



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Noble Energy Inc  
Well Vogler State D33-779  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05-123-48574  
SEC 21 TWP 3N RGE 64W  
Permanent Datum Ground Level Elevation 4796'  
Log Measured From Kelly Bushing 30 FT  
Drilling Measured From Kelly Bushing  
Other Services  
Elevation  
K.B. 4826'  
D.F. ---  
G.L. 4796'

Company Noble Energy Inc  
Well Vogler State D33-779  
Field Wattenberg  
County Weld  
State Colorado

Date	13-APR-2020			
Run Number	One			
Depth Driller	17520 FT			
Depth Logger	7197 FT			
Bottom Logged Interval	7185 FT			
Top Log Interval	Surface			
Open Hole Size	8.5"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	241°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	10:20			
Equipment Number	HD-361			
Location	Platteville, CO			
Recorded By	W. Wacker			
Witnessed By	J.P. Fodionno			
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	17	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

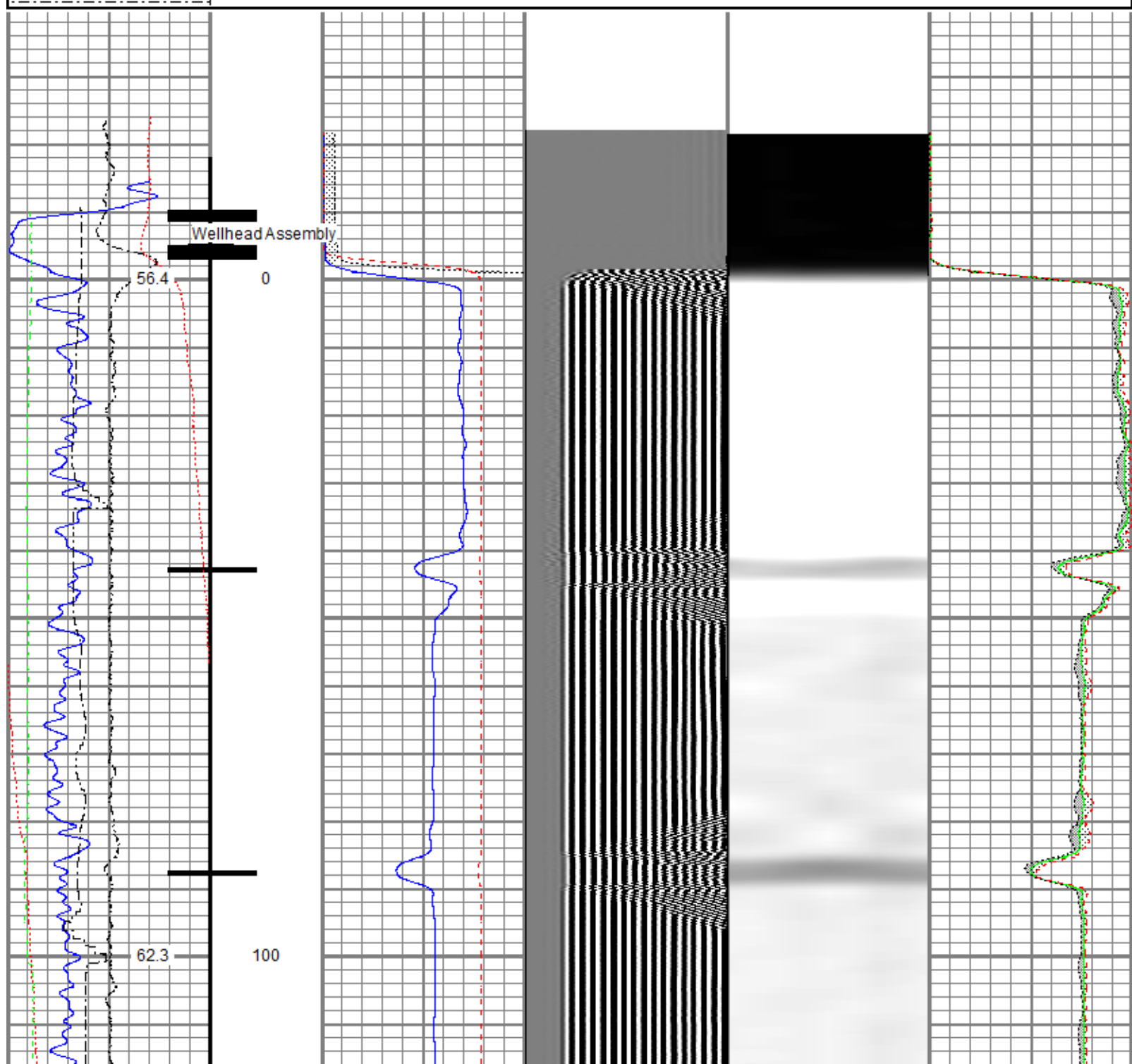
Log ran as per customer request  
Depth referenced to casing tally reported Marker Joint at 6349.1 FT  
Adjusted -36 FT to correlate to Marker Joint  
Log ran with 2500 PSI Surface Induced Pressure  
Logging tools were clean and free of debris upon completion of operations  
Thank you for choosing Reliance Oilfield Services, LLC!!

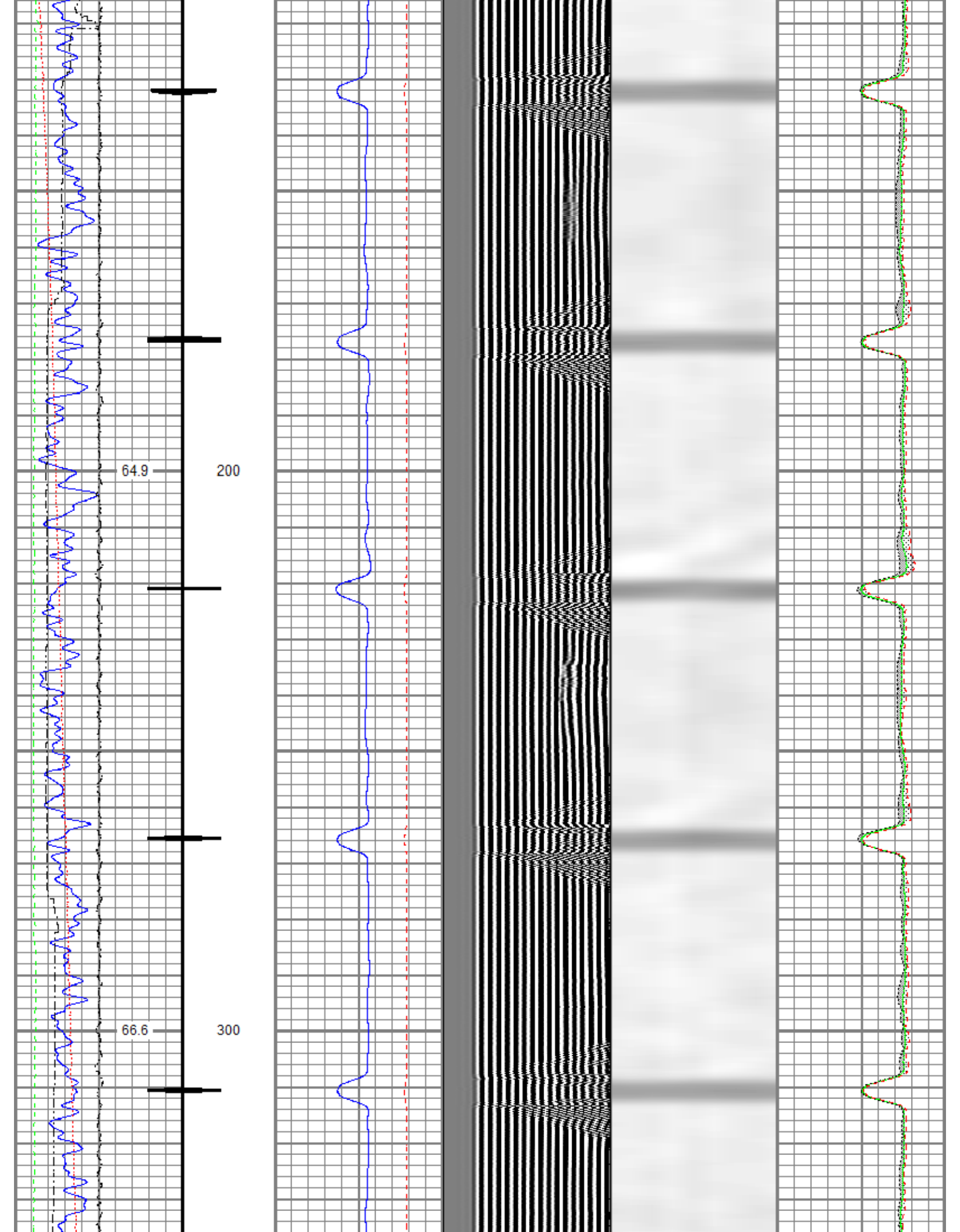
Main Pass

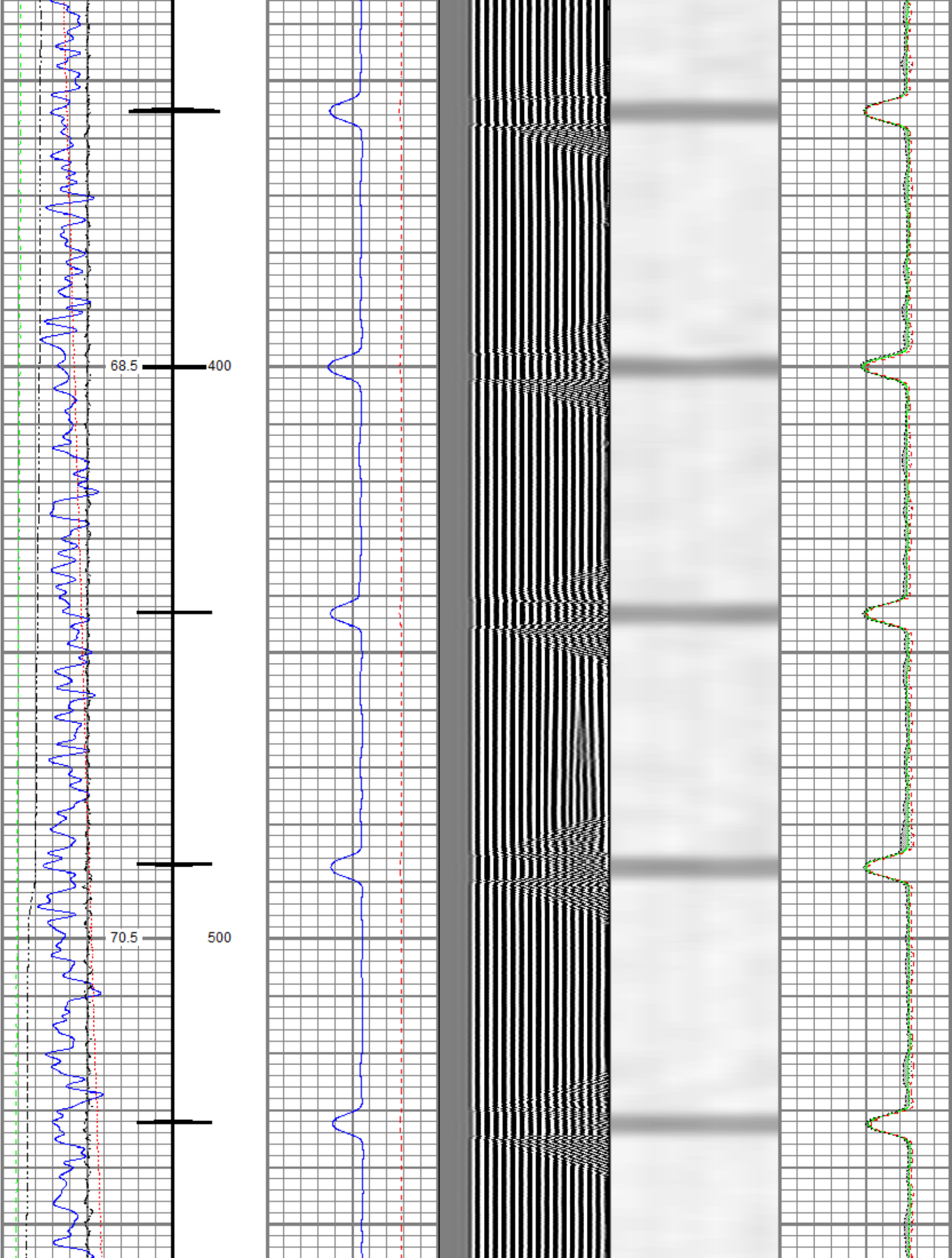


Database File	noble_vogler state d33-779_rbl_04-13-20\noble_vogler state d33-779_rbl_04-13-20.db
Dataset Pathname	main.1
Presentation Format	ros_radri_noble
Dataset Creation	Mon Apr 13 11:43:35 2020
Charted by	Depth in Feet scaled 1:240

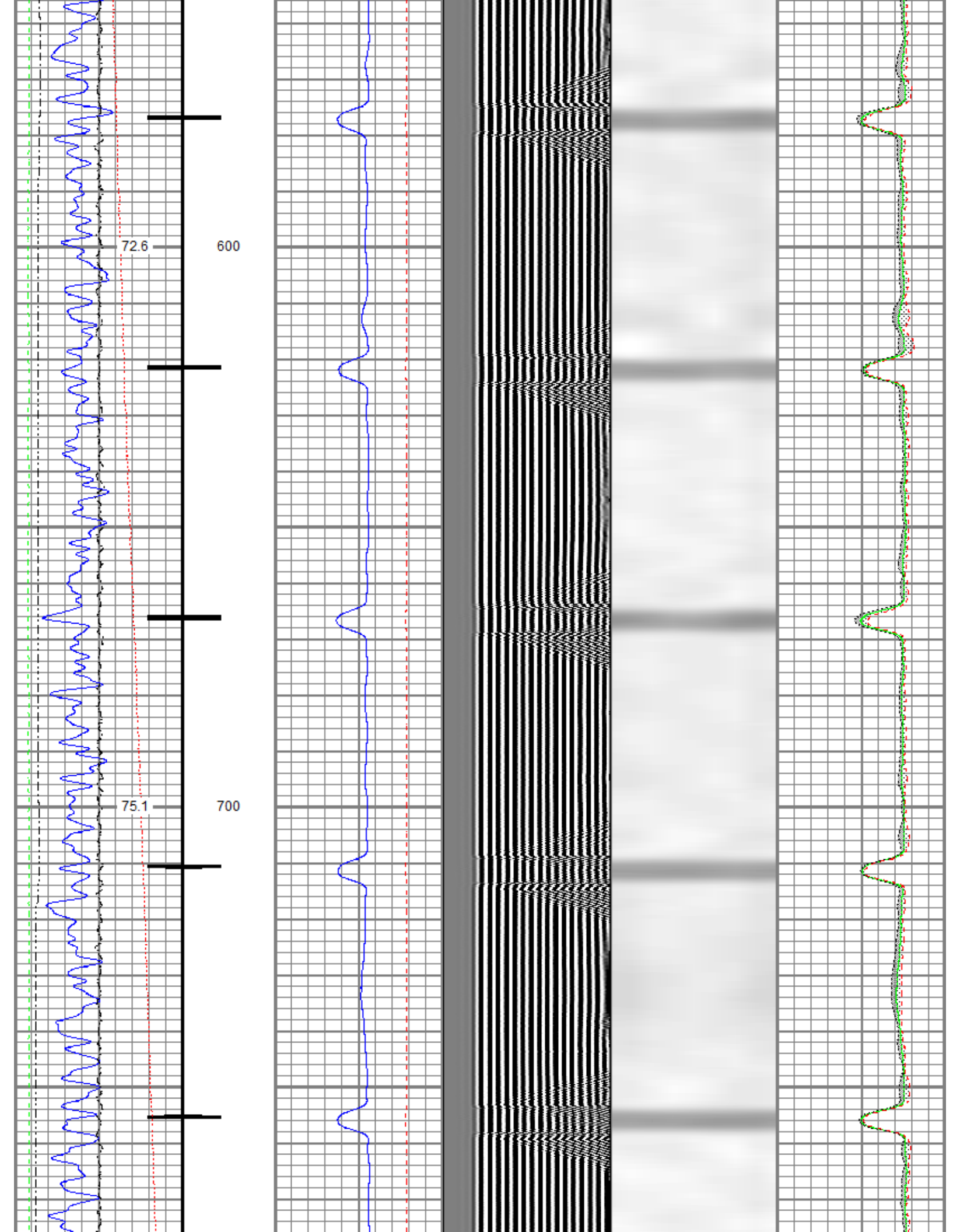
Gamma Ray	0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
(GAPI)	120	3' Amplitude x 5	200	(usec)	1200		Minimum Amplitude	
Casing Collar Log		0	(mV)	20		0	100	
Temperature (degF)	20	3' Travel Time					Maximum Amplitude	
Line Speed		650	(usec)	150		0	100	
(ft/min)	150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

