

2017-12-09 13:30	1	2050.00	Oil Based Mud	9.0	10	N/A	18.4	72/28	Active Pit	24000	0.00
2017-12-10 02:30	1	5456.00	Oil Based Mud	8.7	10	N/A	18.6	74/26	Active Pit	25000	0.00
2017-12-10 13:30	1	7545.00	Oil Based Mud	9.0	10	N/A	20.4	74/26	Active Pit	23000	0.00
2017-12-11 02:30	1	10846.00	Oil Based Mud	9.2	10	N/A	19.6	75/25	Active Pit	24500	0.00
2017-12-11 13:30	1	13157.00	Oil Based Mud	9.0	10	N/A	19.2	76/24	Active Pit	23000	0.00
2017-12-12 02:30	1	16086.00	Oil Based Mud	9.3	10	N/A	18.8	74.8/25.2	Active Pit	22500	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	ATC_SU	12575814	Near Bit VSS	5.93	6.73	7.000	4.330
1	ATC_SU	12575814	Near Bit Inclination	5.93	6.73	7.000	4.330
1	ATC_MWD	12398343	Gamma (single)	2.75	12.90	7.000	3.250
1	ATC_MWD	12398343	Directional (mag)	12.27	22.42	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
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 were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD Run 1 utilized a 6.75 inch NaviGamma service (Directional and Gamma Ray) behind an 8.5 inch bit and rotary steerable assembly from 2050 to 17059 feet MD (2050 to 6957 feet TVD).
3	The Gamma Ray Apparent (GRAM) data is presented 0 to 300 API, per the customer's request.
4	There are multiple gaps in gamma ray due to downhole MWD tool communication issues.

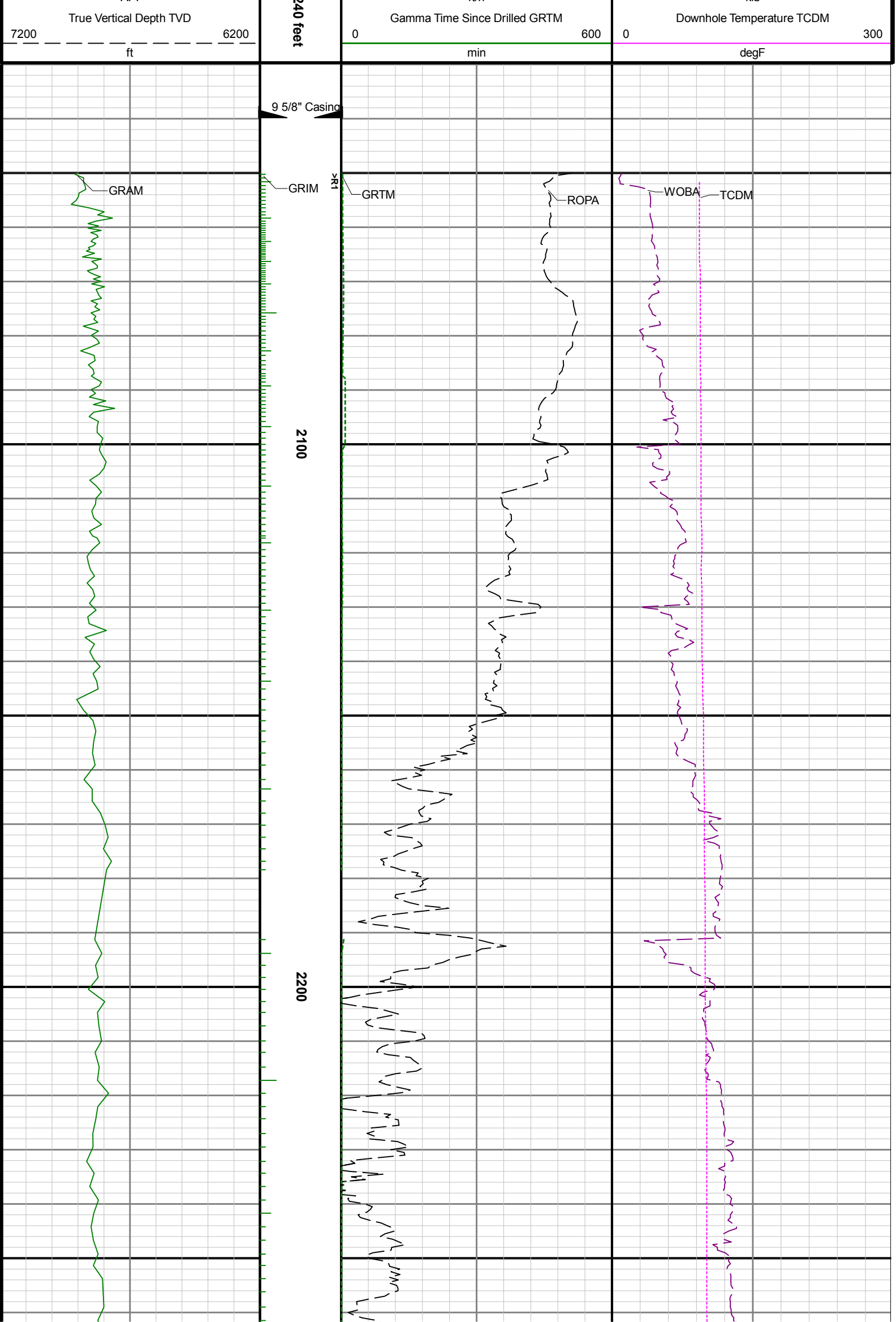
Remarks

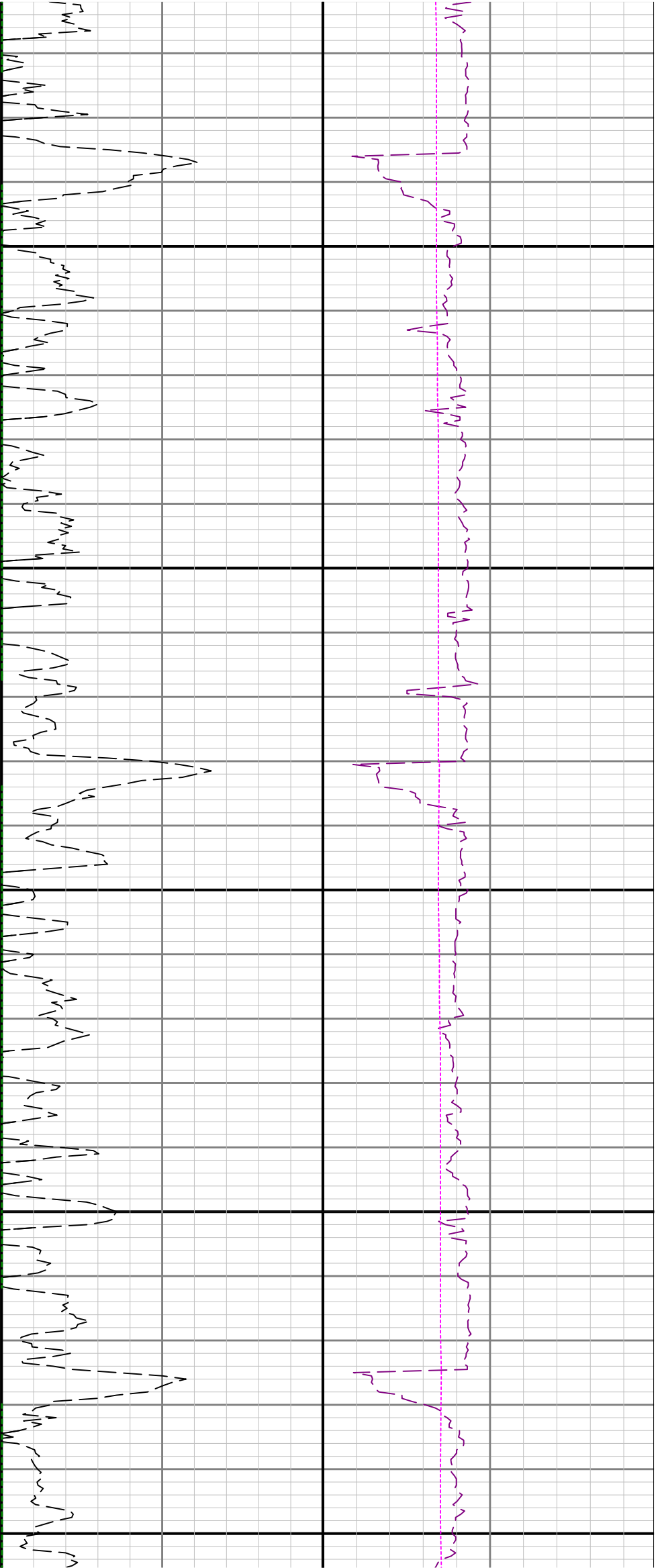
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	3556.00	8.500	1	The interval from 3556 to 3567 feet MD (3552 to 3563 feet TVD) shows zero gamma values due to a downhole MWD tool communication issue.
2	16842.00	8.500	1	The interval from 16842 to 17031 feet MD (6958 feet TVD) shows zero gamma values due to a downhole MWD tool communication issue.
3	17059.00	8.500	1	The interval from 17047 to 17059 feet MD (6957 feet TVD) was not logged after being drilled 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	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
TCDM	Downhole Temperature	degF

<div> BAKER HUGHES</div>	Company	Noble Energy				
	Well	Bison Ridge Y22-764				
	Interval	Date From:	2017-12-09 08:00:42	Top:	2050.00	
		Date To:	2017-12-12 17:45:00	Bottom:	17059.00	
	Created	2017-12-13 05:54:40				
Gamma Ray - Apparent 0.5 ft Average GRAM		MD 11:30	Depth Averaged ROP 3 ft Average ROPA		Weight On Bit, Average 1 ft Average WOBA	
0 300			1000 0		0 50	
API			ft/h		klb	

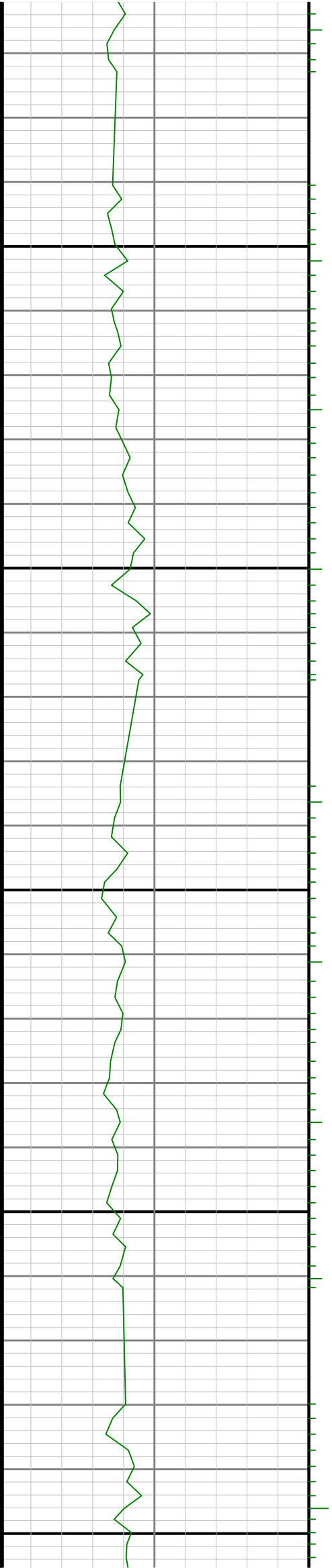


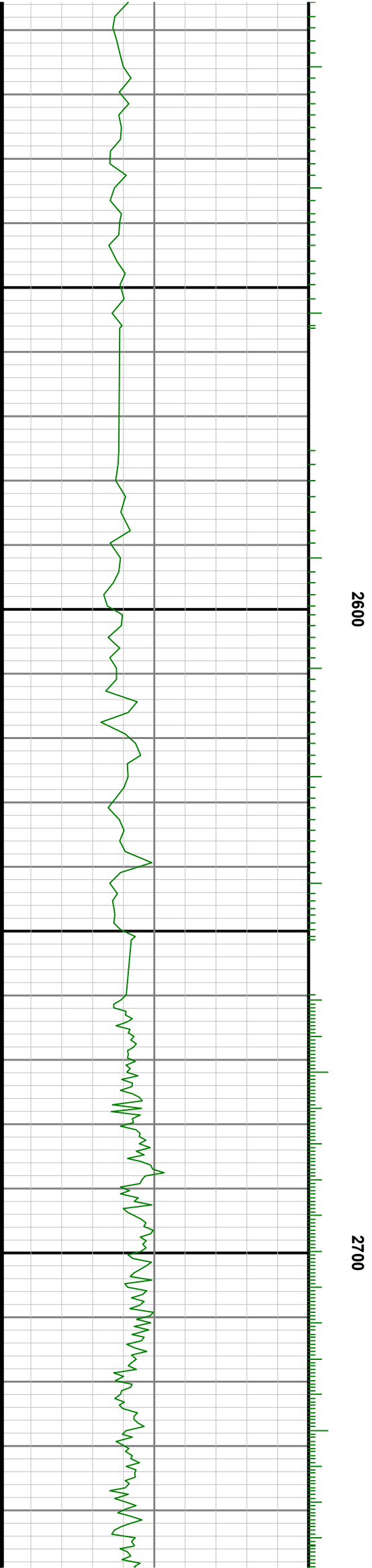
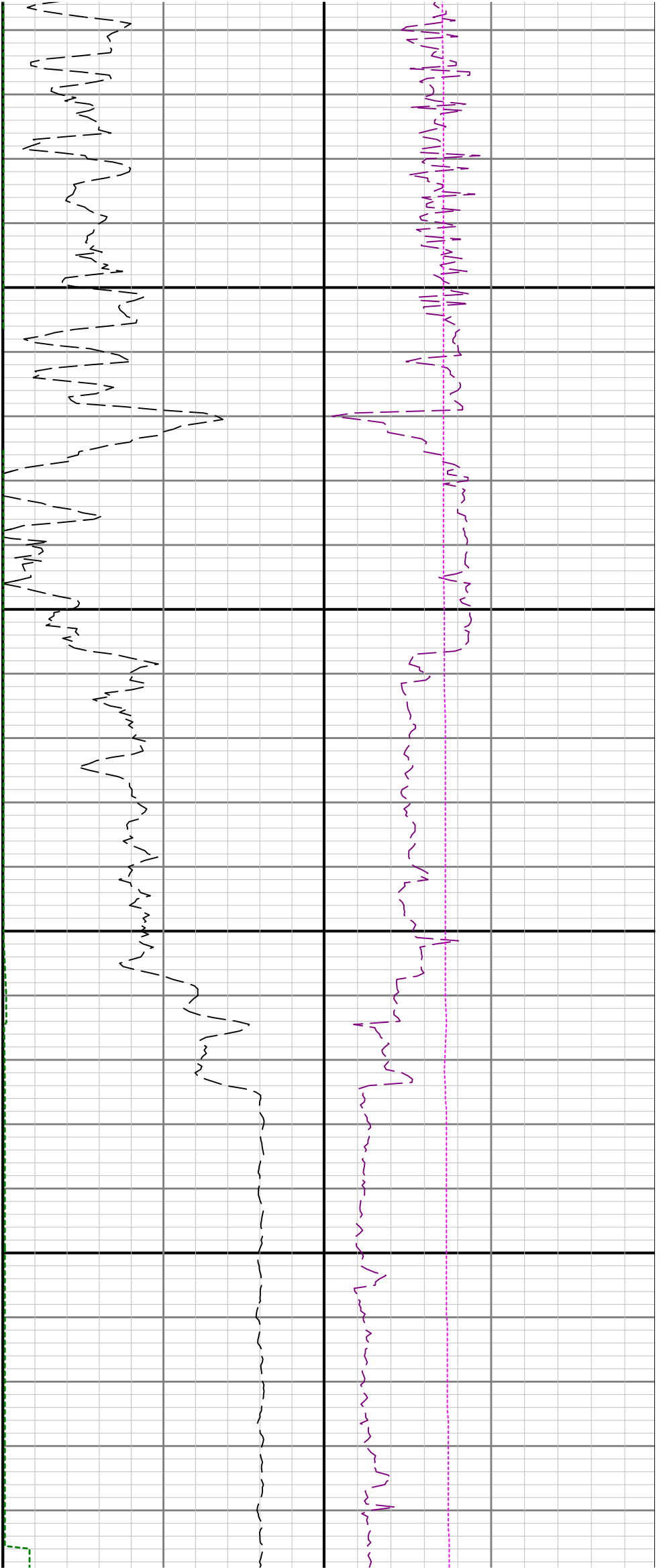


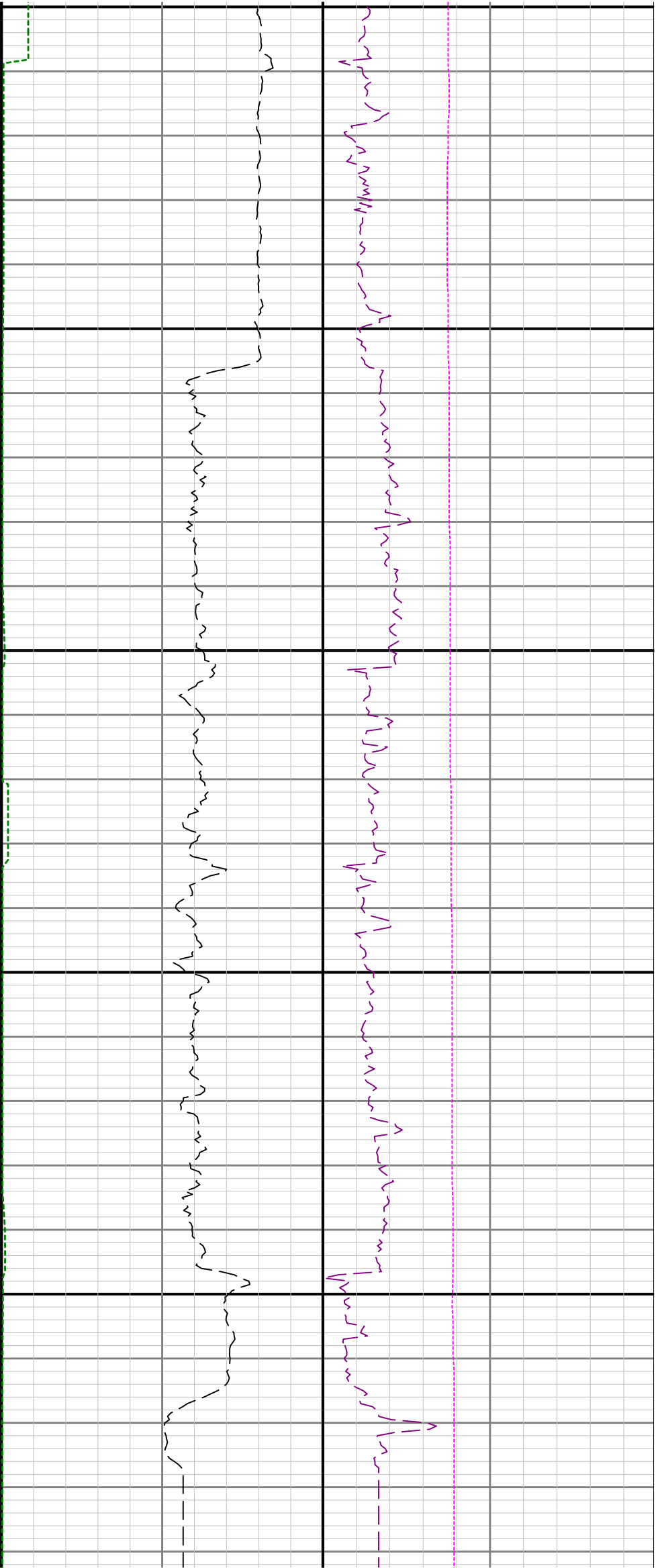
2300

2400

2500

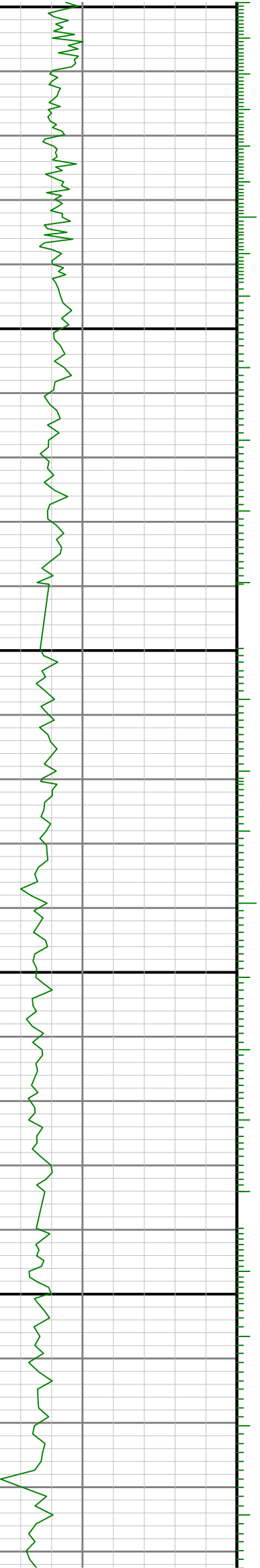


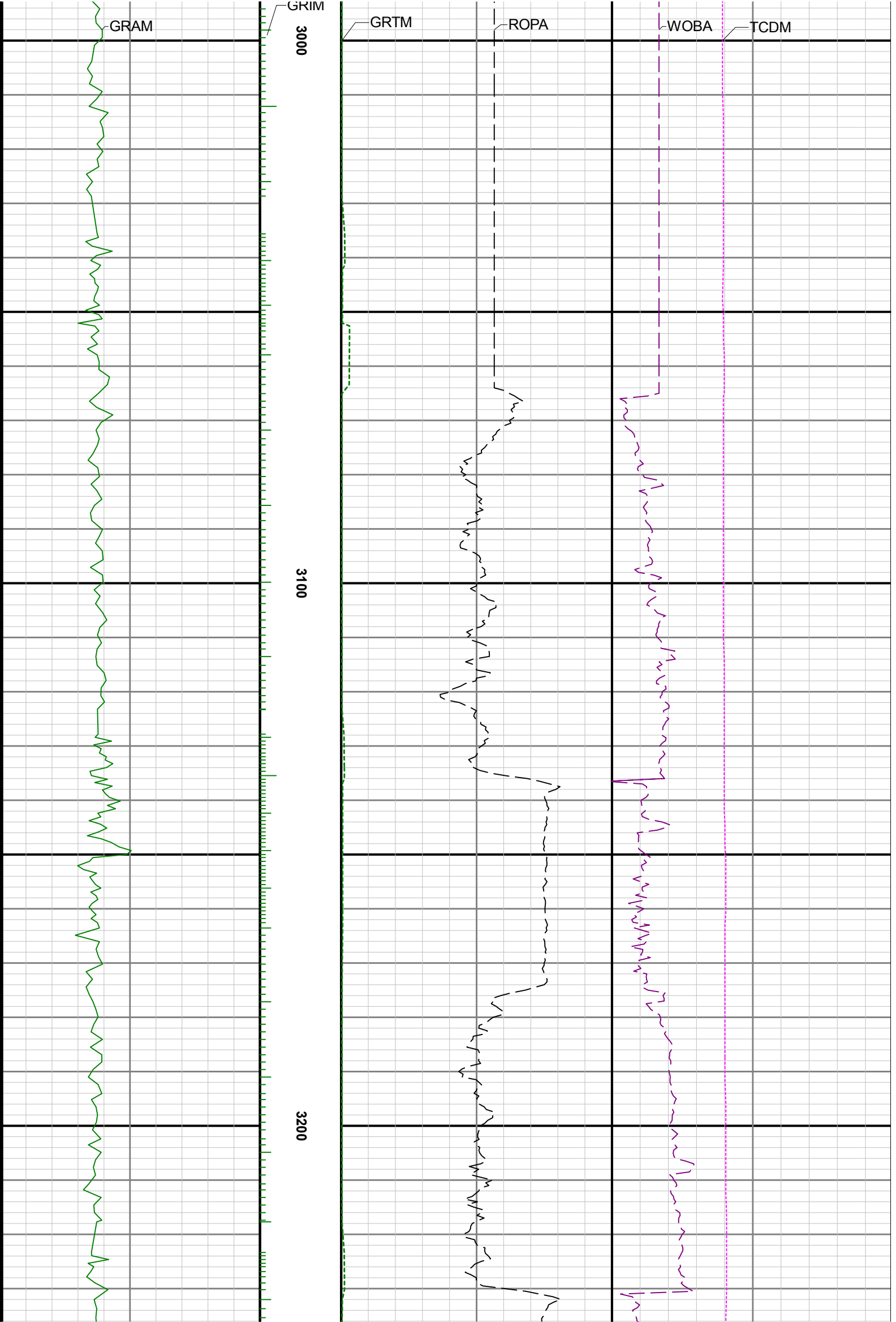


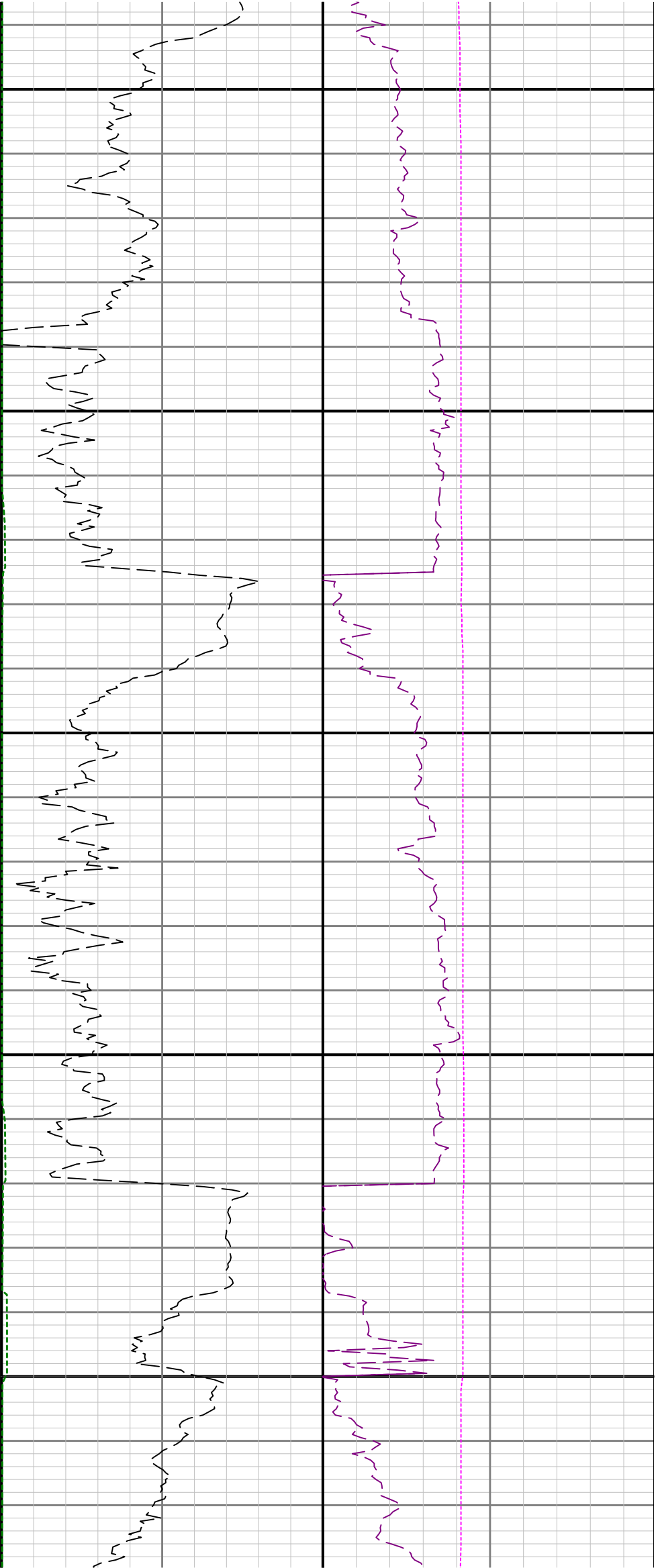


2800

2900

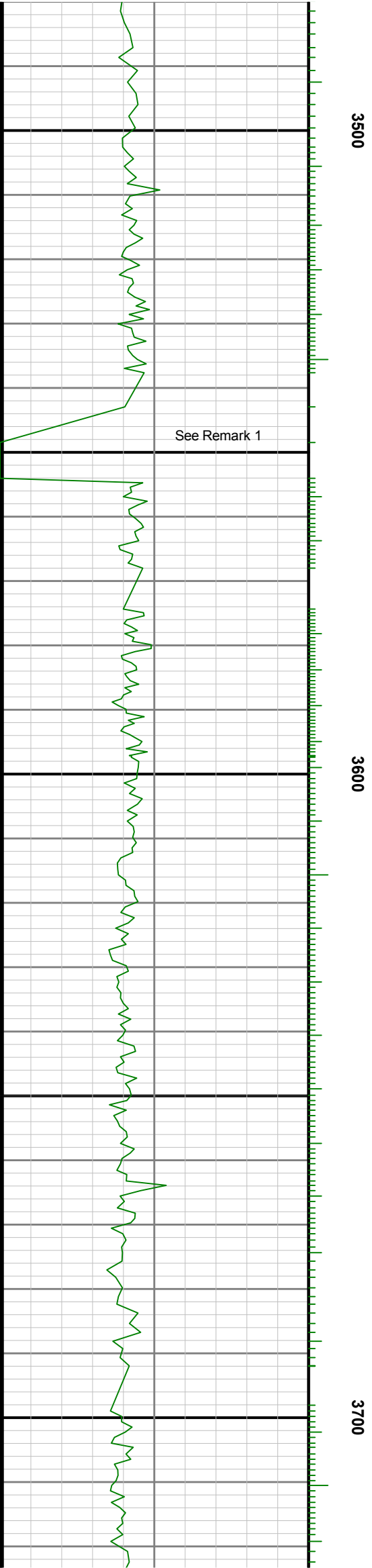
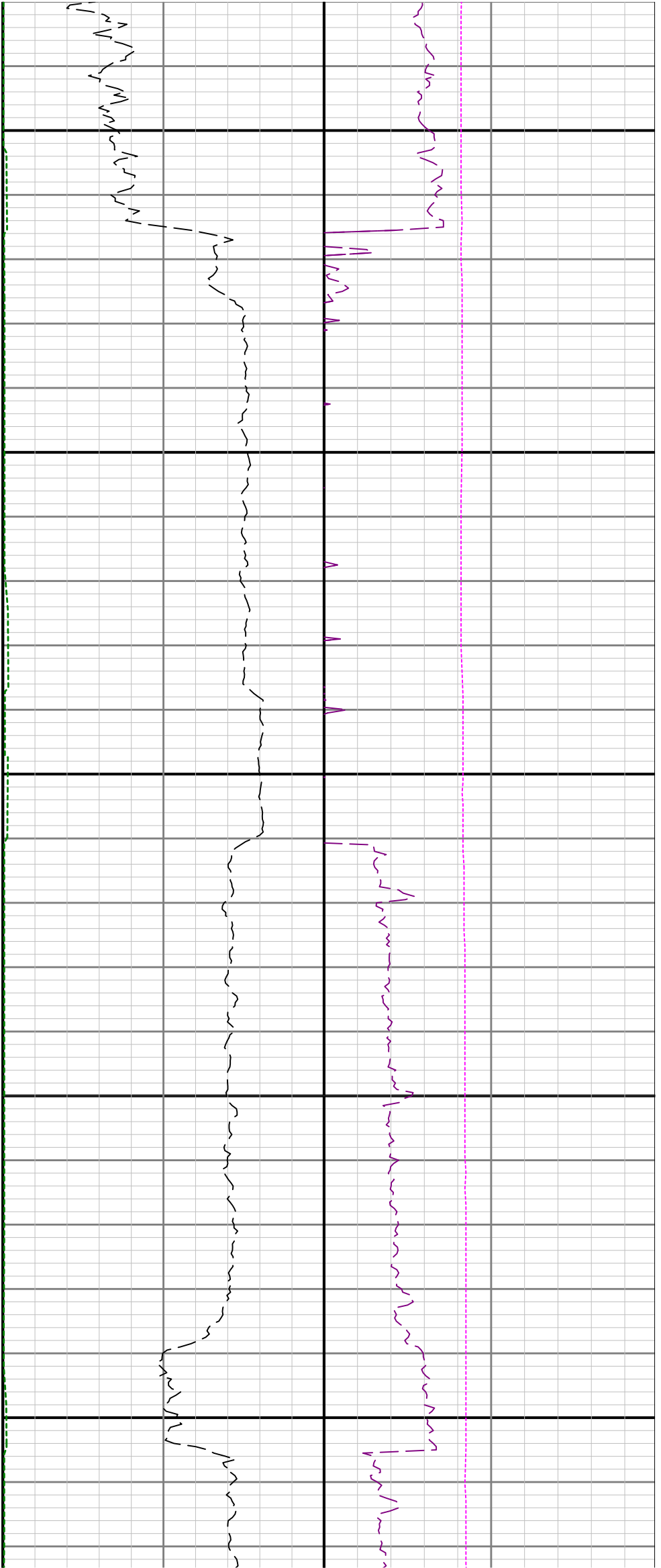


