



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.				
Well	Powers 27N-27HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
Location:	Company	Kerr-McGee Oil & Gas Onshore, L.P.			
	Well	Powers 27N-27HZ			
	Field	Wattenberg			
	County	Weld			
	State	Colorado			
	API # : 05-123-41953				
SEC 22 TWP 2N RGE 65W	Other Services				
Permanent Datum	Ground Level	Elevation 4893'			
Log Measured From	Kelly Bushing	25 FT			
Drilling Measured From	Kelly Bushing				
		K.B. 4918'			
		D.F. 4917'			
		G.L. 4893'			

Date	09-DEC-2015
Run Number	Two
Depth Driller	13055 FT
Depth Logger	7353 FT
Bottom Logged Interval	7339 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	237°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	9:17 AM
Equipment Number	HD-0324
Location	Fort Lupton, CO
Recorded By	A. Olmsted
Witnessed By	DJ Anderson

Borehole Record				Tubing Record			
Run Number	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 8RD LTC	Surface	1846 FT		
Intermediate #1	5 1/2	17	P-110, HCP-110	Surface	13055 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 Casing Tally reported Marker Joint at 6457 FT
Adjusted Log +14 FT to Correlate with Marker Joint
Log ran from 7339 FT to surface
Recorded with 2800 PSI surface induced pressure

Thank you for choosing FMC Technologies Surface Integrated Services.



Main Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\0512341953_anadarko_powers 27n-27hz_12-09-15_rb\0512341953_anadarko_powe

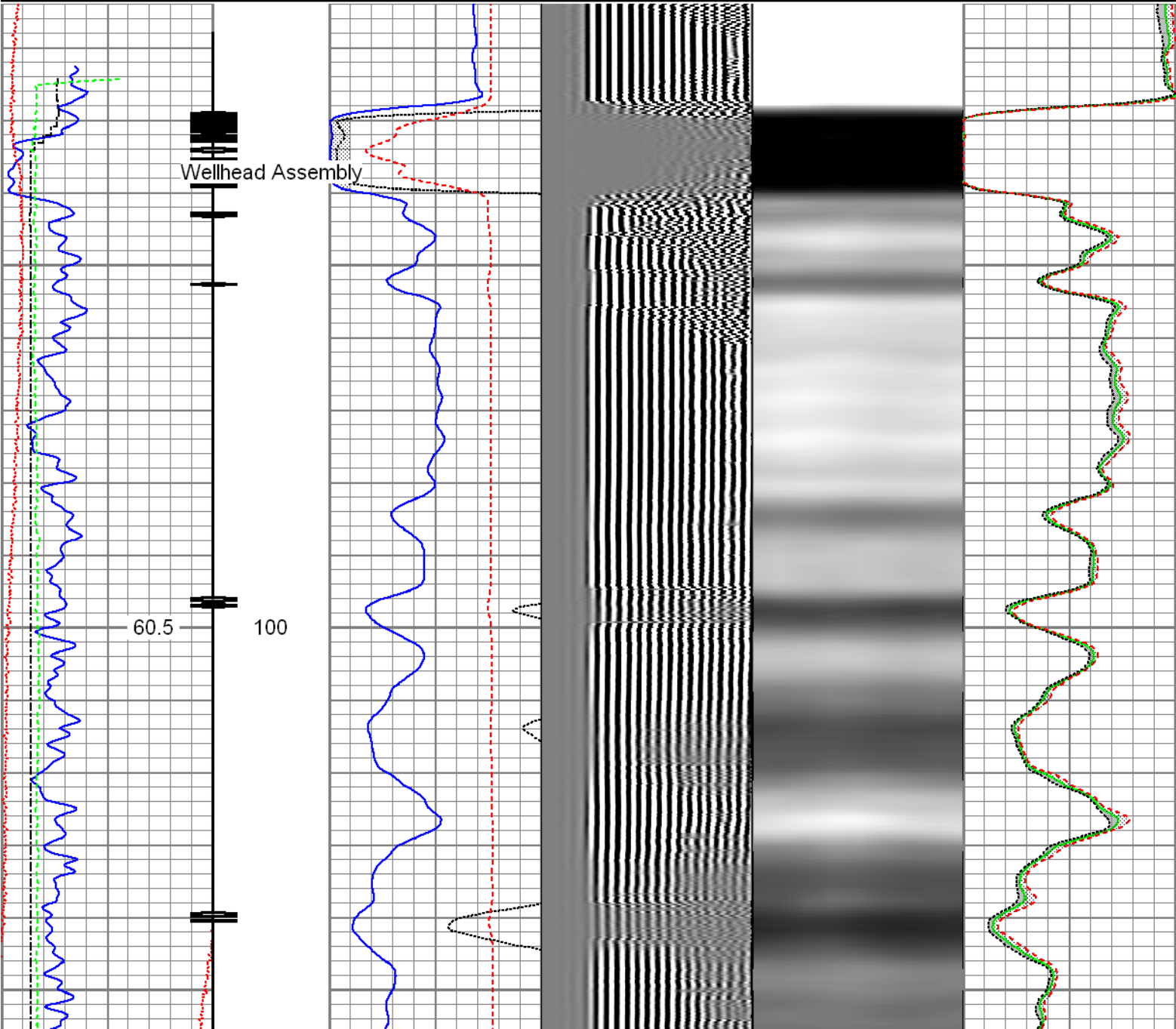
Dataset Pathname: pass7.1

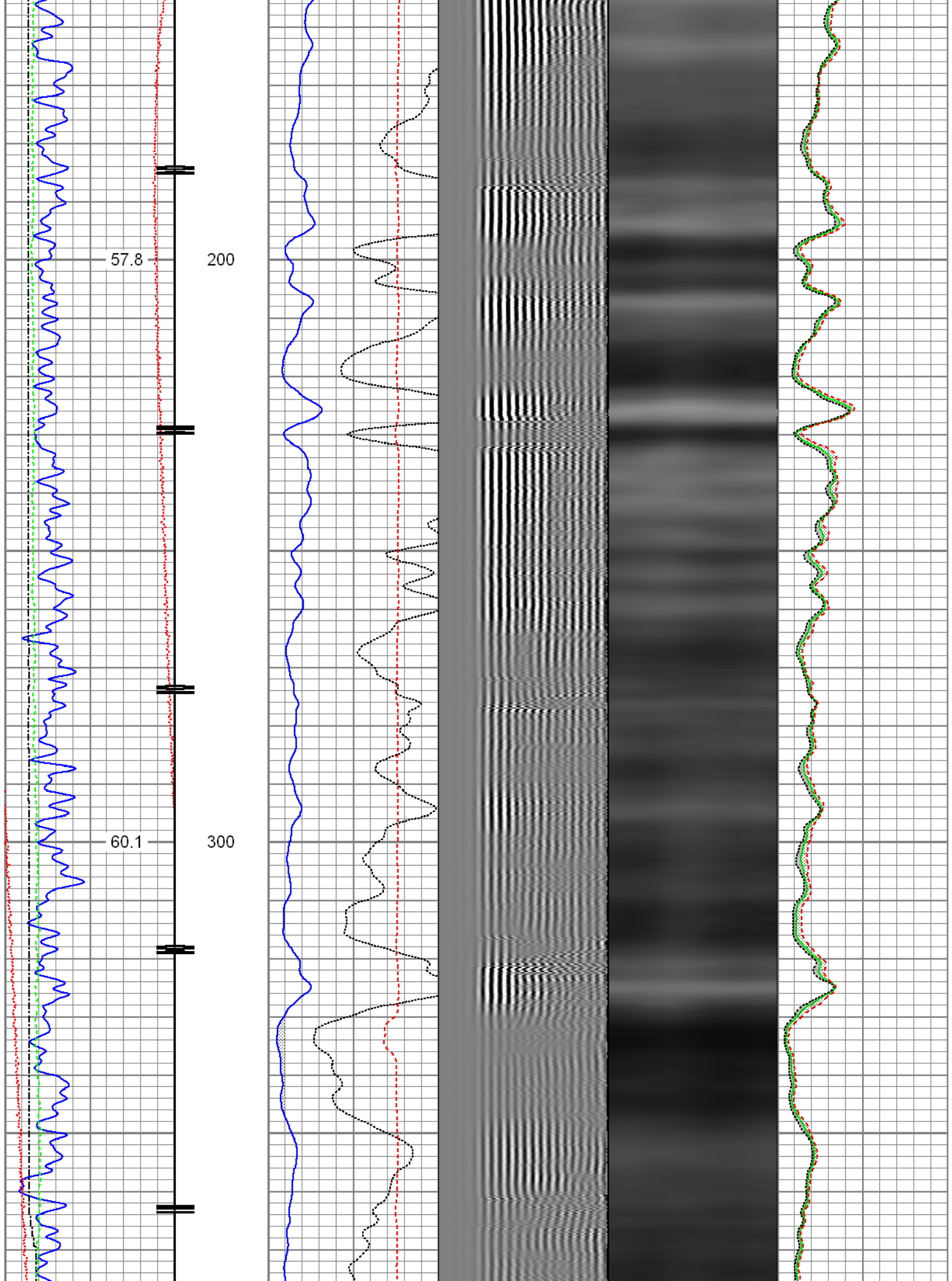
Presentation Format: radii

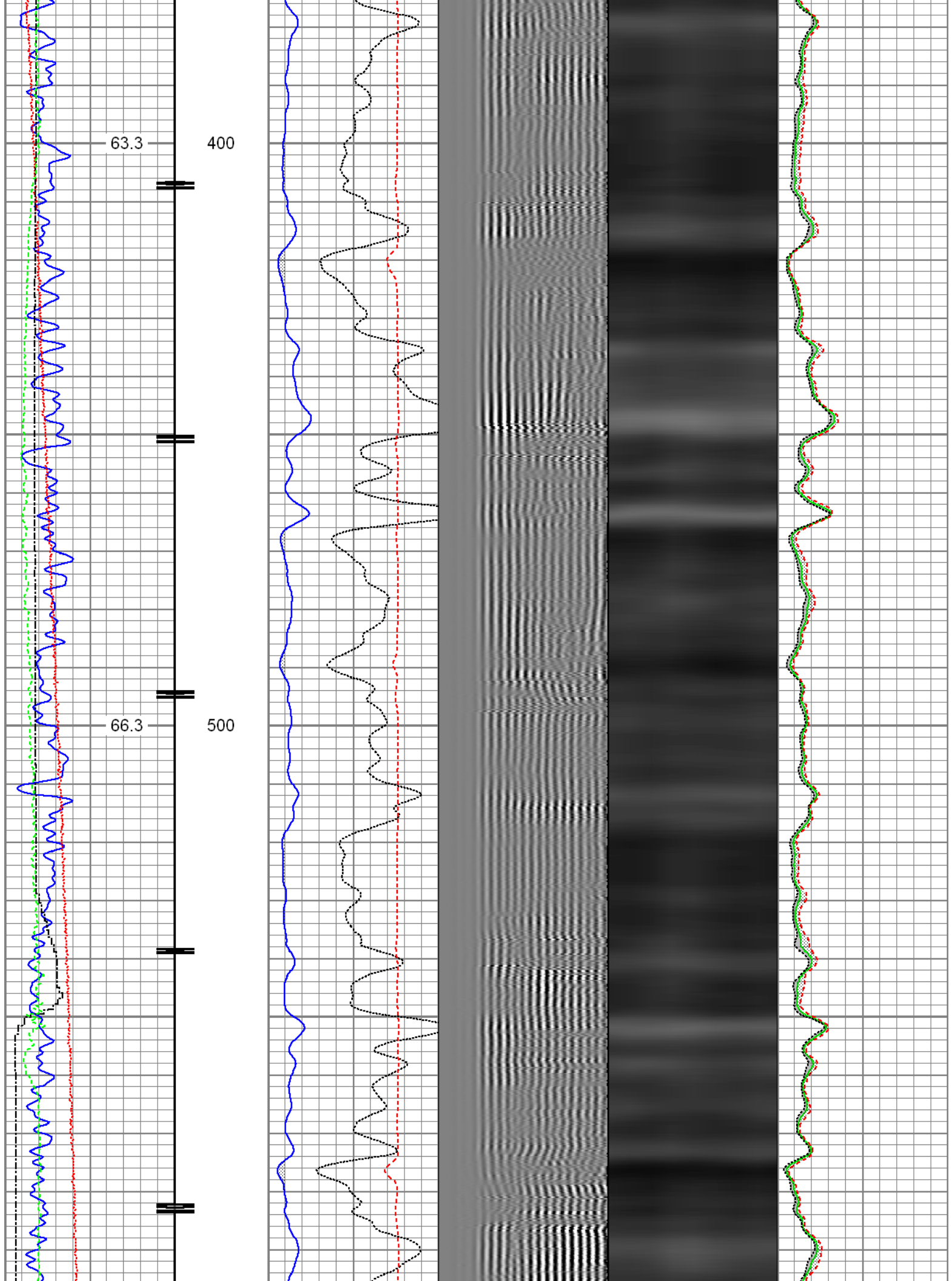
Dataset Creation: Wed Dec 09 10:23:32 2015 by Calc 7.0 B1

