

BAKER HUGHES				Real Time Log			
				Natural Formation Evaluation Gamma Ray			
Scale:	1:240			Company: Kerr McGee Oil&Gas Onshore LP			
Measured Depth	Well: Badding 16C-35HZ						
	Field: Weld County (Kerr McGee)						
	Region: Continental US			Country: United States			
Status:	Final Print			Surface Location:		Other Services:	
API Number:	051233833700			Latitude: 40° 6' 10.814" N Longitude: 104° 44' 13.916" W		Directional VSS	
Permanent Datum (P.D.):		Ground Level	Elevation:	5128.00 ft.		Elevations: 5128.00 ft. N/A	
Log Measured From:		Kelly Bushing	13.00 ft.	Above P.D.		DF: N/A GL: 5115.00 ft.	
Depth Reference:		Driller's Depth					
Interval Logged				Dates		Magnetic Field Reference	
Top:	6930 ft.	Date From:	15/Feb/14	Dip Angle:	66.75 °	Azi Reference North:	True
Bottom:	13265 ft.	Date To:	22/Feb/15	Total	Mag to Reference		
		Spud Date:	15/Feb/14	Field Strength:	52930.0 nT	North Correction:	8.29 °
Borehole Record				Casing Record			
Hole Size	From	To	Size	Weight	From	To	
13.500 in.	Surface	1332 ft.	9.625 in.	36.00 lb/ft	Surface	1322 ft.	
8.750 in.	1332 ft.	7960 ft.	7.000 in.	26.00 lb/ft	Surface	7950 ft.	
6.125 in.	7960 ft.	13315 ft.					
Mud Record				Deviation Record			
Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)	
Water Based Mud	Surface	13315 ft.	13.500 in.	1332 ft.	0.0 ° / 7.8 °	0.5 ° / 37.5 °	
			8.750 in.	6628 ft.	0.5 ° / 37.5 °	84.1 ° / 179.9 °	
			6.125 in.	5365 ft.	84.1 ° / 179.9 °	88.4 ° / 180.1 °	
					/	/	
					/	/	
					/	/	
Acquisition System		Software Version		Other			
Advantage	2.20U4	Rig / Contractor:	Ensign 138	/ Ensign Drilling			
PATS	6.4.1.34	Job No:	6062806				
		District / Unit:	RMD	/ D & E			

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Log Run Summary														
LWD	BHA	Bit	Bit	Bit	Bit	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time	
Run	Run	Run	Size	Type	Gauge		Top	Bottom	From	To	Start	End		Time
No.	No.	No.	(in.)		Length (in.)		(ft.)	(ft.)	(ft.)	(ft.)				
1	1	1	8.750	PDC	3.000	Steerable	6930	7916	1332	7960	15/Feb/2014 13:38	15/Feb/2014 13:38	38.9	
2	2	2	6.125	PDC	6.000	Steerable	7916	13265	7961	13315	18/Feb/2014 16:15	21/Feb/2014 14:06	45	

Crew										
Name	Arrive	Depart		Name	Arrive	Depart		Name	Arrive	Depart
	Wellsite	Wellsite			Wellsite	Wellsite			Wellsite	Wellsite
Tyler Wall	15/Feb/2014	22/Feb/2014		Andrew Overbey	15/Feb/2014	22/Feb/2014		Will Drake	15/Feb/2014	22/Feb/2014
Stephen Martinez	15/Feb/2014	22/Feb/2014								

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
15/Feb/2014	21:00	1	1322	Water Based Mud	8.4	29	8.7	n/a	0.0/99.3	Active Pit	1500	n/a
16/Feb/2014	21:00	1	4613	Water Based Mud	8.4	28	9.4	n/a	00/99.3	Active Pit	900	n/a
17/Feb/2014	21:00	1	7852	Water Based Mud	10.2	41	9.2	n/a	1.1/89.2	Active Pit	2150	n/a
18/Feb/2014	21:00	2	7960	Water Based Mud	10.3	41	9.9	n/a	1/88.9	Active Pit	2300	n/a
19/Feb/2014	21:00	2	8468	Water Based Mud	9.7	40	10.4	n/a	1.2/91.5	Active Pit	2300	n/a
20/Feb/2014	21:00	2	11329	Water Based Mud	9.7	49	8.3	n/a	1.2/90.6	Active Pit	2750	n/a

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Data Density	point
GRSI	Gamma Ray Sliding Indicator	unitless
GRTX	Gamma Ray Time Since Drilled	min
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	klbs

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (m.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11814668	Directional	47.12	6.750	3.250
1	SRIG	12023982	Gamma	43.74	6.750	3.250
2	DIR	12479879	Directional	53.05	4.750	2.750
2	SRIG	12600747	Gamma	49.70	4.750	2.750

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

1.) Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2.) Baker Hughes run 1 utilized 6 3/4 inch NaviTrak services (Directional only) behind an 8 3/4 inch bit and steerable assembly from 1332 to 6930 feet MD (1332 to 6892 feet TVD).
3.) Baker Hughes run 1 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 6930 to 7960 feet MD (6892 to feet 7562 TVD).
4.) Baker Hughes run 2 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 6 1/8 inch bit and steerable assembly from 7960 to 13315 feet MD (7562 to feet 7562 TVD).

5.) The interval from 1332 to 6930 feet MD (1332 to 6892 feet TVD) was not logged due to directional only services being provided through the straight-hole and nudge section for Baker Hughes run 1.

Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	7950	6.125	2	The interval from 7950 to 7960 feet MD (7562 to 7562 feet TVD) was logged up to 25 hours after being drilled due to a trip out of the hole to lay down the curve assembly, intermediate casing and cement operations, and to pick up the lateral assembly.
2	13280	6.125	2	The interval from 13265 to 13315 feet MD (7562 to 7562 feet TVD) was not logged due to sensor to bit offsets at well TD.

Curve Mnemonics

Curve	Description	Units
GRAX	Gamma Ray - Apparent	API
GRIX	Gamma Ray - Data Point Indicator	unitless
GRSIM	Gamma Ray Sliding Indicator	unitless
GRTX	Gamma Ray Time Since Drilled	min
ROPA	AVERAGE Instantaneous ROP - 5 second ROP	ft/hr
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft
WOBA	AVERAGE Weight On Bit	klbf