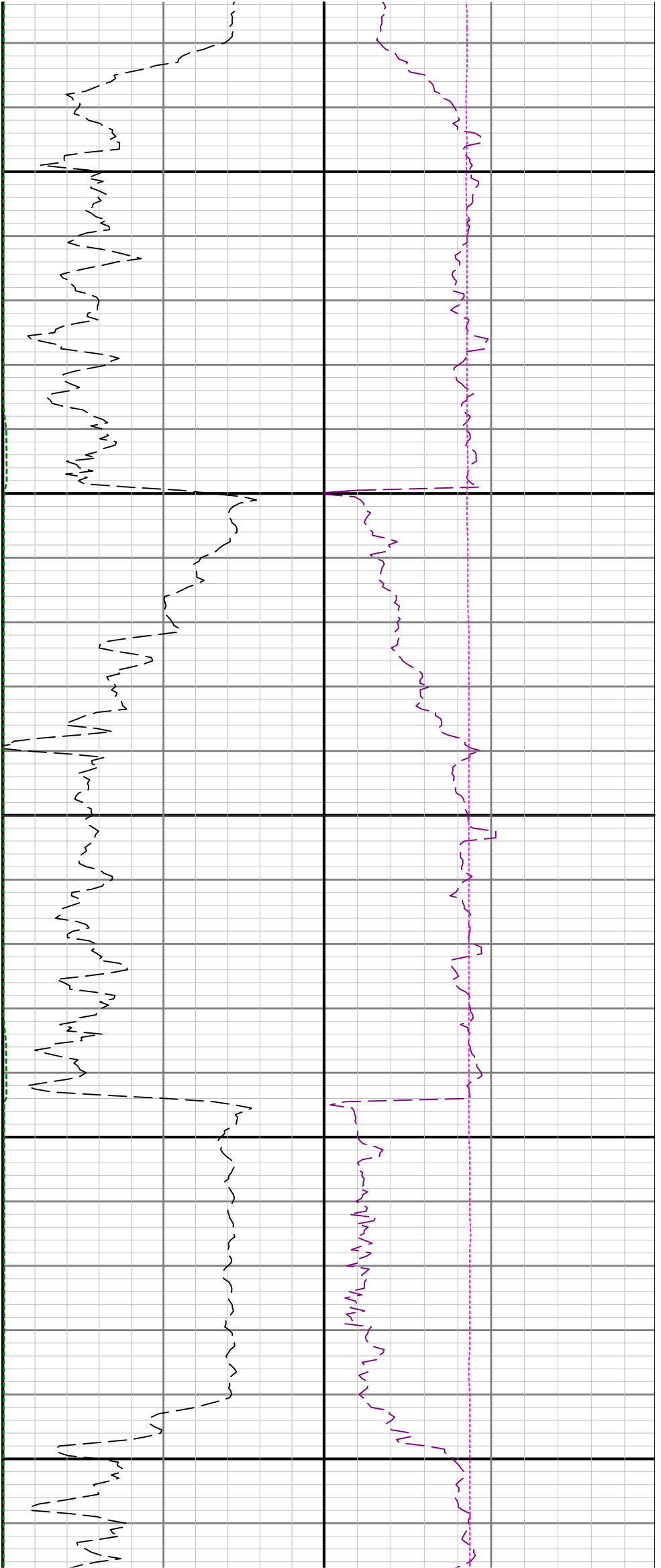




3300

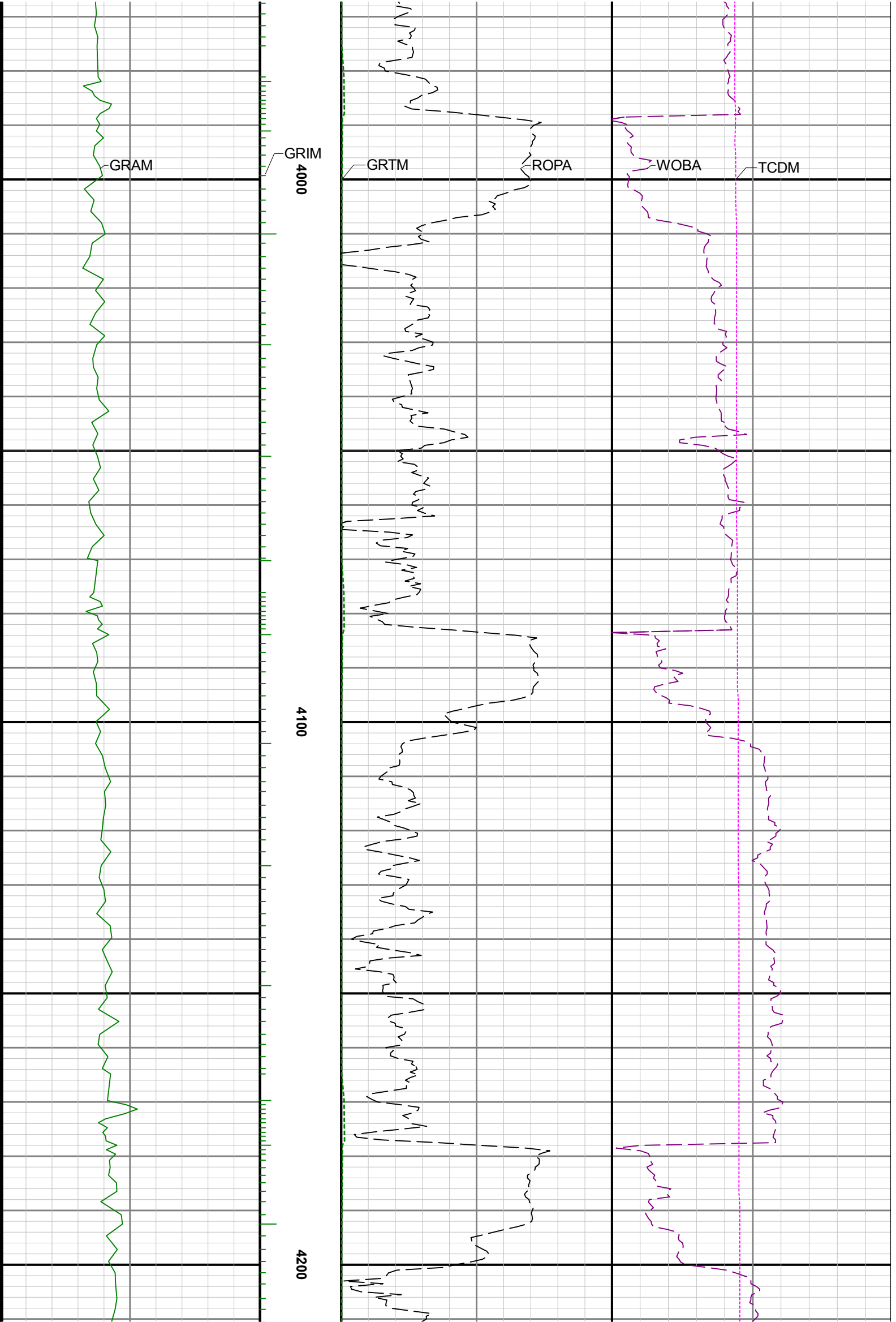
3400

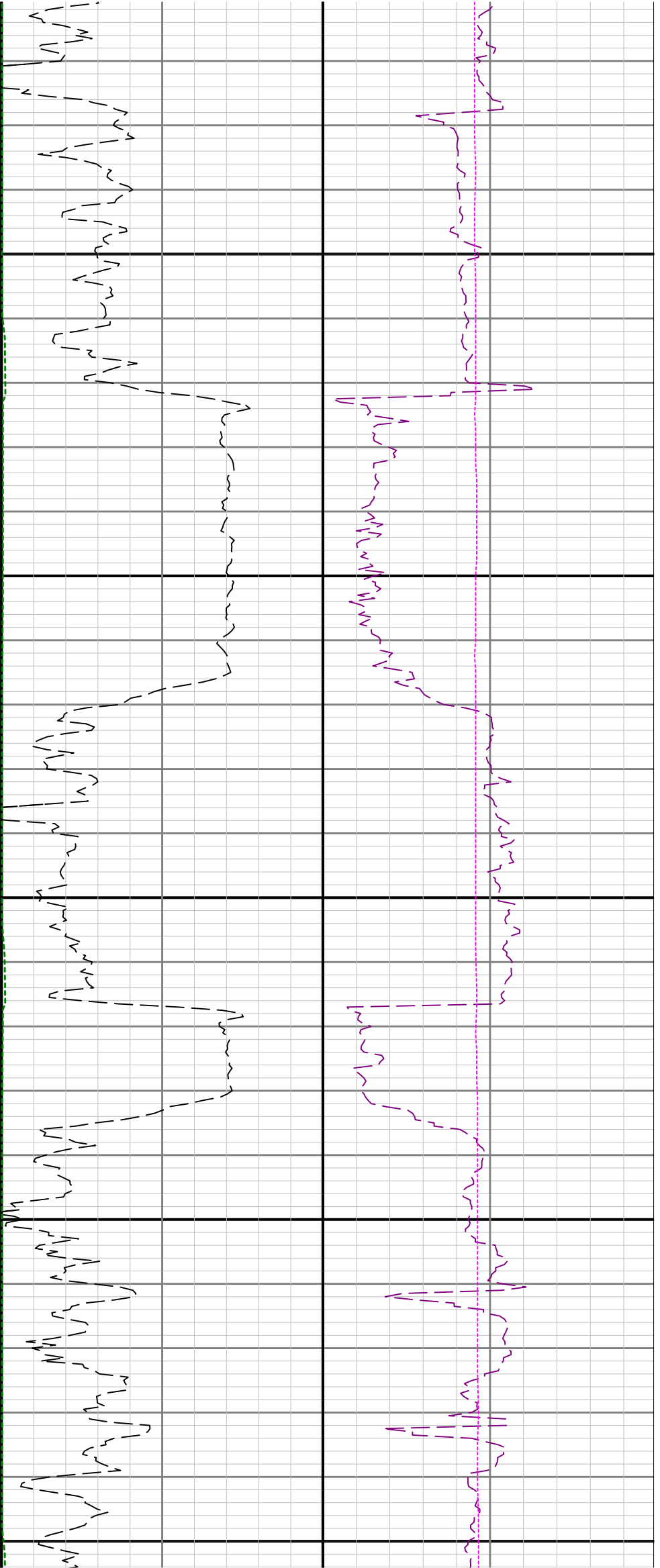




3800

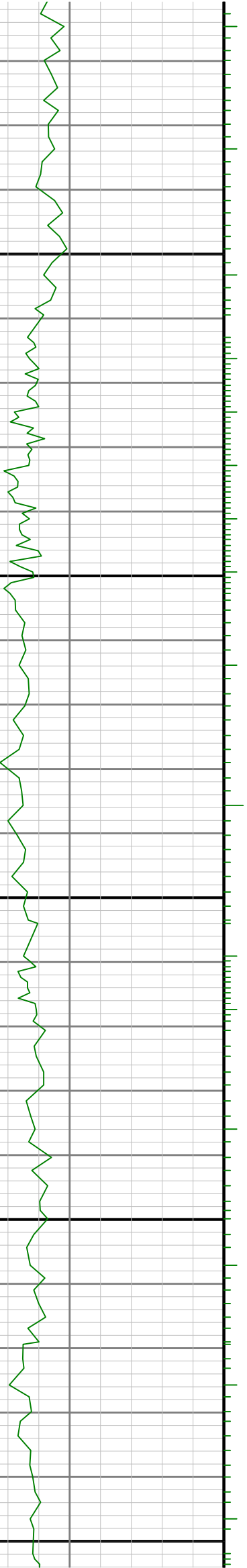
3900

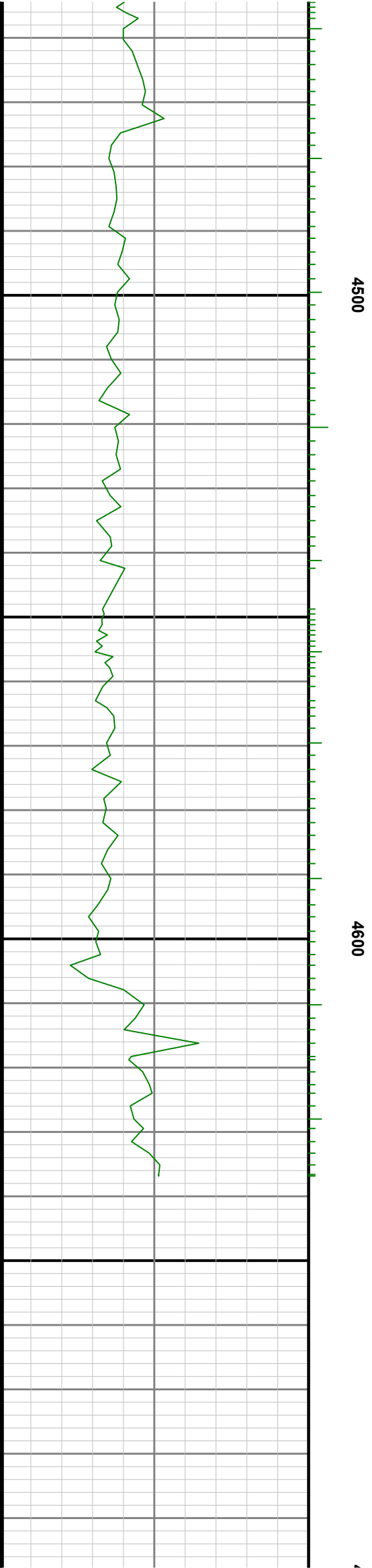
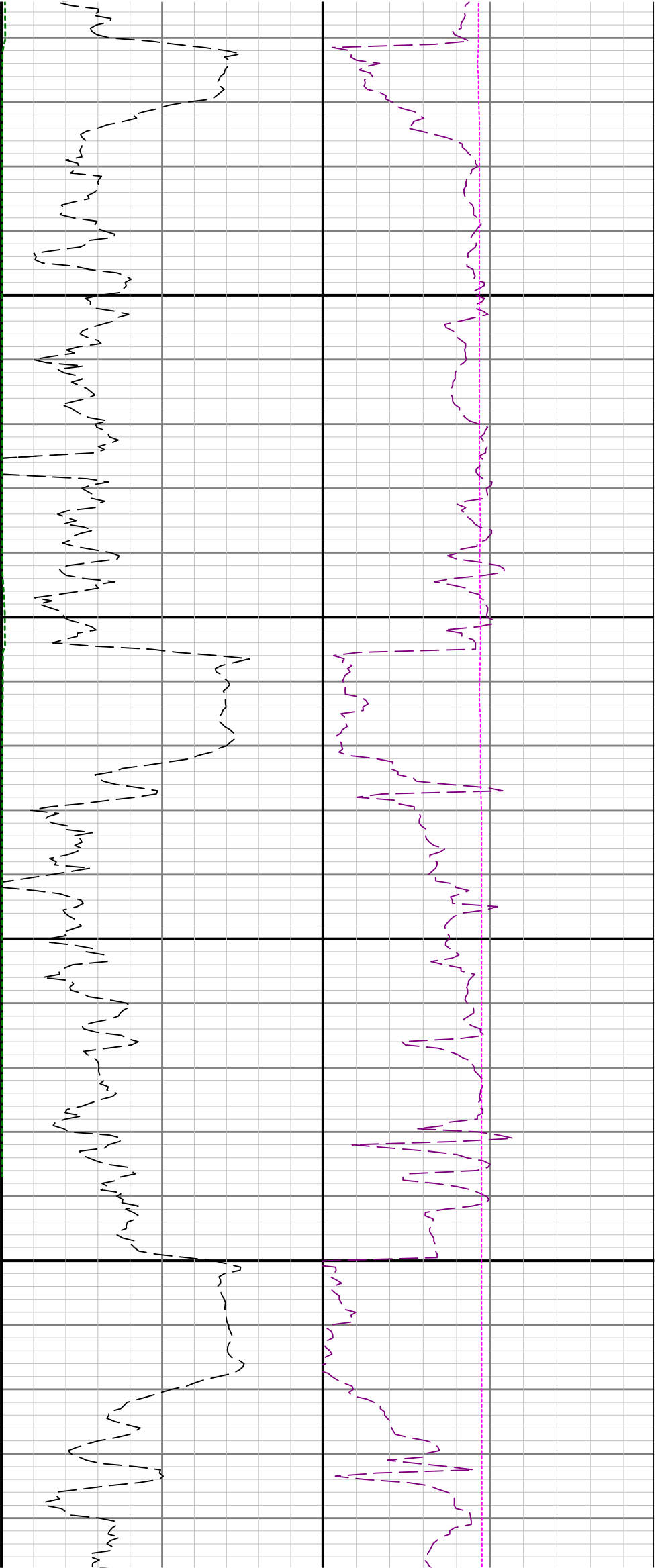


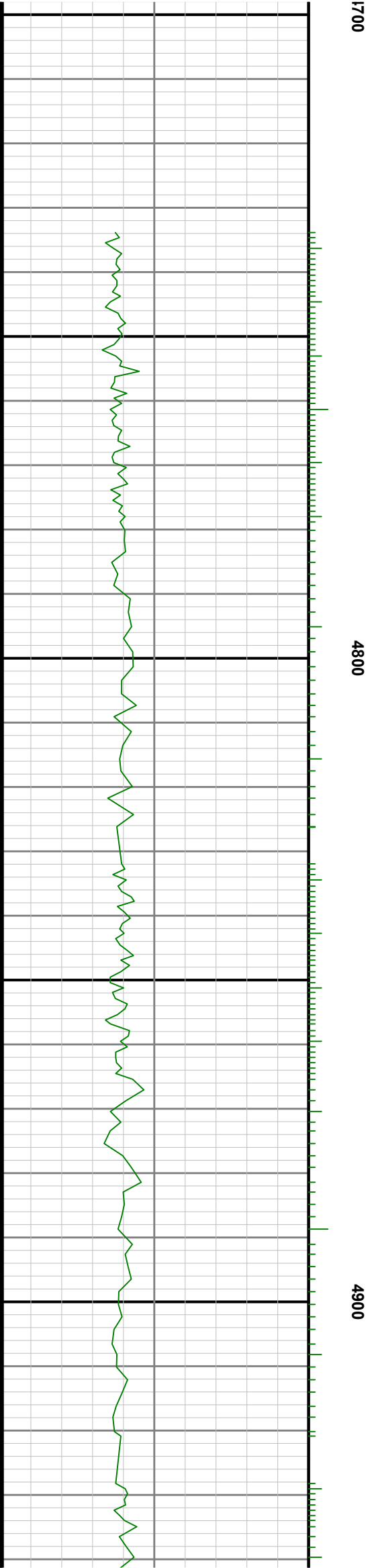
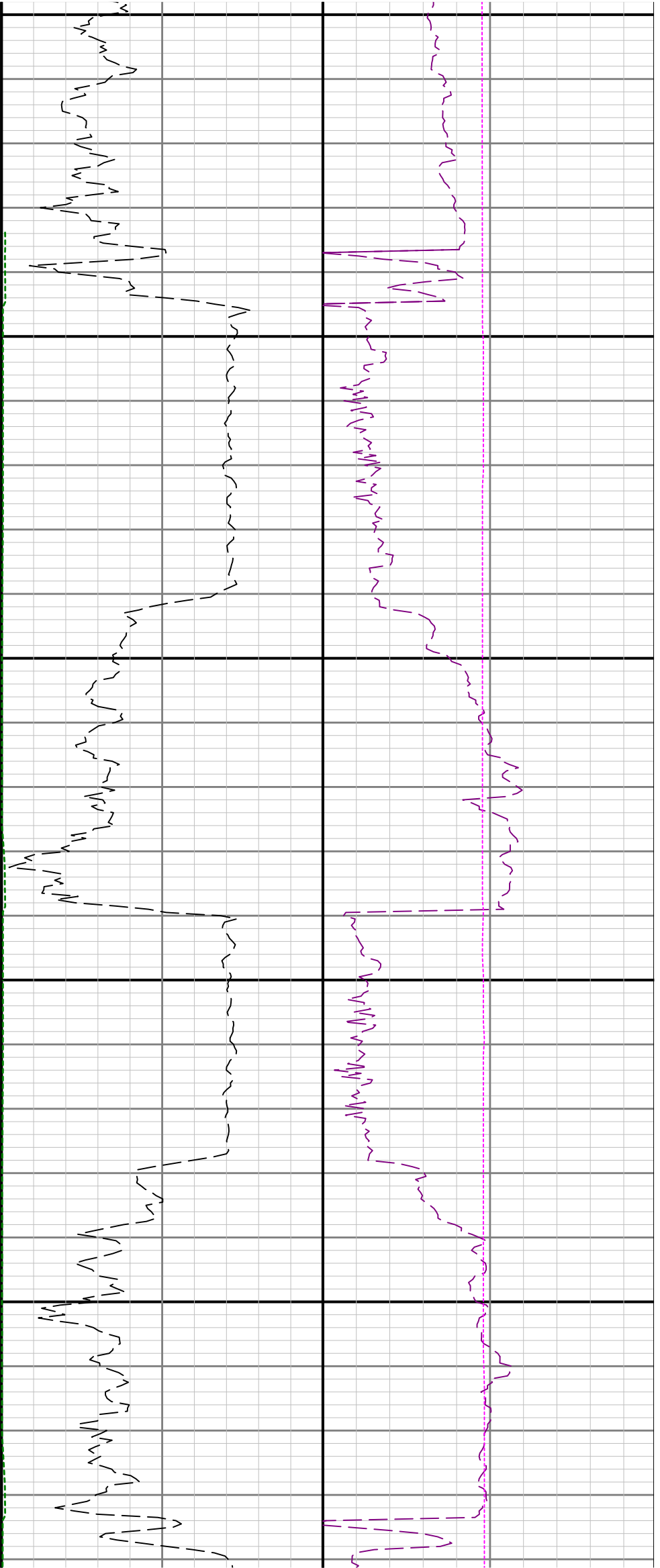


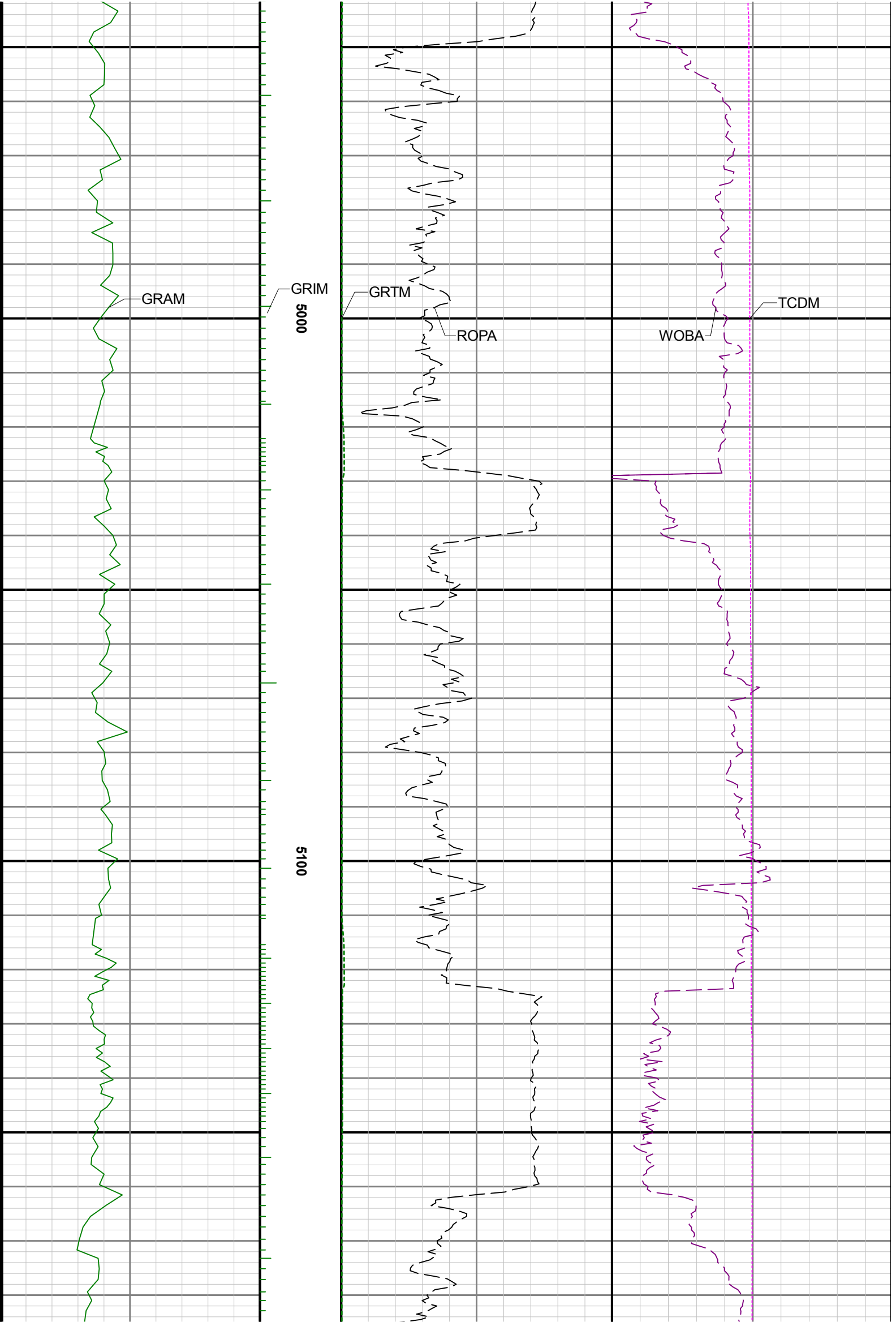
4300

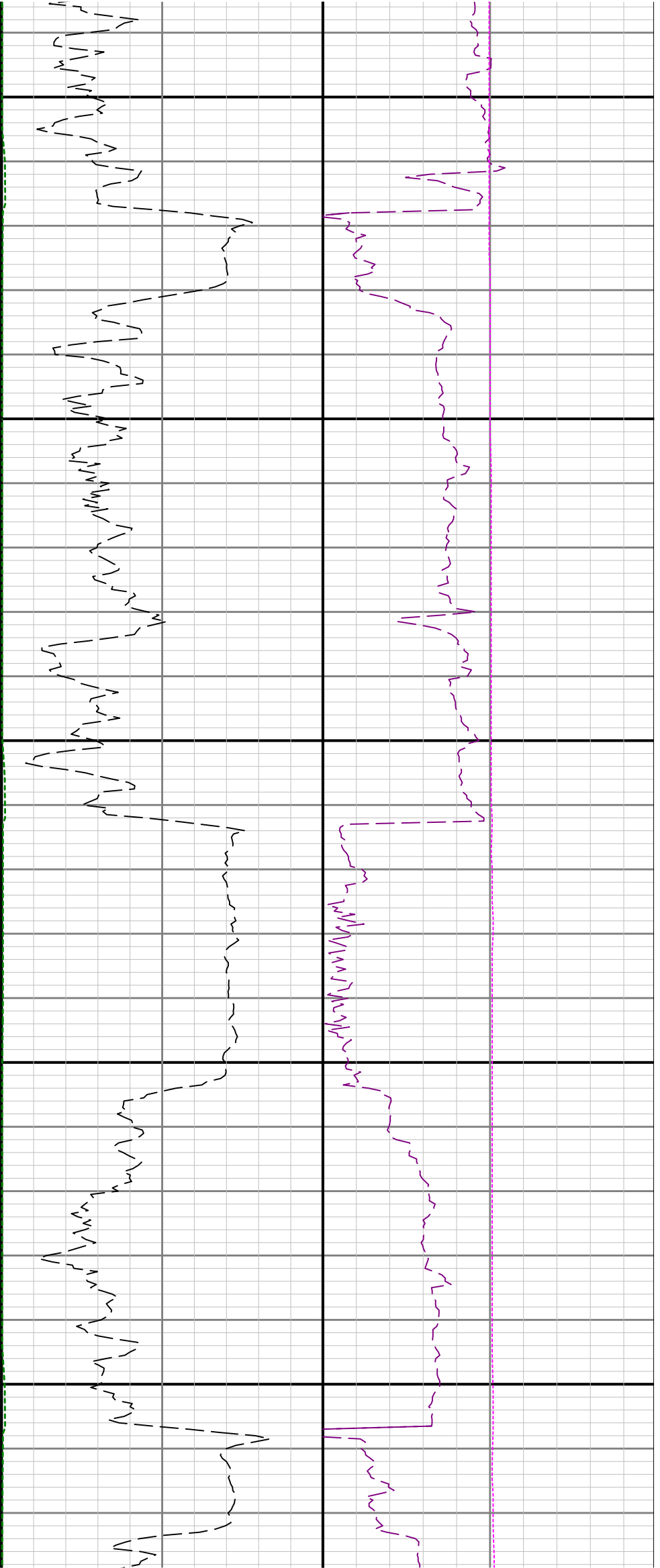
4400







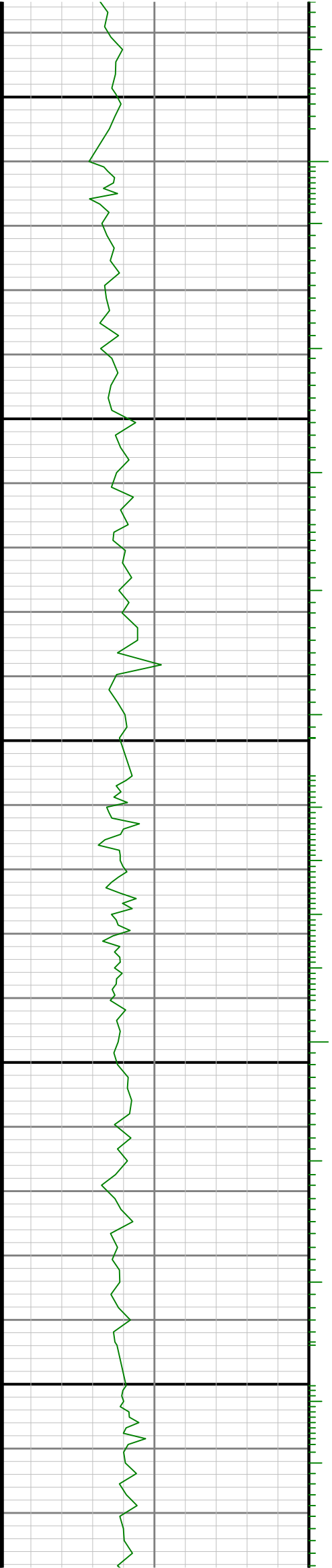


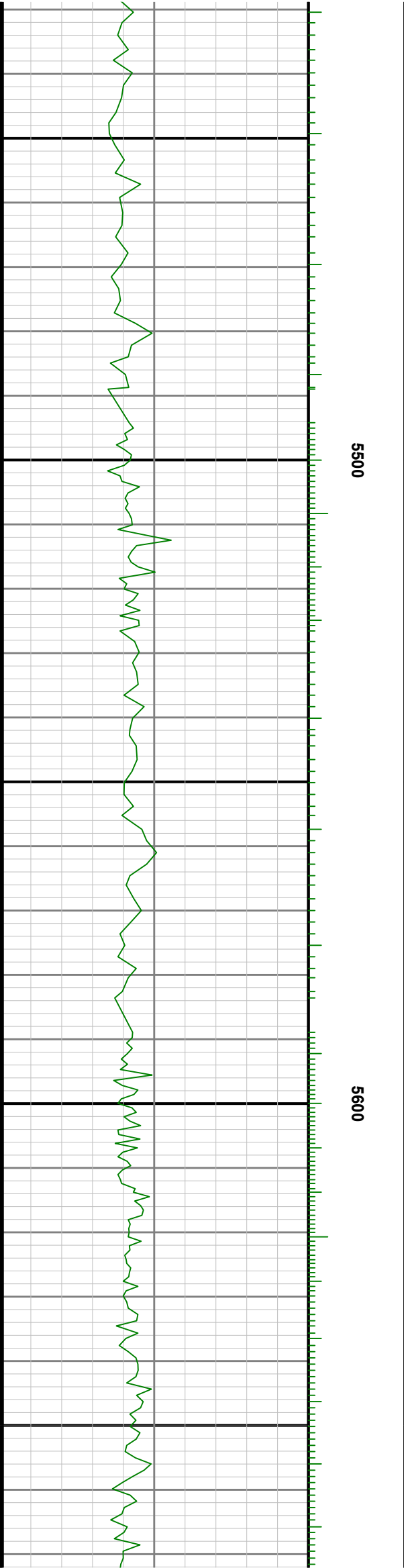
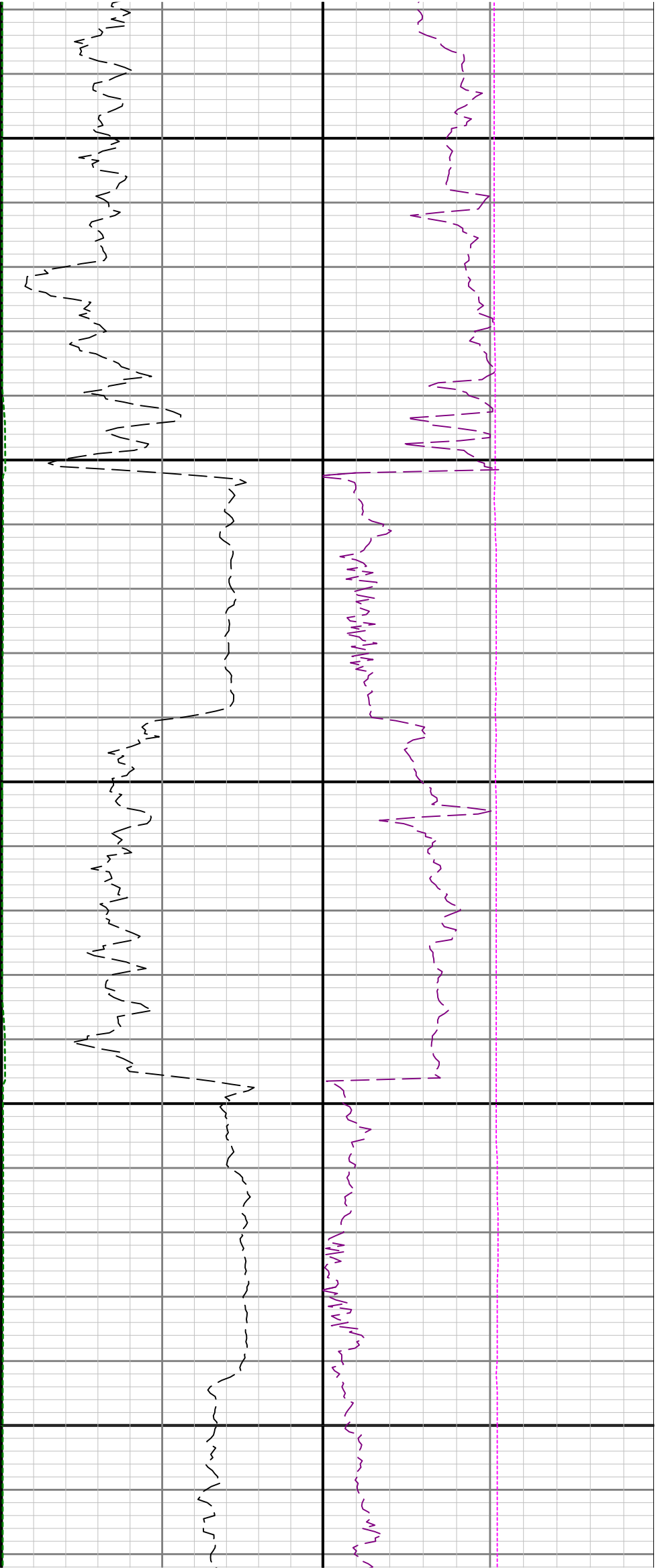