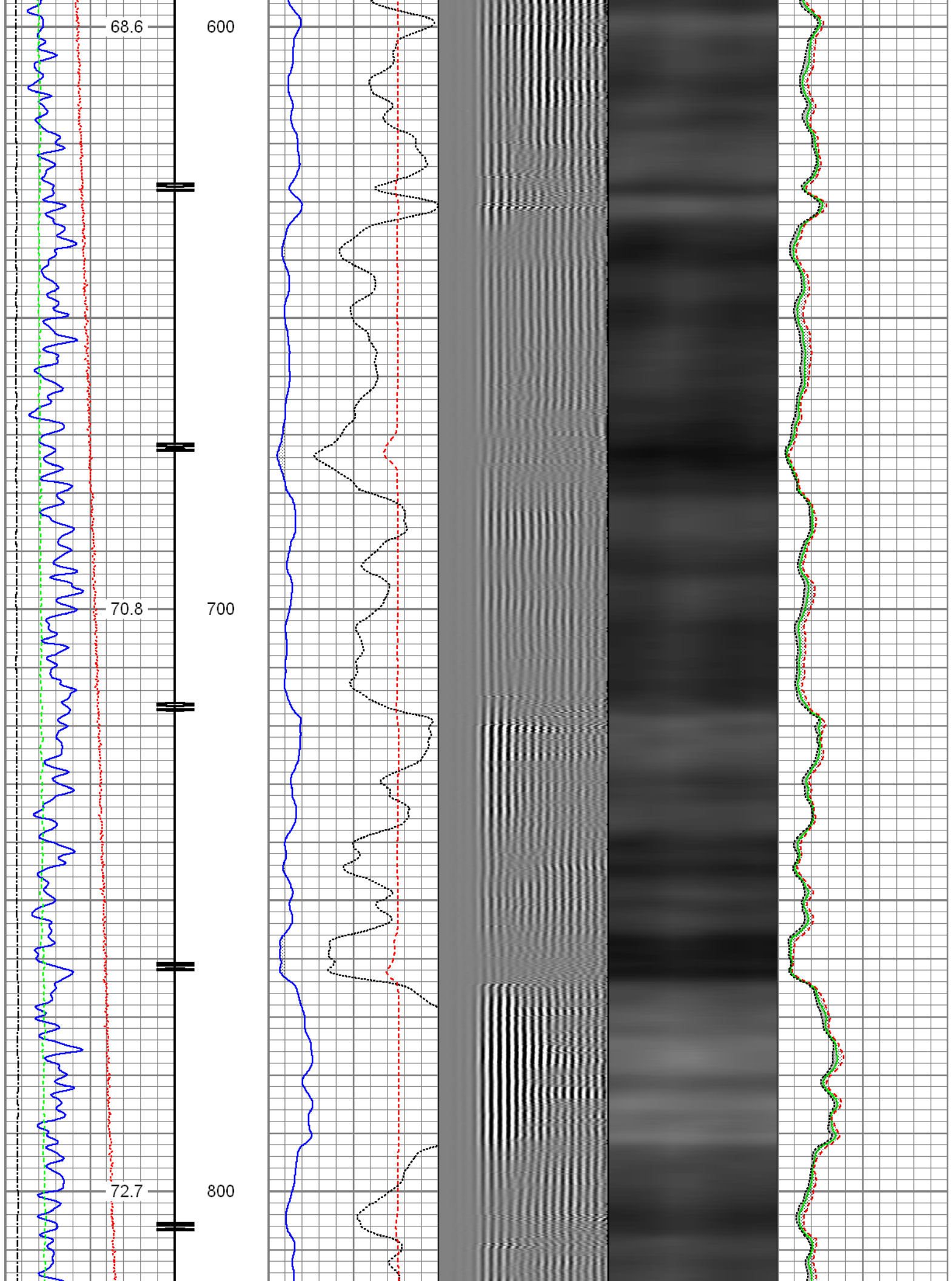
Charted by: Depth in Feet scaled 1:240

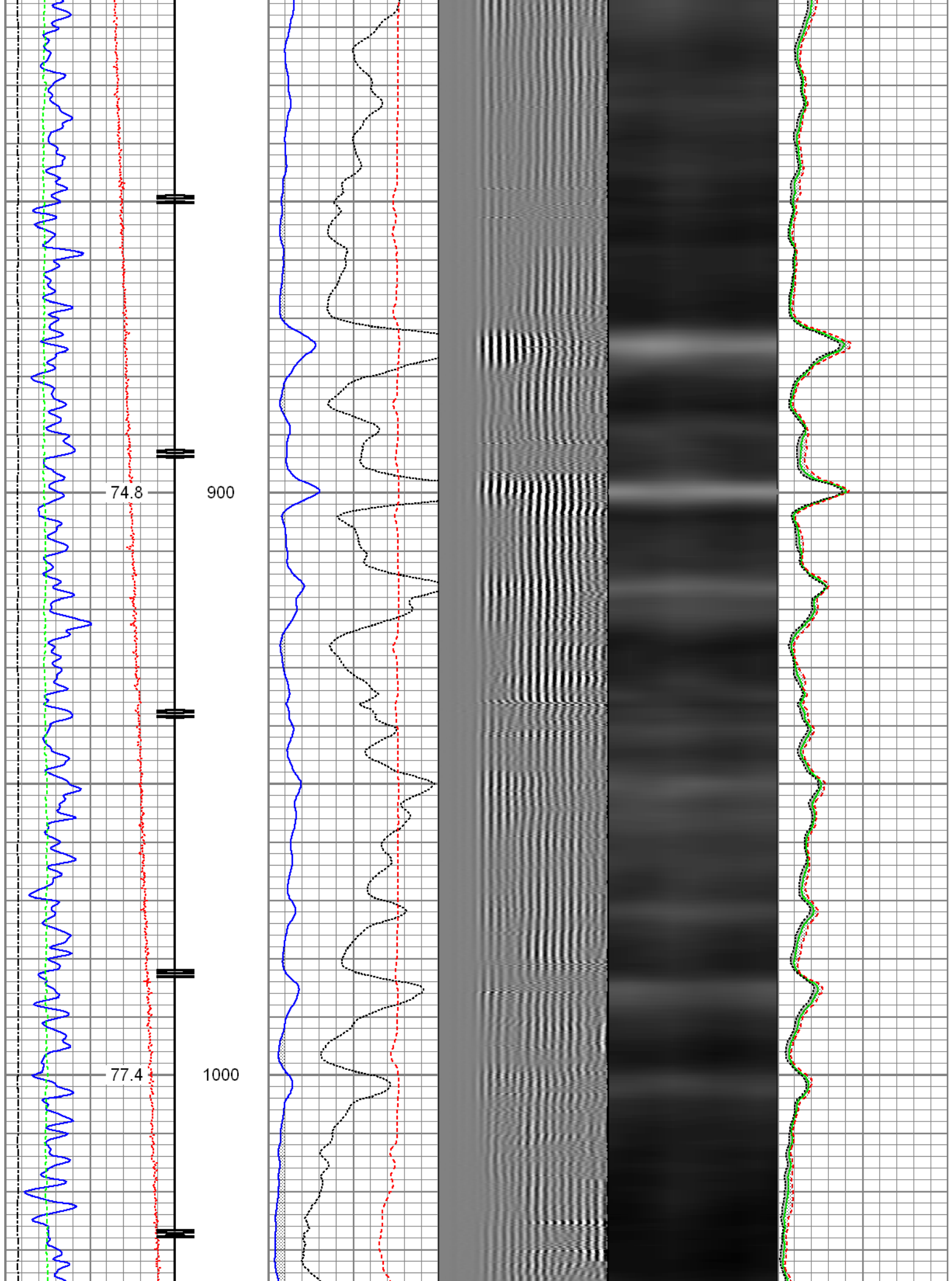
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 150	0 (mV) 100	200 1200		0 100
Temperature	3' Amplitude x 5			Mimimum Amplitude
0 (degF) 20	0 (mV) 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude
-150 (ft/min) 150	650 (usec) 150			0 100
Line Tension				
0 (lb) 2000				
Casing Collar Locator				
10 0				