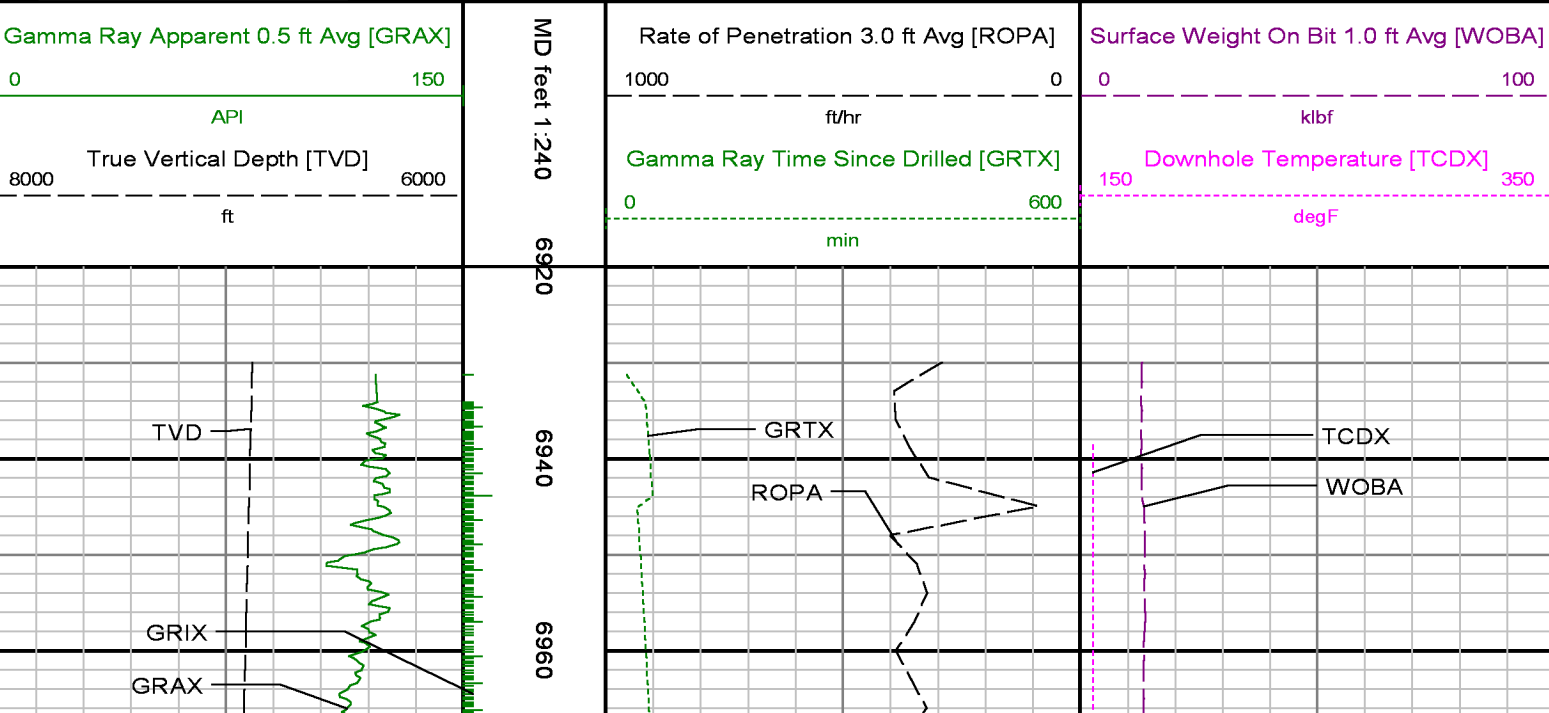


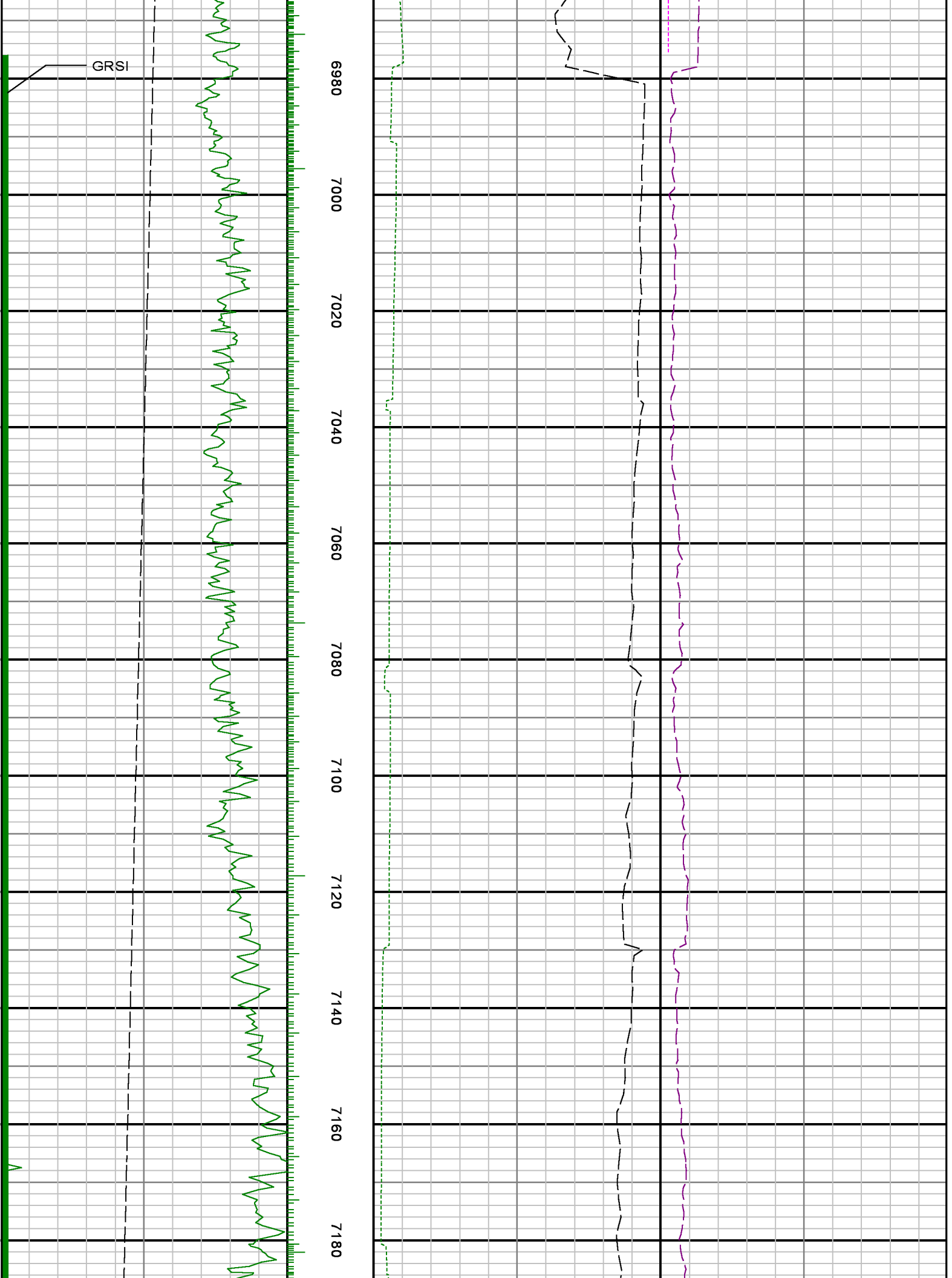
Company : Kerr McGee Oil&Gas Onshore LP

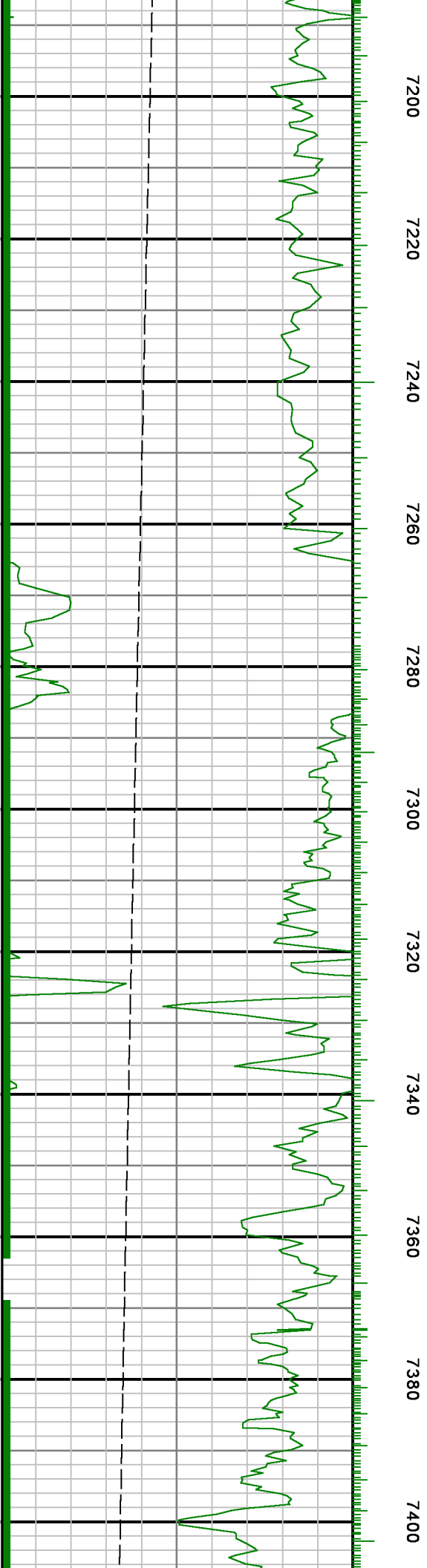
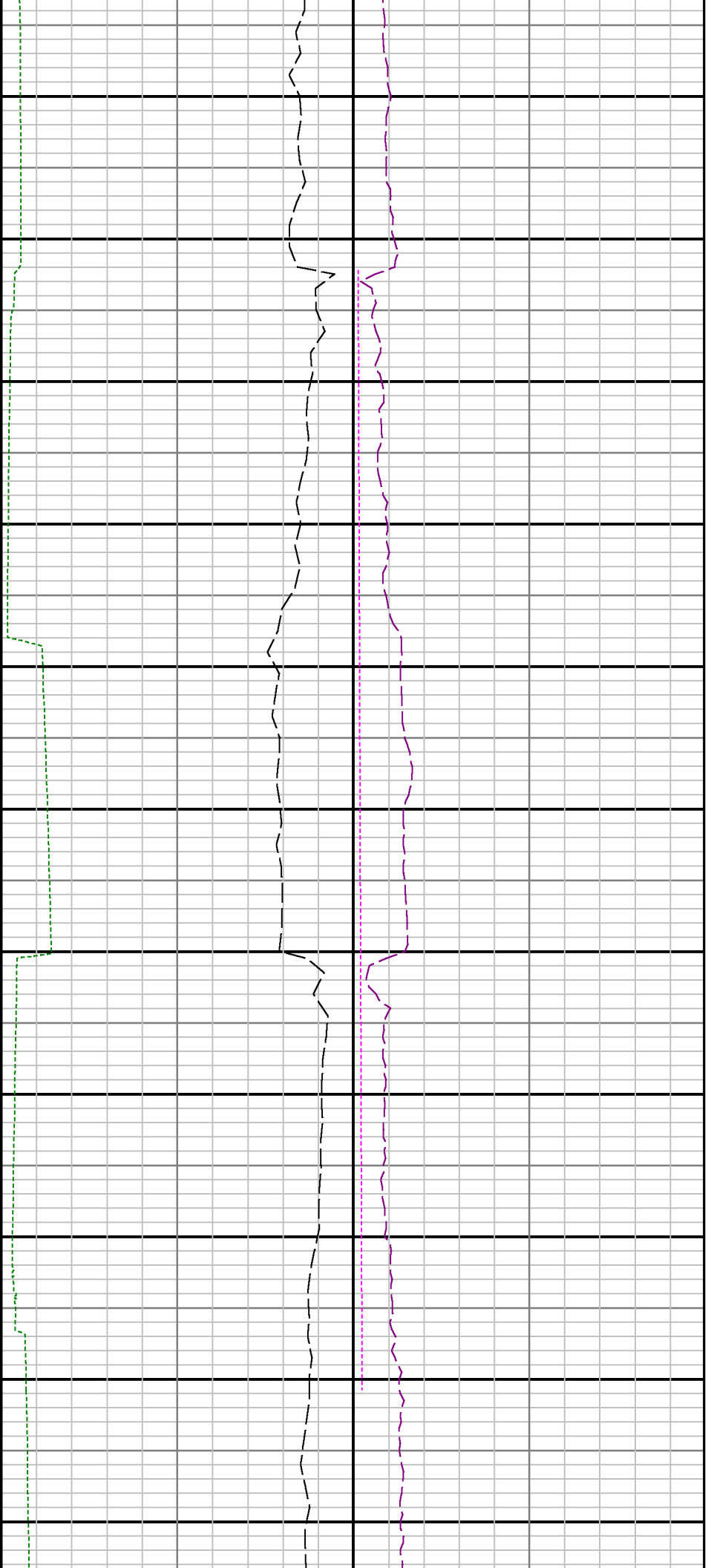
Well : Badding 16C-35HZ

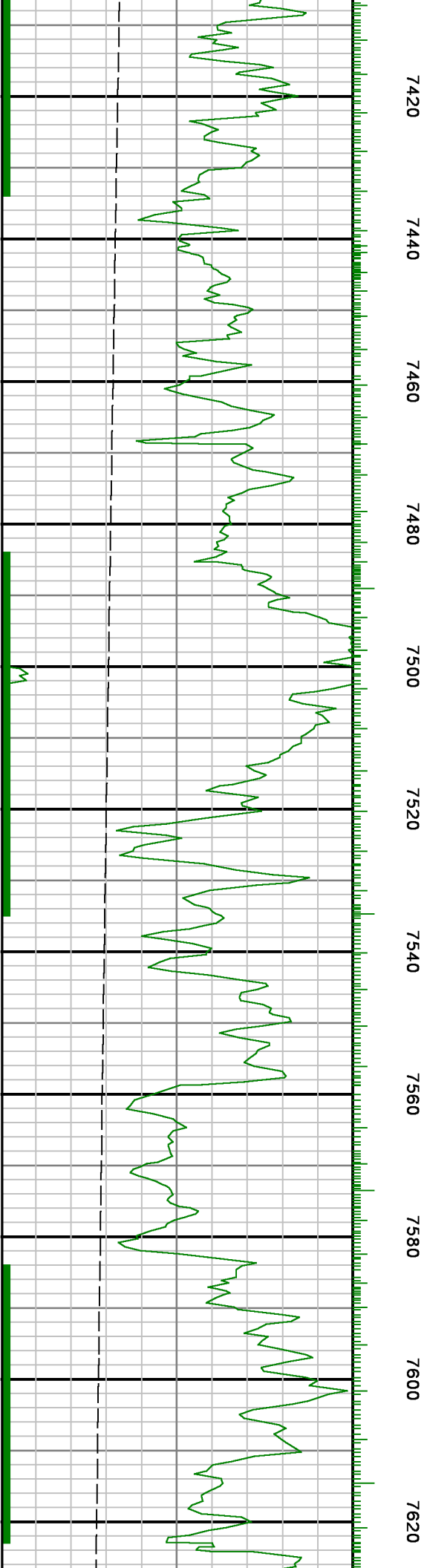