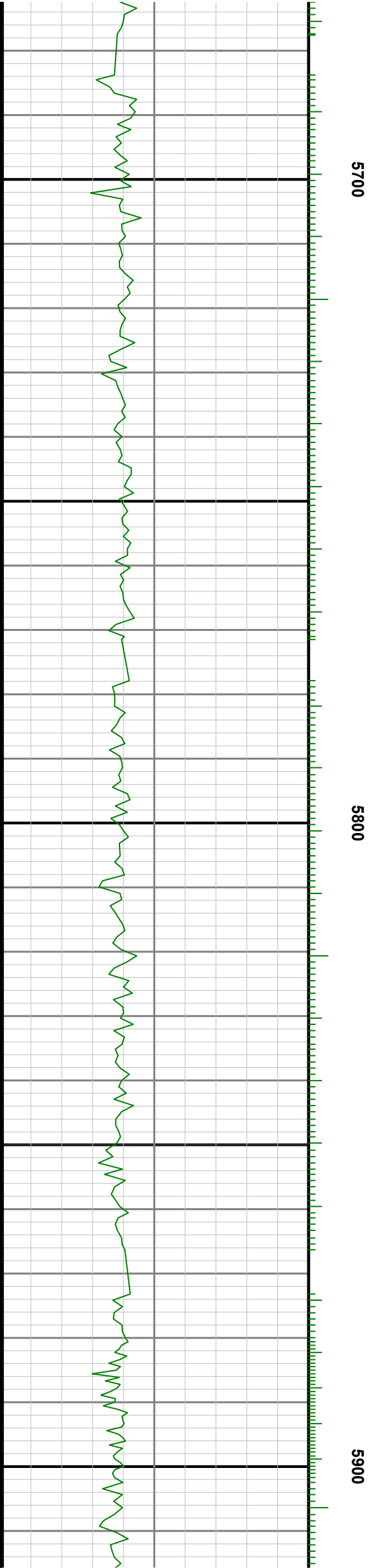
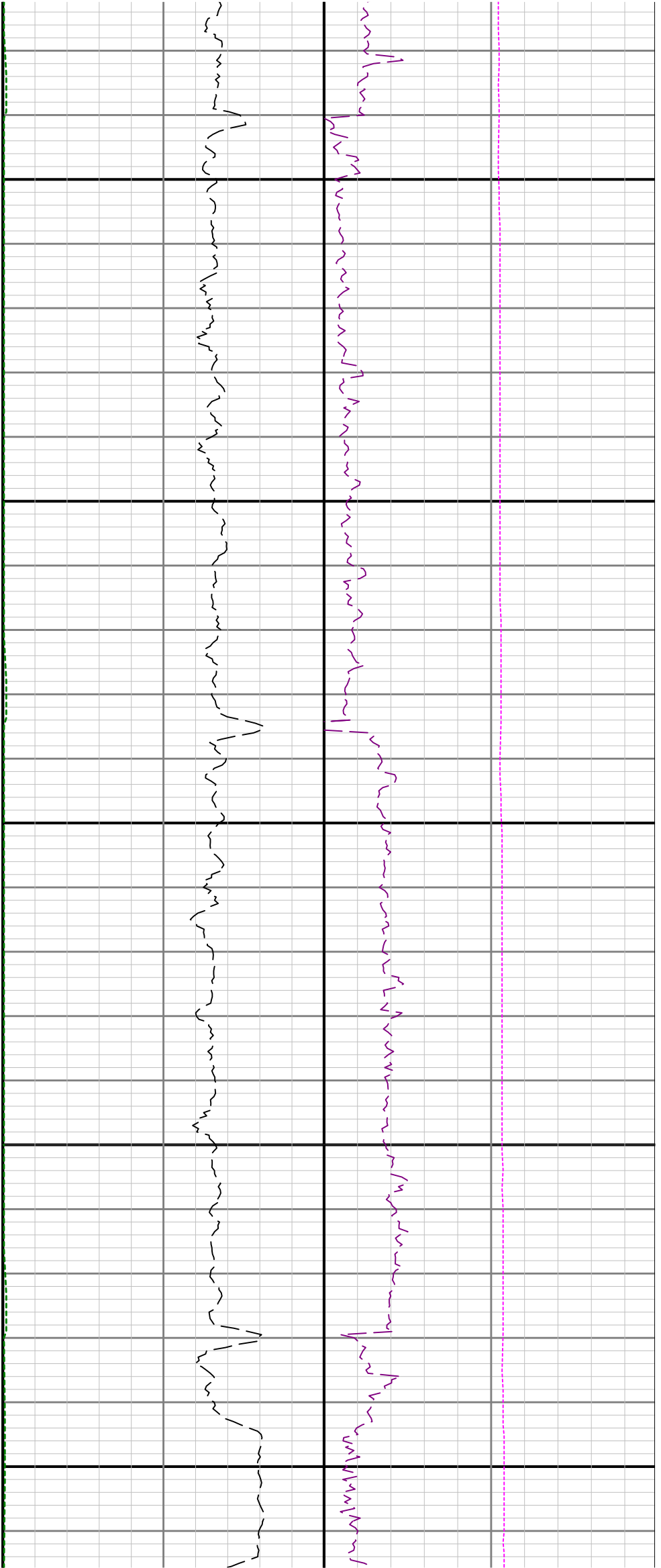
5200

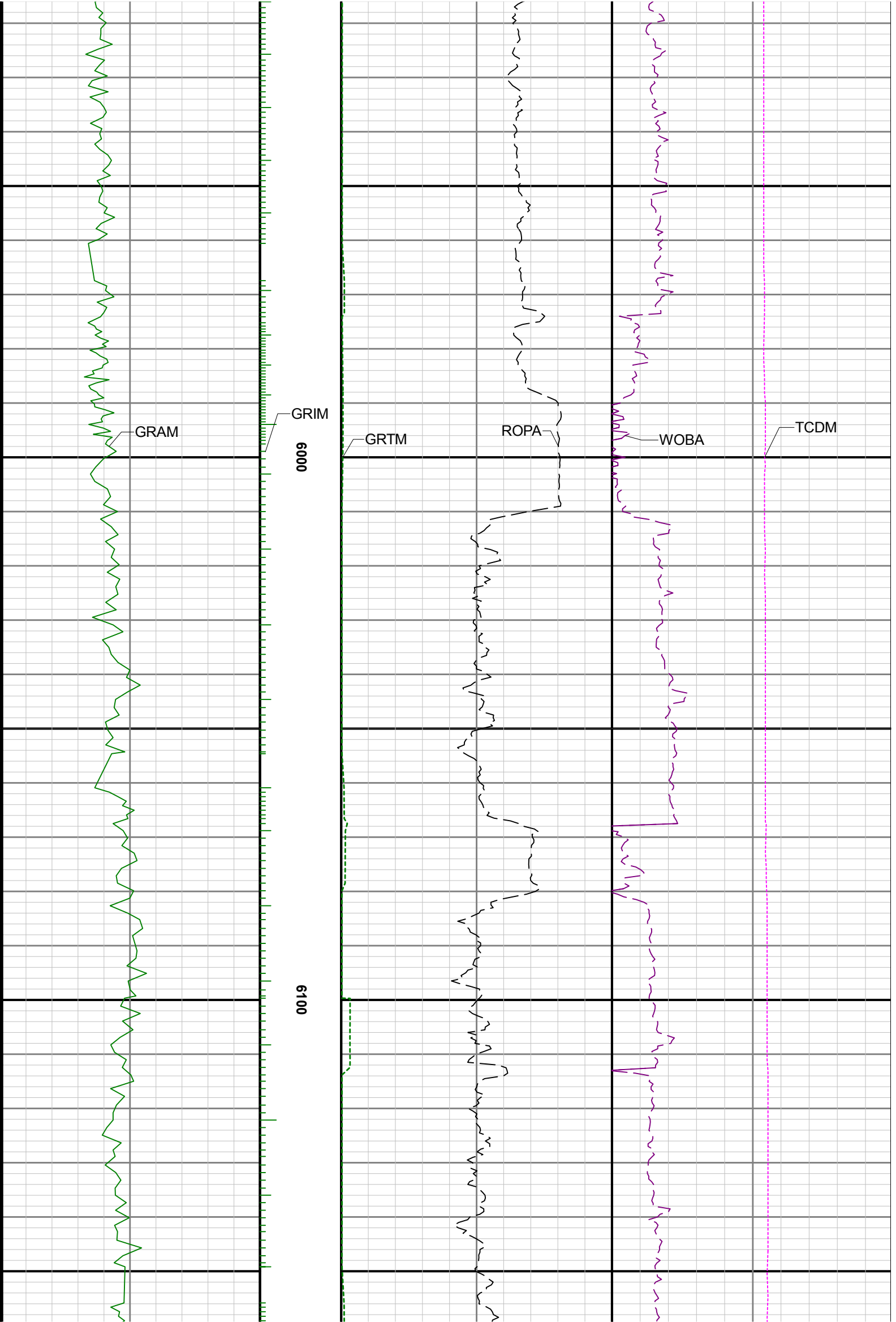
5300

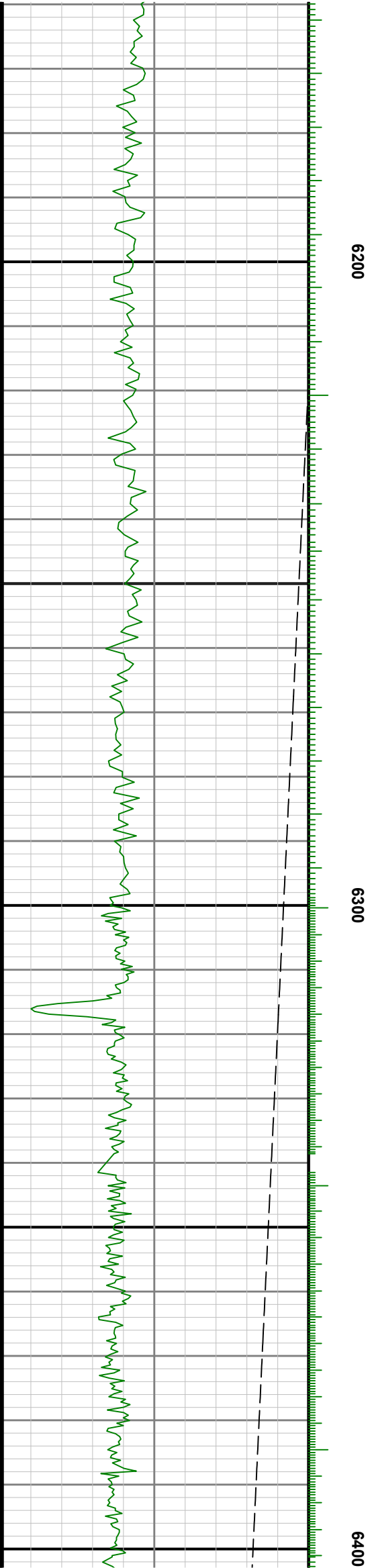
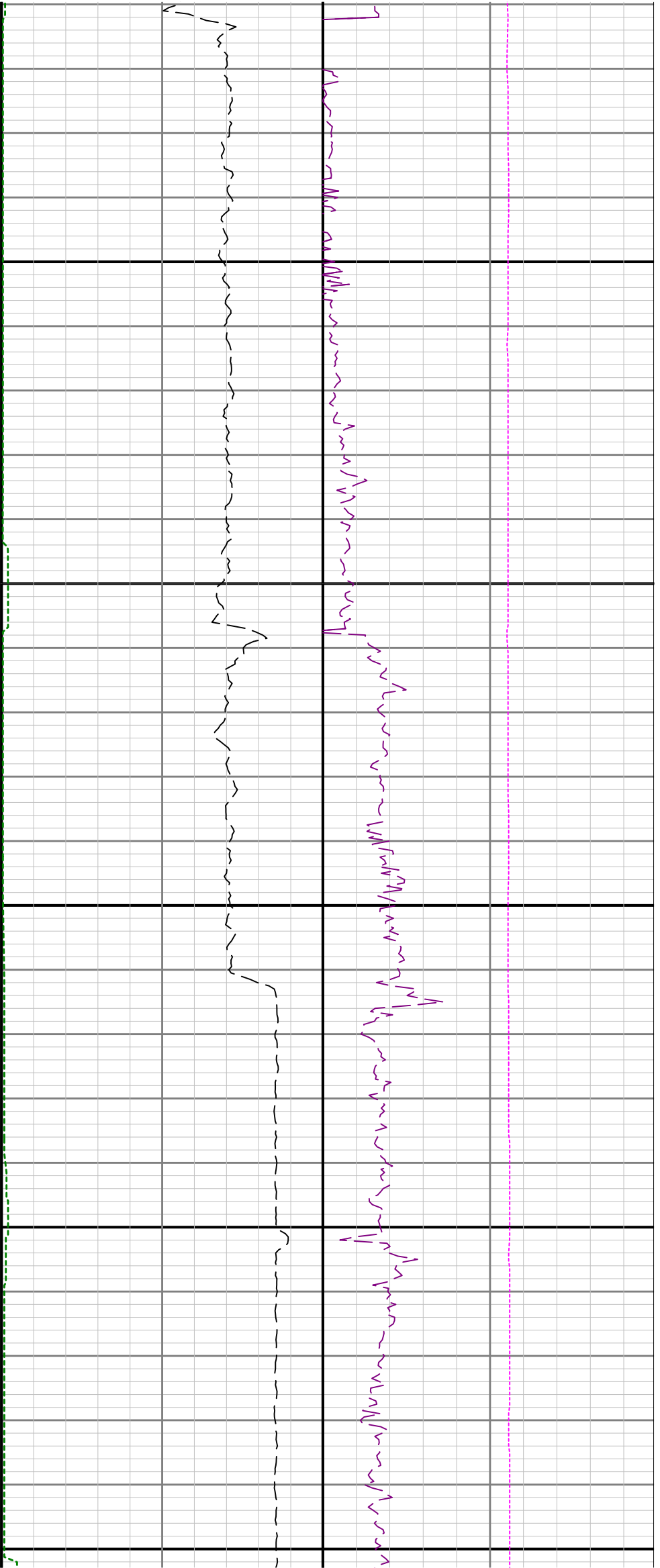
5400

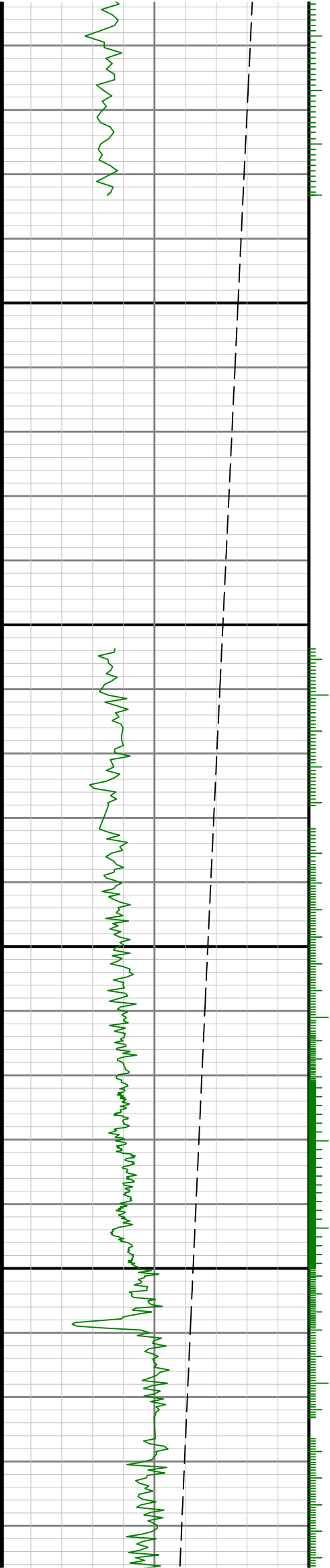






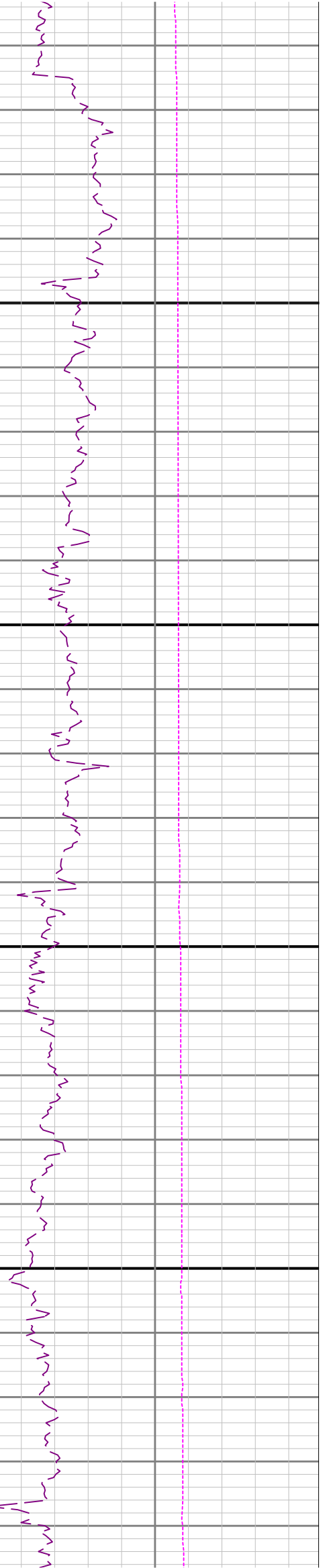
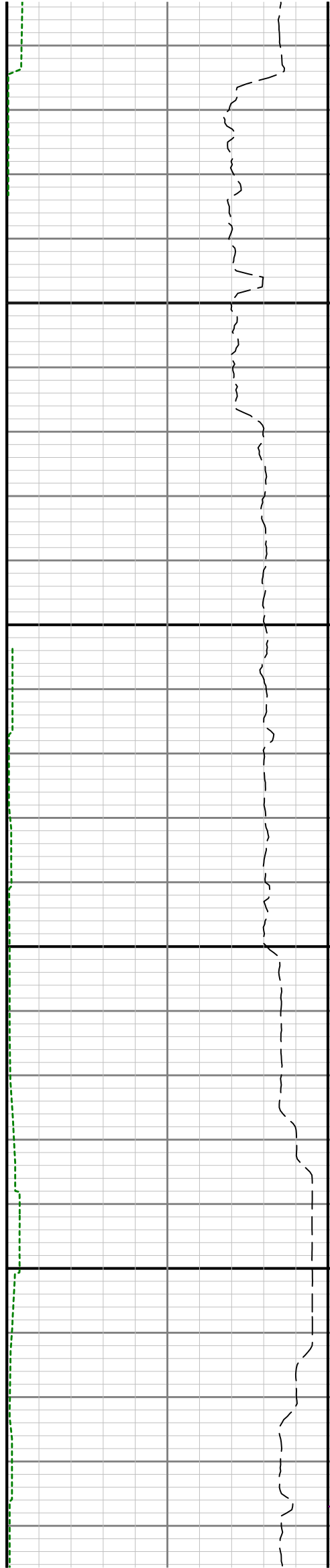


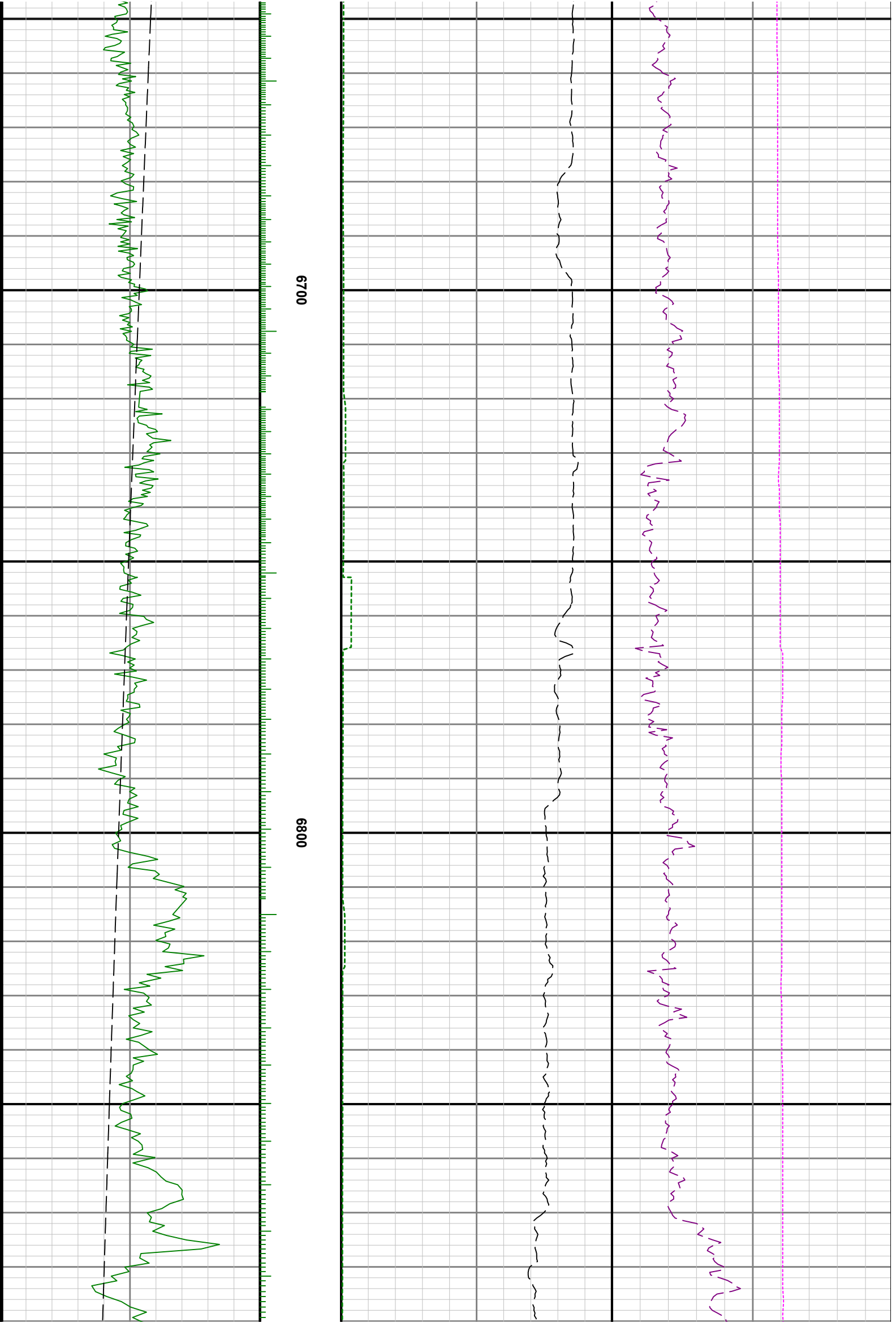


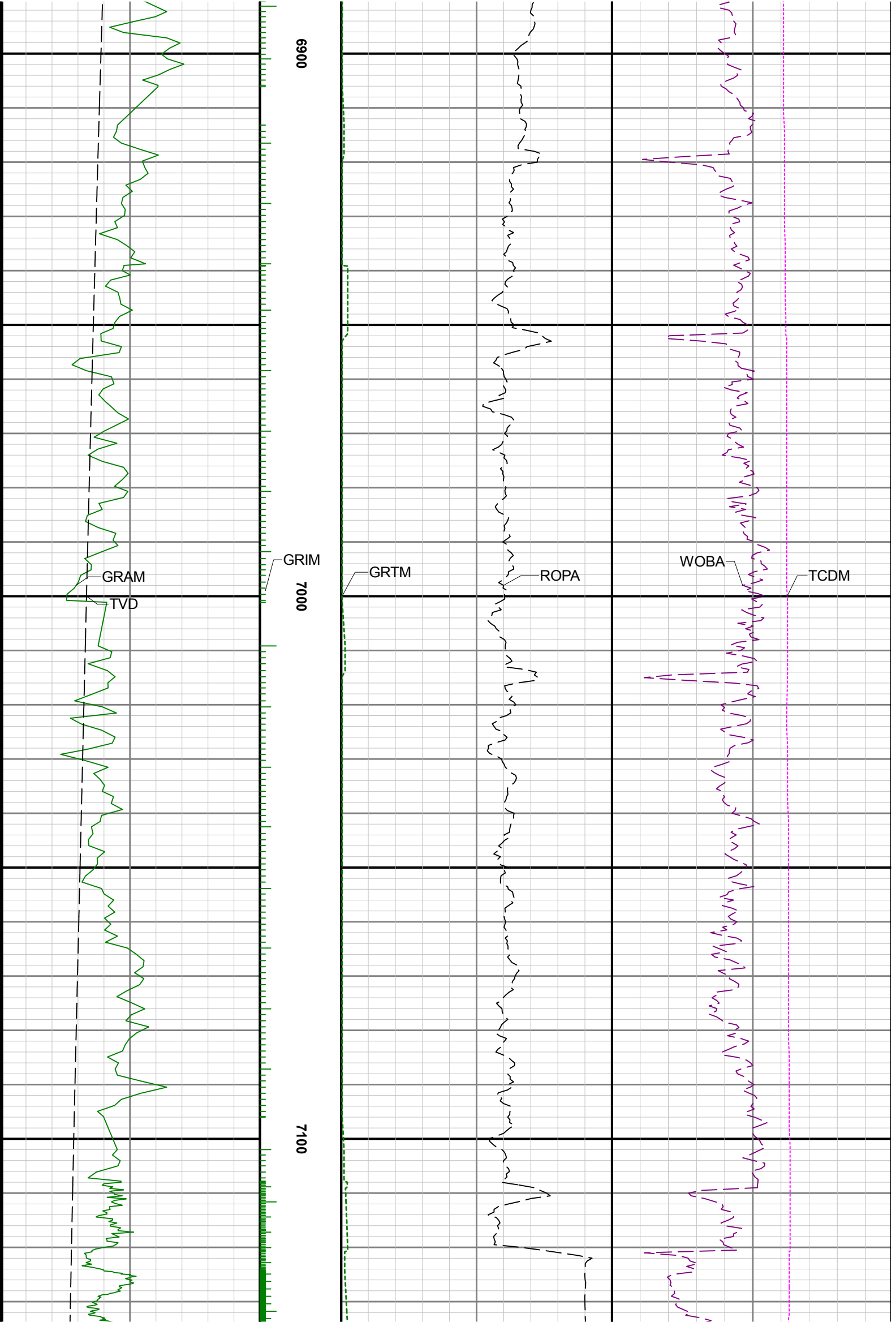


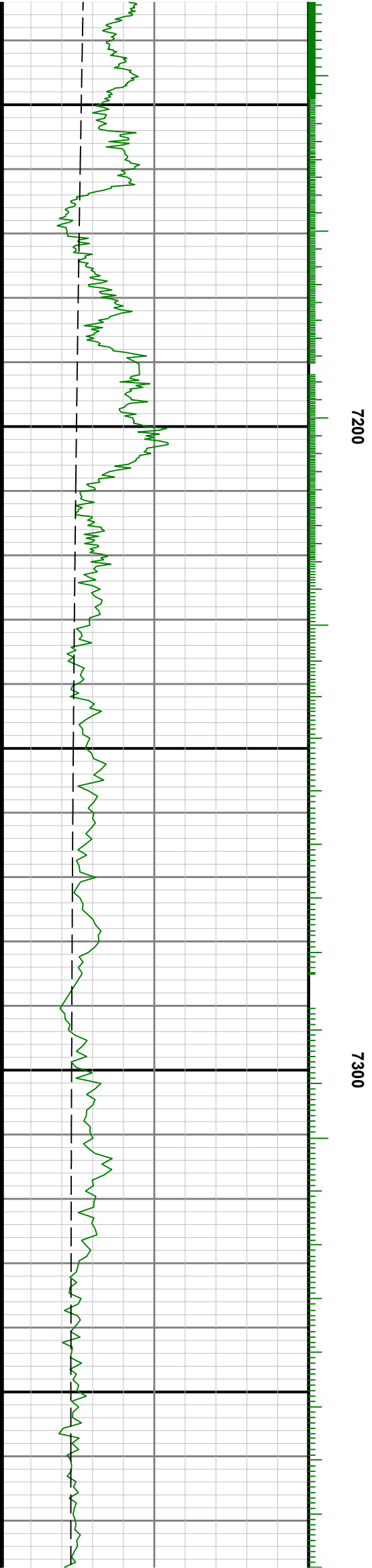
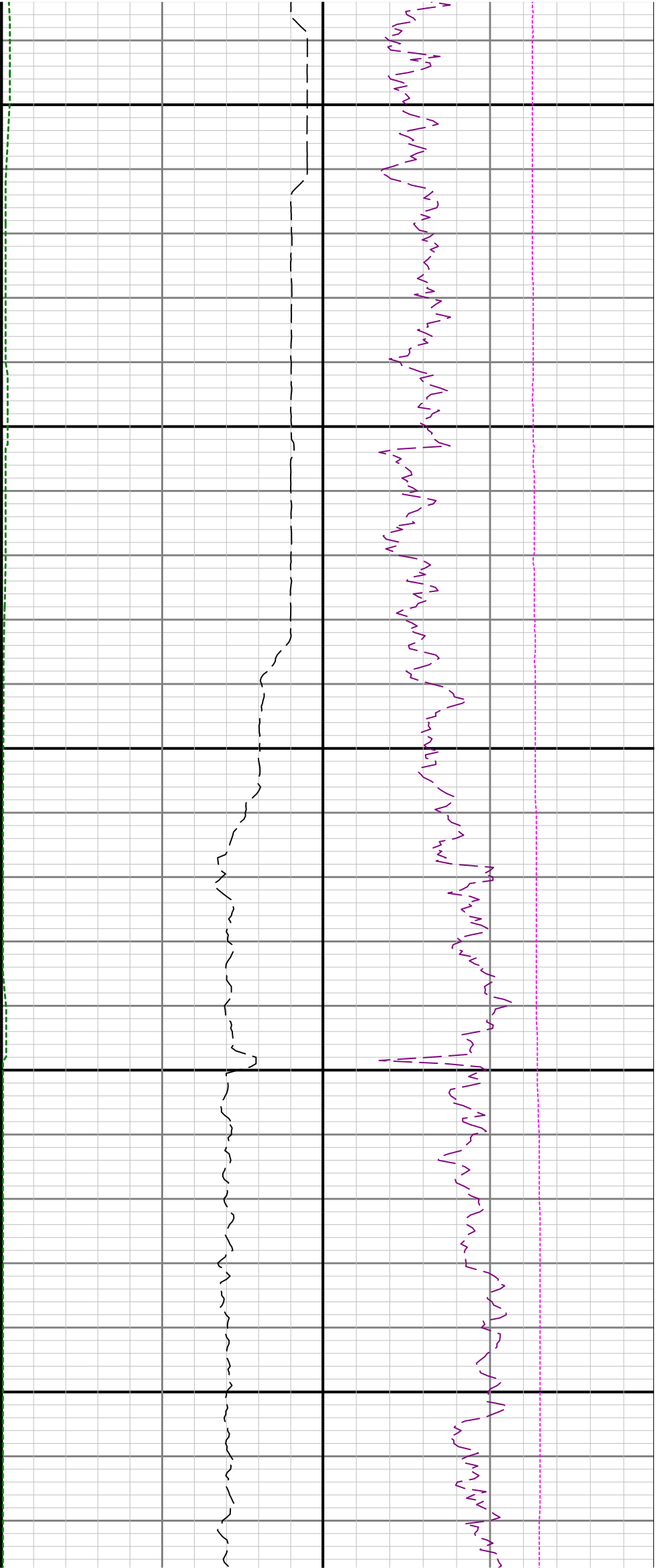
0099