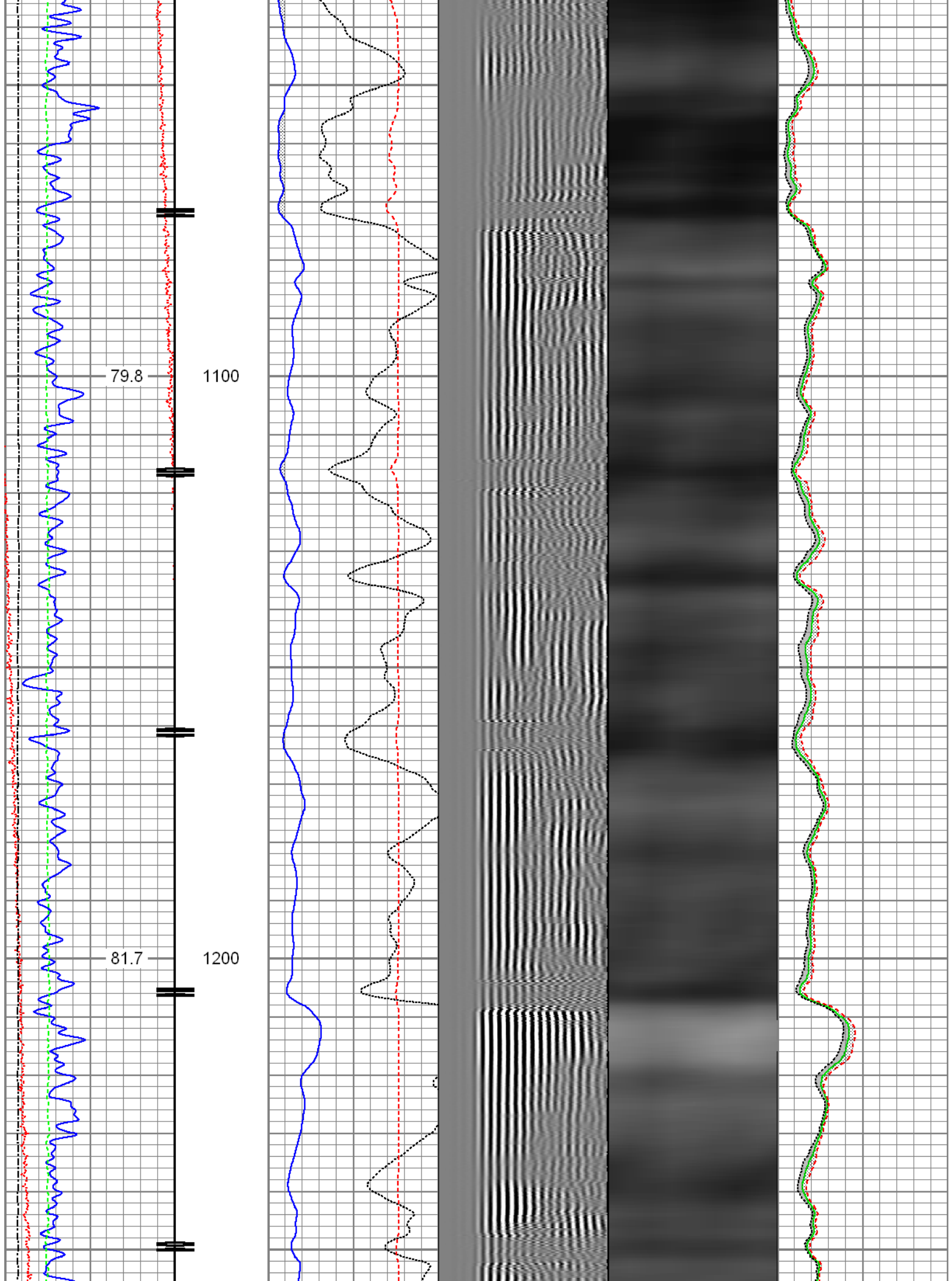


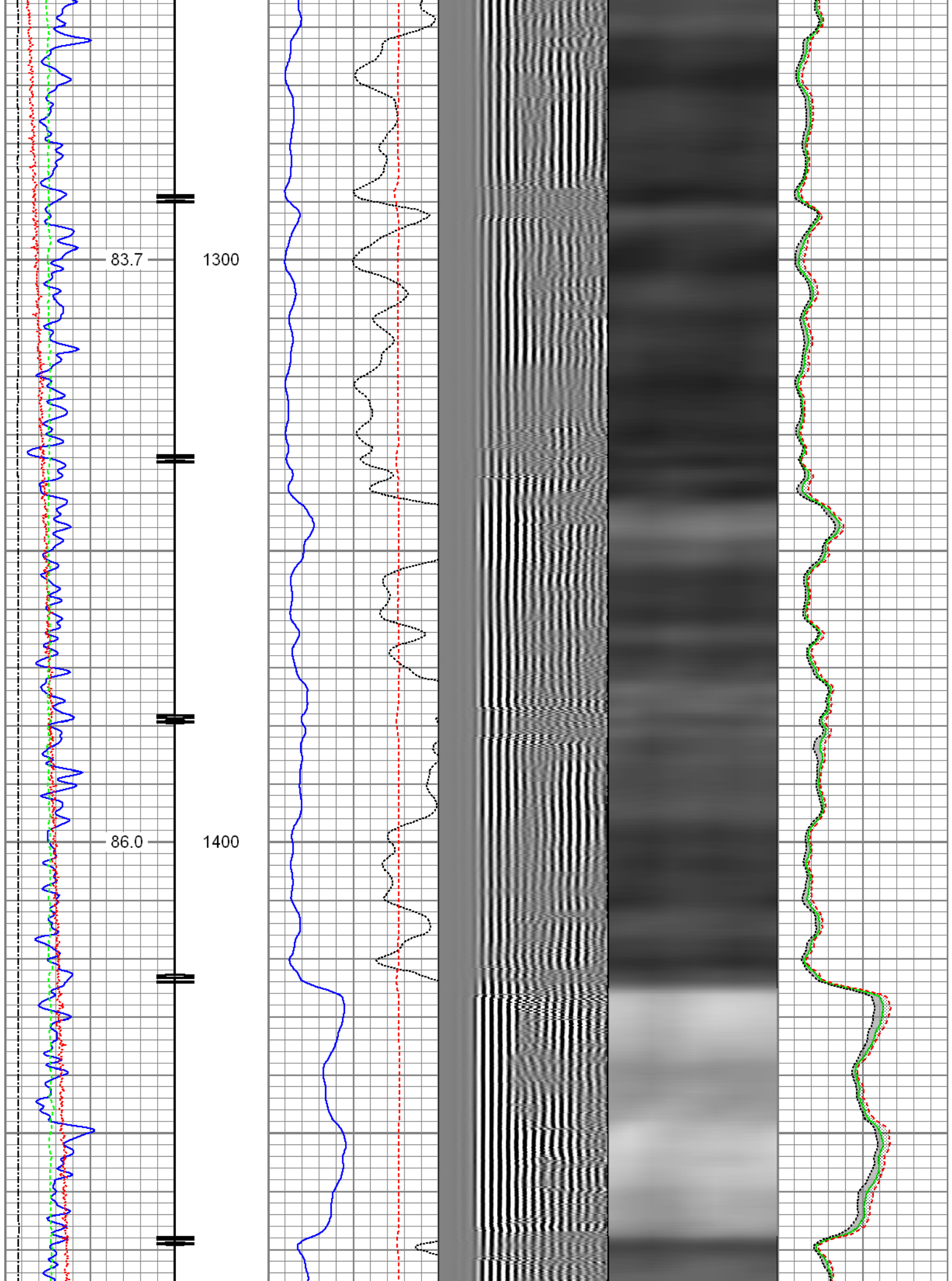


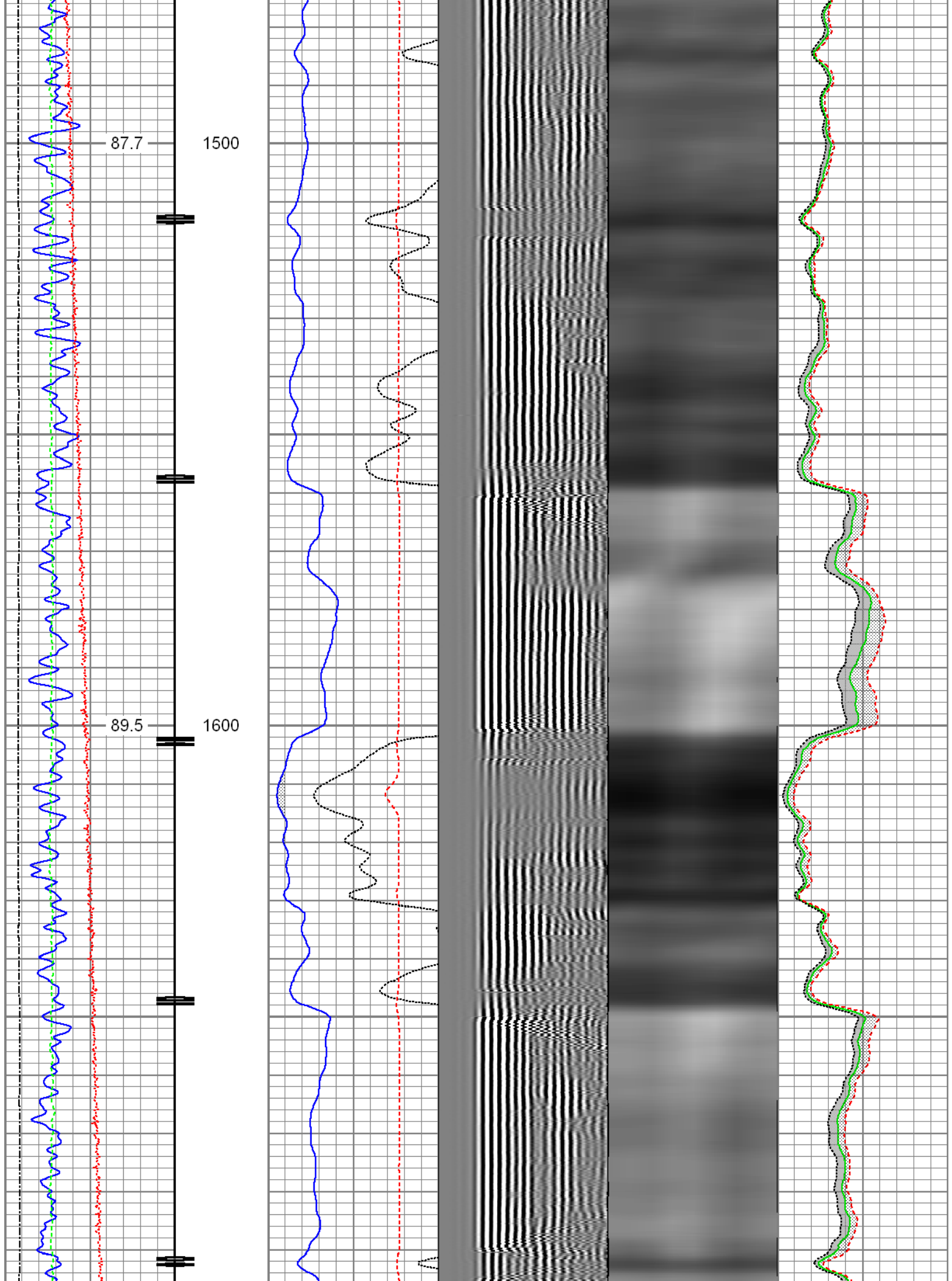


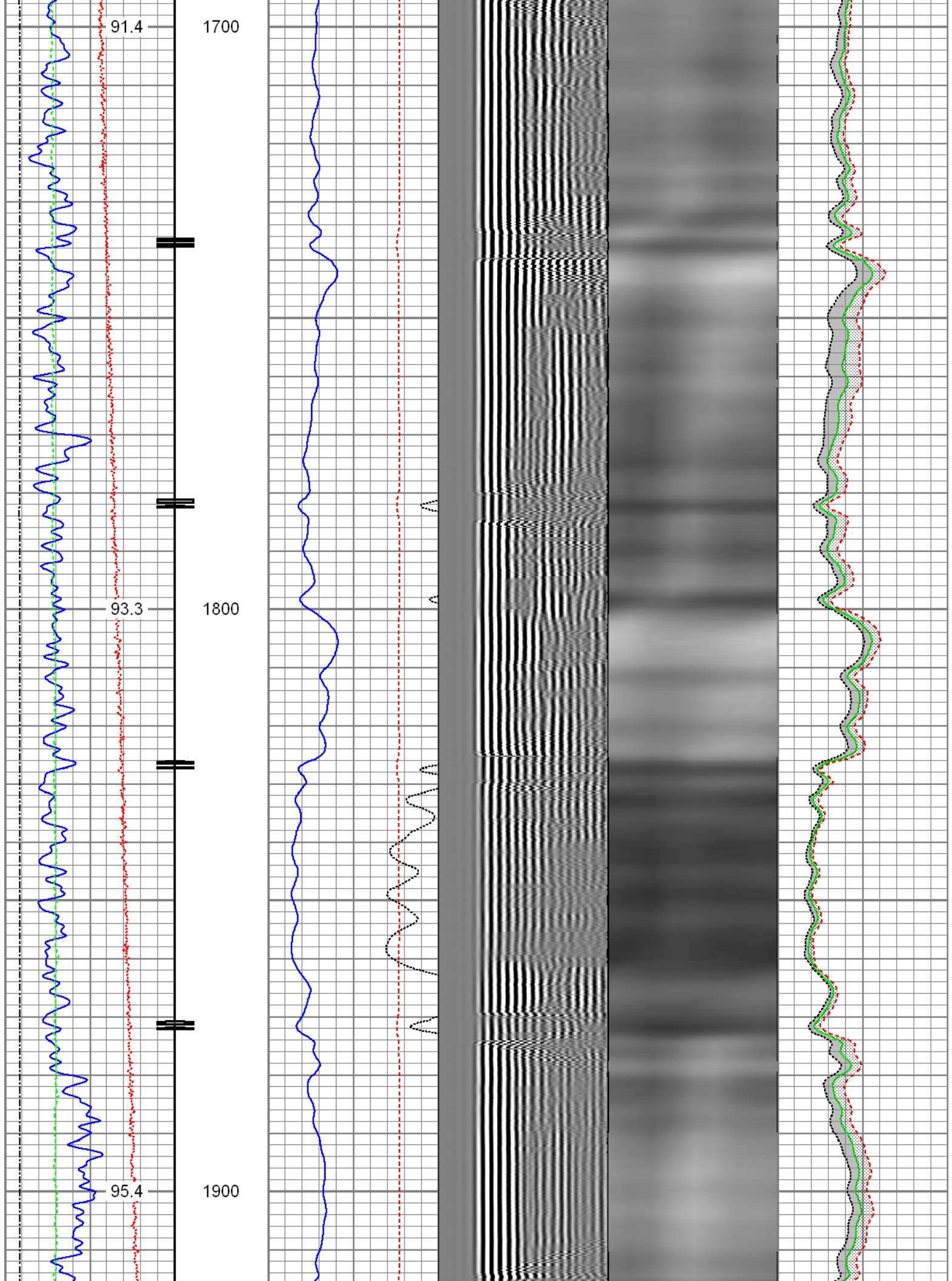


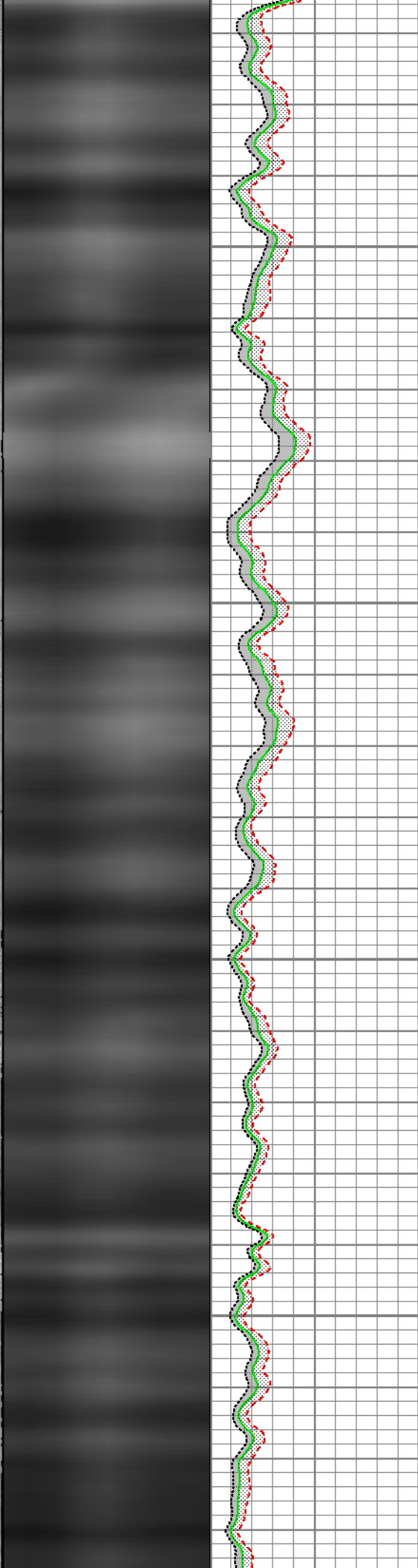
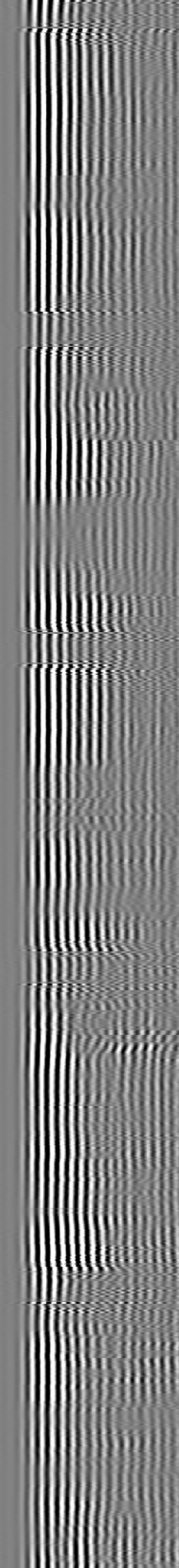
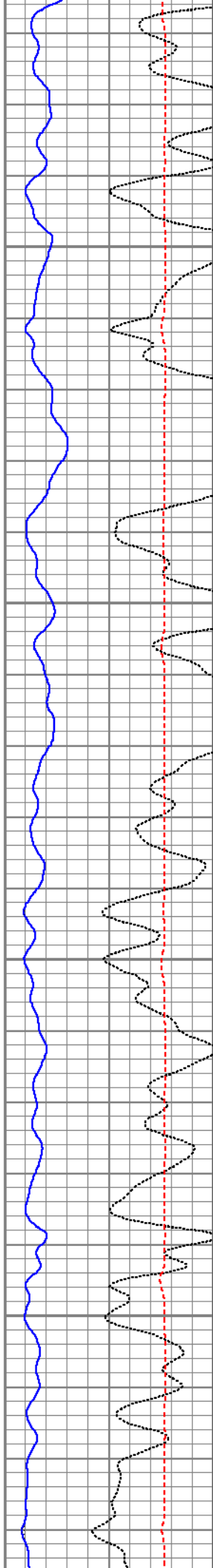
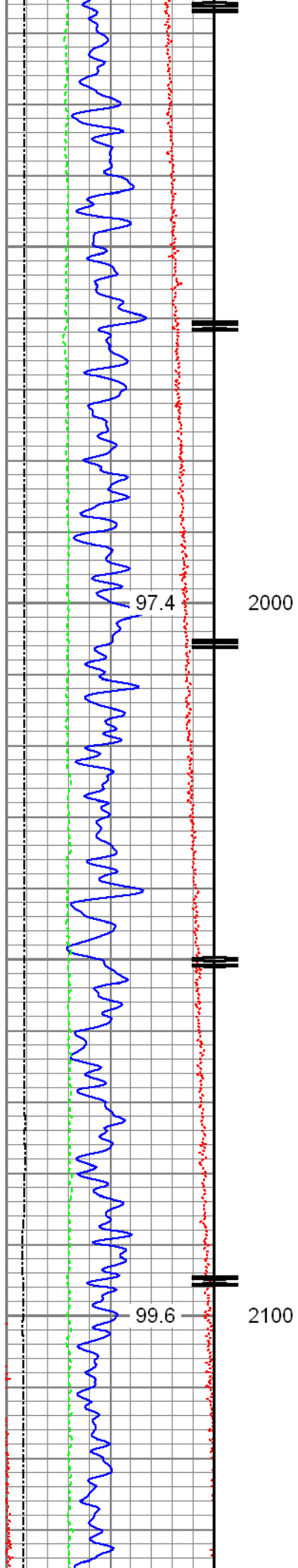


