



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas OnShore L.P.		
Well	Powers 28C-34HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-42019	Other Services Gauge Ring CNL
SEC 27 TWP 2N RGE 65W		Elevation	
Permanent Datum	Ground Level	Elevation	4926'
Log Measured From	Kelly Bushing	20 FT	K.B. 4946' D.F. 4945' G.L. 4926'
Drilling Measured From	Kelly Bushing		

Date	18-NOV-2015		
Run Number	Two		
Depth Driller	12,965 FT		
Depth Logger	7509 FT		
Bottom Logged Interval	7508 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	10:20		
Equipment Number	HD-0340		
Location	Fort Lupton, CO		
Recorded By	W.Wacker	B.Kalkwarf	
Witnessed By	Josh Gustafson		

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	1,862 FT		
Intermediate #1	5 1/2	17	HCP-110	Surface	12,965 FT		
Intermediate #2							
Liner							

<<<< Fold Here >>>>

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 6674 FT
Adjusted log +10 FT to correlate with Marker Joint
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 completions of operations

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



Main Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File: revised_anadarko_powers 28c-34hz_18-nov-2015_rbl_cnl.db

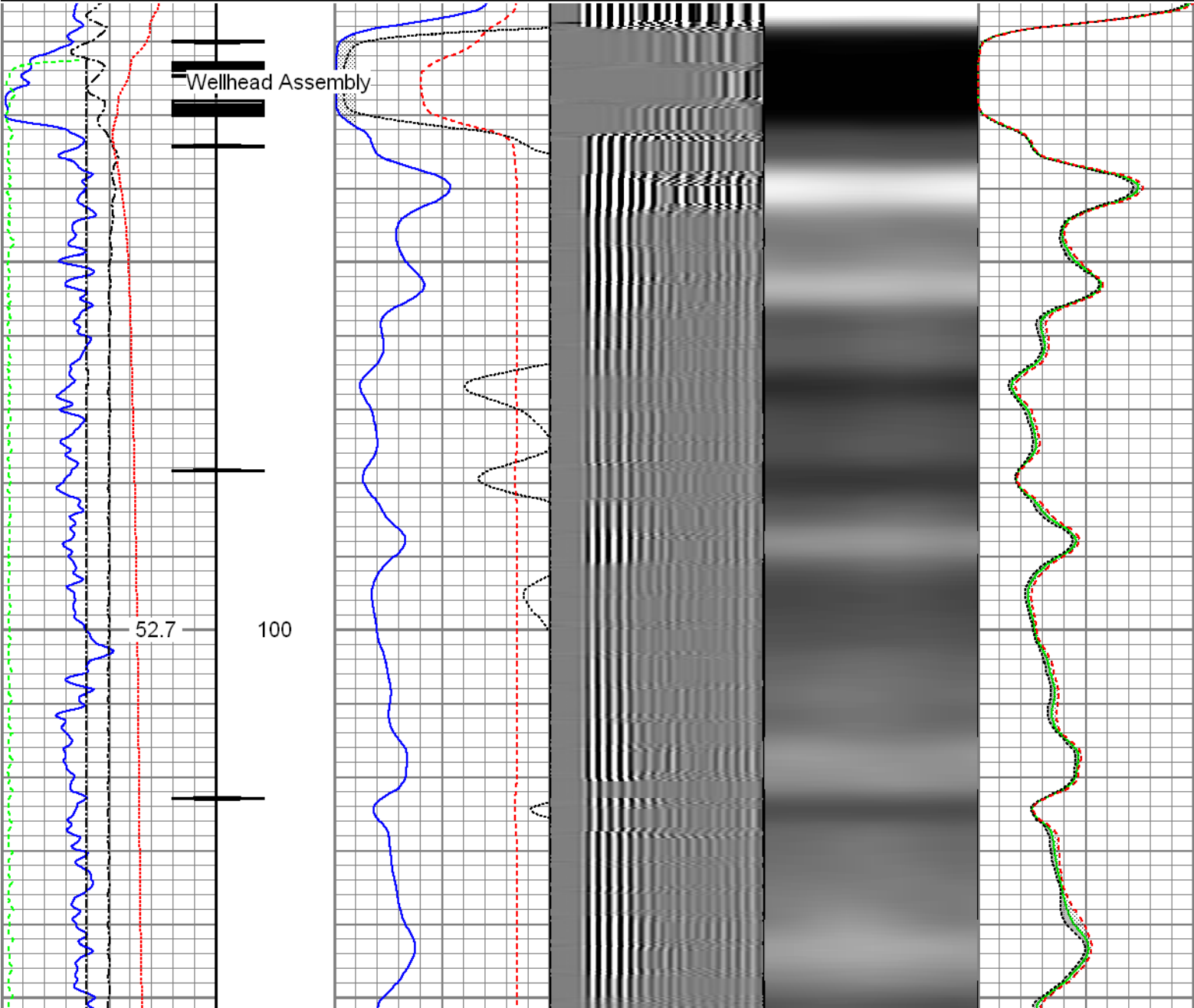
Dataset Pathname: merge1.1

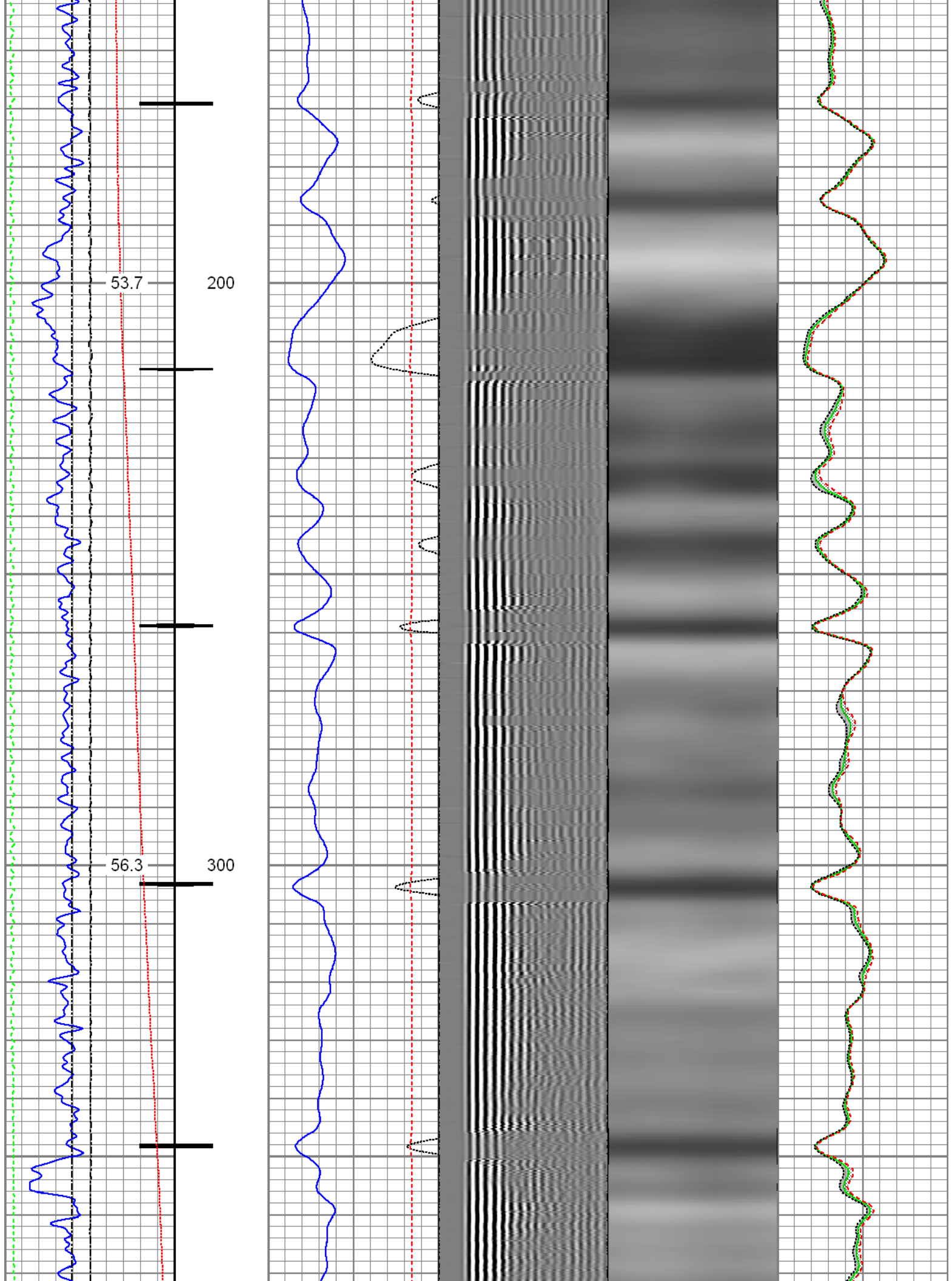
Presentation Format: rbt004

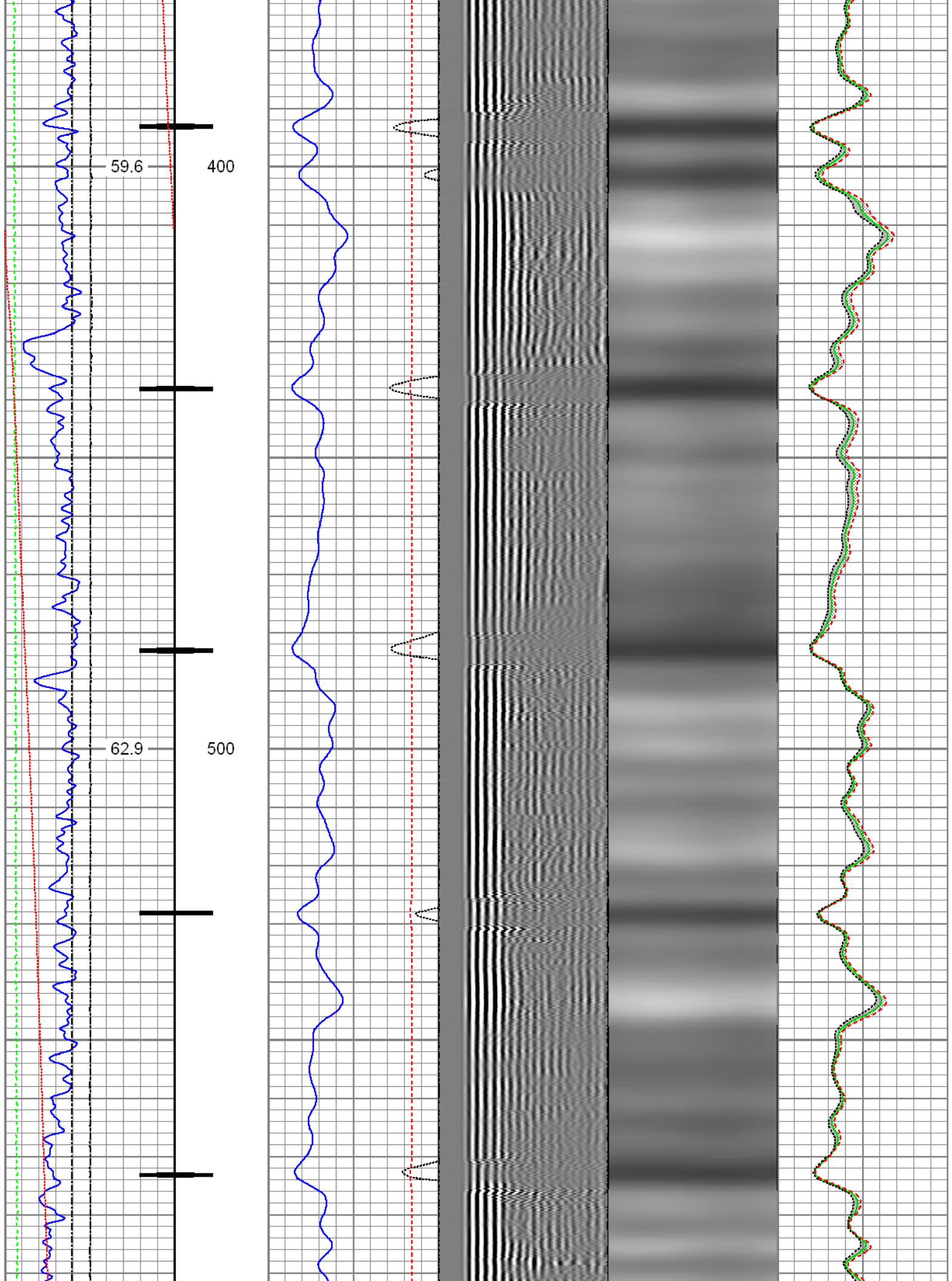
Dataset Creation: Fri Nov 20 12:56:57 2015 by Calc 7.0 B1

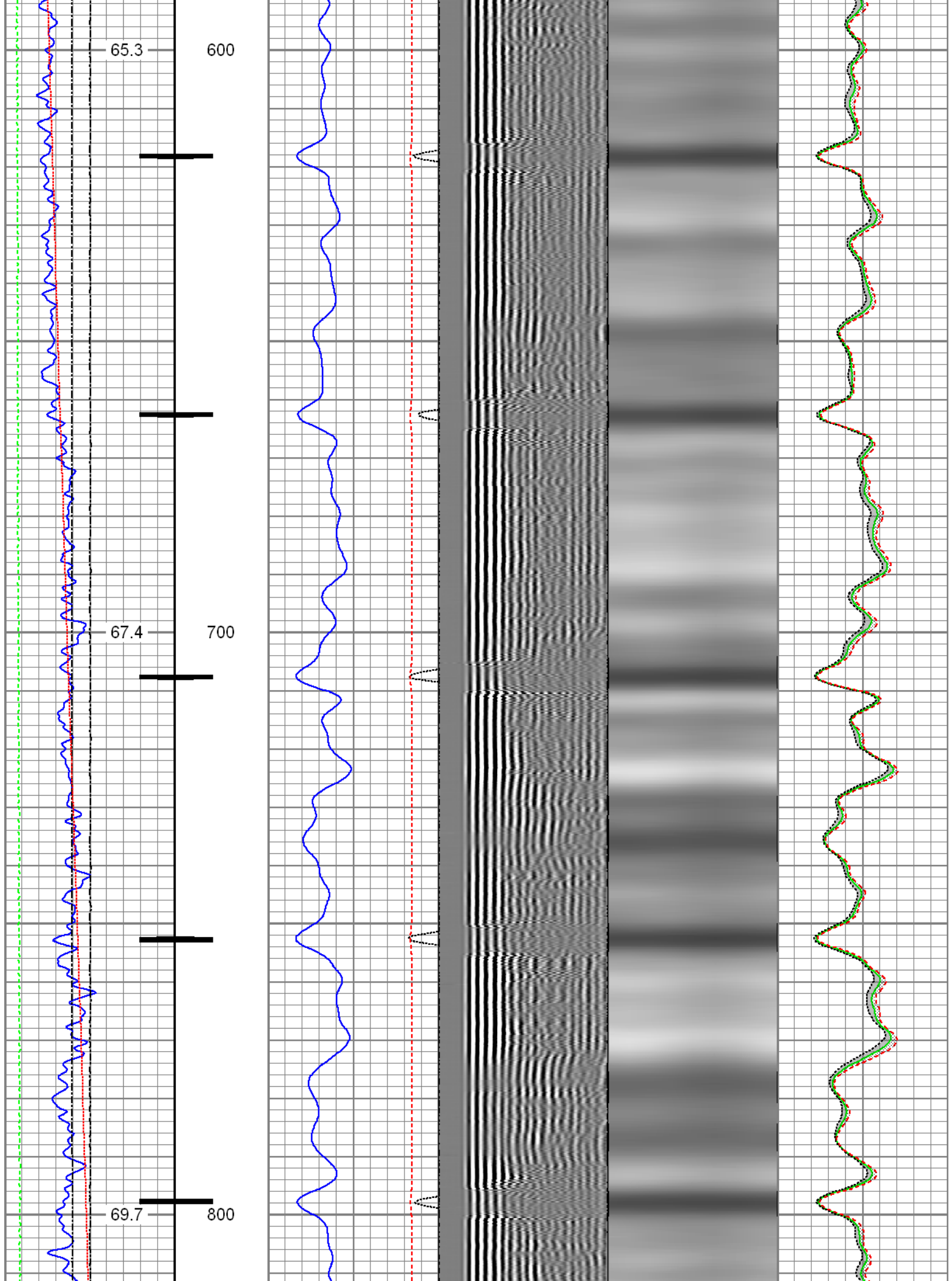
Charted by: Depth in Feet scaled 1:240

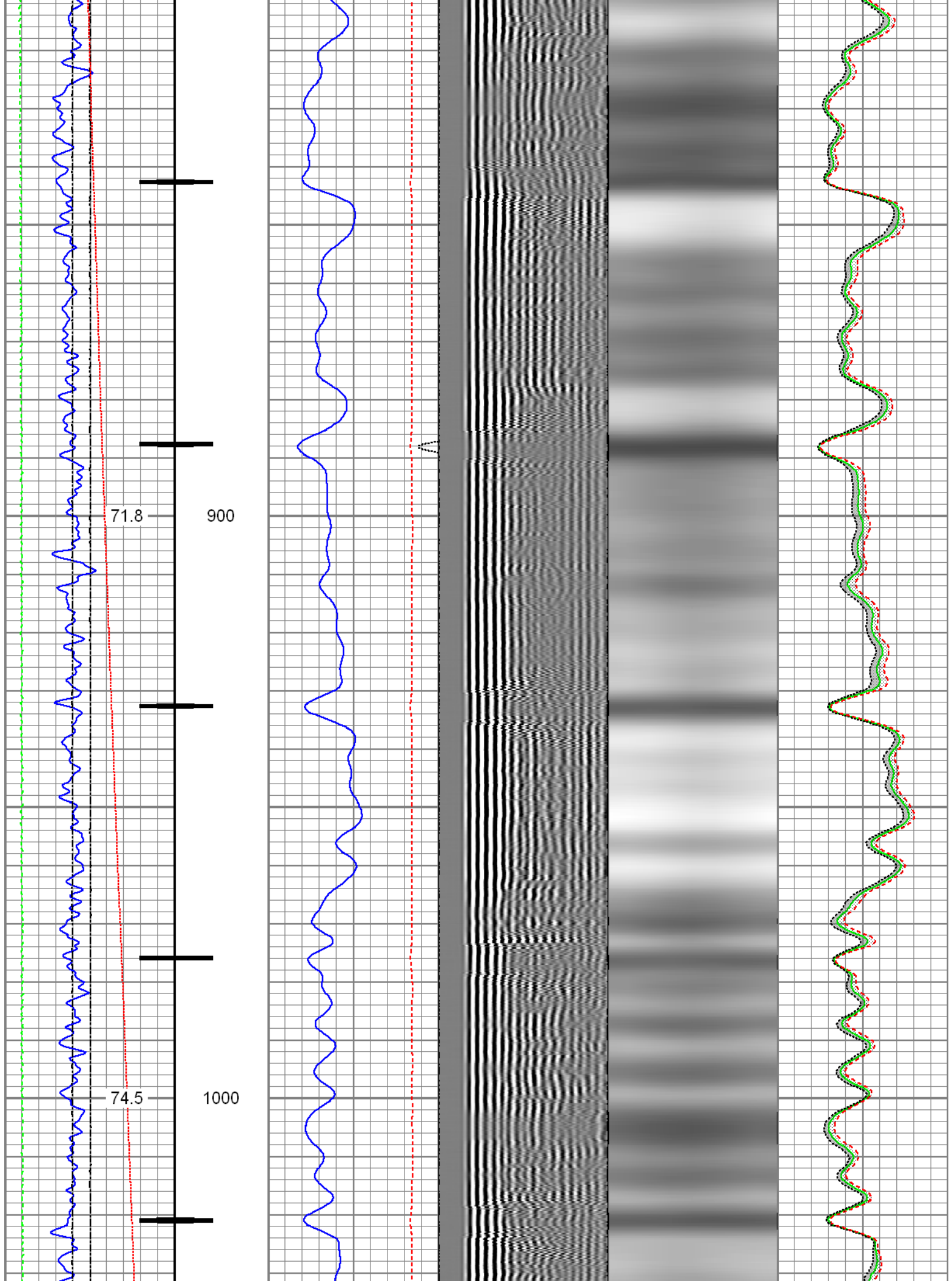
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

