



Gamma Ray

"These interpretations and analyses ("Interpretations") are opinions provided by Baker Hughes Oilfield Operations, Inc ("Baker Hughes"), based upon industry practice, empirical relationships, assumptions and measurements, (many of which may be provided by the customer). The Interpretations are not infallible and may be subject to different opinions. Vjwu. "Dcmgt"Jwi jgu"fqgu"pqv"ycttcpv"vjgkt"ceewtce{"eqttgevpguu."qt"eqornvgpguu."qt"vjcv"vjg"ewuvqogtøu"cpflqt"cp{"vjktf"rctv{øu"tgnkcpqg"qp"uwej"Kpvgtrtgvcvkqpu"yknn"ceegornkuj"cp{"rctvkewnct"tguwnvu0"Vjg"ewuvqogt"cuuwogu"hwnn" responsibility for the use of the Interpretations and for decisions based thereon and the customer agrees to release, defend and indemnify Baker Hughes, its parent, subsidiaries and affiliated or related entities, and subcontractors, together with its and their officers, directors, employees, agents and invitees against, any and all claims, losses, damages, or expenses sustained by the customer or any third party arising out of reliance upon or use of the Interpretations, without regard to the cause(s) thereof, including without limitation any form of negligence on the part of Baker Hughes. Unless other contract terms have been agreed to by the parties, each party's liabilities and qdnkicvkqpu"ujcnn"dg"igxgtpgf"d{"Dcmgt"Jwi jgu"Kpeqtrgtcvgføu"Yqtnfykfg"Vgtou"cpf"Eqpfkvkqpu0\$""

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	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	13.500	PDC	4.50	Motor	20.00	1557.00	20.00	1557.00	2017-07-19 19:29	2017-07-20 02:25	6.74
2	2	8.500	PDC	3.00	AutoTrak Curve	1557.00	12358.00	1557.00	12371.00	2017-08-09 09:17	2017-08-11 18:18	51.05

Crew

Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite
Andrew Clancy		2017-08-09	2017-08-12	Pierce Lovesee		2017-08-09	2017-08-12				

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2017-07-19 16:58	1	219.00	Water Based Mud	8.4	29	9.1	0.0	0/100	Active Pit	600	0.00
2017-08-09 03:41	2	1557.00	Oil Based Mud	10.2	27	N/A	0.0	74/26	Active Pit	23000	0.00
2017-08-10 06:46	2	6543.00	Oil Based Mud	10.1	29	N/A	0.0	73/27	Active Pit	22000	0.00
2017-08-11 06:46	2	10170.00	Oil Based Mud	10.0	22	N/A	0.0	72/28	Active Pit	23000	0.00

Equipment and Service Data

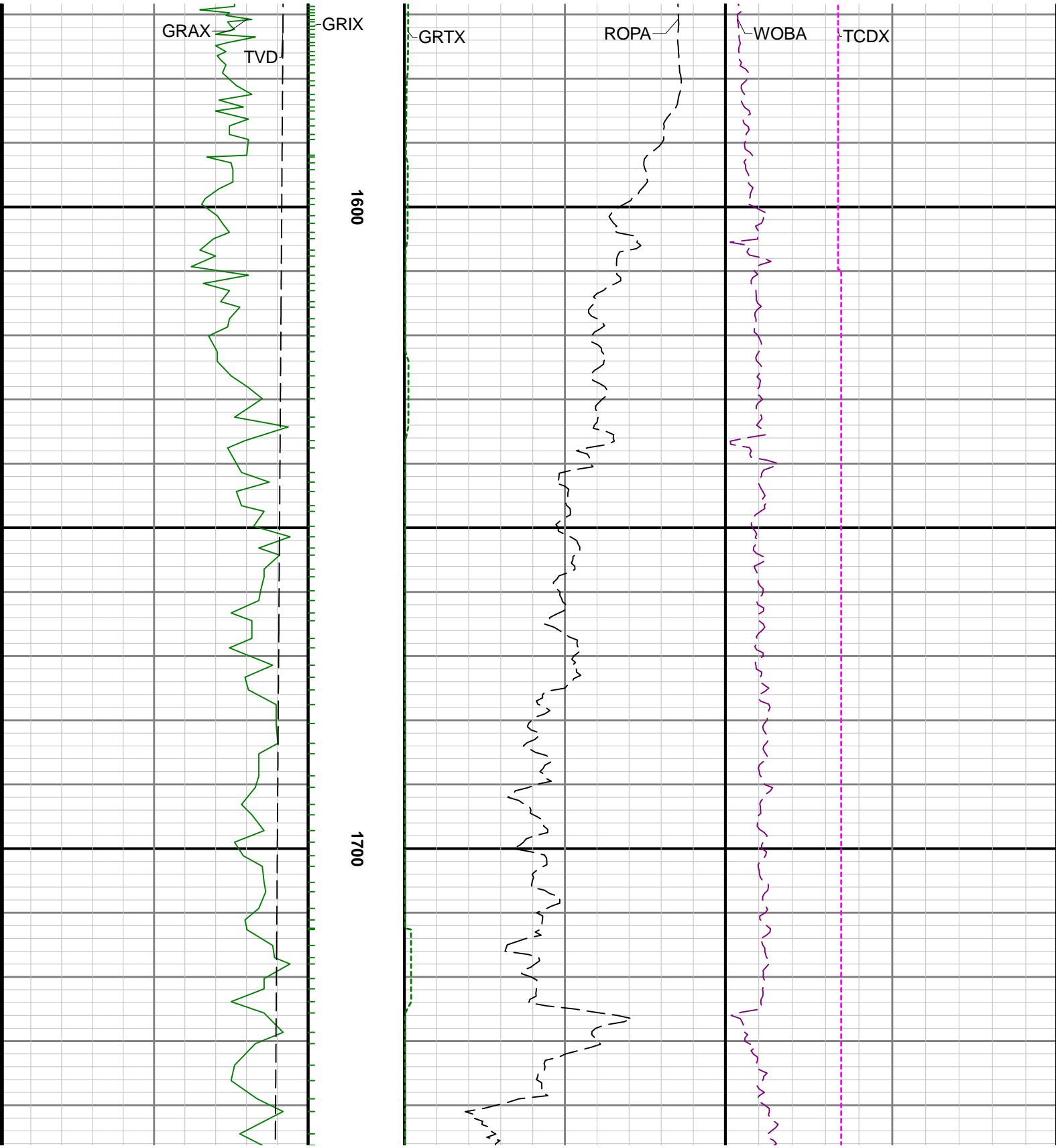
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	NaviTrak	11912324	Directional (mag)	13.13	49.20	8.000	0.000
1	NaviTrak	11912324	VSS	13.13	49.20	8.000	0.000
2	ATC_SU	12911316	Near Bit VSS	5.93	6.73	7.000	4.330
2	ATC_SU	12911316	Near Bit Inclination	5.93	6.73	7.000	4.330
2	ATC_MWD	14146740	Gamma (single)	2.74	12.90	7.000	3.250
2	ATC_MWD	14146740	Directional (mag)	12.26	22.42	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional Module, NaviTrak Platform
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

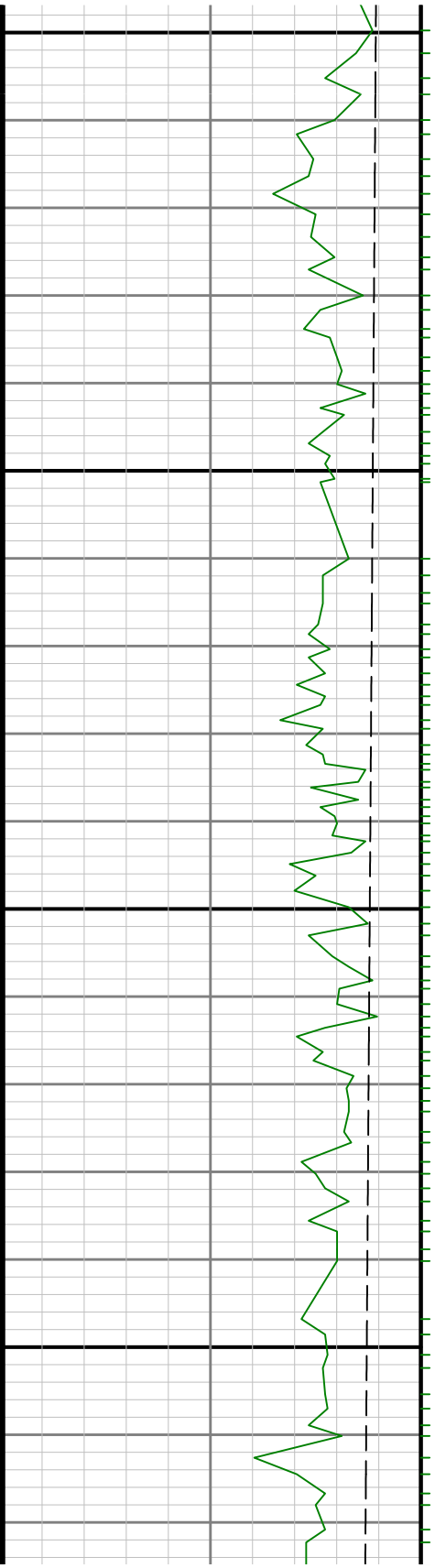
1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	On 7/19/17, the depth control system was calibrated to 1556 feet TVD).

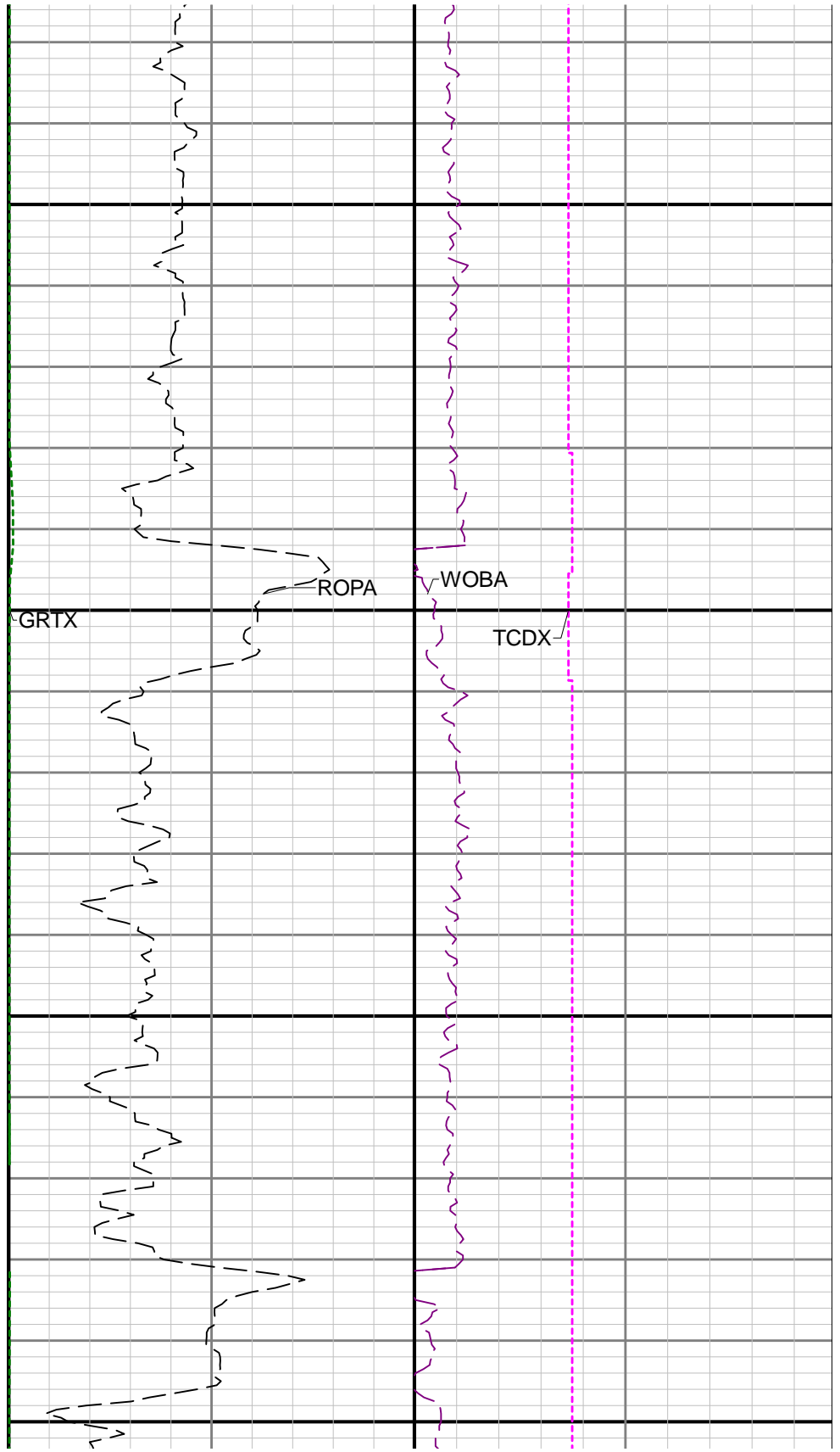
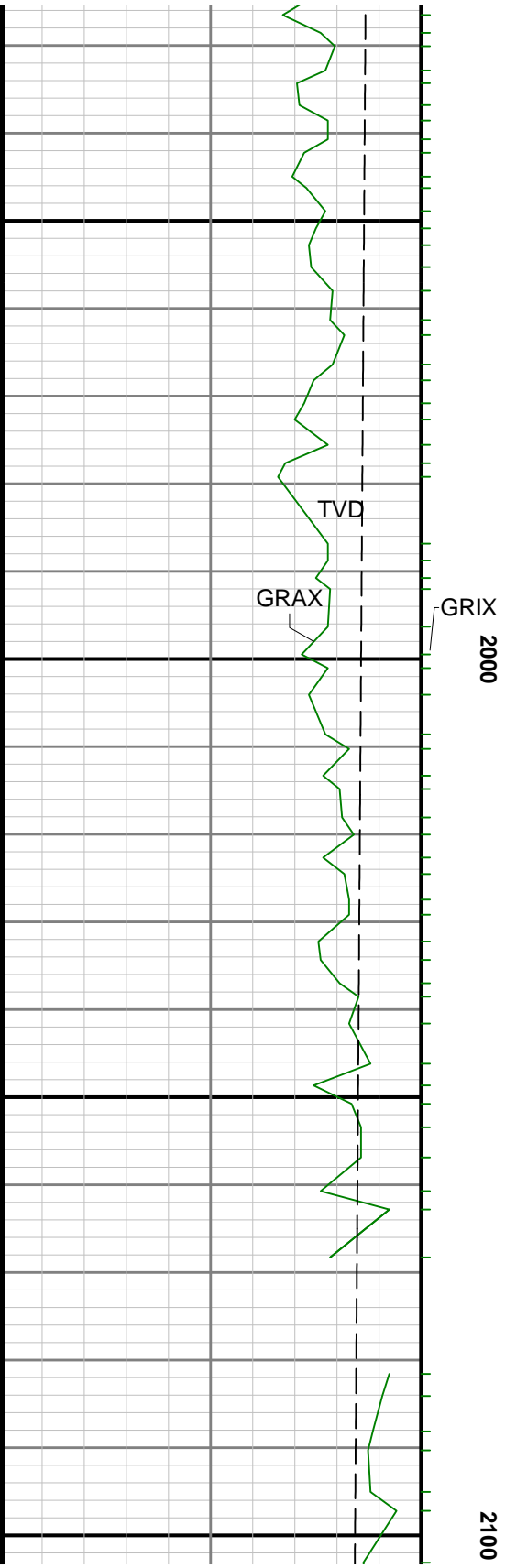


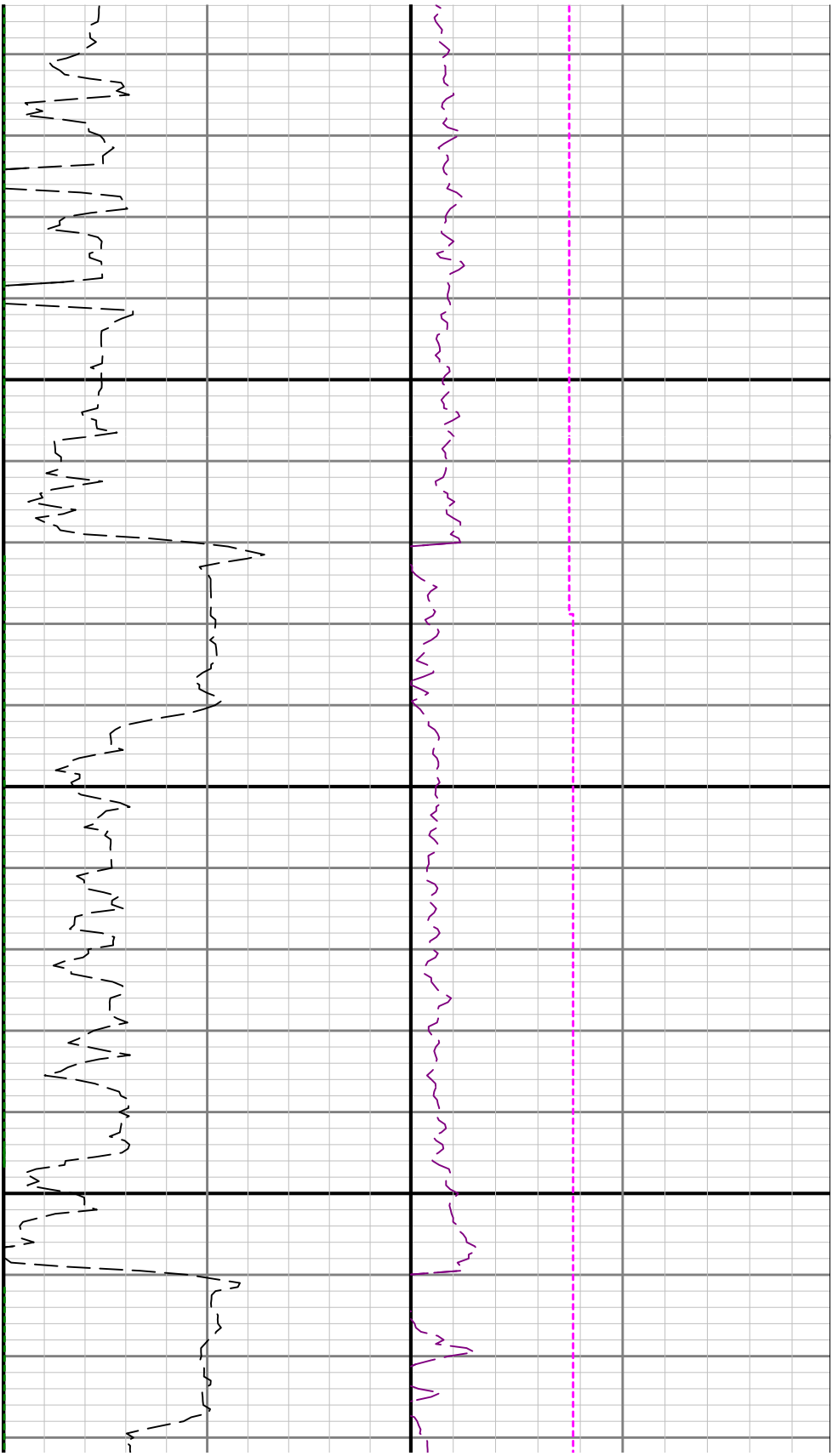


1800

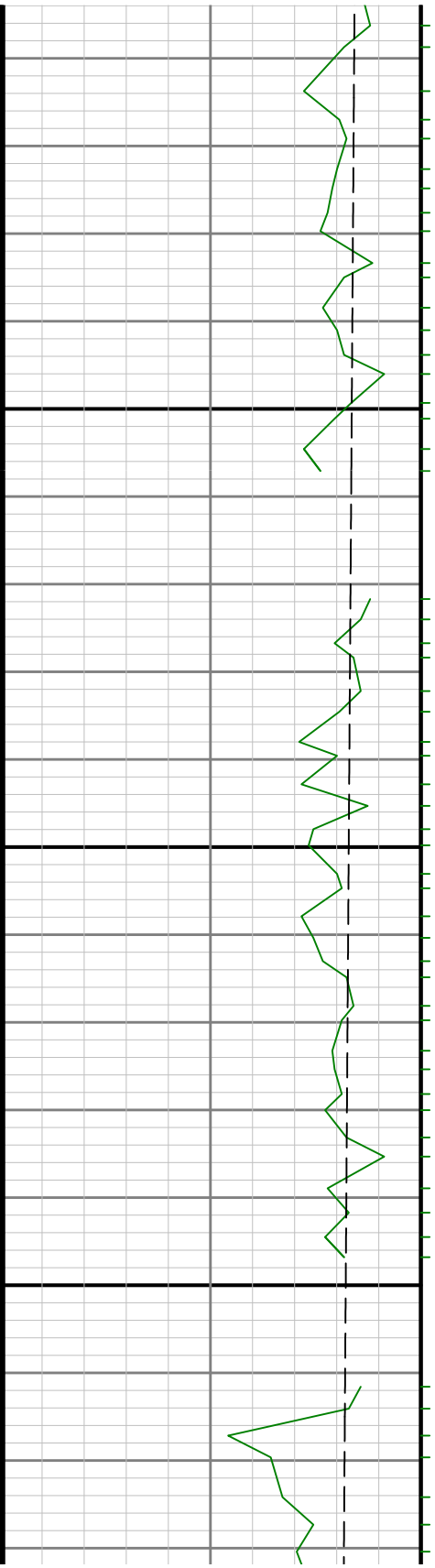
1900

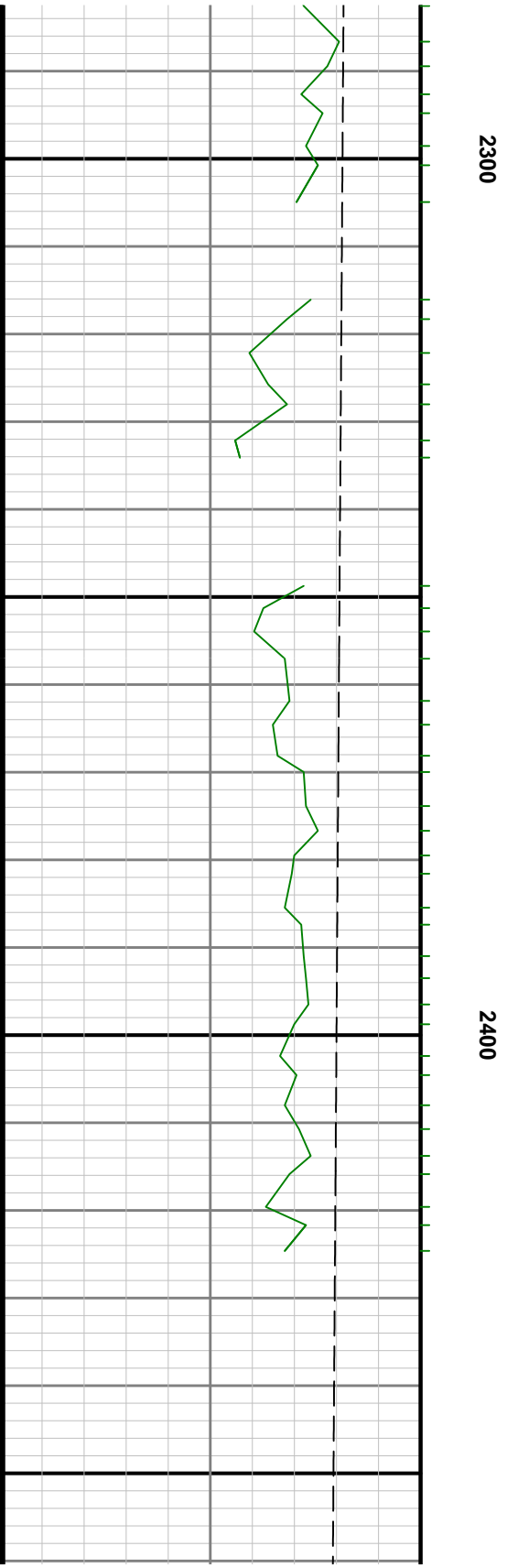
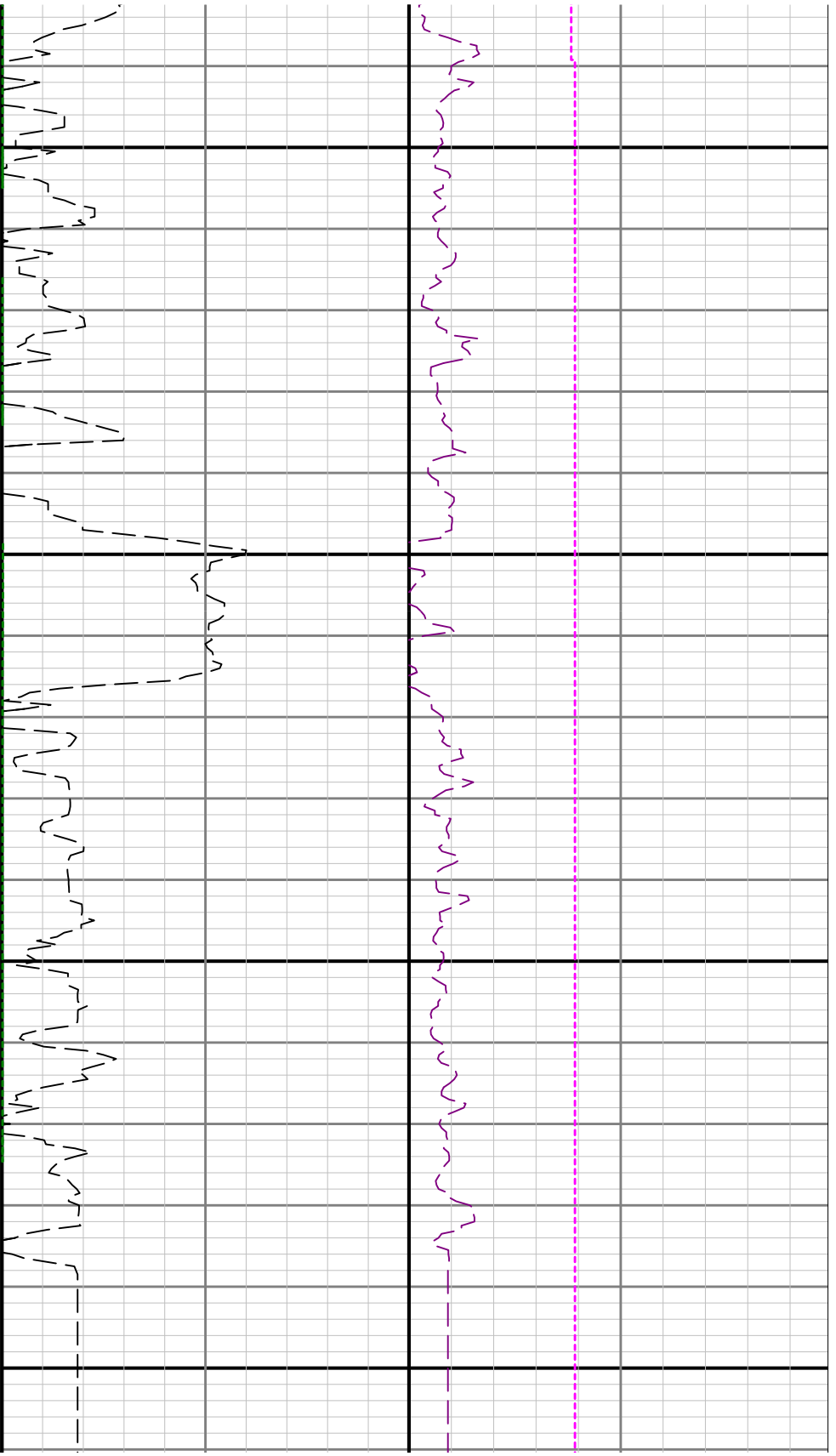






