



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company	Kerr-McGee Oil & Gas OnShore, L.P.				
Well	Alvin 27N-29HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
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Well	Alvin 27N-29HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
Location:	API # : 05-123-42207				
SEC 29 TWP 2N RGE 65W	Other Services				
	Gauge Ring				
	Elevation				
	Permanent Datum Ground Level Elevation 4908'				
Log Measured From	Kelly Bushing 16 FT				
Drilling Measured From	Kelly Bushing				
	K.B. 4924'				
	D.F. 4923'				
	G.L. 4908'				

Date	24-Feb-2016
Run Number	Two
Depth Driller	12735 FT
Depth Logger	7343 FT
Bottom Logged Interval	7340 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	445 FT
Time Well Ready	ROA
Time Logger on Bottom	11:00
Equipment Number	HD-0361
Location	Fort Lupton, CO
Recorded By	Sam Hopper
Witnessed By	Levi McArthur

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	---	Surface	1876 FT		
Intermediate #1	5 1/2	17	---	Surface	12724 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 16 FT  
Casing Tally reported Marker Joint Top at 6524 FT  
Recorded Marker Joint Top at 6432 FT  
Gauge Ring/Junk Basket ran to 7436 FT with no debris found  
Log ran from as deep as possible to surface  
Recorded with 2800 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.

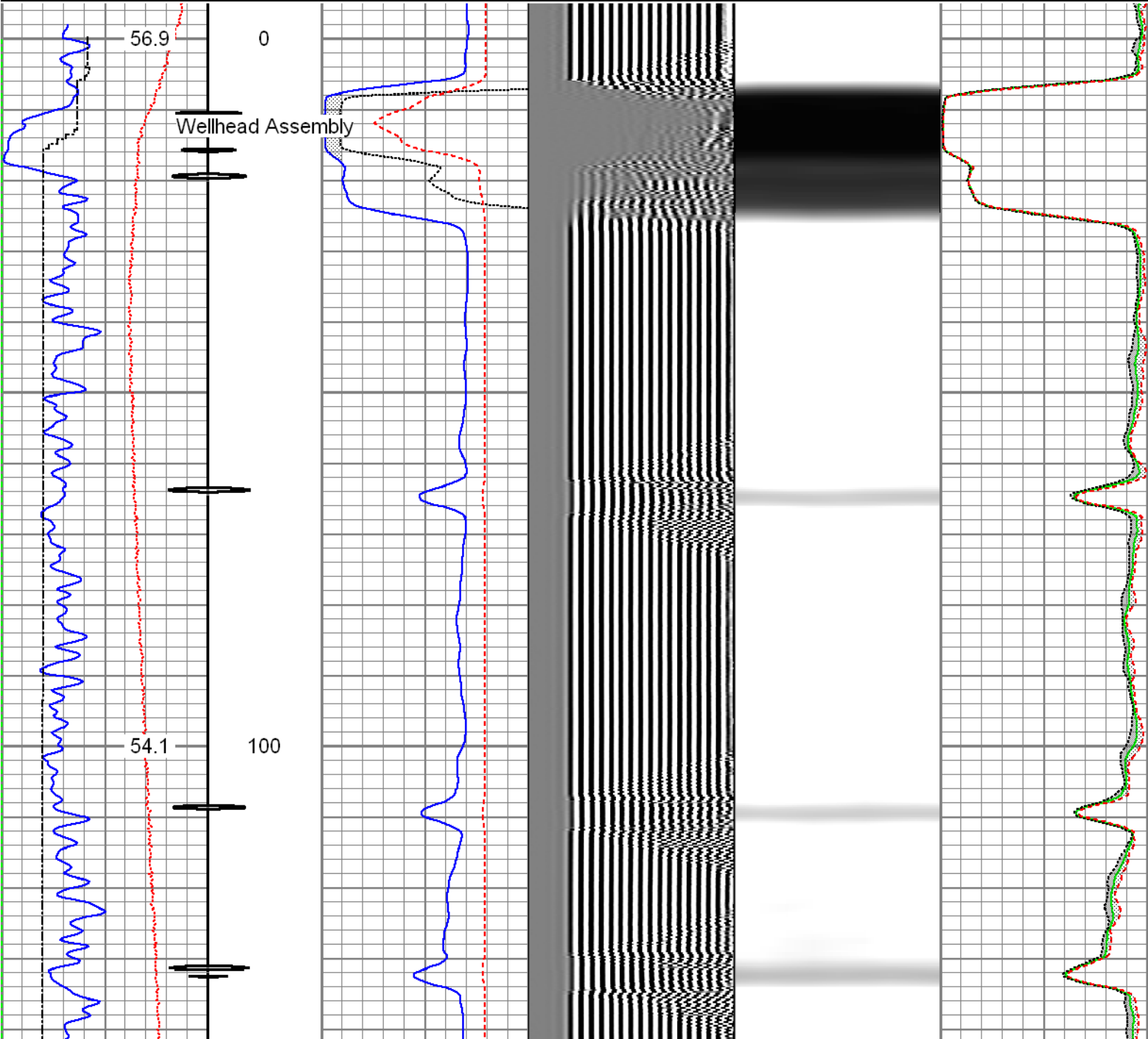


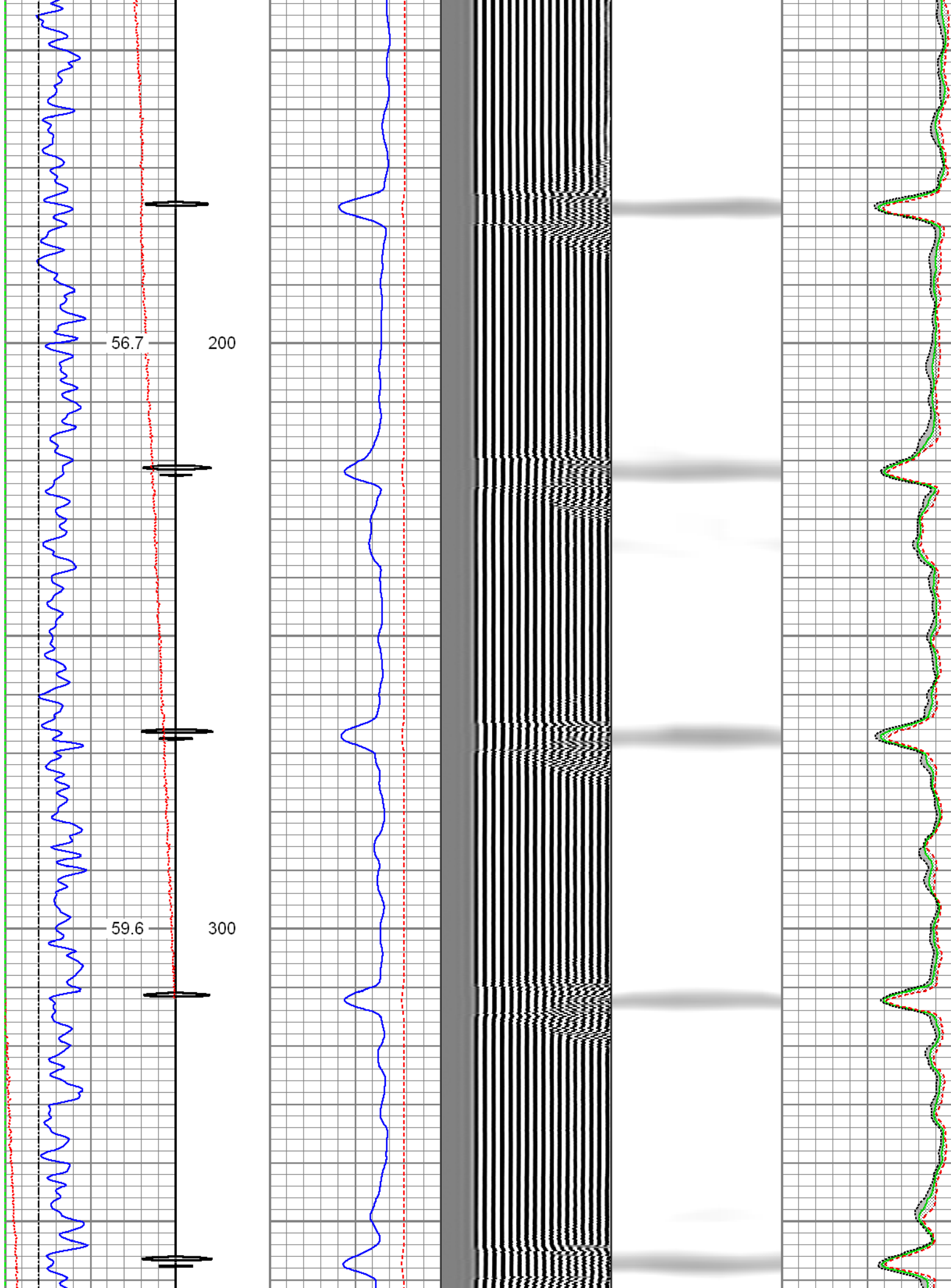
Main Pass

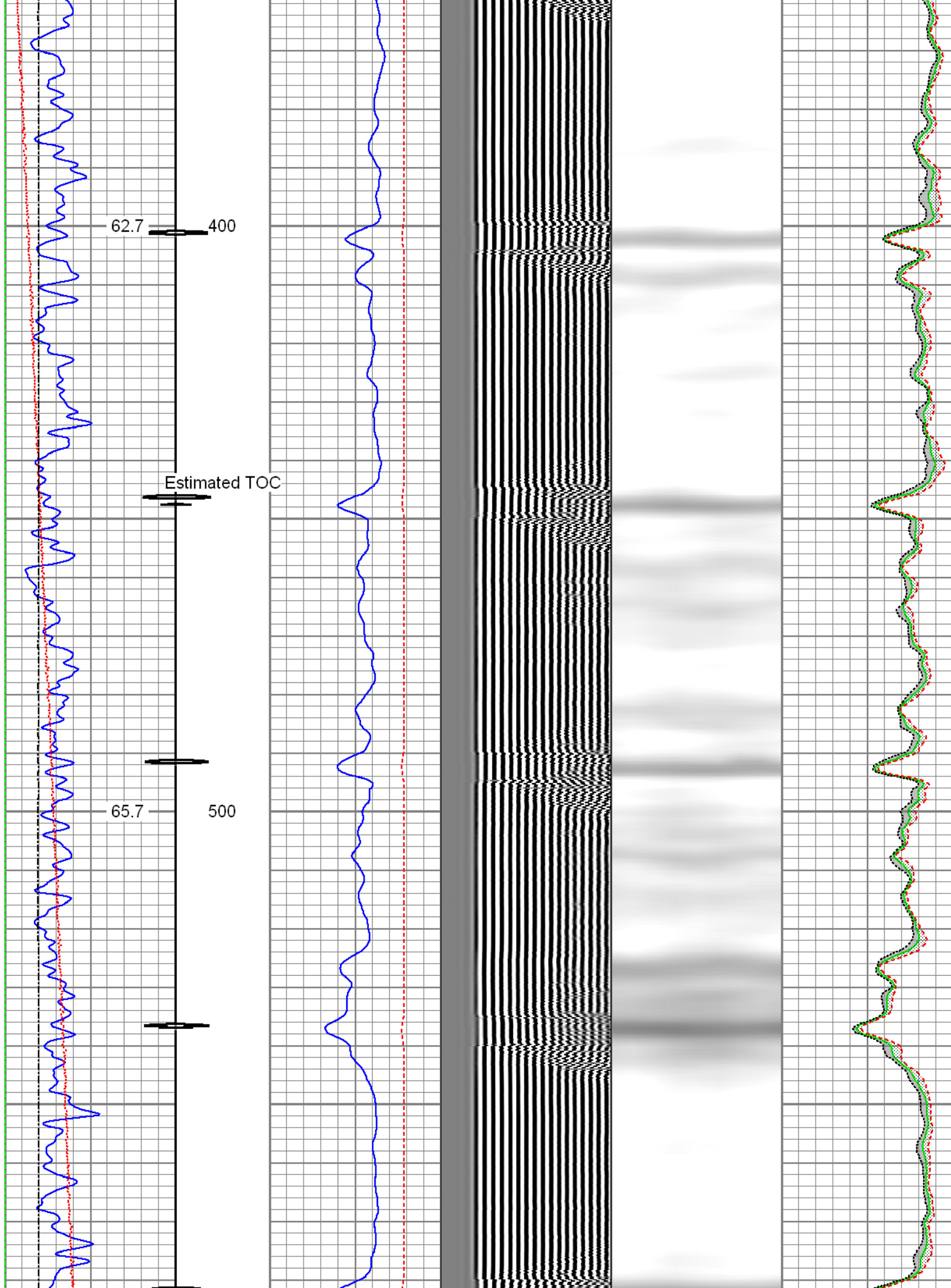
Recorded with 2800 PSI Surface Induced Pressure

Database File: 0512342207\_anadarko\_alvin 27n-29hz\_02-24-16\_rbl.db  
Dataset Pathname: run2/pass7.1  
Presentation Format: radii  
Dataset Creation: Wed Feb 24 12:28:21 2016 by Calc 7.0 B1  
Charted by: Depth in Feet scaled 1:240

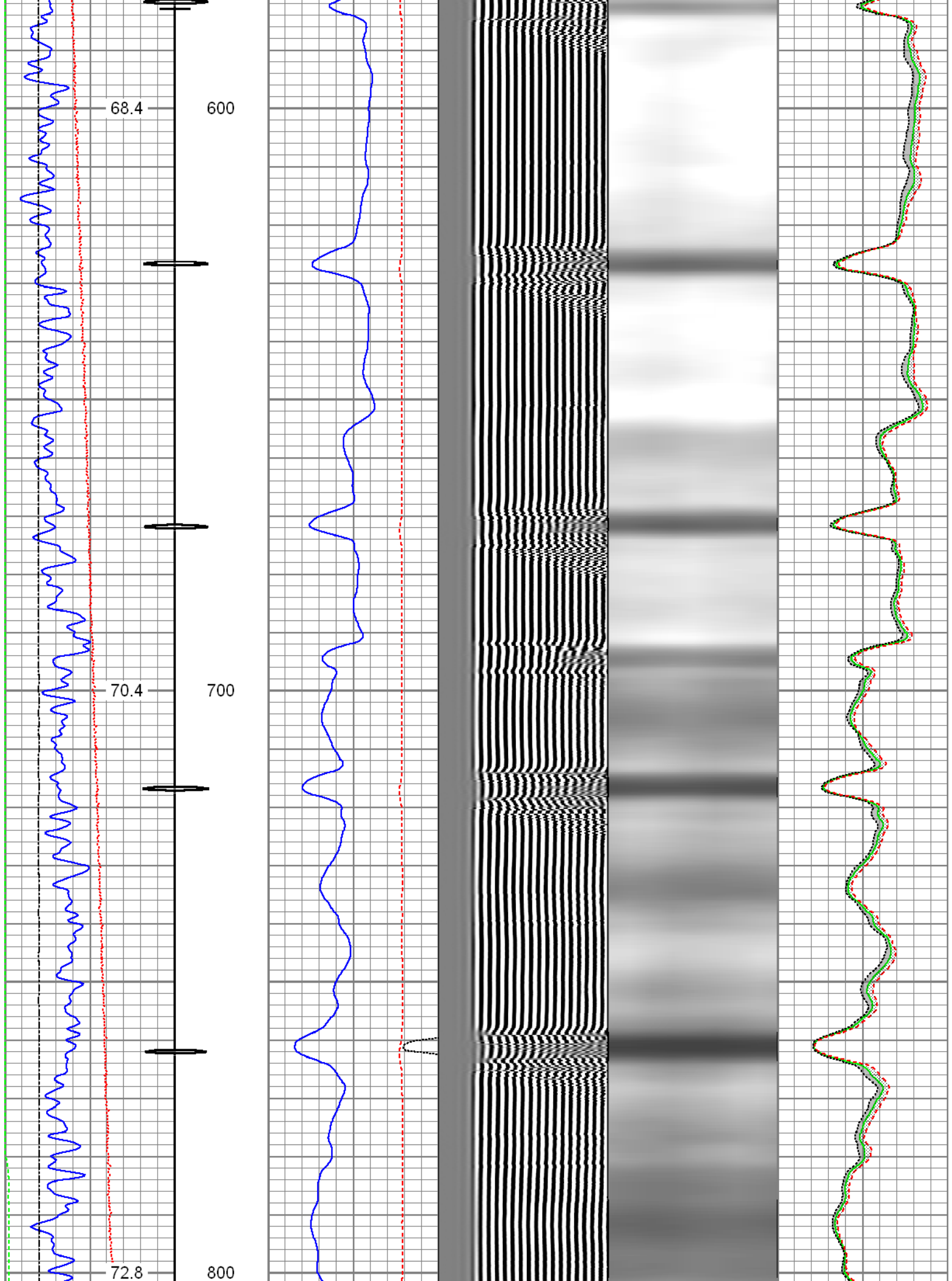
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

