



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Powers 13C-22HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	Company	Kerr-McGee Oil & Gas Onshore, L.P.	
	Well	Powers 13C-22HZ	
	Field	Wattenberg	
	County	Weld	
AP1 # : 05-123-41902	State	Colorado	
	Other Services	Gauge Ring CNL	
	Elevation	K.B. 4905' D.F. 4904' G.L. 4885'	
	SEC 22	TWP 2N	RGE 65W
Permanent Datum	Ground Level	Elevation 4885'	
Log Measured From	Kelly Bushing	20 FT	
Drilling Measured From	Kelly Bushing		

Date	11-Dec-2015
Run Number	Three
Depth Driller	12907 FT
Depth Logger	7550 FT
Bottom Logged Interval	7503 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	130 FT
Time Well Ready	ROA
Time Logger on Bottom	13:40
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	Robert Fogarty
Witnessed By	D.J. 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	9.625	36	J-55 LT&C	Surface	1882 FT		
Intermediate #1	5.5	17	HCP-110 LTC	Surface	12907 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 Reference to Casing Tally Reported Marker Joint Top at 6829 FT  
Log Adjusted +5 FT to Correlate to Marker Joint Top  
Gauge Ring Ran to 7550 FT  
Log Ran as deep as possible to surface  
Log was ran with 2800 PSI surface induced pressure  
No debris found on logging tools upon completion of run.

Thank you for choosing FMC Technologies Completion Services, Inc.!!

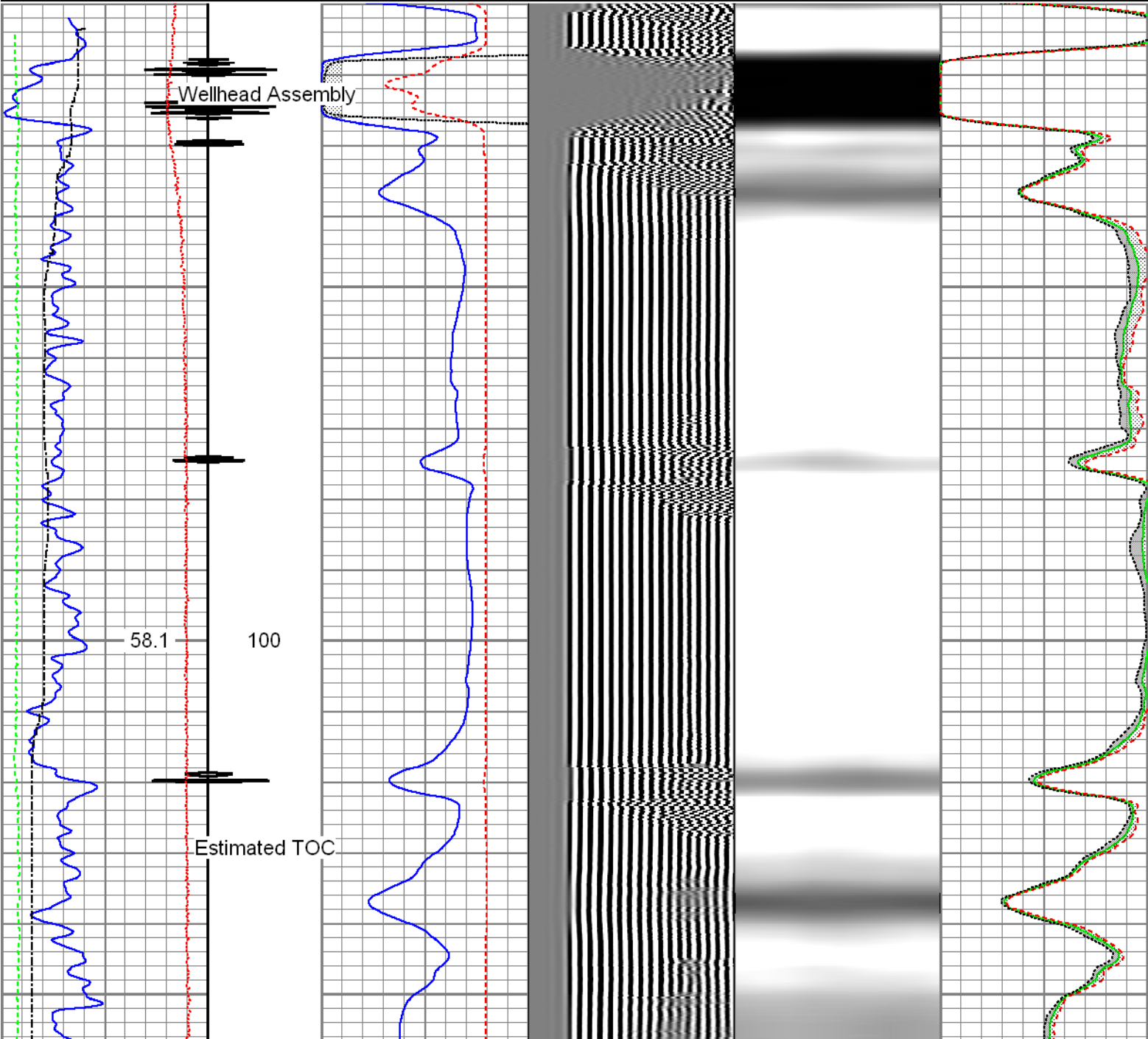


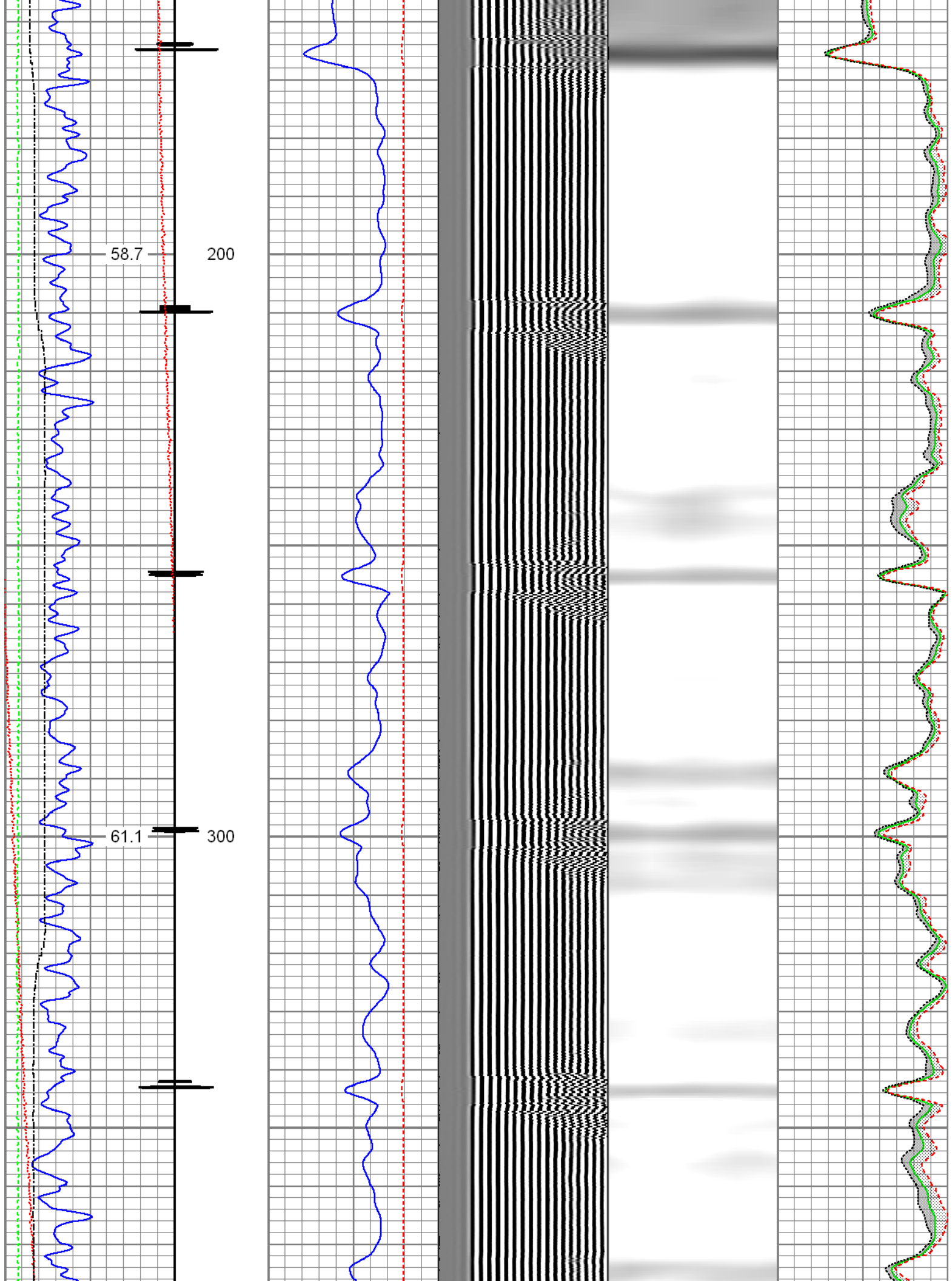
Main Pass

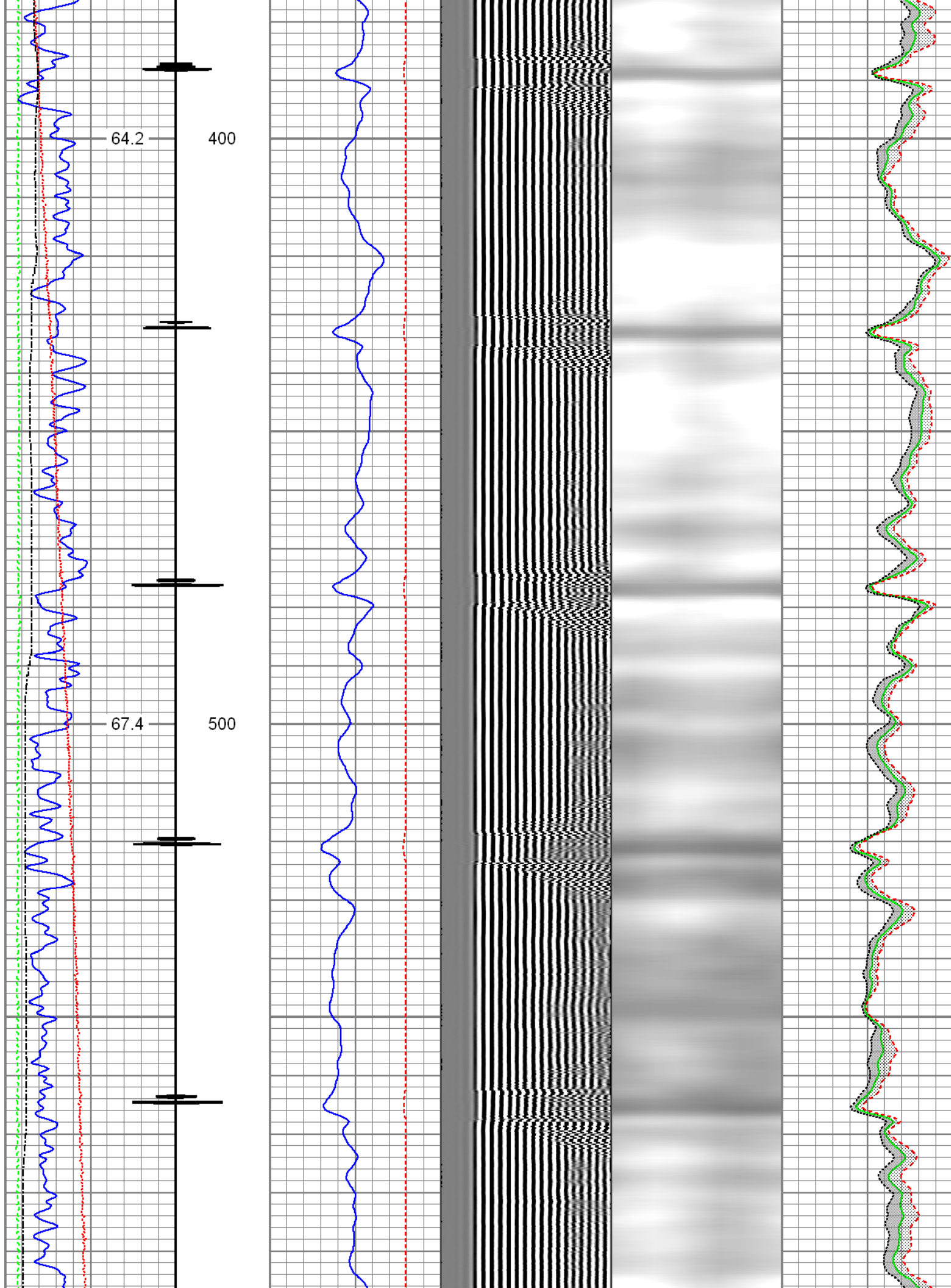
Recorded with 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\20151211\anadarko\_powers\_13c\_22hz\_rcbl\_11\_december\_2015.db  
Dataset Pathname: pass4  
Presentation Format: radii  
Dataset Creation: Fri Dec 11 13:40:08 2015 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

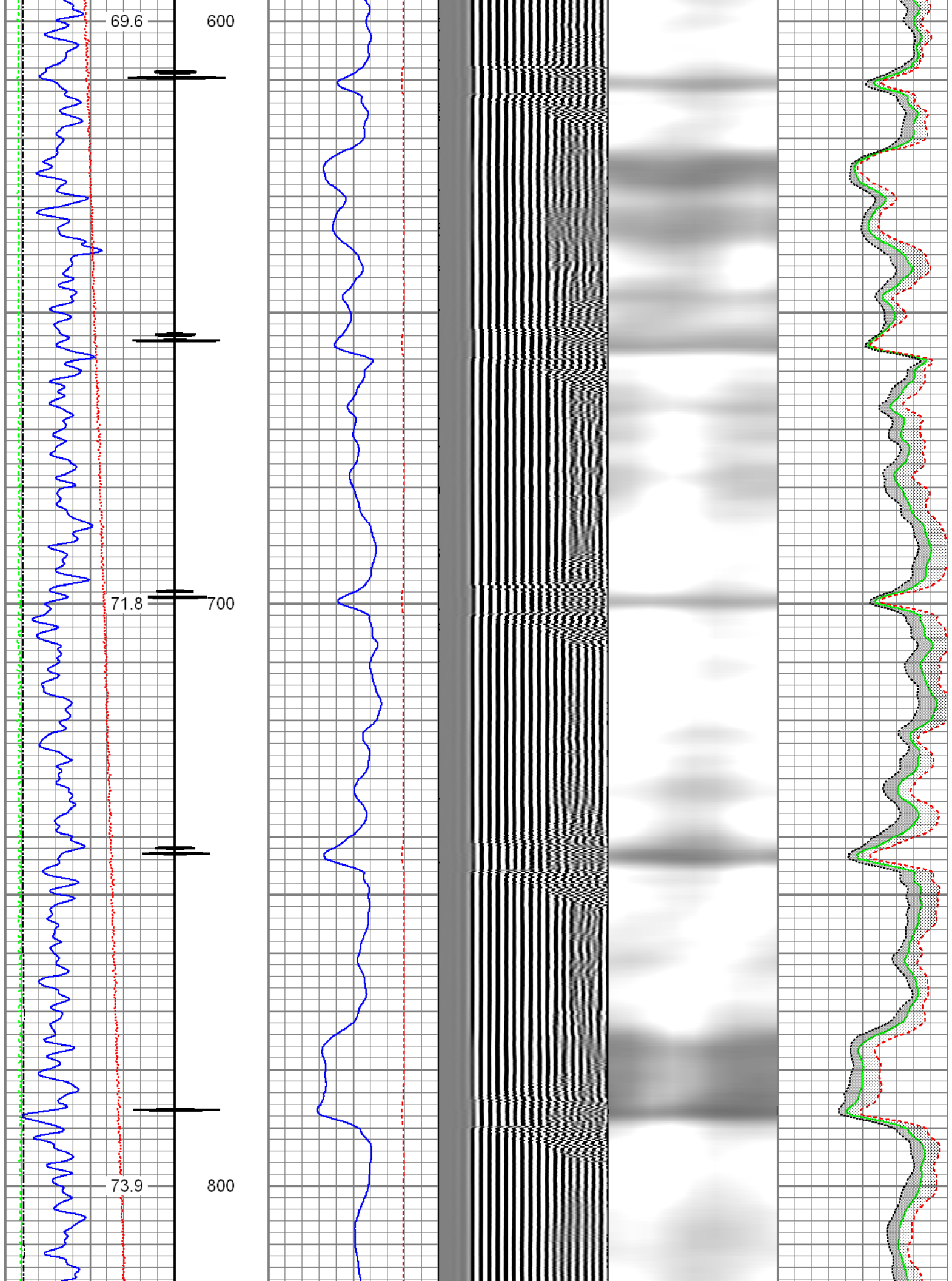
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

