



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Noble Energy Inc  
Well Guttersen D34-759  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05-123-48552  
SEC 22 TWP 3N RGE 64W  
Permanent Datum Ground Level Elevation 4825'  
Log Measured From Kelly Bushing 30 FT  
Drilling Measured From Kelly Bushing  
Other Services  
Elevation  
K.B. 4855'  
D.F. ---  
G.L. 4825'

Company Noble Energy Inc  
Well Guttersen D34-759  
Field Wattenberg  
County Weld  
State Colorado

Date	13-MAY-2020	One		
Run Number		17492 FT		
Depth Driller		7135 FT		
Depth Logger		7123 FT		
Bottom Logged Interval		Surface		
Top Log Interval		8.5"		
Open Hole Size		Water		
Type Fluid		8.34 lb/gal		
Density / Viscosity		242°F		
Max. Recorded Temp.		See Log		
Estimated Cement Top		ROA		
Time Well Ready		12:00		
Time Logger on Bottom		HD-0343		
Equipment Number		Platteville, CO		
Location		Sam Hopper		
Recorded By		Andy Dockins		
Witnessed By				
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 6410.2 FT  
Adjusted -0.2 FT to correlate with 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!!

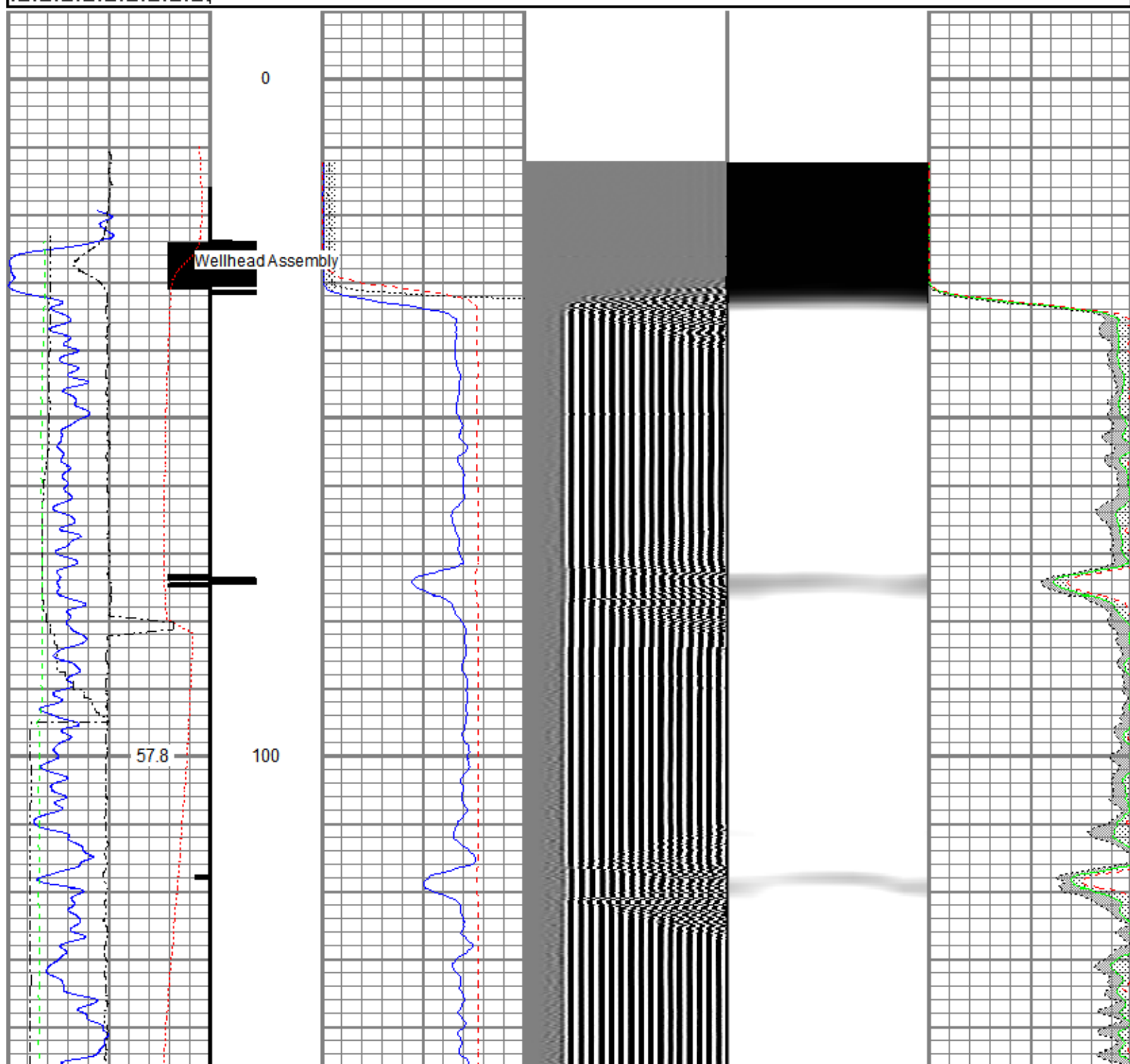
Main Pass

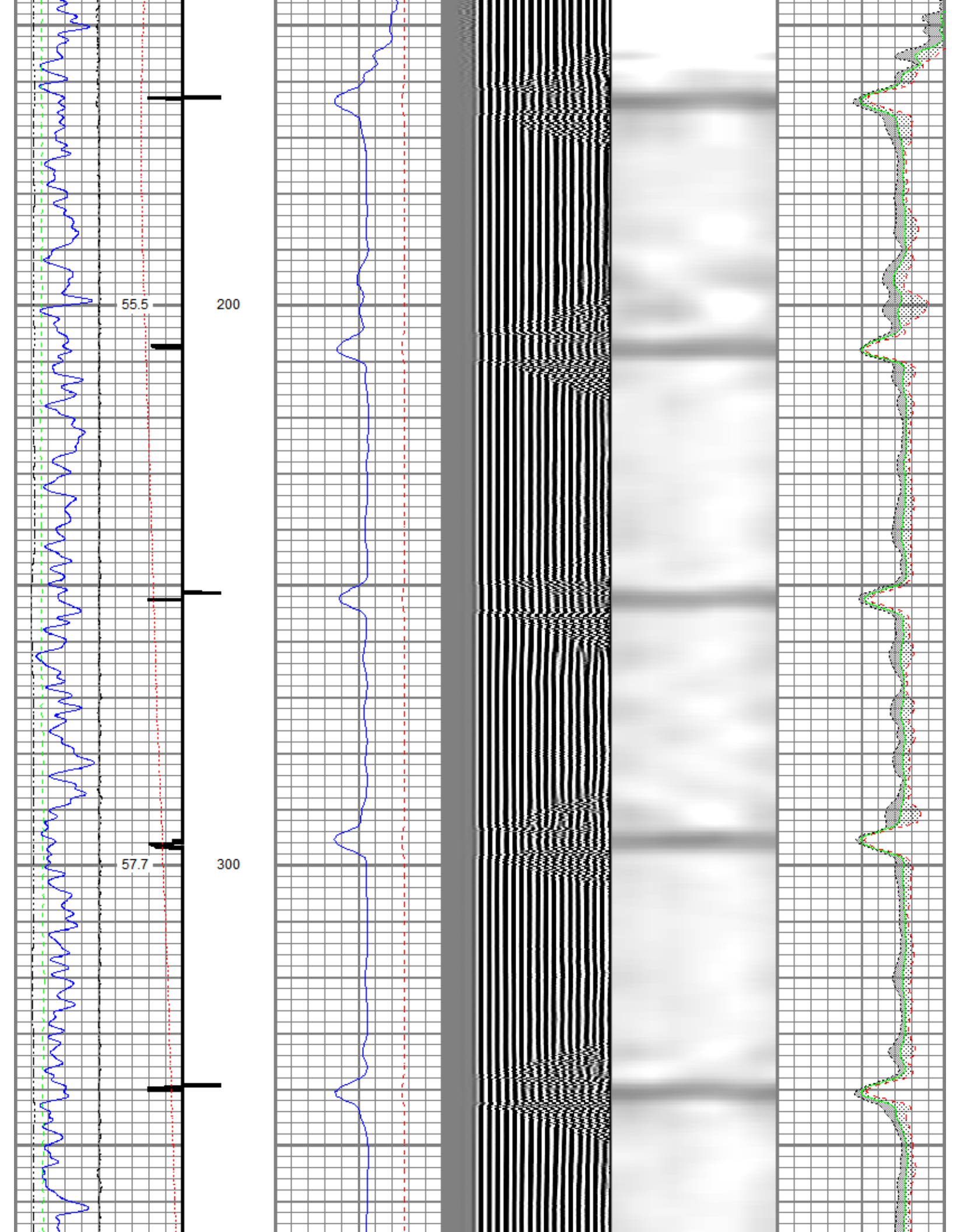


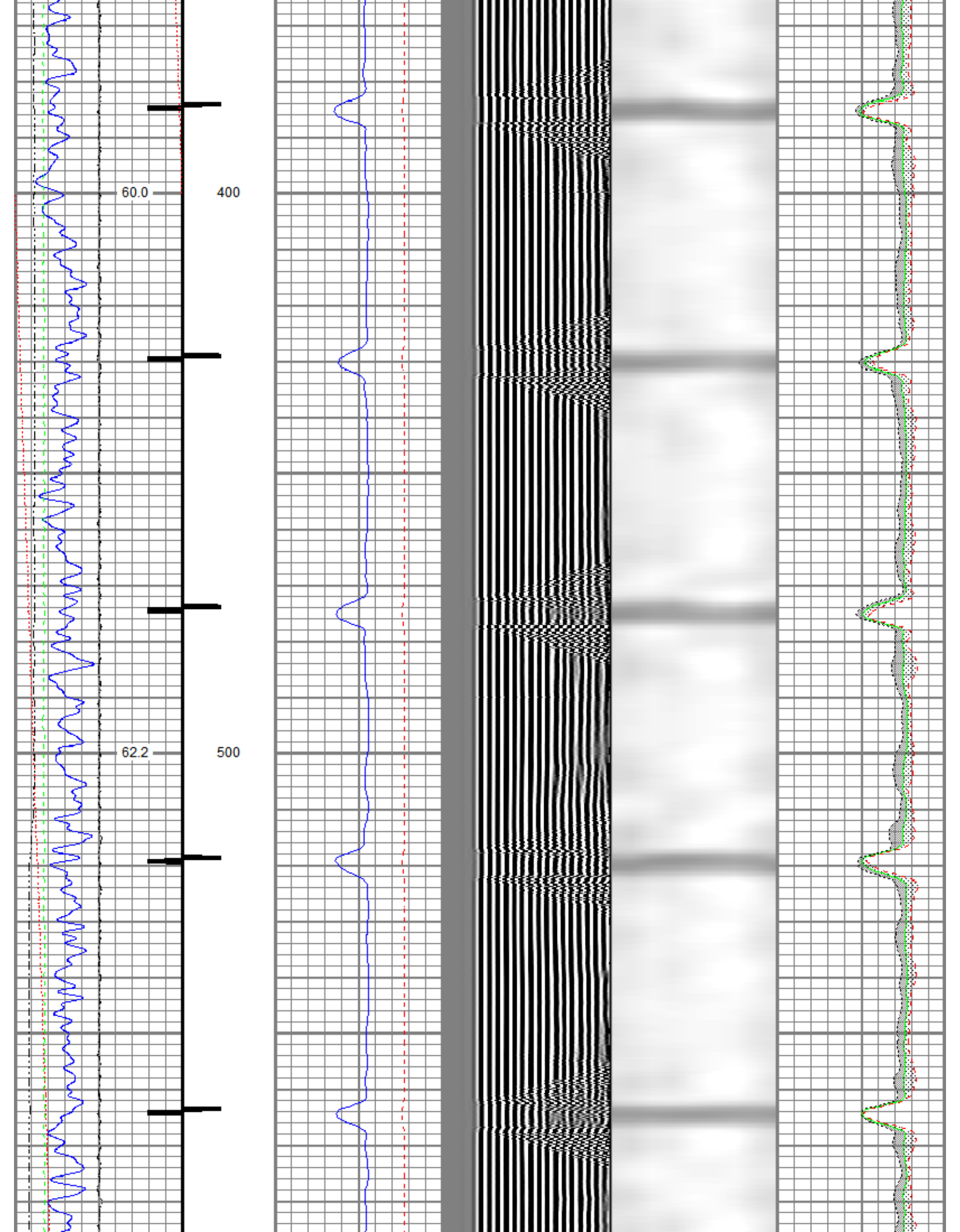
Recorded With 2500 PSI Surface Induced Pressure

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 Presentation Format ros\_radri\_noble  
 Dataset Creation Wed May 13 13:16:38 2020  
 Charted by Depth in Feet scaled 1:240

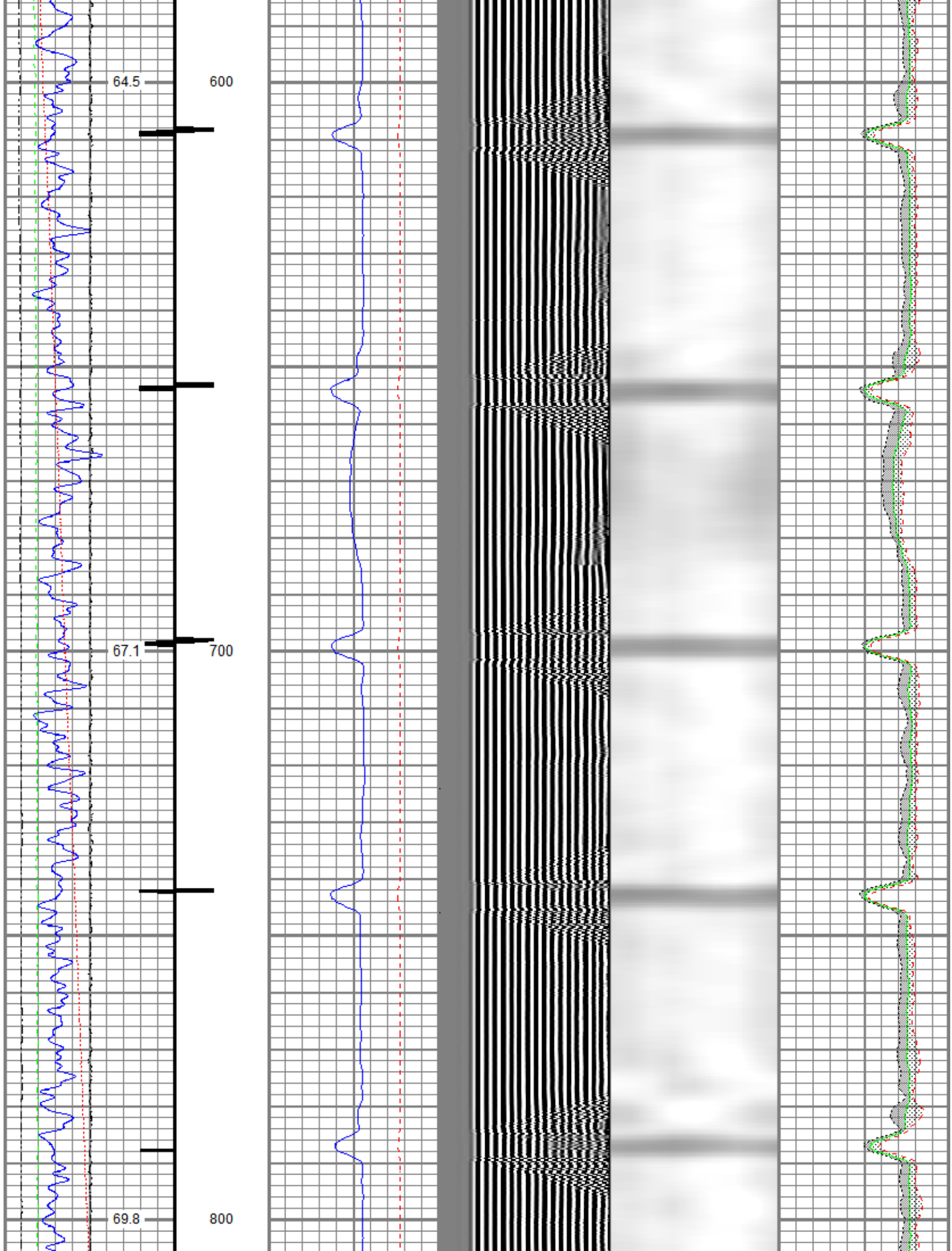
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