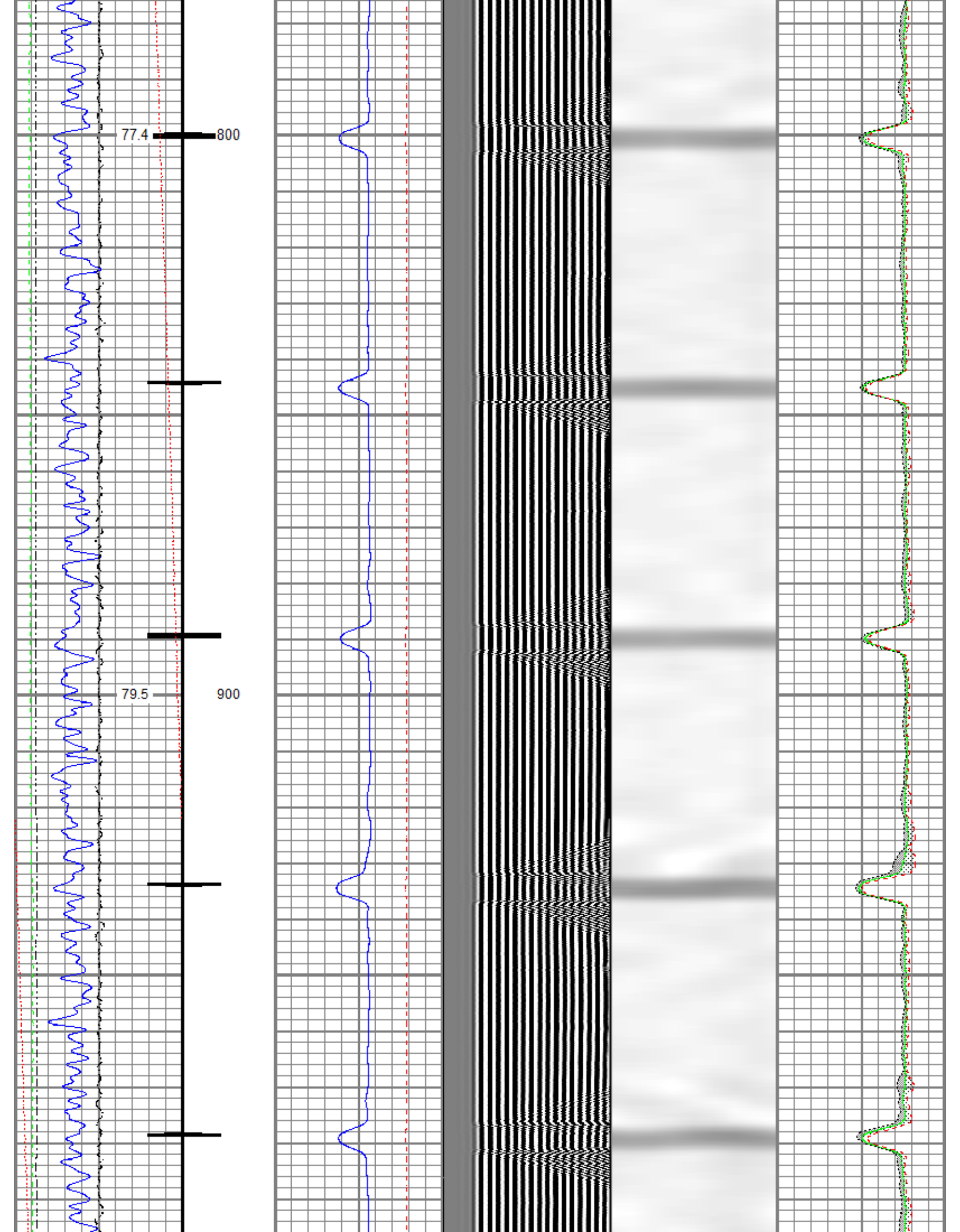


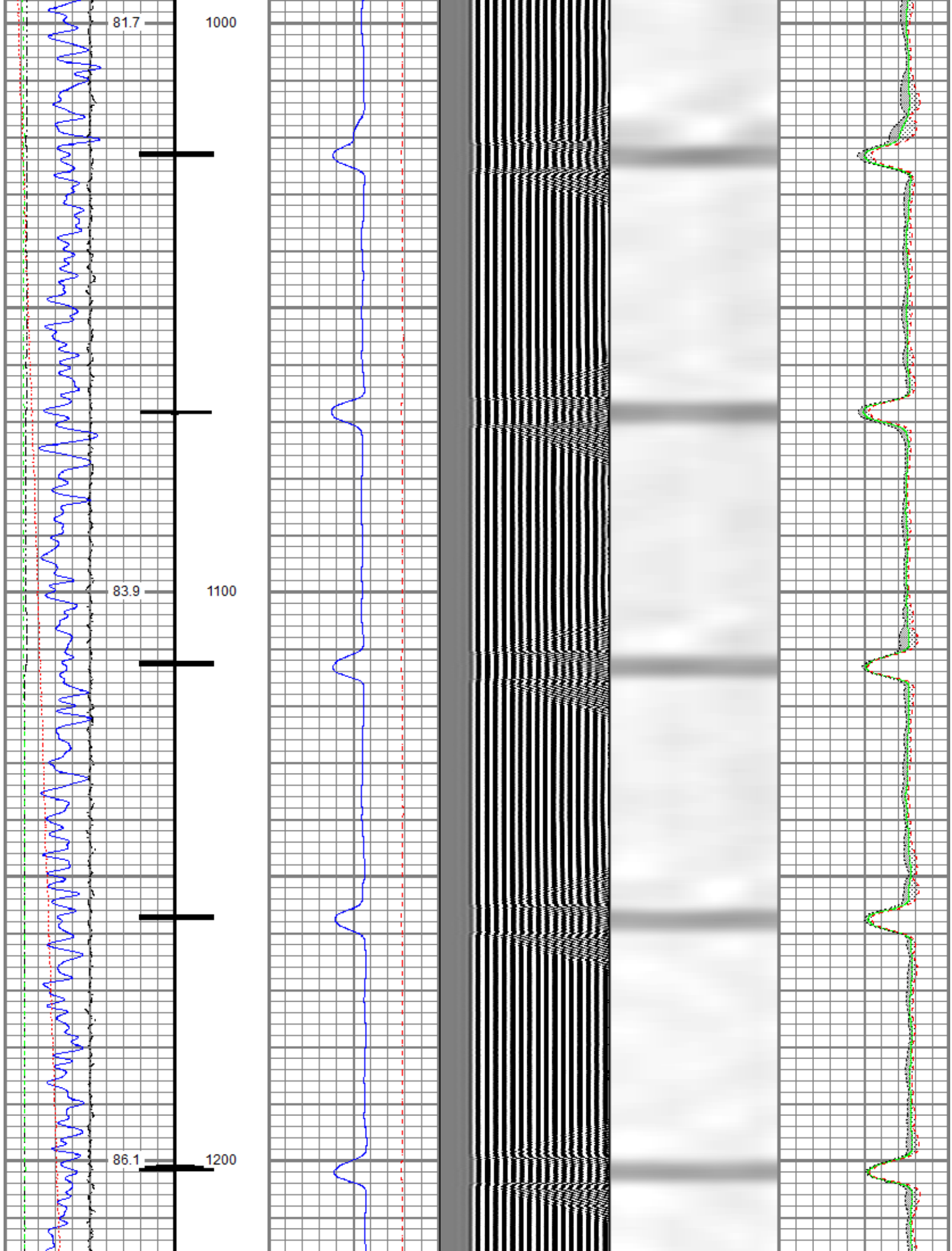


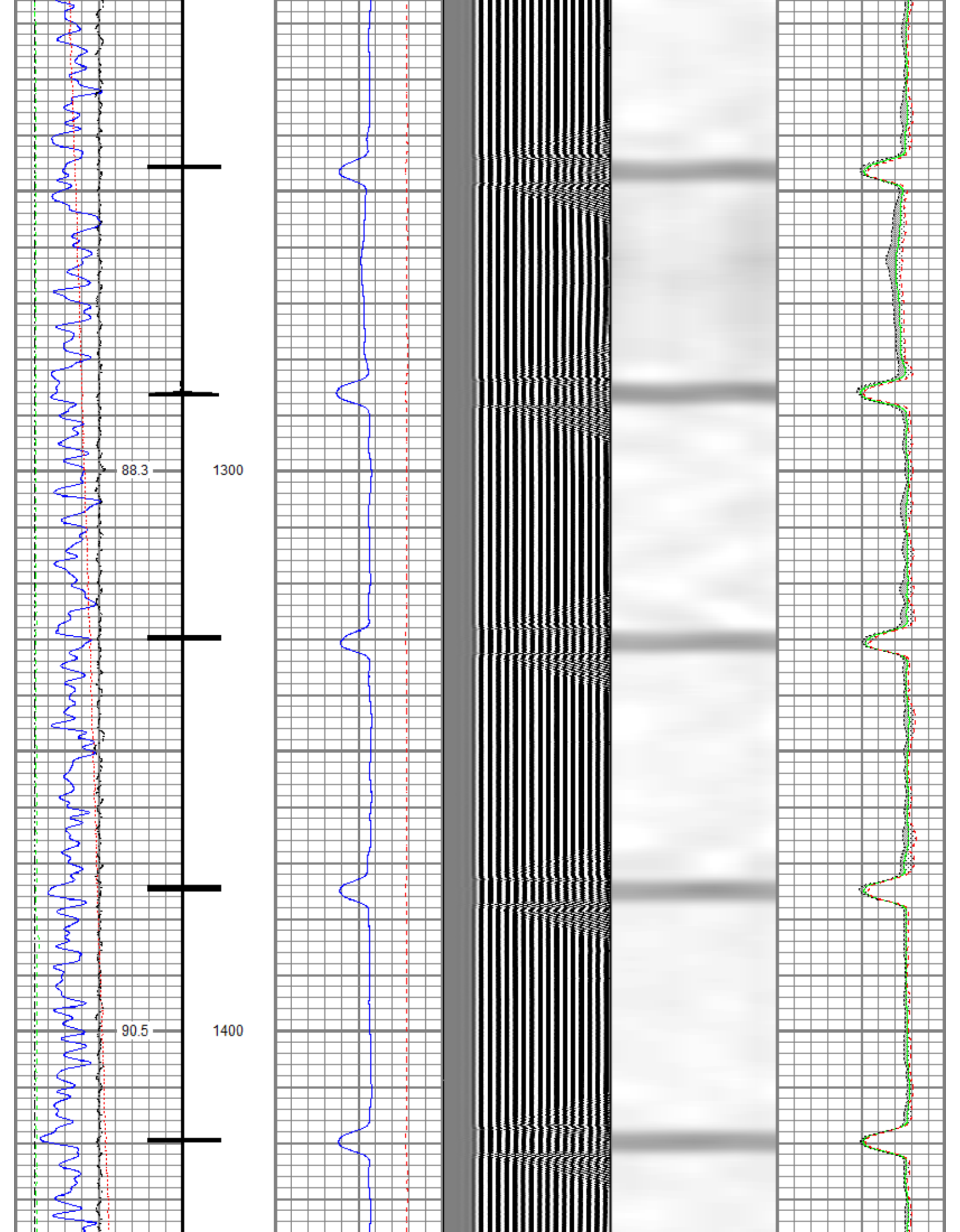




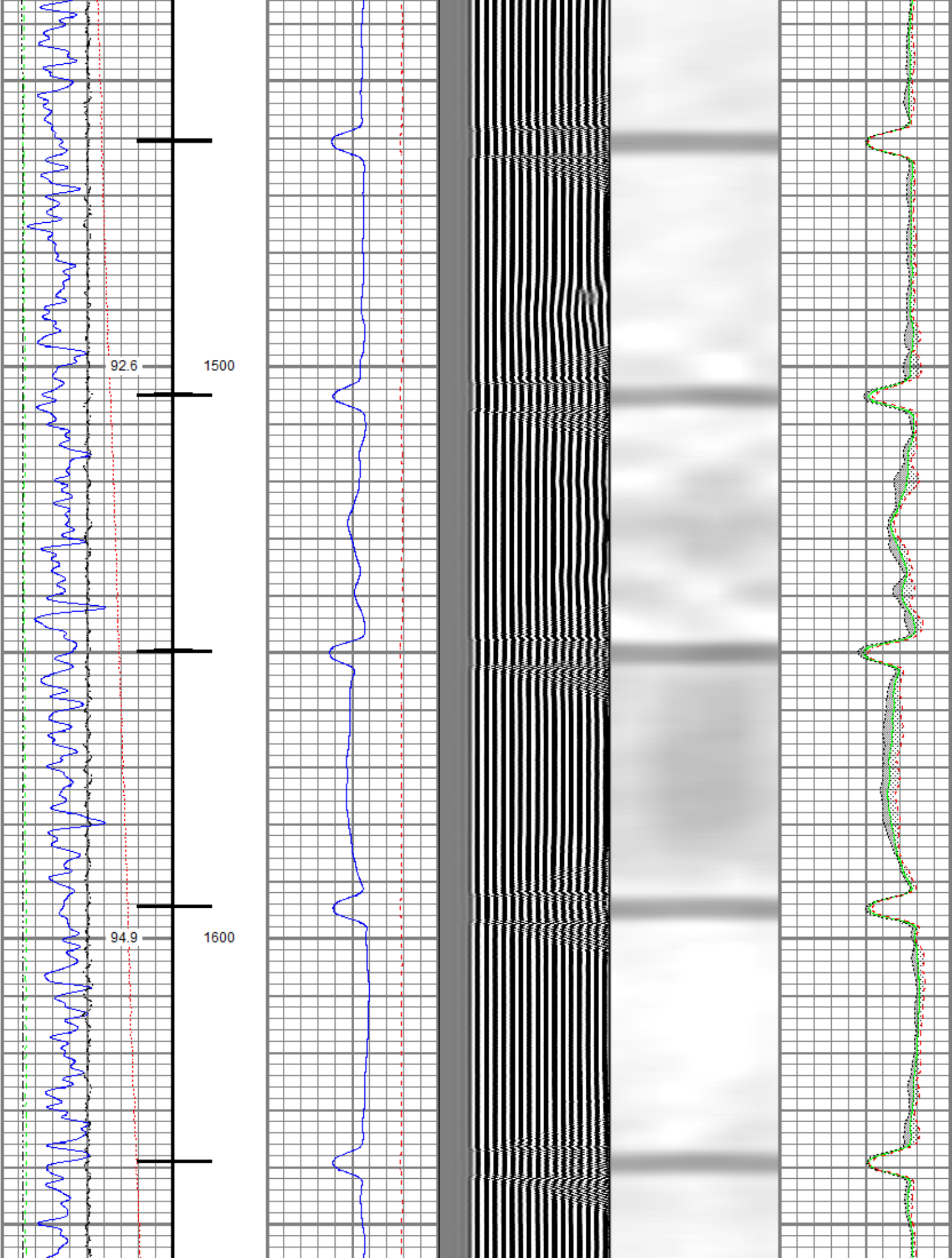


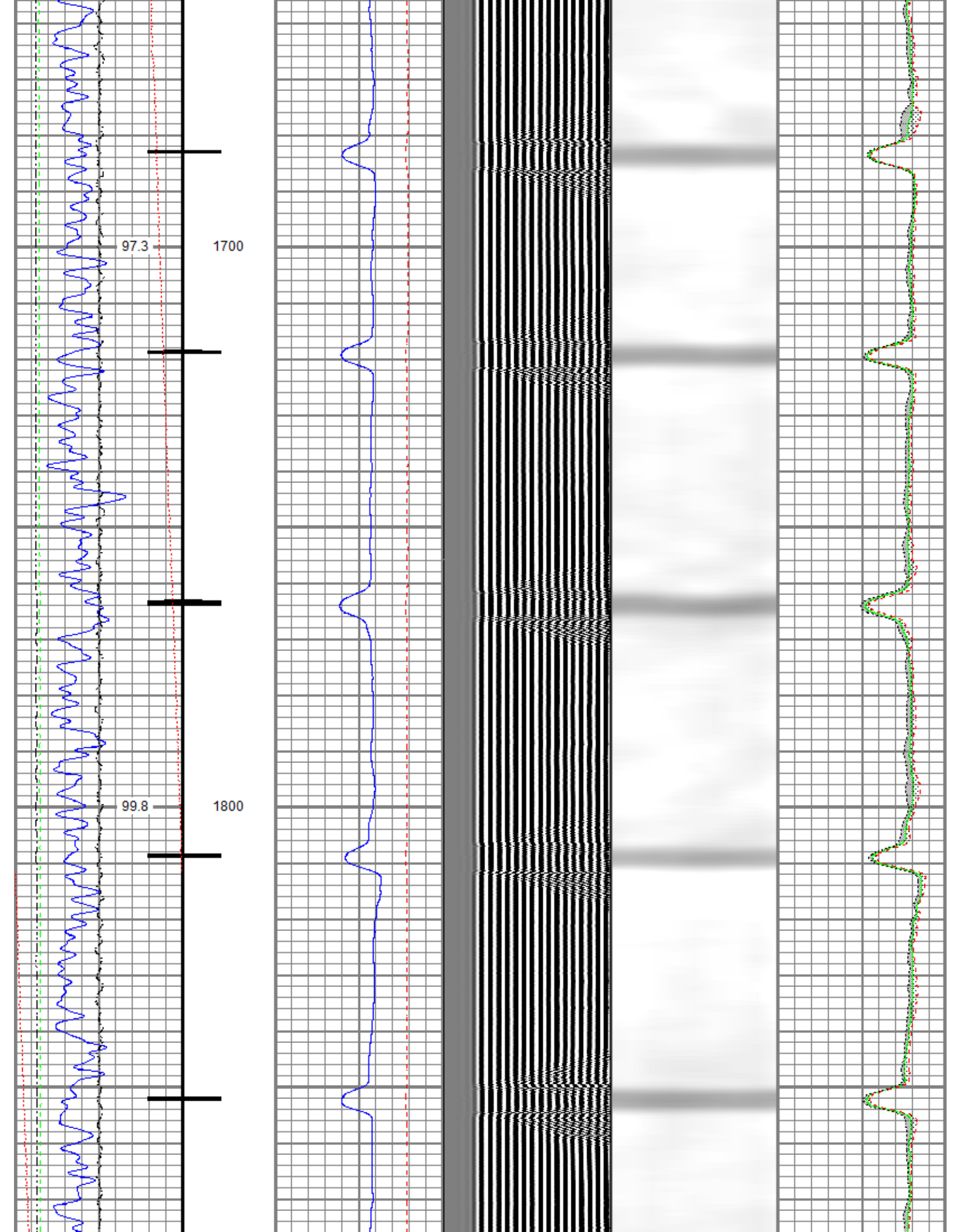


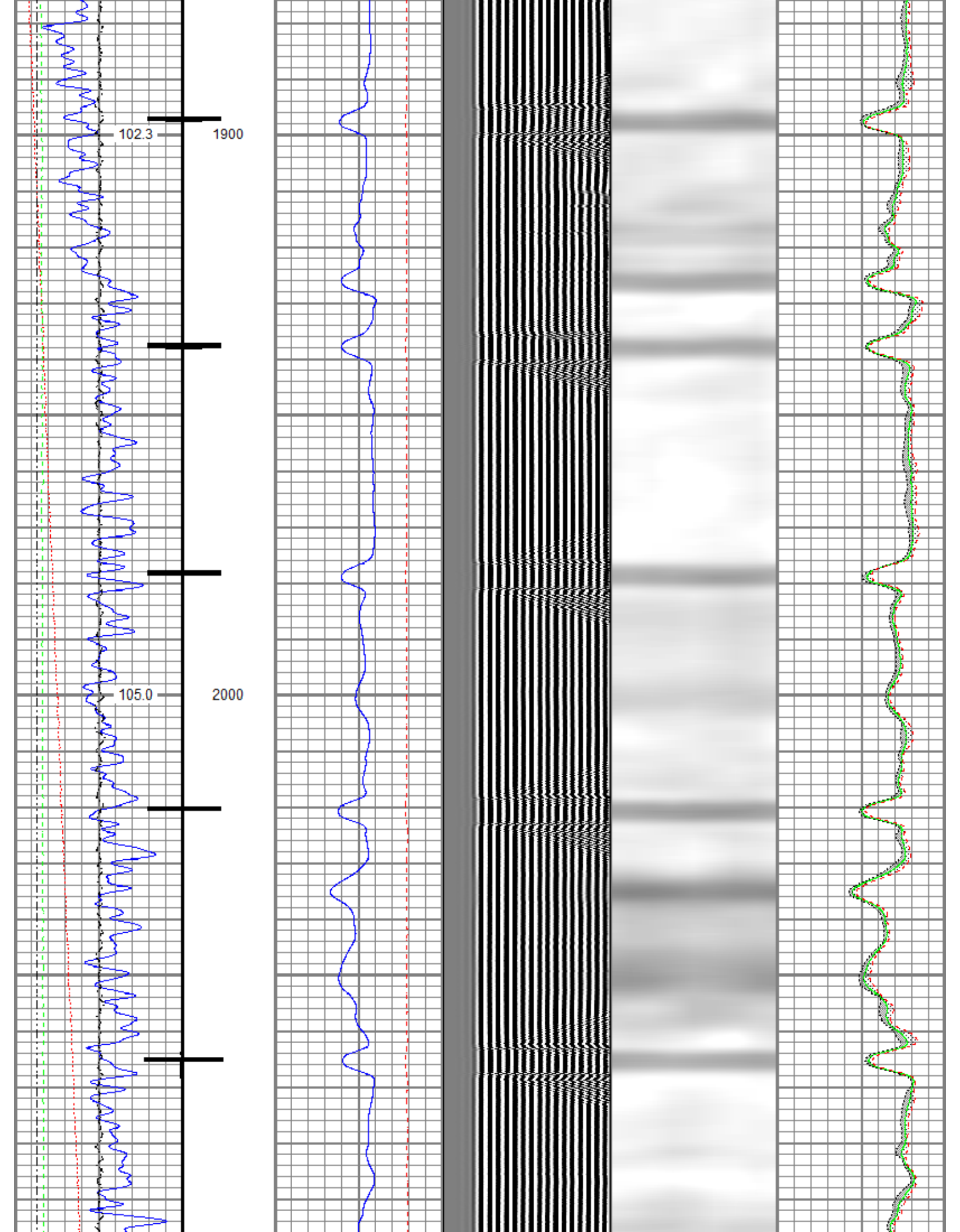


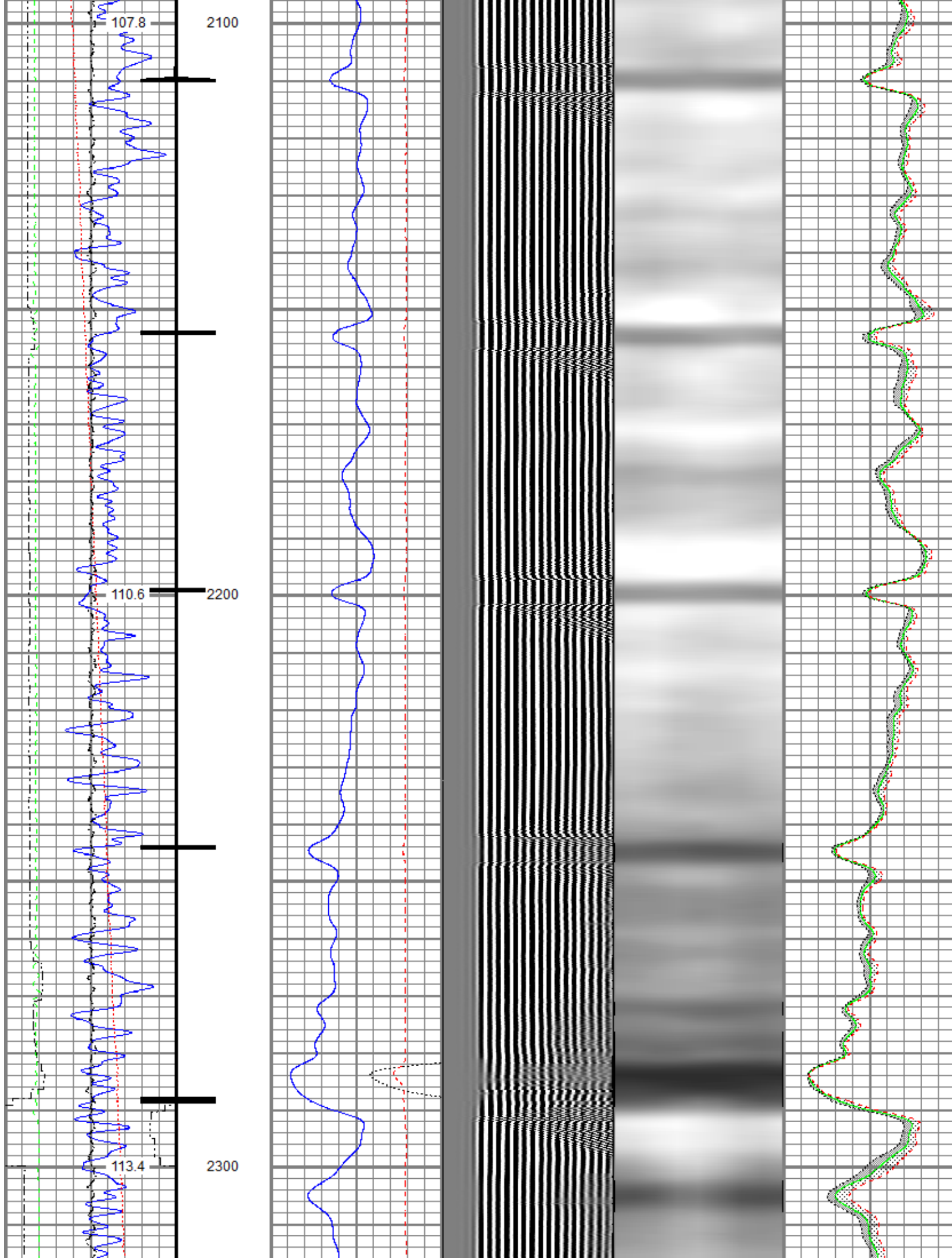




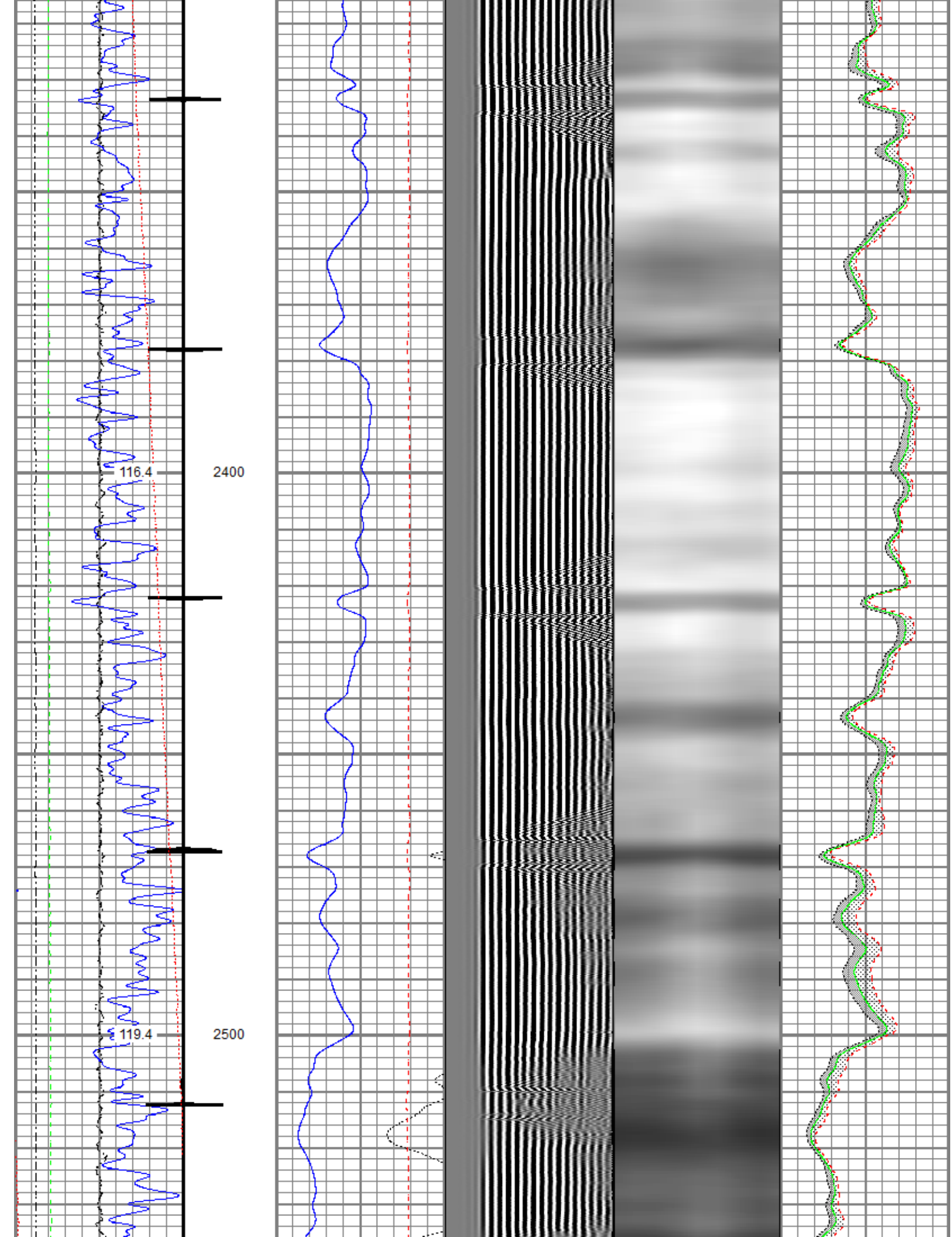


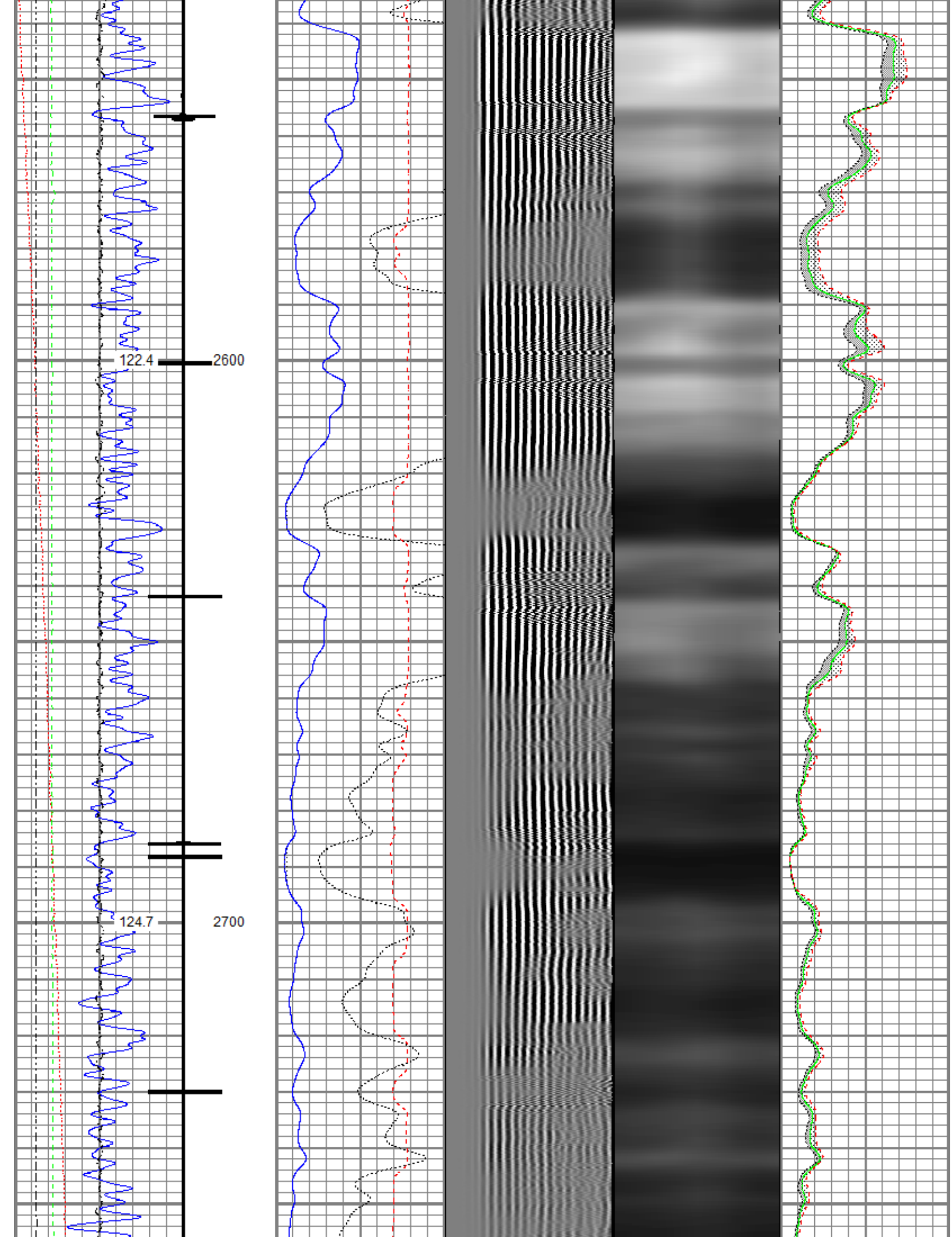


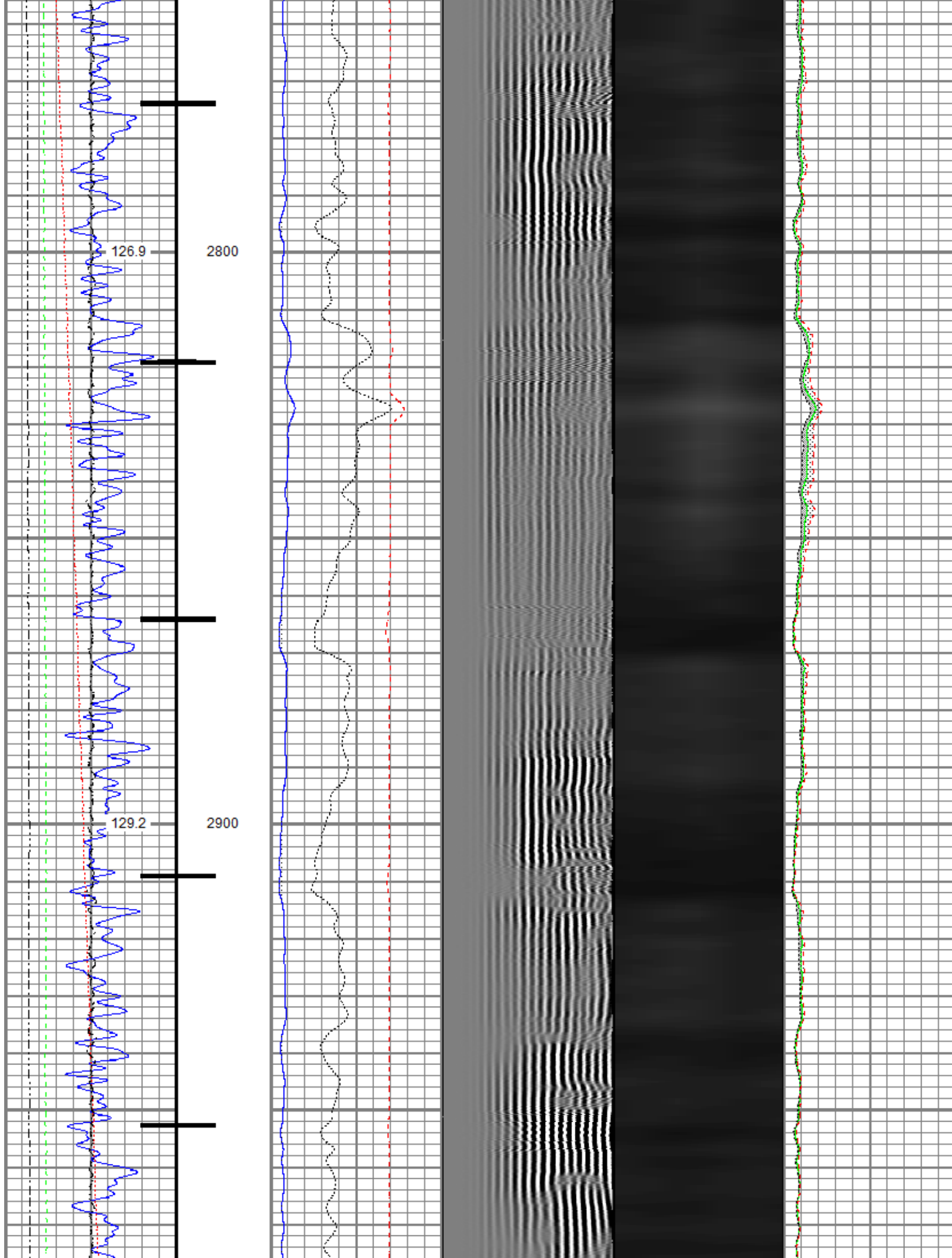




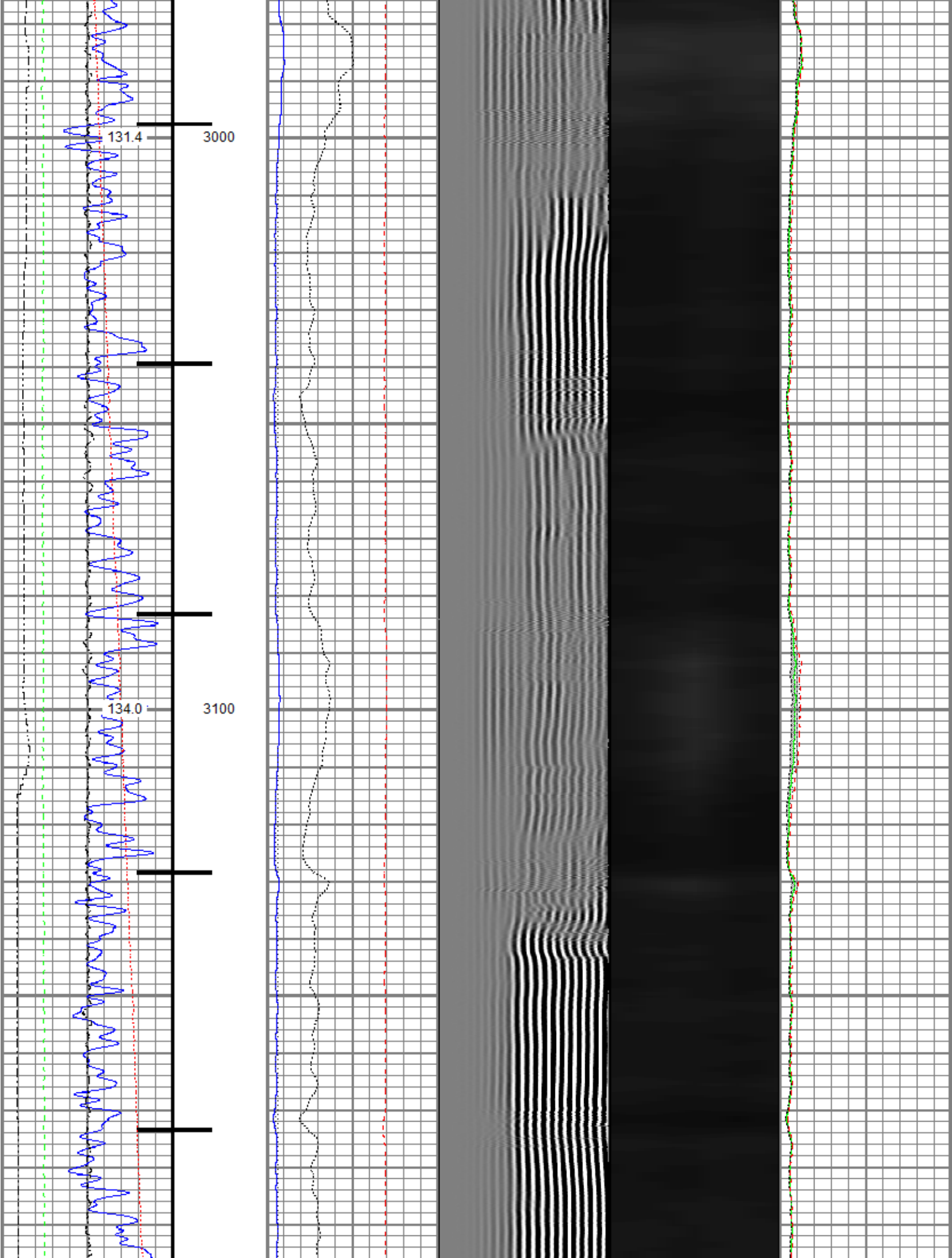




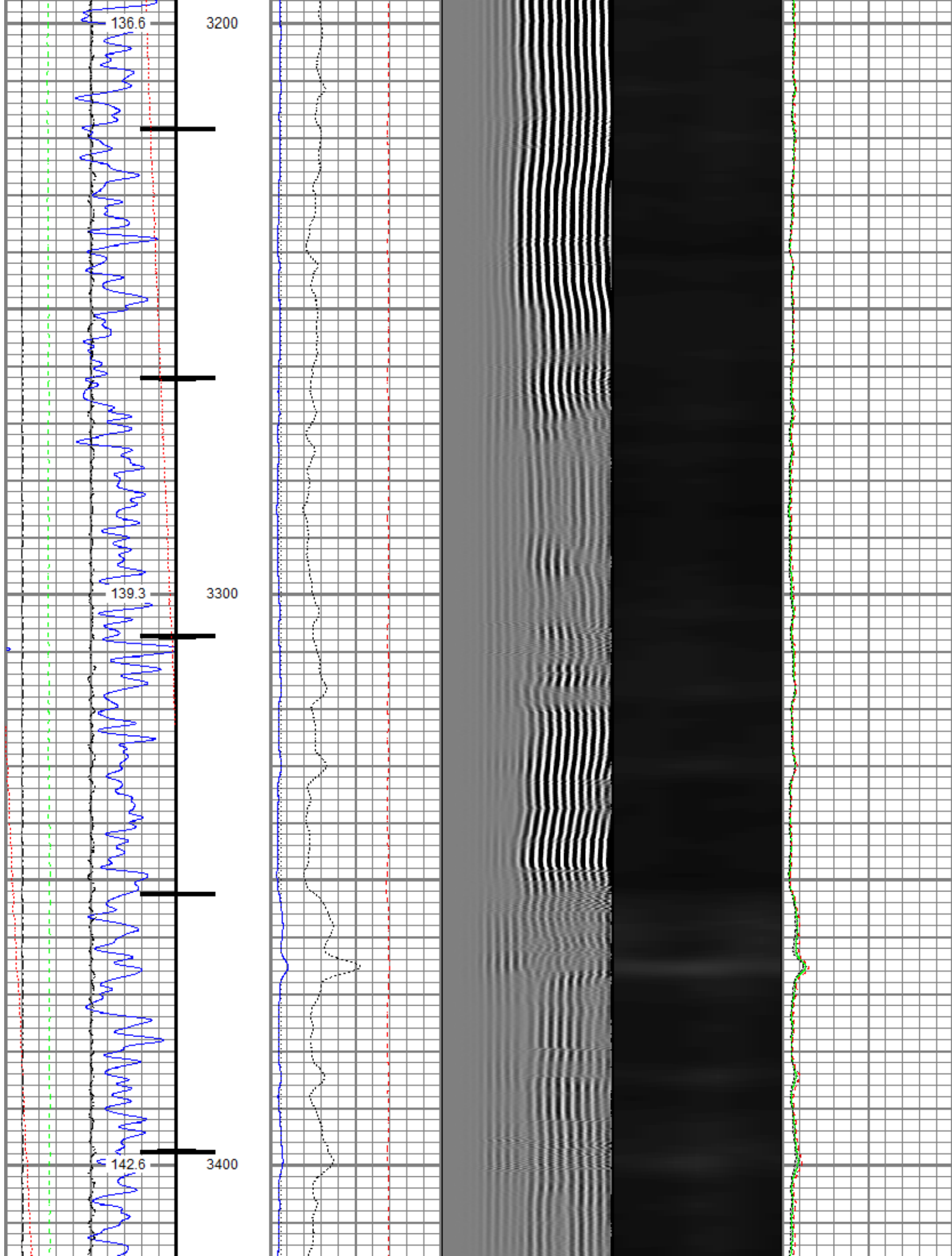


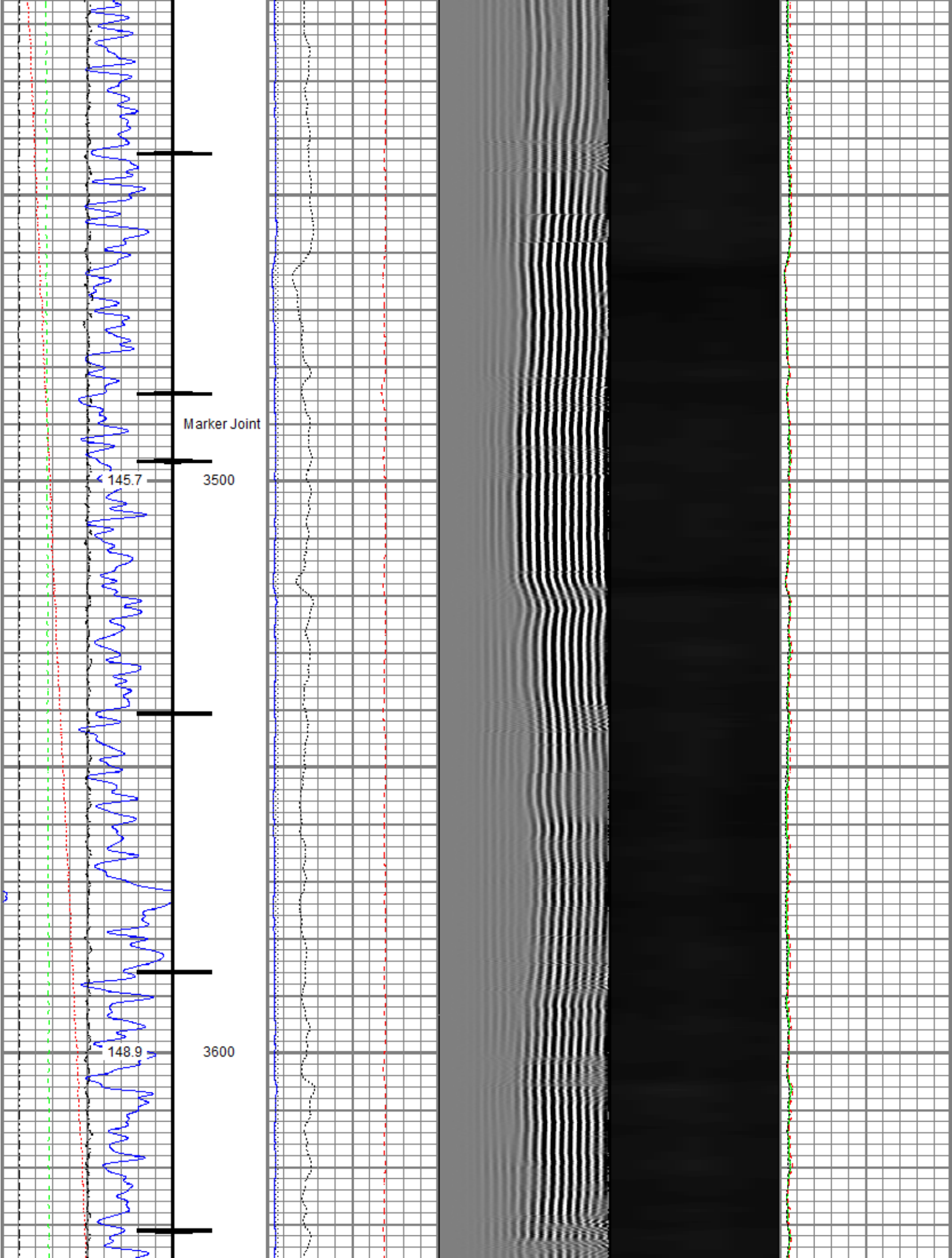


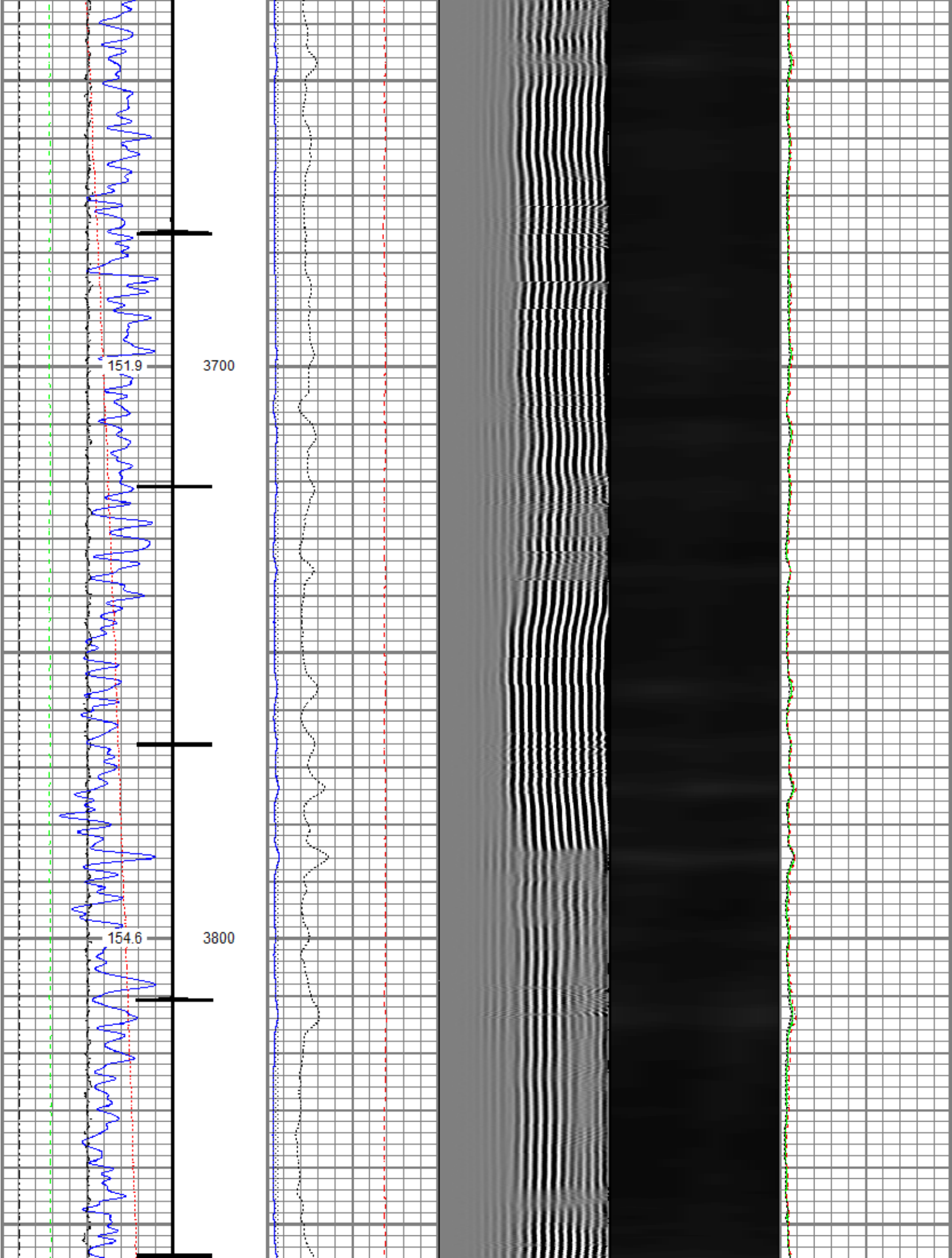


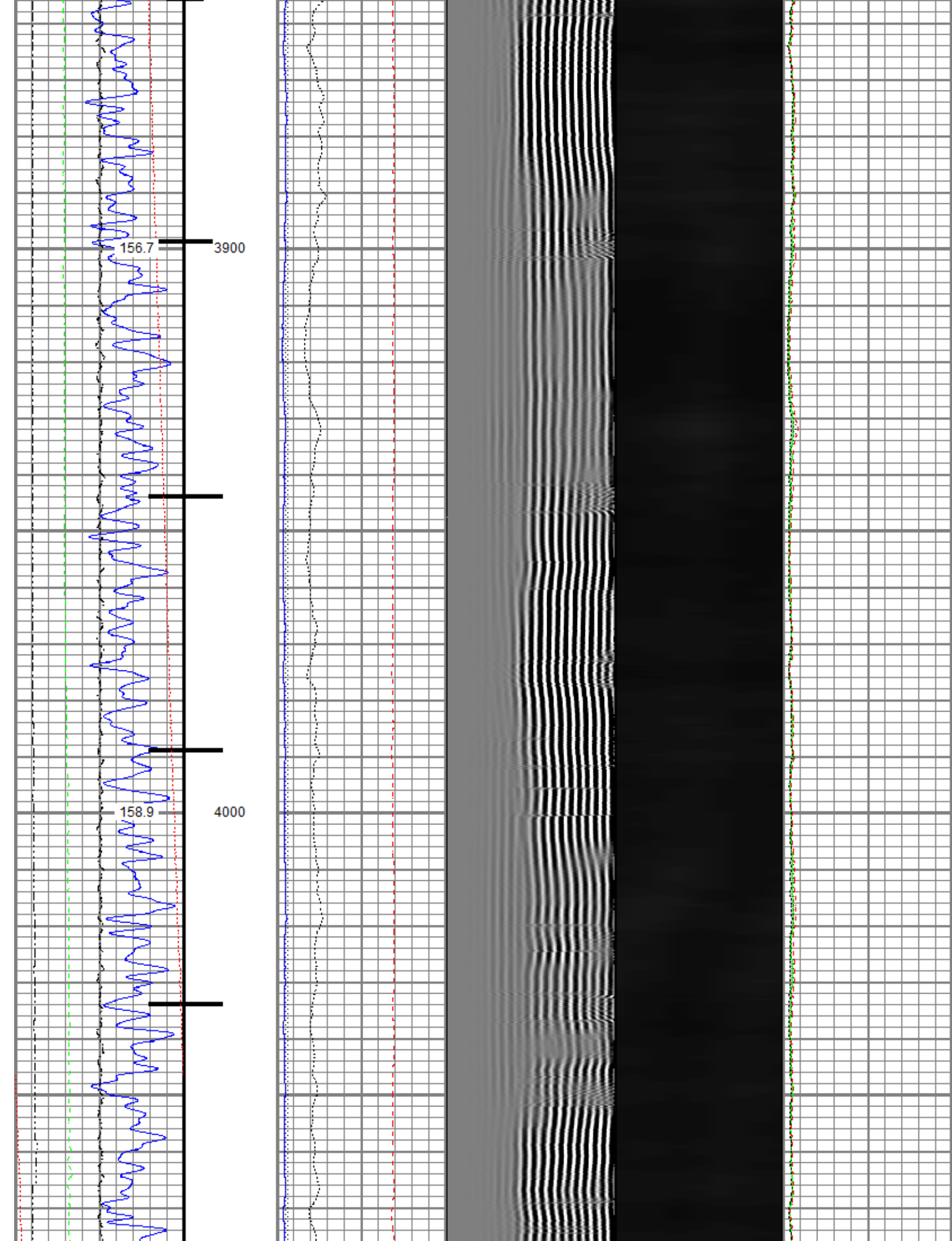




