



LWD MEMORY LOG									
<div> <div>  <div> <div>BAKER</div> <div>HUGHES</div> <div>a GE company</div> </div> </div> <div>  </div> </div> <div>Gamma Ray</div>				<div> <div>Scale:</div> <div>1:240</div> </div> <div> <div>Company: Great Western Operating Company LLC</div> <div>Well: SCHNEIDER HD 11-022HC</div> <div>Field: Weld County</div> </div> <div> <div>County: Weld</div> <div>Country: United States</div> </div>					
<div> <div>Depth Reference:</div> <div>Driller's Depth</div> </div>				<div> <div>State: Colorado</div> </div>					
<div> <div>Status:</div> <div>Final Print</div> </div>				<div> <div>Surface Location:</div> <div> <div>Latitude: 40° 19' 26.680" N</div> <div>Longitude: 104° 49' 36.360" W</div> </div> <div>Other Services:</div> </div>					
<div> <div>API No:</div> <div>05-123-46411</div> </div>				<div> <div>SEC: 7</div> <div>TWN: 4N</div> <div>RGE: 66W</div> </div> <div>Directional</div>					
<div> <div>Job ID:</div> <div>110030383</div> </div>				<div> <div>Permanent Datum (P.D.): Mean Sea Level</div> <div>Elevation: 0.00 ft</div> <div>Elev. KB: N/A</div> </div> <div> <div>Log Measured From: Rig Floor</div> <div>Above P.D.: 4755.00 ft</div> <div>Elev. DF: 4755.00 ft</div> <div>Elev. GL: 4735.00 ft</div> </div>					
<div> <div>Dates</div> <div> <div>From: 2019-09-30</div> <div>To: 2019-10-03</div> <div>Spud: 2019-08-31</div> </div> </div>				<div> <div>Interval</div> <div> <div>Drilled (ft)</div> <div>Top: 1611.00</div> <div>Bottom: 18234.00</div> </div> <div> <div>Logged (ft)</div> <div>Top: 1611.00</div> <div>Bottom: 18221.00</div> </div> <div> <div>Magnetic Field Reference</div> <div> <div>Azi Reference North: 66.68</div> <div>Total Magnetic Field Strength: (nT) 52075</div> <div>Mag to Reference North Correction: (deg) 8.18</div> </div> </div> </div>					
<div> <div>Borehole Record</div> </div>				<div> <div>Casing Record</div> </div>					
<div> <div>Hole Size (in)</div> <div>13.500</div> <div>8.500</div> </div>				<div> <div>From (ft)</div> <div>20.00</div> <div>1611.00</div> </div> <div> <div>To (ft)</div> <div>1611.00</div> <div>18234.00</div> </div> <div> <div>Size (in)</div> <div>9.625</div> </div> <div> <div>Weight (lb/ft)</div> <div>36.00</div> </div> <div> <div>From (ft)</div> <div>20.00</div> </div> <div> <div>To (ft)</div> <div>1611.00</div> </div>					
<div> <div>Mud Record</div> </div>				<div> <div>Deviation Record</div> </div>					
<div> <div>Type</div> <div>Diesel-Oil Based Mud</div> </div>				<div> <div>From (ft)</div> <div>1611.00</div> </div> <div> <div>To (ft)</div> <div>18234.00</div> </div> <div> <div>Hole Size (in)</div> <div>8.500</div> </div> <div> <div>Interval (ft)</div> <div>16623.00</div> </div> <div> <div>Inc Az (Start)</div> <div>5.48 344.89</div> </div> <div> <div>Inc Az (End)</div> <div>90.37 272.00</div> </div>					
<div> <div>Acquisition System</div> <div>Cadence Plot Studio</div> </div>				<div> <div>Software Version</div> <div>RT 5.4 5.4.8625.2</div> </div> <div> <div>Rig: PD 460</div> <div>Contractor: Precision Drilling</div> <div>District: RMA</div> </div> <div> <div>Other</div> <div>Unit: D&E</div> </div>					

(C) 2019 Baker Hughes, a GE company, LLC - All rights reserved. Baker Hughes, a GE company, LLC and its affiliates ("BHGE") provides this information on an "as is" basis for general information purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.

Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	8.500	PDC	2.00	AutoTrak Curve	1611.00	18221.00	1611.00	18234.00	2019-09-30 15:36	2019-10-03 14:27	78.27

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Garrett Gerdsen	2019-09-30	2019-10-04	Jairo Garcia	2019-09-30	2019-10-04			

Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2019-09-30 19:00	1	2143.00	Diesel-Oil Based Mud	10.5	33	N/A	10.8	72/28	Active Pit	23810	0.00
2019-10-01 12:00	1	7112.00	Diesel-Oil Based Mud	10.5	30	N/A	10.8	70/30	Active Pit	24295	0.00
2019-10-02 01:00	1	10144.00	Diesel-Oil Based Mud	10.5	31	N/A	10.8	71/29	Active Pit	23810	0.00
2019-10-03 01:00	1	15767.00	Diesel-Oil Based Mud	10.5	30	N/A	10.8	74/26	Active Pit	22838	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	AutoTrak Curve Steering Unit	14547138	Near Bit VSS	5.93	6.77	7.000	4.330
1	AutoTrak Curve Steering Unit	14547138	Near Bit Inclination	5.93	6.77	7.000	4.330
1	AutoTrak Curve MWD	12441474	Gamma (single)	2.74	12.94	7.000	3.250
1	AutoTrak Curve MWD	12441474	Directional (mag)	12.27	22.47	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
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, a GE Company (BHGE). Due to the lack of control by Baker Hughes, depth calibrations and measurements could not be independently verified.
- 2

BHGE LWD run 1 utilized a 6.75 inch NaviGamma service (Directional and Gamma Ray) behind a 8.5 inch bit and rotary steerable assembly from 1611 to 18234 feet MD (1611 to 7222 feet TVD).
- 3

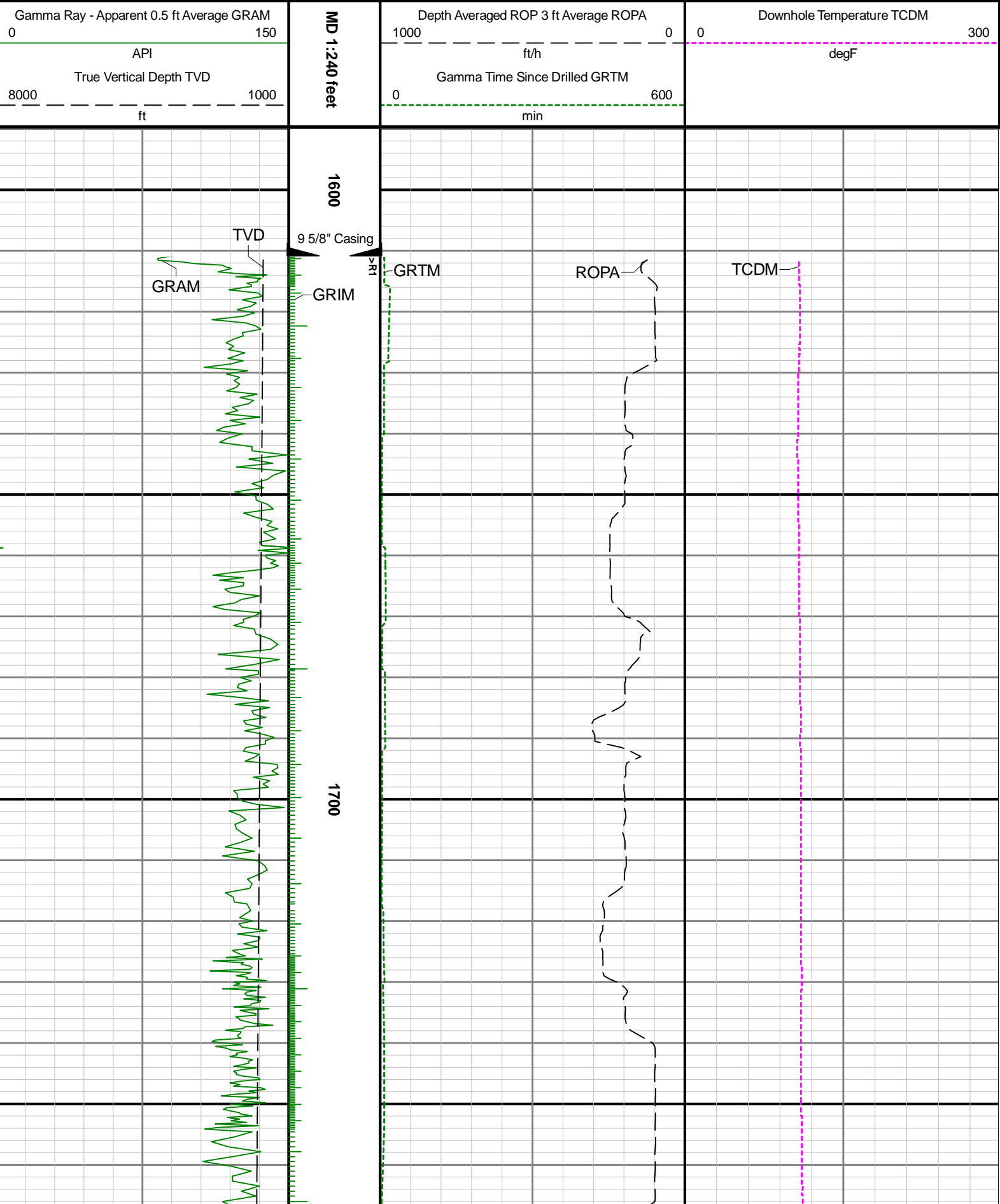
"Date To" indicates the date and time the well reached Total Depth (TD) and logging services ended.

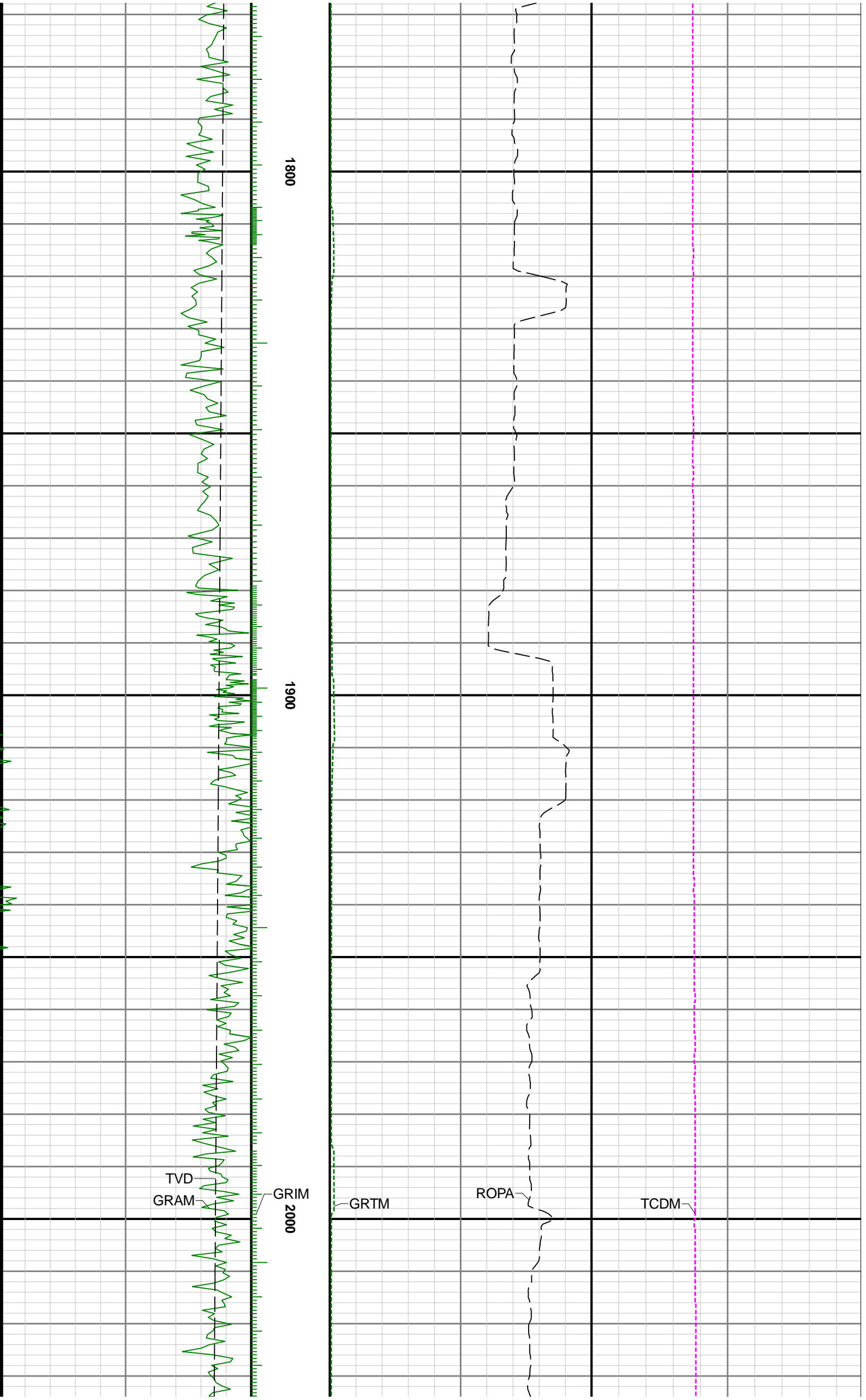
Remarks

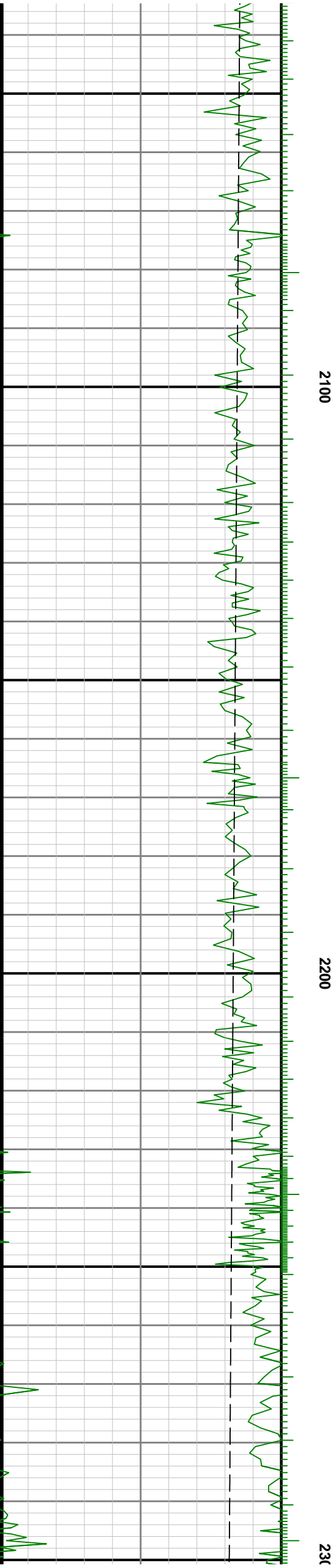
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	18225.00	8.500	1	The interval from 18221 to 18234 feet MD (7222 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

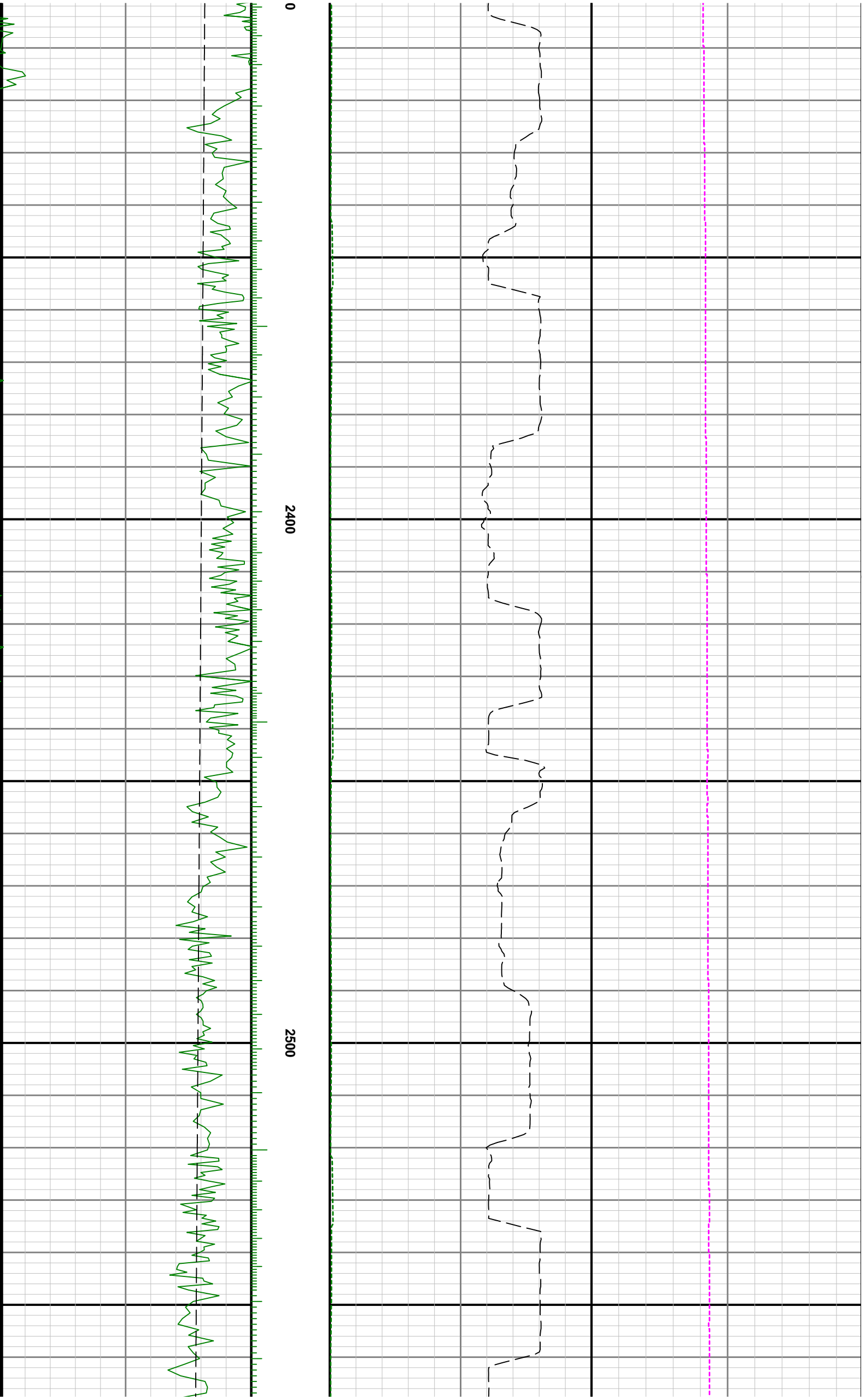
Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
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	Directional Real-Time Survey Temperature	degF