2200

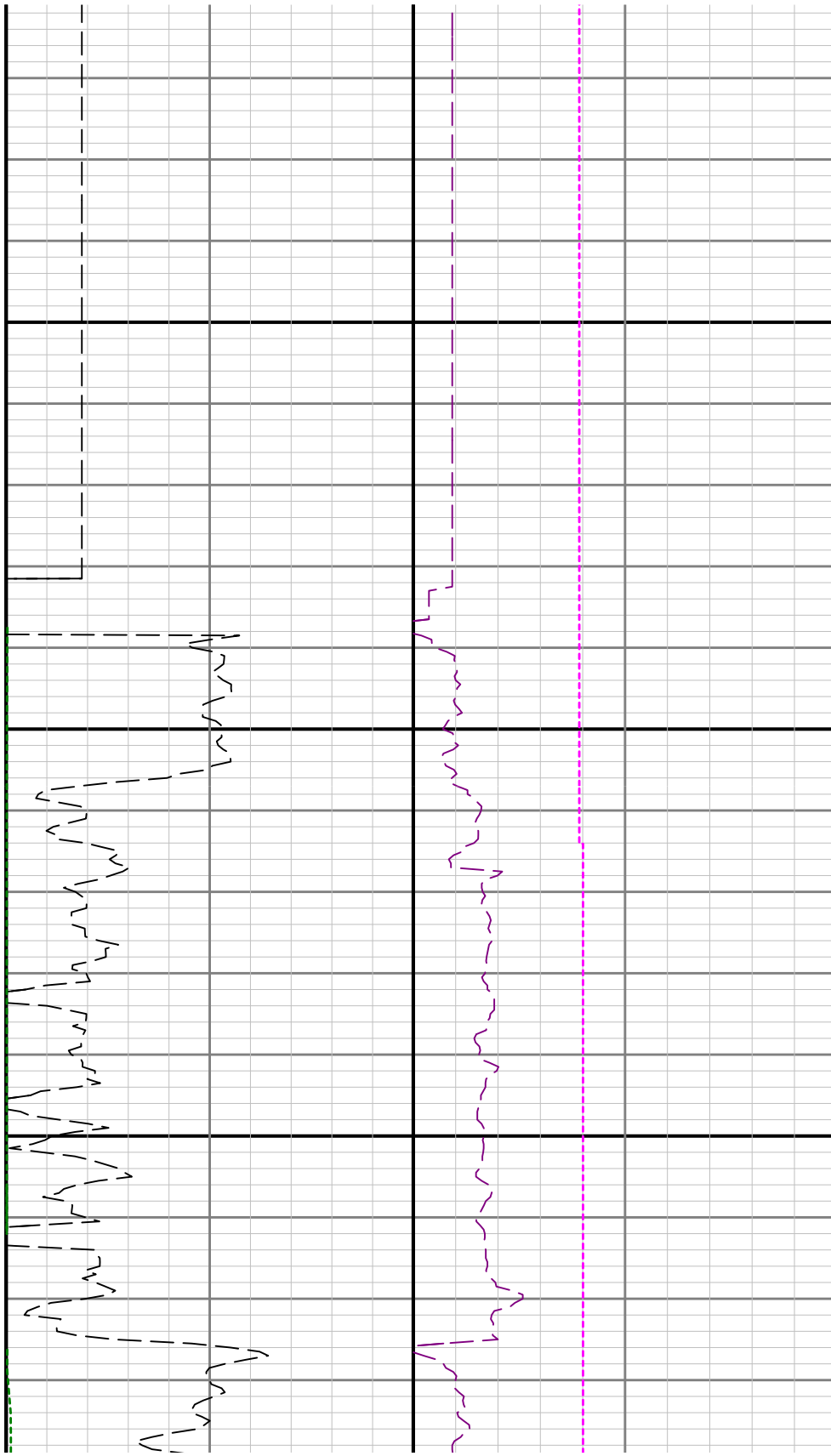


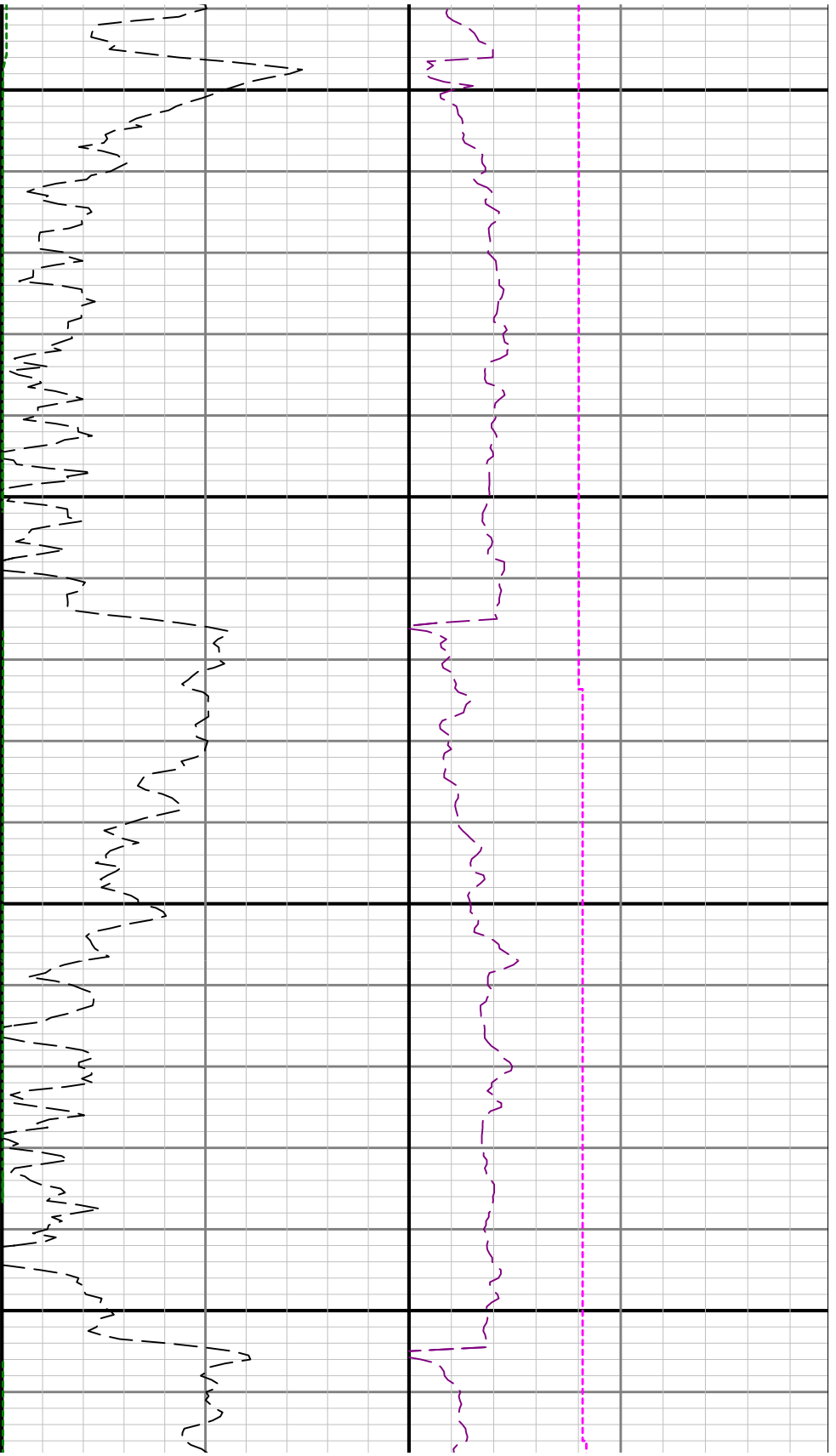


See Remark 1

2500

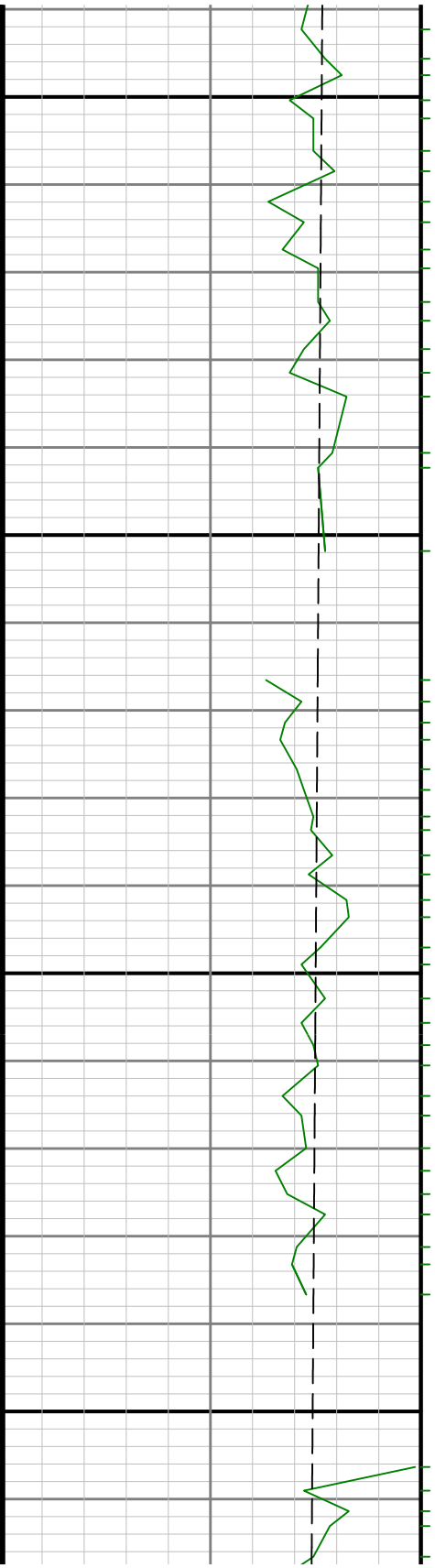
2600

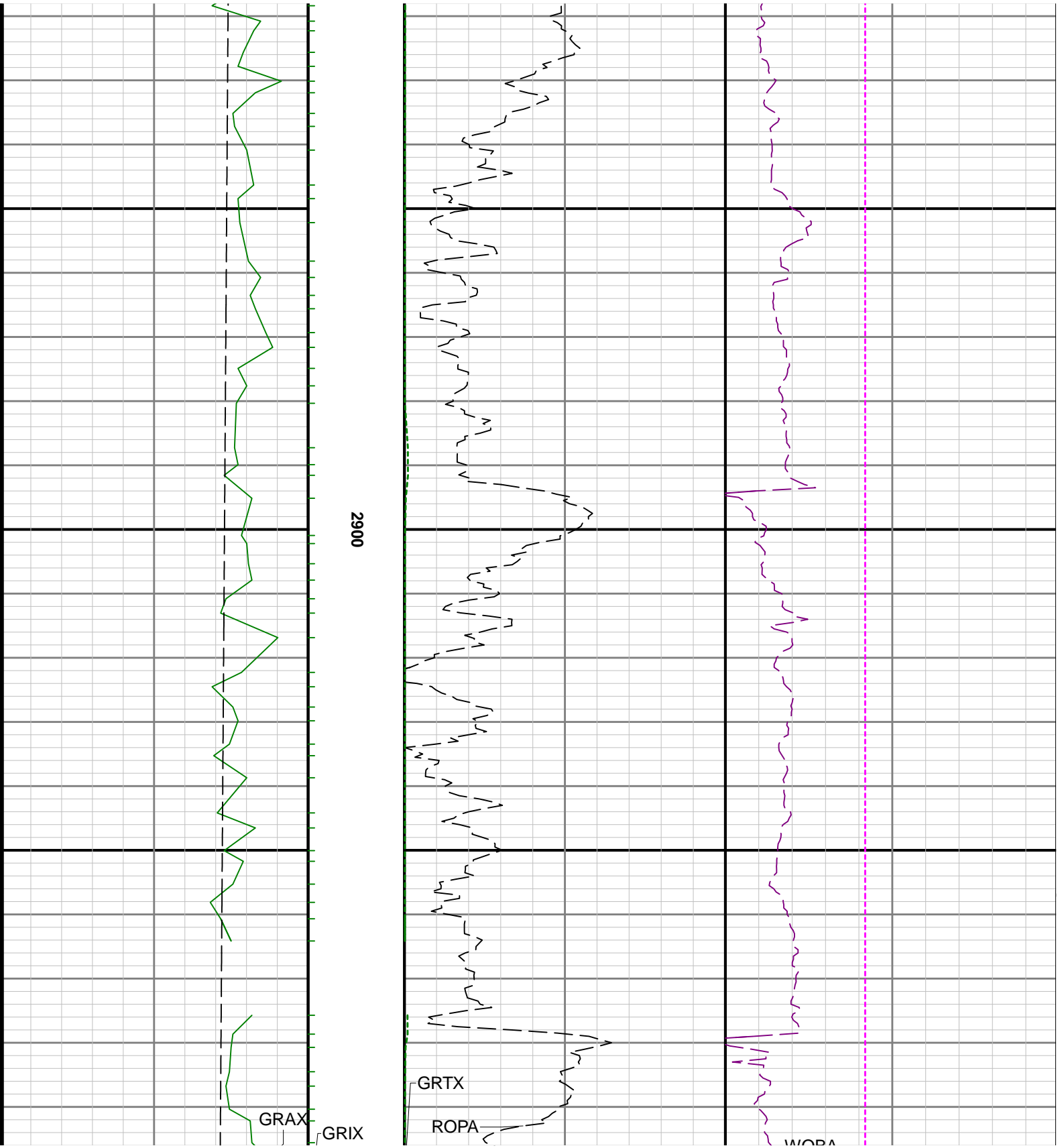


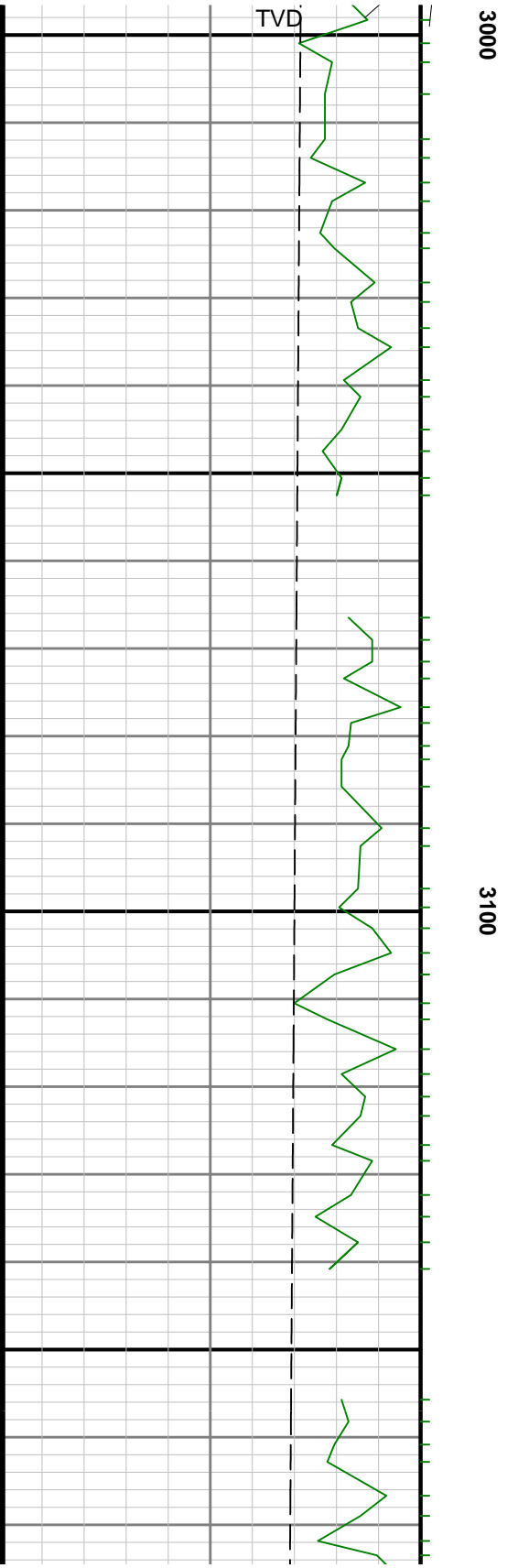
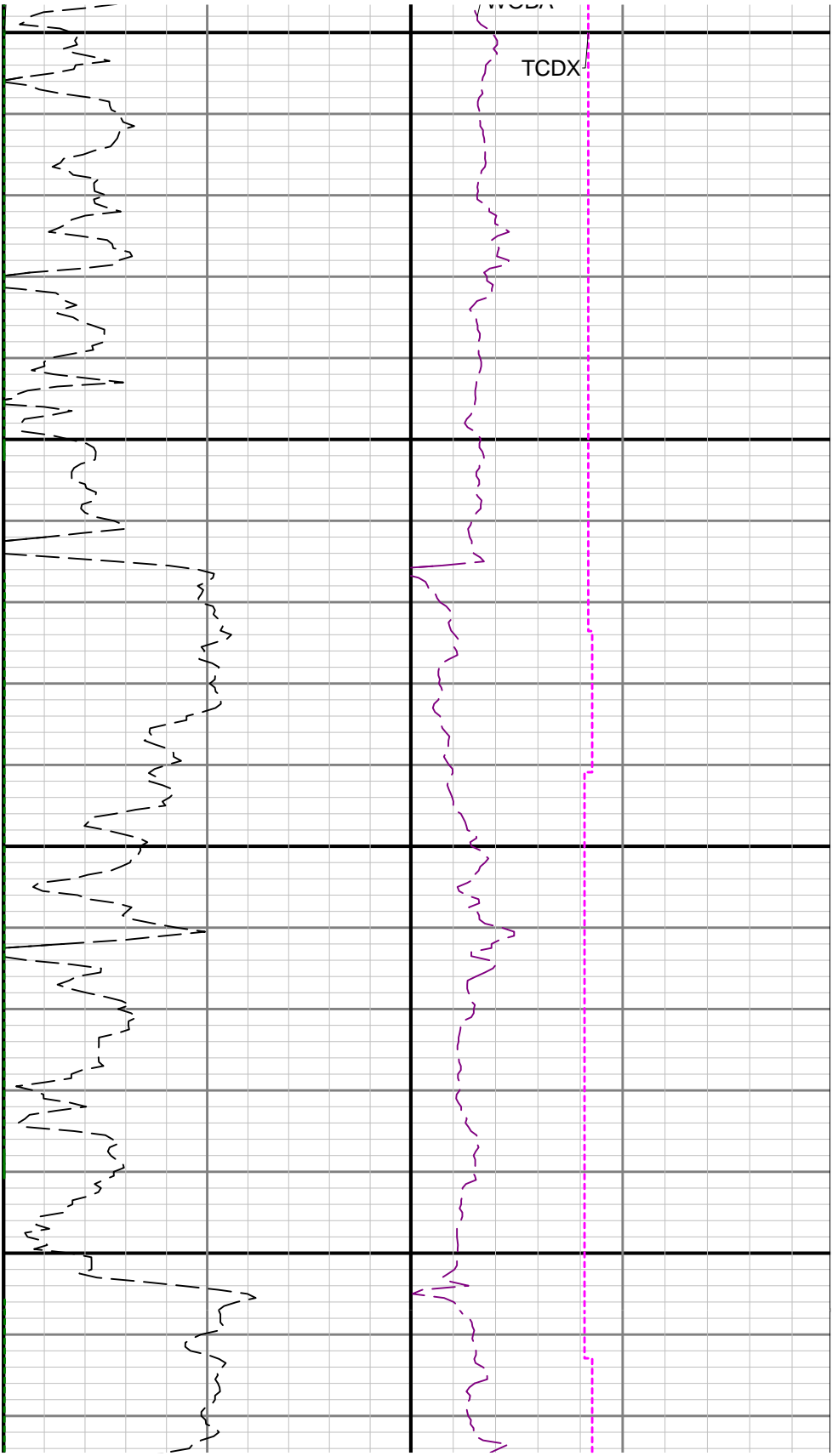


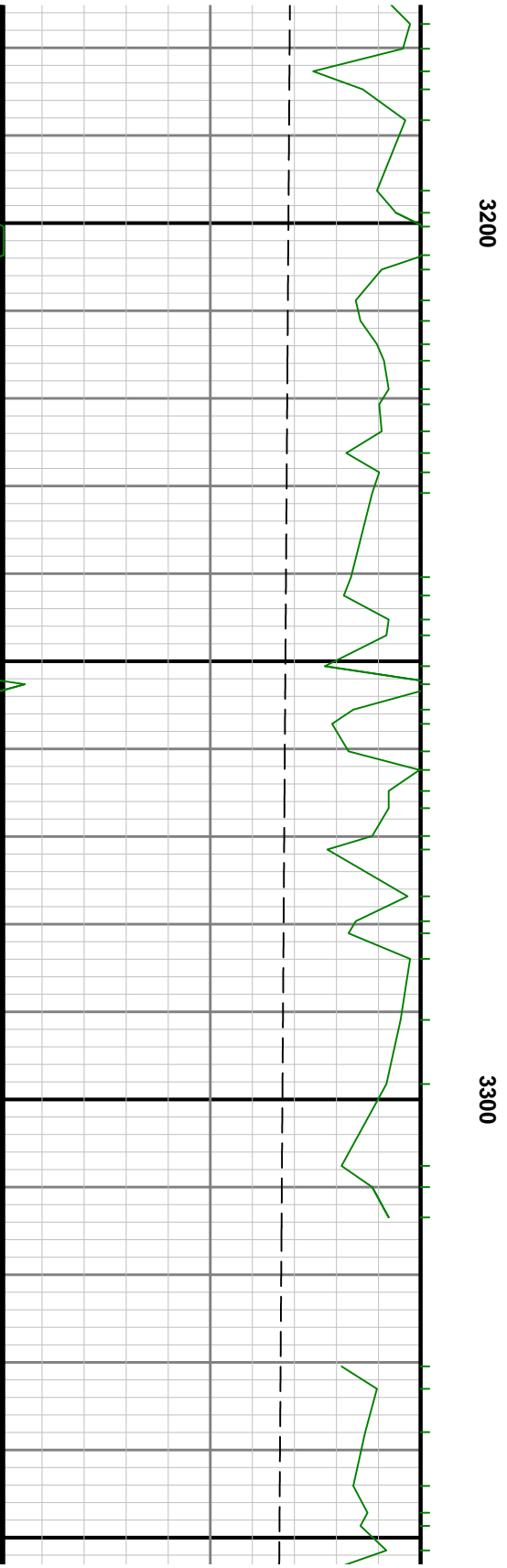
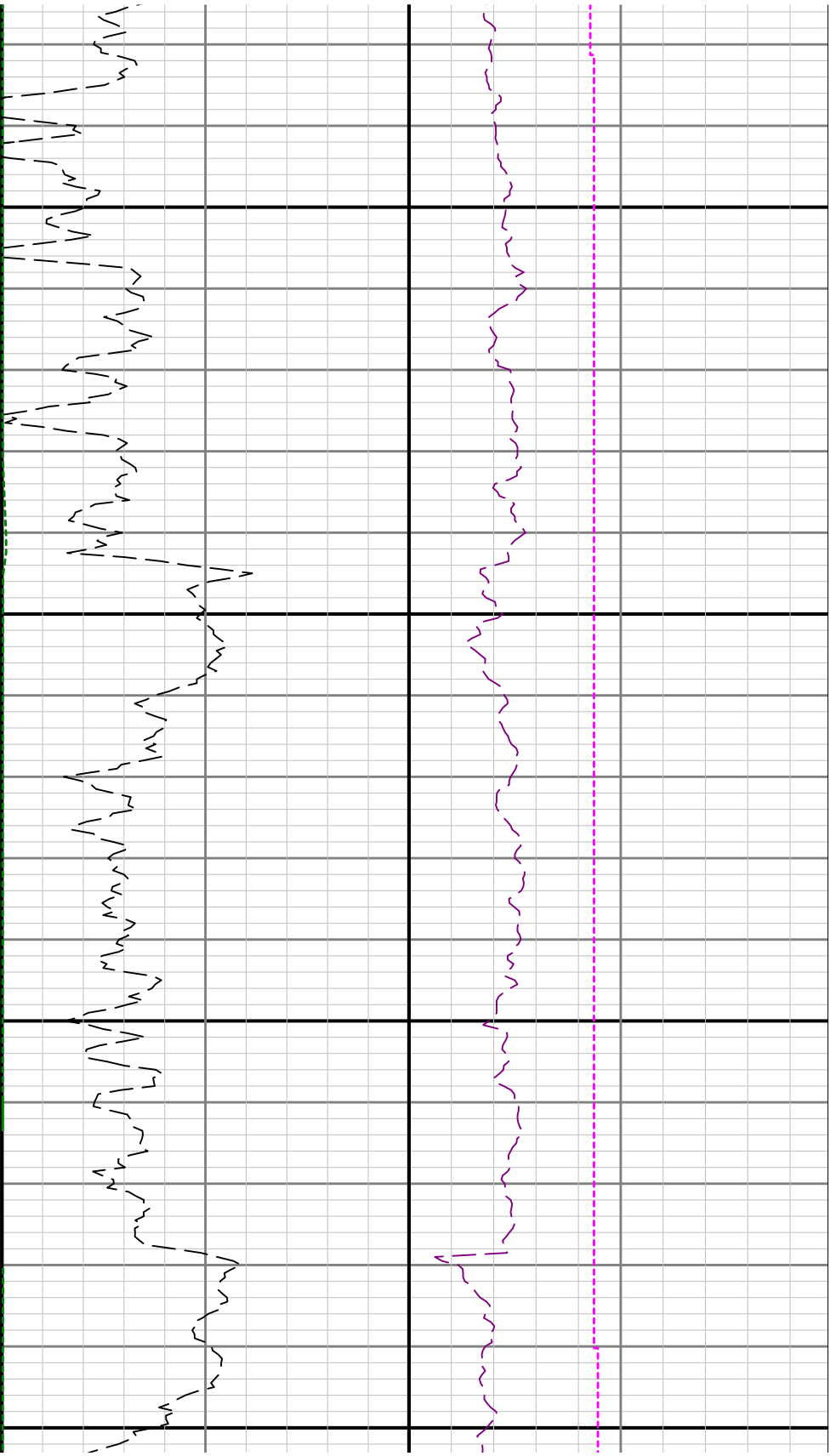
2700

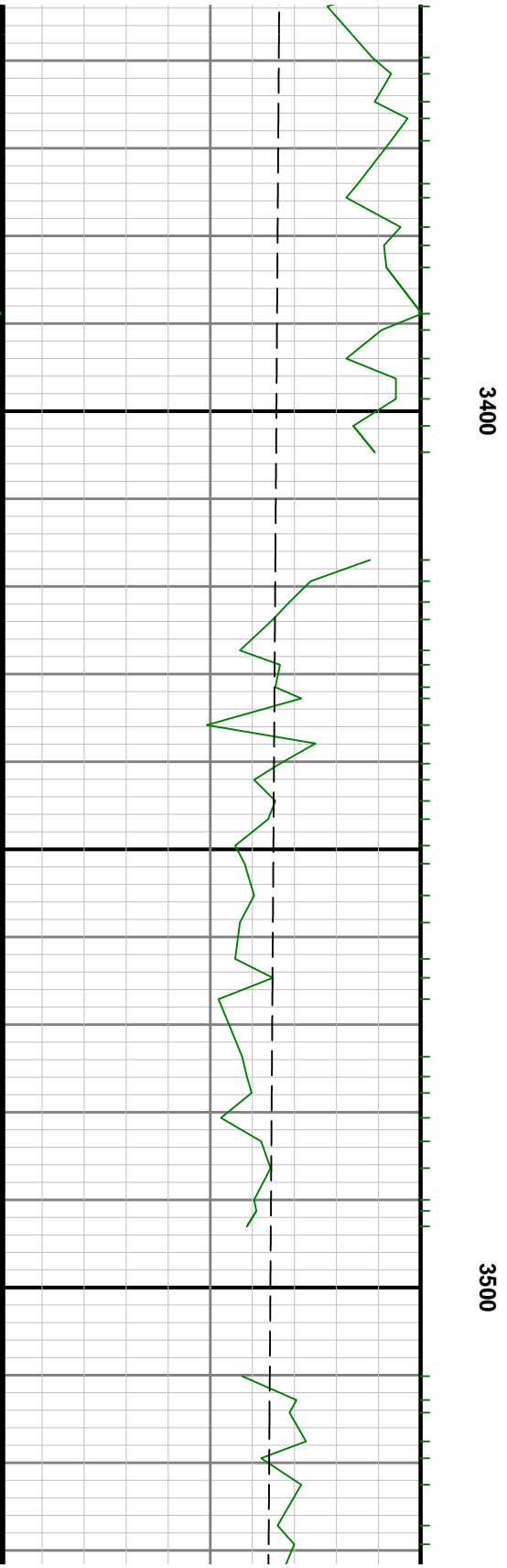
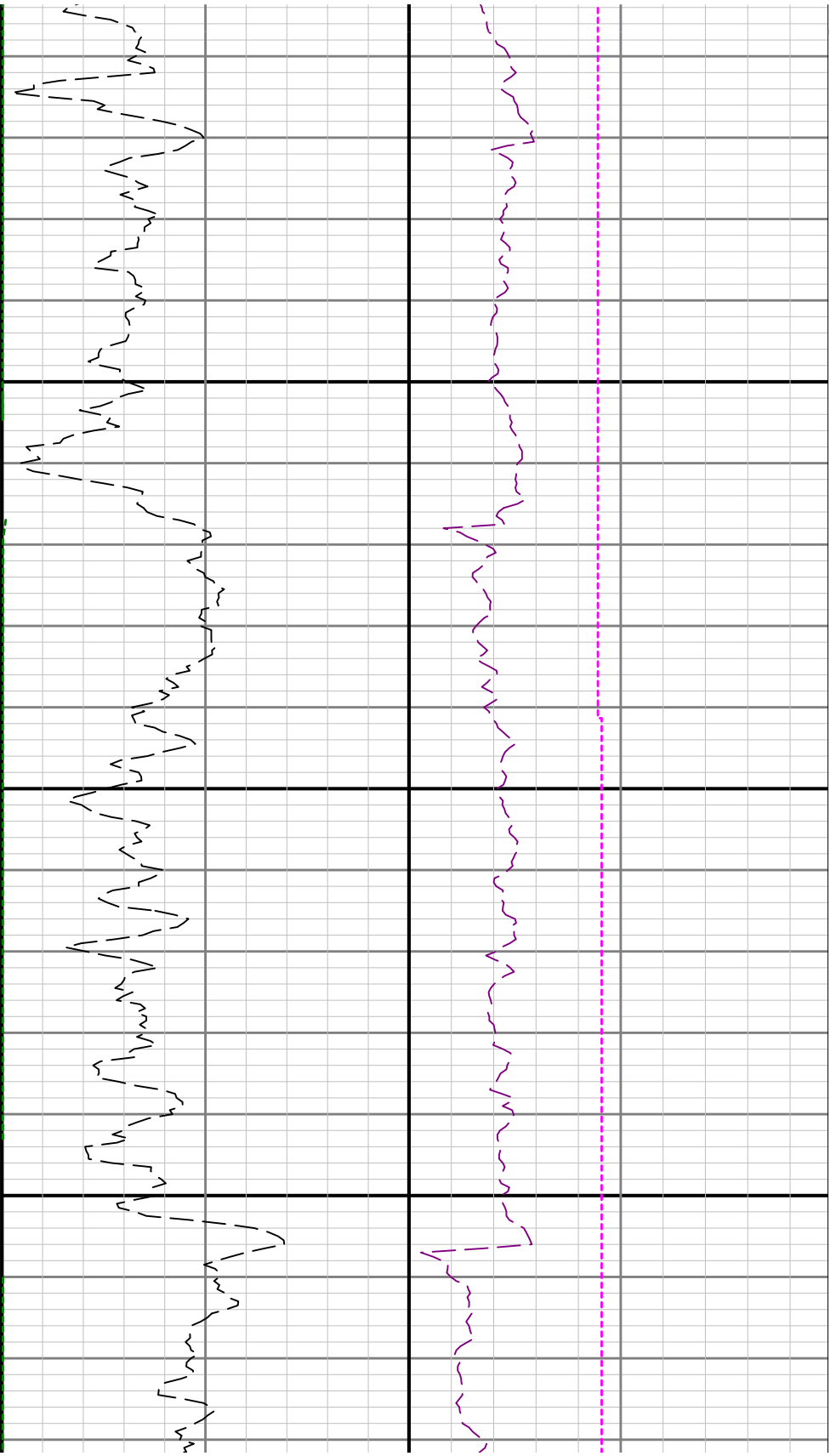
2800

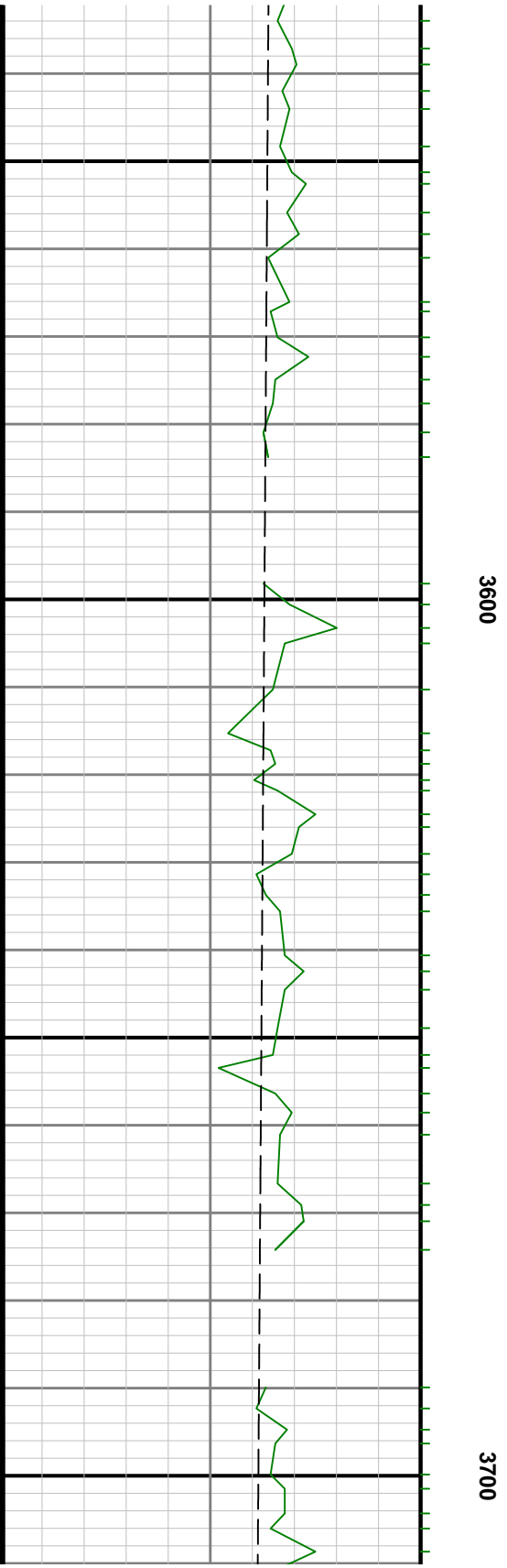
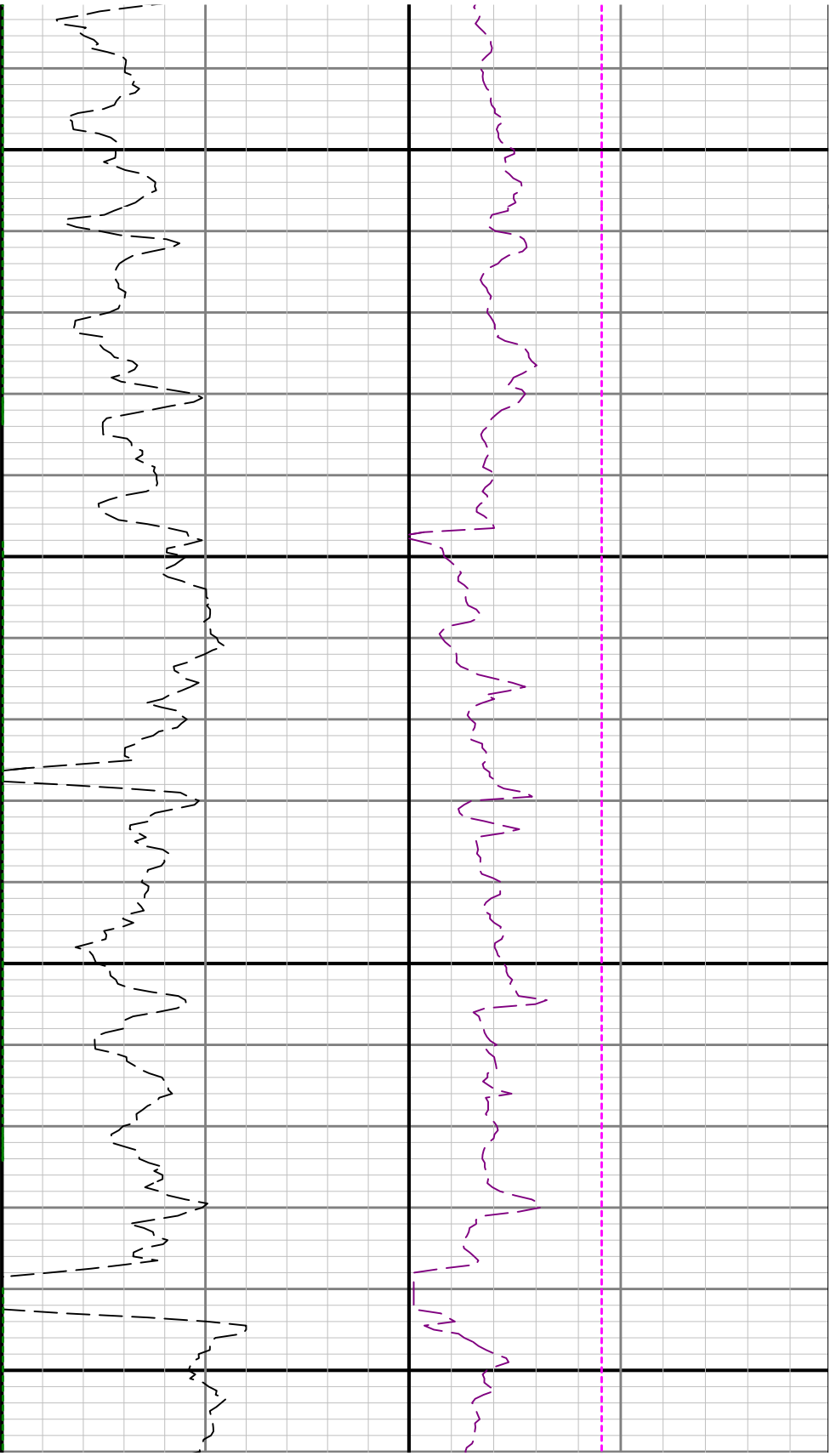


