



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well RW 36N-32HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-44753

SEC 29 TWP 3N RGE 65W

Permanent Datum Ground Level Elevation 4869'

Log Measured From Kelly Bushing 21 FT

Drilling Measured From Kelly Bushing

Other Services  
Gauge Ring  
CNL

Elevation  
K.B. 4890'  
D.F. ---  
G.L. 4869'

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well RW 36N-32HZ  
Field Wattenberg  
County Weld  
State Colorado

Date	20-NOV-2017			
Run Number	Two			
Depth Driller	13054 FT			
Depth Logger	7200 FT			
Bottom Logged Interval	7199 FT			
Top Log Interval	Surface			
Open Hole Size	7 875"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	251°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	11:06 AM			
Equipment Number	HD-340			
Location	Fort Lupton, CO			
Recorded By	J. Fresquez			
Witnessed By	J. McMillen			
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9 5/8	36	J-55	Surface
Intermediate #1	5 1/2	20	P-110	Surface
Intermediate #2				
Inner				

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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 6501 FT  
Adjusted -5 FT to correlate with Marker Joint  
Gauge Ring/Junk Basket ran to 7250 FT with no debris  
Log ran from as deep as possible in heel to Surface  
Log ran with 2800 PSI Surface Induced Pressure  
Logging tools were clean and free of debris upon completion of operations  
  
Thank you for choosing Reliance Oilfield Services, LLC!!

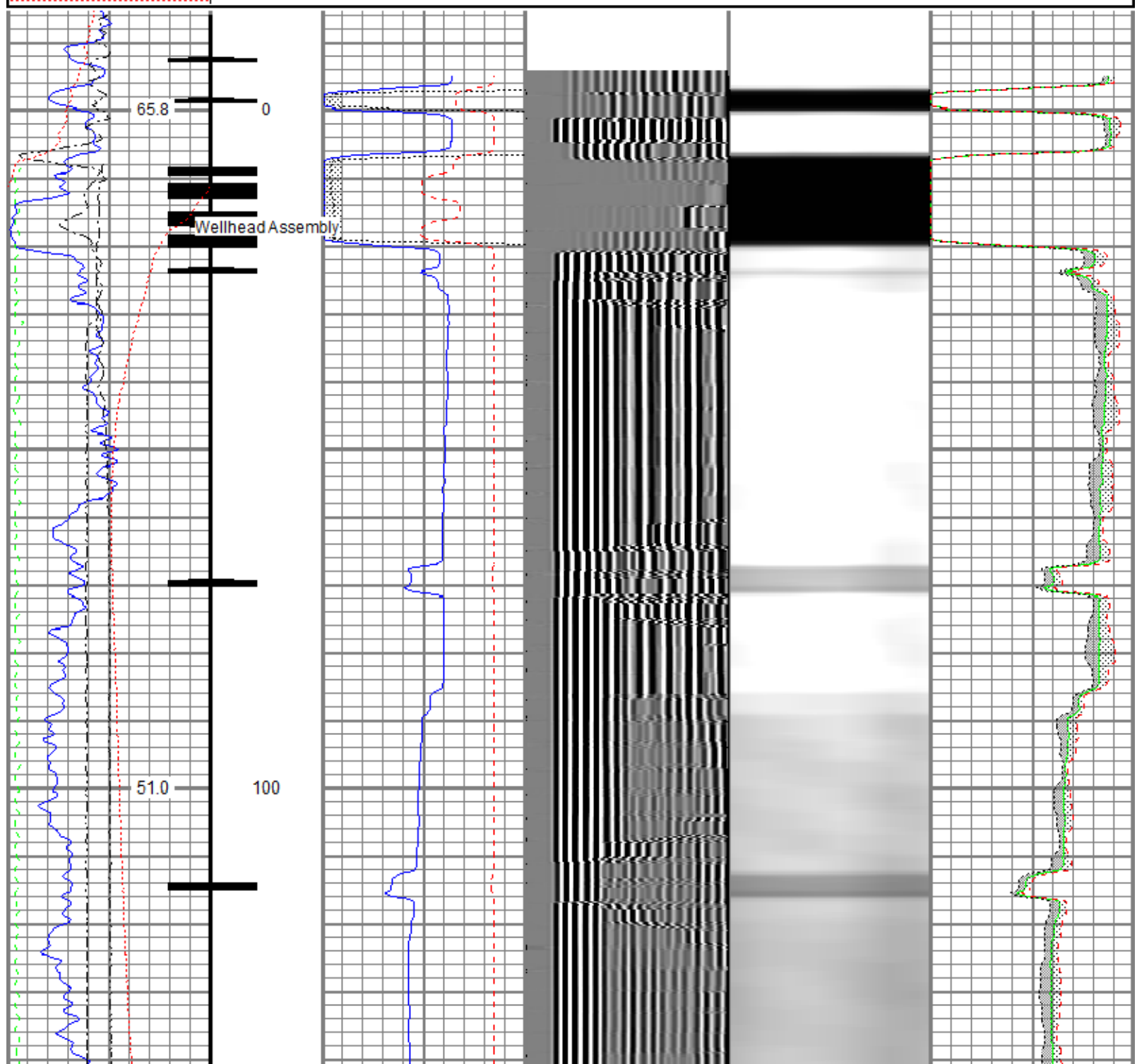
Main Pass

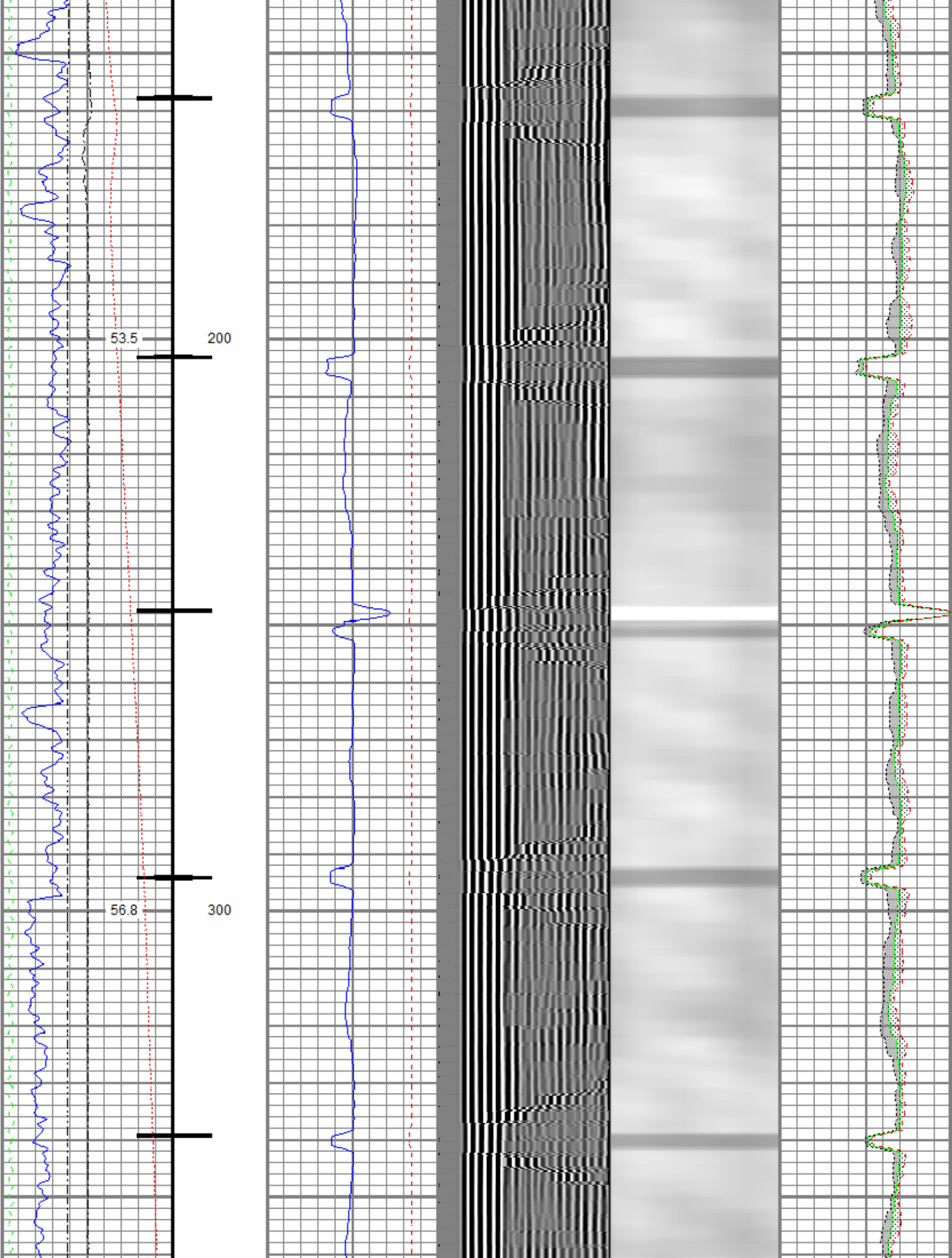


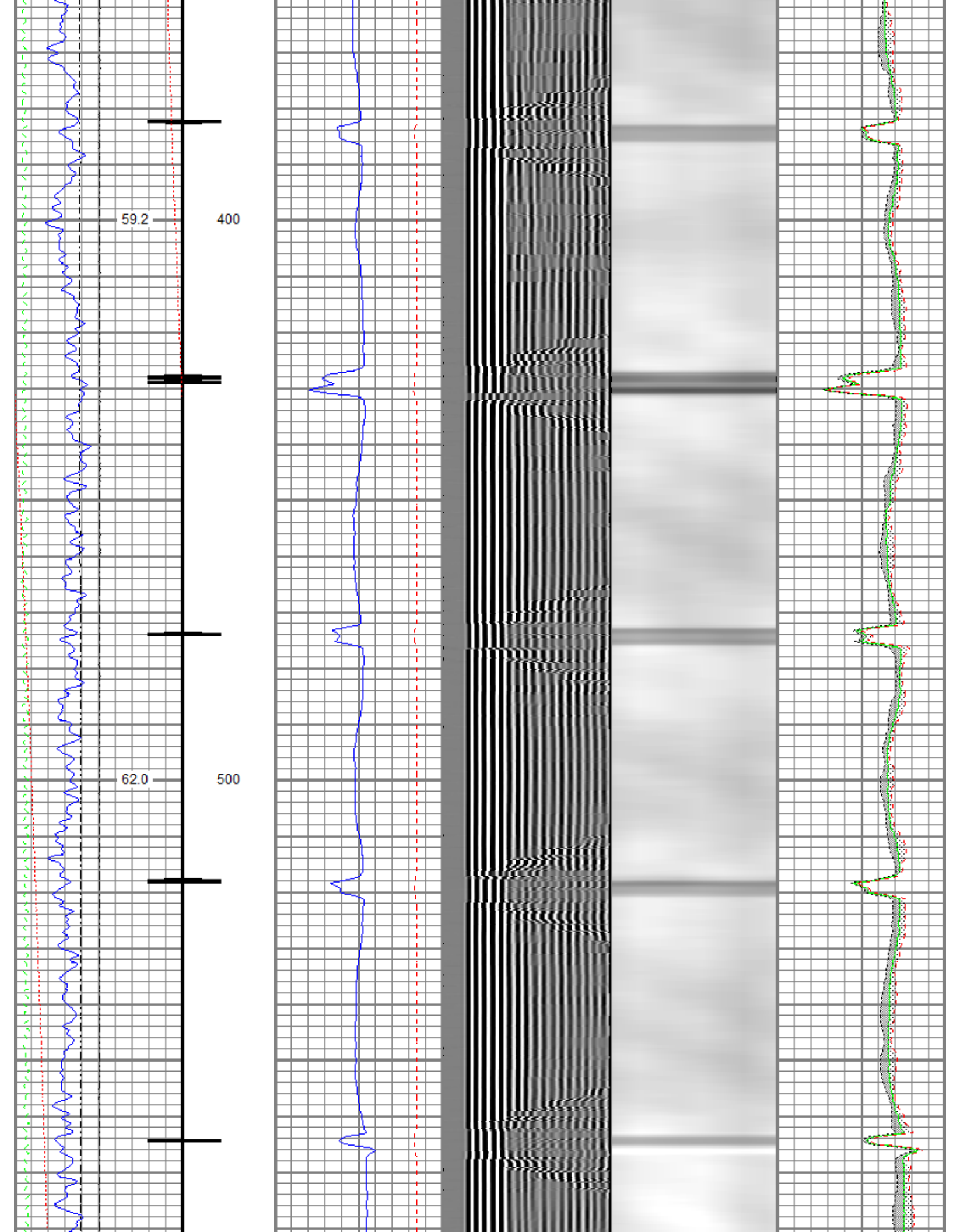
Recorded With 2800 PSI Surface Induced Pressure

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Presentation Format	ros_rbt003_sx
Dataset Creation	Mon Nov 20 14:56:49 2017
Charted by	Depth in Feet scaled 1:240

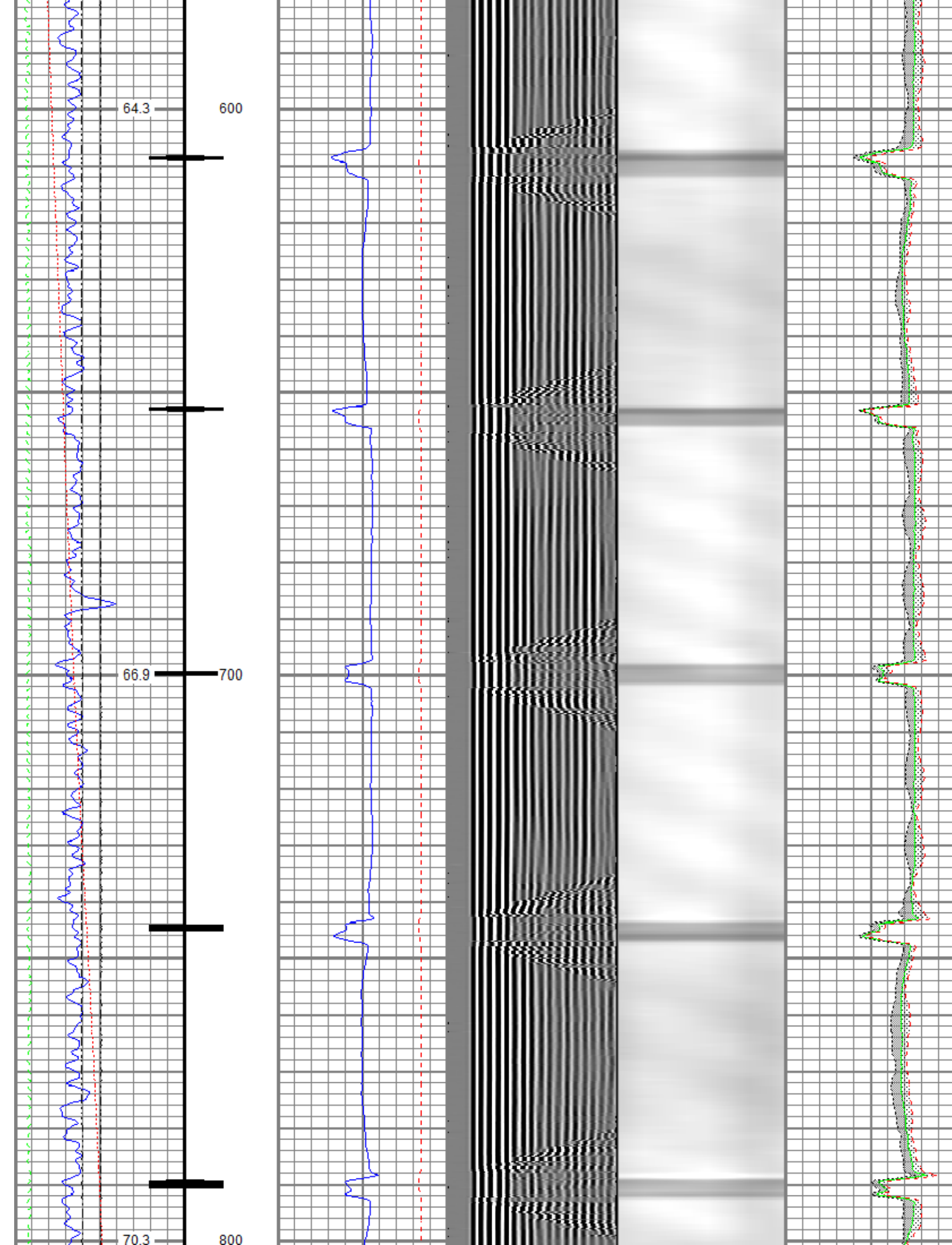
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Line Speed		3' Travel Time				Maximum Amplitude
-150 (ft/min) 150		650 (usec) 150			0	100
Line Tension (lb) 2000		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

