



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.					
Well Powers 36N-22HZ					
Field Wattenberg					
County Weld					
State Colorado					
Location:					
API #: 05-123-41907					
Other Services JB/GR					
SEC 22 TWP 2N RGE 65W					
Permanent Datum Ground Level Elevation 4883'					
Log Measured From Kelly Bushing 20 FT					
Drilling Measured From Kelly Bushing					
Date		08-DEC-2015			
Run Number		One			
Depth Driller		12740 FT			
Depth Logger		7353 FT			
Bottom Logged Interval		7348 FT			
Top Log Interval		Surface			
Open Hole Size		7.875"			
Type Fluid		Water			
Density / Viscosity		8.34 lbm/gal			
Max. Recorded Temp.		239°F			
Estimated Cement Top		Surface			
Time Well Ready		ROA			
Time Logger on Bottom		10:30 A.M.			
Equipment Number		HD-0325			
Location		Fort Lupton, CO			
Recorded By		J. Morrison			
Witnessed By		Mario Torres			
Borehole Record					
Run Number	Bit	From	To	Size	Tubing Record Weight From To
Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	36	J55	Surface	1876 FT
Intermediate #1					
Intermediate #2	5 1/2	17	HCP 110	Surface	12730 FT
Liner					
Marker Joint					6502 FT - 6525 FT

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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 6502 FT
Adjusted log 4 FT to correlate with Marker Joint
Log ran from as deep as possible in heel to surface
Recorded with 2800 PSI Surface Induced Pressure

Thank you for choosing FMC Technologies Surface Integrated Services.

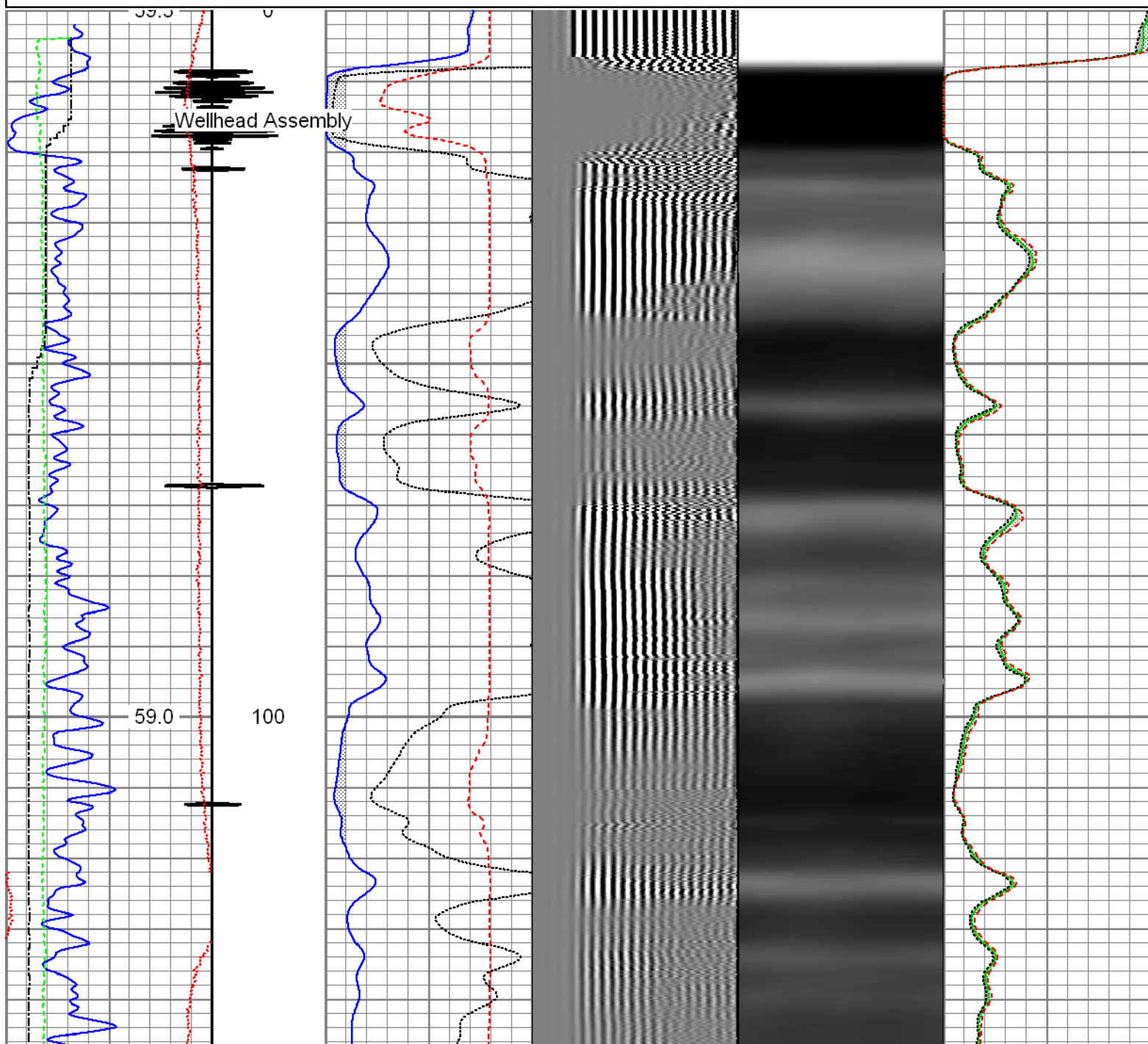


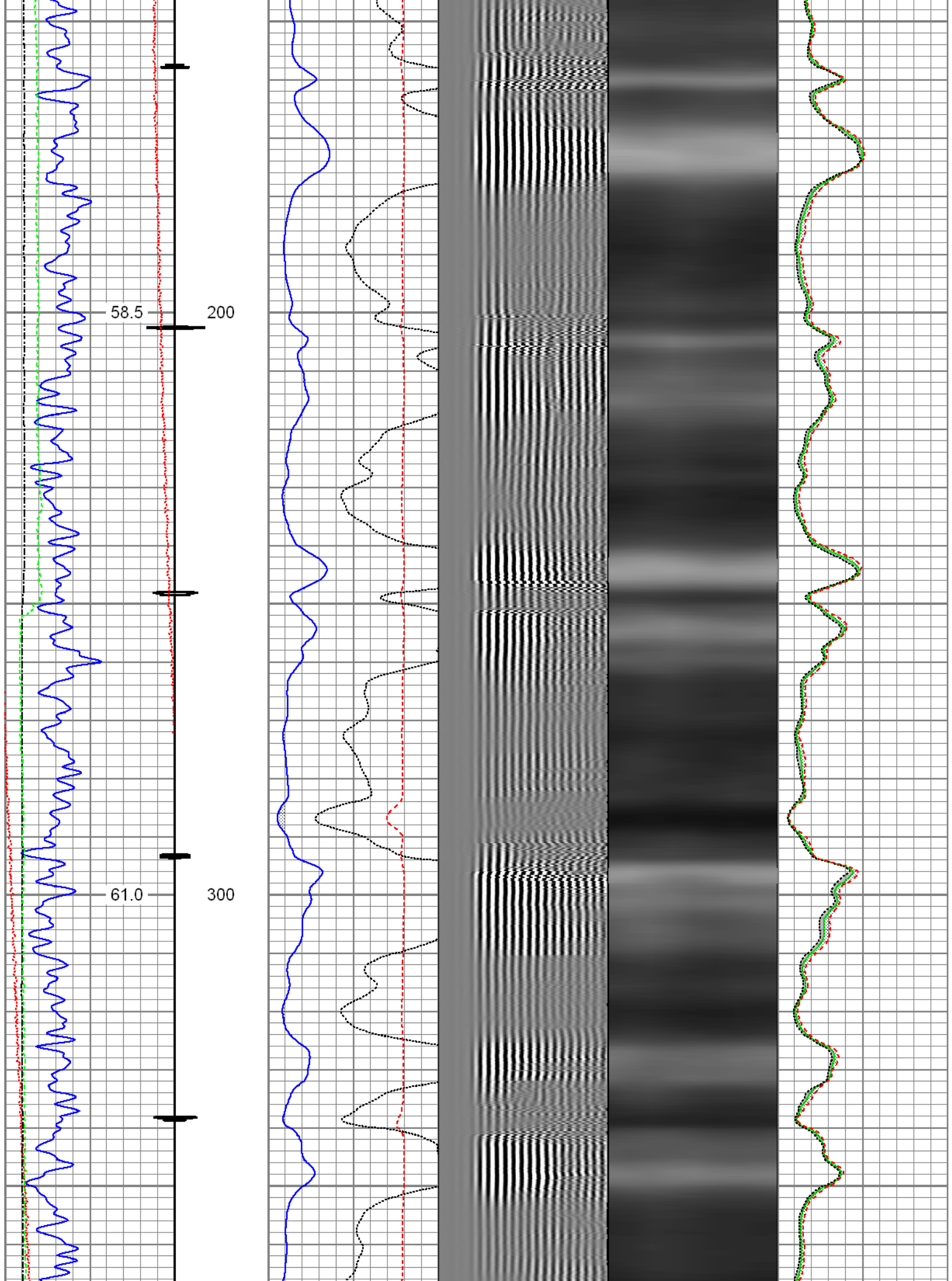
Main Pass

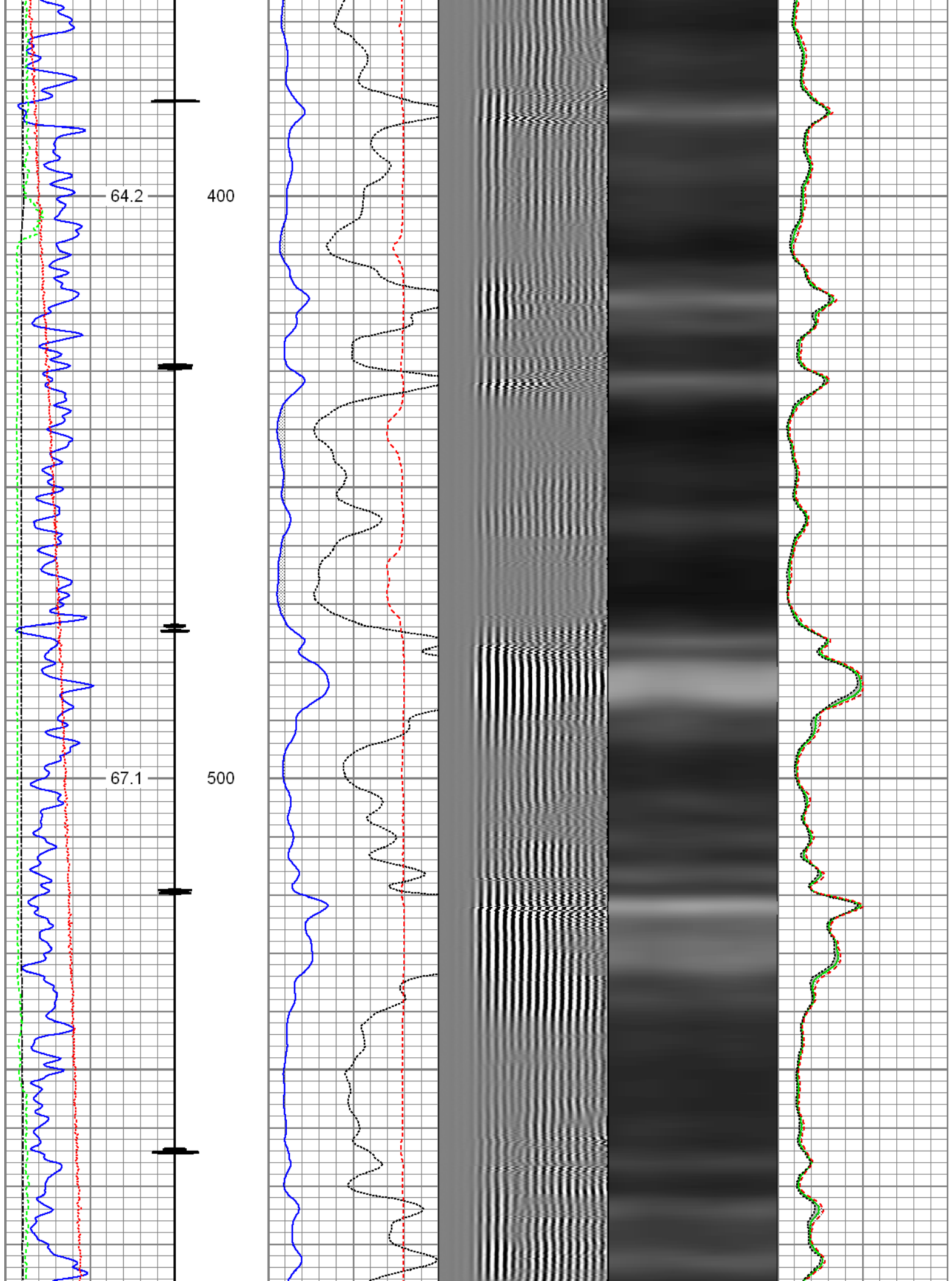
Recorded with 2800 PSI Surface Induced Pressure

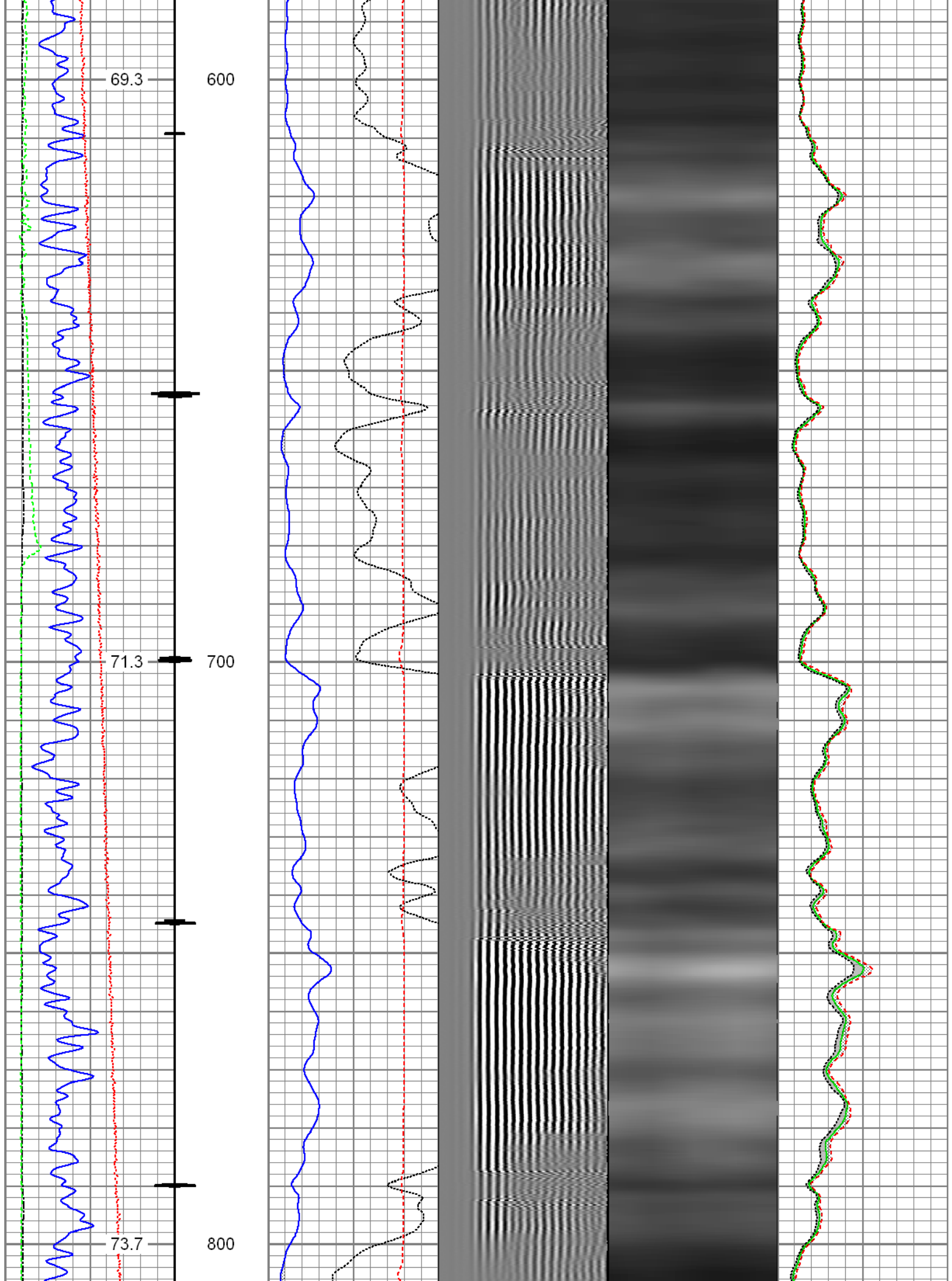
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Presentation Format: radii
Dataset Creation: Wed Dec 09 16:04:41 2015 by Calc SCH 120430
Charted by: Depth in Feet scaled 1:240