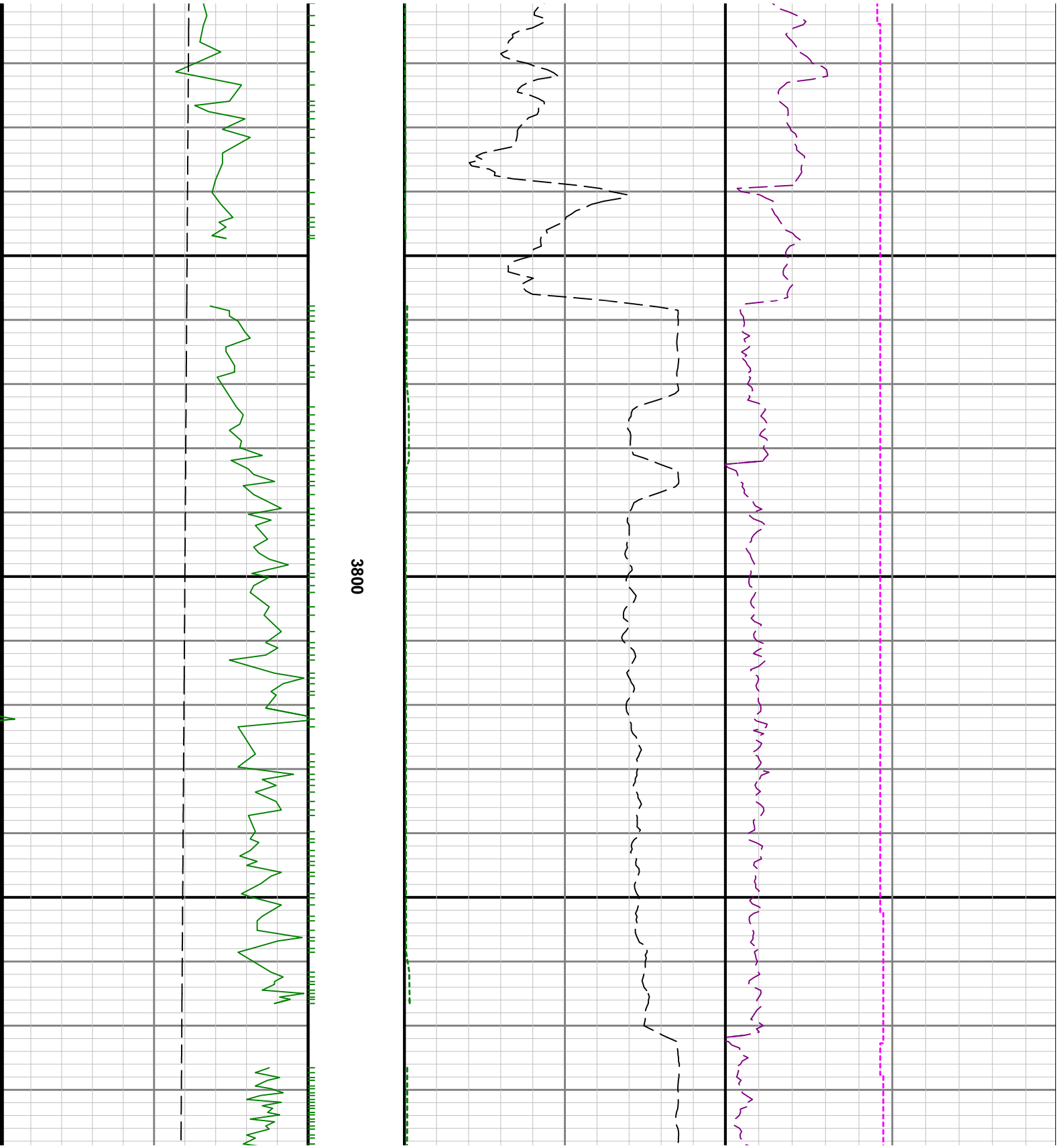


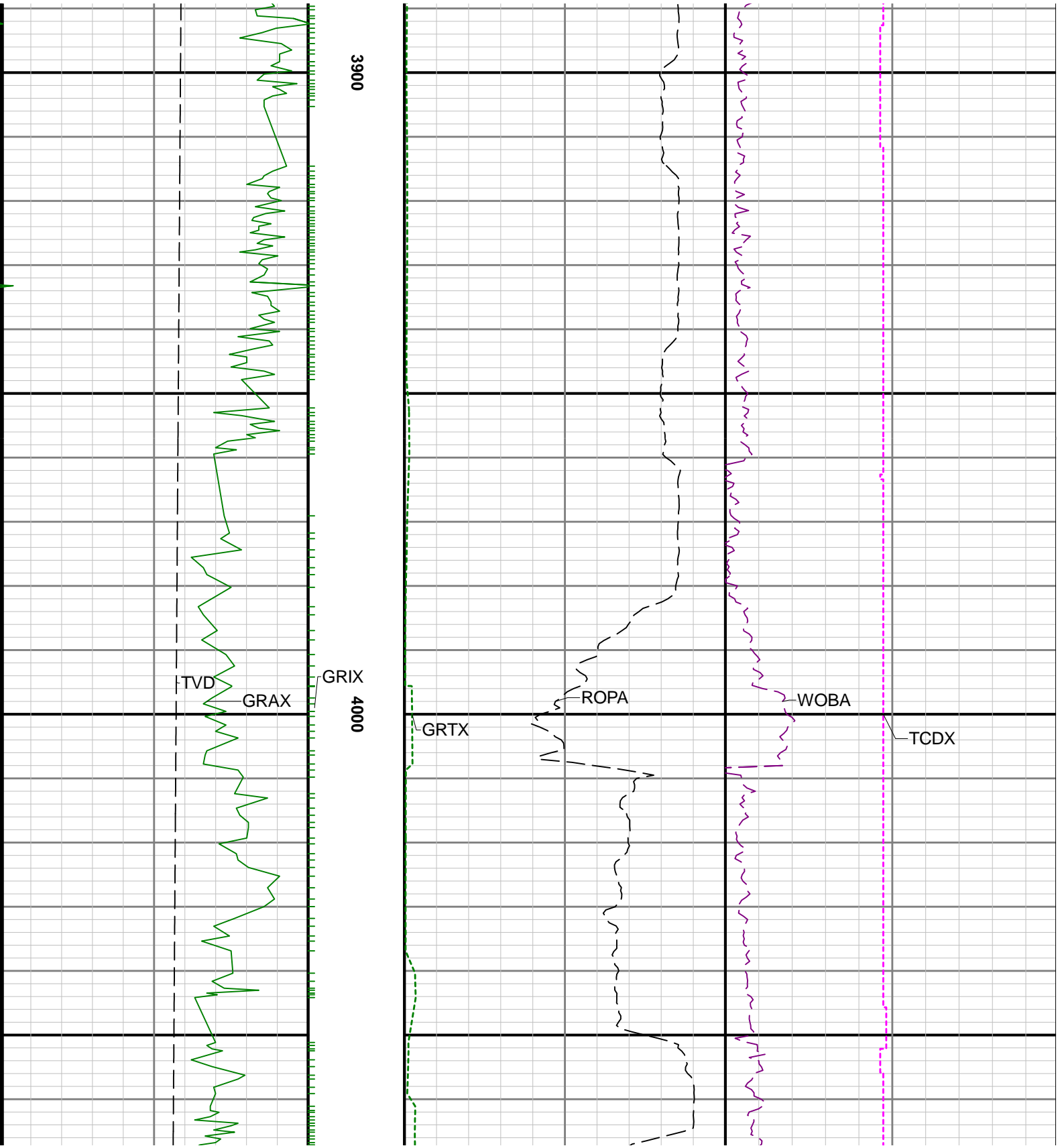


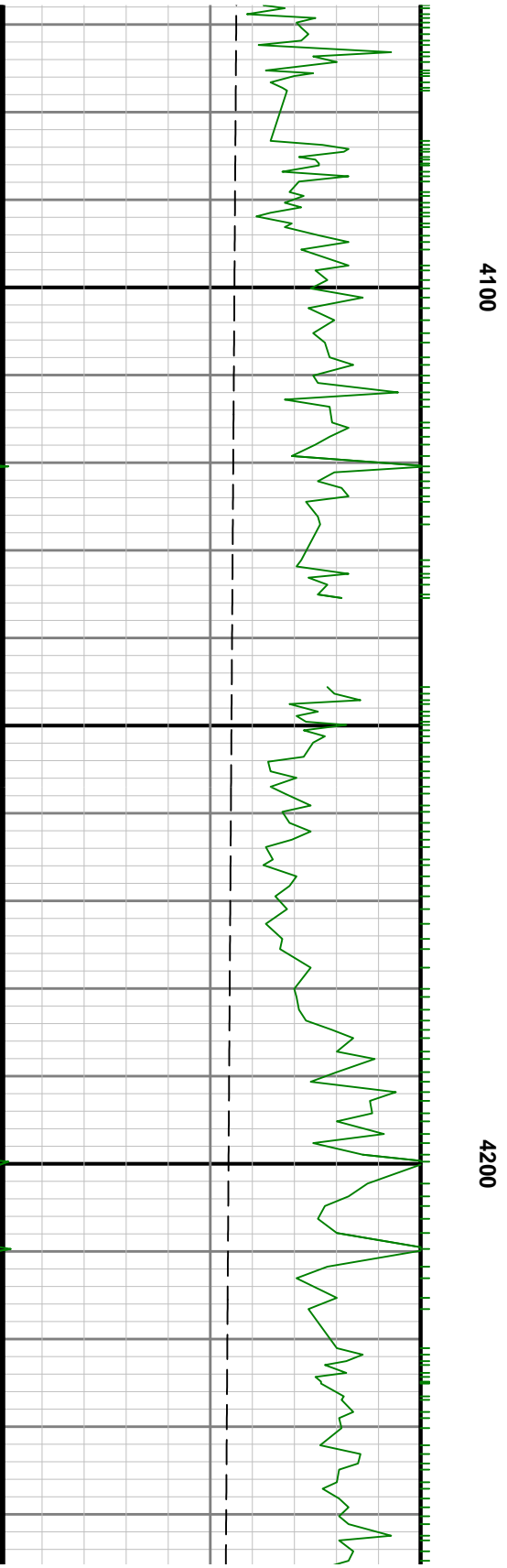
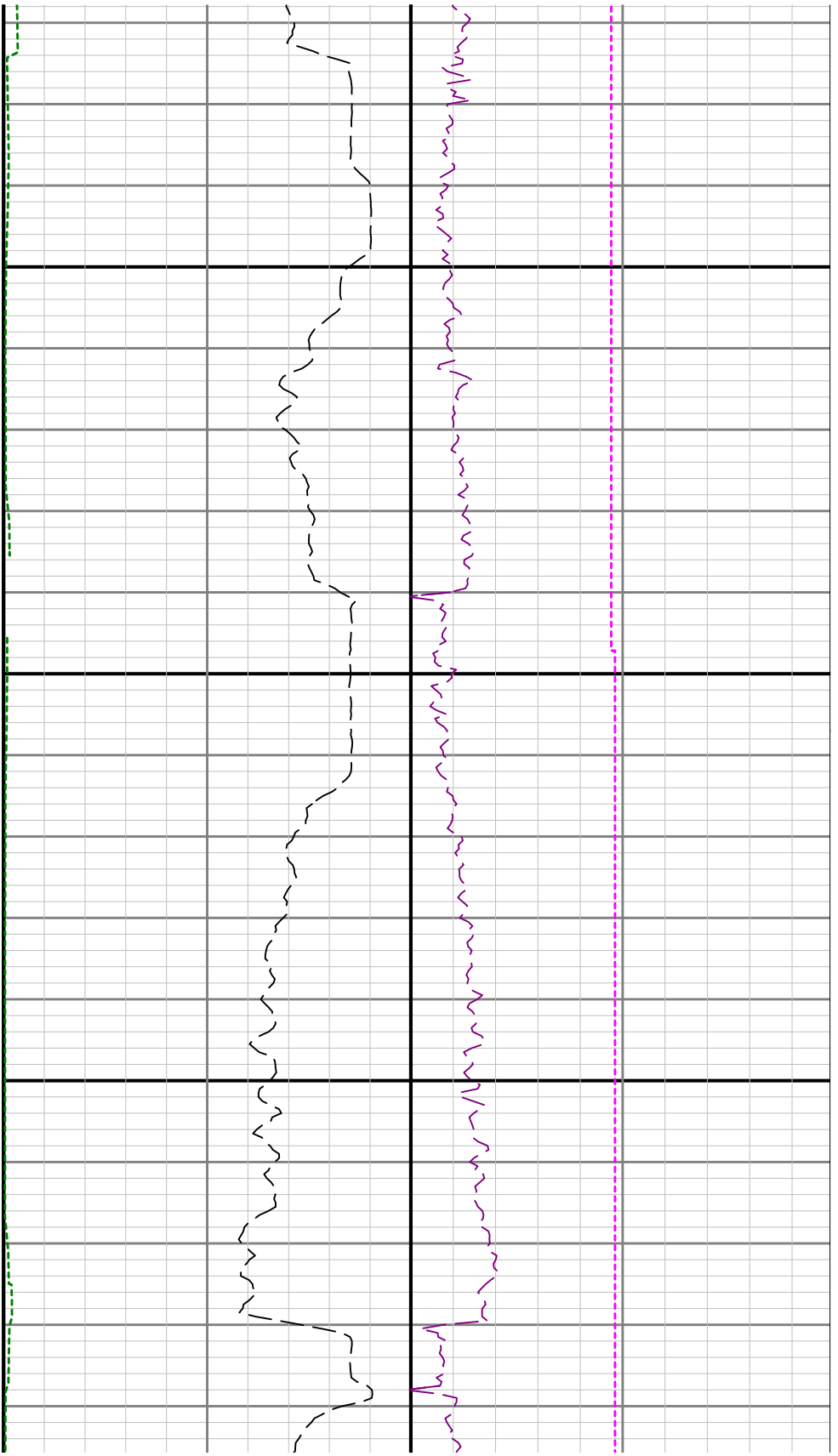


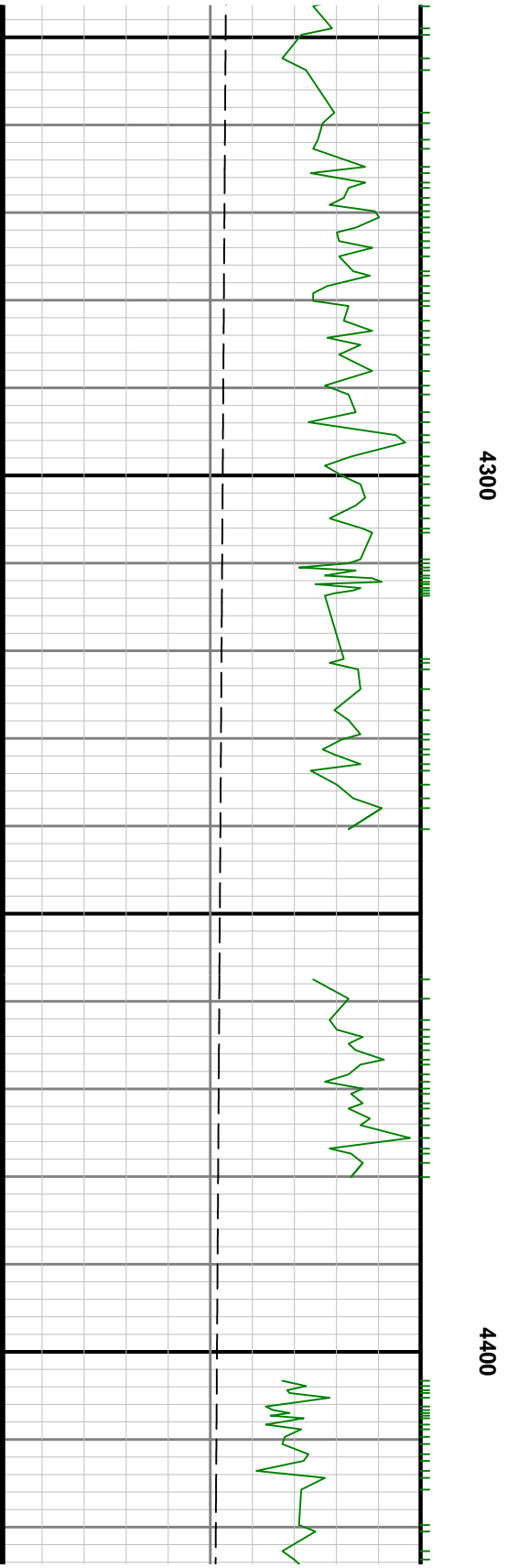
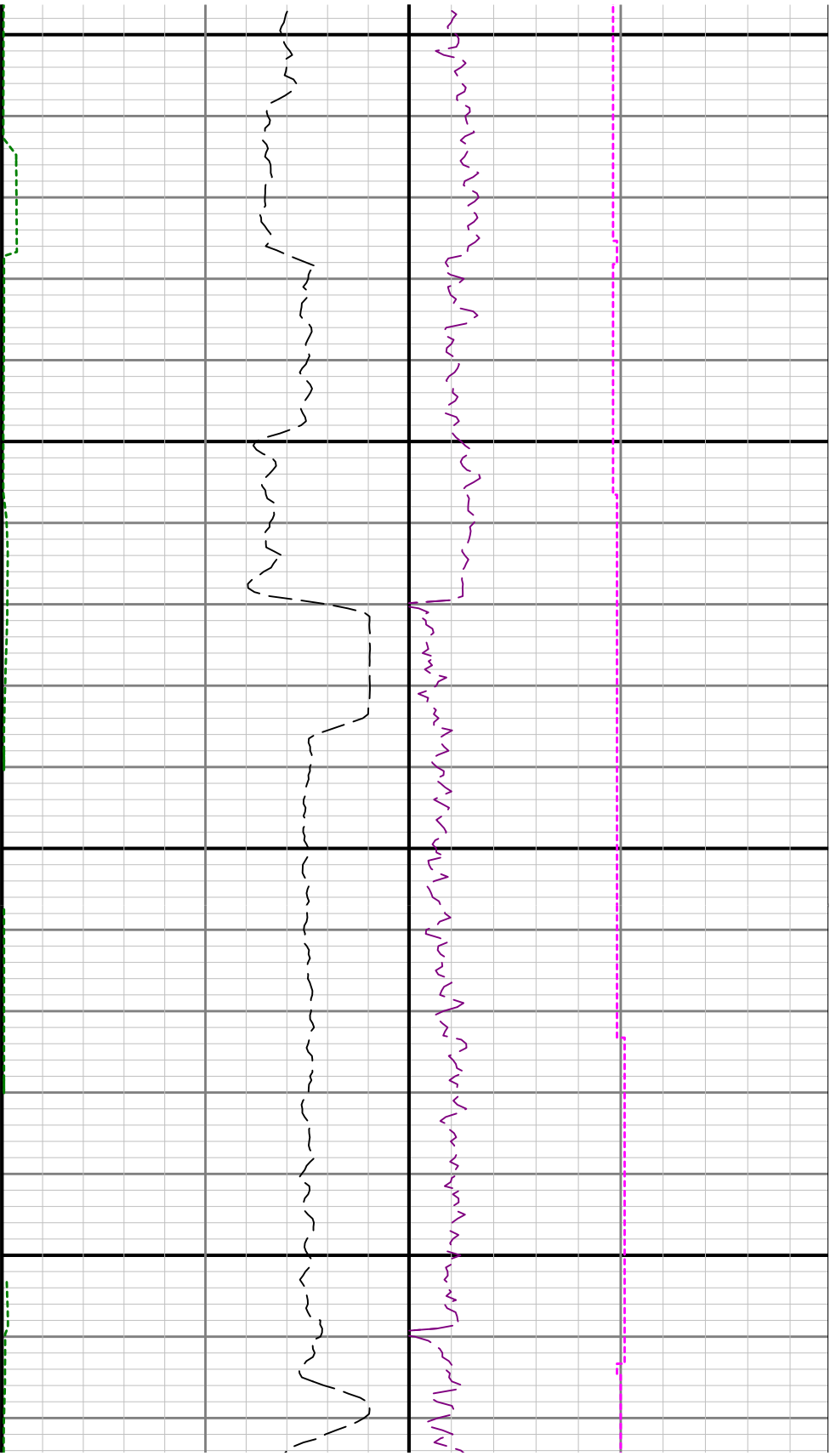


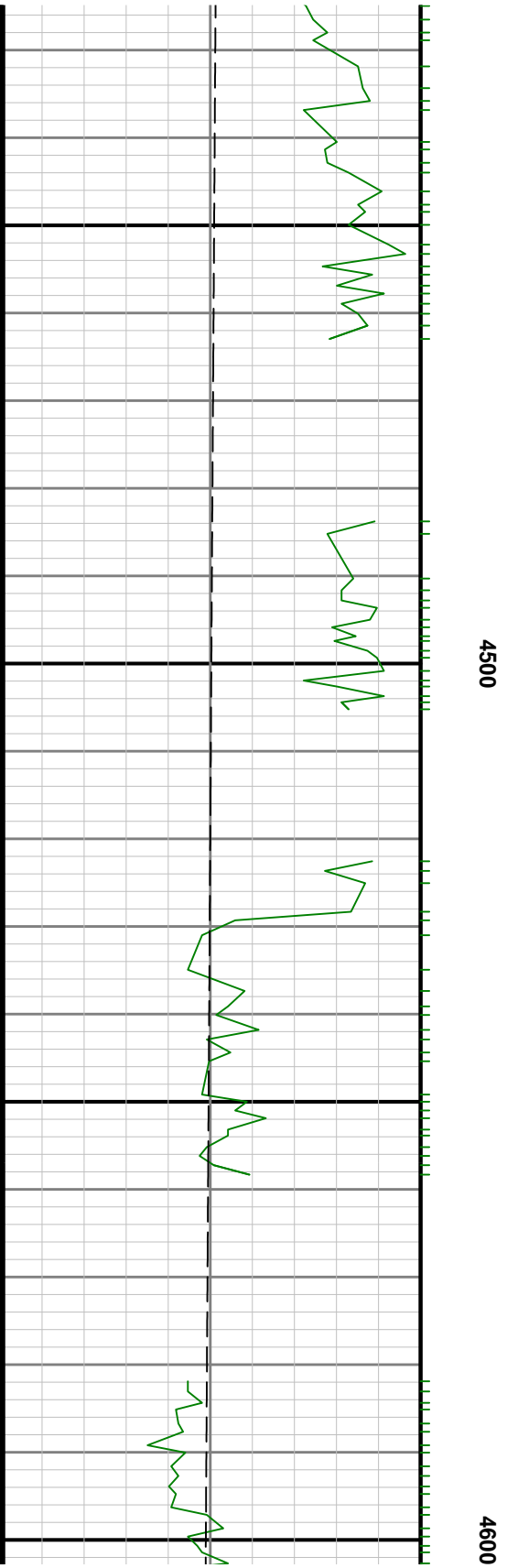
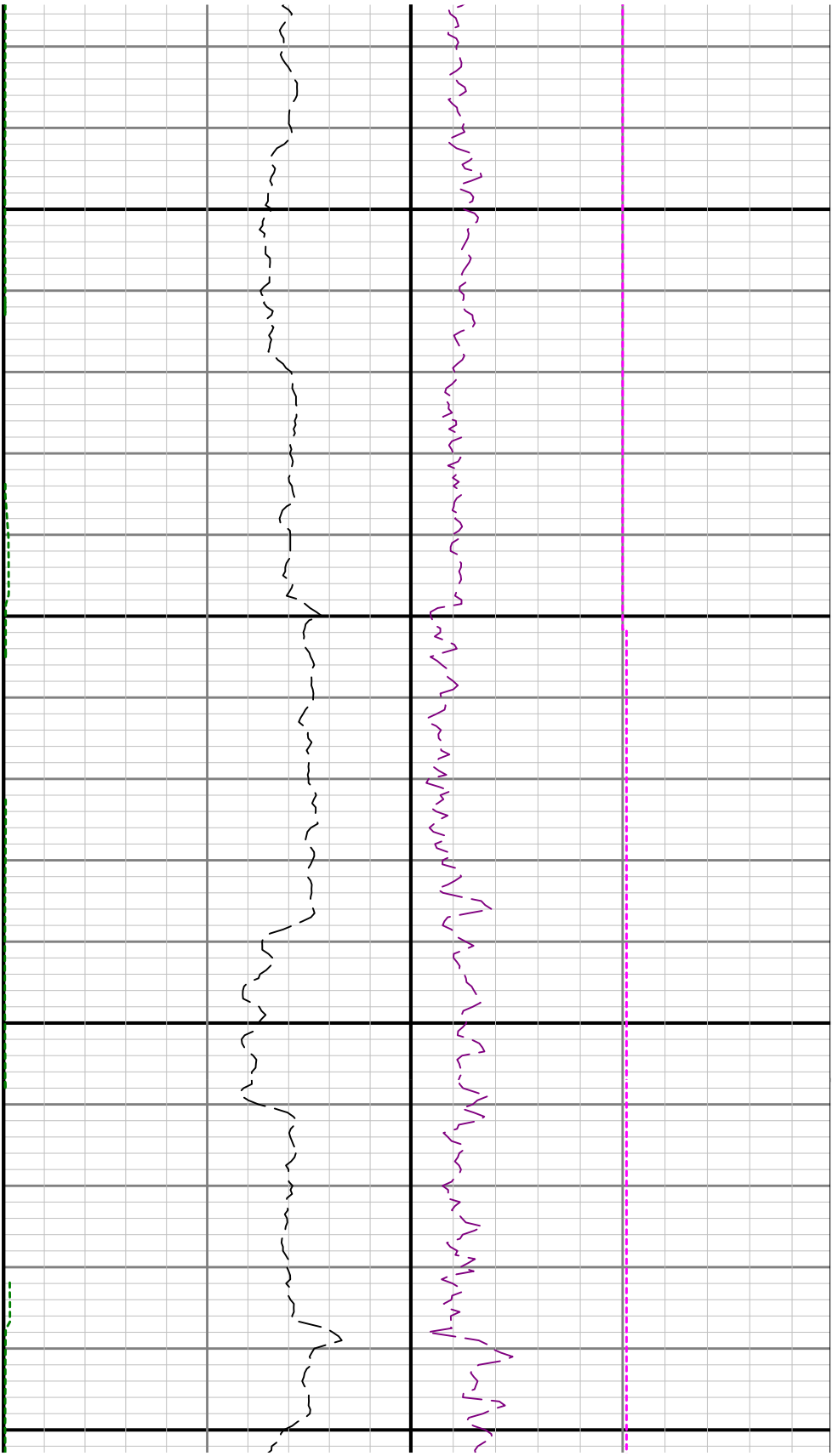


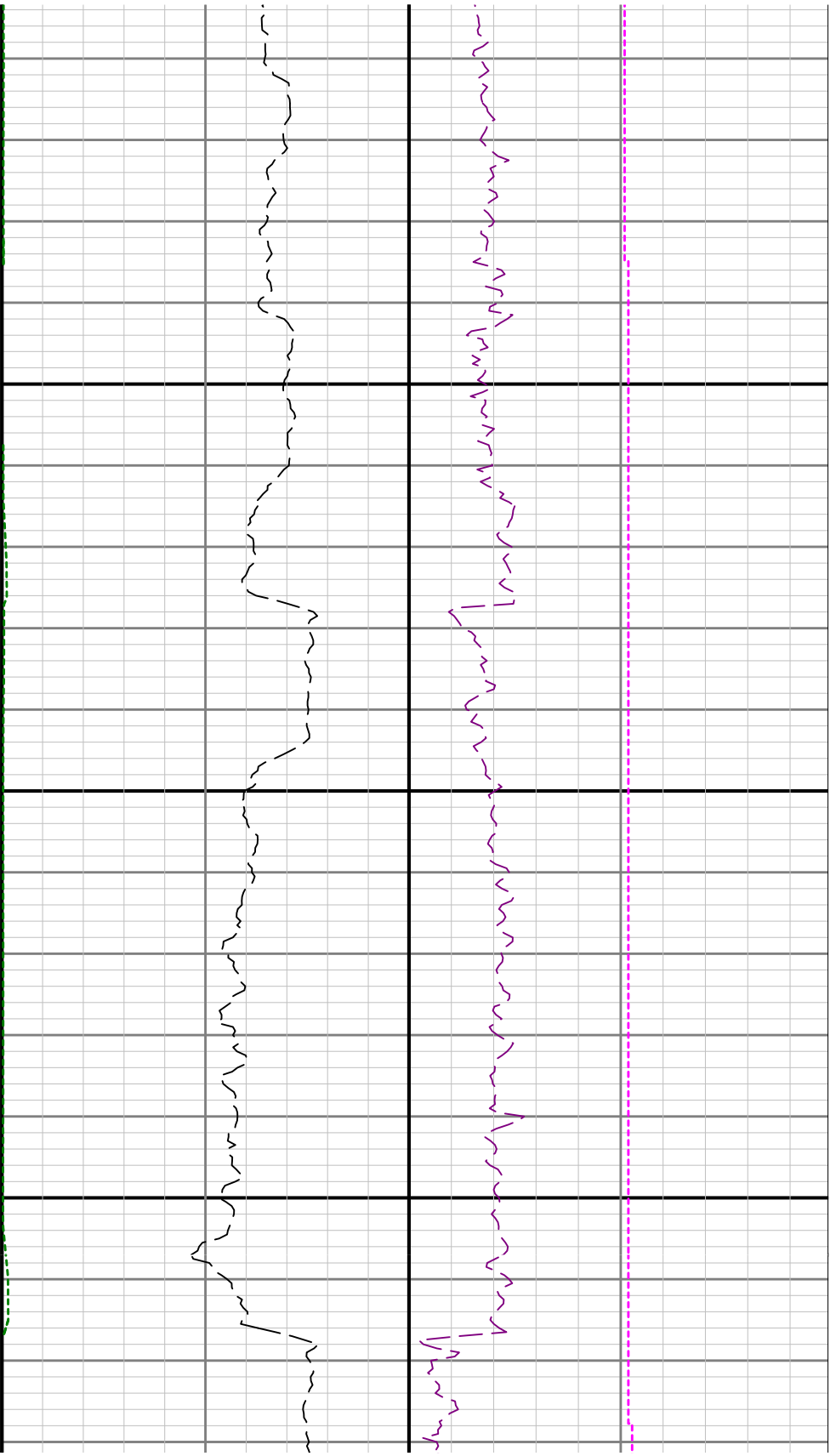




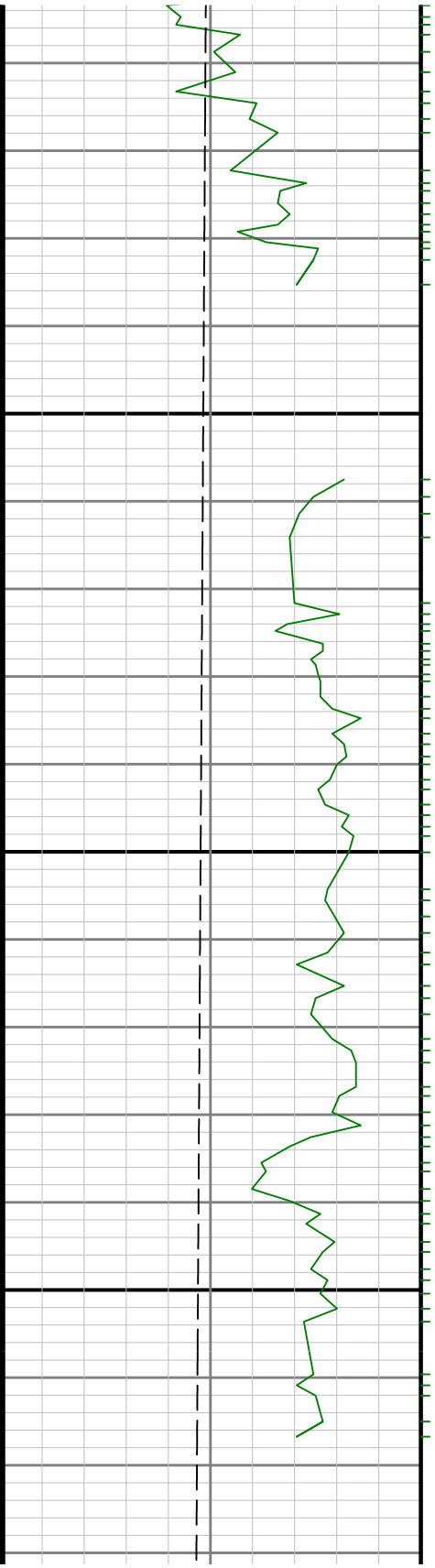


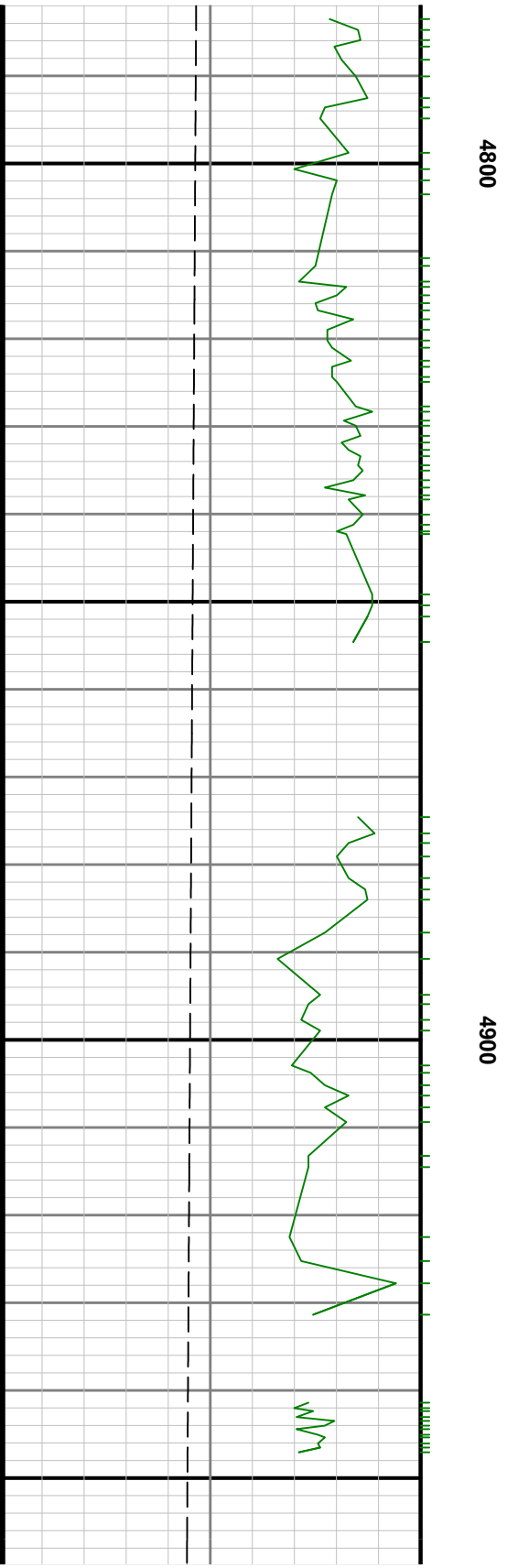
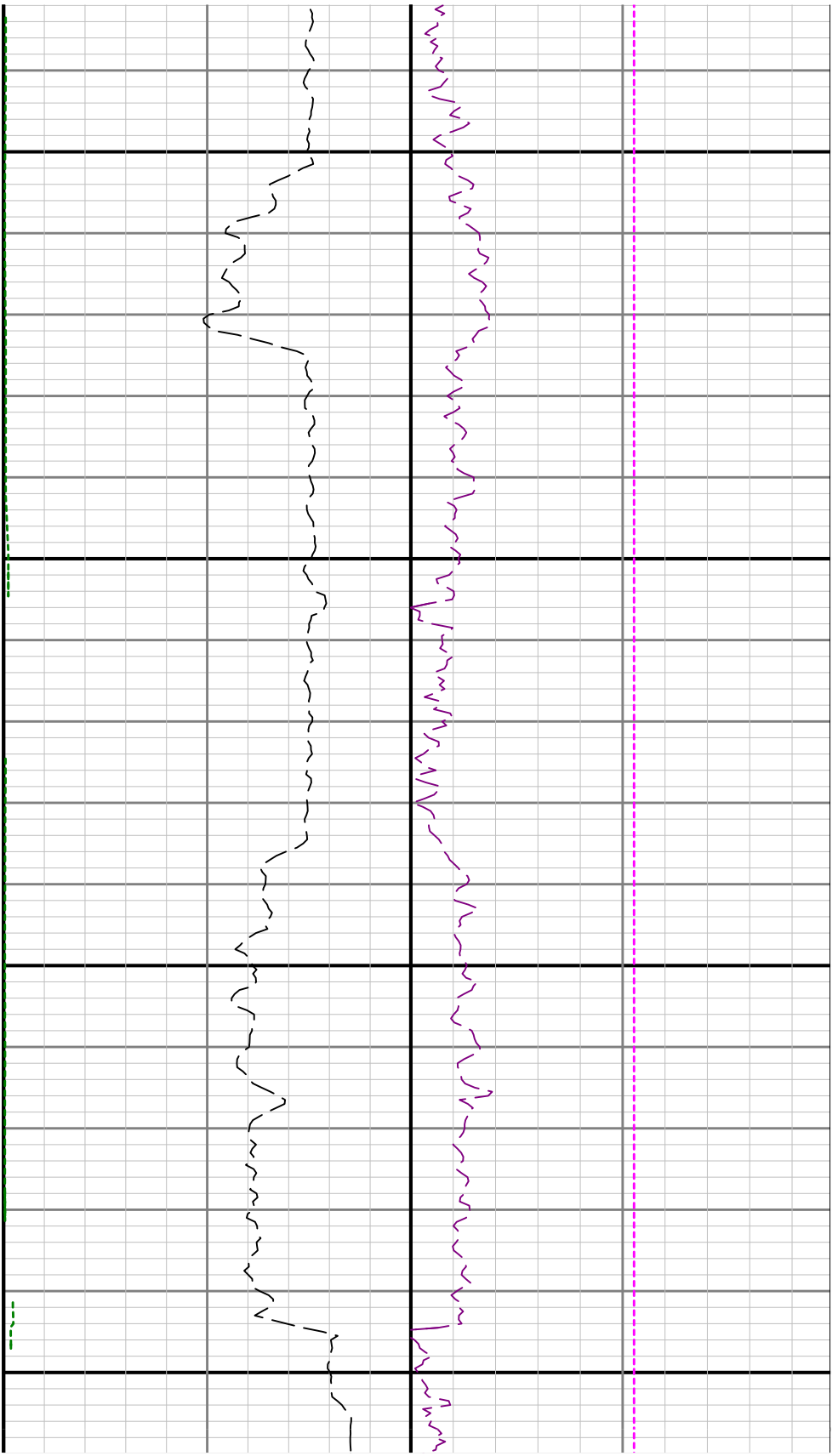