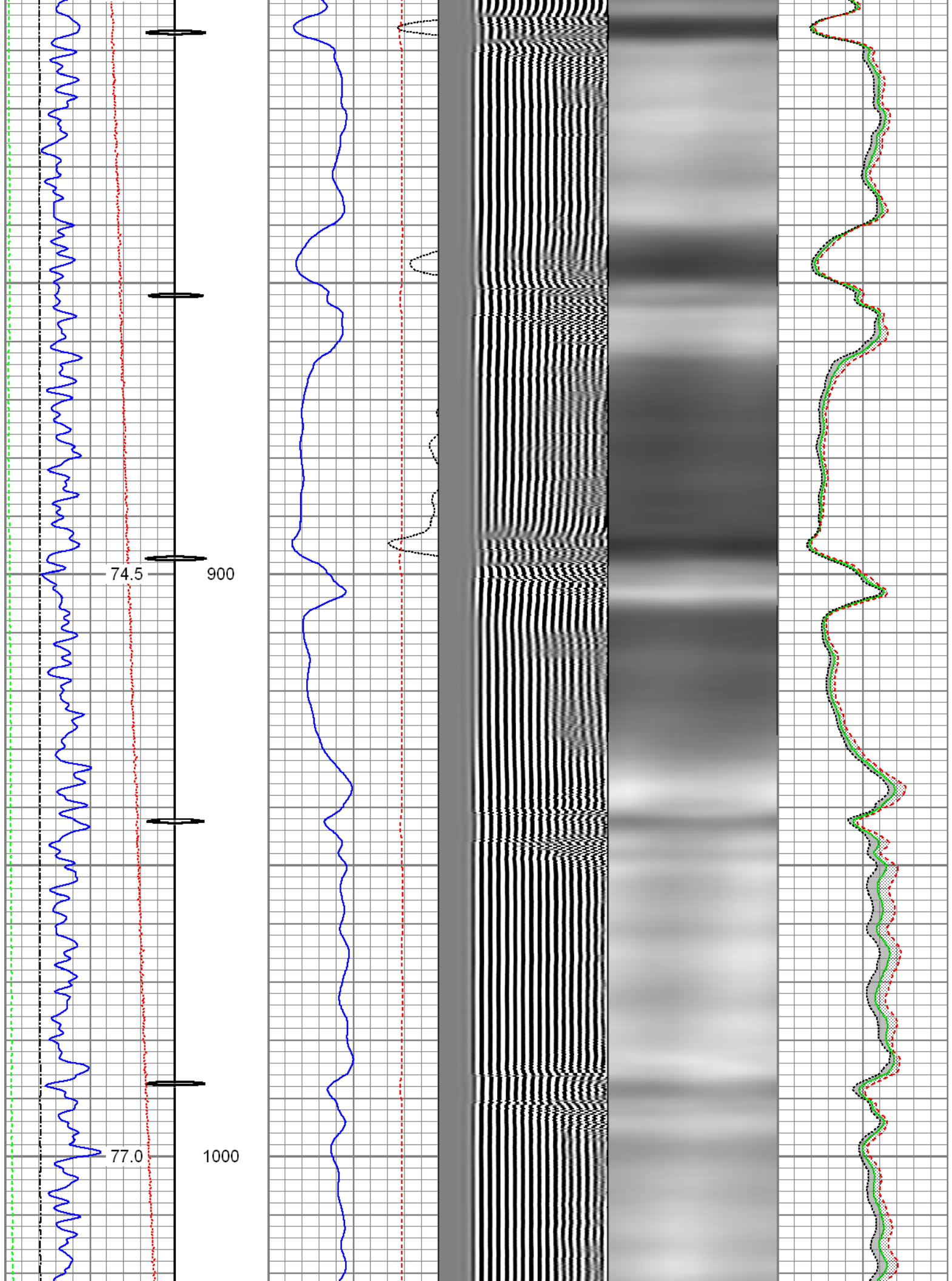


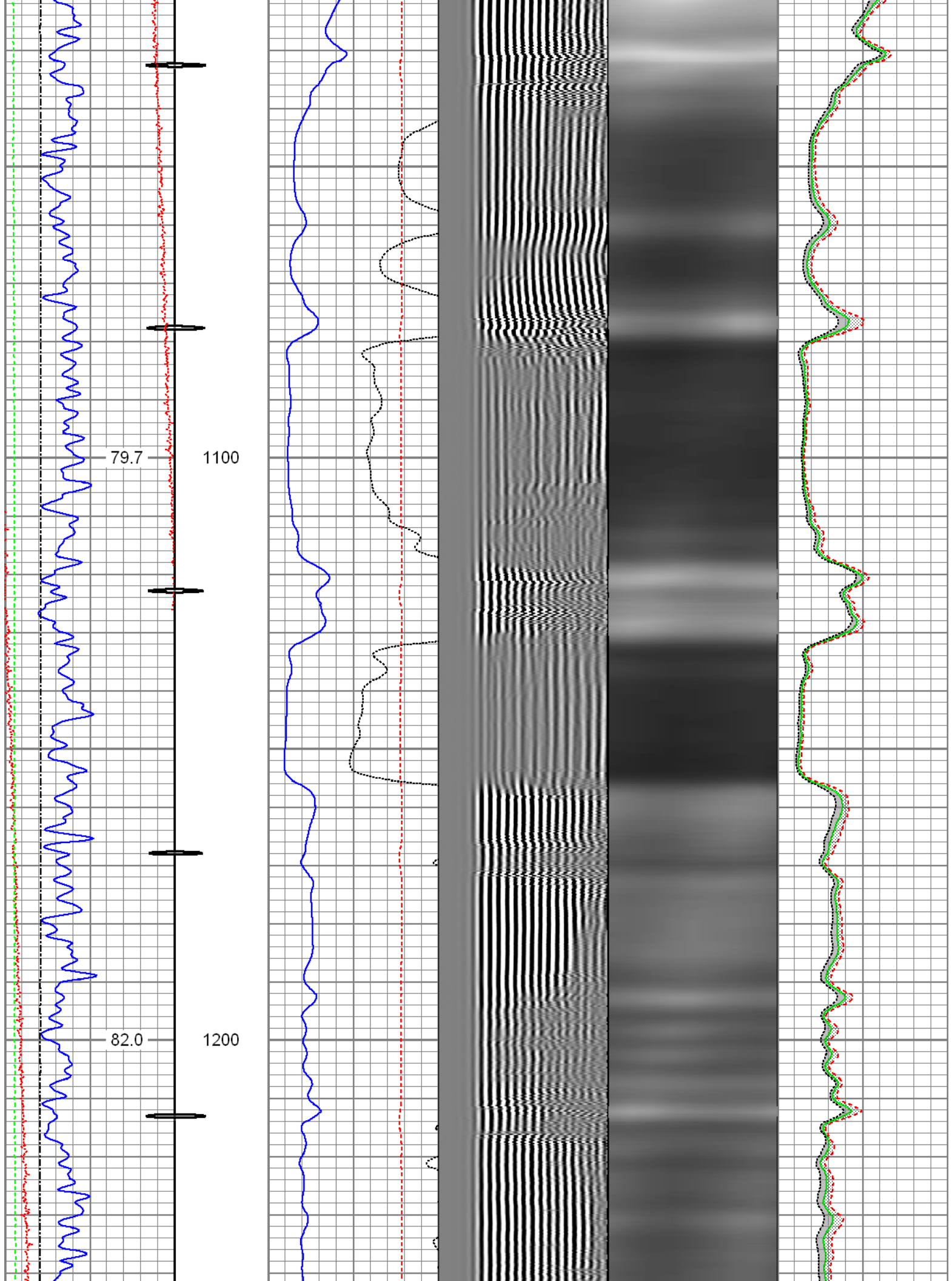


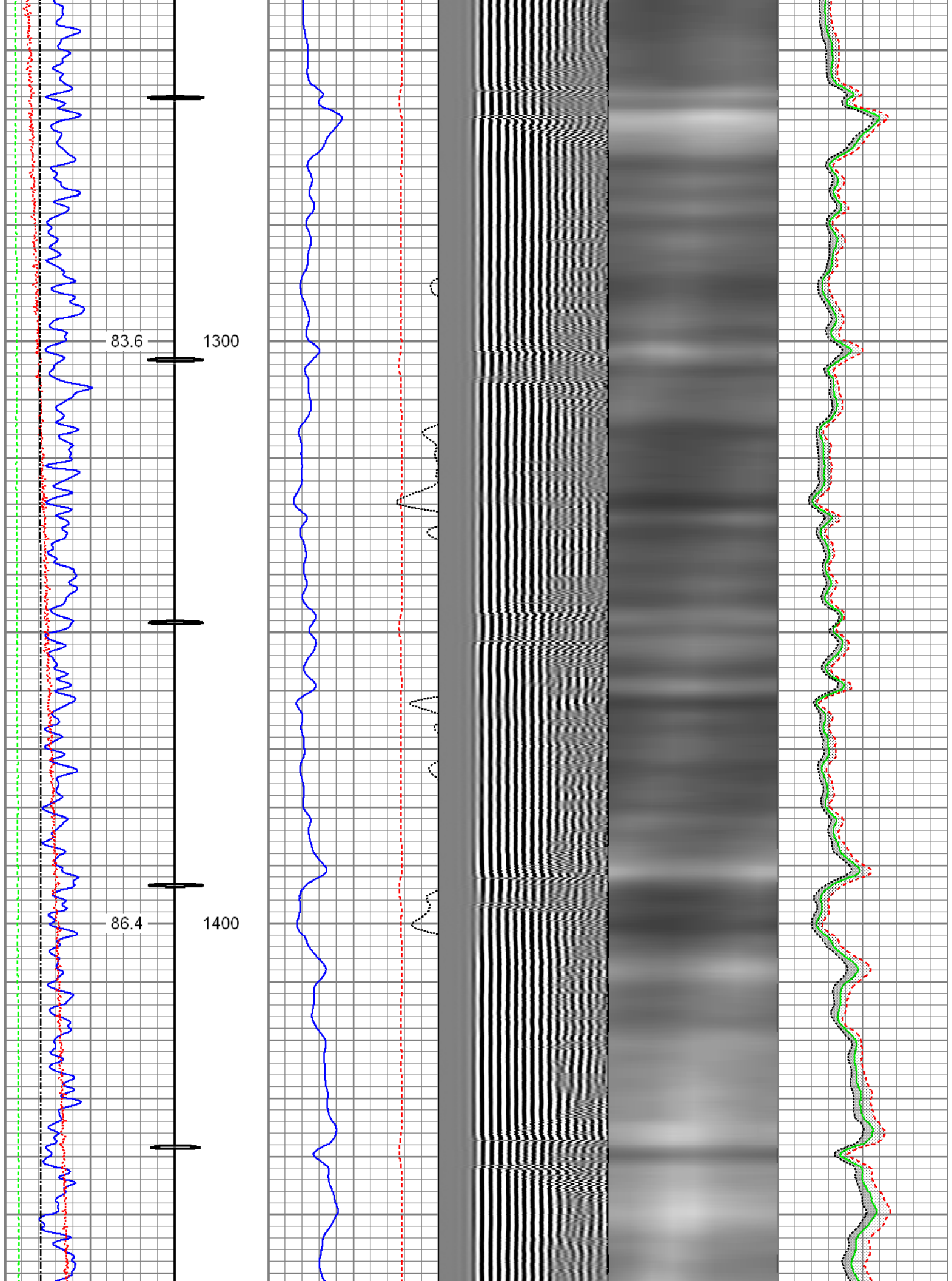




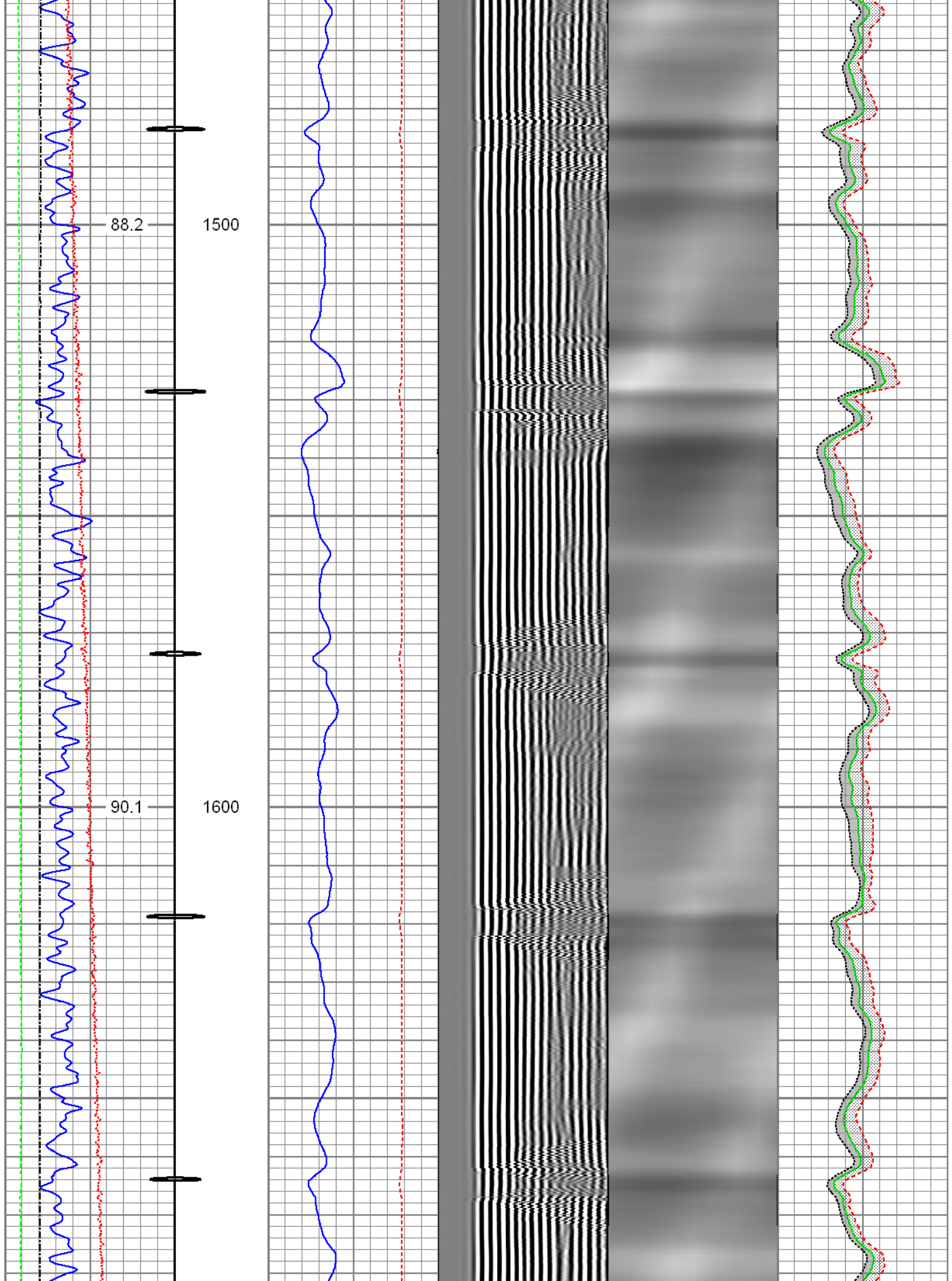




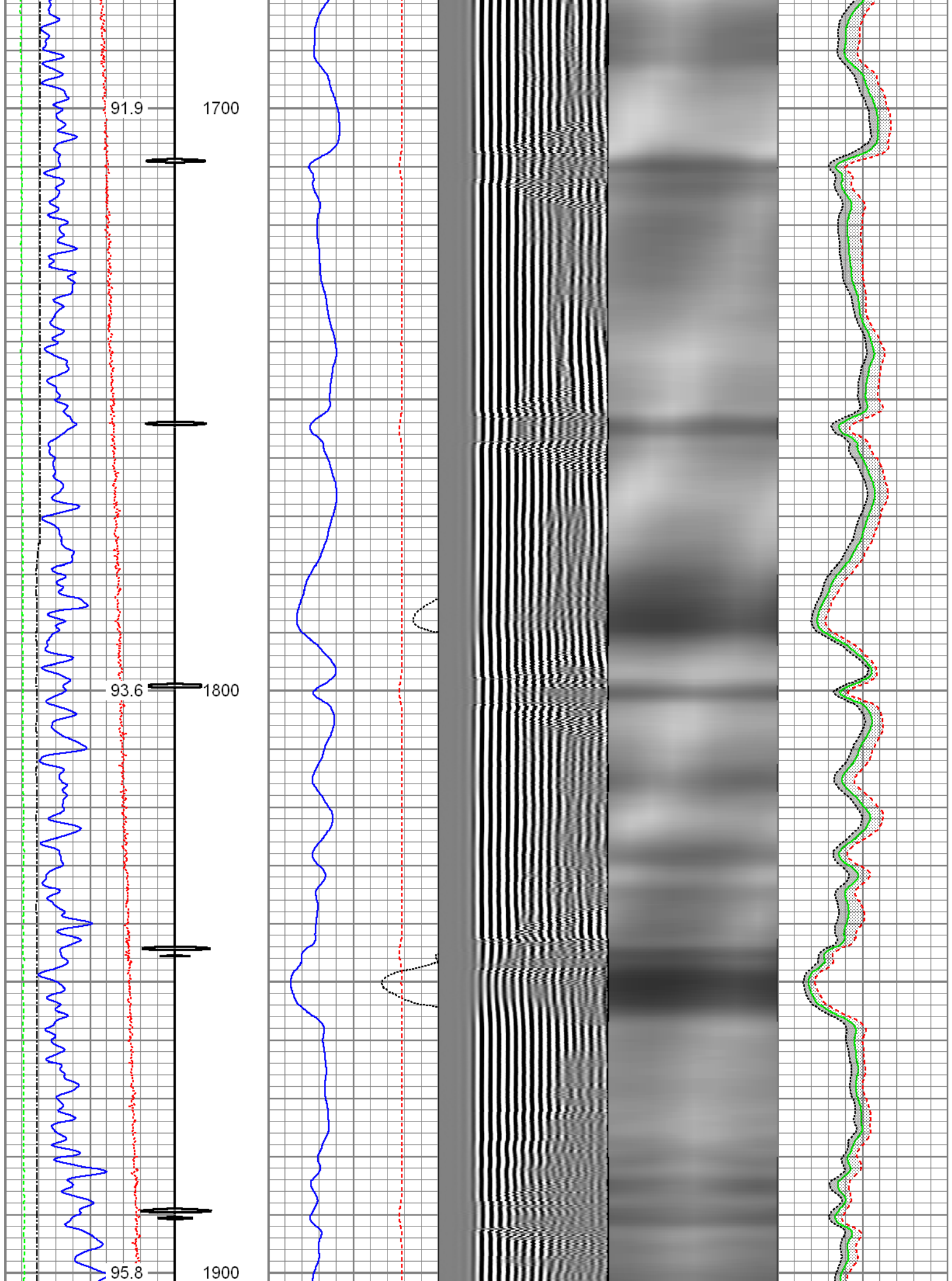


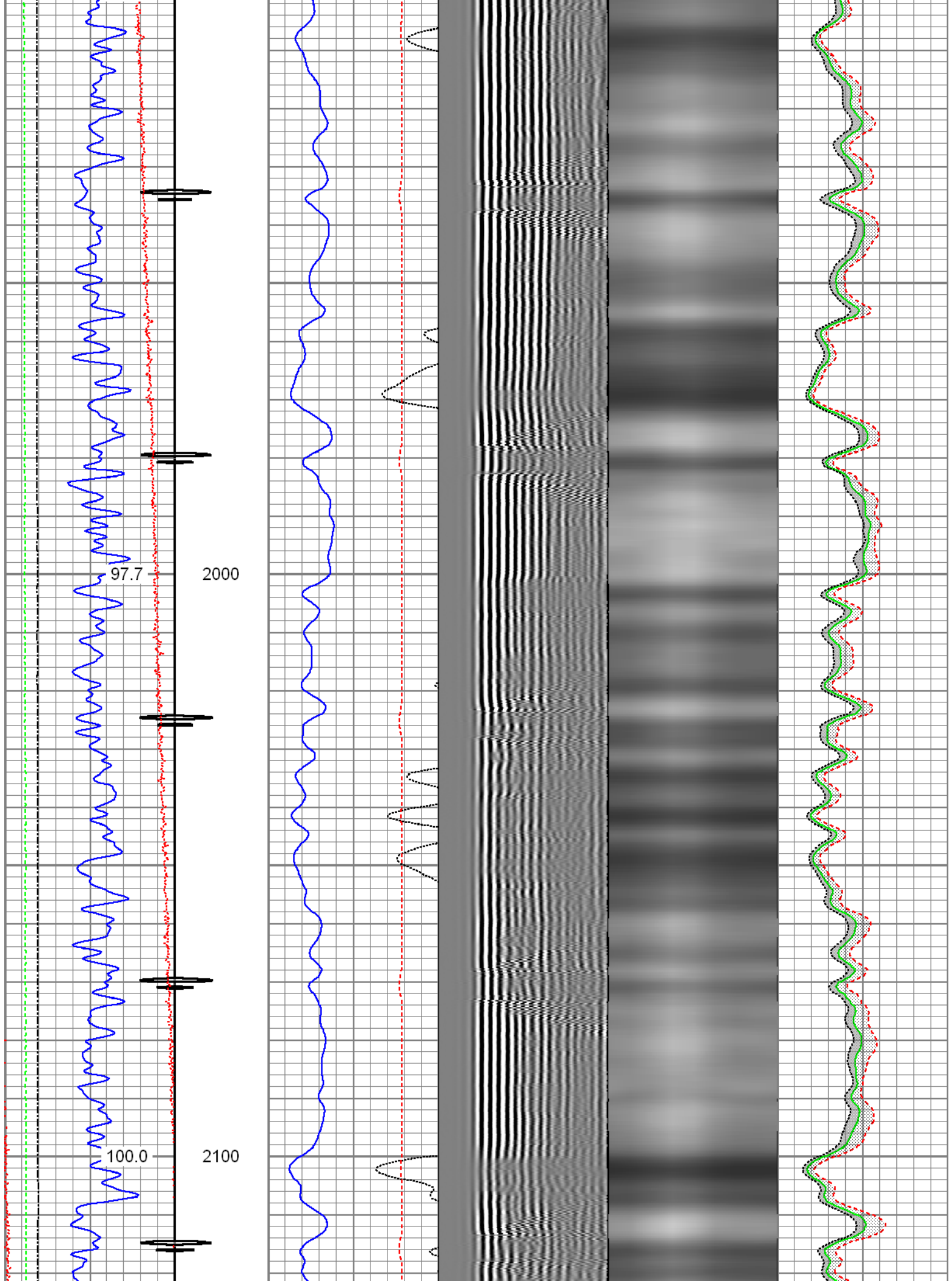


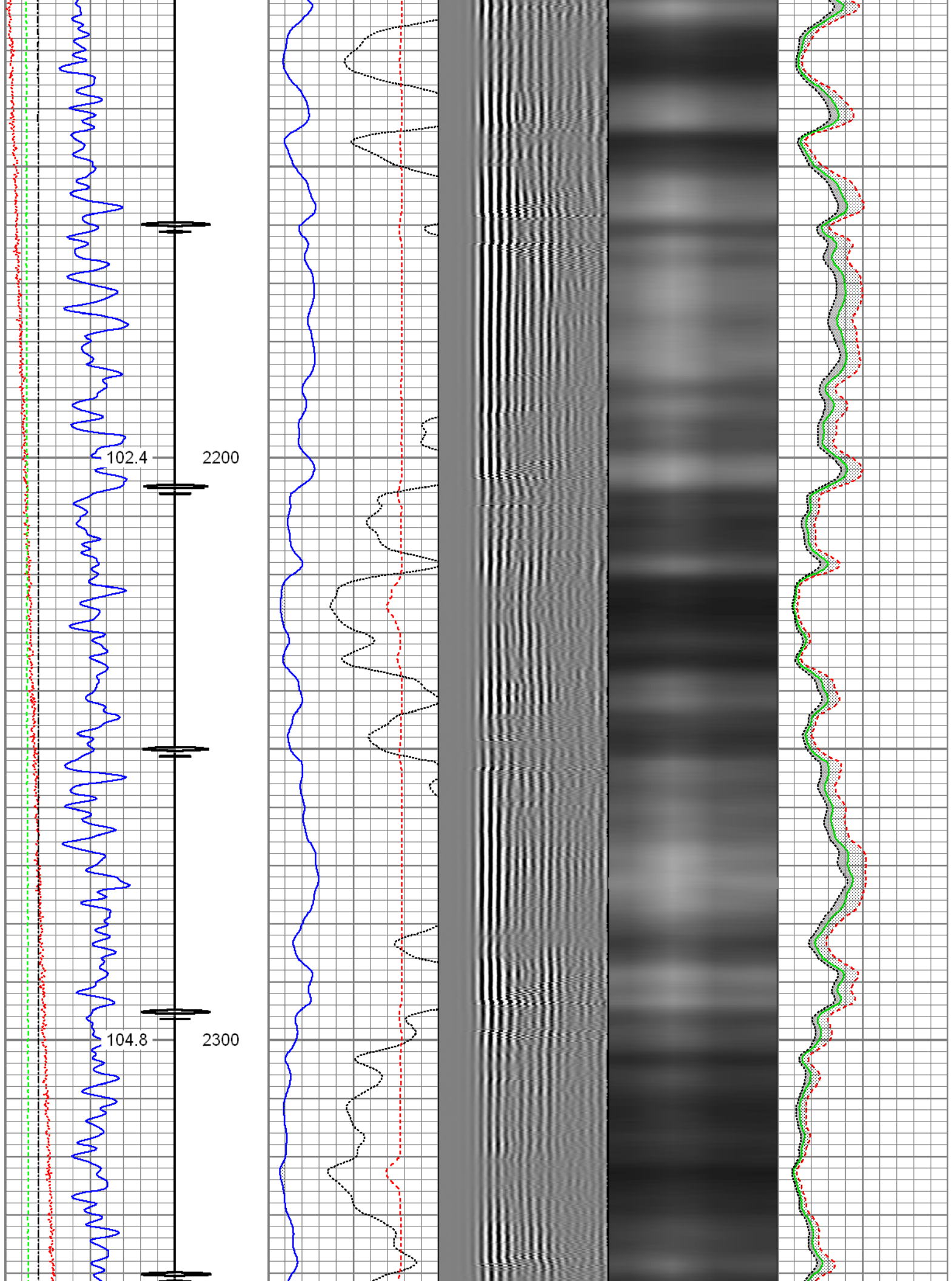




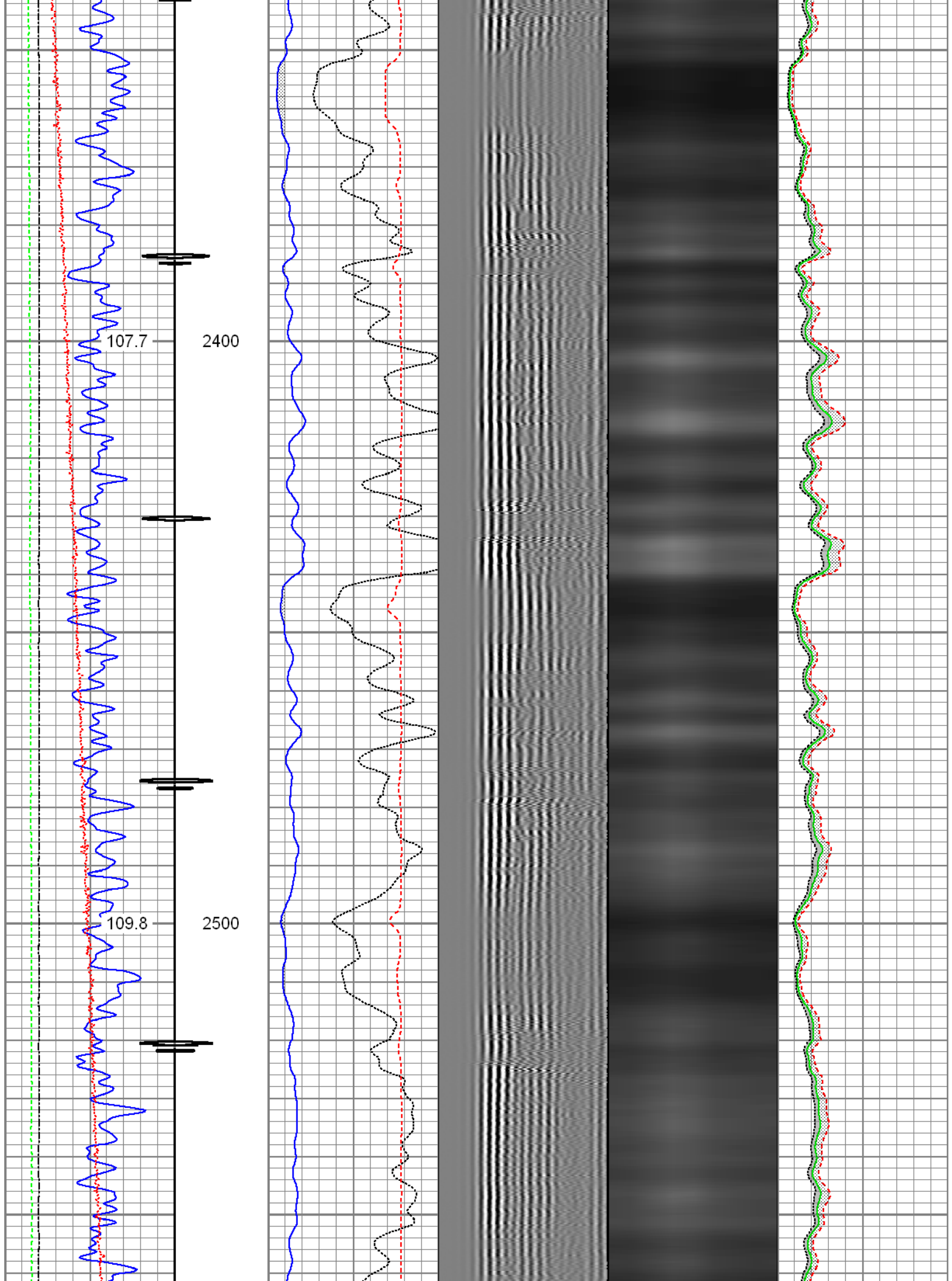


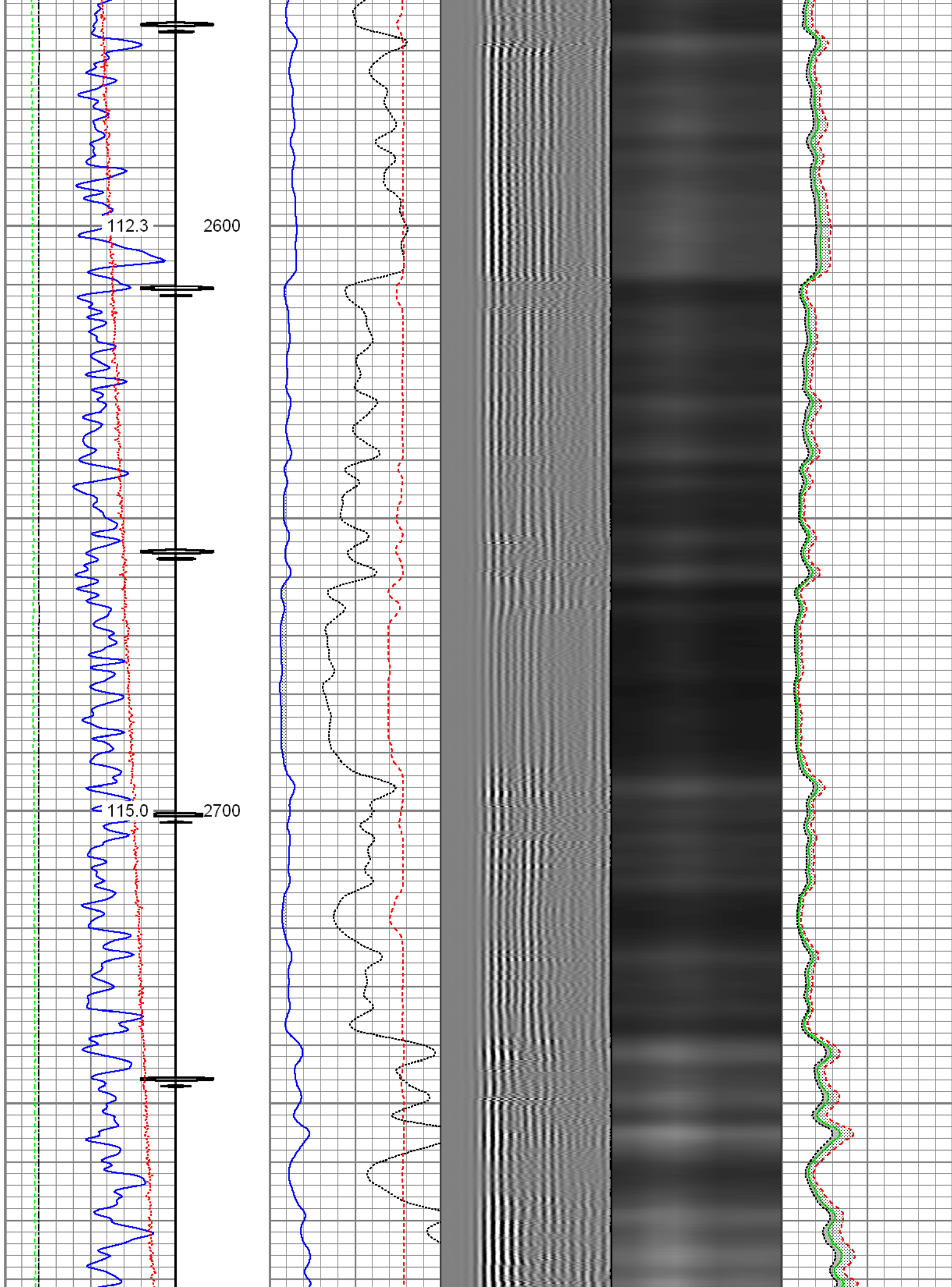




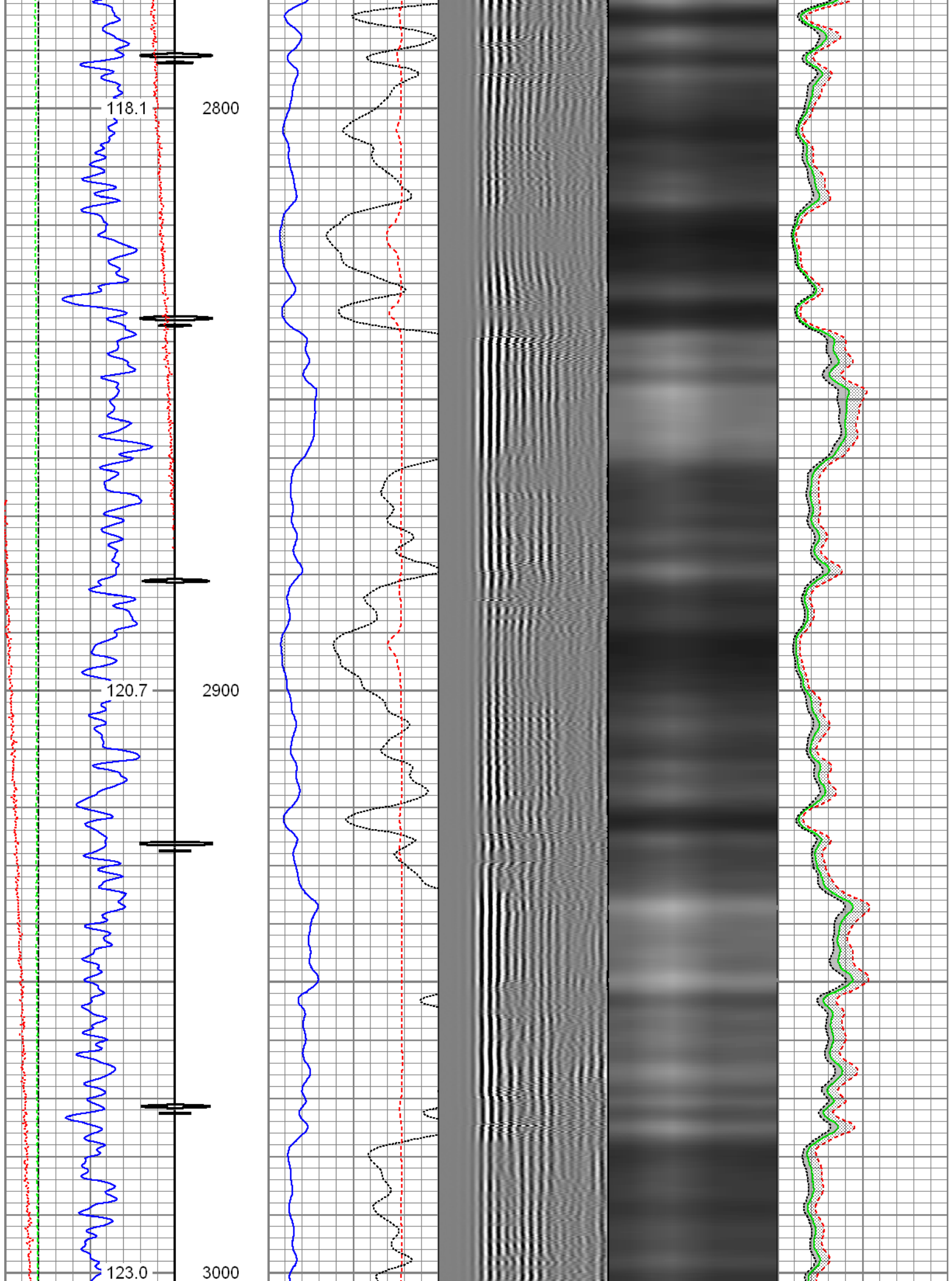


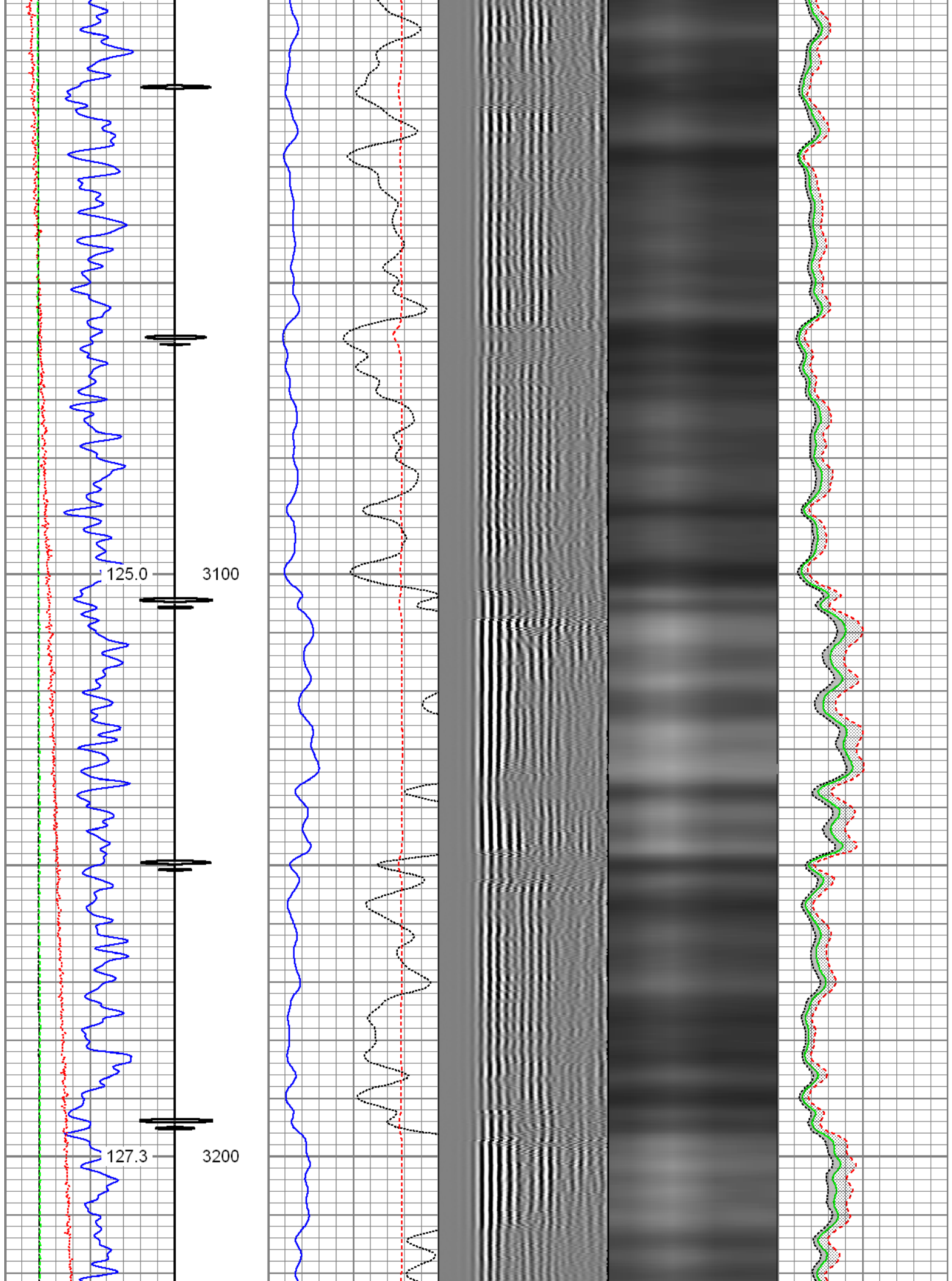


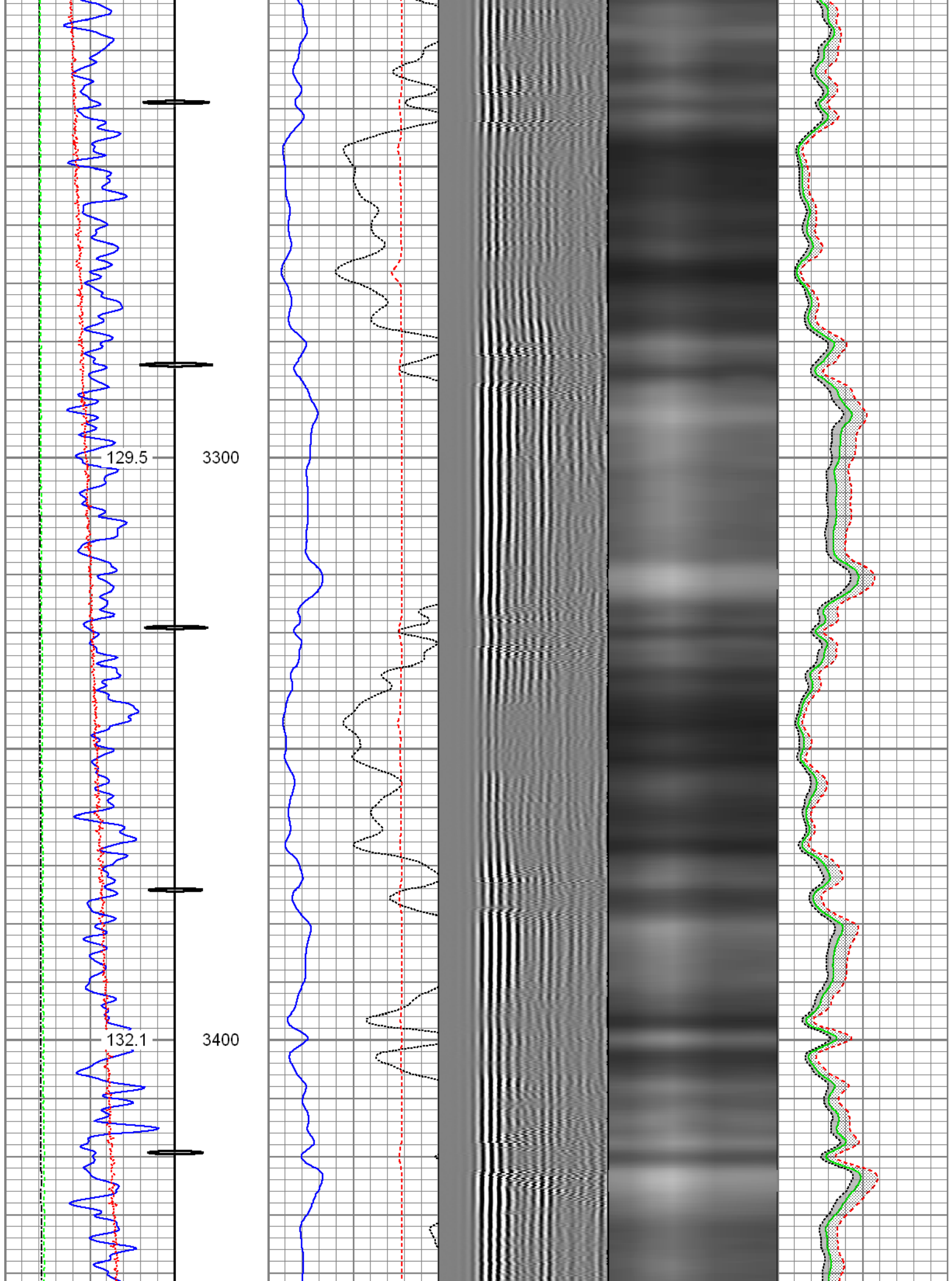




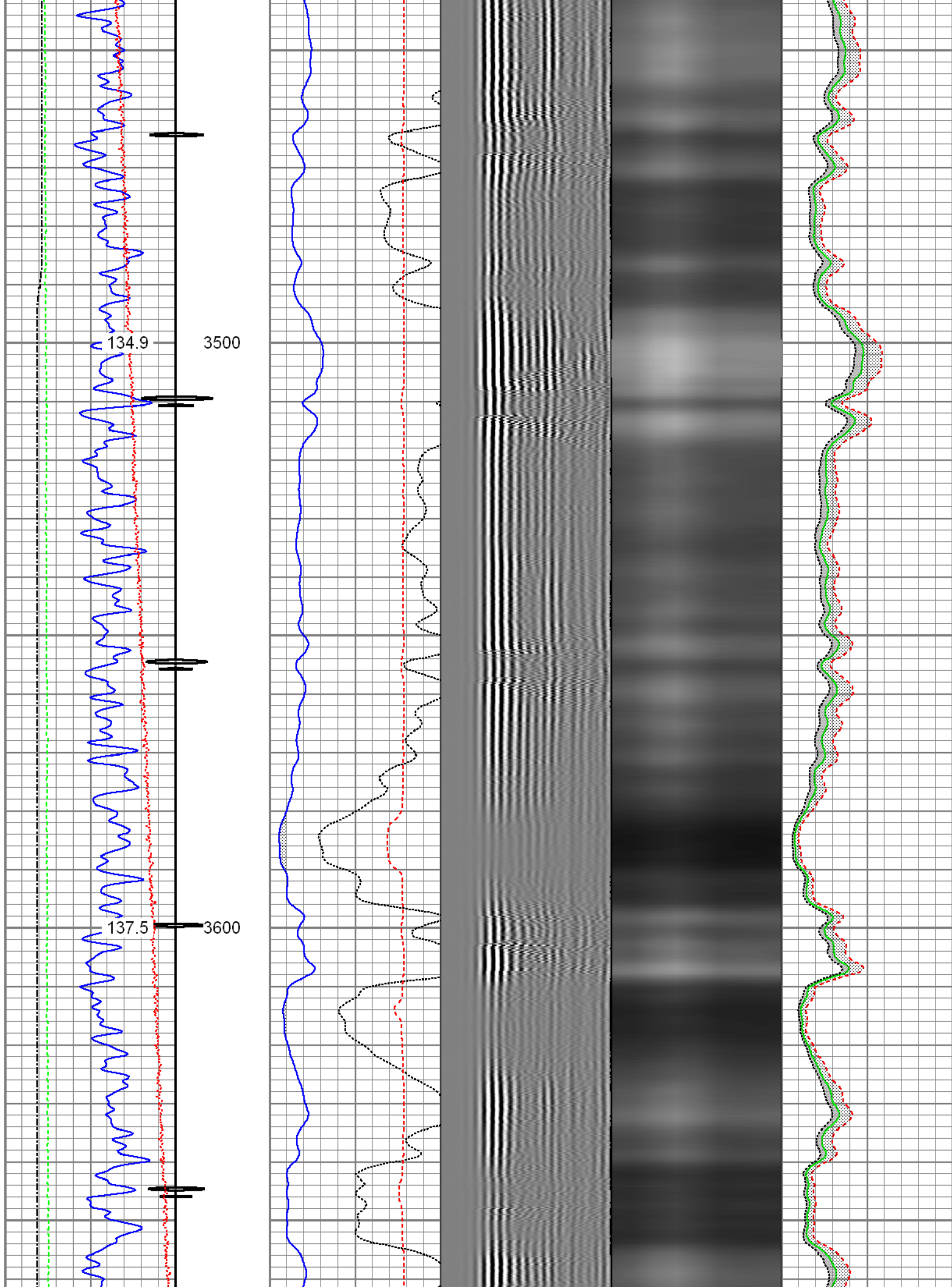


