

LWD MEMORY LOG											
<div><div><div></div><div>BAKER HUGHES</div></div></div>			Azimuthal Gamma Ray								
Scale:			Company: SRC Energy								
1:240 MD			Well: Leffler 41C-23-L								
Depth Reference:			Field: Weld County								
Driller's Depth			Country: Weld Country								
Status:			State: Colorado						Country: United States		
Final Print			Surface Location:						Other Services:		
API No: N/A			Latitude: 40° 04' 41" N Longitude: 105° 01' 03" W						Wellbore Survey		
Job ID: 8576457			SEC: 21		TWN: 6N		RGE: 66W				
Permanent Datum (P.D.):			Ground Level		Elevation:		4748.00 ft		Elev. KB: N/A		
Log Measured From: Rig Floor			Above P.D.		25.00 ft		Elev. DF: 4773.00 ft		Elev. GL: 4748.00 ft		
Dates			Interval Logged			Magnetic Field Reference					
Date From: 2017-07-07			Top: (ft) 1795.00		Azi Reference North: True		Dip Angle: (deg) 66.88				
Date To: 2017-07-12			Bottom: (ft) 17824.00		Total Magnetic Field Strength: (nT) 52614						
Spud Date: 2017-05-29					Mag to Reference North Correction: (deg) 7.42 E						
Borehole Record											
Casing Record											
Hole Size (in)		From (ft)		To (ft)		Size (in)		Weight (lb/ft)		From (ft) To (ft)	
13.500		25.00		1796.00		9.625		36.00		25.00 1790.00	
8.500		1795.00		17837.00							
Mud Record											
Deviation Record											
Type		From (ft)		To (ft)		Hole Size (in)		Interval (ft)		Inc Az (Start) Inc Az (End)	
Fresh Water		25.00		1795.00		13.500		1770.00		1.02 129.40 5.26 332.30	
Oil Based Mud		1795.00		17837.00		8.500		16041.58		5.42 330.50 90.98 91.01	
Acquisition System											
Software Version			Other								
Baker Hughes Cadence			RT4.1			Rig: PD 562			Contractor: Precision Drilling		
PloStudio			4.1.7763.3			District: RMD			Unit: D&E		

2017-05-28 15:49	1	25.00	Fresh Water	8.4	15	7.6	8.7	7/93	Active Pit	55000	0.00
2017-07-07 18:11	2	1796.00	Oil Based Mud	9.5	14	N/A	8.7	80/20	Active Pit	35000	0.00
2017-07-08 20:00	3	4232.00	Oil Based Mud	9.5	20	N/A	9.6	80/20	Active Pit	36000	0.00
2017-07-09 12:00	4	5216.00	Oil Based Mud	9.6	26	N/A	9.6	80/20	Active Pit	37000	0.00
2017-07-09 22:45	5	5216.00	Oil Based Mud	9.6	26	N/A	9.6	80/20	Active Pit	37000	0.00
2017-07-10 16:00	5	7359.00	Oil Based Mud	9.6	20	N/A	9.4	82/18	Active Pit	32000	0.00
2017-07-11 04:00	5	9783.00	Oil Based Mud	9.7	18	N/A	9.3	82/18	Active Pit	36000	0.00
2017-07-11 16:00	5	12378.00	Oil Based Mud	9.7	15	N/A	10.0	78/22	Active Pit	34000	0.00
2017-07-12 04:00	5	14973.00	Oil Based Mud	9.7	15	N/A	10.0	78/22	Active Pit	34000	0.00
2017-07-12 20:00	5	17658.00	Oil Based Mud	9.7	16	N/A	9.6	80/20	Active Pit	30000	0.00

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	Sensor Sub	ZAPS230924	Gamma (single)	9.66	59.62	8.000	3.250
1	Sensor Sub	ZAPS230924	Directional (mag)	12.23	62.19	8.000	3.250
1	Sensor Sub	ZAPS230924	VSS	12.23	62.19	8.000	3.250
1	Sensor Sub	ZAPS230924	Pressure	31.53	81.49	8.000	3.250
2	ATC_SU	11994997	Near Bit VSS	5.93	6.73	7.000	4.330
2	ATC_SU	11994997	Near Bit Inclination	5.93	6.73	7.000	4.330
2	ATC_MWD	12141354	Gamma (single)	2.75	12.90	7.000	3.250
2	ATC_MWD	12141354	Directional (mag)	12.27	22.42	7.000	3.250
3	ATC_SU	13809446	Near Bit Inclination	5.93	6.73	7.000	4.330
3	ATC_SU	13809446	Near Bit VSS	5.93	6.73	7.000	4.330
3	ATC_MWD	12600028	Gamma (single)	2.20	12.35	7.000	3.250
3	ATC_MWD	12600028	Directional (mag)	12.27	22.42	7.000	3.250
4	ATC_SU	12077515	Near Bit VSS	5.93	6.73	7.000	4.330
4	ATC_SU	12077515	Near Bit Inclination	5.93	6.73	7.000	4.330
4	ATC_MWD	12070163	Gamma (single)	2.75	12.89	7.000	3.250
4	ATC_MWD	12070163	Directional (mag)	12.27	22.41	7.000	3.250
5	ATC_SU	12215163	Near Bit Inclination	5.93	6.73	7.000	4.330
5	ATC_SU	12215163	Near Bit VSS	5.93	6.73	7.000	4.330
5	ATC_MWD	14219781	Gamma (single)	2.76	12.90	7.000	3.250
5	ATC_MWD	14219781	Directional (mag)	12.28	22.42	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	APS	APS EM Module
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Comments

1	Depth measurements 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.
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3	Depth measurements 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.
4	Gamma Ray Curves (GRAM-GRAUM-GRADM) are presented 0 to 300 API per customer request.


Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	5123.00	8.500	3	The interval from 5205 to 5214 feet MD (5182 to 5191 feet TVD) was logged up to 19 hours after being drilled due to a trip out of the hole for a tool failure.
2	17827.00	8.500	5	The interval from 17824 to 17837 feet MD (7148 feet TVD) was not logged due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	OnTrak - Gamma Ray - Apparent - Memory 0.5 ft Average	API
CPIM		unitless

GRIM	OnTrak - Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	OnTrak - Gamma Ray - Time Since Drilled - Memory	min
GRADM	OnTrak - Gamma Ray - Apparent - Down Quadrant - Memory 0.5 ft Average	API
GRAUM	OnTrak - Gamma Ray - Apparent - Up Quadrant - Memory 0.5 ft Average	API
TCDM	Downhole Temperature	degF



Company

Well

Interval

Created

SRC Energy

Leffler 41C-23-L

Date From: 2017-07-07 23:44:29

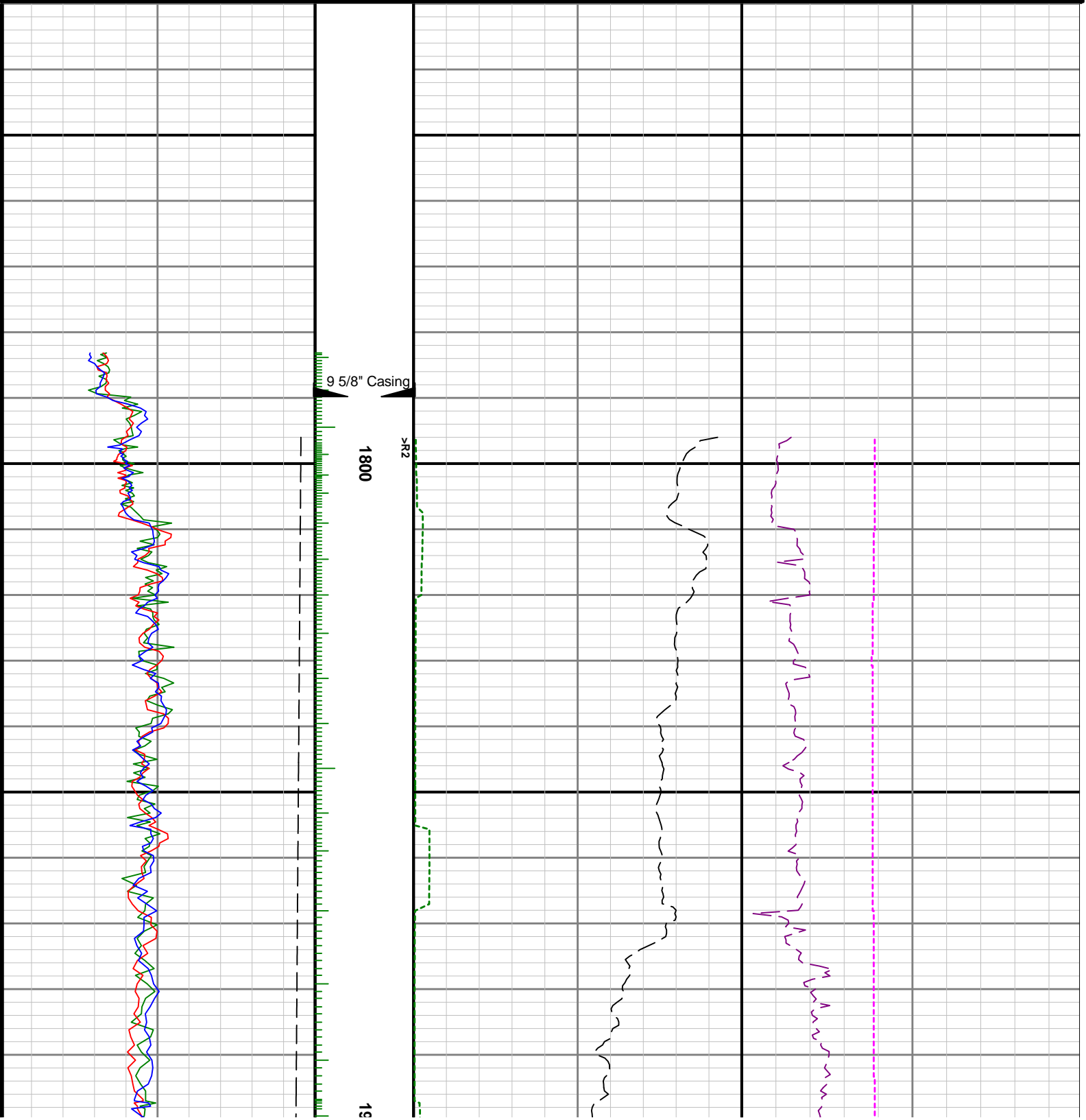
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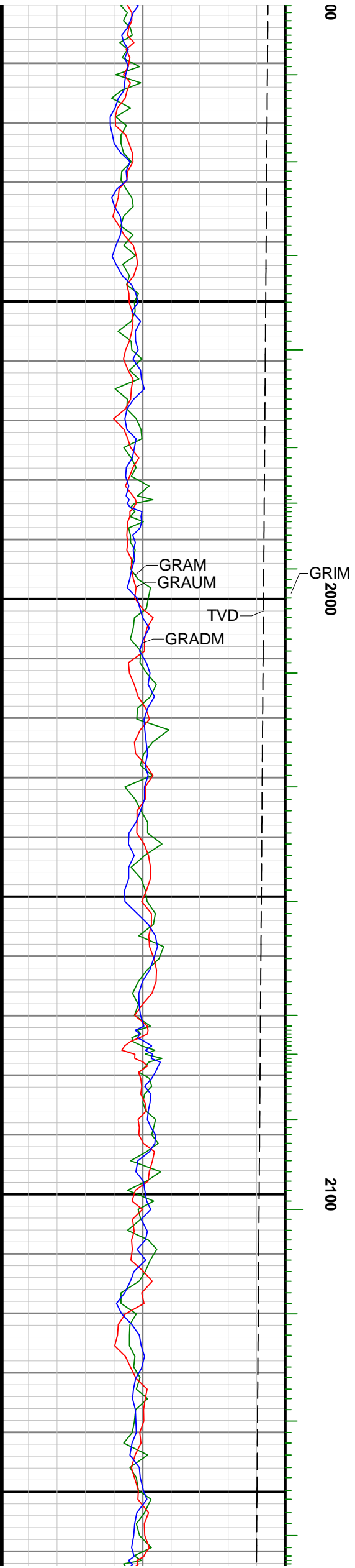
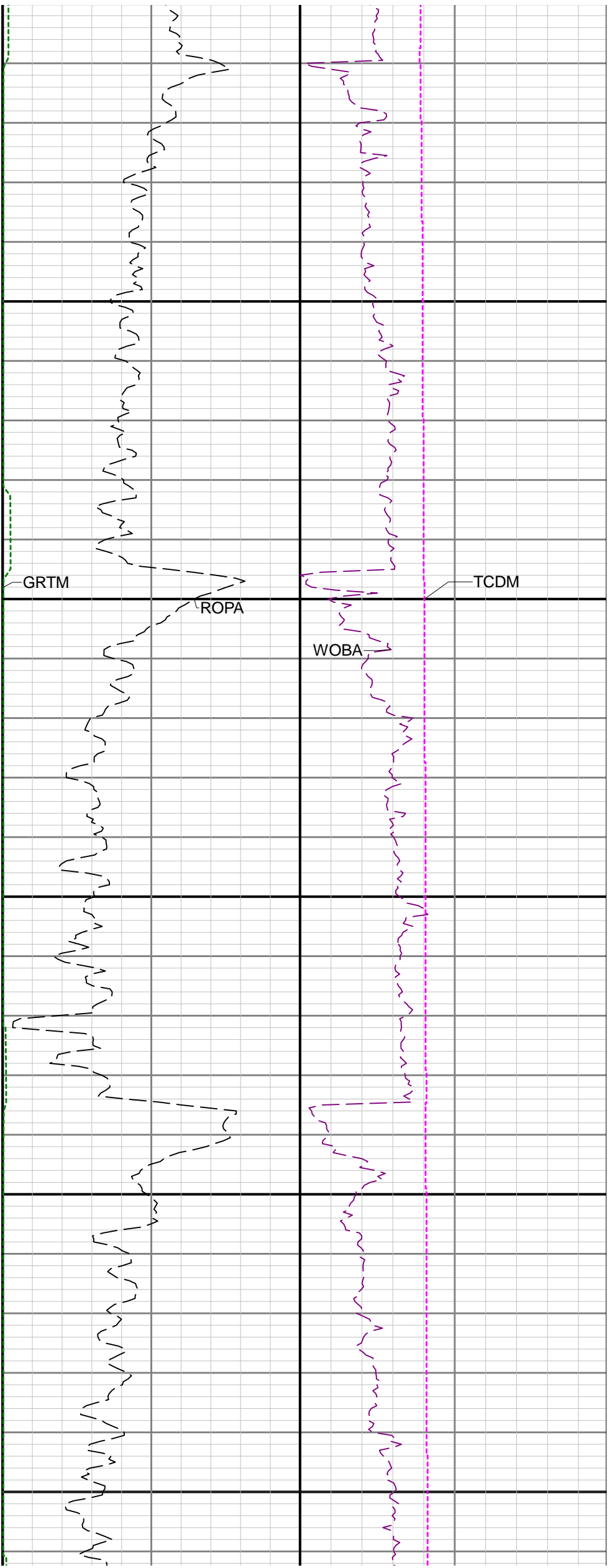
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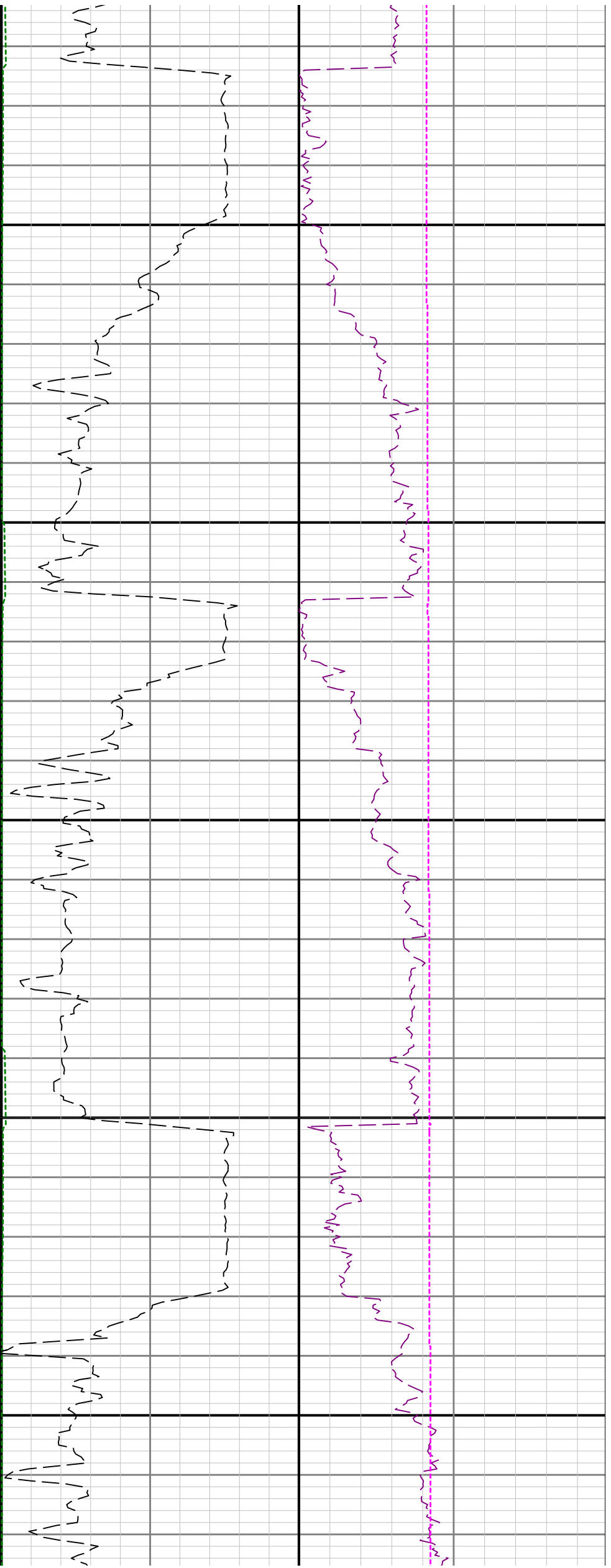
Top: 1795.00

Bottom: 17837.00

Gamma Ray - Apparent 0.5 ft Average GRAM	MD 1:240 feet	Gamma Time Since Drilled GRTM	Weight On Bit, Average 1 ft Average WOBA
0 300		0 600	0 50
API		min	klb
Azimuthal Gamma Ray - Apparent - Up Quadrant 0.5 ft Average GRAUM		Depth Averaged ROP 3 ft Average ROPA	Downhole Temperature TCDM
0 300		1000 0	0 275
API		ft/h	degF
Azimuthal Gamma Ray - Apparent - Down Quadrant 0.5 ft Average GRADM			
0 300			
API			
True Vertical Depth TVD			
8000 1500			
ft			



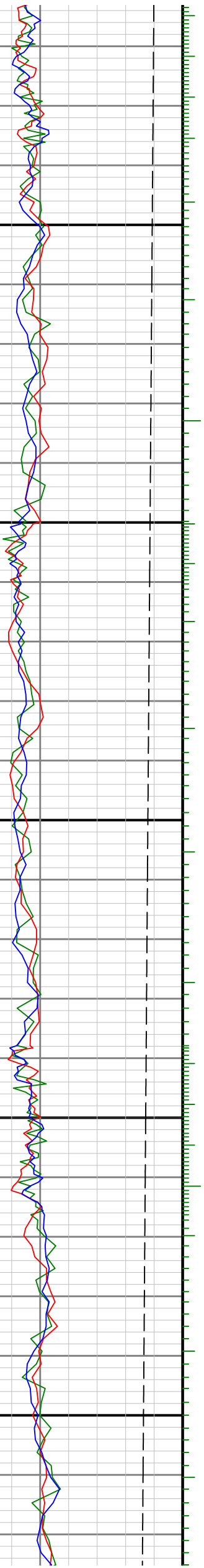


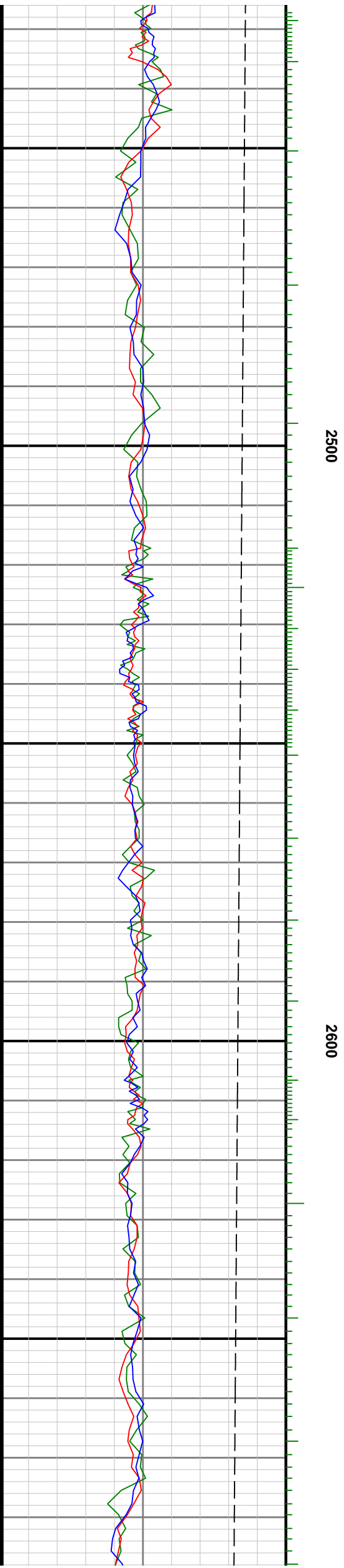
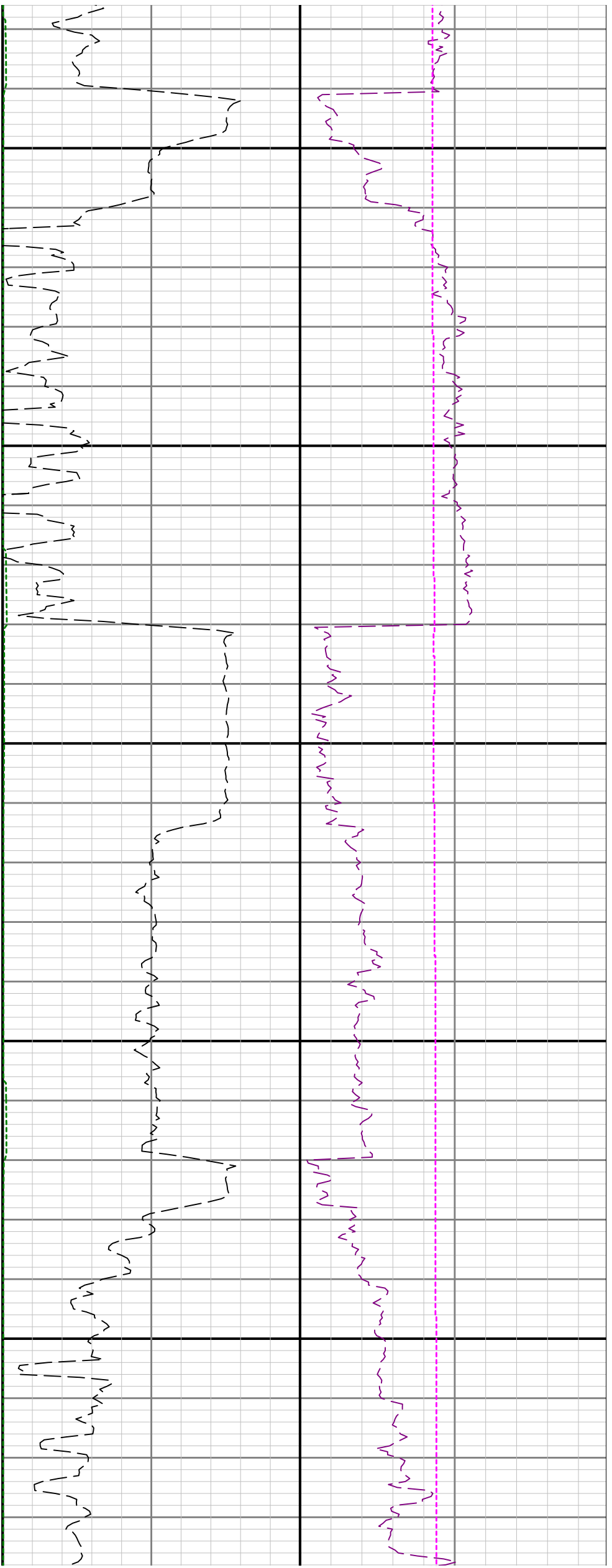