4700





See Remark 2

TVD



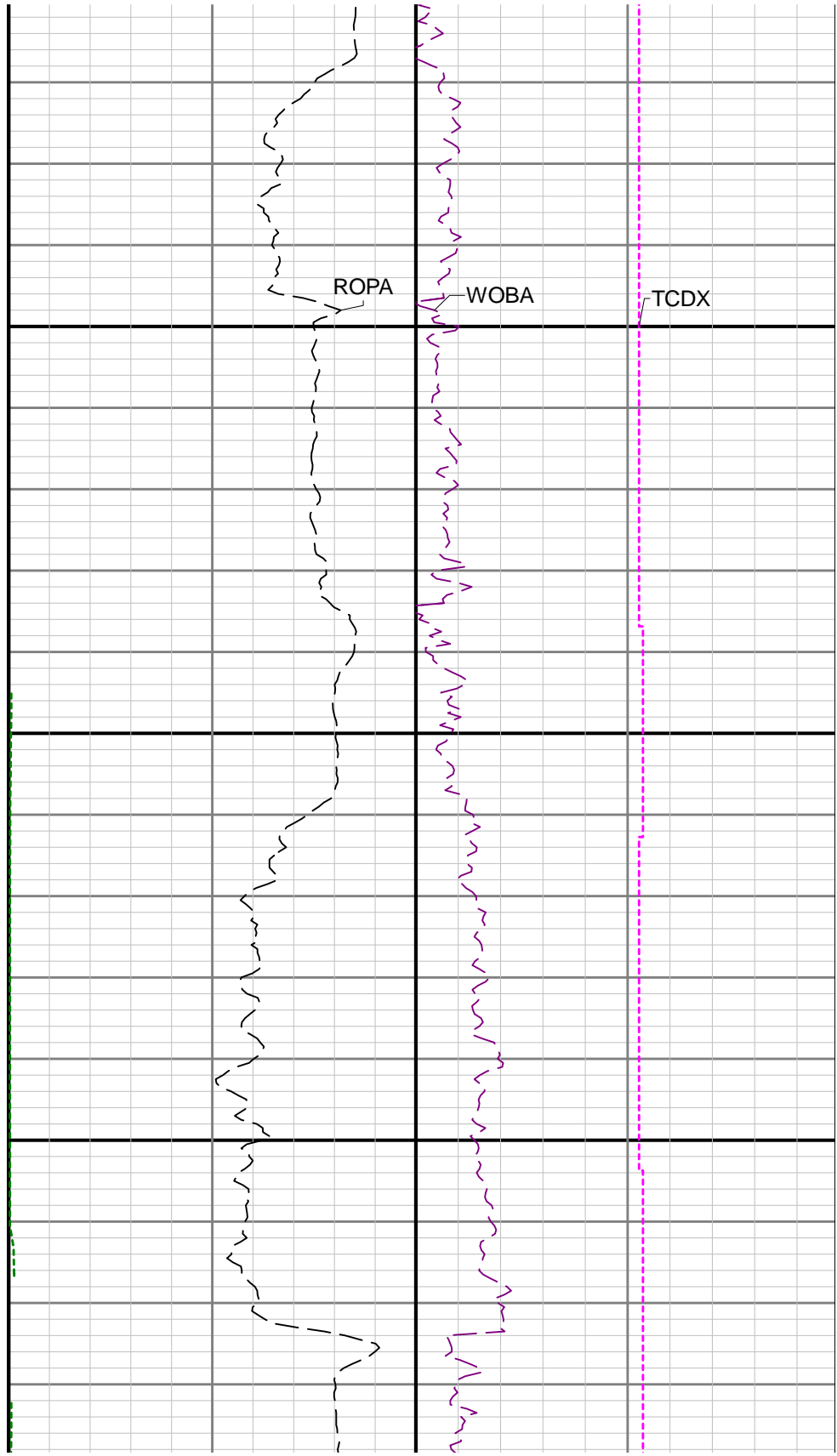
5000

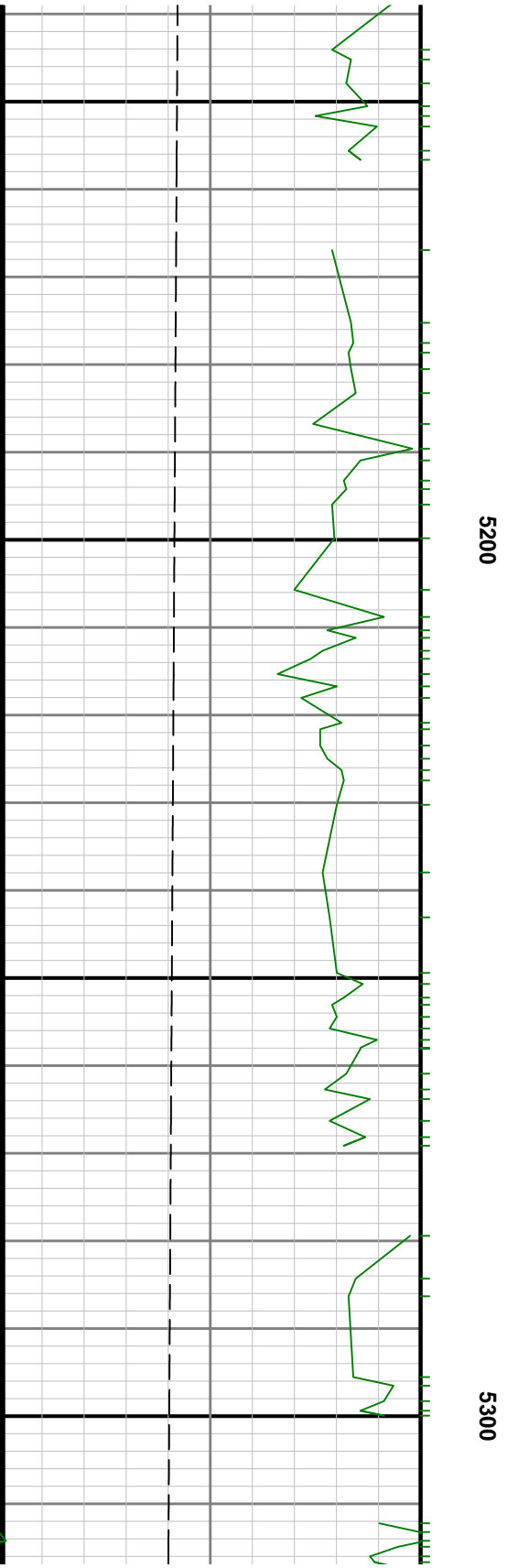
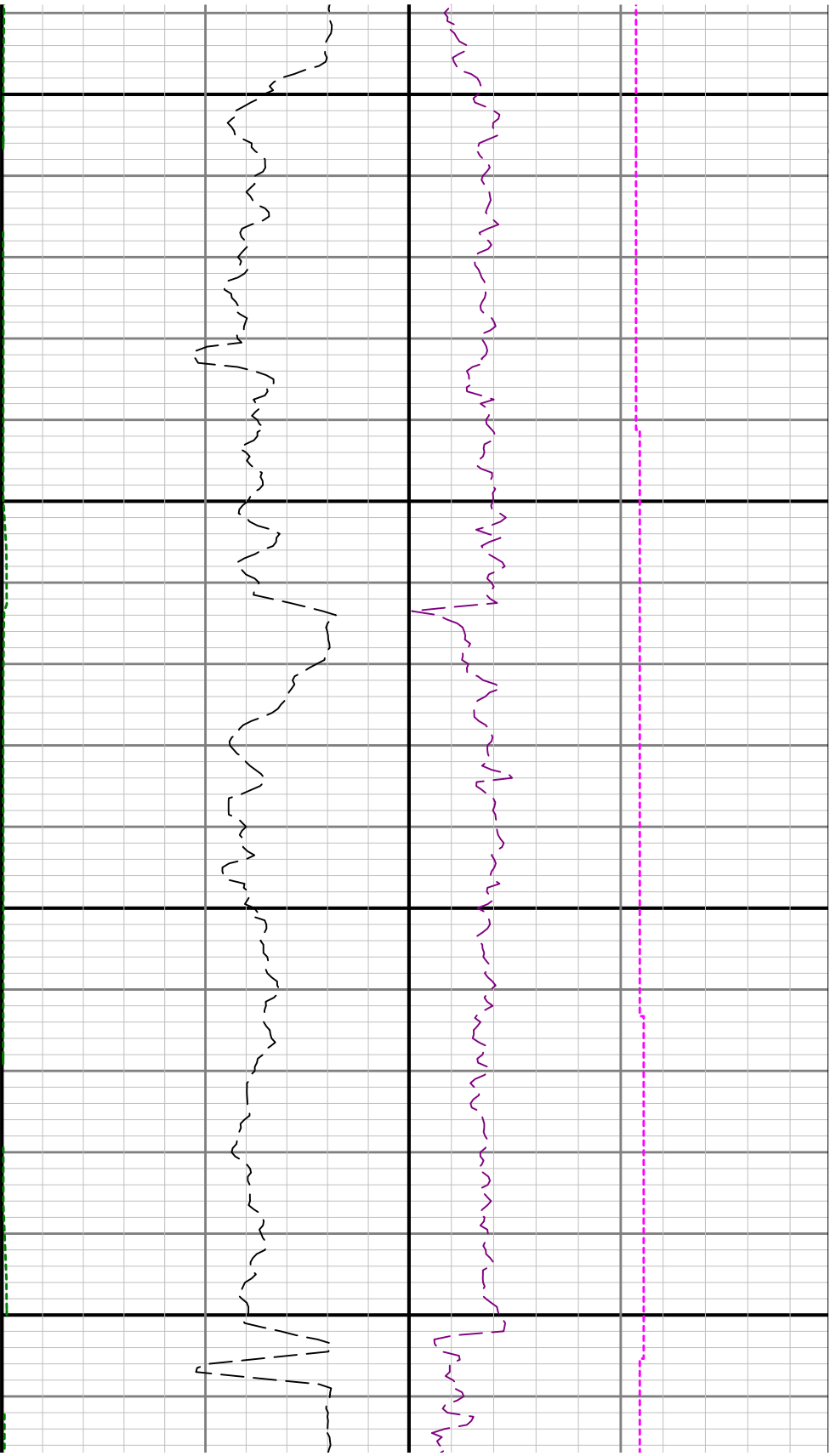
5100

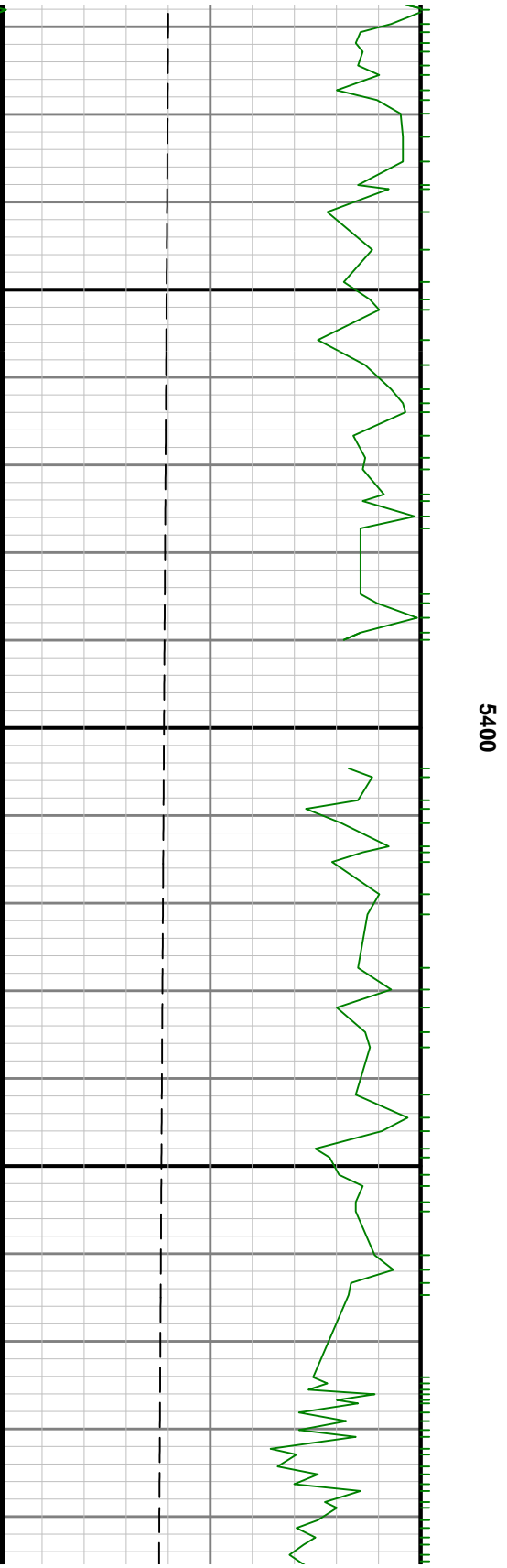
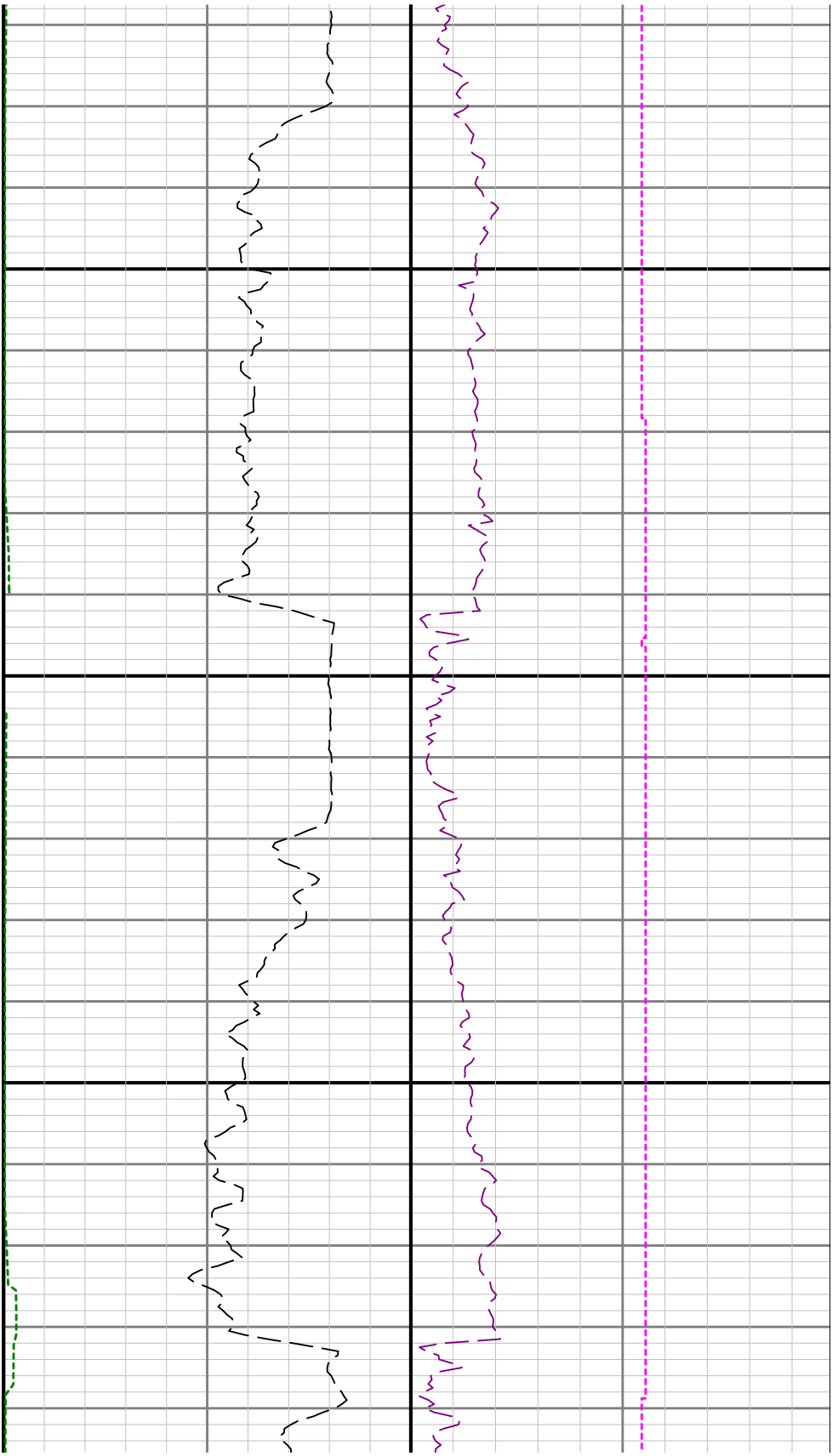
ROPA

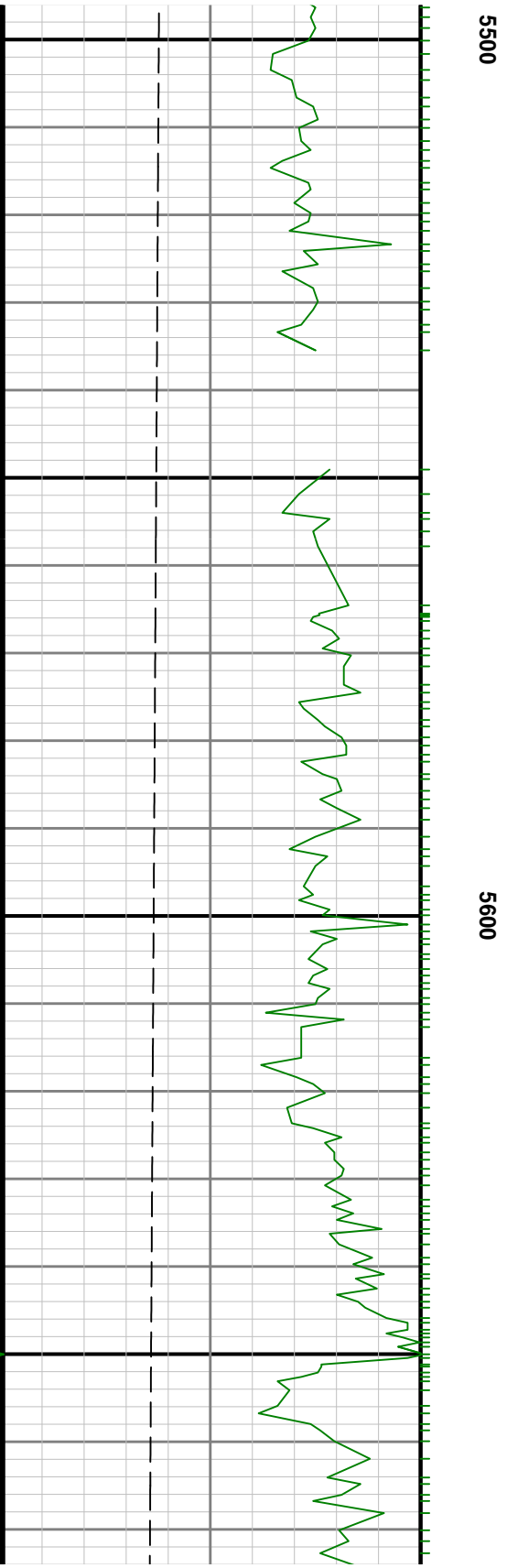
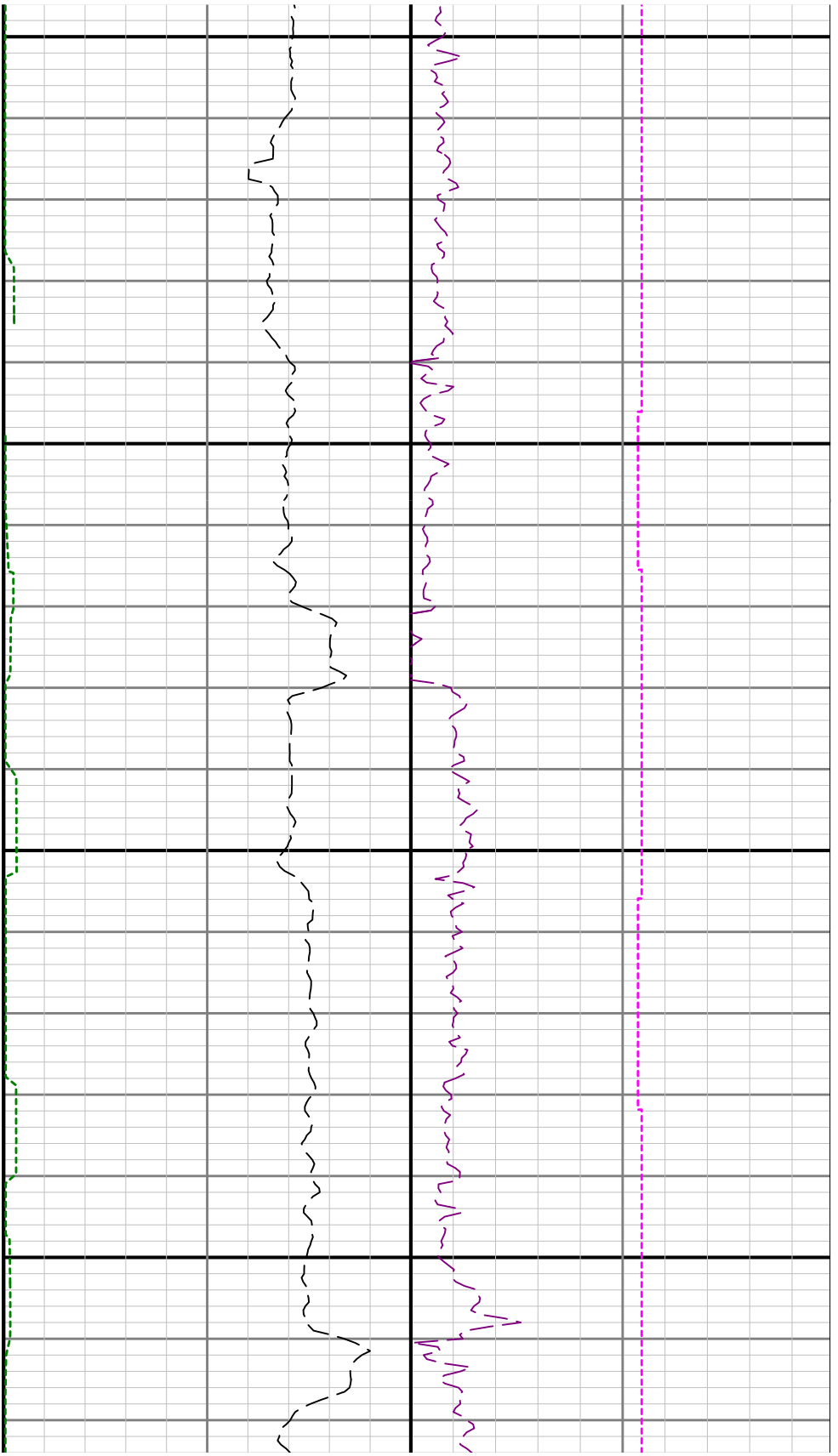
WOBA

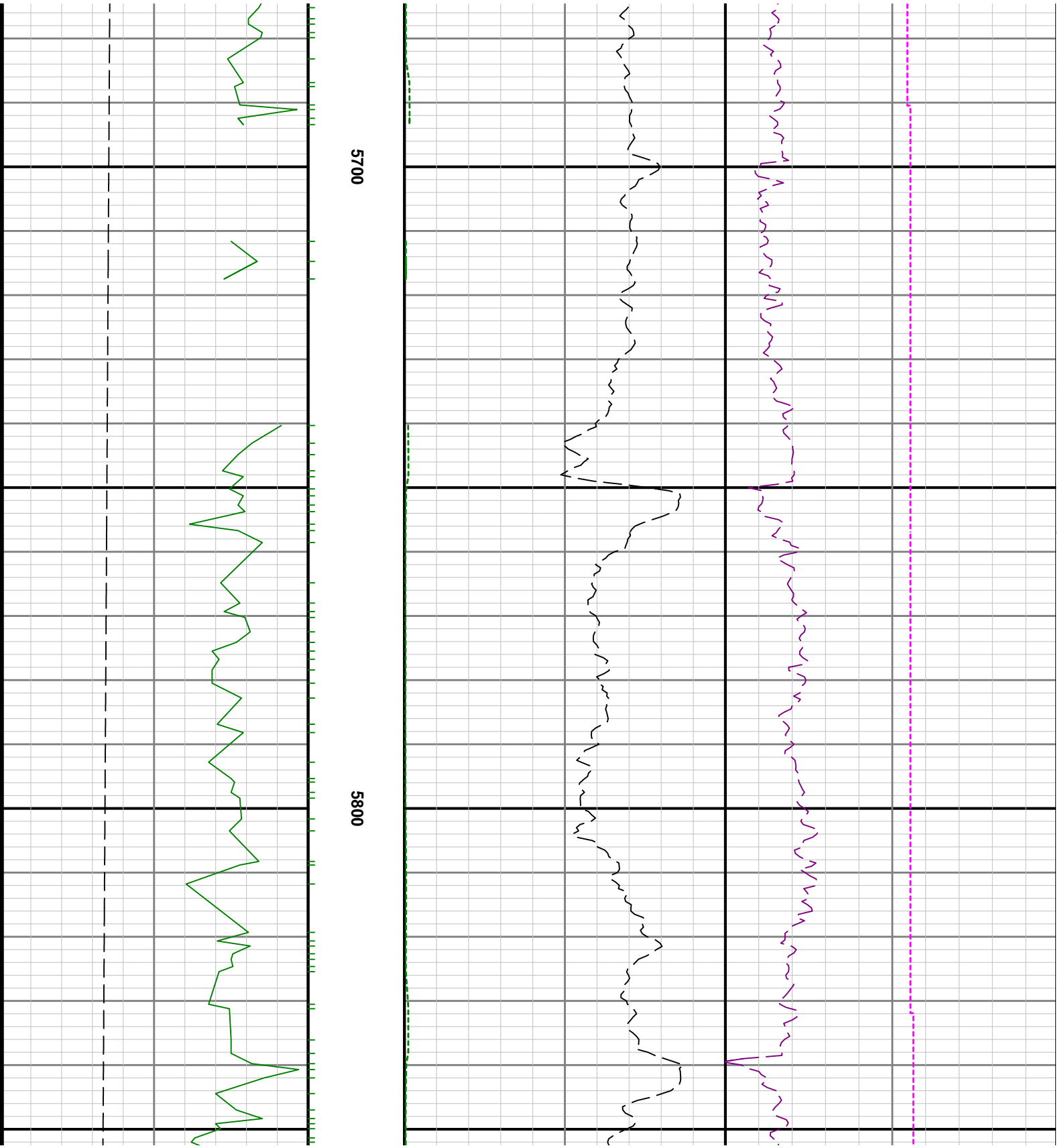
TCDX

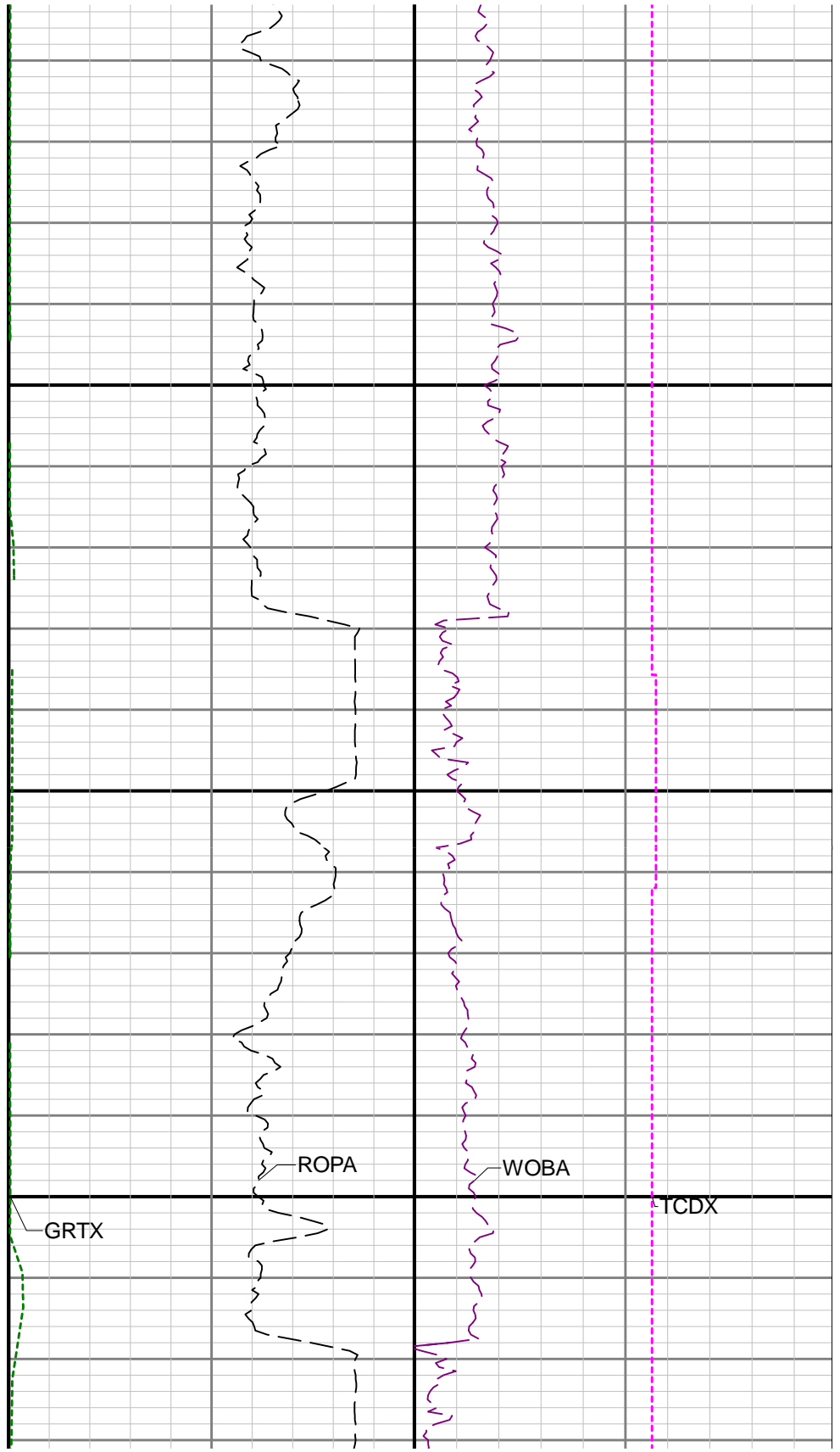
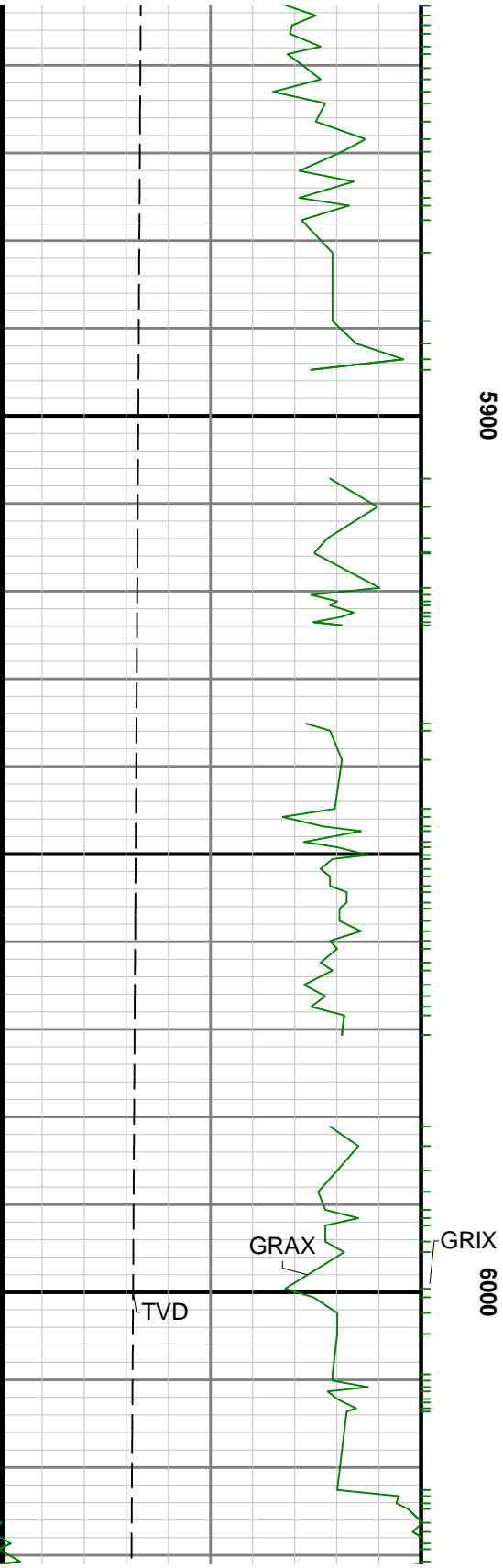