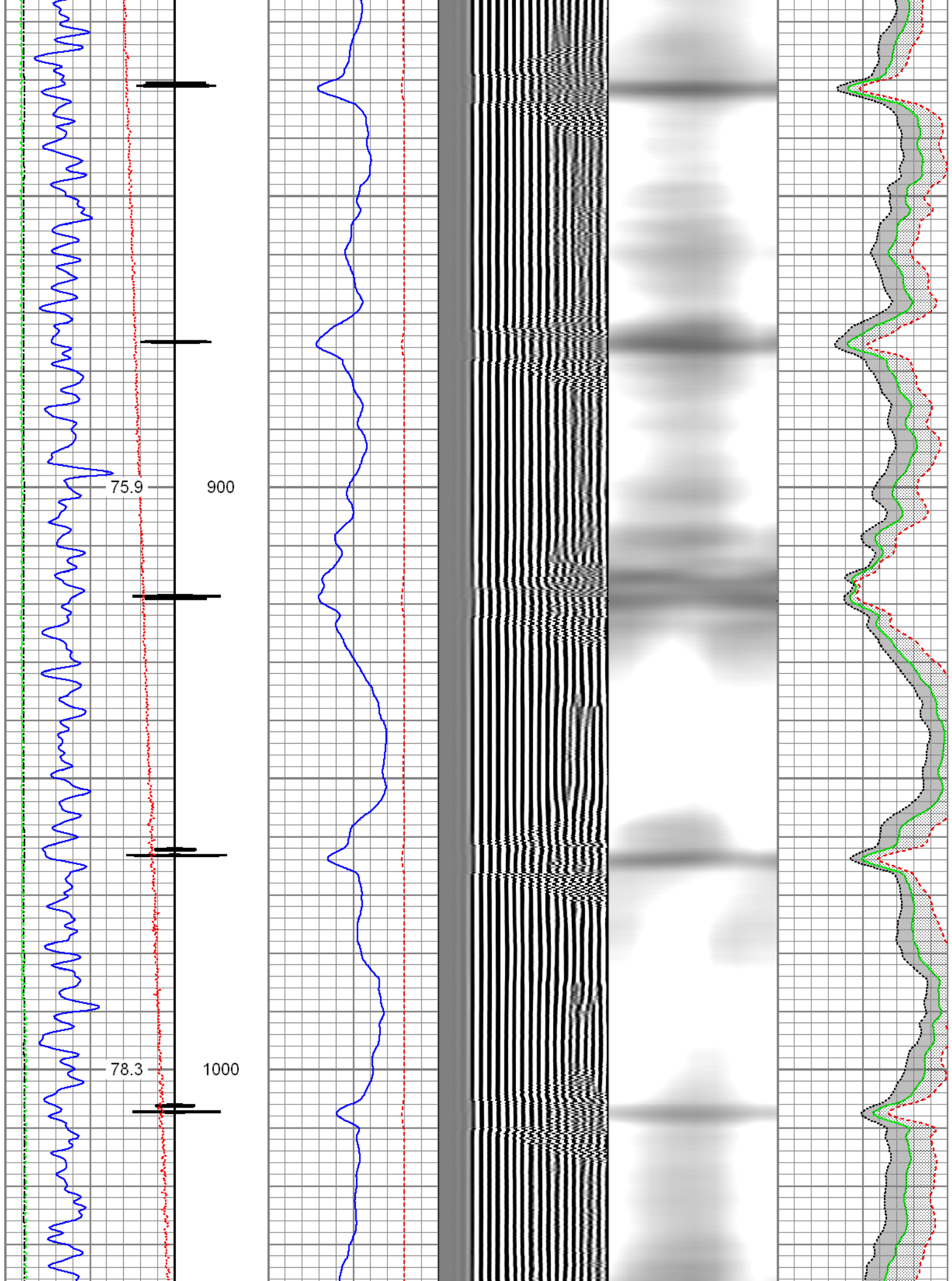


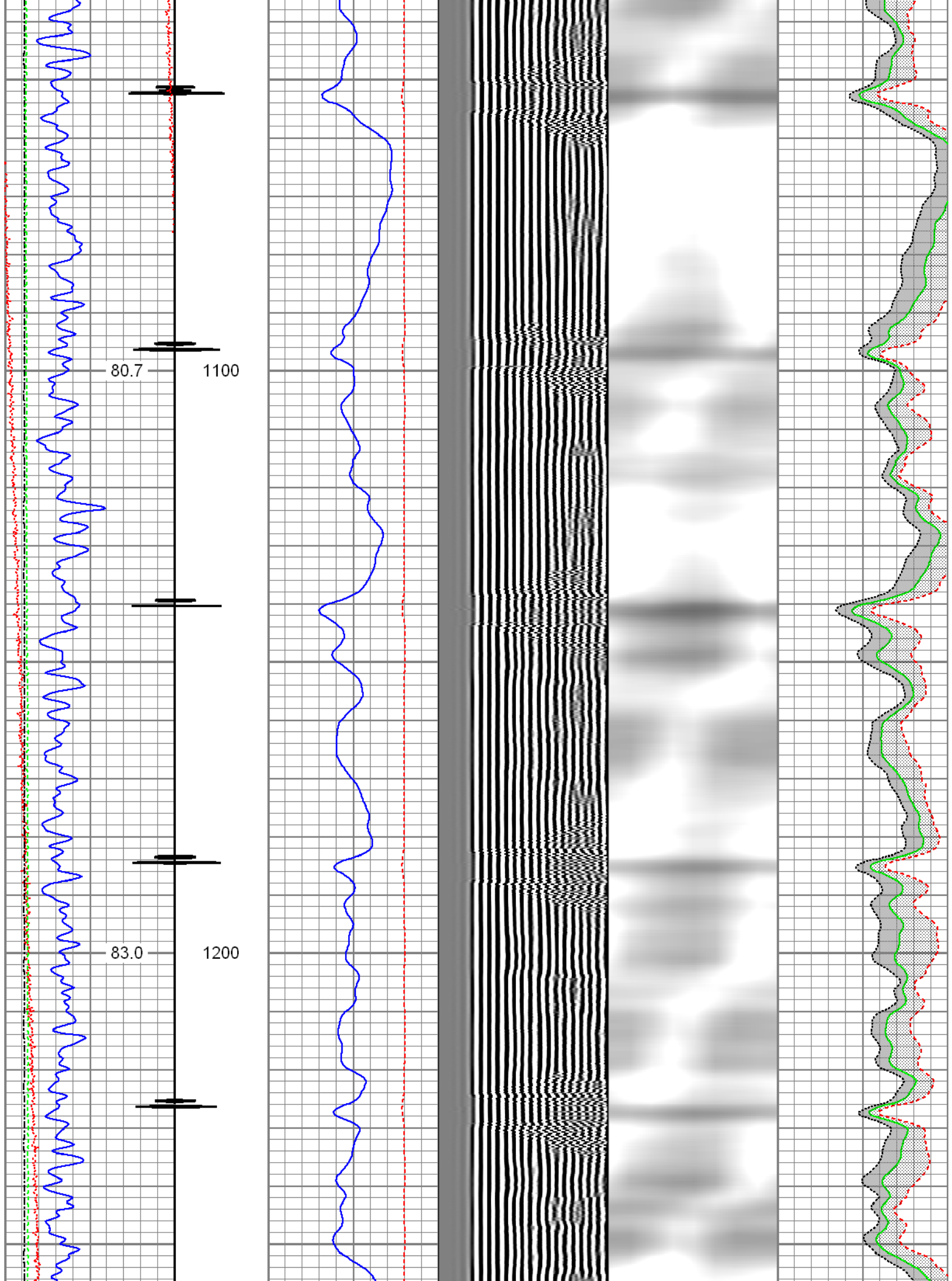




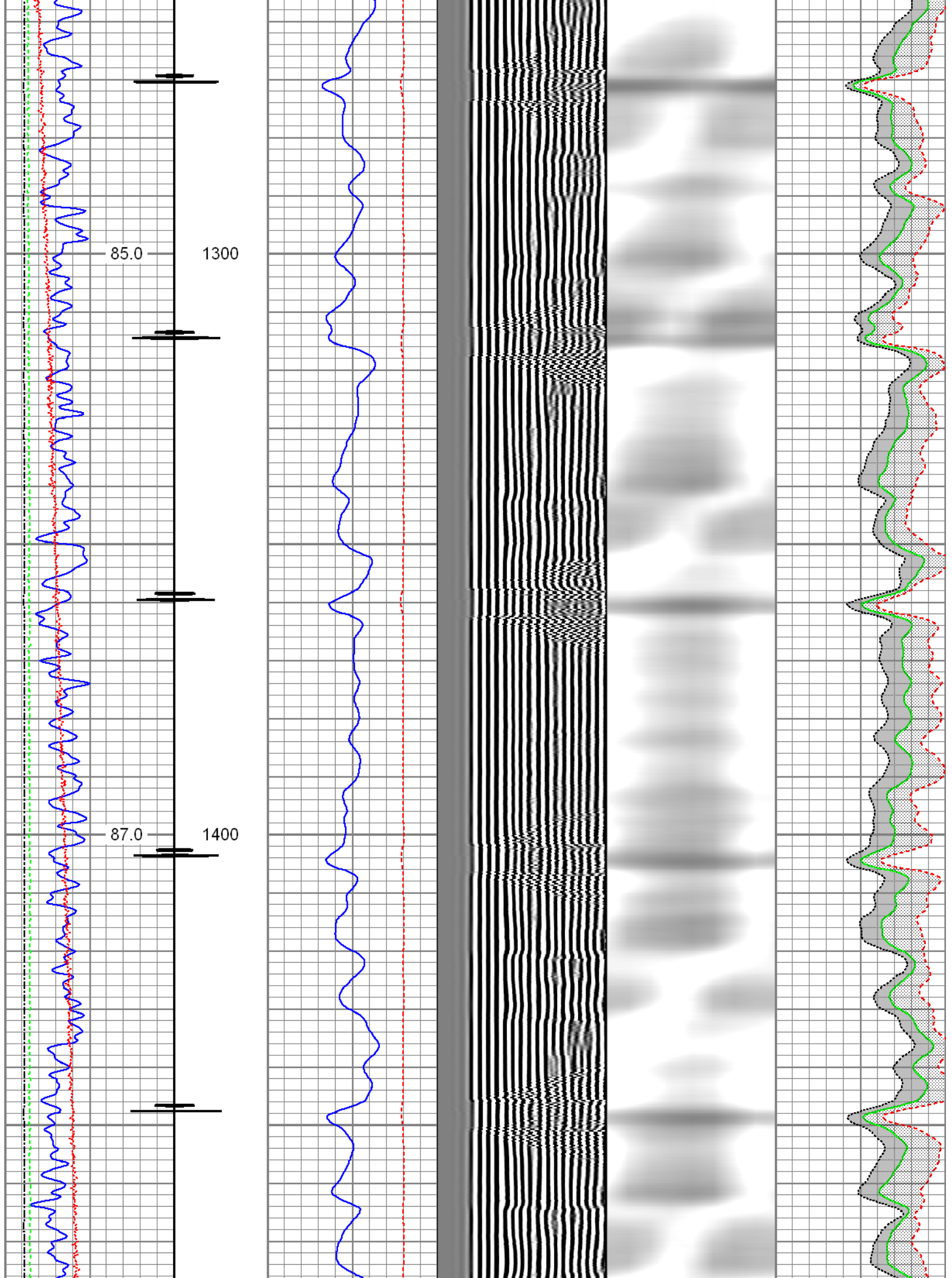




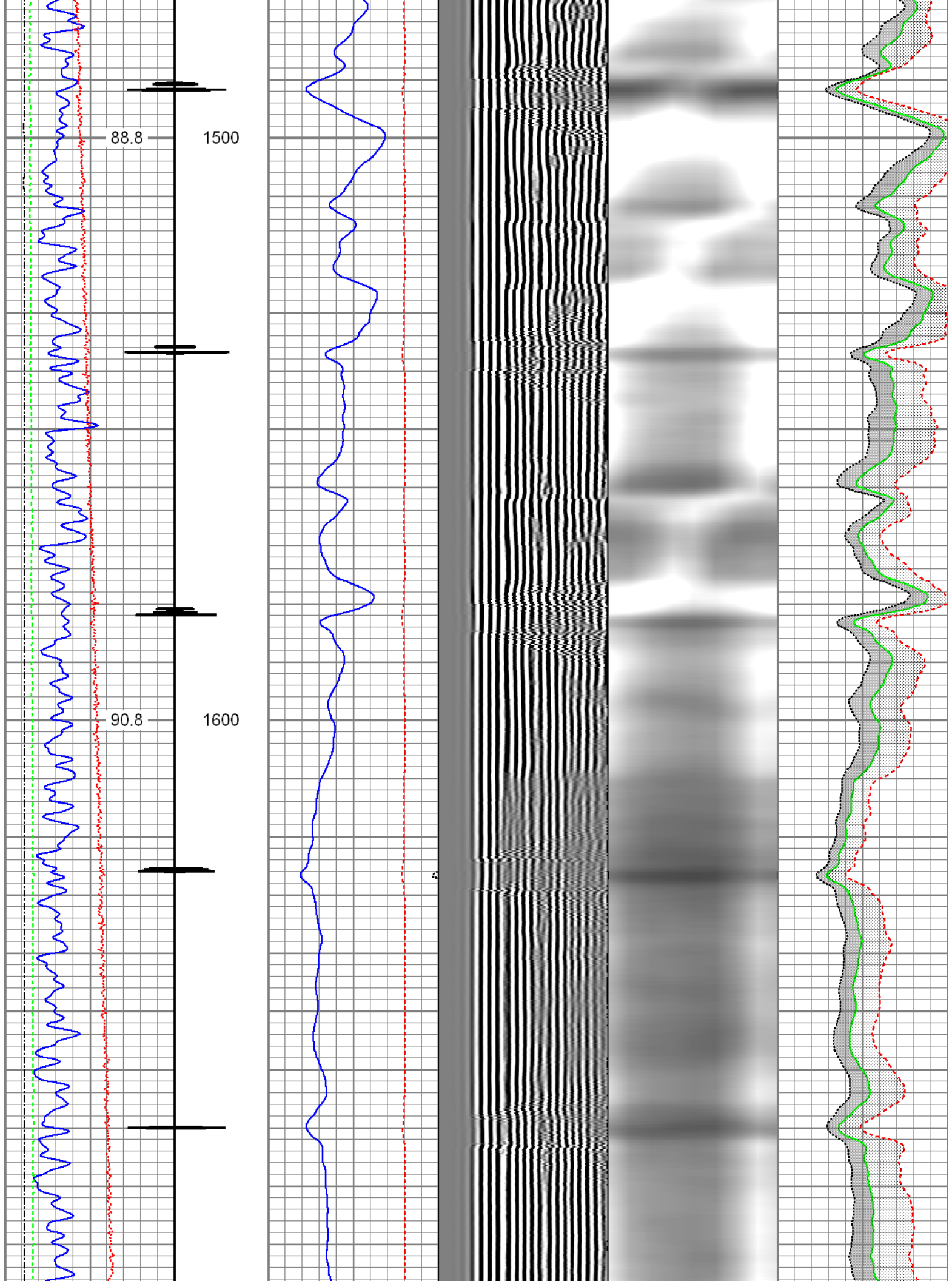


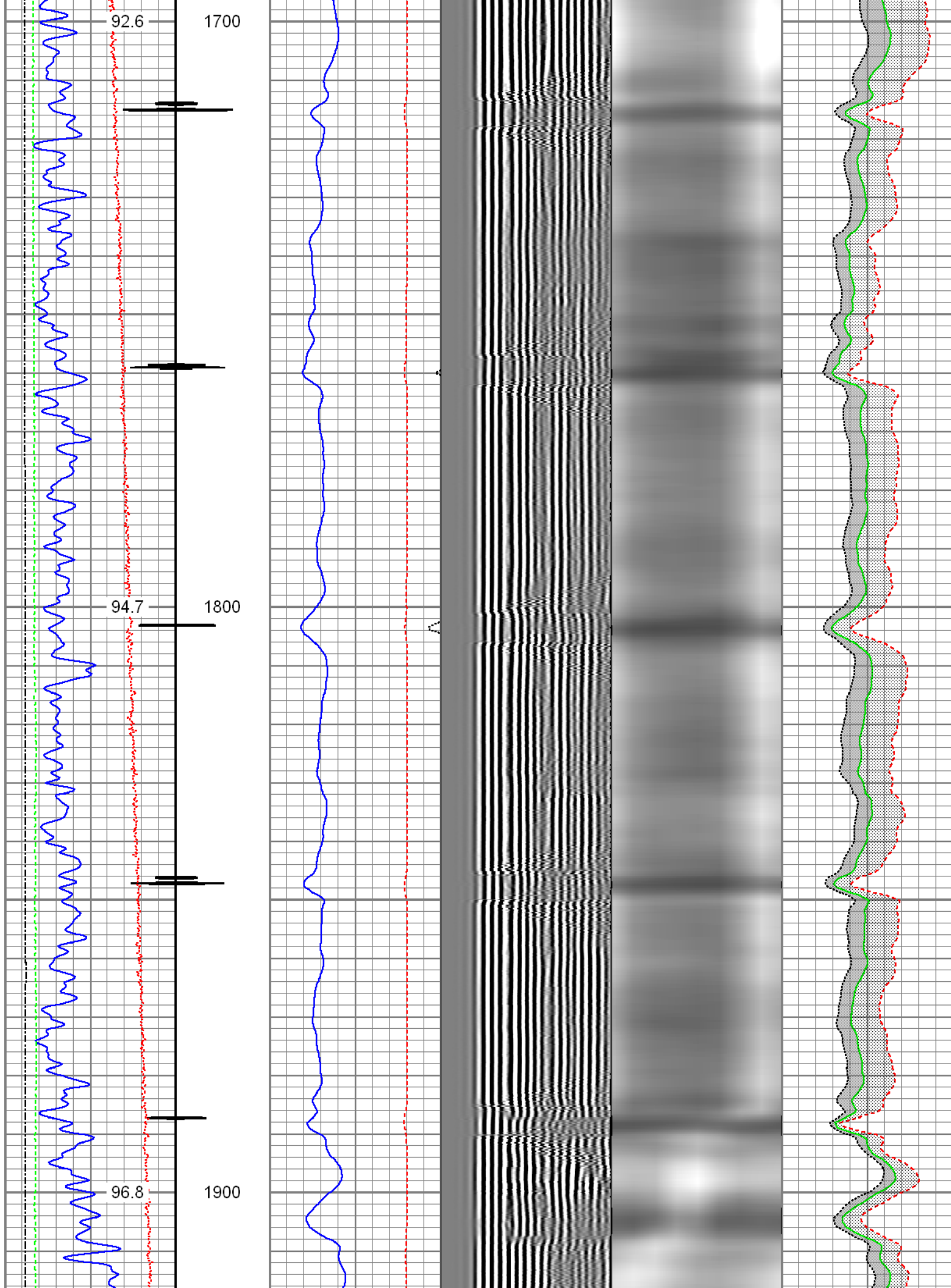


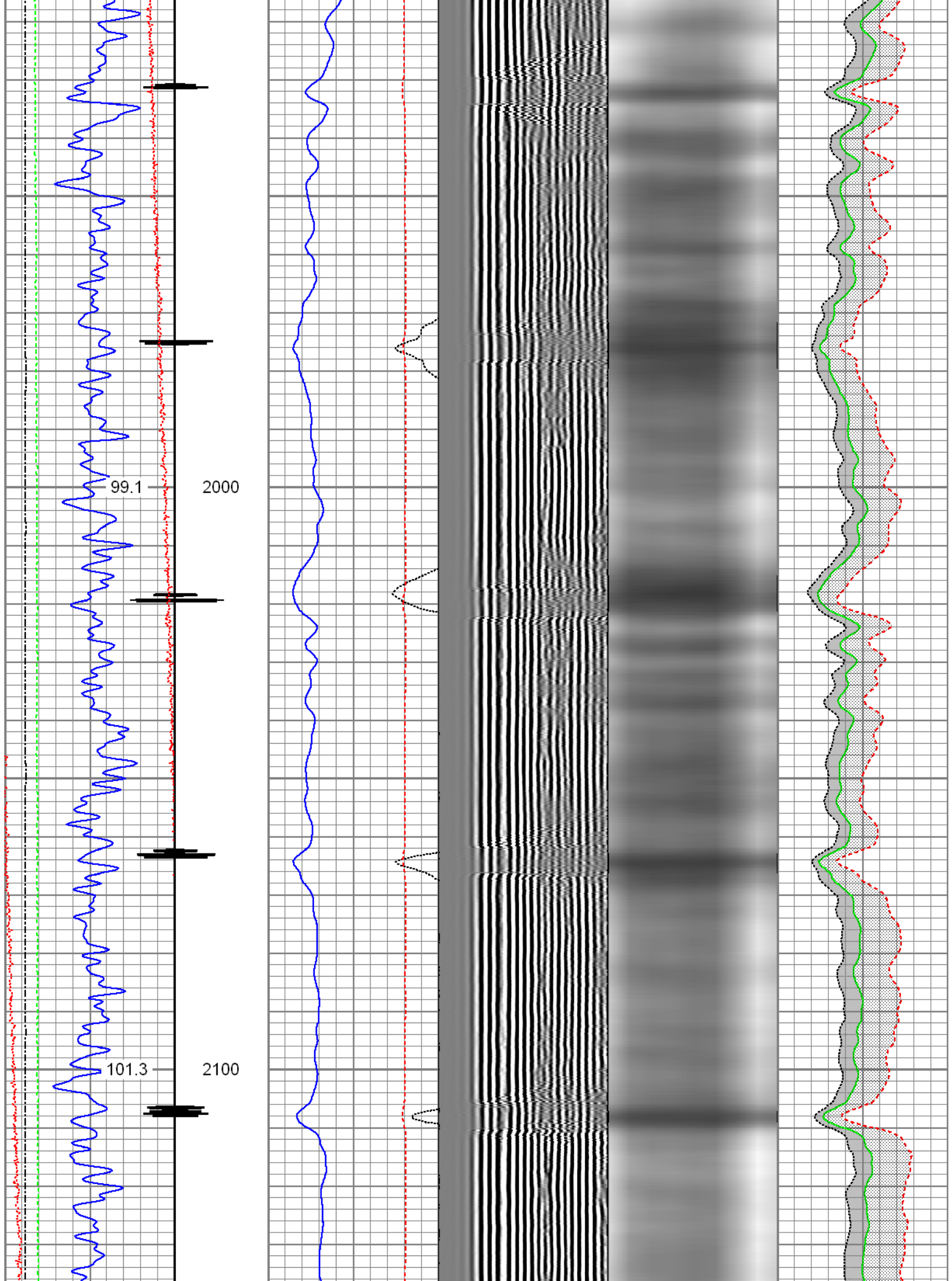




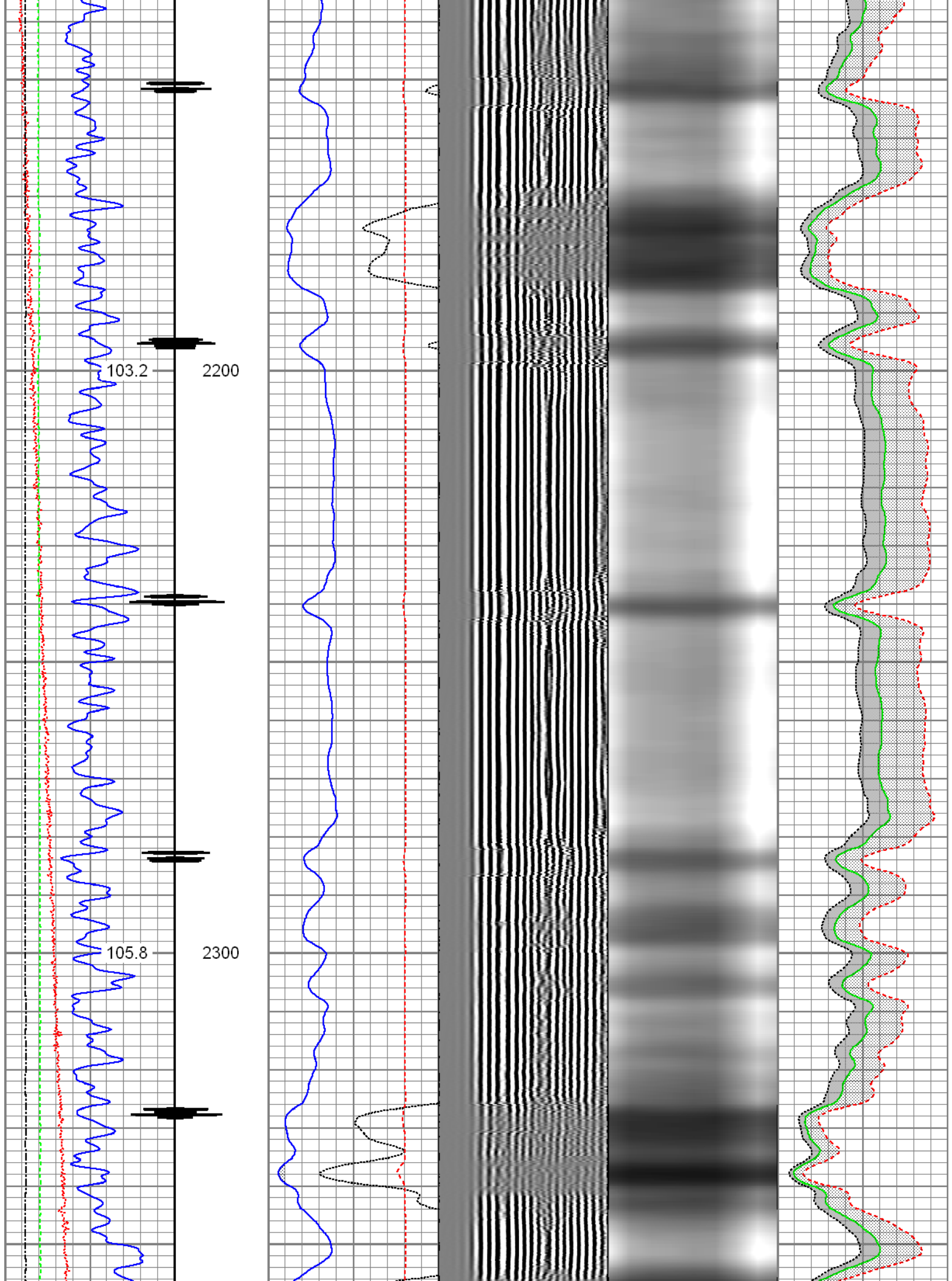




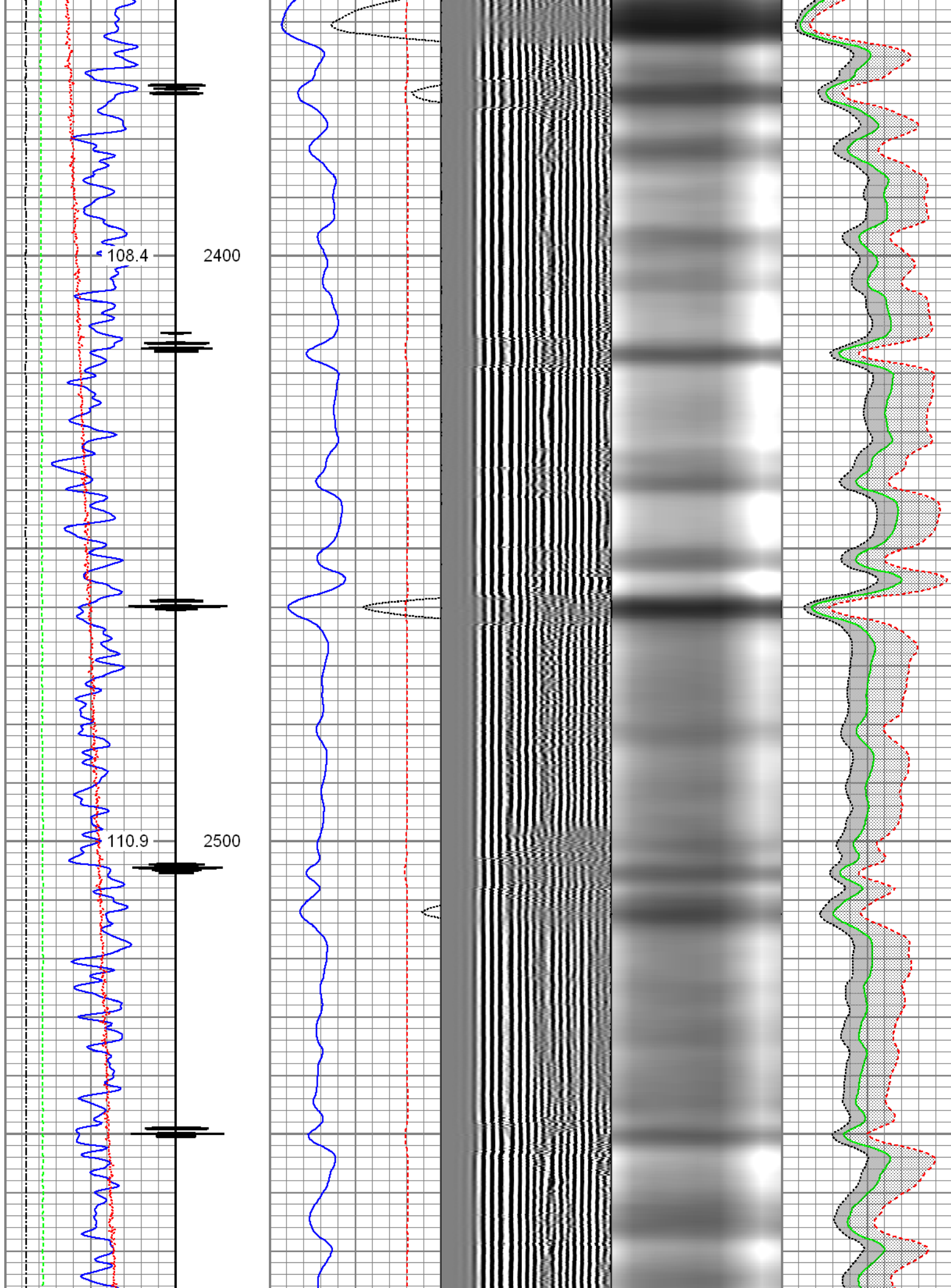


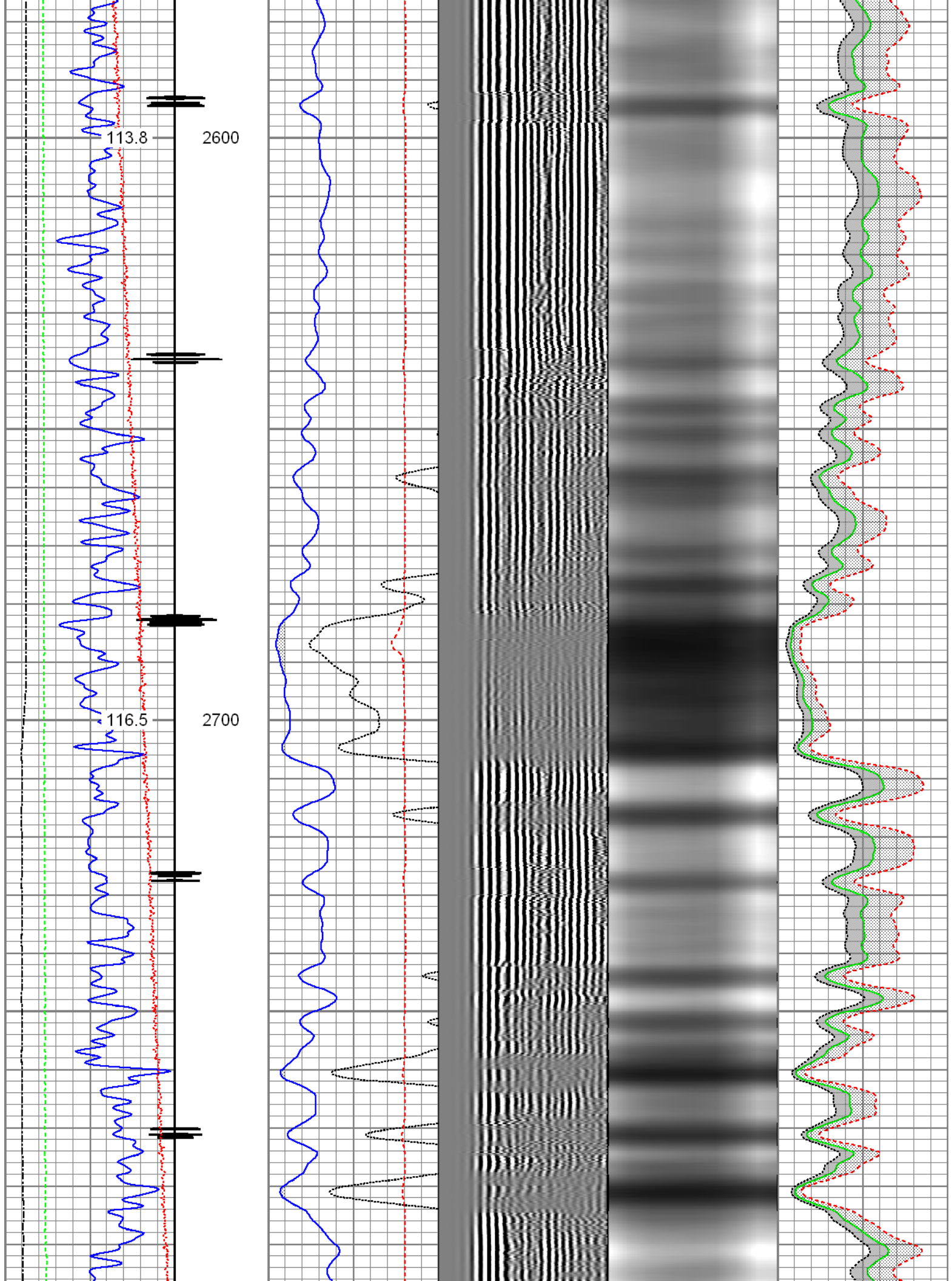




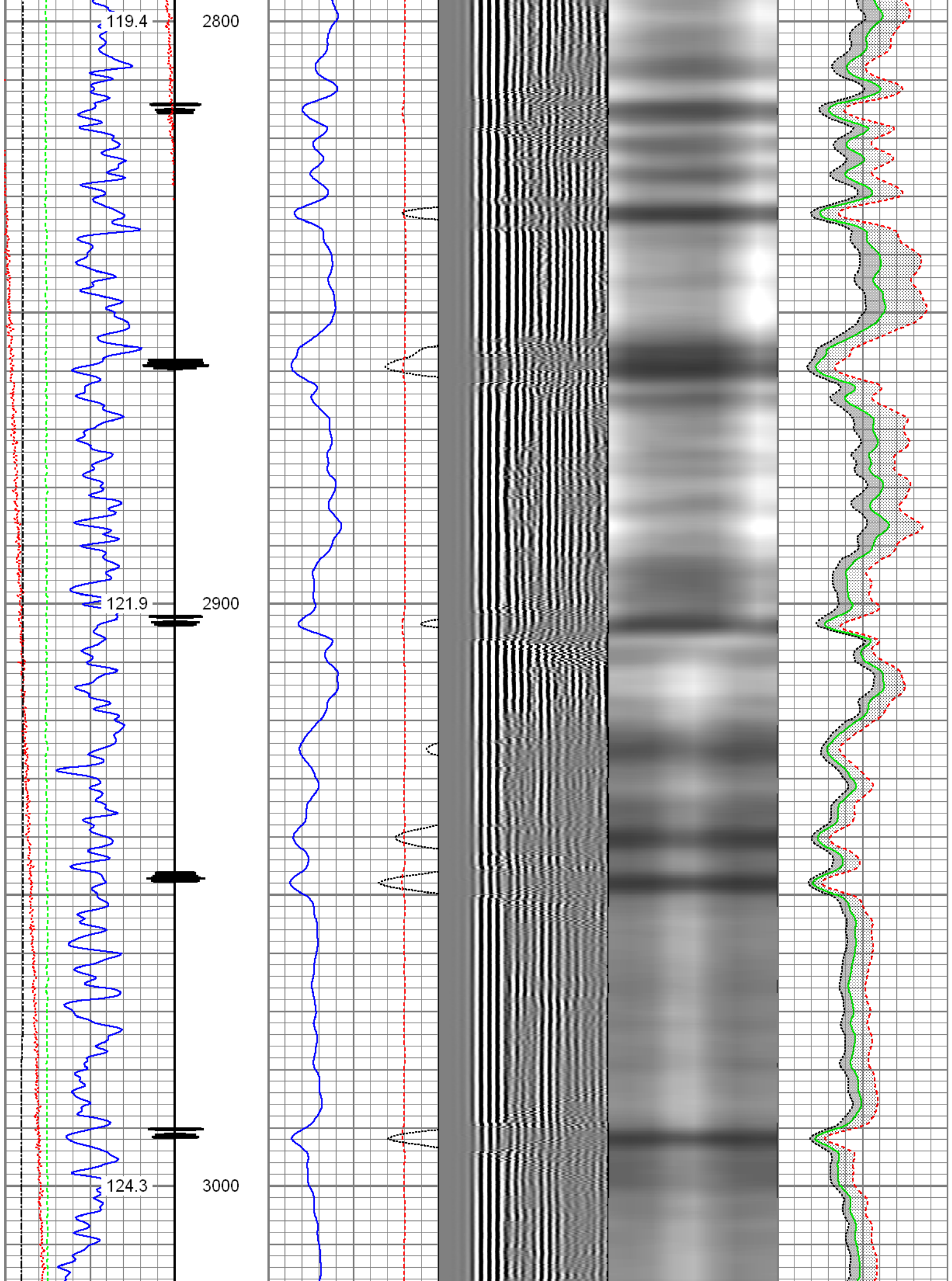


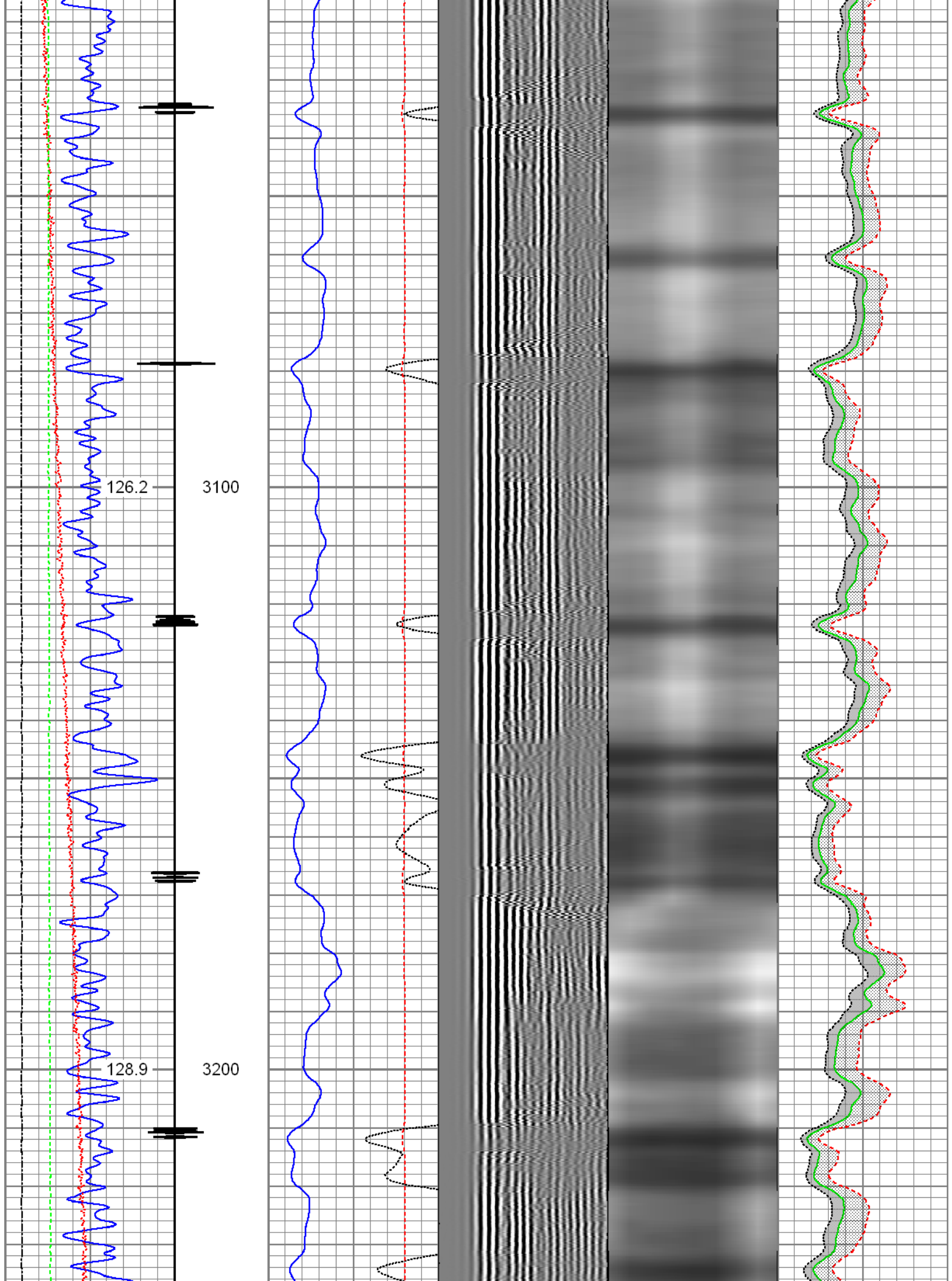




