		MEASURED DEPTH COMPENSATED NEUTRON-DENSITY POROSITY PROPAGATION RESISTIVITY SPECTRAL GAMMA RAY LOG	
Company: GREAT WESTERN OPERATING COMPANY LLC. Well: SCHNEIDER HD 11-099HC Field: WATTENBERG County: WELD State: CO		COMPANY: GREAT WESTERN OPERATING COMPANY LLC. WELL: SCHNEIDER HD 11-099HC FIELD: WATTENBERG COUNTY: WELD STATE: CO	
Permanent Datum: GROUND LEVEL Elevation: 4735.0 ft Log meas. from: KELLY BUSHING 20.0 ft above Perm. Datum Drill. meas. from: KELLY BUSHING		API No. 05-123-46408 Other Services Location SEC:7 TWN:4N RNG:66W N/A LAT:40.324181 LON:-104.826600 1810' FSL & 875' FWL	
Date	15-SEP-2019	Elev.: K.B. 4755.0 ft D.F. ----- G.L. 4735.0 ft	
Run No.	1 (HORIZONTAL)	TVD	
Depth Driller	17996.0 ft	7184.0 ft	
Depth Logger	17996.0 ft	7184.0 ft	
Bottom Logged Interval	17777.0 ft	7182.5 ft	
Top Logged Interval	7378.0 ft	6811.9 ft	
Casing Driller	1594.0 ft	1593.0 ft	
Casing Logger	N/A	N/A	
Bitsize	8.5 in		
Type Fluid in Hole	OBM		
Density / Viscosity	10.5 ppq	75 sec/qt	
pH / Water Loss	N/A	N/A	
Source of Sample	N/A		
Rm at Meas. Temp.	N/A		
Rmf 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	14-SEP-2019 @ 08:30		
Logger on Bottom	14-SEP-2019 @ 12:40		
Max. Recorded Temp.	258.0 °F		
Equip. No / Location	DL-312 OKC		
Recorded by	R. BERGERON	P. MUNGCHAROEN	
Witnessed by	D. ROBERTS		

Fold Here

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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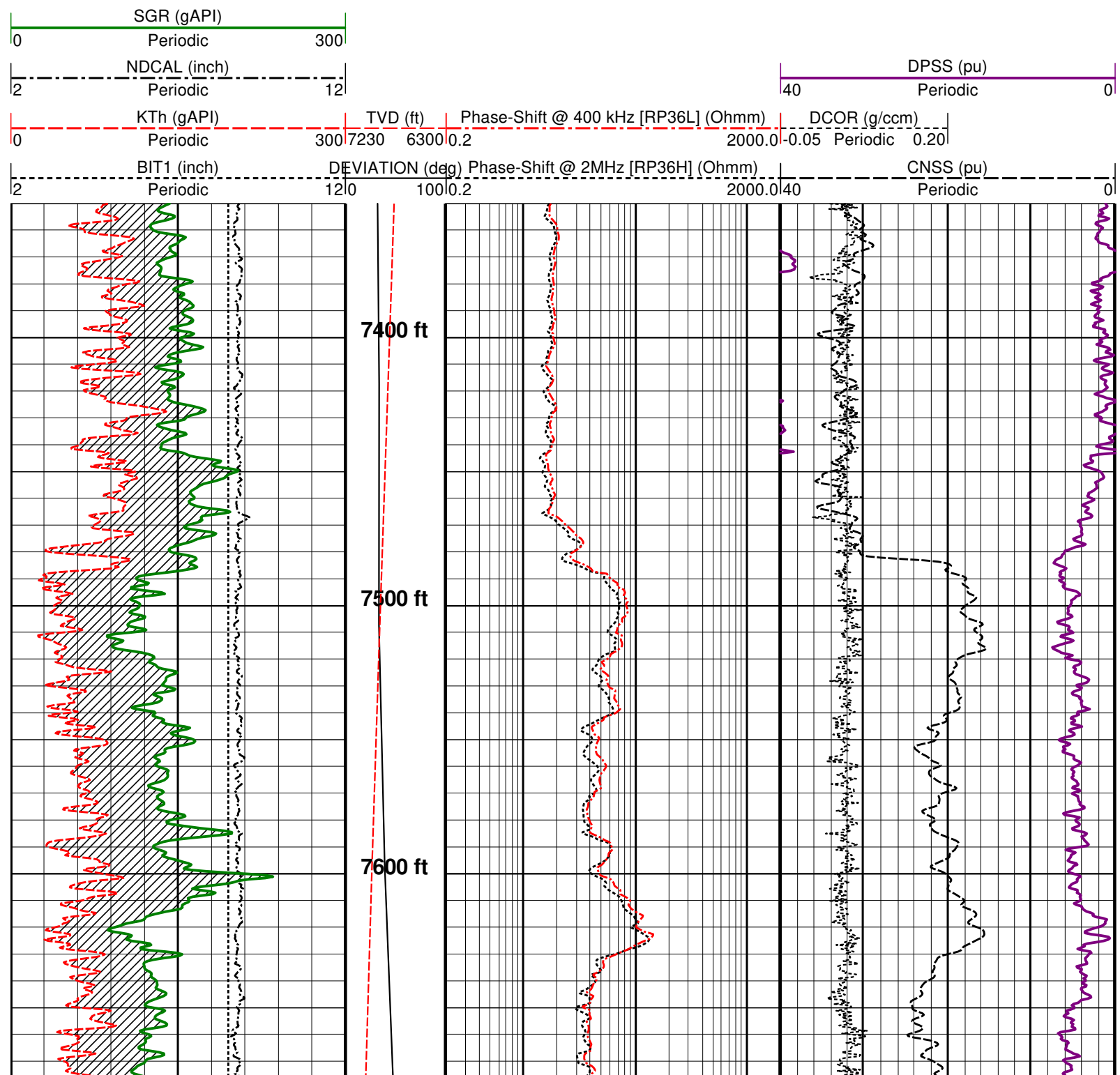
REMARKS

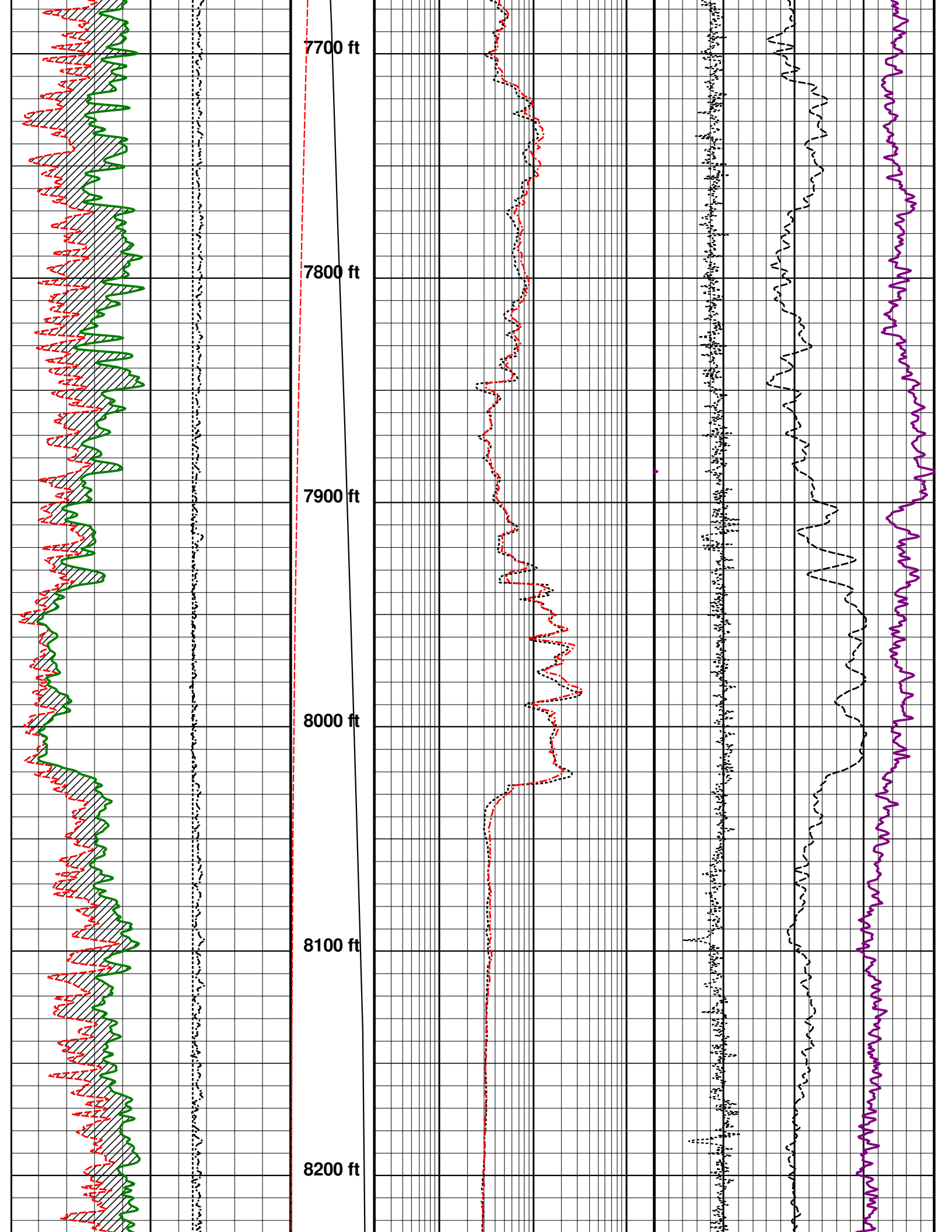
TOOLS PUMPED DOWN FROM SURFACE; LOGGING PERFORMED WHILE TRIPPING OUT
COMPENSATED NEUTRON-DENSITY PRESENTED IN SANDSTONE AND LIMESTONE MATRIX
MAX DEVIATION: 91.2 DEG @ 9032.0 ft
DRILLING RIG: PRECISION DRILLING 466
SURFACE CASING SIZE: 9.625 in, 36.0 lbm/ft FROM 0 ft TO 1594.0 ft
BITSIZE: 8.5 in FROM 1594.0 ft TO 17996.0 ft
ALL LOG DEPTHS WERE RECORDED WITH EDR (TOTCO), AND CORRECTED TO PIPE TALLY

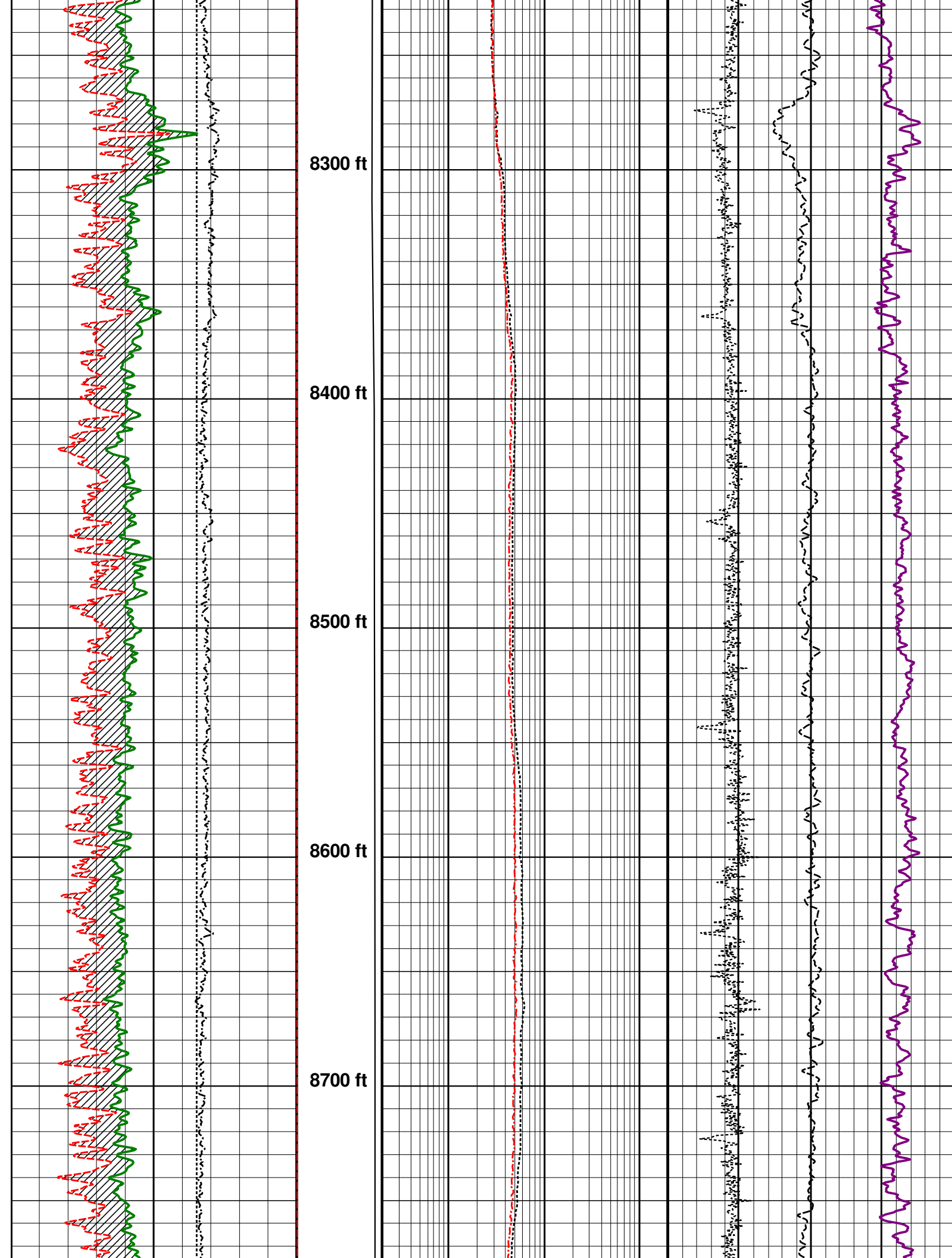
EQUIPMENT DATA					
Run	Trip	Instrument	Serial No.	Series No.	Distance to Reference
1	1	TELEMETRY	3102008		259.0 ft
1	1	SGR	1460017		
1	1	GR-CN	1473018 U	1473018 L	
1	1	KNUCKLE	CEN 005		
1	1	DENSITY	1481006		
1	1	PRT	PRTX013		218.4 ft
1	1	STEEL COLLAR	DL-45XH-5	DL-45XH-6	
1	1	OMEGA COLLAR	RSA65014		
1	1	Am241Be / Cs137	77814	79965B	

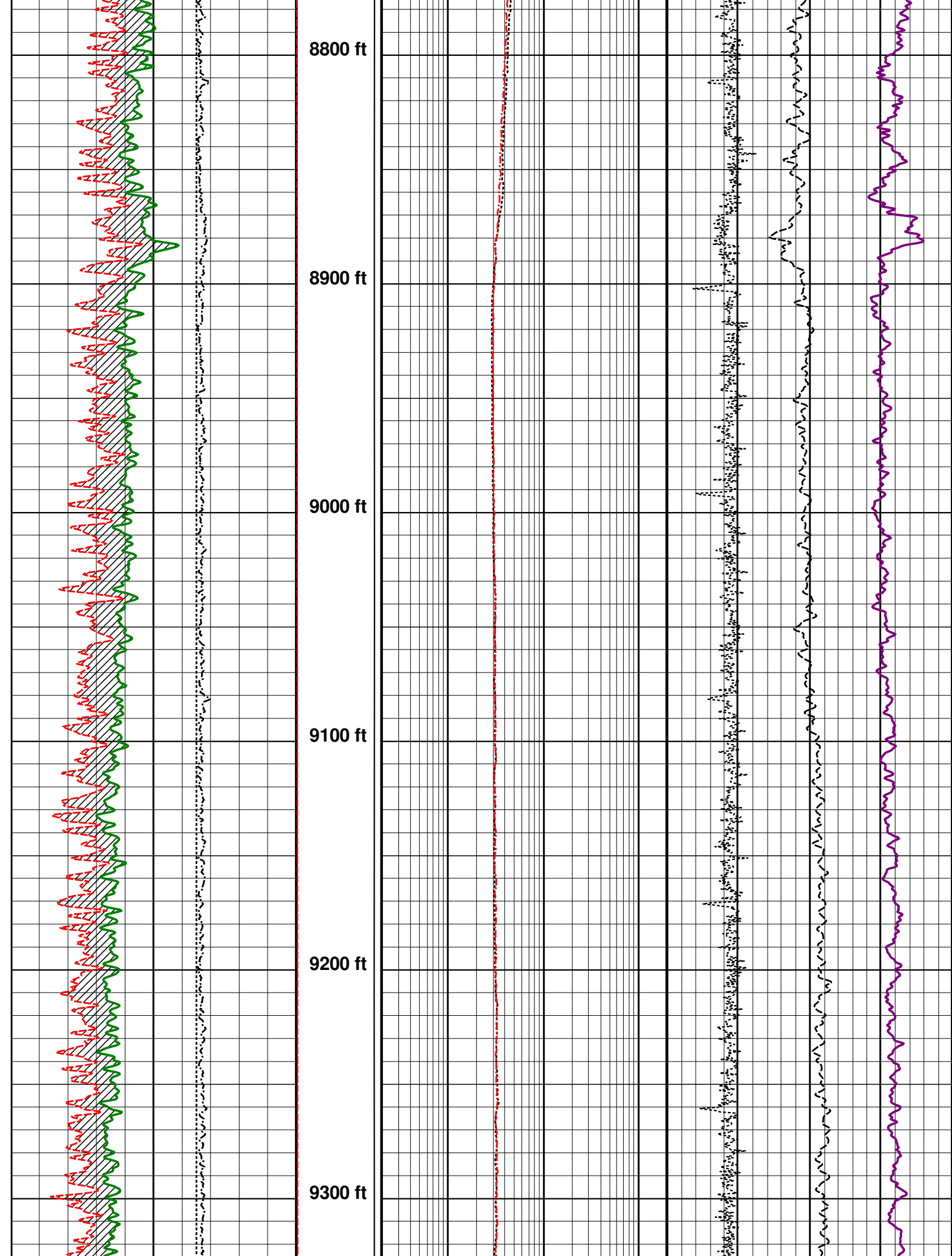
2" MAIN PASS SANDSTONE

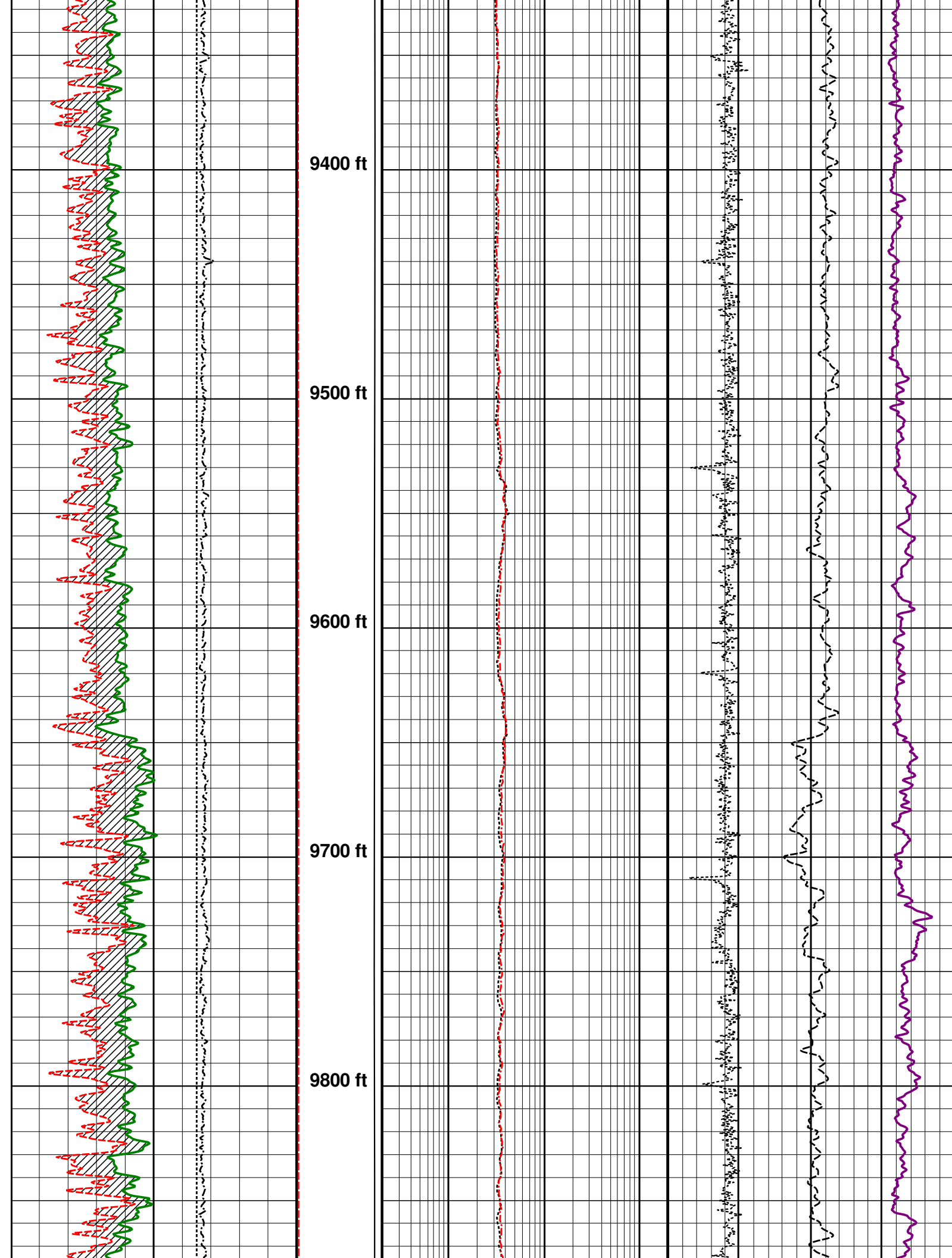
Company : GREAT WESTERN OPERATING COMPNAY LLC Date : 15-SEP-2019
Well : SCHNEIDER HD 11-099HC Time :
Scale : 1 : 600 Remarks : SANDSTONE MATRIX
Depth in : feet
Software : WinAPIot Ver. 6, 18, 0, 0 File Name :

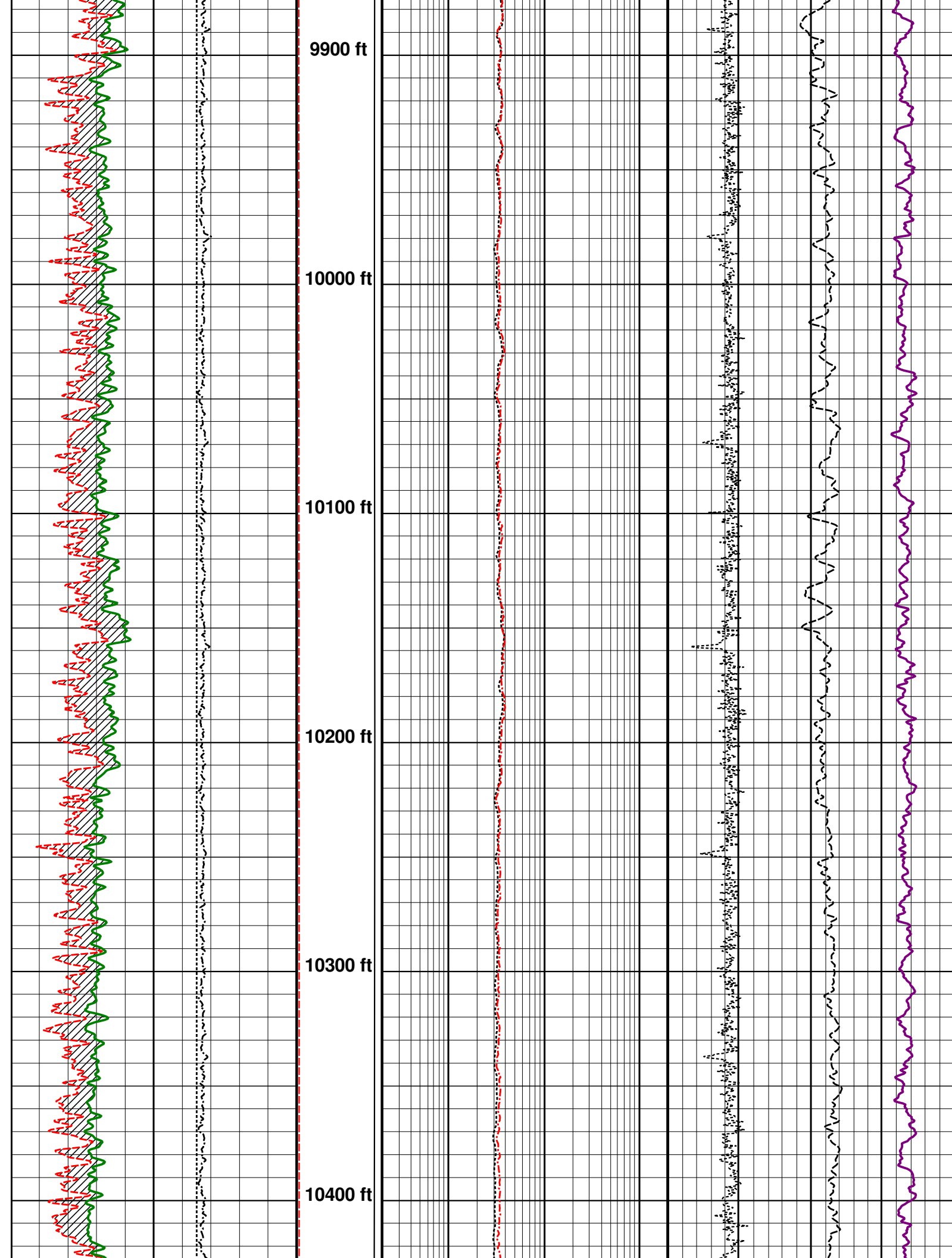


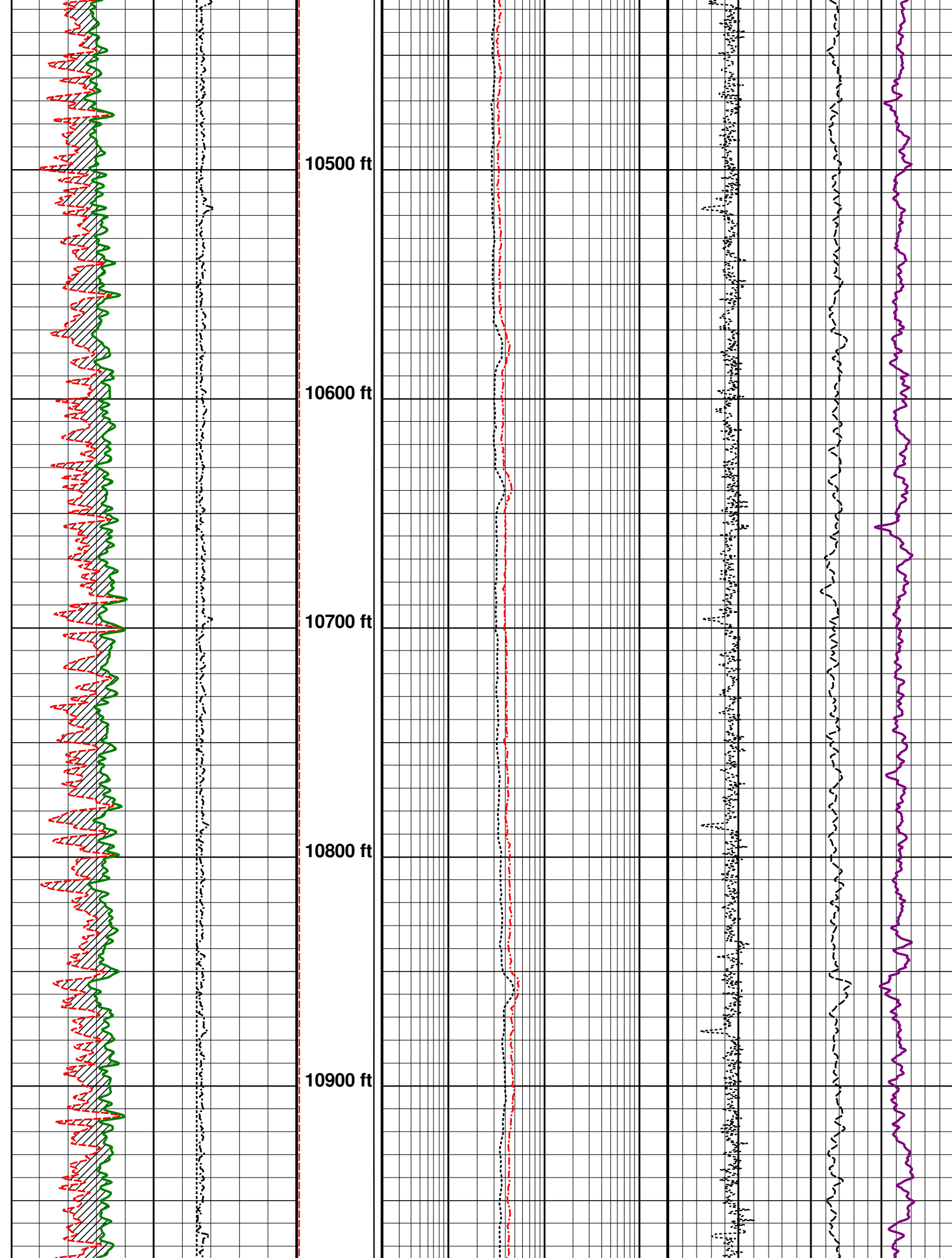


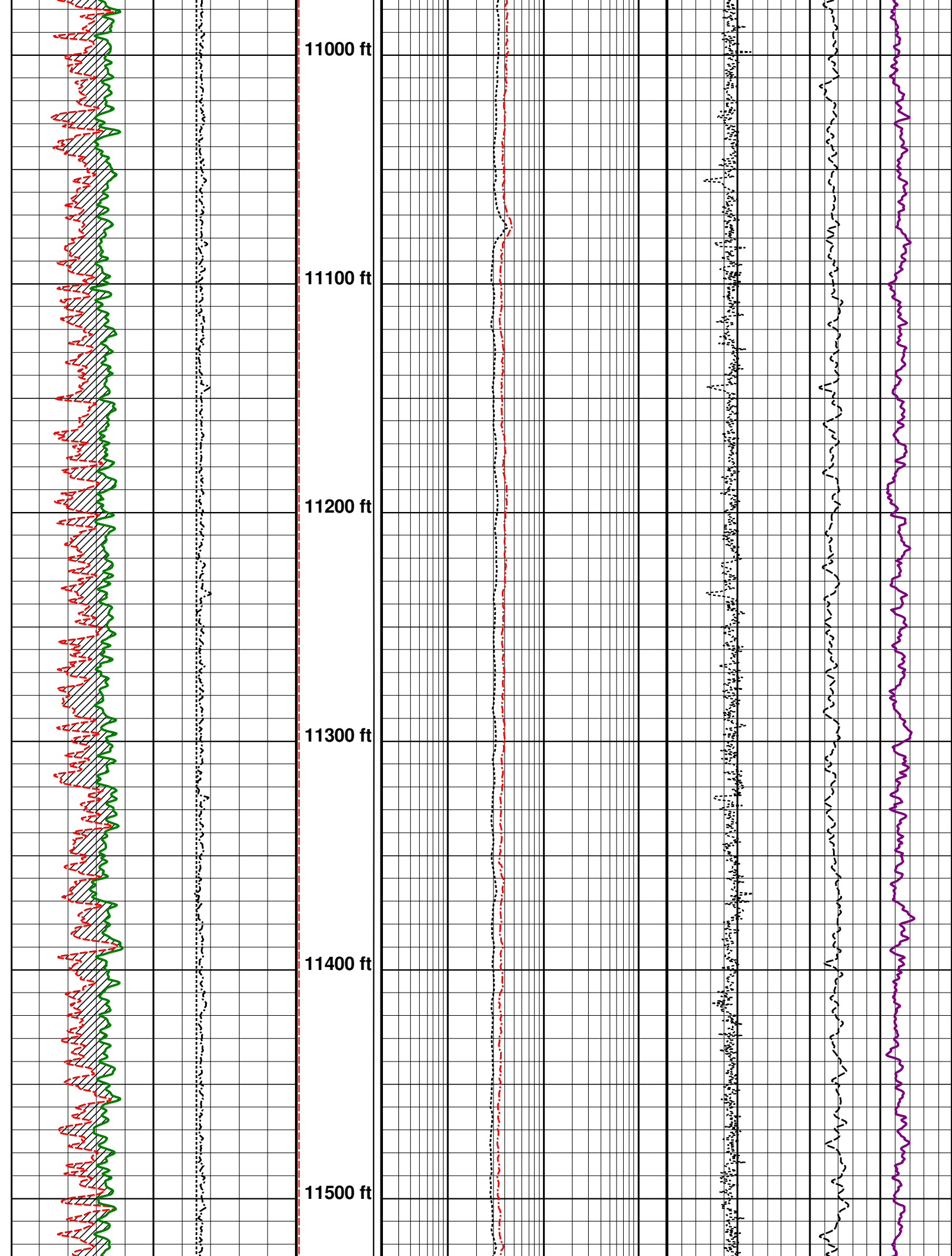


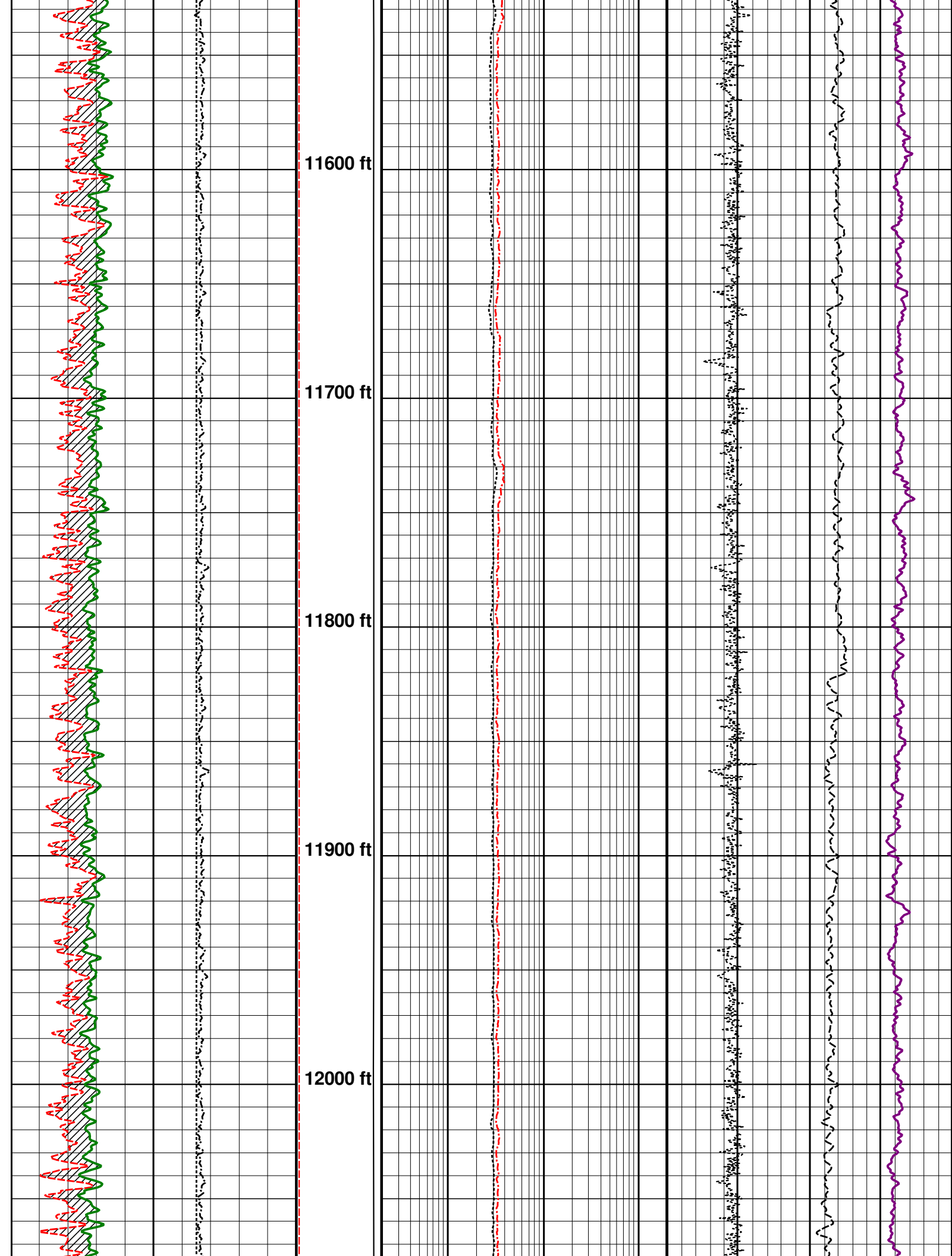


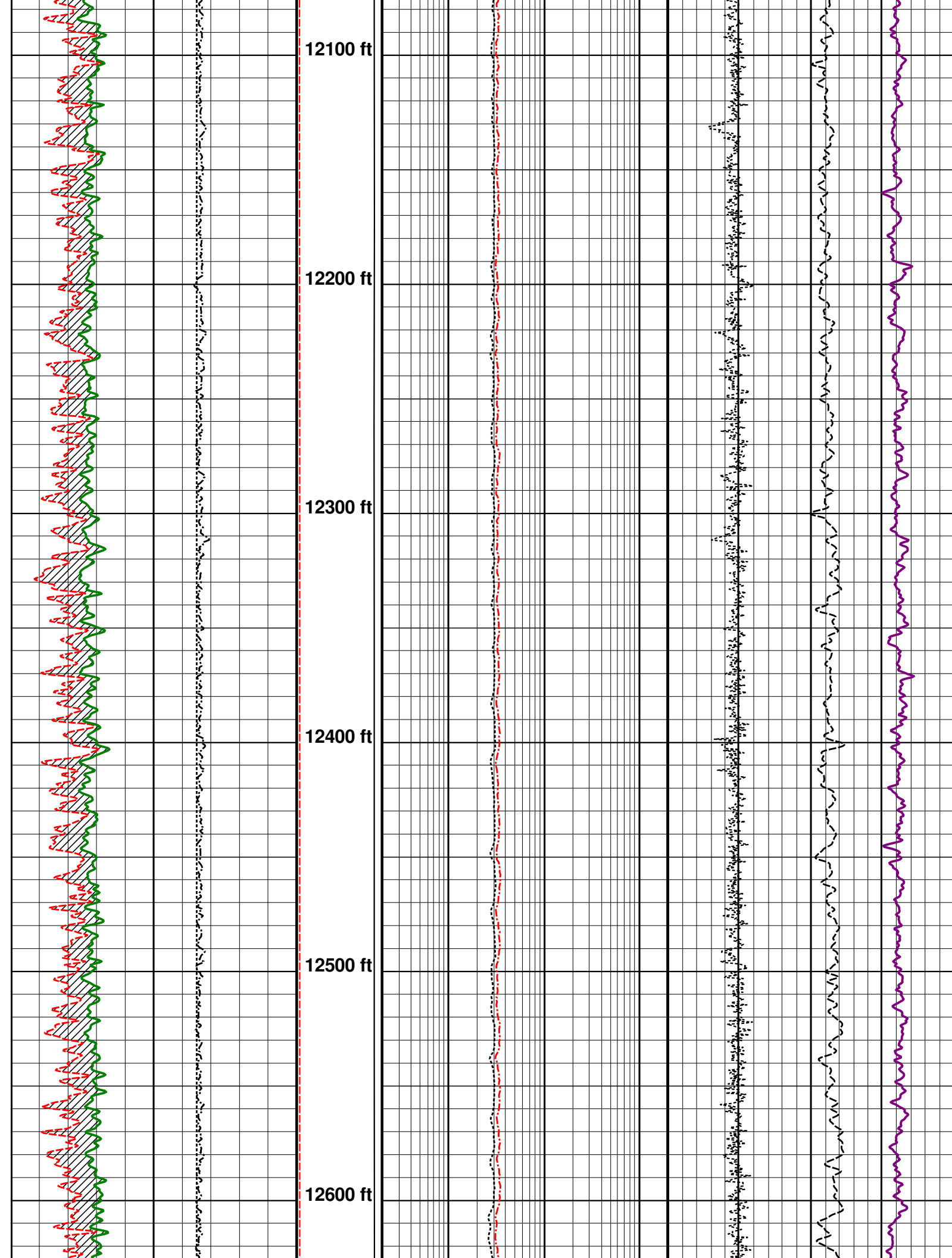


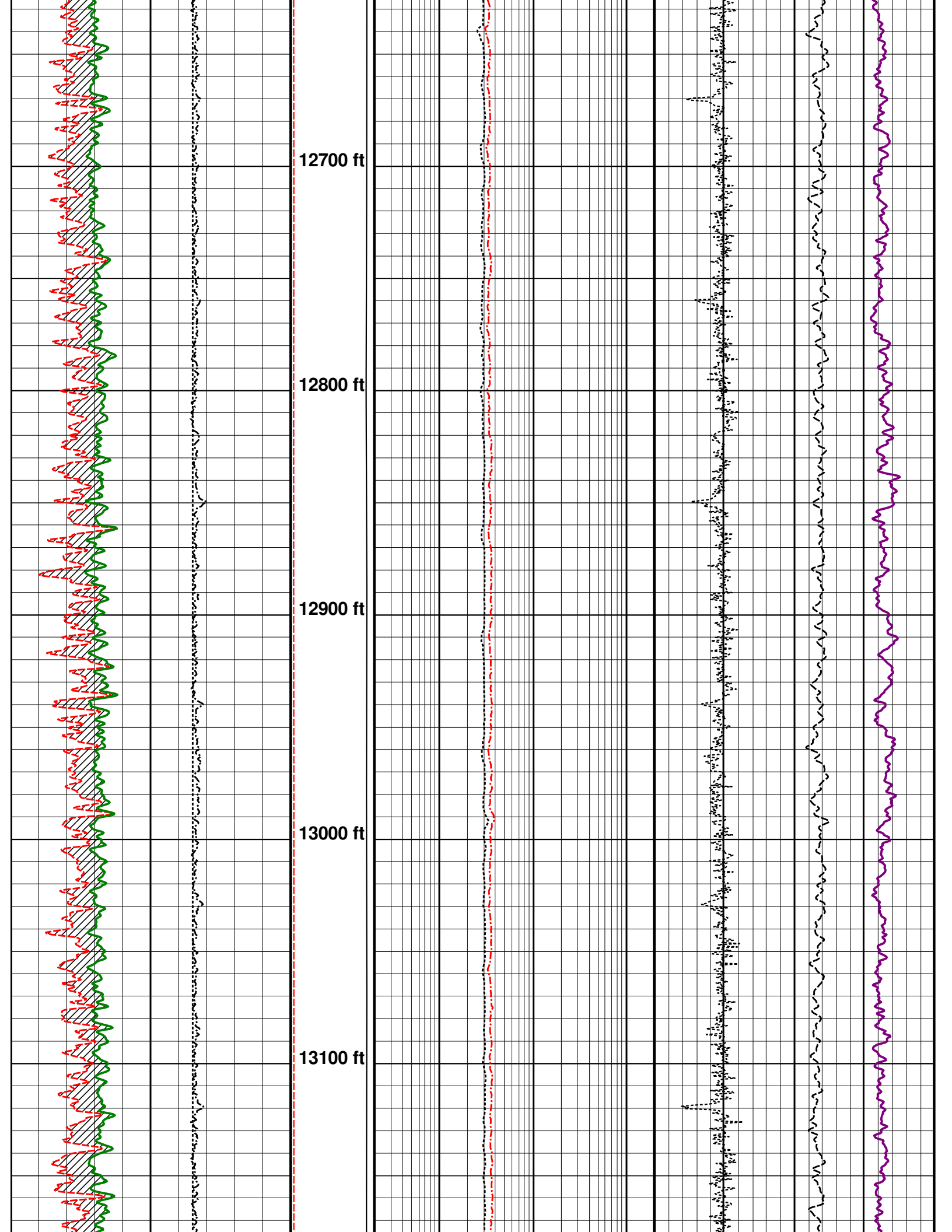


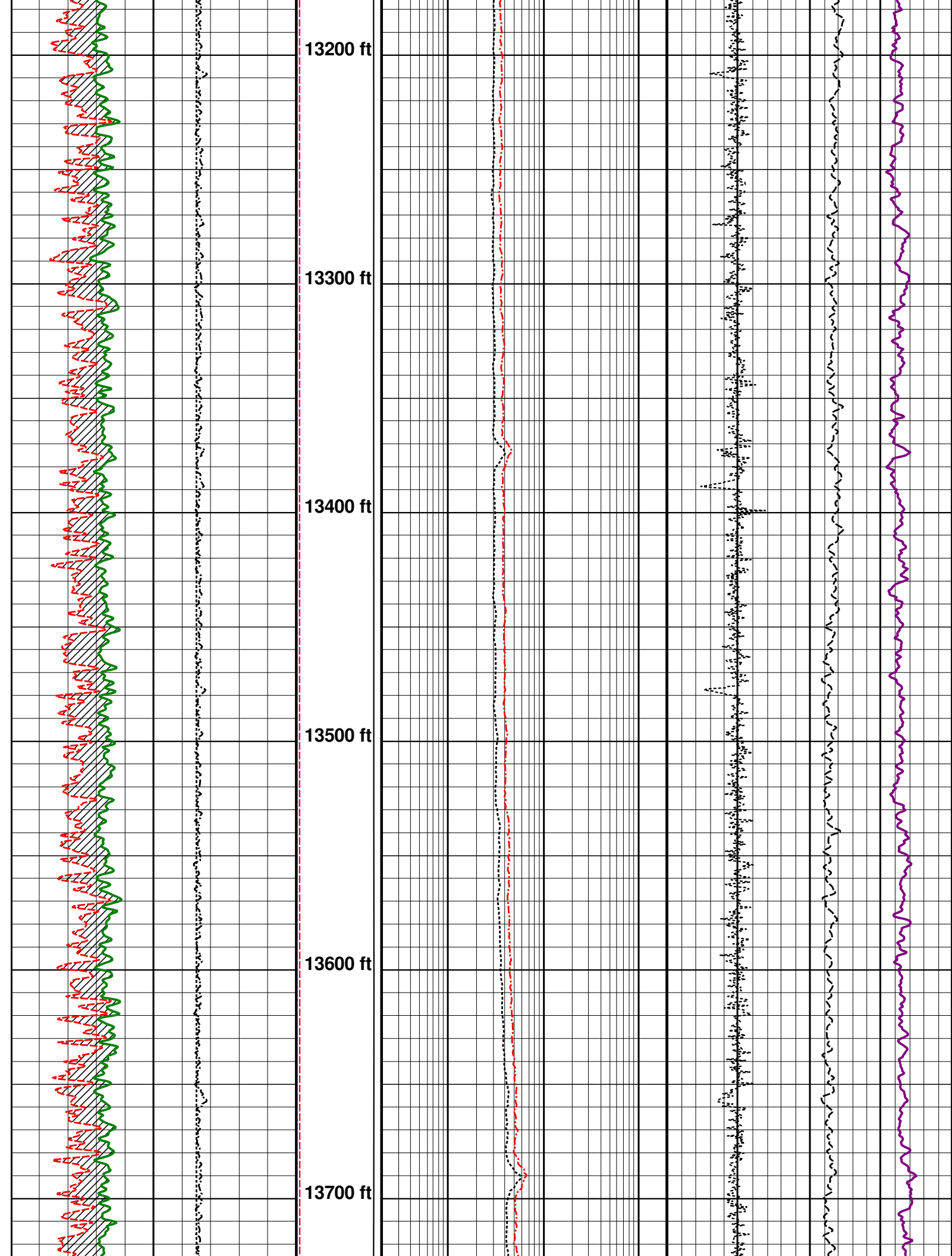


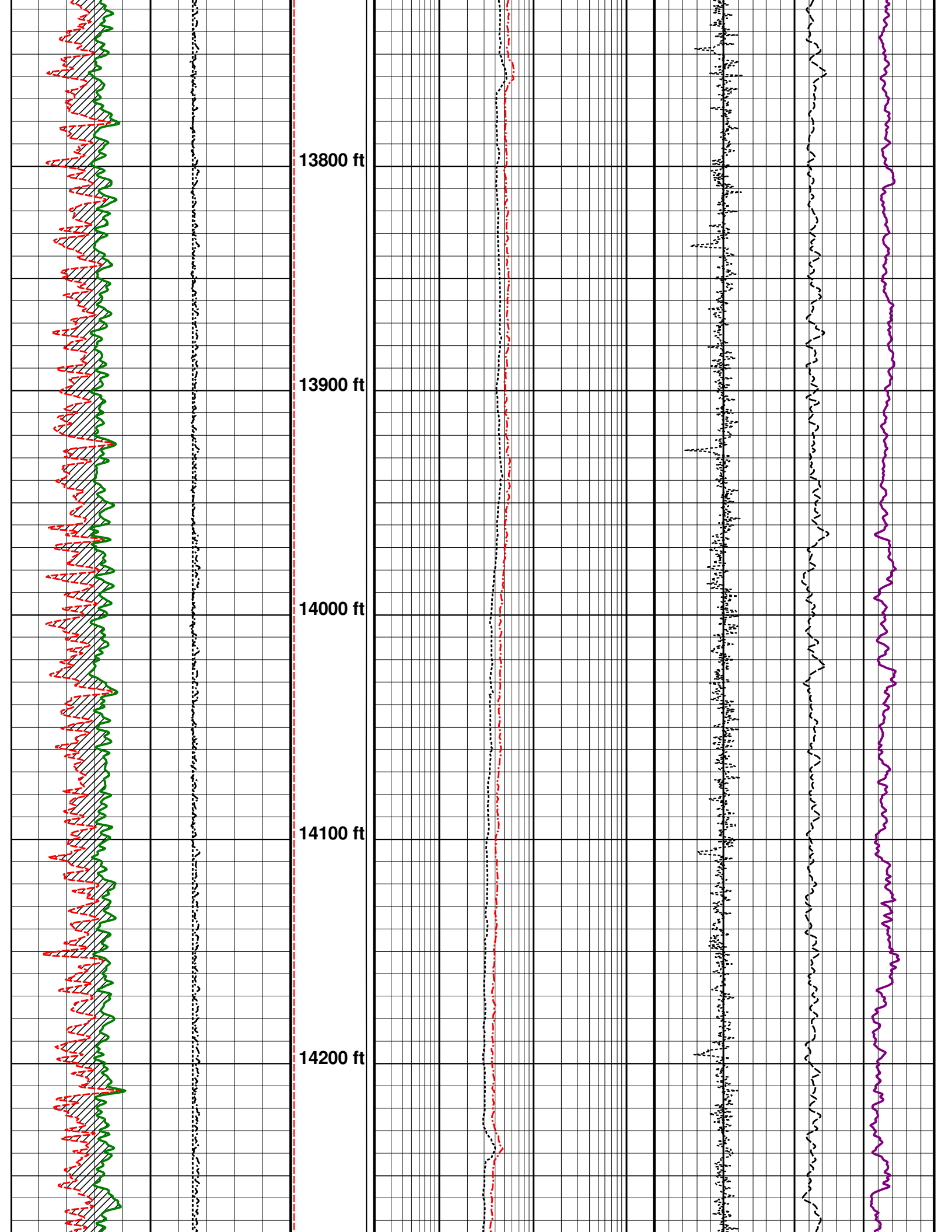


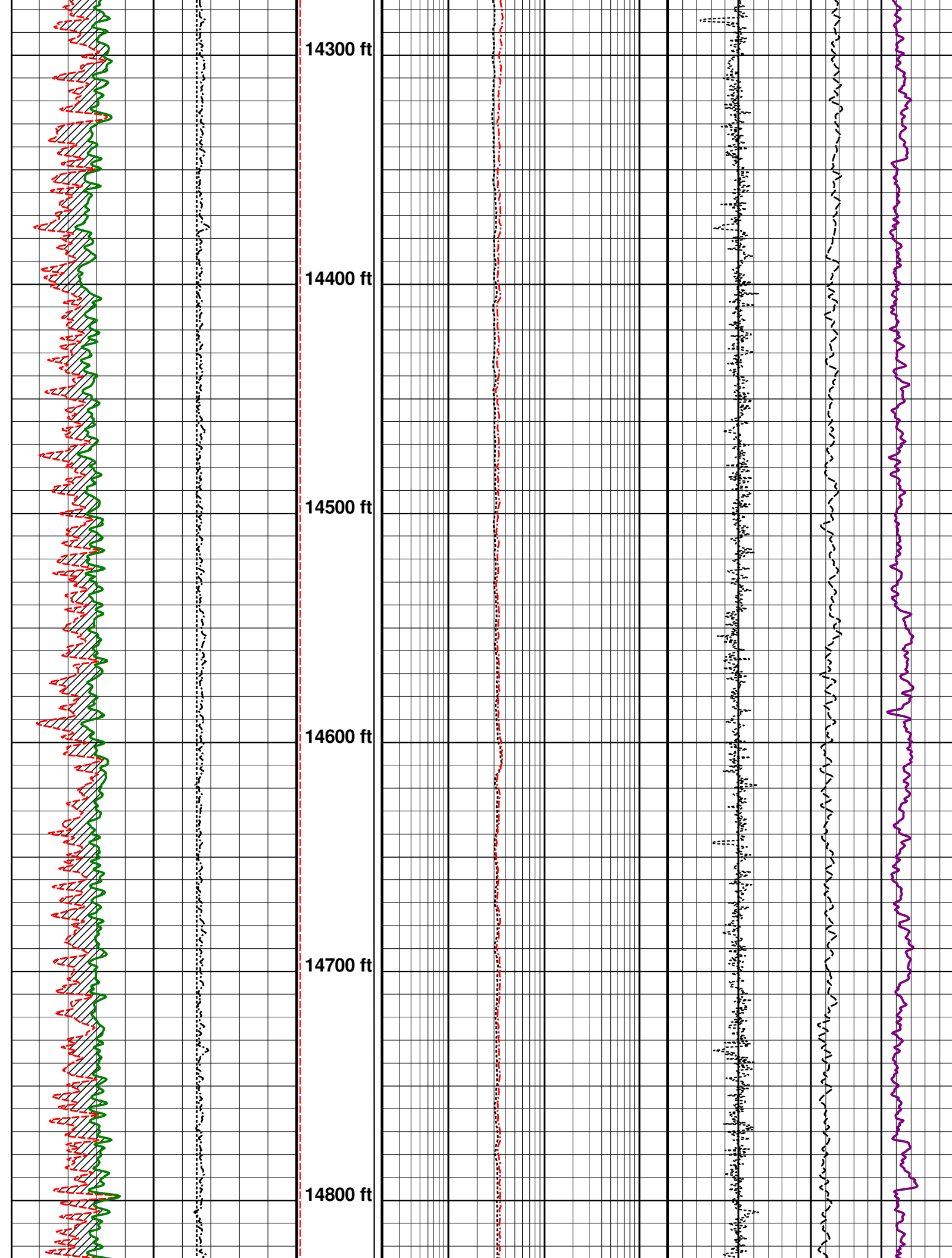


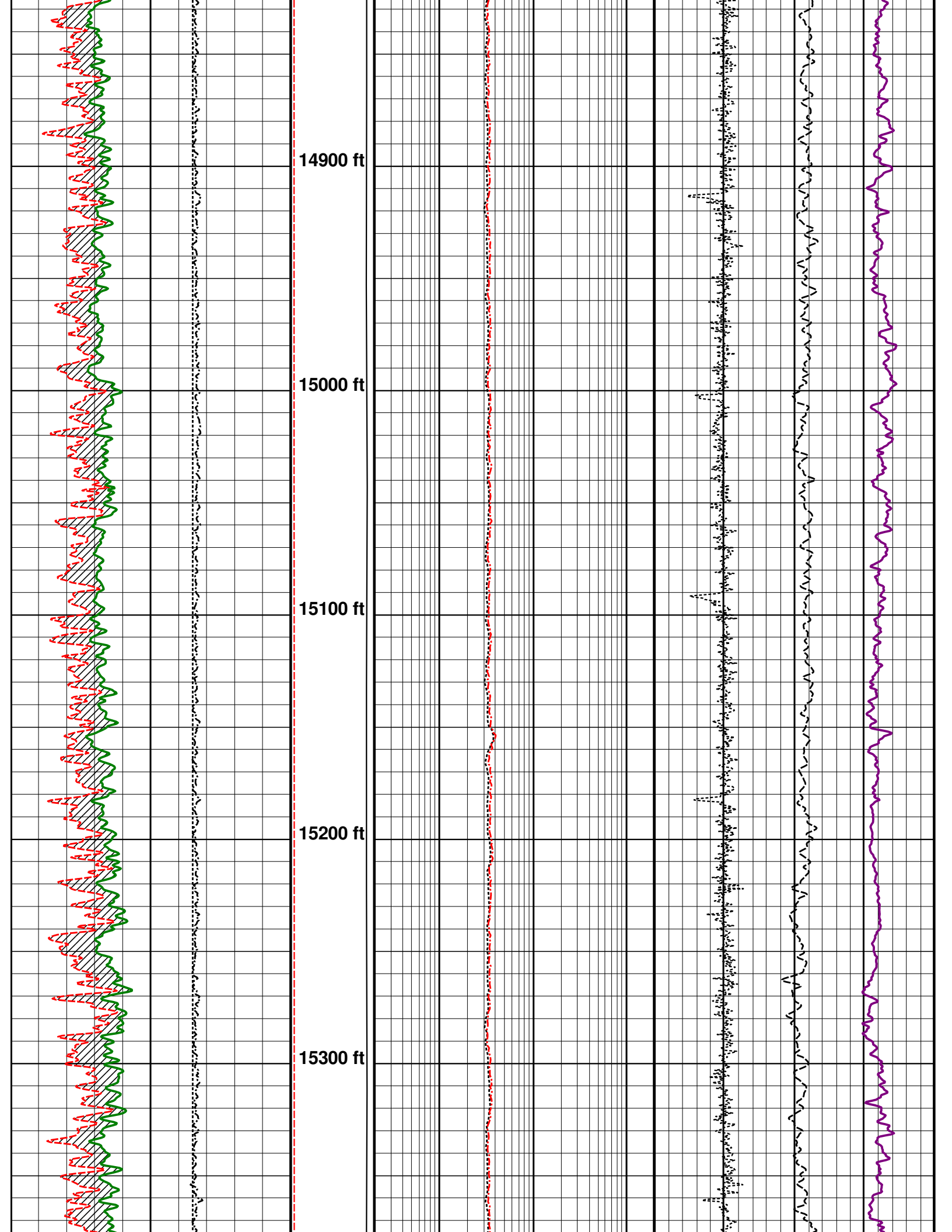


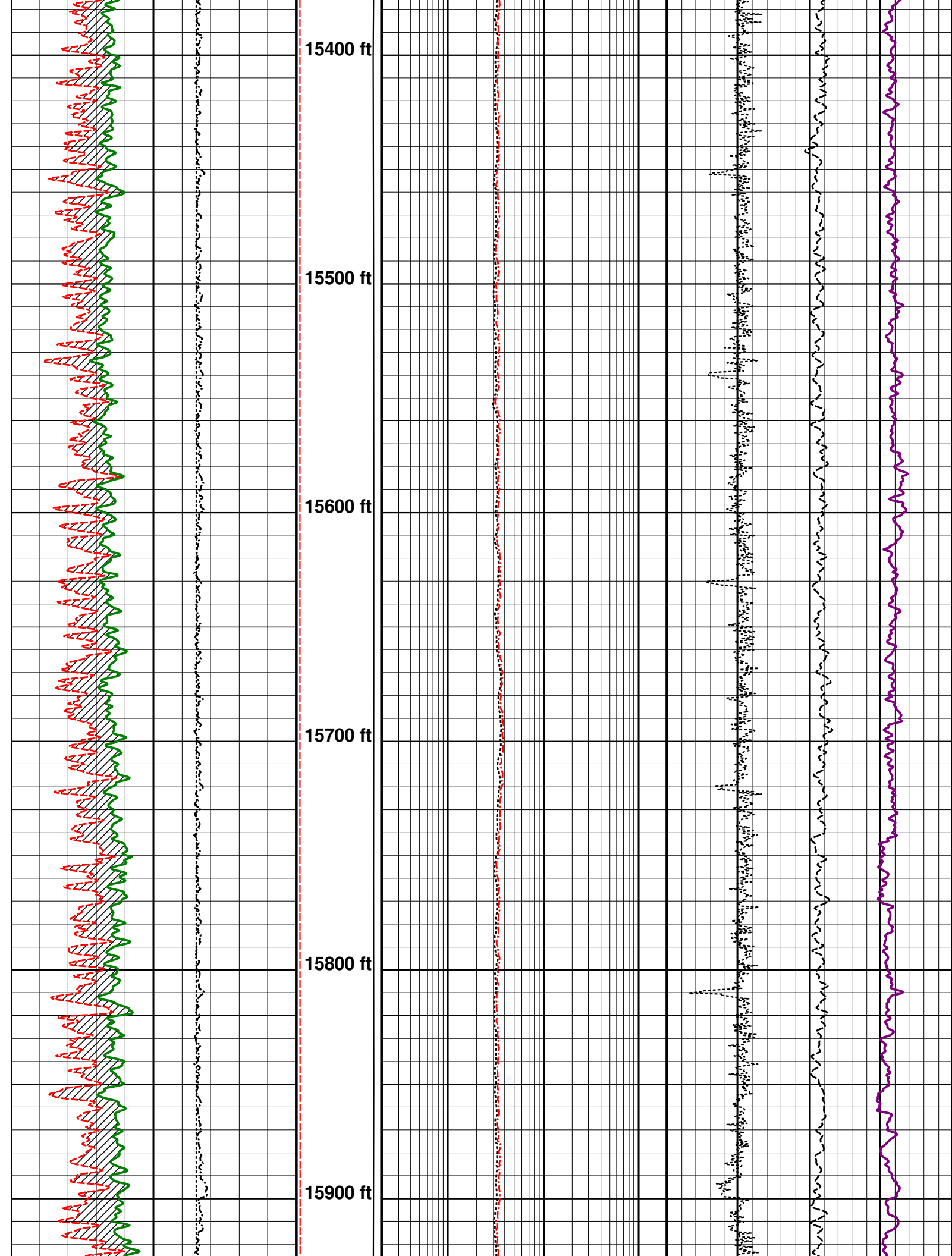


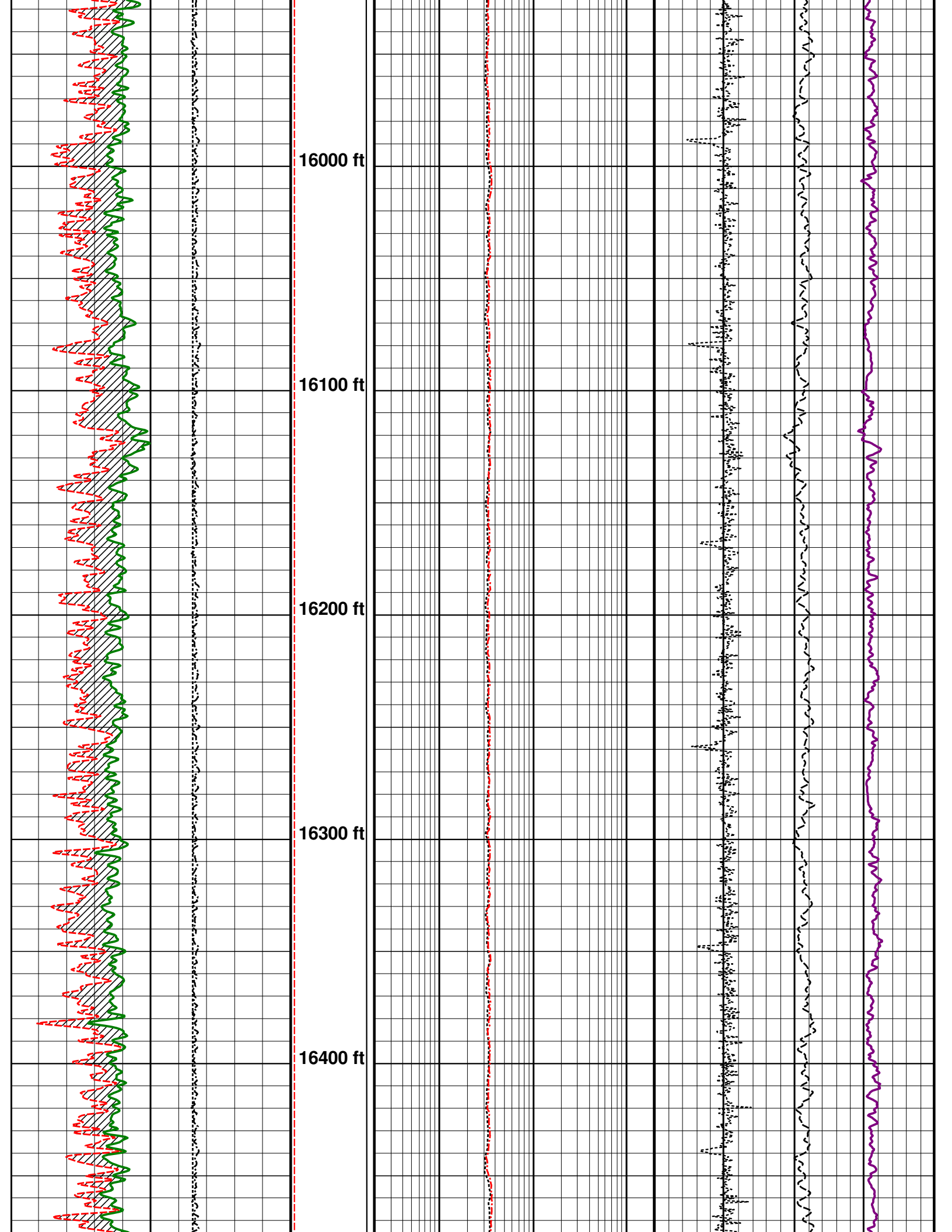


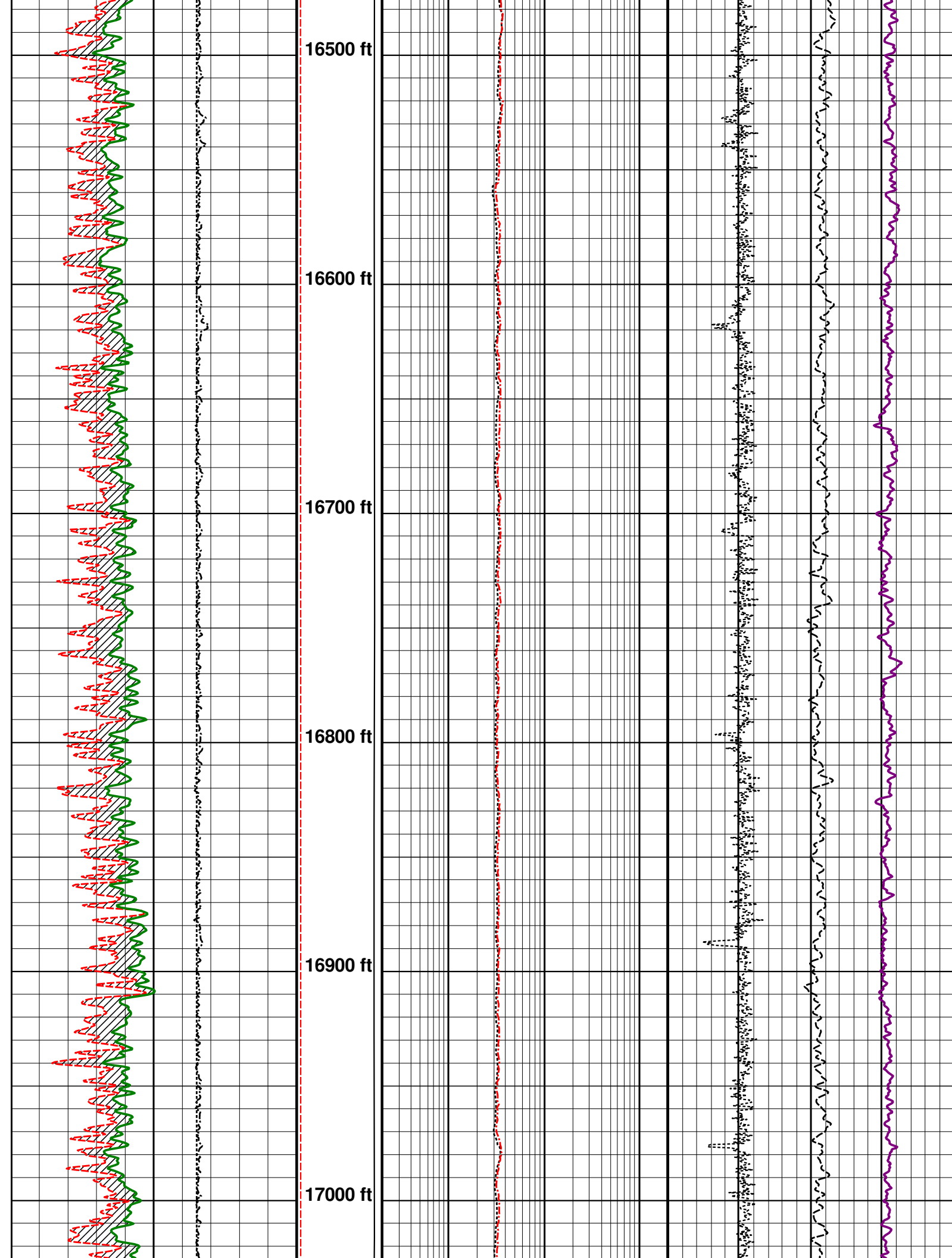


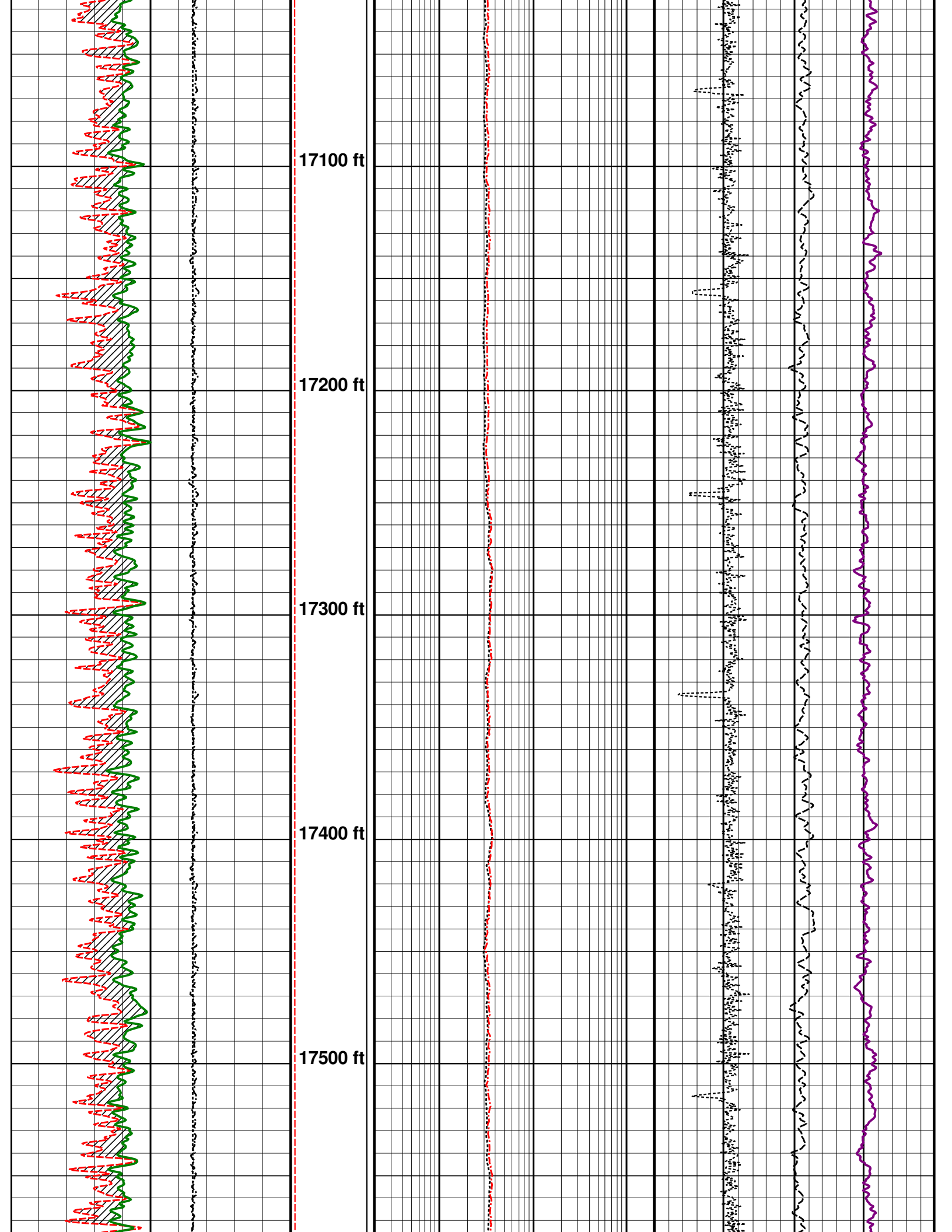


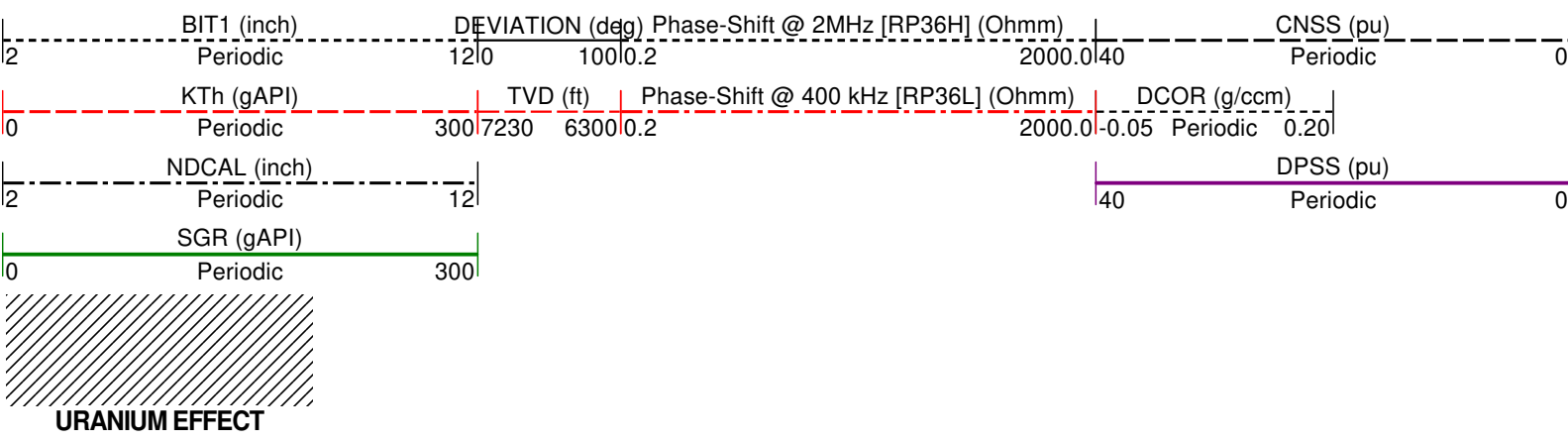
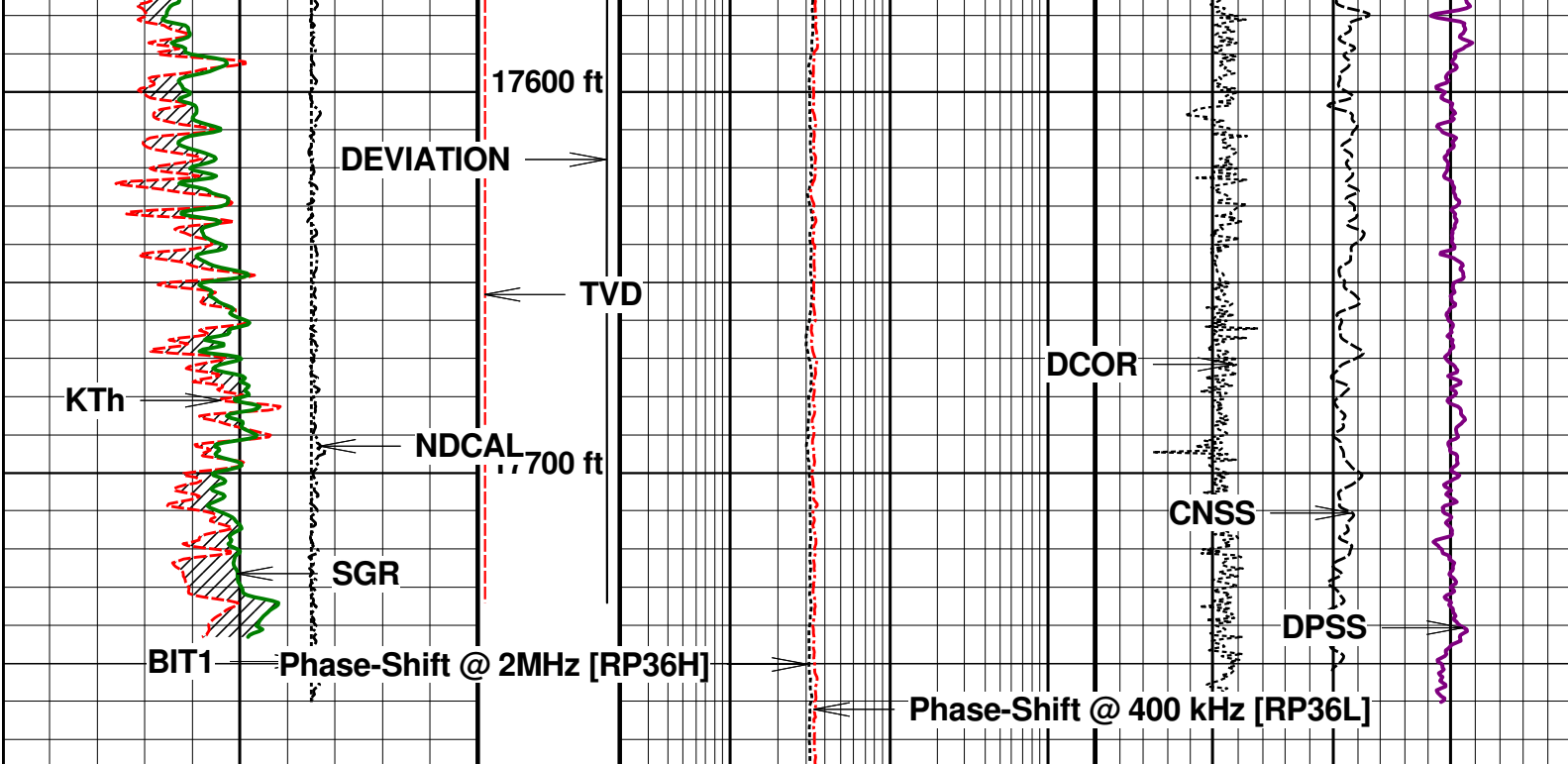