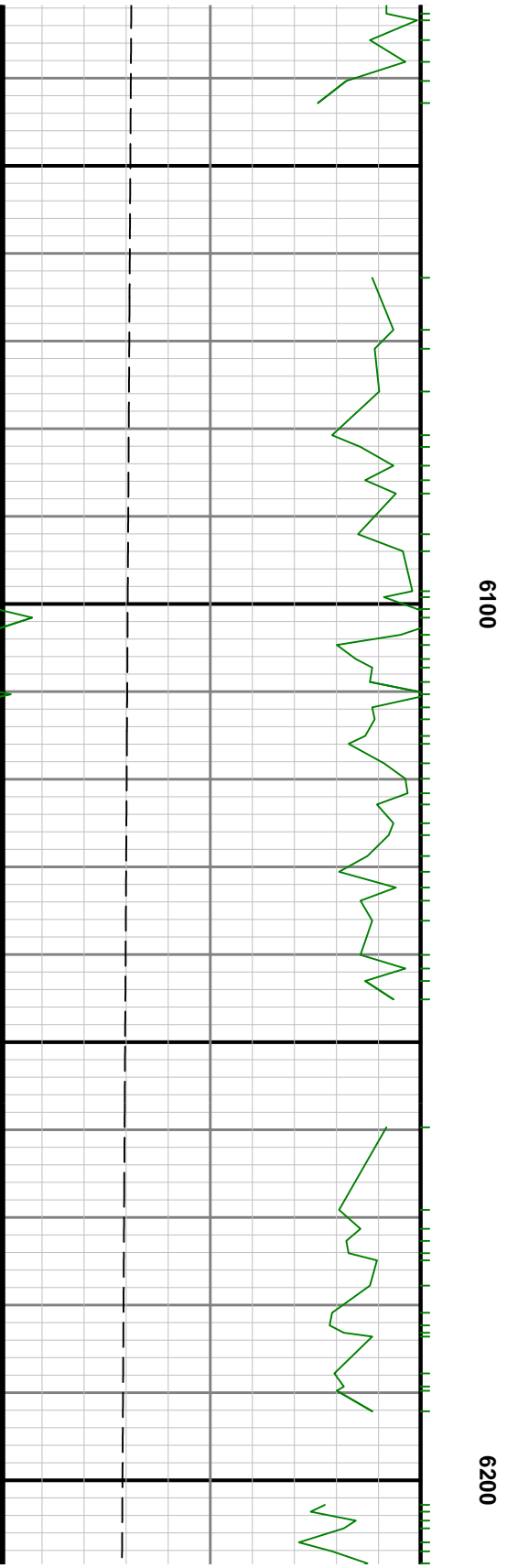
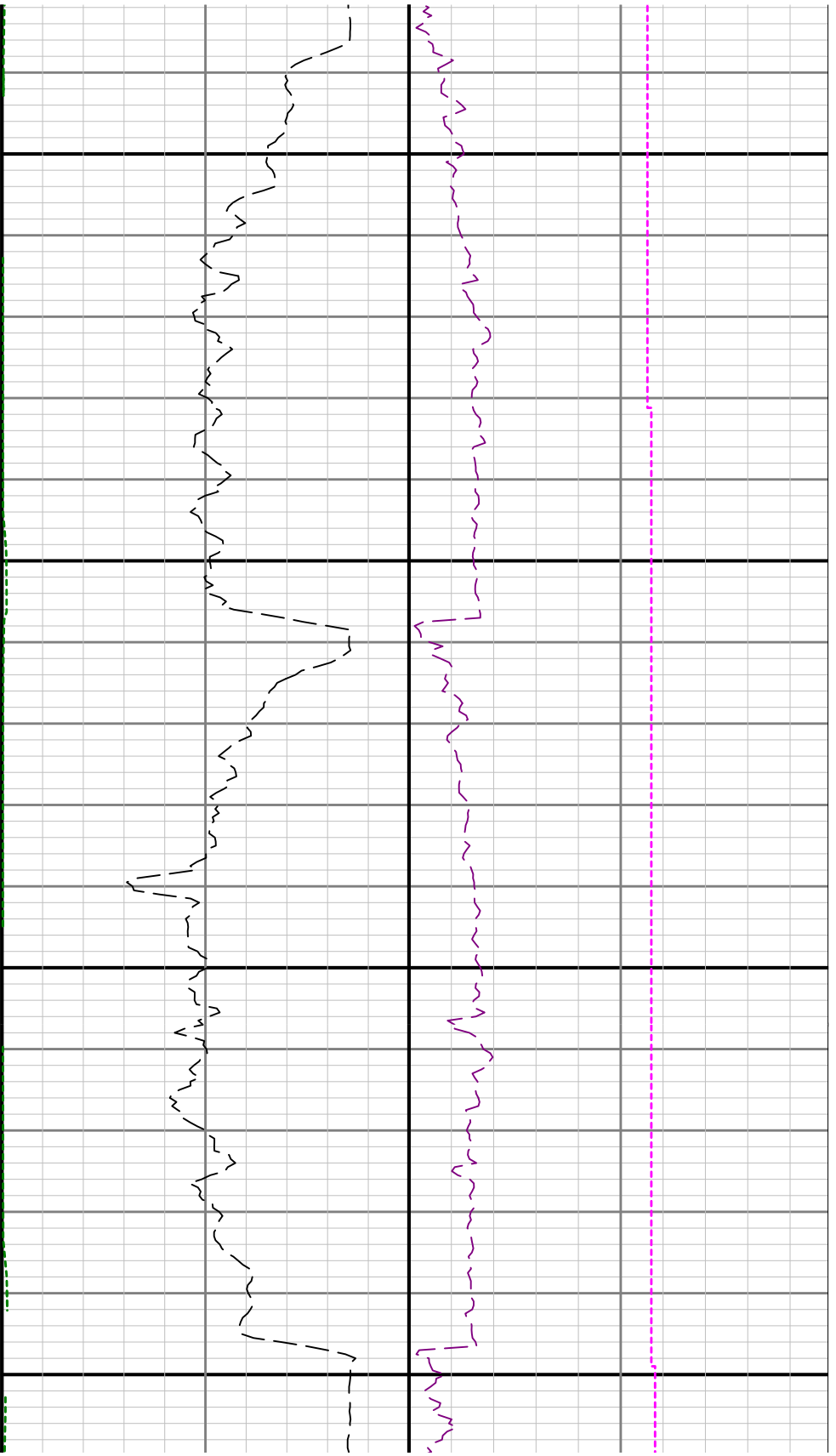


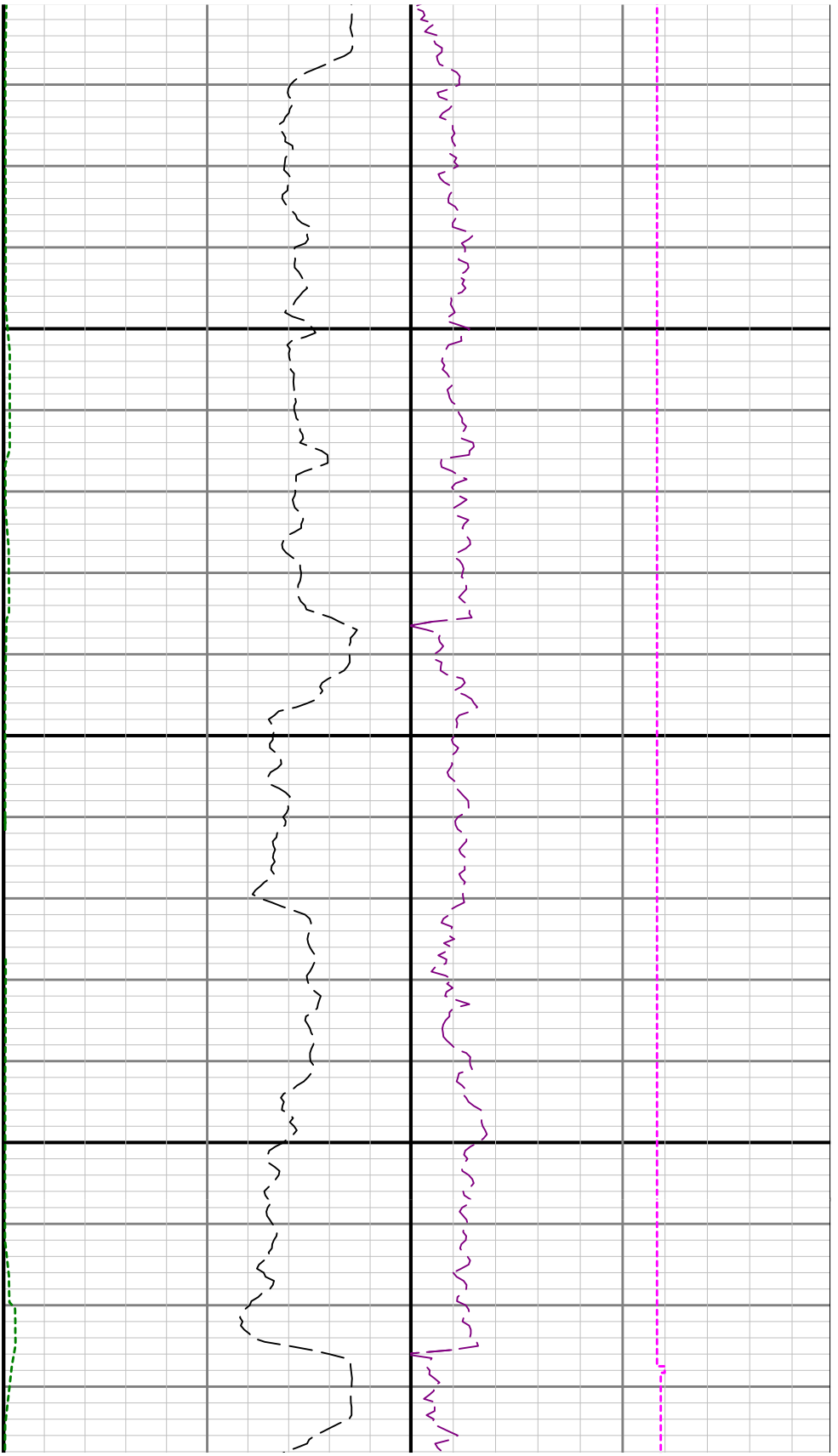




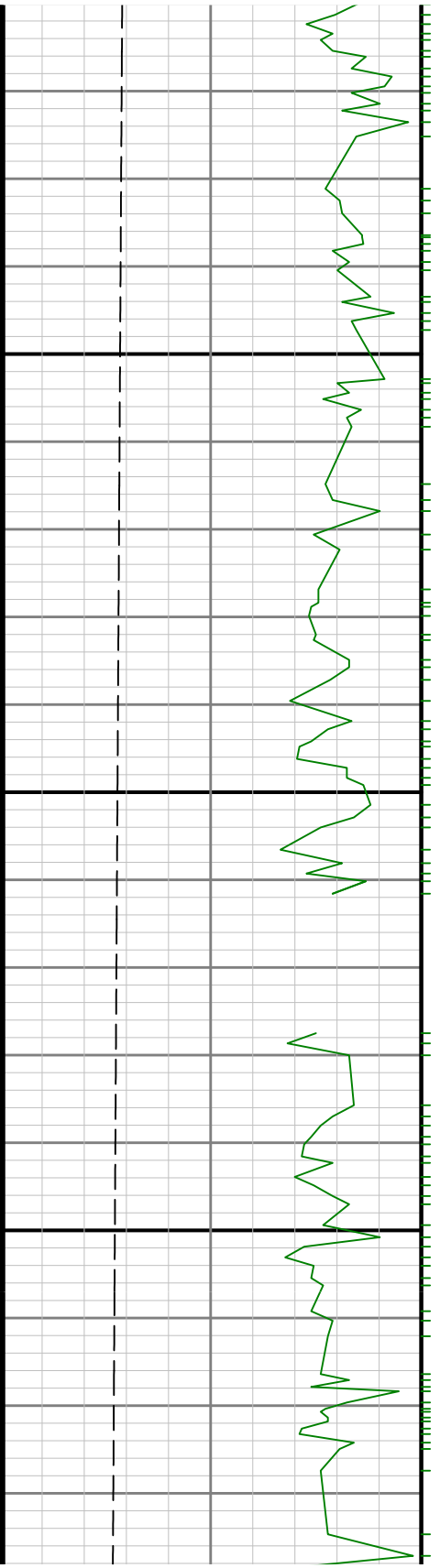


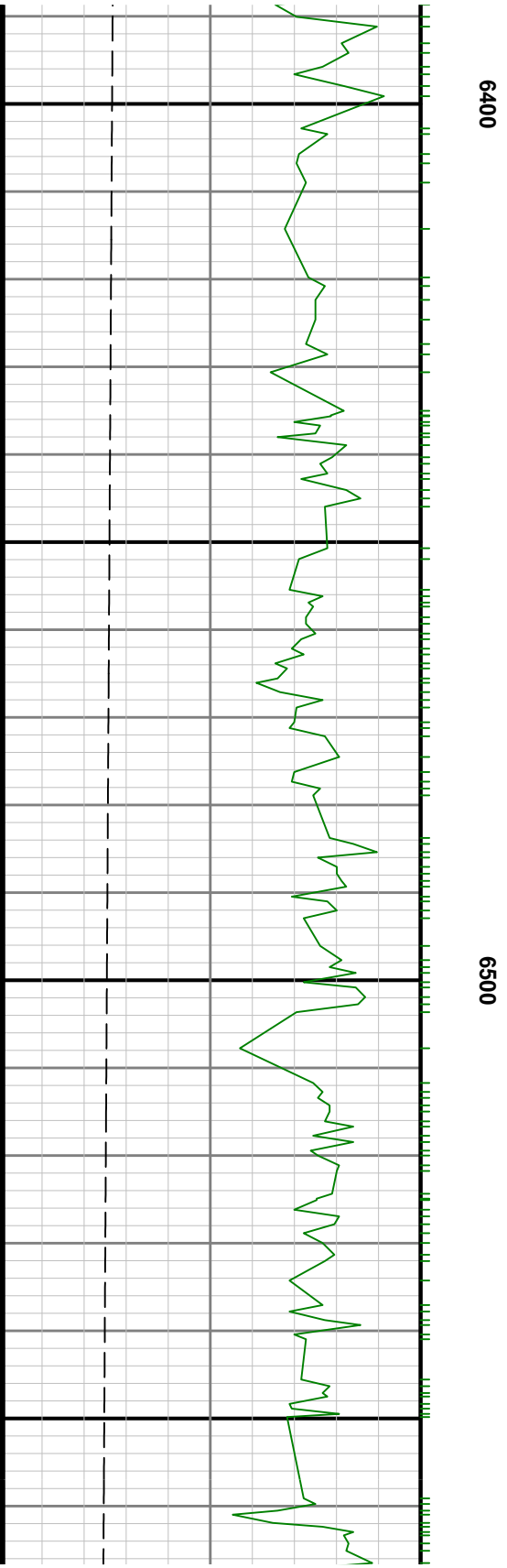
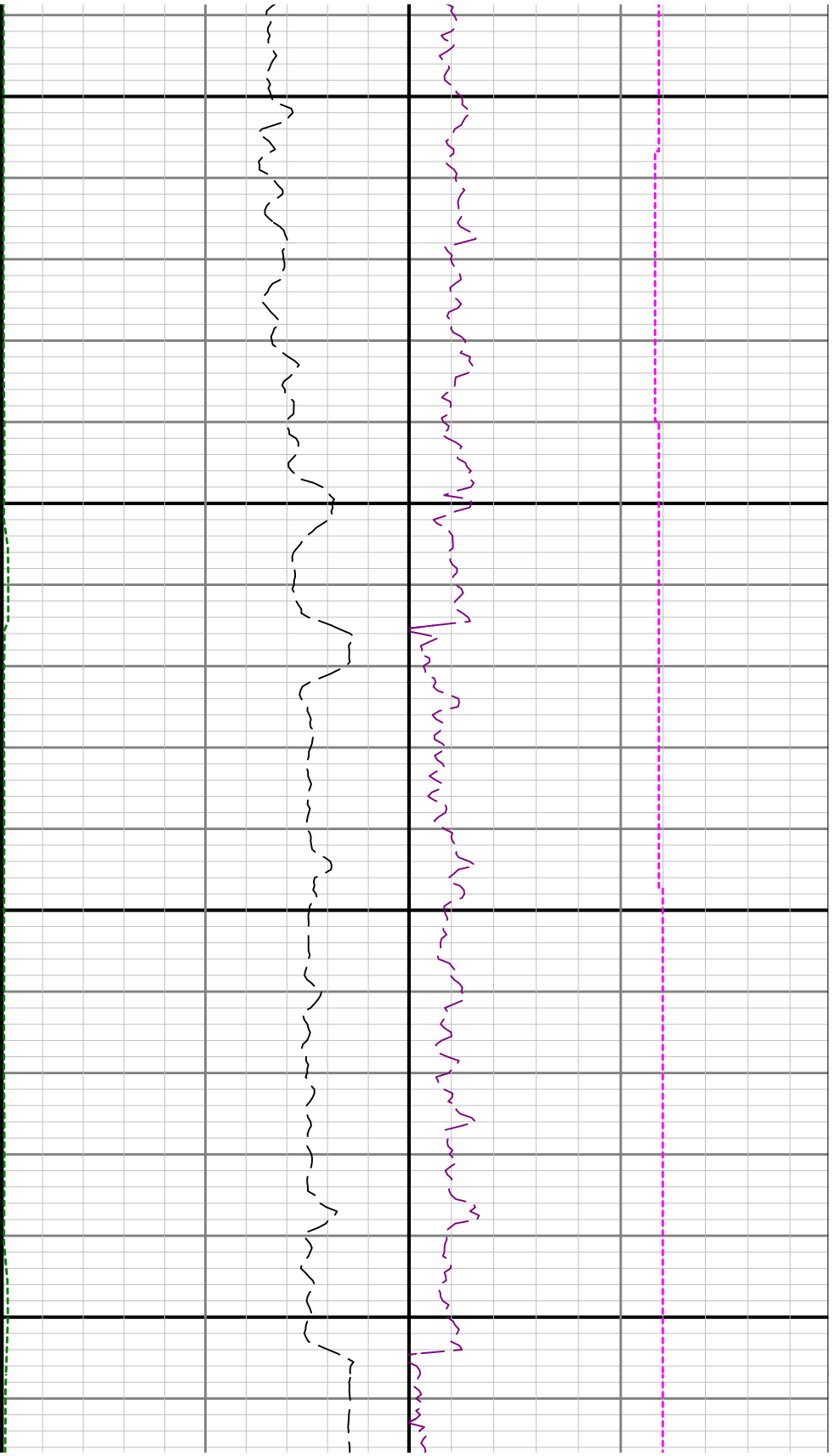


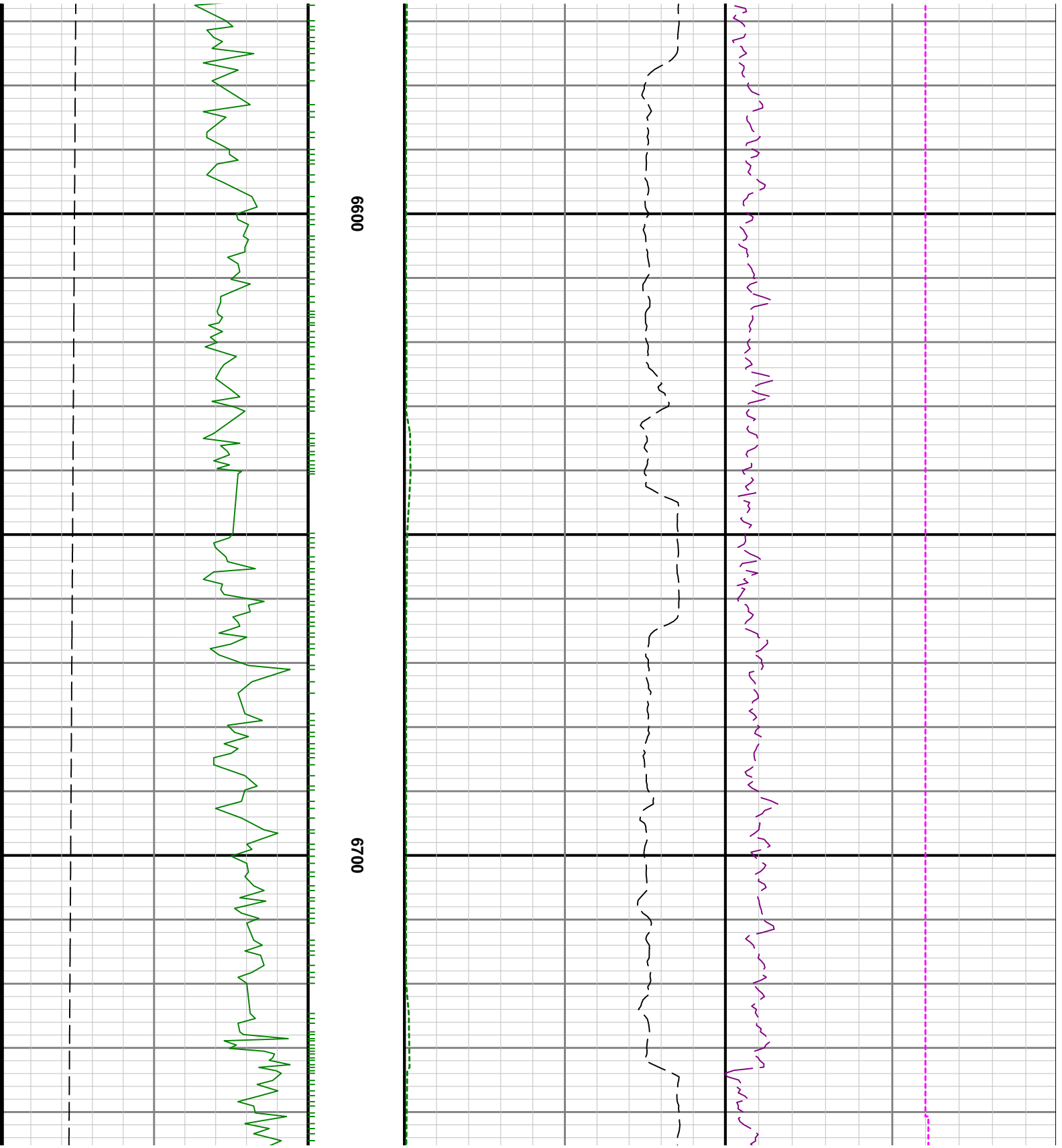


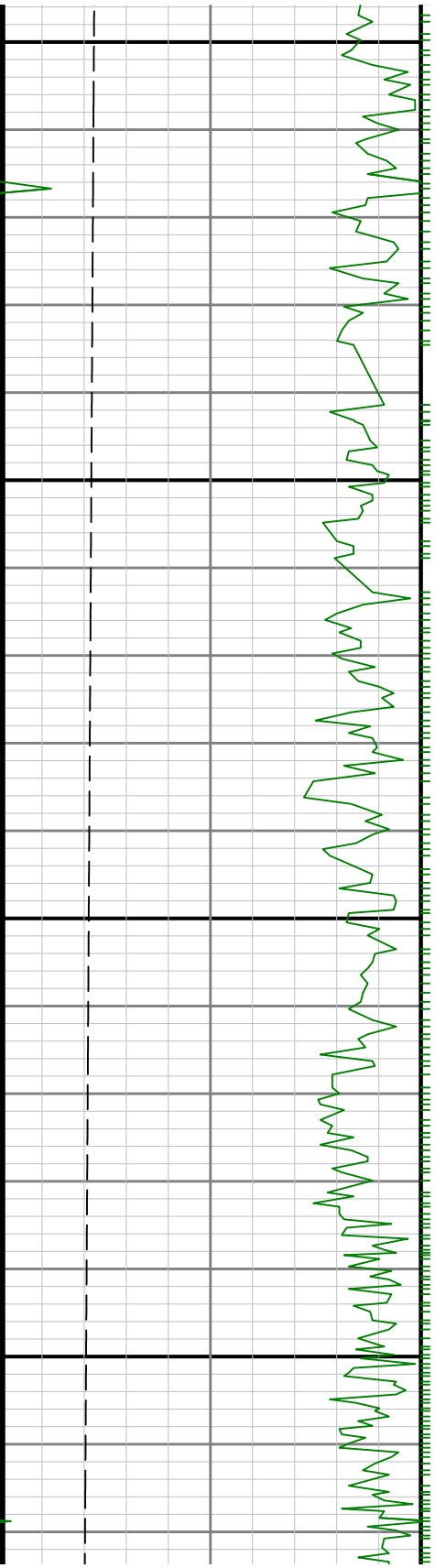


6300



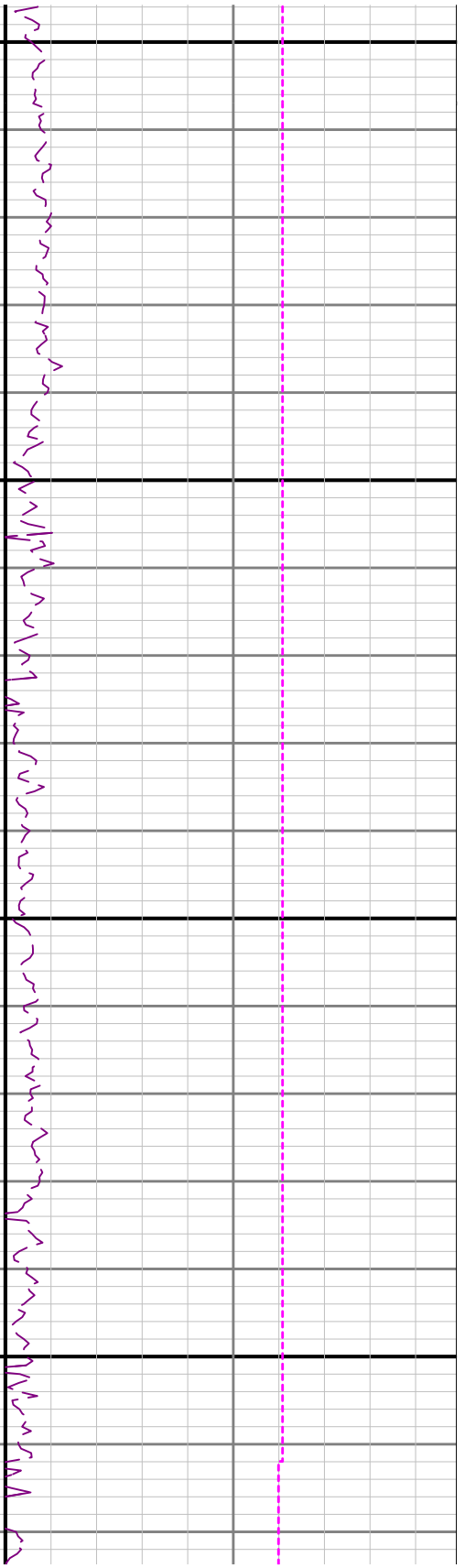


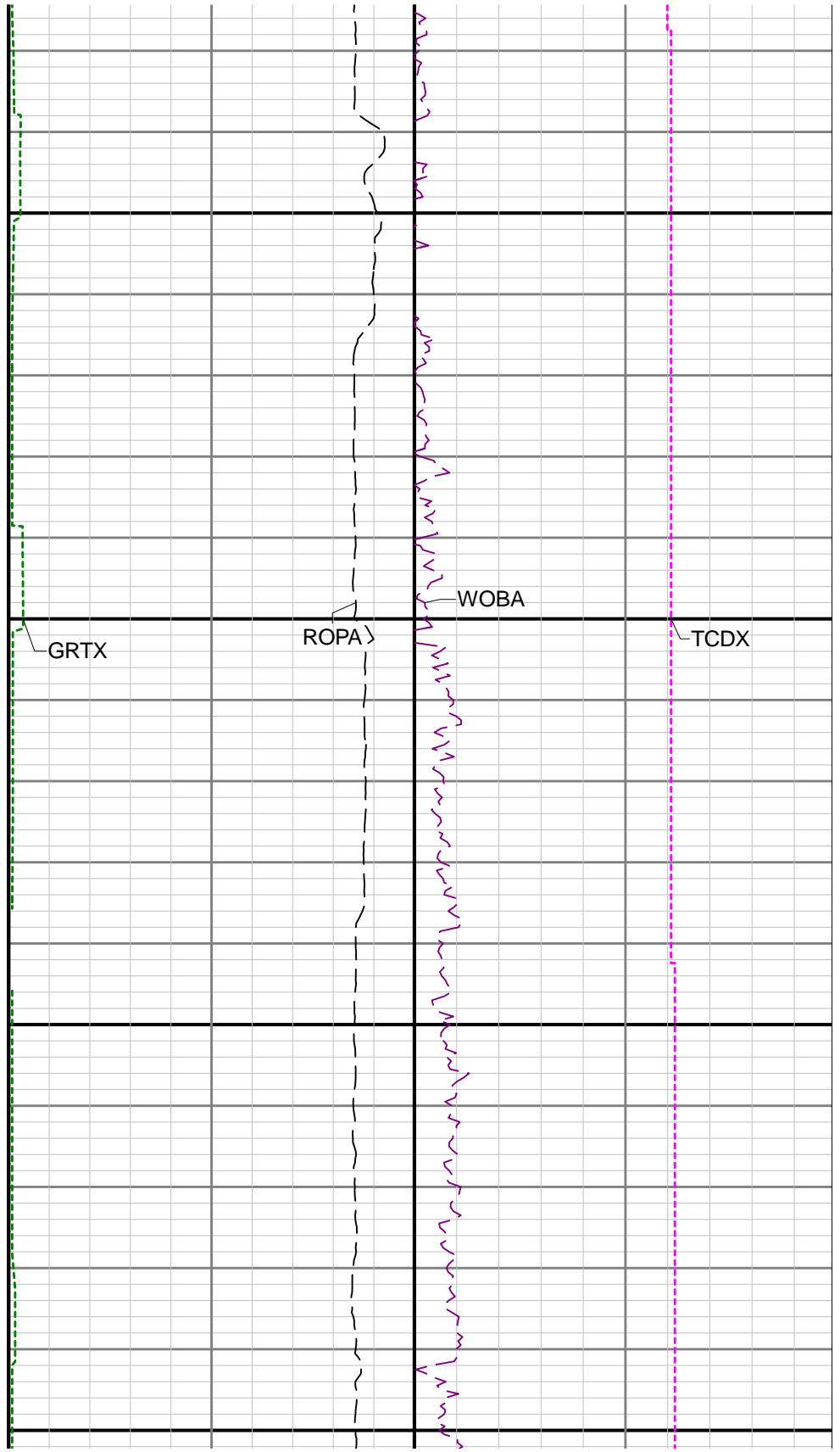
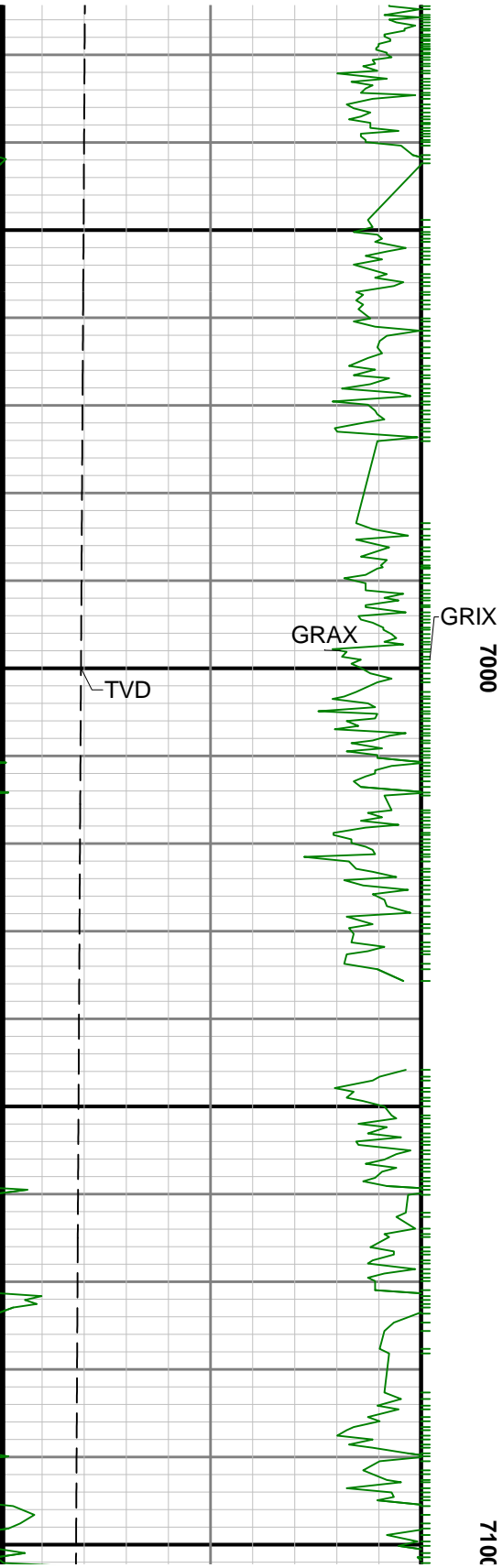




