



MEASURED DEPTH  
COMPENSATED NEUTRON-DENSITY POROSITY  
PROPAGATION RESISTIVITY  
SPECTRAL GAMMA RAY LOG

Company: CONFLUENCE DJ LLC  
Well: BUFORD 33-9-4L  
Field: WATTENBERG  
County: WELD State: CO

COMPANY: CONFLUENCE DJ LLC  
WELL: BUFORD 33-9-4L  
FIELD: WATTENBERG  
COUNTY: WELD  
STATE: CO  
API No. 05-123-45544  
Location LAT 40.003100 LONG -104.677340  
SEC 33 TWN 1N RNG 65W  
470 FSL & 480 FWL  
Other Services  
N/A

Permanent Datum: GROUND LEVEL Elevation: 5077 ft  
Log meas. from: KELLY BUSHING 23 ft above Perm. Datum  
Drill. meas. from: KELLY BUSHING  
Elev.: K.B. 5101 ft  
D.F. -----  
G.L. 5077 ft

Date	11-NOV-2017	
Run No.	1 (HORIZONTAL)	TVD
Depth Driller	17369.8 ft	7334.0 ft
Depth Logger	17369.8 ft	7334.0 ft
Bottom Logged Interval	17225.0 ft	7334.8 ft
Top Logged Interval	1251.5 ft	1251.5 ft
Casing Driller	1545.0 ft	1545.9 ft
Casing Logger	1287.7	1287.6 ft
Bitsize	8.5 in	
Type Fluid in Hole	INVERT MUD	
Density / Viscosity	10.2 ppq	58 s/l
pH / Water Loss	N/A	4.5
Source of Sample	N/A	
Rm at Meas. Temp.	N/A	
Rm at Meas. Temp.	N/A	
Rmc at Meas. Temp.	N/A	
Source Rmf/Rmc	N/A	N/A
Rm at BHT	N/A	
End Circulation	10-NOV-2017 @ 11:30	
Logger on Bottom	DD-MM-2017 @ 15:05	
Max. Recorded Temp.	233.2 °F	
Equip. No / Location	DL-312 OKC	
Recorded by	C. KUHLMAN	C. CHAMBERLAIN
Witnessed by	S. CHAPARRO	

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In making interpretations of logs, Contractors employees will give the Customer the benefit of their best judgement, but since all interpretations are opinions, based on inferences from electrical or other measurements, Contractor cannot, and does not guarantee the accuracy or the correctness of any interpretation.

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REMARKS  
TOOLS PUMPED DOWN FROM SURFACE; LOGGING PERFORMED WHILE TRIPPING OUT  
COMPENSATED NEUTRON-DENSITY PRESENTED LIMESTONE MATRIX  
MAX DEVIATION: 90.49 DEG @ 8036.0 ft  
DRILLING RIG: ENSIGN 160  
SURFACE CASING SIZE: 9.625 in, 36 lbm/ft FROM 0 ft TO 1545.0 ft  
BITSIZE: 8.5 in FROM 1545.0 ft TO 17369.8 ft  
ALL LOG DEPTHS WERE RECORDED WITH EDR (PASON), AND CORRECTED TO PIPE TALLY  
LOGGER CASING FOUND AT 1287.7 ft.

EQUIPMENT DATA

Run	Trip	Instrument	Serial No.	Series No.	Distance to Reference
1	1	TELEMETRY	3102015		185.2 ft
1	1	SGR	1460016		
1	1	GR-CN	1473013 U	1473013 L	
1	1	KNUCKLE	0813011		
1	1	DENSITY	1481016		
1	1	PDT	RX0014		
1	1	STEEL COLLAR	DL-L1972-XH-3		
1	1	STEEL COLLAR	DL-L1972-XH-5		

1	1	STEEL COLLAR	DL-L1972-XH-3		
1	1	OMEGA	RSA 65007 R1		
1	1	Am241Be / Cs137	77814	79965B	

# 5" MAIN PASS

Company : CONFLUENCE DJ LLC

Well : BUFORD 33-9-4L

Scale : 1 : 240

Depth in : Feet

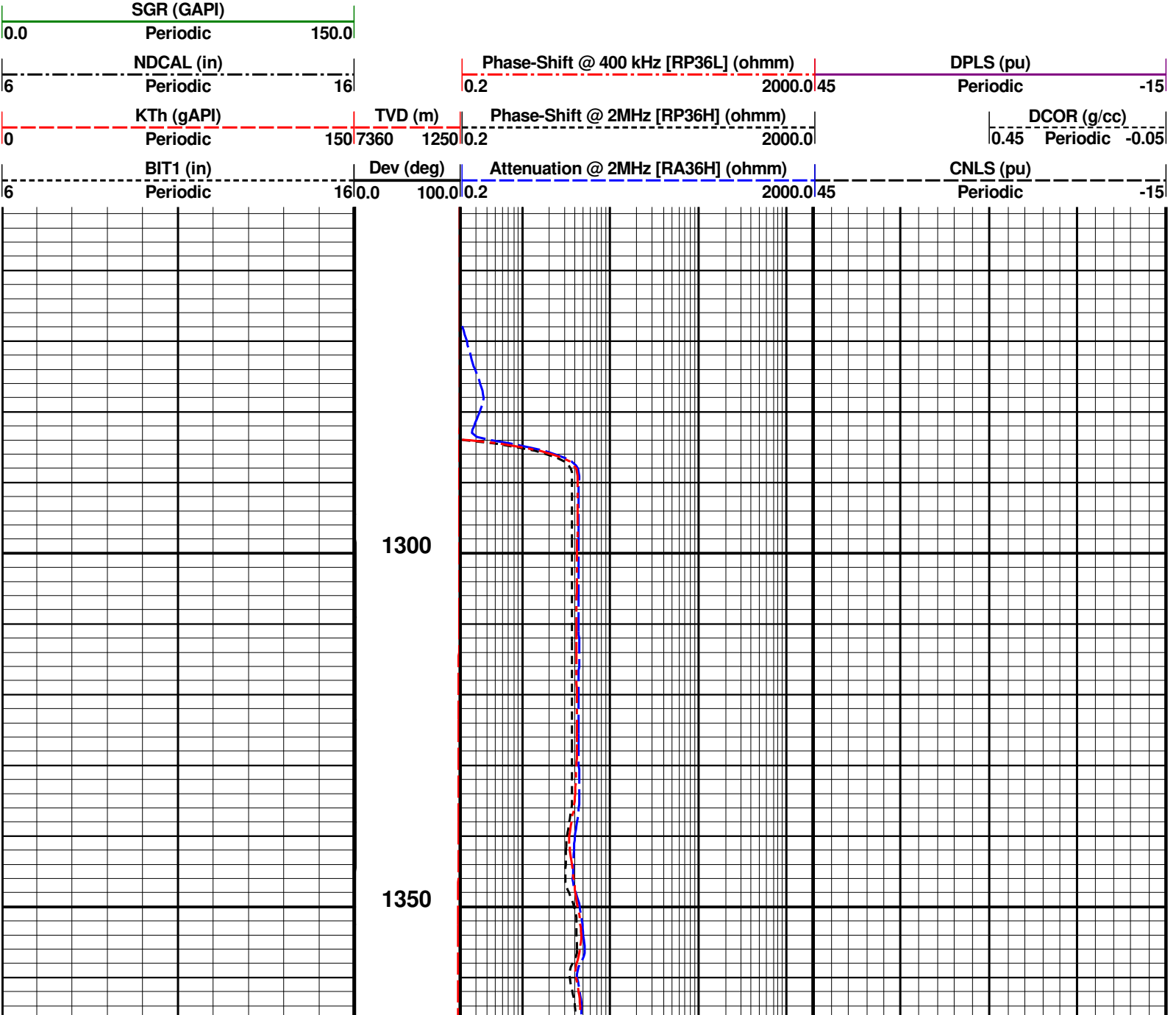
Software : WinAPIPlot Ver. 5, 75, 0, 0

Date : 11-Nov-2017

Time :

Remarks : LIMESTONE MATRIX

File Name : 85\_05-123-45544\_MAIN MD.las



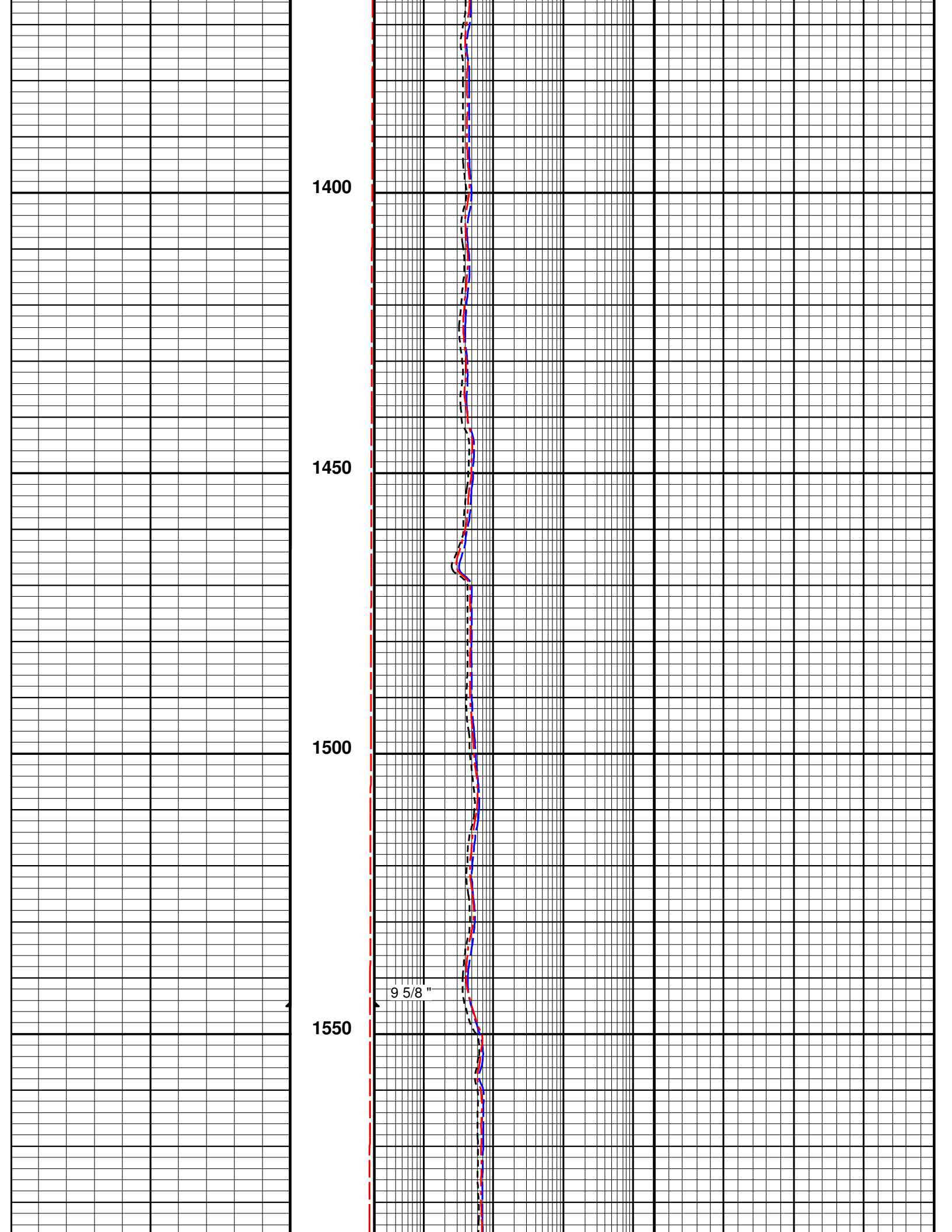
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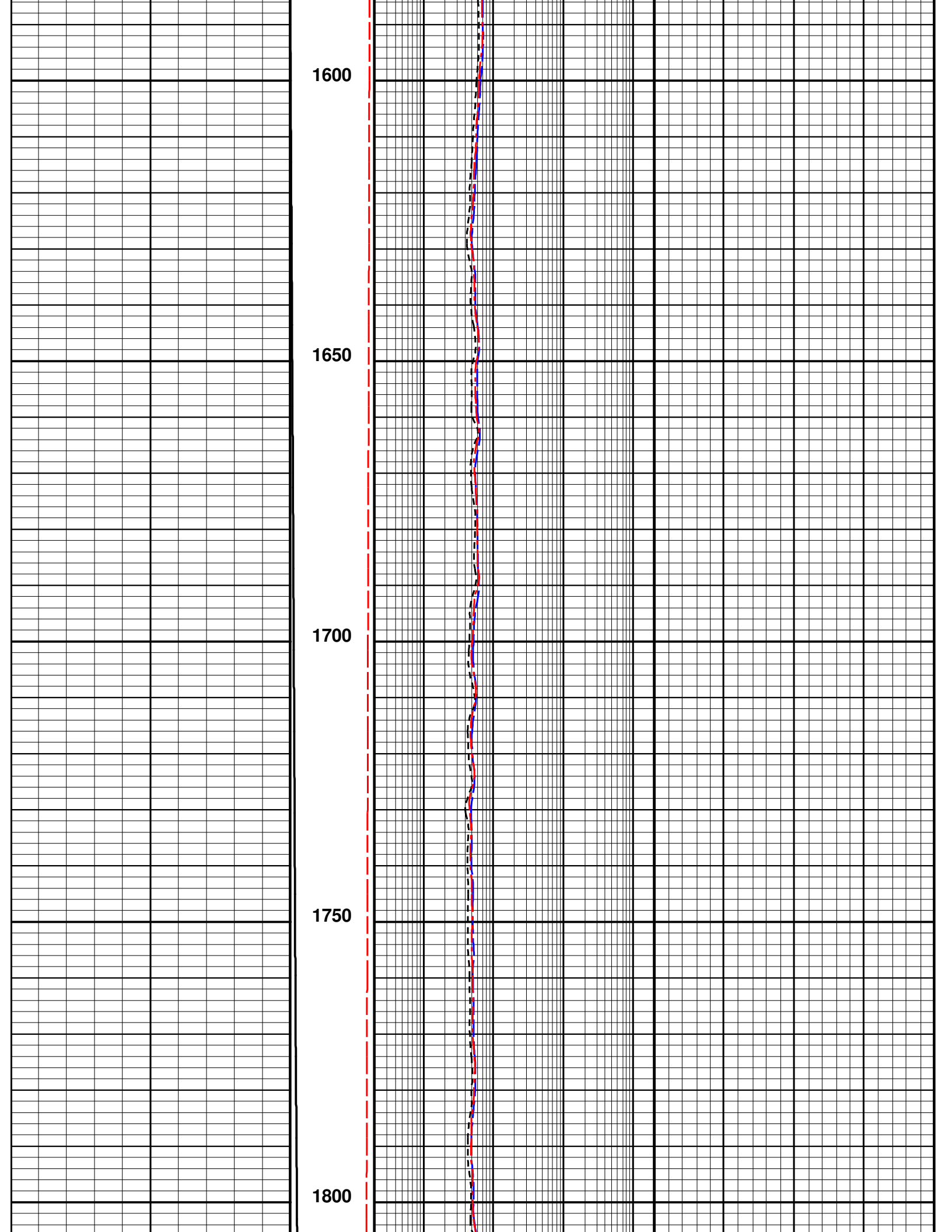
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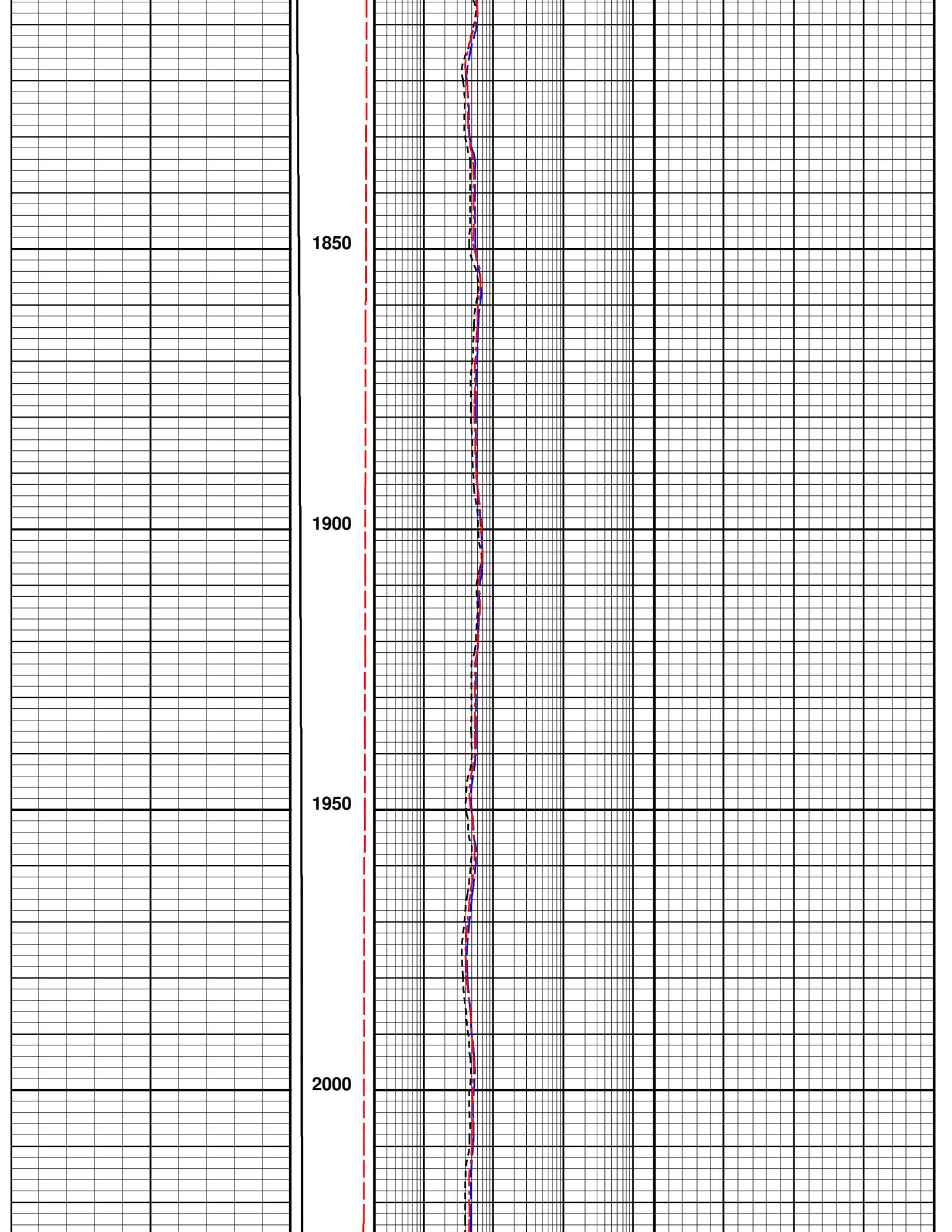
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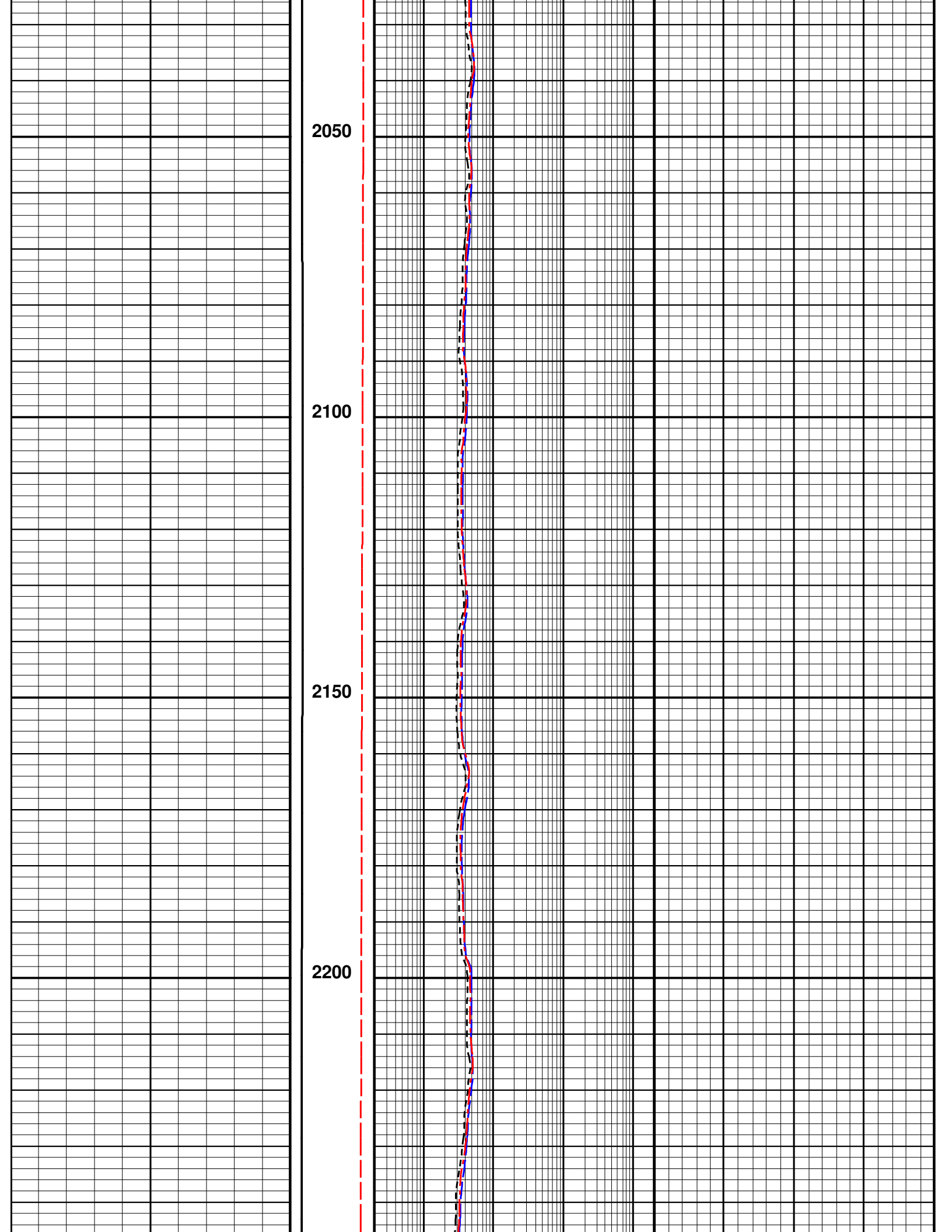
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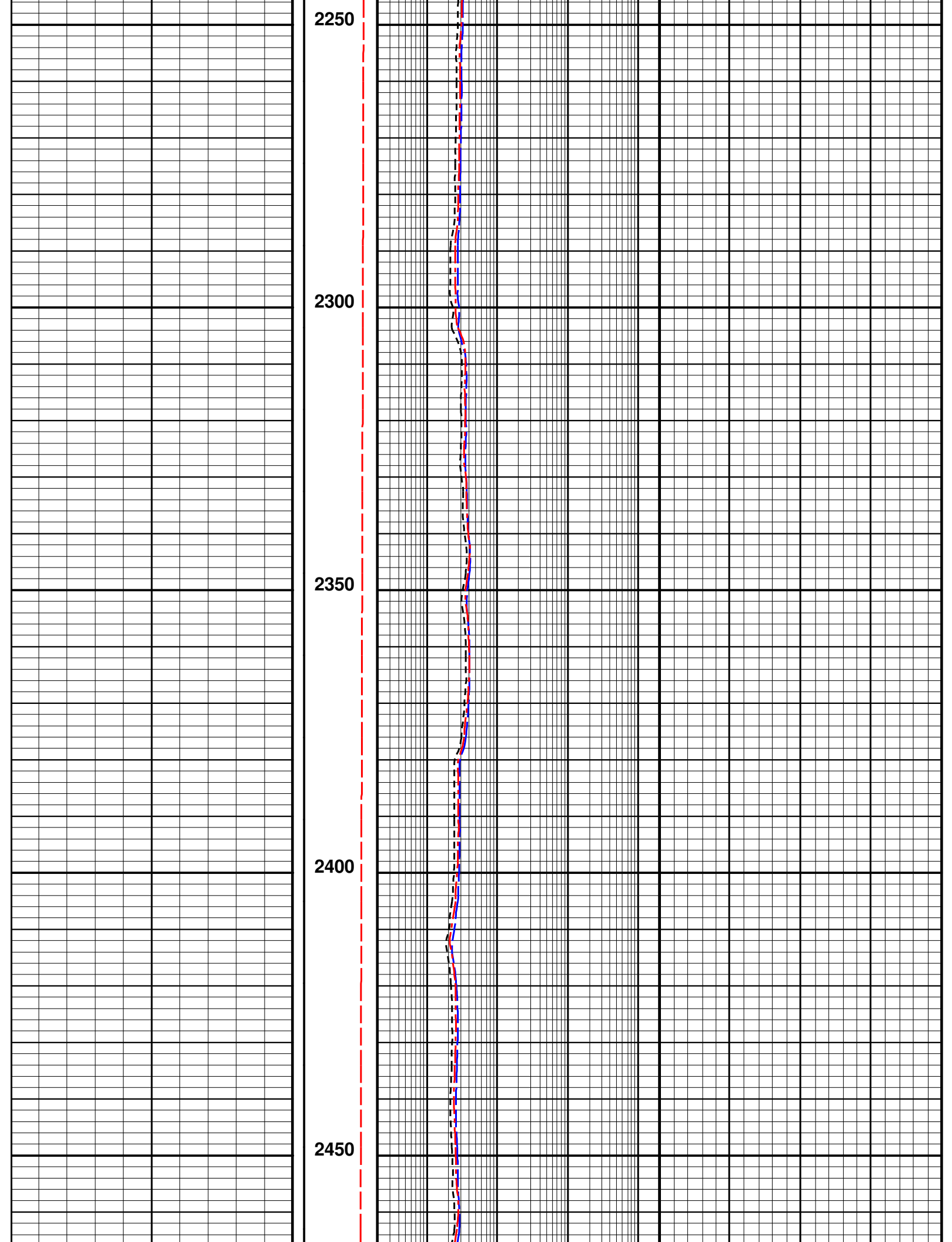
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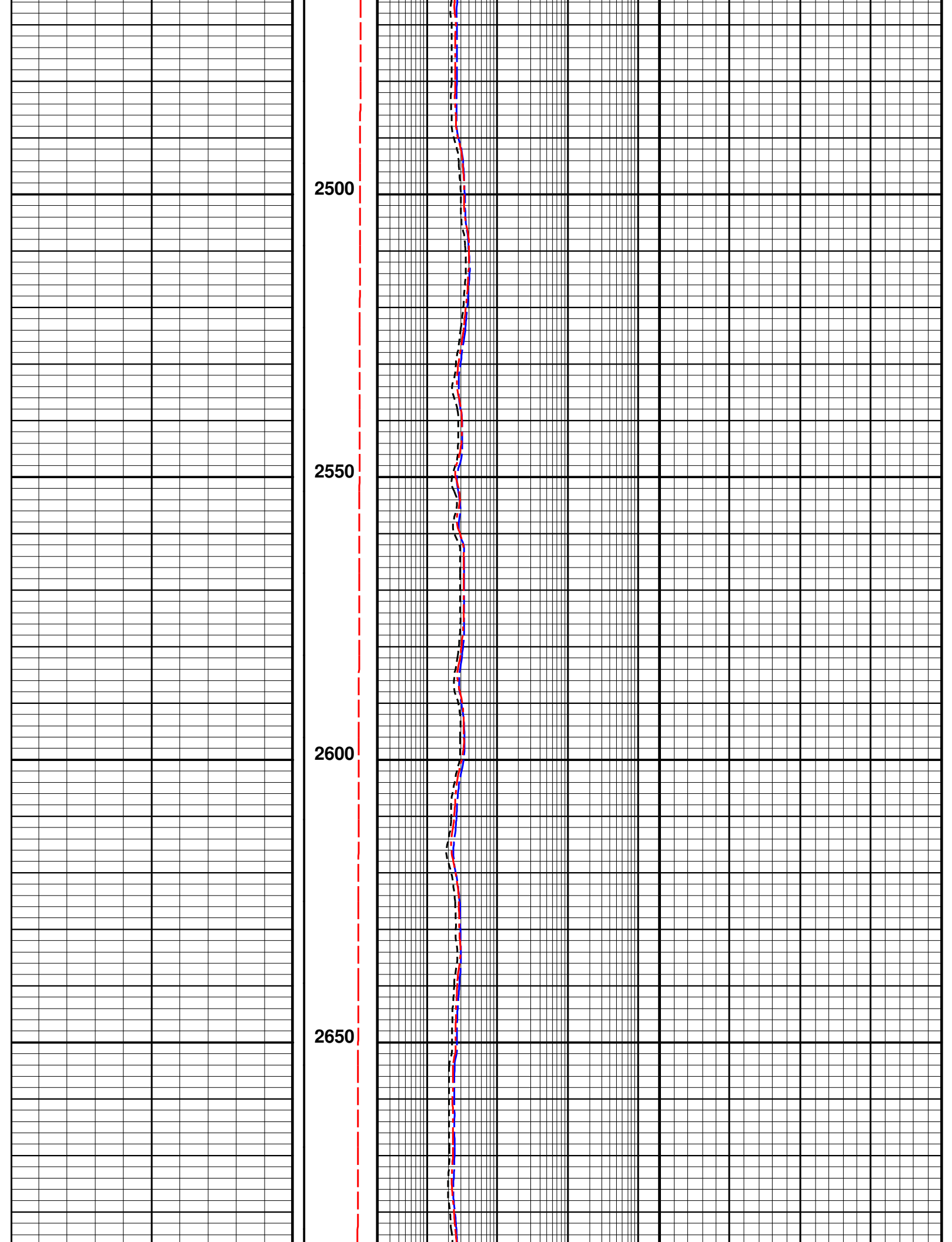




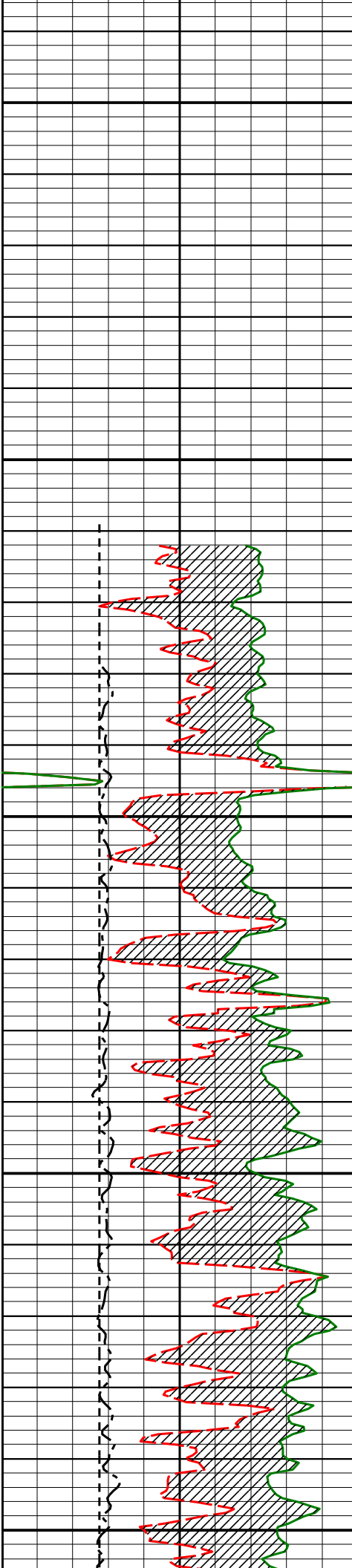












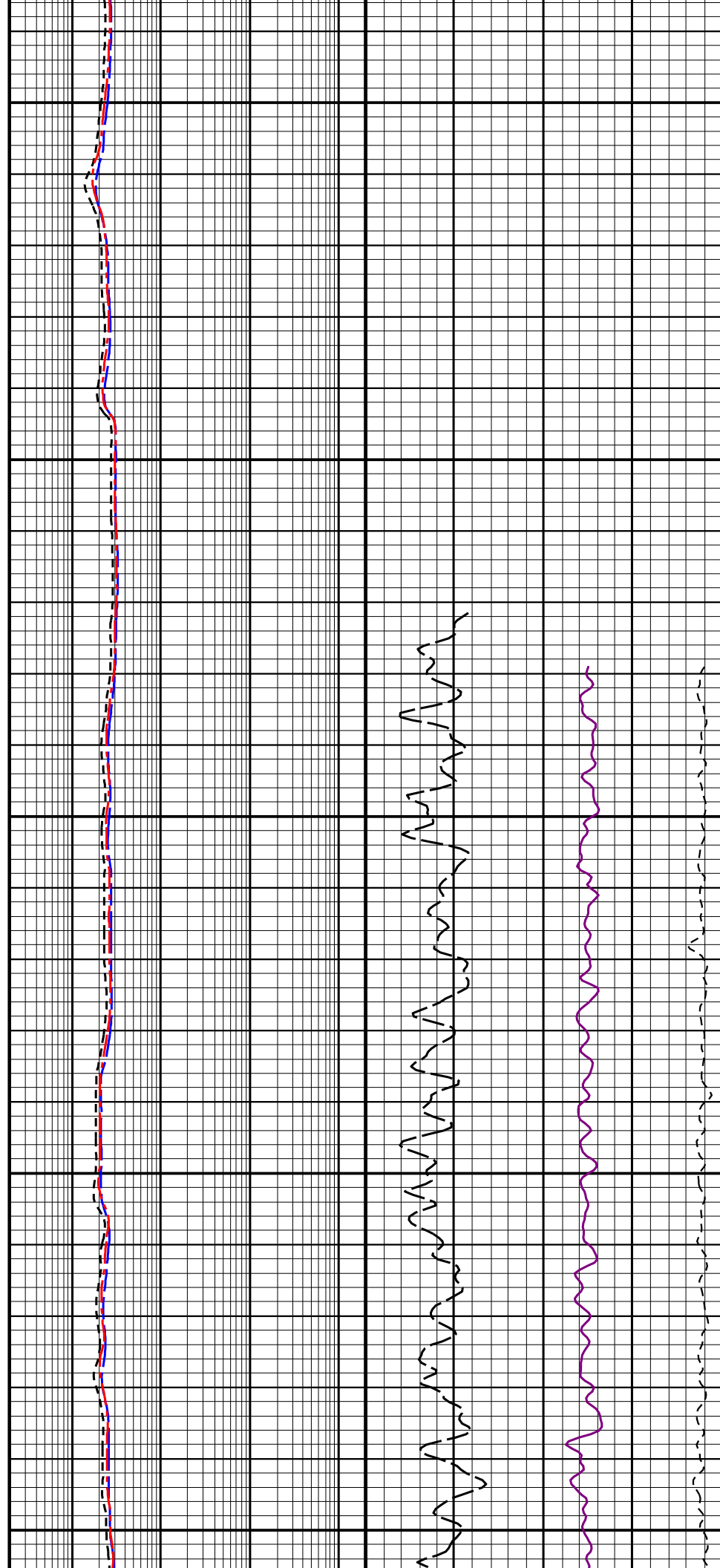
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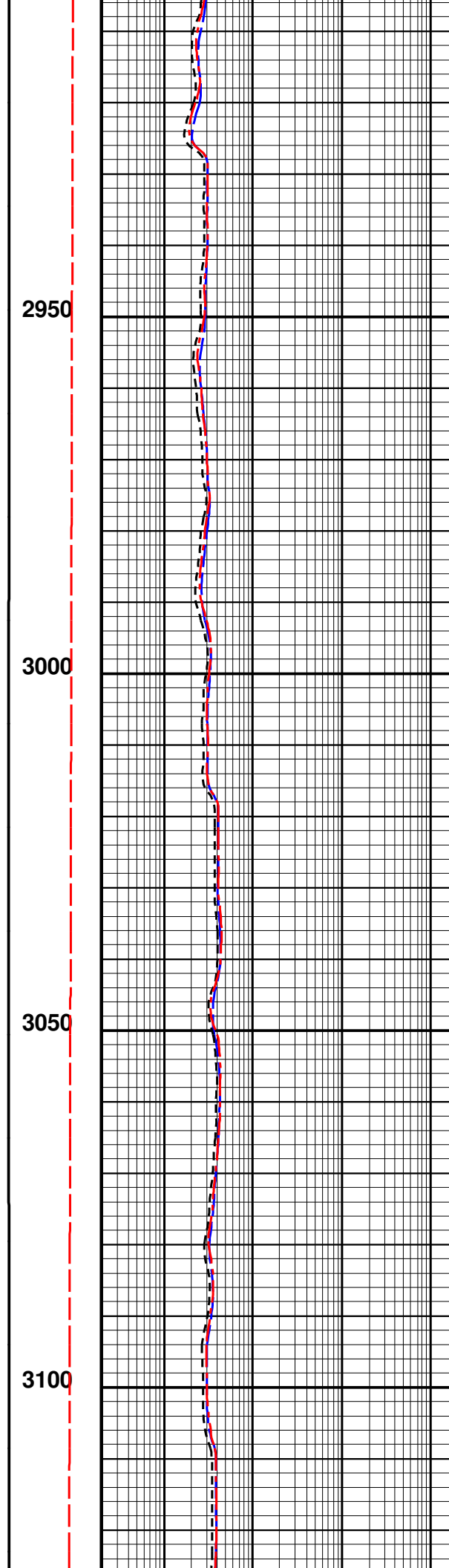
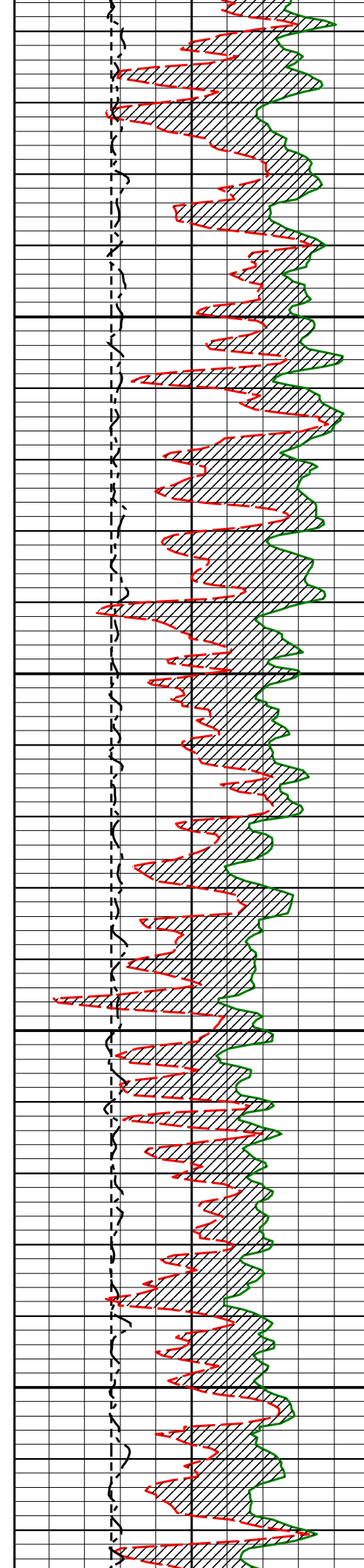
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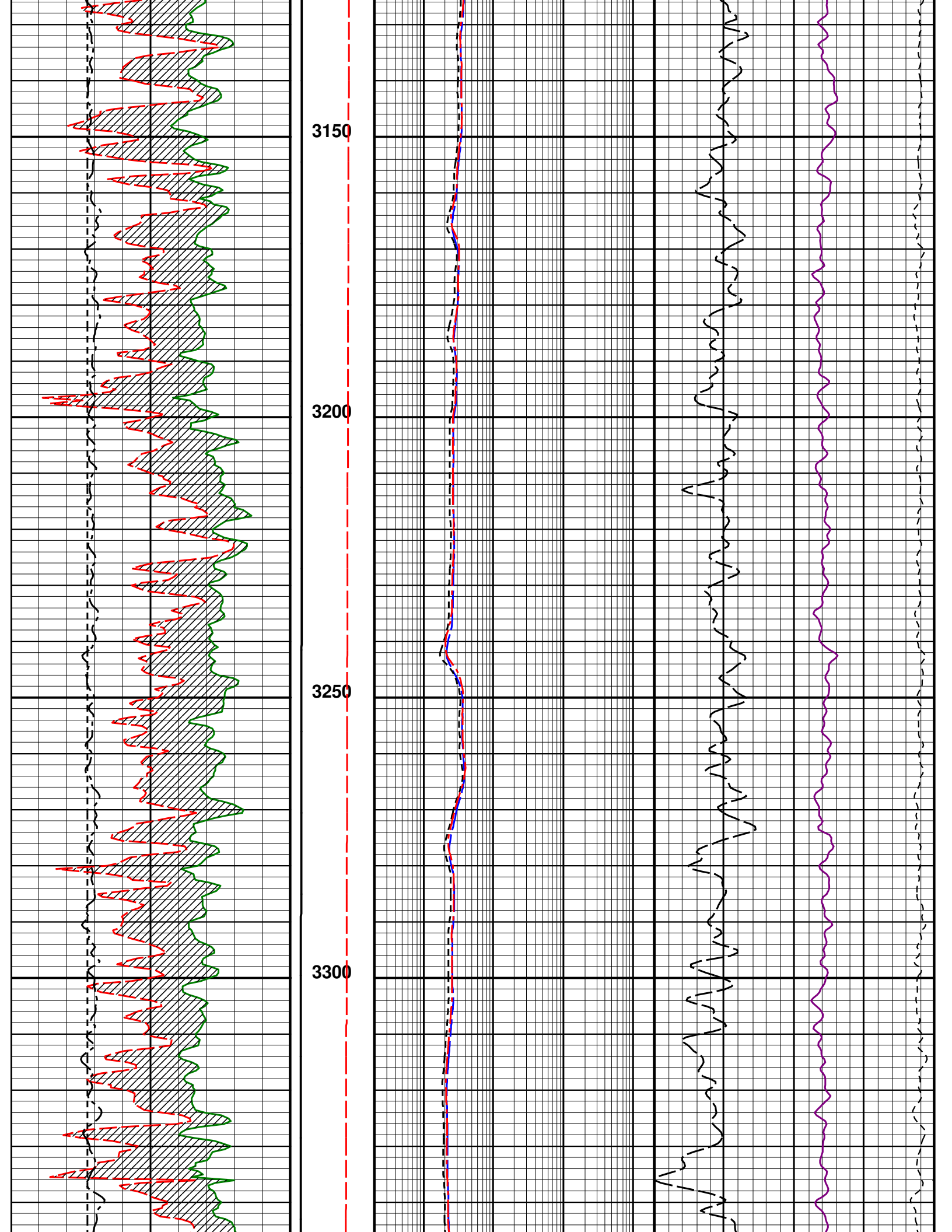
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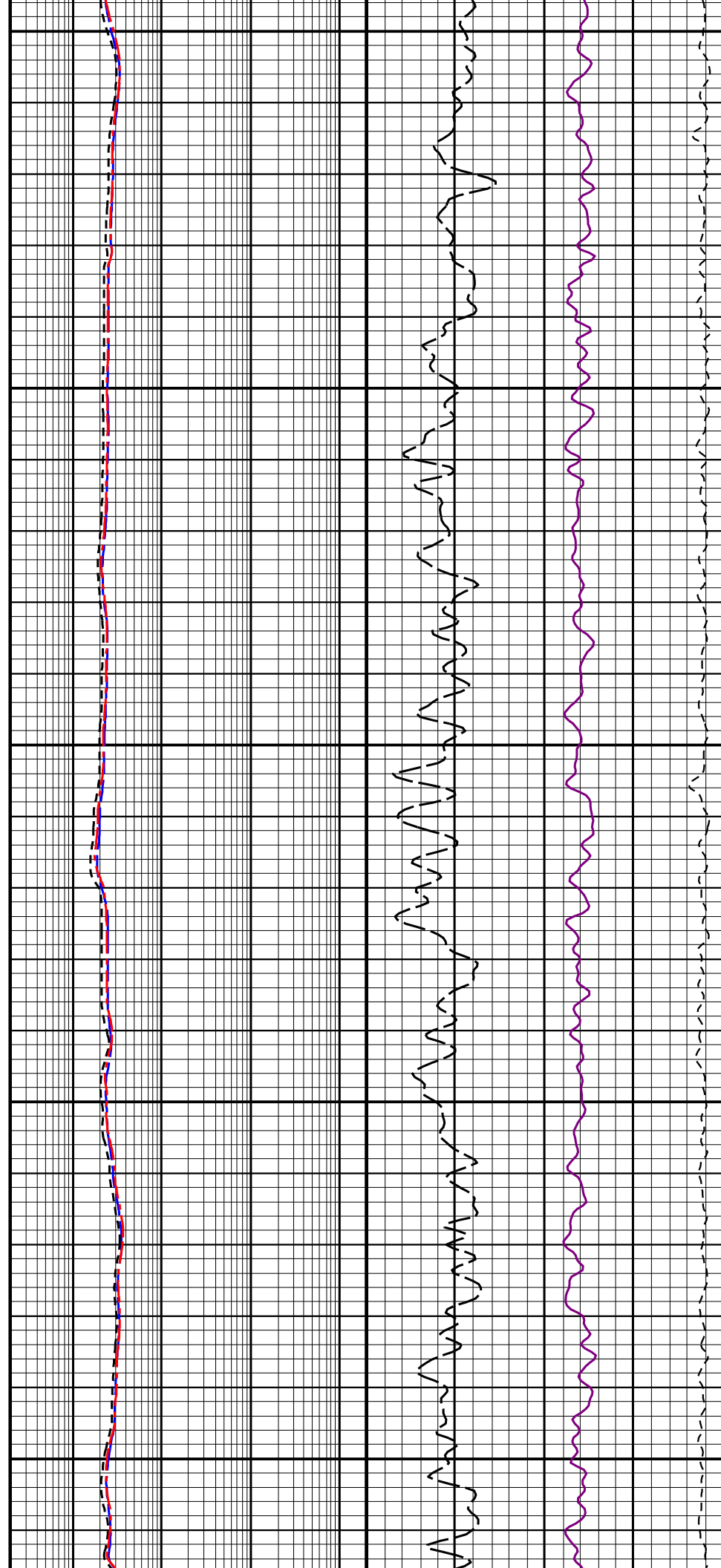
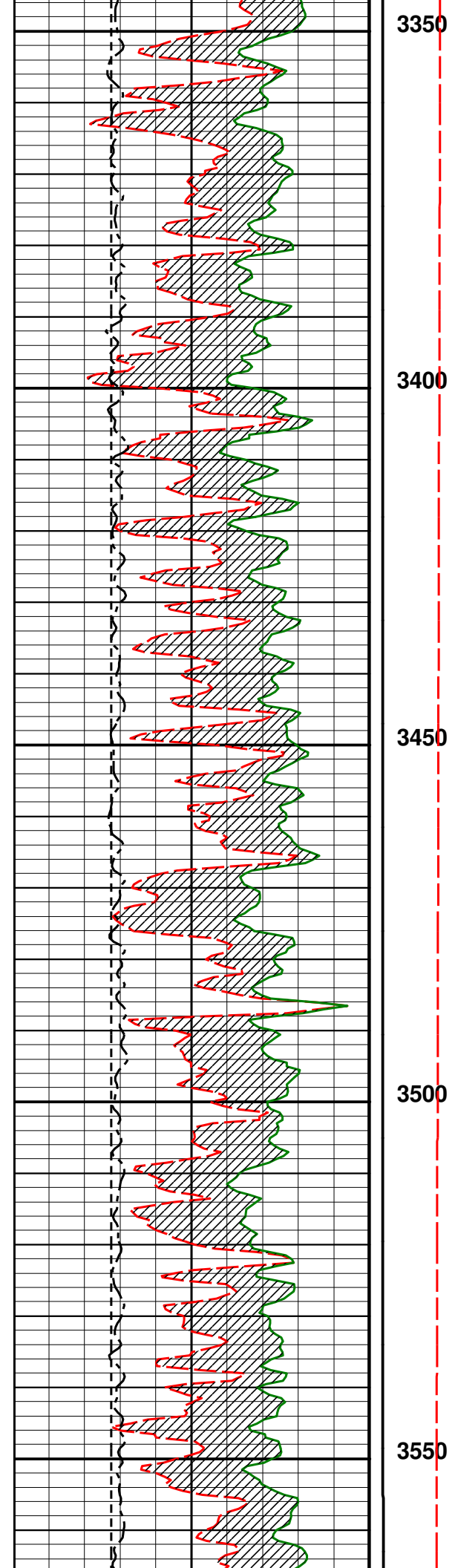
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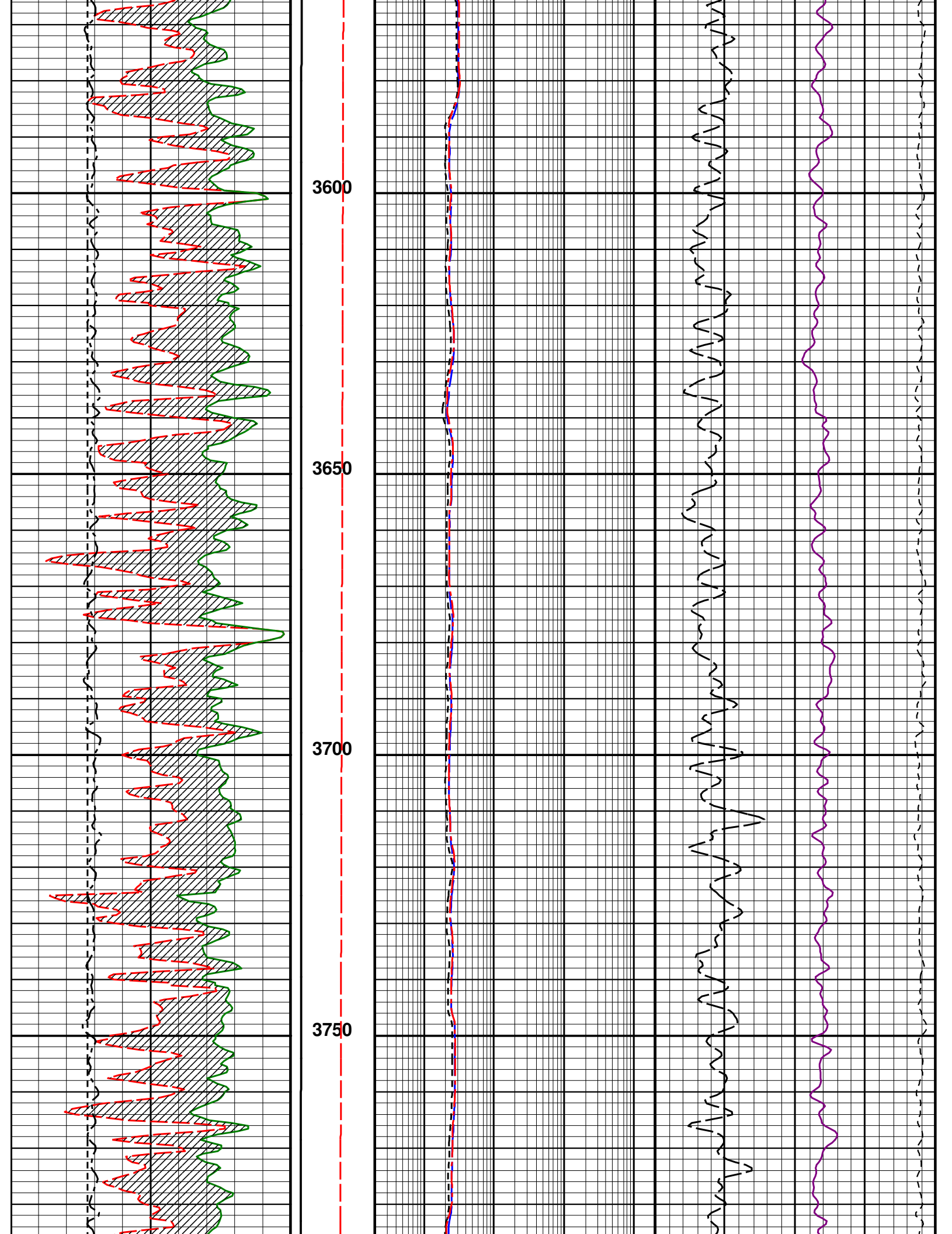
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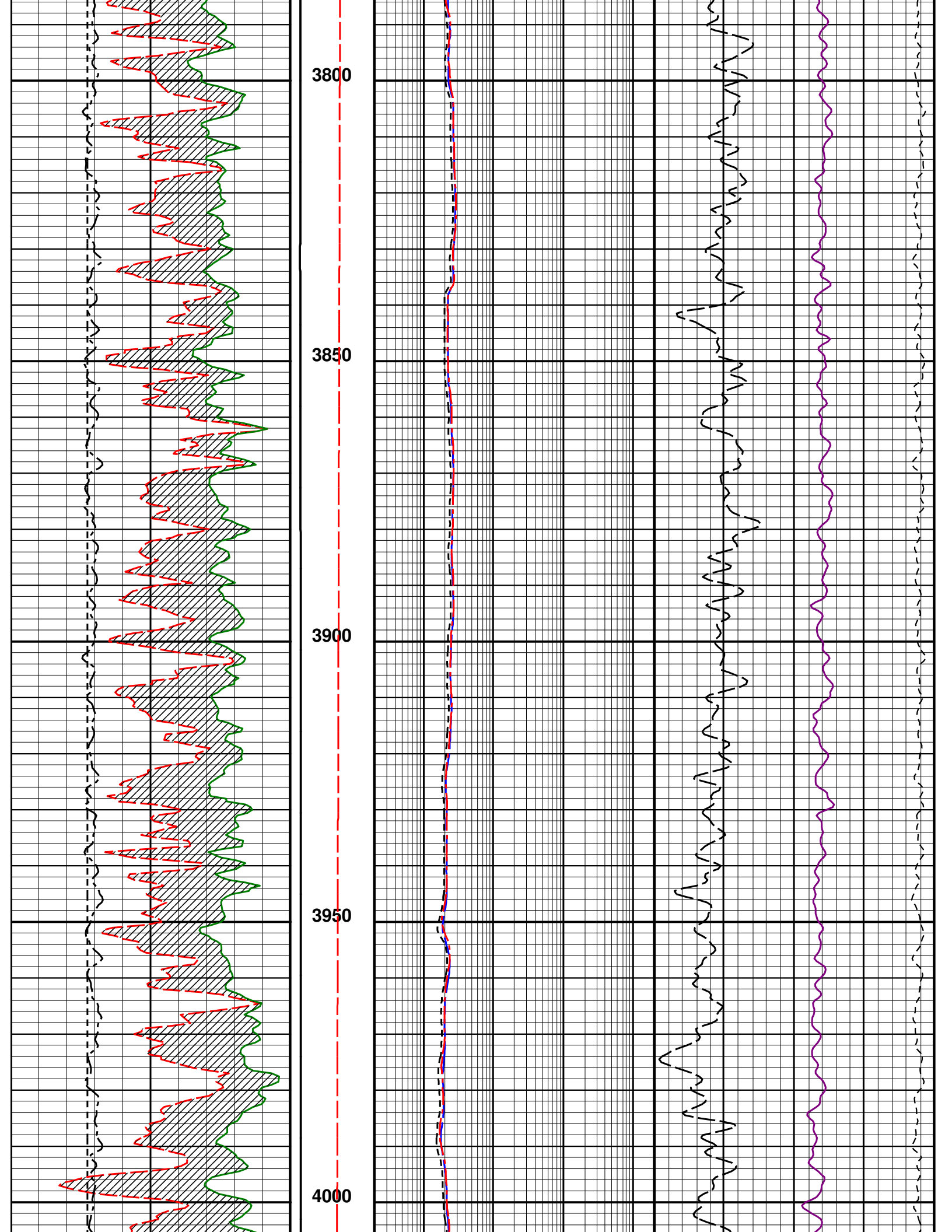


