



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company	Kerr-McGee Oil & Gas OnShore L.P.		
Well	Sunflower 40C-17HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	Company	Kerr-McGee Oil & Gas OnShore L.P.	
	Well	Sunflower 40C-17HZ	
	Field	Wattenberg	
	County	Weld	
Other Services	State	Colorado	
	API # :	05-123-42068	
	SEC 8	TWP 2N	RGE 65W
	Permanent Datum	Ground Level	Elevation 4901'
Gauge Ring	Log Measured From	Kelly Bushing 20 FT	
	Drilling Measured From	Kelly Bushing	
Elevation		K.B. 4921' D.F. 4920' G.L. 4901'	

Date	11-Jan-2016
Run Number	Two
Depth Driller	12840 FT
Depth Logger	7243 FT
Bottom Logged Interval	7238 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	241°F
Estimated Cement Top	98 FT
Time Well Ready	ROA
Time Logger on Bottom	1500
Equipment Number	HD-0361
Location	Fort Lupton, CO
Recorded By	Chad Bryan
Witnessed By	Mario Torres

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	Surface	1887 FT		
Intermediate #1	5 1/2	17	HCP-110	Surface	12840 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 6664 FT  
Adjusted +5 FT to correlate with Marker Joint  
Gauge Ring/Junk Basket ran to 7340 FT with no debris found  
Log ran from as deep as possible in heel to surface  
Recorded with 2800 PSI surface induced pressure  
No debris found on logging tools upon completion of operations  
  
Thank you for choosing FMC Technologies Surface Integrated Services.

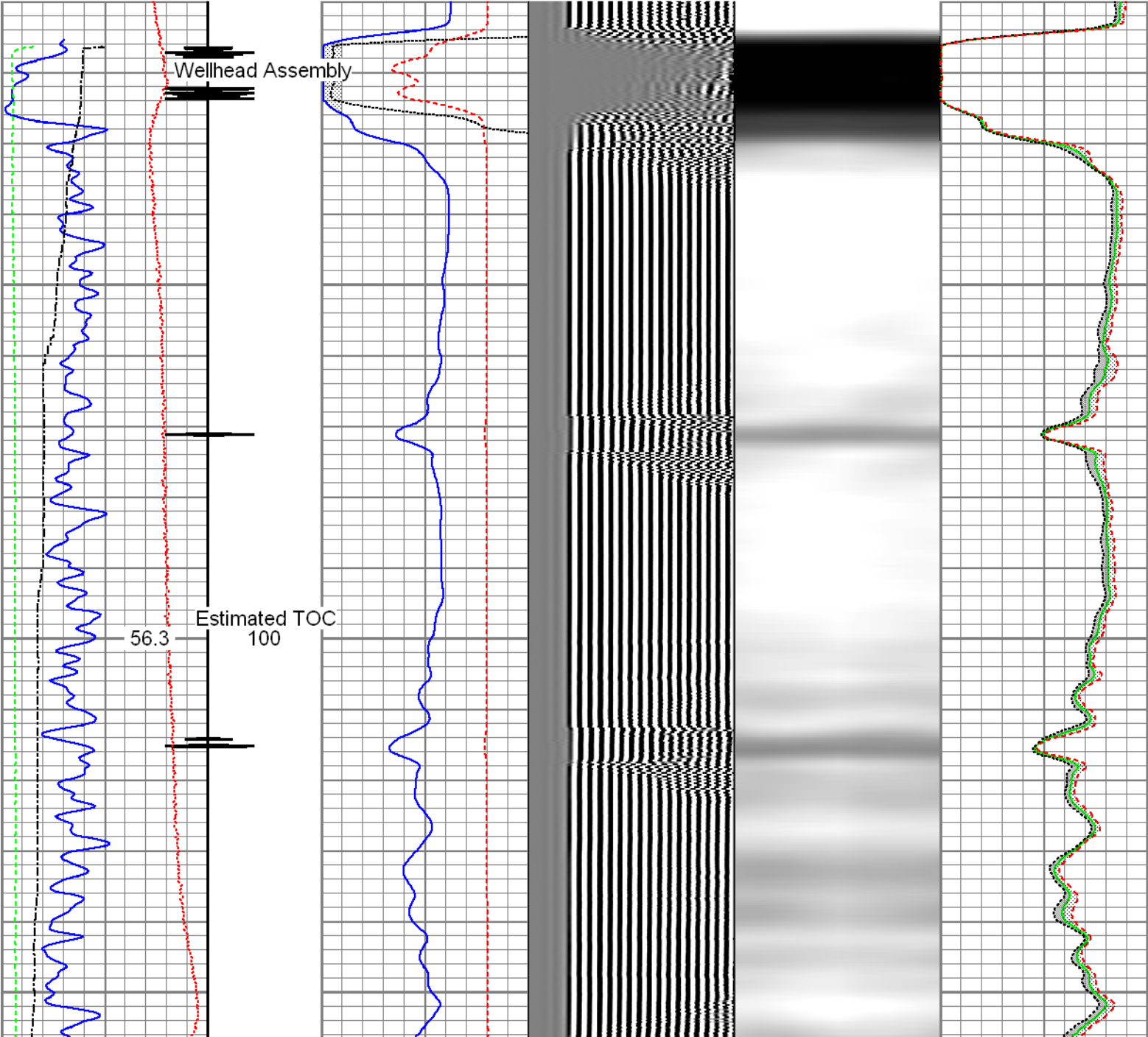


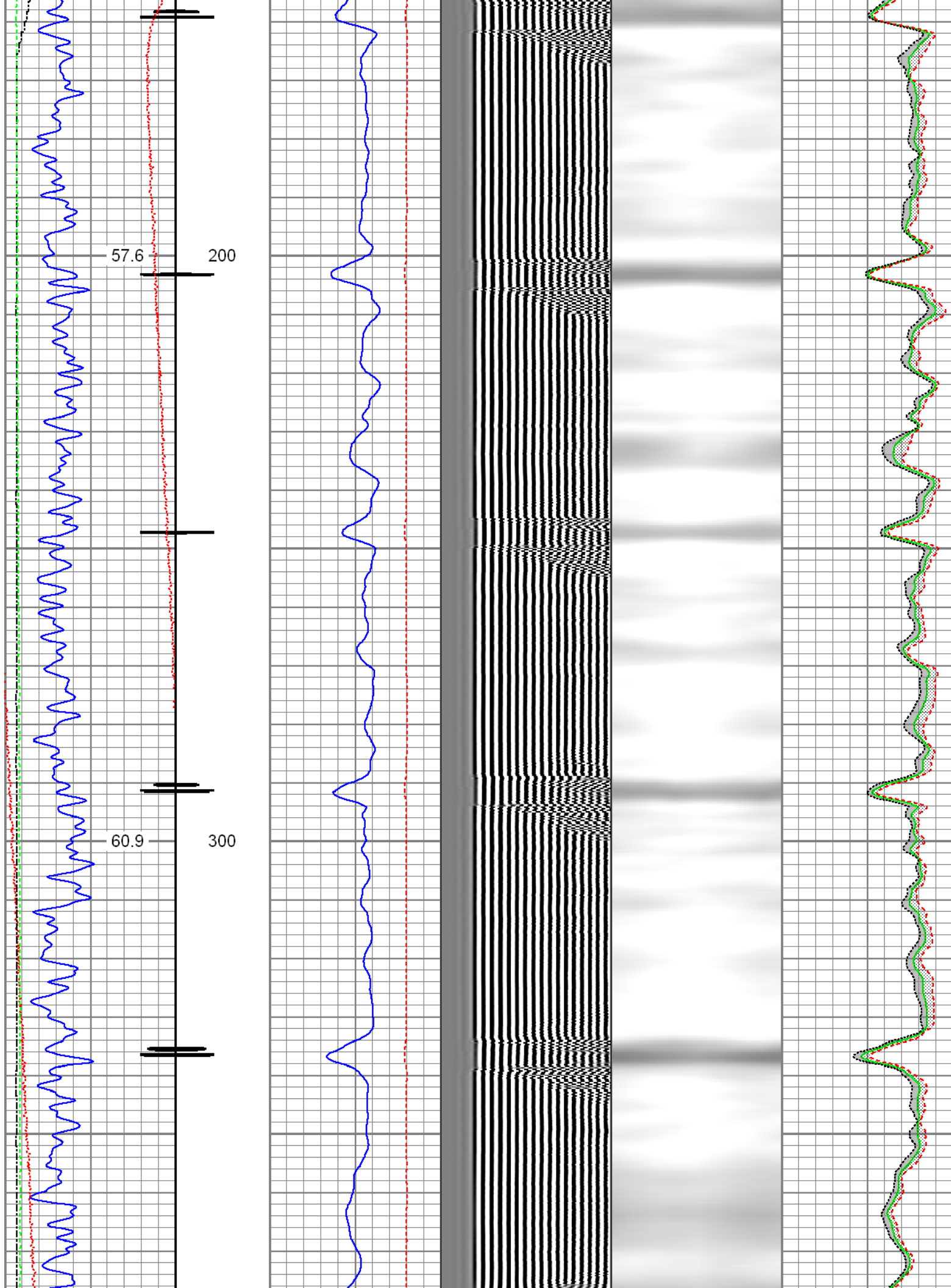
Main Pass

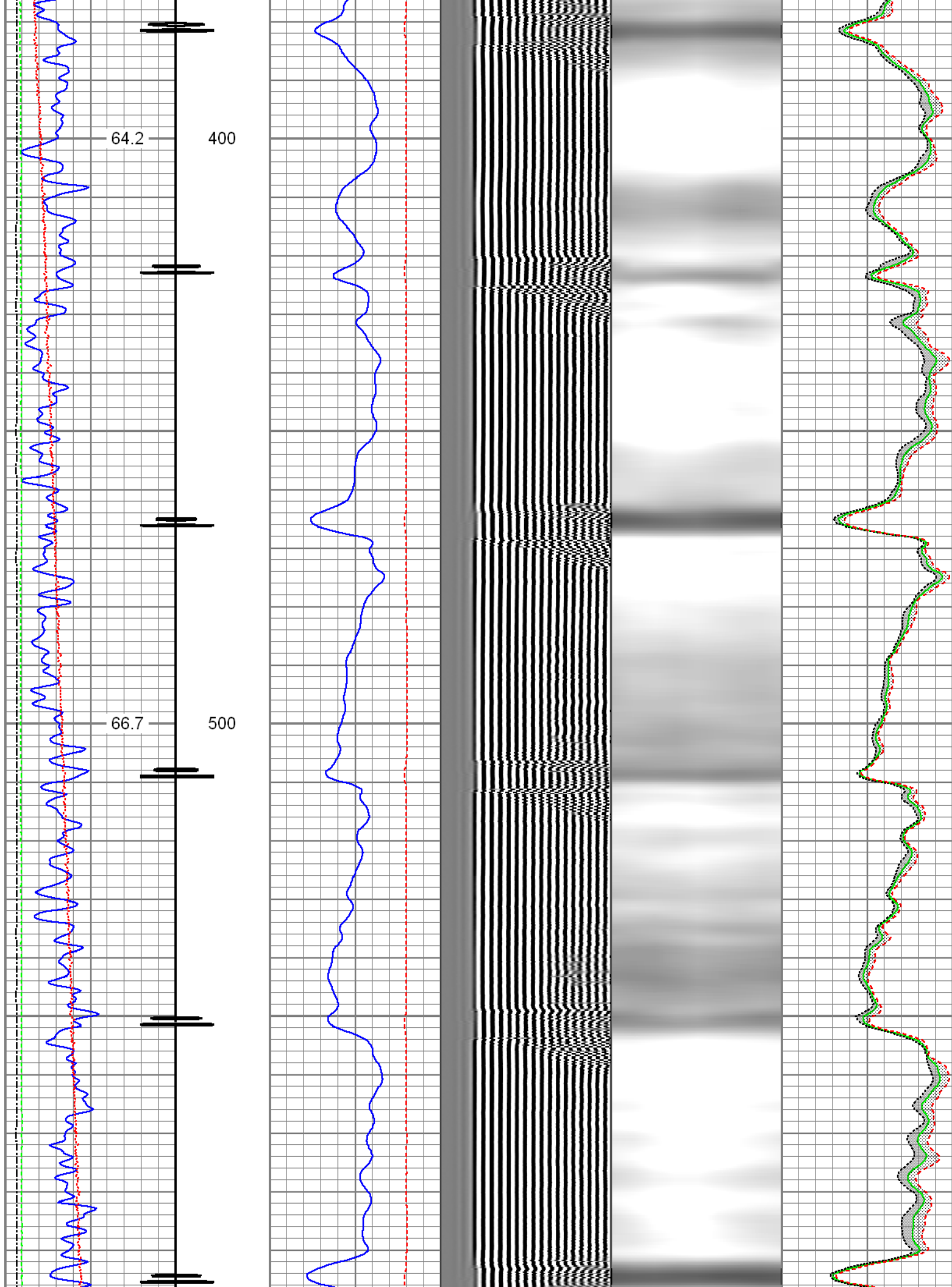
Recorded with 2800 PSI Surface Induced Pressure

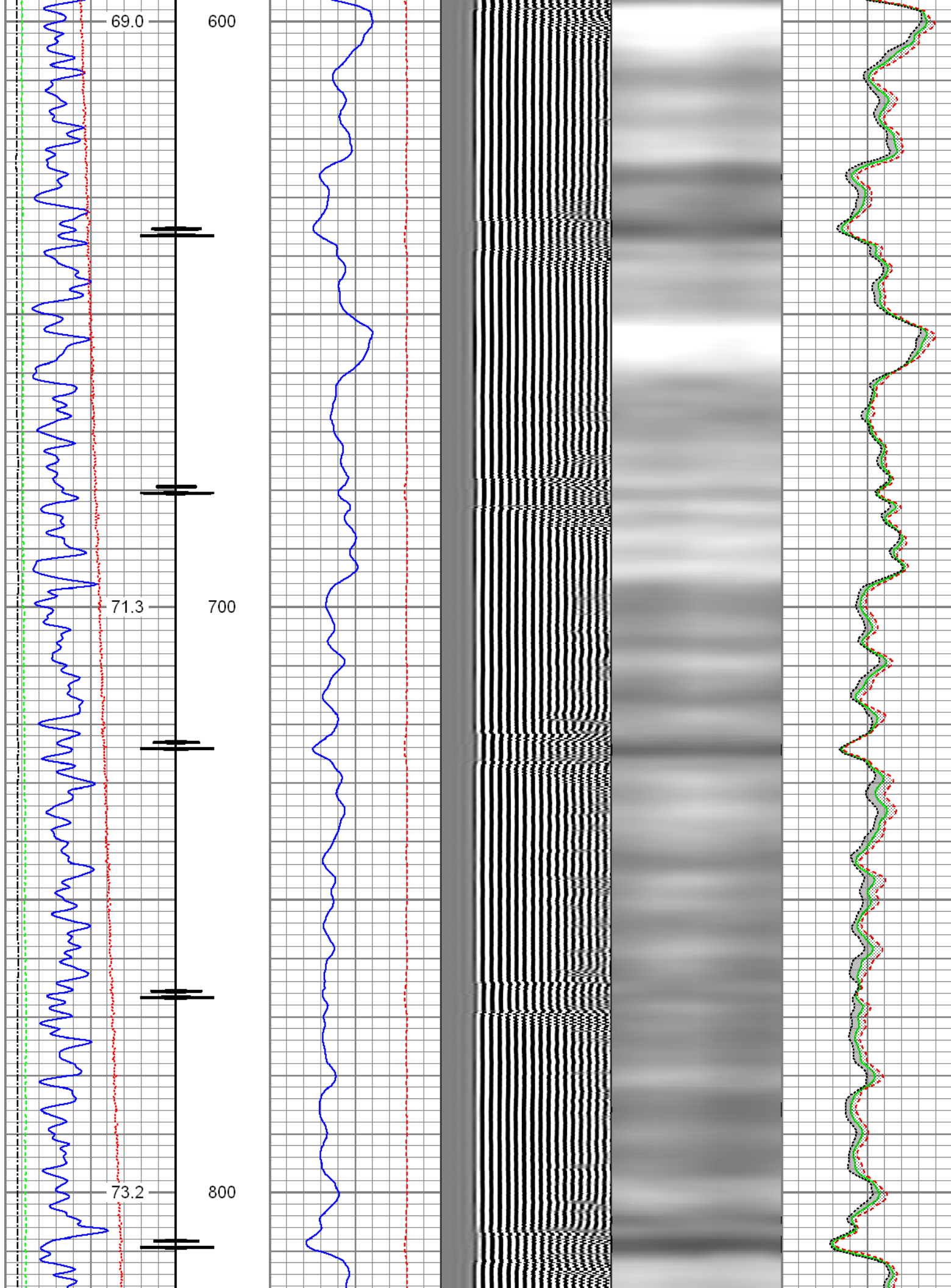
Database File: 0512342068\_anadarko\_sunflower 40c-17hz\_01-11-16\_rbl.db  
Dataset Pathname: main  
Presentation Format: radii  
Dataset Creation: Mon Jan 11 15:10:28 2016 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

