



Natural Formation Evaluation
Multiple Propagation Resistivity
Gamma Ray

Memory and Realtime Log

Scale:

1:240
MEASURED DEPTH

Company: Anadarko

Well: Niles 29N-28HZ

Field: WELD COUNTY

County: Weld County State: Colorado

Status:

Final Print

Surface Location:
Latitude: 40° 11' 21.322" N
Longitude: 104° 47' 24.270" W

Other Services:

Directional
VSS

API Number: 051233549400

SEC: 28 TWP: 3N RNC: 66W

Permanent Datum (P.D.): Mean Sea Level Elevation: 0.00 ft.

Kelly Bushing 13.00 ft. Above P.D.

Elevations:
4947.00 ft.
N/A

Log Measured From: Depth Reference:

Driller's Depth

KB:
DF:
GL: 4934.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 6605.0 ft. Date From: 07 Jan 2013 Date To: 18 Jan 2013 Dip Angle: 66.97° Azi Reference North: True

Bottom: 11746.0 ft. Date To: 18 Jan 2013 Total Mag to Reference

Spud Date: 06 Jan 2013 Field Strength: 52739.0 nT North Correction: 8.62°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	956.0 ft.	9.625 in.	36.00 lb/ft	Surface	940.0 ft.
8.750 in.	956.0 ft.	7592.0 ft.	7.000 in.	26.00 lb/ft	Surface	7574.0 ft.
6.125 in.	7592.0 ft.	11746.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	Surface	11746.0 ft.	8.750 in.	Intermediate	0.3° / 181.1°	87.0° / 0.6°
			6.125 in.	Lateral	87.0° / 0.6°	89.1° / 359.6°
					/	/
					/	/
					/	/
					/	/
					/	/

Acquisition System

Software Version

Other

Advantage	2.20U3	Rig:	Ensign 145	/	Anadarko
PATS	6.4.1.34	Job No:	5171785		
		District / Unit:	Rocky Mountain	/	

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
2	2	3	8.750	PDC	2.000	Steerable	6605.0	6854.0	6655.0	6904.0	07 Jan 2013 02:36	10 Jan 2013 07:05	16.1
3	3	4	8.750	PDC	2.000	Steerable	6854.0	7542.0	6904.0	7592.0	10 Jan 2013 08:10	11 Jan 2013 23:40	23.9
4	4	5	6.125	PDC	2.000	Steerable	N/A	N/A	N/A	N/A	13 Jan 2013 03:40	13 Jan 2013 14:50	0
5	5	6	6.125	PDC	2.000	Steerable	7592.0	10692.0	7592.0	10735.0	13 Jan 2013 15:32	16 Jan 2013 12:30	42.6
6	6	7	6.125	PDC	2.000	Steerable	10692.0	11697.0	10735.0	11746.0	16 Jan 2013 13:25	18 Jan 2013 22:45	23.2

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite

York Lewis	07 Jan 2013	10 Jan 2013	Ian McCarrell	07 Jan 2013	18 Jan 2013	Steven Cano	10 Jan 2013	18 Jan 2013
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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+ (%)
10 Jan 2013	07:30	3	7100.0	Water Based	9.8	13	9.0	N/A	0 / 93	Pit	1400	N/A
14 Jan 2013	07:30	5	7610.0	Water Based	9.3	13	9.0	N/A	0 / 95	Pit	1100	N/A
14 Jan 2013	18:00	5	8950.0	Water Based	9.1	13	9.0	N/A	0 / 95	Pit	1100	N/A

Mnemonics

Curve	Description	Units
CACLM	Conductivity, Attenuation – 400kHz – LS – Compensated Borehole Corrected	mmoh/m
GRAM	Gamma Ray – Apparent, 0.5 ft. Avg.	API
GRAX	Gamma Ray – Apparent, 0.5 ft. Avg.	API
GRIM	Gamma Ray Point Indicator	Unitless
GRIX	Gamma Ray Point Indicator	Unitless
RACHM	Resistivity, Attenuation – 2MHz – LS – Compensated Borehole Corrected	ohm.m
RACLM	Resistivity, Attenuation – 400kHz – LS – Compensated Borehole Corrected	ohm.m
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
RPCHM	Resistivity, Phase Difference – 2 MHz – LS – Compensated Borehole Corrected	ohm.m
RPCLM	Resistivity, Phase Difference – 400kHz – LS – Compensated Borehole Corrected	ohm.m
RPSIHM	Resistivity sliding indicator	unitless
RPTHM	Resistivity time since drilled	Min

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft)	Max O.D. (in.)	Min I.D. (in.)
2	DIR	12235767	Directional	52.69	6.750	2.880
2	SRIG	11858322	Gamma	49.32	6.750	2.880
3	DIR	12235767	Directional	52.67	6.750	2.880
3	SRIG	11858322	Gamma	49.30	6.750	2.880
4	CS	10160235	-	75.43	5.010	1.750
4	BCPM	12000484	Telemetry	64.32	5.000	1.750
4	STAB	11853040	-	61.04	5.625	1.750
4	OTK	12517559	Directional	56.47	5.000	2.569
4	OTK	12517559	Resistivity	50.50	5.000	2.569
4	OTK	12517559	Gamma	43.31	5.000	2.569
4	OTK	12517559	Pressure	45.94	5.000	2.569
4	CS	12202693	-	38.08	5.020	1.750
5	CS	10160235	-	74.63	5.010	1.750
5	BCPM	11705962	Telemetry	63.62	5.000	1.750
5	STAB	11883702	-	60.64	5.625	1.750

5	OTK	11874621	Directional	56.16	4.843	2.569
5	OTK	11874621	Resistivity	50.19	5.000	2.569
5	OTK	11874621	Gamma	43.00	4.843	2.569
5	OTK	11874621	Pressure	45.63	4.843	2.569
5	CS	12202693	-	38.03	5.020	1.750
6	CS	10160235	-	75.06	5.010	1.750
6	BCPM	11850784	Telemetry	63.97	5.010	1.750
6	STAB	11864240	-	60.88	5.625	1.750
6	OTK	12150047	Directional	56.36	5.000	1.750
6	OTK	12150047	Resistivity	50.39	5.000	1.750
6	OTK	12150047	Gamma	43.20	5.000	1.750
6	OTK	12150047	Pressure	45.83	5.000	1.750
6	CS	12202693	-	37.98	5.020	1.750

Service and Tool Mnemonics

Mnemonic	Name	Description
BCPM	BCPM	Mud pulse telemetry and downhole tool power module
DIR	Directional	Wellbore directional survey
OTK	OnTrak	Propagation resistivity, propagation conductivity, gamma ray, directional, annular pressure, system memory and VSS
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module
STAB	Stabilizer	Stabilizer assembly
CS	Closure Sub	BHA power ring isolator allowing insertion of inert sub into electrically powered BHA

Comments

<p>1) Baker Hughes INTEQ run 1 utilized 6 1/2 inch NaviTrak services (Directional only) behind an 8 3/4 inch bit and steerable assembly from 938 to 6655 feet MD (937 to 6591 feet TVD).</p> <p>2) Baker Hughes INTEQ run 2 and 3 utilized 6 1/2 inch NaviGamma services (Directional, Gamma Ray, and VSS) behind an 8 3/4 inch bit and steerable assembly from 6655 to 7592 feet MD (6591 to 7172 feet TVD).</p> <p>3) Baker Hughes INTEQ run 4–6 utilized 4 3/4 inch OnTrak services (Directional, Gamma Ray, Resistivity, and VSS) behind a 6 1/8 inch bit and steerable assembly from 7592 to 11746 feet MD (7172 to 7185 feet TVD).</p> <p>4) A sliding indicator is shown on the right edge of track 2 as a heavy line. The indicator has depth—shifted to the resitivity sensor offset to correspond with resistivity data acquired while sliding.</p>

Remarks

Number	Measured Depth (ft)	Hole Section (in.)	LWD Run No.	Remark
1	6730	8.750	2	The interval from surface to 6712 feet MD (6645 feet TVD) was not logged since logging services began with the start of drilling with the curve assembly for run 2.
2	7600	6.125	5	The interval from 7542 to 7592 feet MD (7170 to 7172 feet TVD) was logged up to 65 hours after being drilled due to trip out of the hole for casing and cementing operations and picking up the lateral assembly.
3	10735	6.125	6	The interval from 10692 to 10735 feet MD (7098 to 7097 feet TVD) was logged up to 26 hours after being drilled due to trip out of the hole to replace motor, mwd, and bit.
4	11710	6.125	6	The interval from 11697 to 11746 feet MD (7184 to 7185 feet TVD) was not logged due to sensor offset at TD.



Company : Anadarko

Well : Niles 29N-28HZ

Interval : 6595.00 - 11760.00 feet

Created : 16/Jan/2013 4:17:55 PM

Gamma Ray Apparent 0.5 ft Avg [GRAM]

0 150

API

Gamma Ray Apparent 0.5 ft Avg [GRAX]

0 150

API

Rate of Penetration 3.0 ft Avg [ROPA]

1000 0

ft/hr

MD feet 1:240

Res PD LS 2MHz Corr [RPOCHM]

0.2 200

ohm.m

Res PD LS 400kHz Corr [RPCLM]

0.2 200

ohm.m

Res AT LS 2MHz Corr [RACHM]

0.2 200

ohm.m

Res AT LS 400kHz Corr [RACLM]

0.2 200

ohm.m

Con PD LS 2MHz Corr [CACLM]

40 0

mmho/m

Time Since Drilled [RPTHM]

0 600

min

Downhole Temperature [TCDM]

100 300

degF

Downhole Temperature [TCDX]