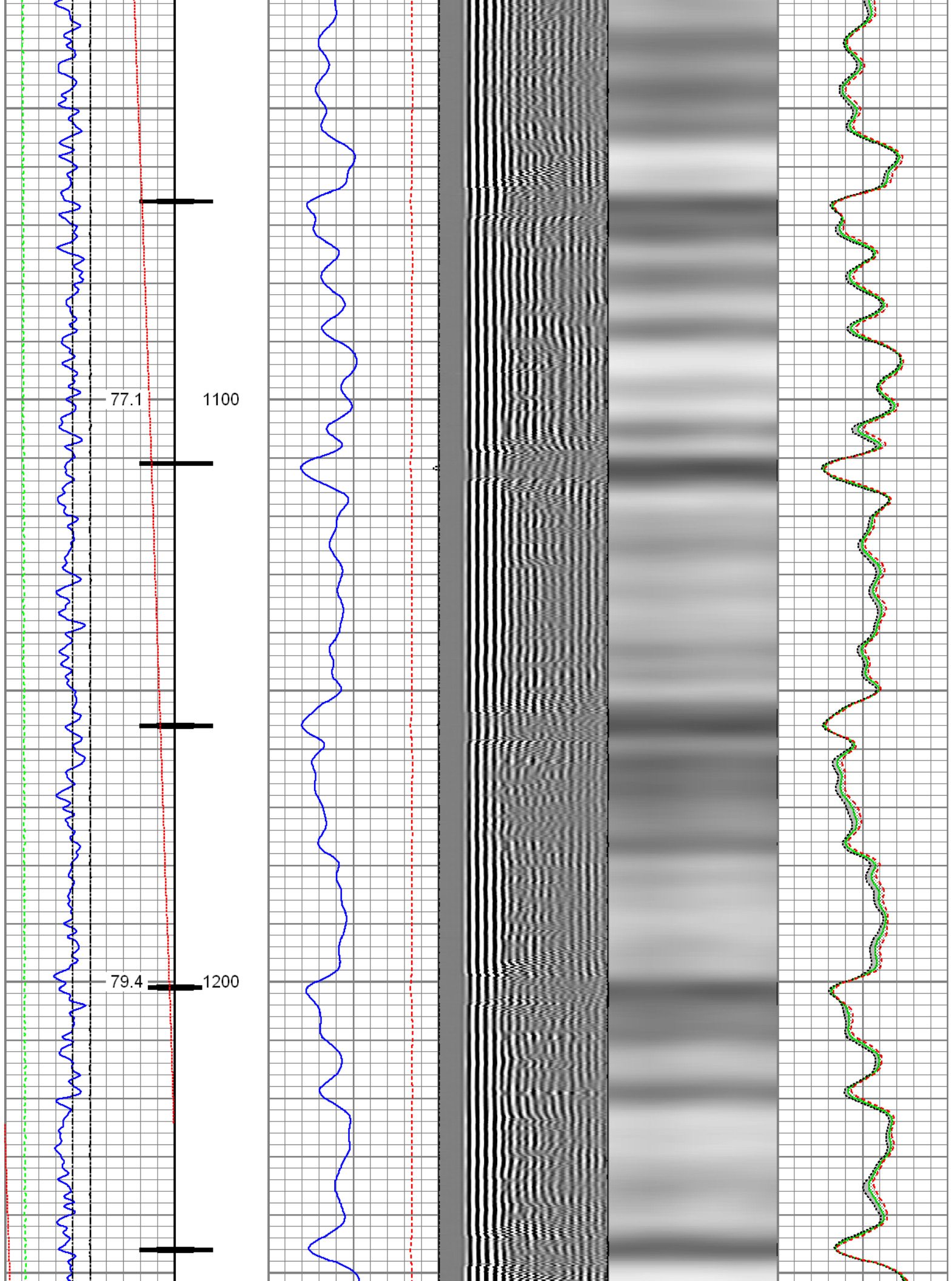


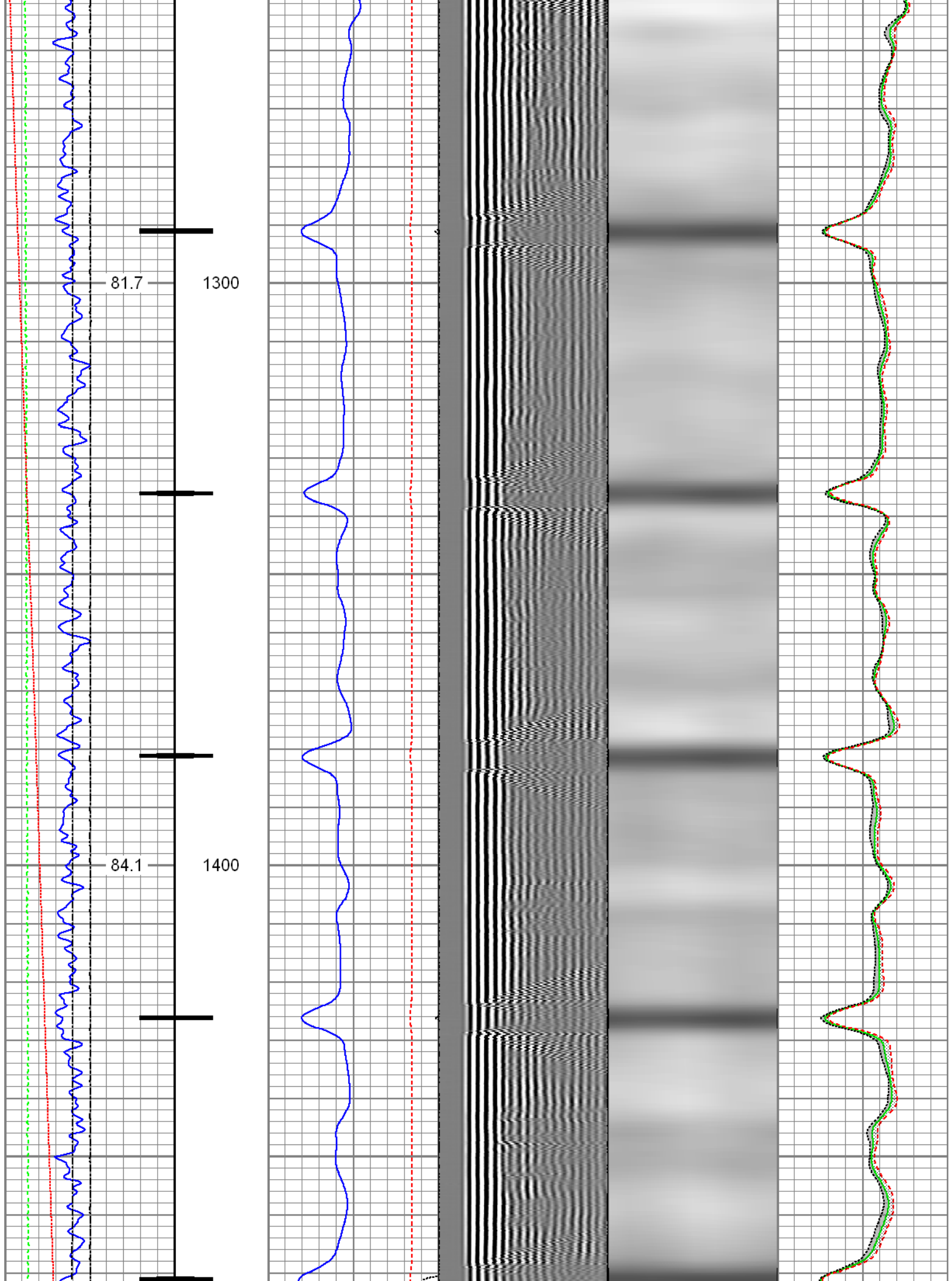


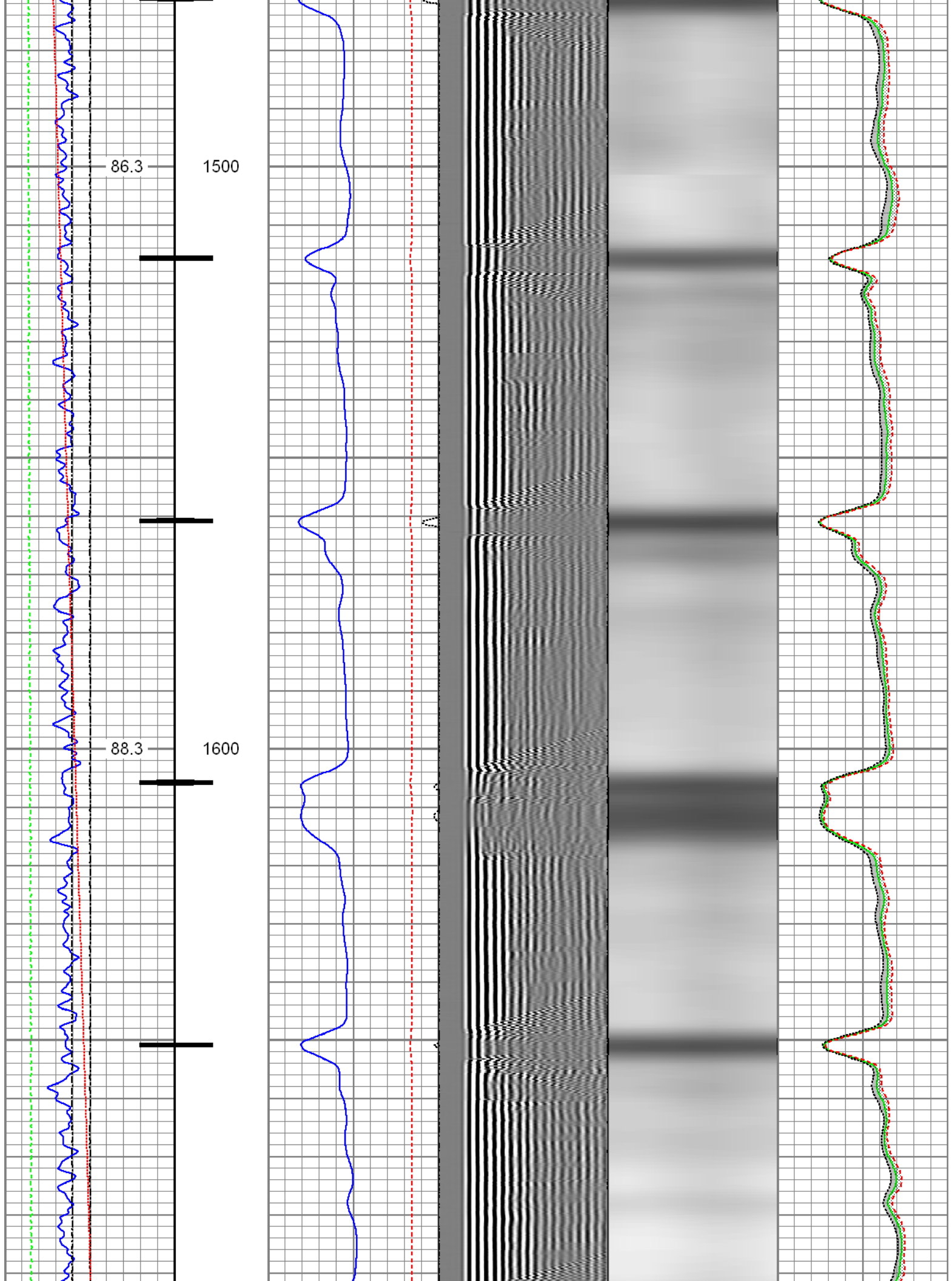


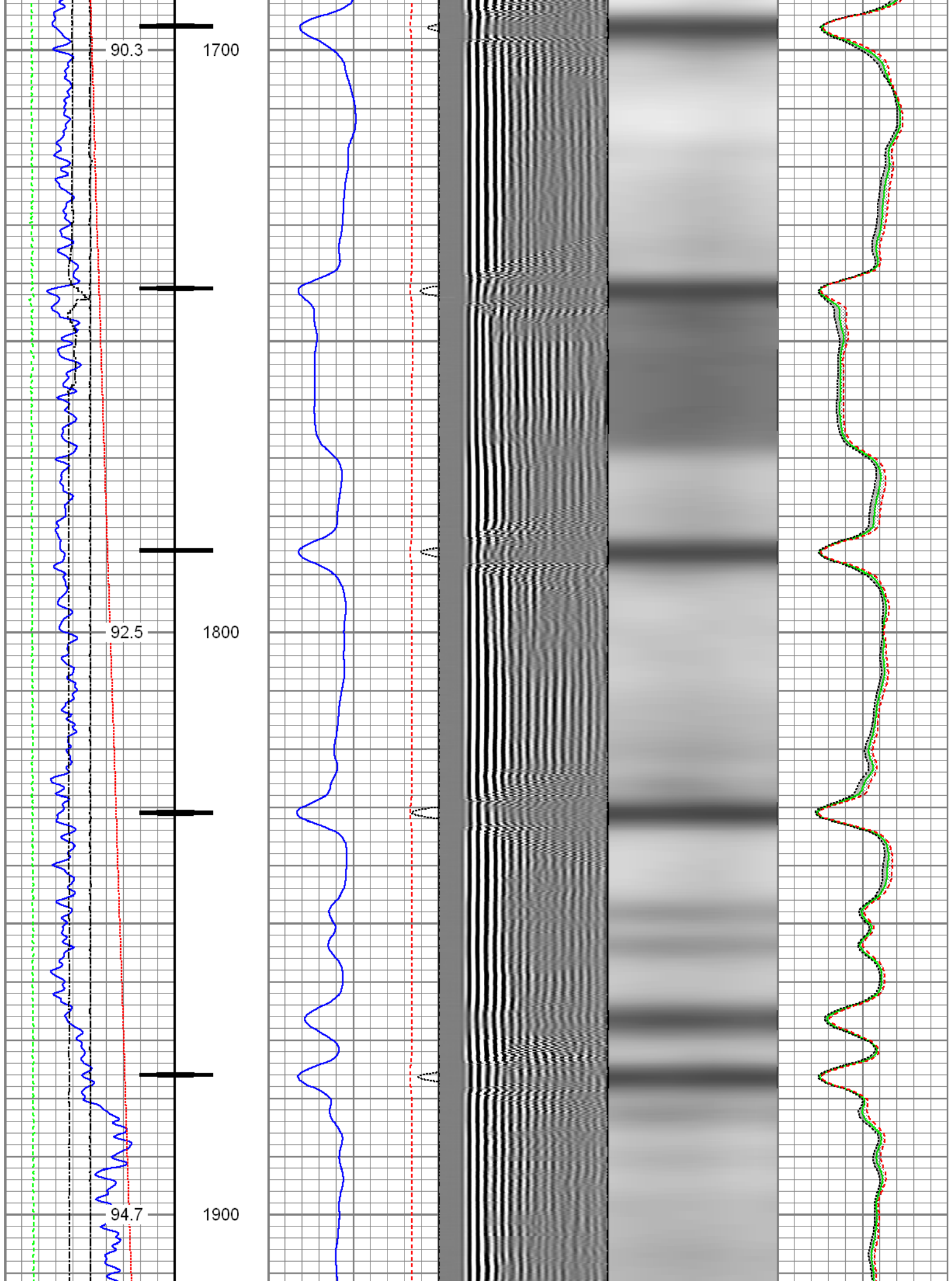


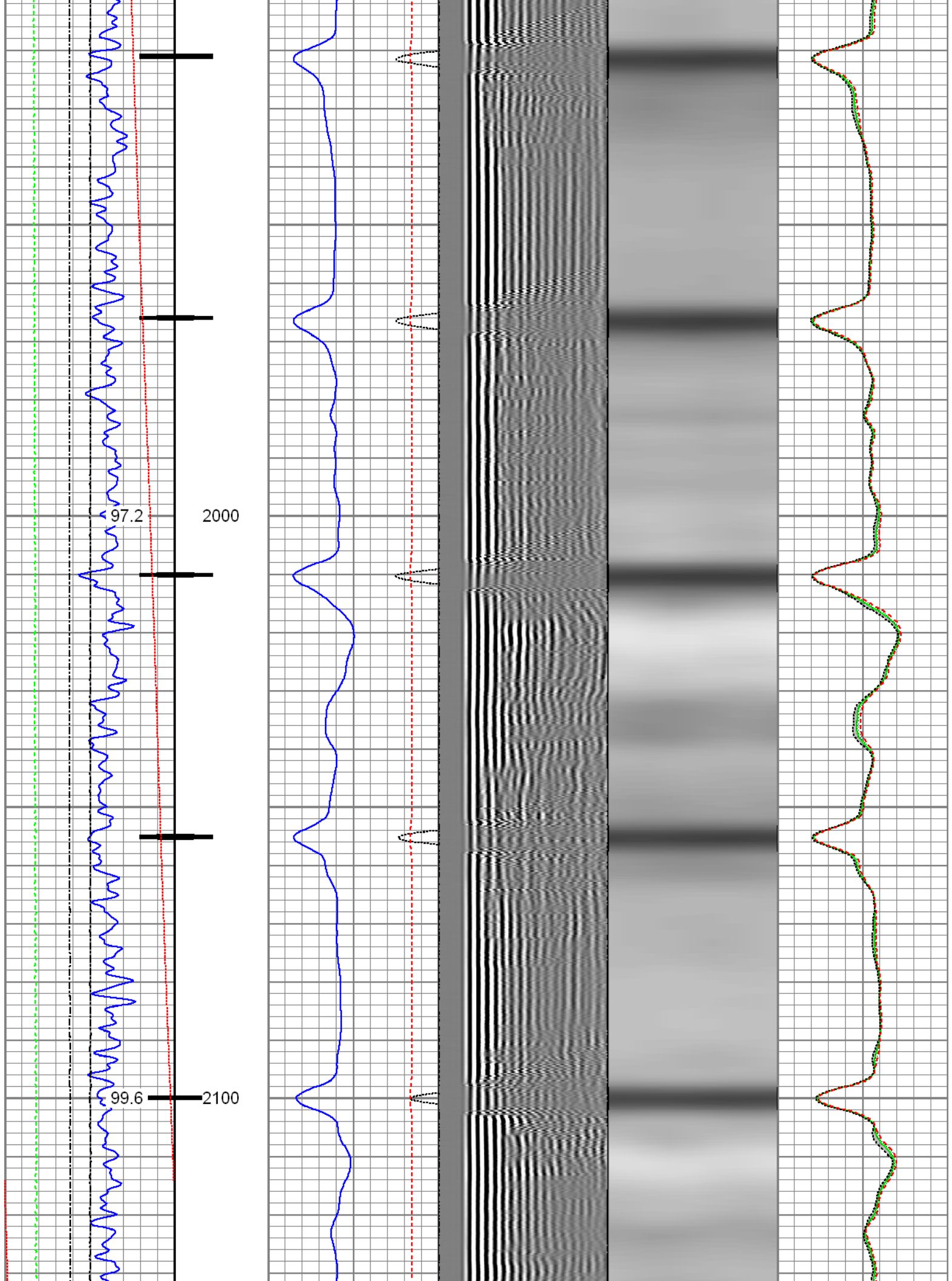


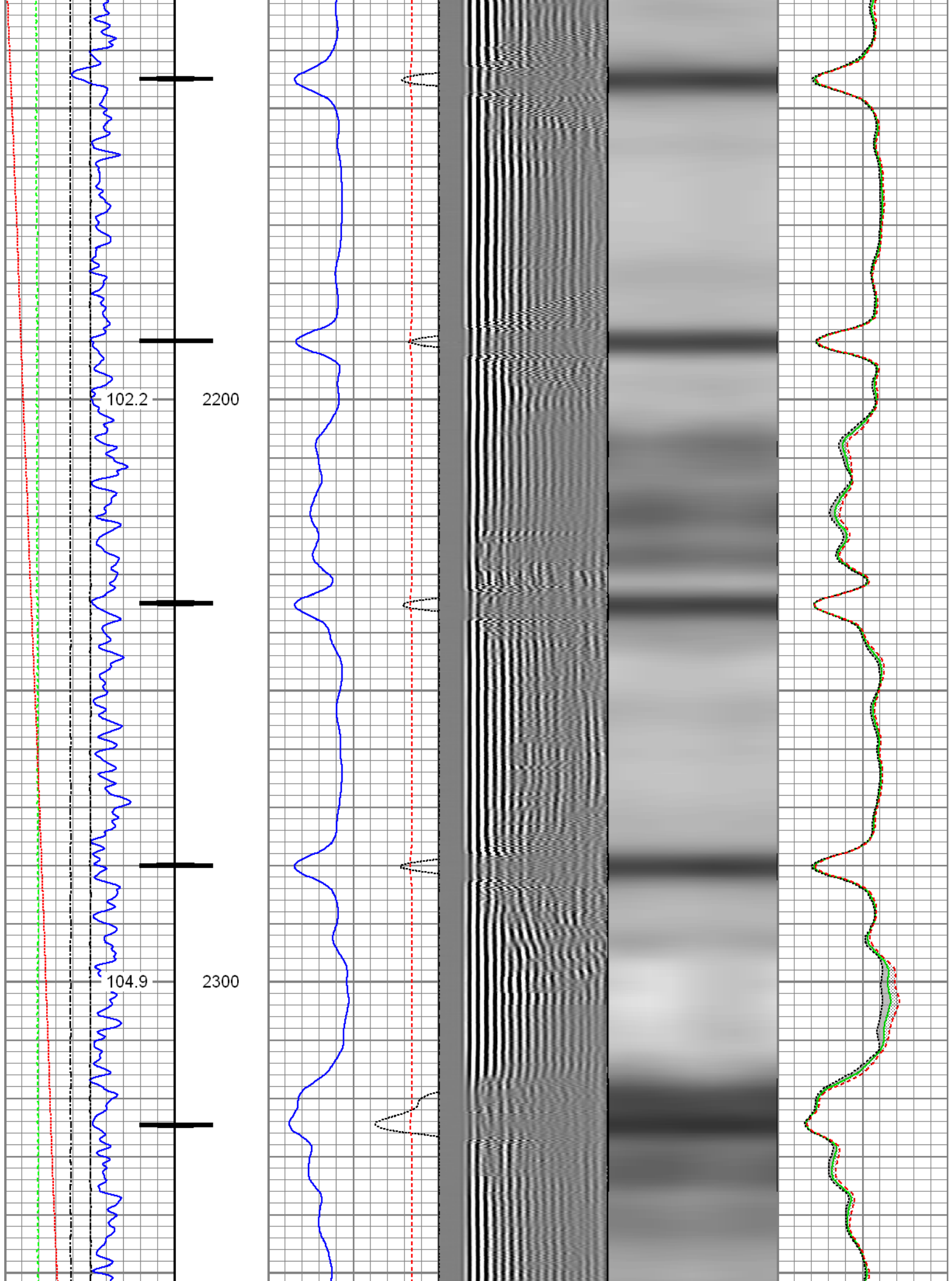


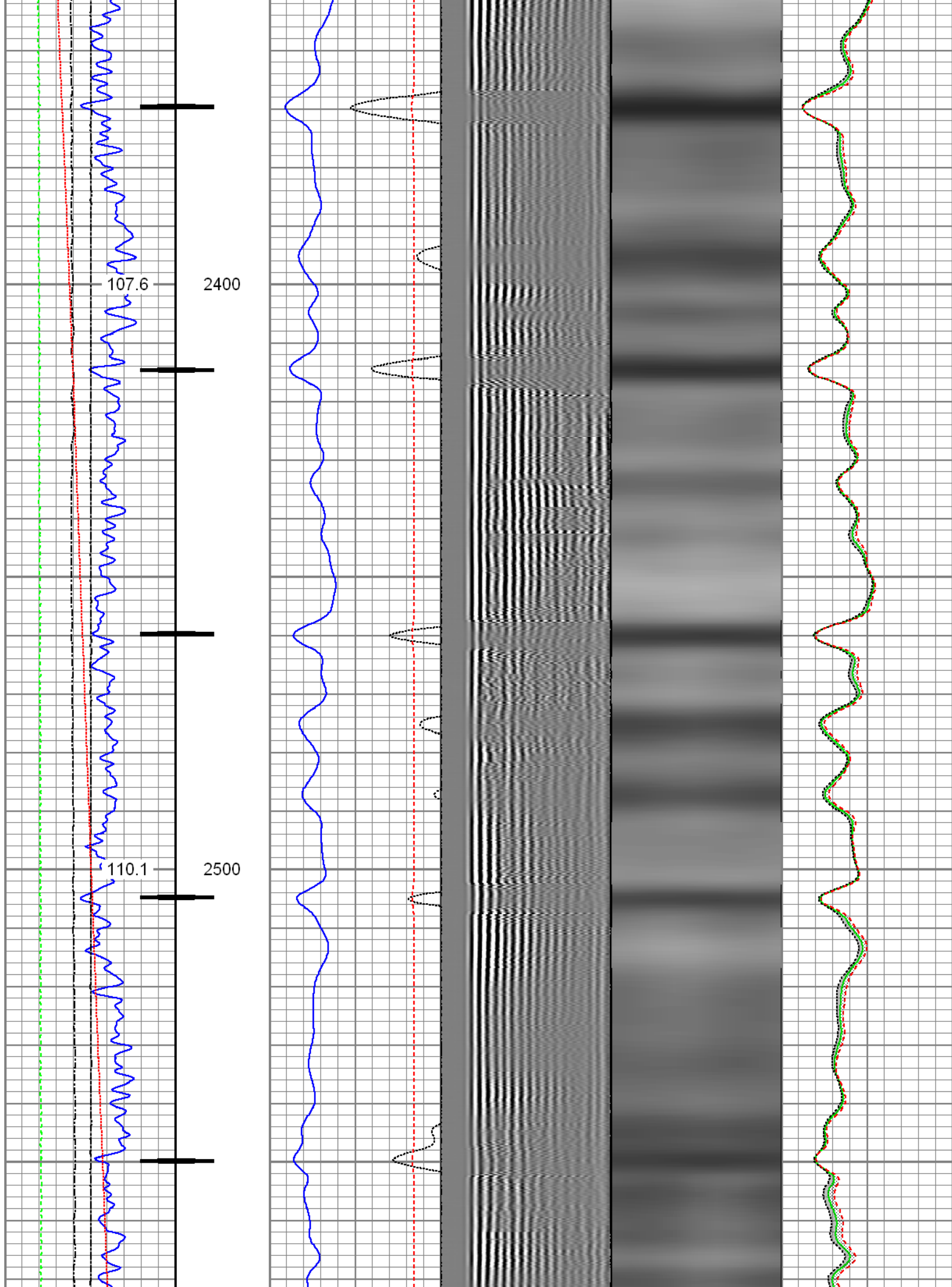


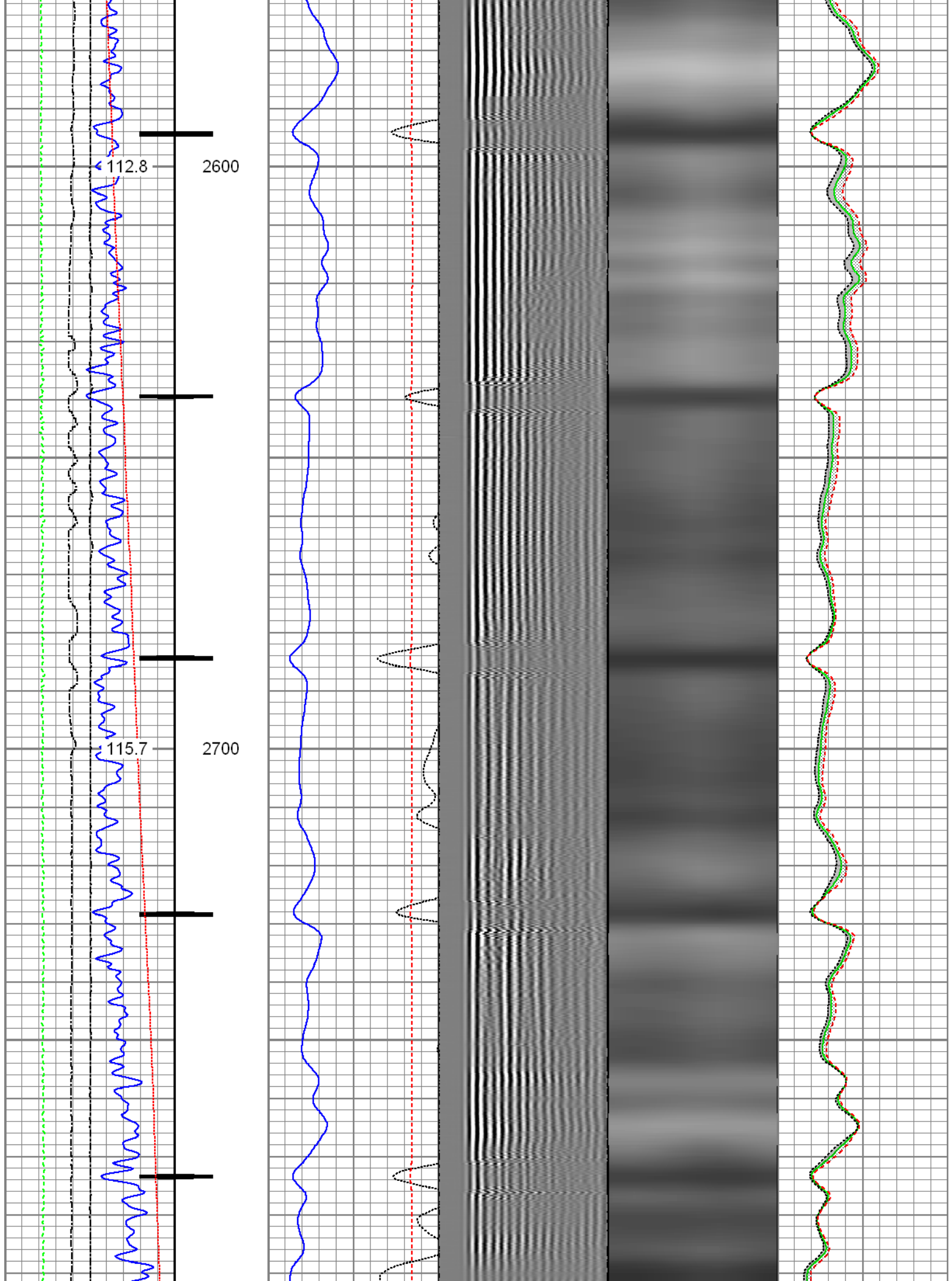


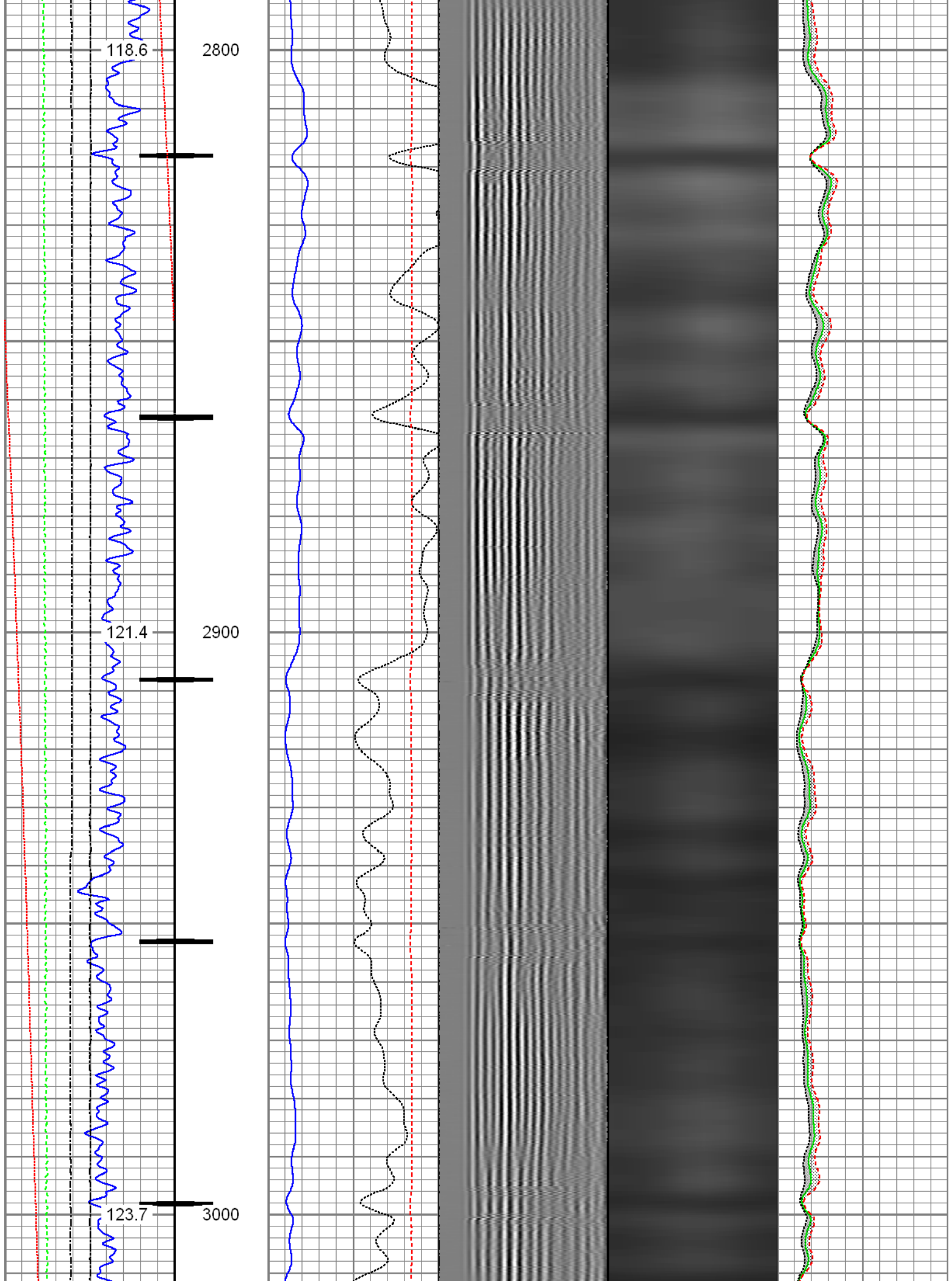


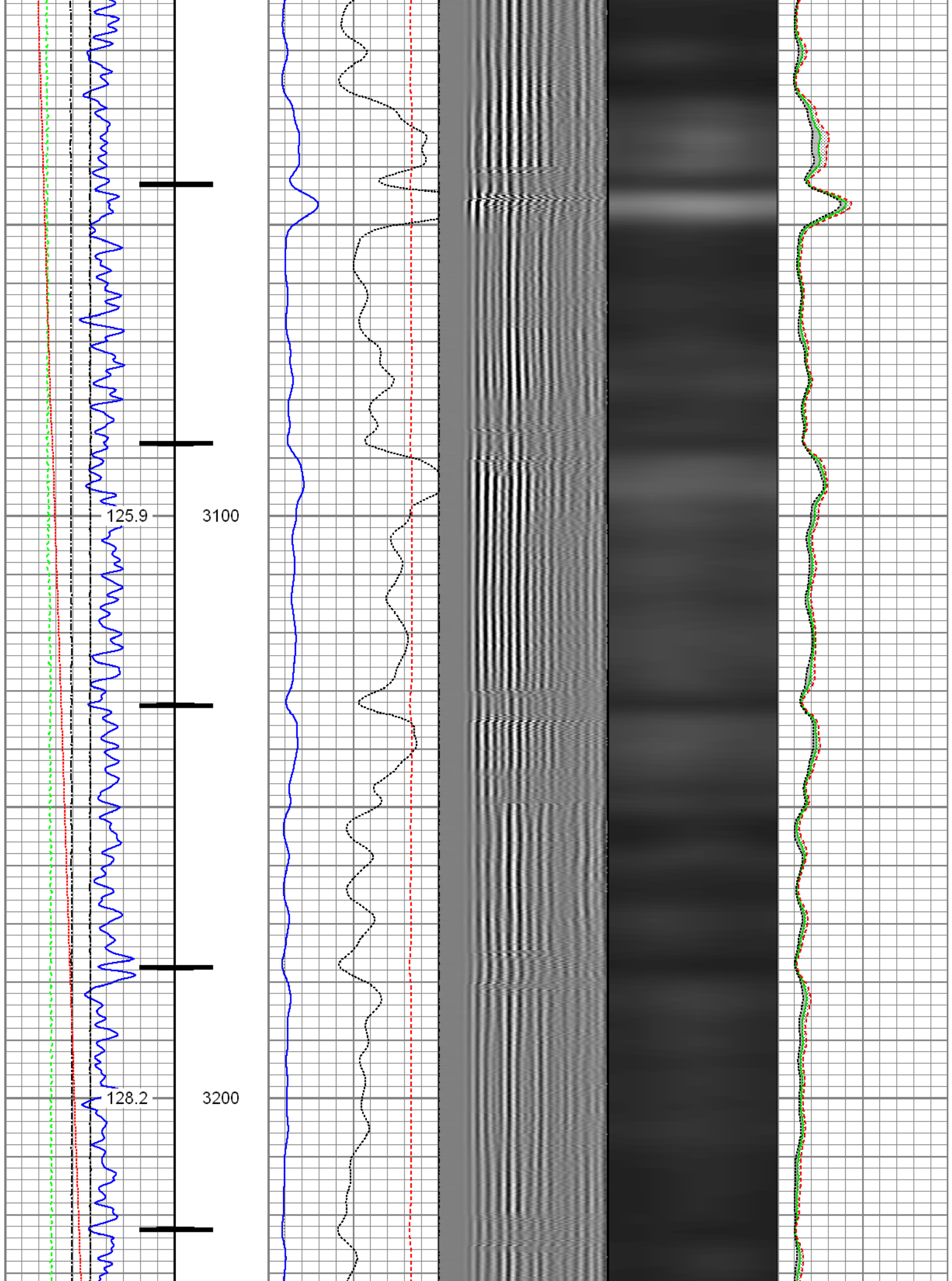


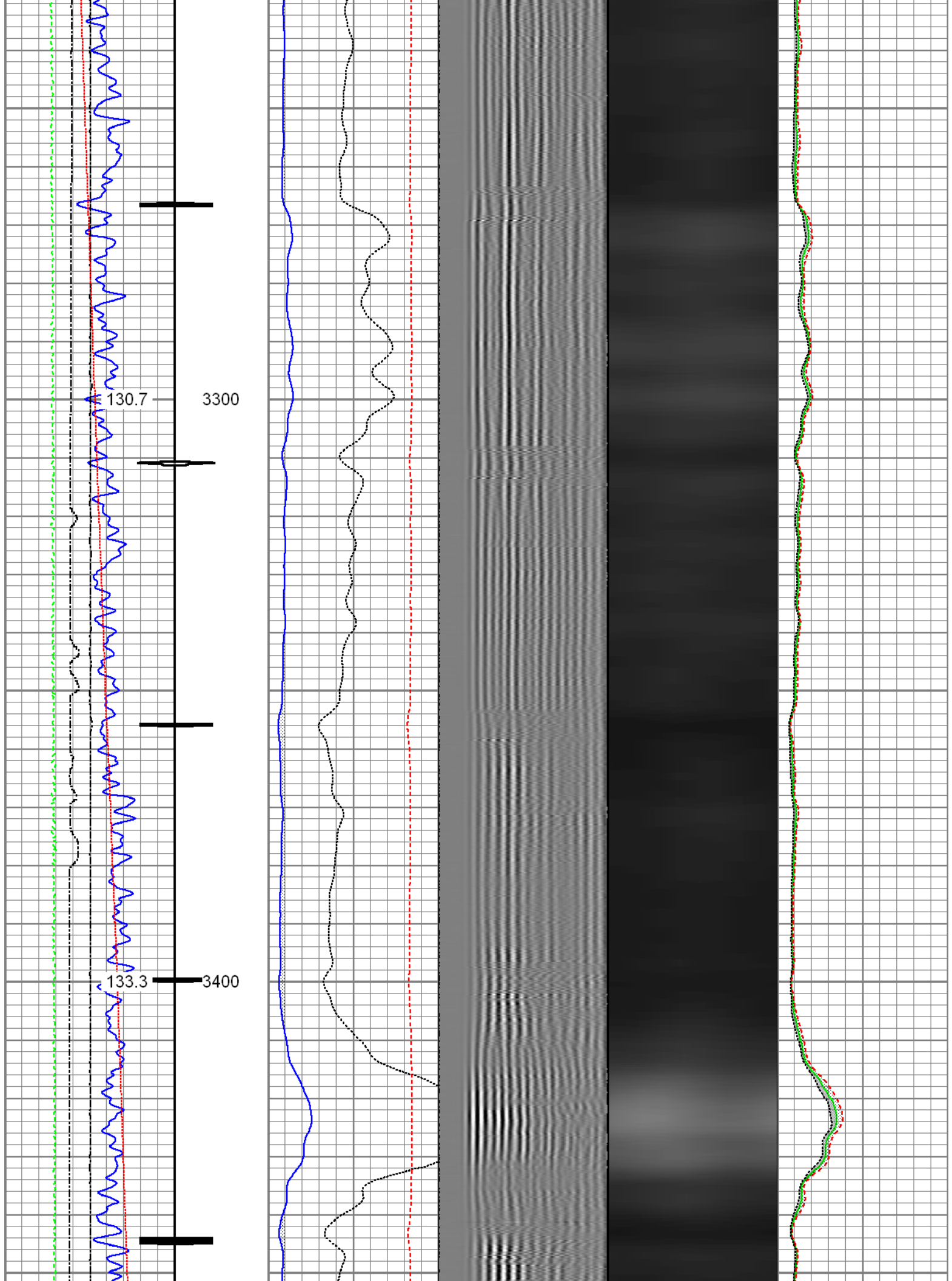


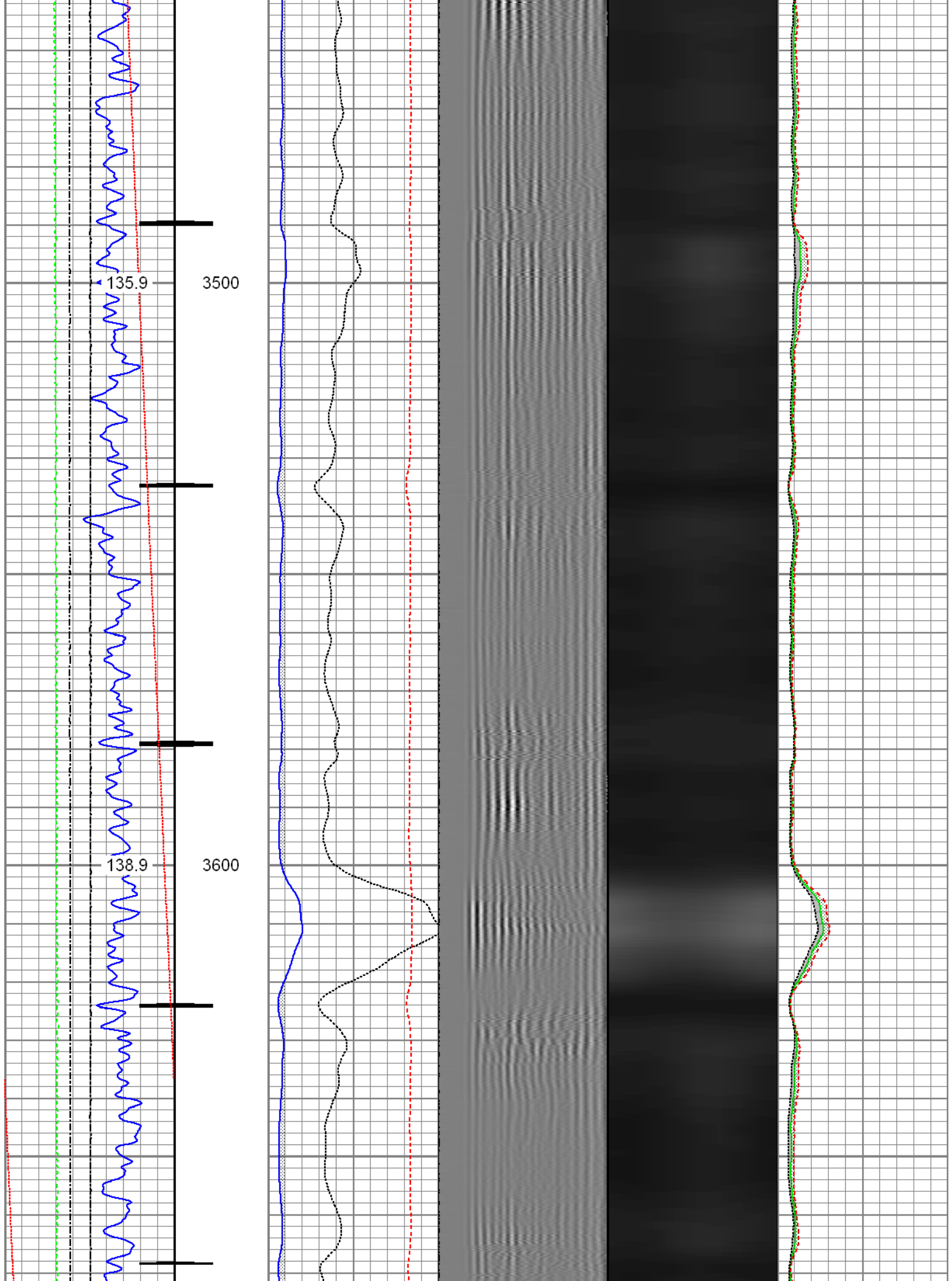


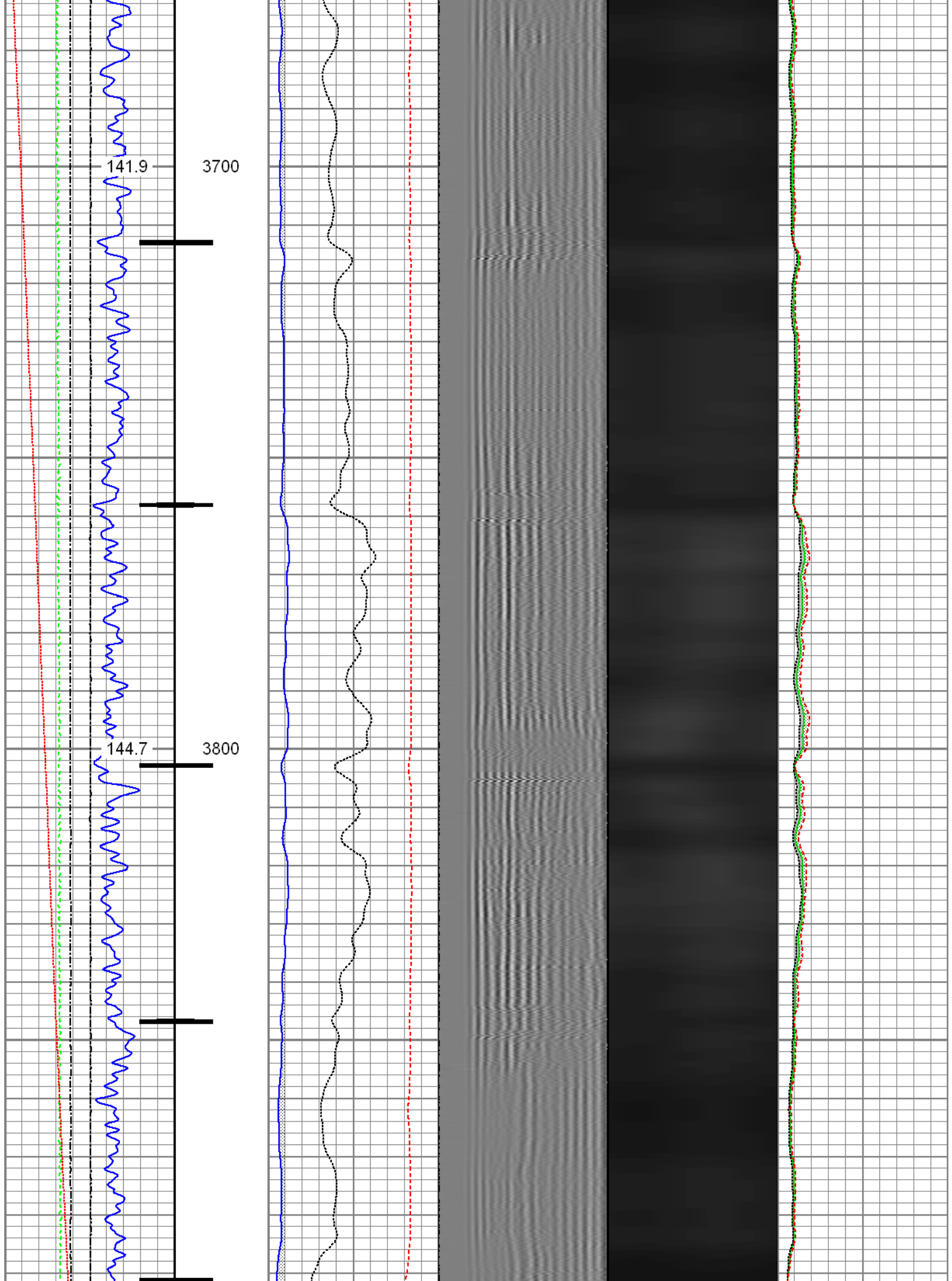


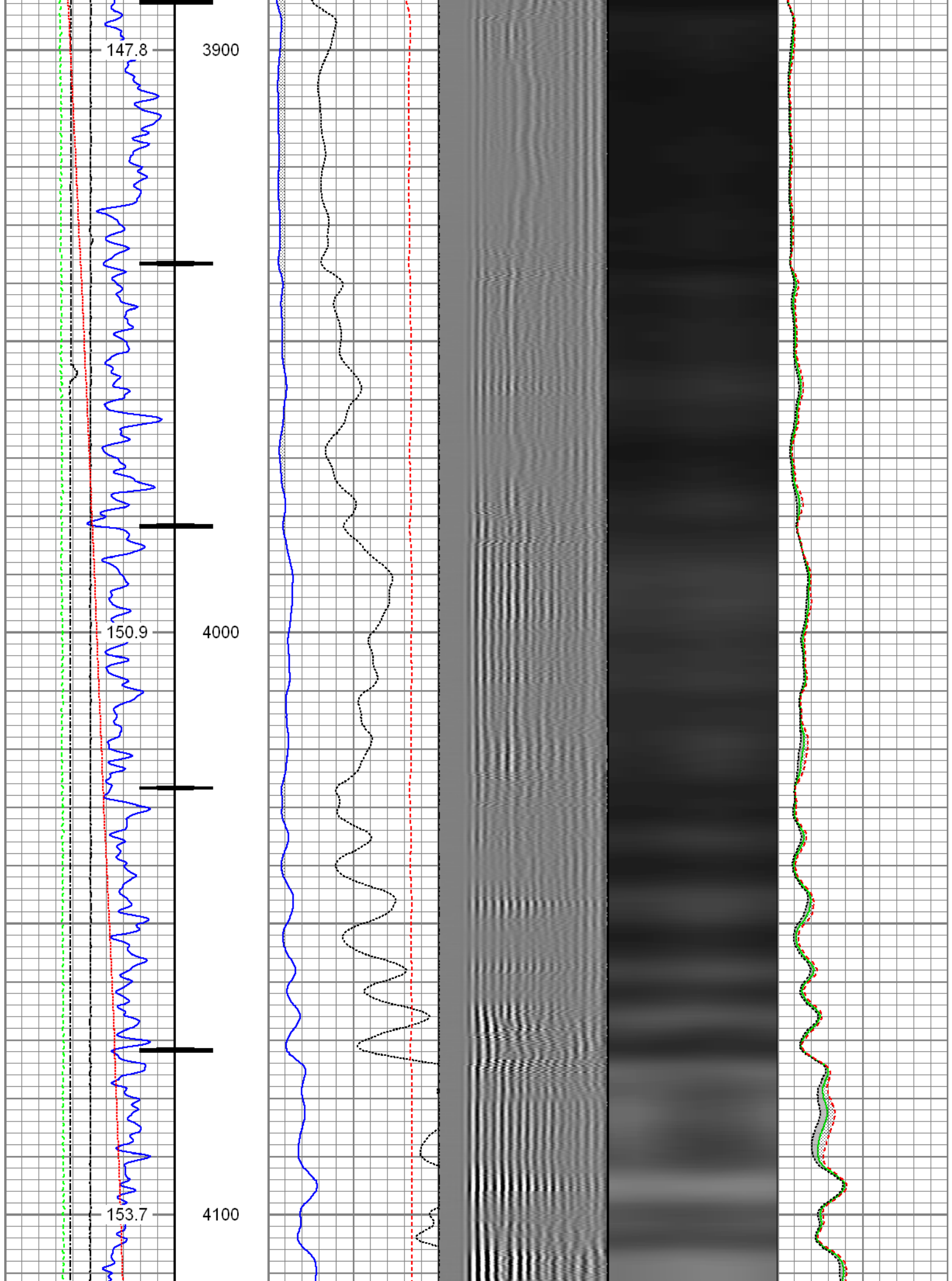


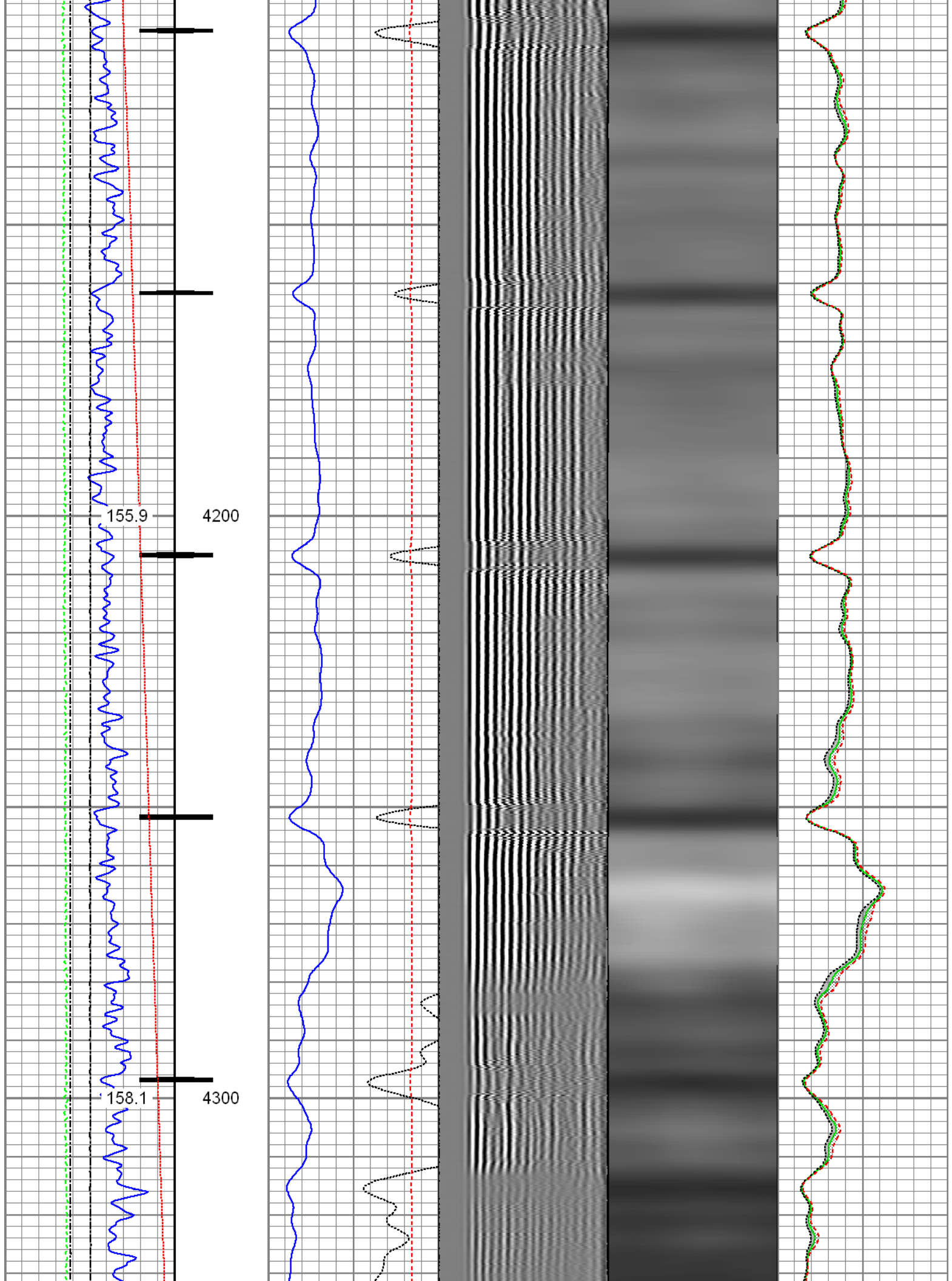


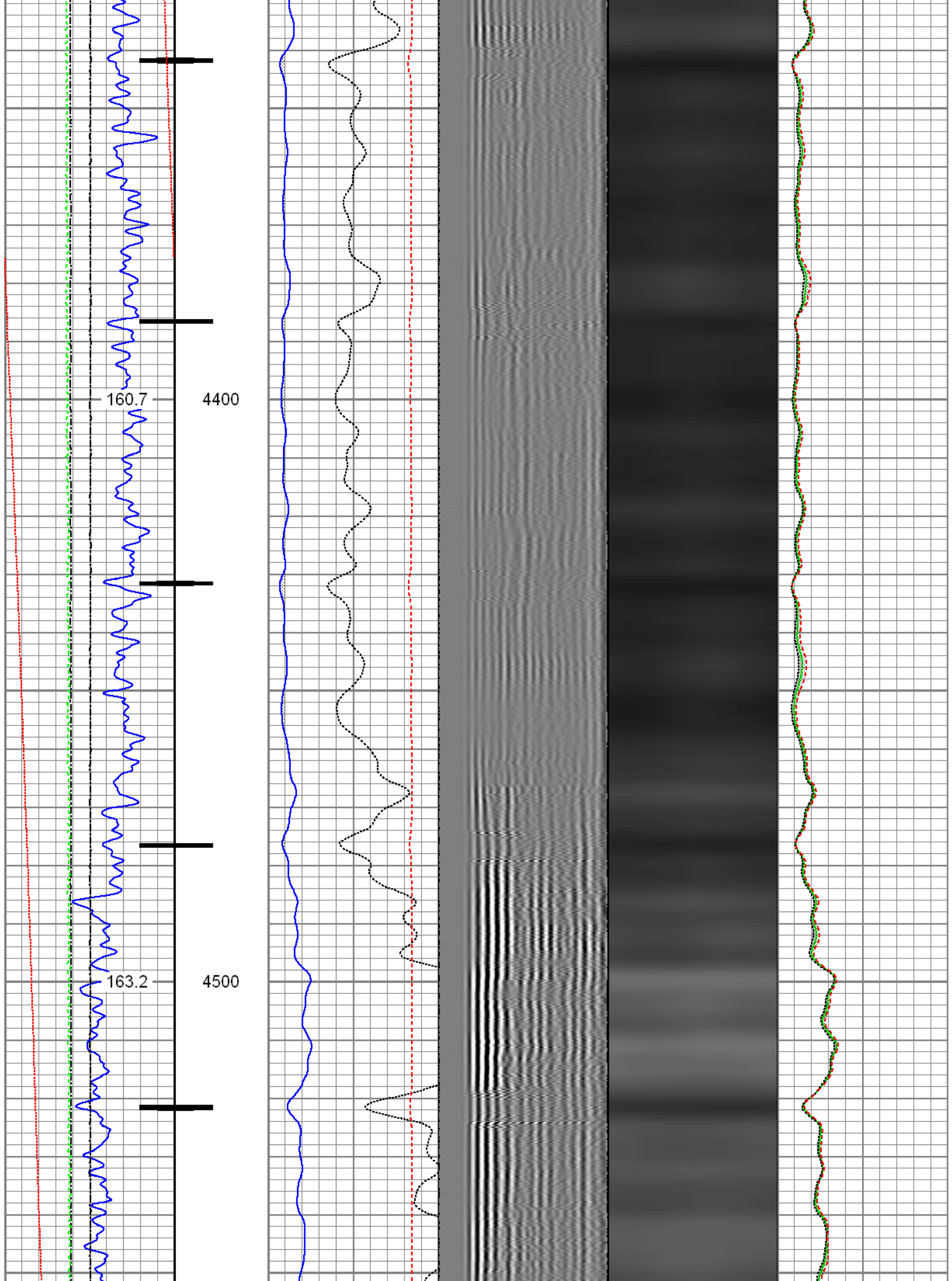


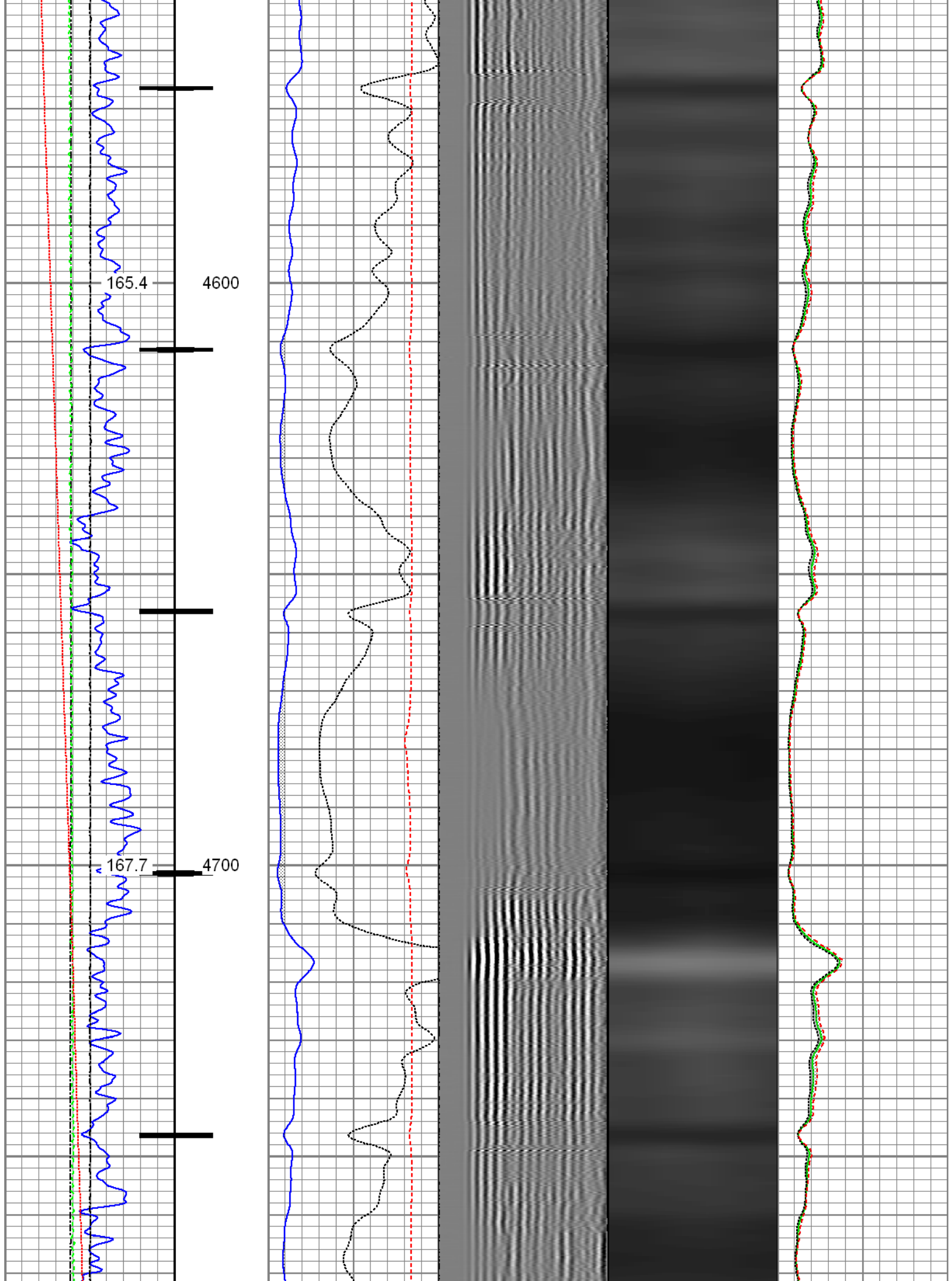