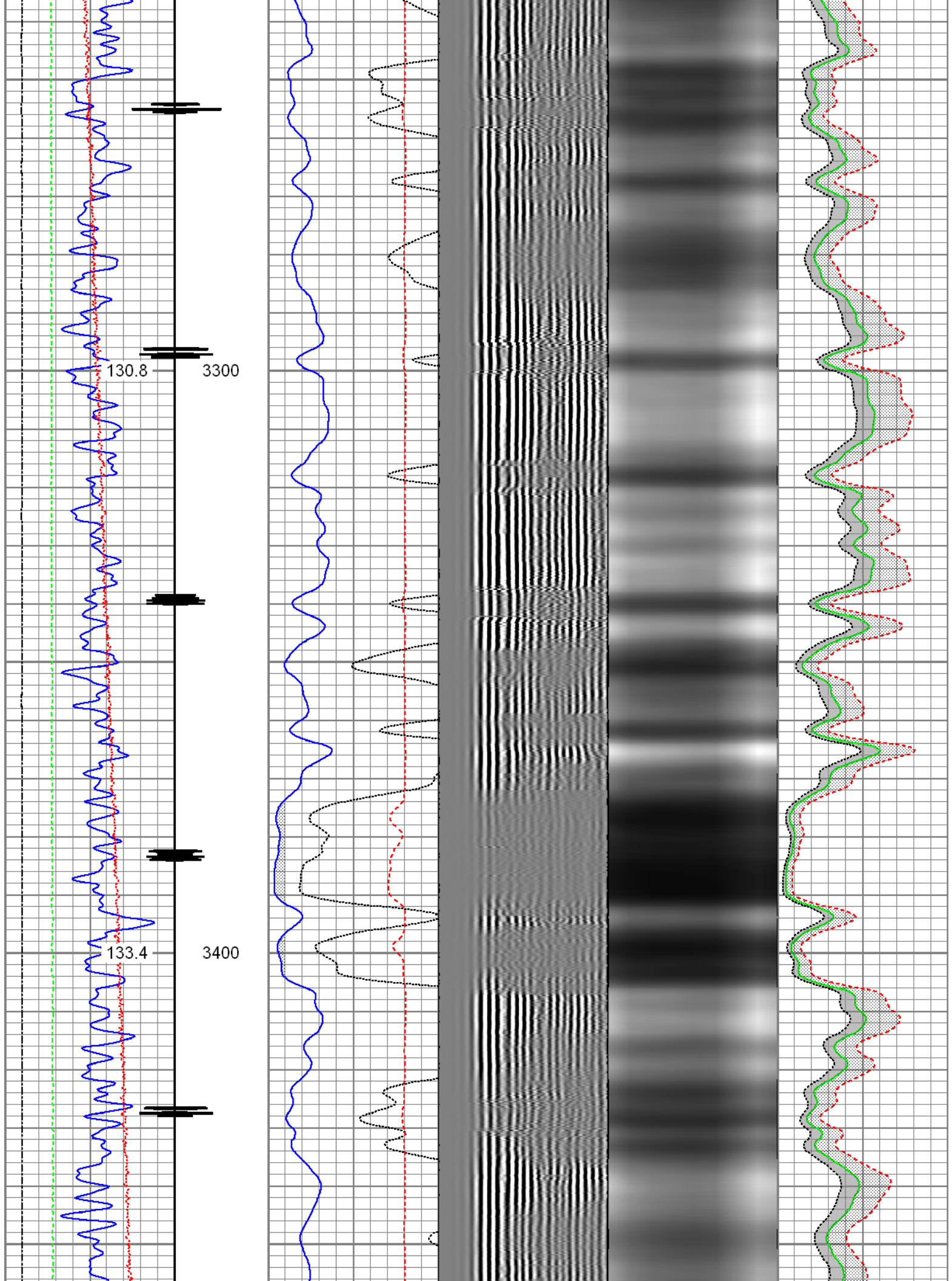


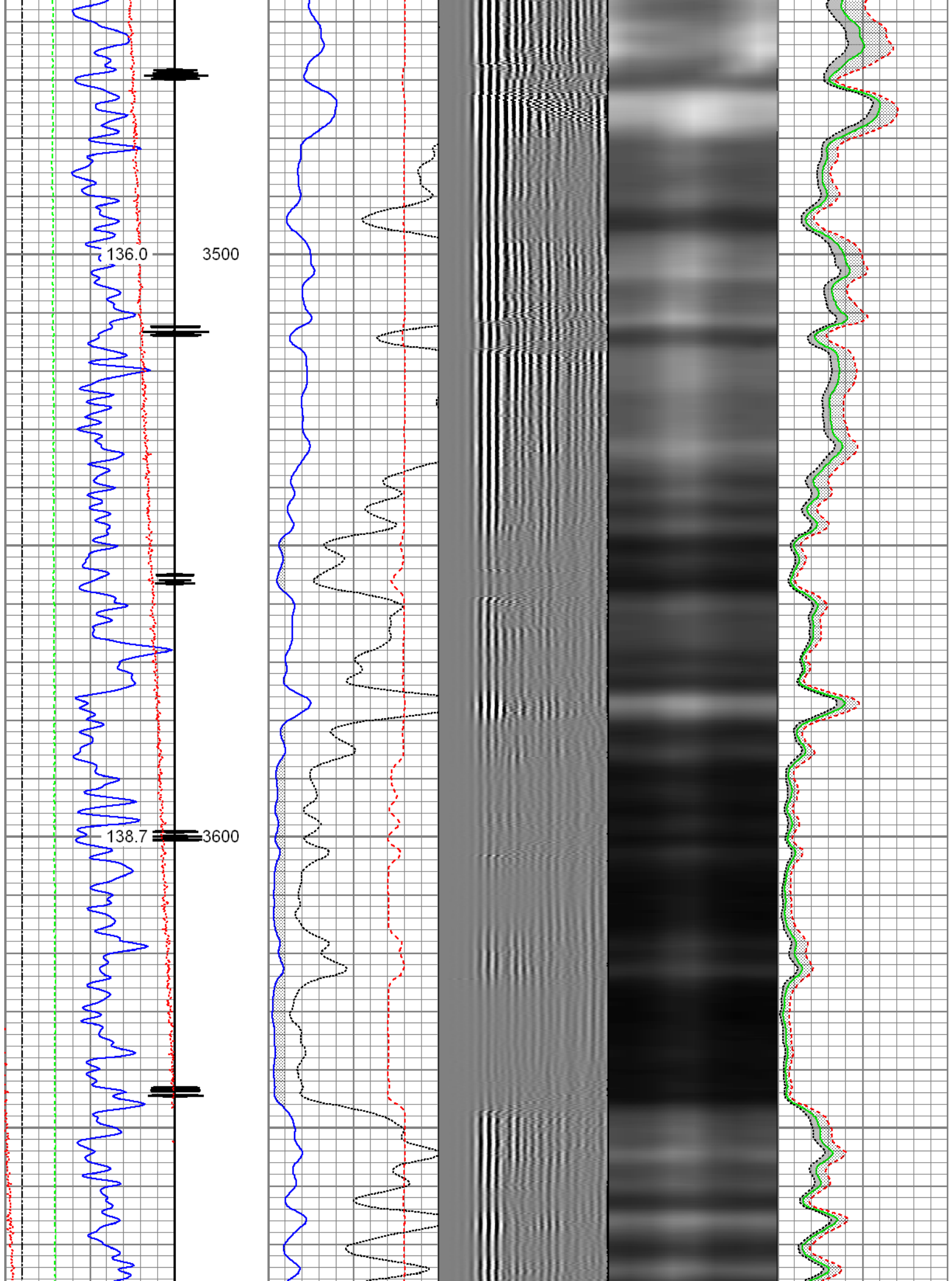


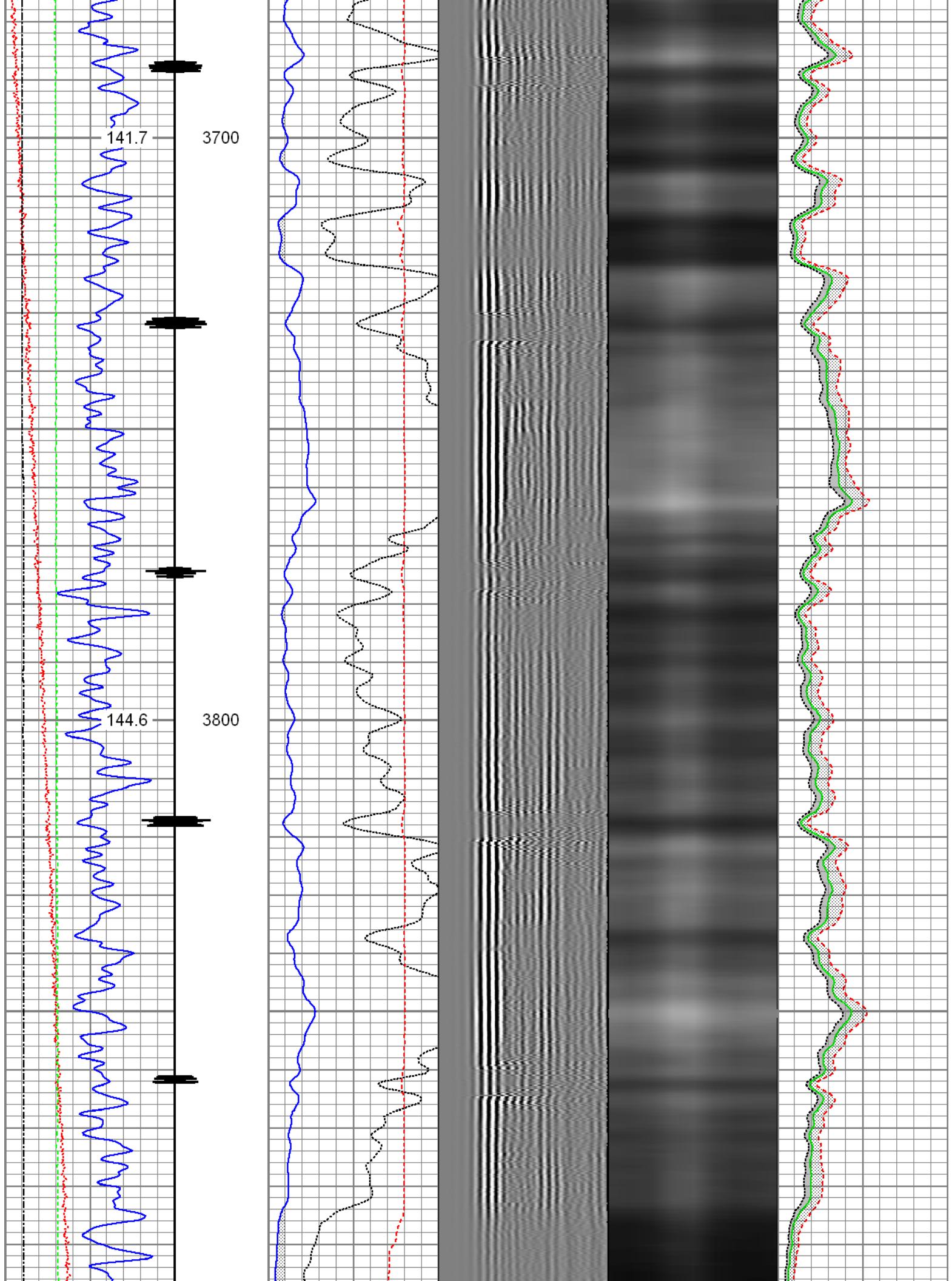




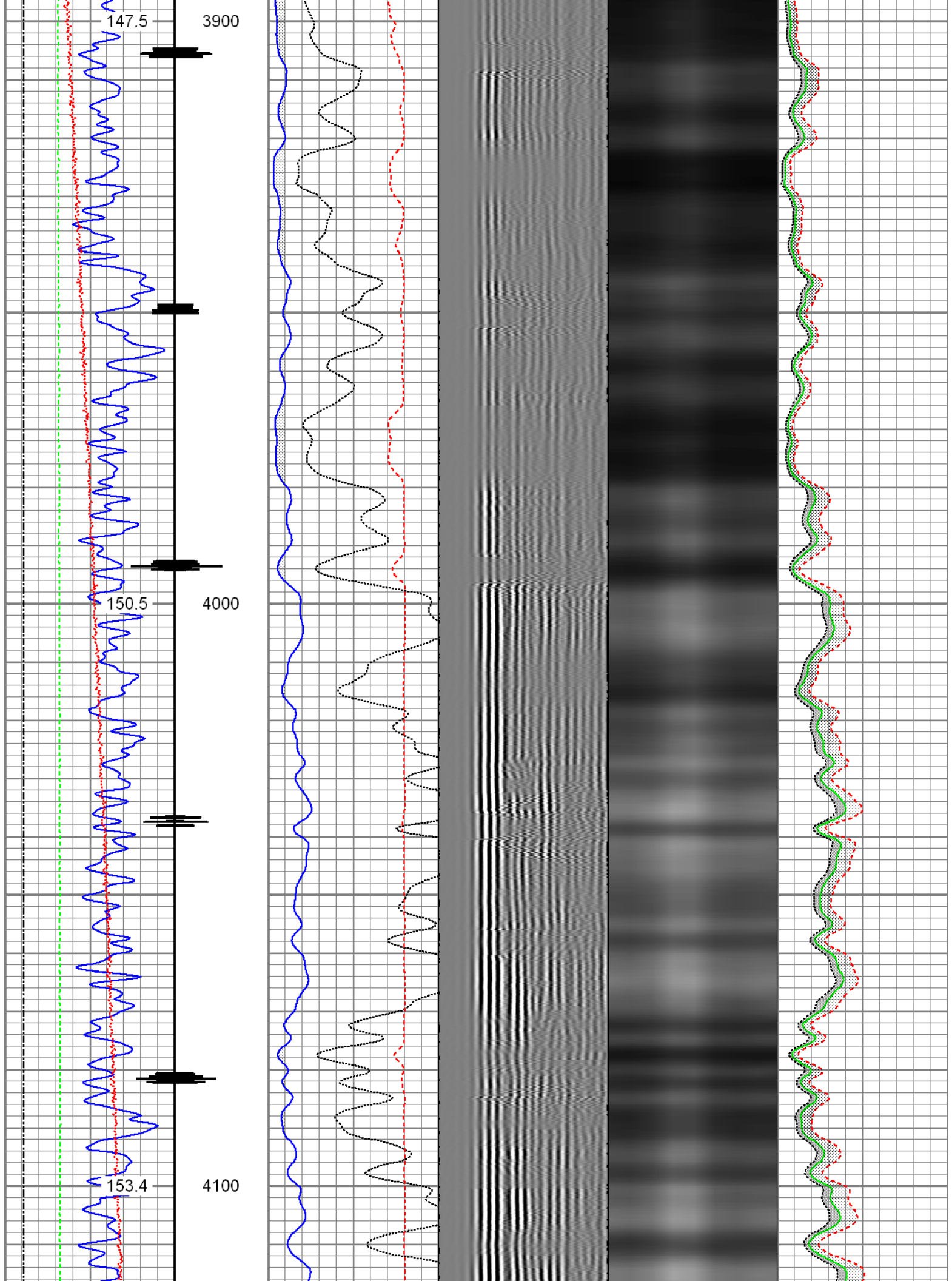




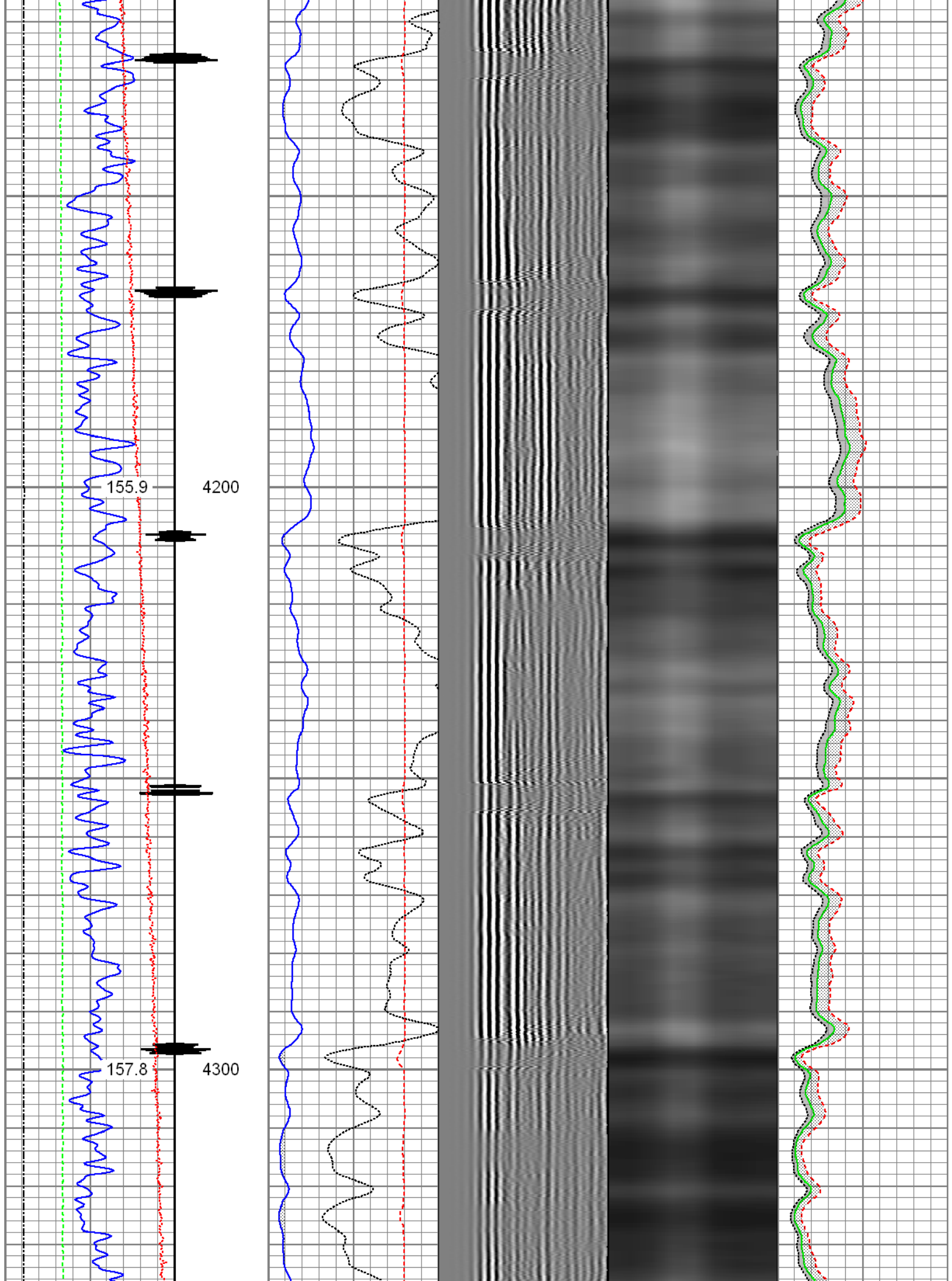


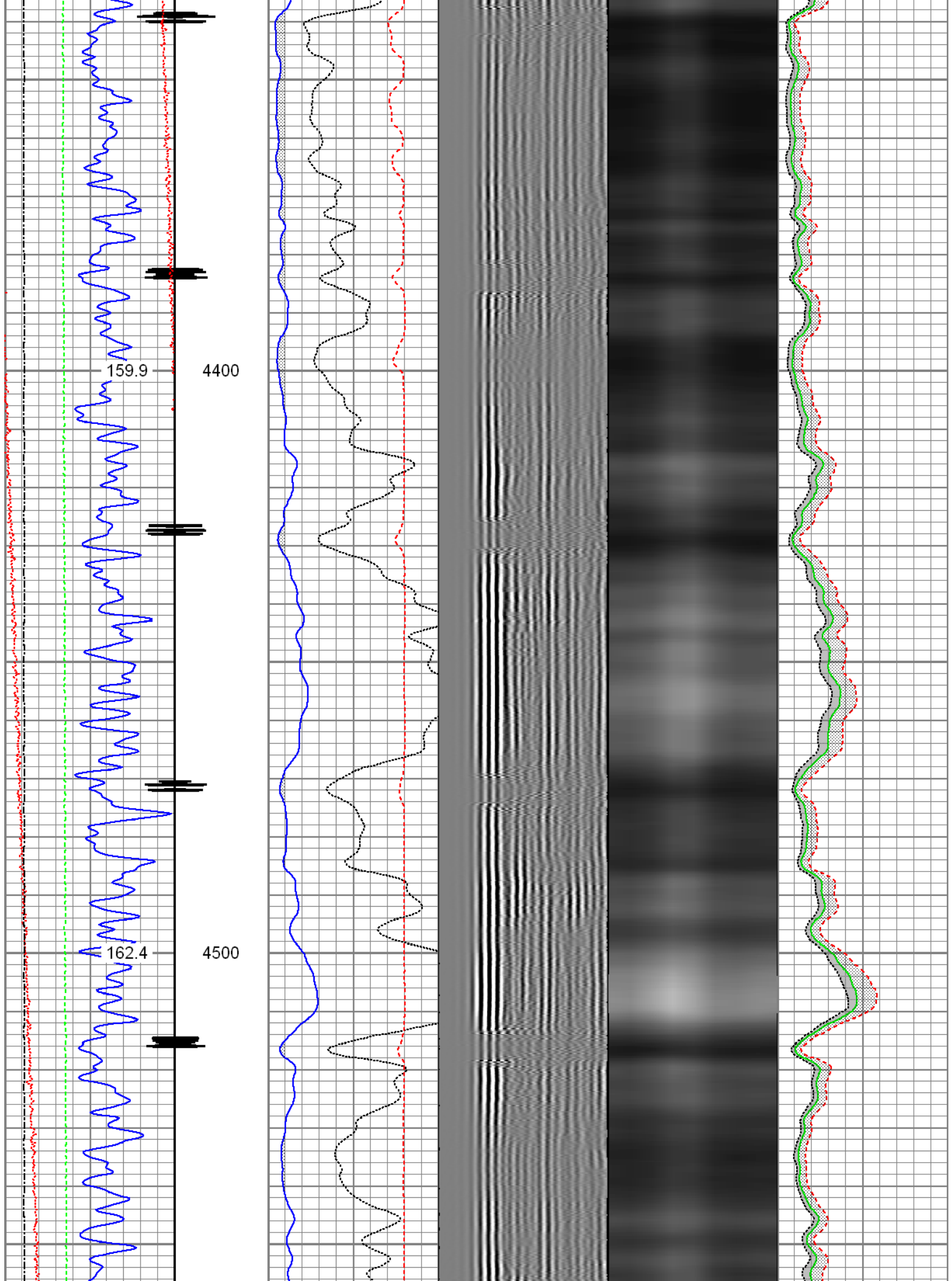


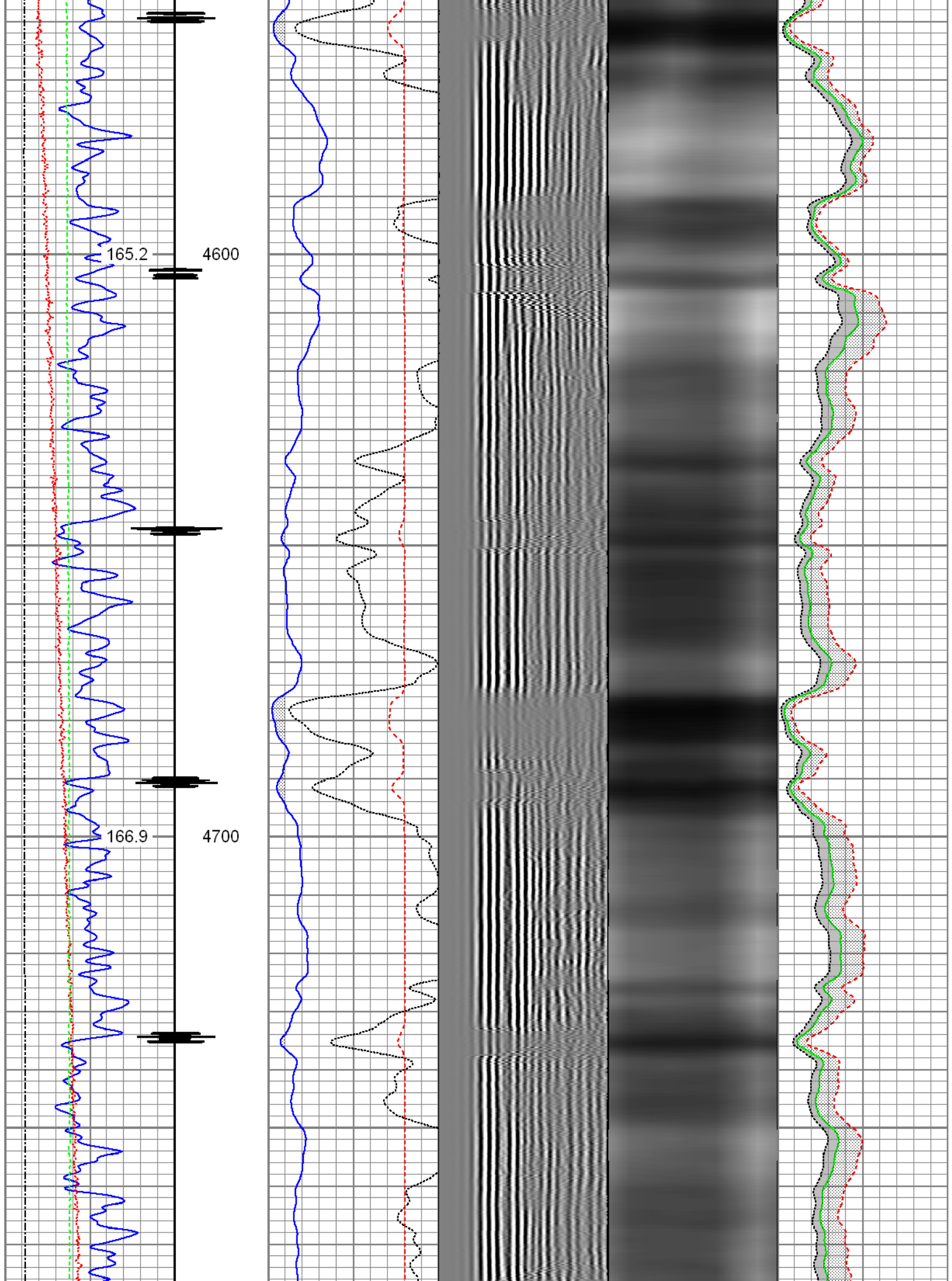




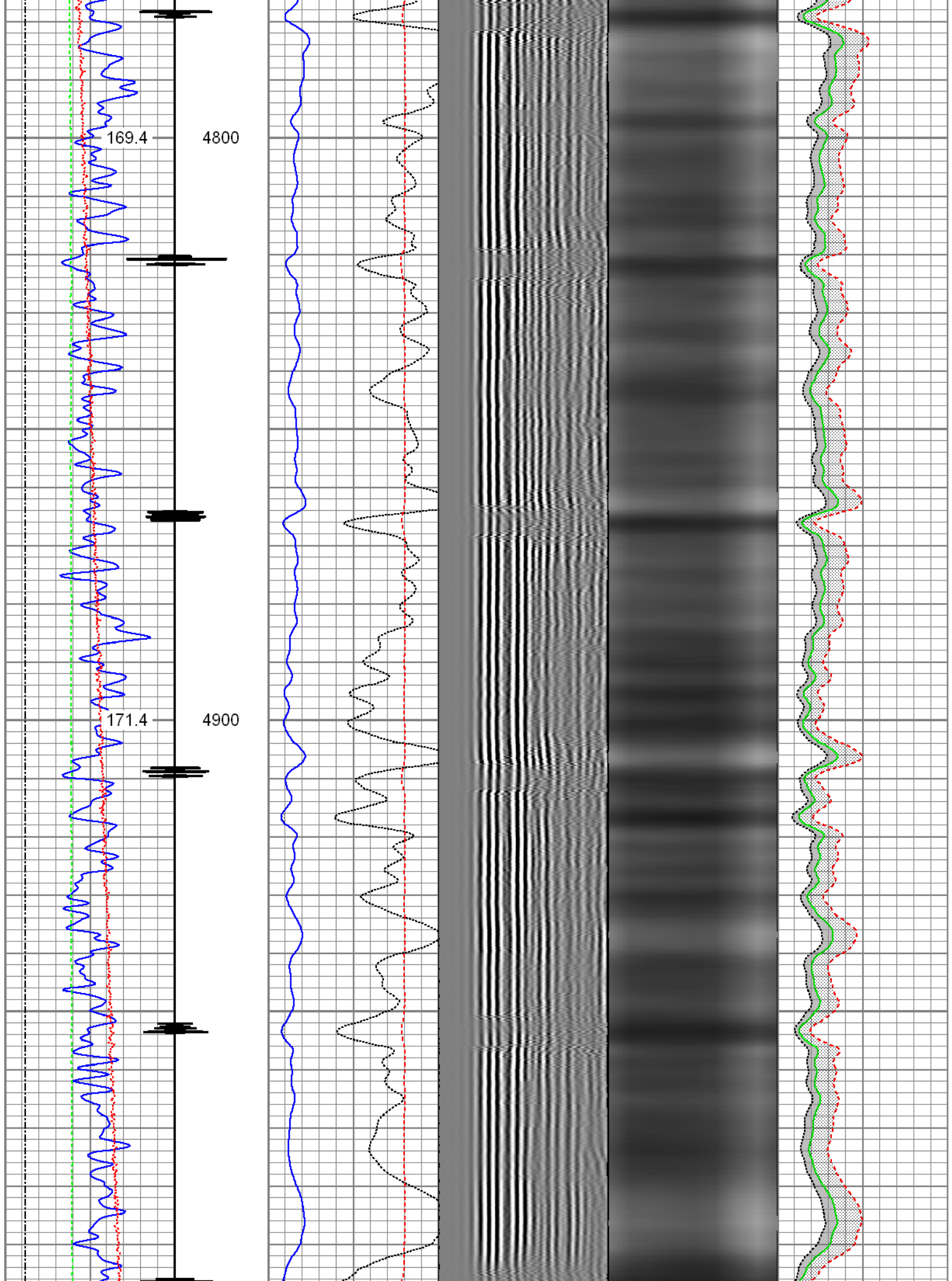


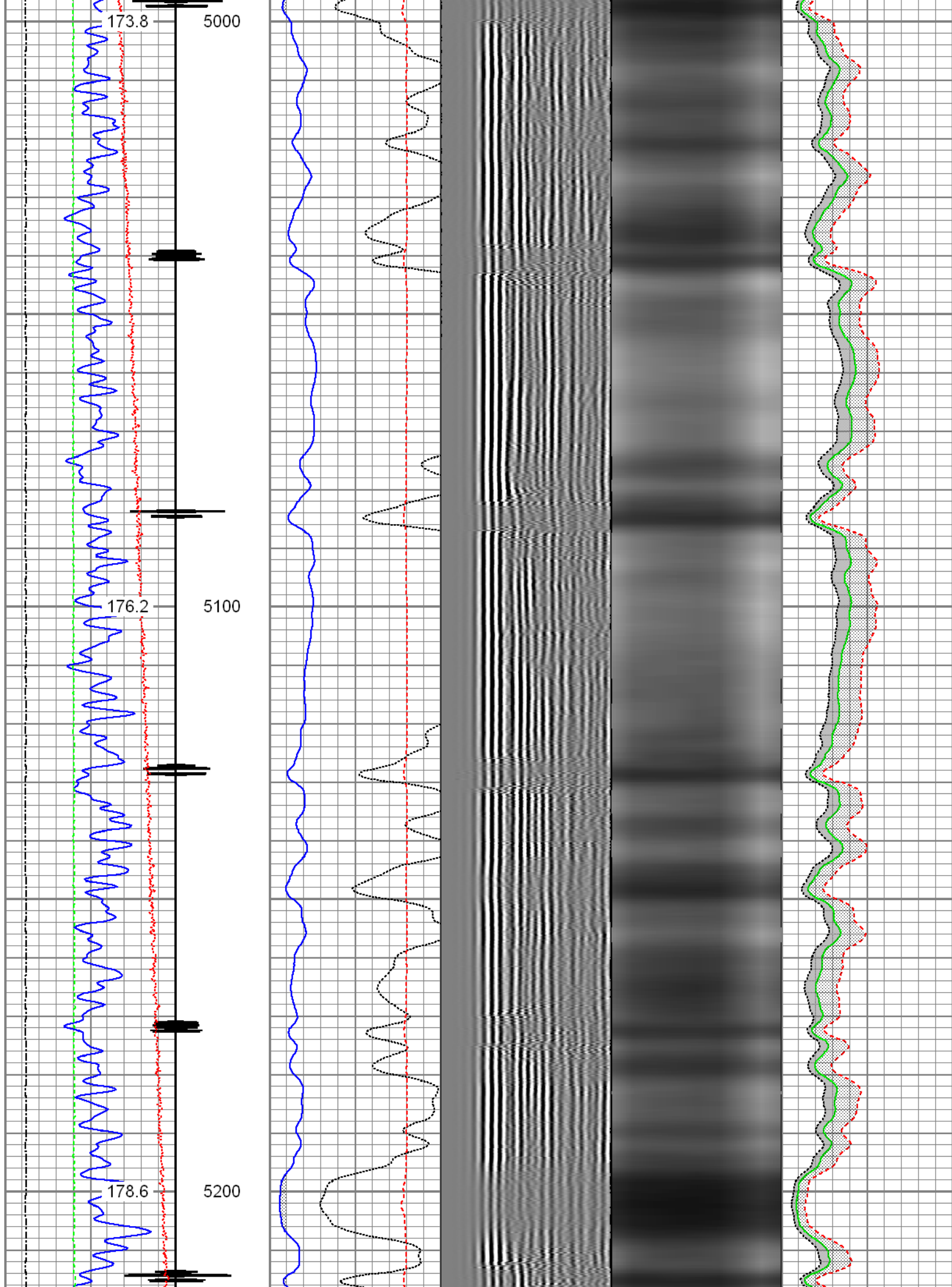


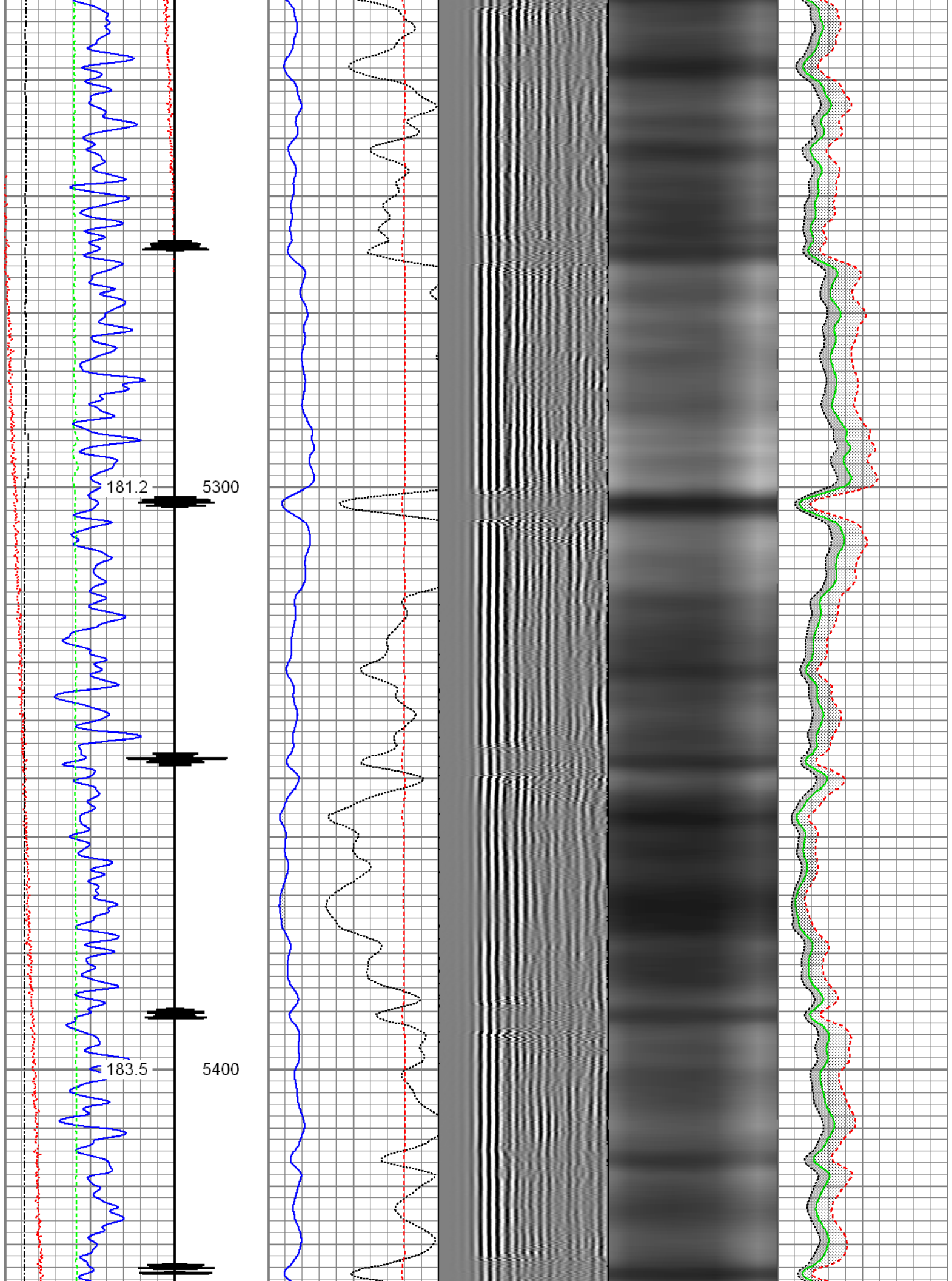




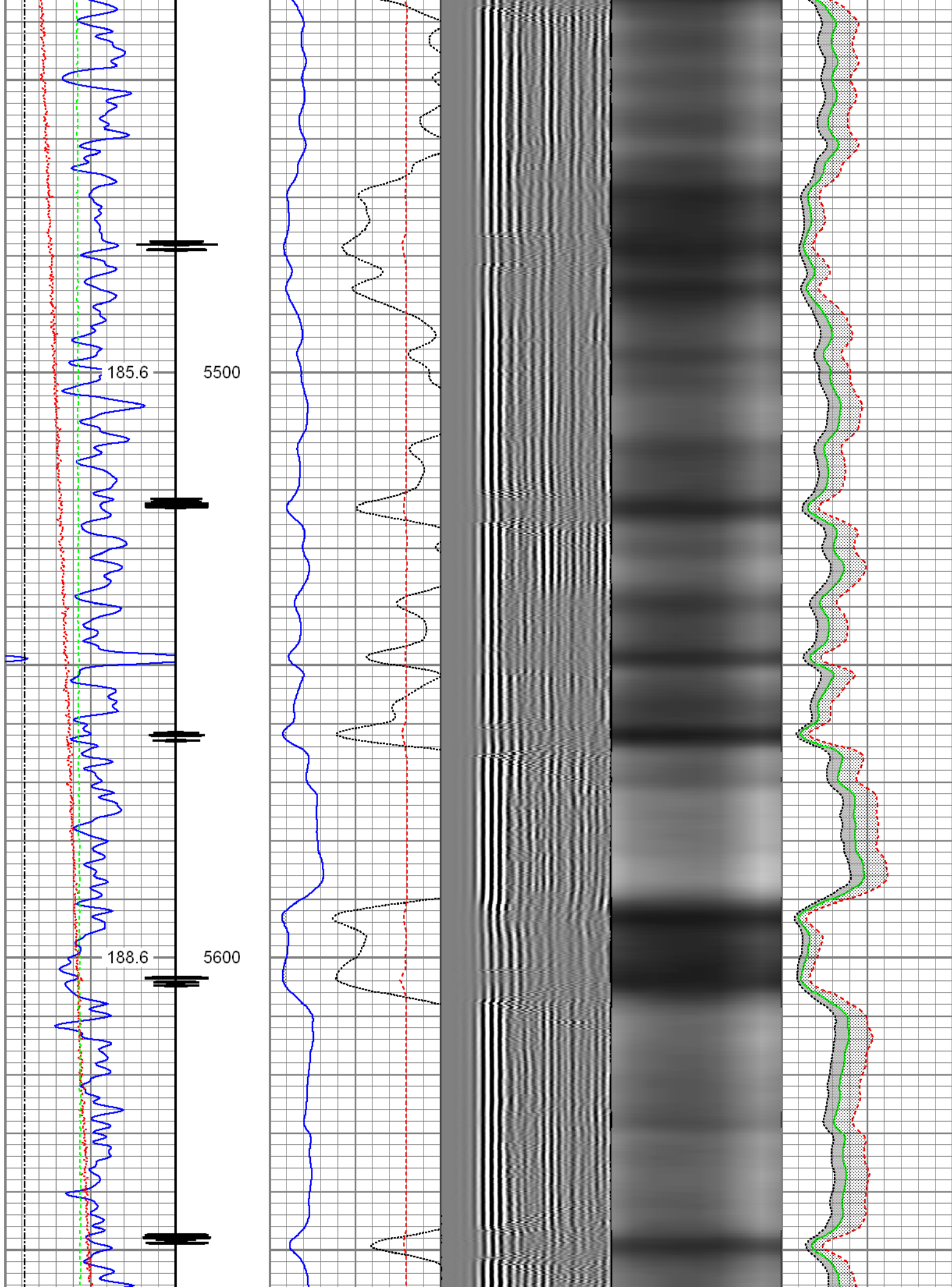


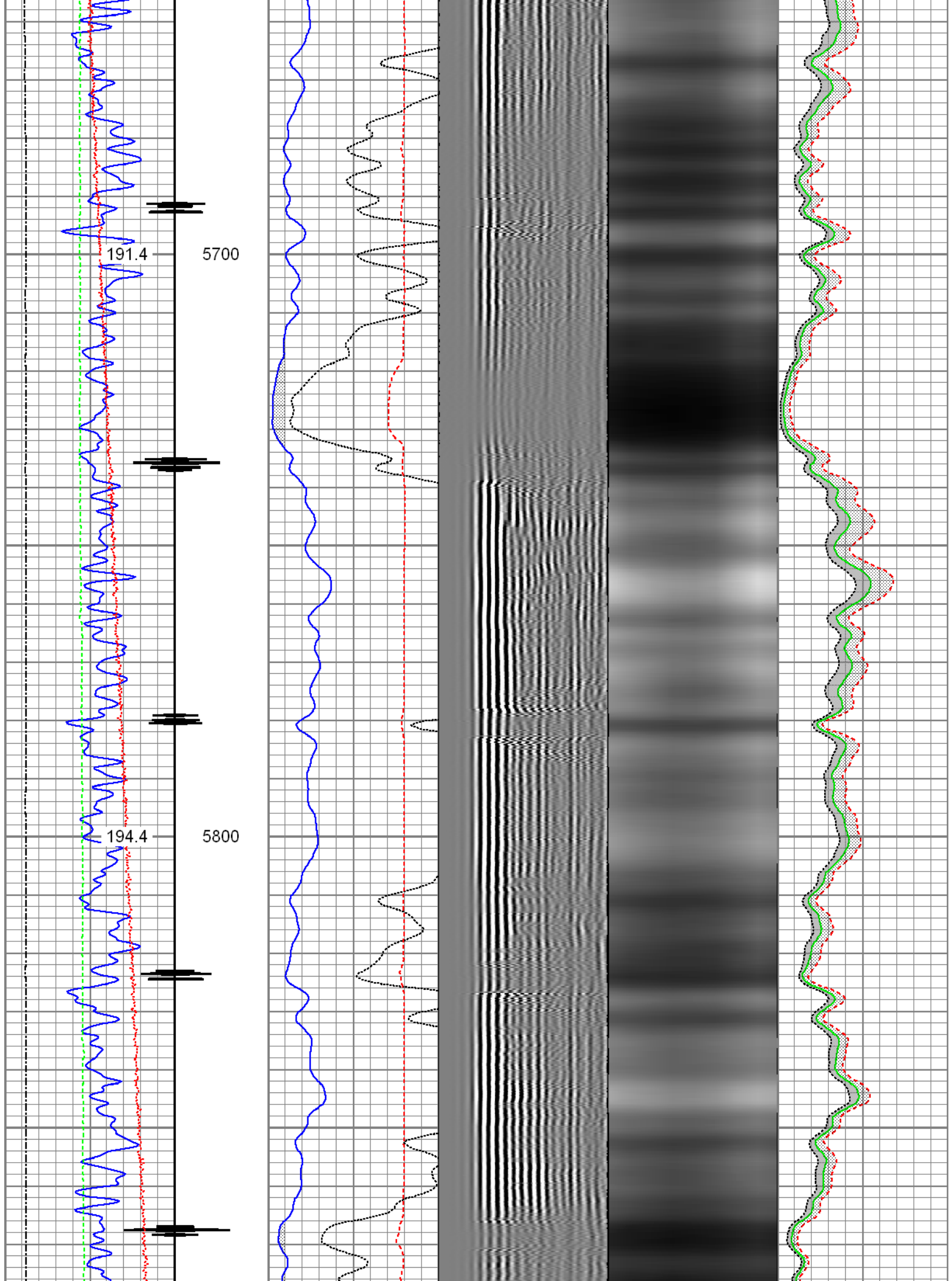


