



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Noble Energy Inc.		Company Noble Energy Inc.	
Well Moser H22-745		Well Moser H22-745	
Field Wattenberg		Field Wattenberg	
County Weld		County Weld	
State Colorado		State Colorado	
Location:		API #: 05-123-40882	
SEC 27 TWP 3N RGE 65W		Other Services ---	
Permanent Datum Ground Level		Elevation	
Log Measured From Kelly Bushing		4811'	
Drilling Measured From Kelly Bushing		30 FT	
Date 25-Jan-2016		K.B. 4841'	
Run Number One		D.F. 4840'	
Depth Driller 12430 FT		G.L. 4811'	
Depth Logger 7300 FT			
Bottom Logged Interval 7295 FT			
Top Log Interval Surface			
Open Hole Size 7.875"			
Type Fluid Water			
Density / Viscosity 8.34 lbm/gal			
Max. Recorded Temp. 251°F			
Estimated Cement Top 1410 FT			
Time Well Ready ROA			
Time Logger on Bottom 840			
Equipment Number HD-0361			
Location Fort Lupton, CO			
Recorded By Chad Bryan			
Witnessed By Bill Mansfield			
Borehole Record			
Run Number		Tubing Record	
Bit From To		Size Weight From To	
Casing Record		Size (in) Wgt (lbs/Ft) Grade Top Bottom	
Surface Casing 9 5/8 36 J-55 30 FT 1865.5 FT			
Intermediate #1 5 1/2 20 P110-1C -5.6 FT 12420 FT			
Intermediate #2			
Liner			

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Log ran as per customer request  
Depth Referenced to Kelly Bushing at 30 FT  
Log ran from as deep as possible in heel to surface  
Recorded with 2500 PSI surface induced pressure  
Logging tools were clean and free of any debris upon completions of operations  
  
Thank you for choosing FMC Technologies Surface Integrated Services.

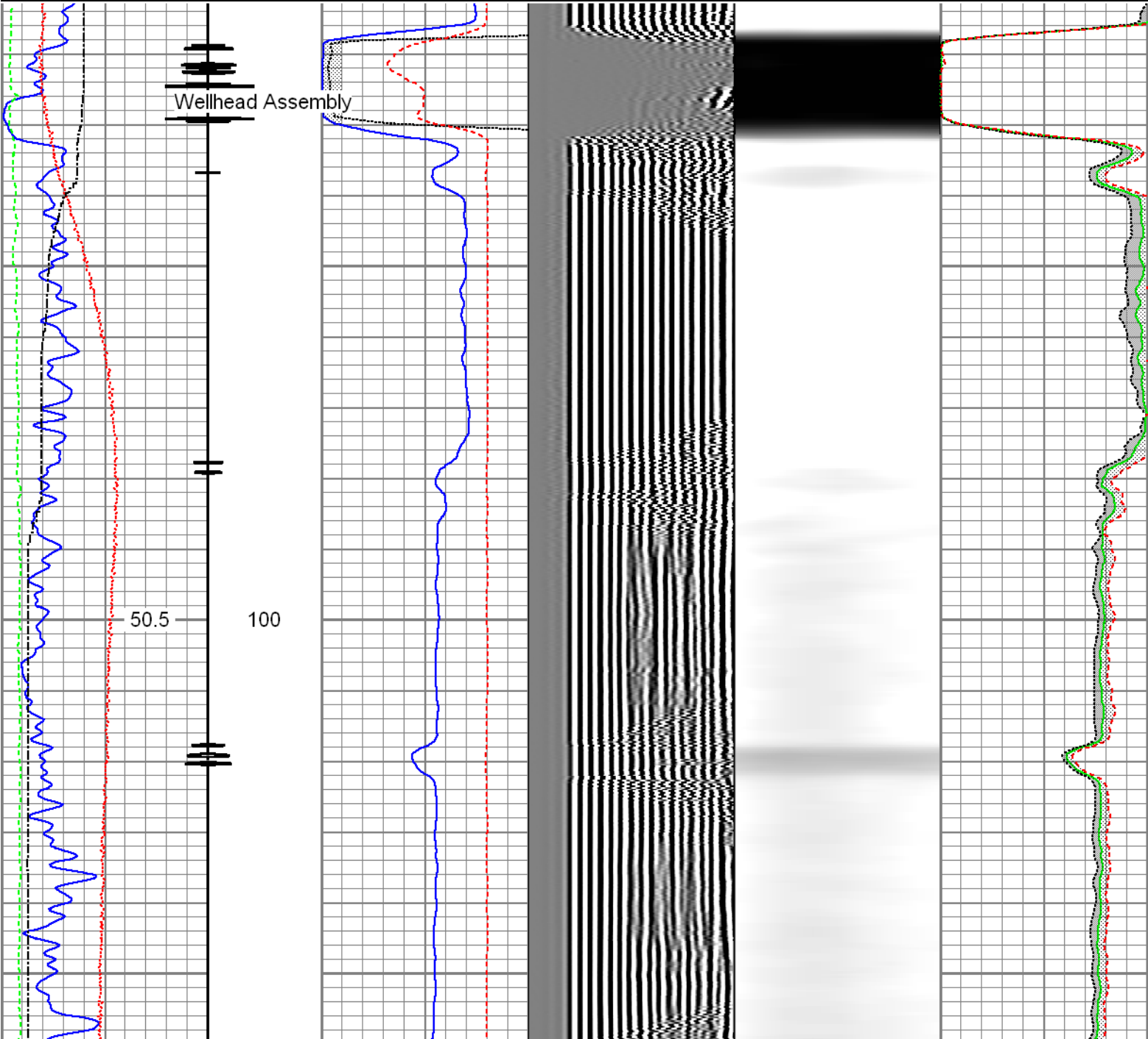


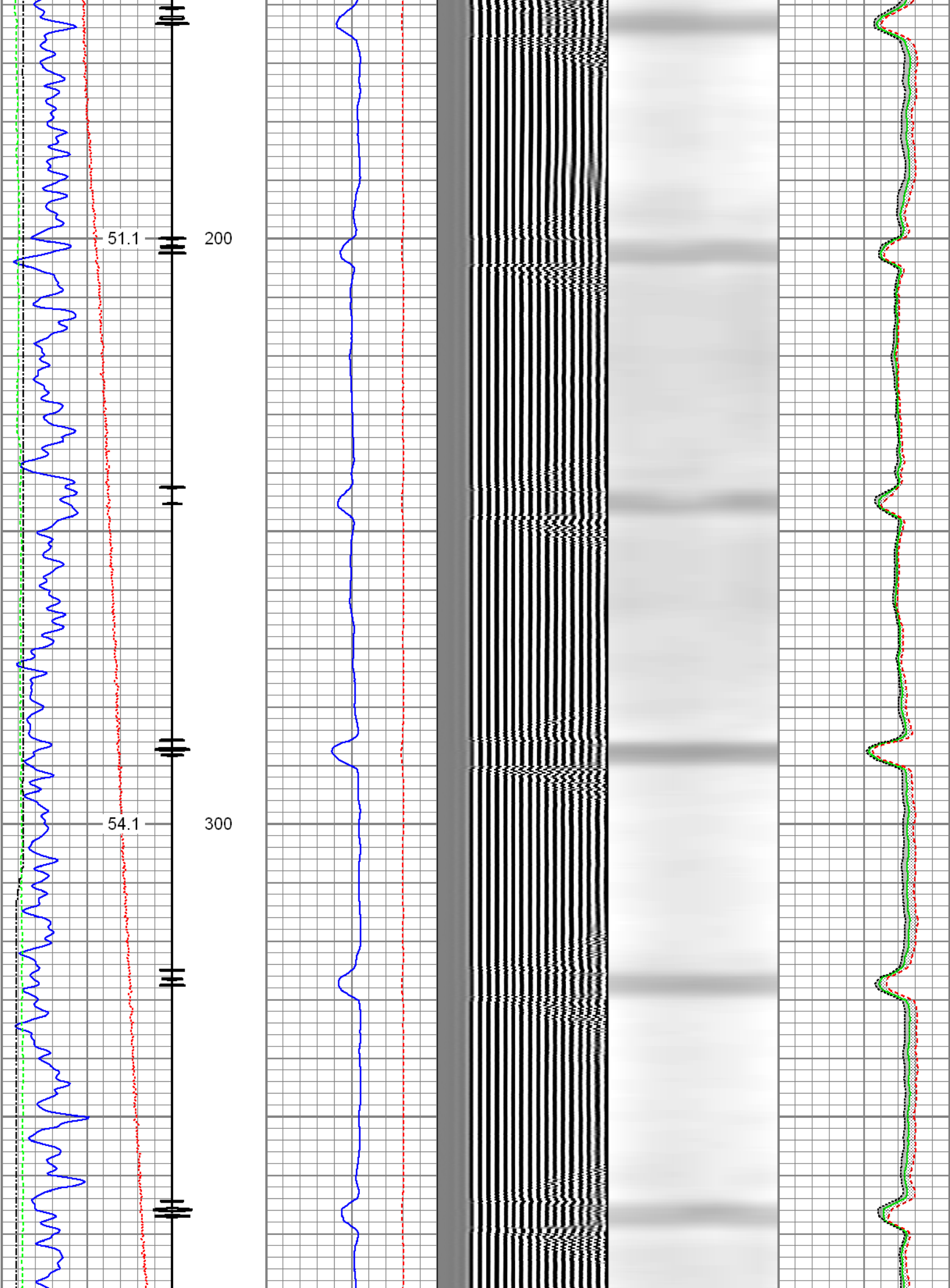
Main Pass

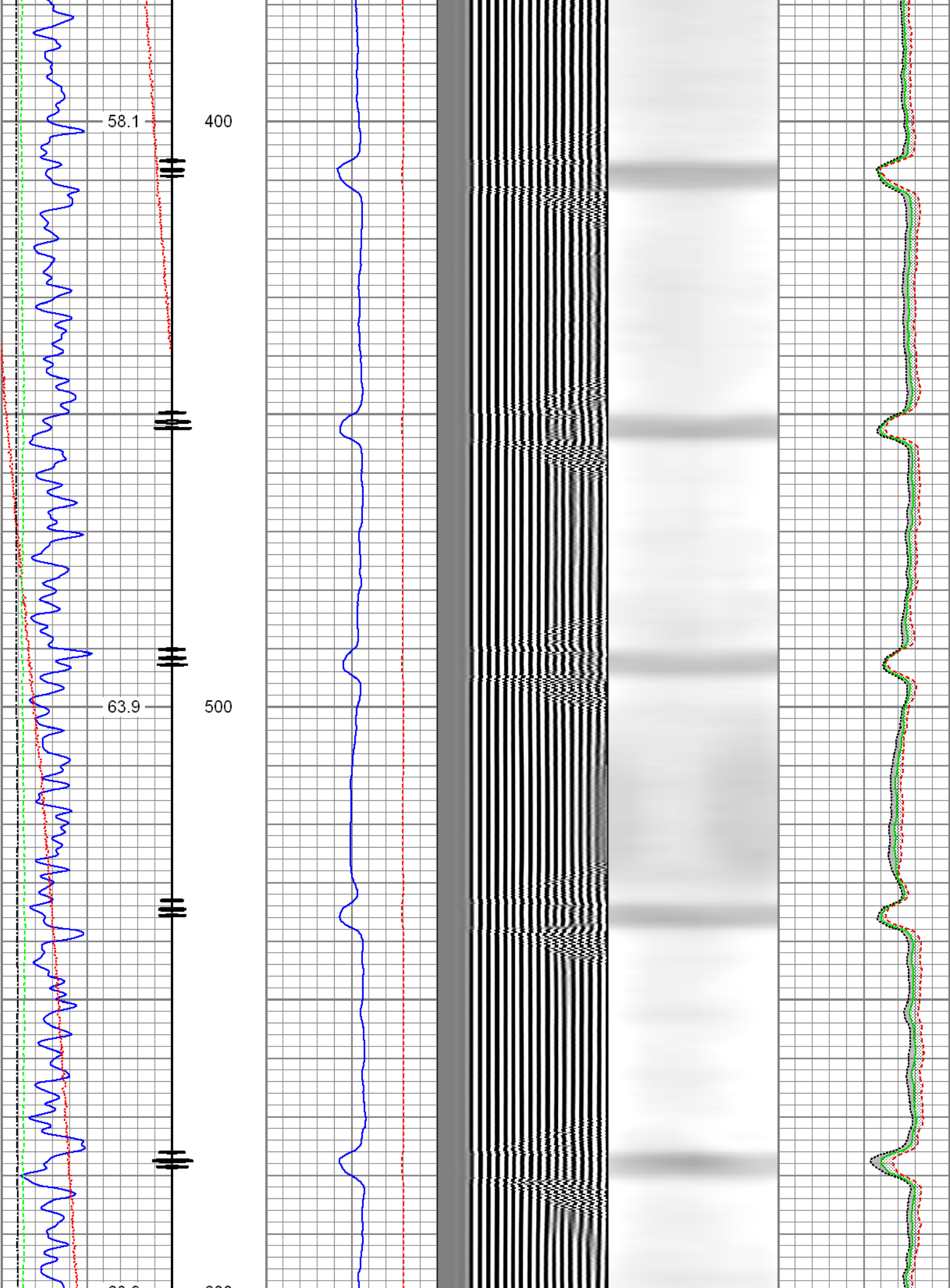
Recorded With 2500 PSI Surface Induced Pressure

Database File: 01-25-16\_noble energy\_moser h22-745\_rbl.db  
Dataset Pathname: main.1  
Presentation Format: radii  
Dataset Creation: Tue Jan 26 11:47:13 2016 by Calc SCH 120430  
Charted by: Depth in Feet scaled 1:240

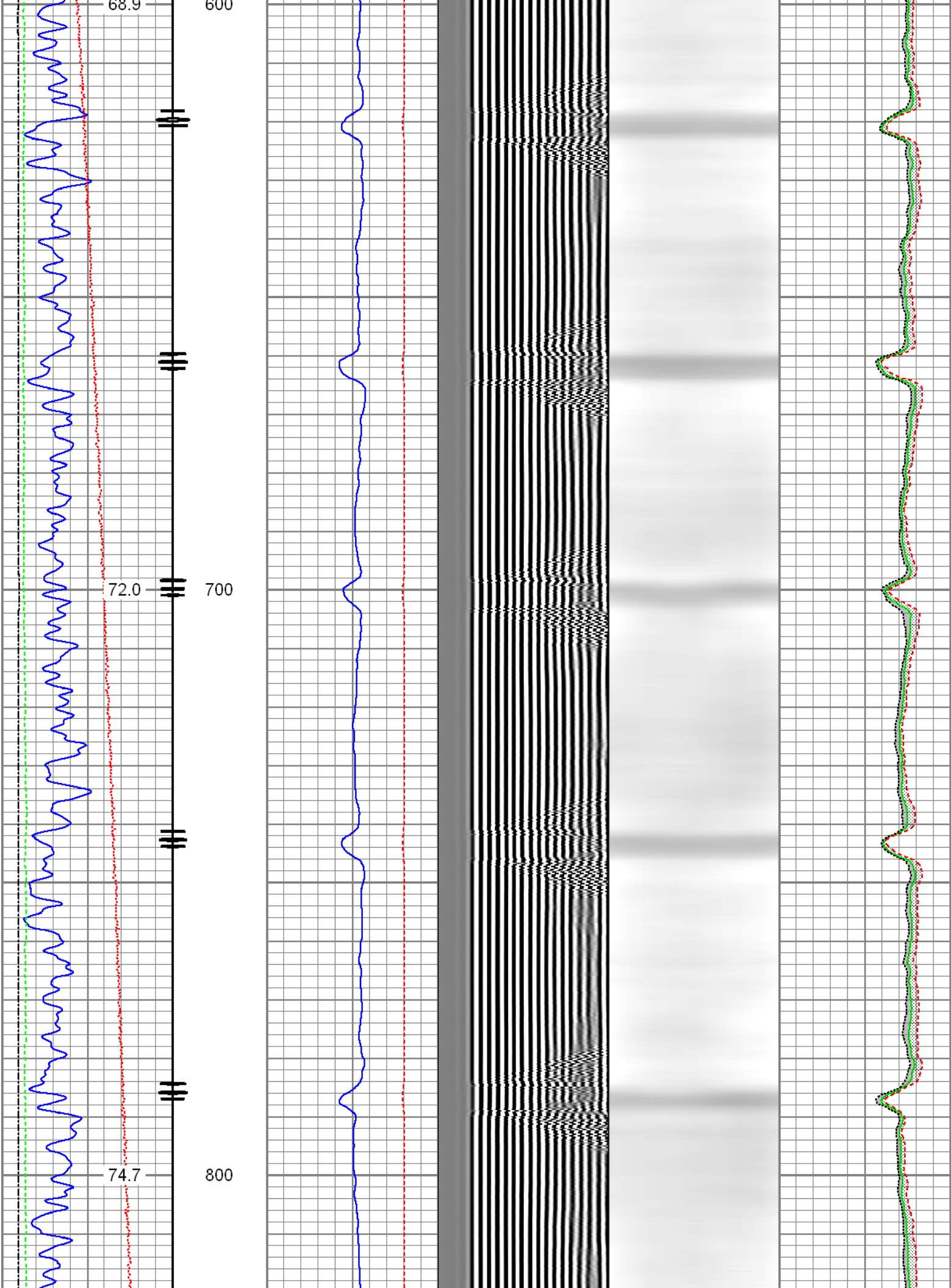
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150				
Line Tension				
0 (lb) 2000				