100 300

degF

6600

GRAX

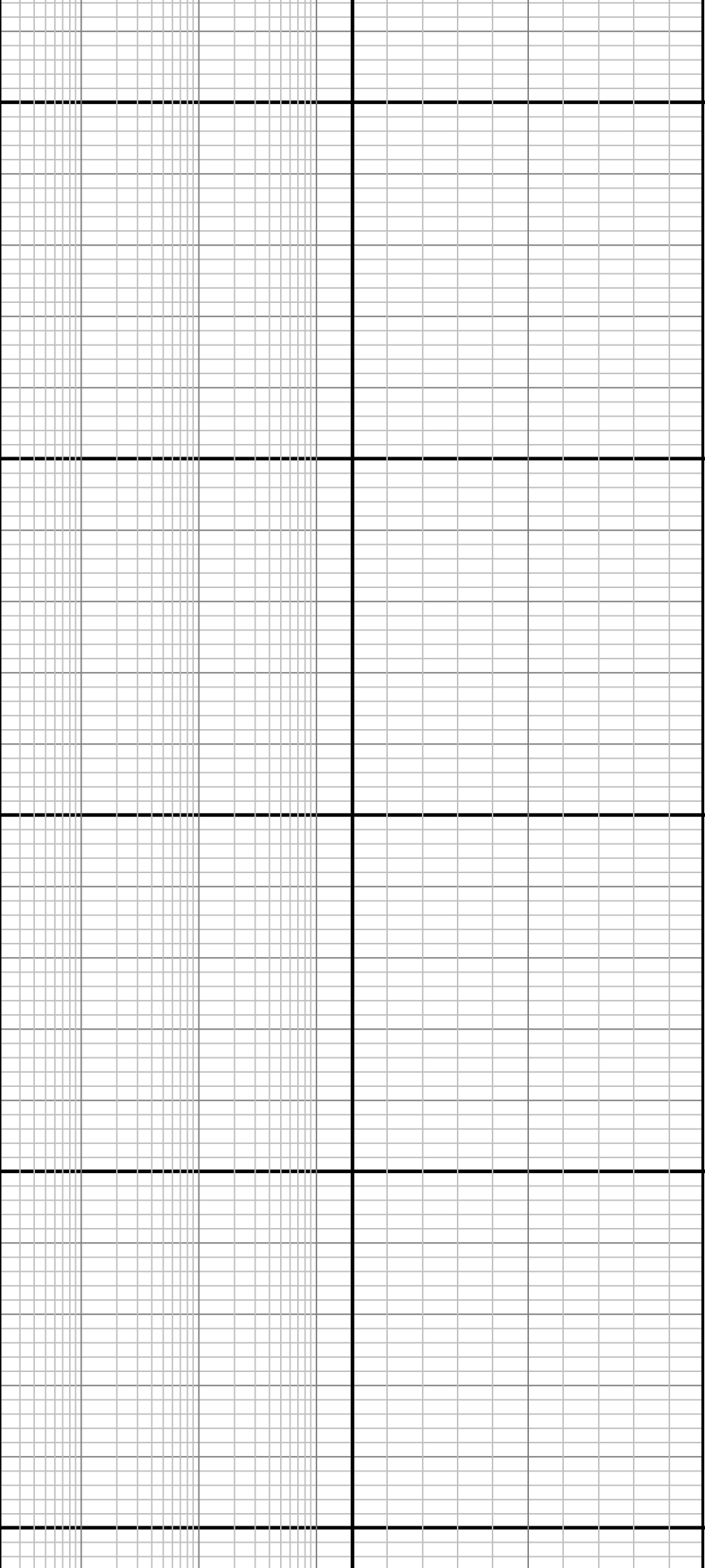
GRIX

See Remark 1

> Run 2

ROPA

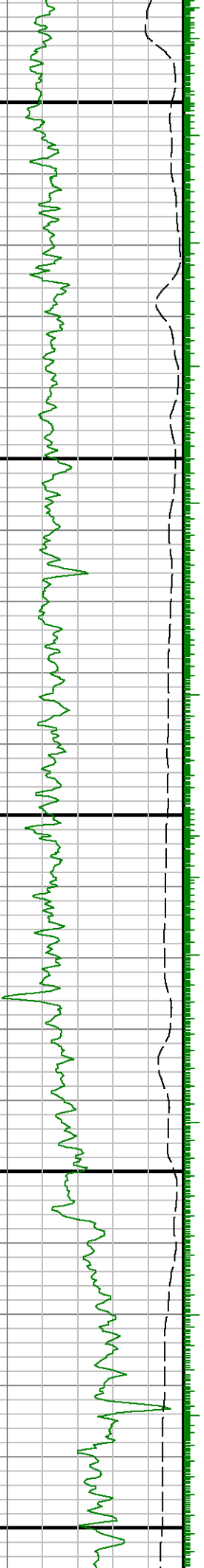
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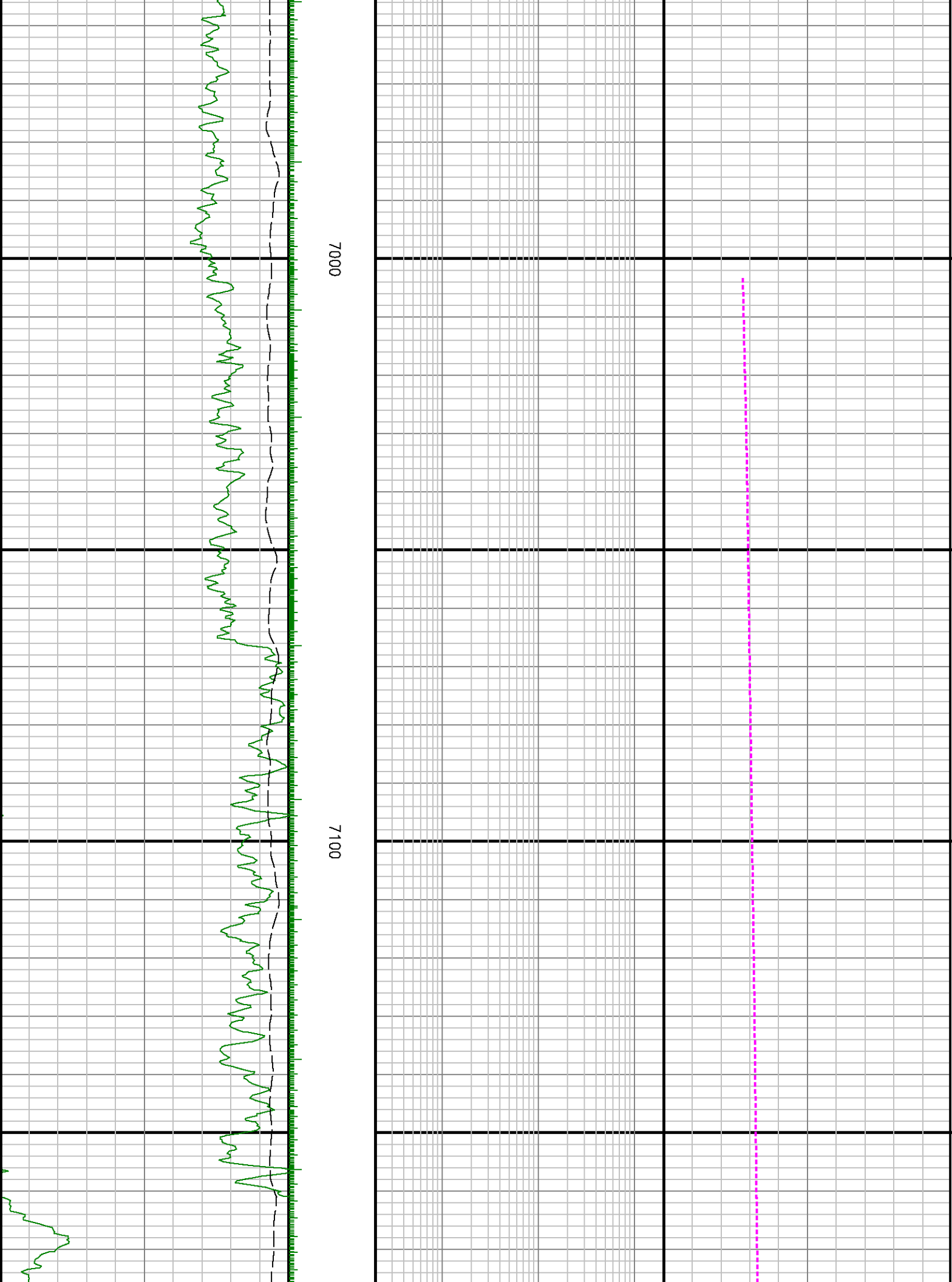


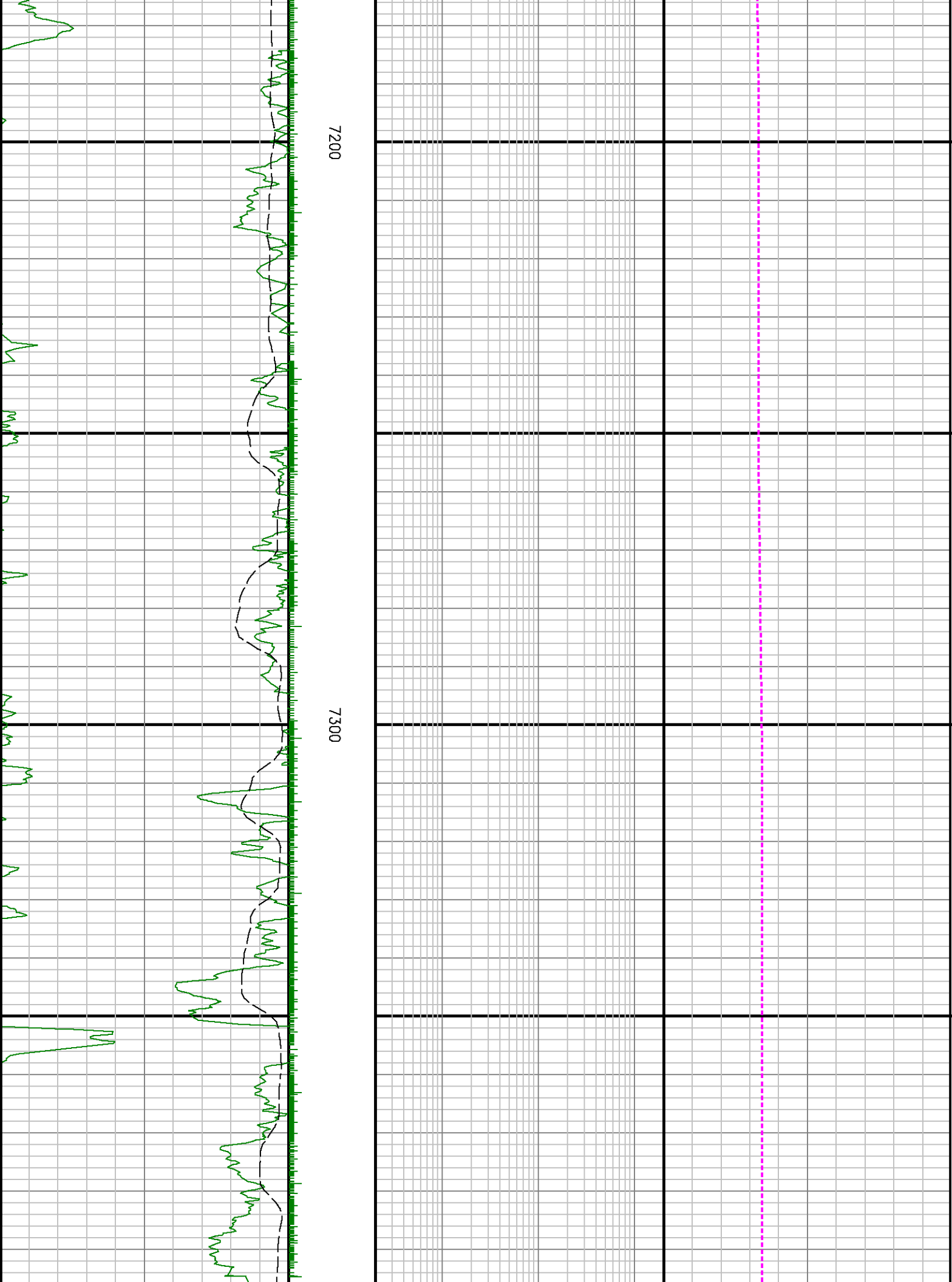