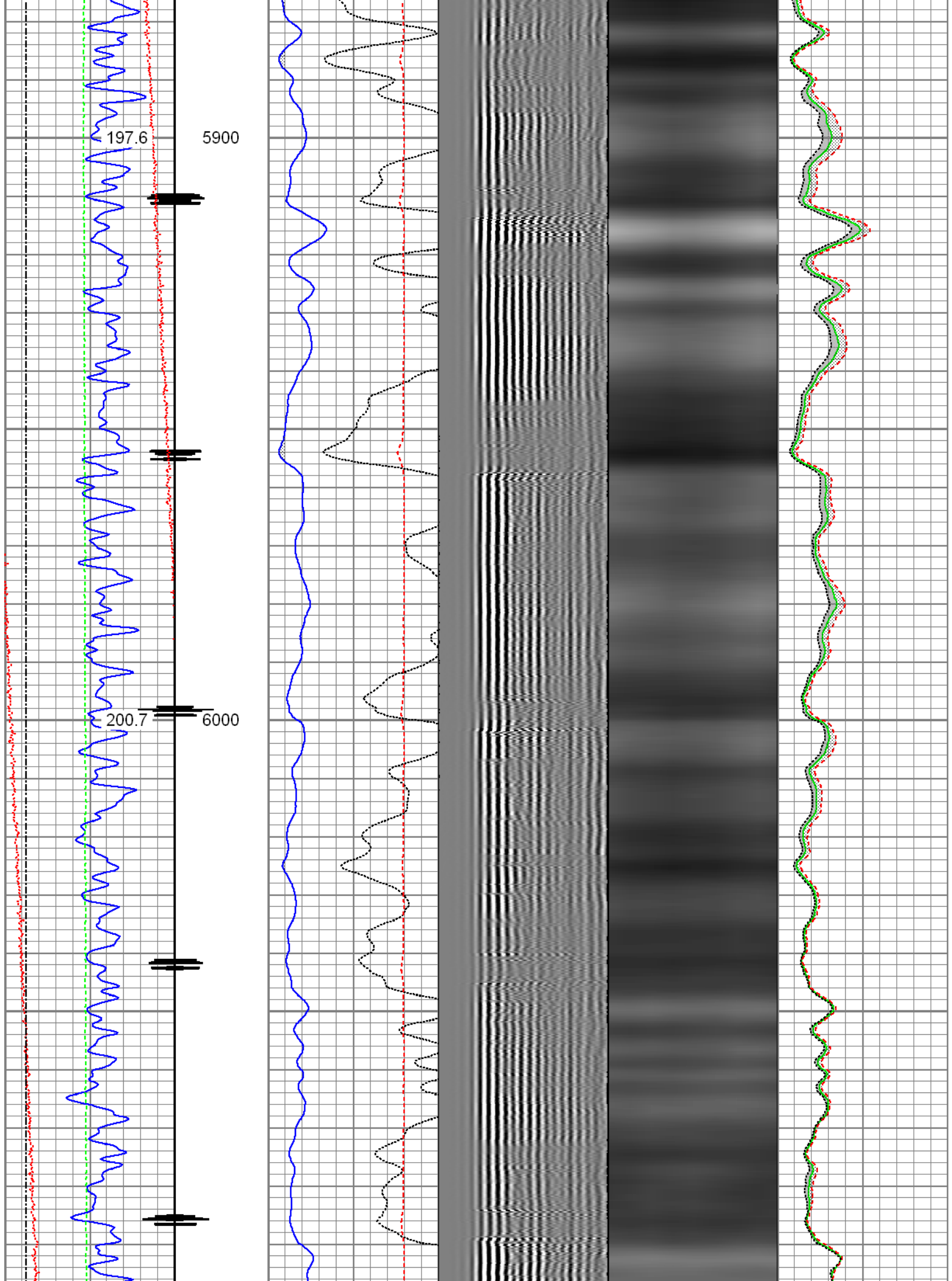




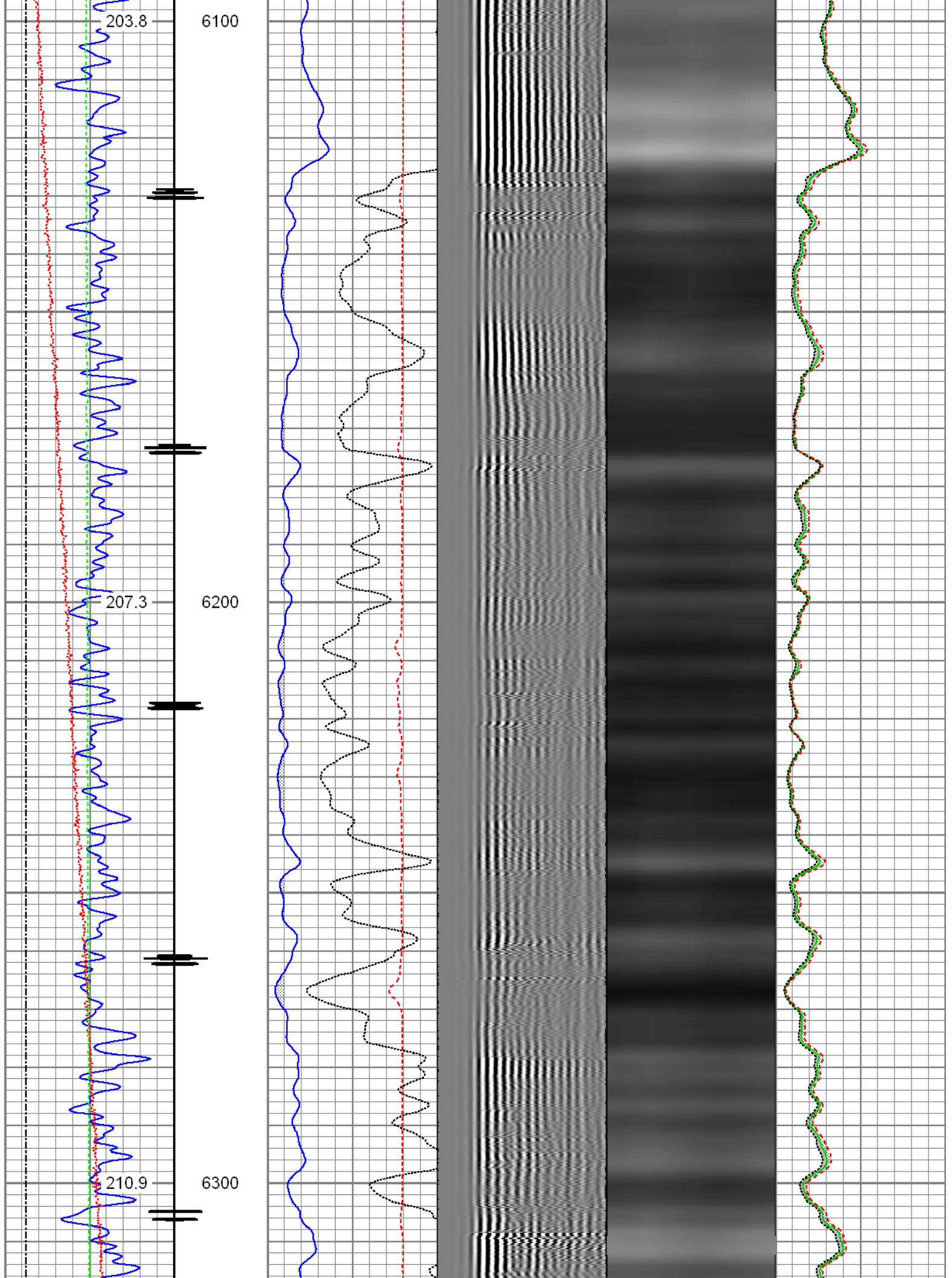


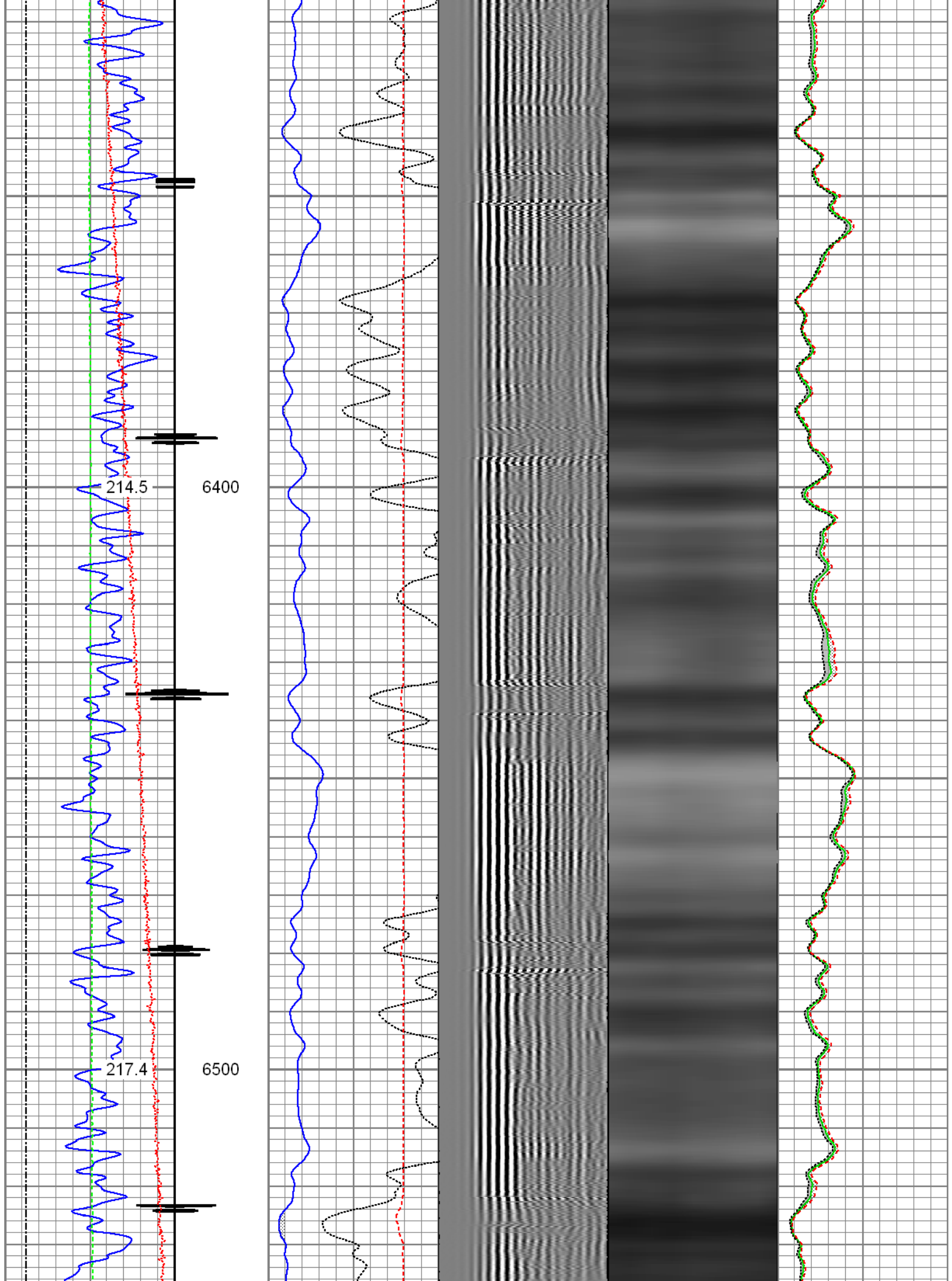


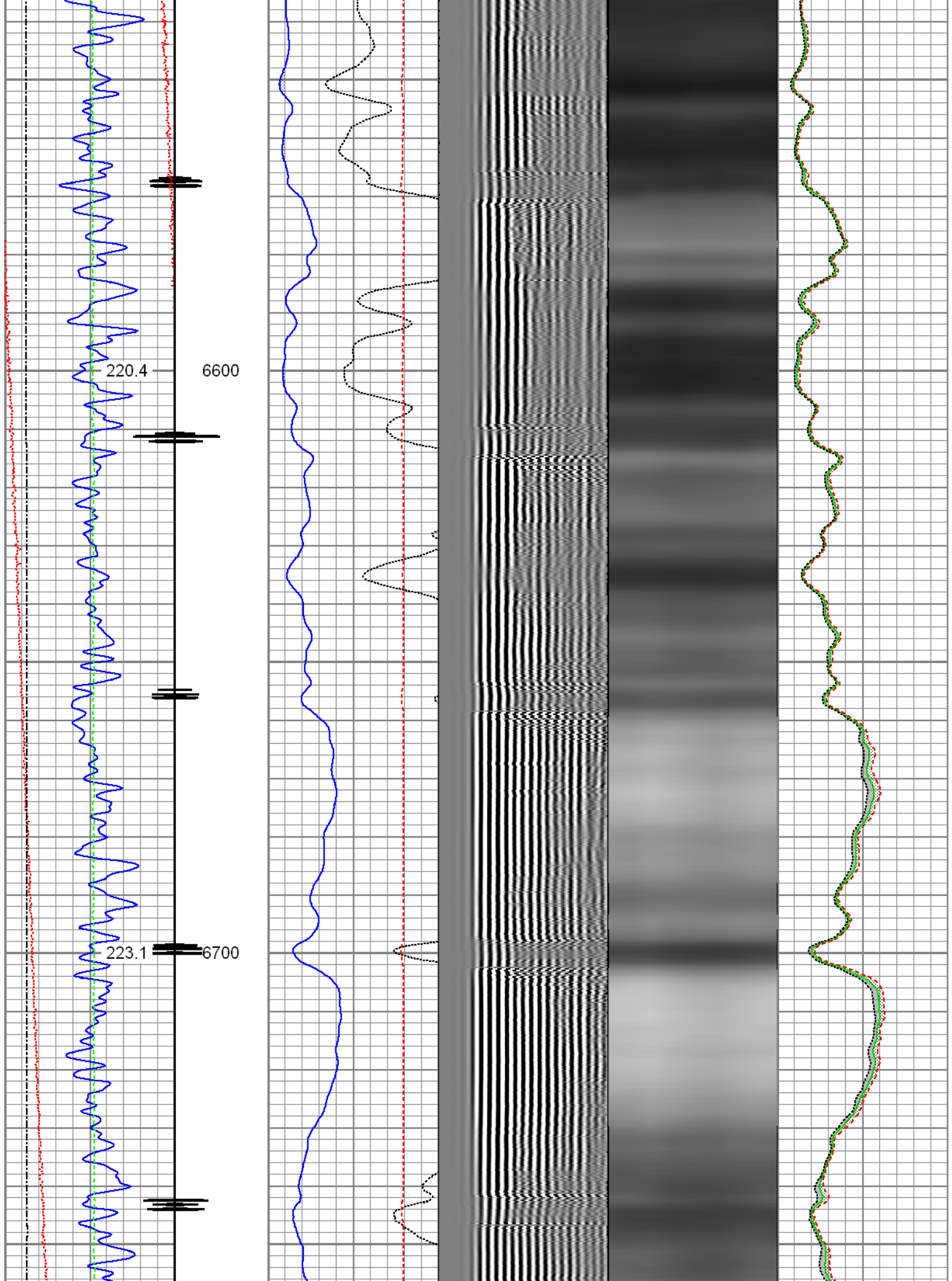




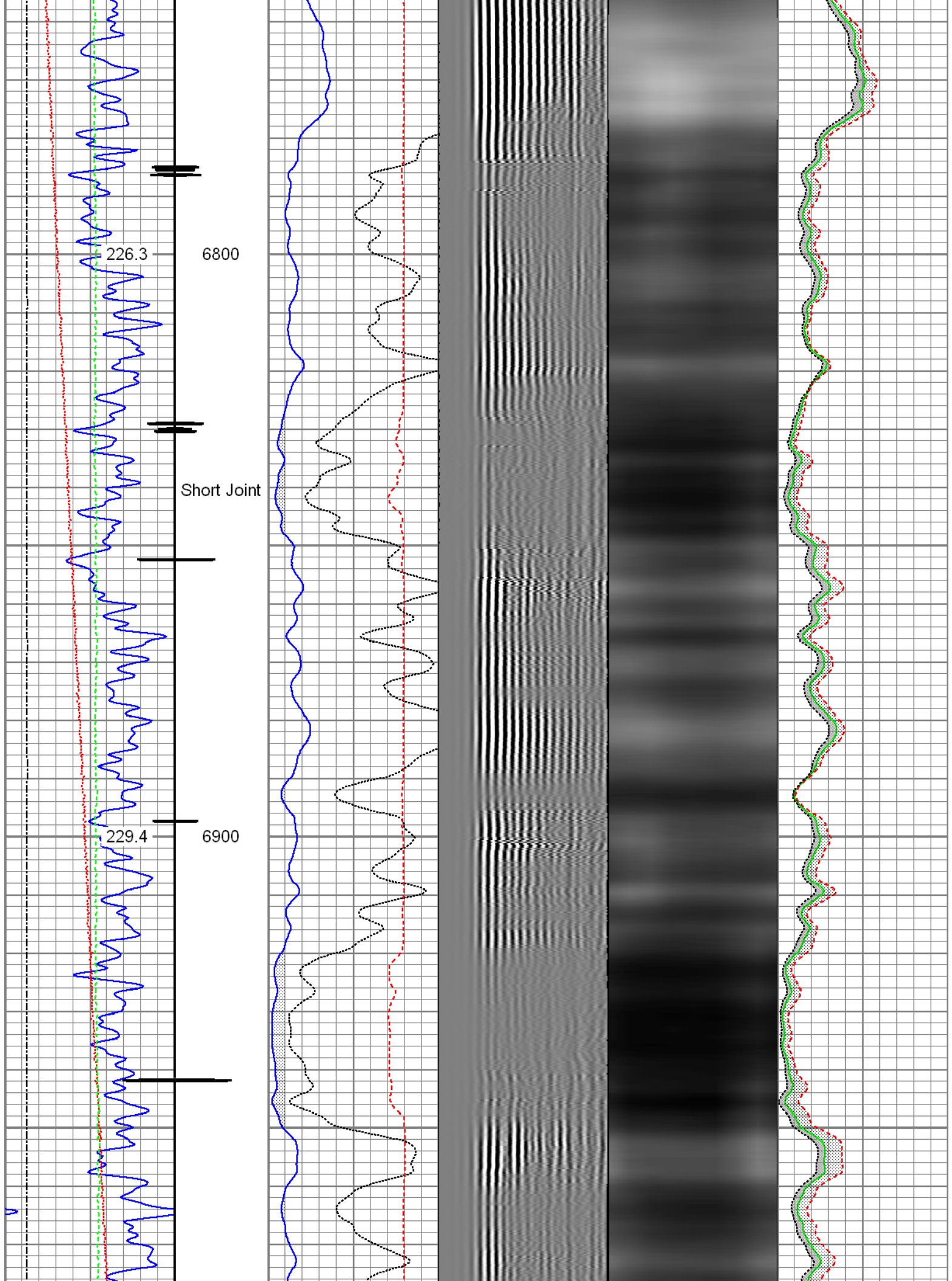


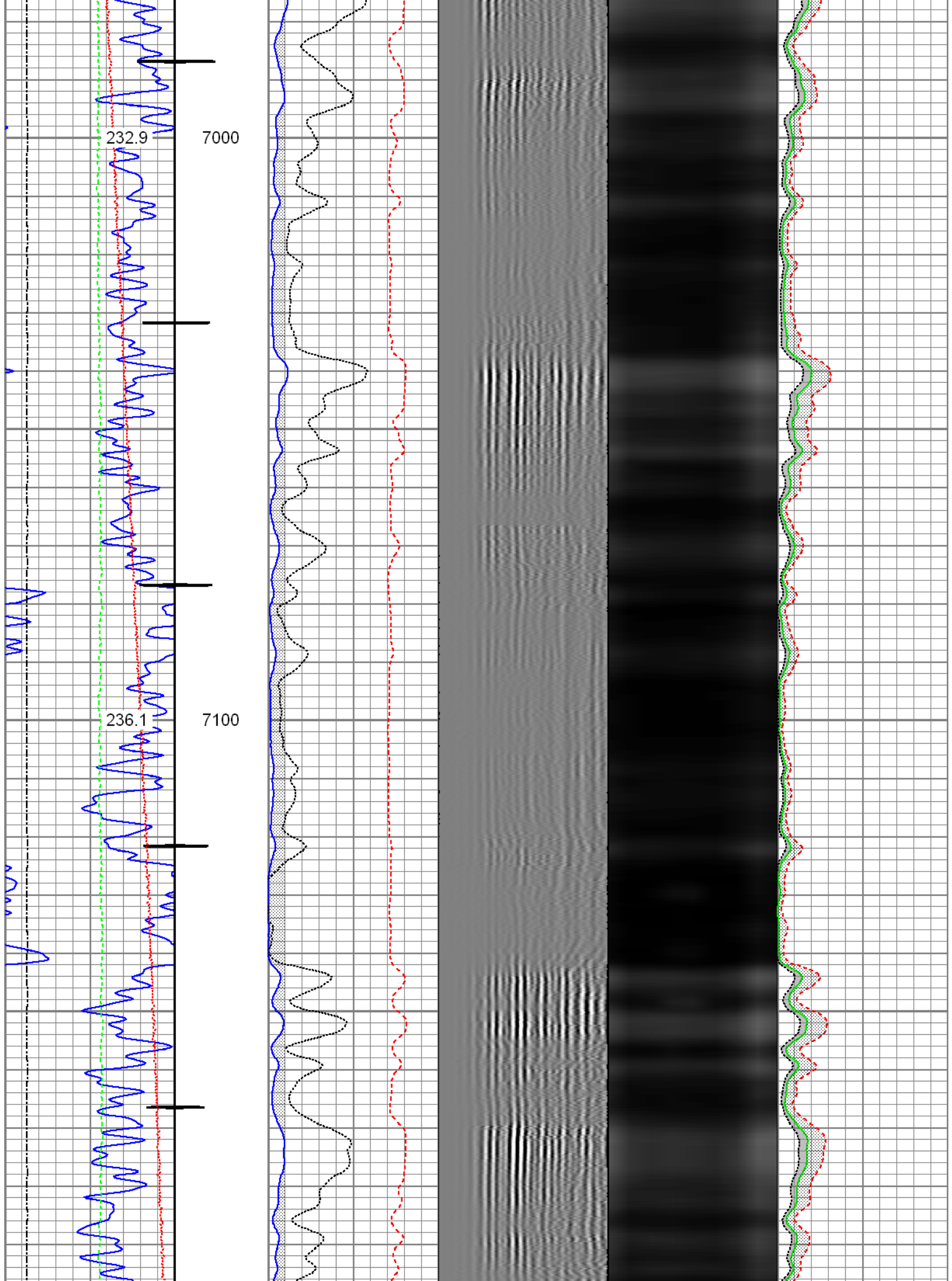


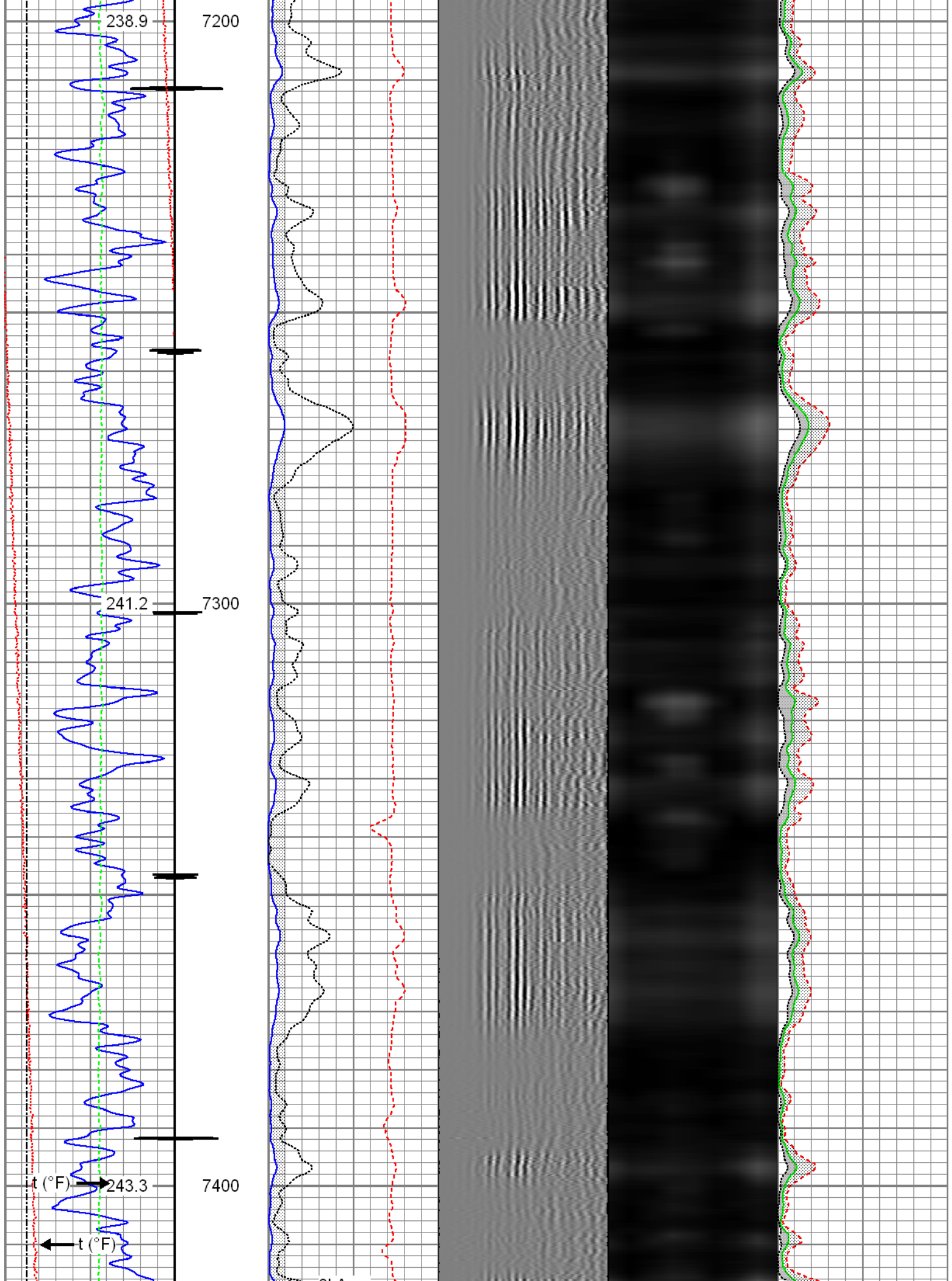




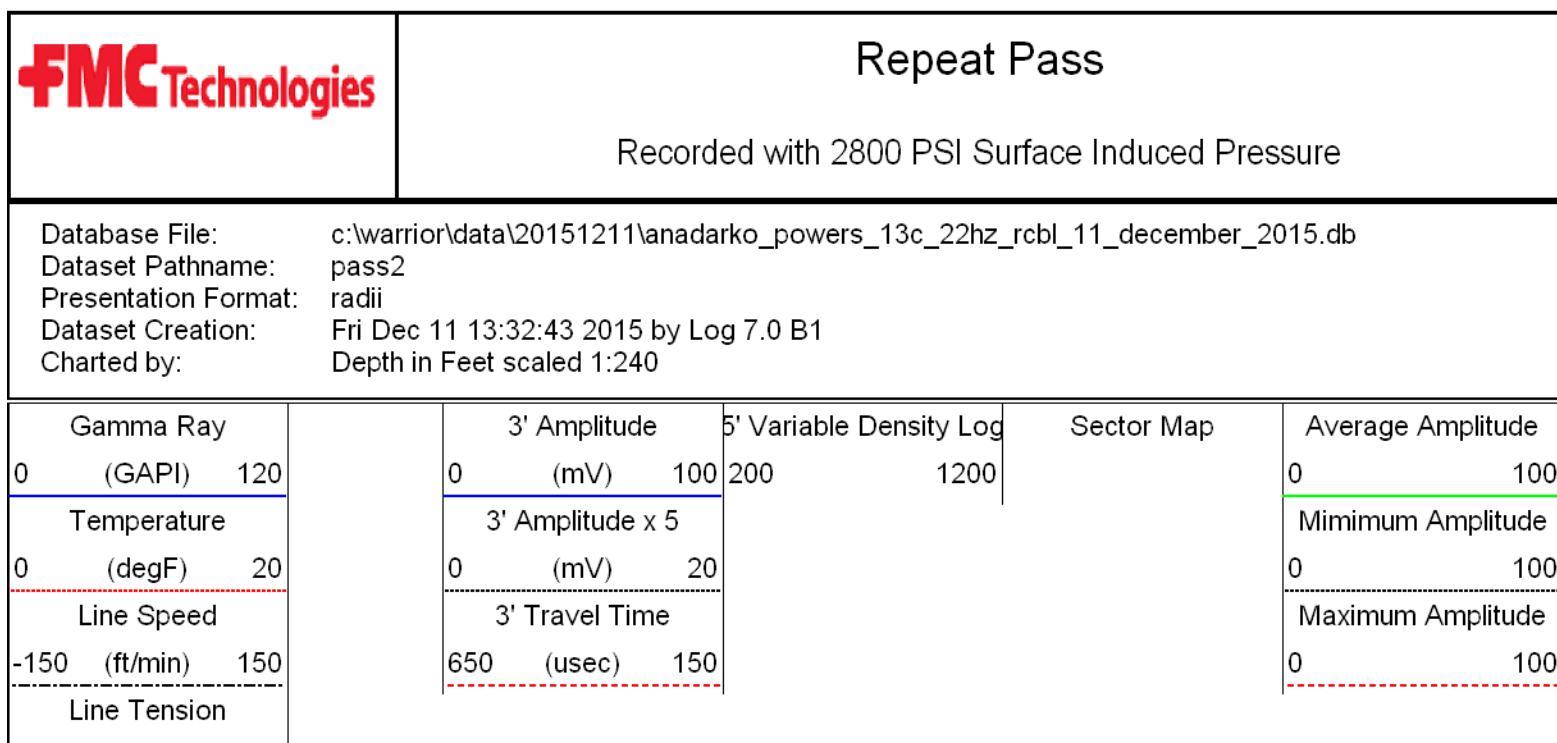
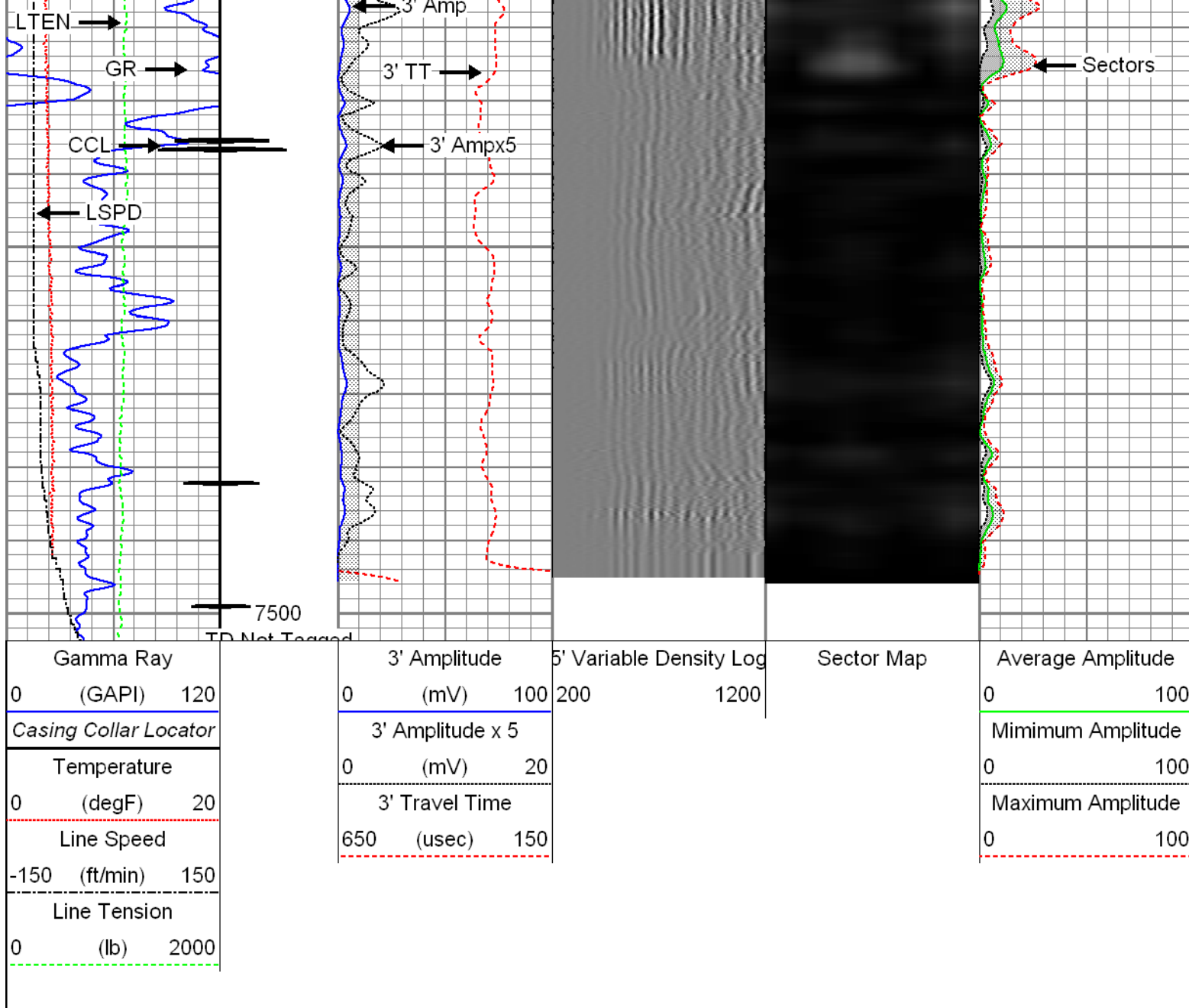


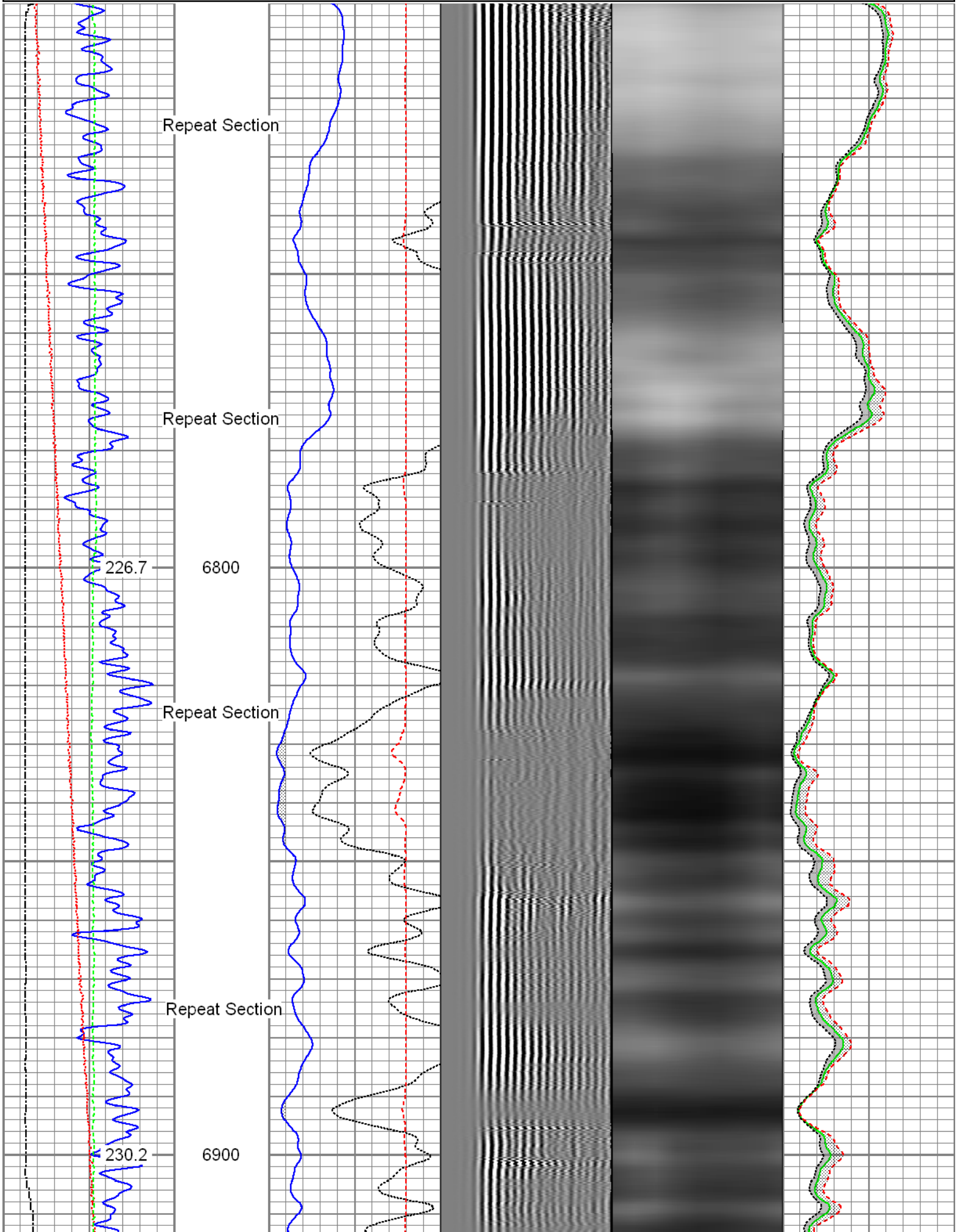


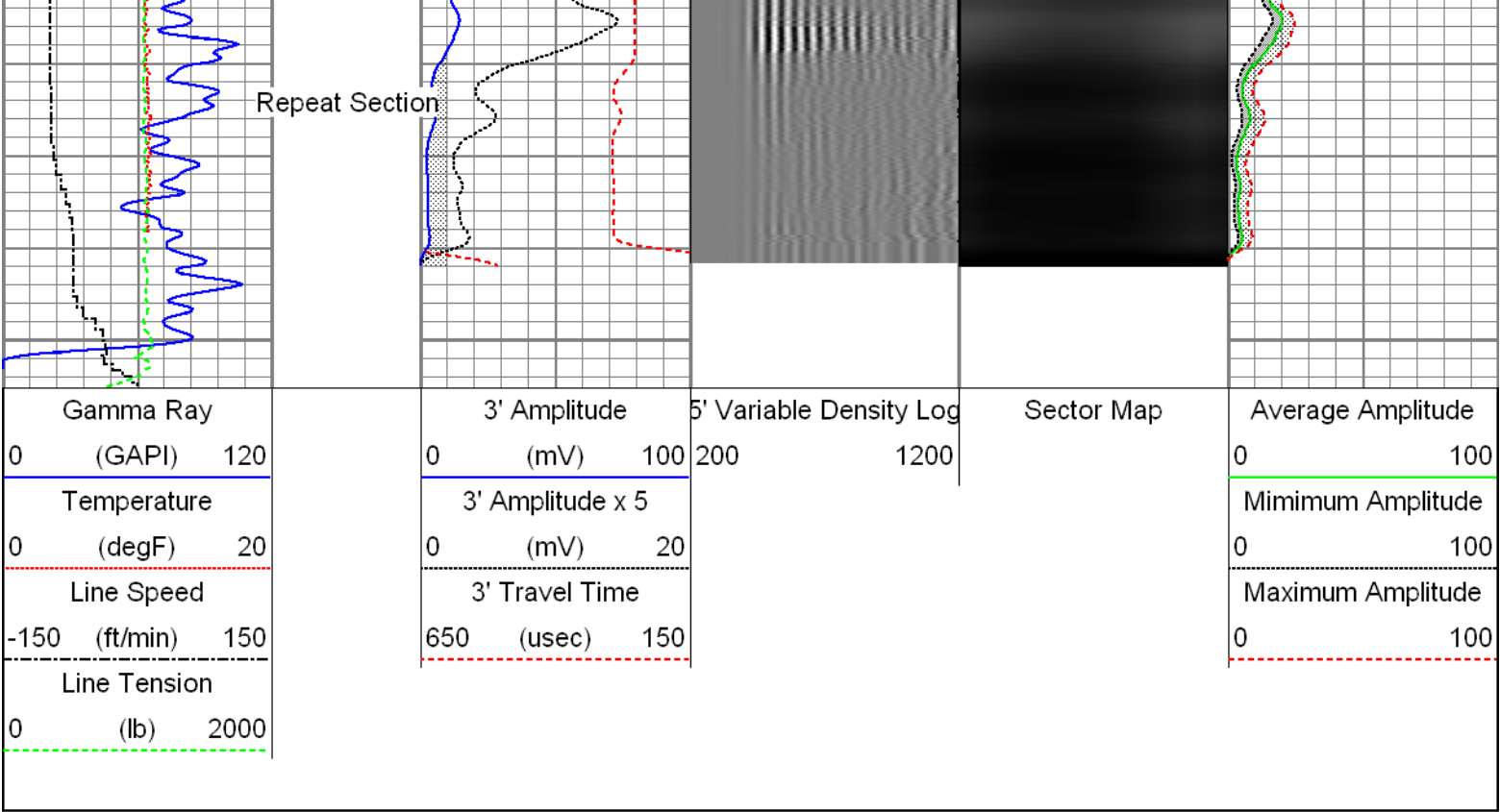