0069

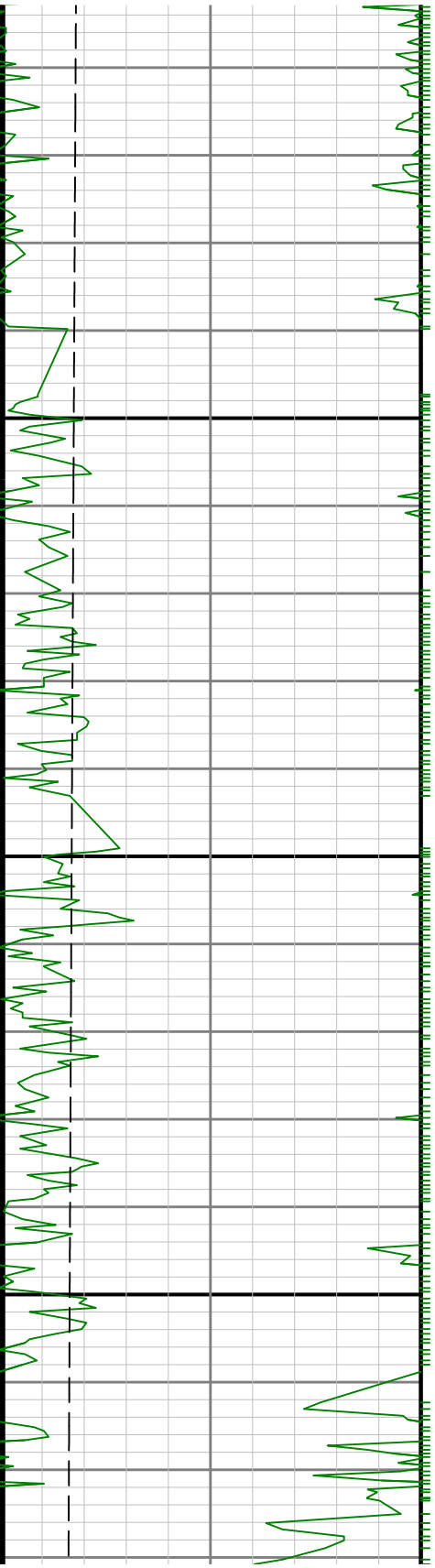
0080

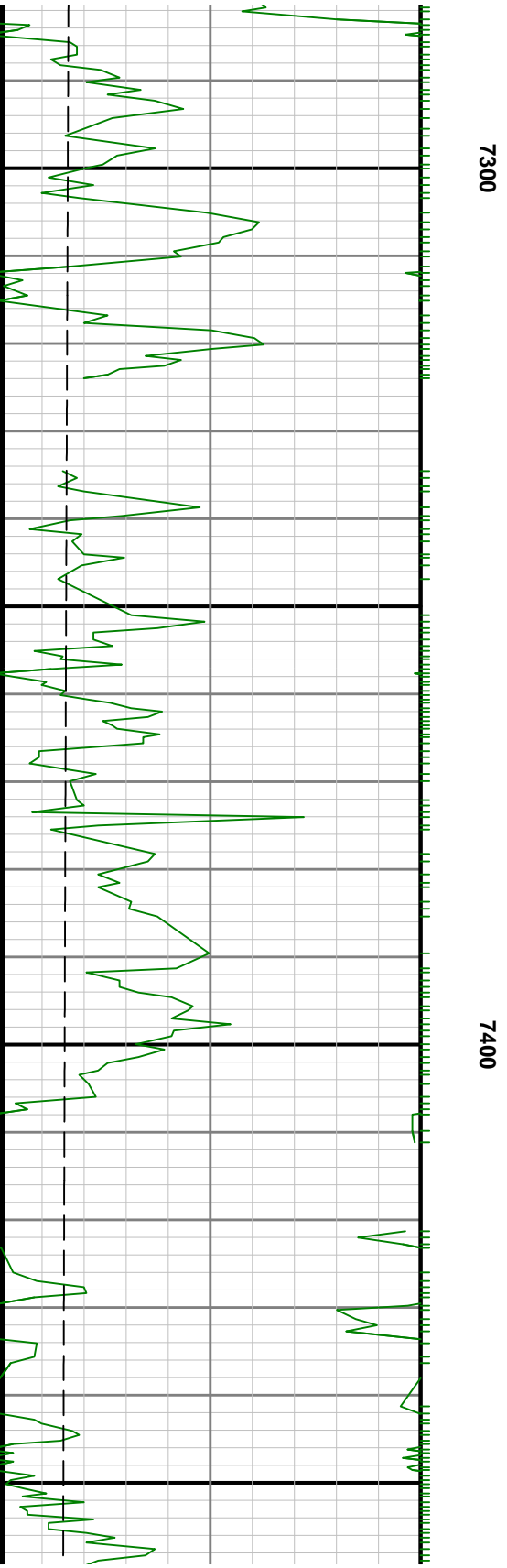
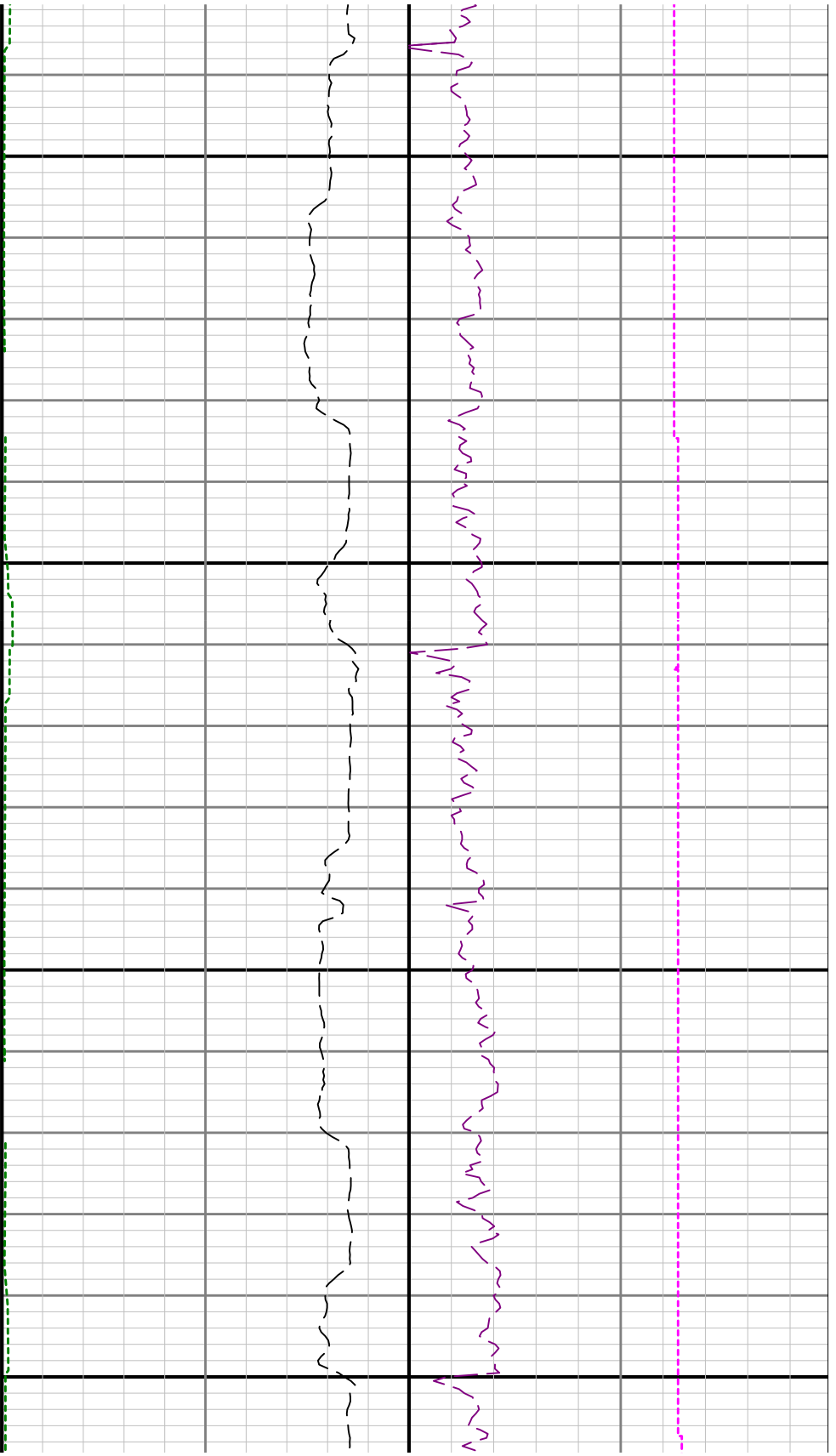


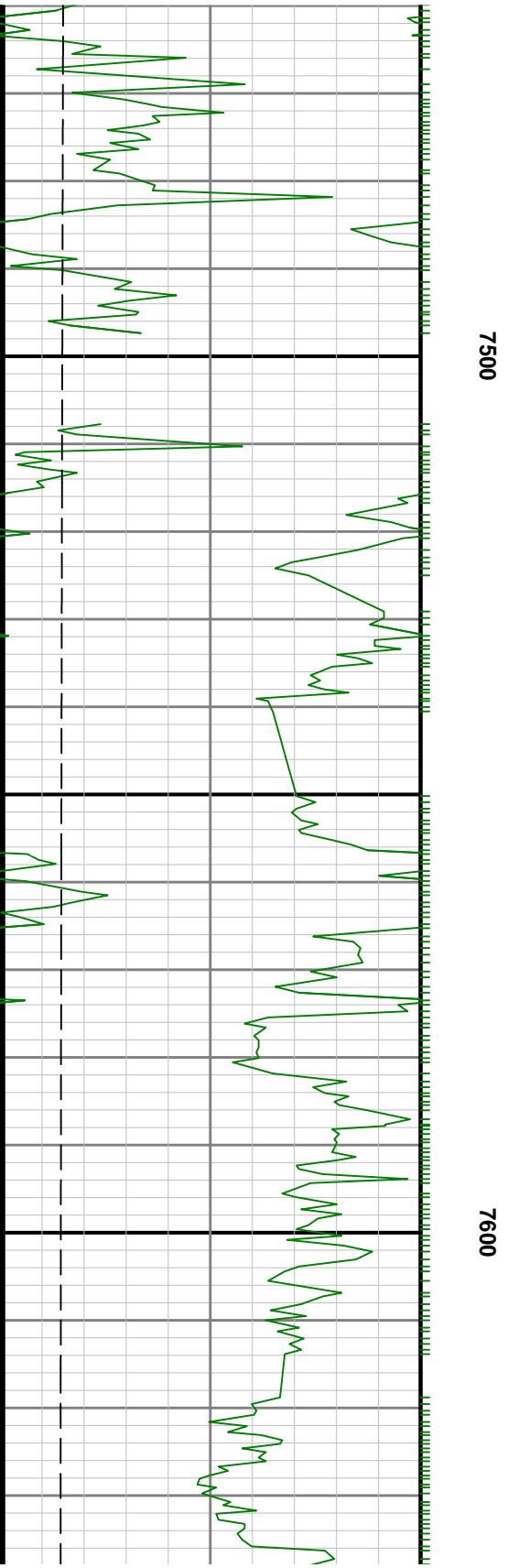
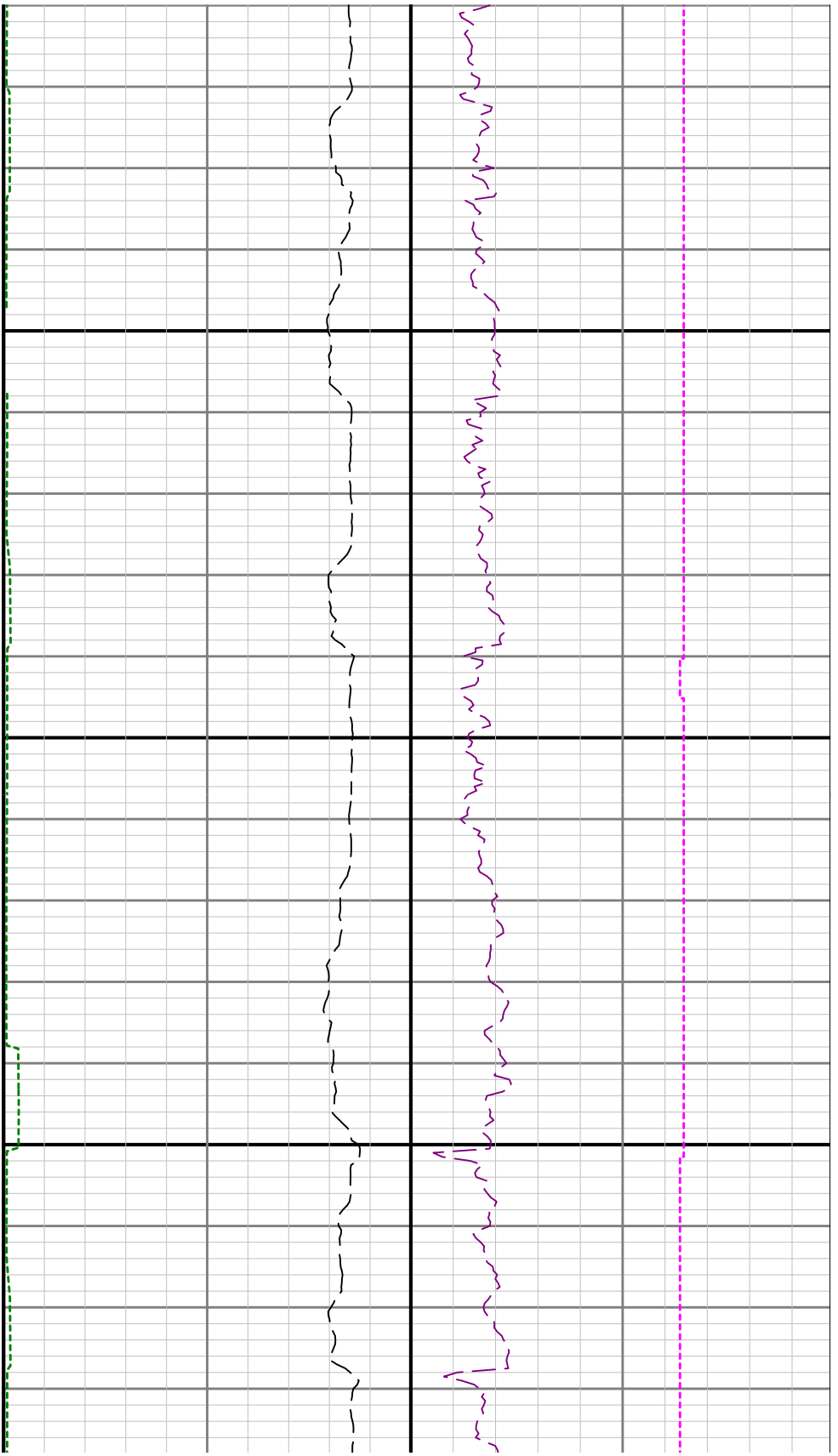


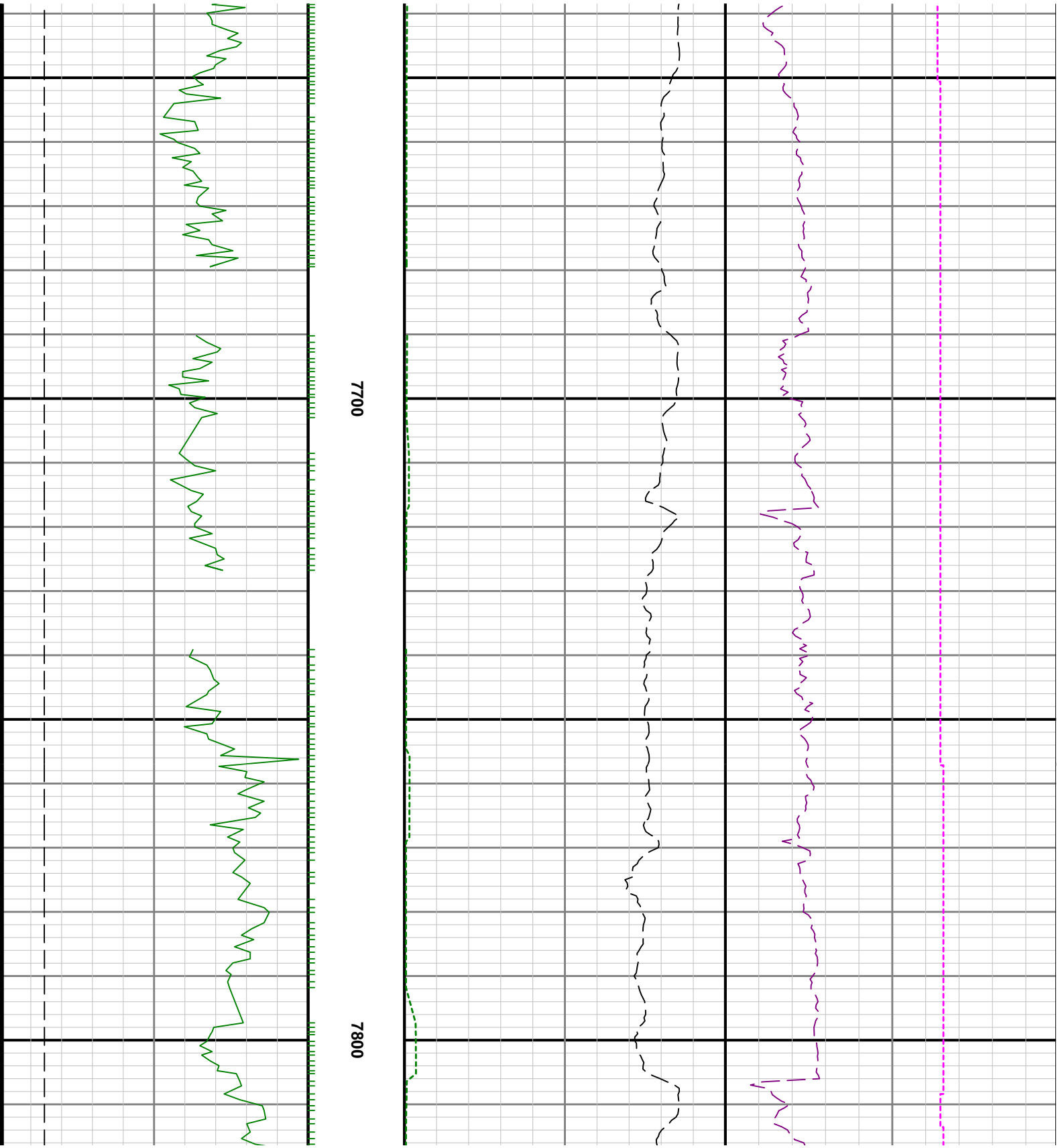


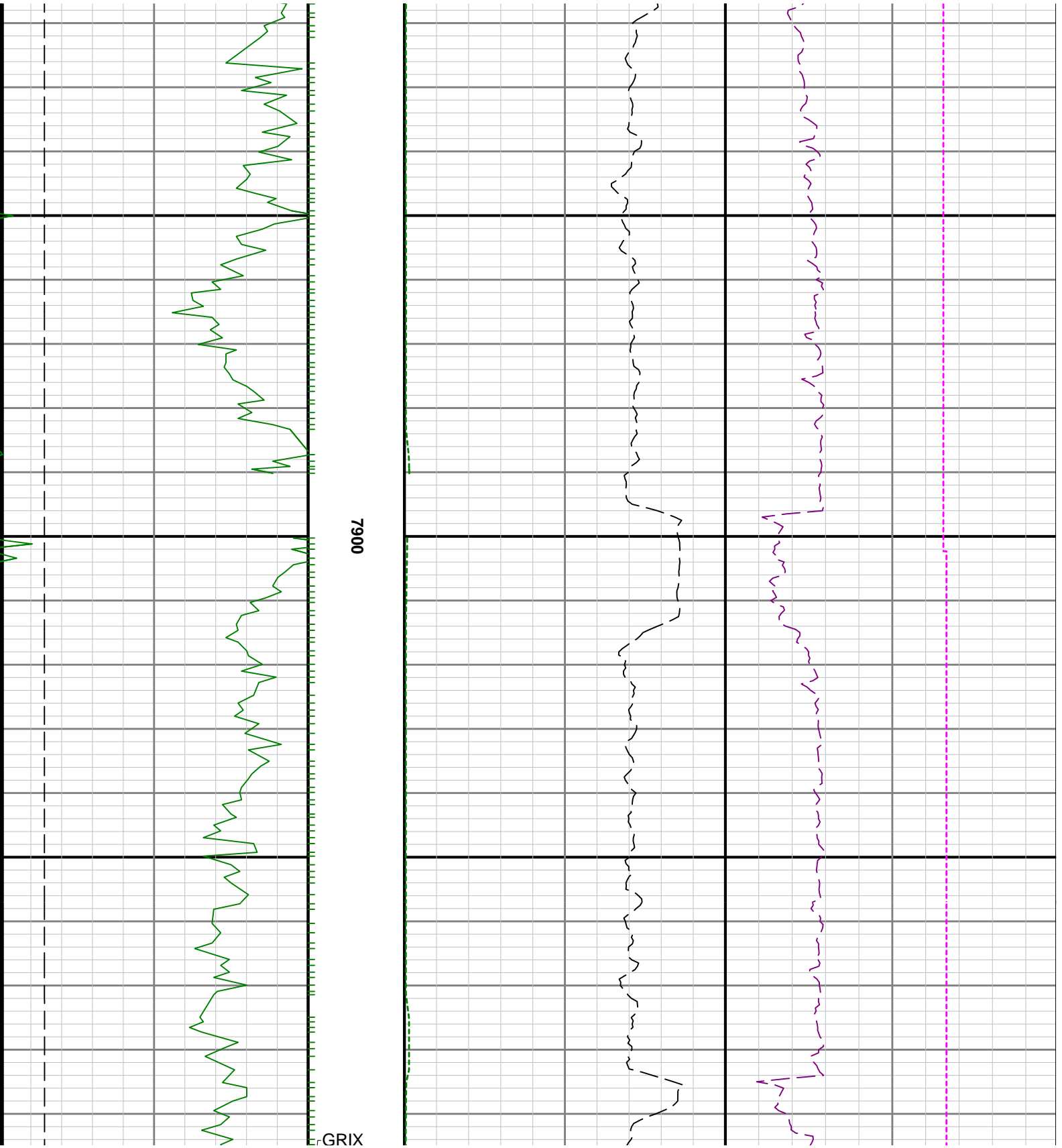
7200

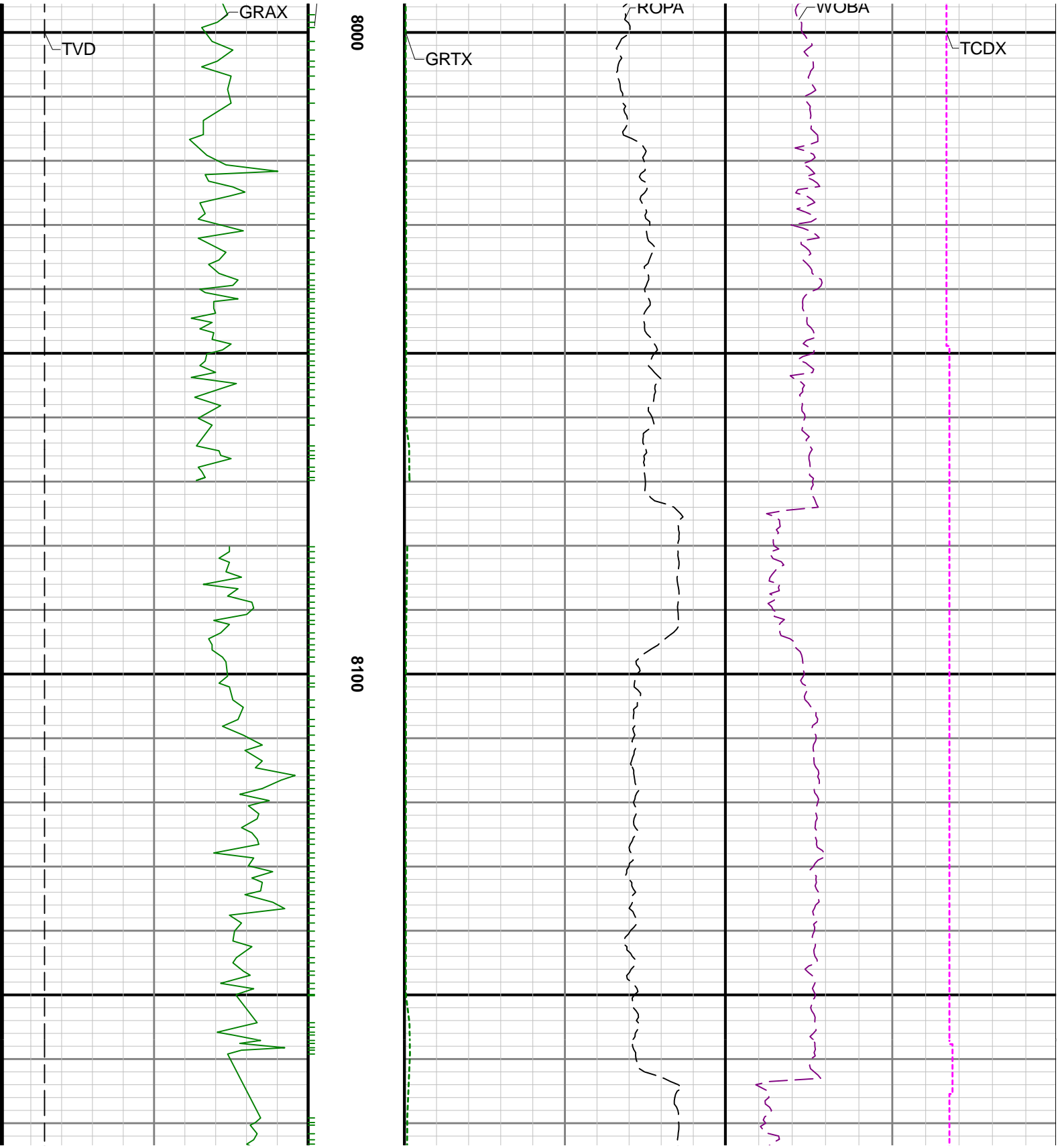


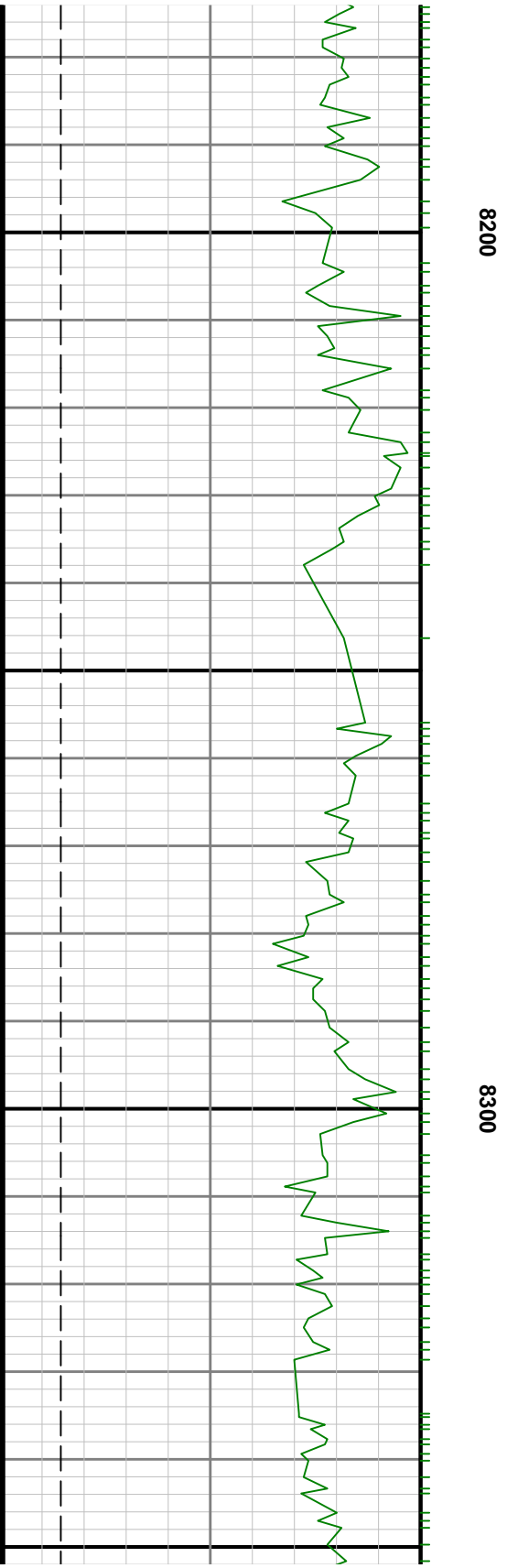
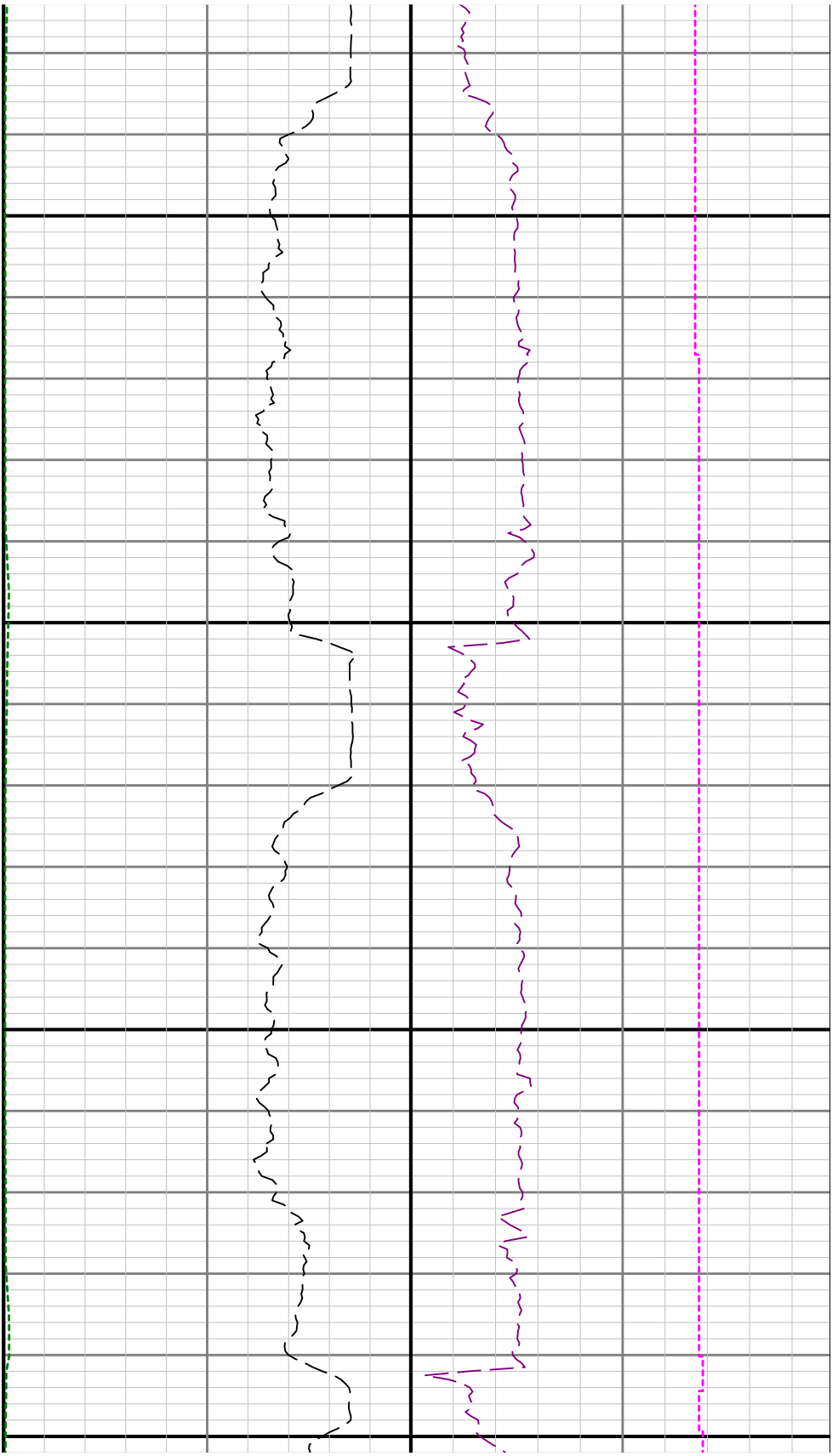