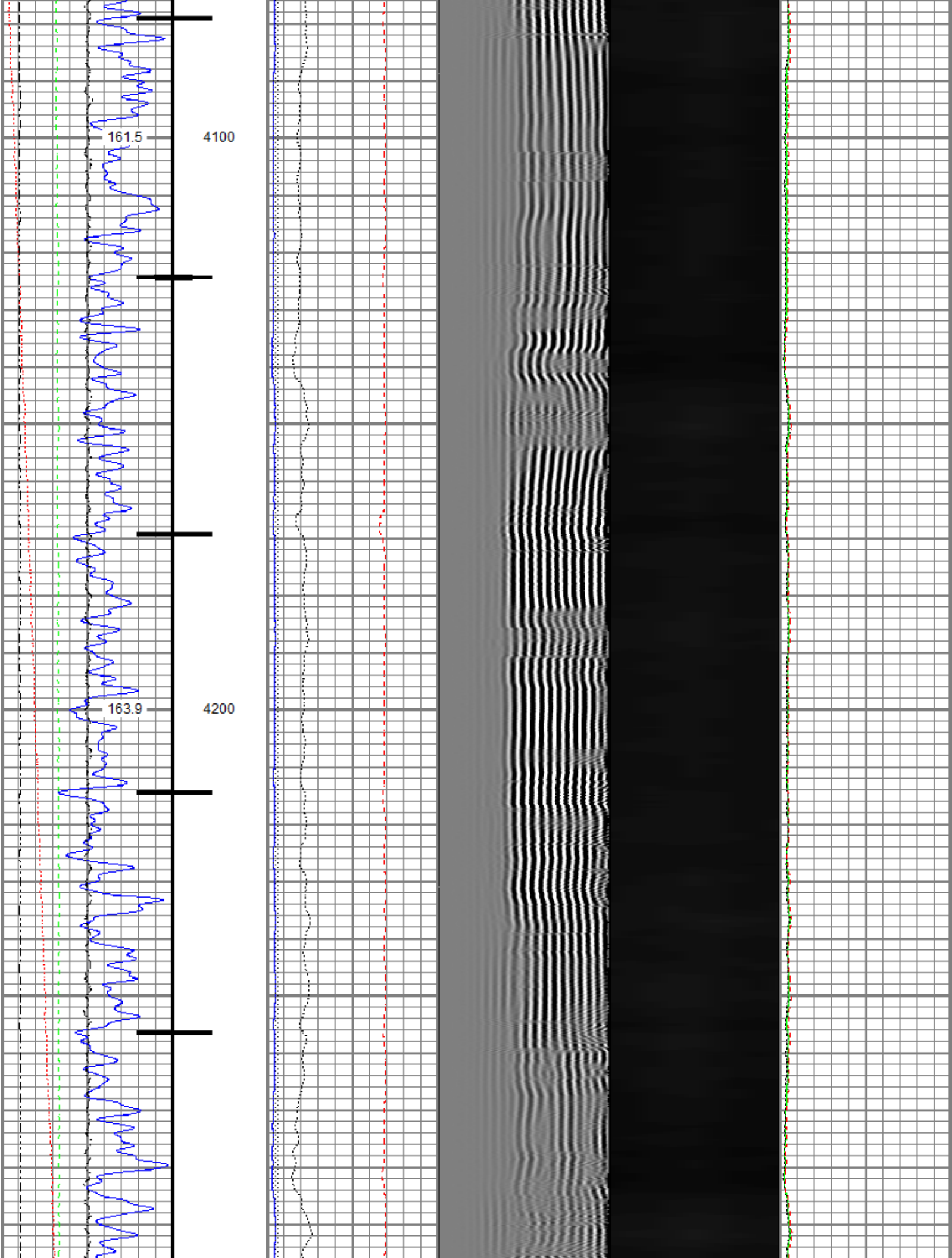


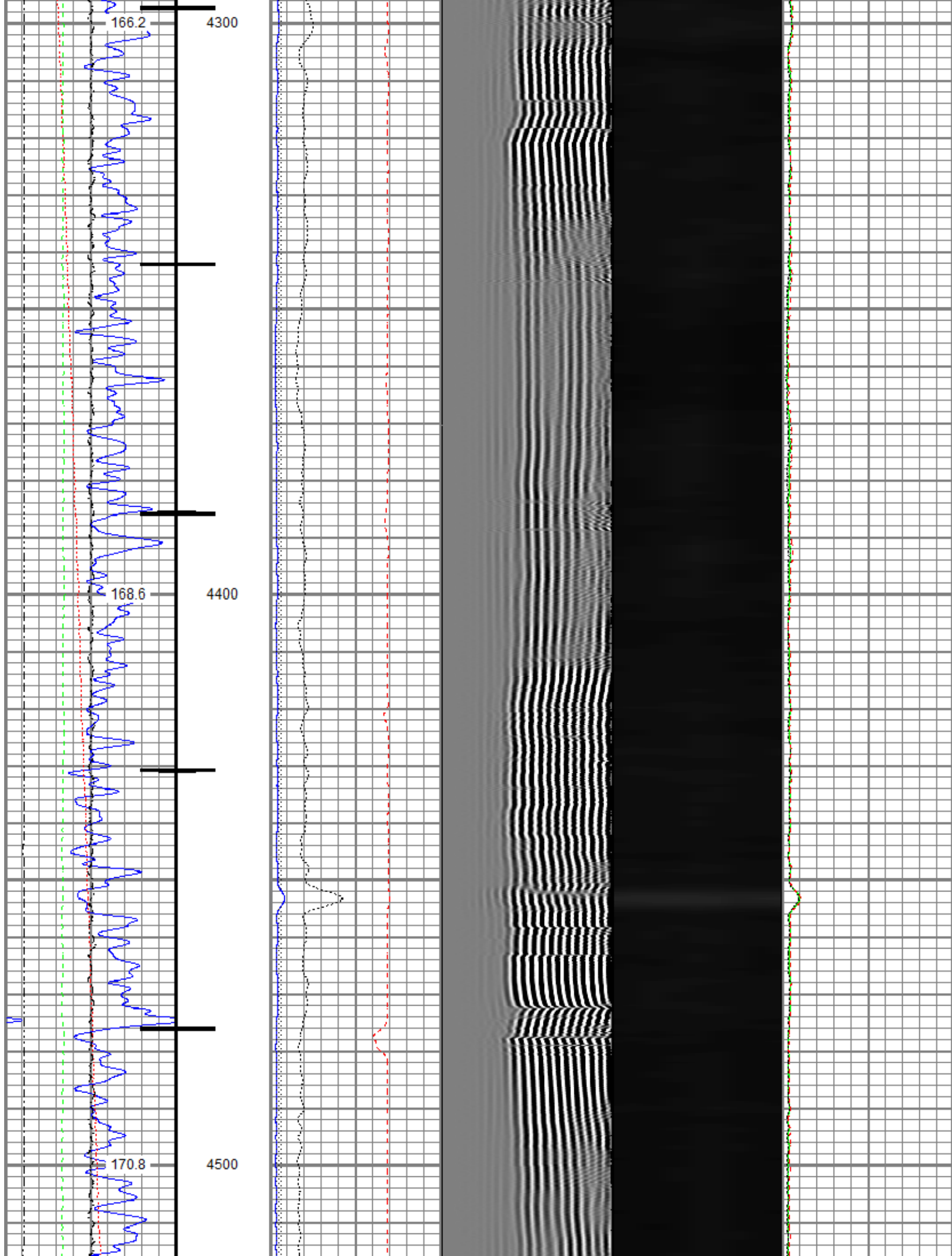


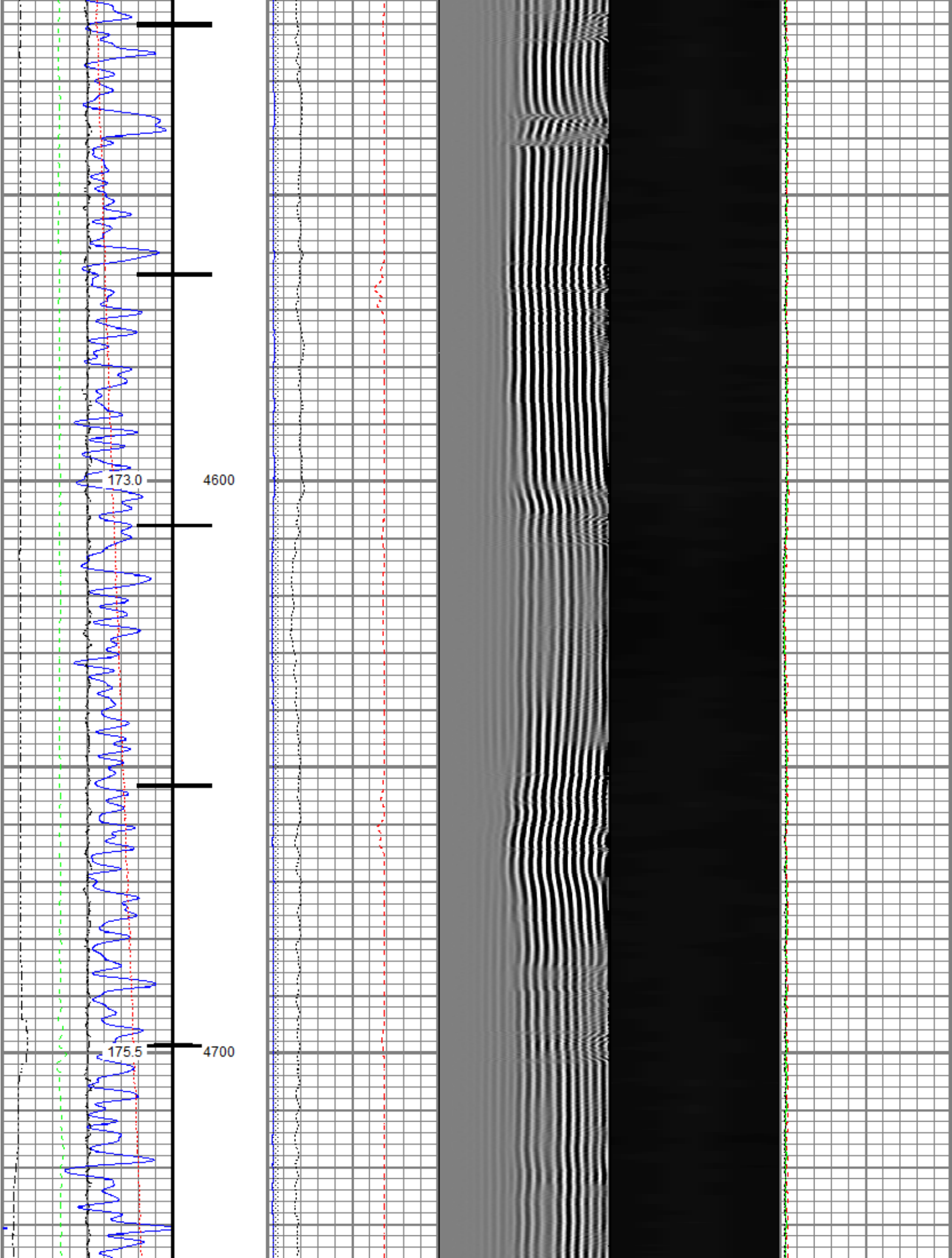


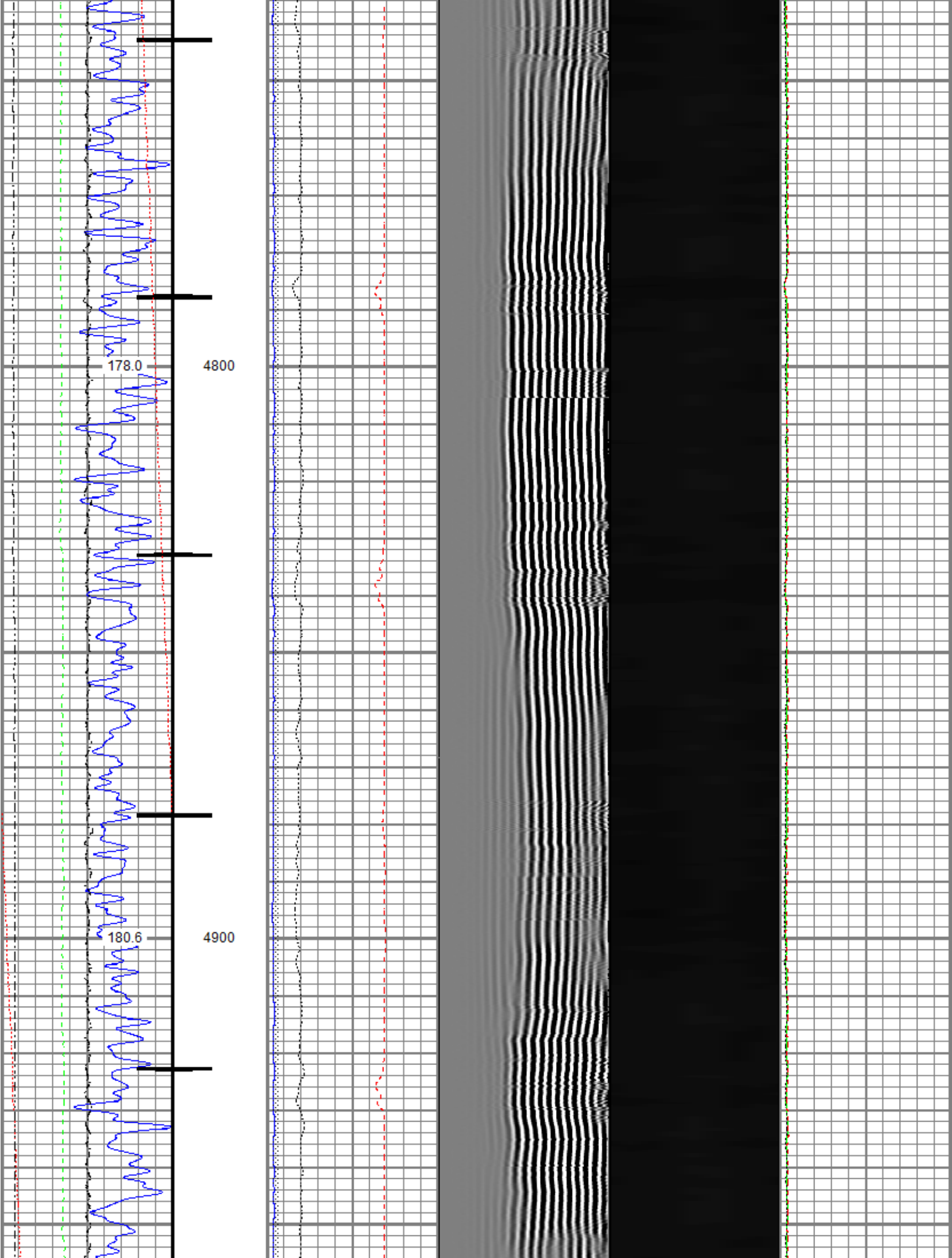




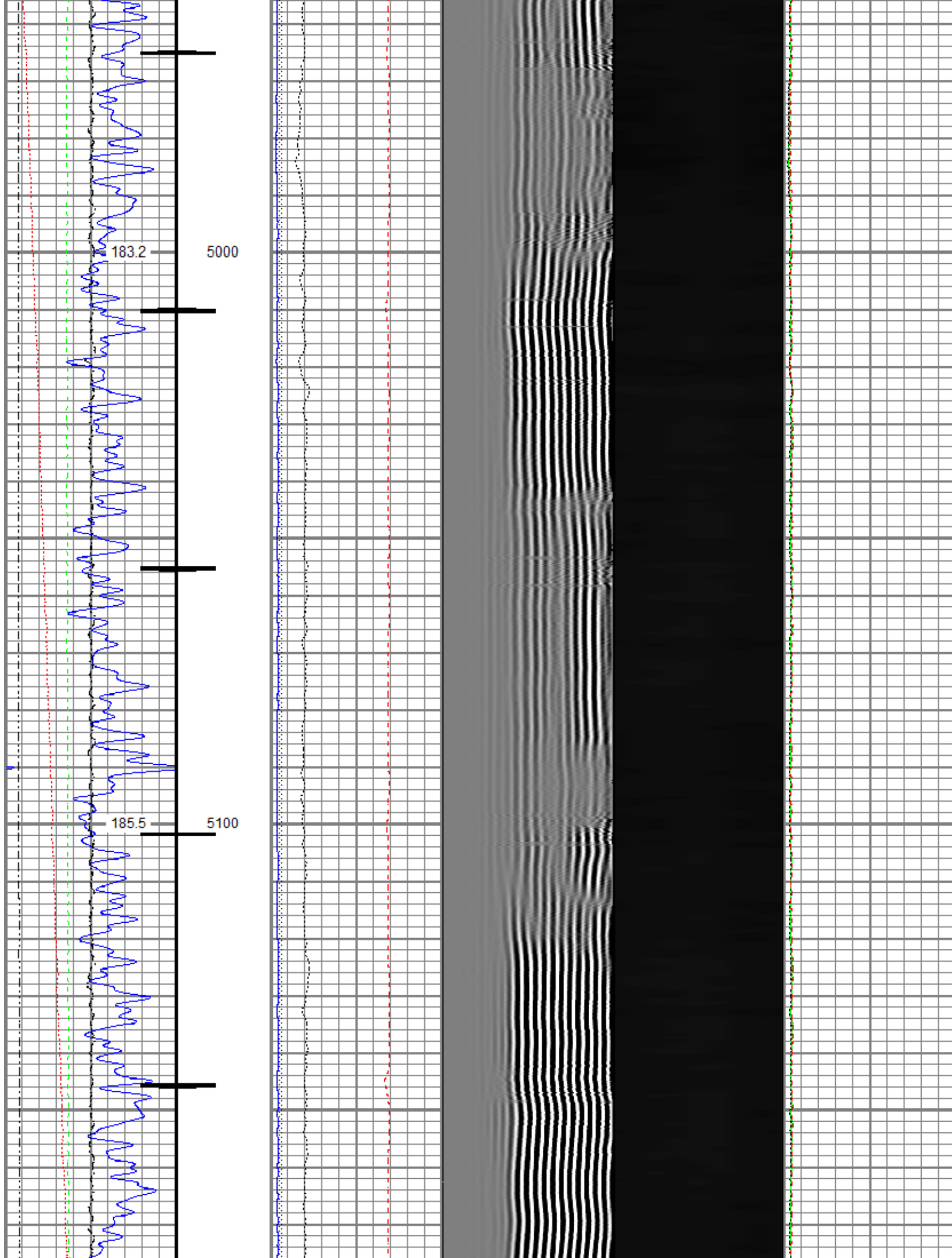


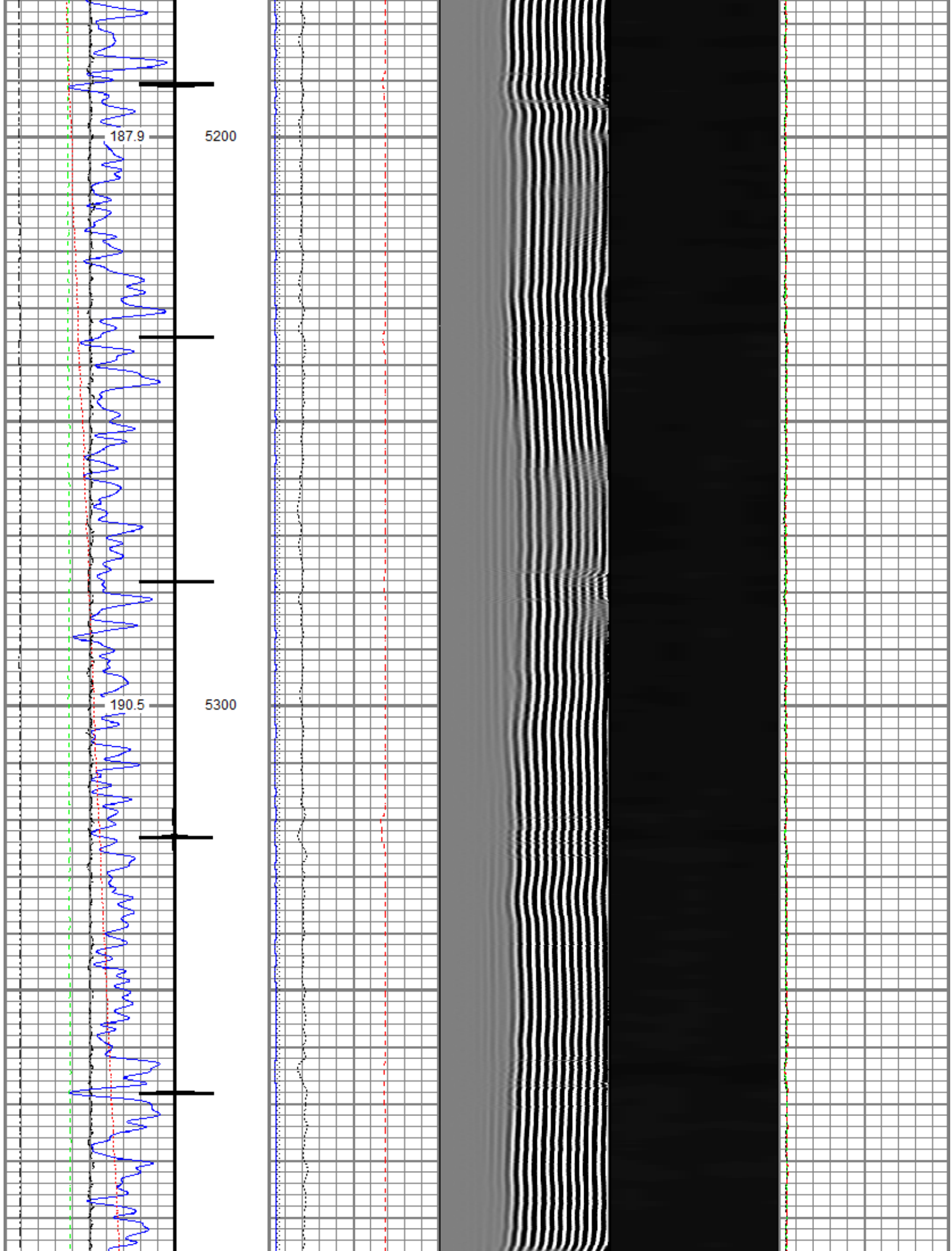


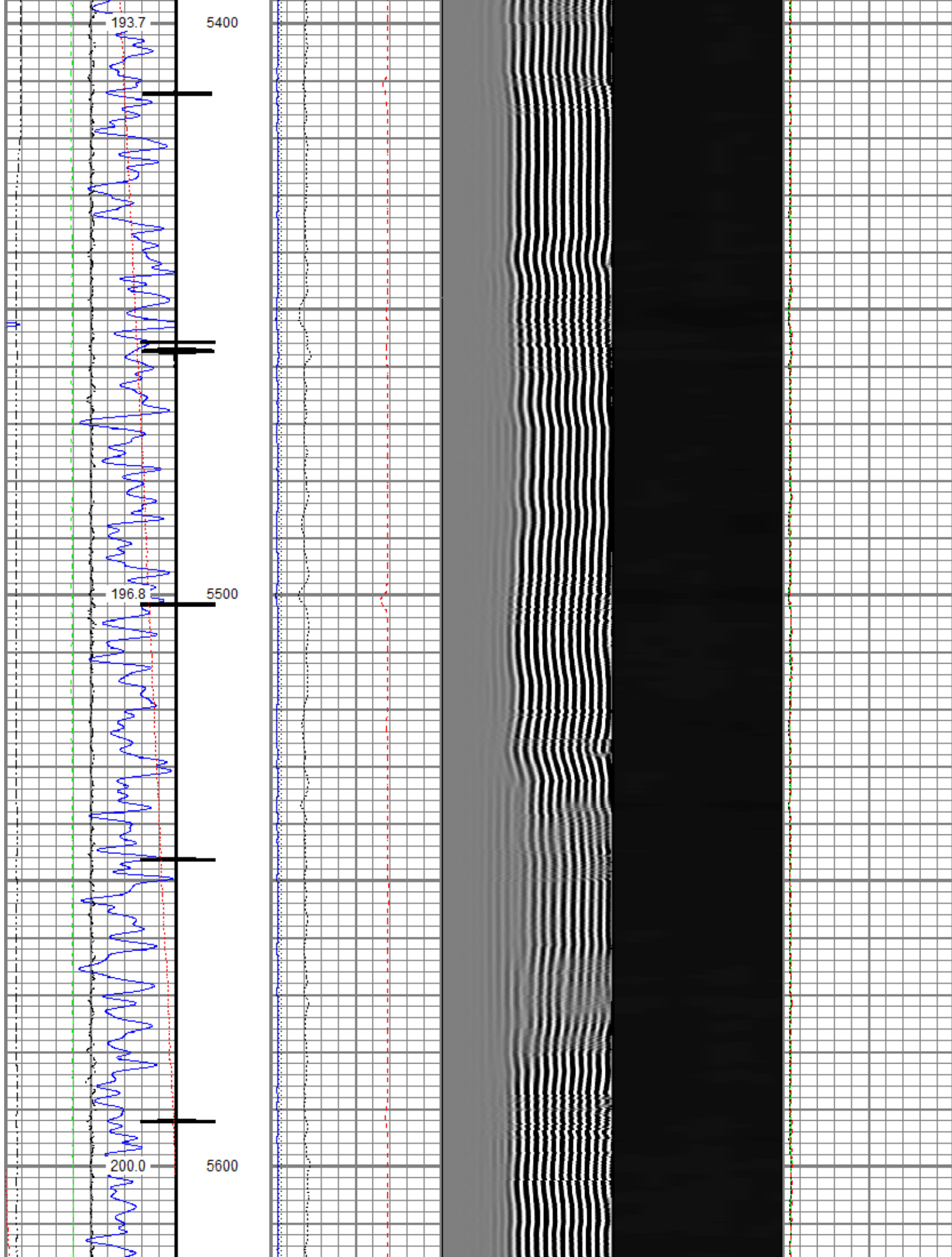


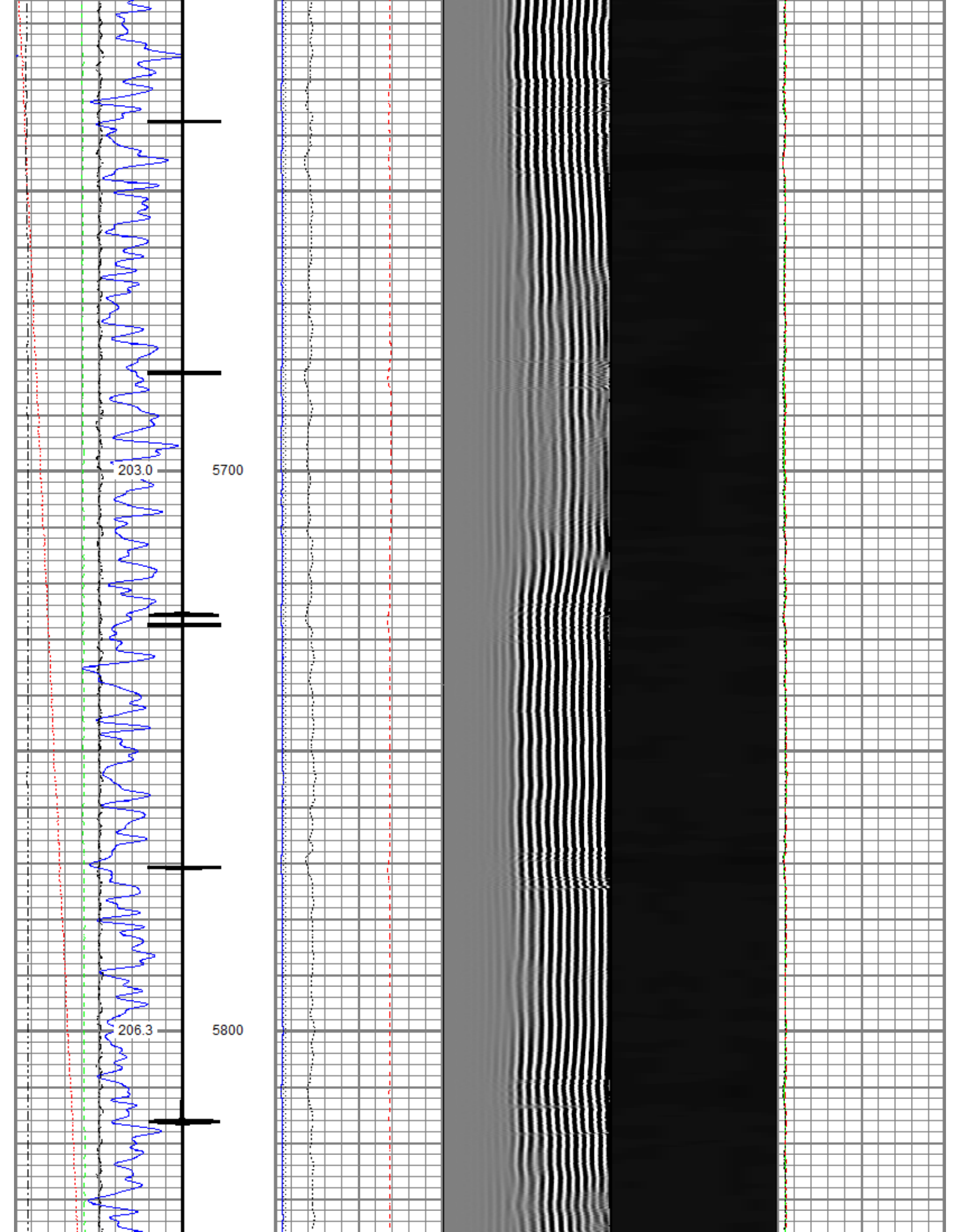




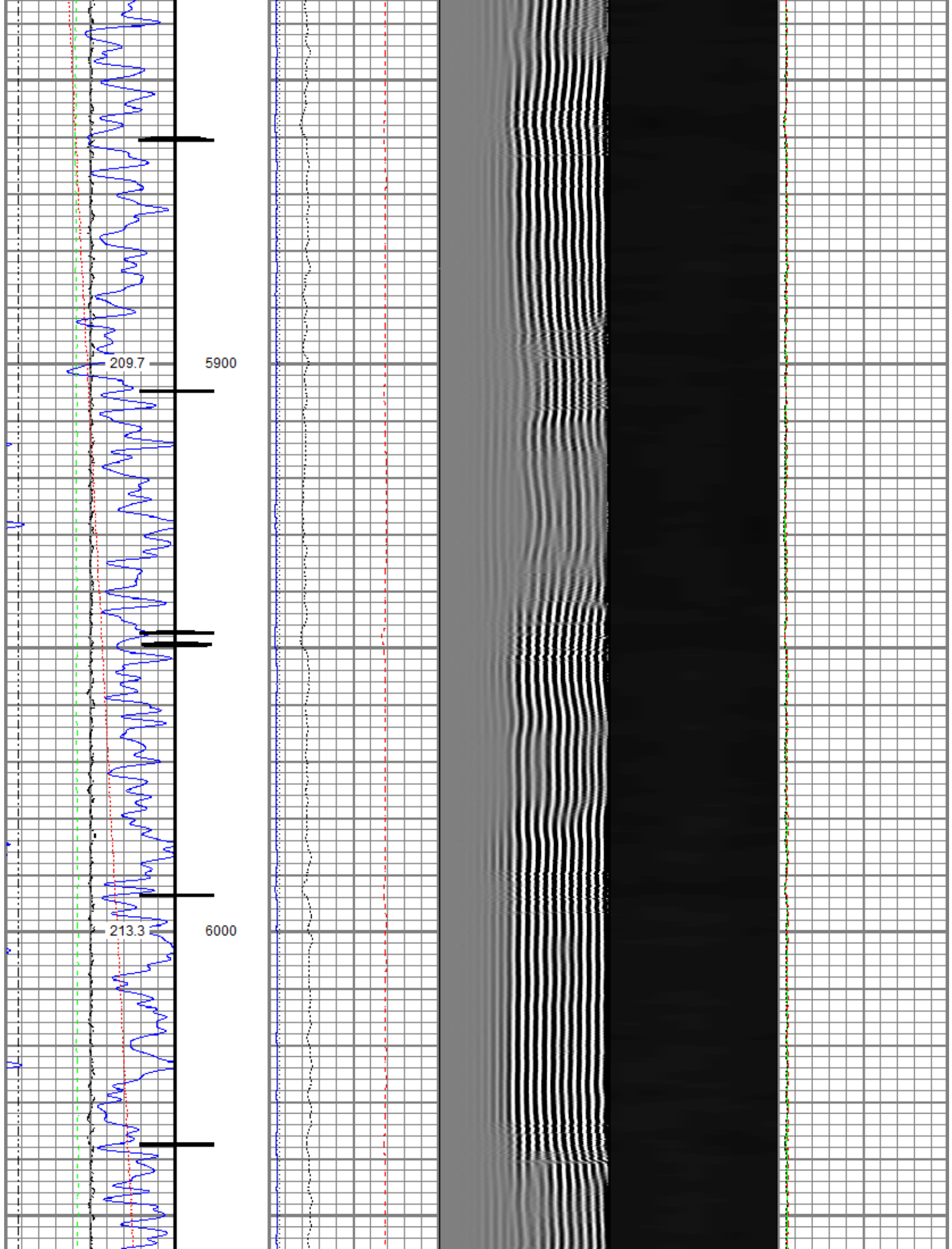


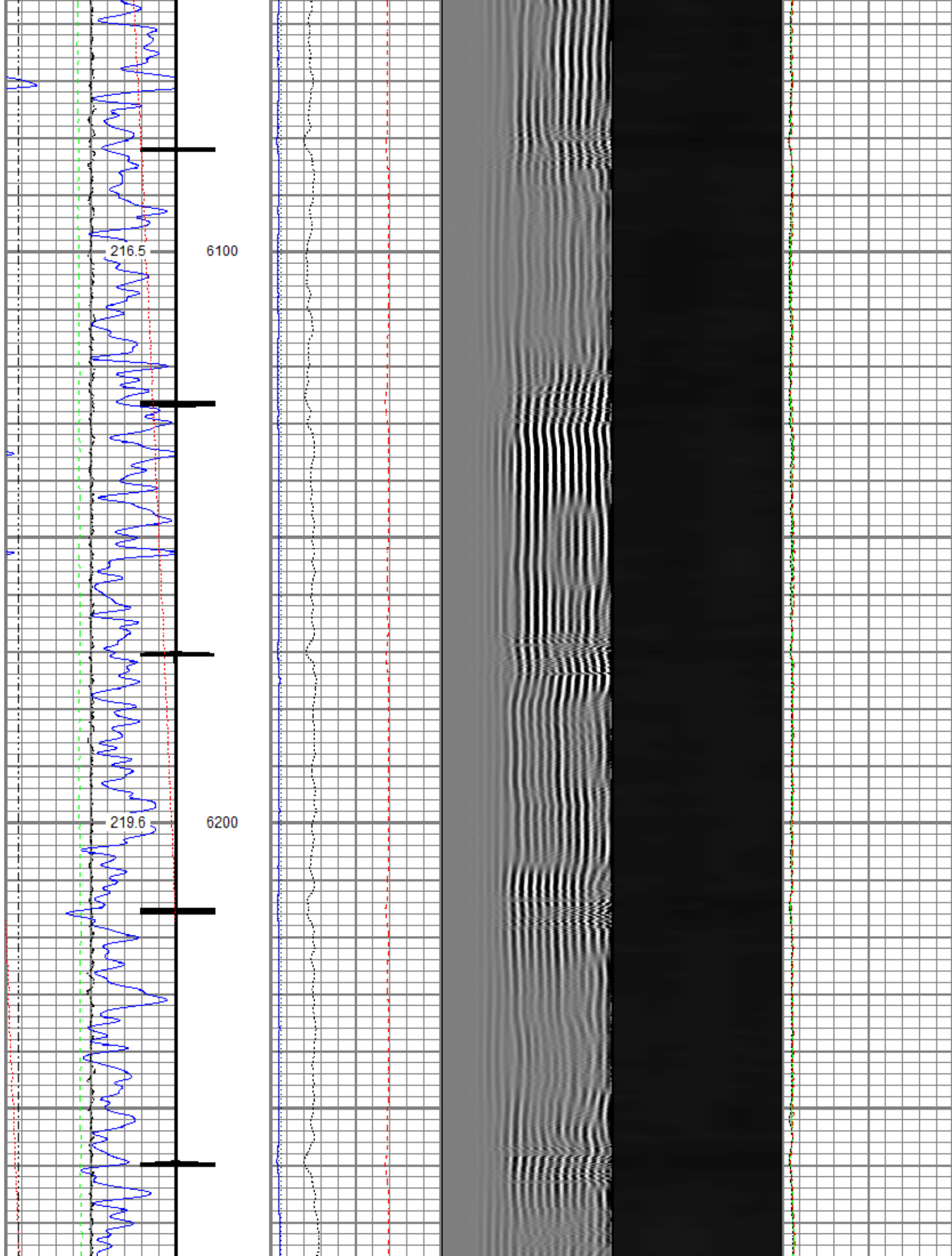


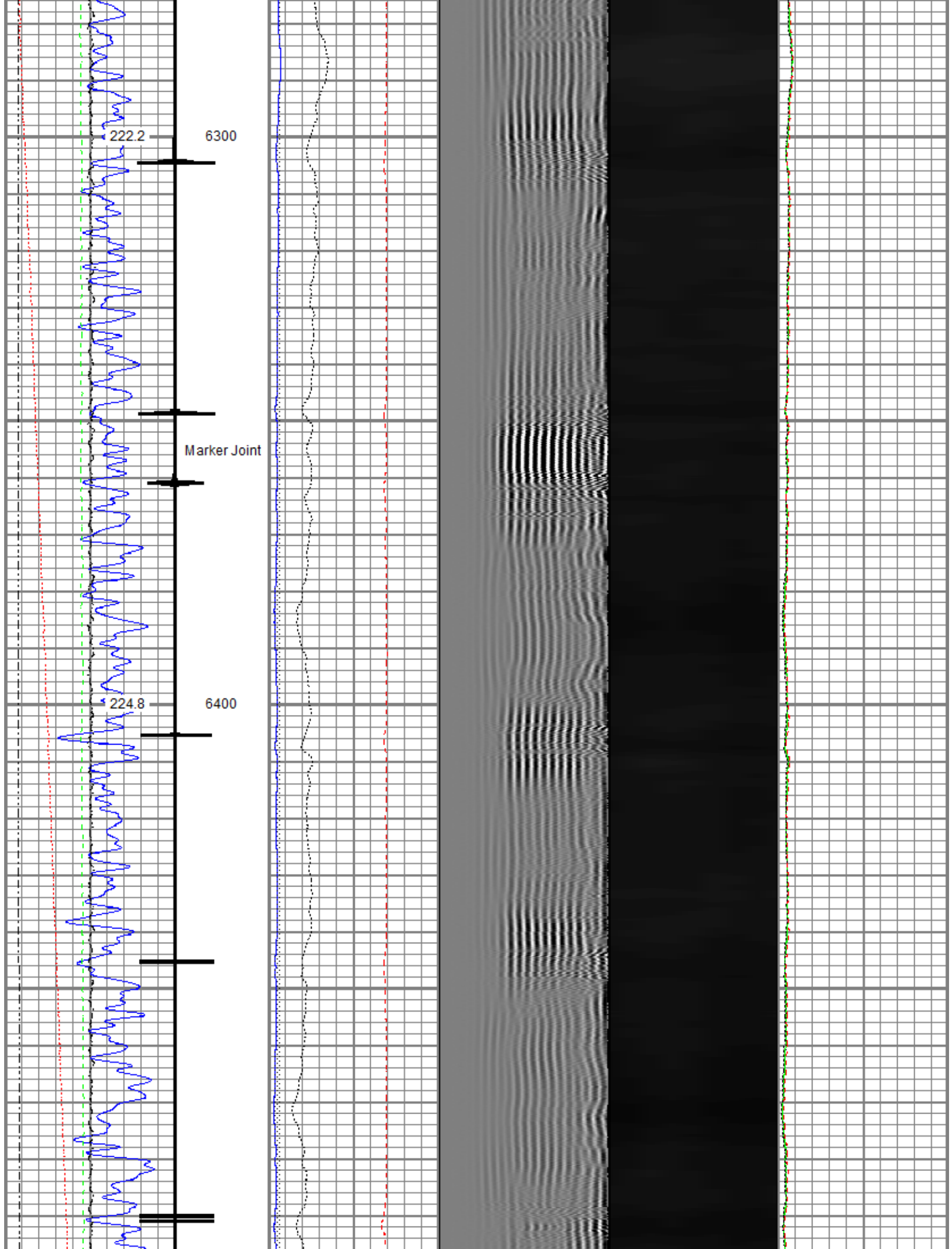


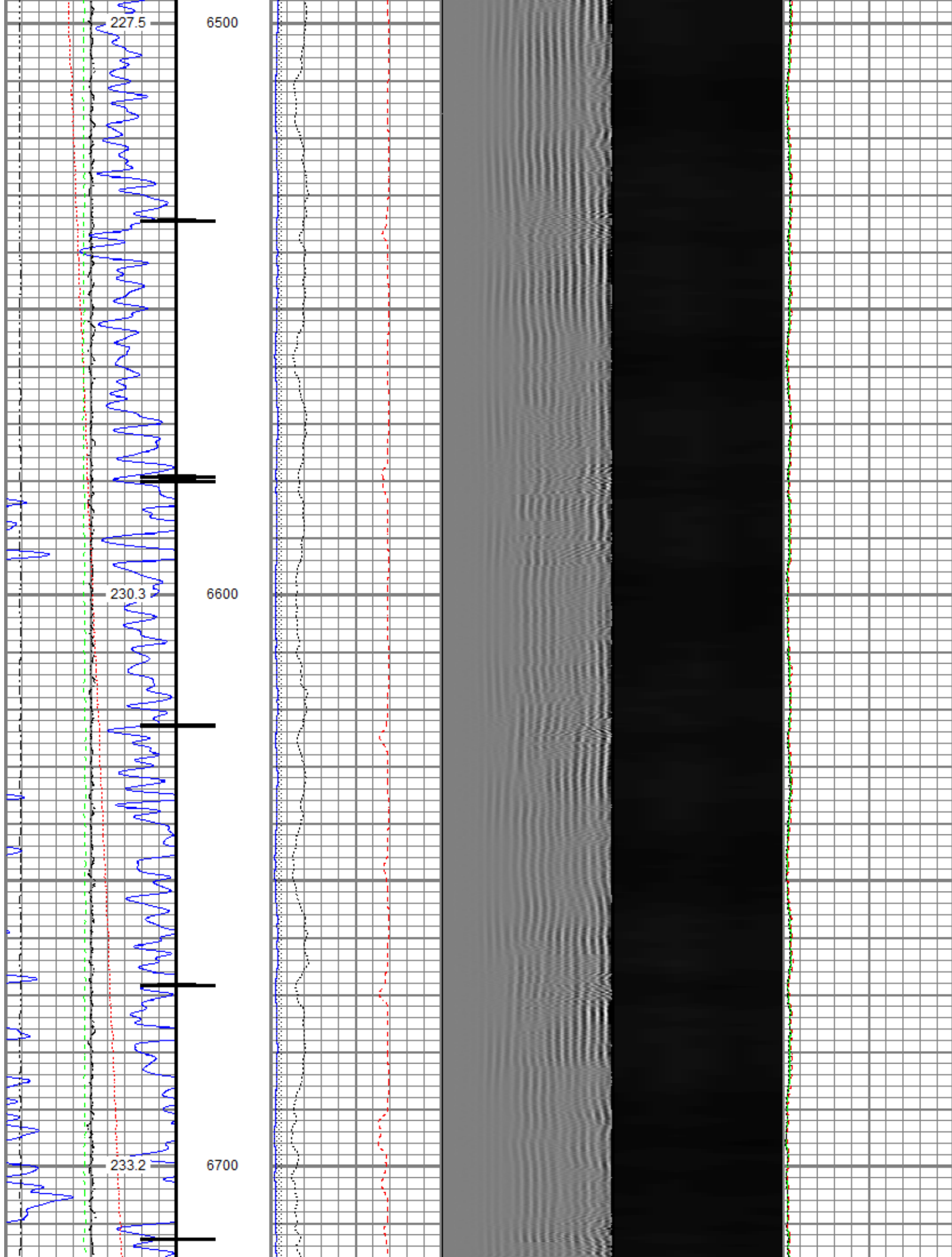




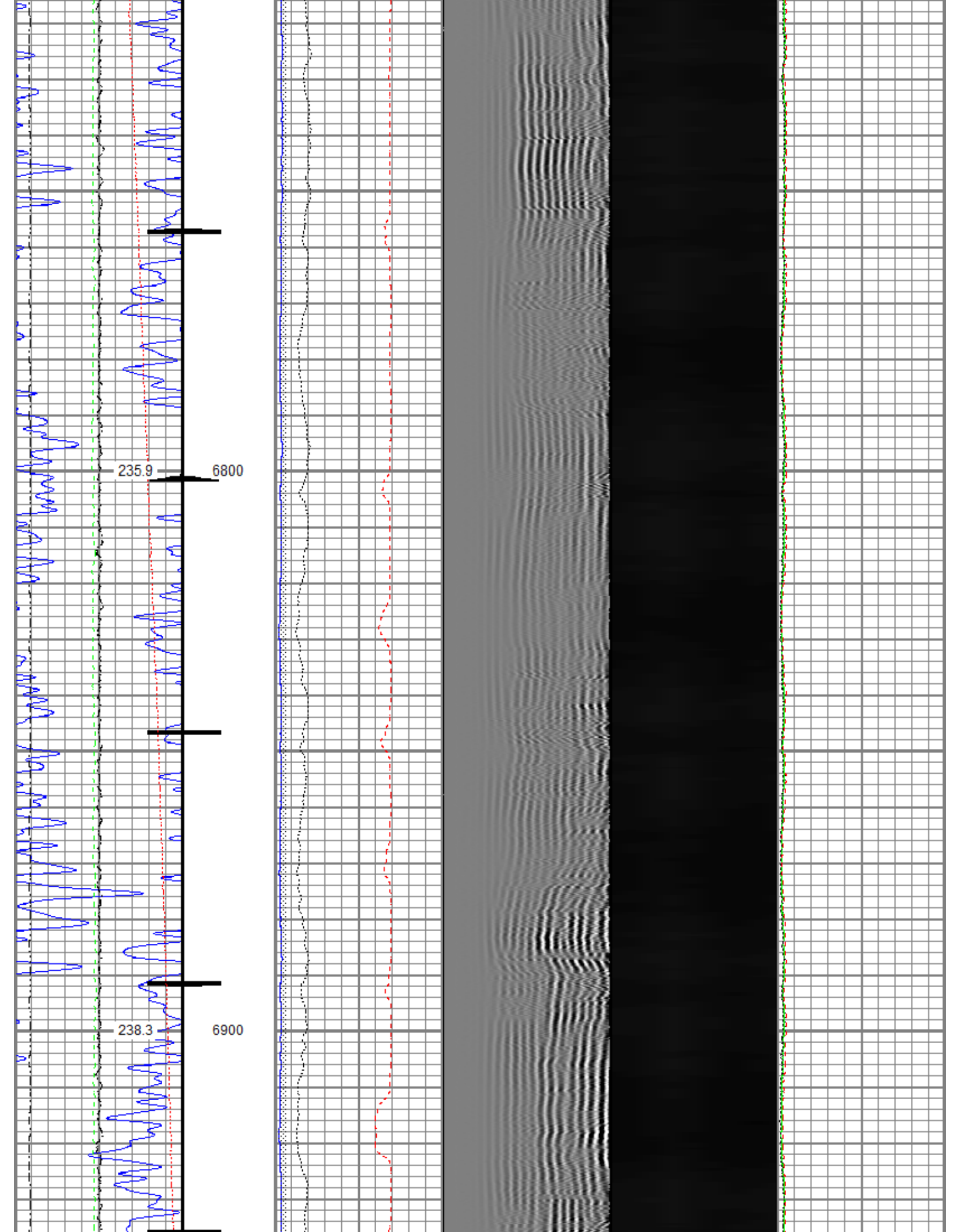


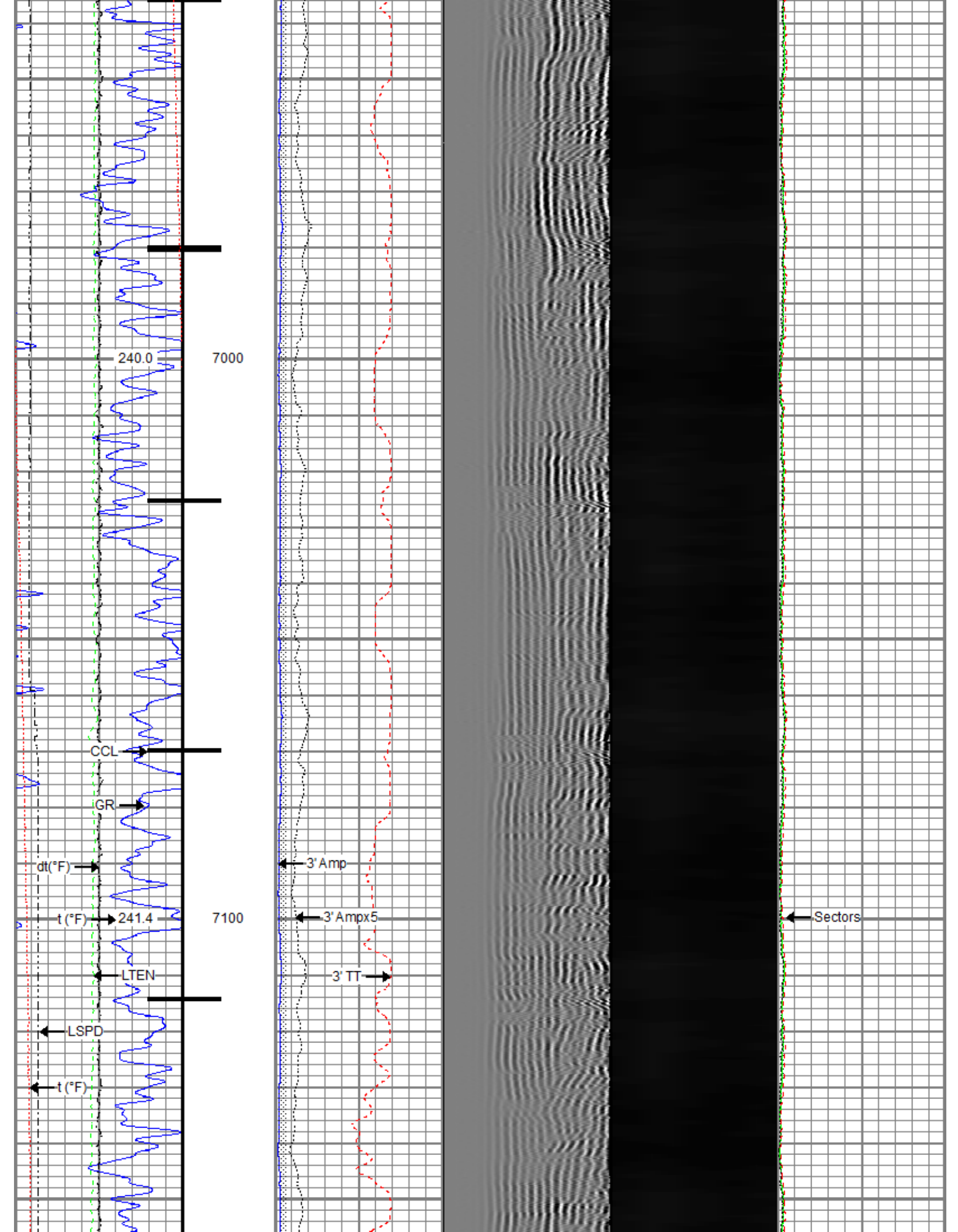


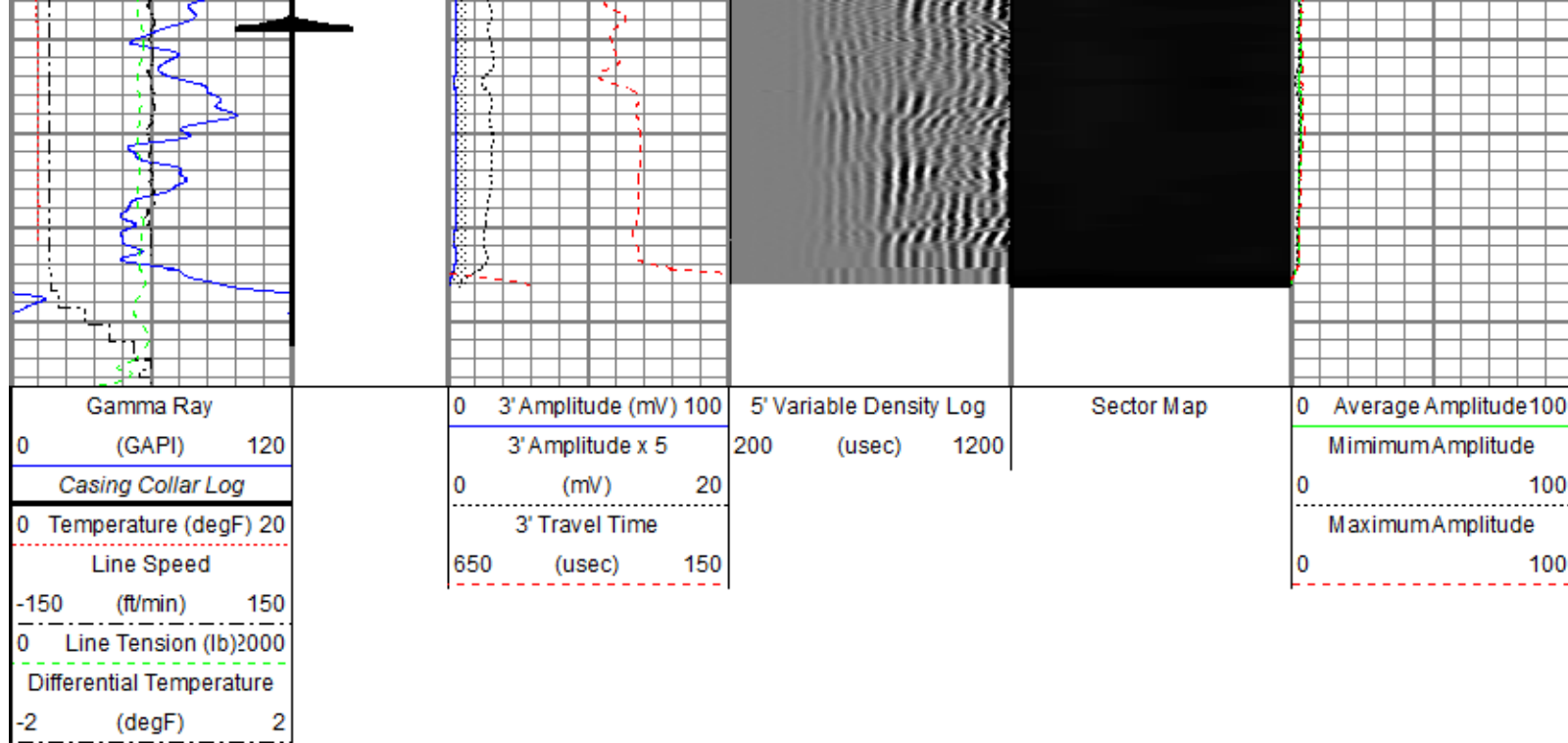








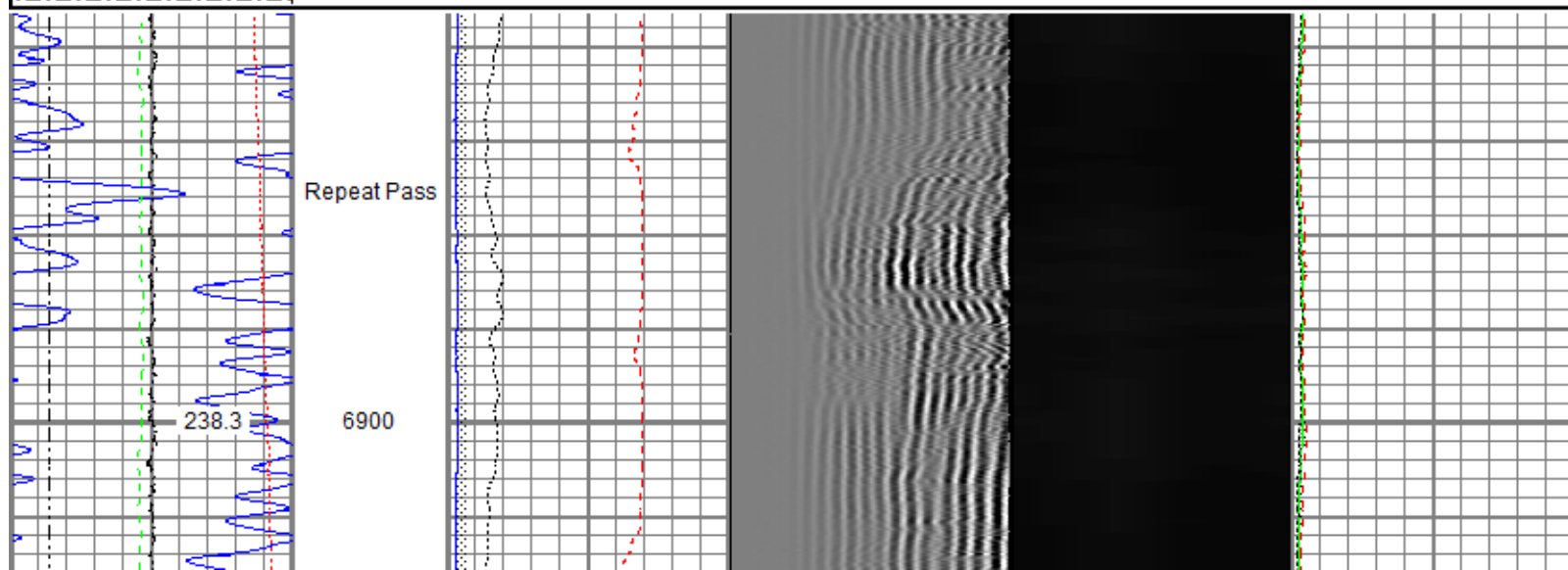