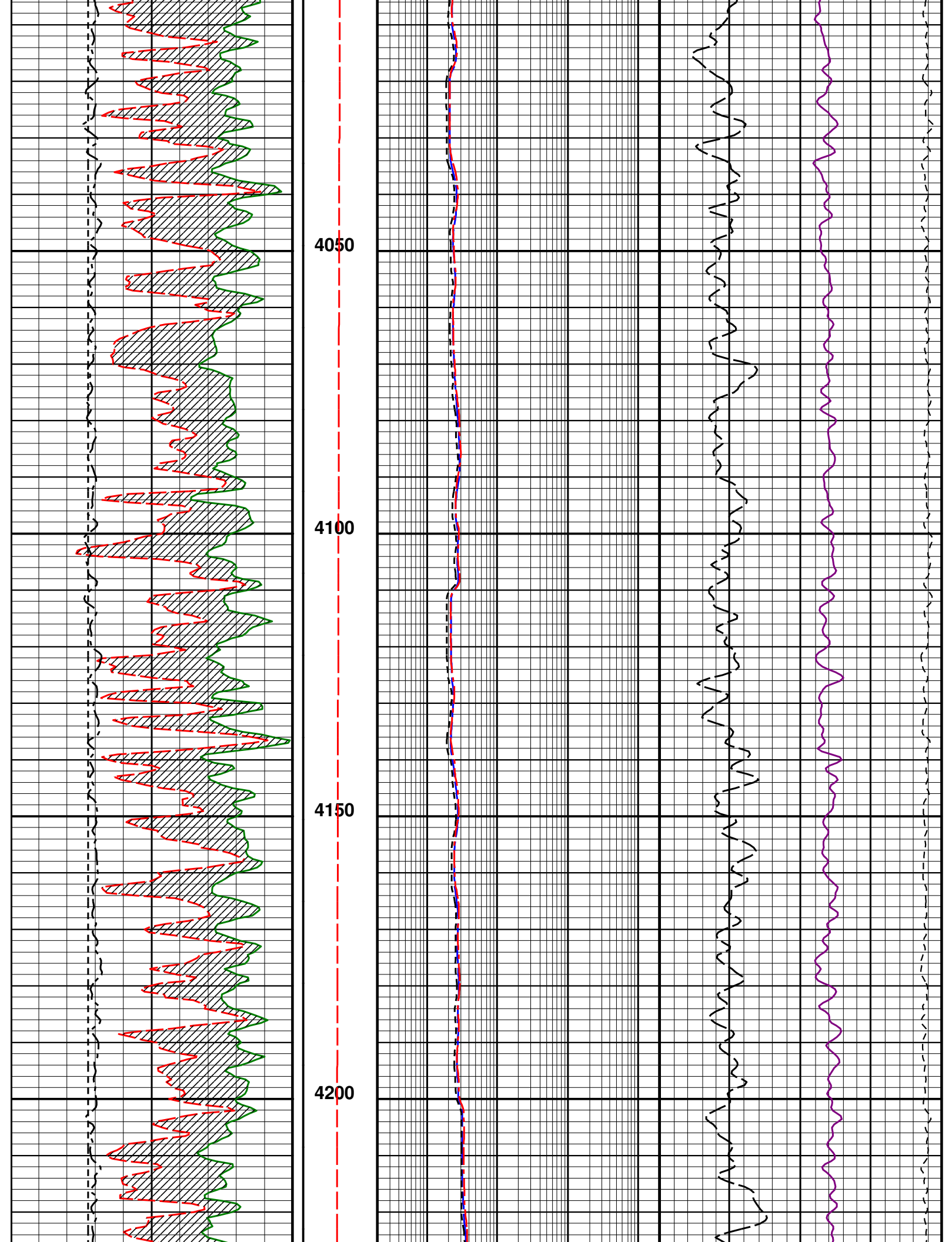




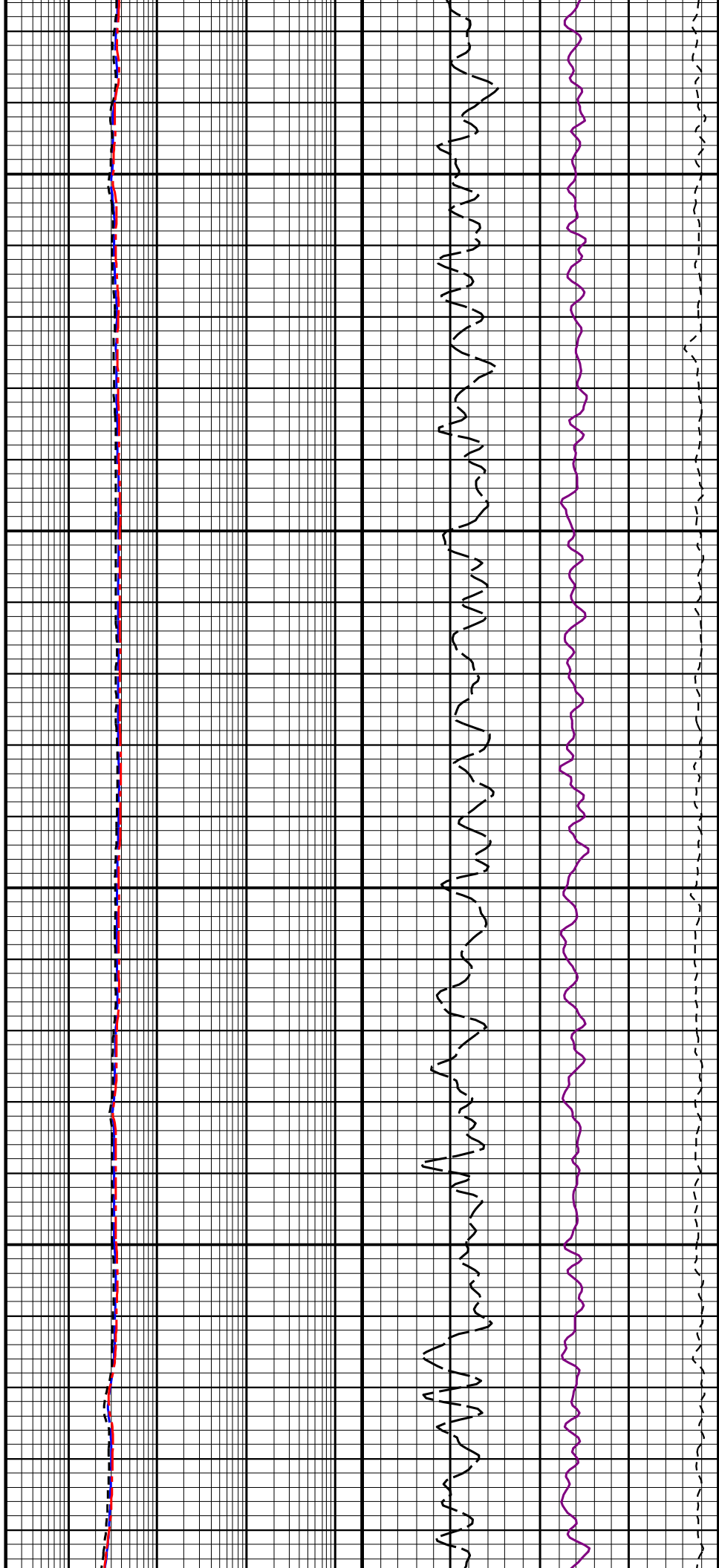
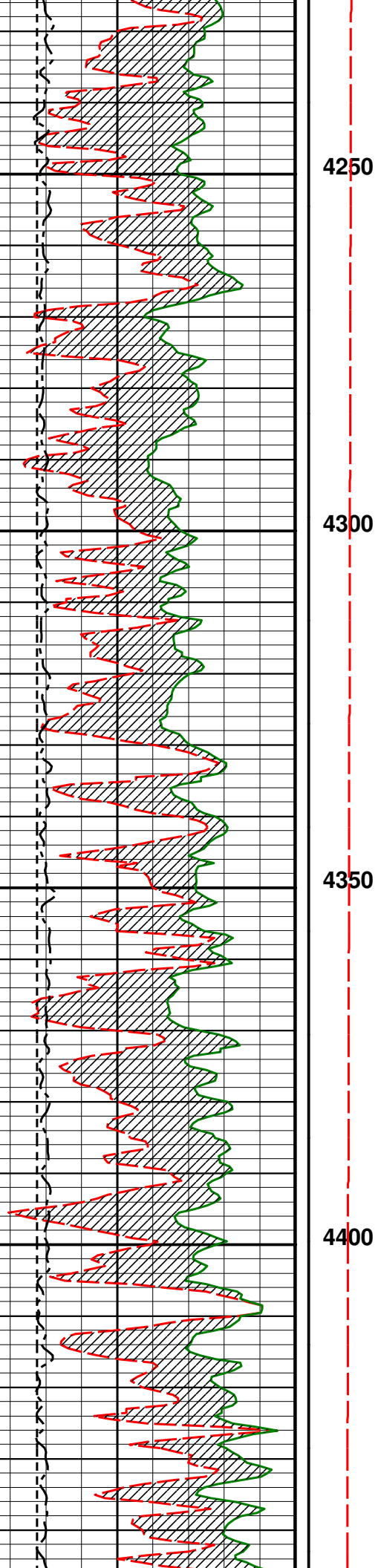




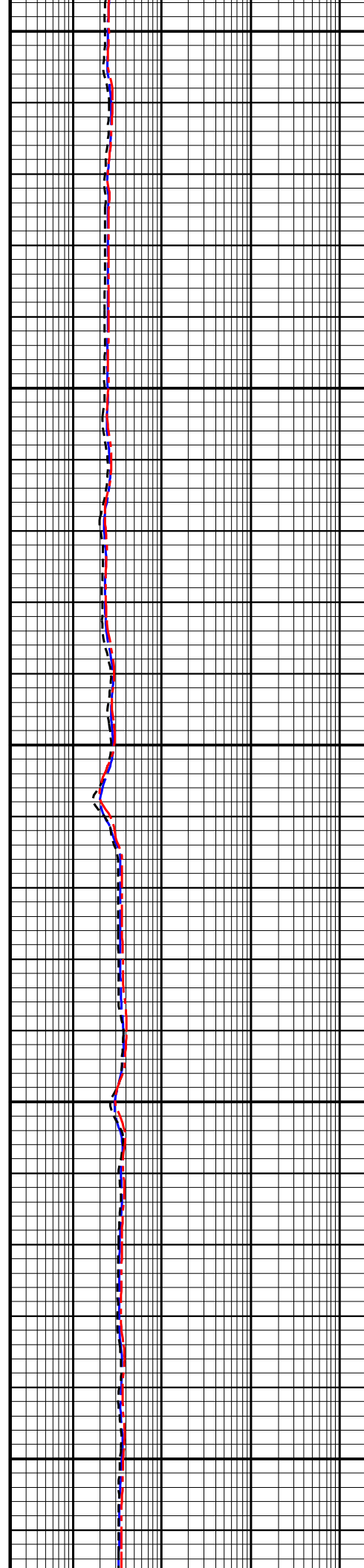
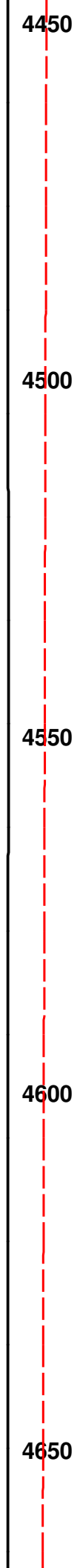
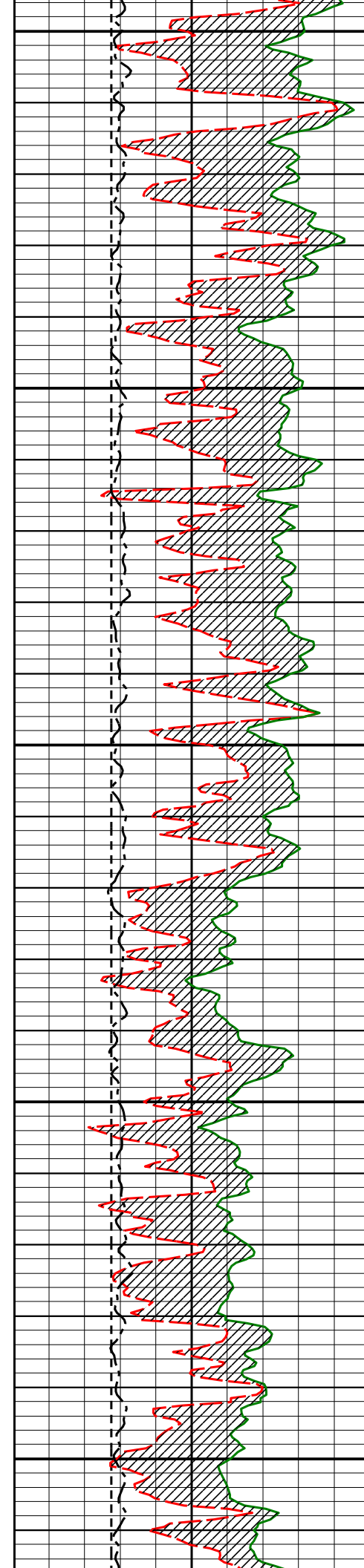


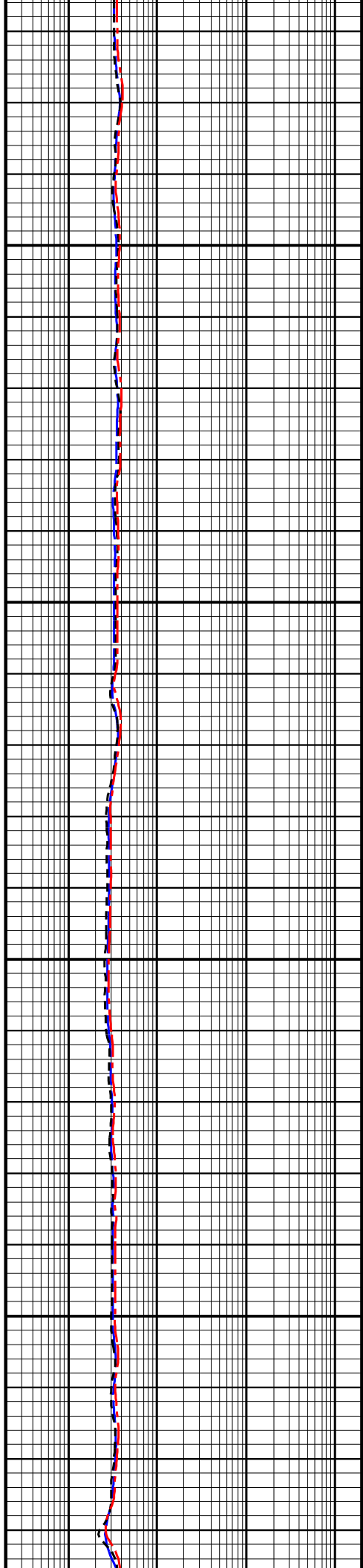
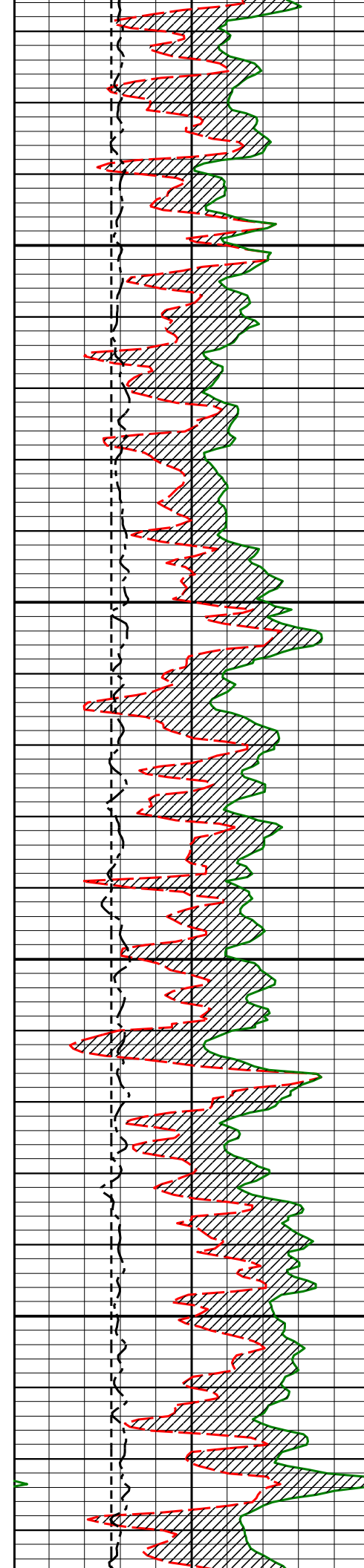


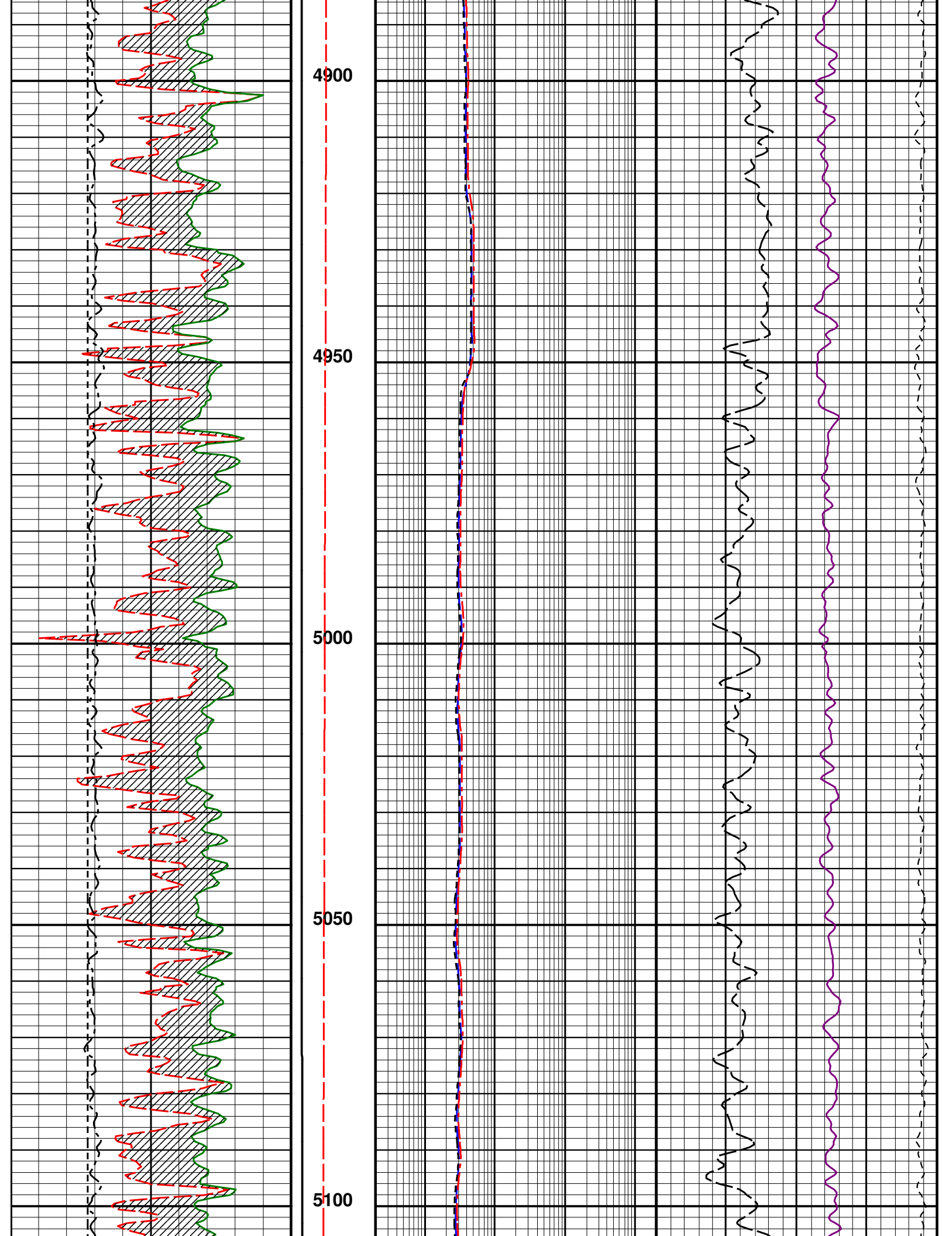


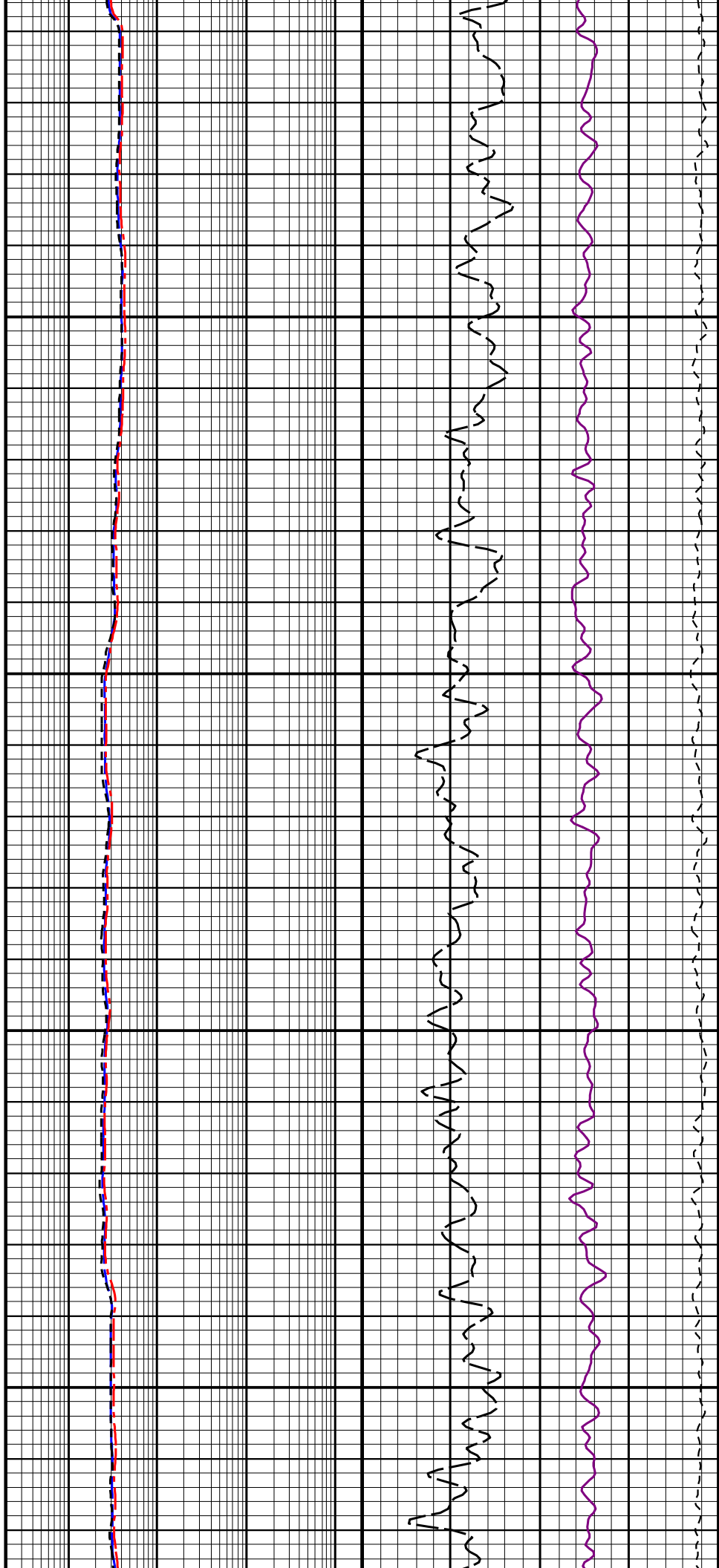
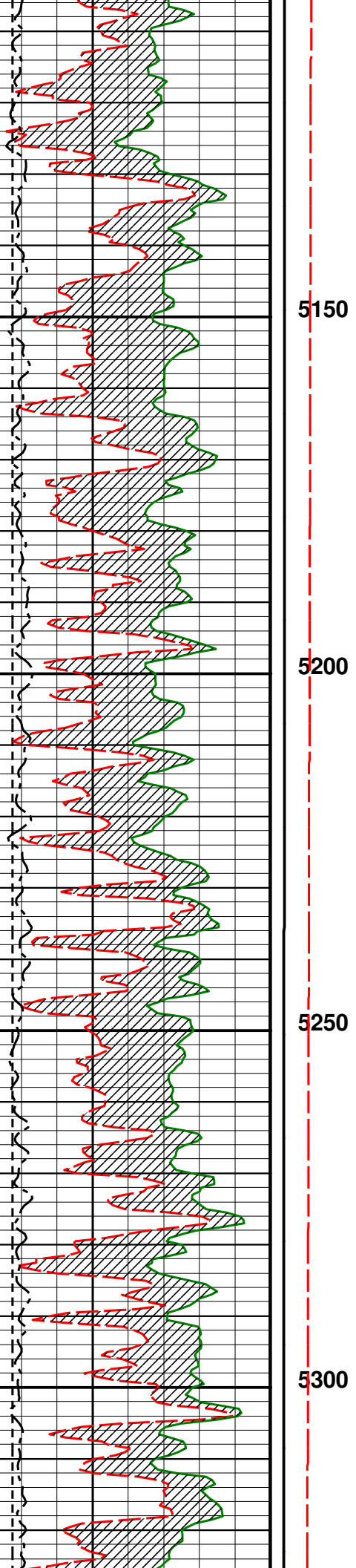