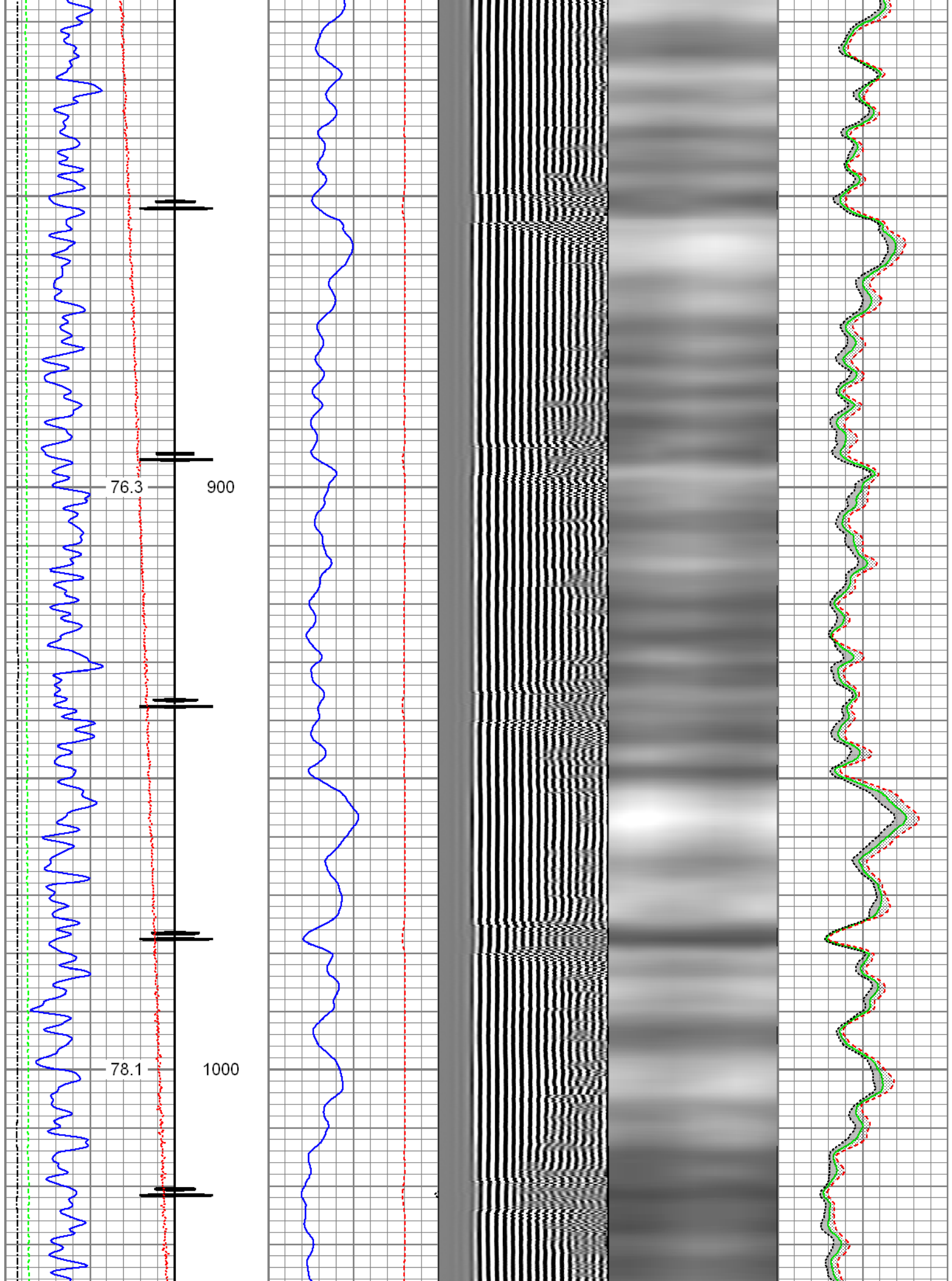
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