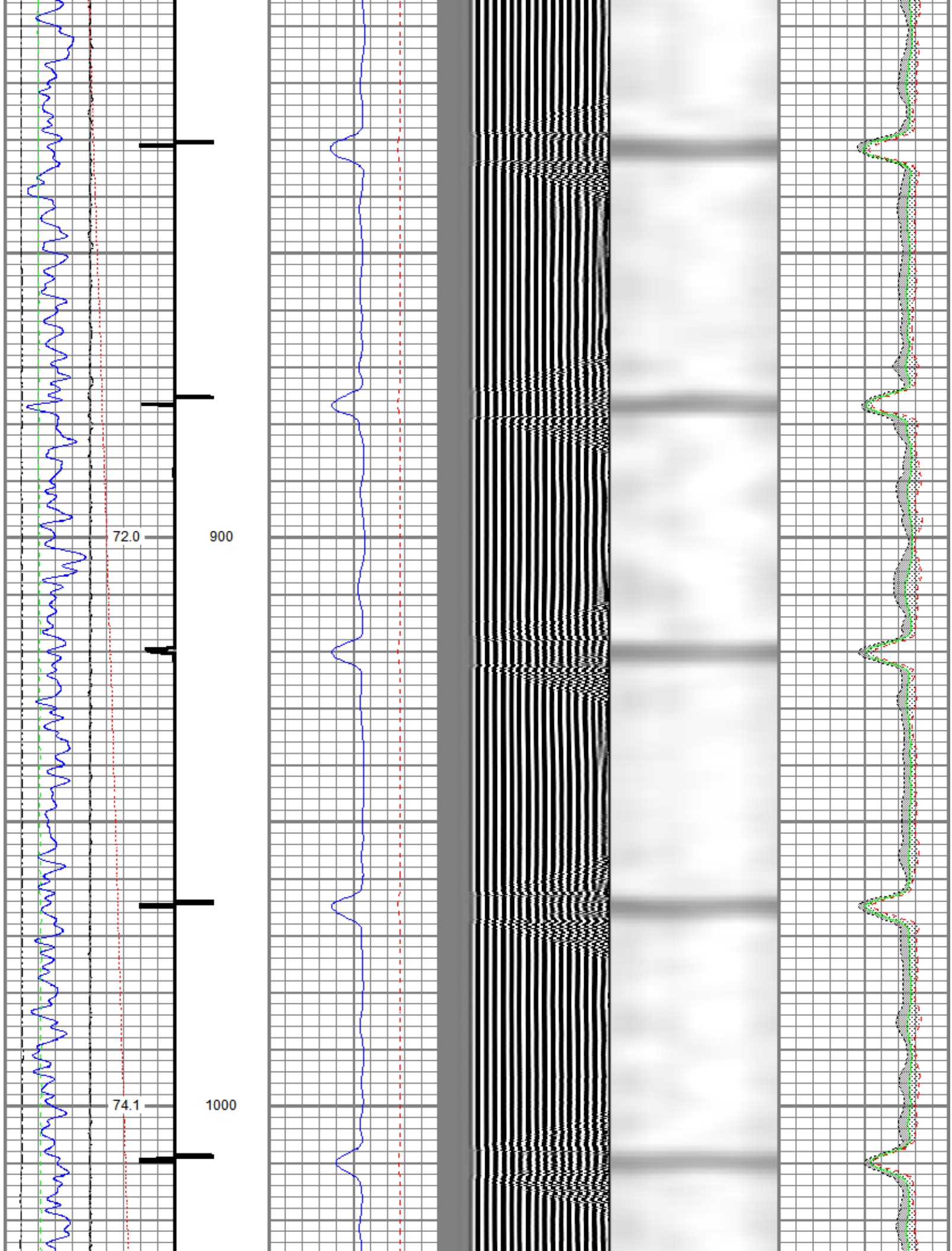


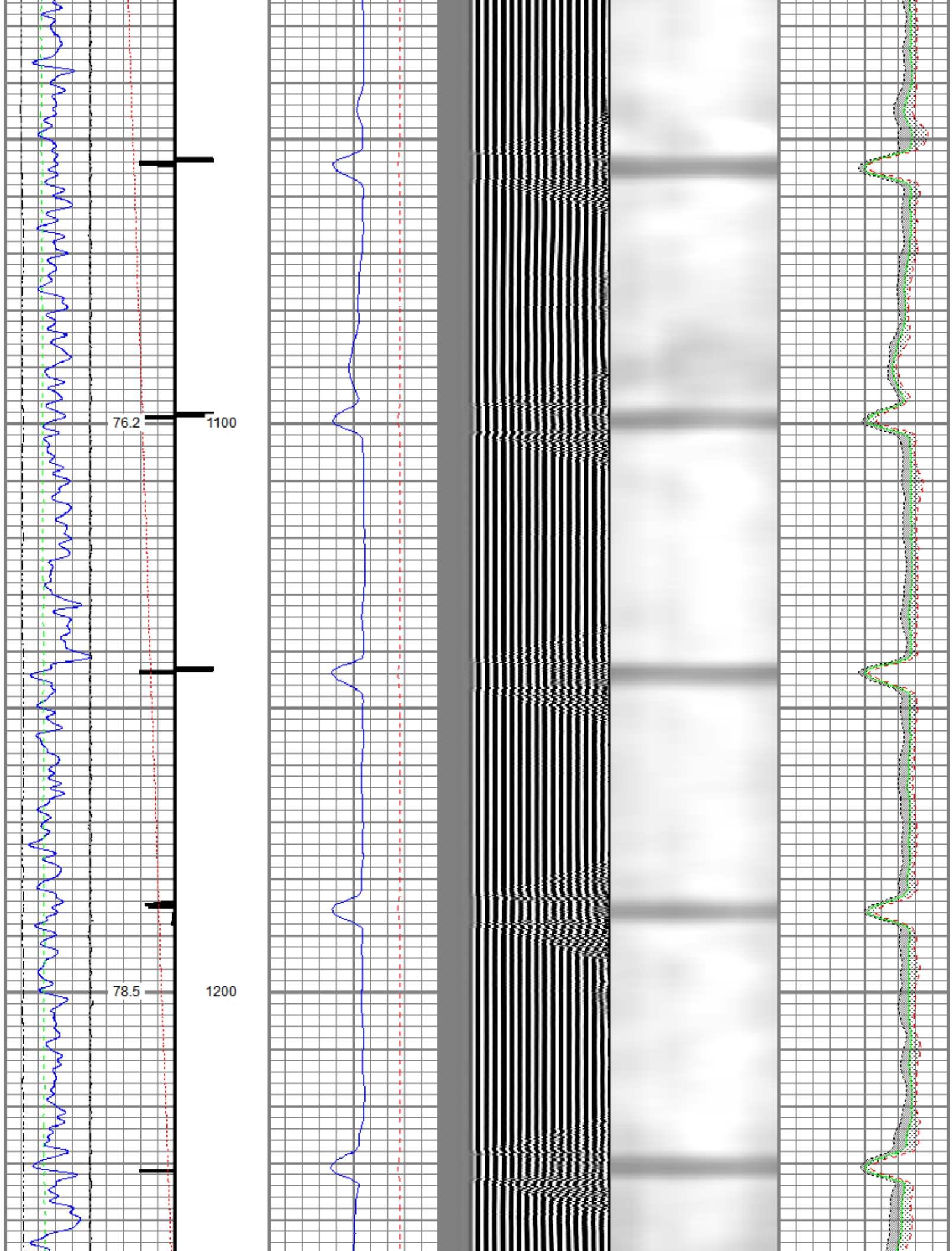