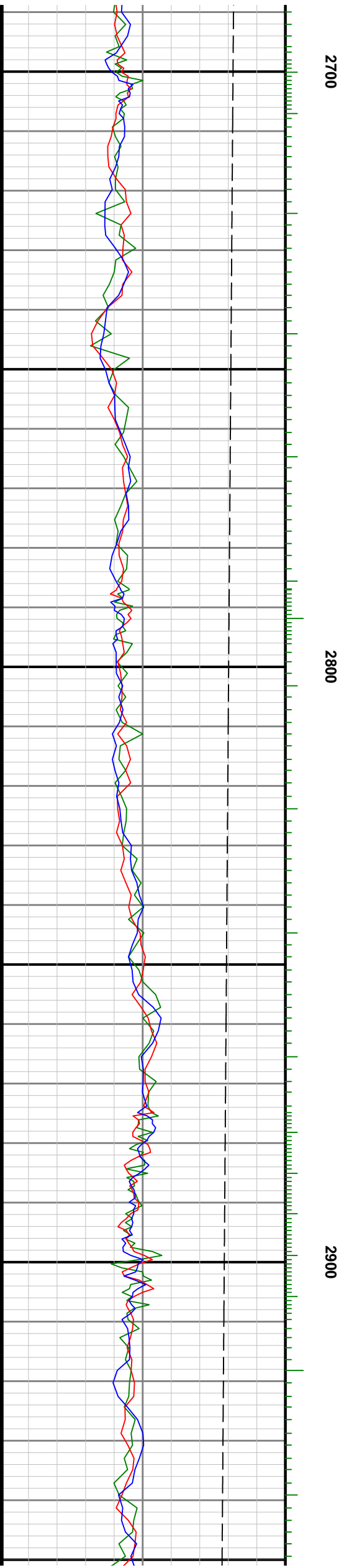
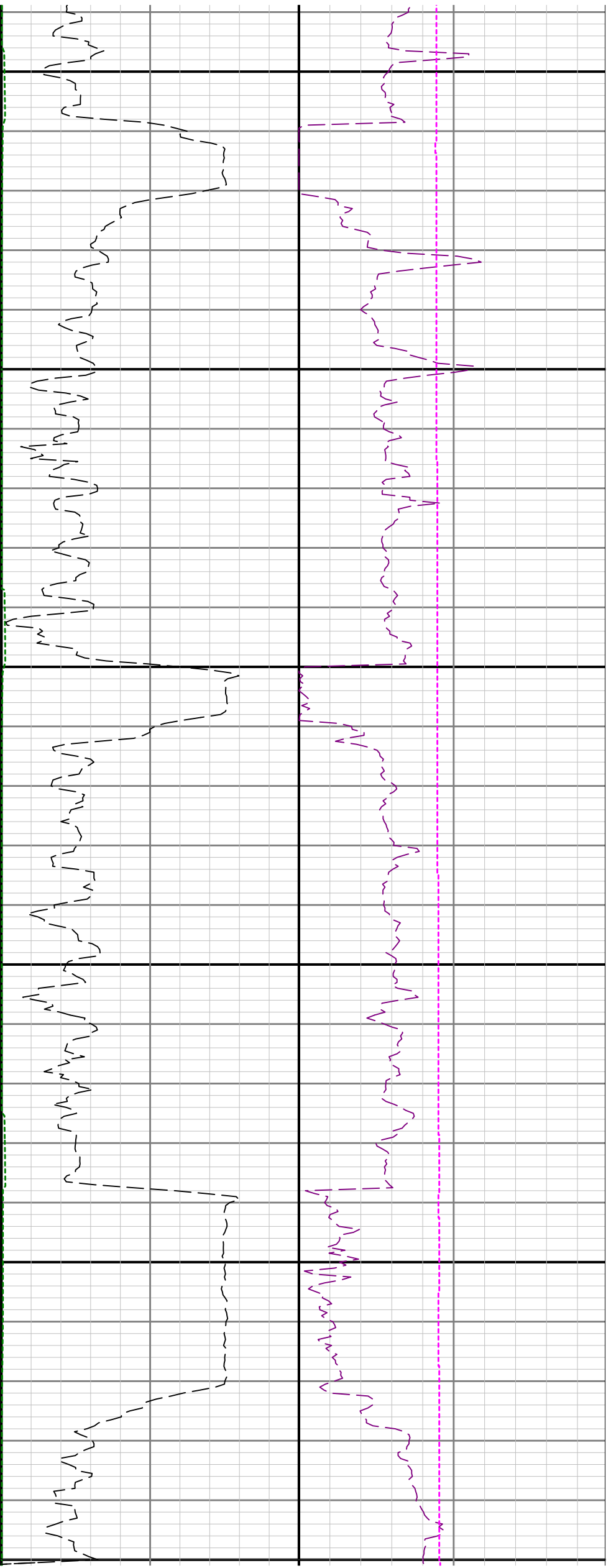
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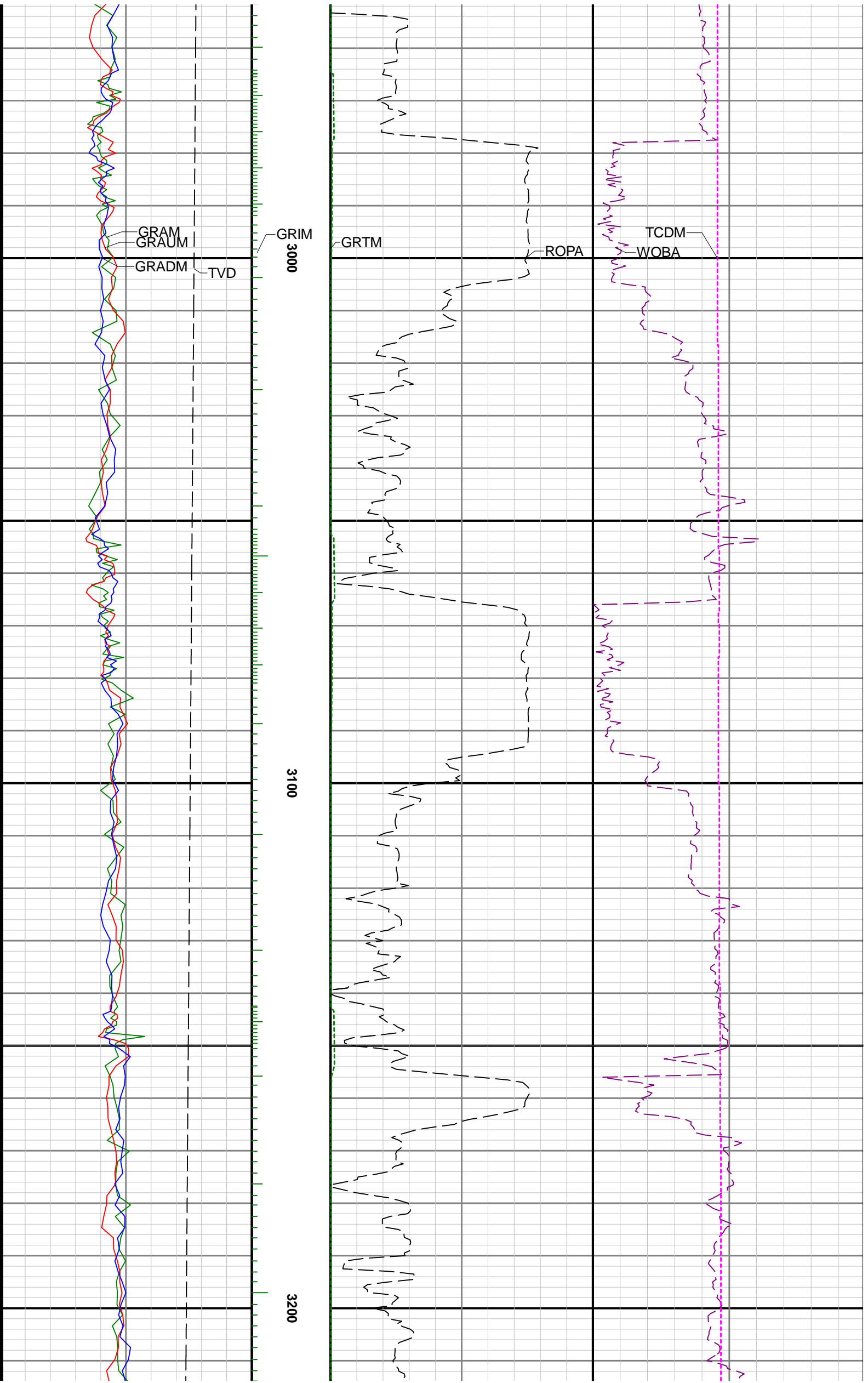
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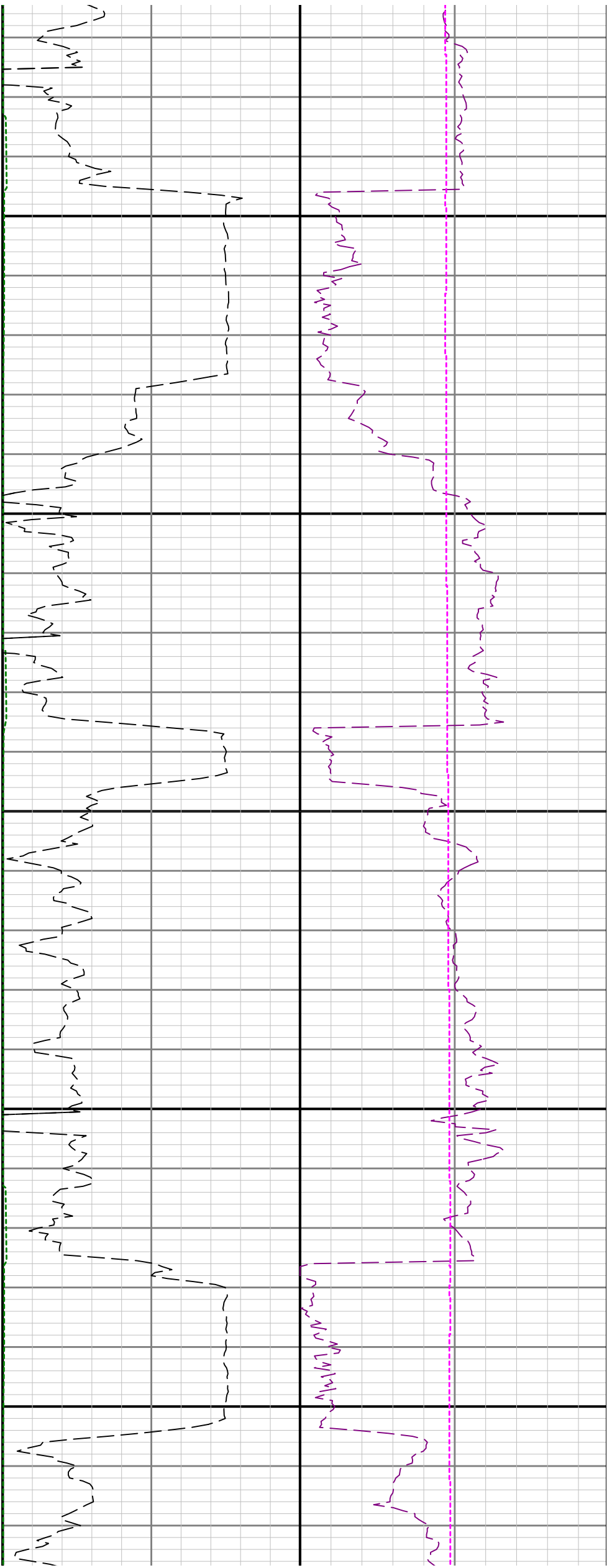
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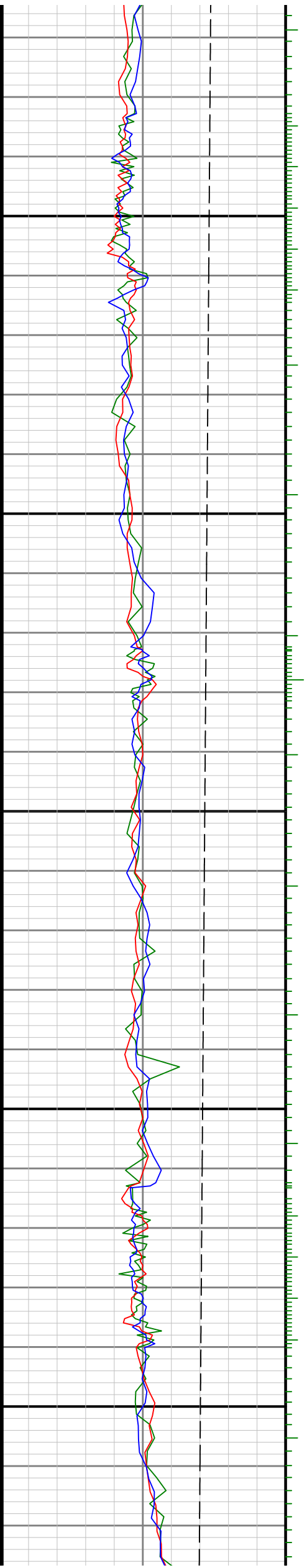


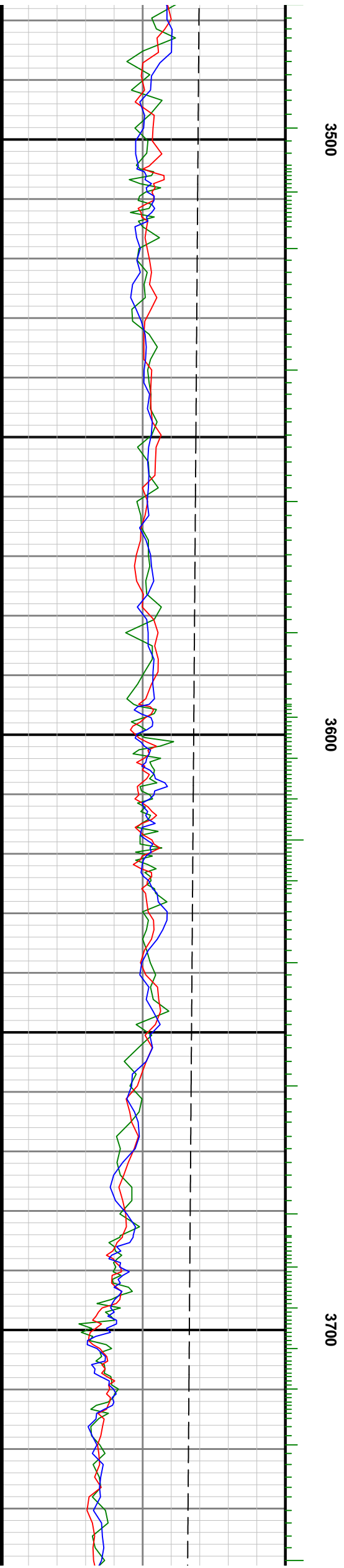
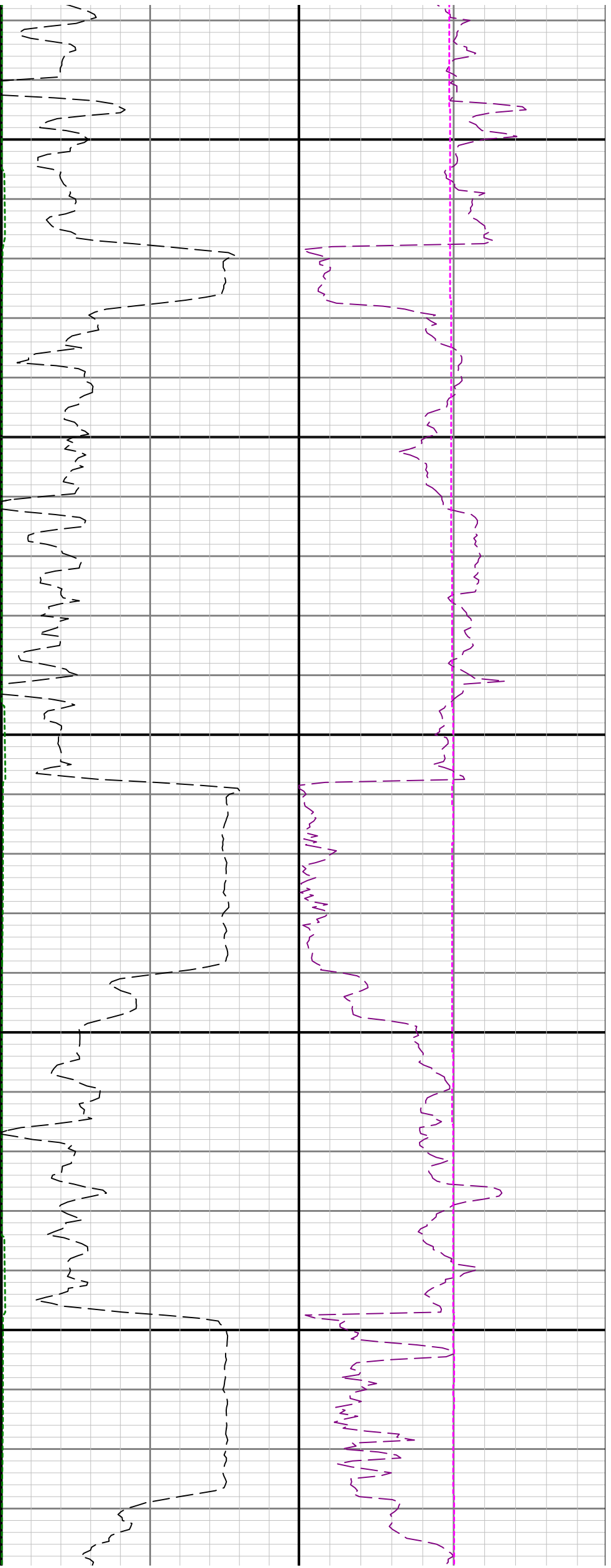