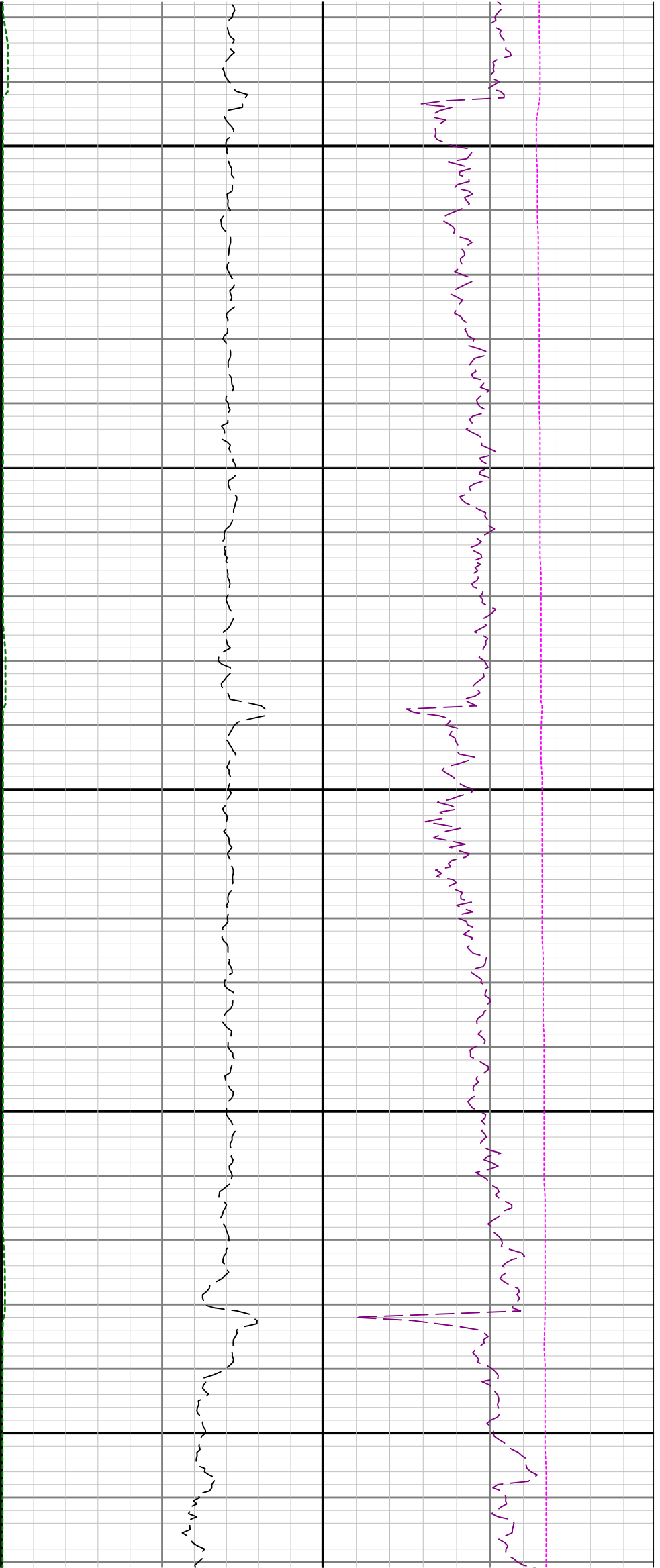
6500







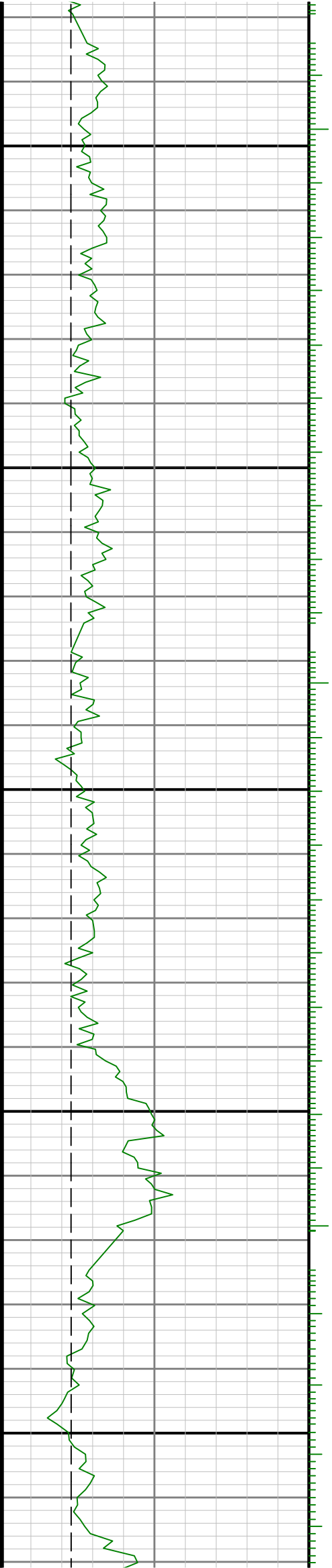


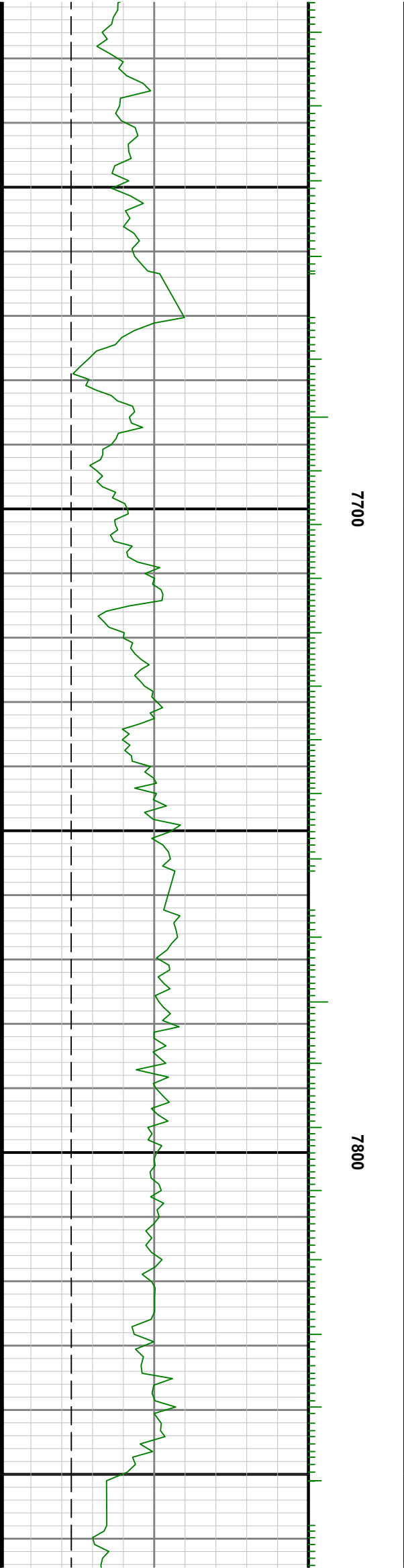
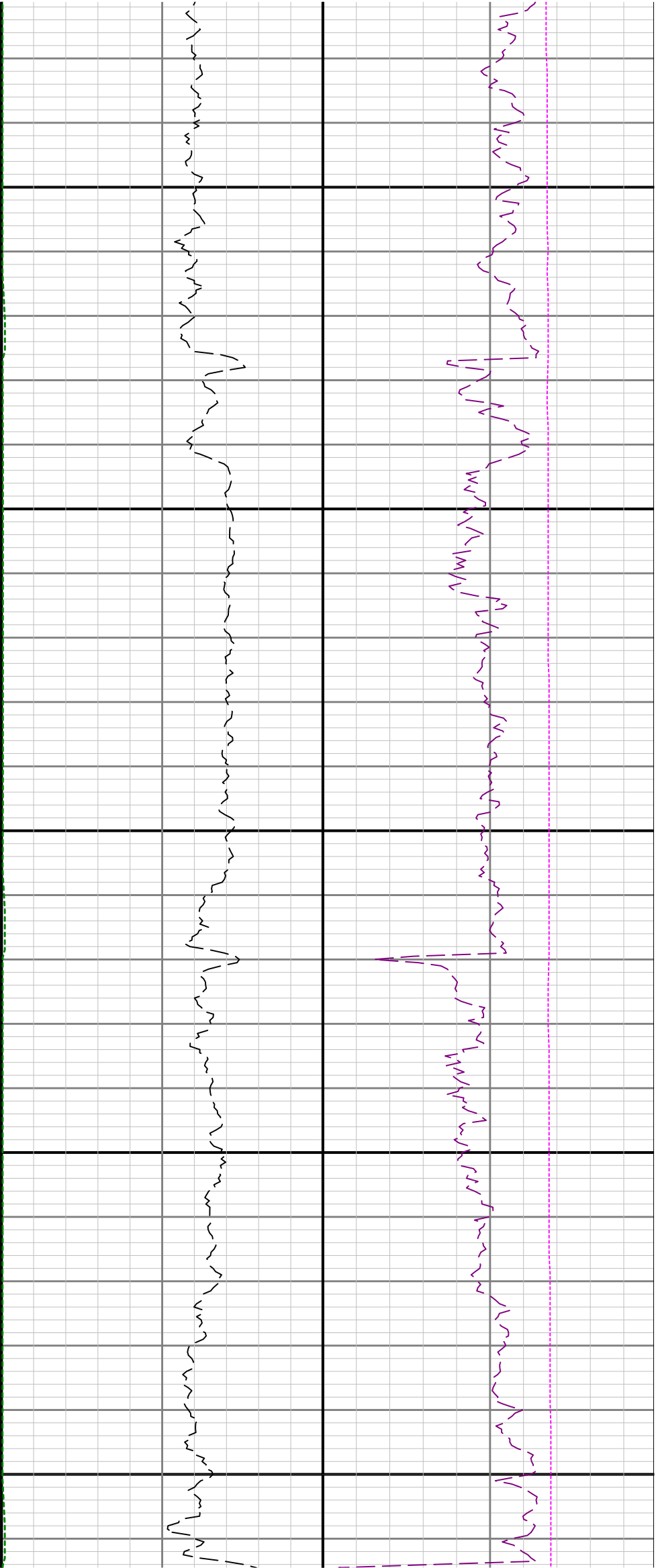


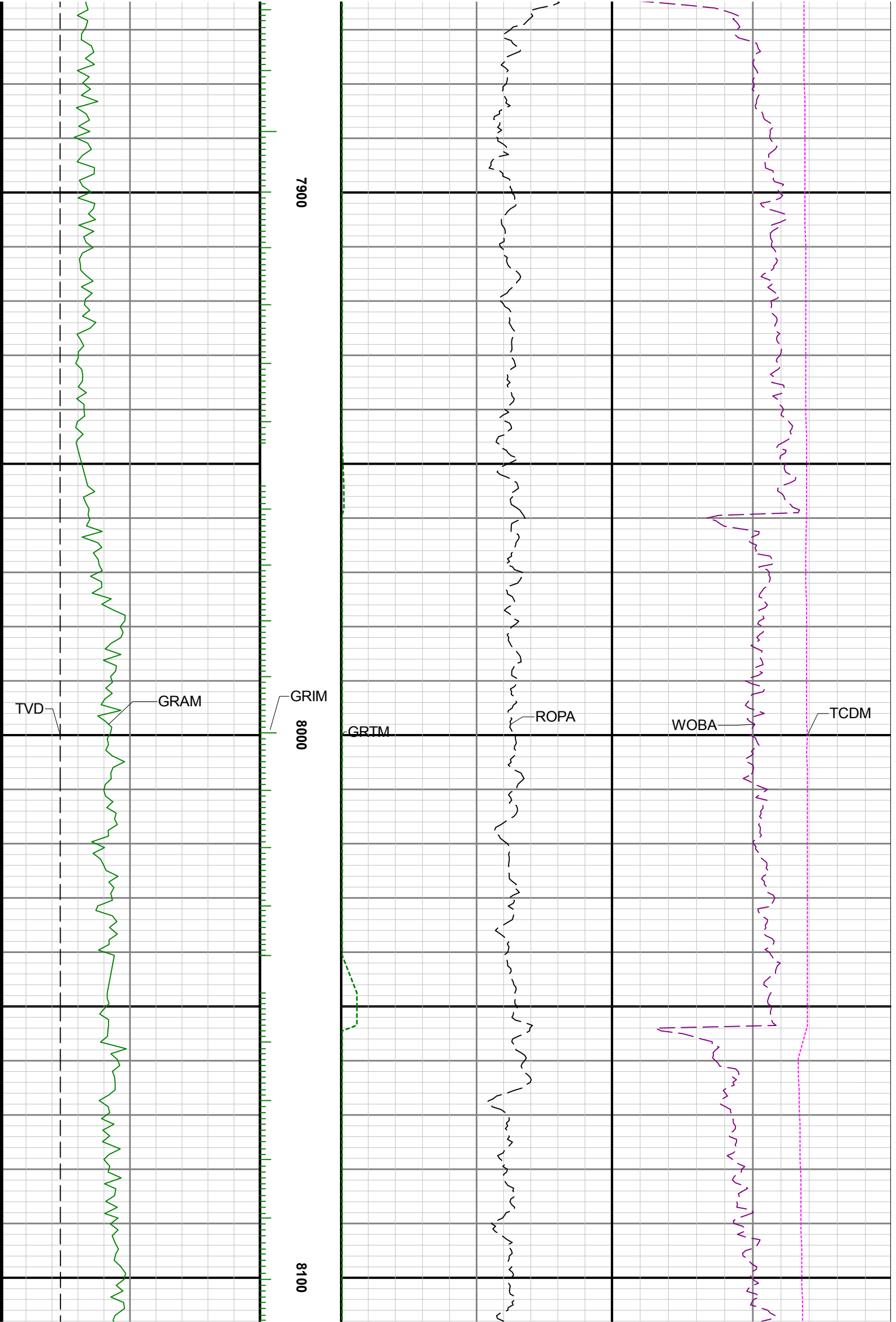
7400

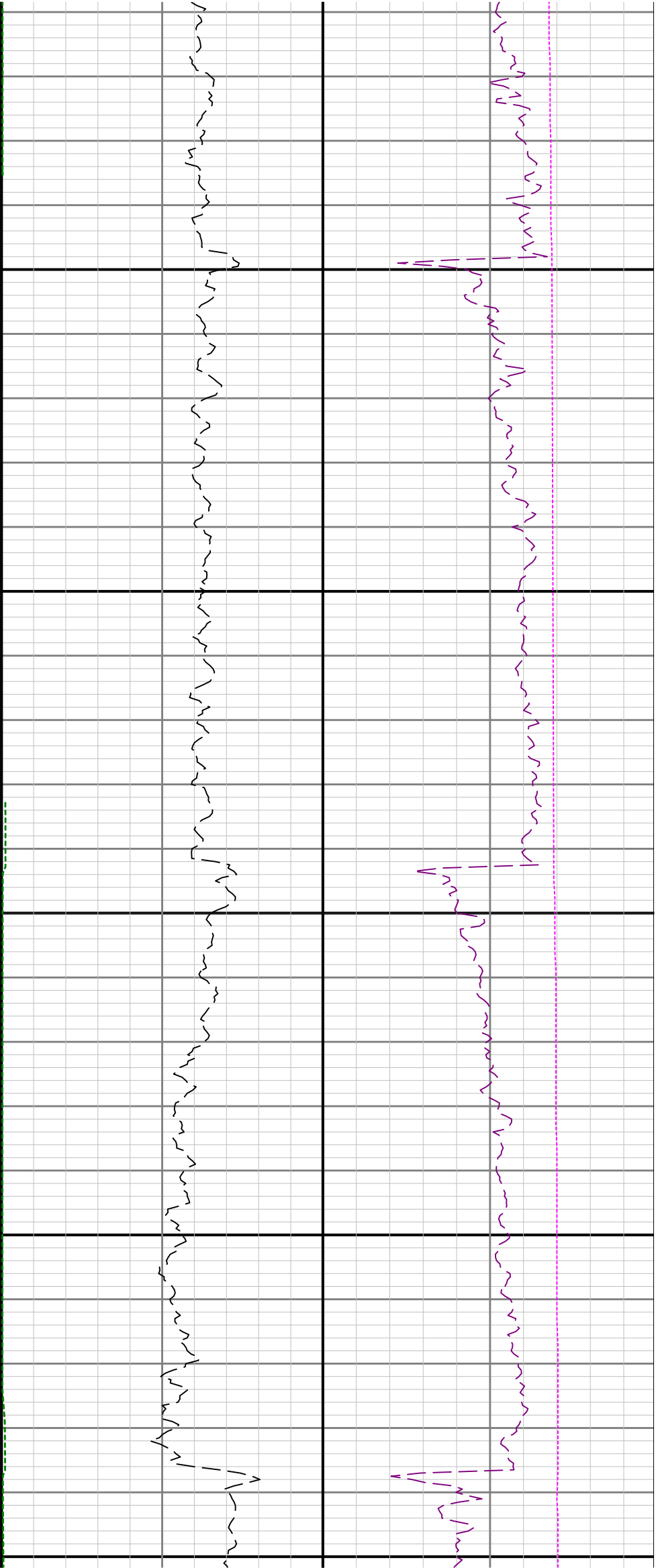
7500

7600



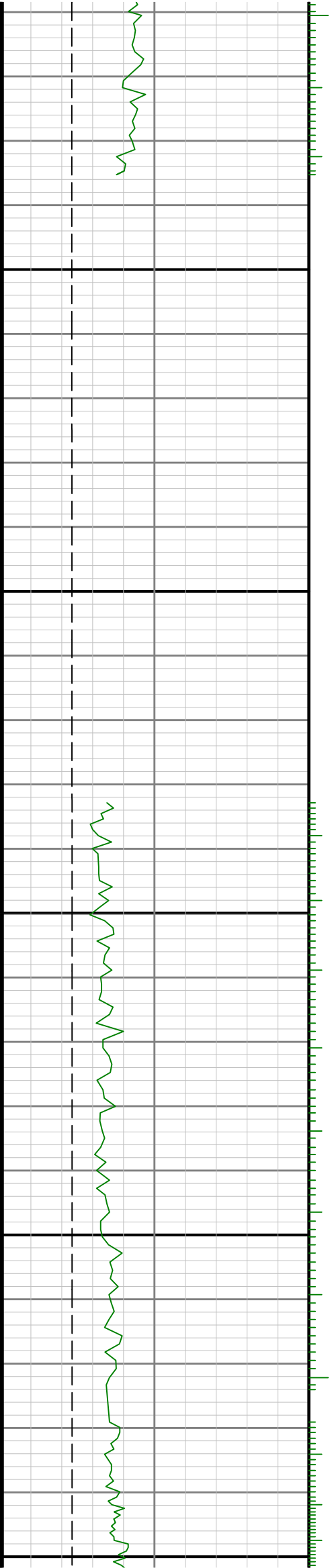


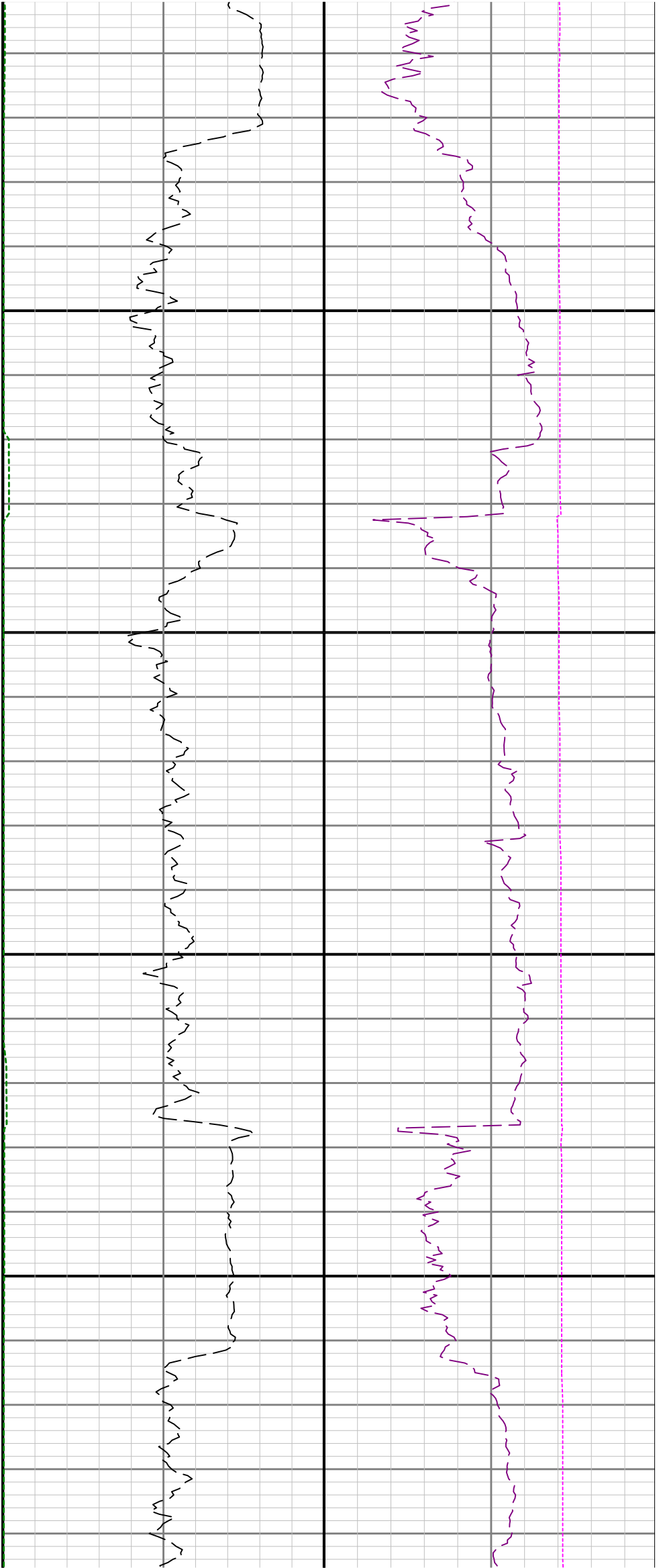




8200

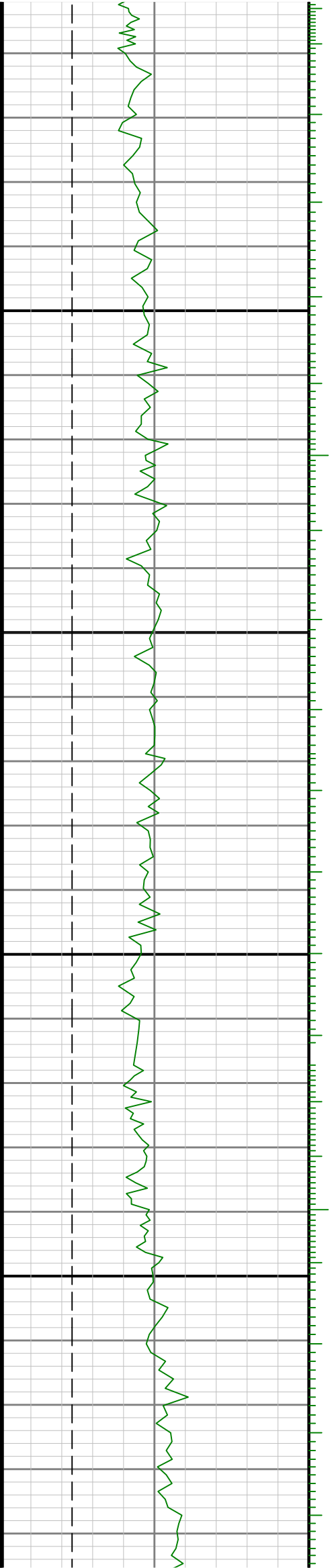
8300

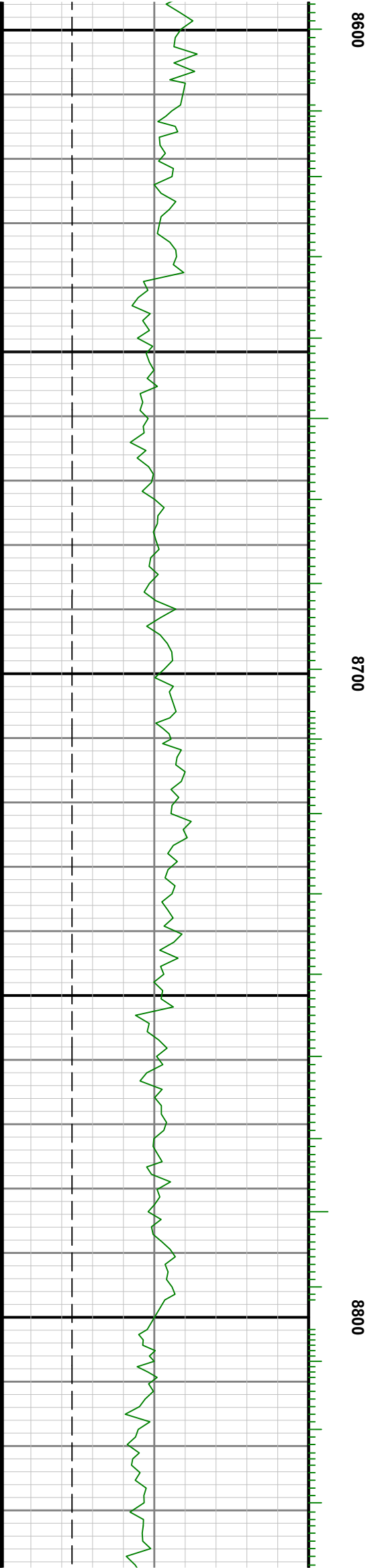
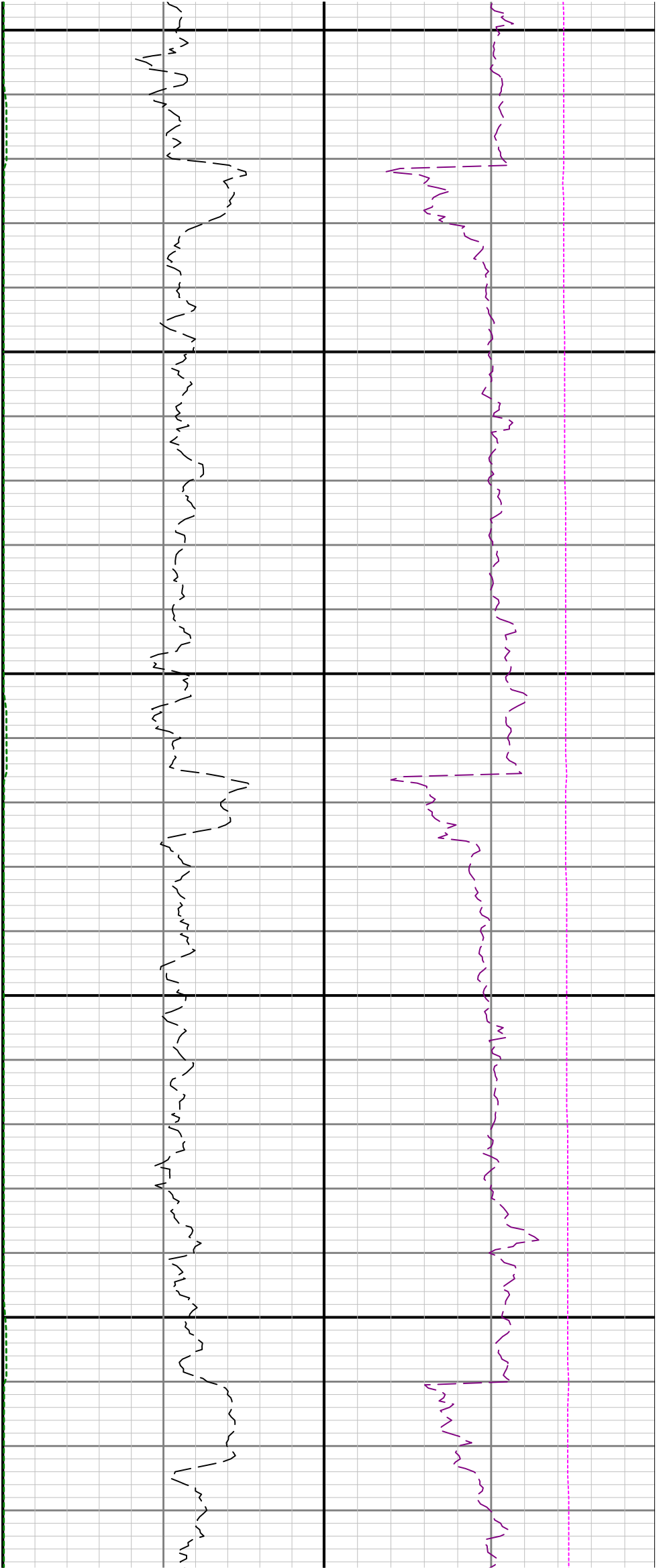


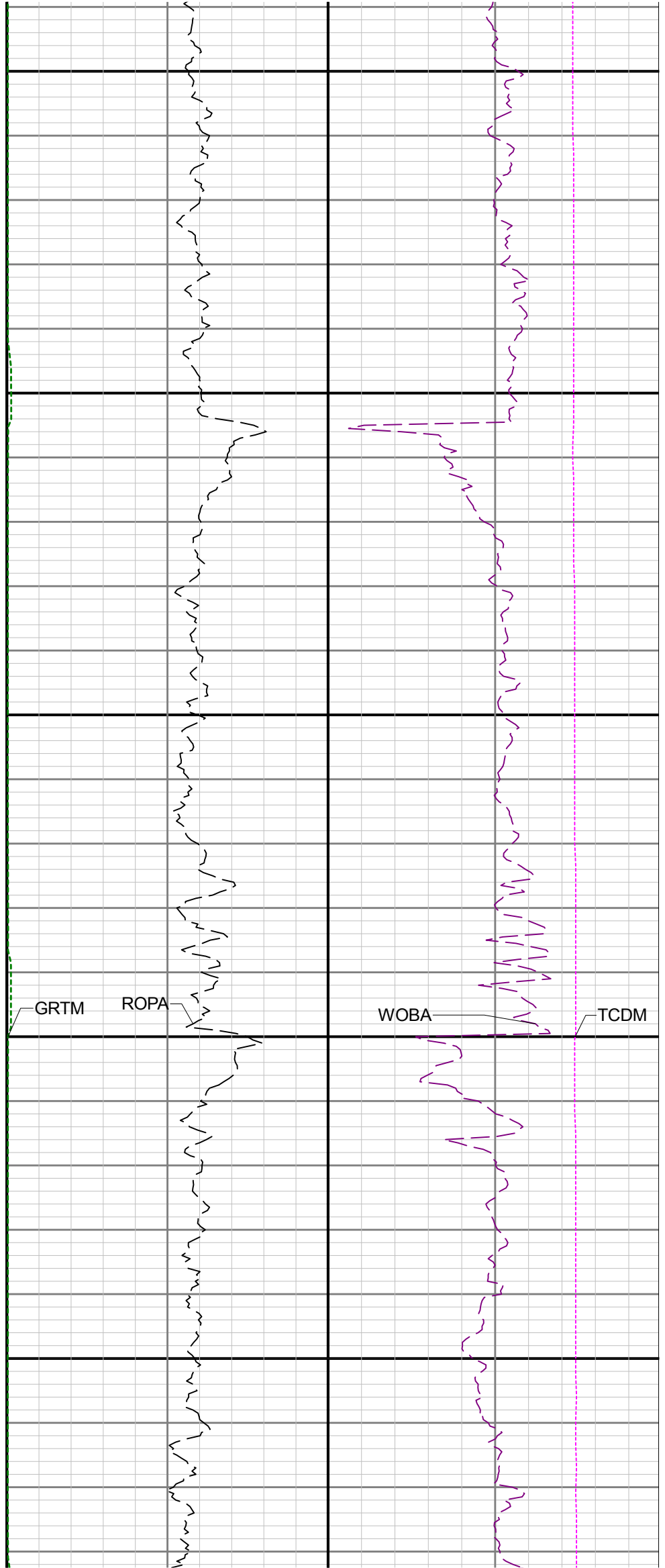
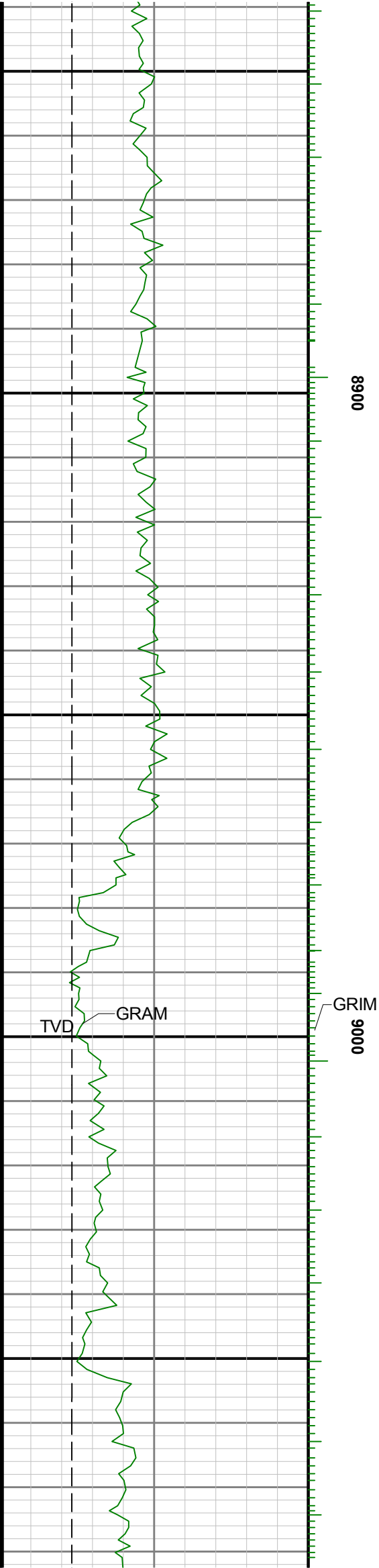