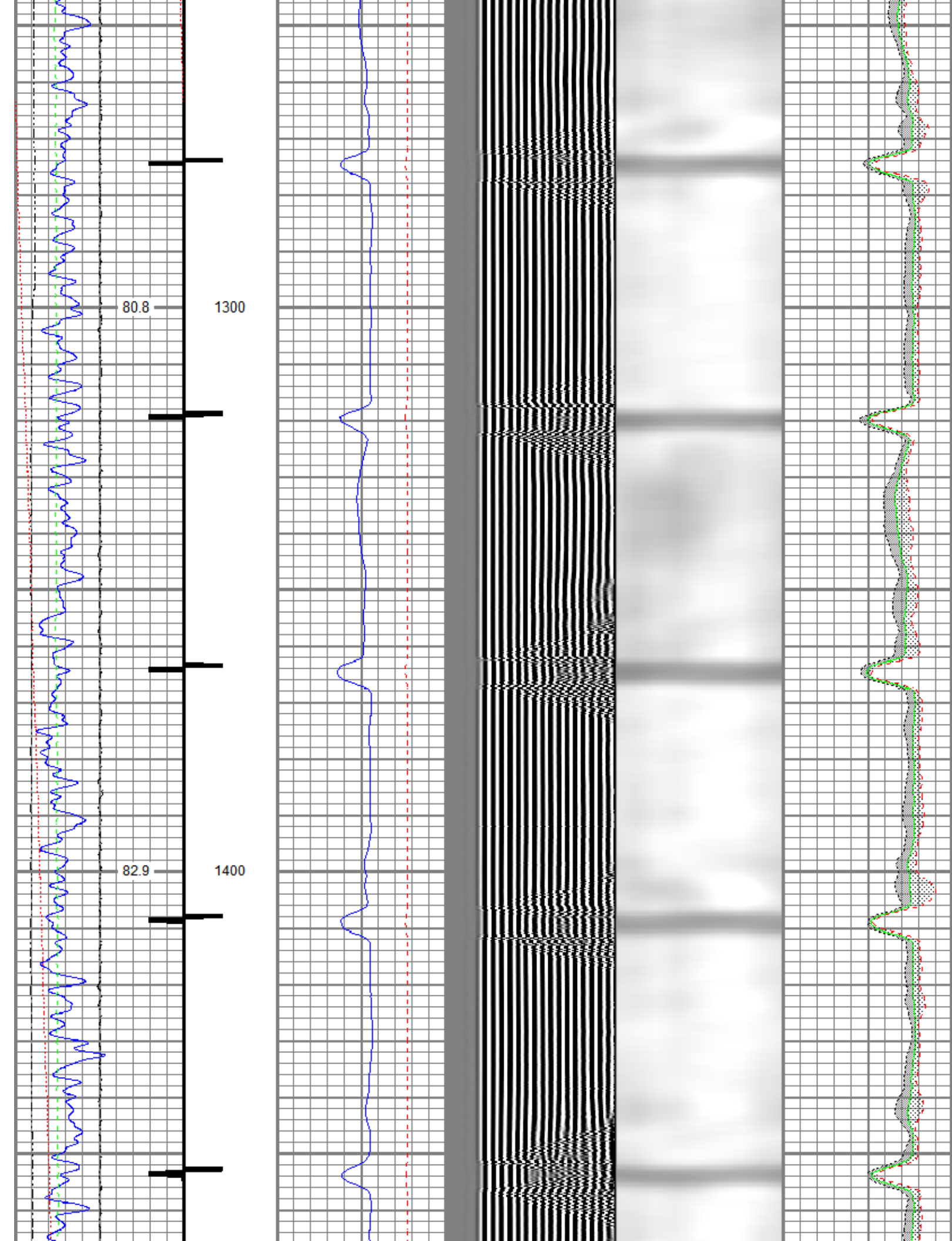




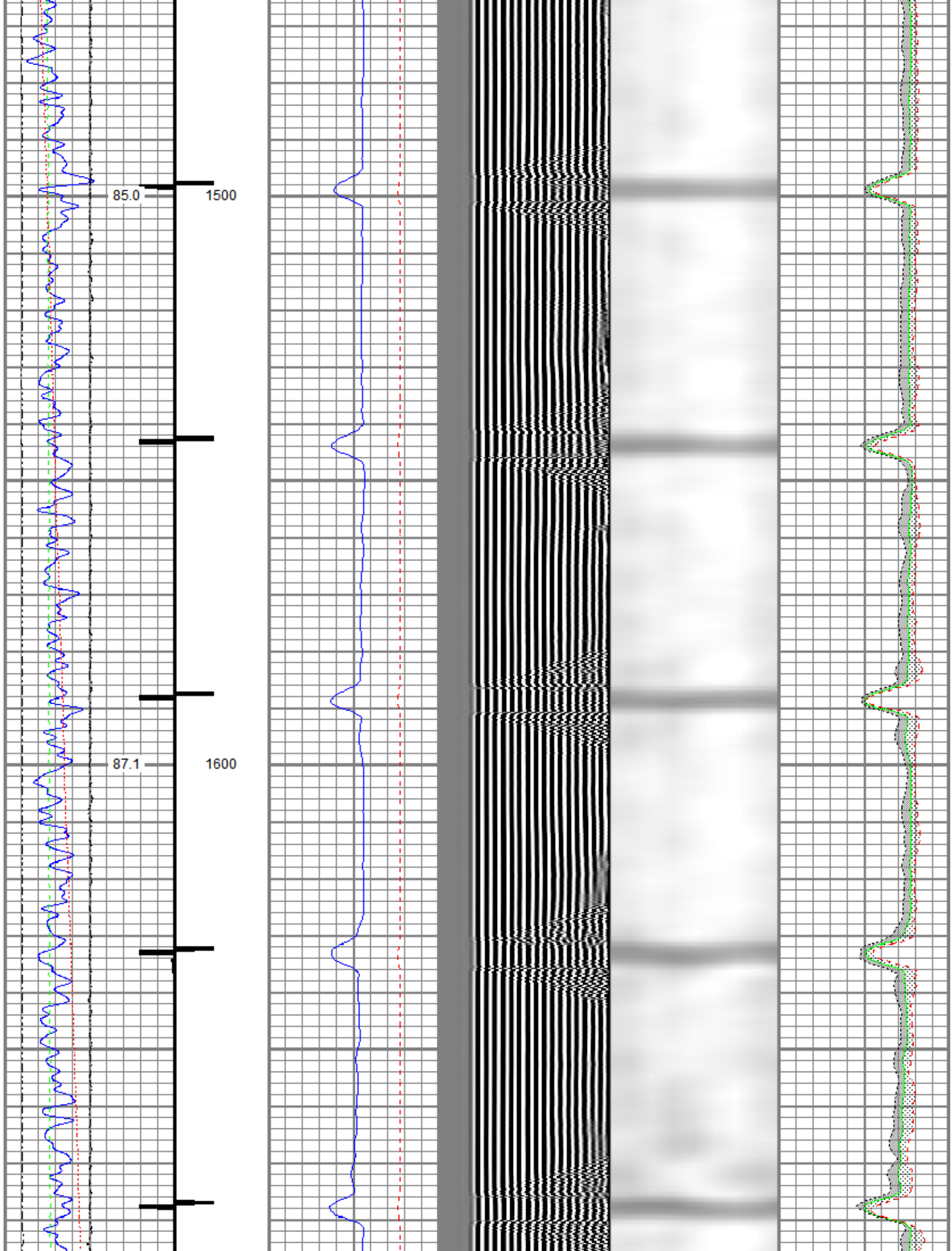