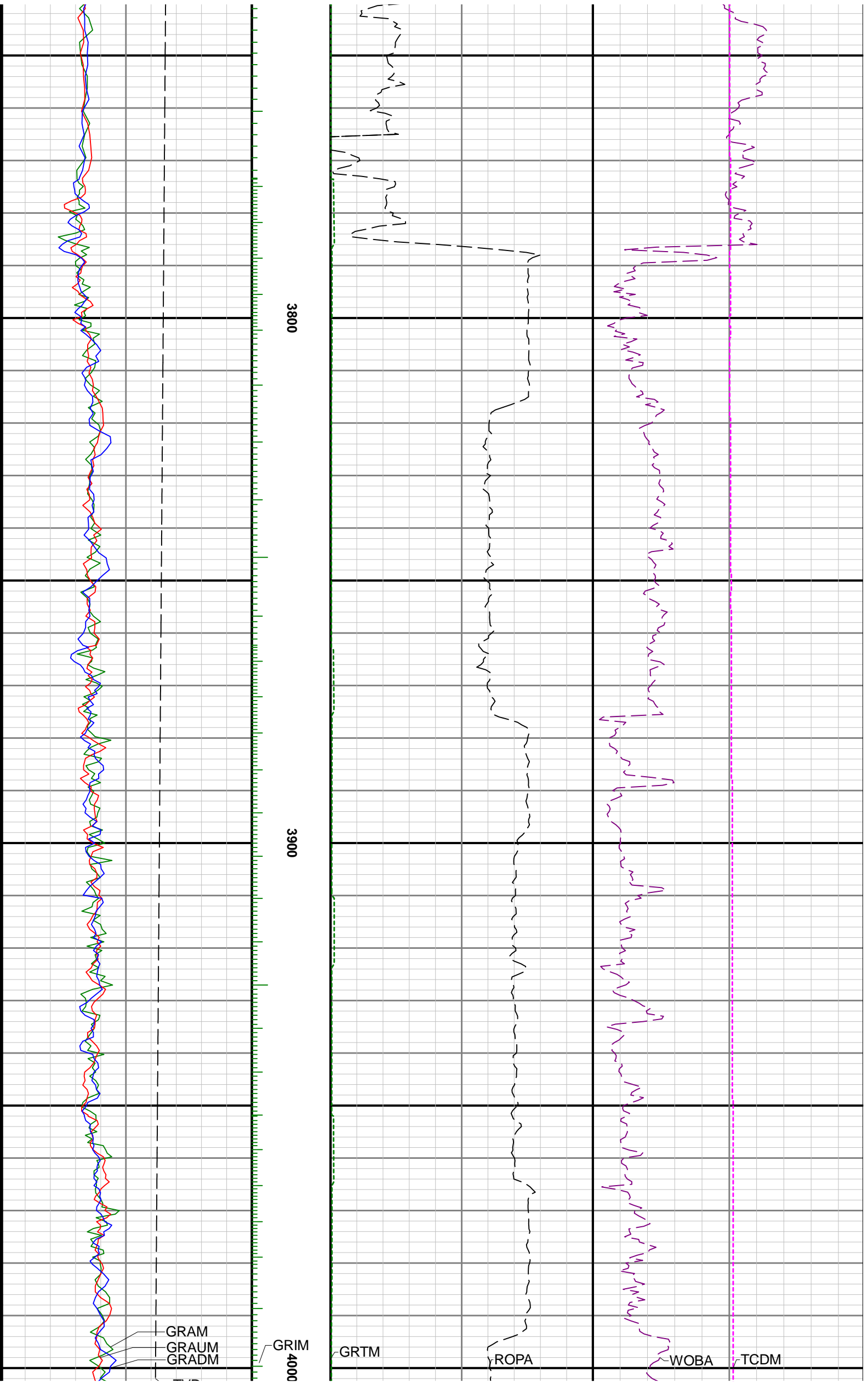


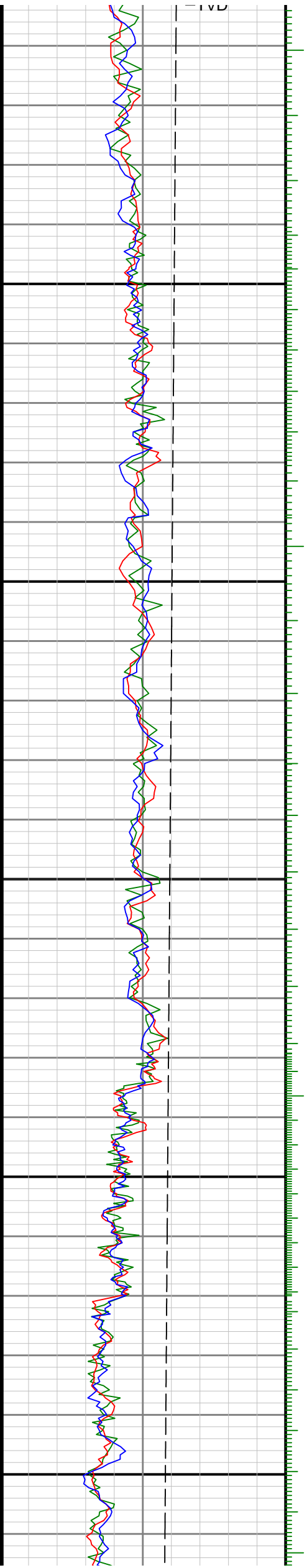
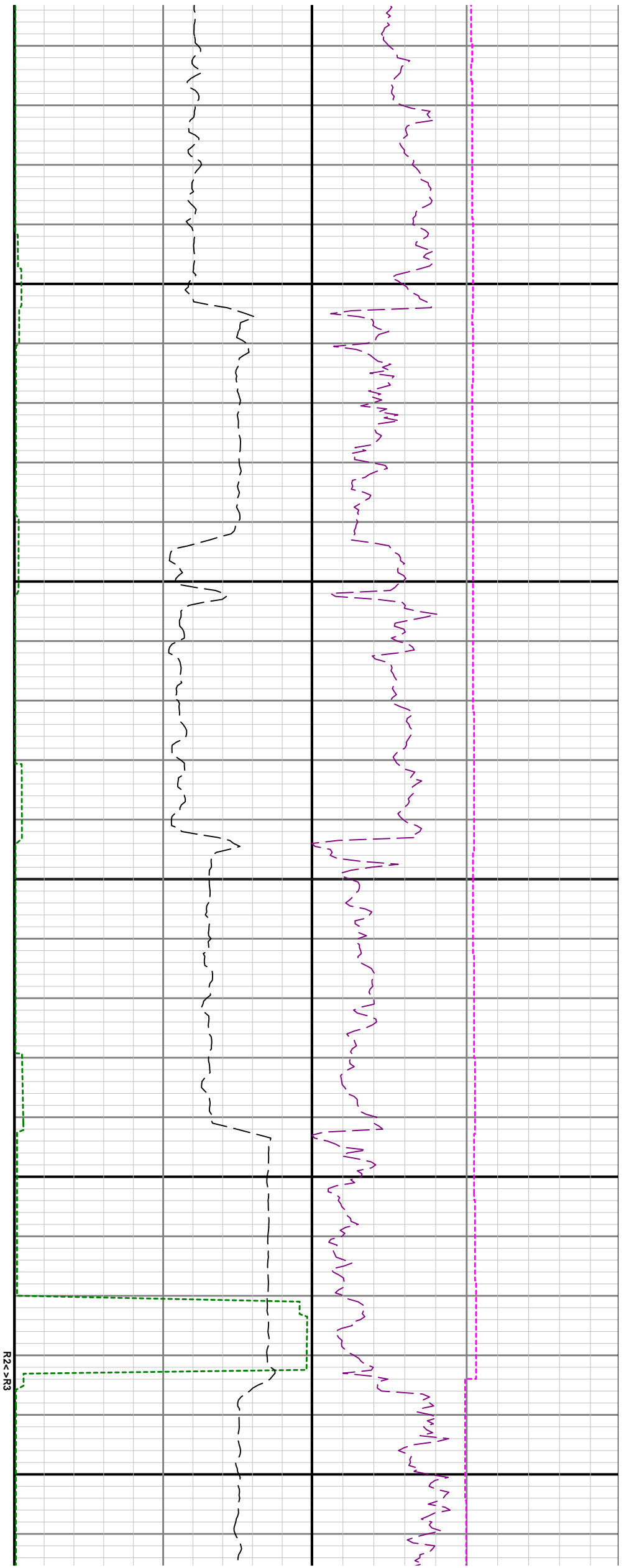
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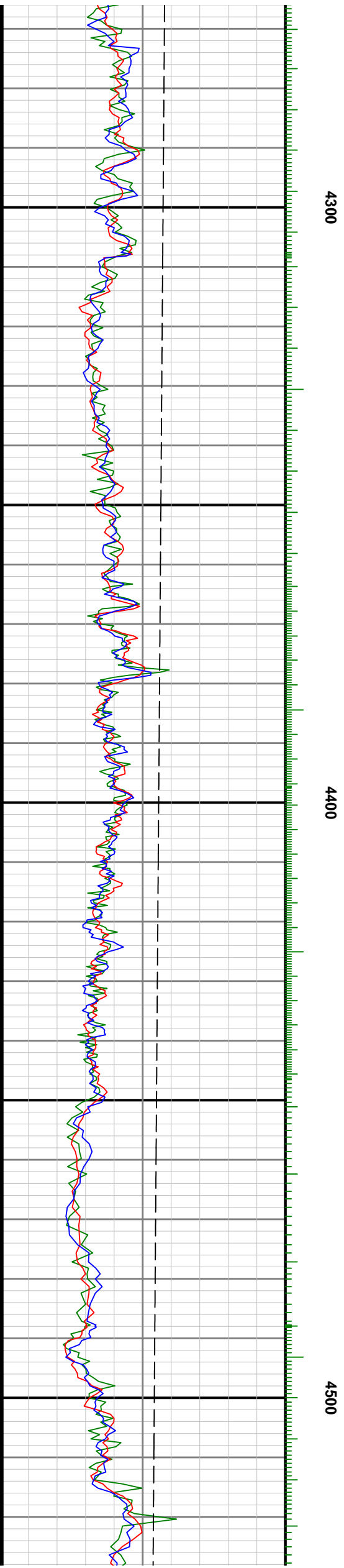
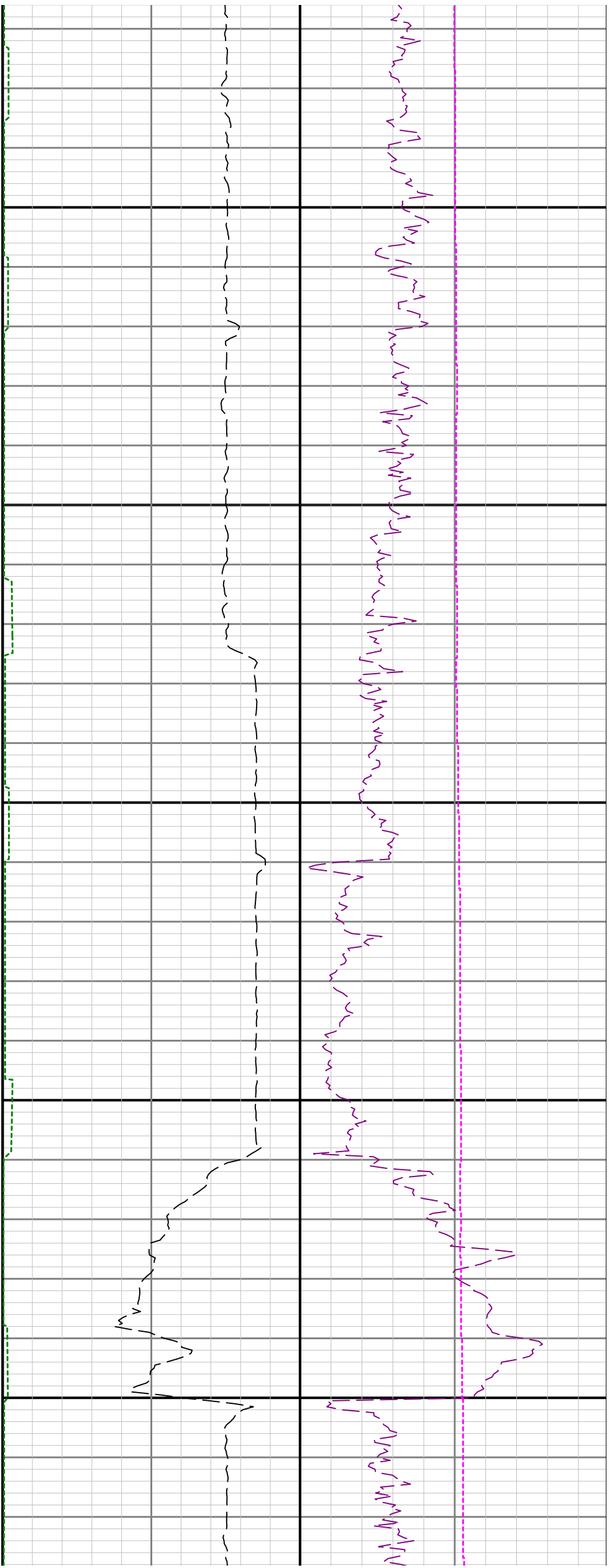
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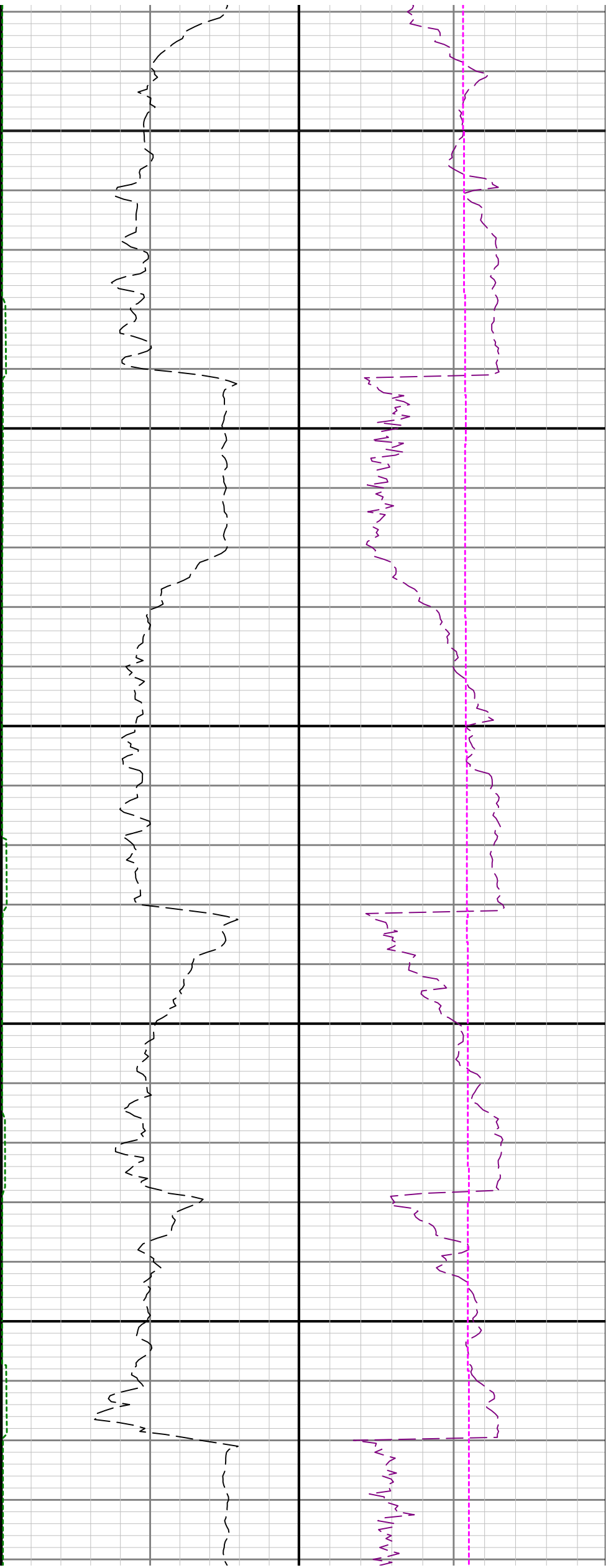






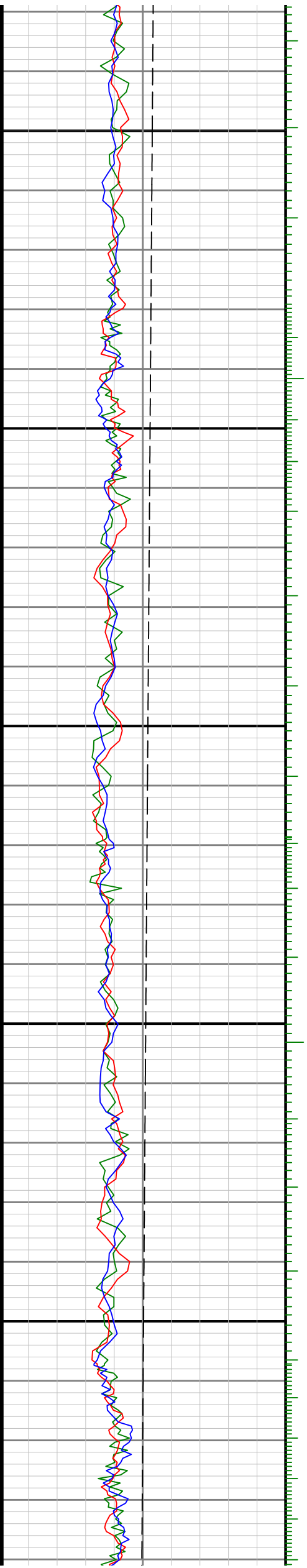


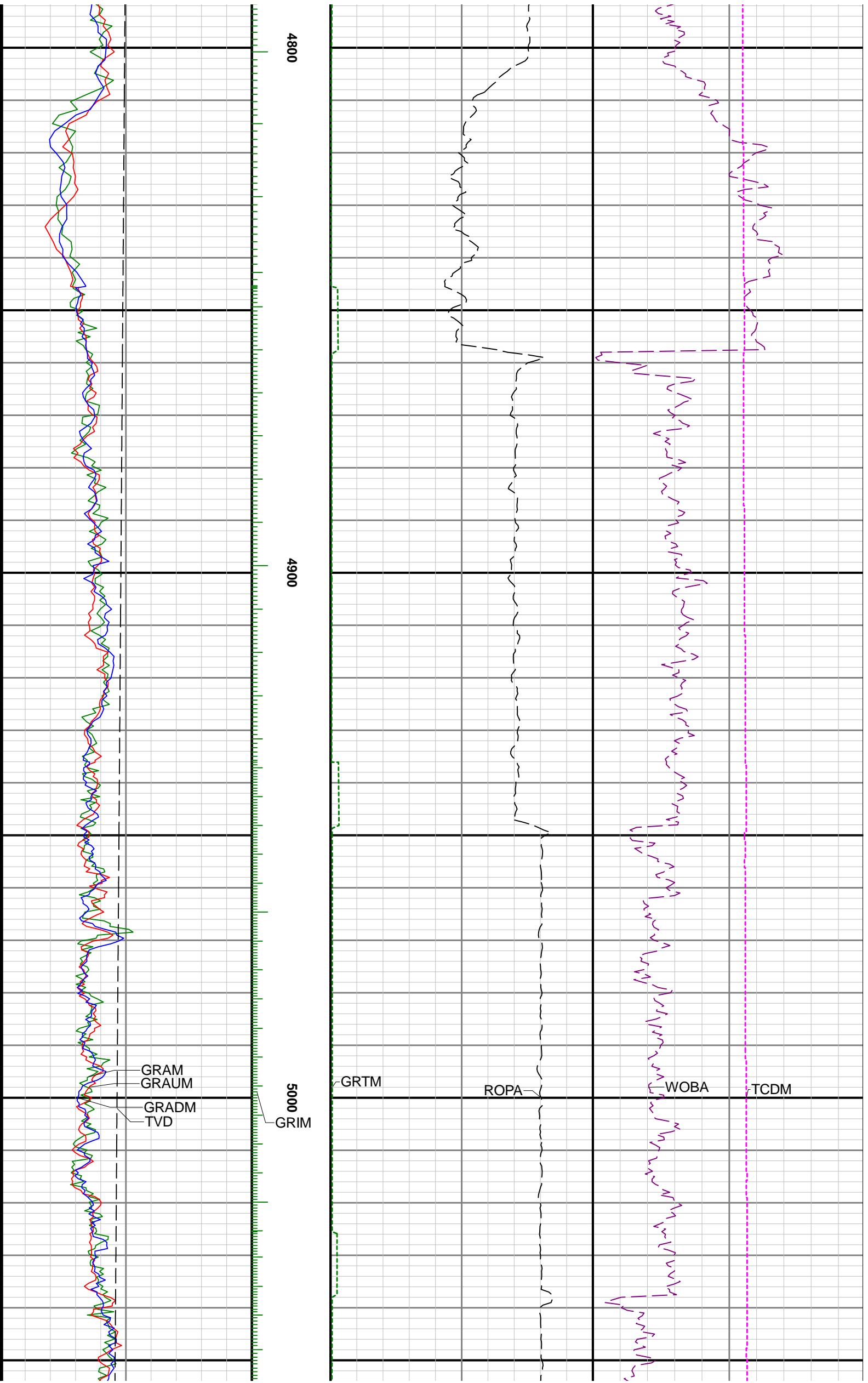


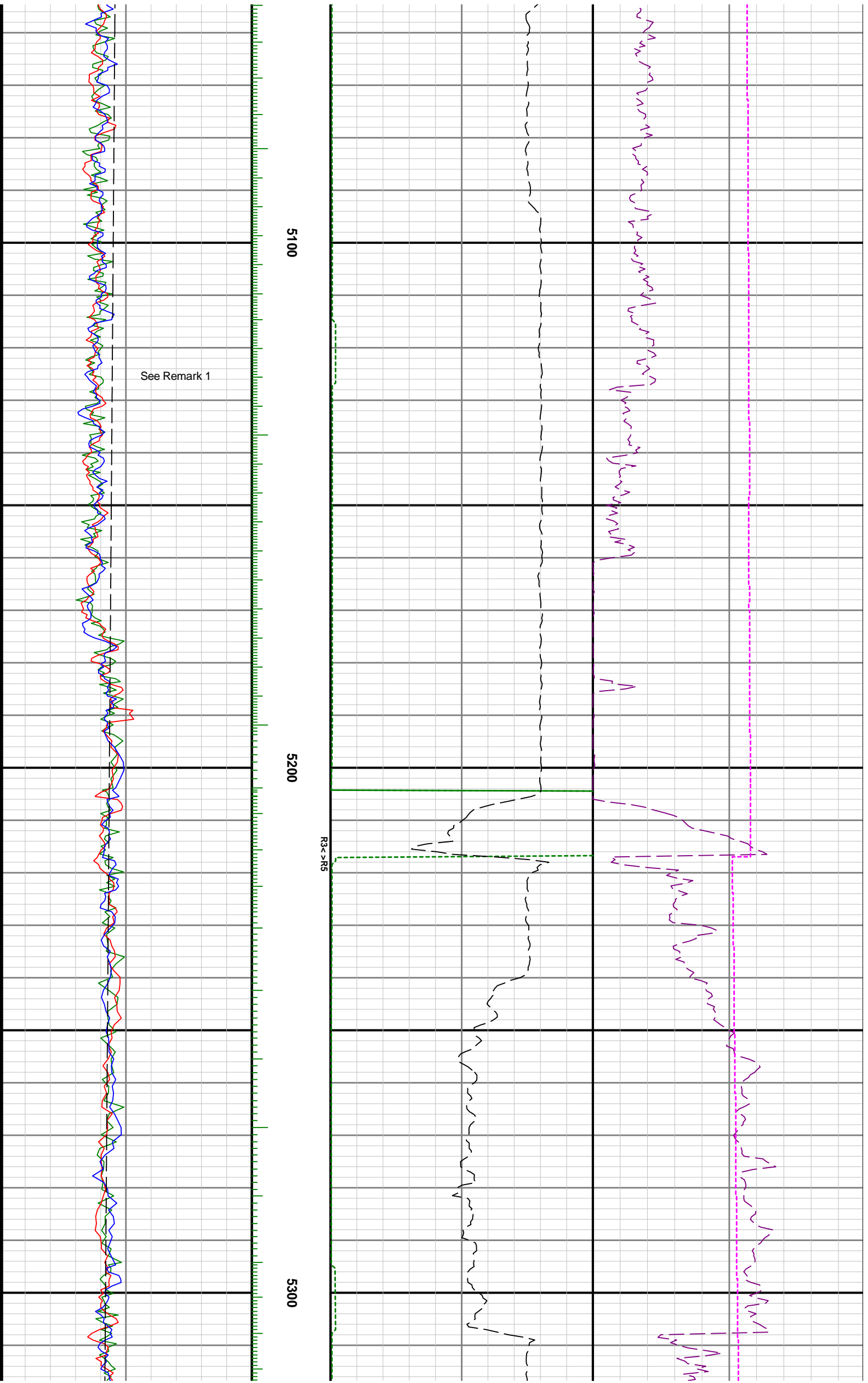


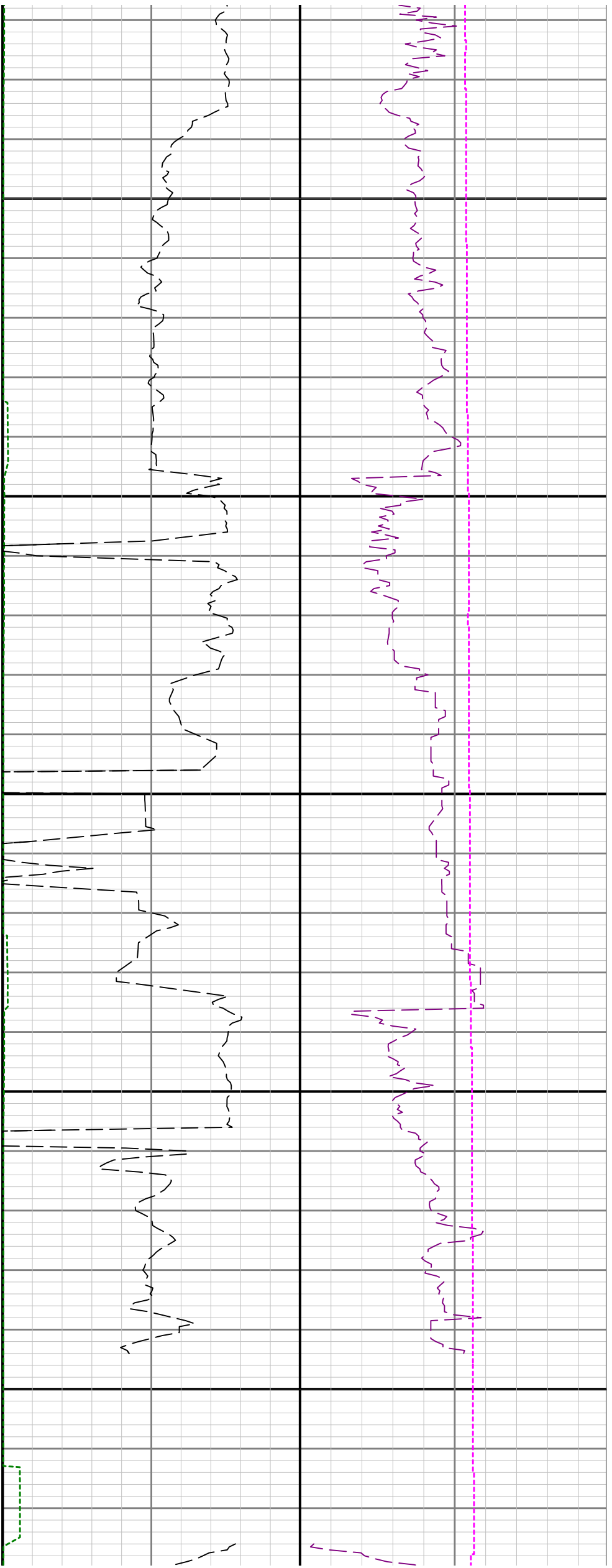
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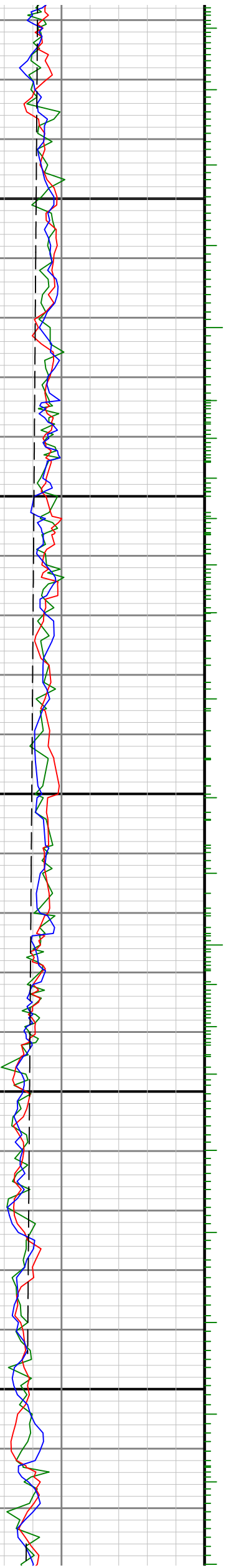