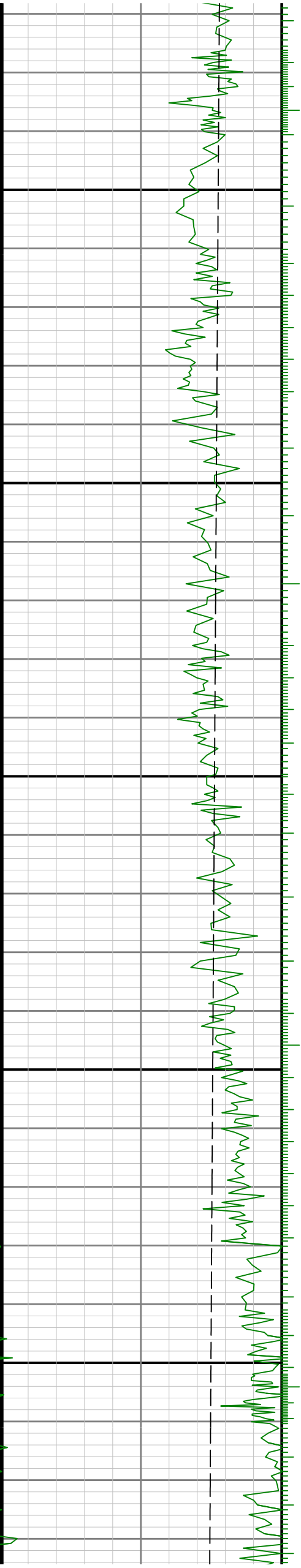


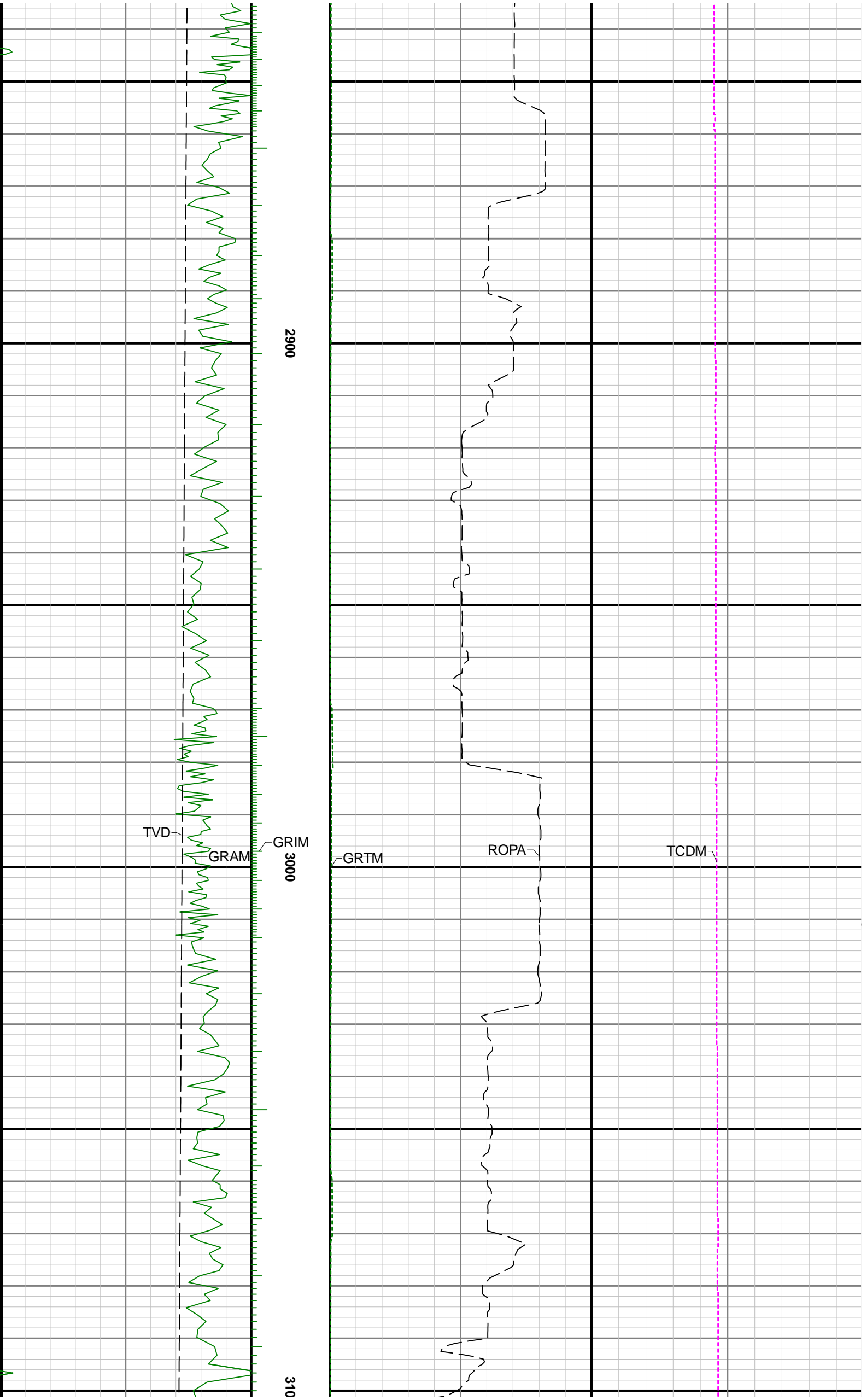


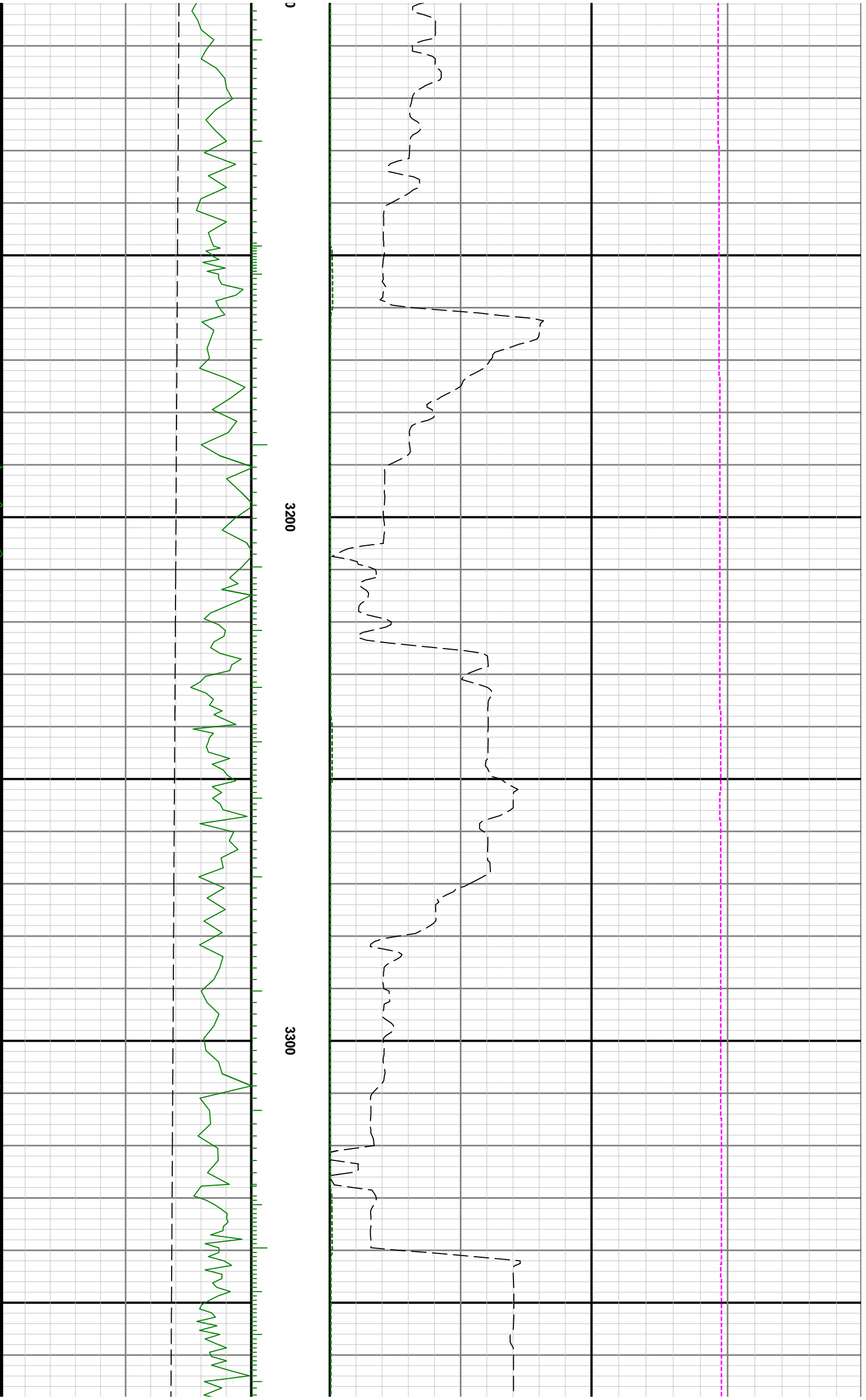
2600

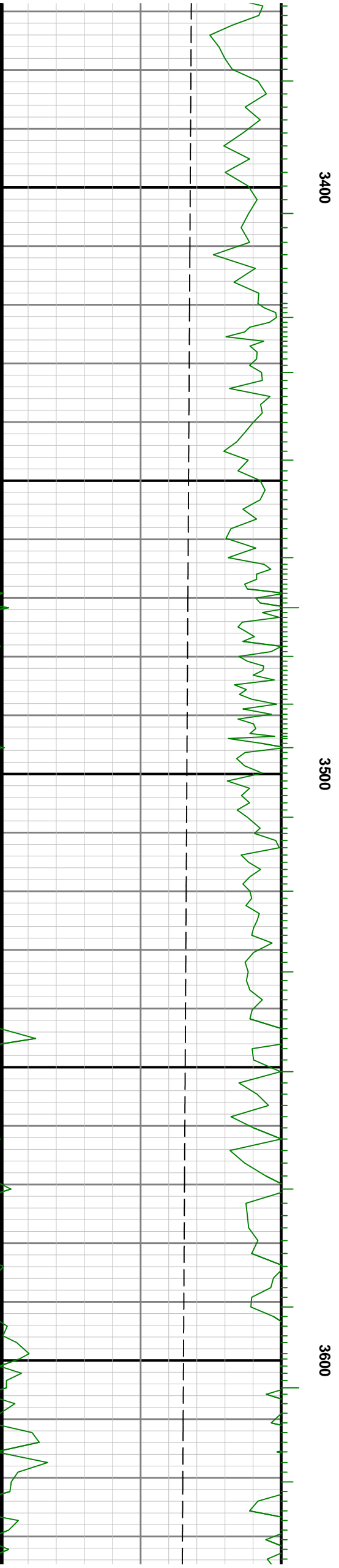
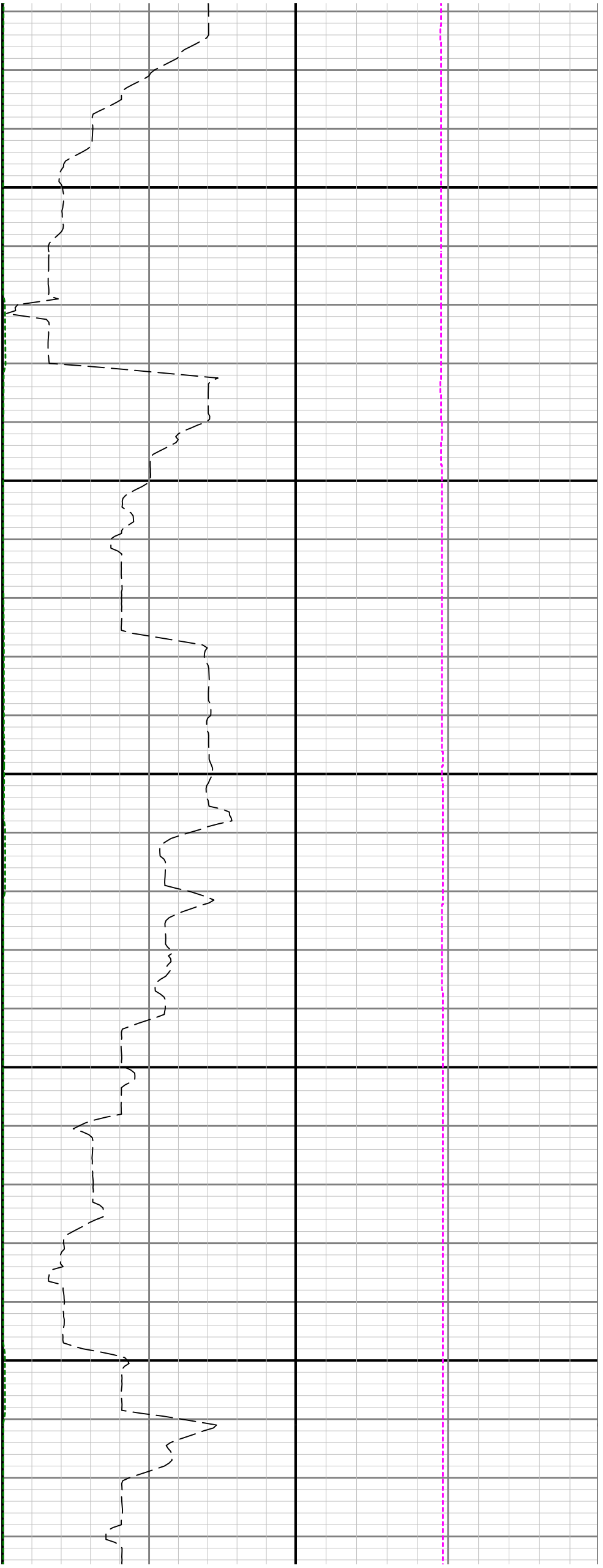
2700

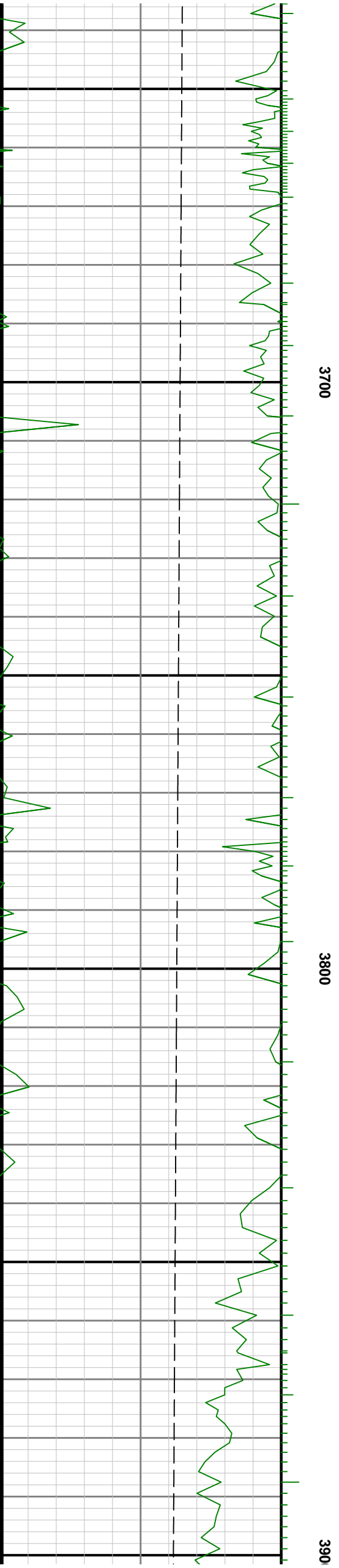
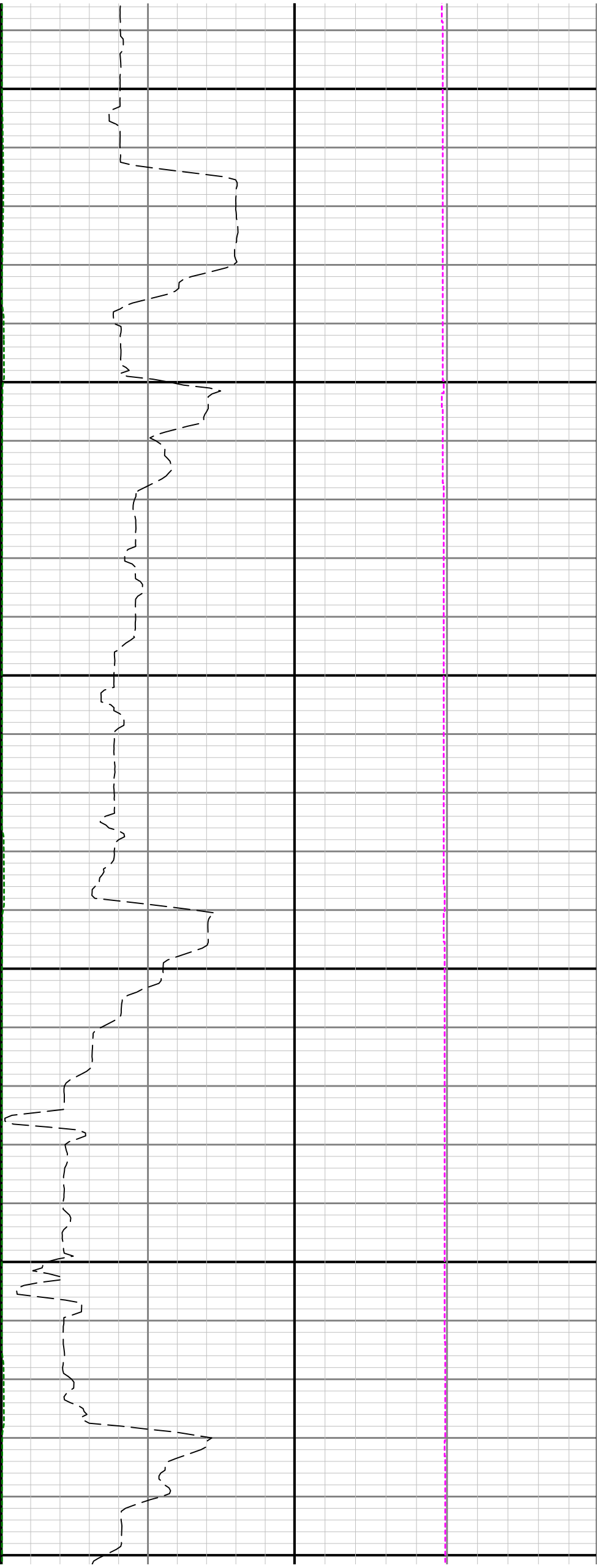
2800

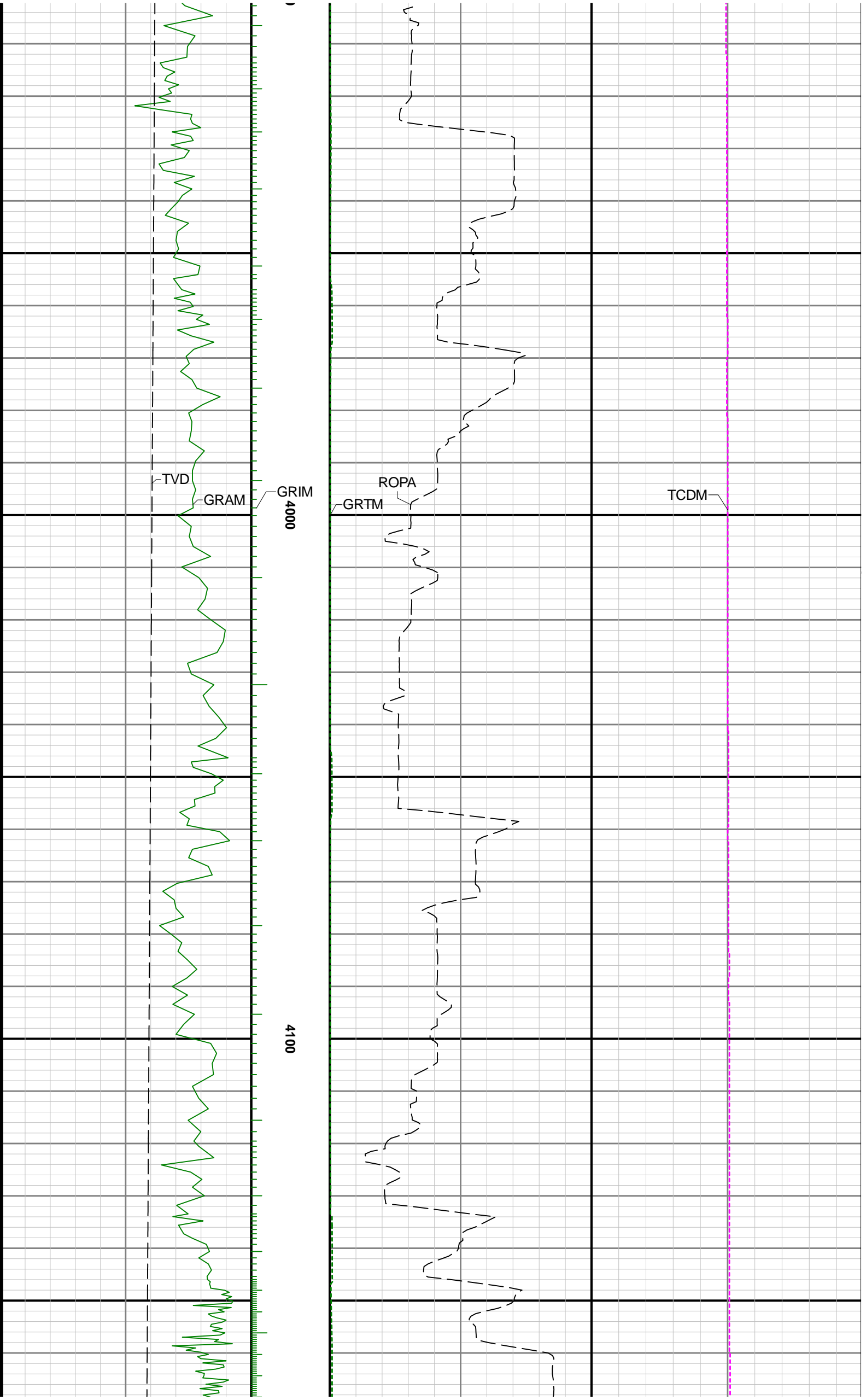


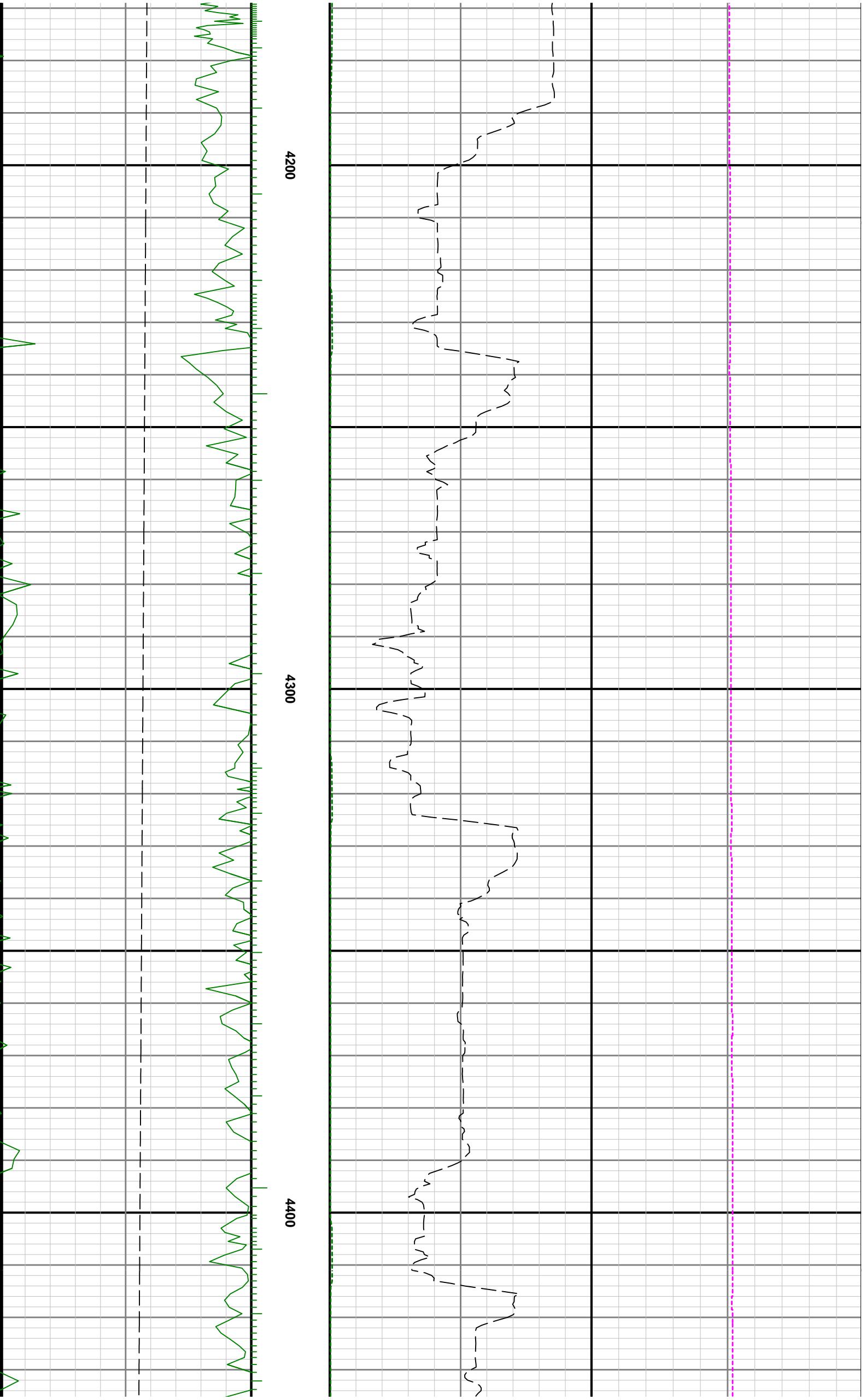


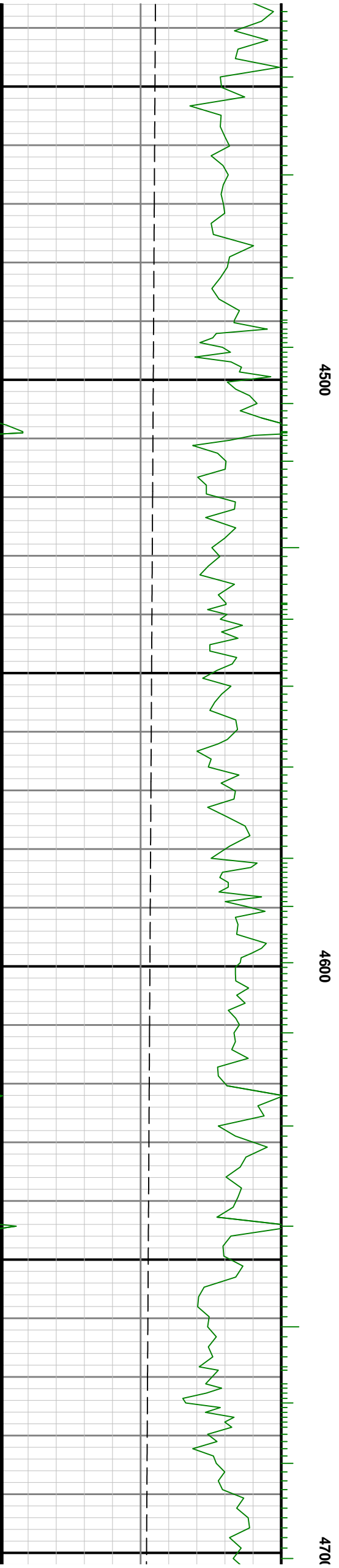
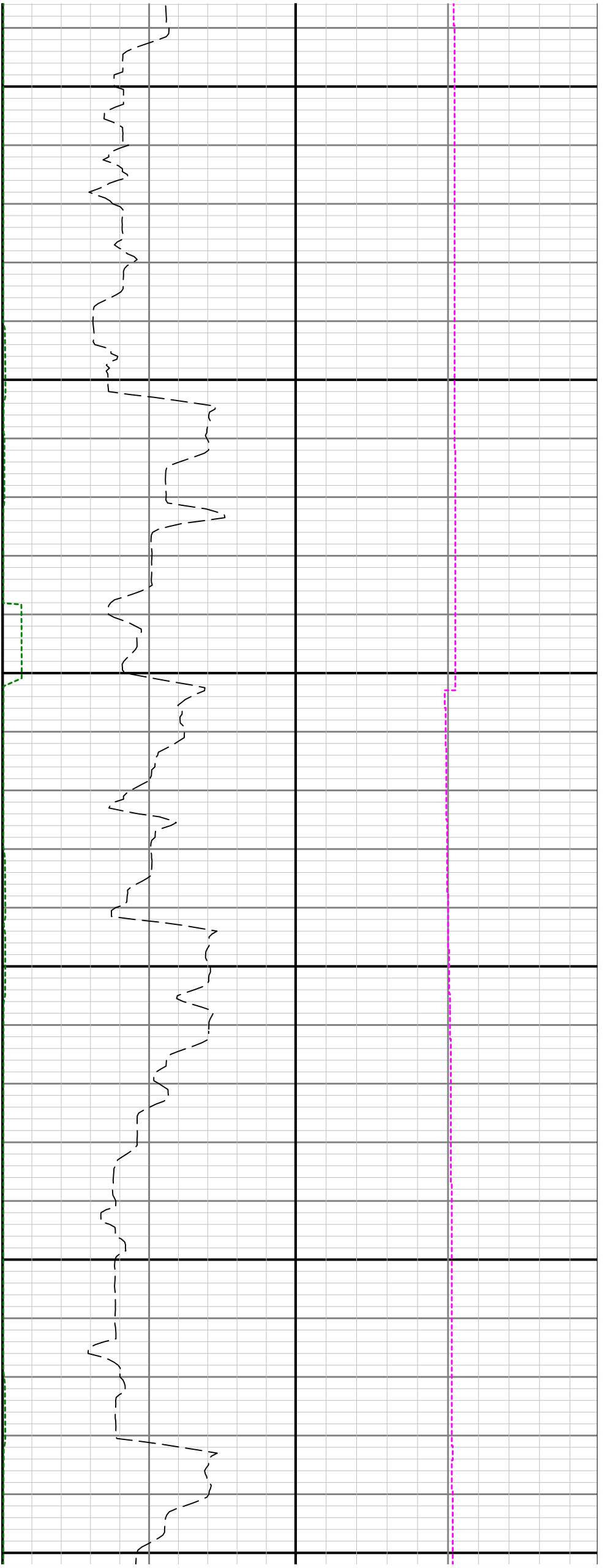


