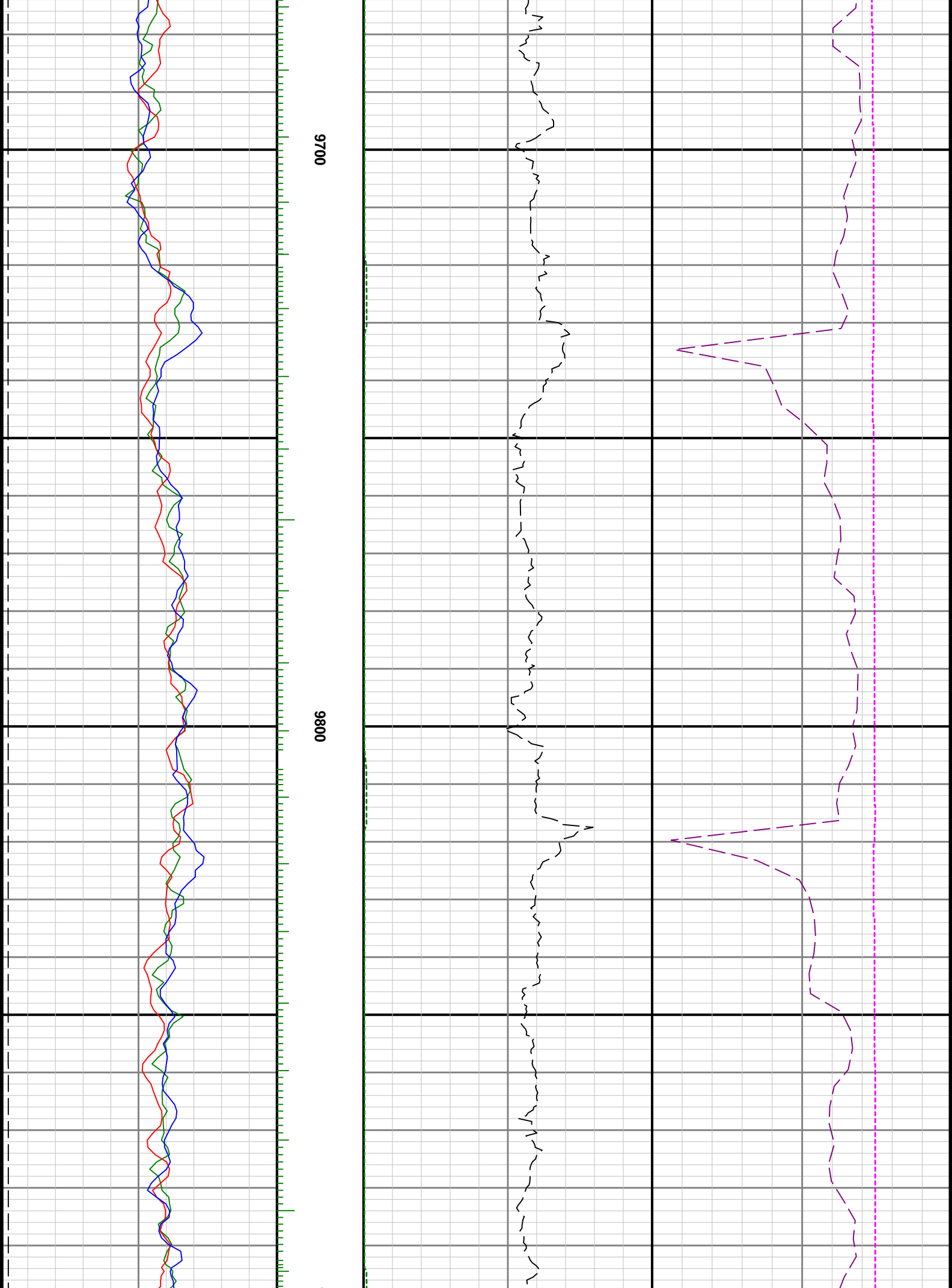


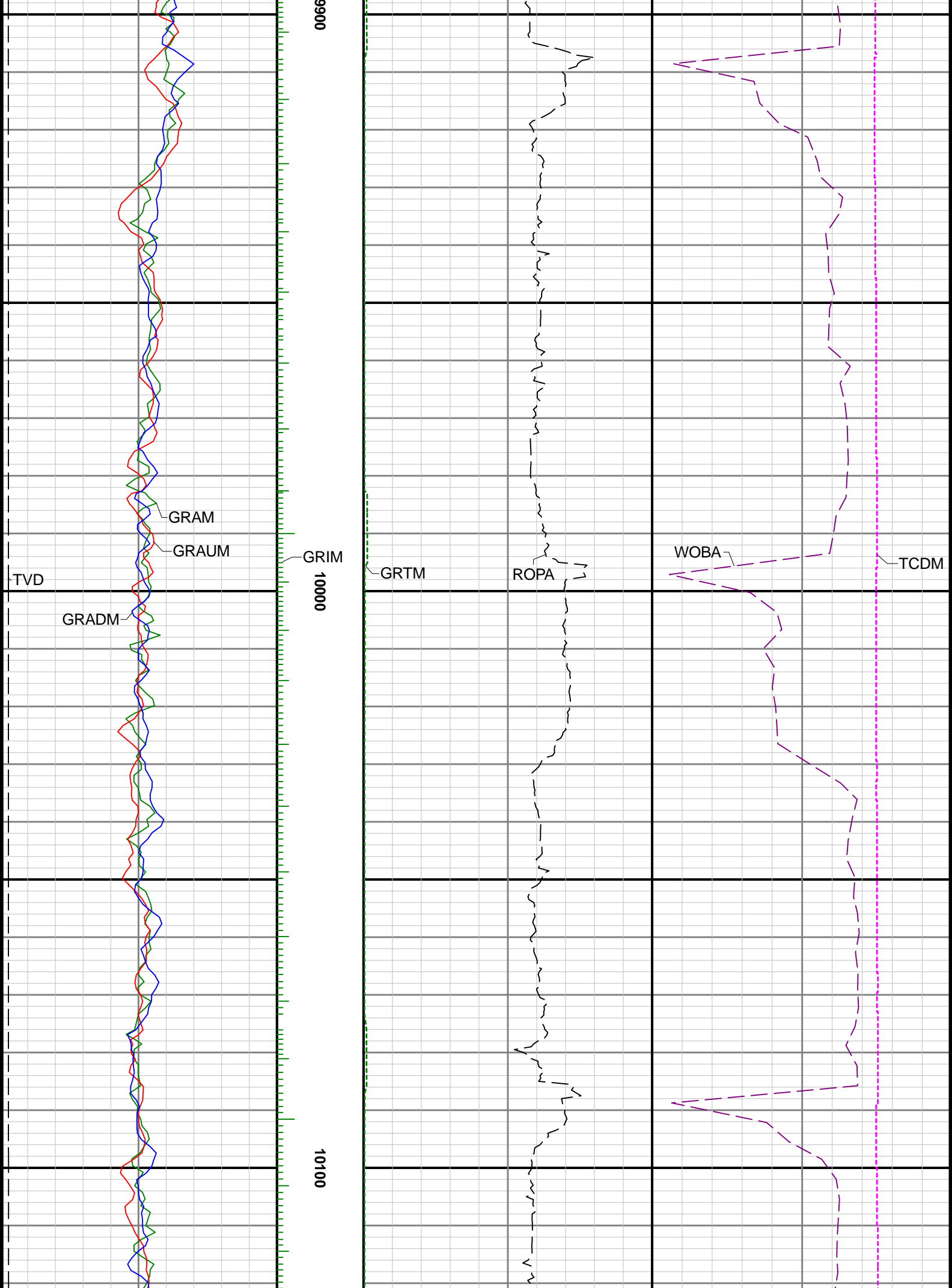


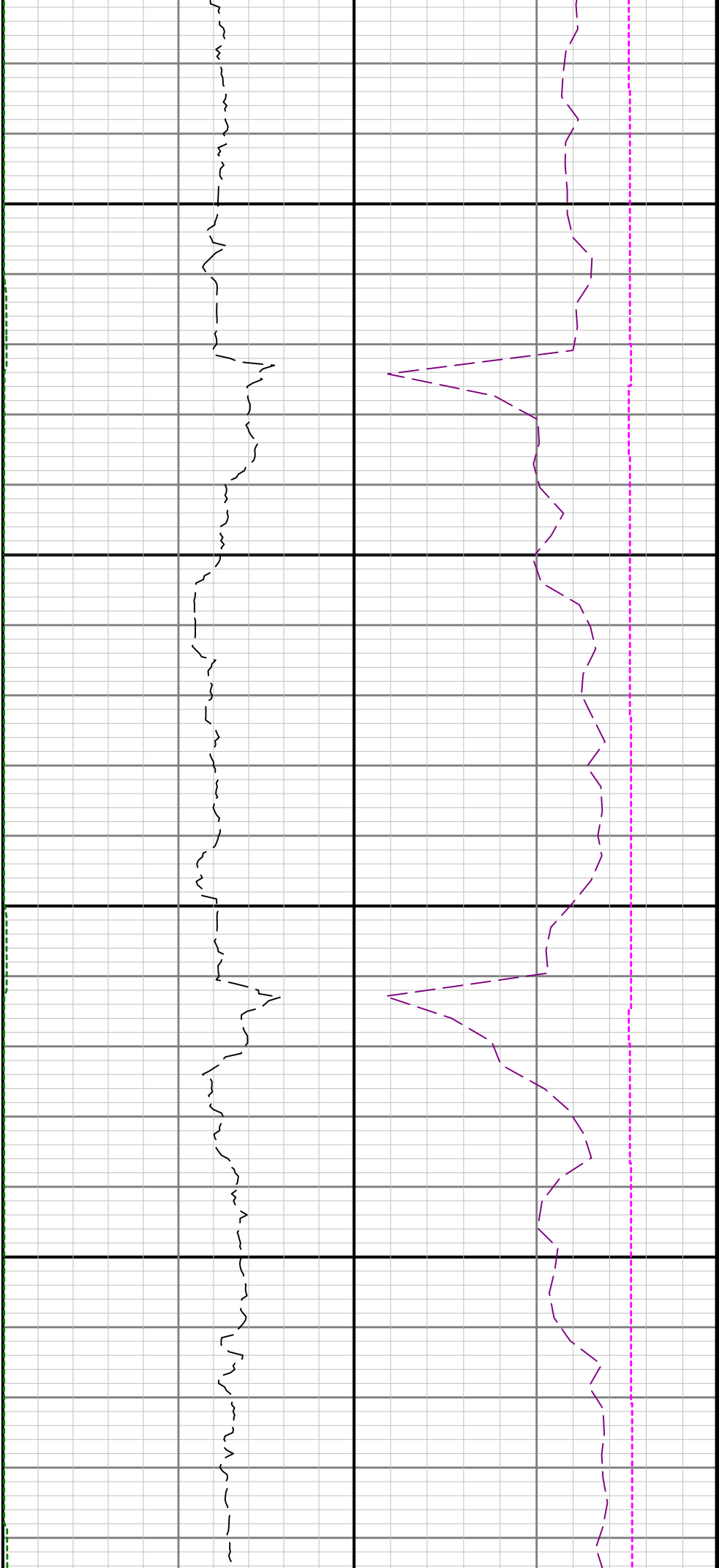