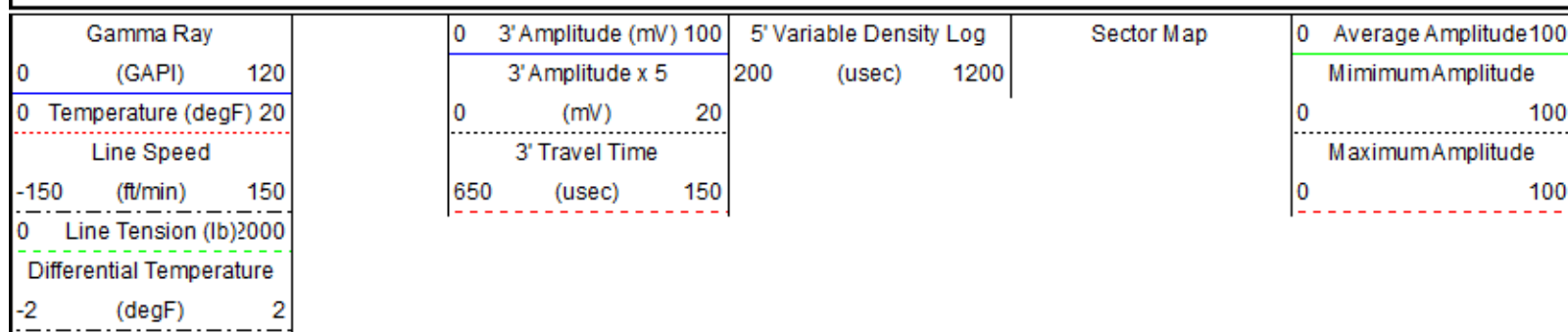




## Repeat Pass

Recorded With 2500 PSI Surface Induced Pressure

Database File noble\_vogler state d33-779\_rbl\_04-13-20\noble\_vogler state d33-779\_rbl\_04-13-20.db  
Dataset Pathname Pass\_6.1  
Presentation Format ros\_radri\_noble  
Dataset Creation Tue Apr 14 12:23:50 2020  
Charted by Depth in Feet scaled 1:240



Repeat Pass

Repeat Pass

240.1

7000

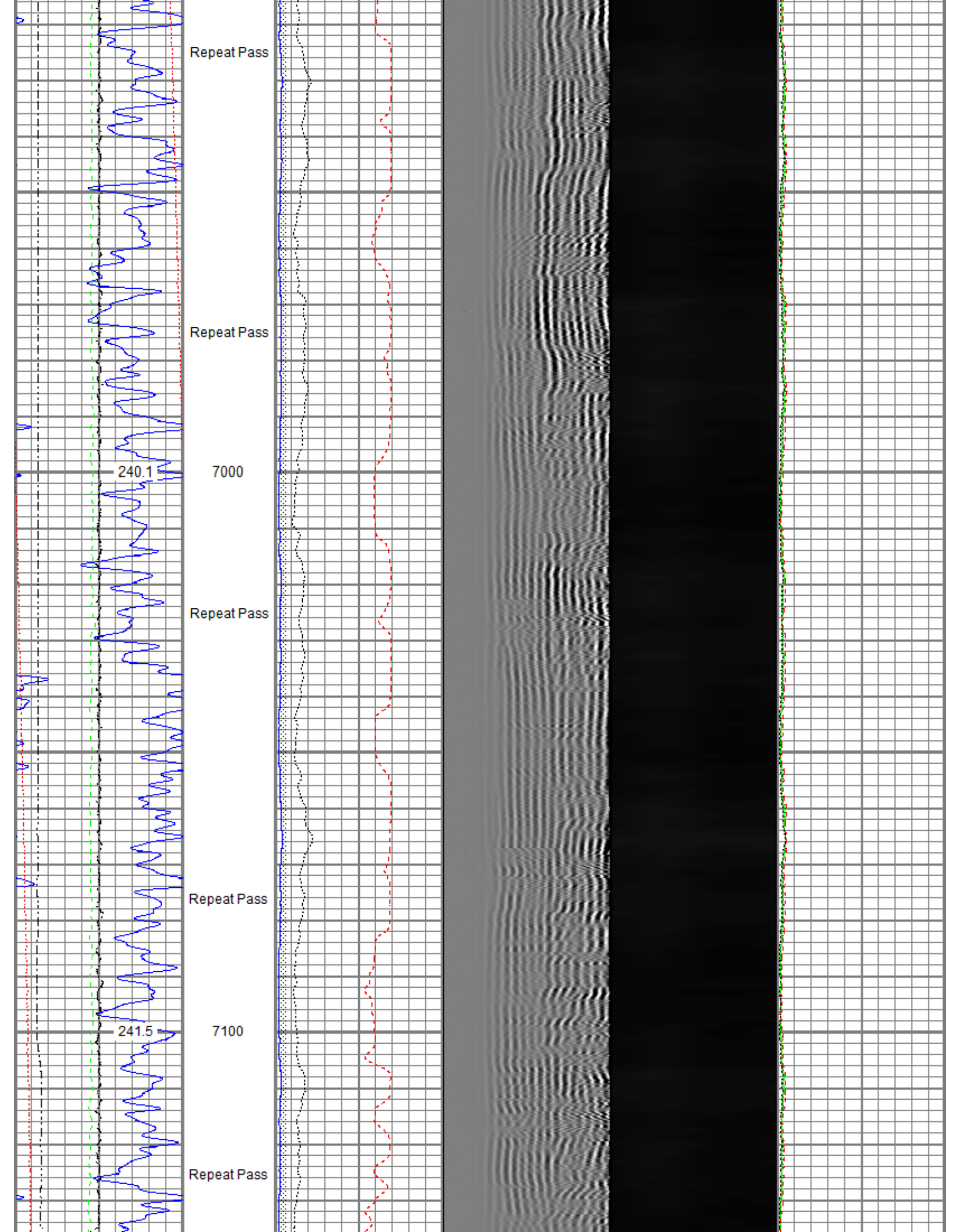
Repeat Pass

Repeat Pass

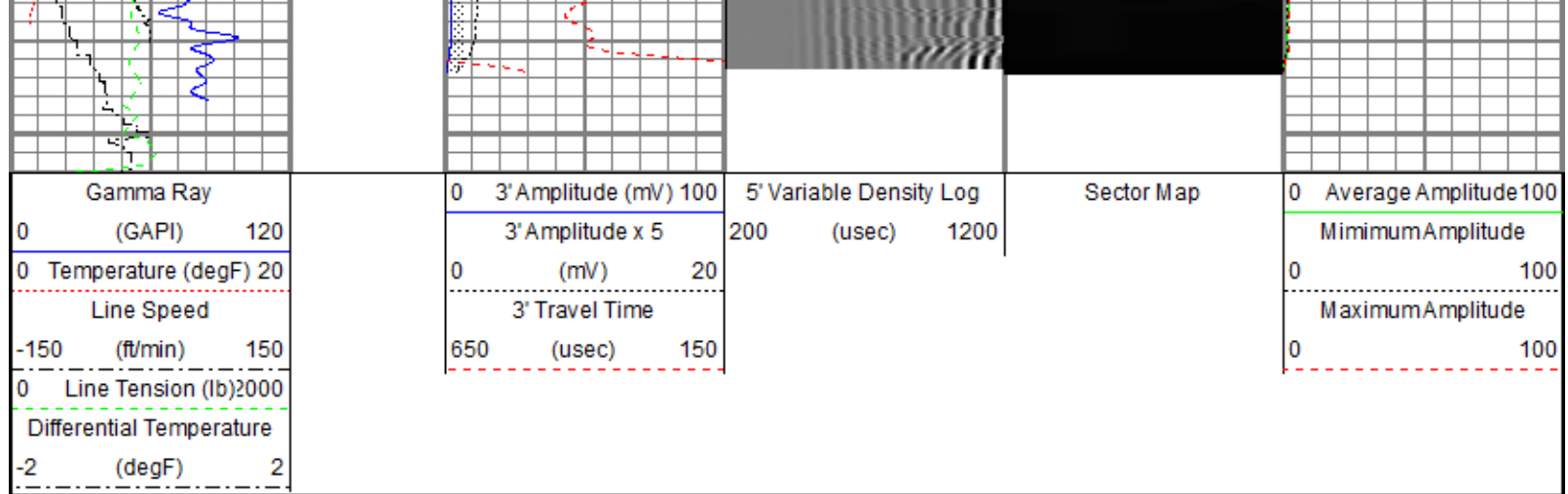
241.5

7100

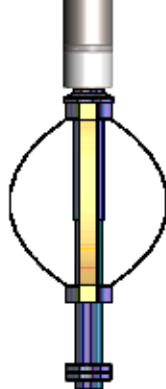
Repeat Pass







Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	14.16		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck			