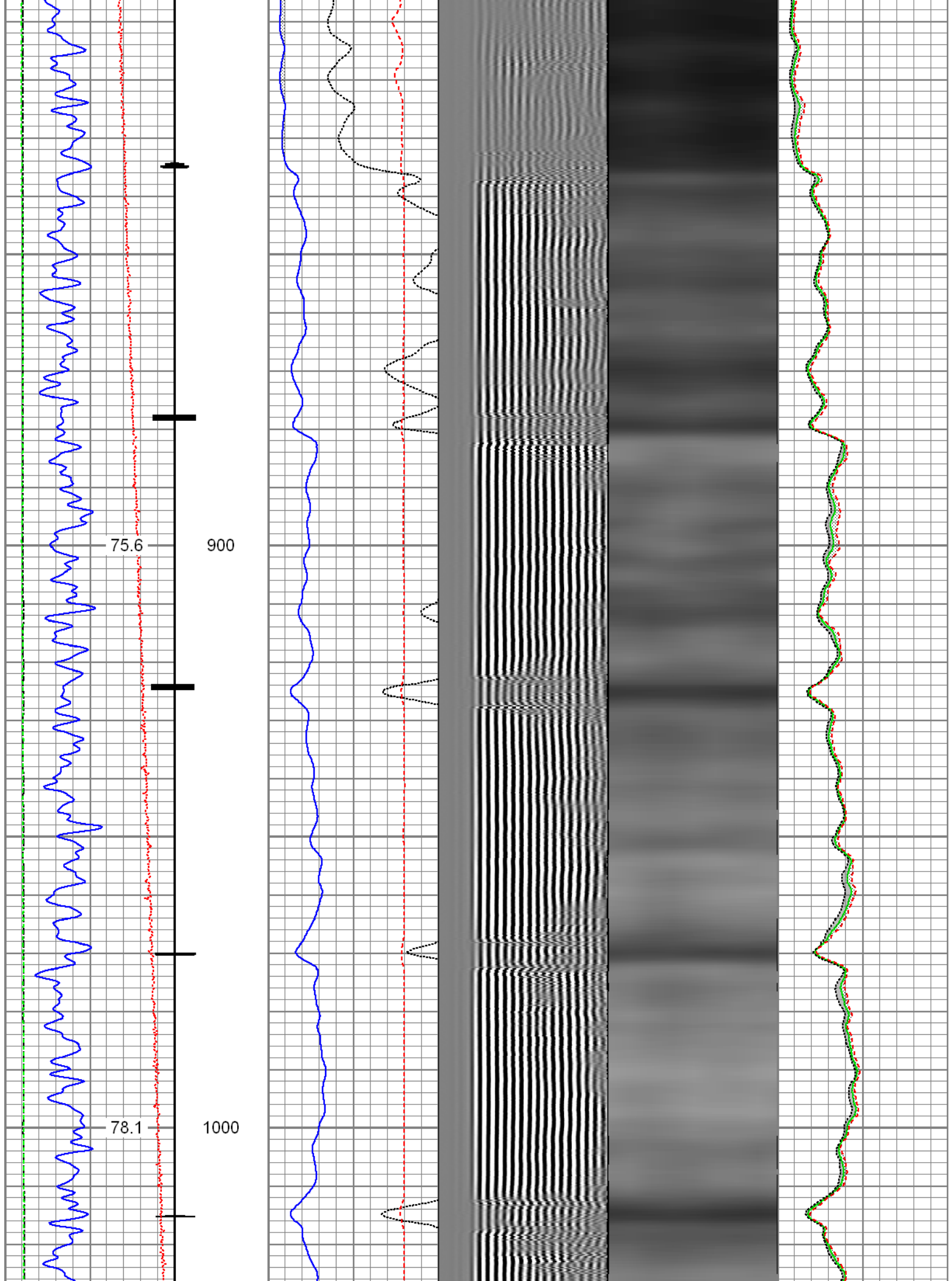
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