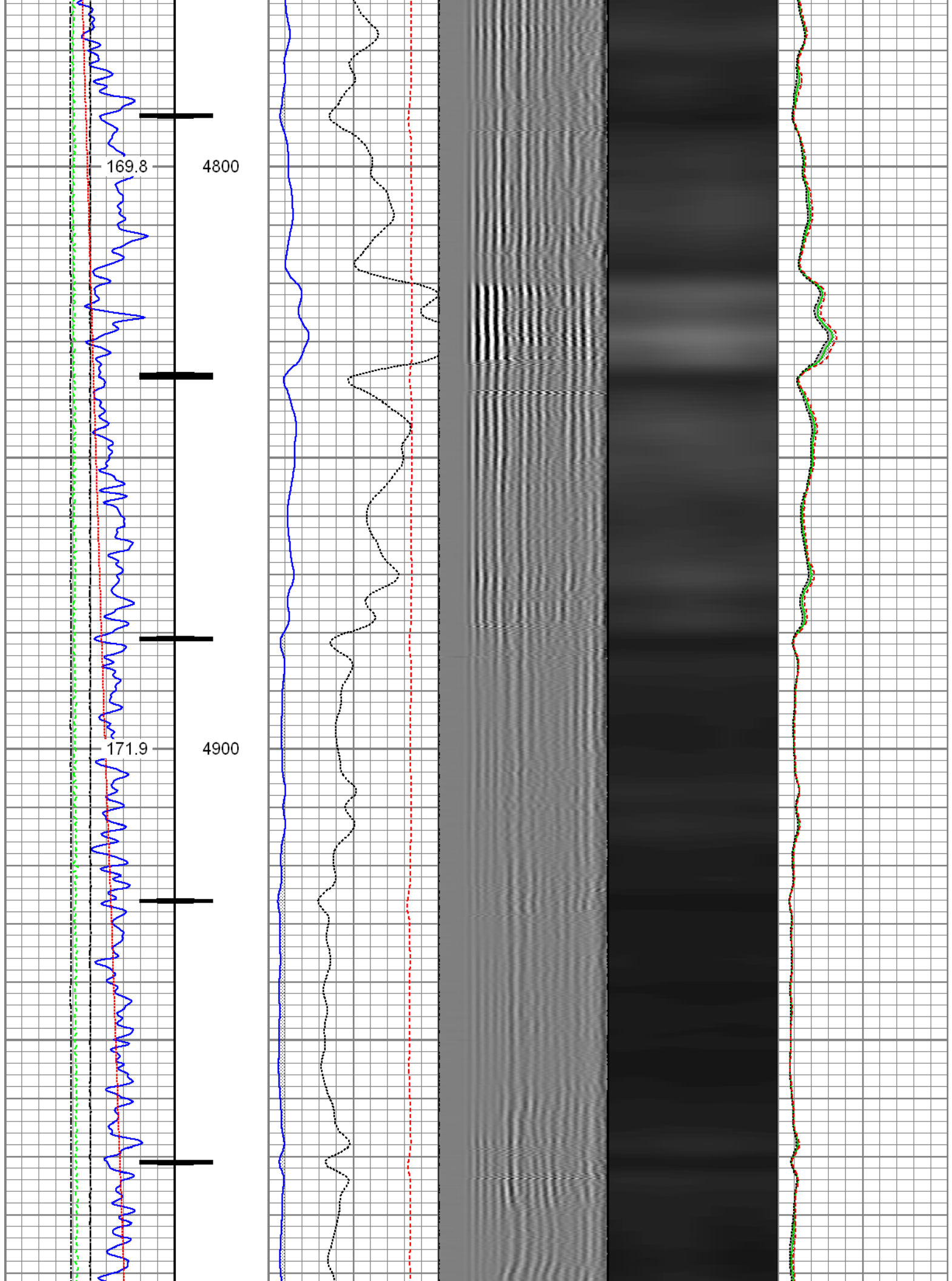


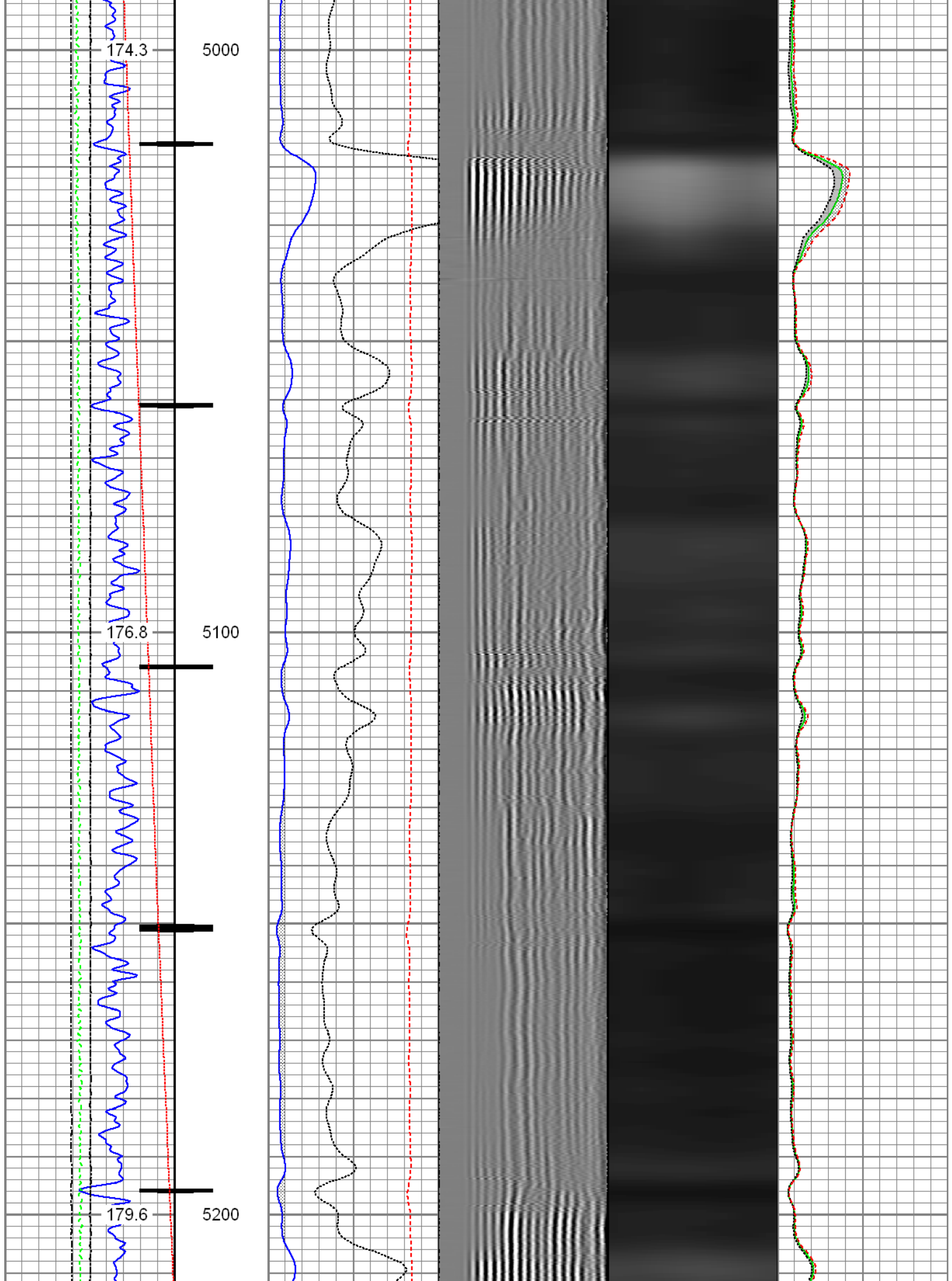


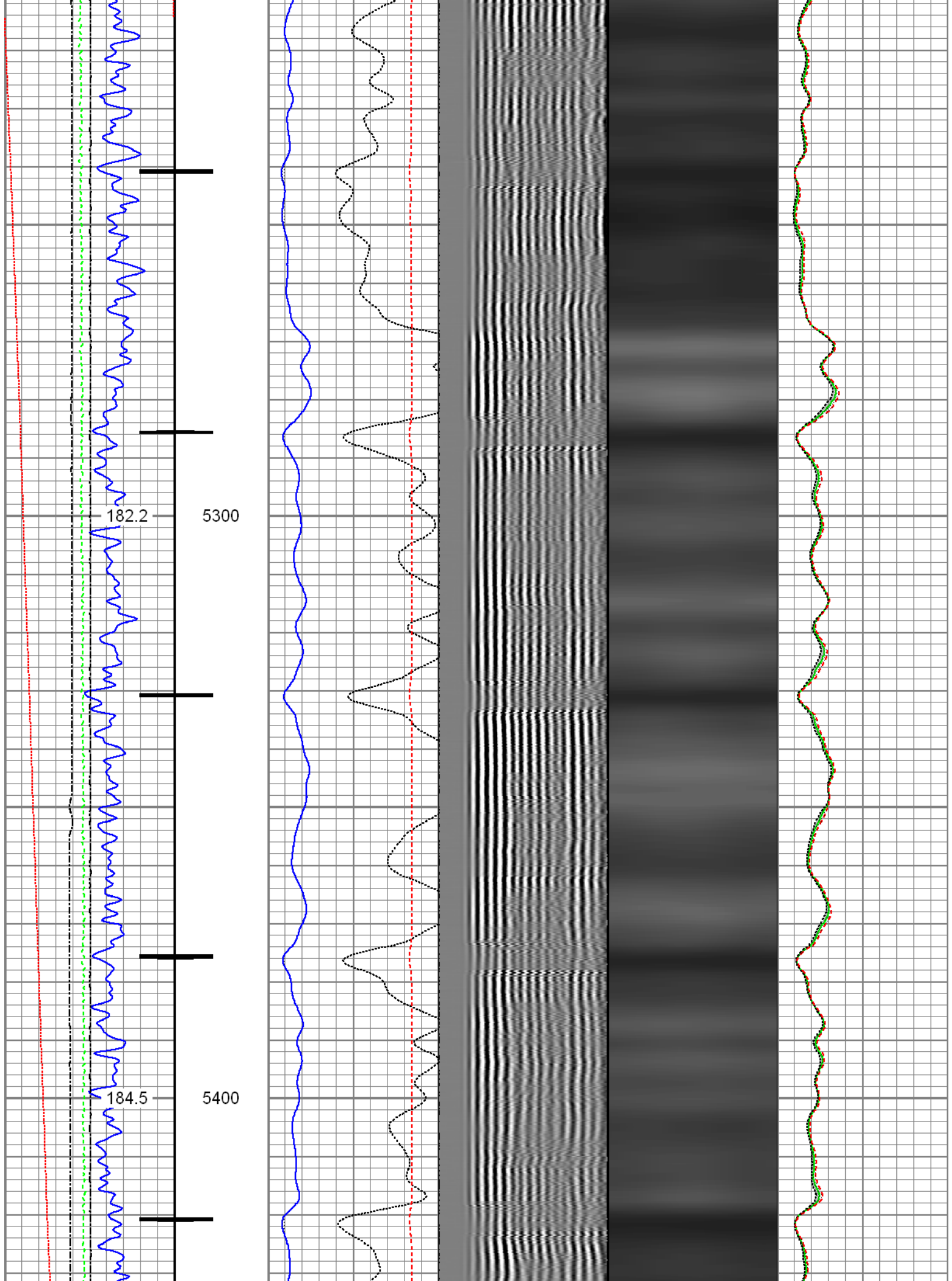


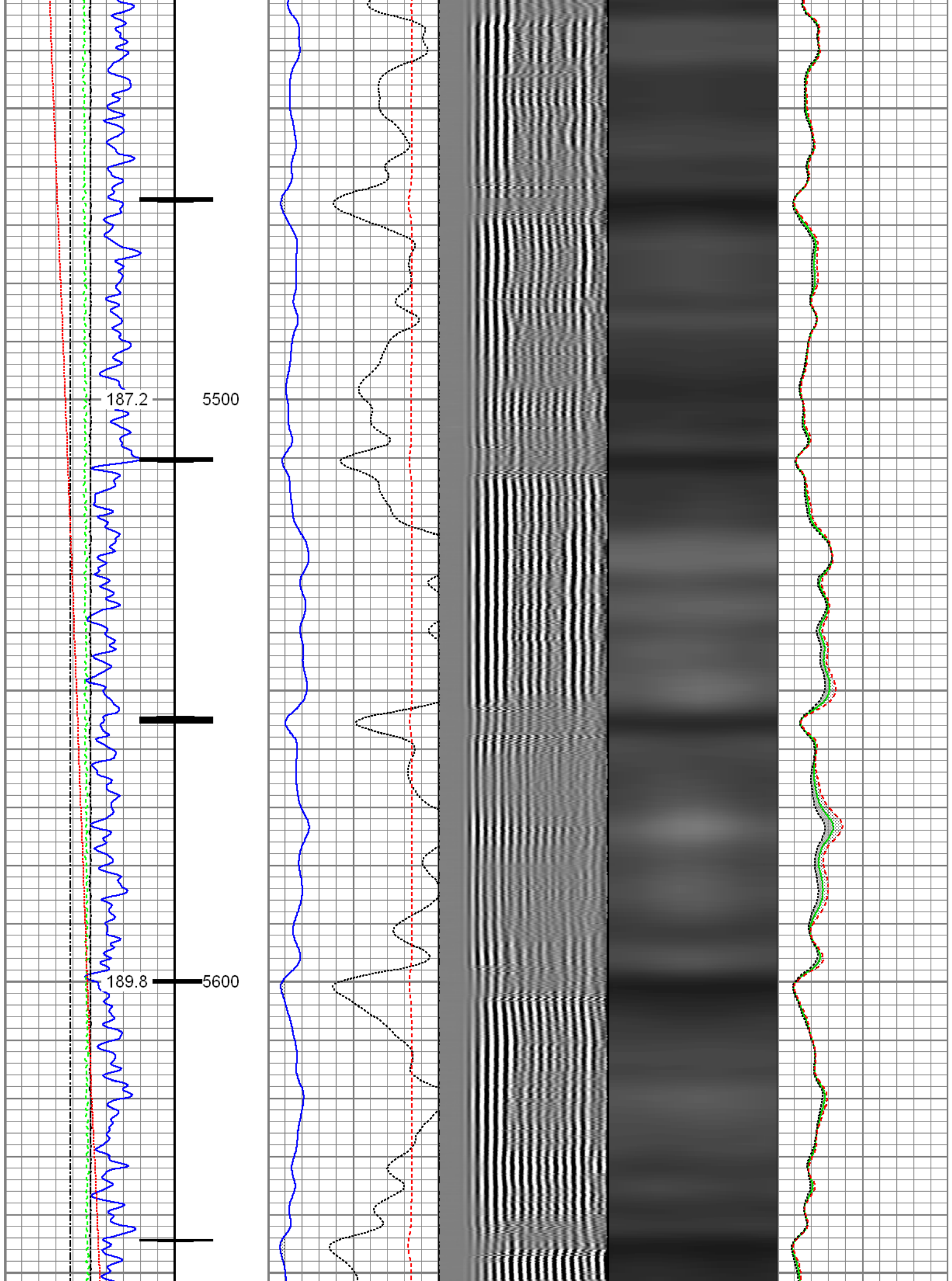


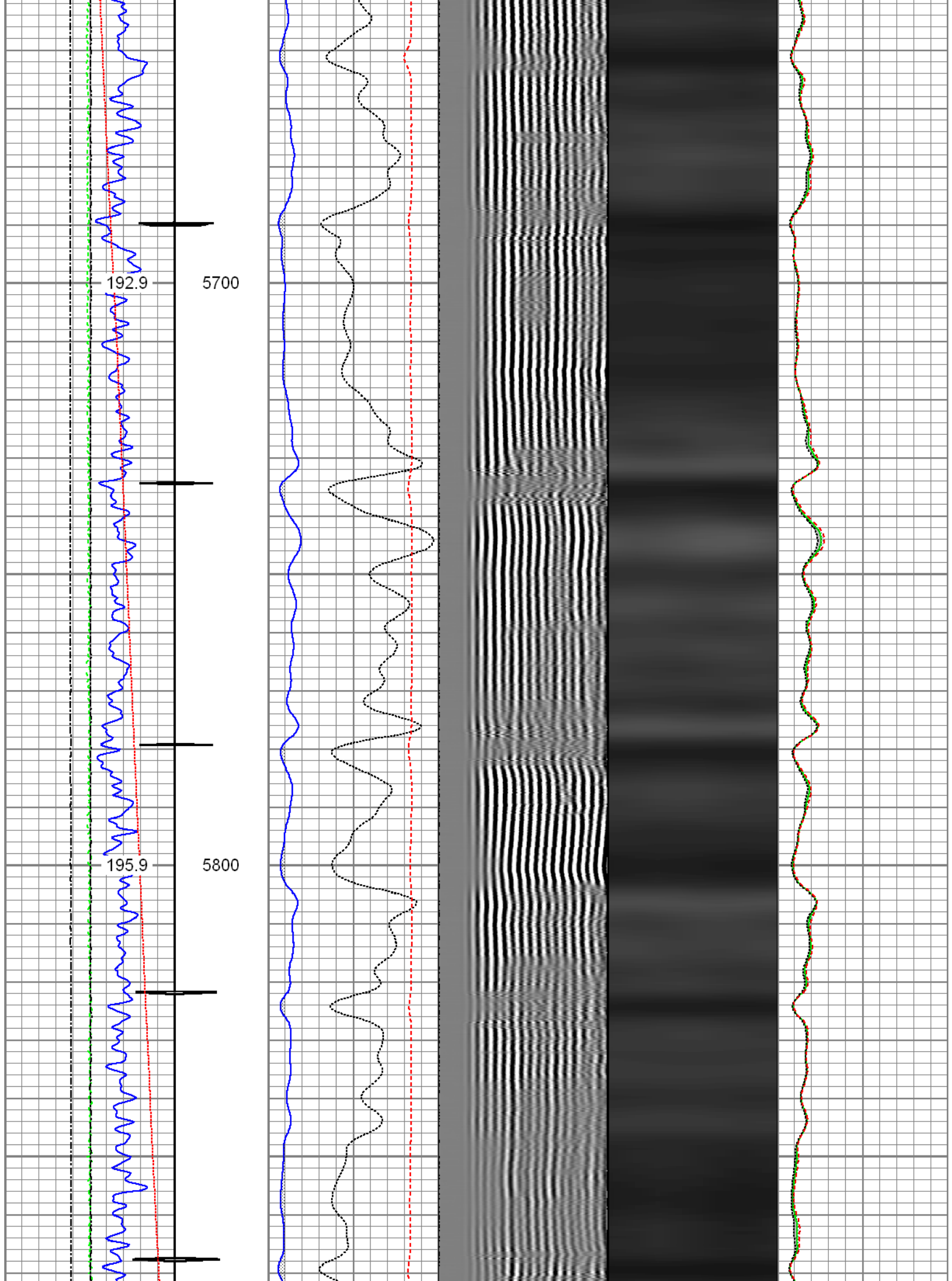


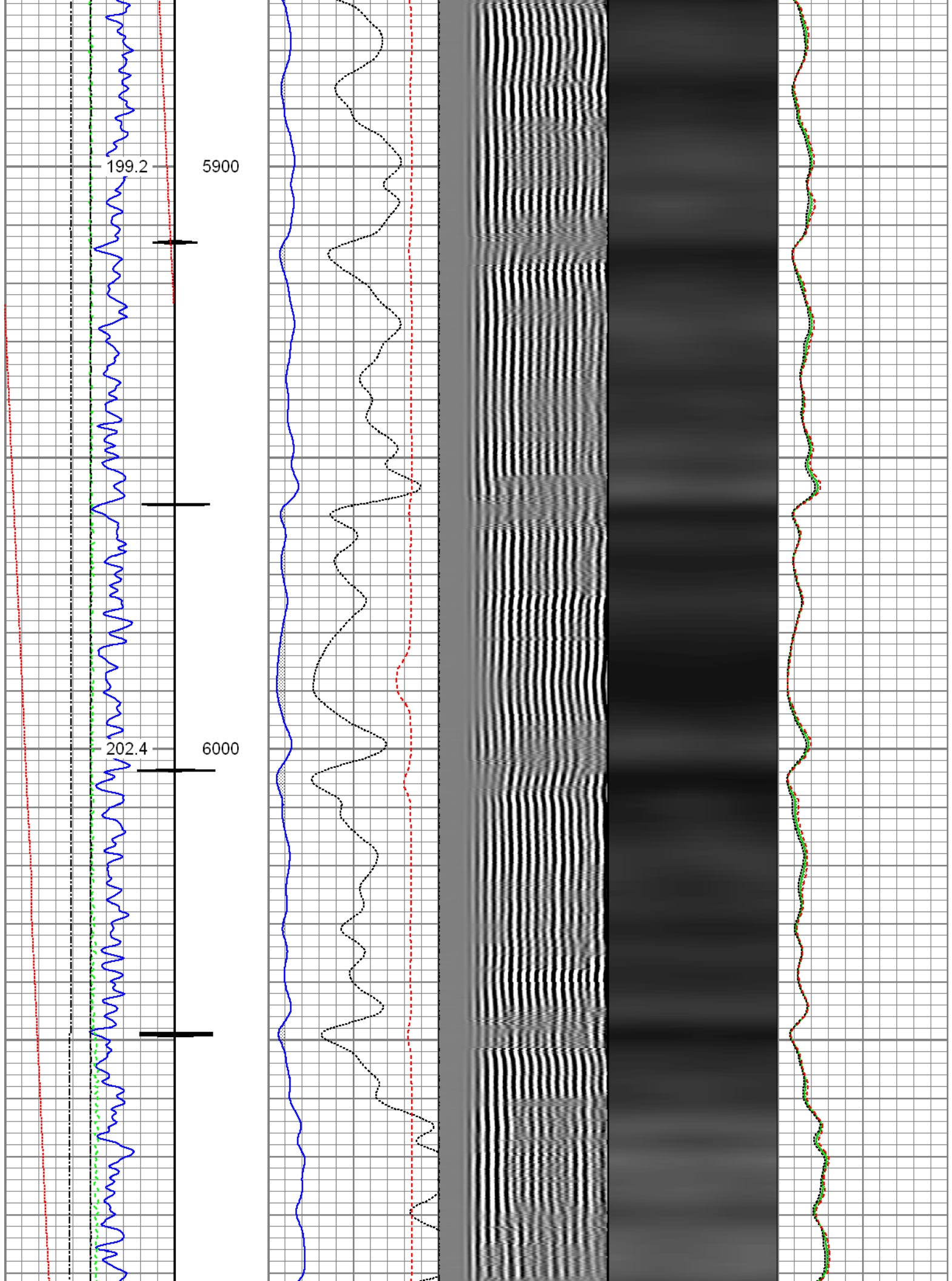


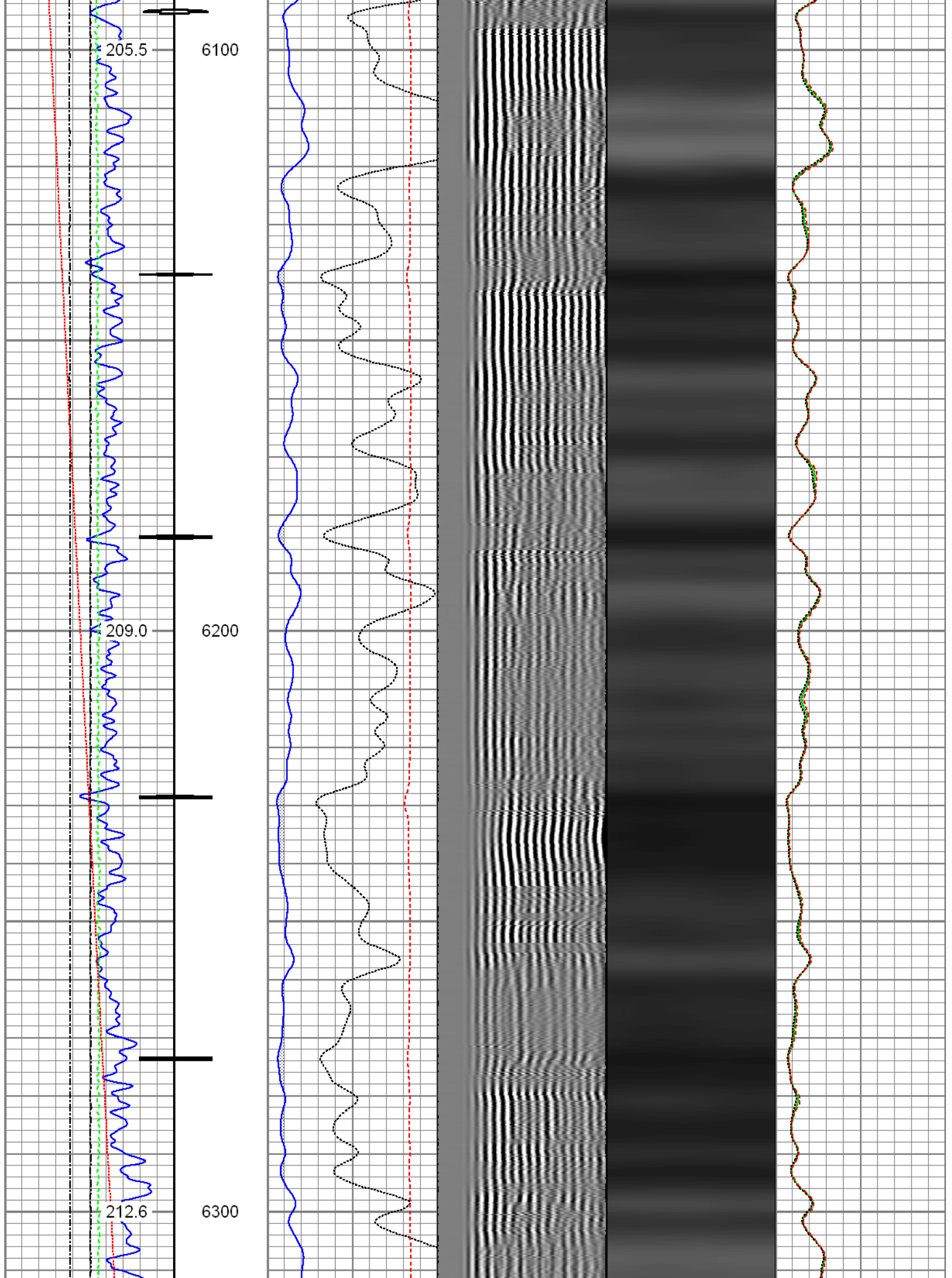


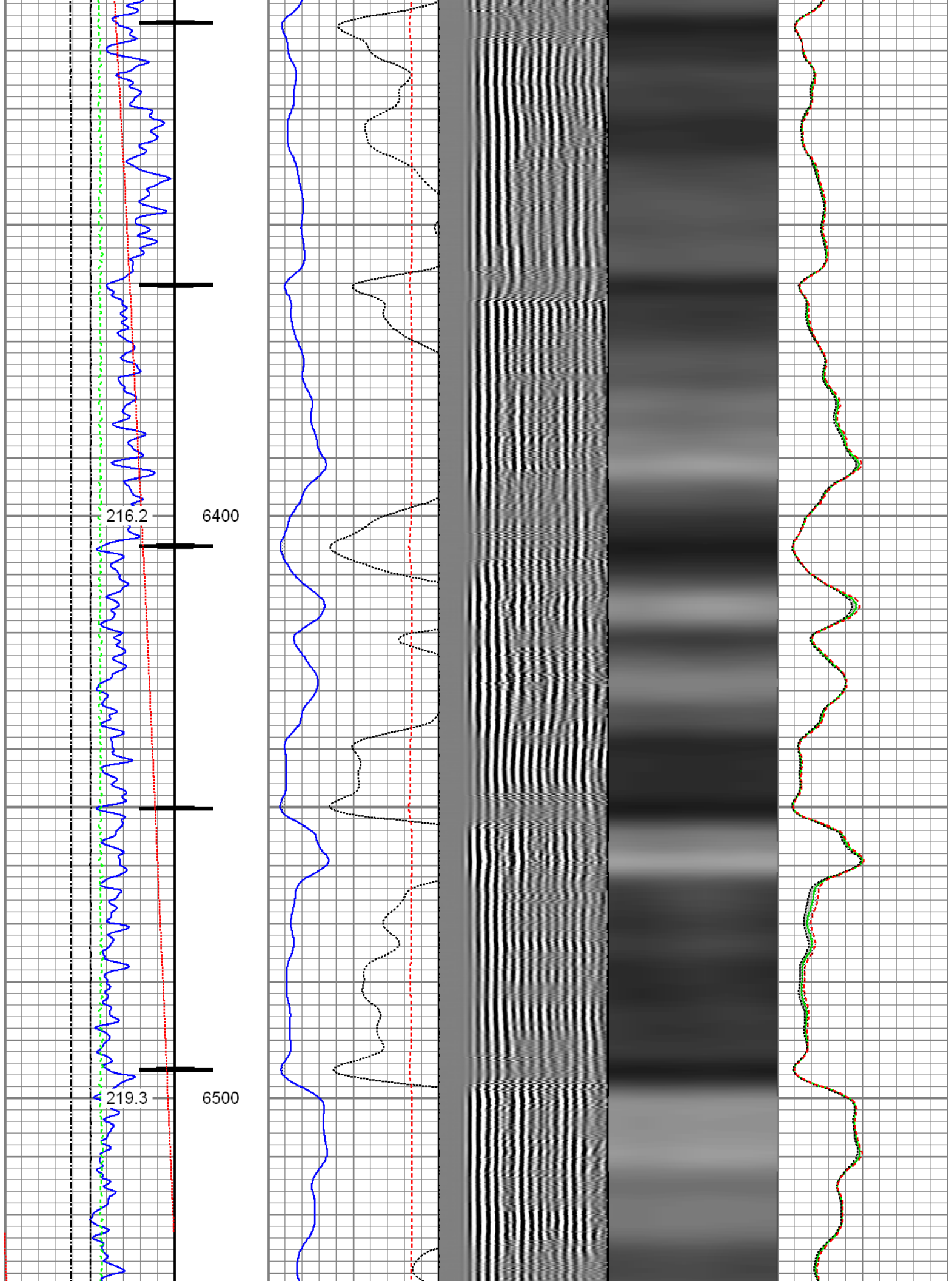


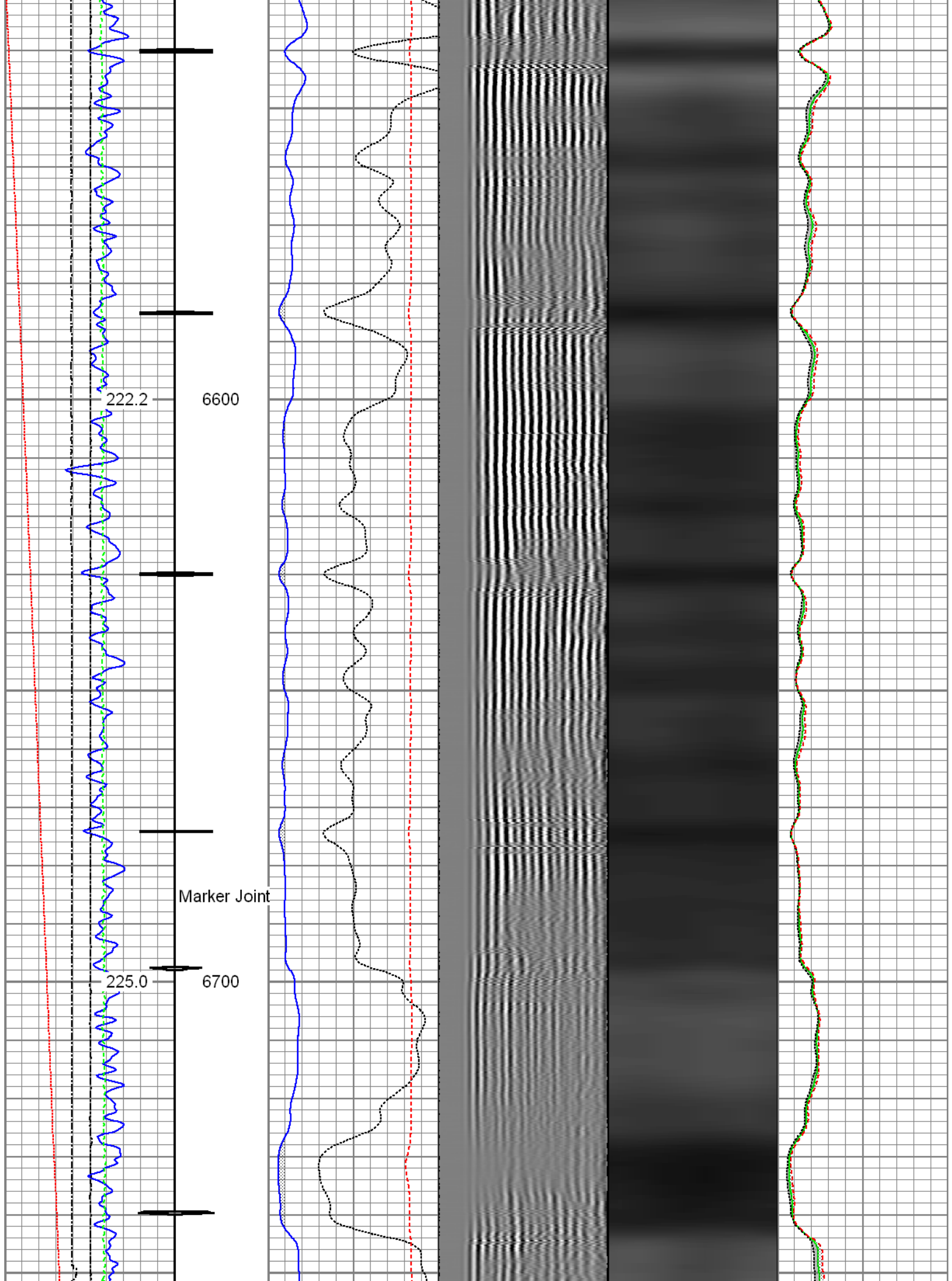


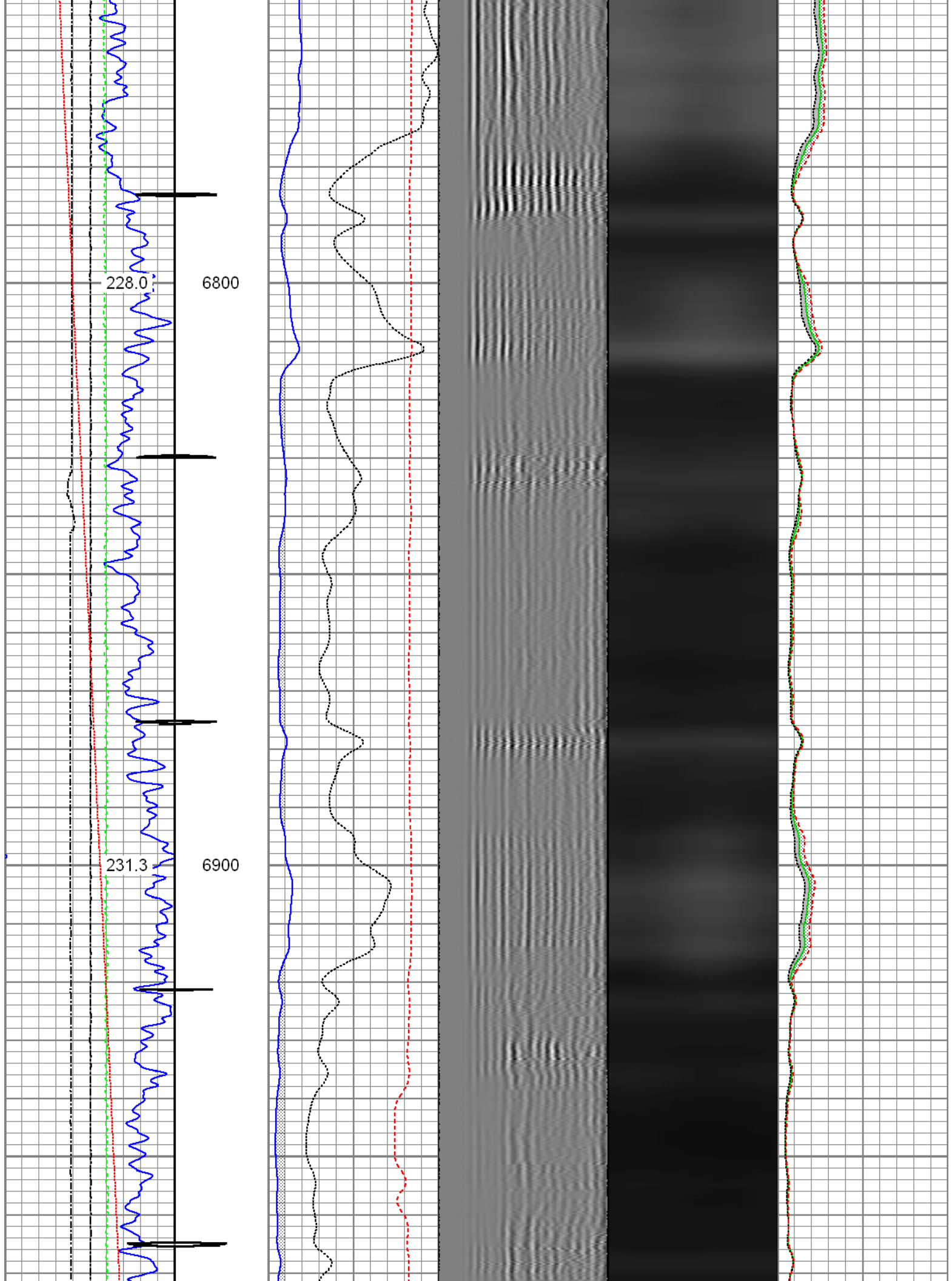


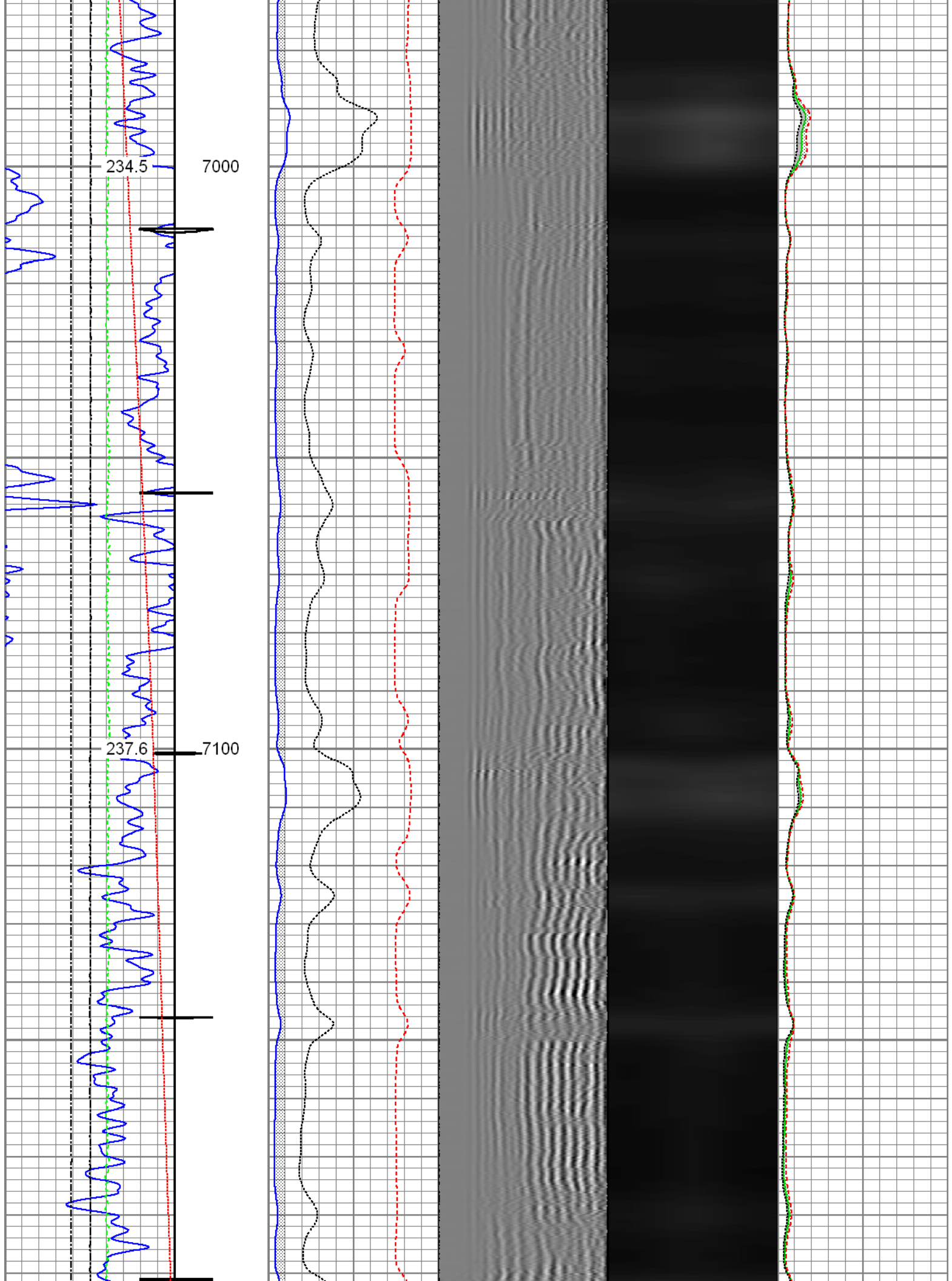


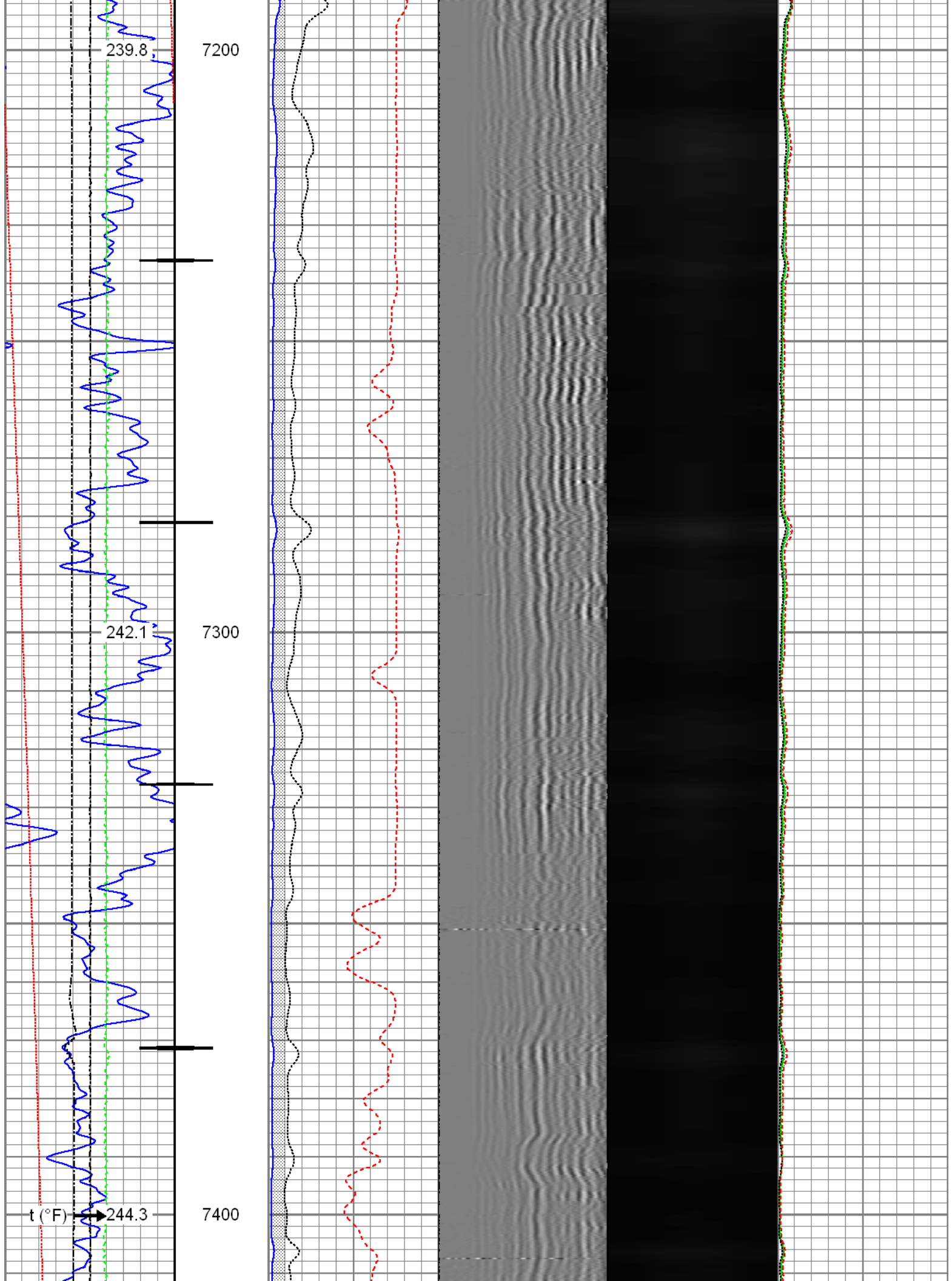


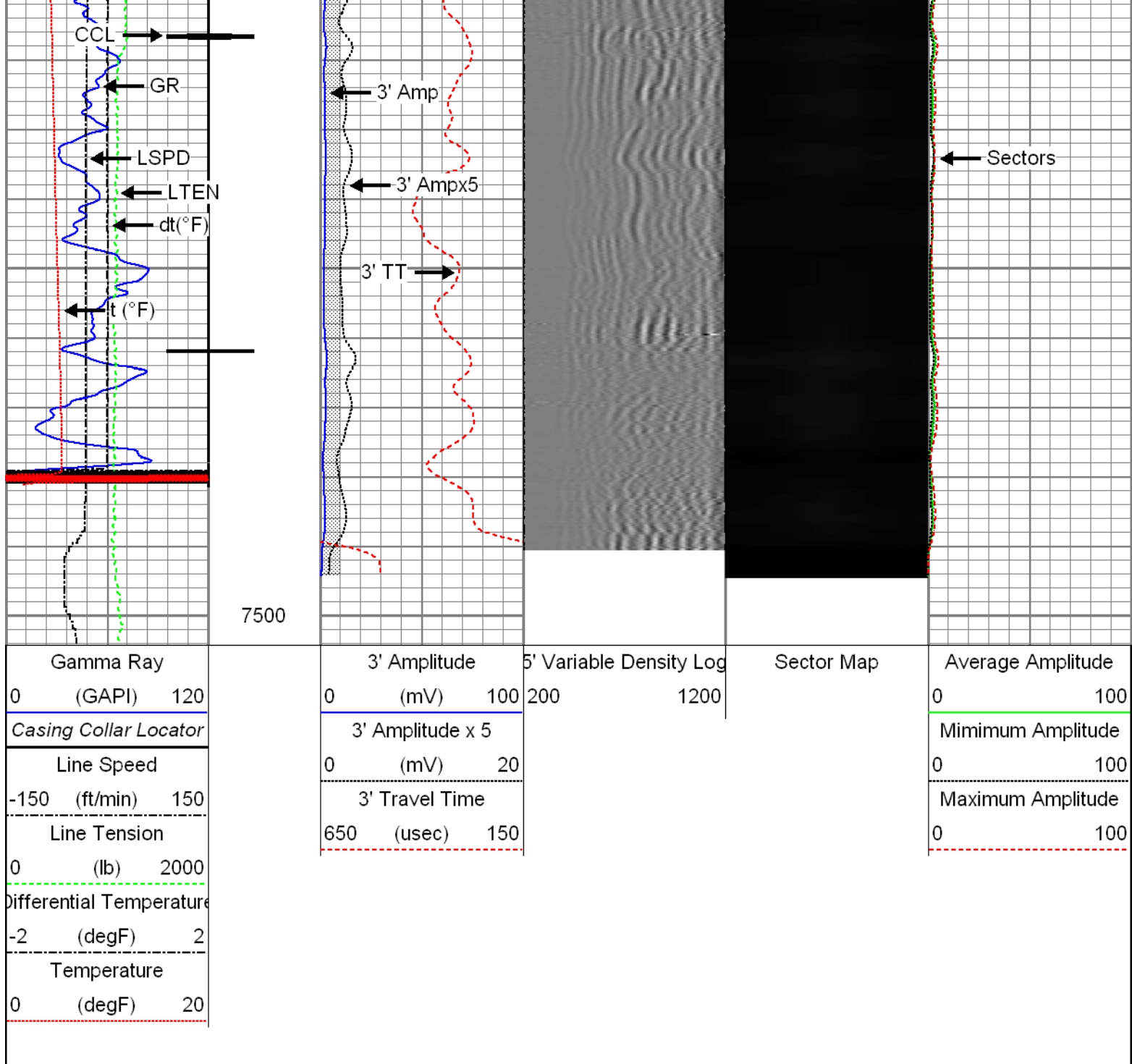






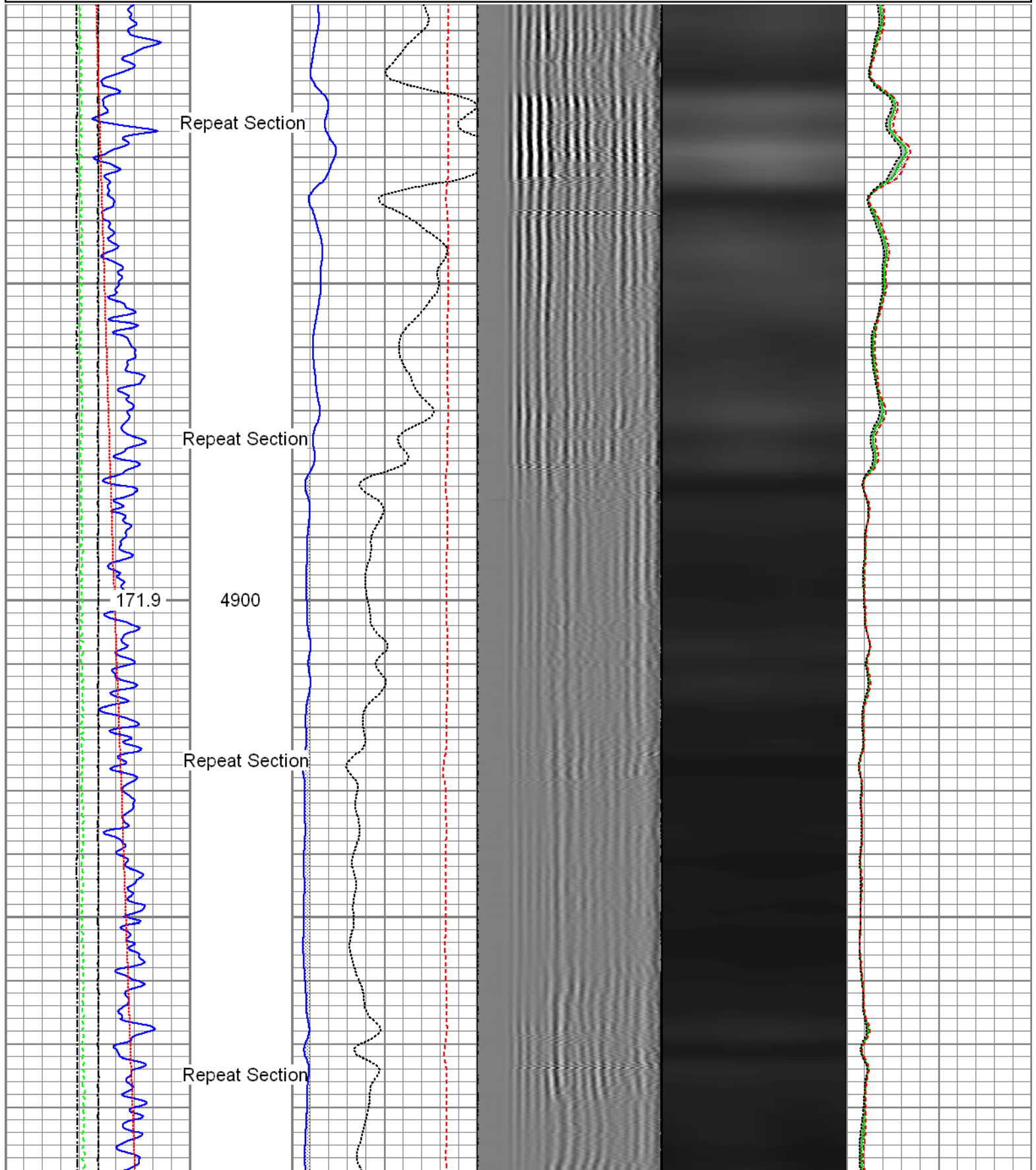


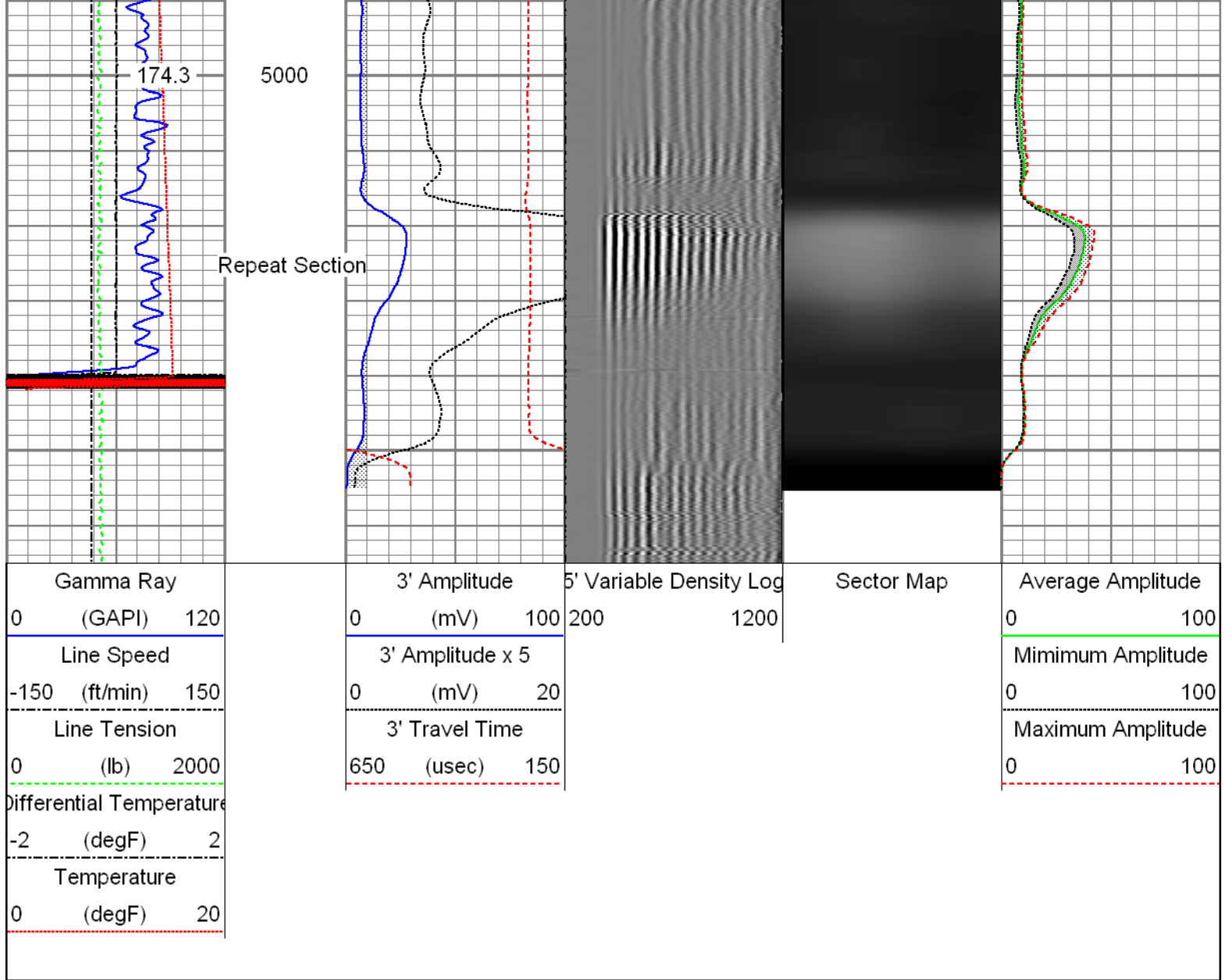




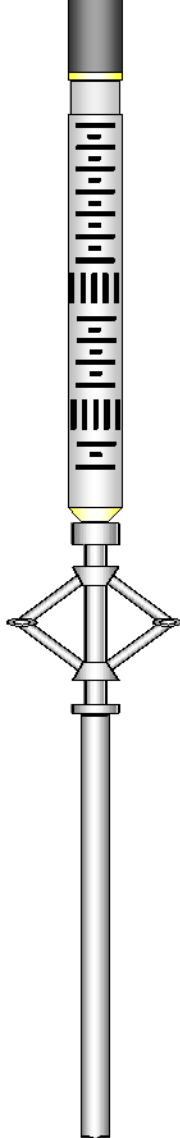
FMC Technologies		Repeat Section			