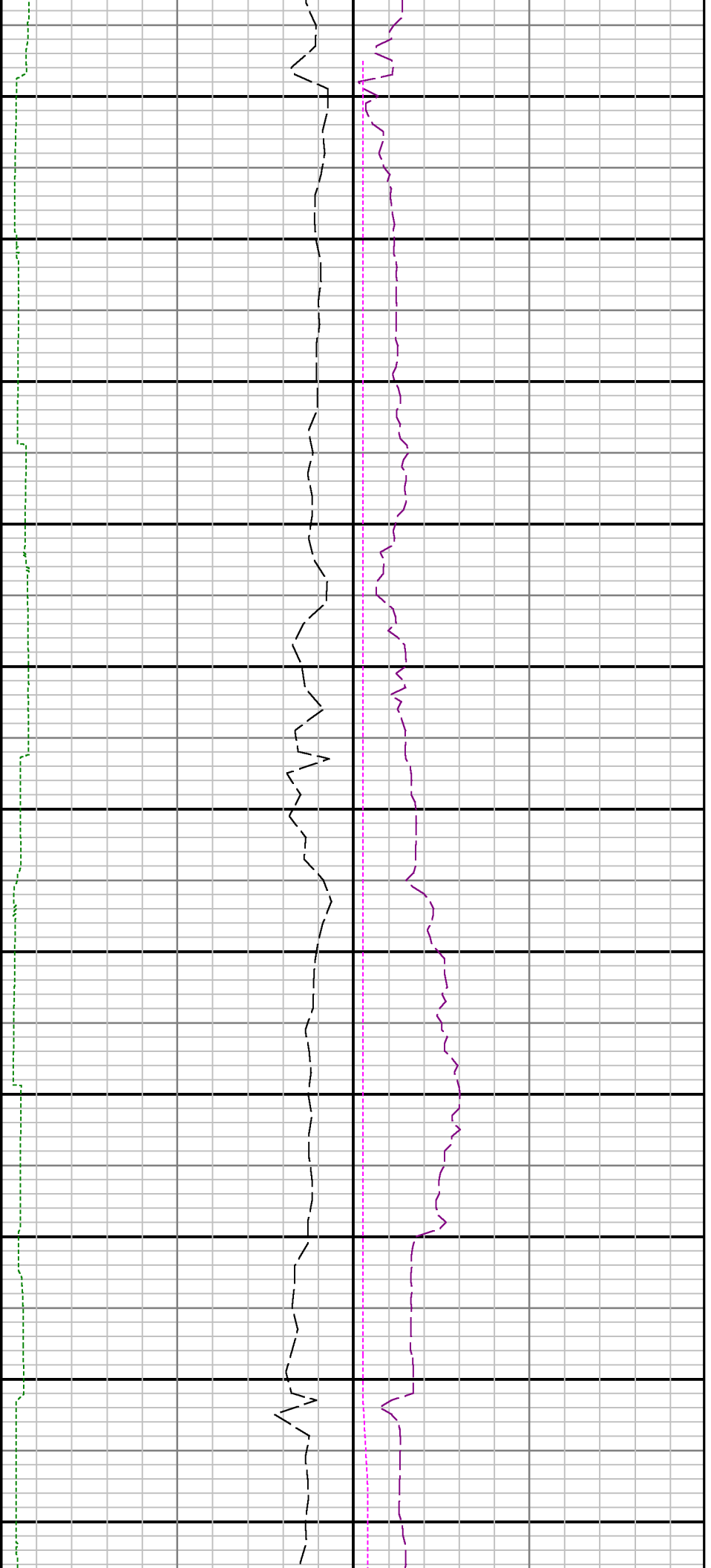
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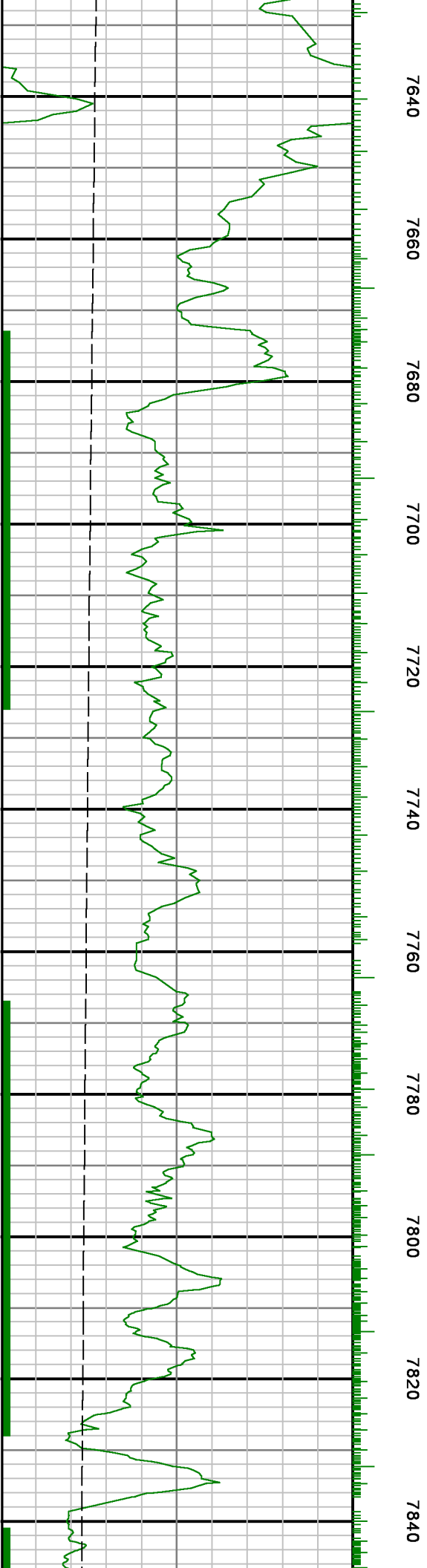
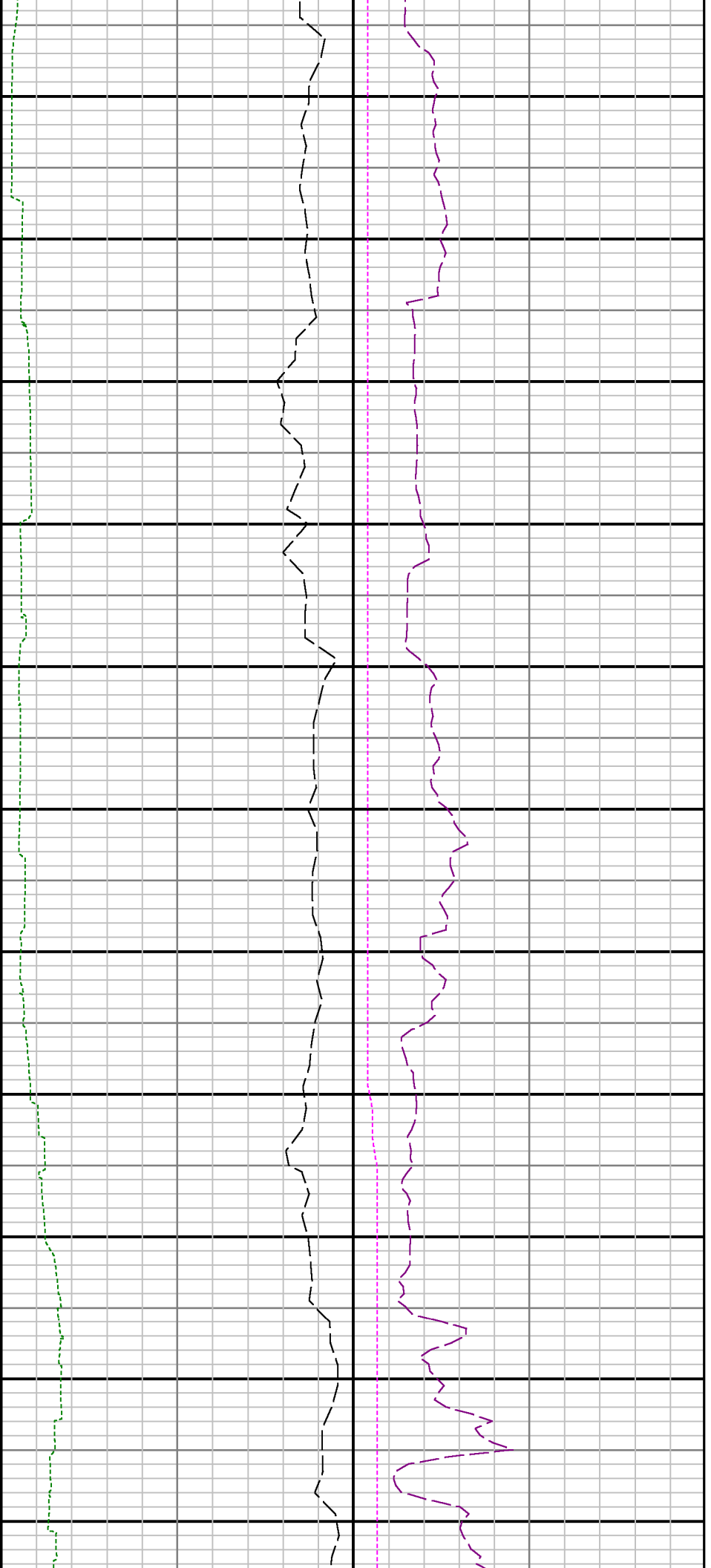
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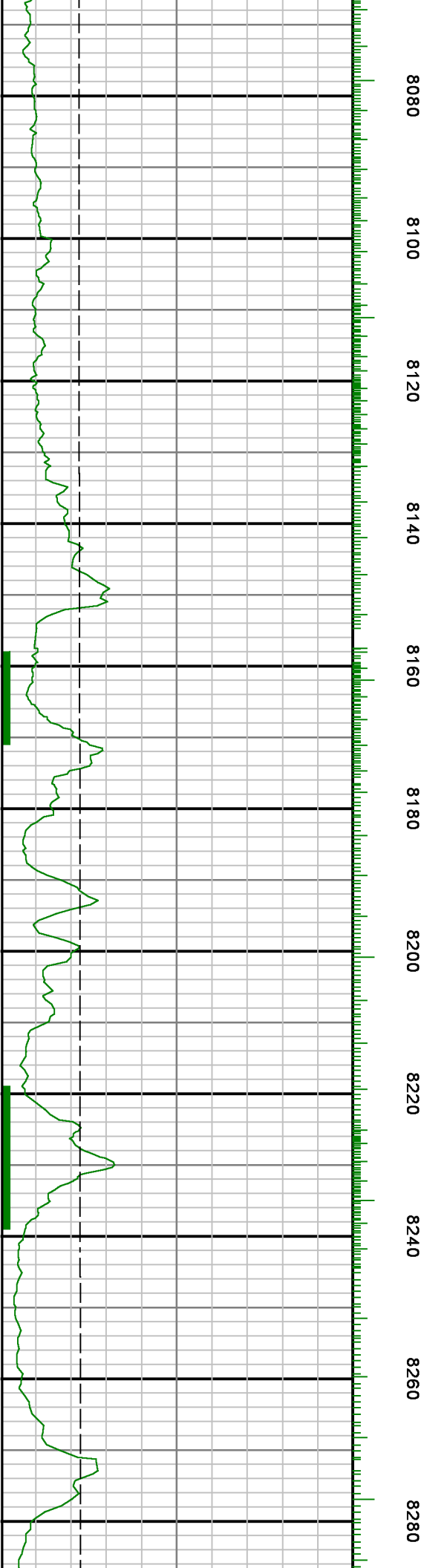
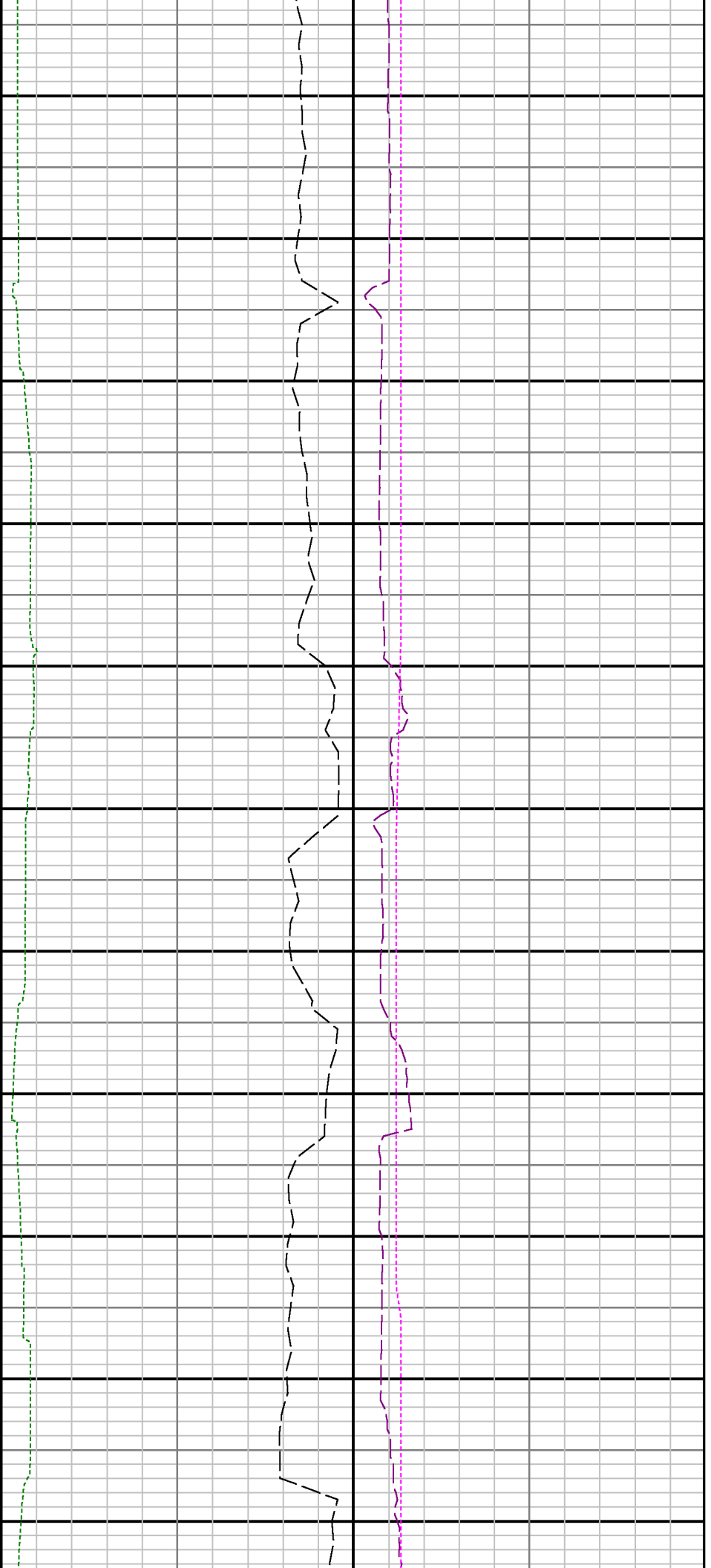