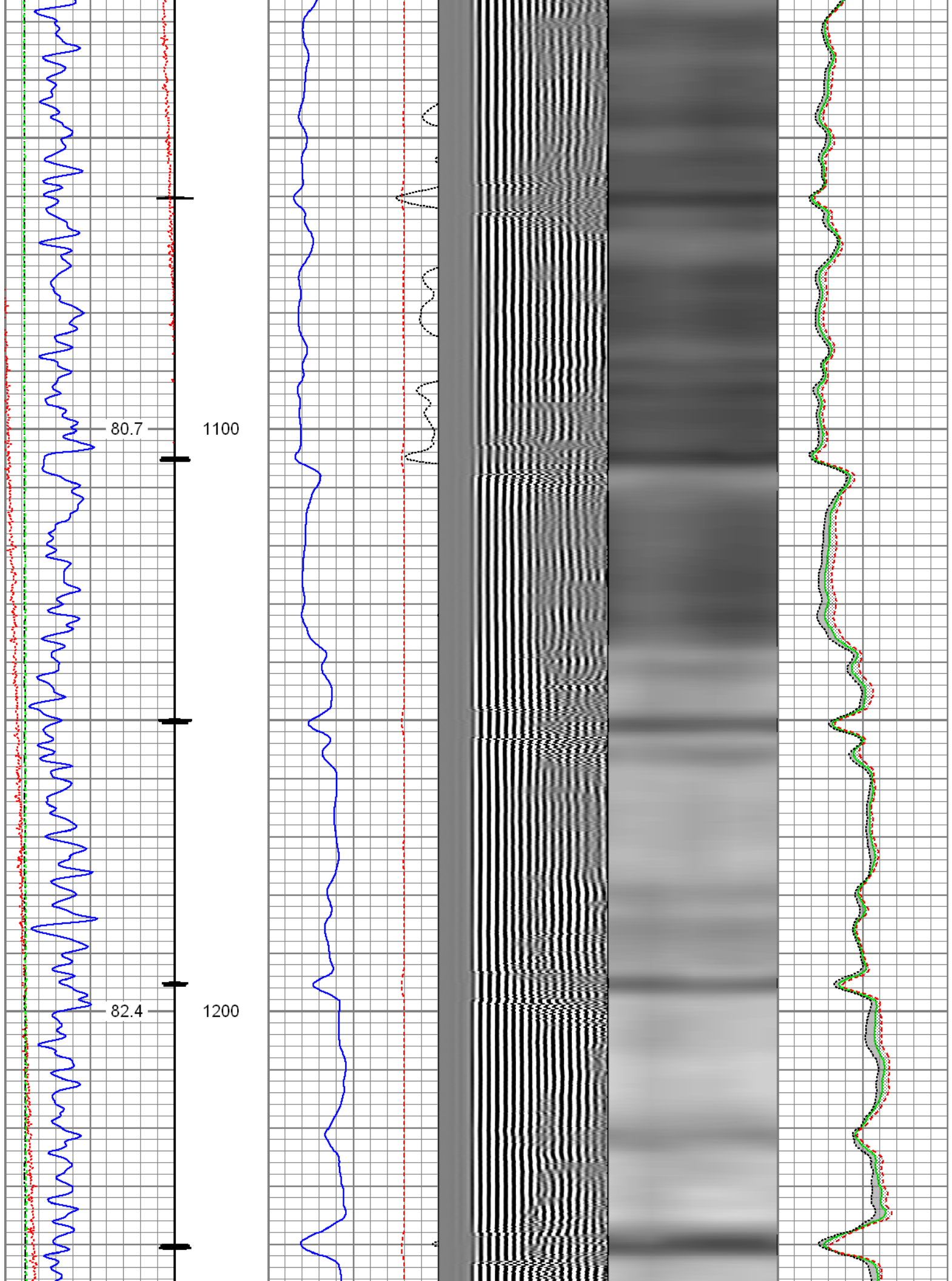


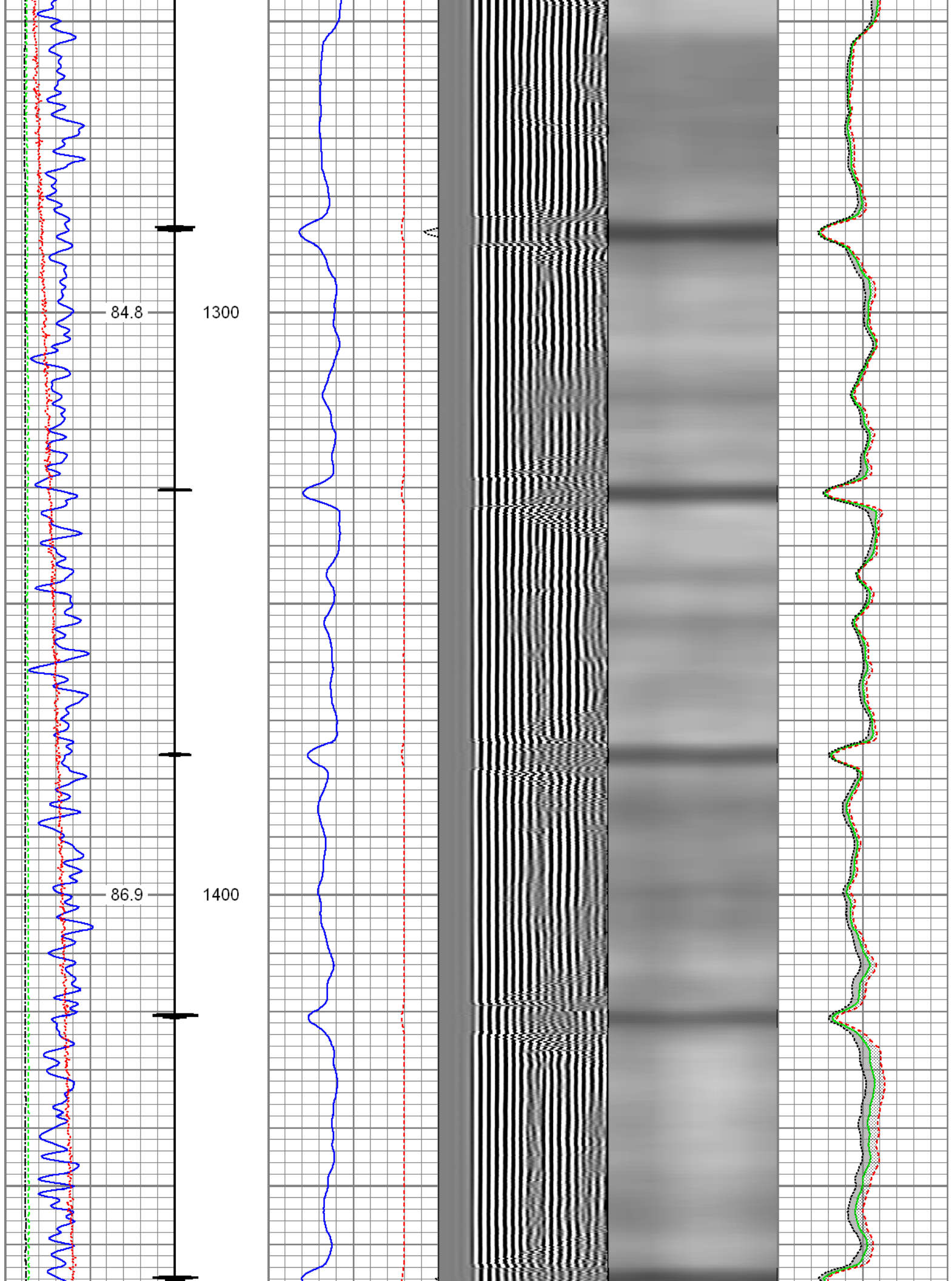


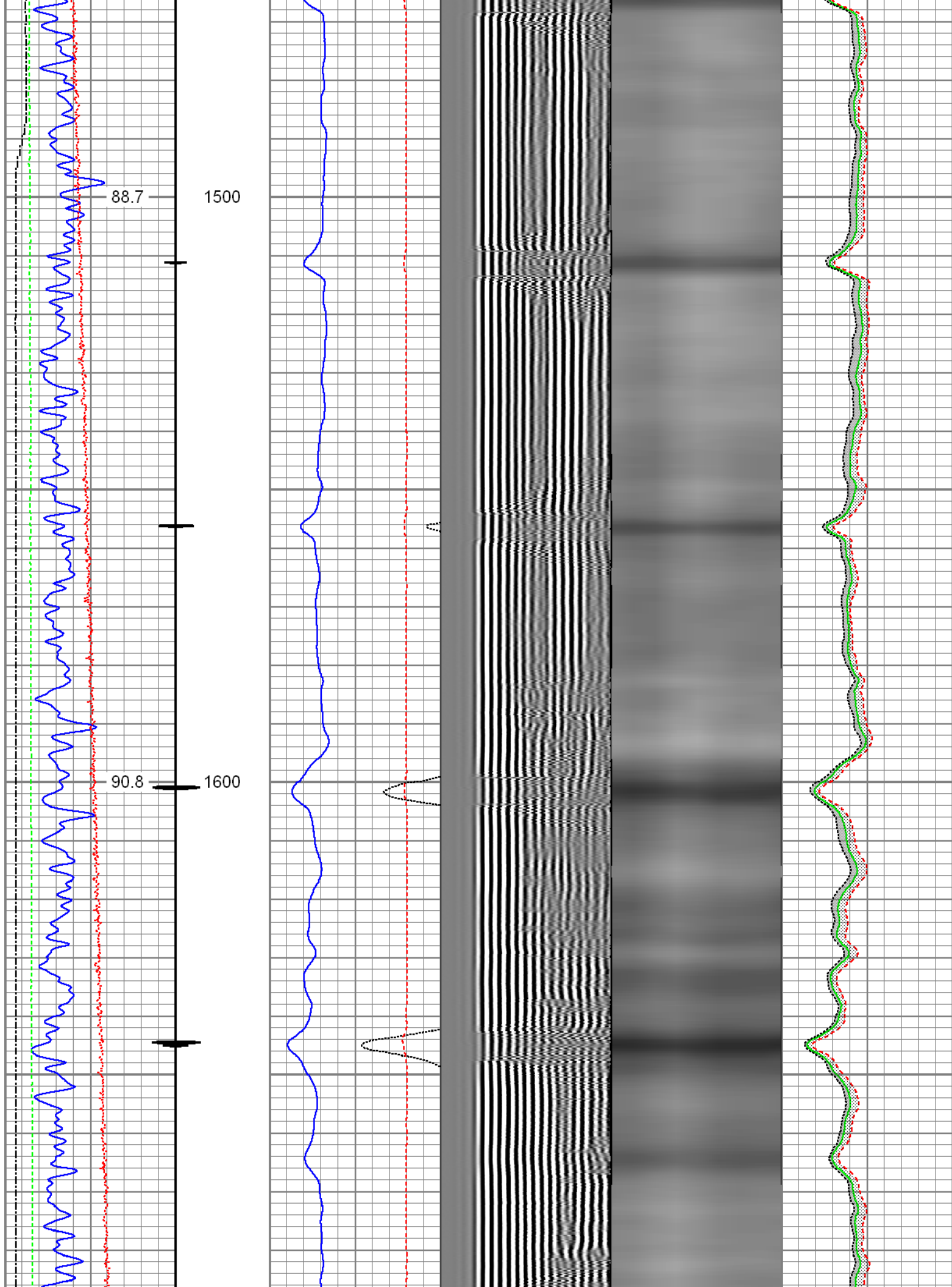


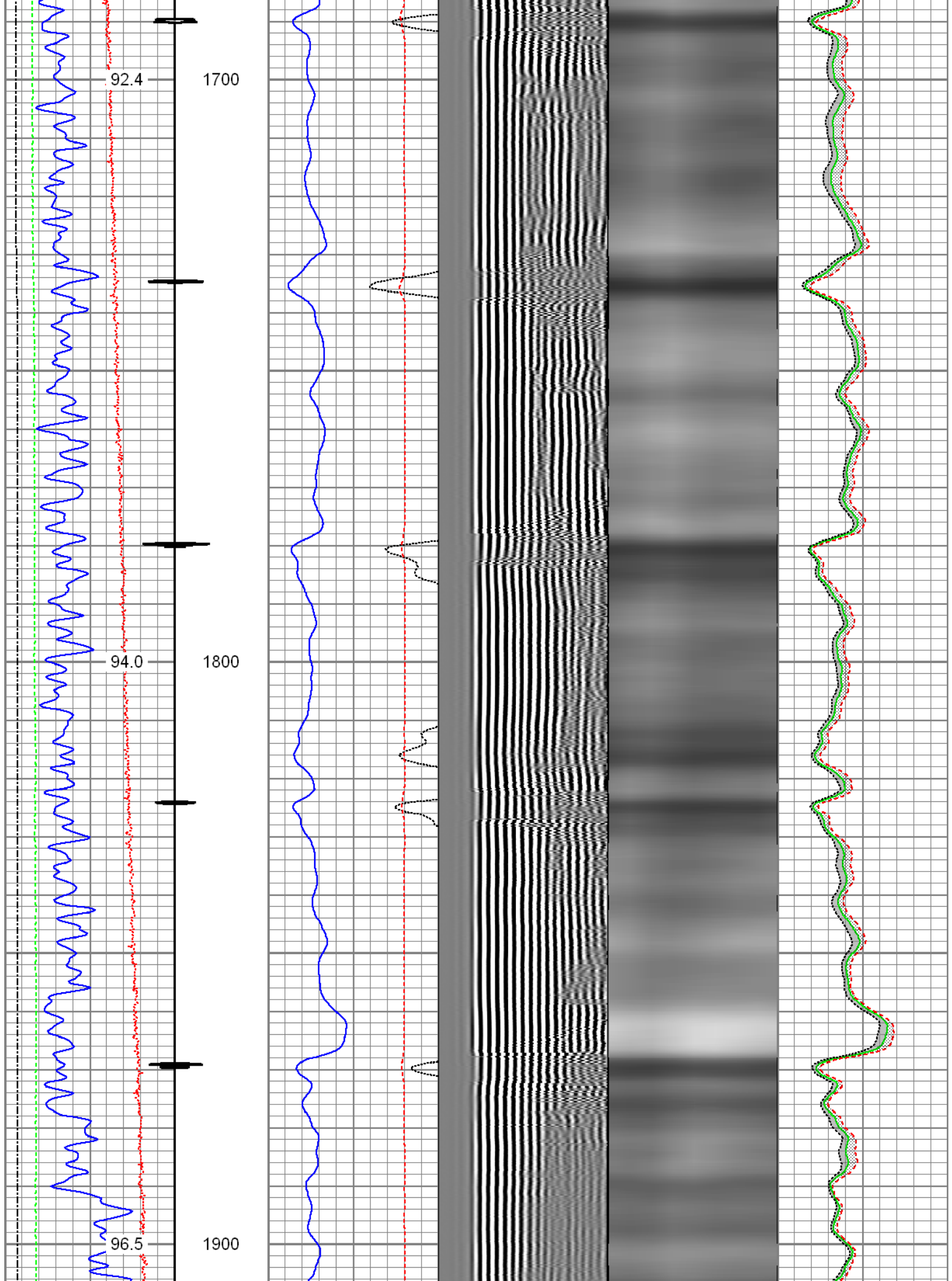


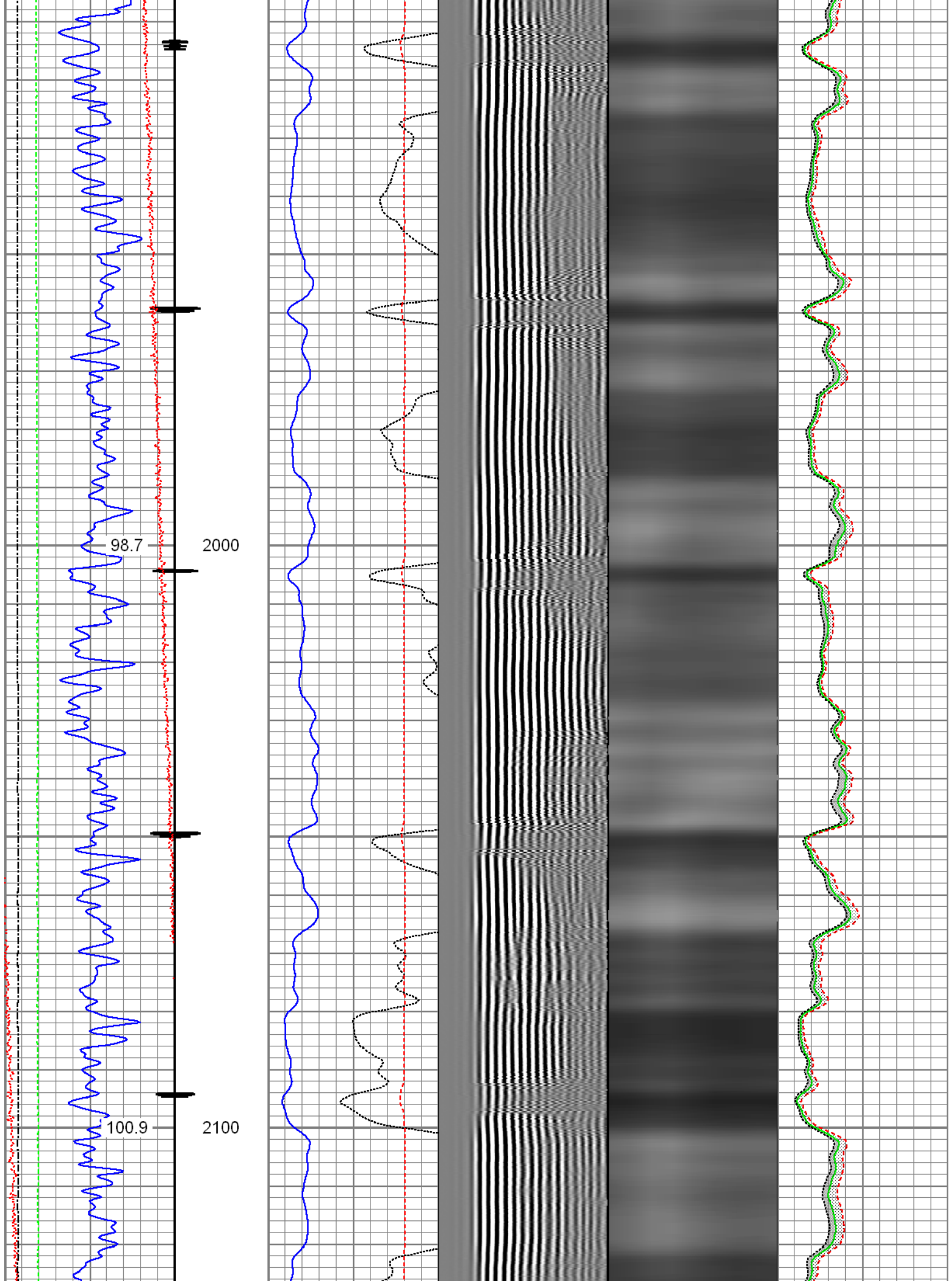


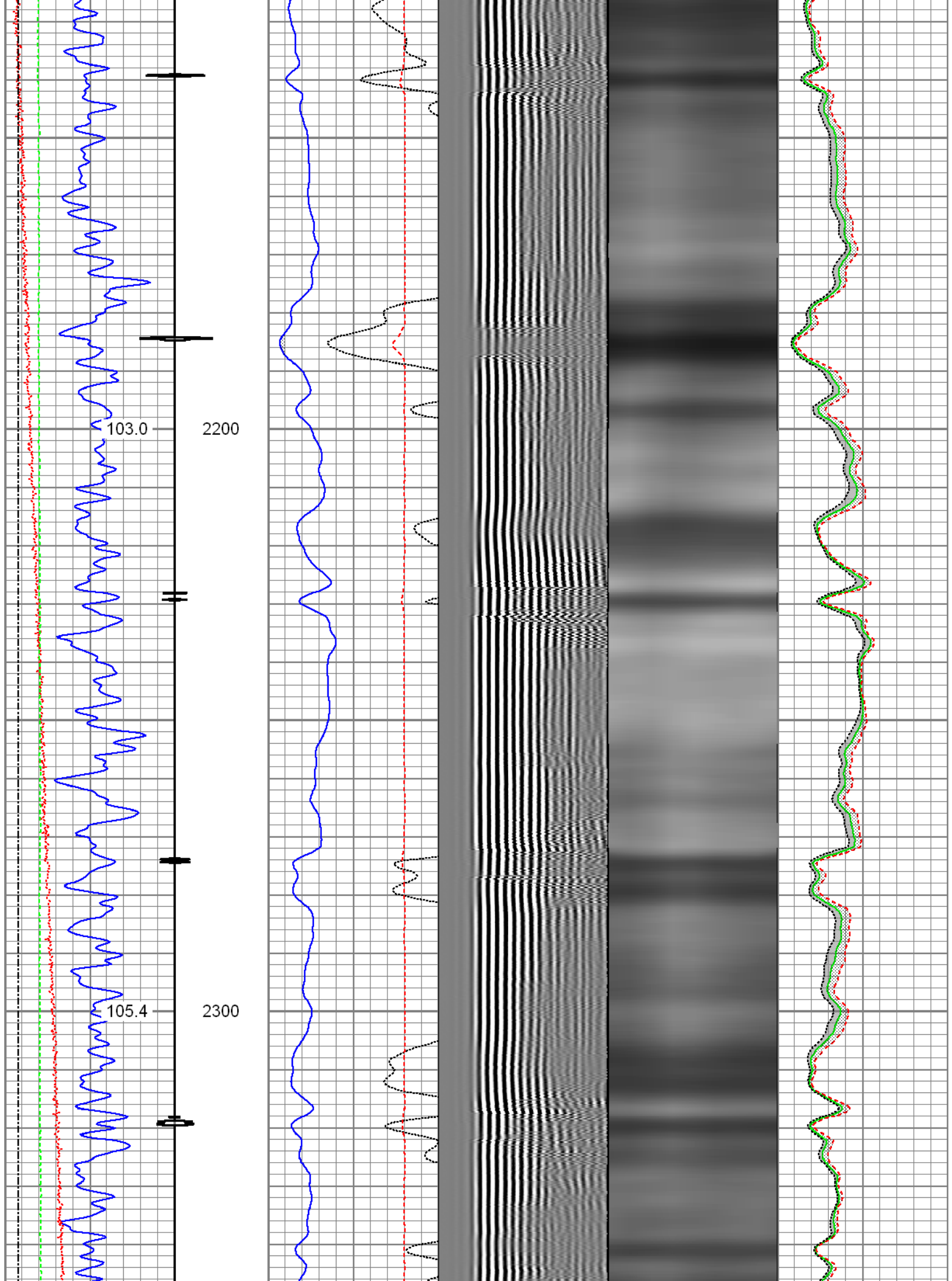


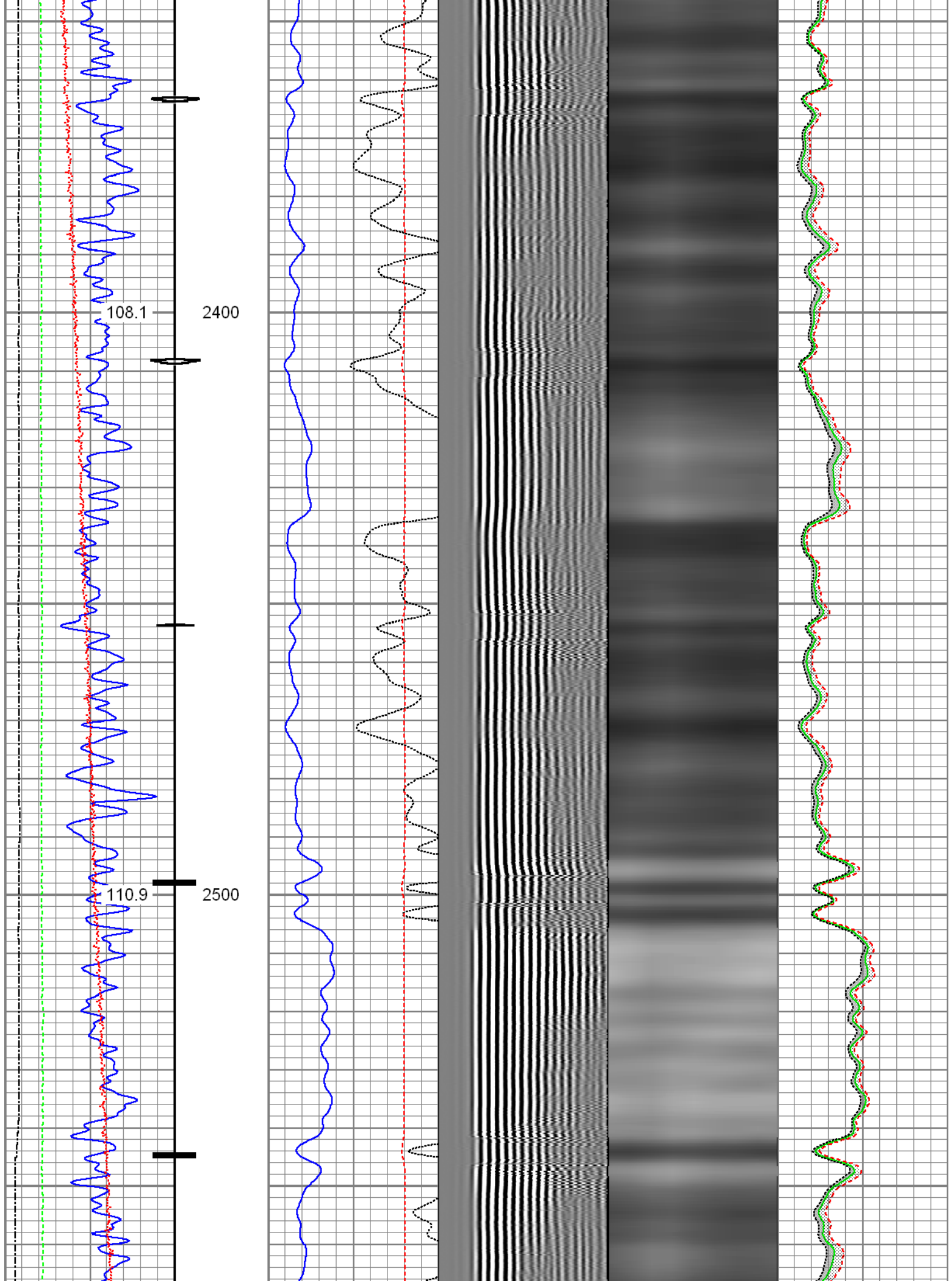


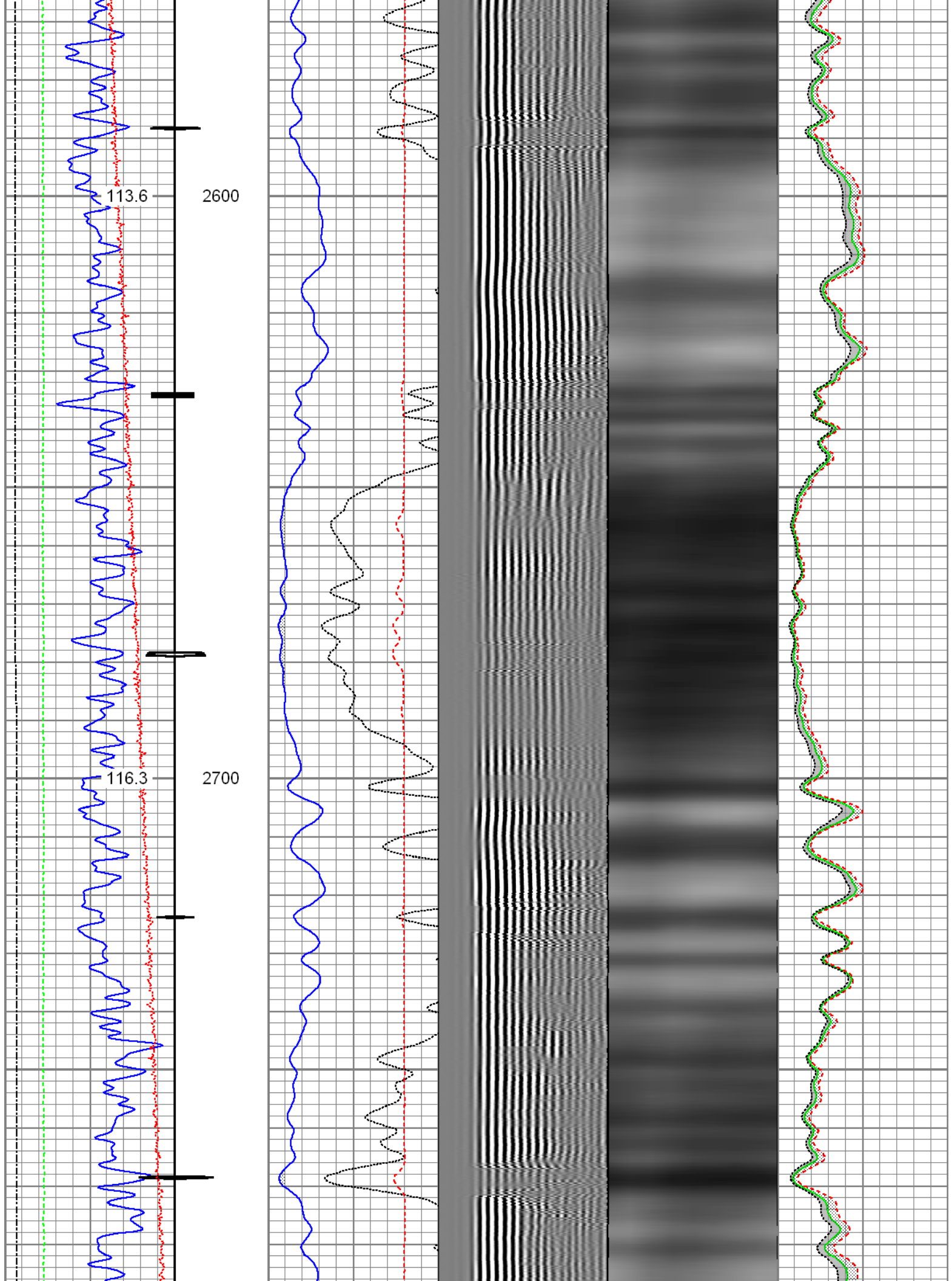


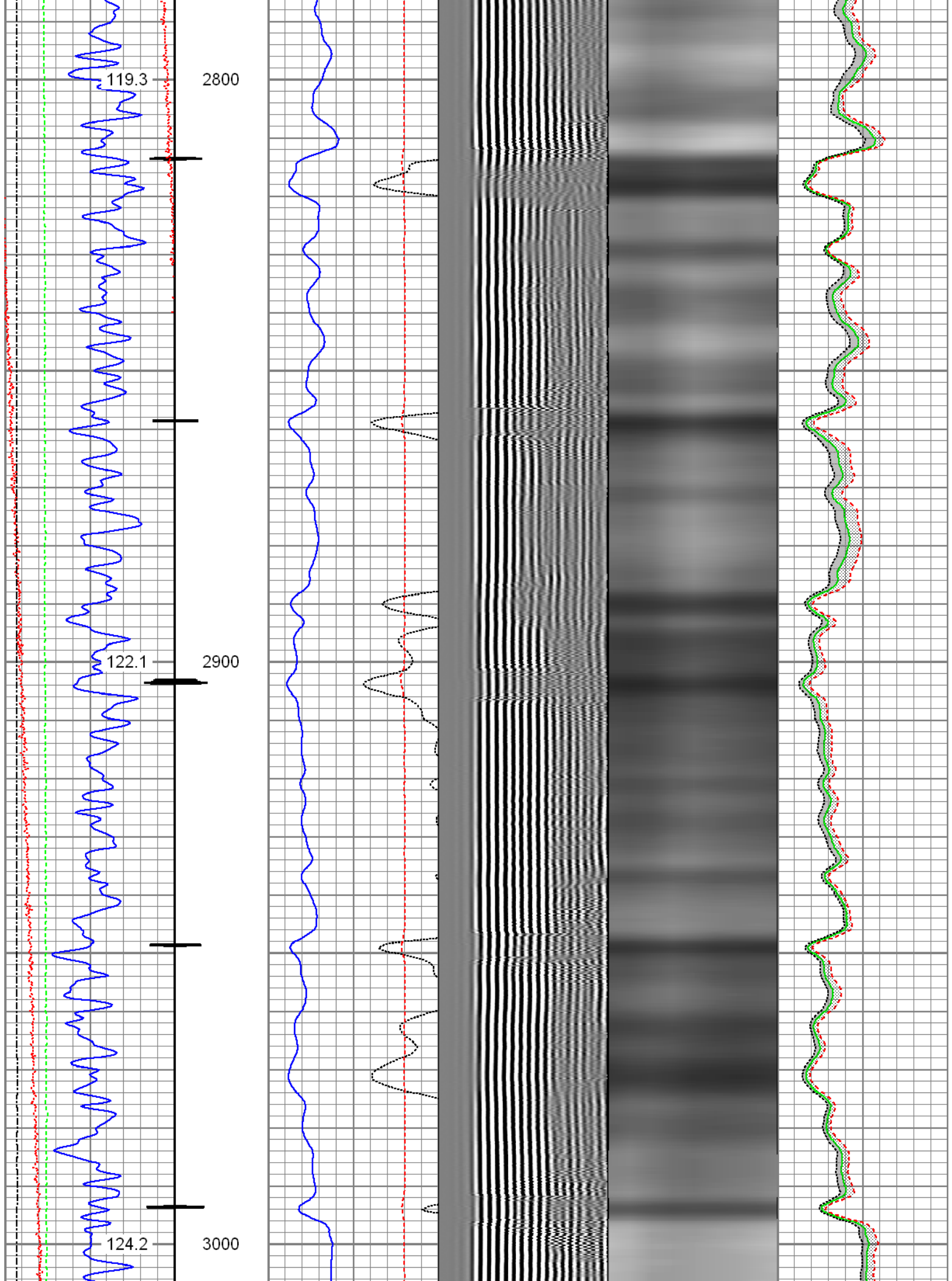


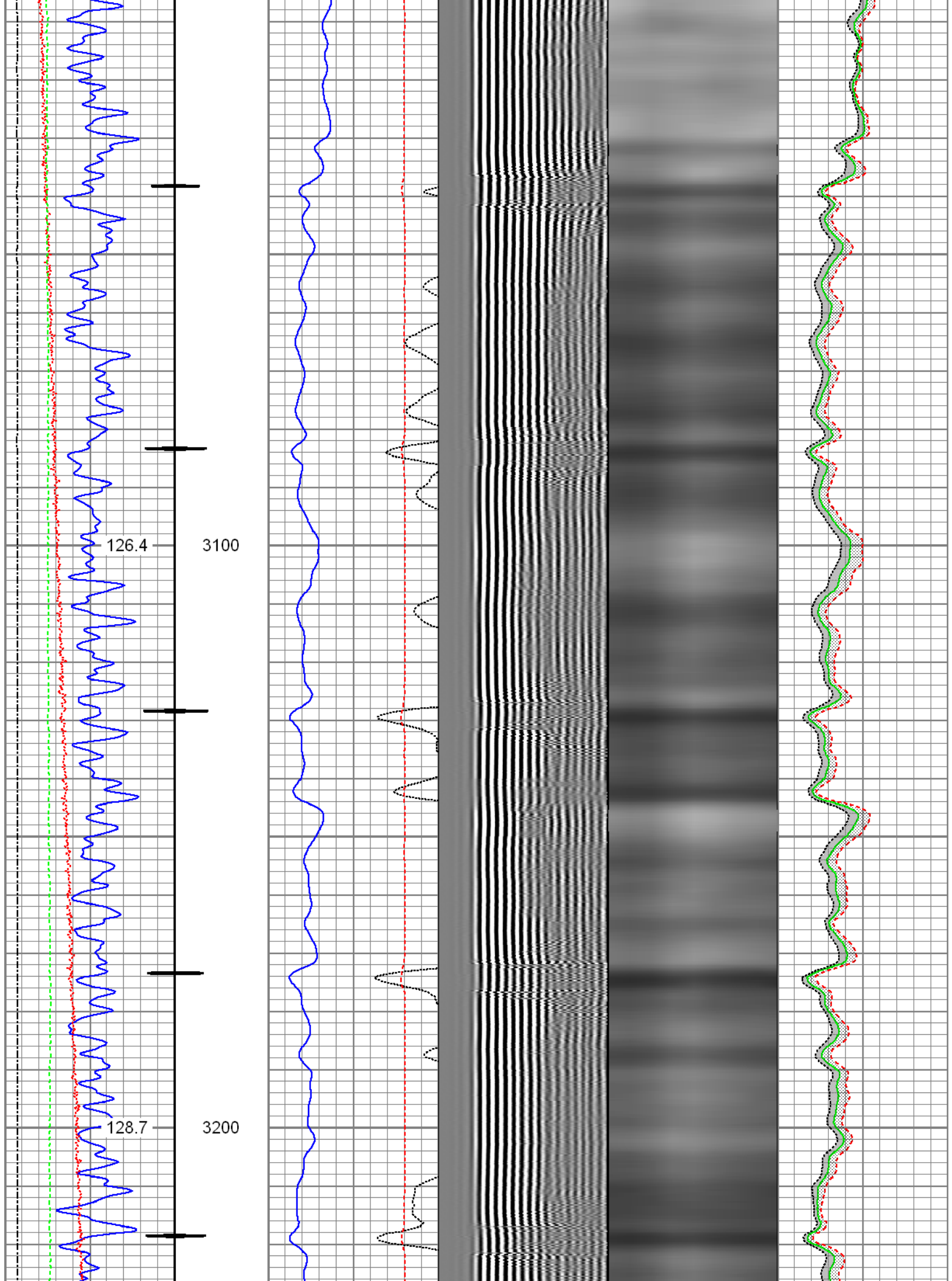


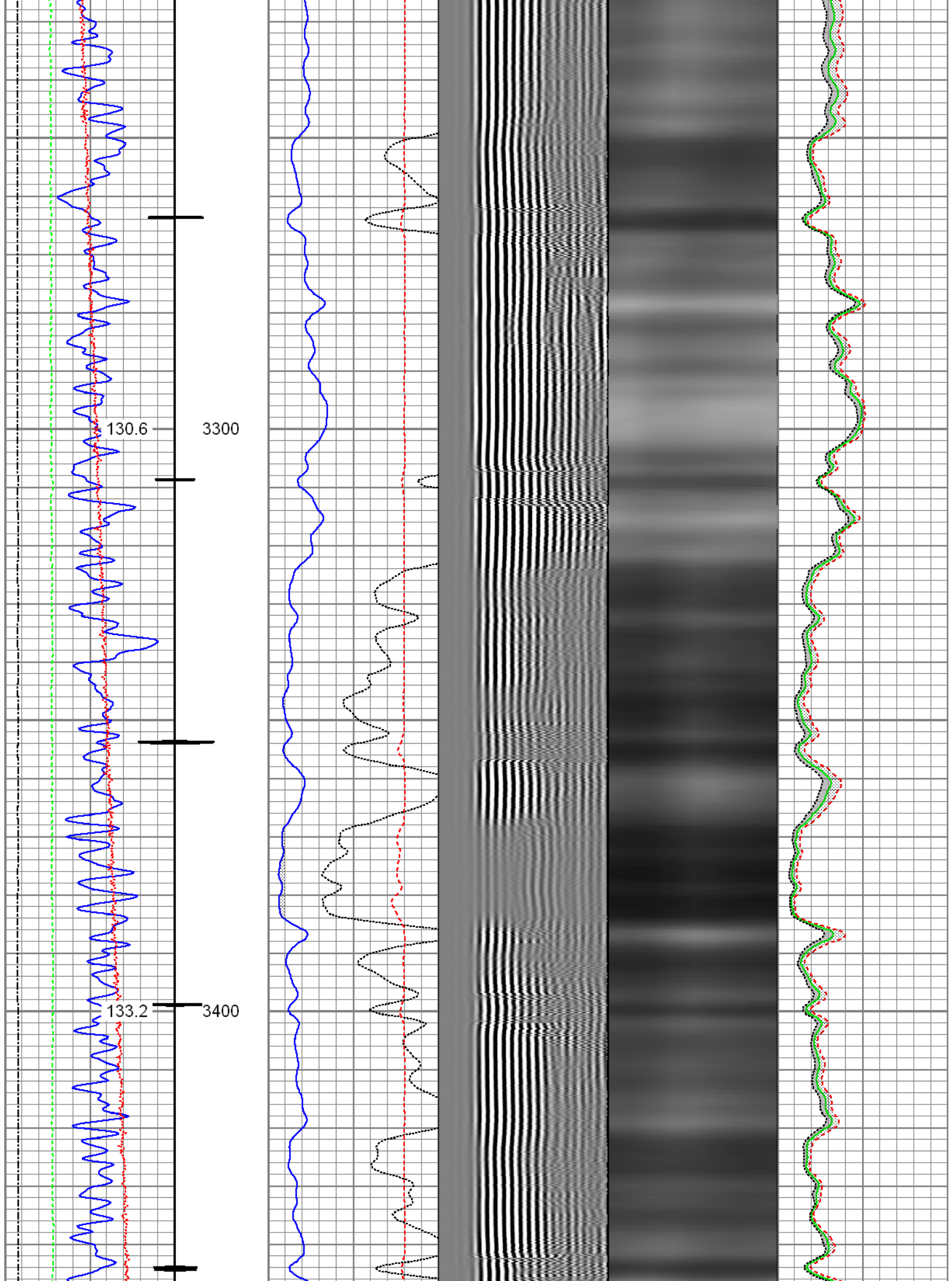


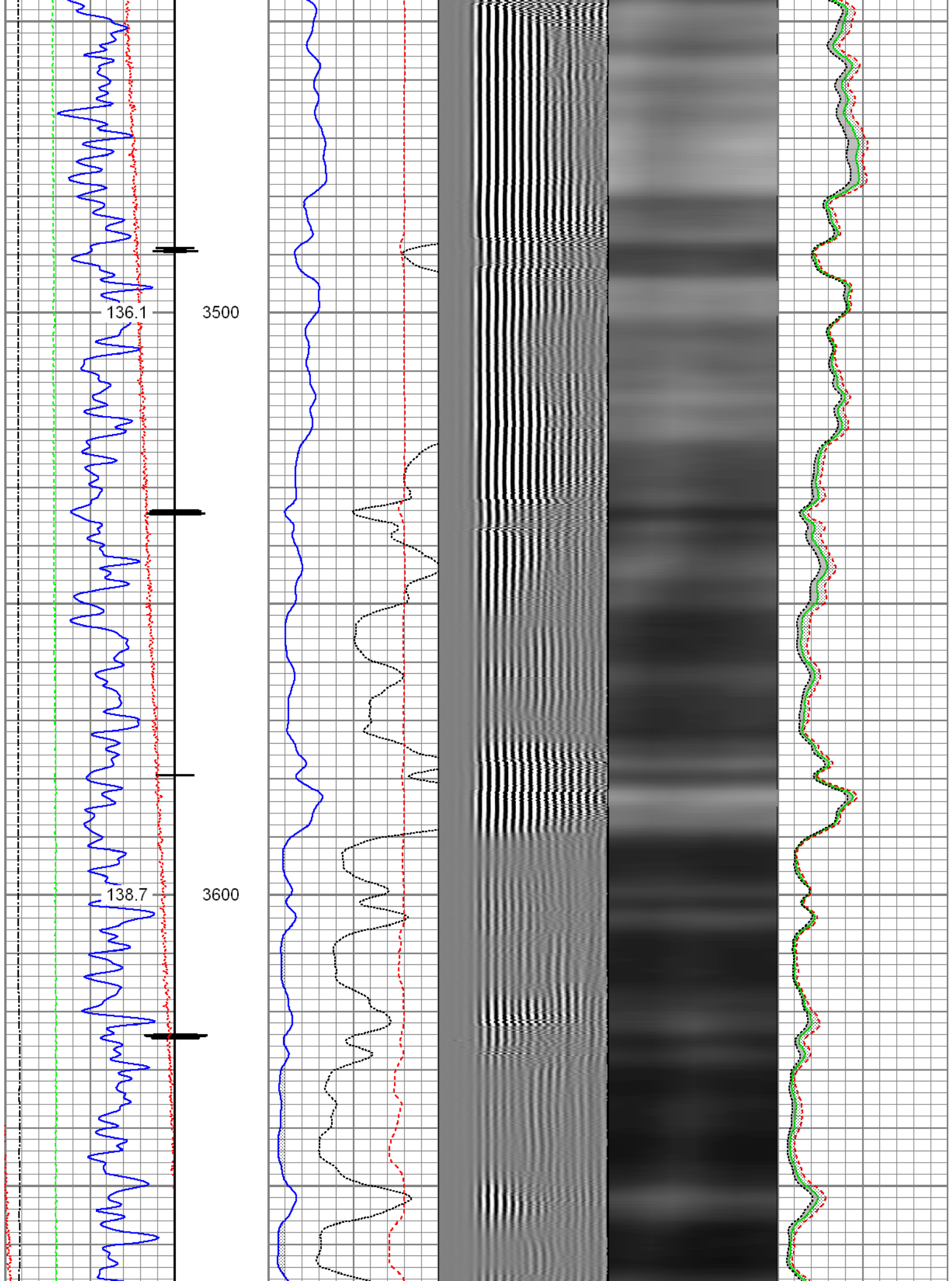


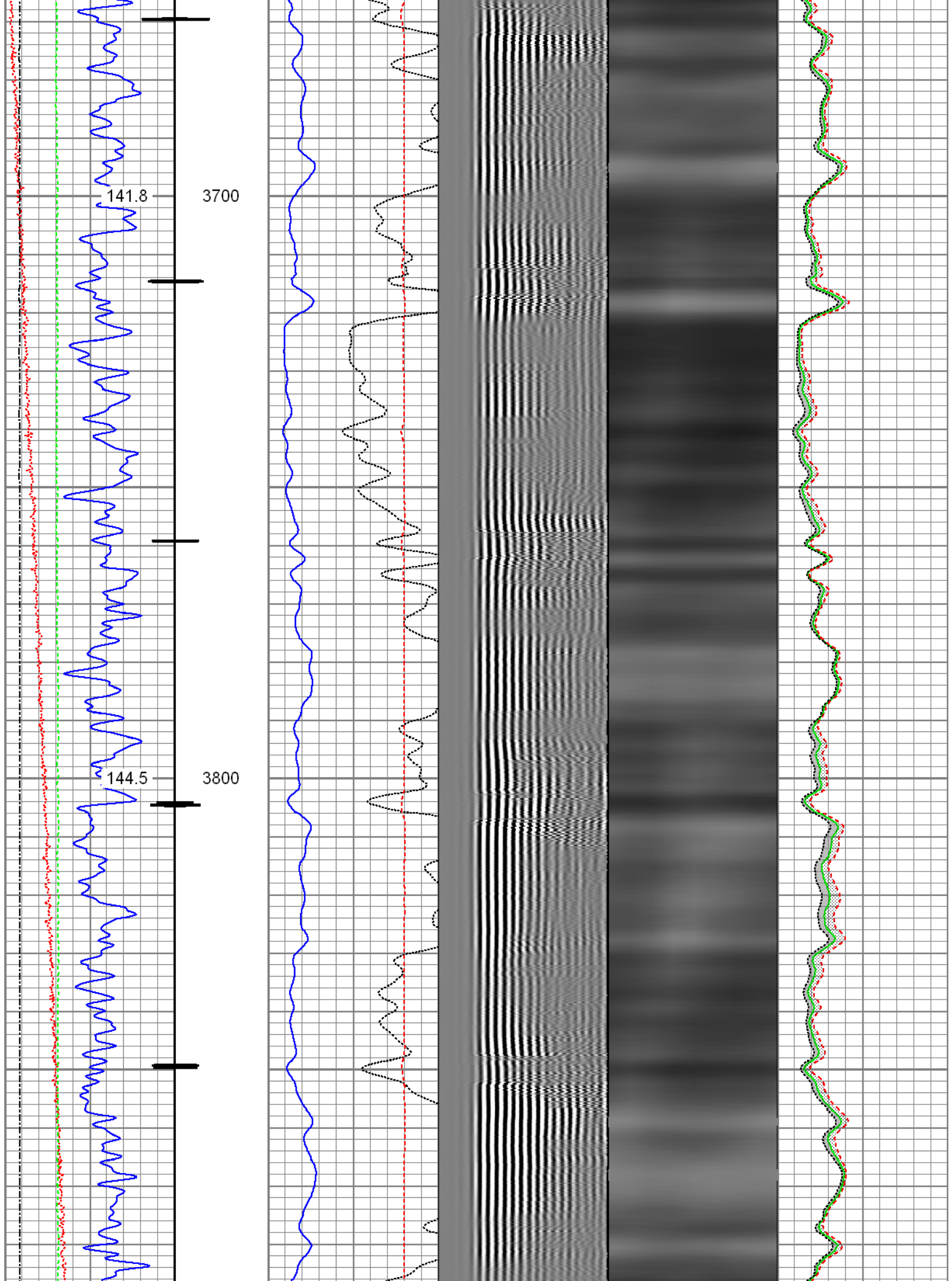


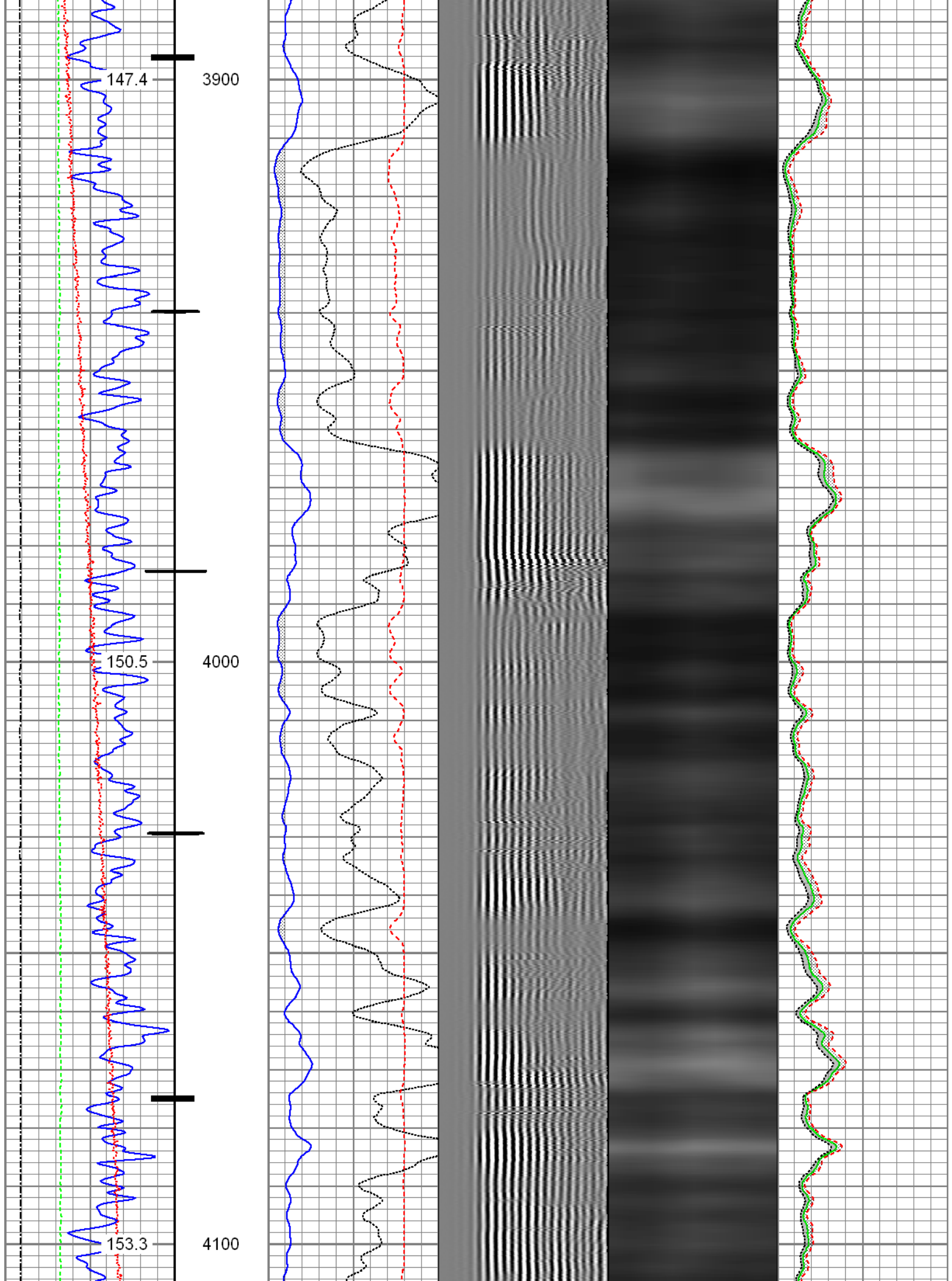