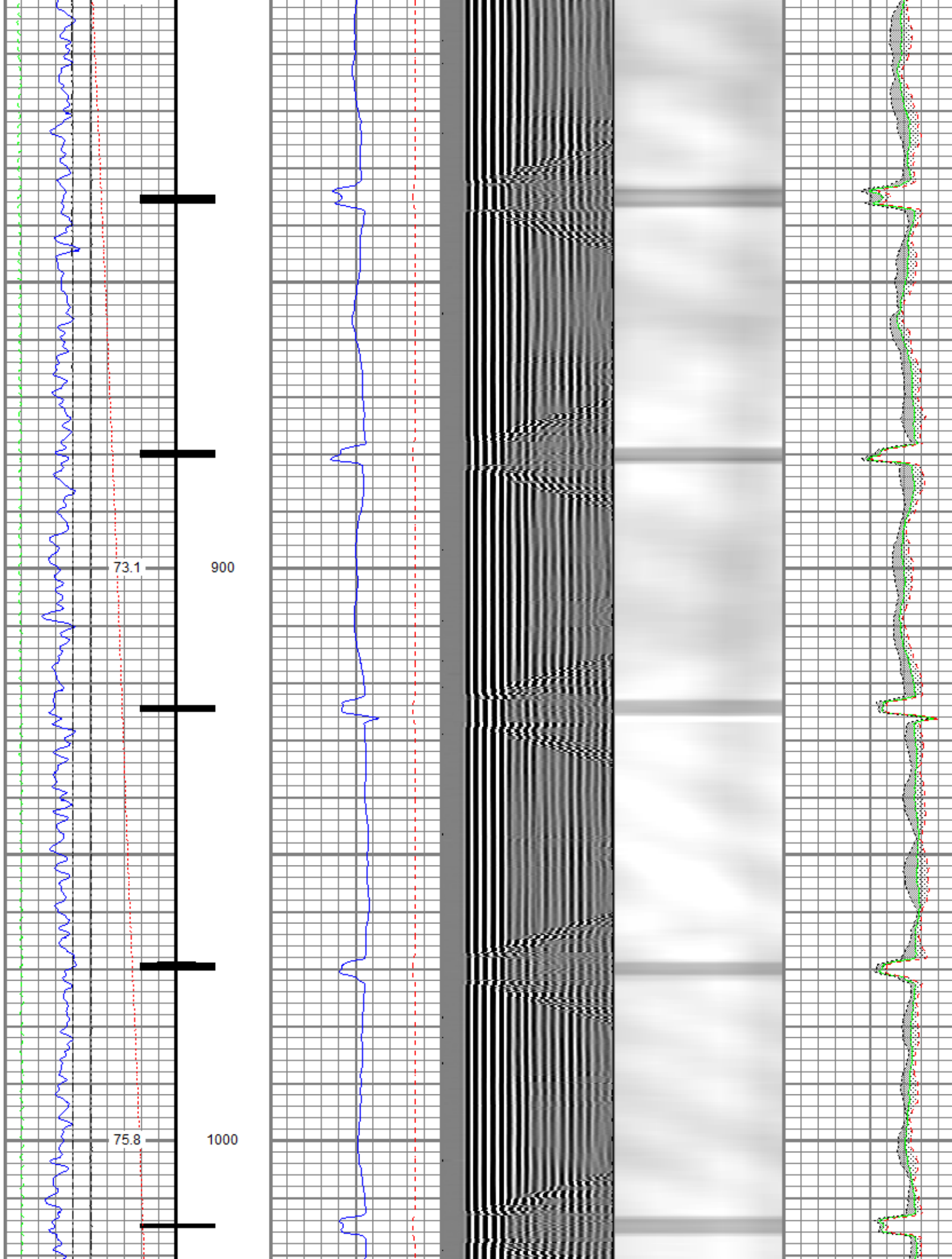


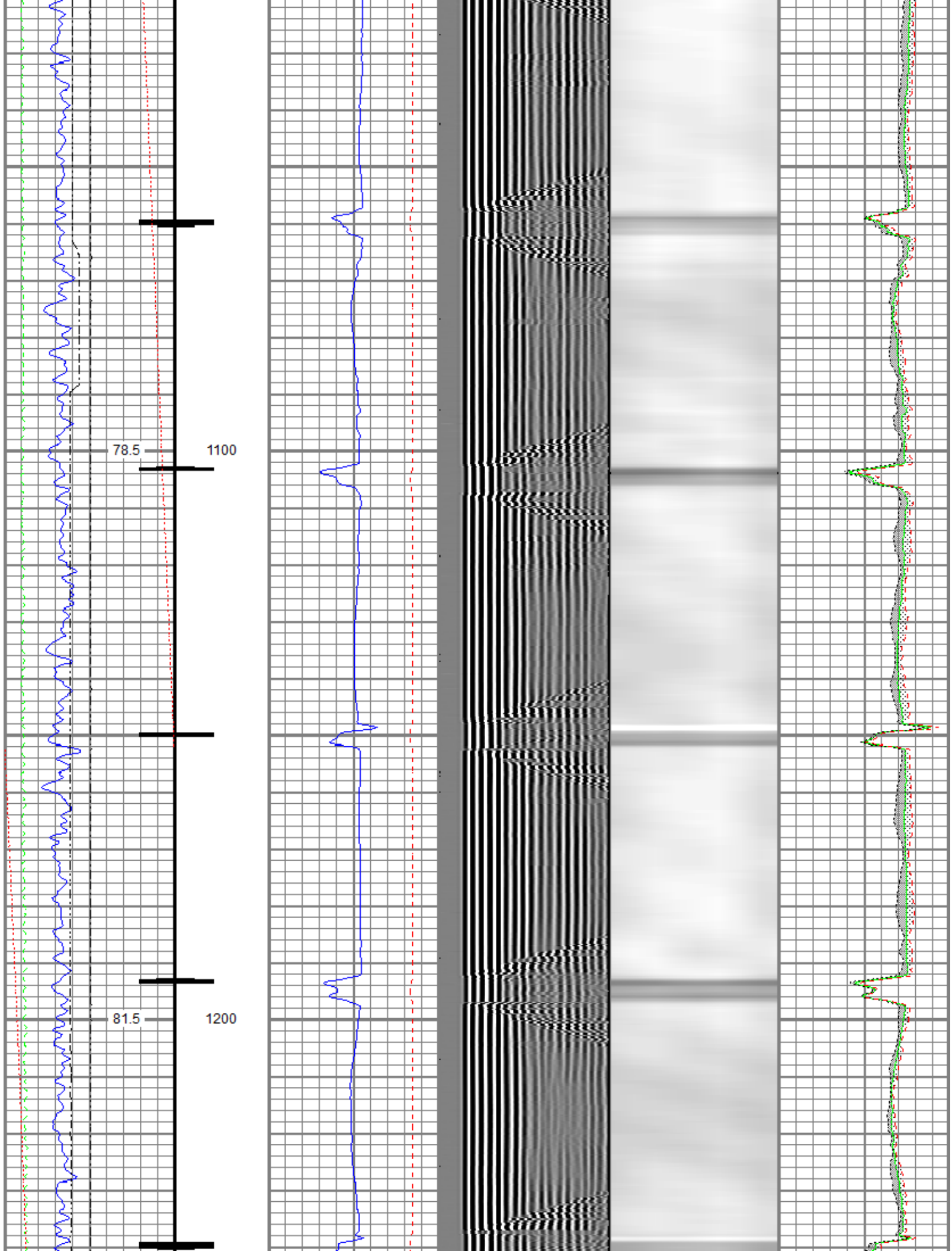


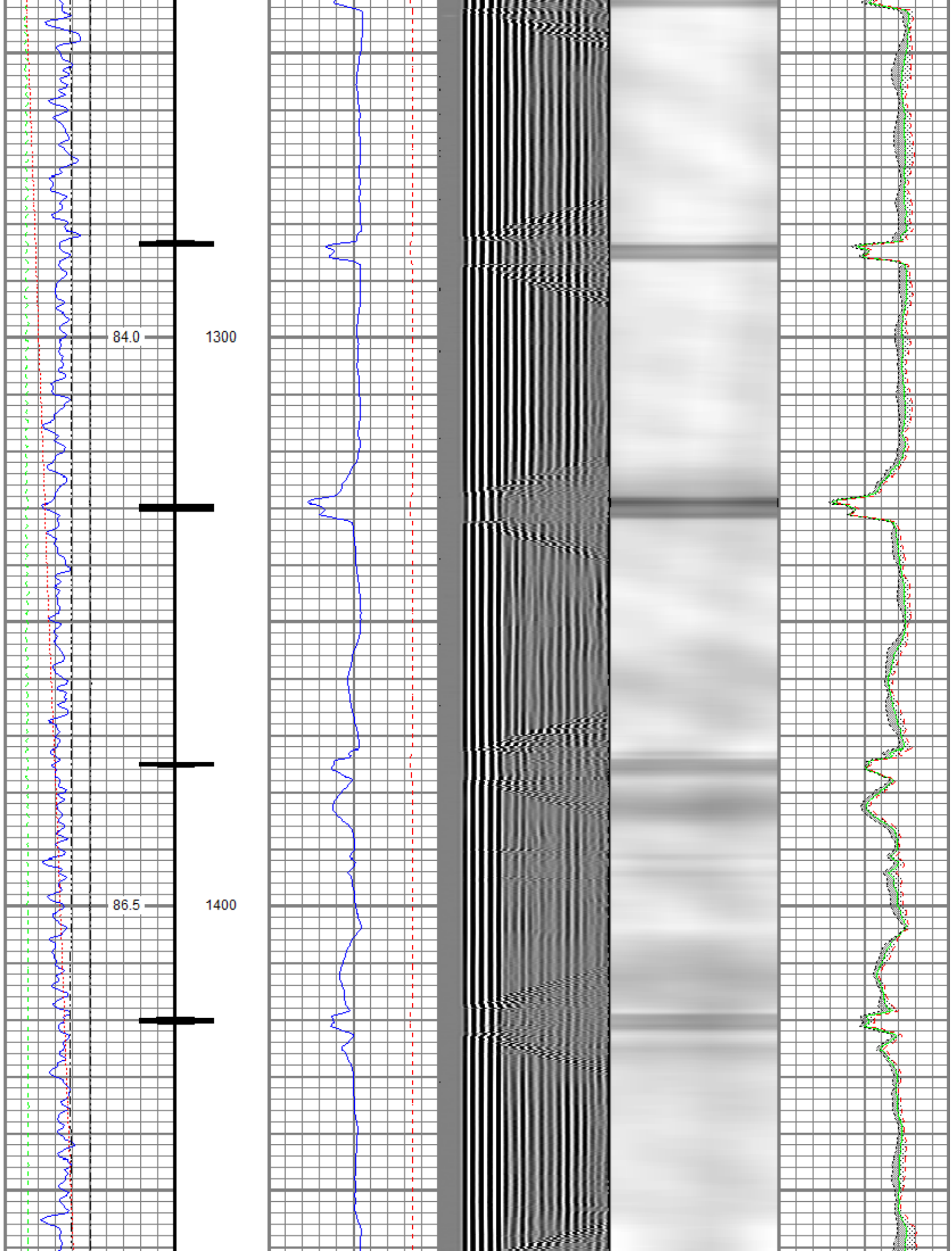




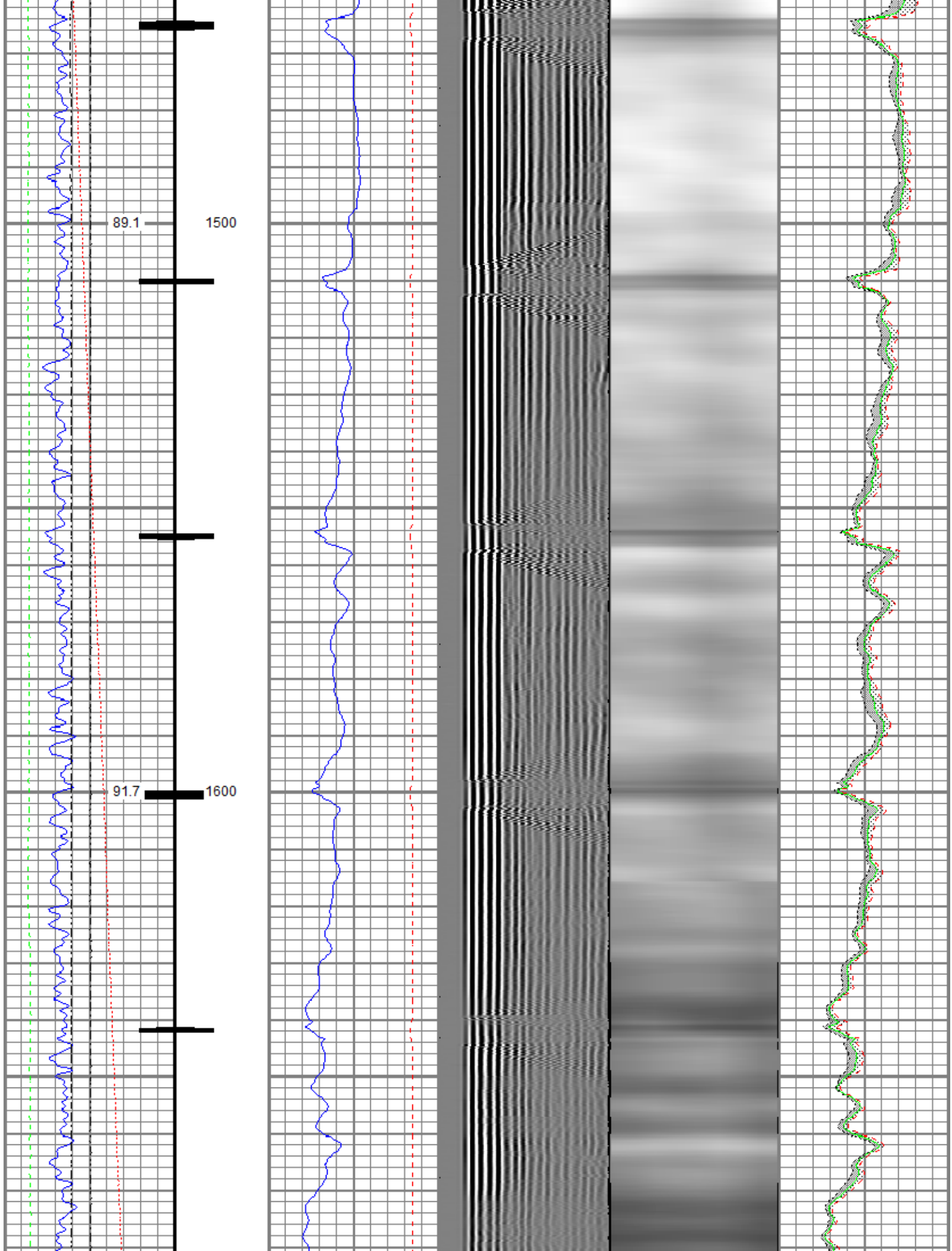


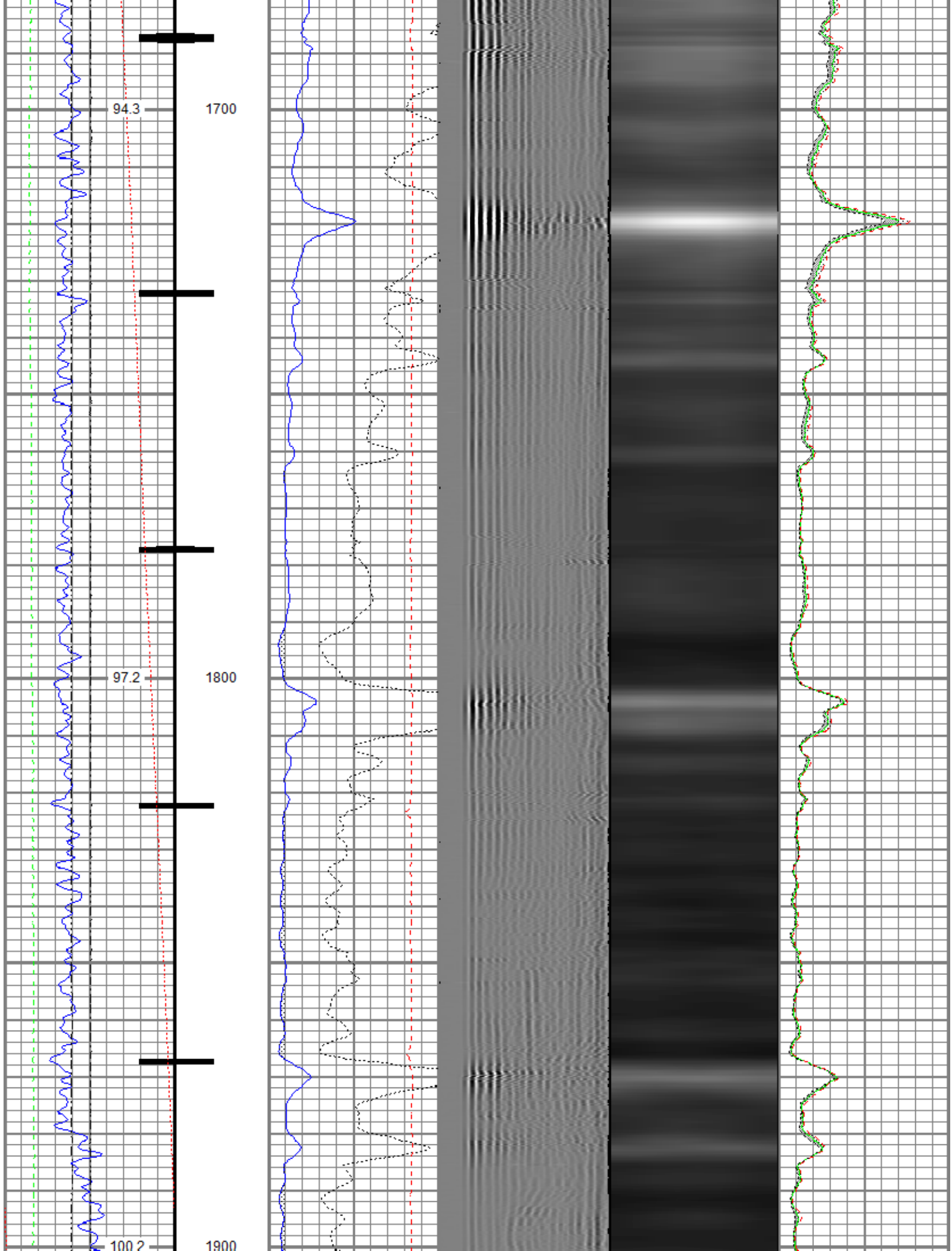


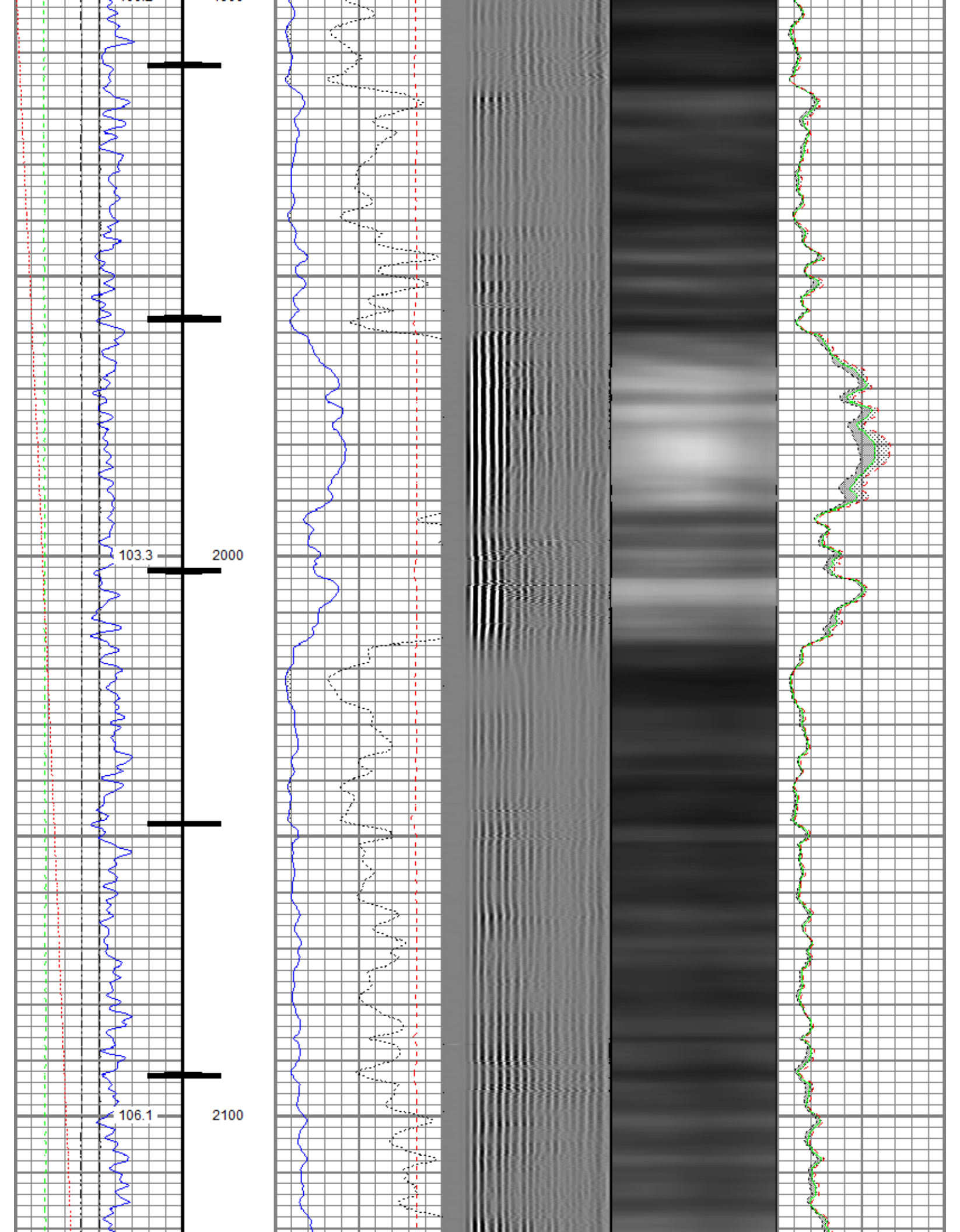


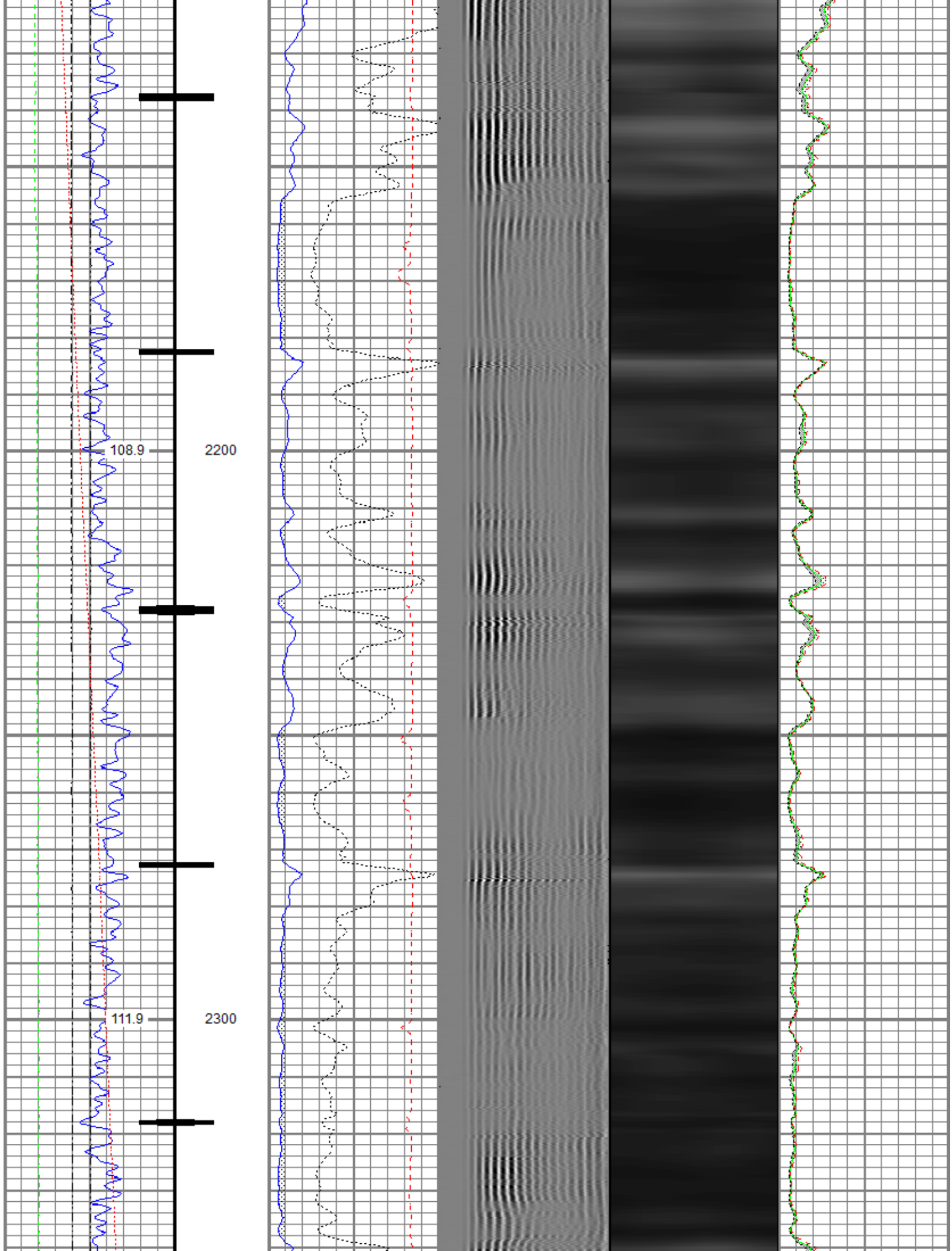




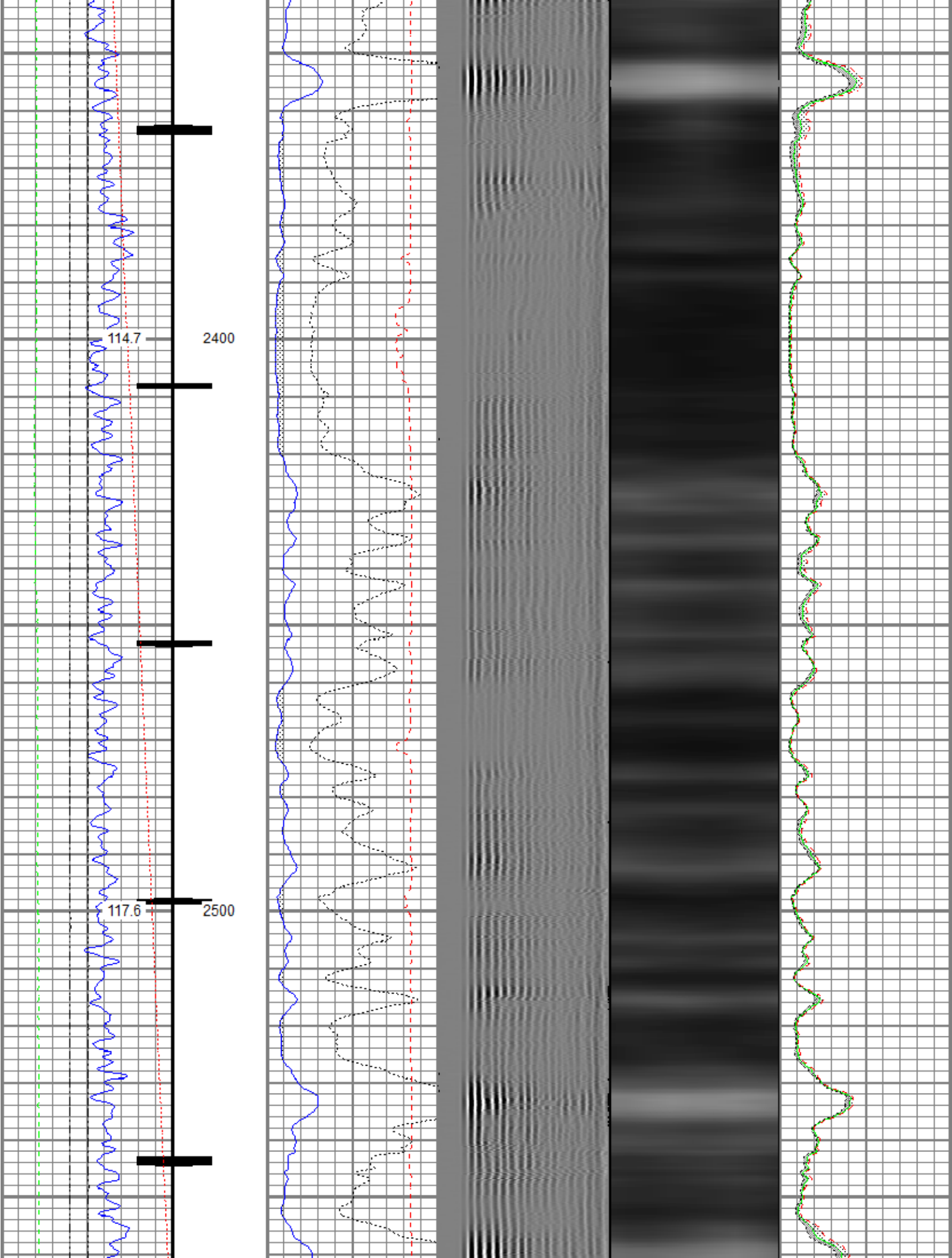


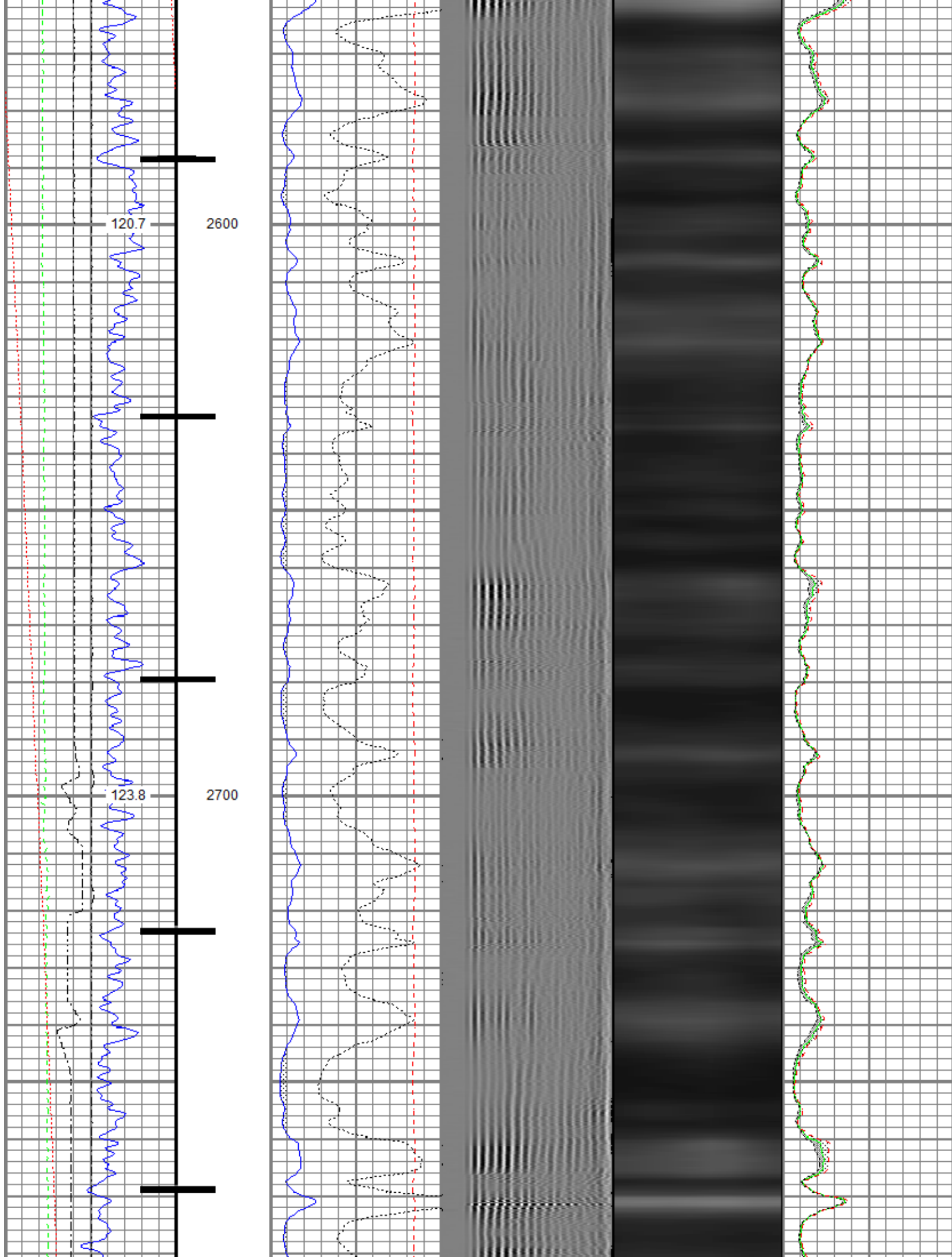


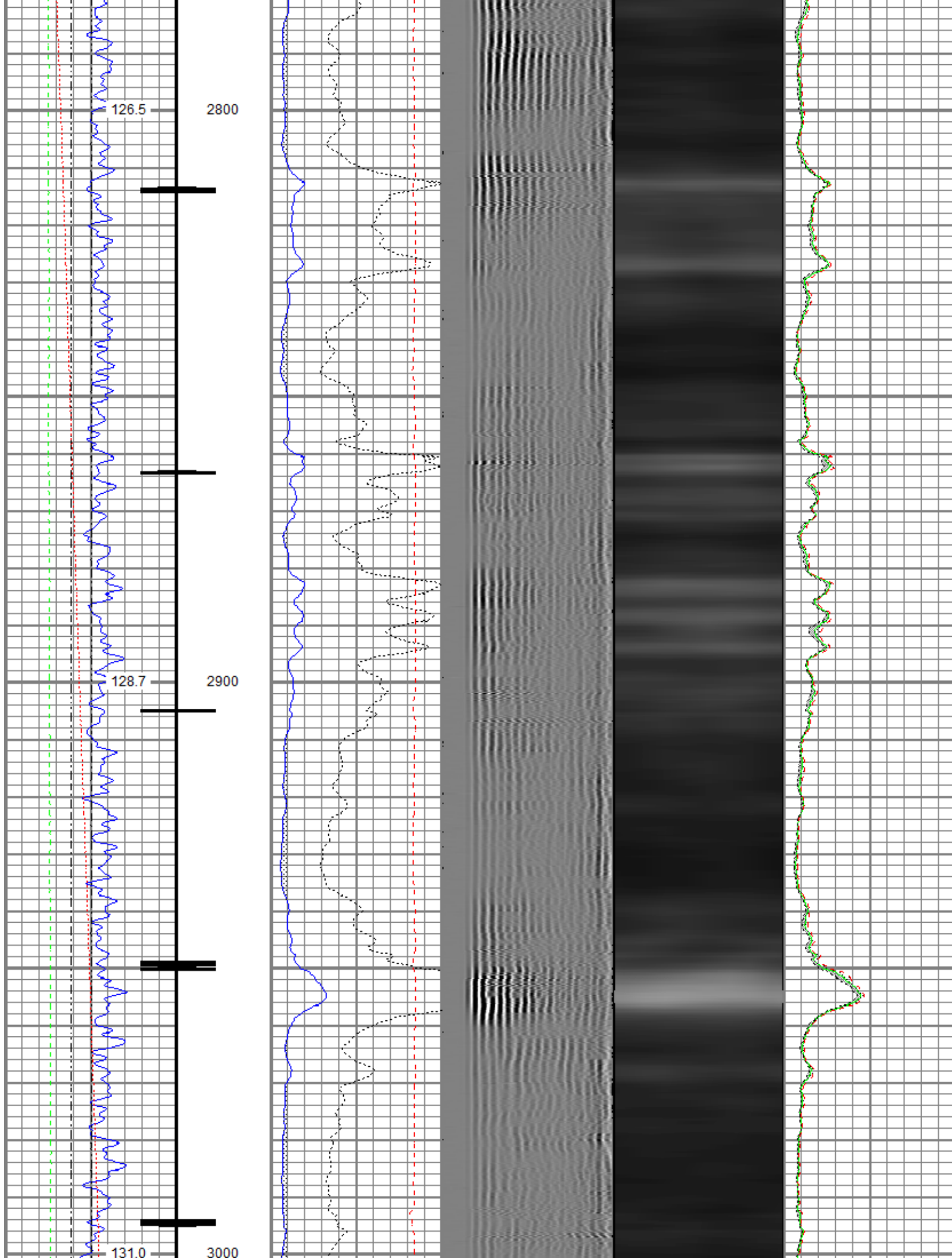


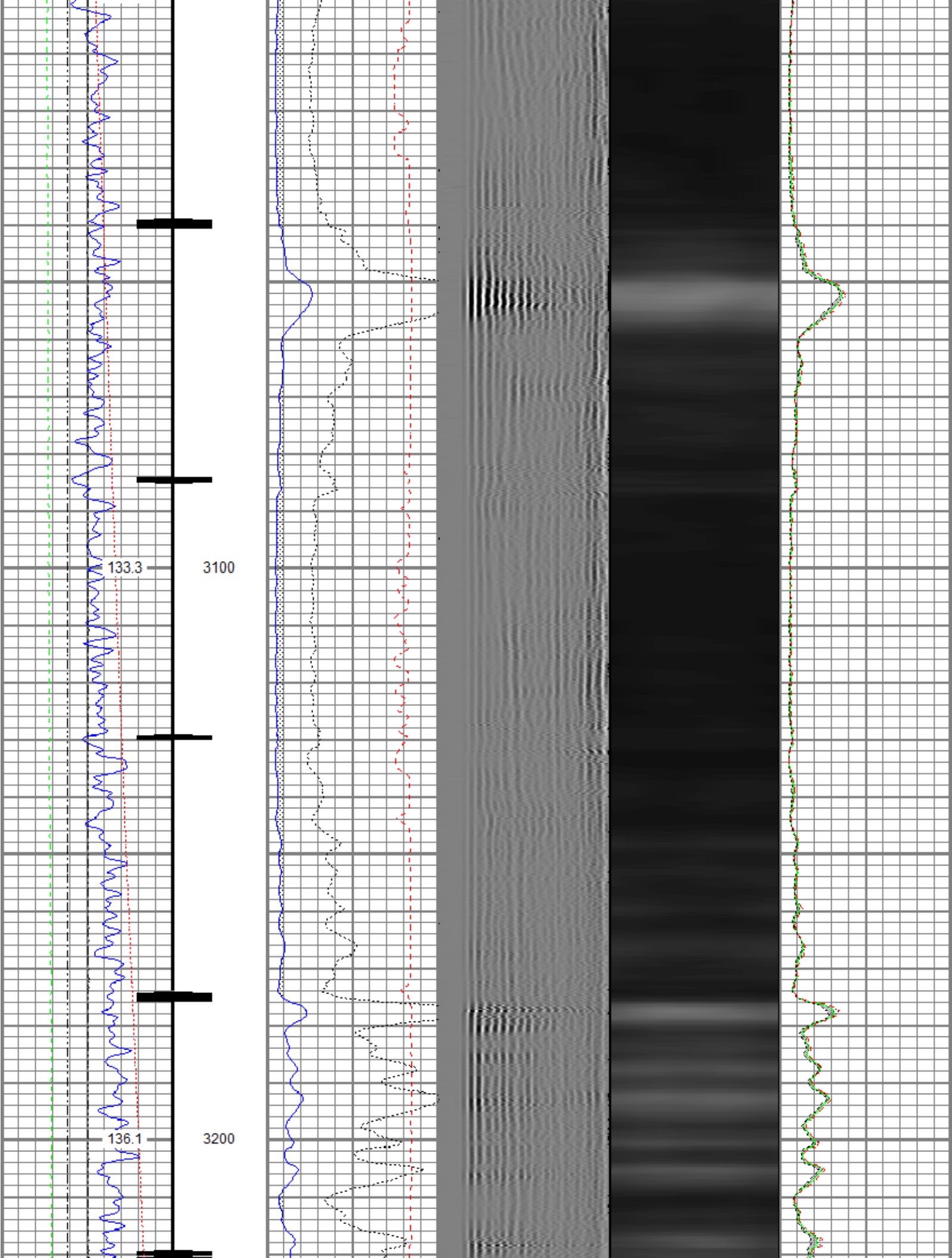




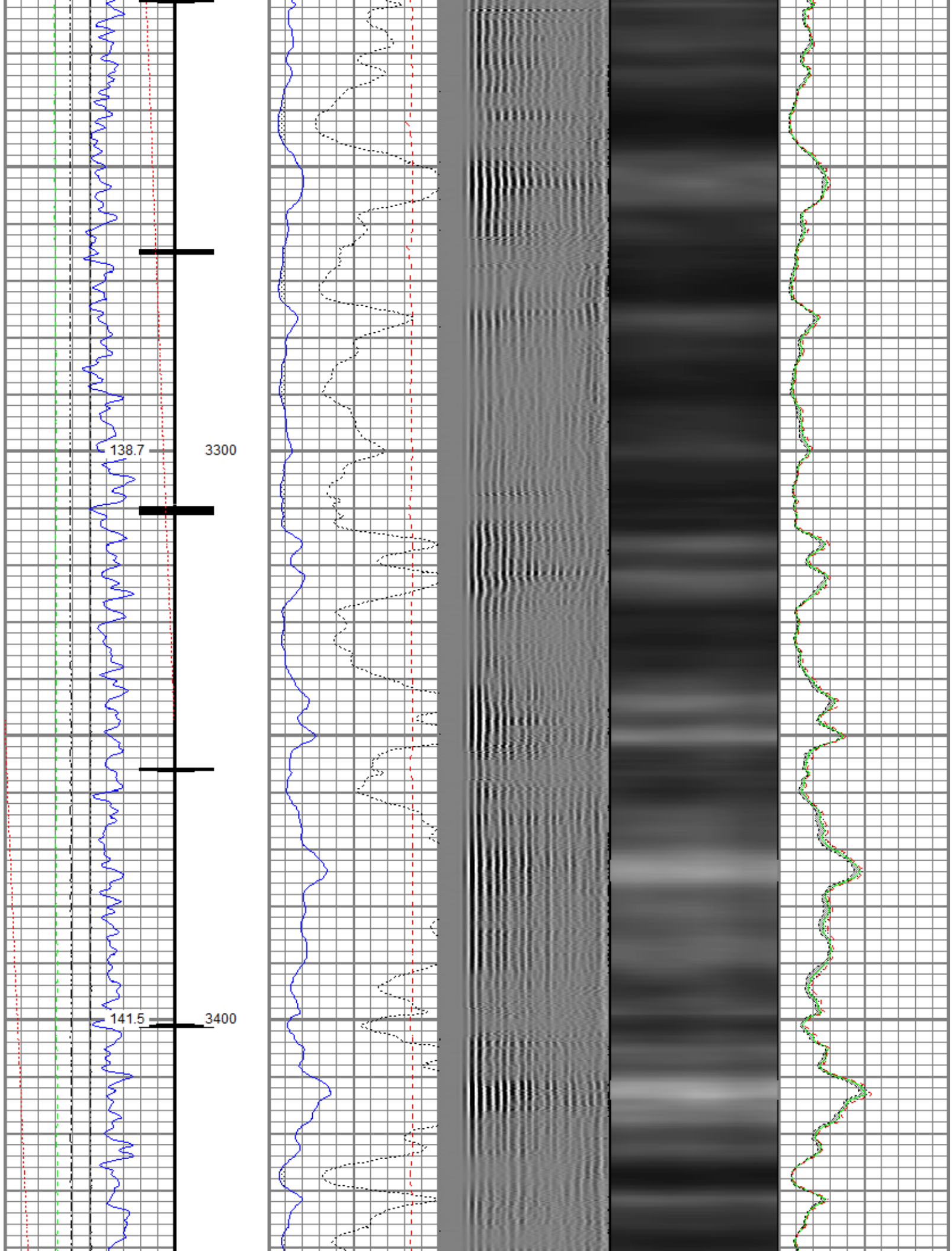


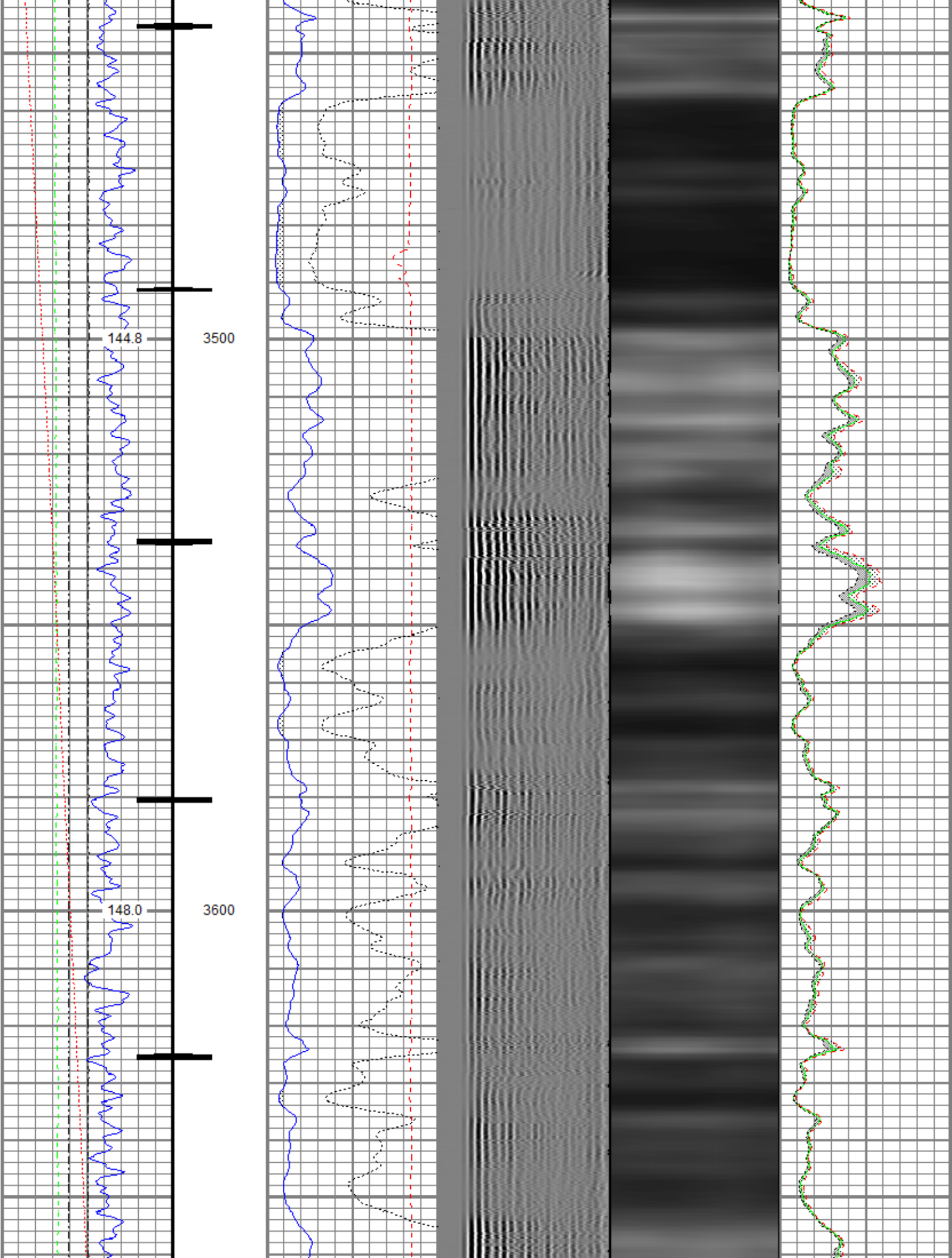


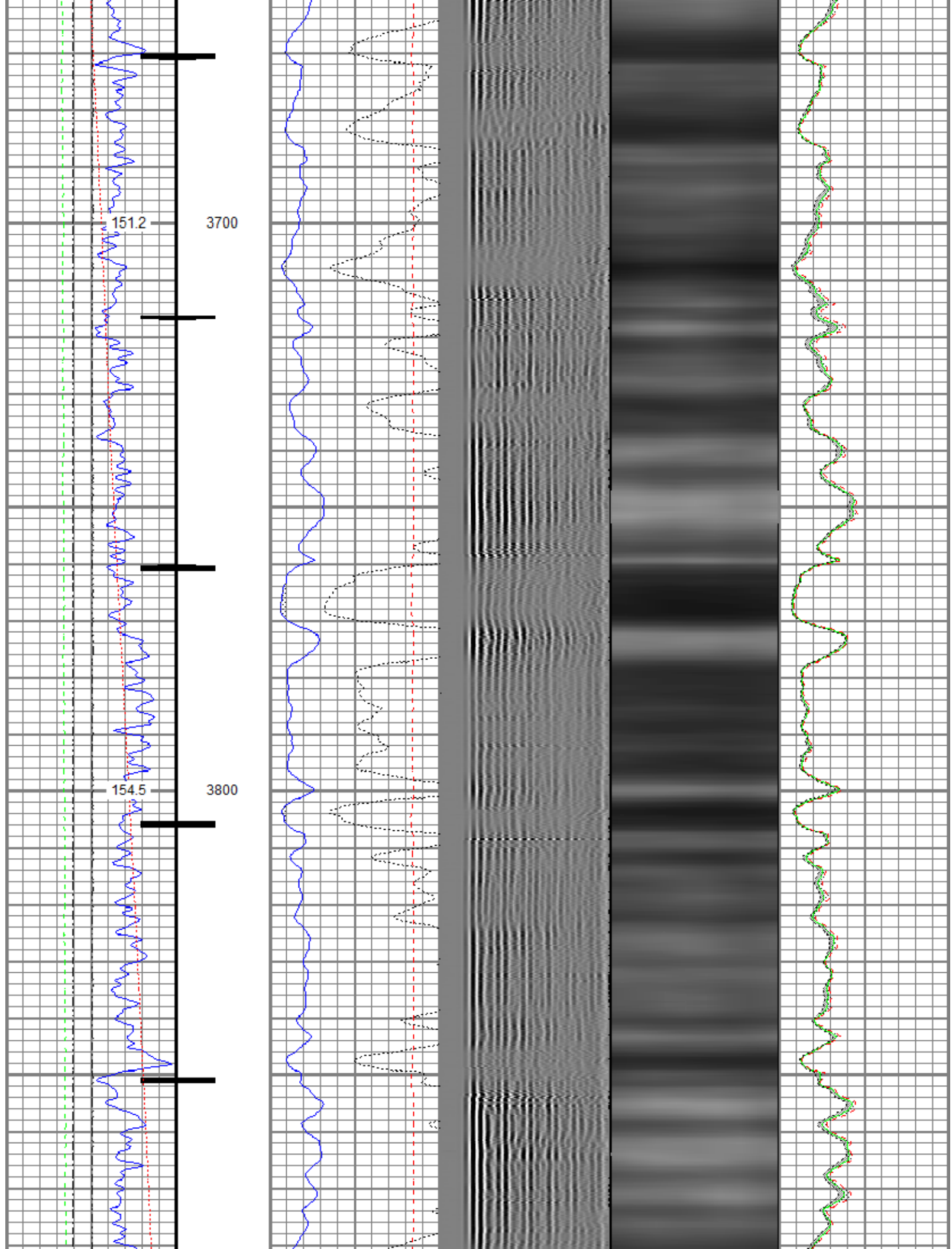


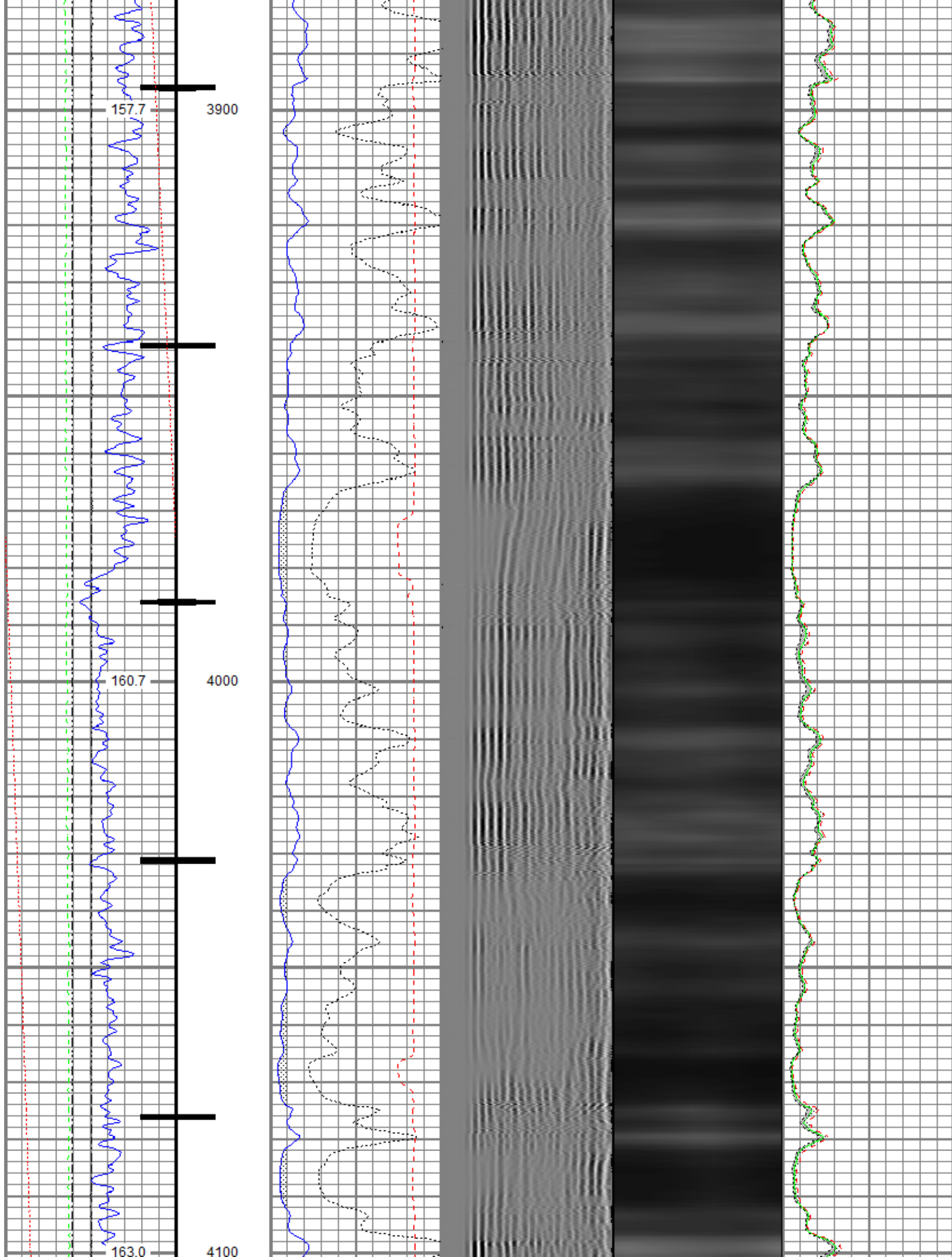




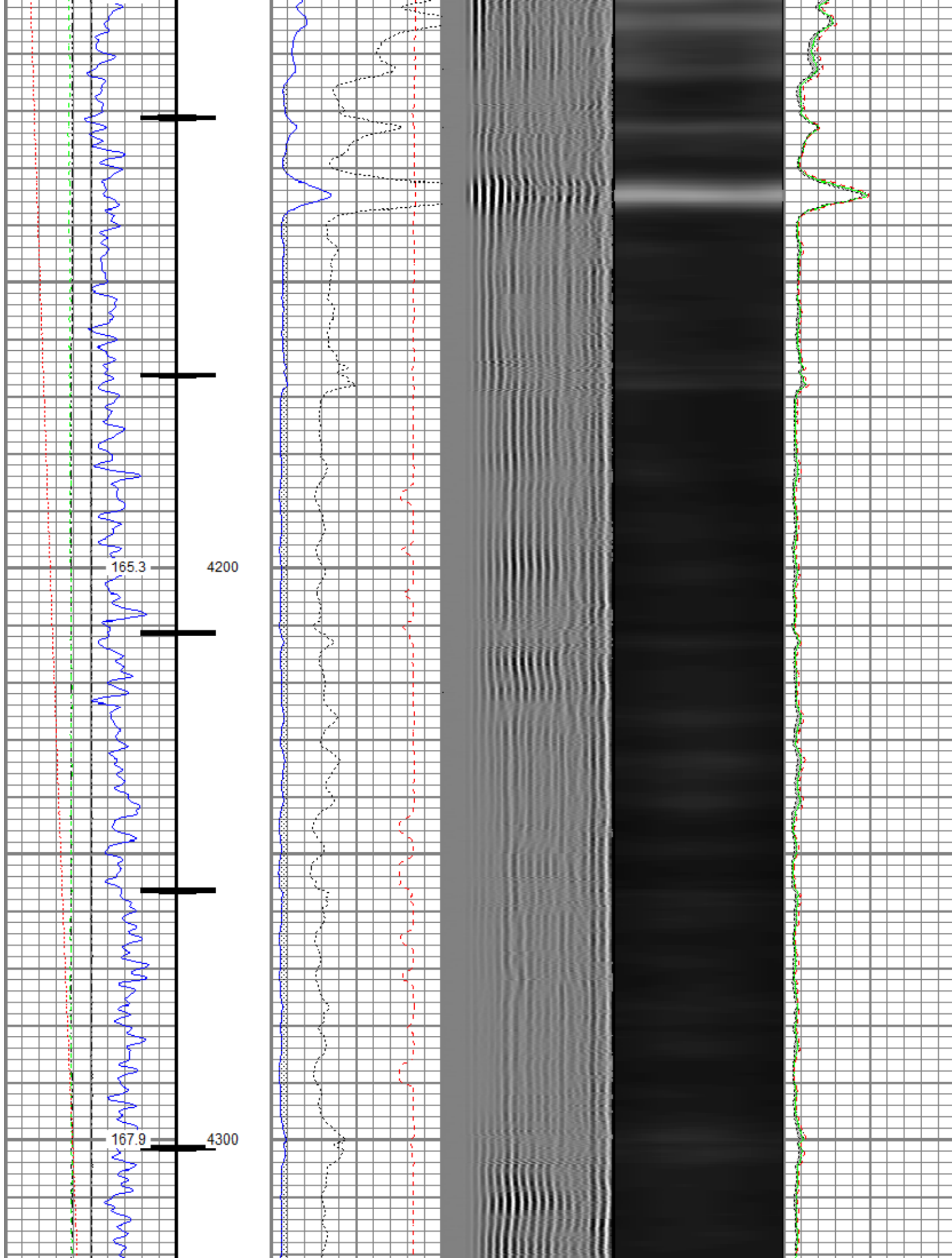