		Recorded With 2800 PSI Surface Induced Pressure			
Database File: revised_anadarko_powers 28c-34hz_18-nov-2015_rbl_cnl.db Dataset Pathname: pass4.1 Presentation Format: rbt004 Dataset Creation: Fri Nov 20 13:07:12 2015 by Calc 7.0 B1 Charted by: Depth in Feet scaled 1:240					
Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude	
0 120	0 100	200 1200		0 100	
Line Speed (ft/min)	3' Amplitude x 5 (mV)			Minimum Amplitude	
-150 150	0 20			0 100	

Line Tension			3' Travel Time			Maximum Amplitude		
0	(lb)	2000	650	(usec)	150	0		100
Differential Temperature								
-2	(degF)	2						
Temperature								
0	(degF)	20						





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
GR	25.20		UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50
TEMP	23.80		UW_PRT-UW_PRT_016 (10025095) Platinum Resistance Thermometer	1.04	1.69	5.20
CCL	22.56		UW_CCL-UW_CCL_028 (10009470) Ultrawire 3-1/8" CCL	1.61	3.13	36.00
			UW_PRC-UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00

WVF3FT	14.72		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00					
WVFS1	14.72										
WVFS2	14.72										
WVFS3	14.72										
WVFS4	14.72										
WVFS5	14.72										
WVFS6	14.72										
WVFS7	14.72										
WVFS8	14.72										
CBLTEMP	14.72	UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser		2.98	2.75	32.00					
CBLROT	14.72			CNL-007 (1005) Compensated Neutron Logging Tool	6.61	1.69	30.00				
WVF5FT	13.72										
