



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.					
Well Sunflower 25G-17HZ					
Field Wattenberg					
County Weld					
State Colorado					
Location:					
API #: 05-123-42072					
Other Services					
JB/GR					
Elevation					
Permanent Datum Ground Level 4902'					
Log Measured From Kelly Bushing 20 FT					
Drilling Measured From Kelly Bushing					
Date	12-Jan-2016				
Run Number	One				
Depth Driller	12664 FT				
Depth Logger	7355 FT				
Bottom Logged Interval	7351 FT				
Top Log Interval	Surface				
Open Hole Size	7.875"				
Type Fluid	Water				
Density / Viscosity	8.34 lbm/gal				
Max. Recorded Temp.	245°F				
Estimated Cement Top	Surface				
Time Well Ready	ROA				
Time Logger on Bottom	10:50 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	1855 FT
Intermediate #1					
Intermediate #2					
Liner	5 1/2	17	HCP-110	Surface	12656 FT
Marker Joint				6495 FT - 6517 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 reference to Casing Tally reported Liner Top at 6495 FT
Adjusted log -4 FT to correlate with Marker Joint
Gauge Ring ran to 7473 FT with no debris
Recorded with 2800 PSI Surface Induced Pressure
Tools came out clean and free of debris

Thank you for choosing FMC Technologies Surface Integrated Services.

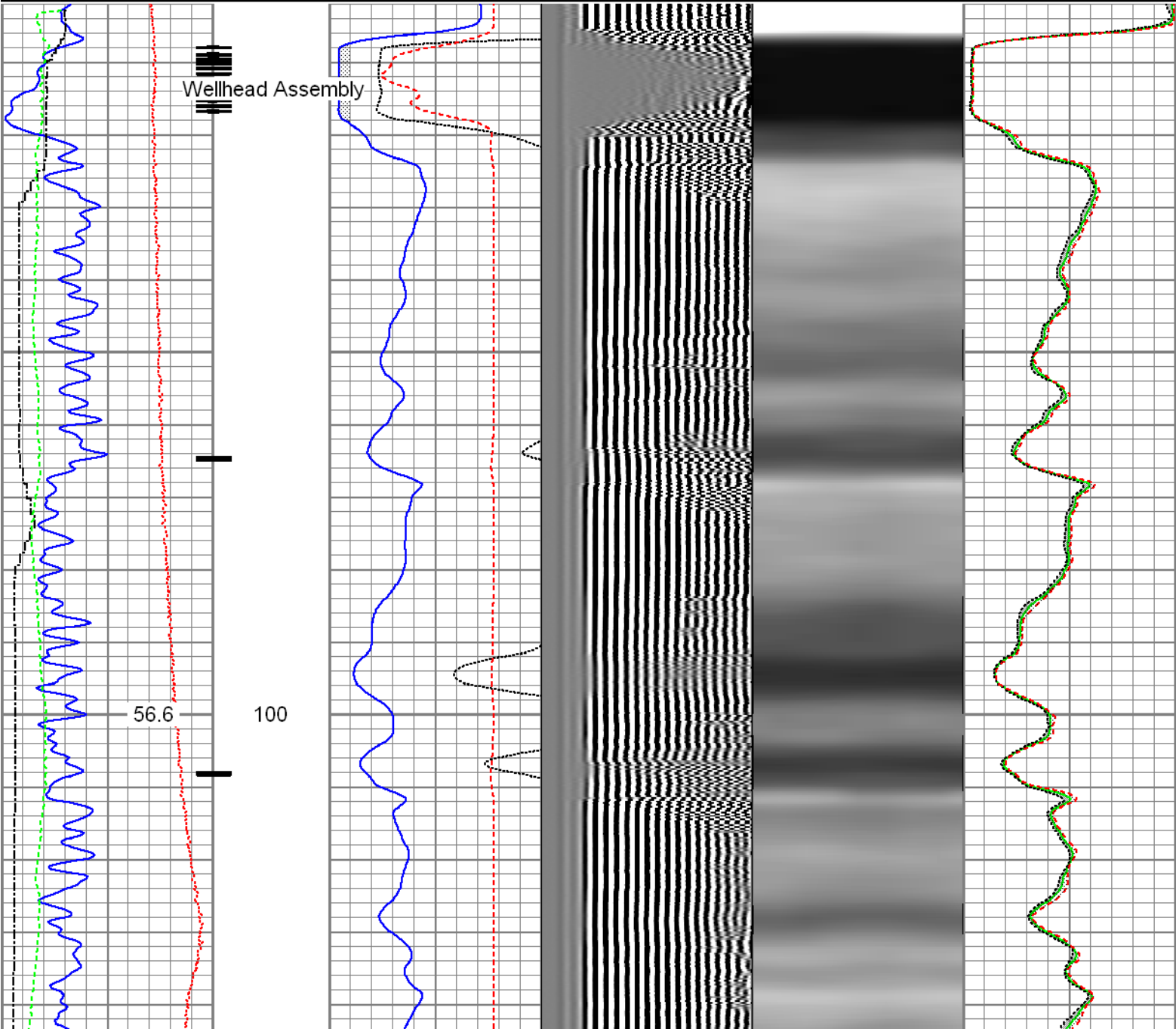


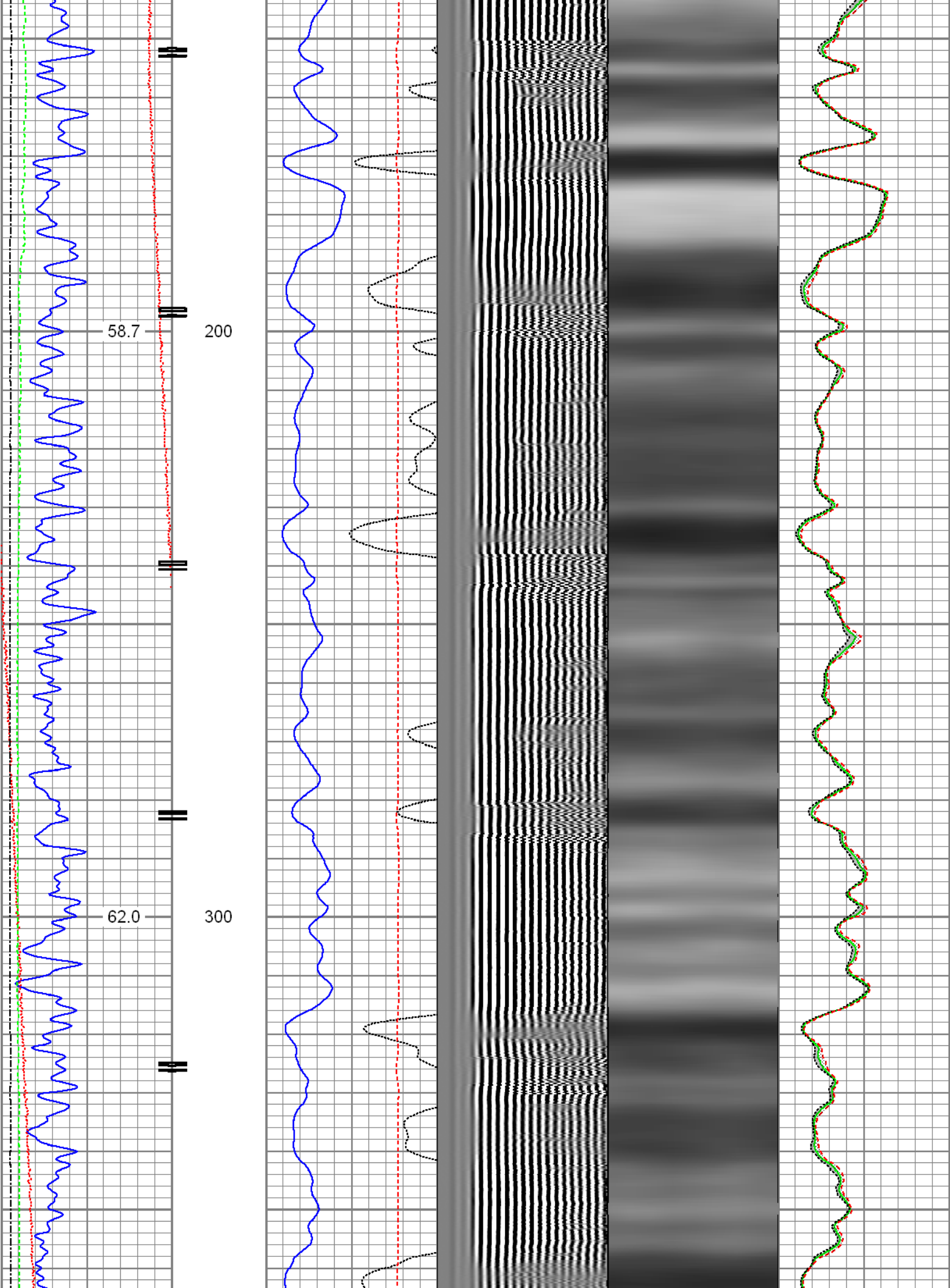
Main Pass

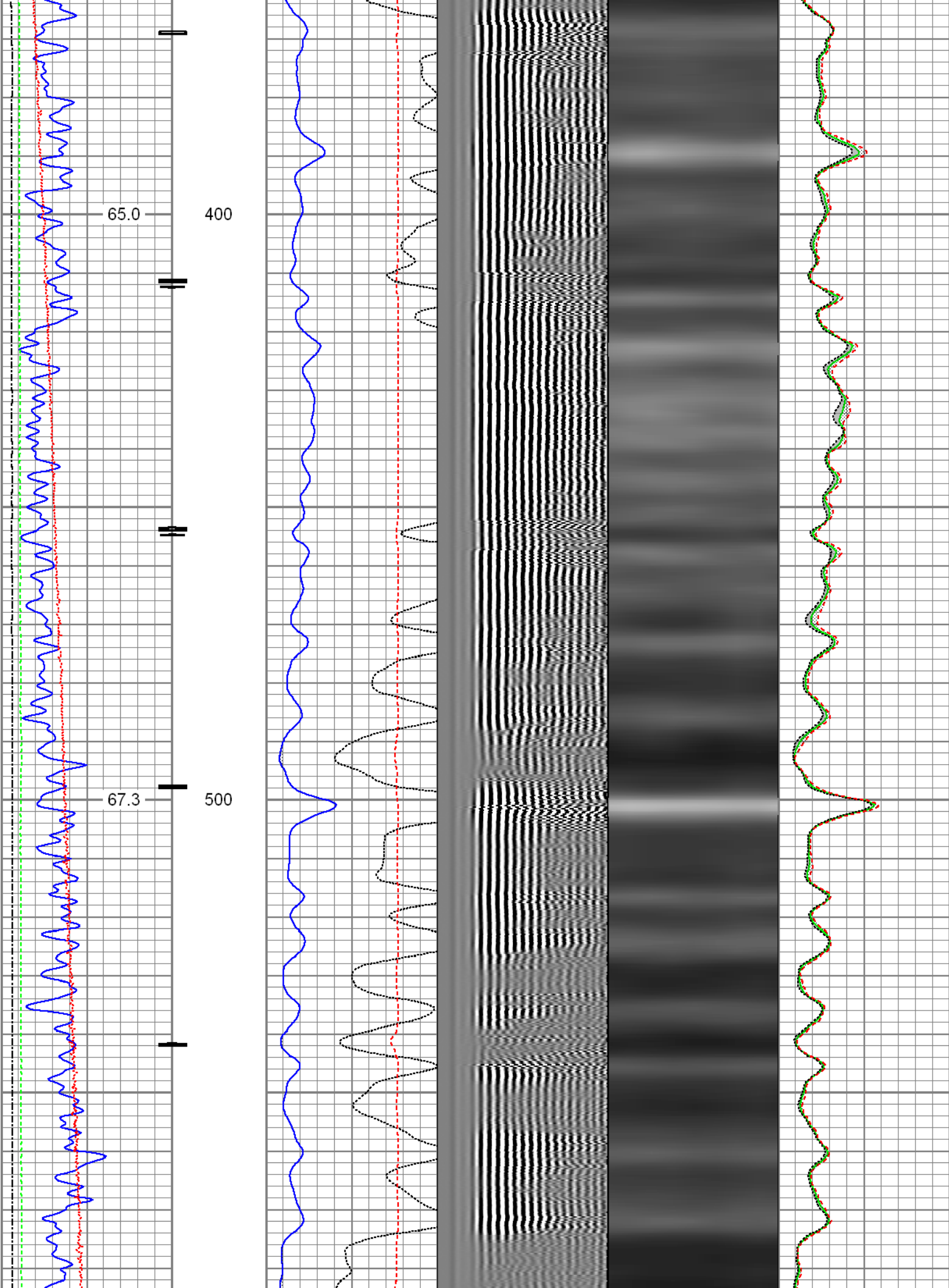
Recorded with 2800 PSI Surface Induced Pressure

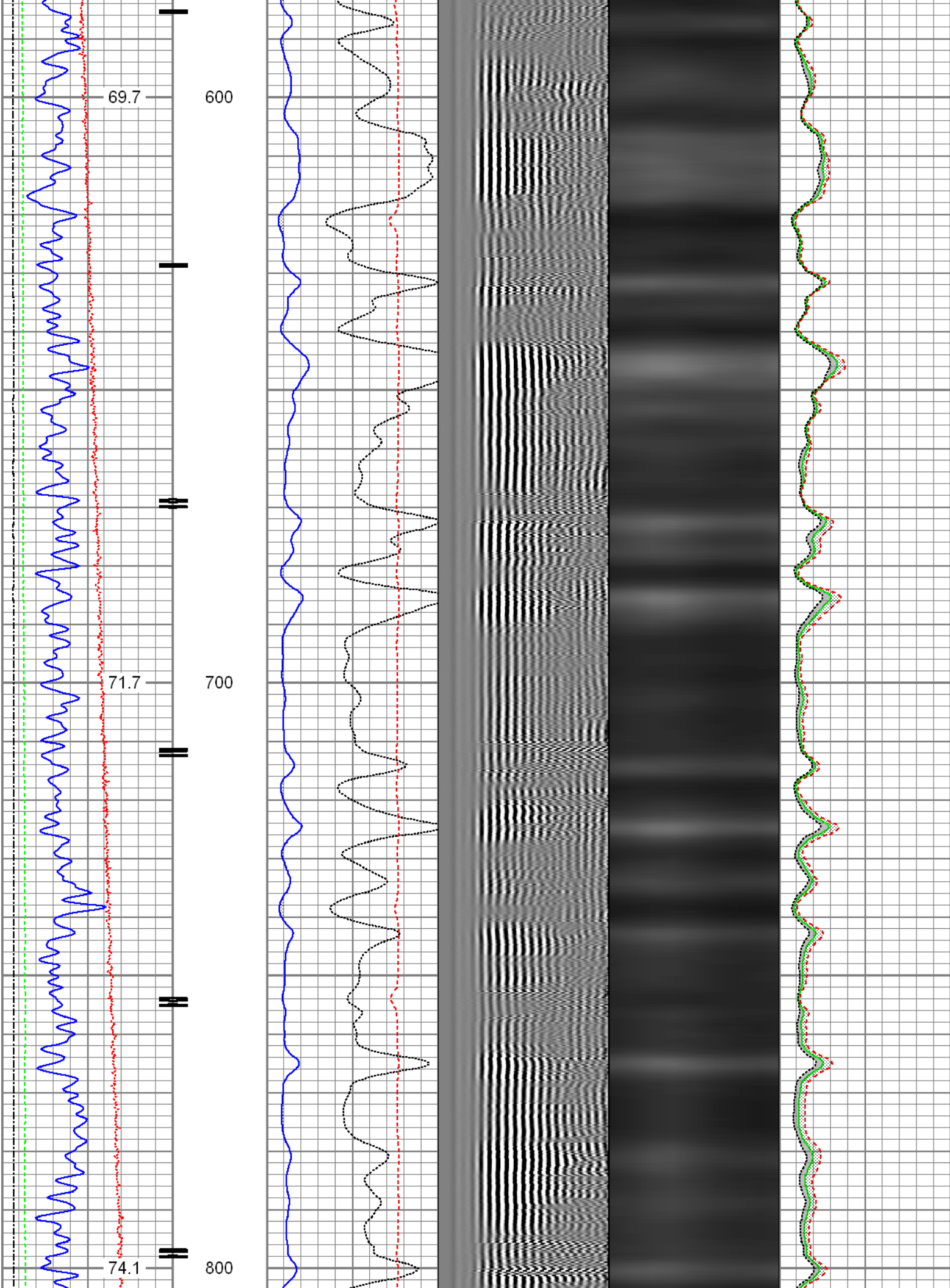
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Presentation Format: radii
Dataset Creation: Wed Jan 13 09:40:22 2016 by Calc SCH 120430
Charted by: Depth in Feet scaled 1:240