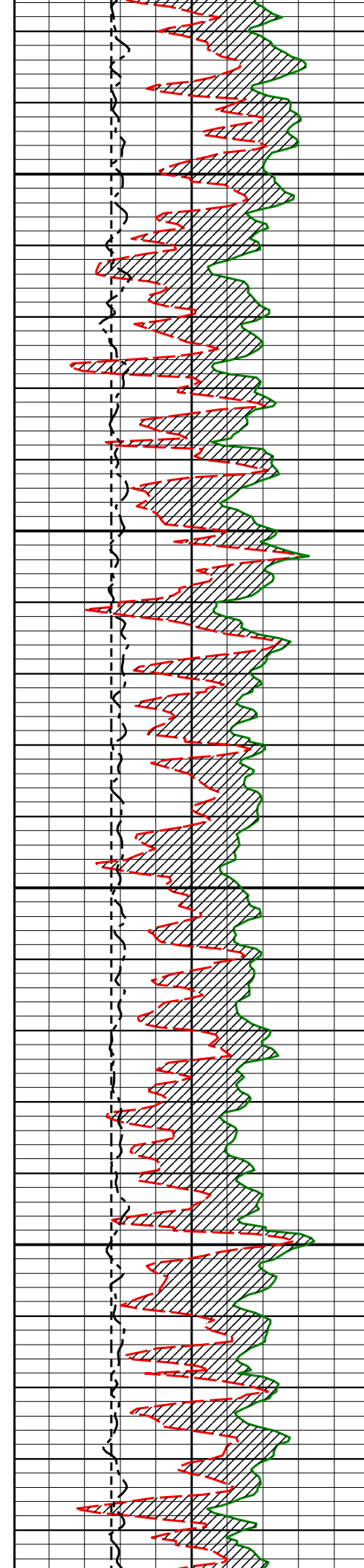










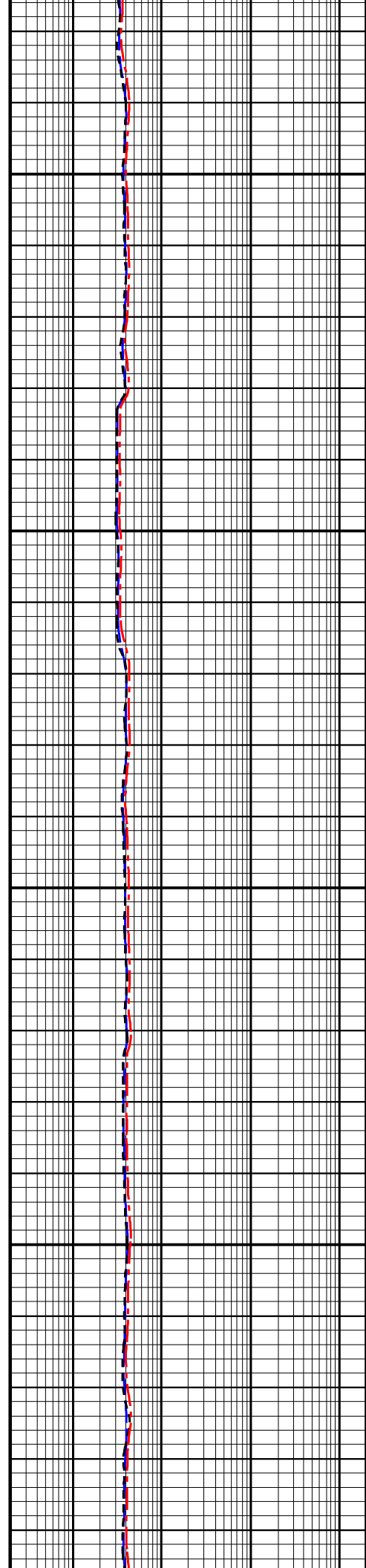


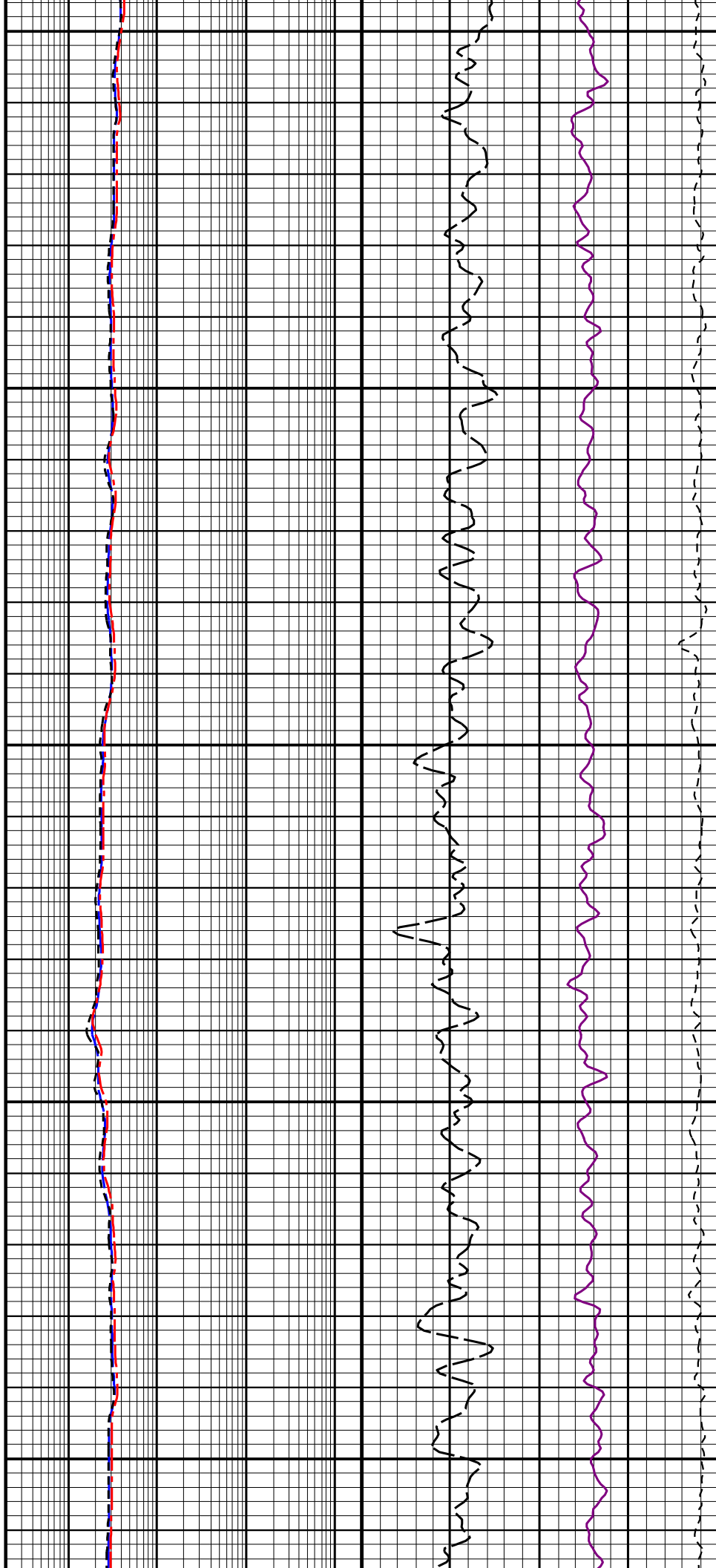
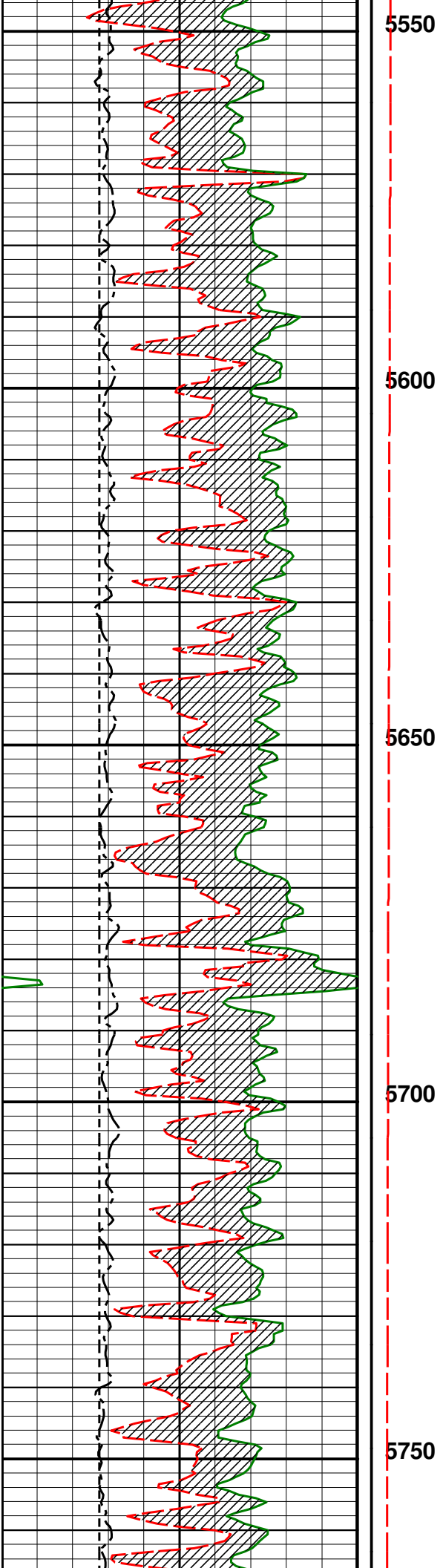
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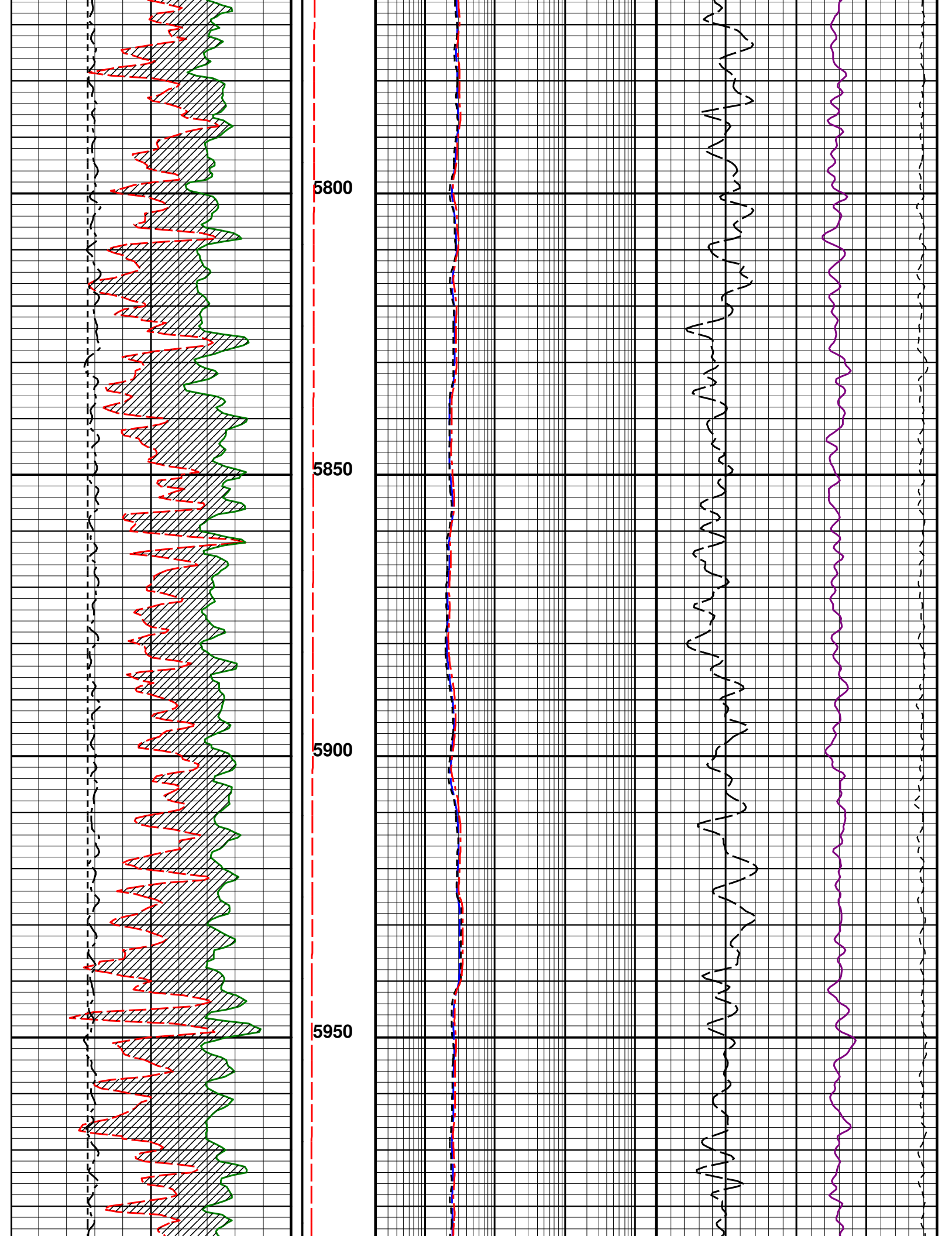
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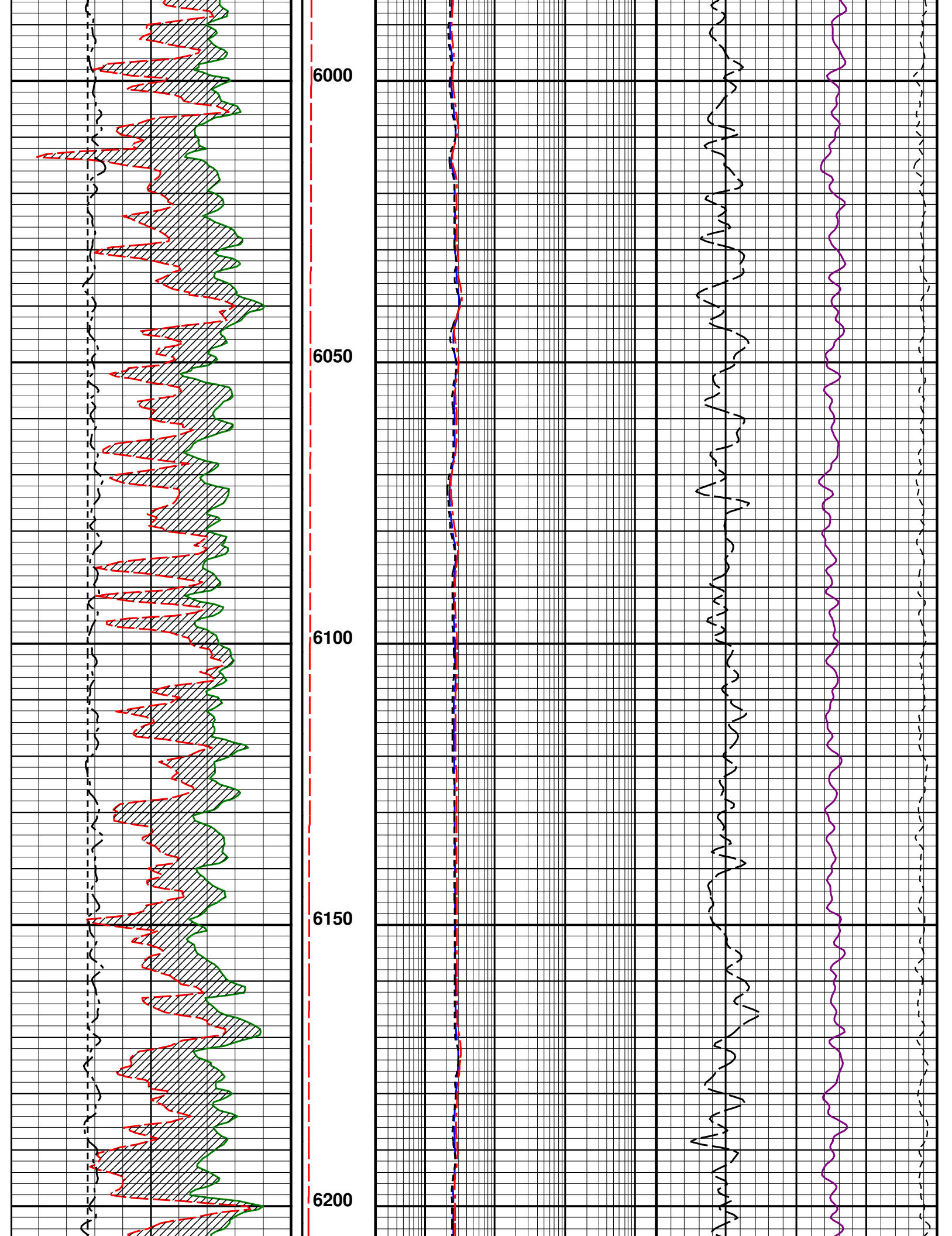
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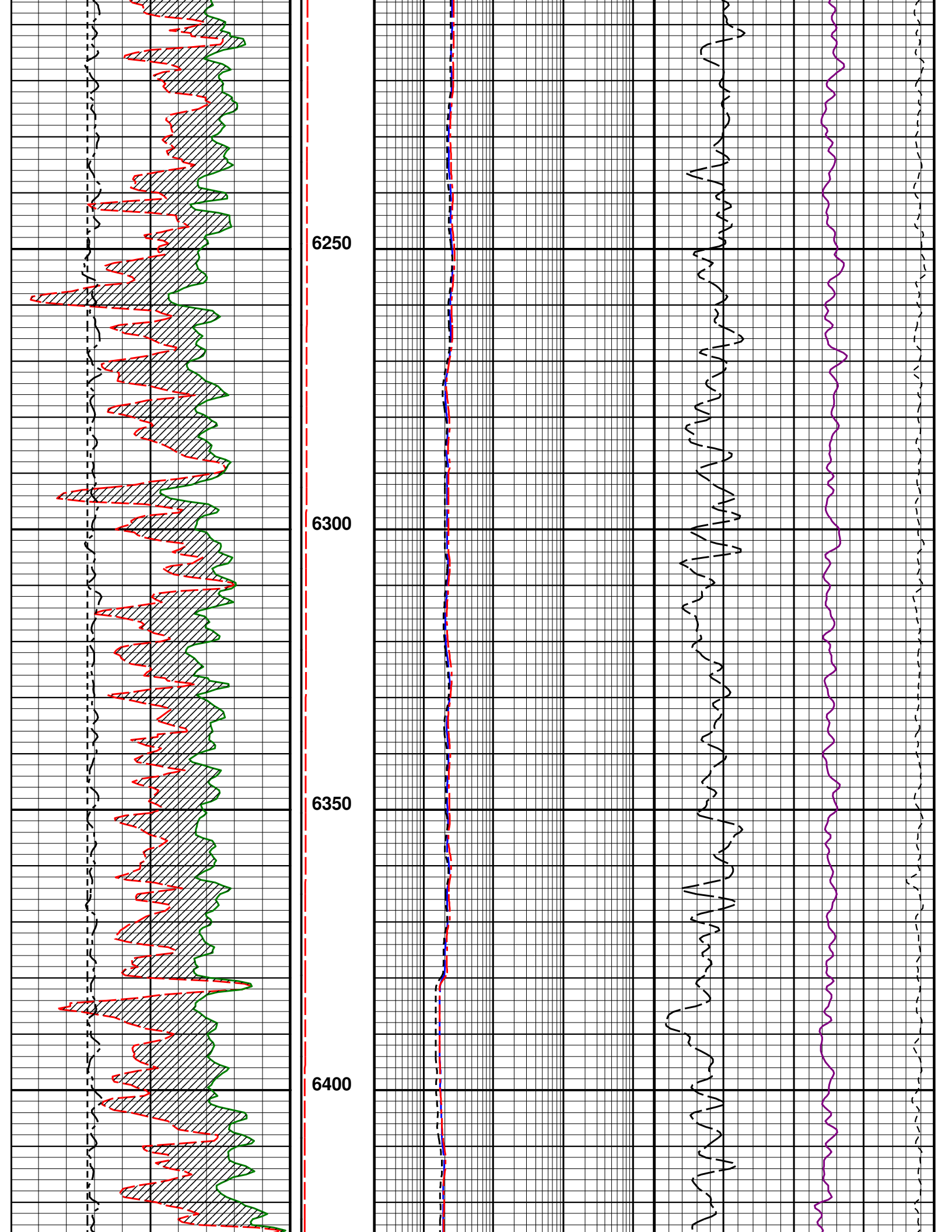


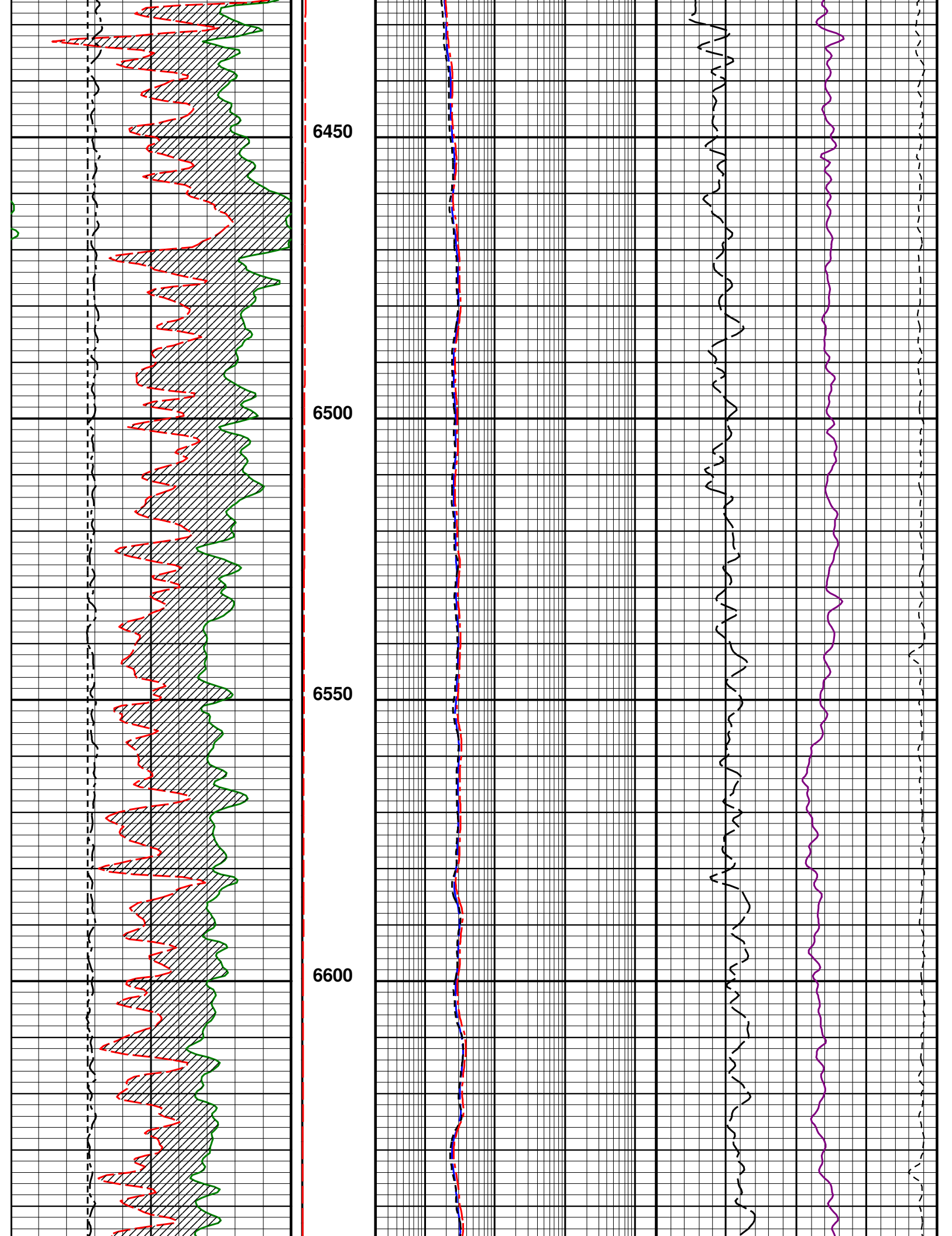


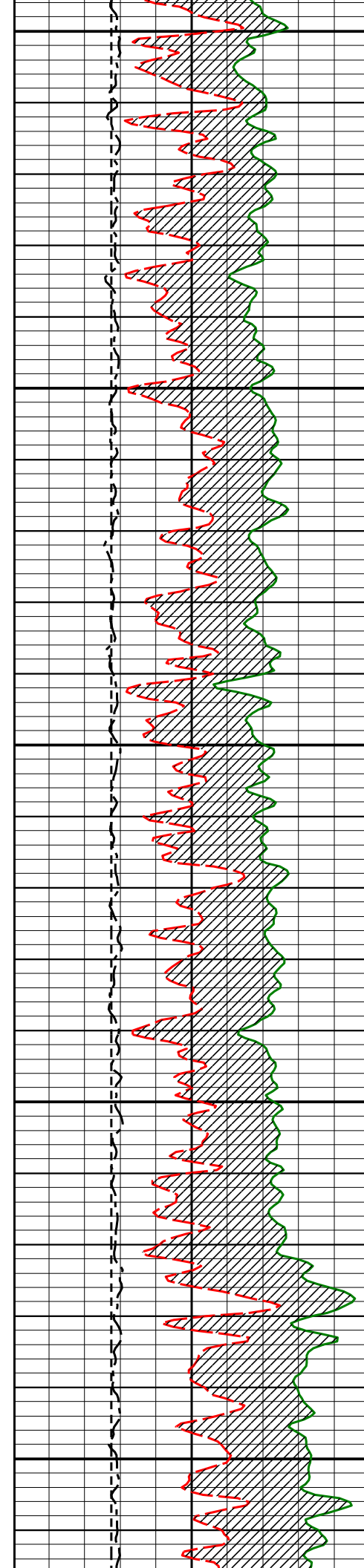




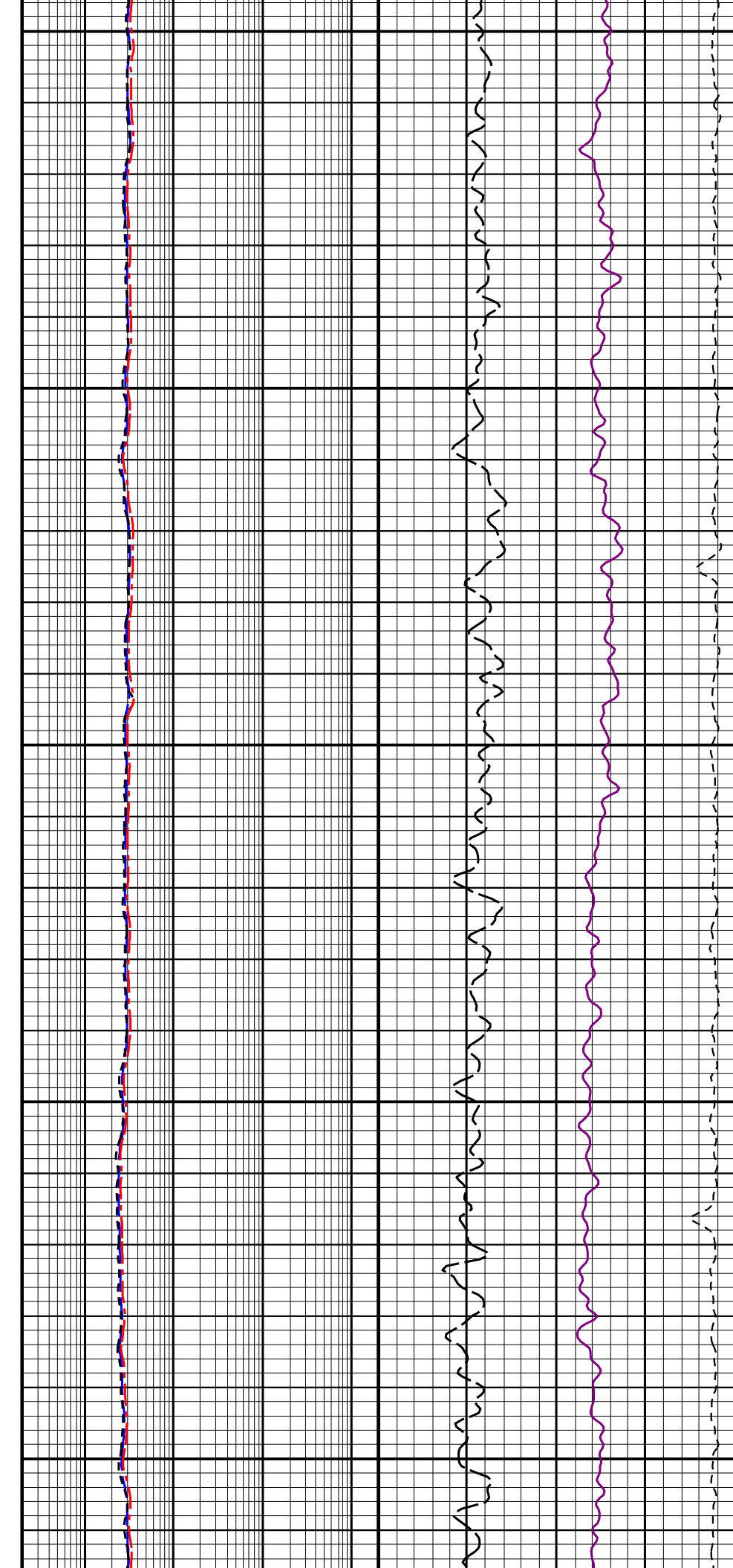


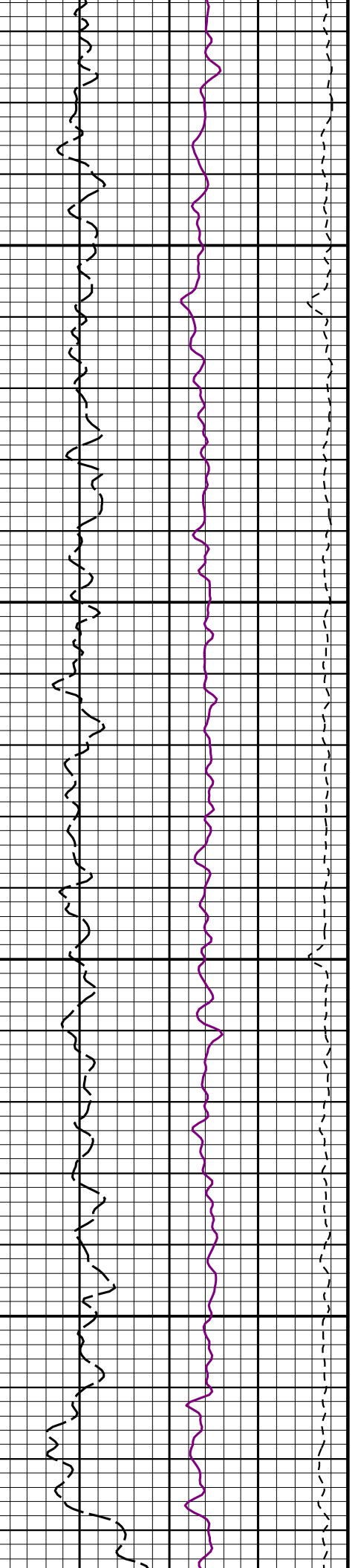
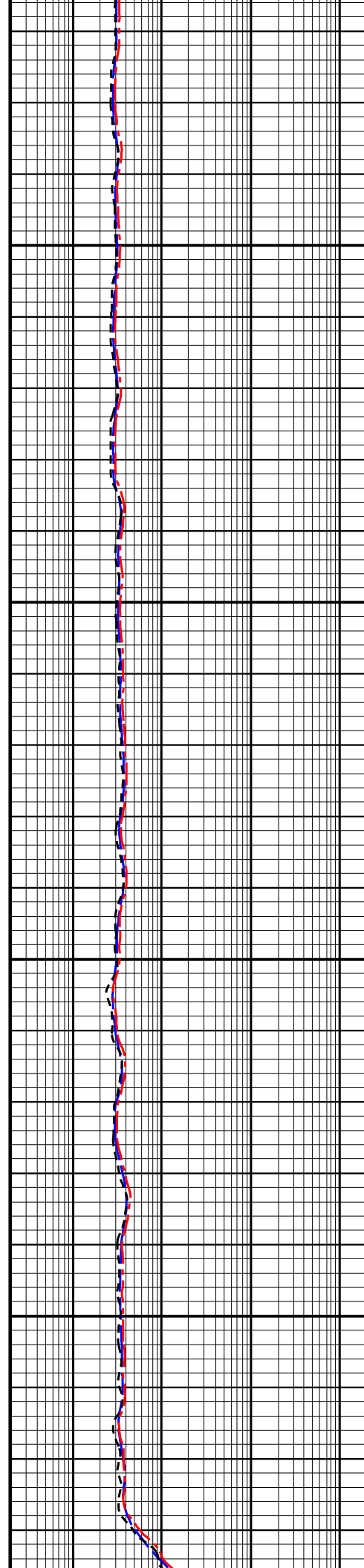
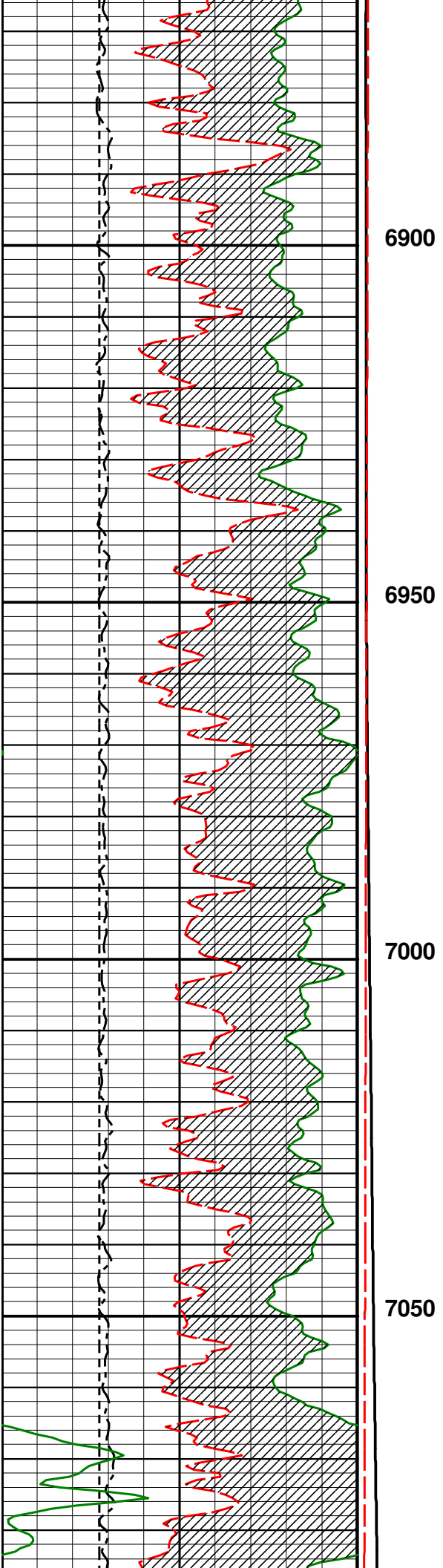


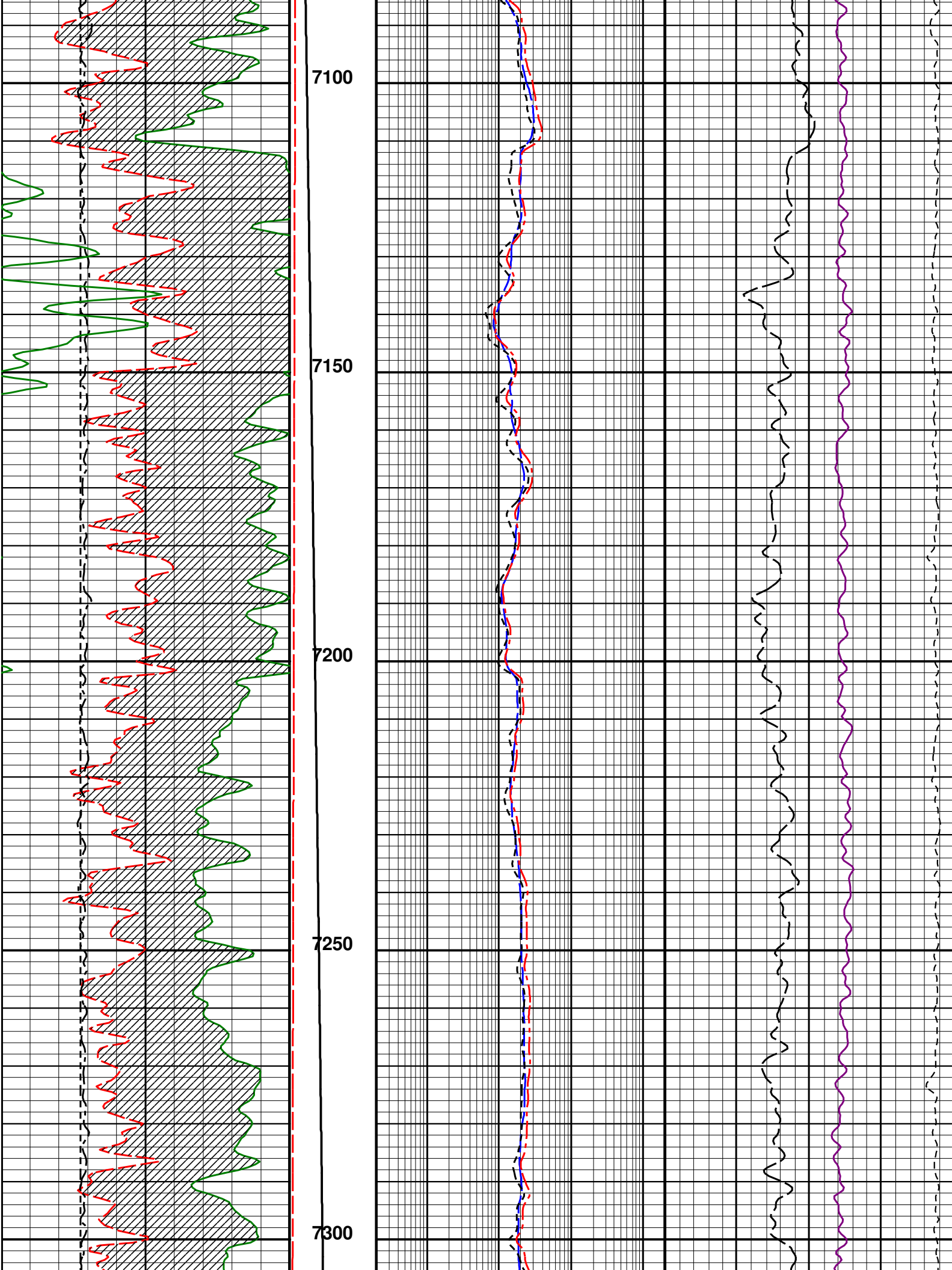


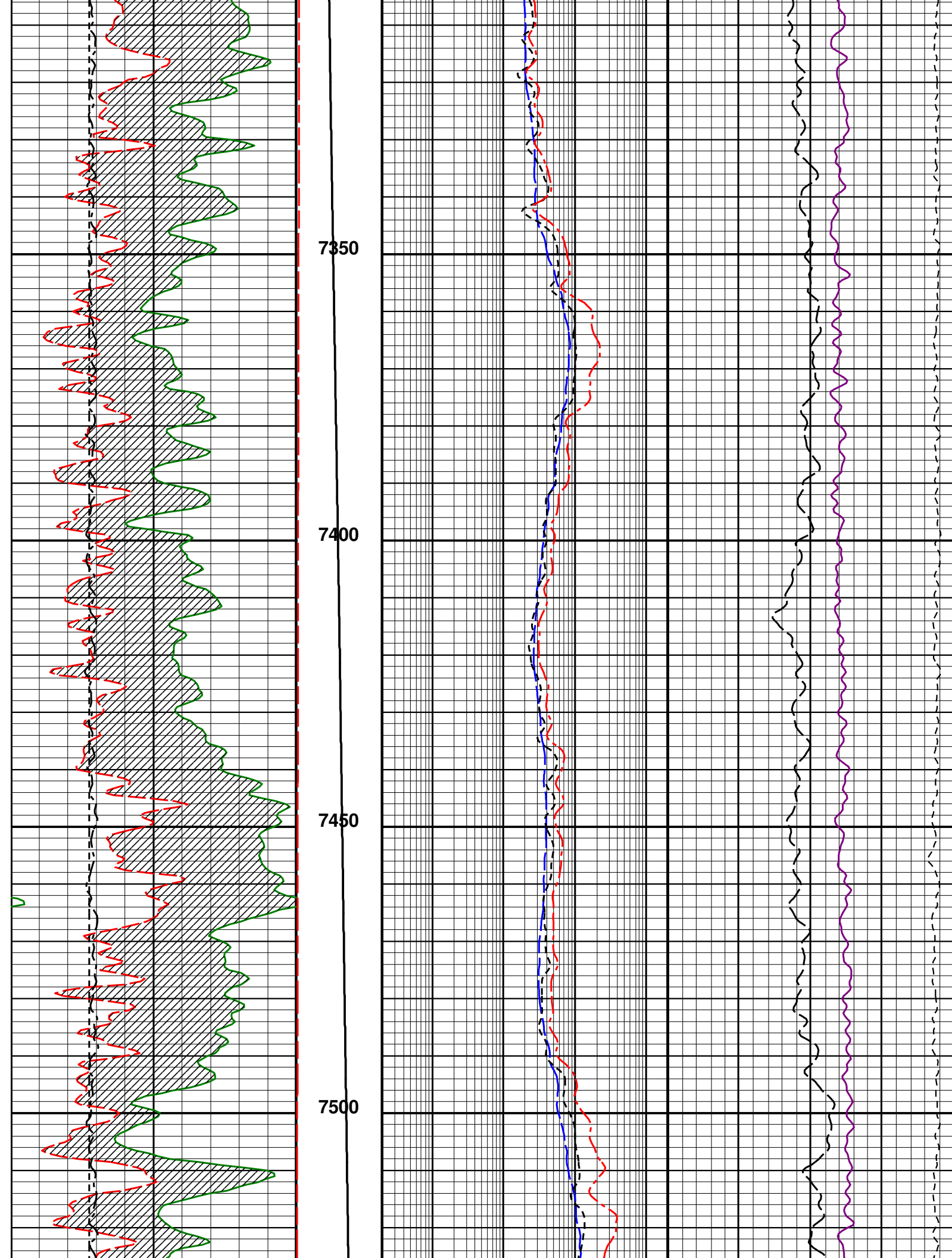


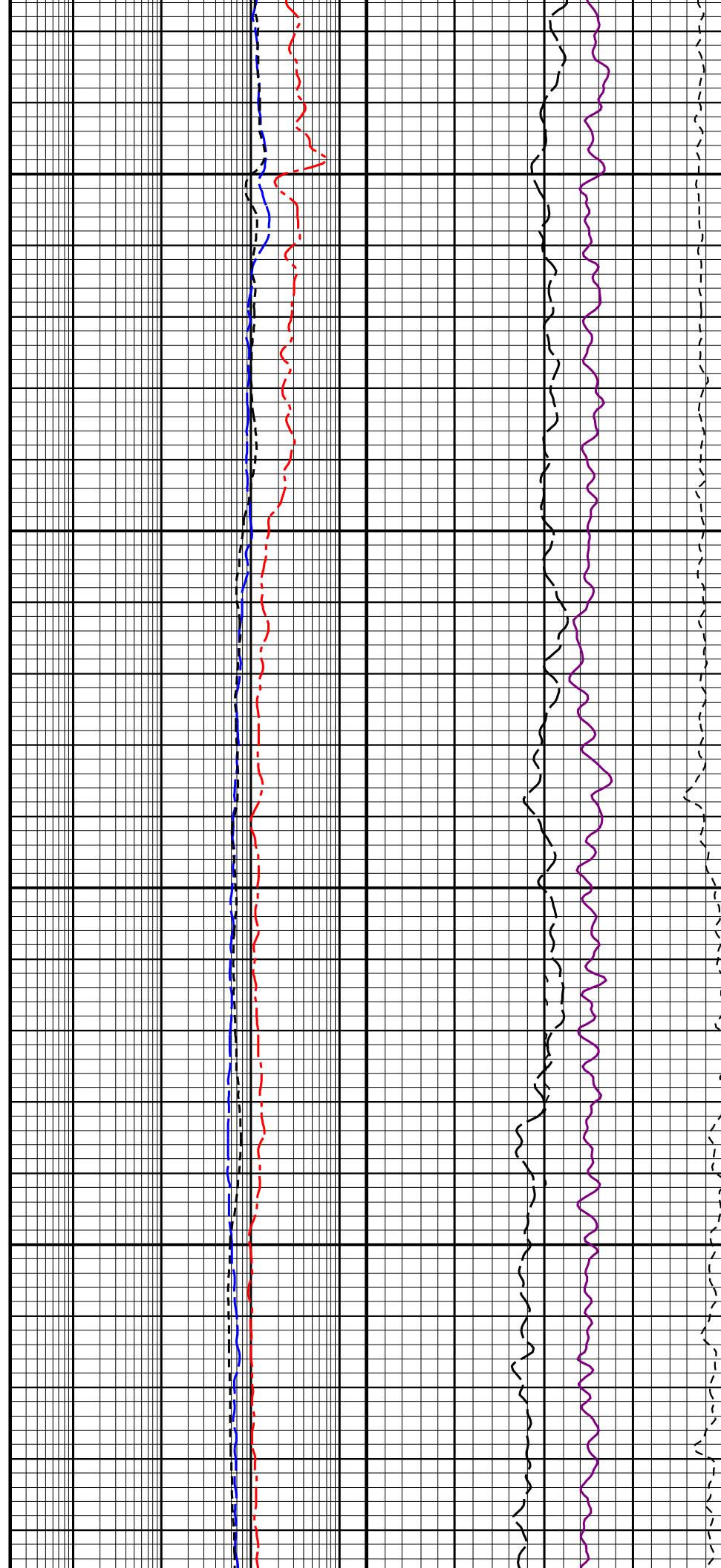
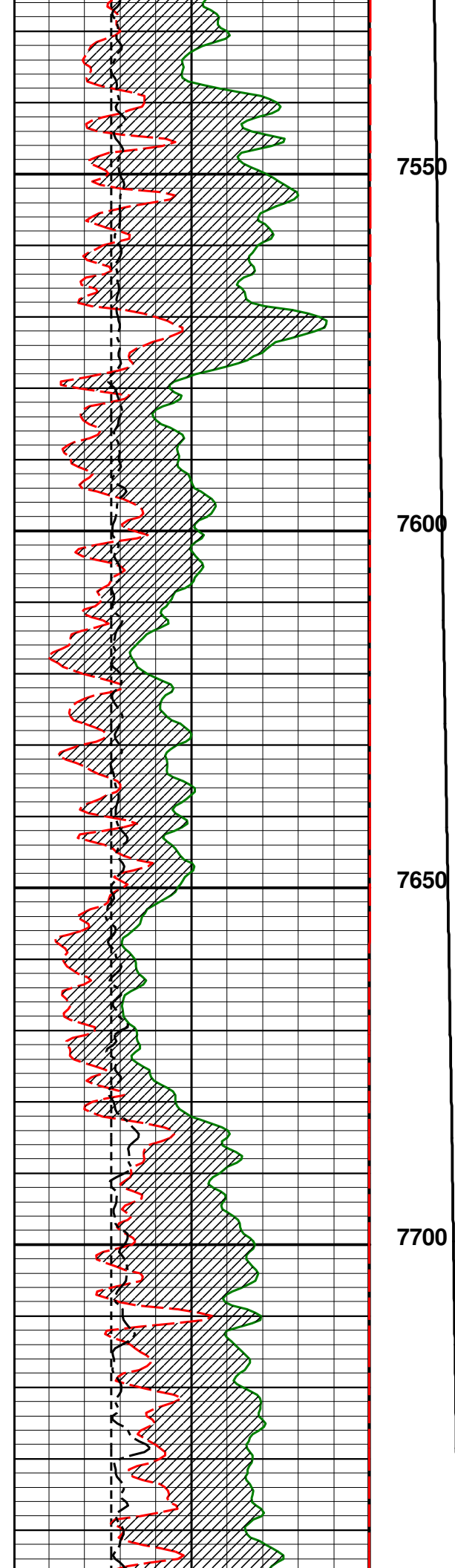
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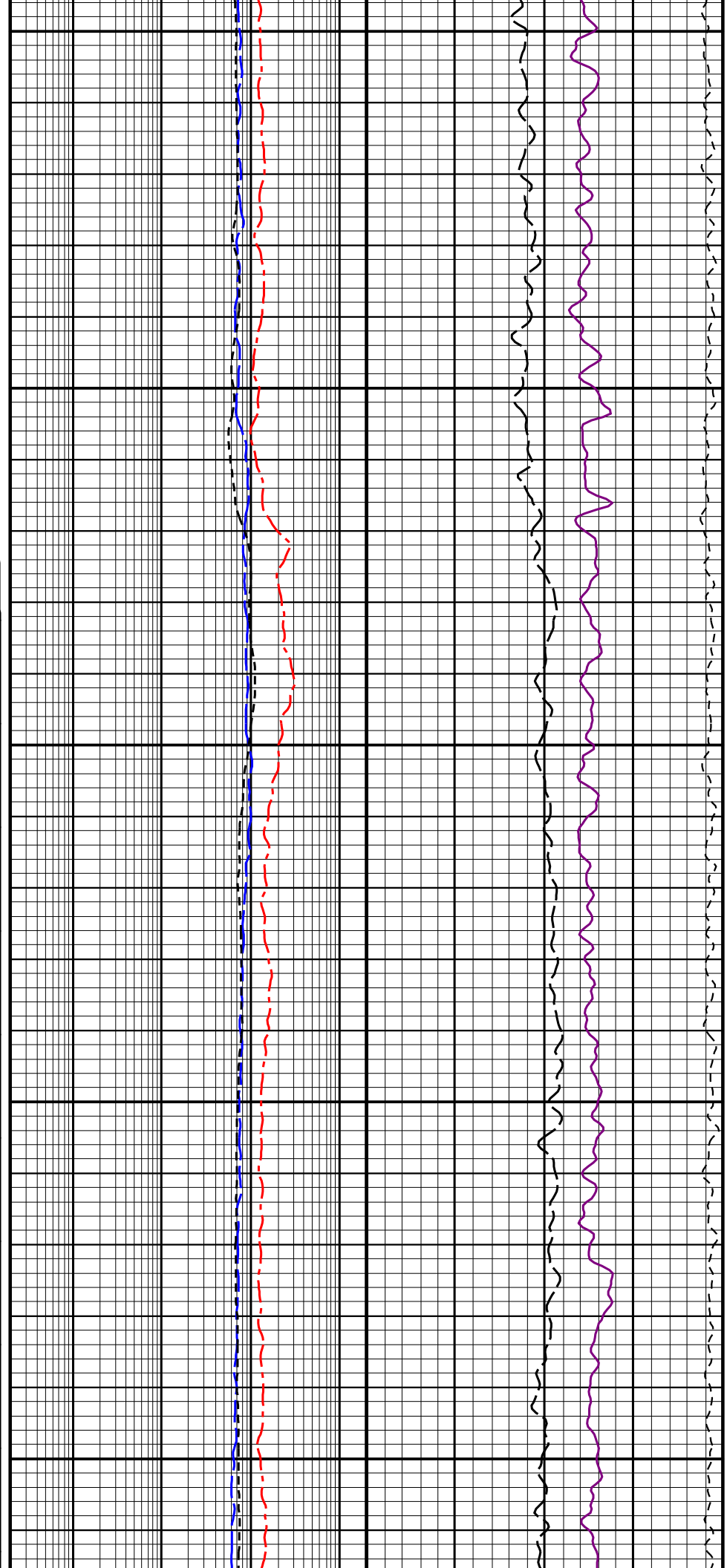
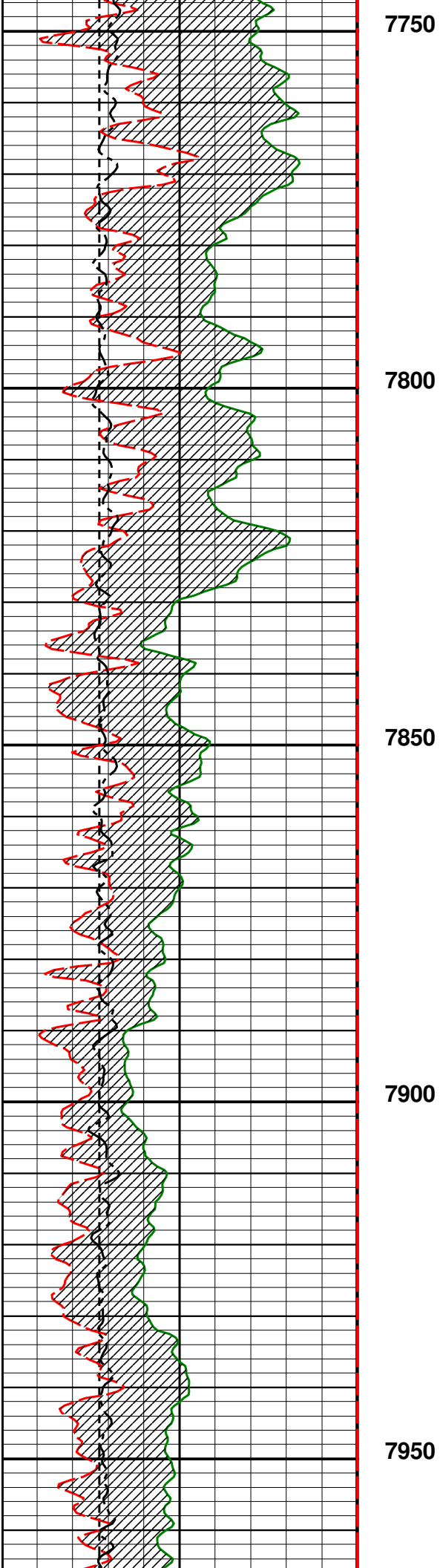