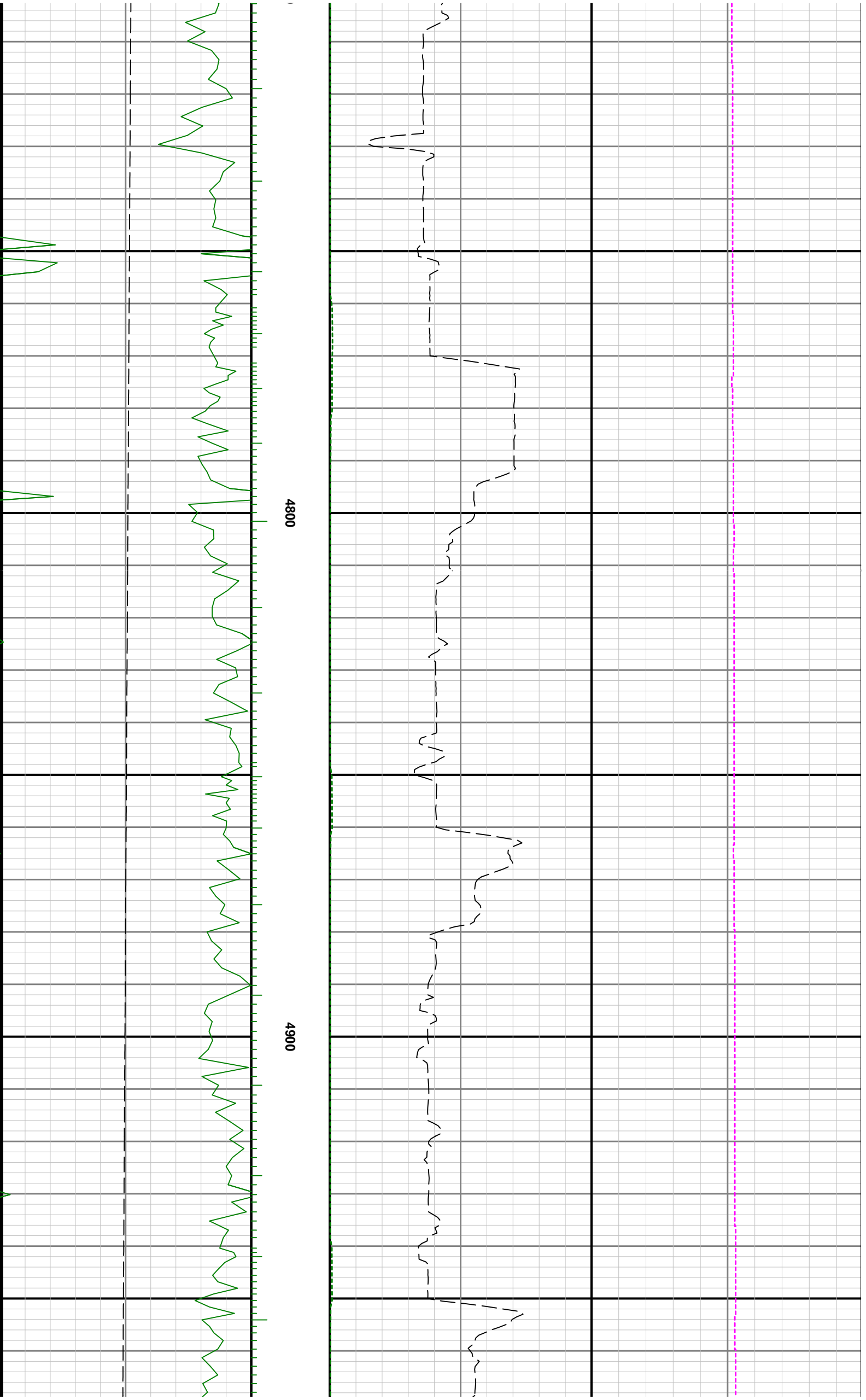


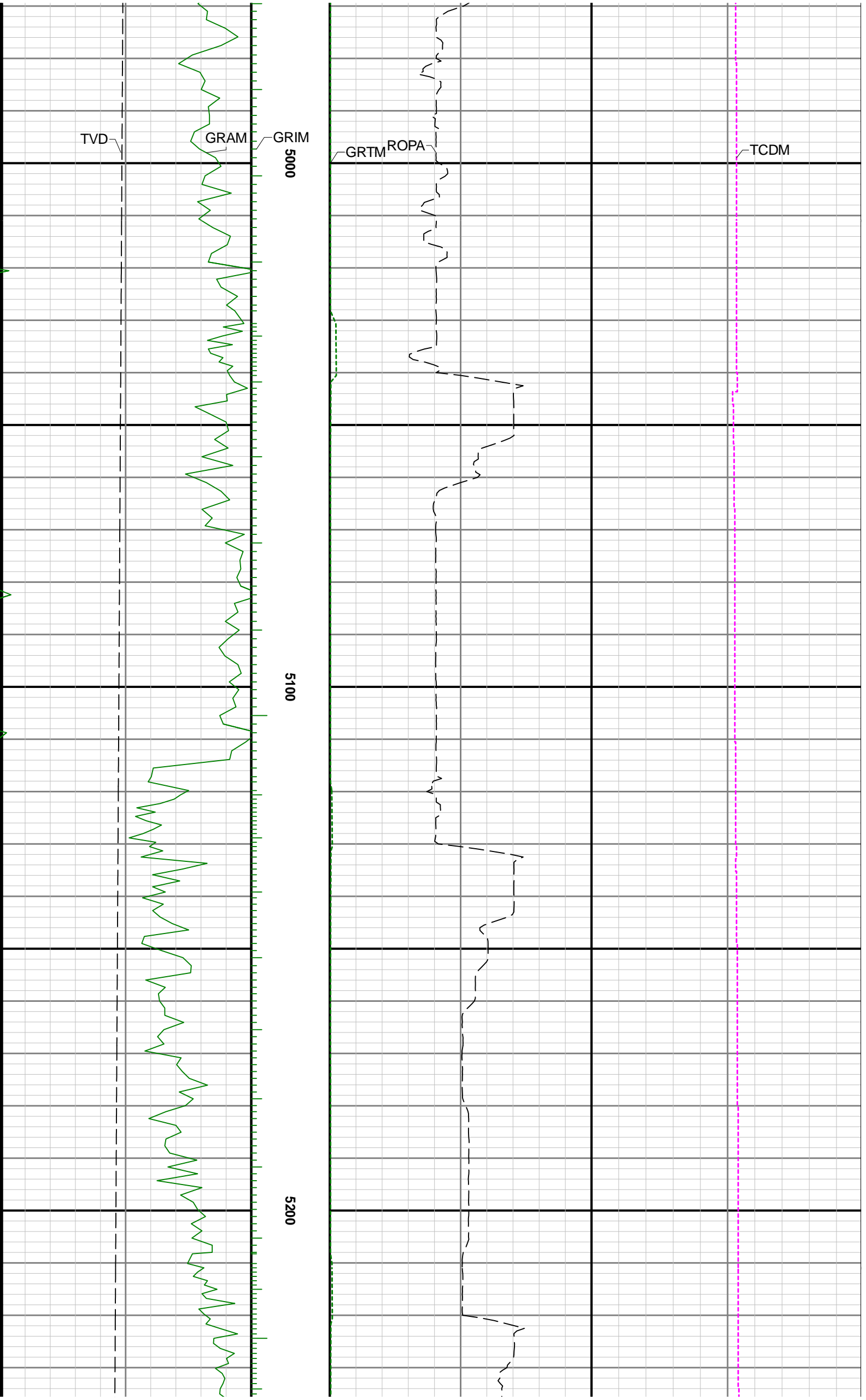


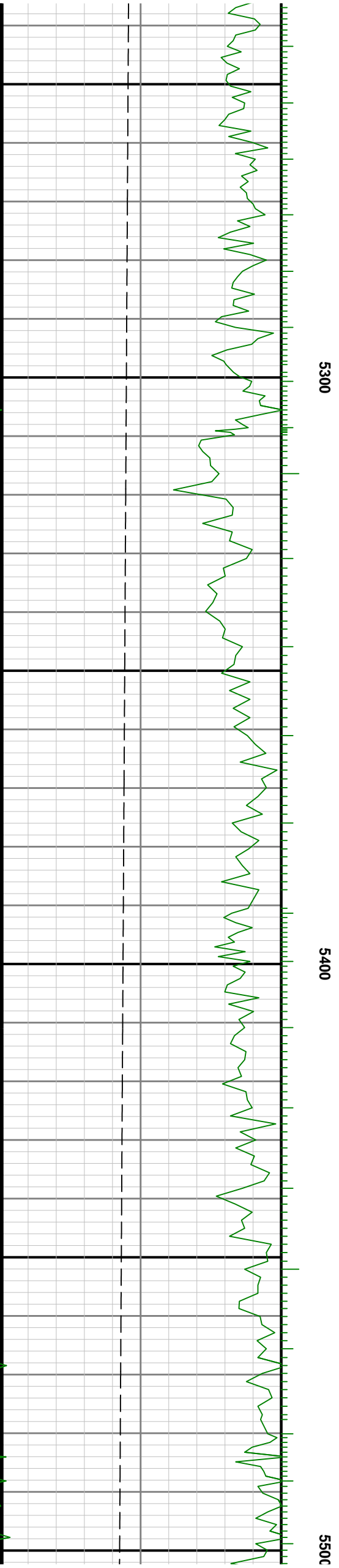
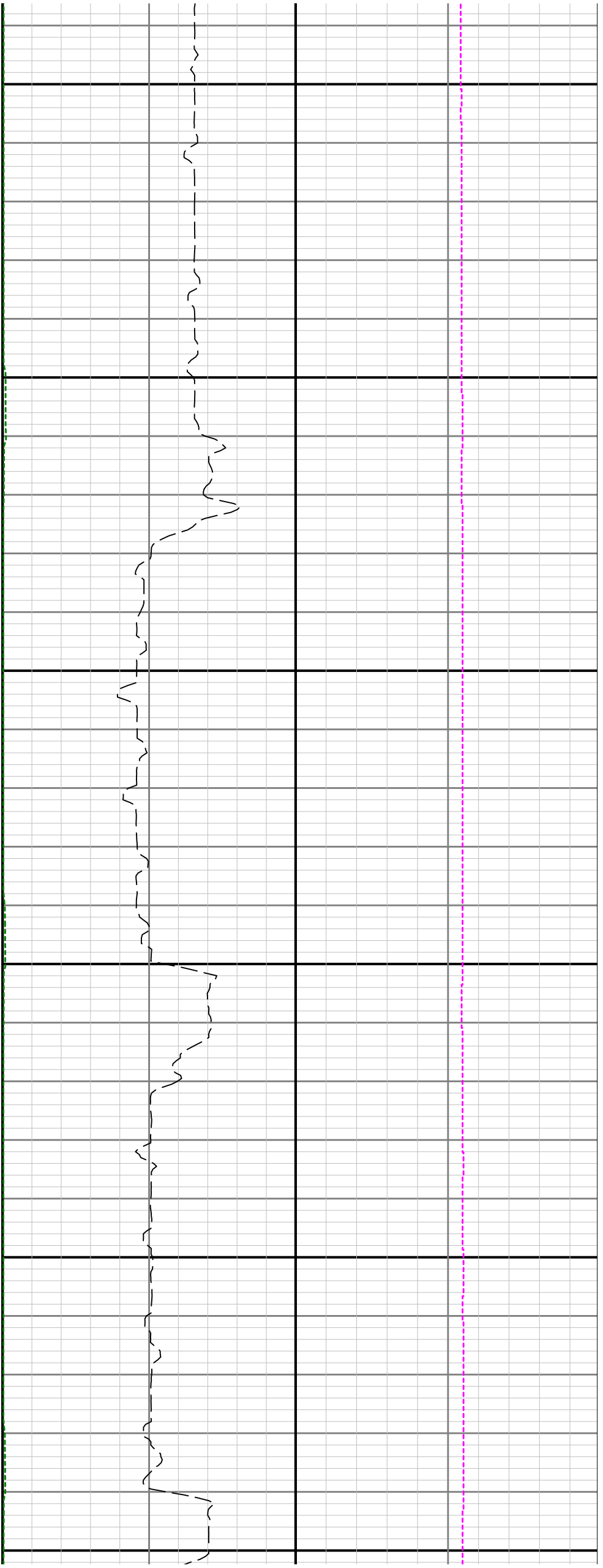


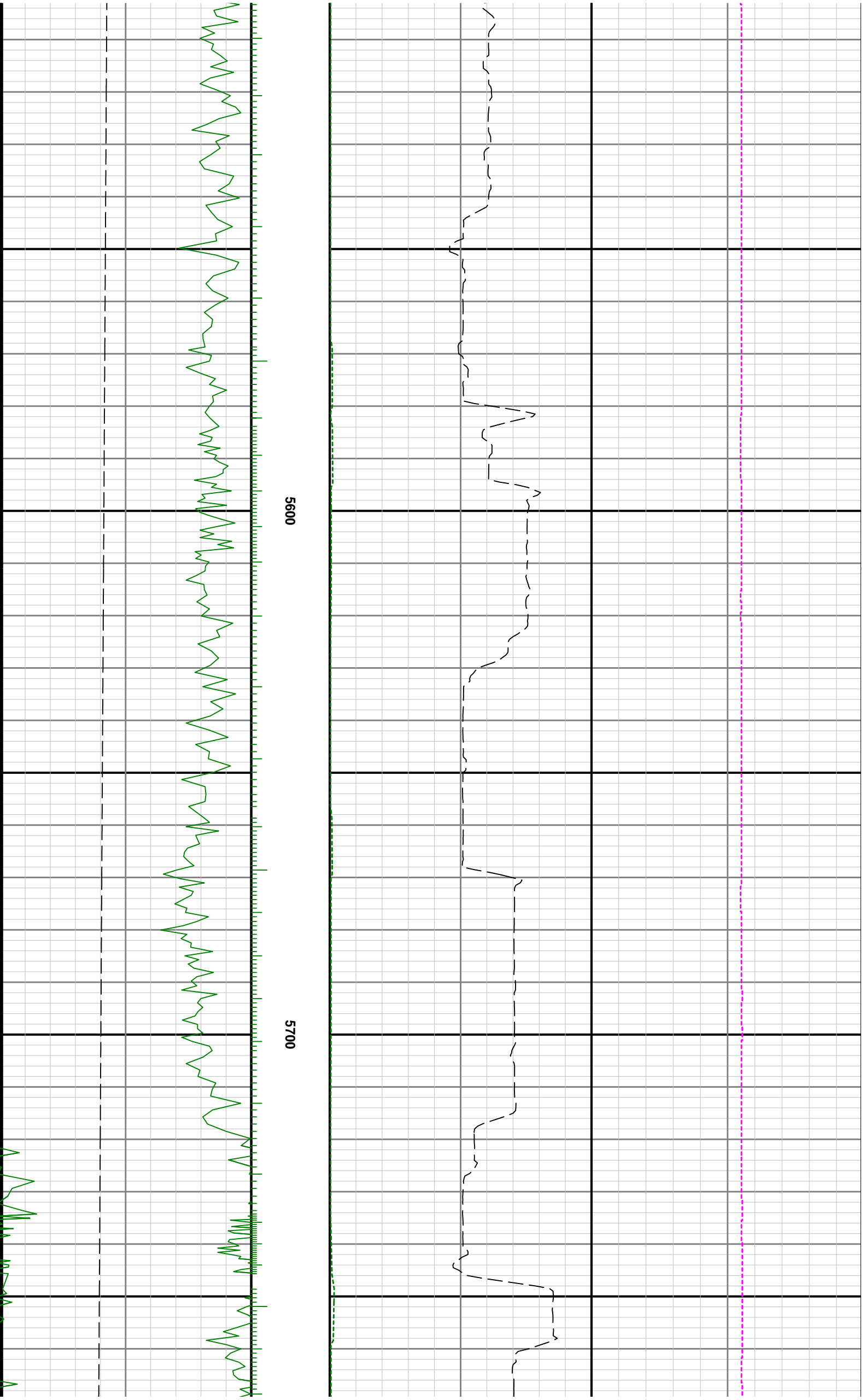


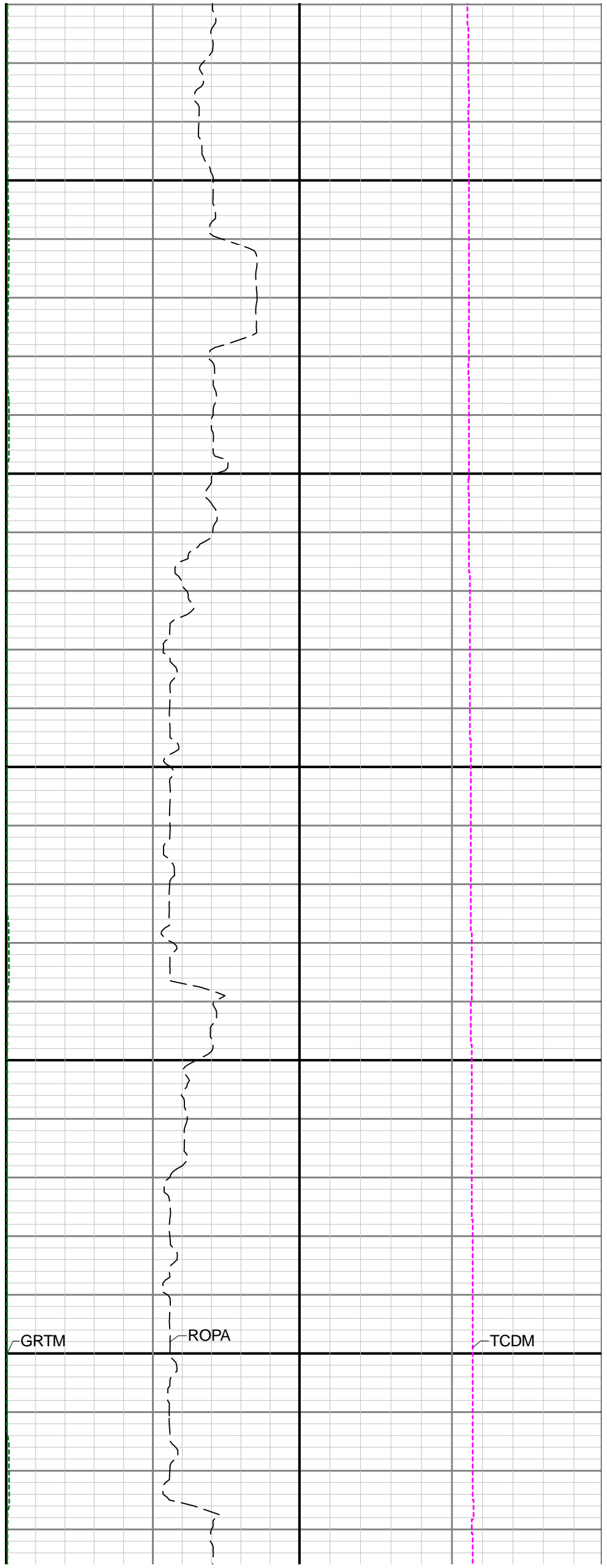
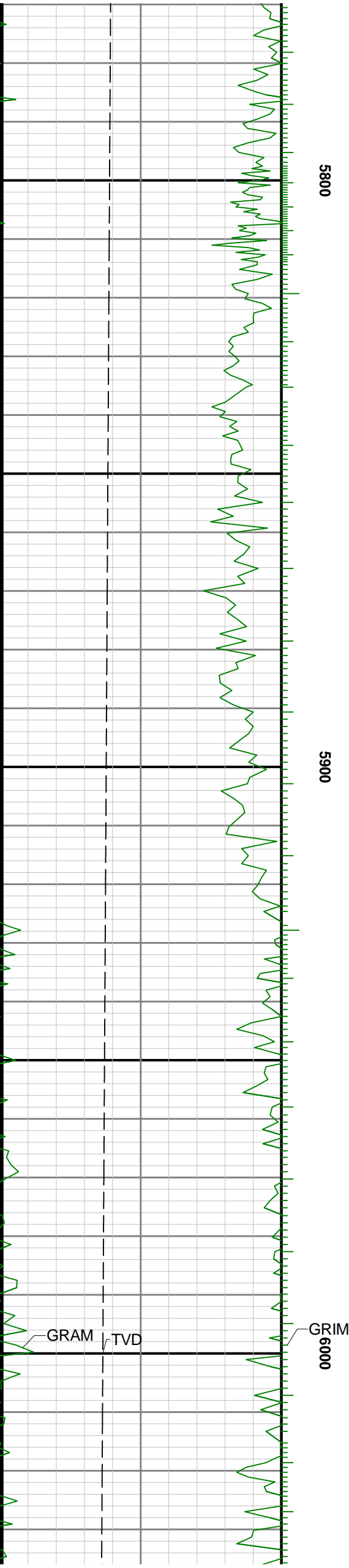


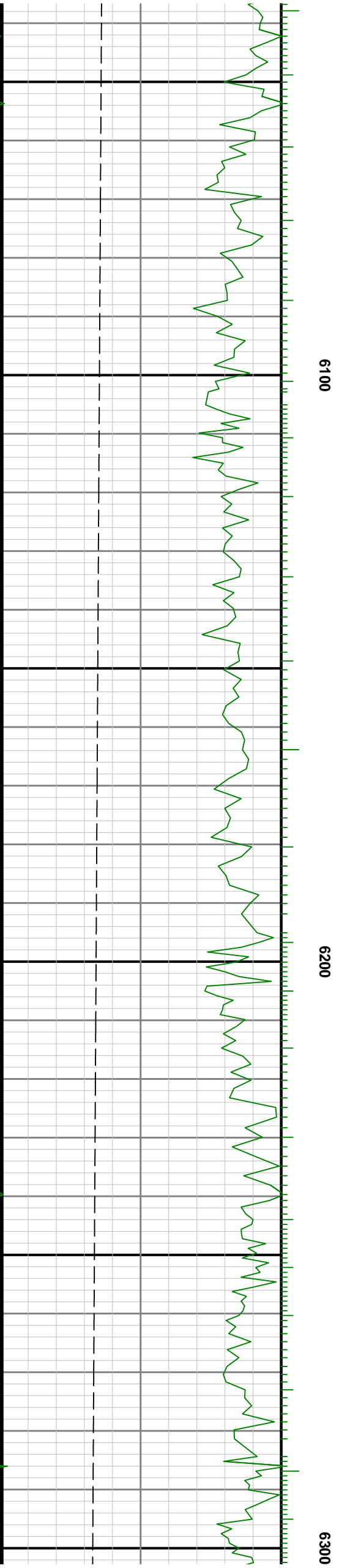
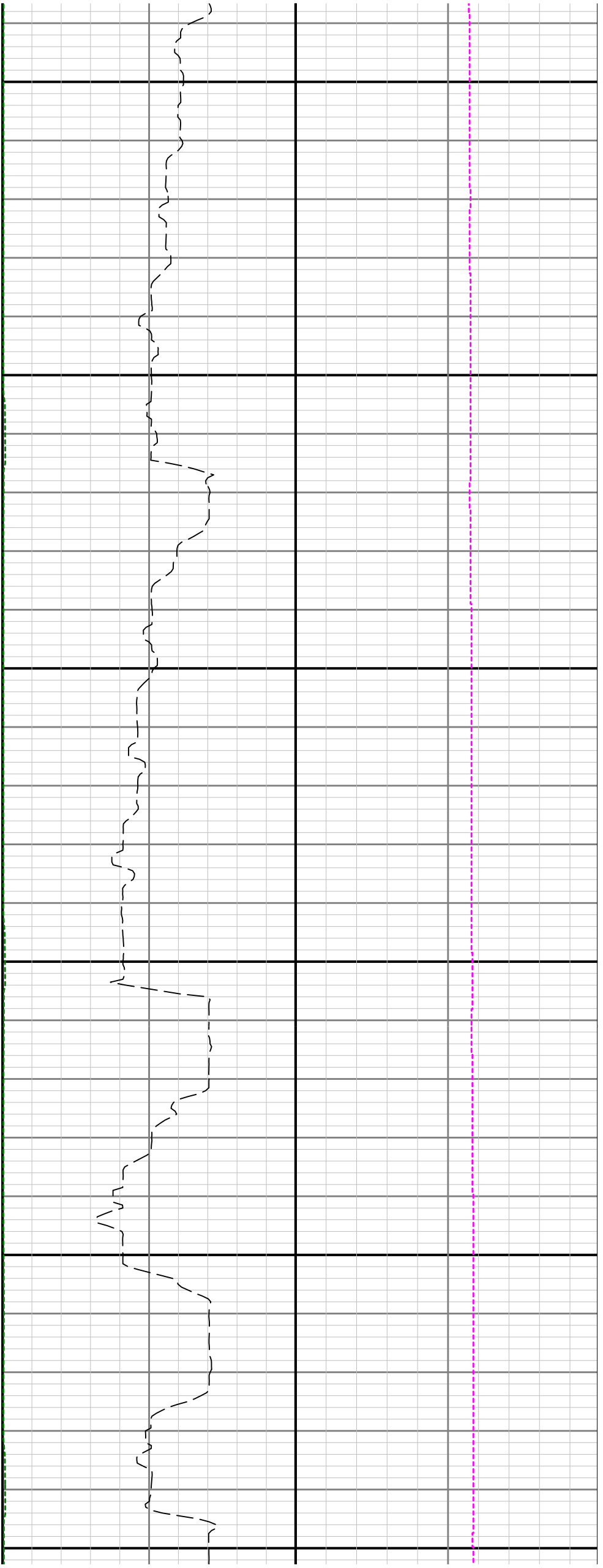