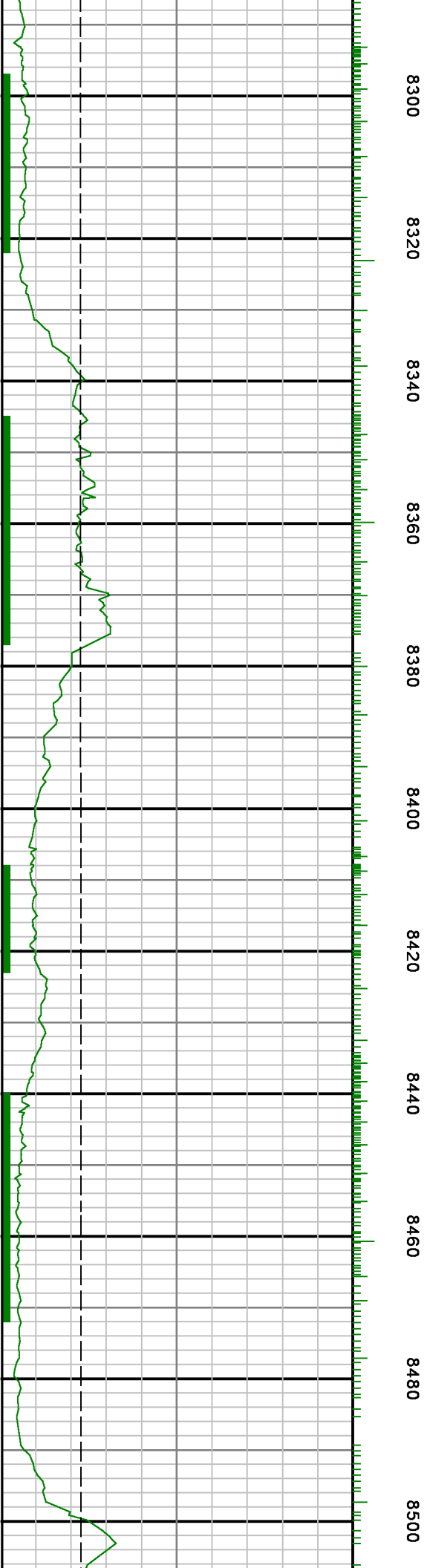
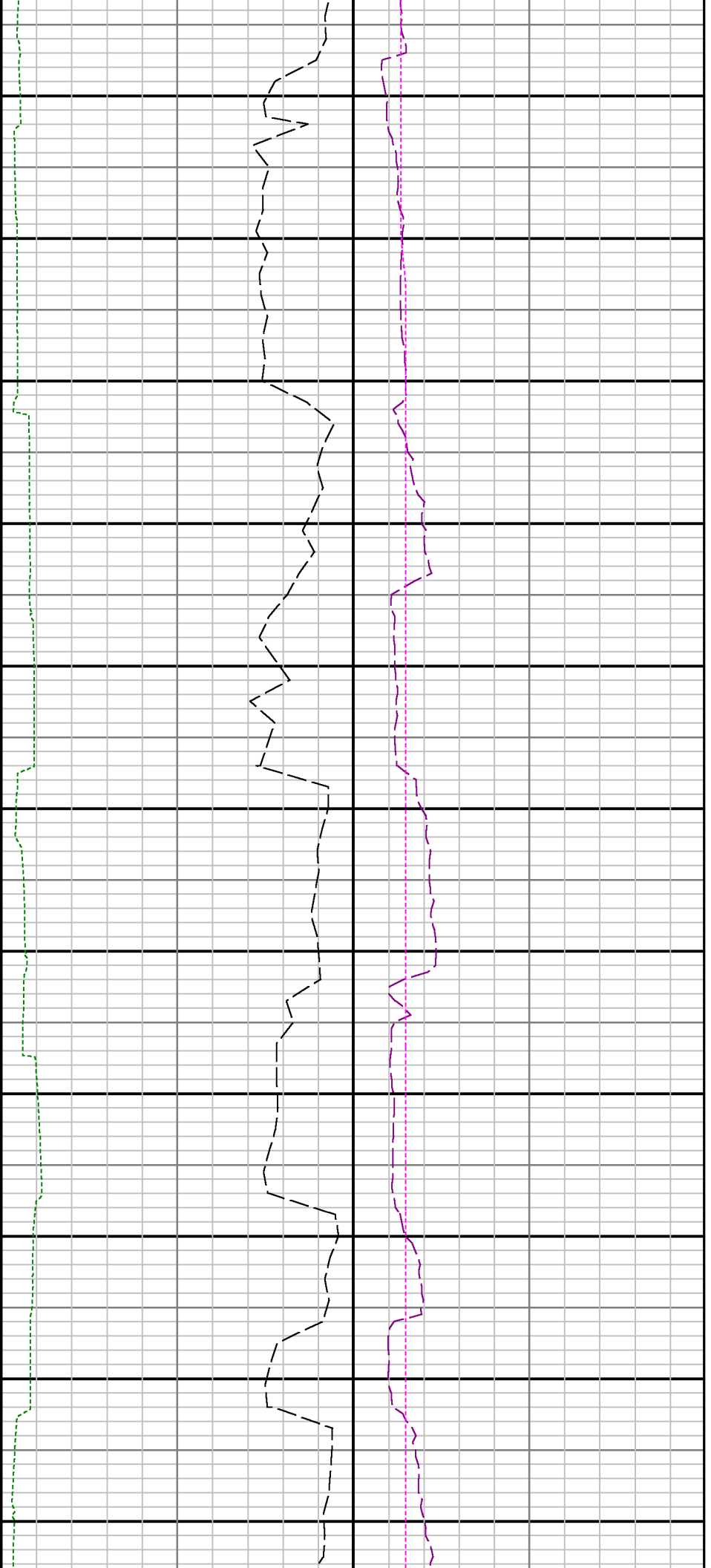