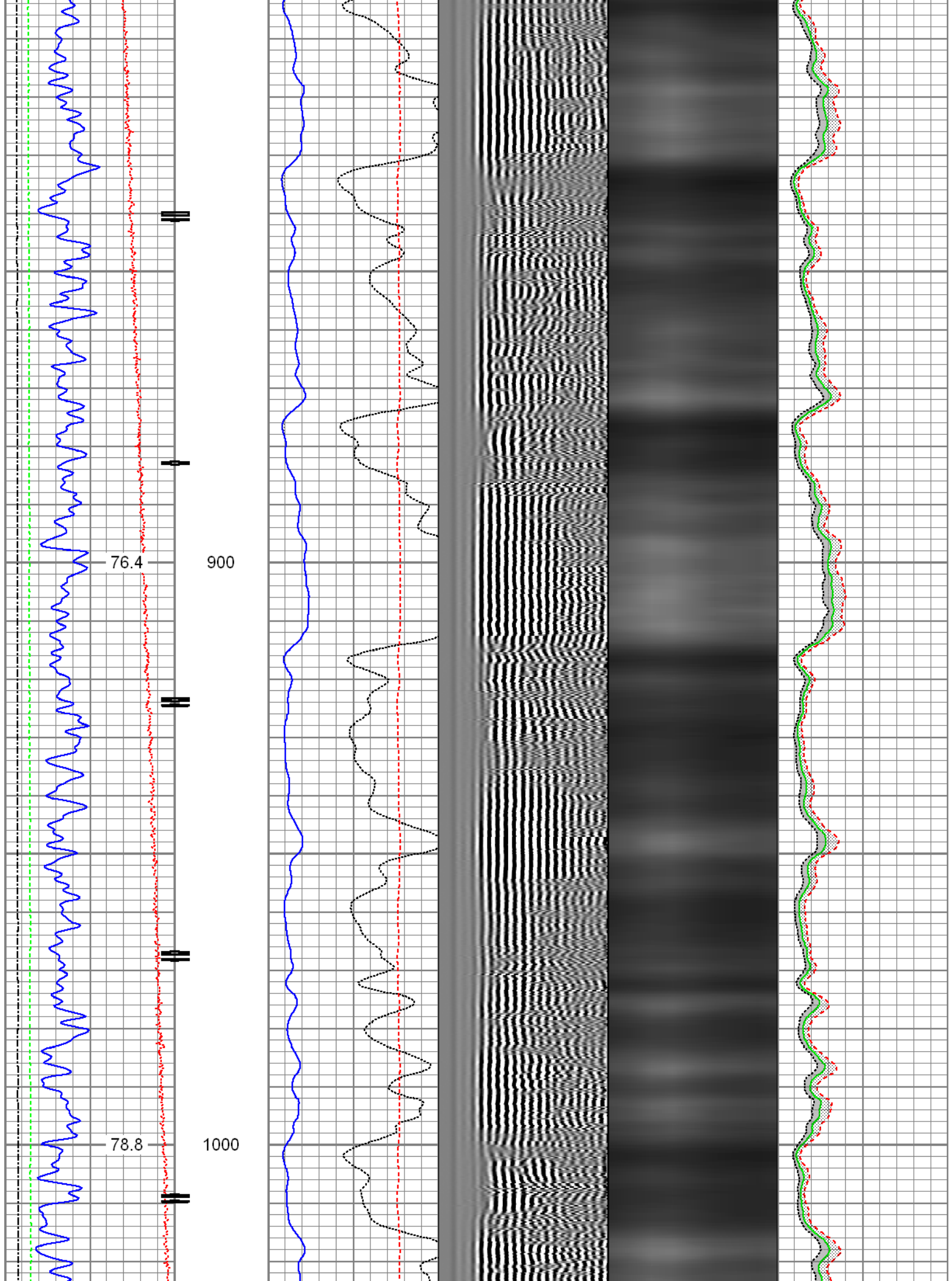
Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Temperature 0 (degF) 20	3' Amplitude x 5 0 (mV) 20			Mimimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000				
Casing Collar Locator 10 0.3				