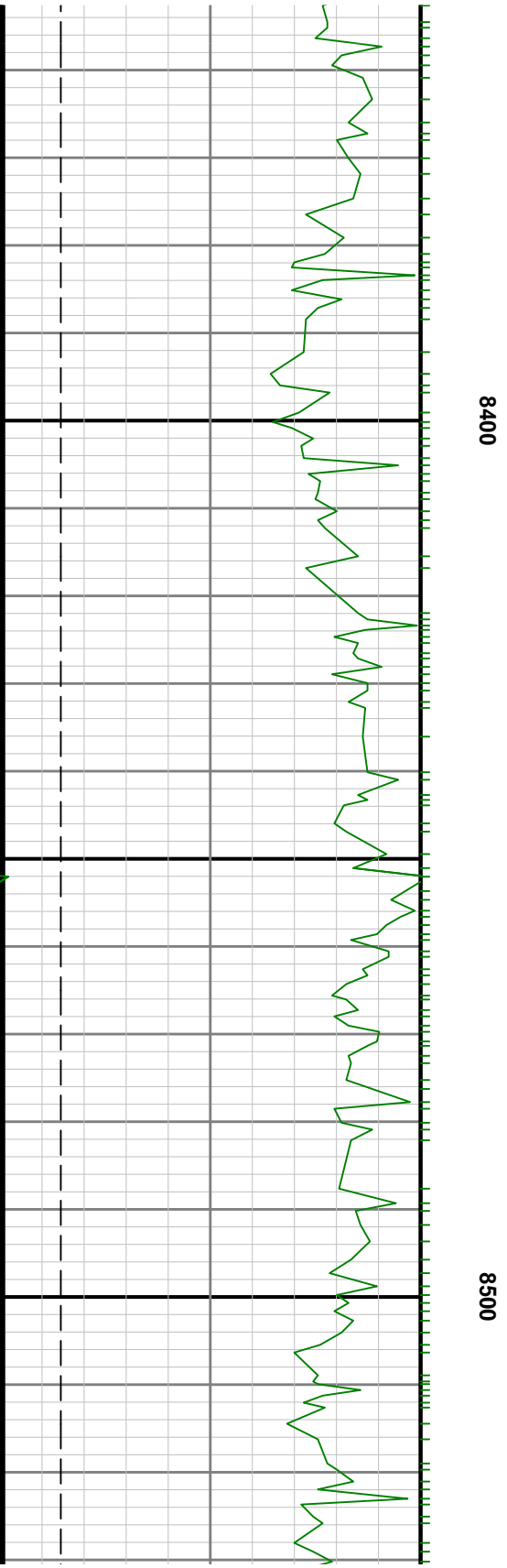
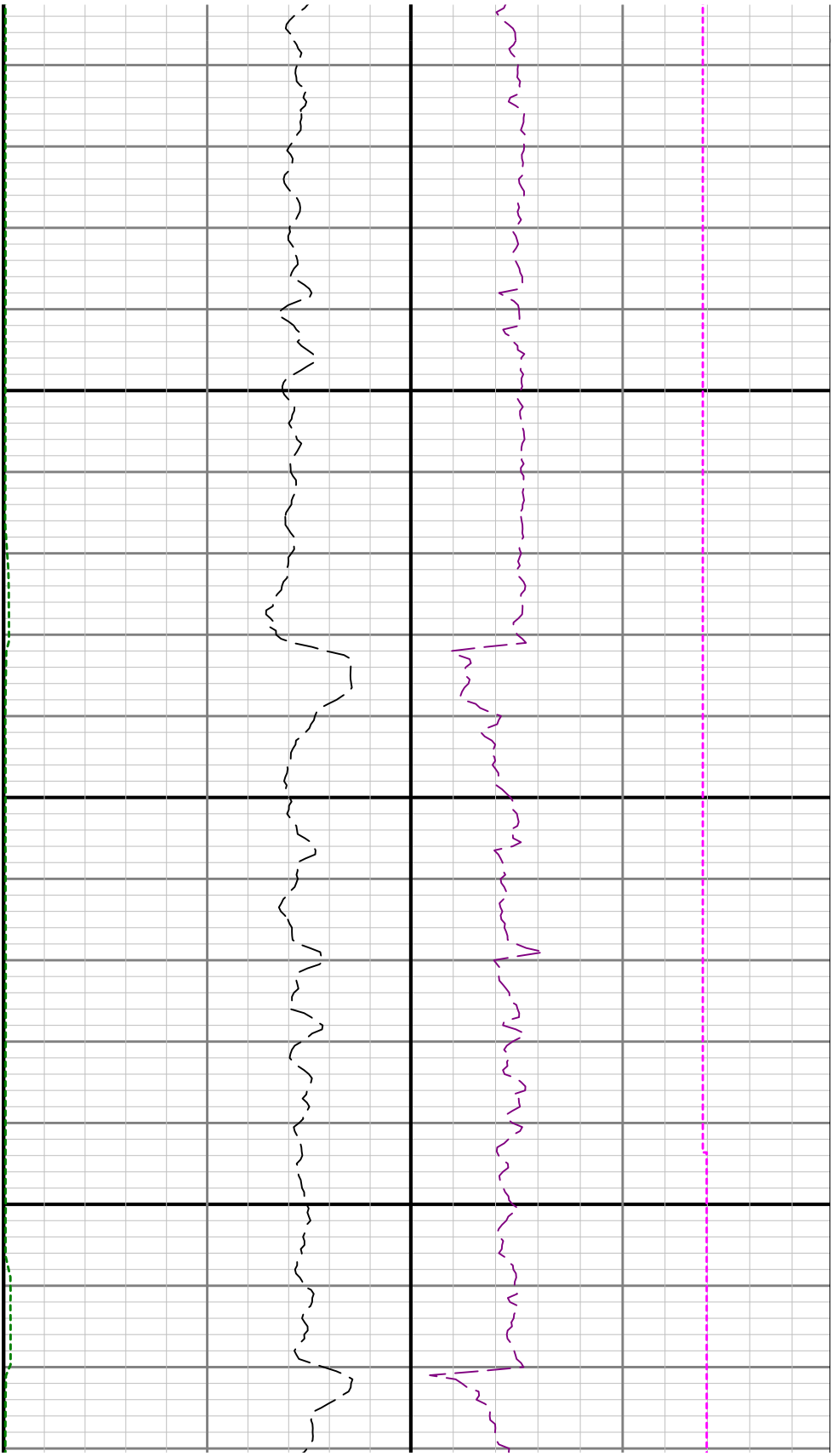


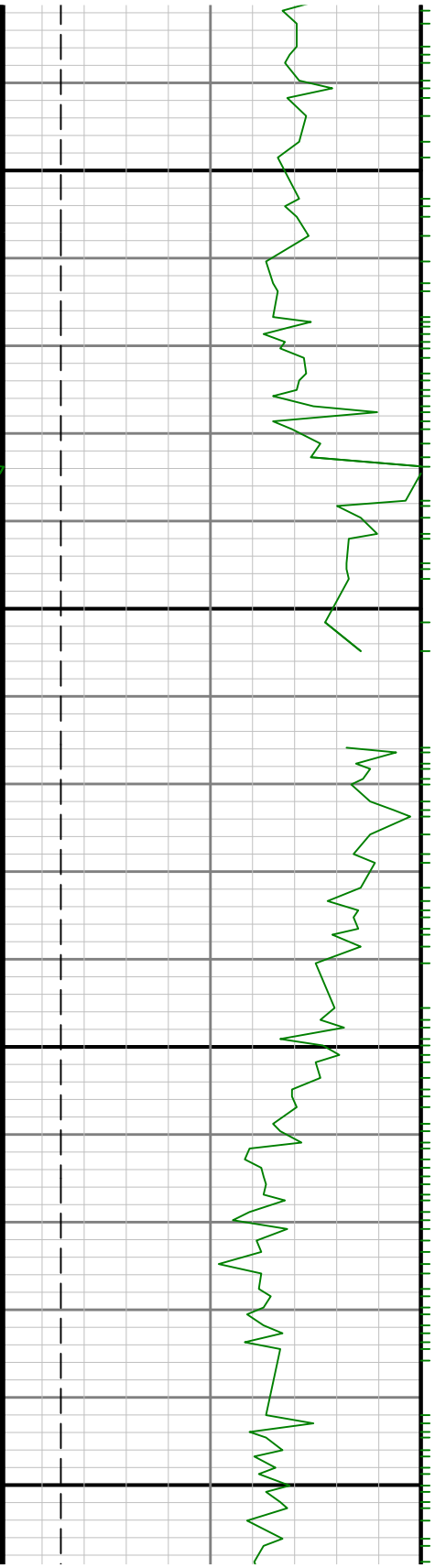






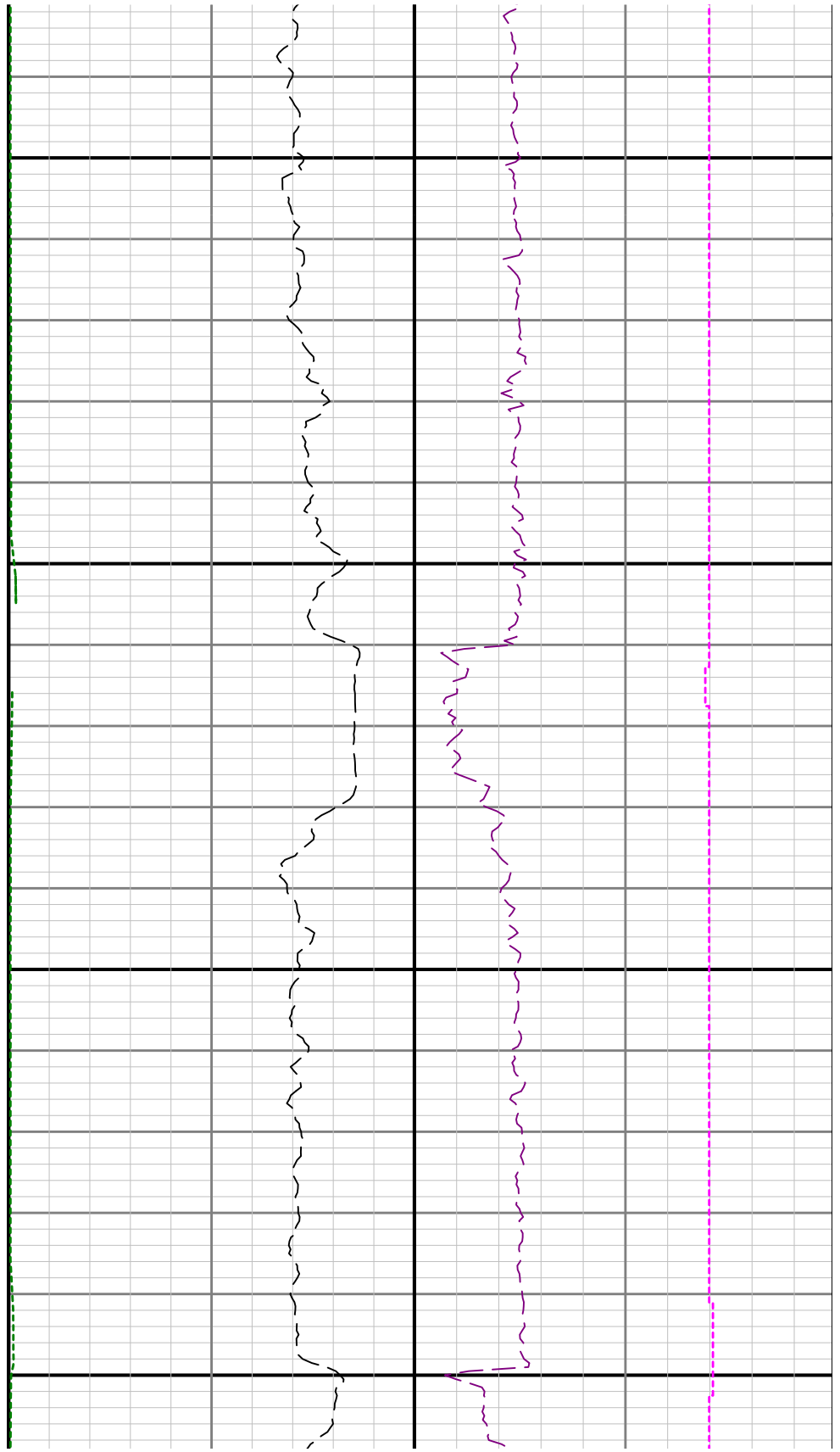


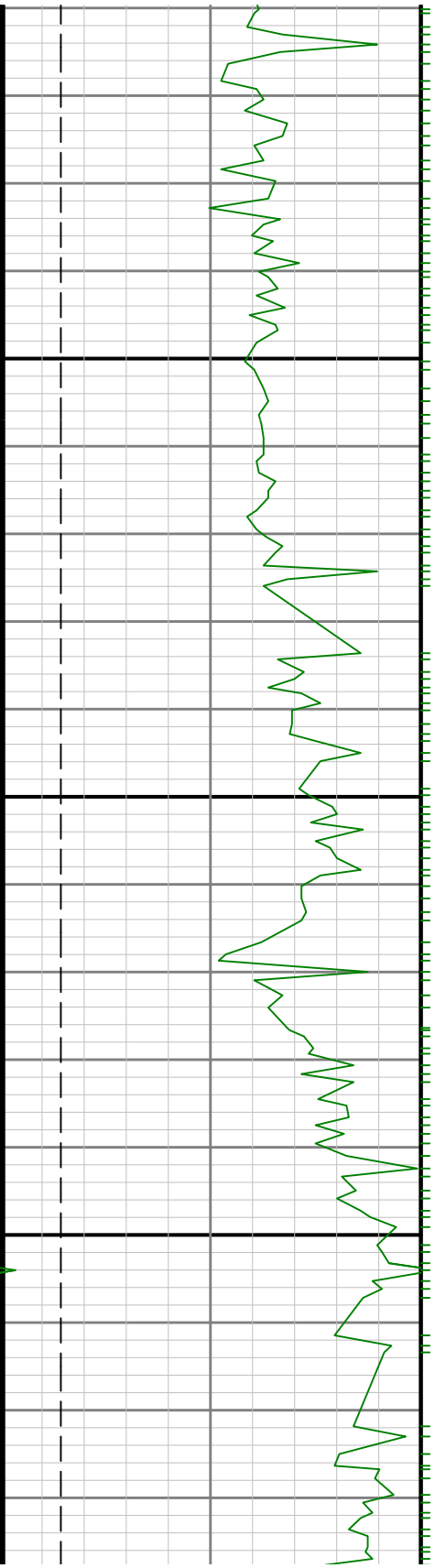




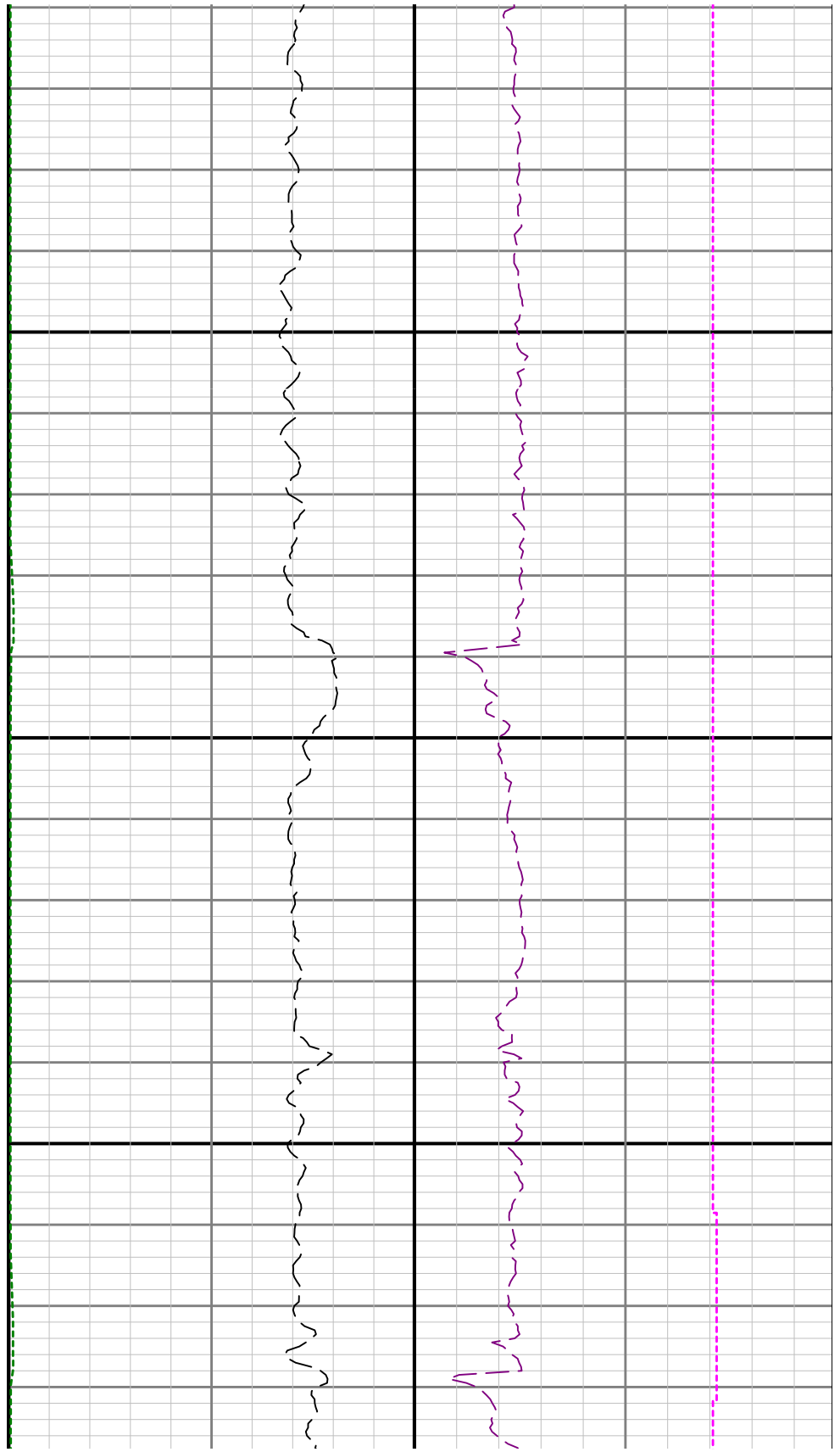
8700

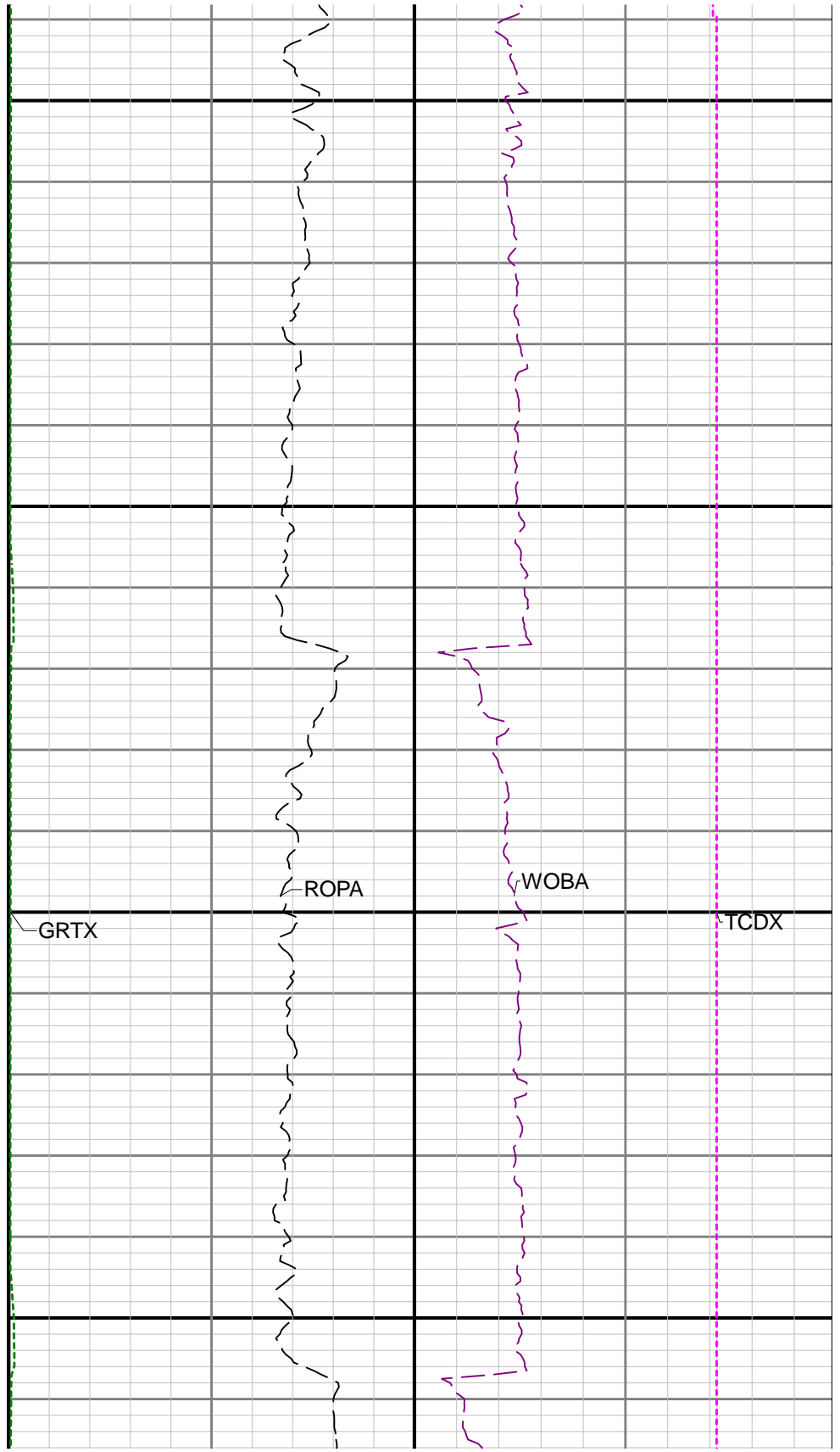
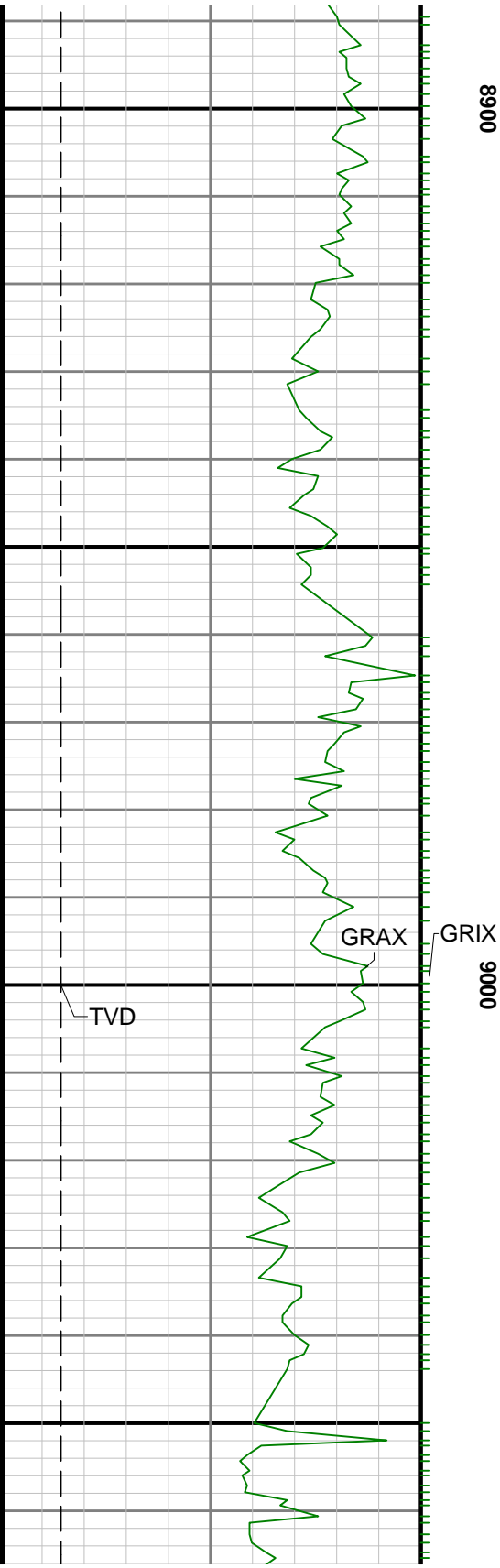
0098

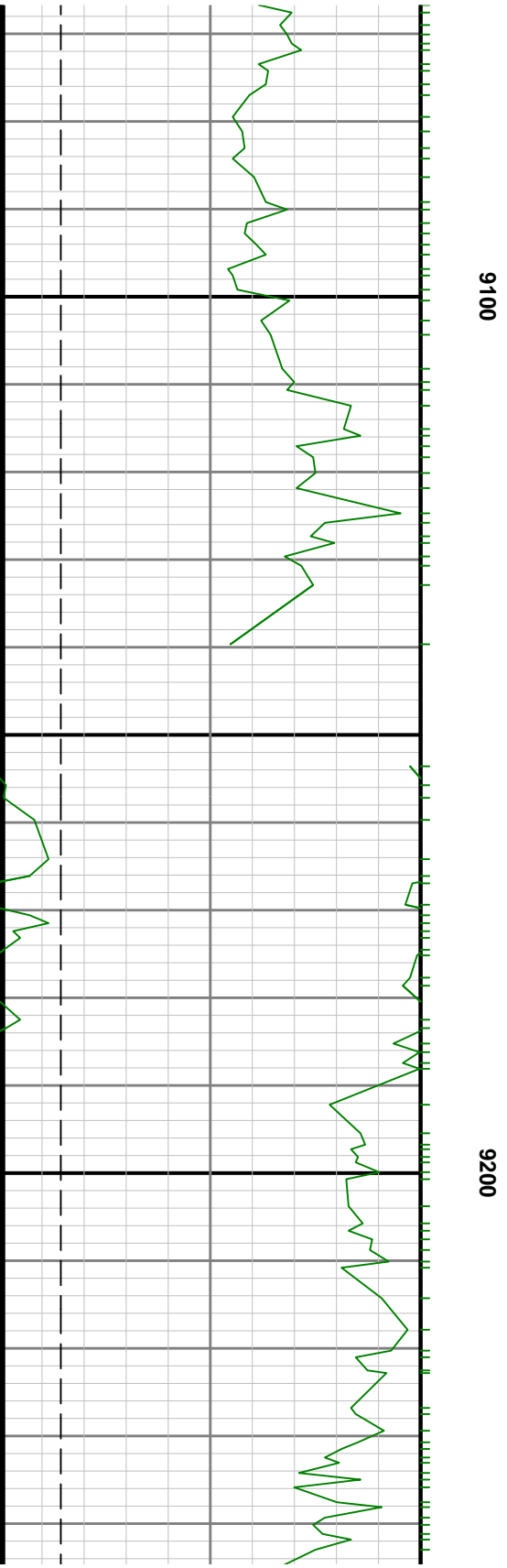
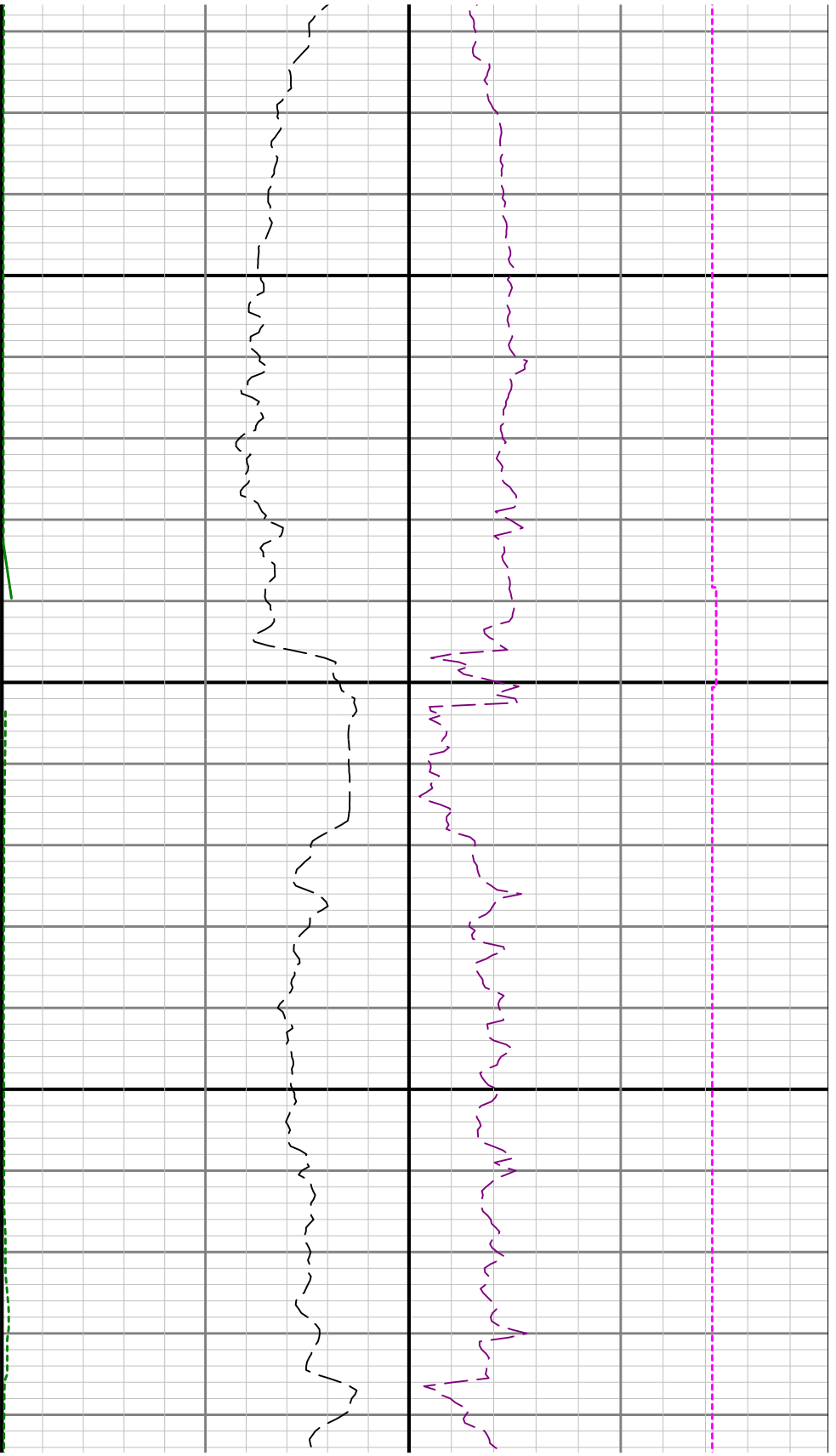