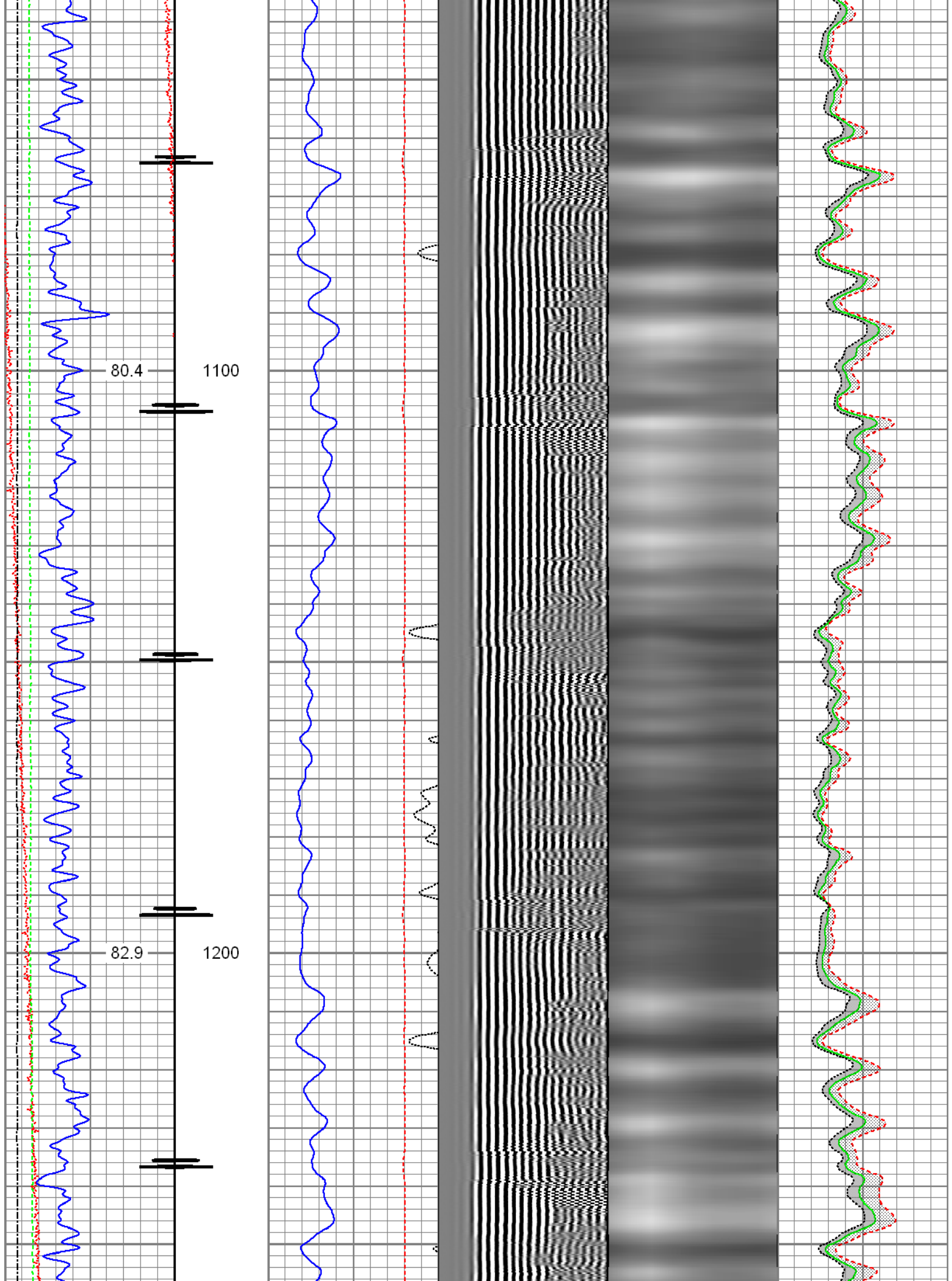


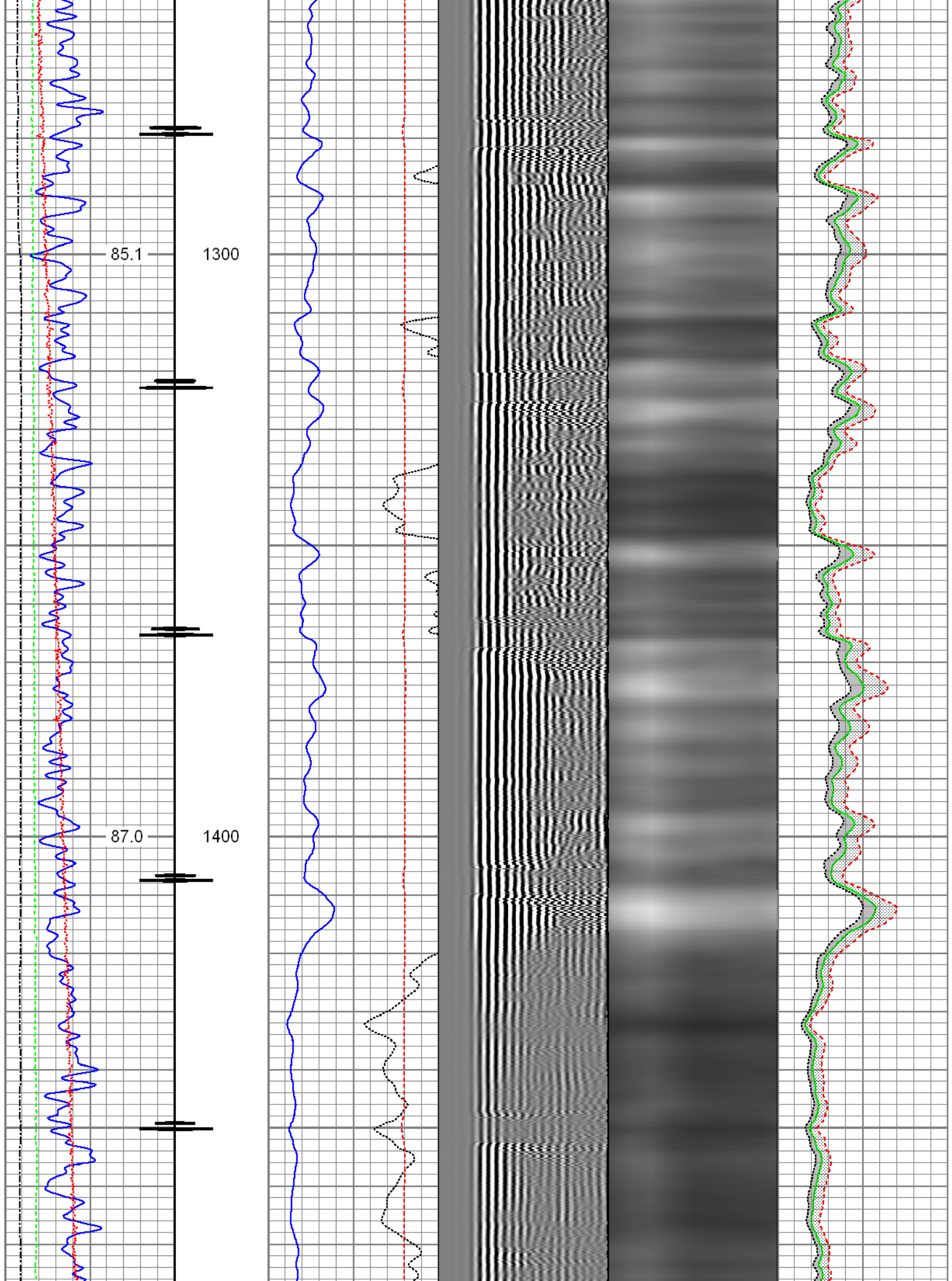


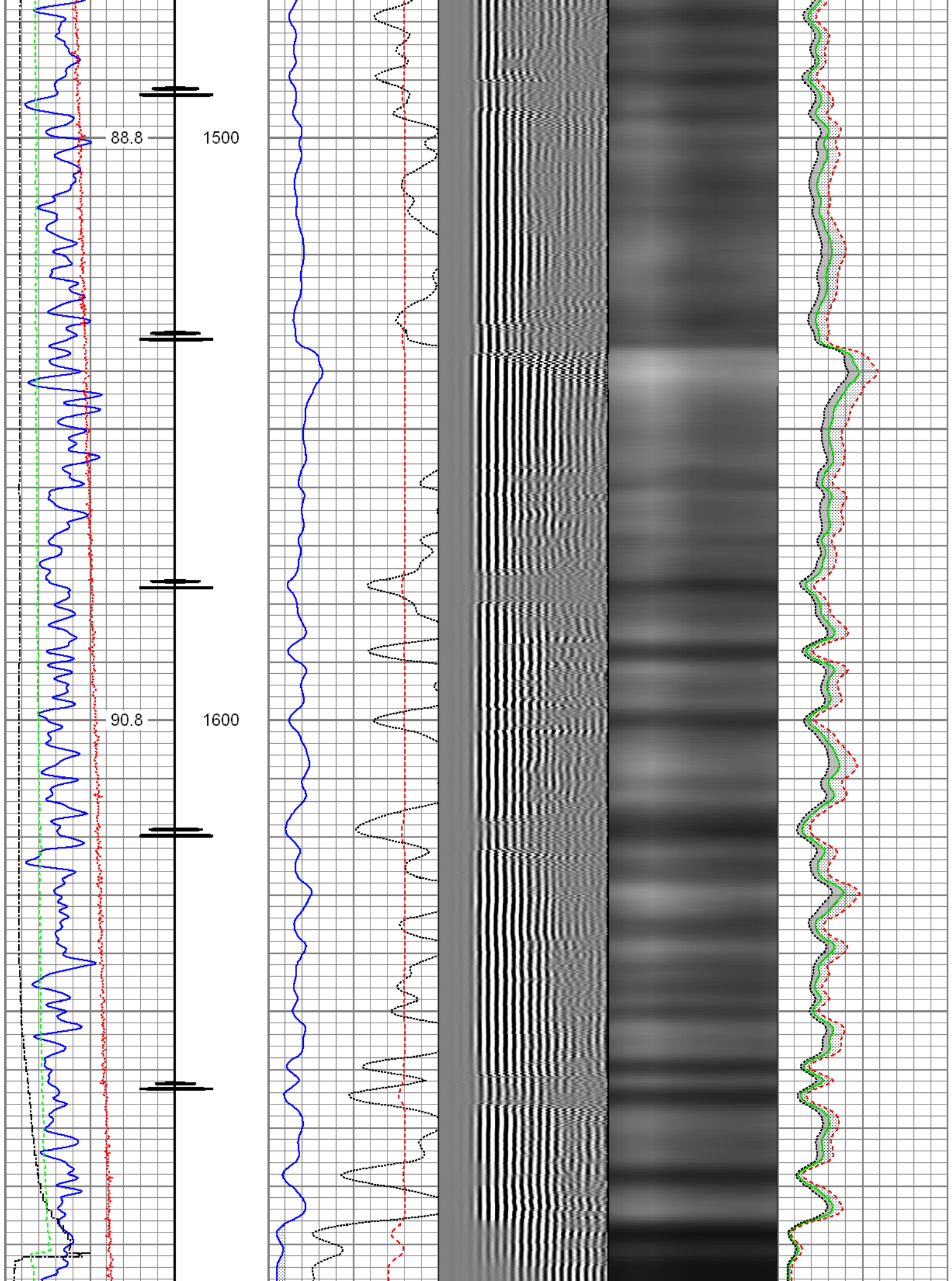


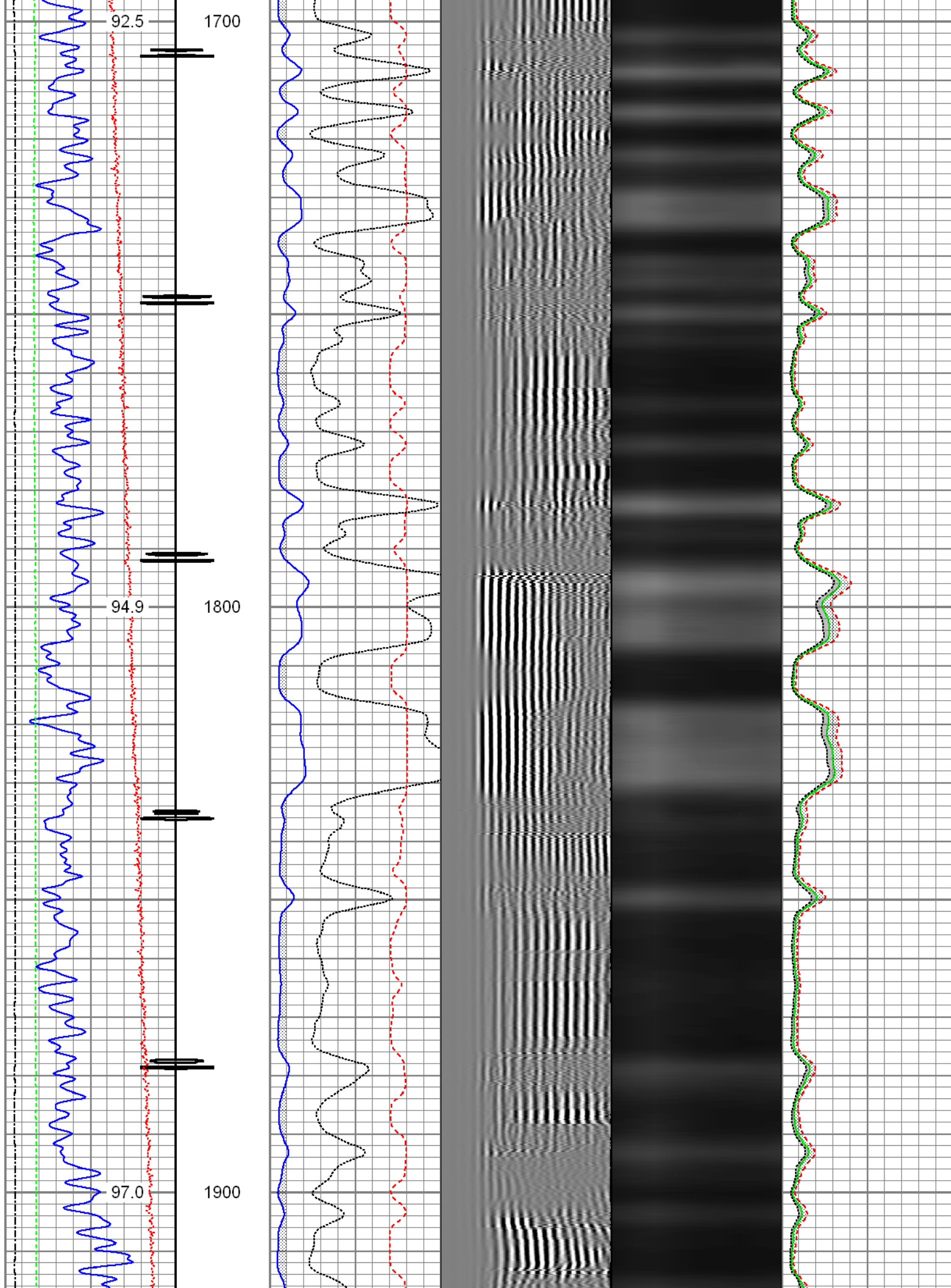


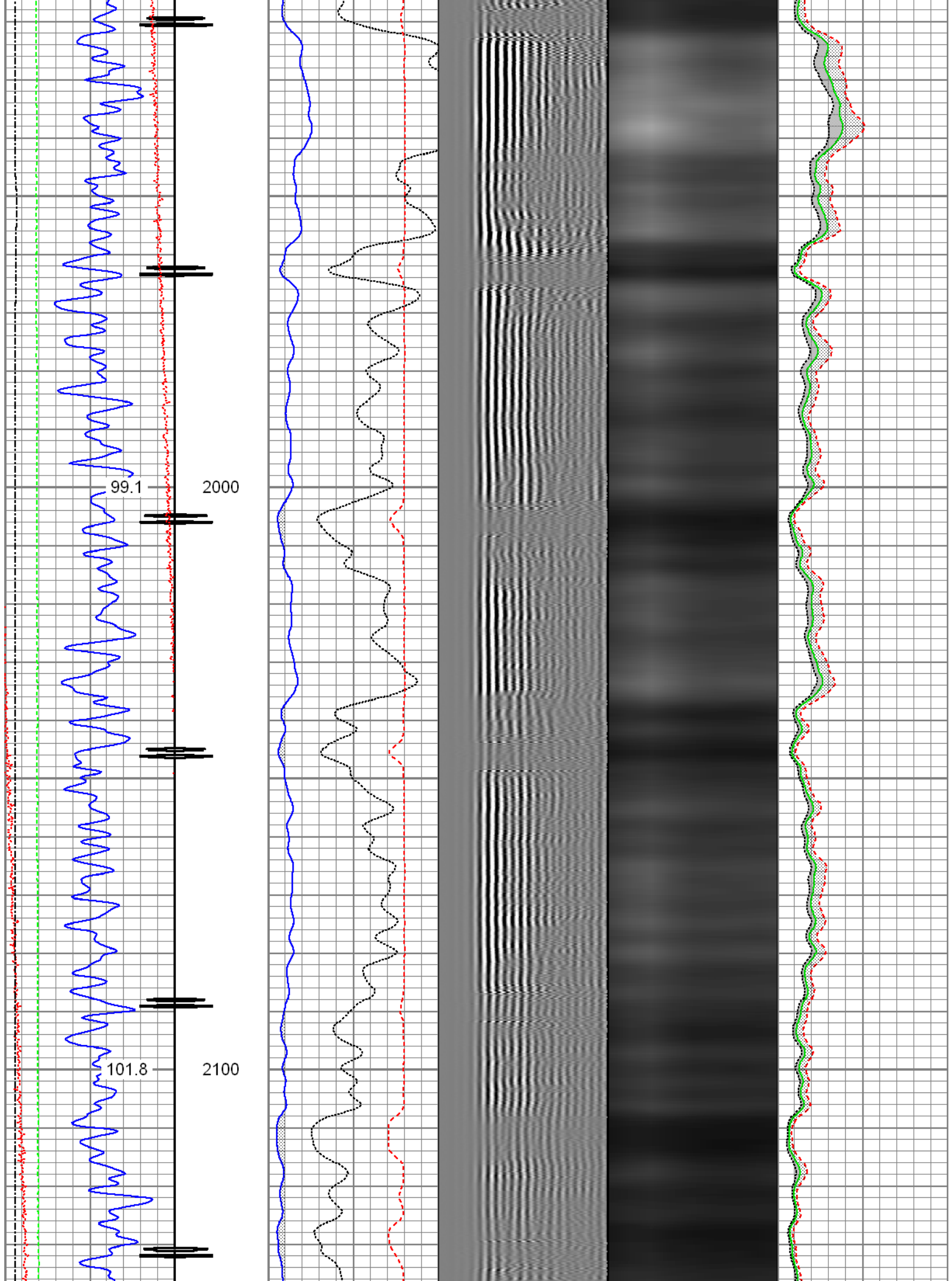


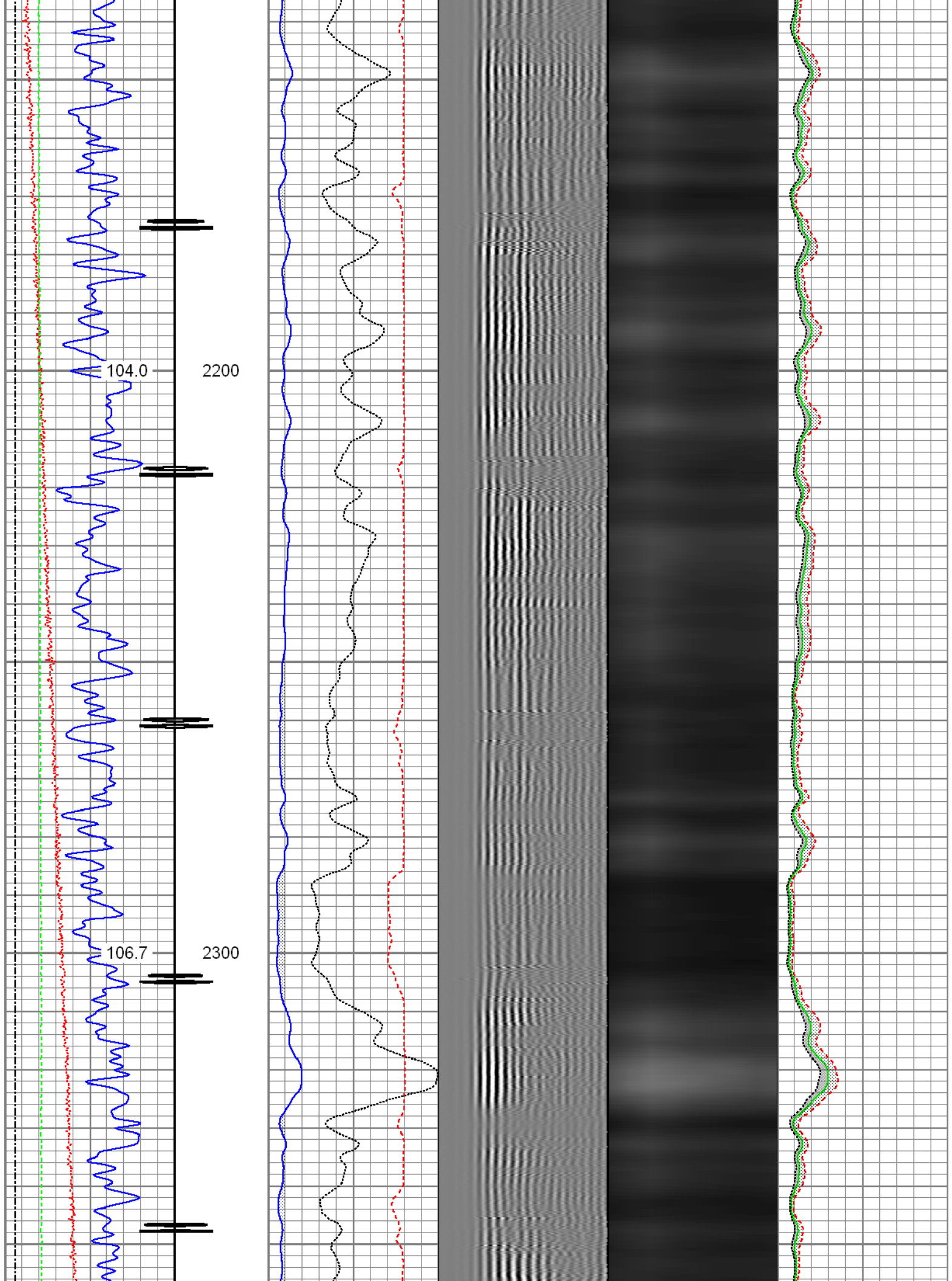


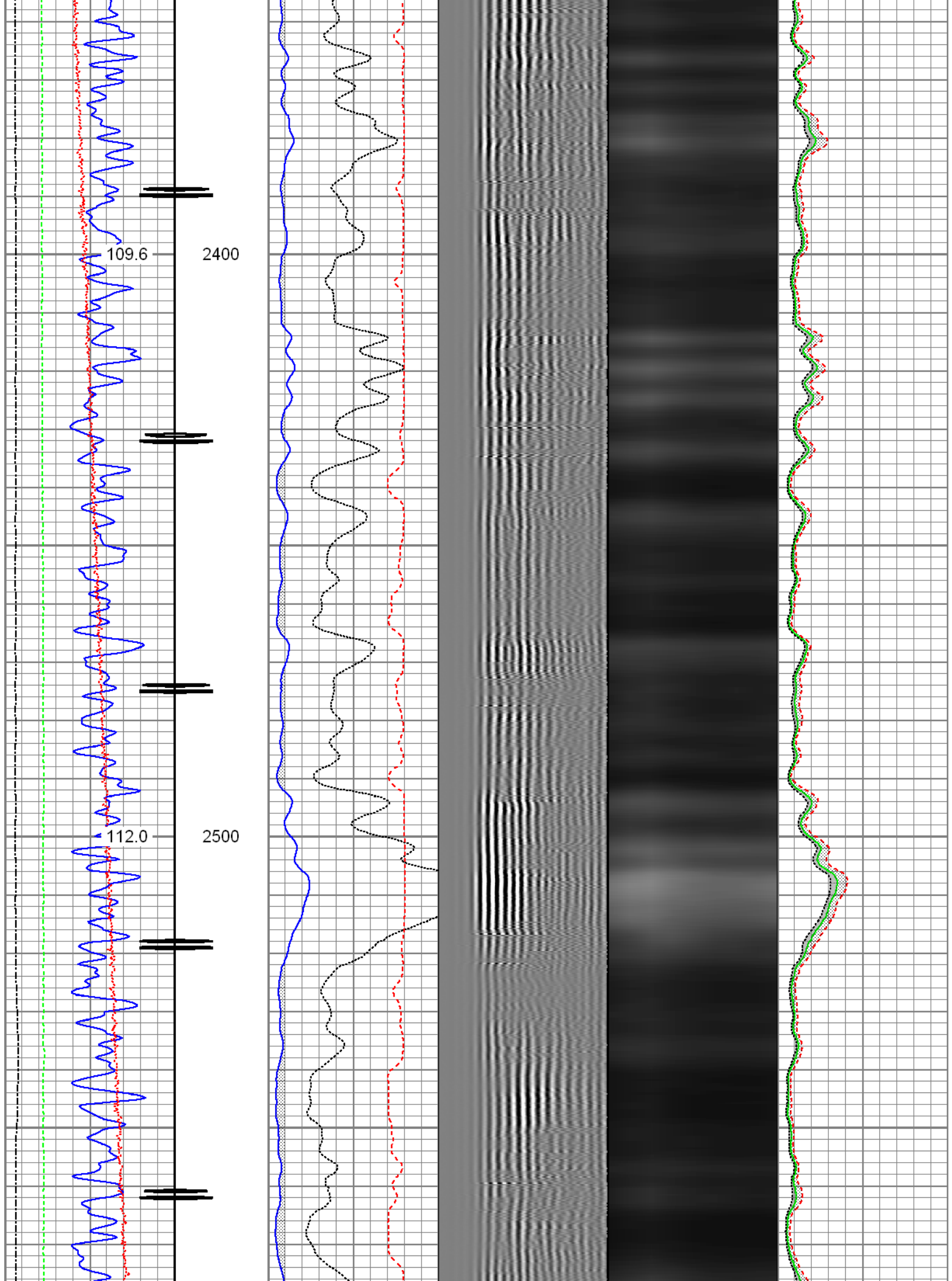


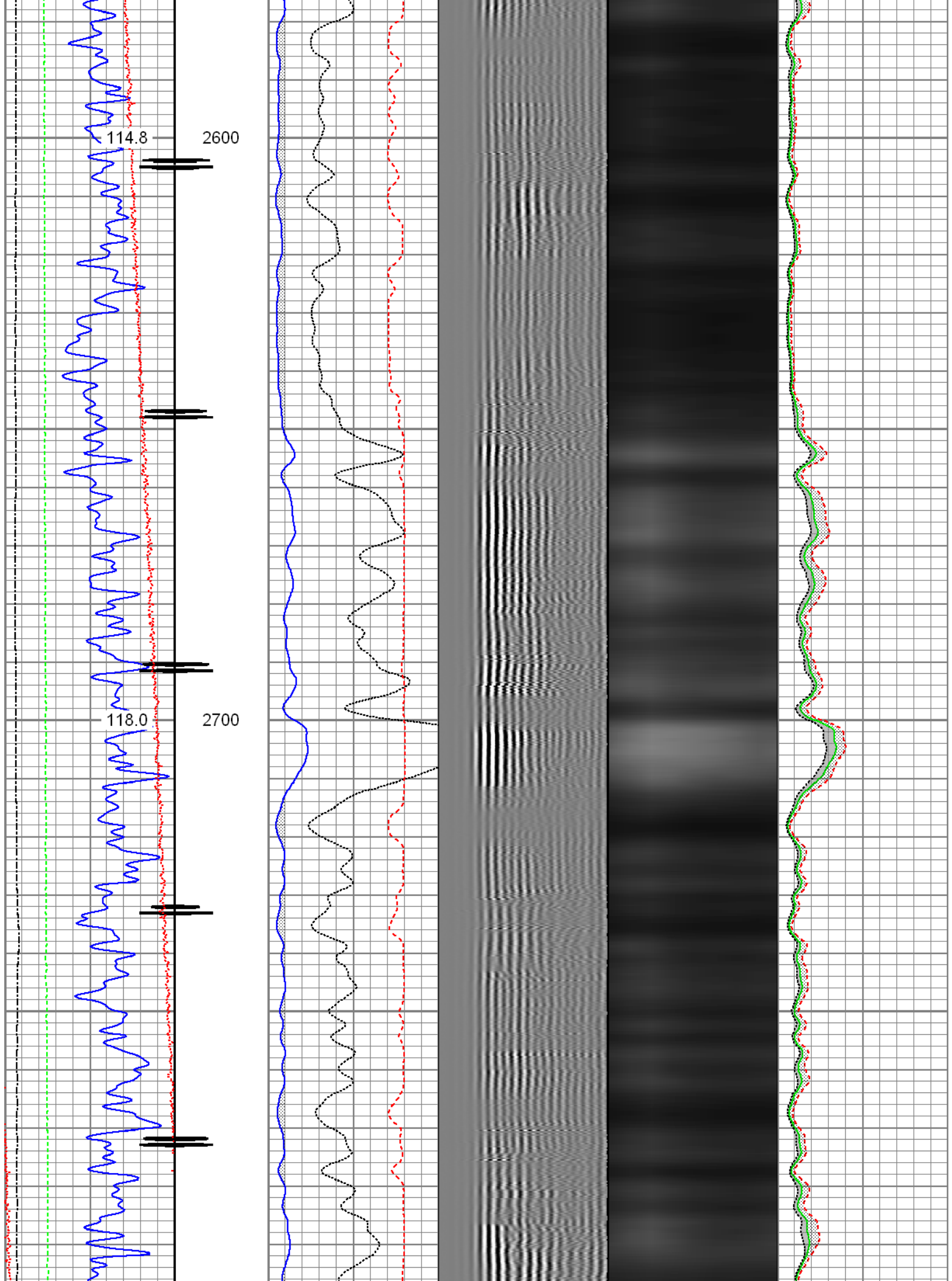


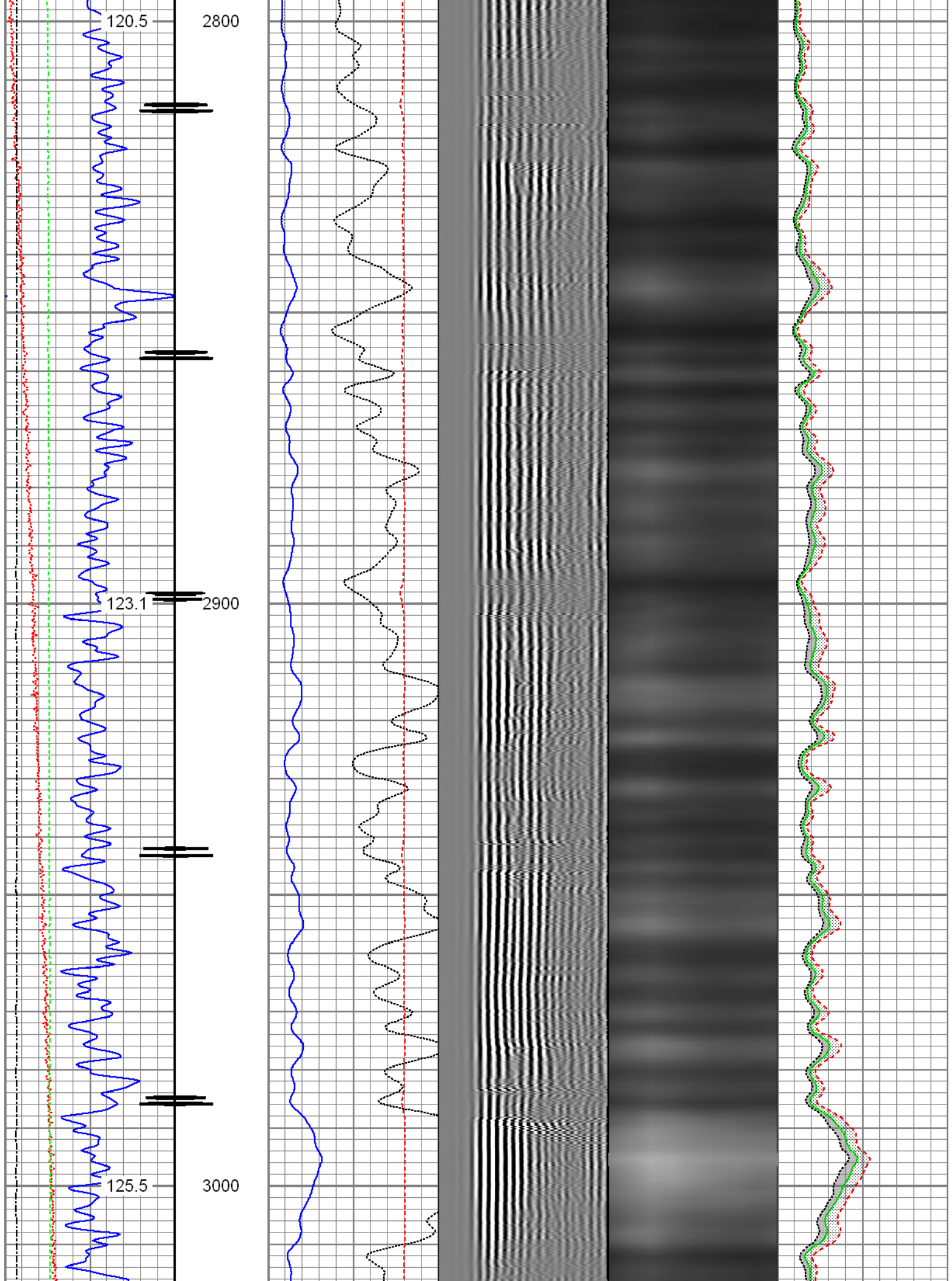


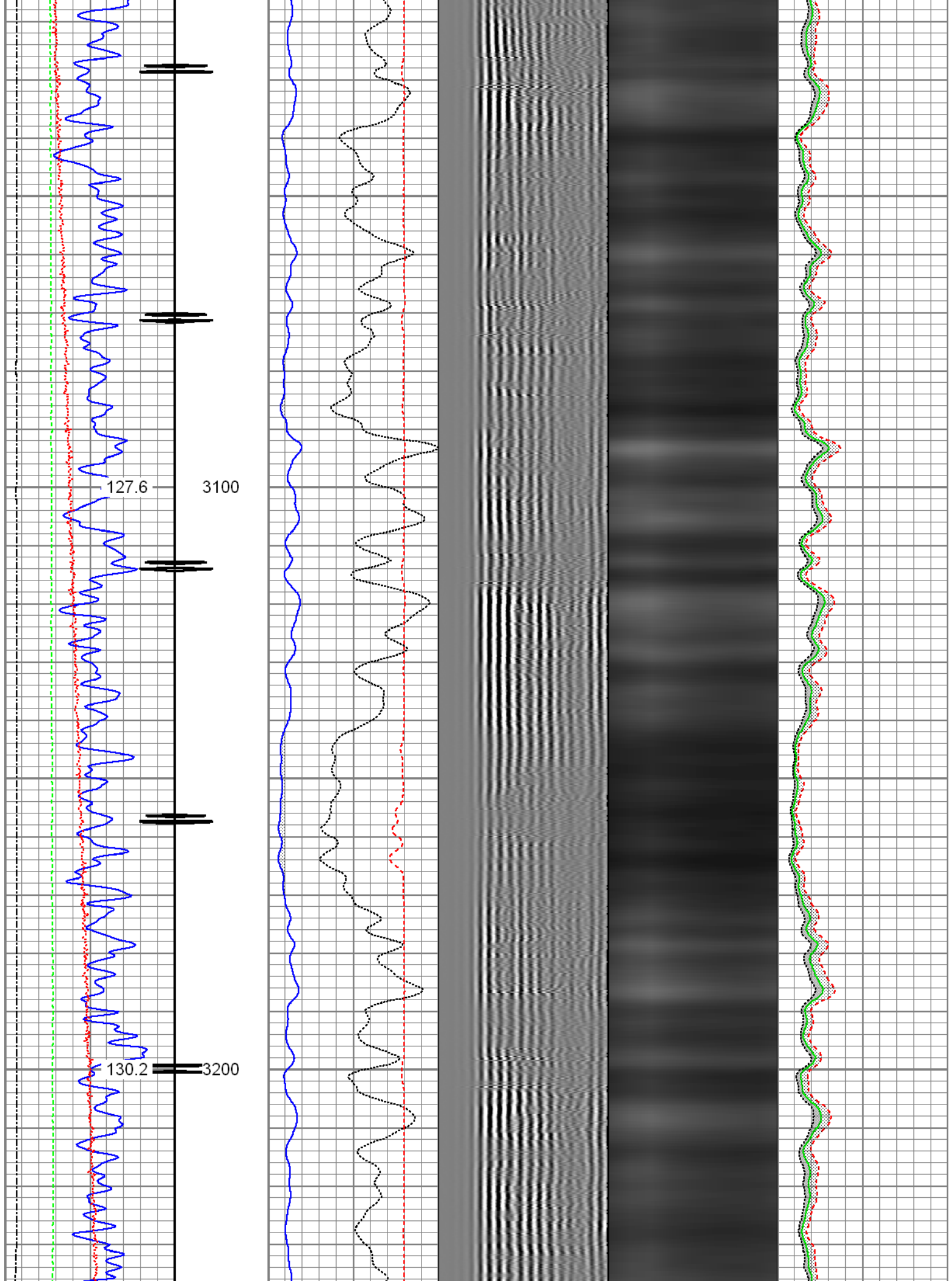


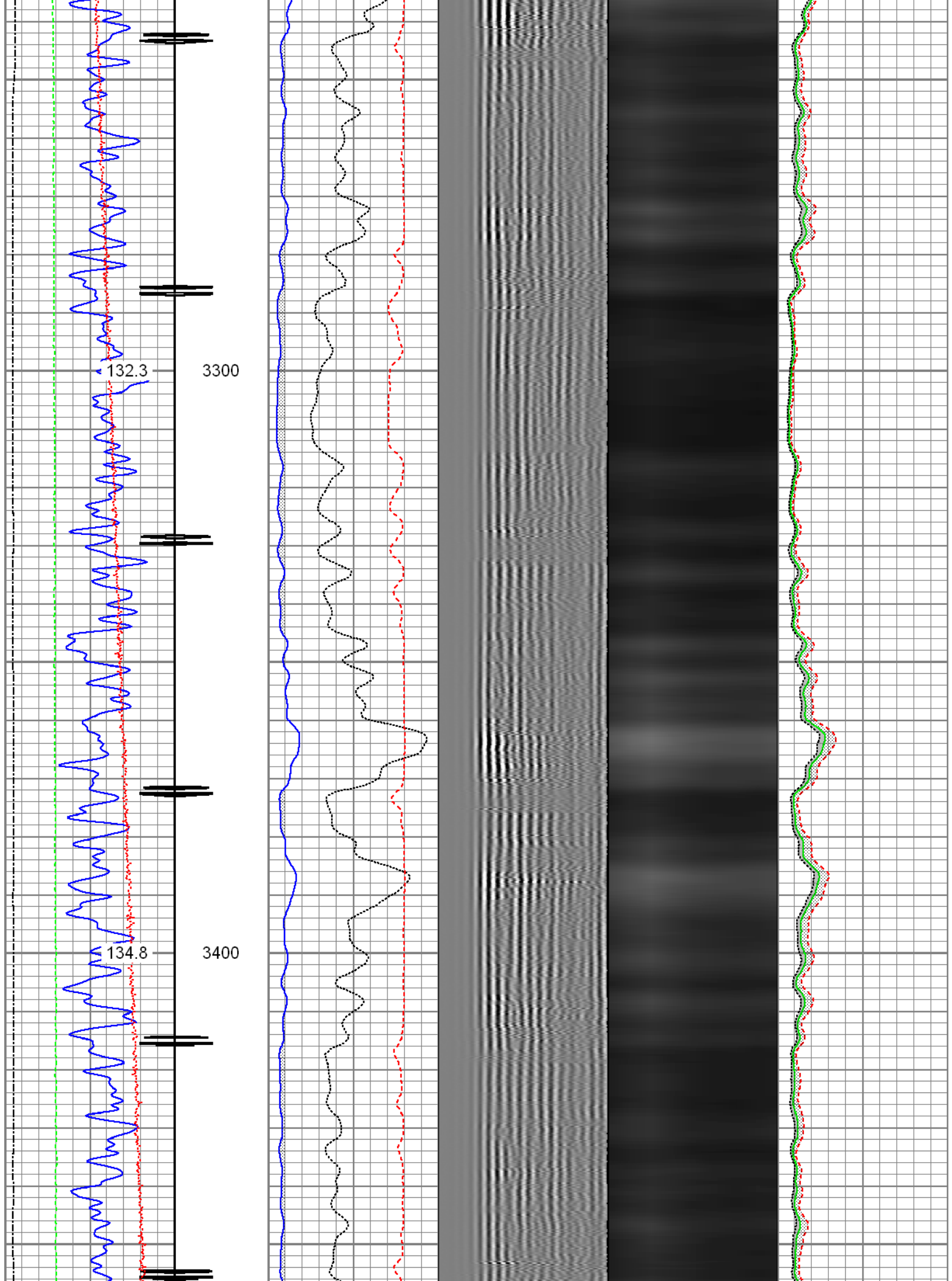


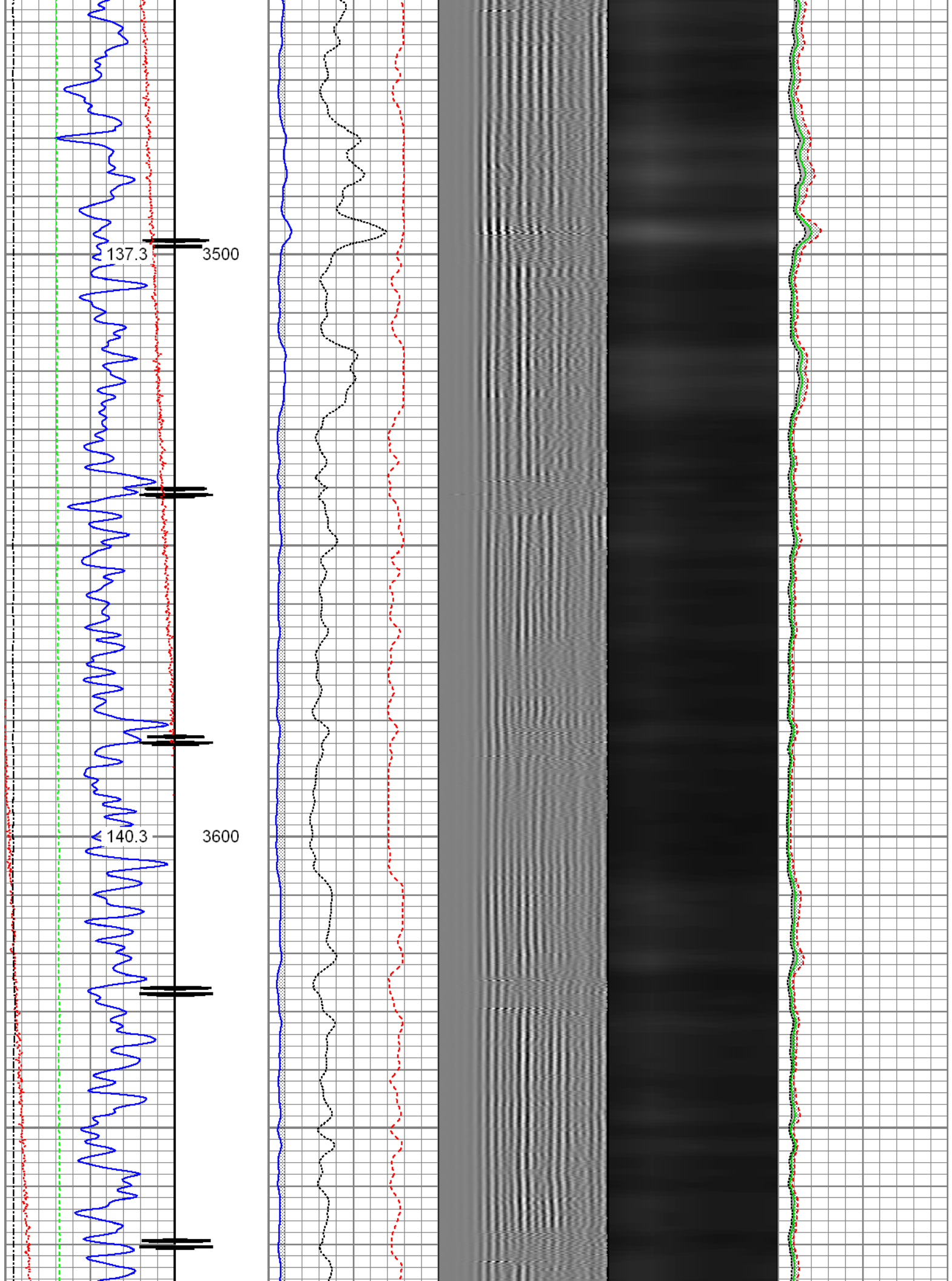


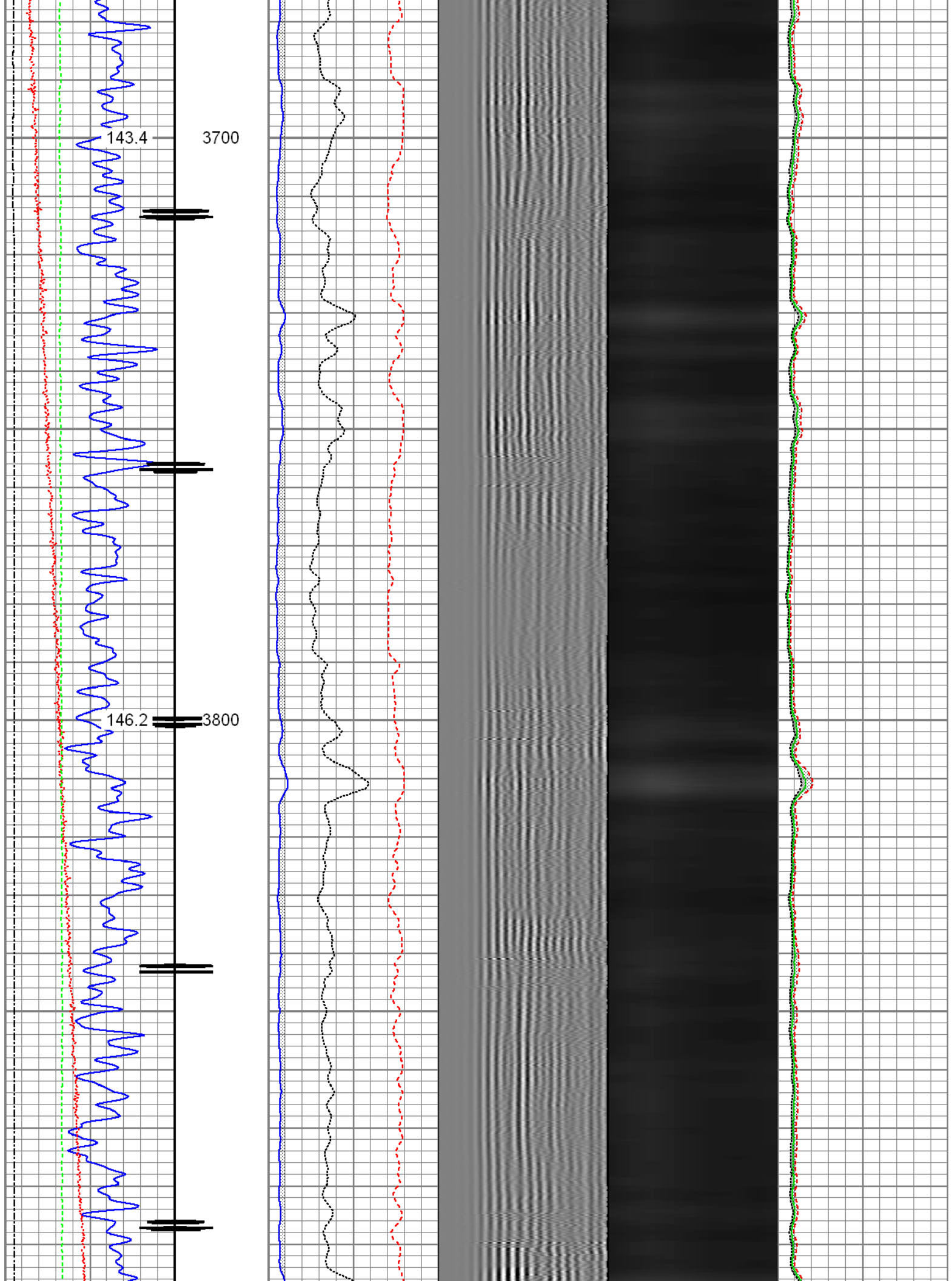


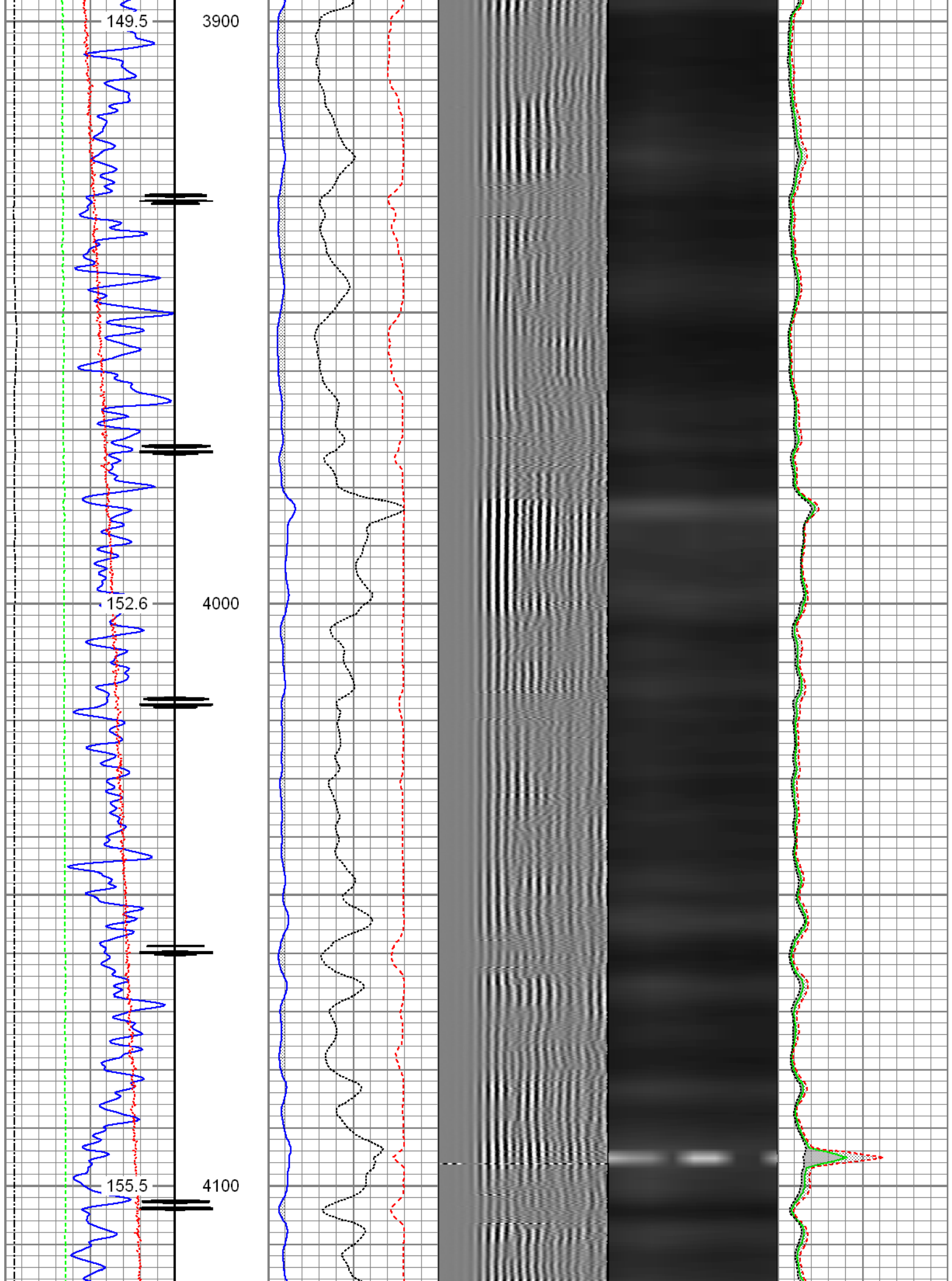


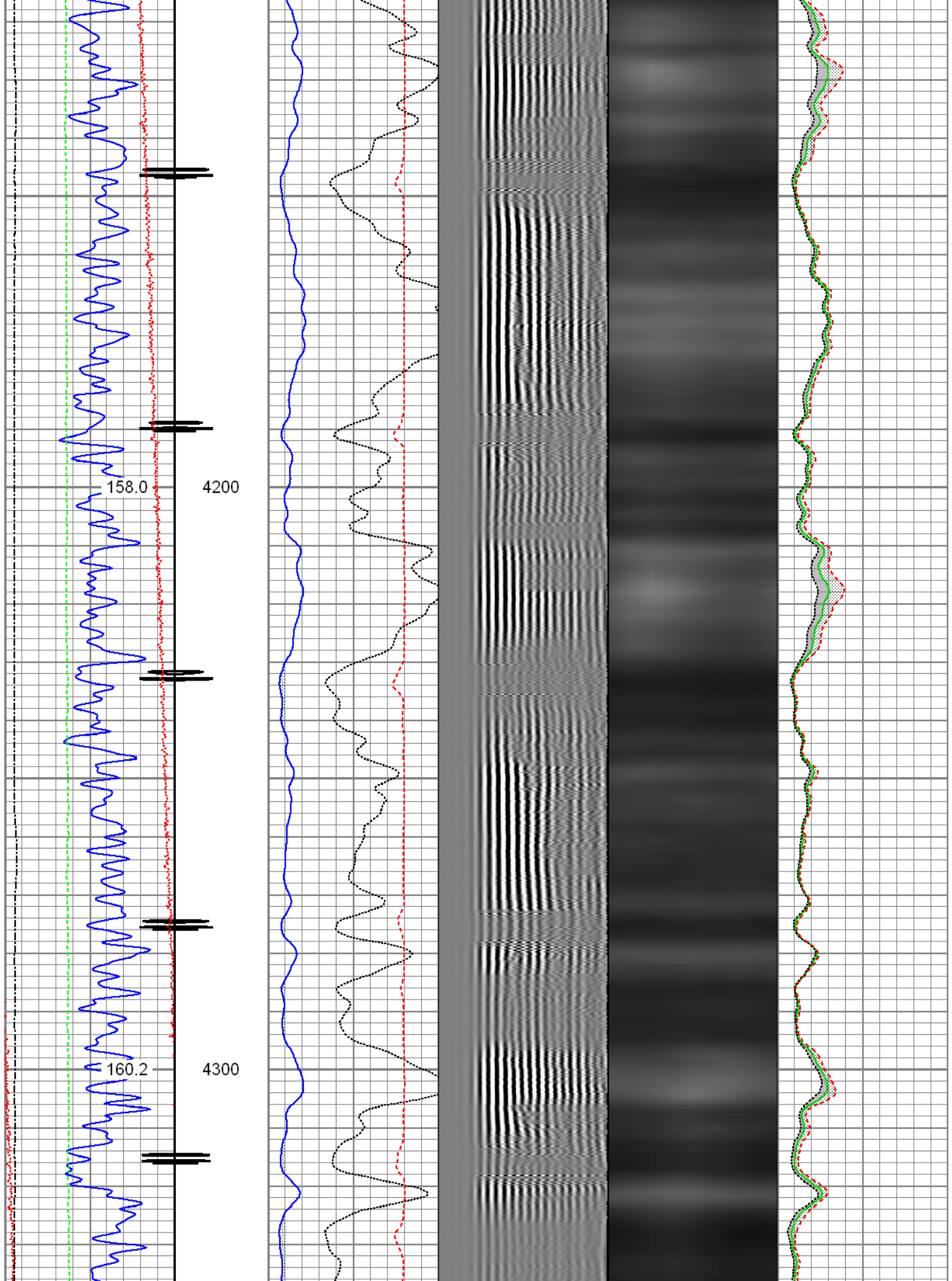


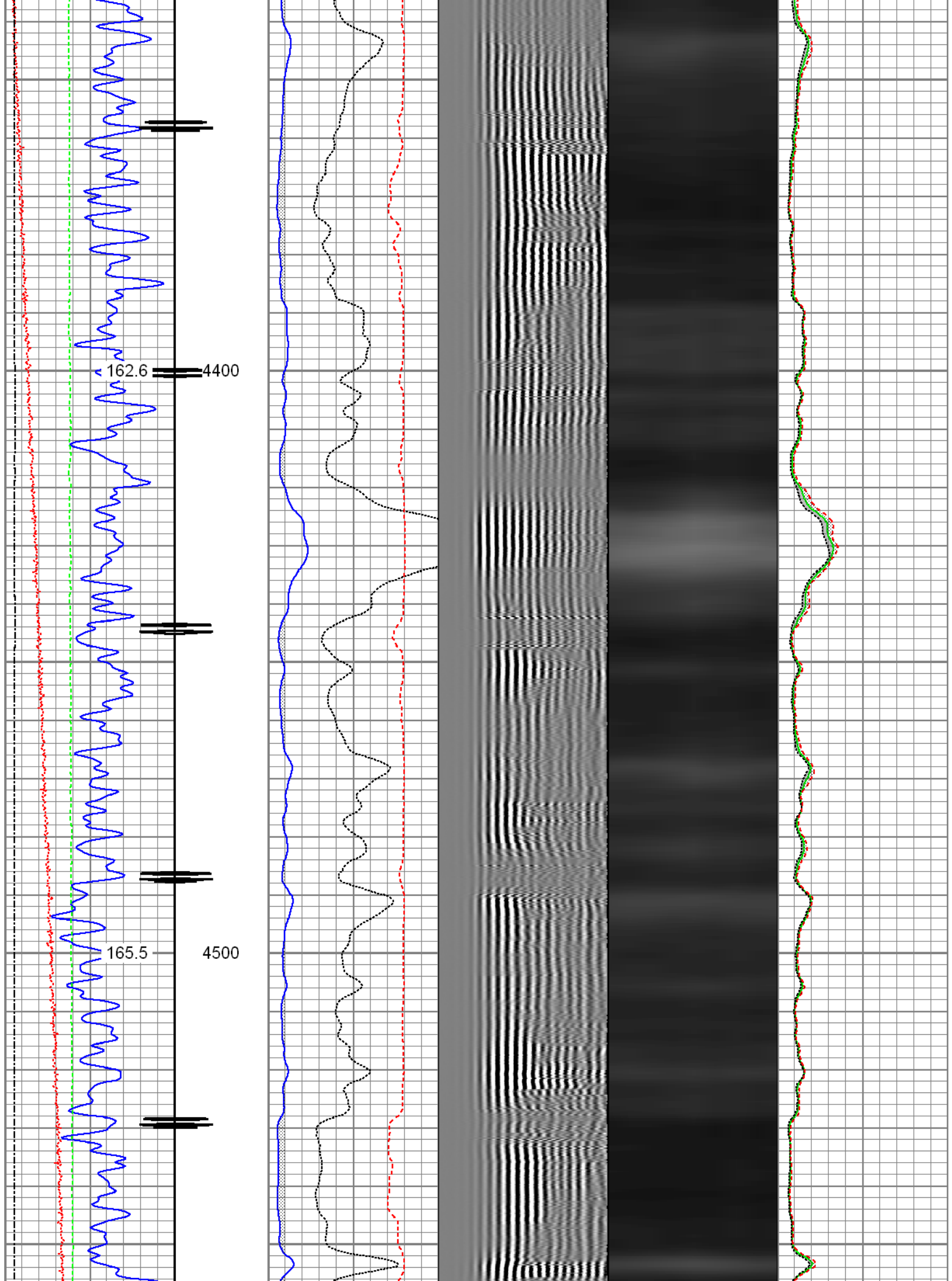