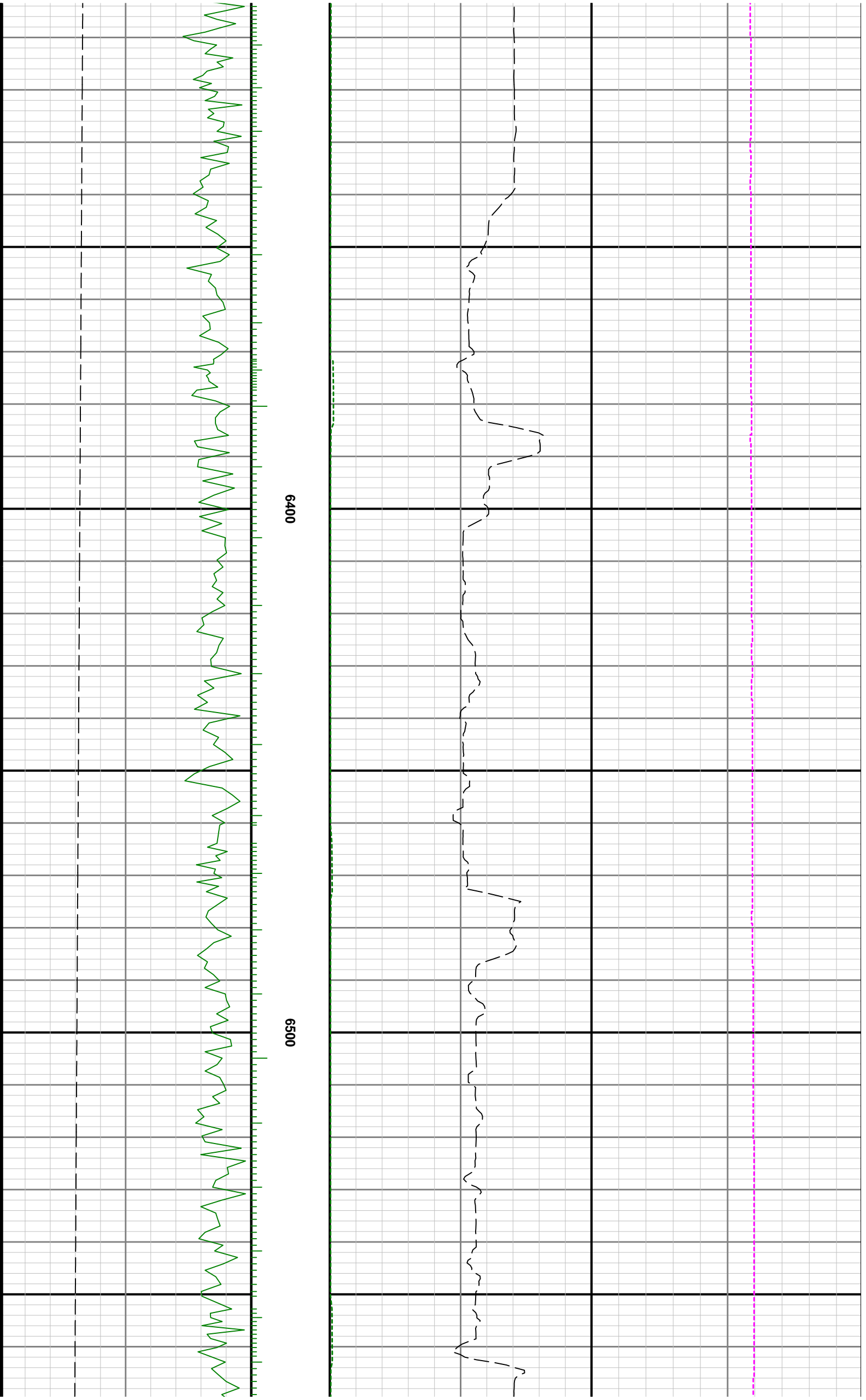


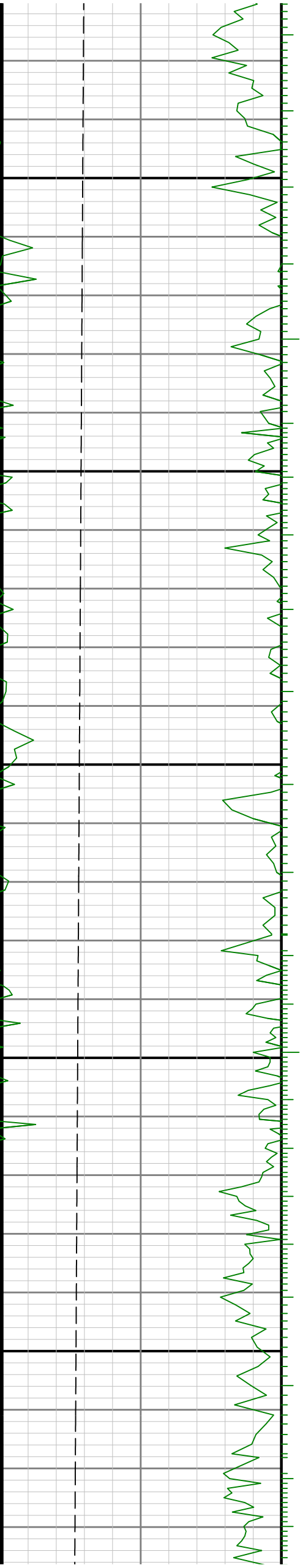








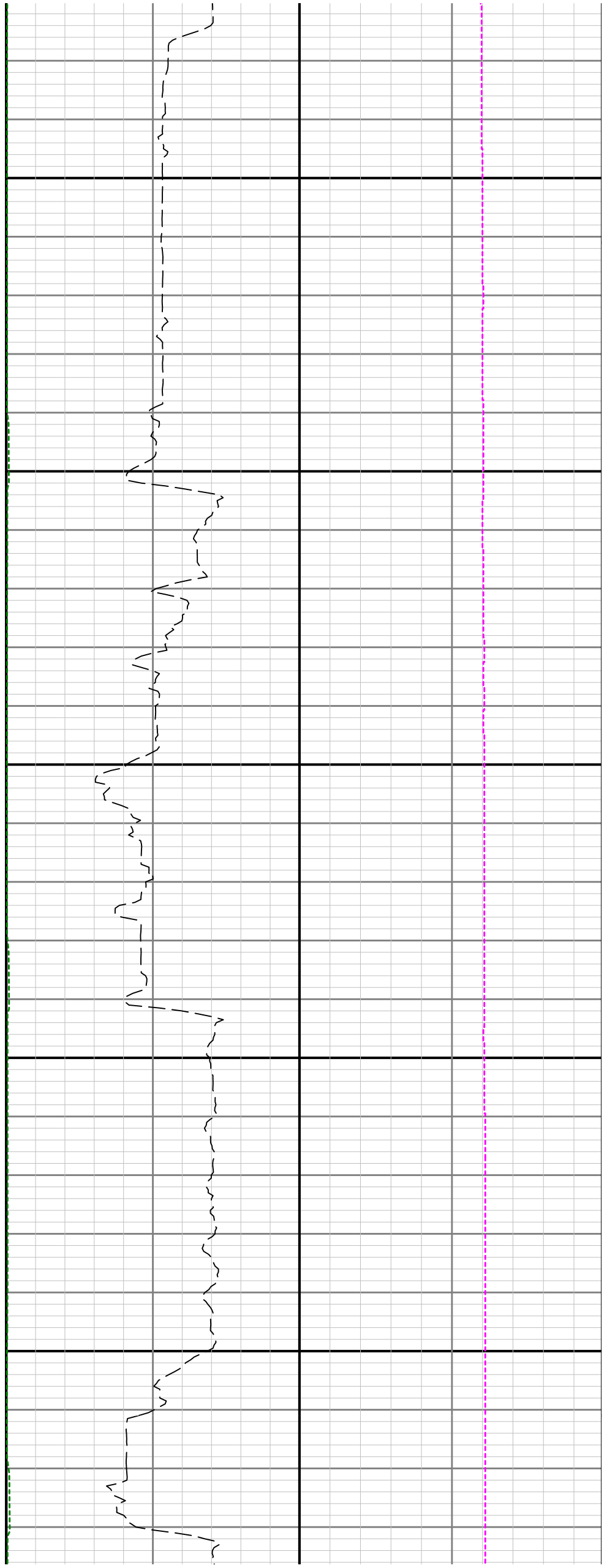


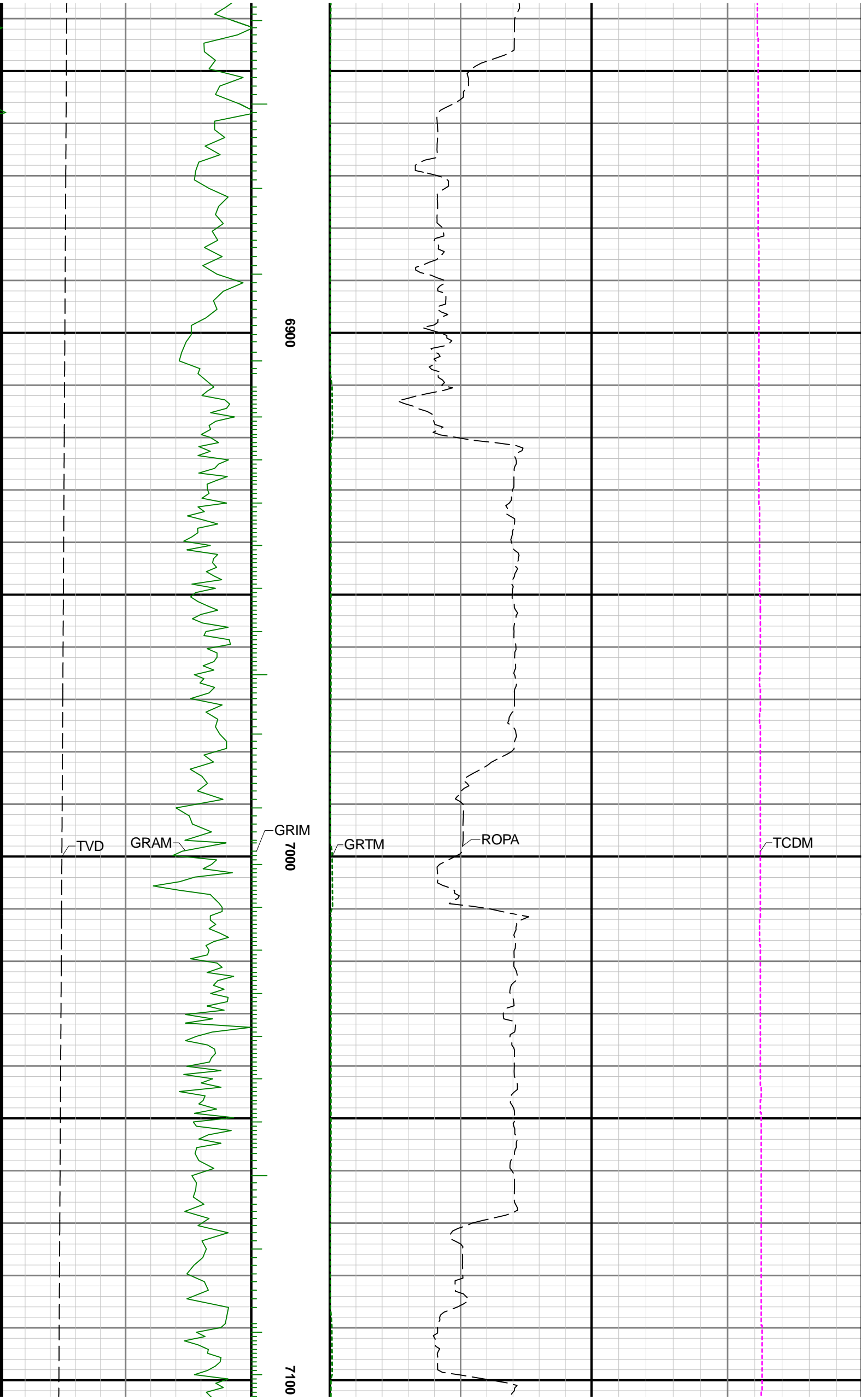


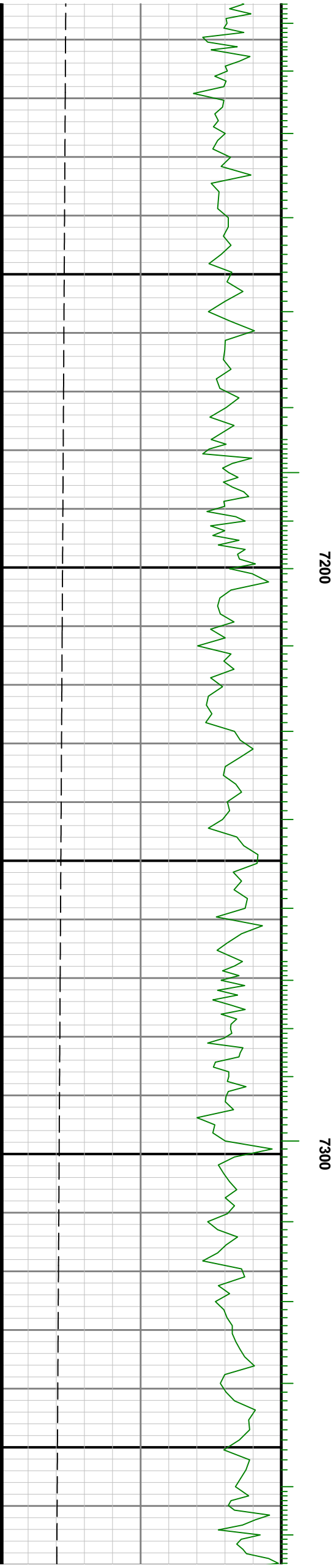
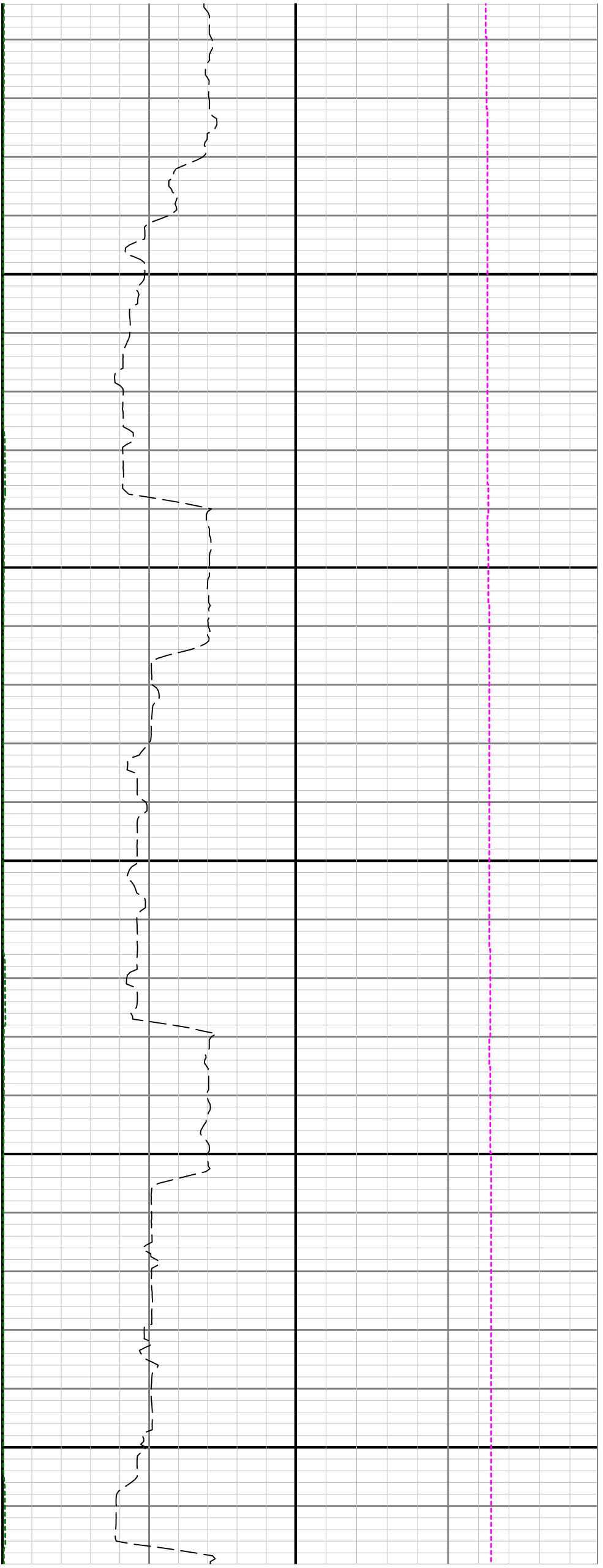
6600

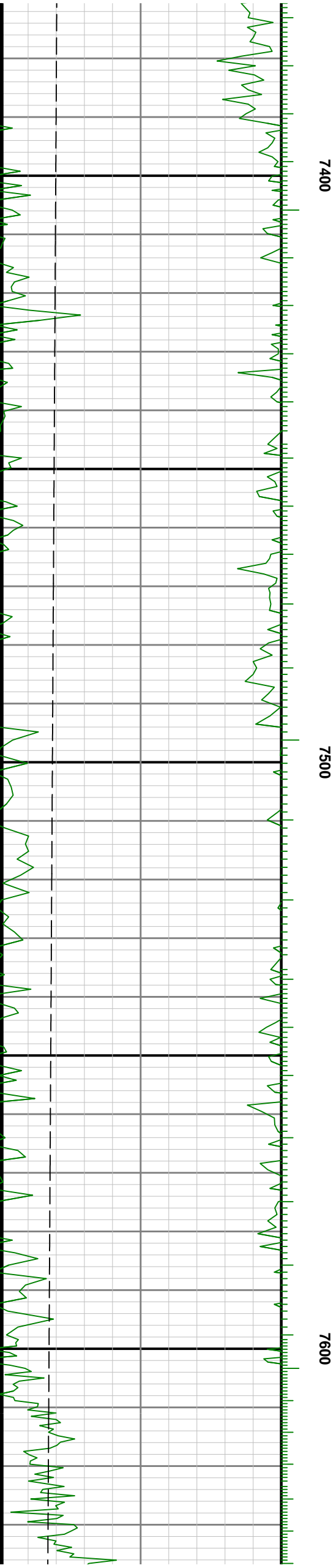
6700

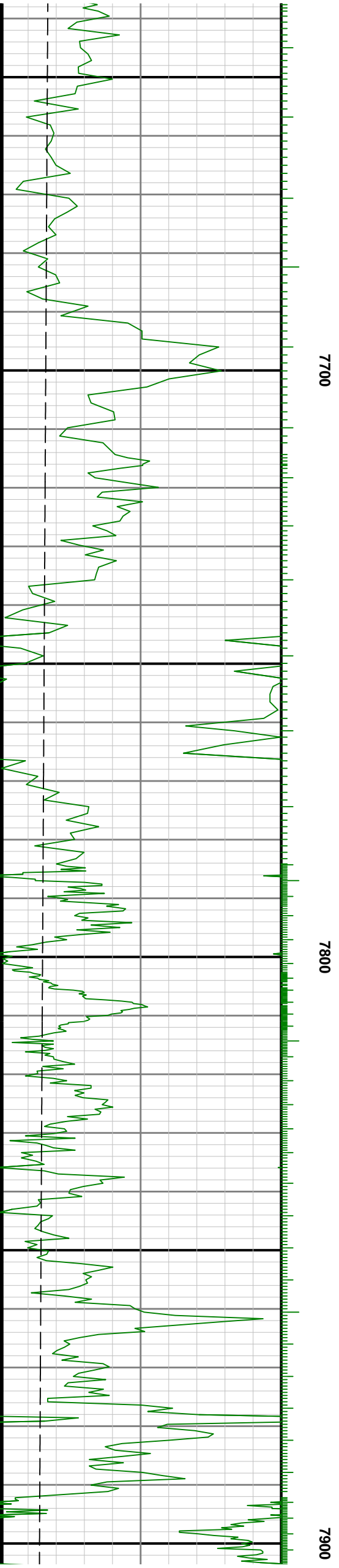
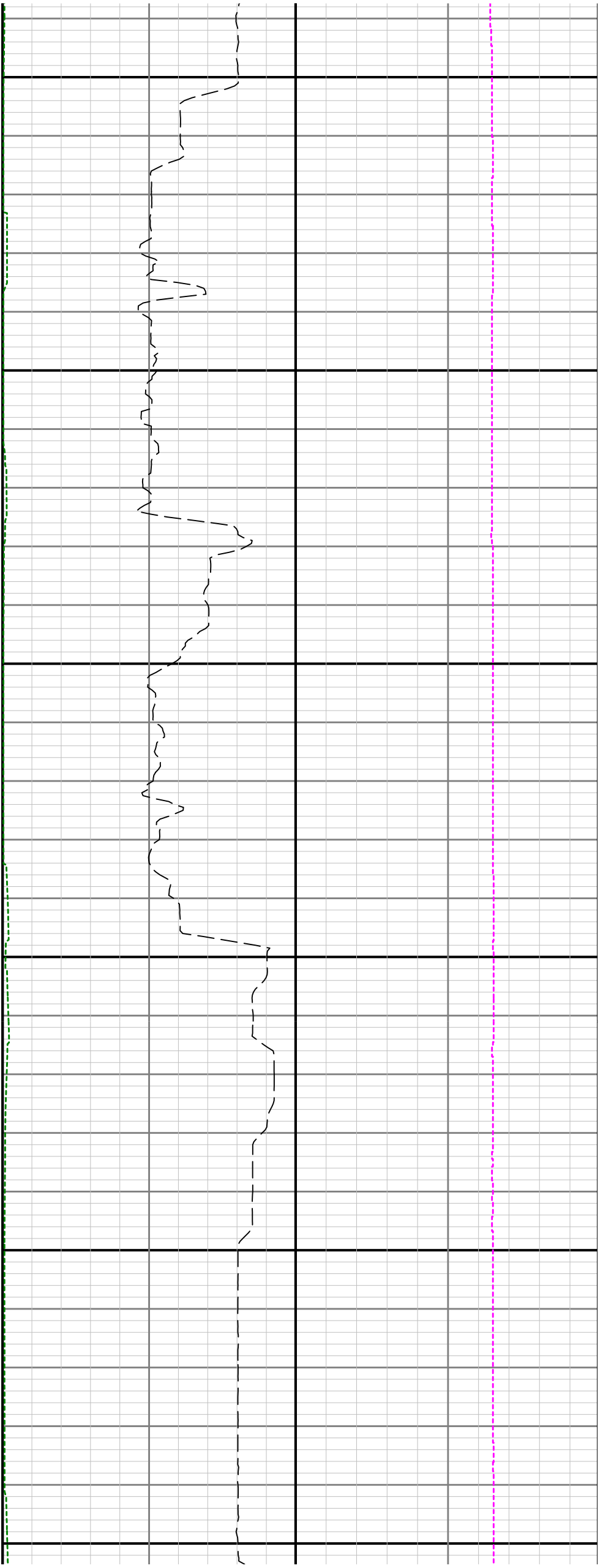
6800