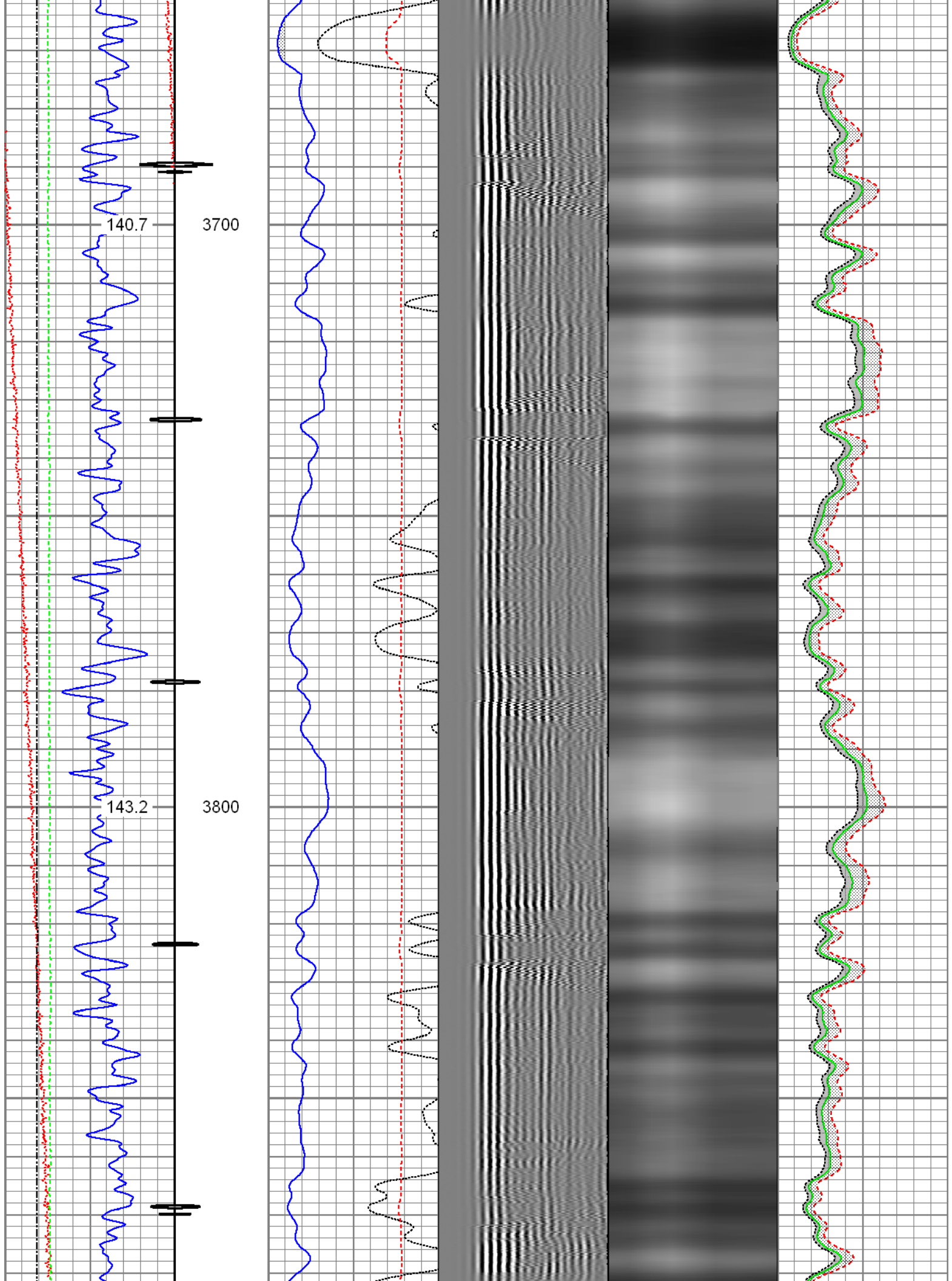




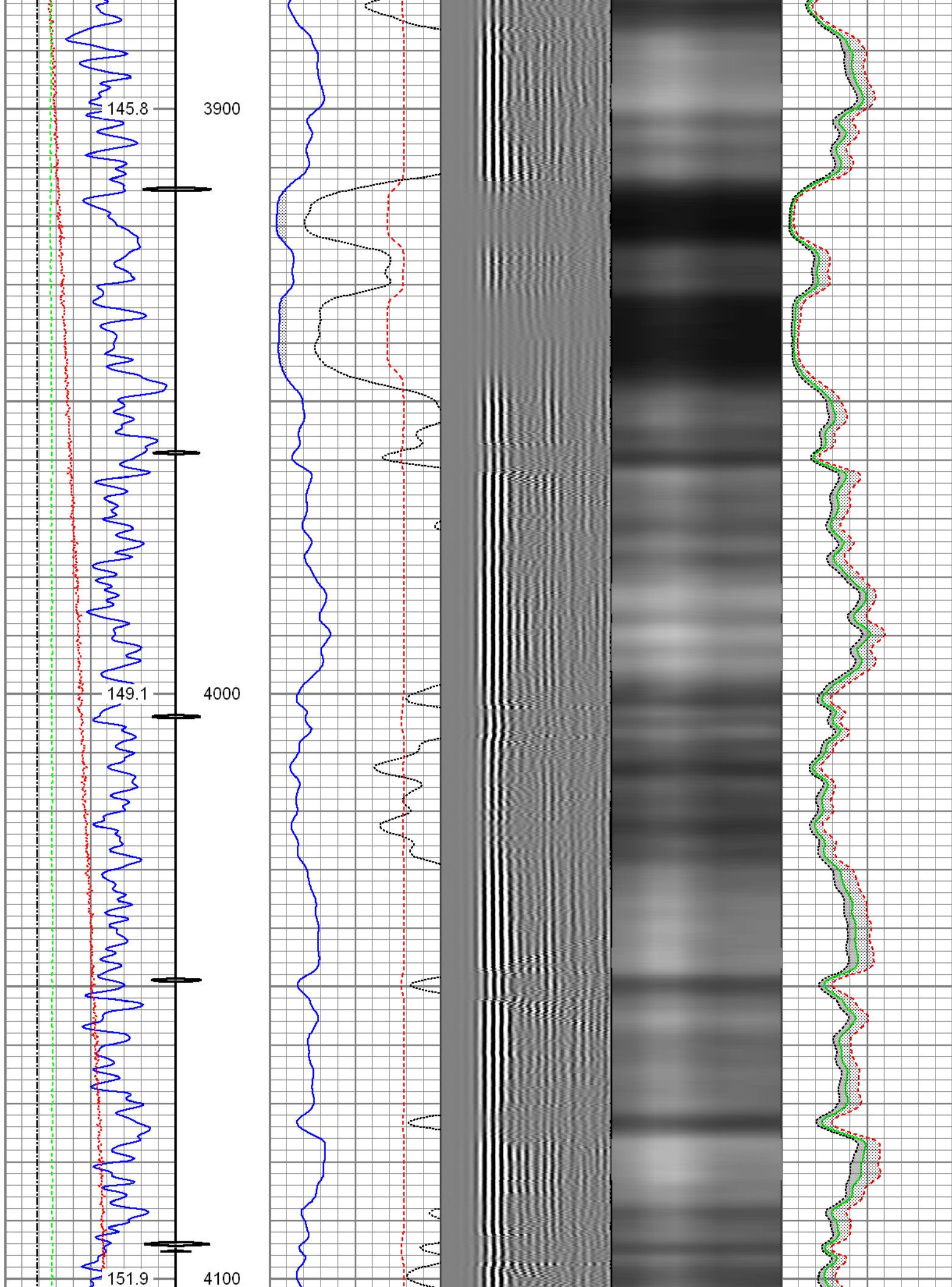


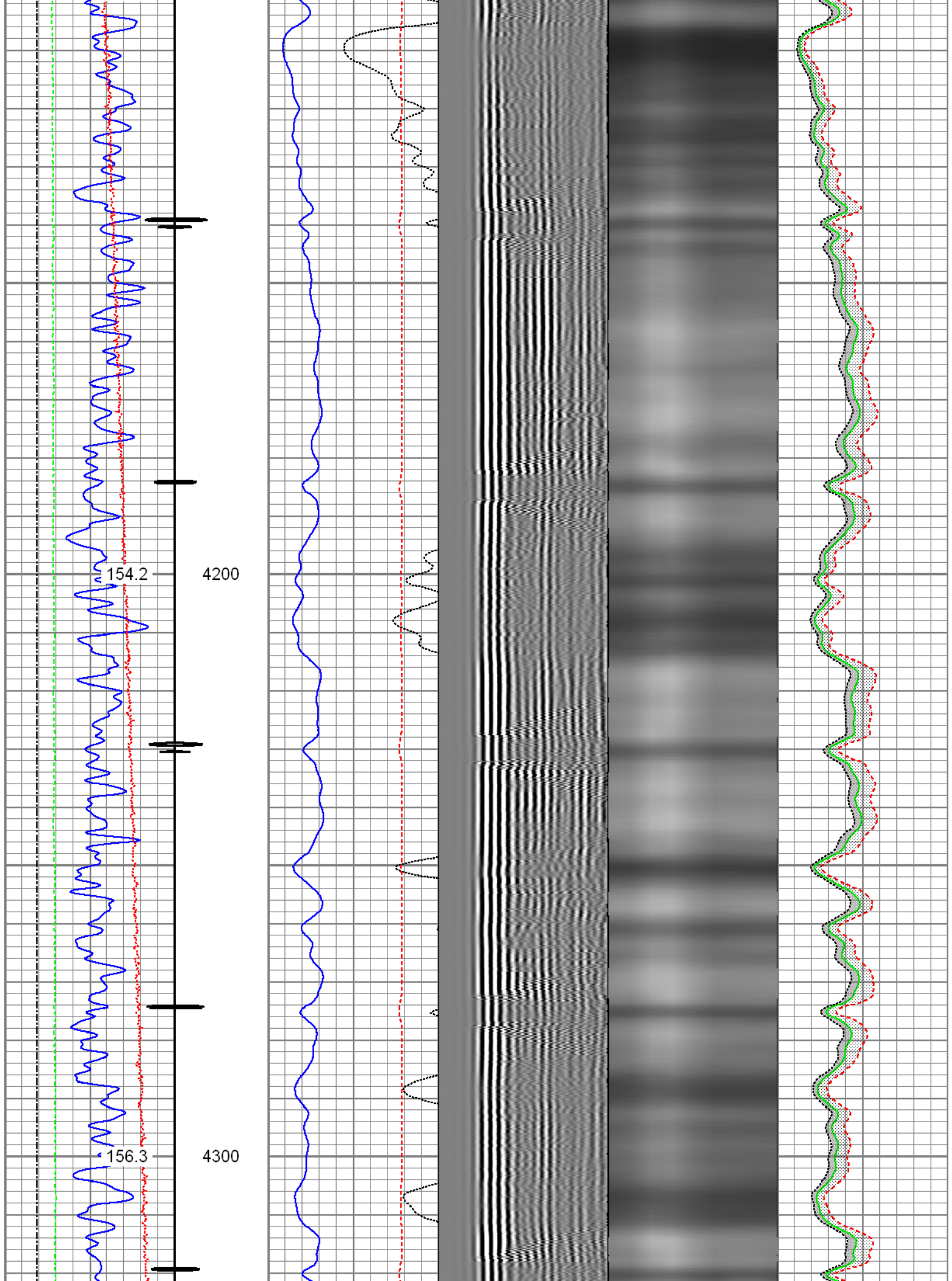


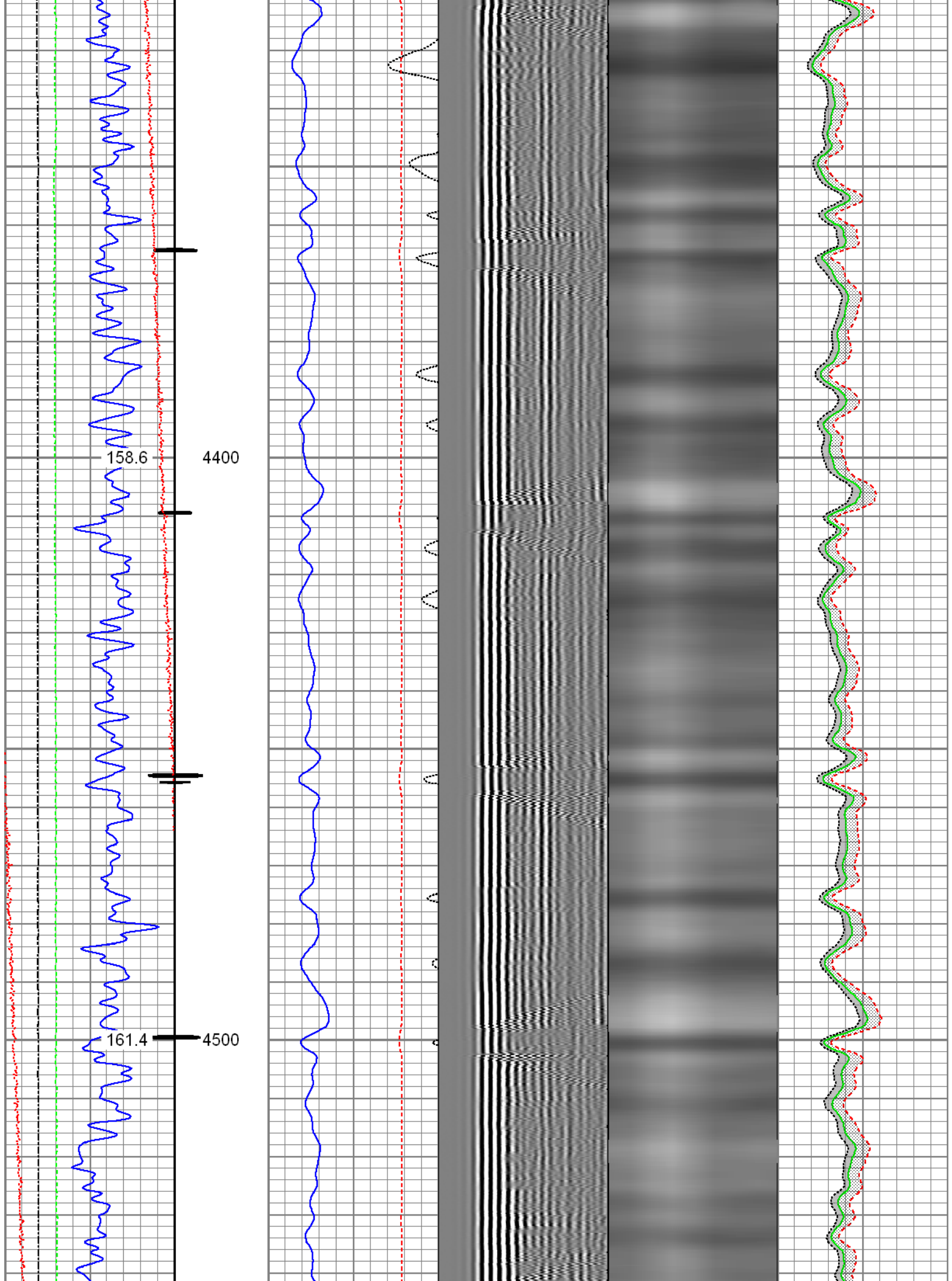




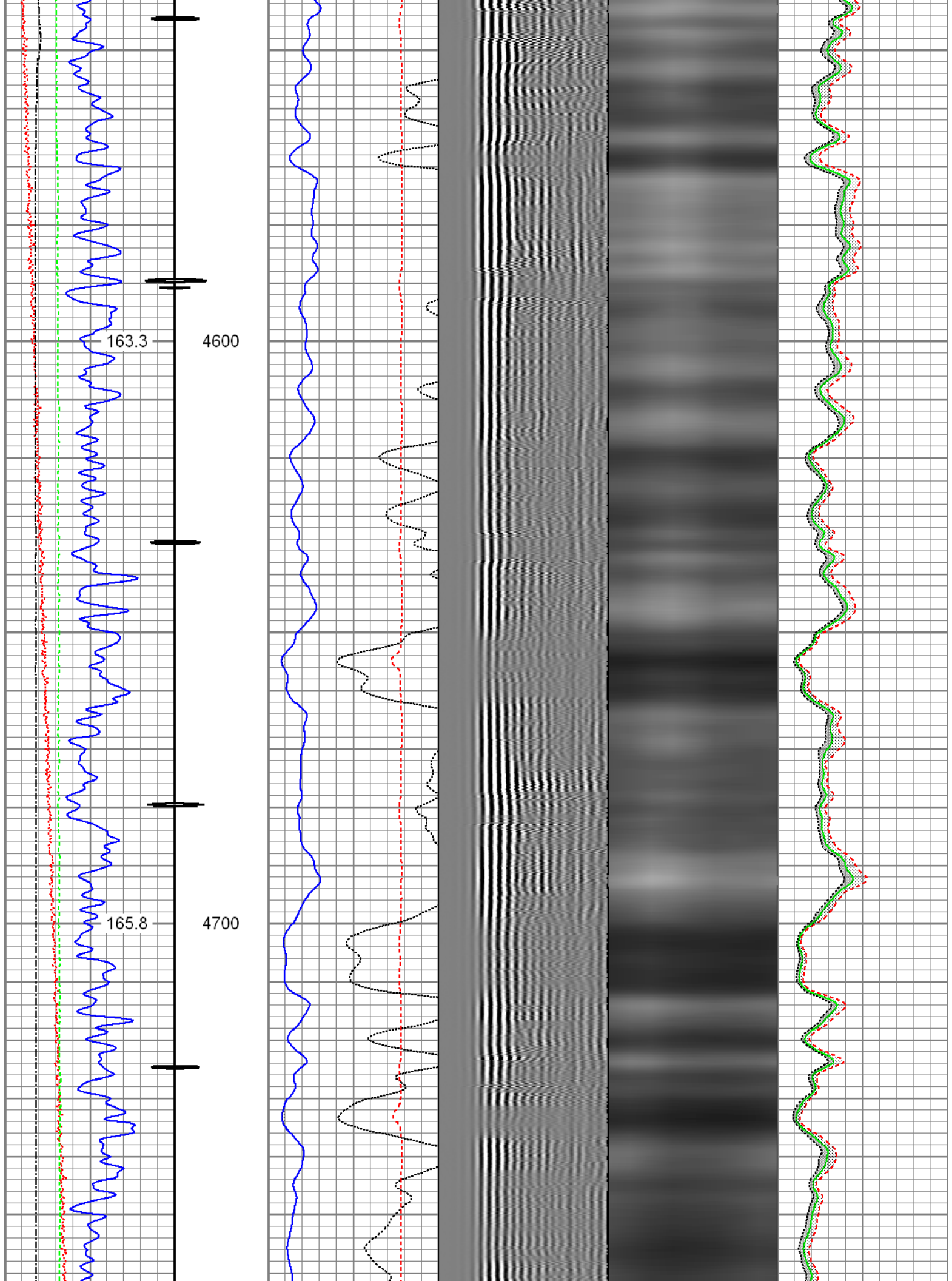


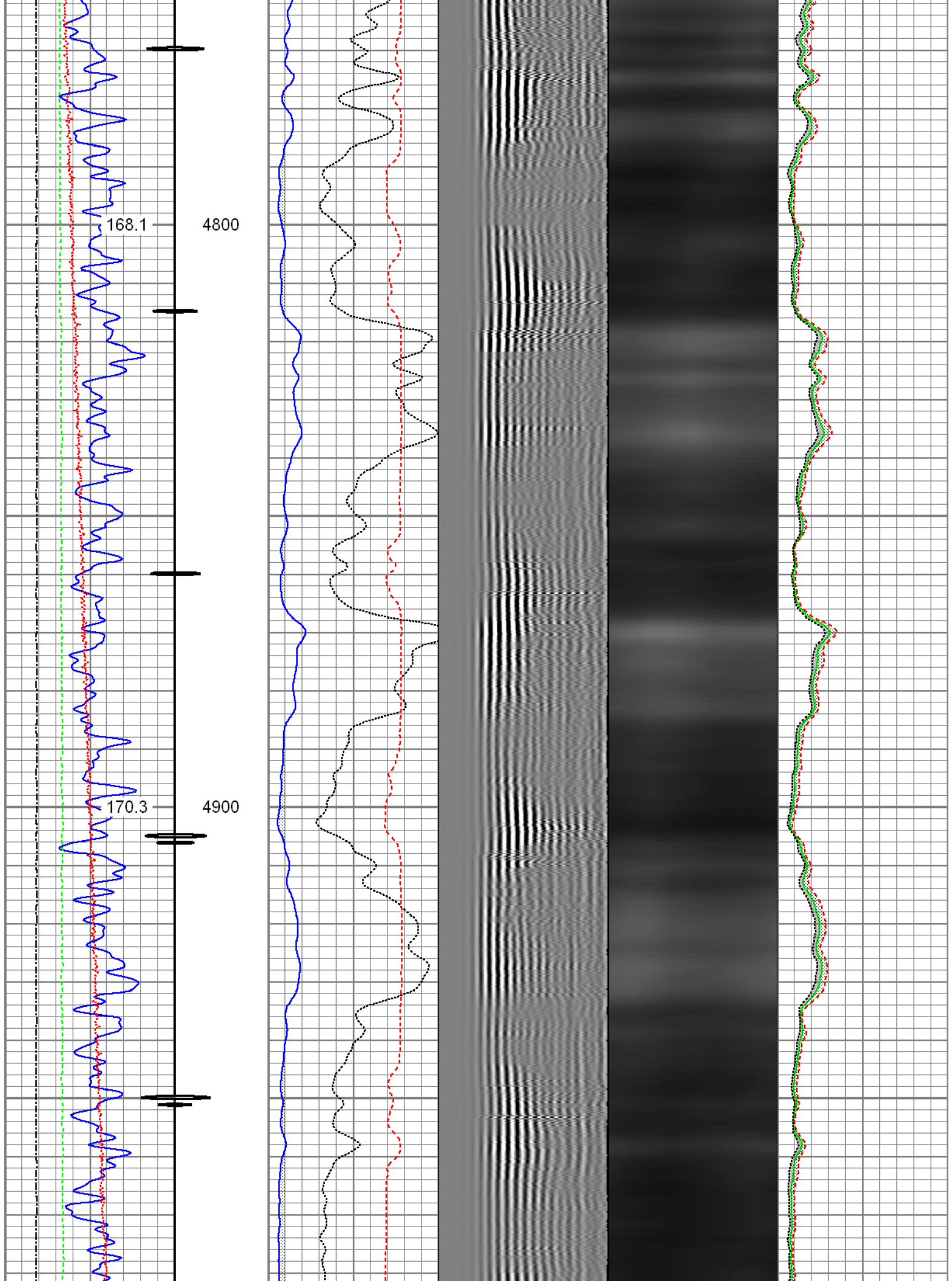




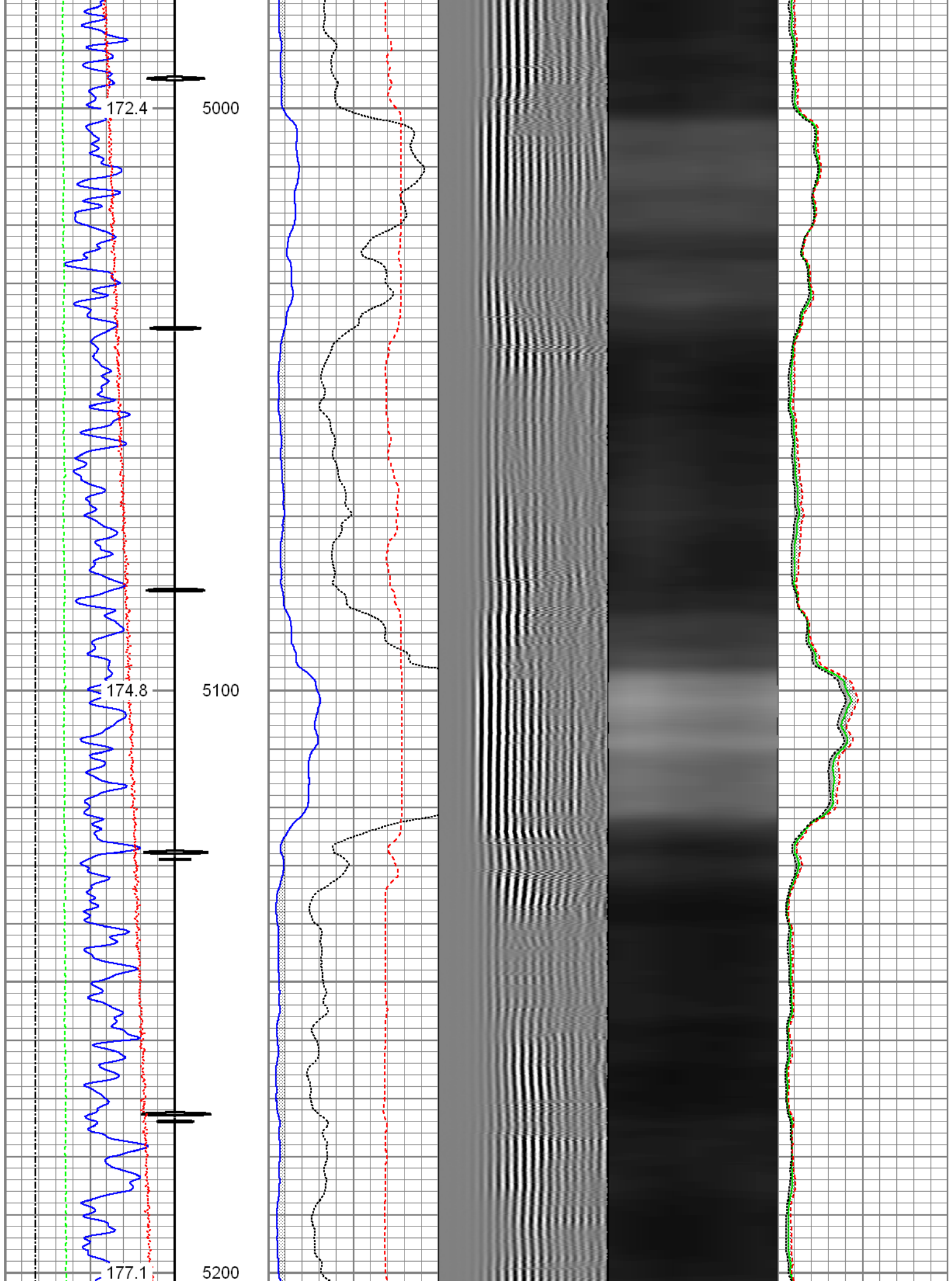


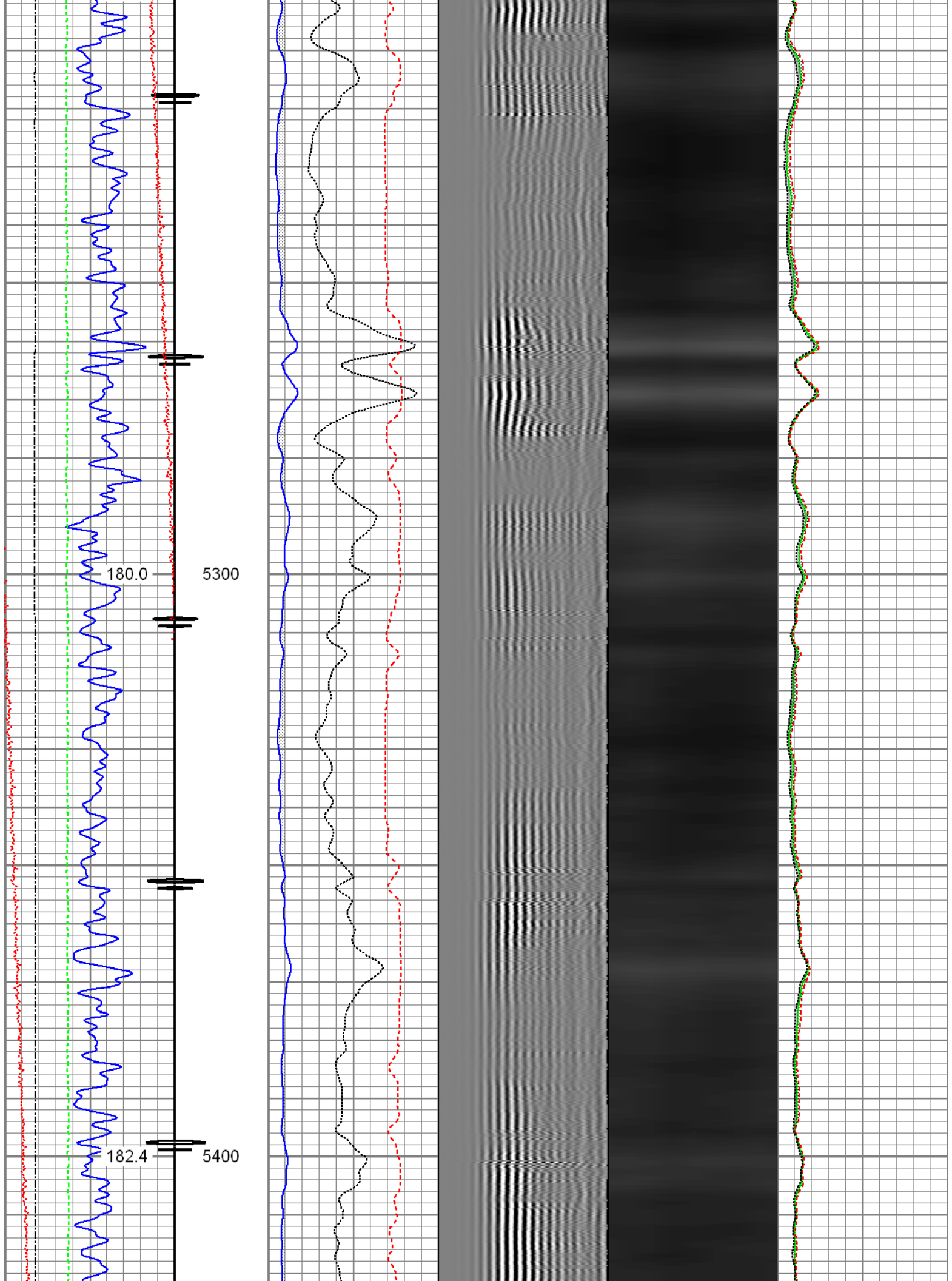


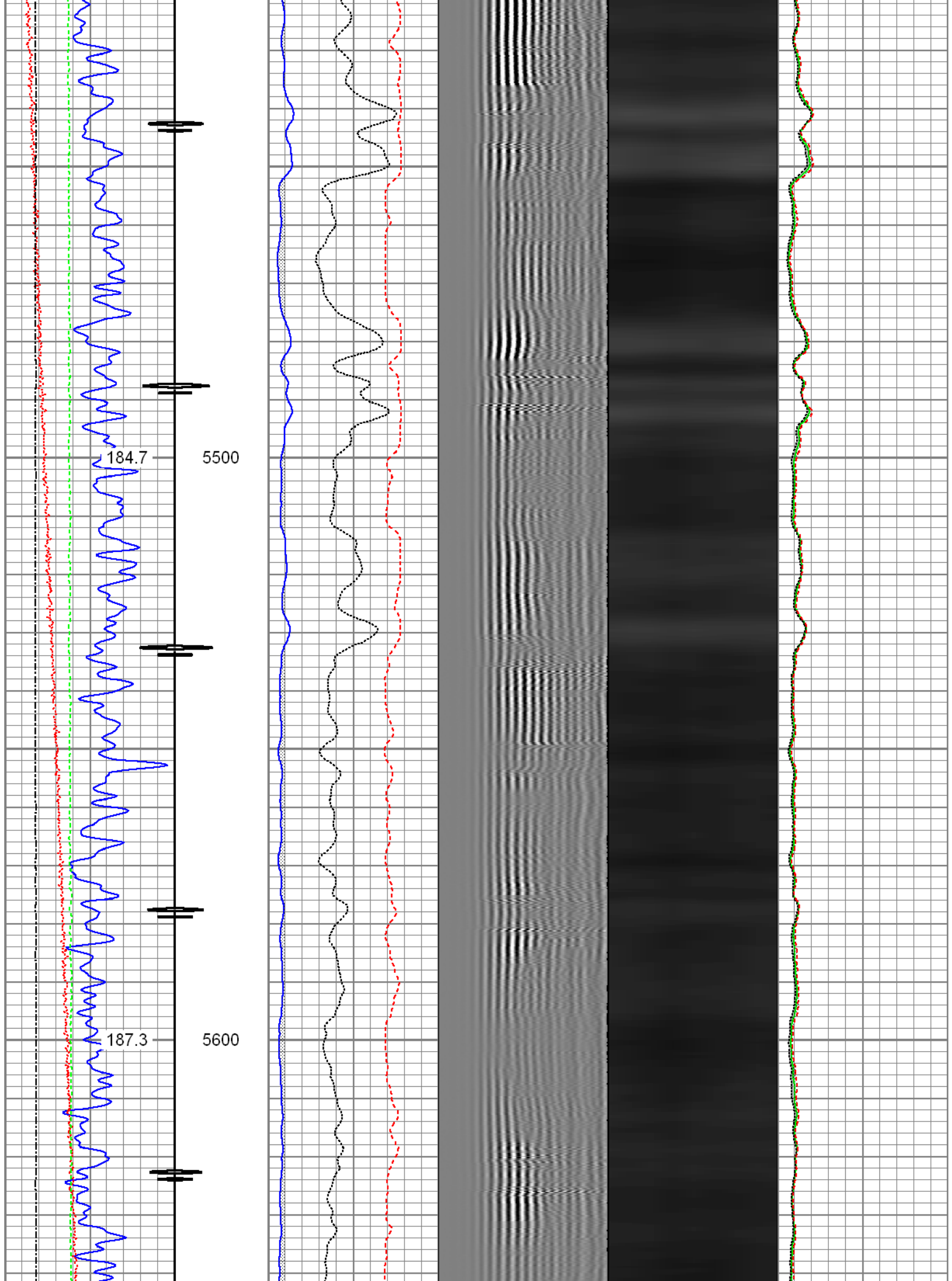


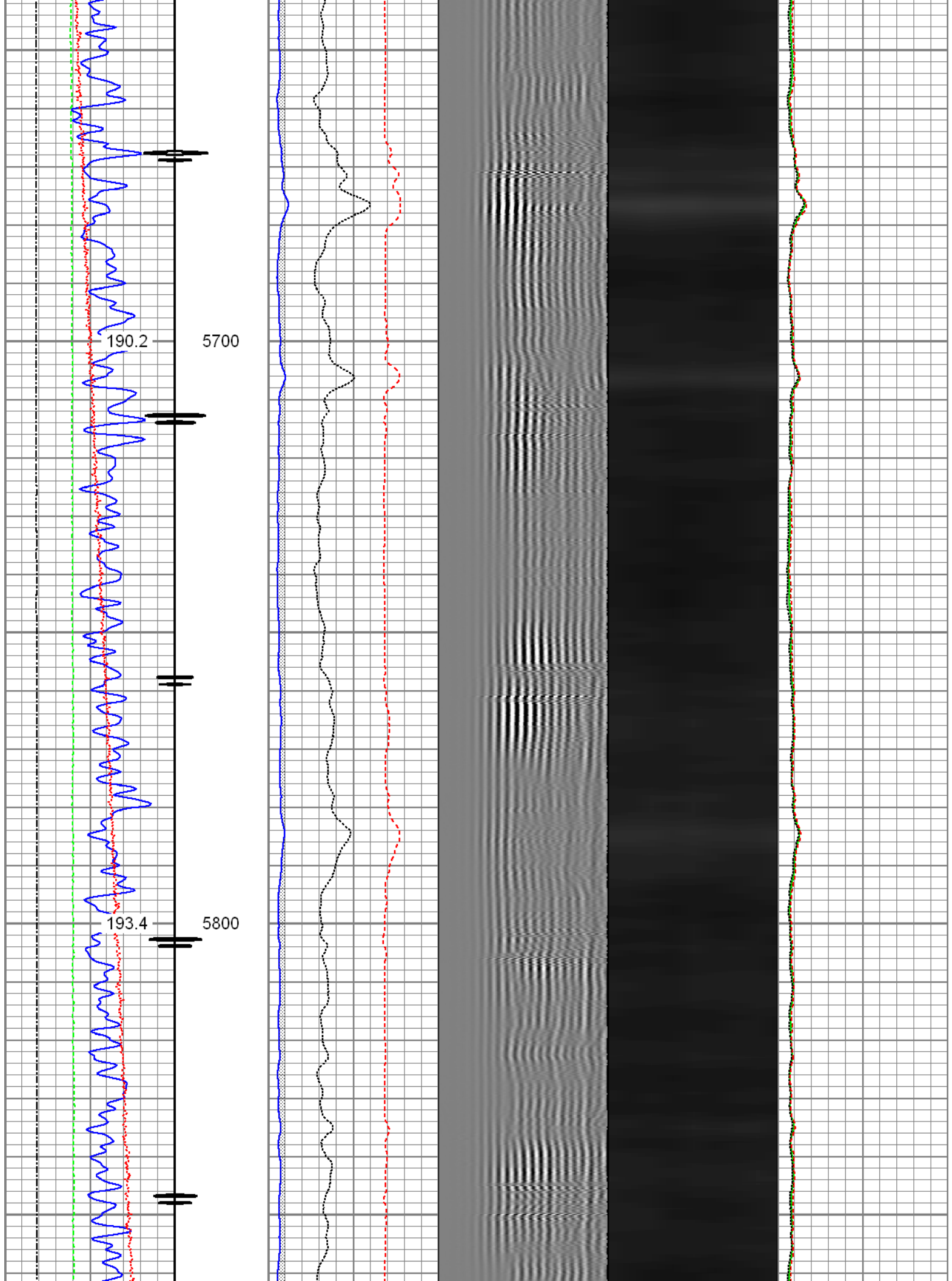




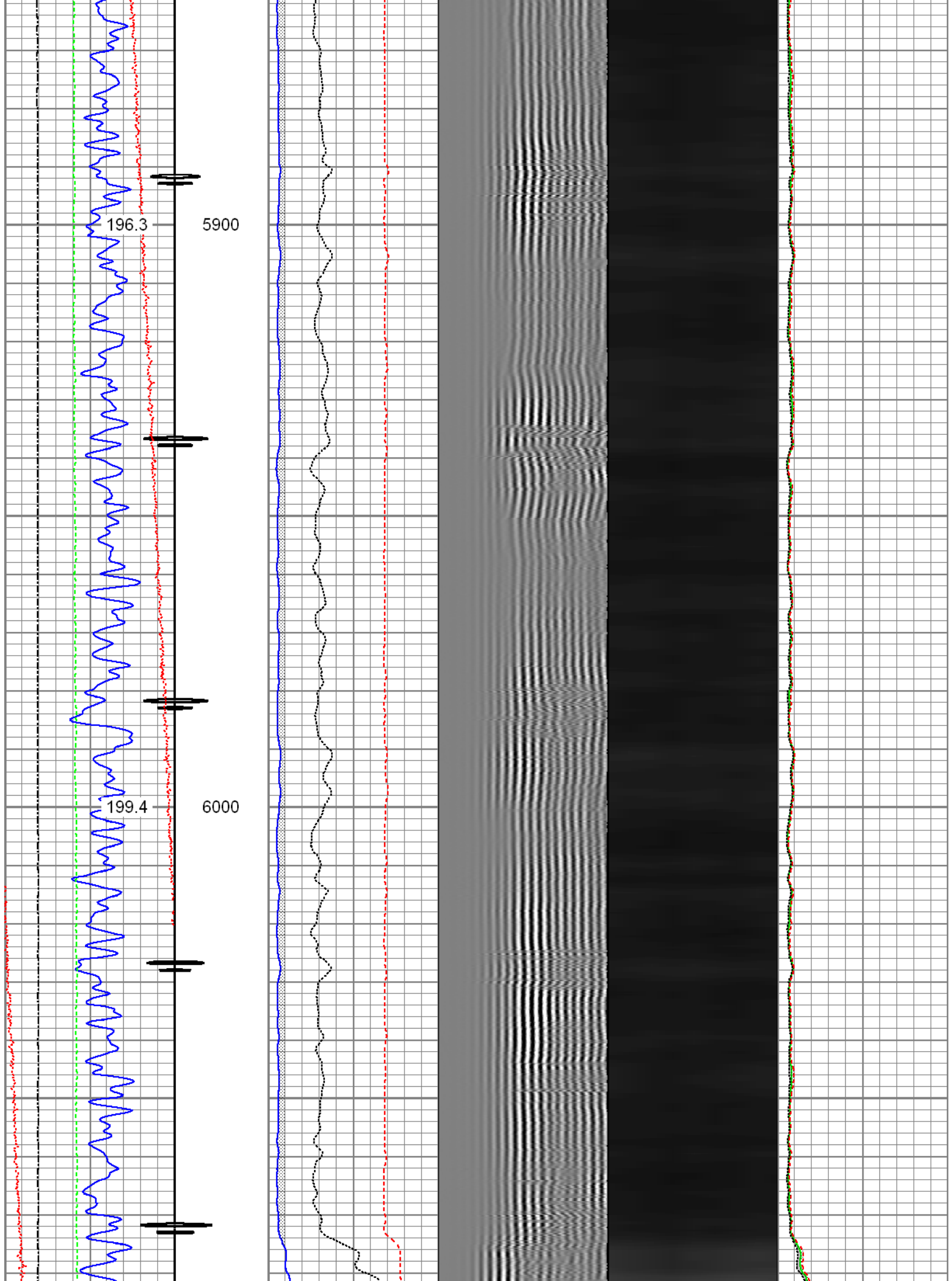


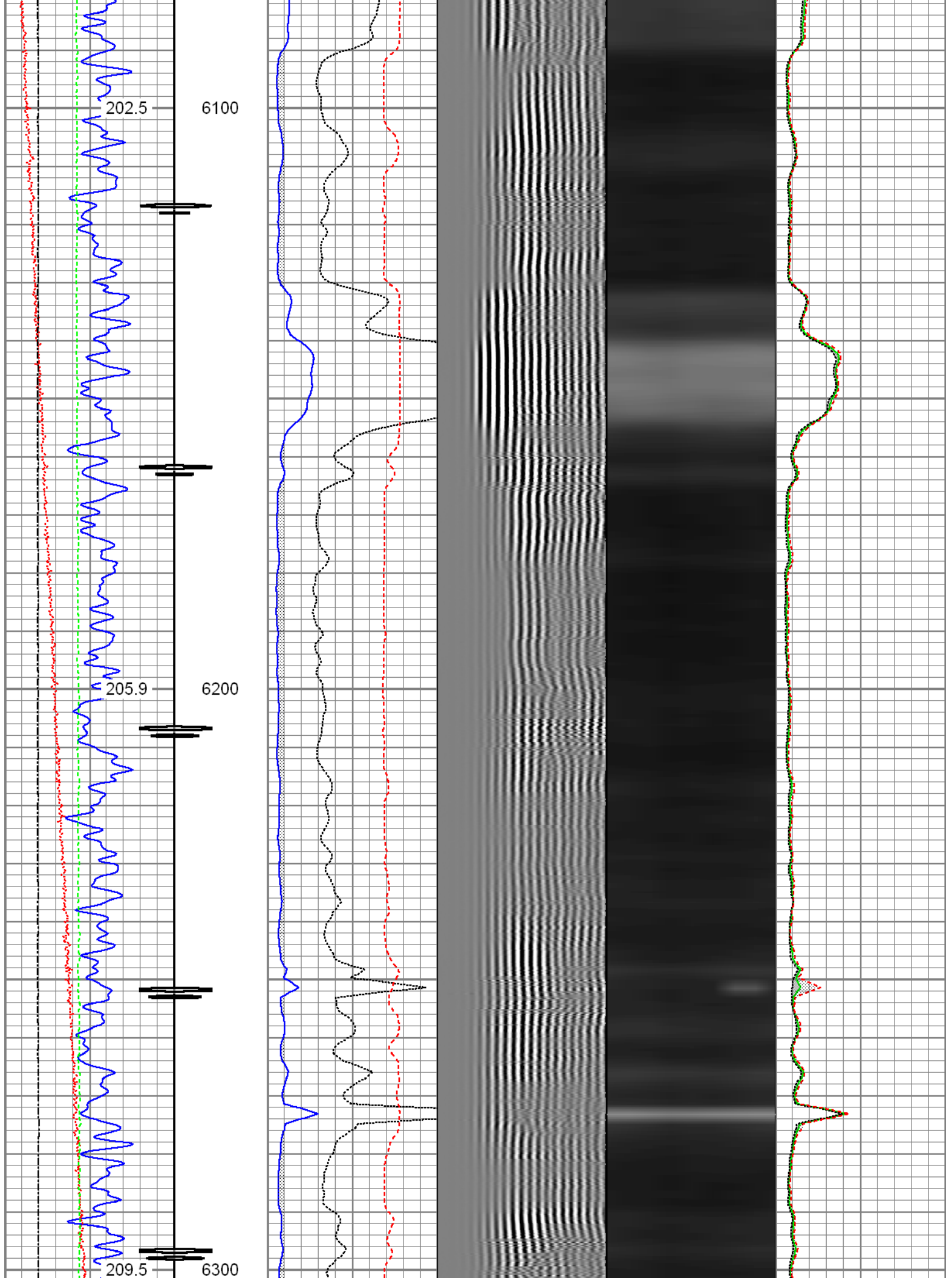


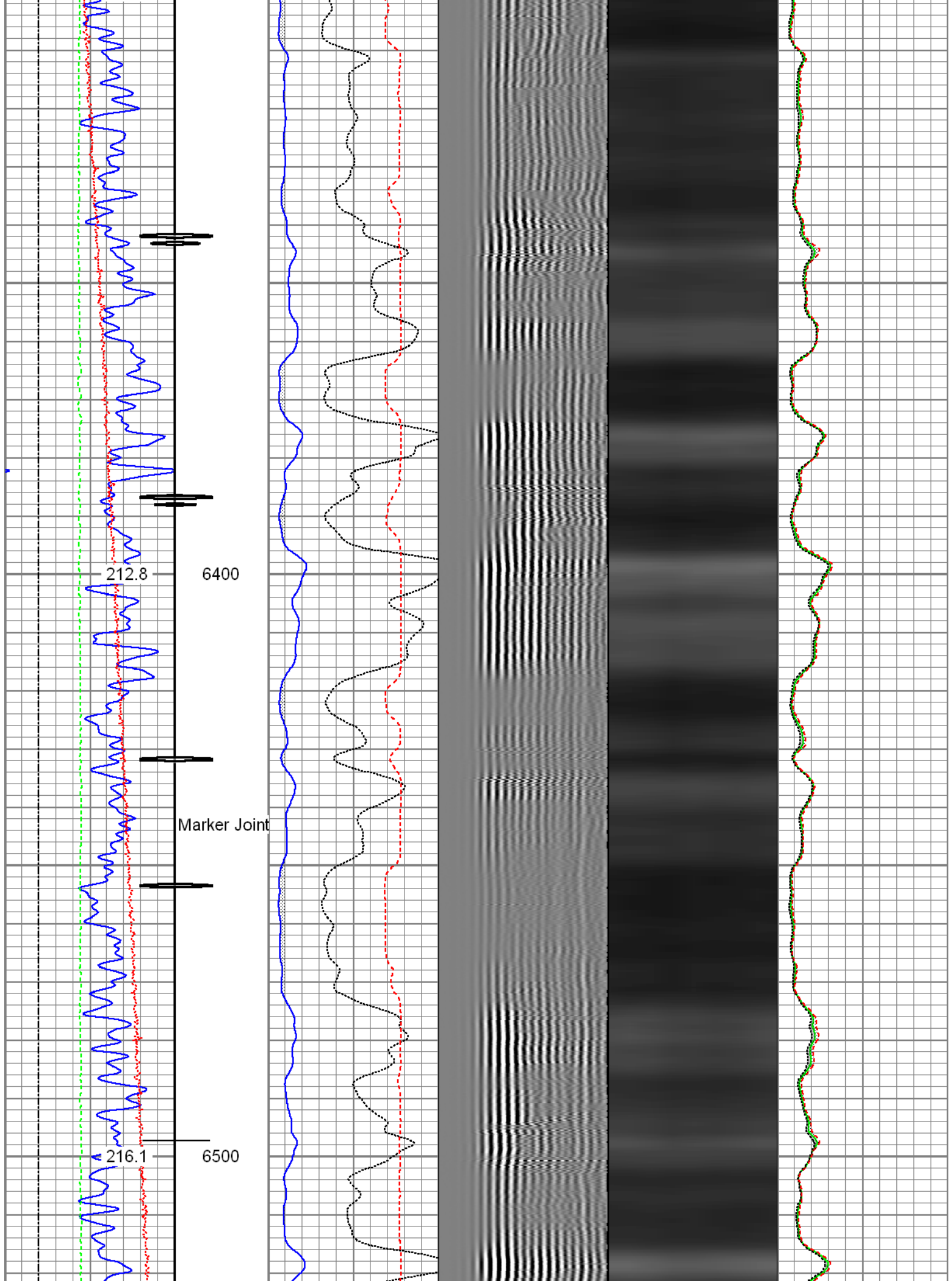


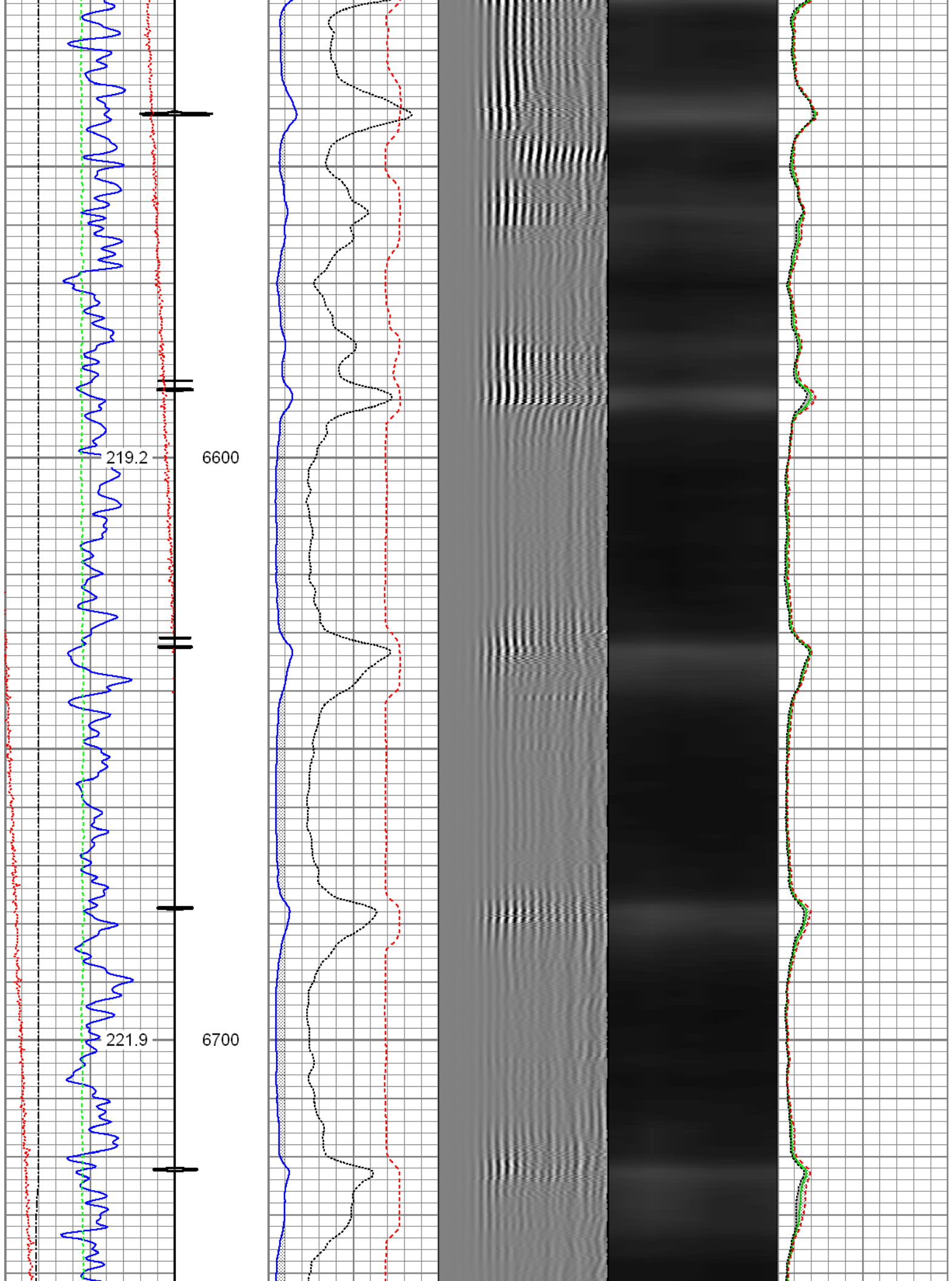