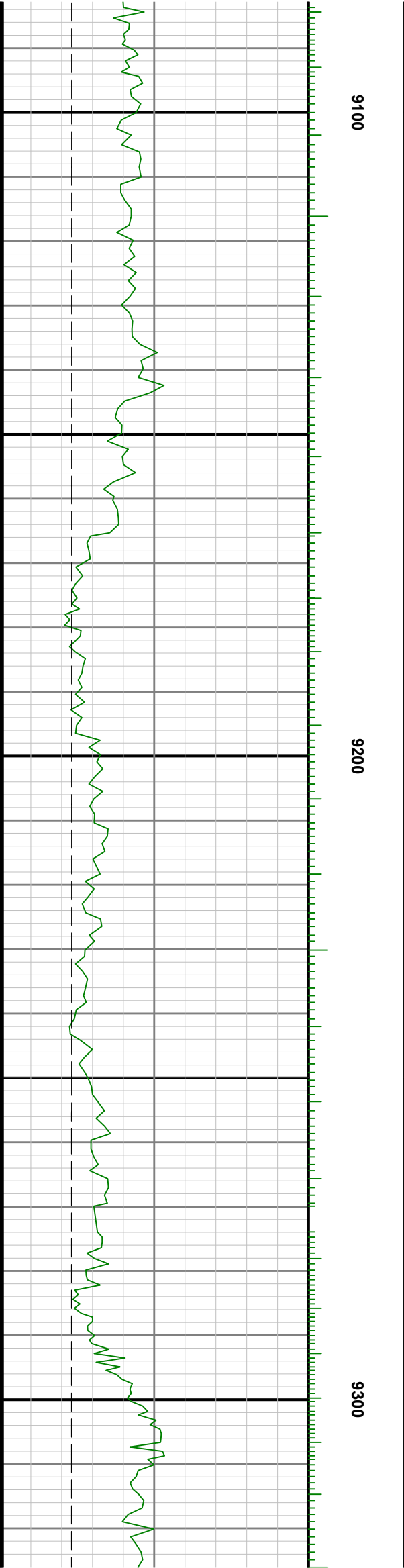
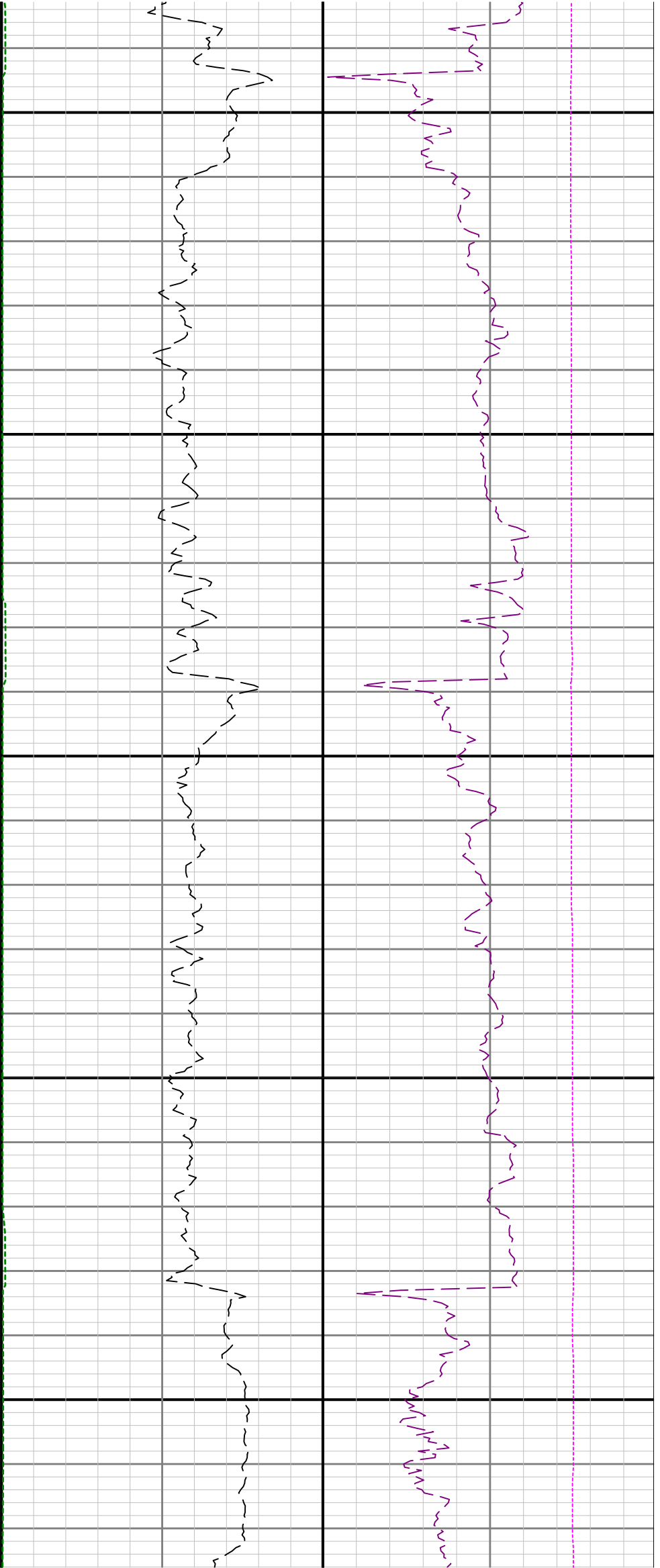
8400

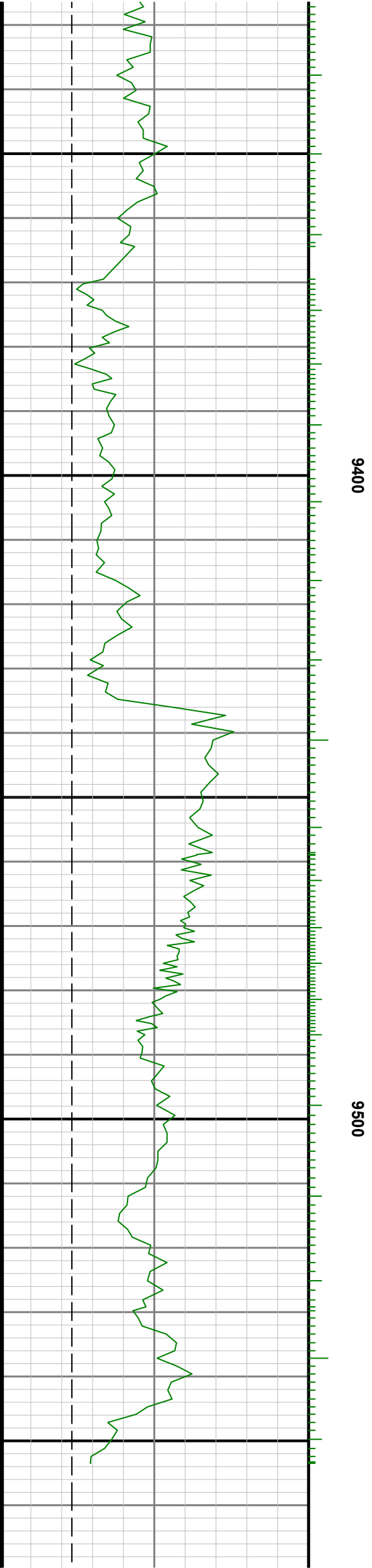
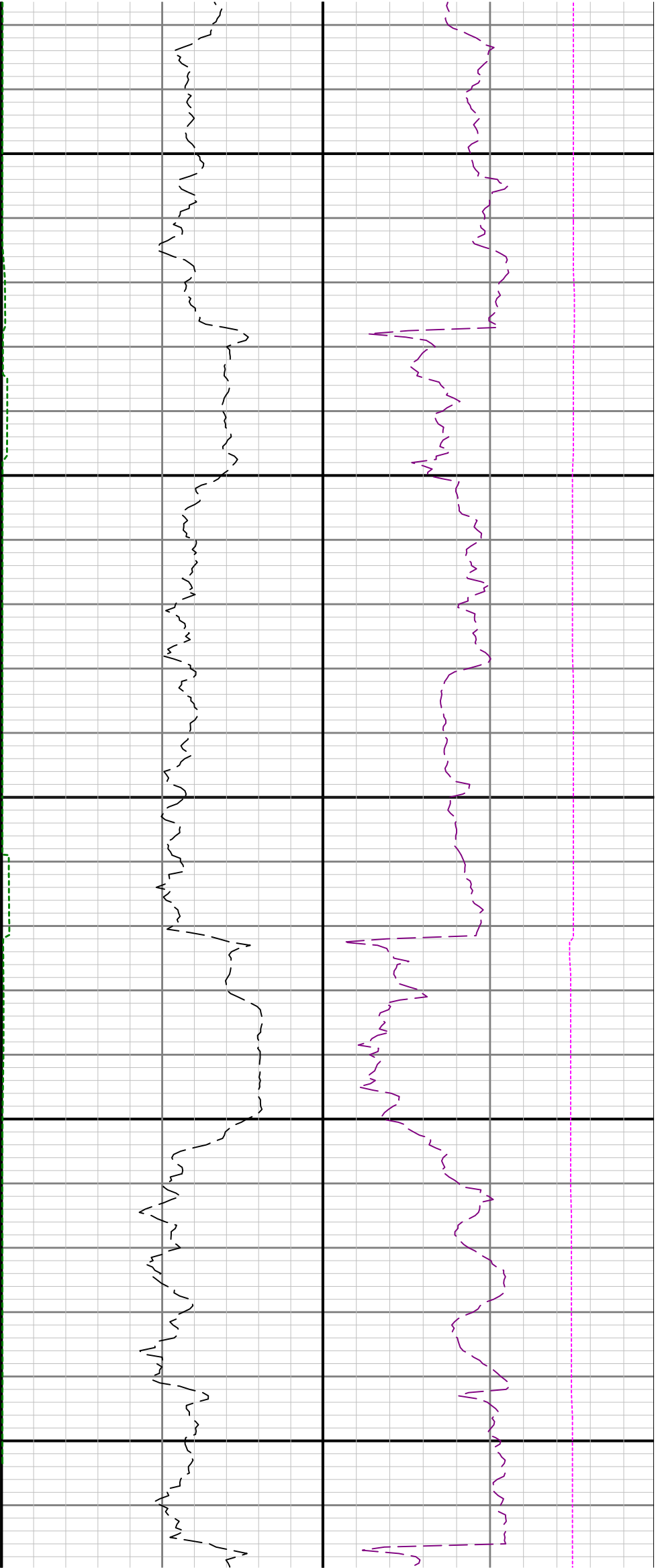
8500

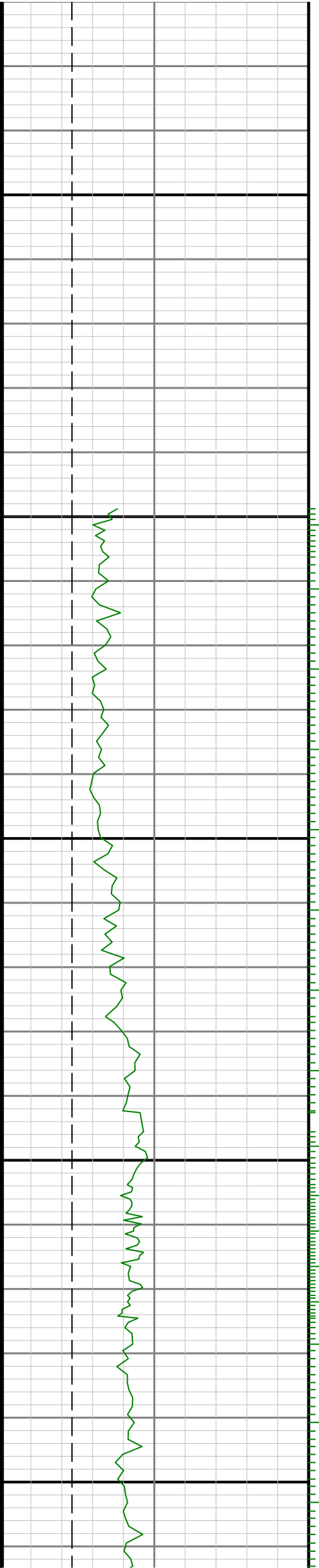








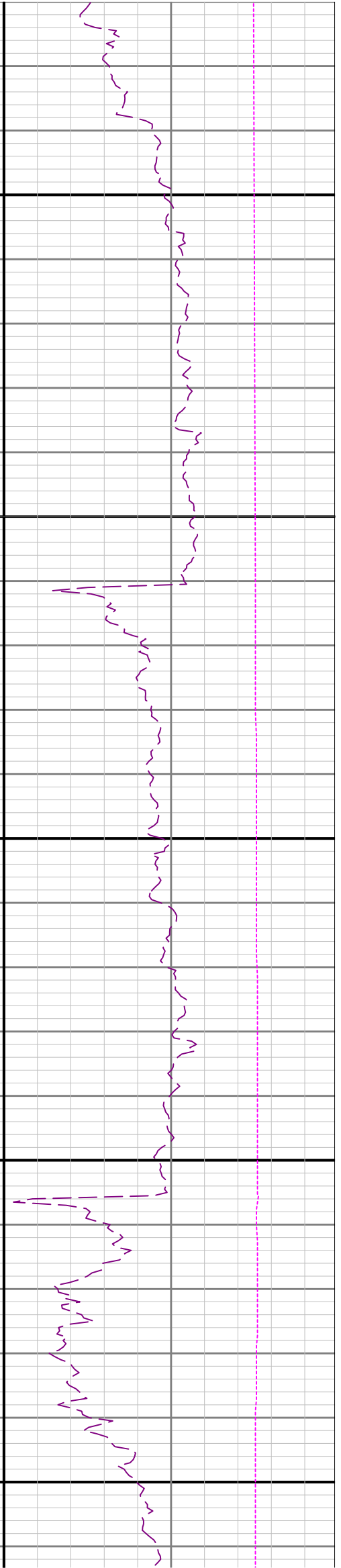
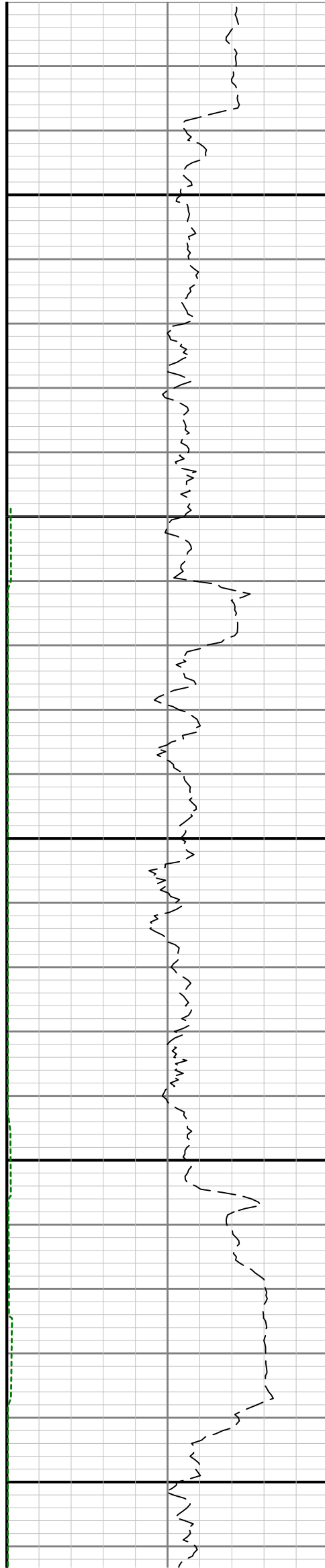


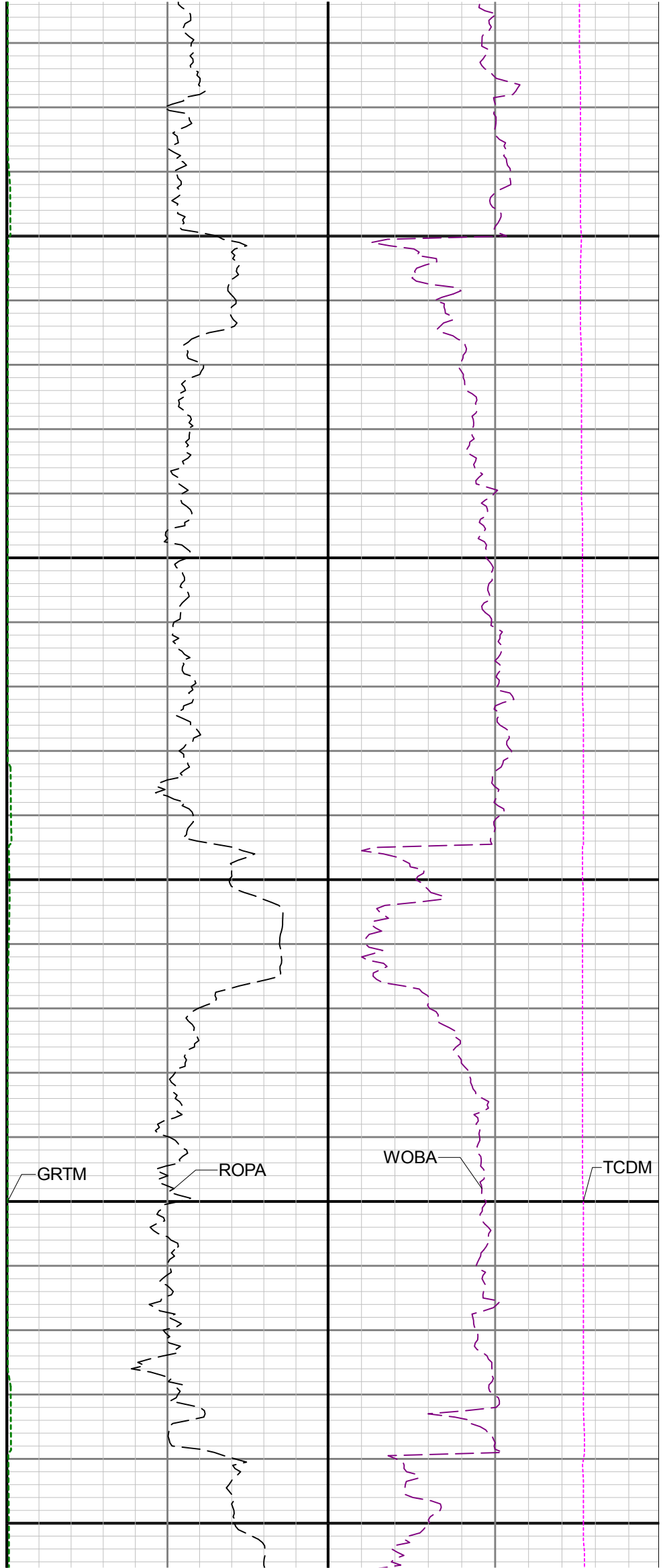
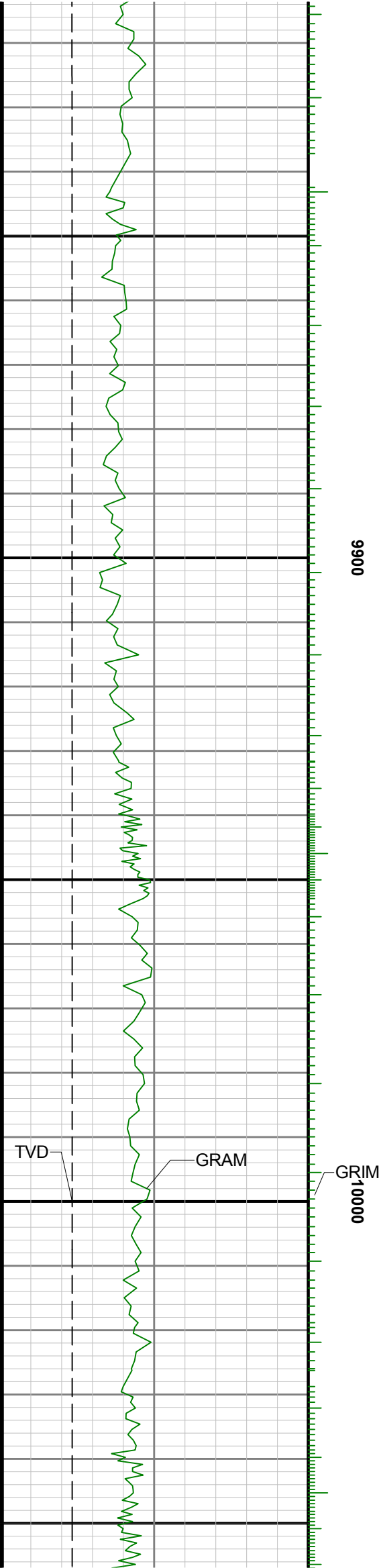


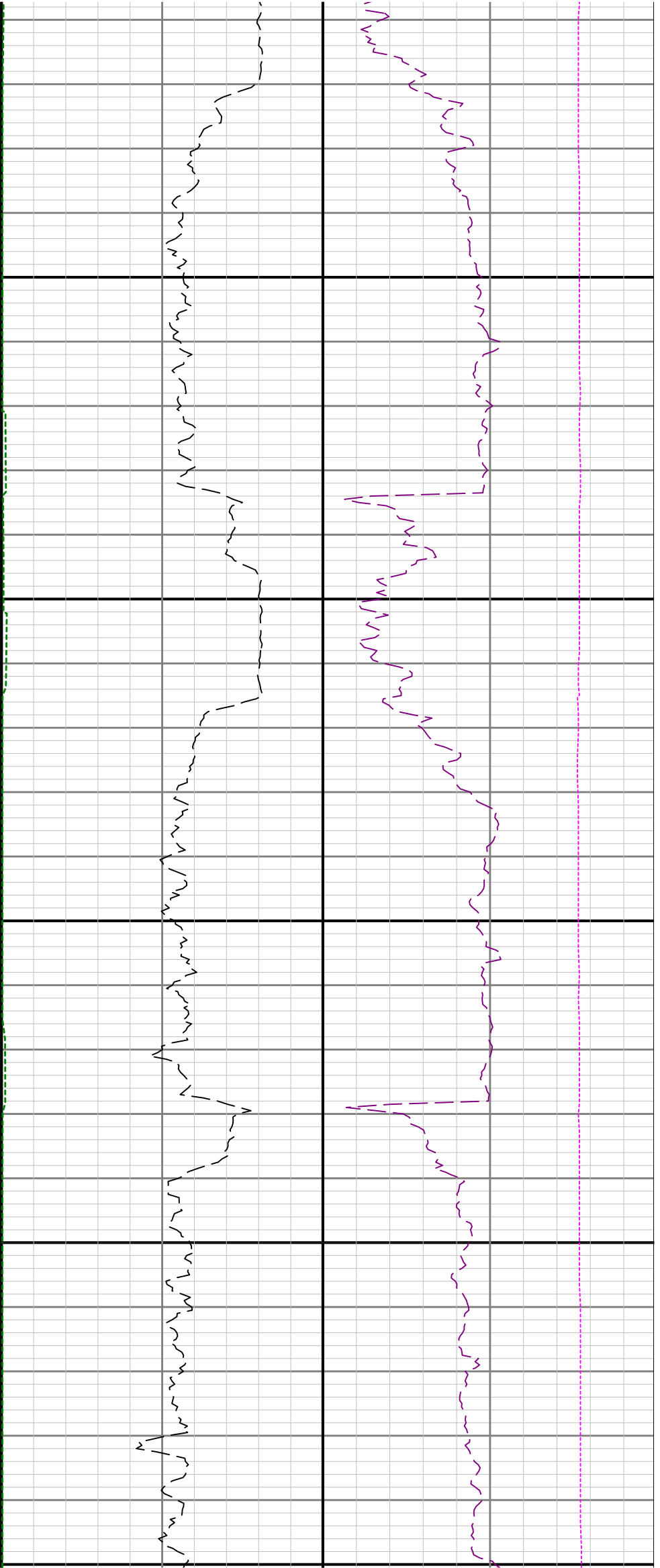
0096

9700

0086



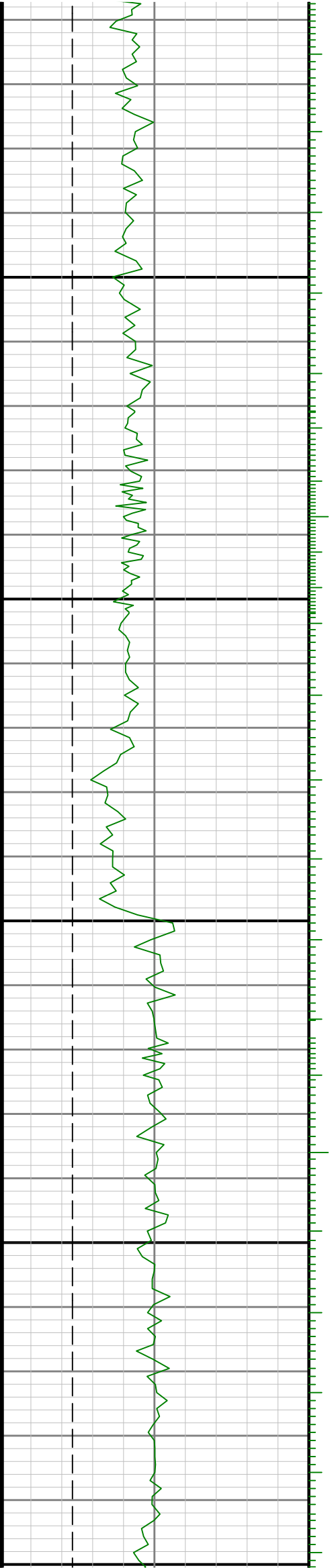


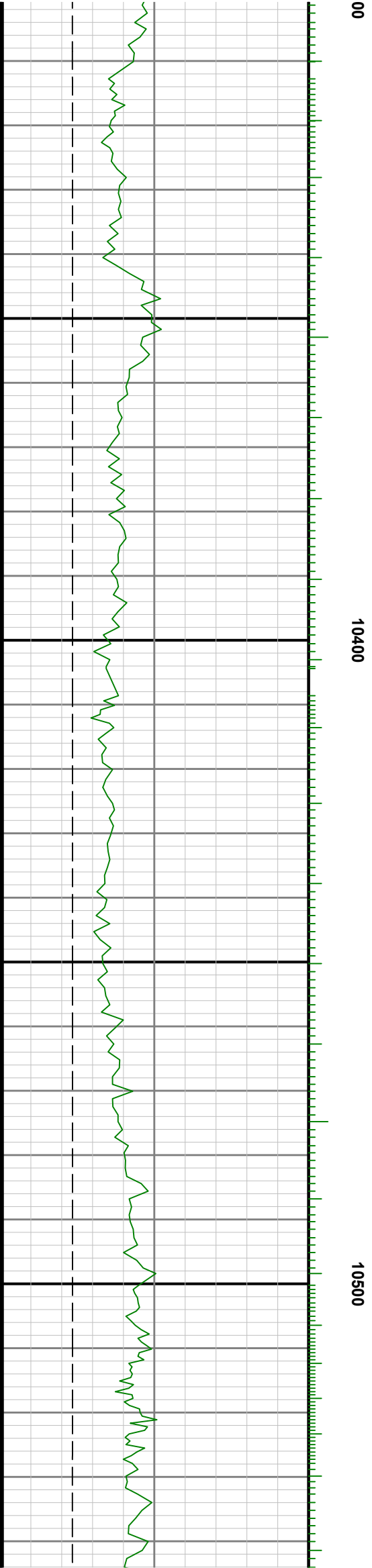
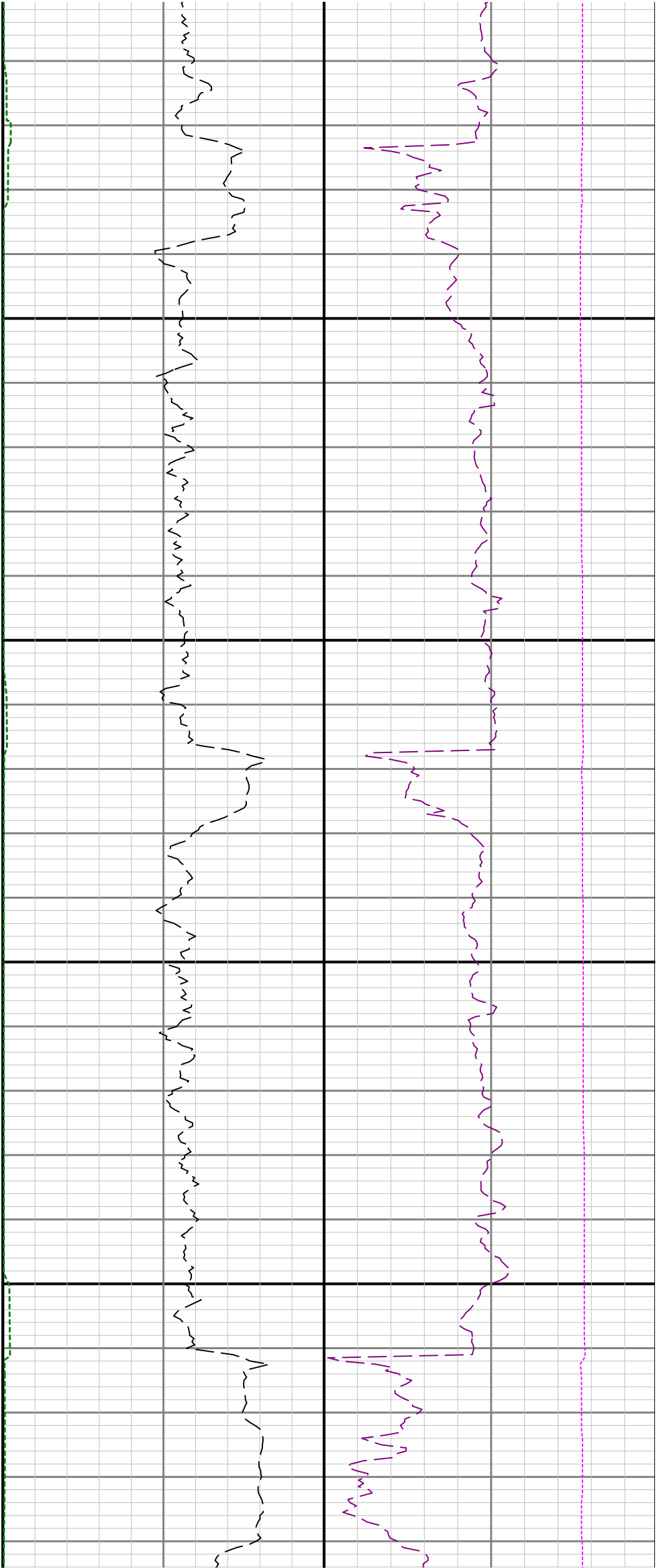