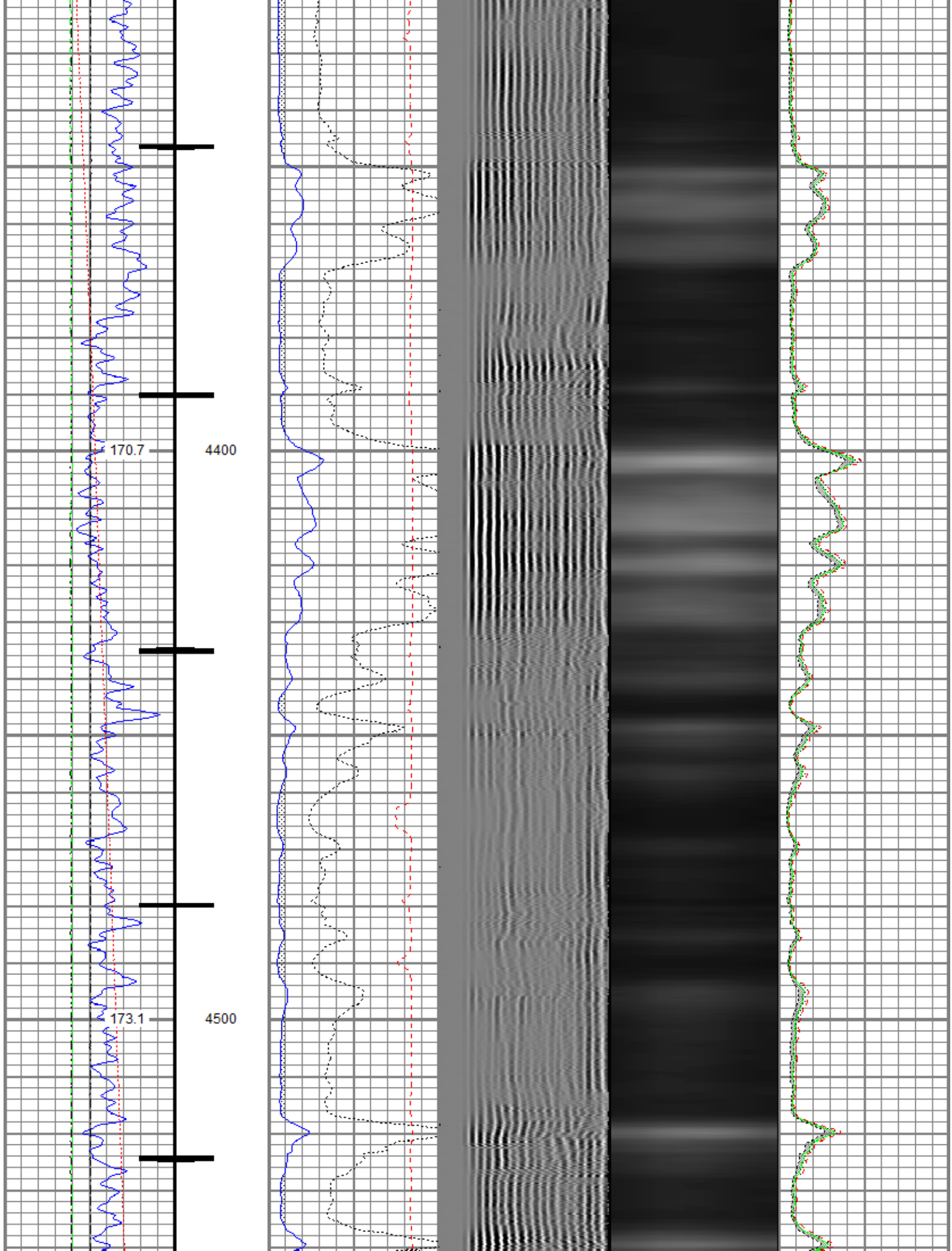


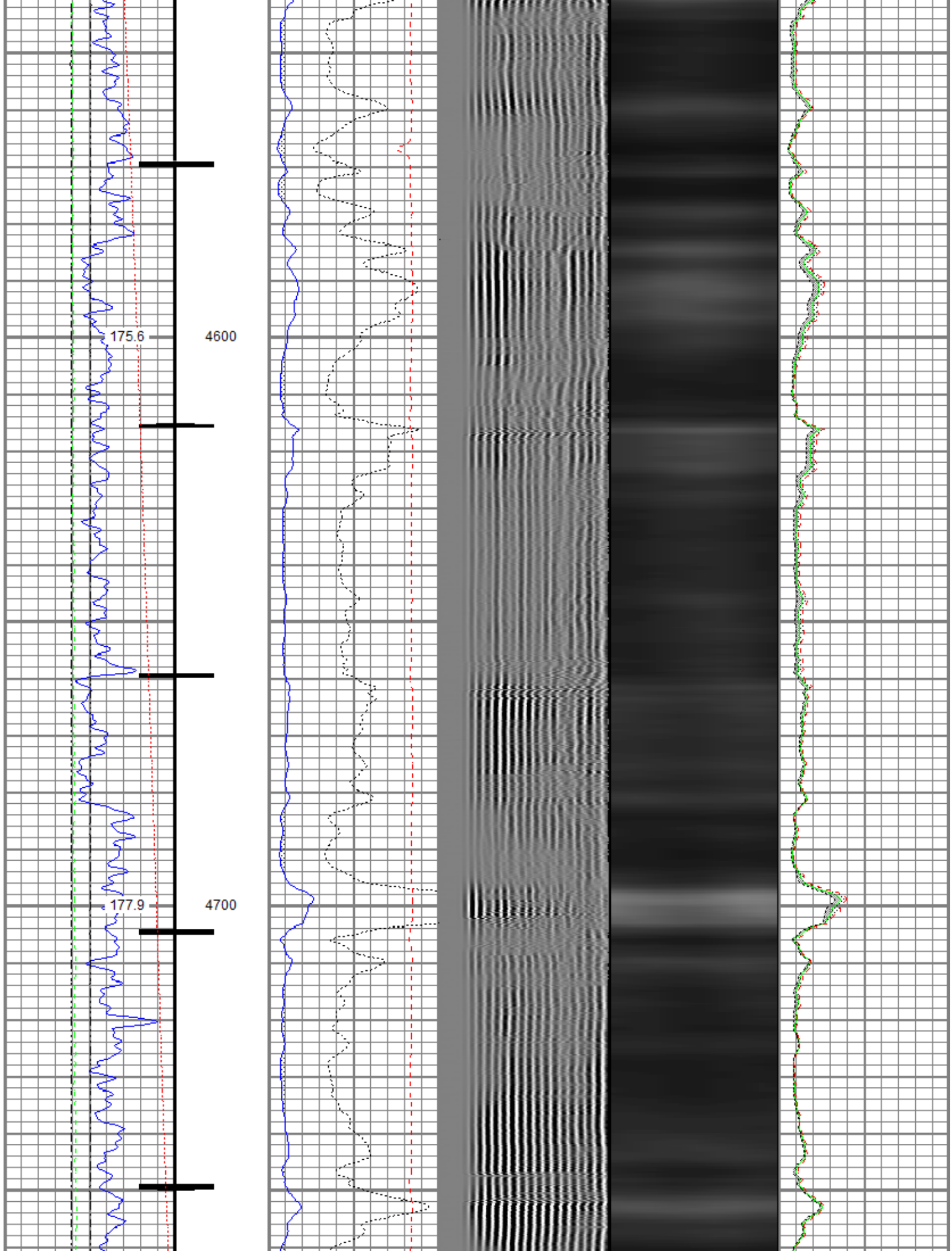


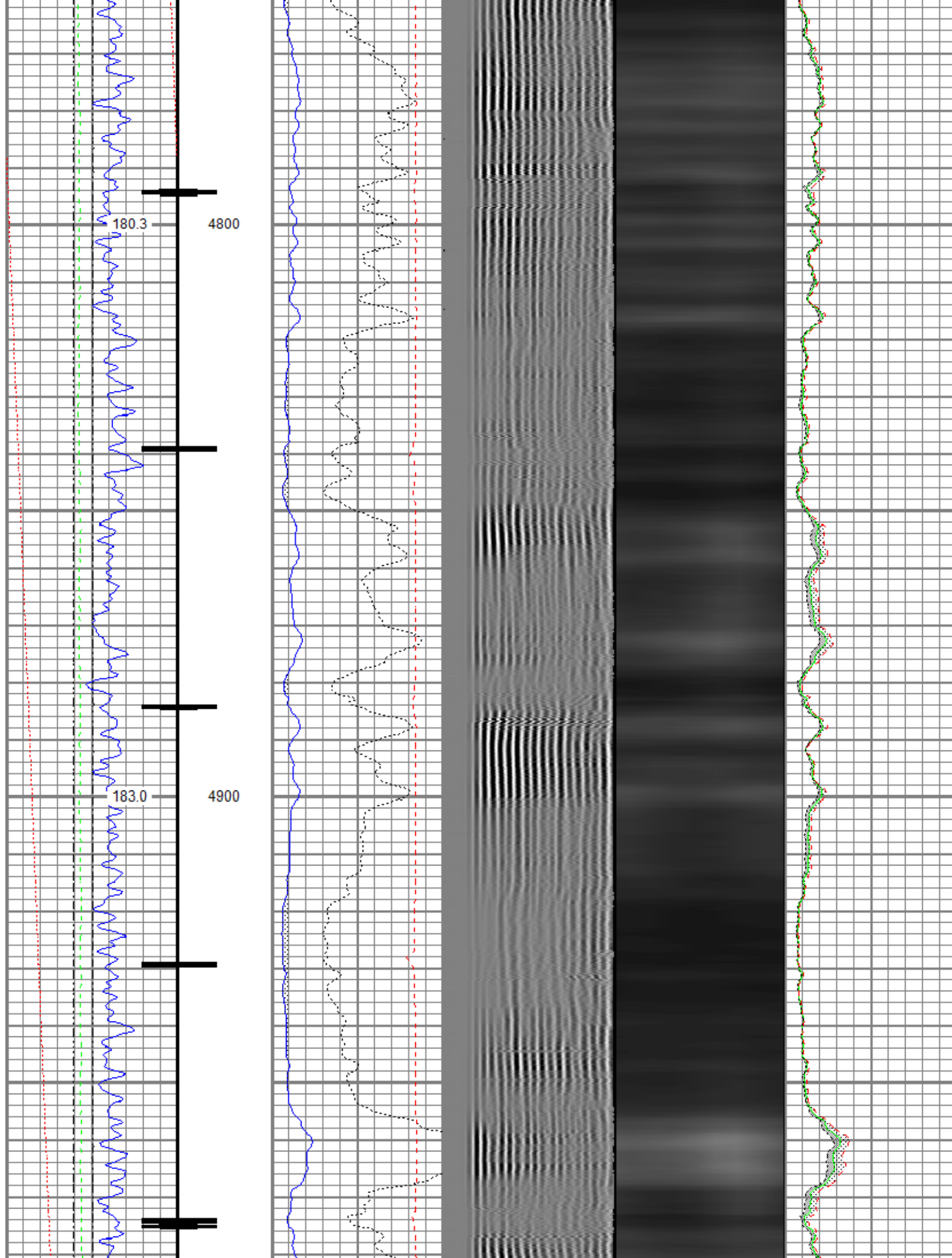




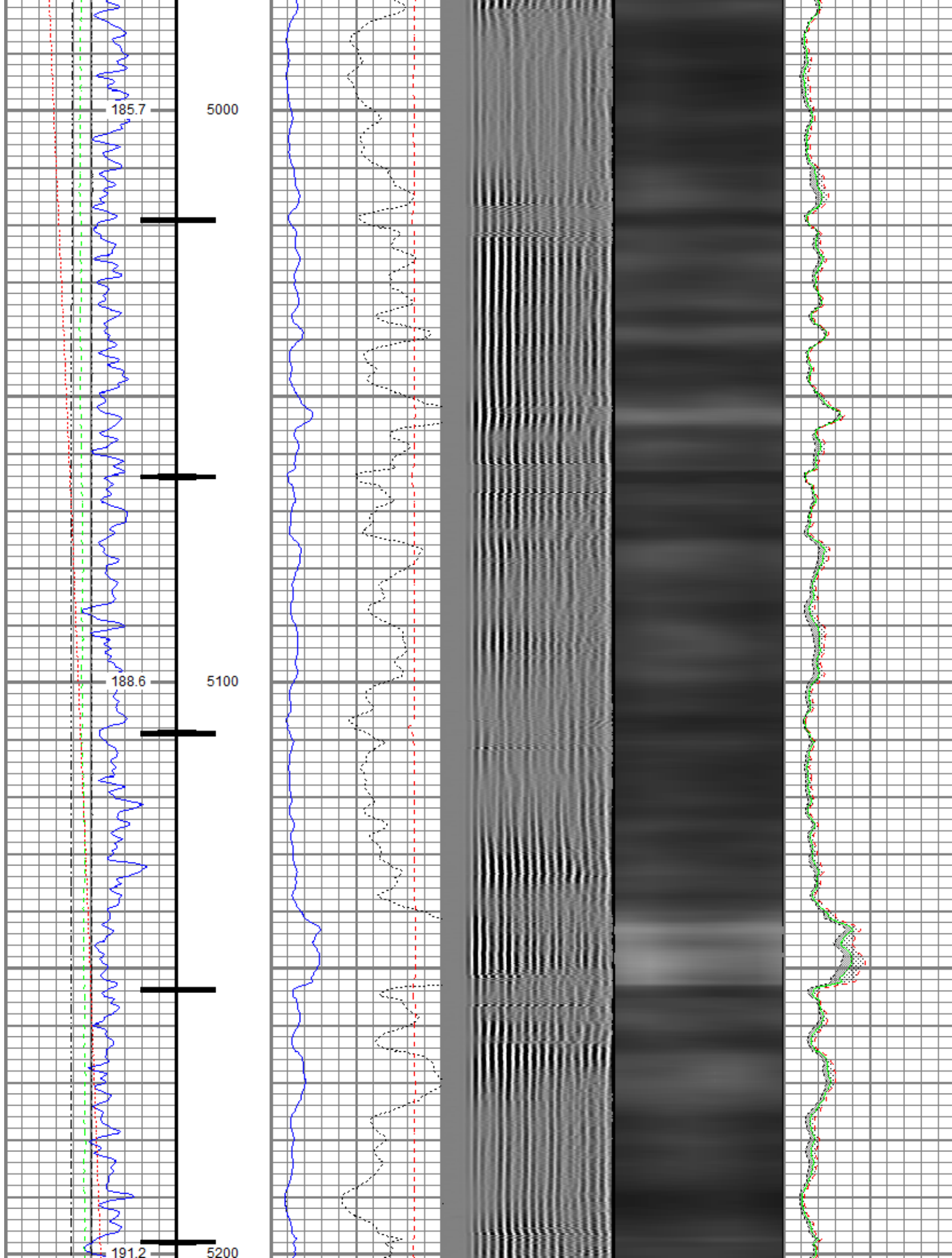


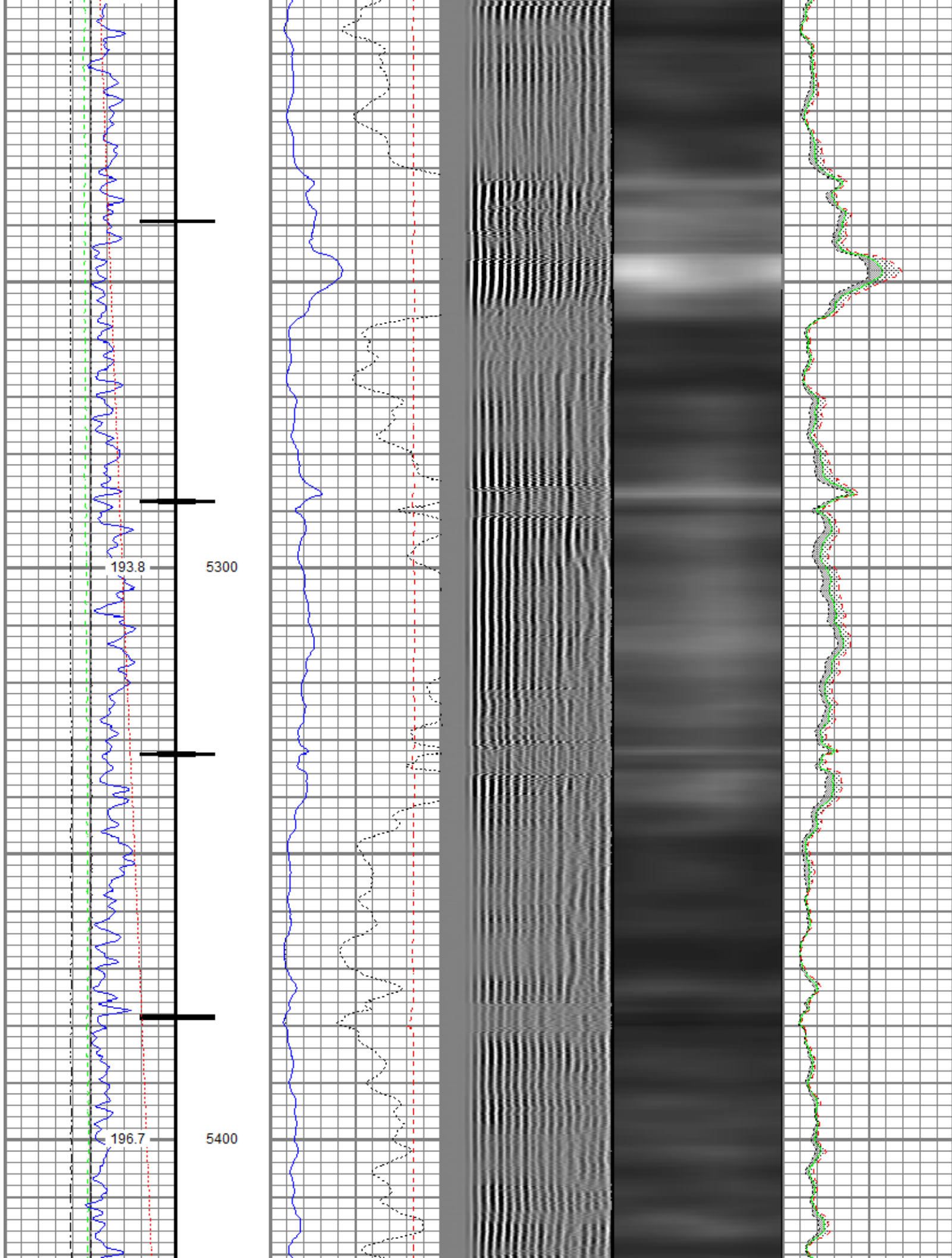


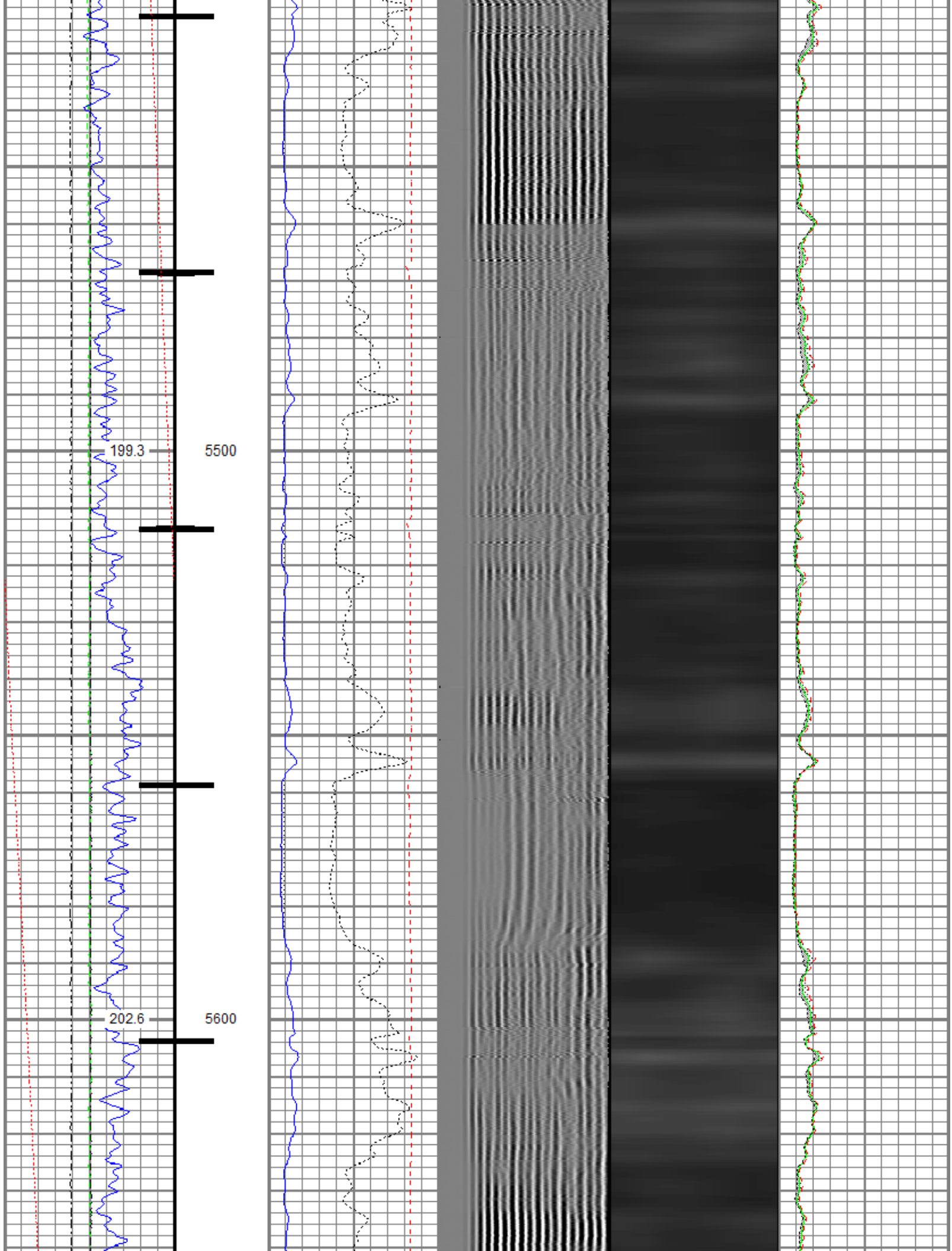


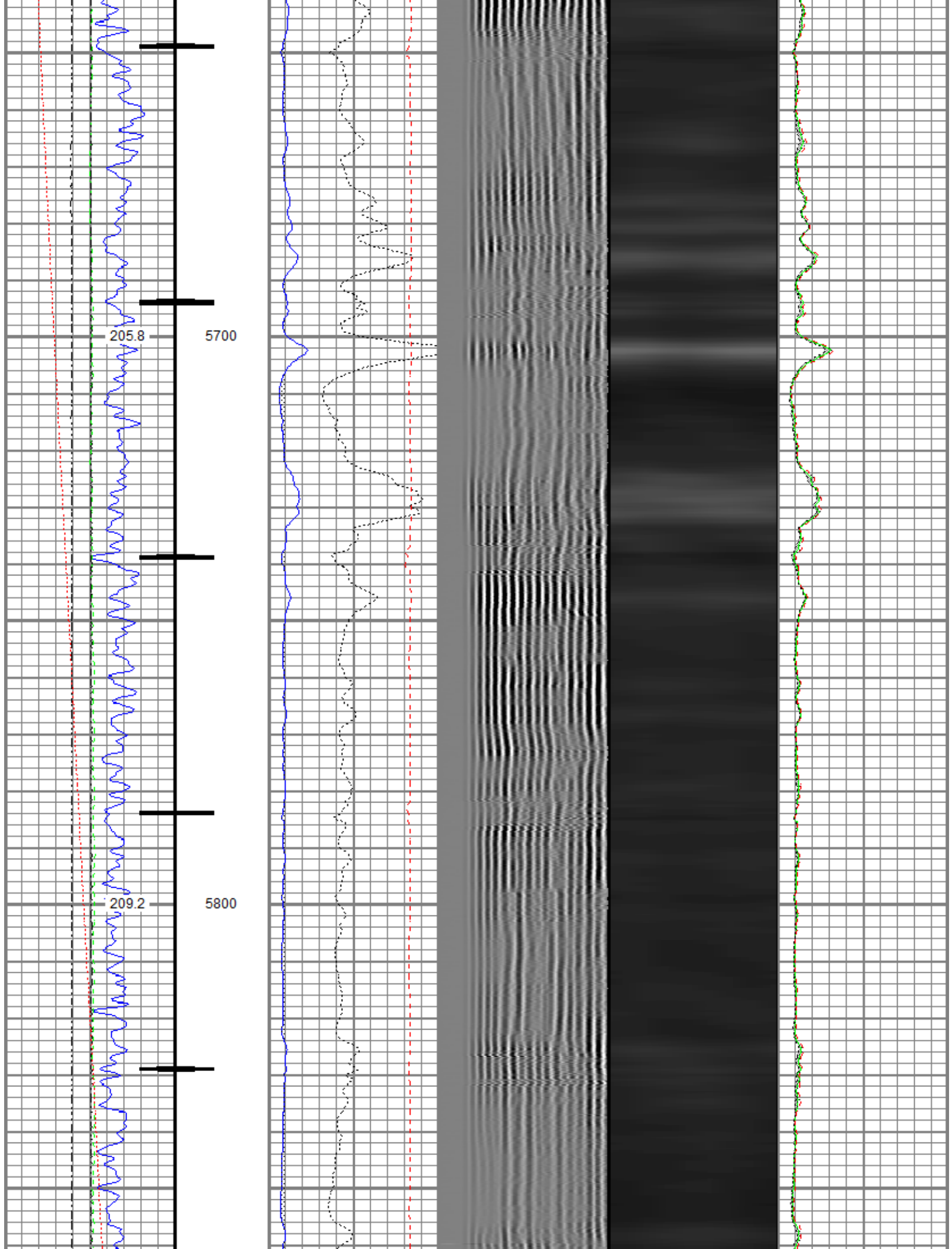




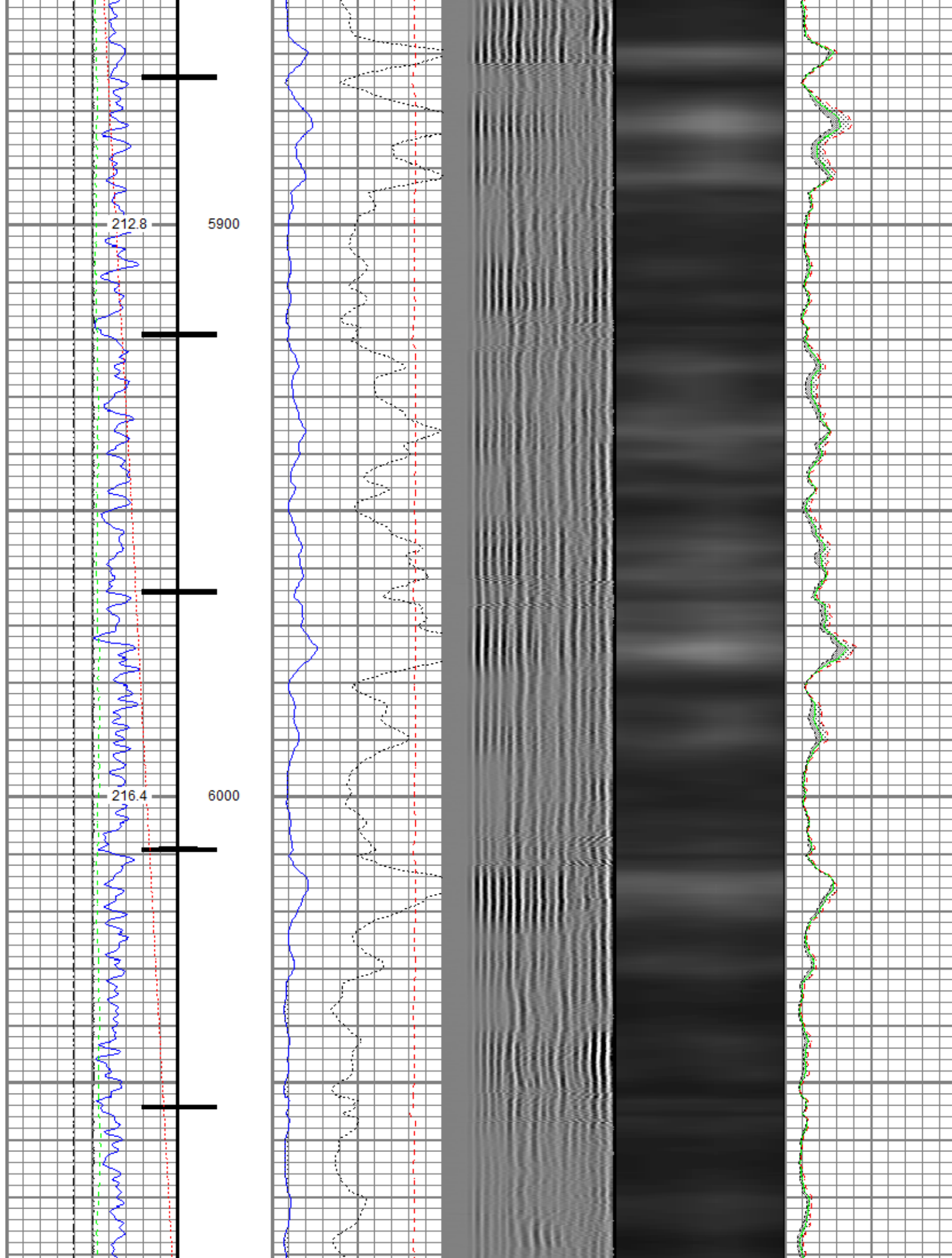


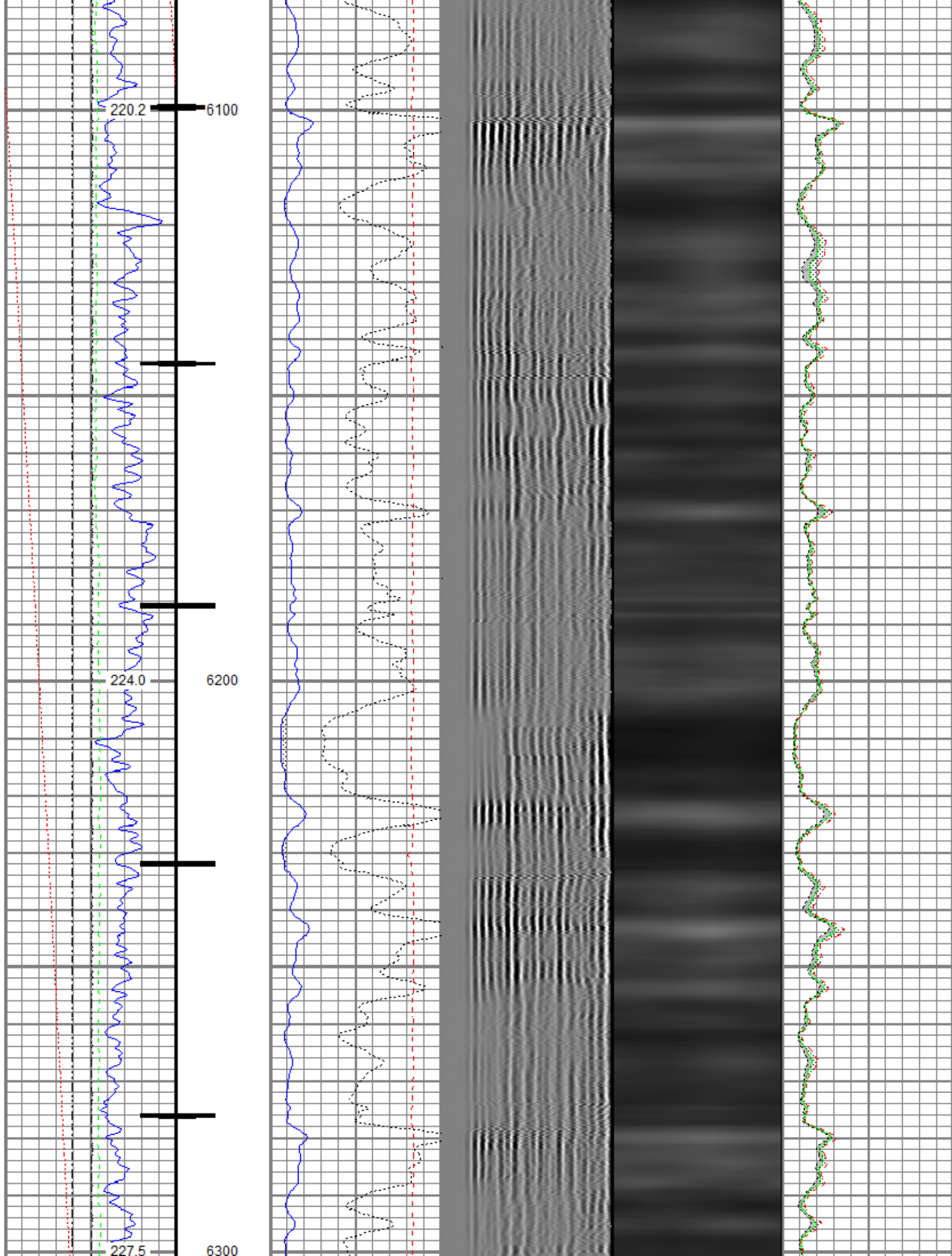


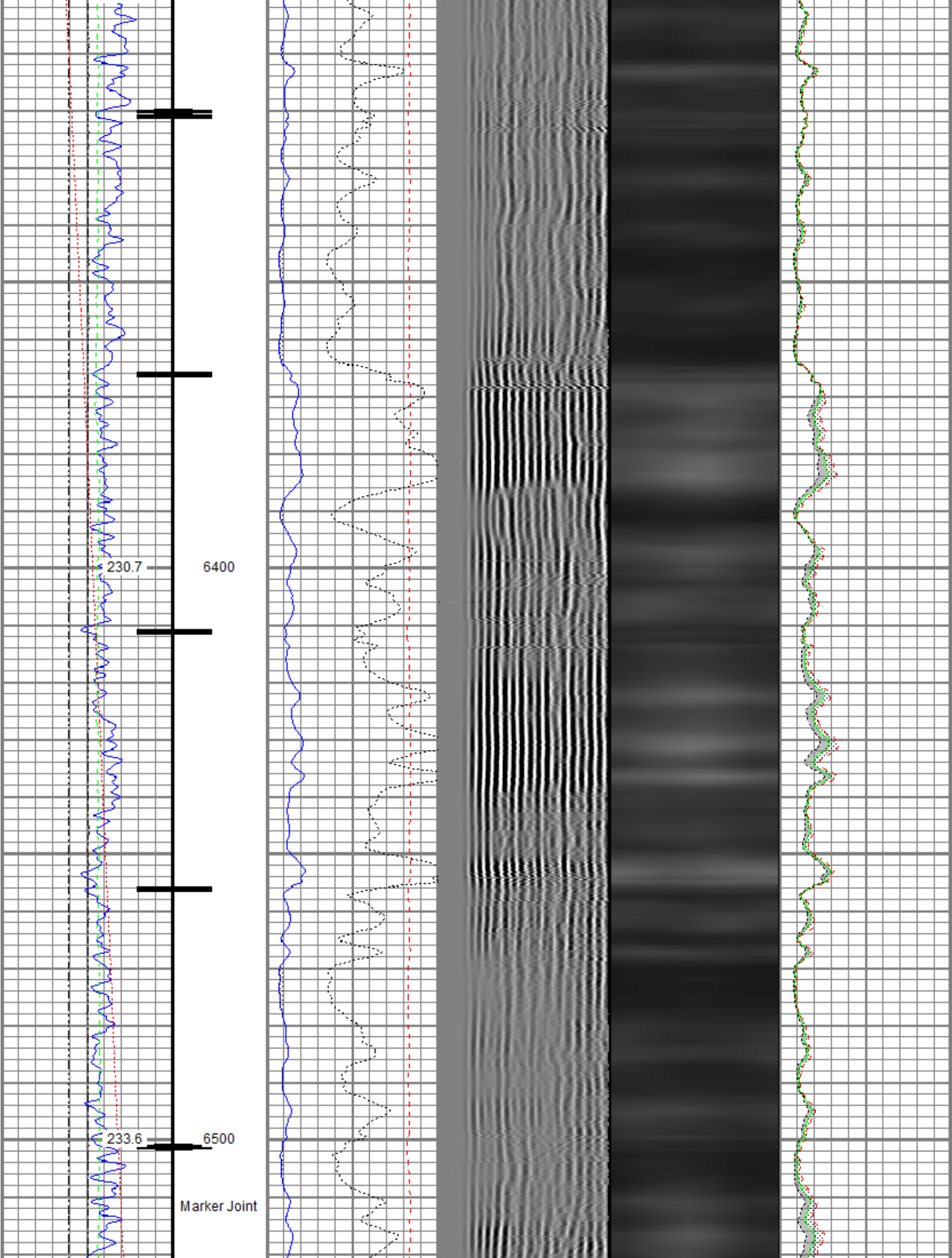


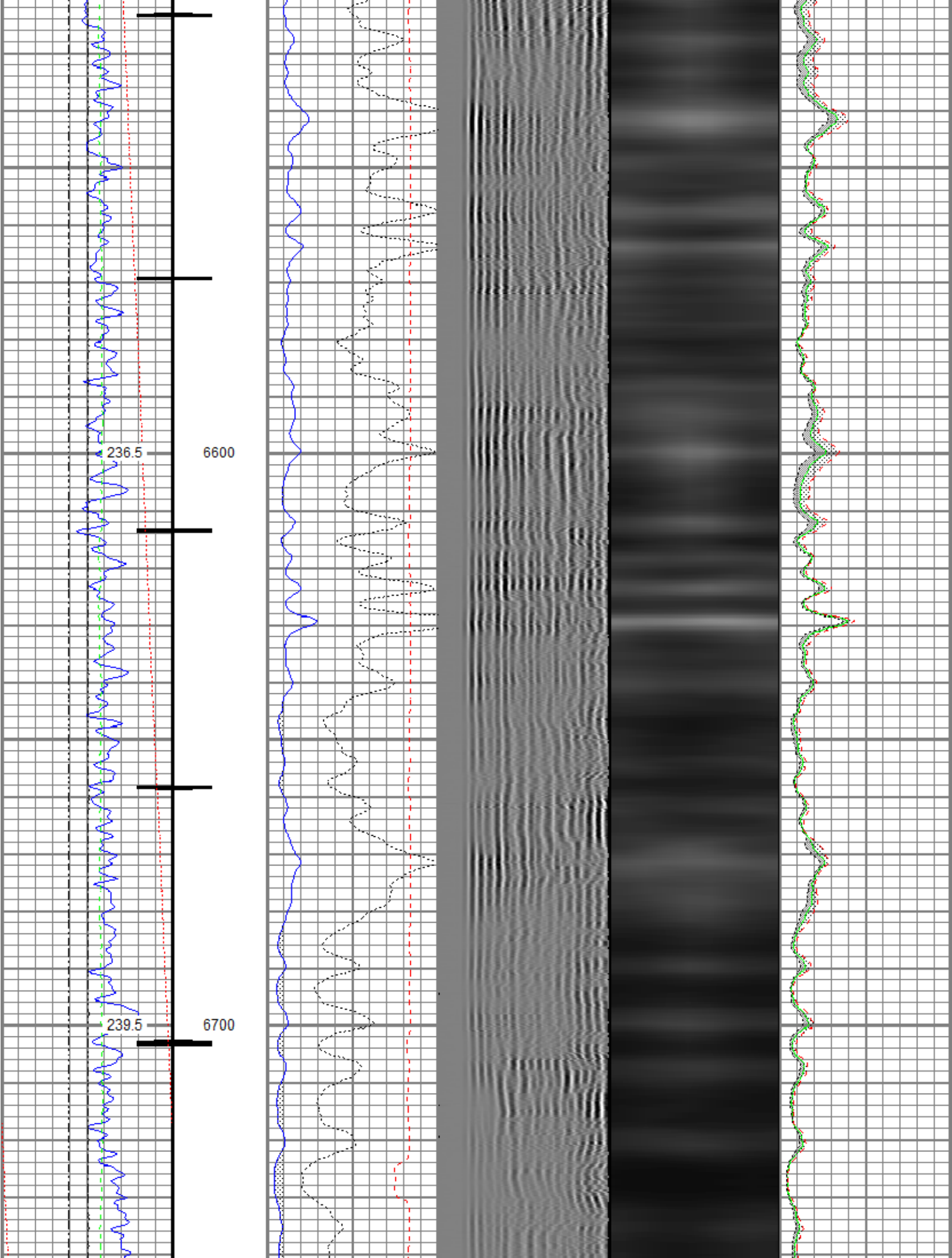




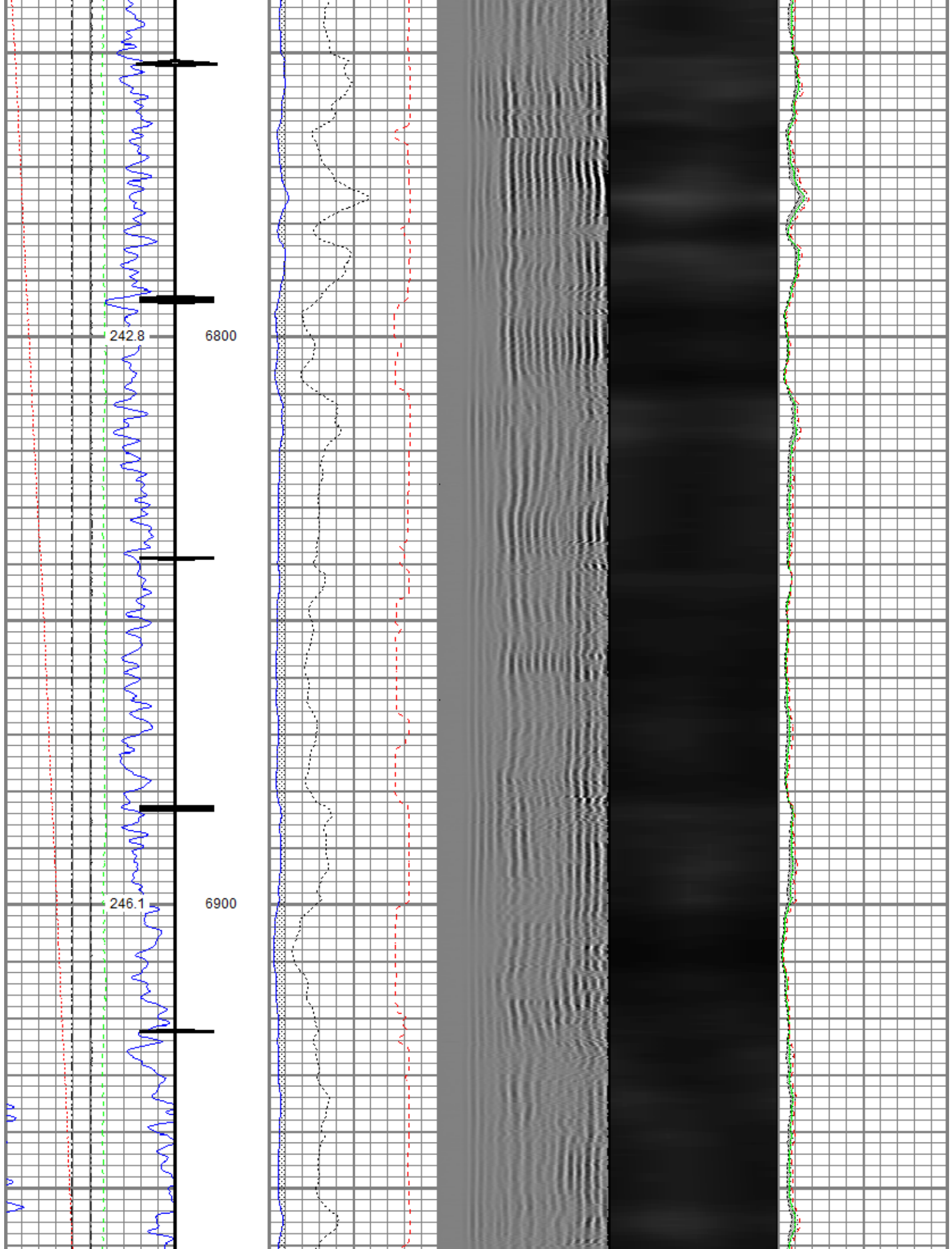


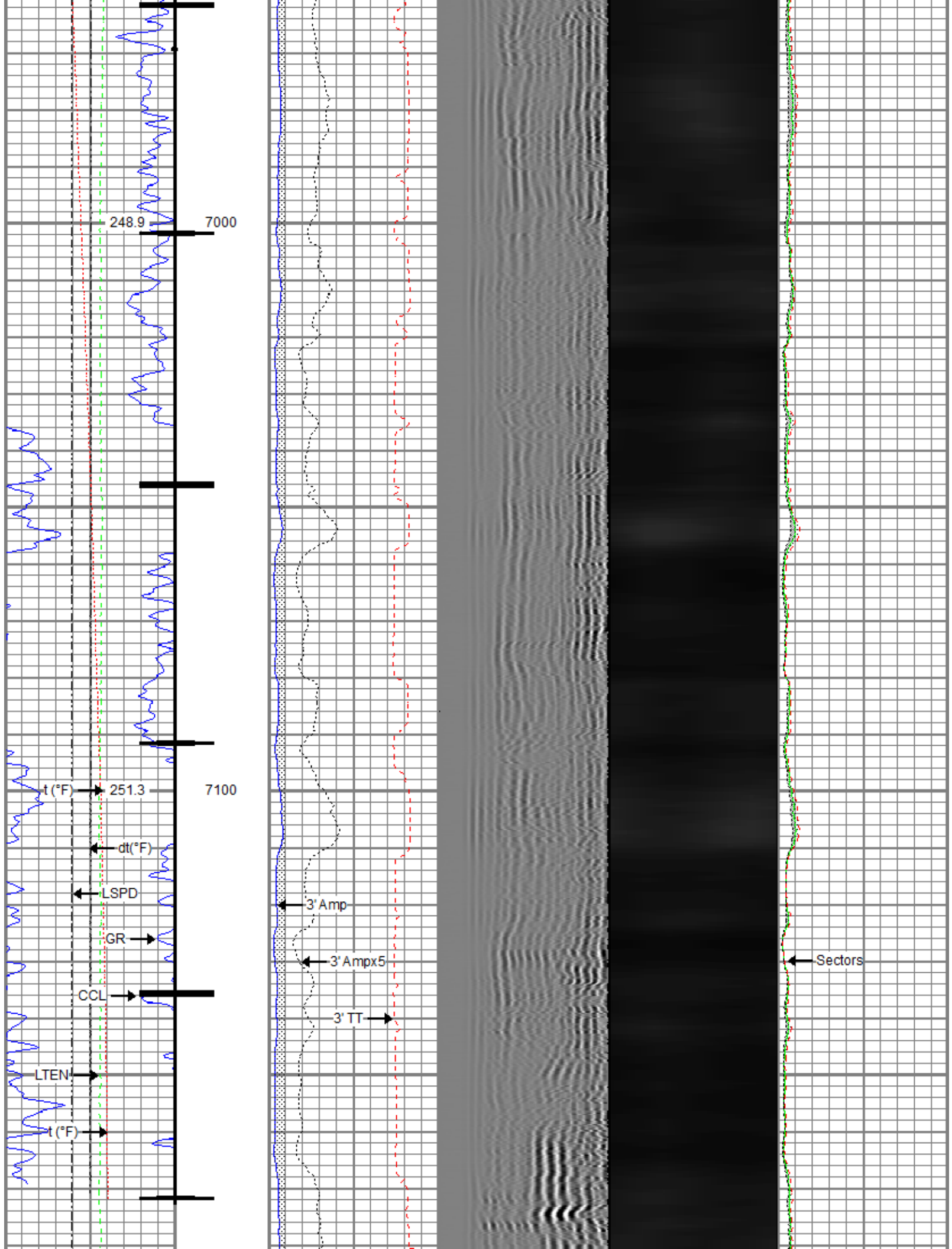


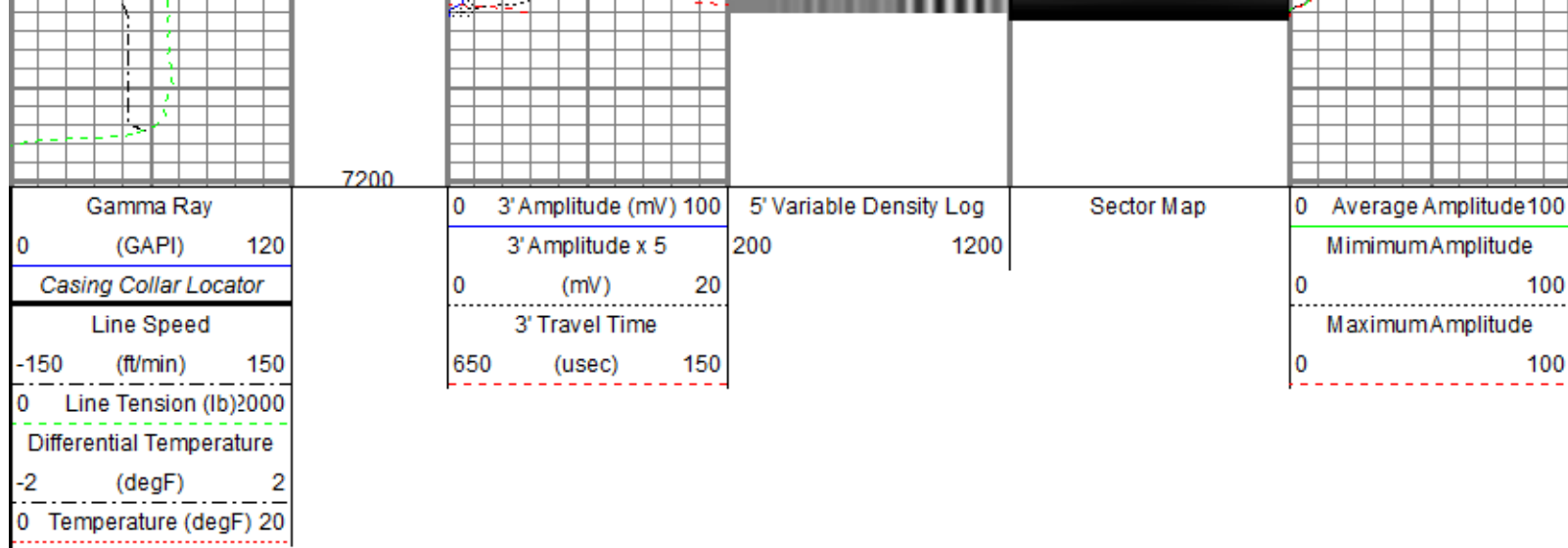








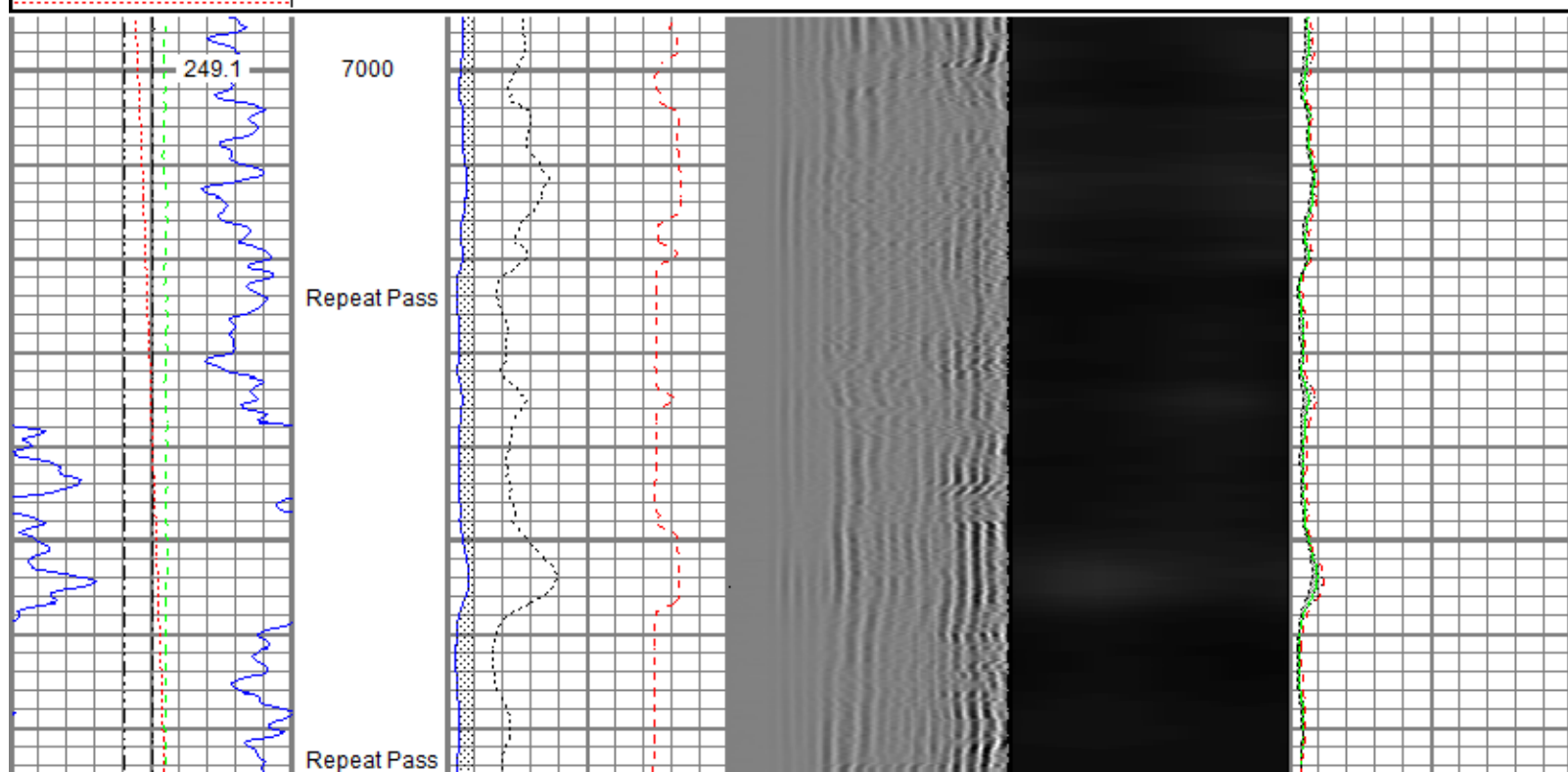
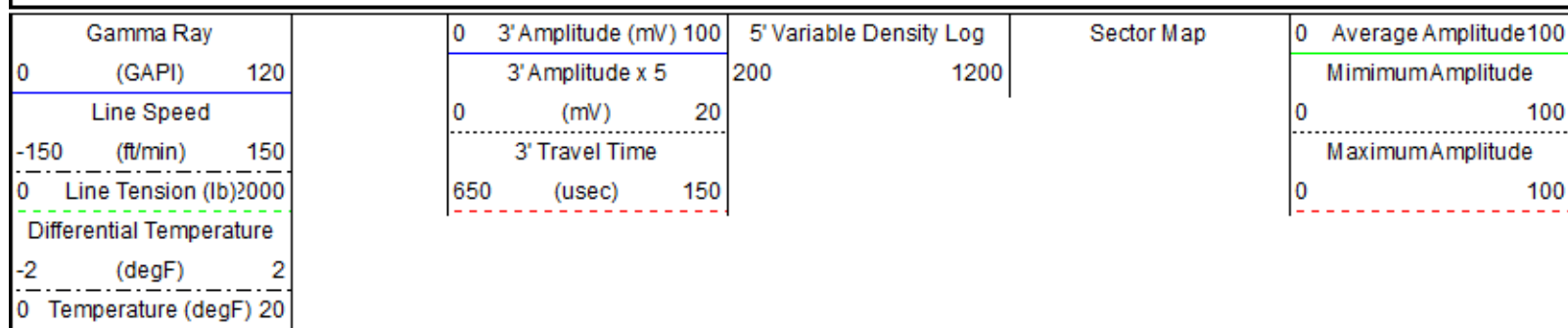


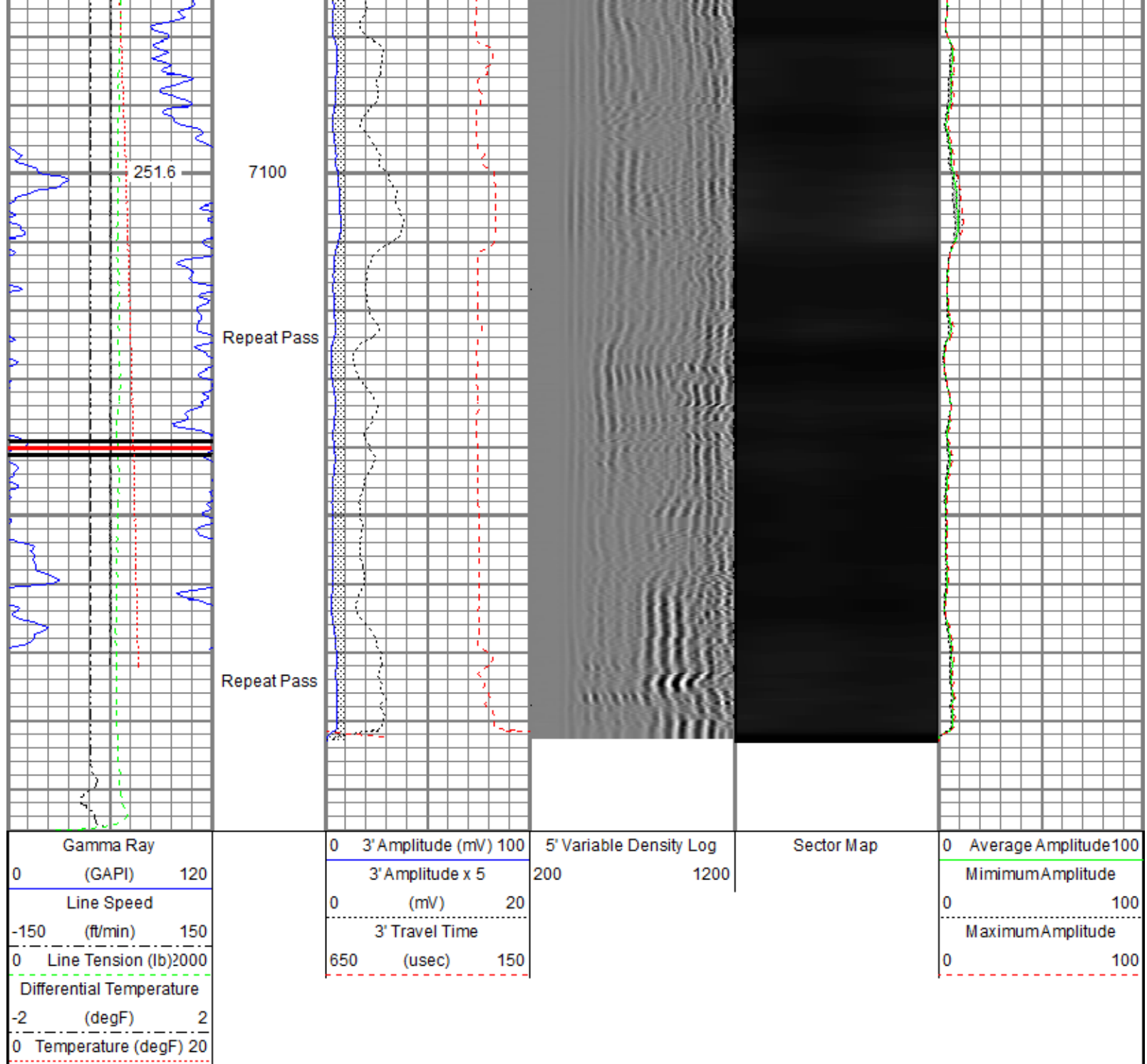



## Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure



Database File 0512344753\_anadarko\_rw 36n-32hz\_rbl\_cnl\_11-20-17\processed\_0512344753\_anadarko\_rw 36n-32hz\_rbl\_cnl\_11-20-17.dt  
 Dataset Pathname pass2.3  
 Presentation Format ros\_rbt003\_sx  
 Dataset Creation Tue Nov 21 11:36:26 2017  
 Charted by Depth in Feet scaled 1:240





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	24.33		Titan_Electric_Cable_Heads-Titan_1-11/16"	1.03	1.69	5.40
			Electric Cable Head with 1" Fishing Neck			
			UW_AGS-UW_AGS_001 (218874)	0.21	1.69	1.00
			Sondex Adapter - GO Box to Sondex Pin			
			UW_XTU-UW_XTU_002 (218874)	1.58	1.69	6.50
			Crossover Ultrawire Toolbus to Ultralink			
			UW_PGR-UW_PGR_020 (10013902)	1.92	1.69	9.50
			Production Gamma Ray			
TEMP	22.93			UW_PRT-PRT_016 (10025097)	1.04	1.69
			Platinum Resistance Thermometer			
CCL	21.69		UW_CCL-UW_CCL_028 (10026420)	1.61	3.13	36.00
			3-1/8" Ultrawire Casing Collar Locator			



			UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
CBLROT	14.29		UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
WVFS8	14.29					
WVFS7	14.29					
WVFS6	14.29					
WVFS5	14.29					
WVFS4	14.29					
WVFS3	14.29					
WVFS2	14.29					
WVFS1	14.29					
WVF3FT	14.29					
WVF5FT	13.29		UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
CBLTEMP	9.16					
			UW_CNL-UW_CNL_007 (1007) Sondex Compensated Neutron Logging Tool	6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