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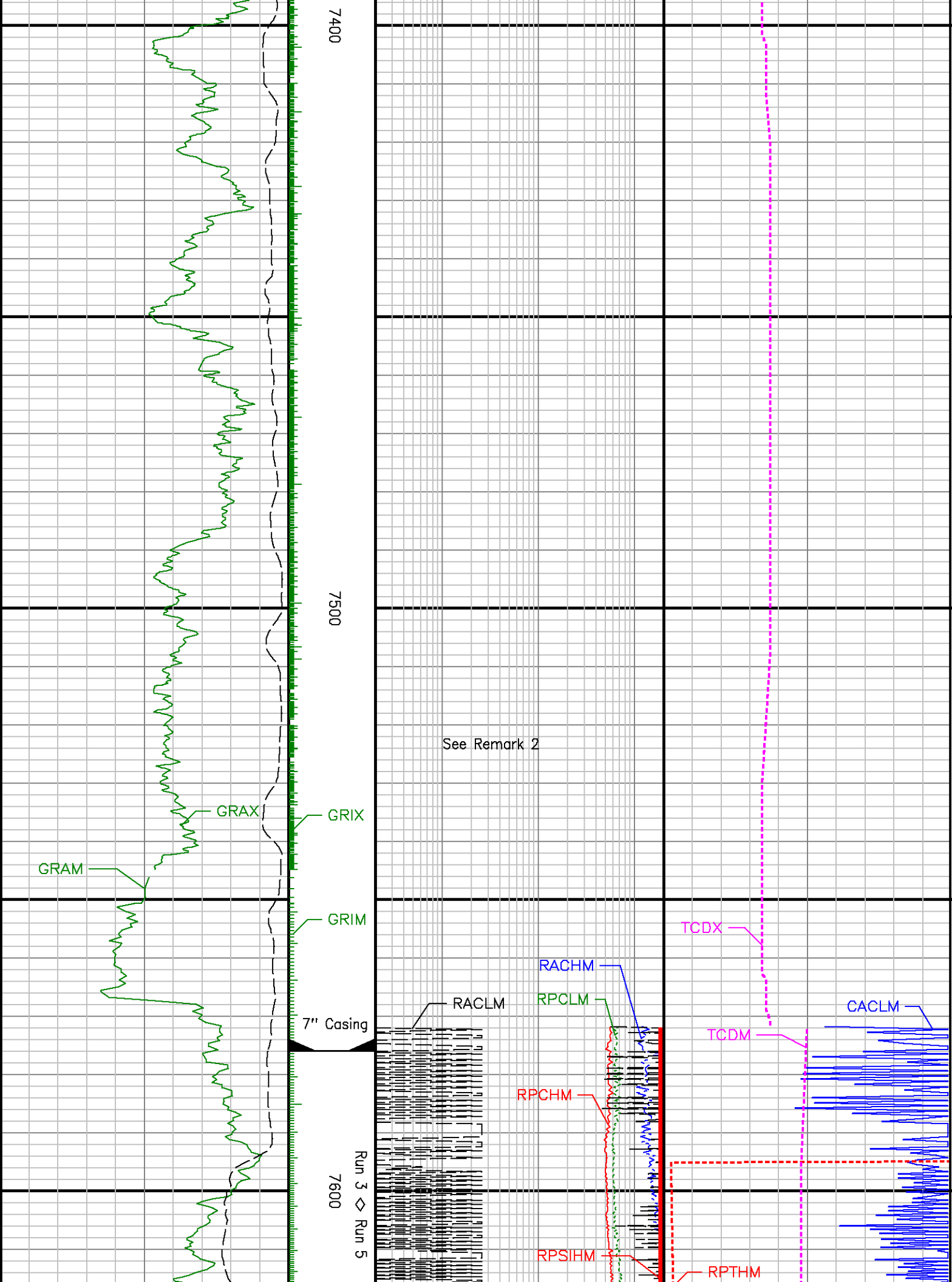
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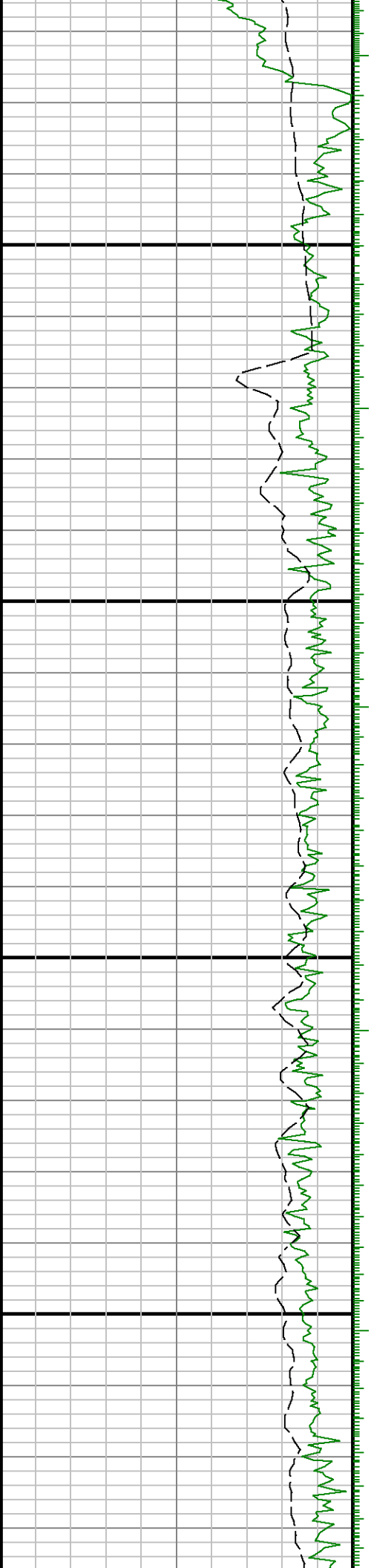
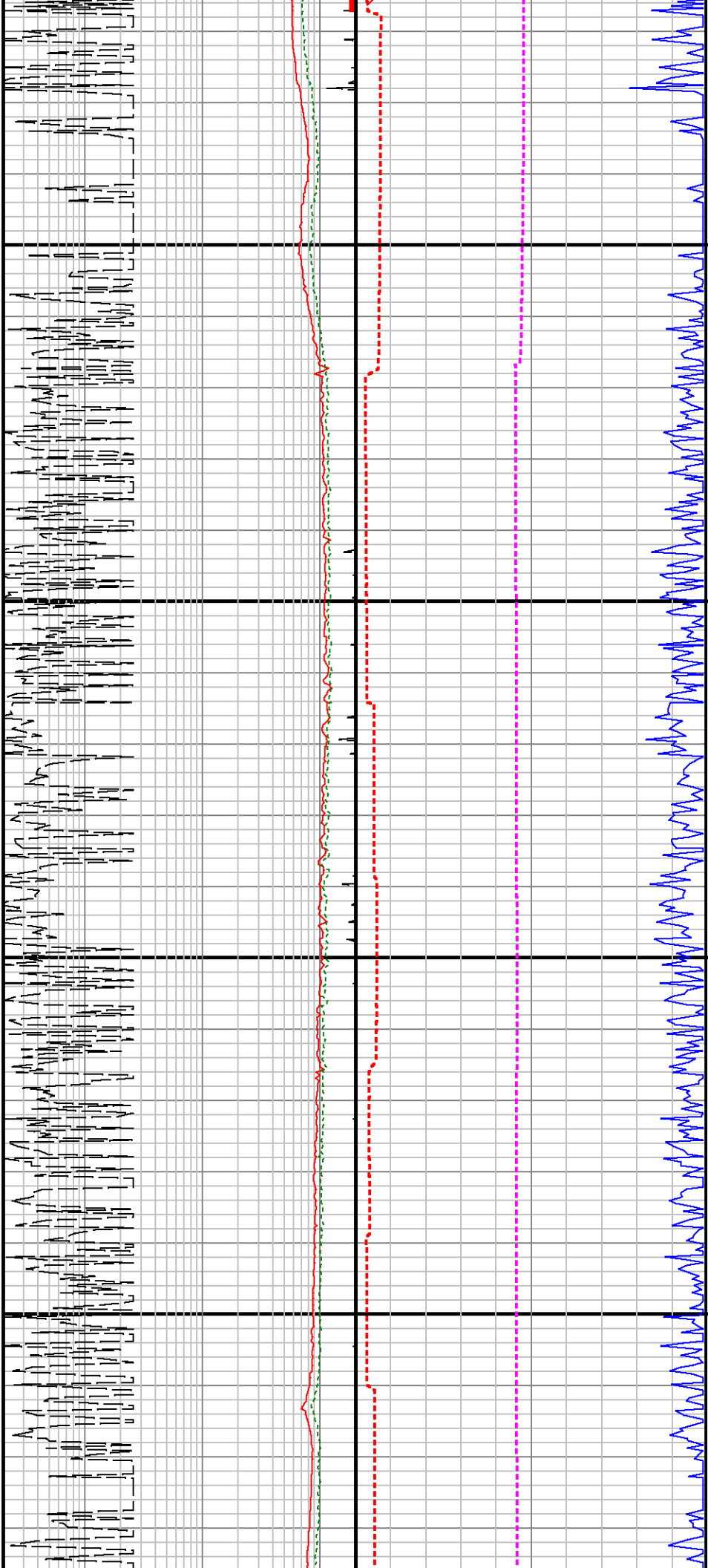
Run 2 ◇ Run 3