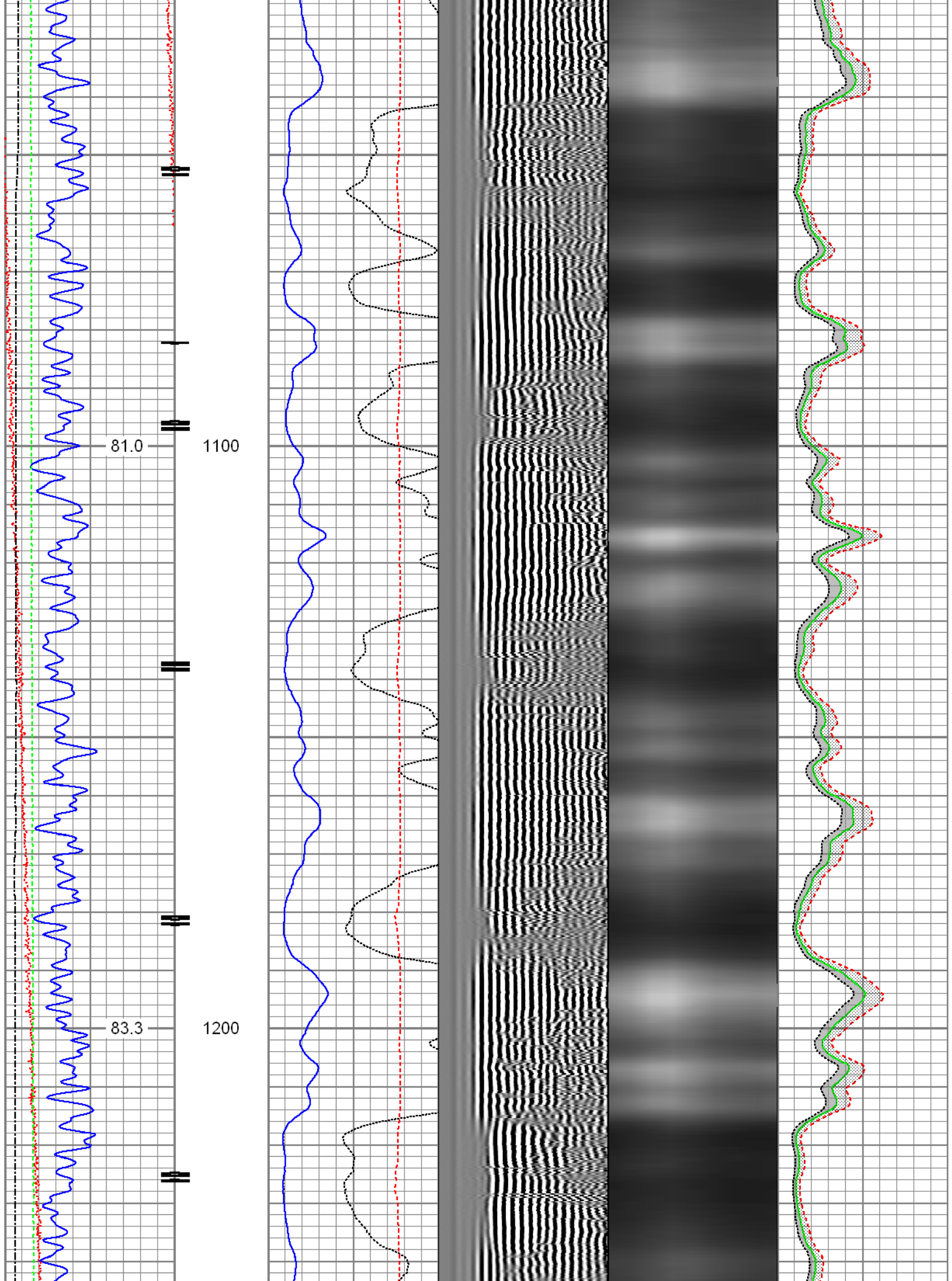


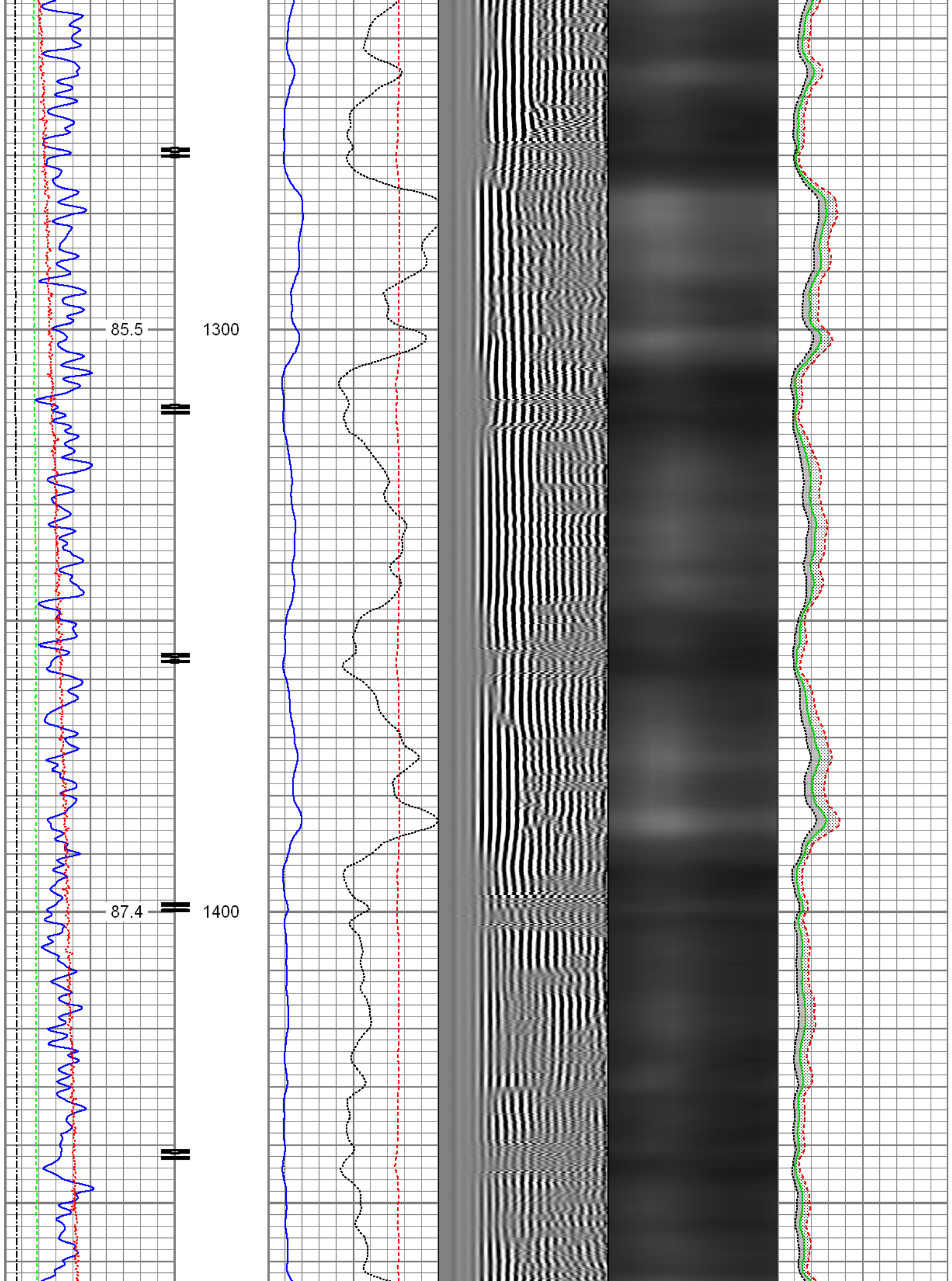


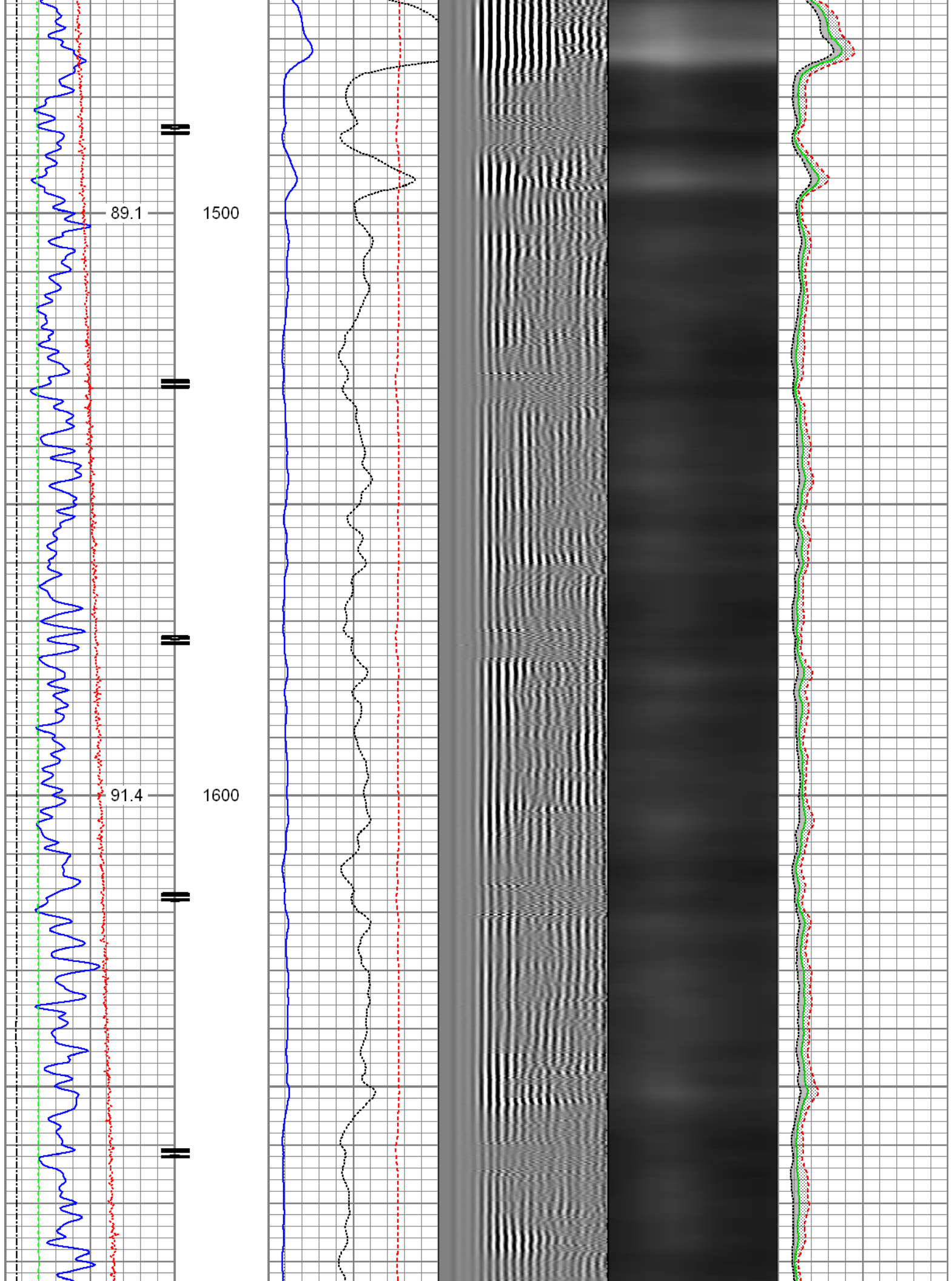


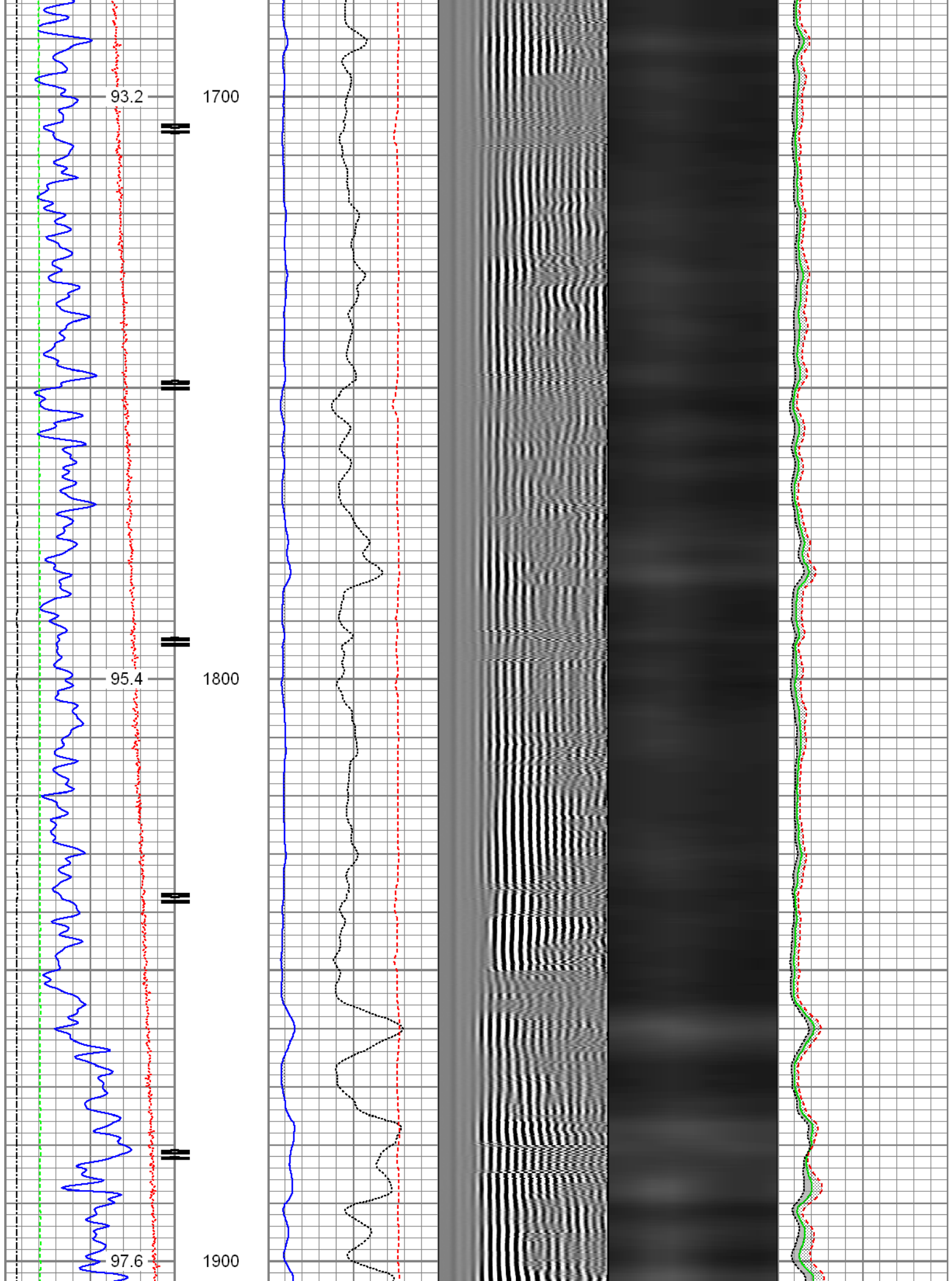


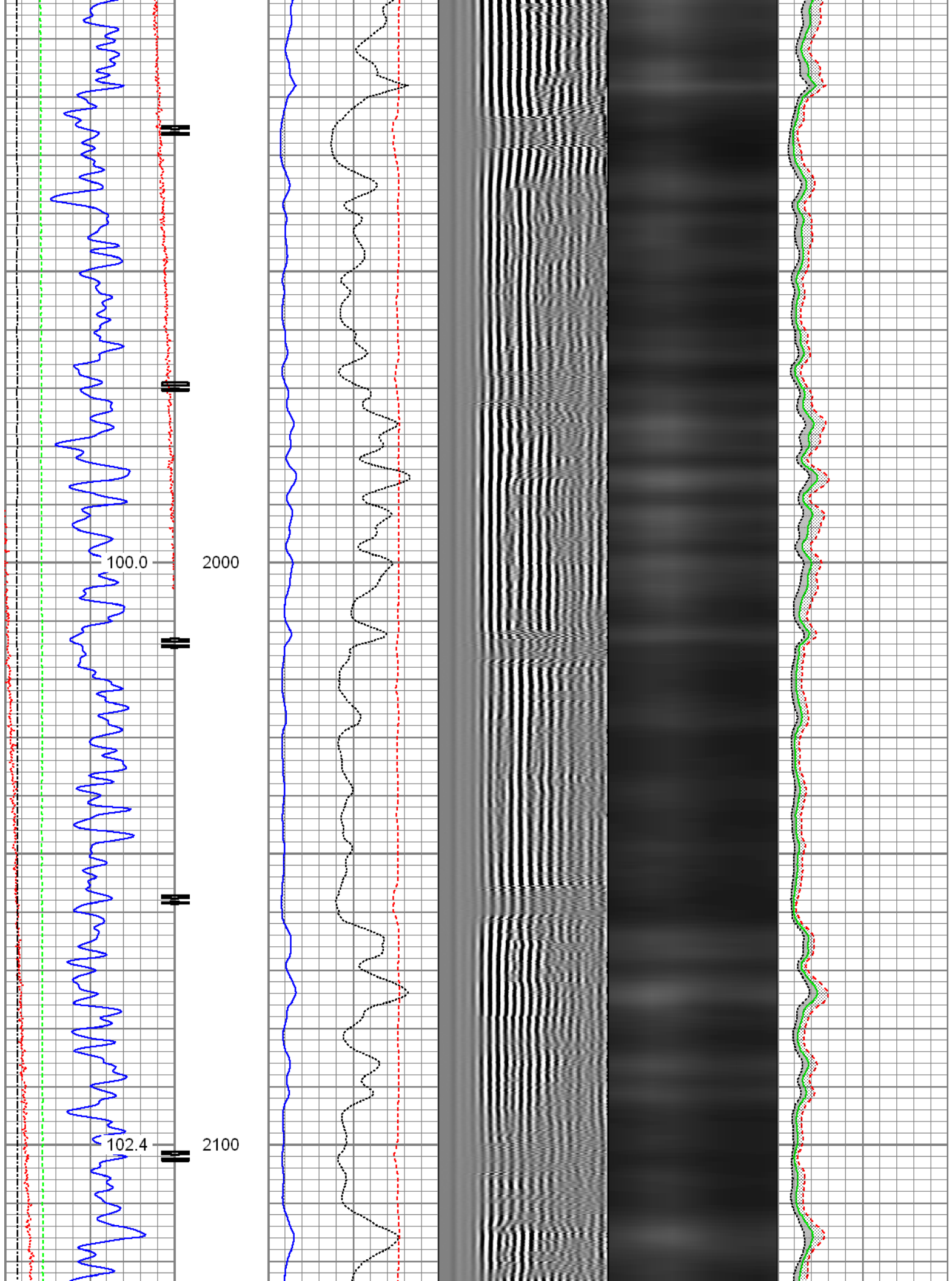


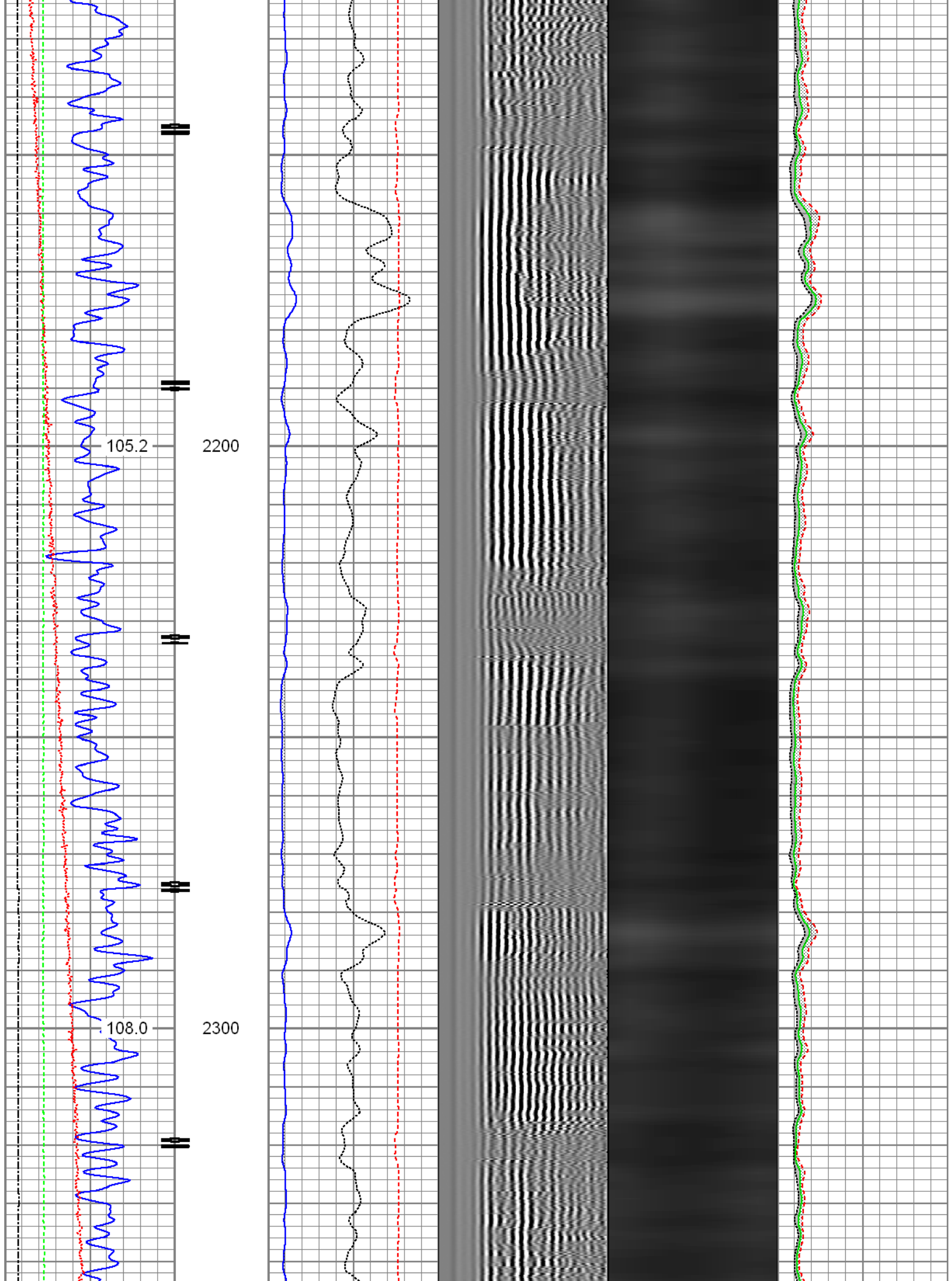


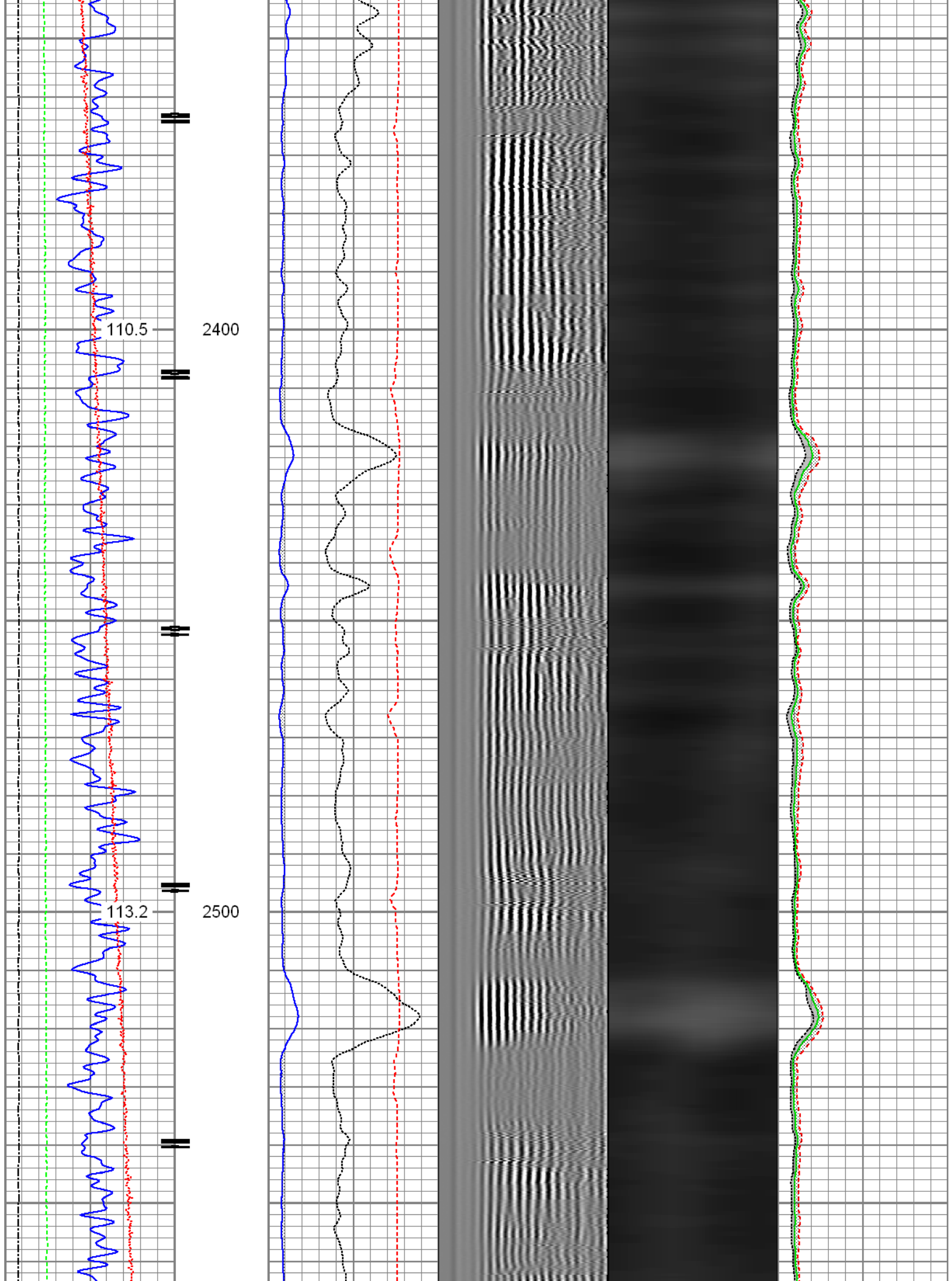


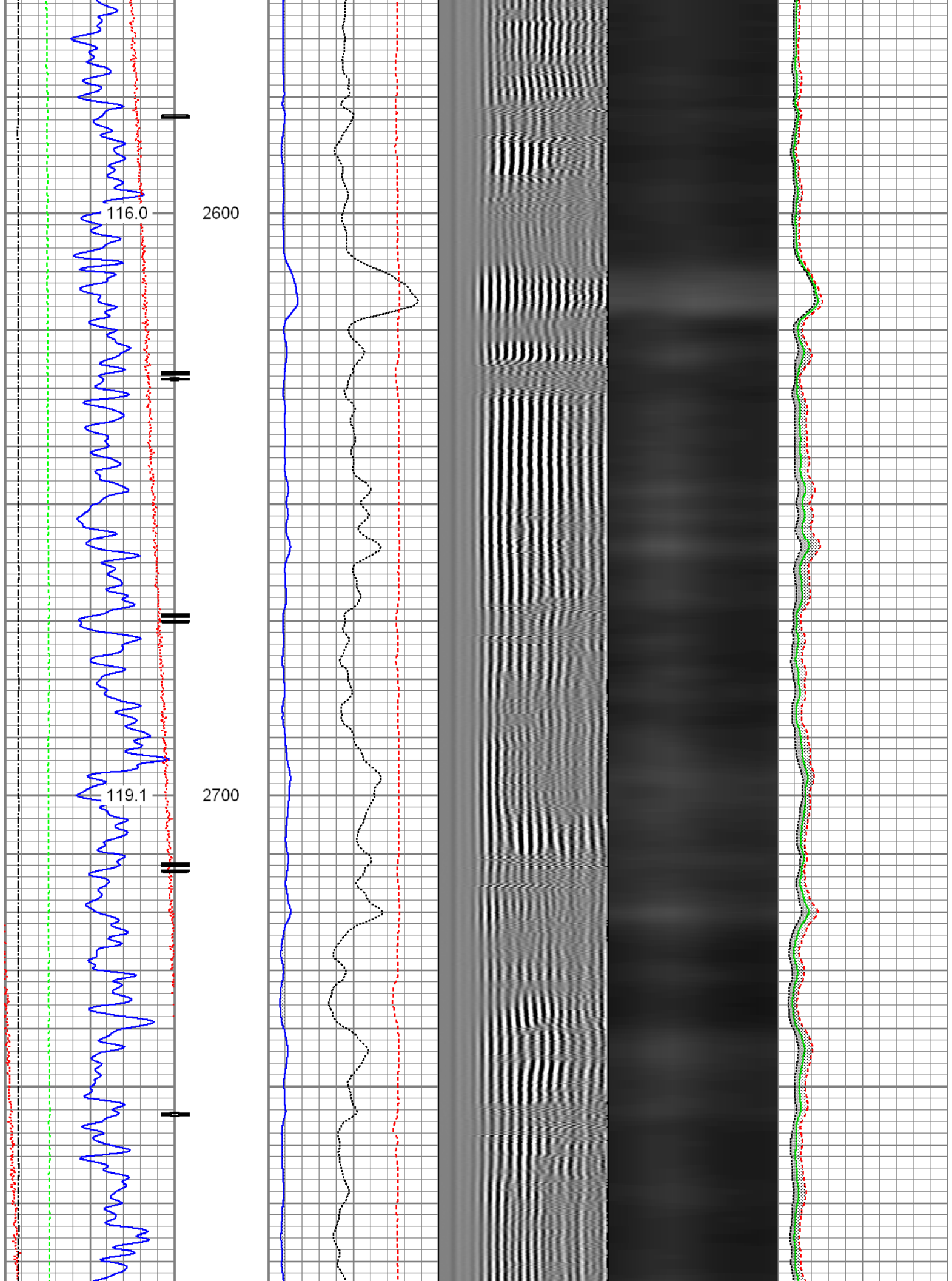


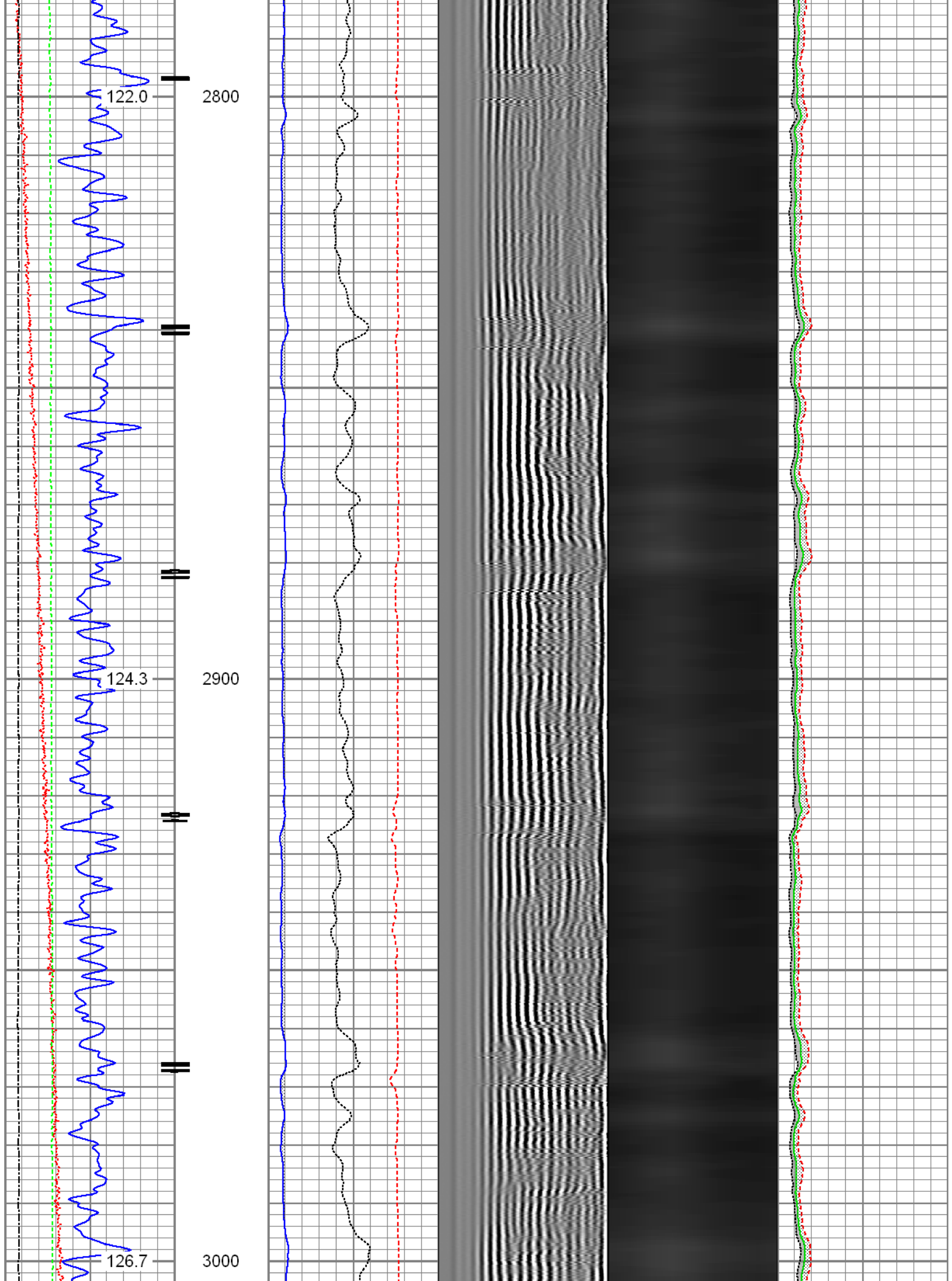


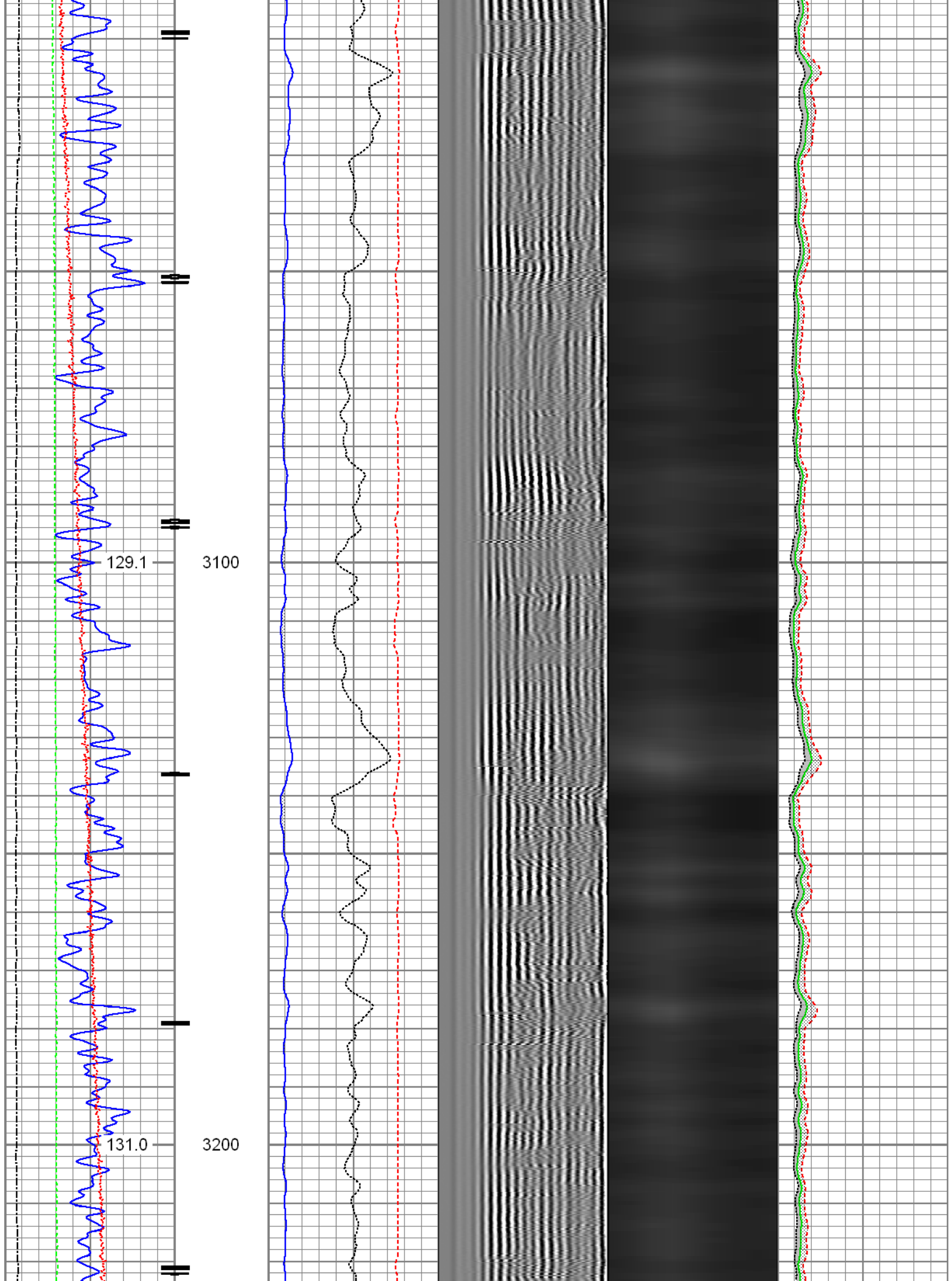


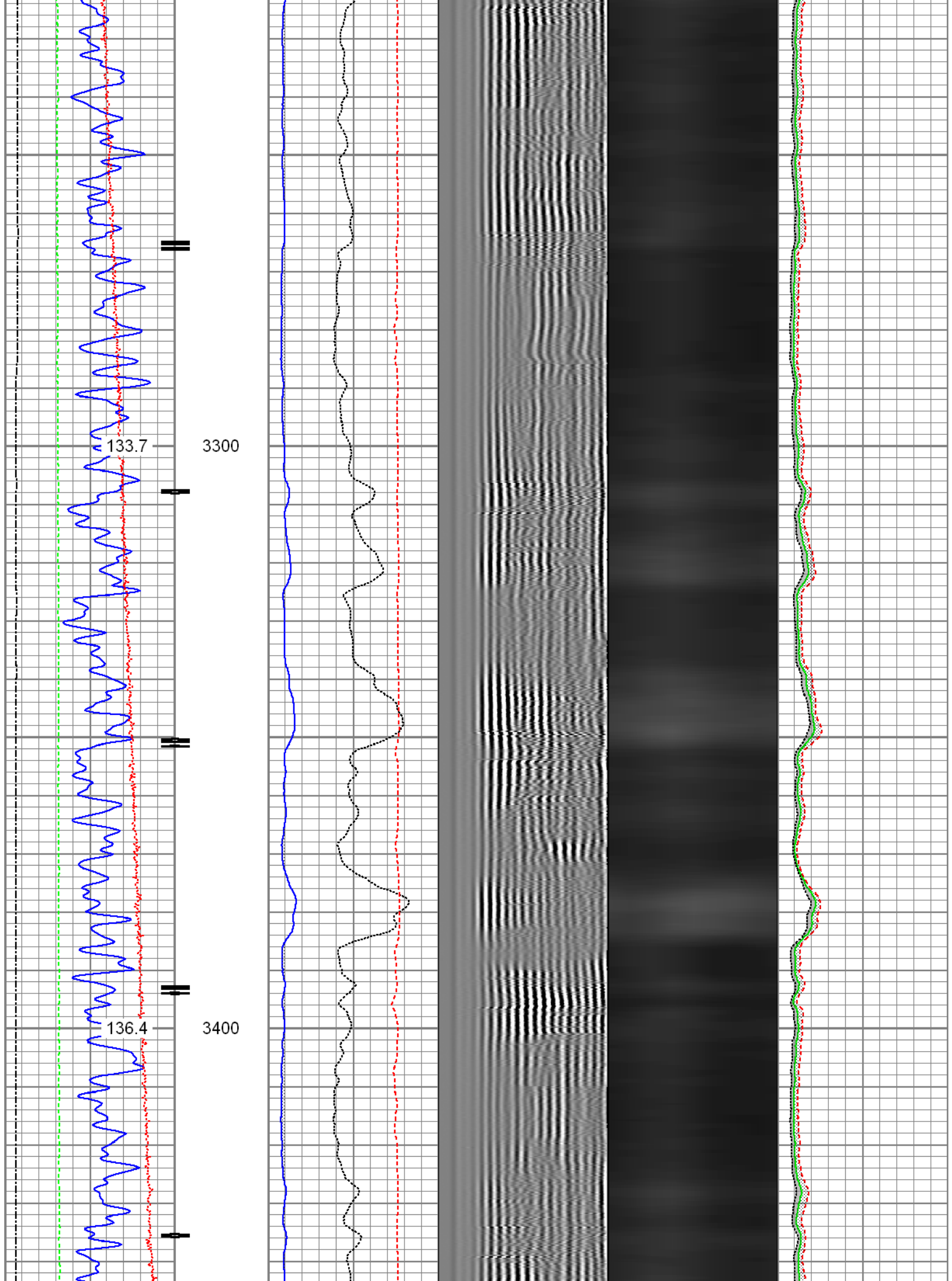


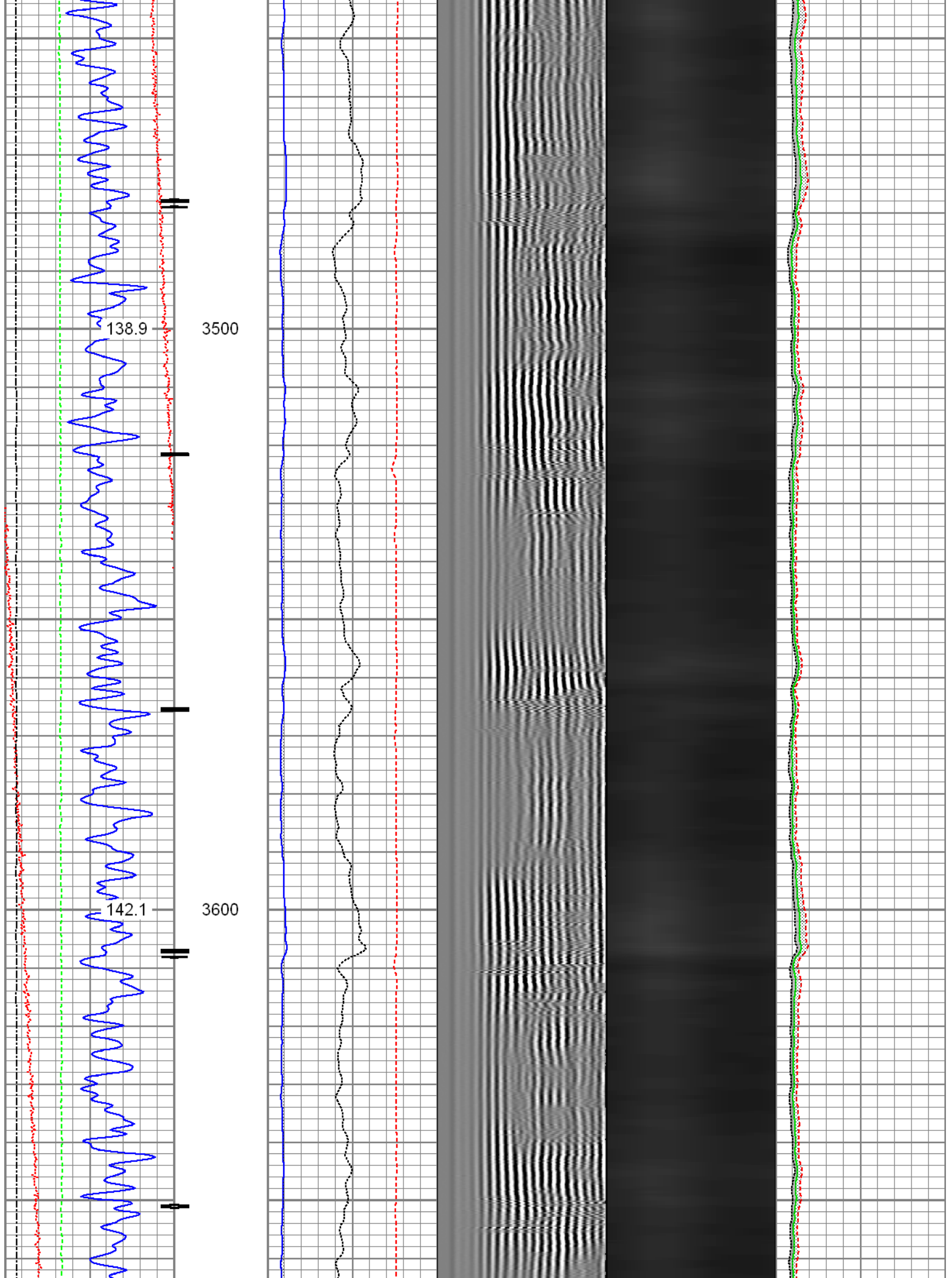


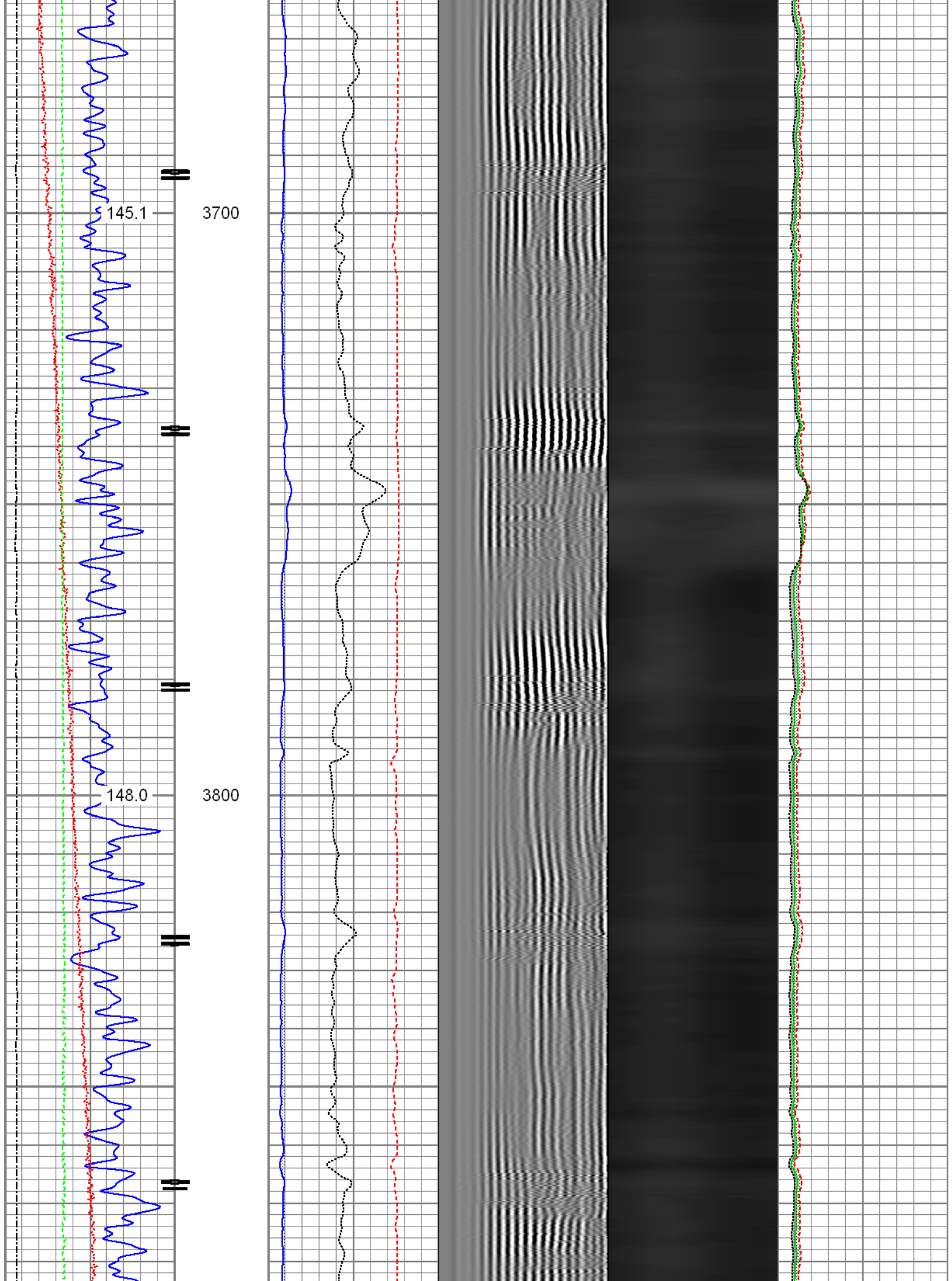