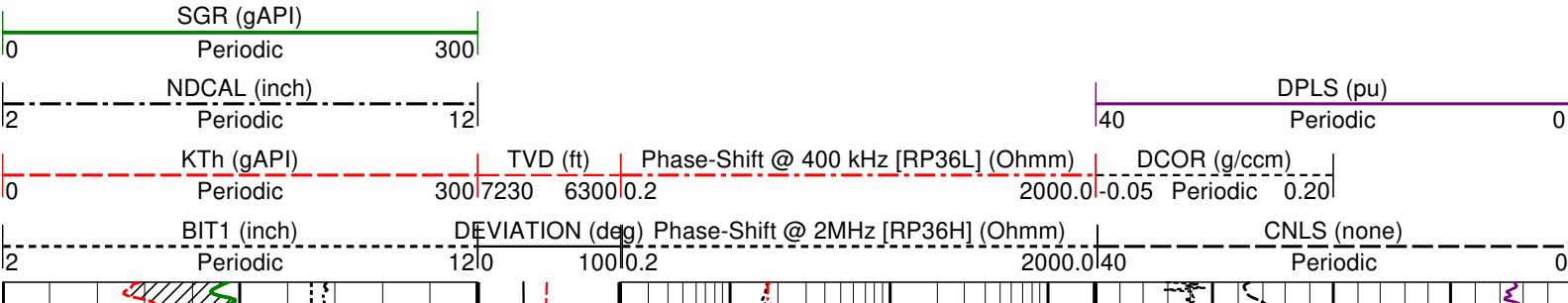


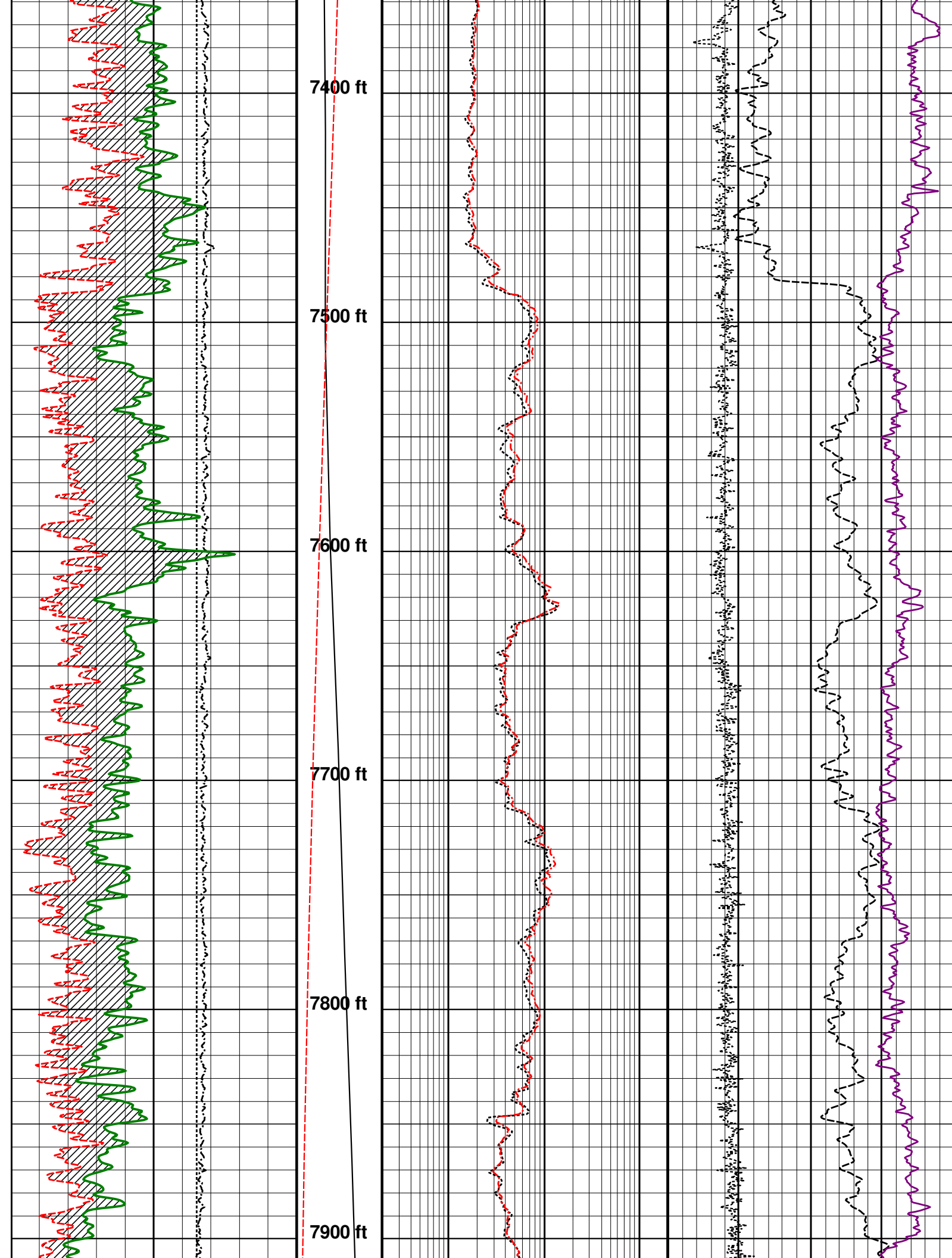


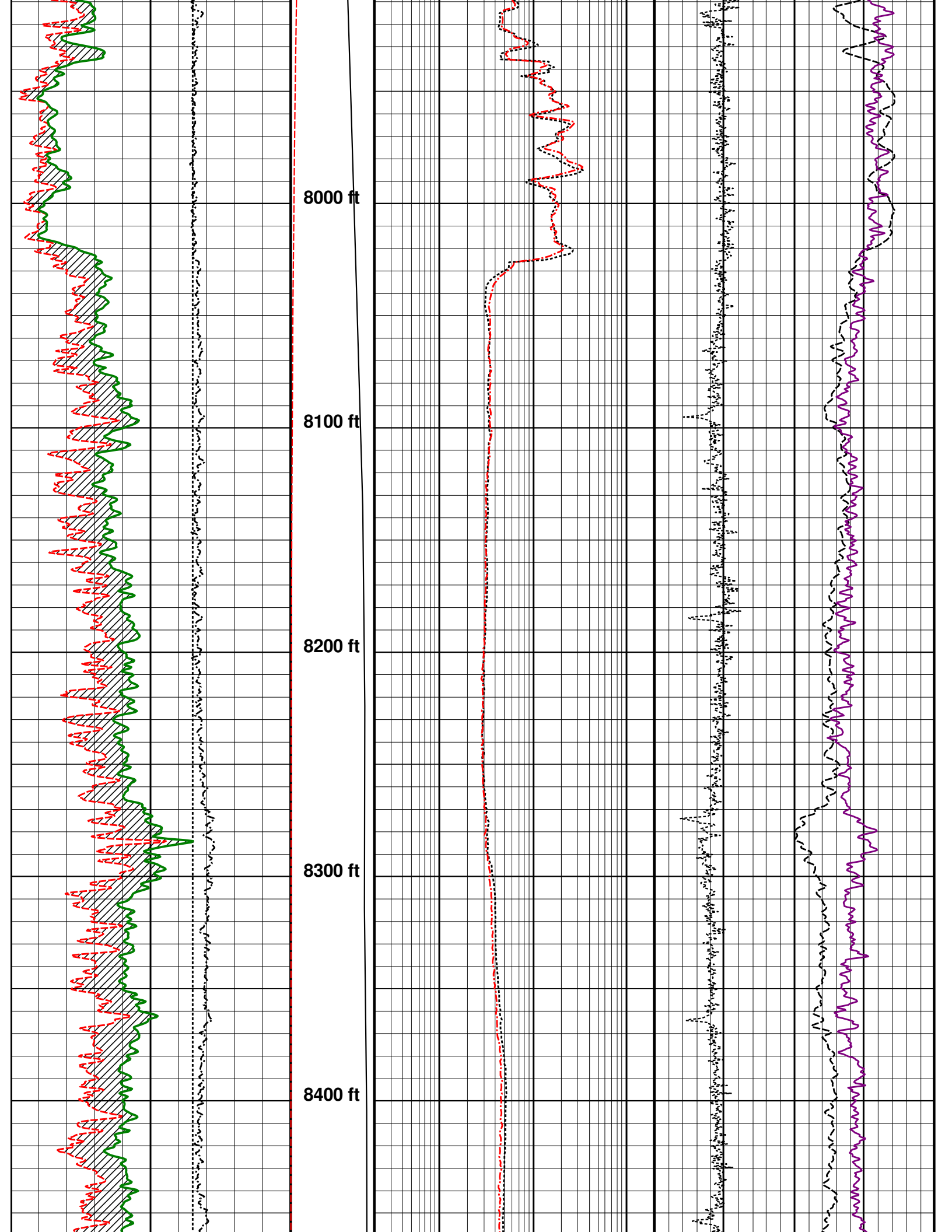


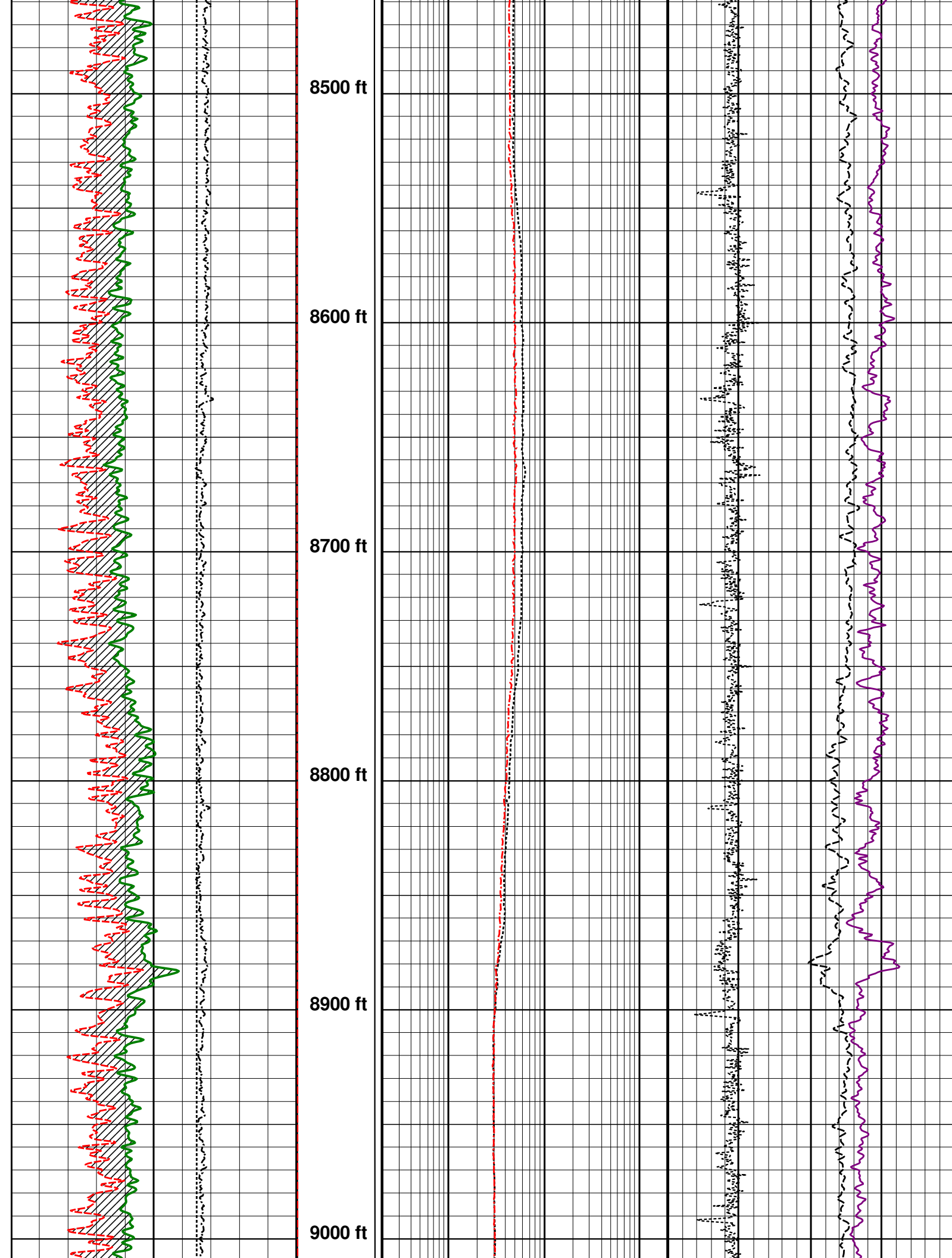
2" MAIN PASS LIMESTONE

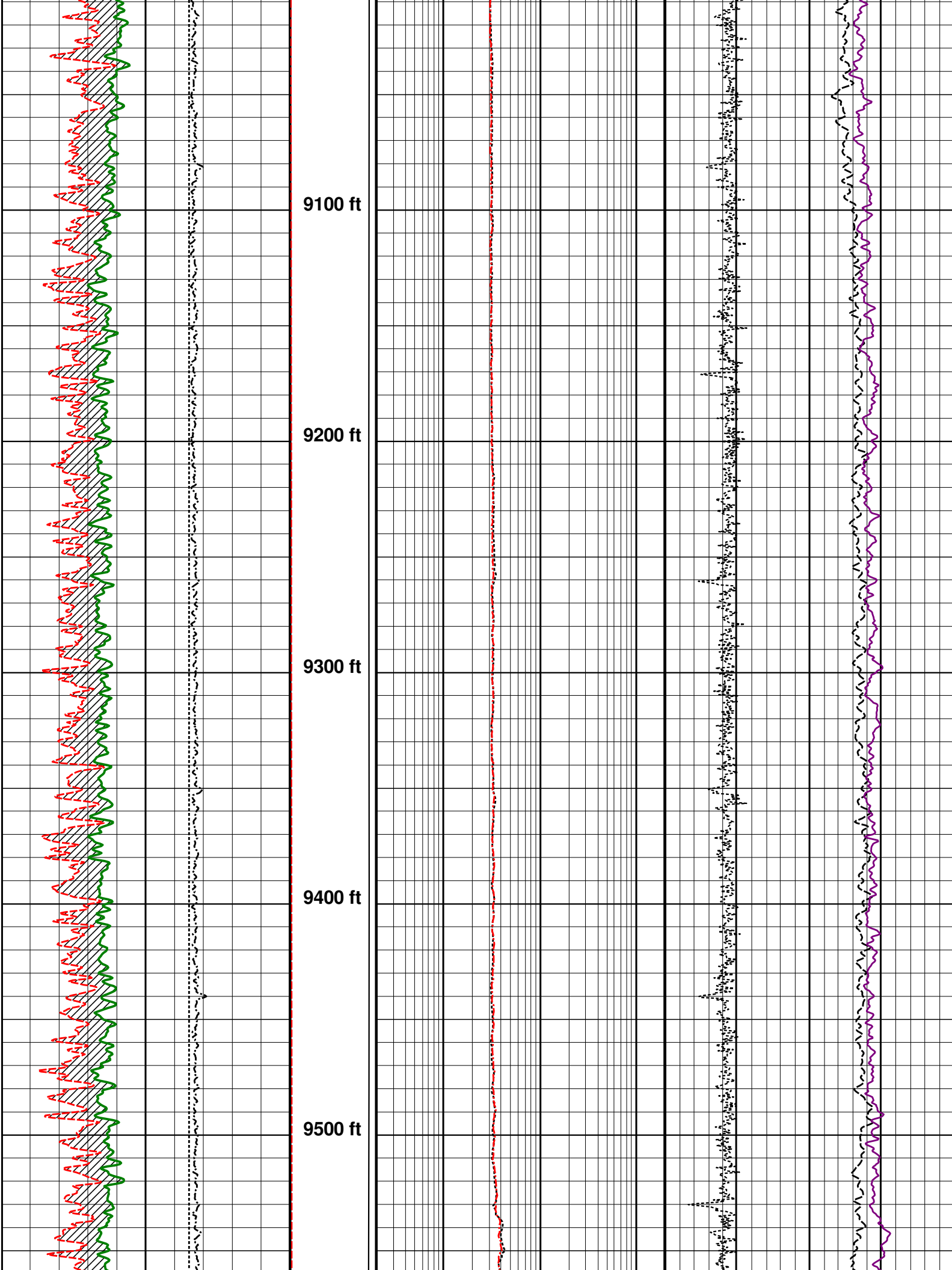
Company : GREAT WESTERN OPERATING COMPNAY LLC Date : 15-SEP-2019
Well : SCHNEIDER HD 11-099HC Time :
Scale : 1 : 600 Remarks : LIMESTONE MATRIX
Depth in : feet
Software : WinAPIlot Ver. 6, 18, 0, 0 File Name :