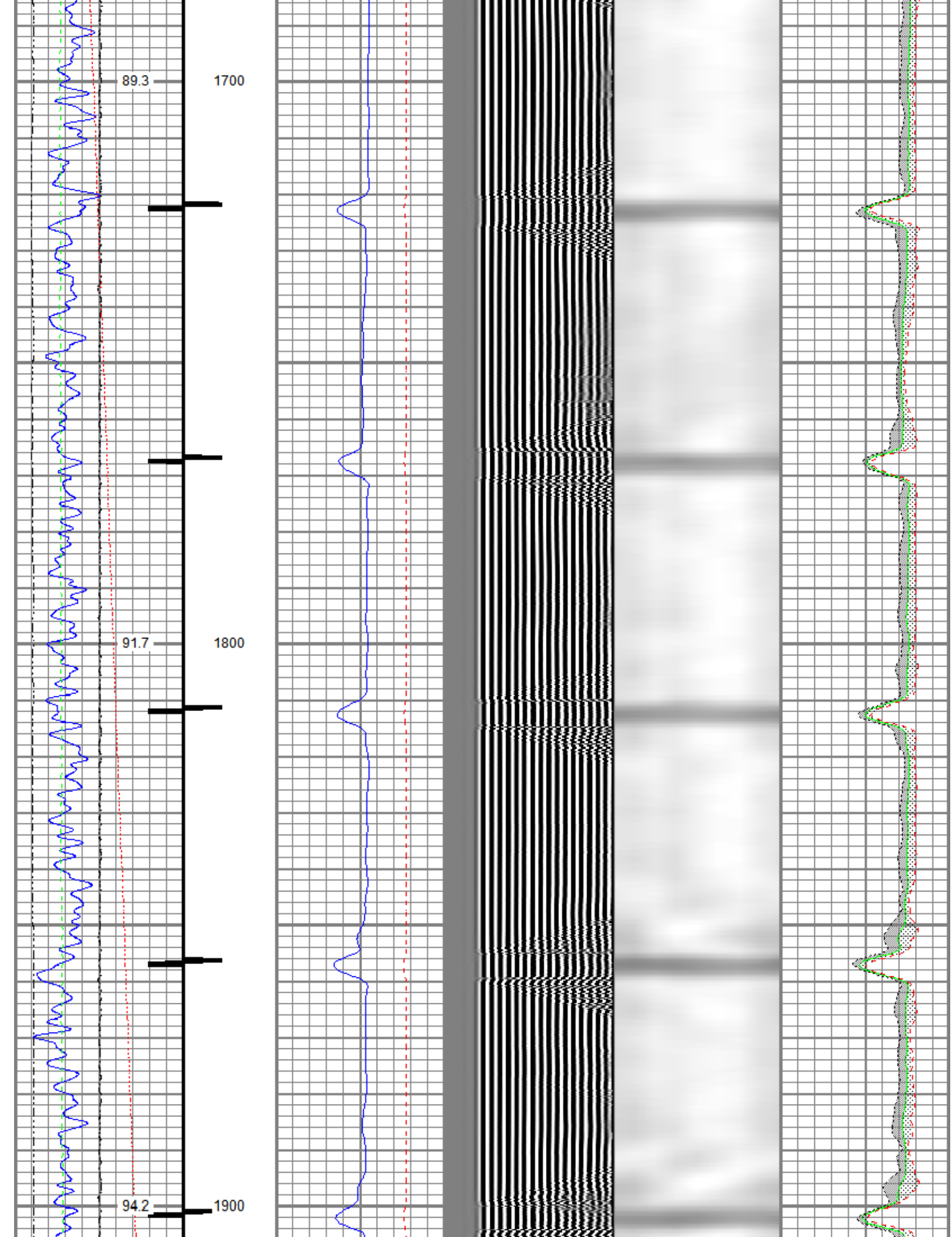


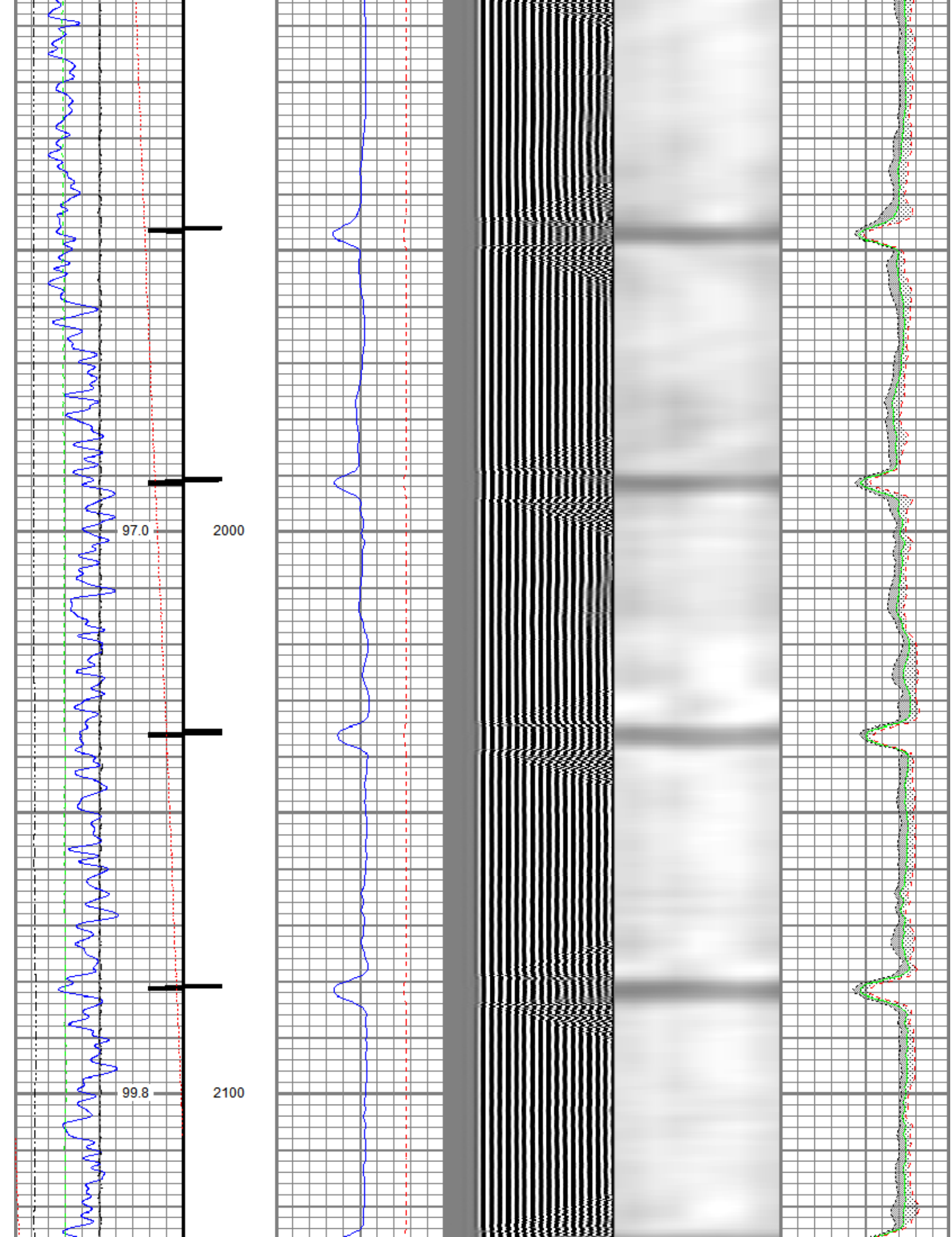


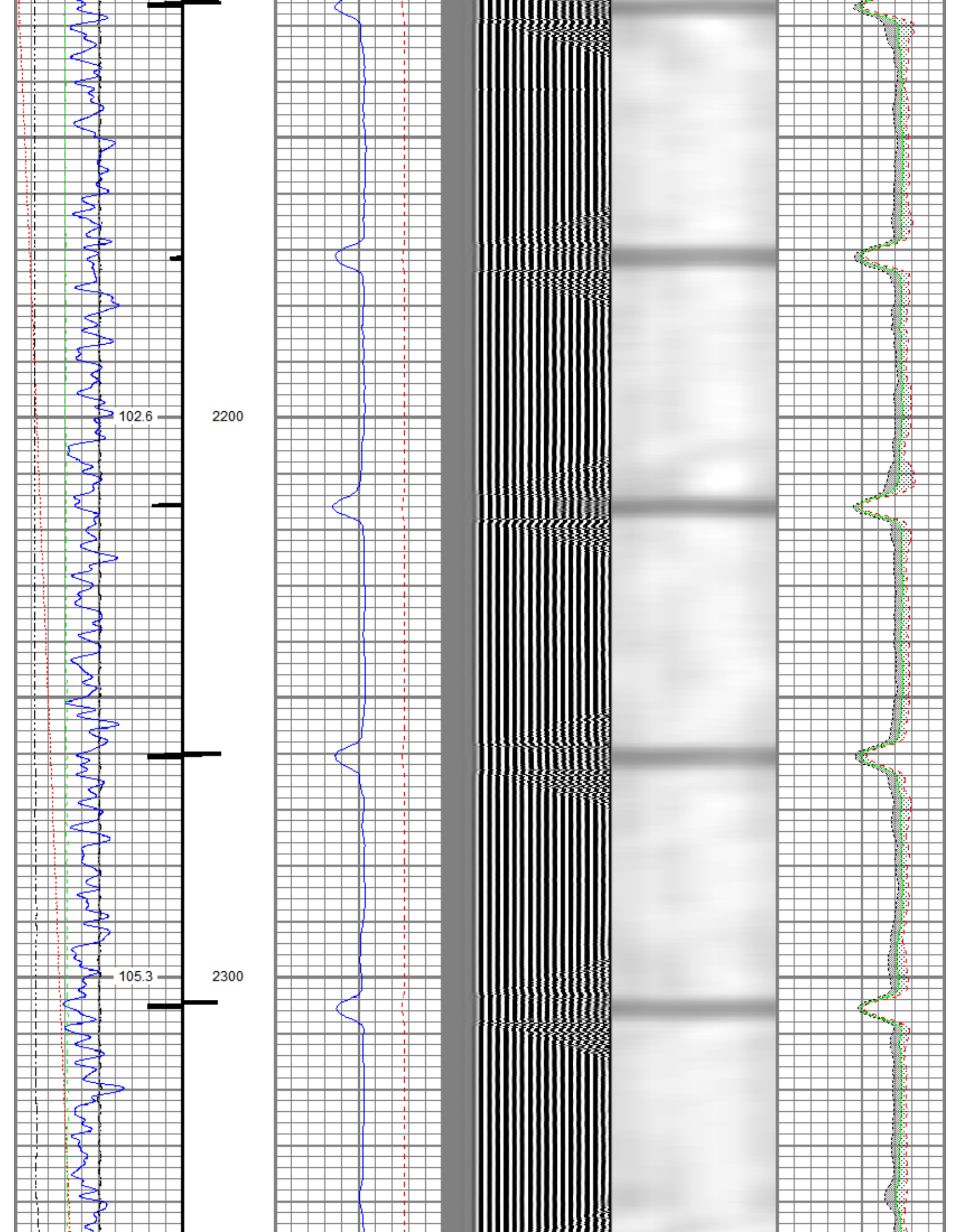