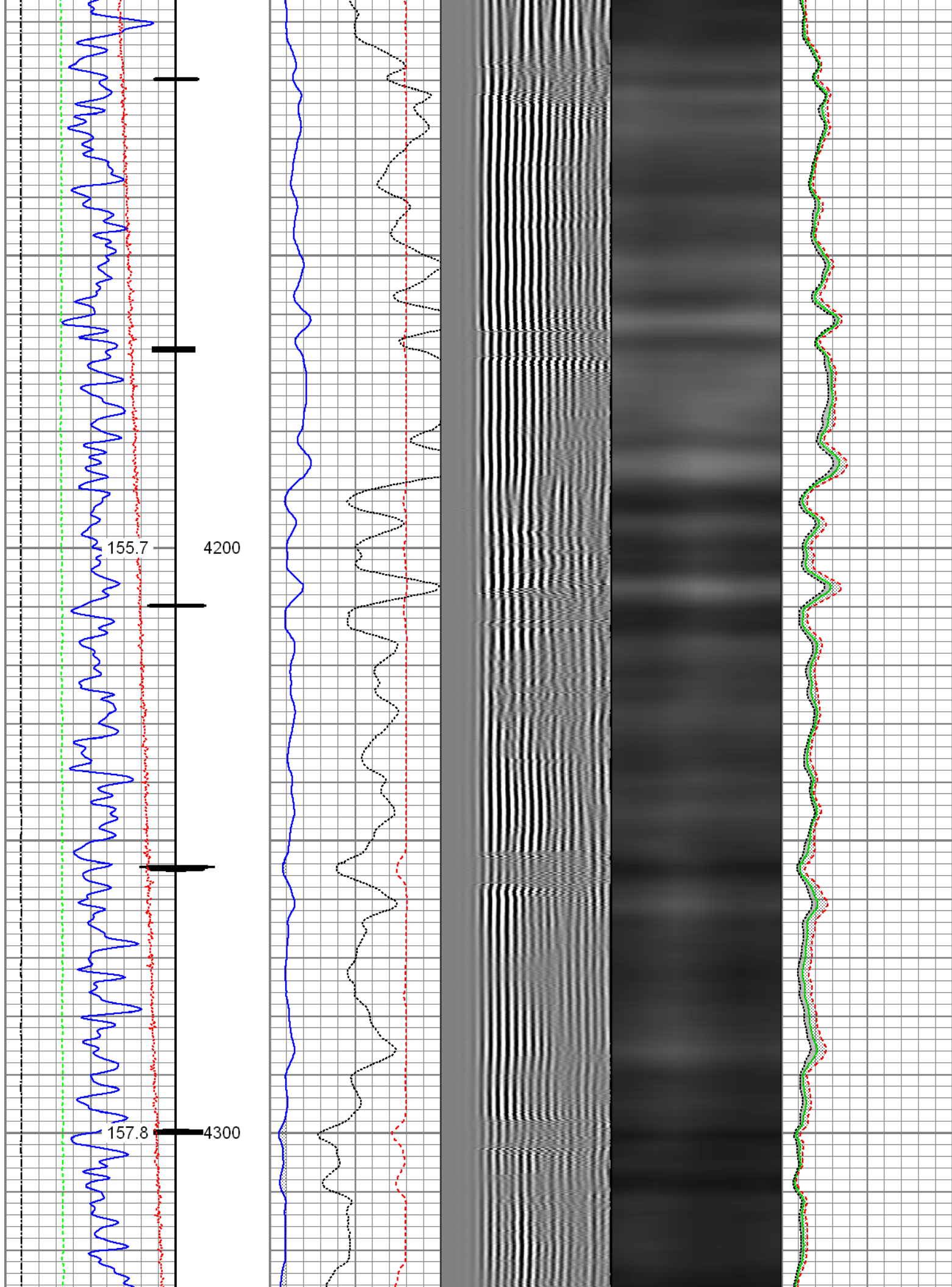


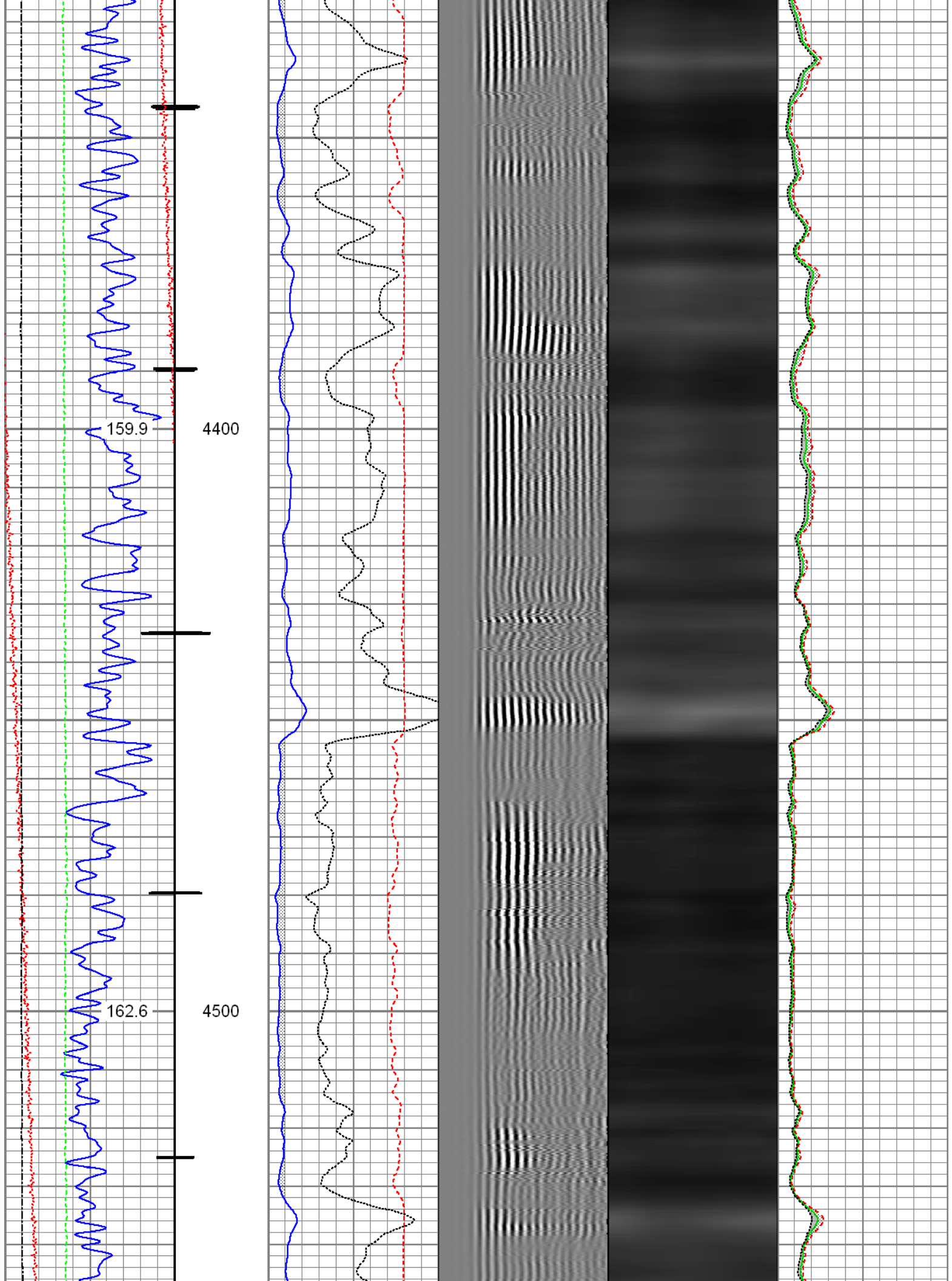


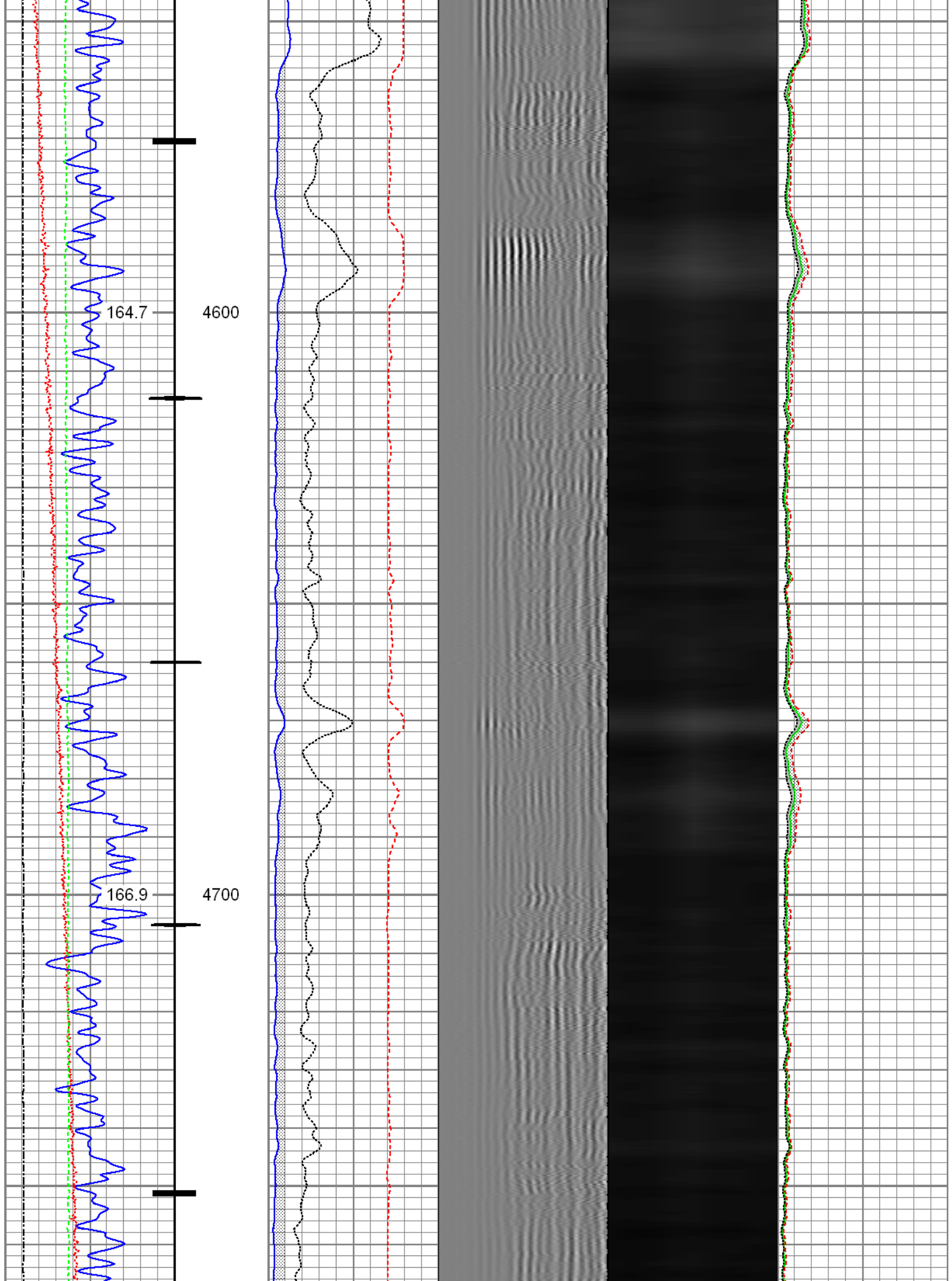


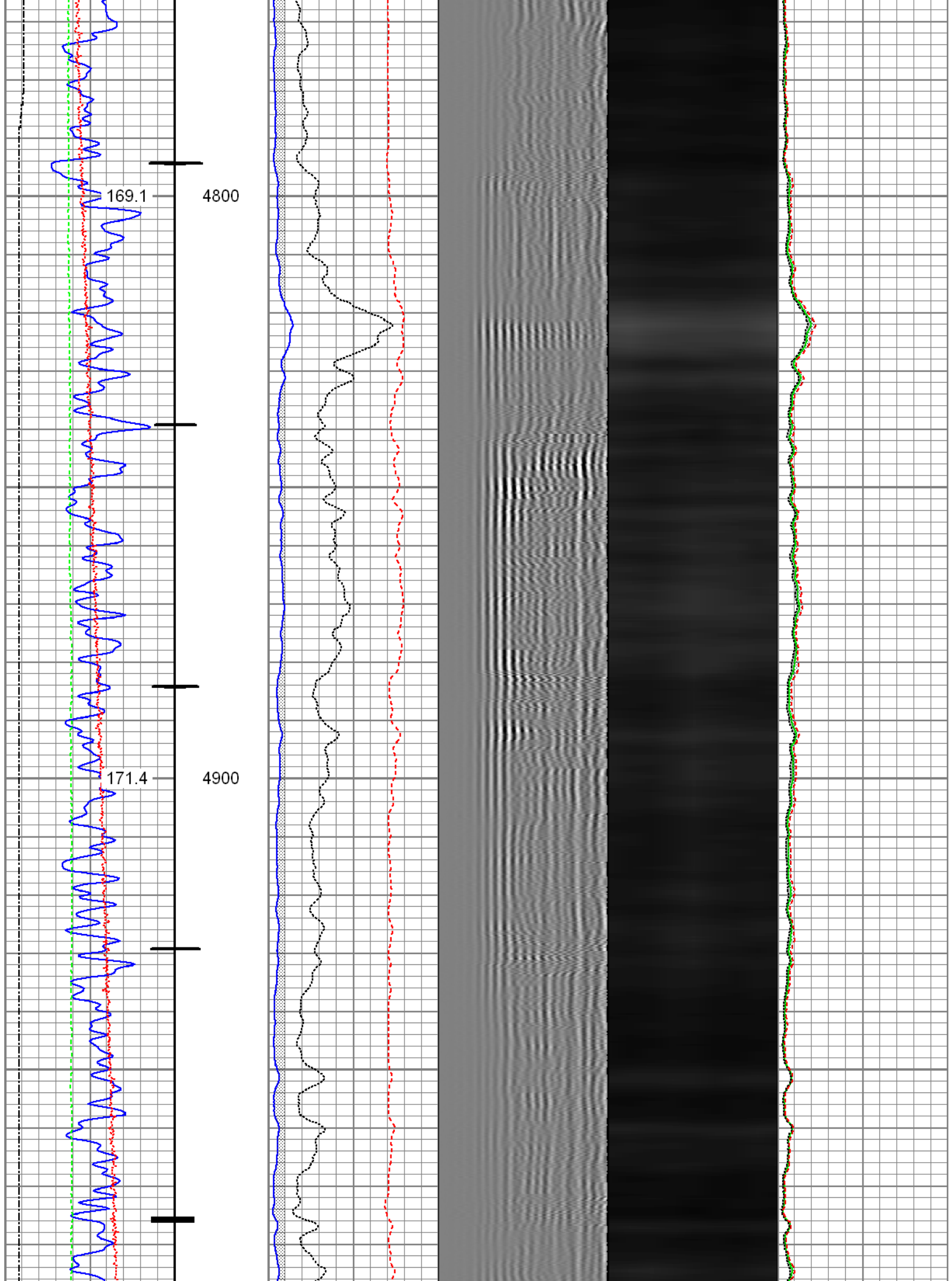


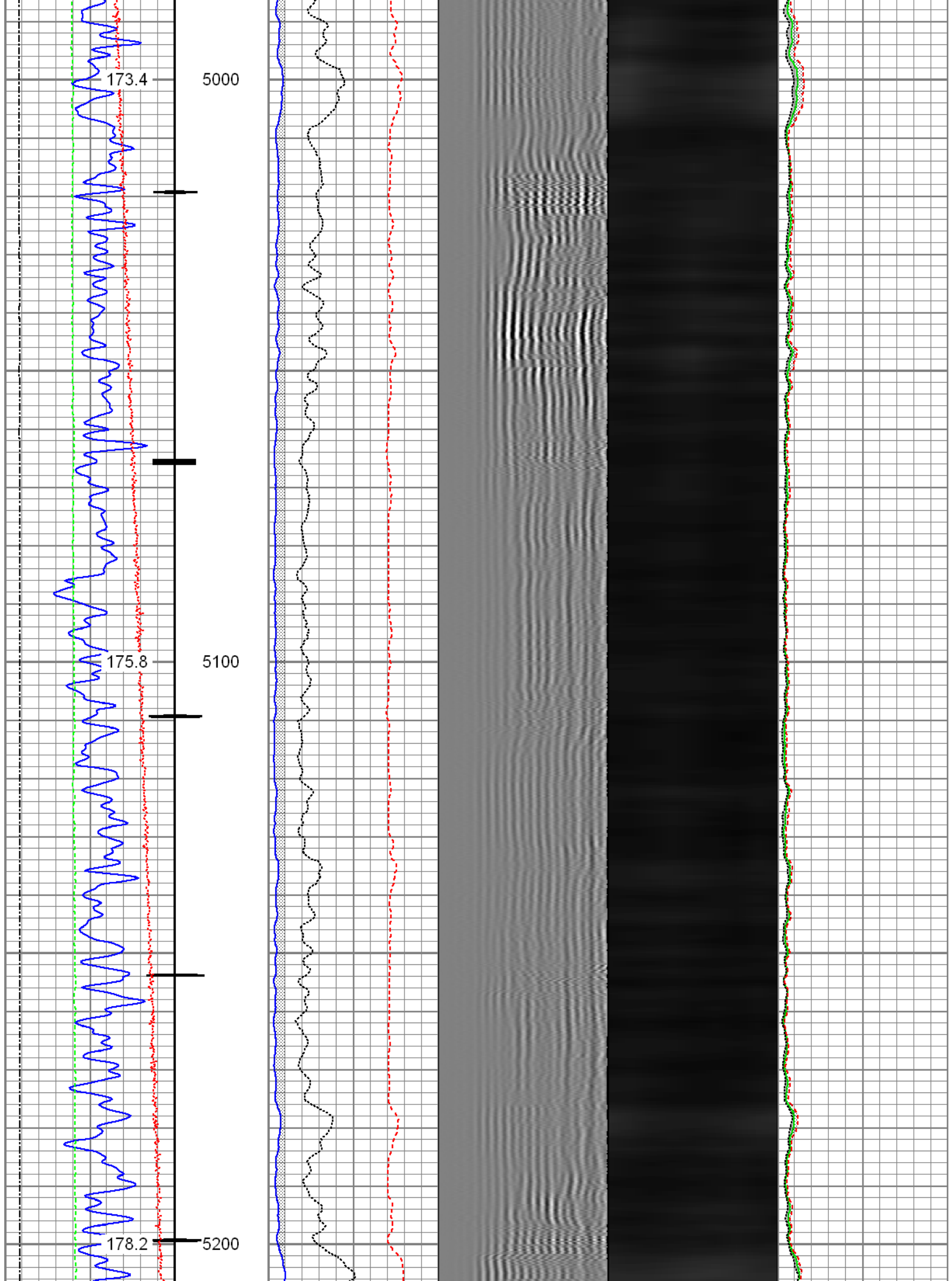


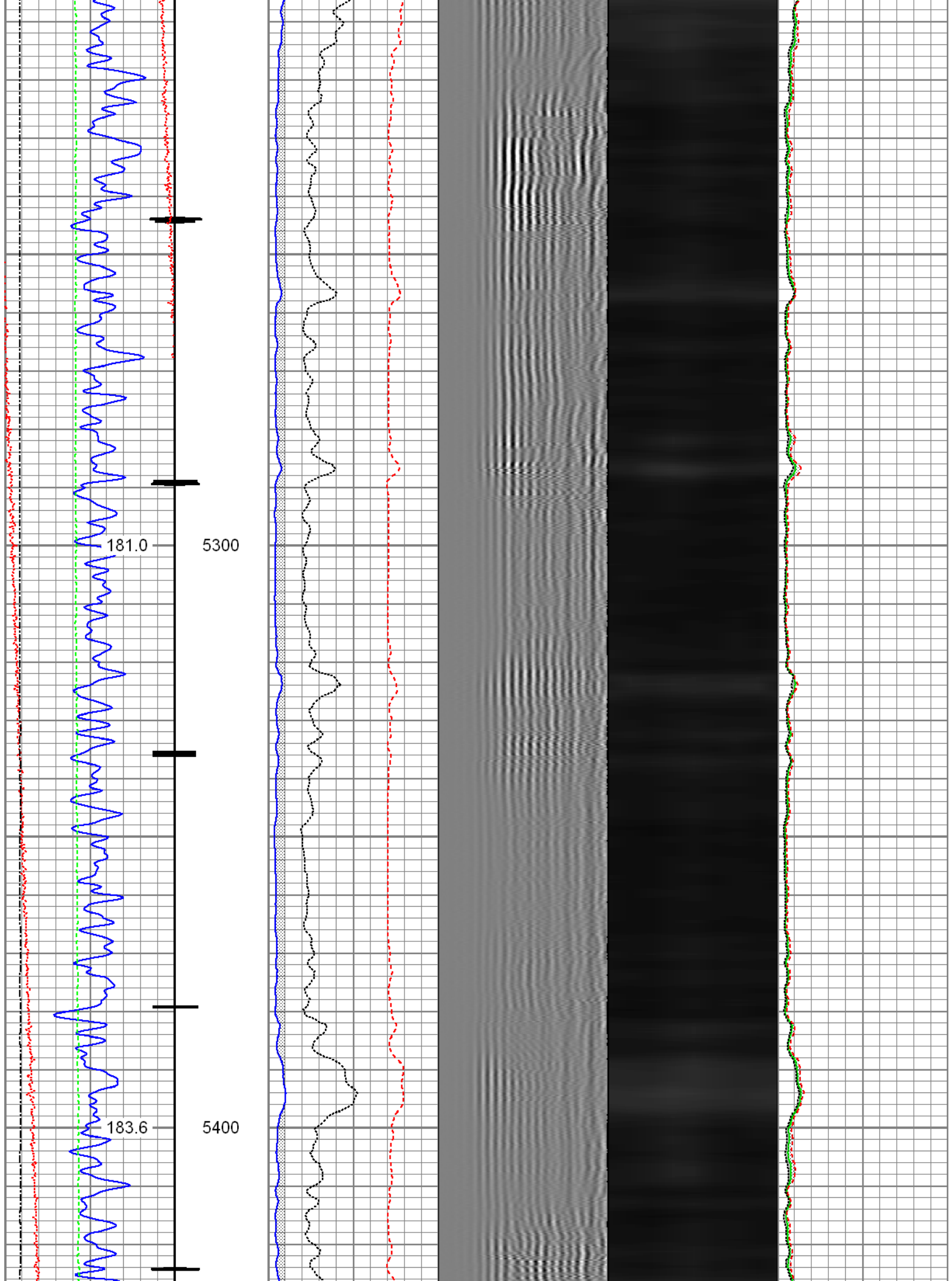


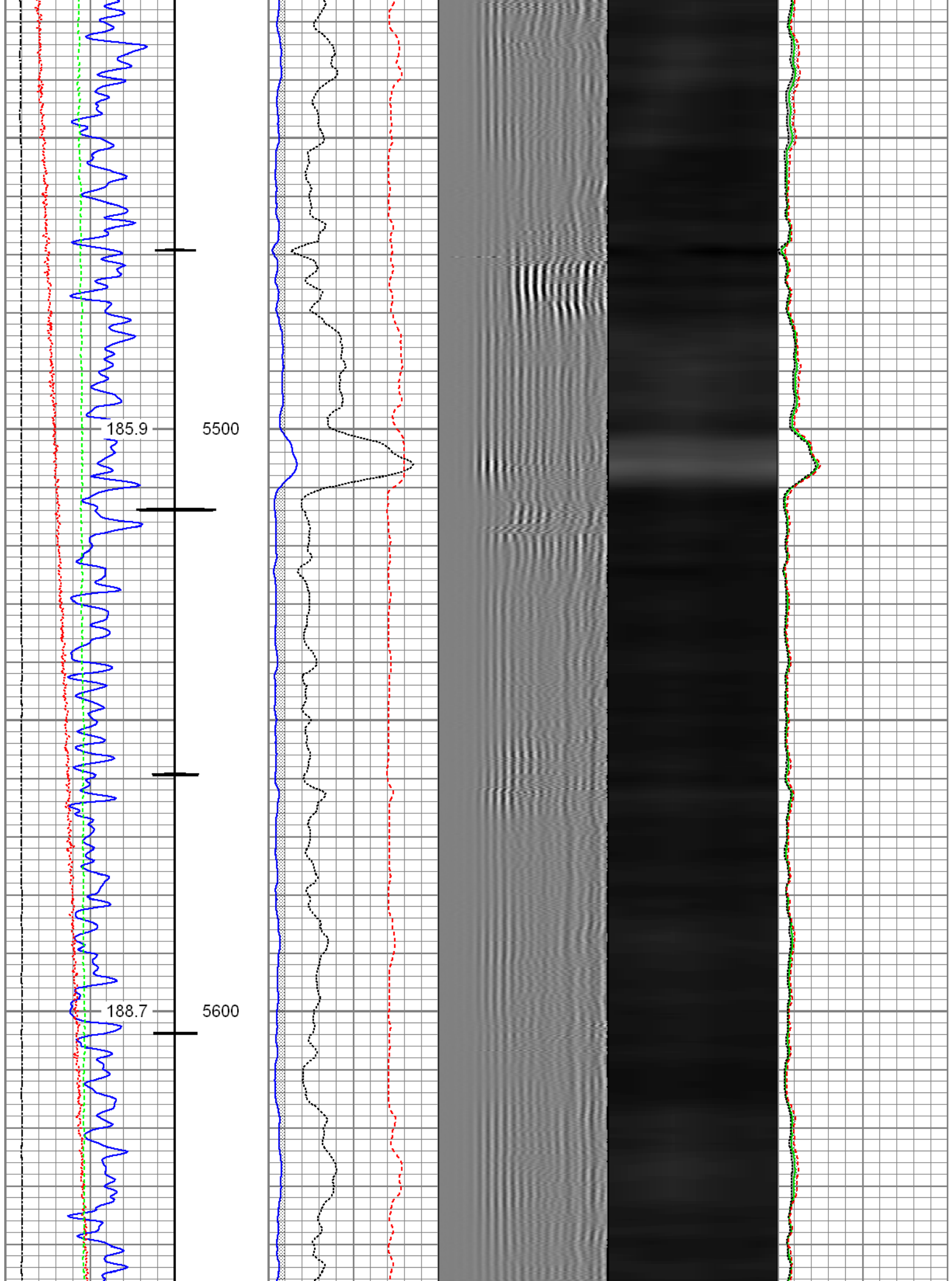


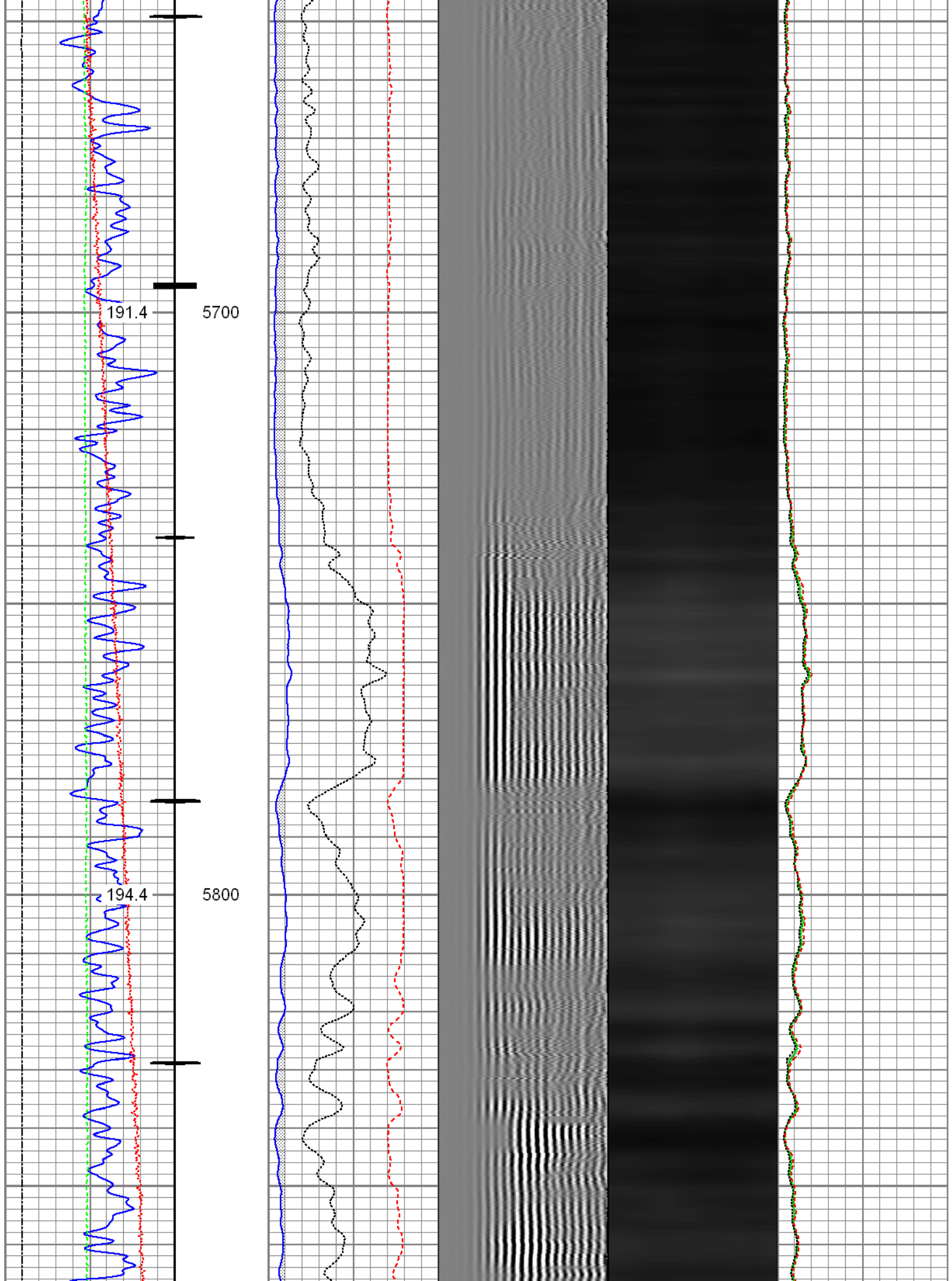


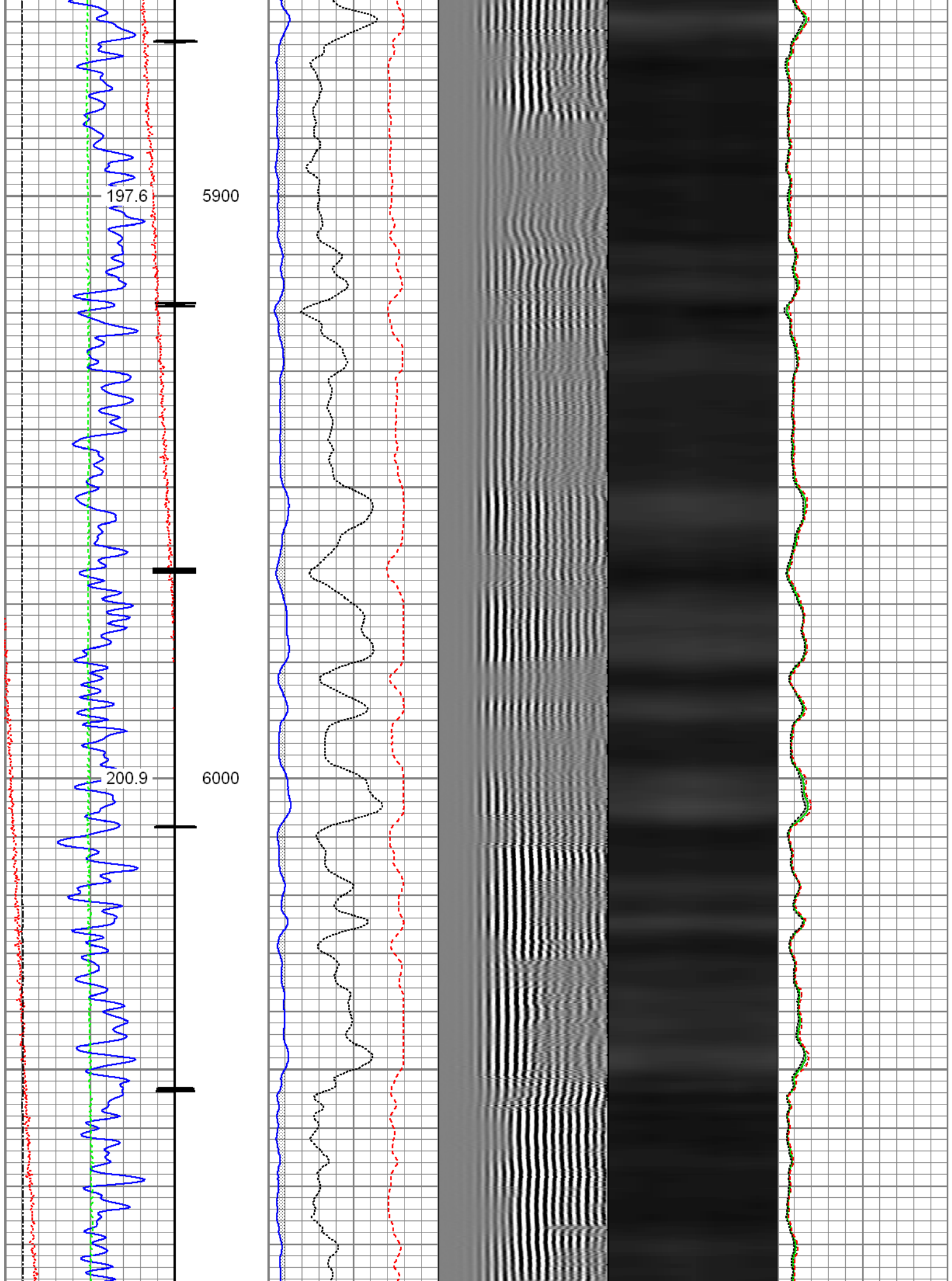


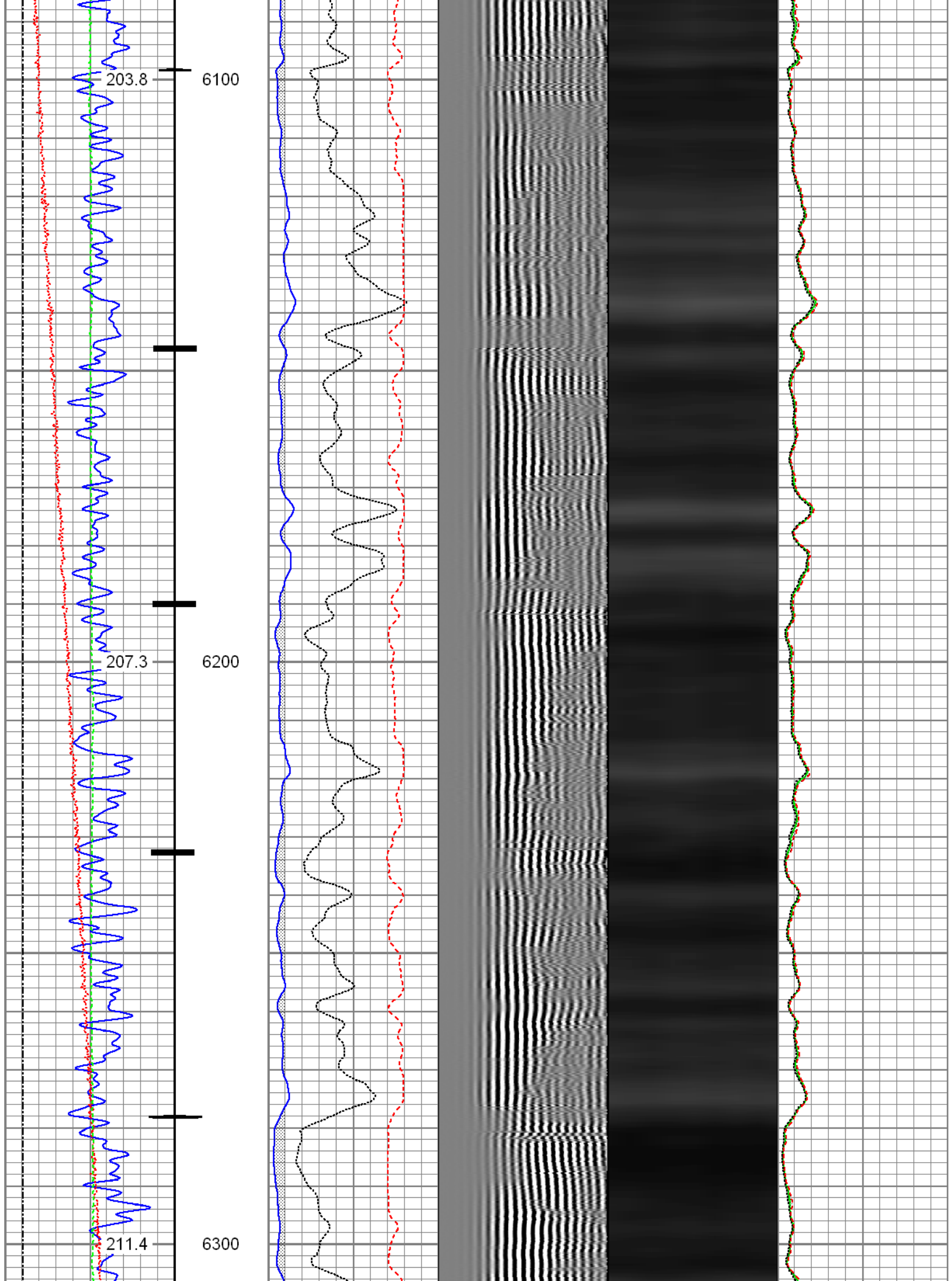


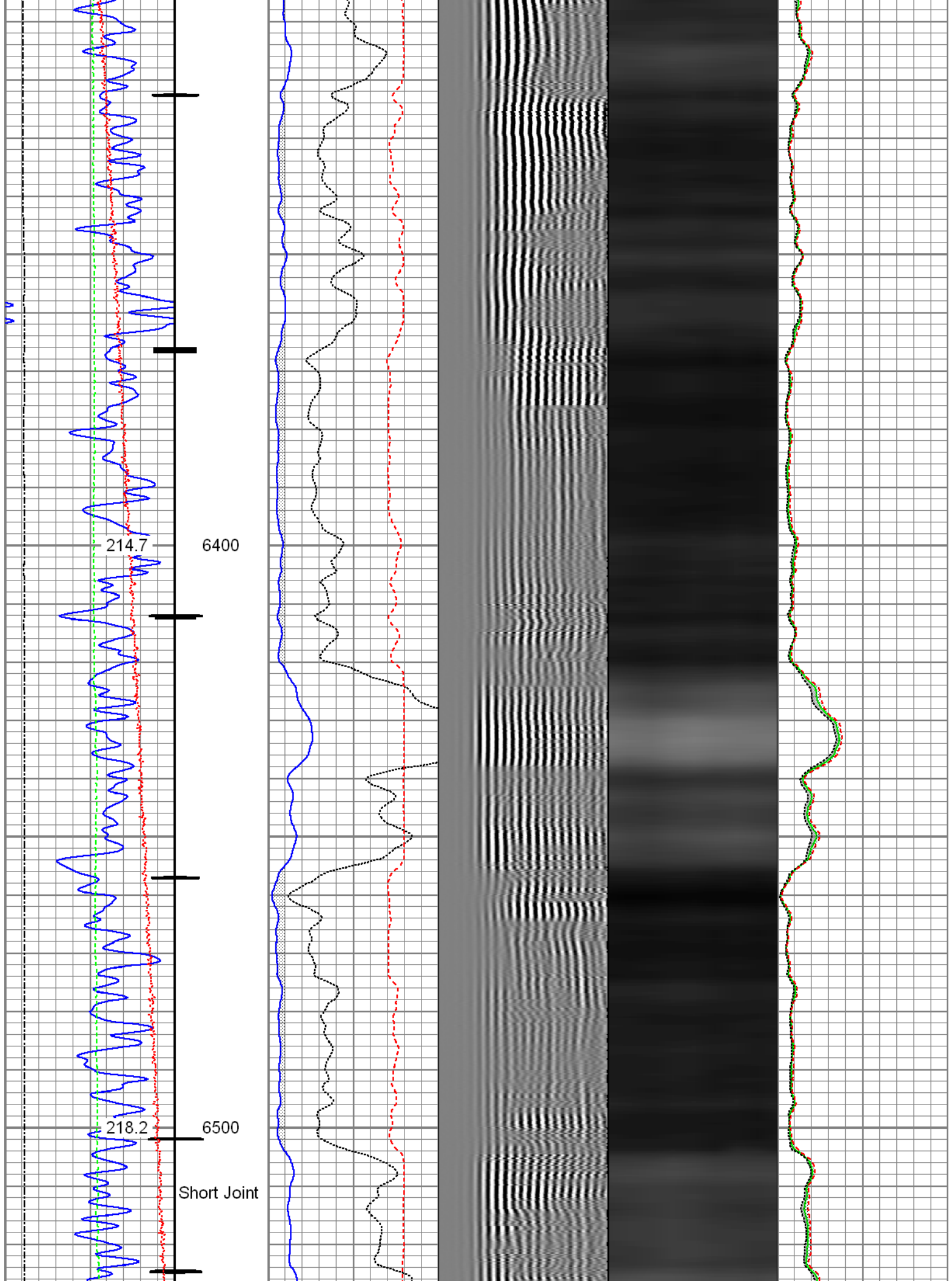


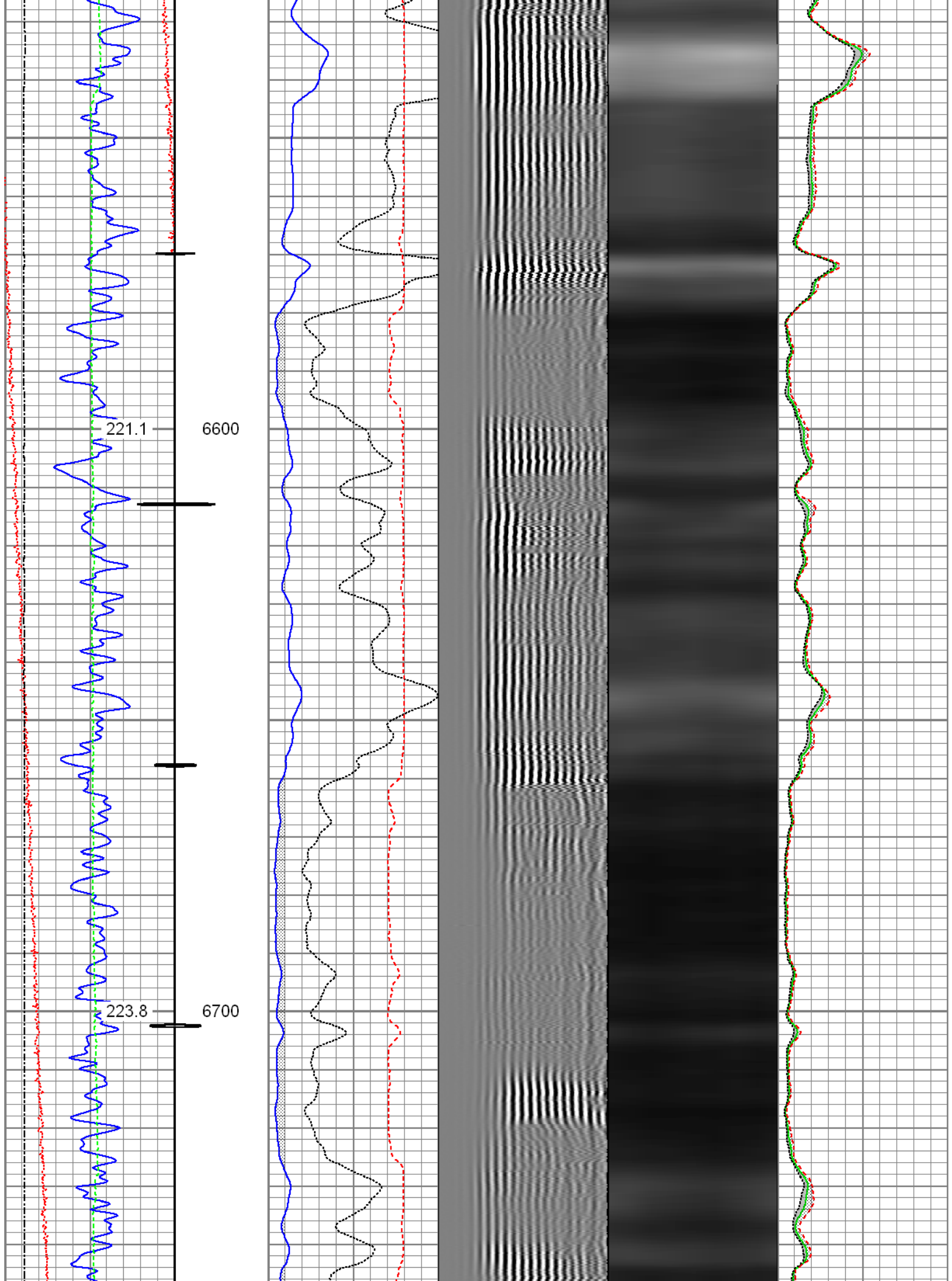


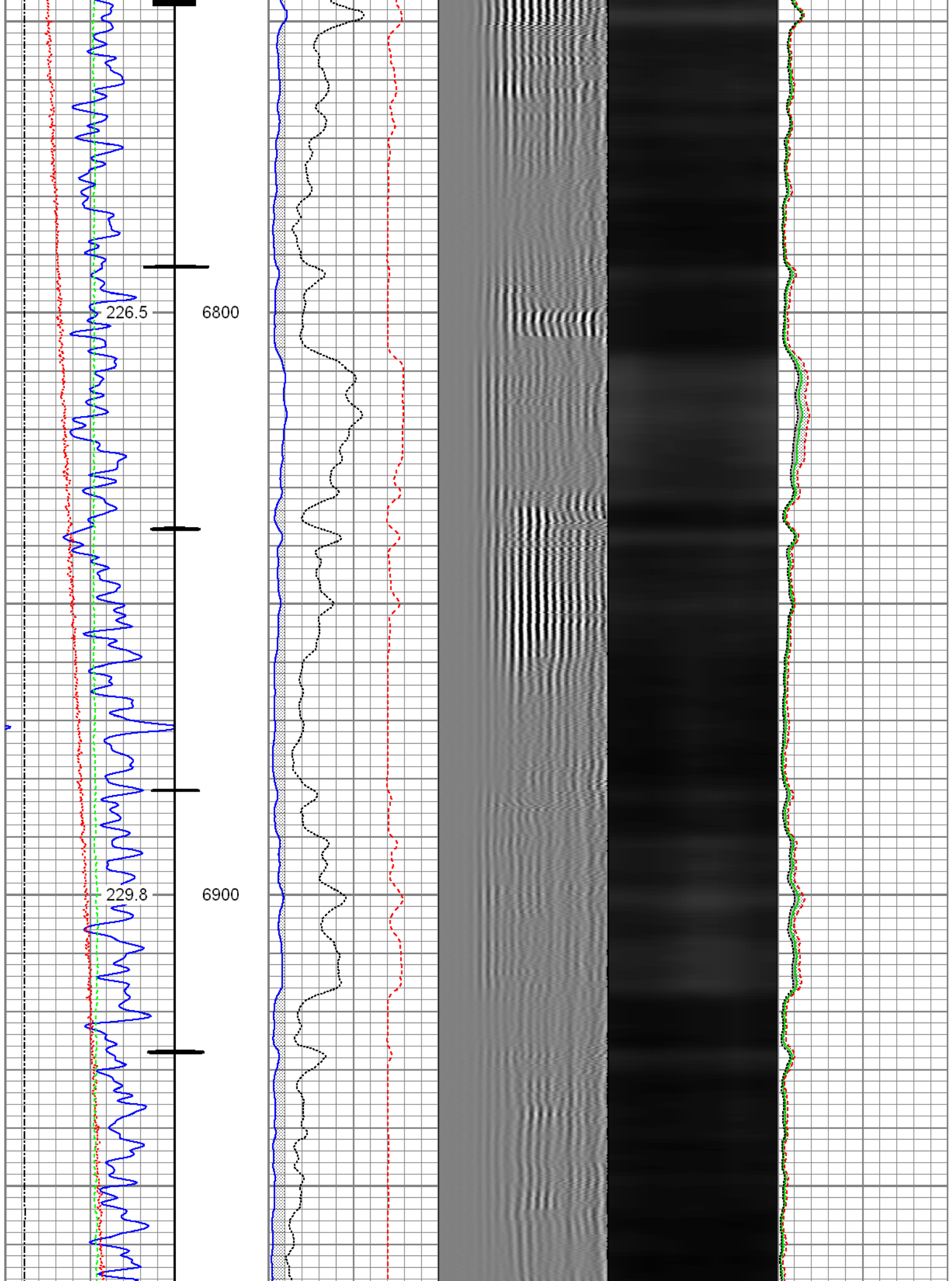


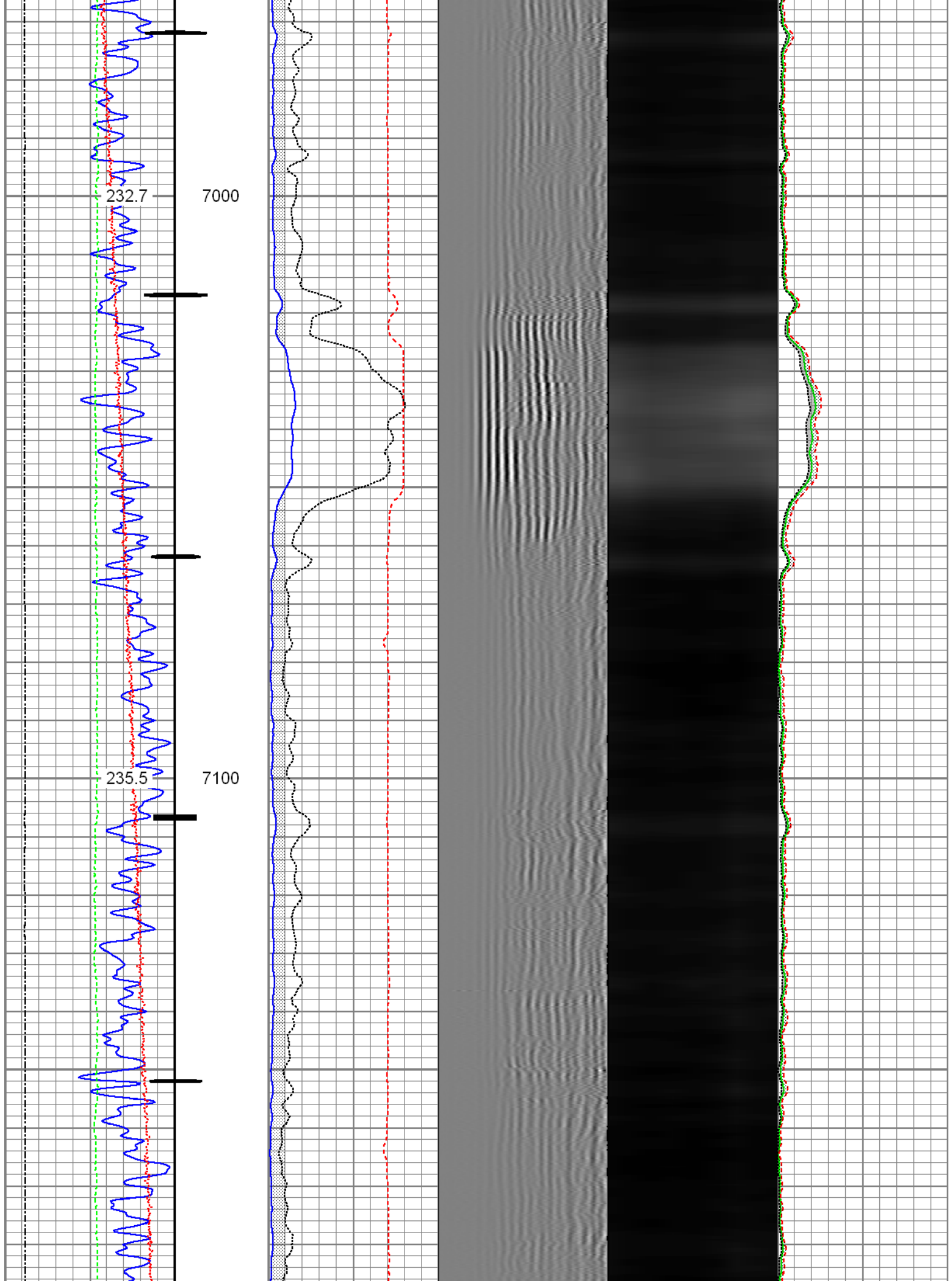


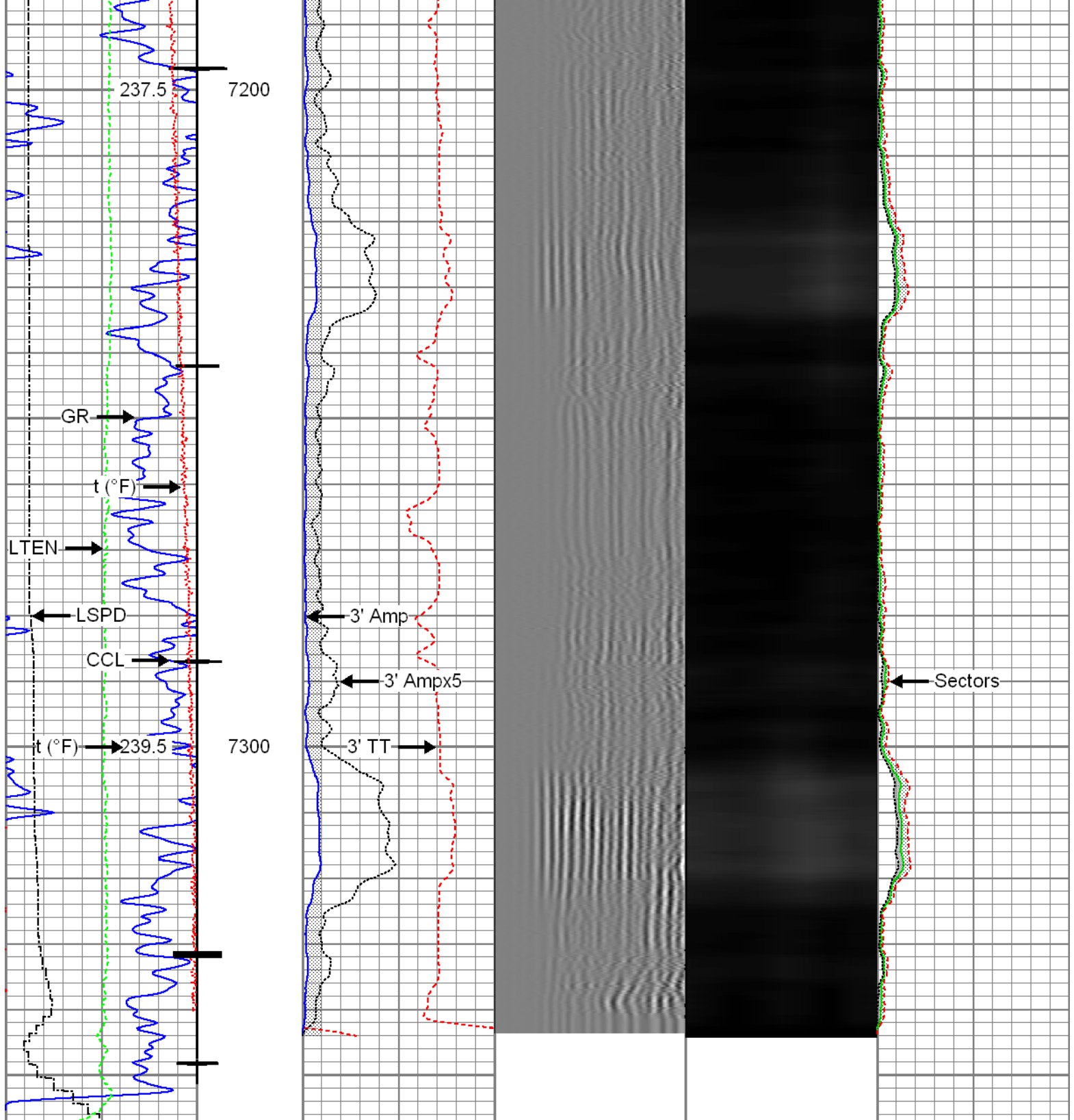