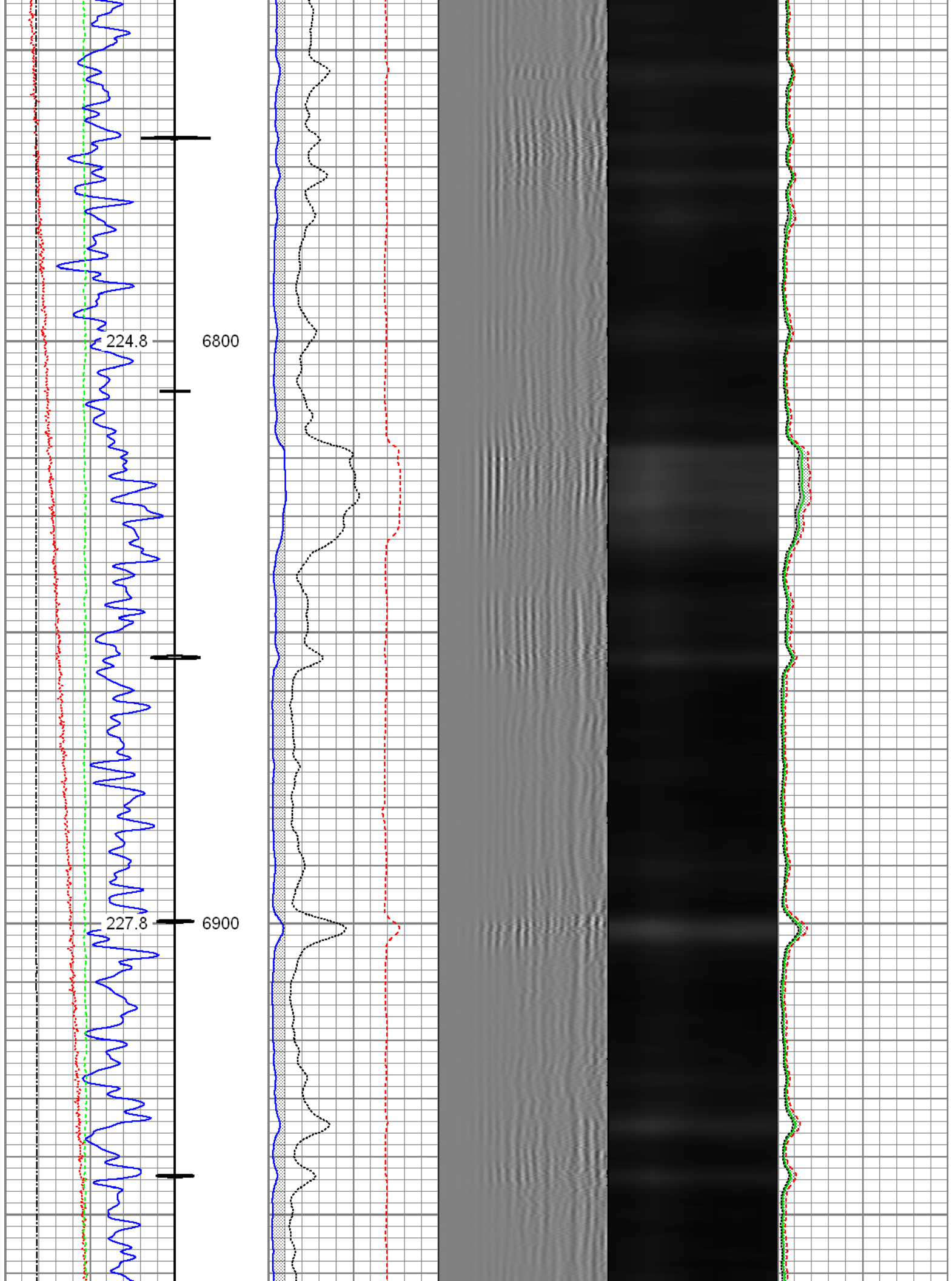


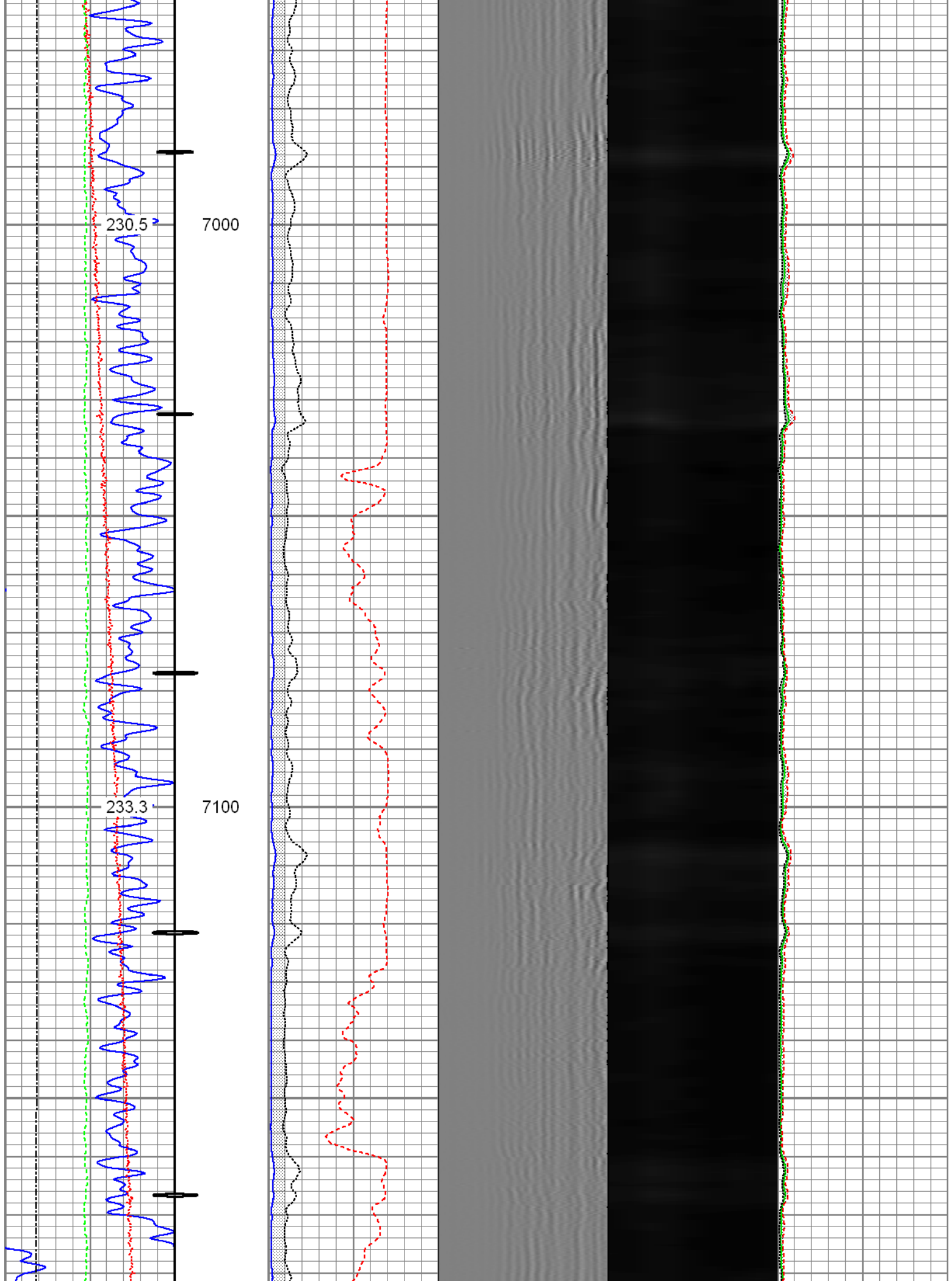


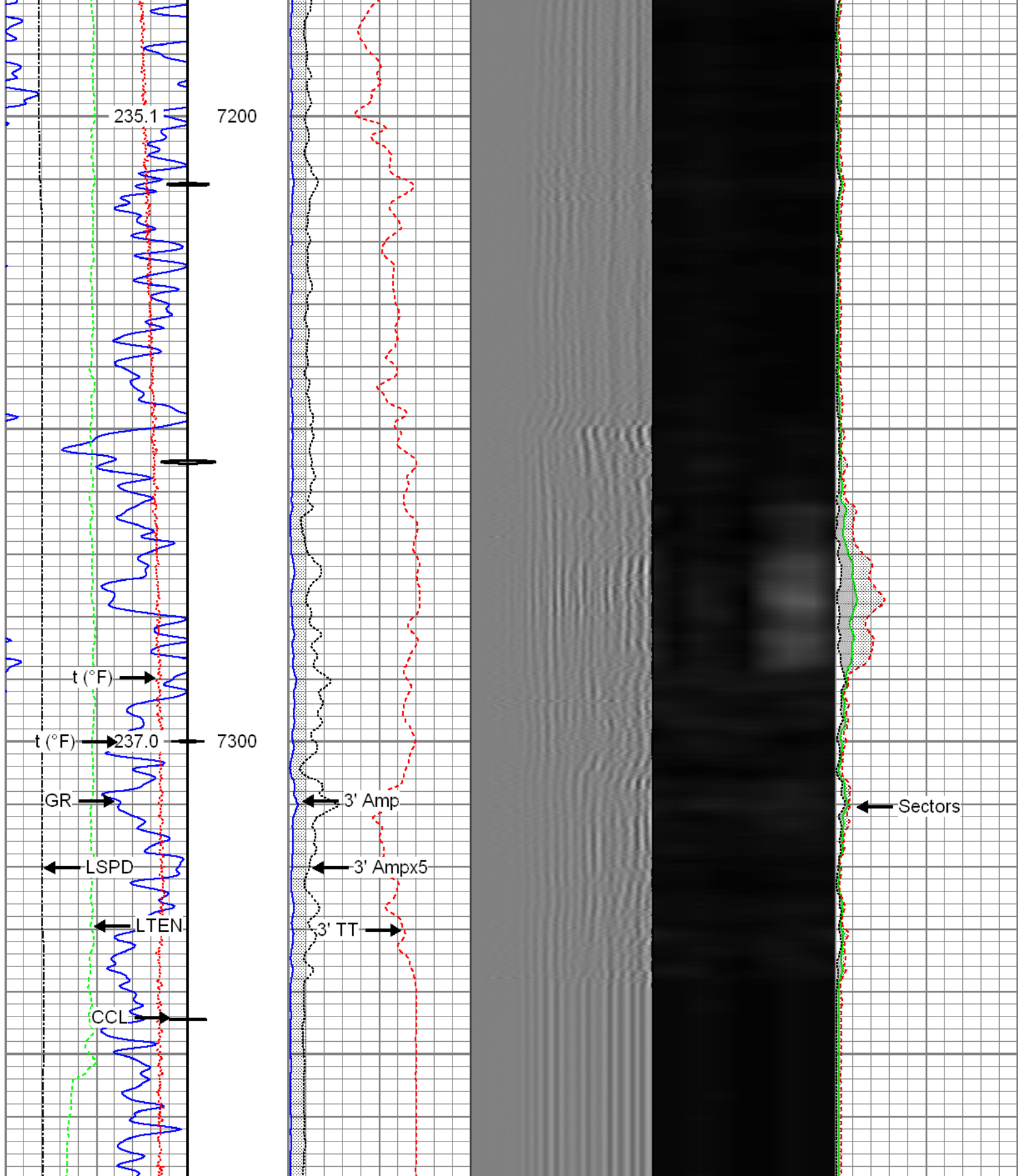













Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
0 (degF) 20	0 (mV) 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude
150 (ft/min) 150	650 (usec) 150			0 100

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

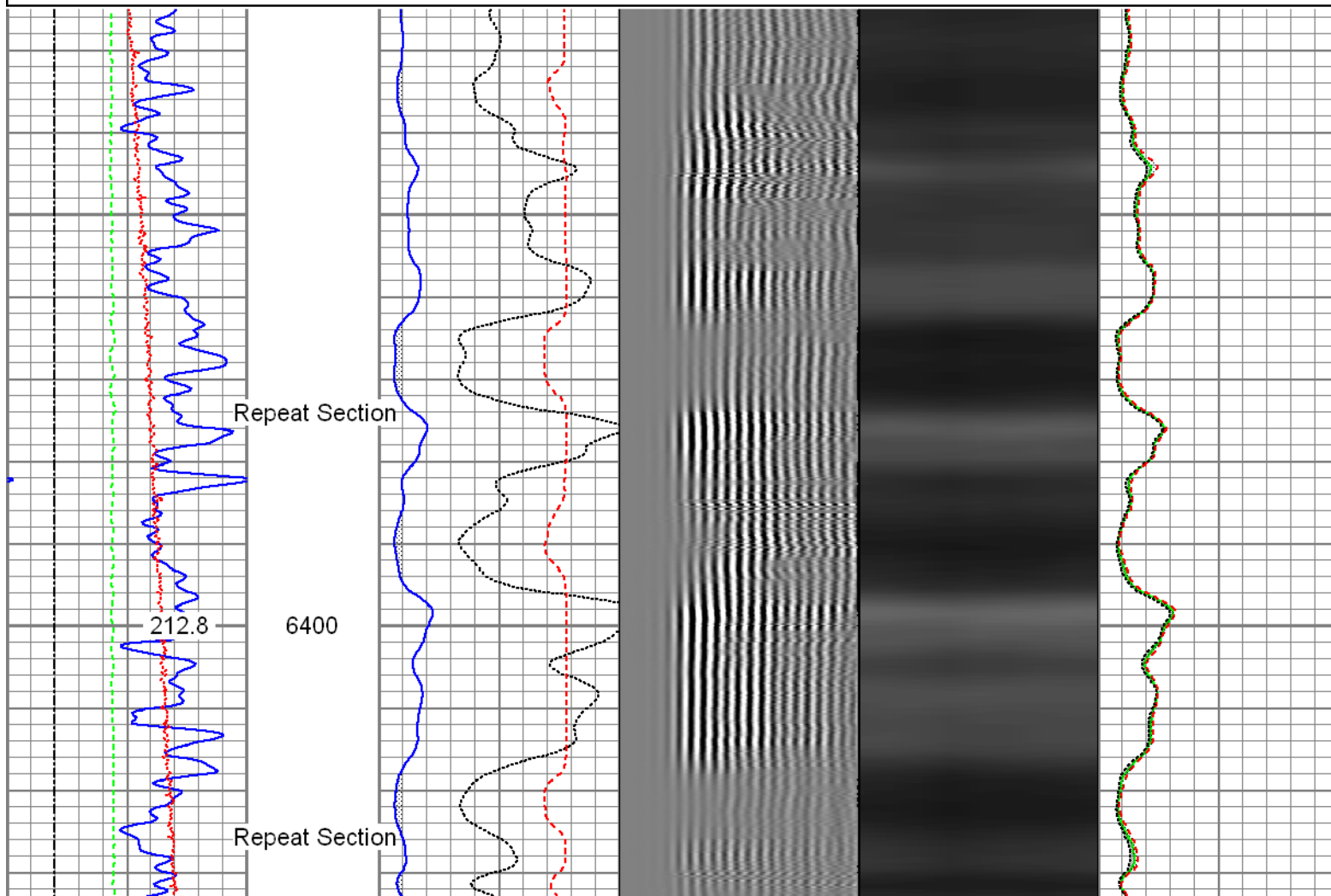


# Repeat Section

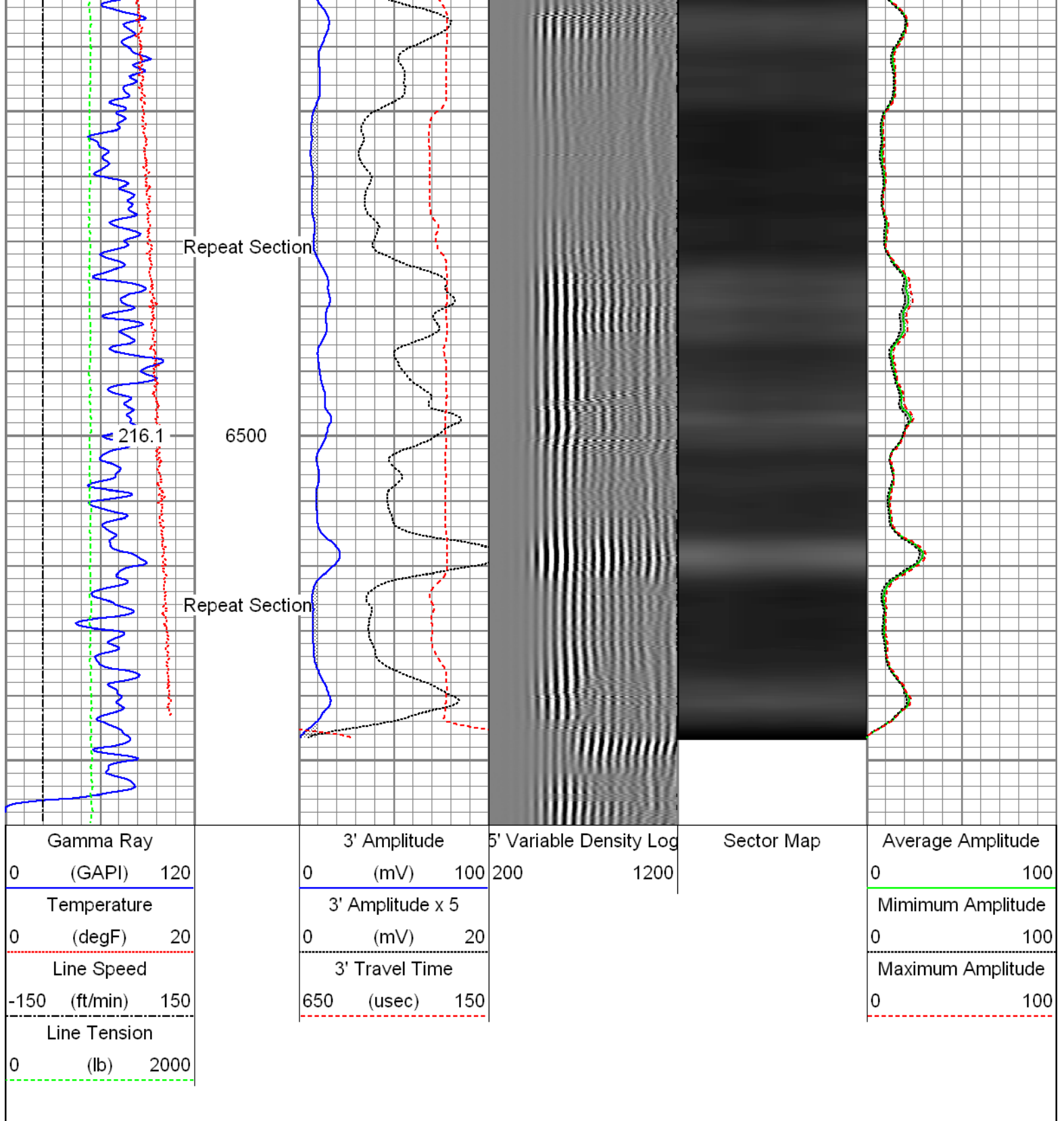
Recorded with 2800 PSI Surface Induced Pressure

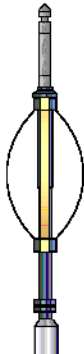