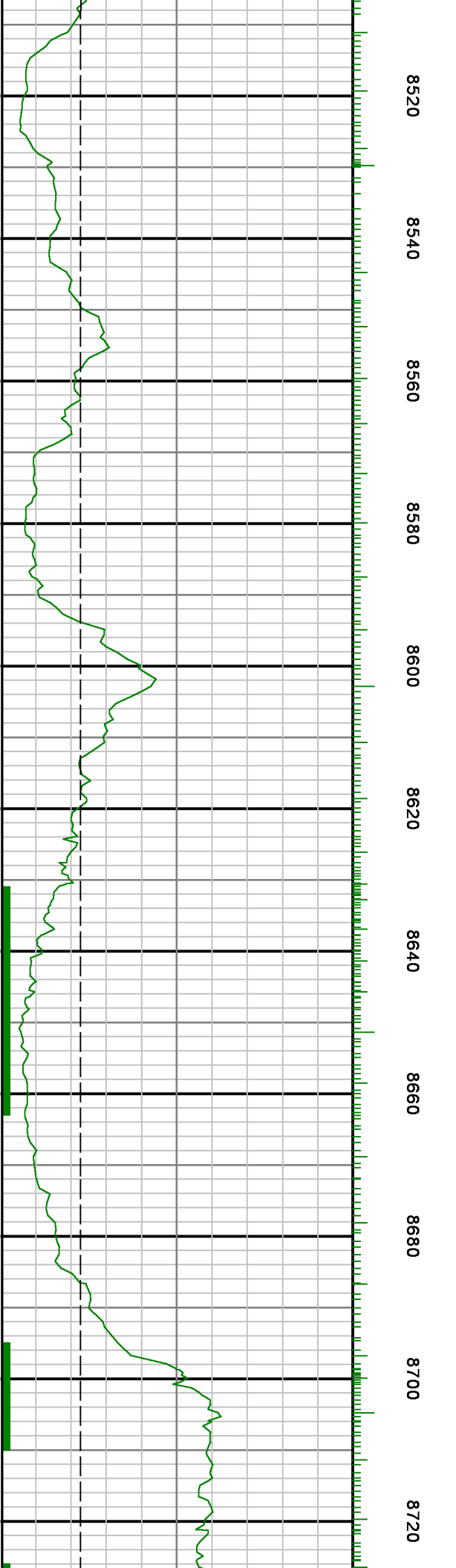


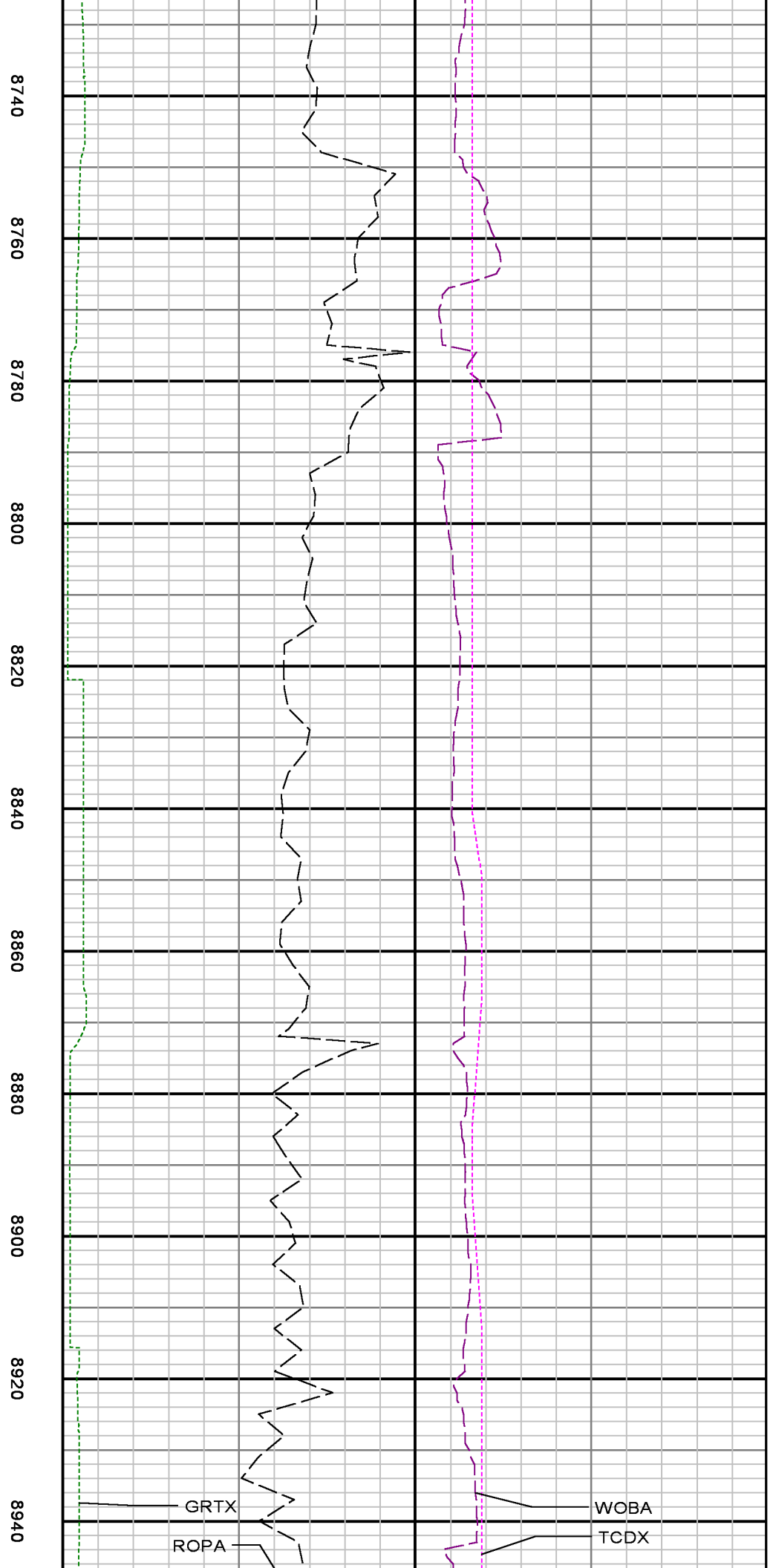
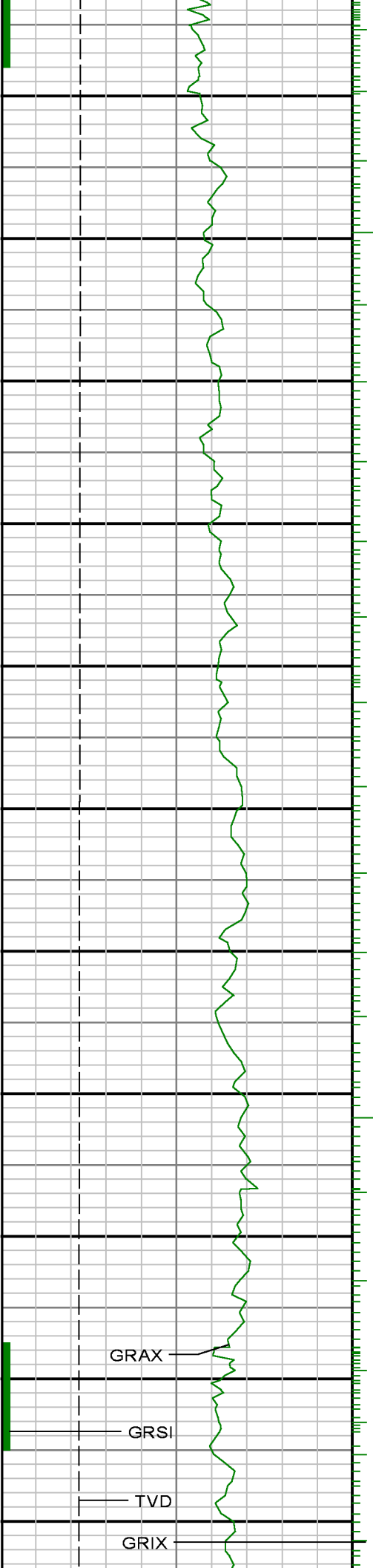


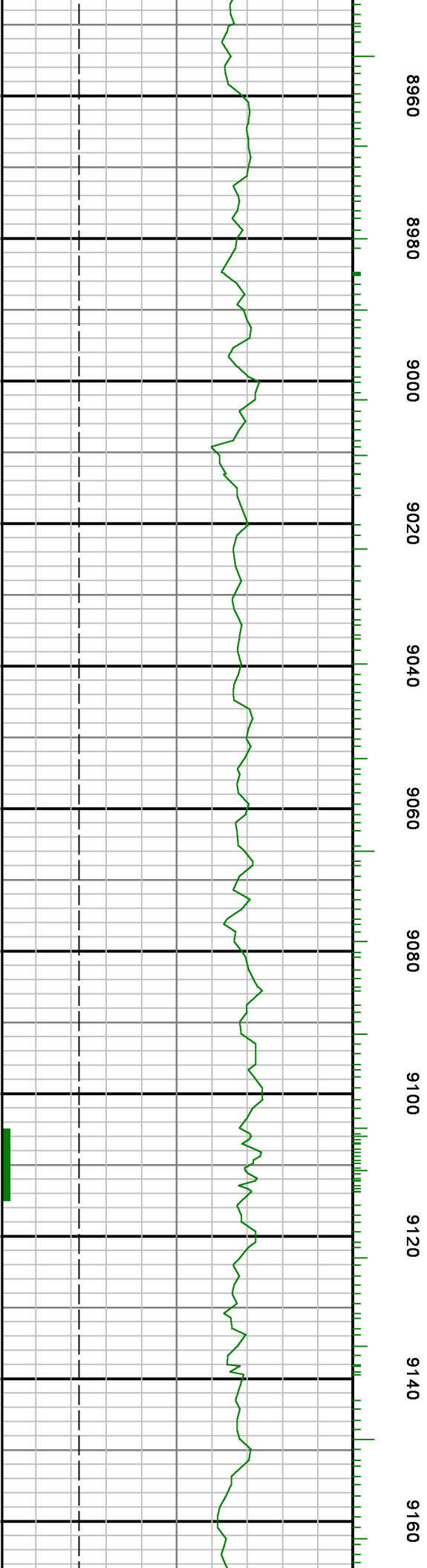


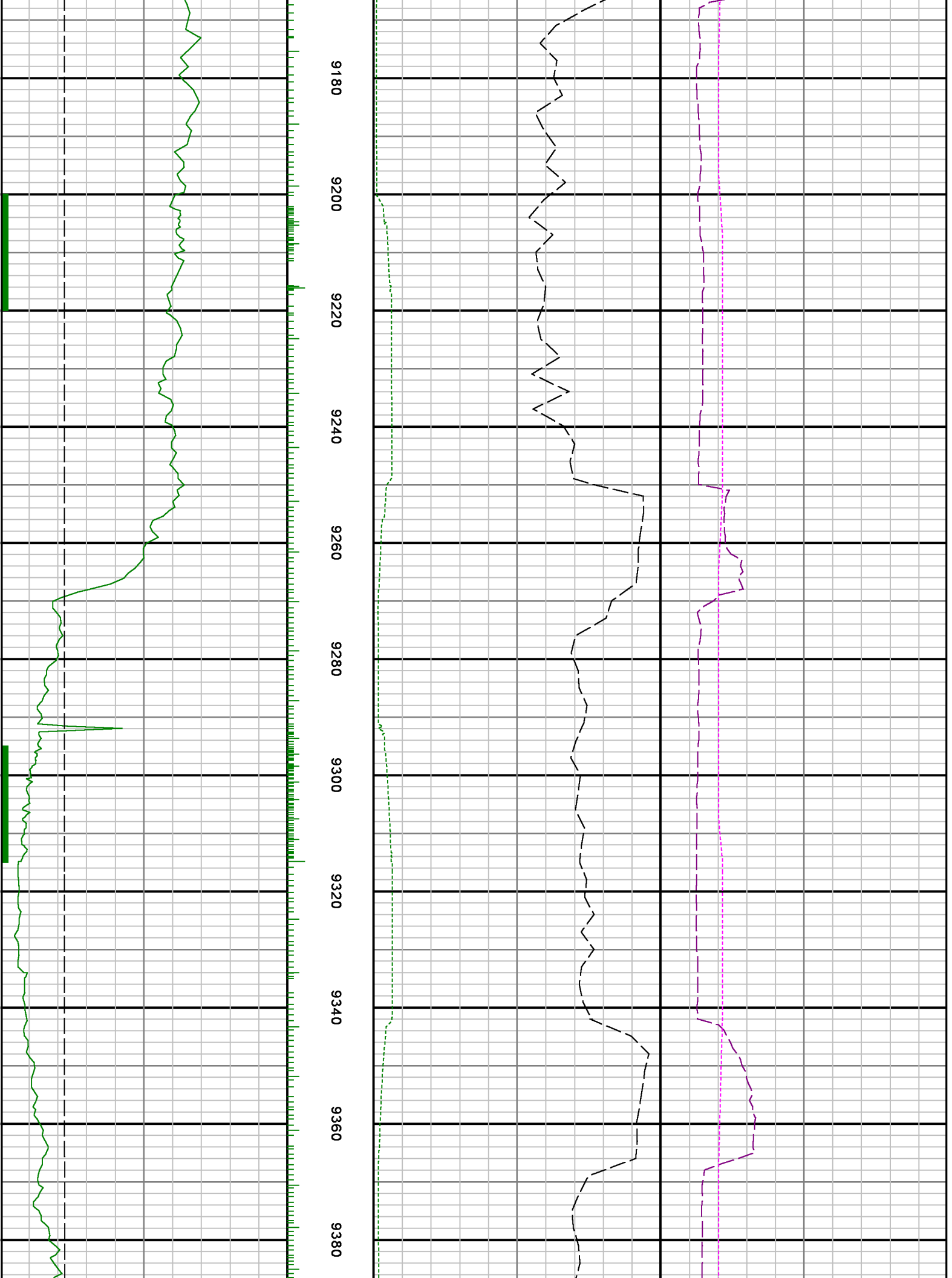


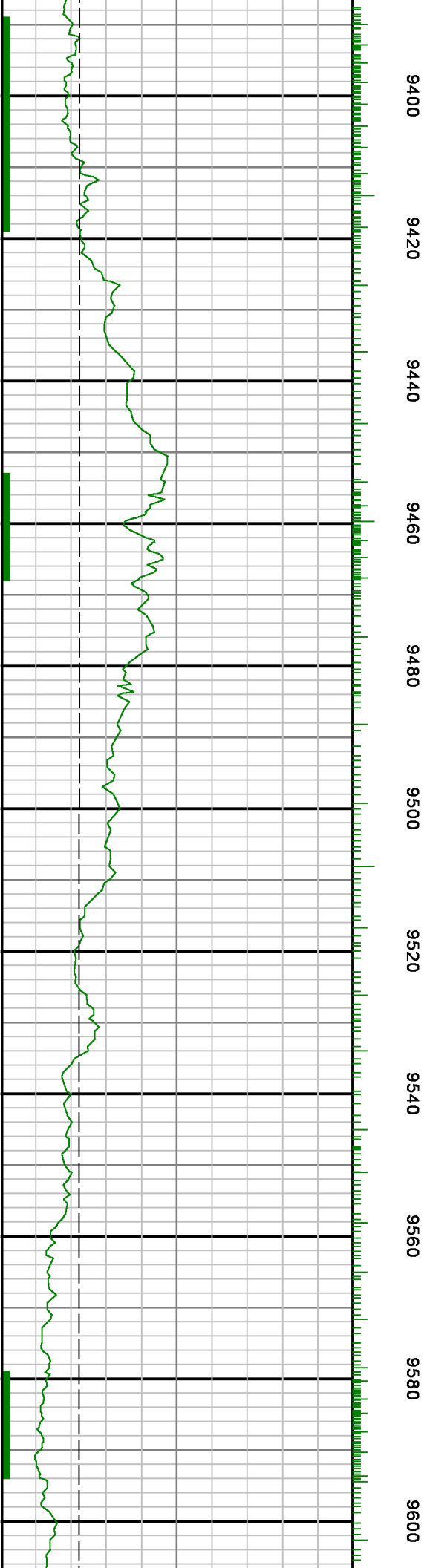


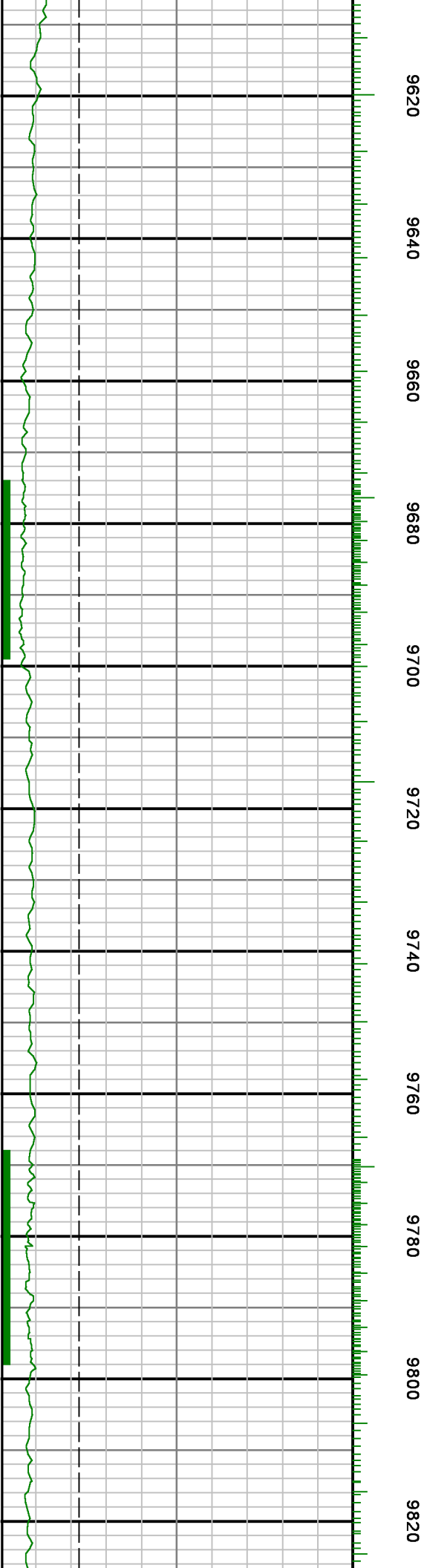
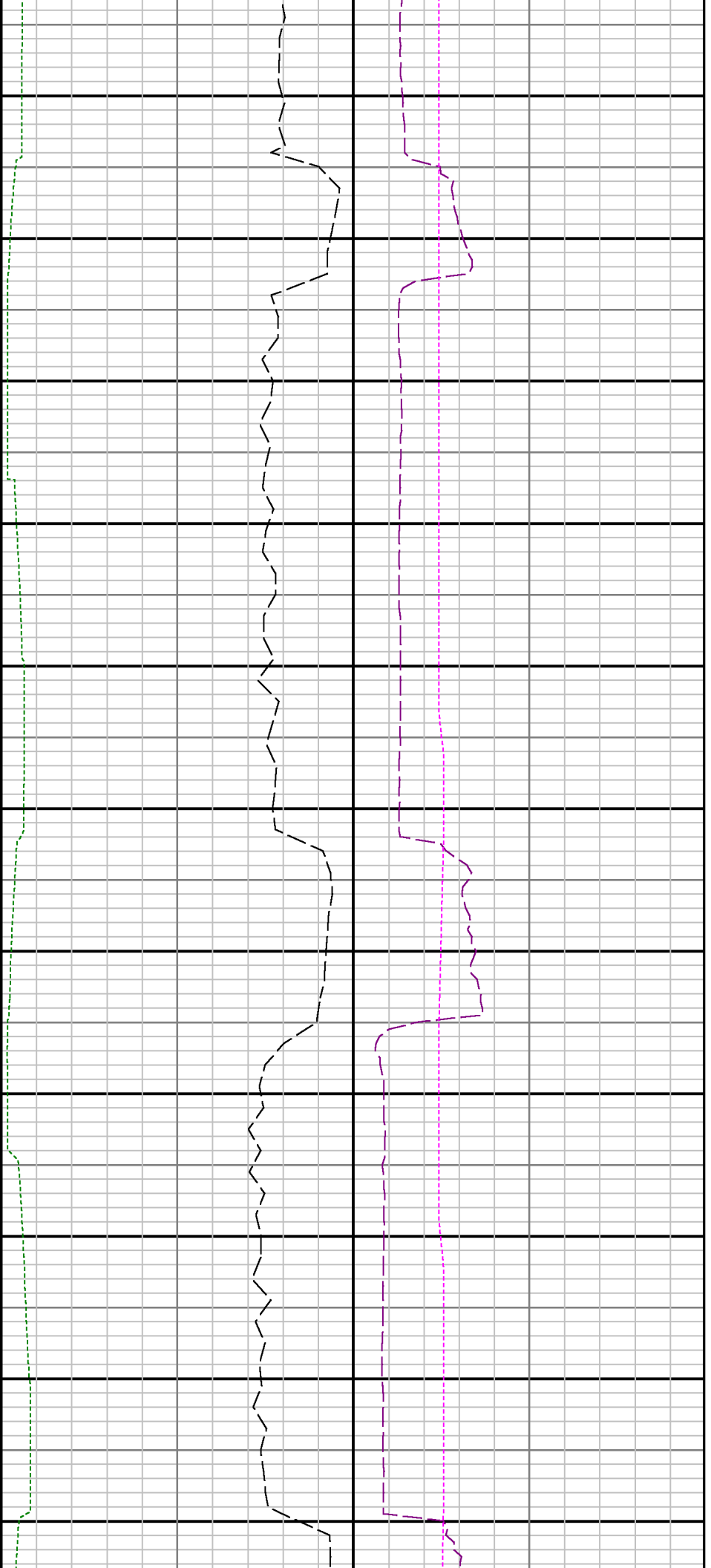