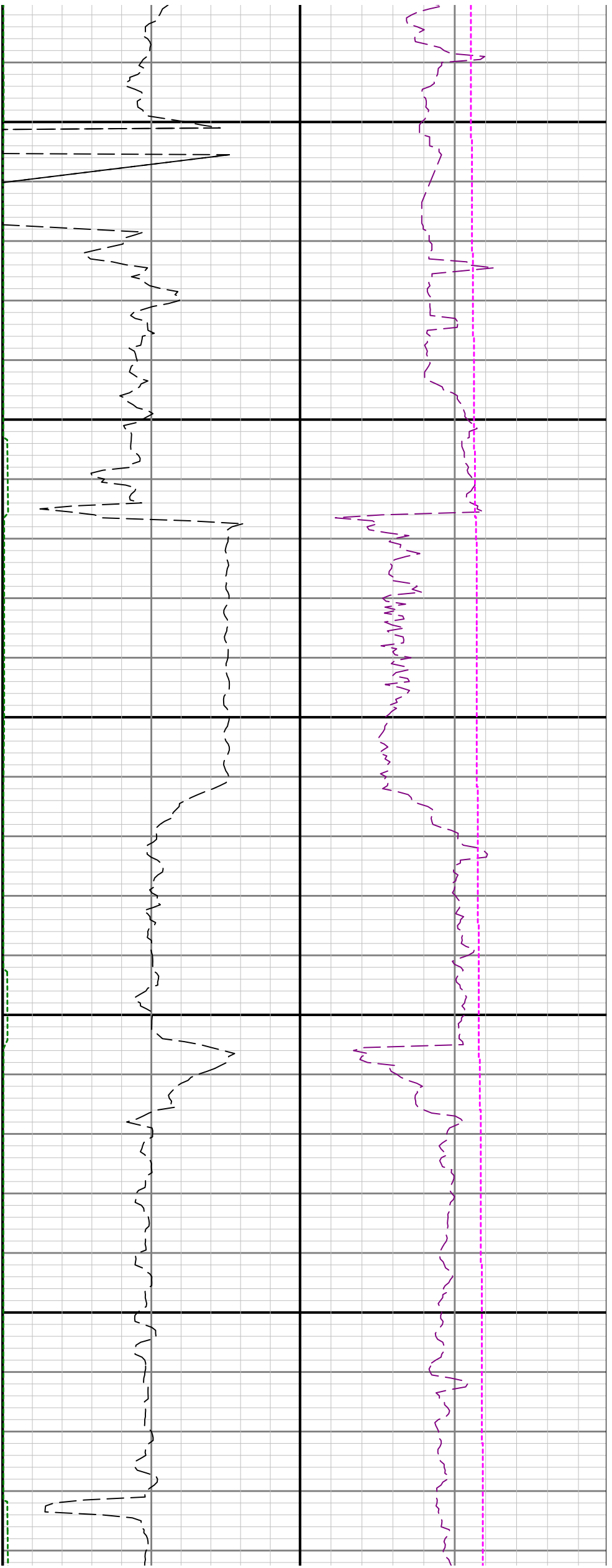




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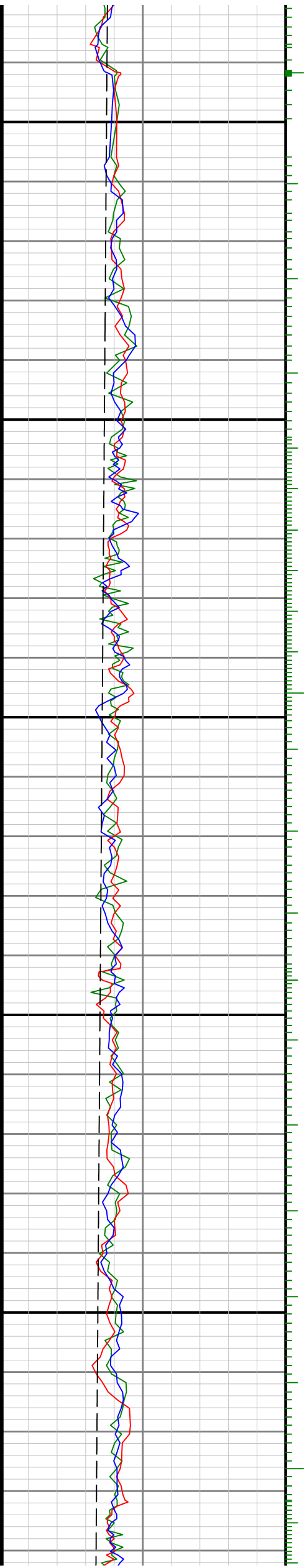


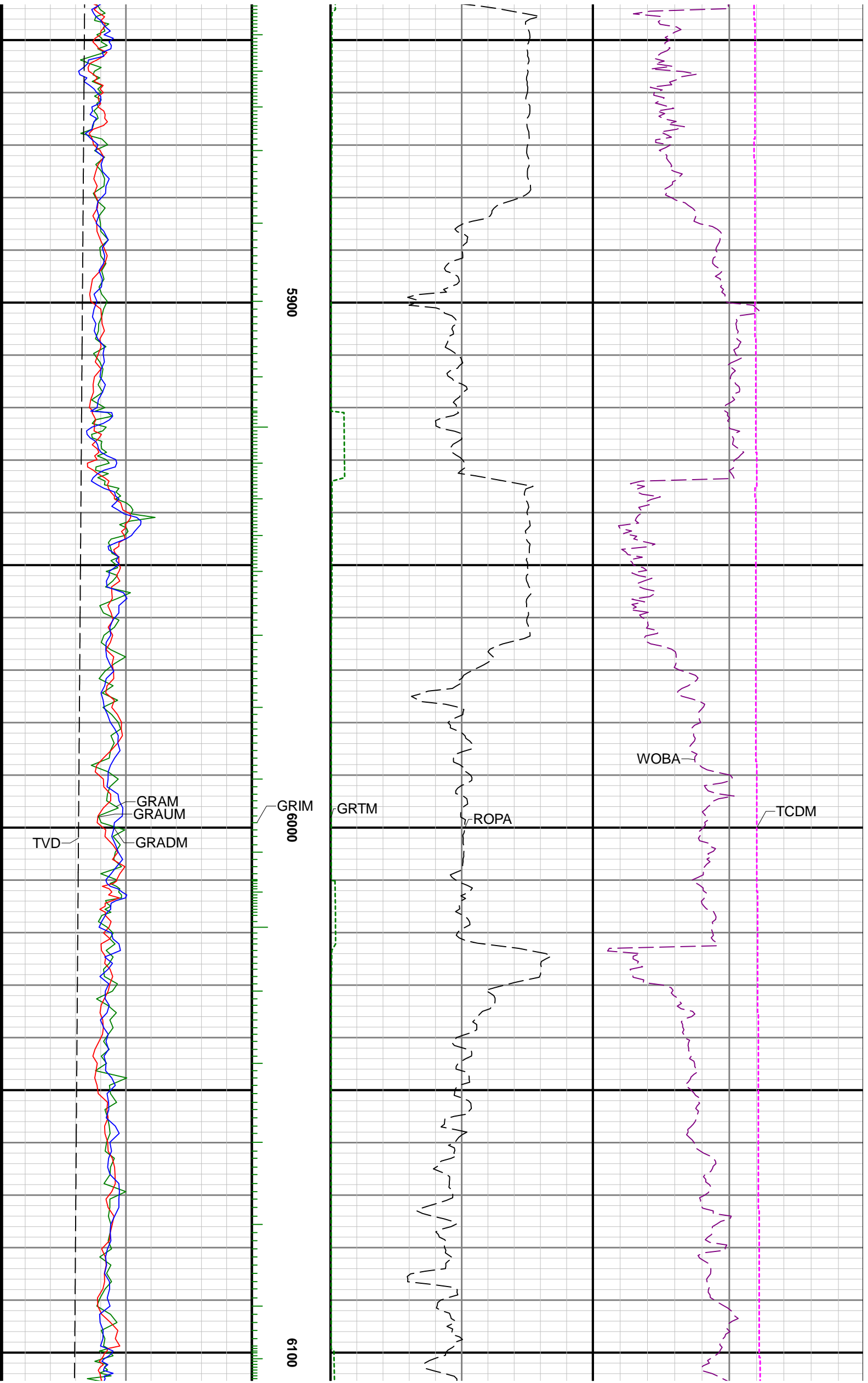


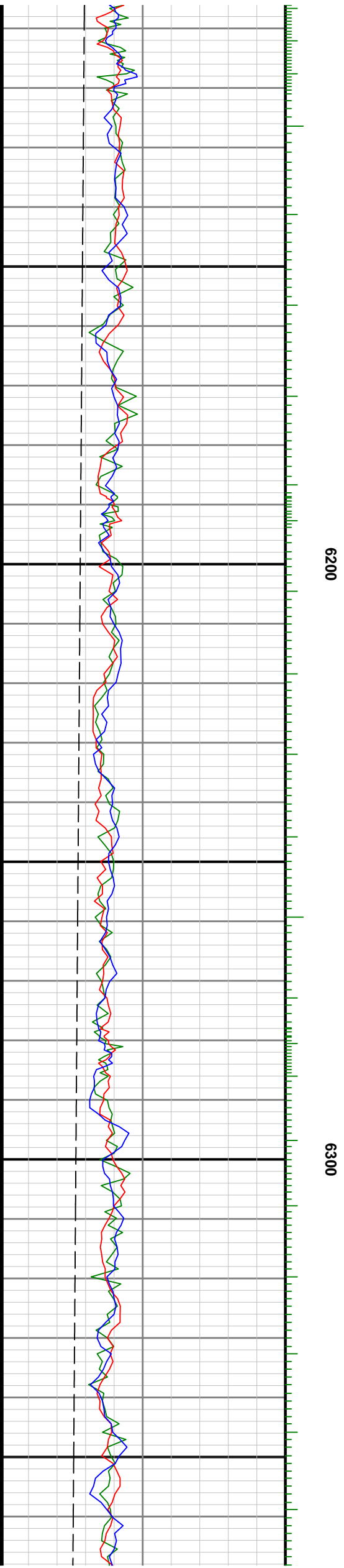
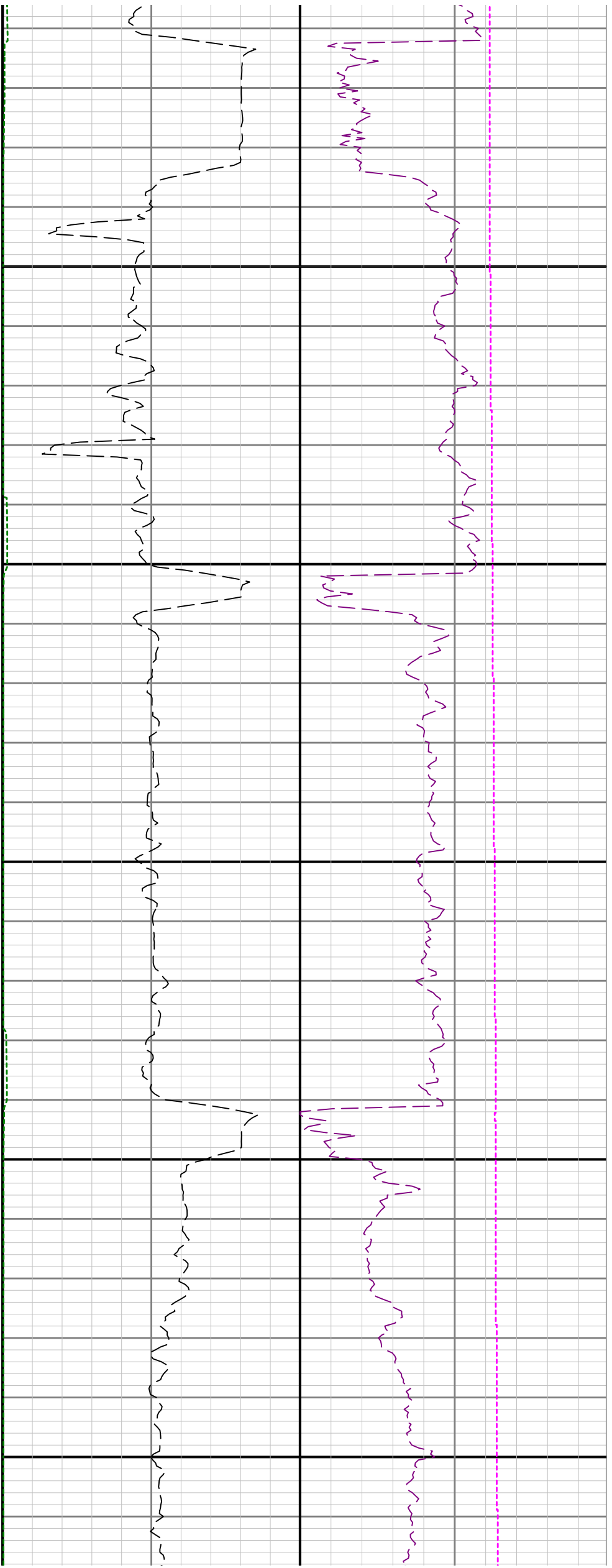
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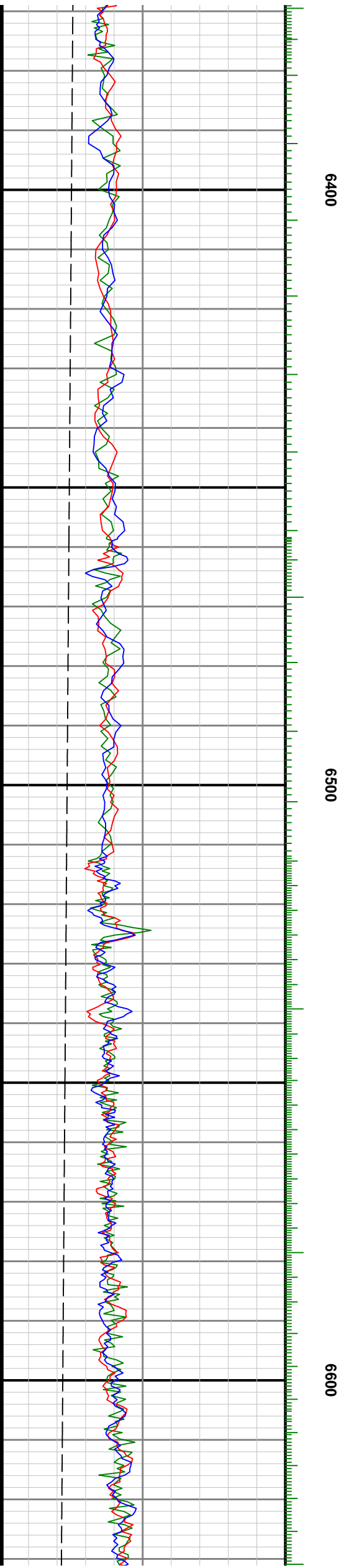
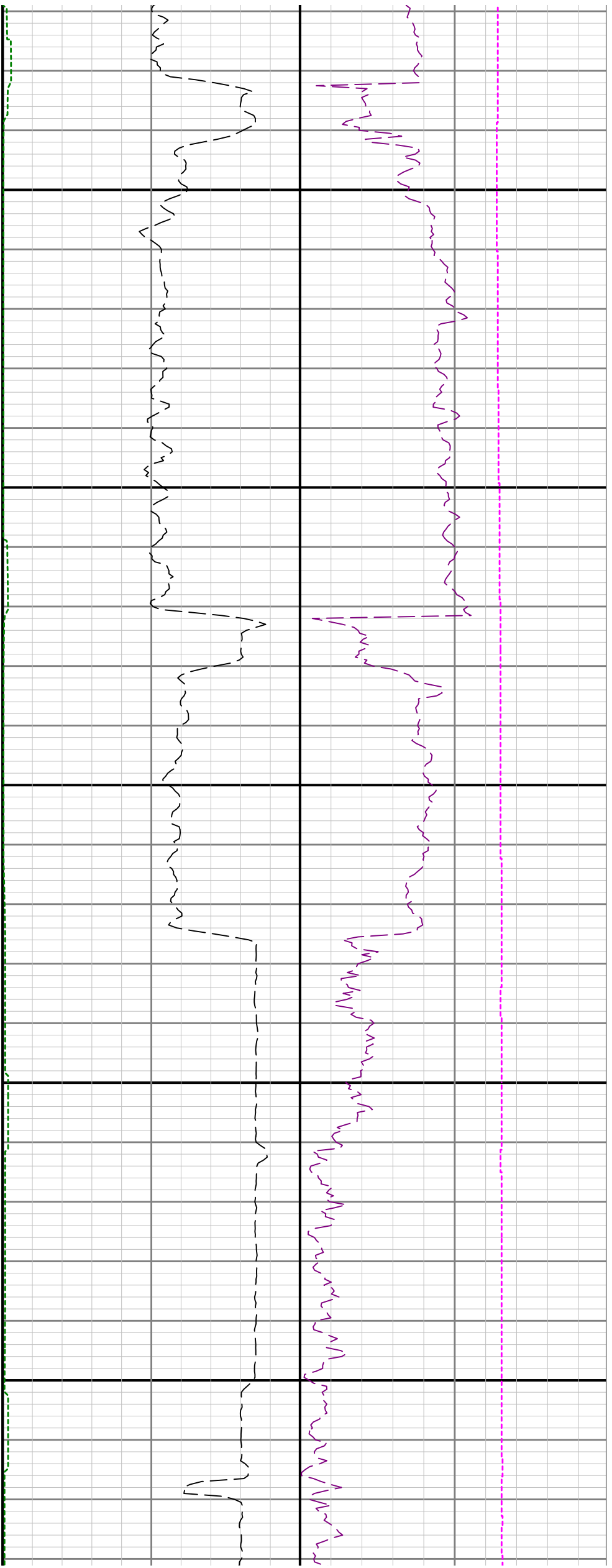
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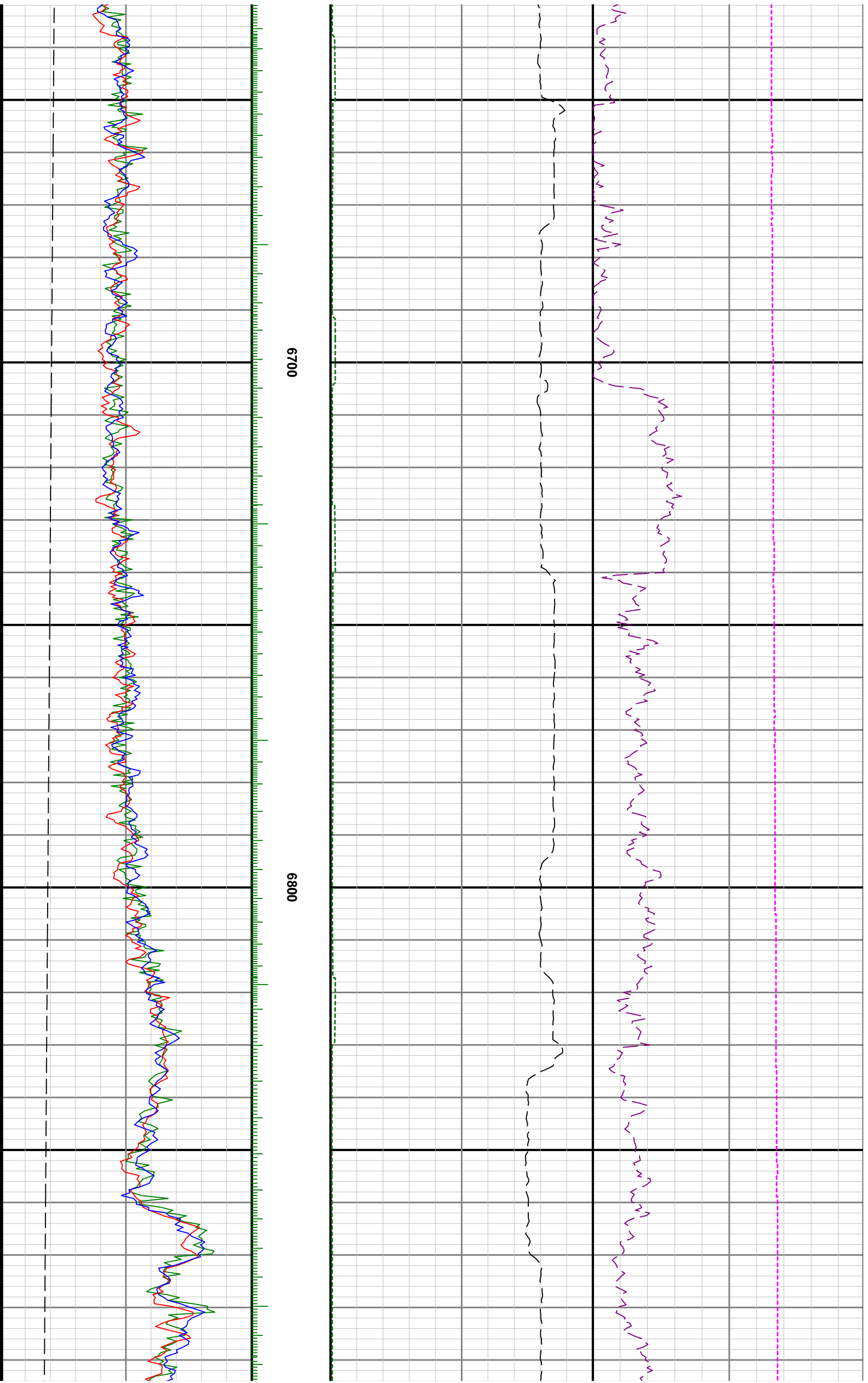
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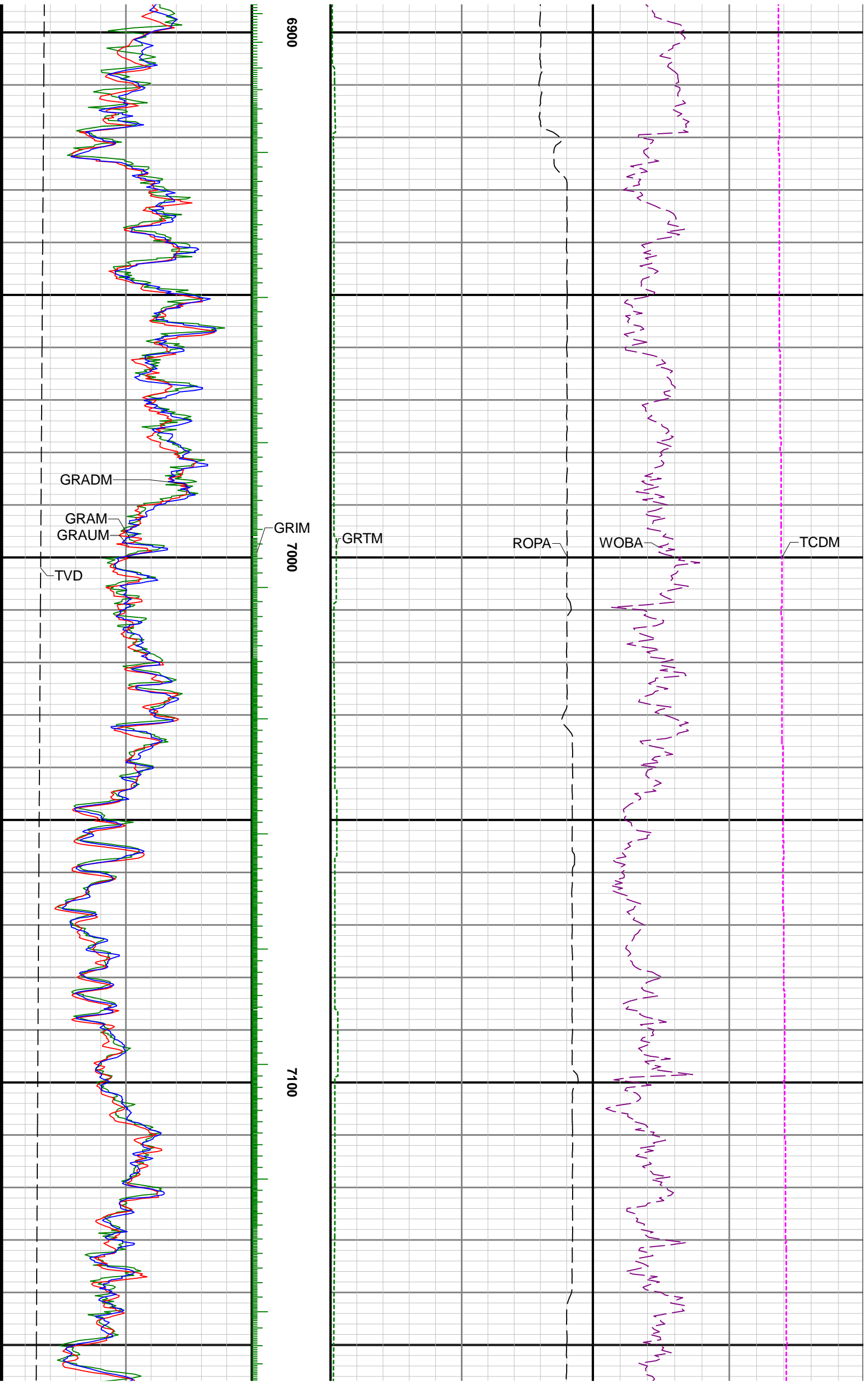