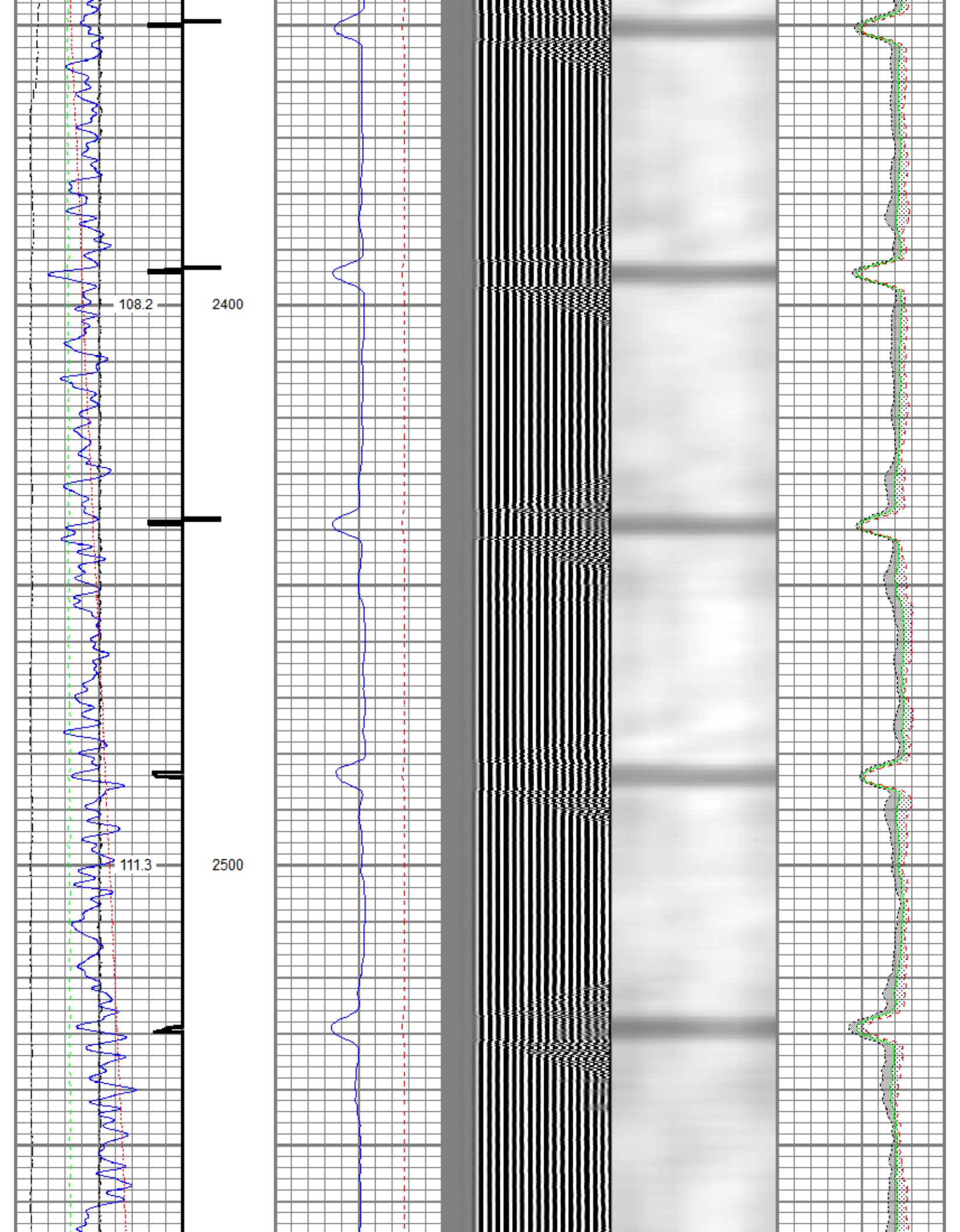


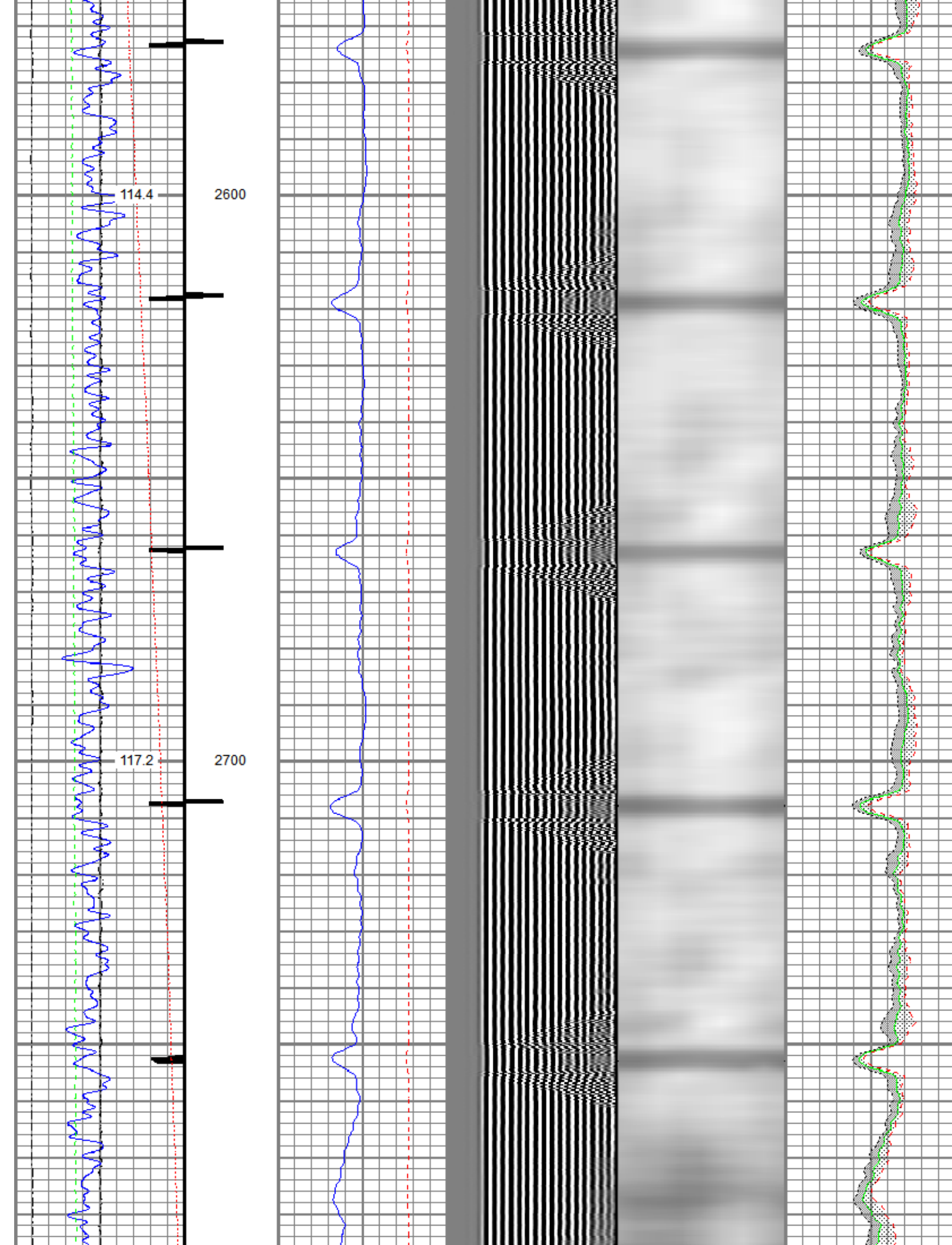