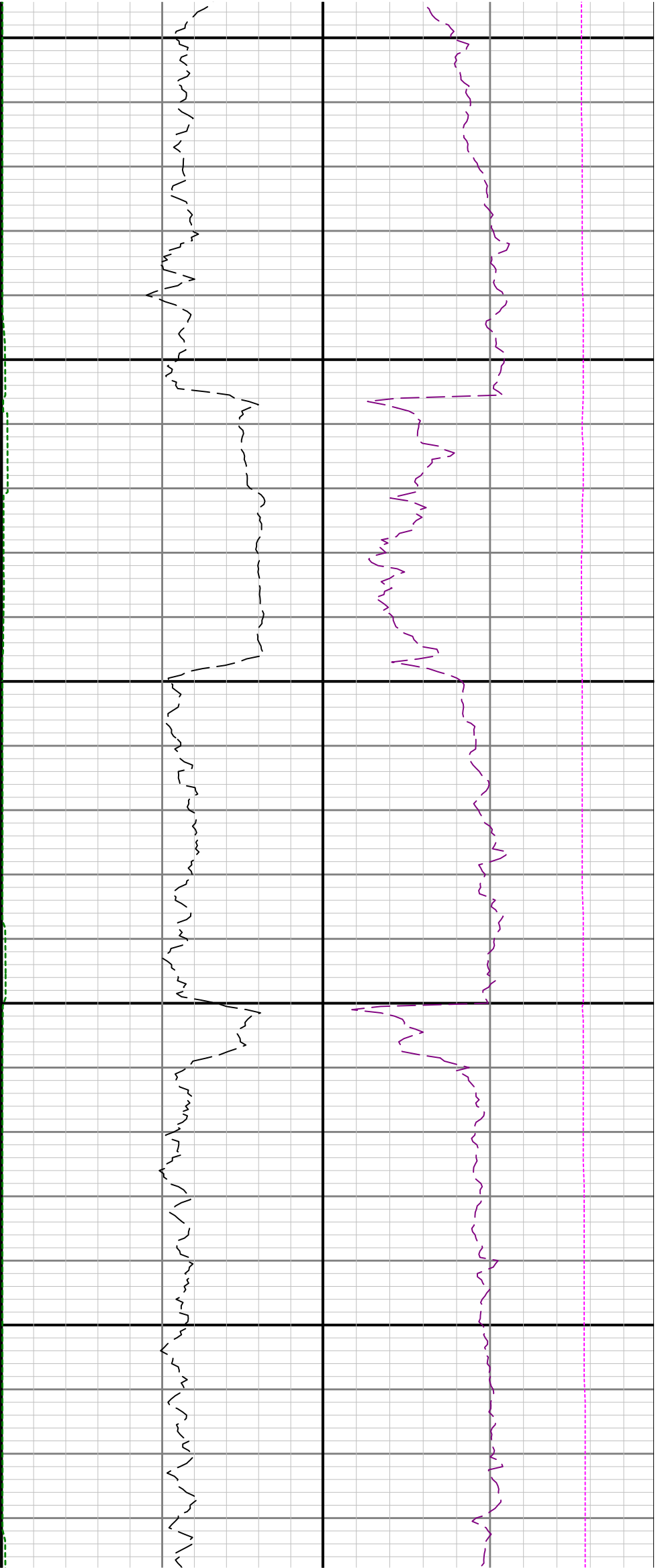
10100

10200

103

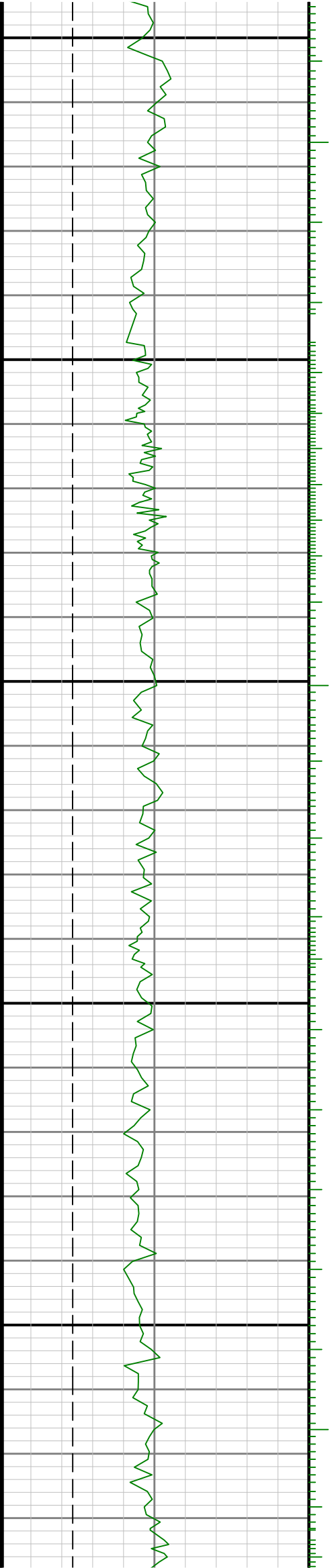


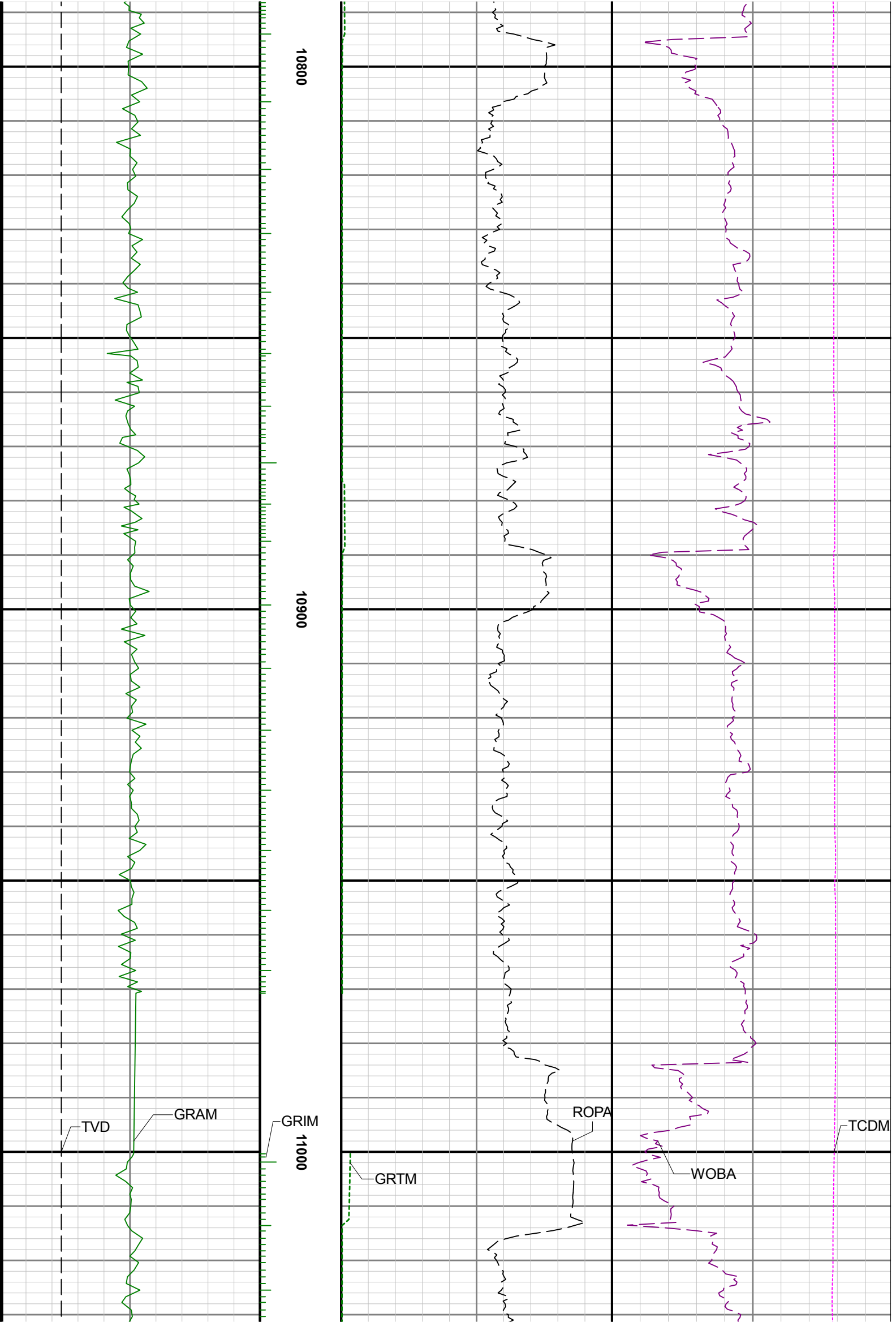


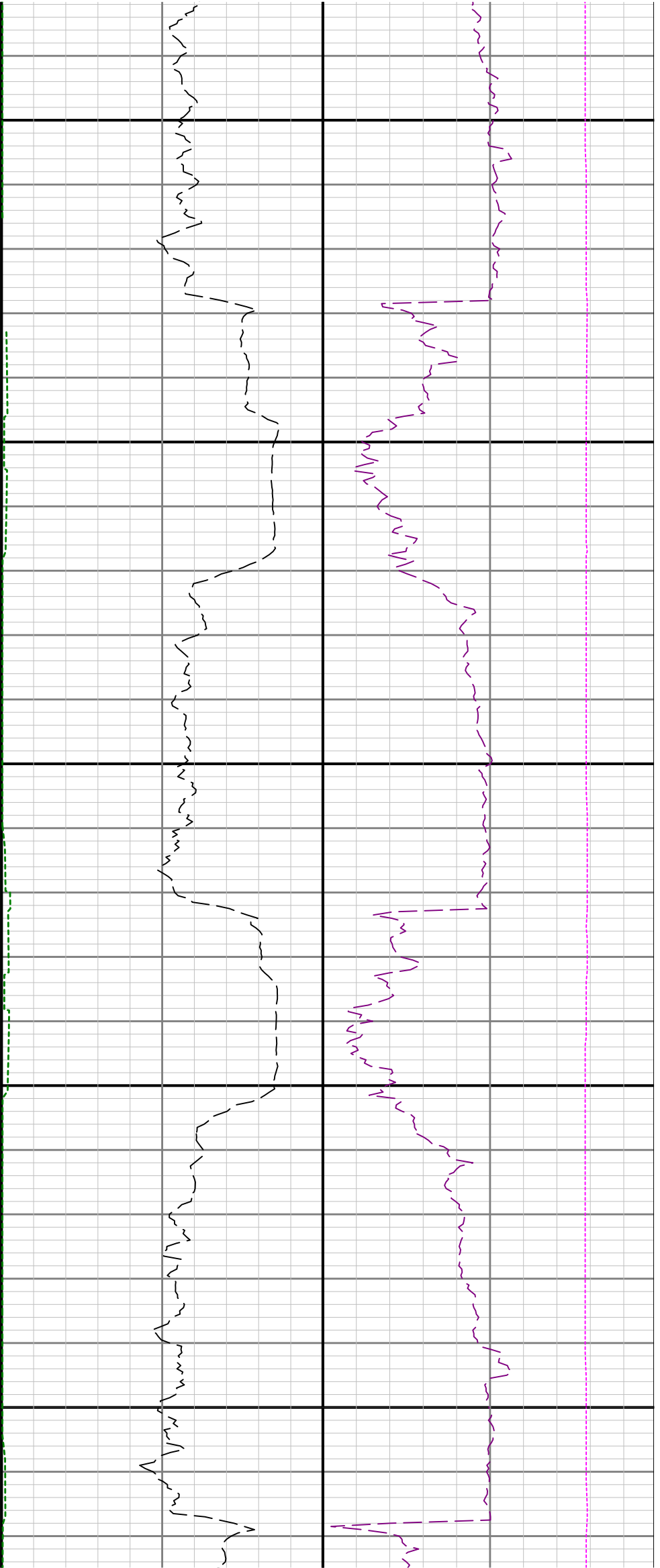


10600

10700

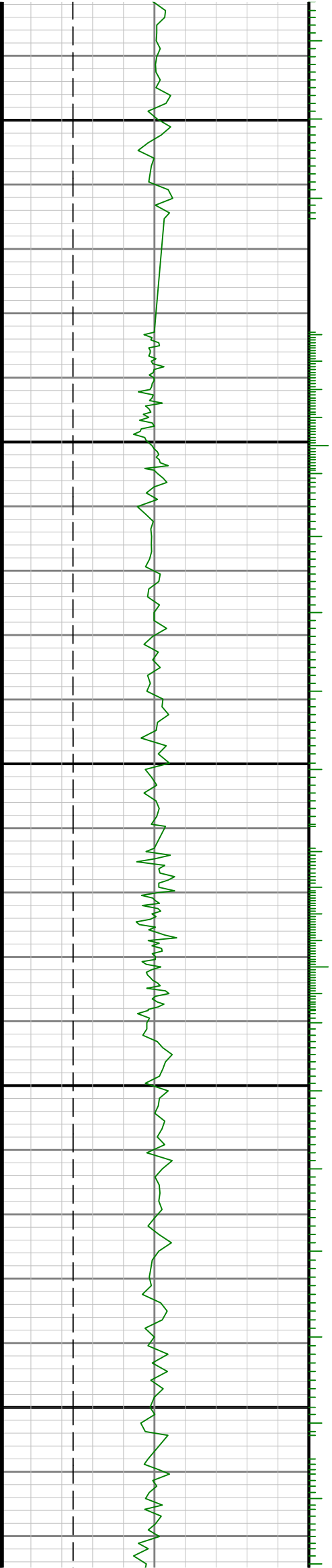


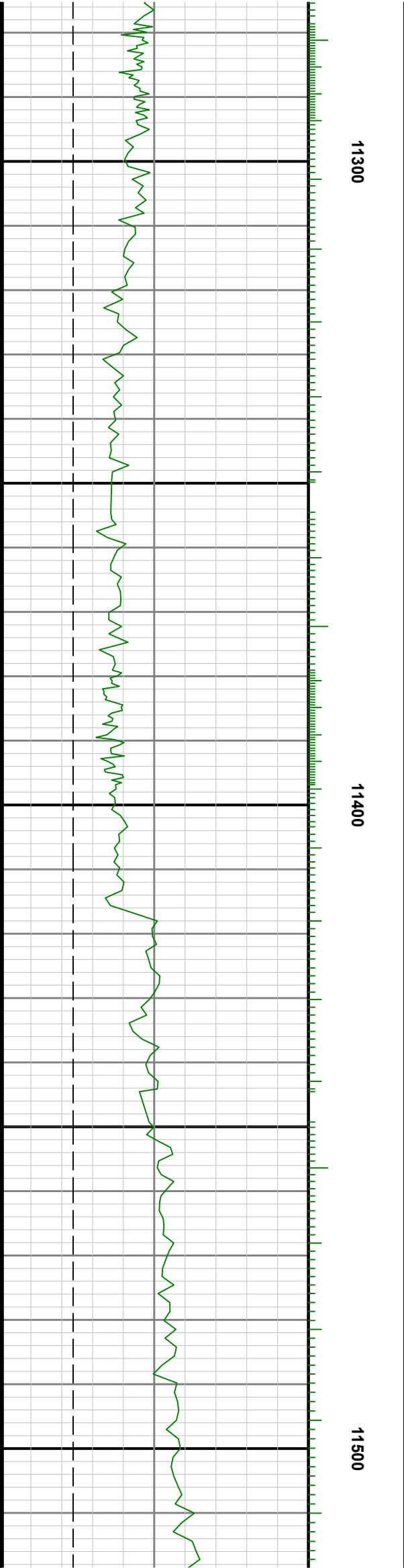
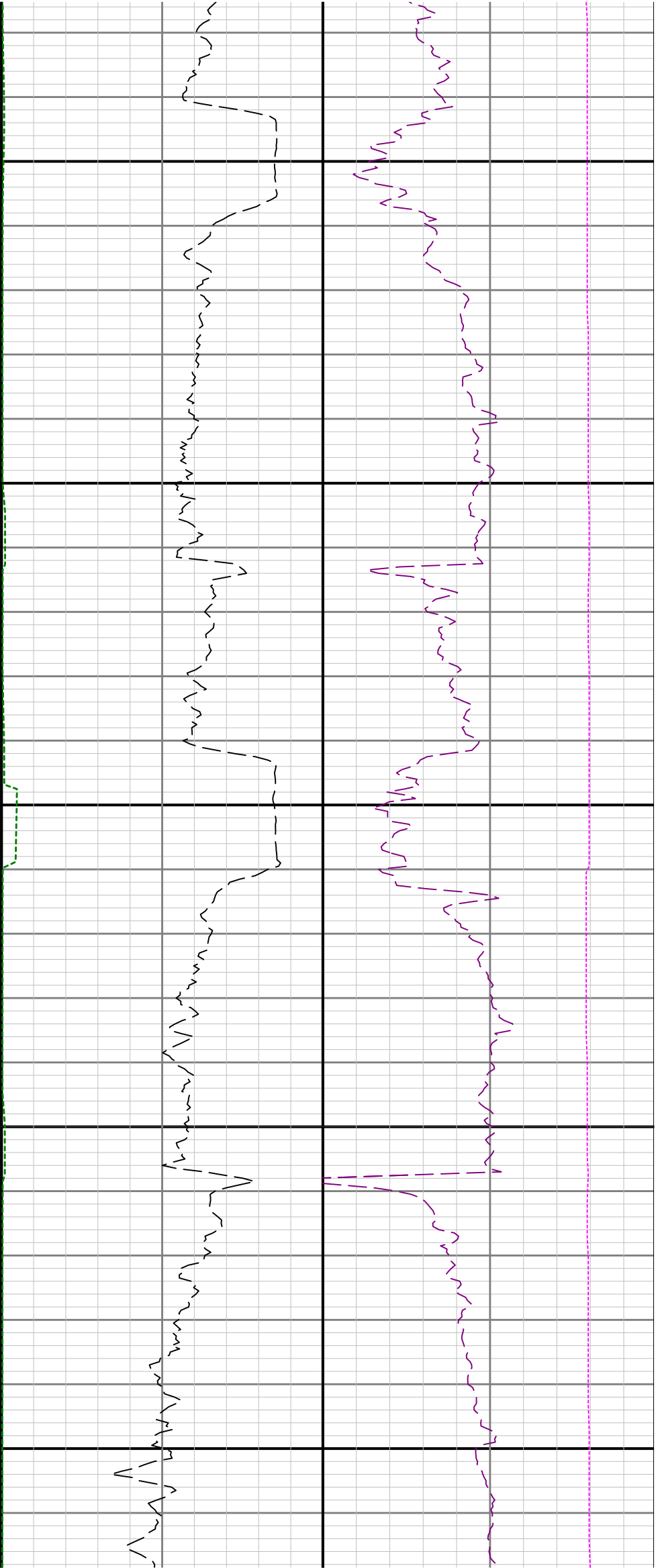


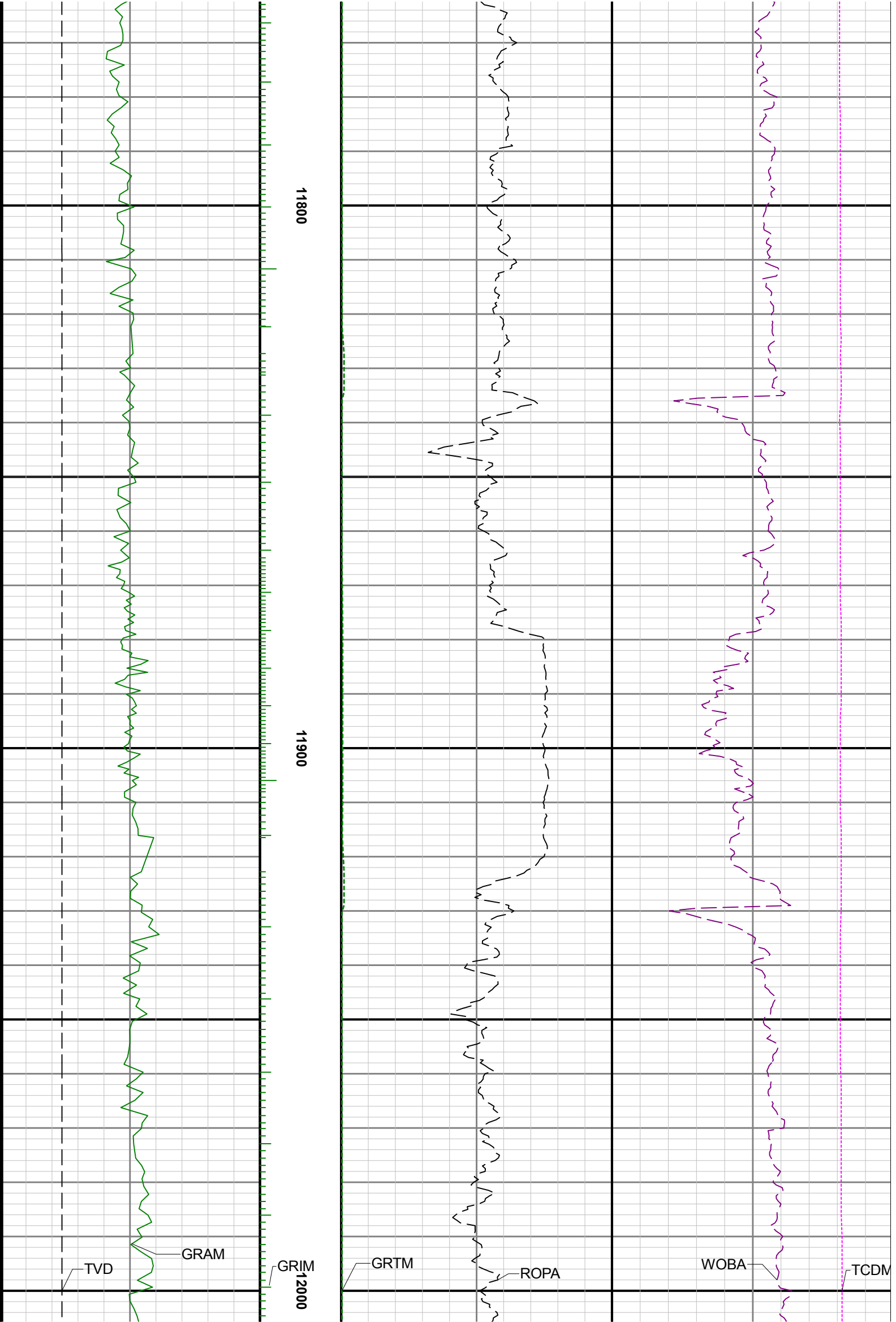


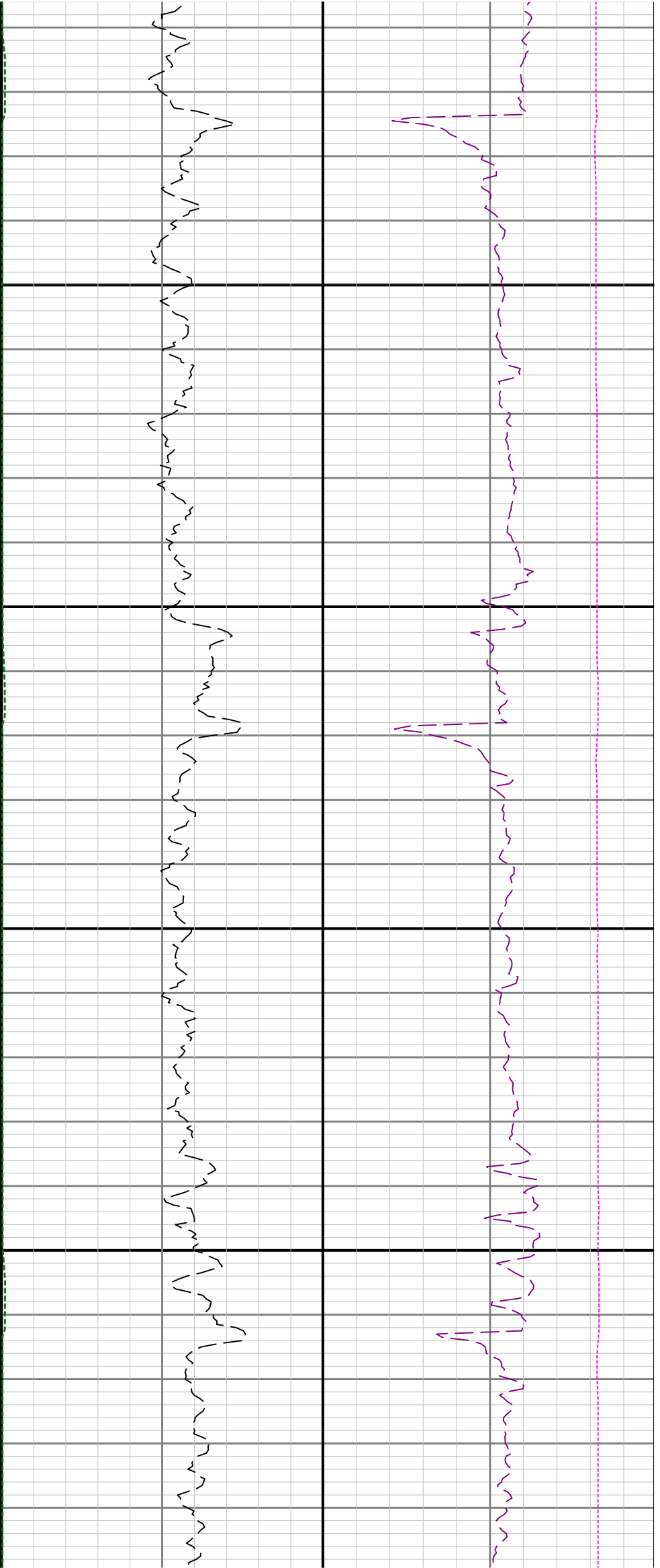
11100

11200



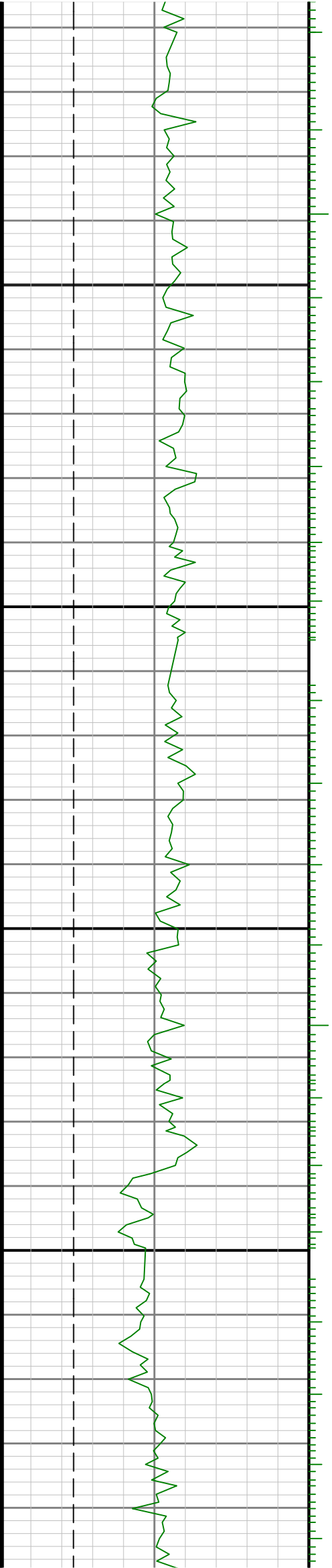


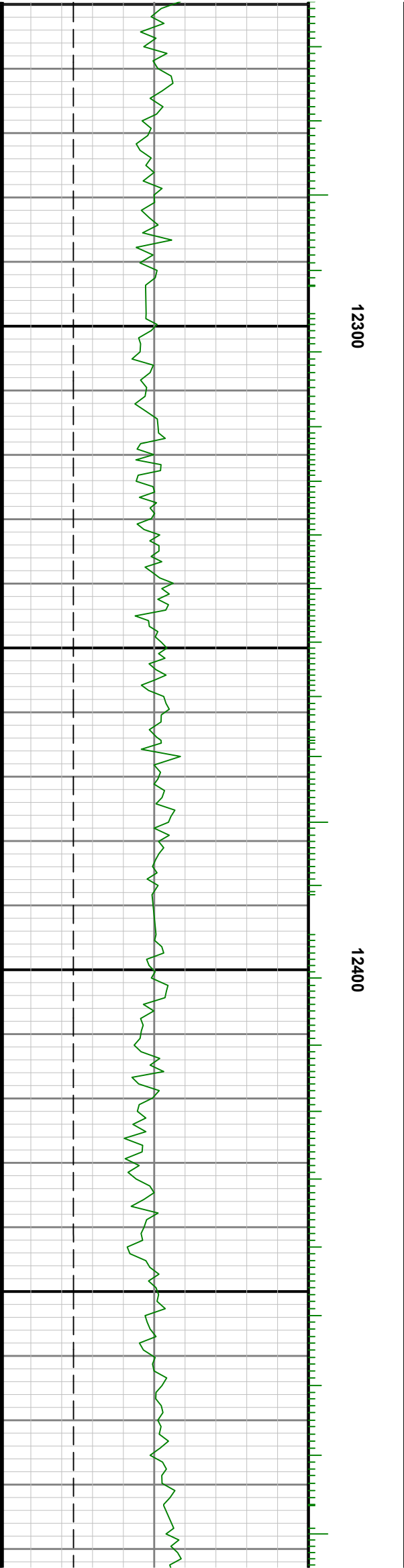
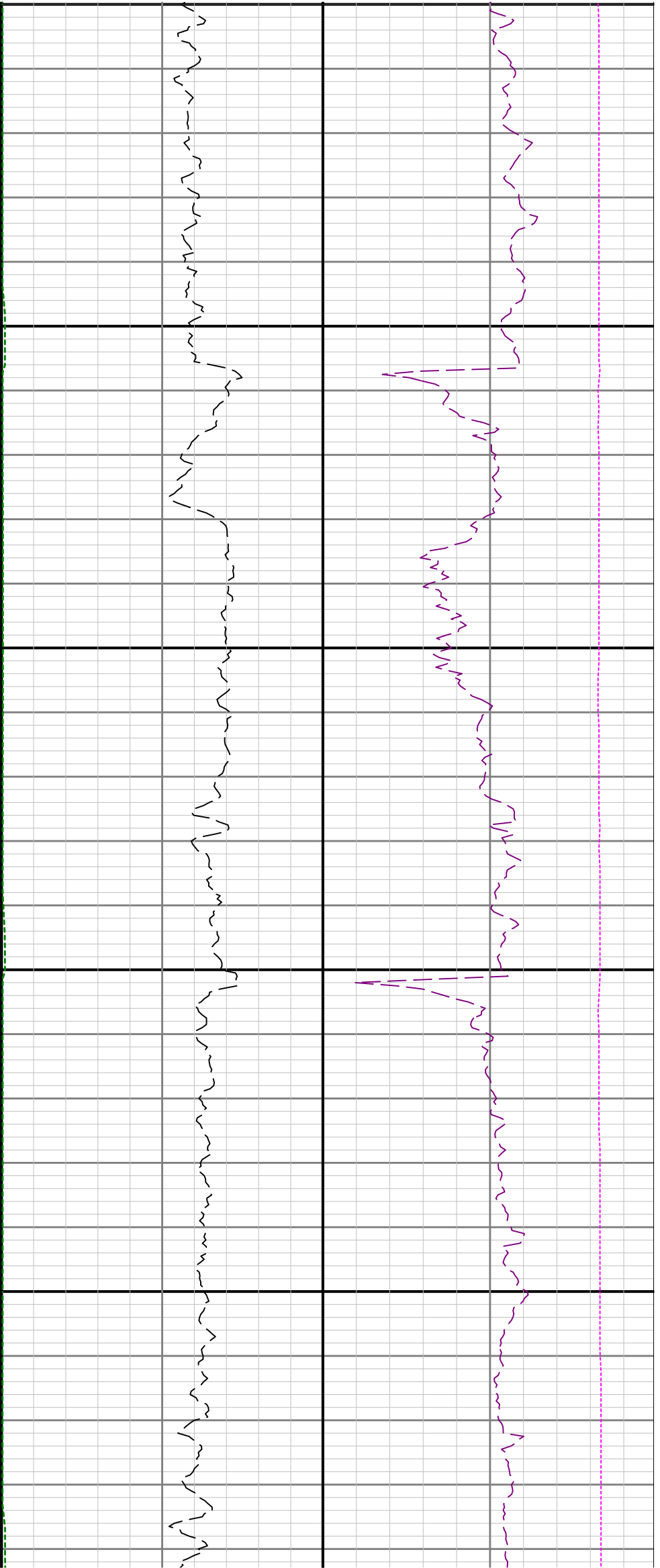