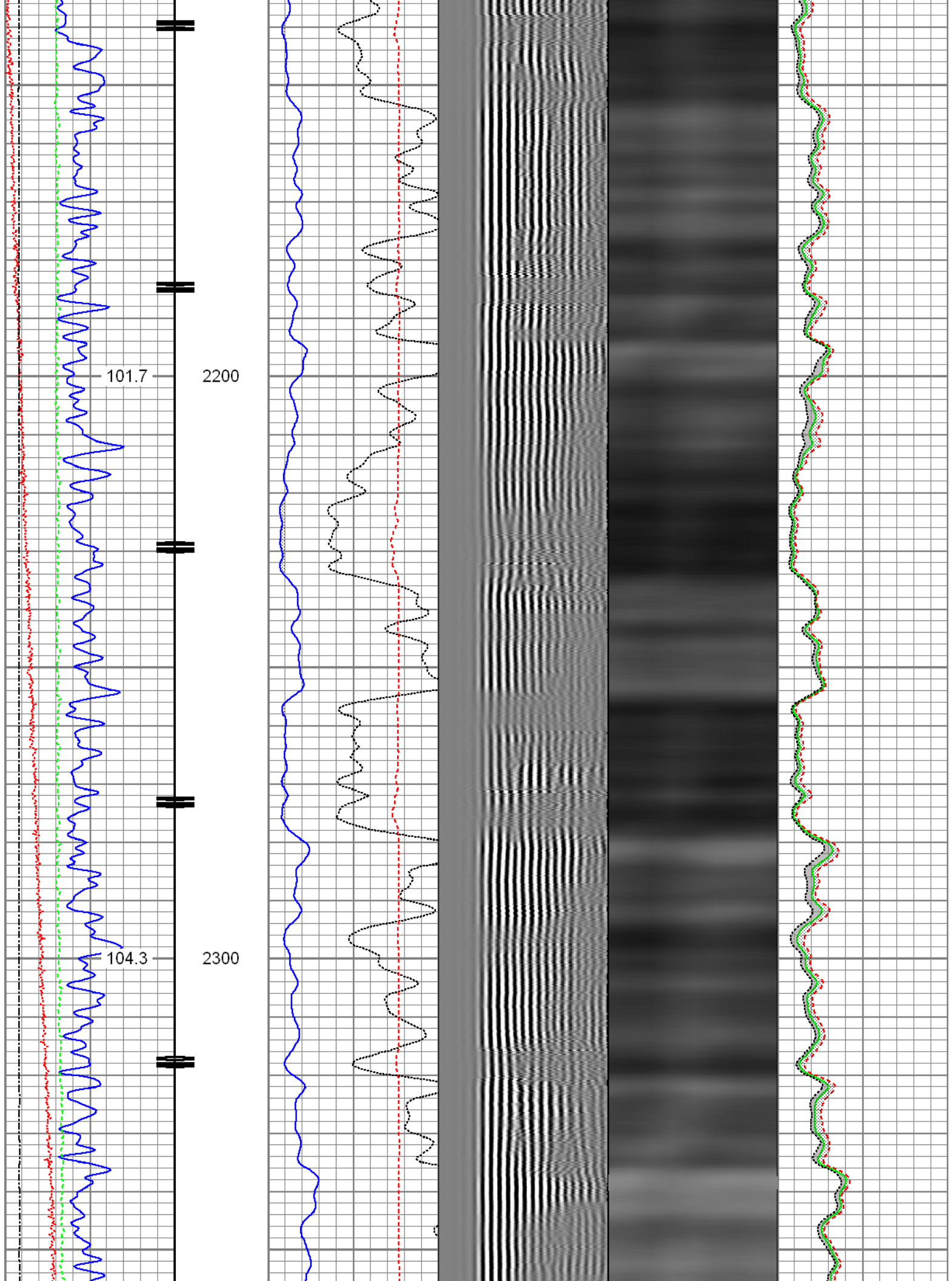


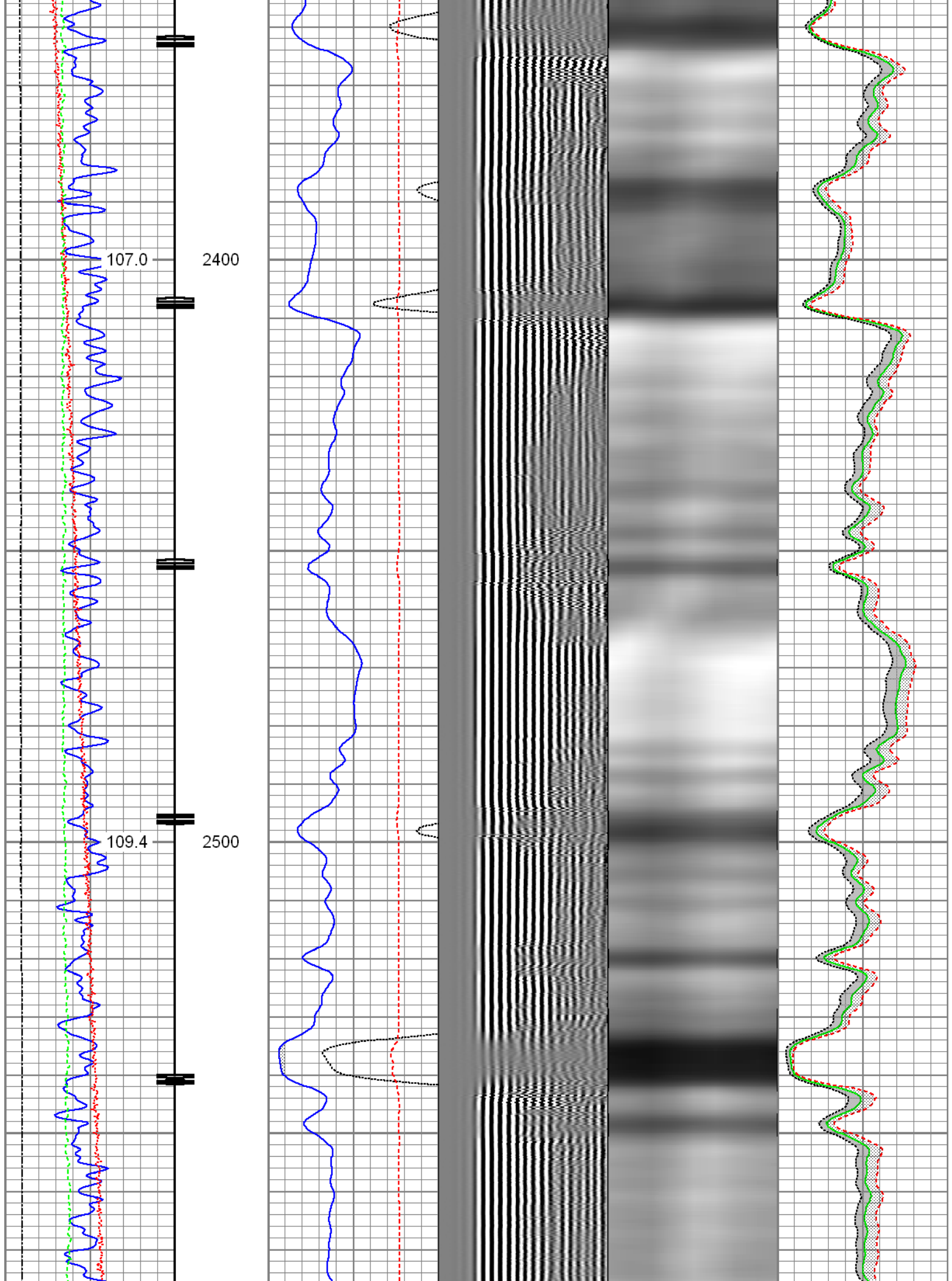


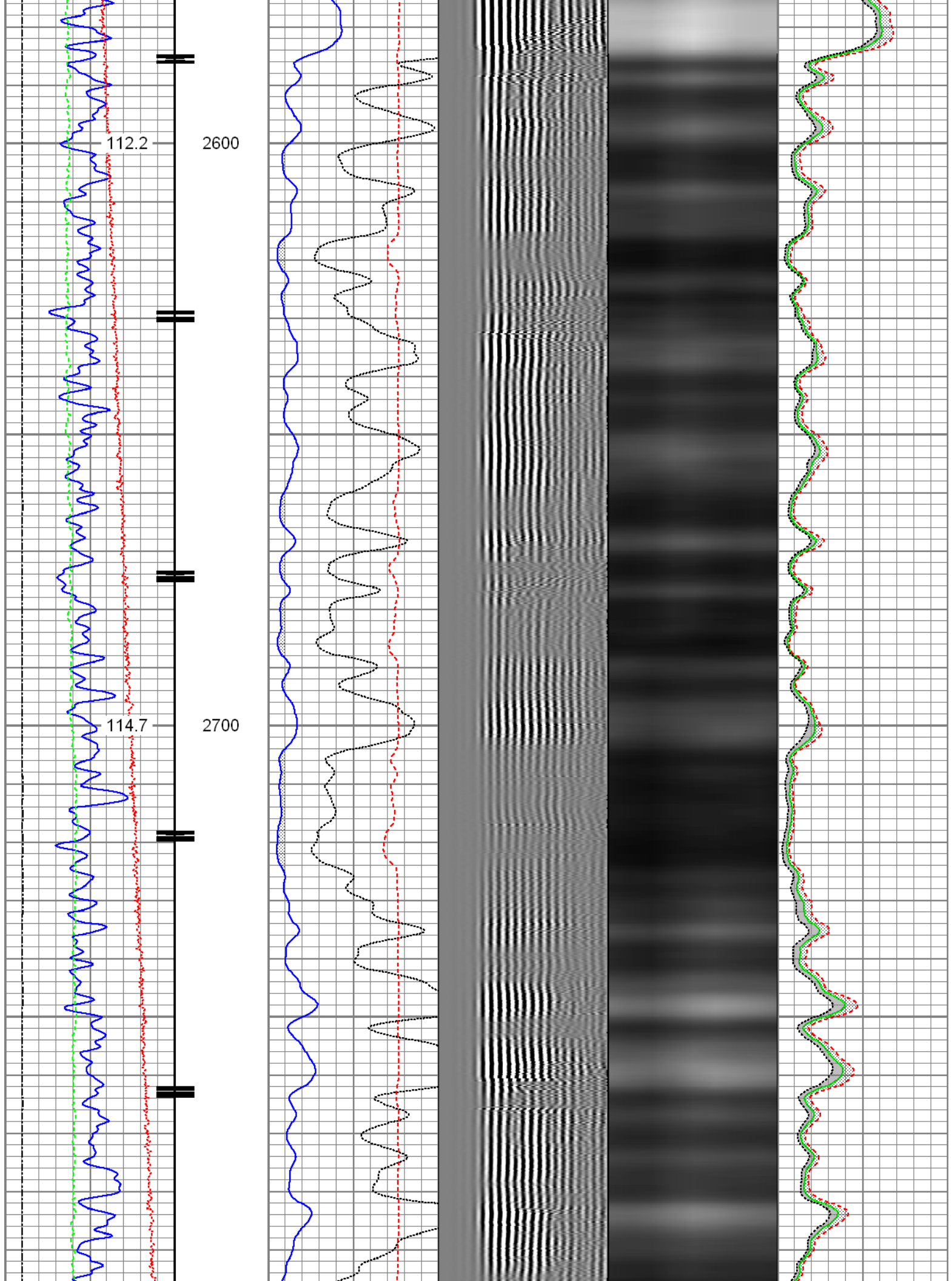


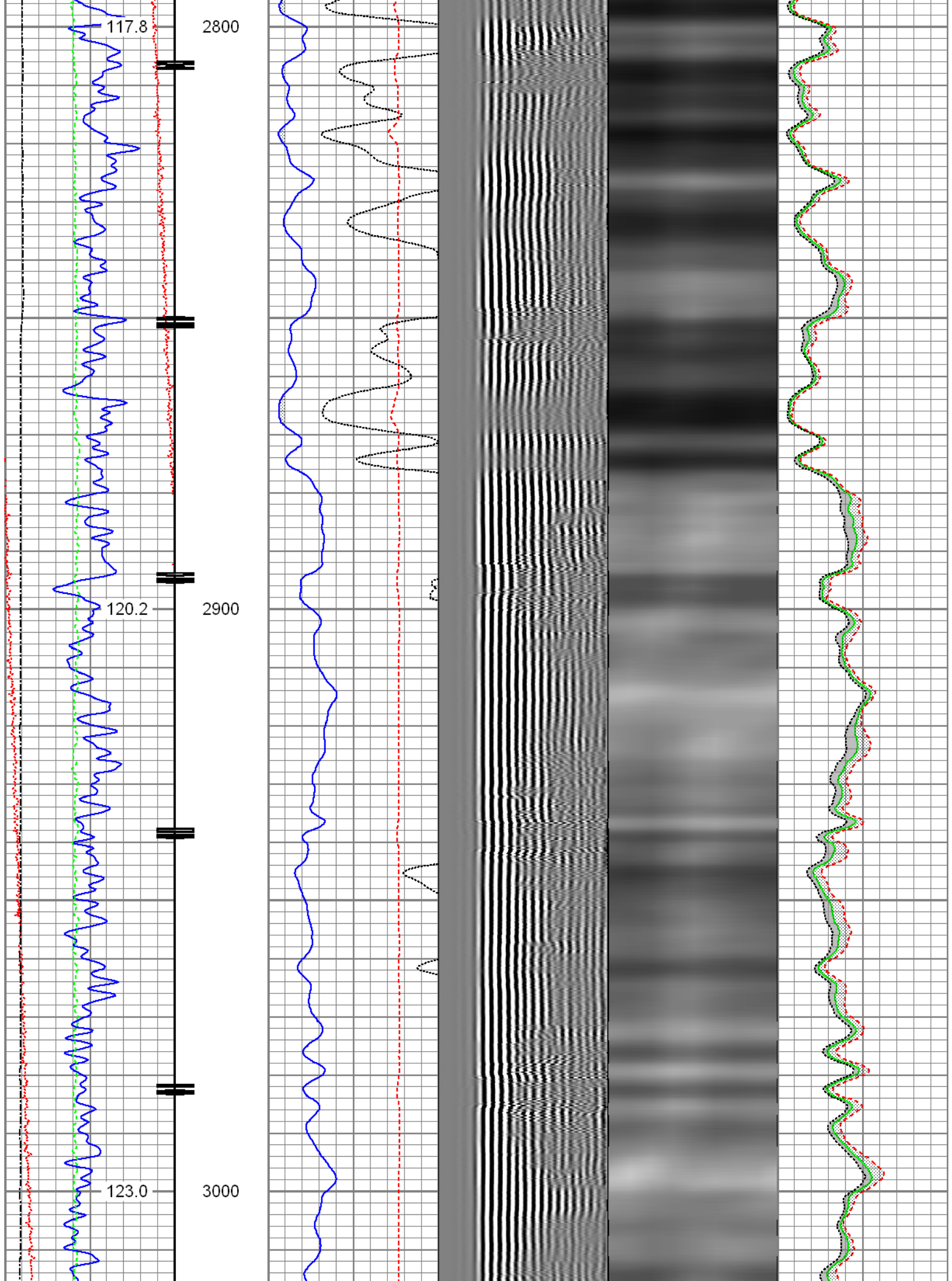


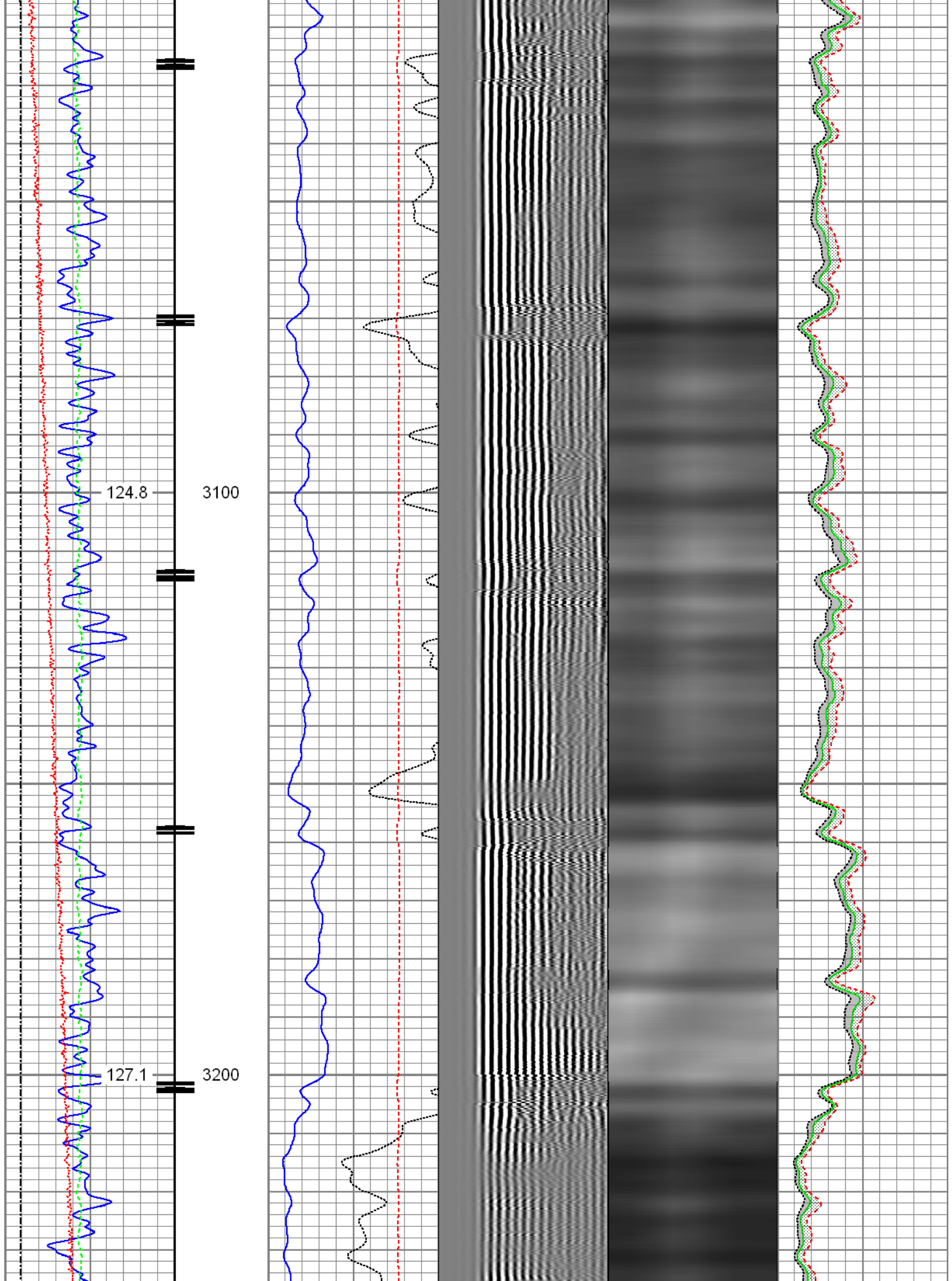


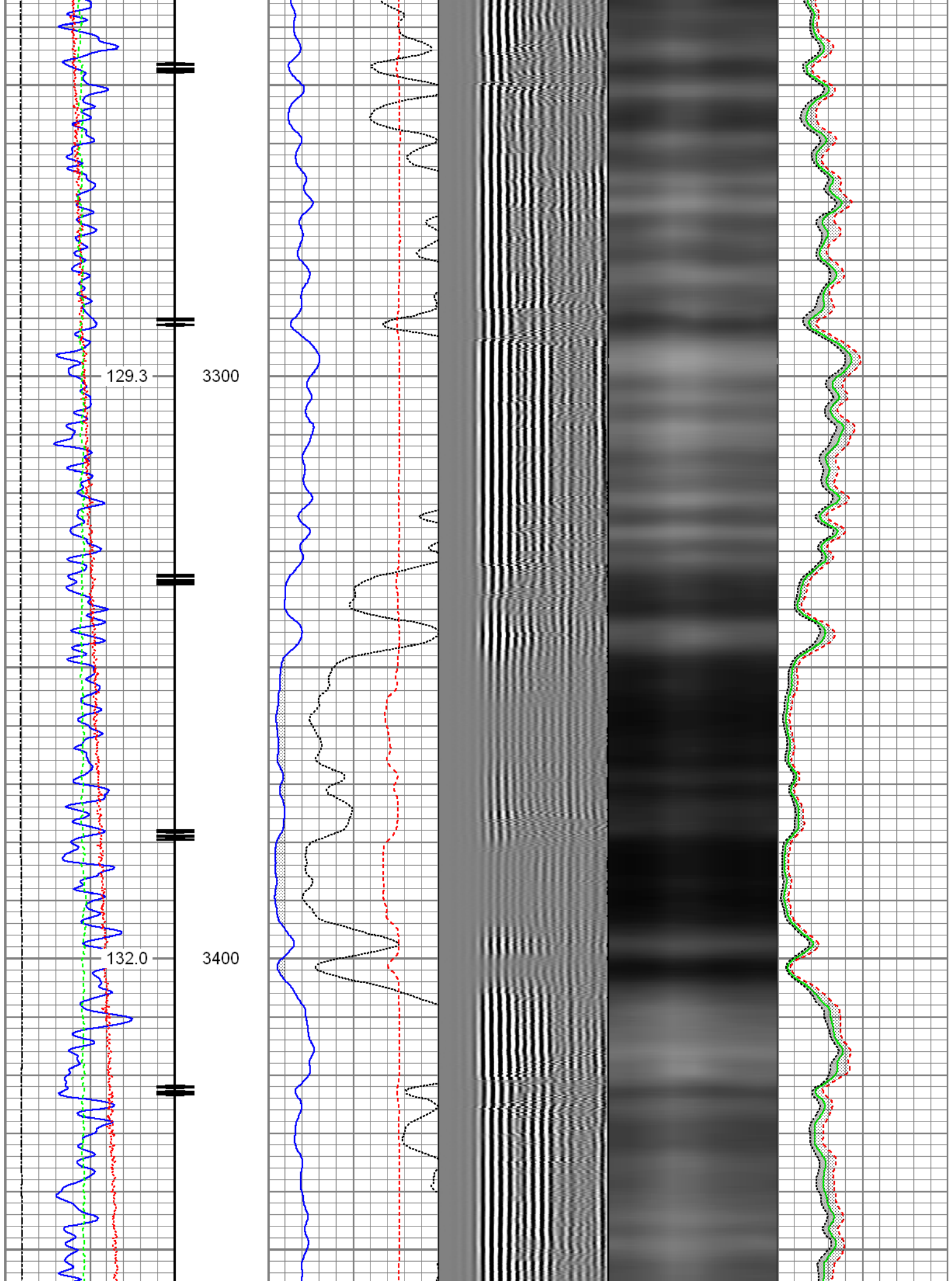


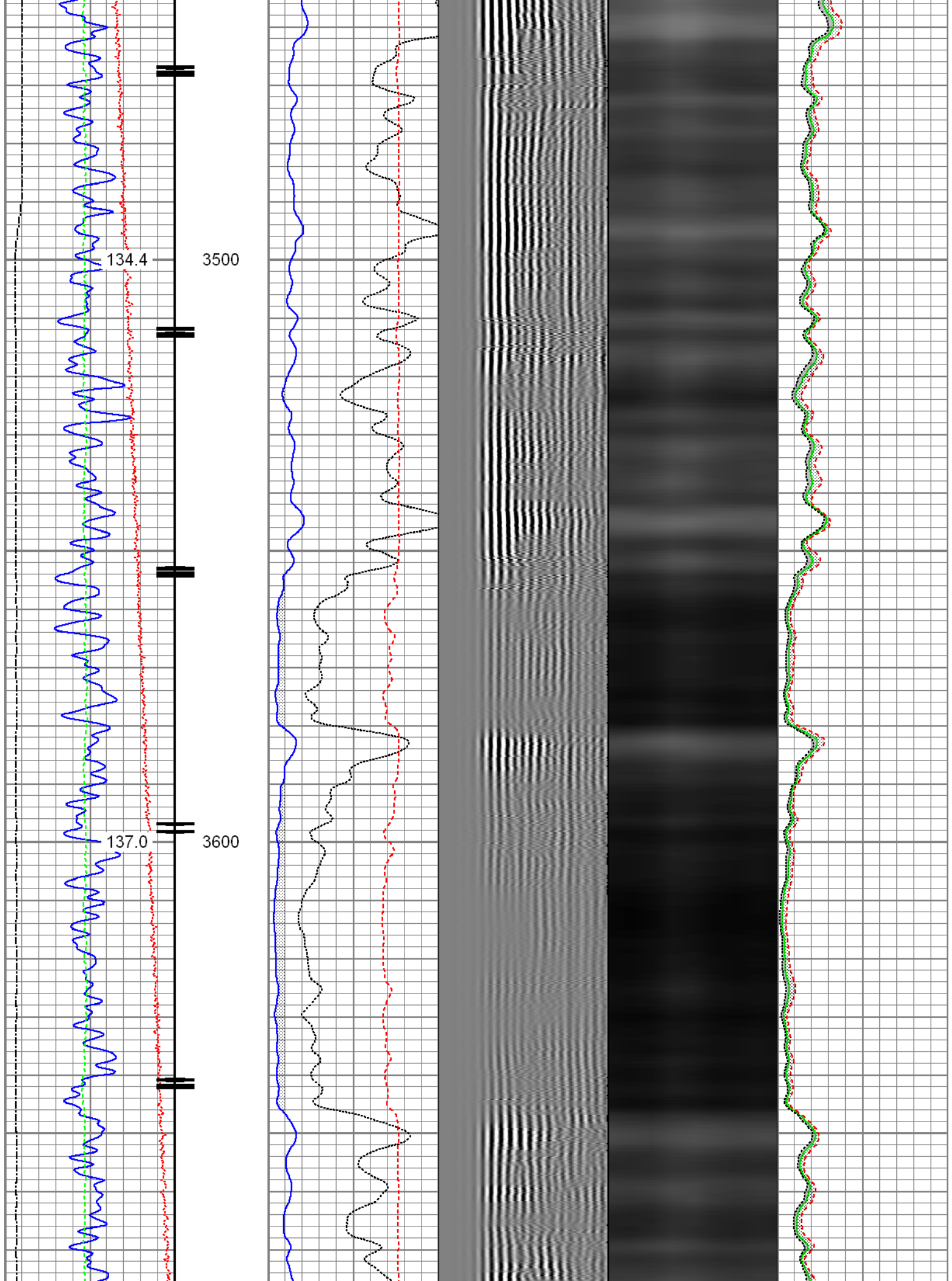


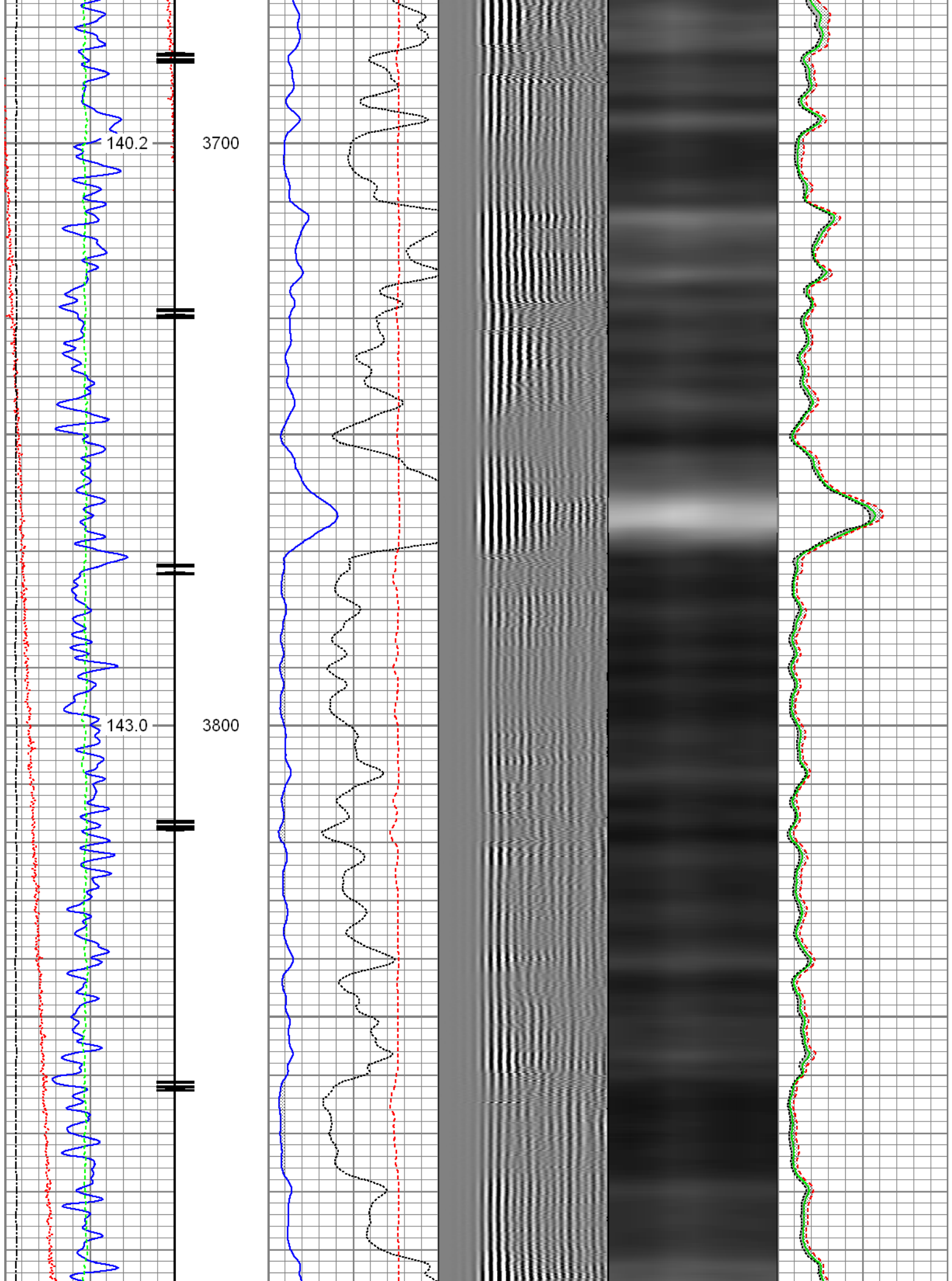


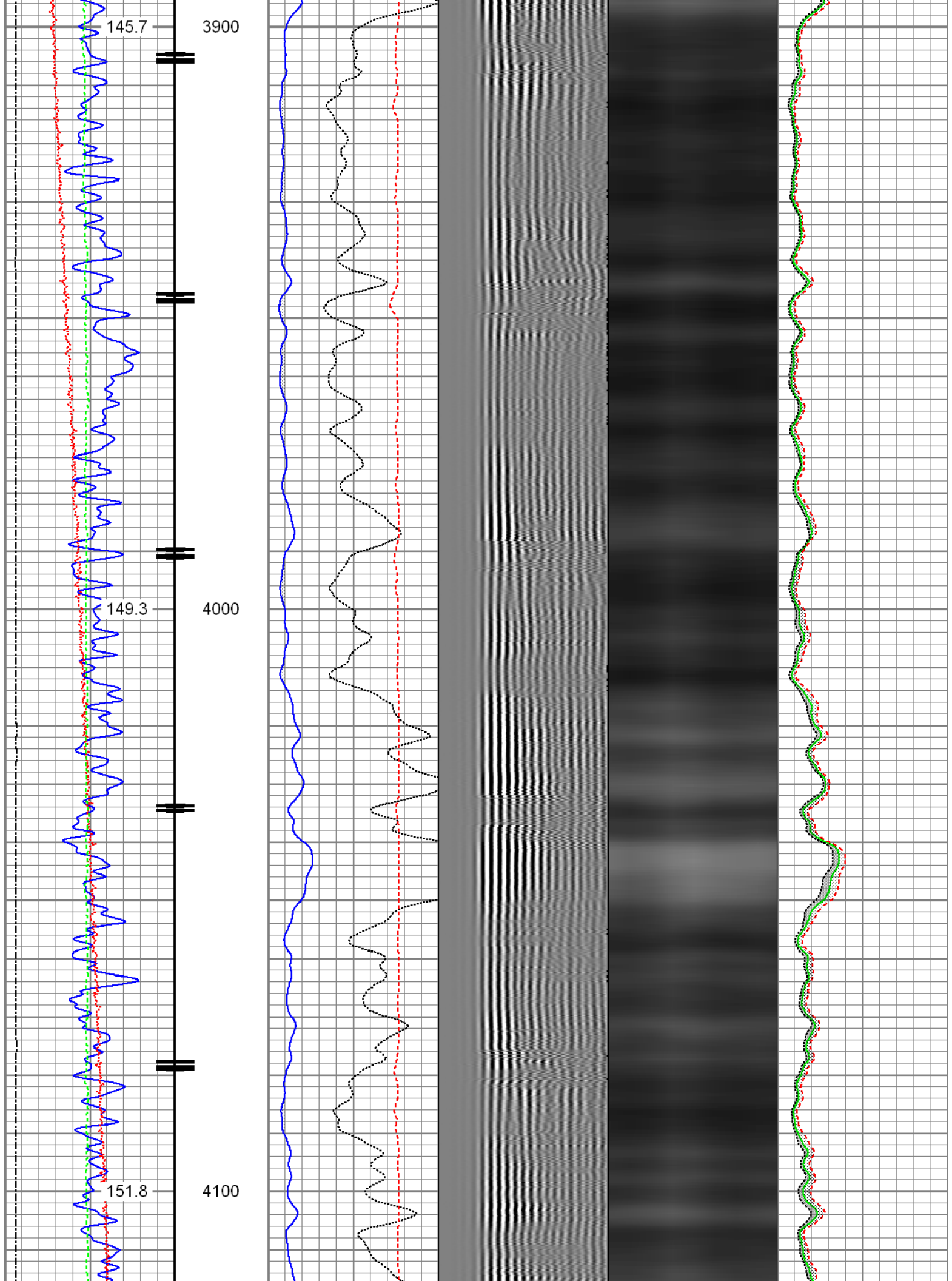


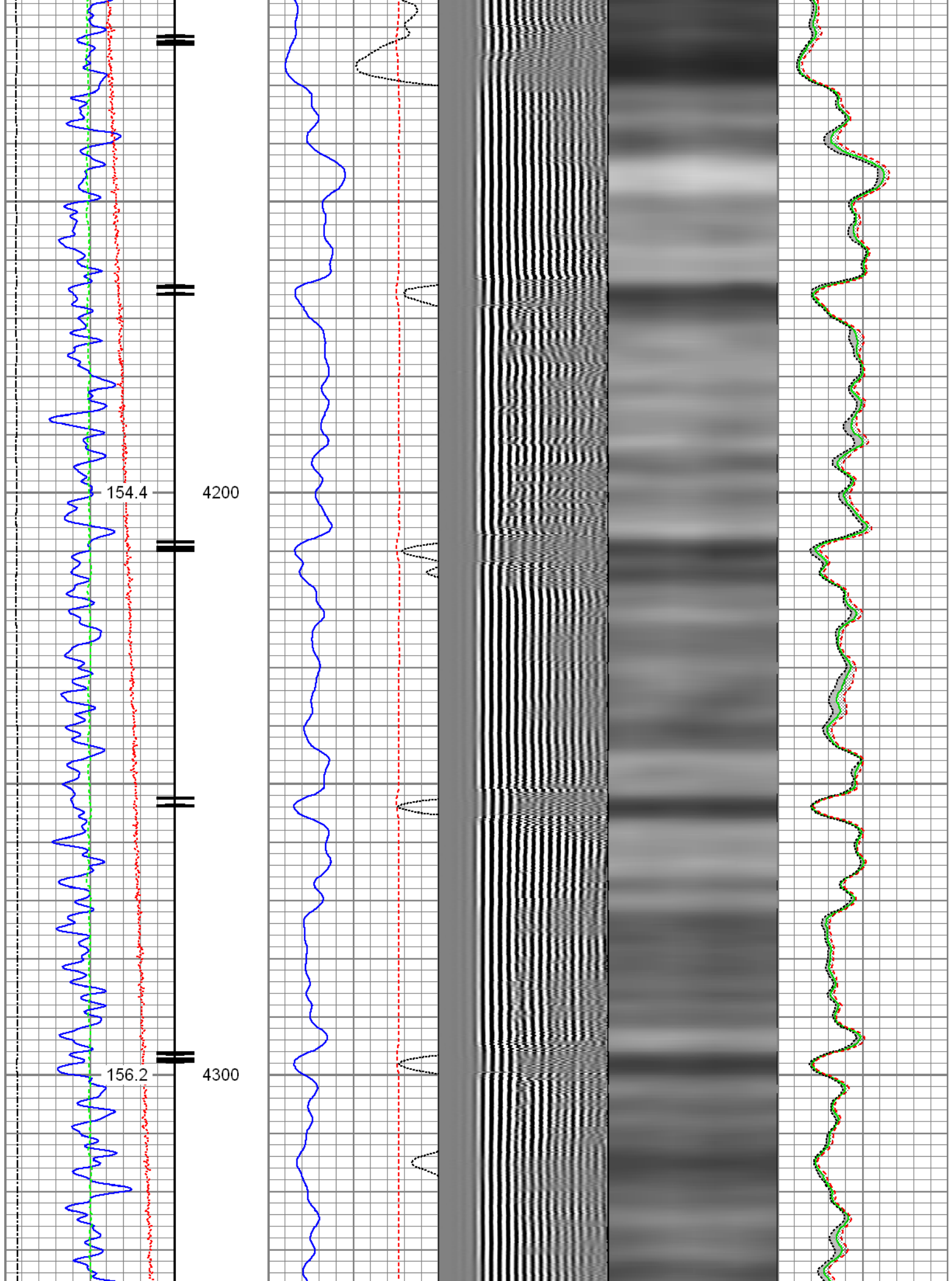


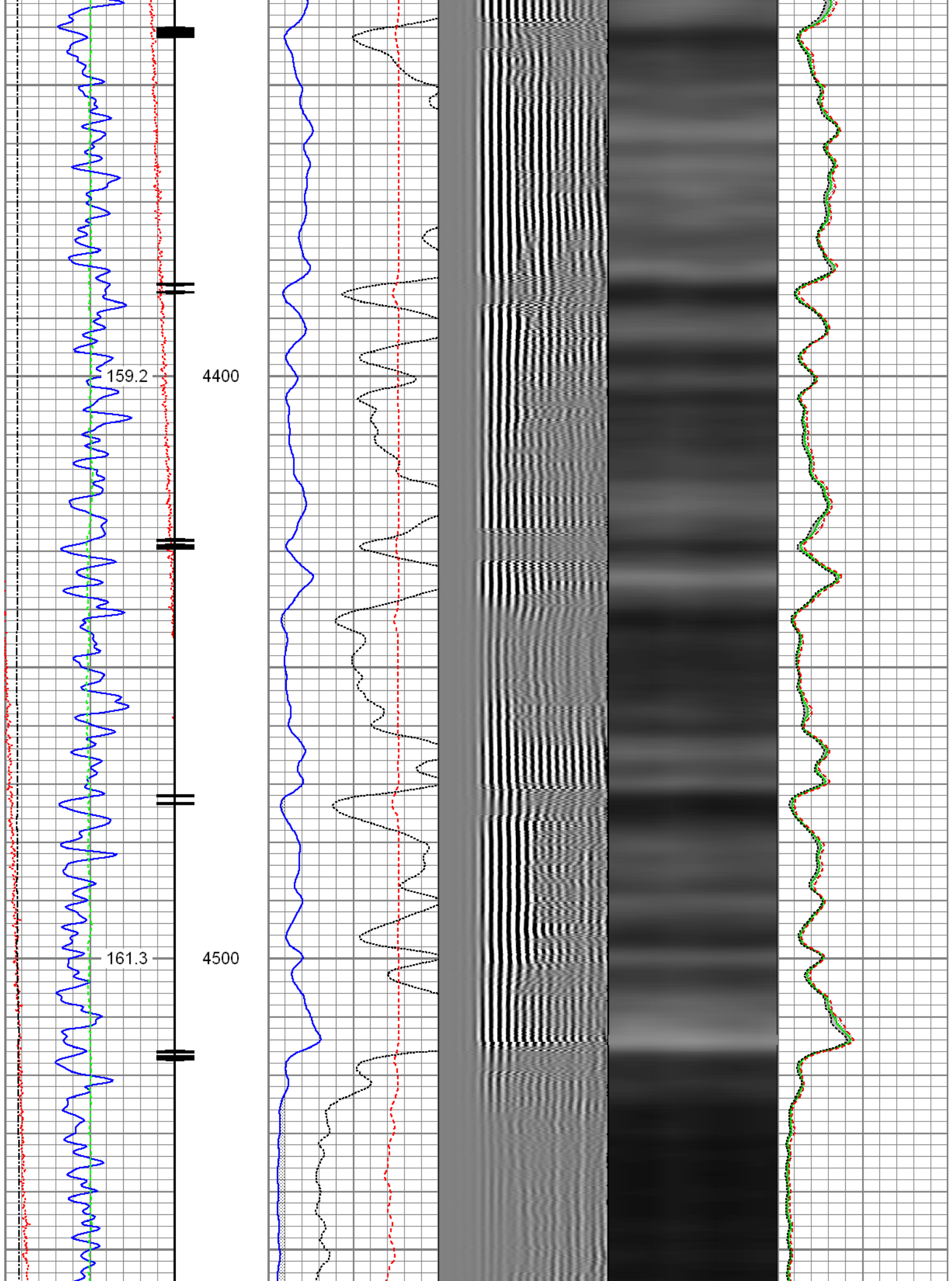


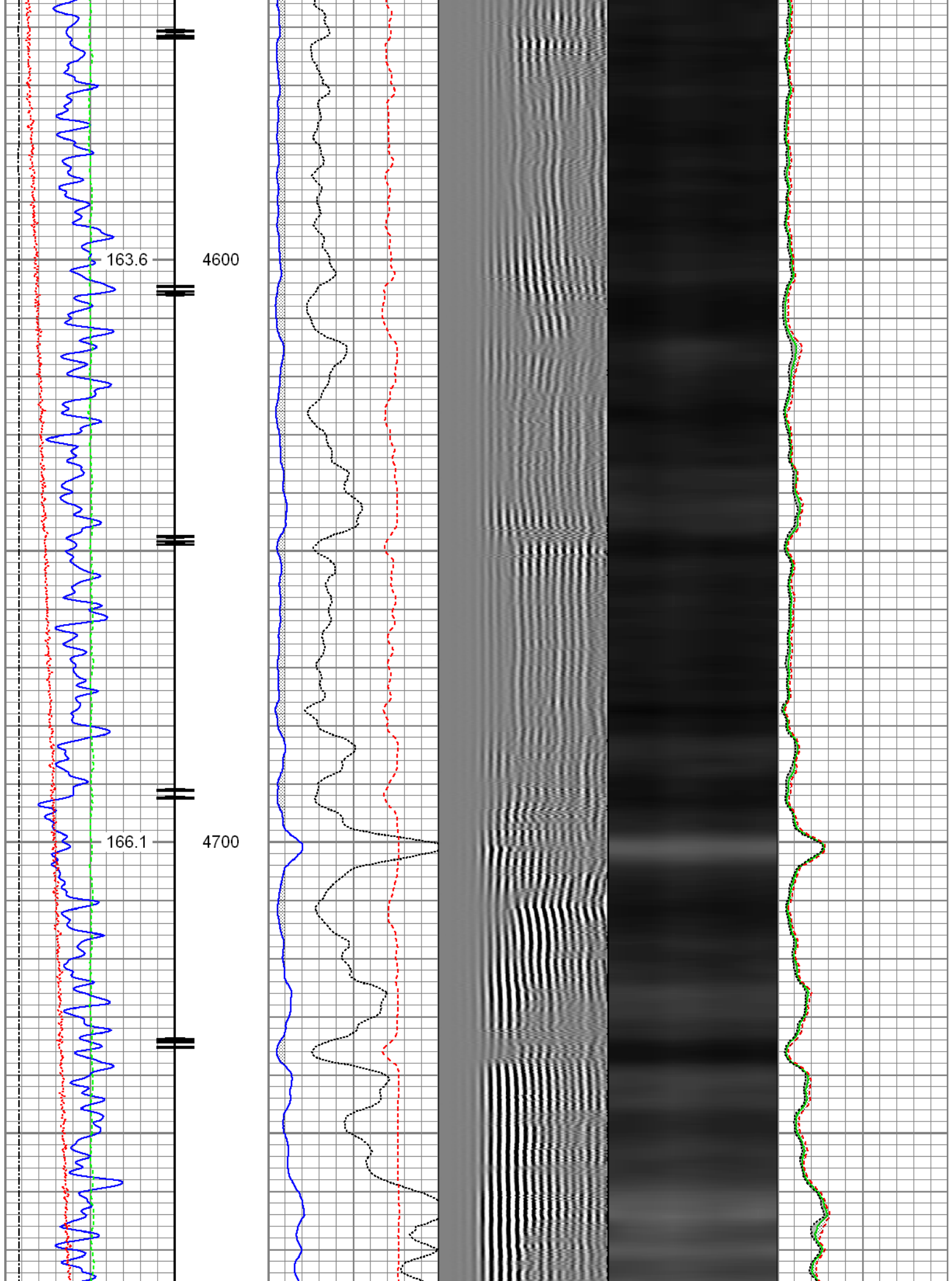


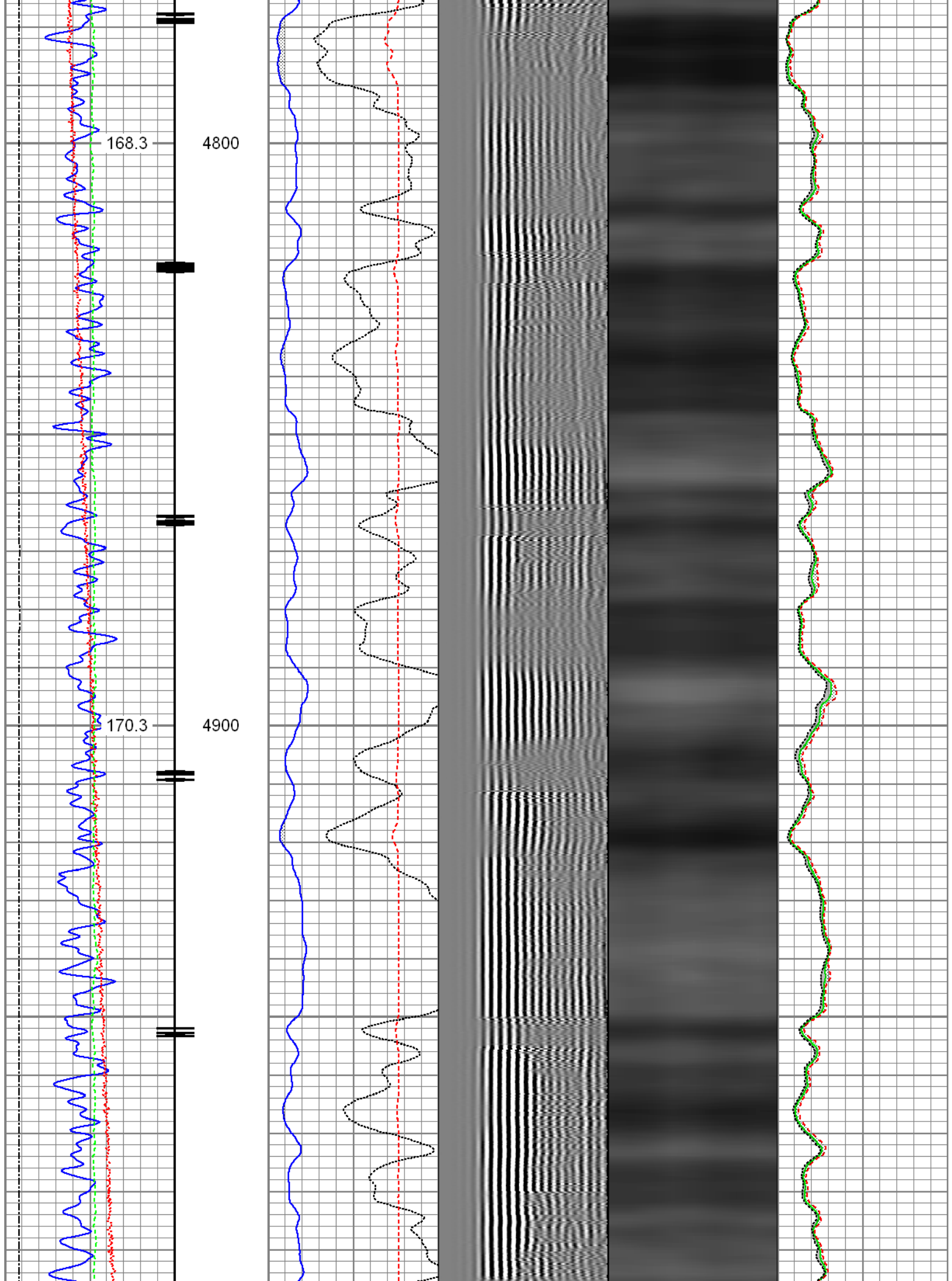


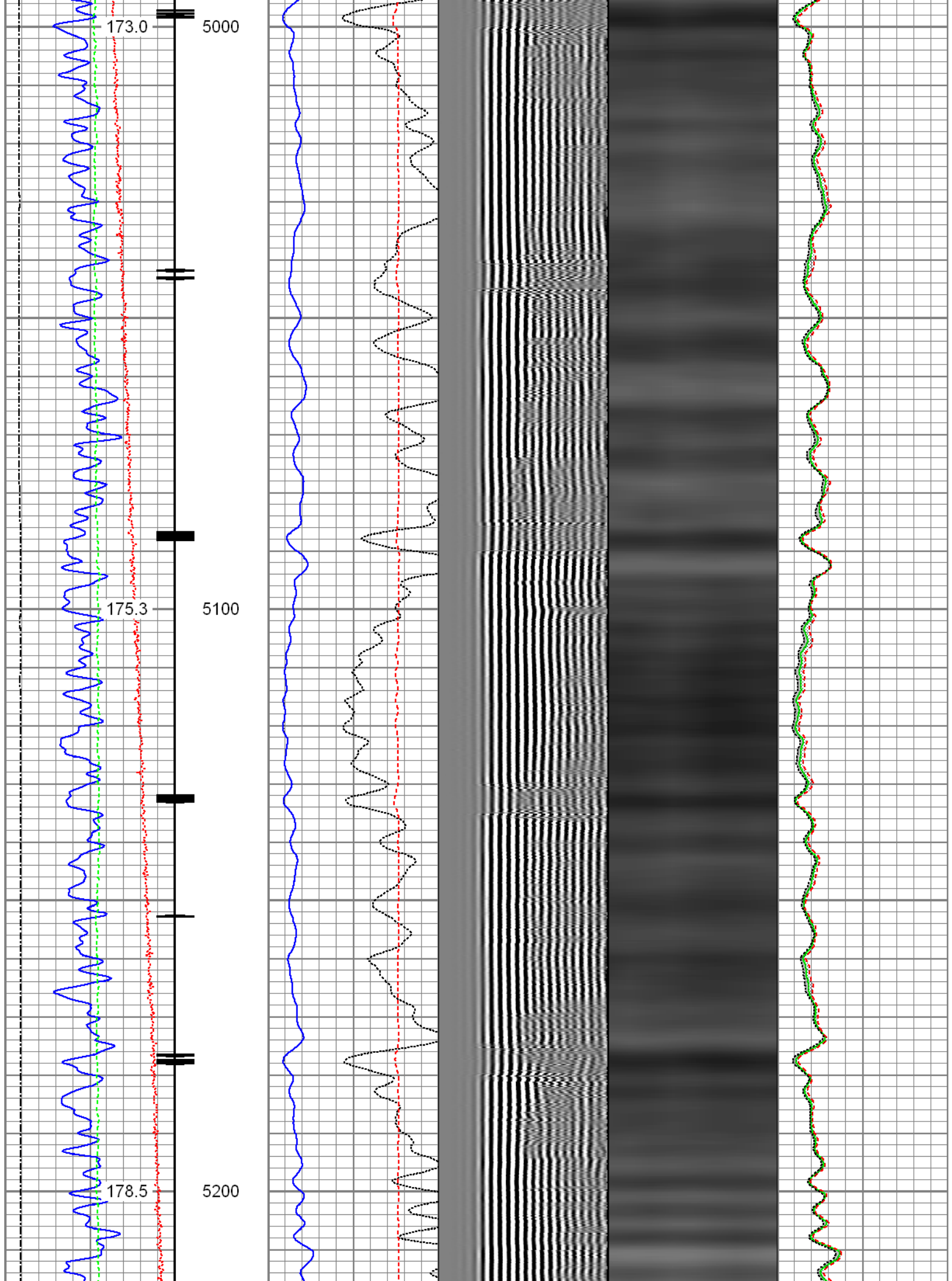


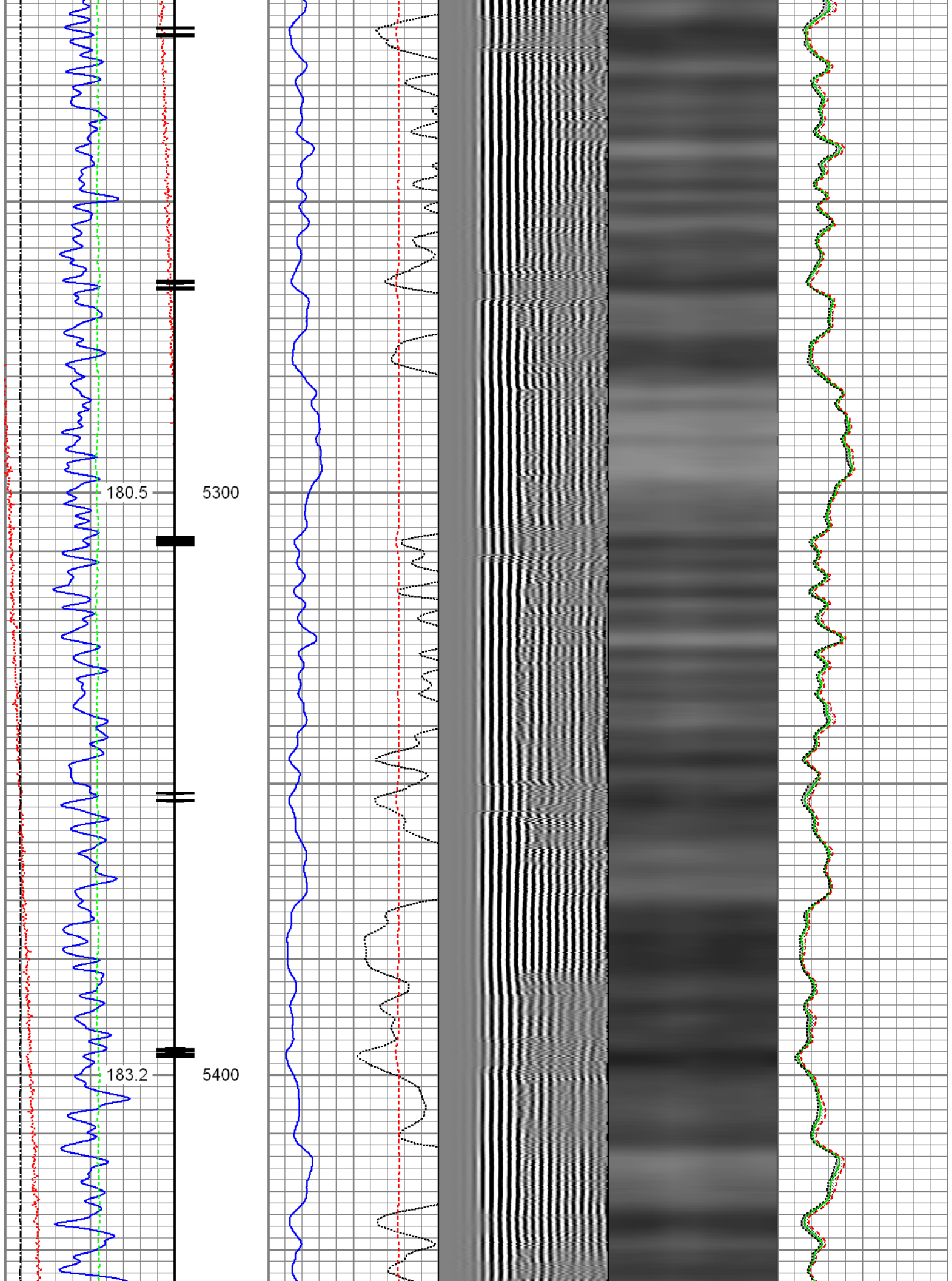


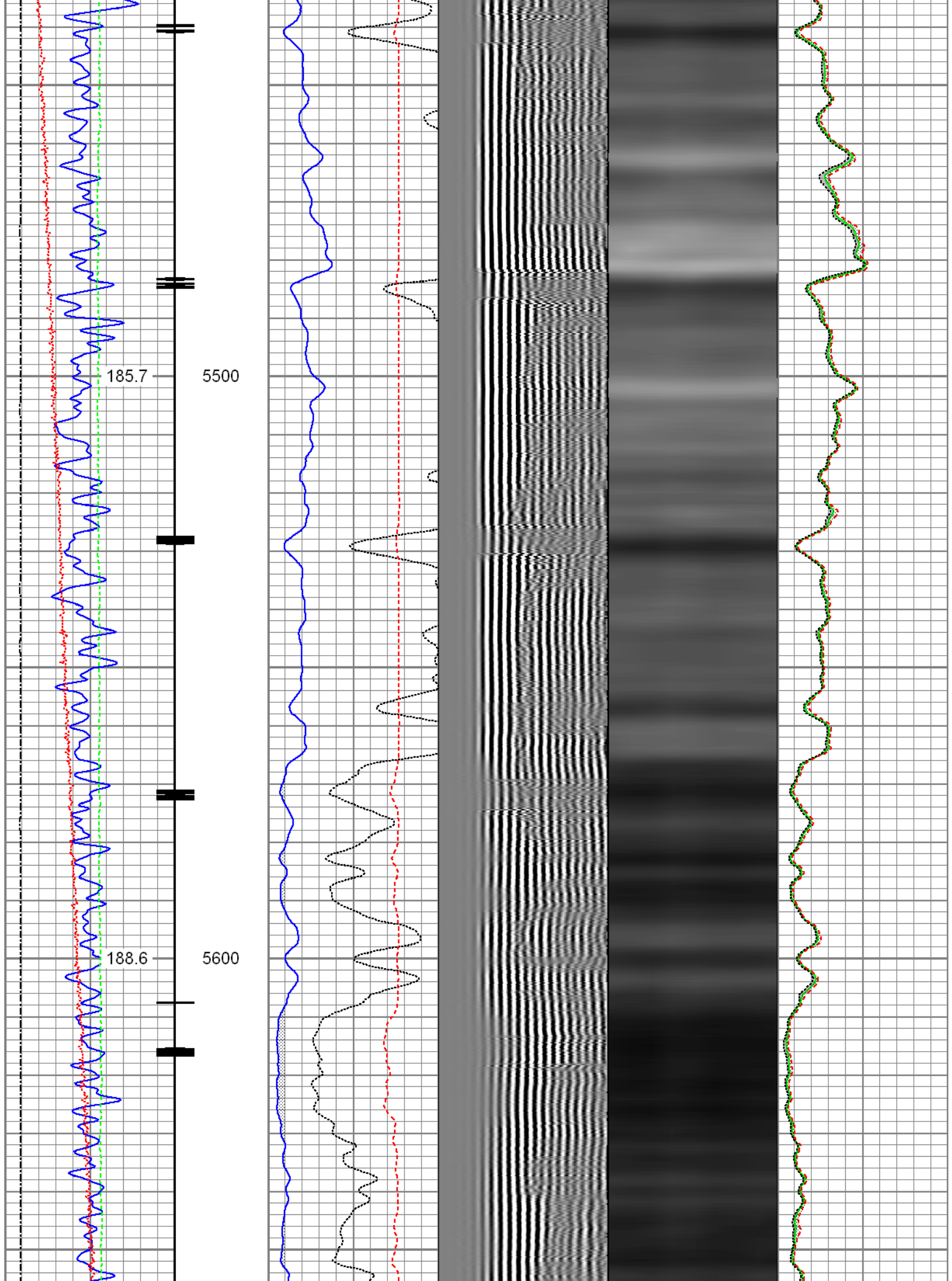


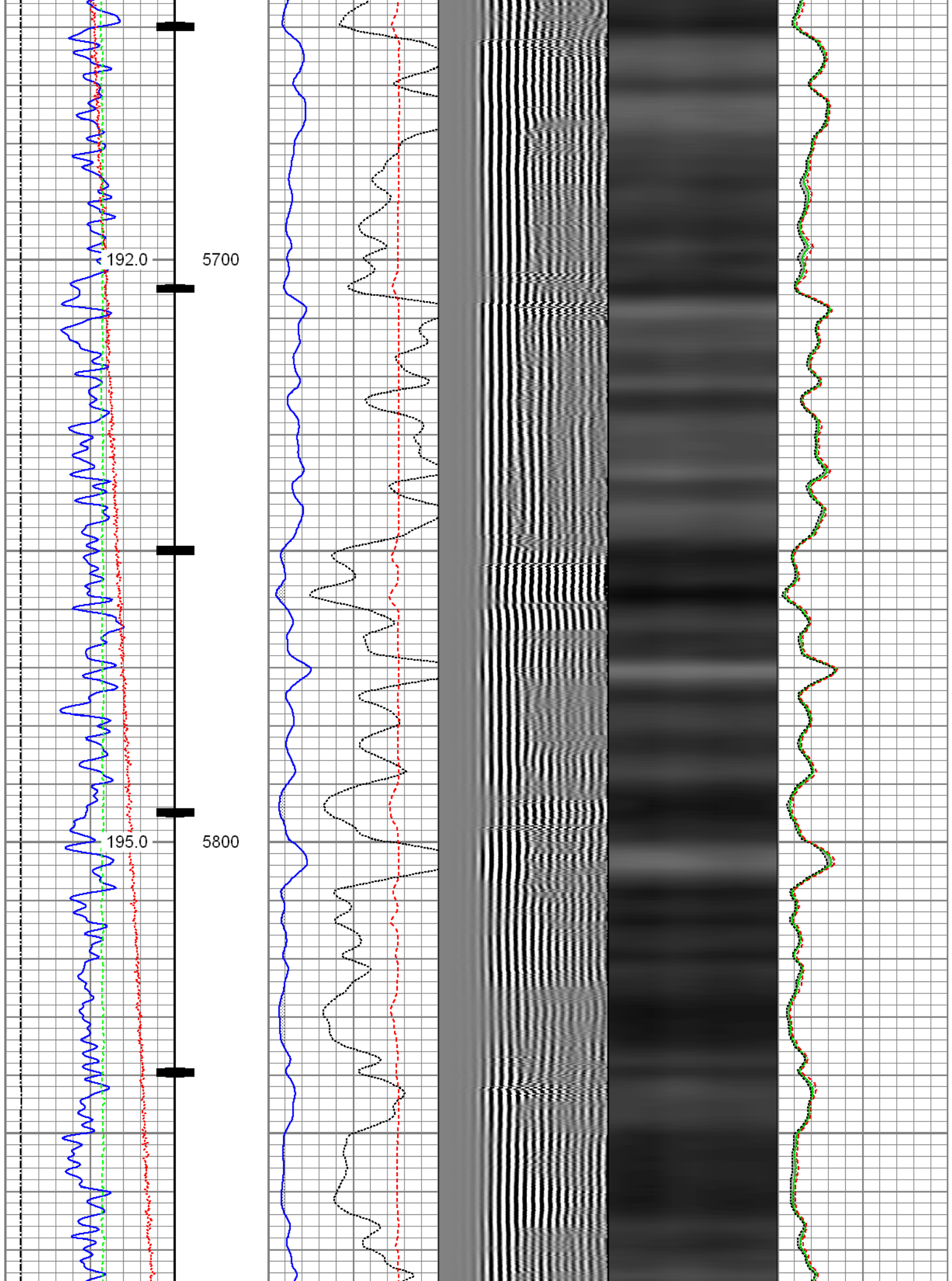


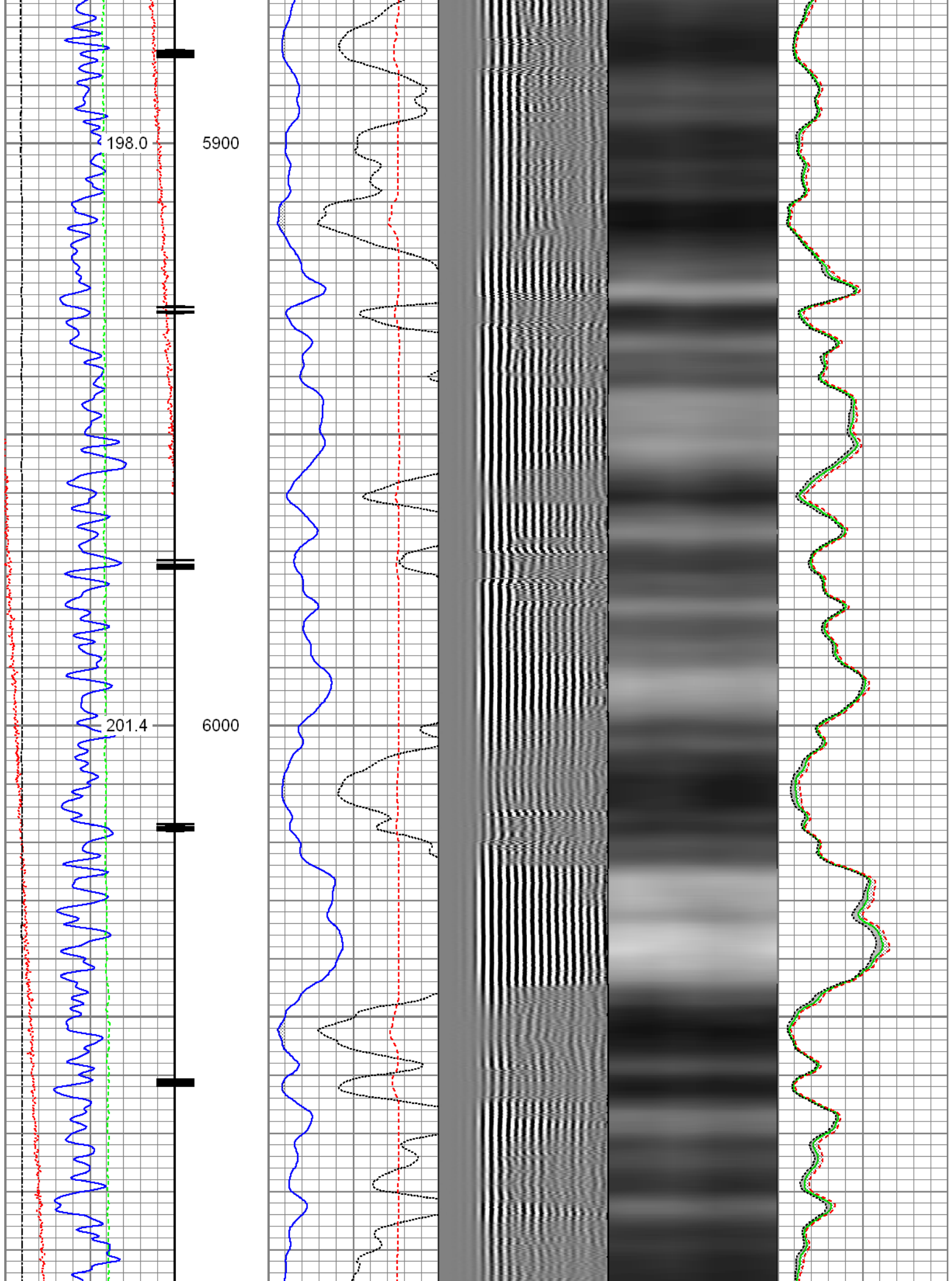