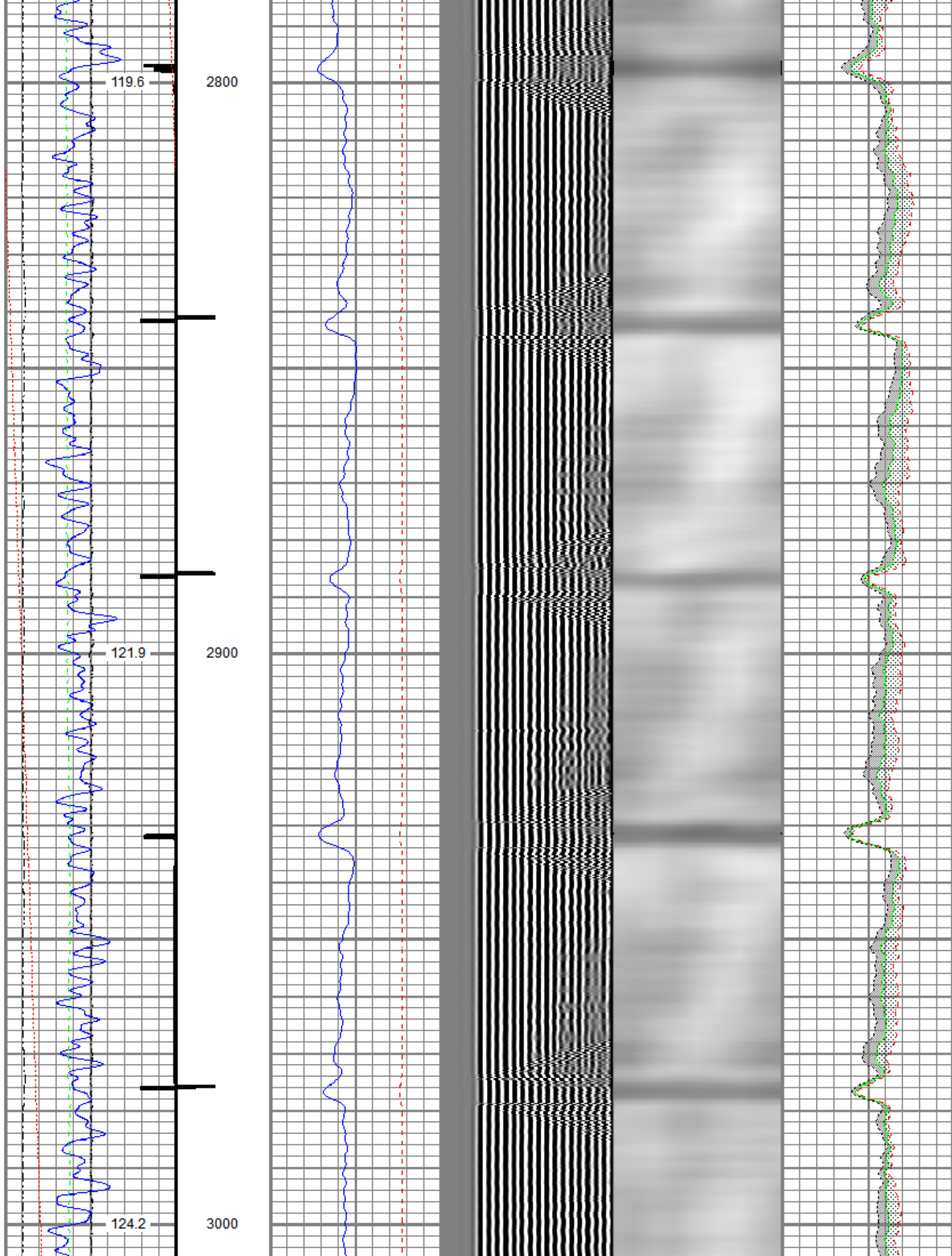




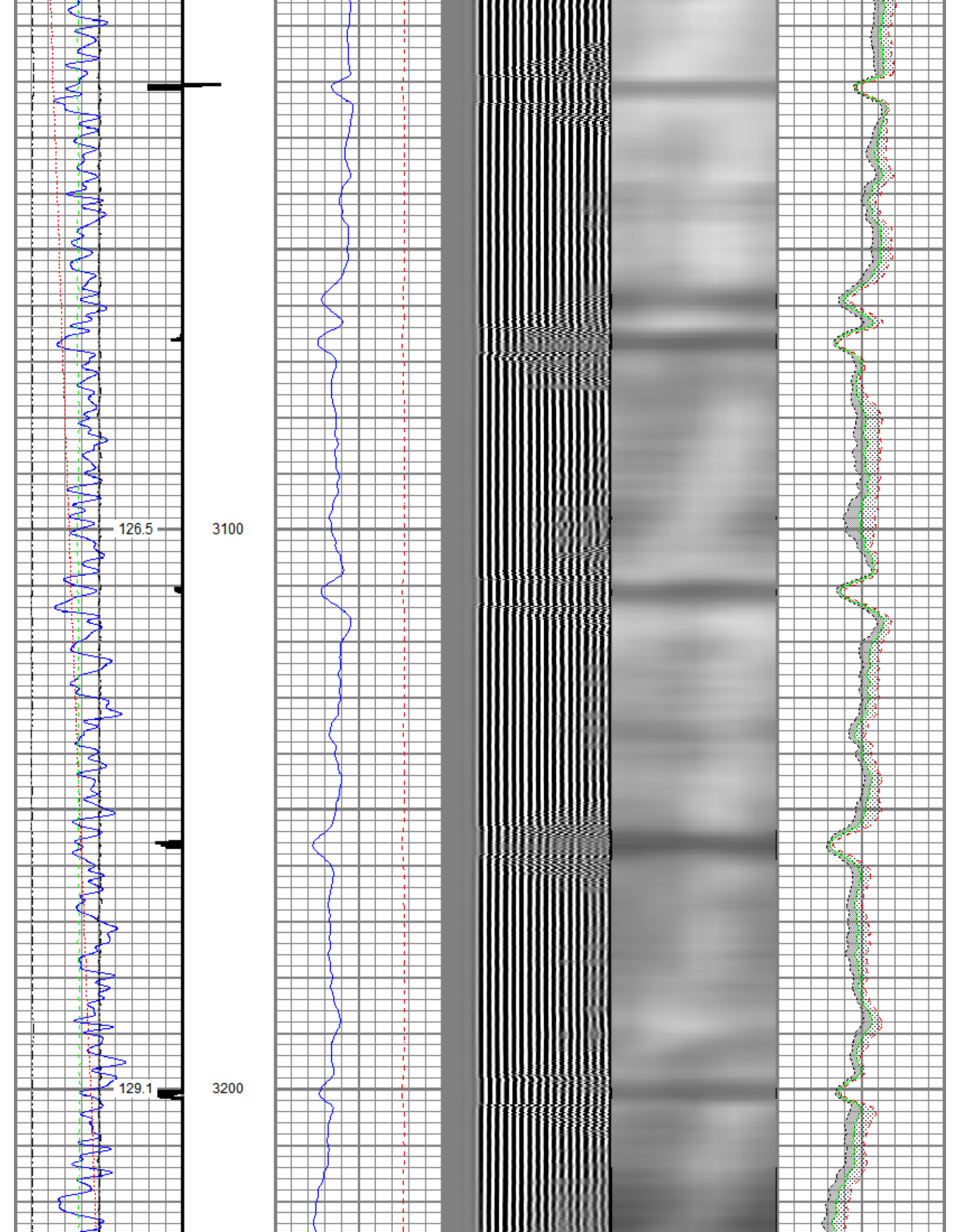