WVFS8 WVFS7 WVFS6 WVFS5 WVFS4 WVFS3 WVFS2 WVFS1 WVFCAL WVF3FT WVF5FT	11.93 11.93 11.93 11.93 11.93 11.93 11.93 11.93 11.93 11.93 10.93		SO BS CENT-2750-4500	1.33	3.25	10.00
			Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer			
			Probe Radii-2750 RBT (FW0712-020)	9.39	2.75	105.00
			Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub			
CCL\$2	6.80		SO BS CENT-2750-4500	1.33	3.25	10.00
CCL\$1	6.80		Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer			
GR	5.46		Probe GR-CCL-2750 6PB (101001)	4.80	2.75	55.00
			Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT			

LOCTIM	0.00		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
UTCTIM	0.00					
Dataset: noble_vogler state d33-779_rbl_04-13-20.db: field/well/run1/main.1 Total length: 18.10 ft Total weight: 203.60 lb O.D.: 3.25 in						

Calibration Report						
Database File	C:\ProgramData\Warrior\Data\Noble_Vogler State D33-779_RBL_04-13-20\Noble_Vogler State D33-779_RBL_04-13-20.db					
Dataset Pathname	main.1					
Dataset Creation	Mon Apr 13 11:43:35 2020					
Gamma Ray Calibration Report						
Serial Number:	101001					
Tool Model:	2750 6PB					
Performed:	Tue Dec 03 09:24:53 2019					
Calibrator Value:	637.0	GAPI				
Background Reading:	100.6	cps				
Calibrator Reading:	981.1	cps				
Sensitivity:	0.7235	GAPI/cps				