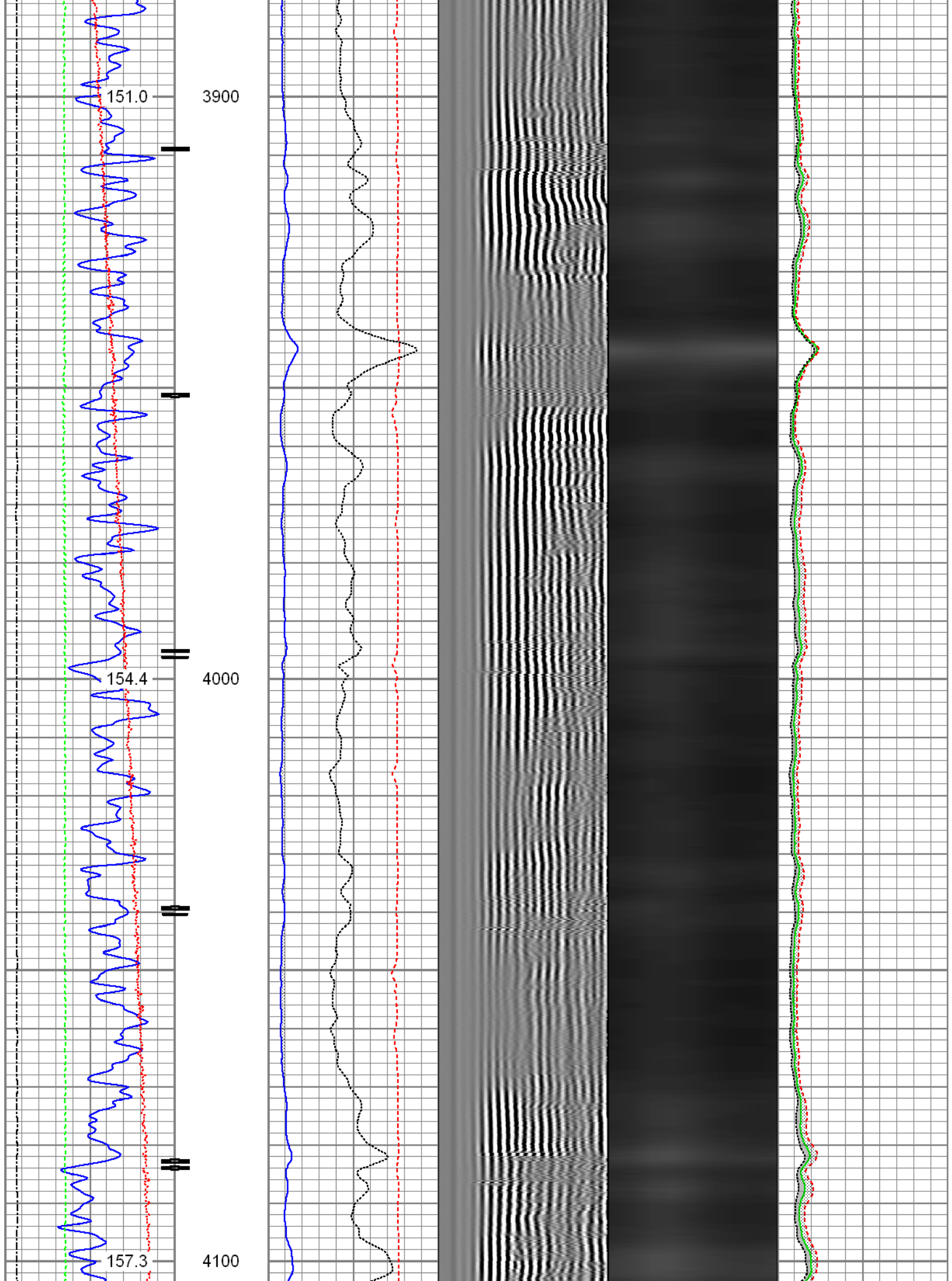


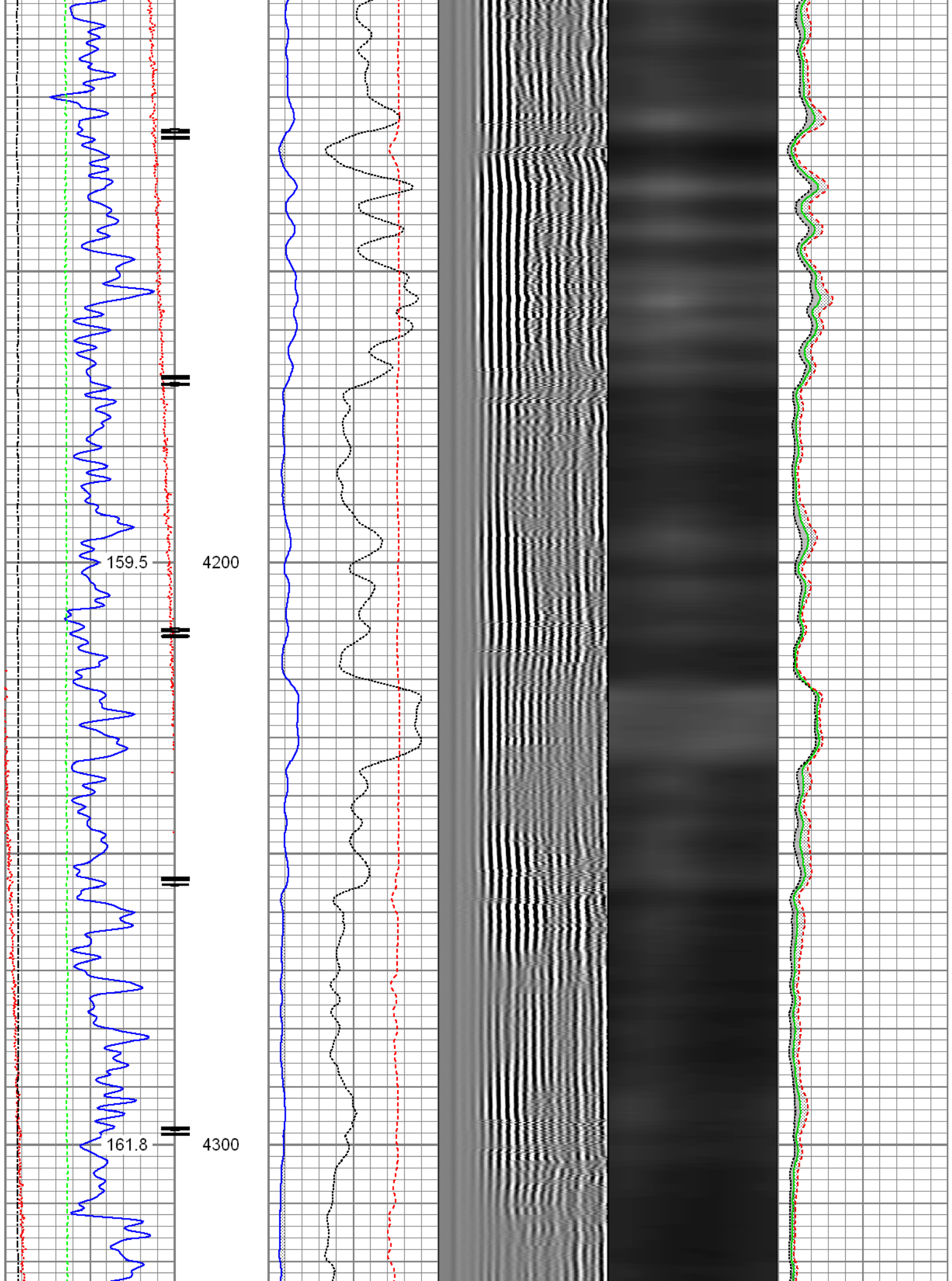


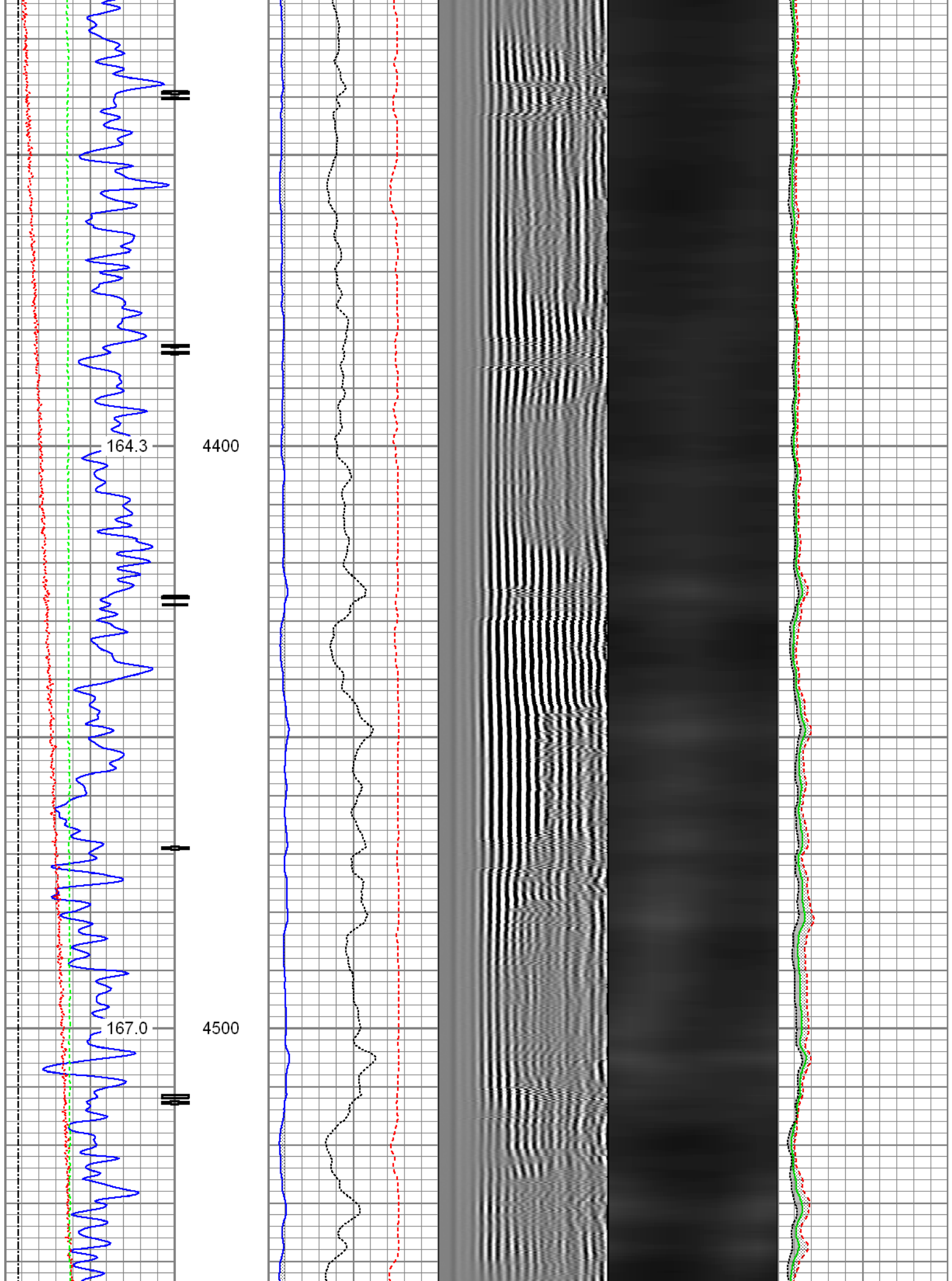


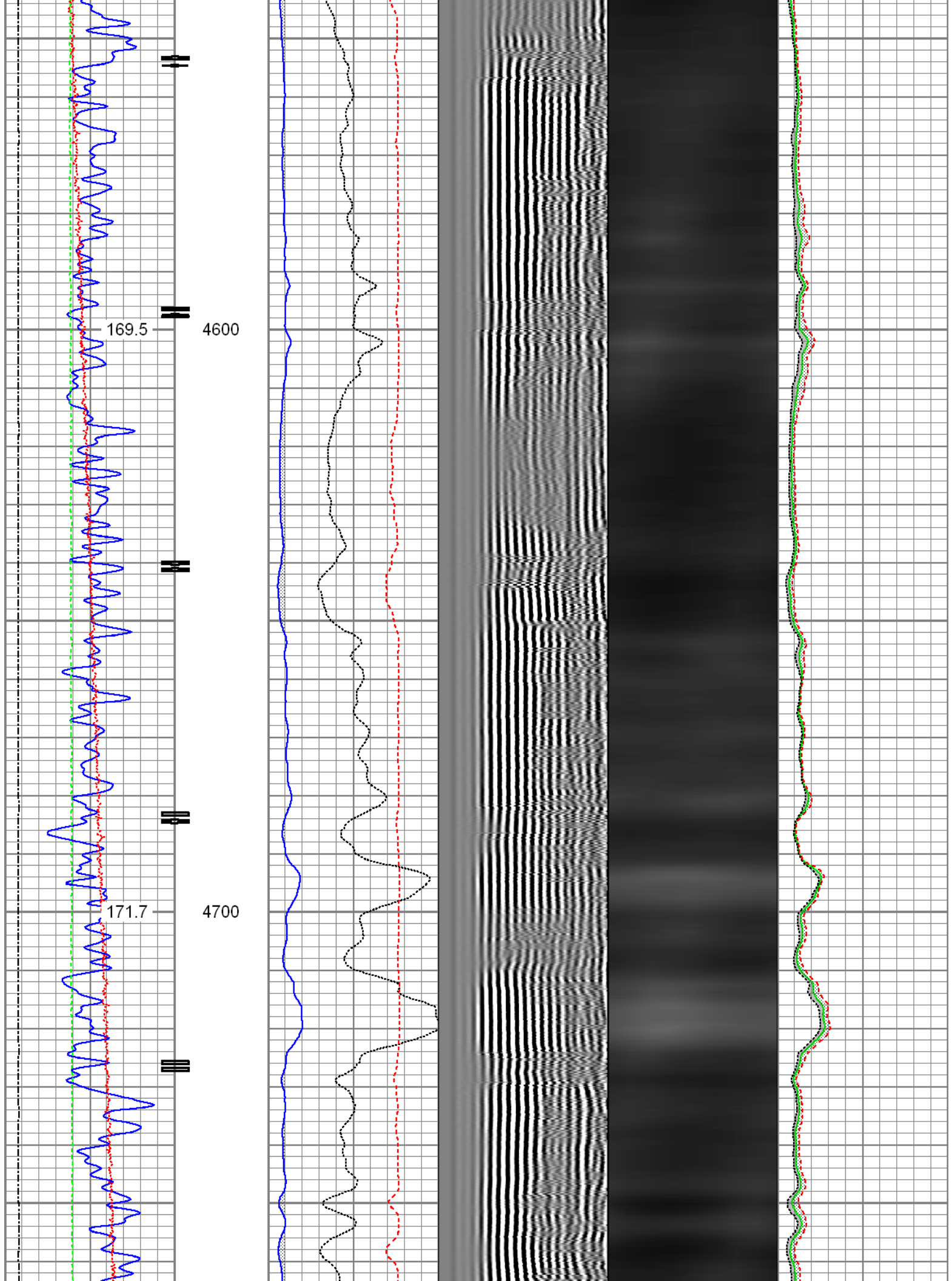


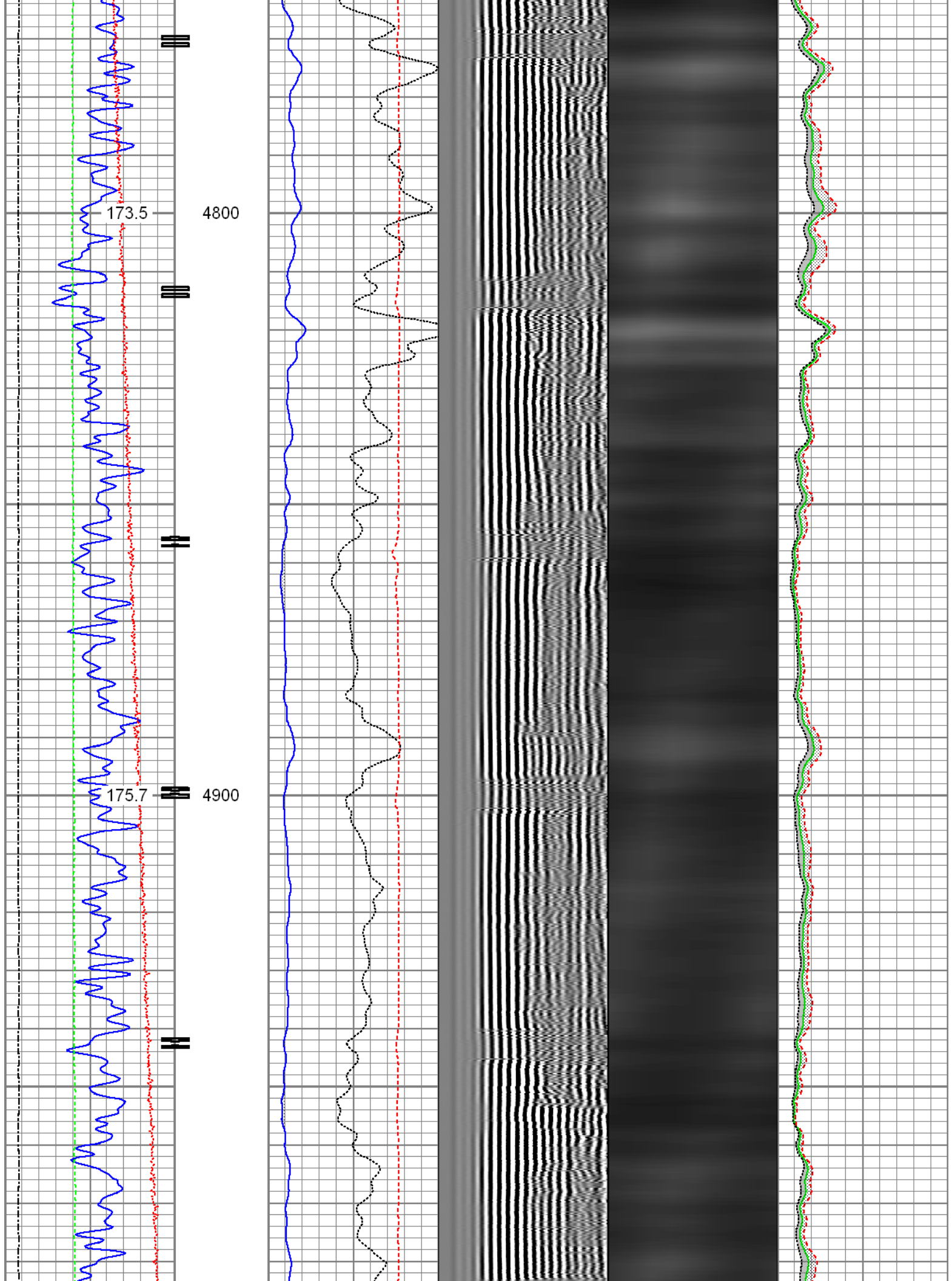


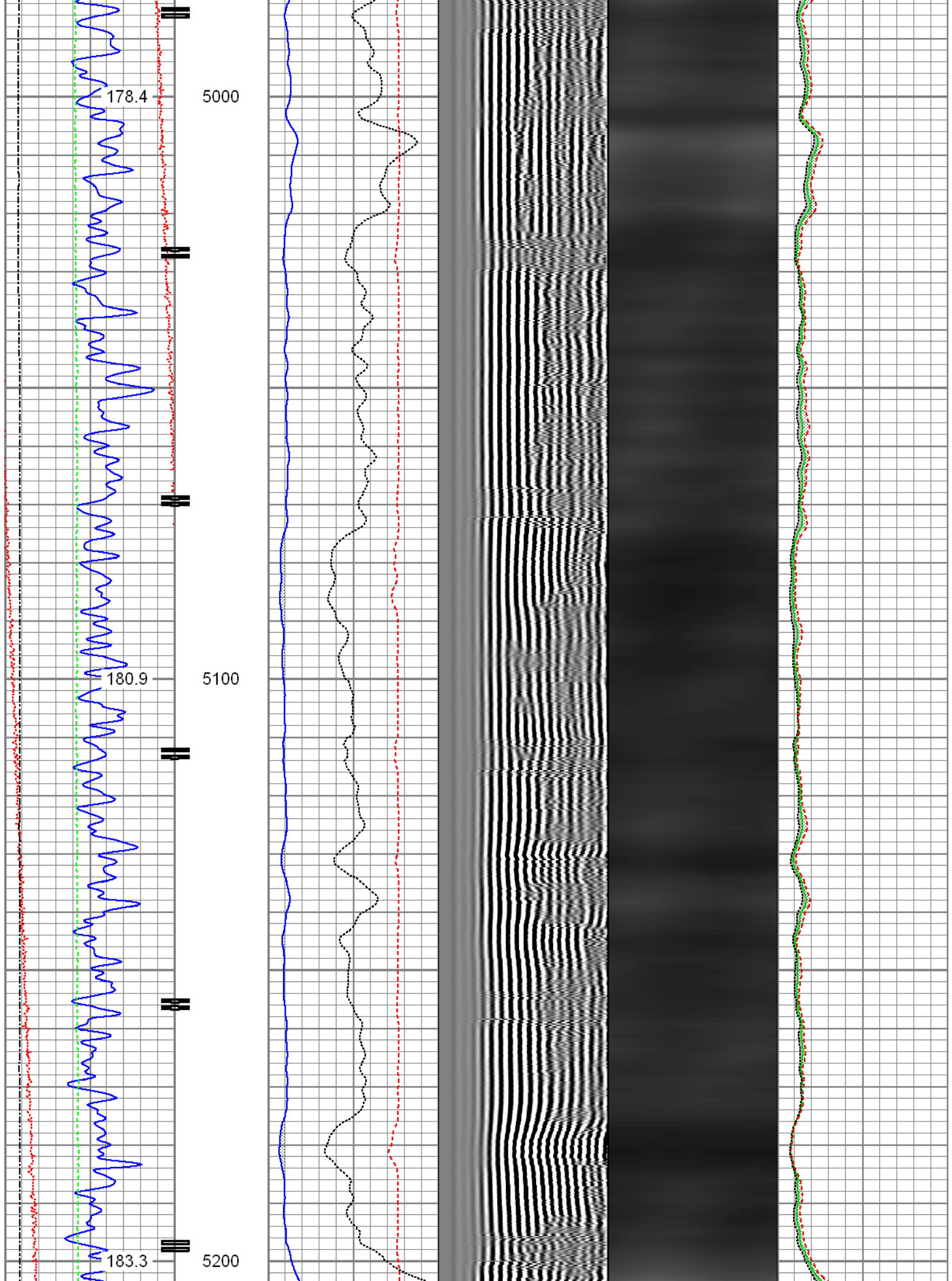


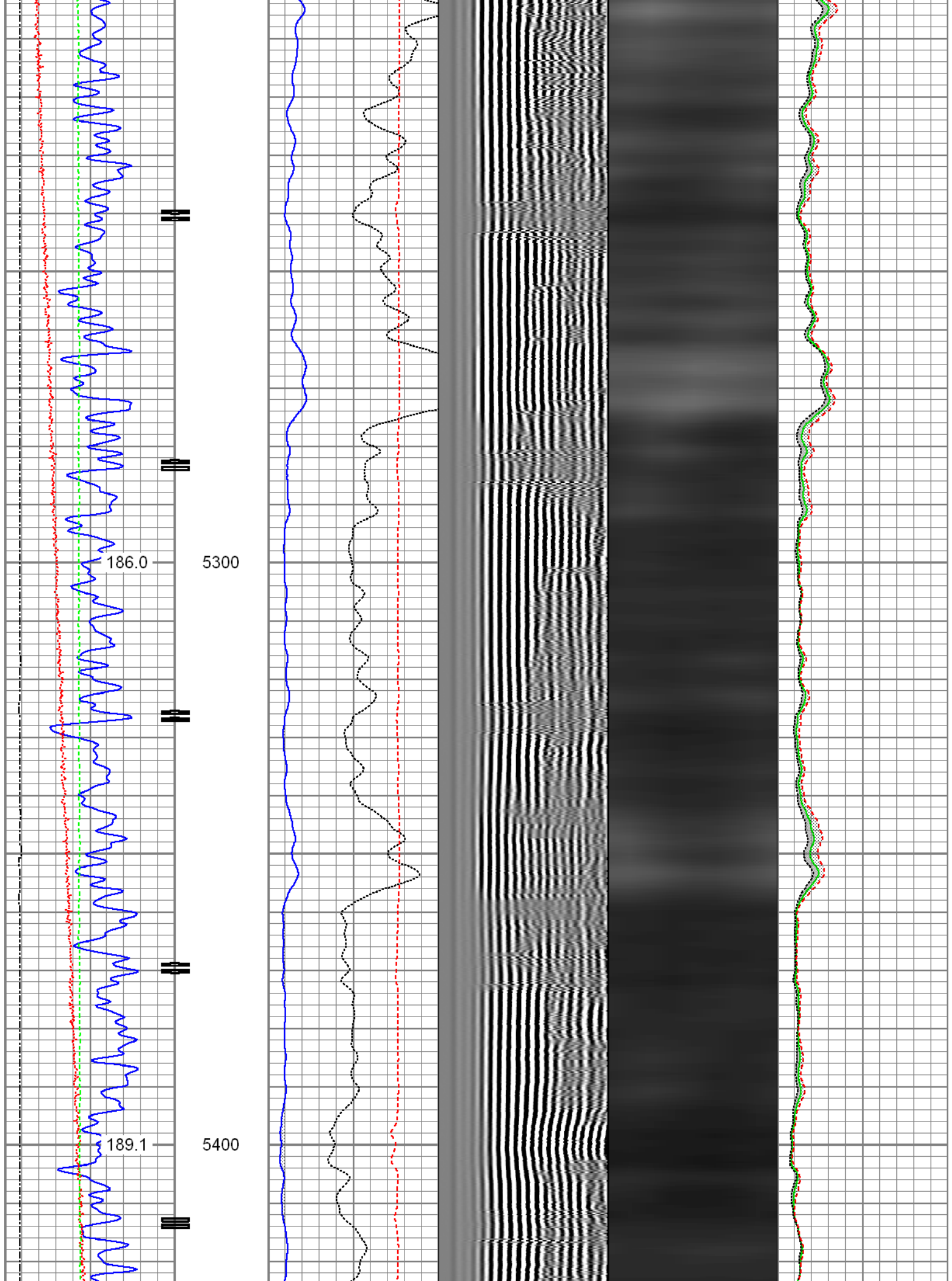


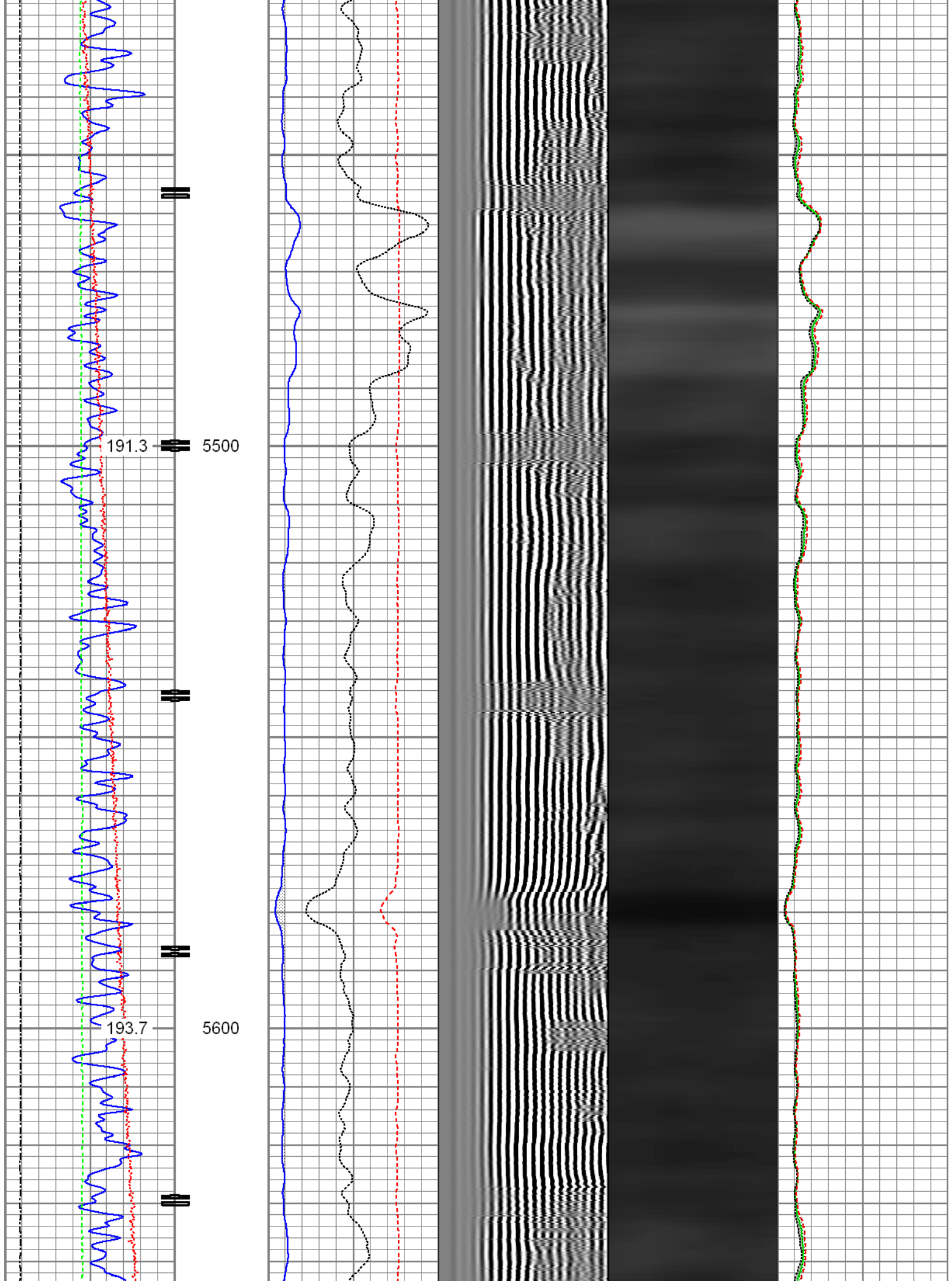


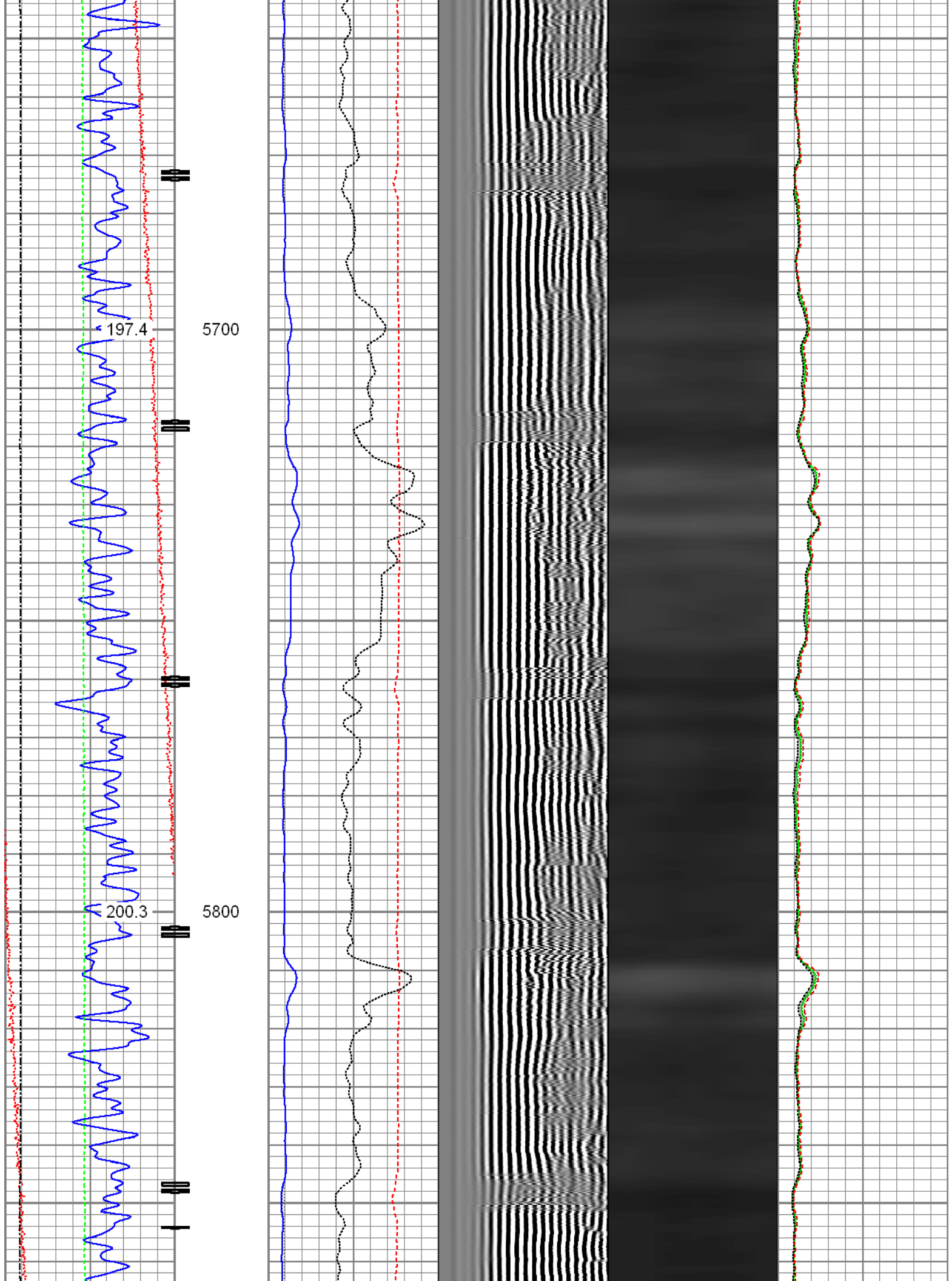


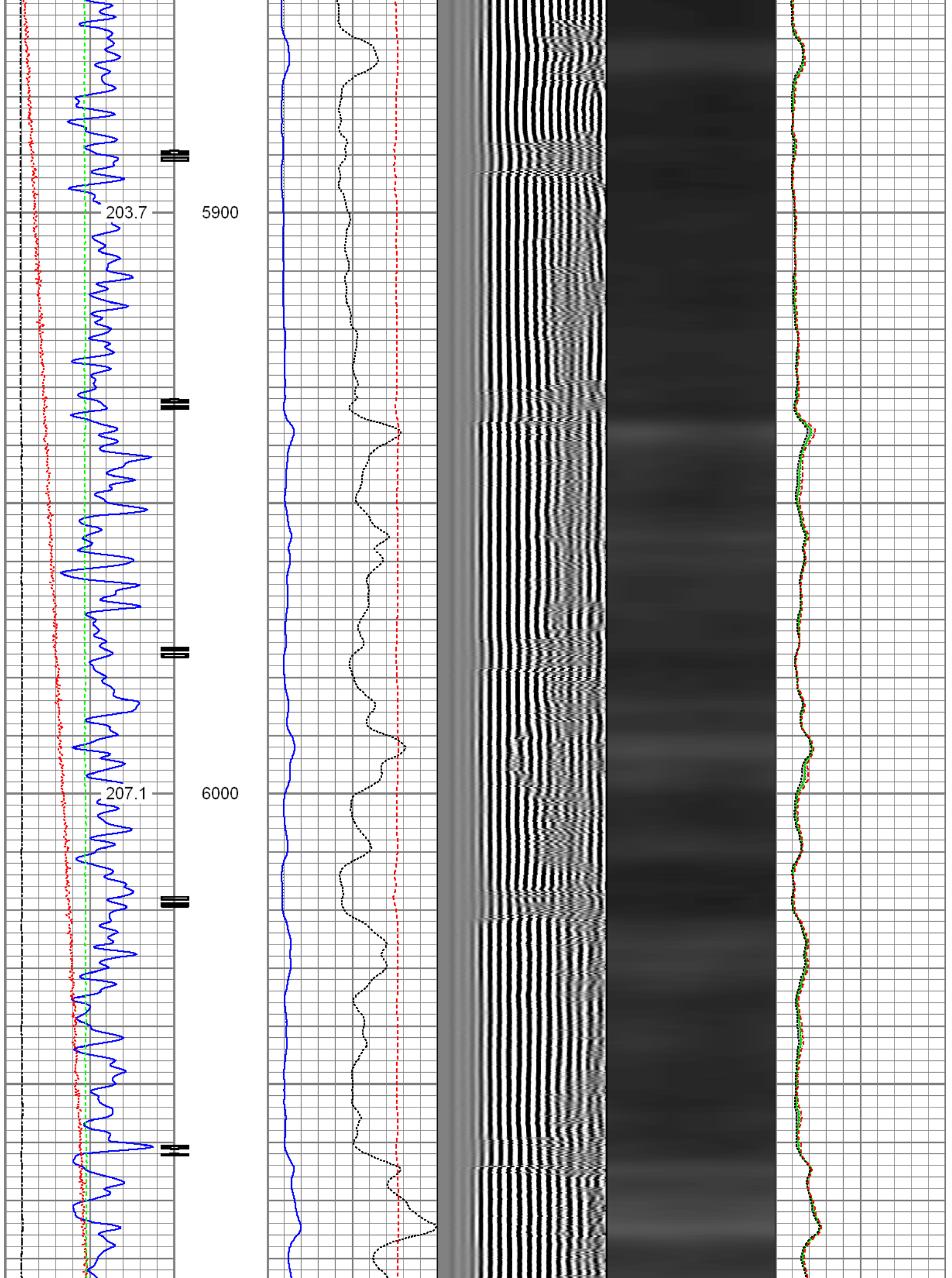


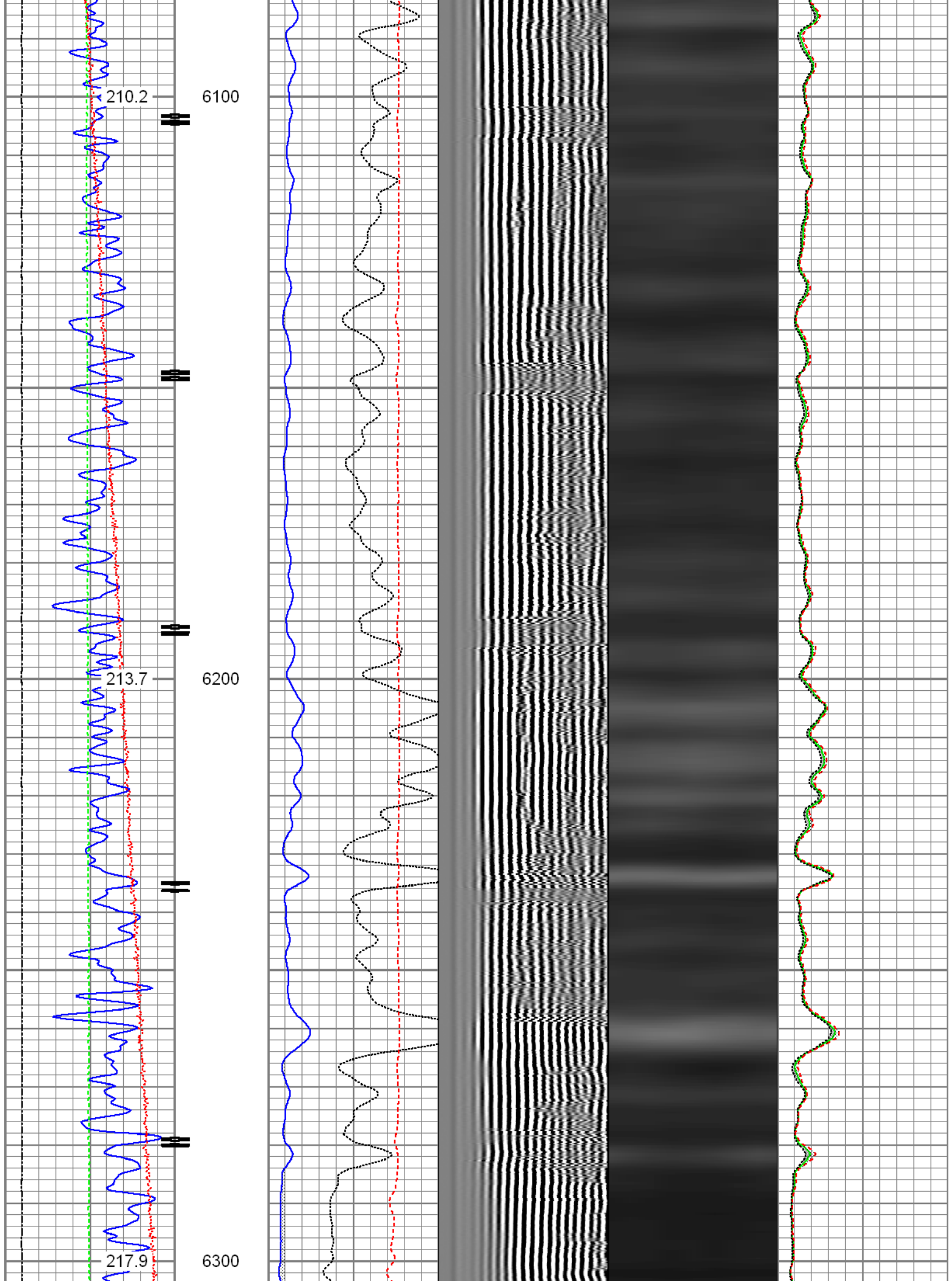


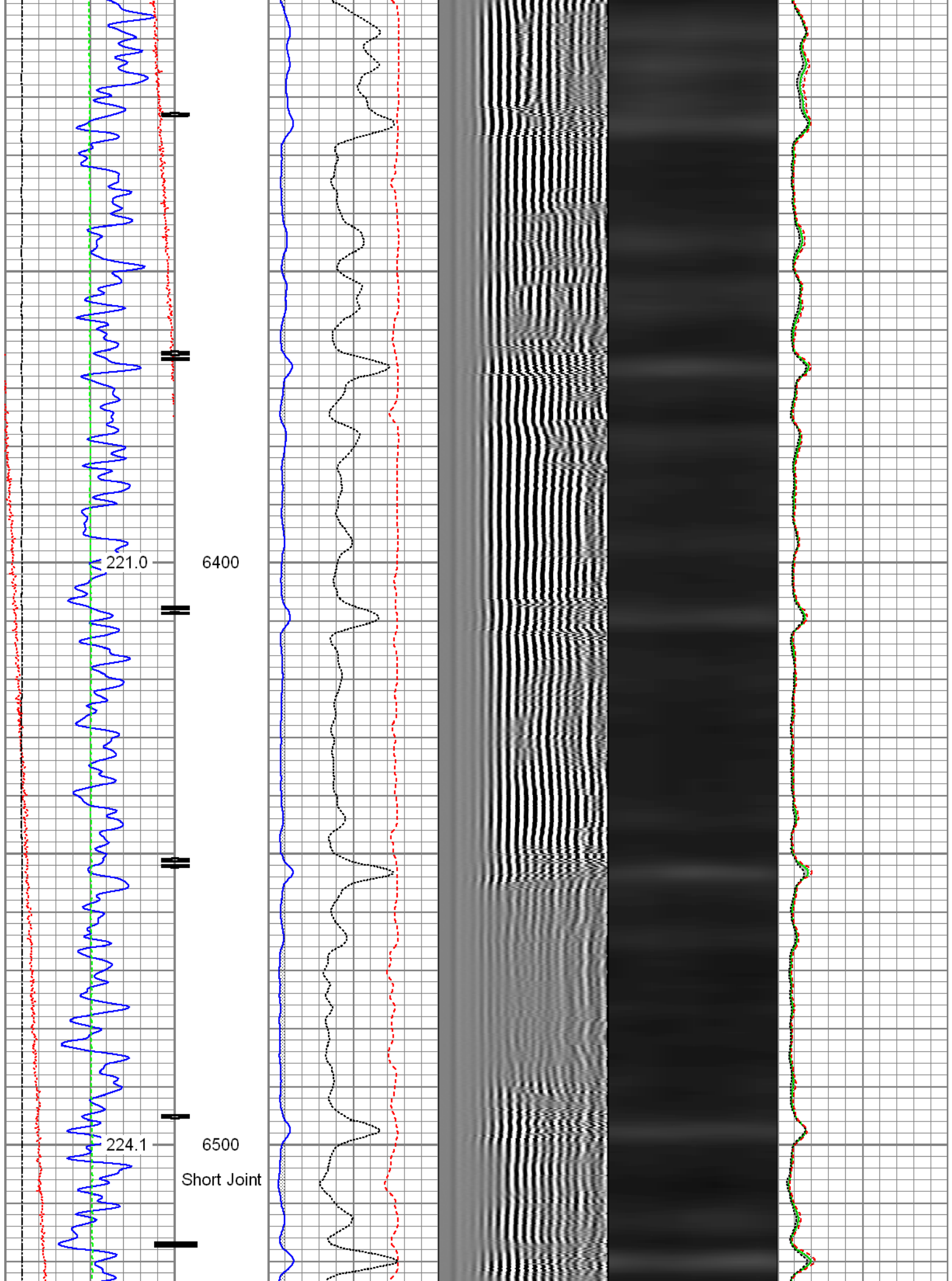