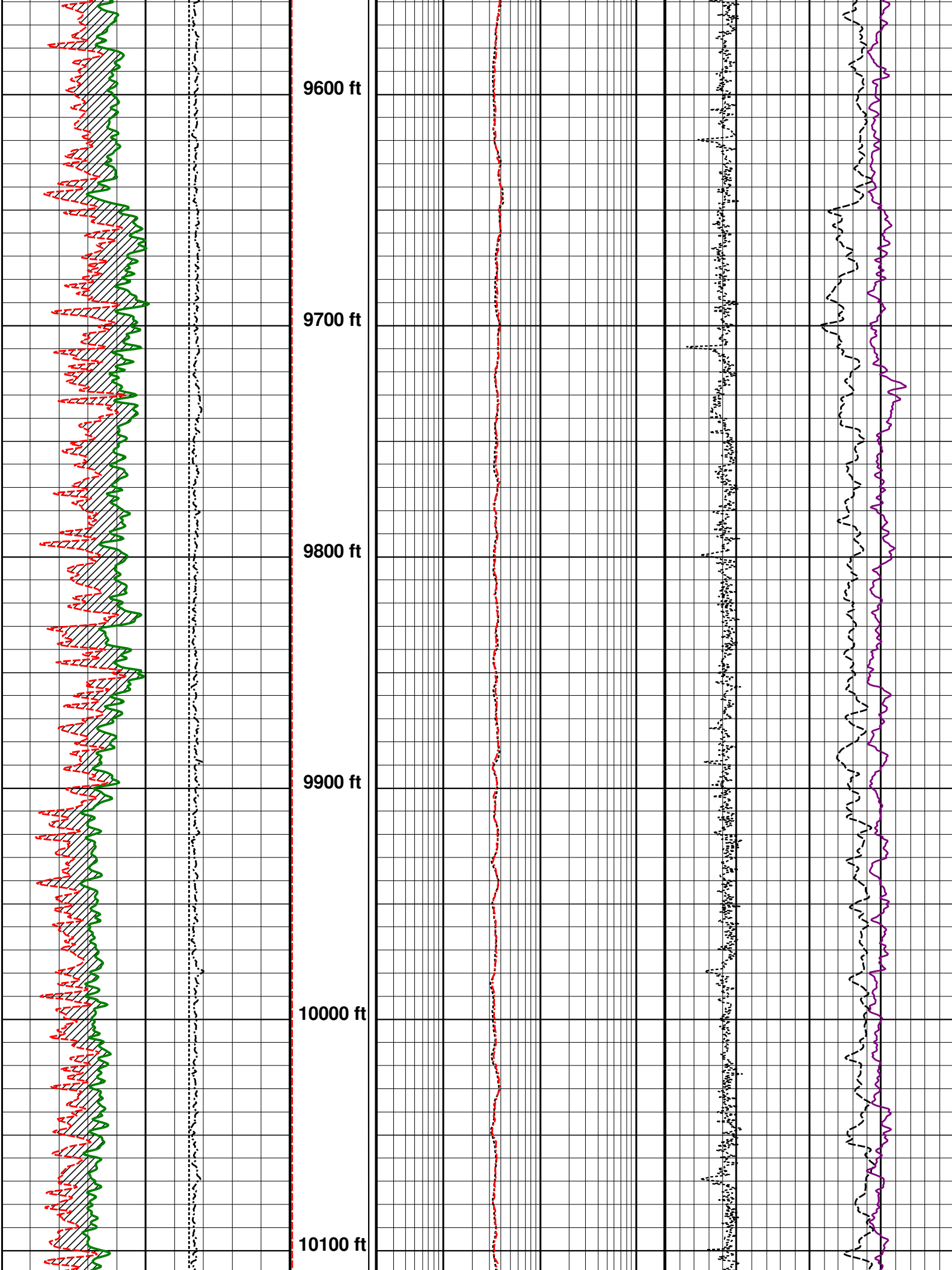


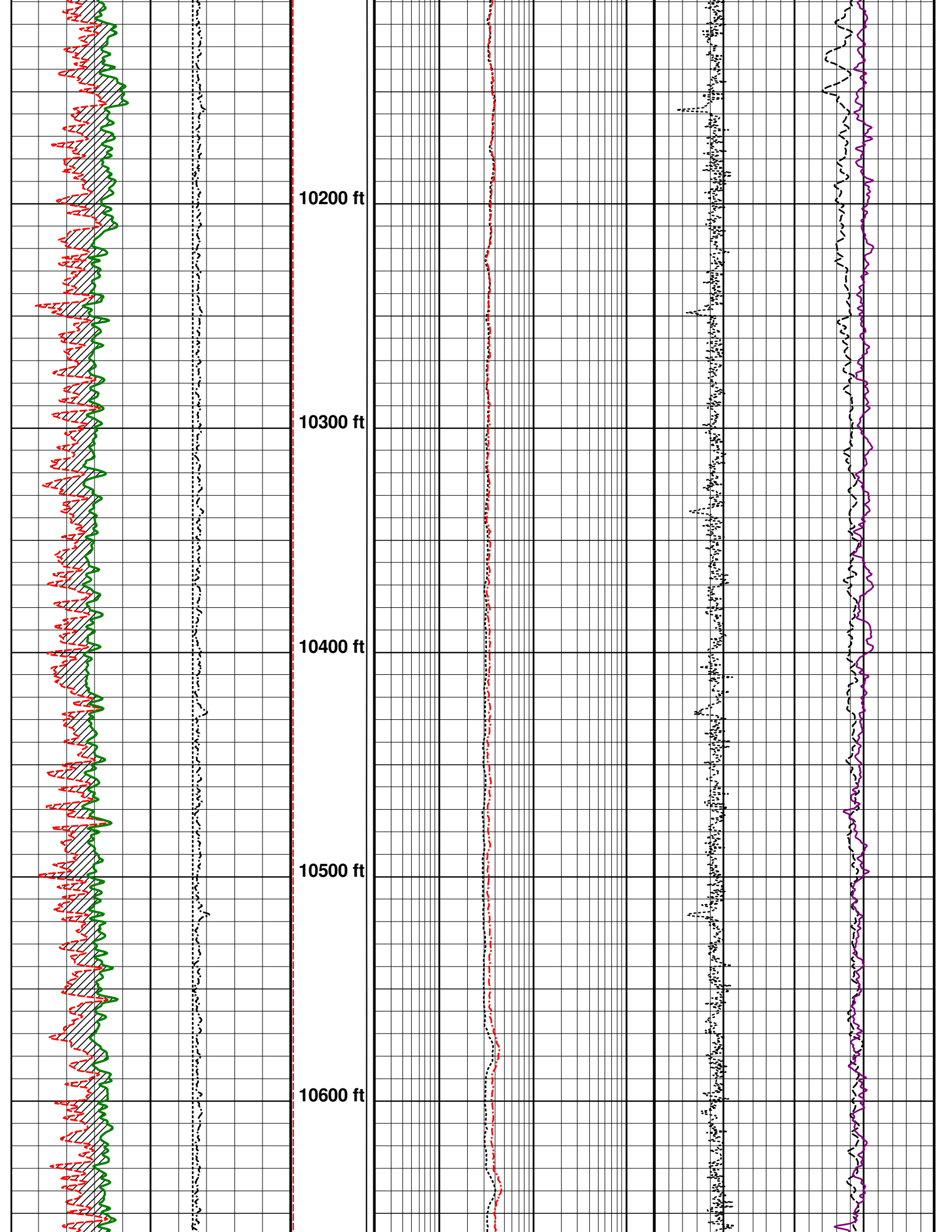


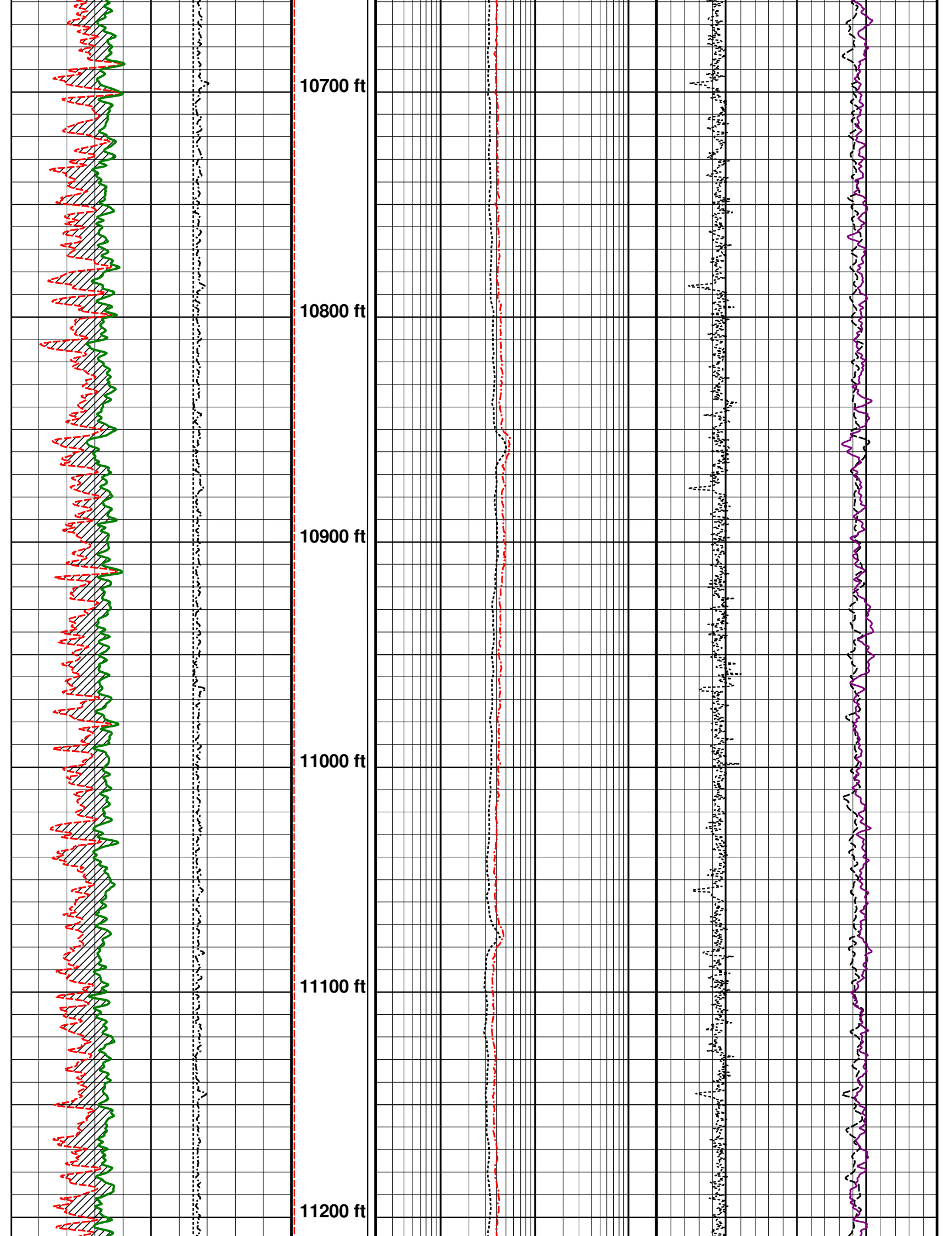


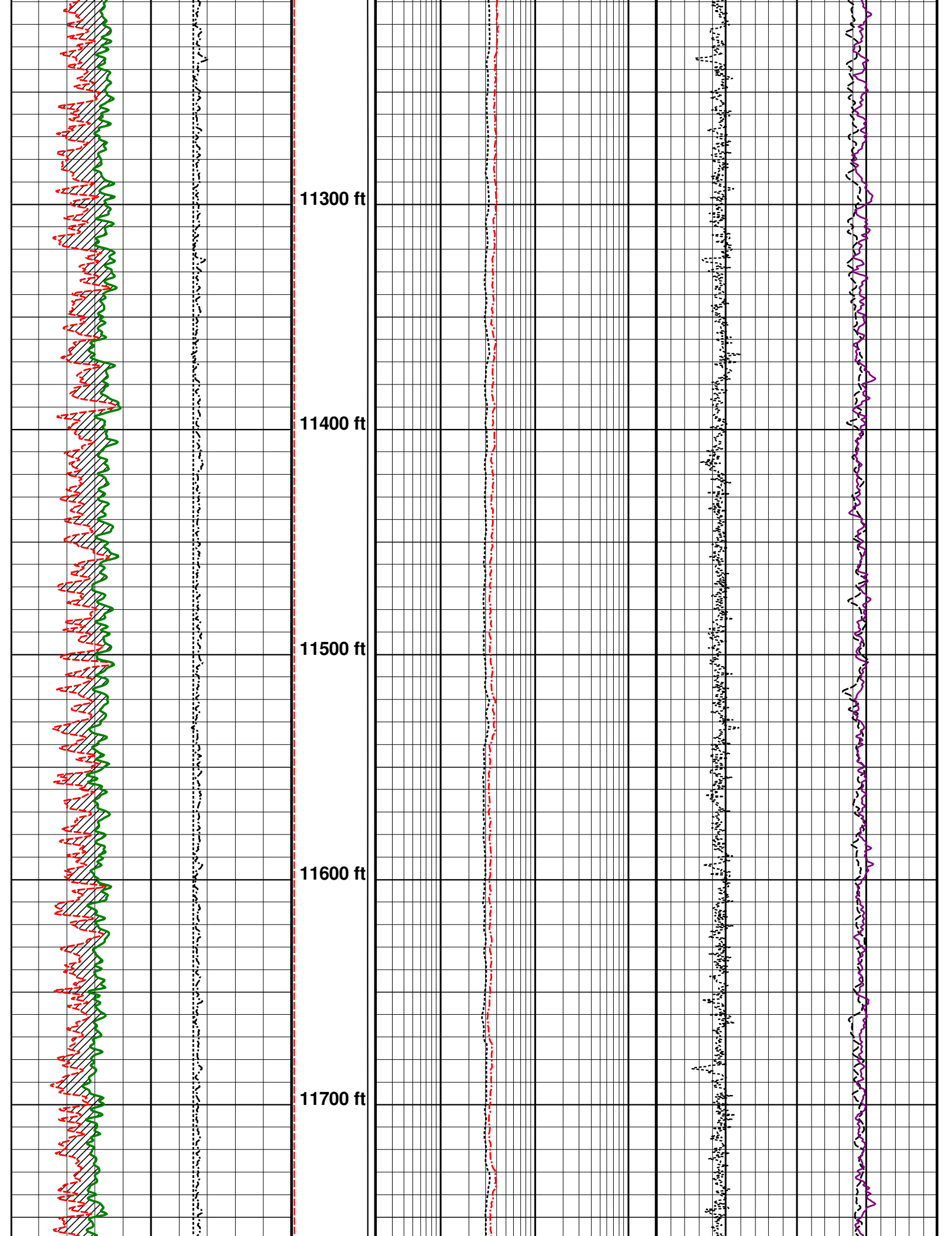


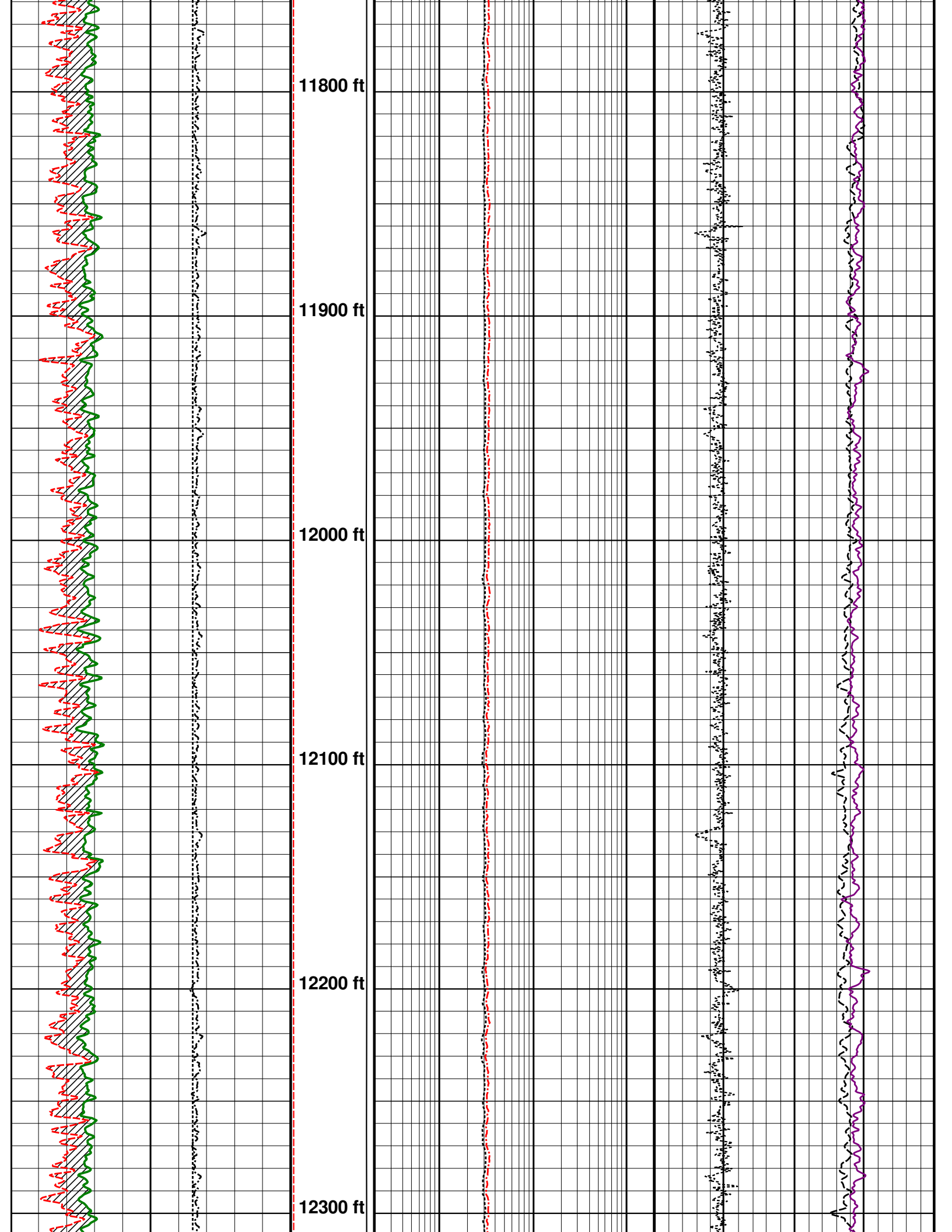


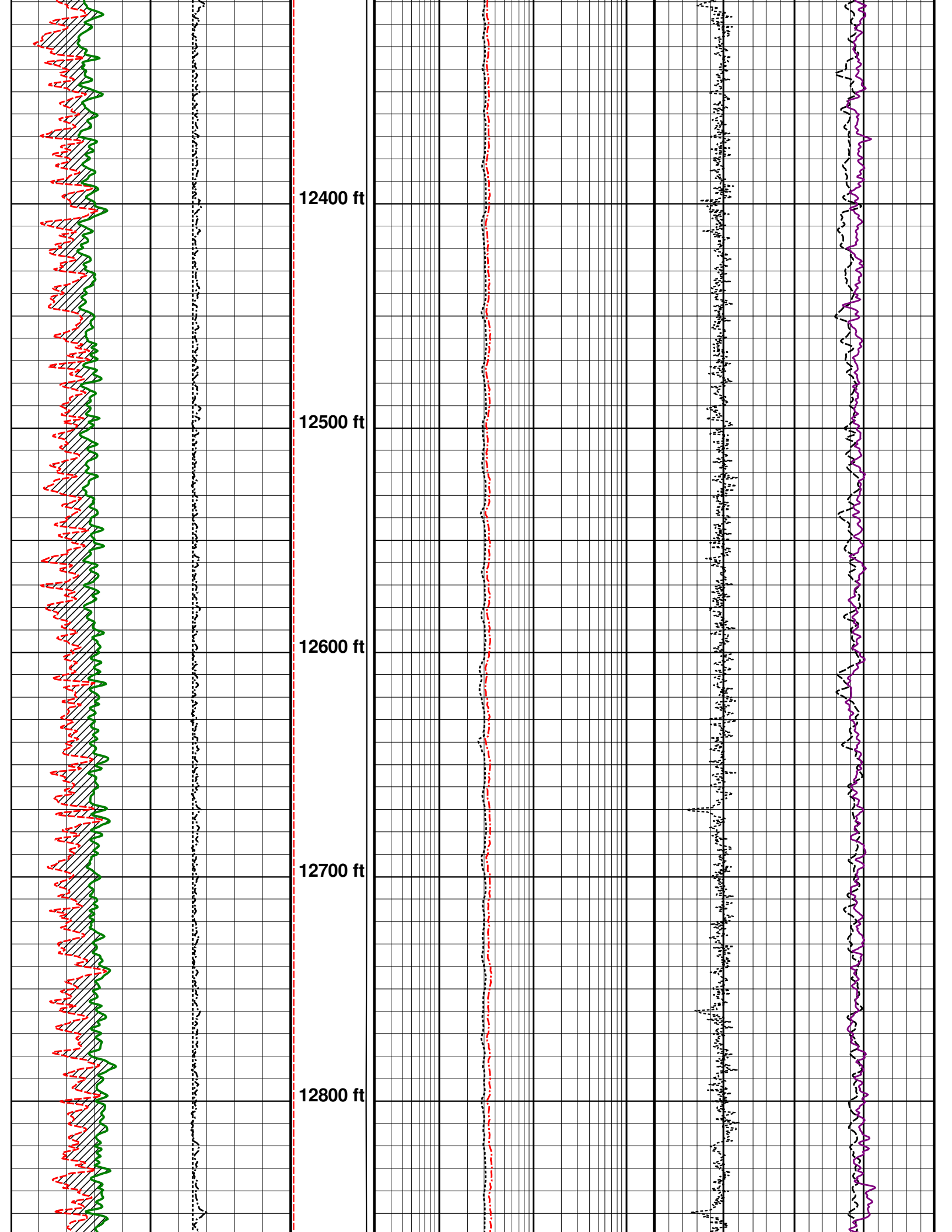


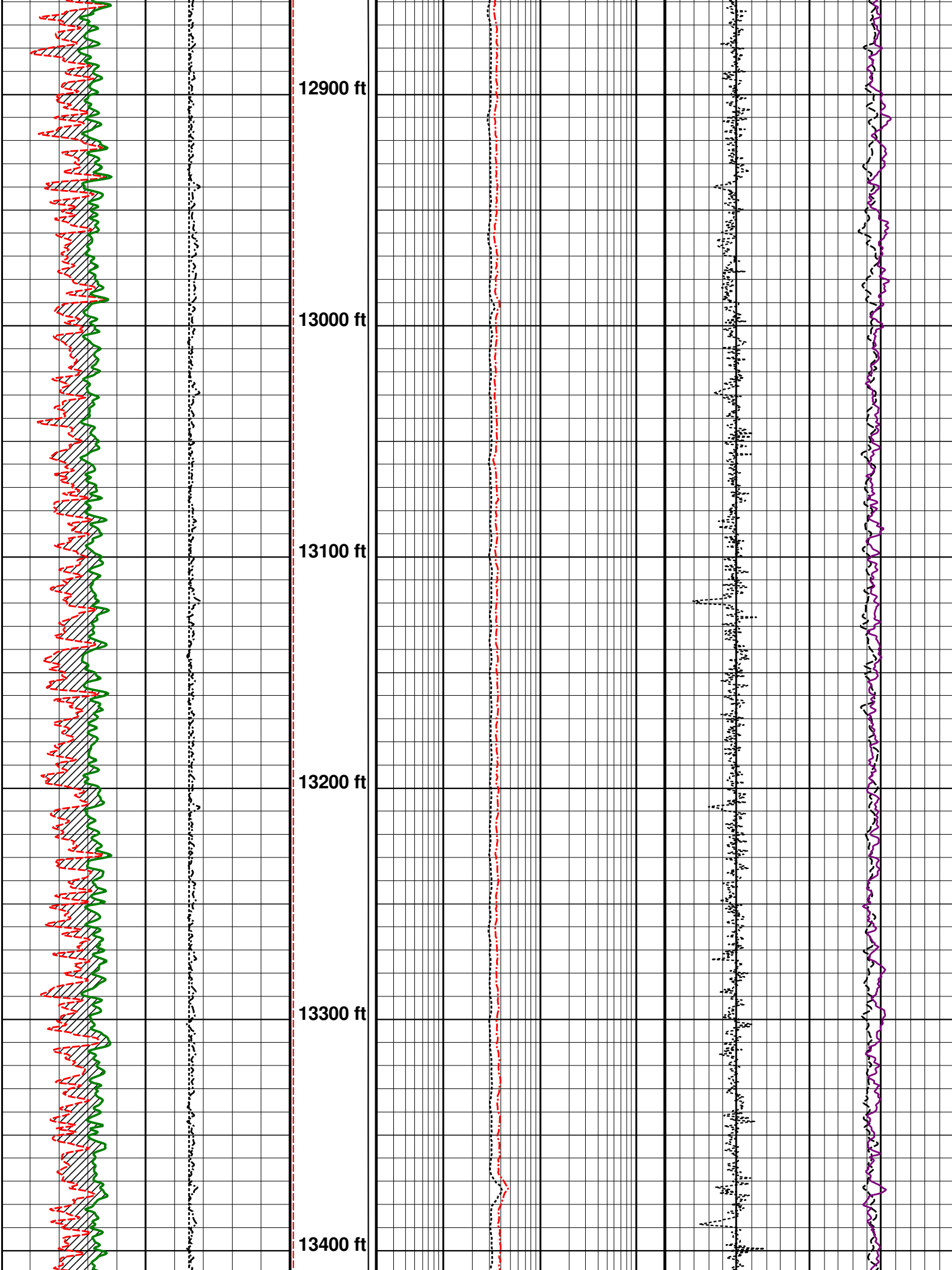


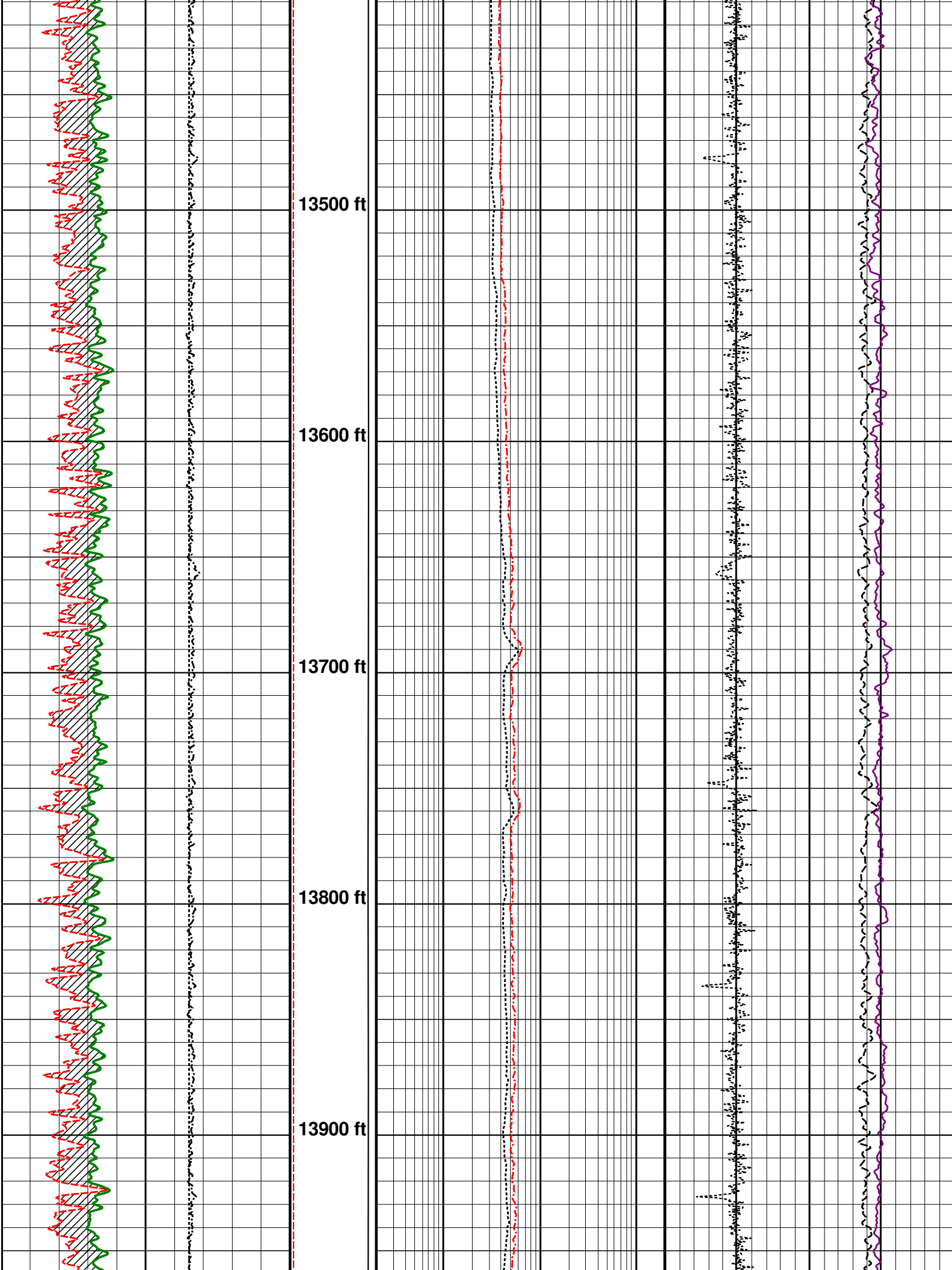


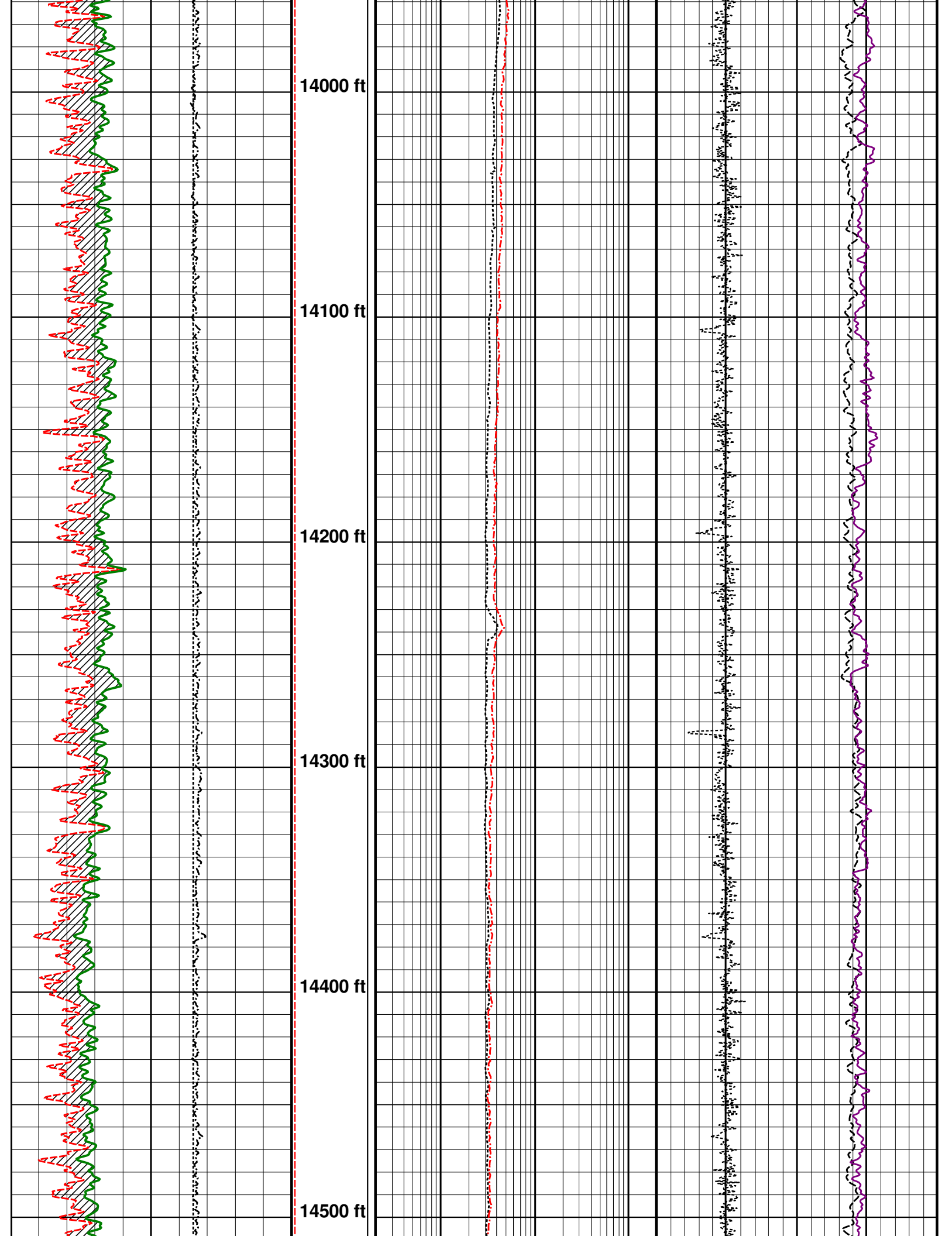


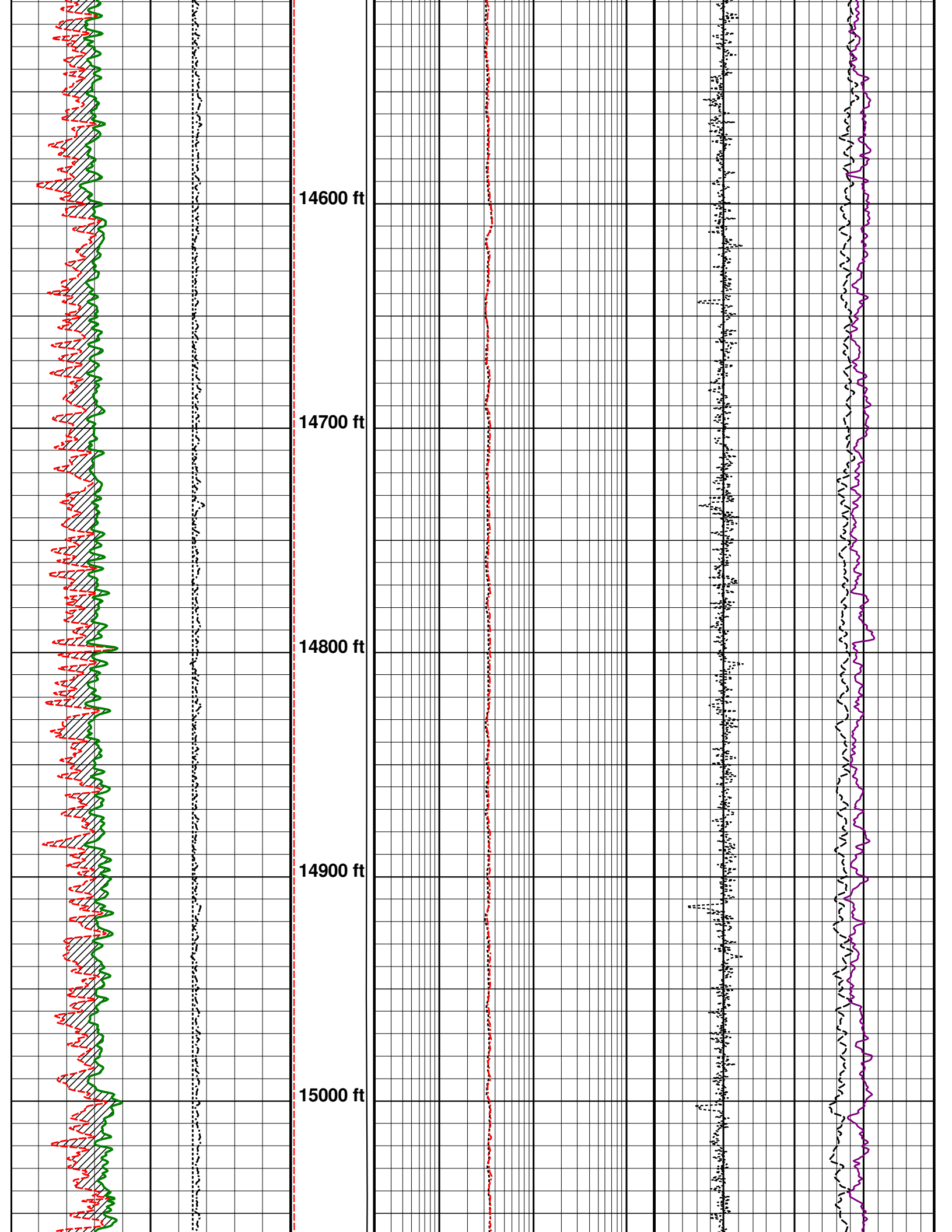


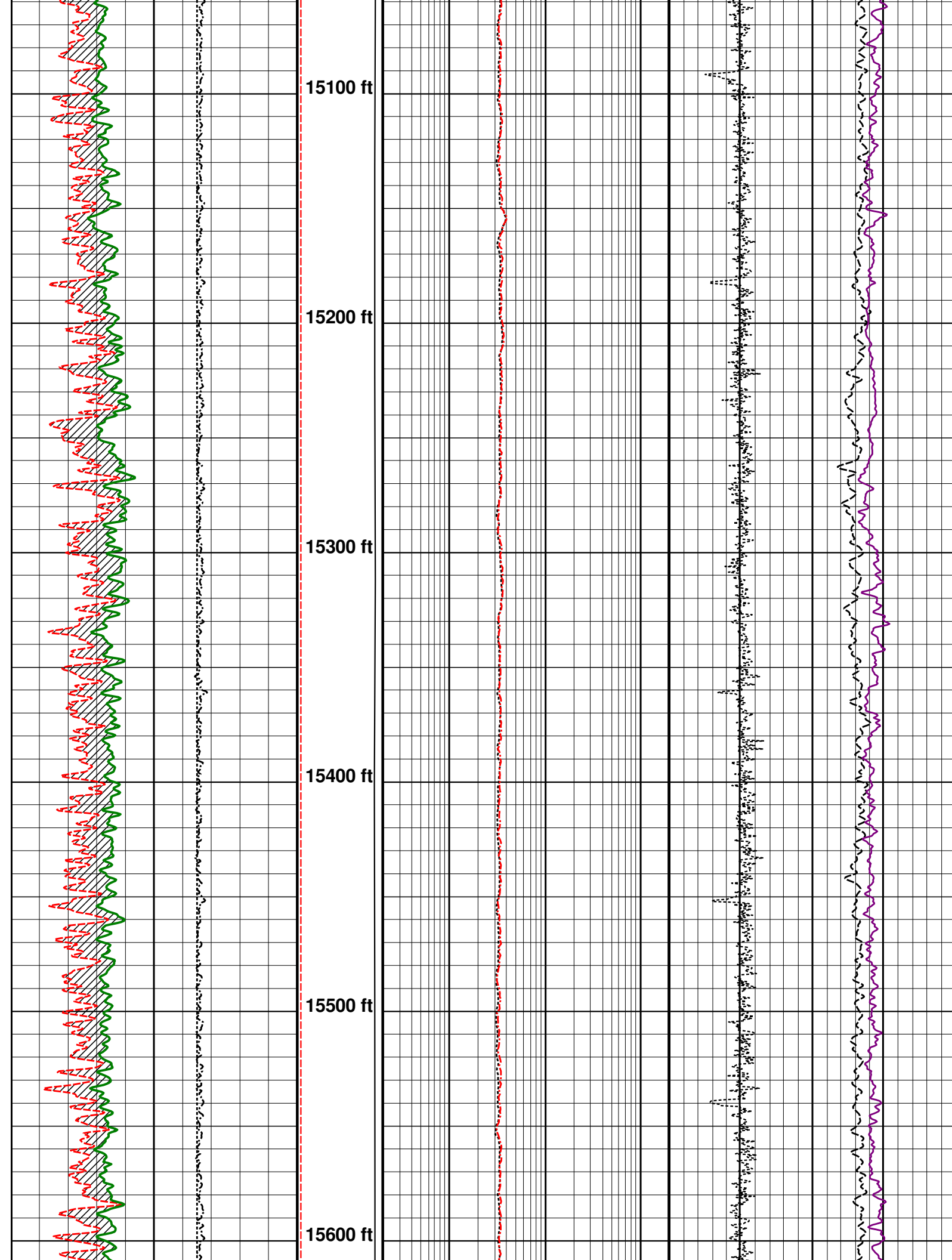


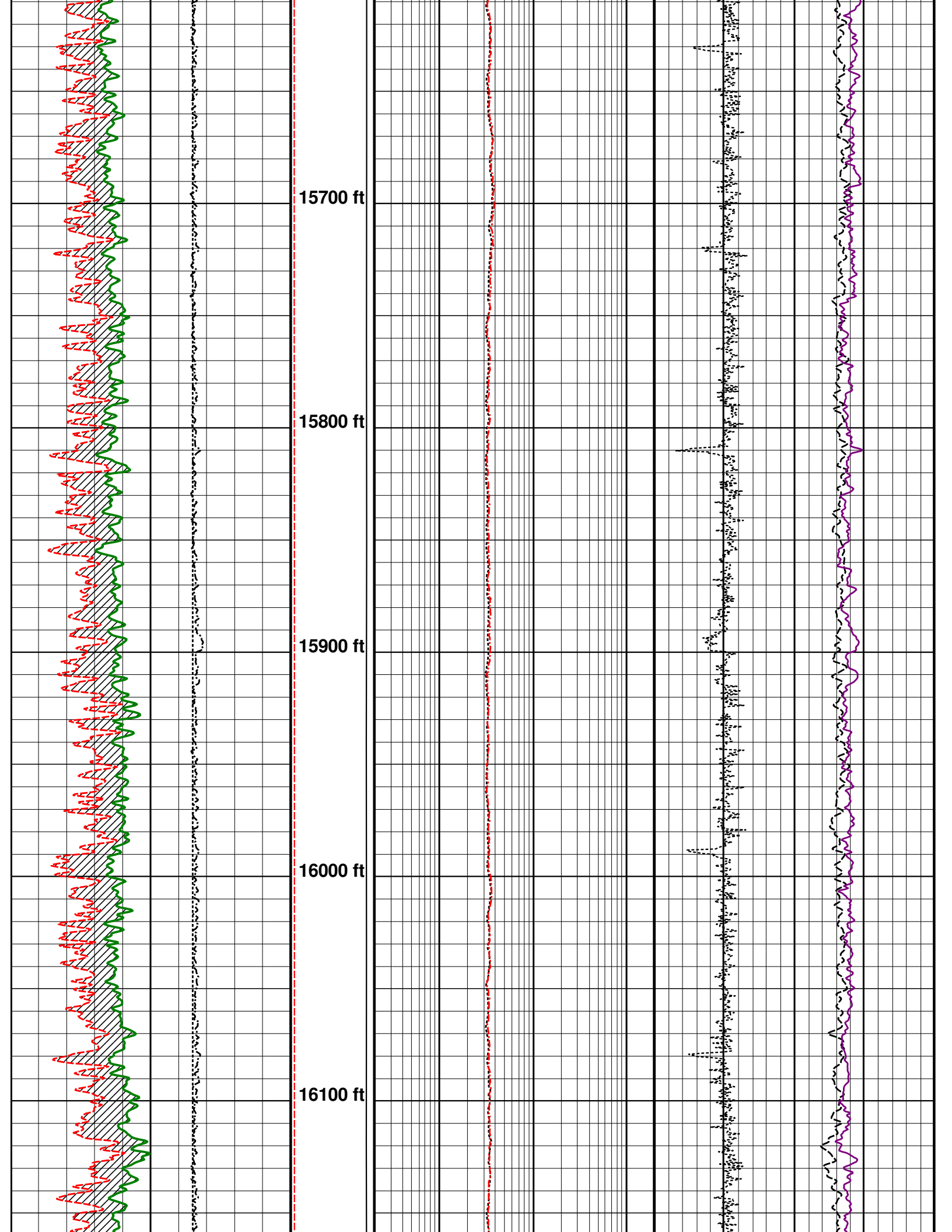


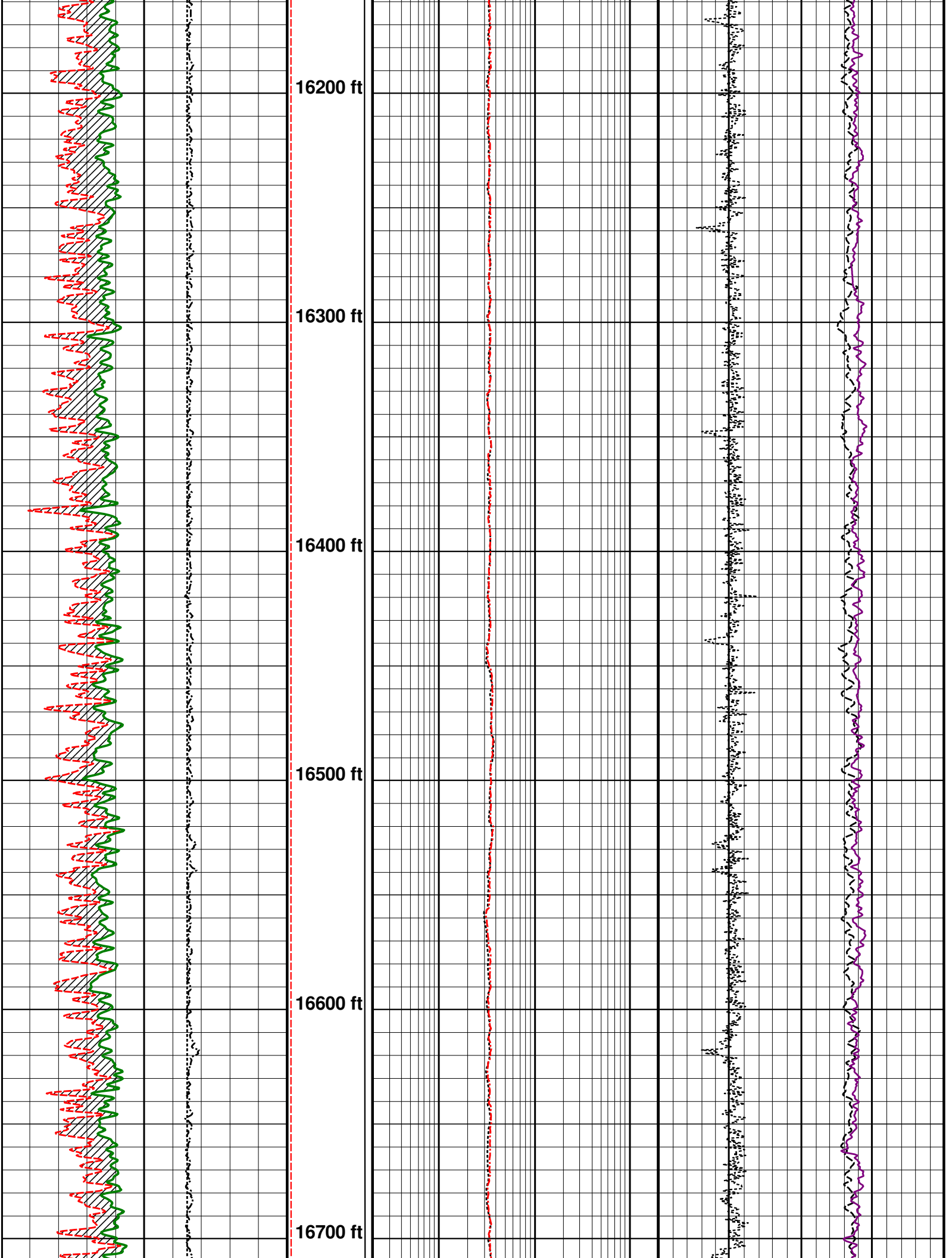


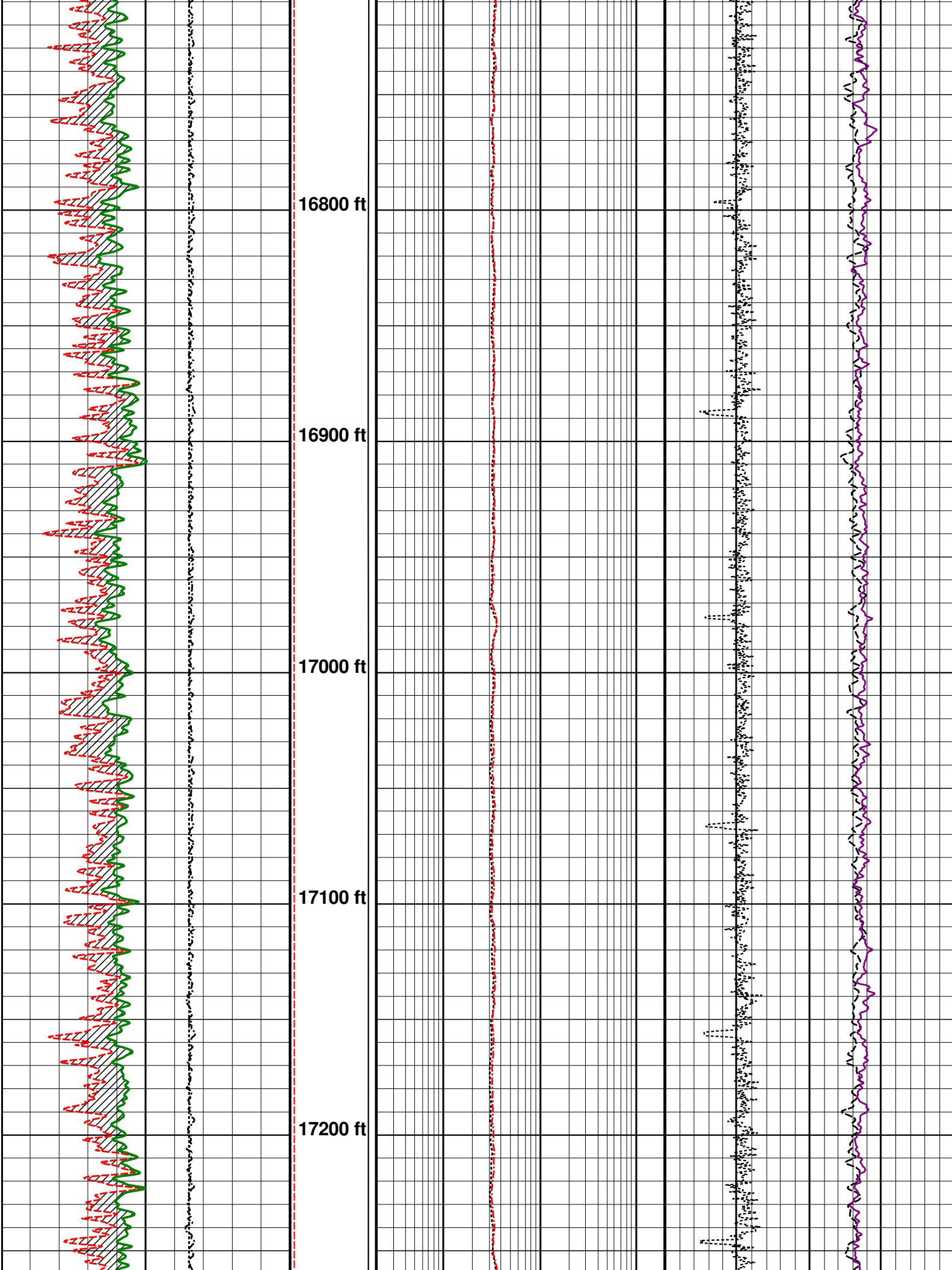


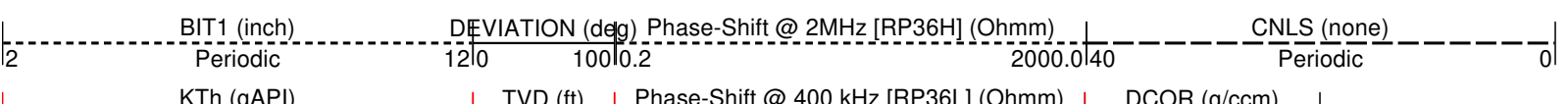
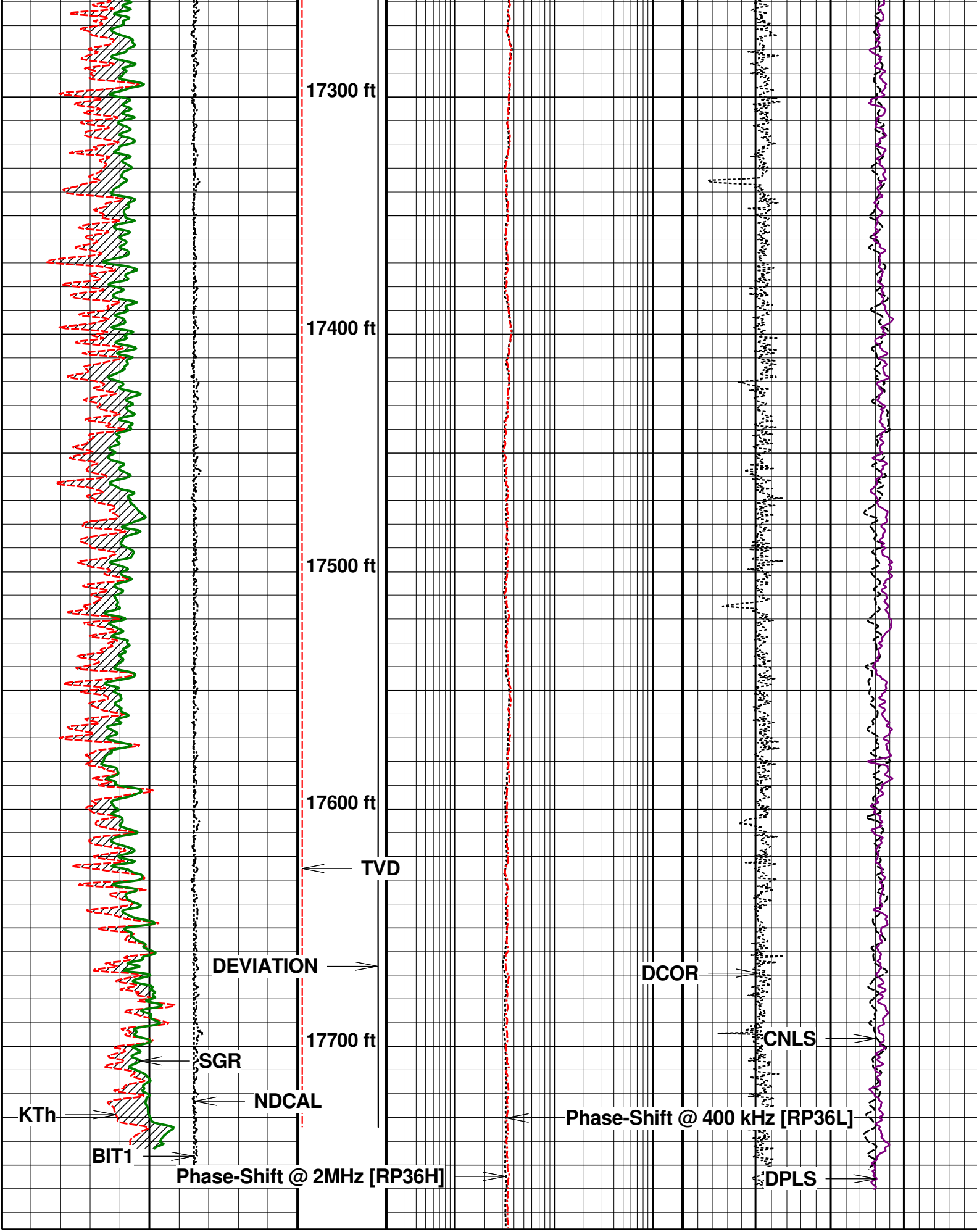


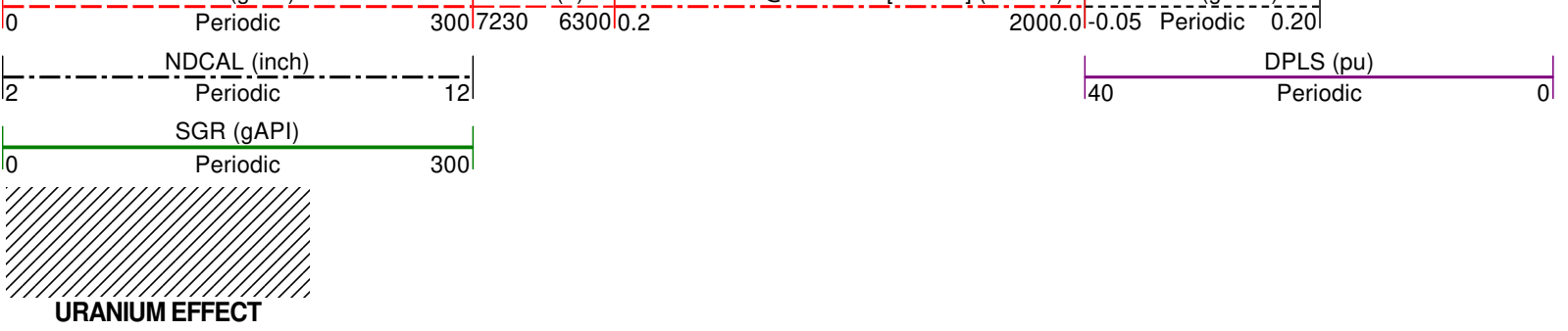






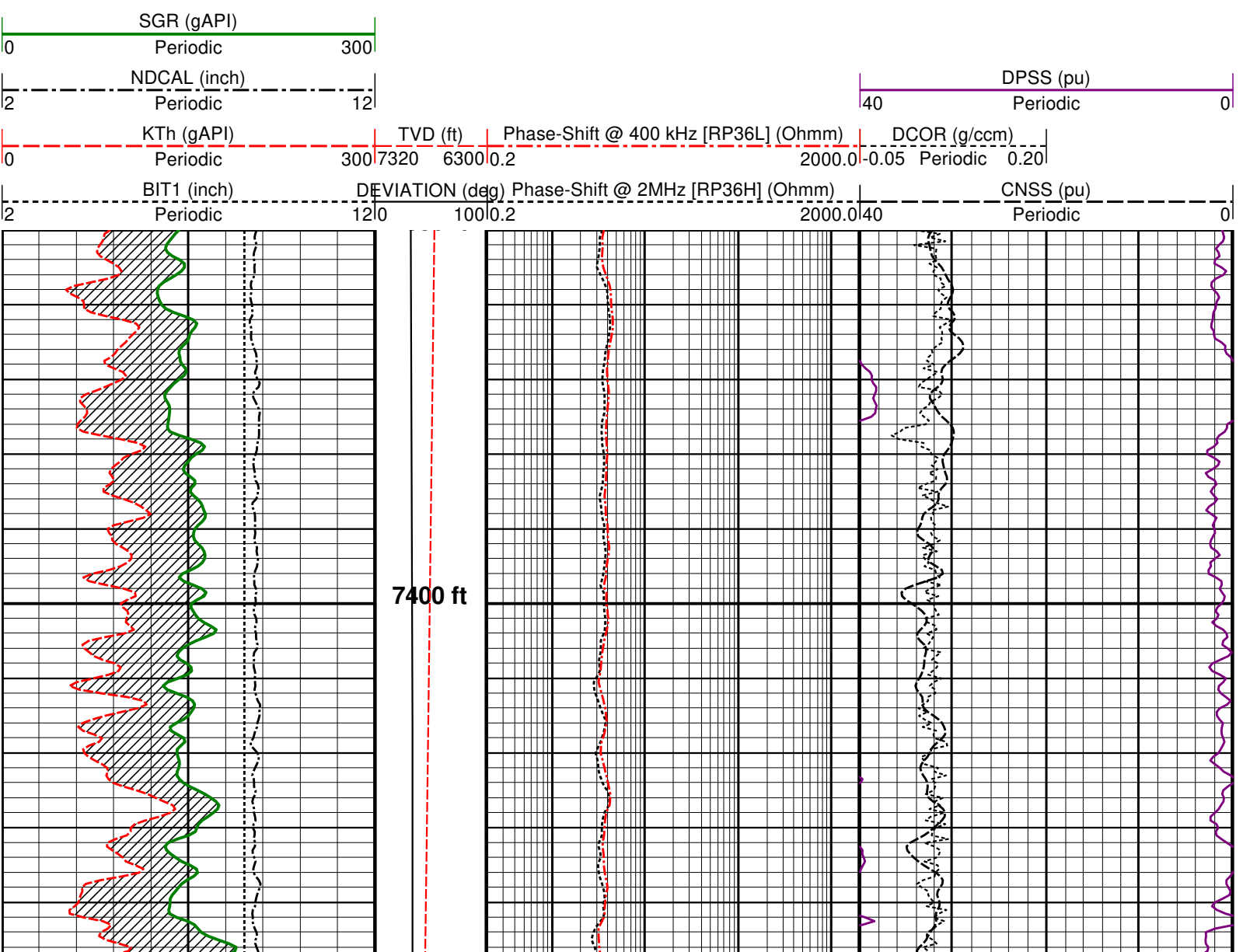


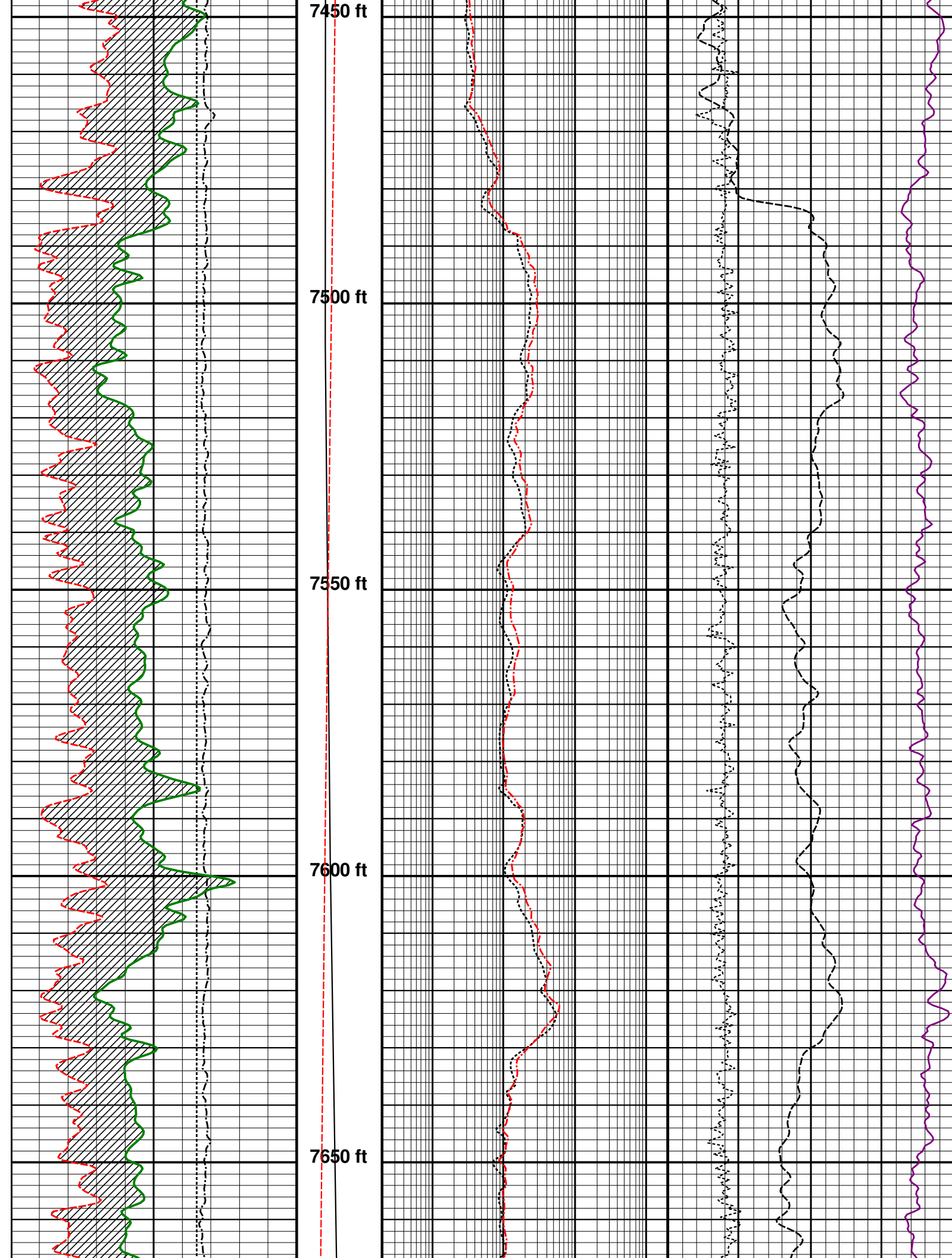


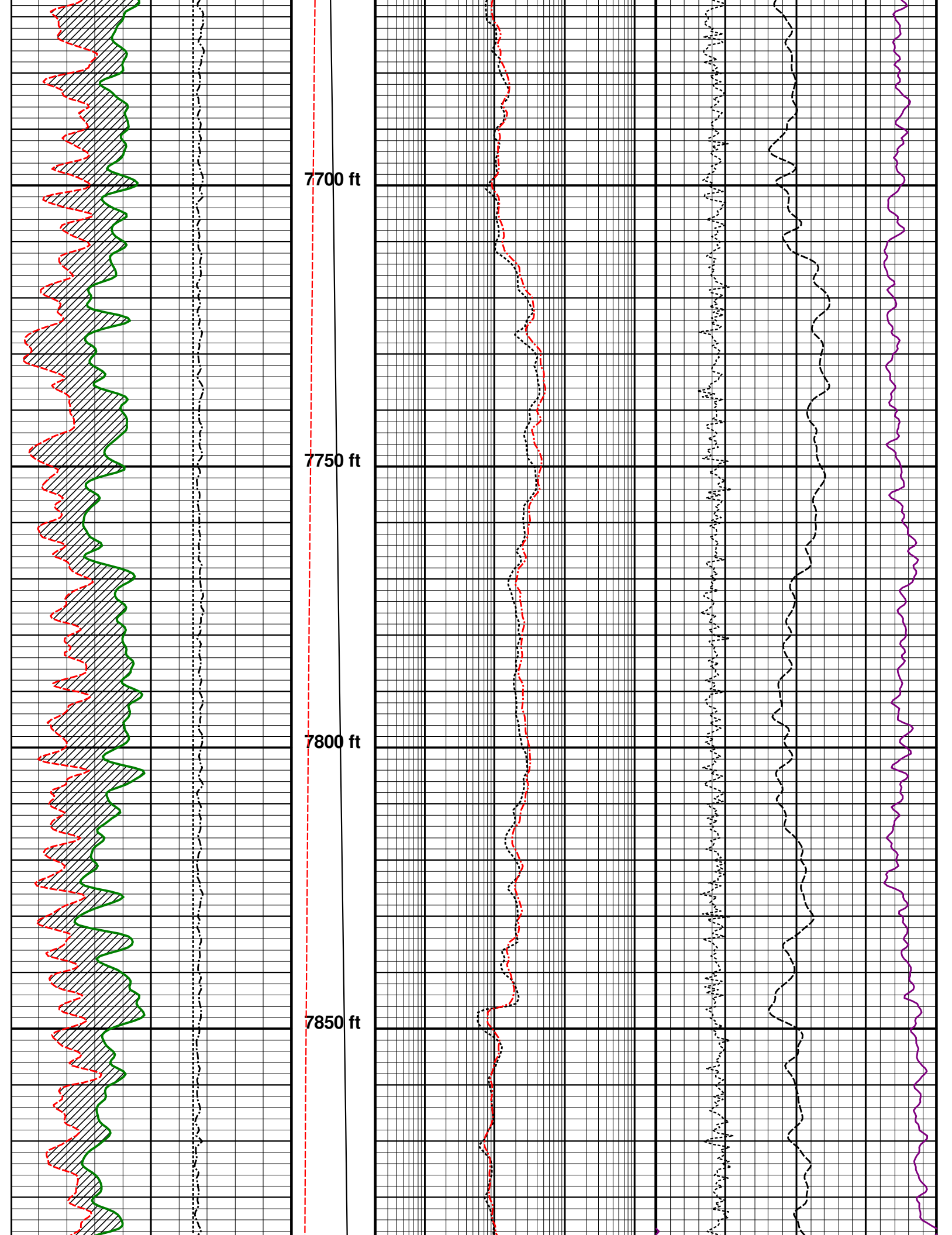


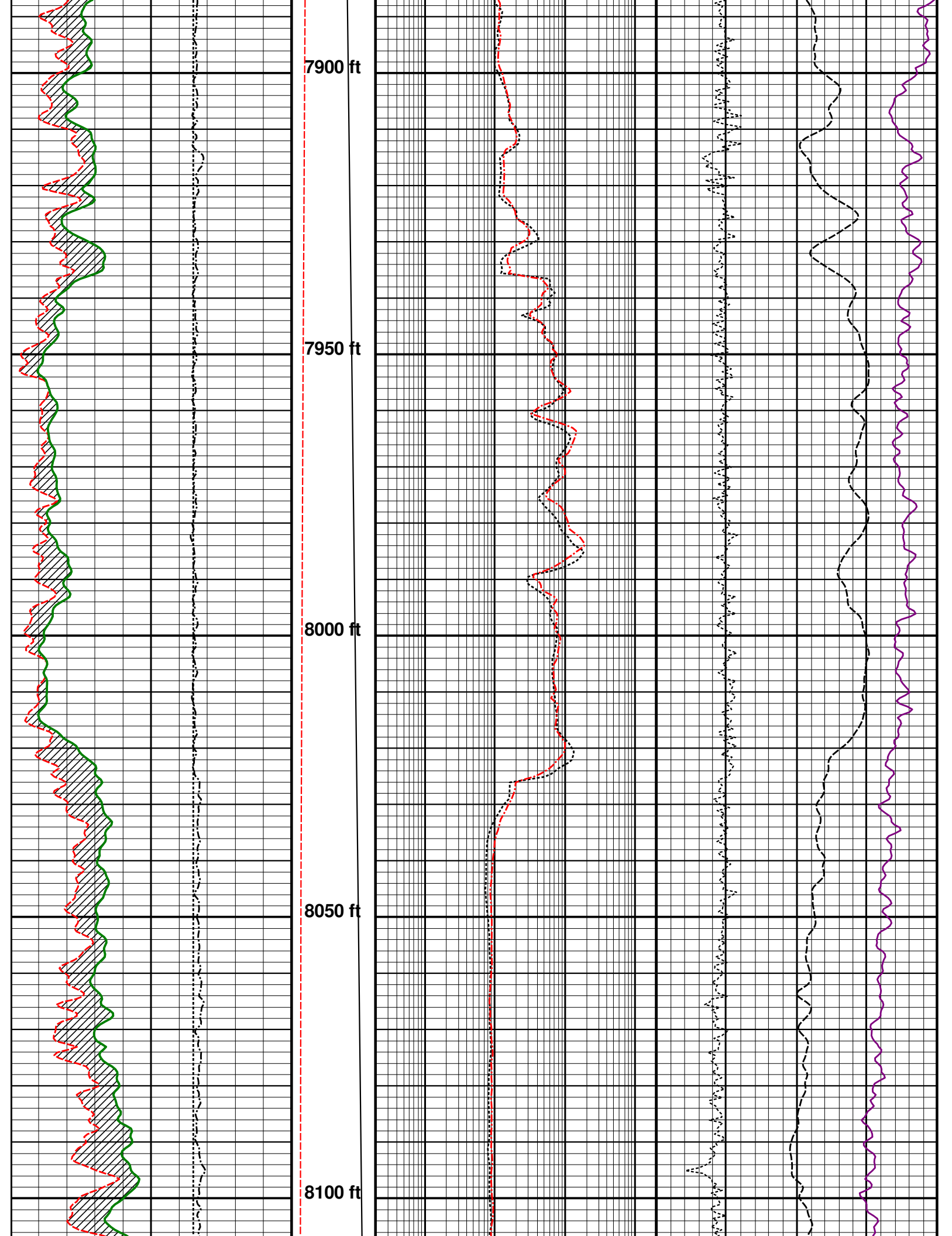
5" MAIN PASS SANDSTONE

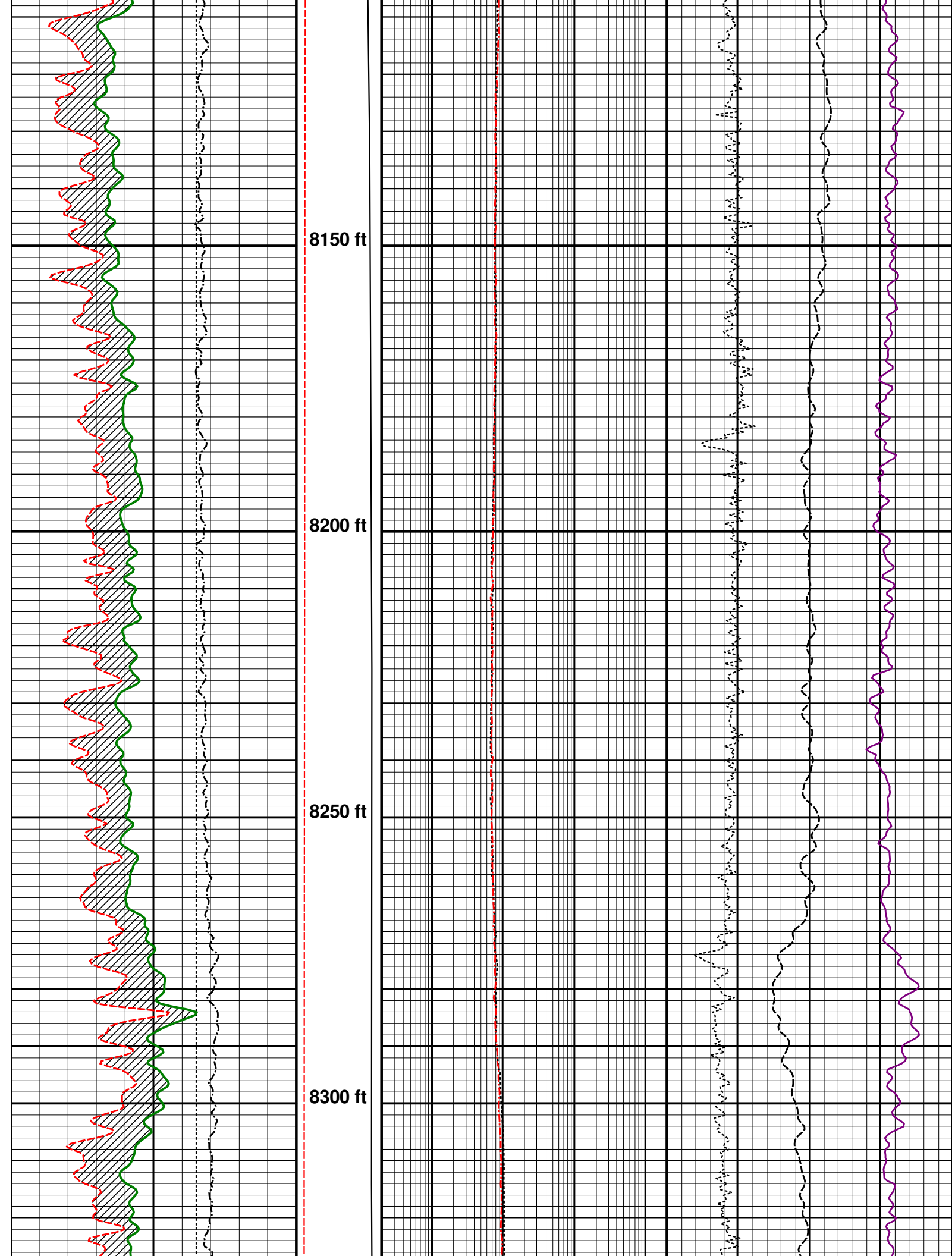
Company : GREAT WESTERN OPERATING COMPANY LLC Date : 15-SEP-2019
Well : SCHNEIDER HD 11-099HC Time :
Scale : 1 : 240 Remarks : SANDSTONE MATRIX
Depth in : feet
Software : WinAPIPlot Ver. 6, 18, 0, 0 File Name :