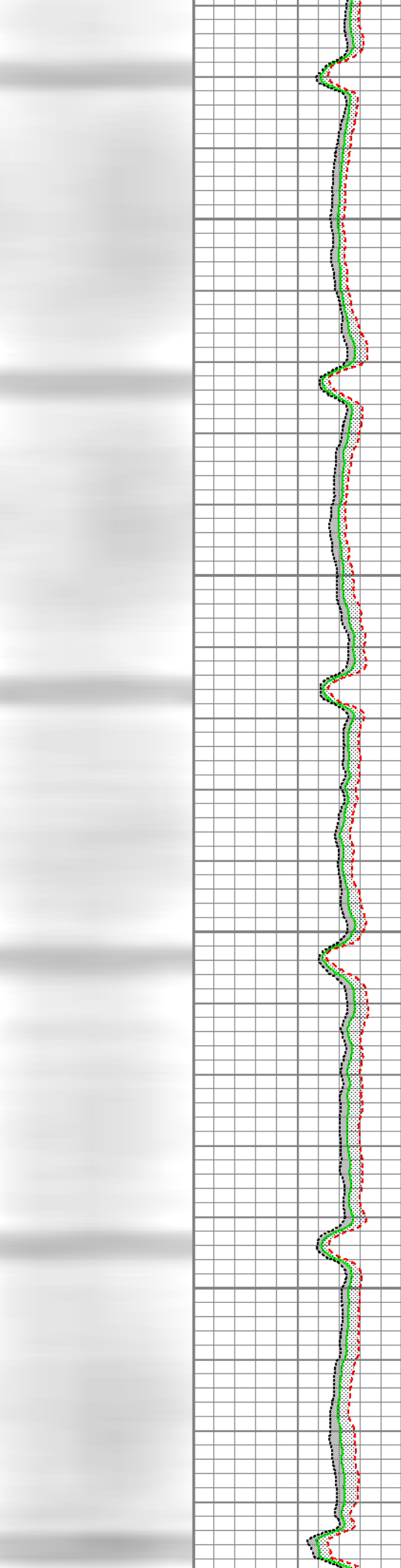
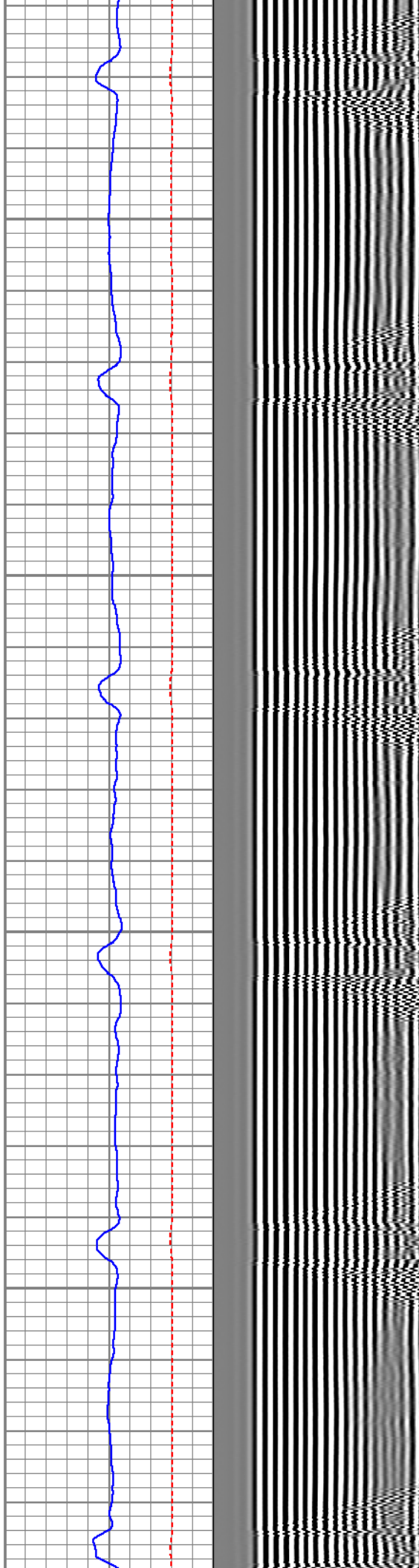
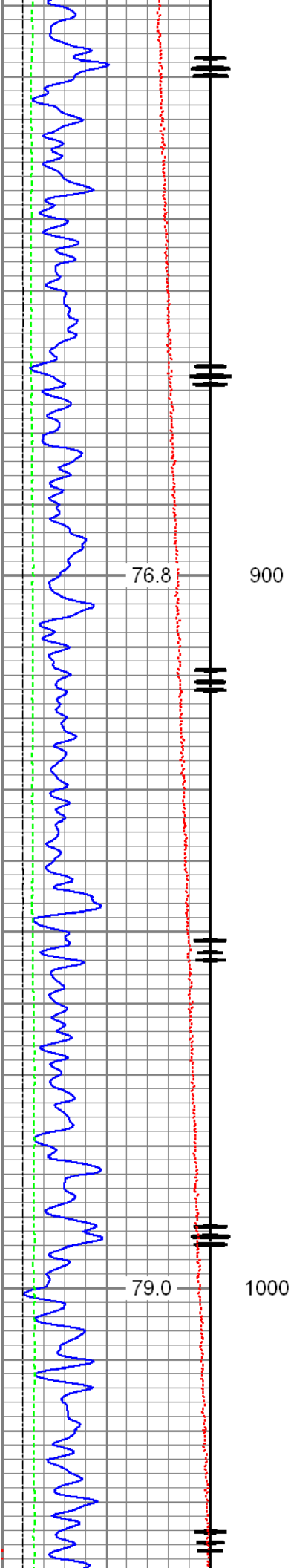