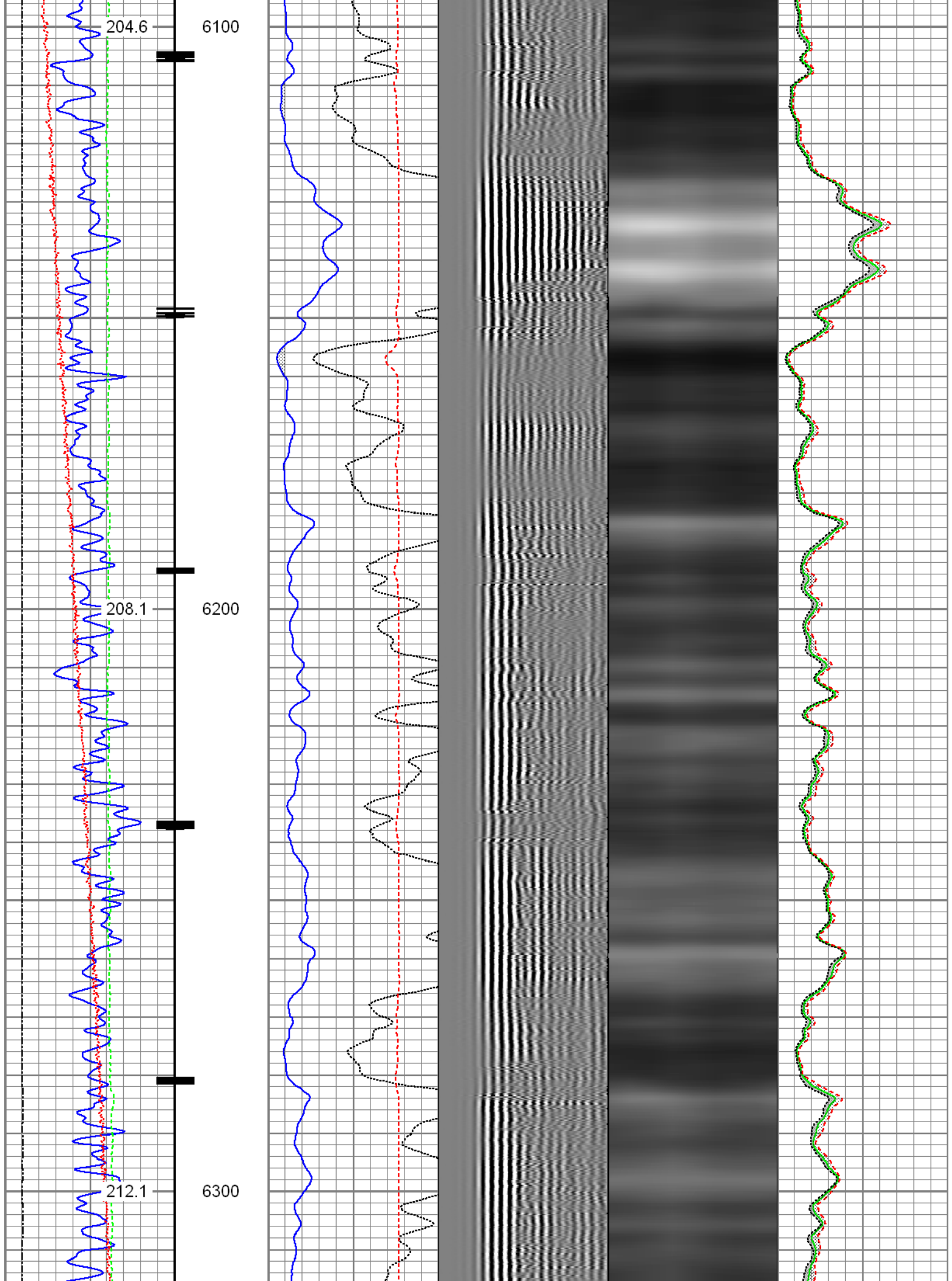


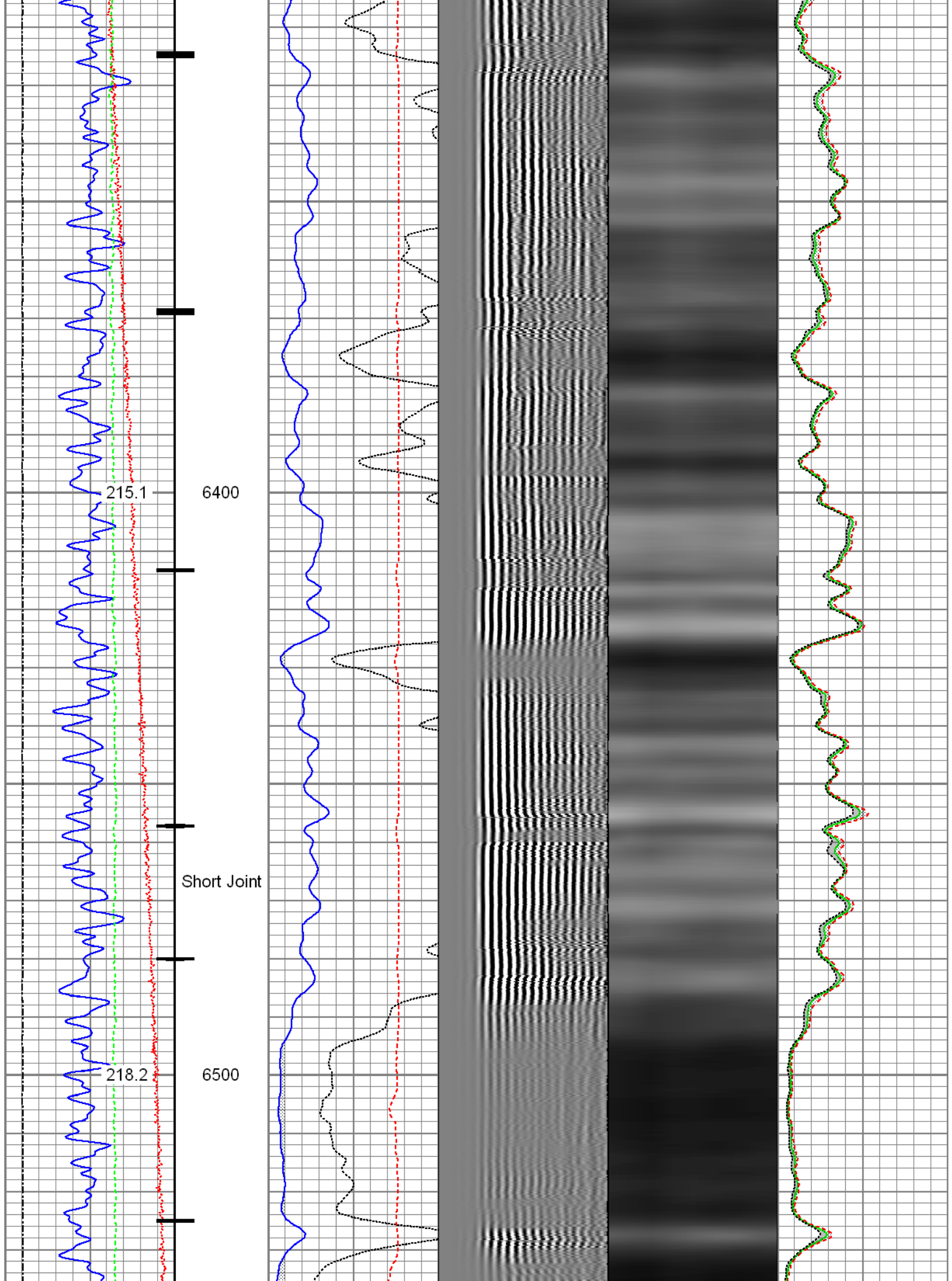


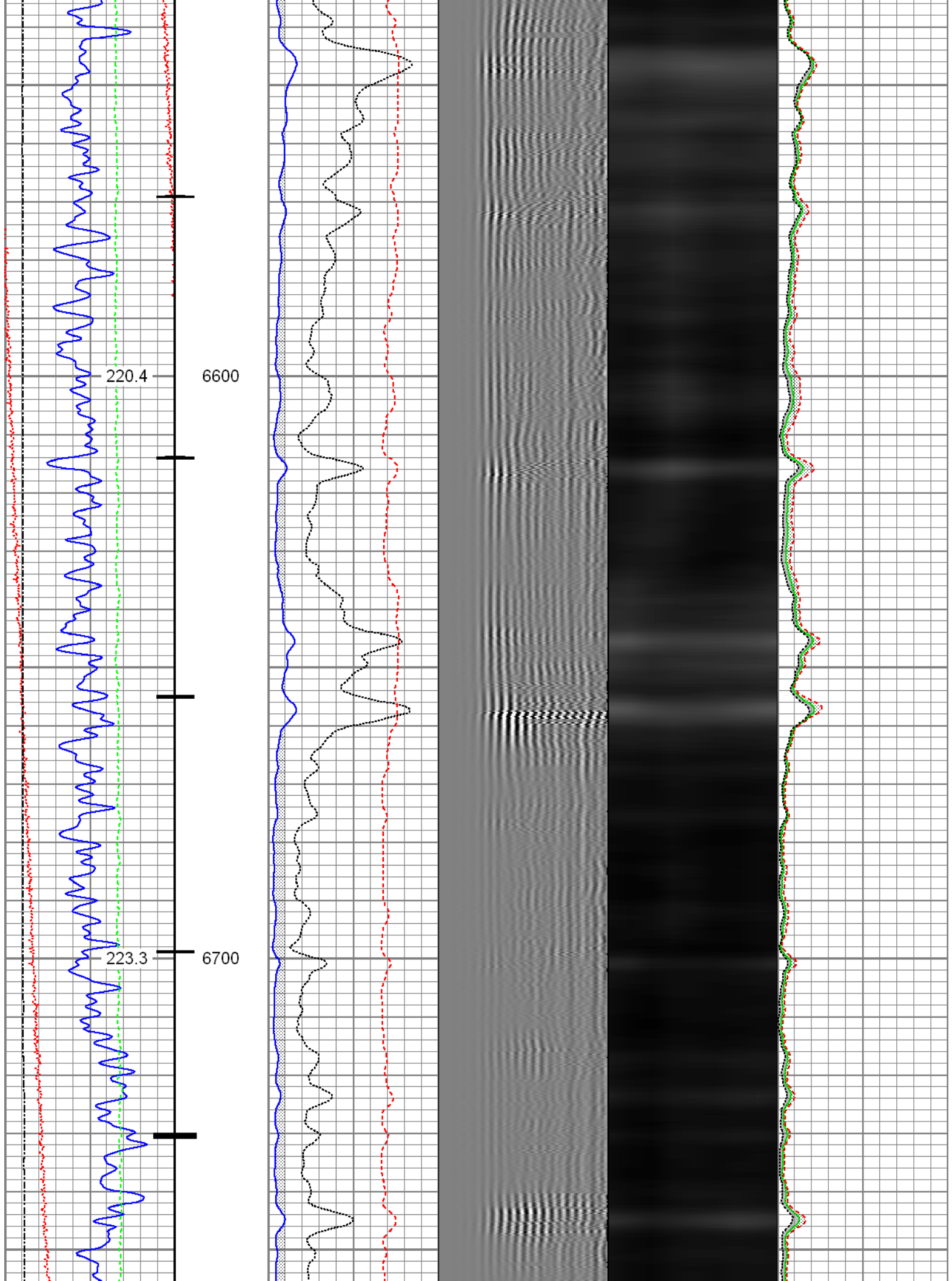


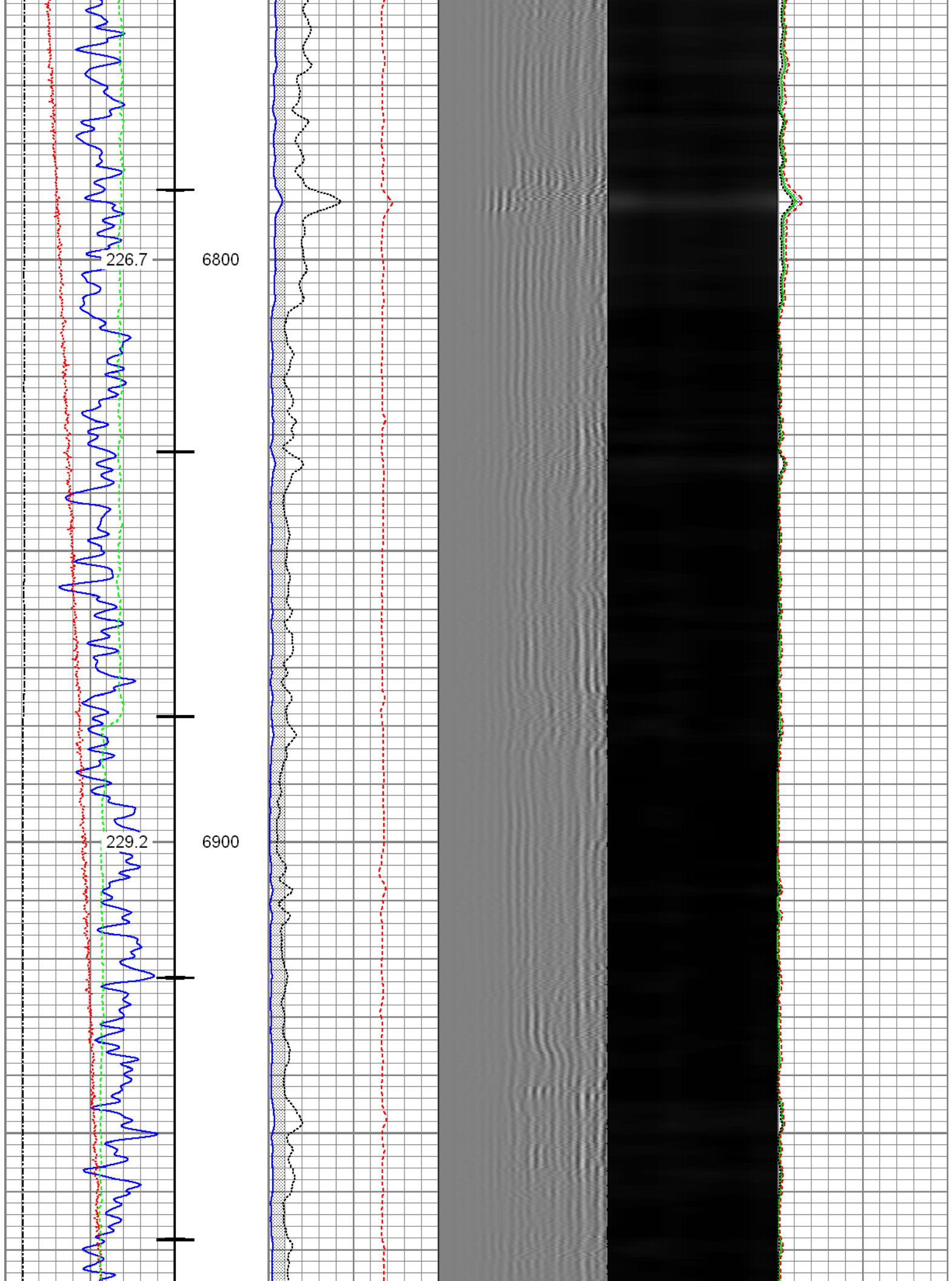


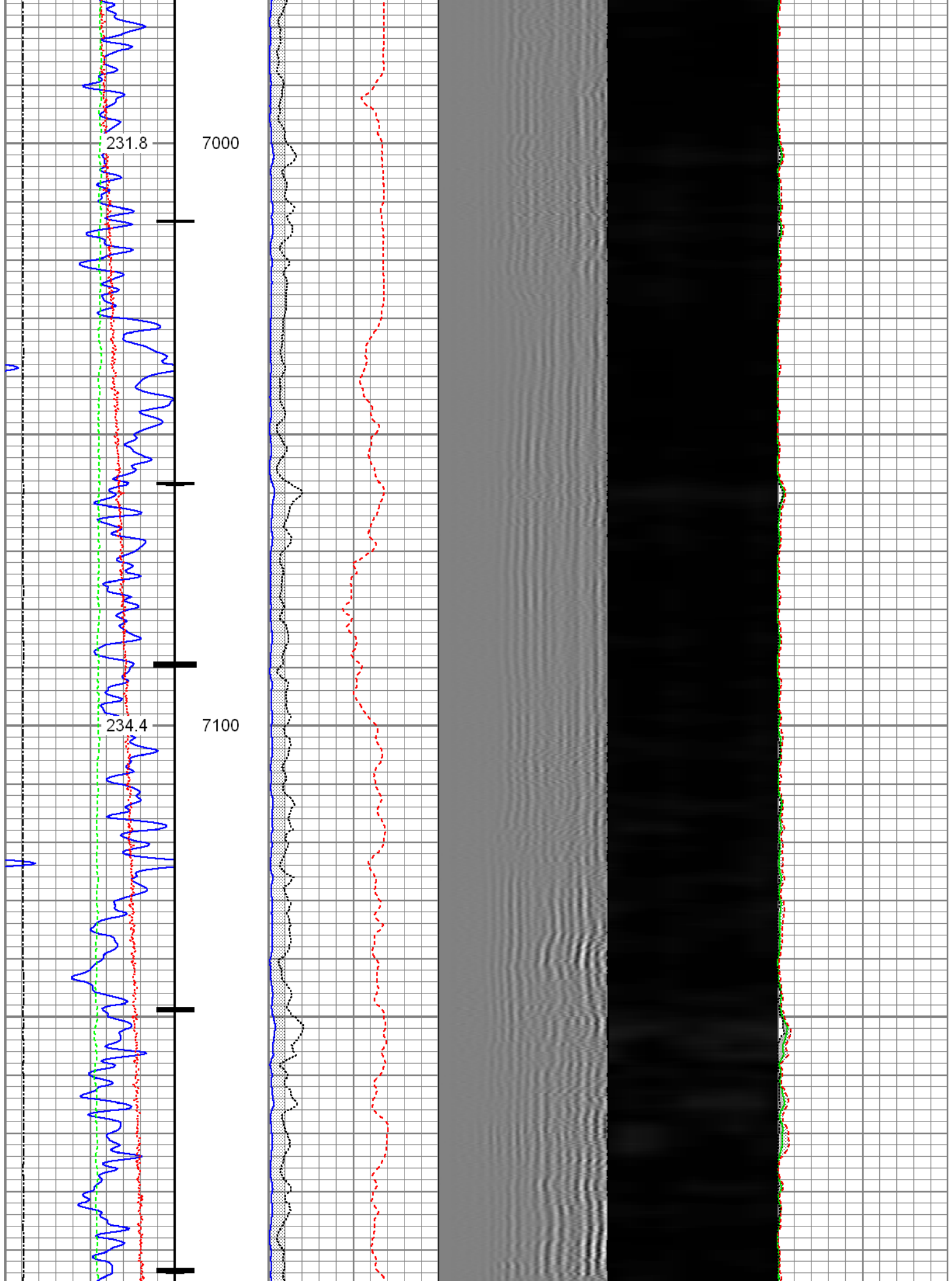


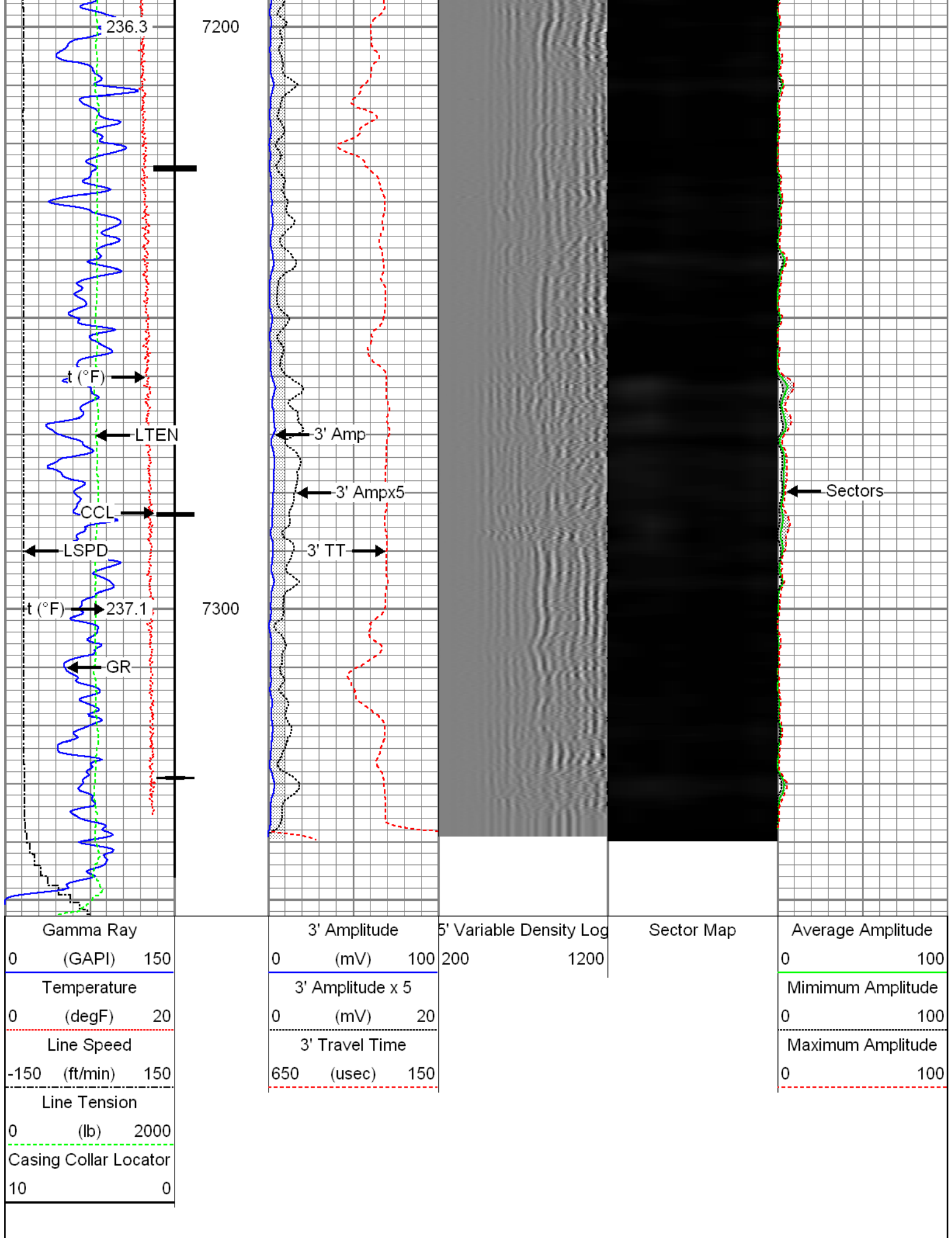






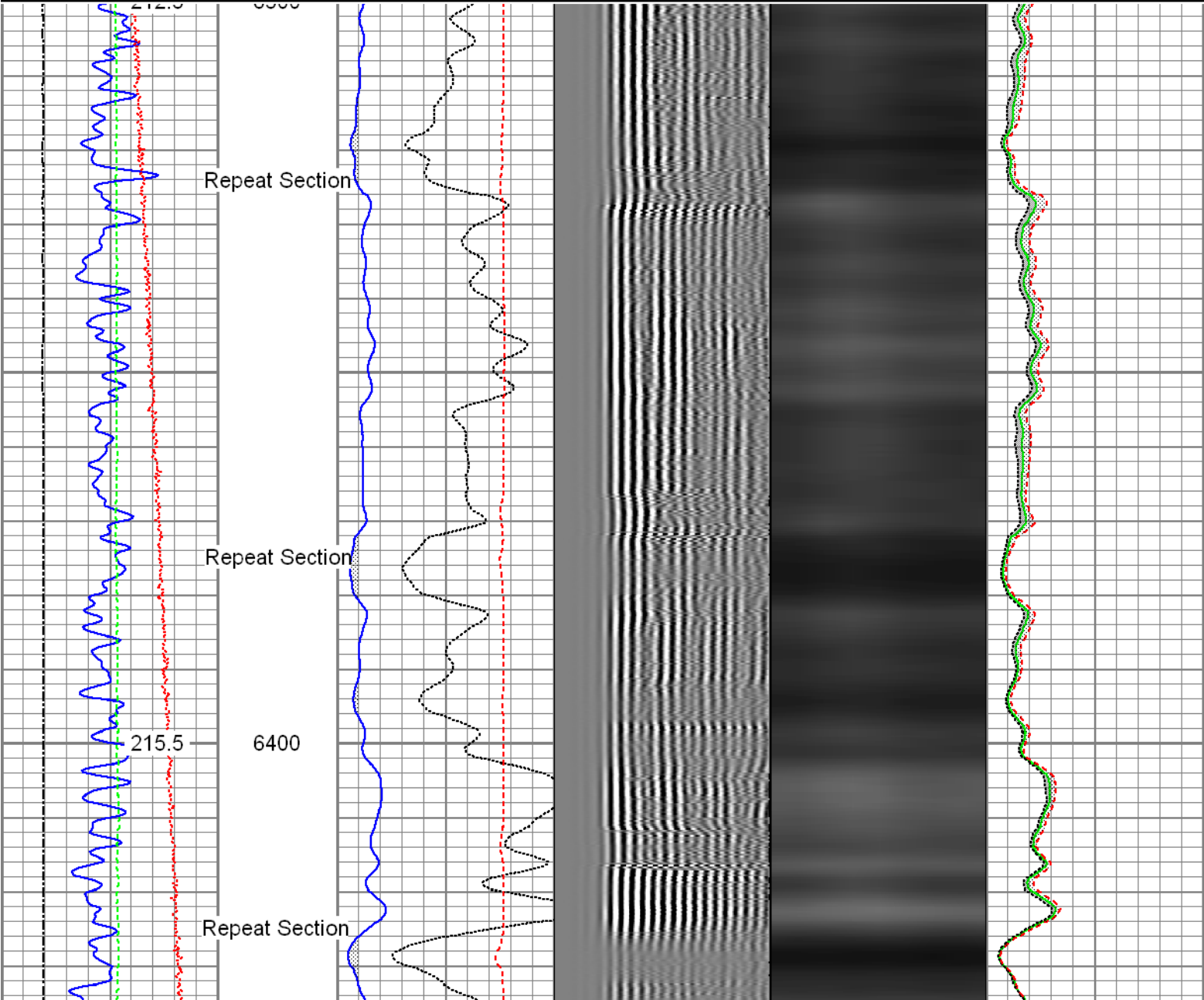


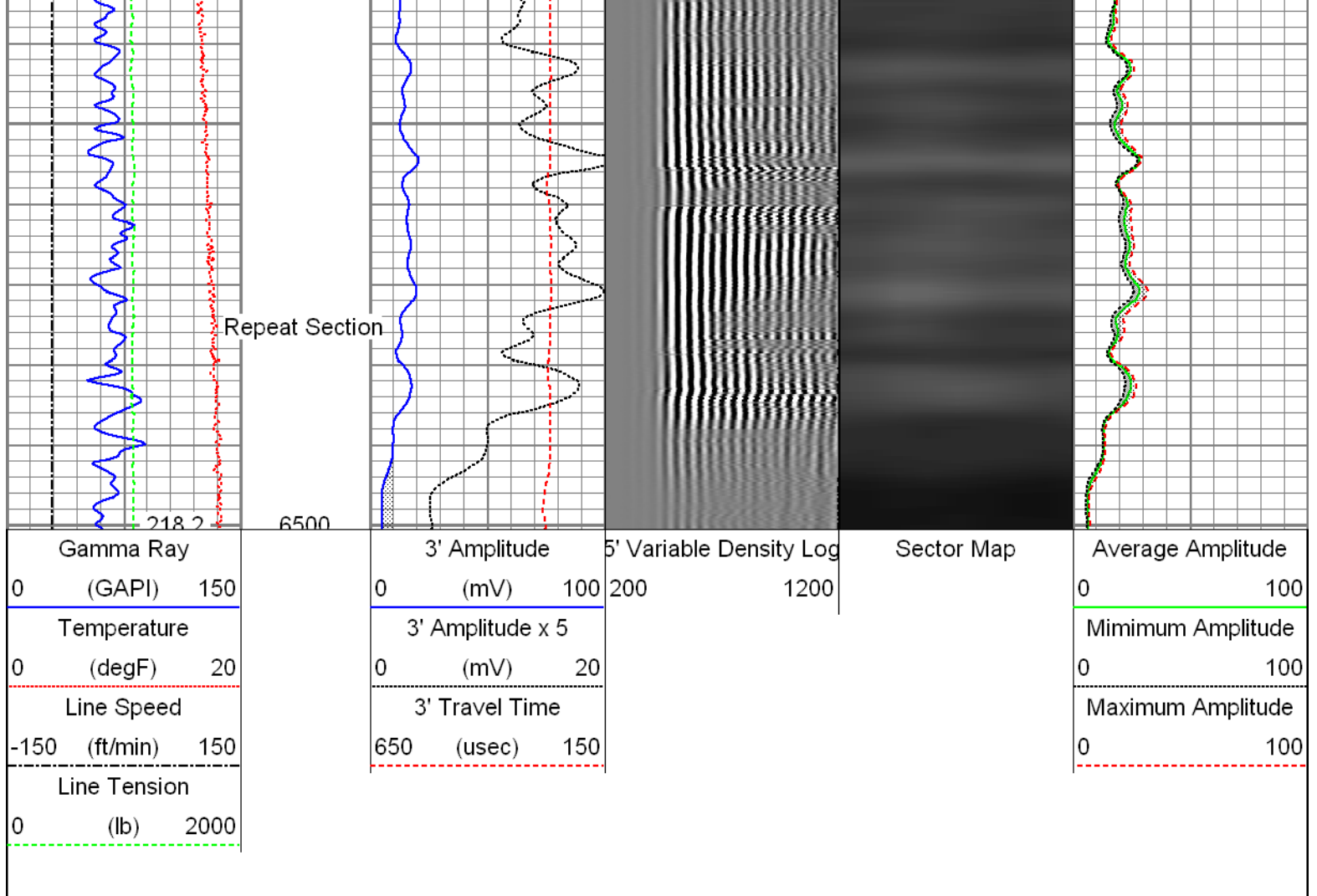


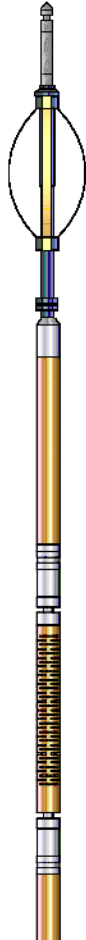
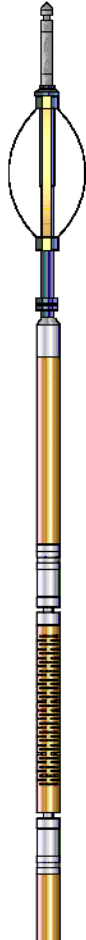


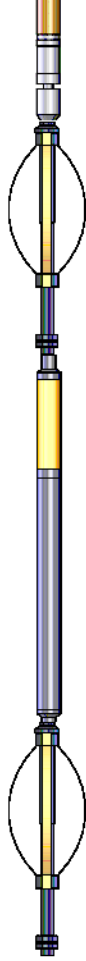
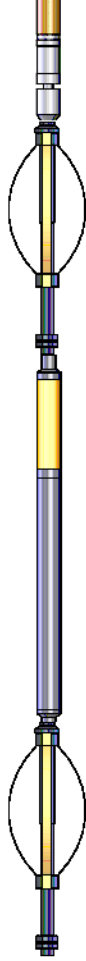
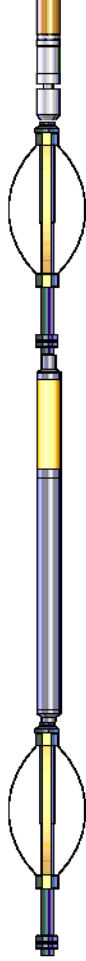
Database File: c:\warrior\data\0512341953_anadarko_powers 27n-27hz_12-09-15_rb\0512341953_anadarko_powers
Dataset Pathname: pass5
Presentation Format: radii