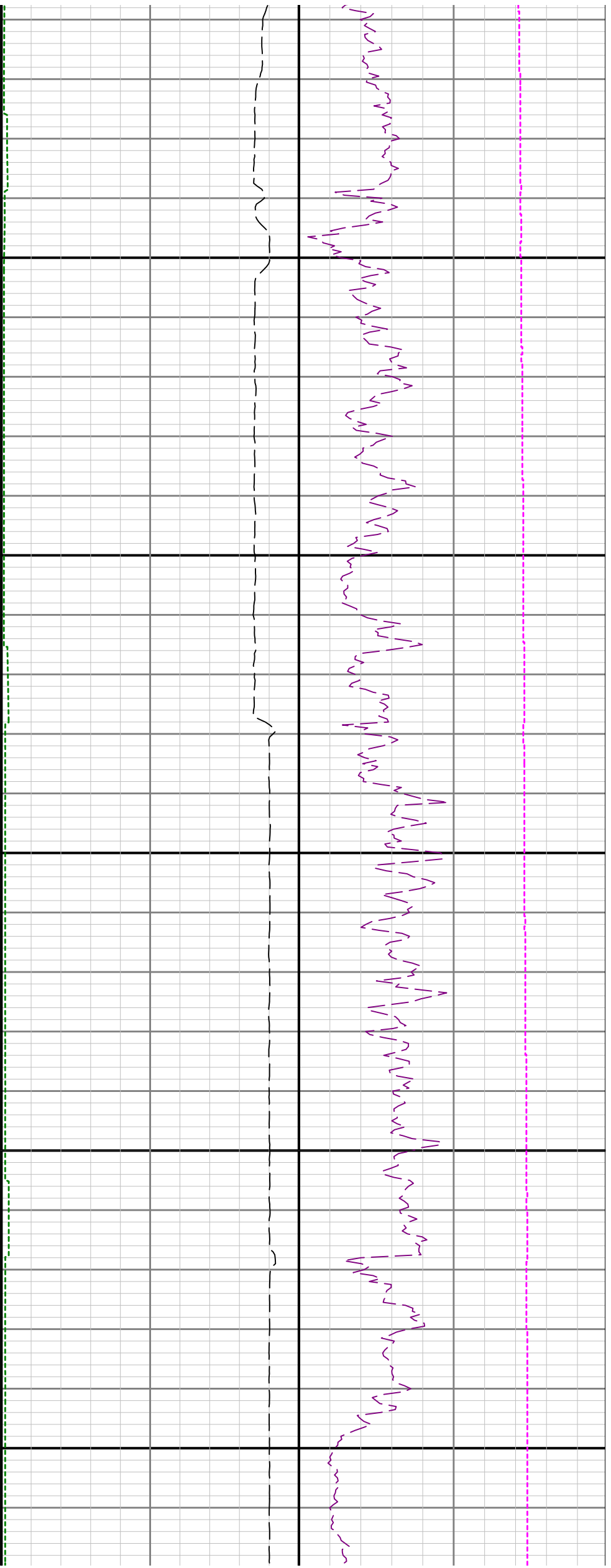








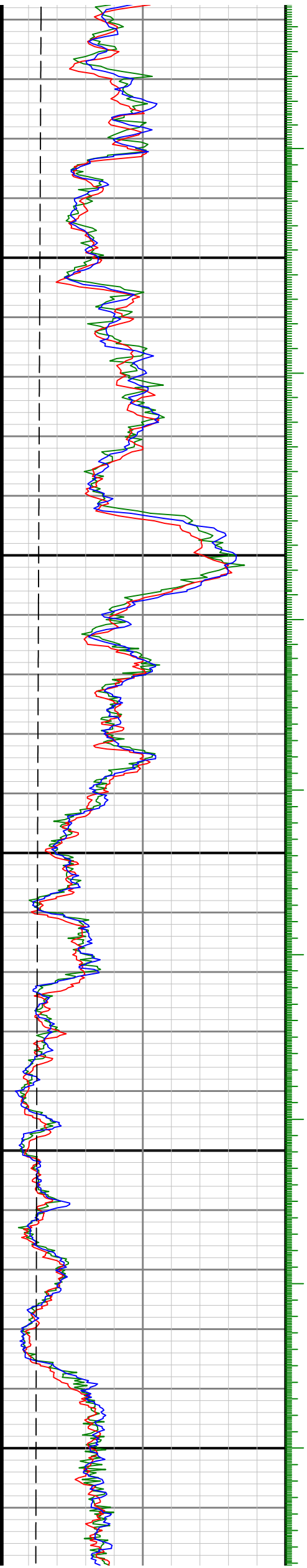


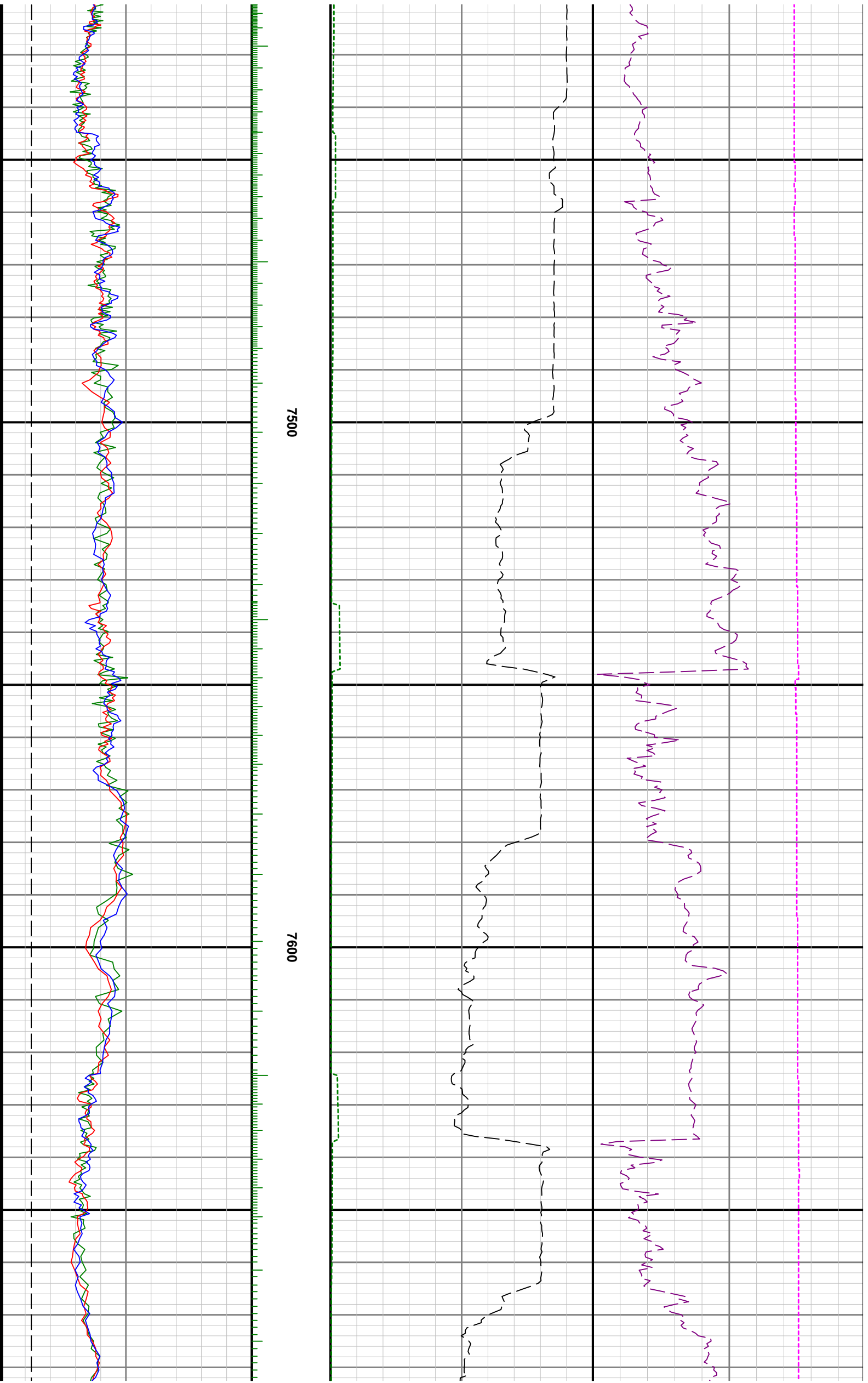


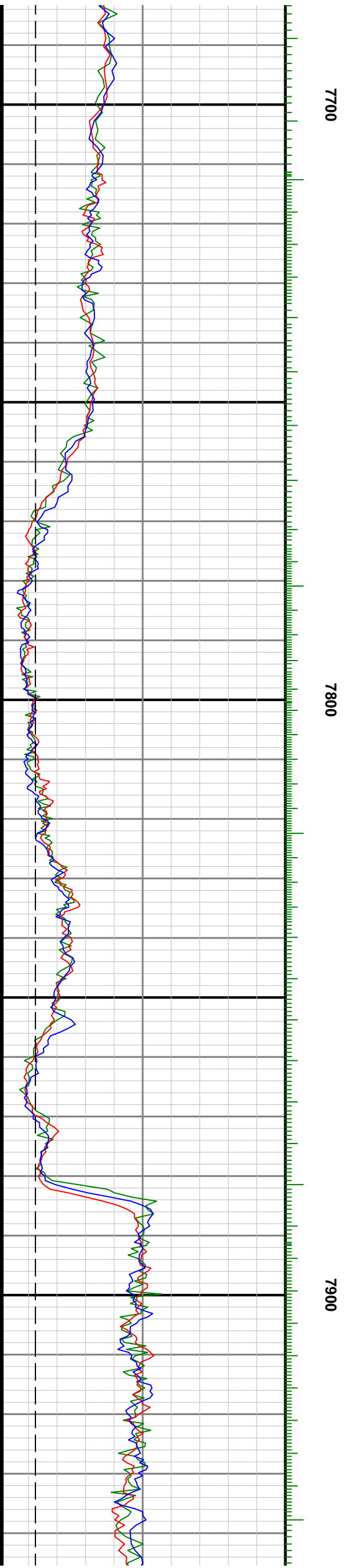
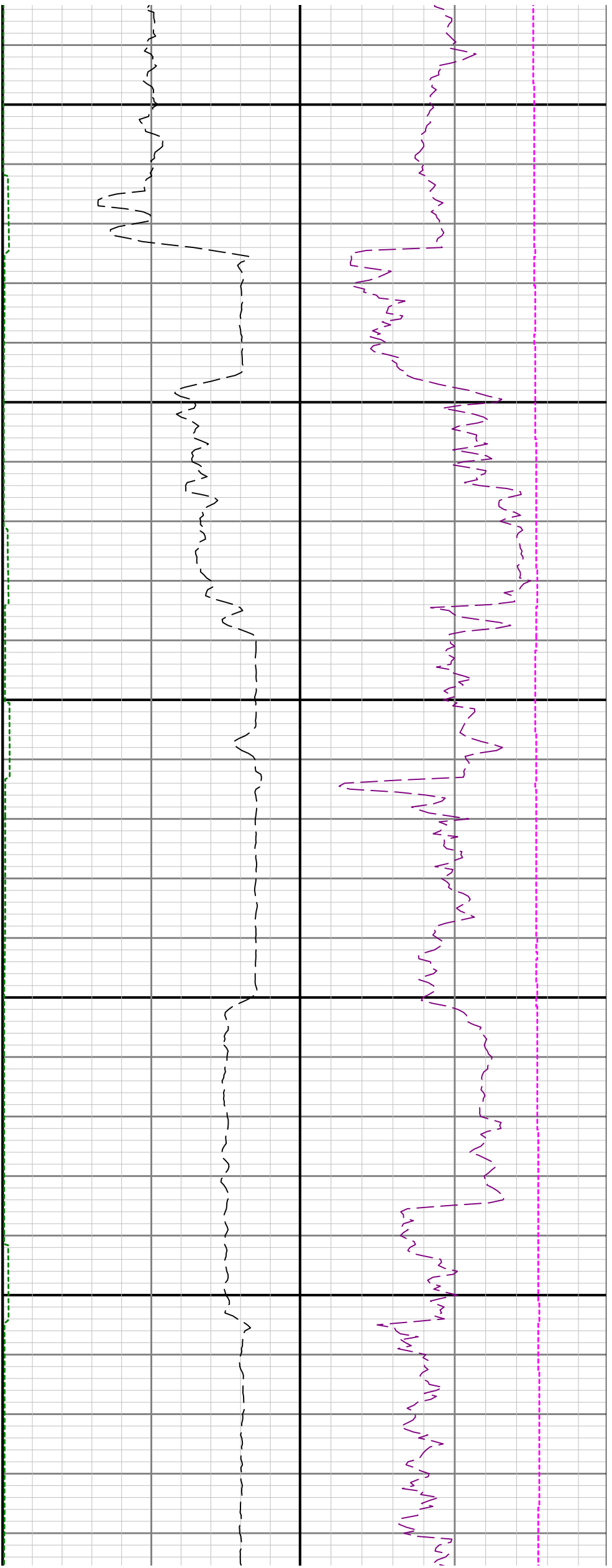
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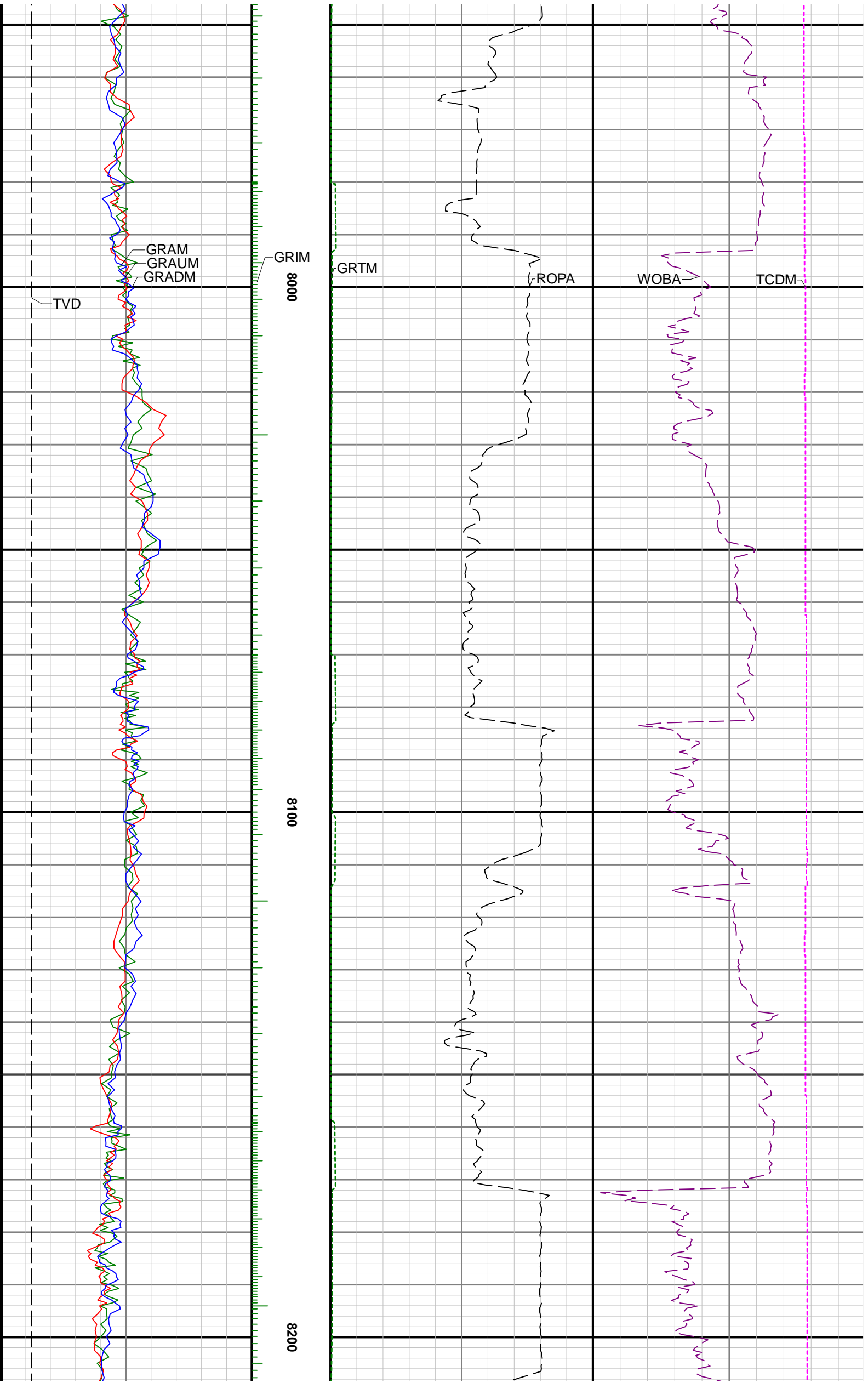
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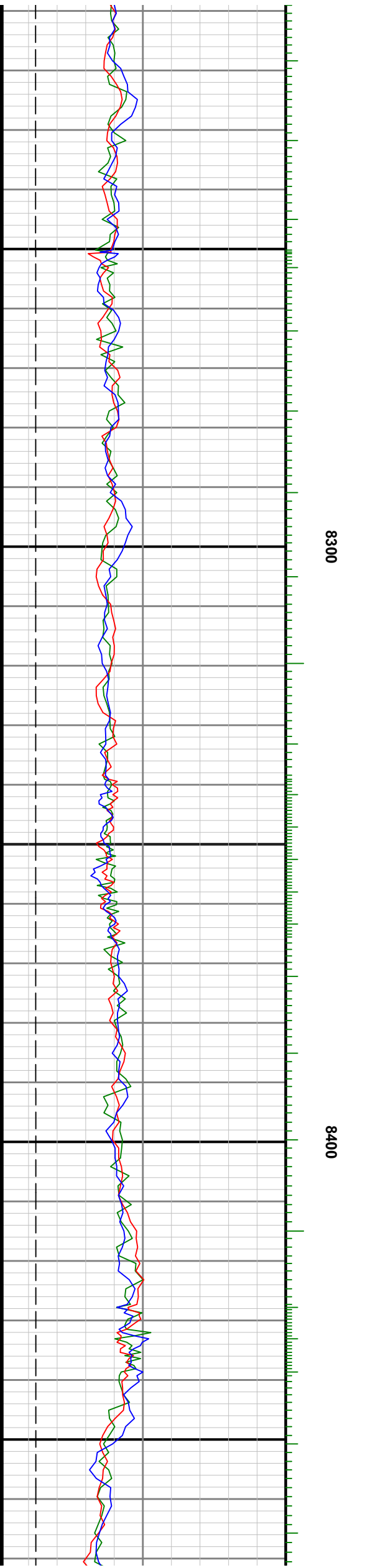
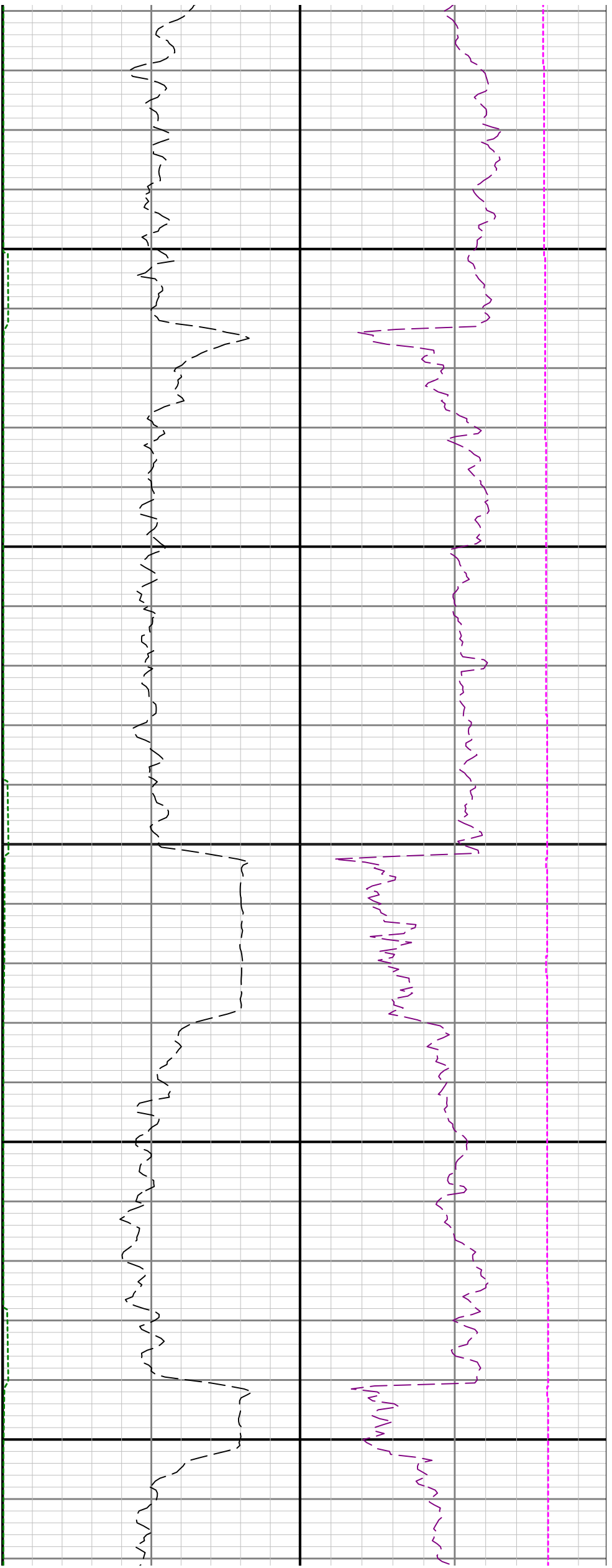
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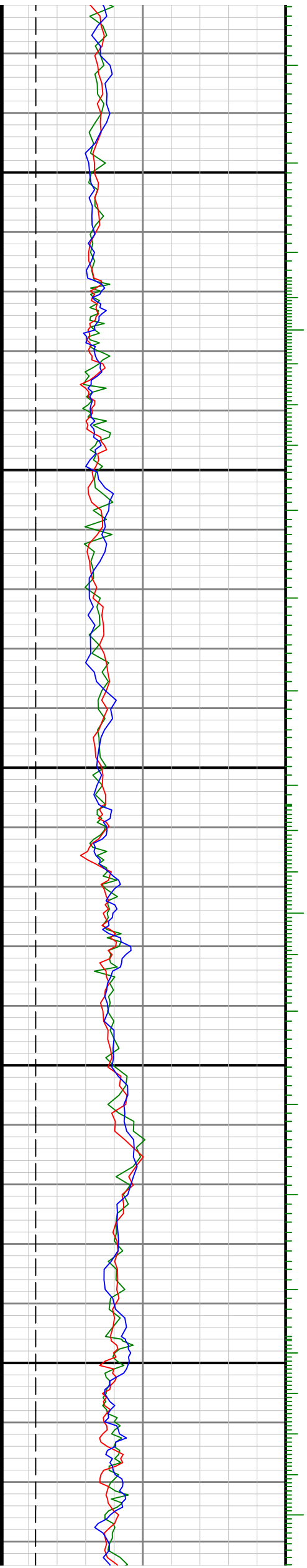