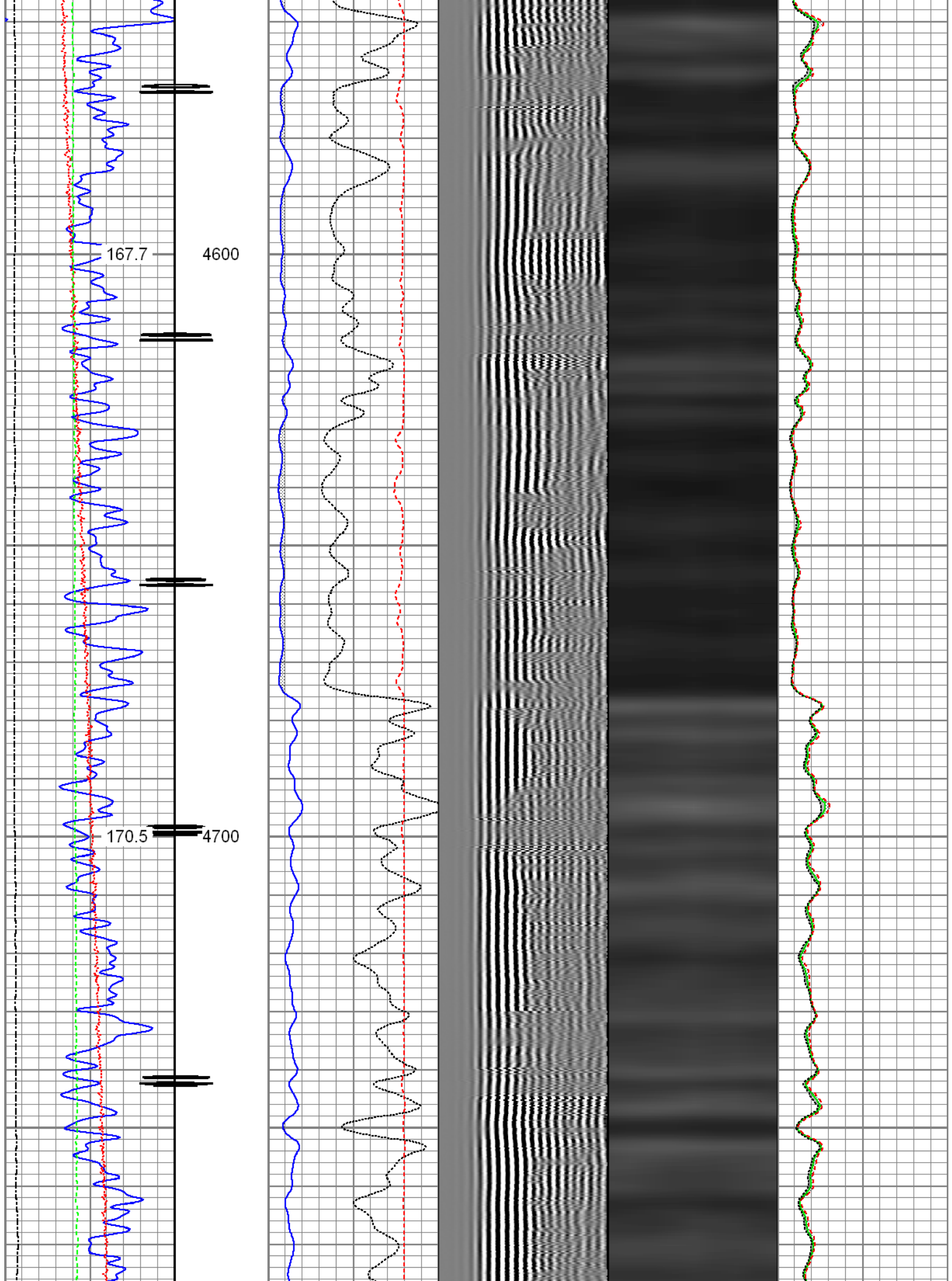


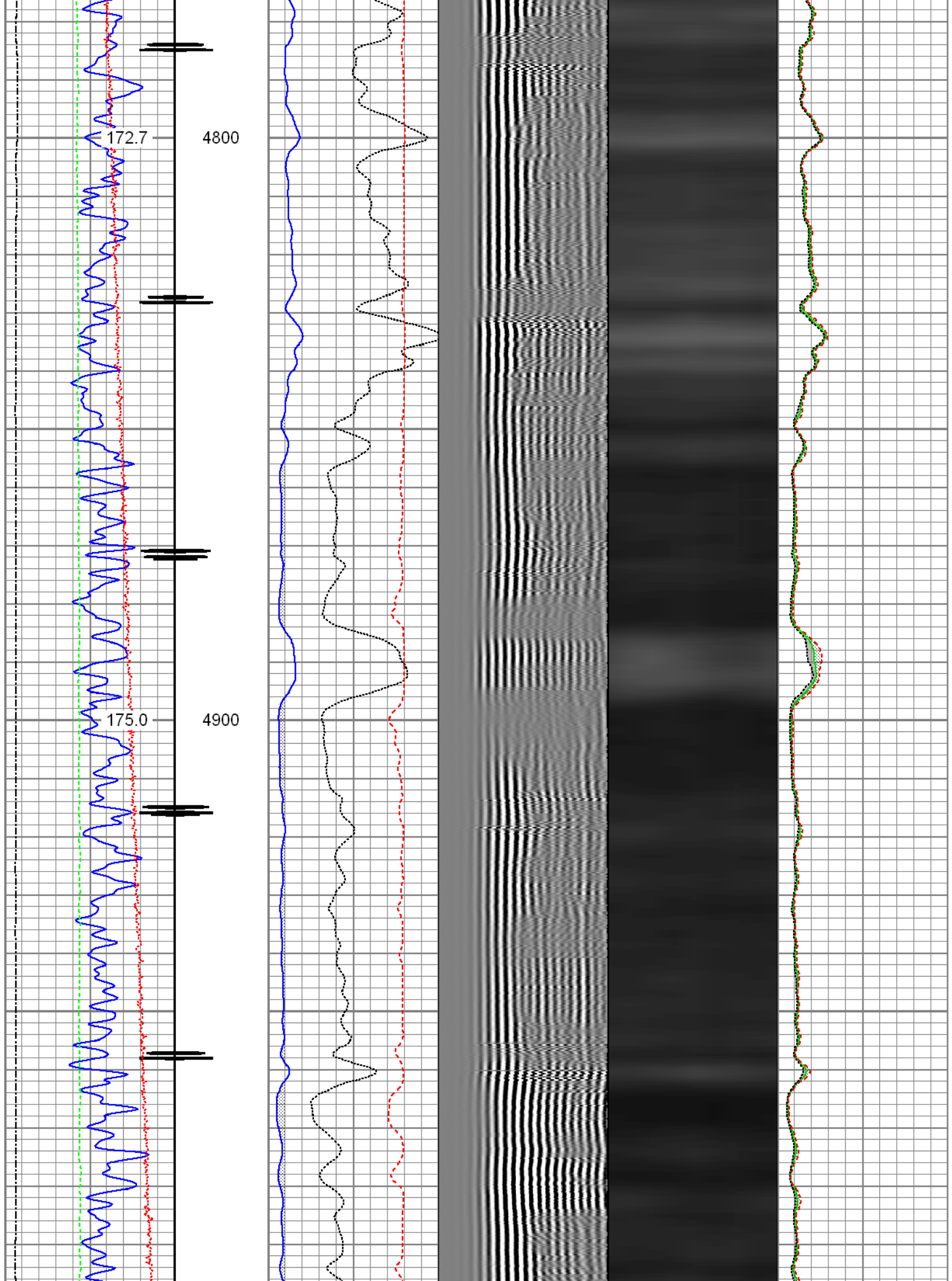


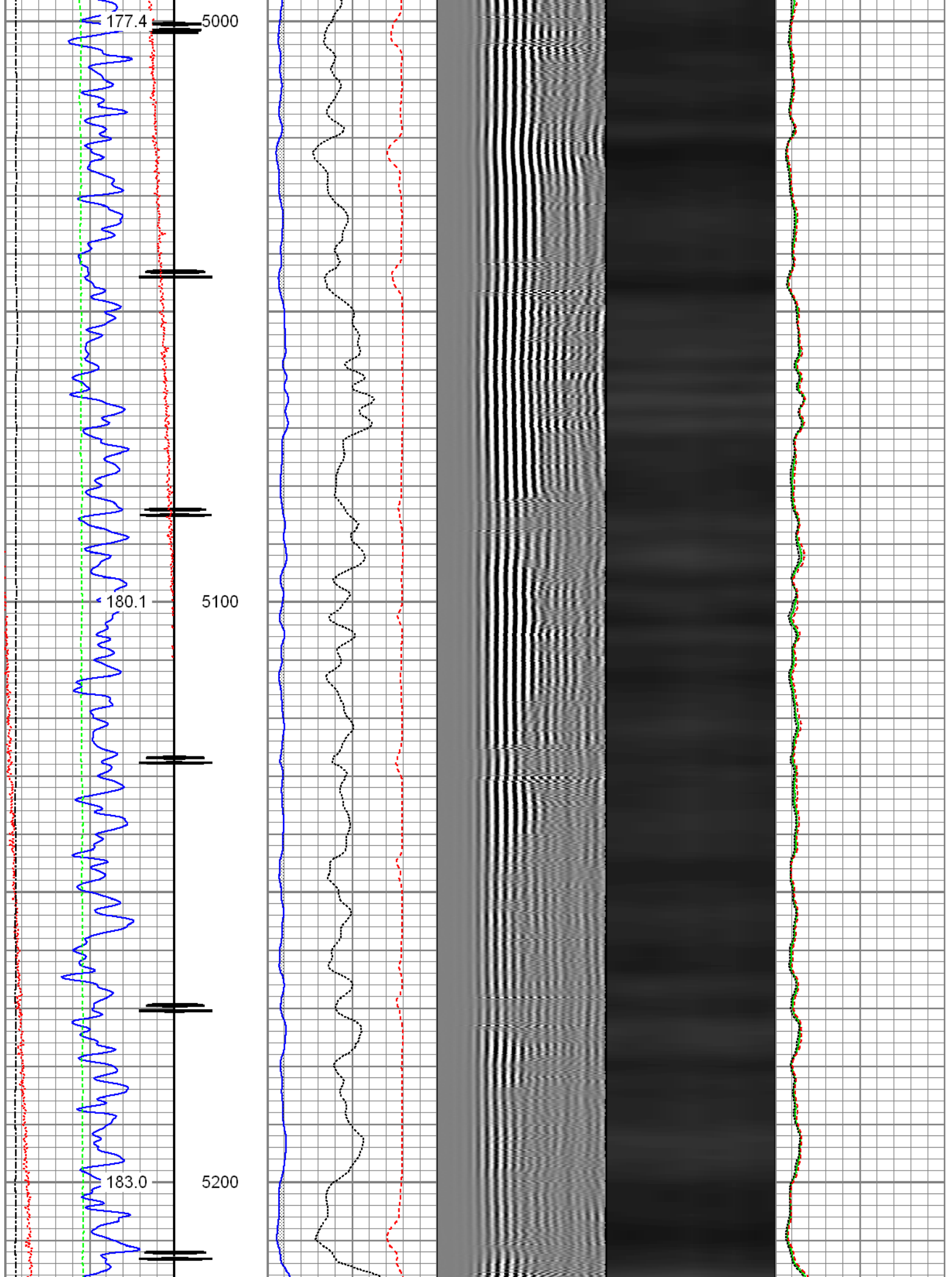


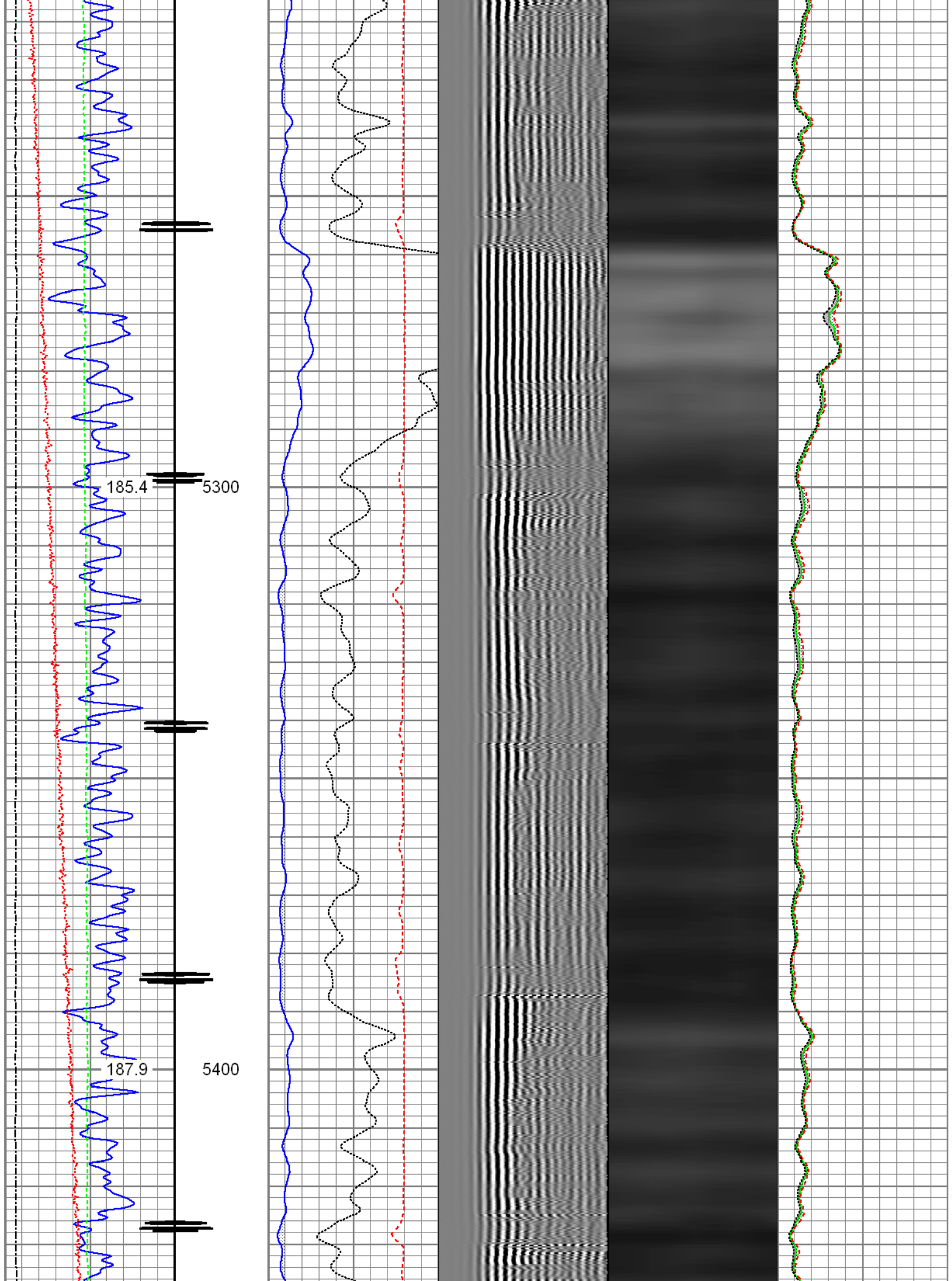


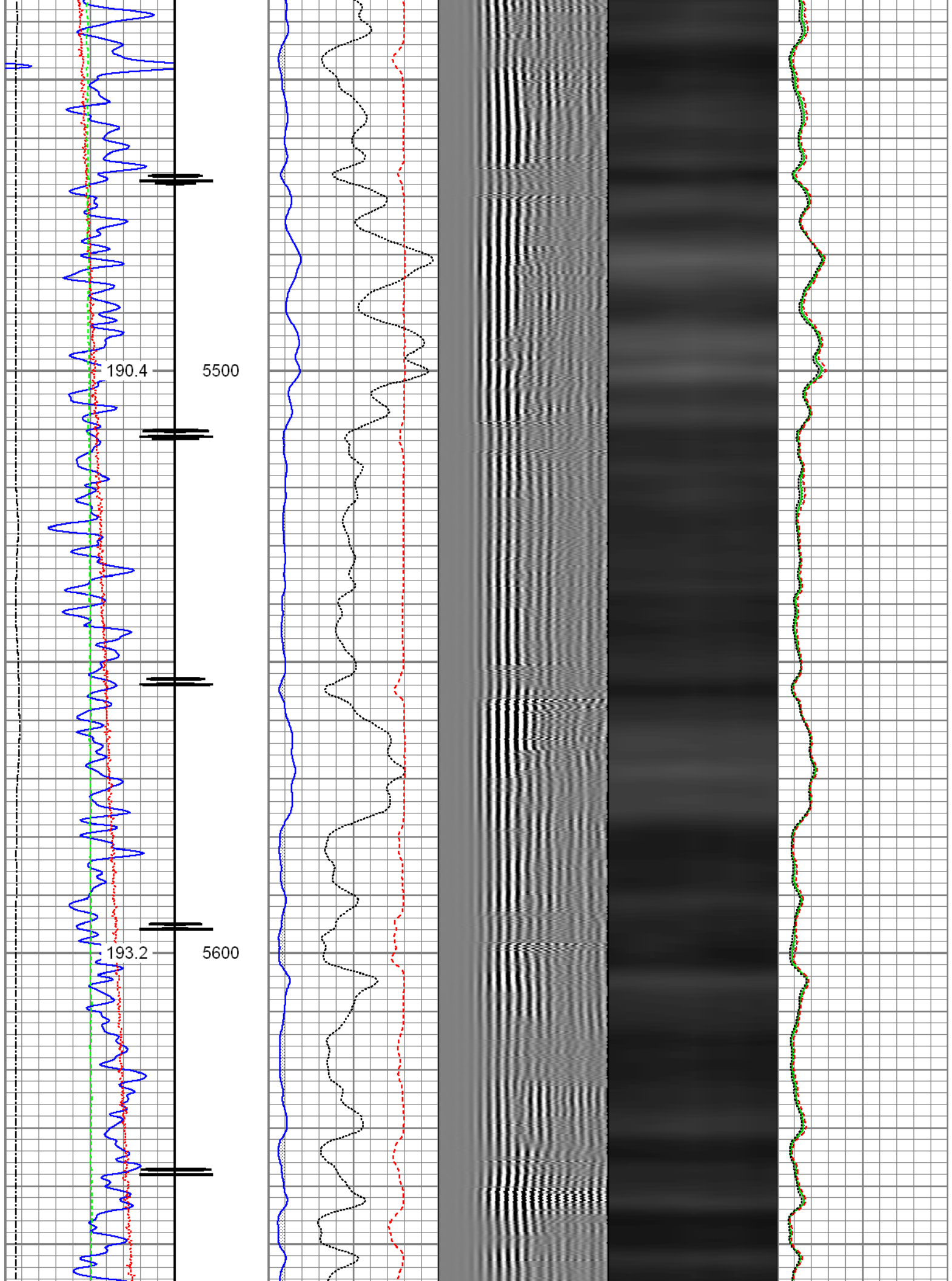


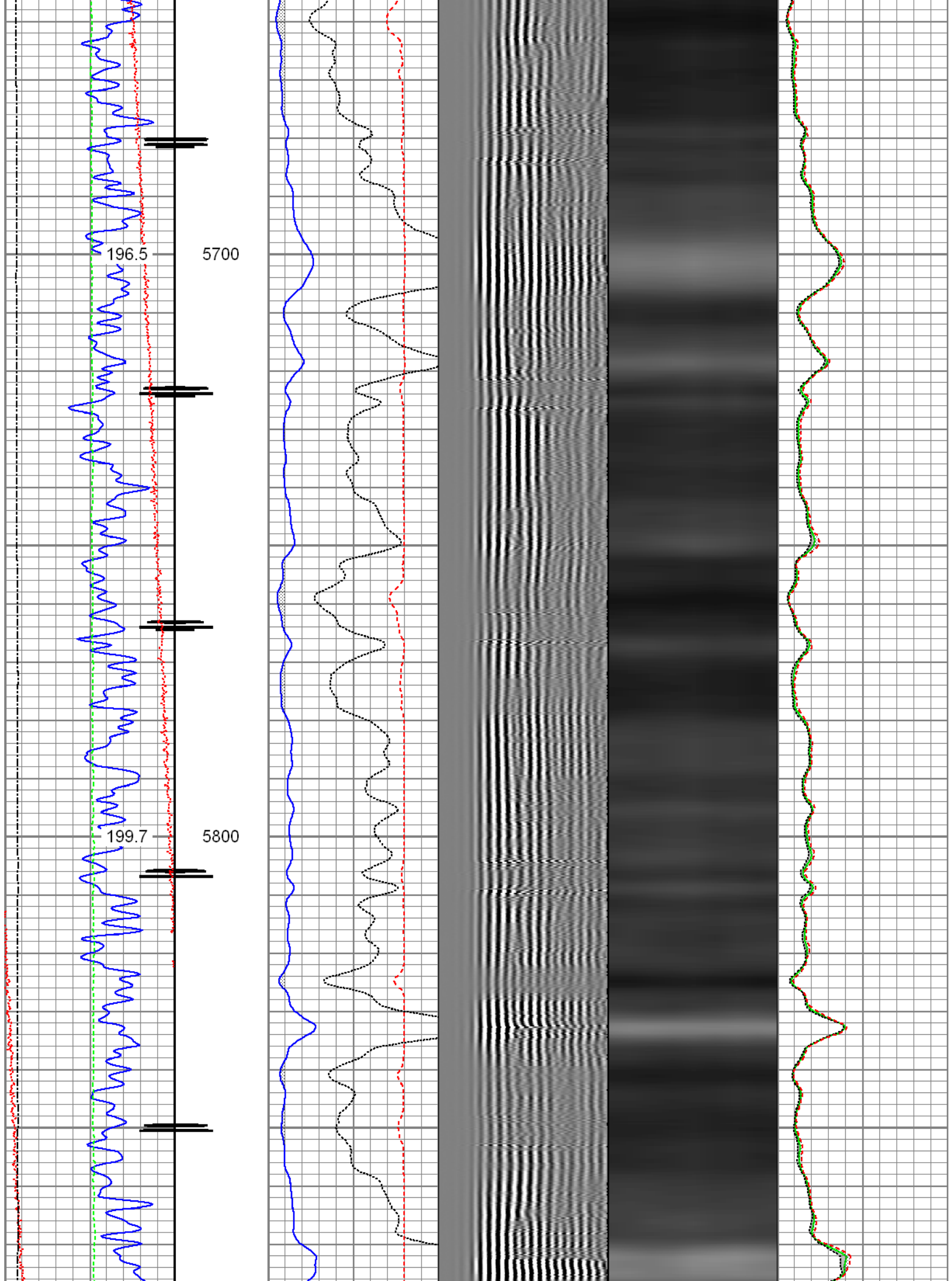


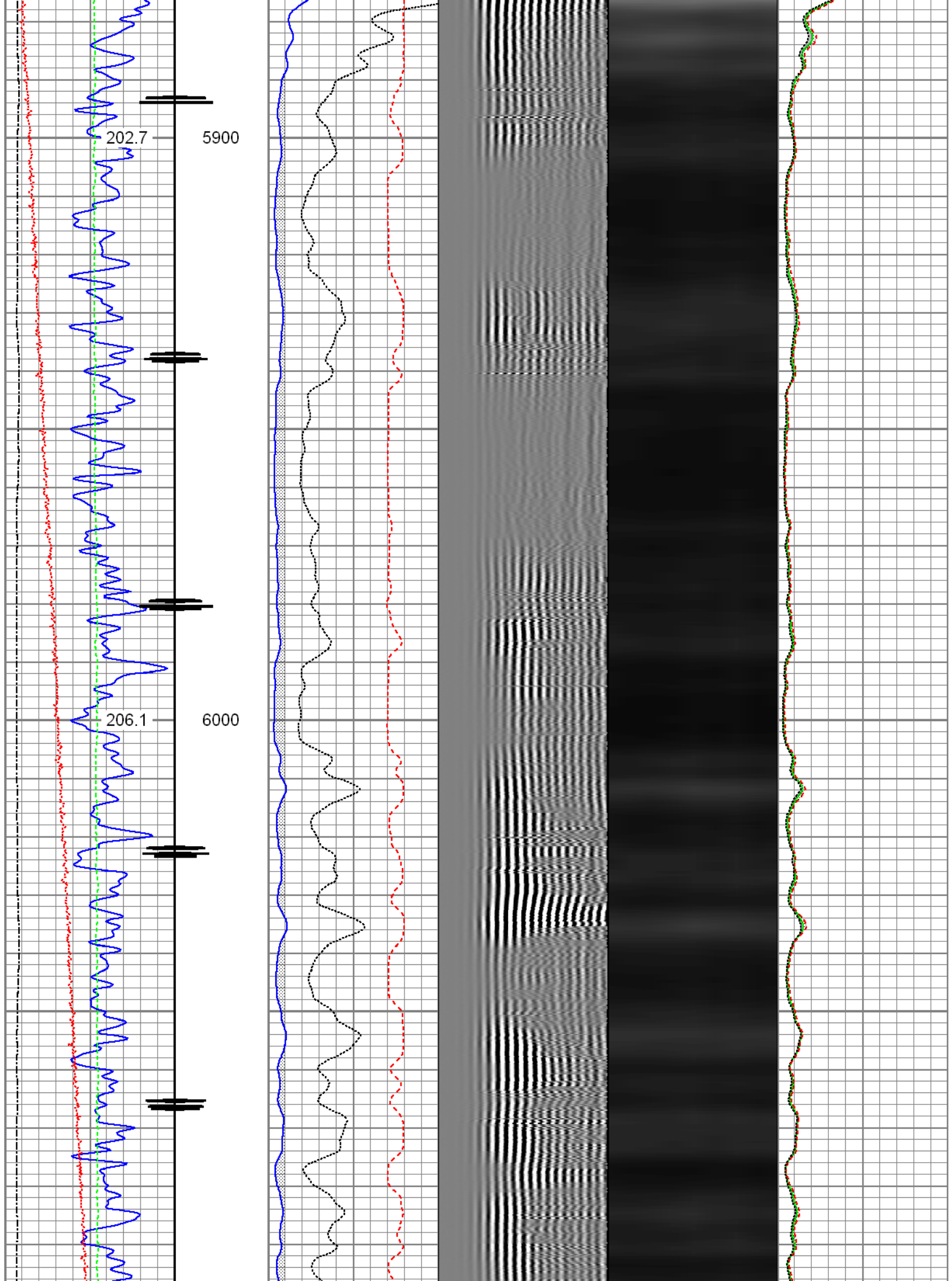


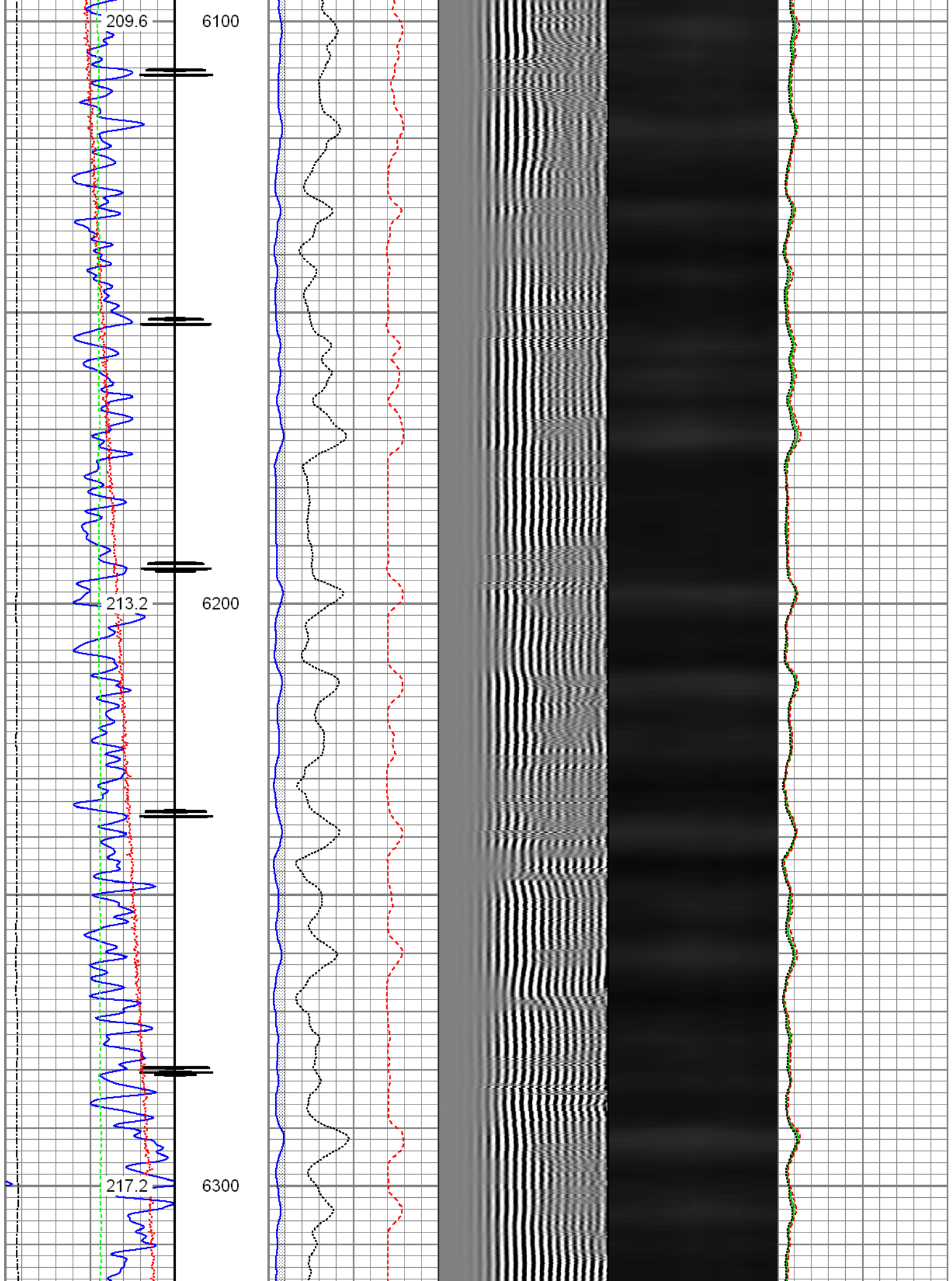


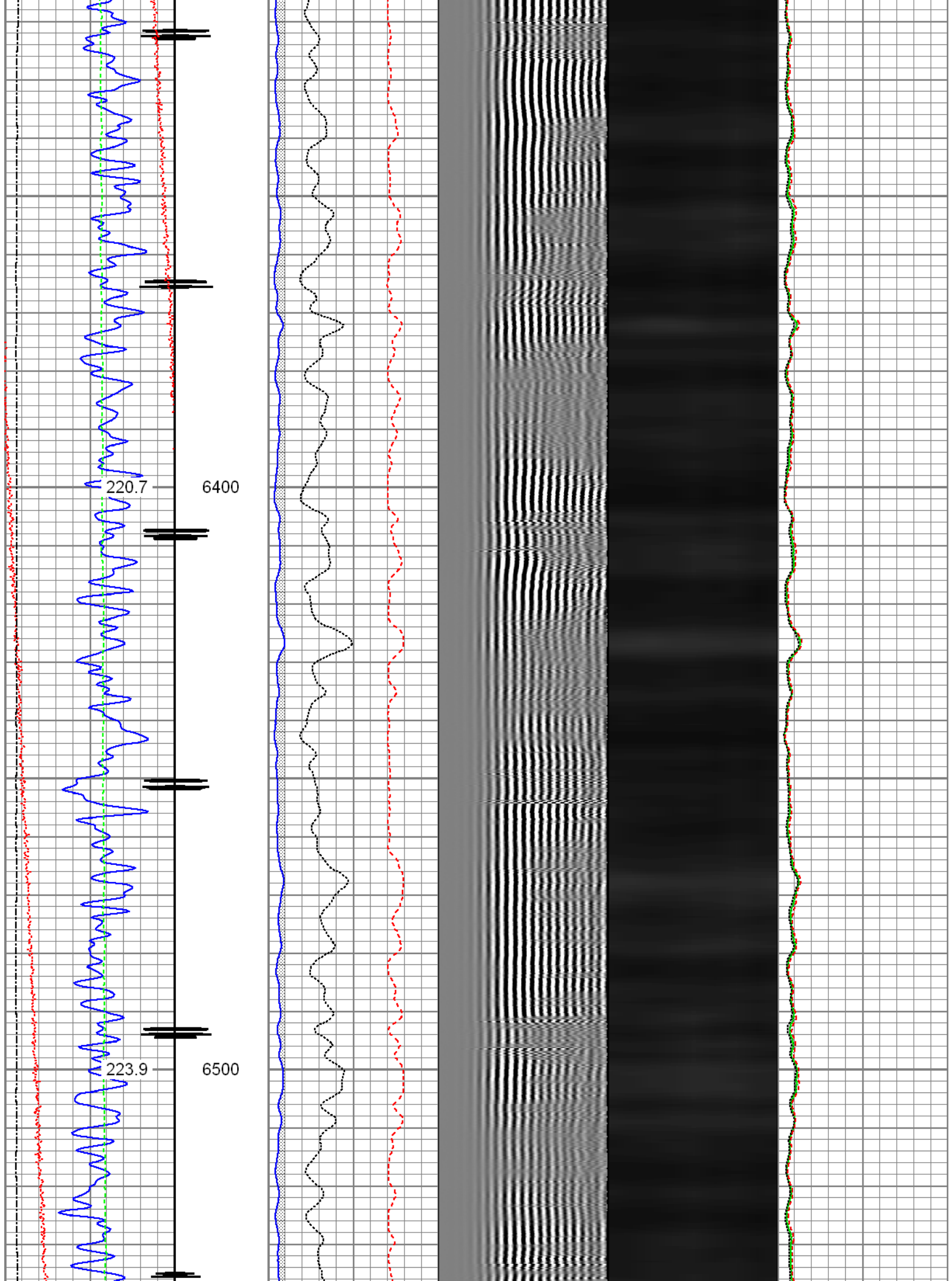


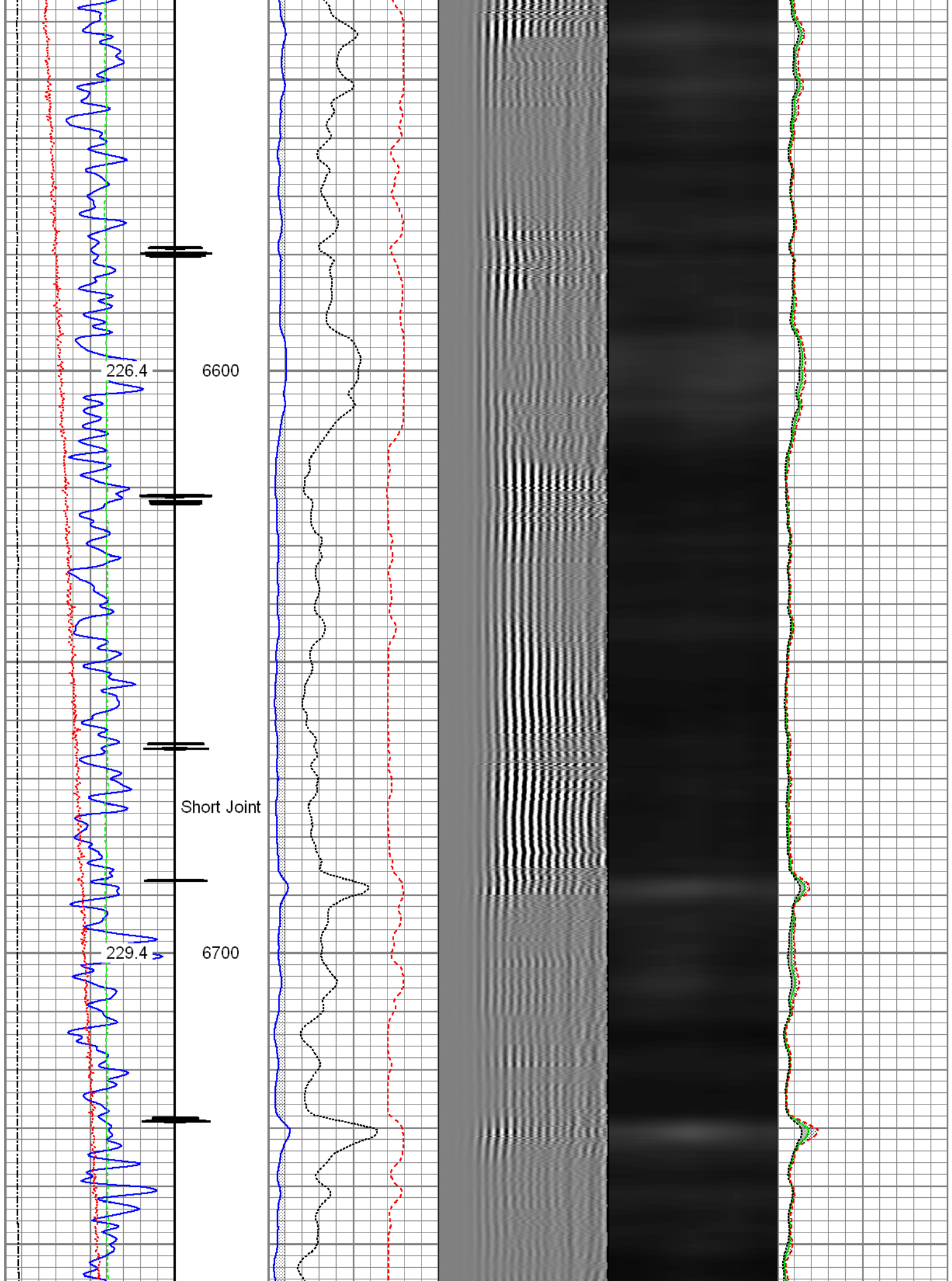


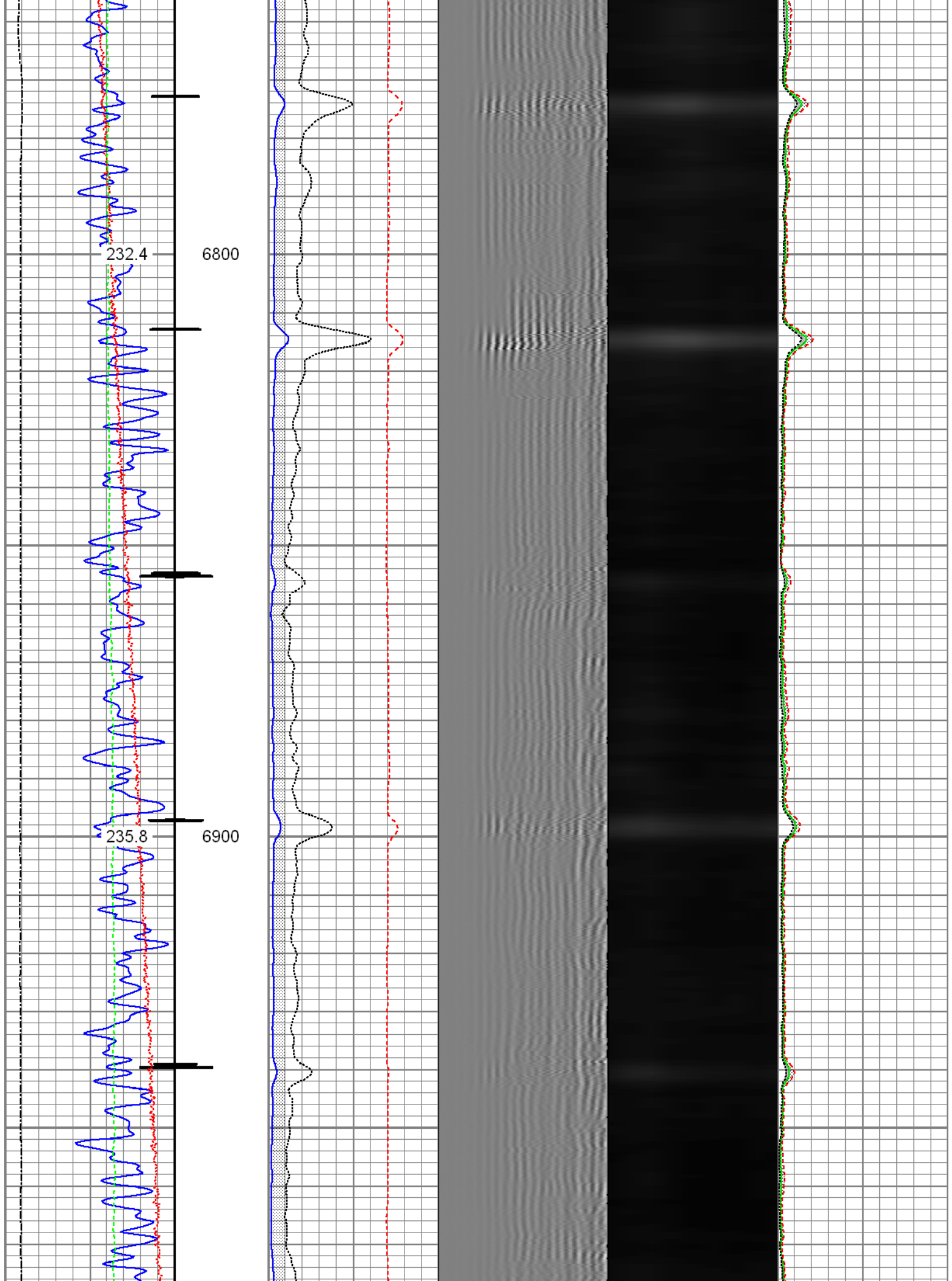


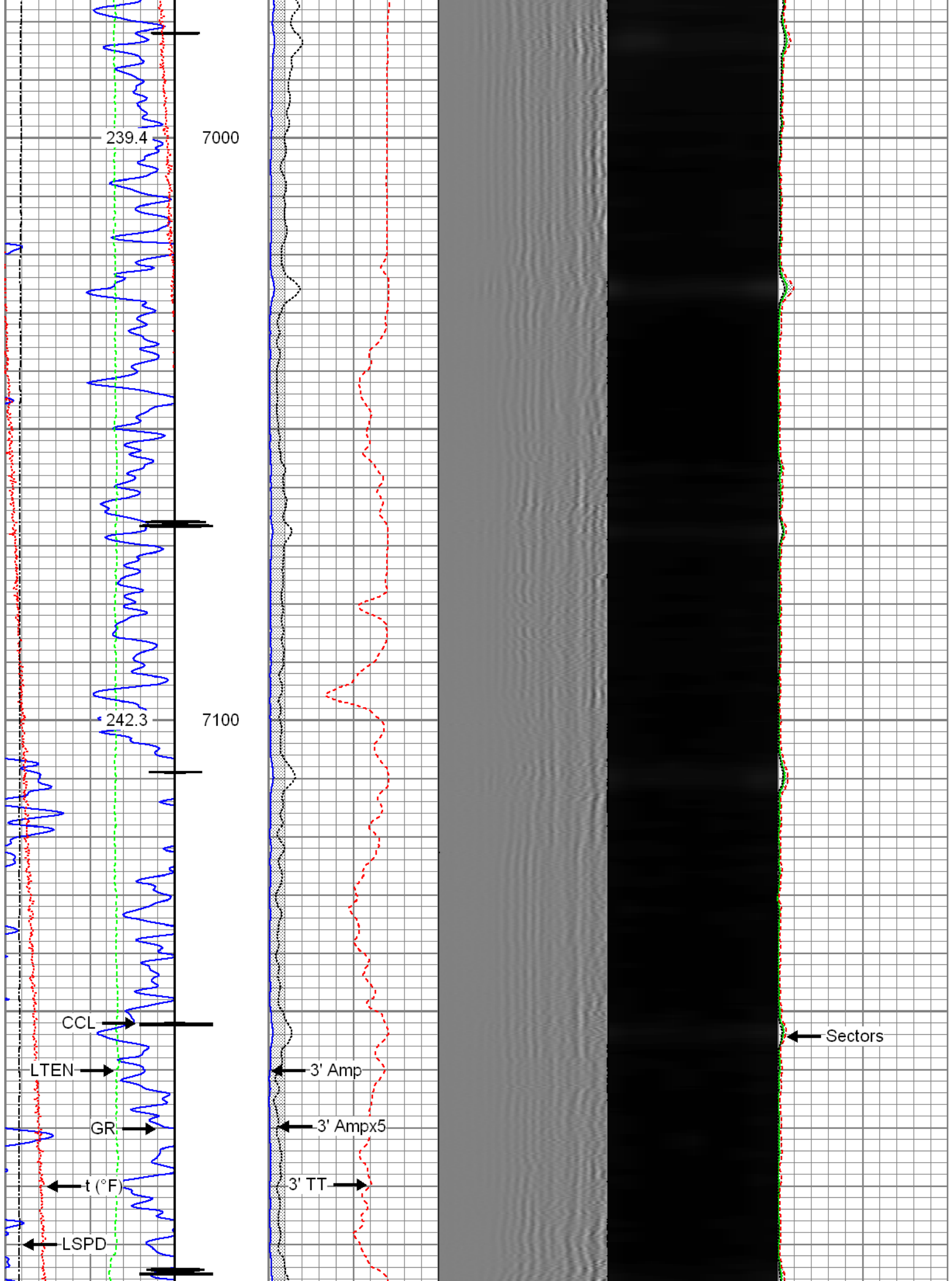


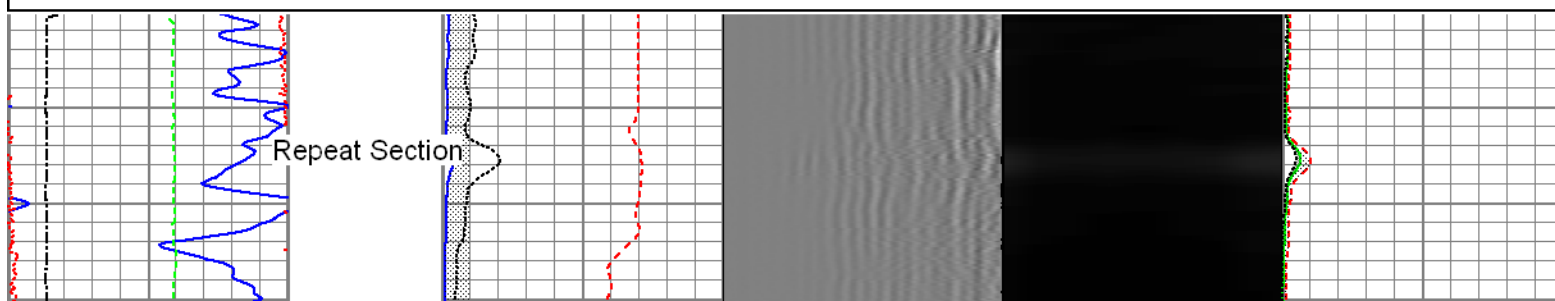
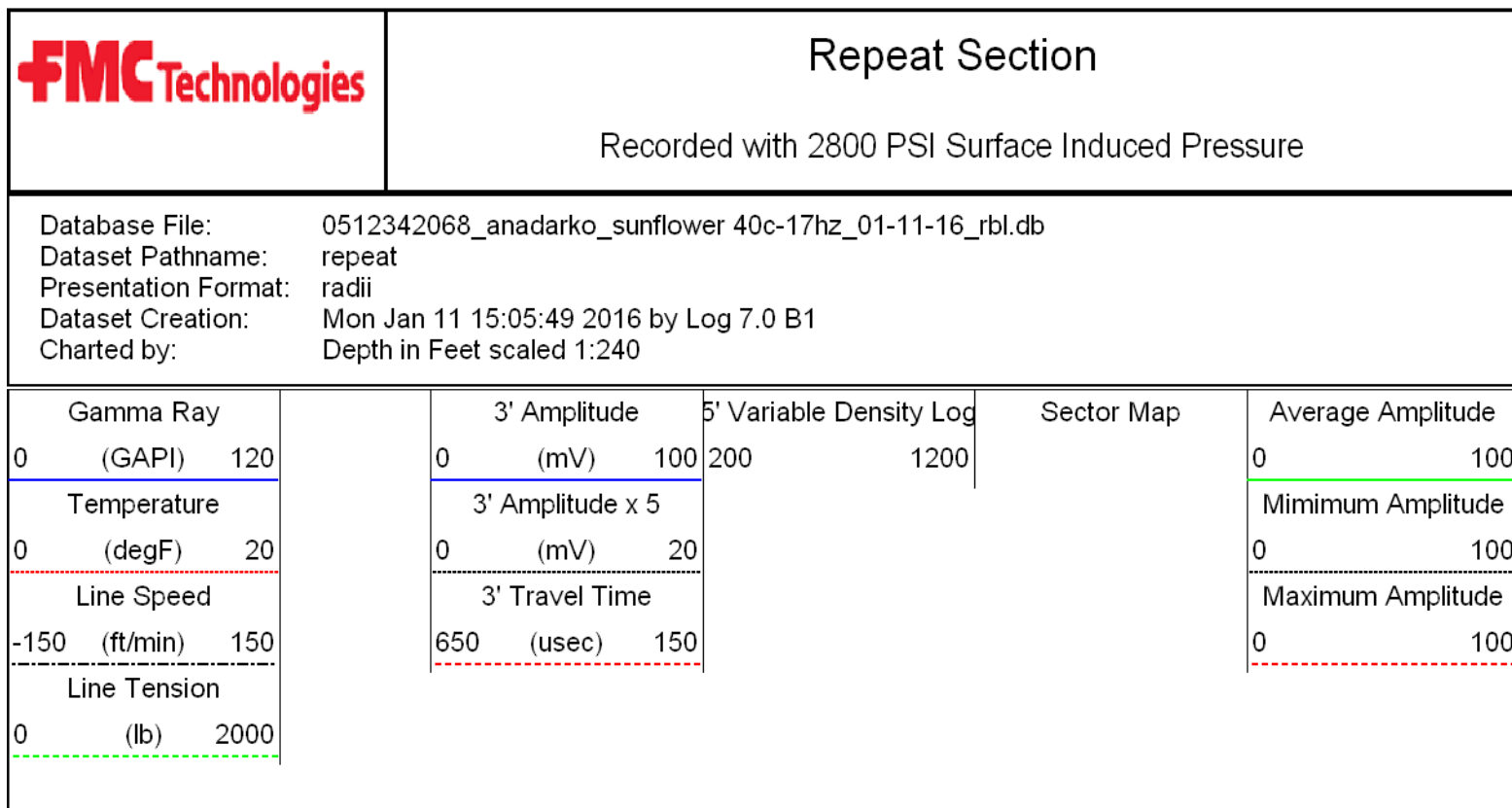
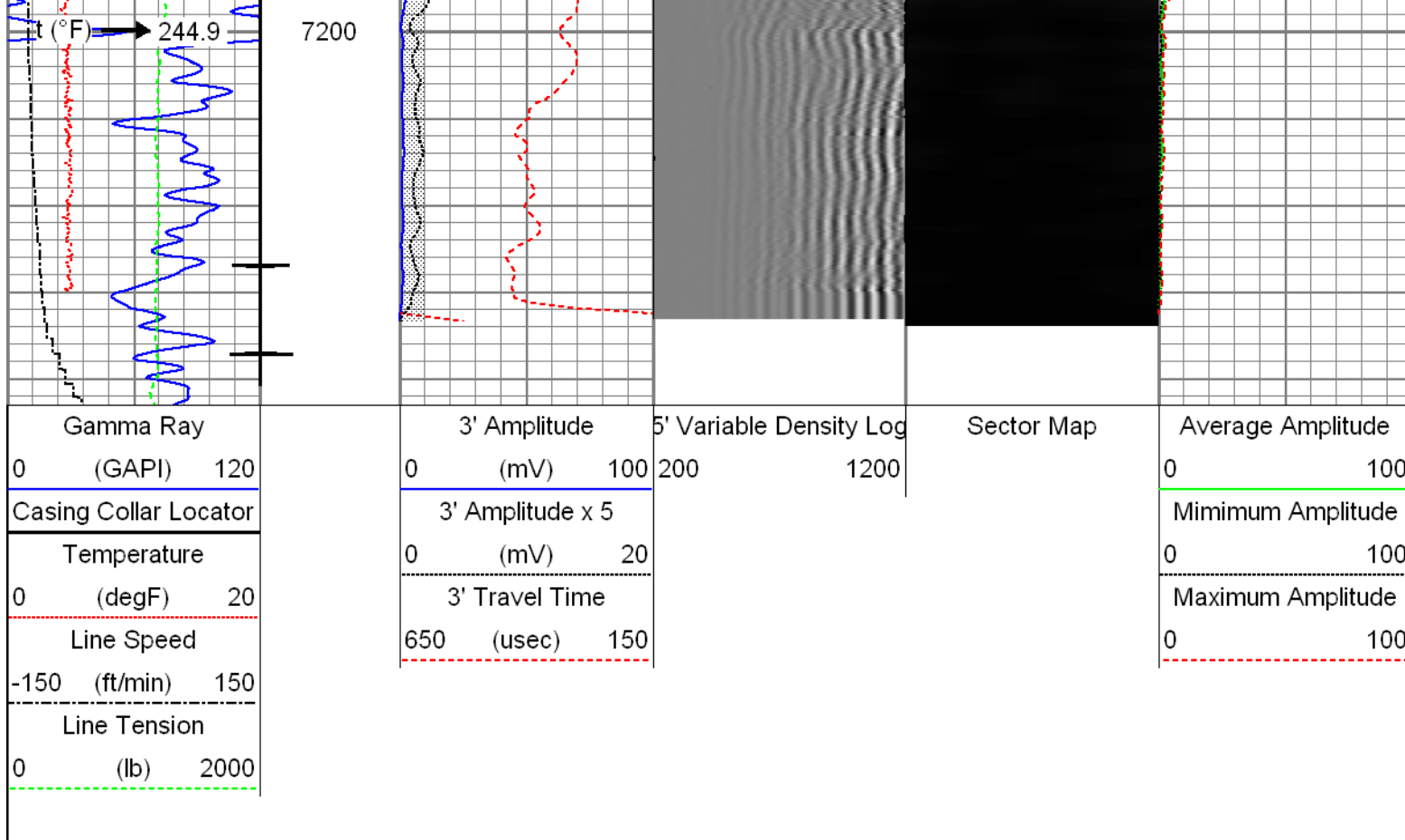