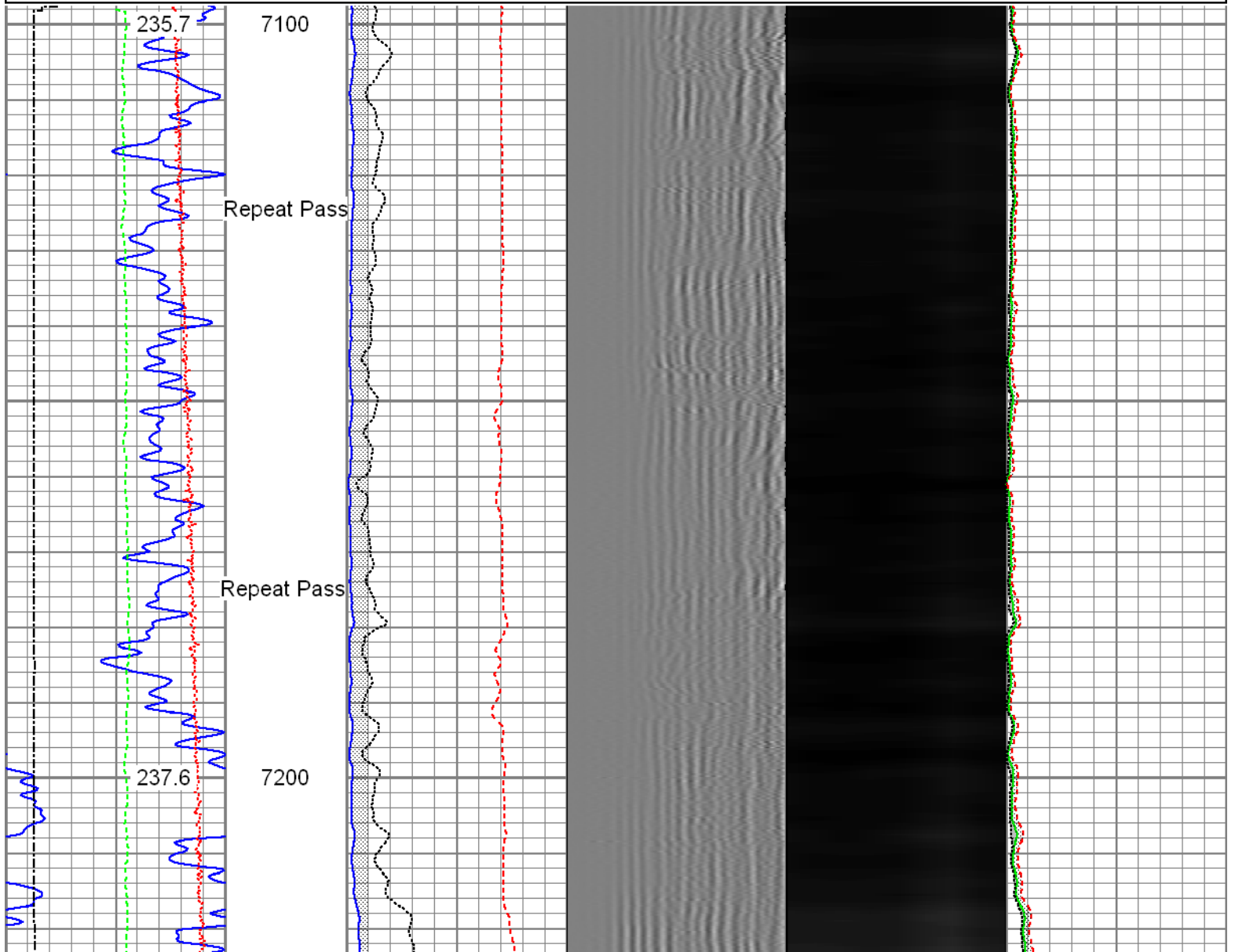


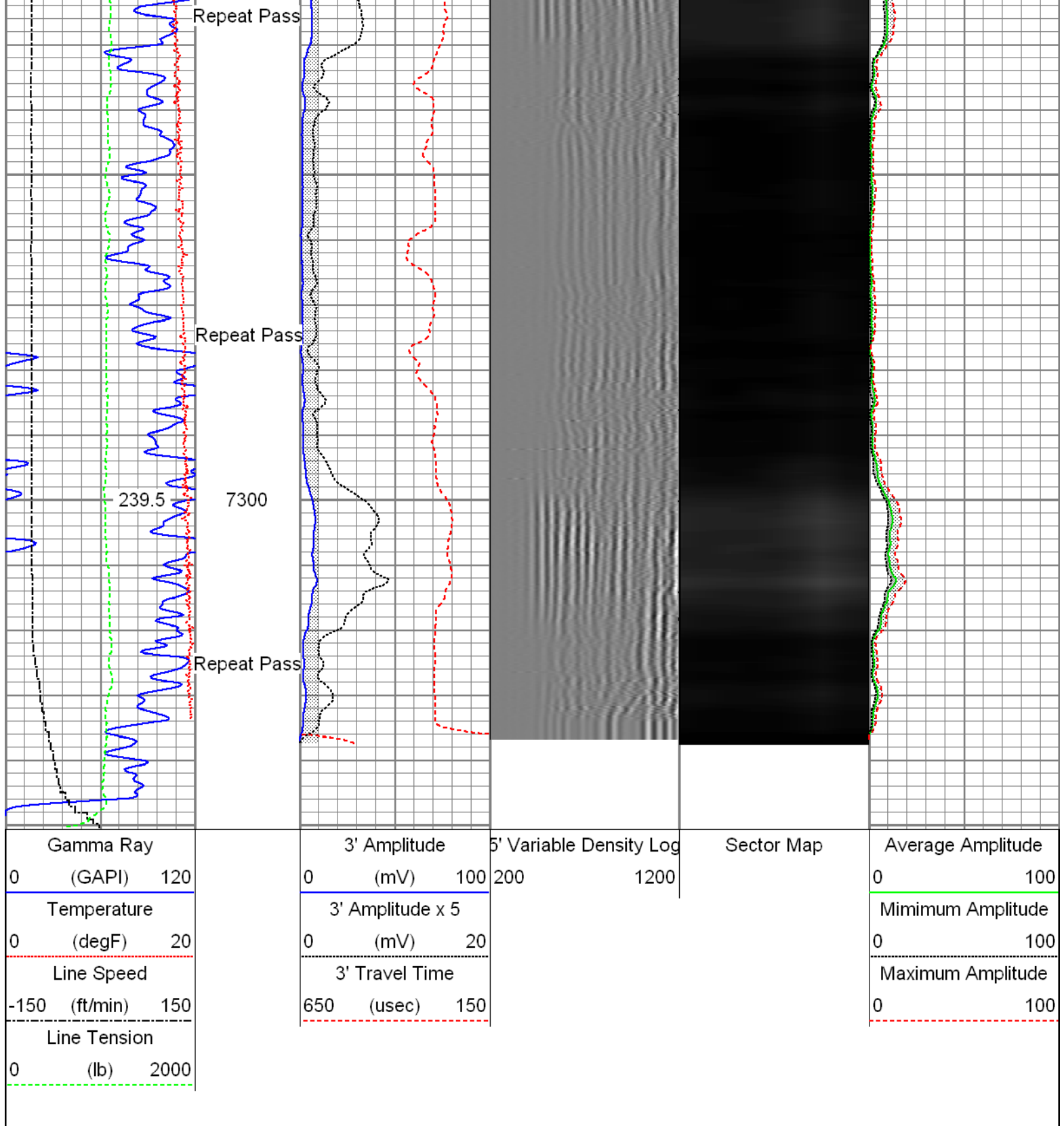


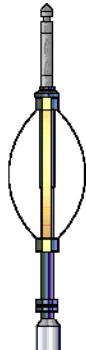
Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Casing Collar Locator	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Temperature 0 (degF) 20	3' Travel Time 650 (uSec) 150			Maximum Amplitude 0 100
Line Speed -150 (ft/min) 150		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

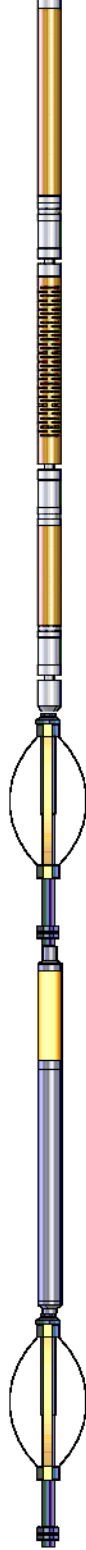
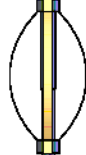


Database File: c:\warrior\data\0512341907_anadarko_powers 36n-22hz_12-08-15_rbl\processed_0512341907_anadarko_powers 36n-22hz_12-08-15_rbl