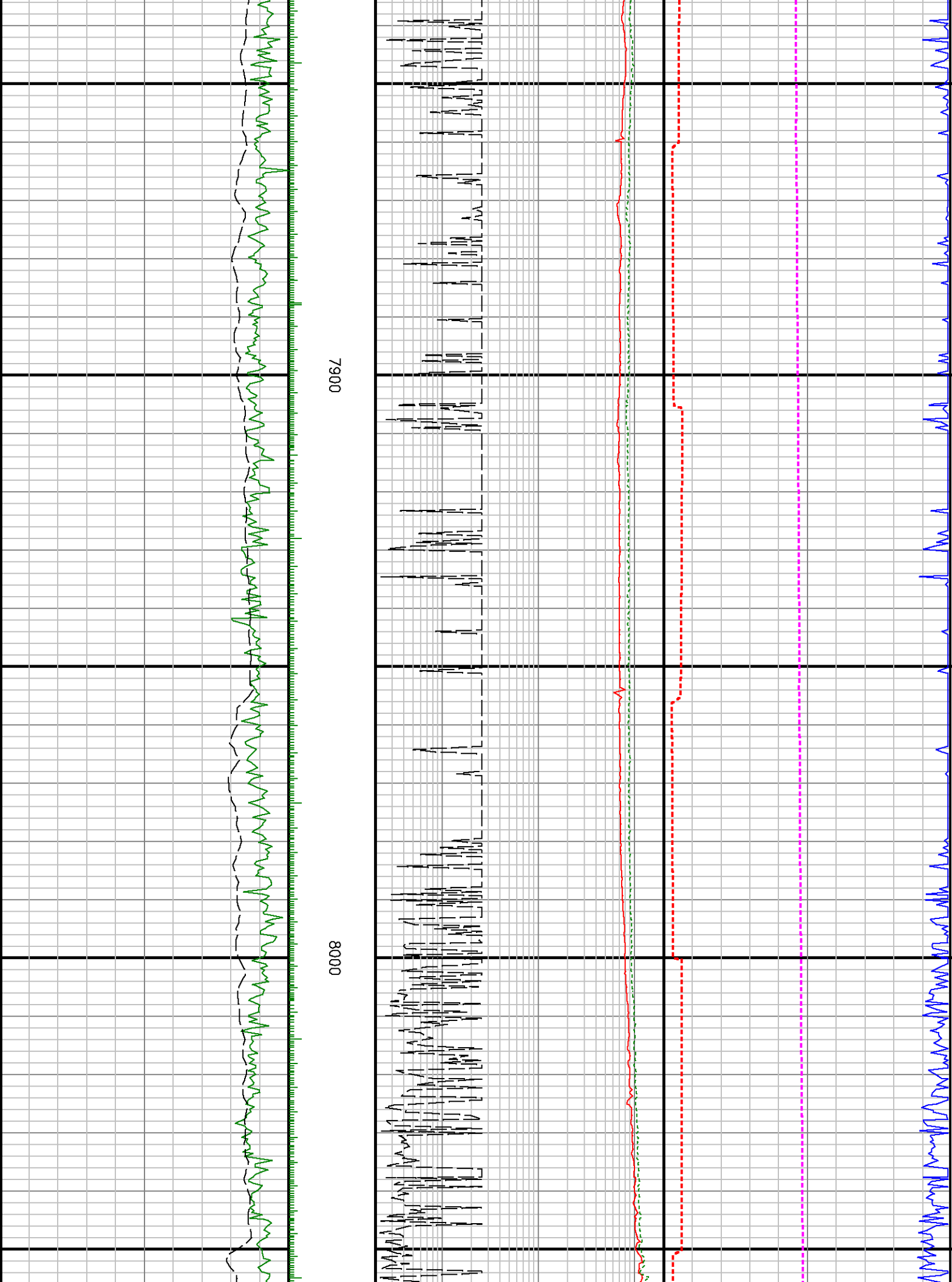


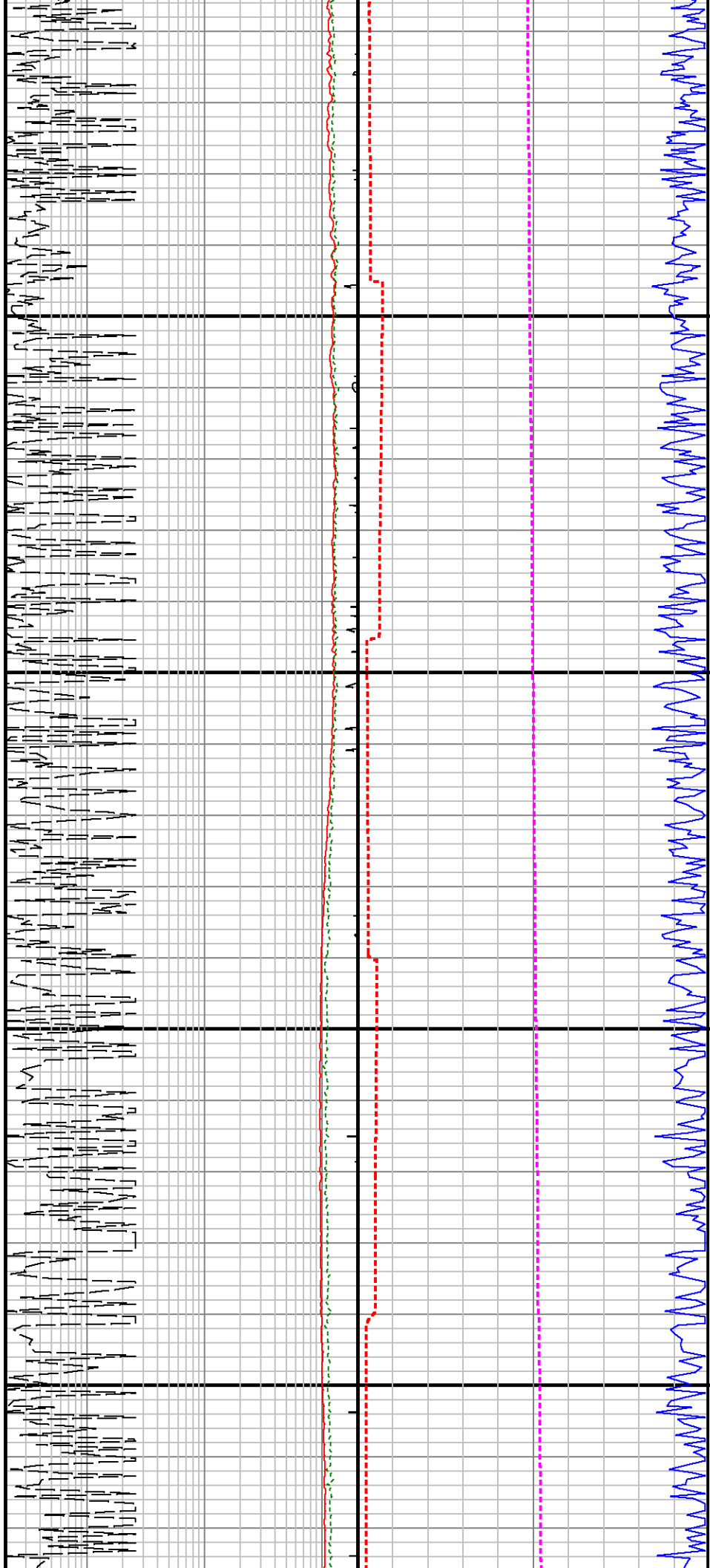






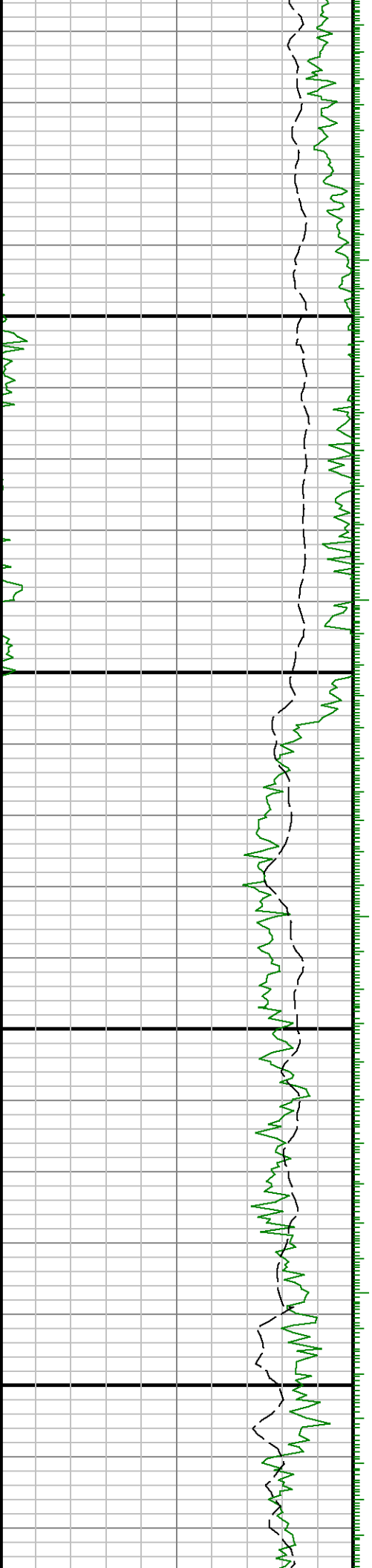


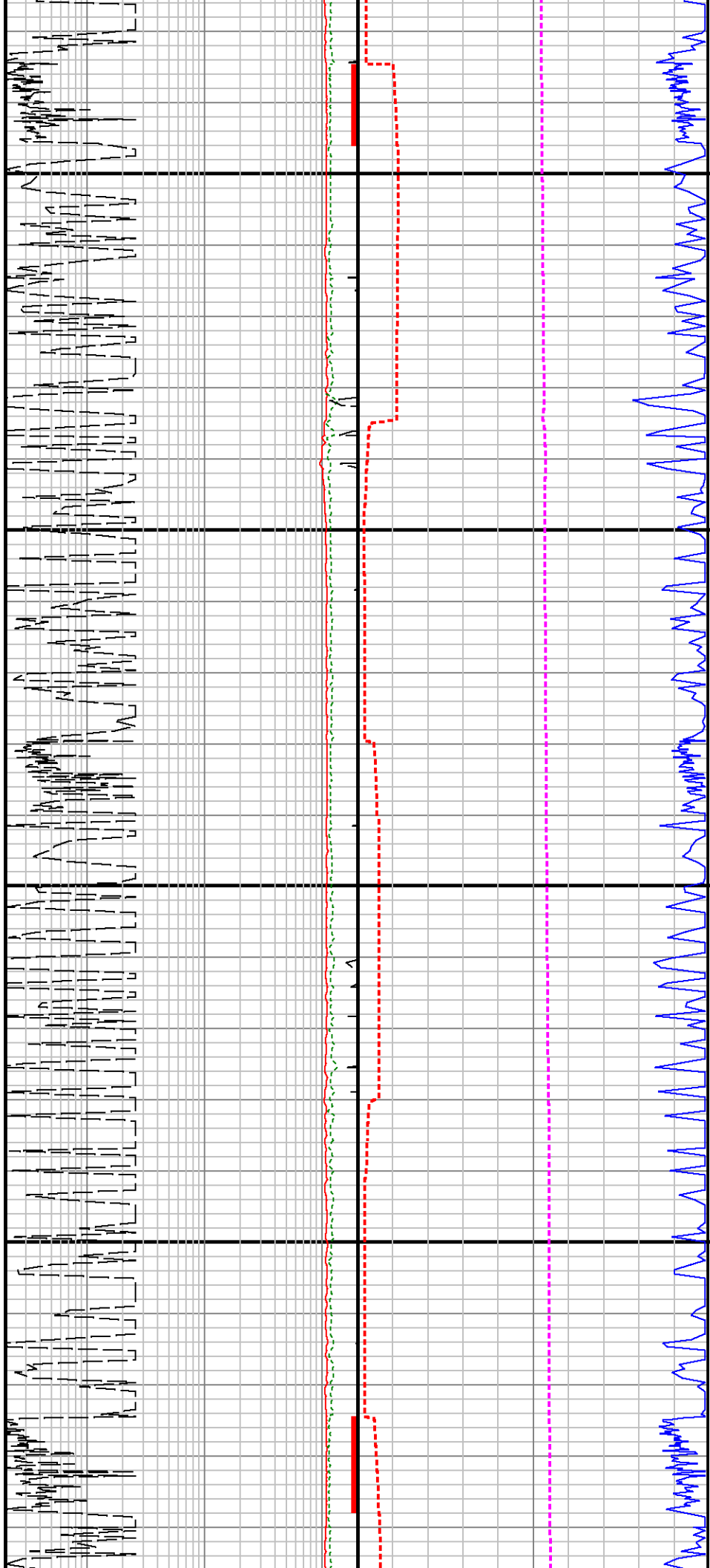




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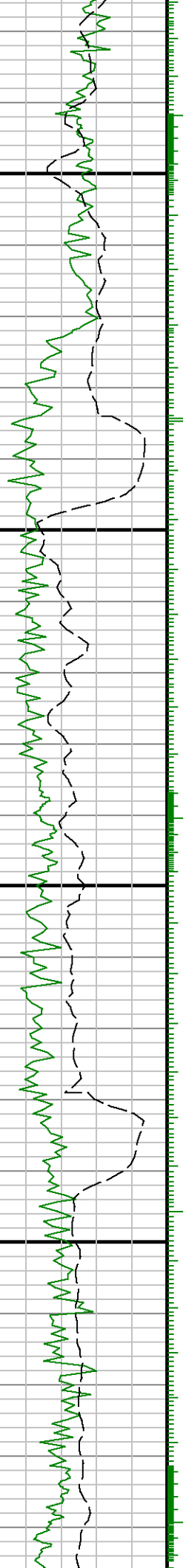
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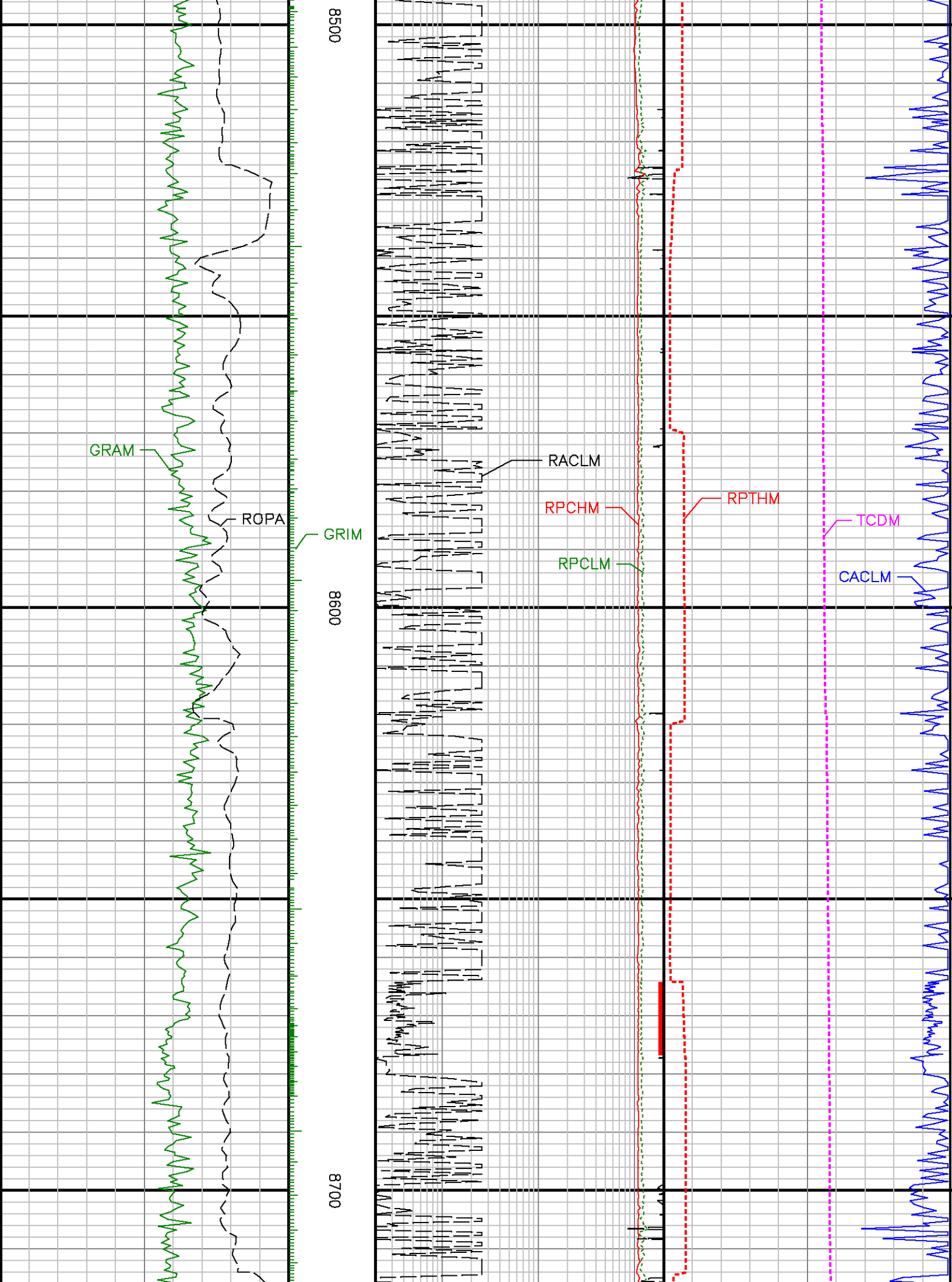