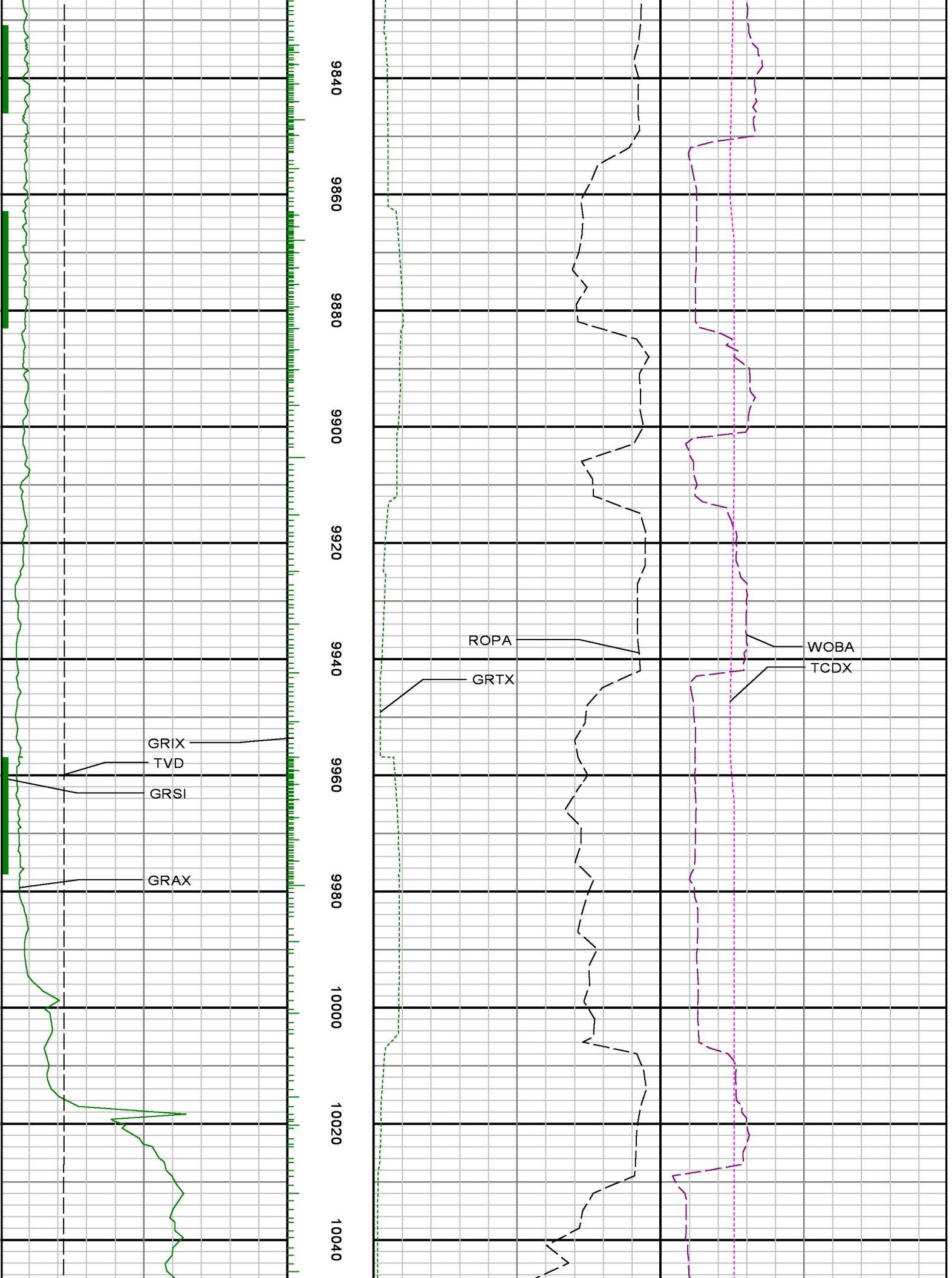






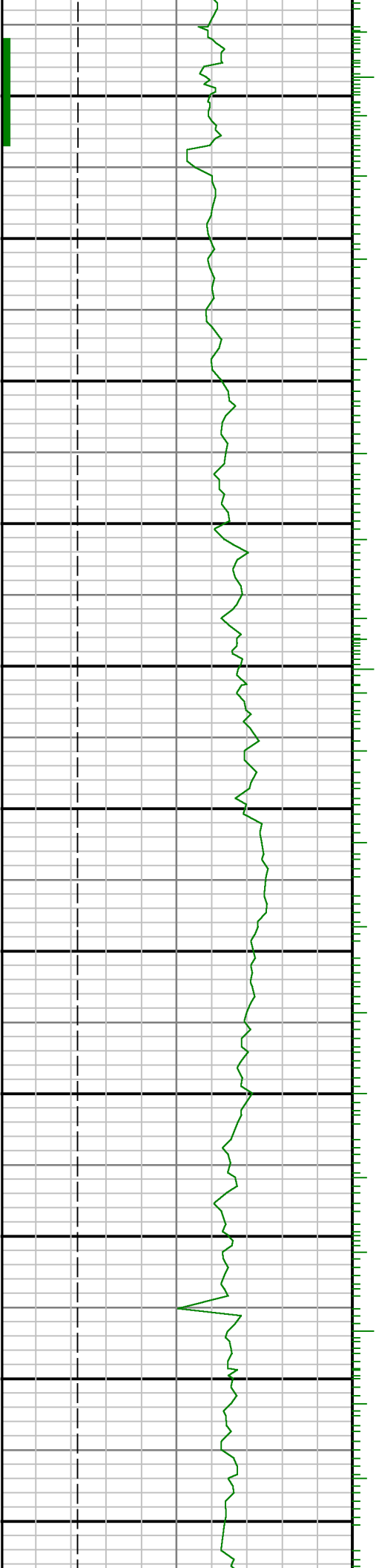


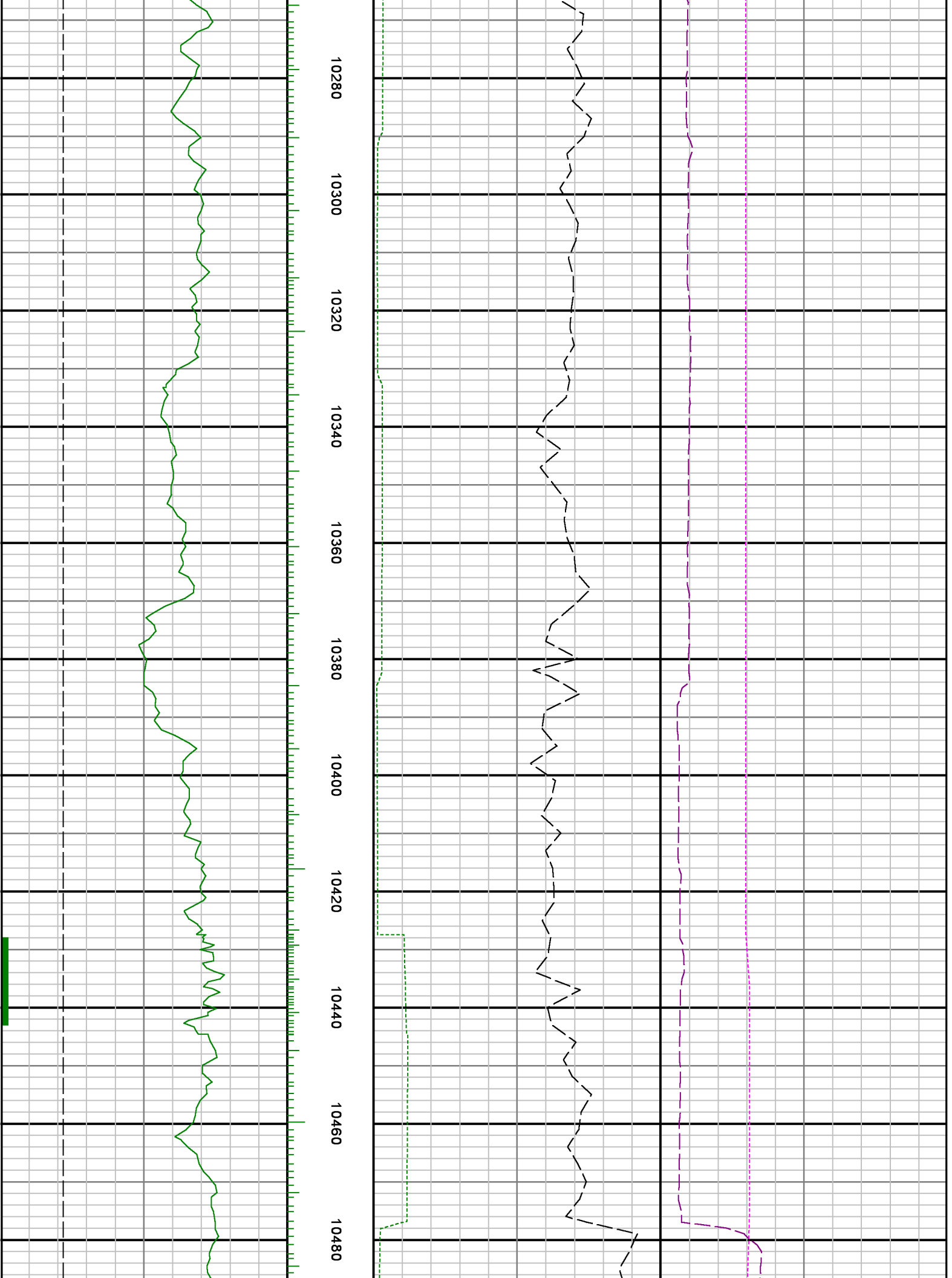


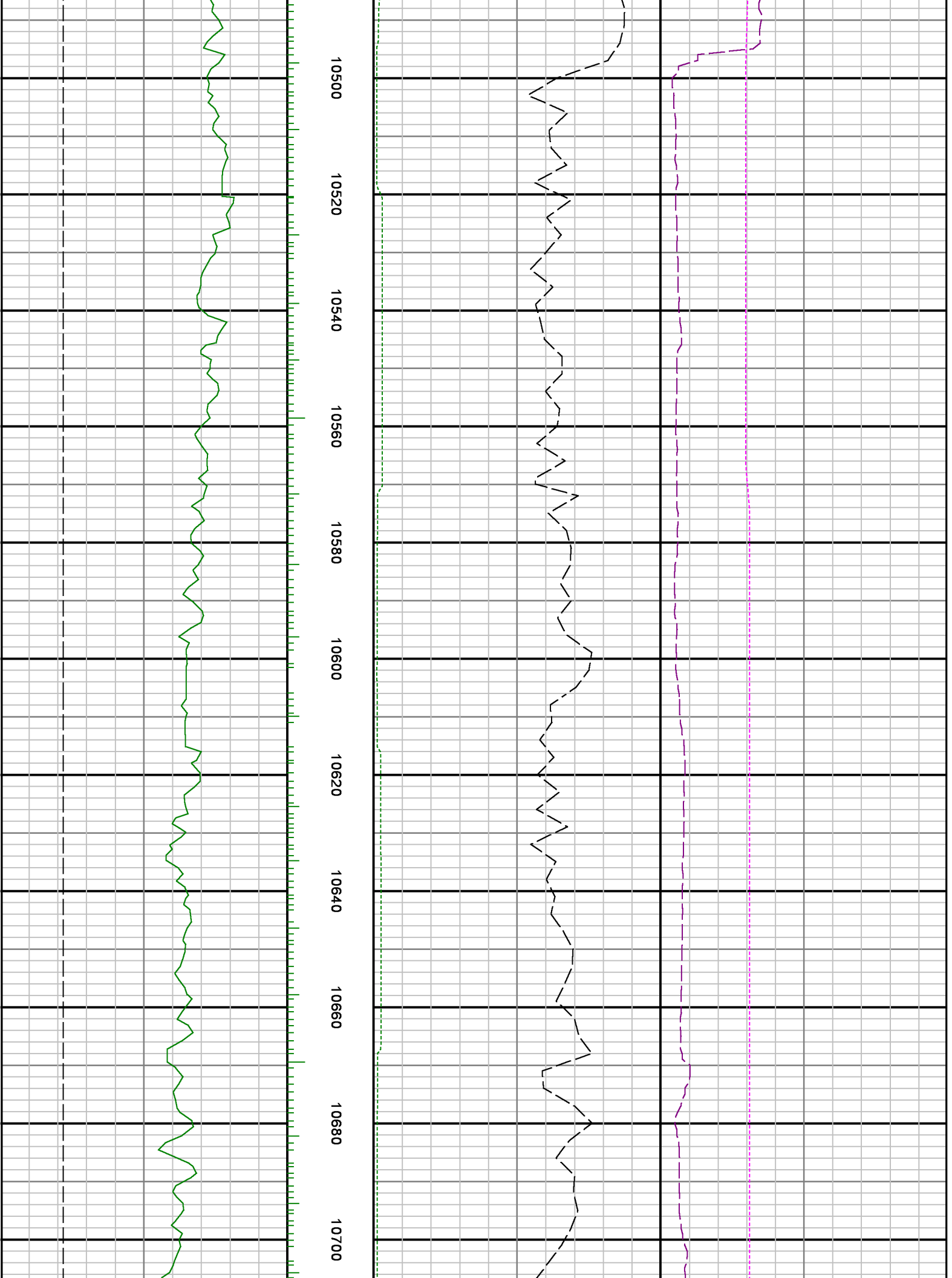


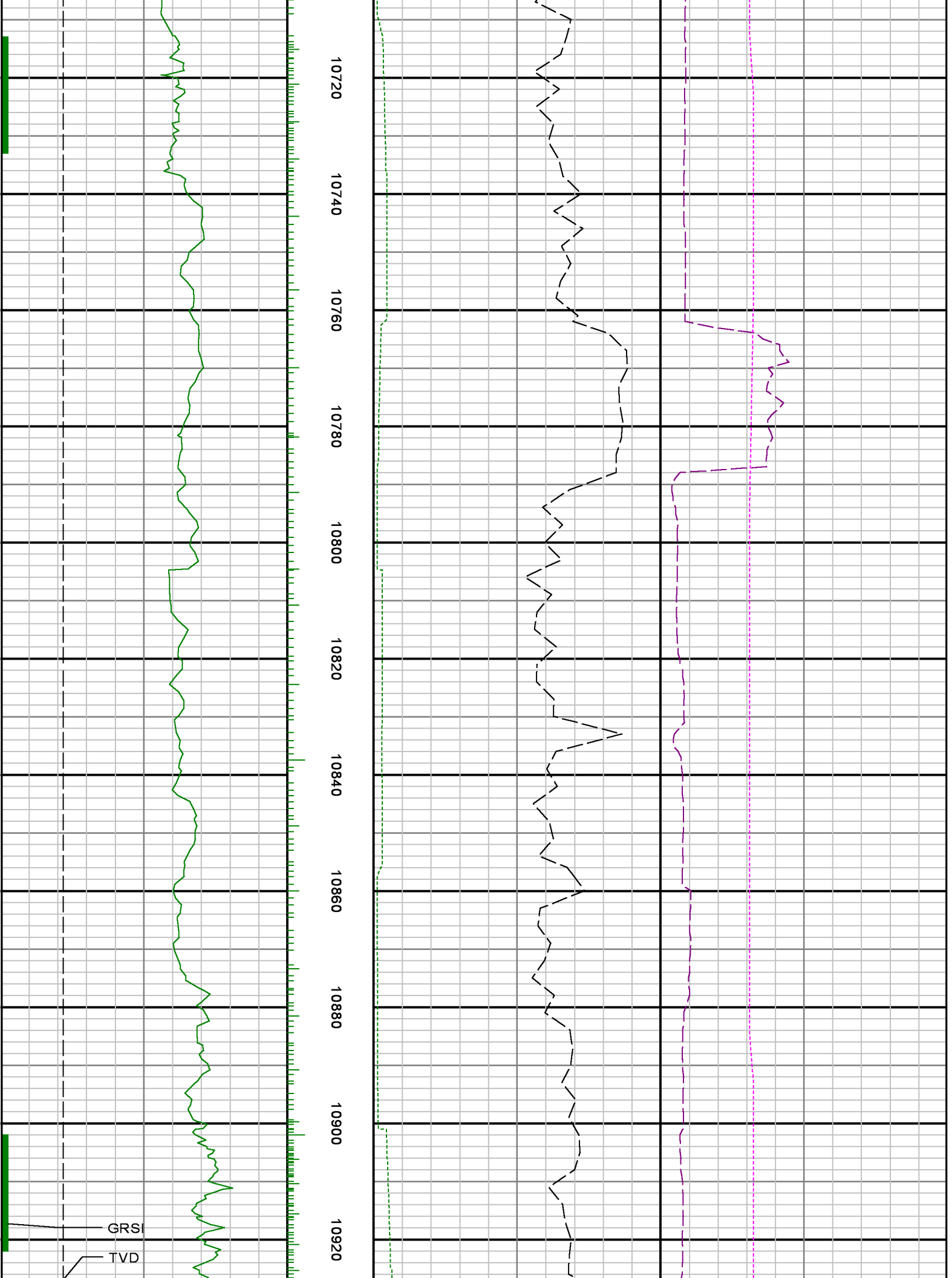


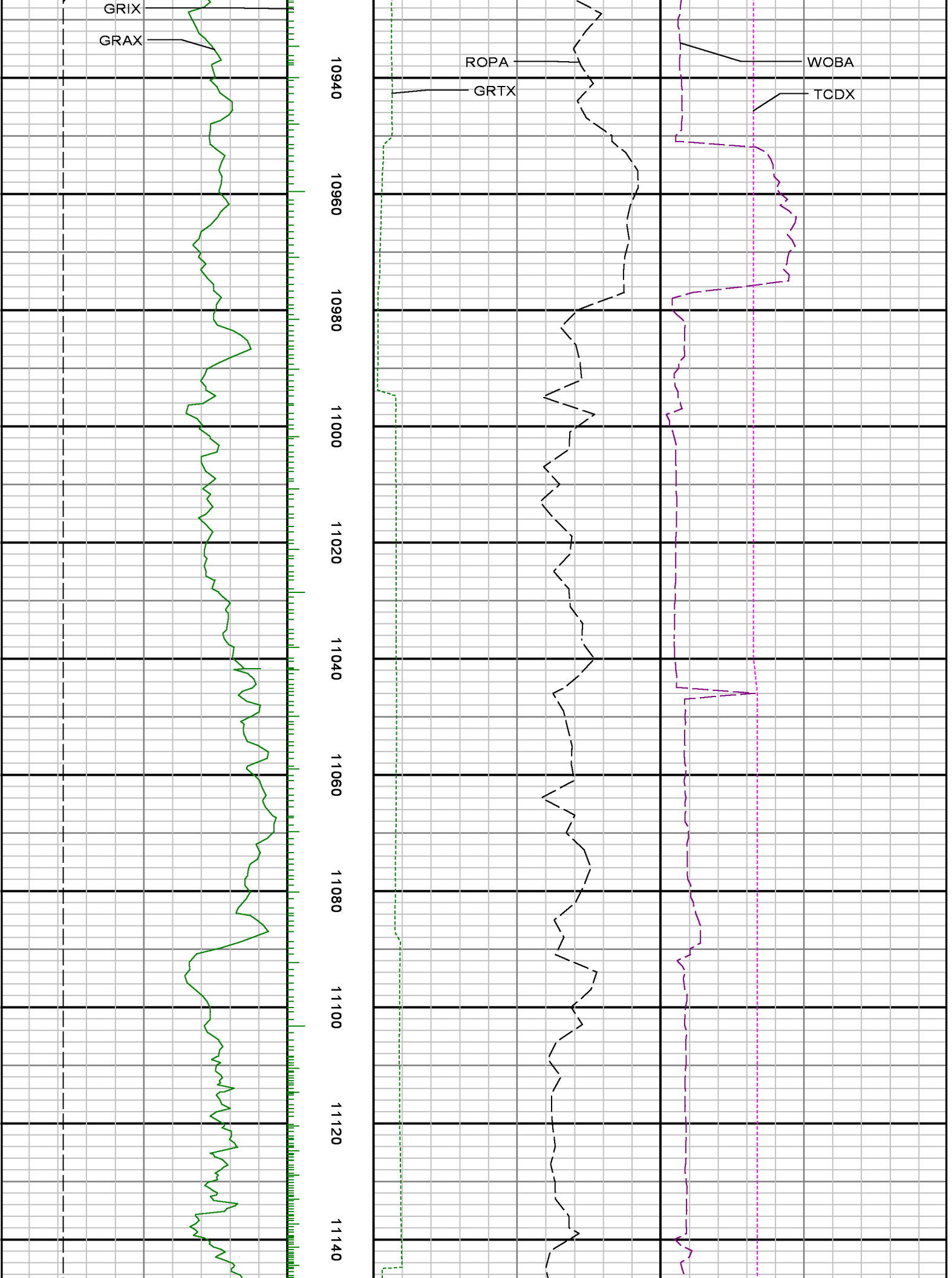
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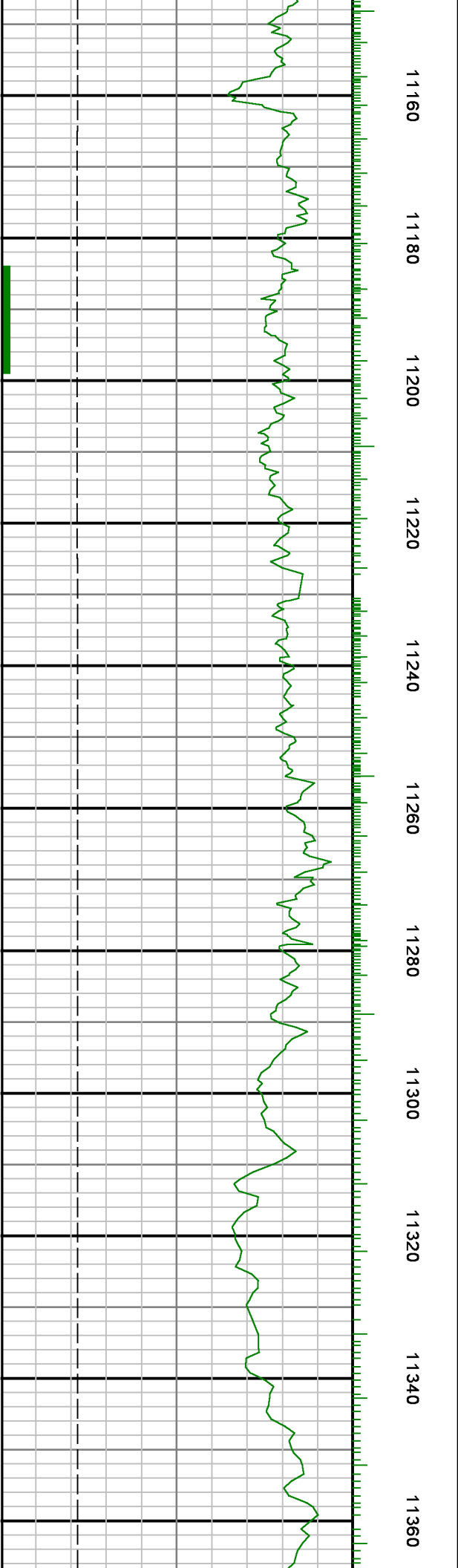