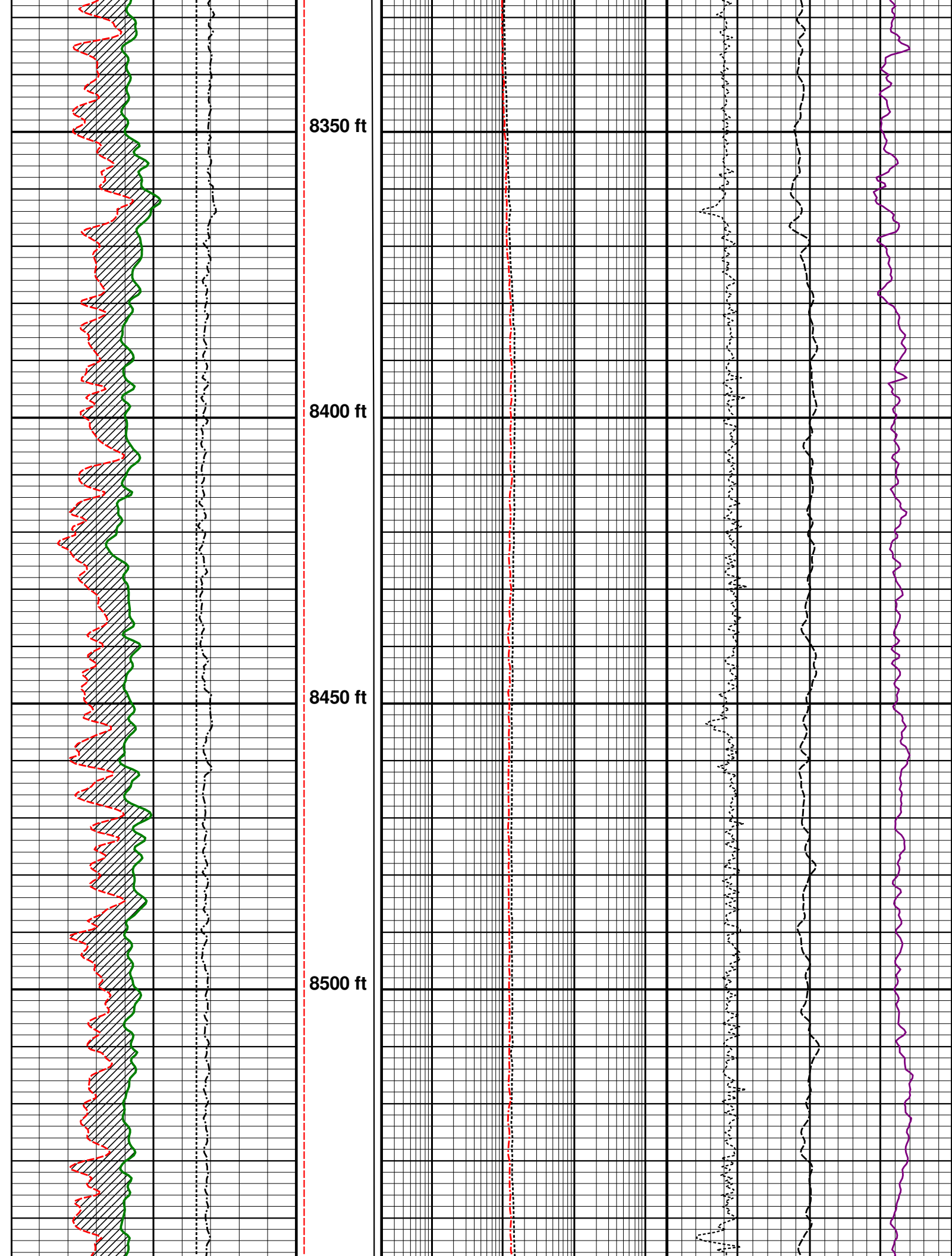


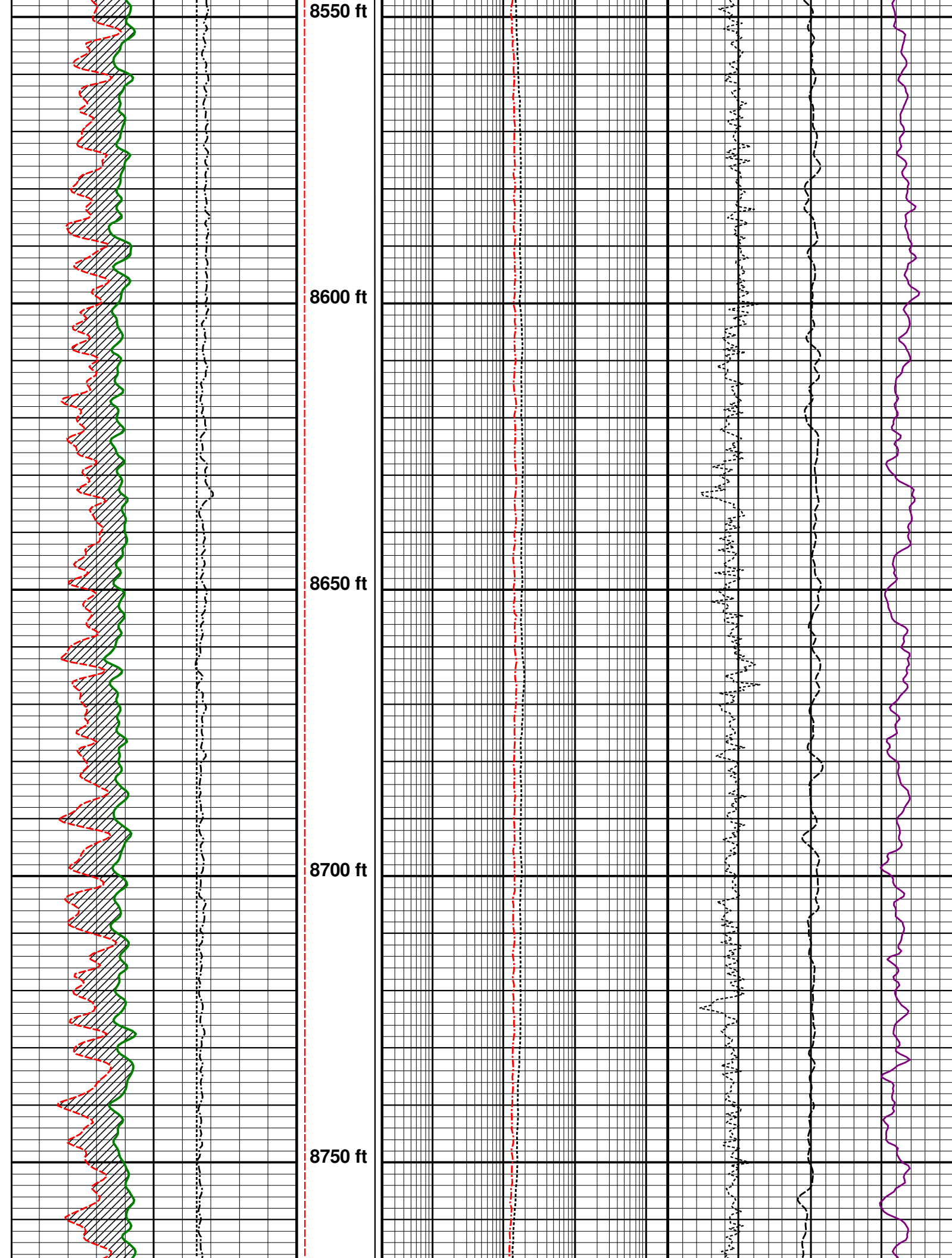


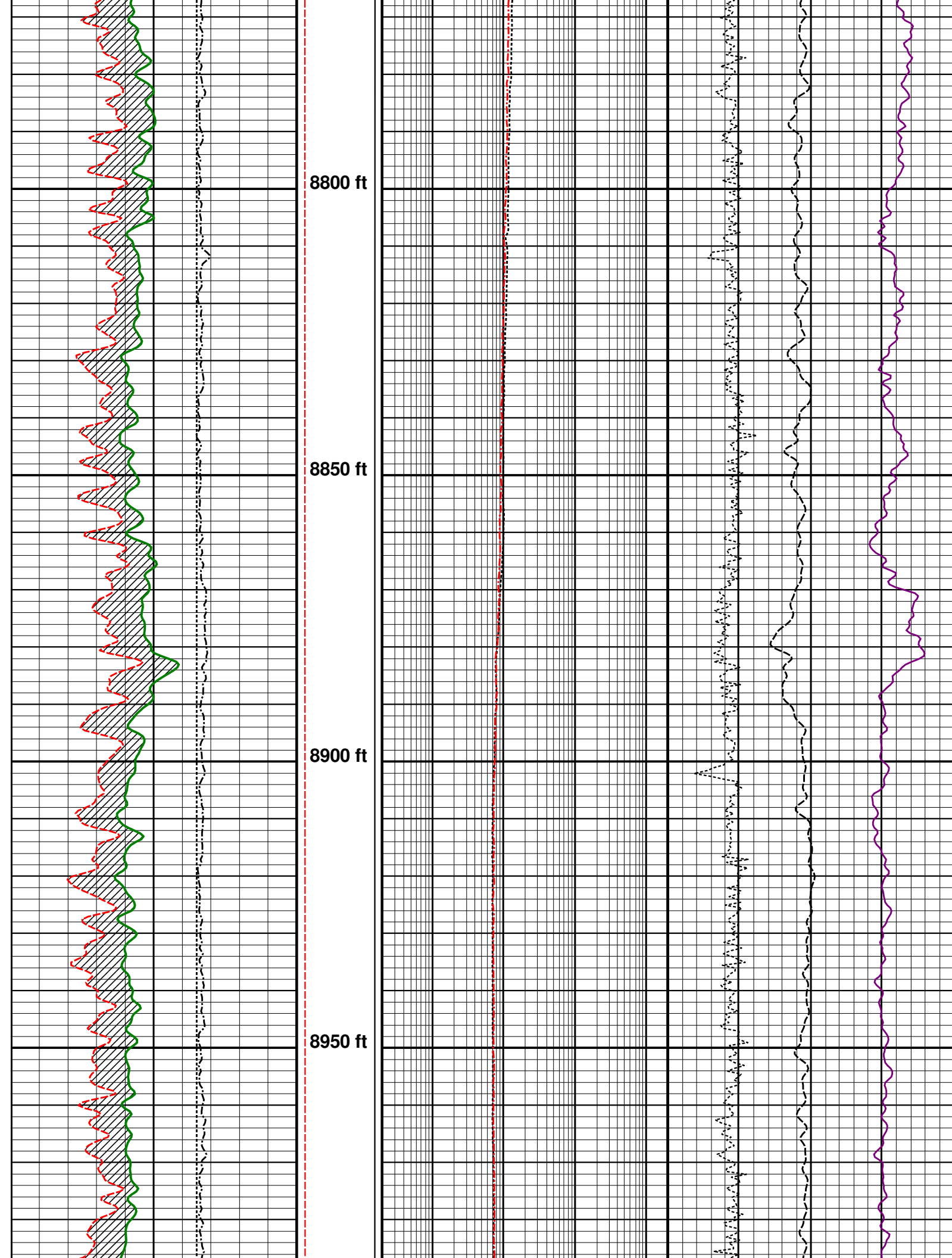


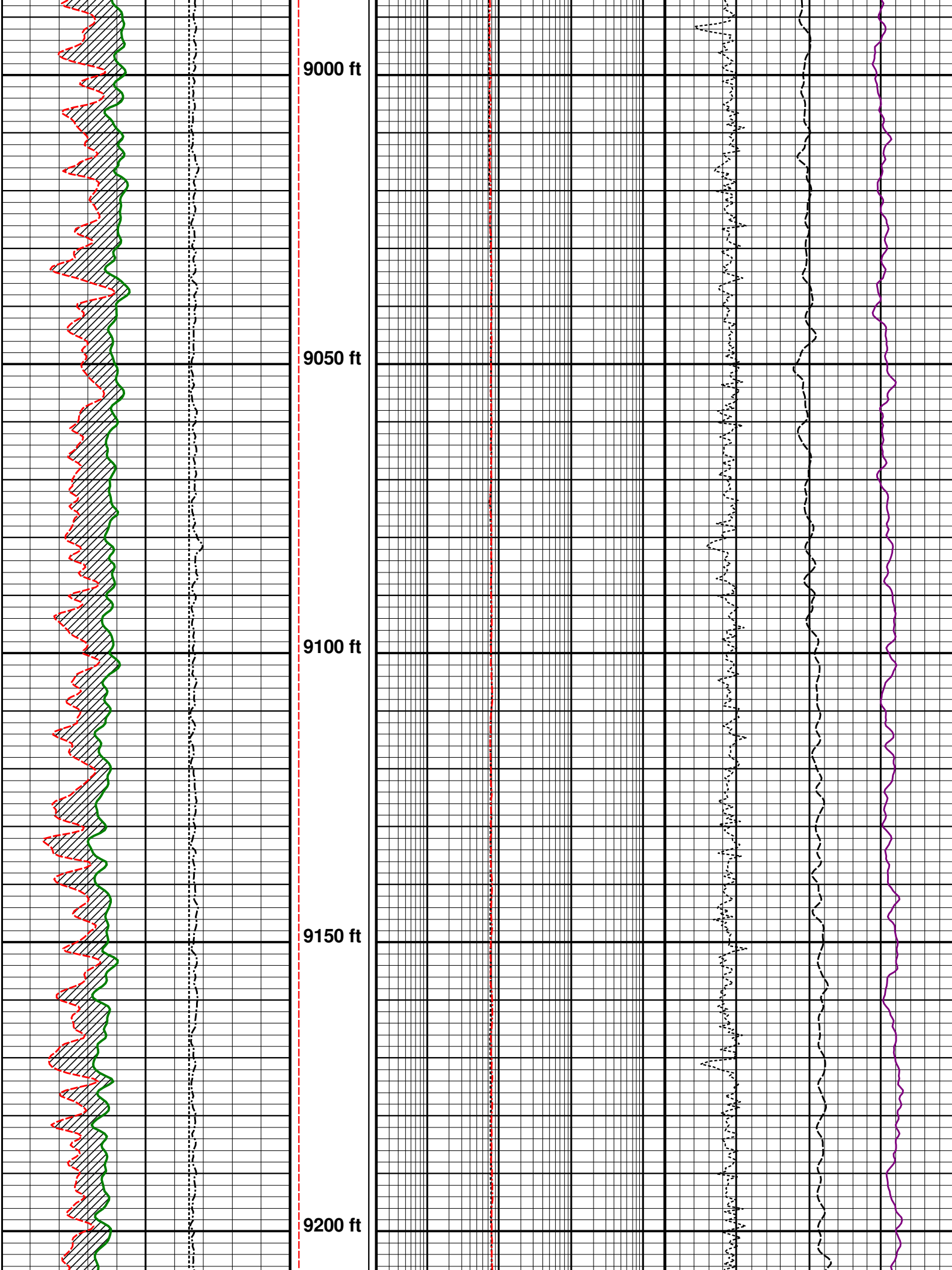


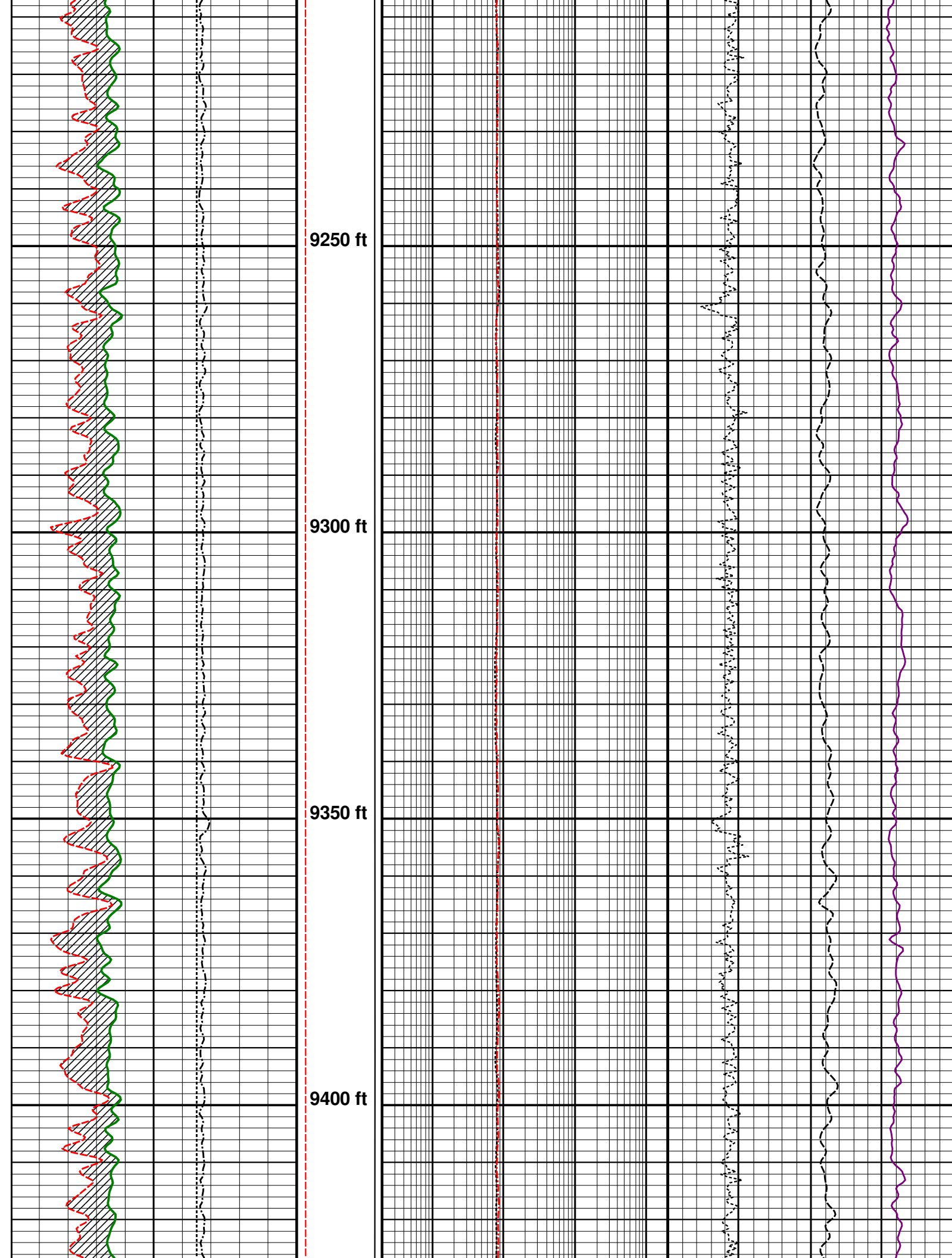


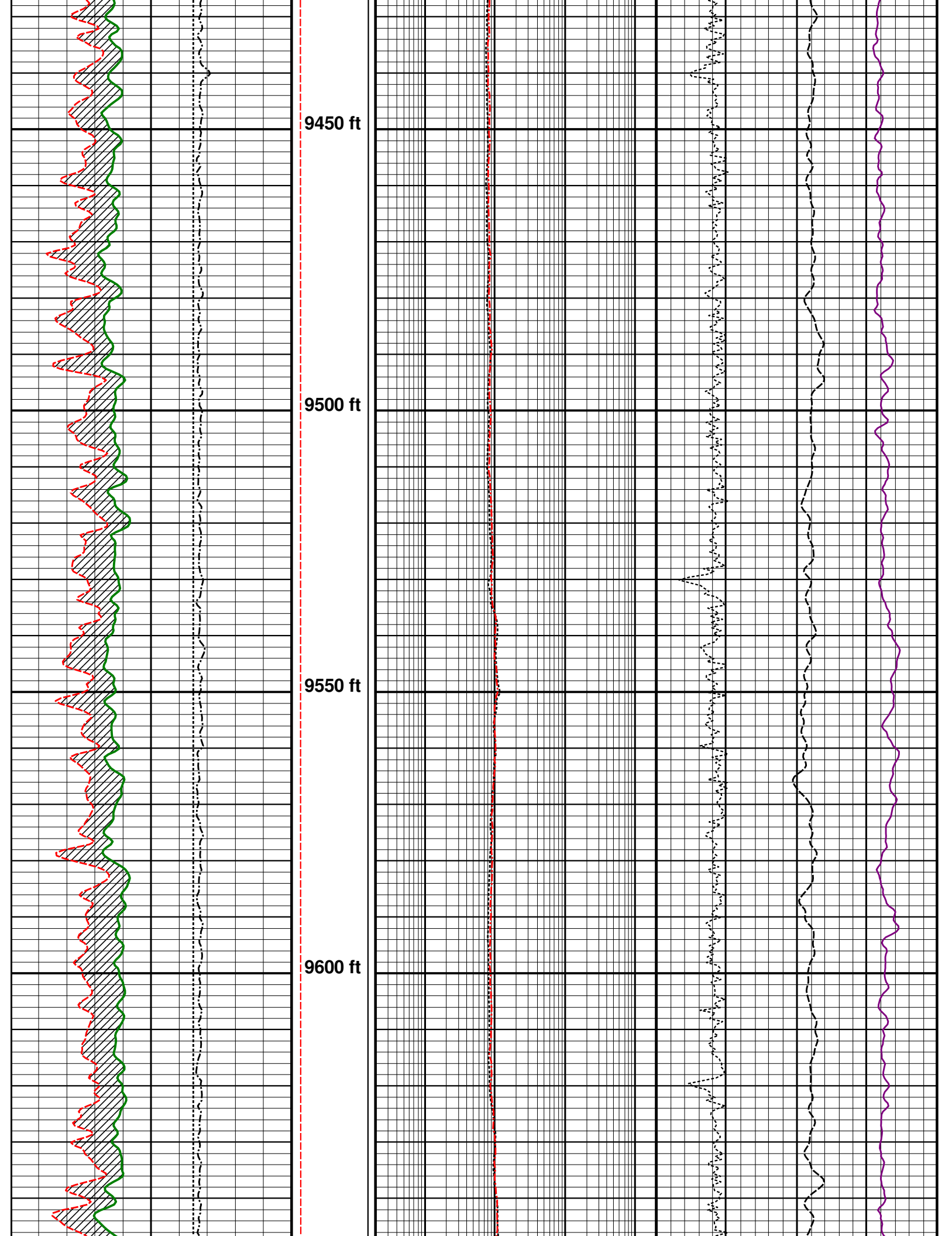


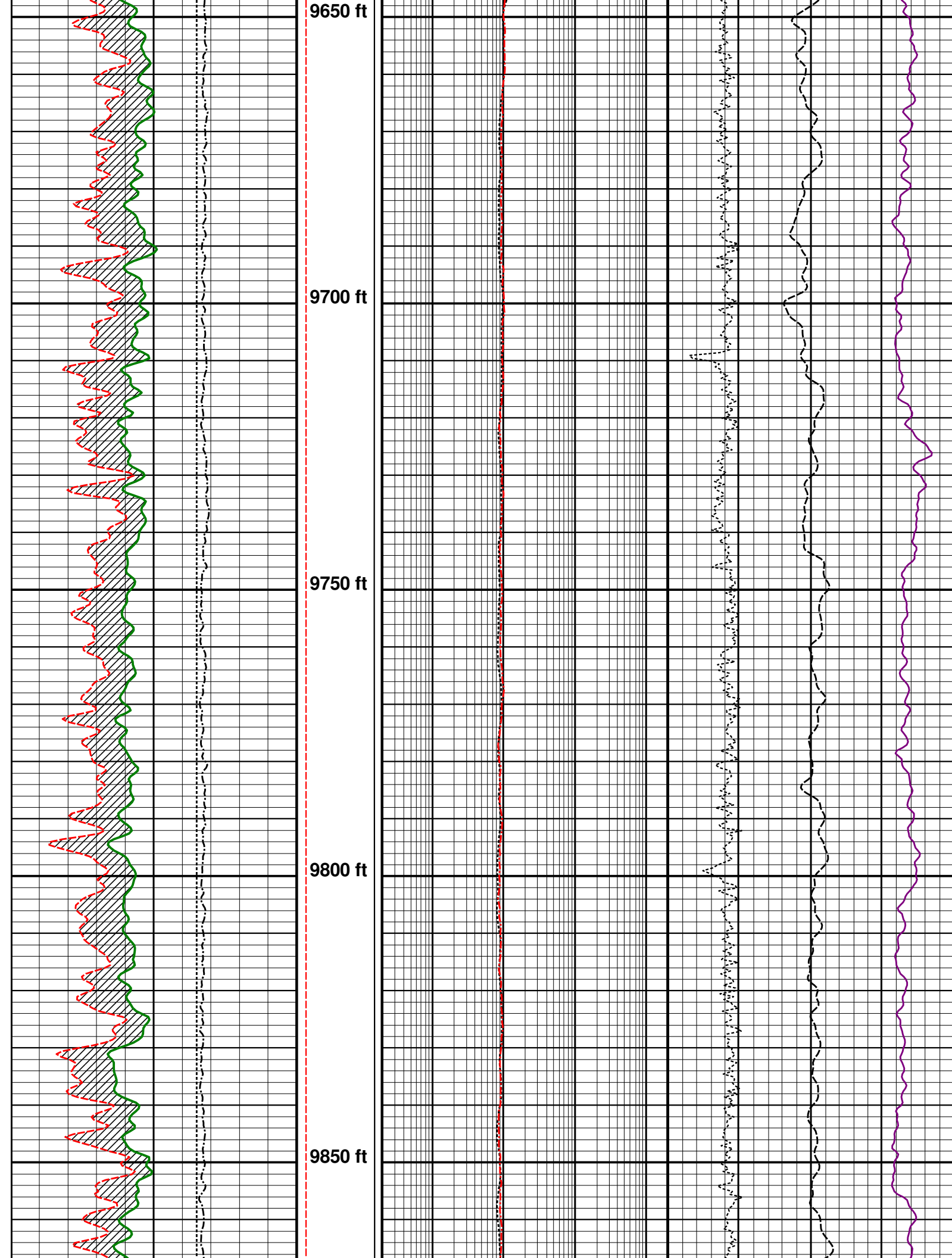


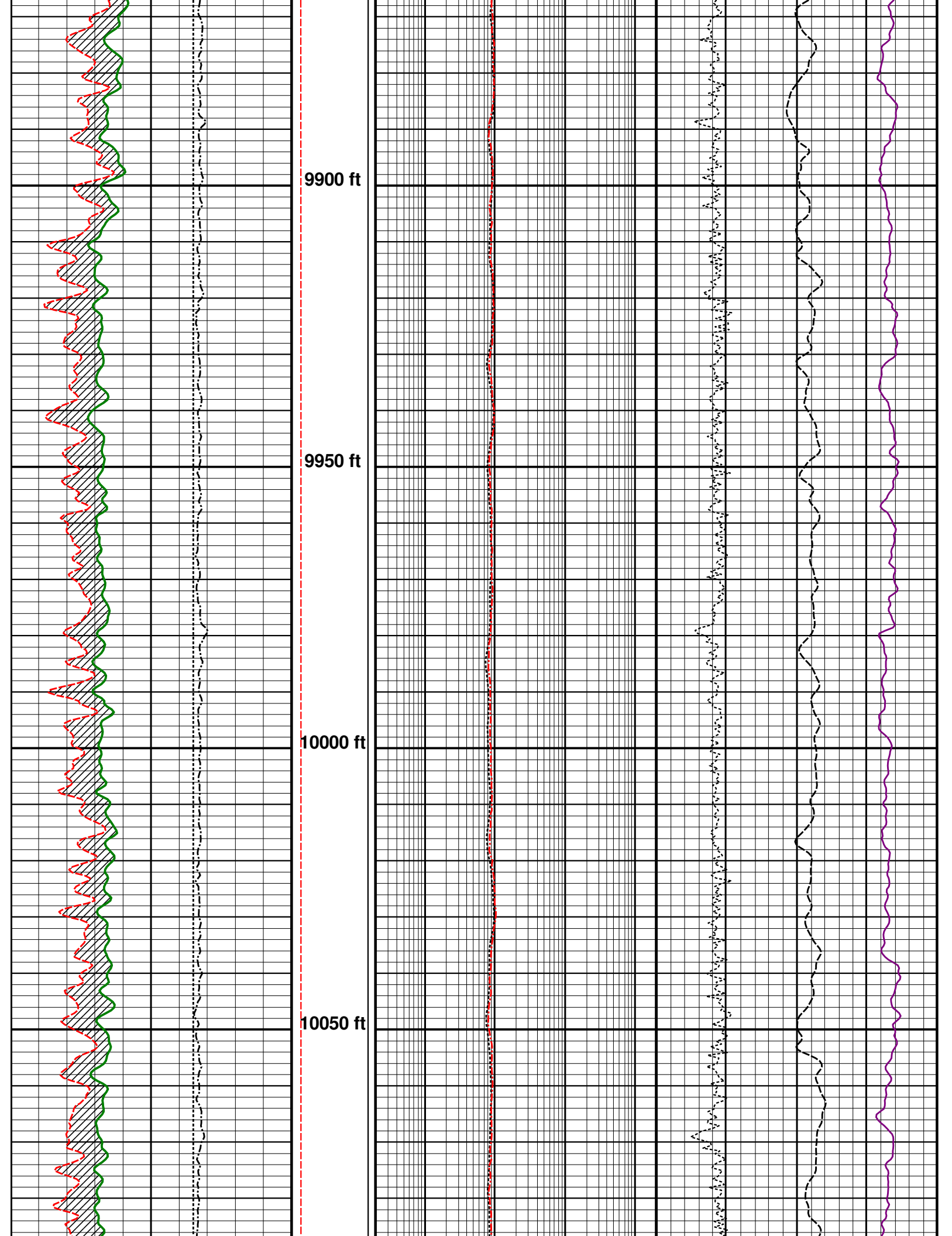


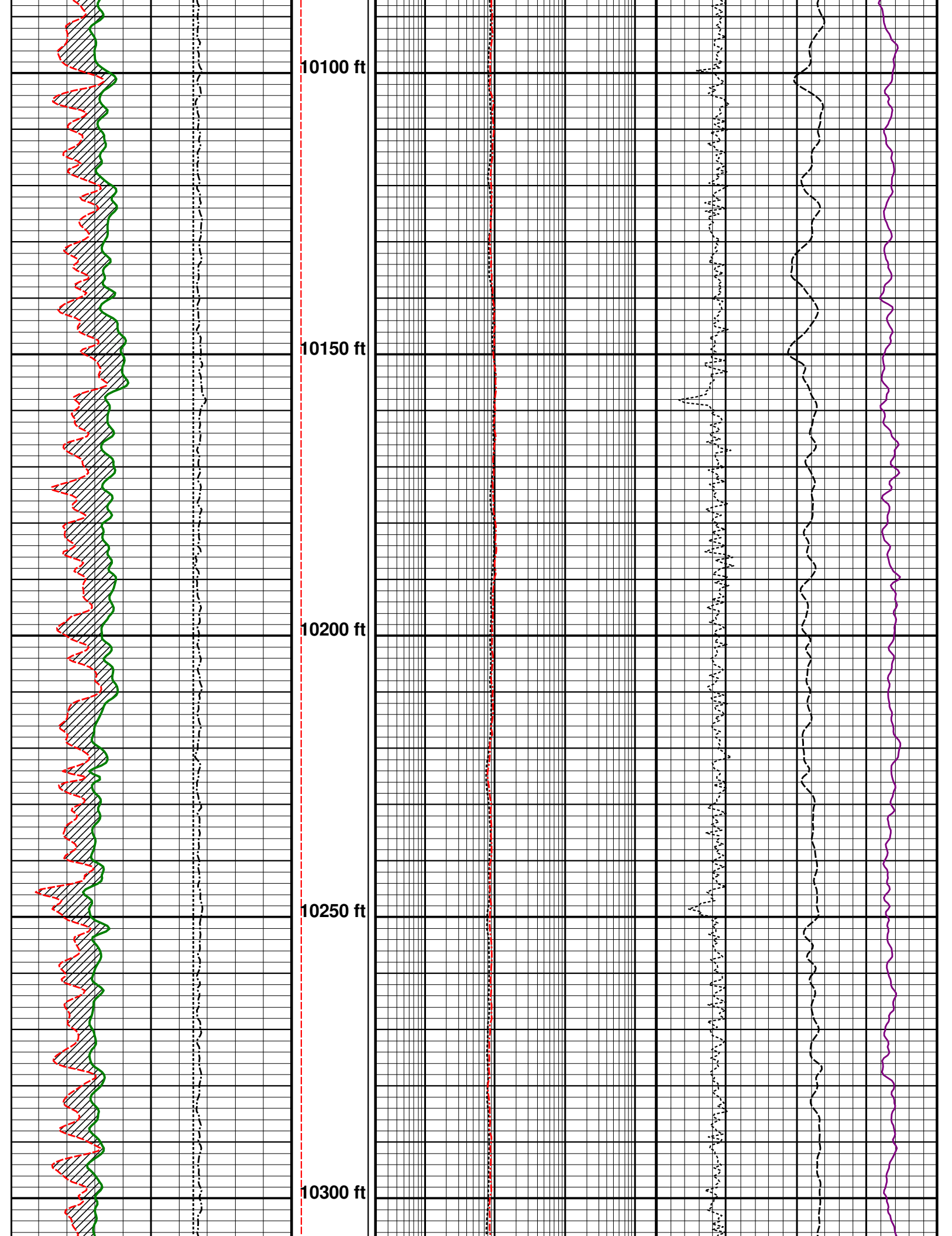


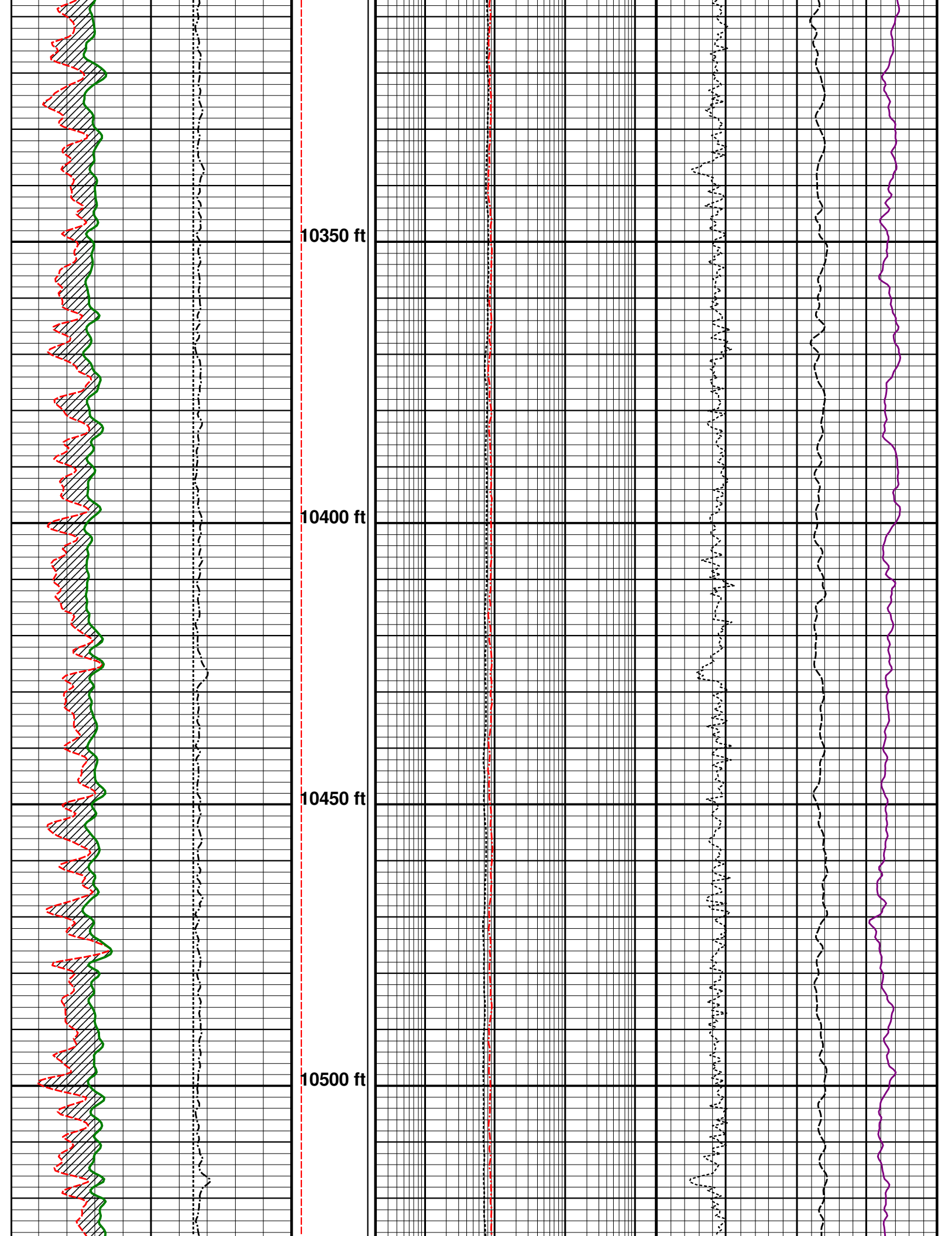


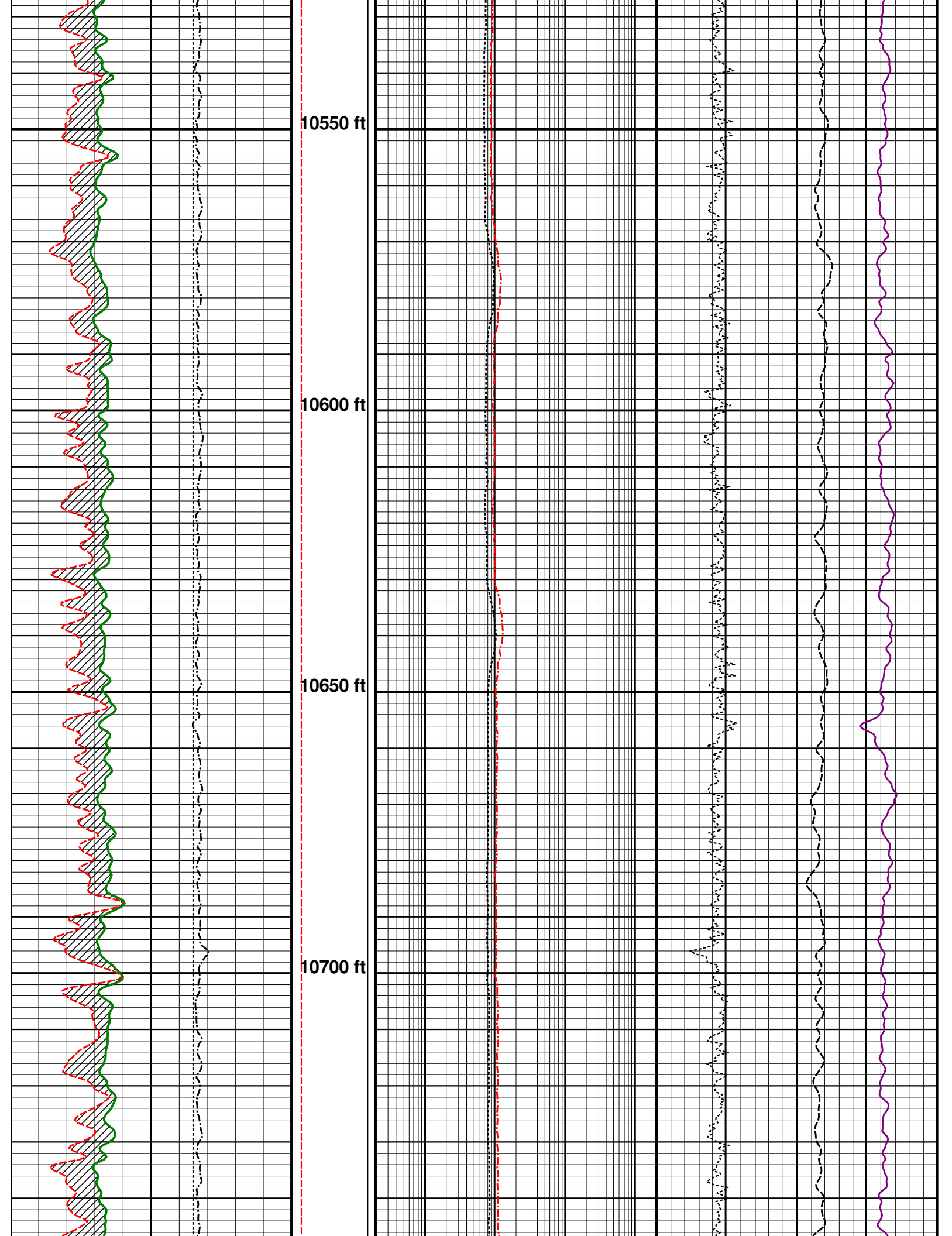


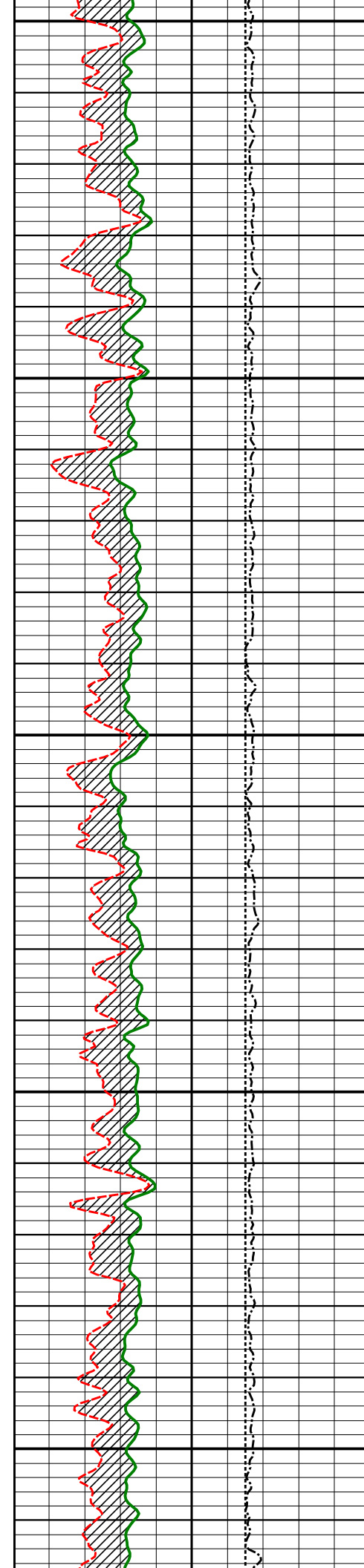




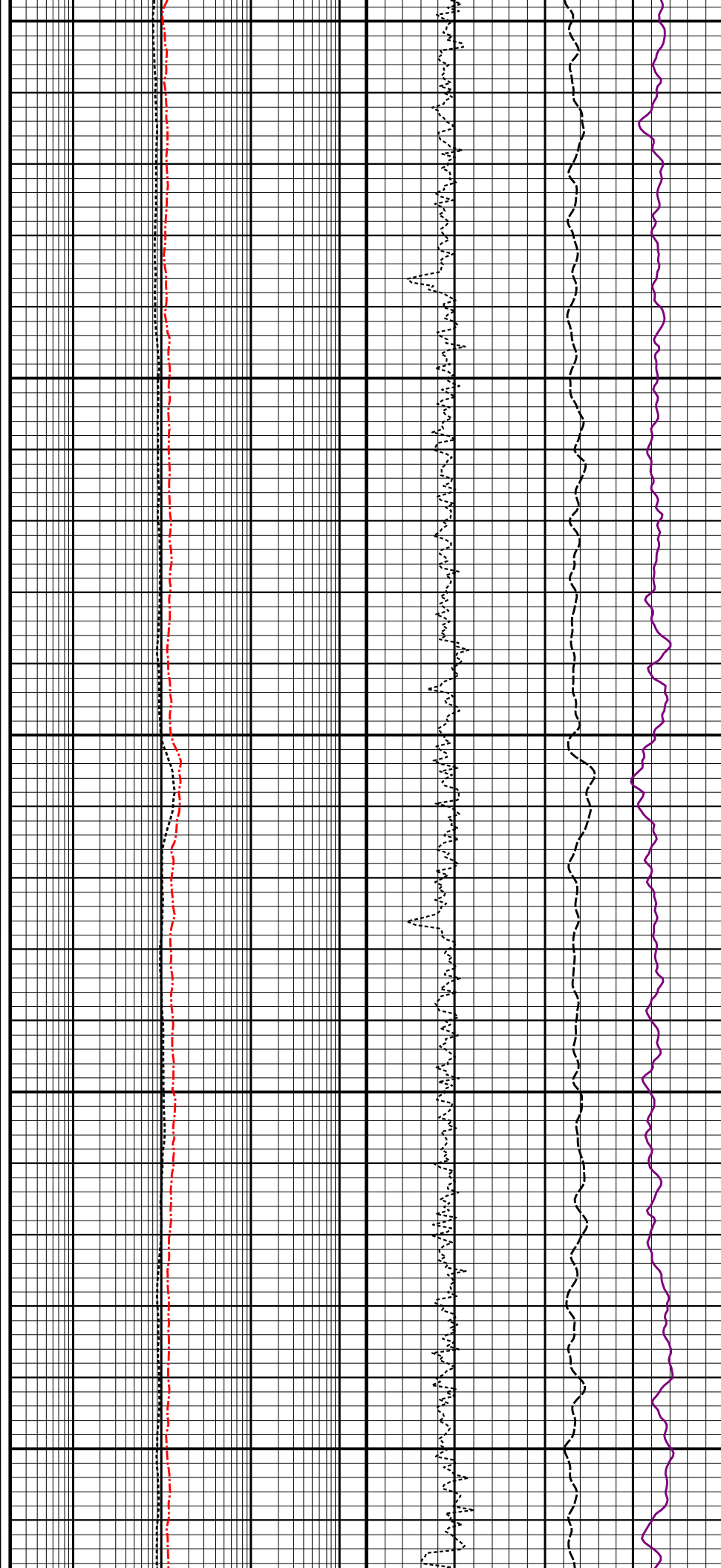


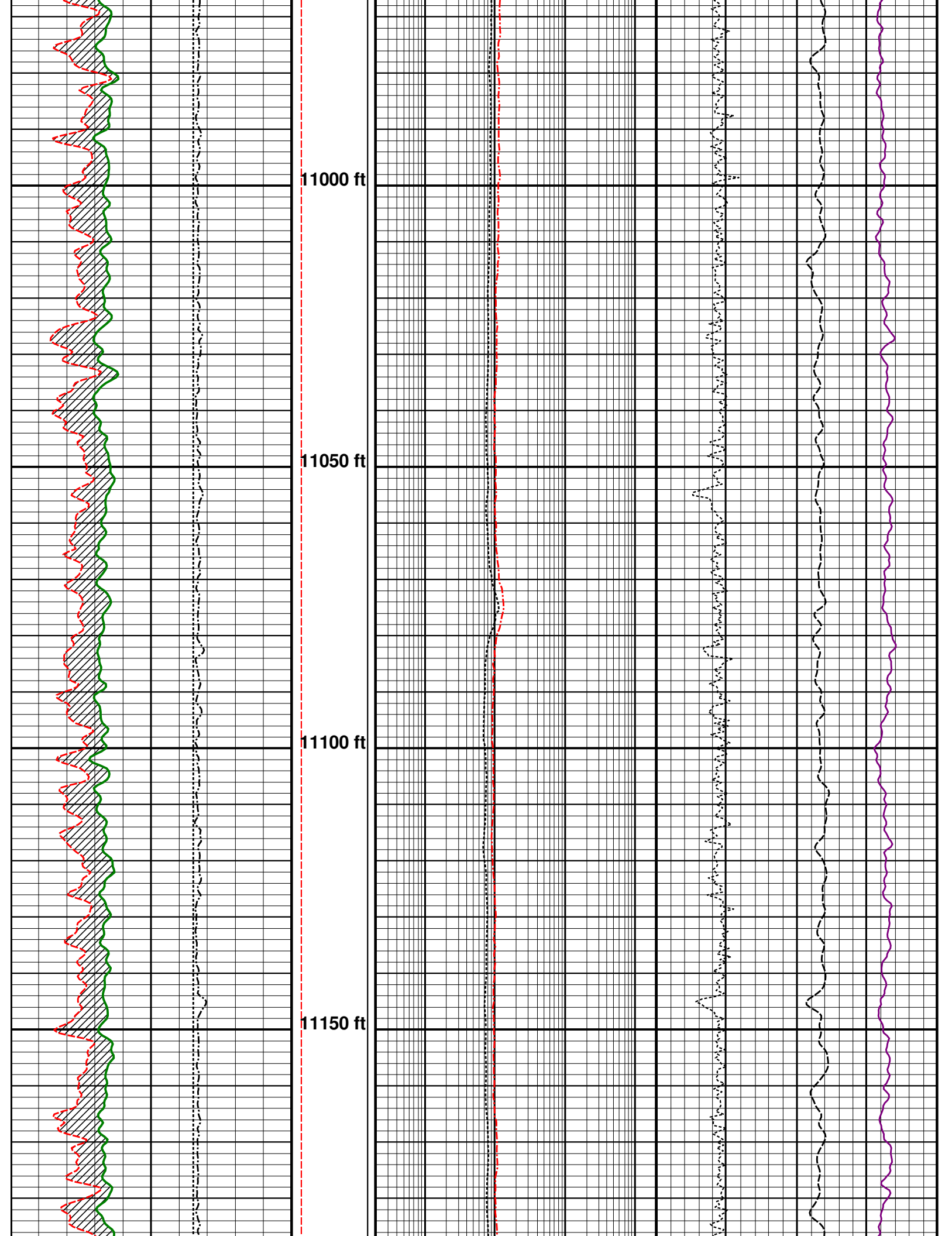


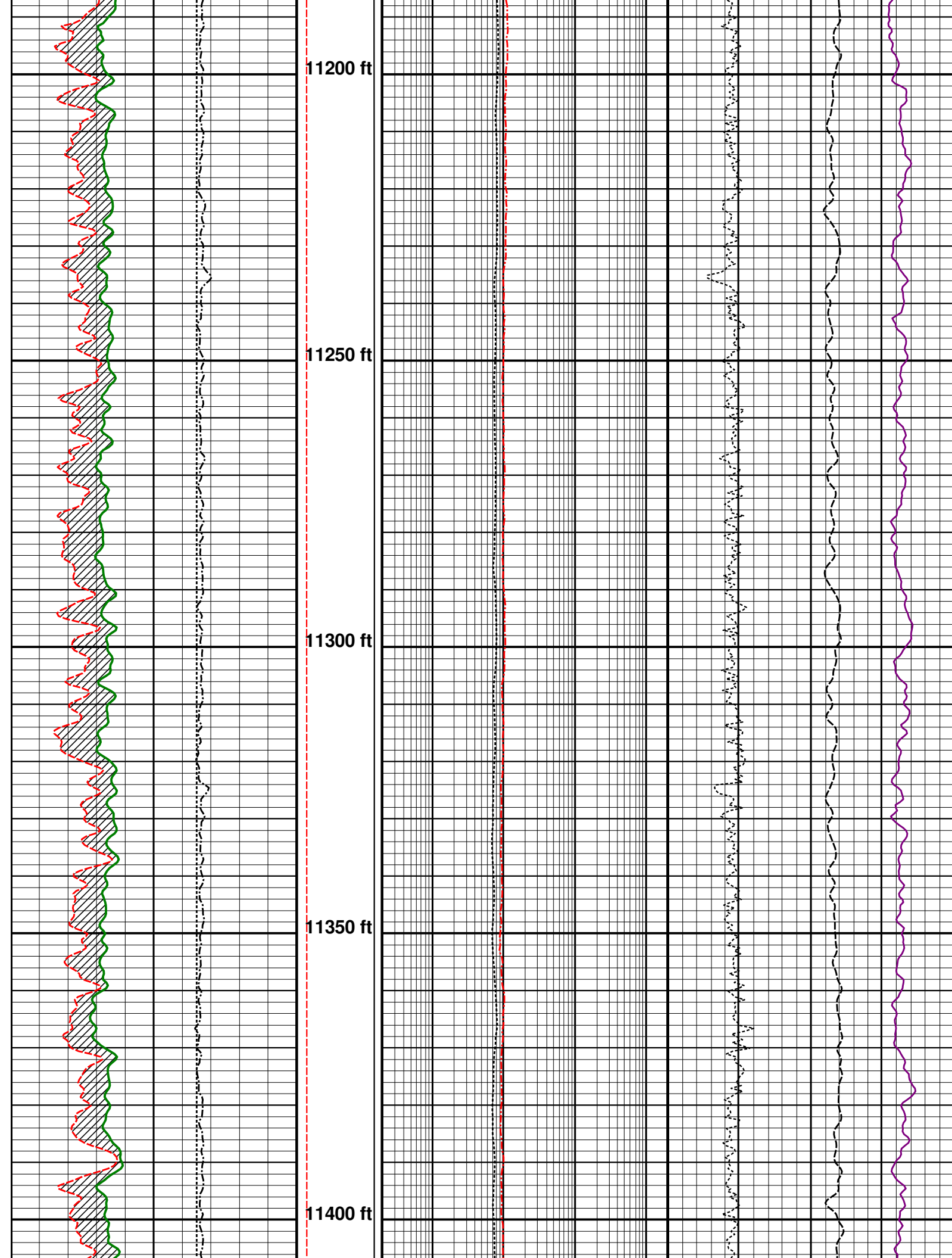


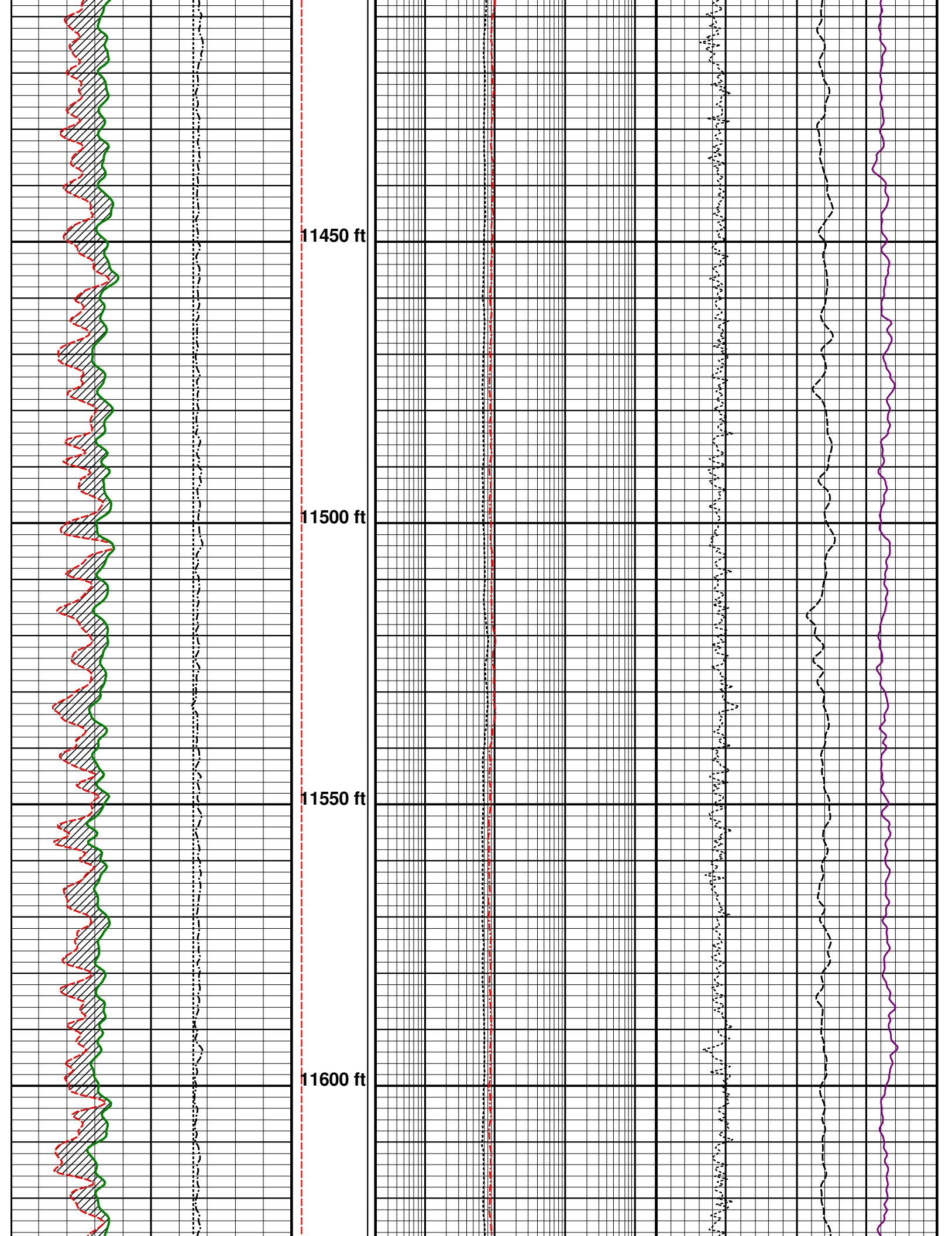


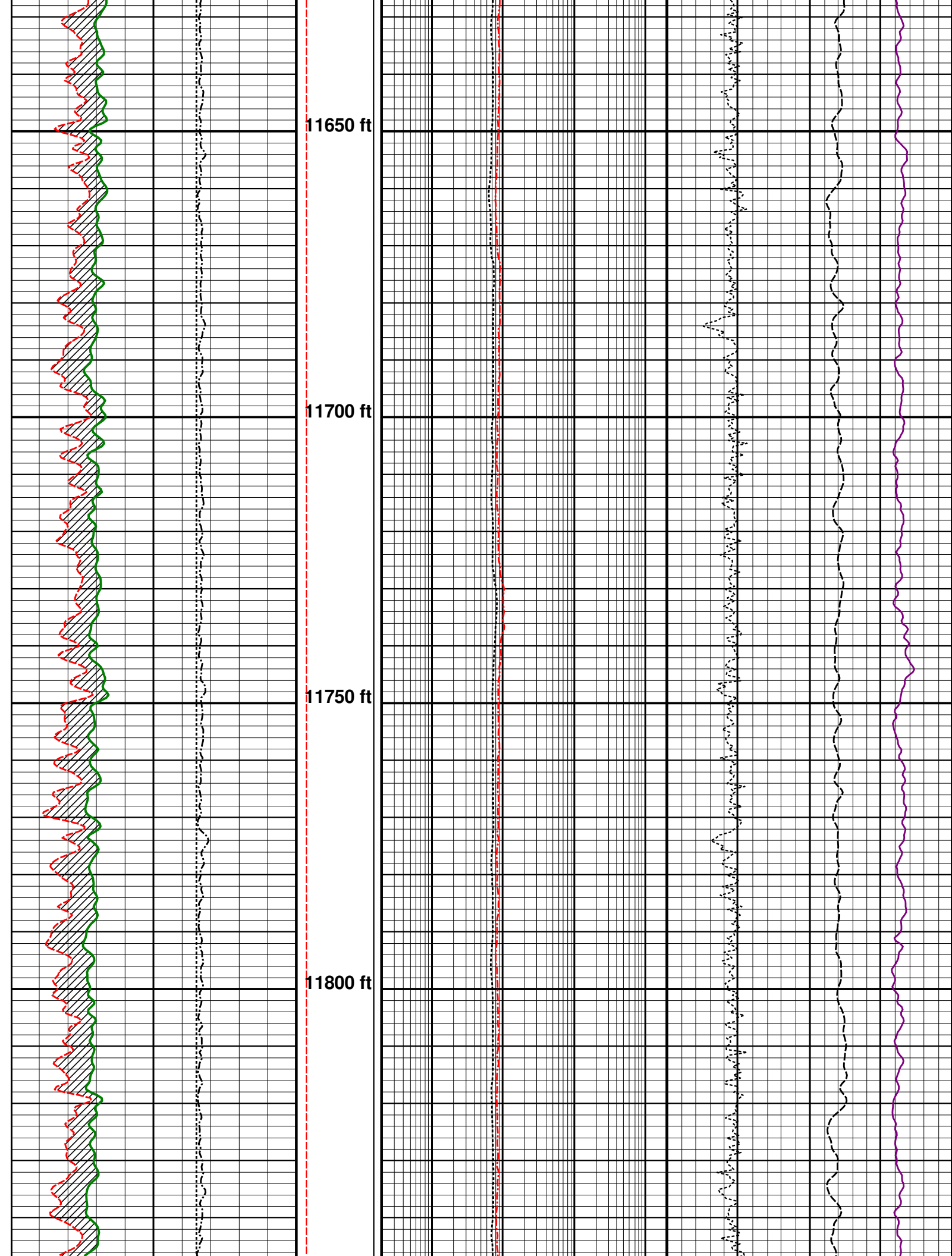
10750 ft
10800 ft
10850 ft
10900 ft
10950 ft