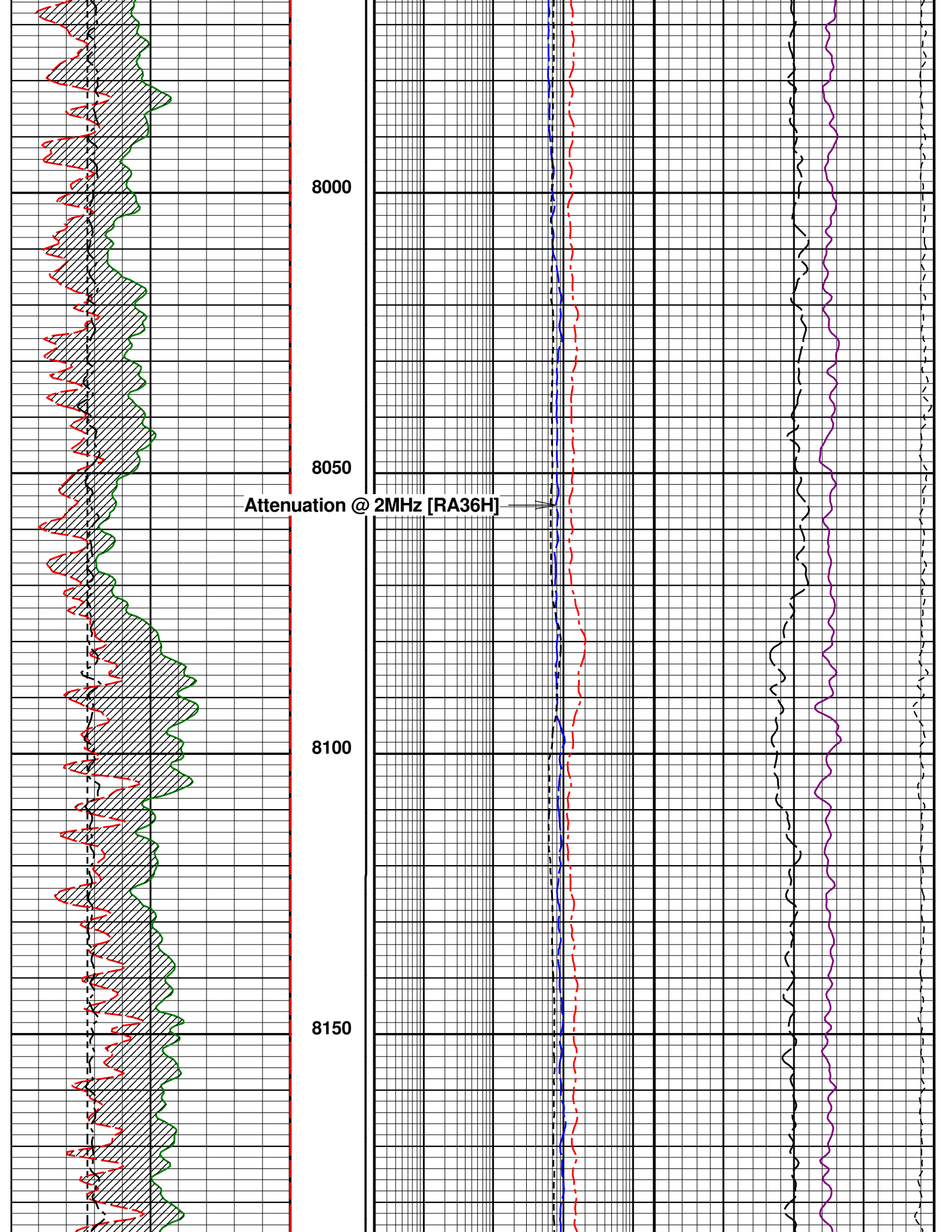


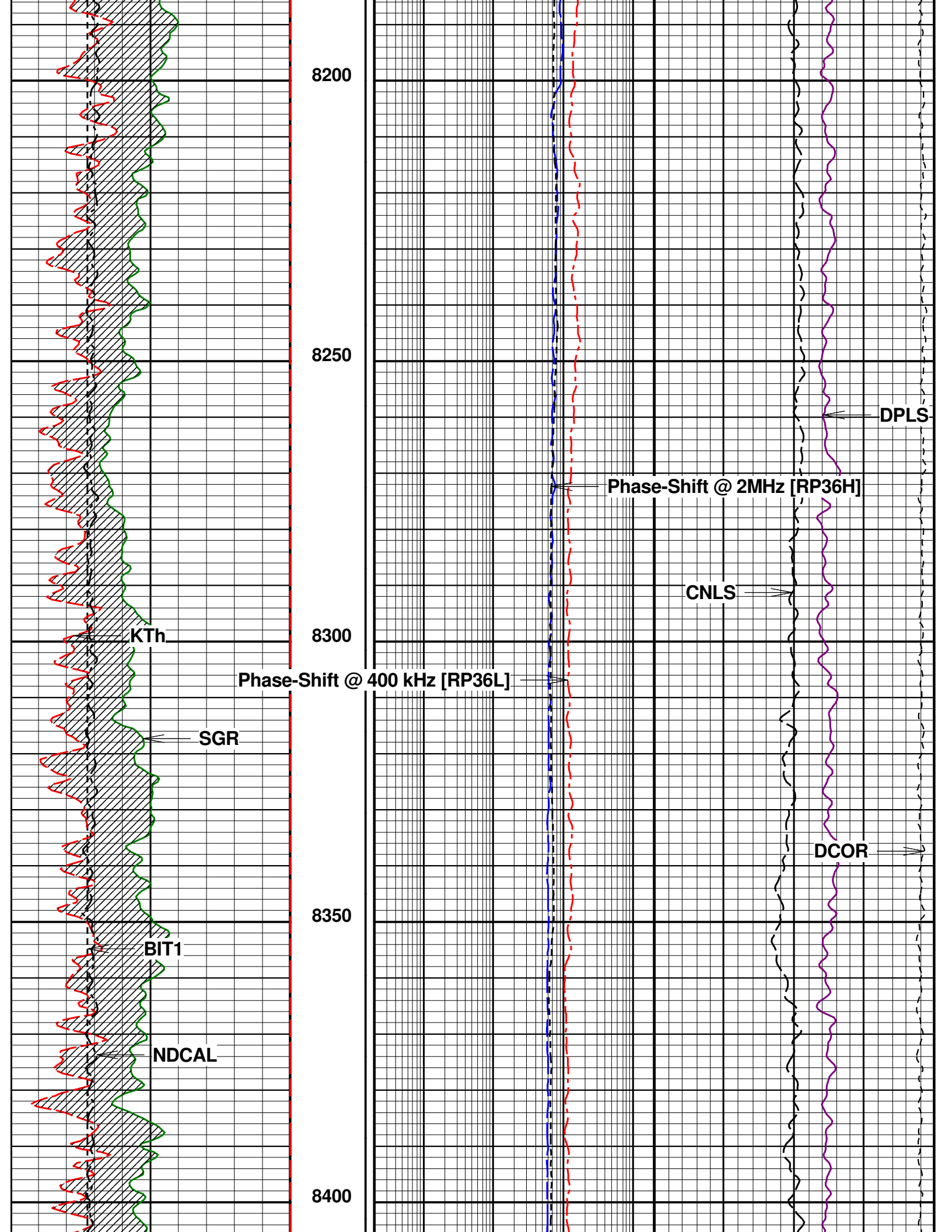


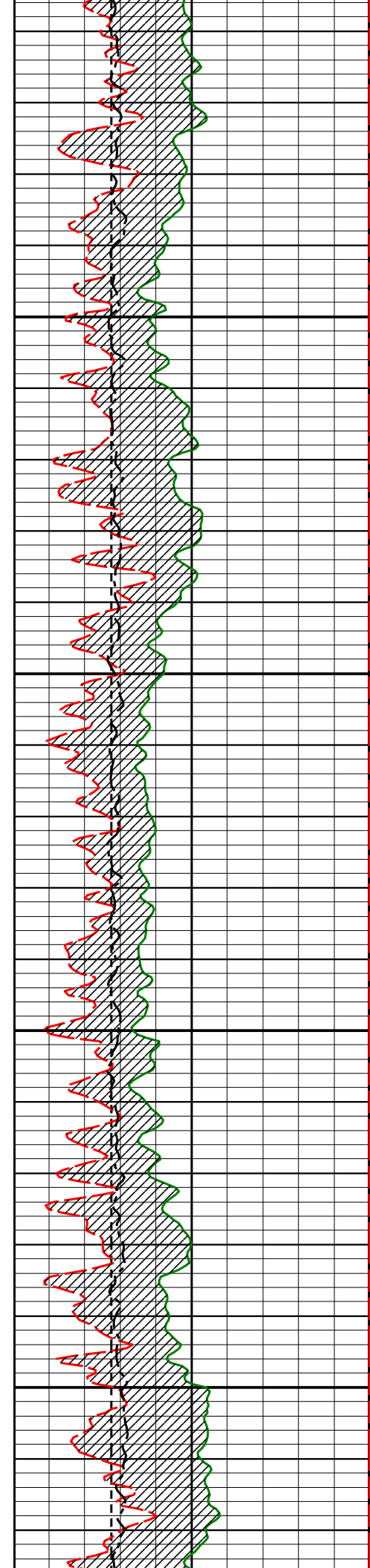










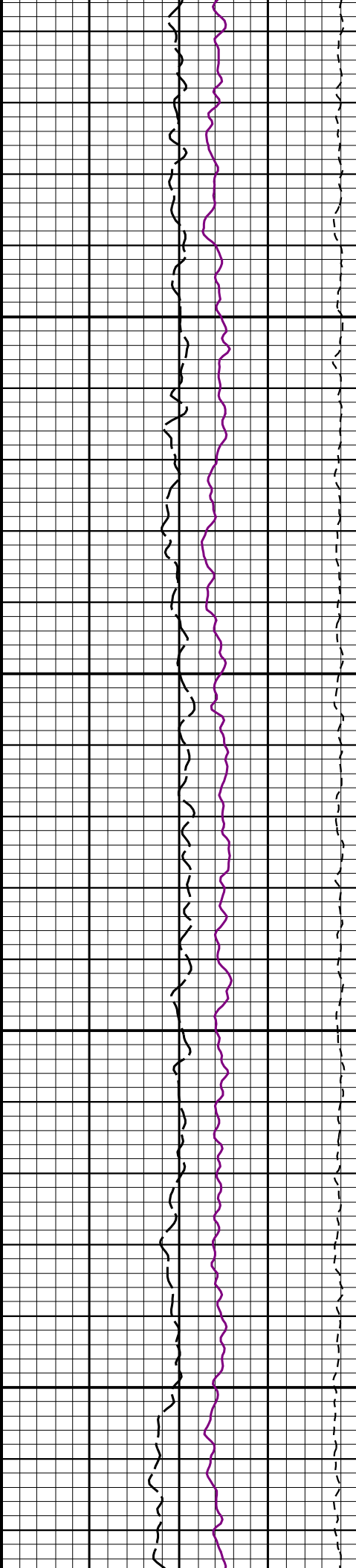
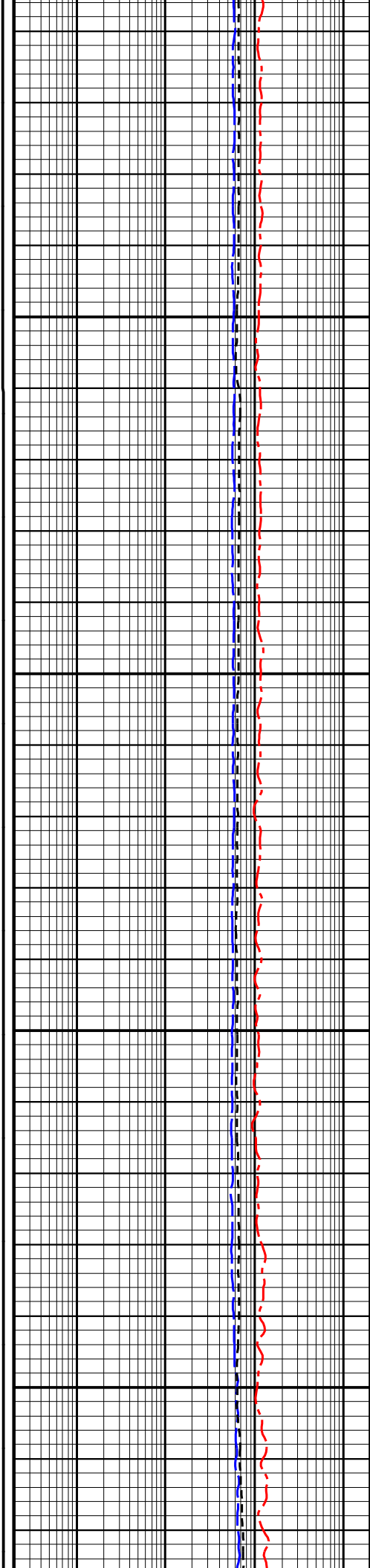


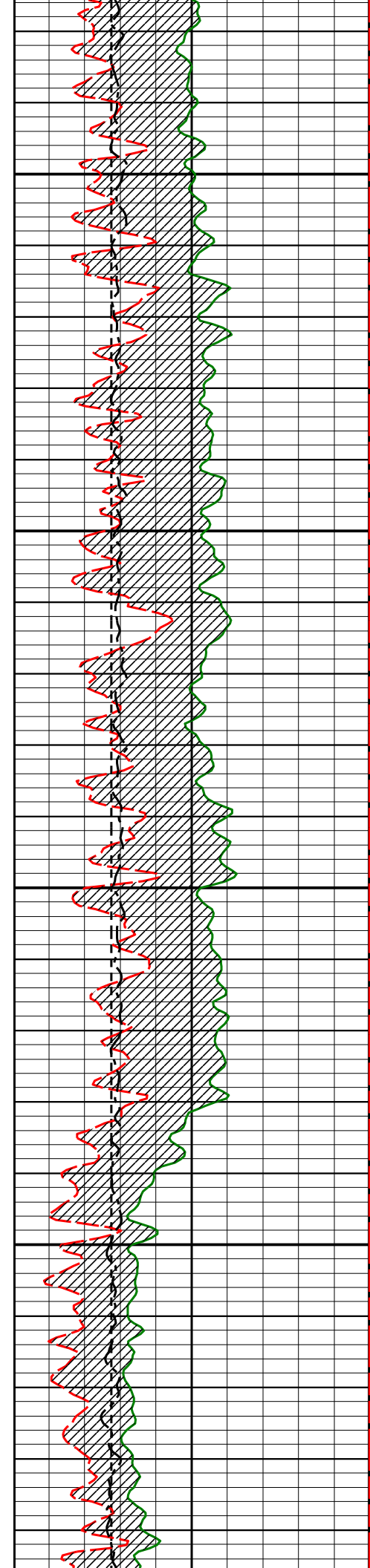
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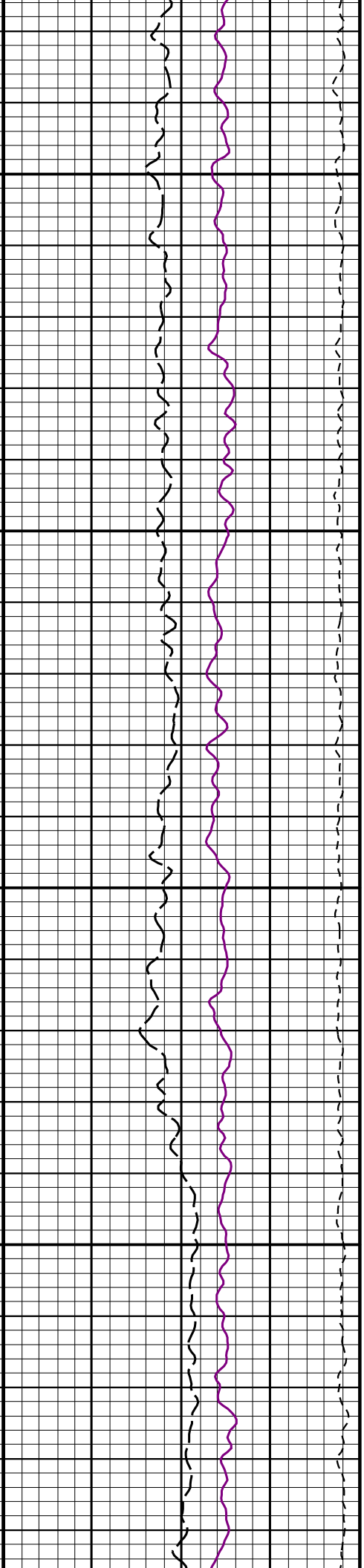
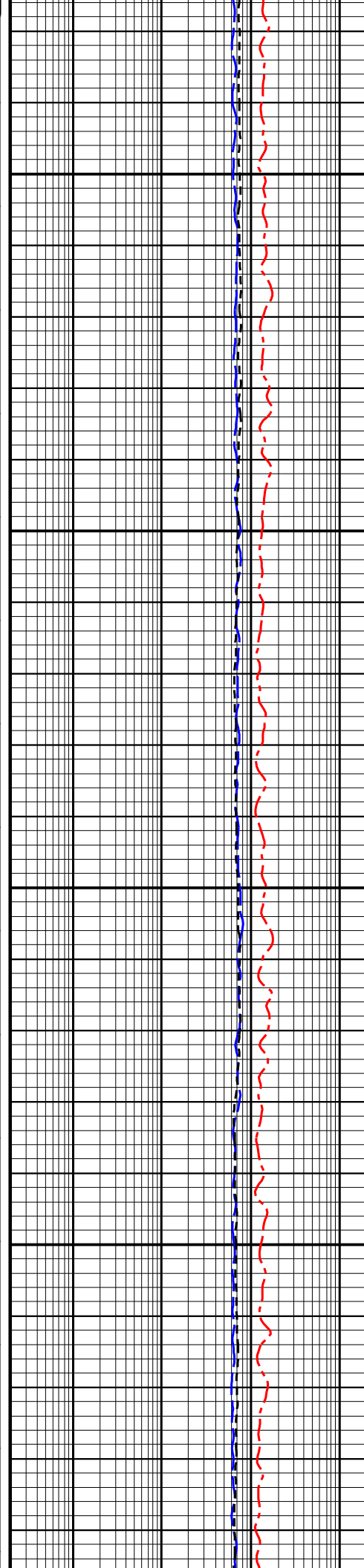


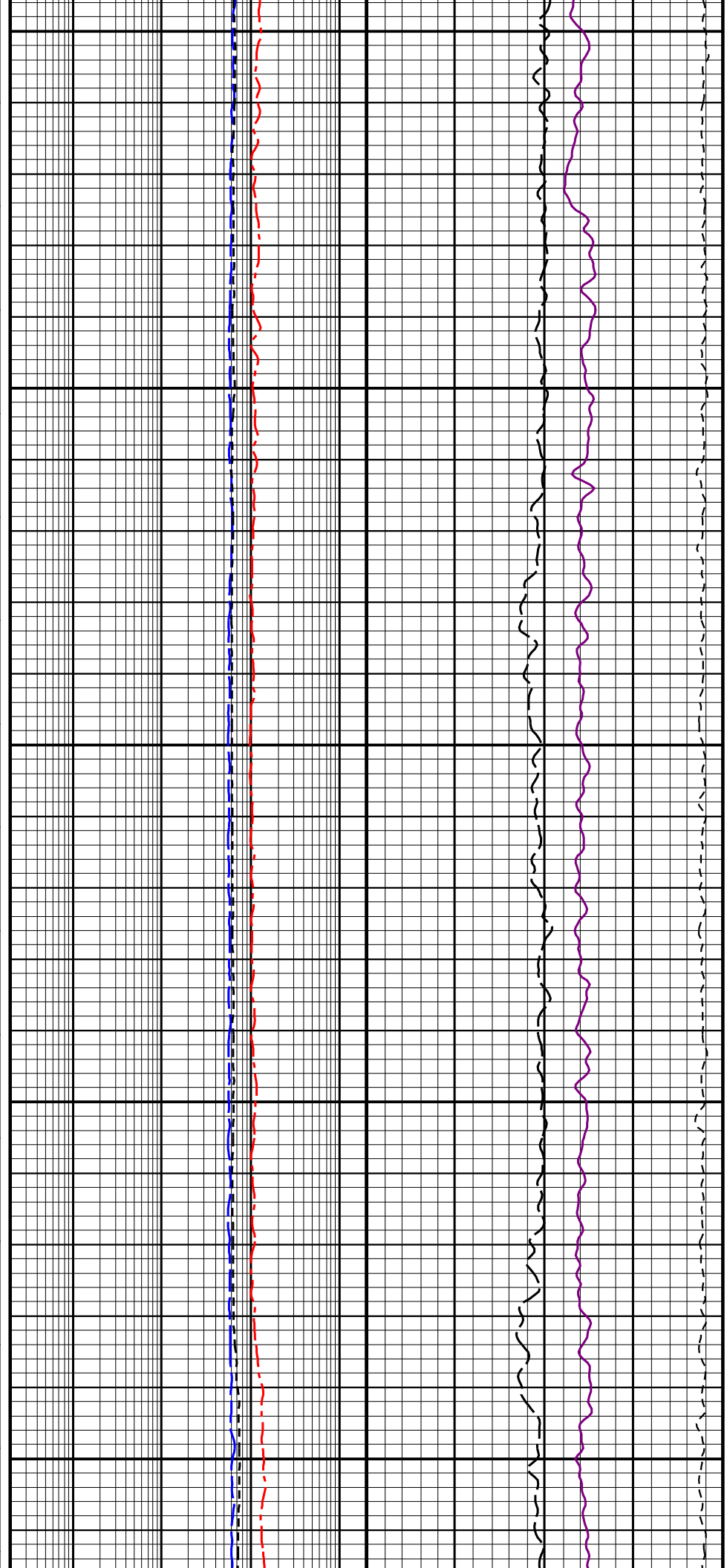
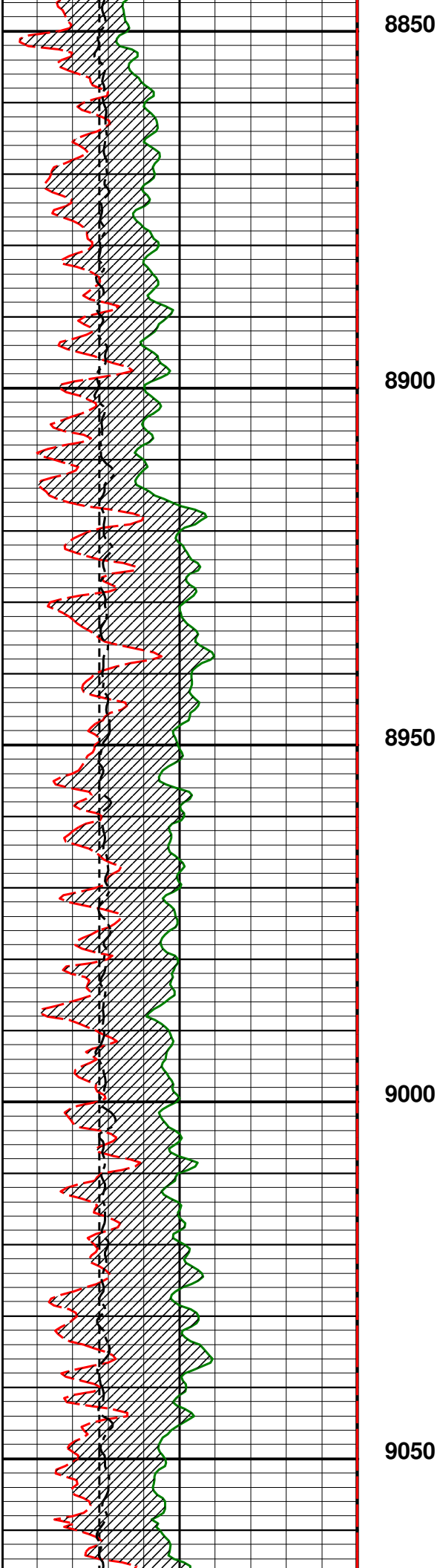
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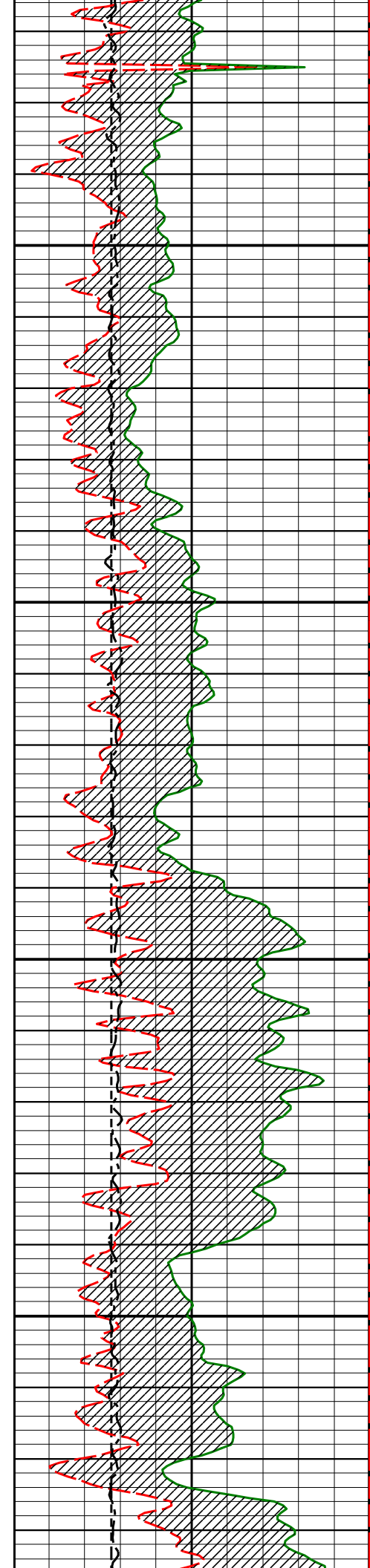
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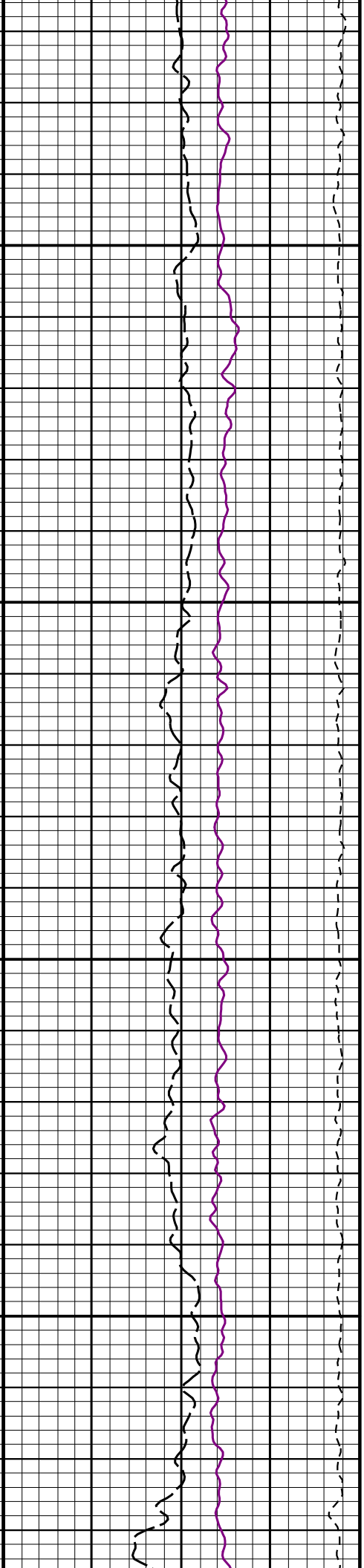
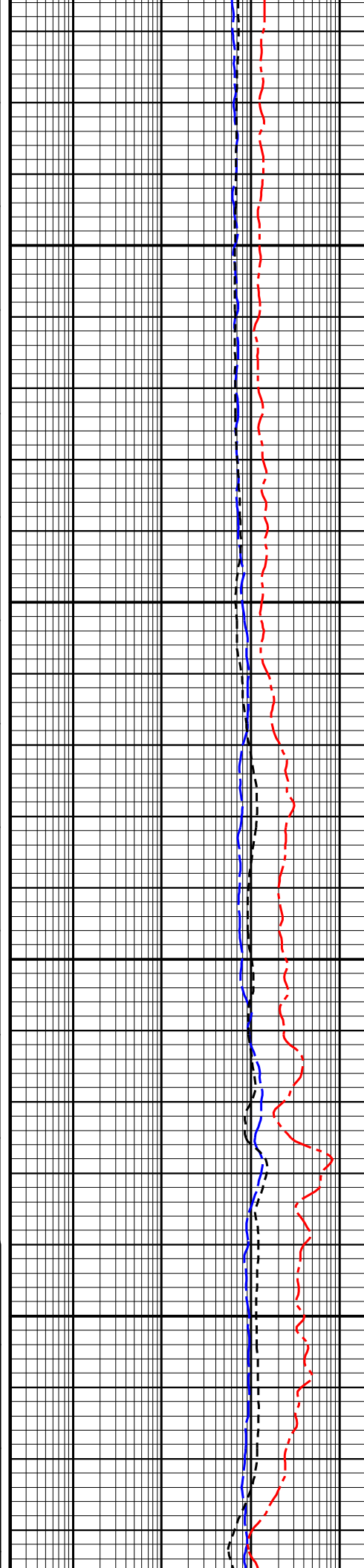


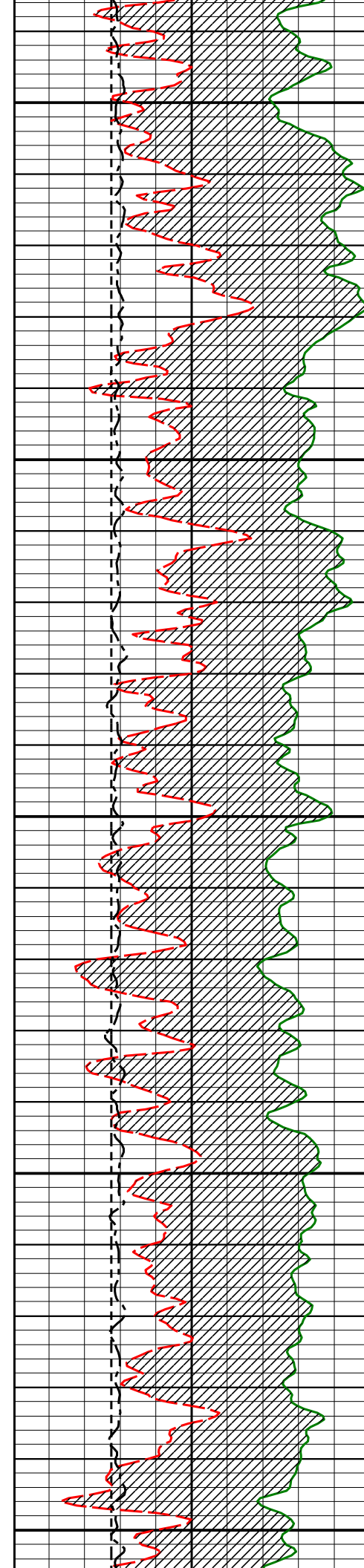
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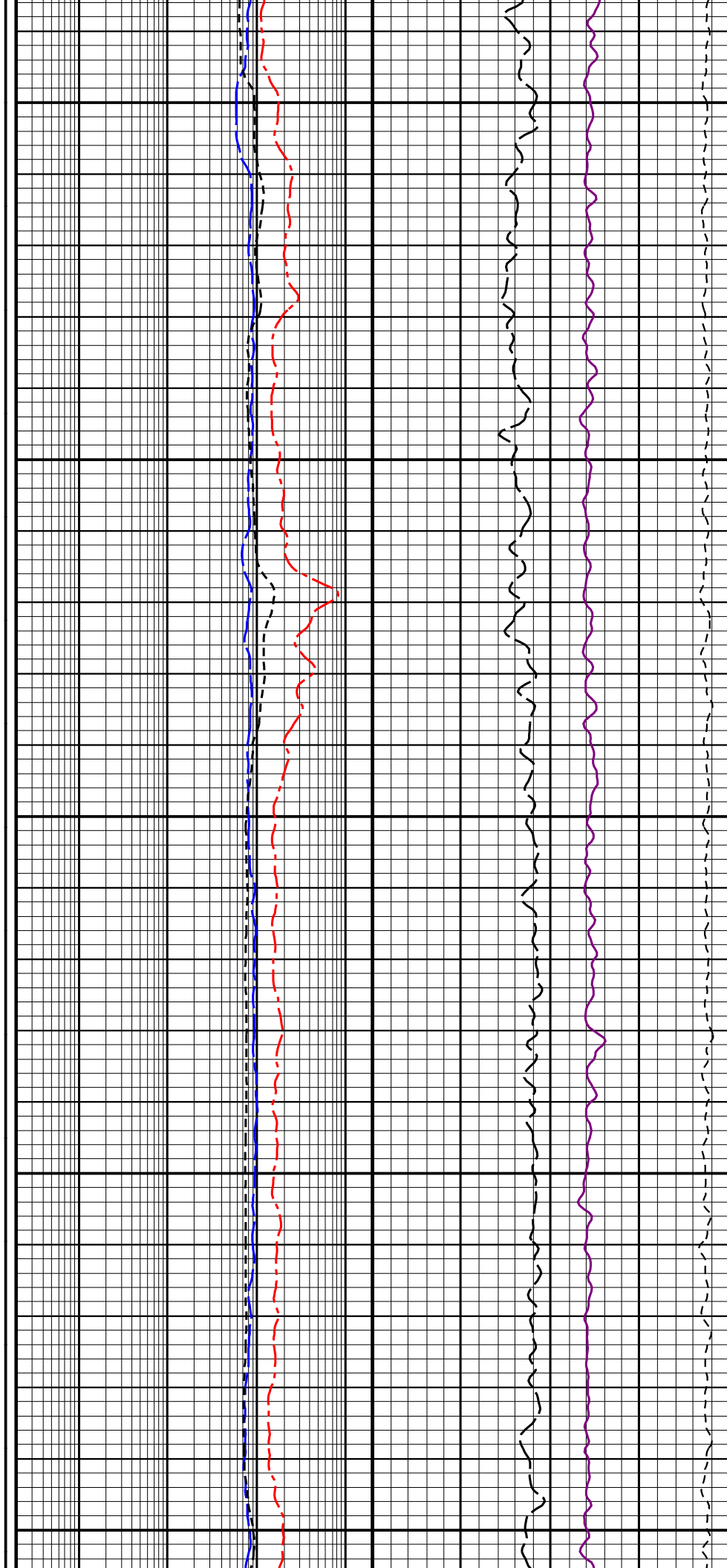
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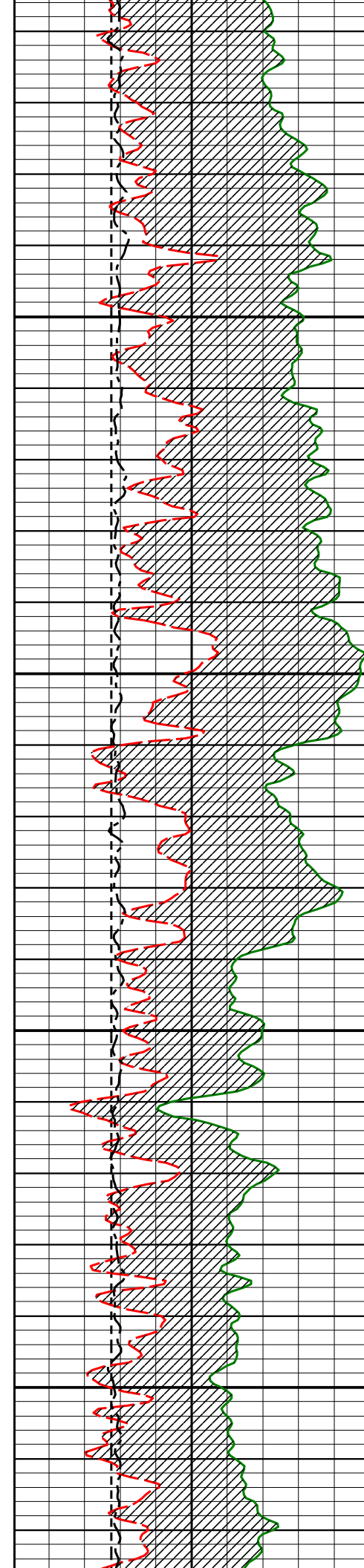
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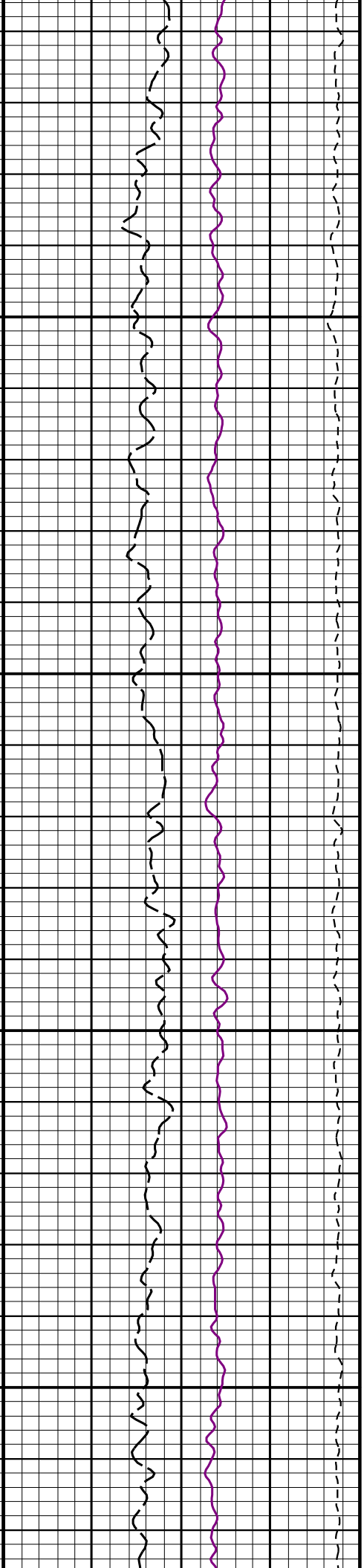
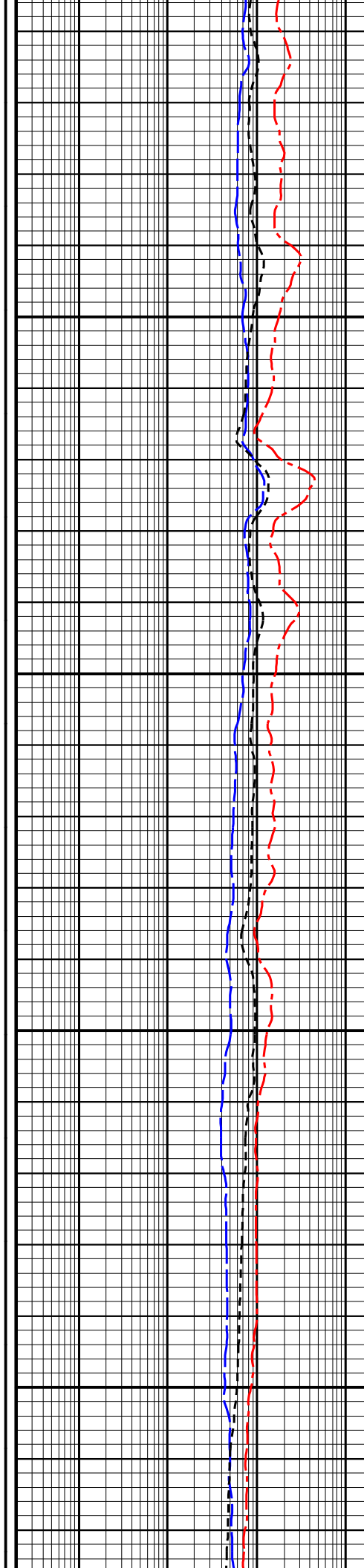