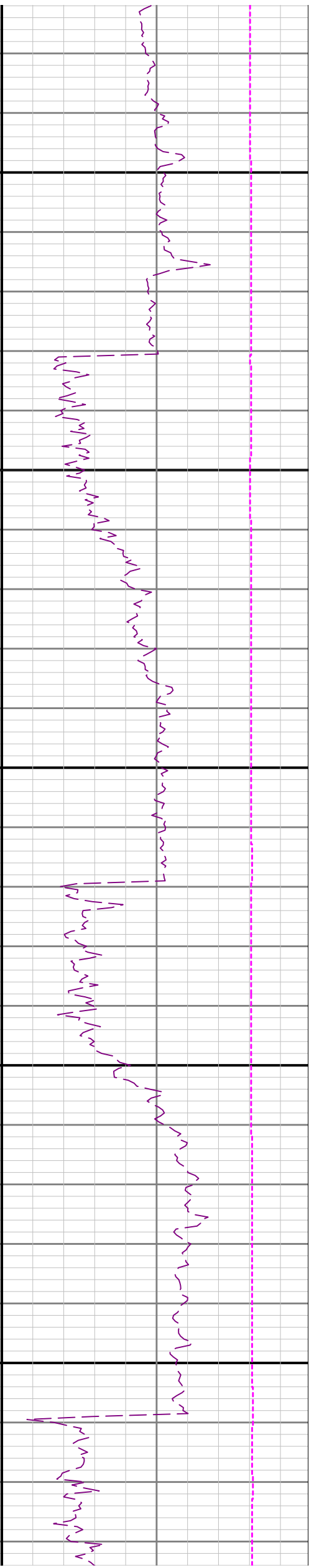


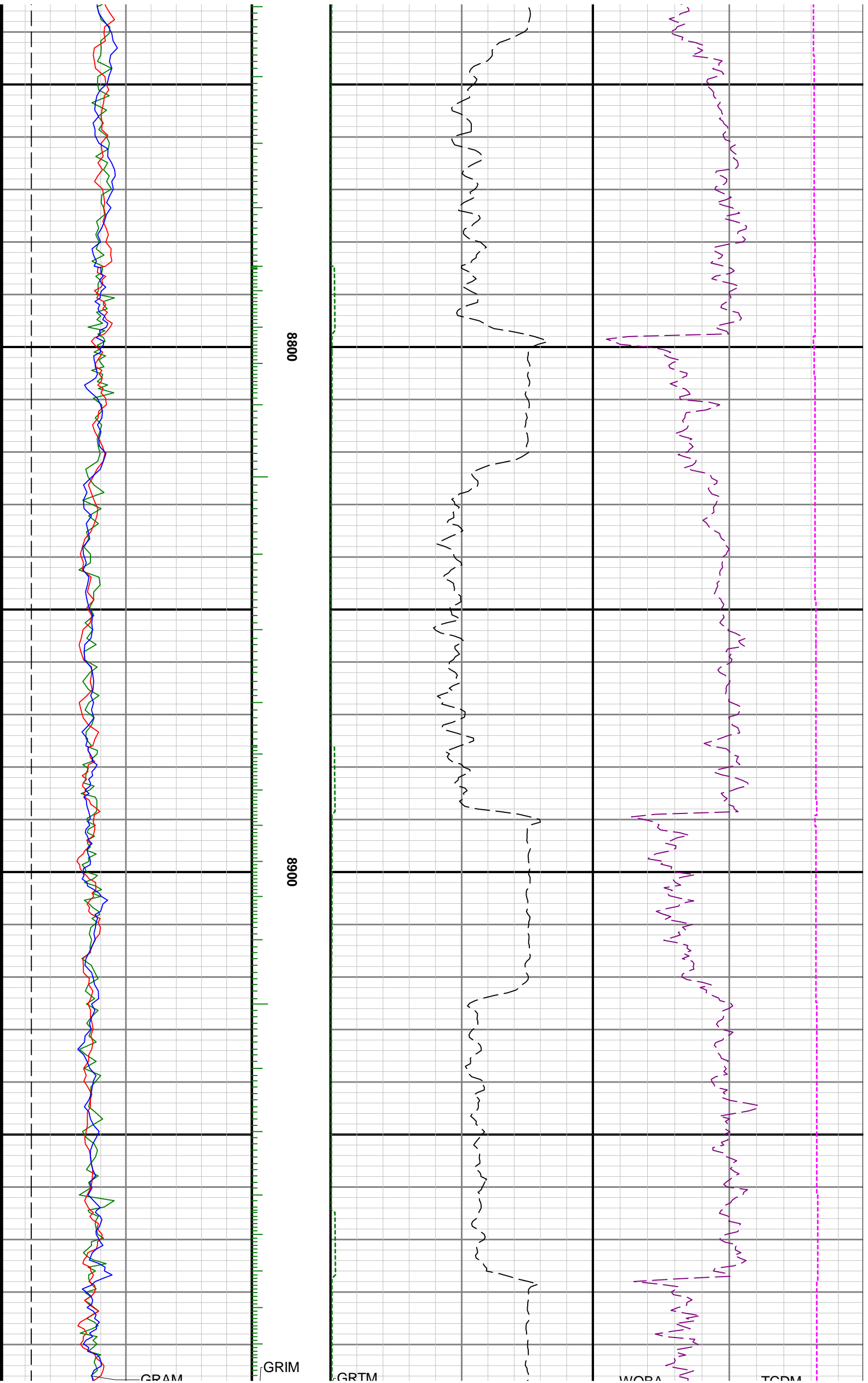


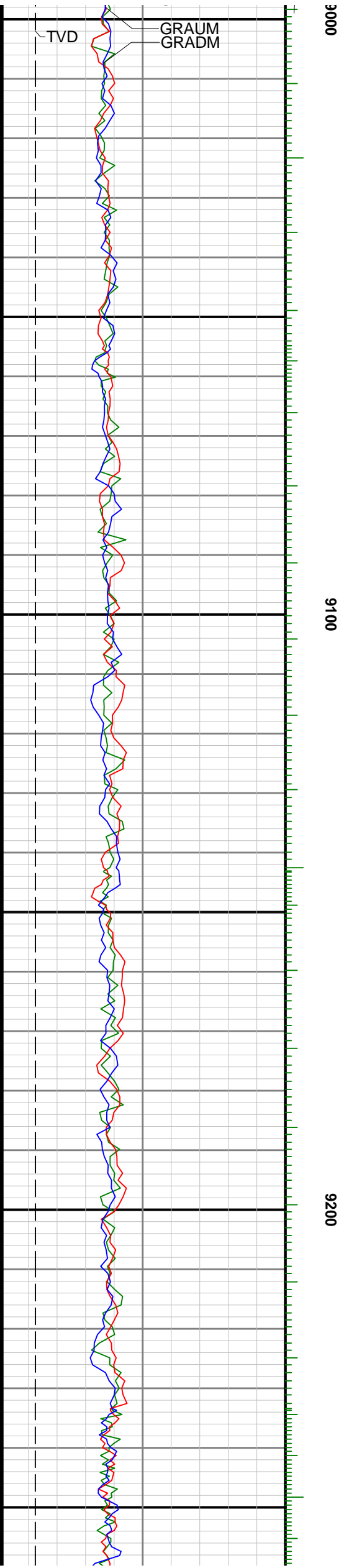
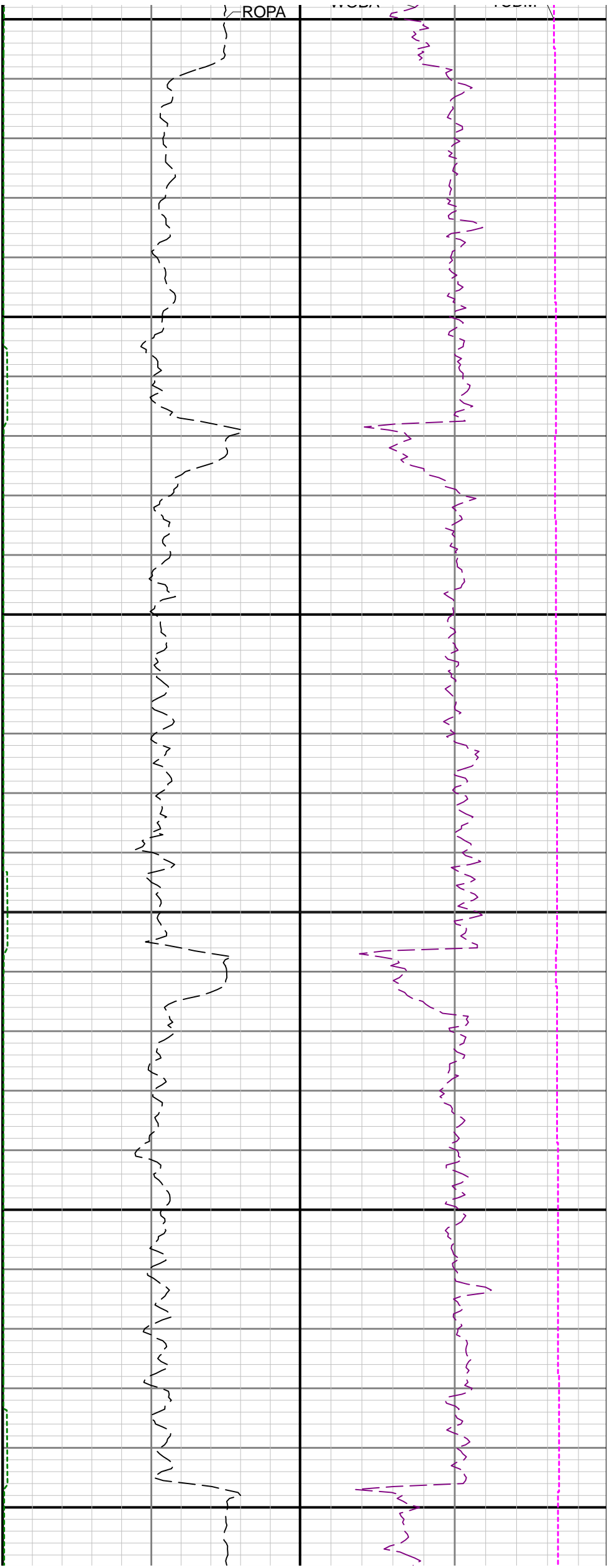
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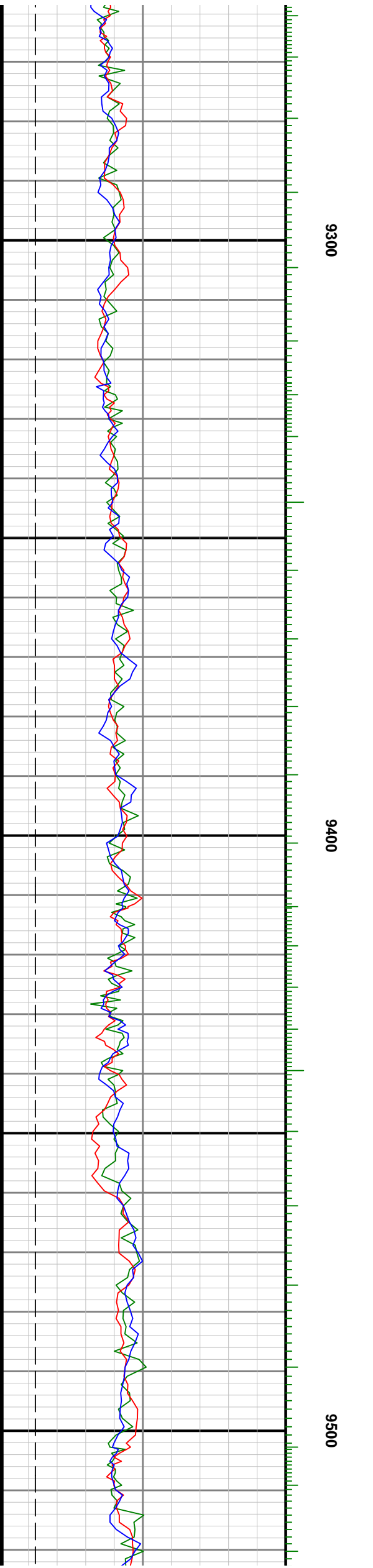
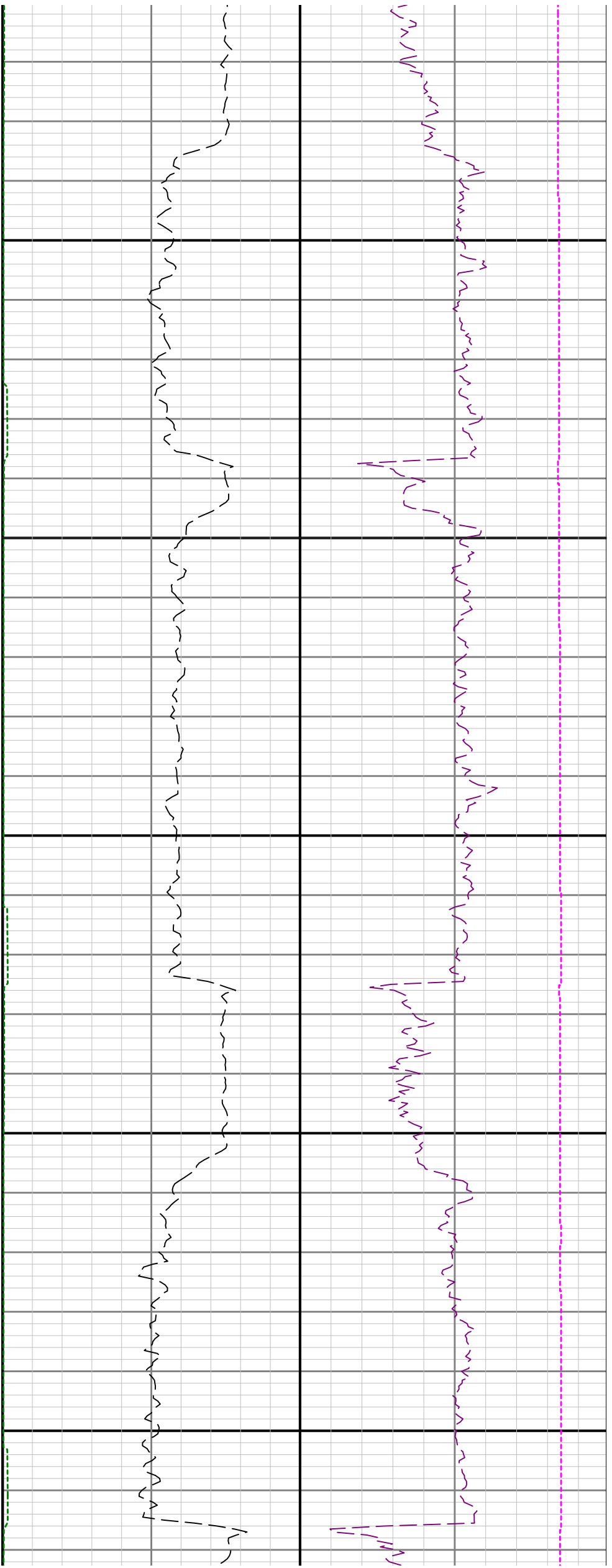
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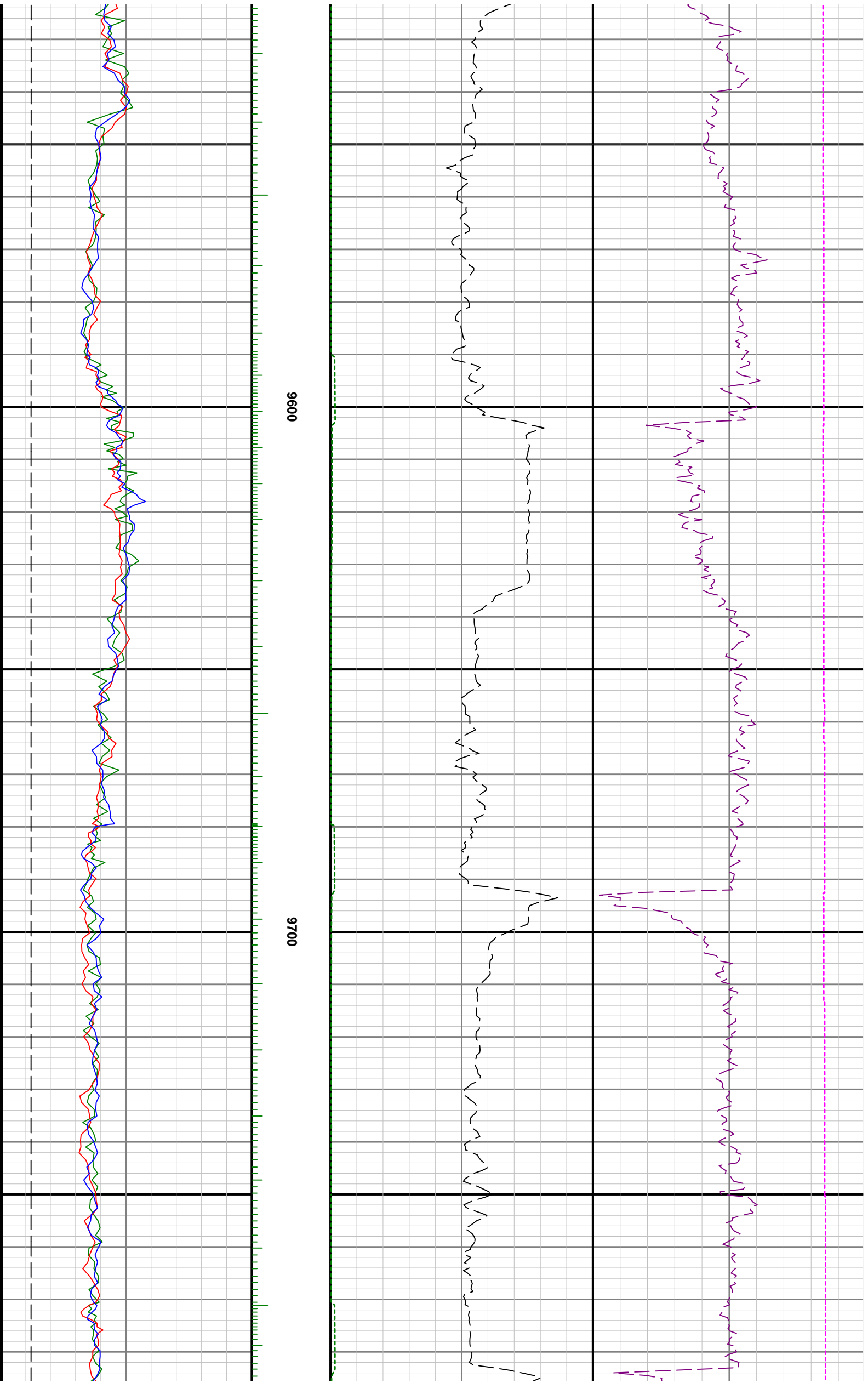
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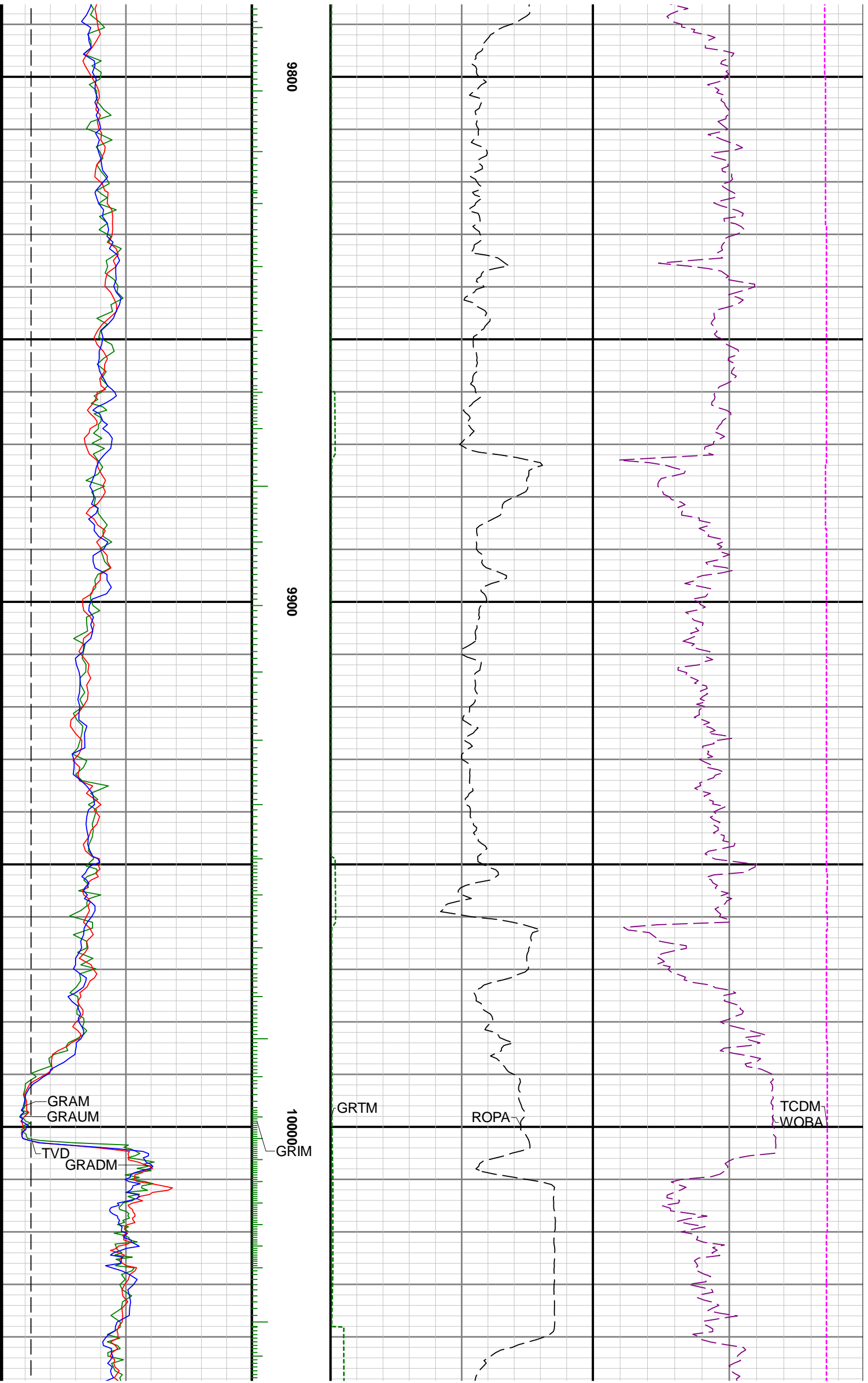


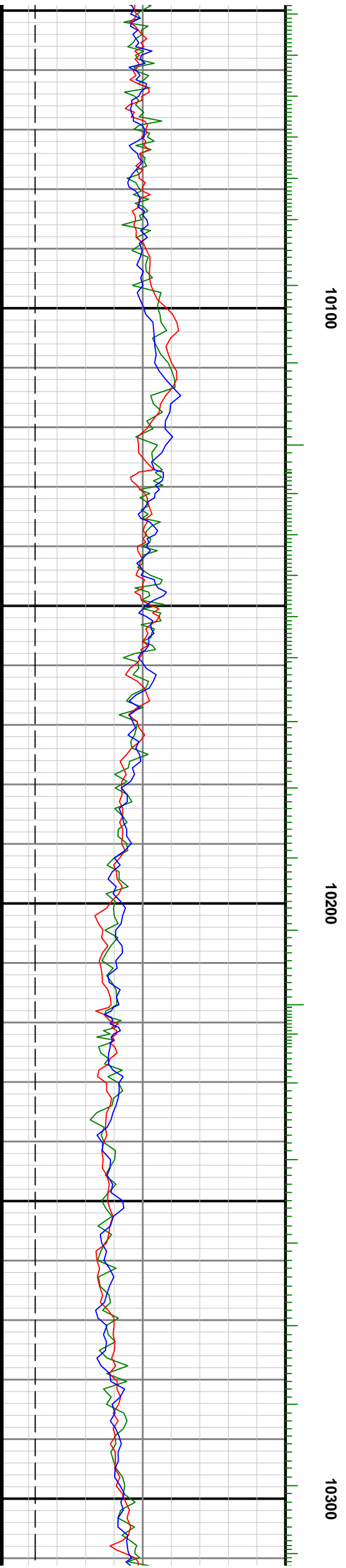
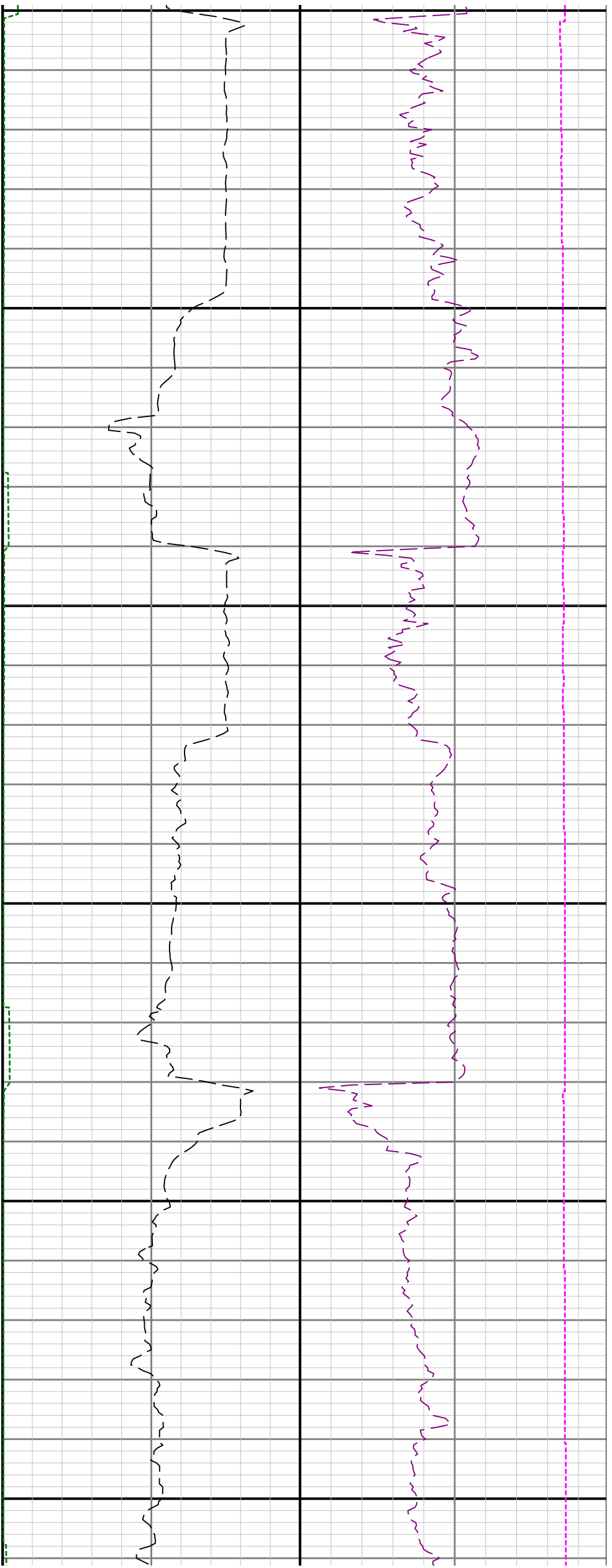