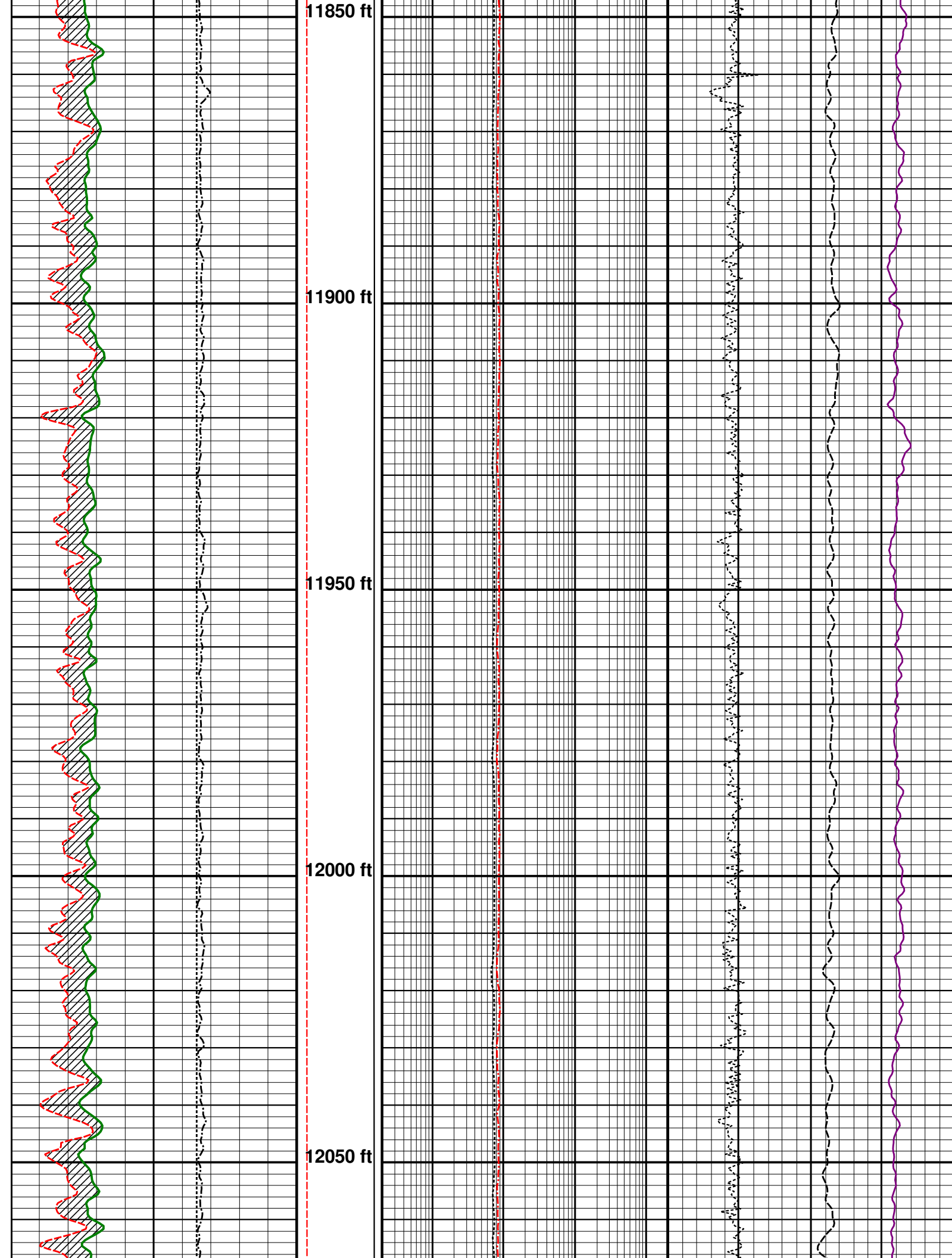


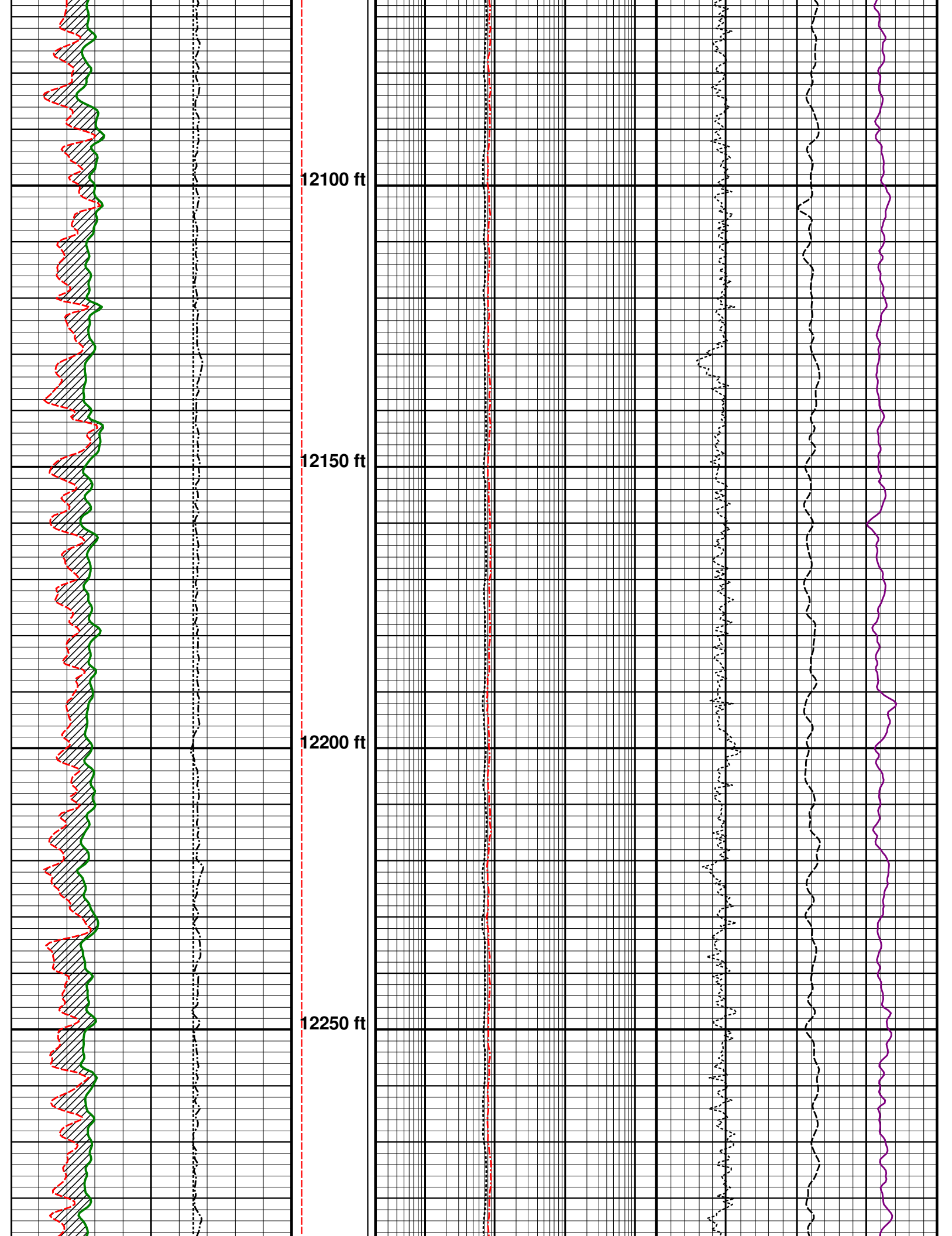


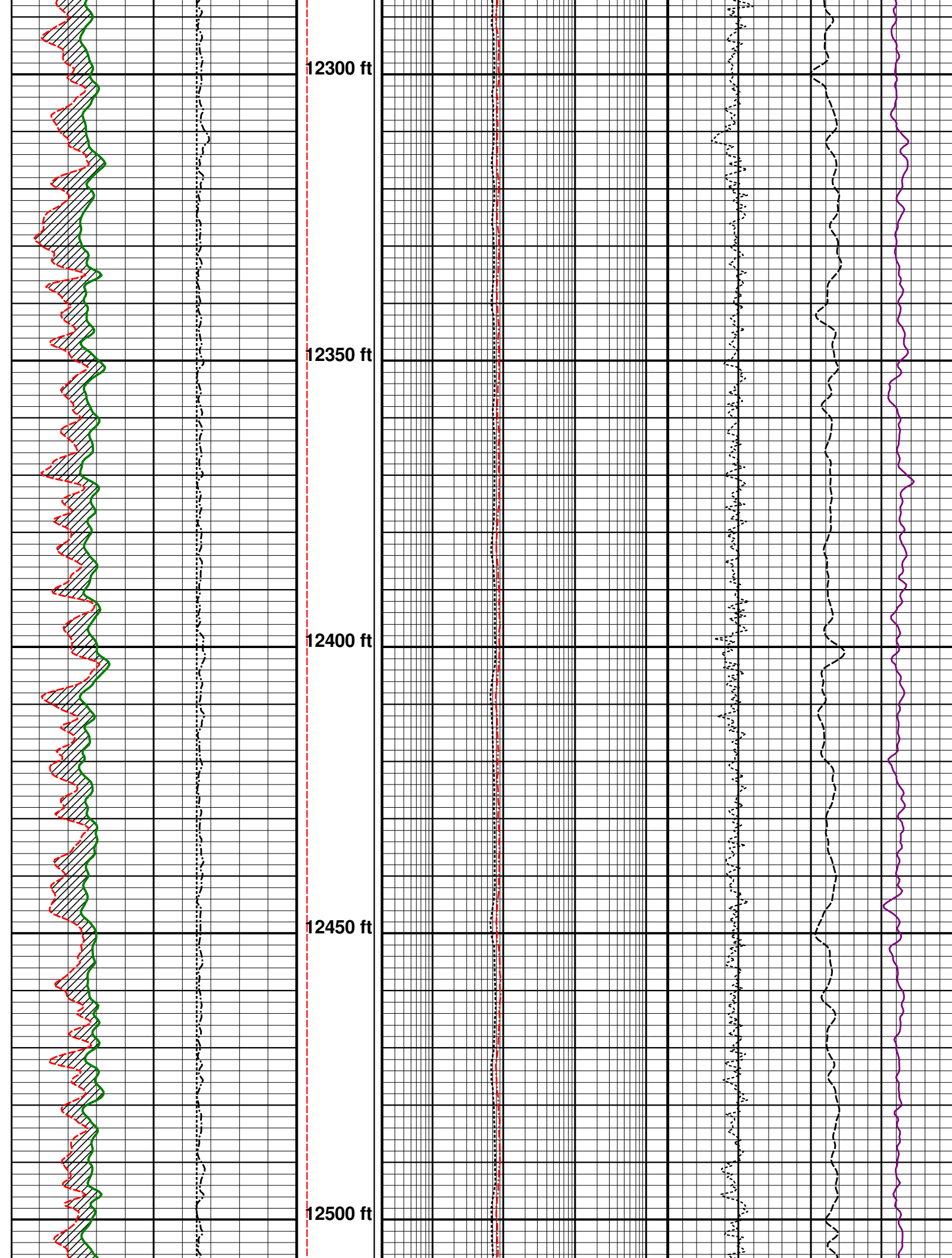


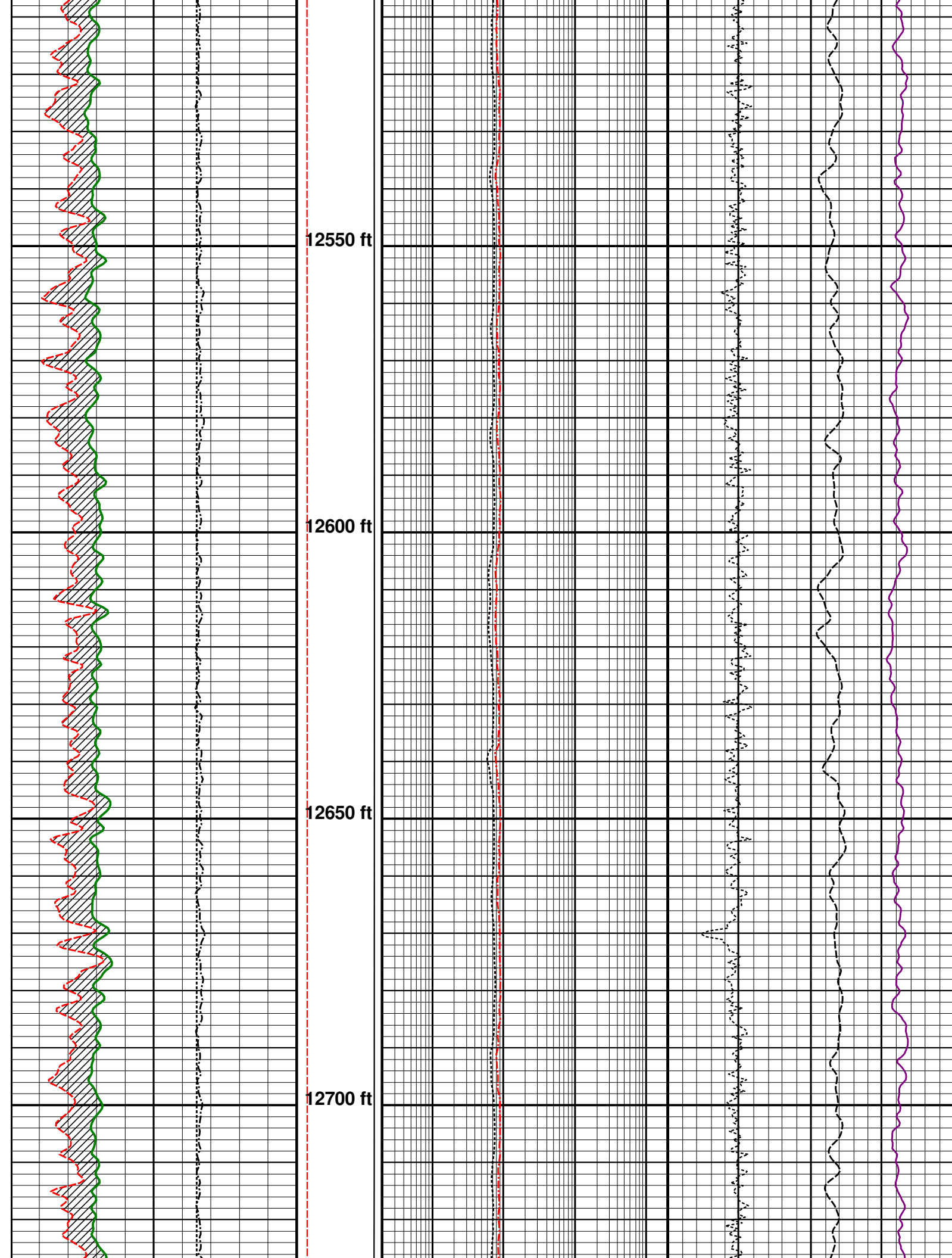


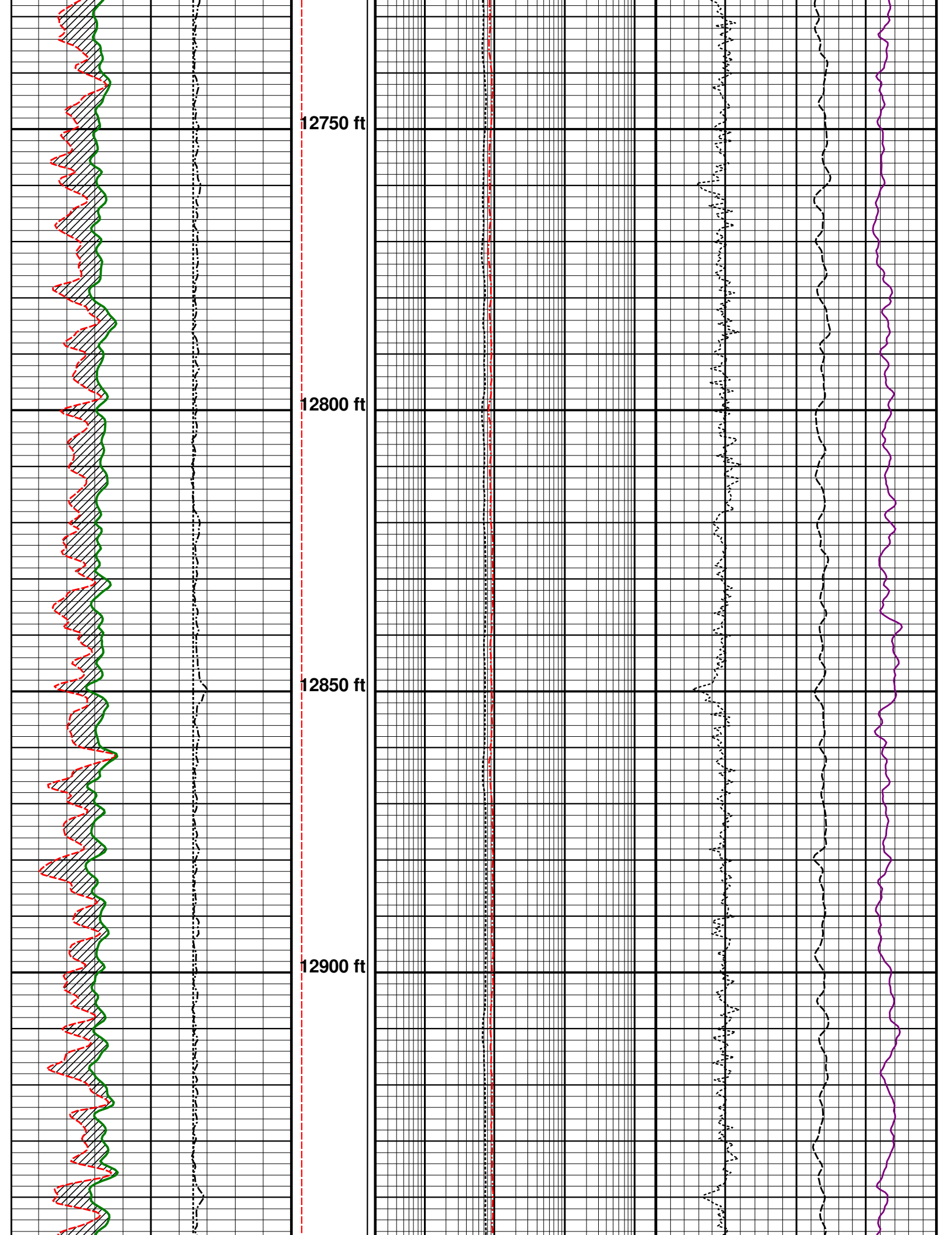


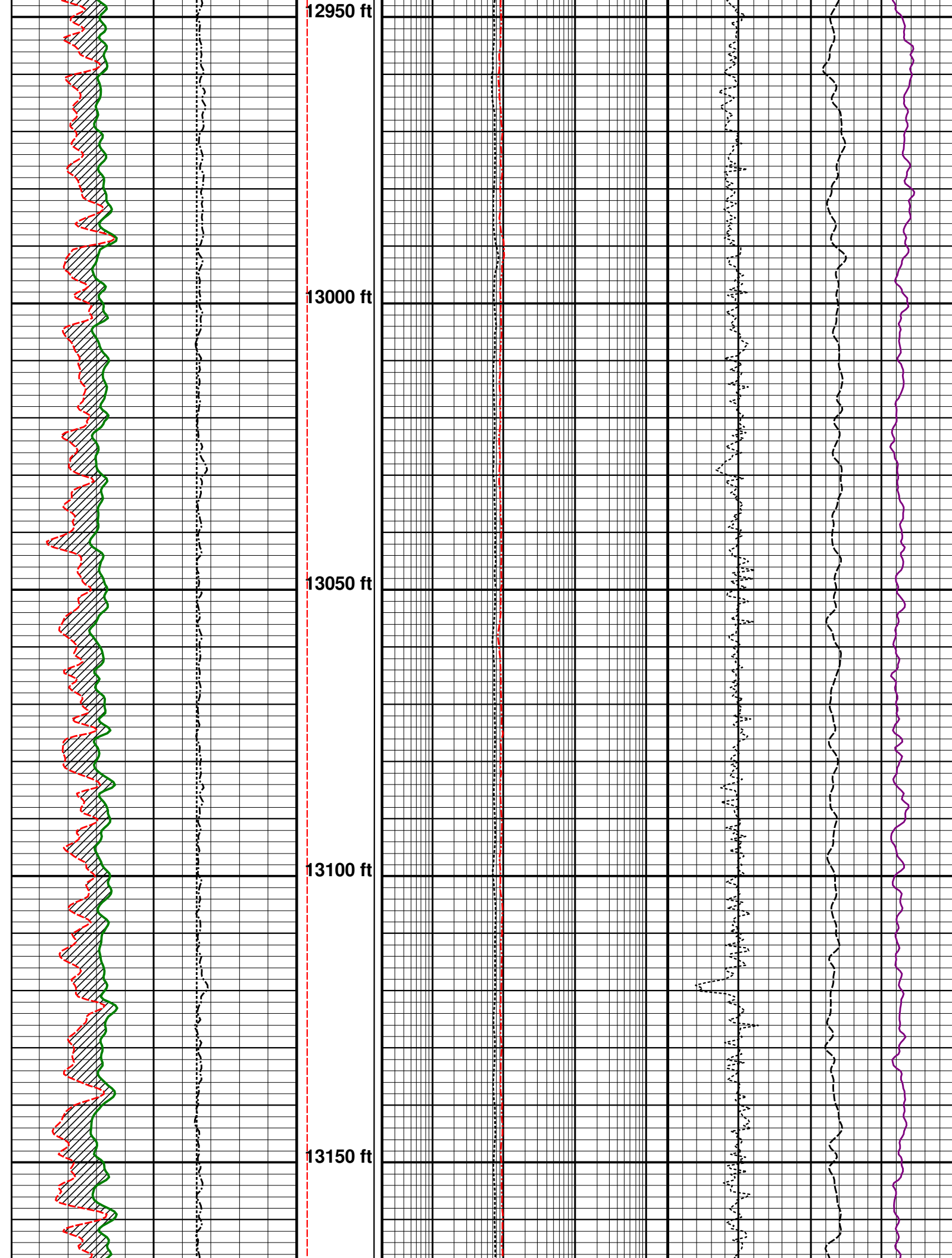


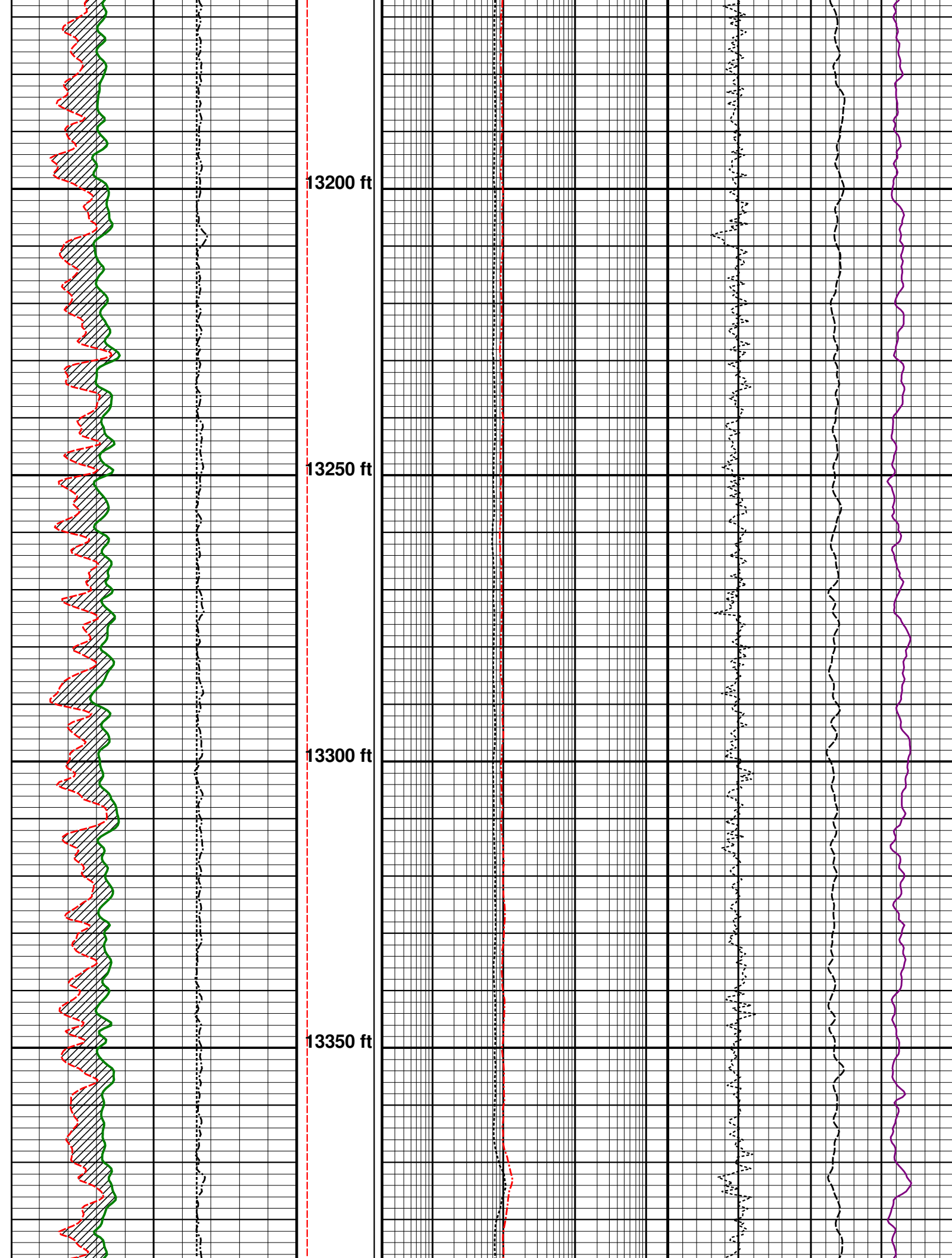


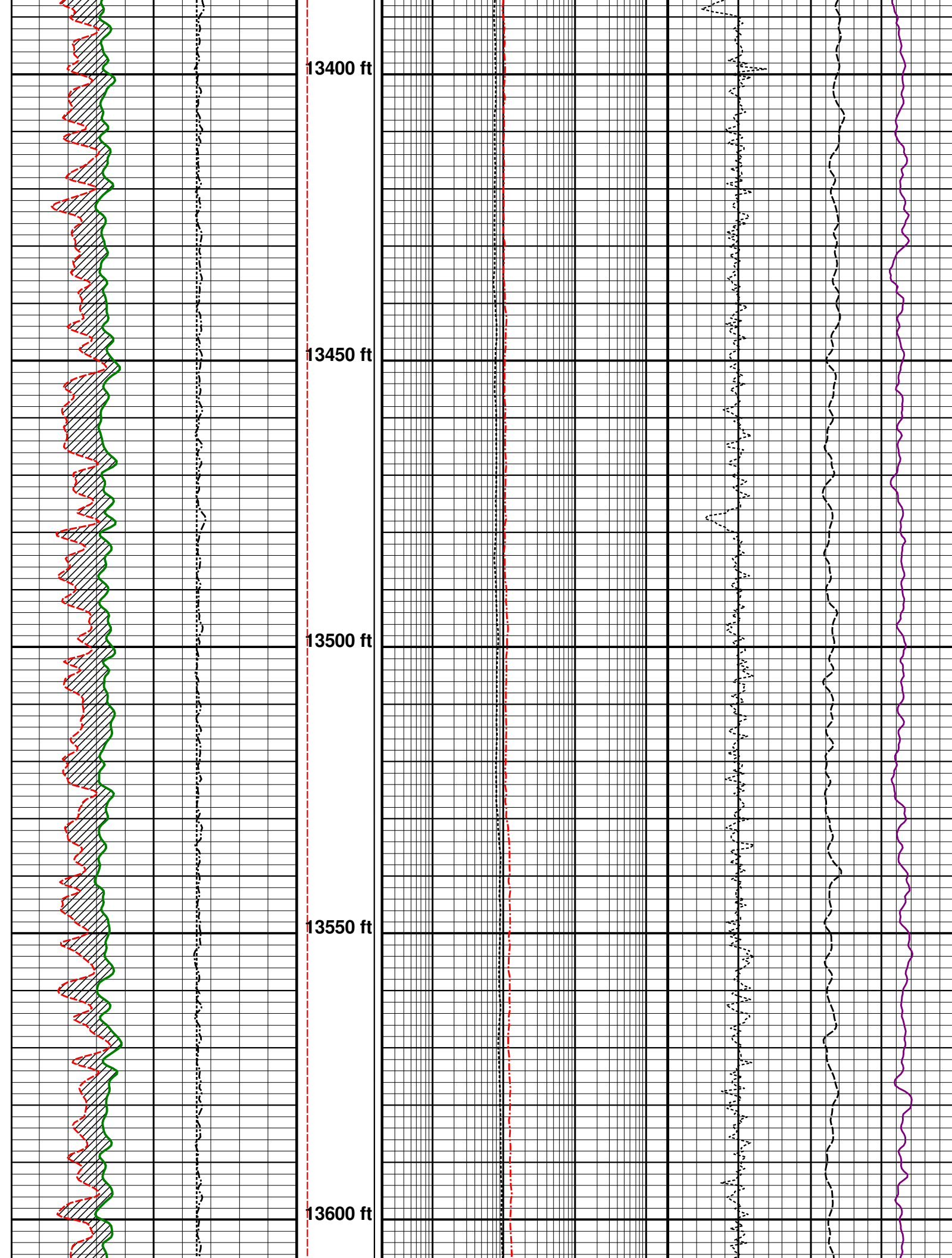


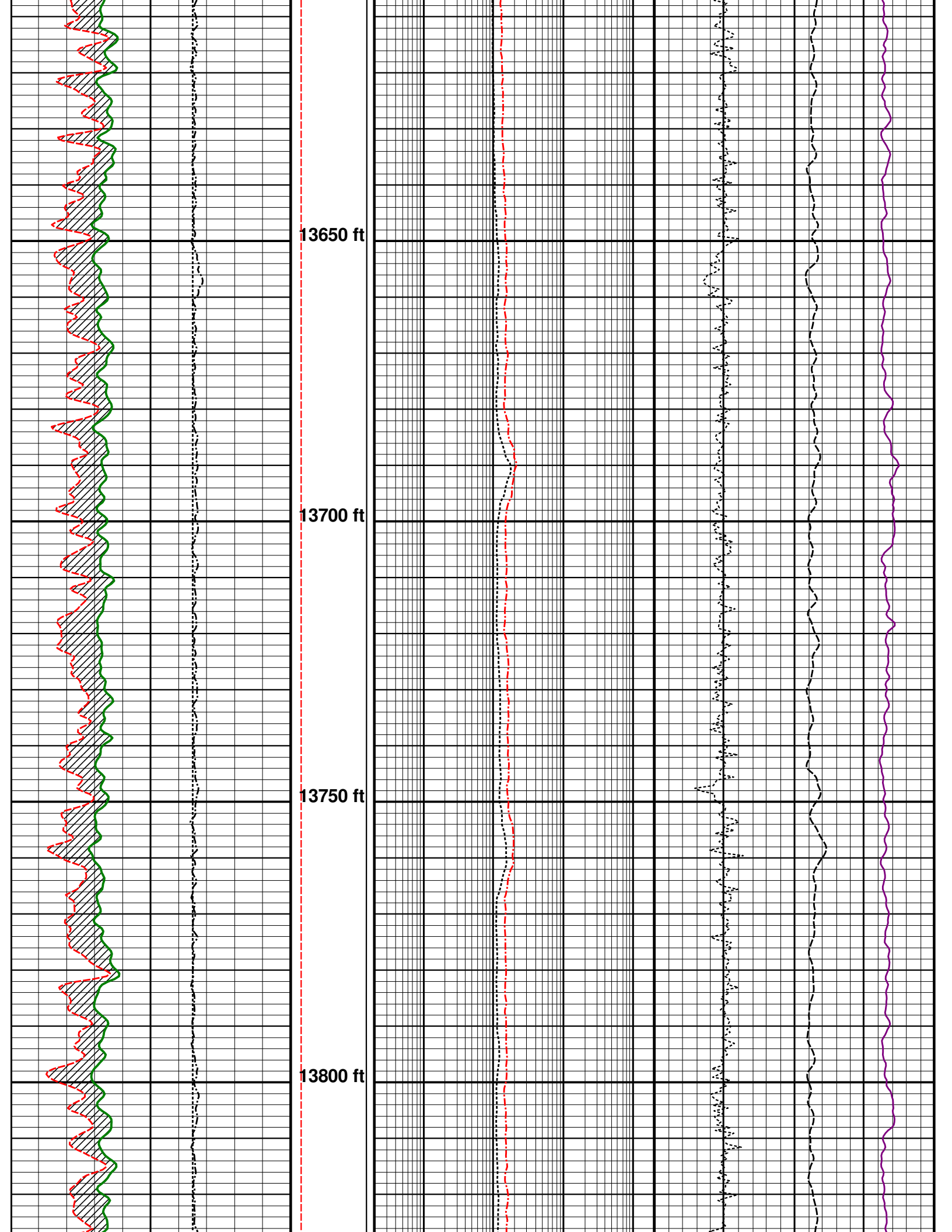


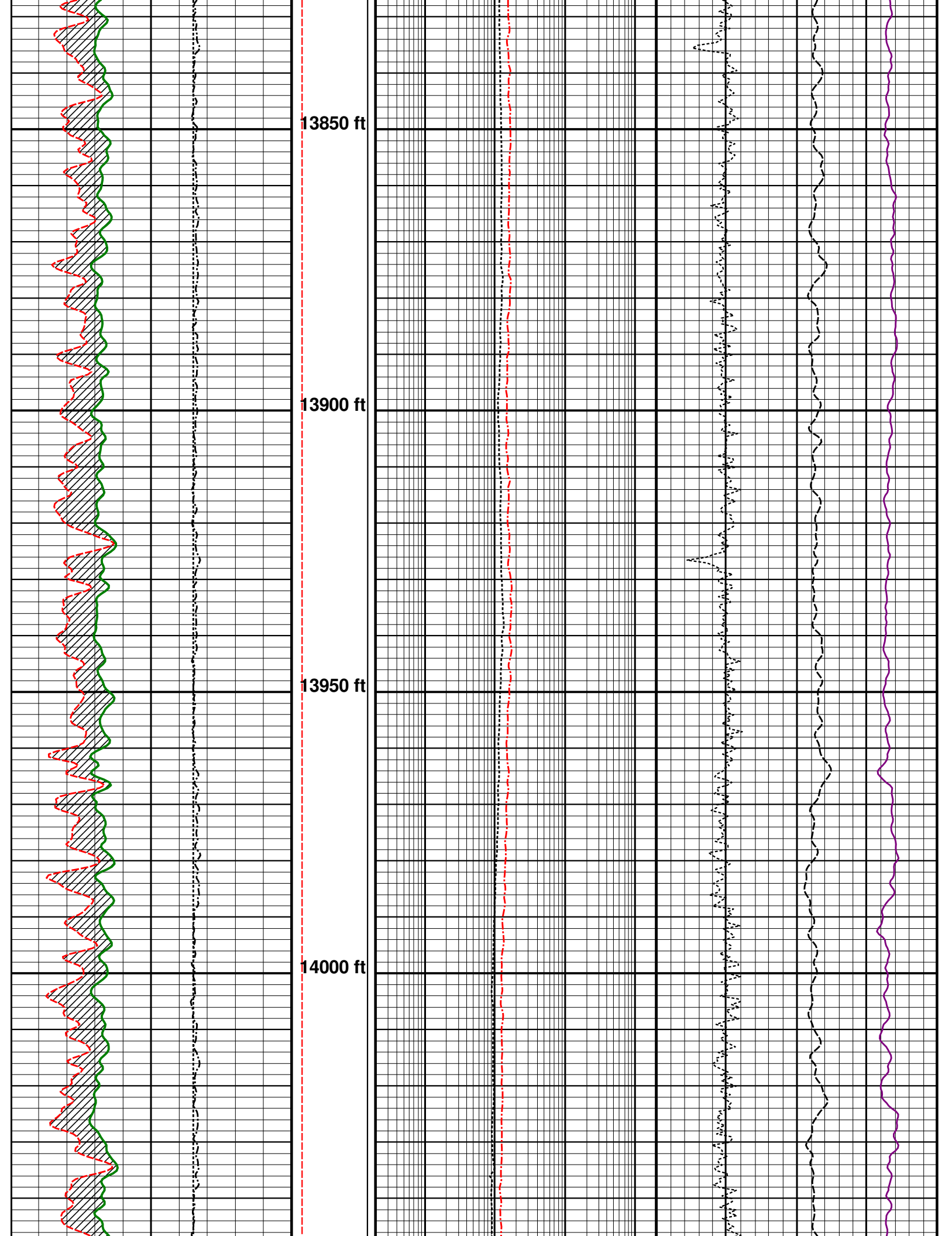


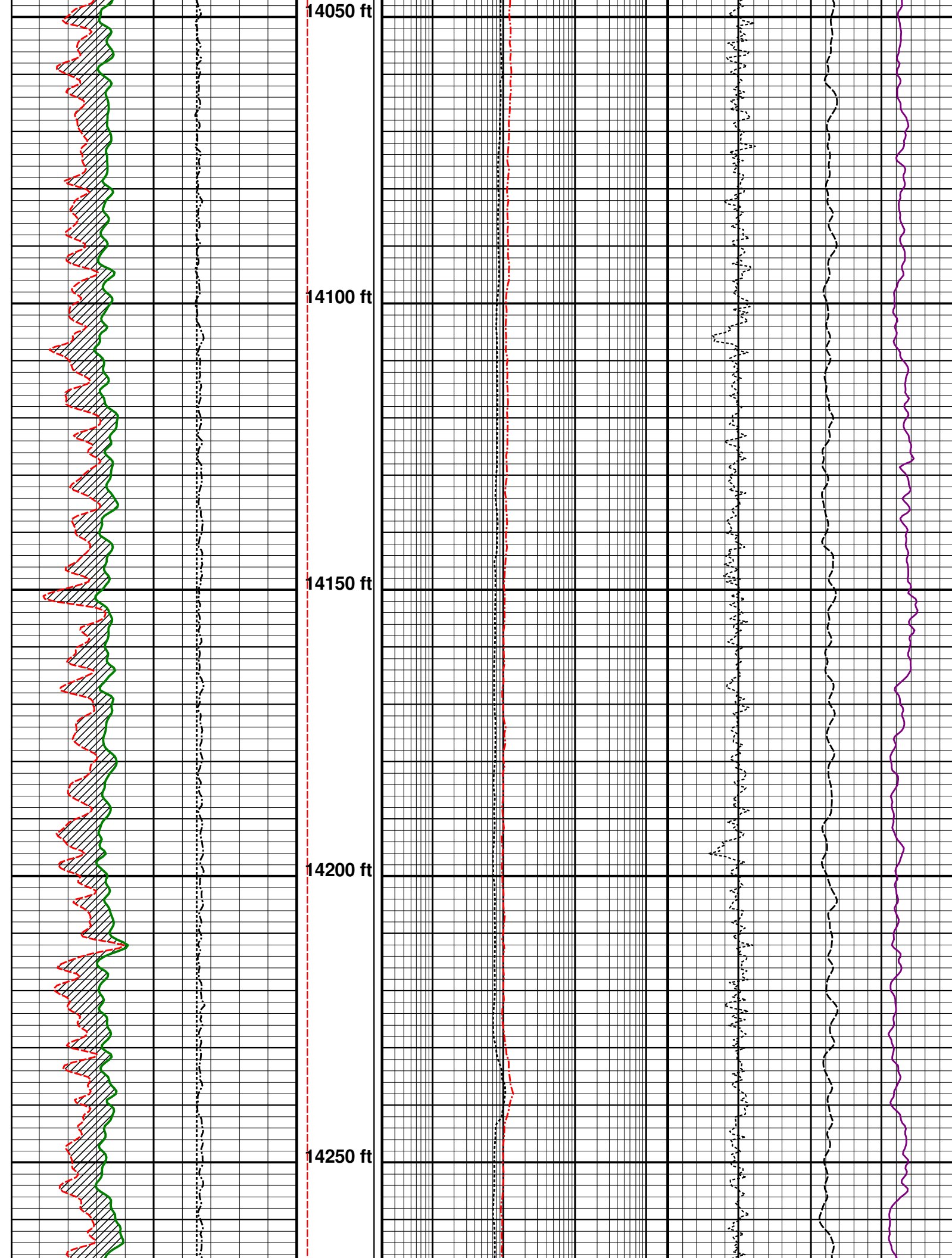


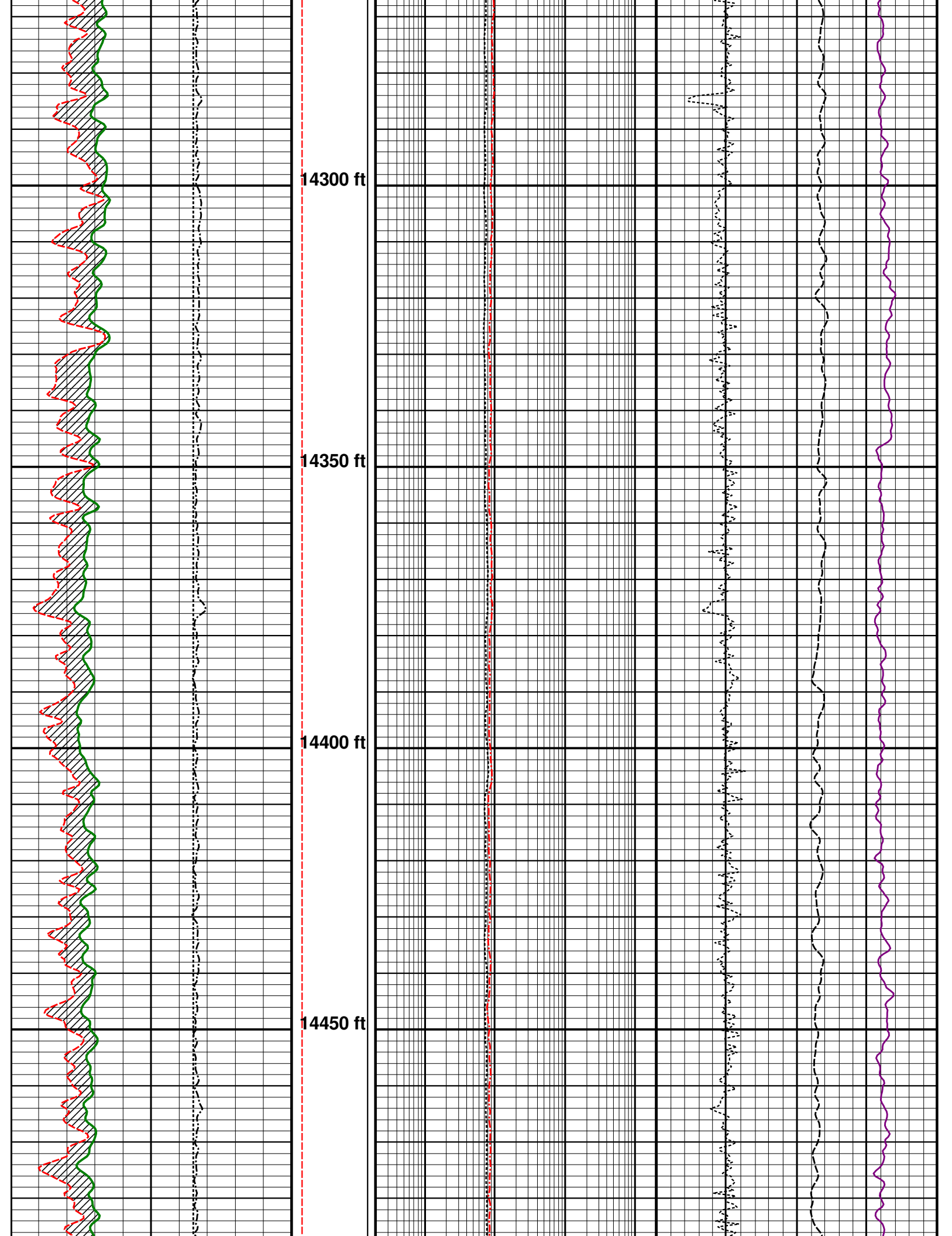


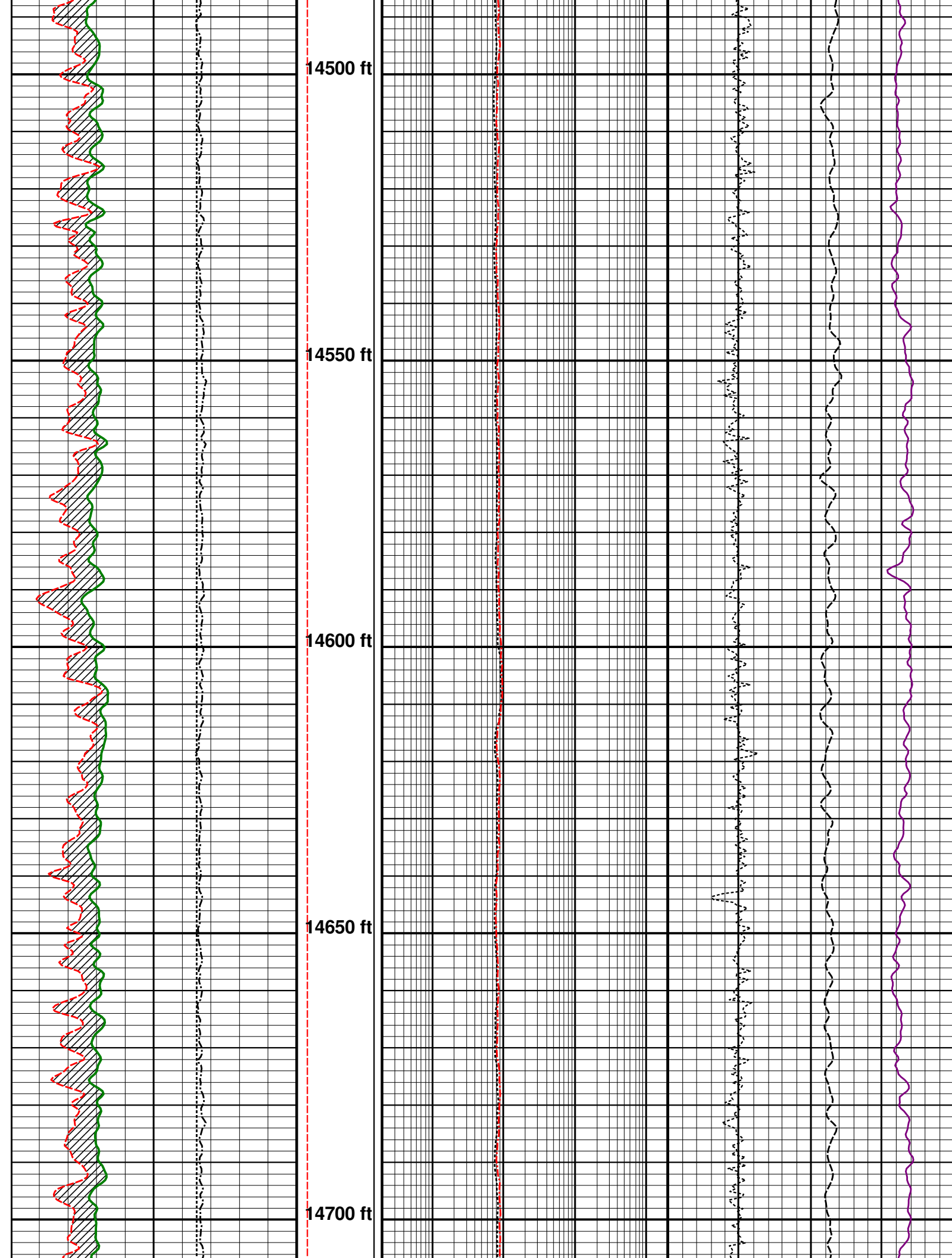


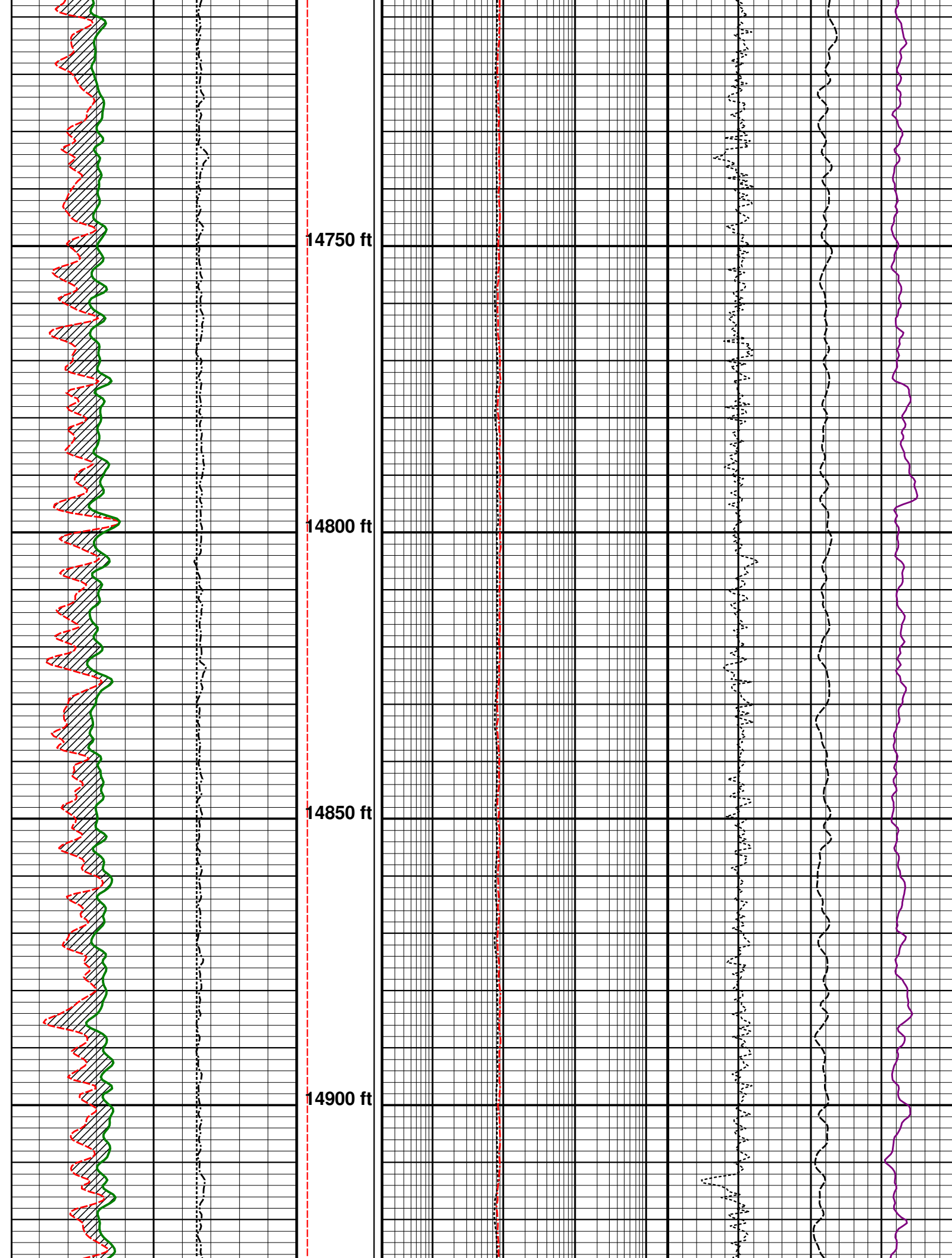


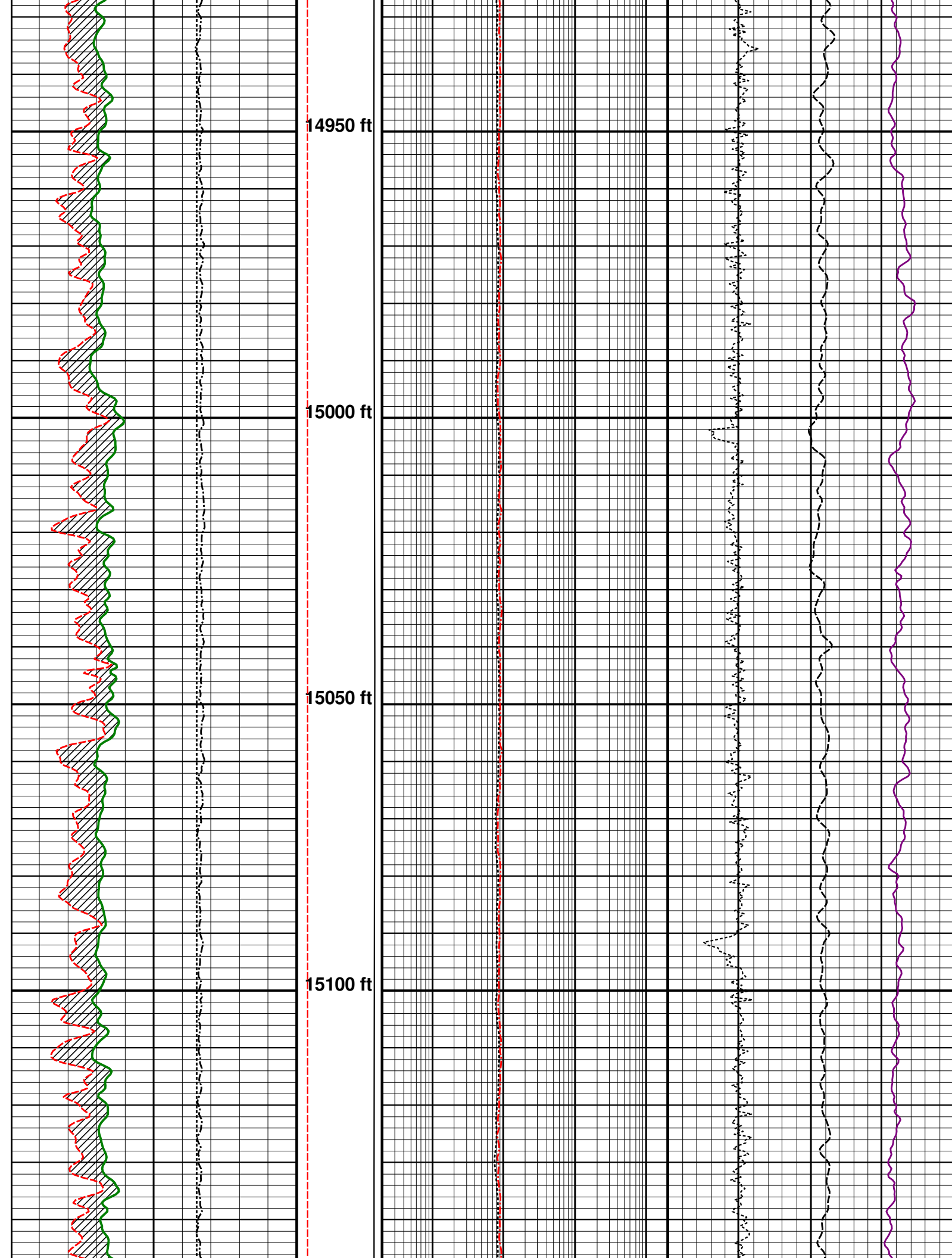


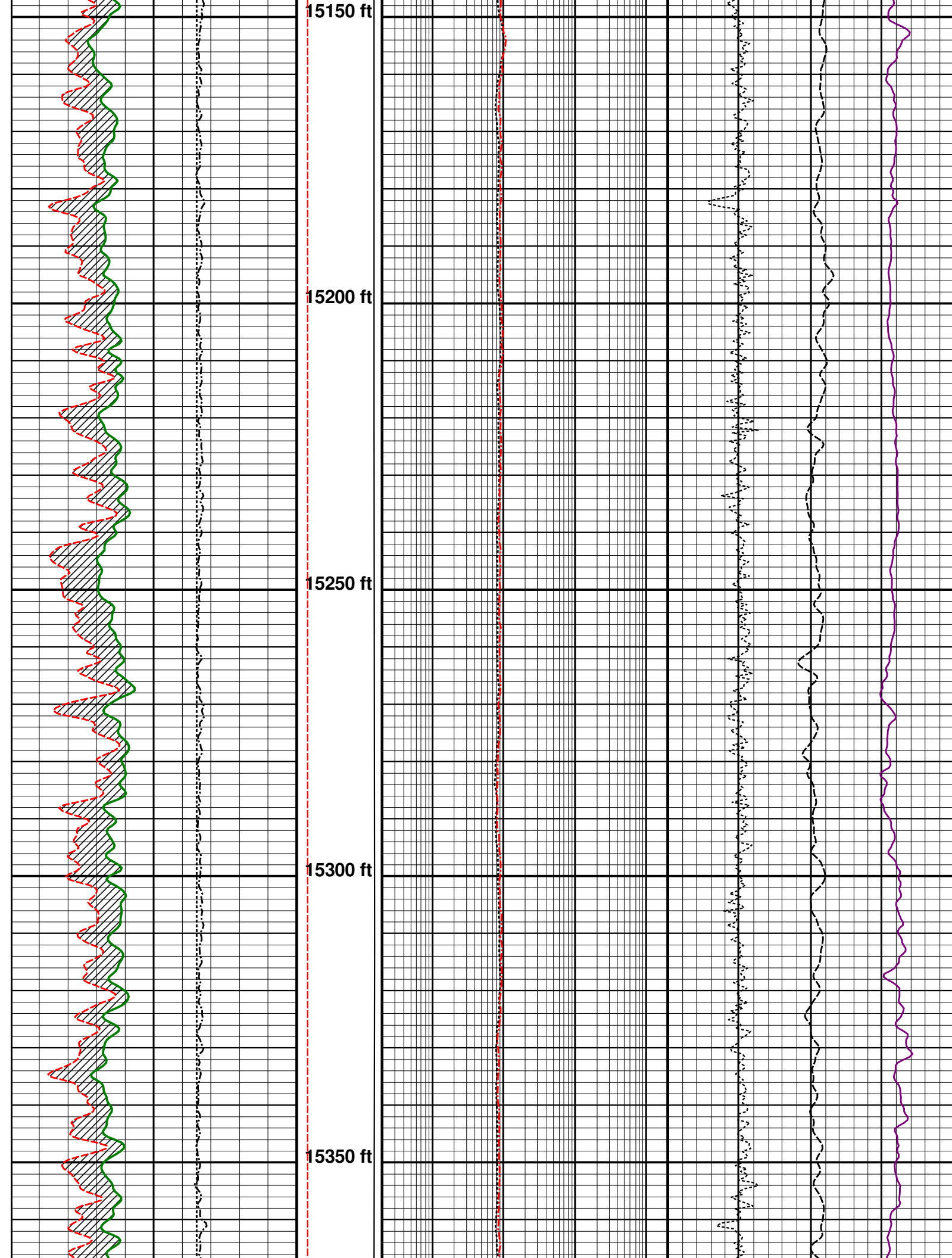


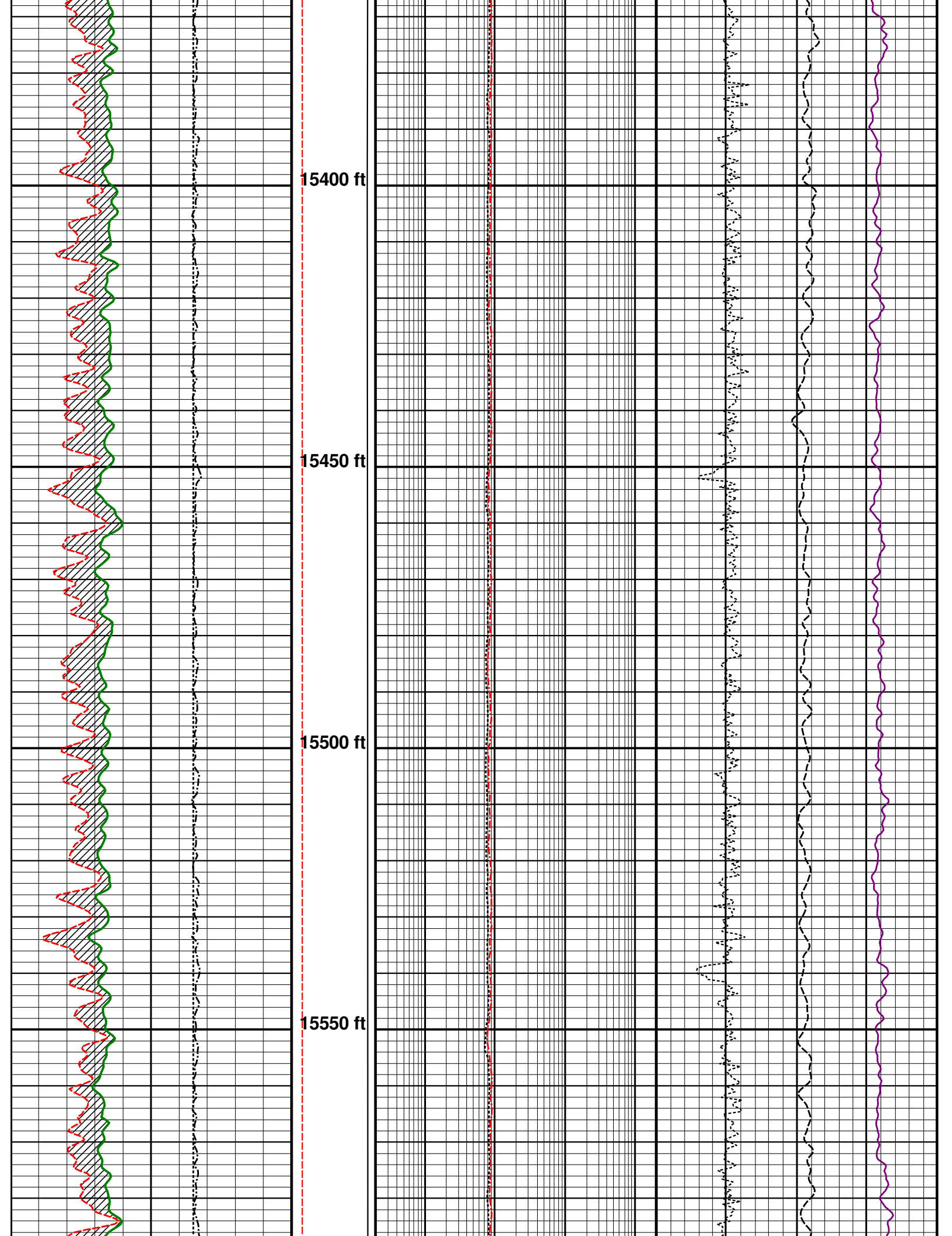


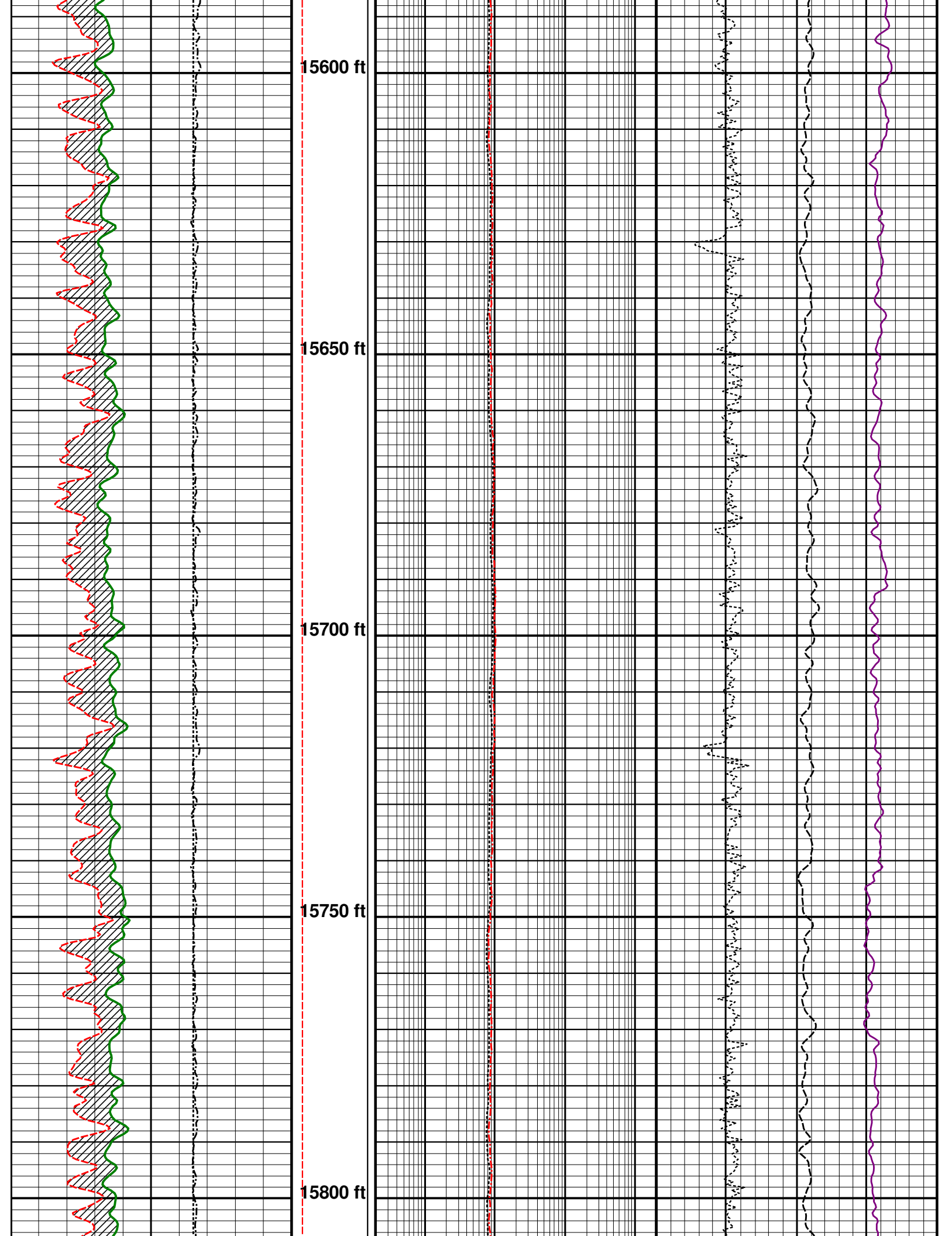


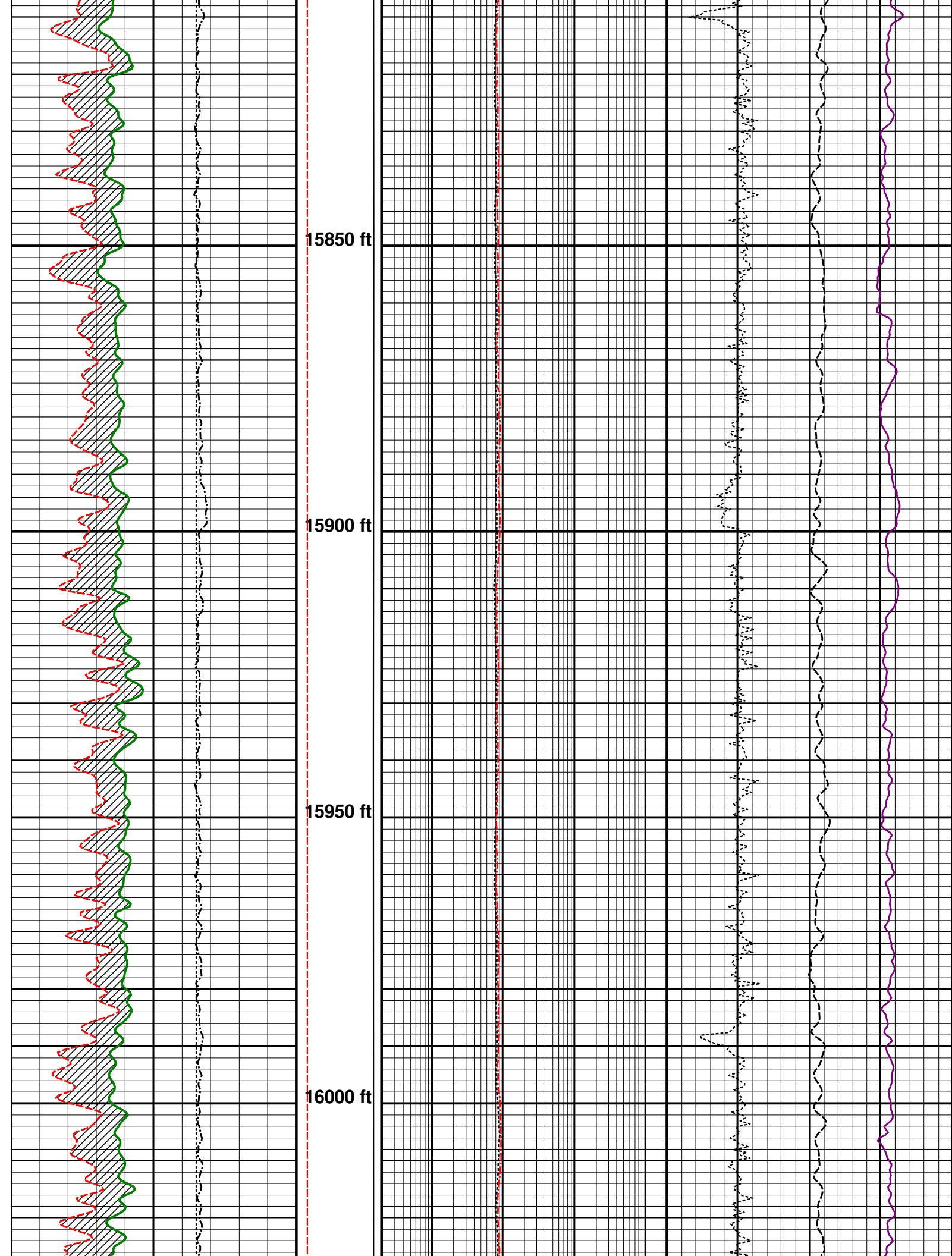


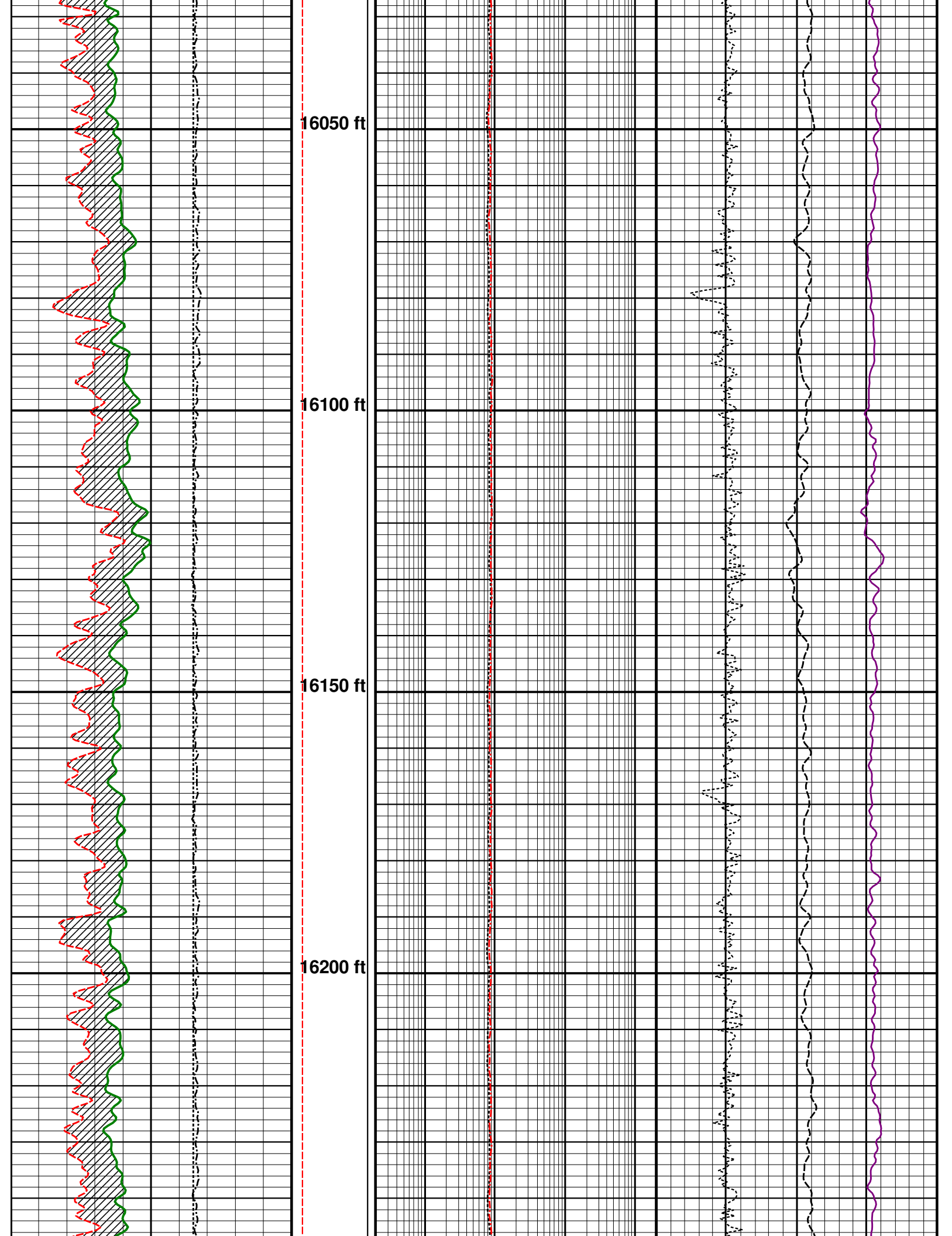


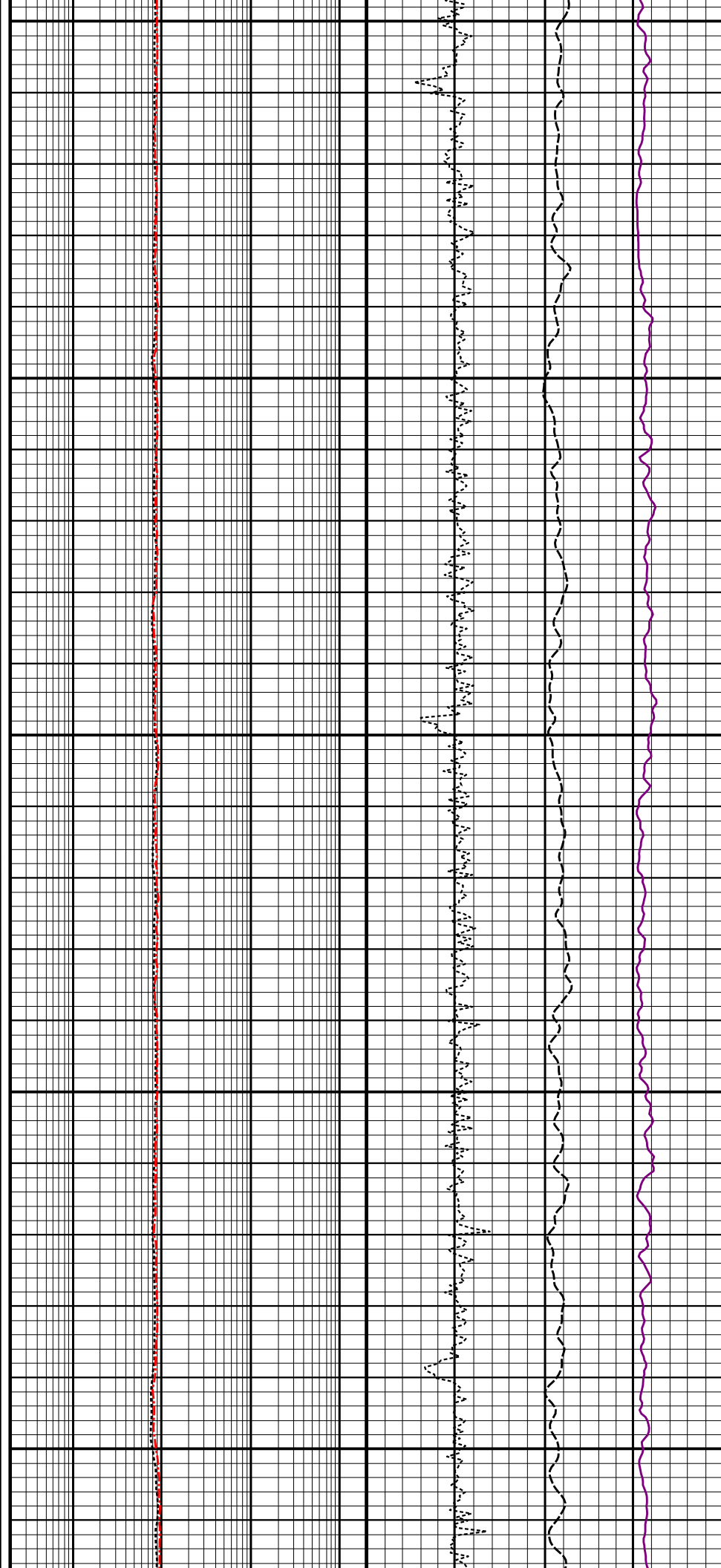
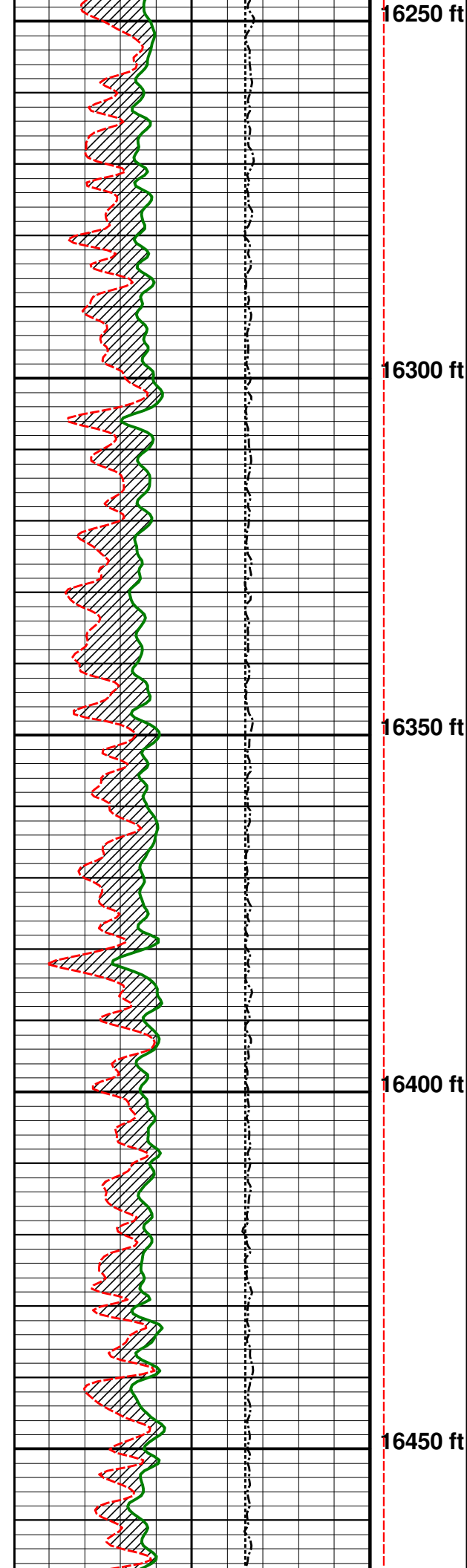


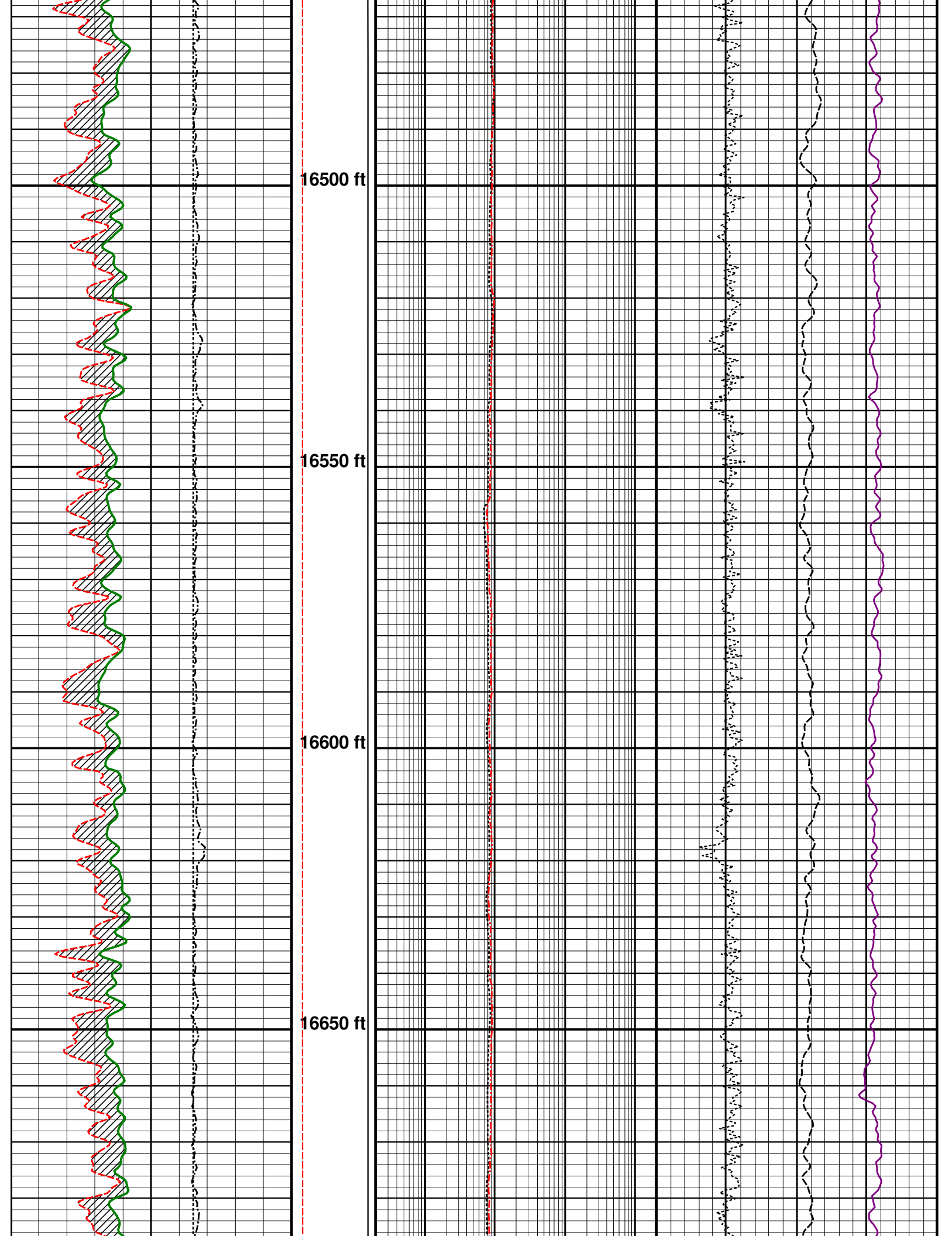


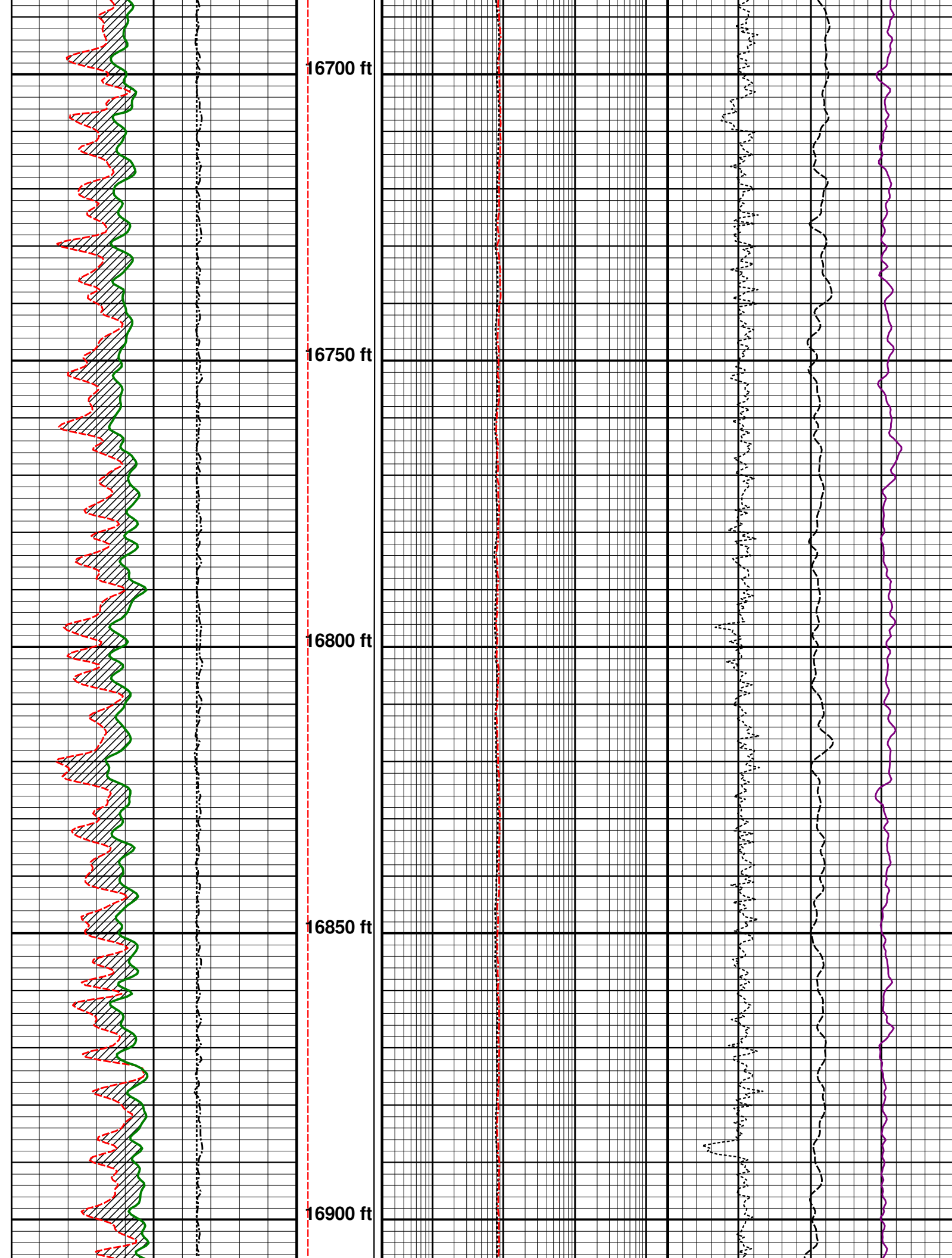


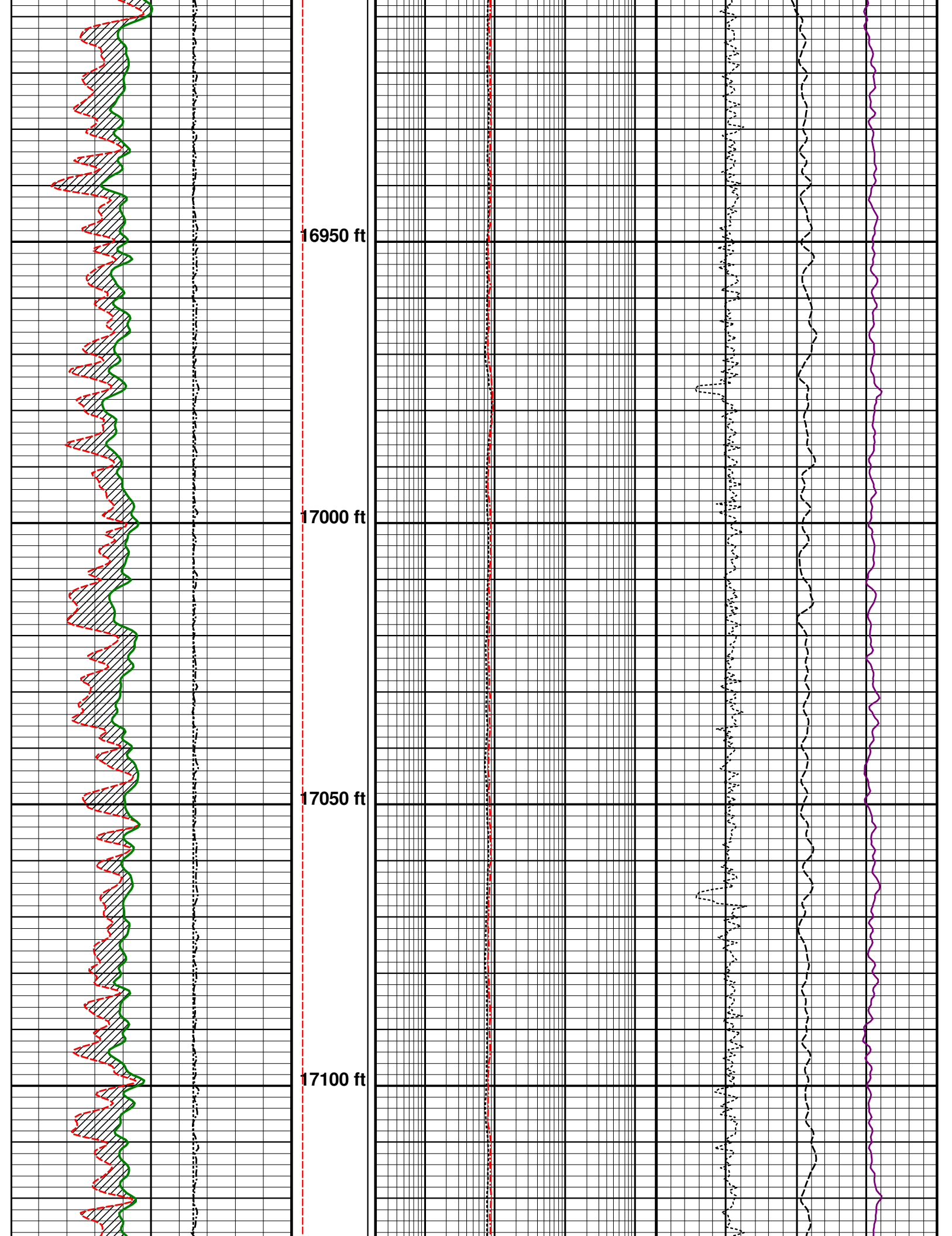


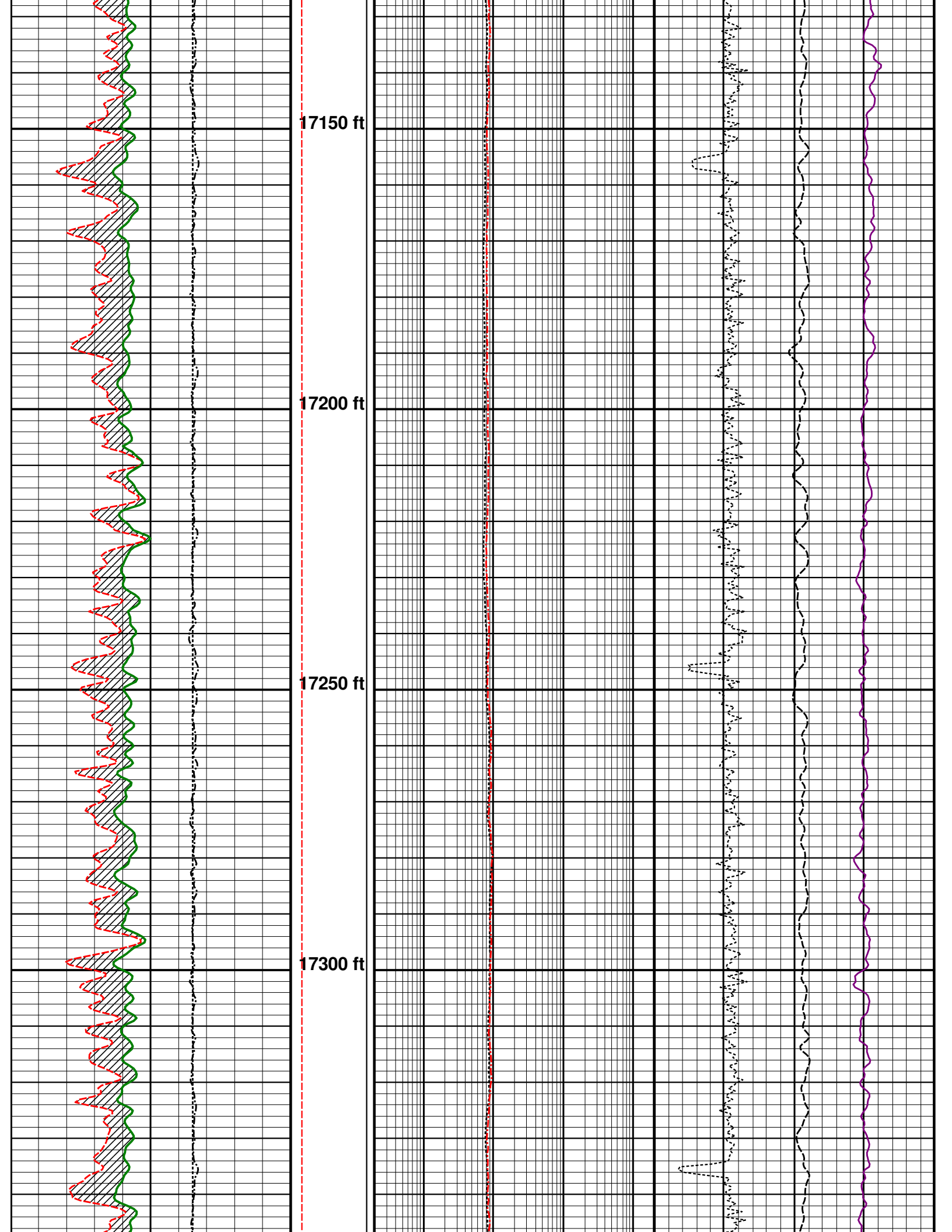


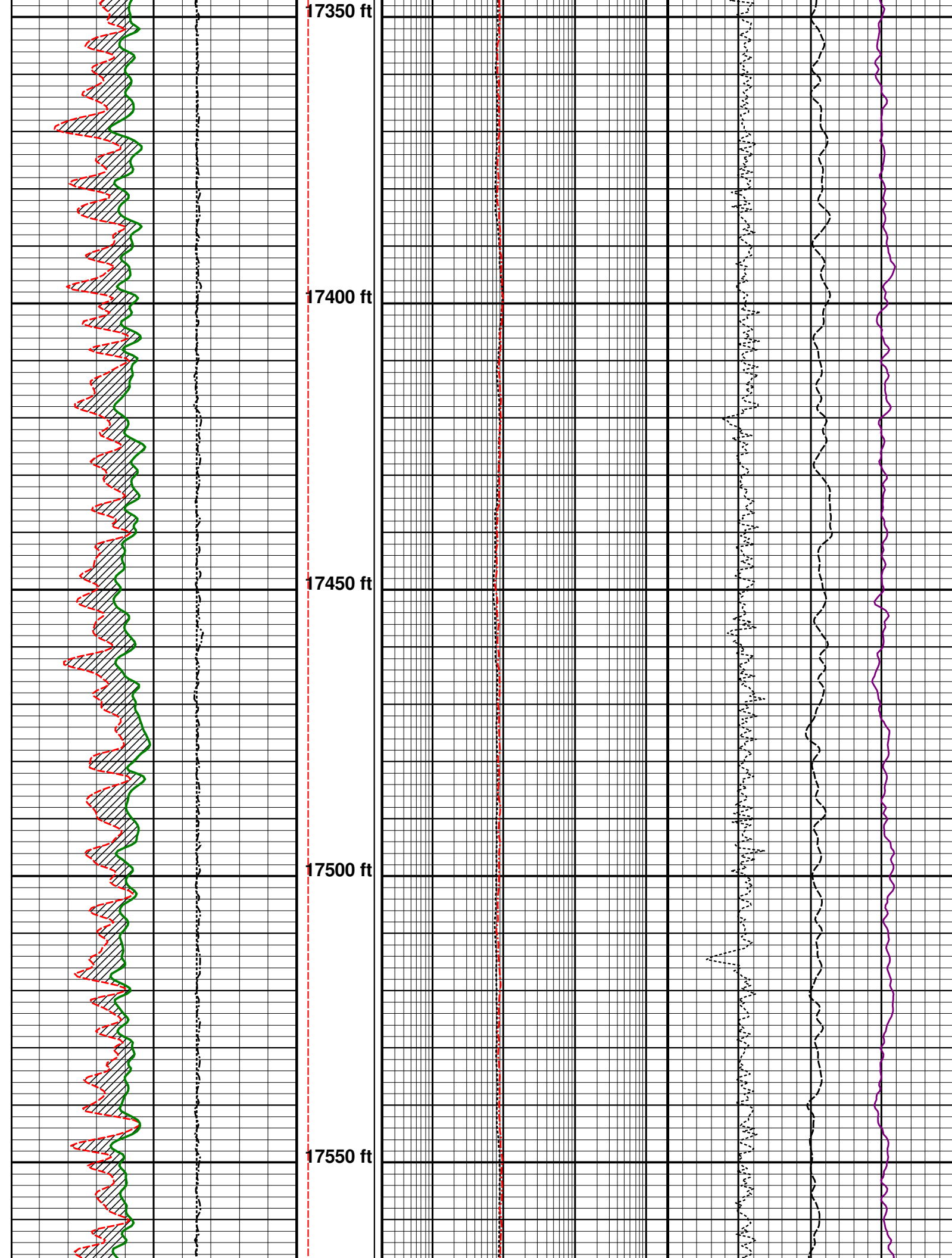


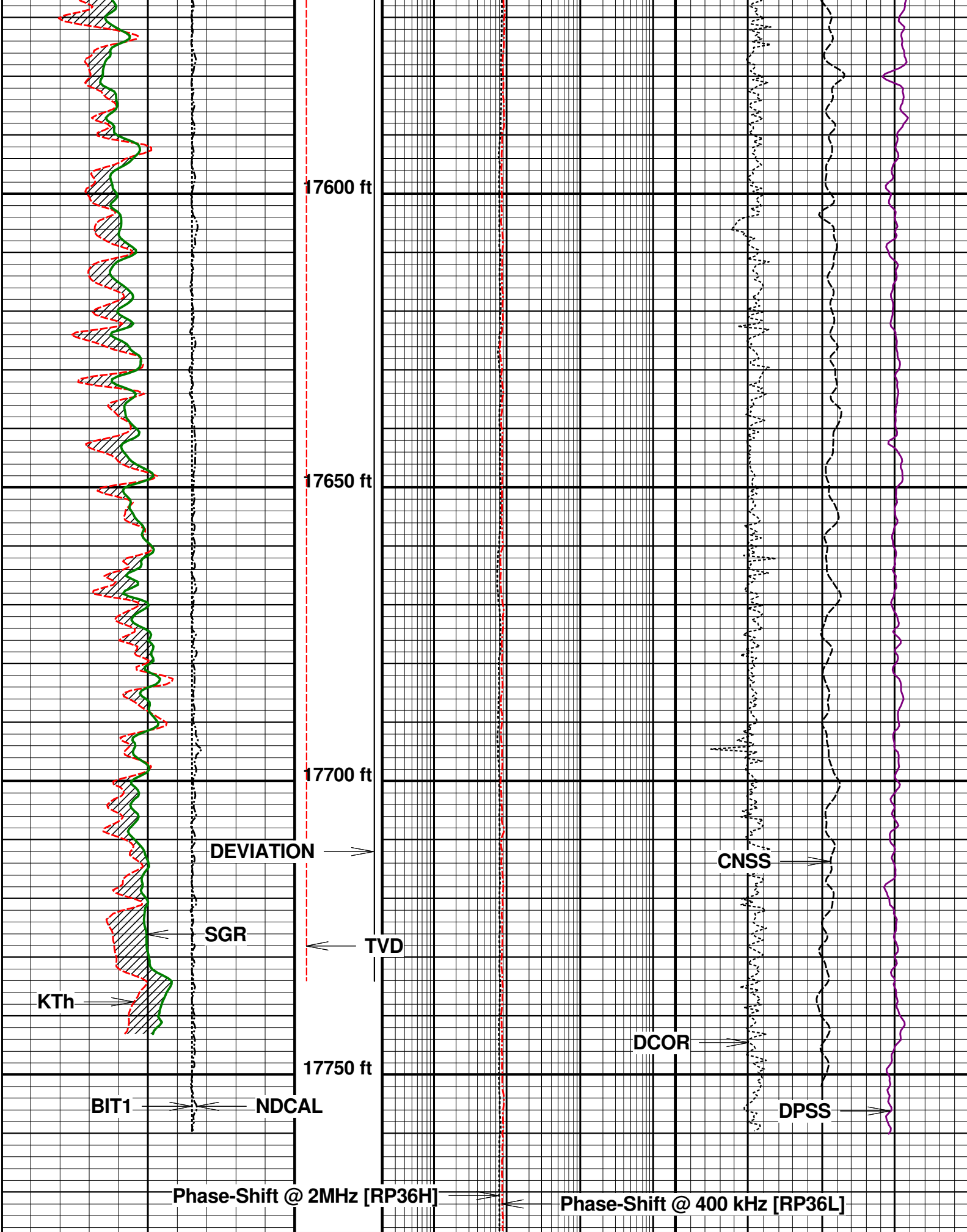


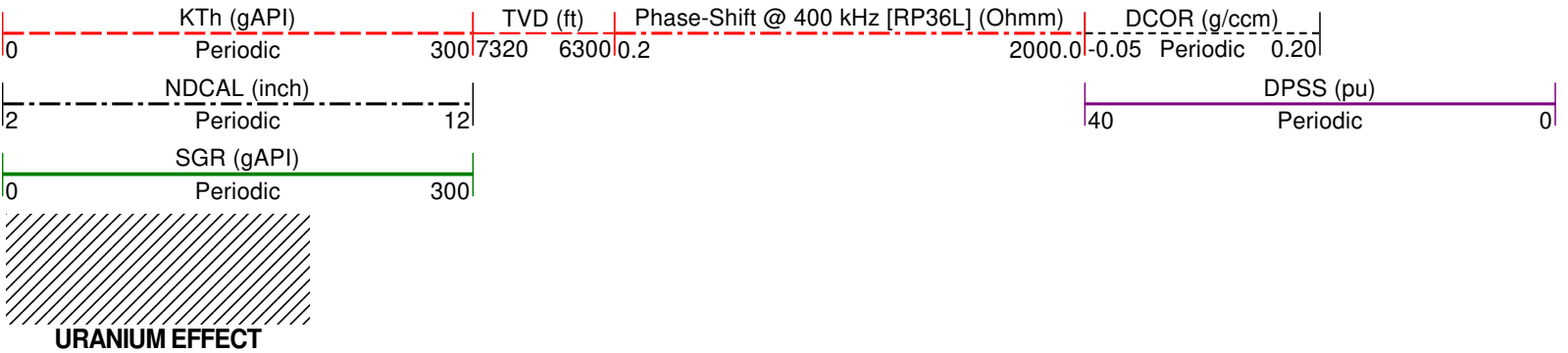






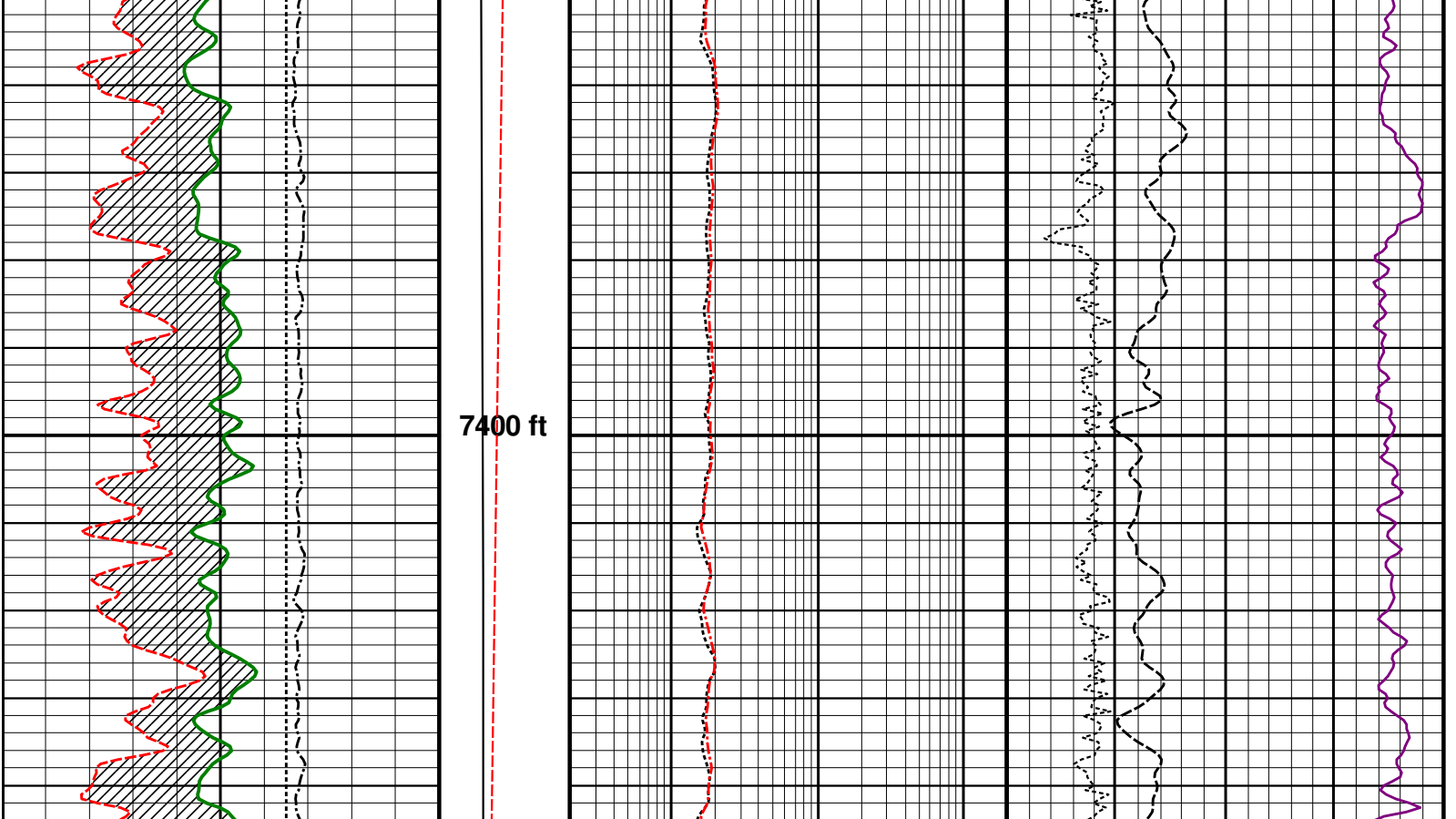
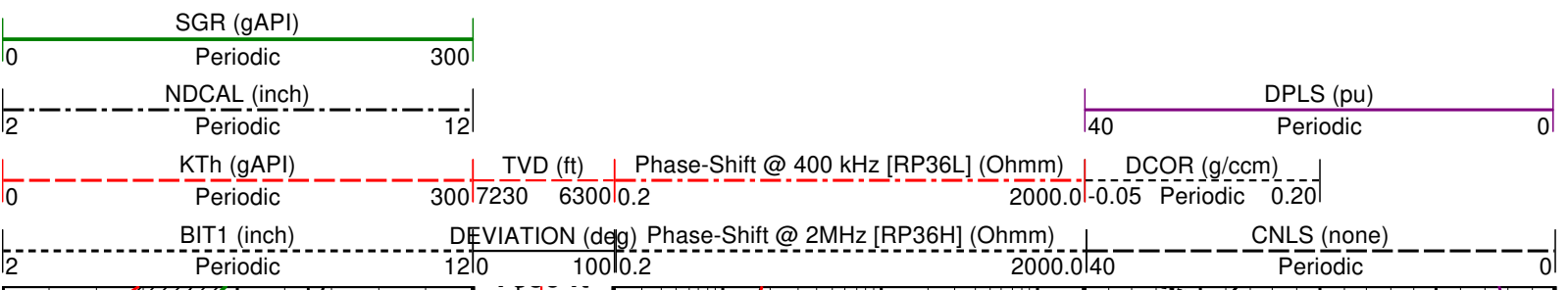