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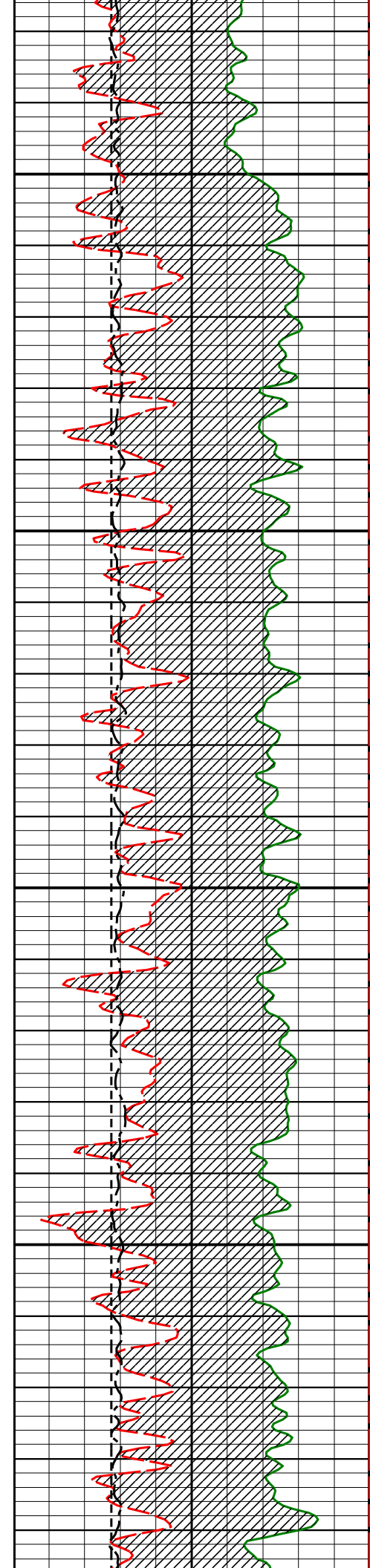
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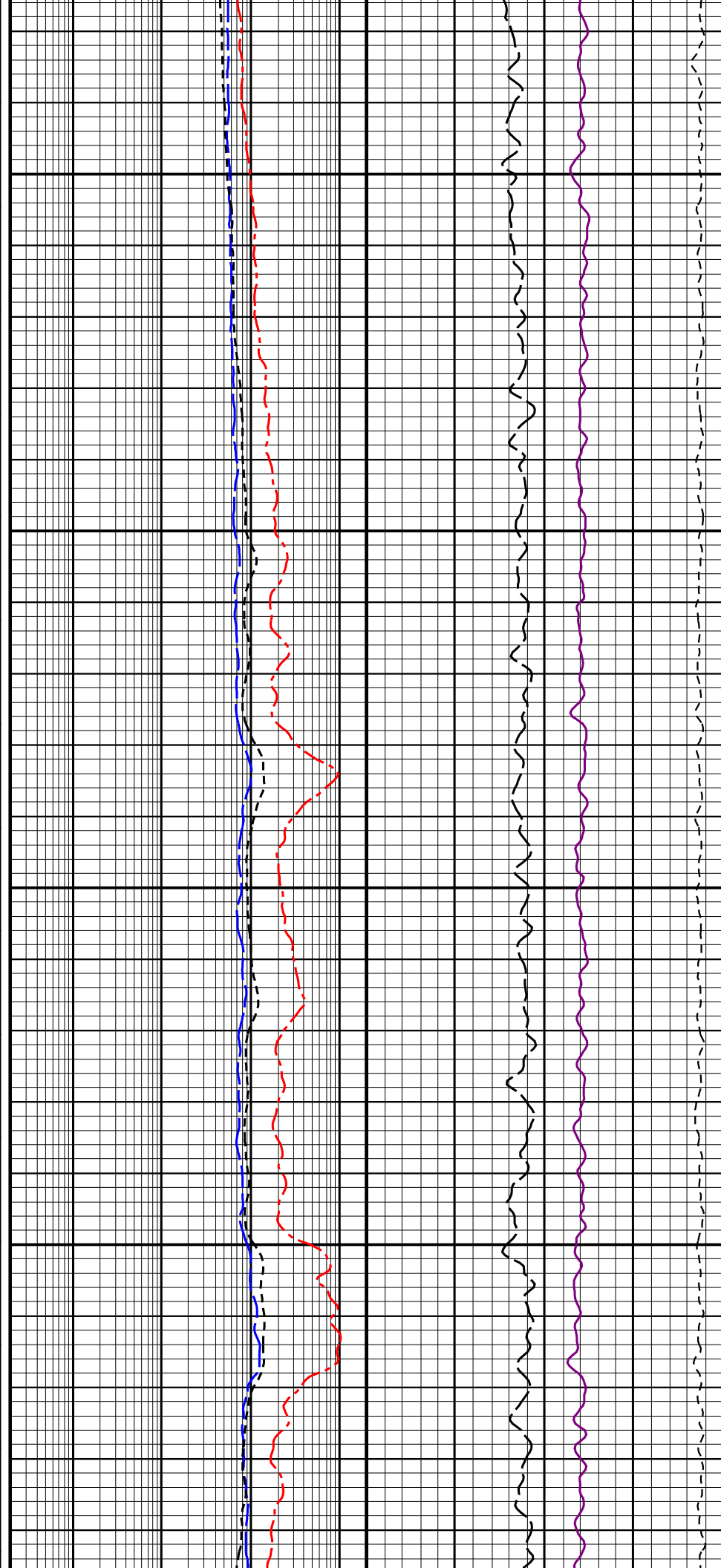


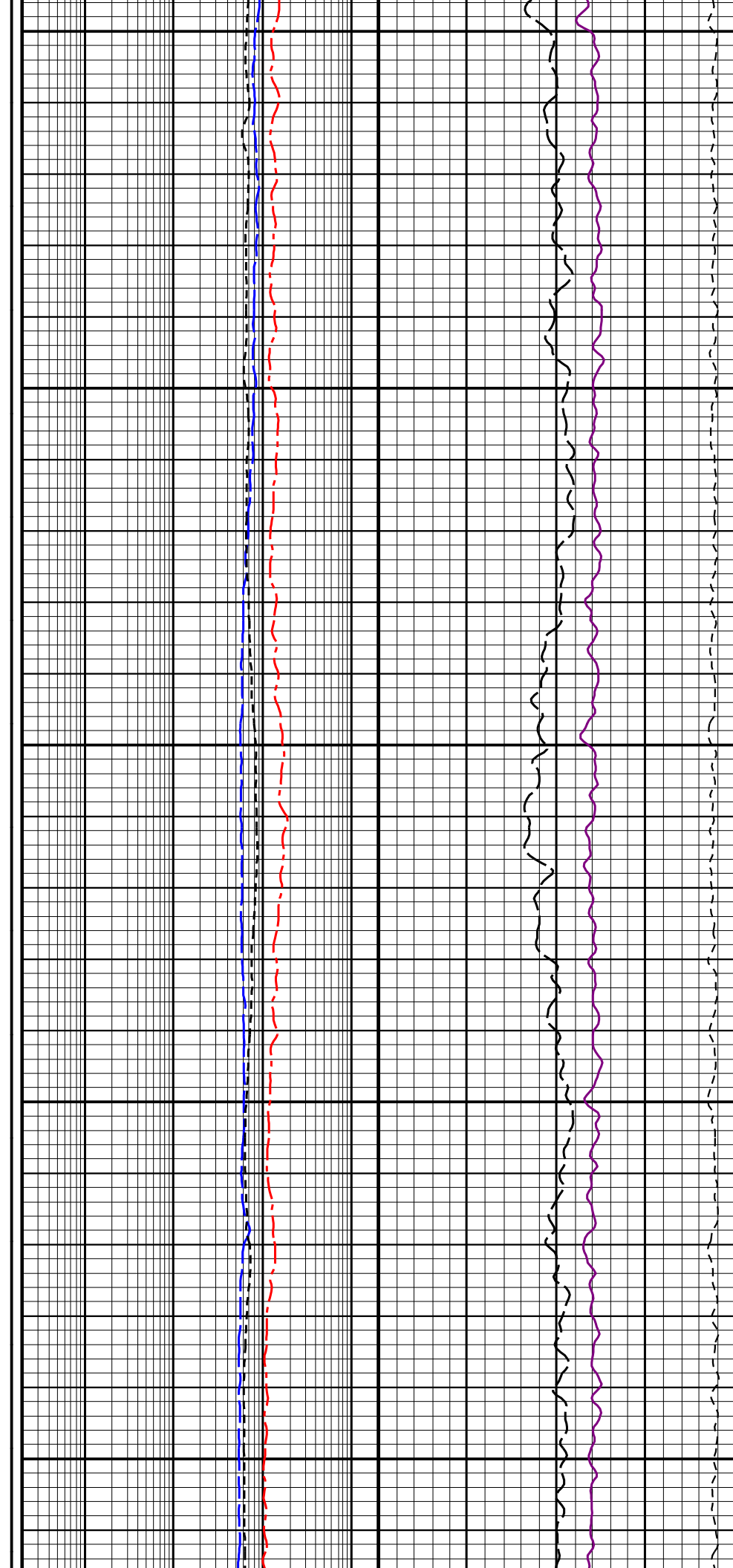
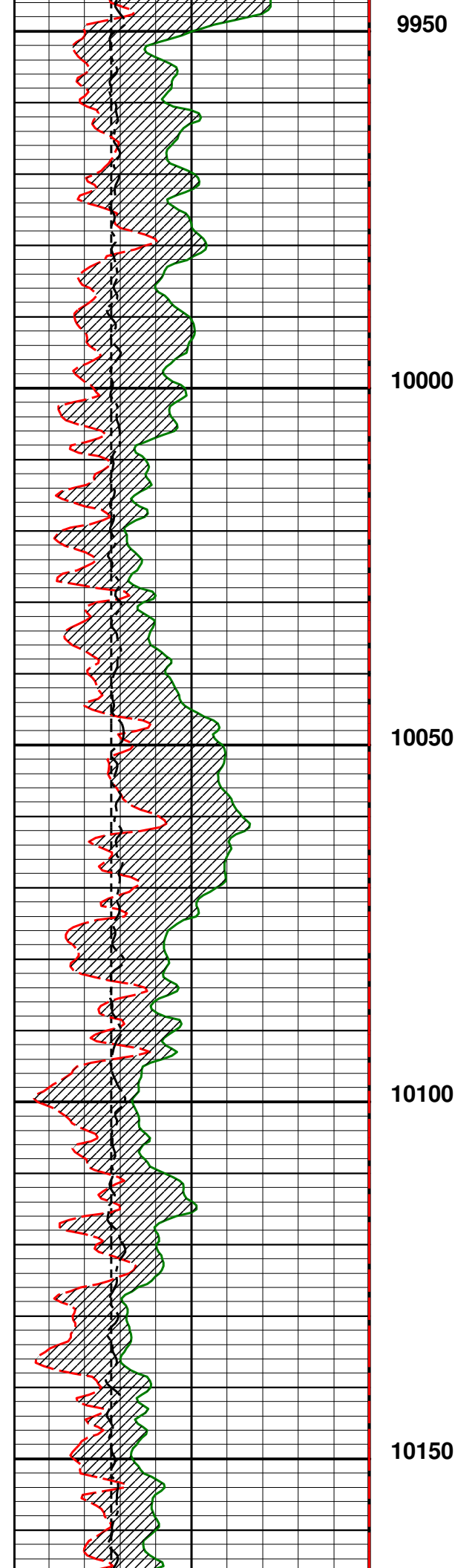
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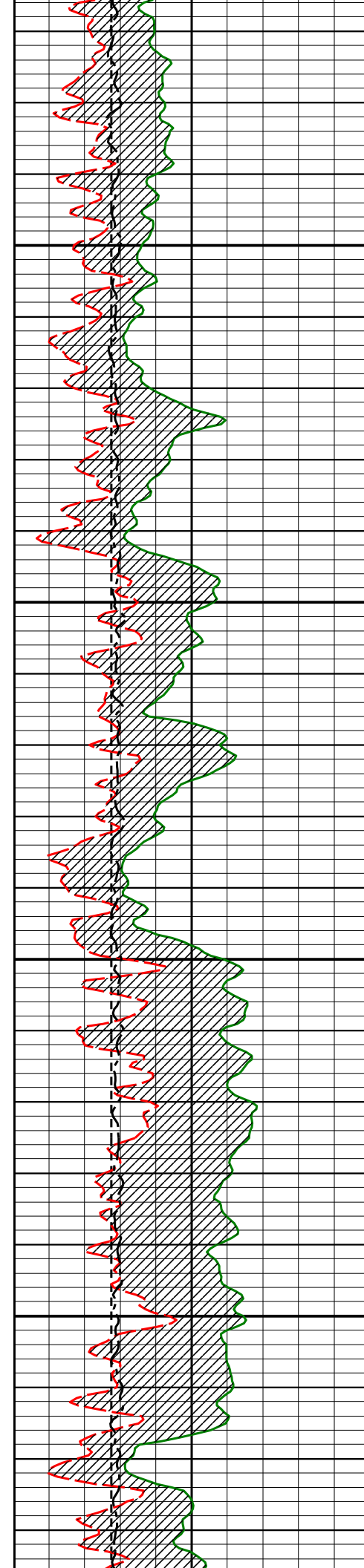
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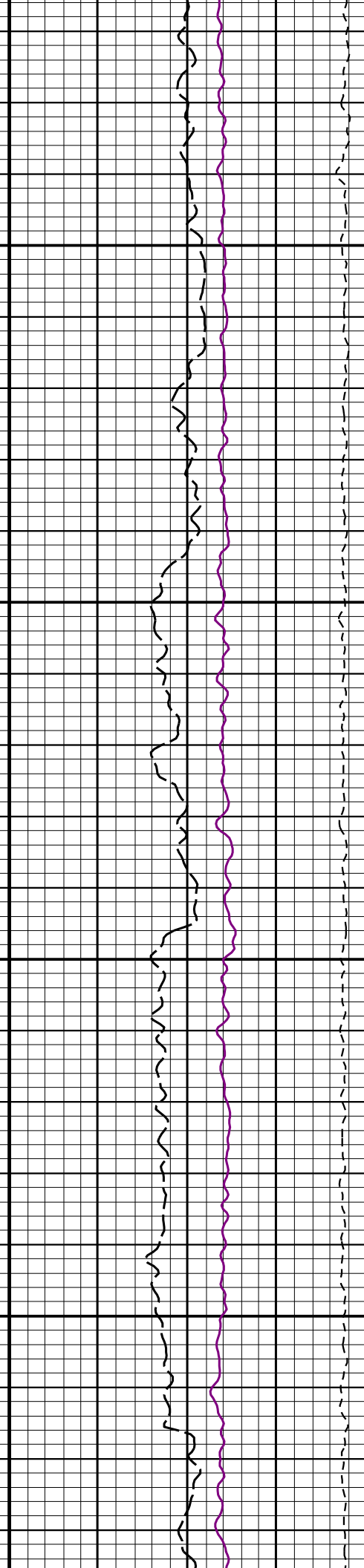
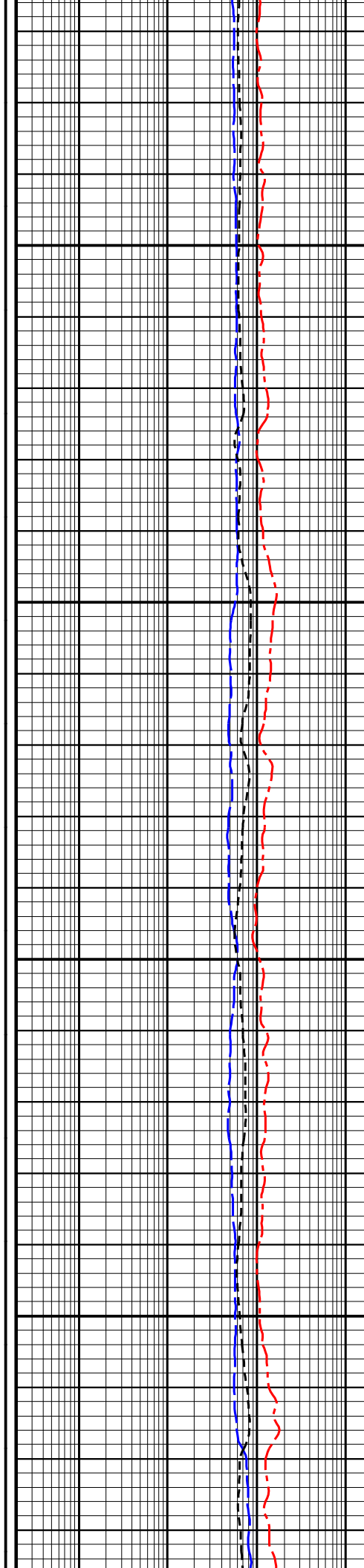


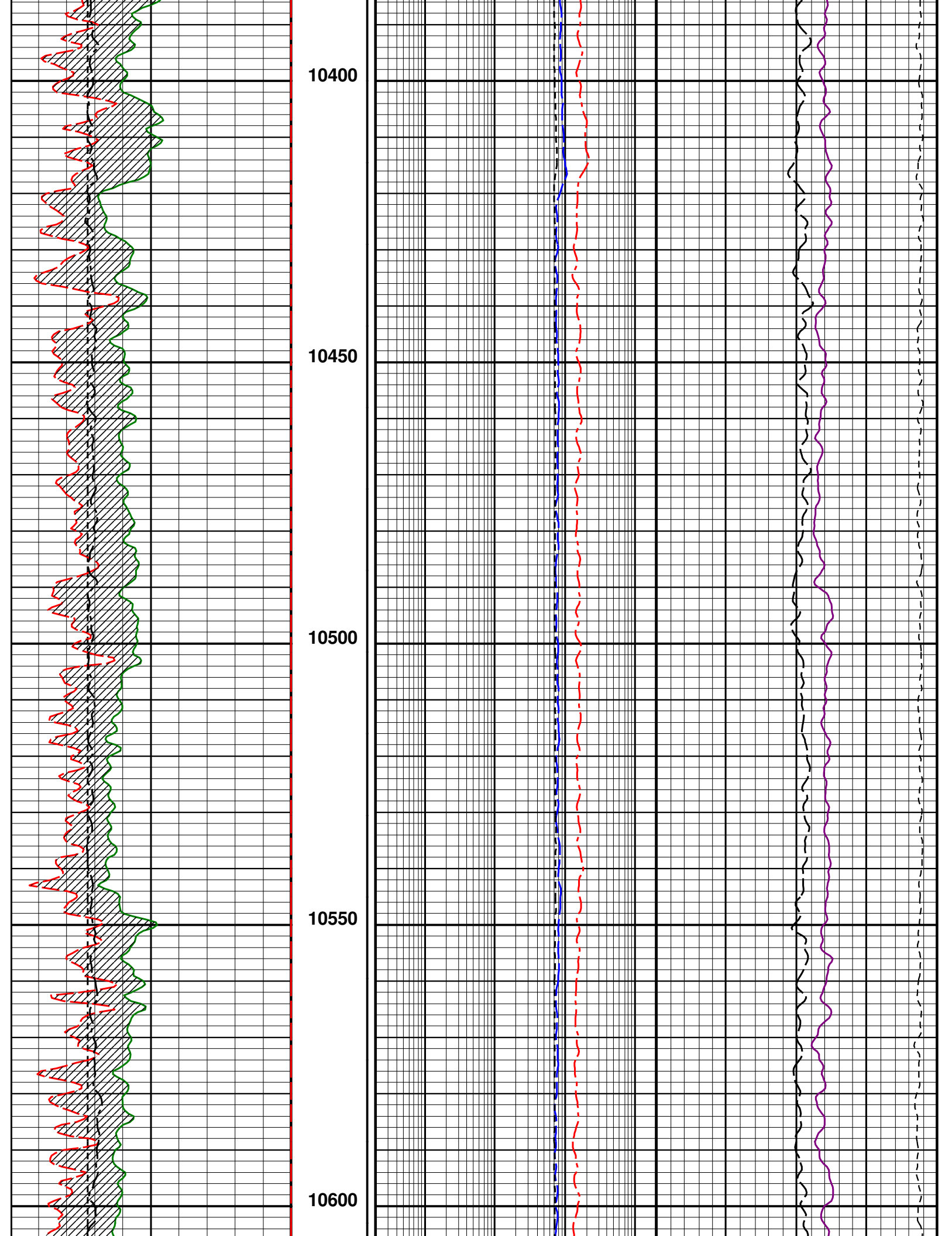
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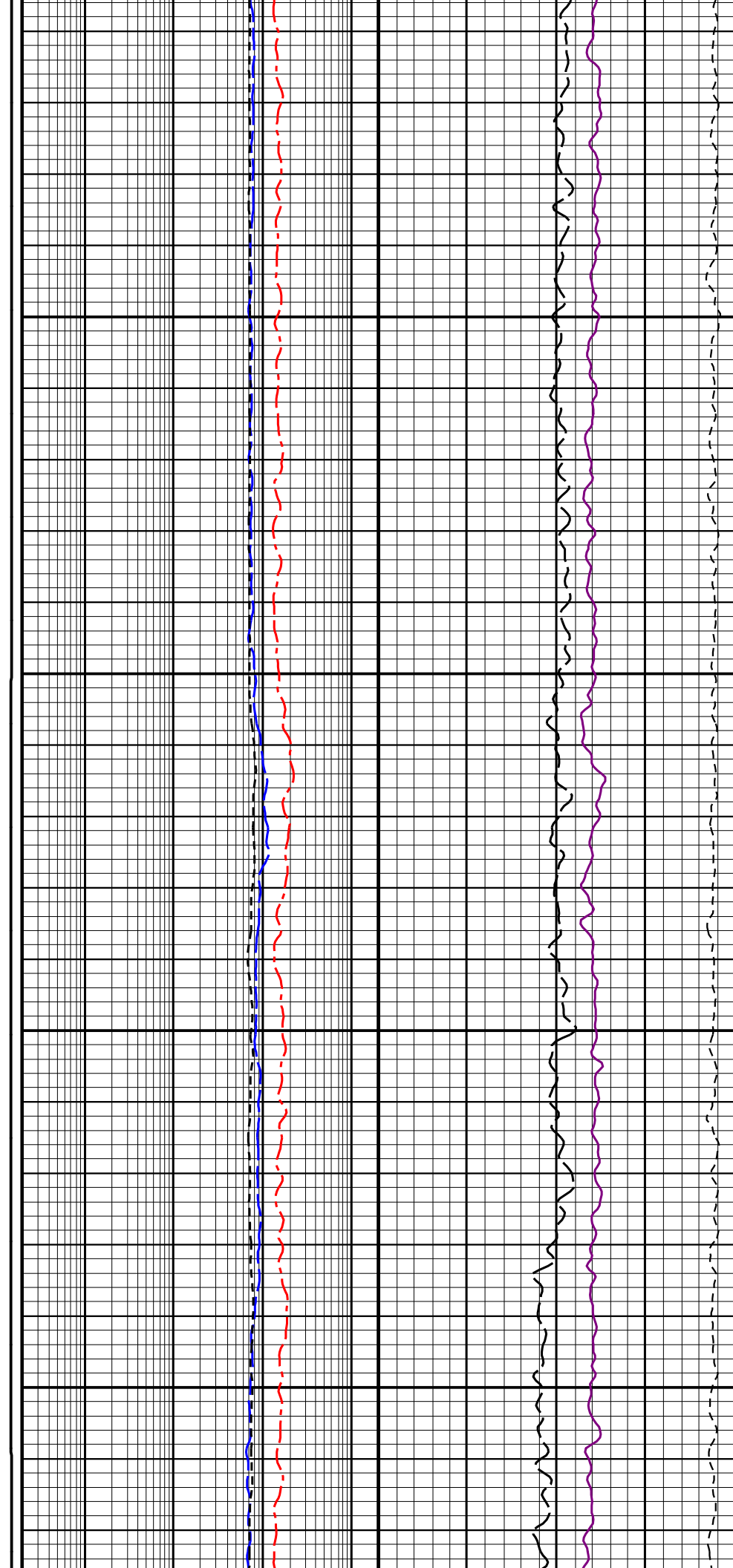
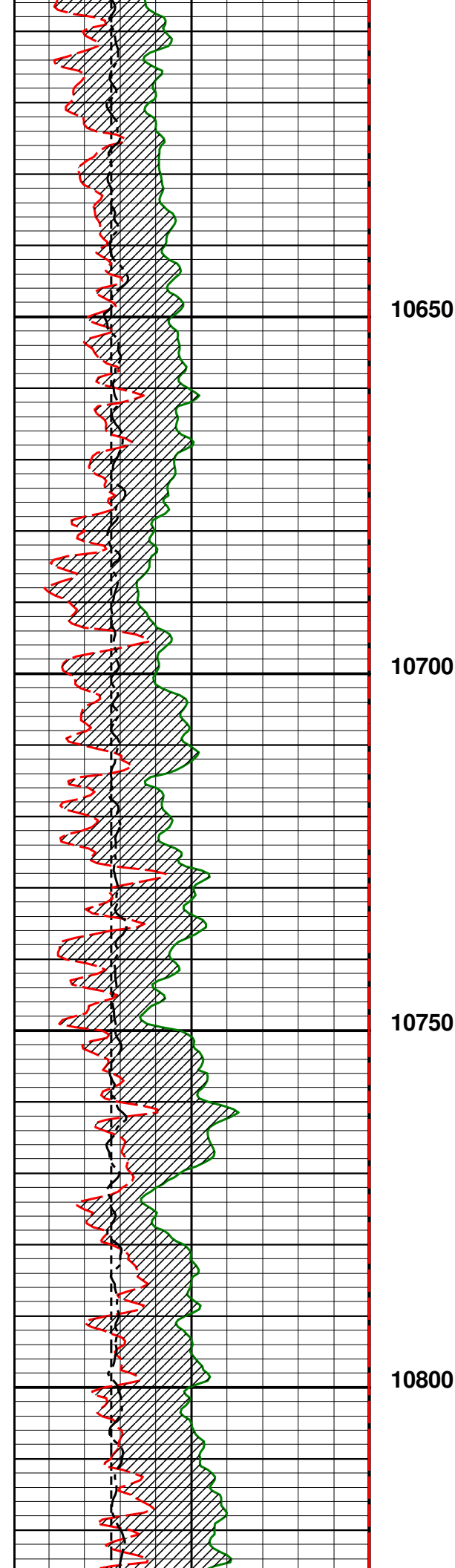
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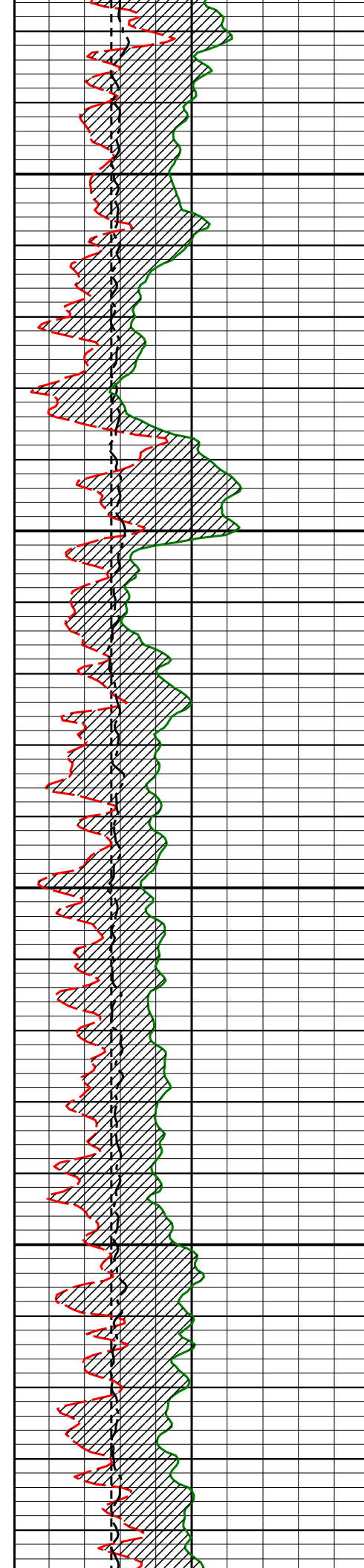
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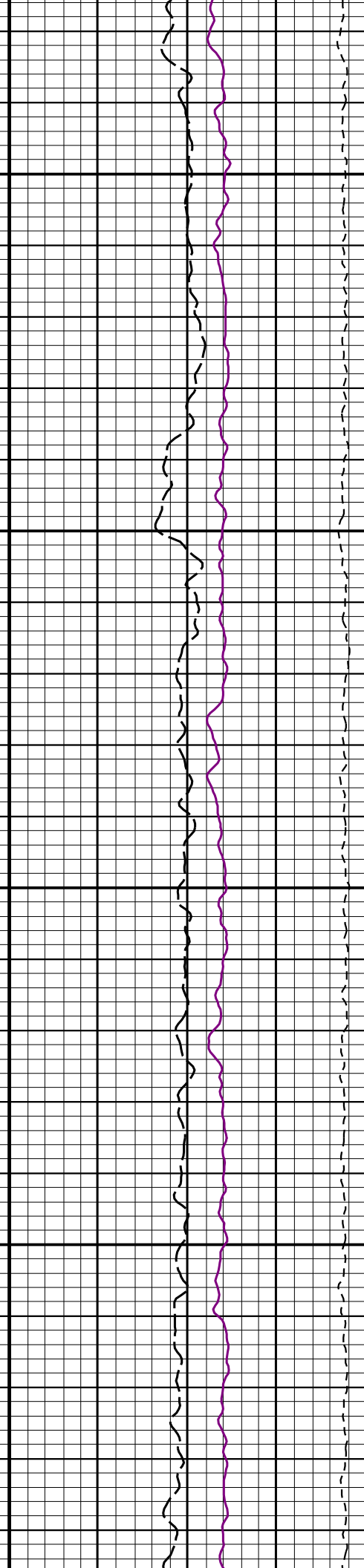
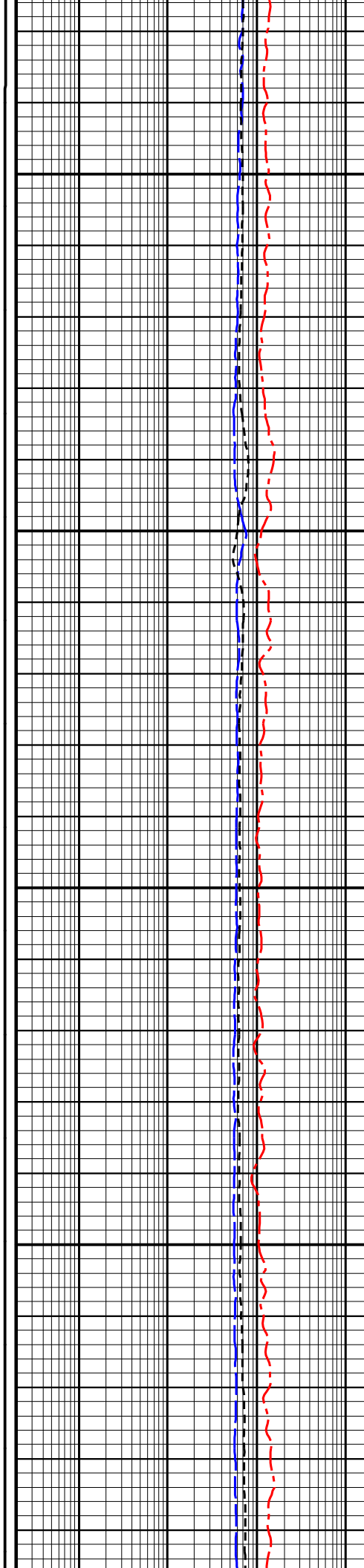


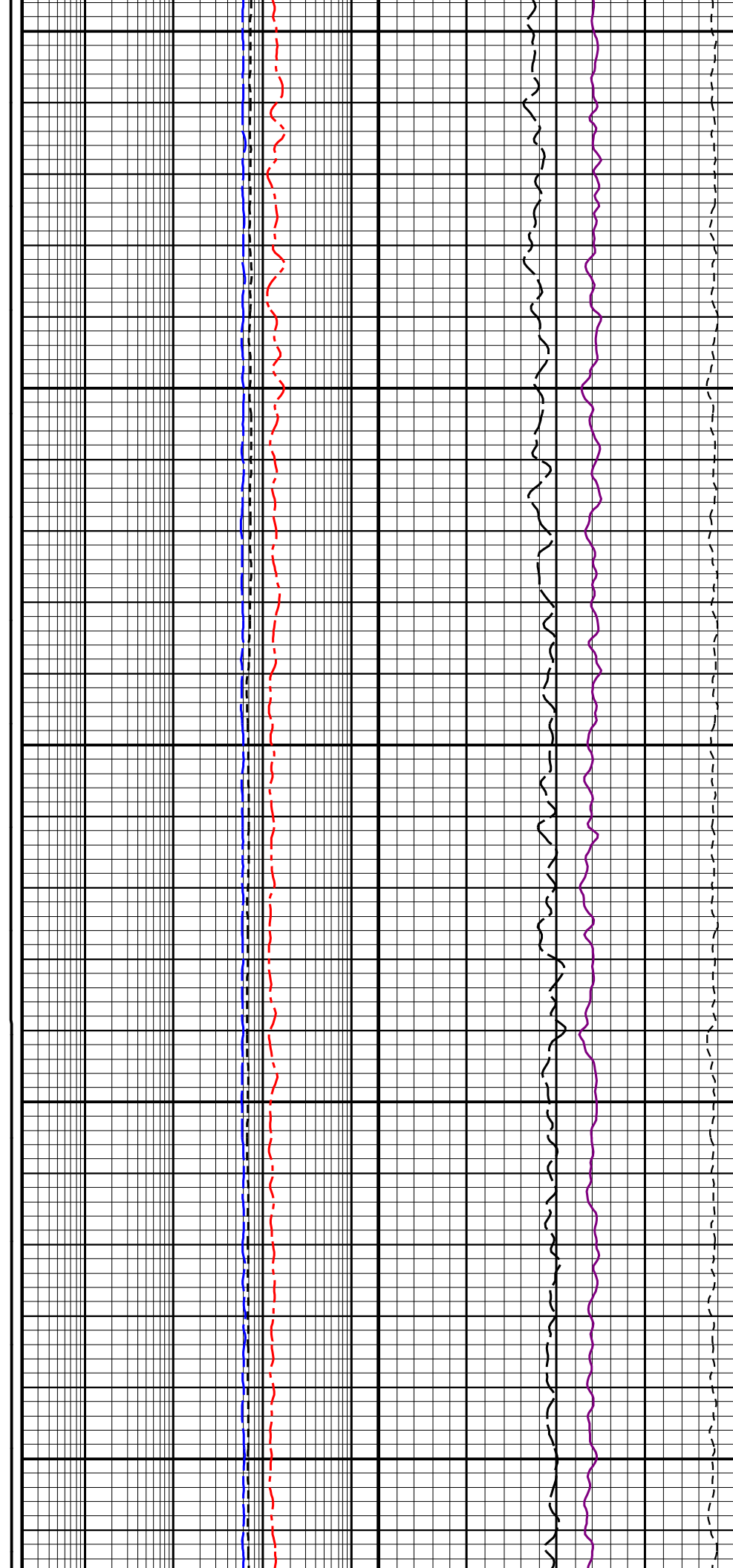
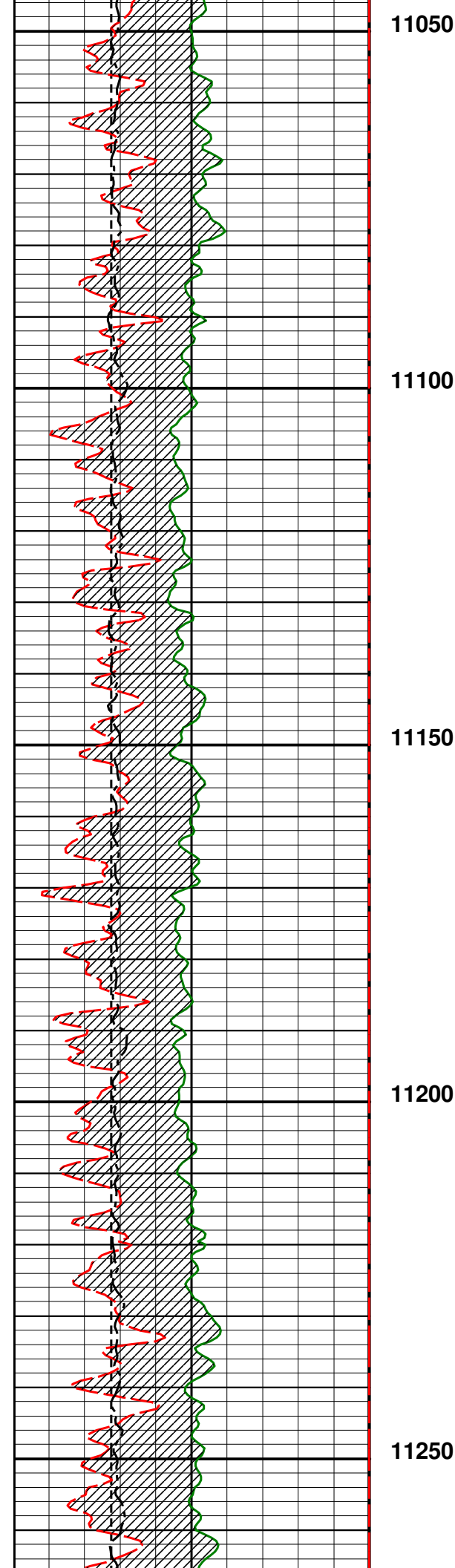
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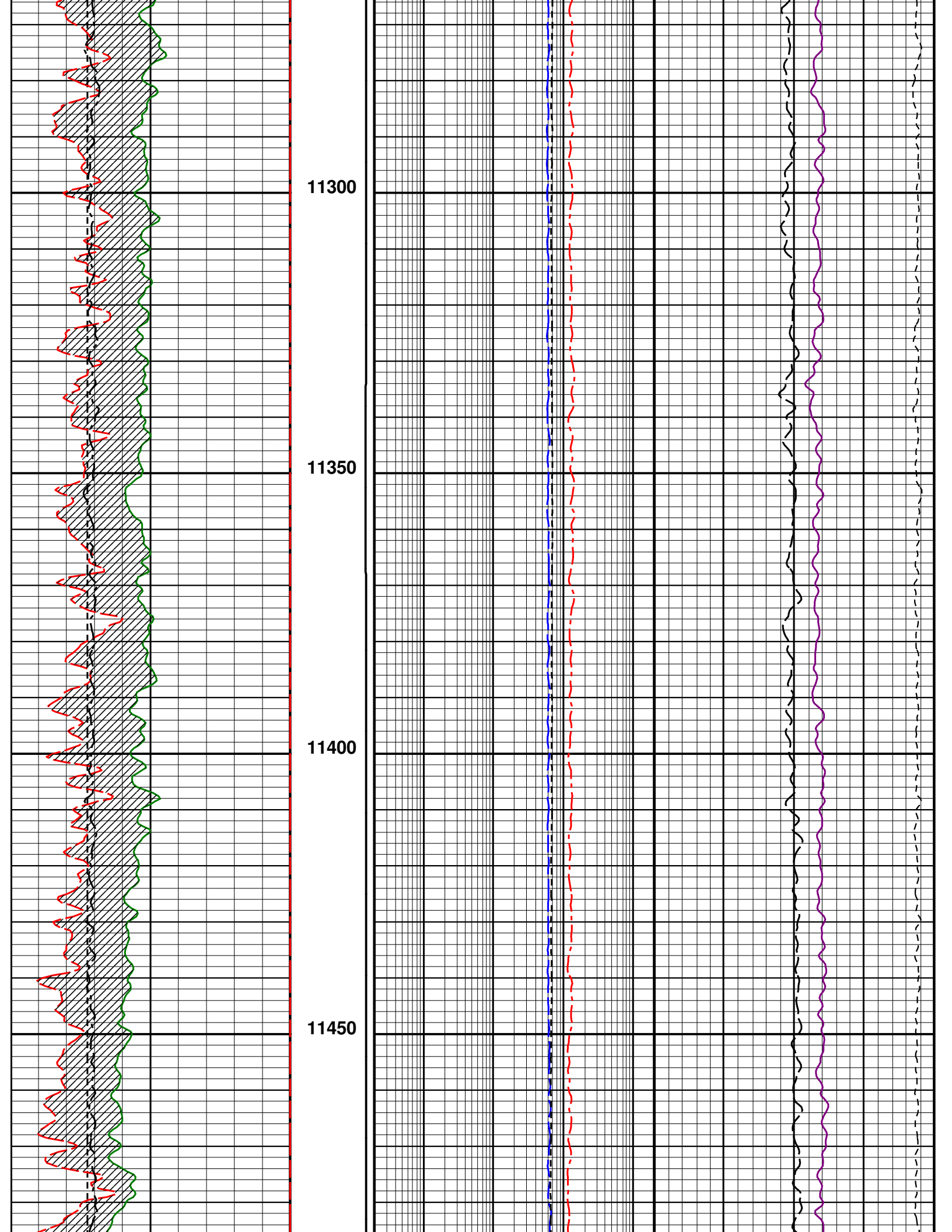
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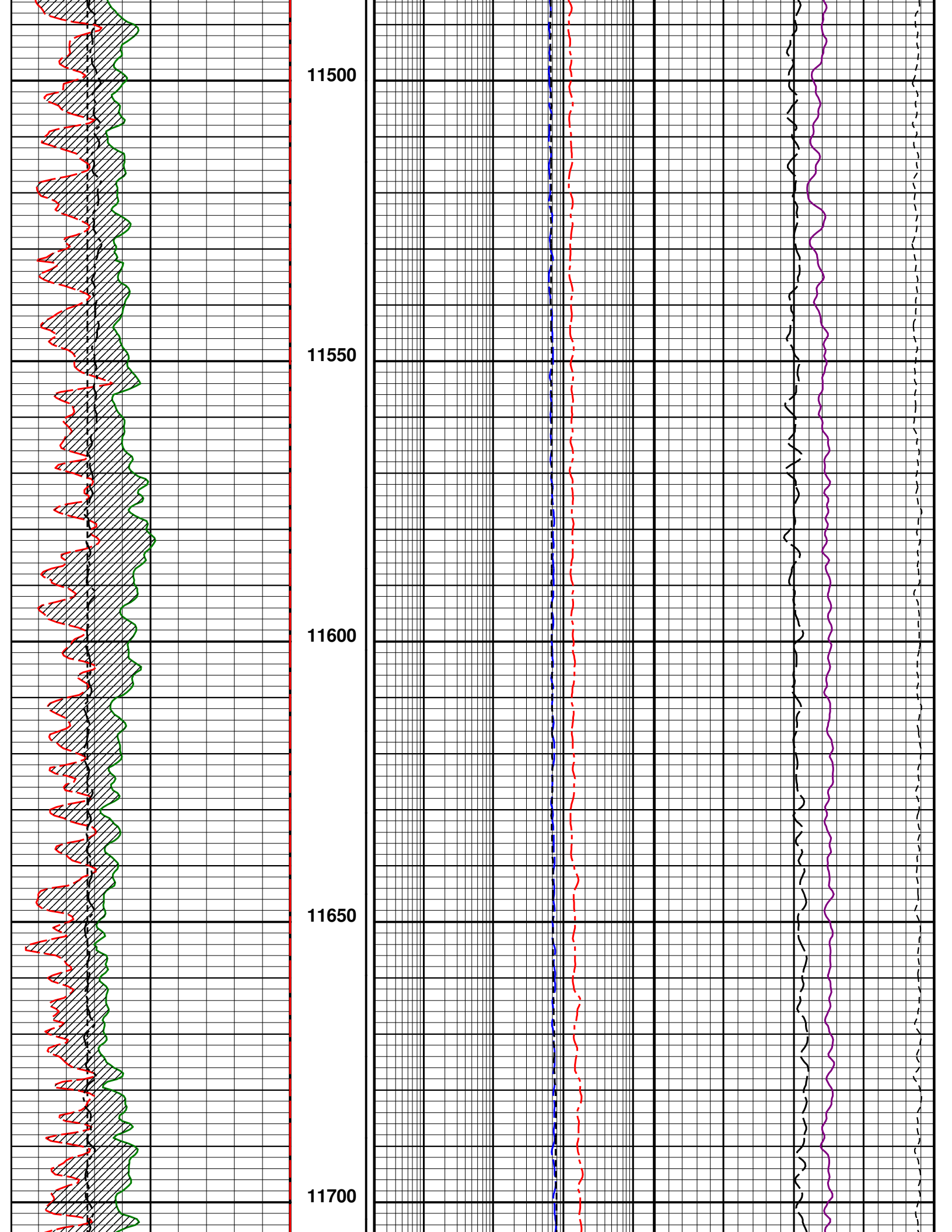
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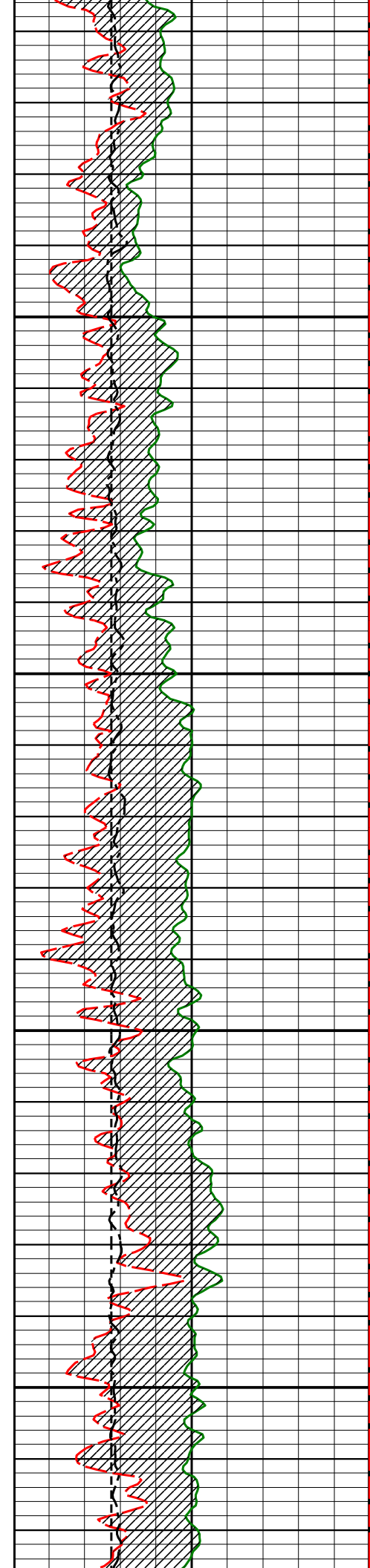