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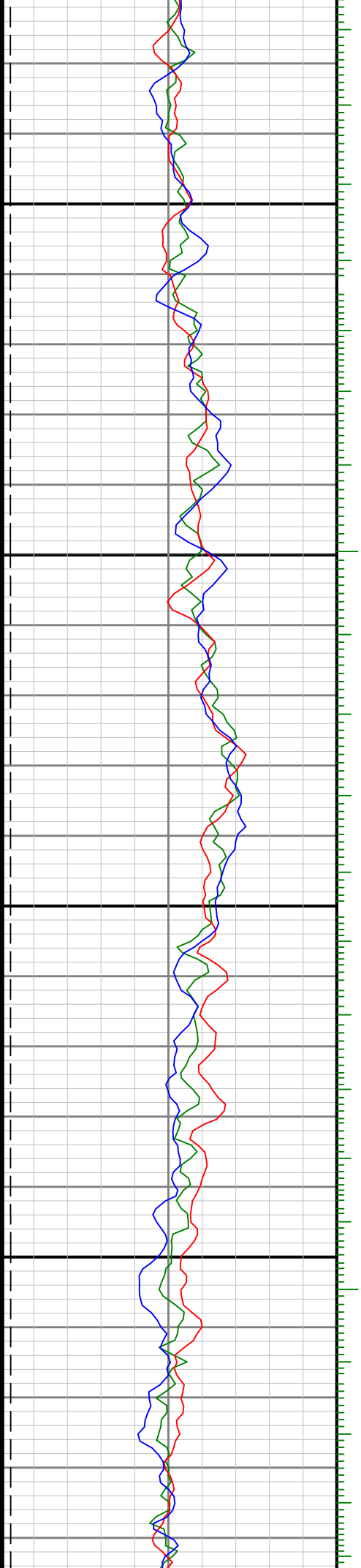