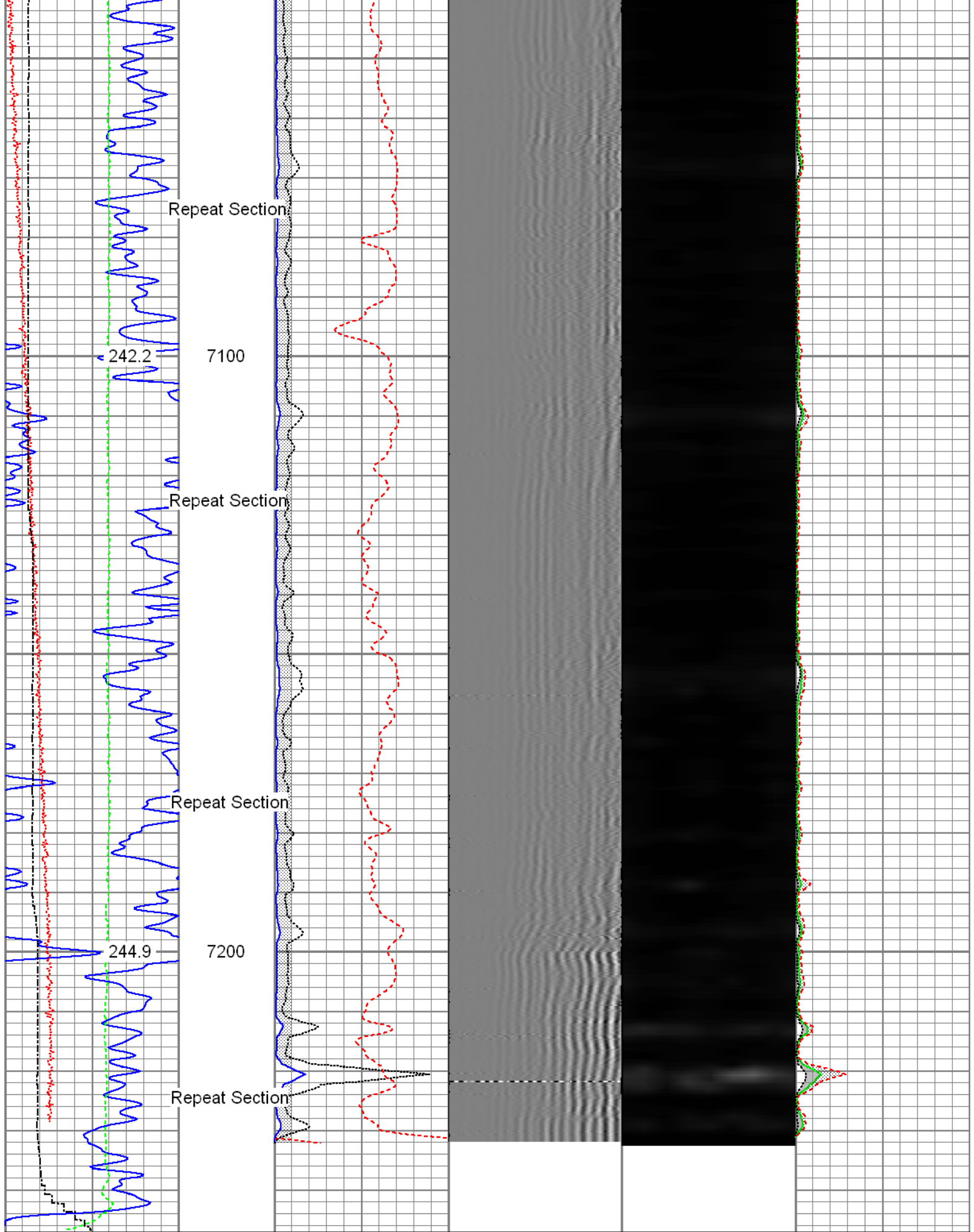






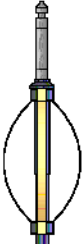



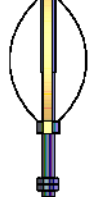




Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Temperature	3' Amplitude x 5			Minimum Amplitude

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)
HeadVolt	20.94		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	18.17					
WVF3FT	16.00		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	16.00					
WVFS1	16.00					
WVFS2	16.00					
WVFS3	16.00					
WVFS4	16.00					
WVFS5	16.00					
WVFS6	16.00					
WVFS7	16.00					
WVFS8	16.00					
WVF5FT	15.00					
CCL DCCL	7.38		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