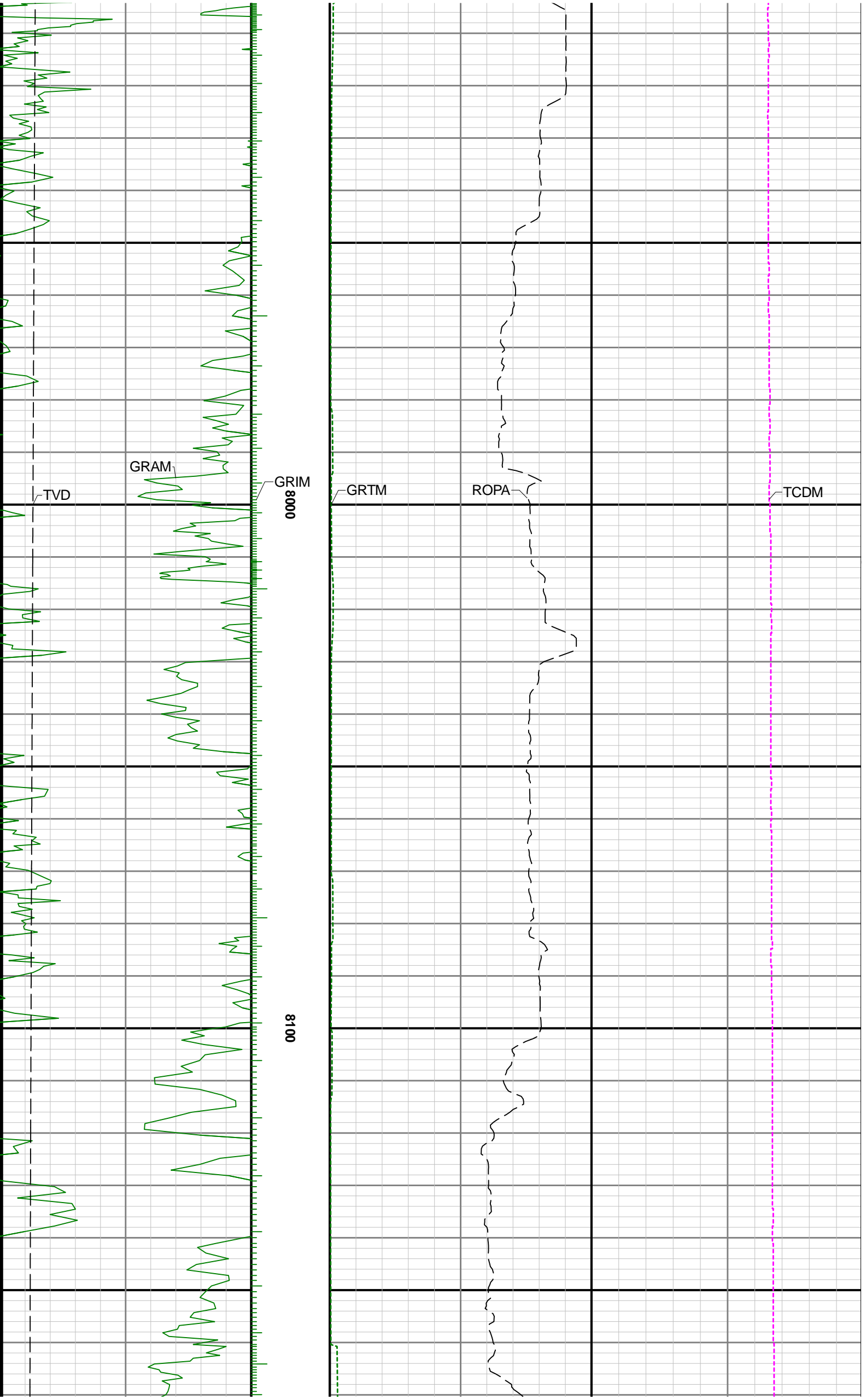


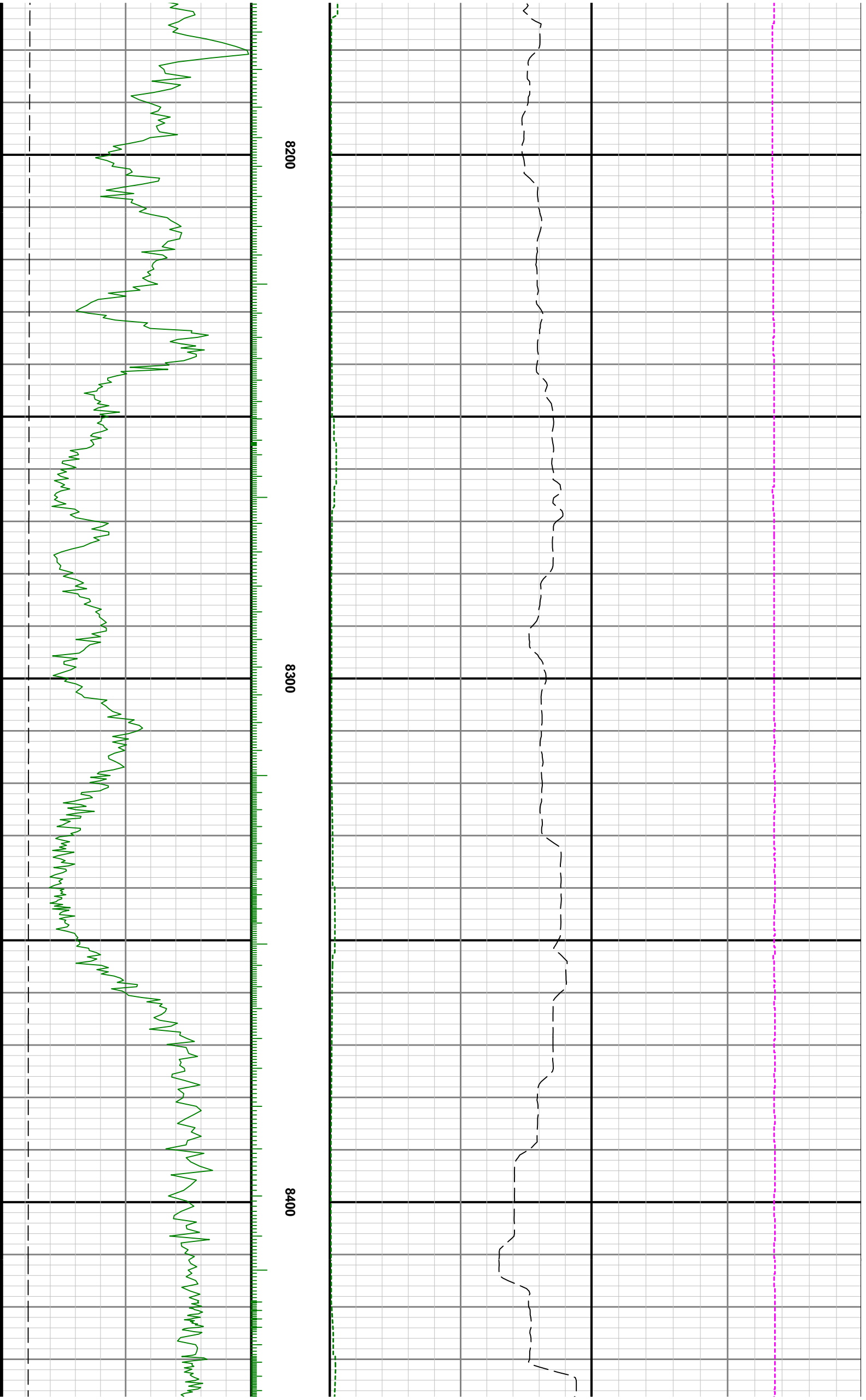


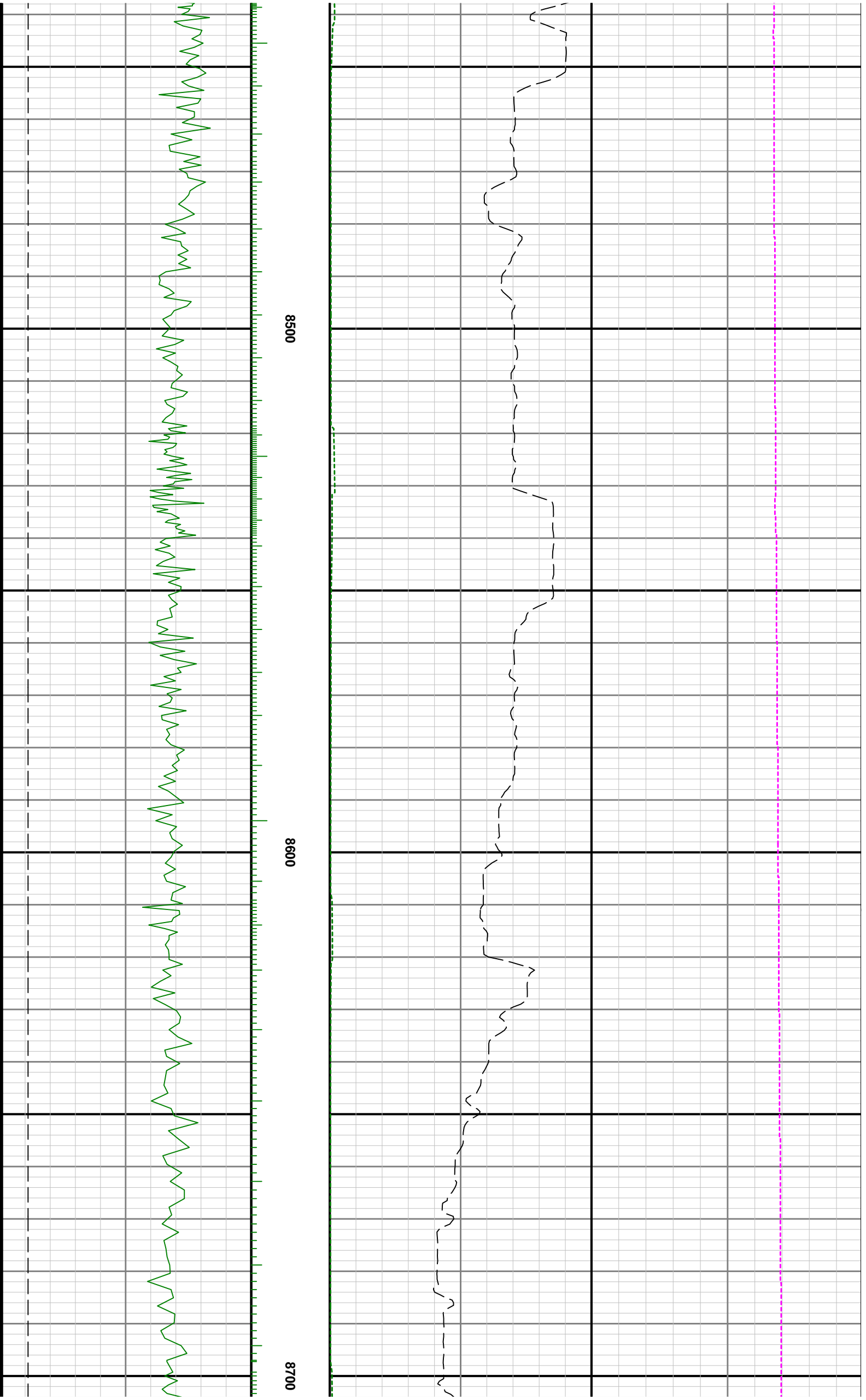


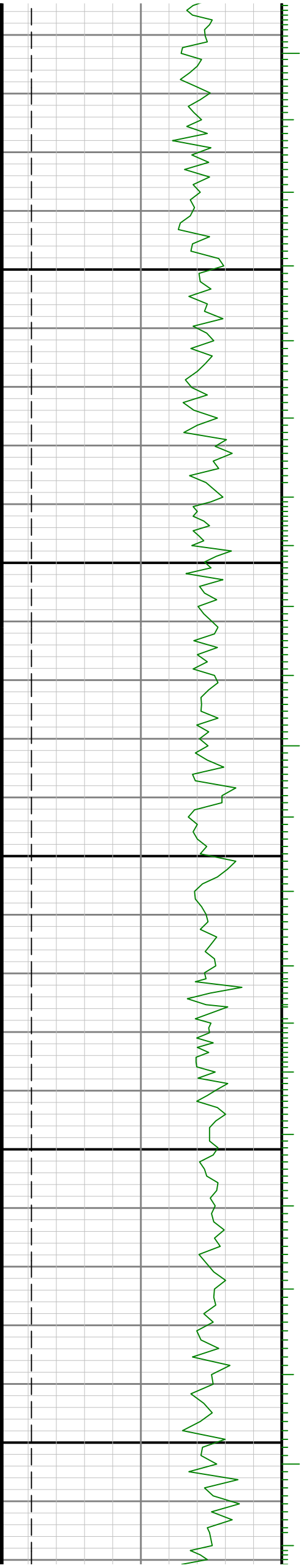








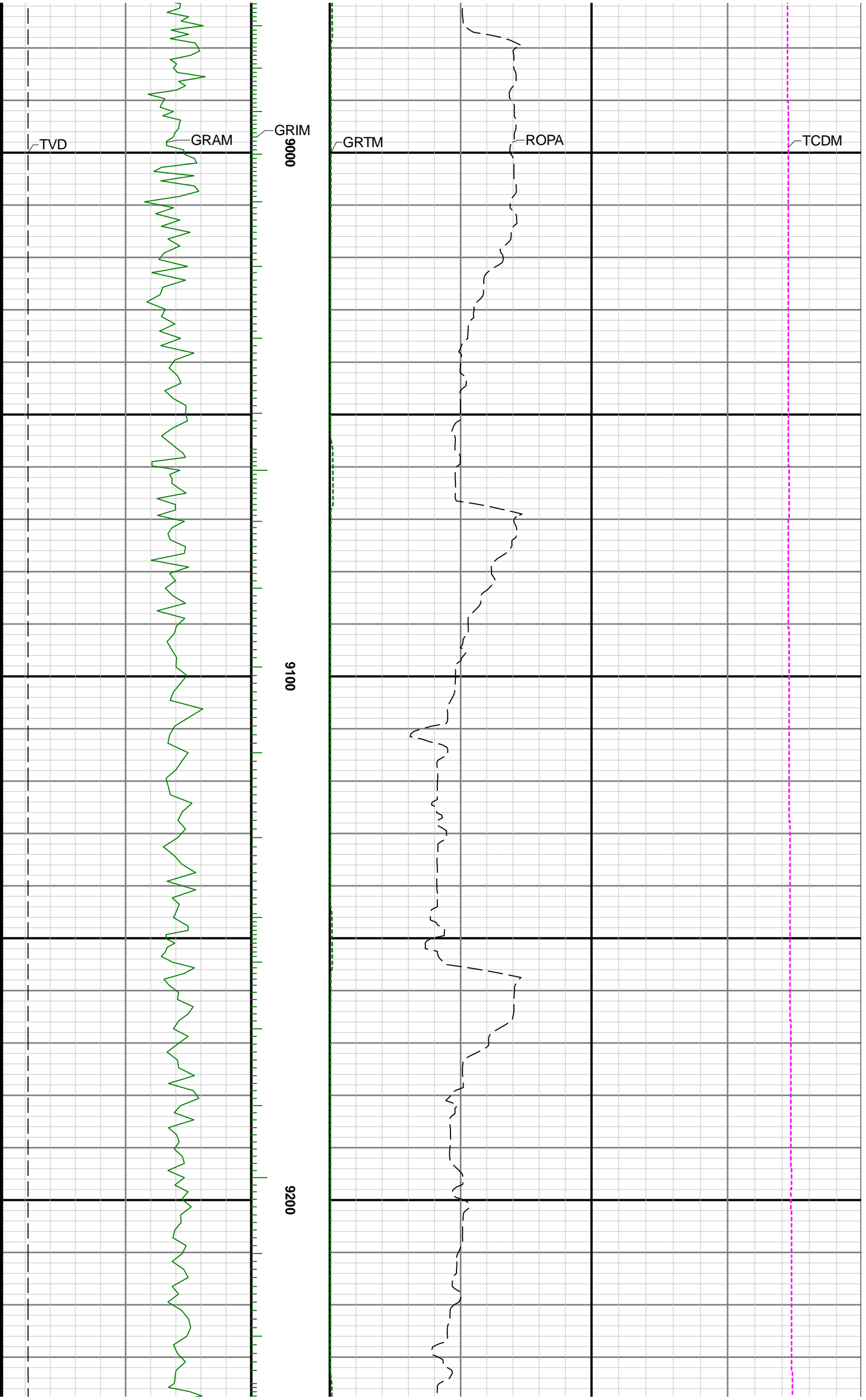


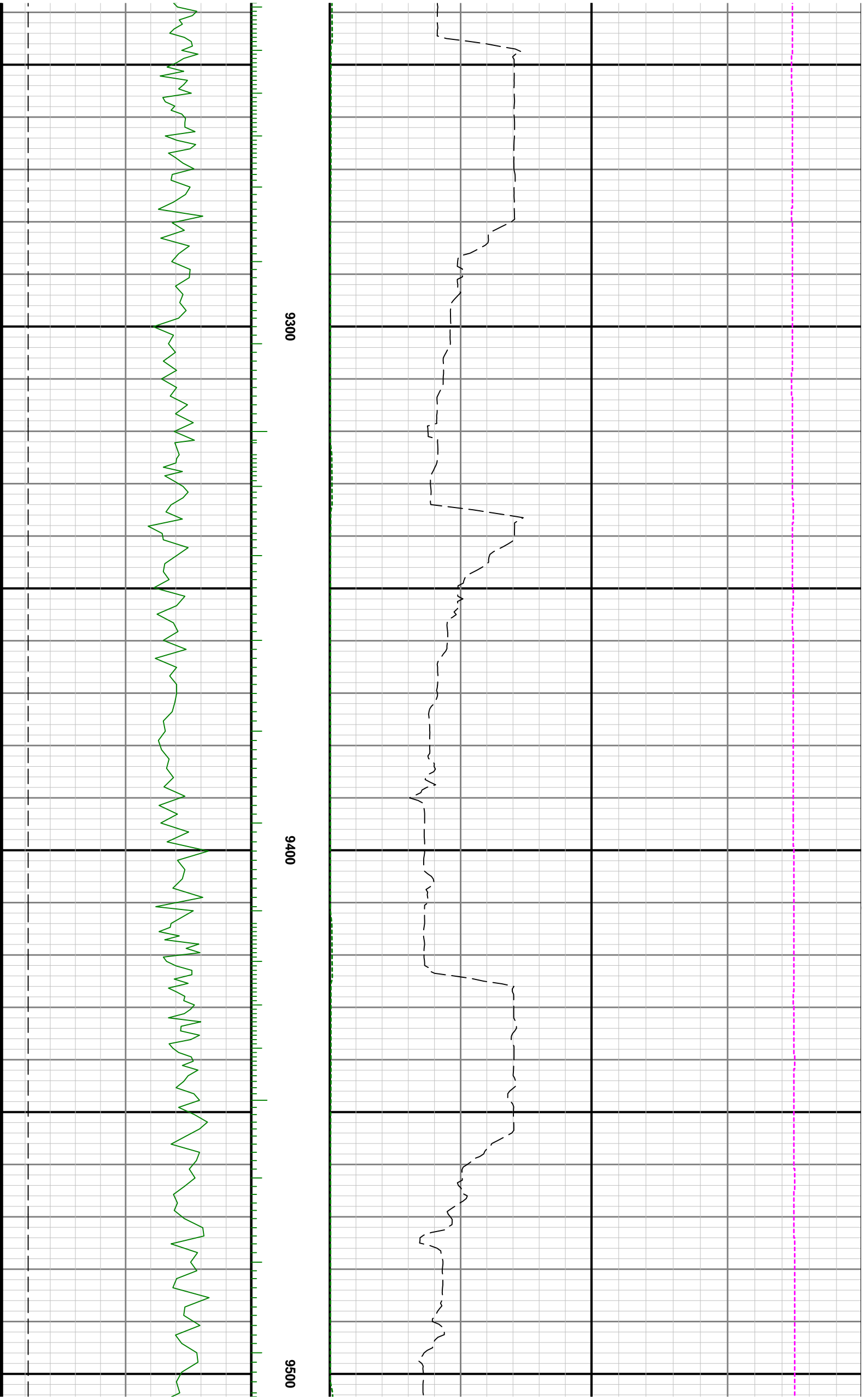


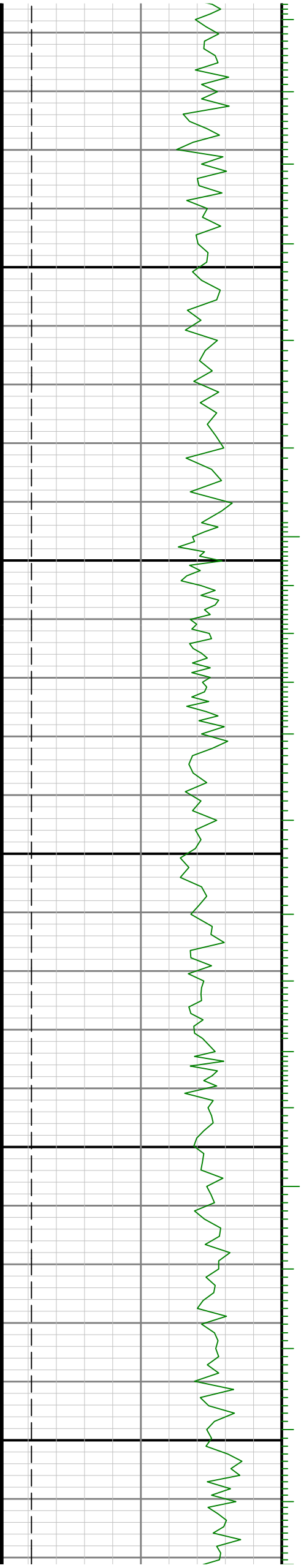
8800

8900



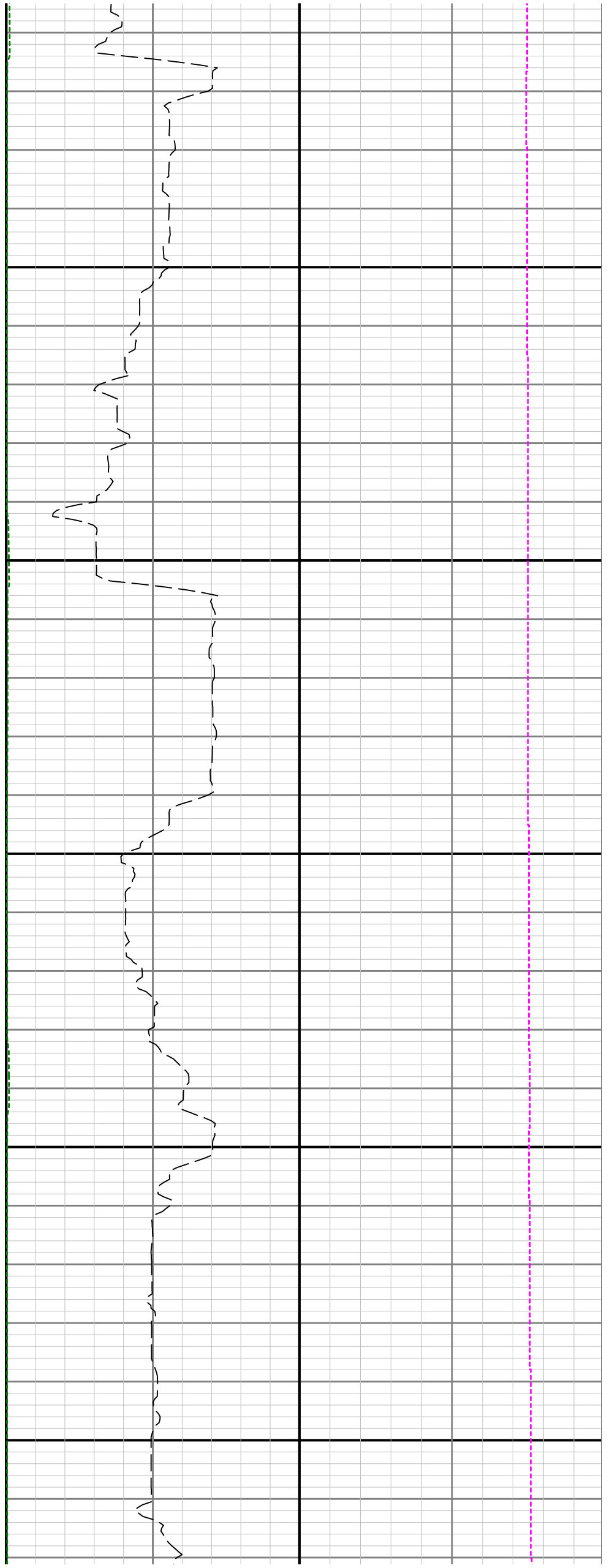


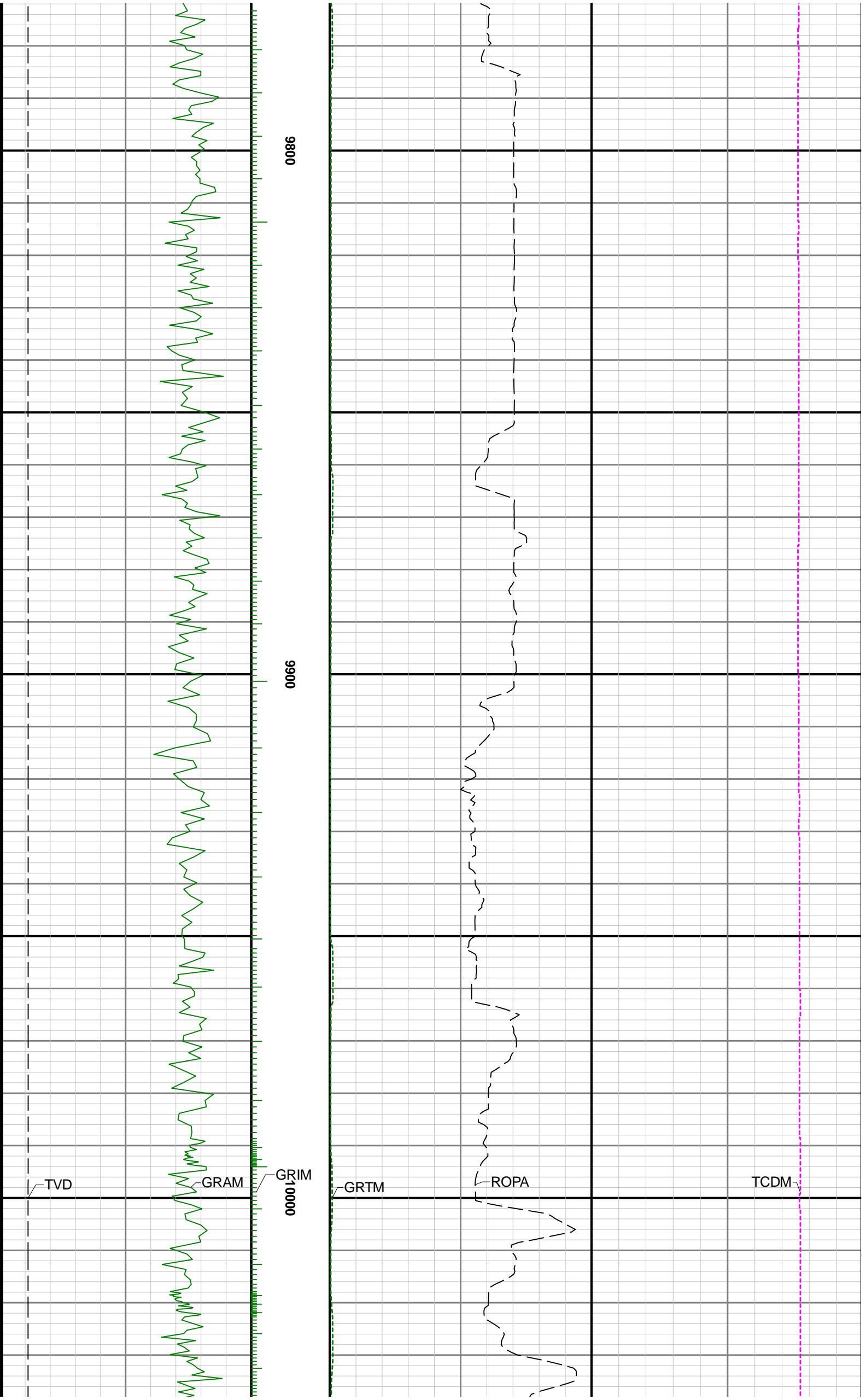


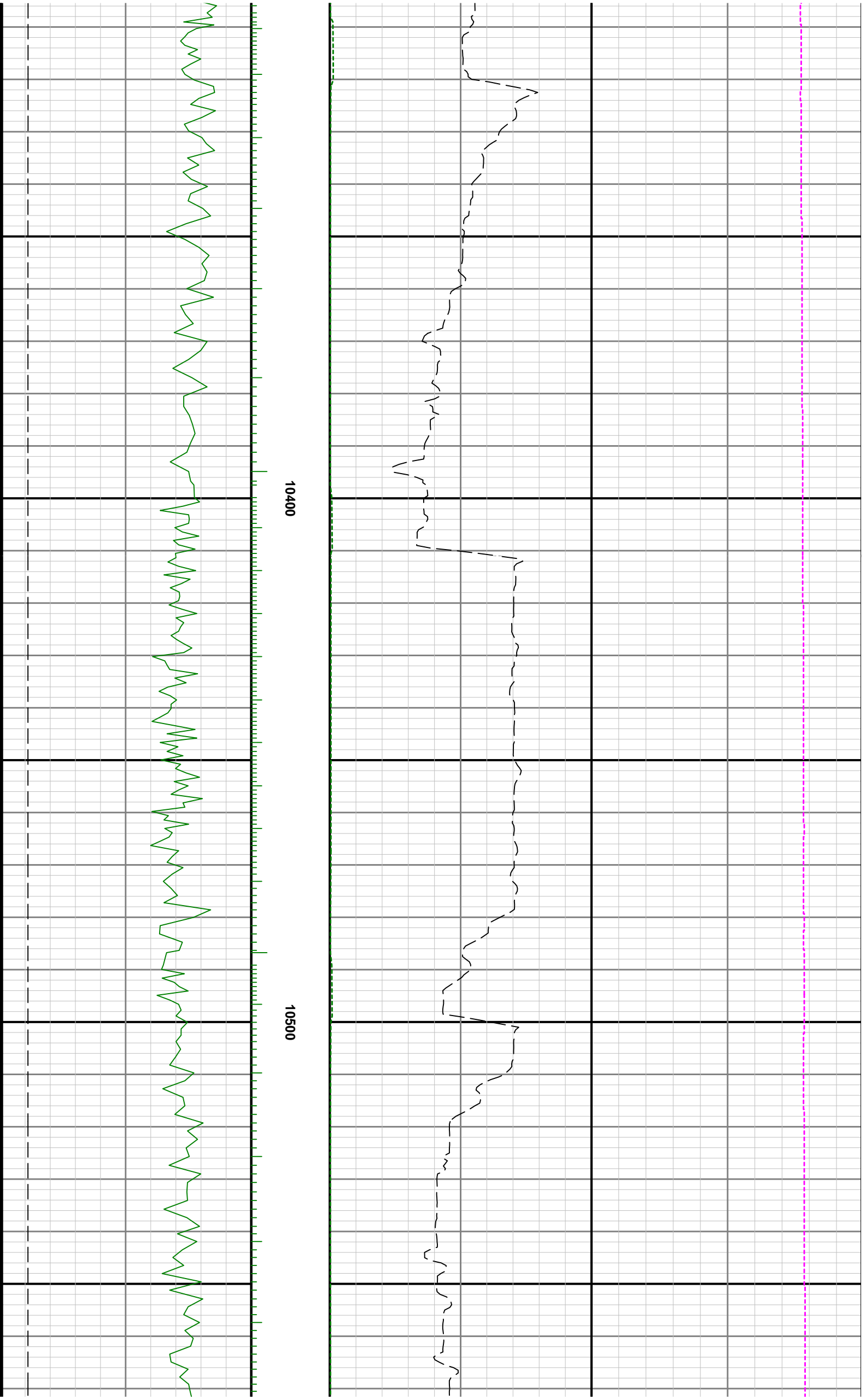