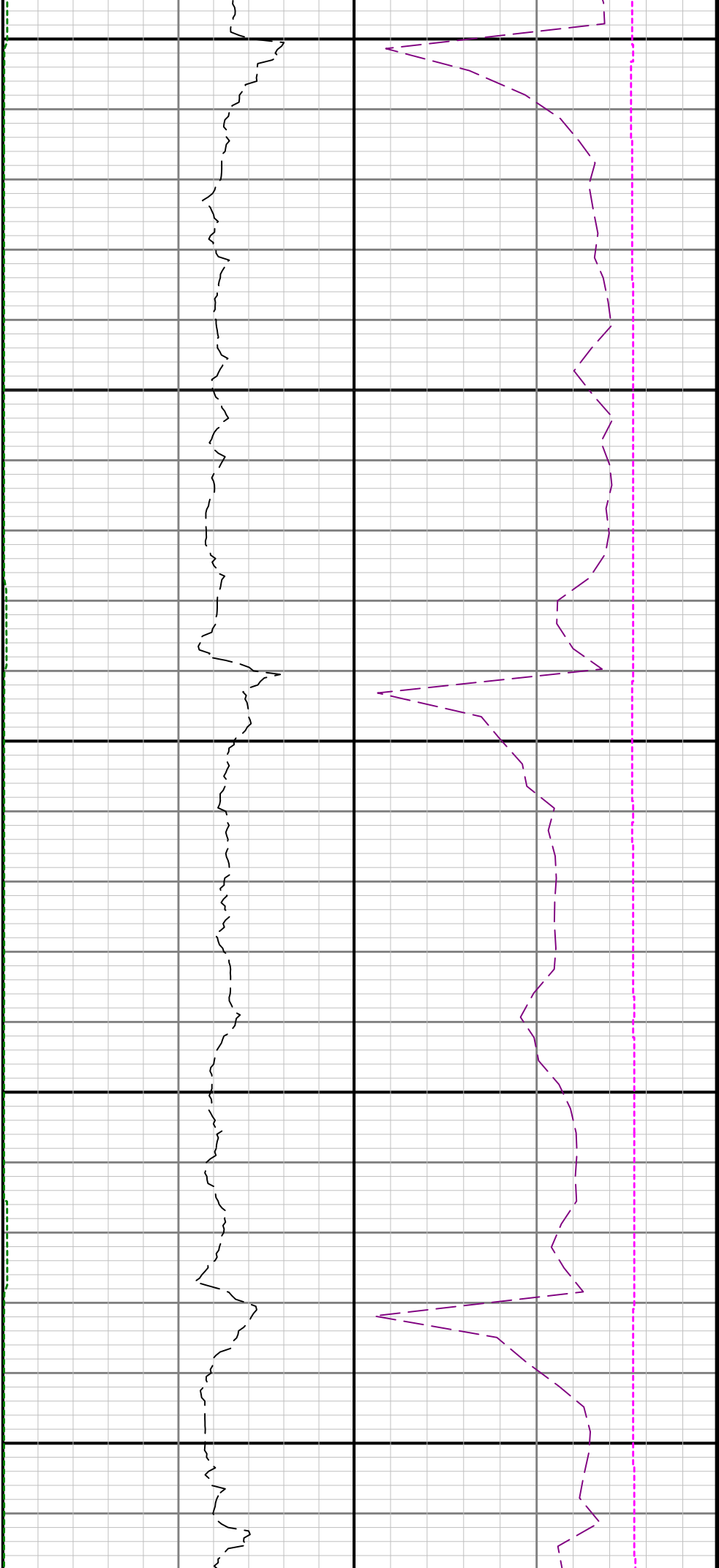




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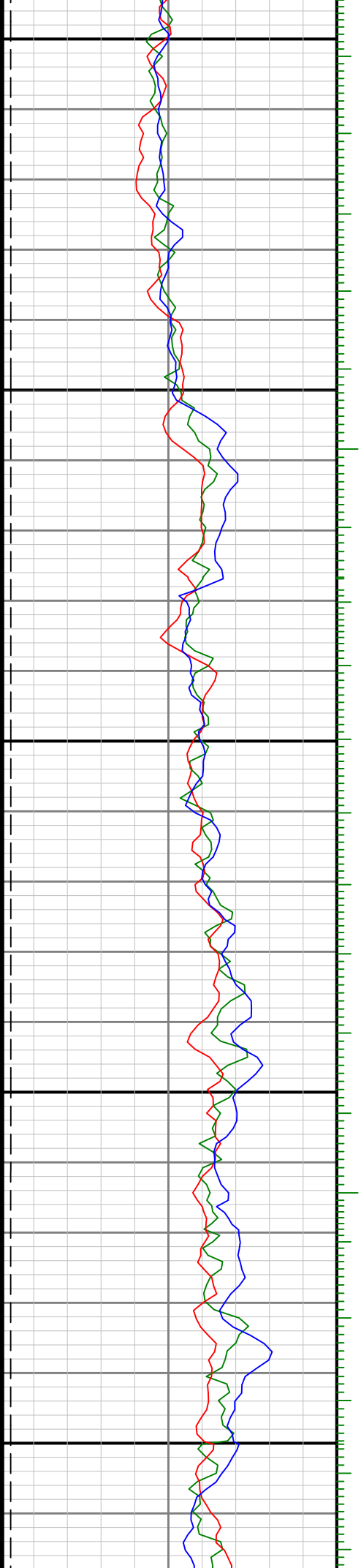