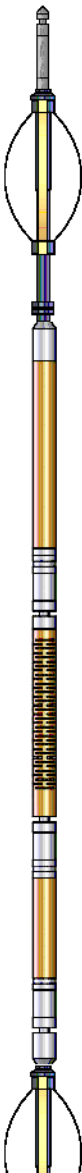
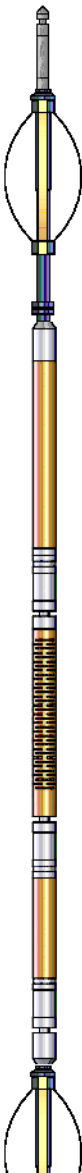










Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HeadVolt	19.49		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Temp	16.72		Probe_RADII-C-2-3/4" (FW1302-002) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVF3FT	14.55					
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 DCCL	6.51 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
GR	3.77						
				Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
<div>Dataset: anadarko_powers_13c_22hz_rcbl_11_december_2015.db: field/well/run1/pass4</div> <div>Total Length: 23.40 ft</div> <div>Total Weight: 194.00 lb</div> <div>O.D.: 2.75 in</div>							

Calibration Report	
Database File:	C:\Warrior\Data\20151211\anadarko_powers_13c_22hz_rcbl_11_december_2015.db
Dataset Pathname:	pass4
Dataset Creation:	Fri Dec 11 13:40:08 2015 by Log 7.0 B1

Gamma Ray Calibration Report		
Serial Number:	FW1307-038	
Tool Model:	2.75"Digital	
Performed:	Fri Sep 11 07:43:30 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:	FW1302-002	
Tool Model:	2-3/4"	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	20.000	ft

Master Calibration, performed Fri Dec 11 13:05:43 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.010	0.658	0.800	71.921	109.813	-0.310
CAL	0.811	0.804				
5'	0.011	0.594	0.800	71.921	121.987	-0.567

SUM						
S1	0.011	0.622	0.000	100.000	163.575	-1.783
S2	0.012	0.615	0.000	100.000	165.907	-1.991
S3	0.011	0.626	0.000	100.000	162.408	-1.739
S4	0.010	0.667	0.000	100.000	152.220	-1.579
S5	0.009	0.713	0.000	100.000	142.008	-1.311
S6	0.010	0.711	0.000	100.000	142.840	-1.493
S7	0.010	0.670	0.000	100.000	151.412	-1.458
S8	0.010	0.646	0.000	100.000	157.242	-1.591

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	0.811	0.804	1.000	0.000

Air Zero Calibration, performed Fri Dec 11 13:05:26 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 13C-22HZ  
Field Wattenberg  
County Weld  
State Colorado