Dataset Creation: Wed Dec 09 09:09:38 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 150	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	650 (usec) 150			0 100
Line Tension				
0 (lb) 2000				





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			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
Head/Volt	19.49					
Temp	16.72					
WVF3FT	14.55		Probe_RADII-C-2-3/4" (FW1302-002) 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		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
WVFS7	14.55					
WVFS8	14.55					
WVFS5FT	13.55					
CCL	6.51		Probe_CCL_GR-2.75"Digital (FW1307-038) Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
DCCL	6.51					
GR	3.77		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: 0512341953_Anadarko_Powers 27N-27HZ_12-09-15_RBL.db: field/well/run1/pass7.1 Total Length: 23.40 ft Total Weight: 194.00 lb O.D. 2.75 in						

Calibration Report			
Database File:	C:\Warrior\Data\0512341953_Anadarko_Powers 27N-27HZ_12-09-15_RBL\0512341953_Anadarko_P		
Dataset Pathname:	pass7.1		
Dataset Creation:	Wed Dec 09 10:23:32 2015 by Calc 7.0 B1		
Gamma Ray Calibration Report			
Serial Number:	FW1307-038		
Tool Model:	2.75"Digital		
Performed:	Mon Dec 07 13:38:50 2015		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.6300	GAPI/cps	
Segmented Cement Bond Log Calibration Report			
Serial Number:	FW1302-002		
Tool Model:	2-3/4"		
Calibration Casing Diameter:	5.500	in	
Calibration Depth:	-138.264	ft	
Master Calibration, performed Wed Dec 09 10:23:23 2015:			

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	0.483	0.800	71.921	150.216	-0.615
CAL	0.723	0.720				
5'	0.015	0.402	0.800	71.921	183.627	-1.899
SUM						
S1	0.012	0.460	0.000	100.000	223.067	-2.567
S2	0.019	0.476	0.000	100.000	219.002	-4.266
S3	0.021	0.520	0.000	100.000	200.394	-4.298
S4	0.012	0.548	0.000	100.000	186.632	-2.325
S5	0.014	0.531	0.000	100.000	193.590	-2.701
S6	0.017	0.497	0.000	100.000	208.328	-3.540
S7	0.016	0.471	0.000	100.000	219.770	-3.581
S8	0.013	0.466	0.000	100.000	220.518	-2.769

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	0.723	0.720	1.000	0.000

Air Zero Calibration, performed Wed Dec 09 08:30:44 2015:

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



Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Powers 27N-27HZ
Field Wattenberg
County Weld
State Colorado