HVOLT	0.00					
ITEMPX	0.00					
TSTAMP	0.00					
Dataset: PROCESSED_0512344753_Anadarko_RW 36N-32HZ_RBL_CNL_11-20-17.db: field/well/run1/pass4.3 Total length: 28.58 ft Total weight: 297.60 lb O.D.: 3.13 in						

Calibration Report			
Database File	C:\ProgramData\Warrior\Data\0512344753_Anadarko_RW 36N-32HZ_RBL_CNL_11-20-17\PROCESSED_0512344753_Anadarko_RW 36N-32HZ_RBL_CNL_11-20-17\PROCESSED_0512344753_Anadarko_RW 36N-32HZ_RBL_CNL_11-20-17\pass4.3		
Dataset Pathname	pass4.3		
Dataset Creation	Mon Nov 20 14:56:49 2017		
Compensated Neutron Calibration Report			
Serial Number:	1007		
Tool Model:	UW_CNL_007		
Master Calibration	Sun Feb 07 11:32:29 2016		
Detector	Readings		
Short Space	240.97	cps	
Long Space	302.45	cps	

Ratio	Measured	Reference
CNRAT Gain K	0.8150	Sleeve: 1.0000
	1.0211	
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:		1066				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		3.524	ft			
Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.000	0.959	0.800	71.921	74.159	0.809
5FT	-0.006	0.848	0.800	71.921	83.302	1.315
S1	-0.001	0.999	0.000	100.000	100.075	0.066
S2	-0.002	0.982	0.000	100.000	101.626	0.190
S3	-0.001	0.947	0.000	100.000	105.537	0.108
S4	-0.002	0.951	0.000	100.000	104.972	0.162
S5	-0.000	0.906	0.000	100.000	110.355	0.054
S6	-0.001	0.913	0.000	100.000	109.366	0.133
S7	-0.000	0.987	0.000	100.000	101.272	0.033
S8	-0.001	1.011	0.000	100.000	98.884	0.058

Temperature Calibration Report					
Serial Number:		10025097			
Tool Model:		PRT_016			
Performed:		Sun Oct 11 12:34:58 2015			
Point #	Reading	Reference			
1	13053.00	cps	68.00	degF	
2	18014.00	cps	104.00	degF	
3	29668.00	cps	176.00	degF	
4	41181.00	cps	248.00	degF	
5	52983.00	cps	320.00	degF	
6	58931.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Gamma Ray Calibration Report	
Serial Number:	10013902
Tool Model:	UW_PGR_020

Performed:	(Not Performed)	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps



<b>Company</b>	Kerr-McGee Oil & Gas Onshore, L.P.
<b>Well</b>	RW 36N-32HZ
<b>Field</b>	Wattenberg
<b>County</b>	Weld
<b>State</b>	Colorado