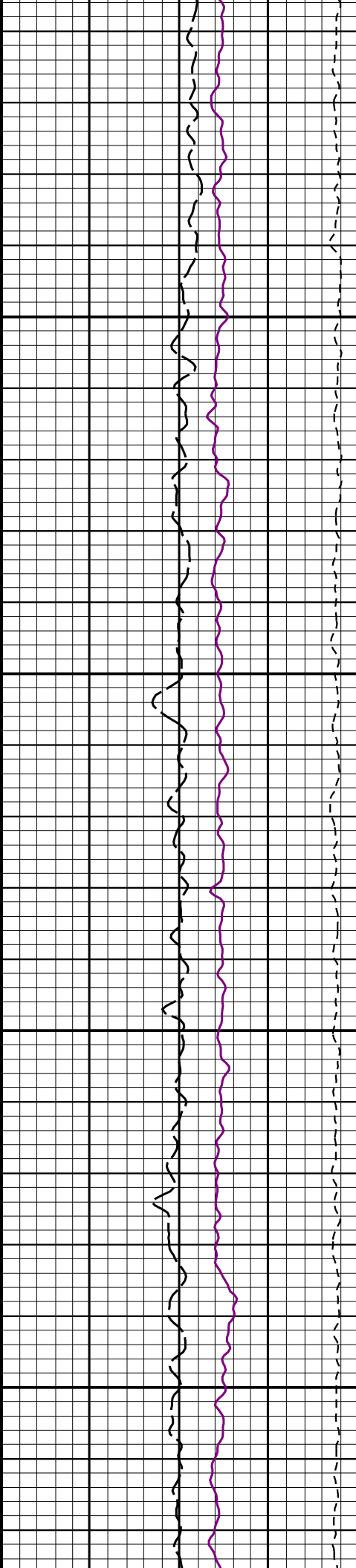
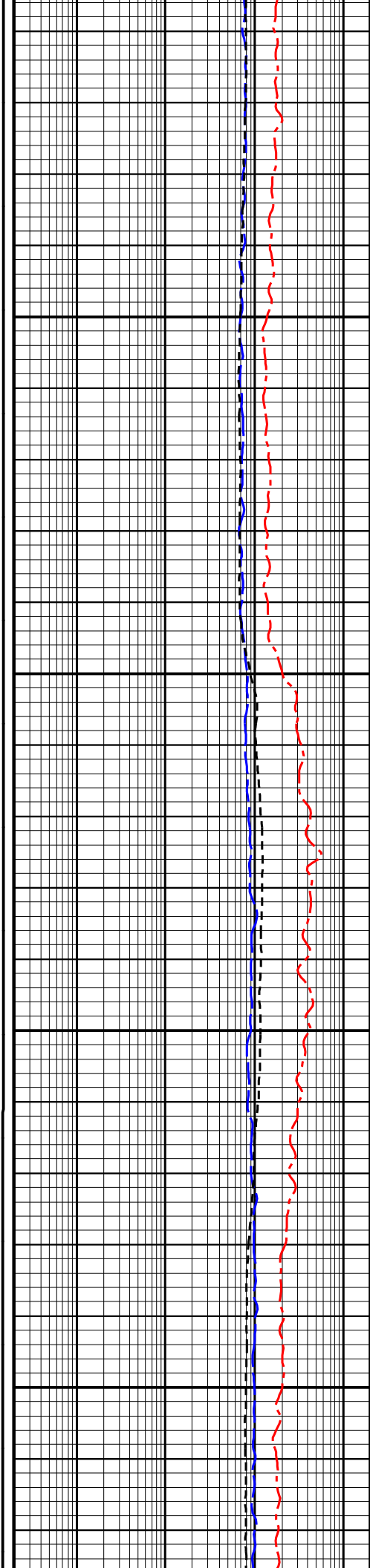


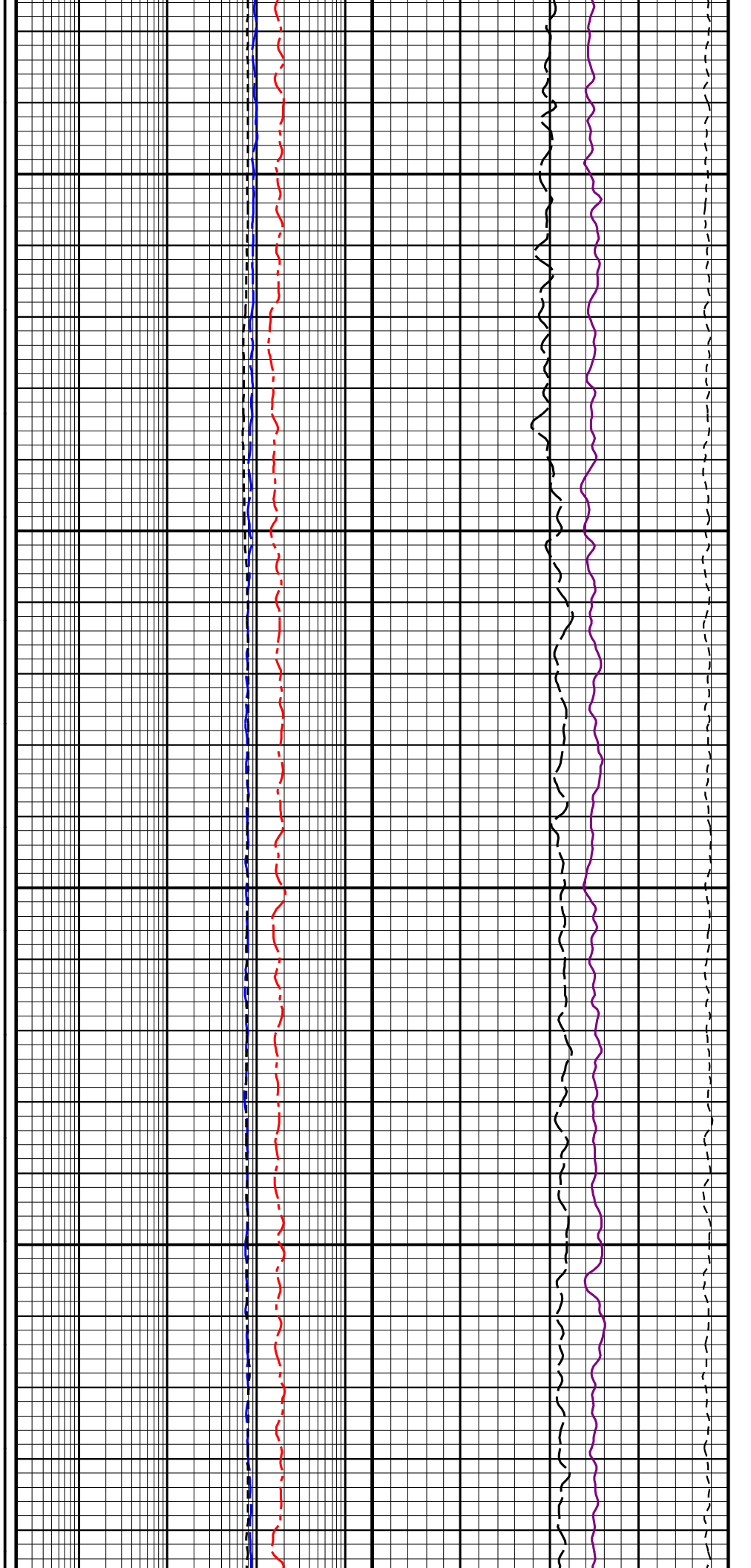
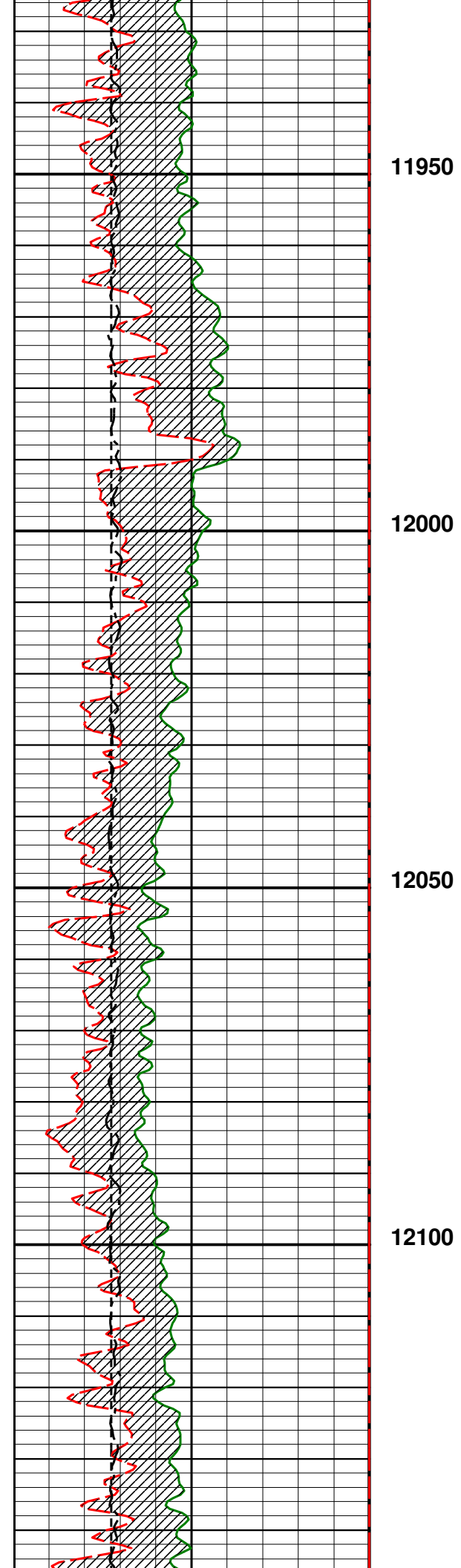
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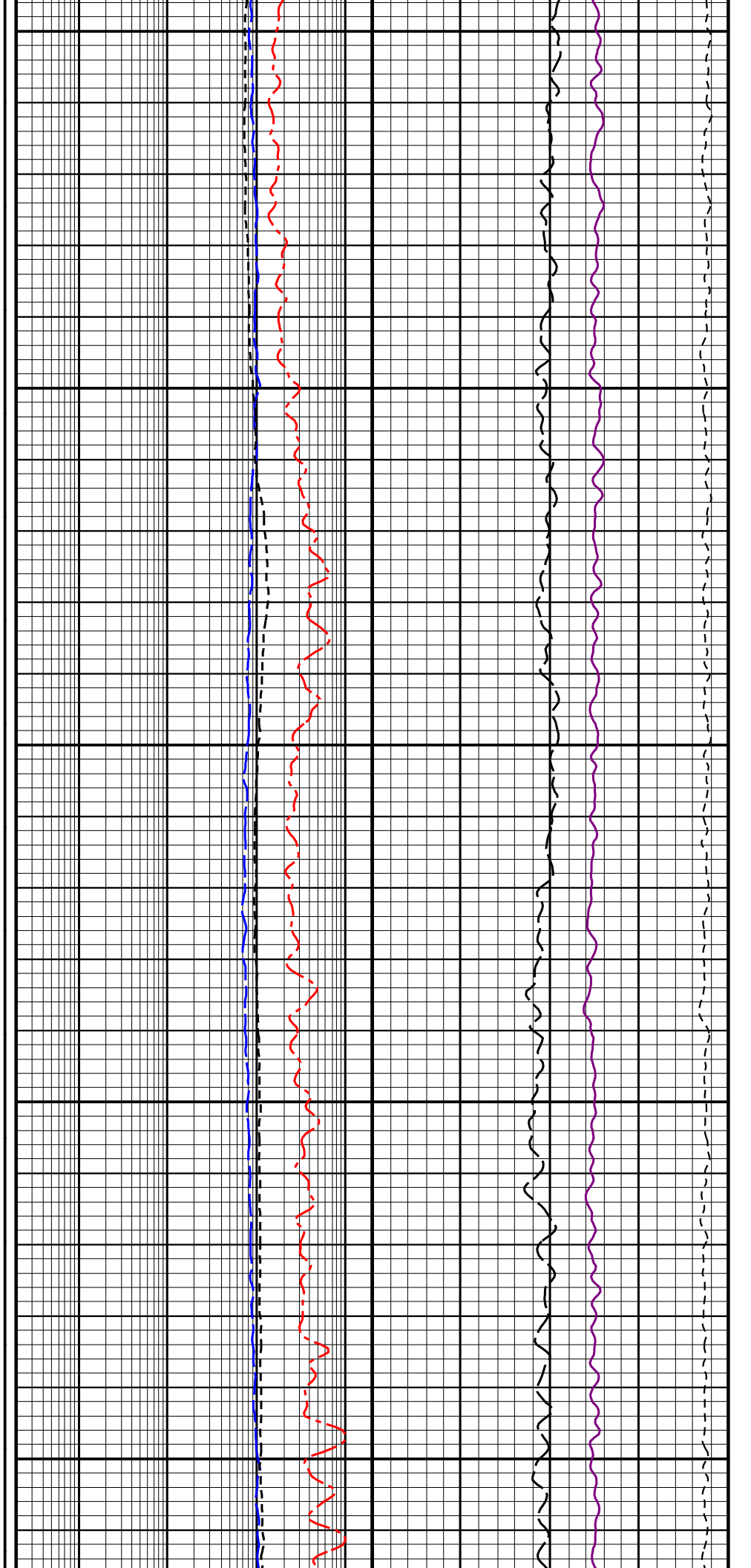
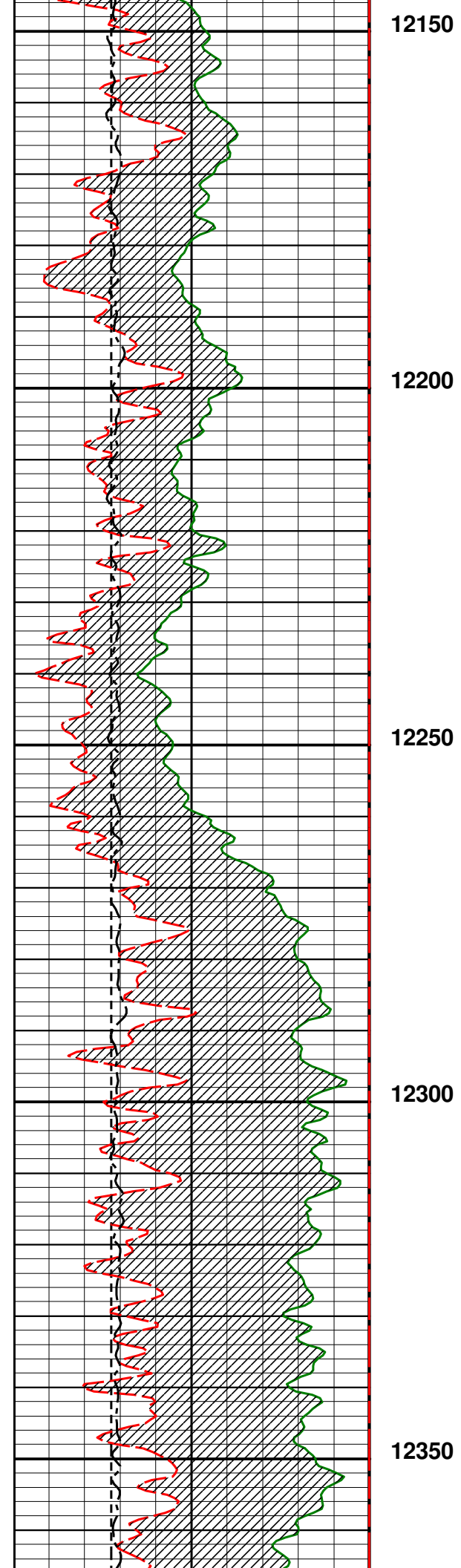
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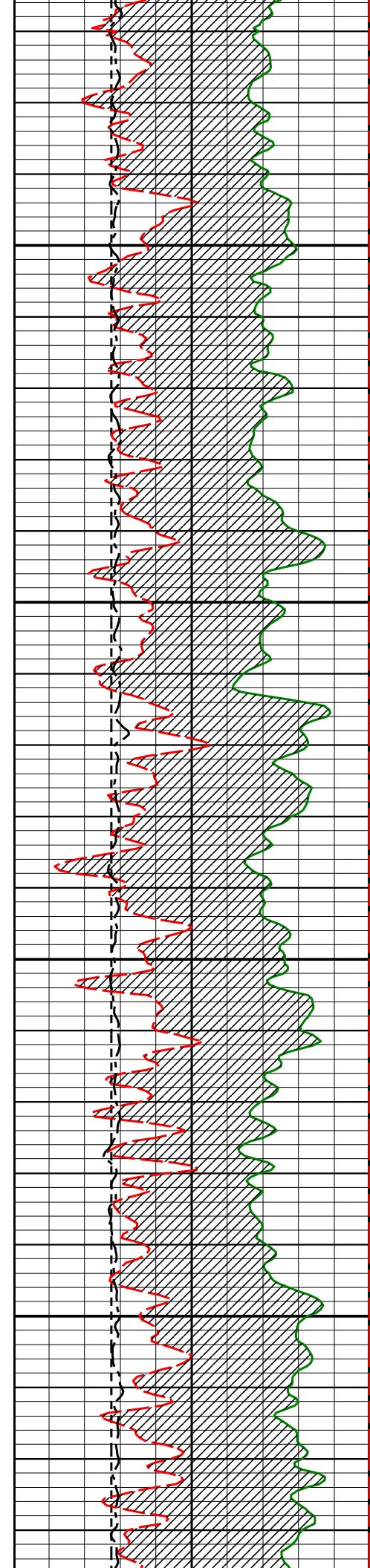
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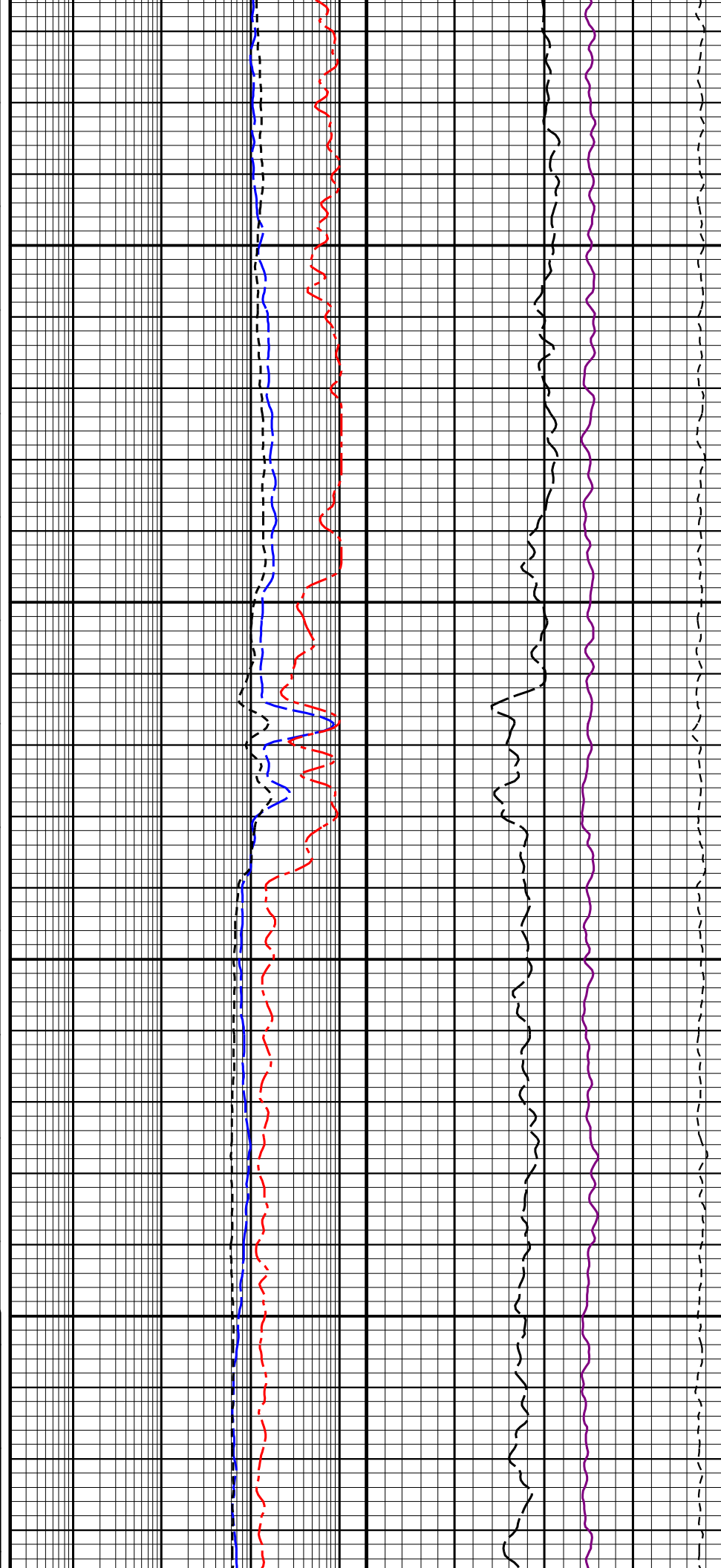


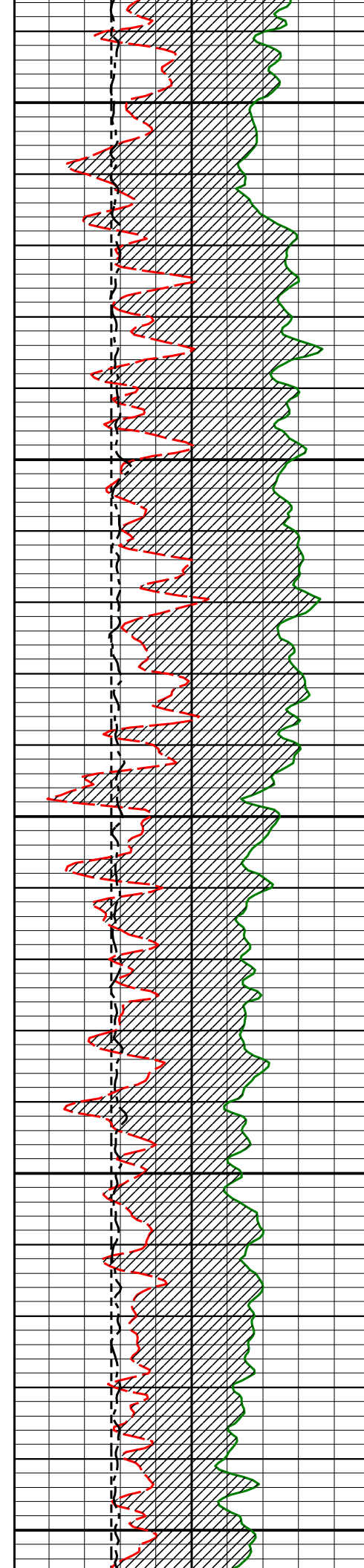
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12450

12500

12550





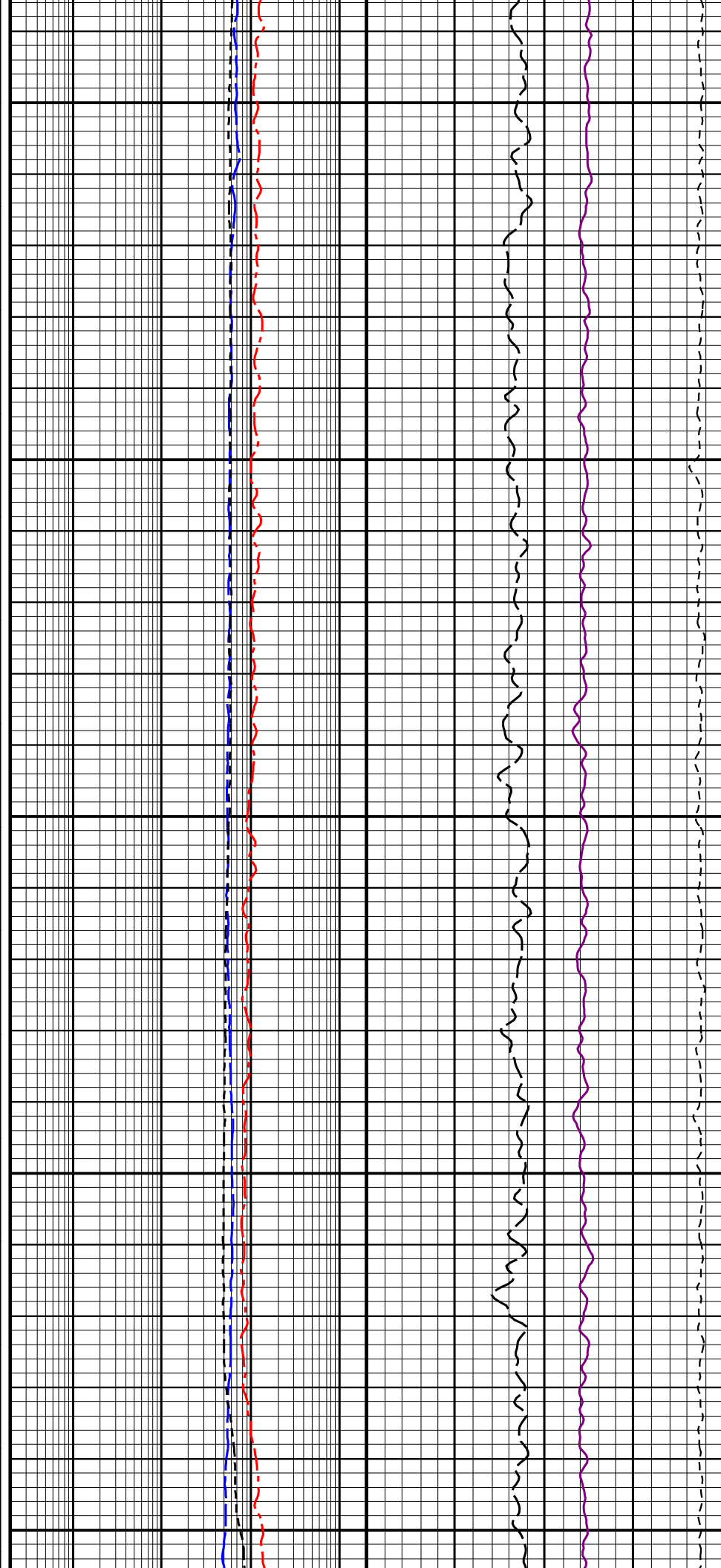
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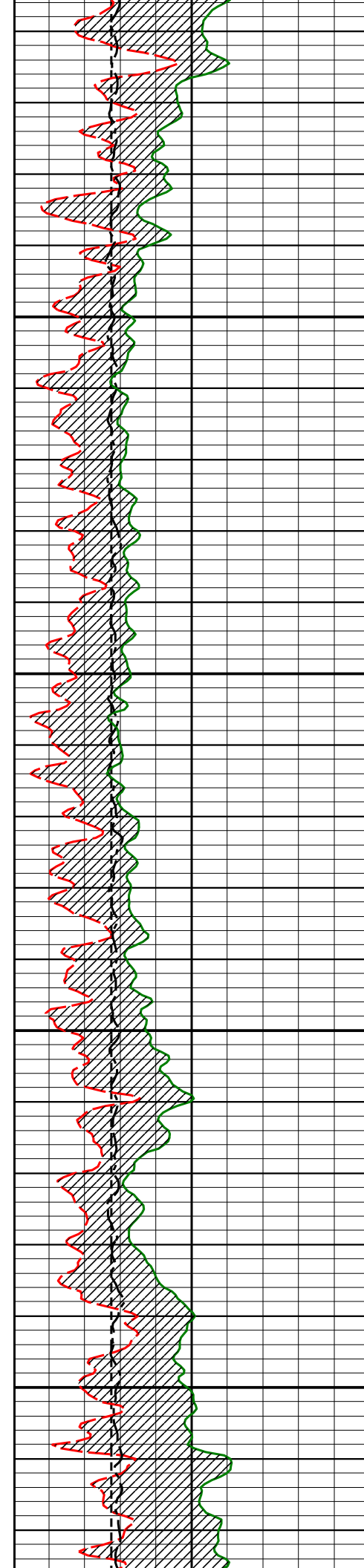
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12700

12750

12800



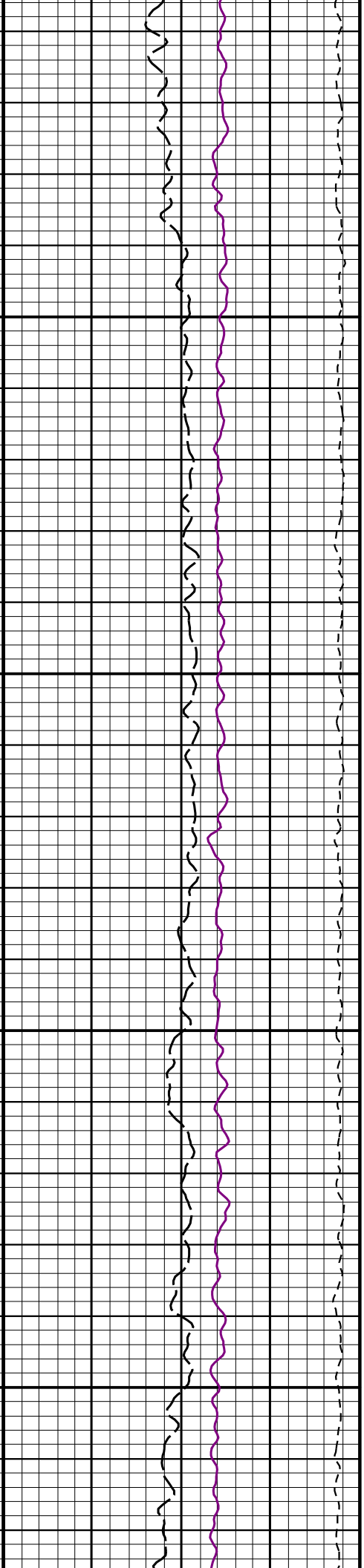
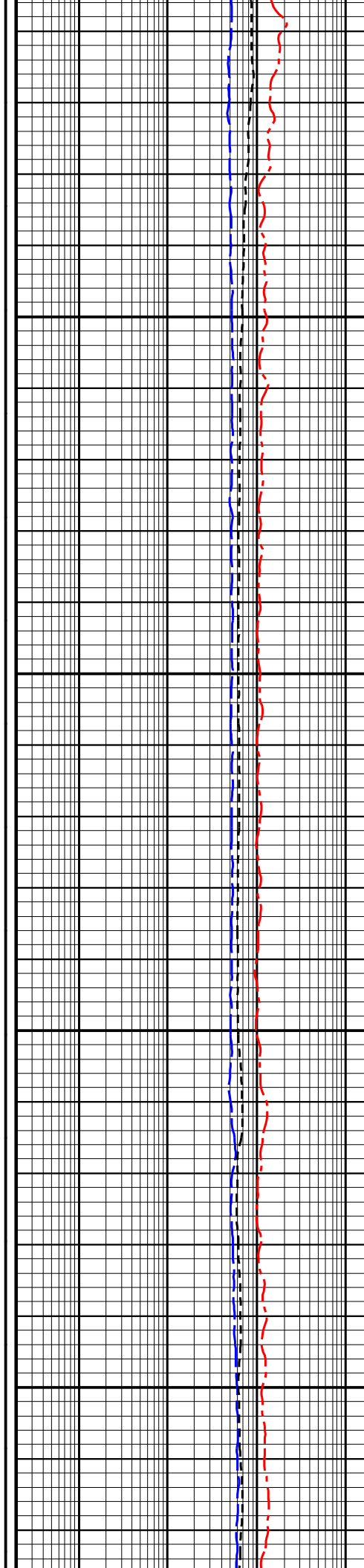


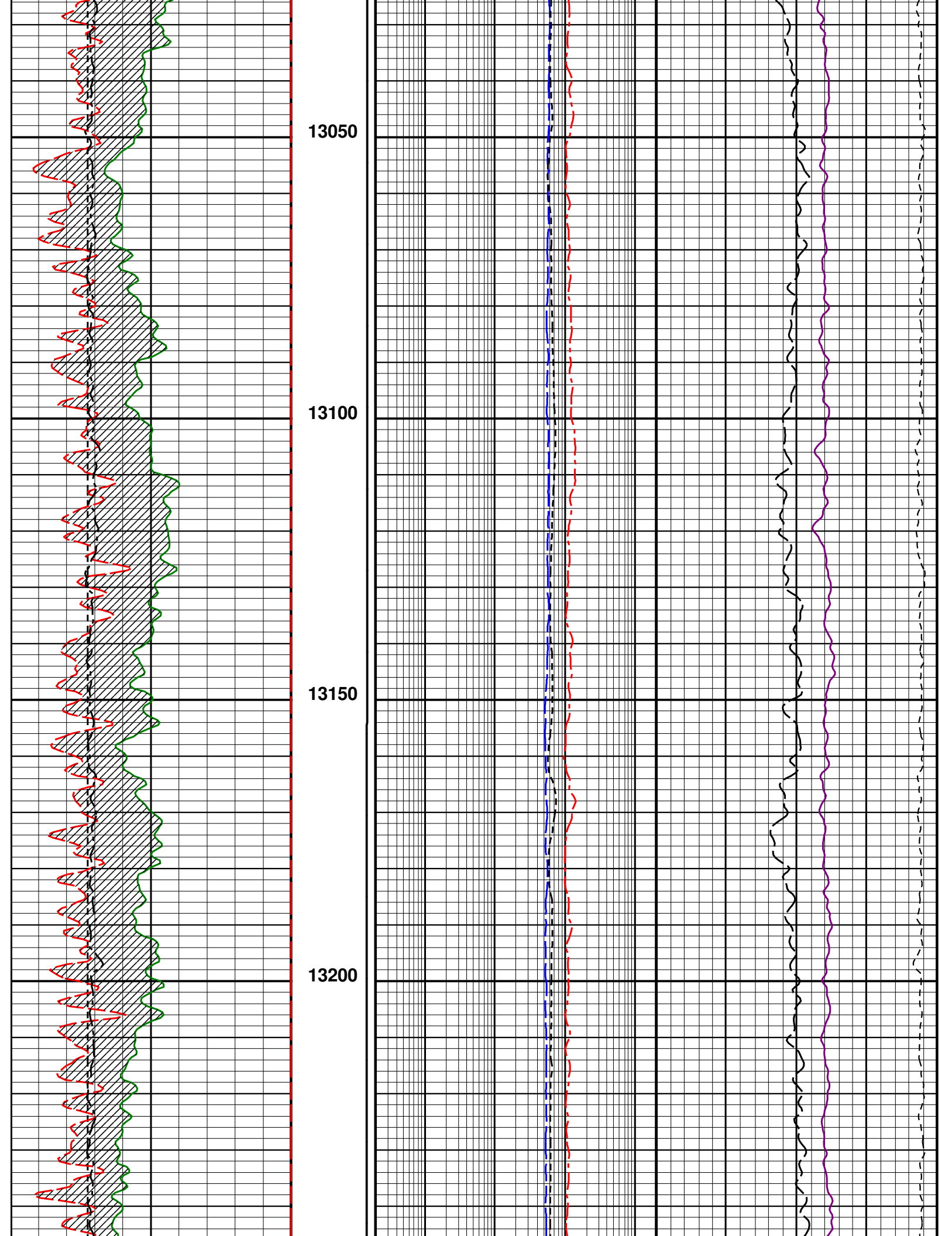
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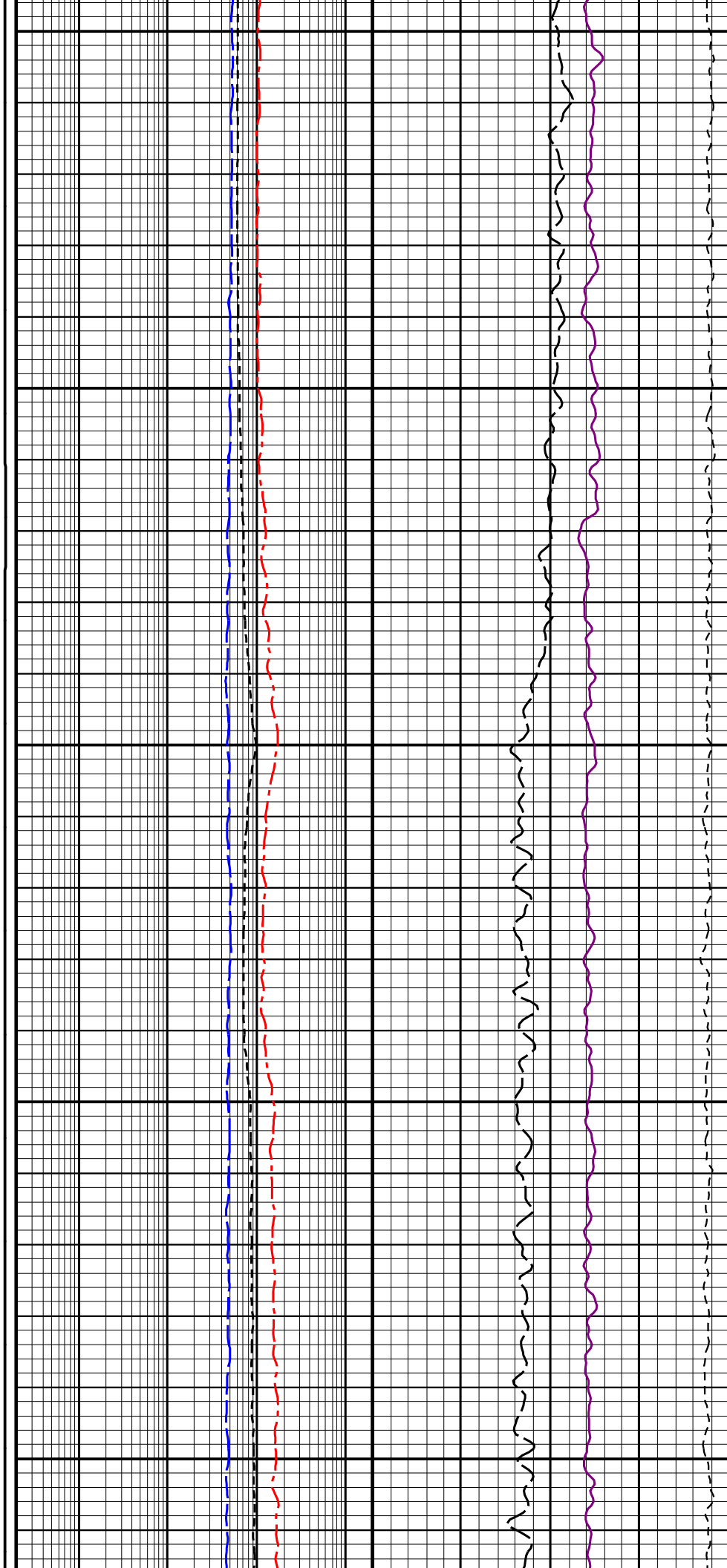
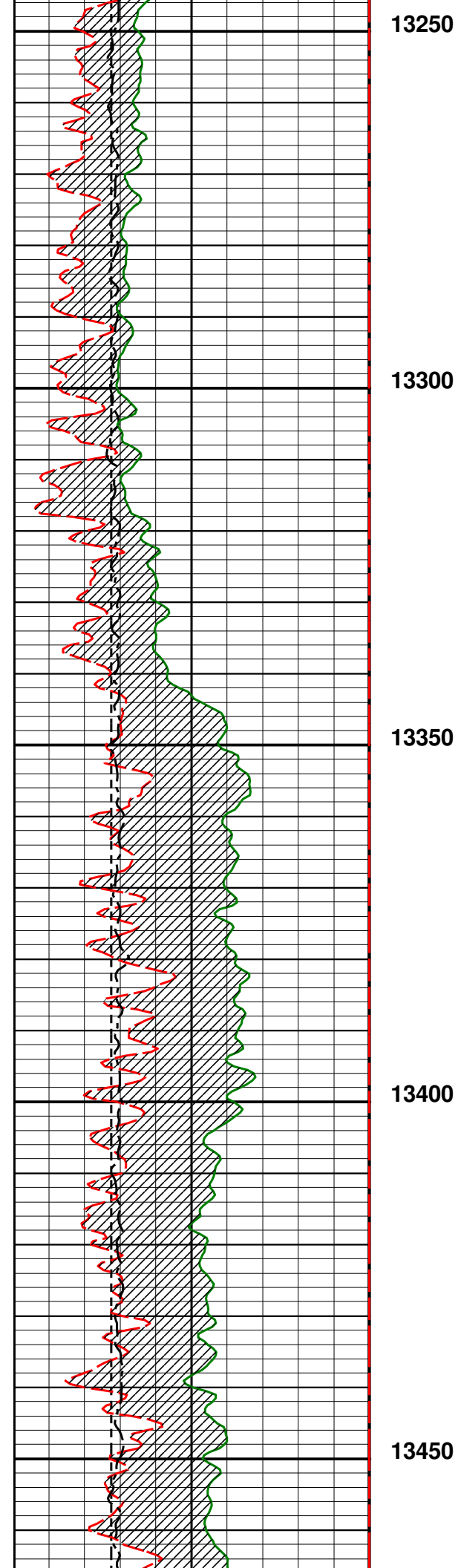
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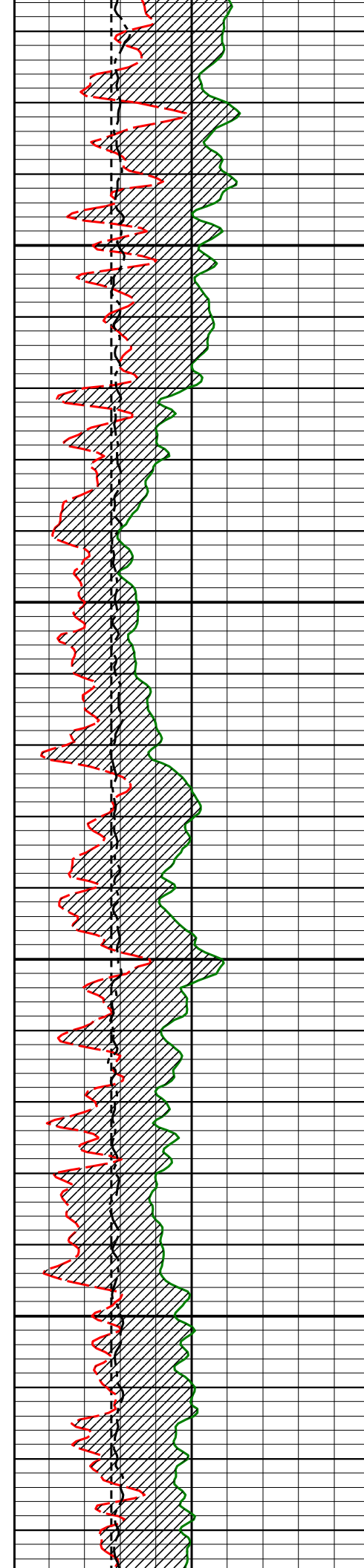
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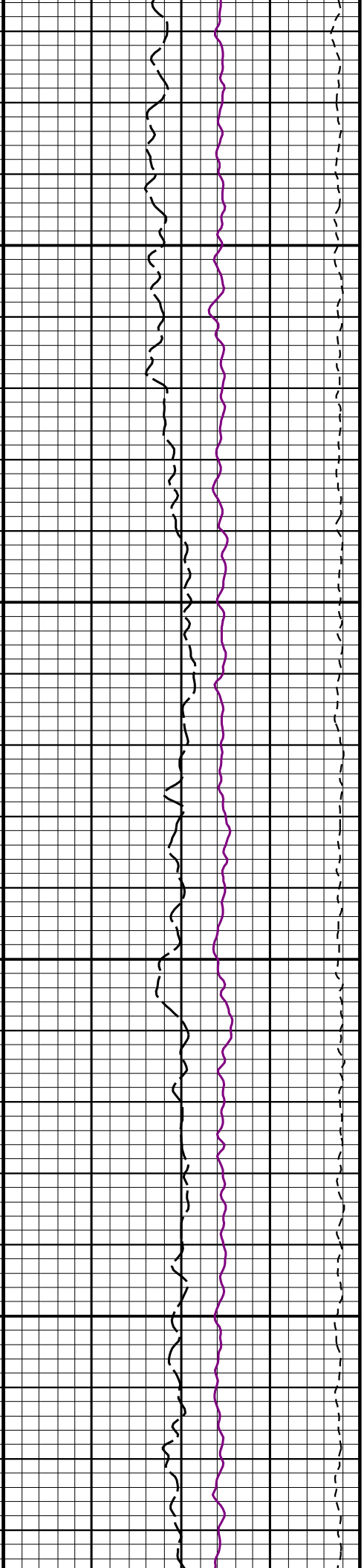
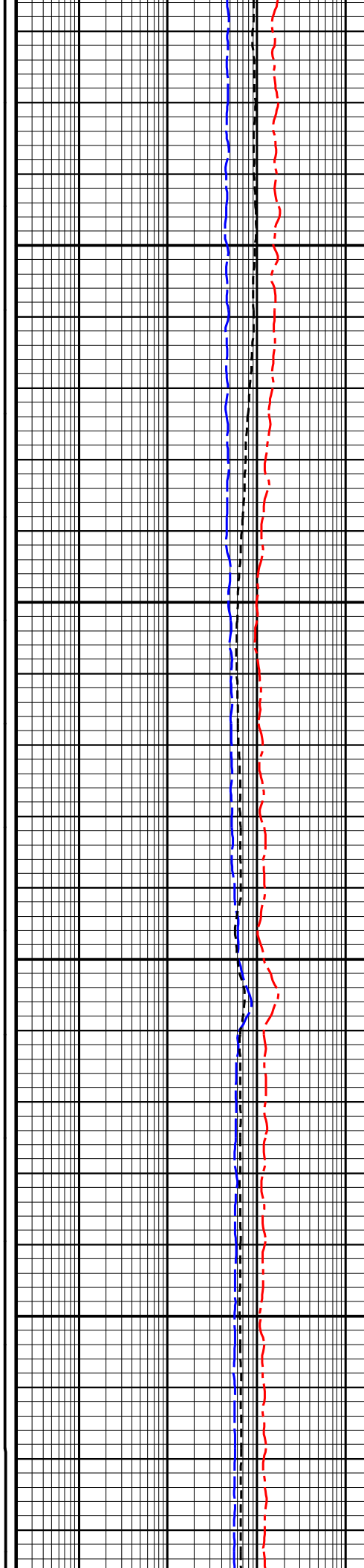