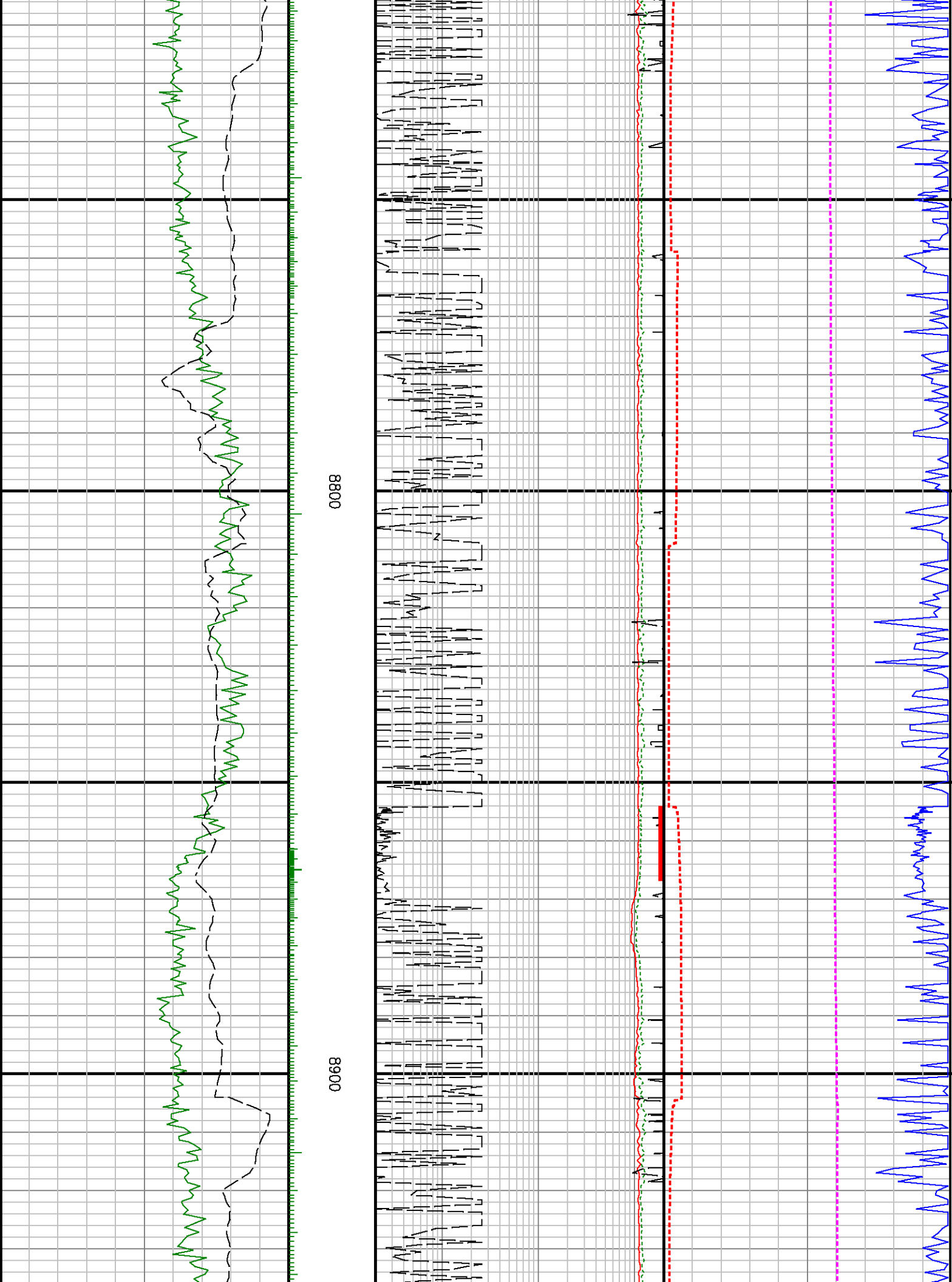


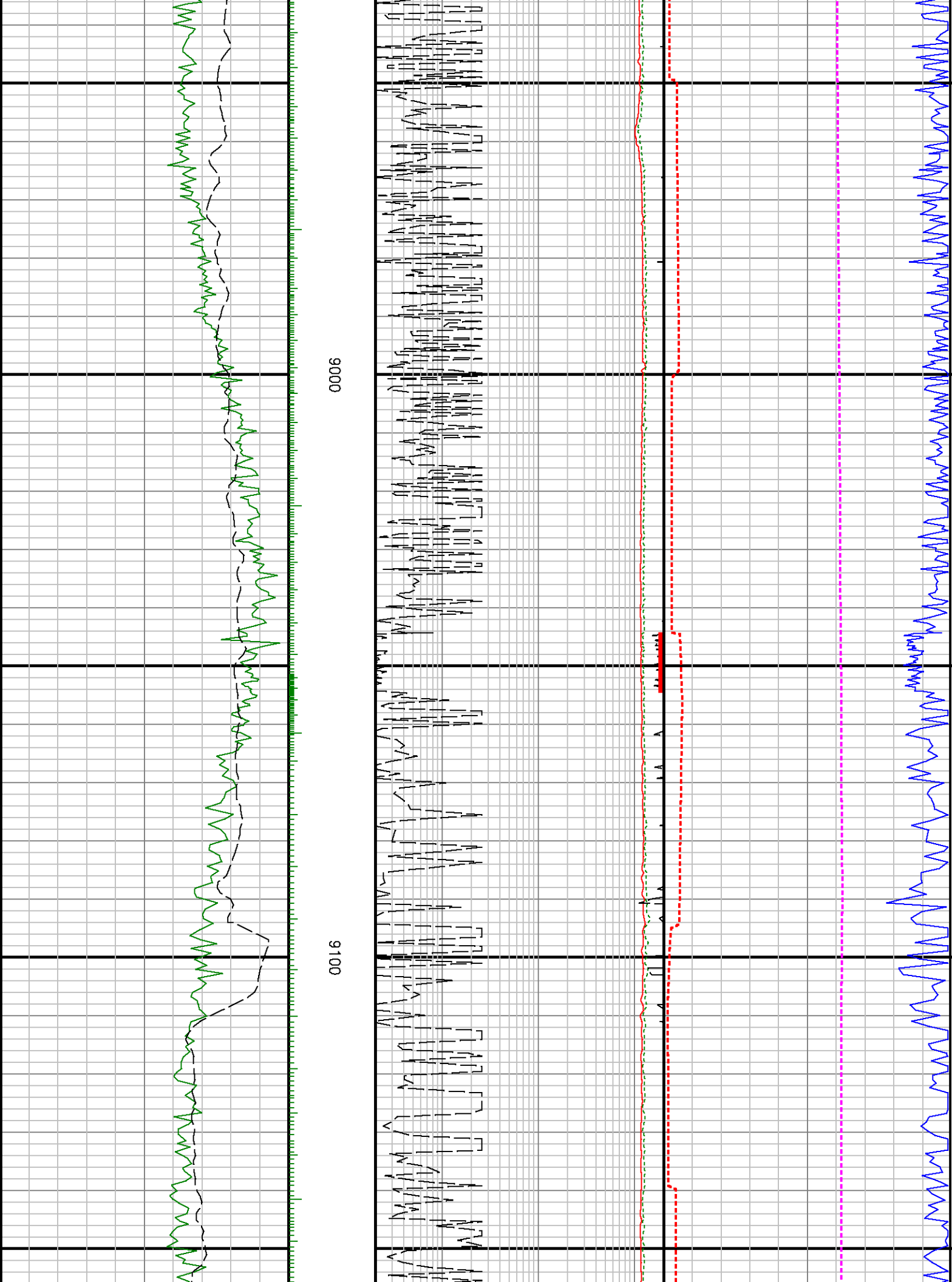
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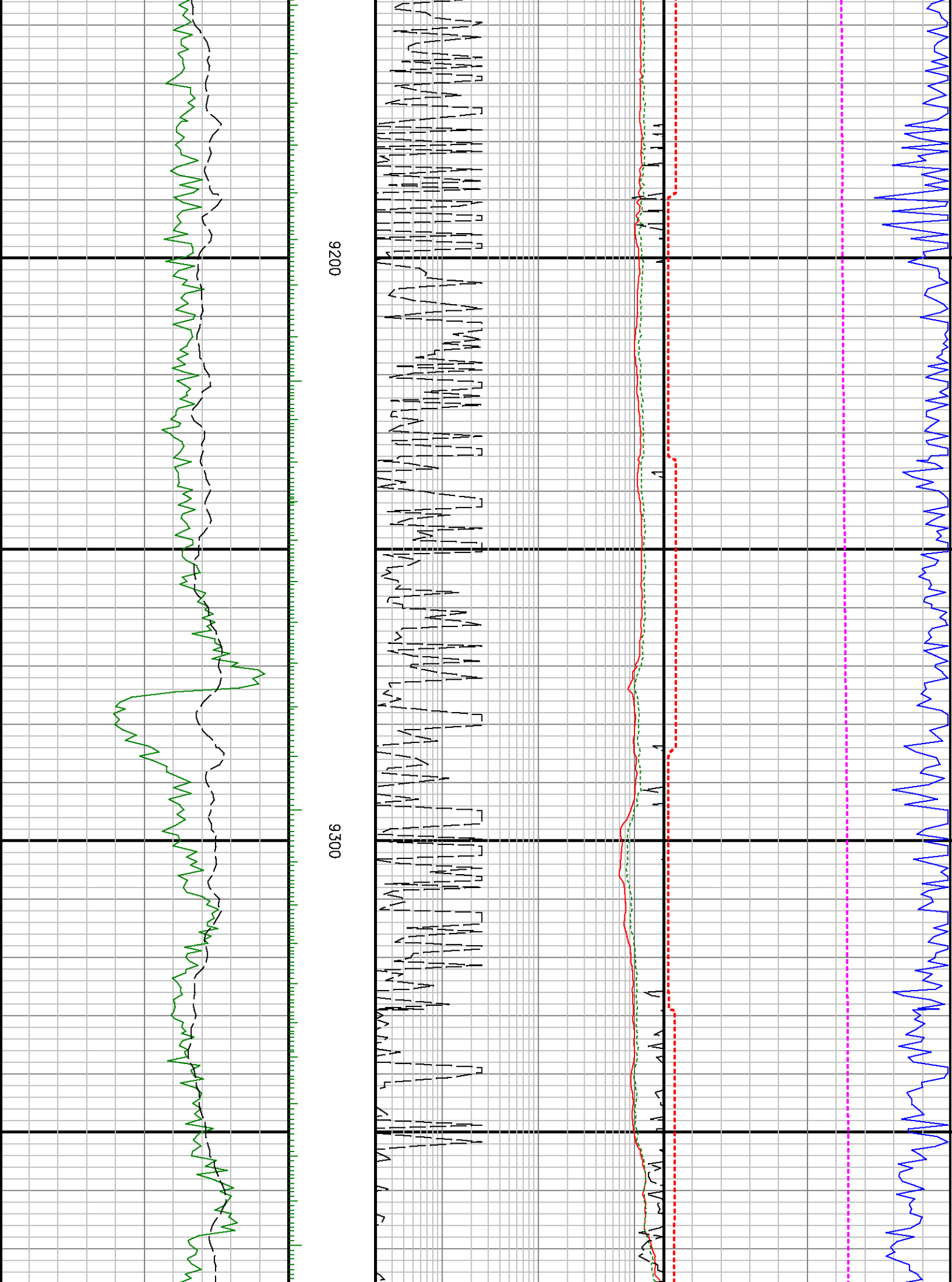
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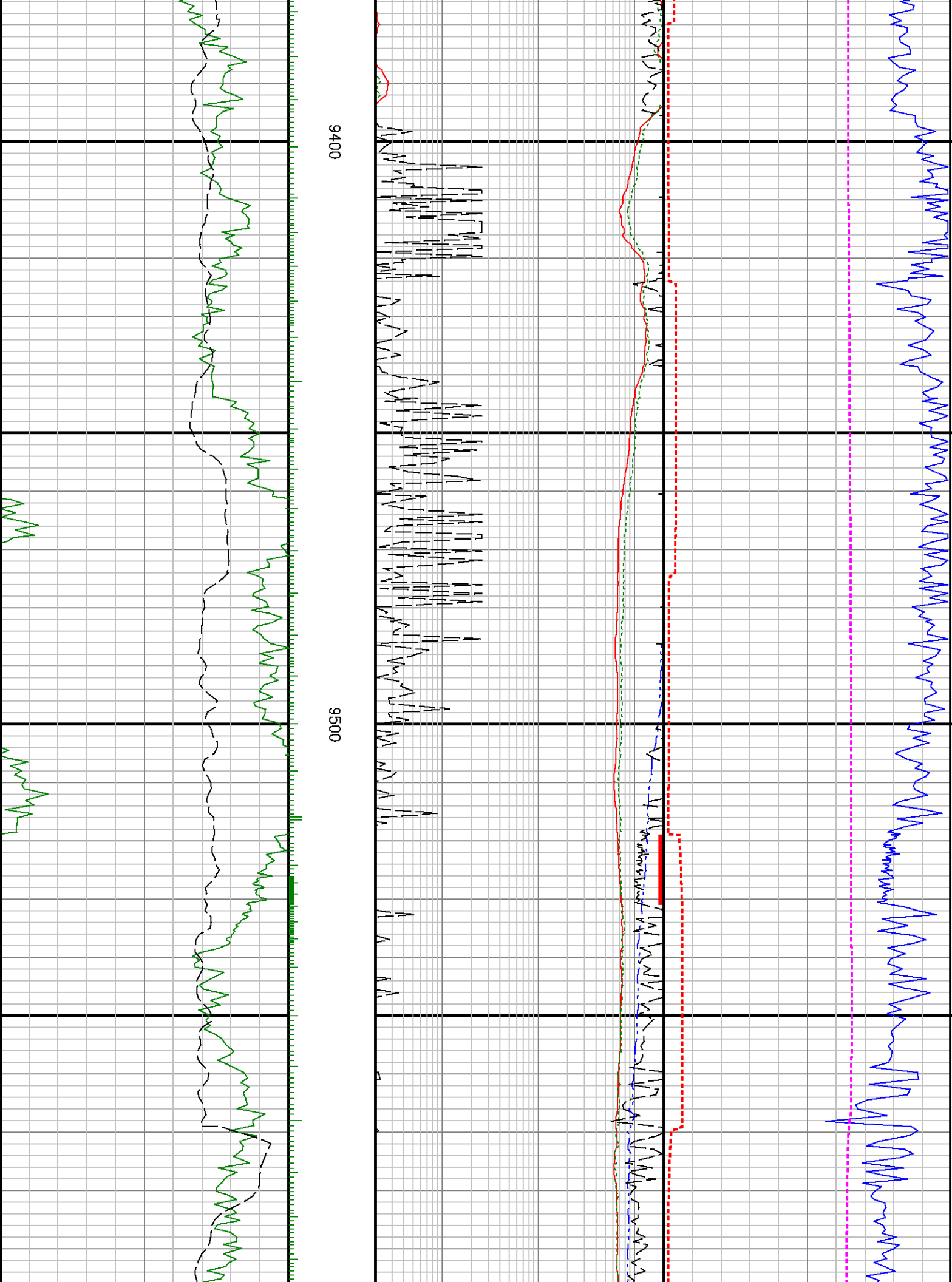