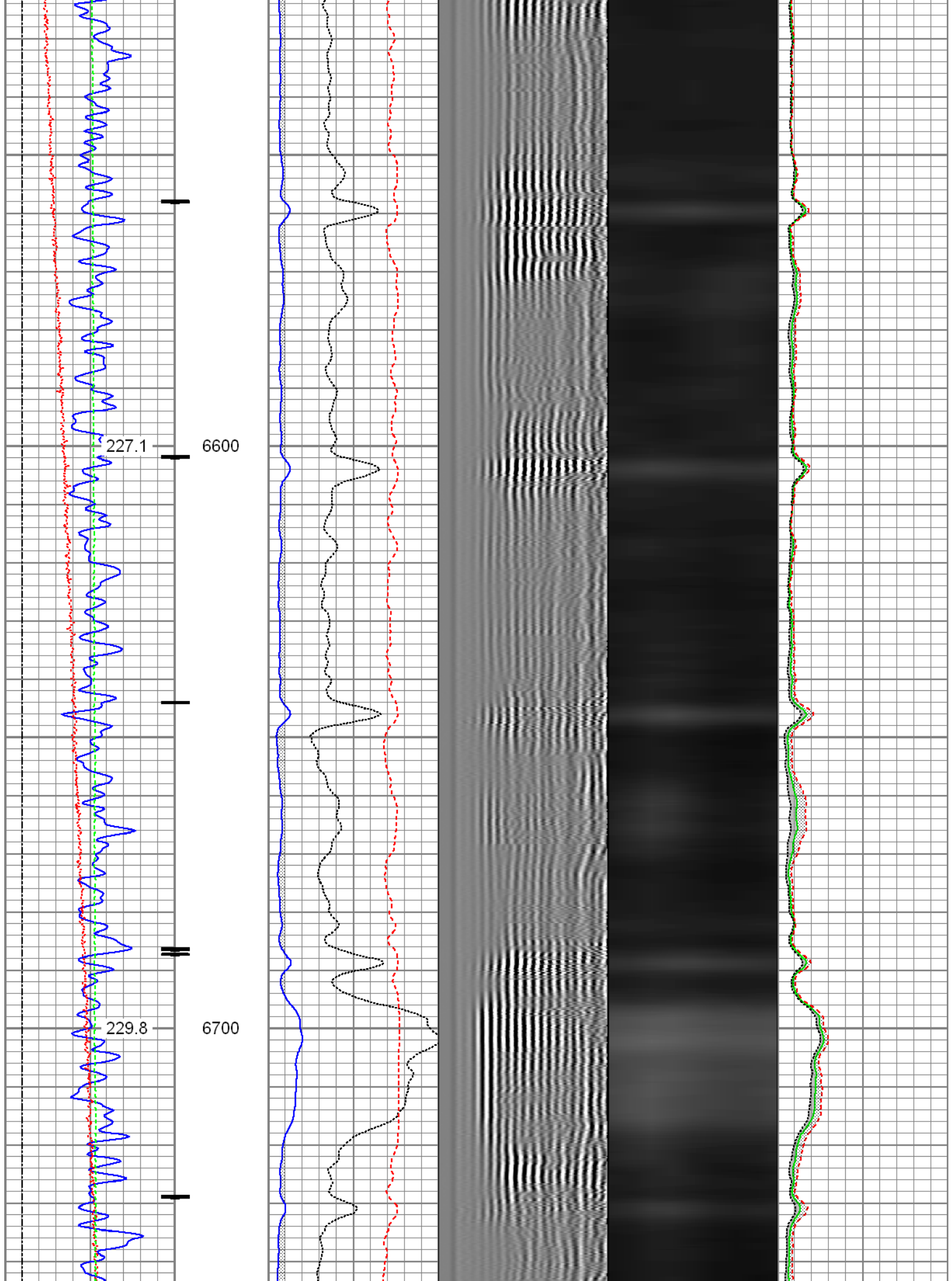


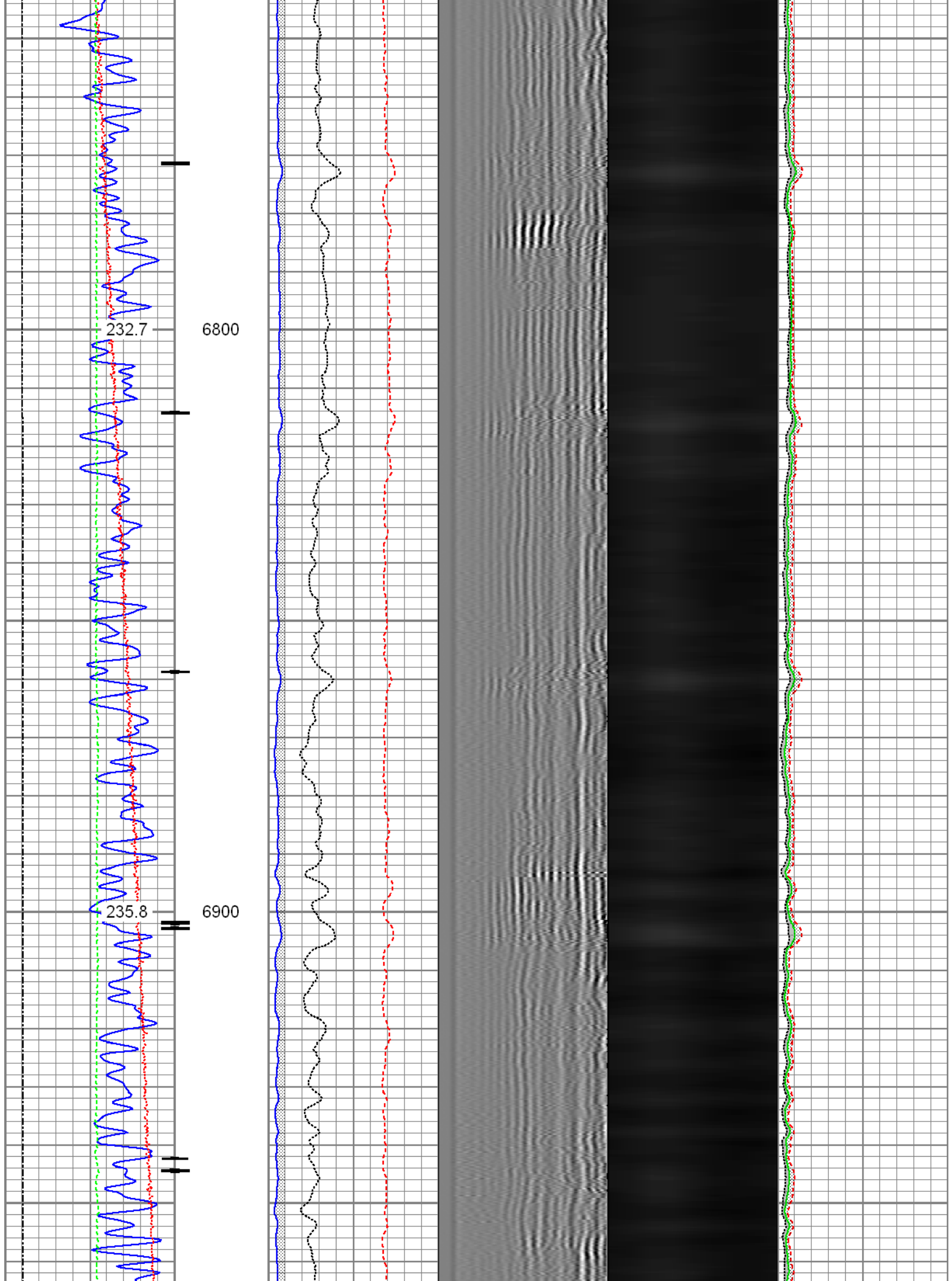


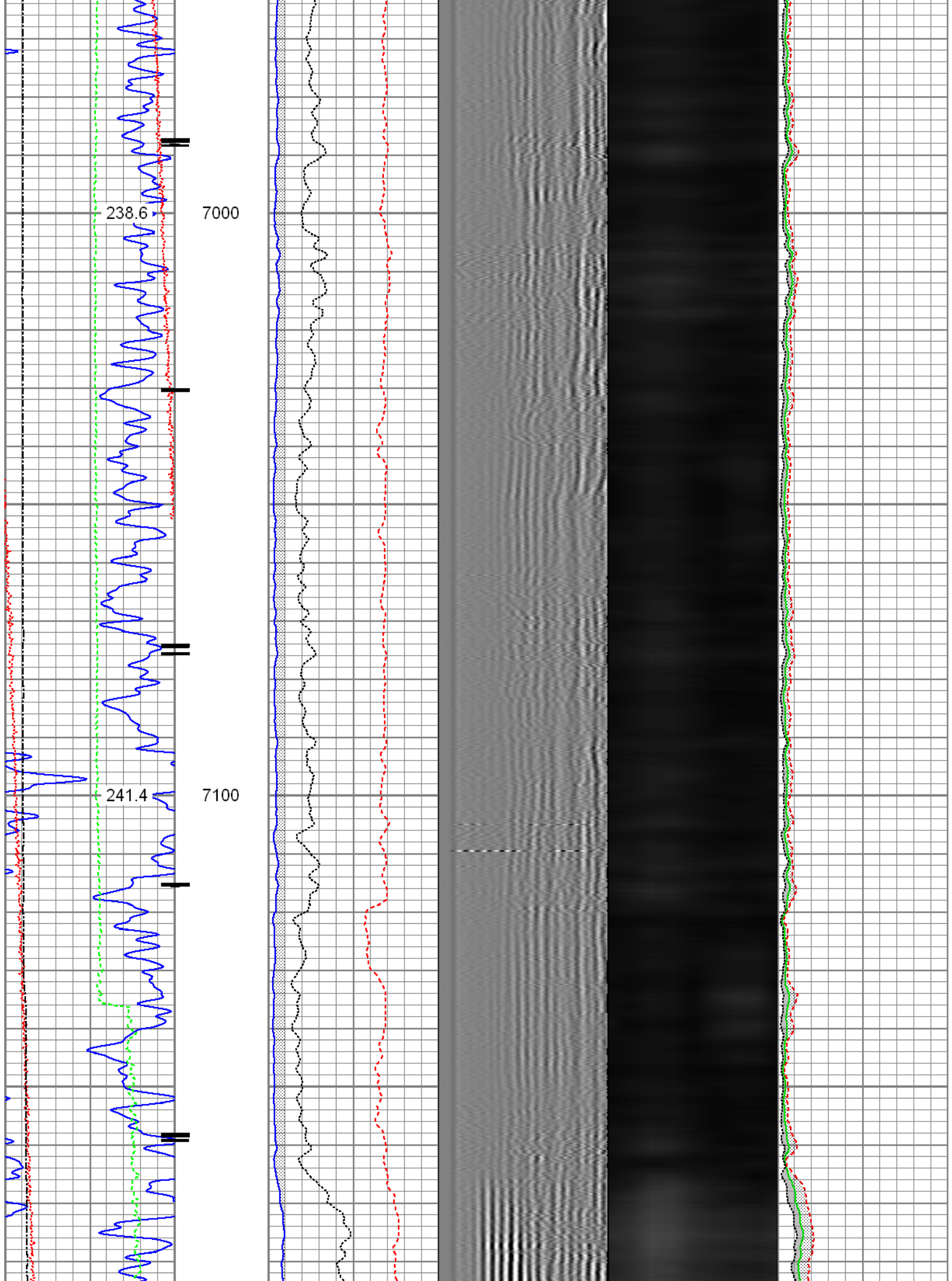


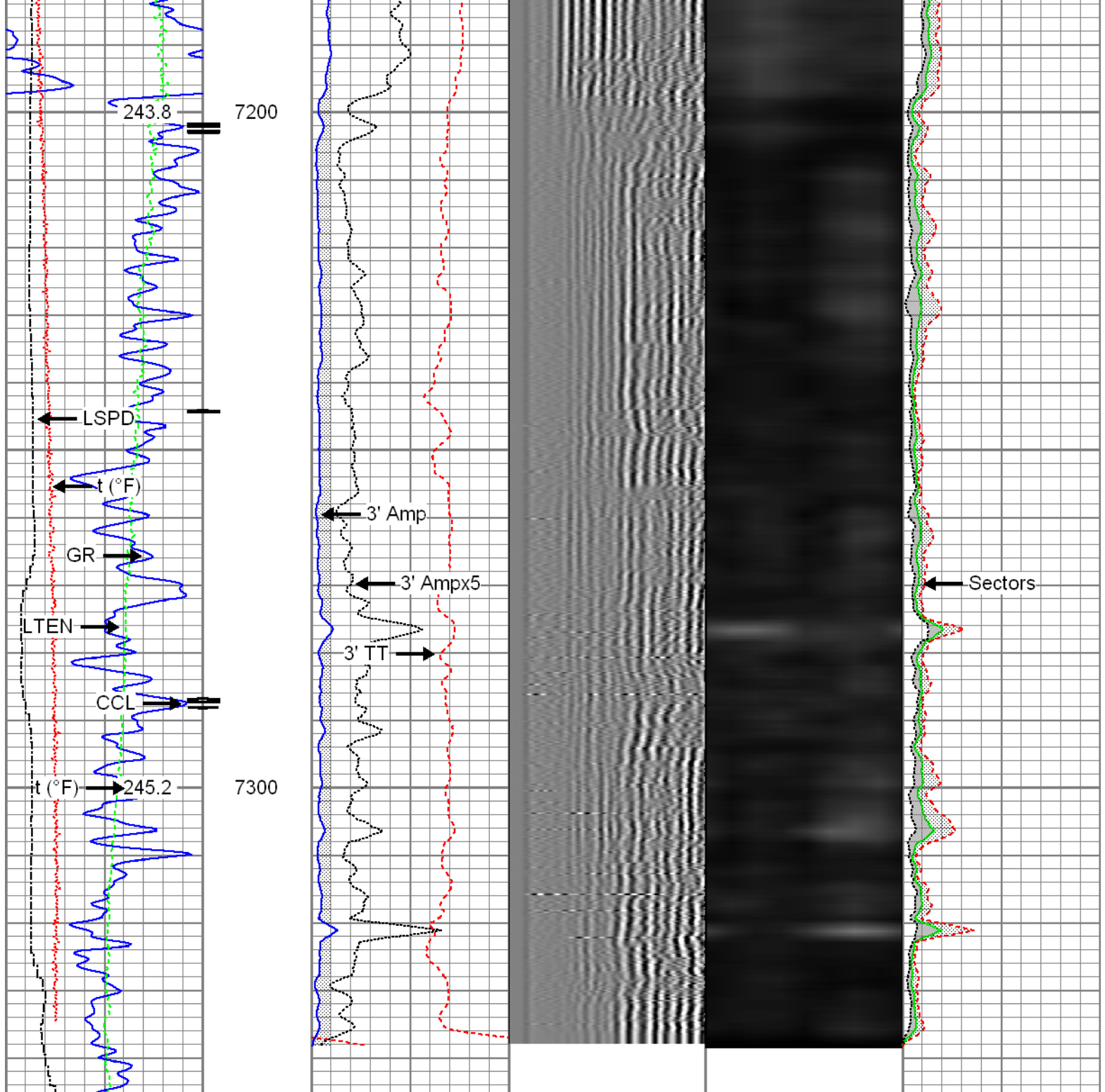










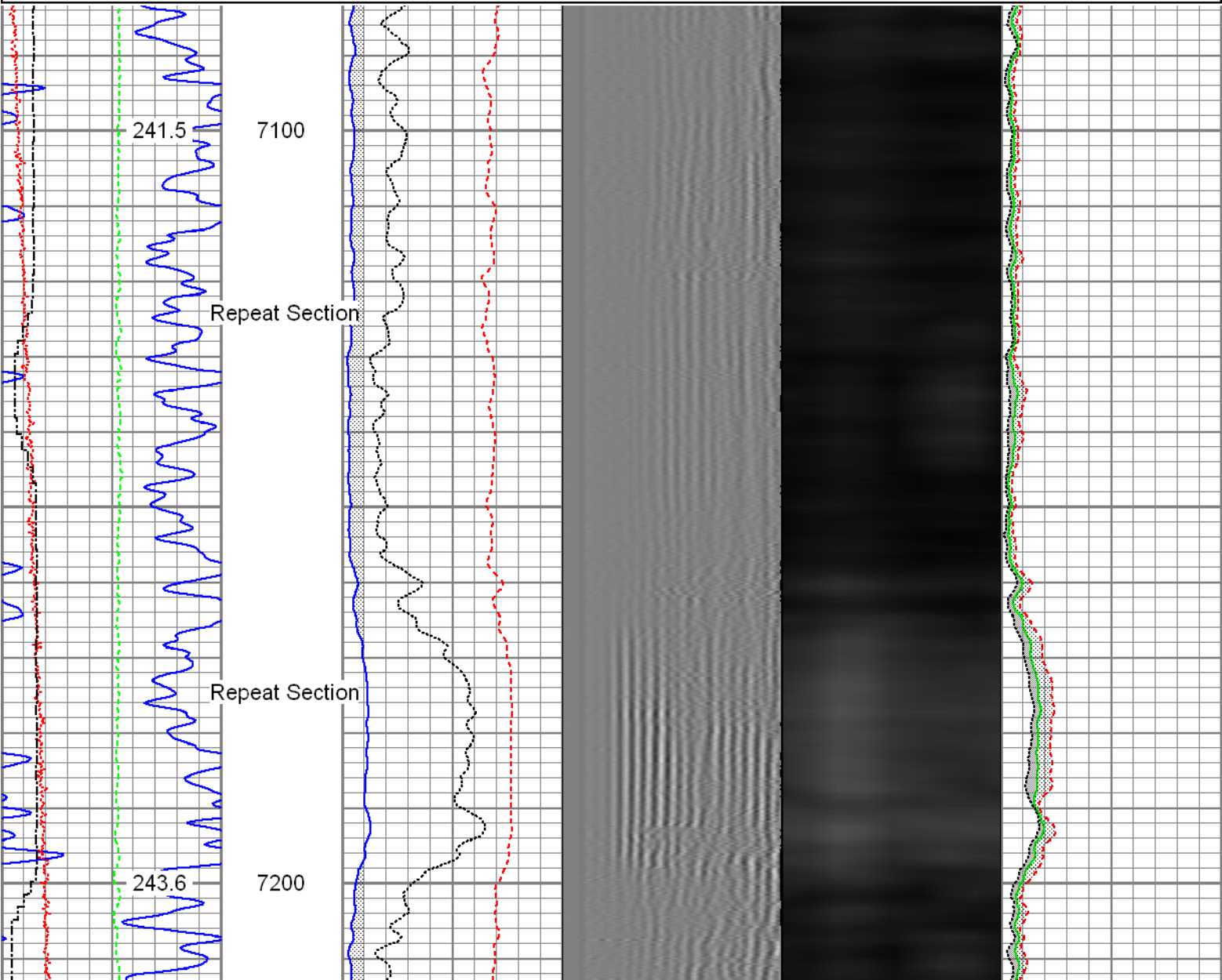


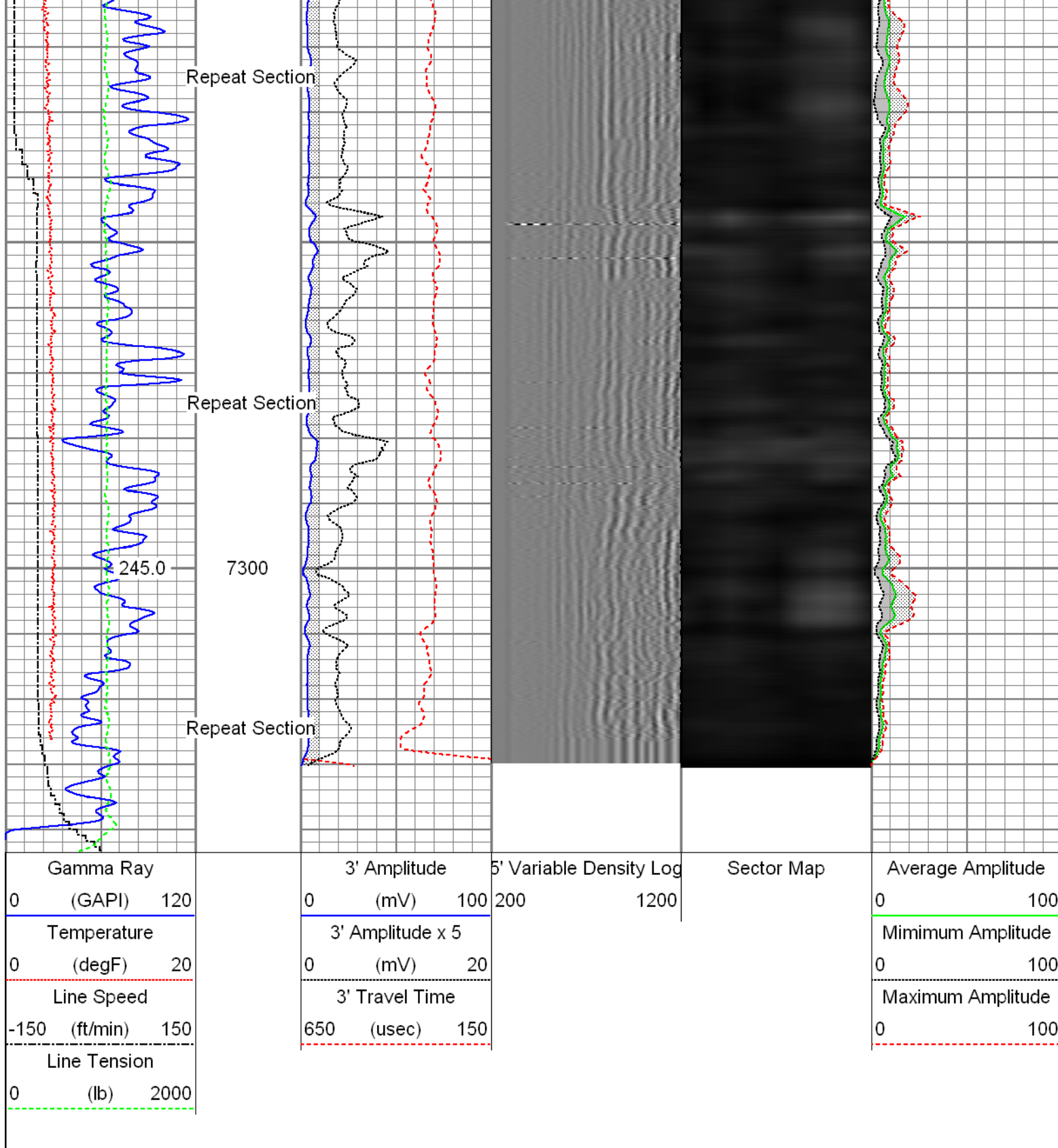
Gamma Ray (GAPI)		3' Amplitude (mV)		5' Variable Density Log		Sector Map		Average Amplitude	
0	120	0	100	200	1200			0	100
Temperature (degF)		3' Amplitude x 5 (mV)						Minimum Amplitude	
0	20	0	20					0	100
Line Speed (ft/min)		3' Travel Time (usec)						Maximum Amplitude	