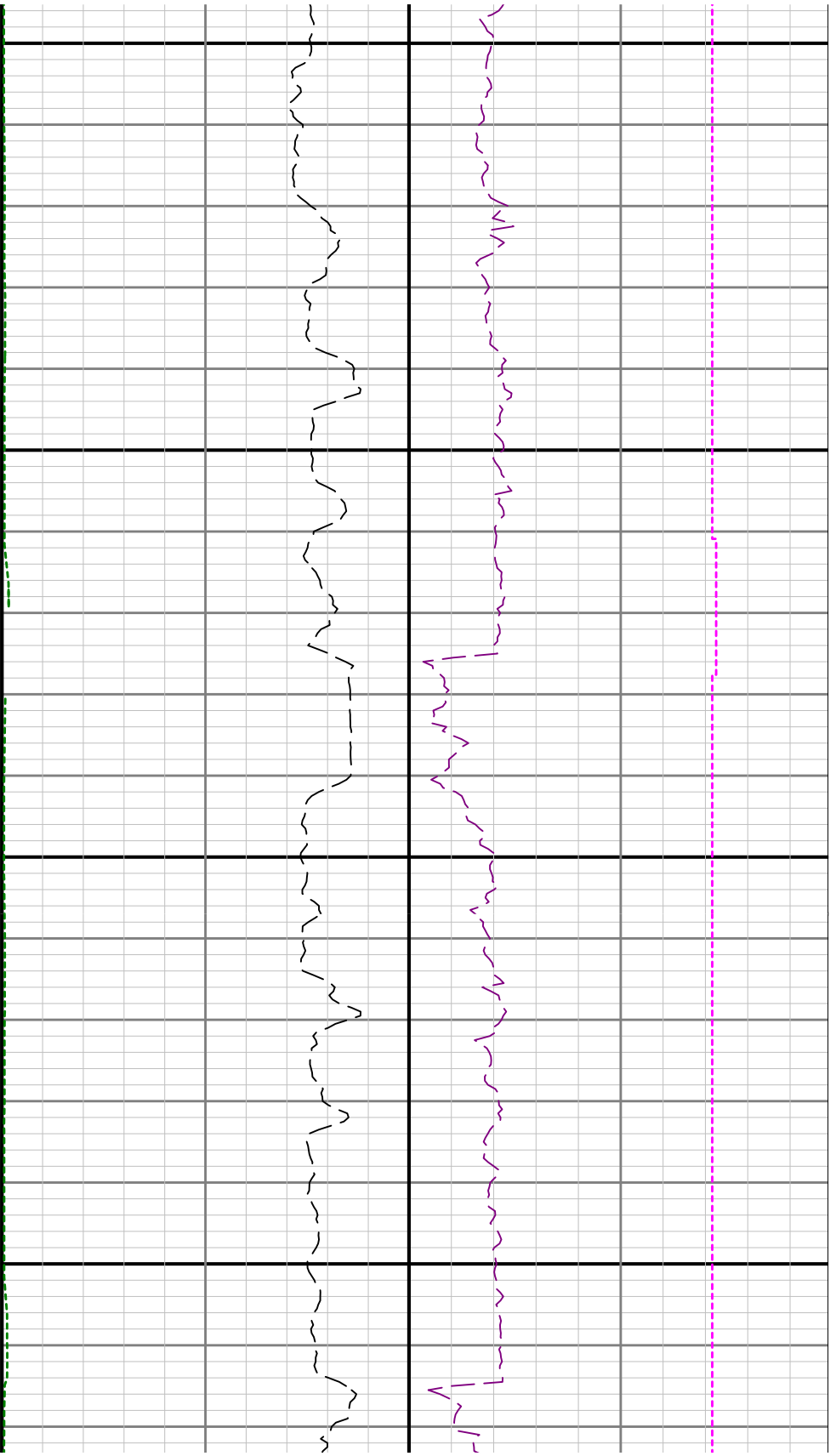


008



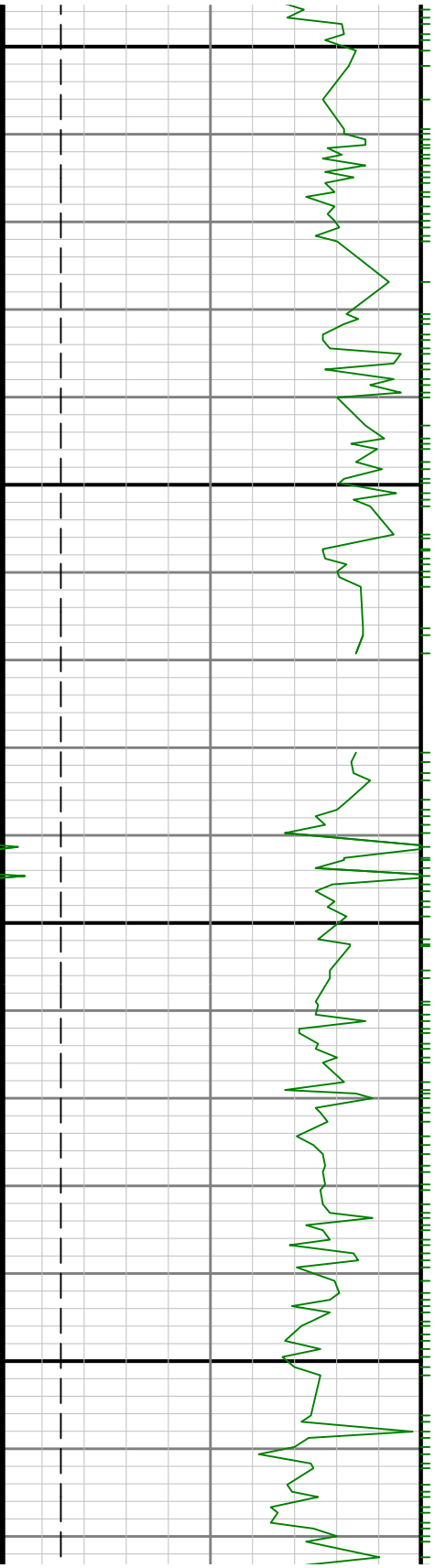


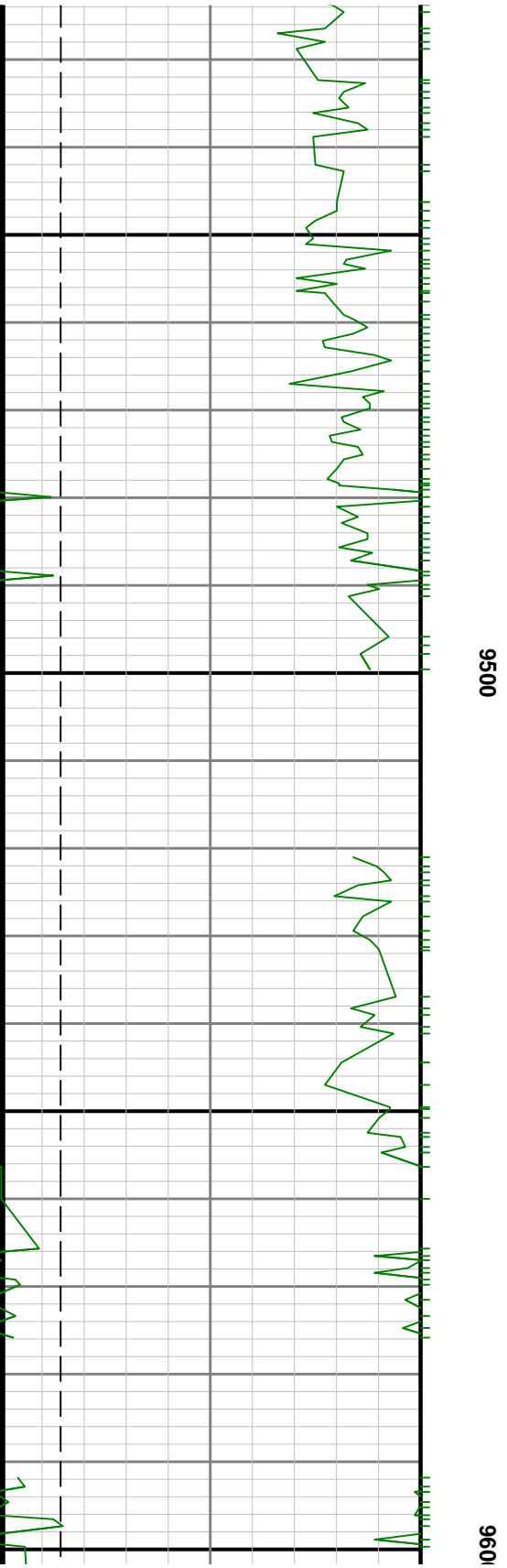
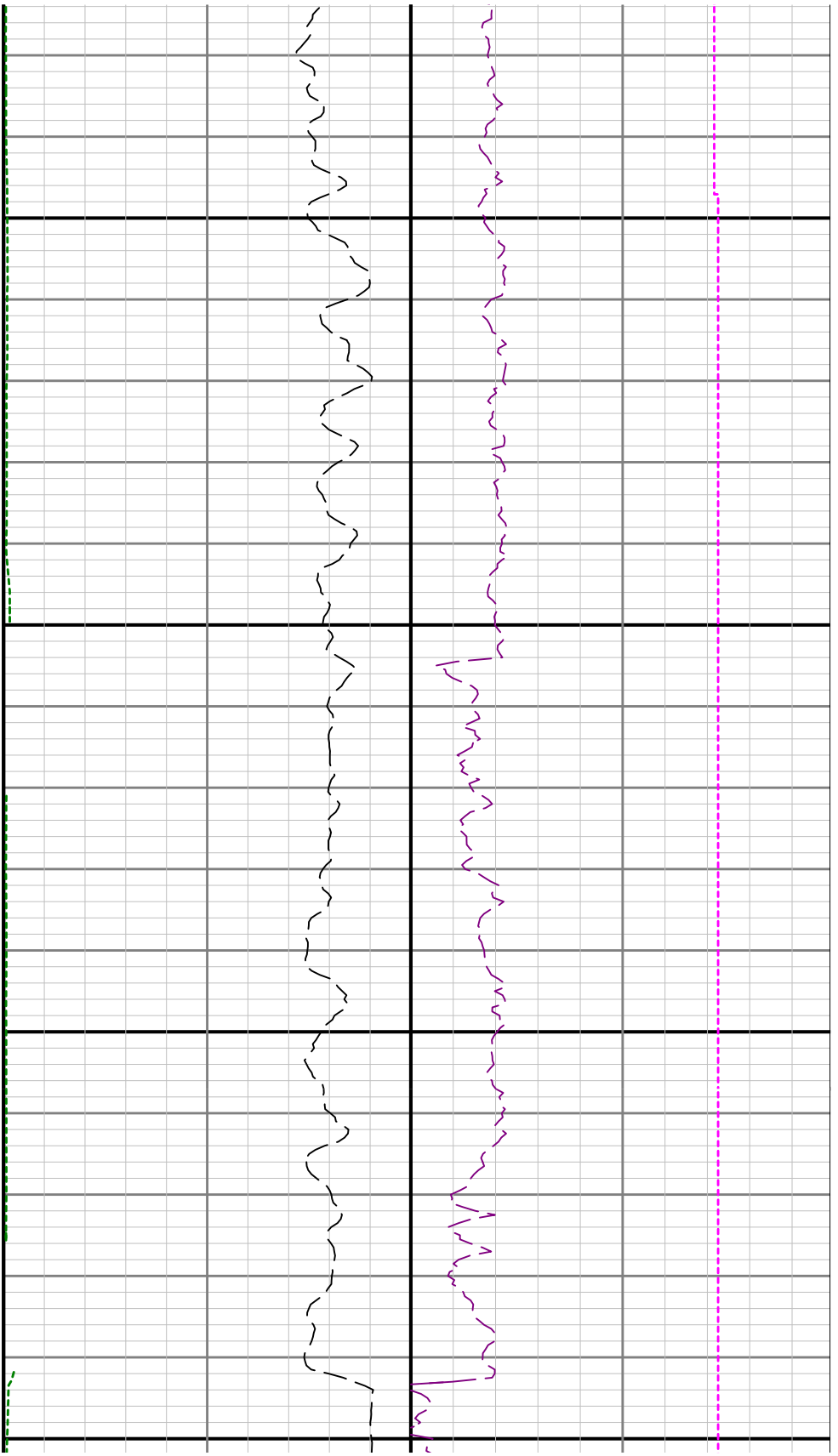


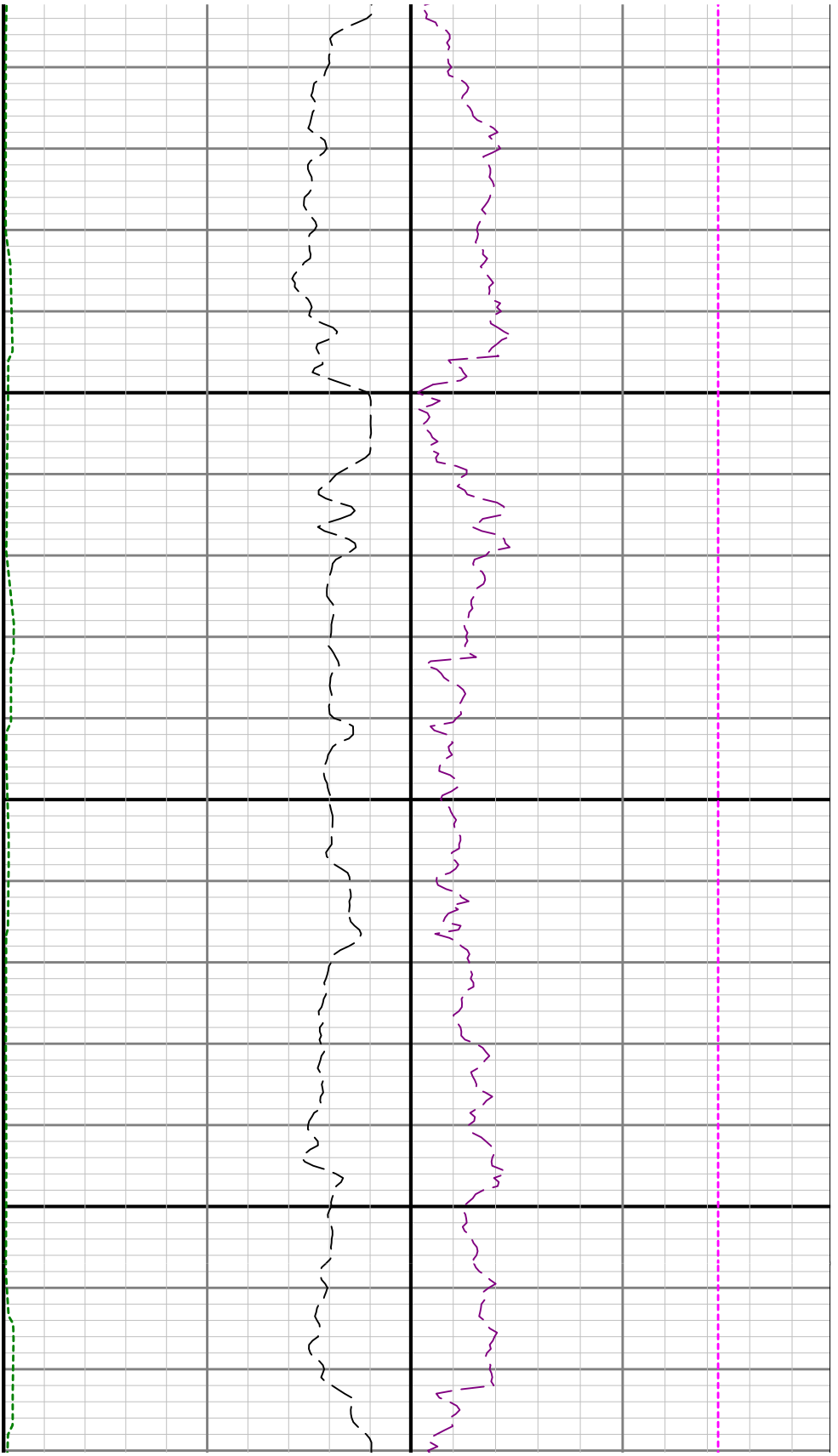


9300

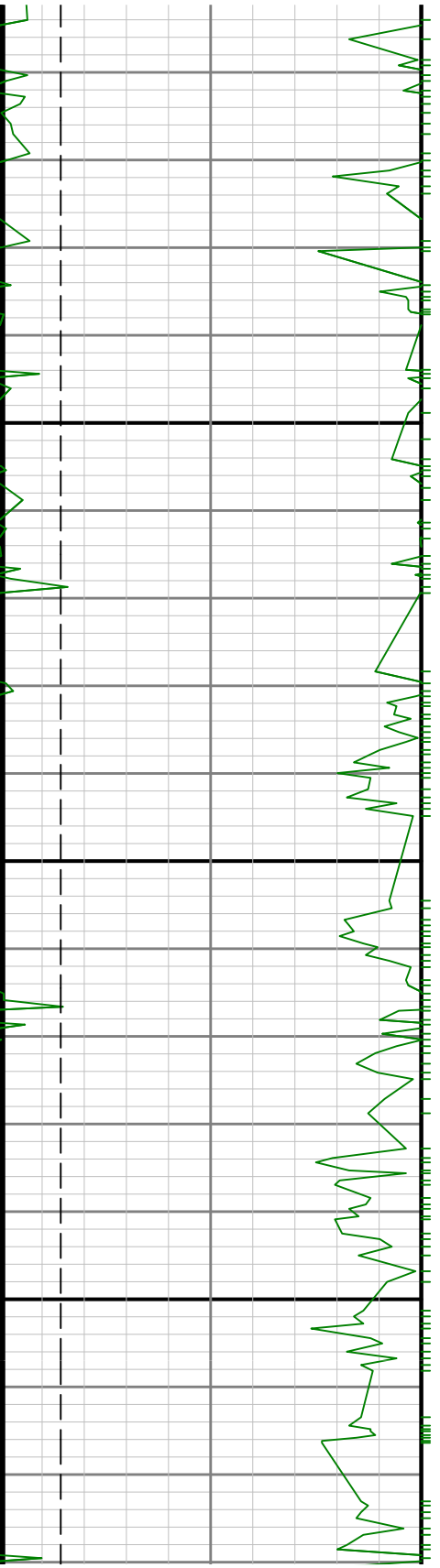
9400

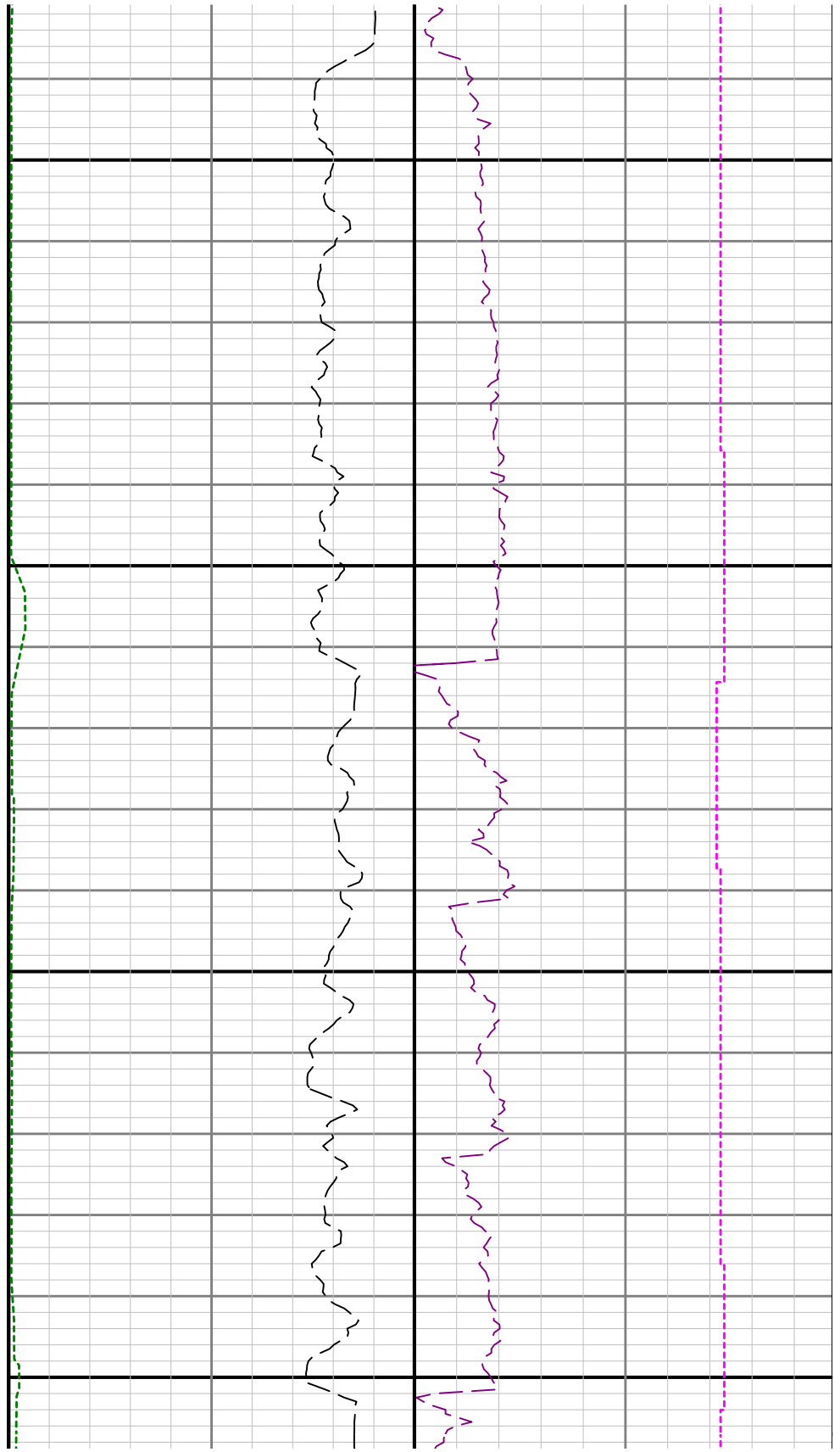
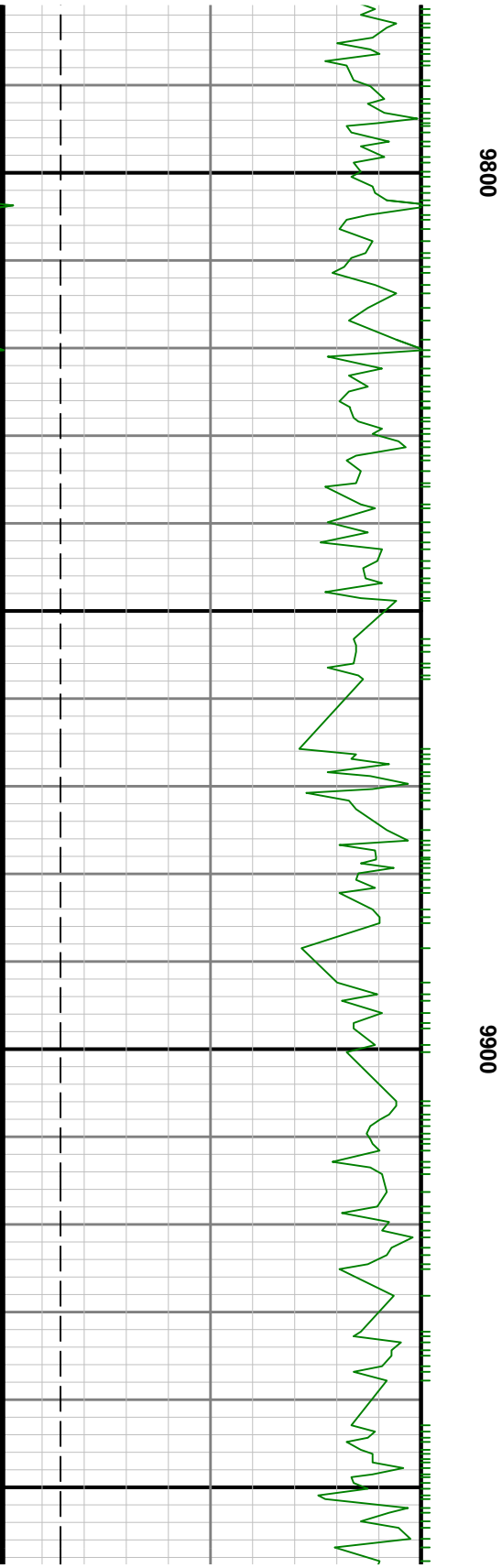


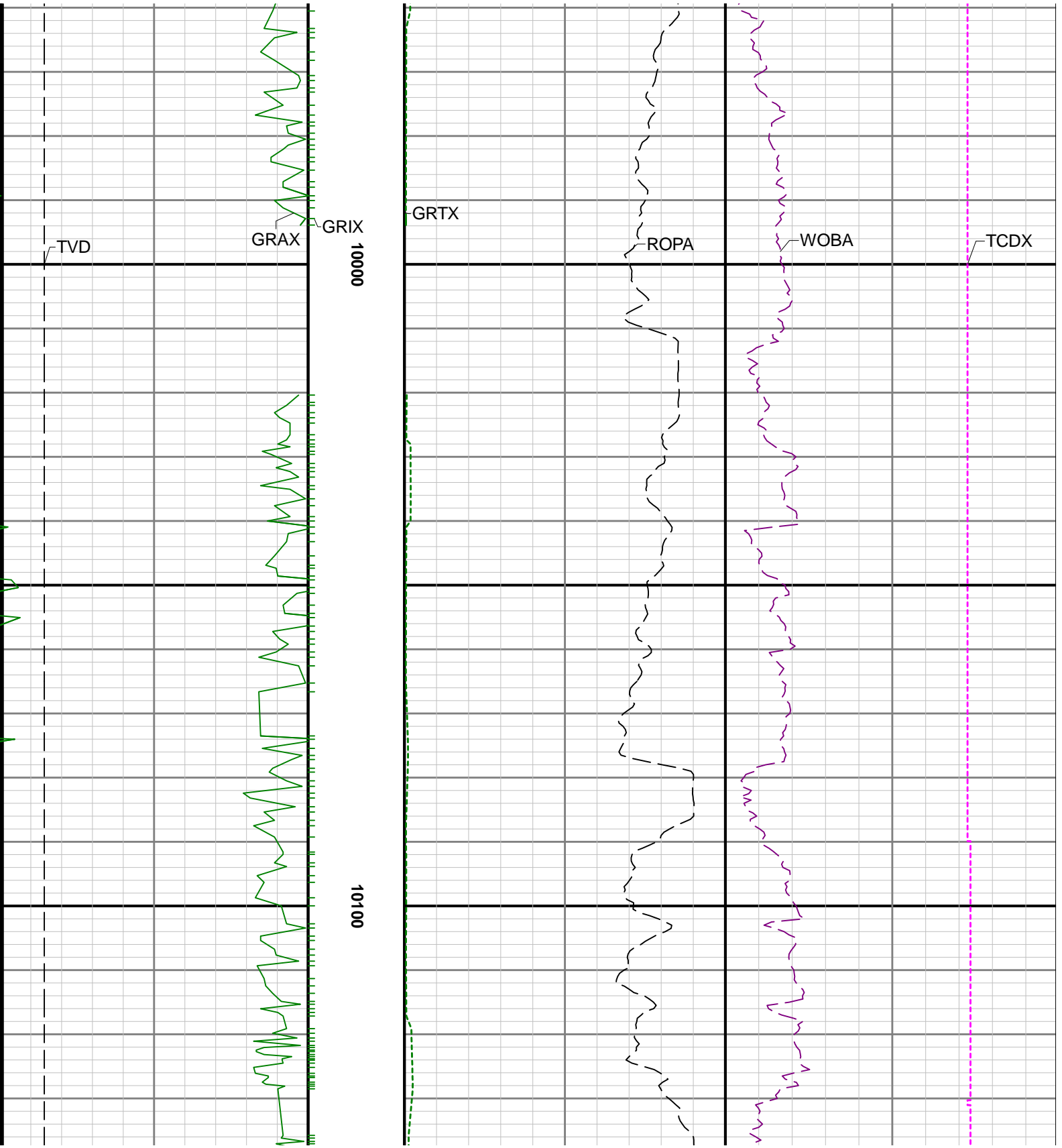


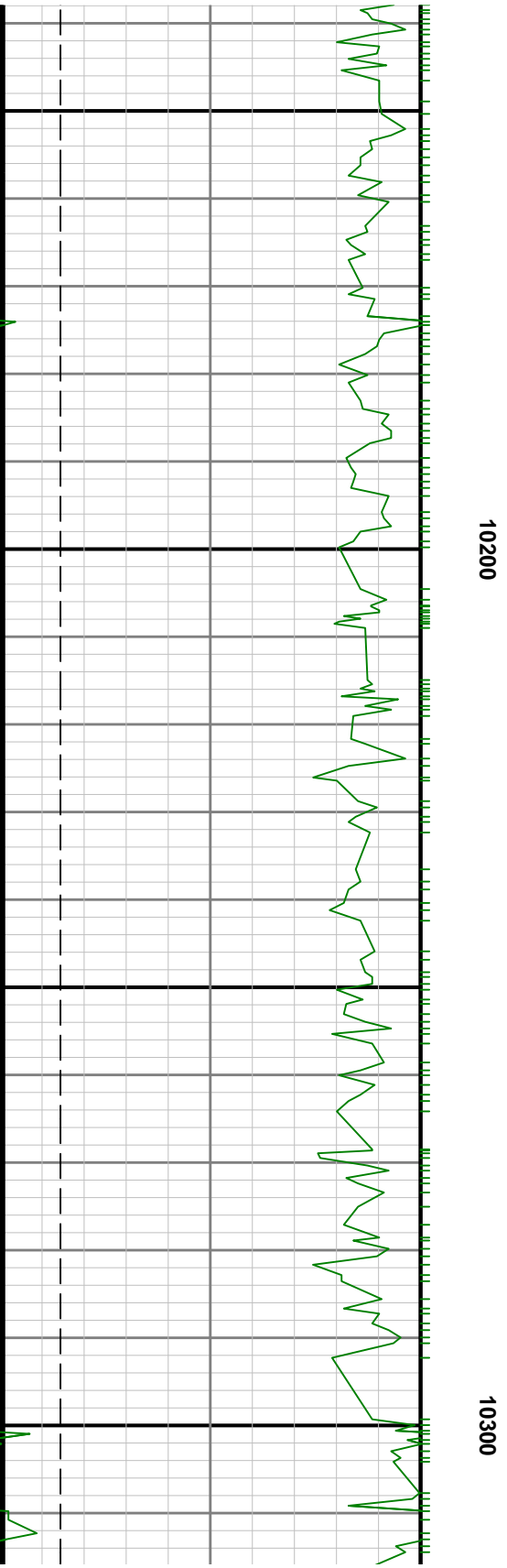
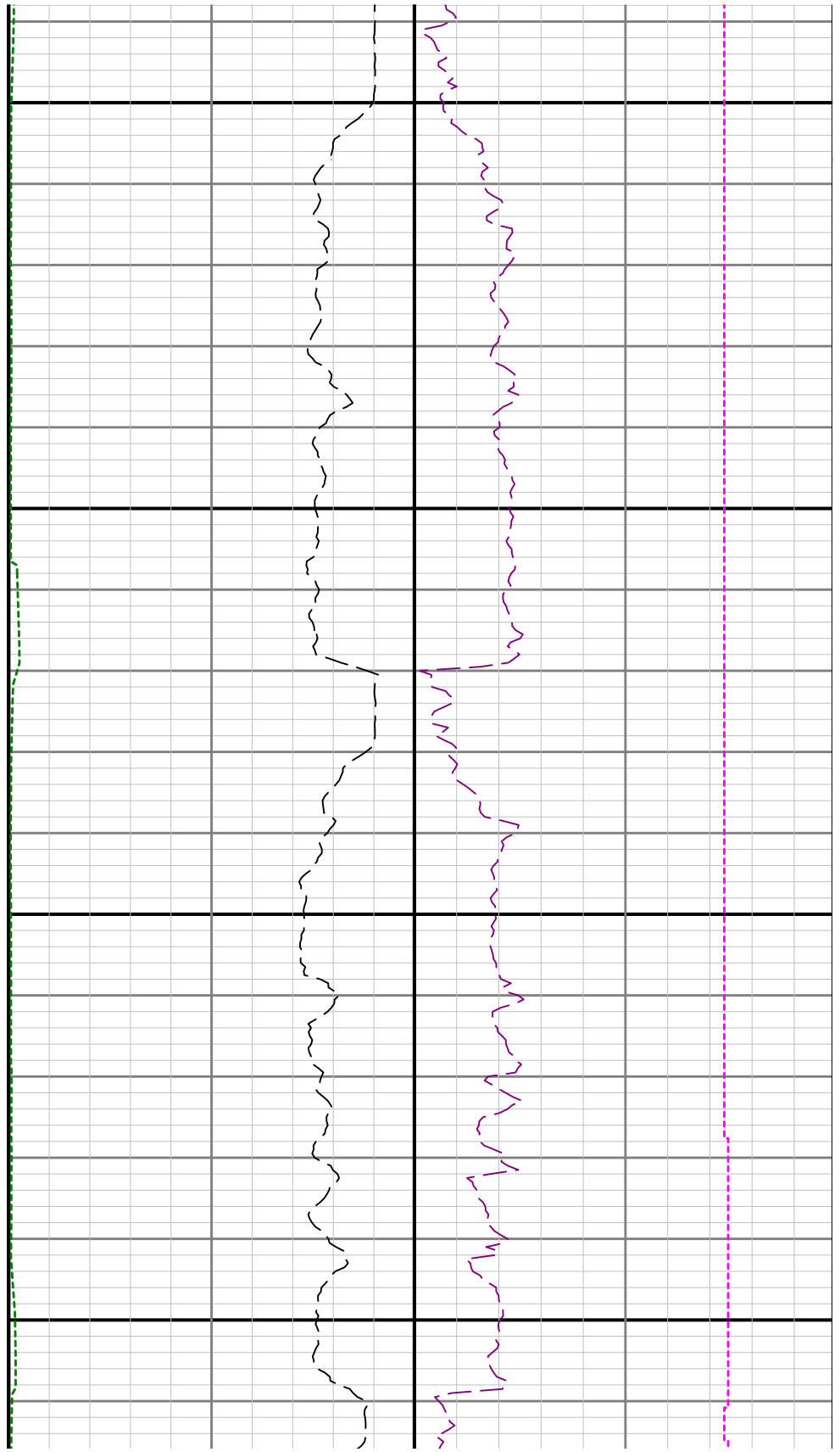


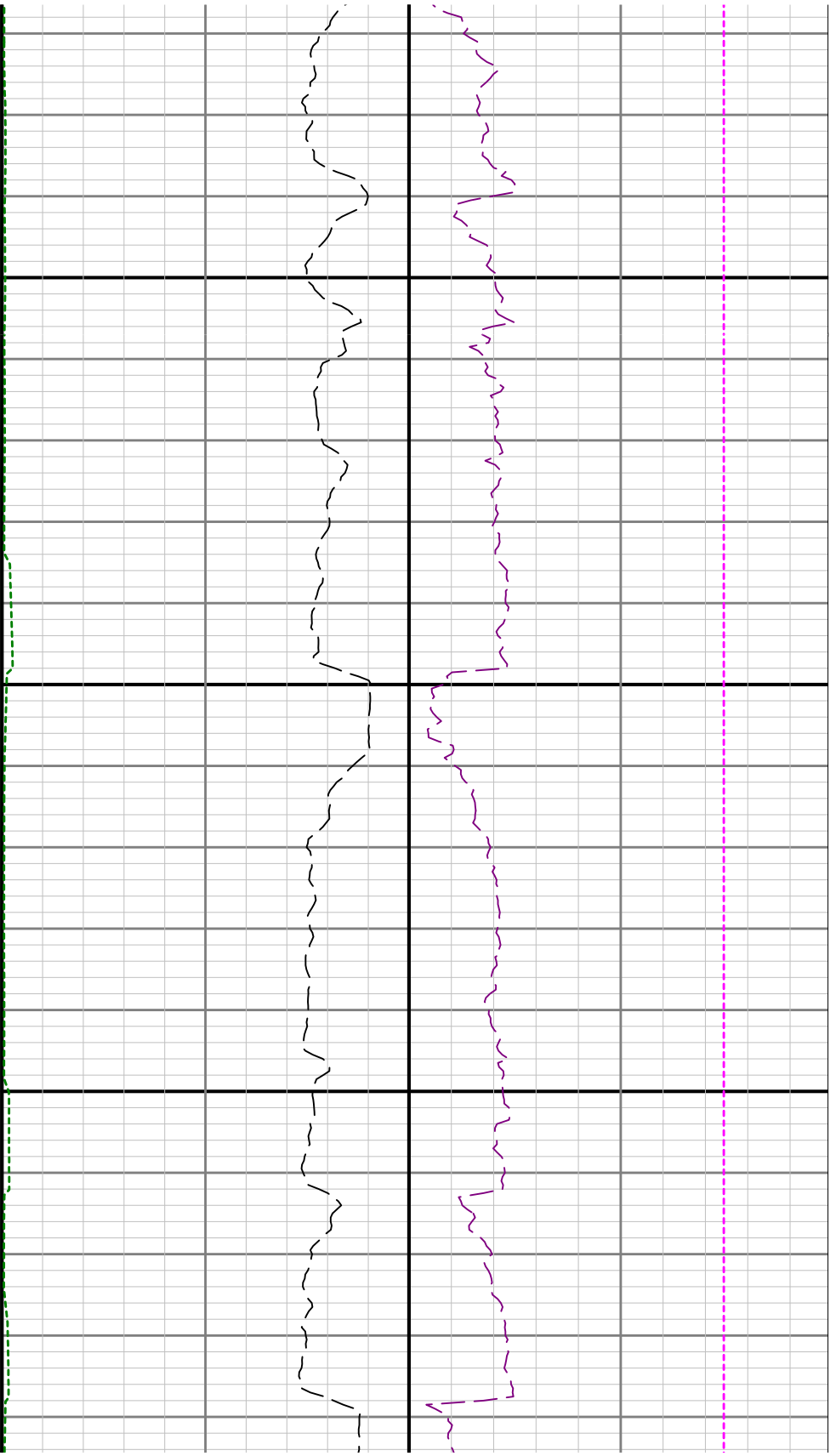
9700











10400