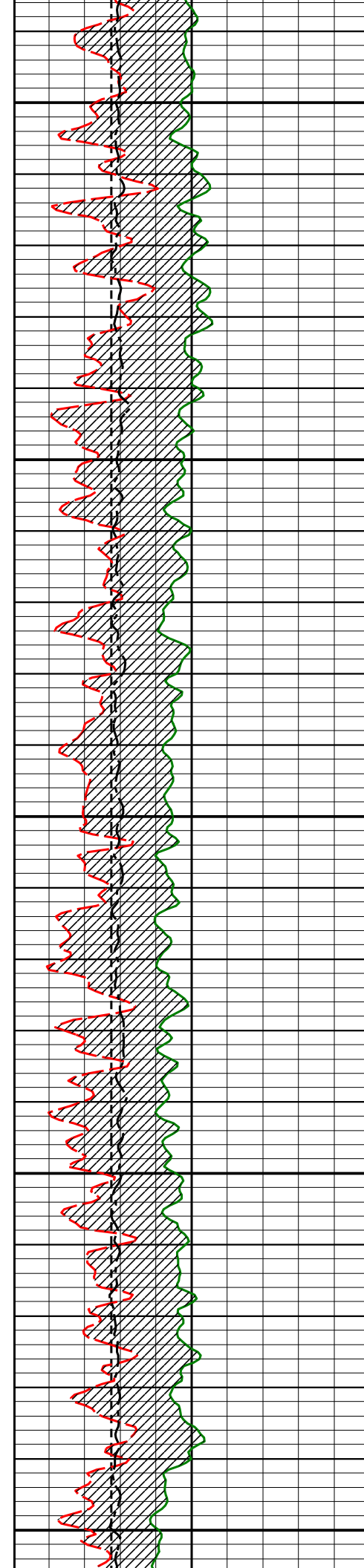
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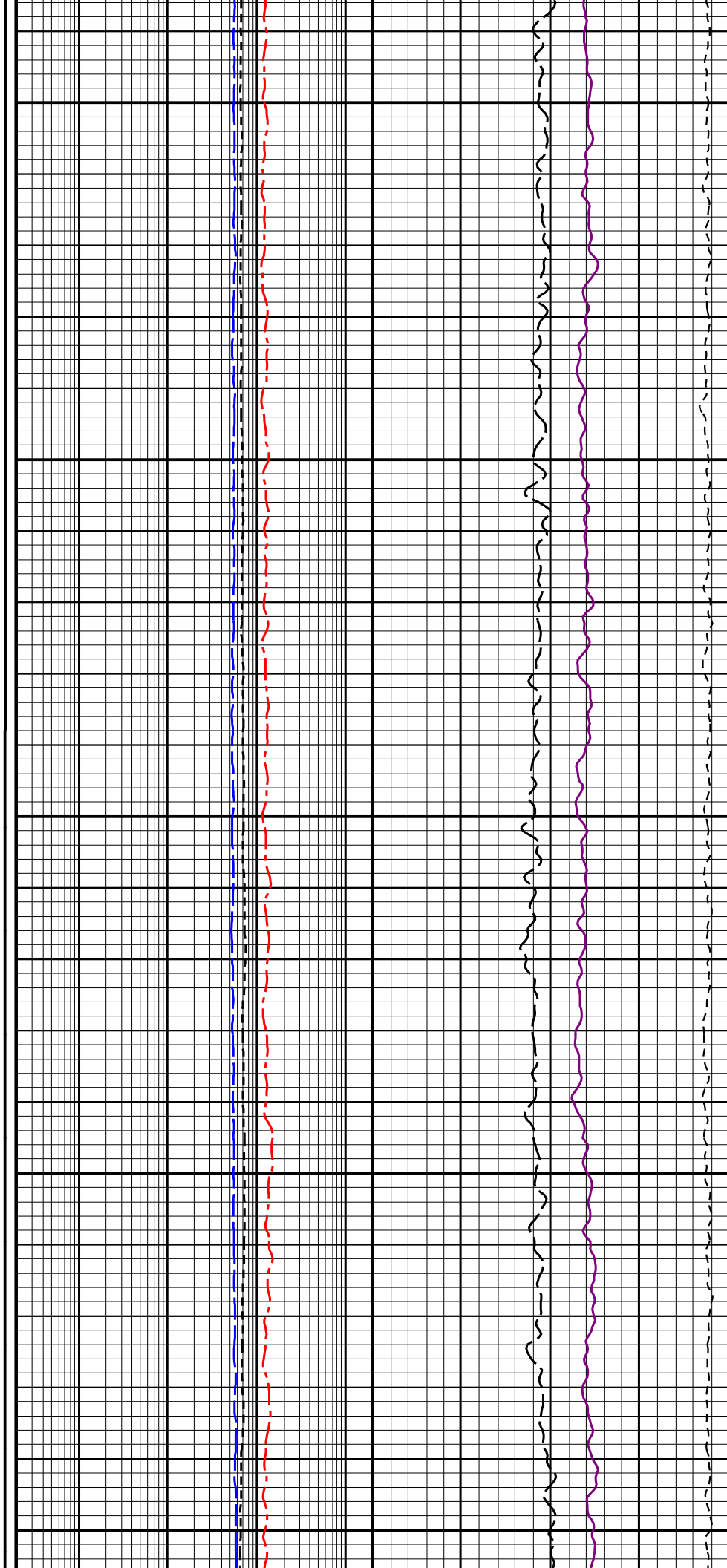
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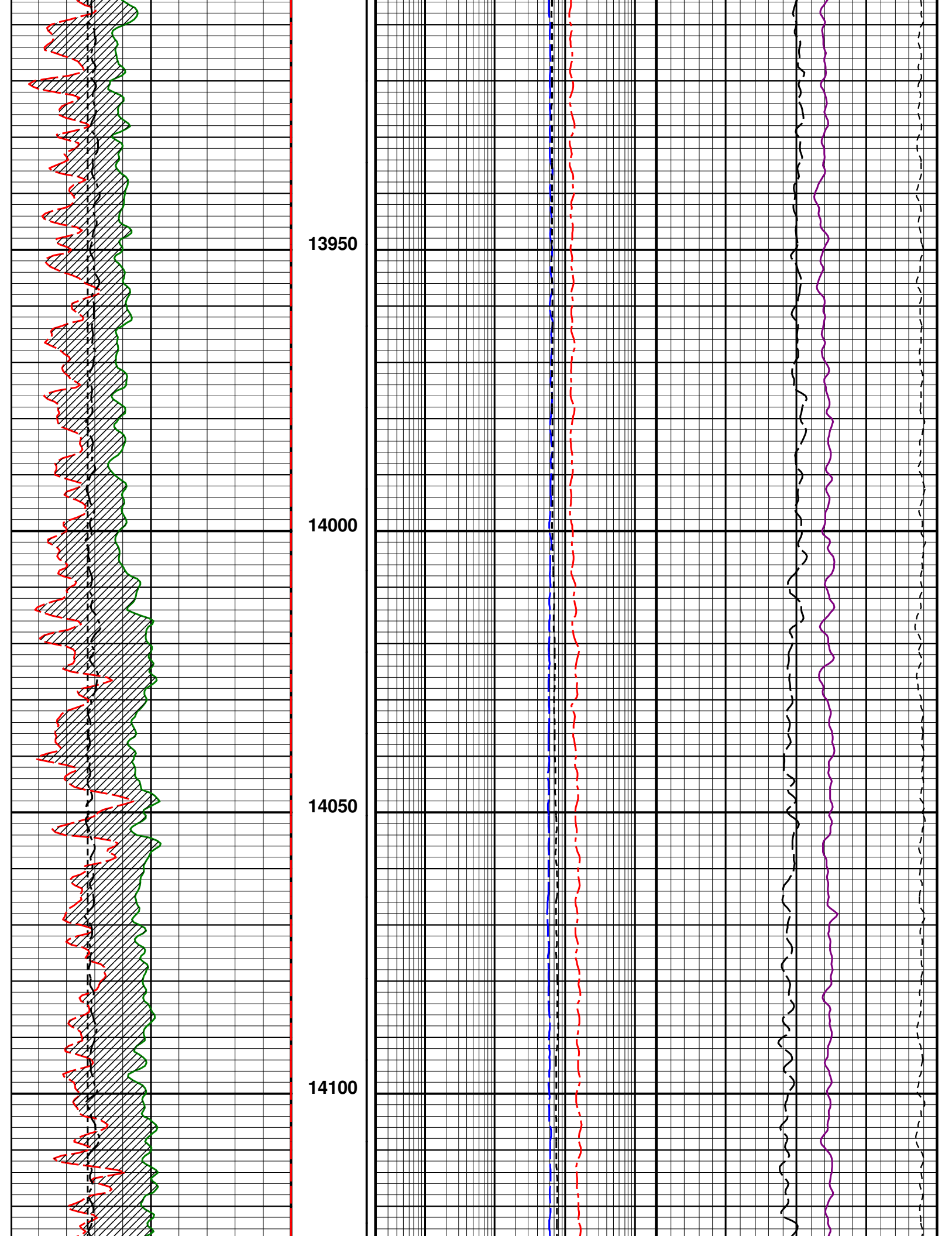
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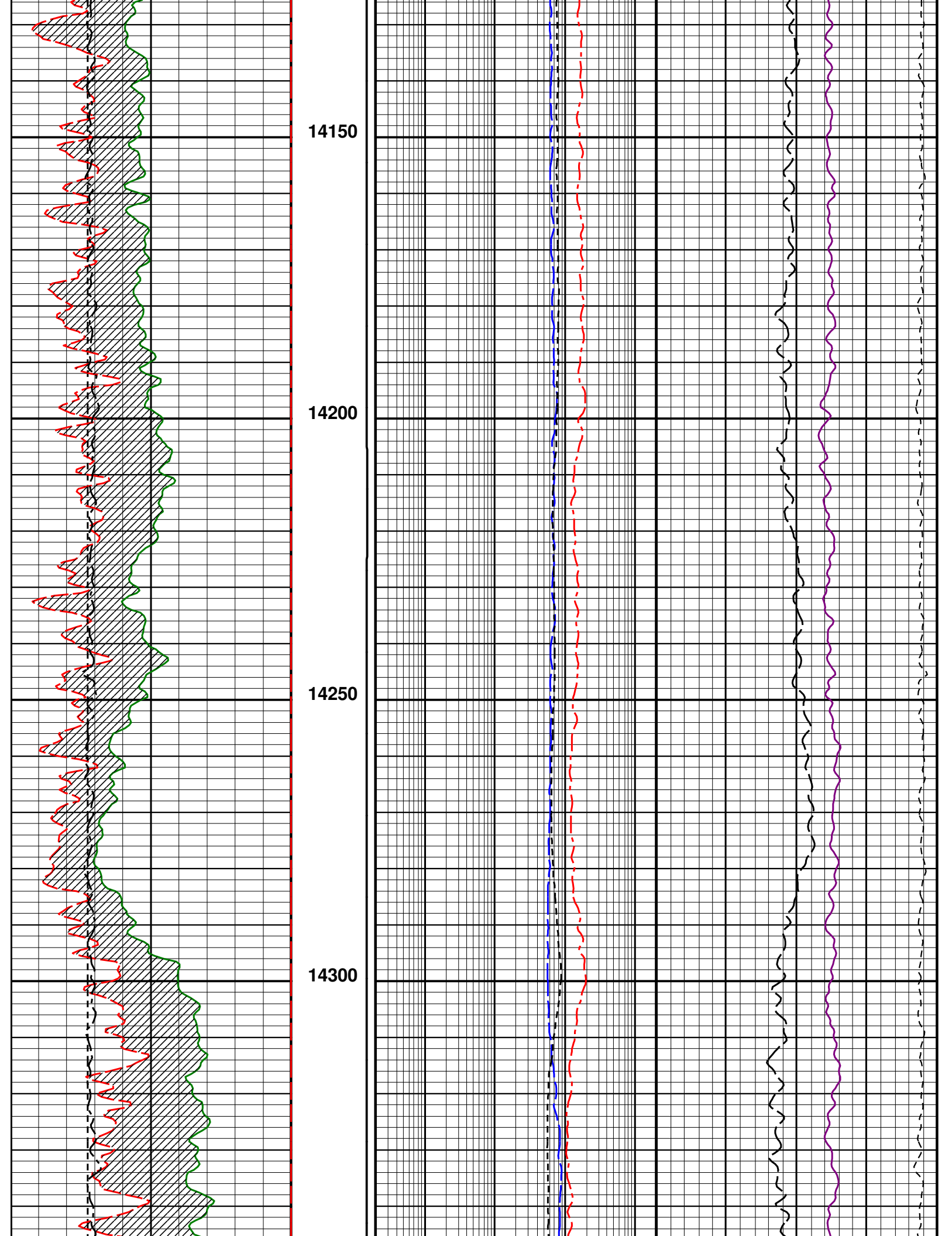
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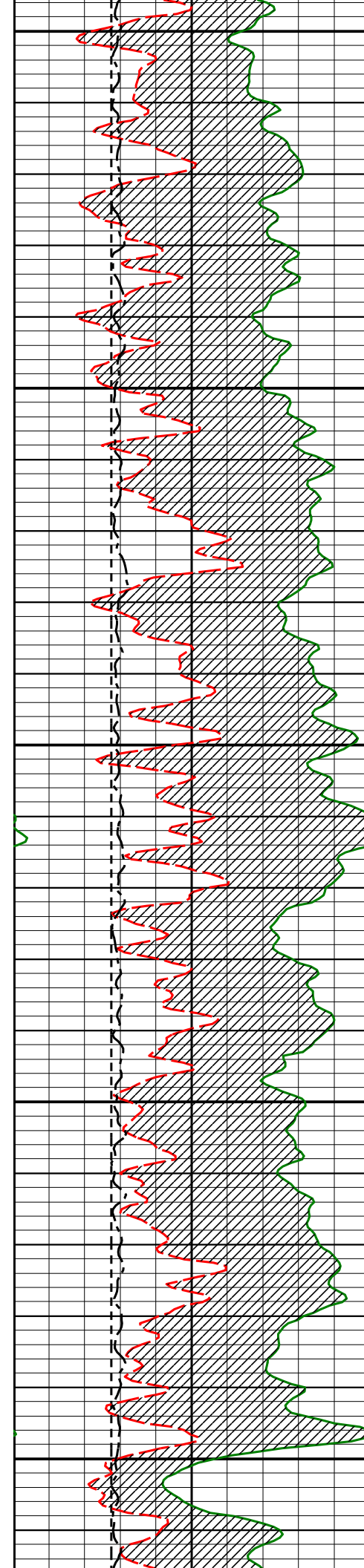
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13900









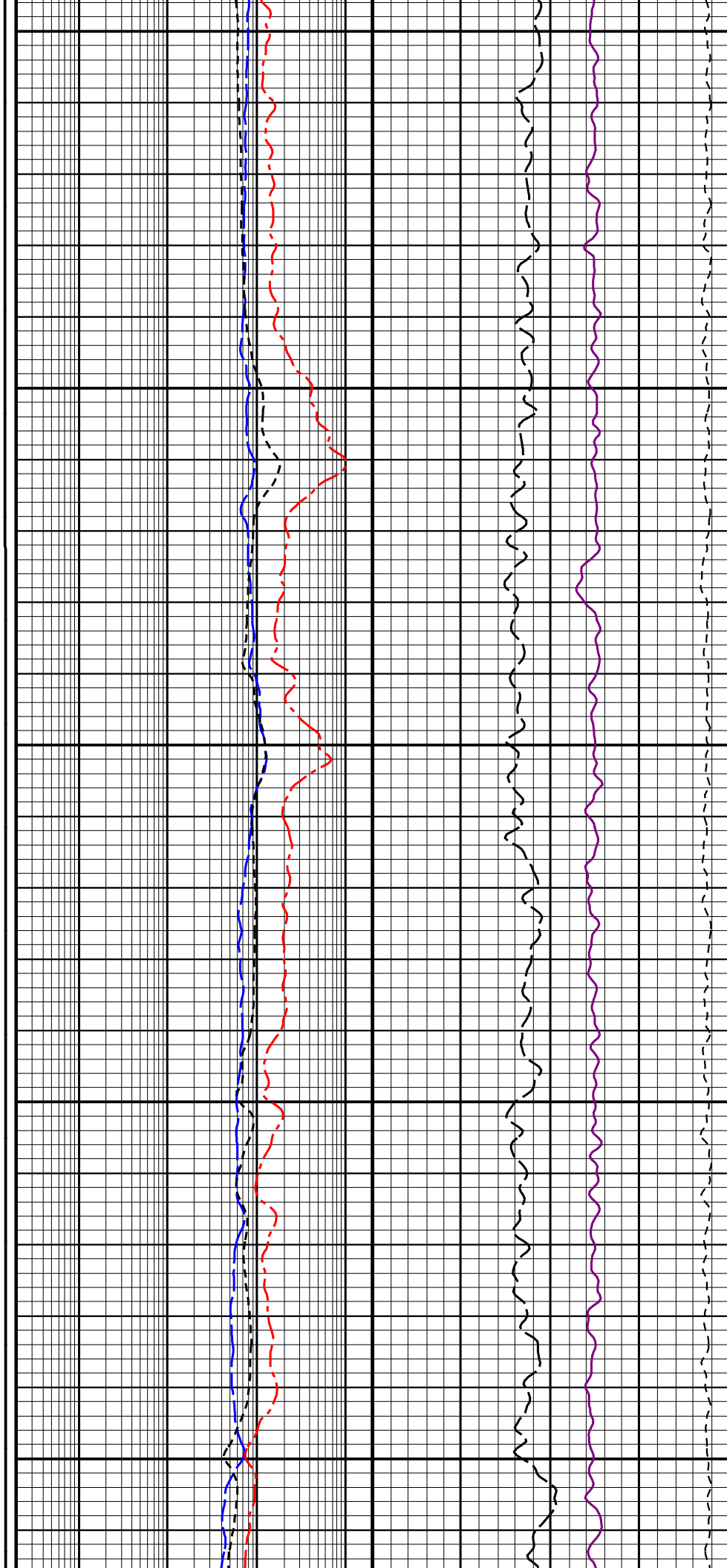
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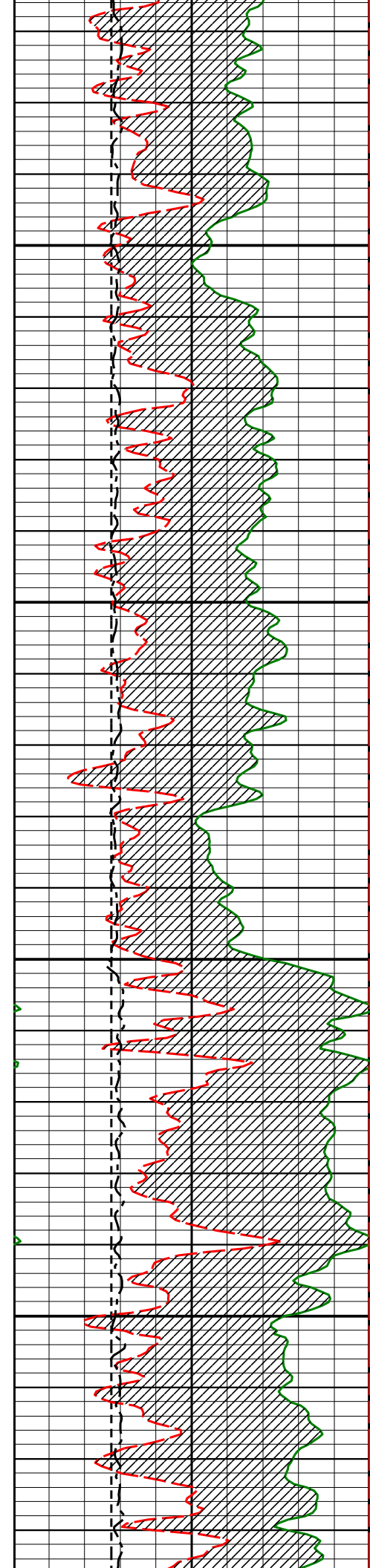
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14450

14500

14550



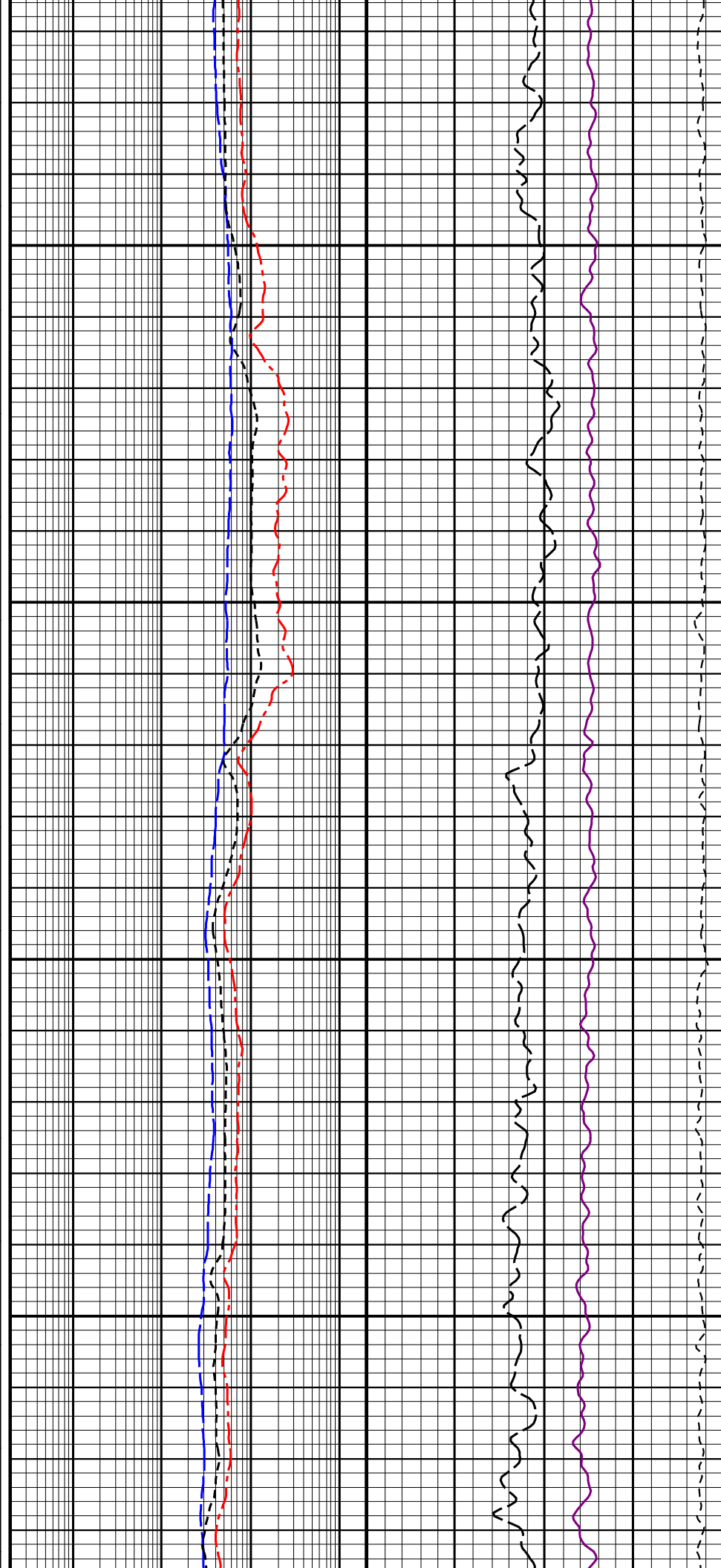


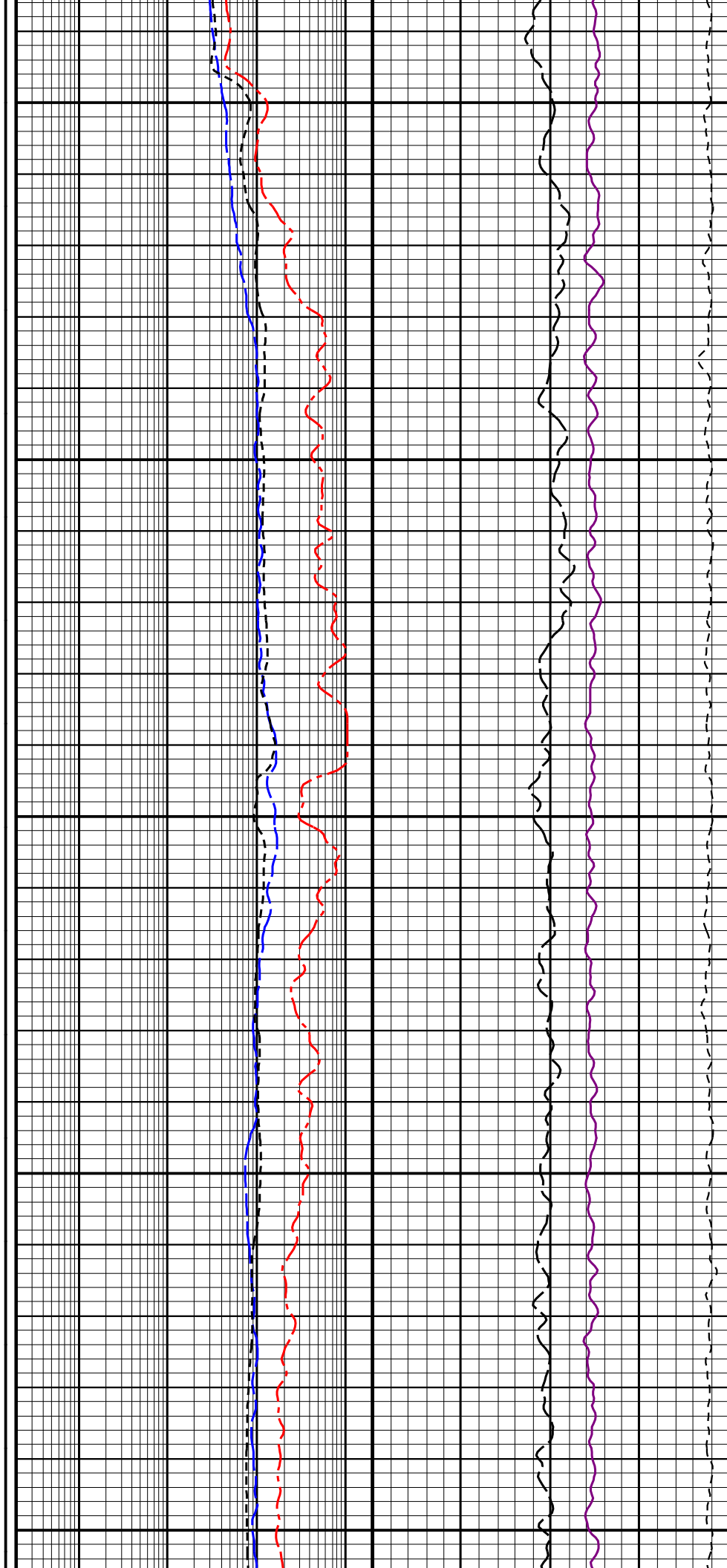
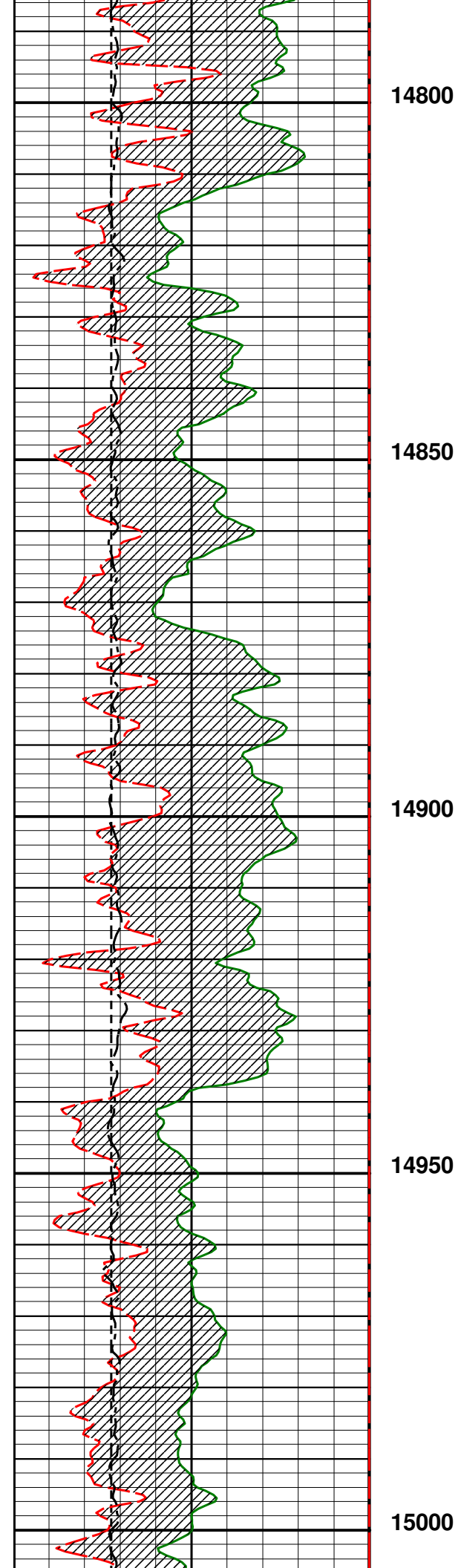
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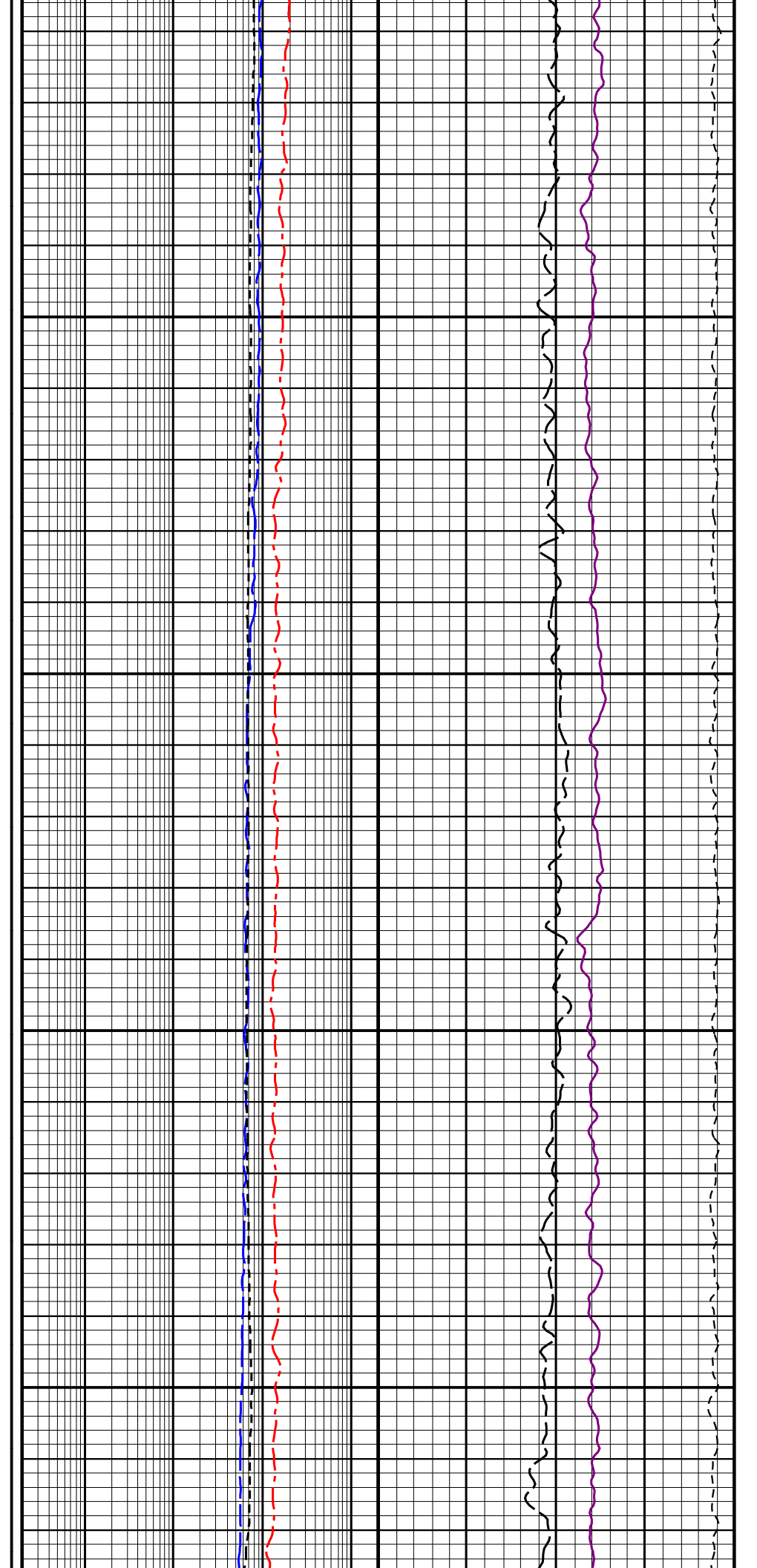
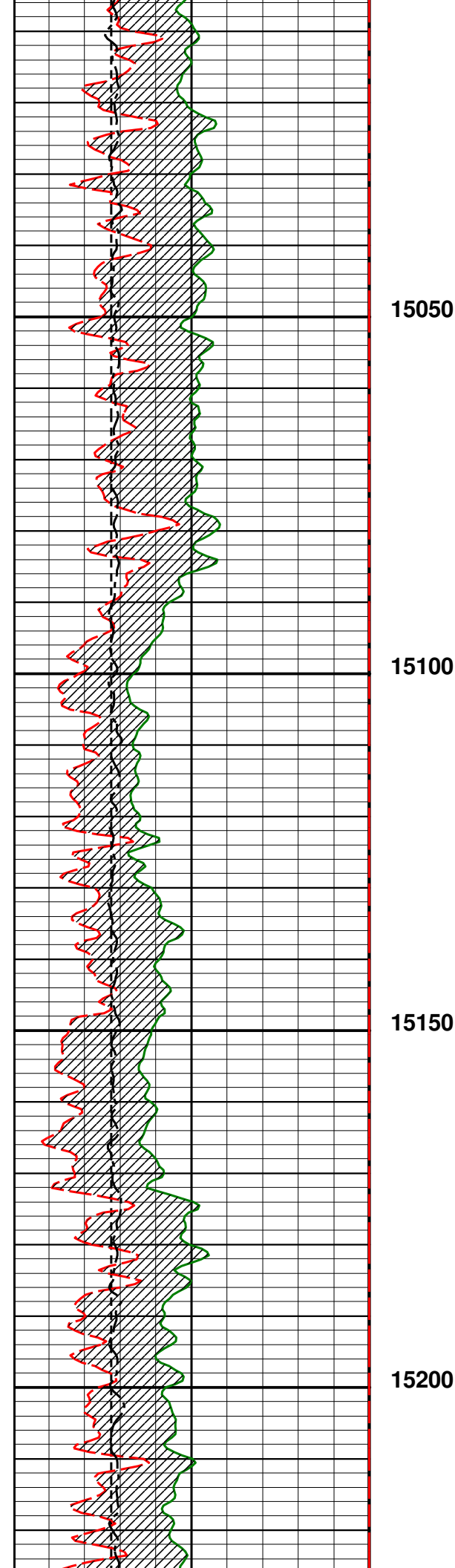
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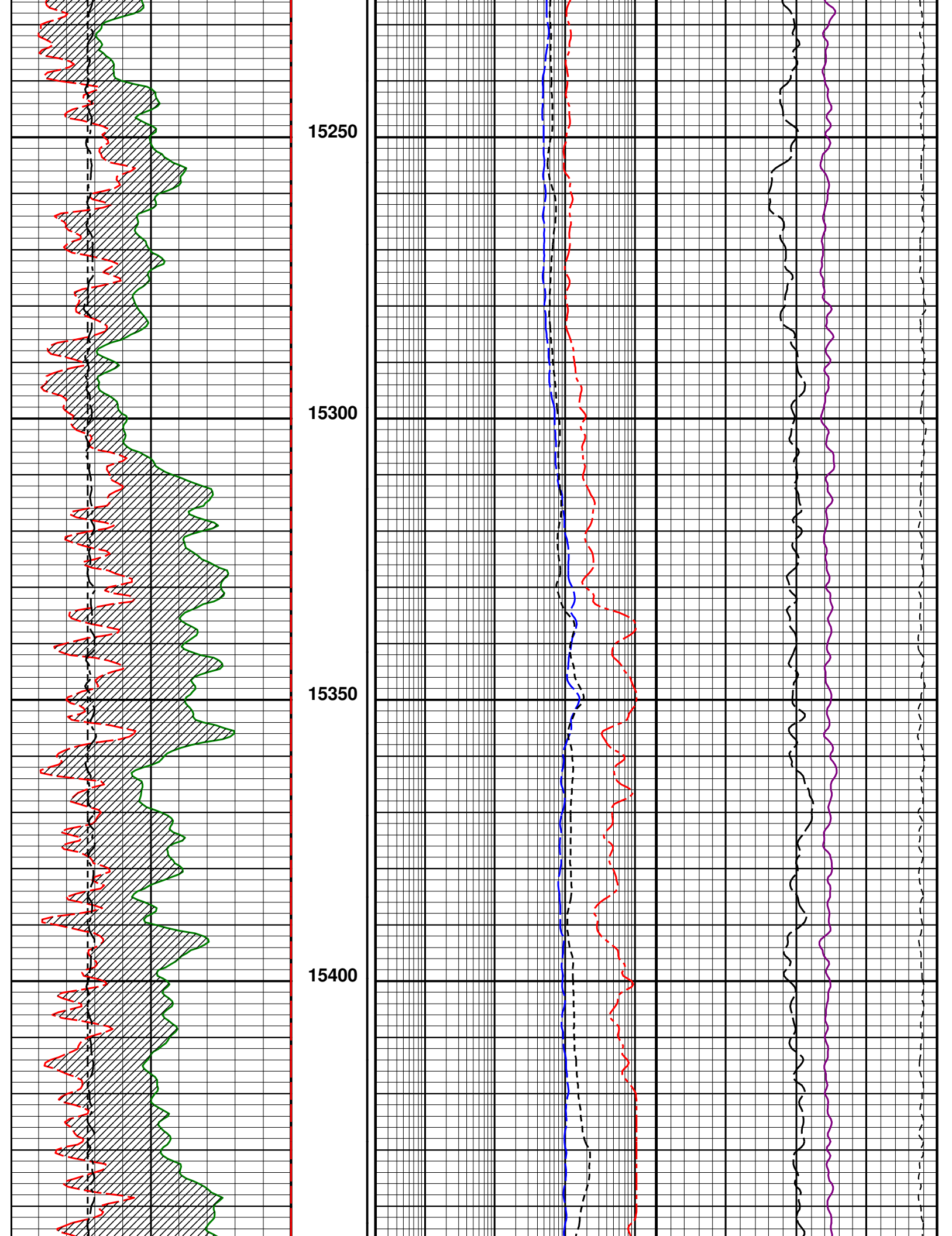
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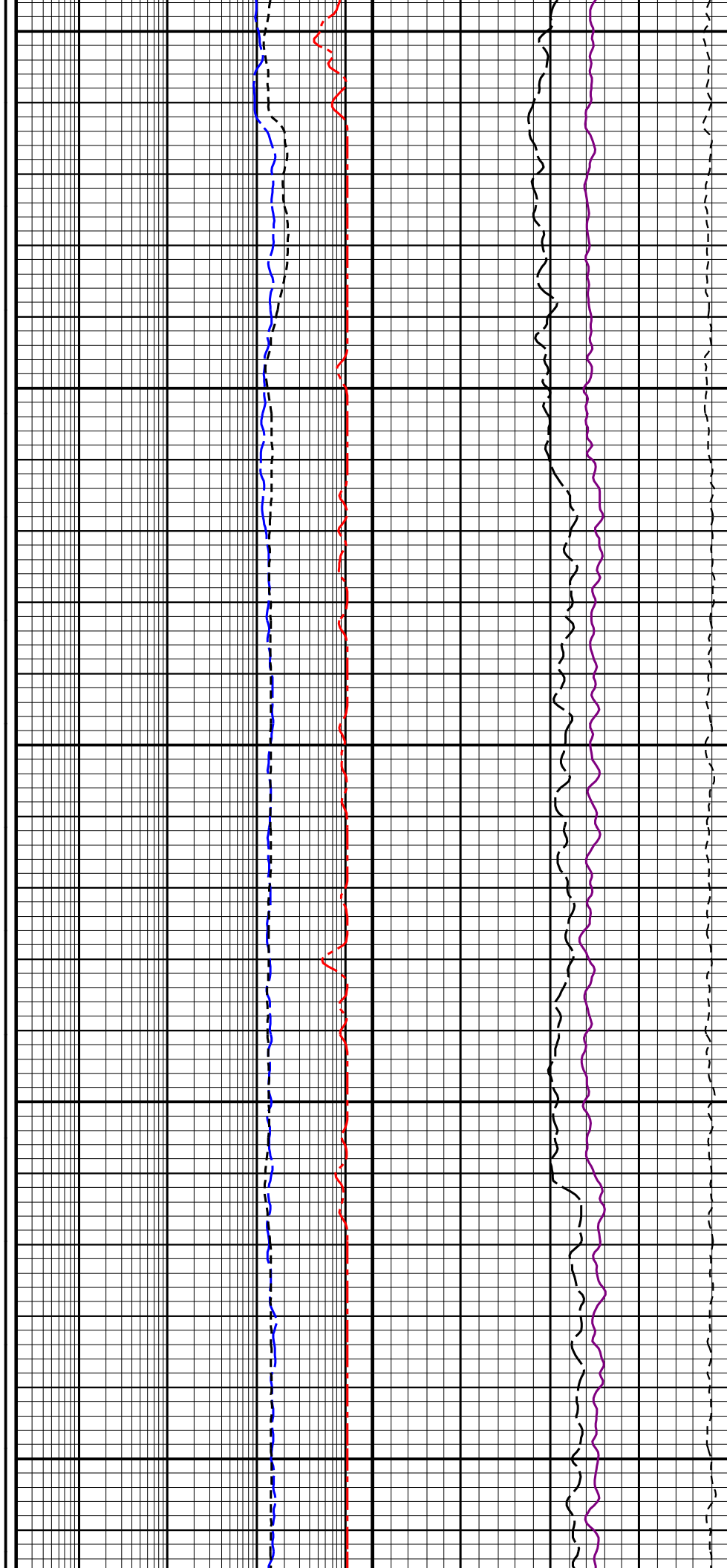
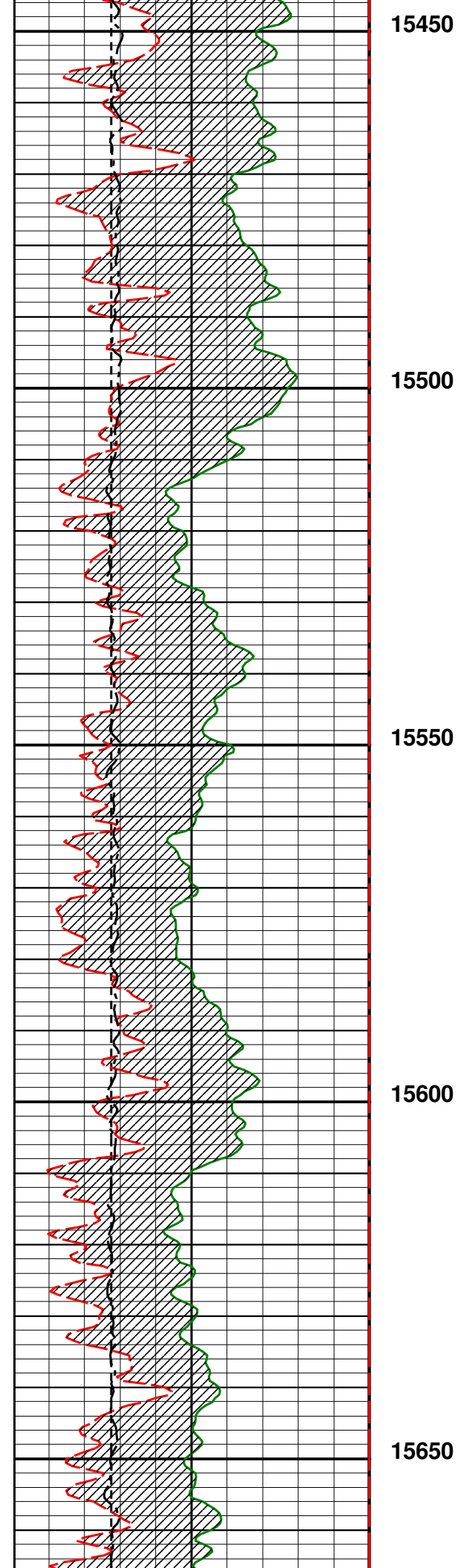