Segmented Cement Bond Log Calibration Report						
Serial Number:	FW0712-020					
Tool Model:	2750 RBT					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	-3408.067	ft				
Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.776	0.800	71.921	91.602	0.798
CAL	0.006	0.667				
5'	0.000	0.764	0.800	71.921	93.147	0.799
SUM						
S1	0.000	0.726	0.000	100.000	137.784	-0.004
S2	0.000	0.727	0.000	100.000	137.617	-0.003
S3	0.000	0.762	0.000	100.000	131.212	-0.002
S4	0.000	0.813	0.000	100.000	123.017	-0.003
S5	0.000	0.856	0.000	100.000	116.833	-0.003
S6	0.000	0.844	0.000	100.000	118.510	-0.003
S7	0.000	0.815	0.000	100.000	122.758	-0.003
S8	0.000	0.764	0.000	100.000	130.872	-0.003
Internal Reference Calibration, performed (Not Performed):						
	Raw (v)		Calibrated (v)		Results	

	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.006	0.667	1.000	0.000

Air Zero Calibration, performed Mon Apr 13 09:48:18 2020:

	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

#### Temperature Calibration Report

Serial Number: FW0712-020  
Tool Model: 2750 RBT  
Performed: Tue Dec 03 09:24:53 2019

	Reference	Reading
Low Reference:	100.00 degF	109.43 degF
High Reference:	350.00 degF	405.87 degF

Gain: 0.84  
Offset: 7.72  
Delta Spacing: 1



Company: Noble Energy Inc  
Well: Vogler State D33-779  
Field: Wattenberg  
County: Weld  
State: Colorado