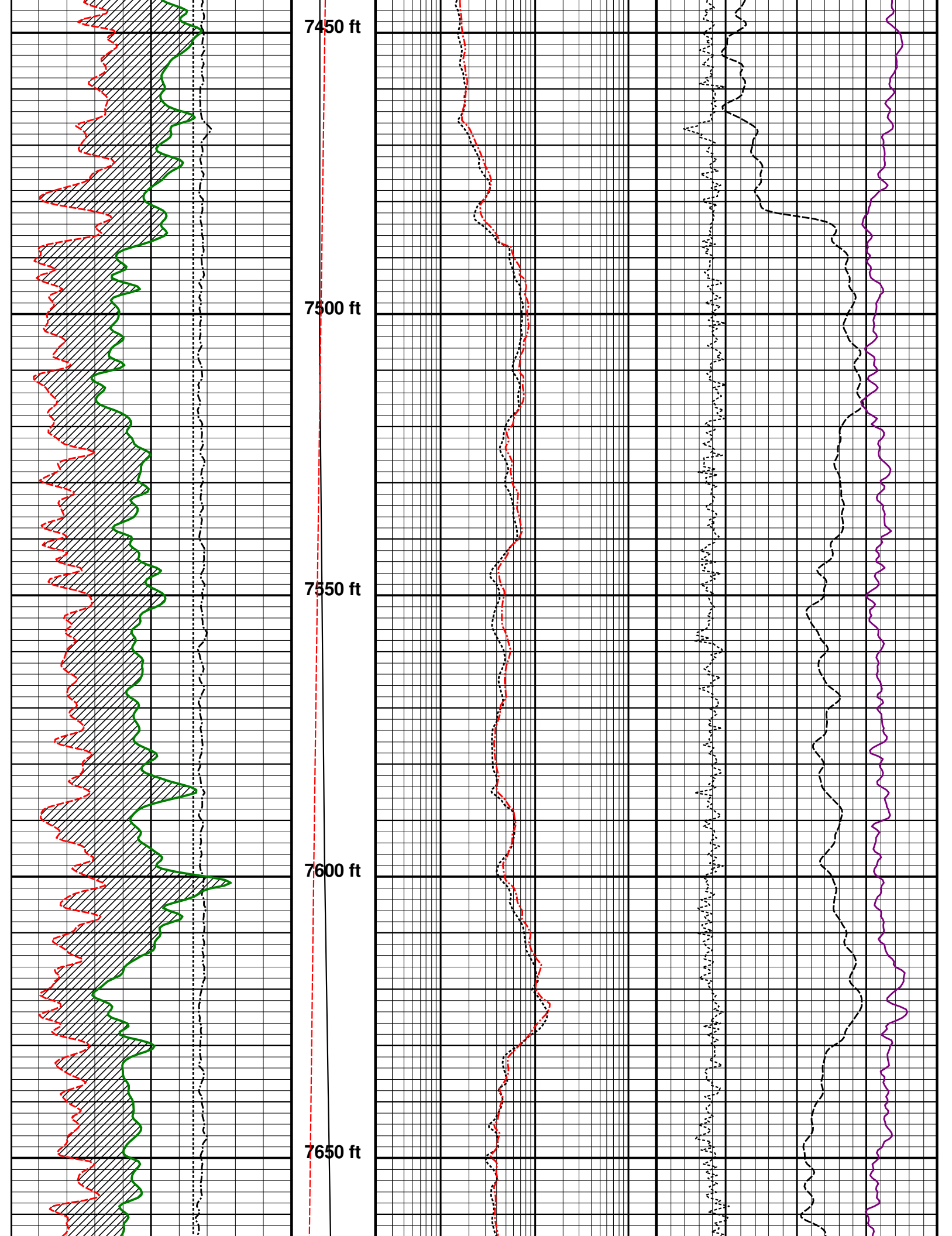


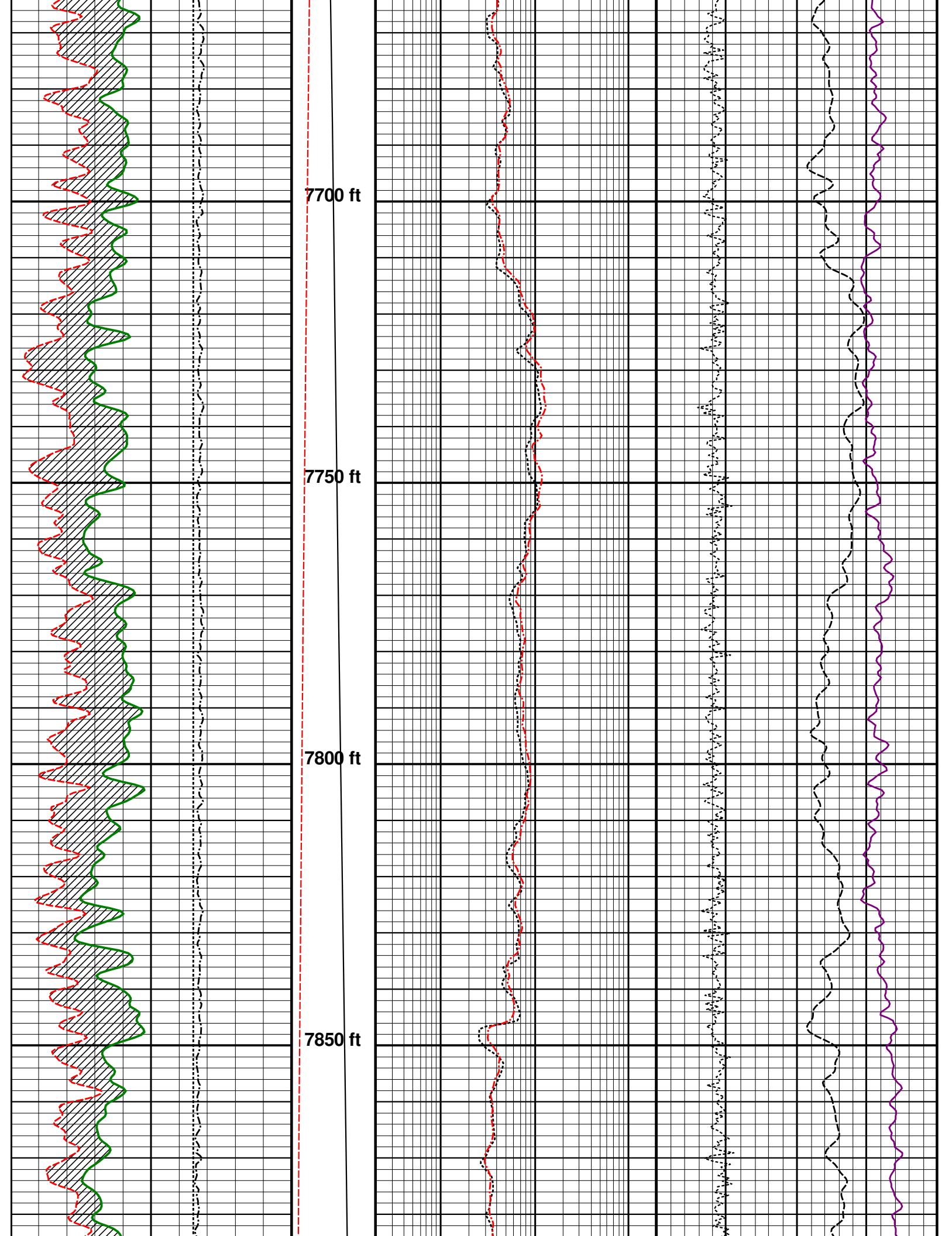


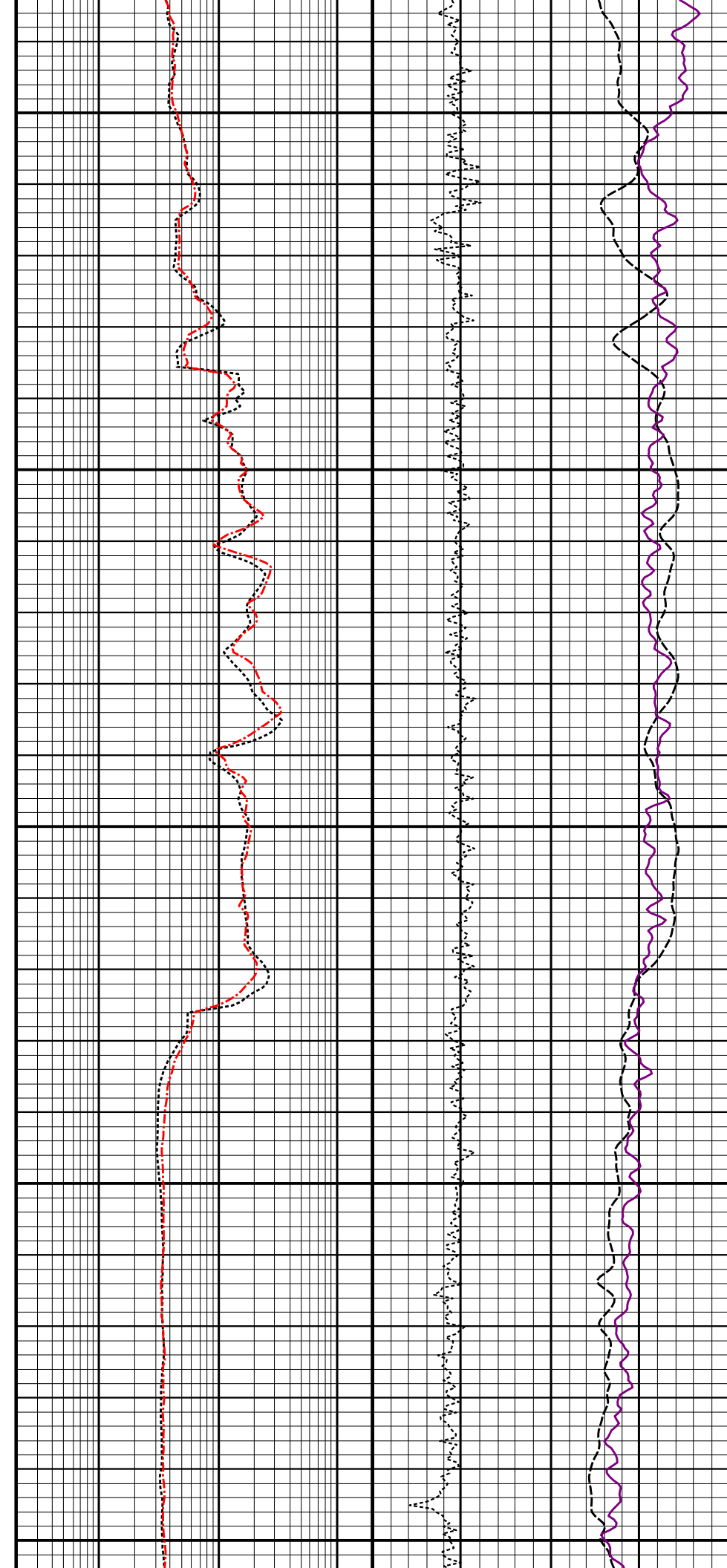
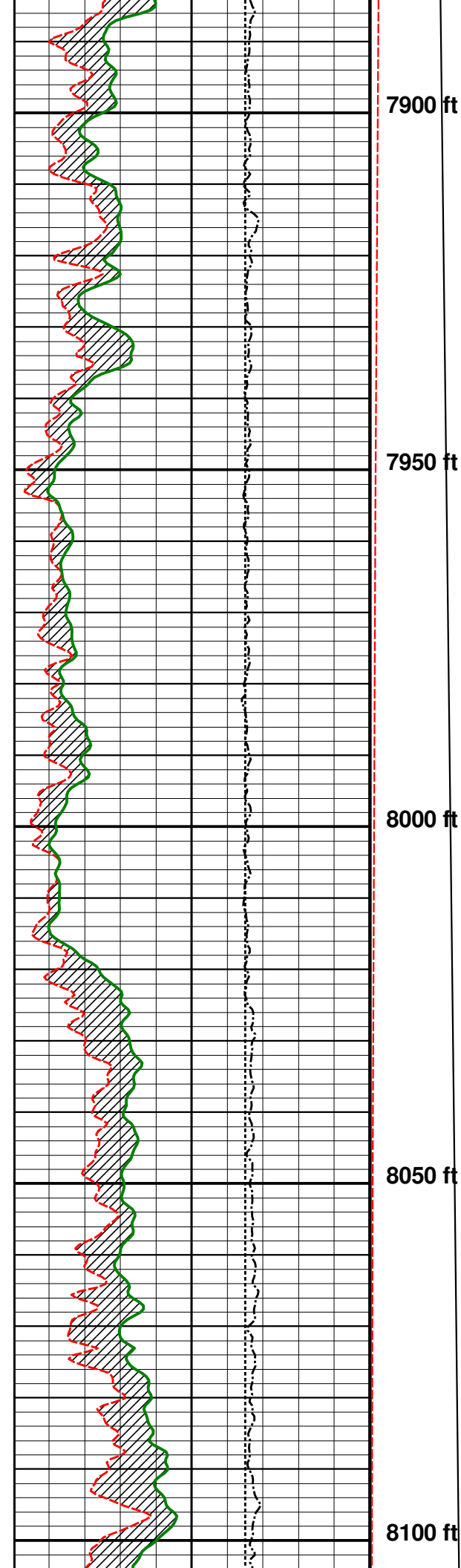
5" MAIN PASS LIMESTONE

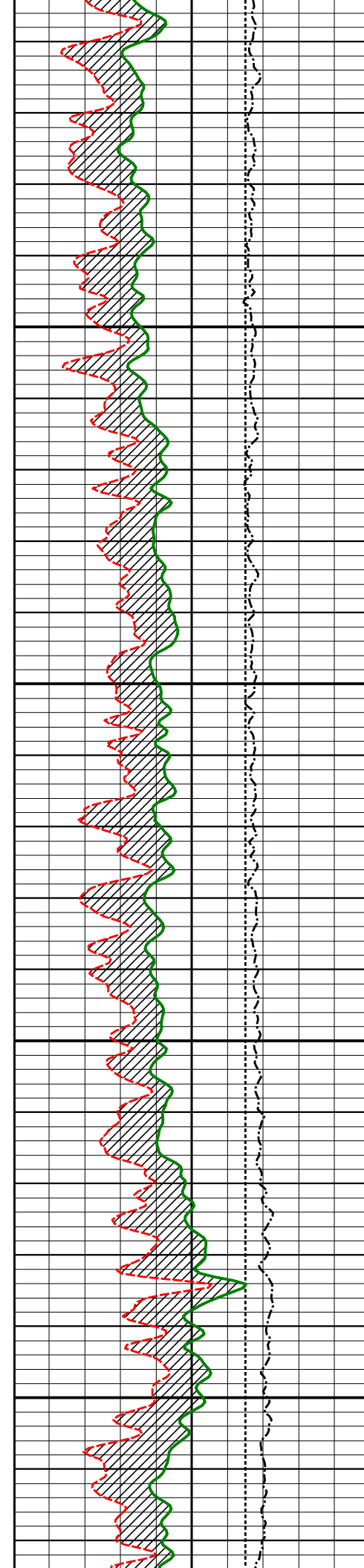
Company : GREAT WESTERN OPERATING COMPNAY LLC Date : 15-SEP-2019
Well : SCHNEIDER HD 11-099HC Time :
Scale : 1 : 240 Remarks : LIMESTONE MATRIX
Depth in : feet
Software : WinAPIPlot Ver. 6, 18, 0, 0 File Name :









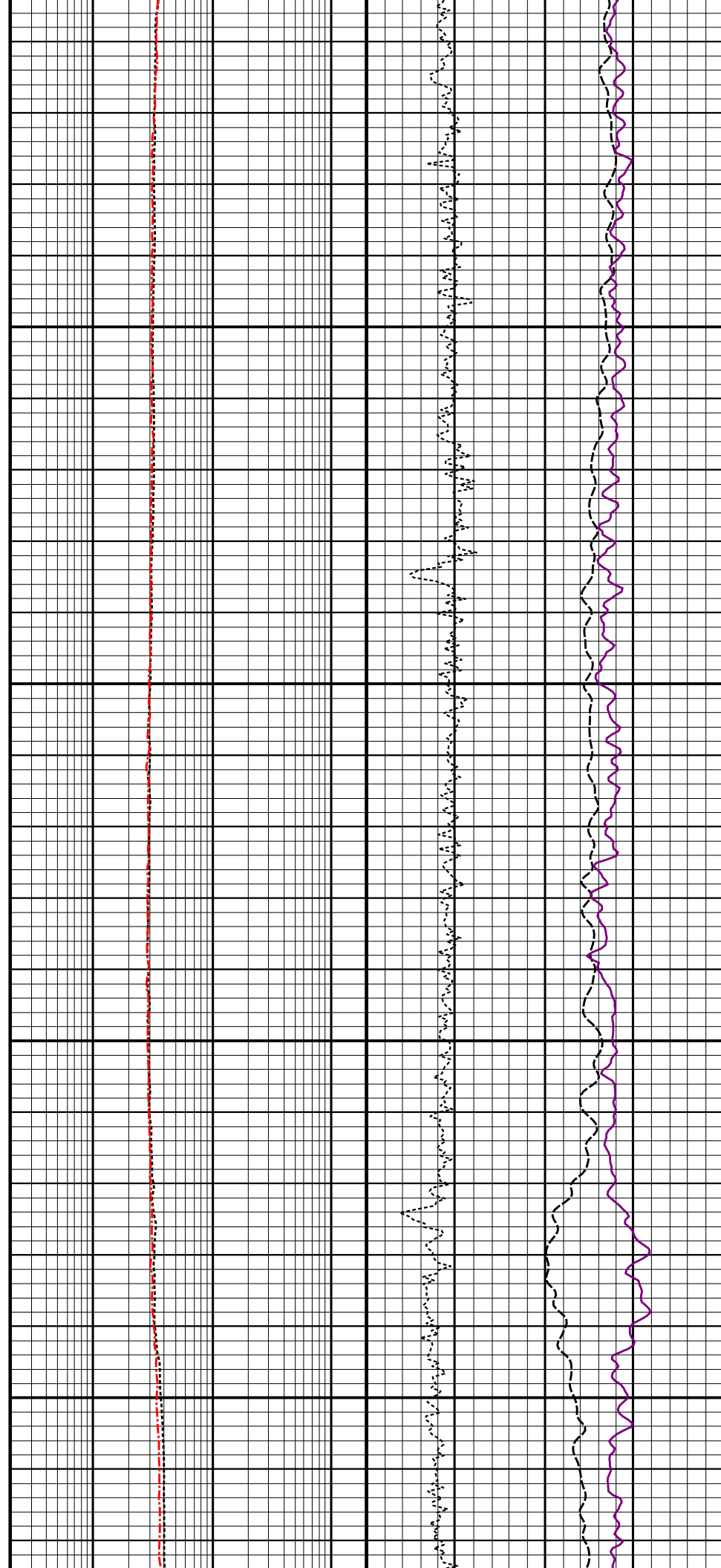


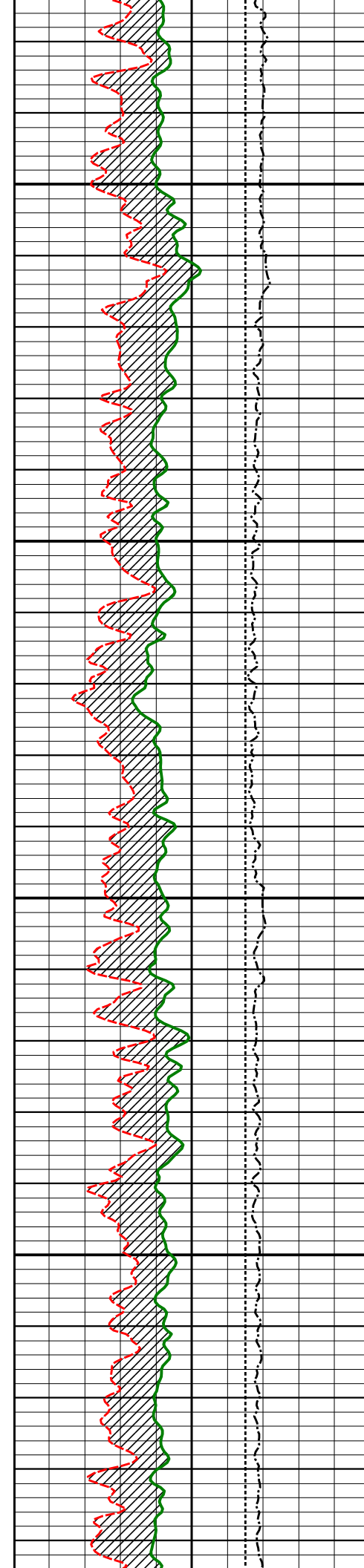
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8200 ft

8250 ft

8300 ft



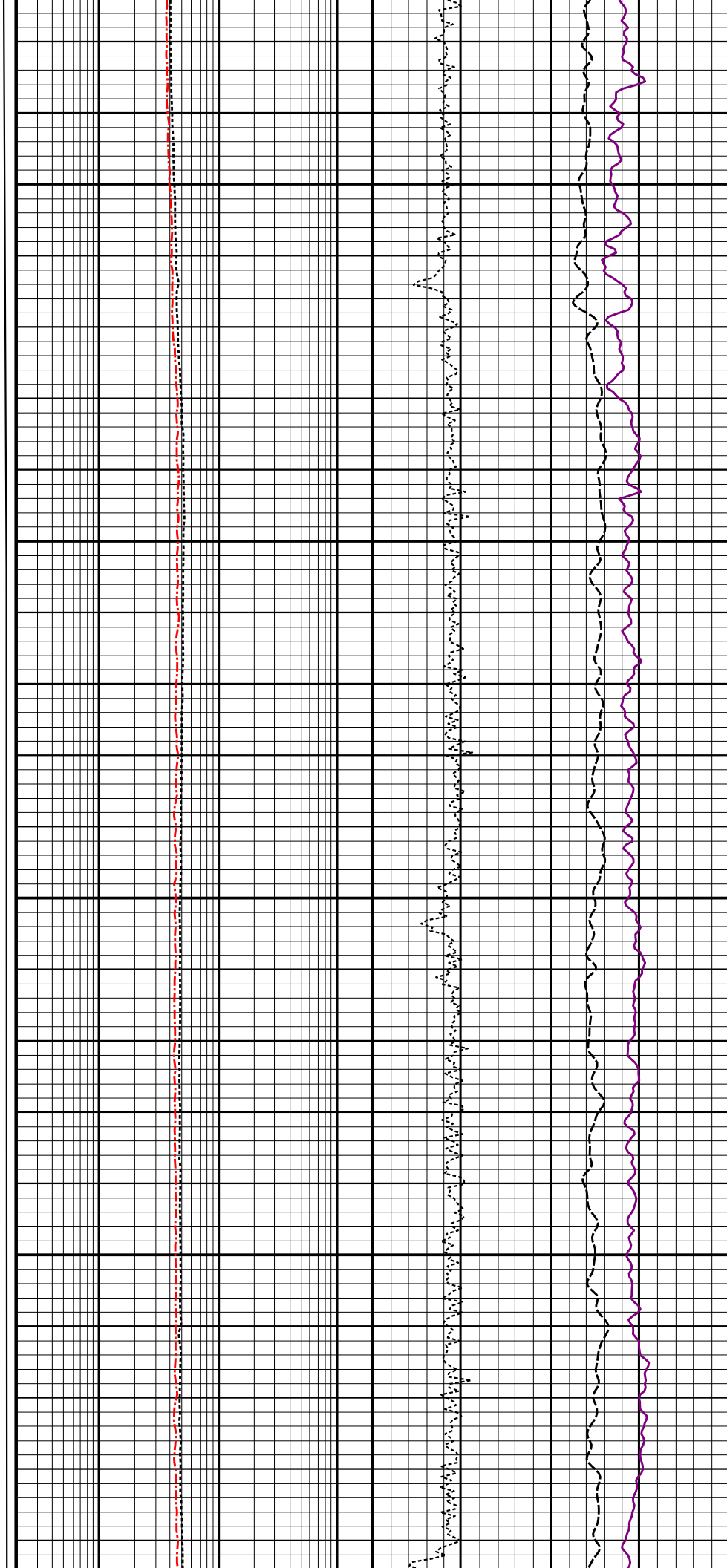


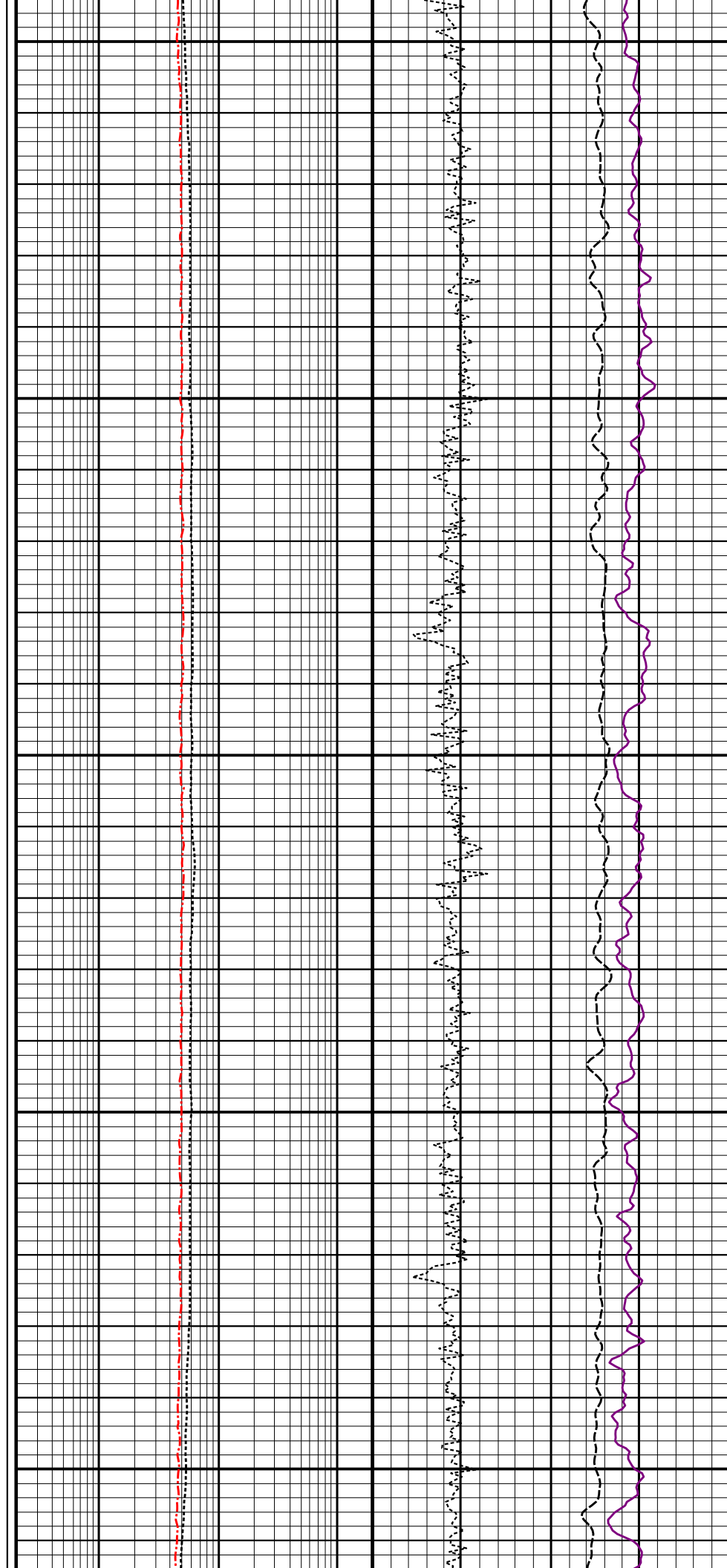
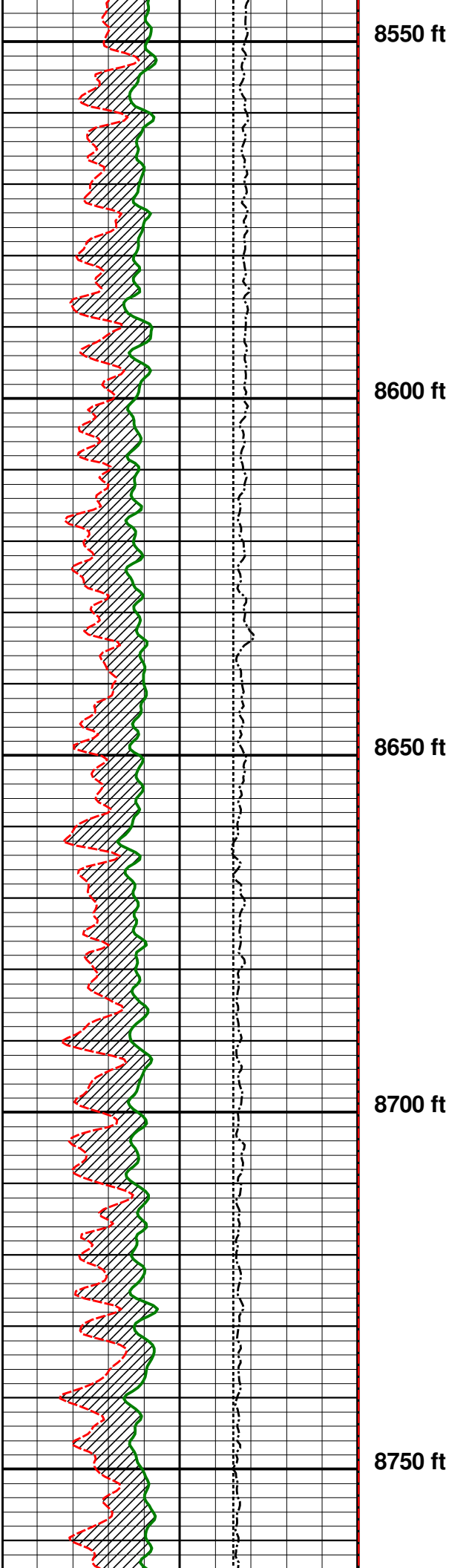
8350 ft

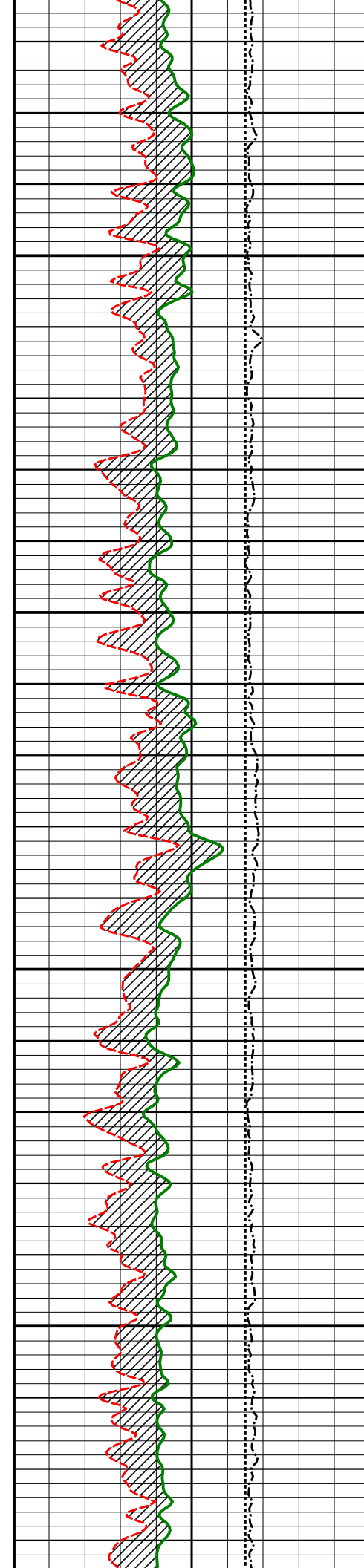
8400 ft

8450 ft

8500 ft





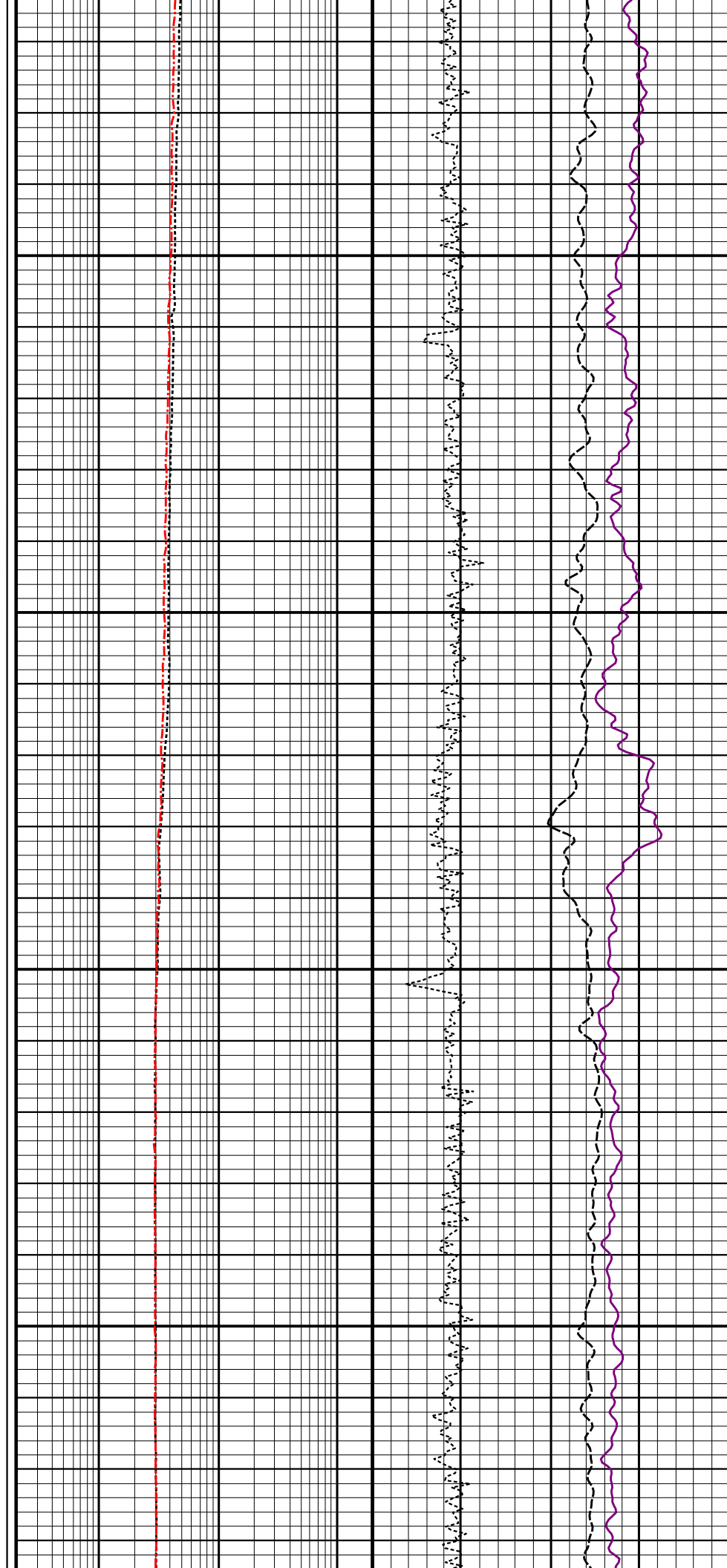


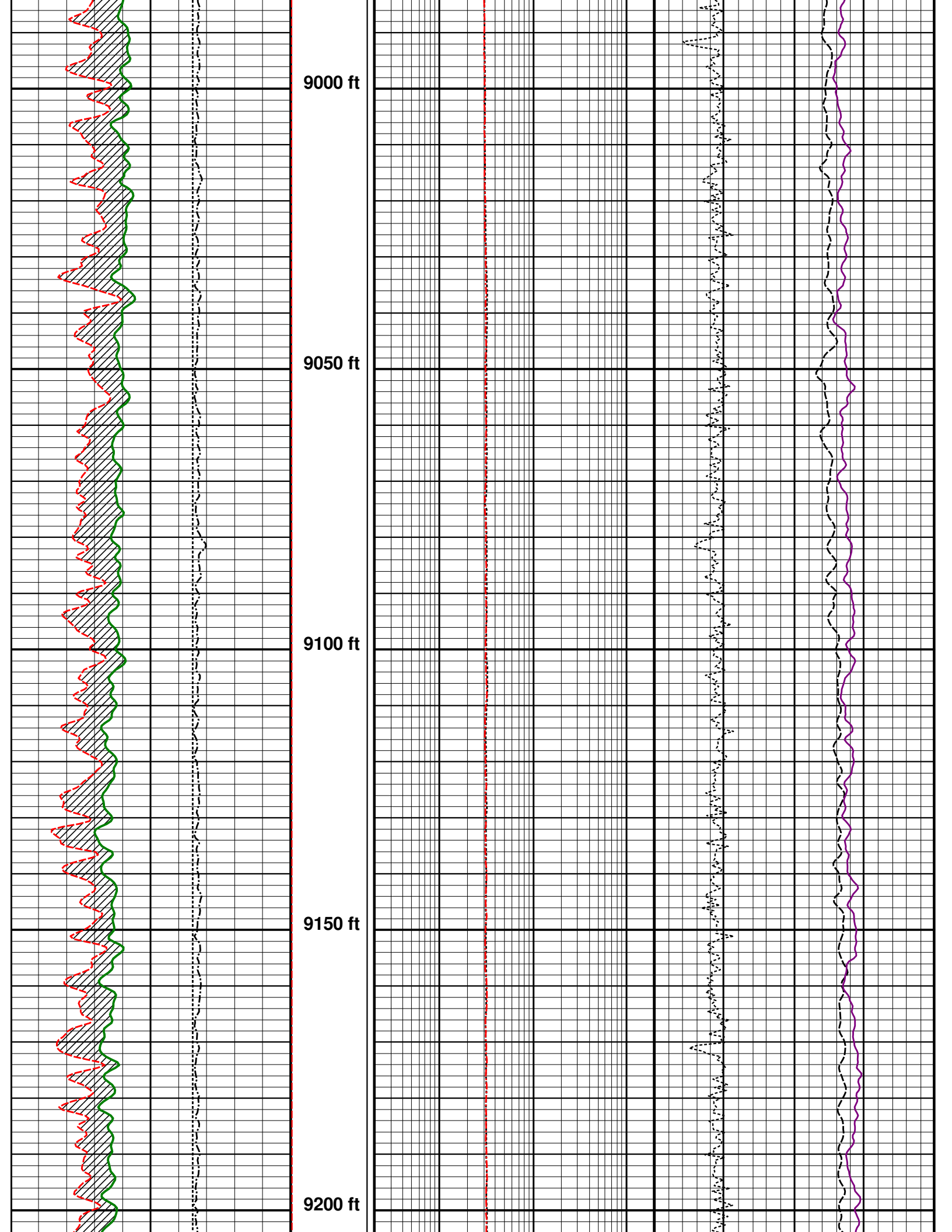
8800 ft

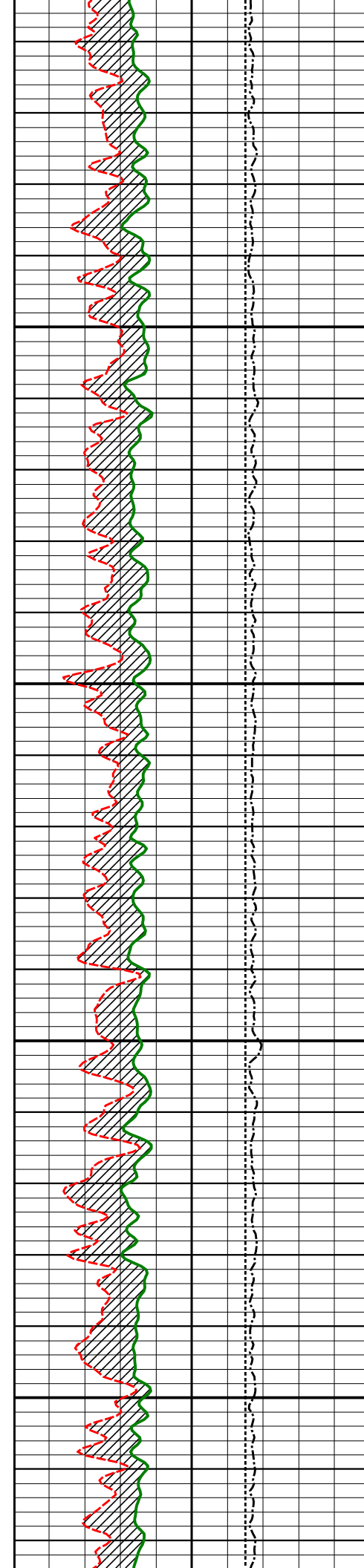
8850 ft

8900 ft

8950 ft





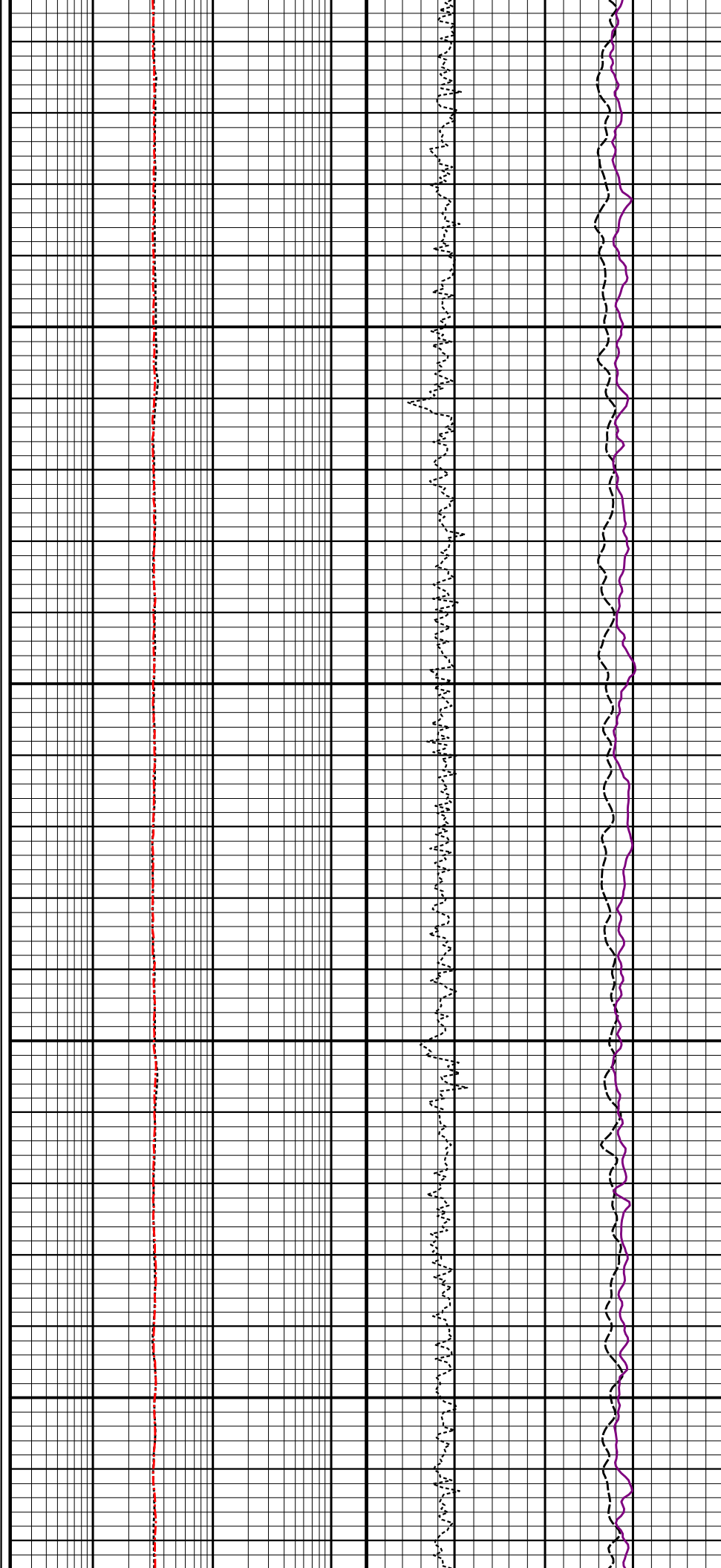


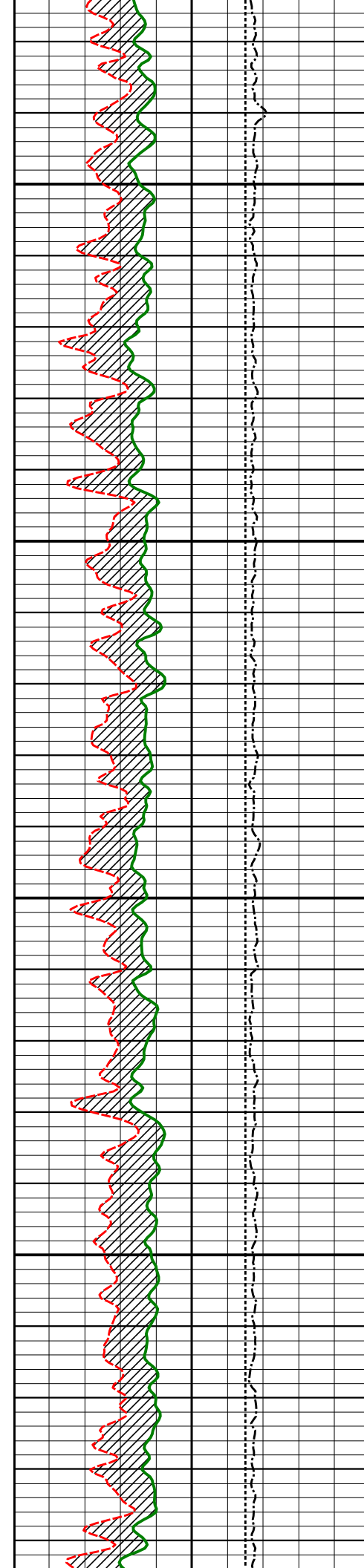
9250 ft

9300 ft

9350 ft

9400 ft



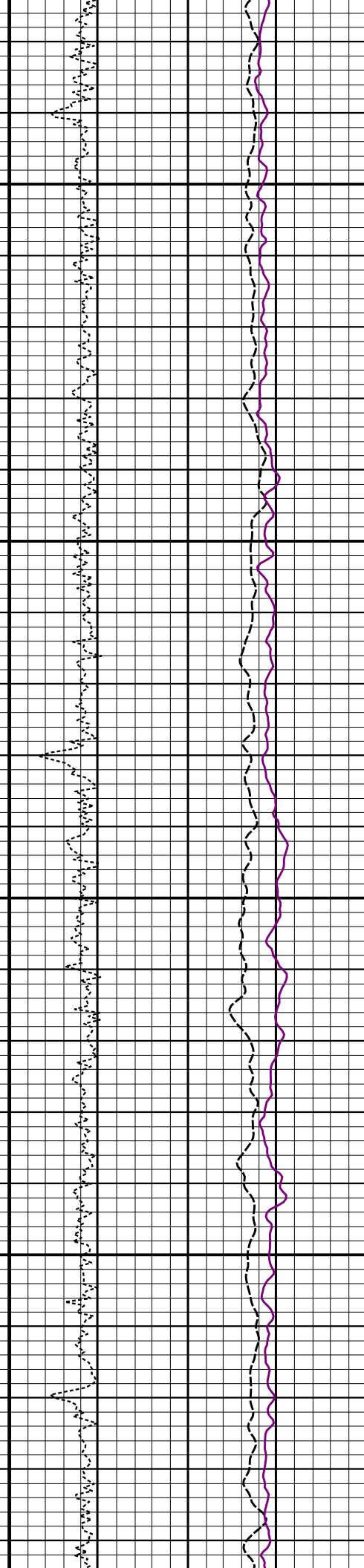
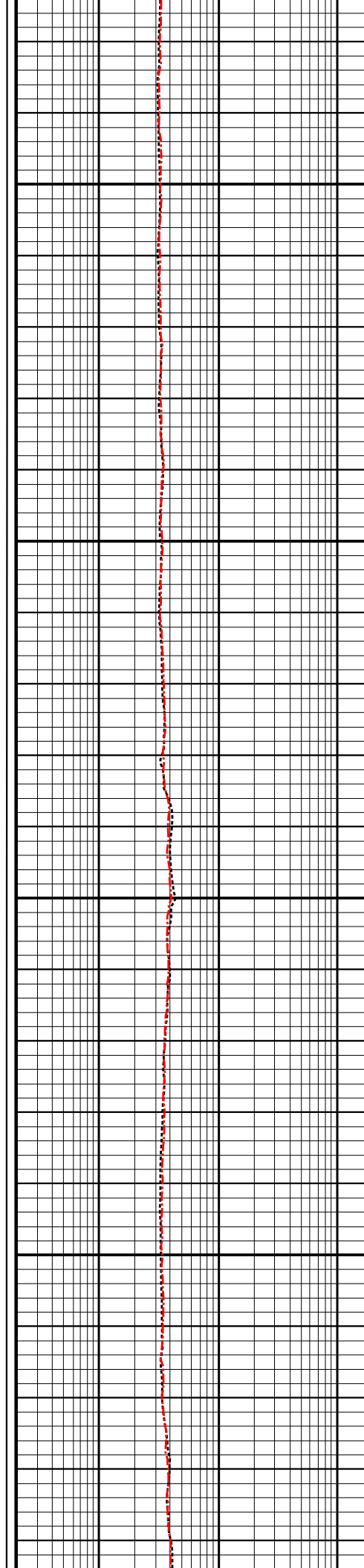


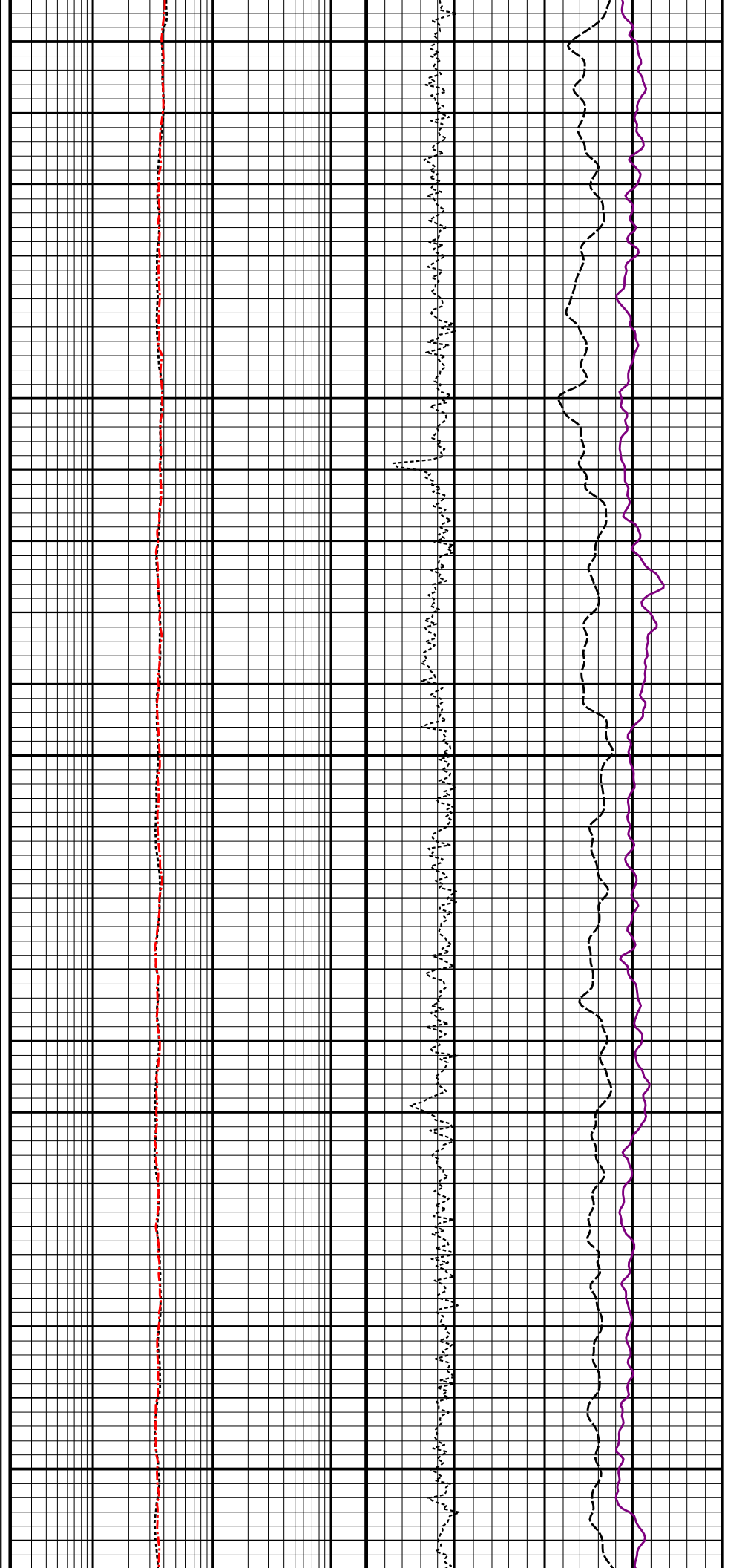
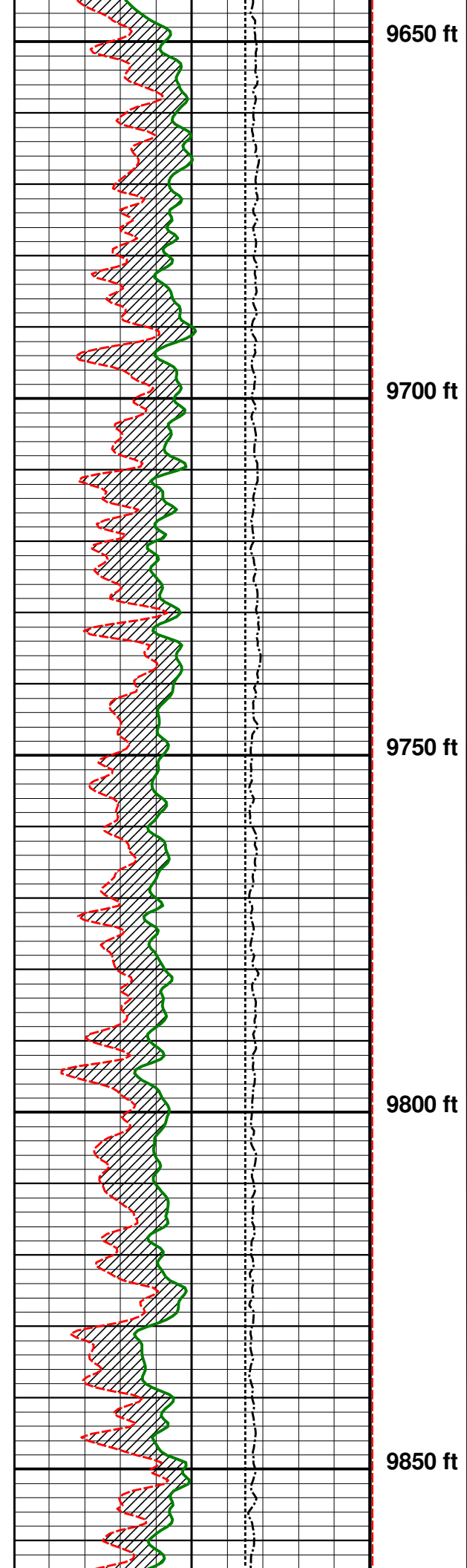
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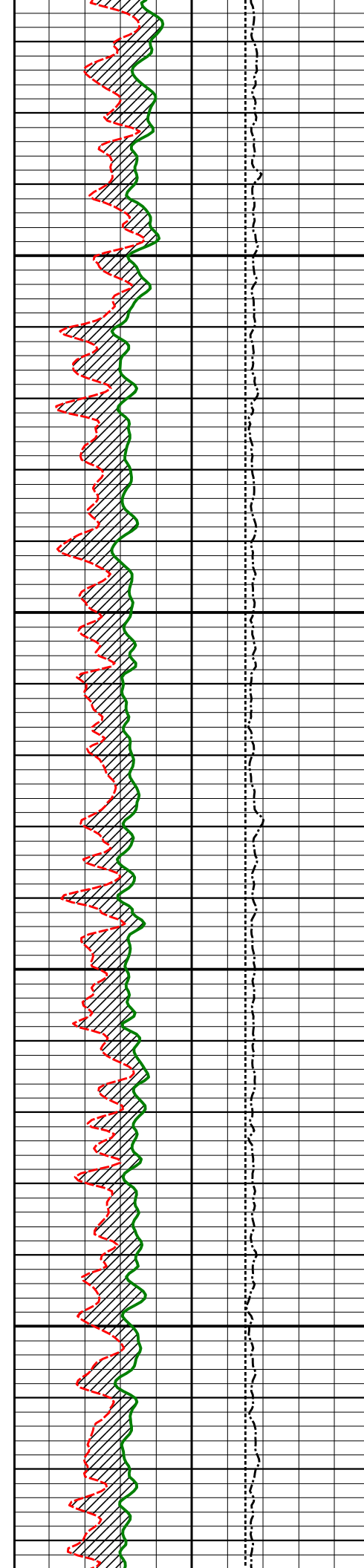
9500 ft

9550 ft

9600 ft





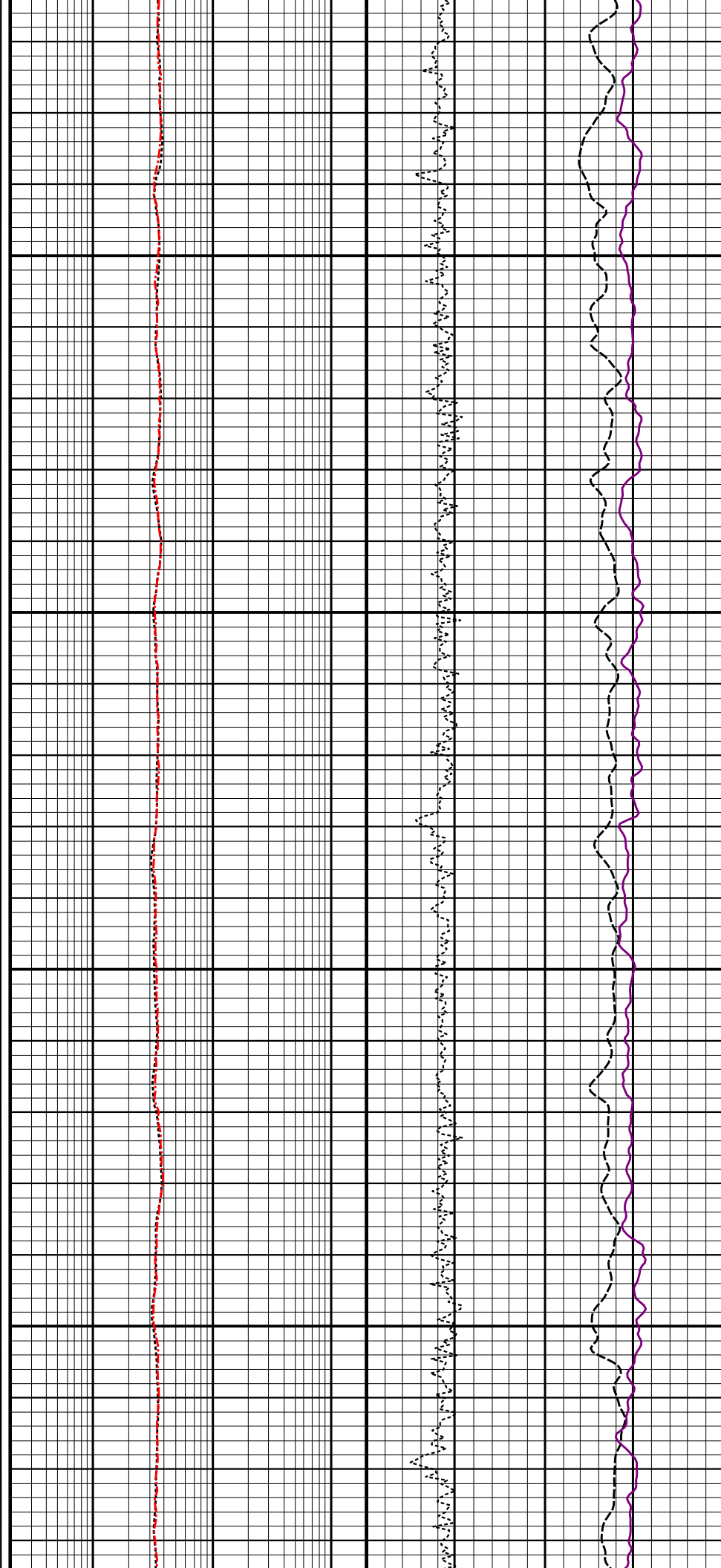


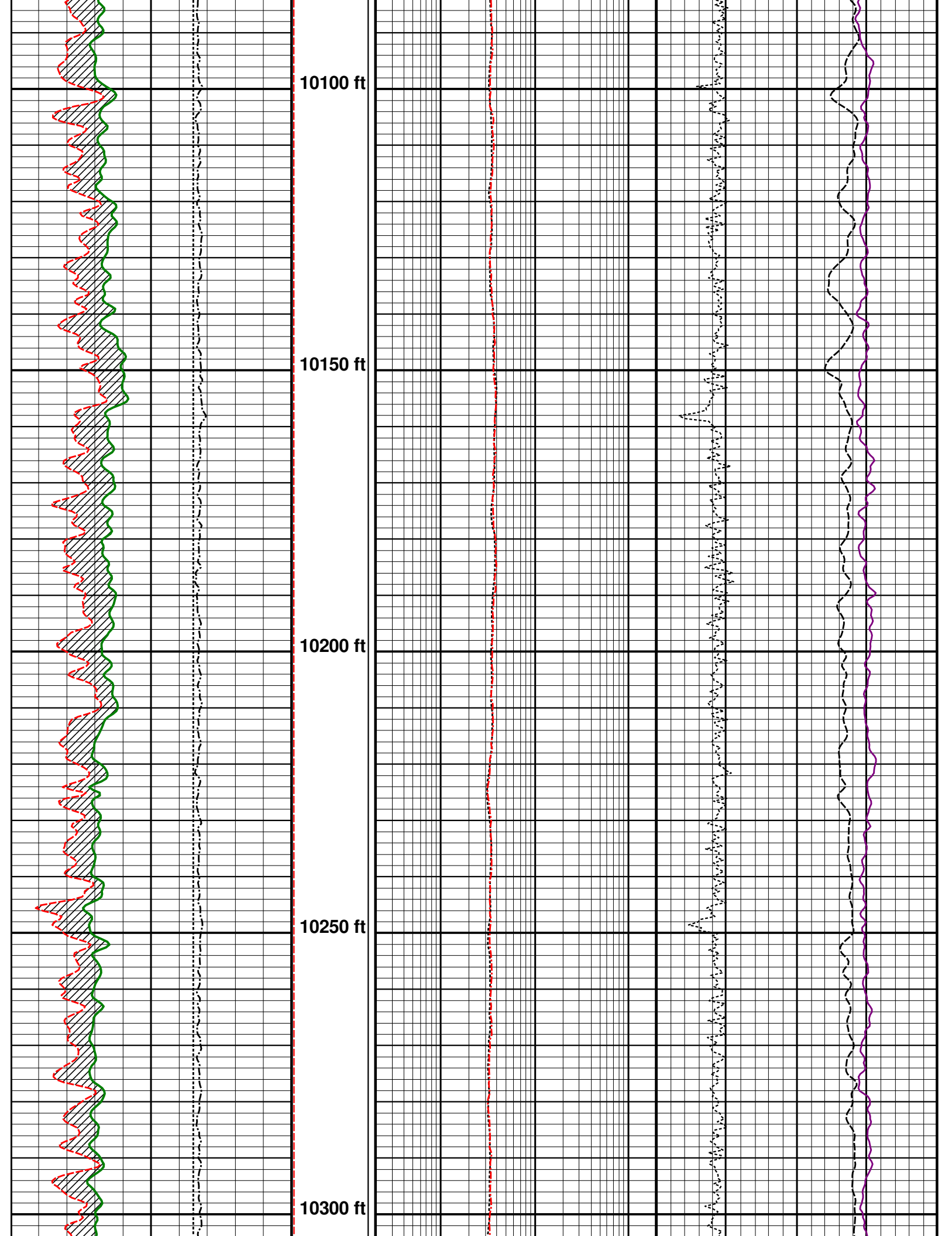
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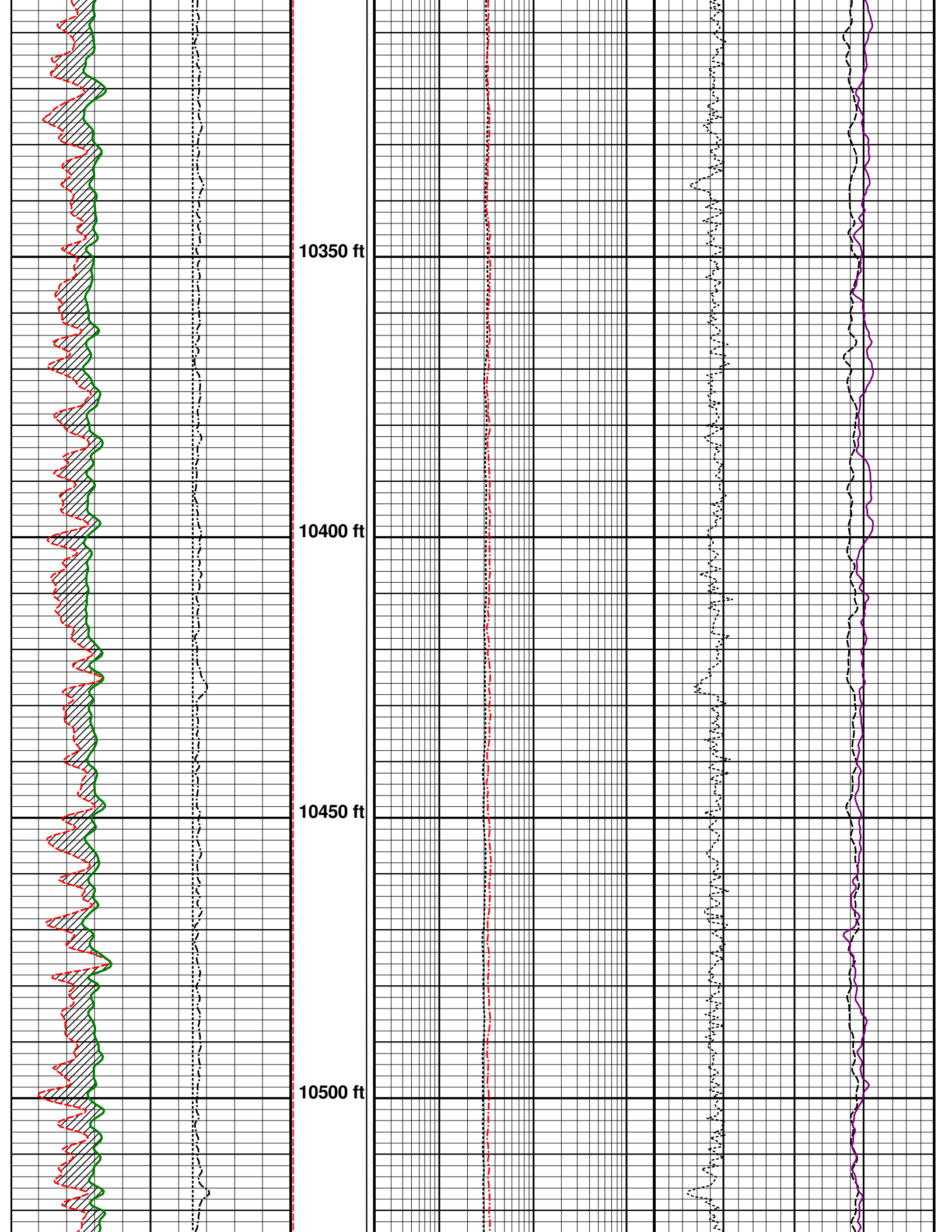
9950 ft