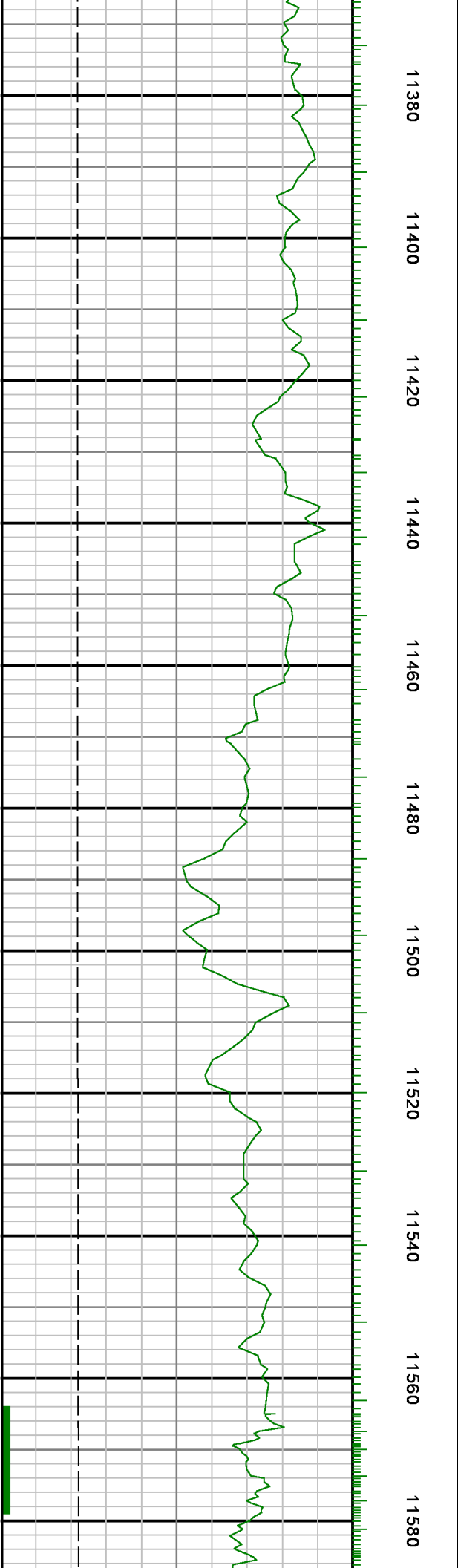


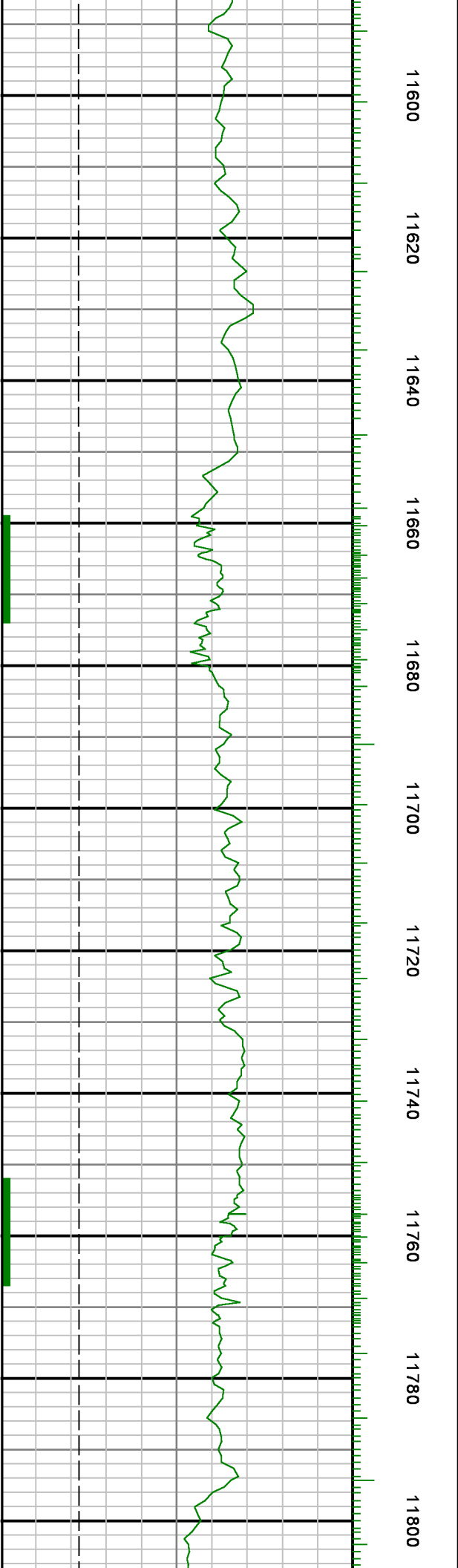
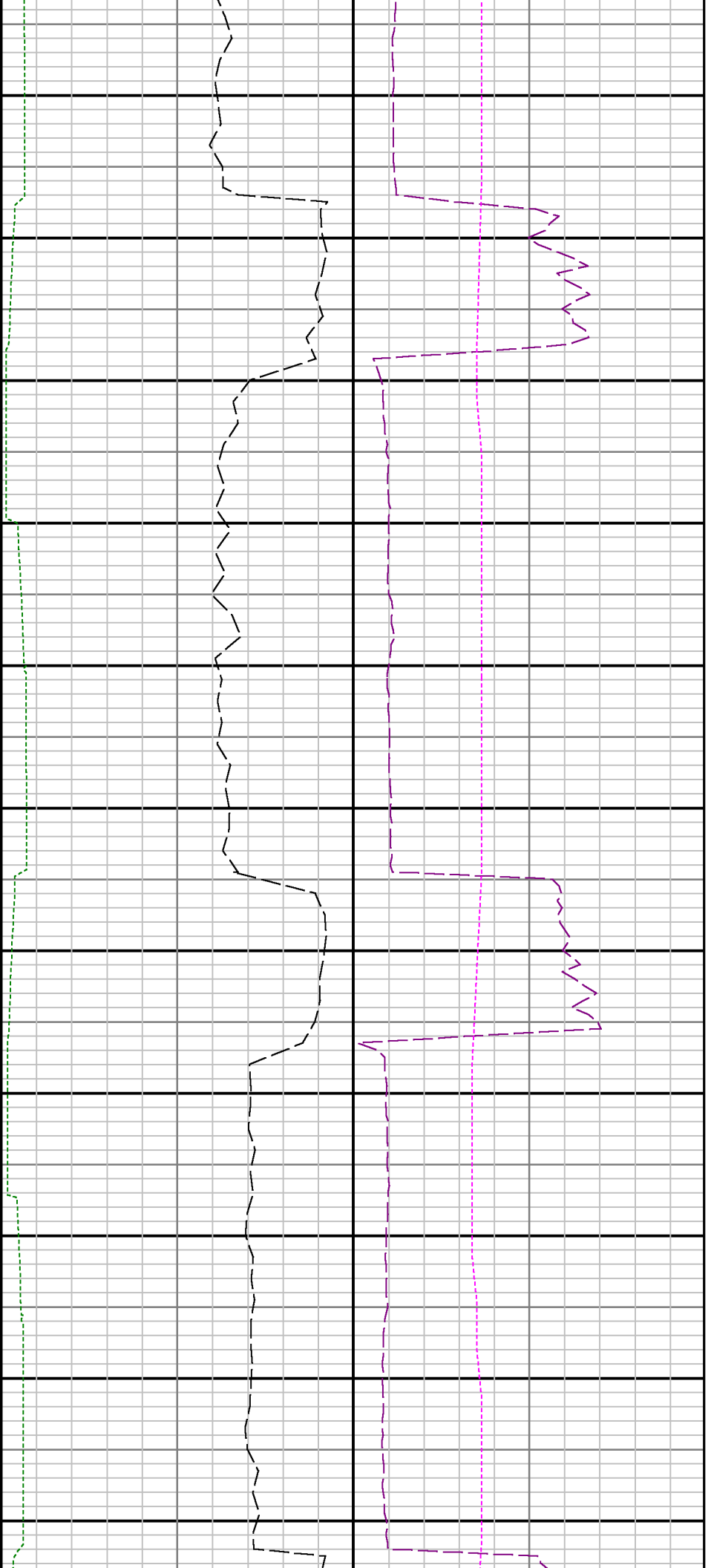


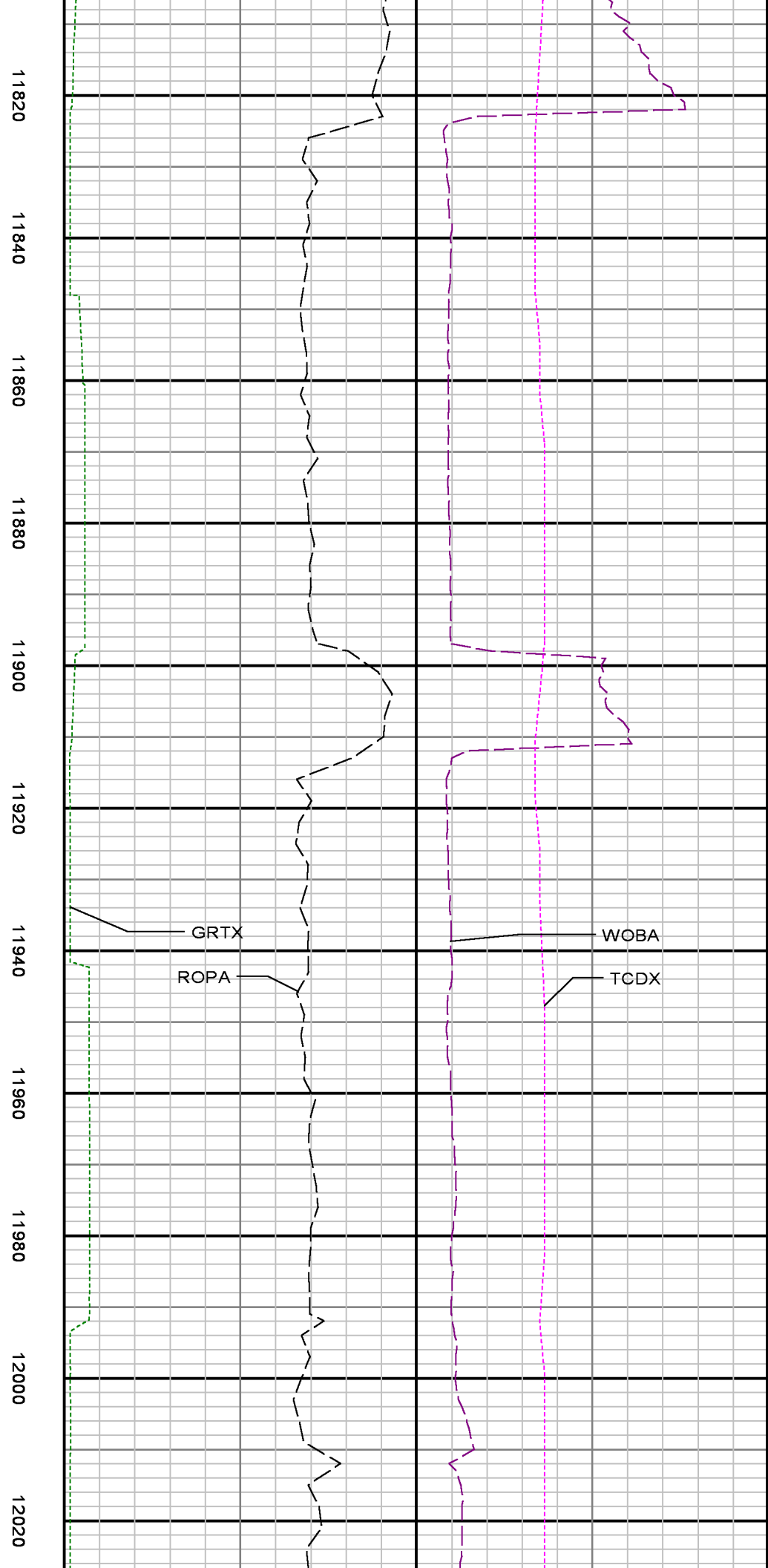
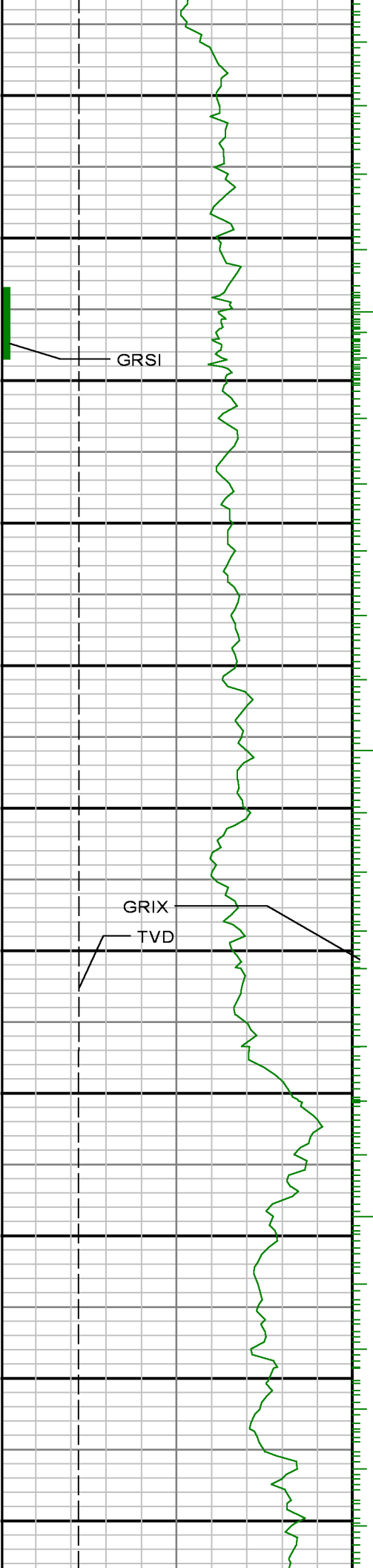


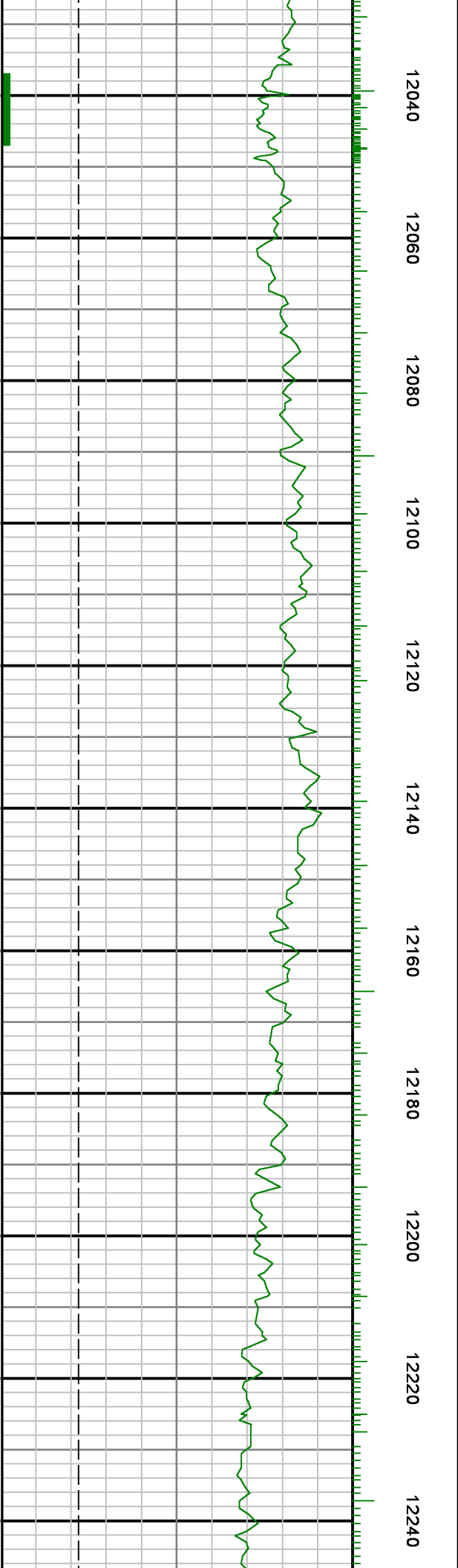


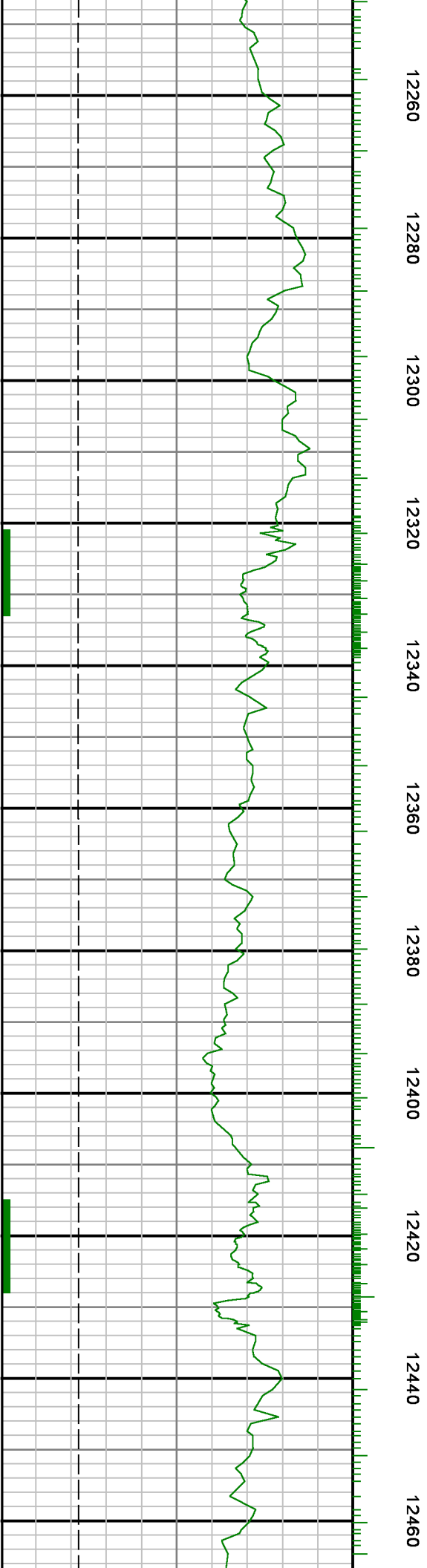
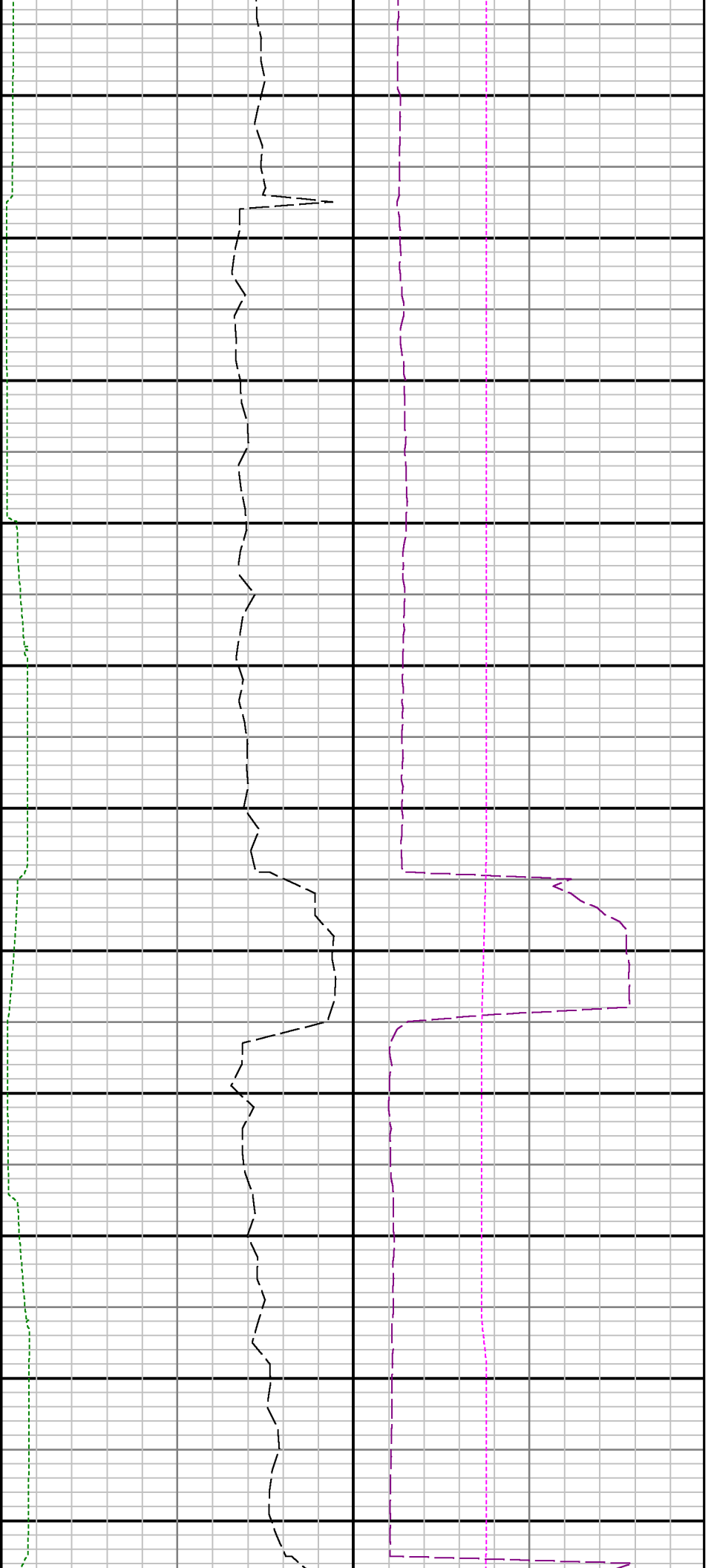