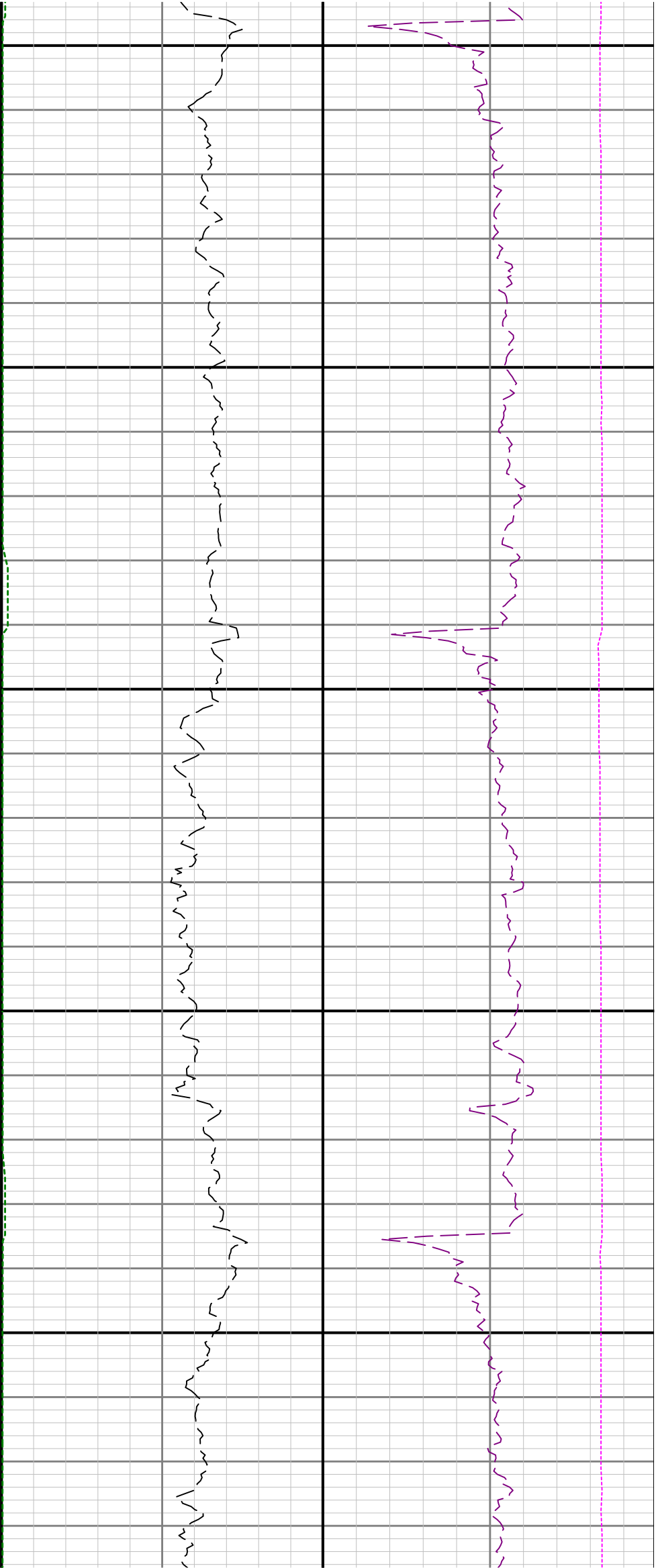


12100

12200



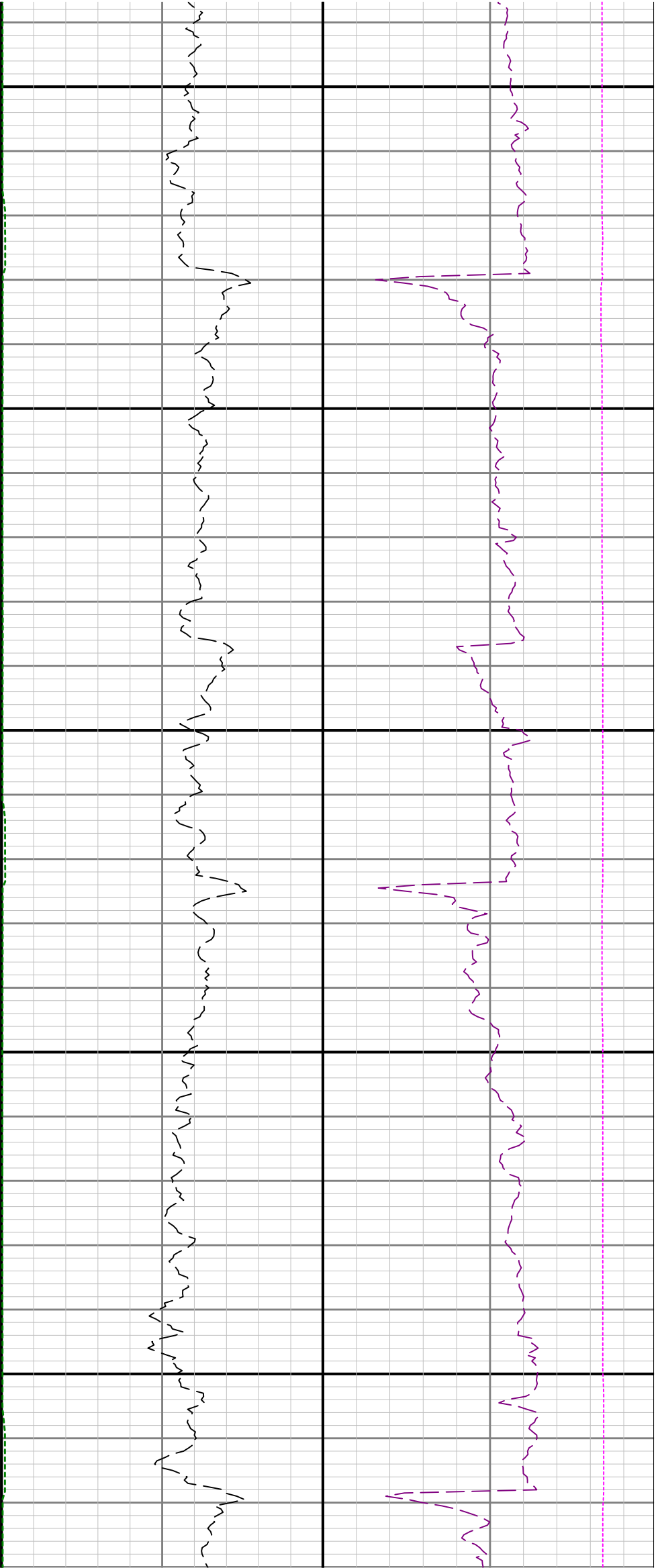




12500

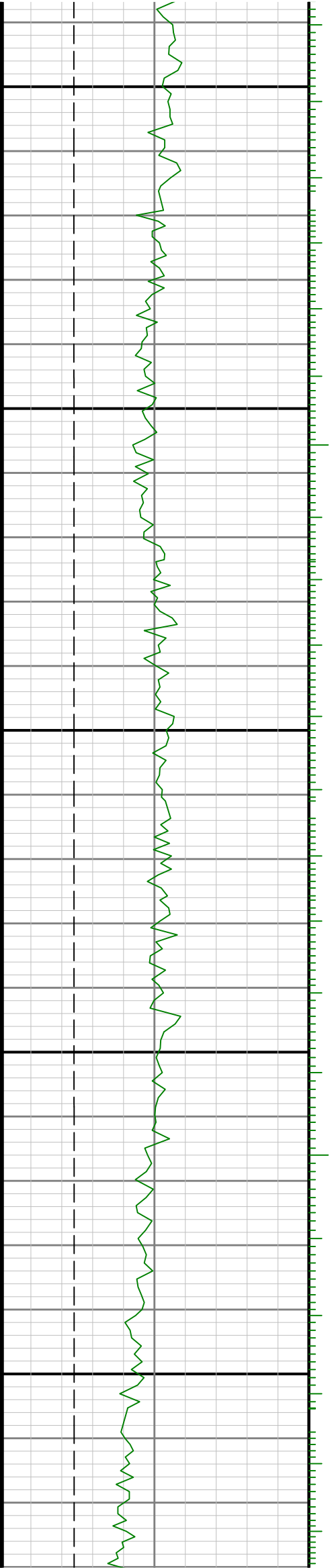
12600

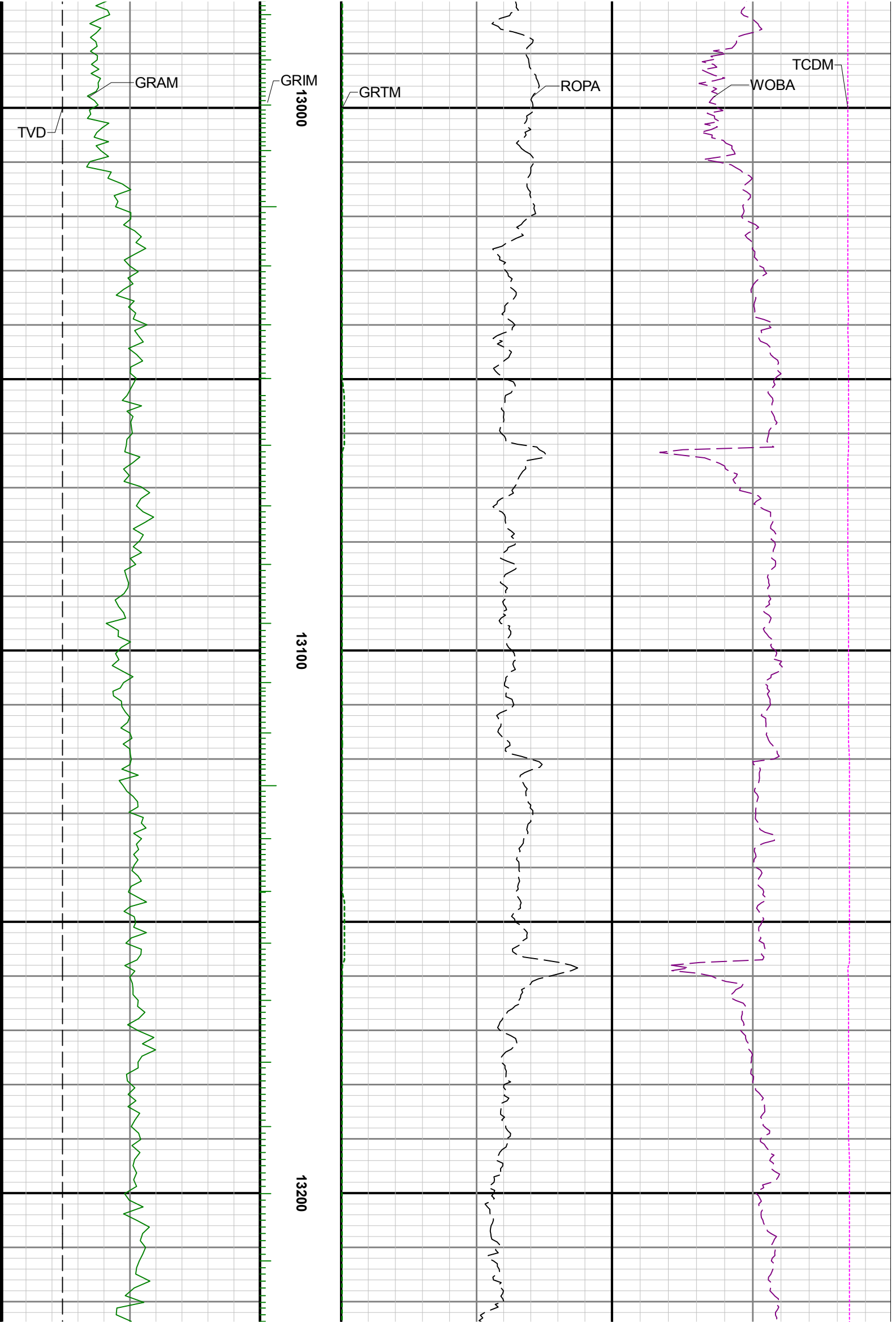
12700

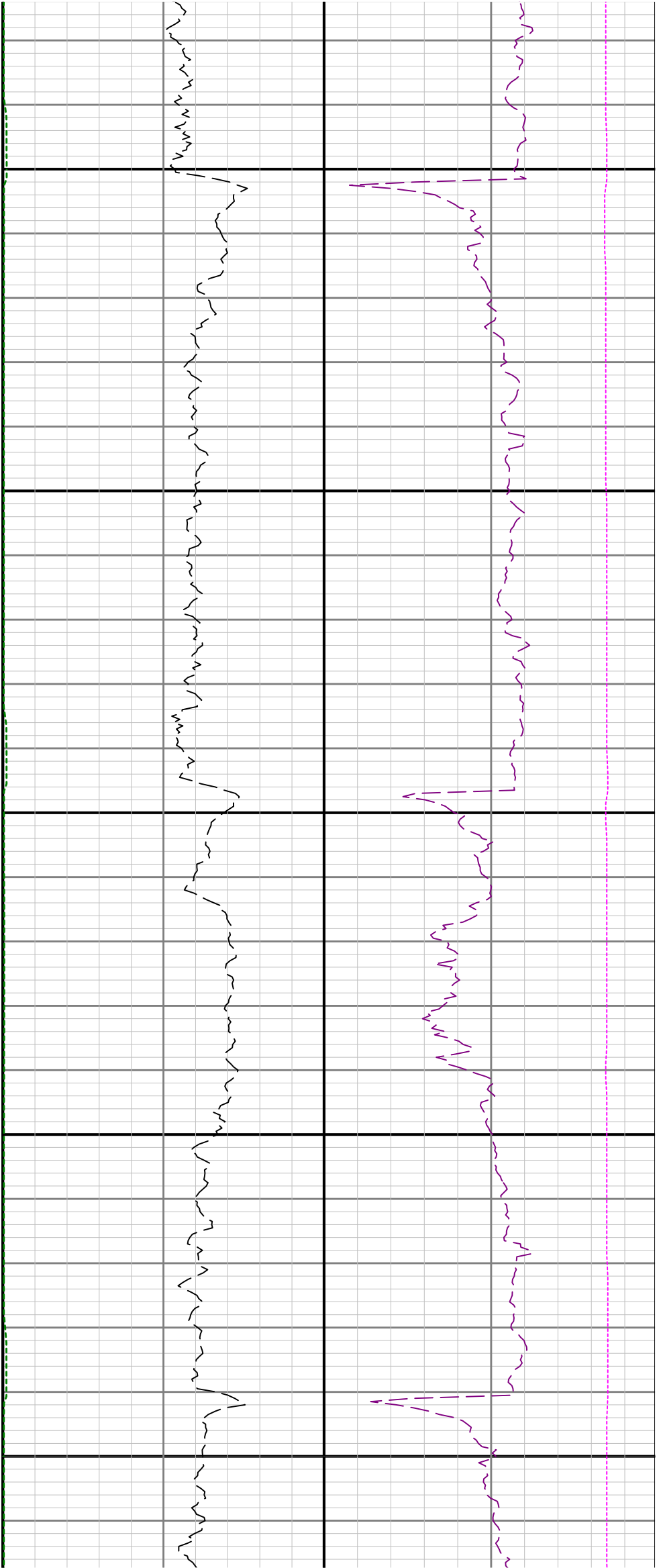


12800

12900

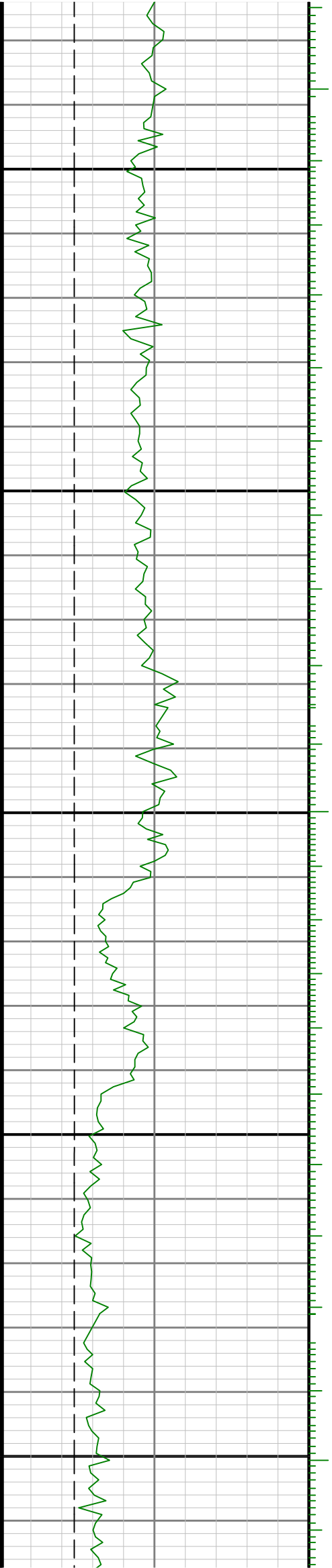


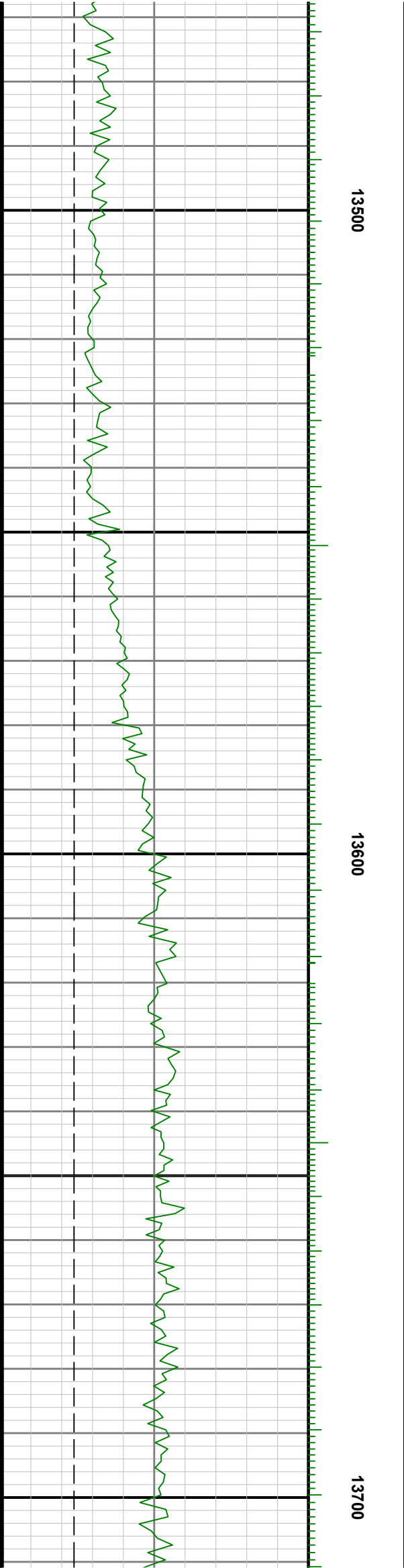
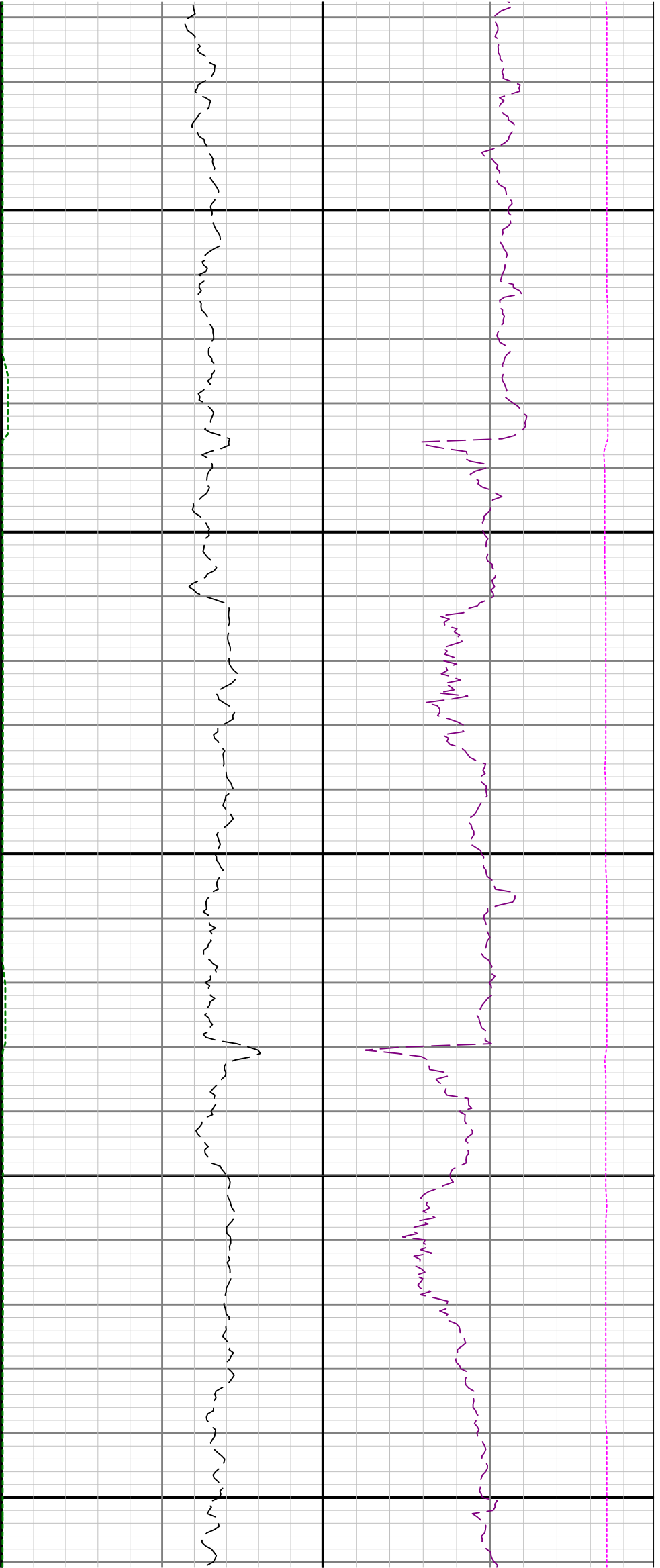


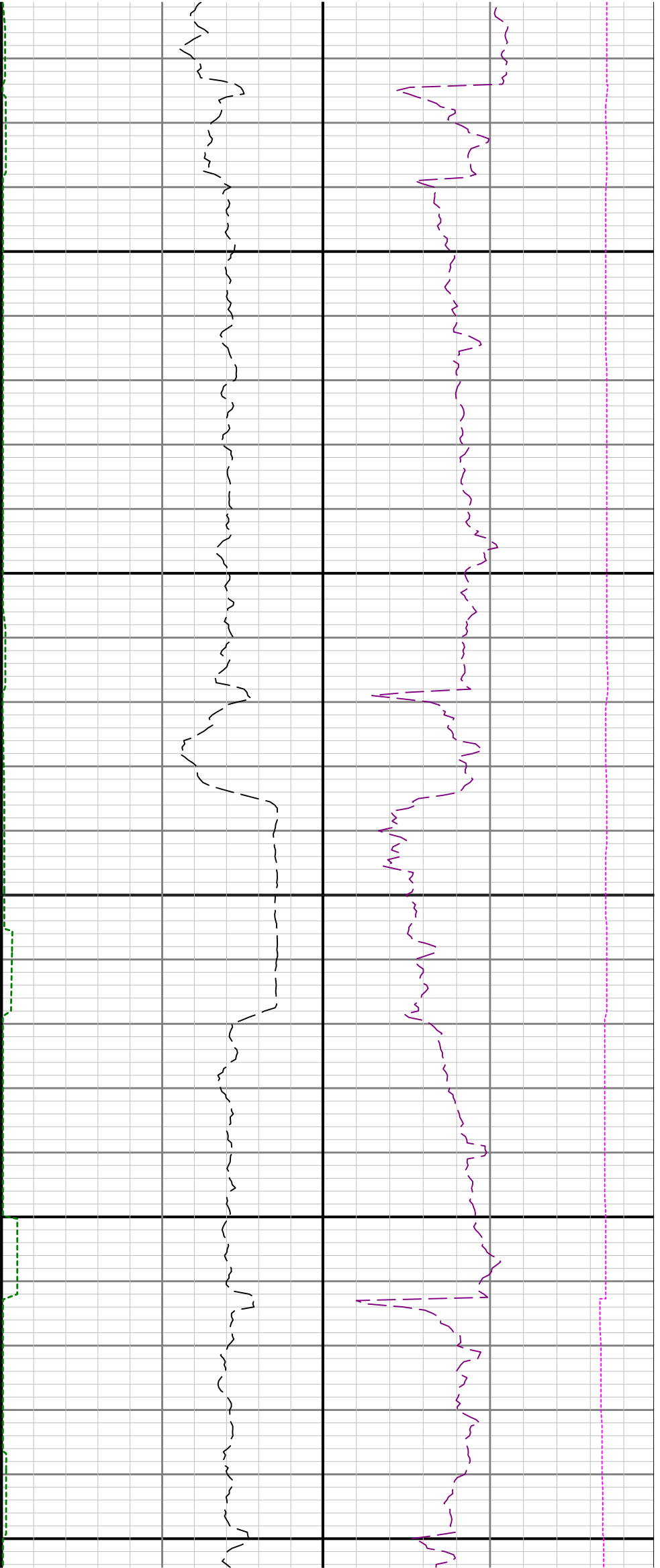


13300

13400

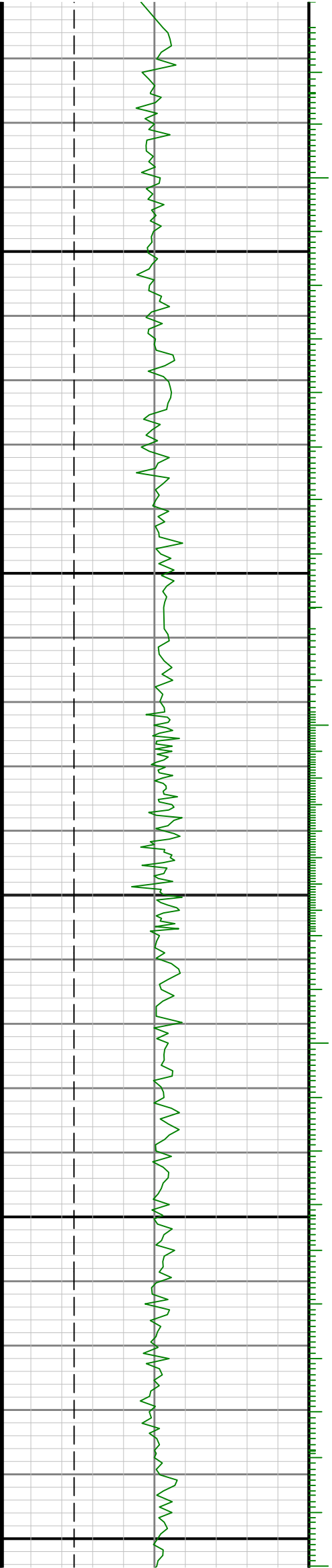


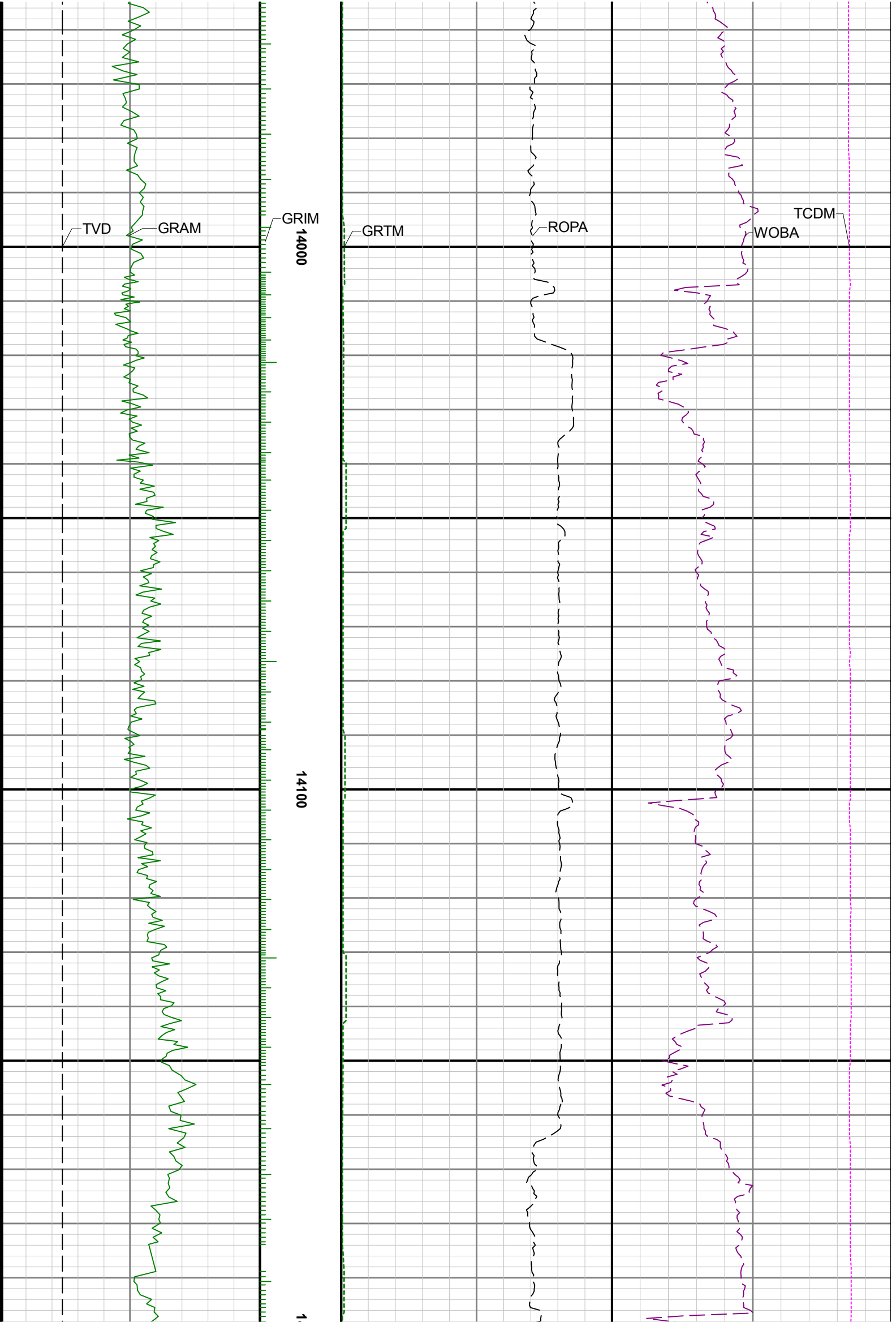


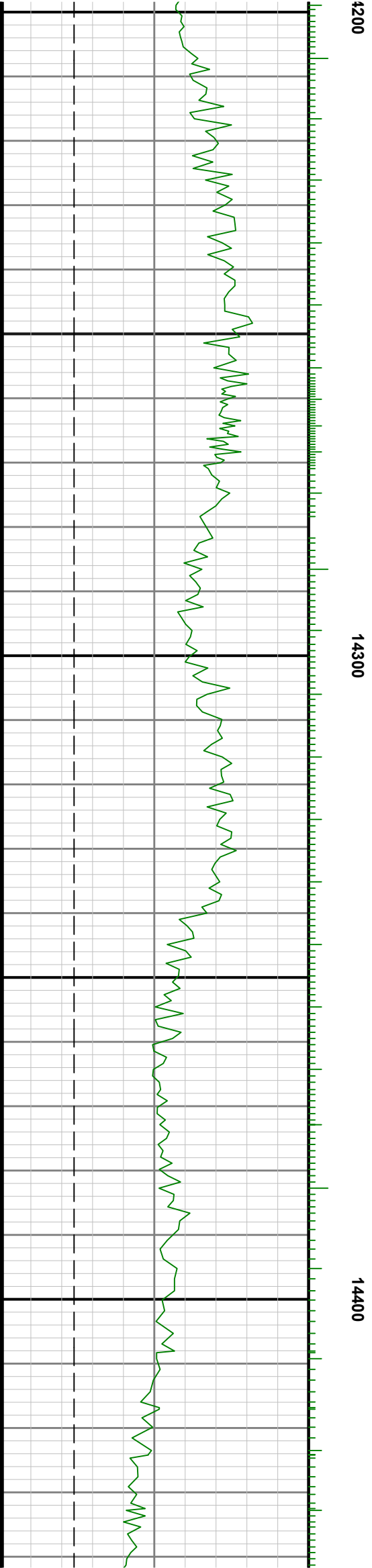
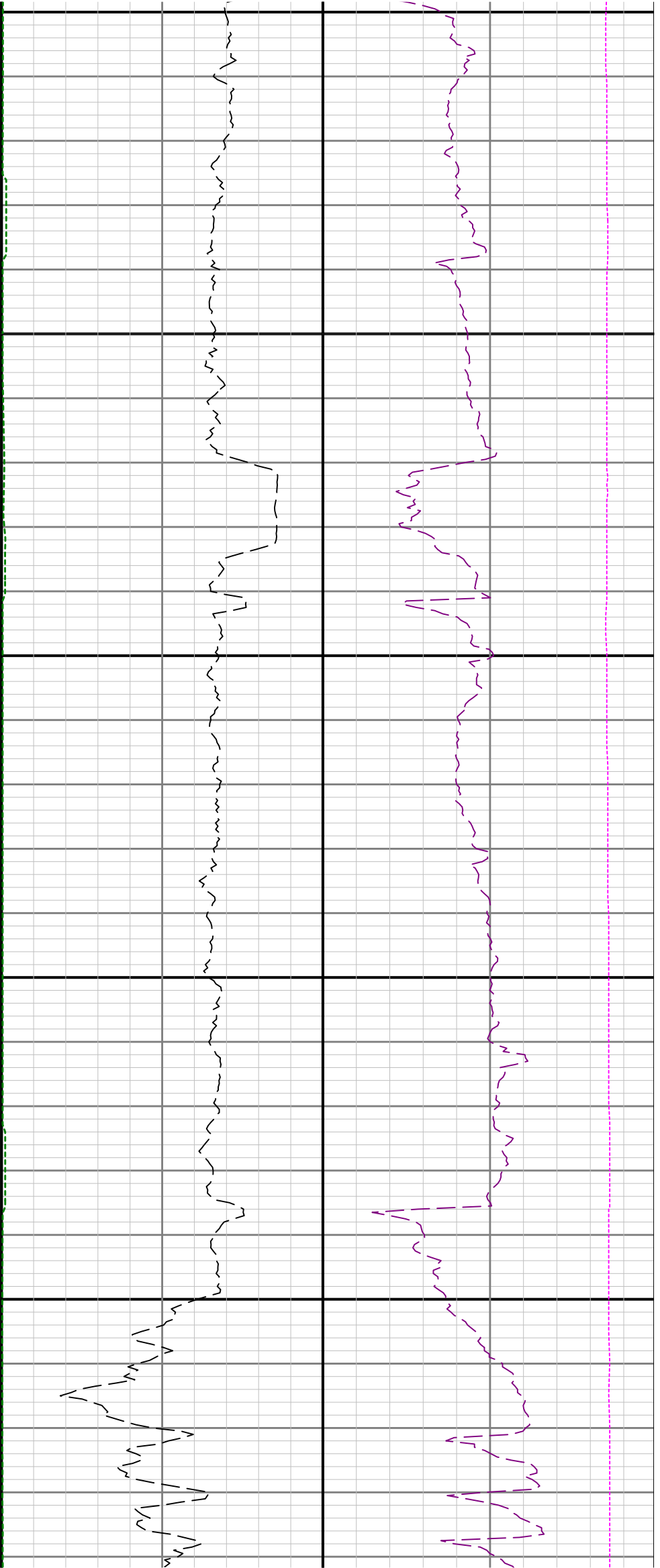