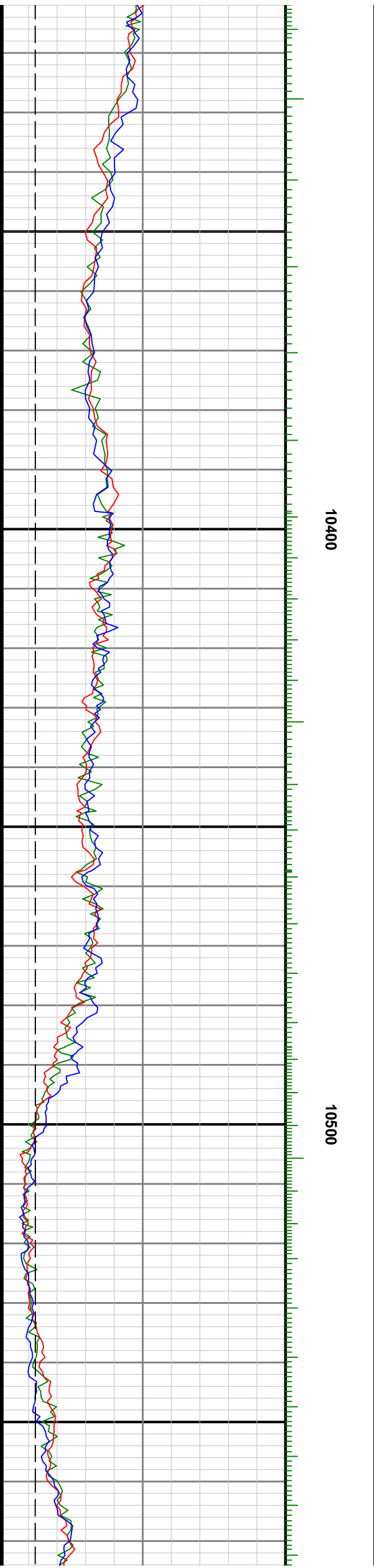
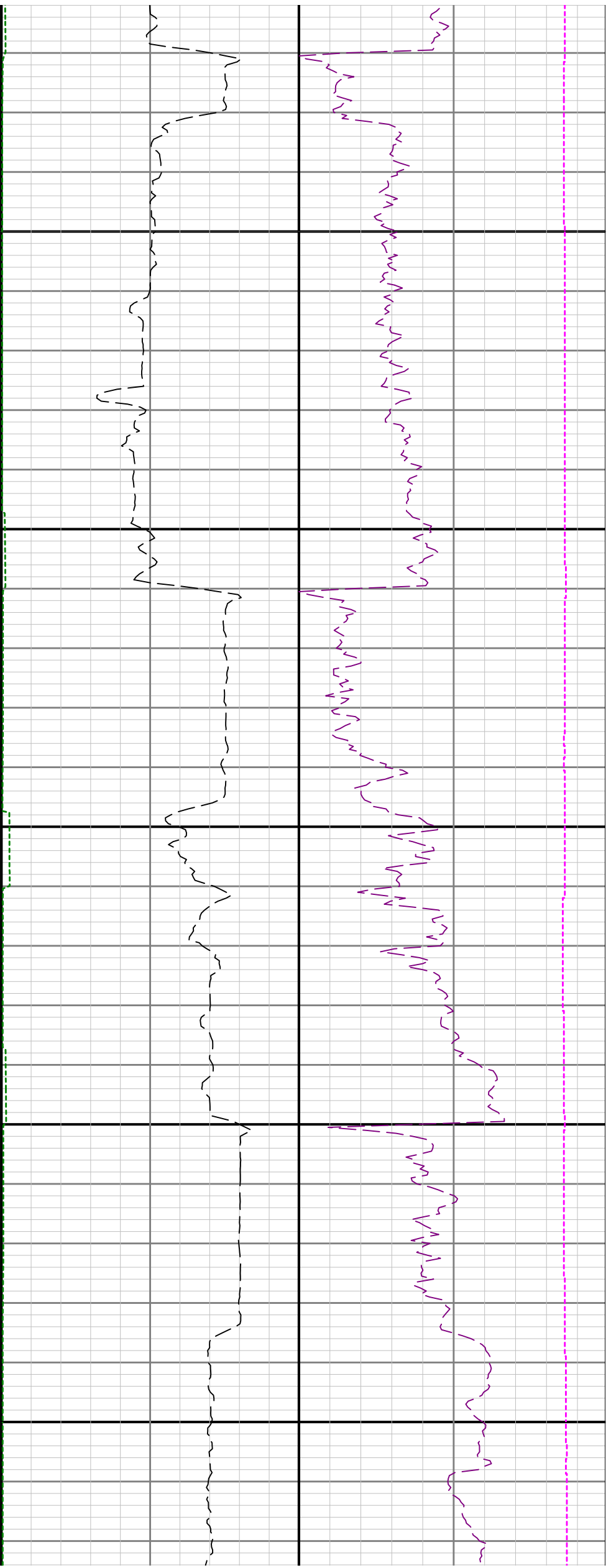


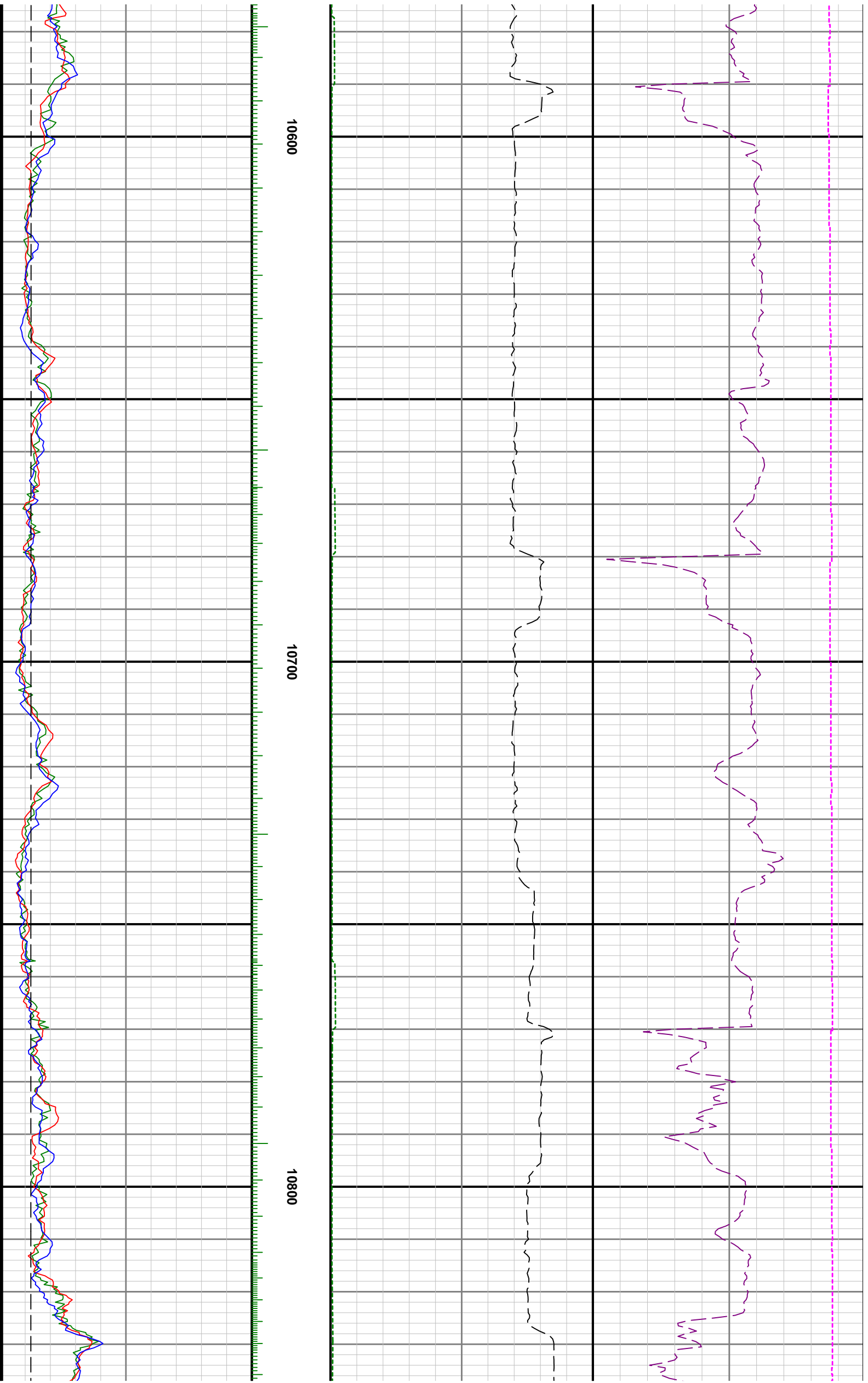


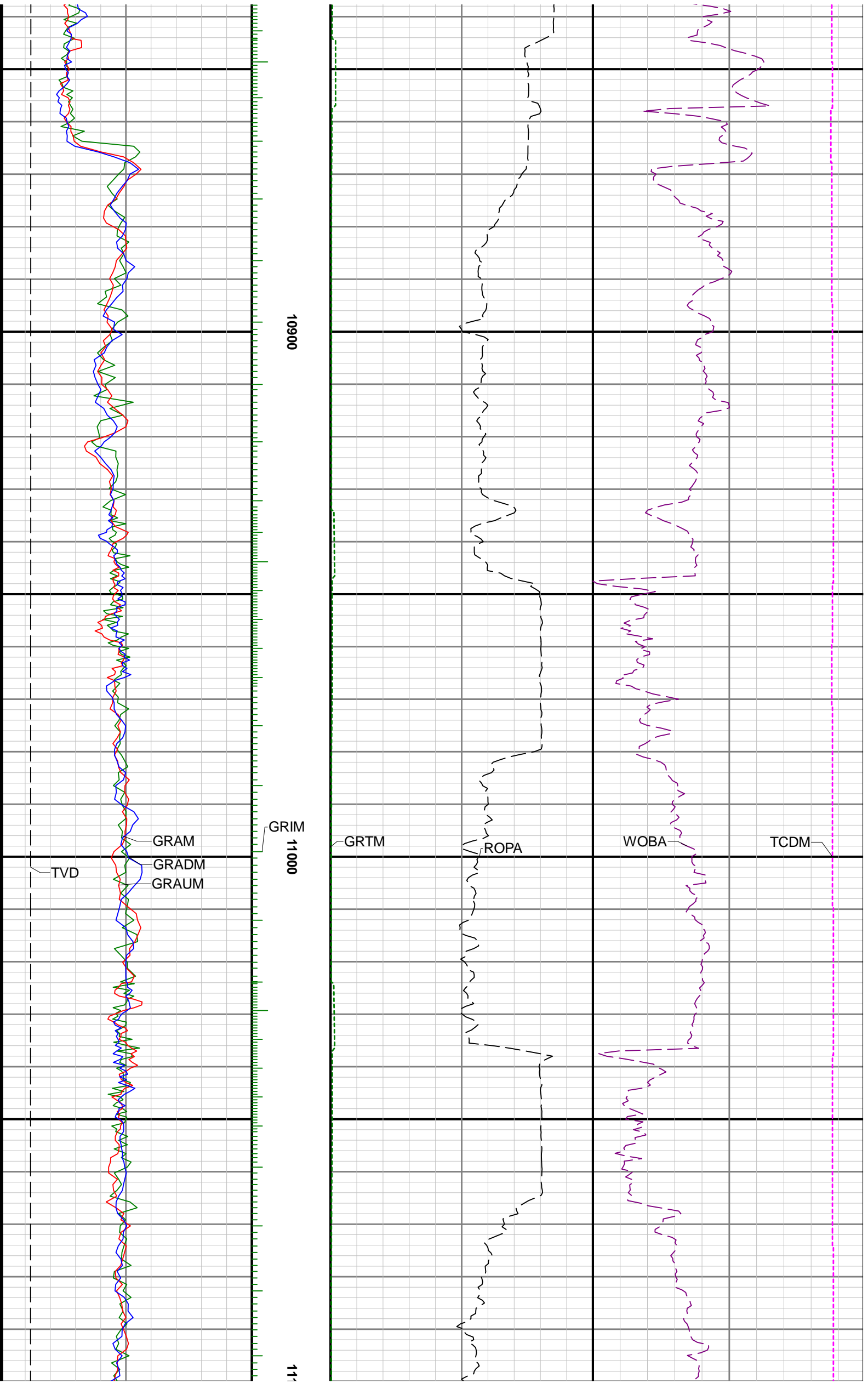


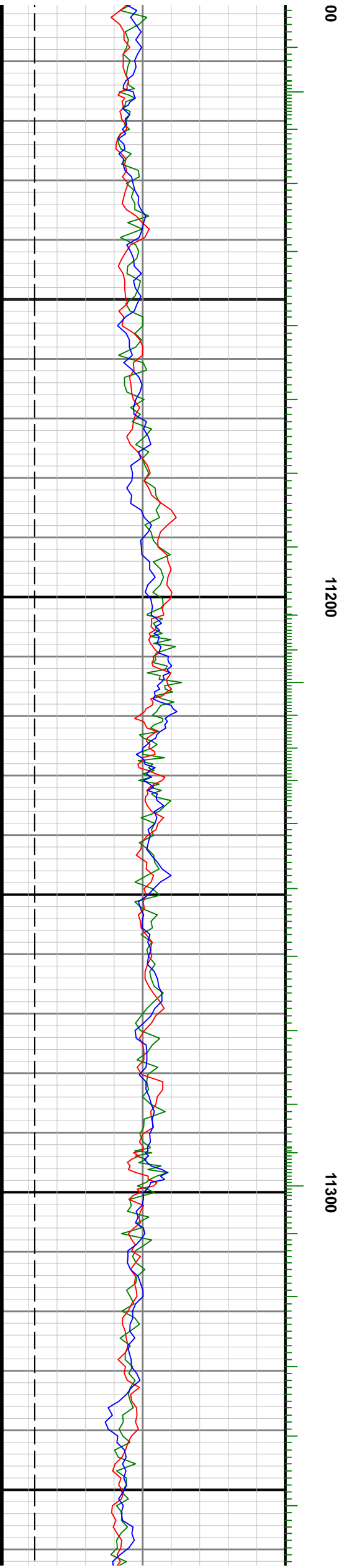
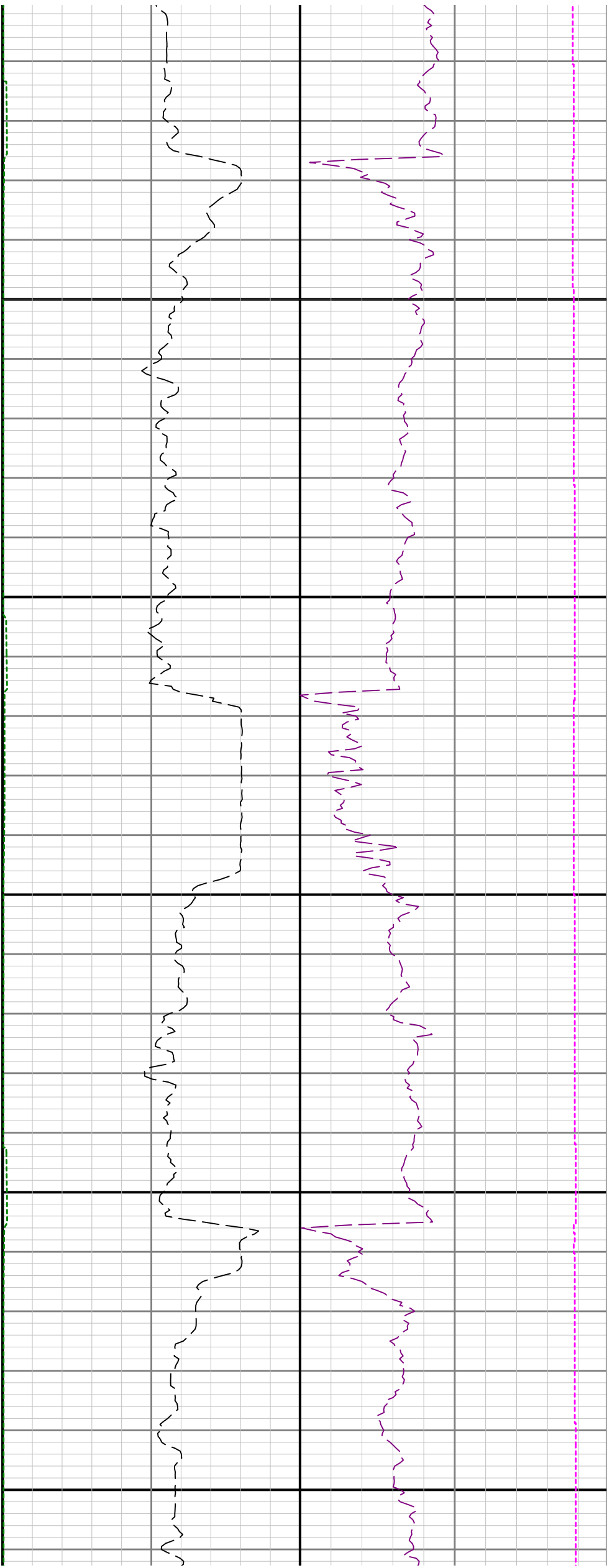


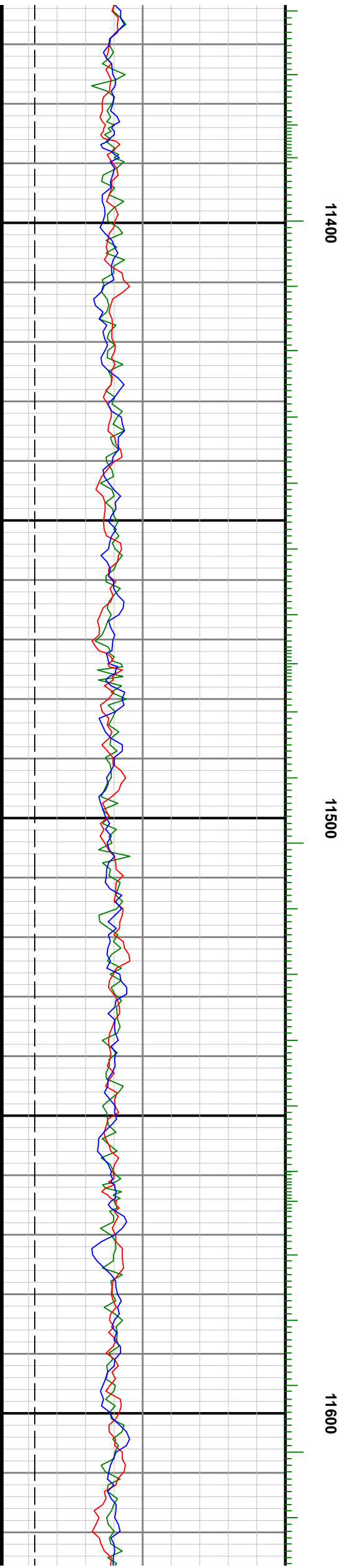
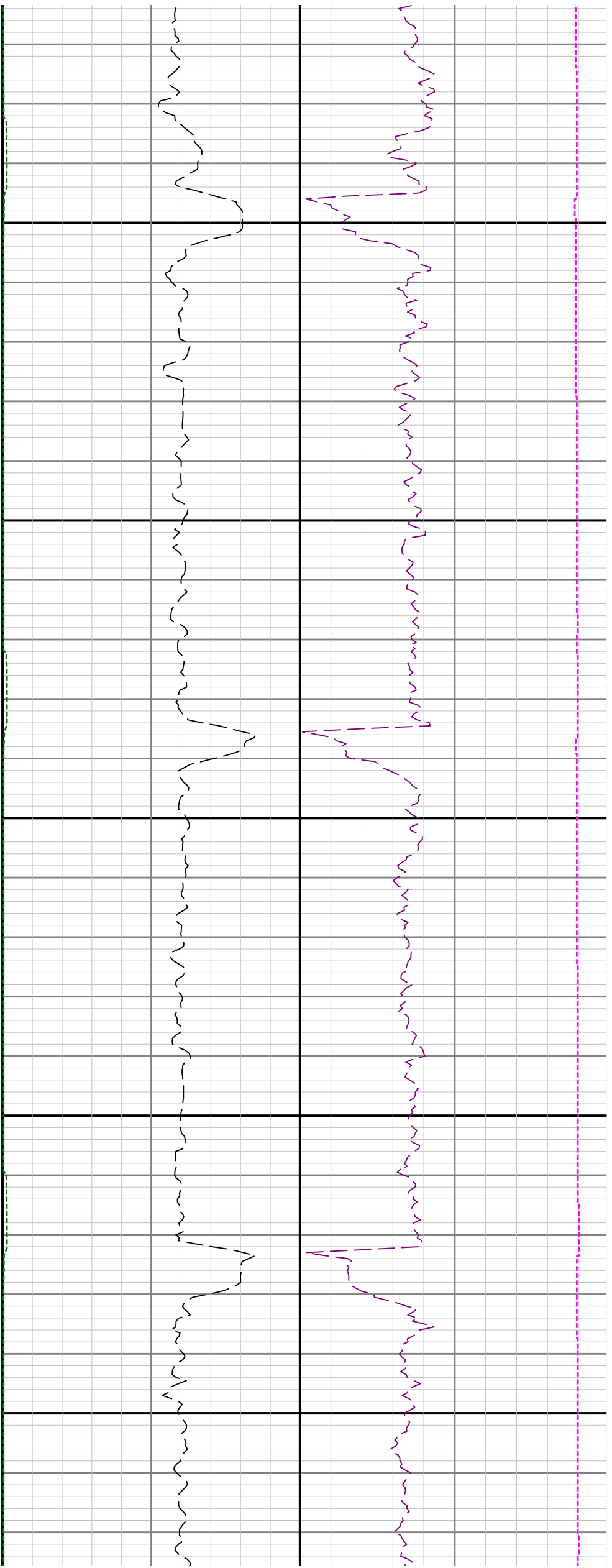