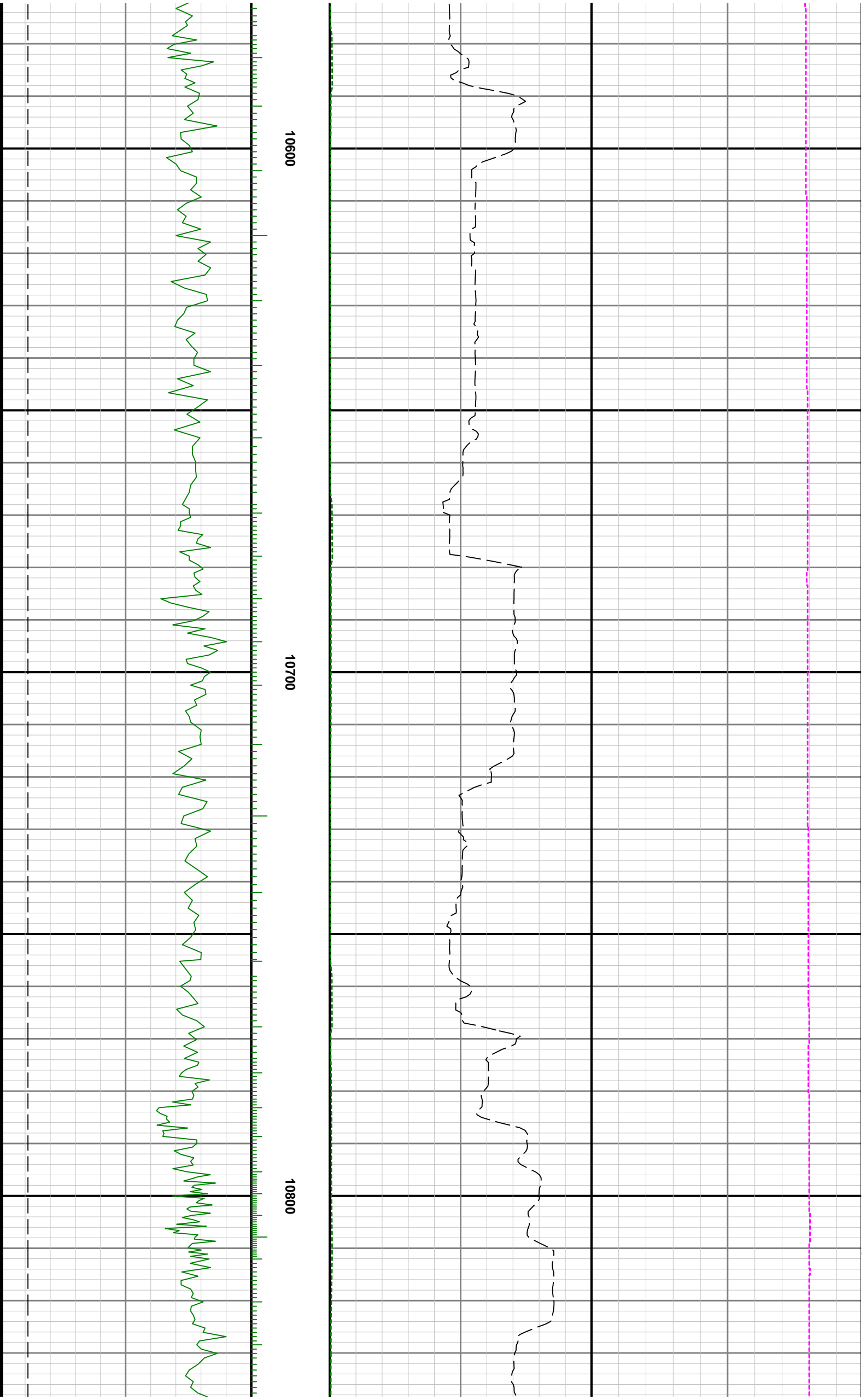
9600

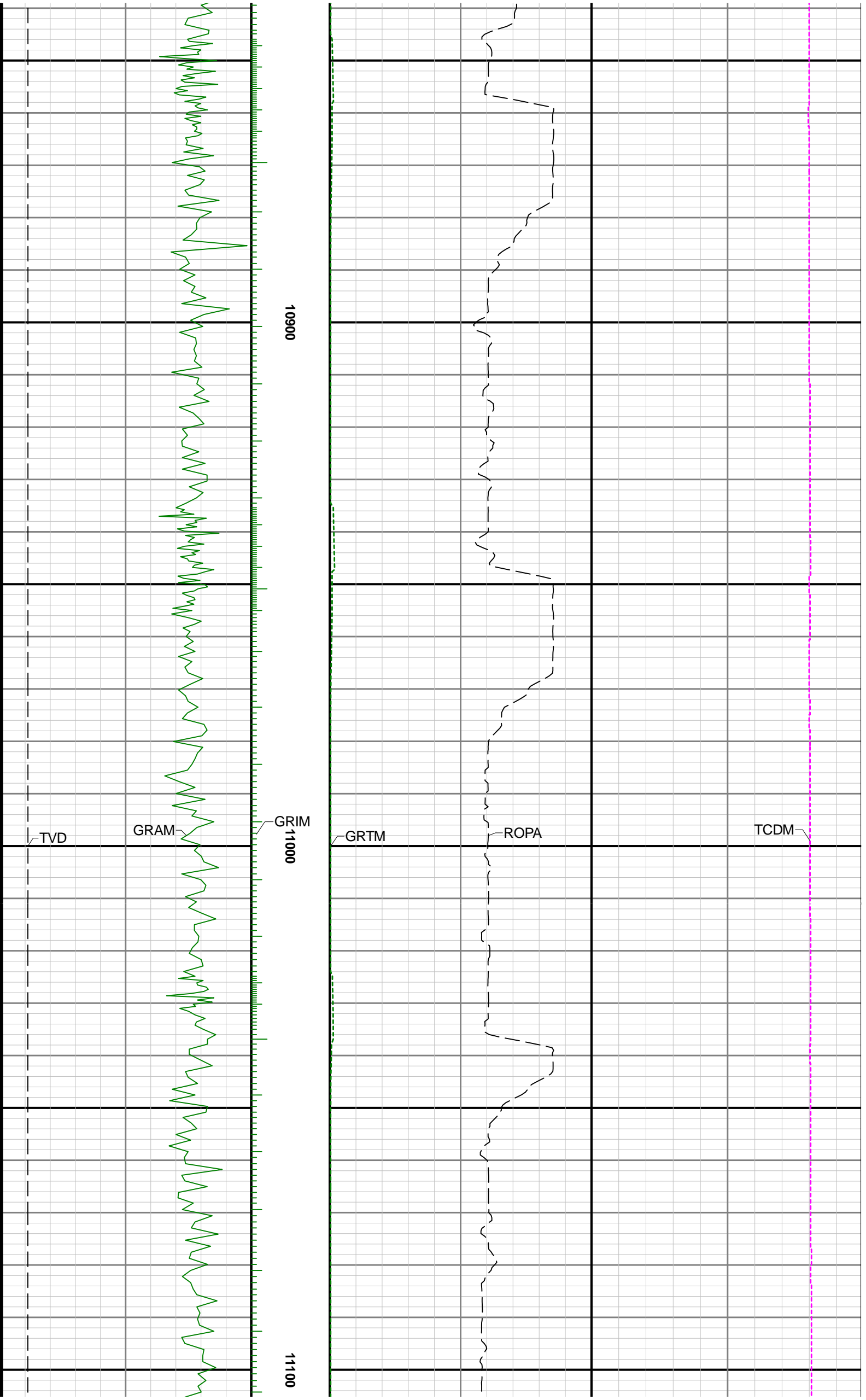
9700

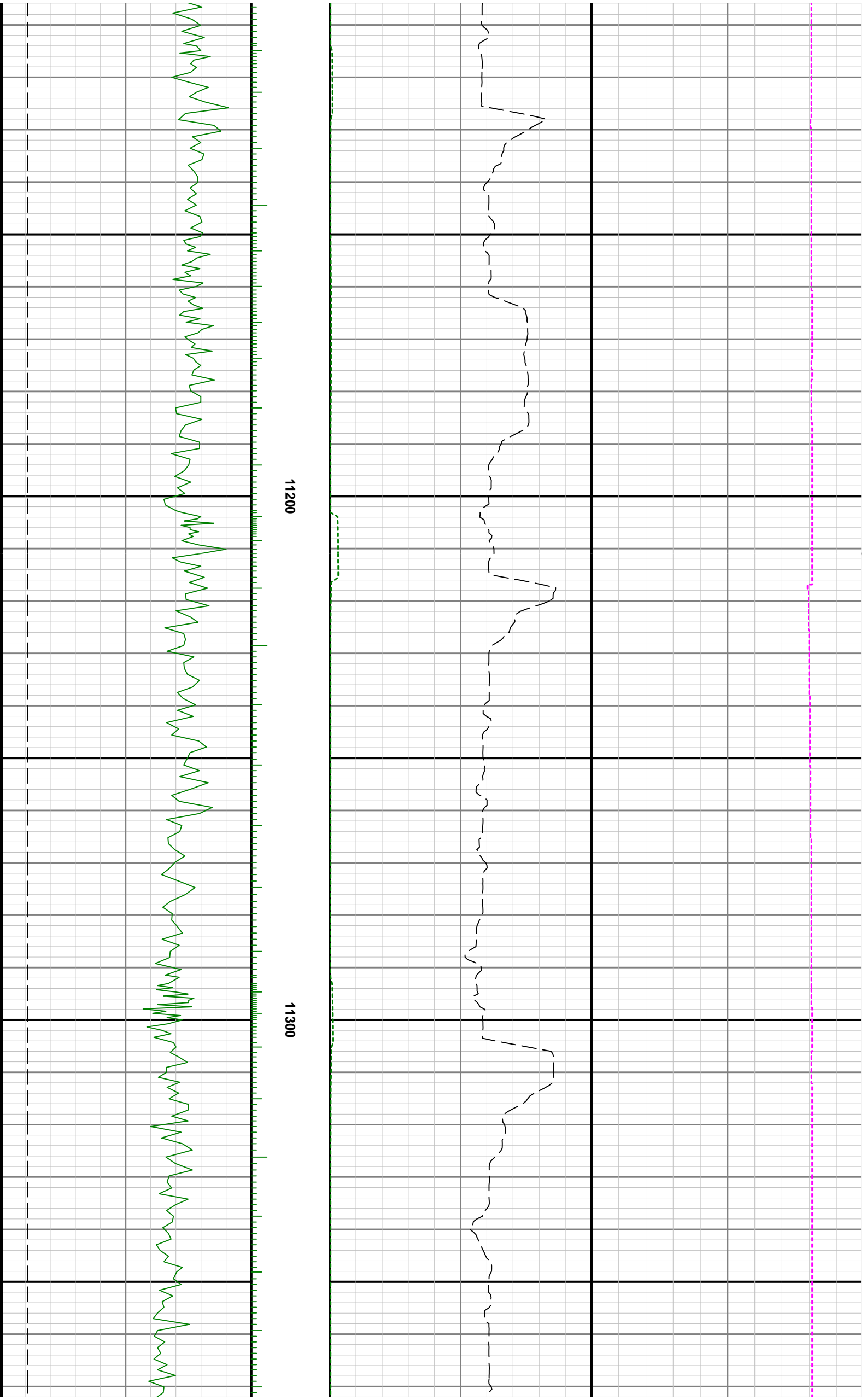


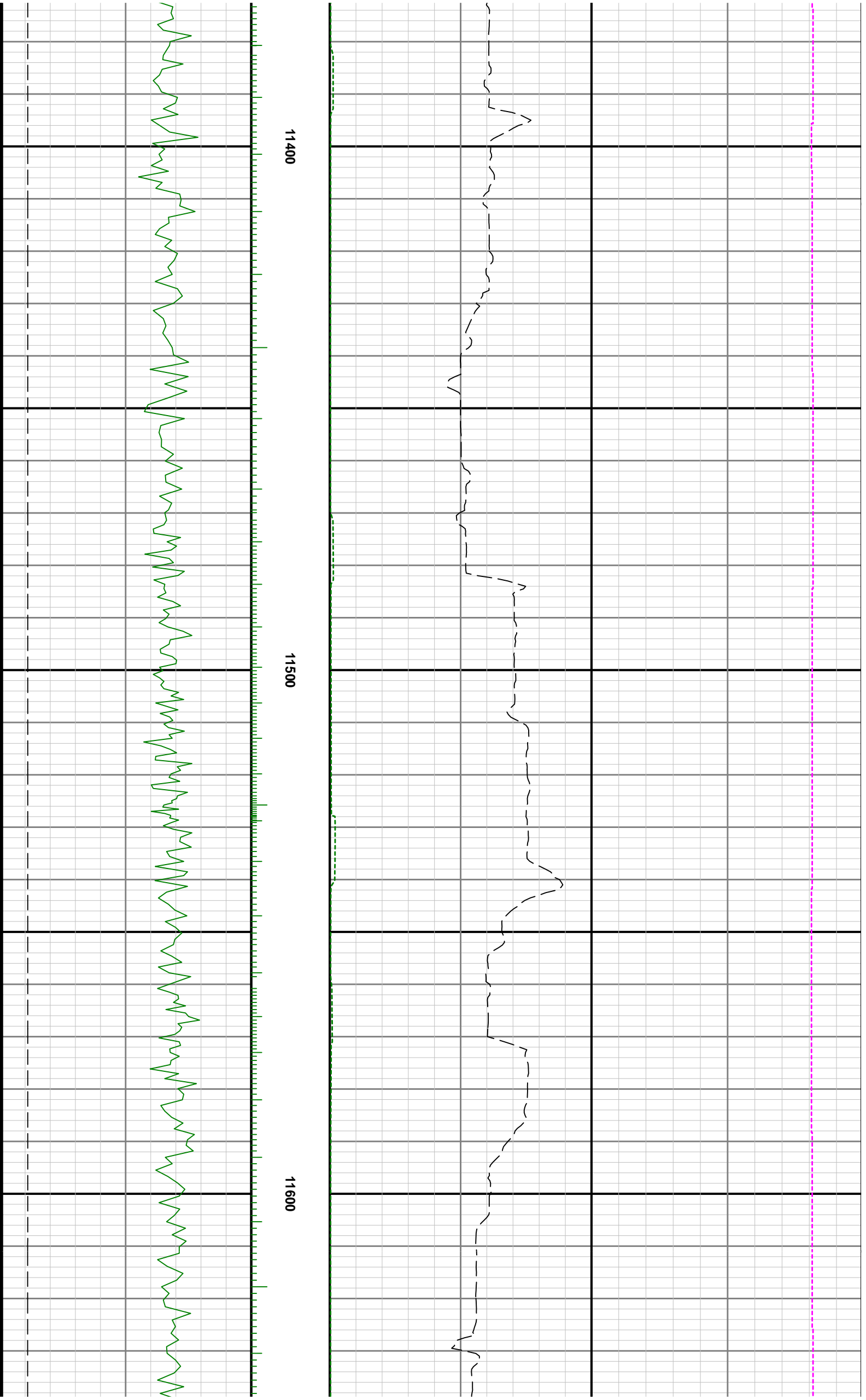


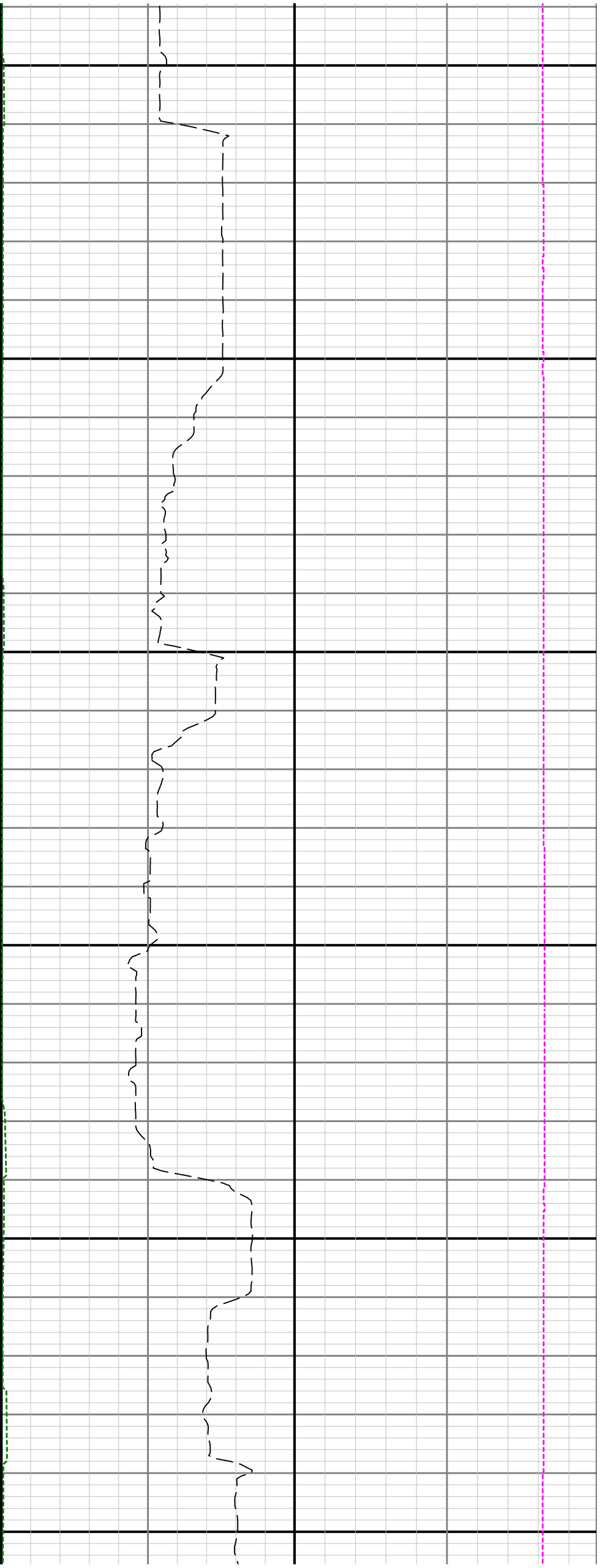








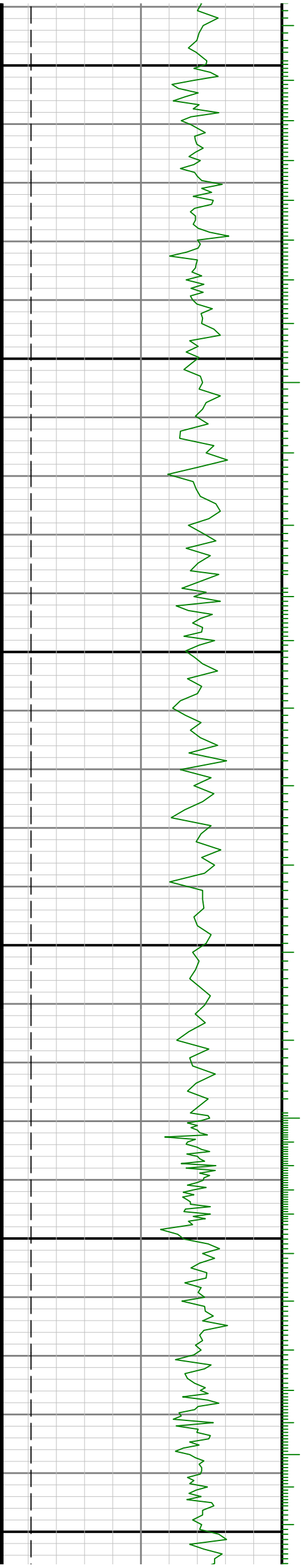


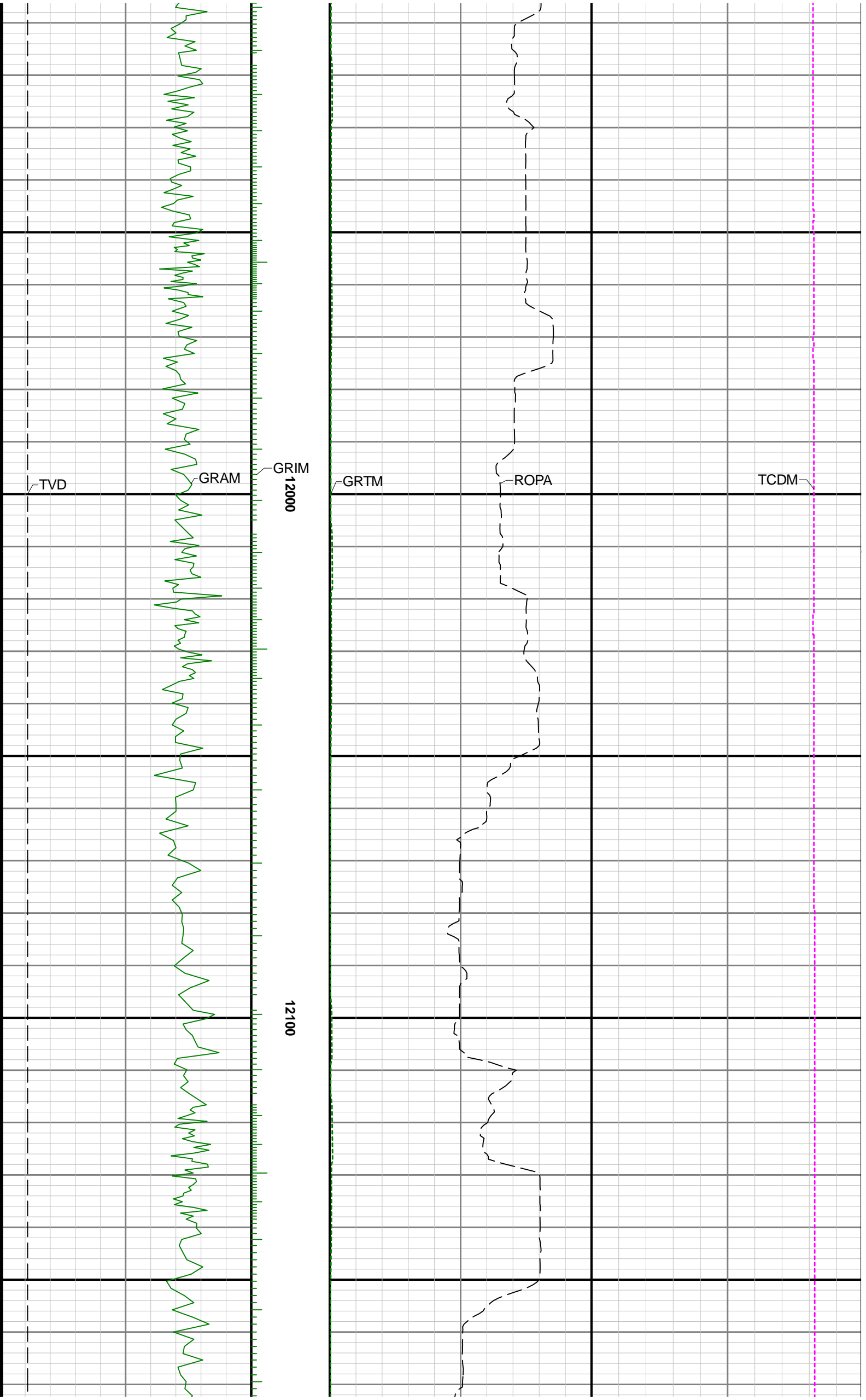


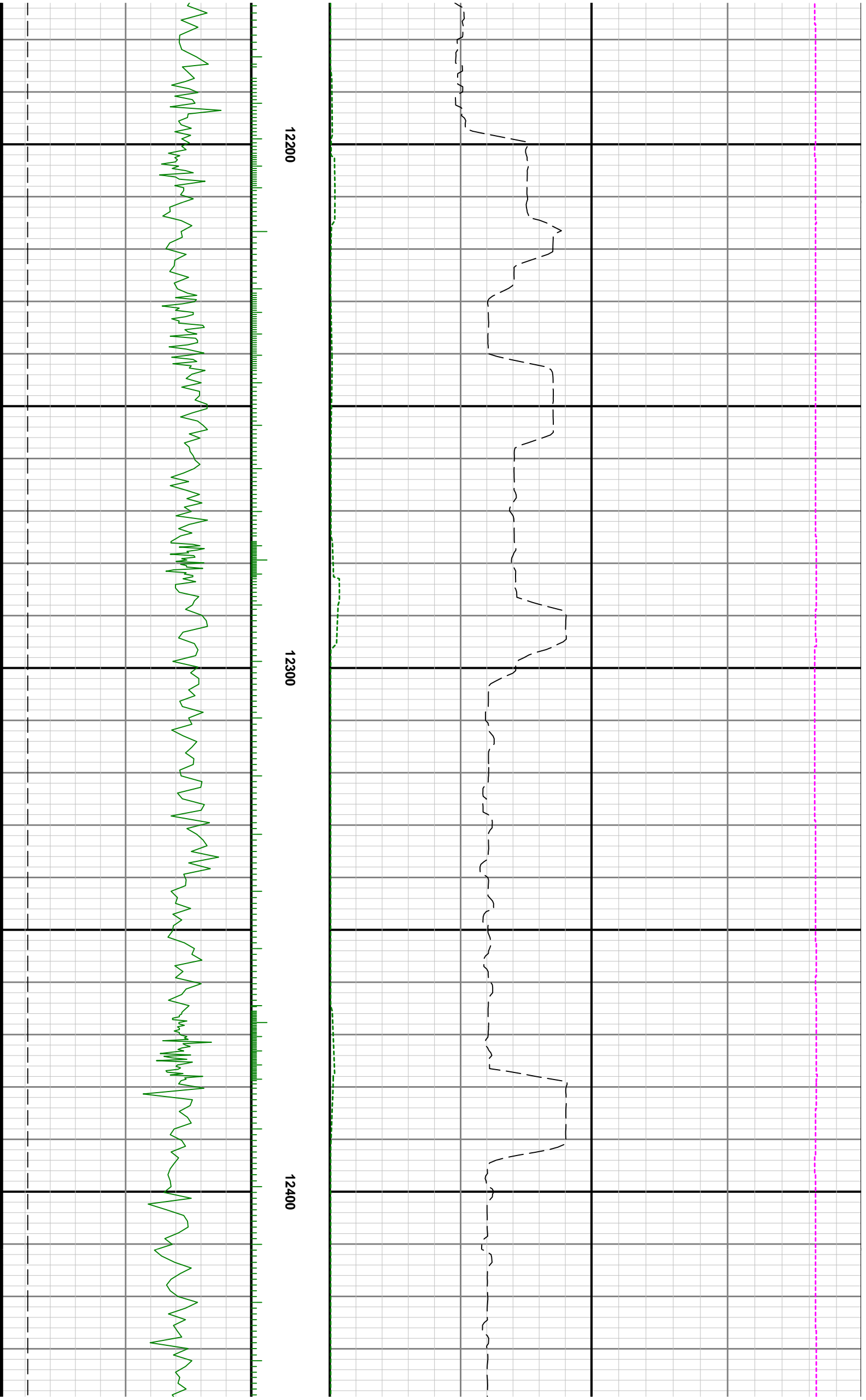
11700

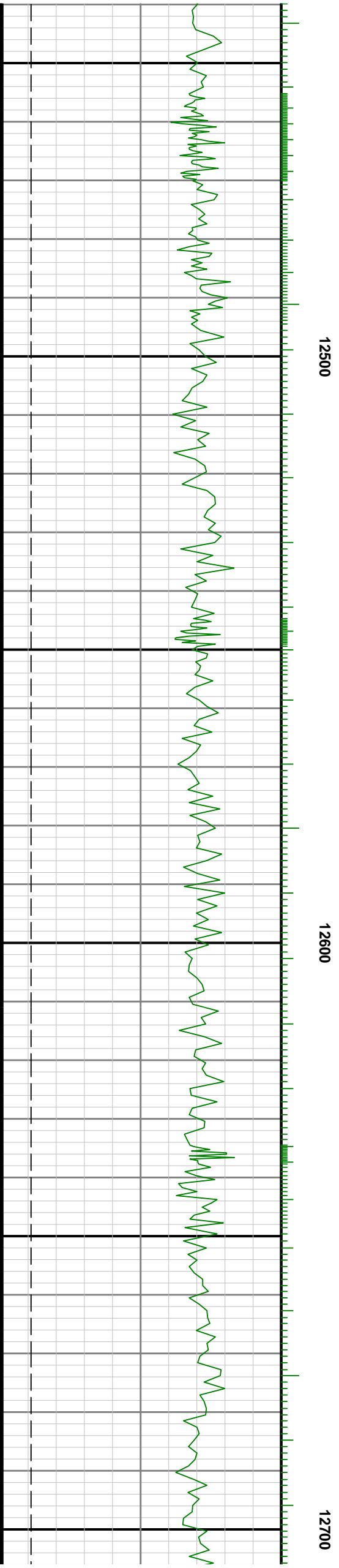
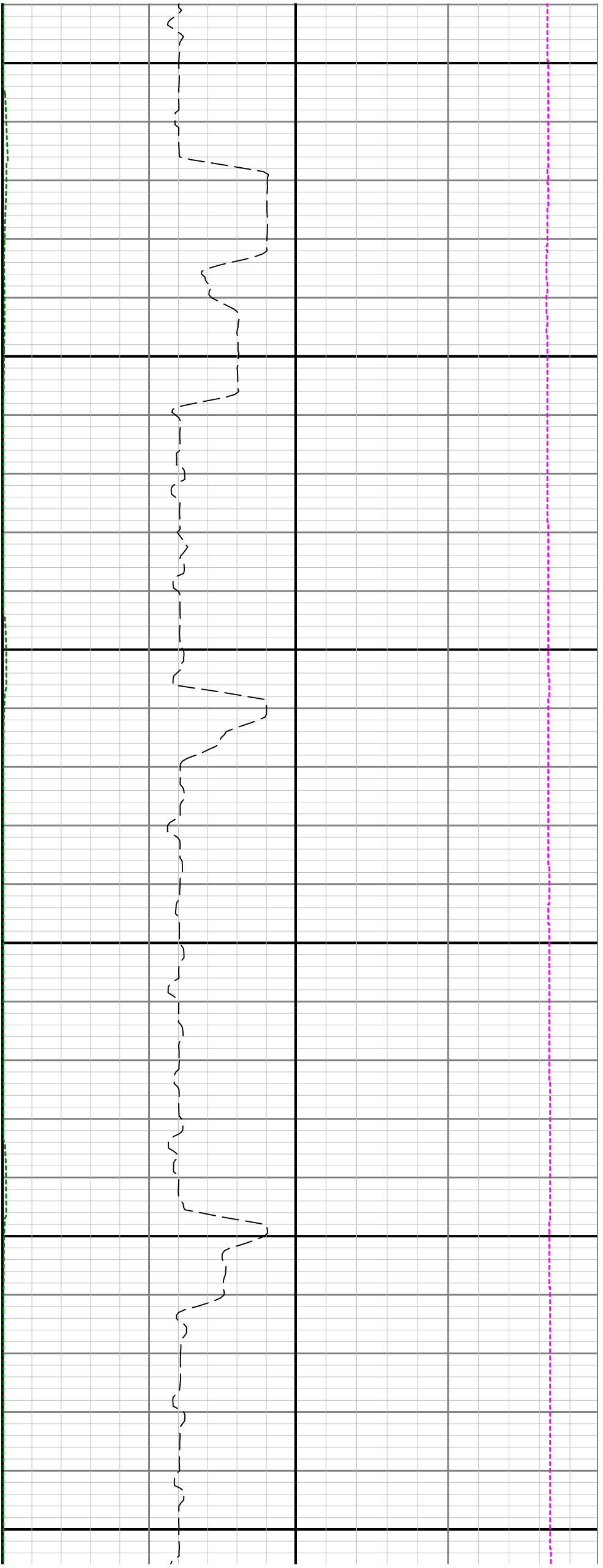
11800