-150	150	650	150					0	100
Line Tension (lb)									
0	2000								
Casing Collar Locator									
10	0.3								

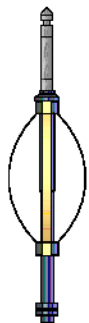
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Dataset Pathname:
Presentation Format:
Dataset Creation:
Charted by:

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repeat.1
radii
Wed Jan 13 09:52:15 2016 by Calc SCH 120430
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	650 (usec) 150			0 100
Line Tension				
0 (lb) 2000				





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
Head/Volt	10.40		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

Performed: Fri Jan 08 09:20:24 2016

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:	FW1302-002	
Tool Model:	2-3/4"	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	7151.198	ft

Master Calibration, performed Wed Jan 13 09:40:15 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.615	0.800	71.921	115.825	0.737
CAL	0.710	0.741				
5'	0.000	0.522	0.800	71.921	136.426	0.732
SUM						
S1	0.001	0.616	0.000	100.000	162.369	-0.093
S2	0.000	0.611	0.000	100.000	163.693	-0.077
S3	0.001	0.607	0.000	100.000	164.978	-0.115
S4	0.001	0.604	0.000	100.000	165.639	-0.095
S5	0.000	0.611	0.000	100.000	163.700	-0.057
S6	0.001	0.616	0.000	100.000	162.671	-0.170
S7	0.001	0.612	0.000	100.000	163.660	-0.232
S8	0.001	0.627	0.000	100.000	159.713	-0.215

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	0.710	0.741	1.000	0.000

Air Zero Calibration, performed Tue Jan 12 09:00:57 2016:

	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	Sunflower 25G-17HZ
Field	Wattenberg
County	Weld
State	Colorado