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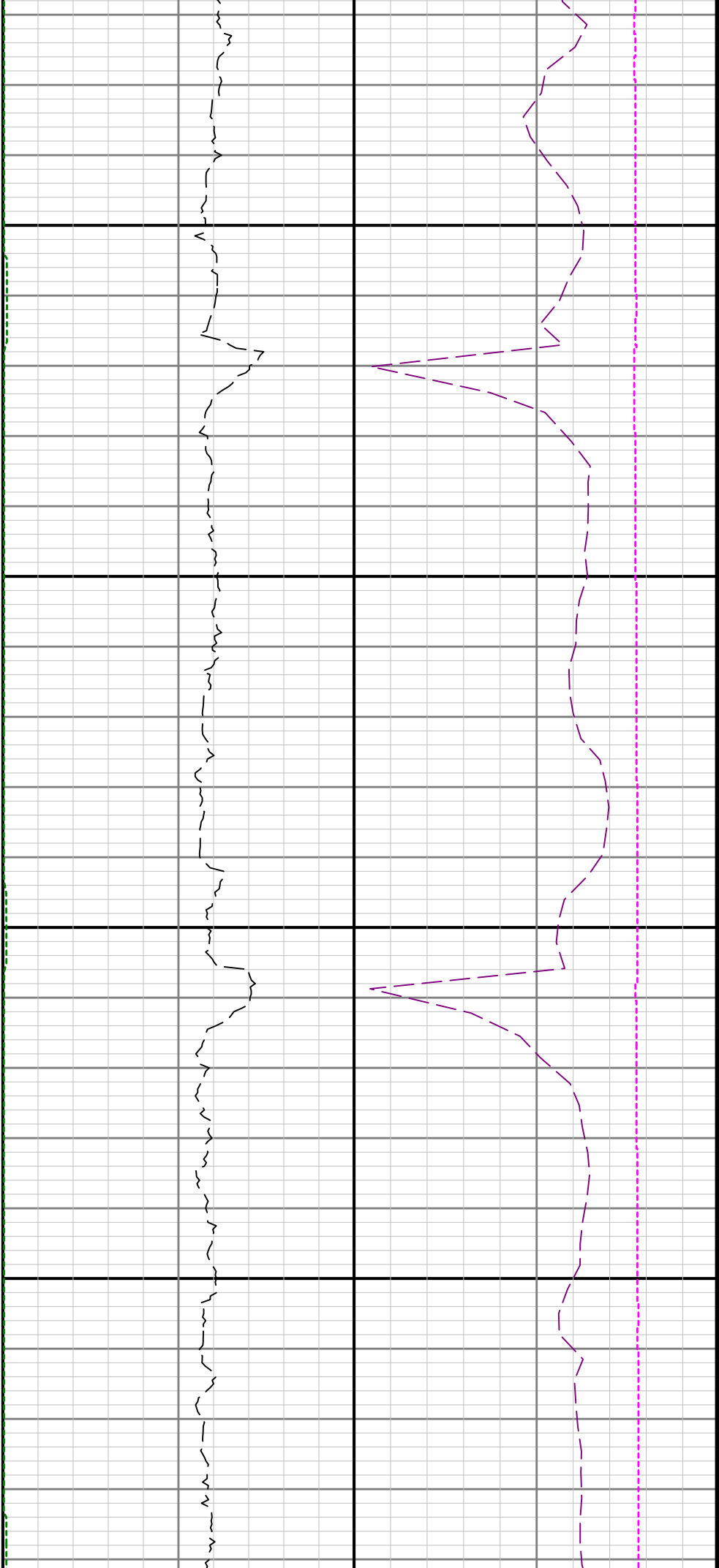




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10500





10600

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