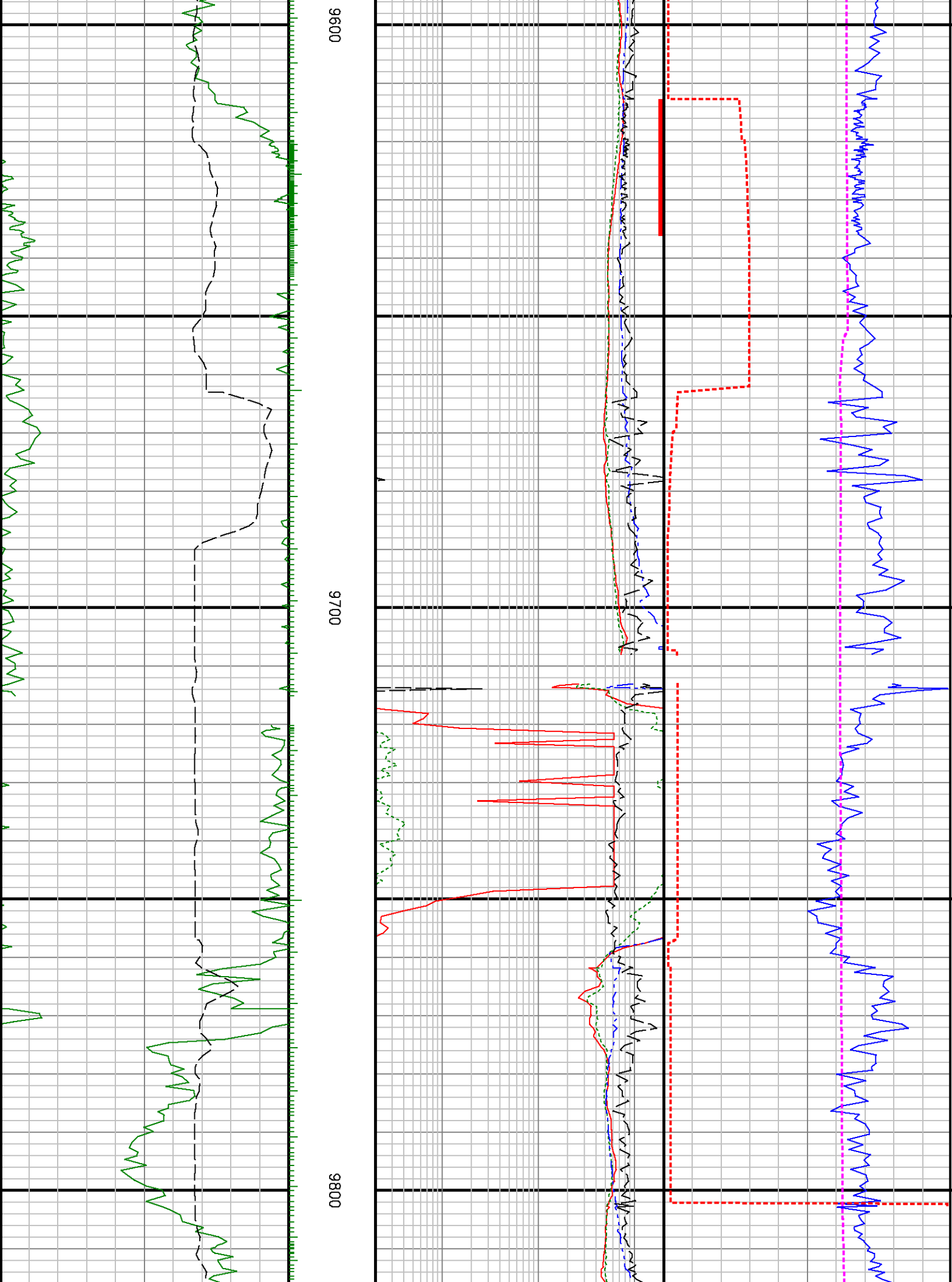


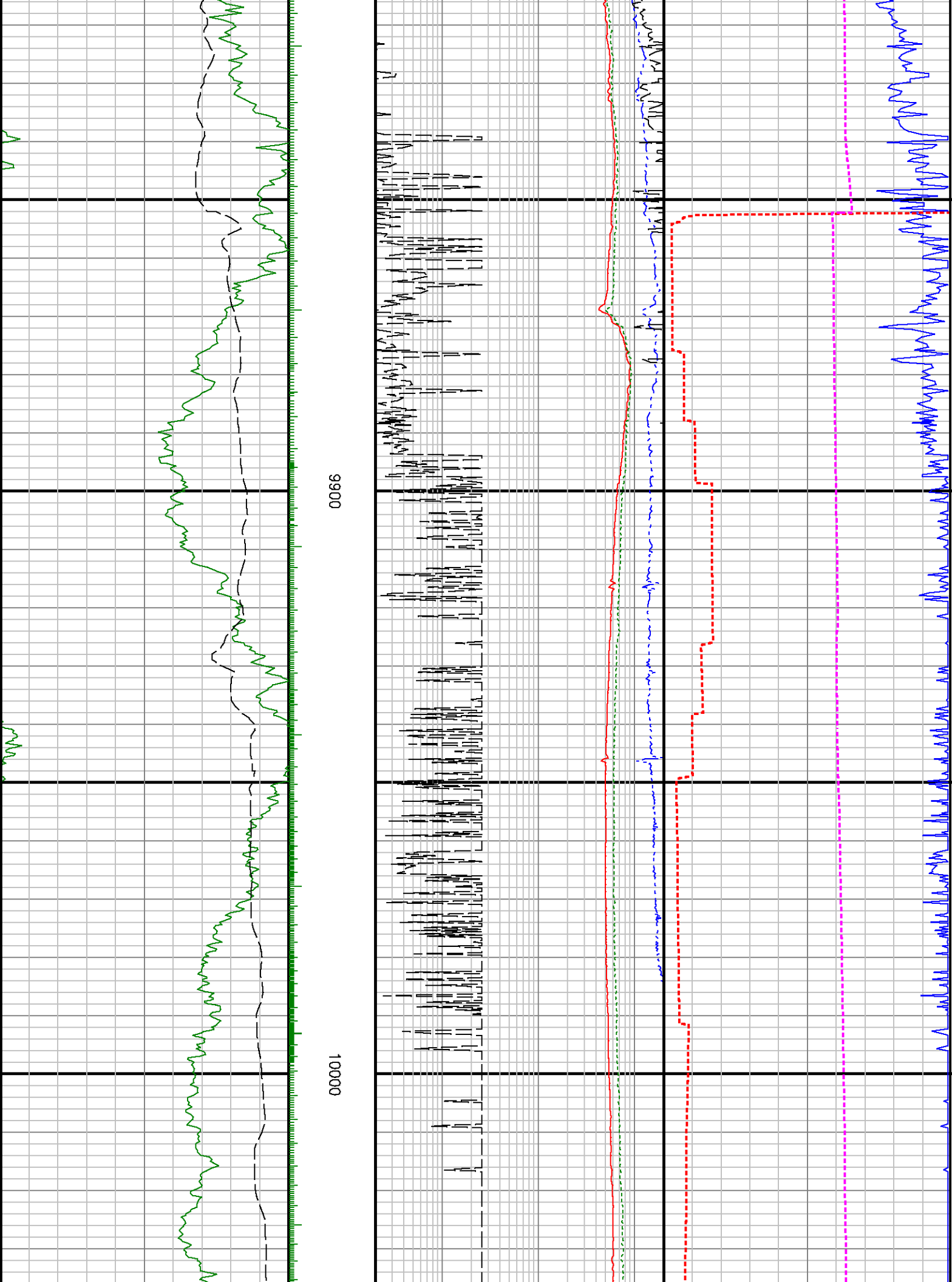


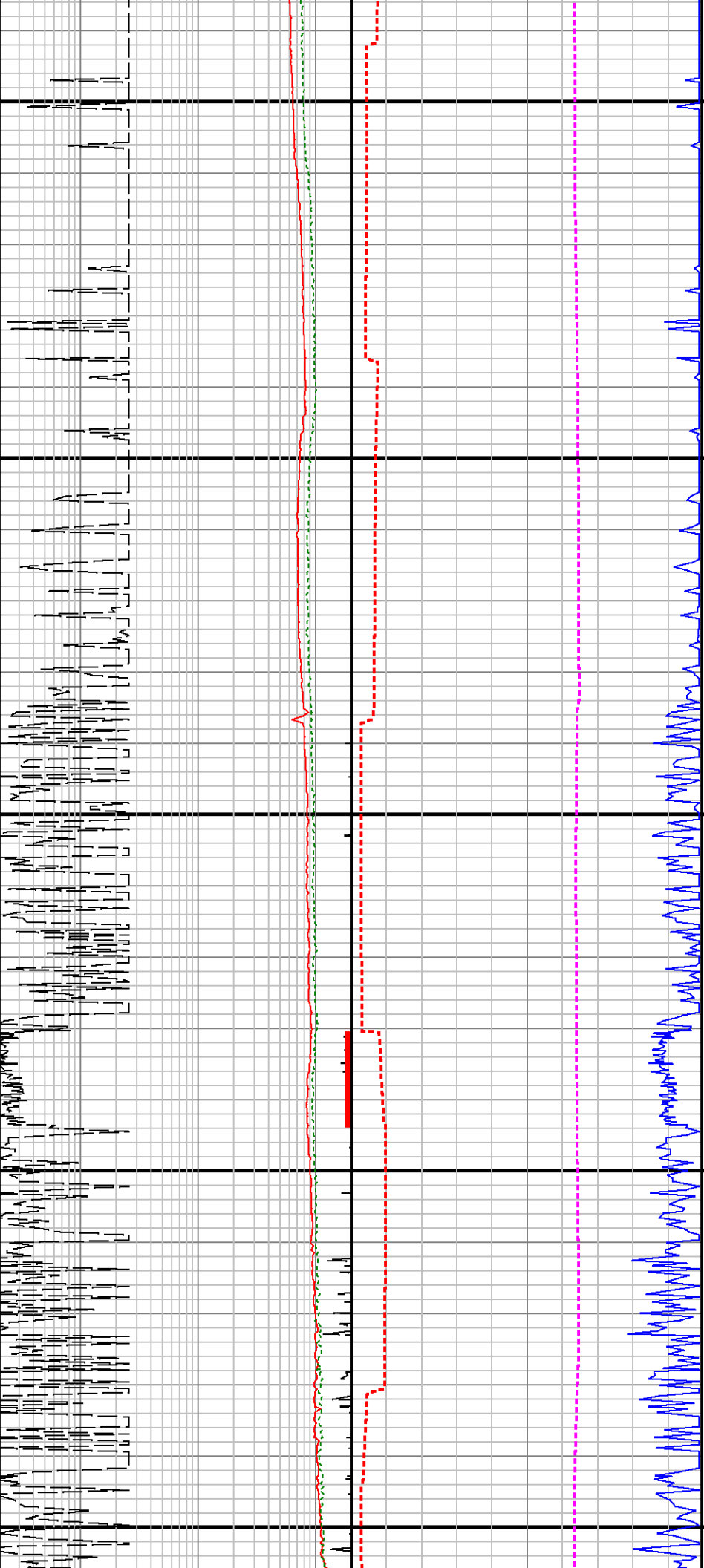






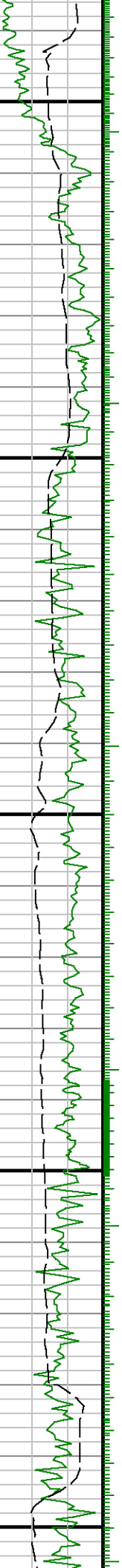


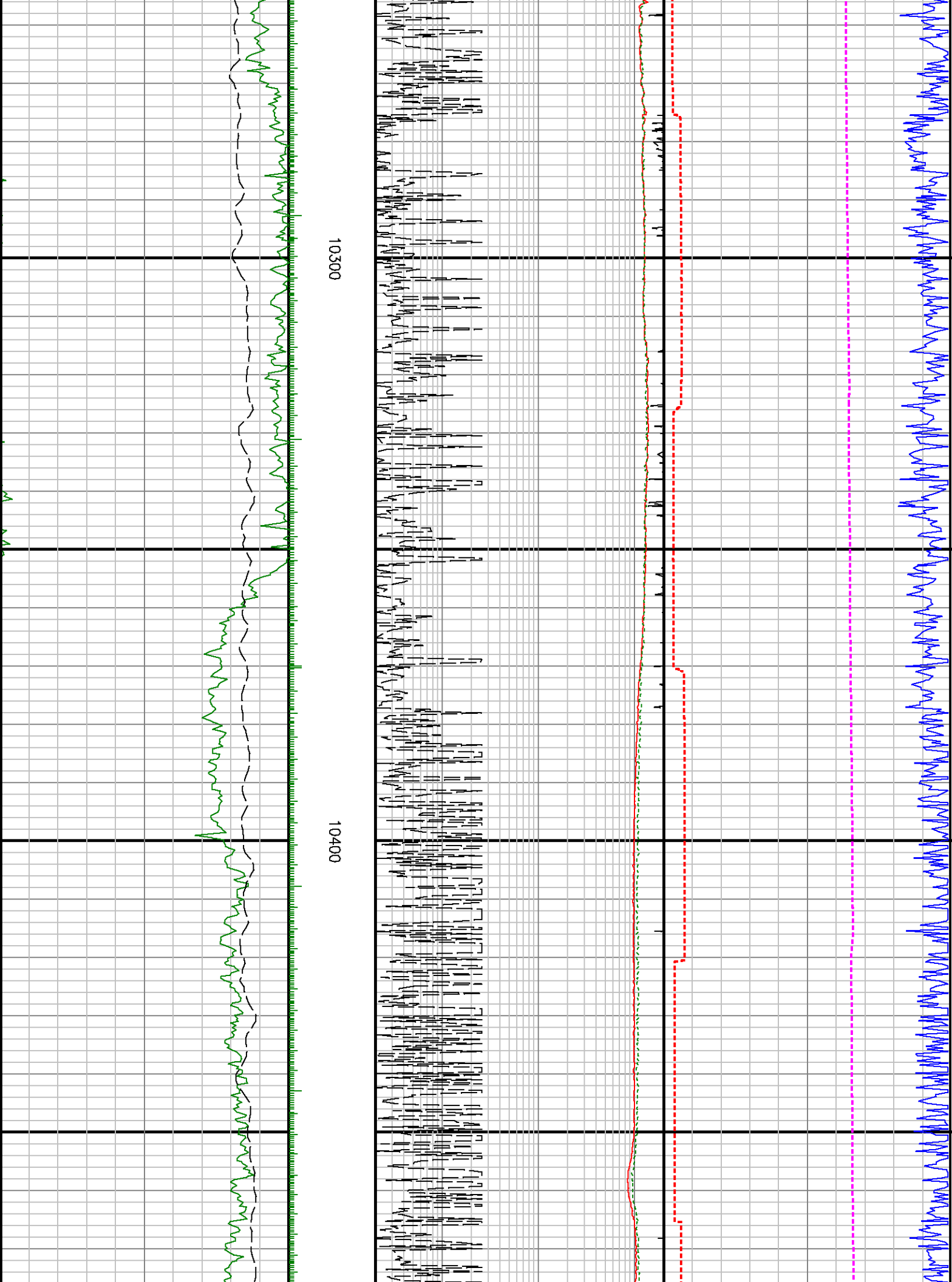


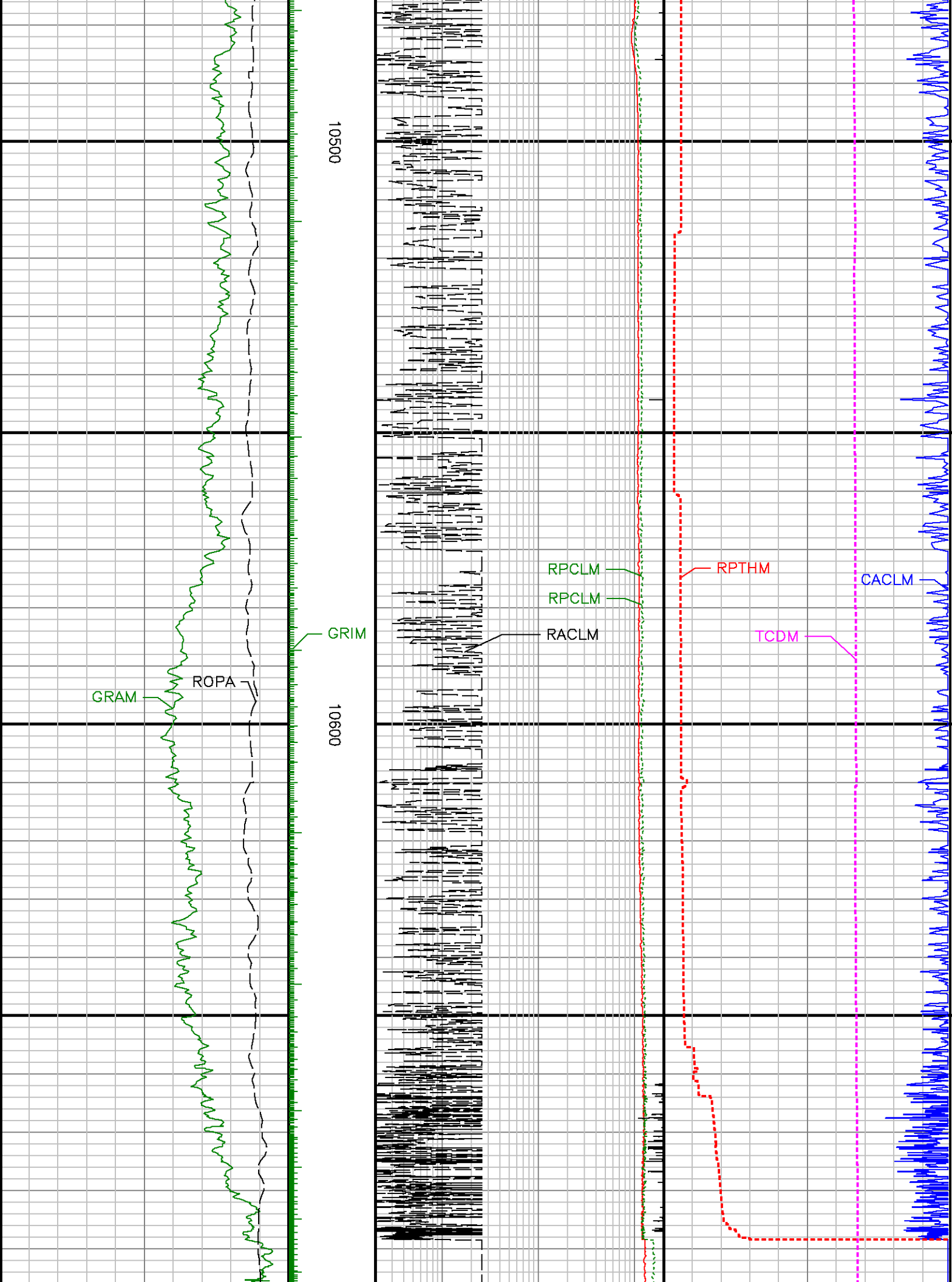