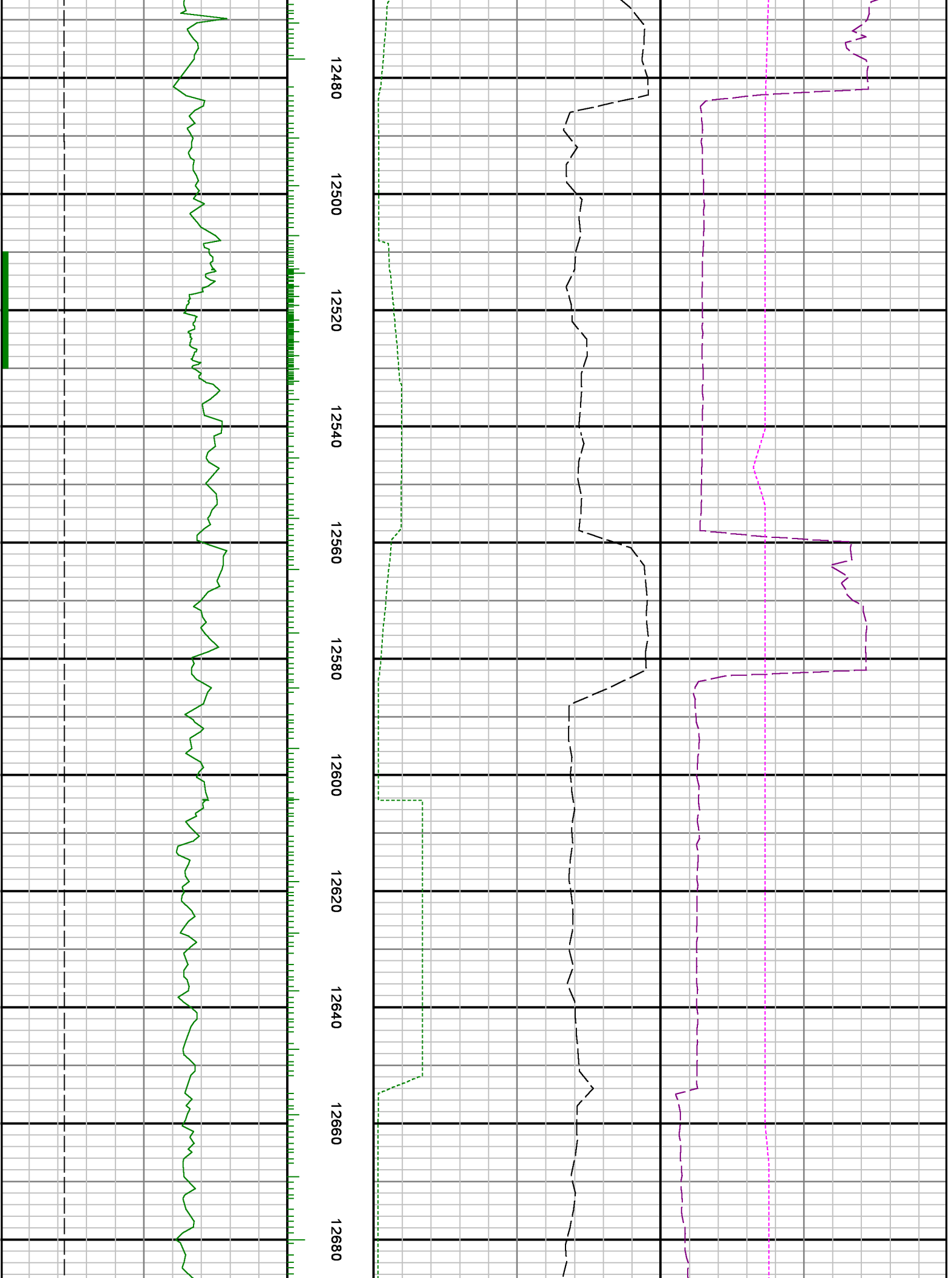


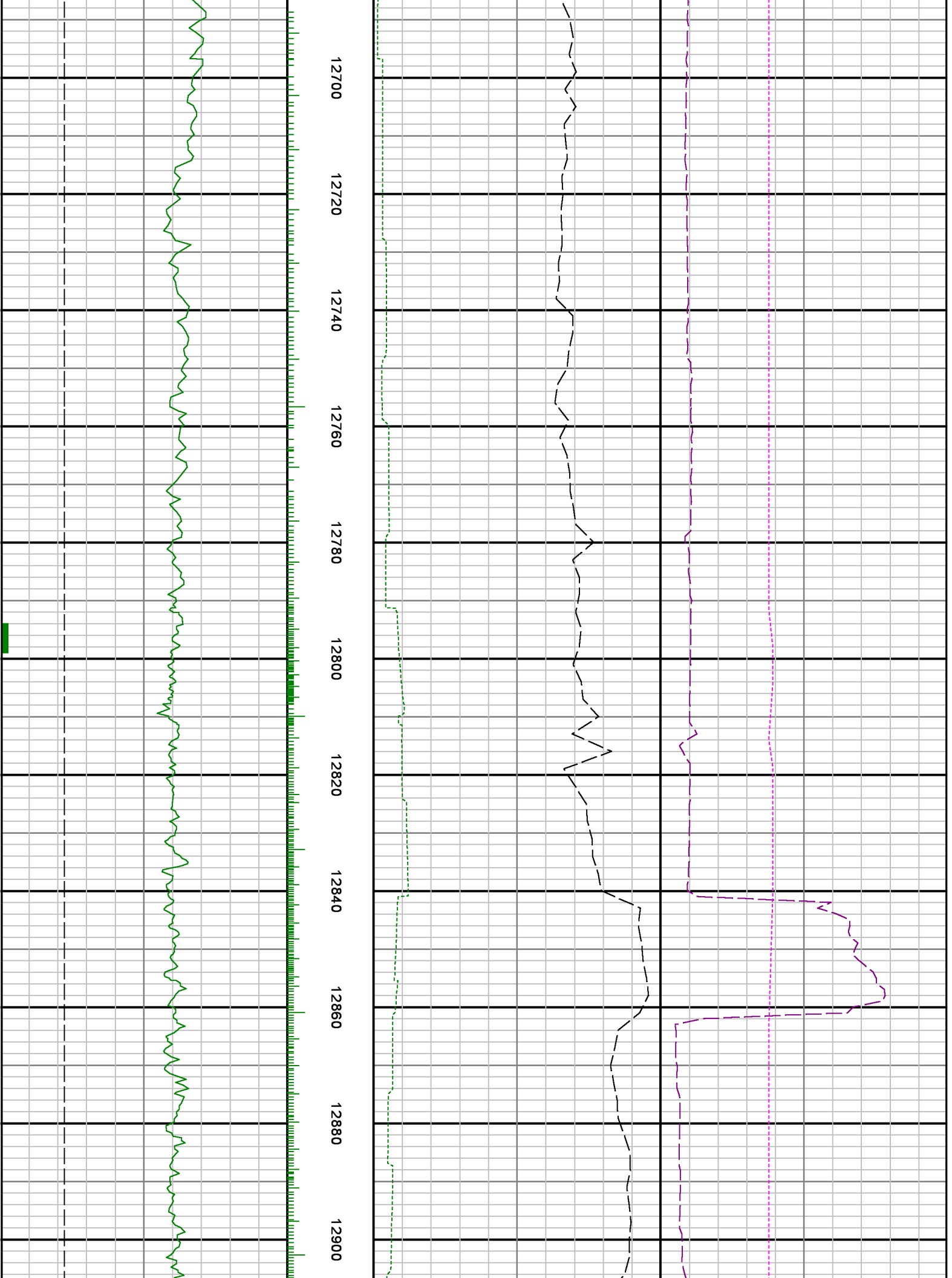


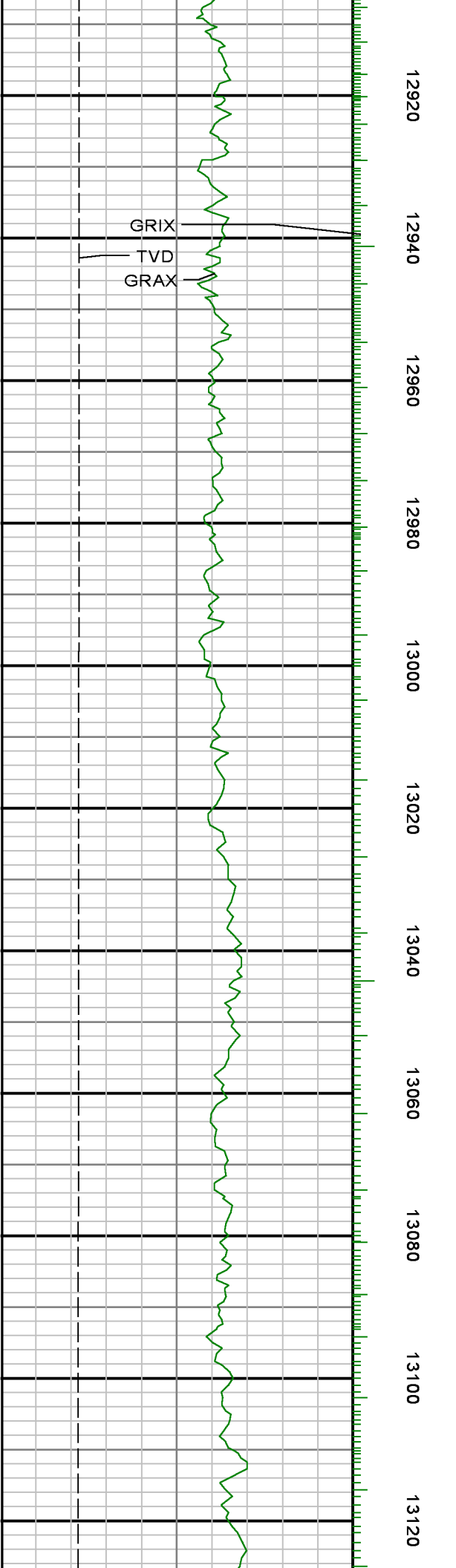


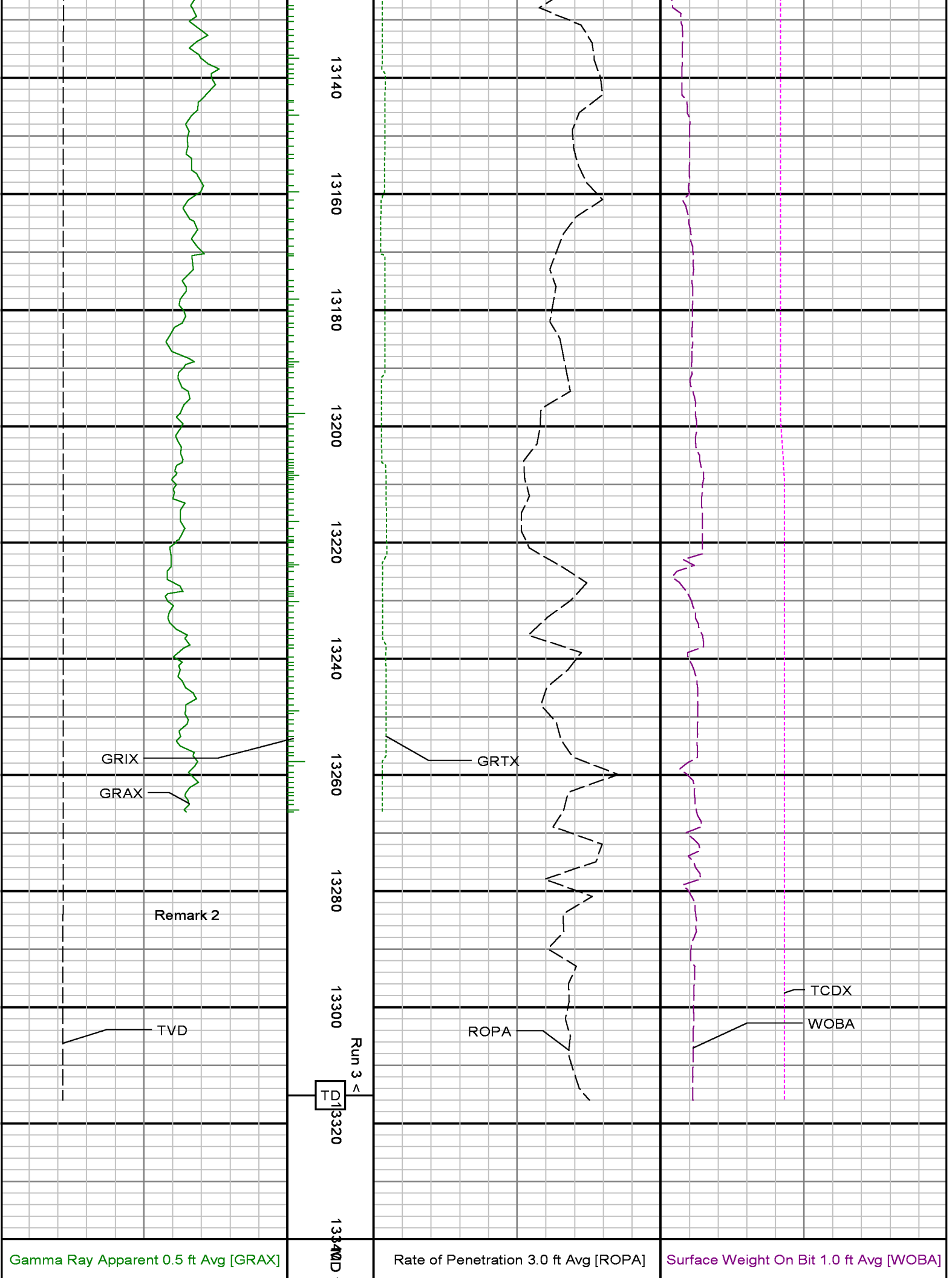












0150	feet 1:240	10000	0	0100
API		ft/hr		klbf
True Vertical Depth [TVD]		Gamma Ray Time Since Drilled [GRTX]		Downhole Temperature [TCDX]
80006000		0600		150350
ft		min		degF