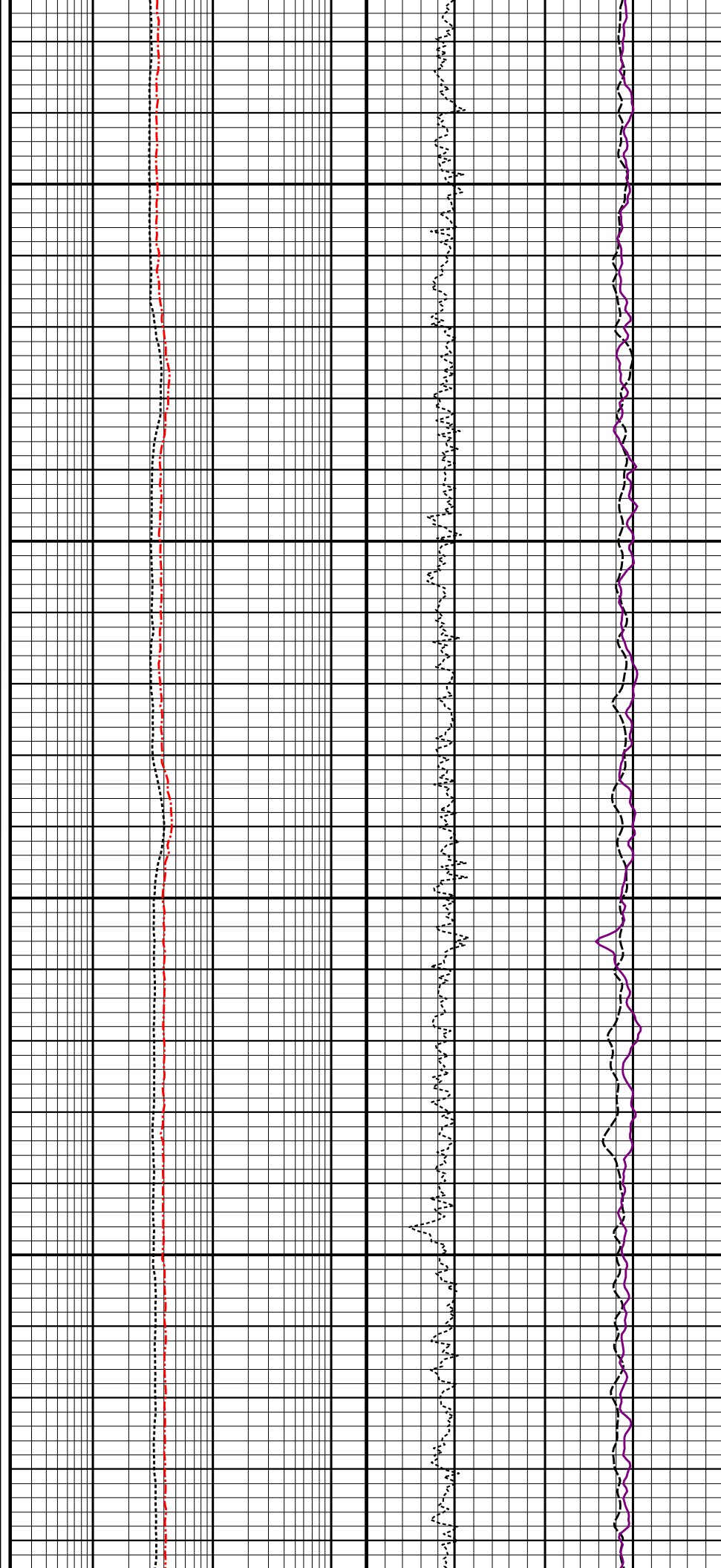
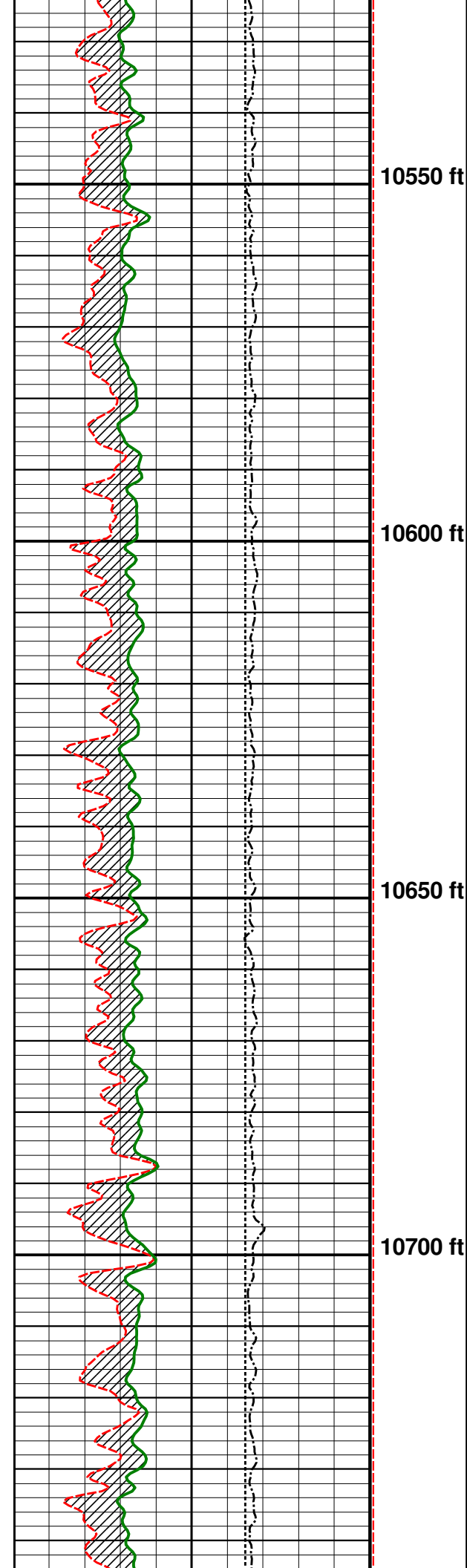
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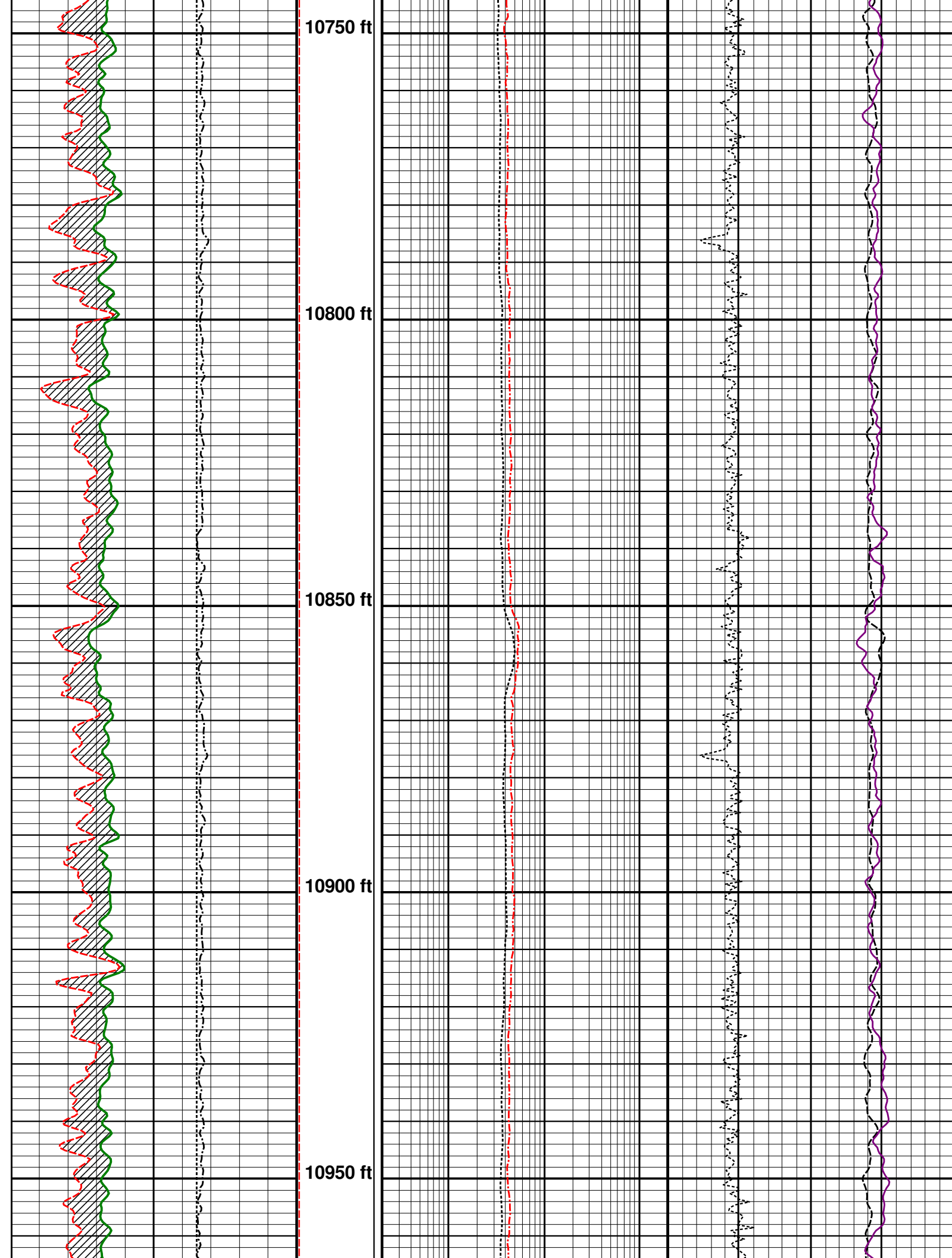
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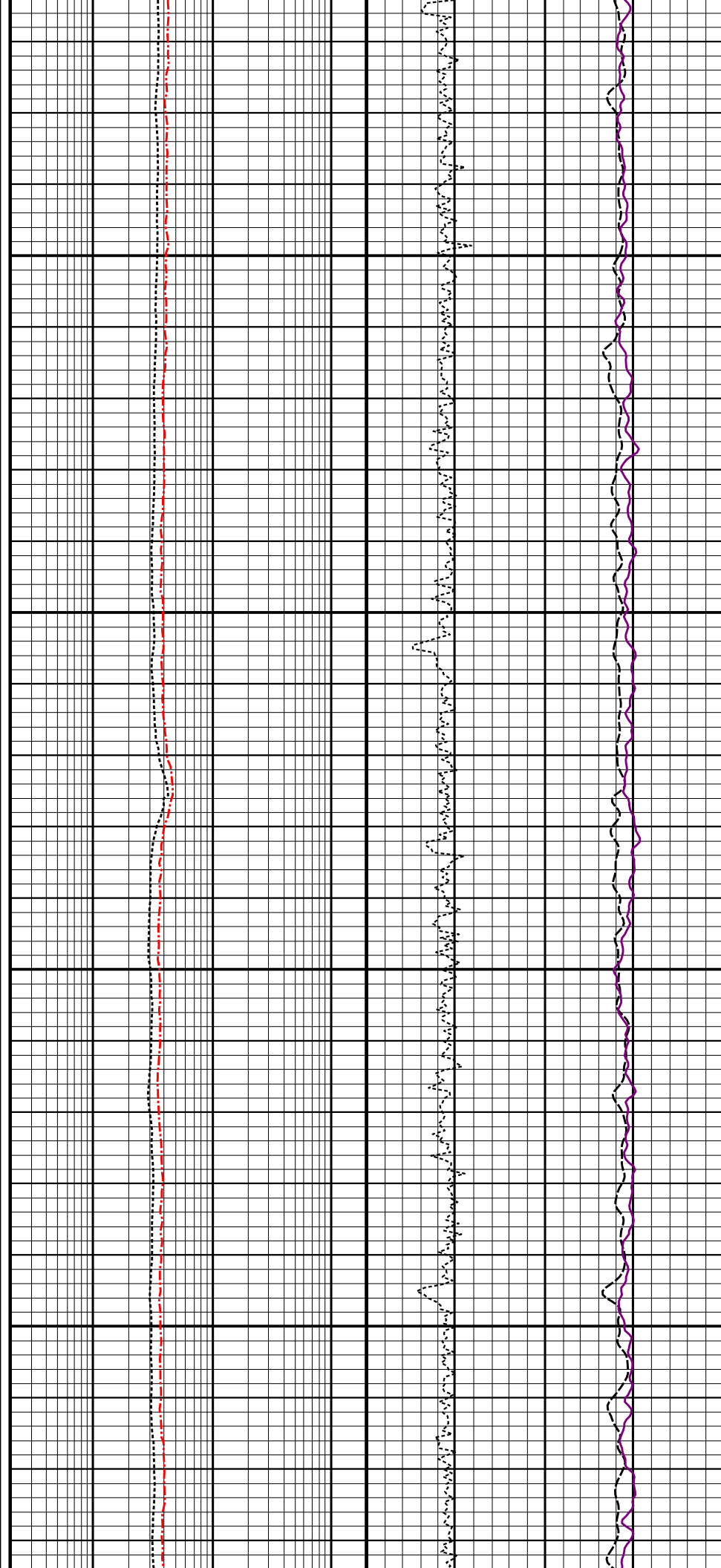
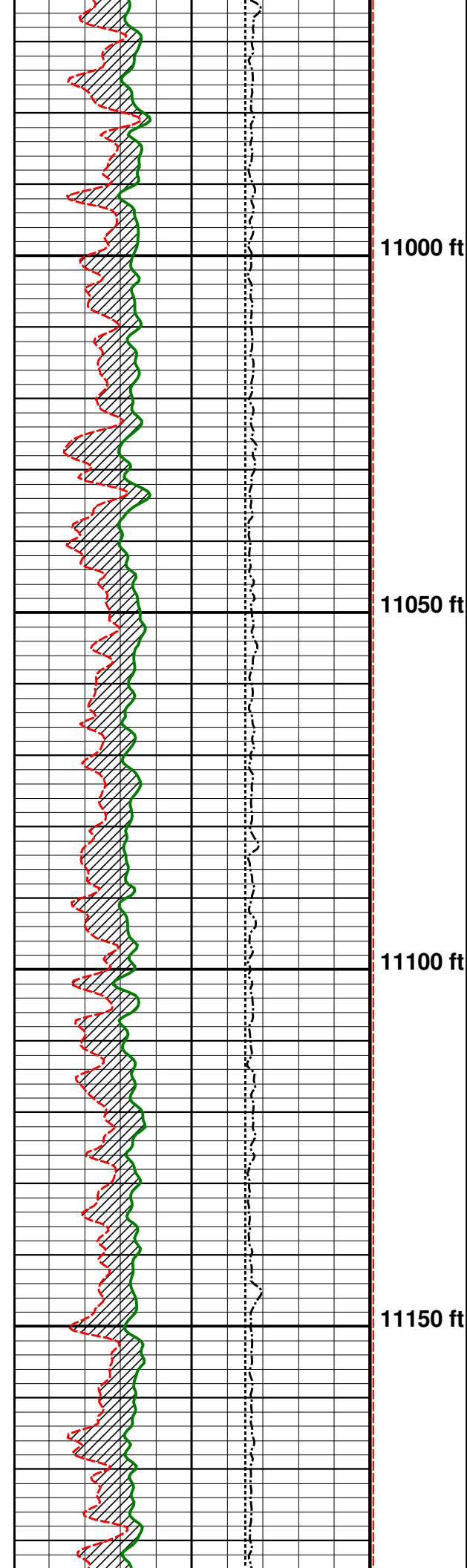


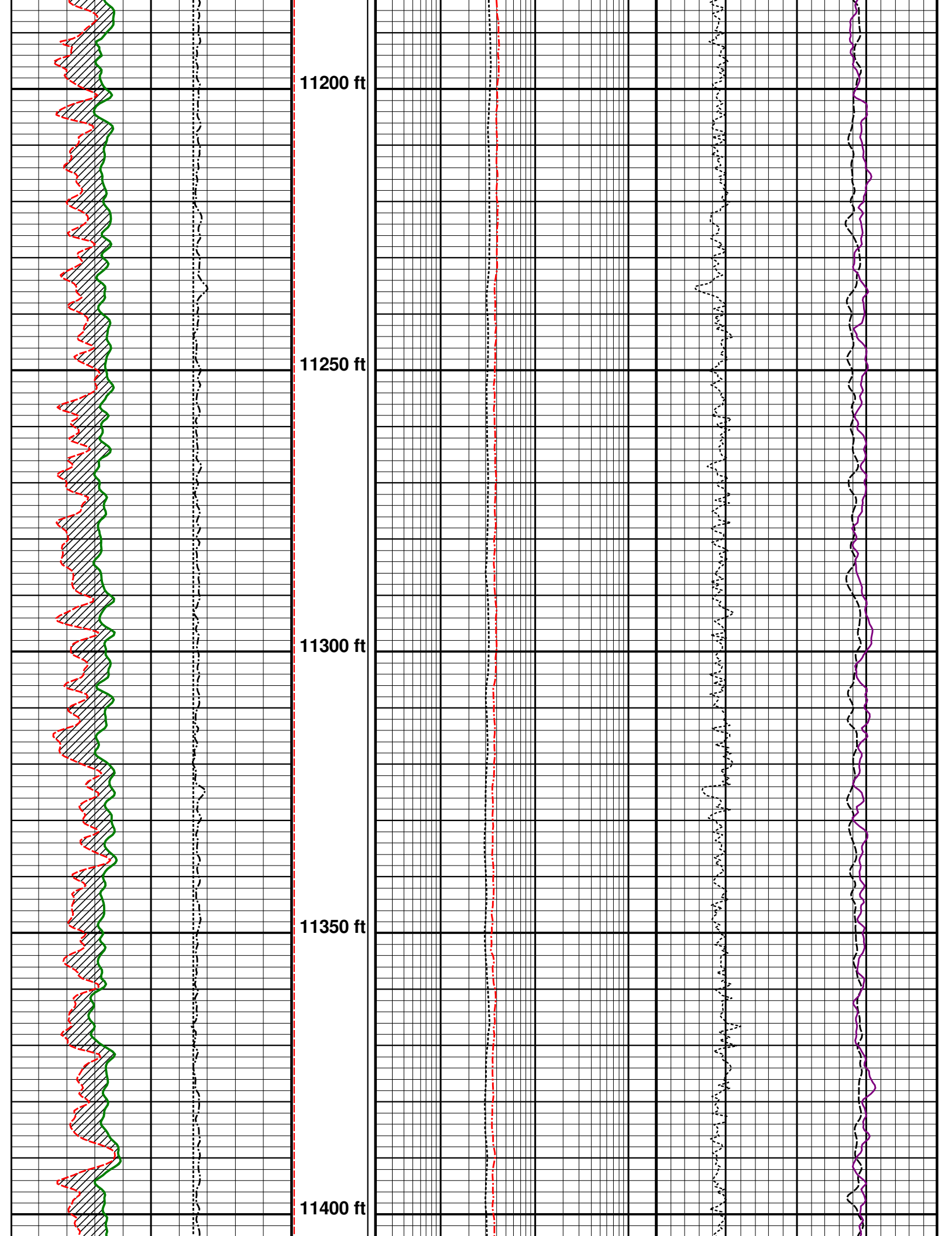


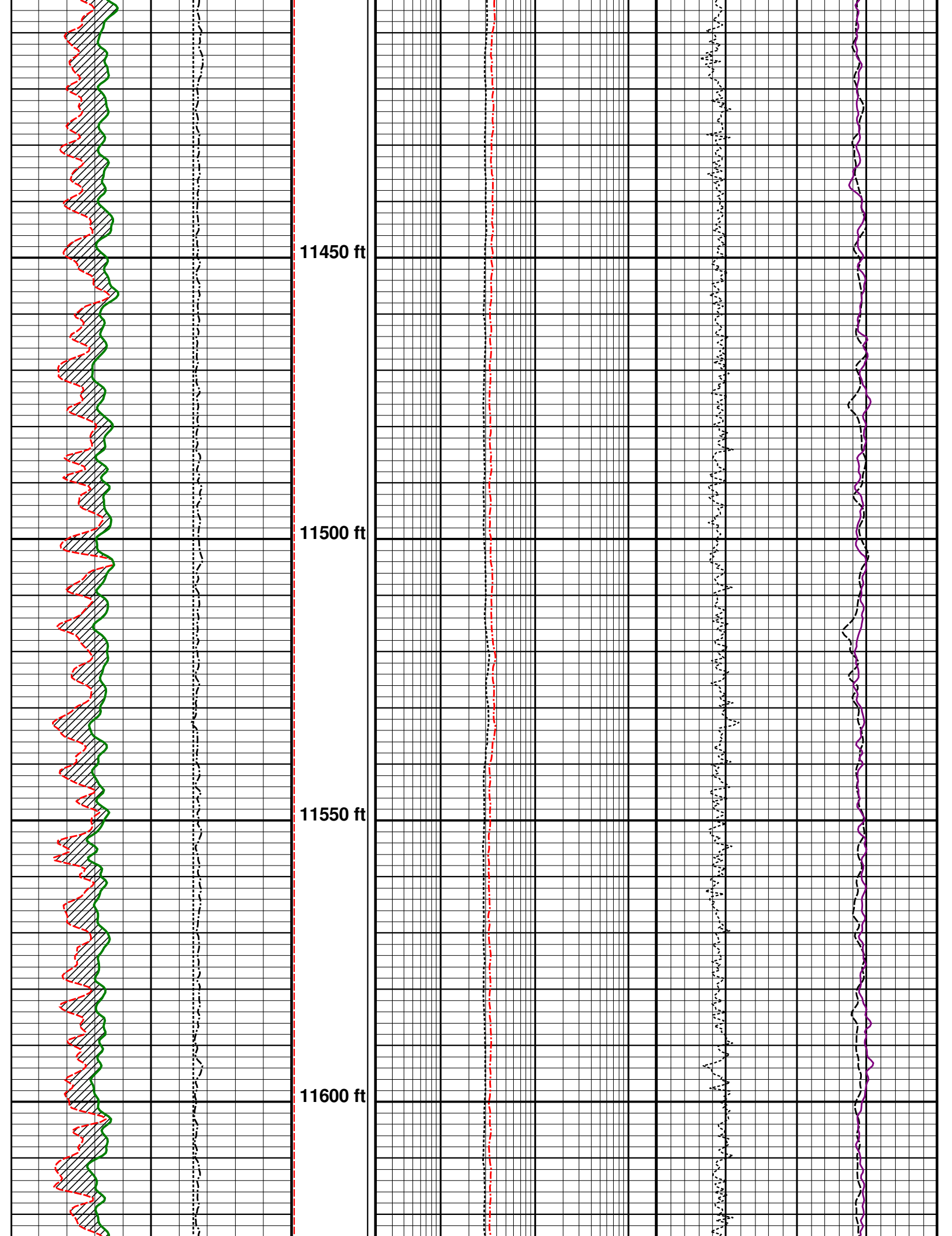


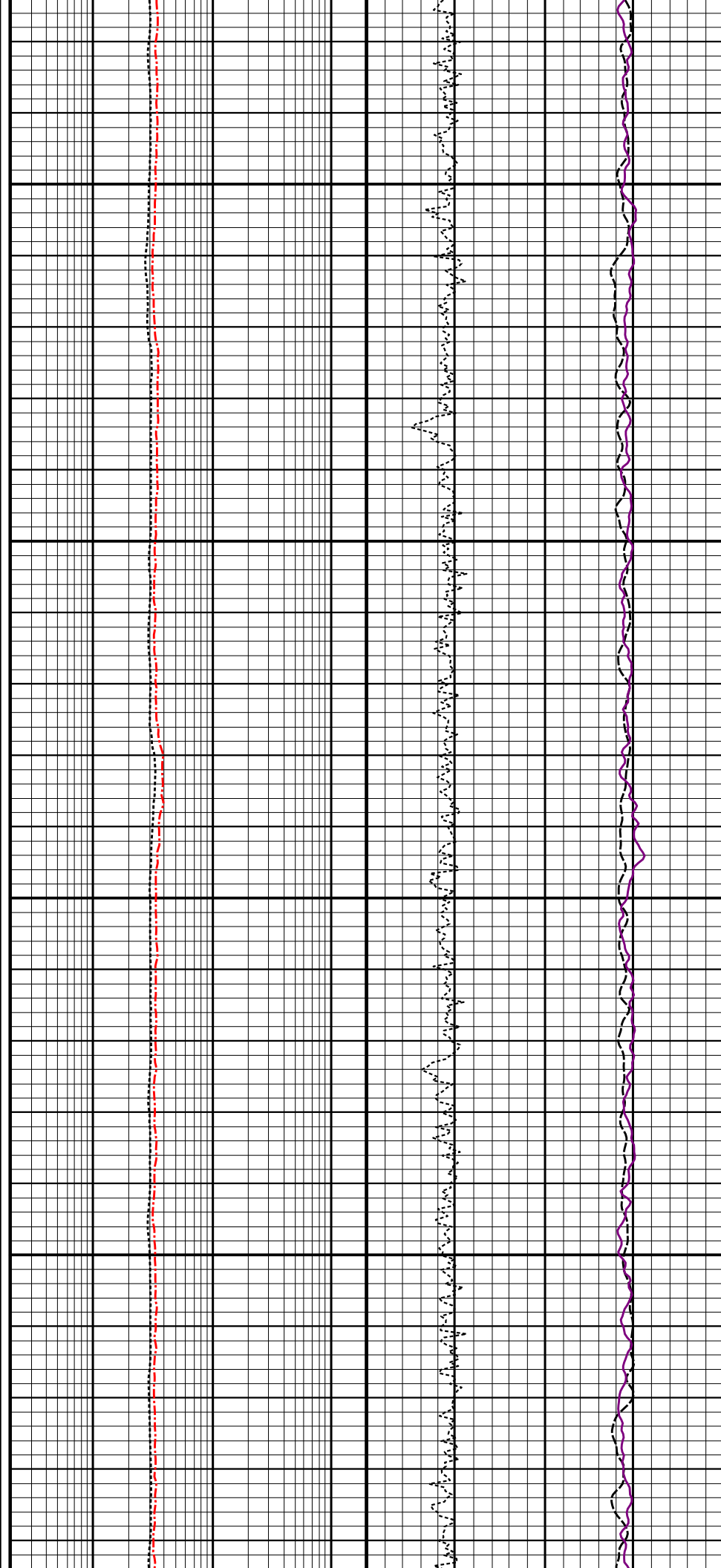
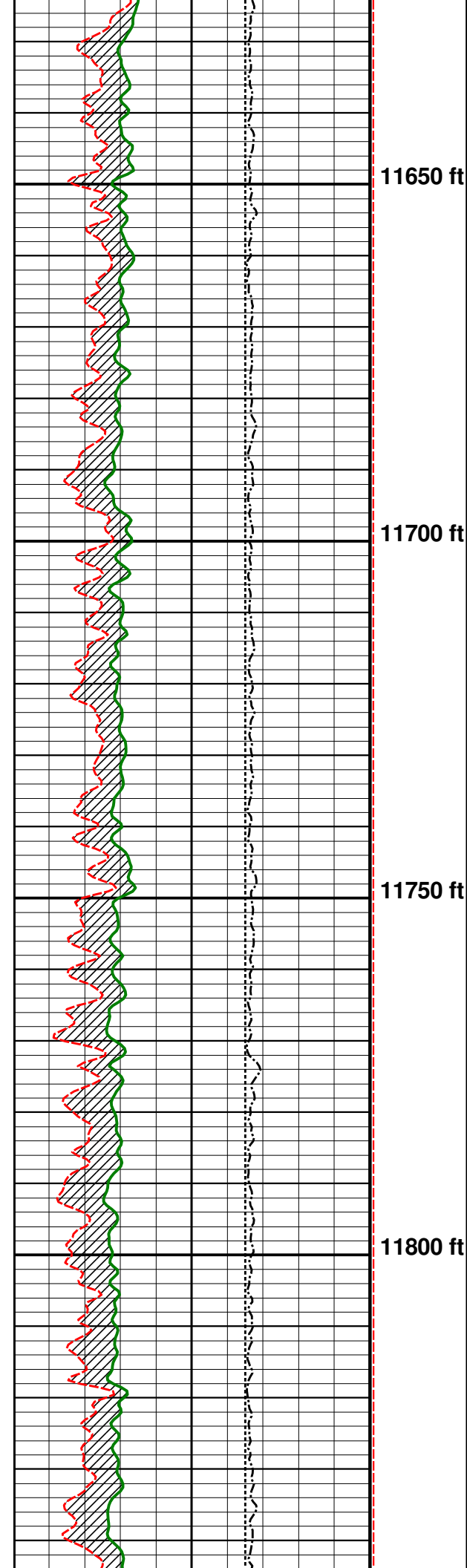


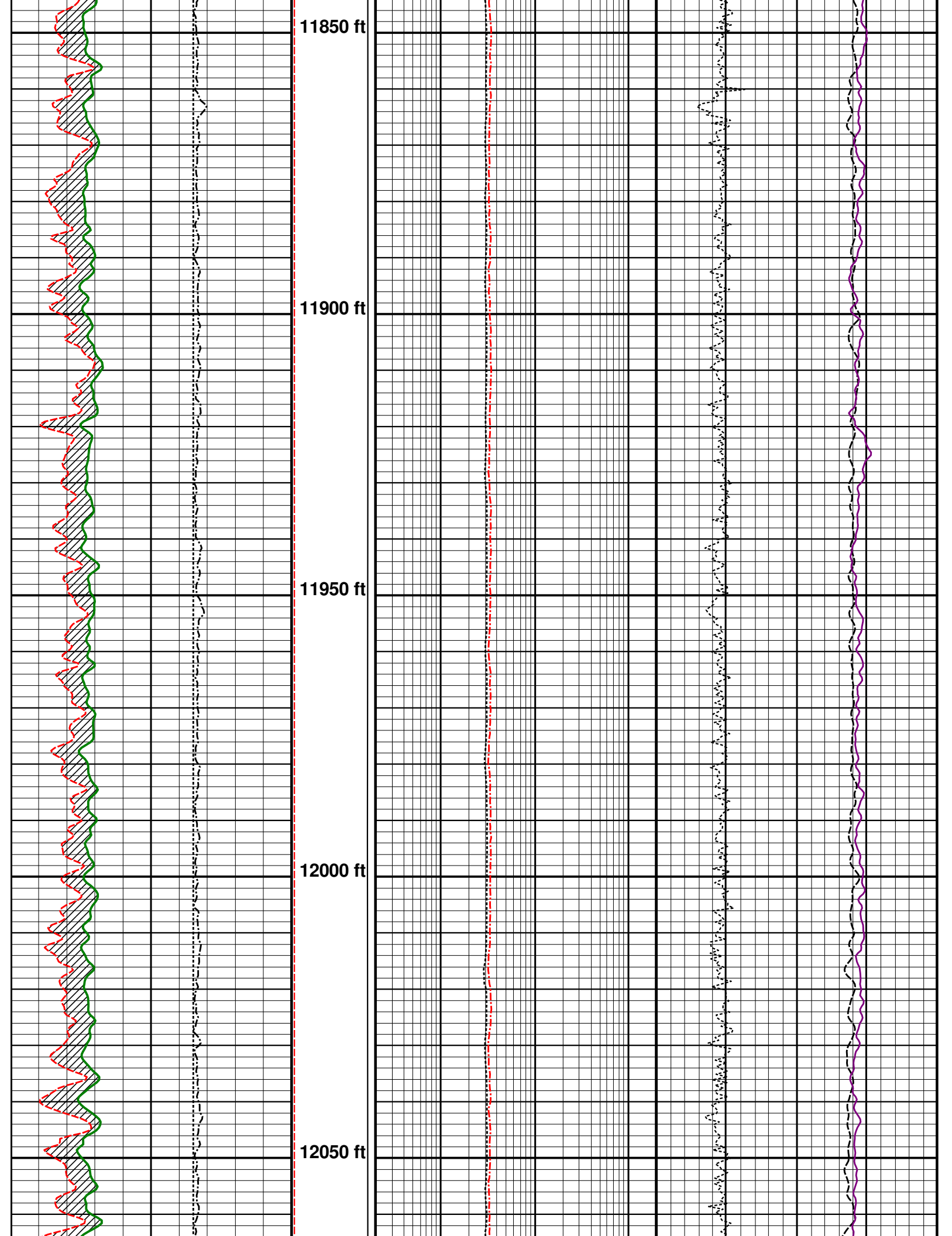


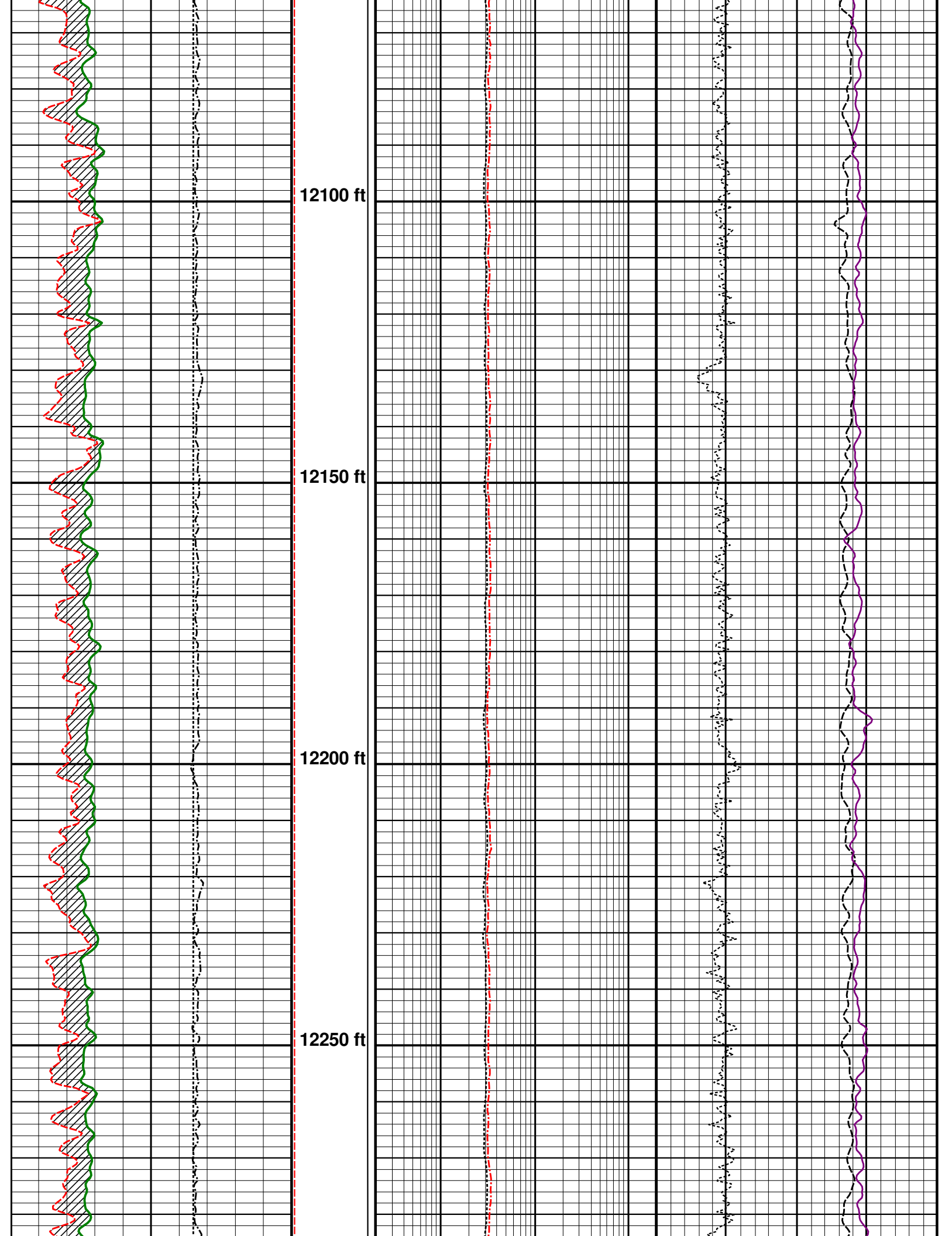


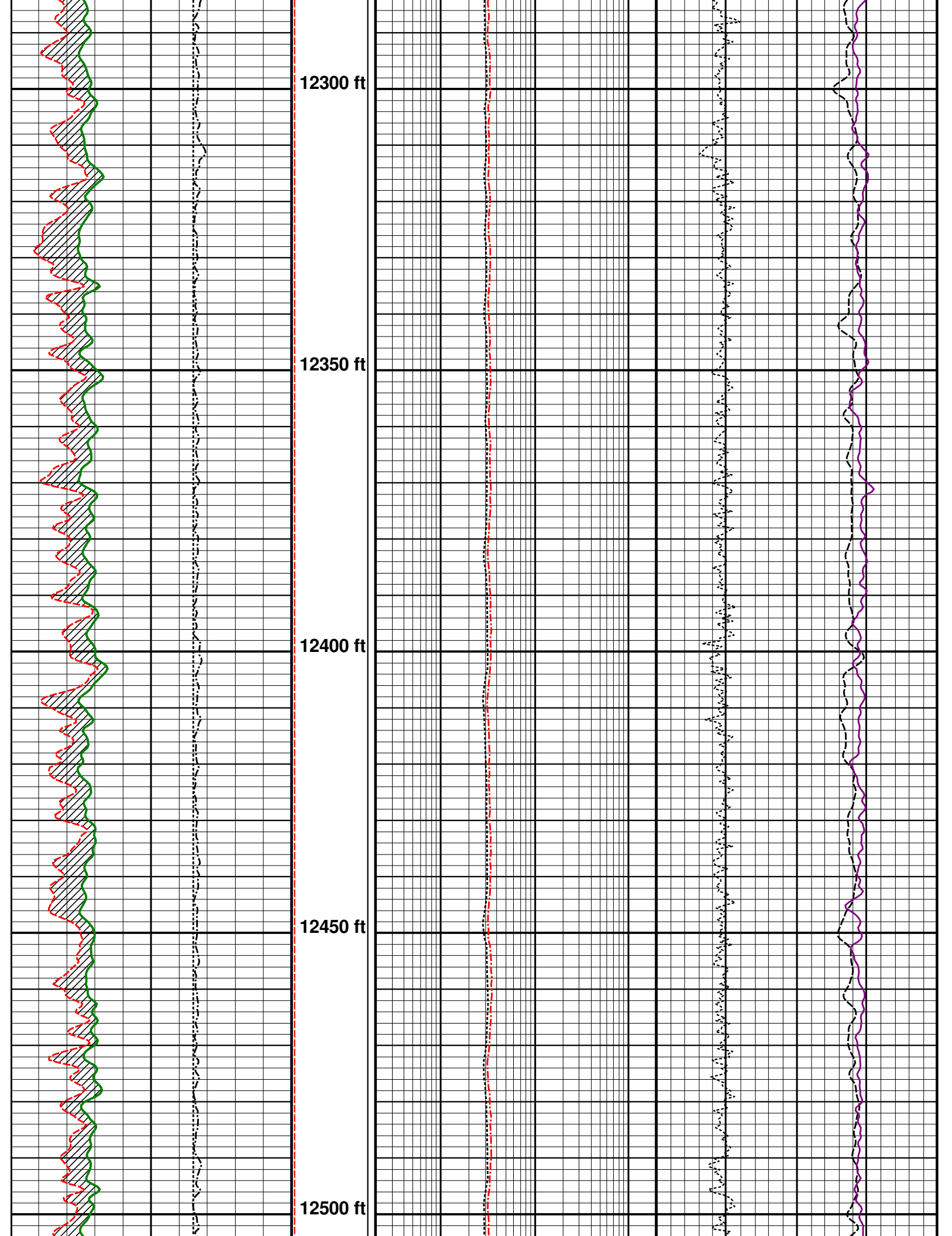


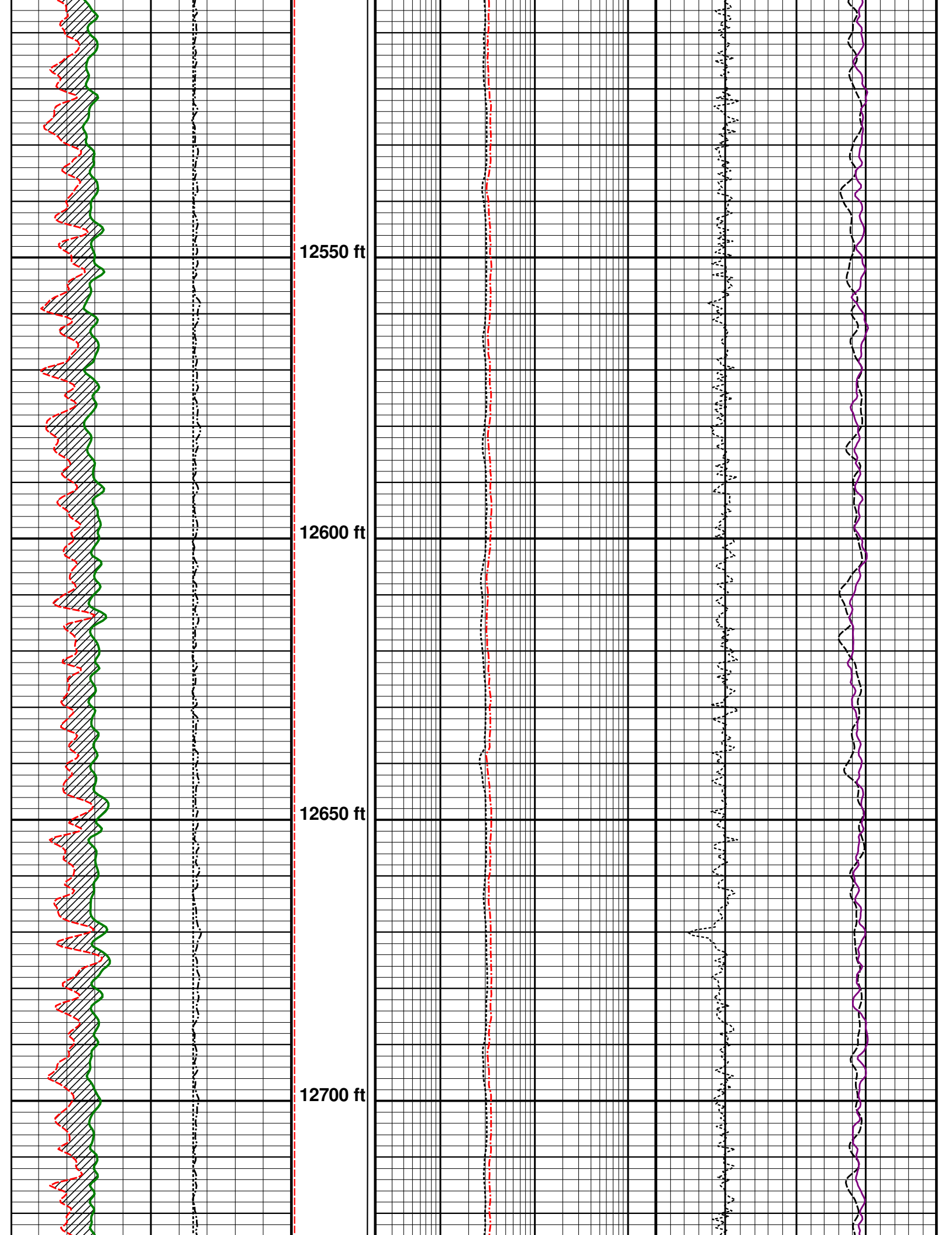


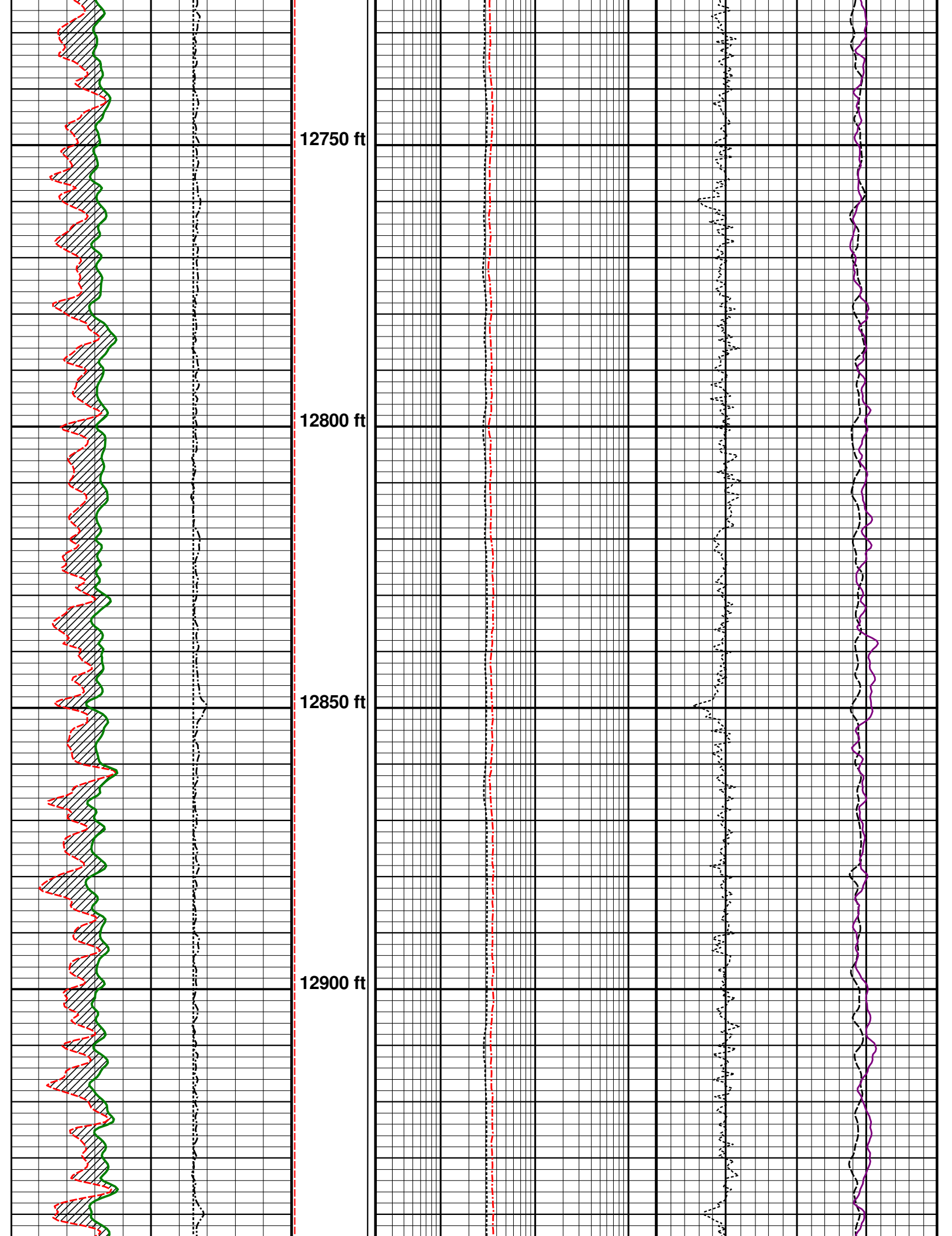


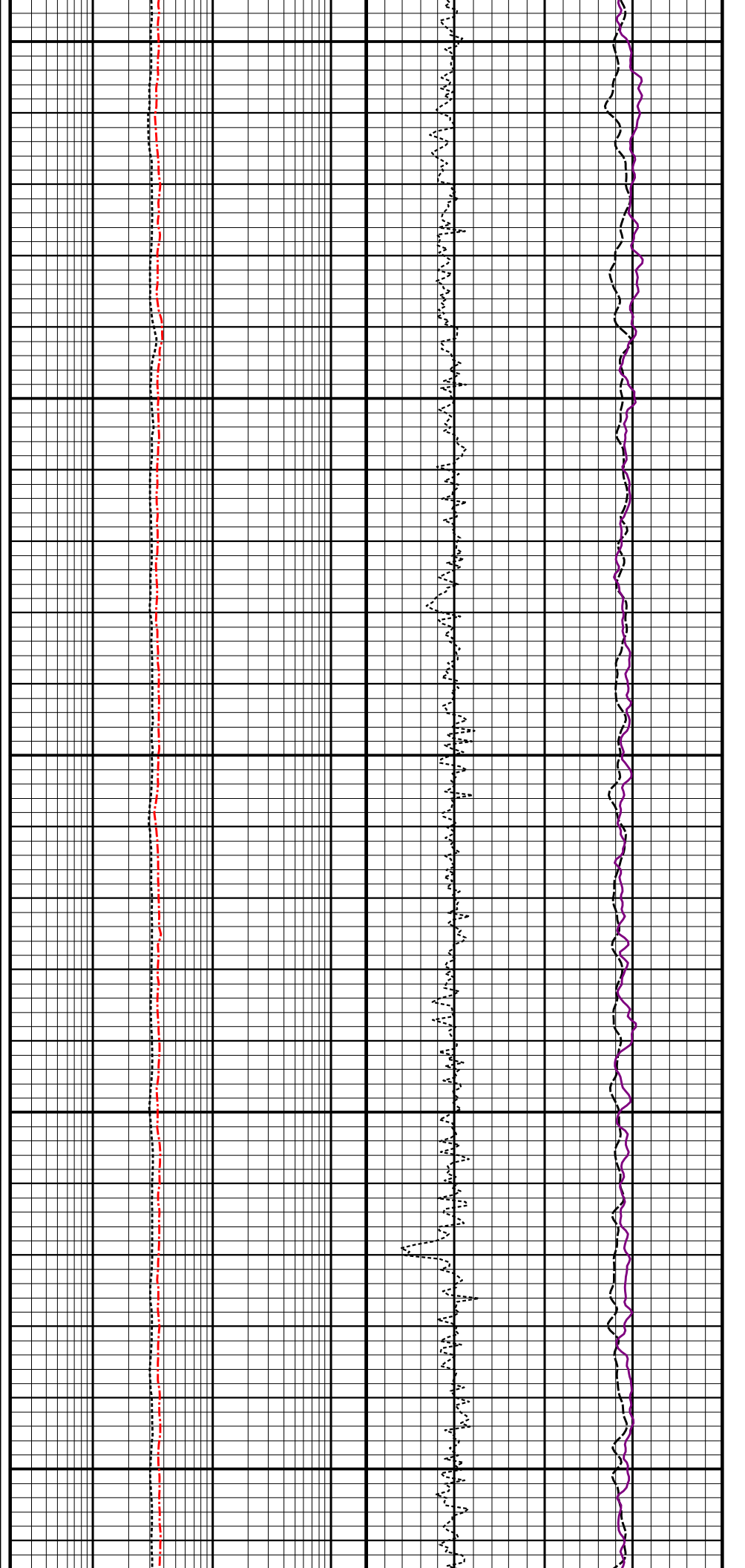
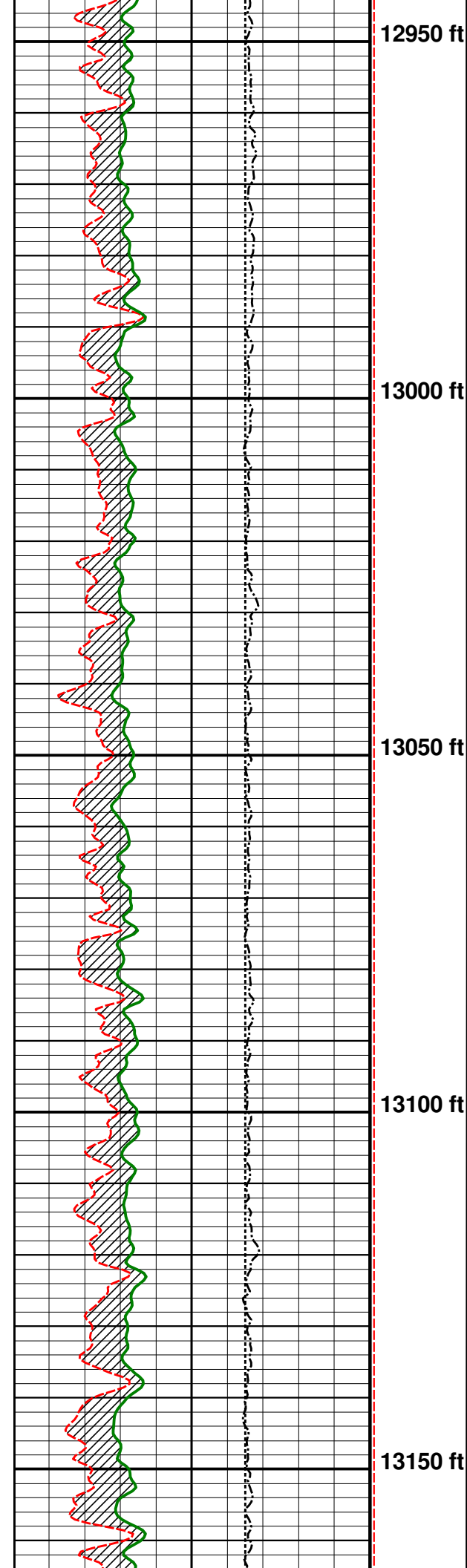


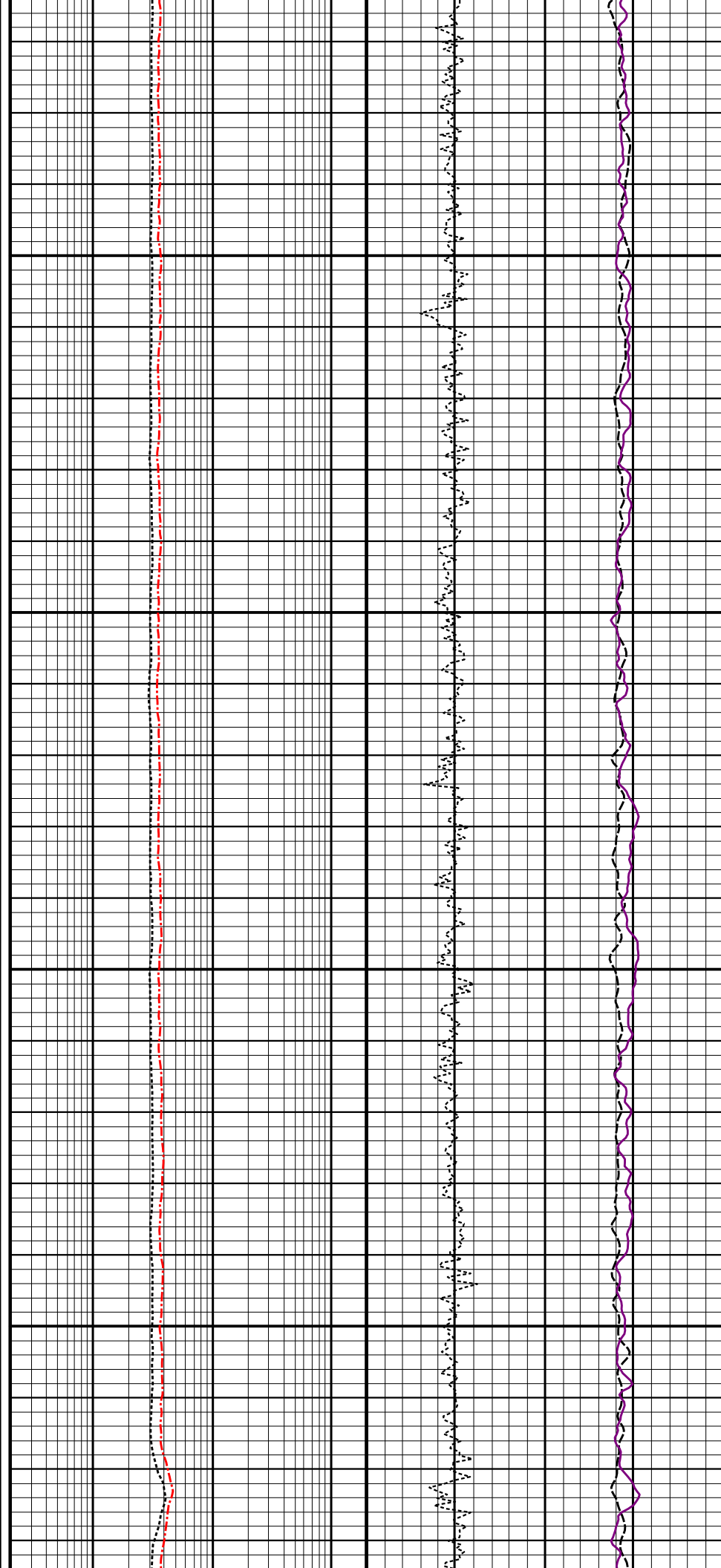
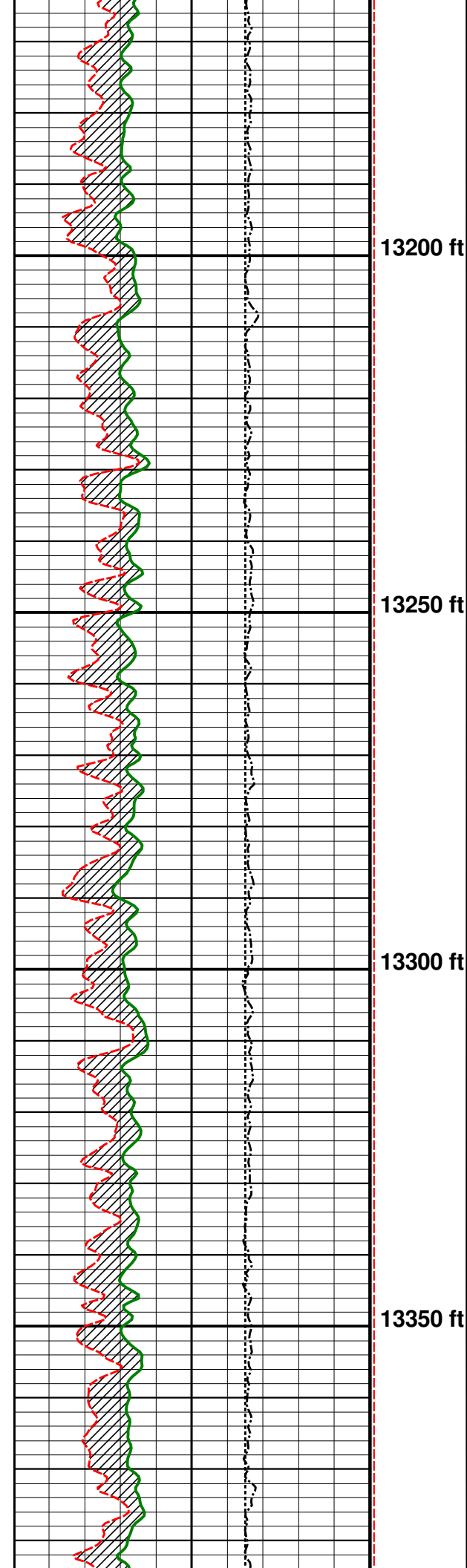