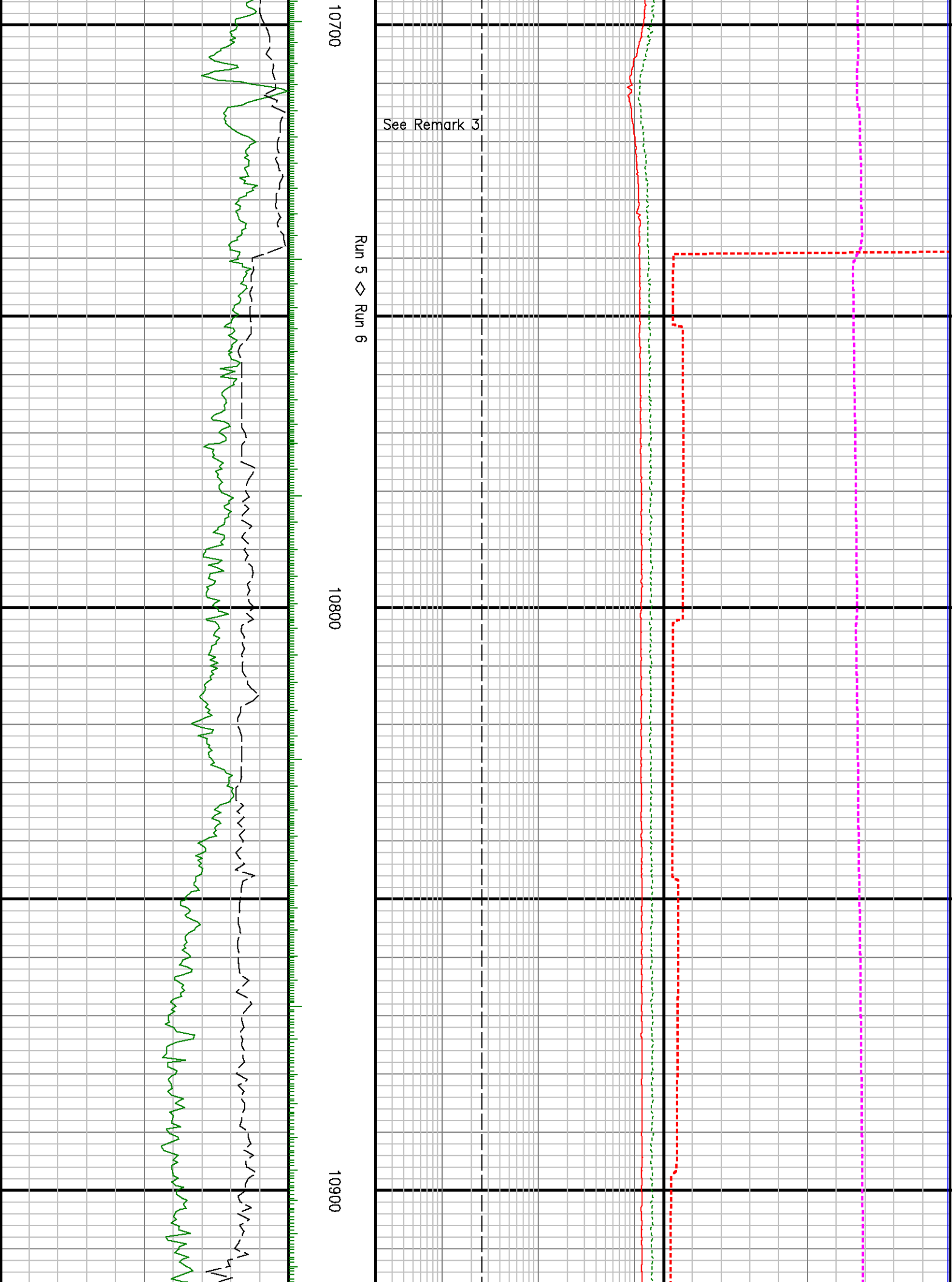
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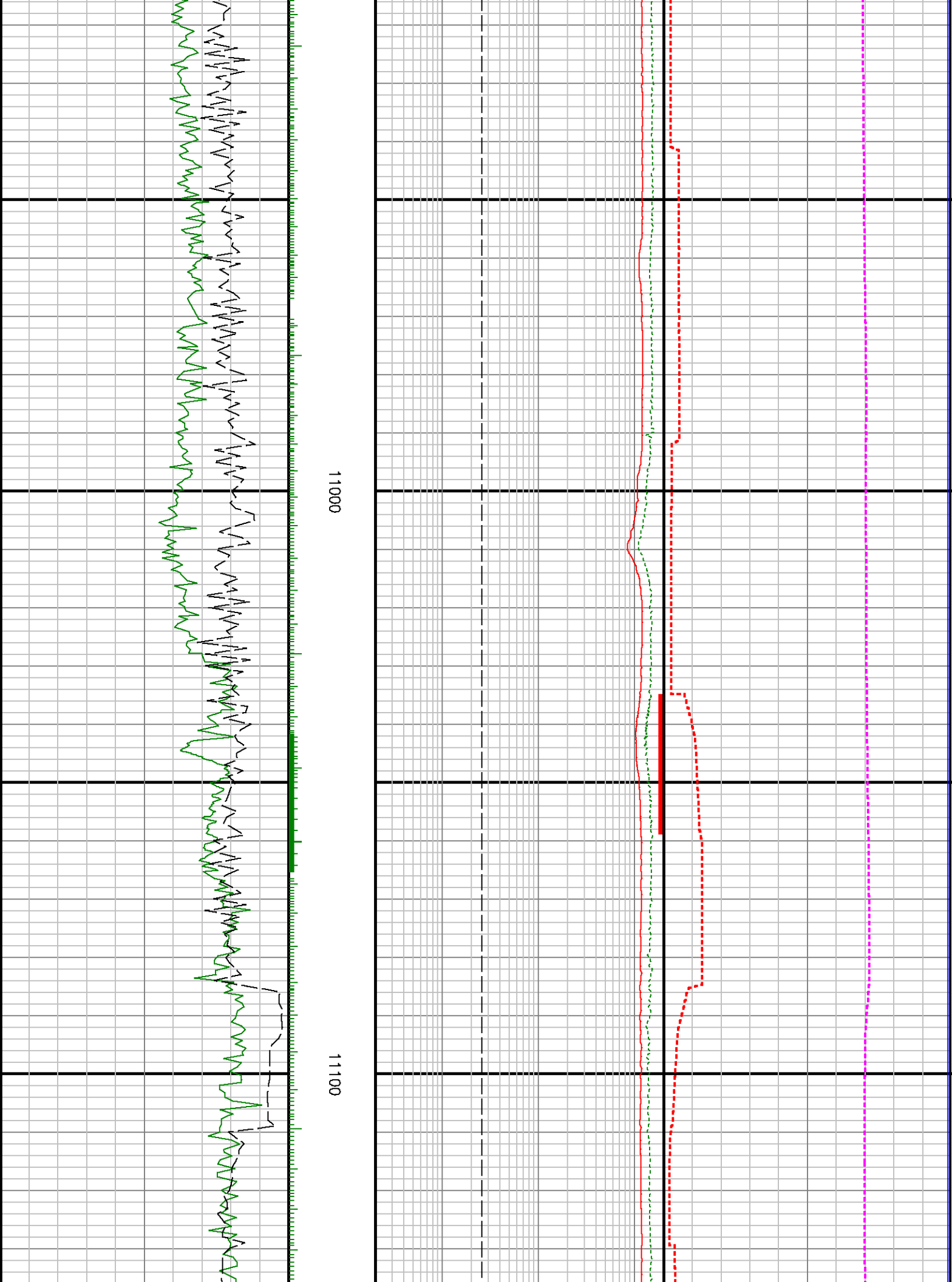
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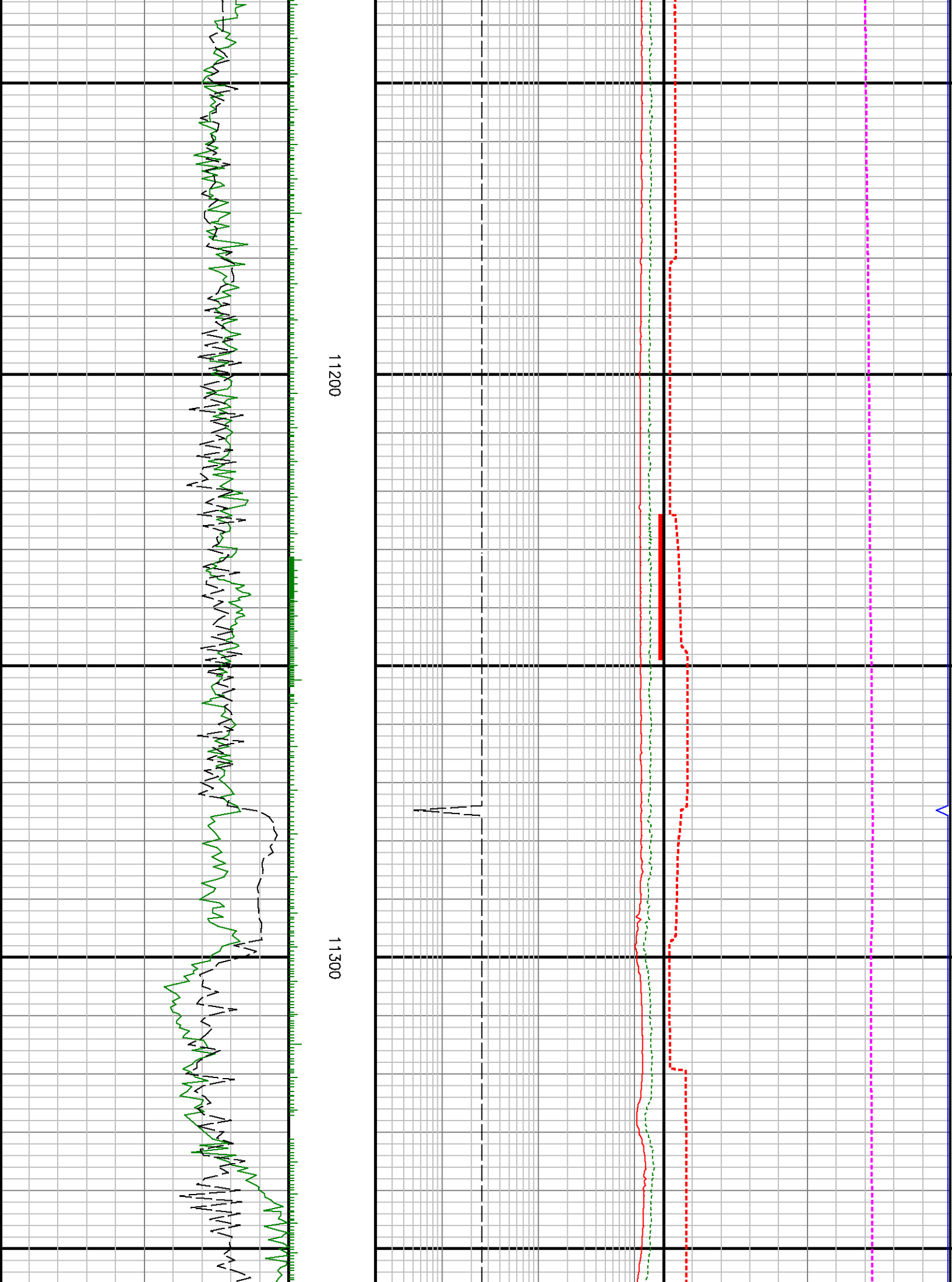