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 Presentation Format: radii
 Dataset Creation: Tue Dec 08 10:35:36 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

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





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" (FW1305-098) 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		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
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: PROCESSED_0512341907_Anadarko_Powers 36N-22HZ_12-08-15_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:	C:\Warrior\Data\0512341907_Anadarko_Powers 36N-22HZ_12-08-15_RBL\PROCESSED_05123419
Dataset Pathname:	Main.1
Dataset Creation:	Wed Dec 09 16:04:41 2015 by Calc SCH 120430

Gamma Ray Calibration Report	
Serial Number:	FW1212-026
Tool Model:	2.75"Digital
Performed:	Wed Dec 02 08:59:40 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:	FW1305-098	
Tool Model:	2-3/4"	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	18.019	ft

Master Calibration, performed Wed Dec 09 16:04:38 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.537	0.800	71.921	134.302	-0.150
CAL	0.722	0.783				
5'	0.011	0.453	0.800	71.921	161.182	-1.019
SUM						
S1	0.005	0.525	0.000	100.000	192.218	-1.010
S2	0.007	0.555	0.000	100.000	182.583	-1.337
S3	0.008	0.581	0.000	100.000	174.616	-1.409
S4	0.008	0.572	0.000	100.000	177.168	-1.395
S5	0.008	0.561	0.000	100.000	181.027	-1.538
S6	0.009	0.535	0.000	100.000	189.854	-1.660
S7	0.009	0.517	0.000	100.000	197.097	-1.851
S8	0.008	0.511	0.000	100.000	198.864	-1.551

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	0.722	0.783	1.000	0.000

Air Zero Calibration, performed Tue Dec 08 10:07:31 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 36N-22HZ
Field	Wattenberg
County	Weld
State	Colorado