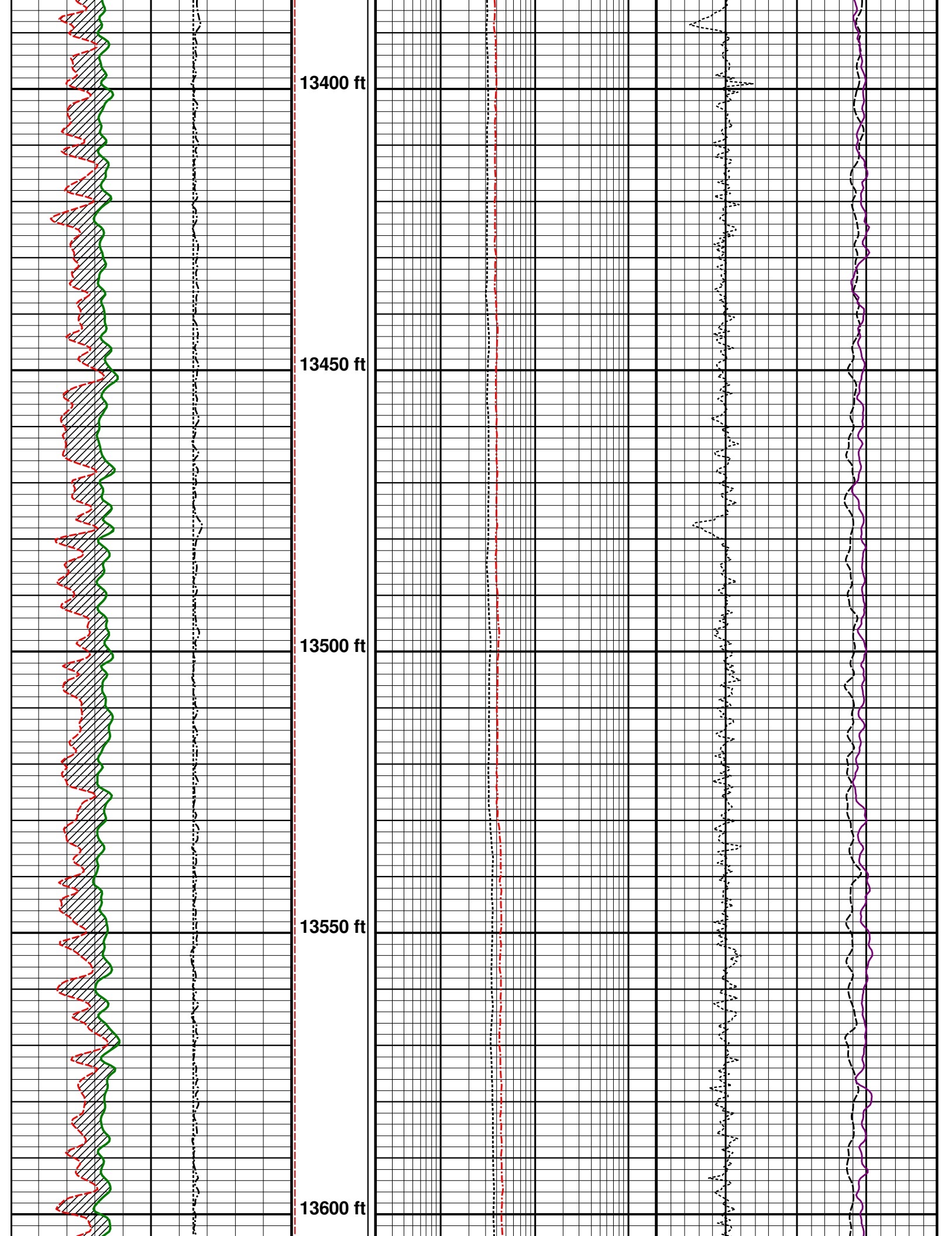


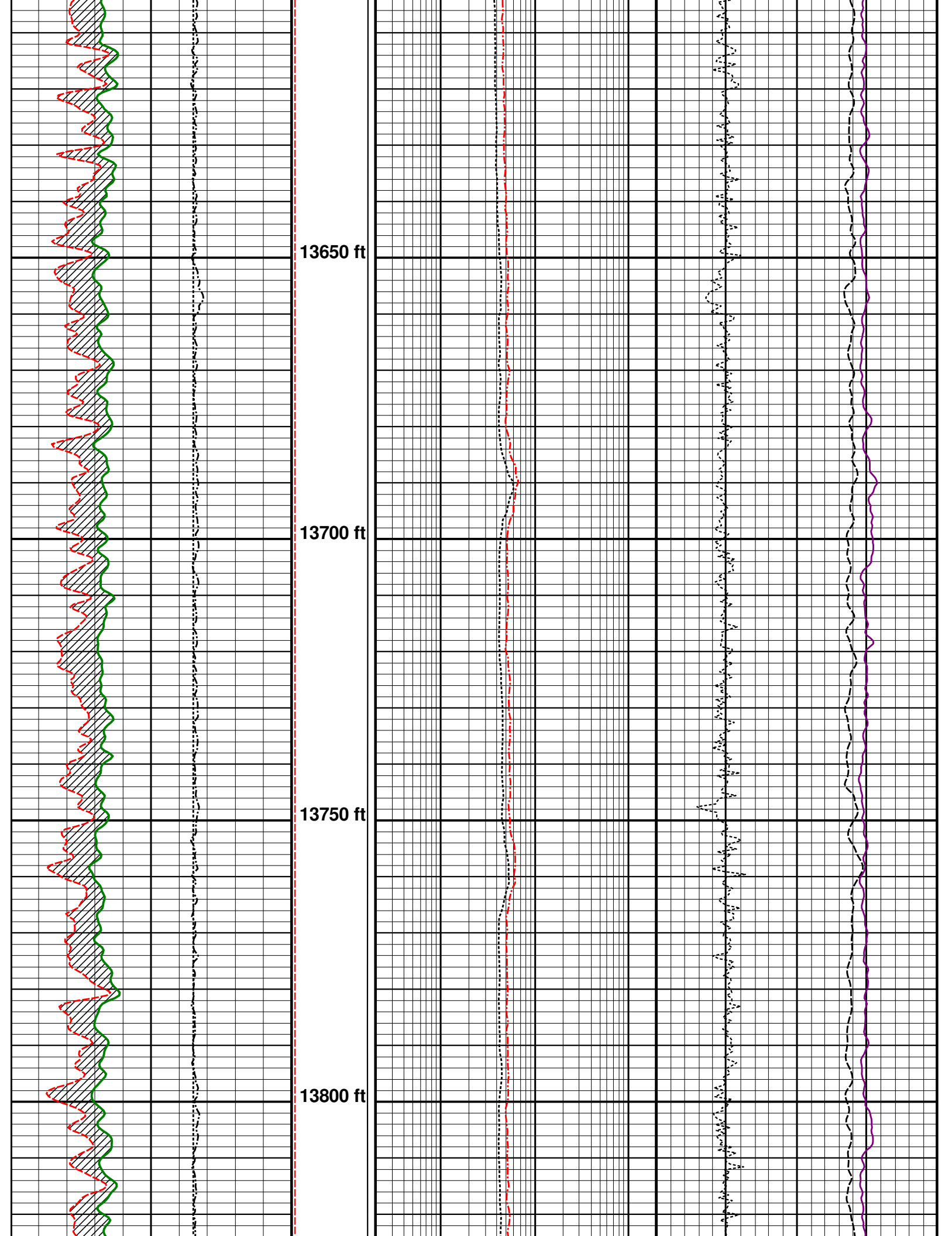


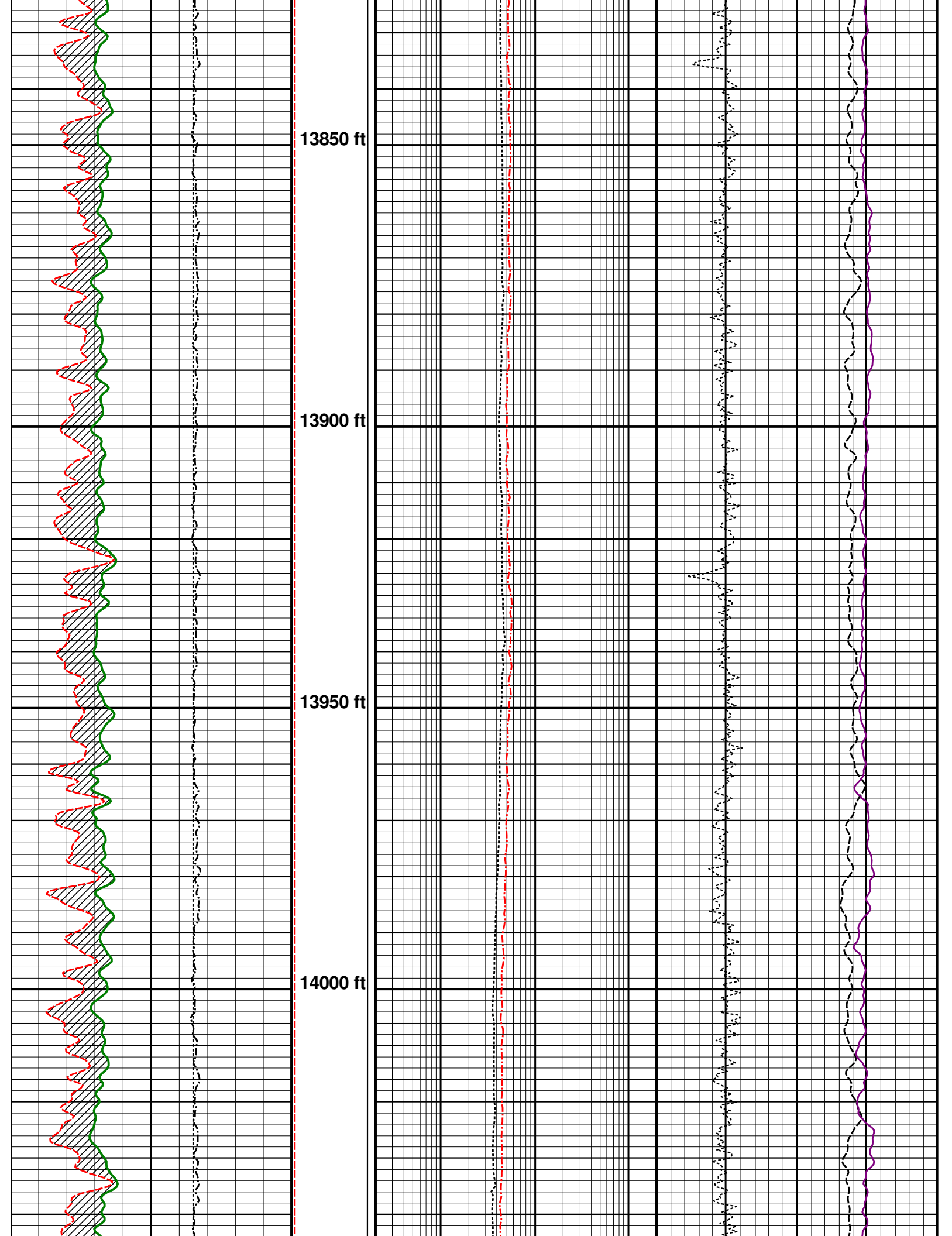


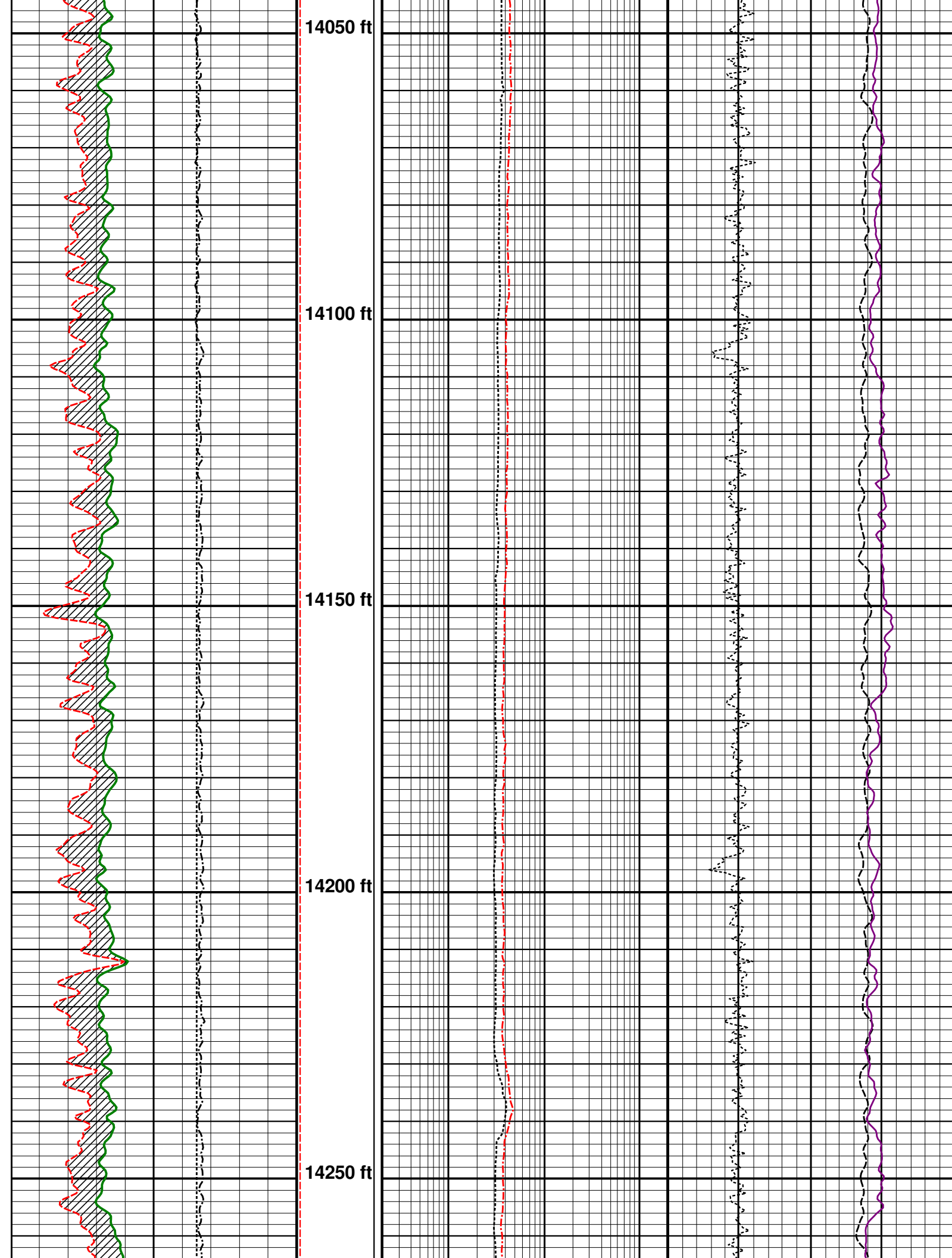


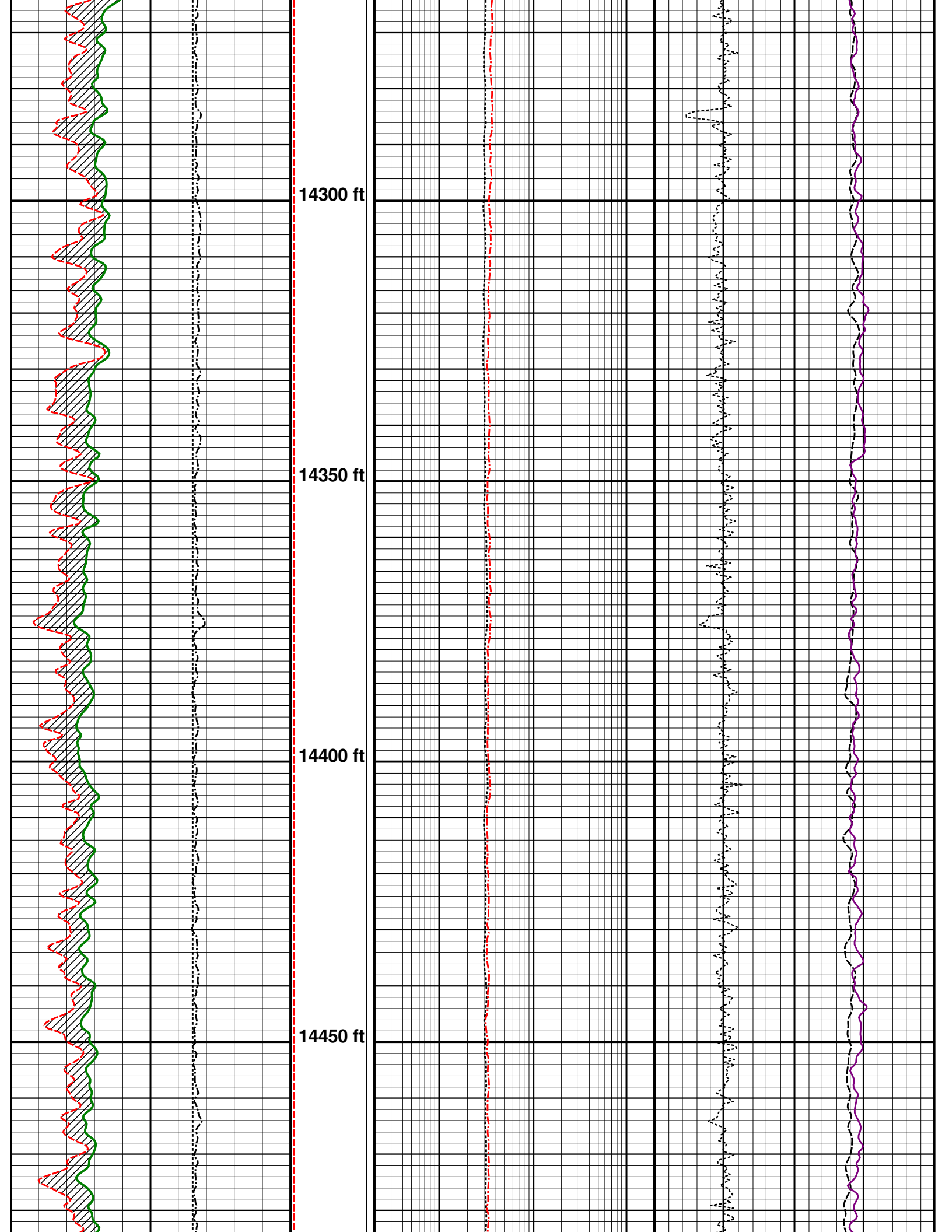


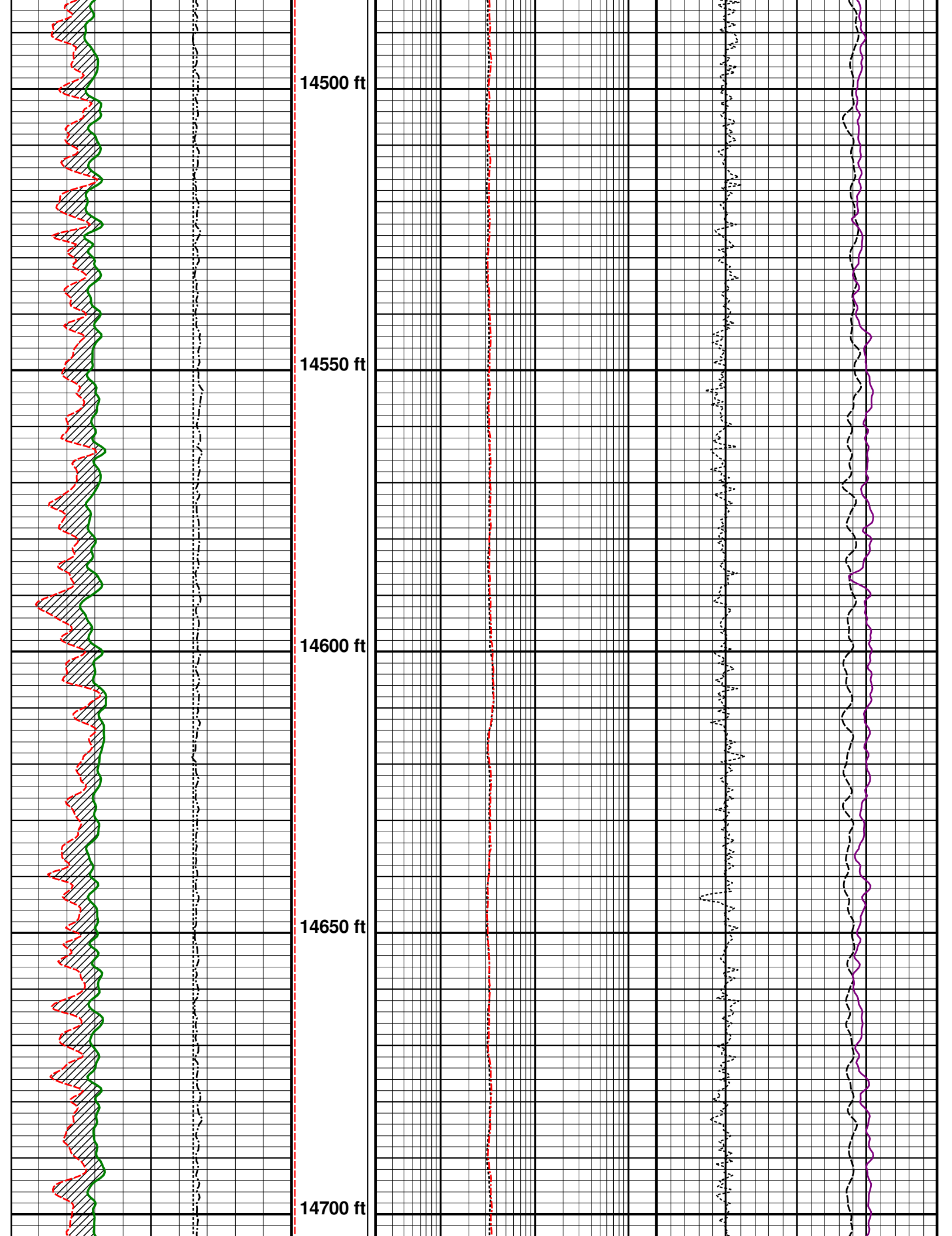


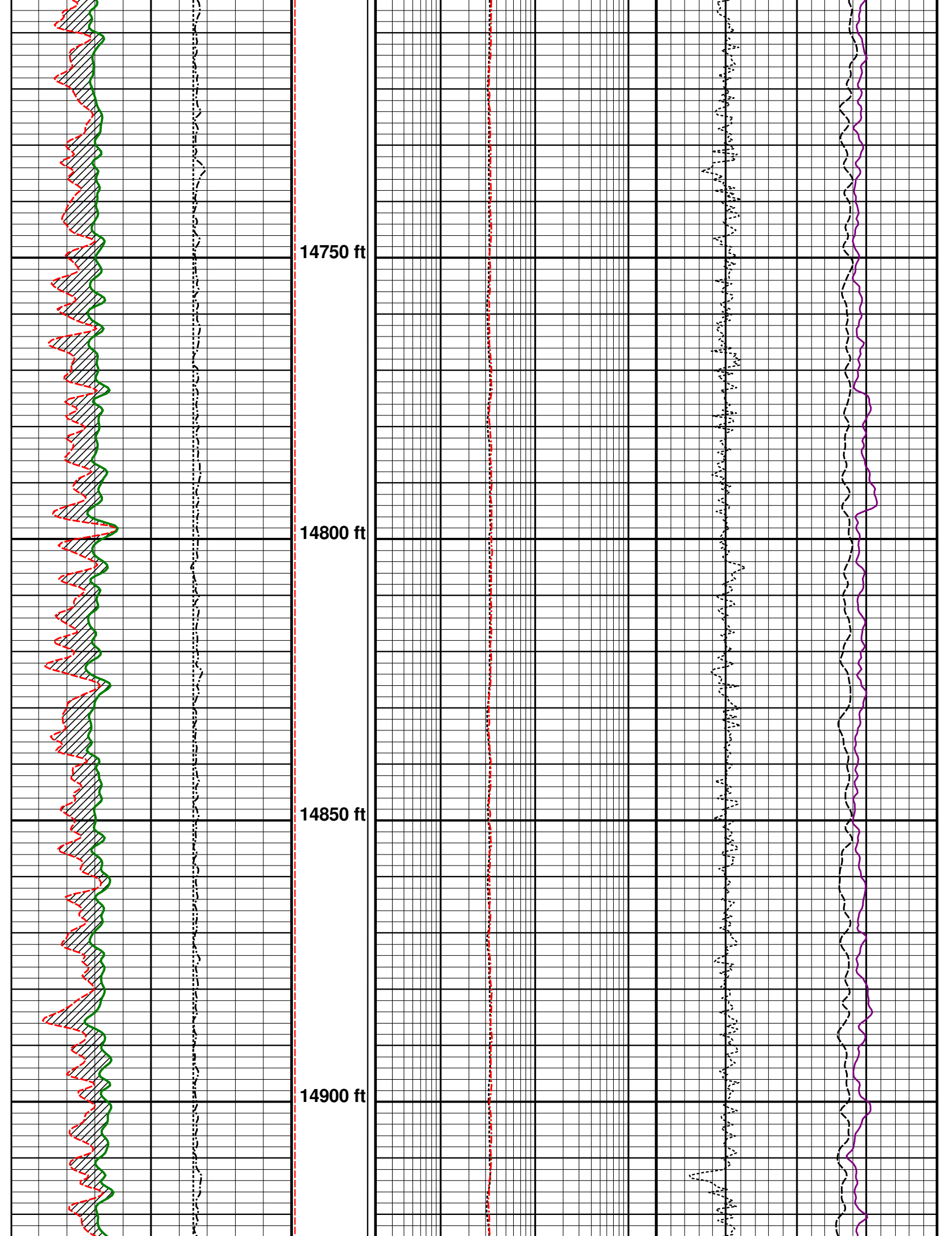


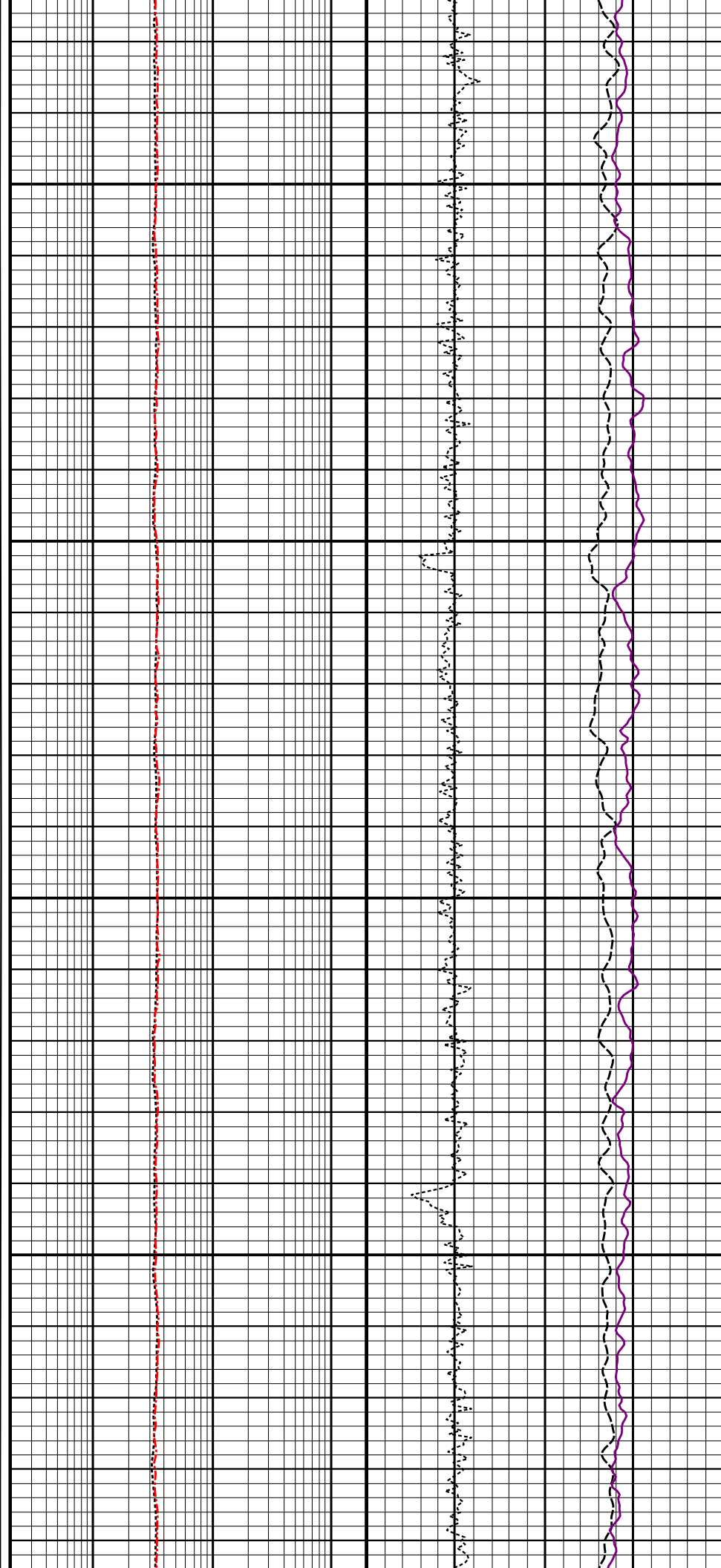
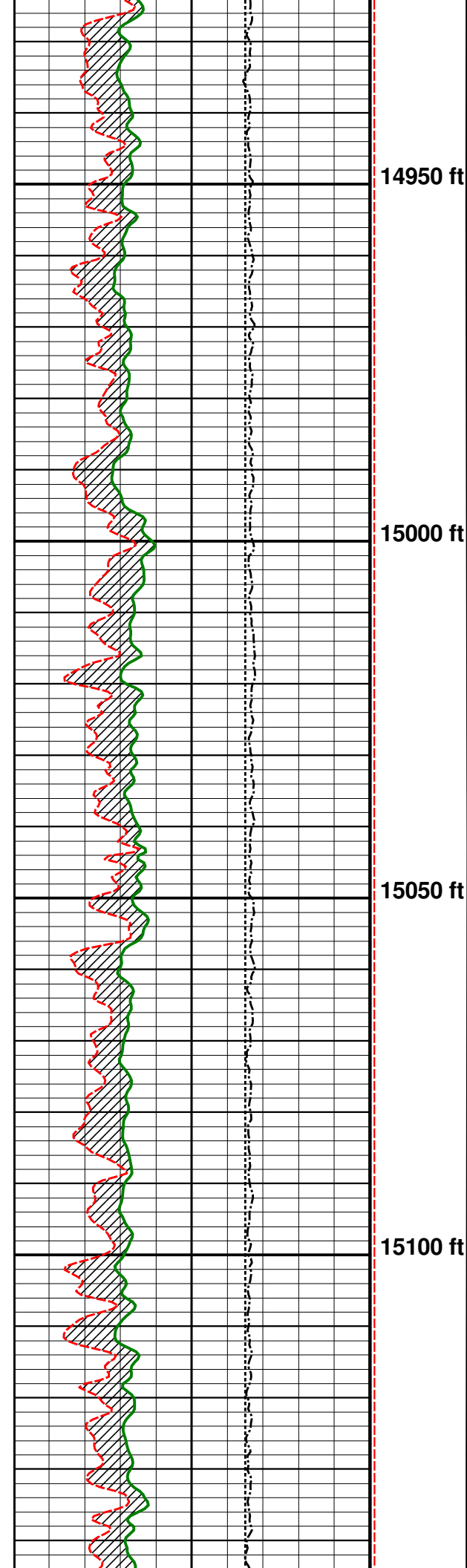


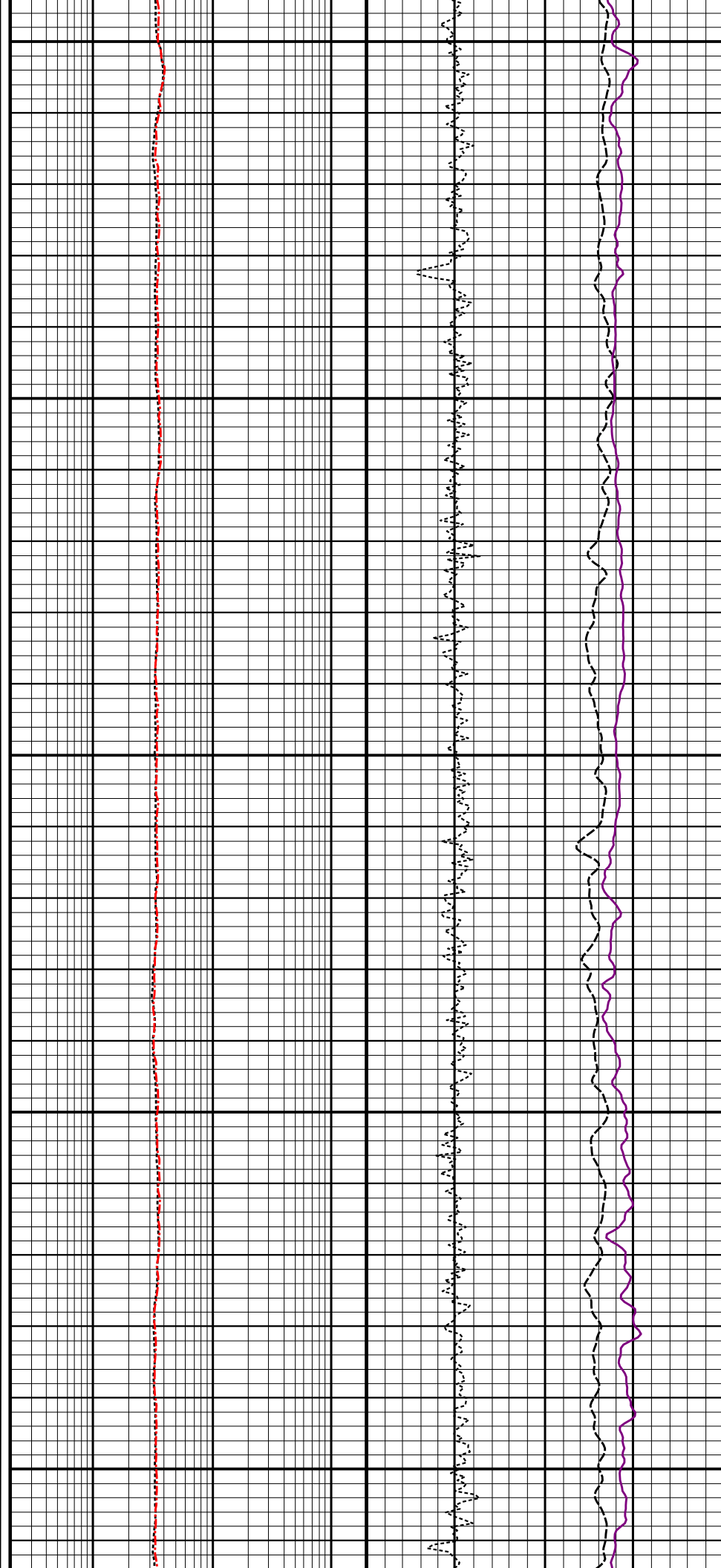
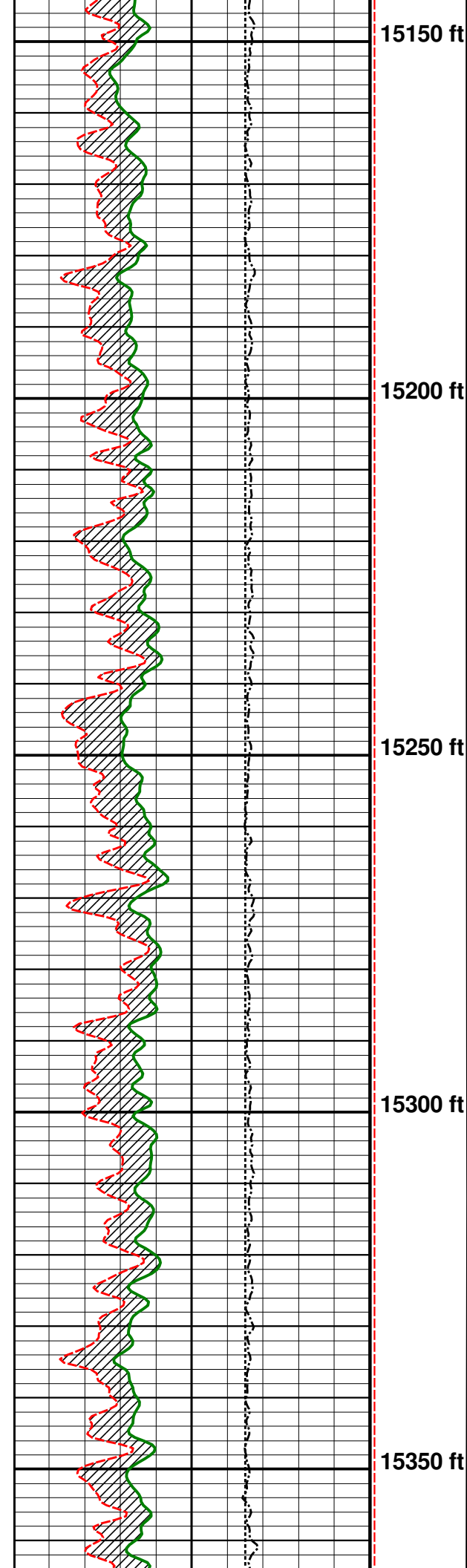


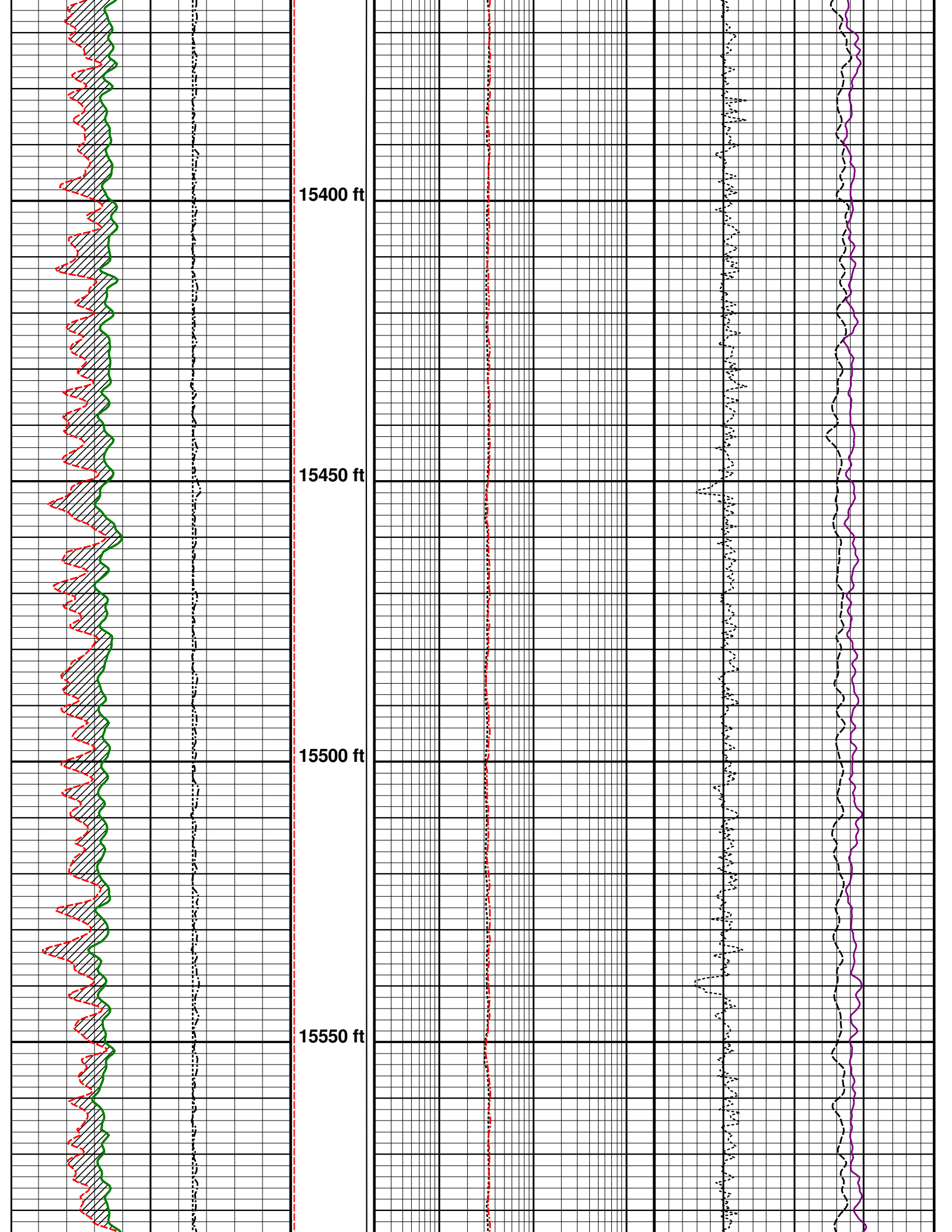


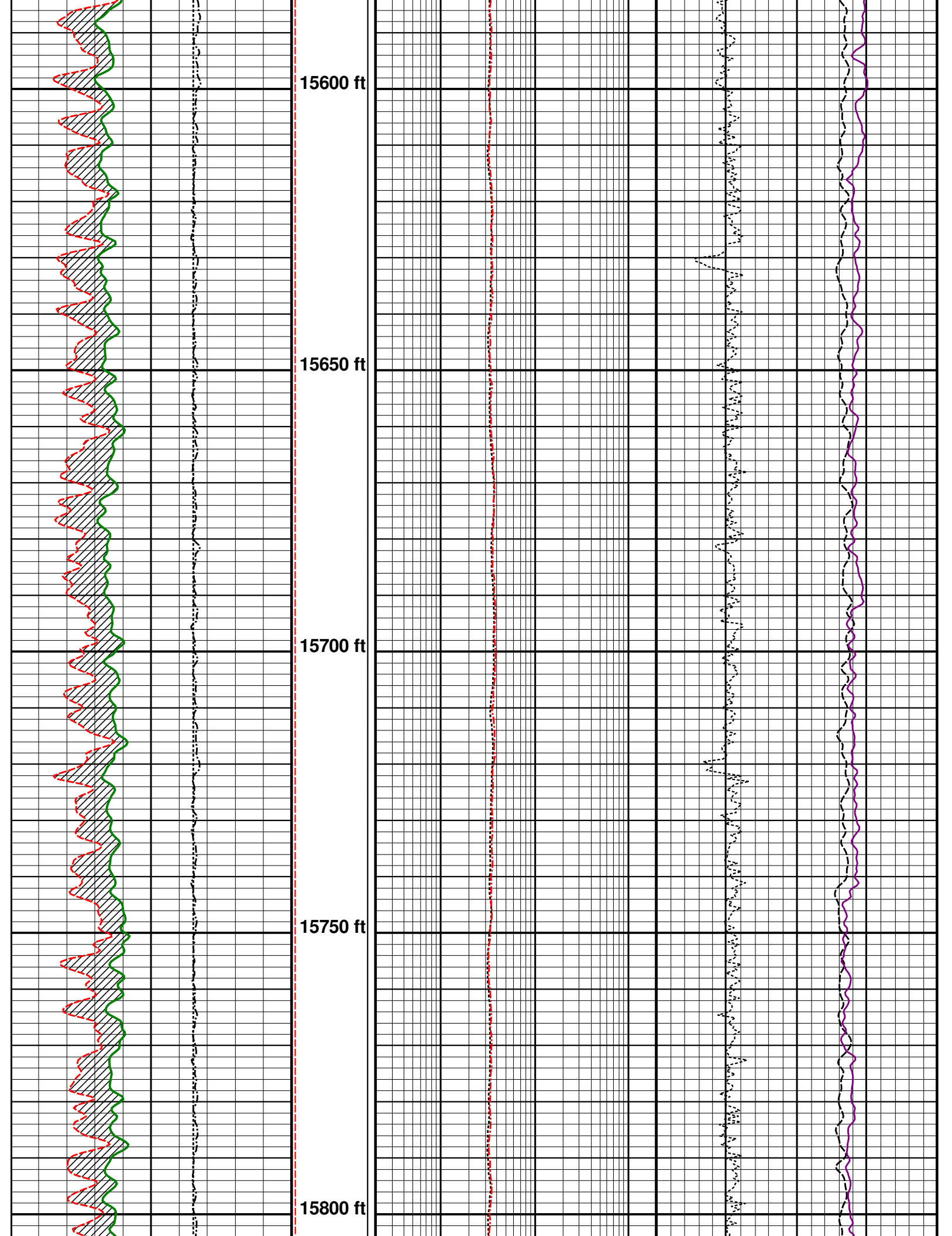


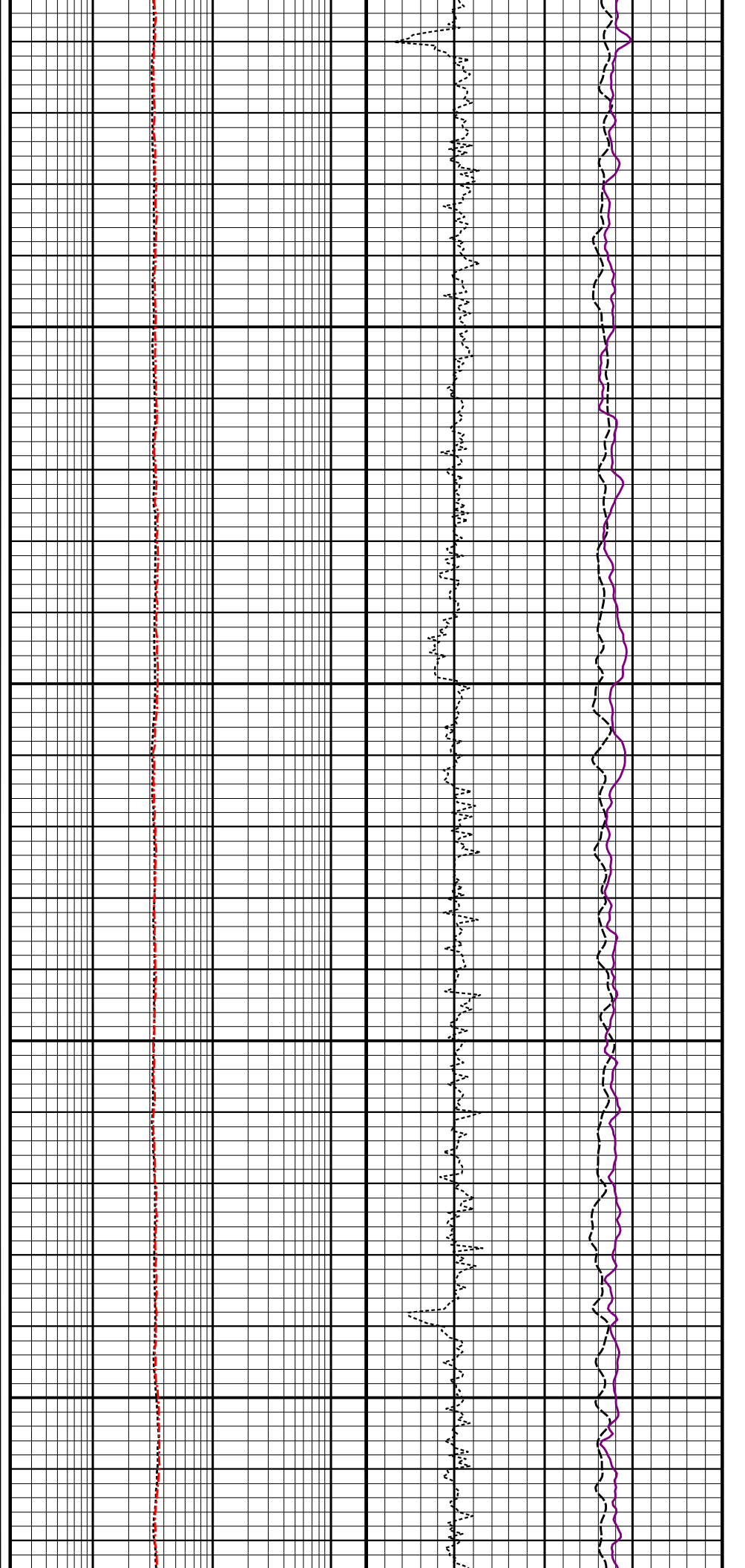
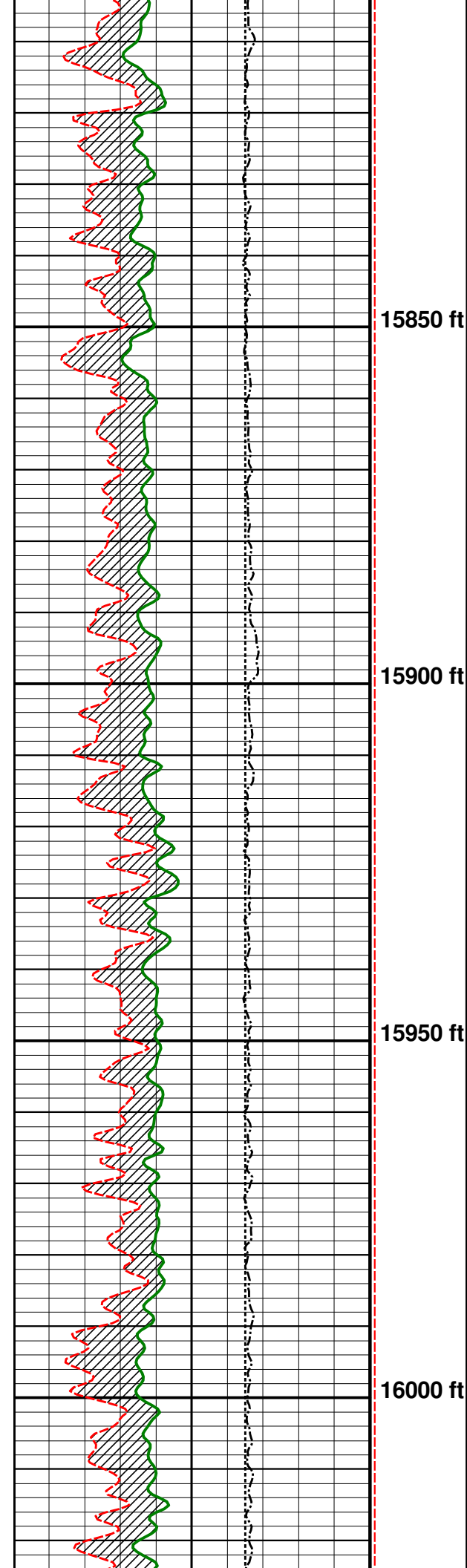


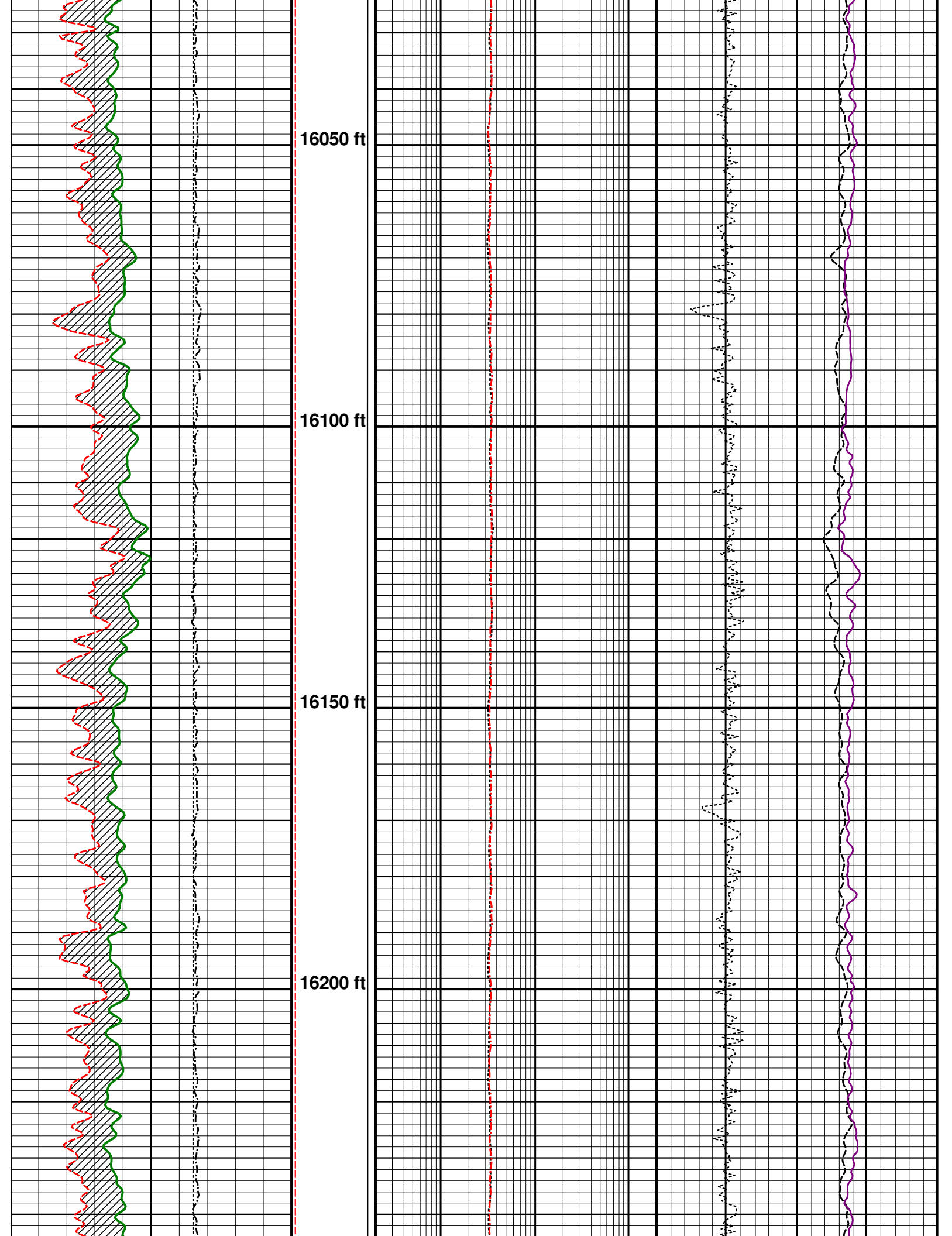


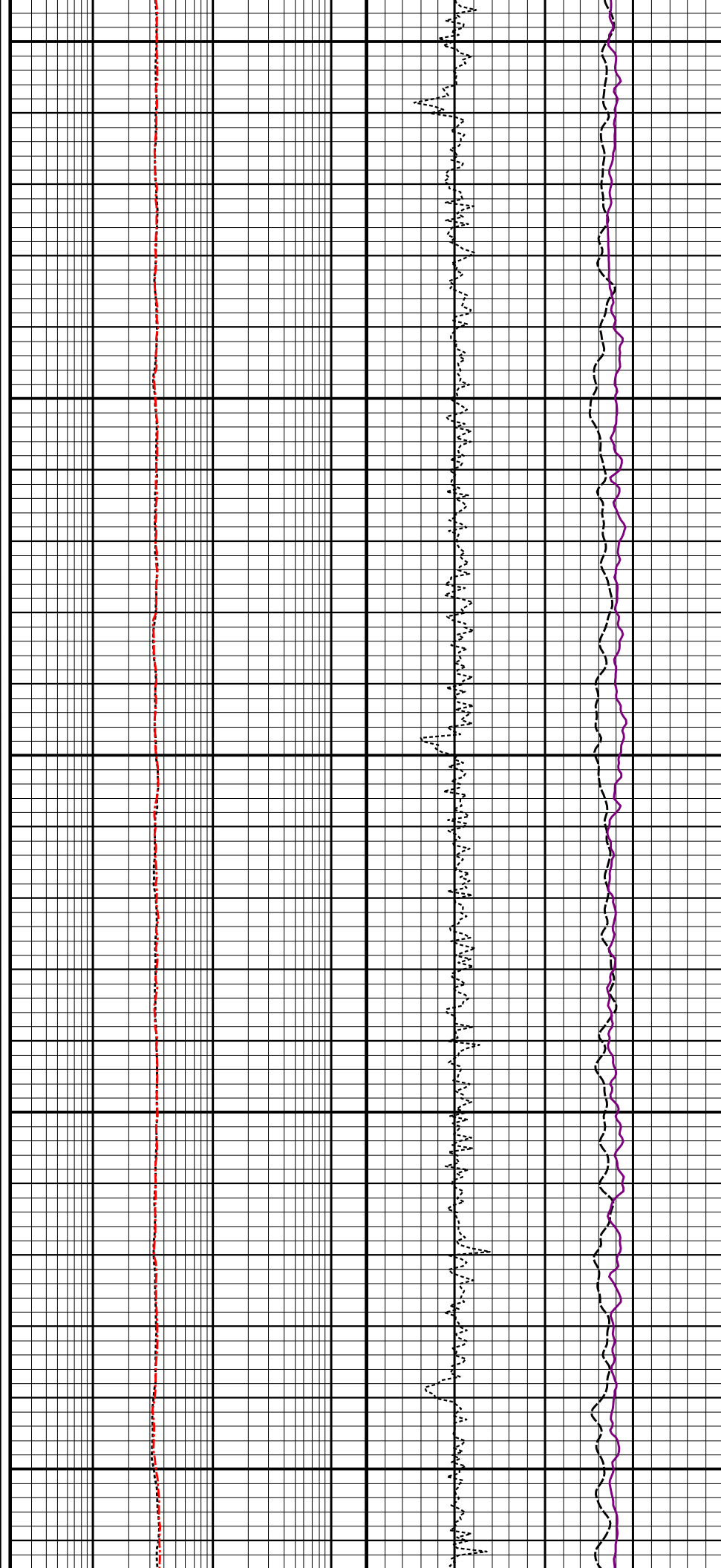
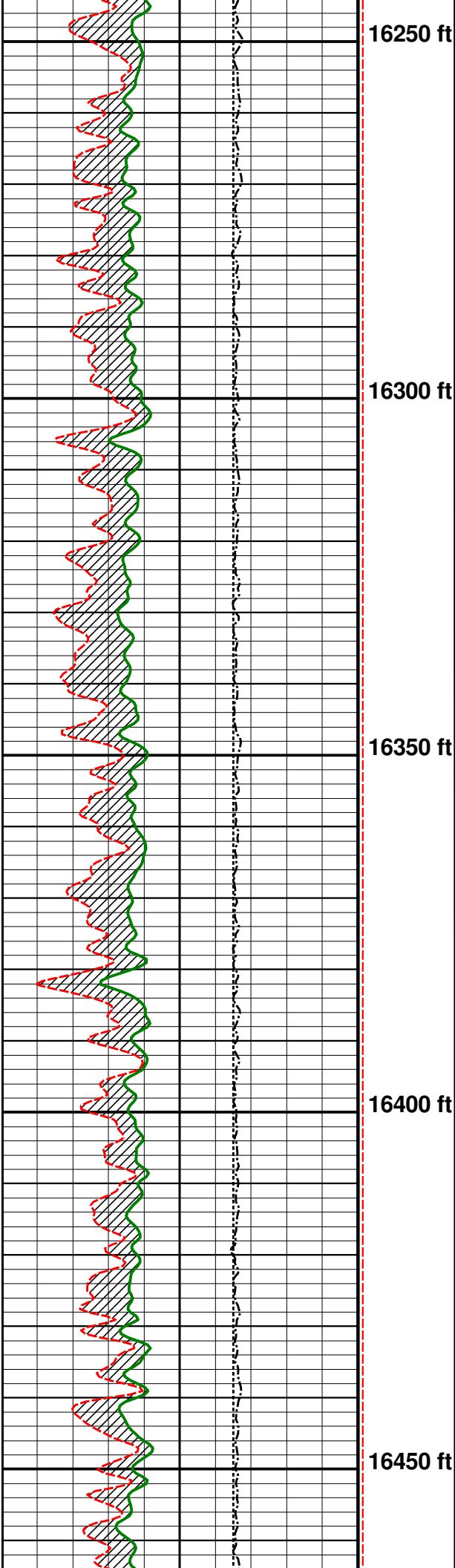


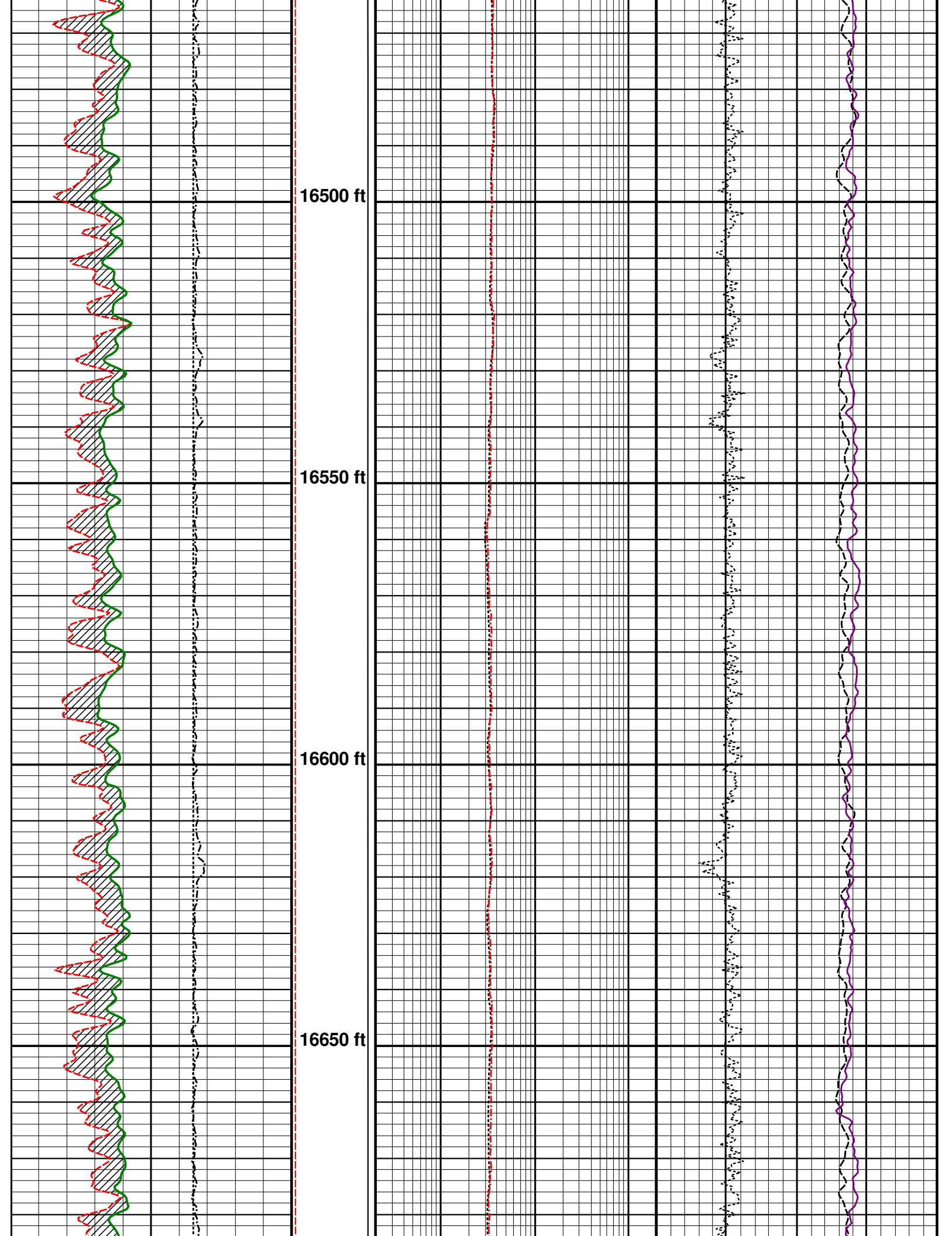


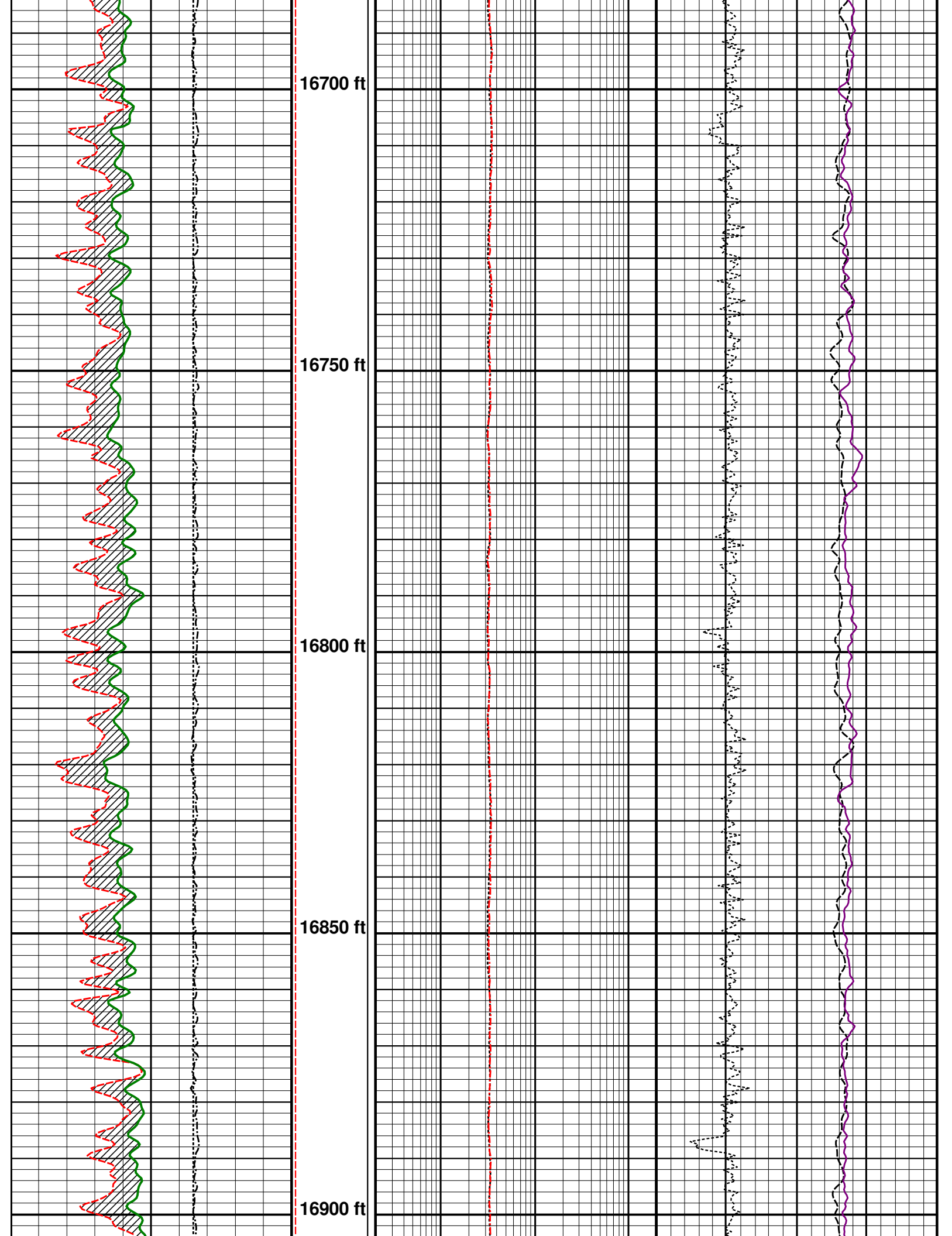


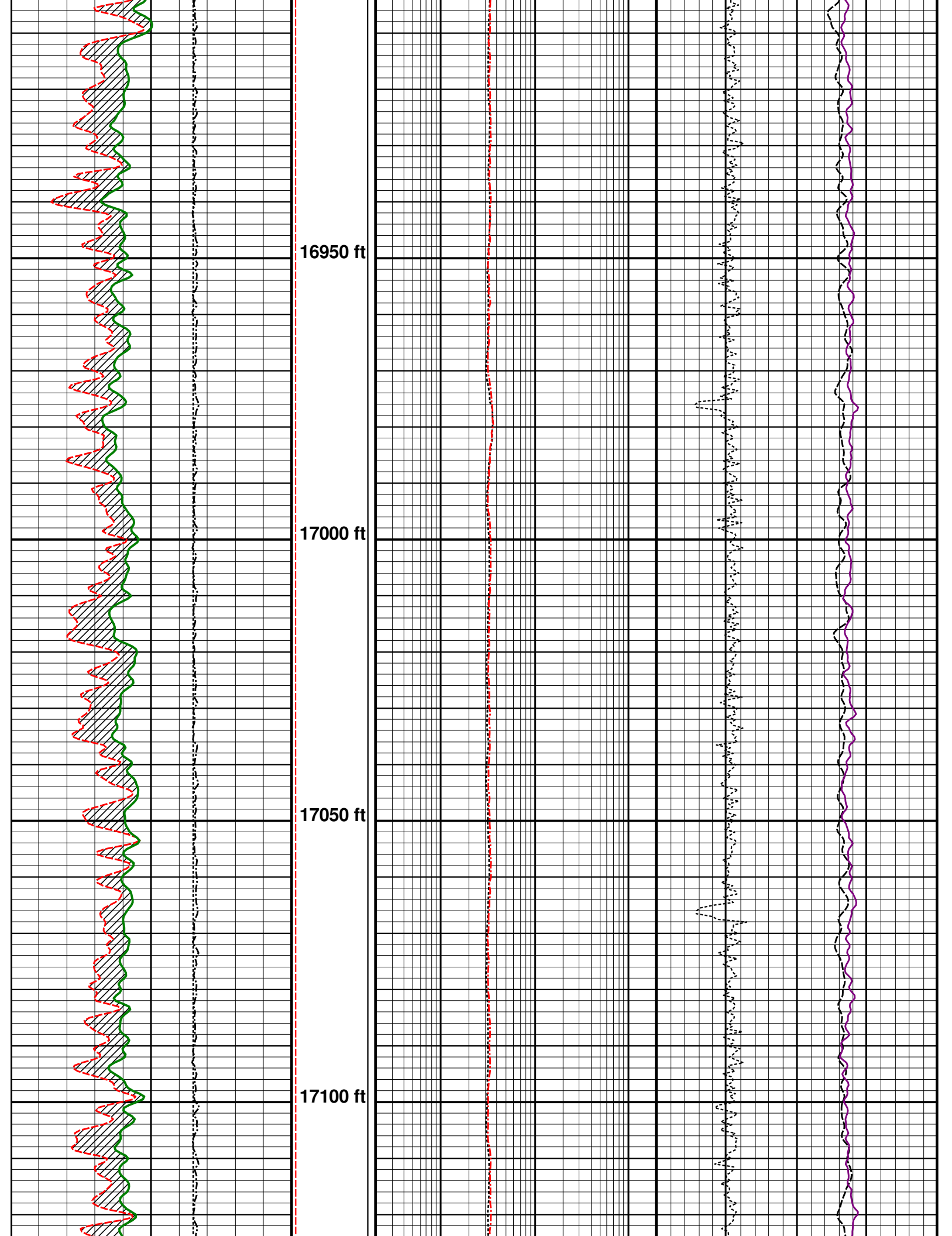


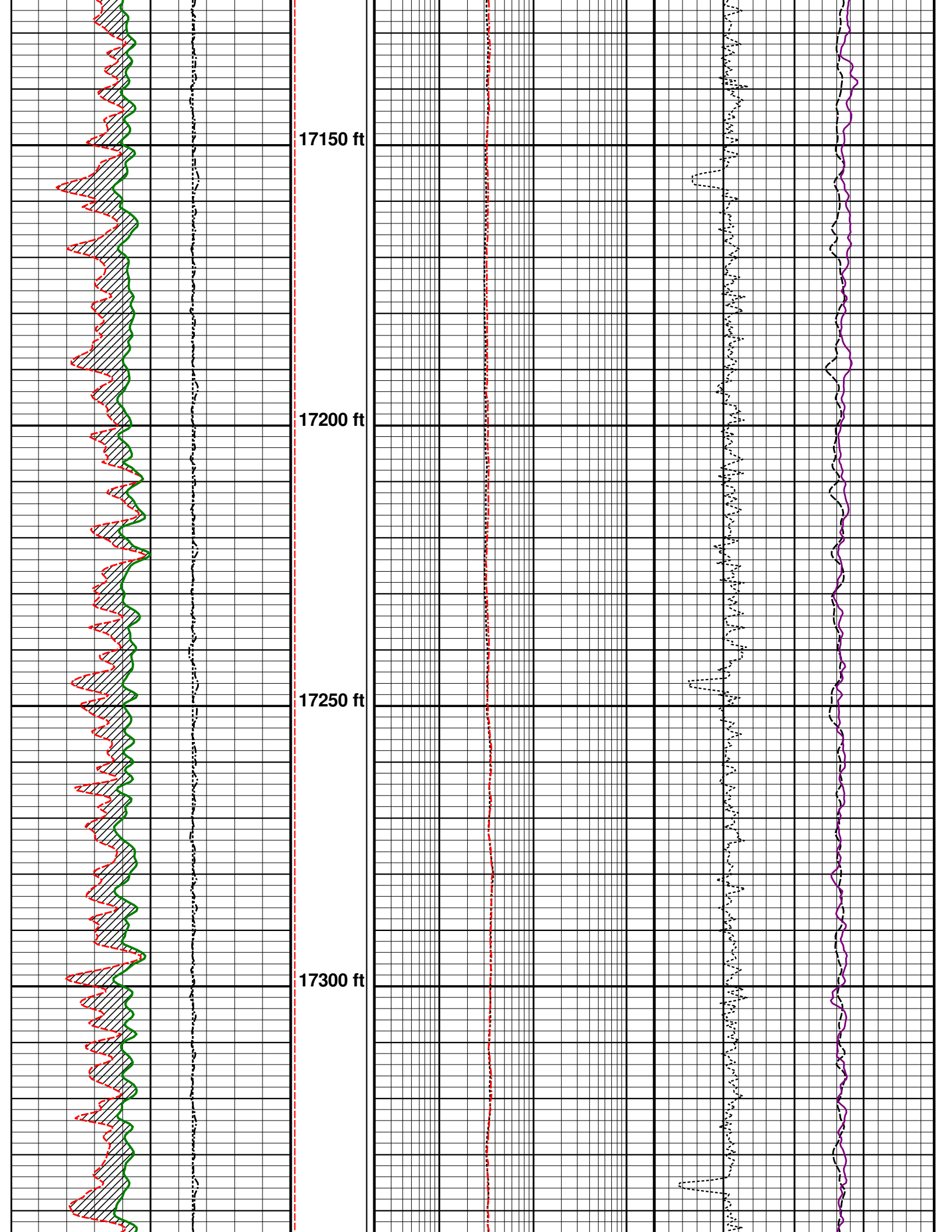


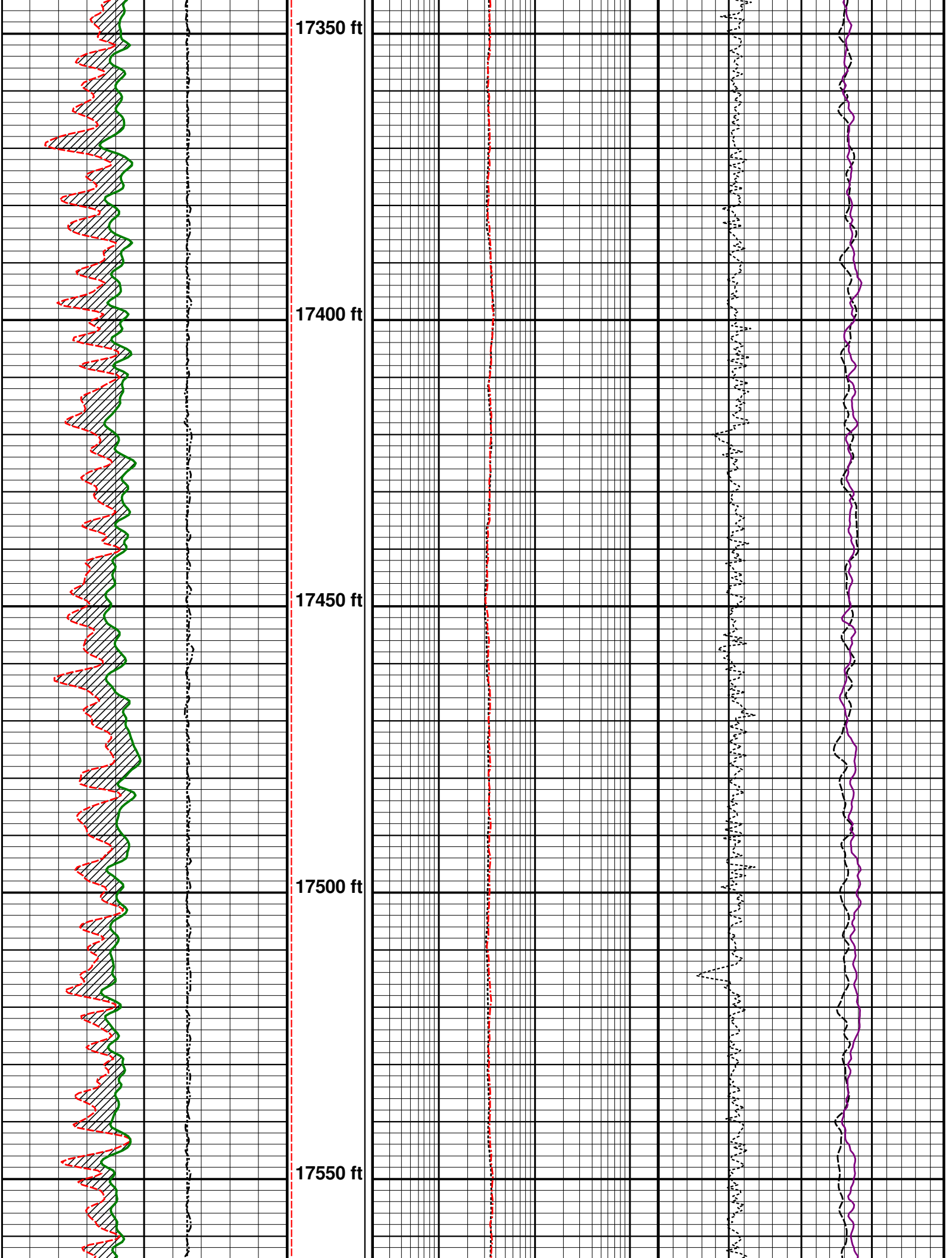


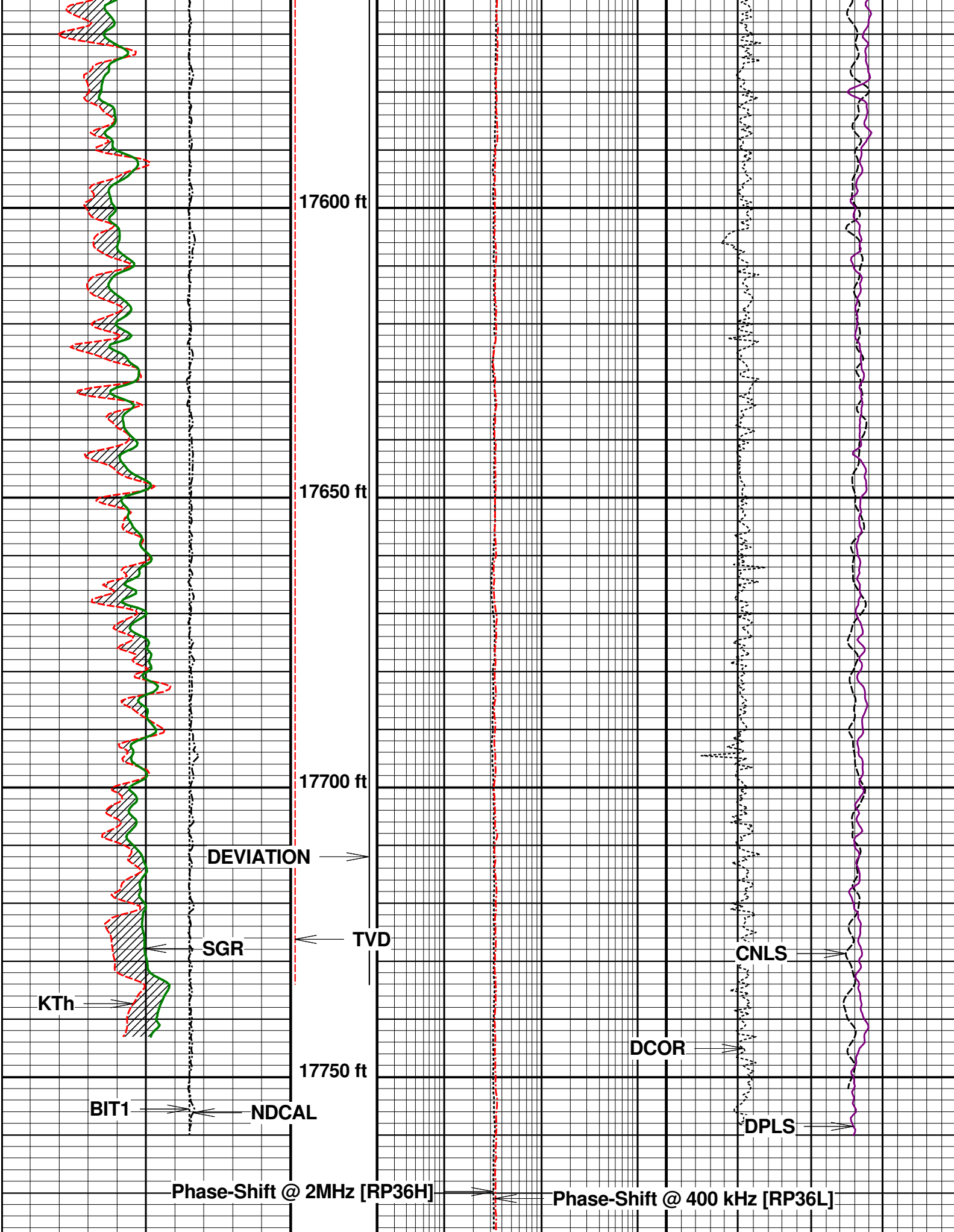


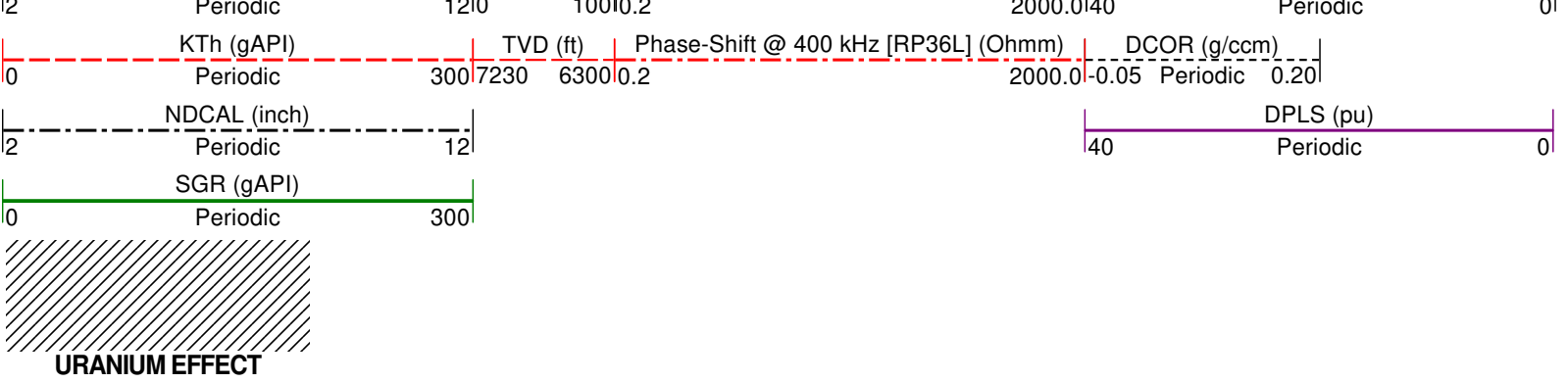












File : C:\.....\Pre-post\pre\MLT_1473_018.cvf

Tool name : **Dual Neutron** Asset : **018** Series : **1473** Source ID :

Gamma

Gamma Calibration

Time Aug / 21 / 2019 14:56:06

Setup

Description 1473018_1619-93_2019AUG21_MR

Setup Version 00046

Block	Raw Value	User Value	Device	Device SN	Mult.
Background	37.5622 cps				
Jig ON	347.748 cps				
Gamma	310.1858 cps	250.0001 gAPI	Gamma Ray Jlg	1619-93	0.805969

Gamma Primary Verification

Time Aug / 21 / 2019 14:58:23

Setup

Description 1473018_1619-93_2019AUG21_MR

Setup Version 00046

Block	Device	Device SN	Raw Value	User Value
Background			36.8616 cps	
Jig ON	Gamma Ray Jlg	1619-93	341.519 cps	
Gamma				245.5447 gAPI

Tool name : **Dual Neutron** Asset : **018** Series : **1473** Source ID :

Ratio

Compensated Neutron Calibration

Time Aug / 21 / 2019 15:15:16

Setup

Description 1473018_66467B_2019AUG21_MR

Setup Version 00046

Curve Name	pt	Raw Value	User Value	Device	Mult.
Ratio	1	17.7643 none	17 none	Neutron Ratio	0.956976

Compensated Neutron Primary Verification

Time Aug / 21 / 2019 15:18:06

Setup

Description 1473018_66467B_2019AUG21_MR

Curve Name	pt	Device	Device Value
CN	1	Neutron Porosity	23 %

User Value

24.6907 %
21.16 24.84

File : C:.....\Pre-post\pre\MLT_1481_006.cvf

Tool name : **Density**Asset : **006**Series : **1481**

Source ID :

Density**Density Calibration**

Time Aug / 22 / 2019 12:59:30

Setup

Description 1481006_63552B_2019AUG22_PM

Setup Version 00046

Curve Name	pt	Raw Value	User Value	Device	Mult.	Add.
LSDensity	1	0.284113 none	2.7 g/c3	Aluminum Block	30.153510	-5.867
MSDensity	1	0.227015 none	2.7 g/c3	Aluminum Block	70.749610	-13.361
SSDensity	1	0.251801 none	2.7 g/c3	Aluminum Block	113.349900	-25.842
LSDensity	2	0.251281 none	1.71 g/c3	Concrete Block		
MSDensity	2	0.213022 none	1.71 g/c3	Concrete Block		
SSDensity	2	0.243067 none	1.71 g/c3	Concrete Block		

0913 Telemetry3102

Identifier : 0913
Asset Number : 008
Length : 4.003 ft
Diameter : 1.7 inch
Weight : 14.6 lbs
Measure Point : 0.000 ft : State

State 21.74 ft

1460 Spectrum Gamma

Identifier : 1460
Asset Number : 017
Length : 3.950 ft
Diameter : 2.0 inch
Weight : 22.7 lbs
Measure Point : 1.247 ft : Spectrum

Spectrum 19.04 ft

GR 17.11 ft

1473 Dual Neutron

Identifier : 1473
Asset Number : 018
Length : 10.069 ft
Diameter : 2.0 inch
Weight : 52.4 lbs

Weight : 58.4 lbs
Measure Point : 1.854 ft : SSN
Measure Point : 2.343 ft : LSN
Measure Point : 9.383 ft : GR

LSN 10.07 ft
SSN 9.58 ft

0813 Knuckle Joint

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

1481 Density

Identifier : 1481
Asset Number : 006
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

Long 2.14 ft
Mid 1.87 ft
Short 1.65 ft

0.00 ft

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

CORDAX™

COMPANY: GREAT WESTERN OPERATING COMPANY LLC.
WELL: SCHNEIDER HD 11-099HC
FIELD: WATTENBERG
COUNTY: WELD
STATE: CO