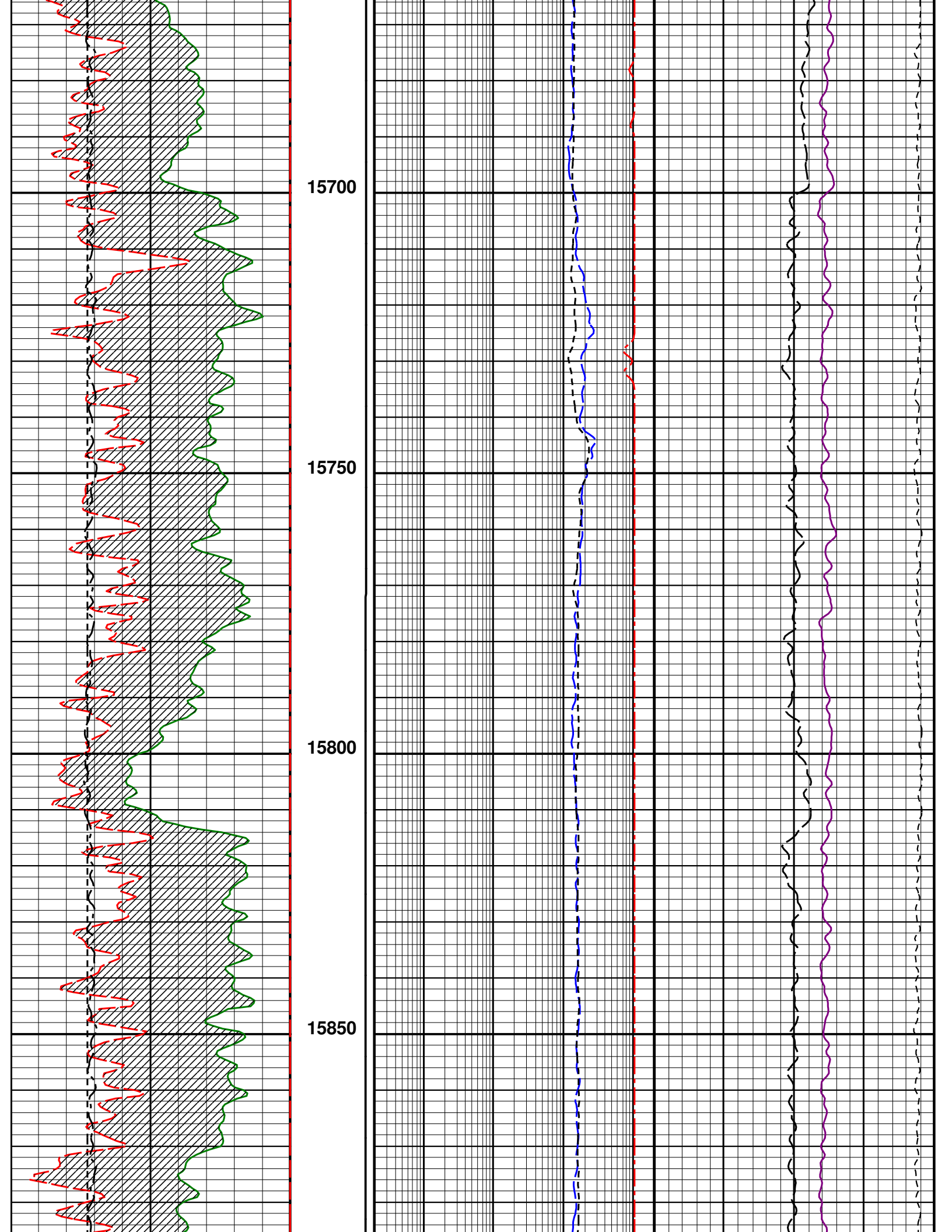


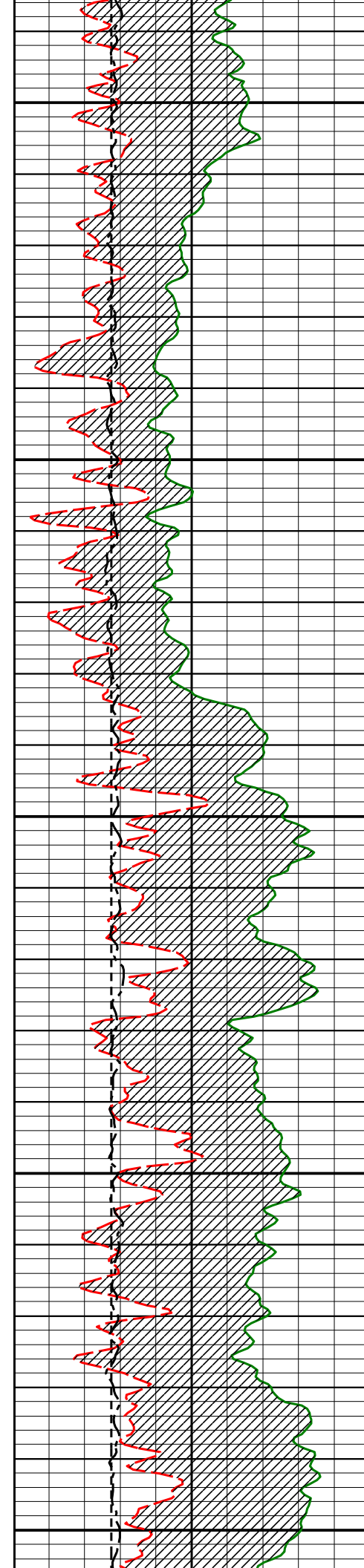












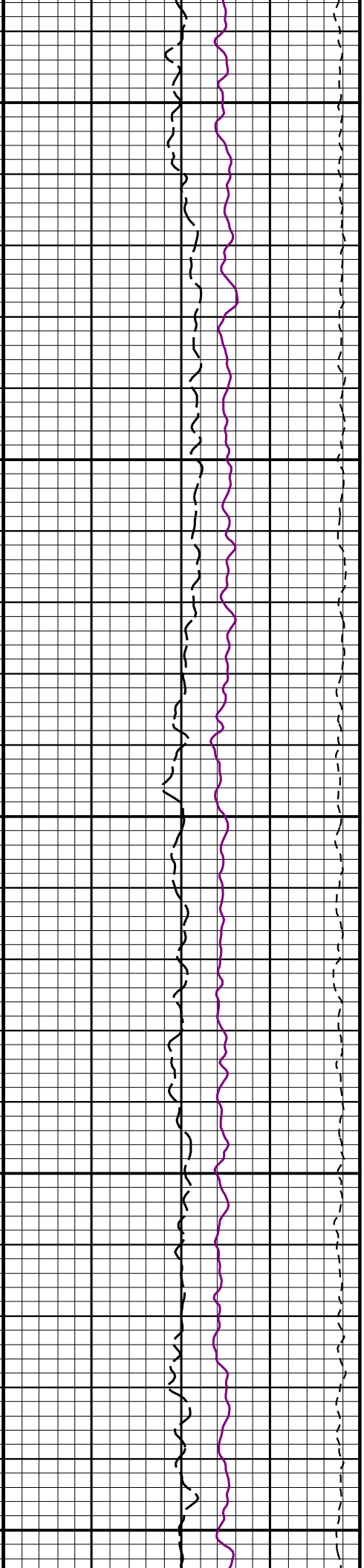
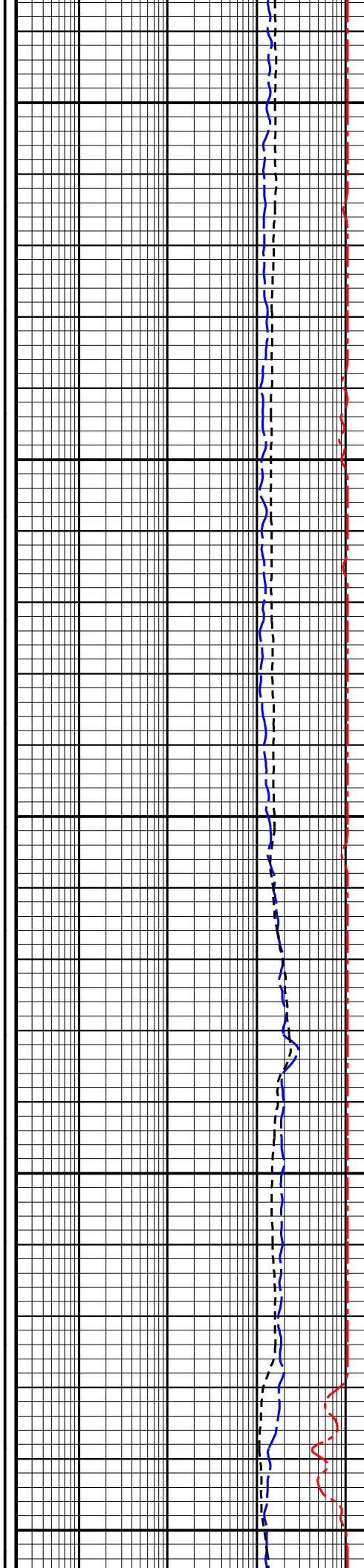
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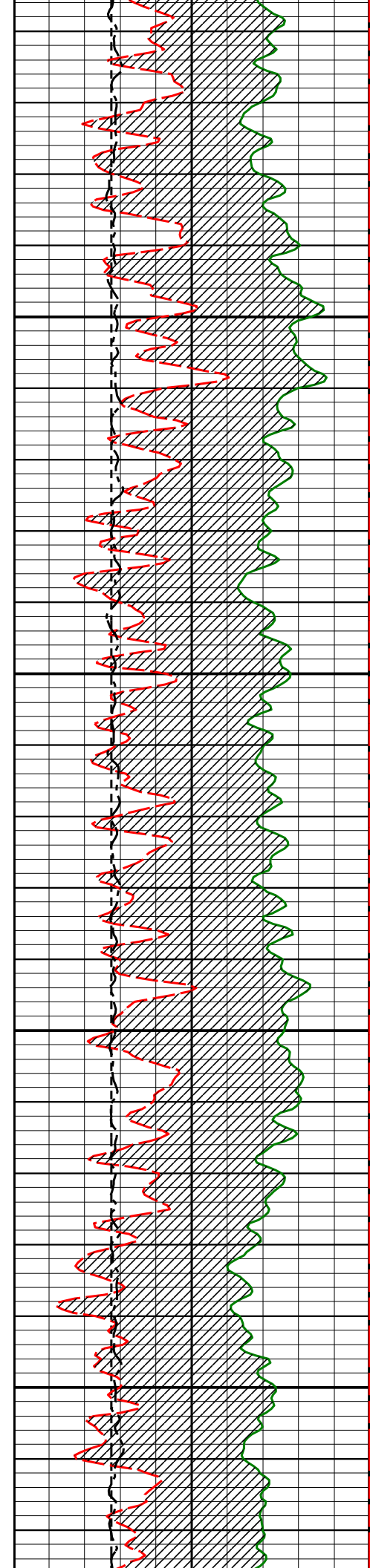
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16000

16050

16100



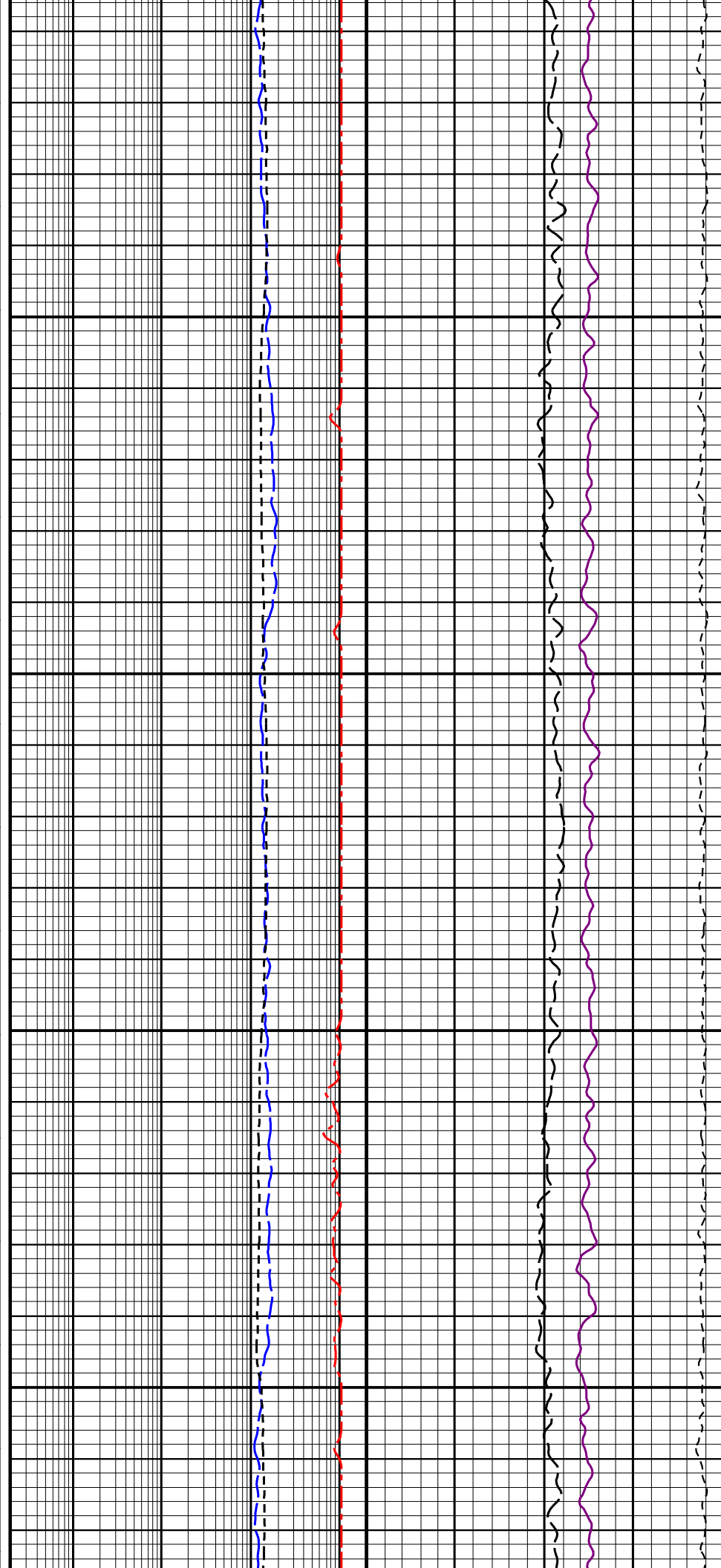


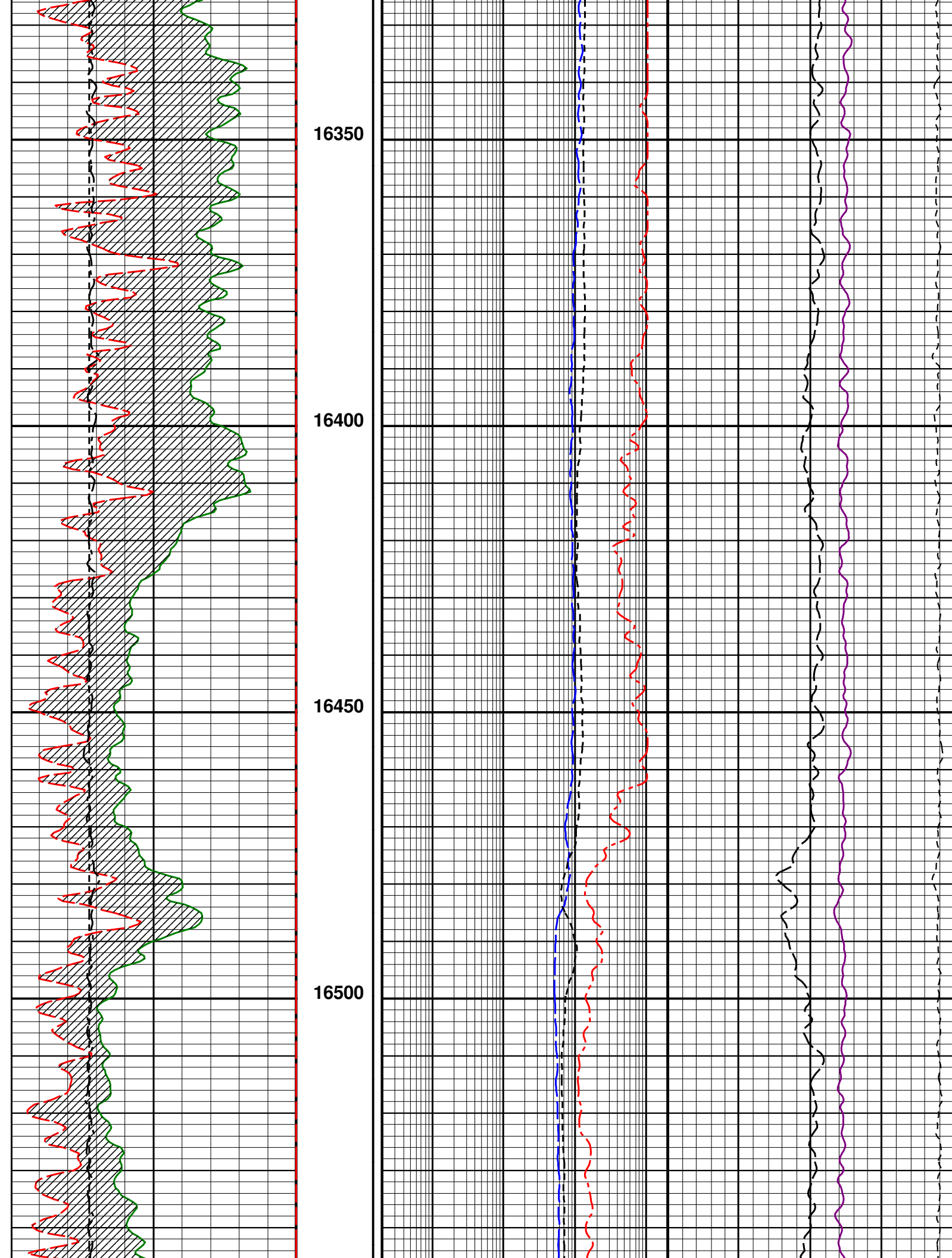
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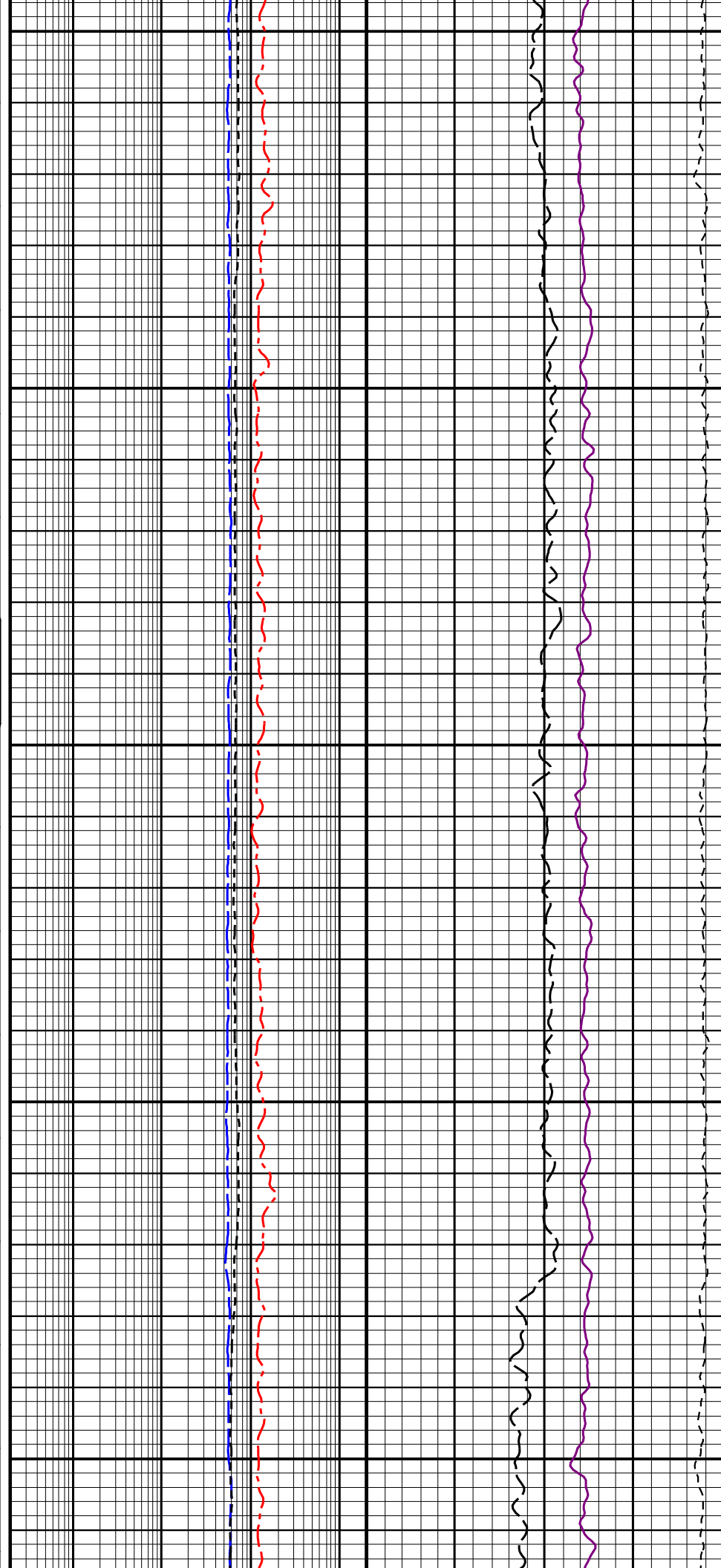
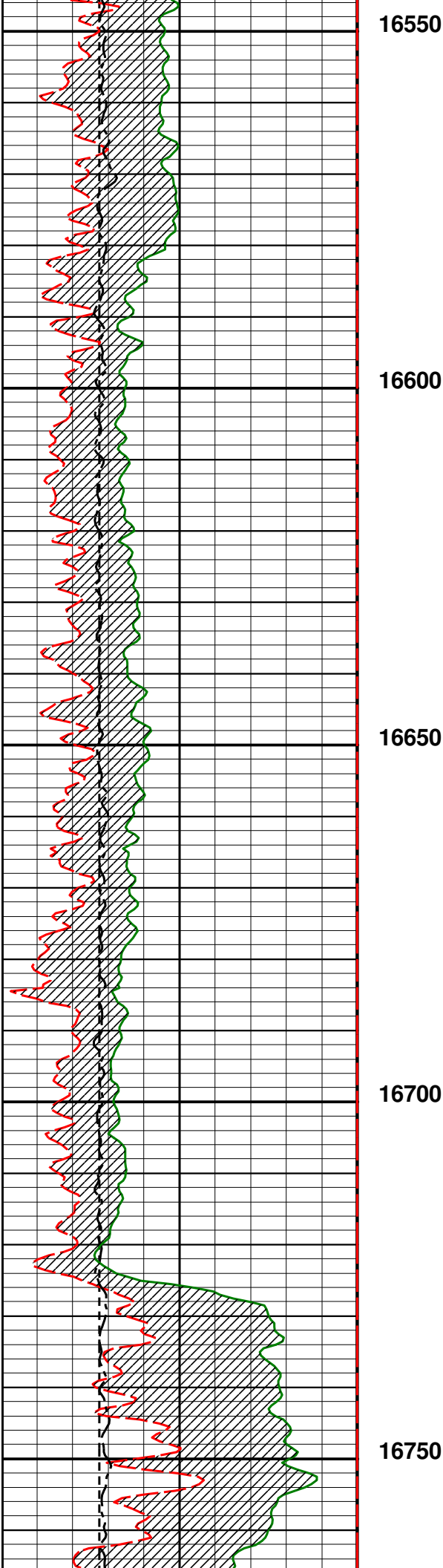
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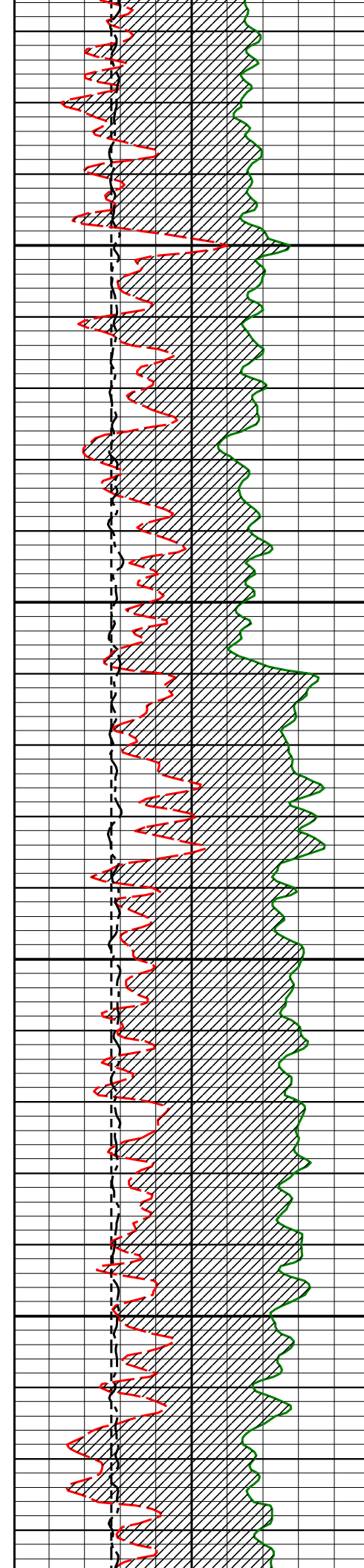
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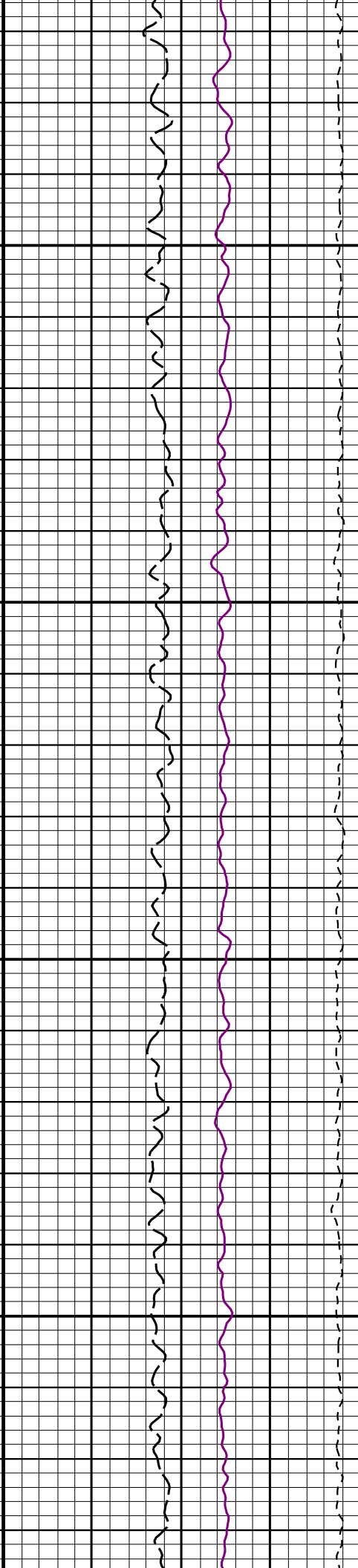
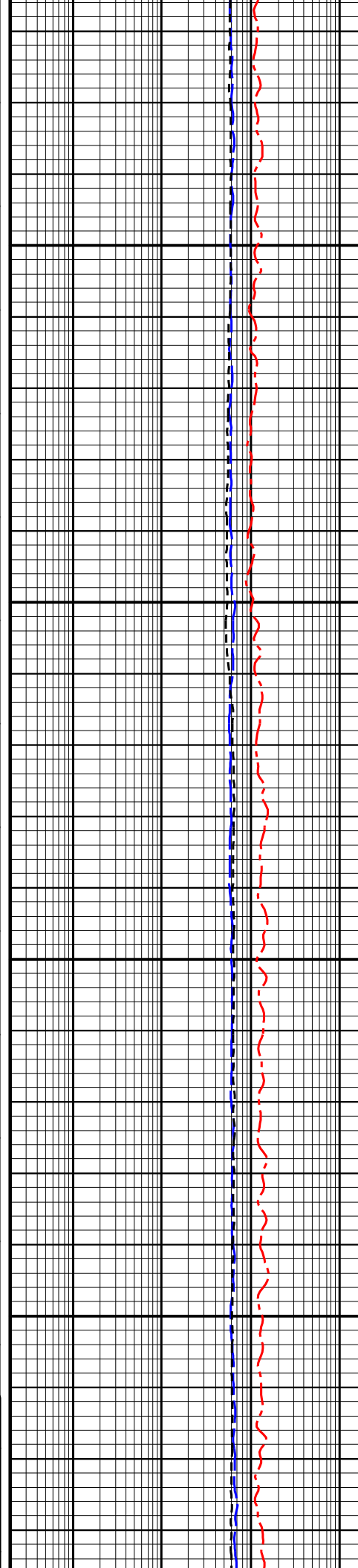


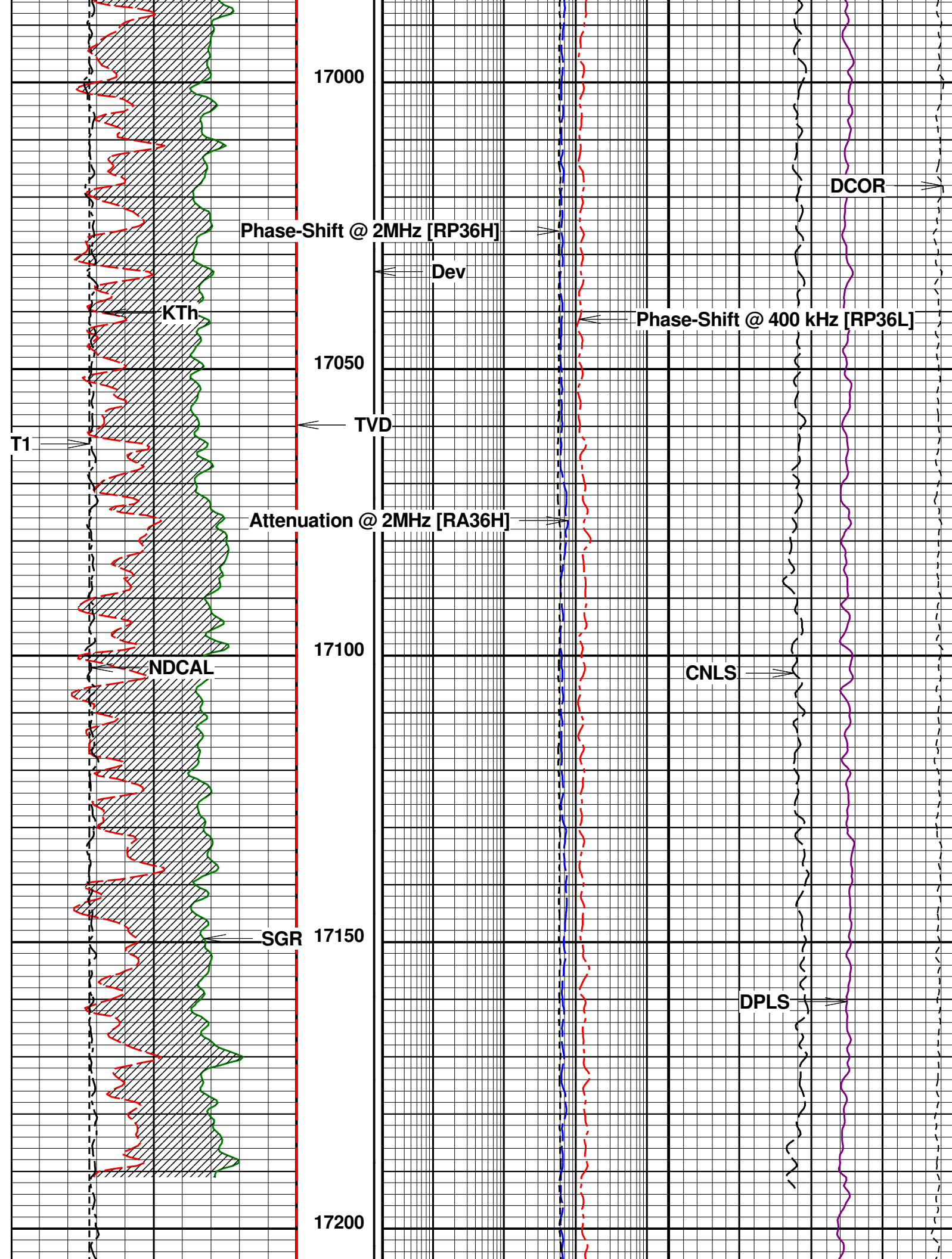
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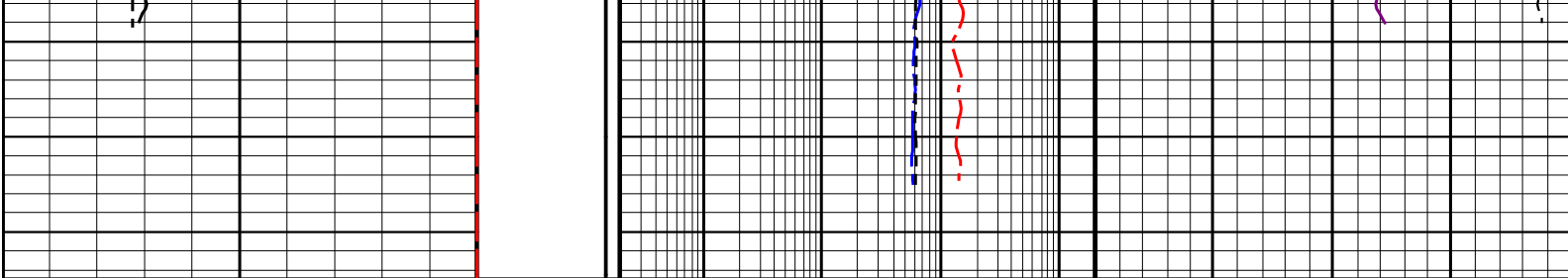
16850

16900

16950







BIT1 (in)			Dev (deg)			Attenuation @ 2MHz [RA36H] (ohmm)			CNLS (pu)		
6	Periodic	16	0.0	100.0	0.2	2000.0	45		Periodic	-15	
KTh (gAPI)			TVD (m)			Phase-Shift @ 2MHz [RP36H] (ohmm)			DCOR (g/cc)		
0	Periodic	150	7360	1250	0.2	2000.0			0.45	Periodic	-0.05
NDCAL (in)			Phase-Shift @ 400 kHz [RP36L] (ohmm)			DPLS (pu)					
6	Periodic	16	0.2			2000.0	45		Periodic	-15	
SGR (GAPI)											
0.0	Periodic	150.0									

URANIUM EFFECT

File :

Tool name : **Density**      Asset : **016**      Series : **1481**      Source ID :

Density

Density Calibration

Time      Oct / 16 / 2017 13:47:24

Setup

Description      1481016\_79965B\_2017OCT16\_PM

Setup Version      00046

Curve Name	pt	Raw Value	User Value	Device	Mult.	Add.
LSDensity	1	0.248915	1.71 g/c3	Concrete Block	31.797000	-6.205
MSDensity	1	0.212666	1.71 g/c3	Concrete Block	71.869380	-13.574
SSDensity	1	0.243331	1.71 g/c3	Concrete Block	112.270500	-25.609
LSDensity	2	0.28005	2.7 g/c3	Aluminum Block		
MSDensity	2	0.226441	2.7 g/c3	Aluminum Block		
SSDensity	2	0.252149	2.7 g/c3	Aluminum Block		

File :

Tool name : **Dual Neutron**      Asset : **013**      Series : **1473**      Source ID :

Gamma

Gamma Calibration

Time      Oct / 16 / 2017 12:54:41

Setup

Description      1473013\_1619-93\_2017OCT16\_PM

Setup Version      00046

Block	Raw Value	User Value	Device	Device SN	Mult.
Background	38.1573				

Jig ON	354.078				
Gamma	315.9207	249.9997 gAPI	Gamma Ray Jig	1619-93	0.7913369
	287	325			

Gamma Primary Verification

Time Oct / 16 / 2017 12:57:15  
Setup  
Description 1473013\_1619-93\_2017OCT16\_PM  
Setup Version 00046

Block	Device	Device SN	Raw Value	User Value
Background			38.394	
Jig ON	Gamma Ray JI	1619-93	358.667	
Gamma			253.4444 gAPI	
			244.5	255.5

Tool name : Dual Neutron      Asset : 013      Series : 1473      Source ID :

Ratio

Compensated Neutron Calibration

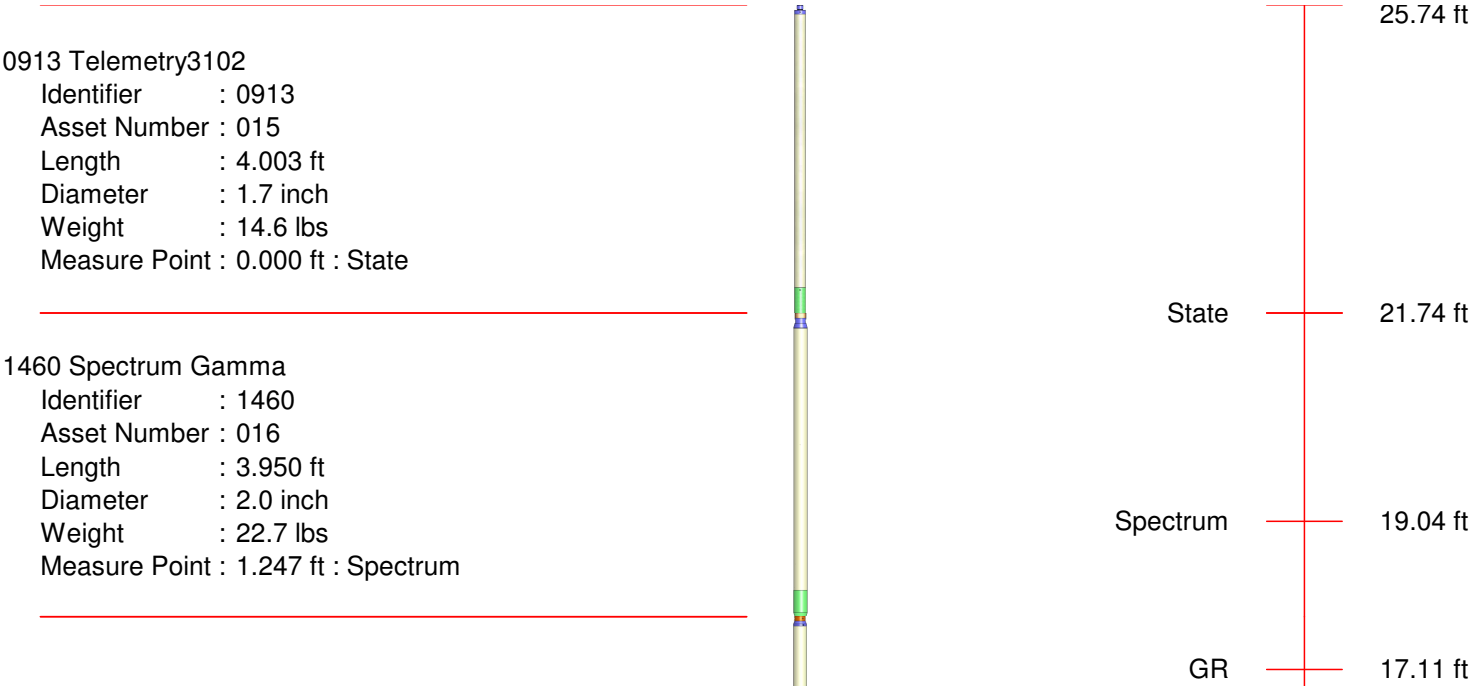
Time Oct / 16 / 2017 13:01:37  
Setup  
Description 1473013\_77814\_2017OCT16\_PM  
Setup Version 00046

Curve Name	pt	Raw Value	User Value	Device	Mult.
Ratio	1	17.5318	17 none	Neutron Ratio	0.969667
		16.15	17.85		

Compensated Neutron Primary Verification

Time Oct / 16 / 2017 13:04:35  
Setup  
Description 1473013\_77814\_2017OCT16\_PM  
Setup Version 00046

Curve Name	pt	Device	Device Value	User Value
CN	1	Neutron Porosity	23 pu	23.7909 pu
				21.16 24.84



1473 Dual Neutron  
Identifier : 1473  
Asset Number : 013  
Length : 10.069 ft  
Diameter : 2.0 inch  
Weight : 58.4 lbs  
Measure Point : 1.854 ft : SSN  
Measure Point : 2.343 ft : LSN  
Measure Point : 9.383 ft : GR

0813 Knuckle Joint  
Identifier : 0813  
Length : 2.297 ft  
Diameter : 1.7 inch  
Weight : 16.1 lbs

1481 Density  
Identifier : 1481  
Asset Number : 016  
Length : 5.427 ft  
Diameter : 2.0 inch  
Weight : 38.4 lbs  
Measure Point : 1.647 ft : Short  
Measure Point : 1.870 ft : Mid  
Measure Point : 2.139 ft : Long

Total Length : 25.74 ft  
Total Weight : 150.13 lbs  
Max Diameter : 2.0 inch

LSN 10.07 ft  
SSN 9.58 ft

Long 2.14 ft  
Mid 1.87 ft  
Short 1.65 ft

0.00 ft



COMPANY: CONFLUENCE DJ LLC  
WELL: BUFORD 33-9-4L  
FIELD: WATTENBERG  
COUNTY: WELD  
STATE: CO