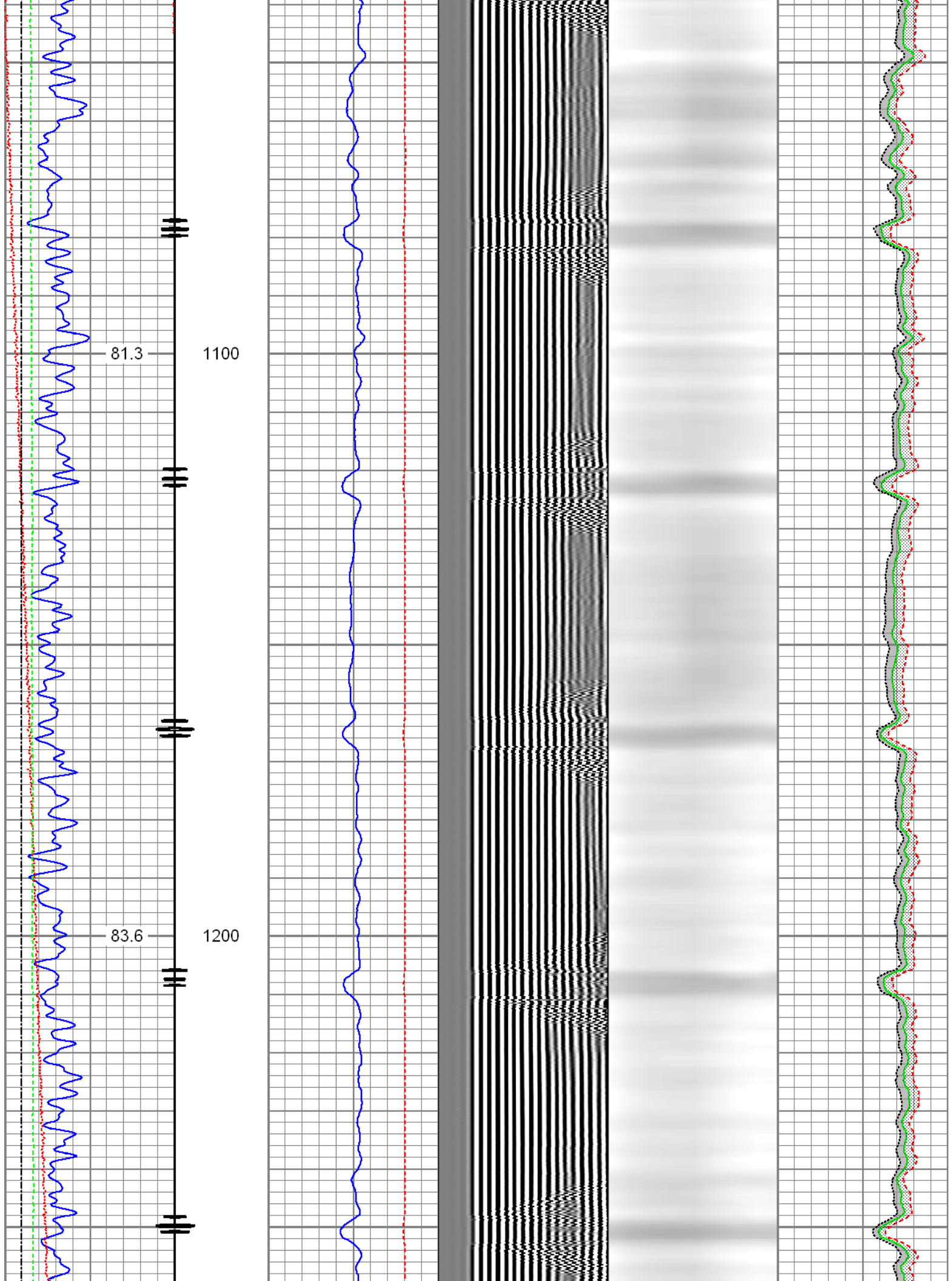


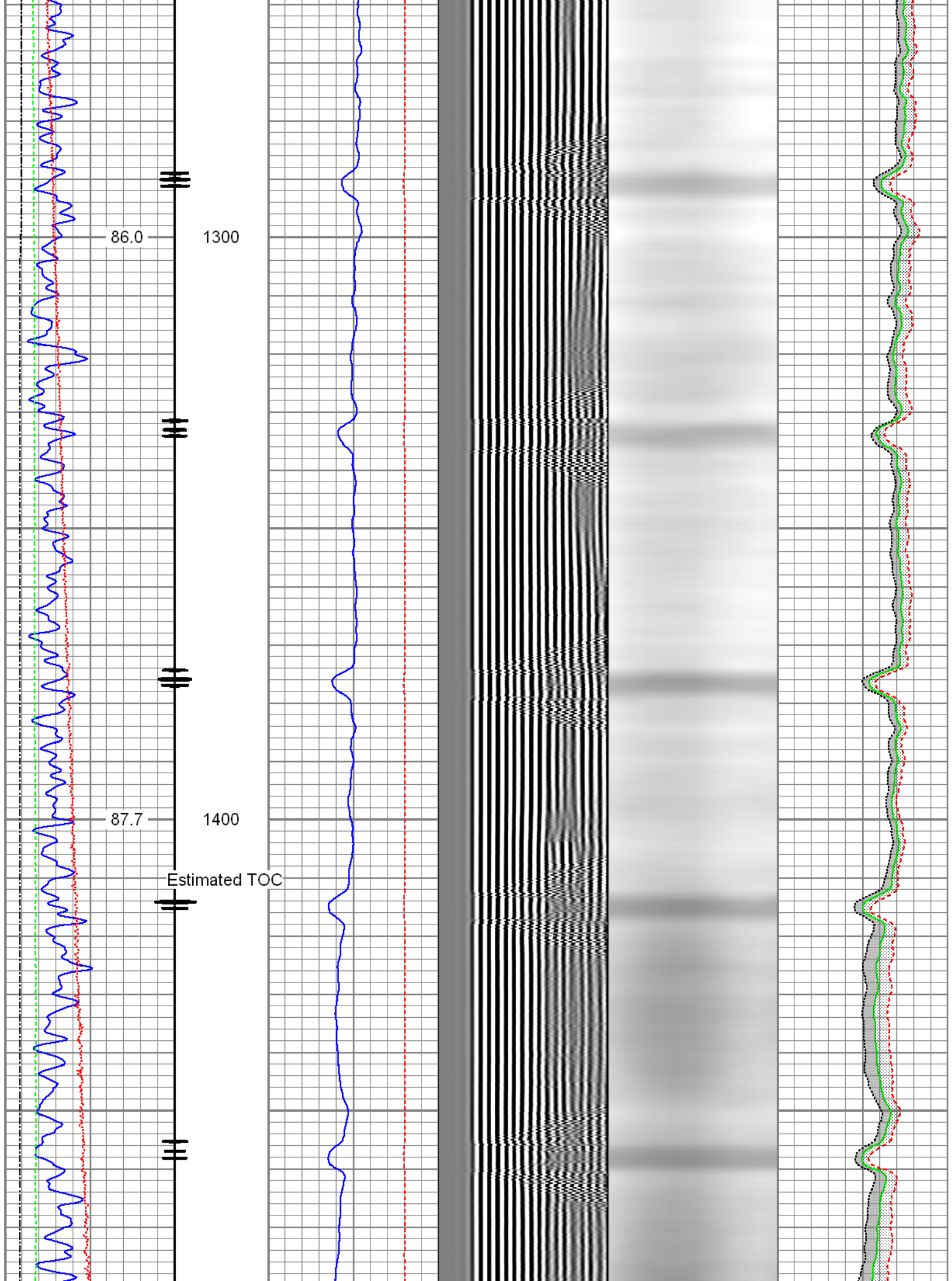




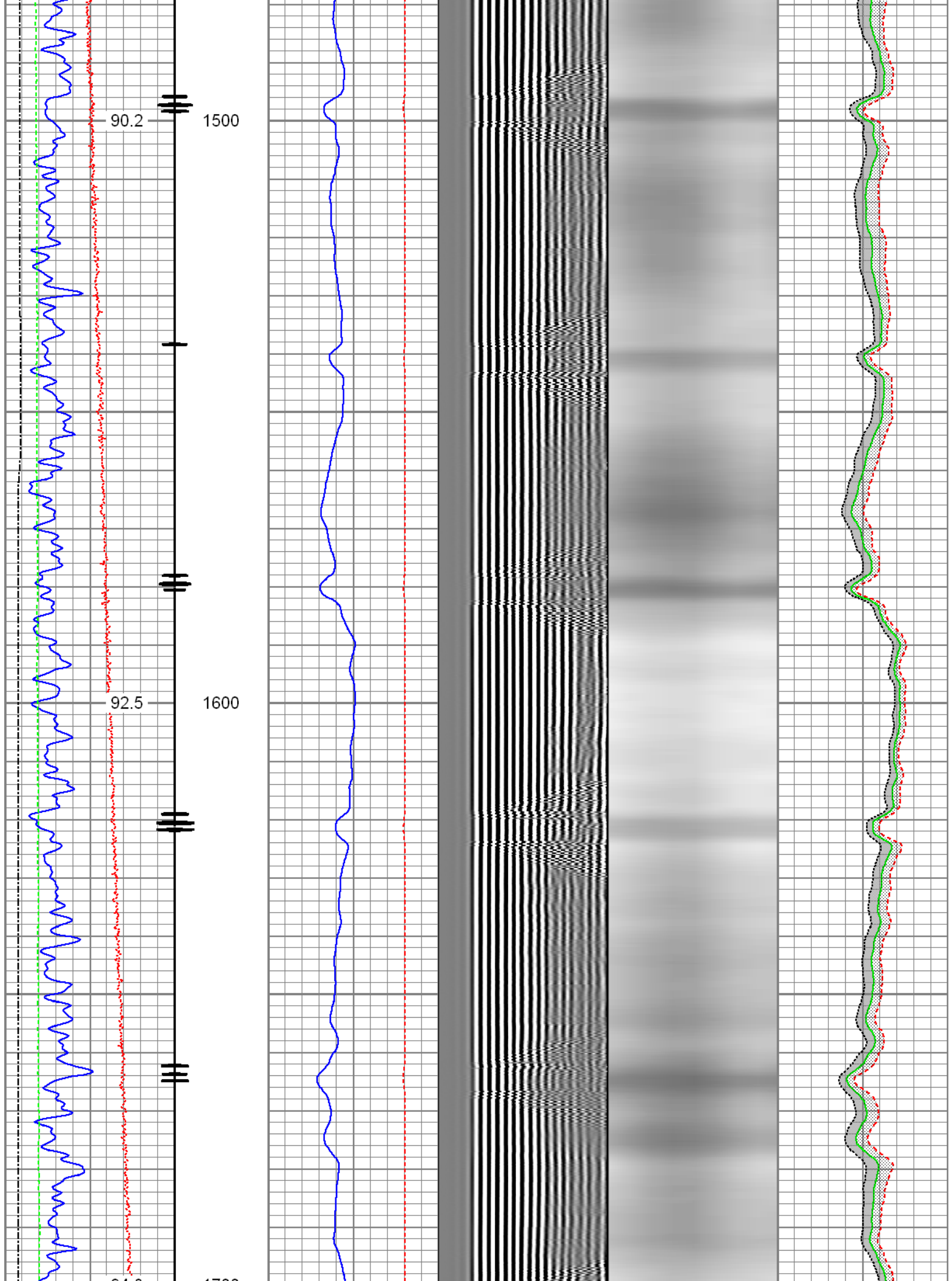




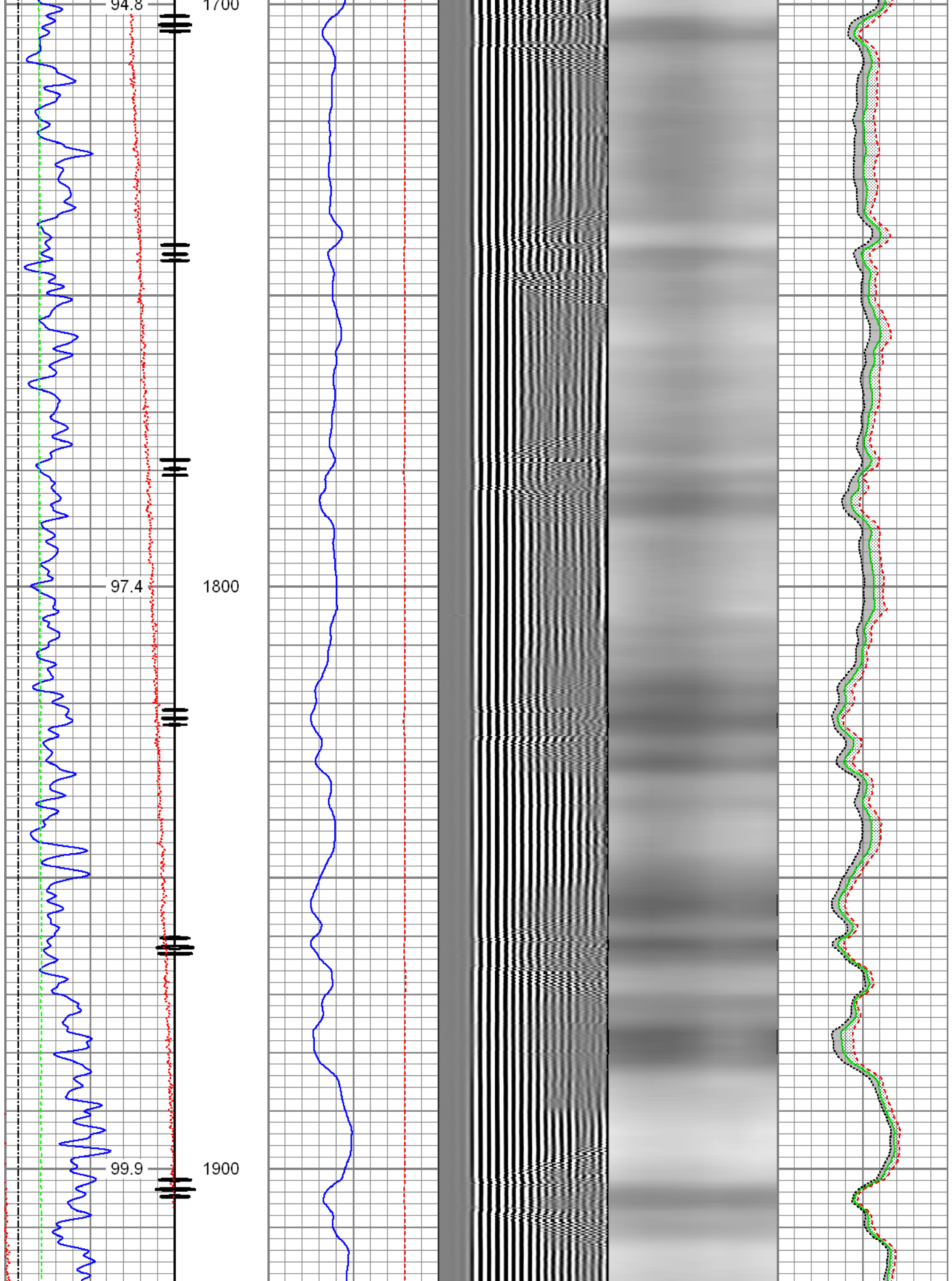


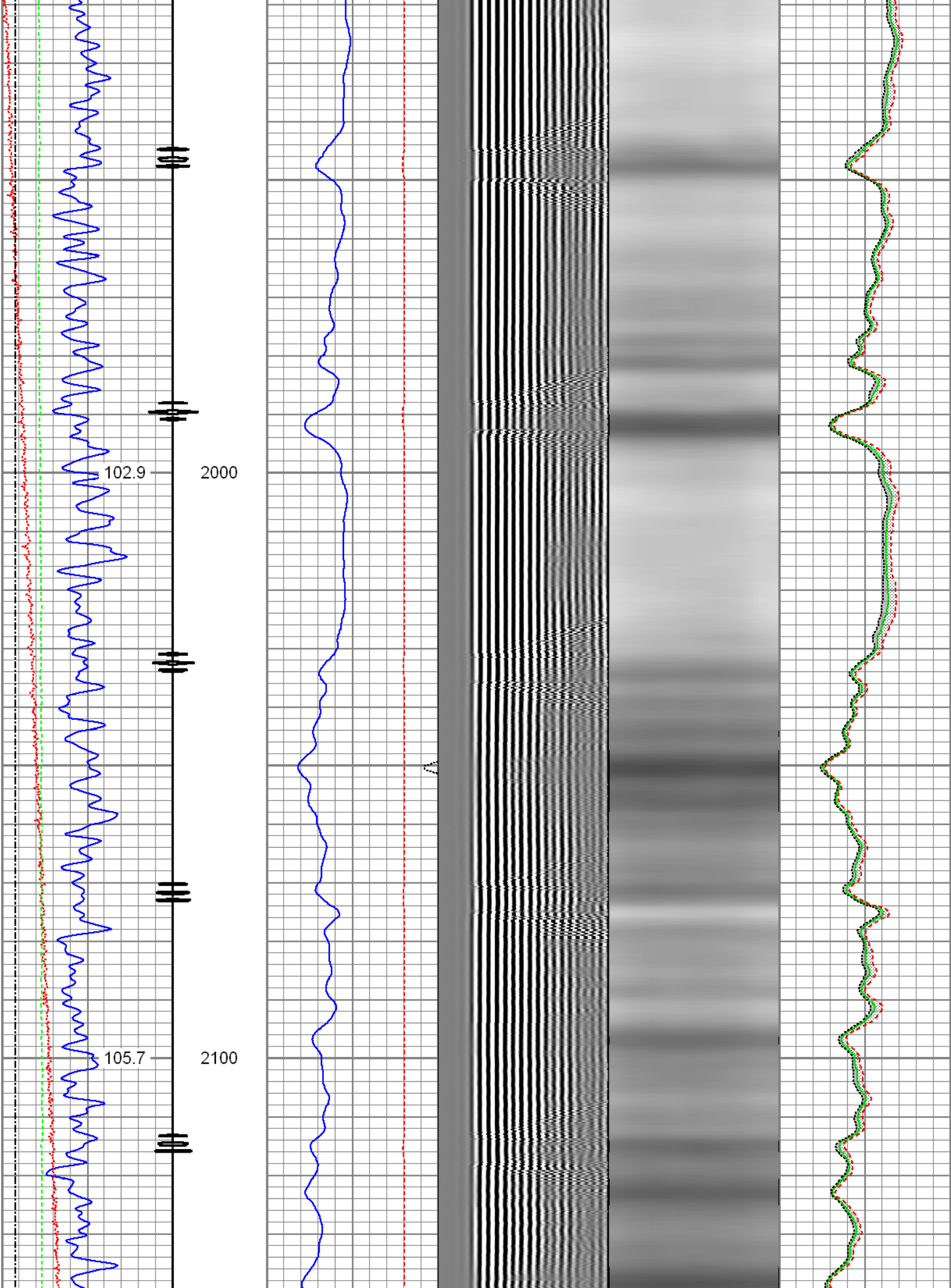


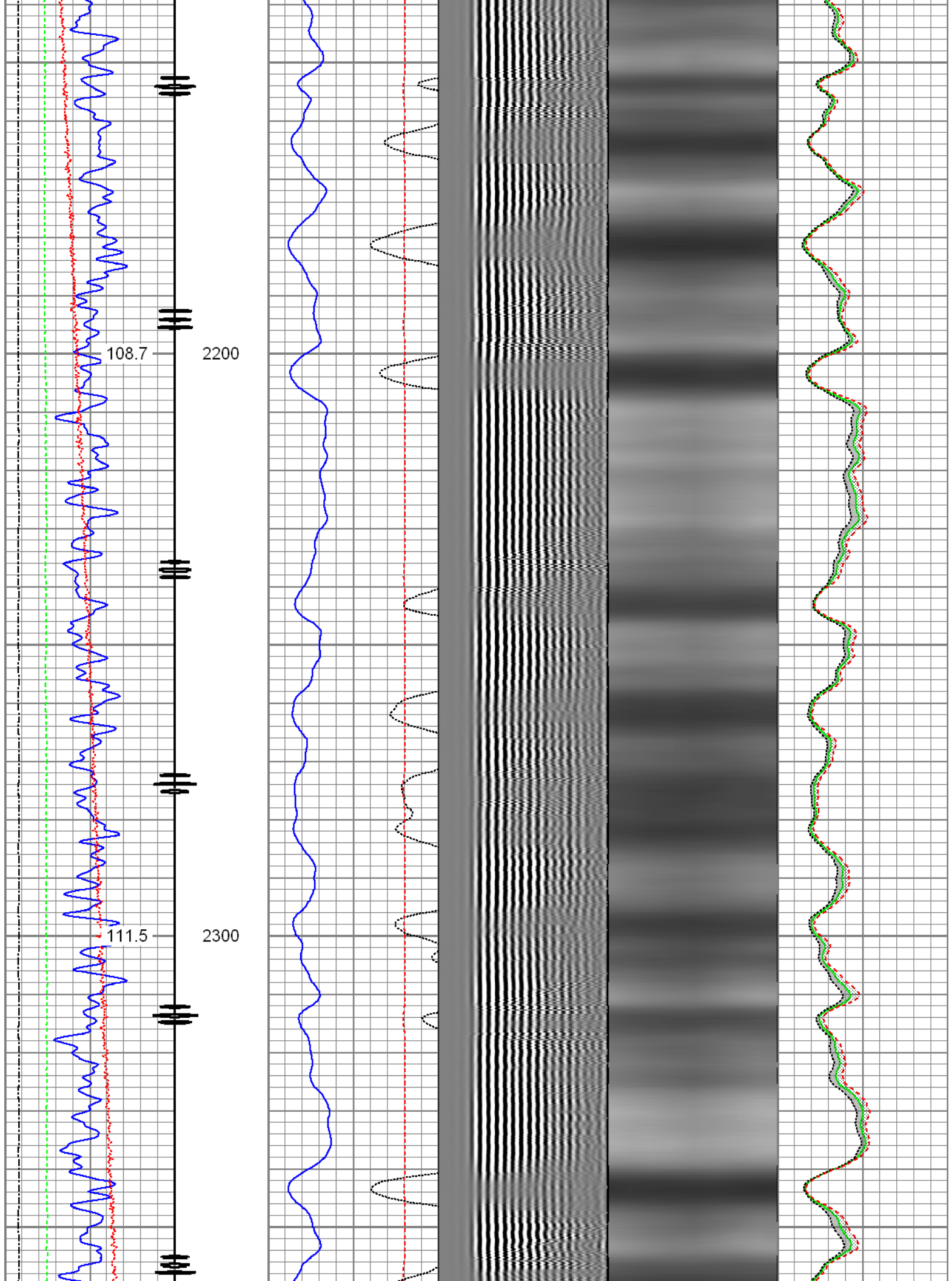




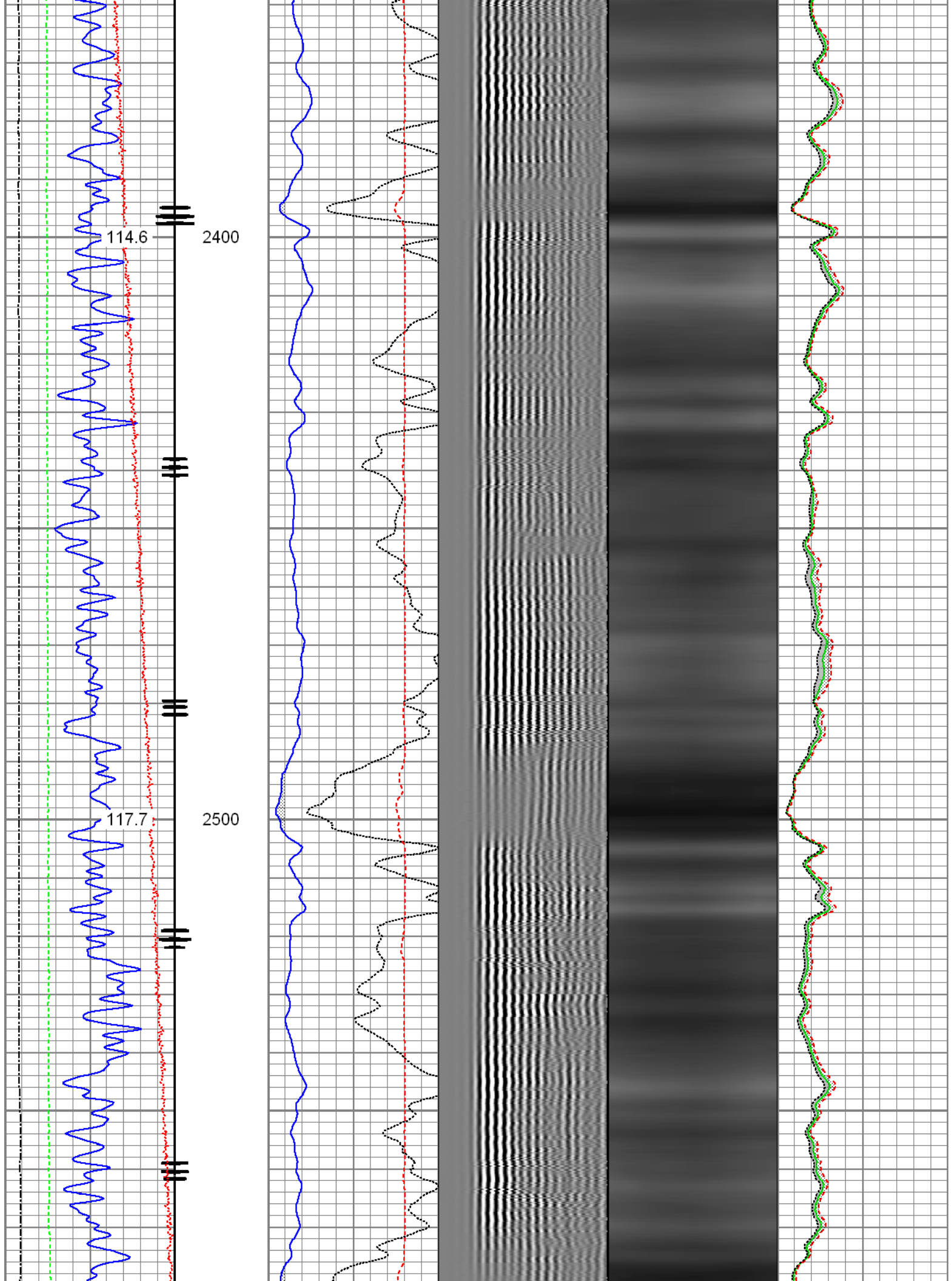


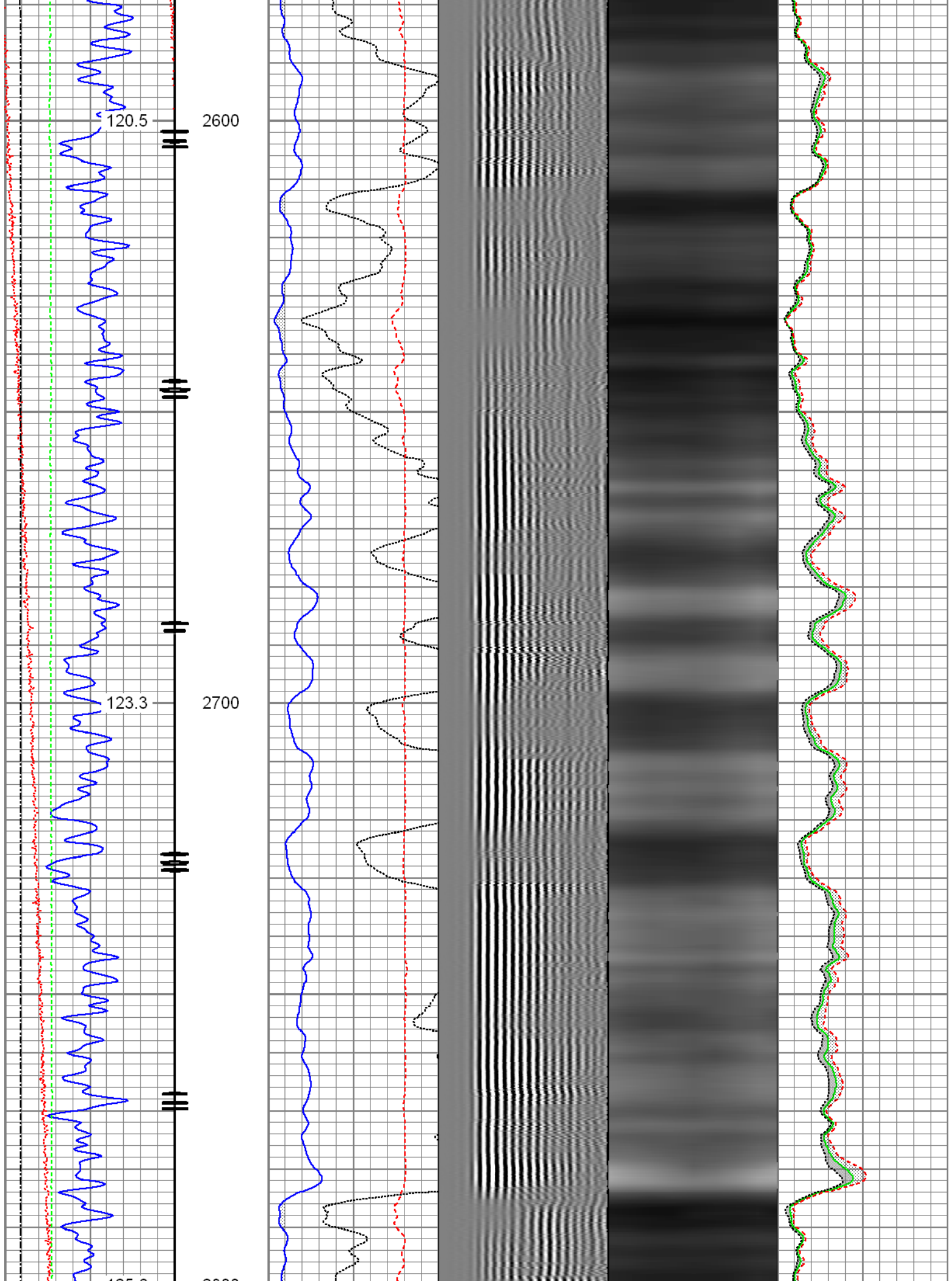




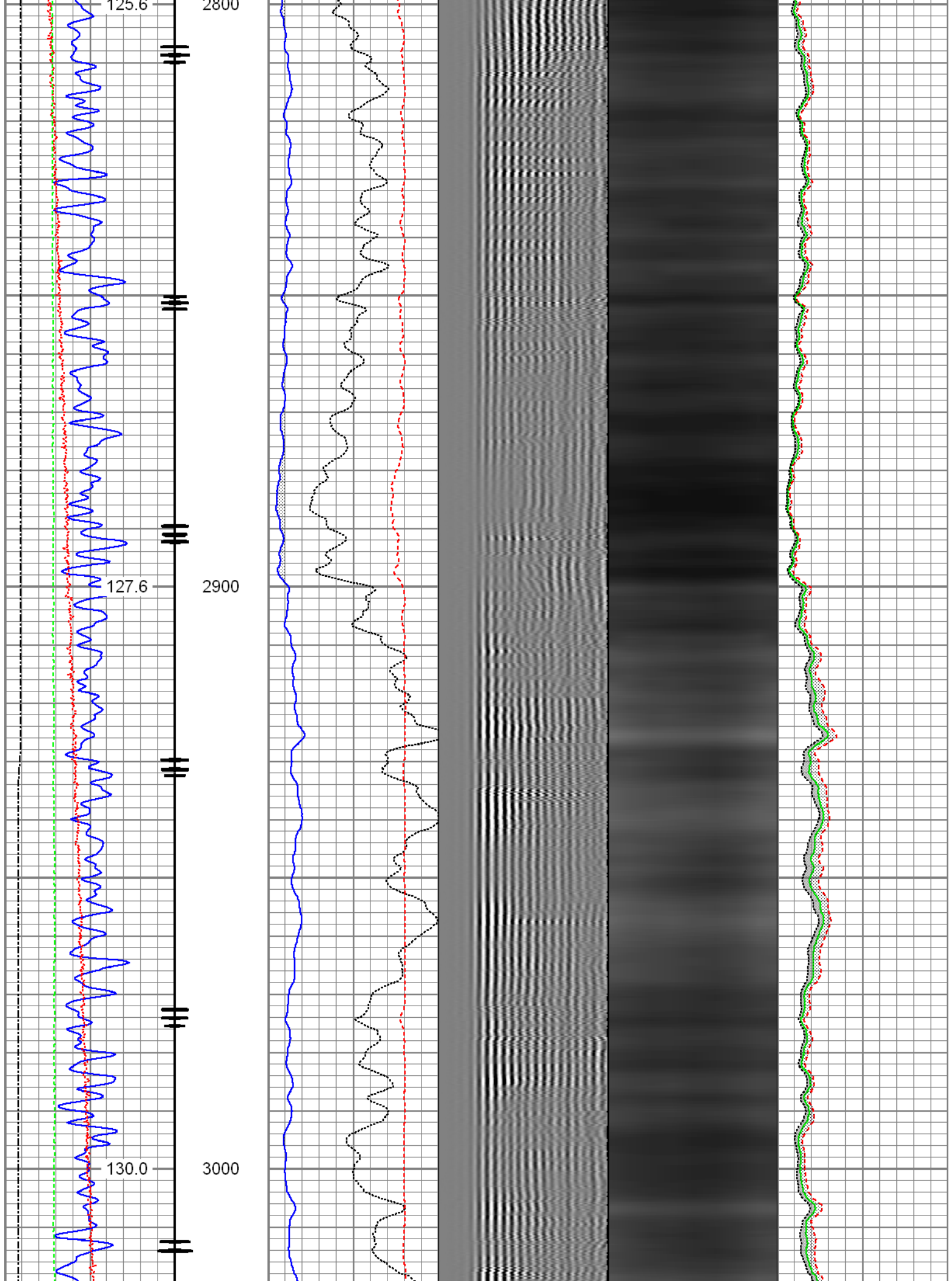


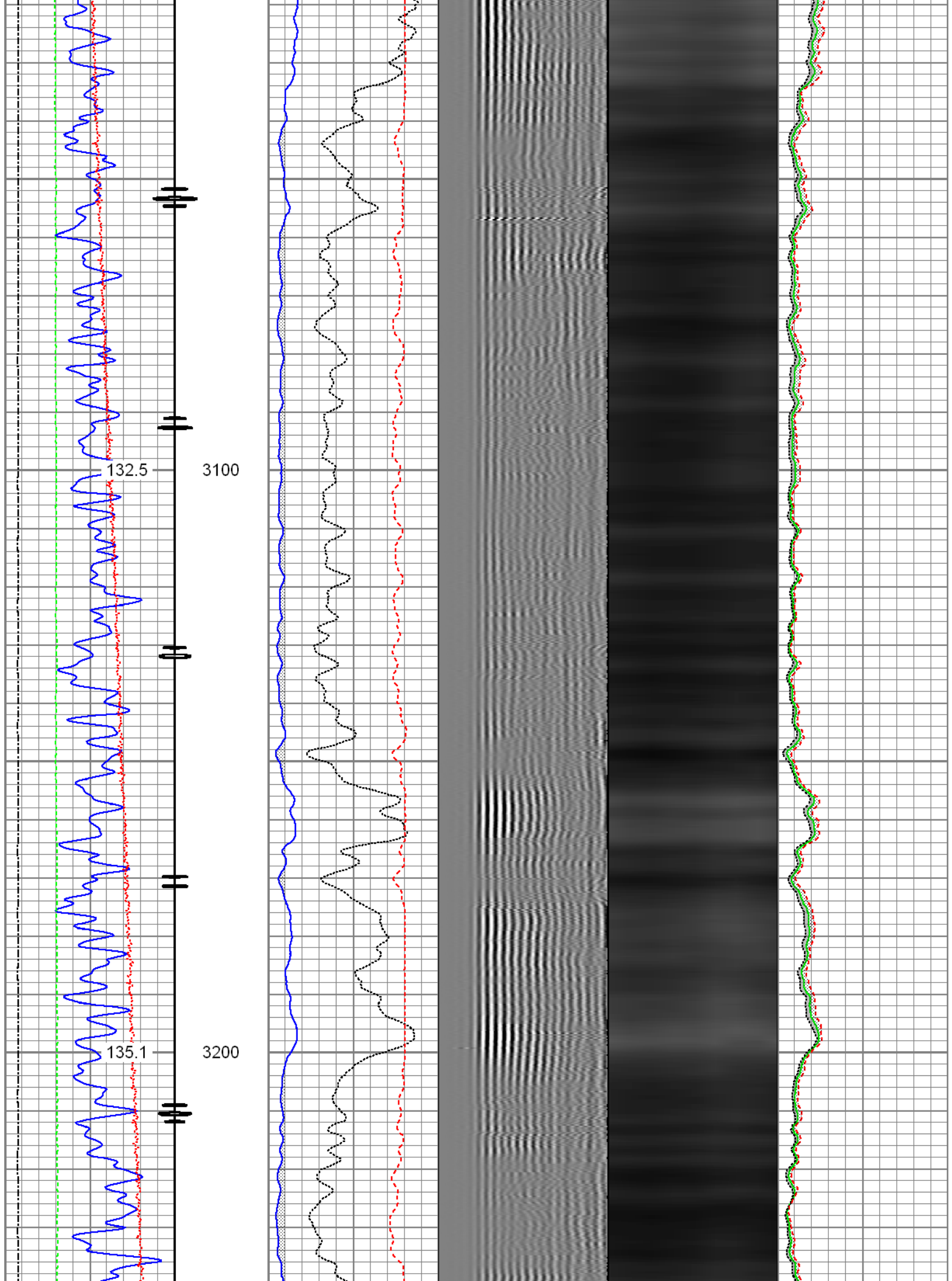


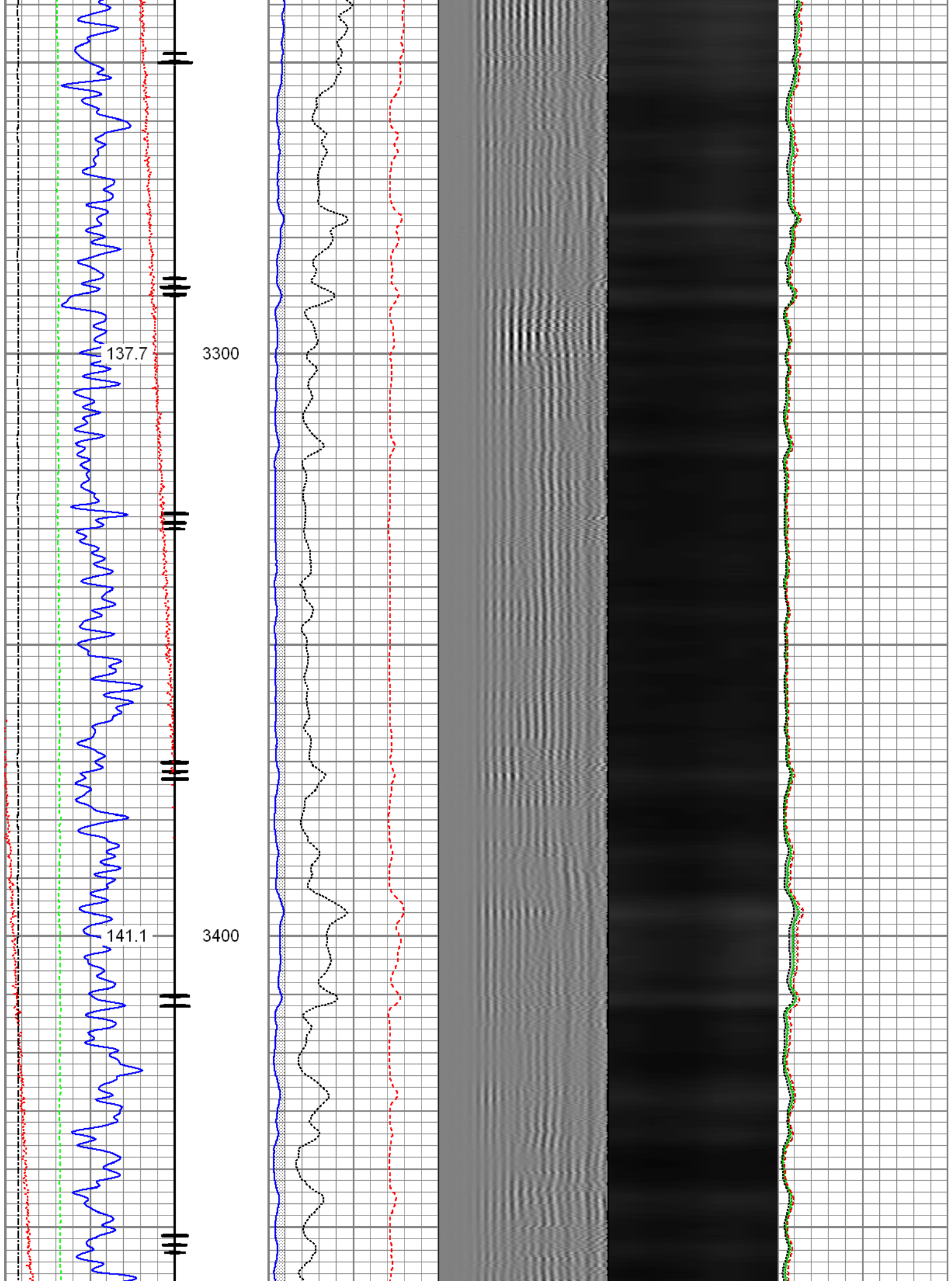


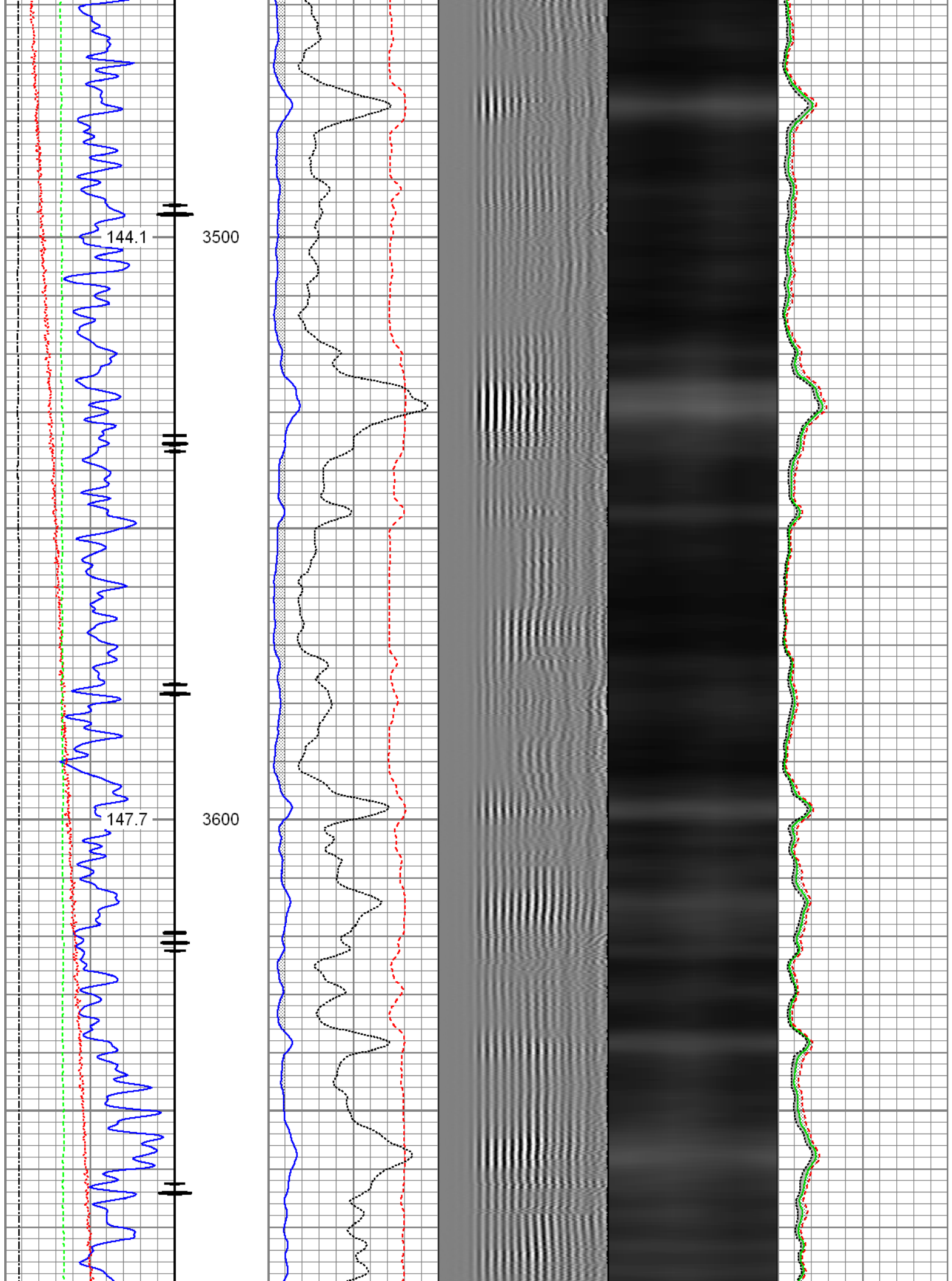




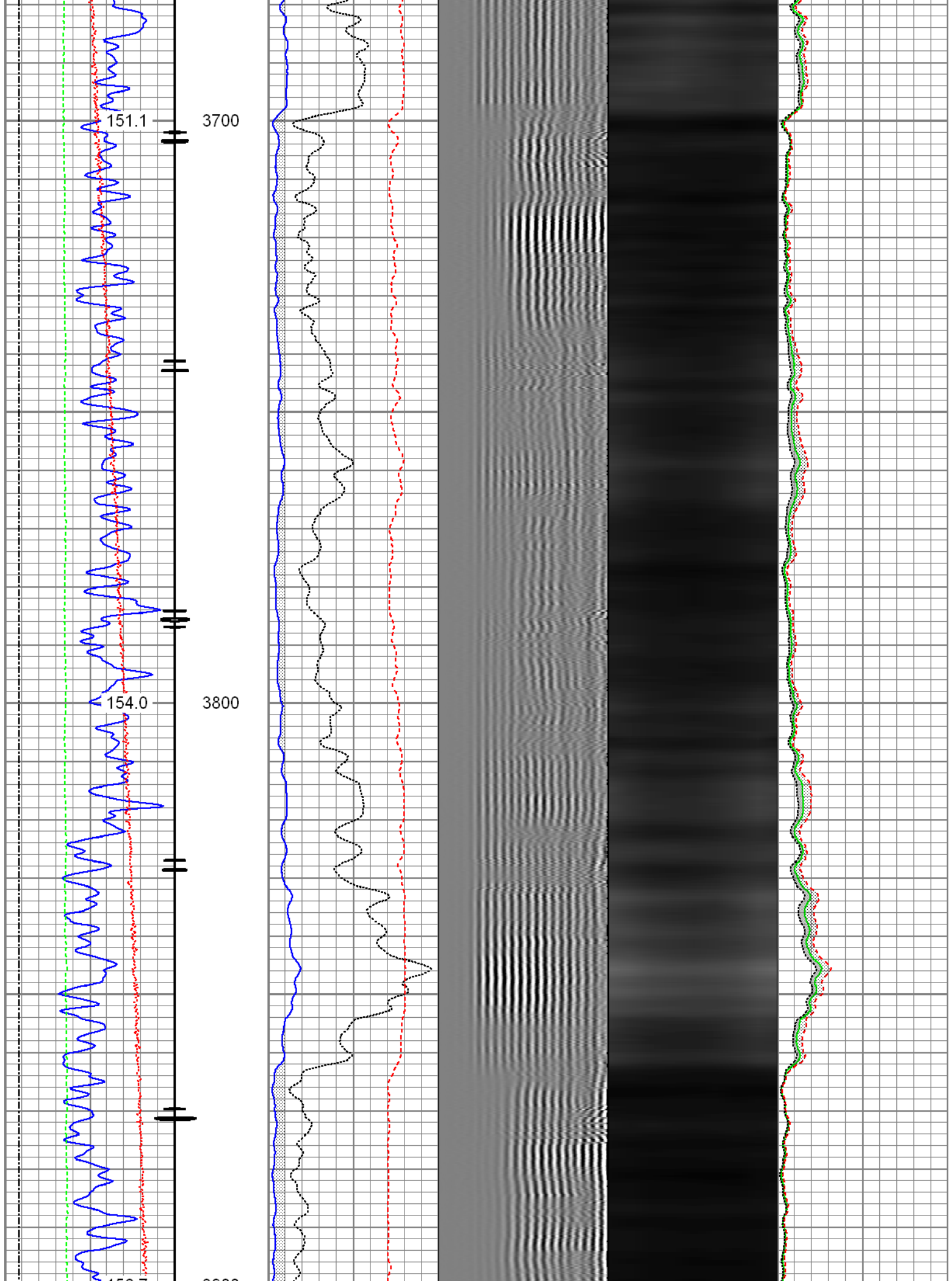




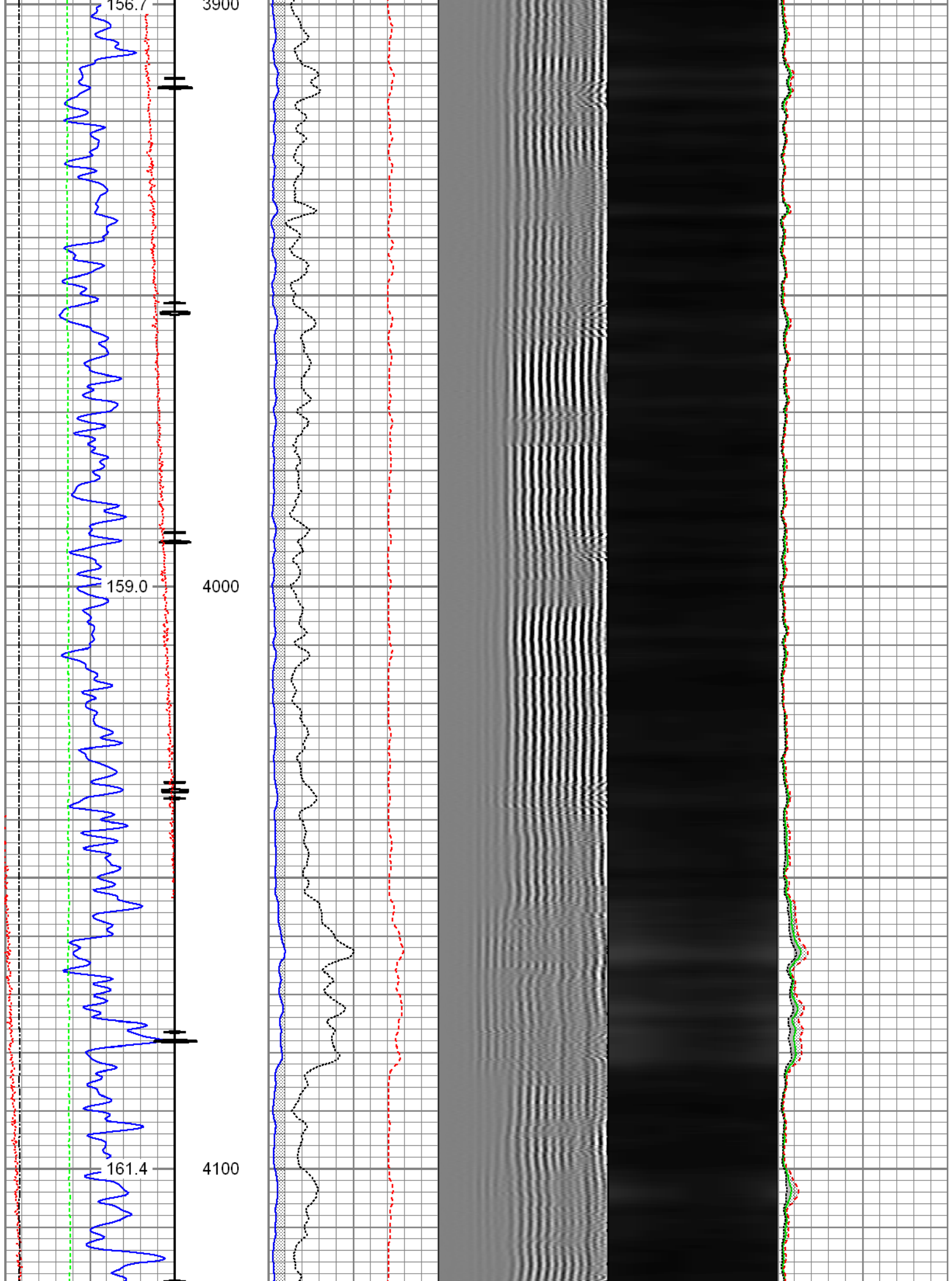


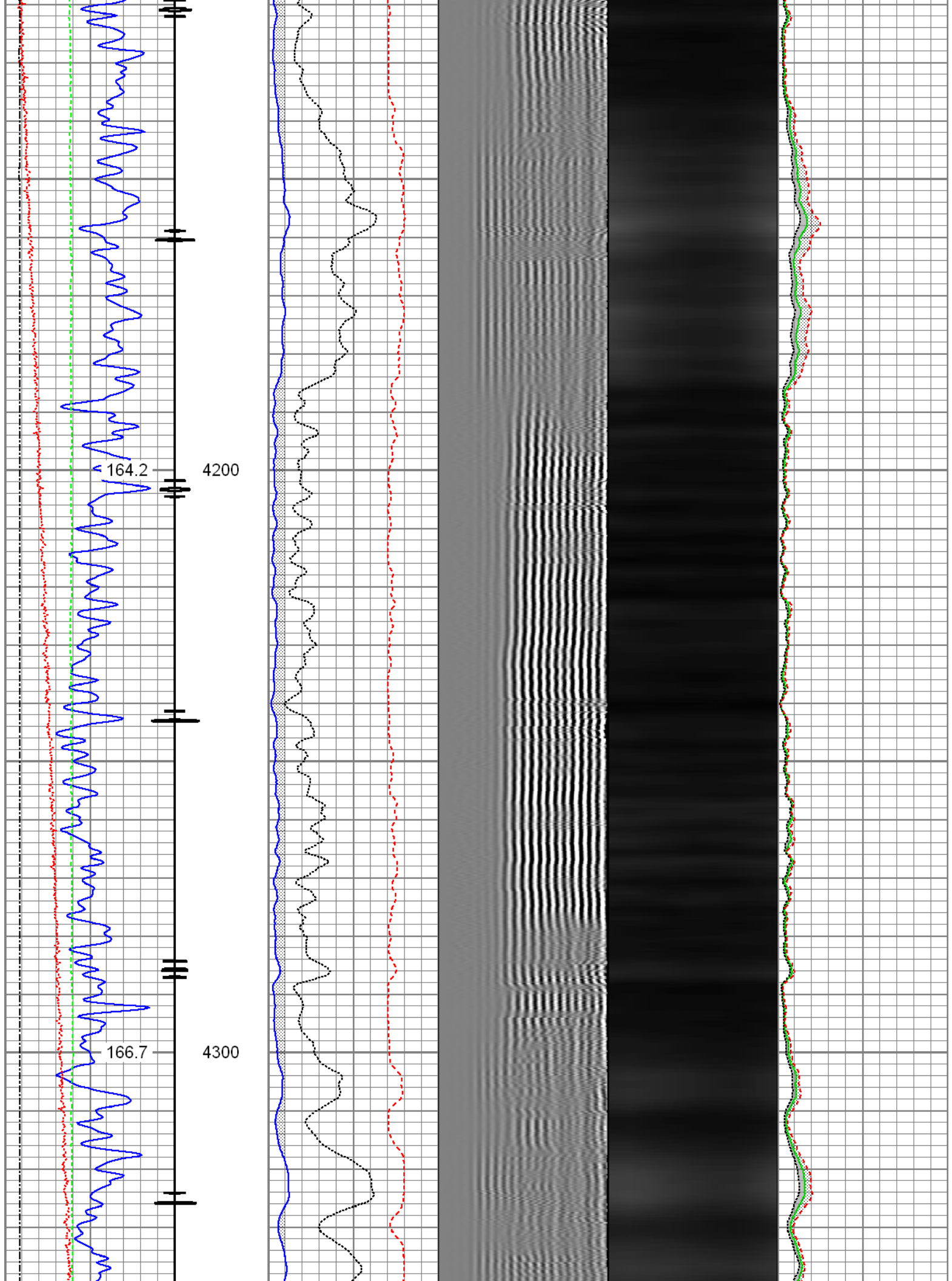


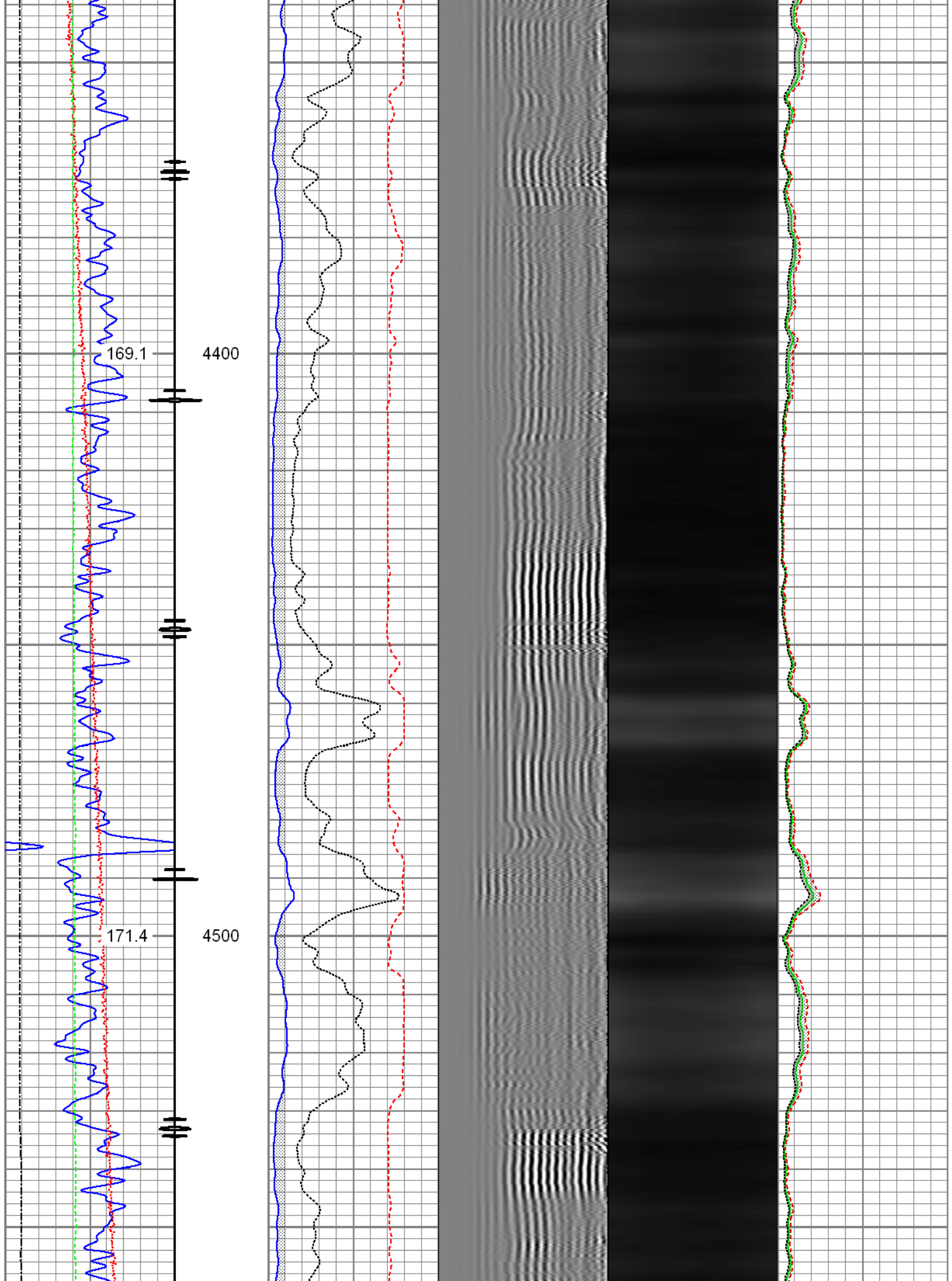


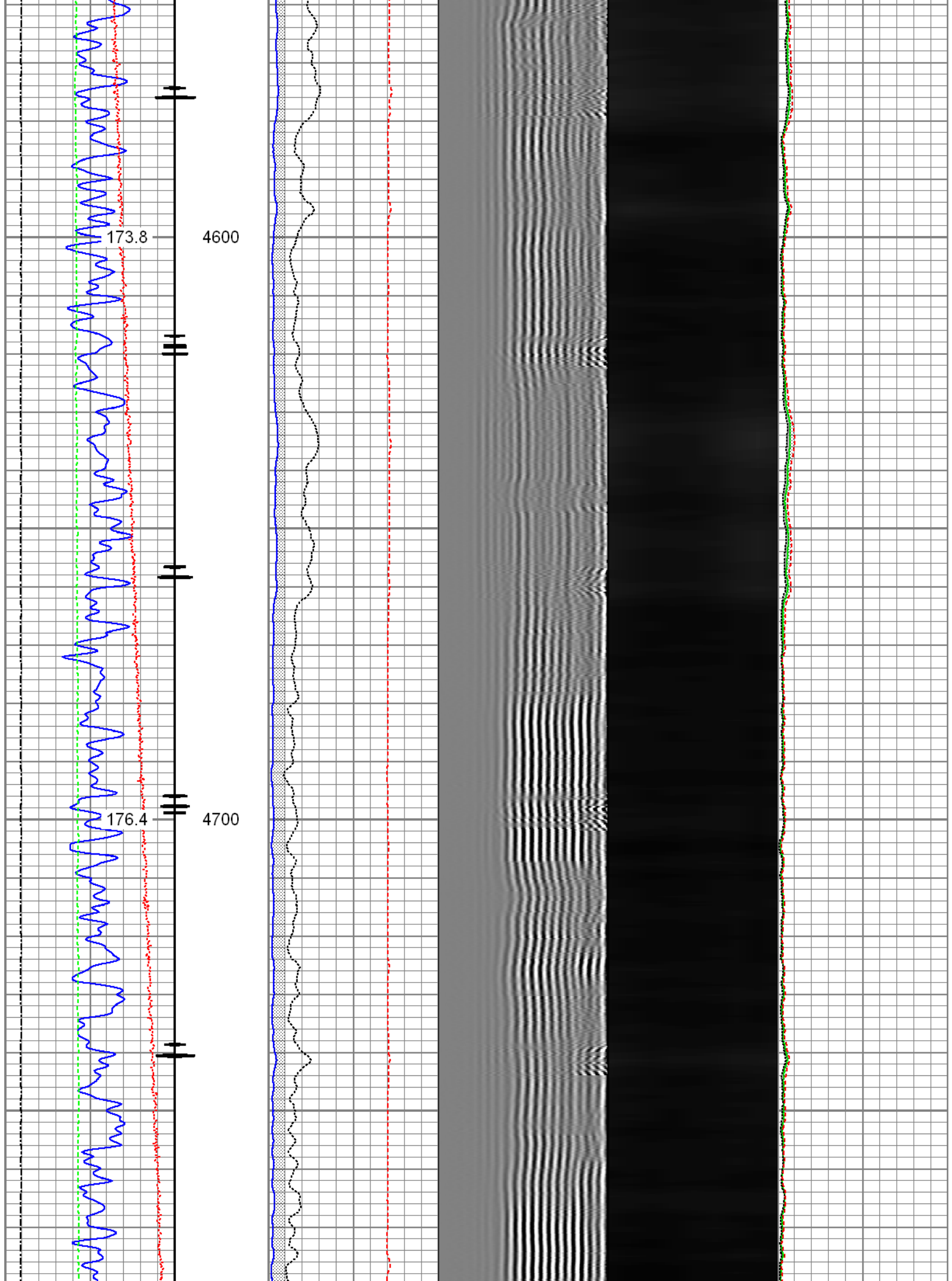