	7.38		CCL_LOG-Probe_SA_CCL (FW1307-076) Probe 2-3/4" Digital Six Magnet Logging CCL	2.66	2.75	35.00
GR			GR-Probe_SA_GR (FW1307-078) Probe 2-3/4" Scintillating Gamma Ray	3.33	2.75	55.00
	2.88					



Probe\_IL\_BS\_Cent  
Probe 2-3/4" Inline Electrical Inline Bowspring  
Centralizer

2.88

2.75

10.00

Dataset: 0512342068\_Anadarko\_Sunflower 40C-17HZ\_01-11-16\_RBL.db: field/well/run1/main  
Total Length: 24.85 ft  
Total Weight: 229.00 lb  
O.D. 2.75 in

### Calibration Report

Database File: 0512342068\_Anadarko\_Sunflower 40C-17HZ\_01-11-16\_RBL.db  
Dataset Pathname: main  
Dataset Creation: Mon Jan 11 15:10:28 2016 by Log 7.0 B1

### Gamma Ray Calibration Report

Serial Number: FW1307-078  
Tool Model: Probe\_SA\_GR  
Performed: Wed Dec 02 09:26:20 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: FW1305-098  
Tool Model: 2-3/4"  
  
Calibration Casing Diameter: 4.500 in  
Calibration Depth: -0.002 ft

Master Calibration, performed Wed Dec 30 15:24:14 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.672	0.800	81.196	120.807	0.001
CAL	0.007	0.724				
5'	0.007	0.623	0.800	81.196	130.512	-0.081
SUM						
S1	0.007	0.673	0.000	100.000	150.094	-1.019
S2	0.007	0.669	0.000	100.000	151.027	-0.996
S3	0.007	0.669	0.000	100.000	150.968	-1.008
S4	0.007	0.673	0.000	100.000	149.938	-0.979
S5	0.007	0.670	0.000	100.000	150.727	-0.995
S6	0.007	0.670	0.000	100.000	150.702	-0.990
S7	0.006	0.668	0.000	100.000	151.133	-0.981
S8	0.007	0.666	0.000	100.000	151.735	-1.015

Internal Reference Calibration, performed Wed Dec 30 13:01:11 2015:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset

CAL	0.007	0.723	0.007	0.724	1.002	-0.000
Air Zero Calibration, performed Wed Dec 30 13:00:22 2015:						
	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	0.007		0.000		-0.000	
S5	0.007		0.000		-0.000	
S6	0.007		0.000		0.000	
S7	0.006		0.000		0.000	
S8	0.007		0.000		-0.000	

	Company	Kerr-McGee Oil & Gas OnShore L.P.
	Well	Sunflower 40C-17HZ
	Field	Wattenberg
	County	Weld
	State	Colorado