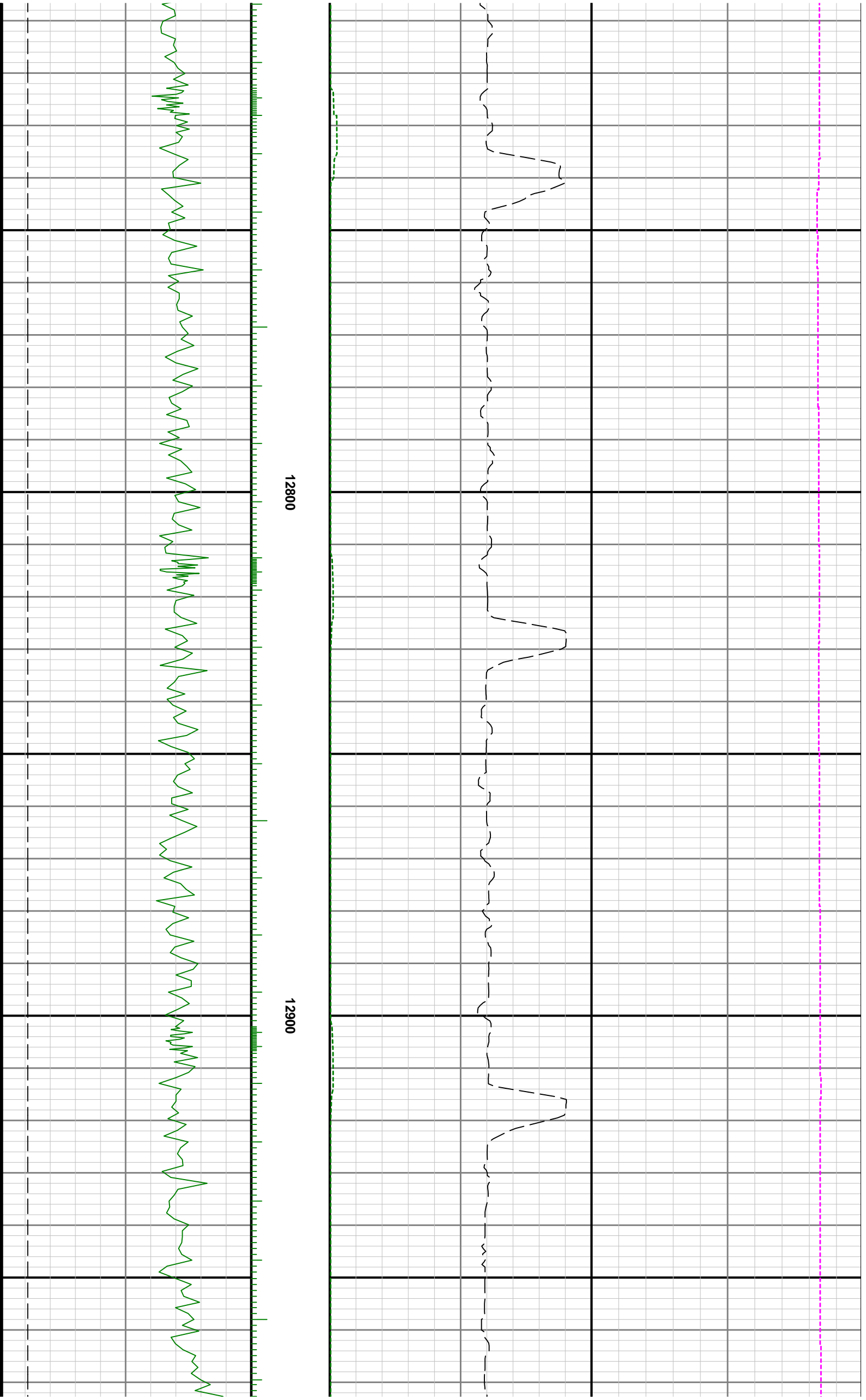
11900

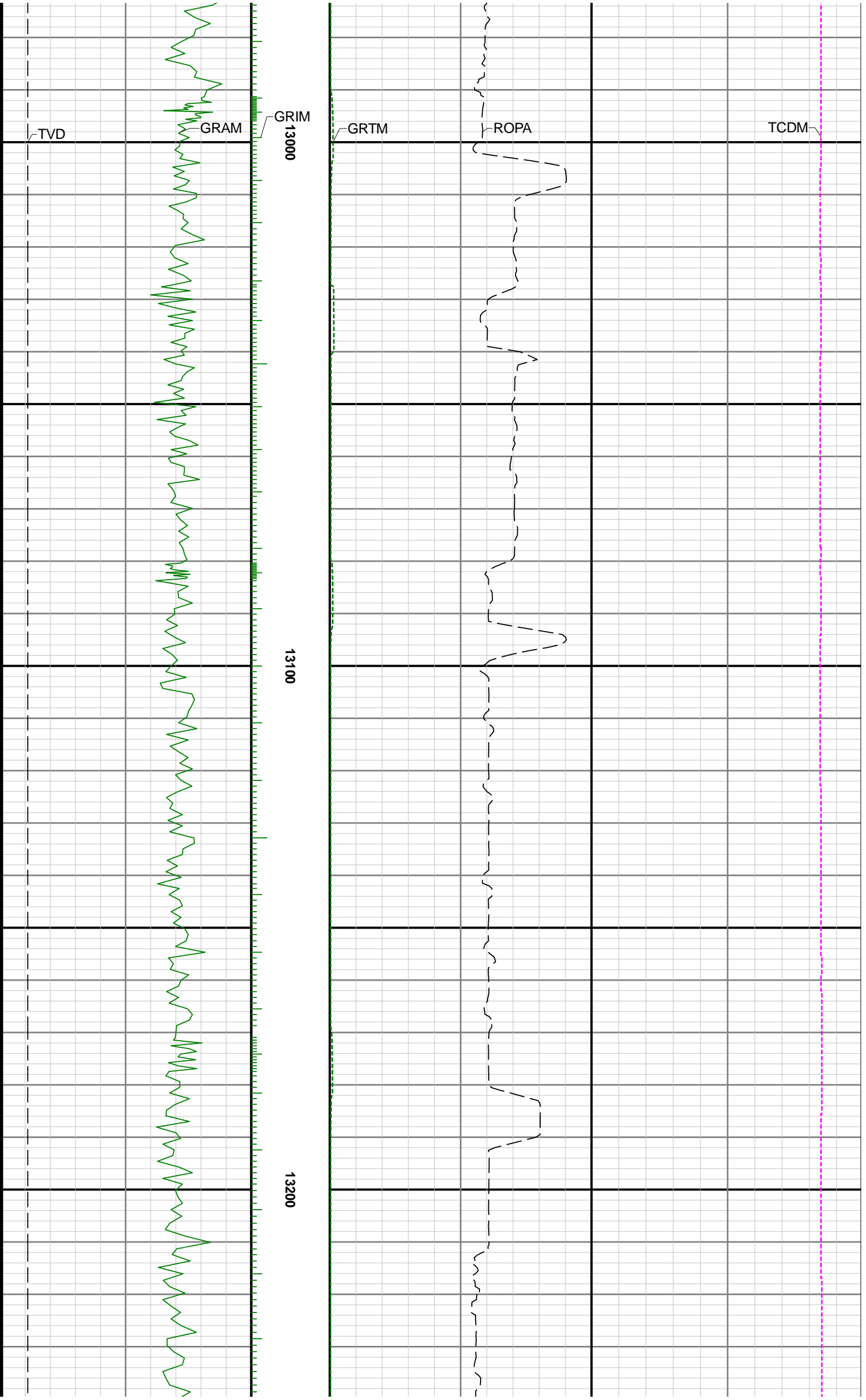


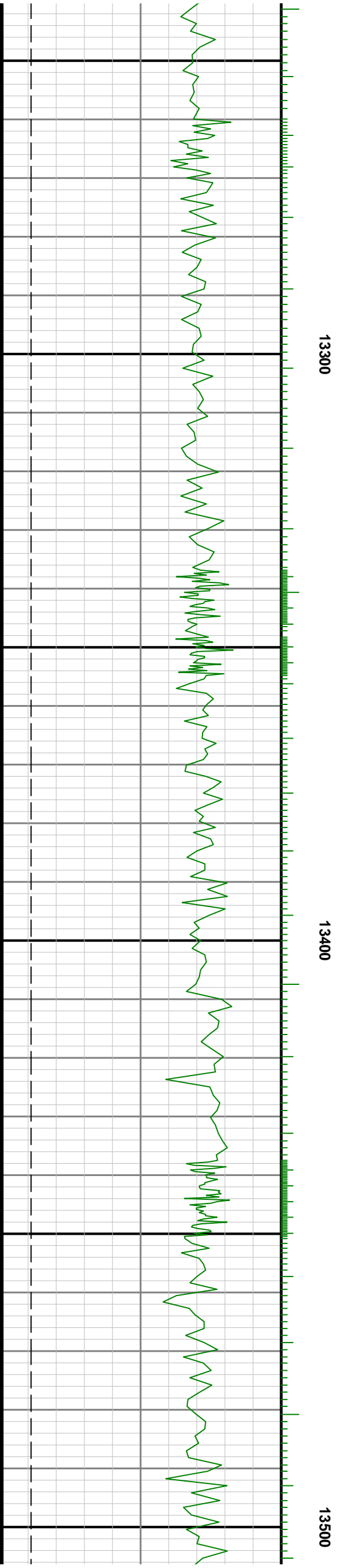


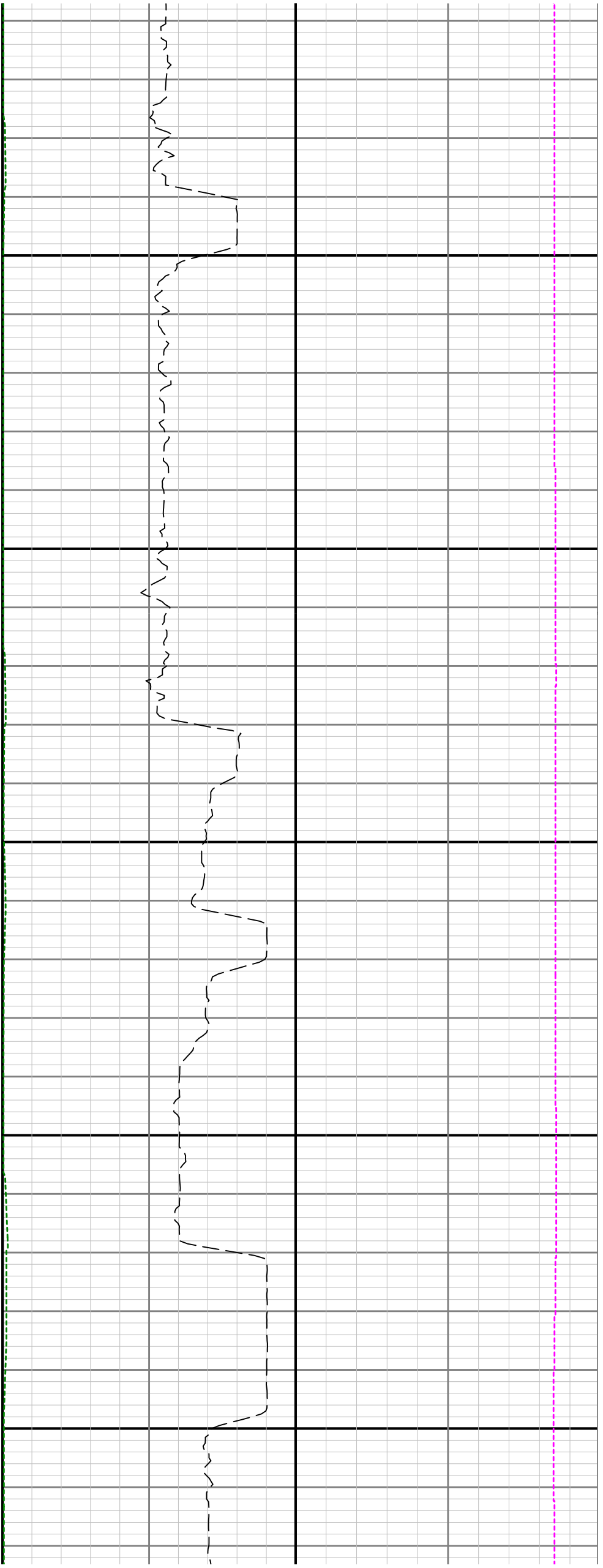






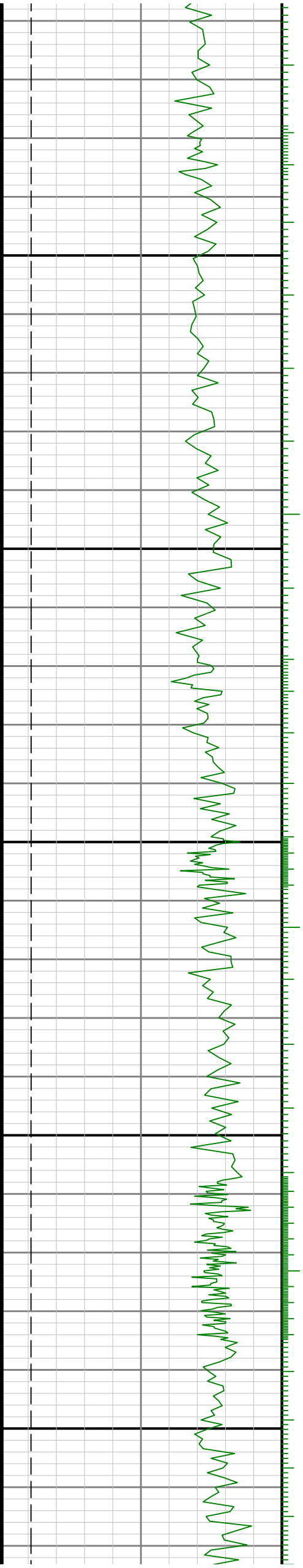


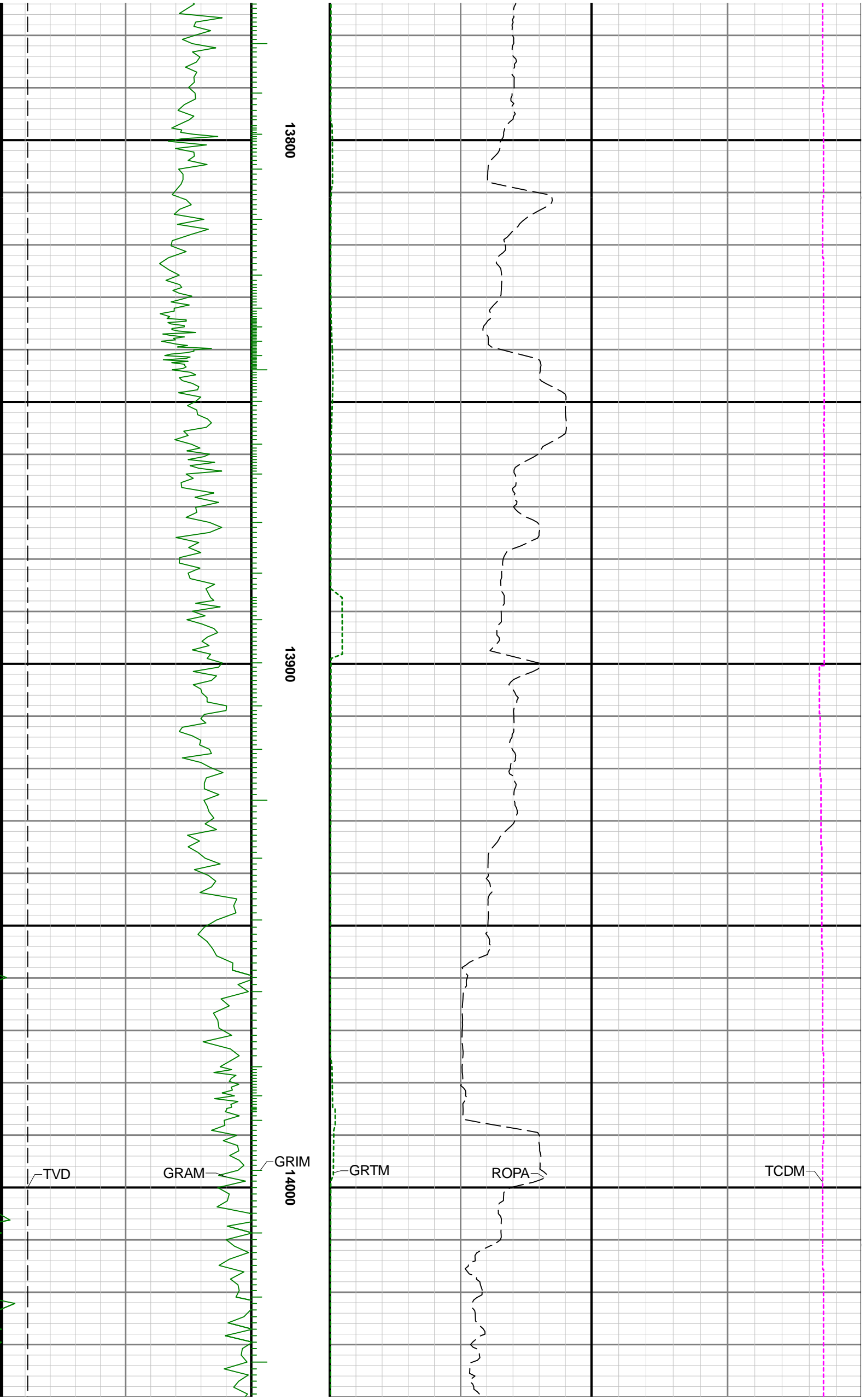


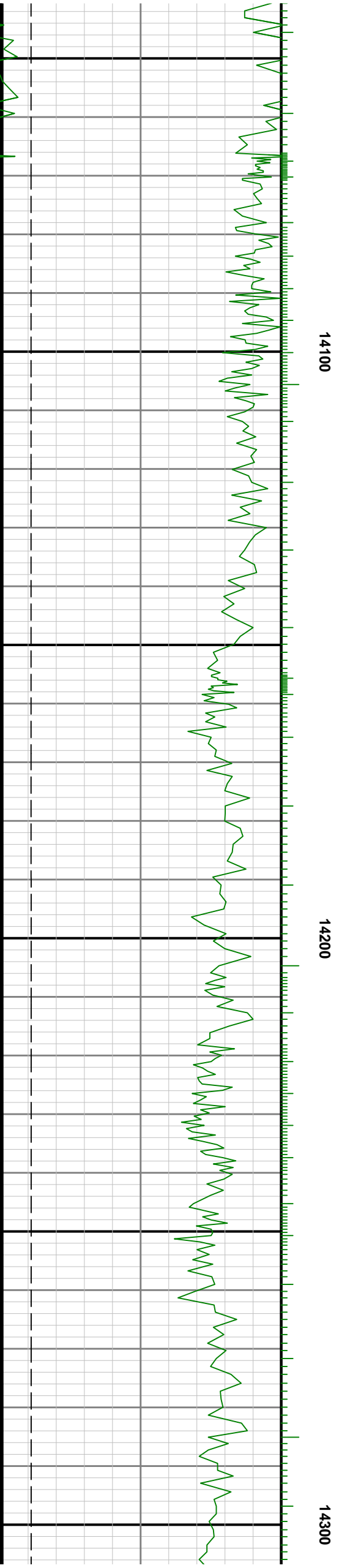
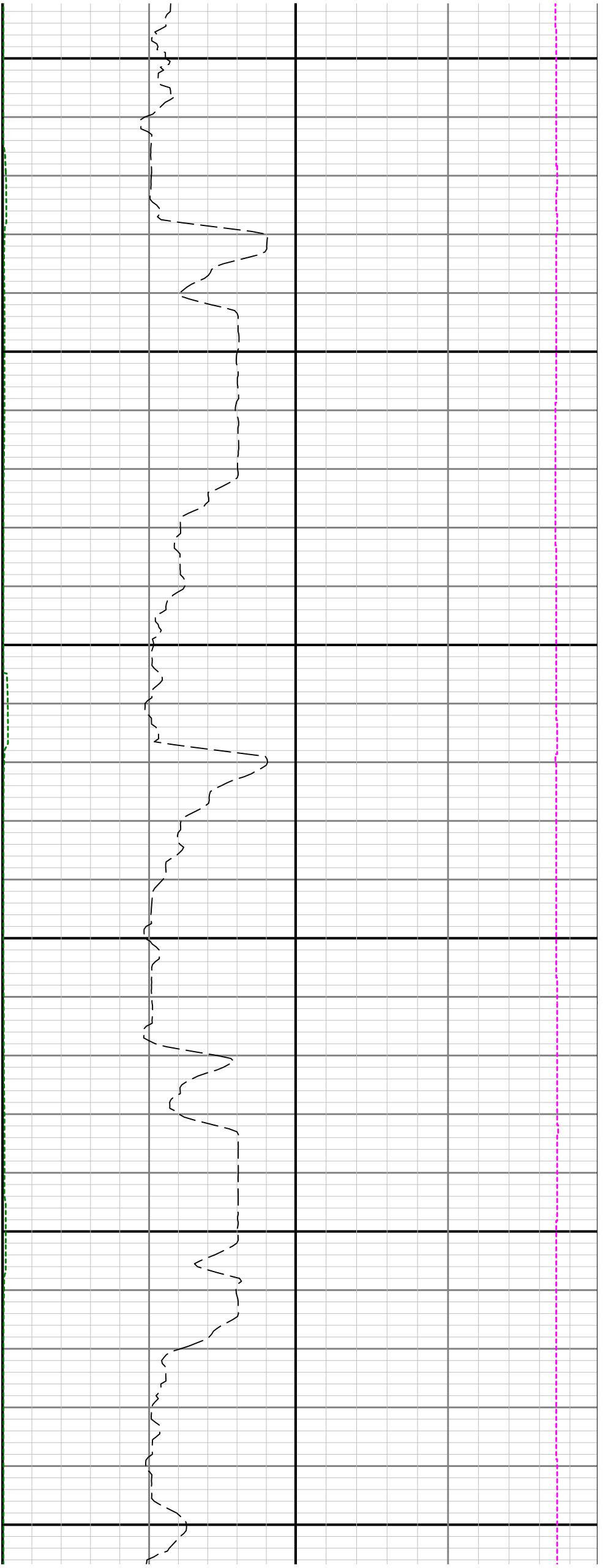


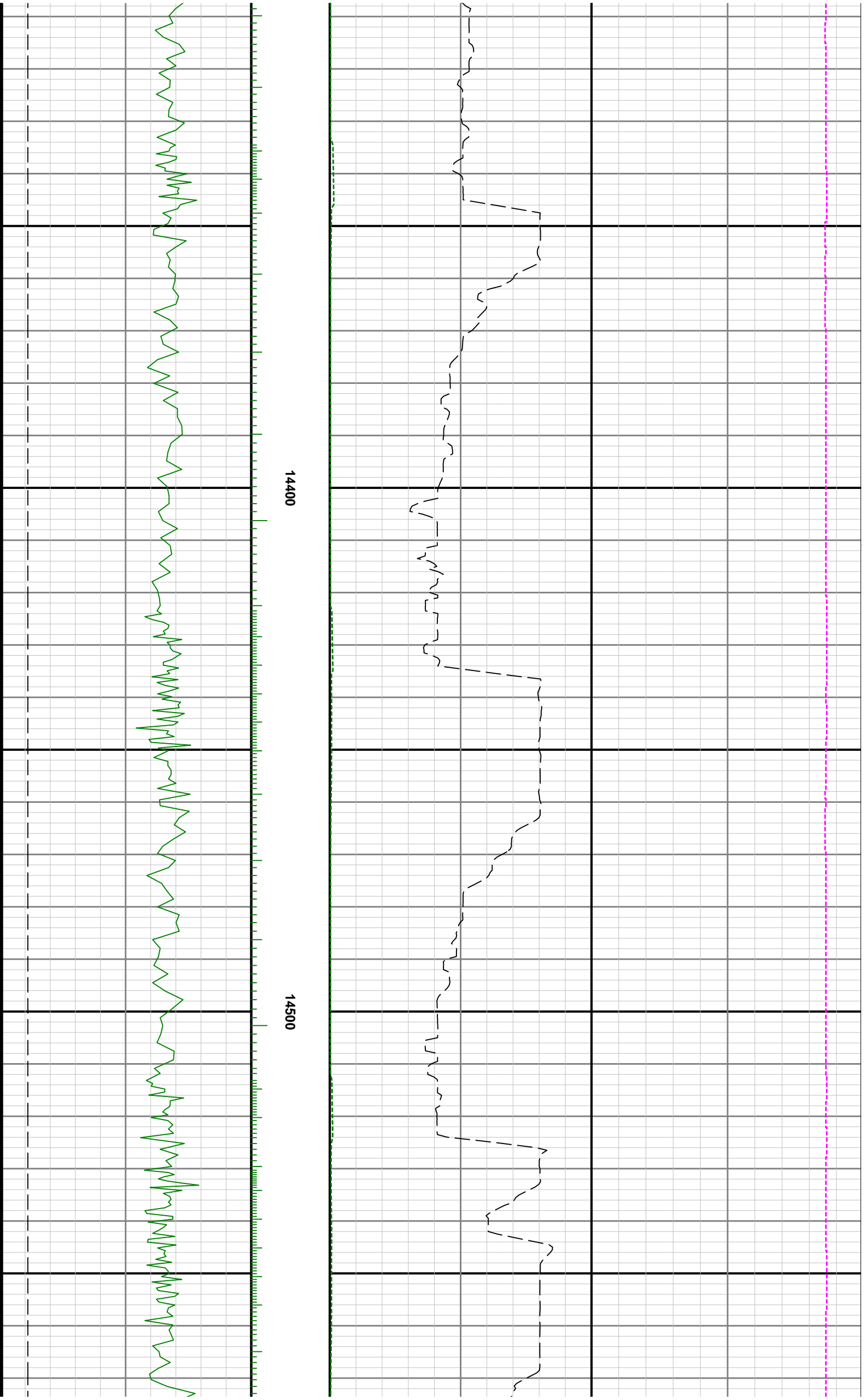
13600

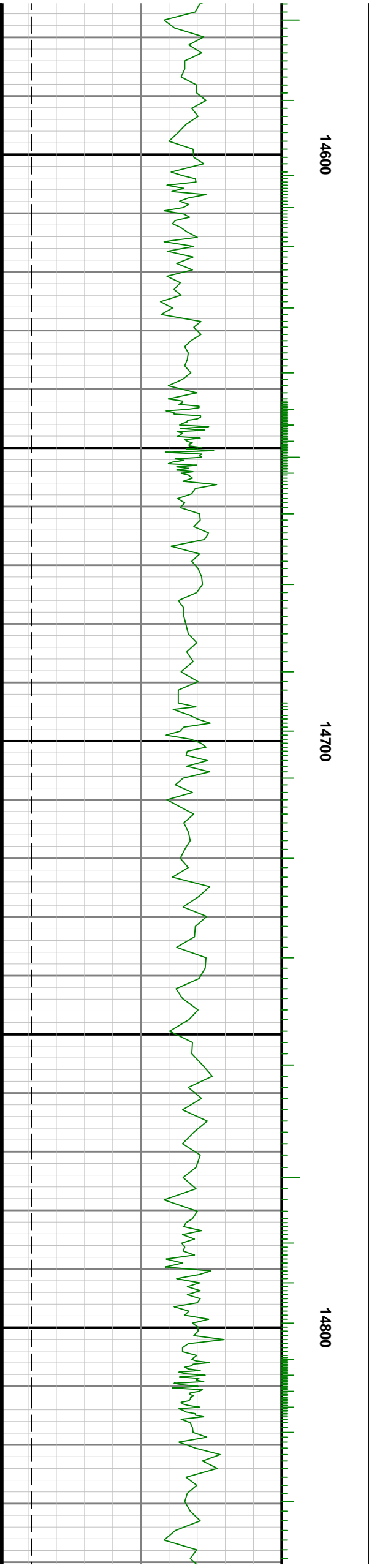
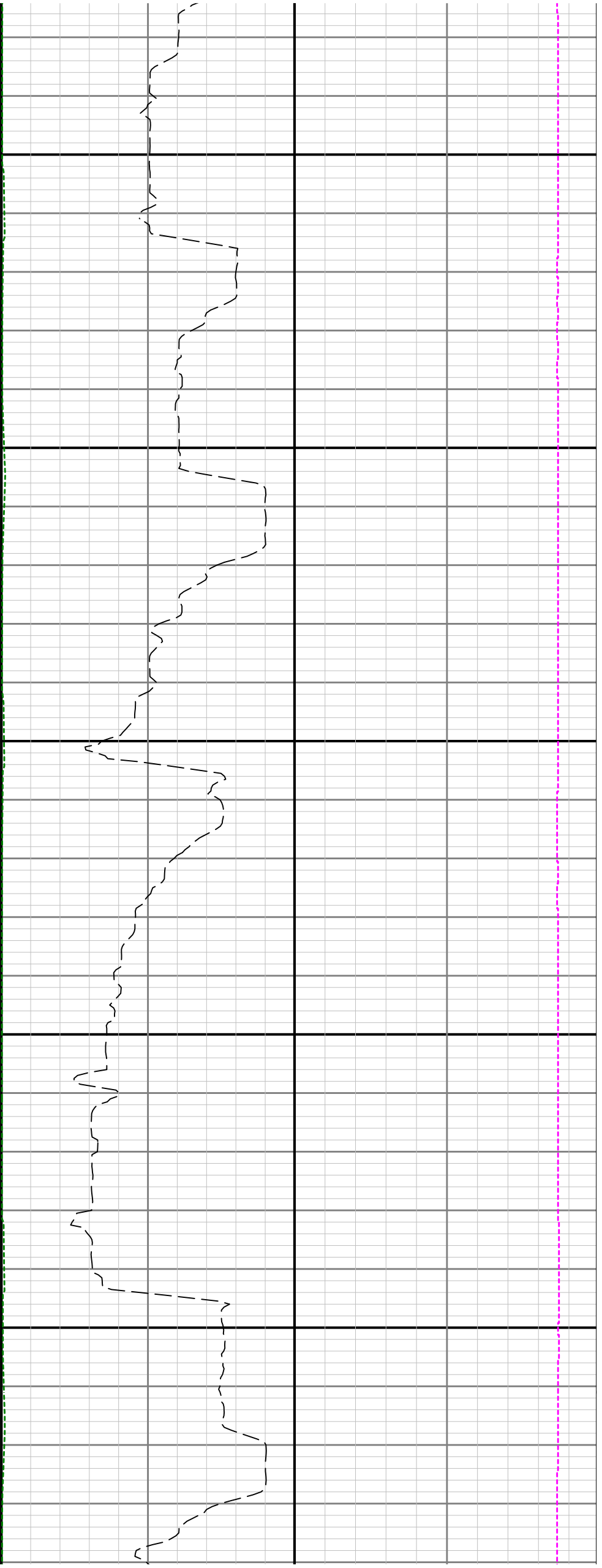
13700