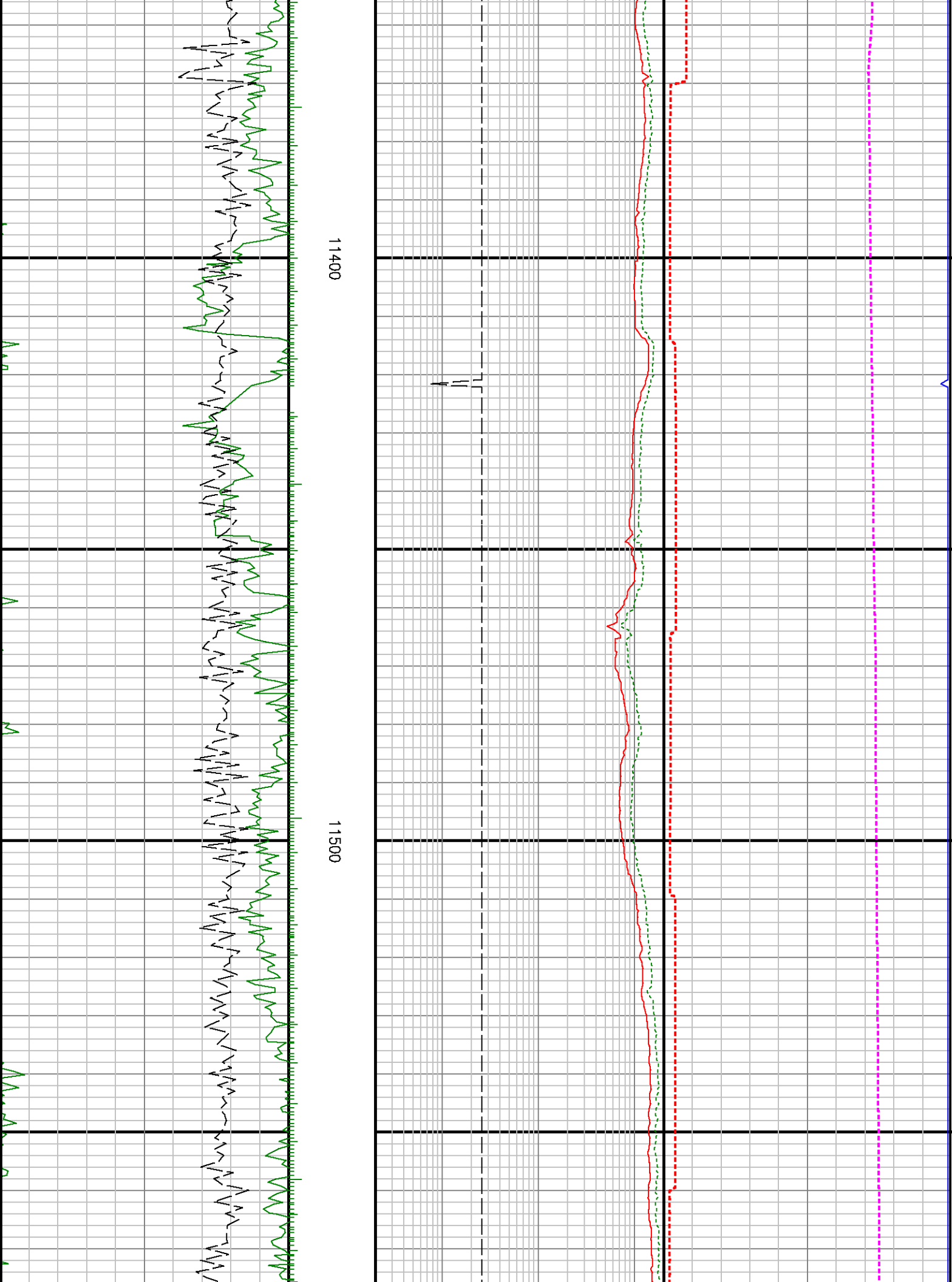


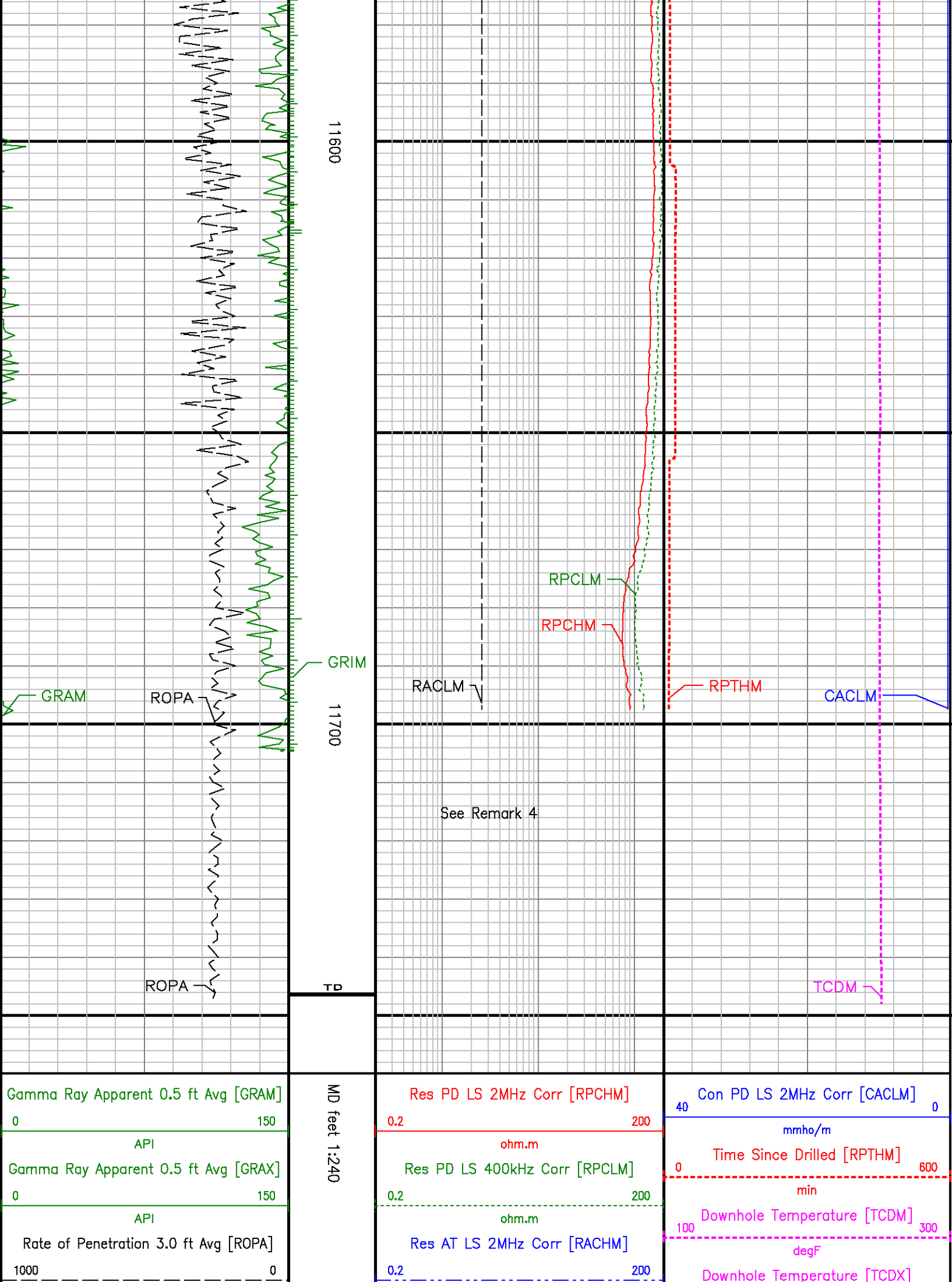












ft/hr		<div>ohm.m</div> <div>Res AT LS 400kHz Corr [RACLM]</div> <div>0.2200</div> <div>ohm.m</div>	<div>100300</div> <div>degF</div>
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