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Dataset Pathname:	run2/pass4.1
Presentation Format:	radii
Dataset Creation:	Wed Feb 24 12:30:05 2016 by Calc 7.0 B1
Charted by:	Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 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)
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" (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					
WVFS7	14.55					
WVFS8	14.55					
WVF5FT	13.55					
CCL	6.51		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
DCCL	6.51					
GR	3.77		Probe_CCL_GR-2.75"Digital (FW1211-026) 4.54 Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: 0512342207_Anadarko_Alvin 27N-29HZ_02-24-16_RBL.db: field/well/run2/pass7.1 Total Length: 23.40 ft Total Weight: 194.00 lb O.D. 2.75 in						

Calibration Report	
Database File:	0512342207_Anadarko_Alvin 27N-29HZ_02-24-16_RBL.db
Dataset Pathname:	run2/pass7.1
Dataset Creation:	Wed Feb 24 12:28:21 2016 by Calc 7.0 B1

Gamma Ray Calibration Report	
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Serial Number:	FW1211-026
Tool Model:	2.75"Digital
Performed:	Wed Feb 24 10:35:47 2016

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	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:	39.400	ft

Master Calibration, performed Wed Feb 24 12:27:58 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.523	0.800	71.921	135.904	0.786
CAL	0.006	0.649				
5'	0.000	0.441	0.800	71.921	161.174	0.764
SUM						
S1	0.000	0.519	0.000	100.000	192.511	-0.001
S2	0.000	0.517	0.000	100.000	193.675	-0.056
S3	0.000	0.531	0.000	100.000	188.271	-0.034
S4	0.000	0.542	0.000	100.000	184.518	-0.026
S5	0.000	0.546	0.000	100.000	183.329	-0.046
S6	0.000	0.542	0.000	100.000	184.417	-0.041
S7	0.000	0.524	0.000	100.000	190.989	-0.086
S8	0.000	0.523	0.000	100.000	191.171	-0.029

Internal Reference Calibration, performed Wed Feb 24 10:25:57 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.007	0.648	0.006	0.649	1.001	-0.000

Air Zero Calibration, performed Wed Feb 24 10:25:13 2016:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.007	0.000	-0.000
5'	0.006	0.000	0.000
SUM			
S1	0.007	0.000	-0.000
S2	0.006	0.000	0.000
S3	0.007	0.000	-0.000
S4	0.007	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	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Alvin 27N-29HZ
Field	Wattenberg
County	Weld
State	Colorado