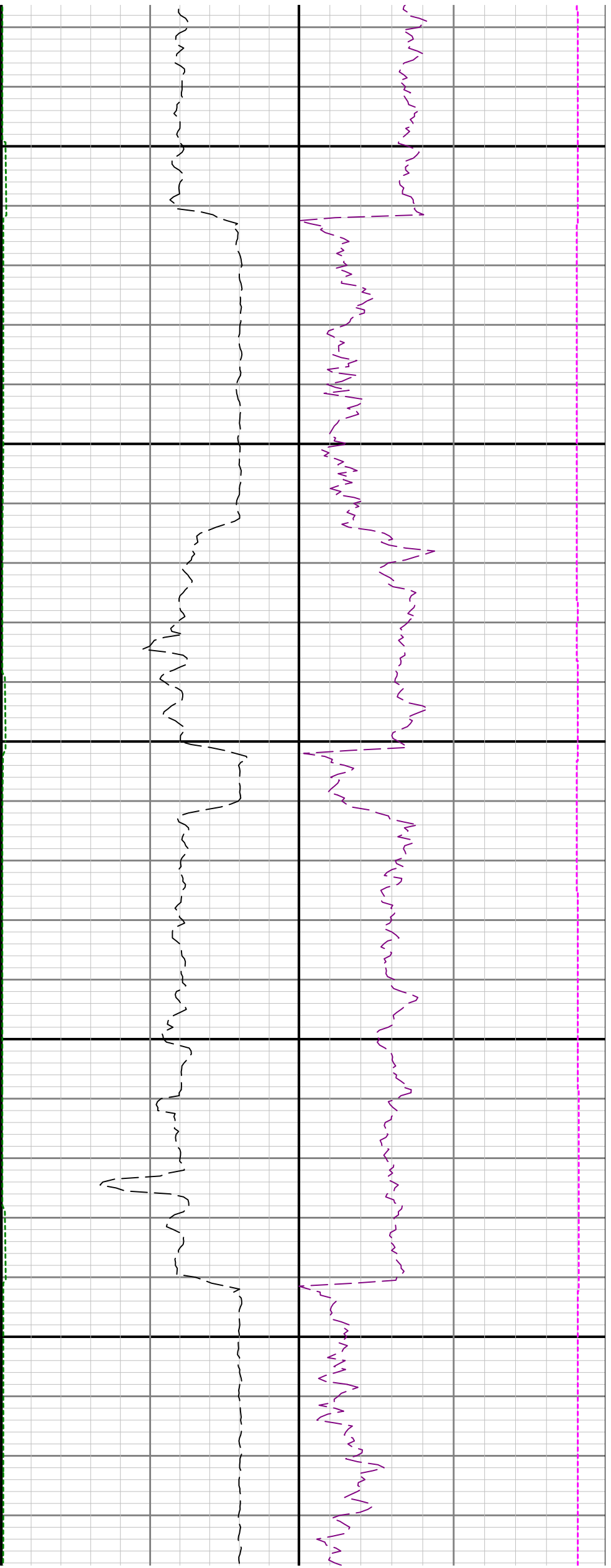






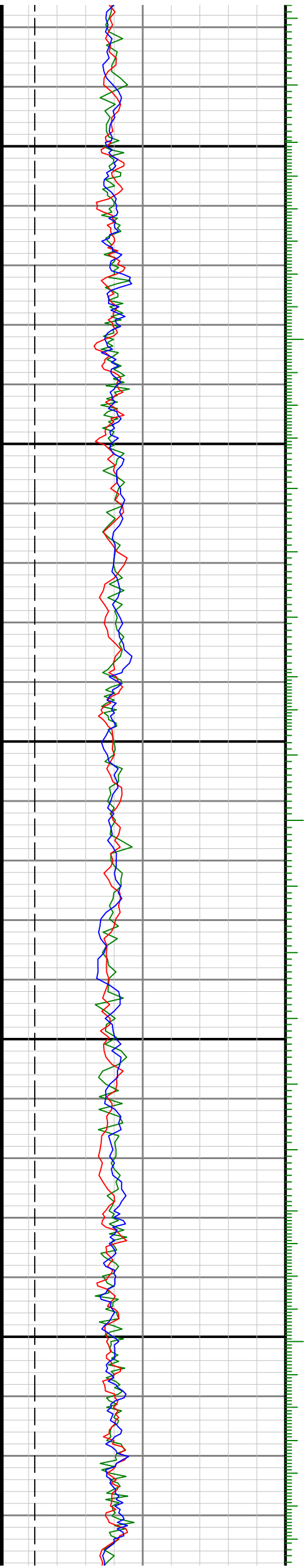


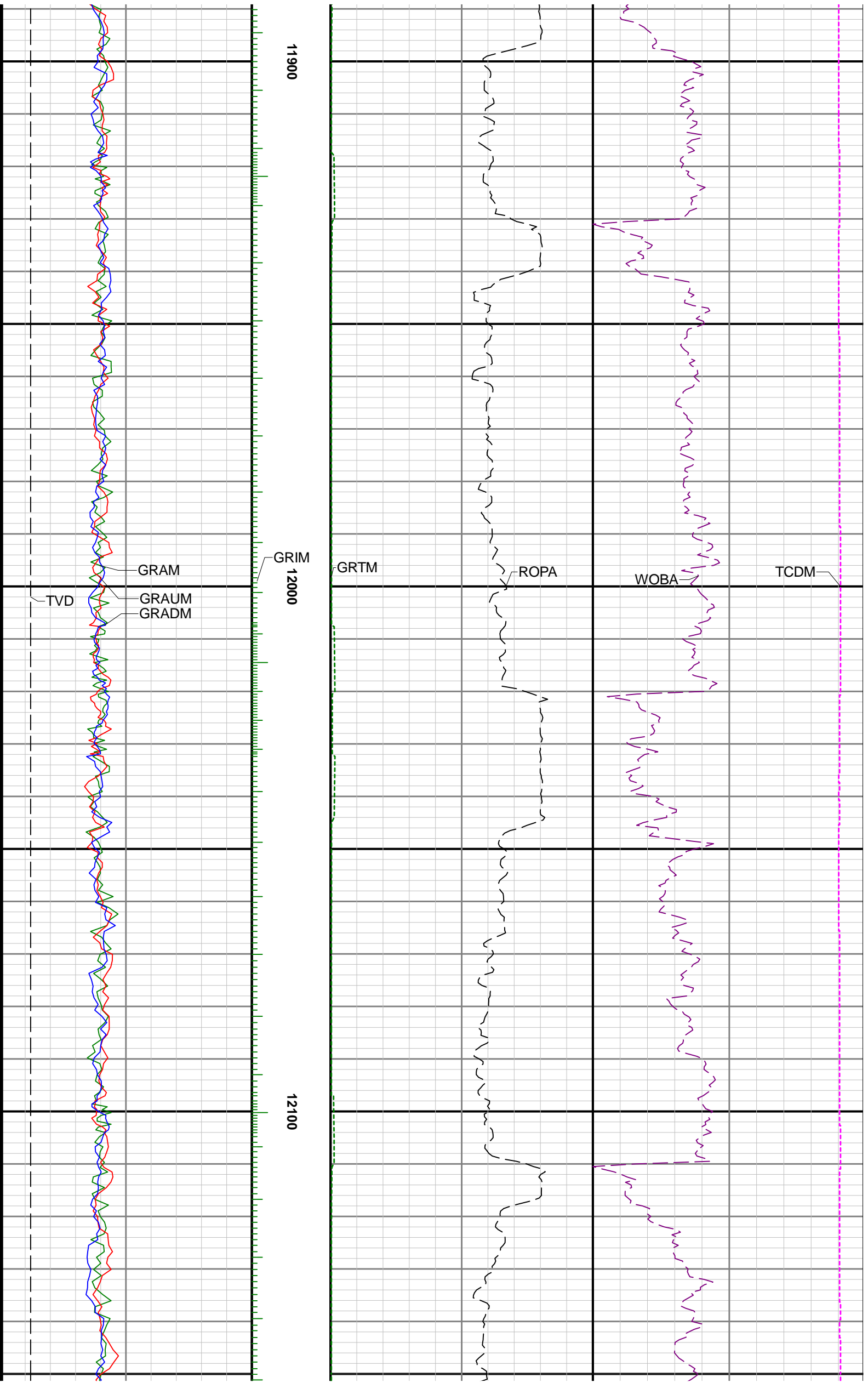


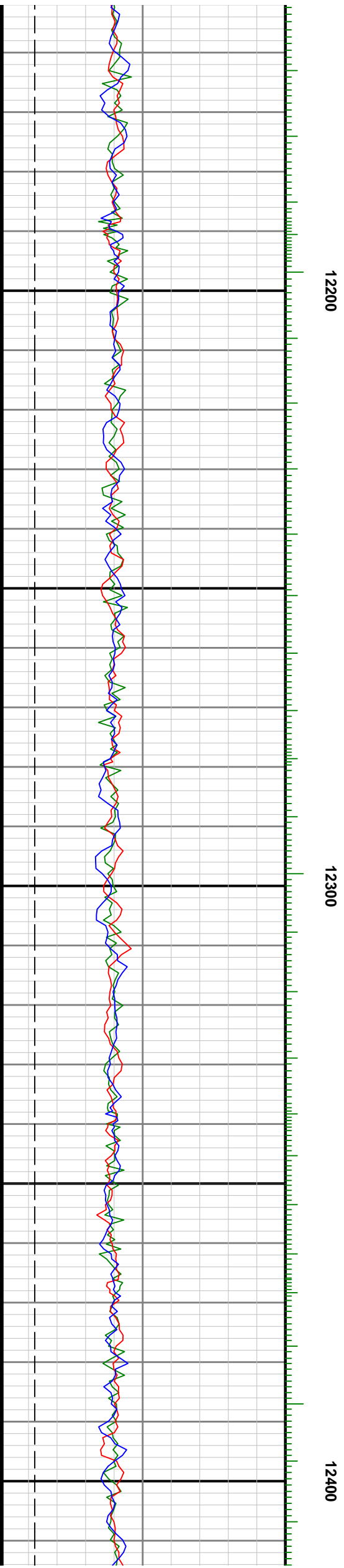


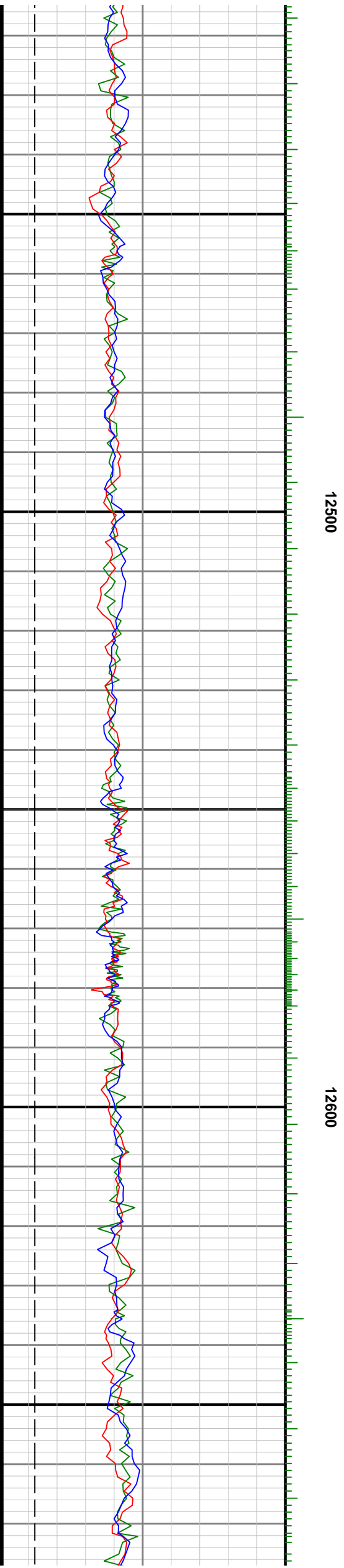
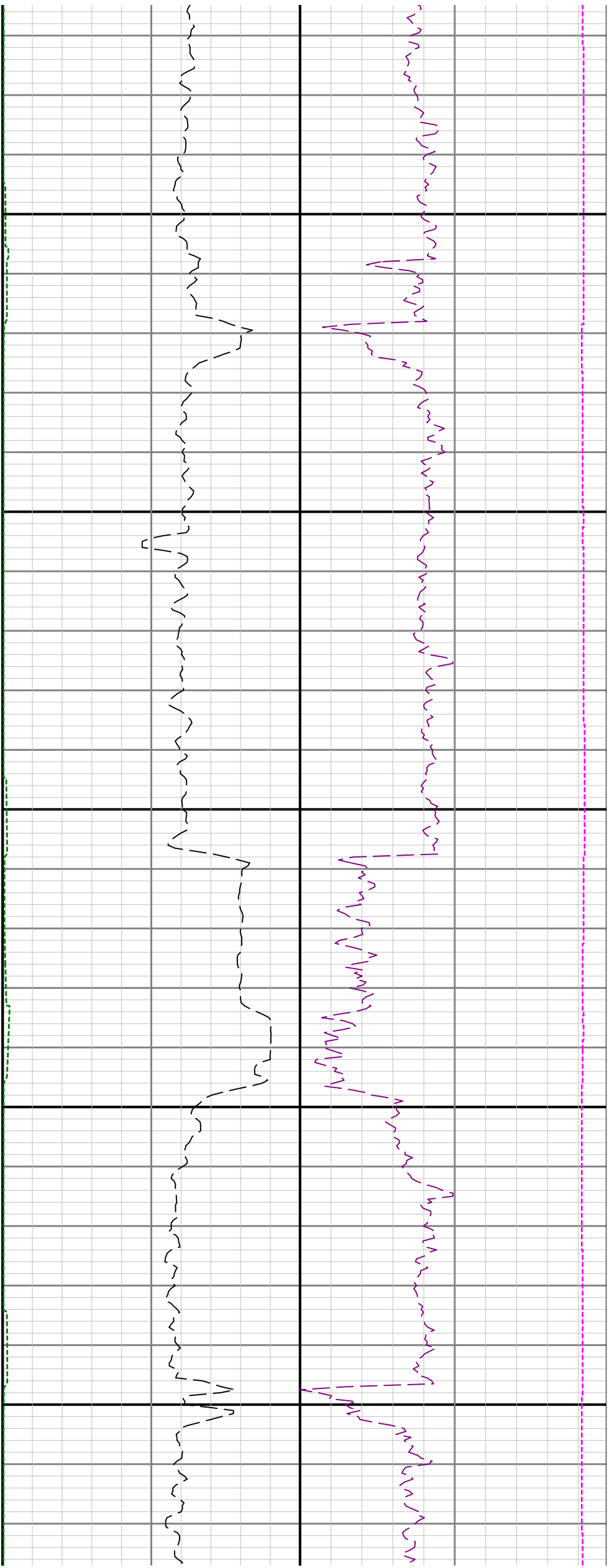
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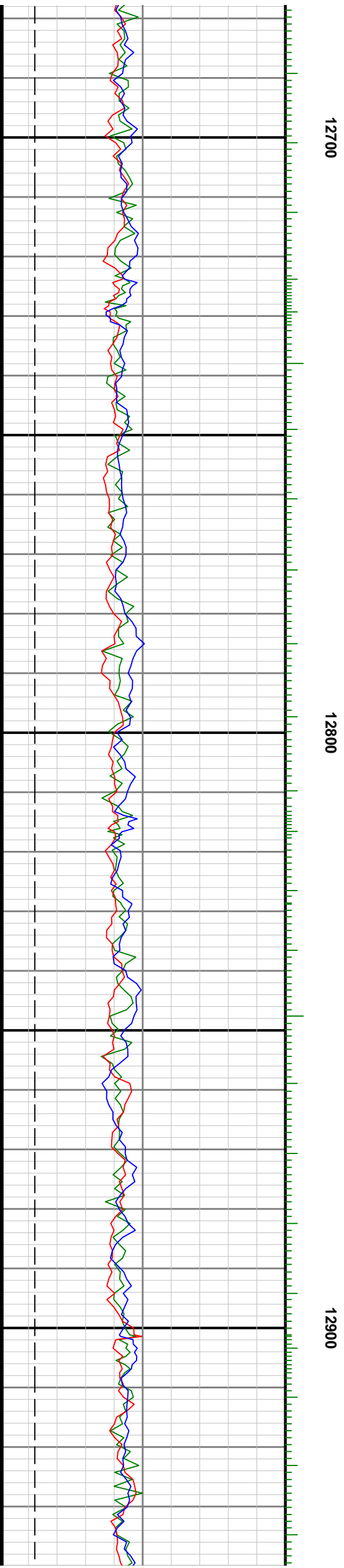
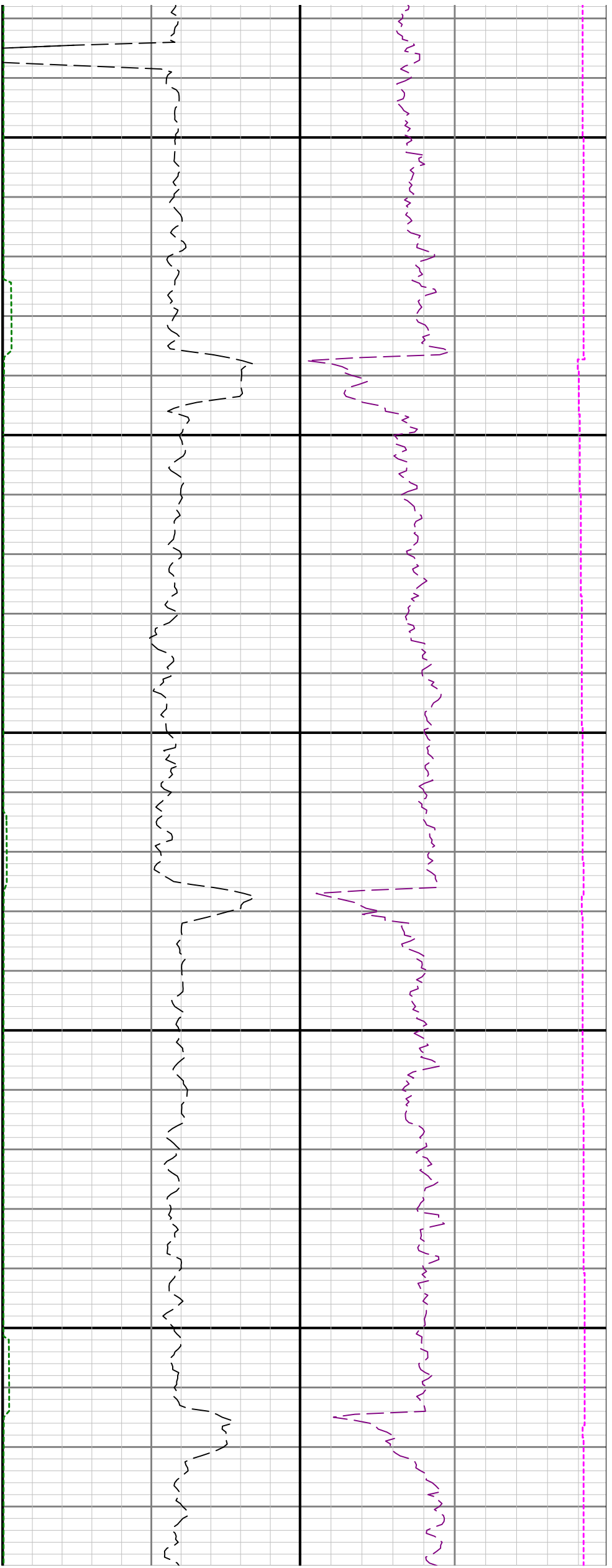
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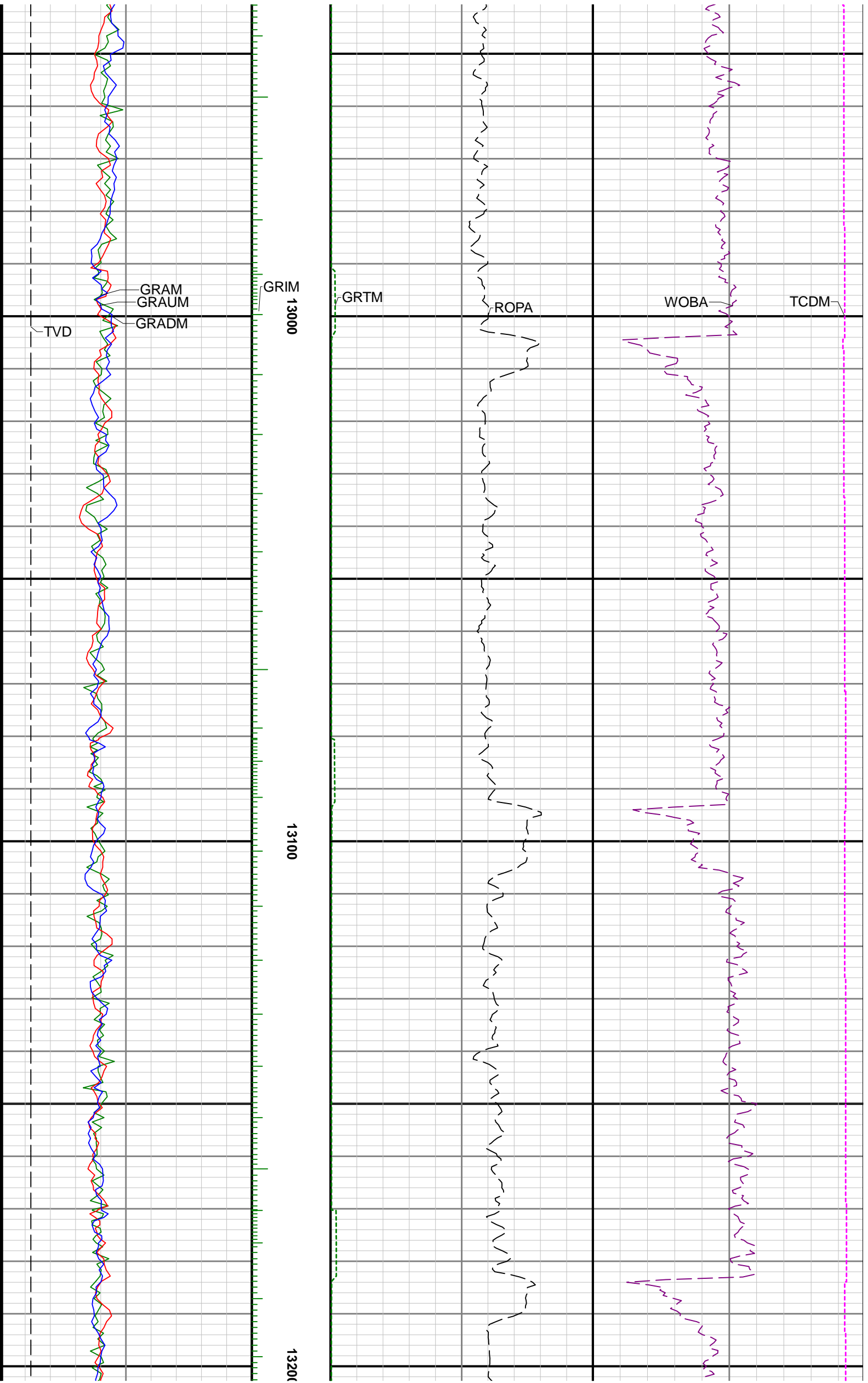


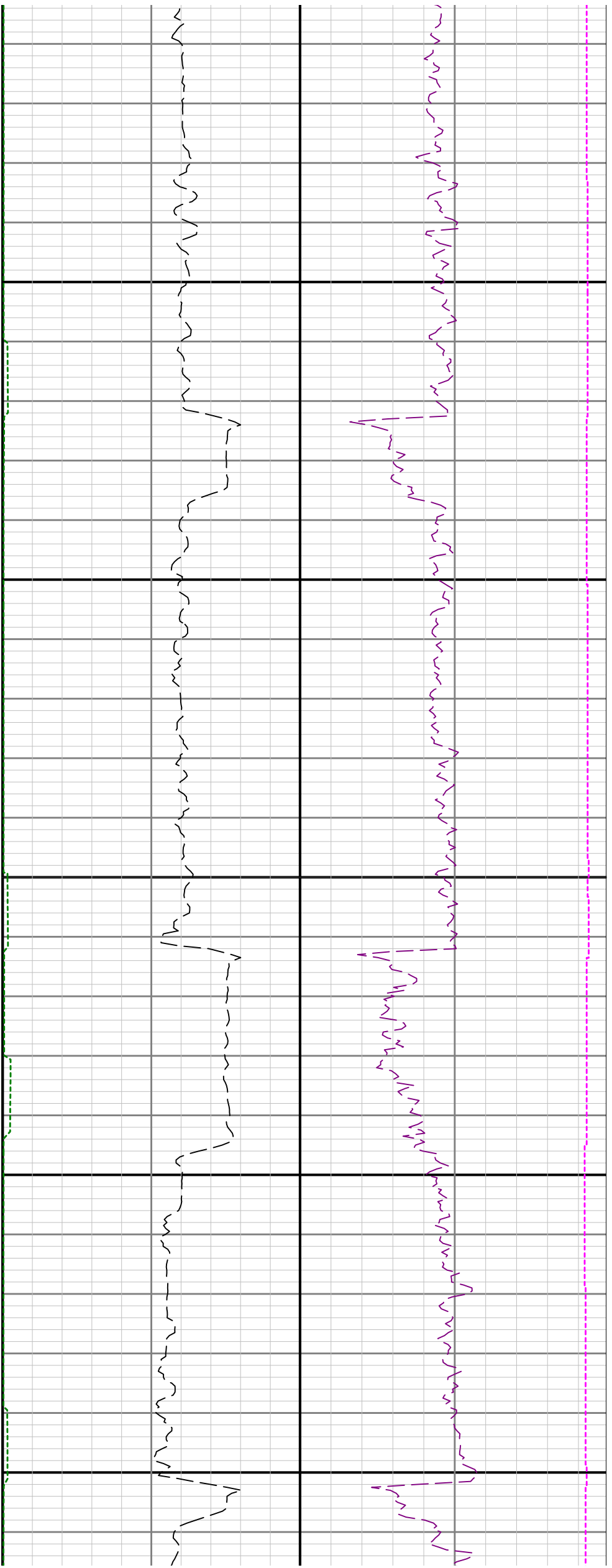












13300

13400