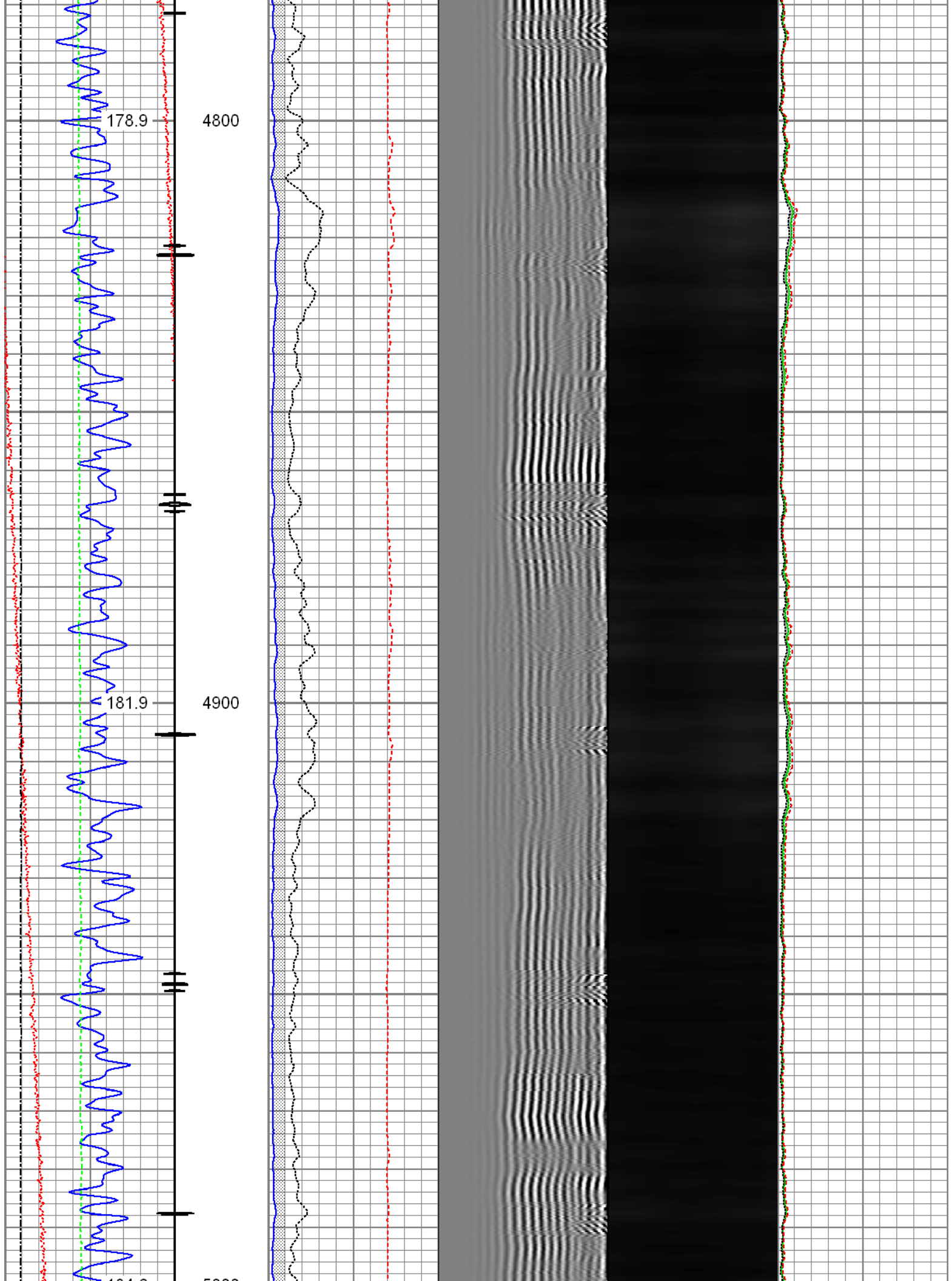




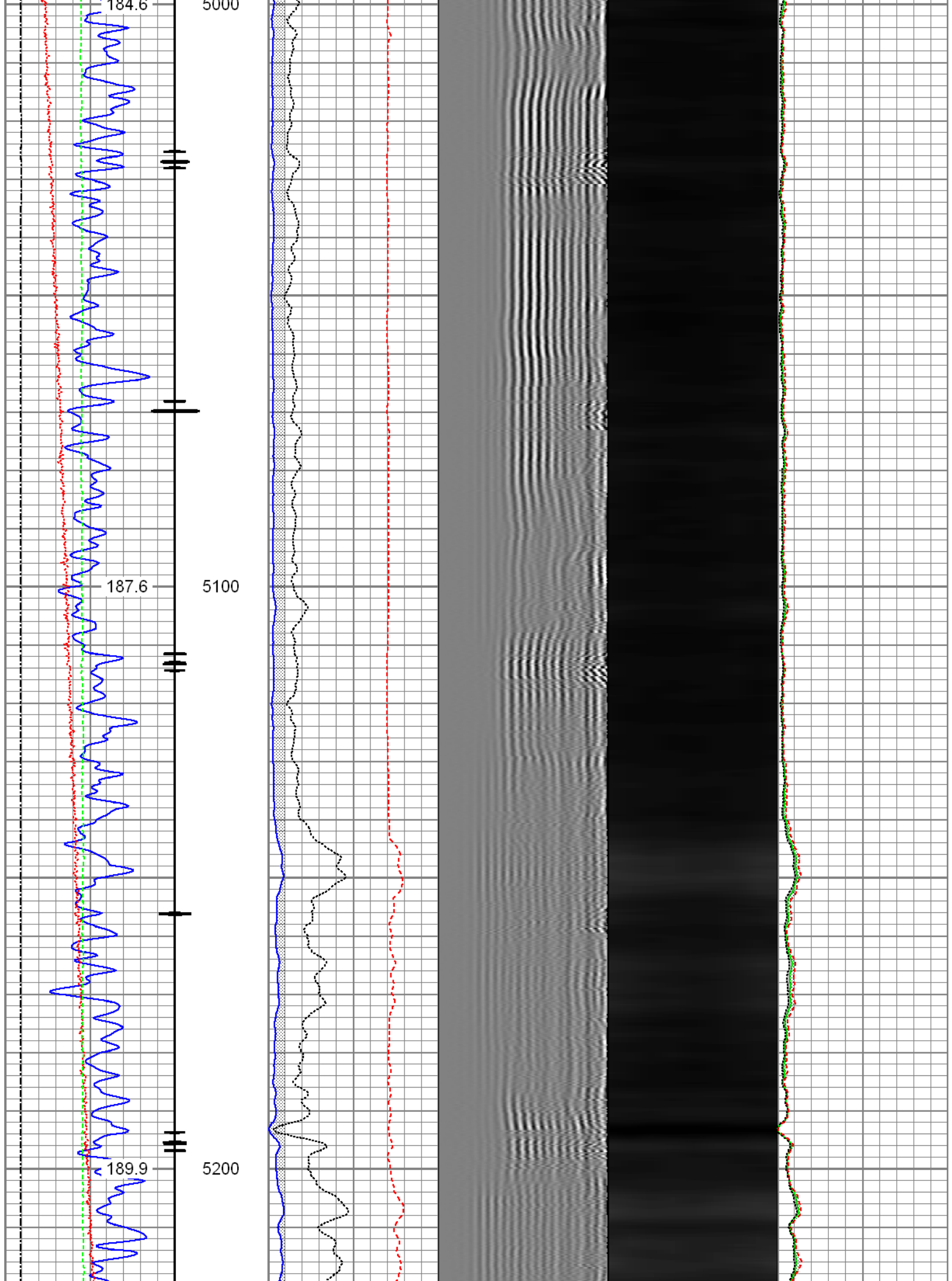


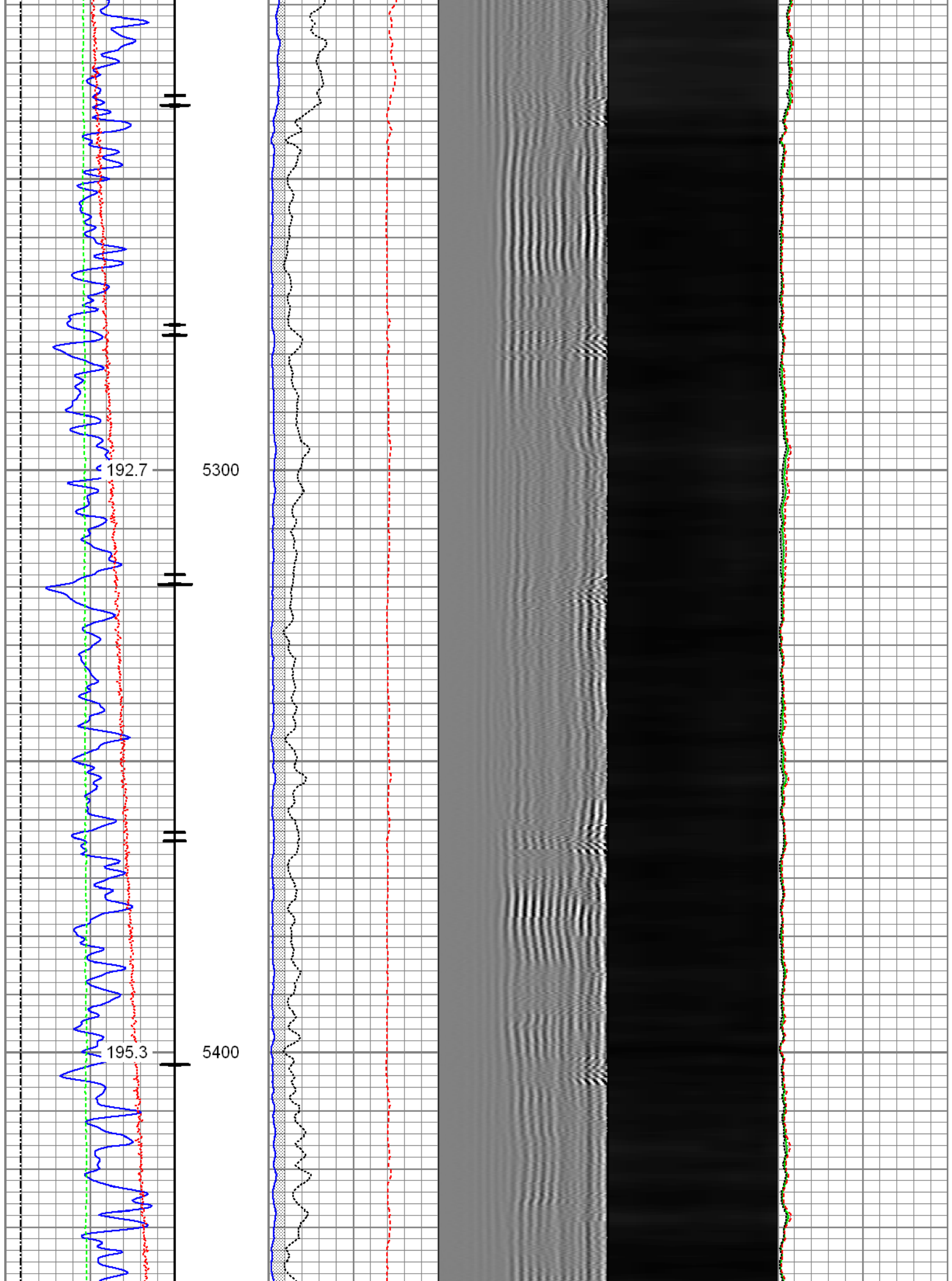


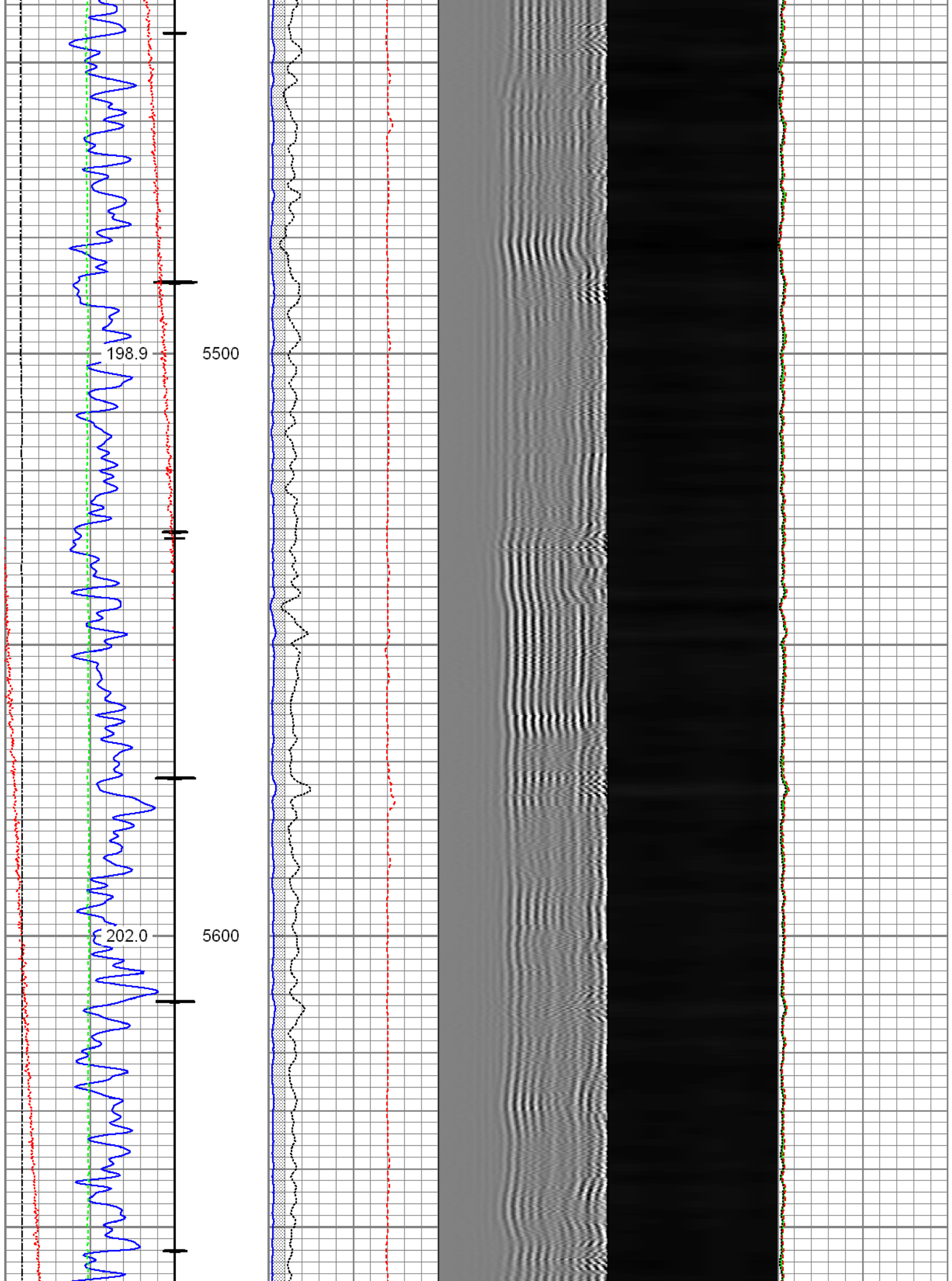


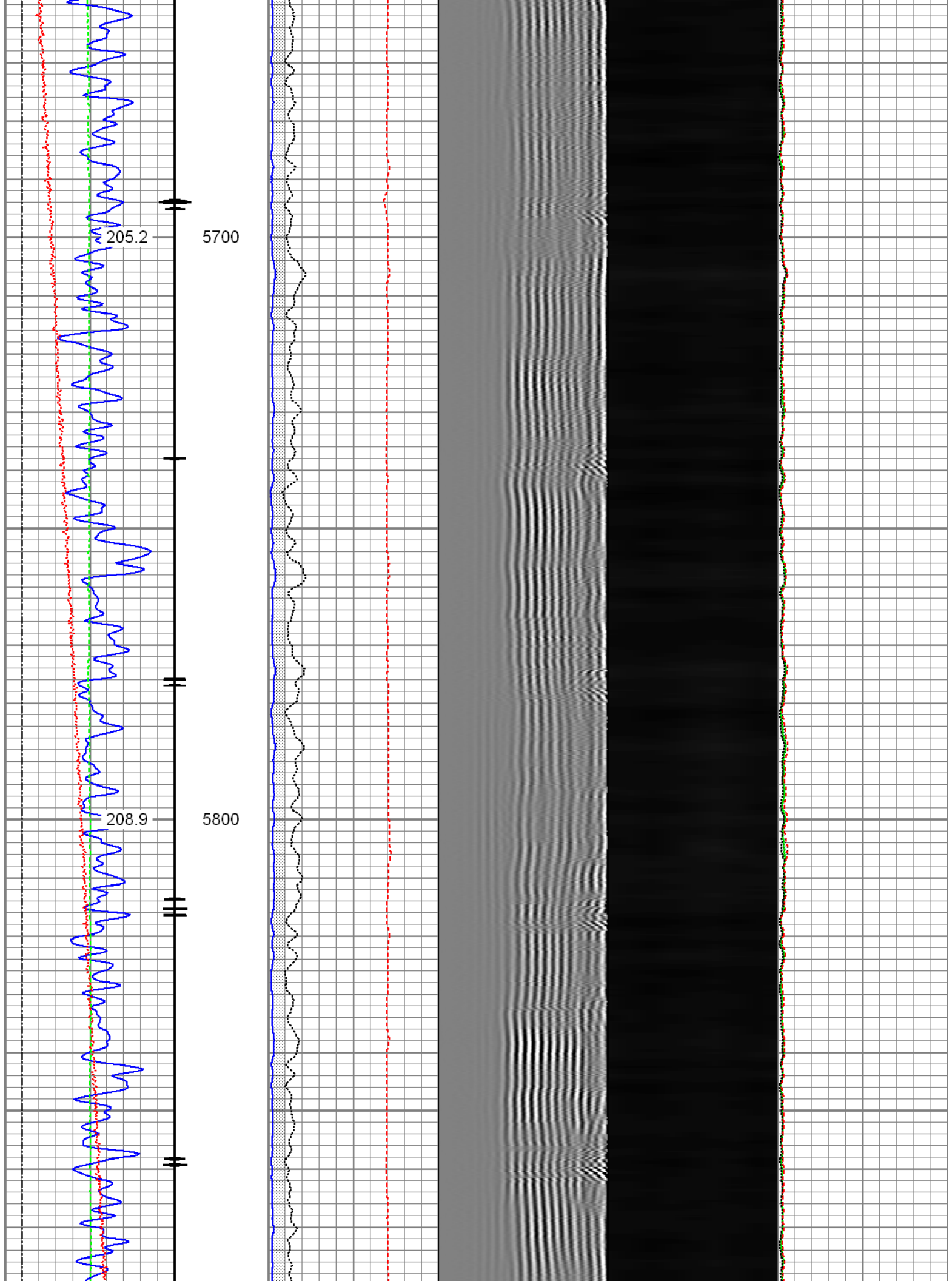




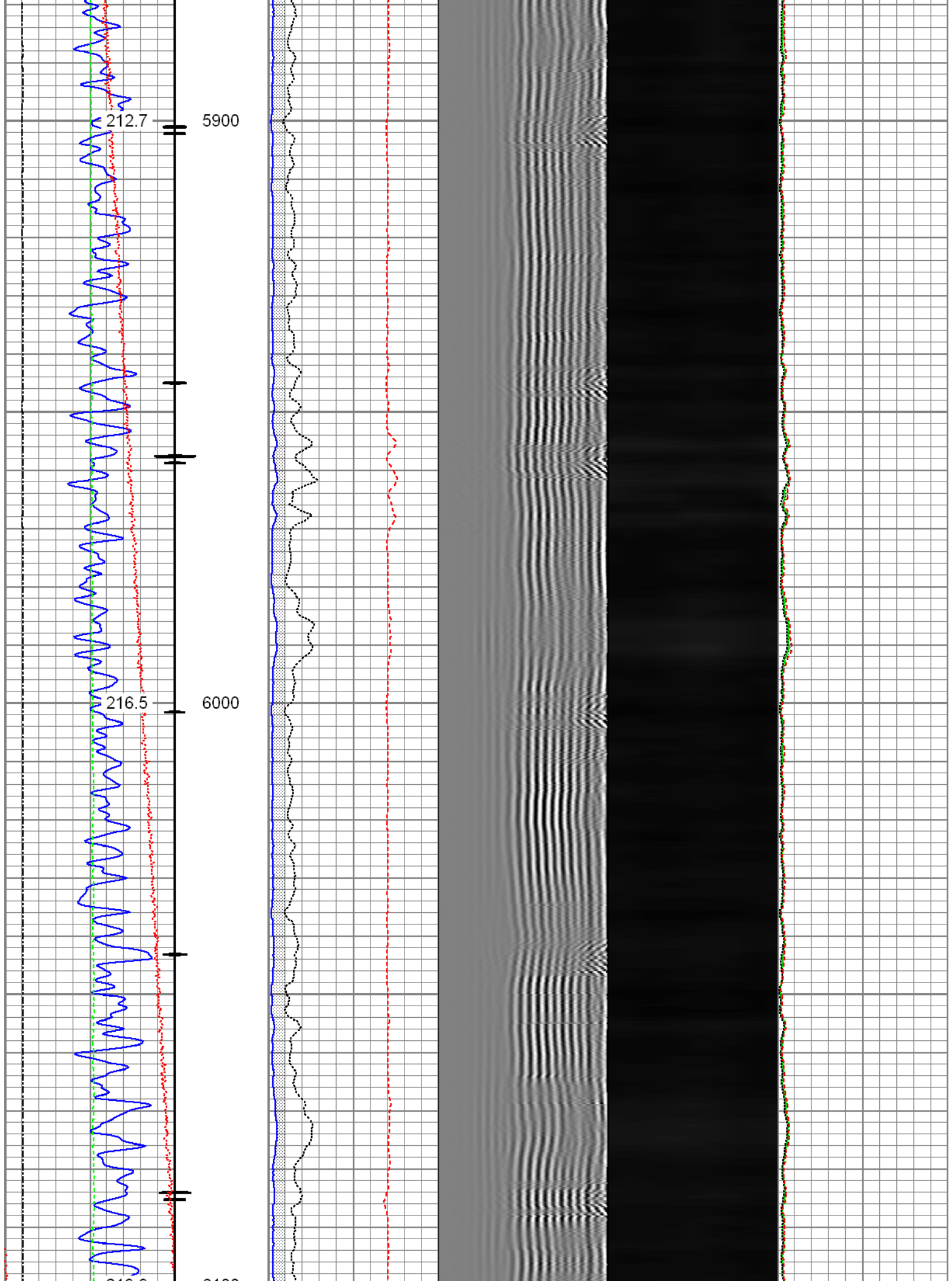


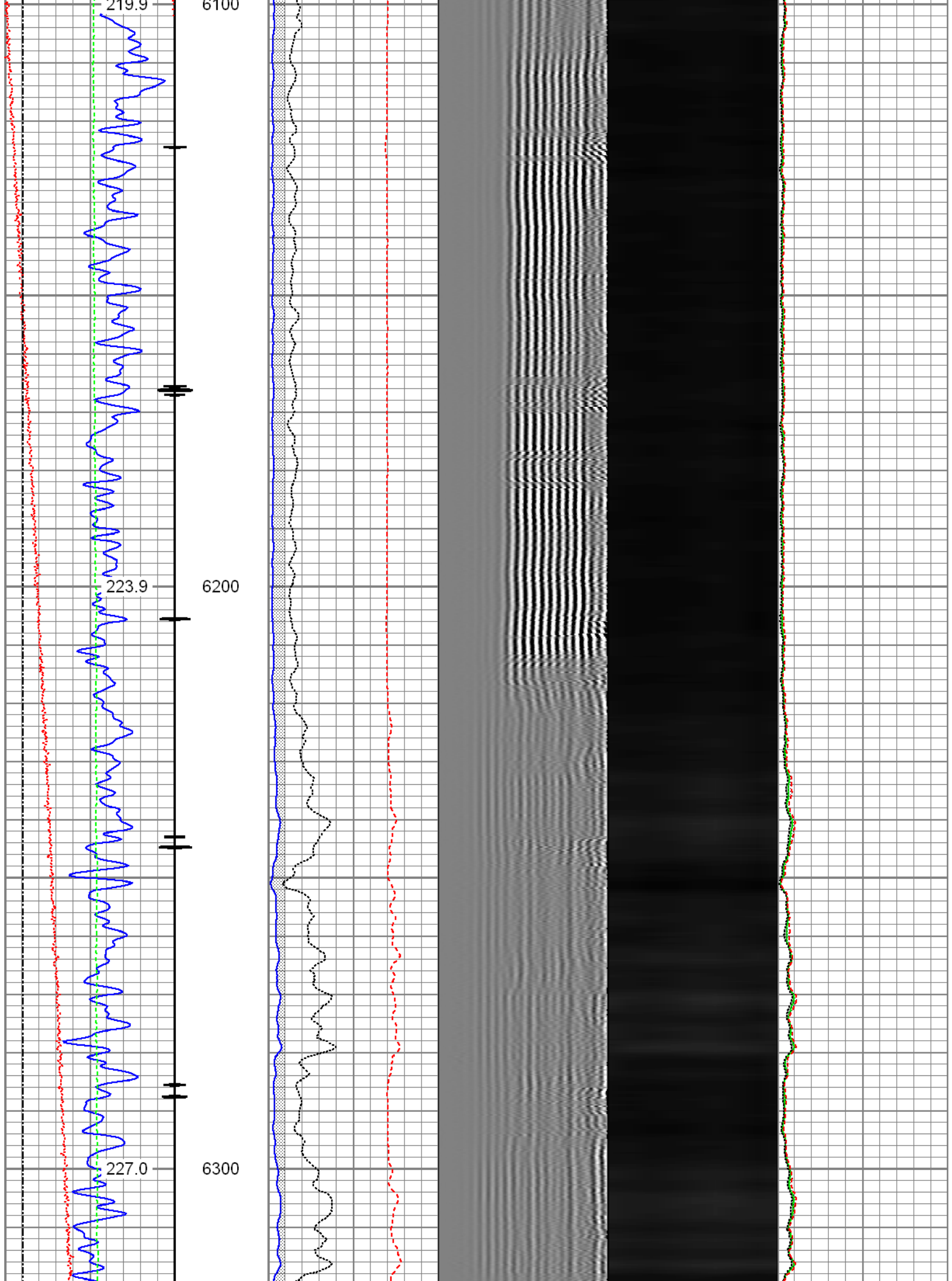


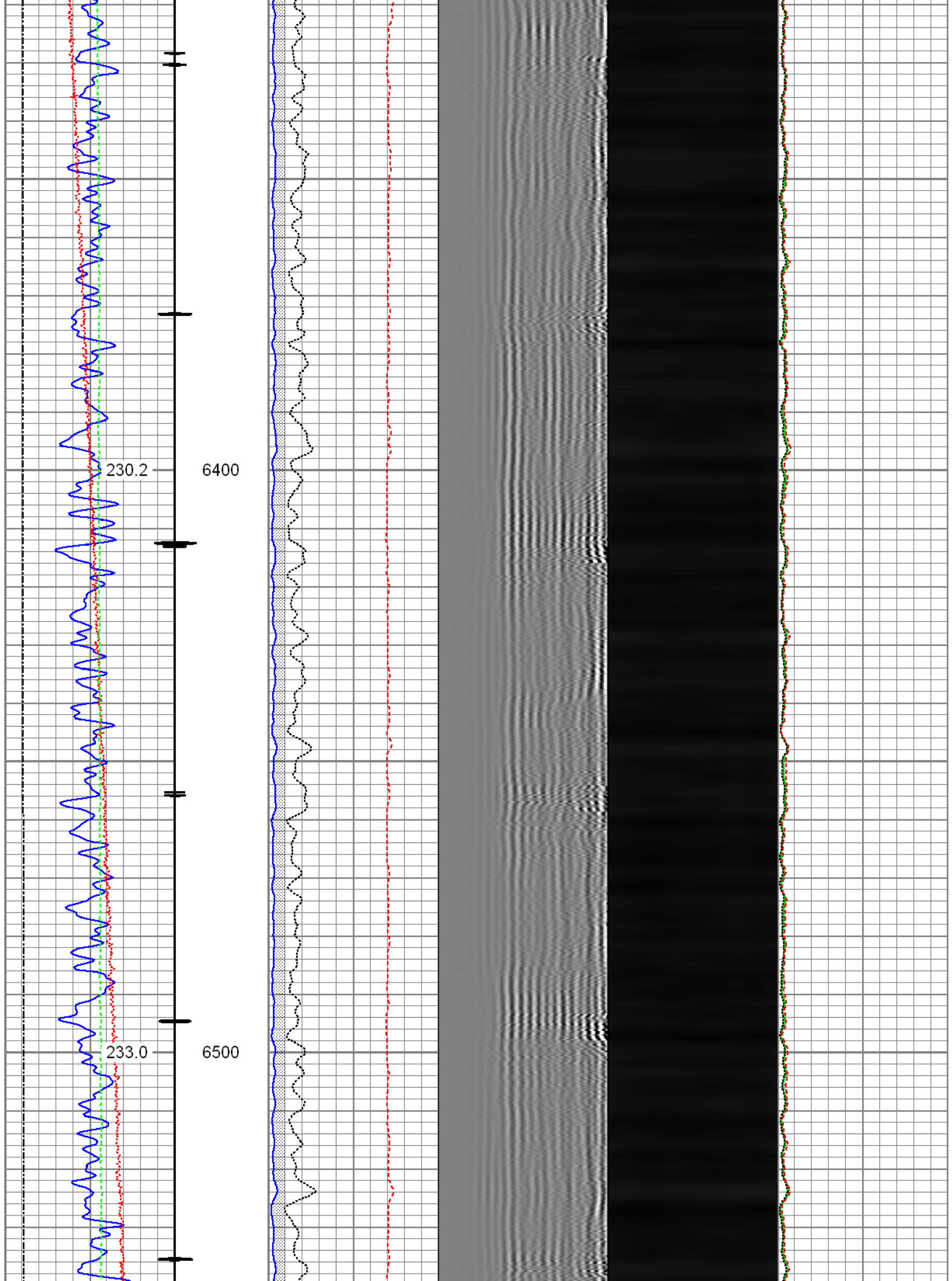


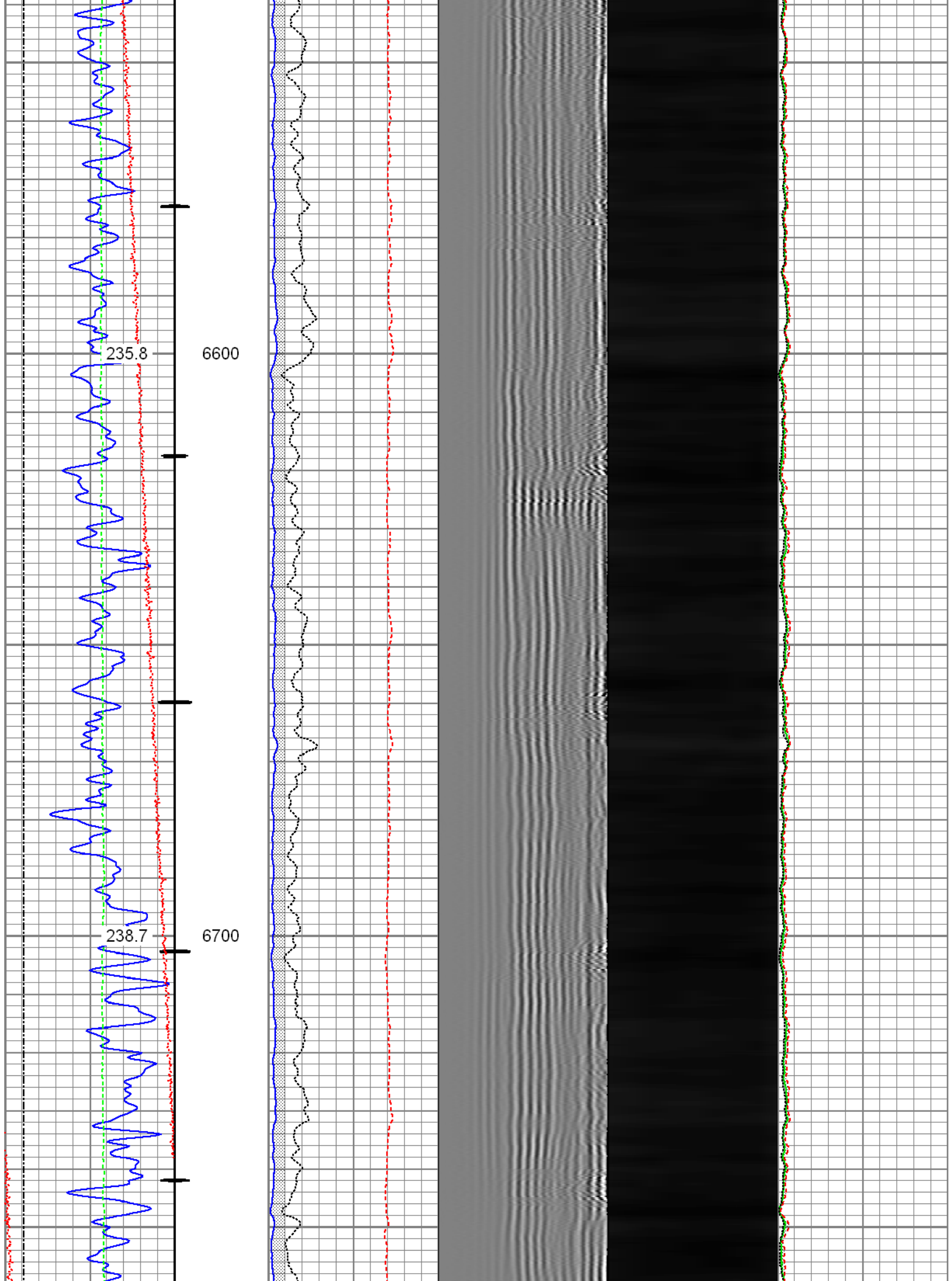




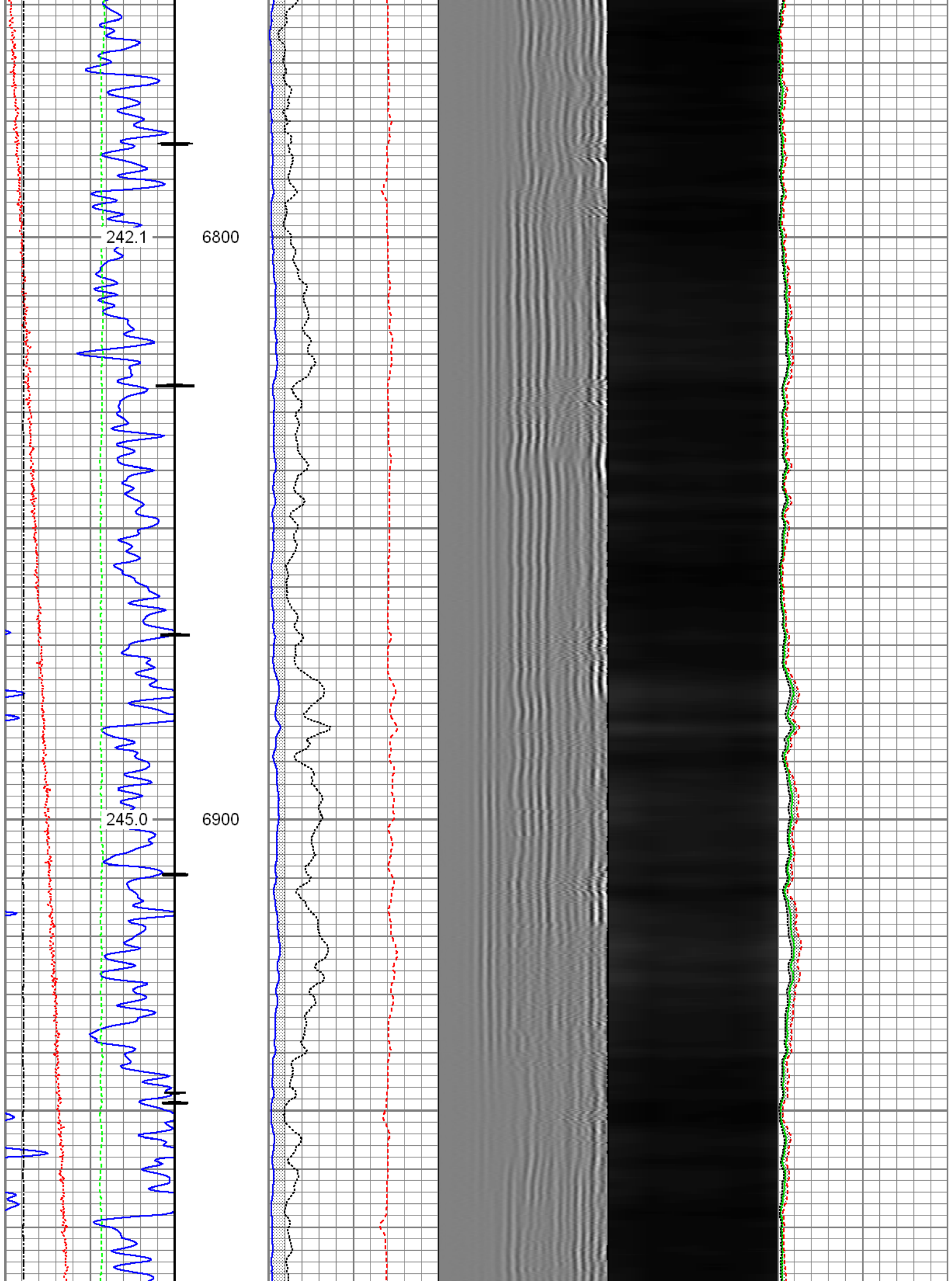


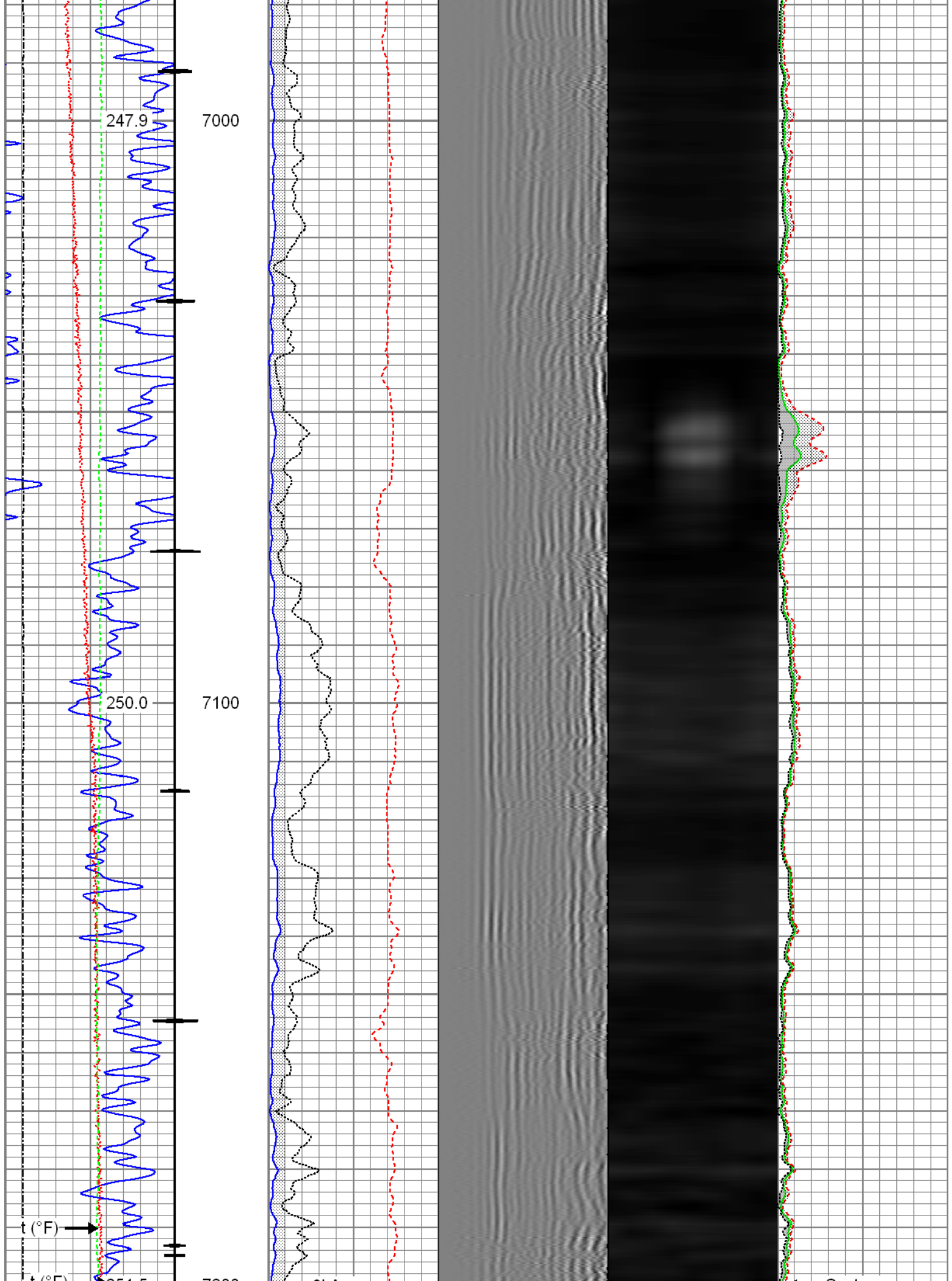


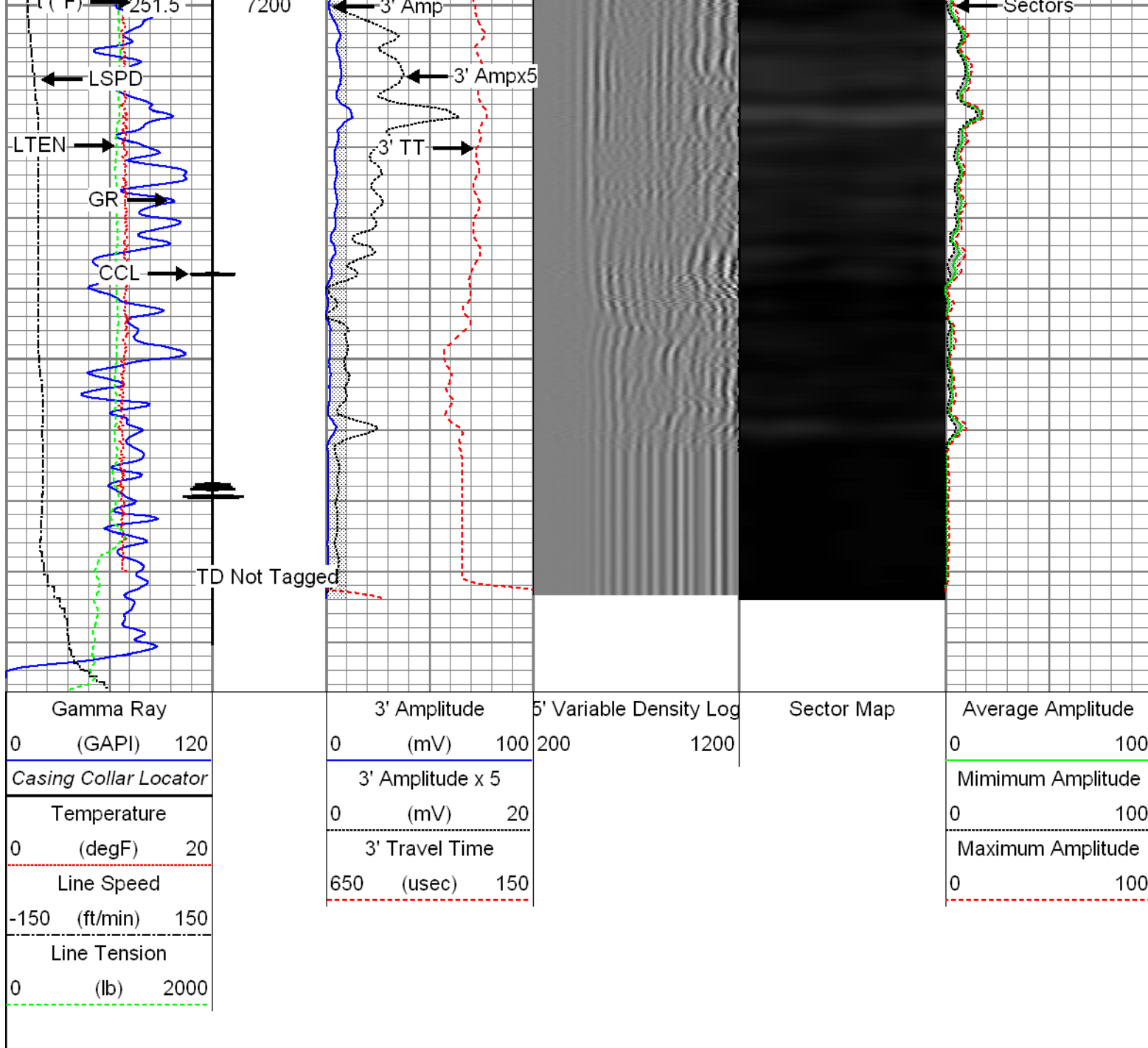












## Repeat Section

Recorded with 2500 PSI Surface Induced Pressure

Database File: 01-25-16\_noble energy\_moser h22-745\_rbl.db

Dataset Pathname: repeat

Presentation Format: radii