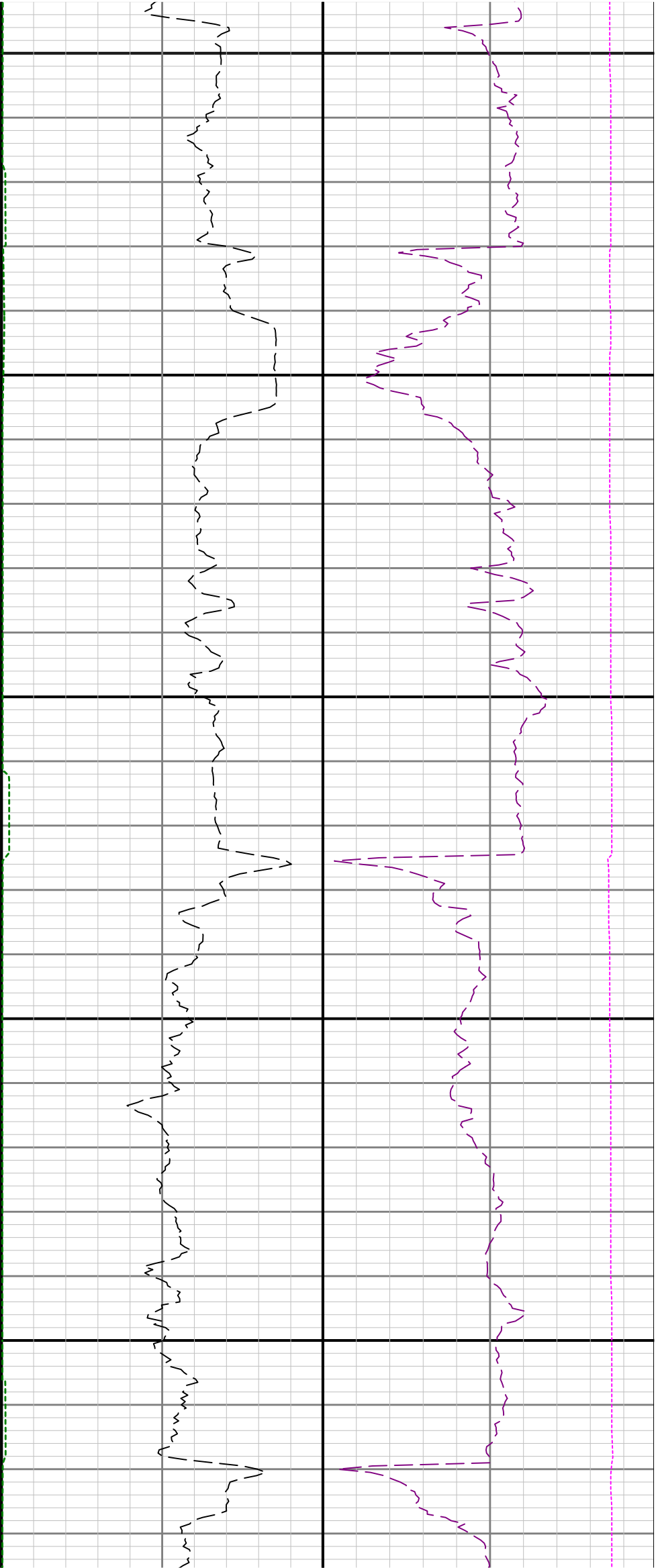
13800

13900



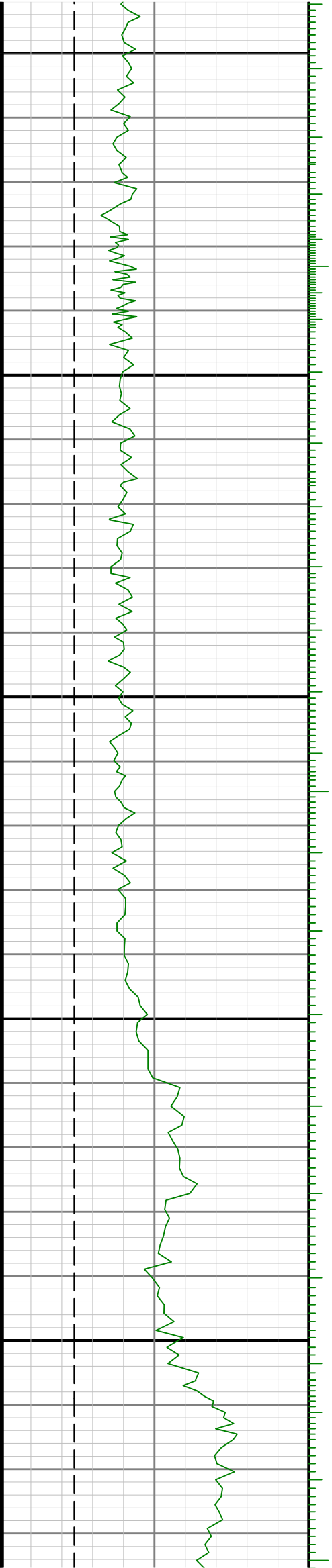


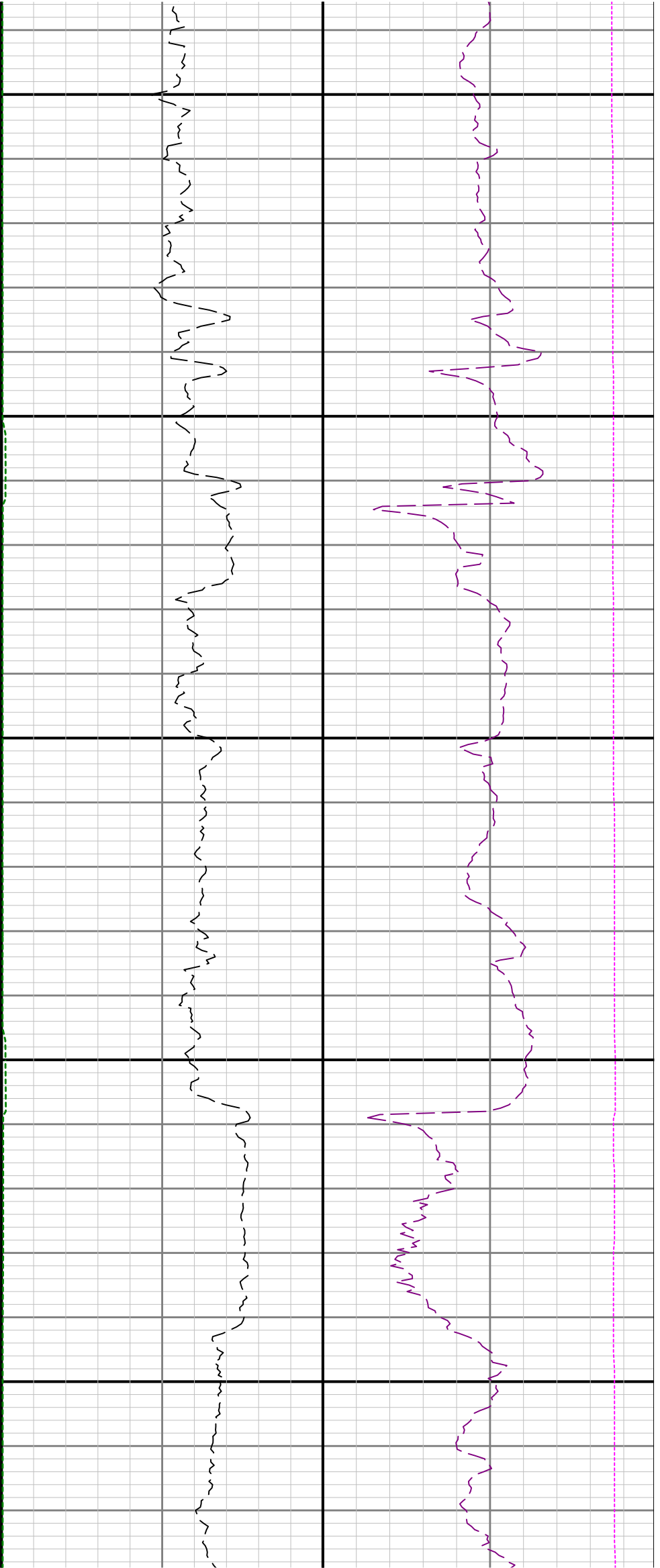




14500

14600

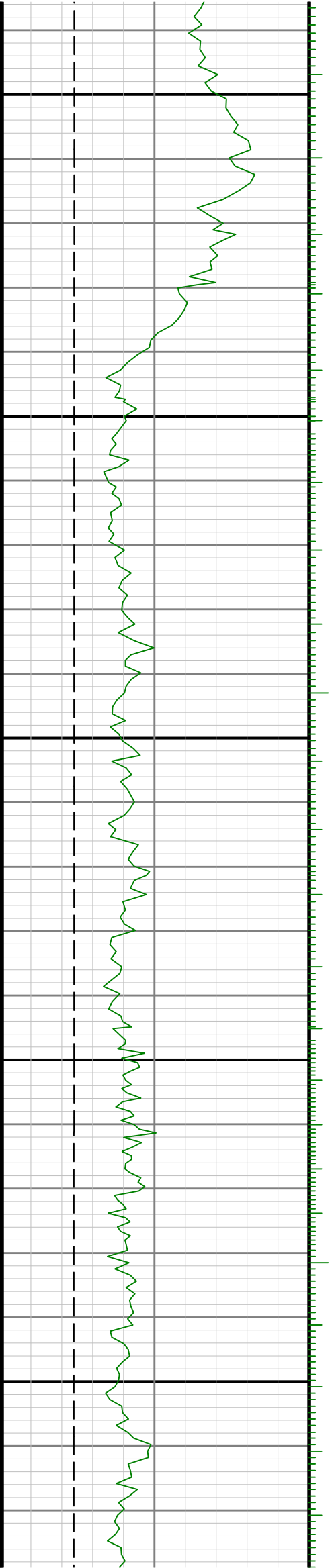


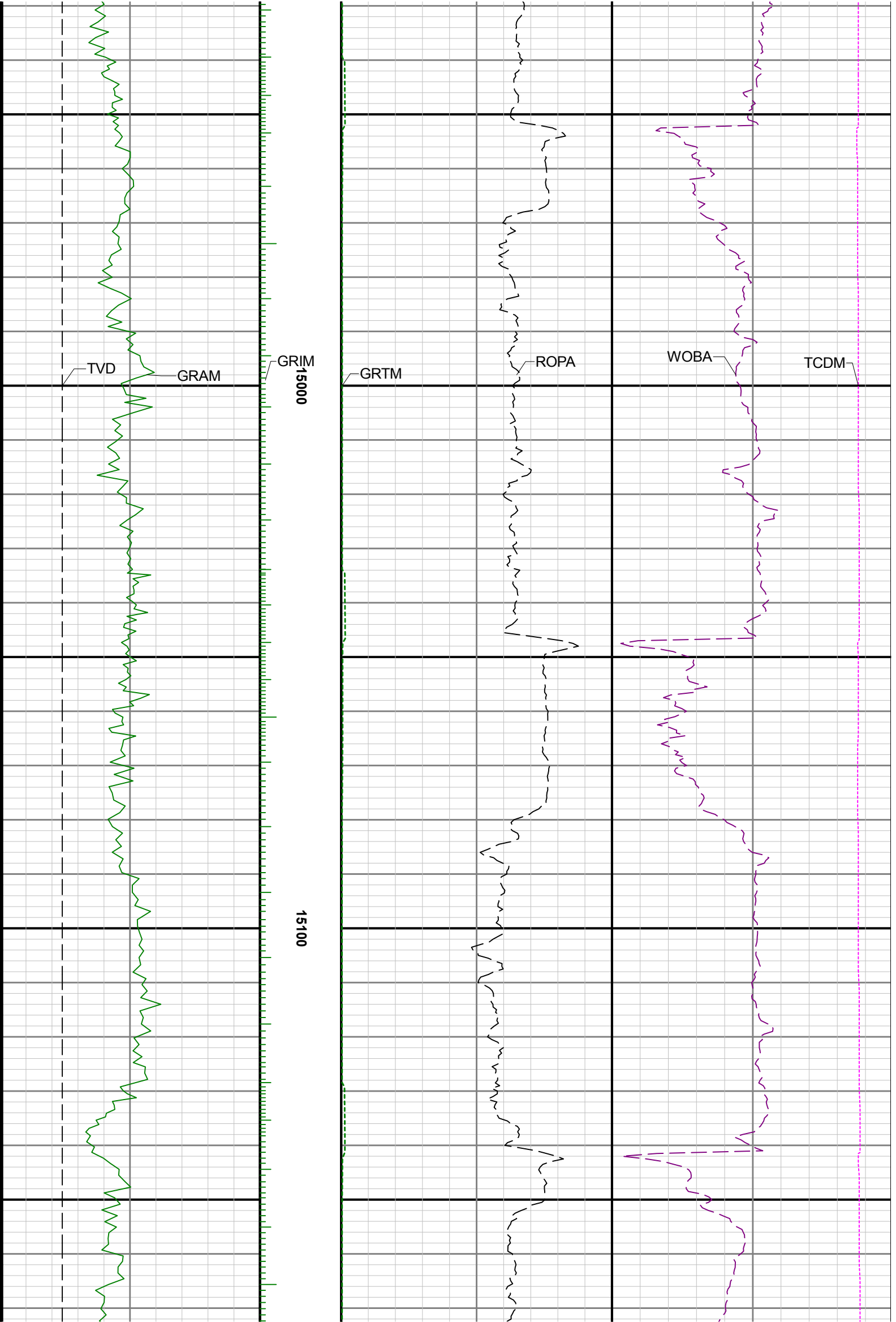


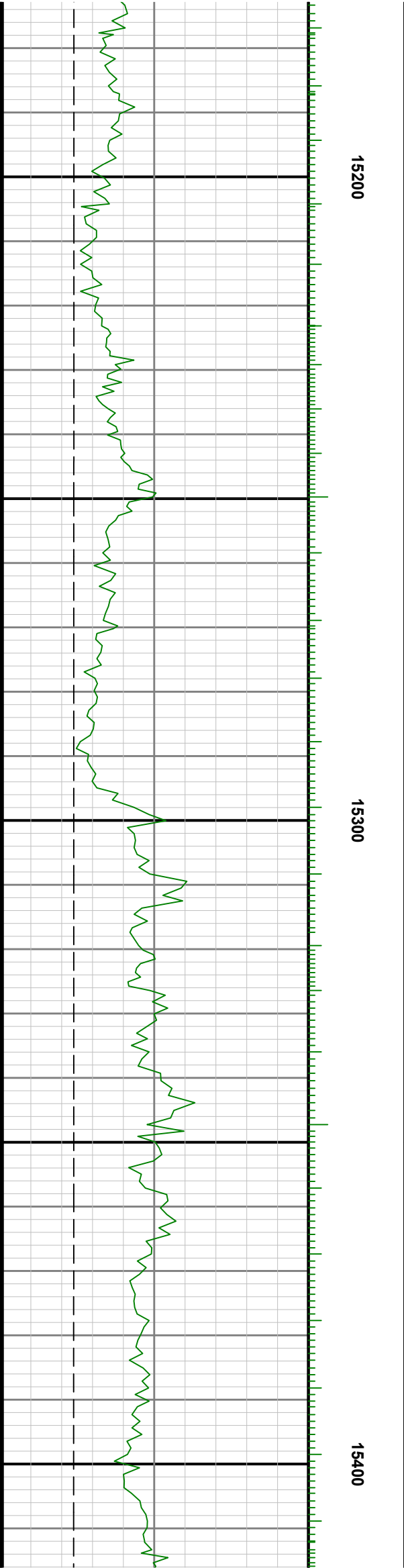
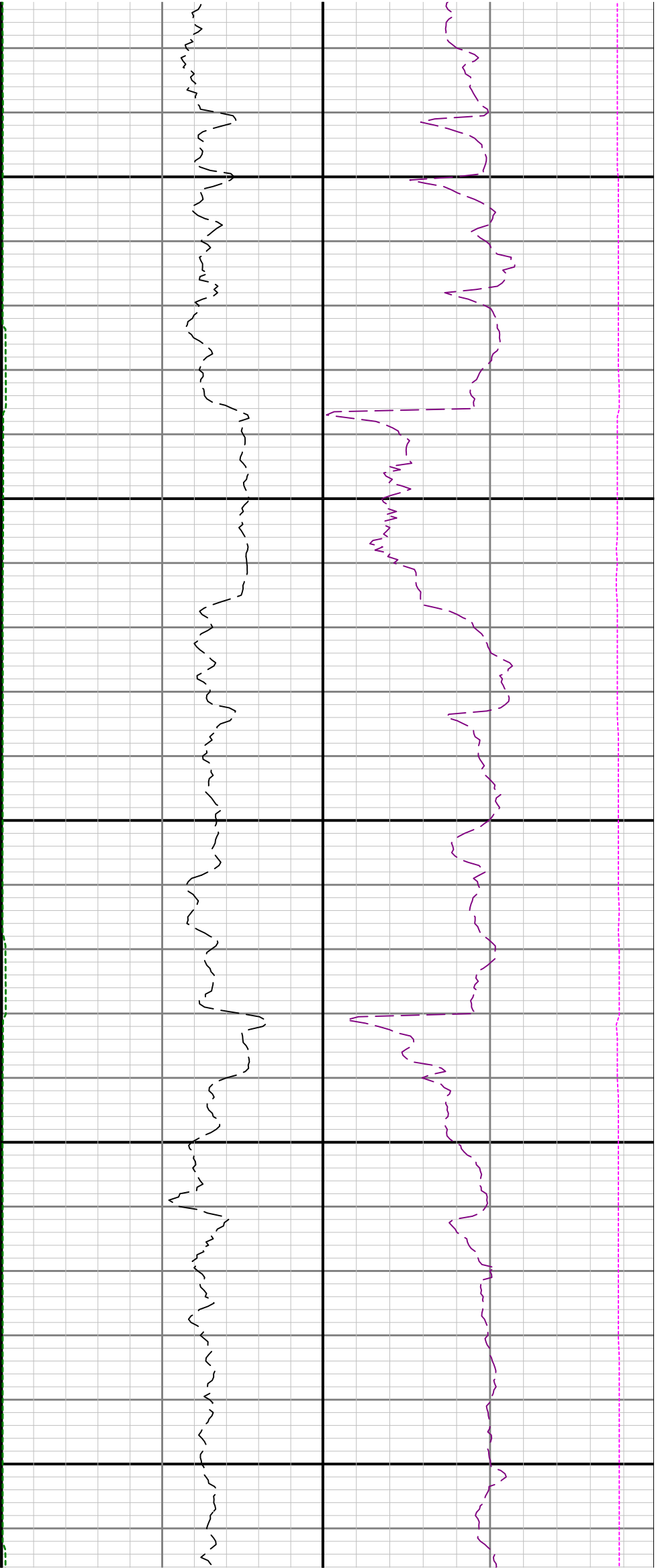
14700

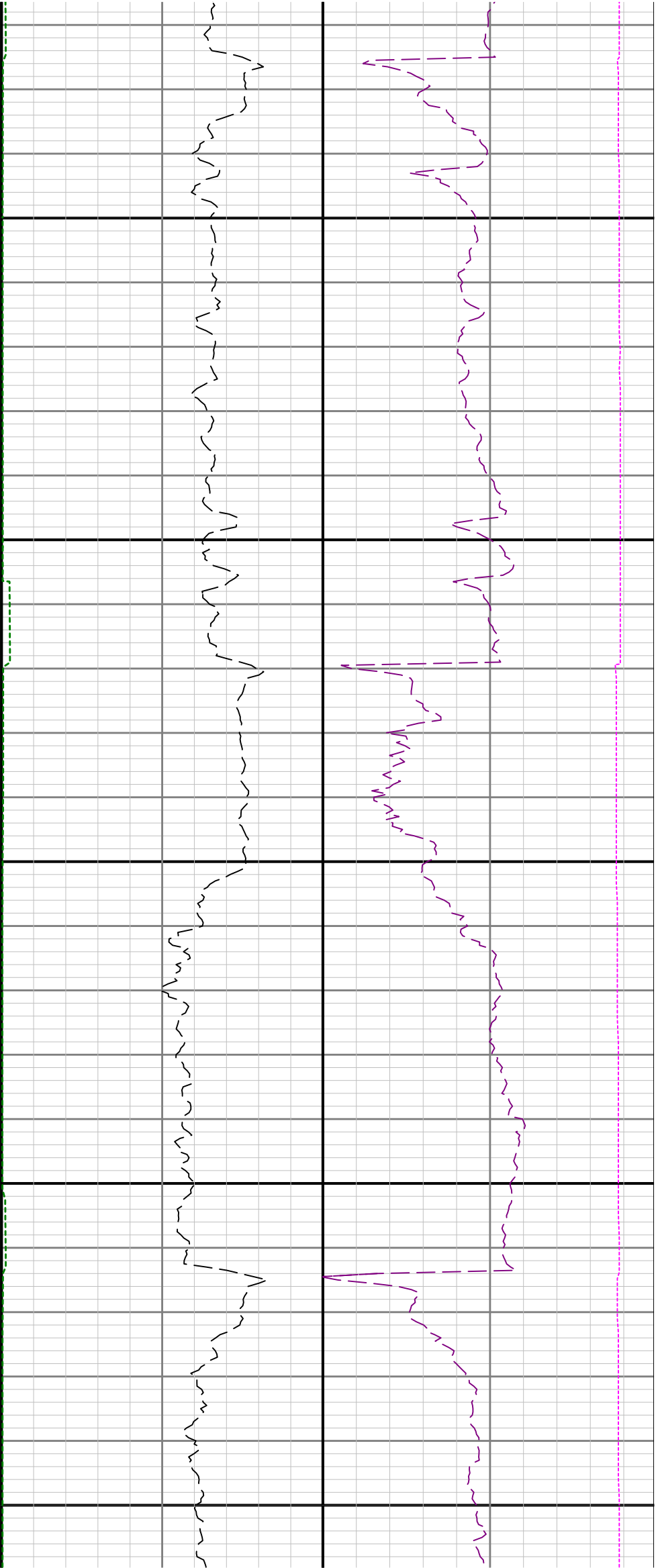
14800

14900



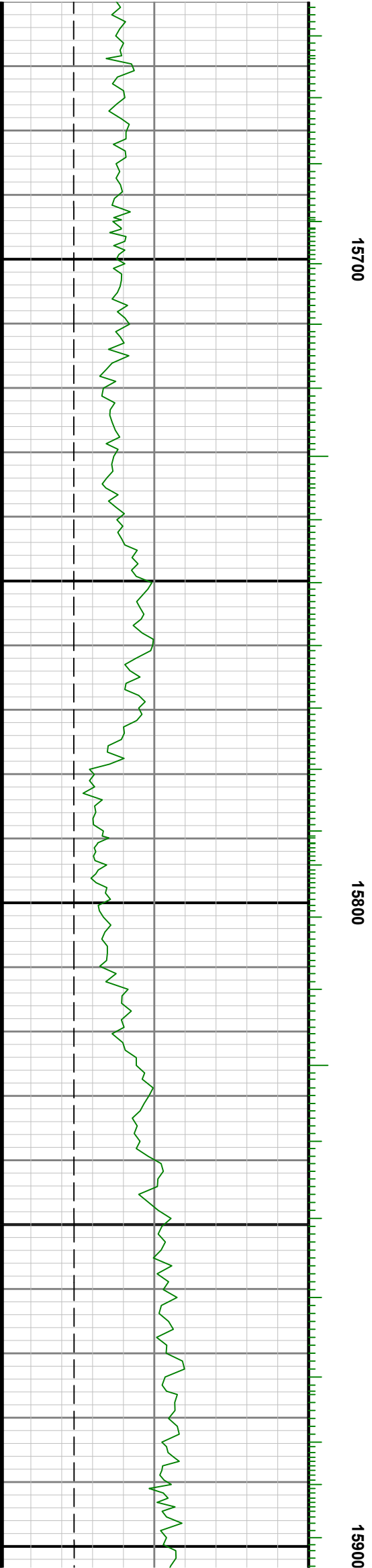
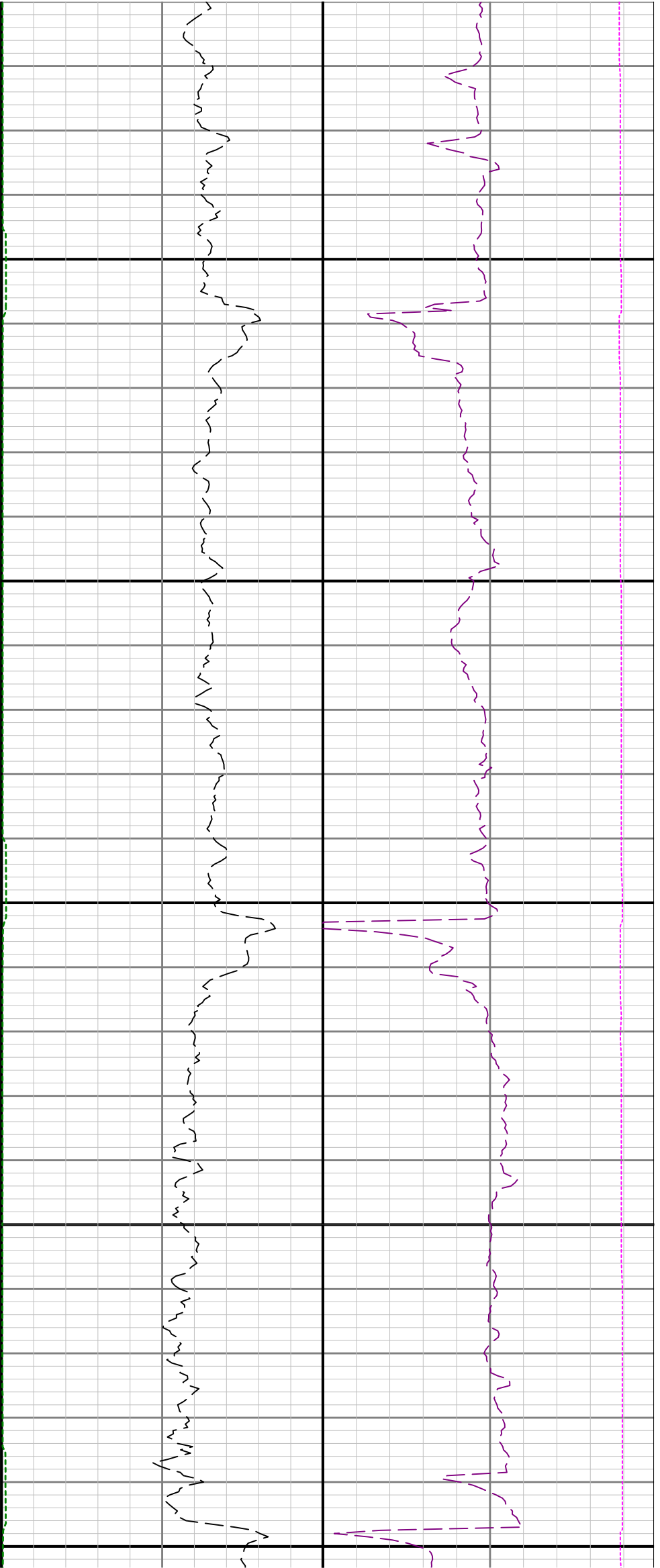


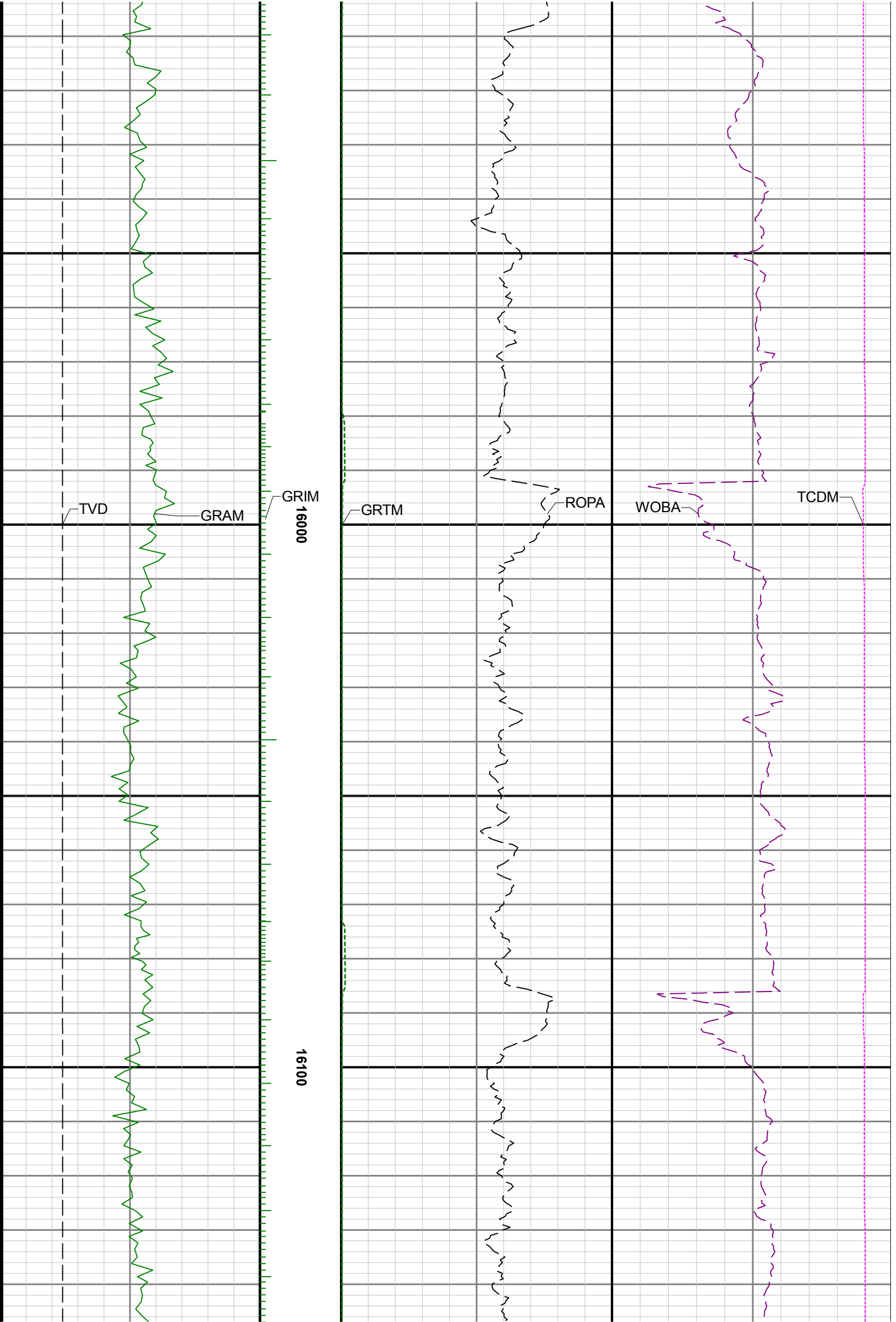


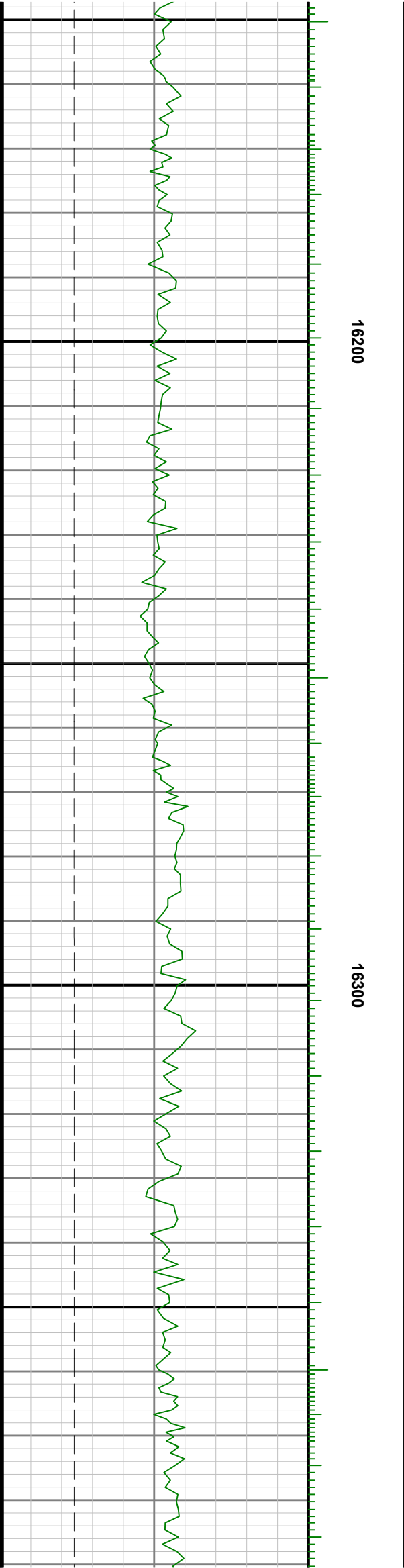
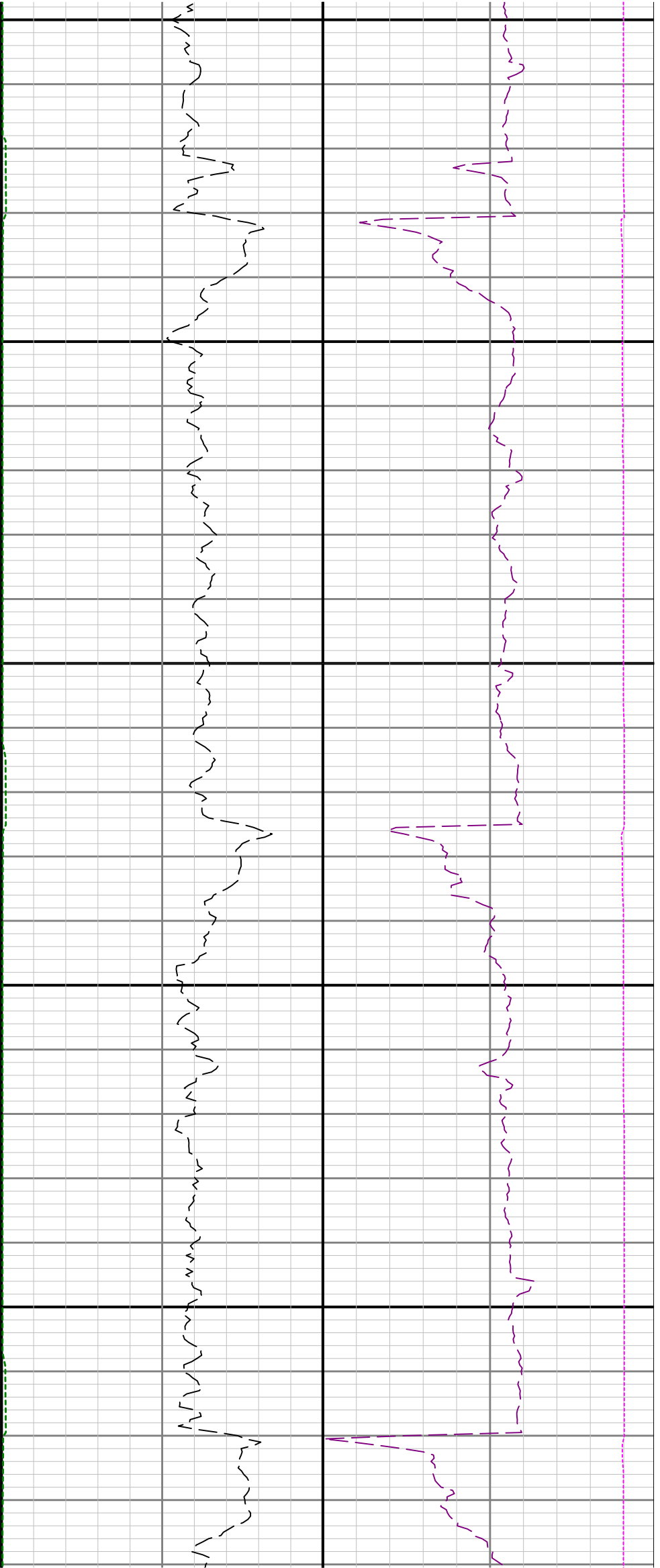


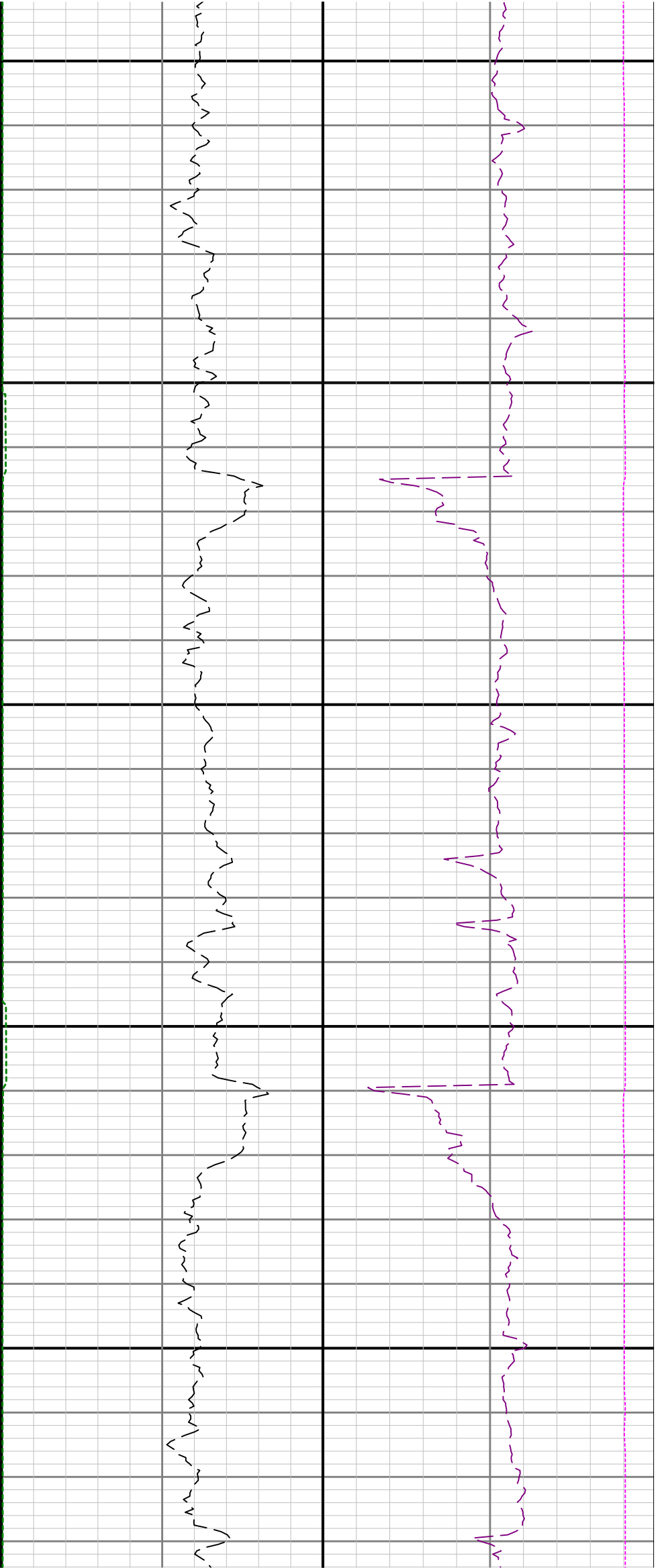
15500

15600









16400

16500

16600