CNLSC	1.53	CNL-007 (1005) Compensated Neutron Logging Tool									
CNSSC	1.12										
TSTAMP	0.00										
Dataset: revised_anadarko_powers 28c-34hz_18-nov-2015_rbl_cnl.db: field/well/run1/merge1.1 Total Length: 29.45 ft Total Weight: 296.20 lb O.D. 3.13 in											

Calibration Report			
Database File:	revised_anadarko_powers 28c-34hz_18-nov-2015_rbl_cnl.db		
Dataset Pathname:	merge1.1		
Dataset Creation:	Fri Nov 20 12:56:57 2015 by Calc 7.0 B1		
Compensated Neutron Calibration Report			
Serial Number:	1005		
Tool Model:	007		
Master Calibration	Tue Jun 03 09:29:29 2014		
Detector	Readings		
Short Space	240.87	cps	
Long Space	303.55	cps	
Ratio	Measured	Reference	
CNRAT Gain K	0.8150	Sleeve: 1.0000	
	1.0271		
Before Survey			

Detector	Readings	
Short Space		cps
Long Space		cps
	Measured	Reference
Ratio		

After Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
	Measured	Reference
Ratio		

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	9.625 in
Calibration Depth:	814.297 ft

Master Calibration, performed Fri Nov 20 12:56:39 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.775	0.800	71.917	91.579	0.912
5FT	-0.003	0.459	0.800	71.917	153.987	1.237
S1	-0.000	0.797	0.000	140.000	175.509	0.035
S2	-0.002	0.795	0.000	140.000	175.496	0.435
S3	-0.002	0.782	0.000	140.000	178.567	0.432
S4	-0.002	0.779	0.000	140.000	179.133	0.431
S5	-0.001	0.781	0.000	140.000	179.073	0.219
S6	-0.002	0.791	0.000	140.000	176.476	0.418
S7	-0.001	0.790	0.000	140.000	177.021	0.220
S8	-0.001	0.796	0.000	140.000	175.730	0.204

Temperature Calibration Report

Serial Number:		10025095		
Tool Model:		UW_PRT_016		
Performed:		Wed Feb 11 13:43:20 2015		
Point #	Reading		Reference	
1	12798.00	cps	68.00	degF
2	18136.00	cps	104.00	degF
3	29513.00	cps	176.00	degF
4	40905.00	cps	248.00	degF
5	52487.00	cps	320.00	degF
6	58362.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number:	10013899
----------------	----------

Tool Model: UW_PGR_020
Performed: Sun Jun 13 13:33:21 1993

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps



Company Kerr-McGee Oil & Gas OnShore L.P.
Well Powers 28C-34HZ
Field Wattenberg
County Weld
State Colorado