Dataset Creation: Mon Jan 25 08:31:34 2016 by Log 7.0 B1

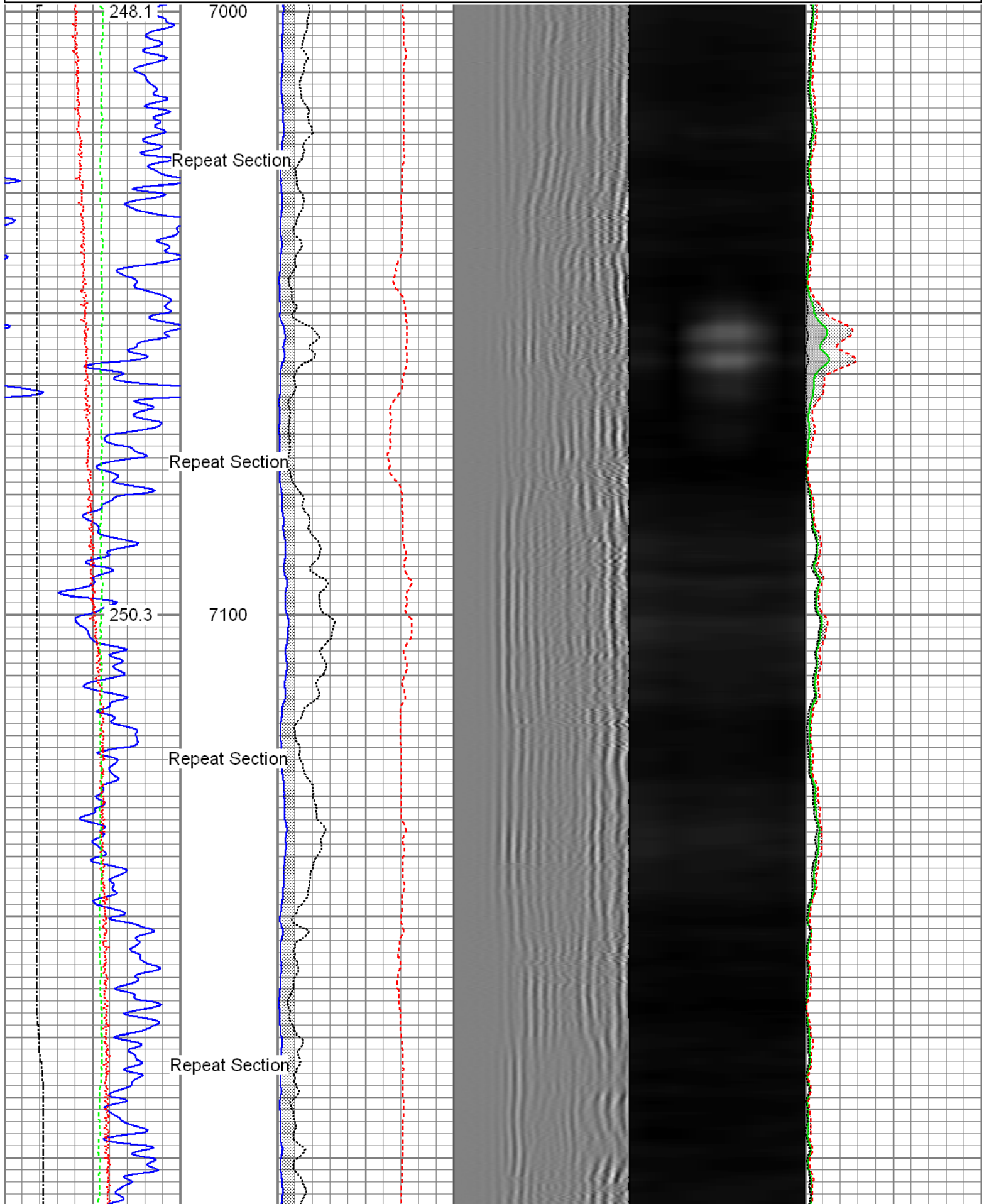
Charted by: Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Temperature	3' Amplitude x 5			Minimum Amplitude
0 (degF) 20	0 (mV) 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude

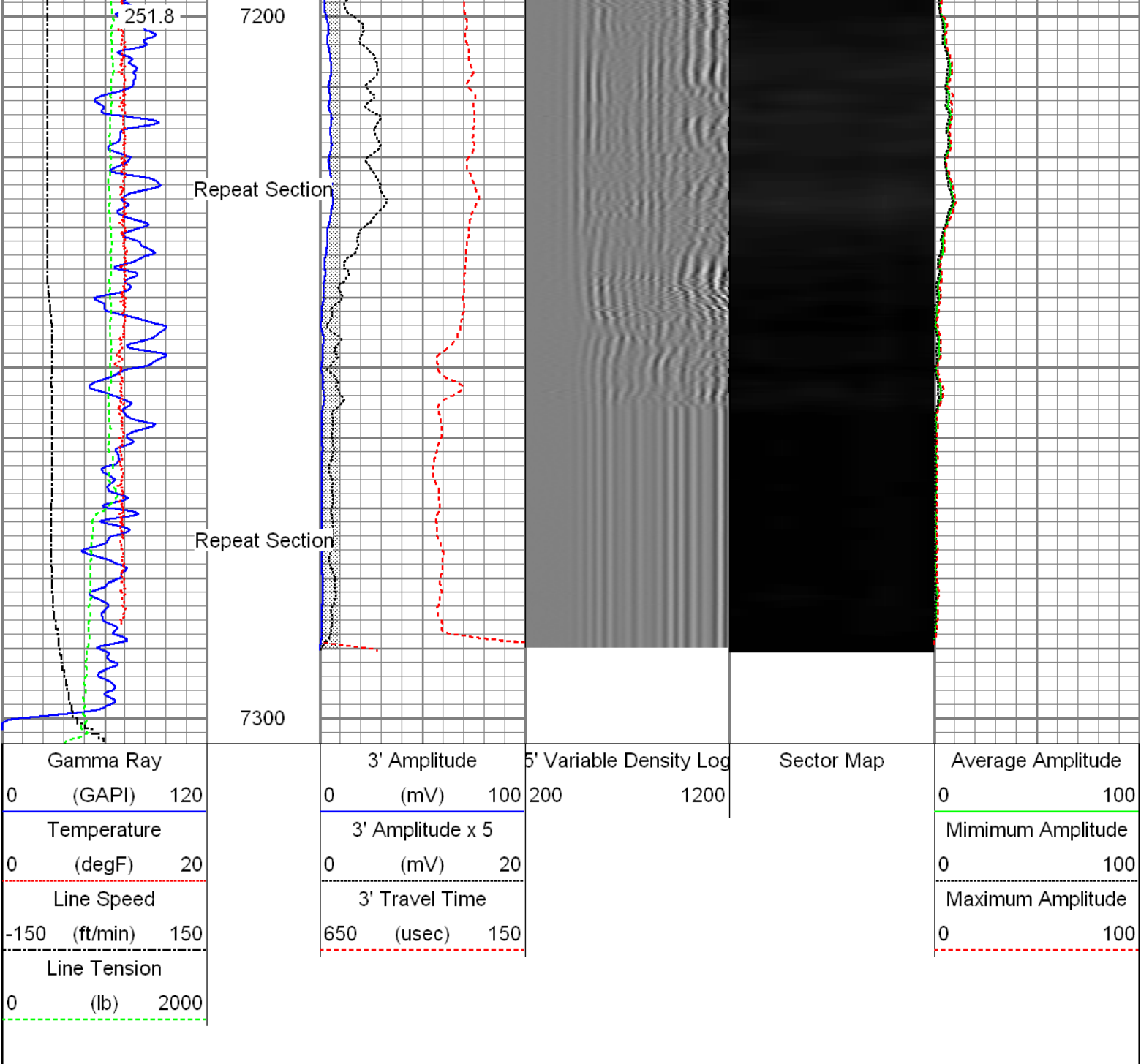
-150 (ft/min) 150  
Line Tension  
0 (lb) 2000

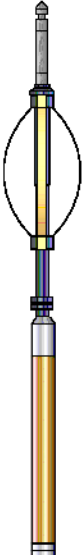
650 (usec) 150

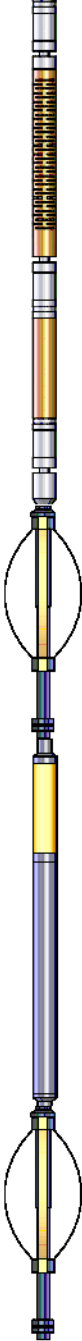
0 100







Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HeadVolt	19.49		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Temp	16.72					

WVF3FT	14.55		Probe_RADII-C-2-3/4" (FW1305-096) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVFCAL	14.55					