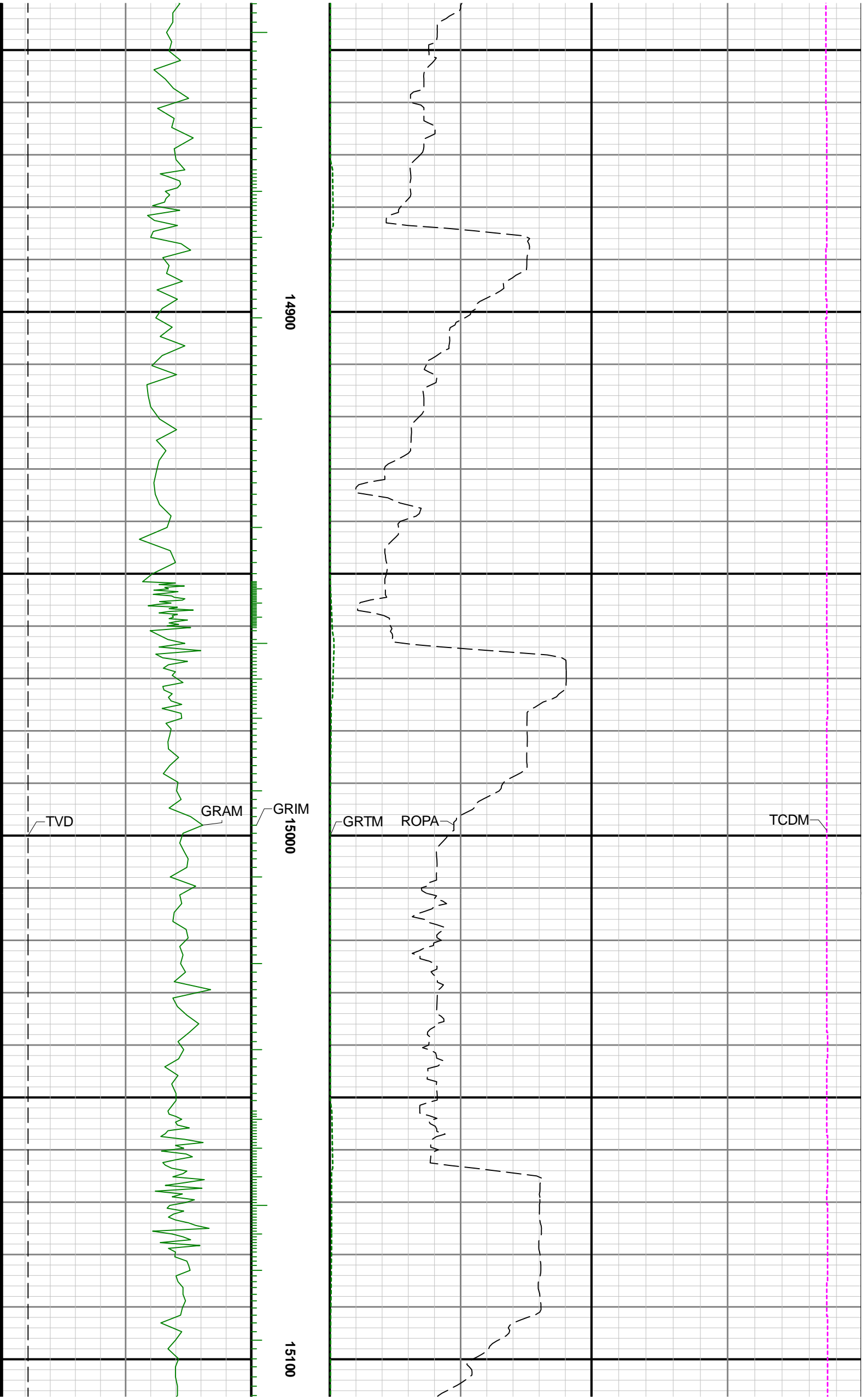


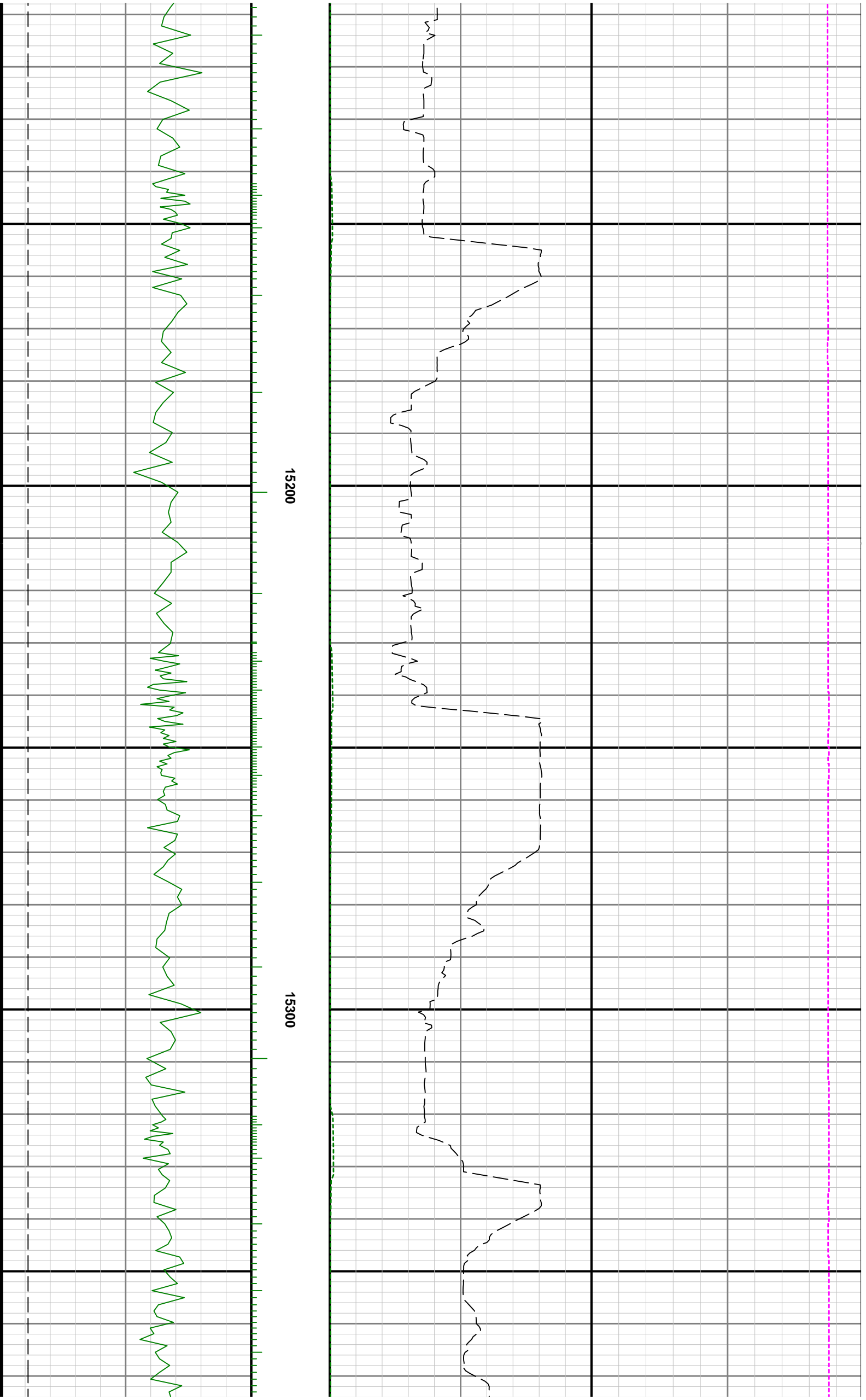


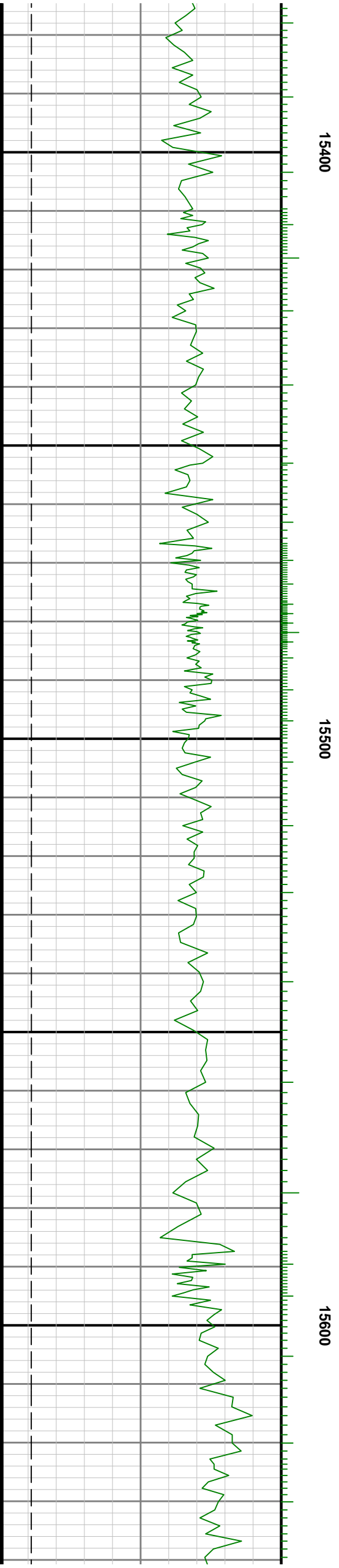
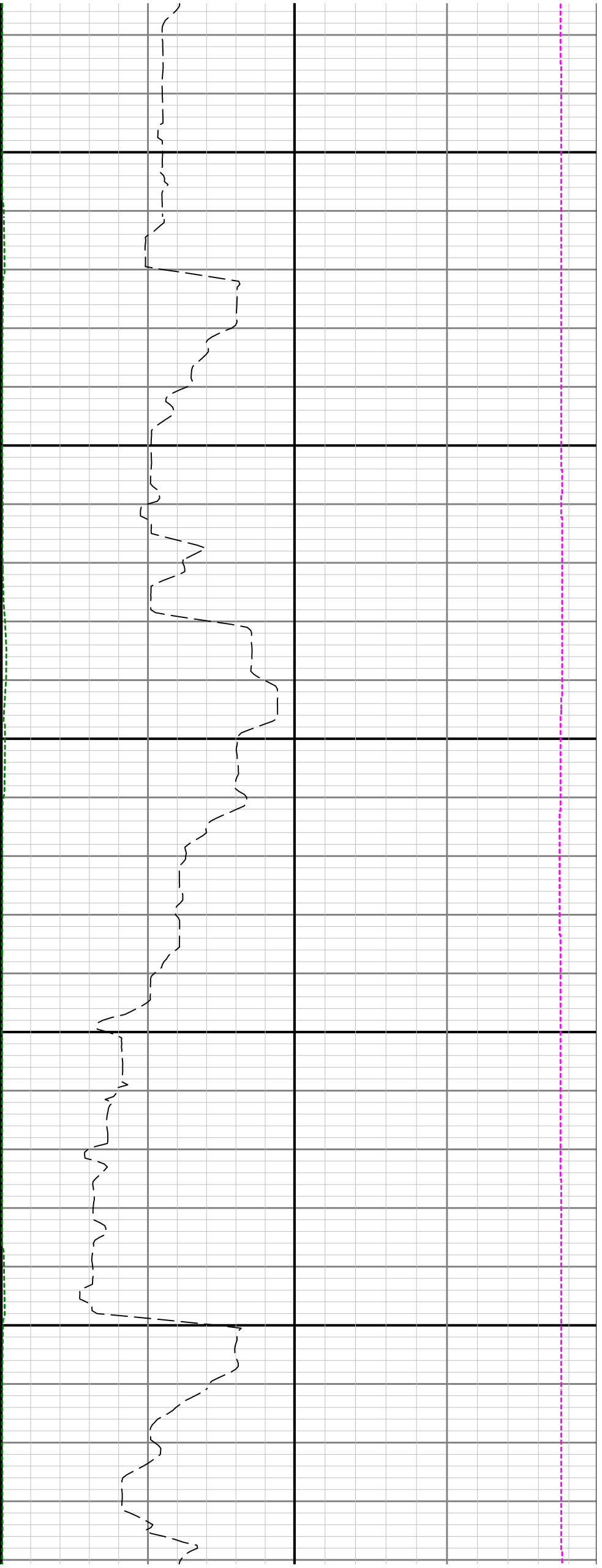


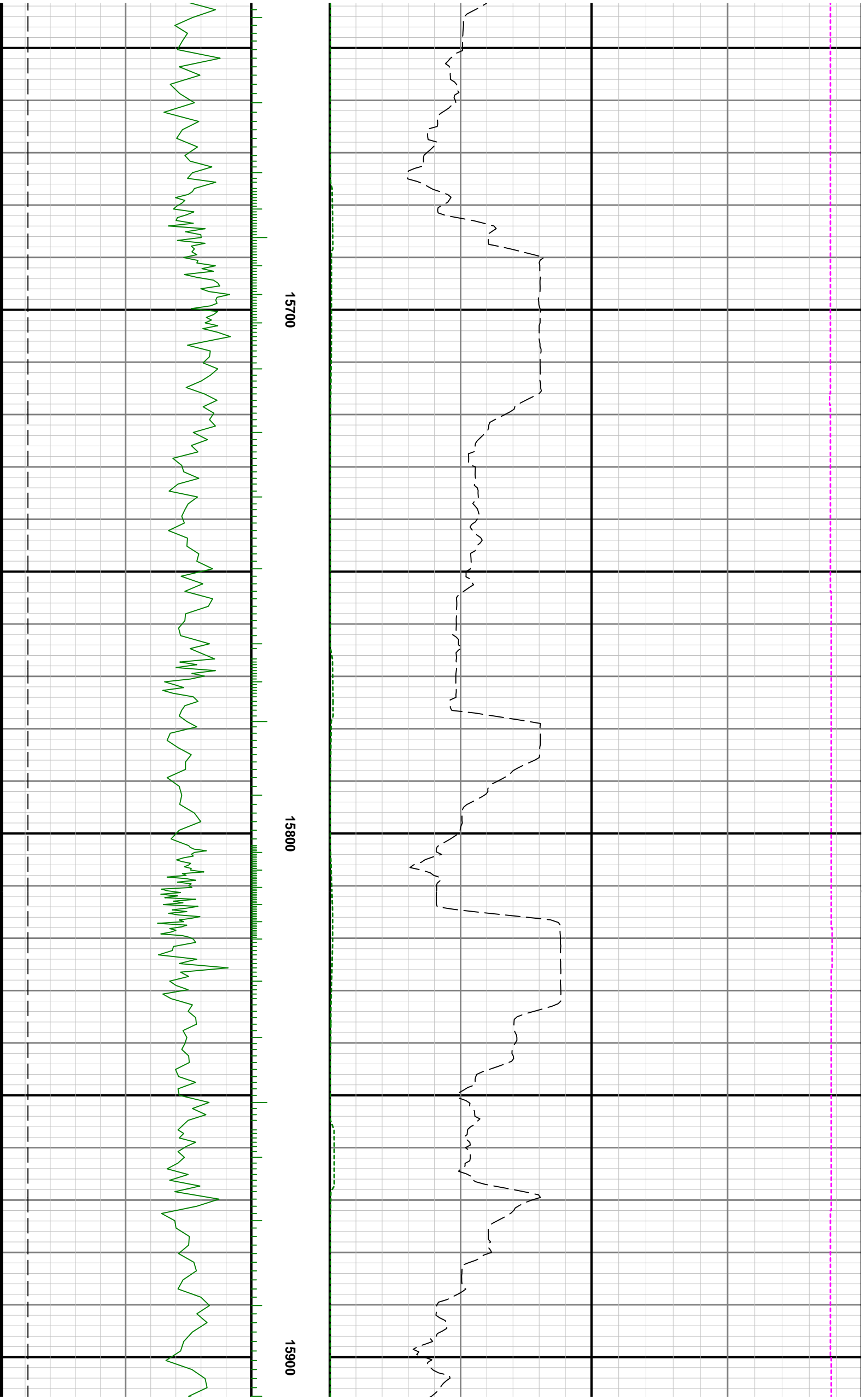


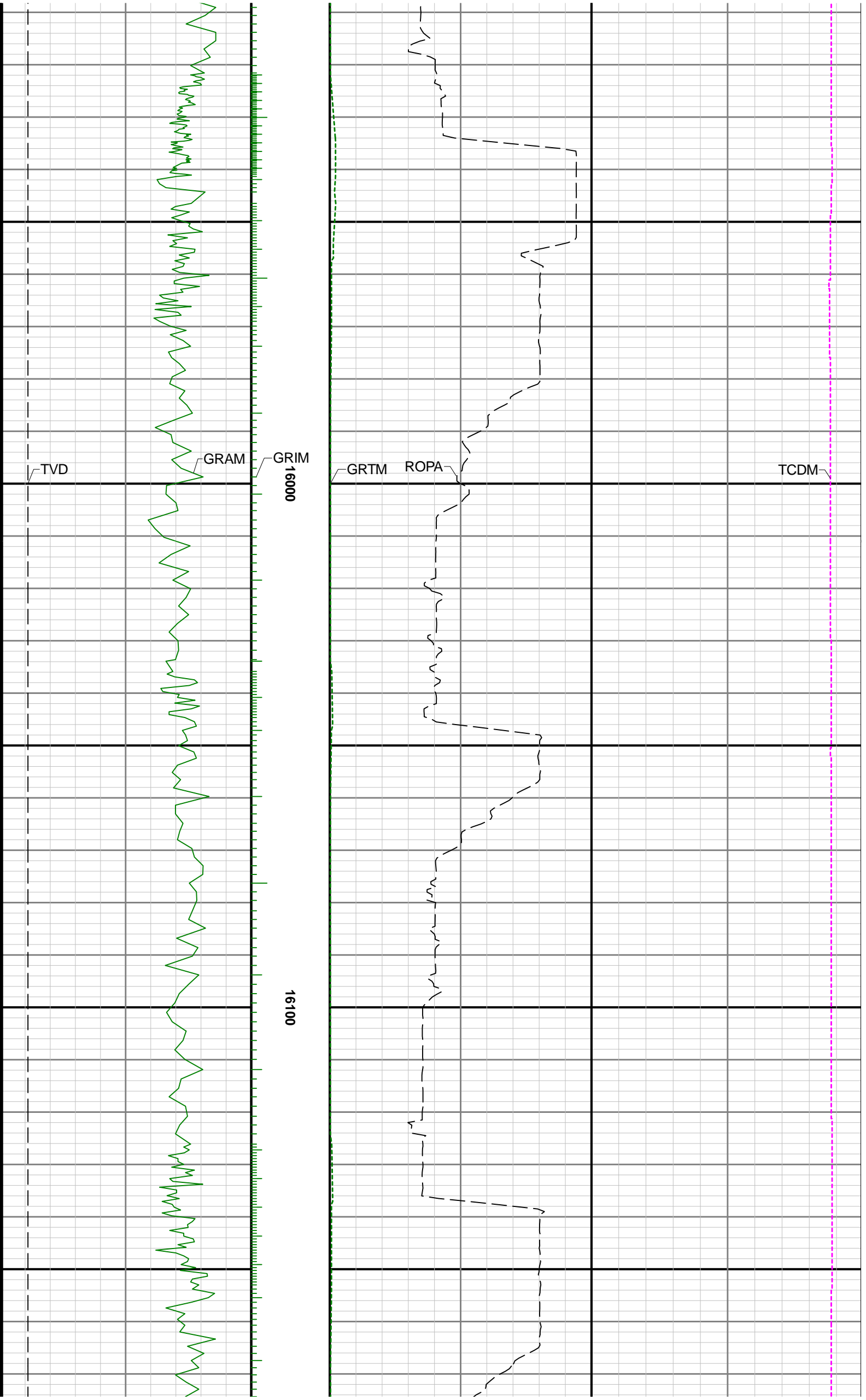


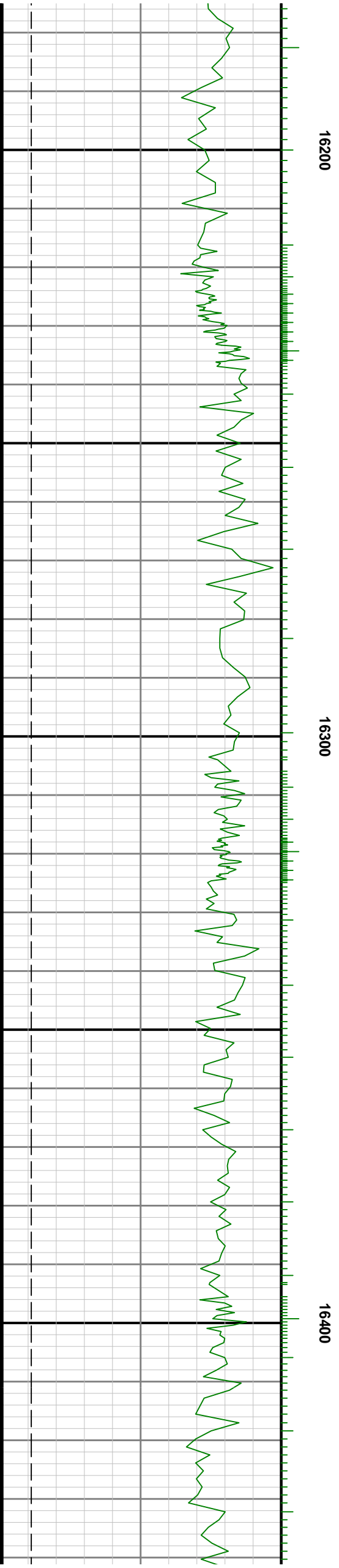
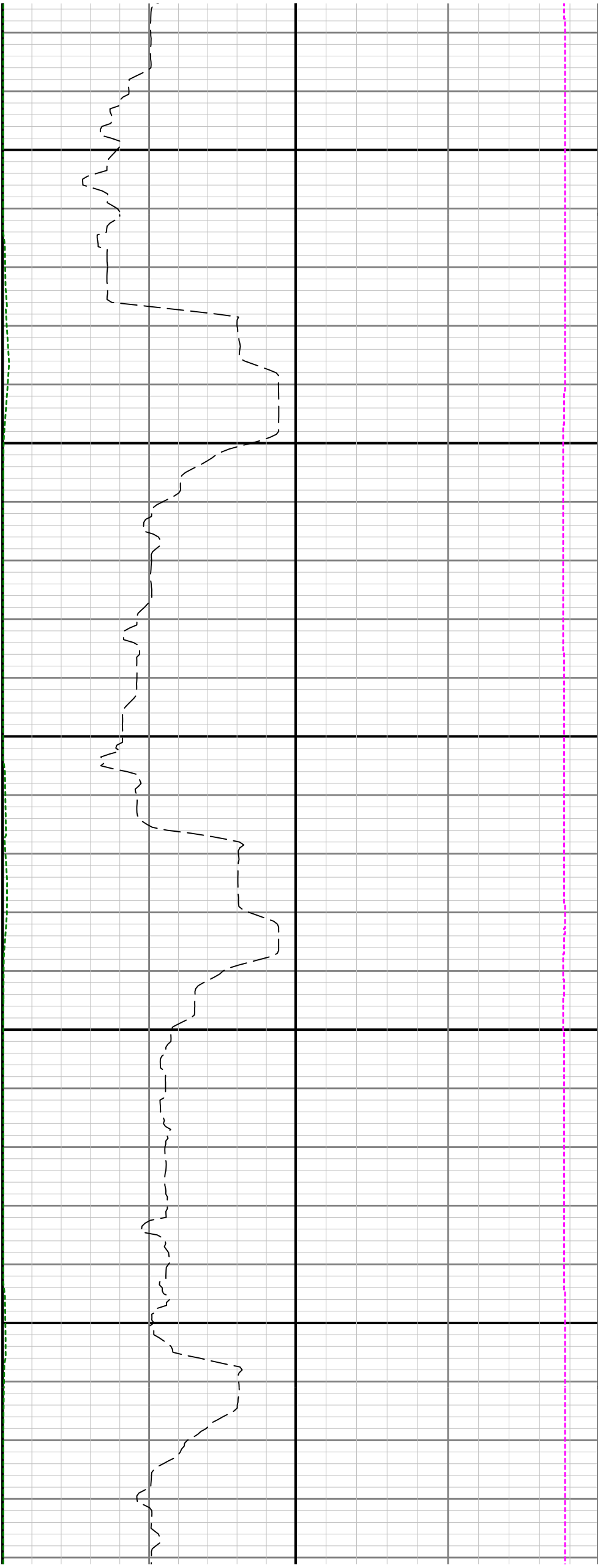


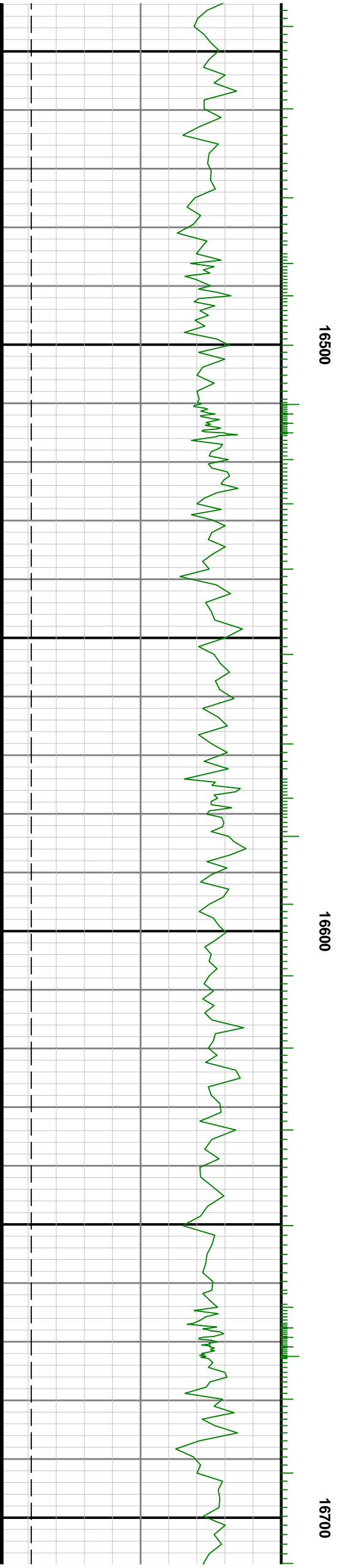
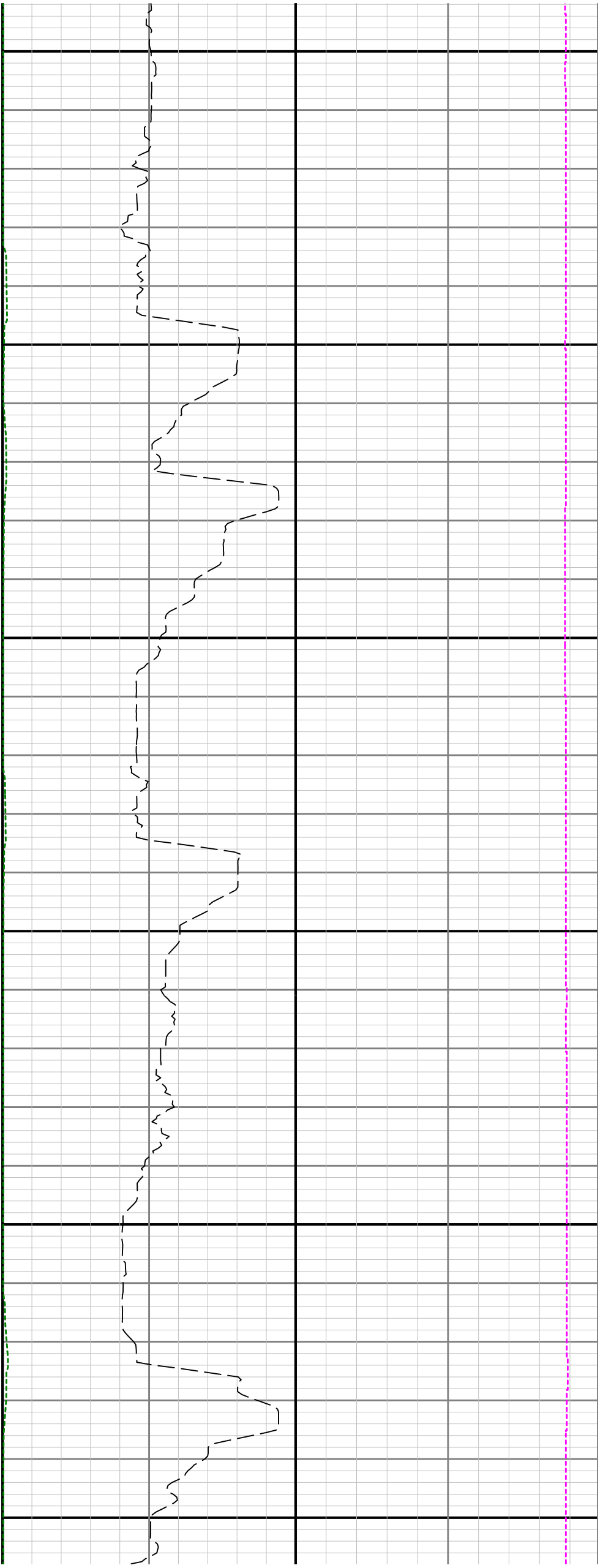














16800

16900