WVFS1	14.55					
WVFS2	14.55					
WVFS3	14.55					
WVFS4	14.55					
WVFS5	14.55					
WVFS6	14.55					
WVFS7	14.55					
WVFS8	14.55					
WVF5FT	13.55					
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
CCL	6.51					
DCCL	6.51					
			Probe_CCL_GR-2.75"Digital (FW1212-026) 4.54 Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
GR	3.77					
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: 01-25-16_noble energy_moser h22-745_rbl.db: field/well/run1/main.1 Total Length: 23.40 ft Total Weight: 194.00 lb O.D. 2.75 in						

Calibration Report		
Database File:	01-25-16_noble energy_moser h22-745_rbl.db	
Dataset Pathname:	main.1	
Dataset Creation:	Tue Jan 26 11:47:13 2016 by Calc SCH 120430	
Gamma Ray Calibration Report		
Serial Number:	FW1212-026	
Tool Model:	2.75"Digital	
Performed:	Fri Nov 06 09:15:34 2015	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps

# Segmented Cement Bond Log Calibration Report

Serial Number: FW1305-096  
 Tool Model: 2-3/4"

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 281.411 ft

Master Calibration, performed Tue Jan 26 11:47:11 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	0.532	0.800	71.921	135.783	-0.355
CAL	0.006	0.710				
5'	0.010	0.471	0.800	71.921	154.375	-0.791
SUM						
S1	0.007	0.478	0.000	100.000	212.195	-1.404
S2	0.007	0.497	0.000	100.000	204.195	-1.523
S3	0.008	0.520	0.000	100.000	195.332	-1.642
S4	0.008	0.539	0.000	100.000	188.366	-1.515
S5	0.007	0.583	0.000	100.000	173.665	-1.271
S6	0.007	0.608	0.000	100.000	166.304	-1.093
S7	0.008	0.583	0.000	100.000	173.875	-1.383
S8	0.007	0.525	0.000	100.000	193.179	-1.443

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.006	0.710	1.000	0.000

Air Zero Calibration, performed Mon Jan 25 07:32:36 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.006		0.000		0.000	
5'	0.007		0.000		-0.000	
SUM						
S1	0.007		0.000		-0.000	
S2	0.007		0.000		0.000	
S3	0.007		0.000		0.000	
S4	0.006		0.000		0.000	
S5	0.006		0.000		0.000	
S6	0.006		0.000		0.000	
S7	0.006		0.000		0.000	
S8	0.007		0.000		0.000	



Company: Noble Energy Inc.  
 Well: Moser H22-745  
 Field: Wattenberg  
 County: Weld  
 State: Colorado

	State	Colorado
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