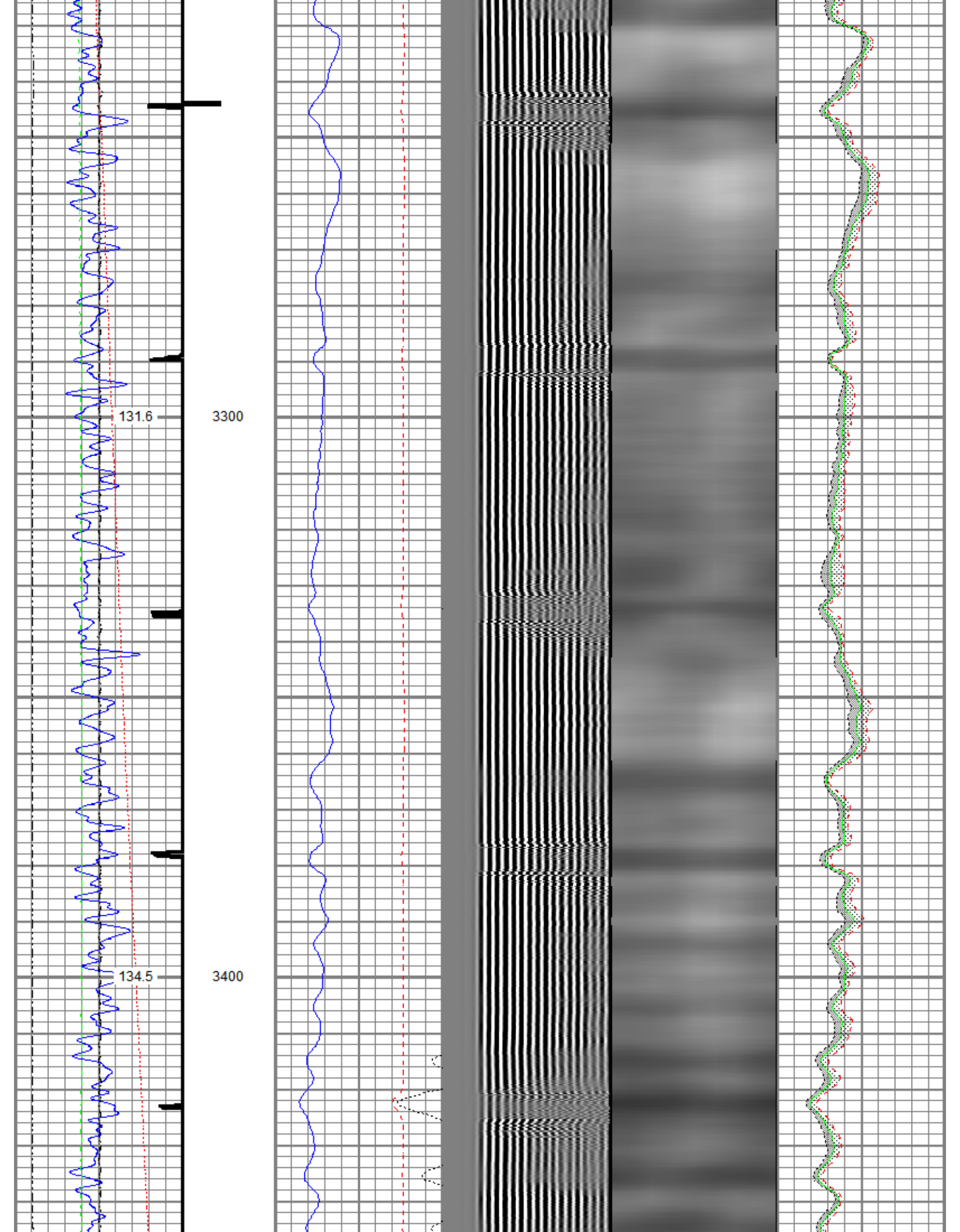


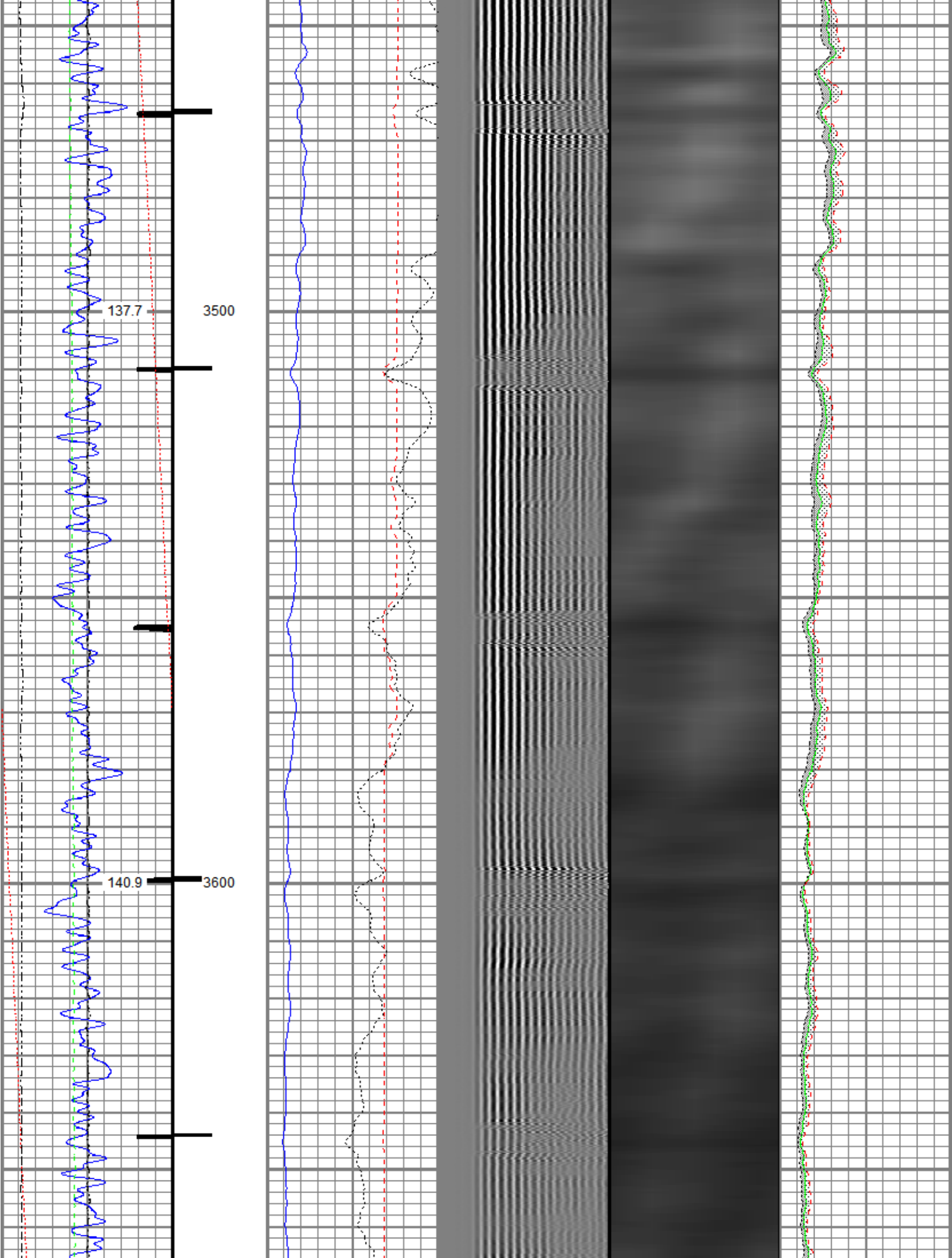


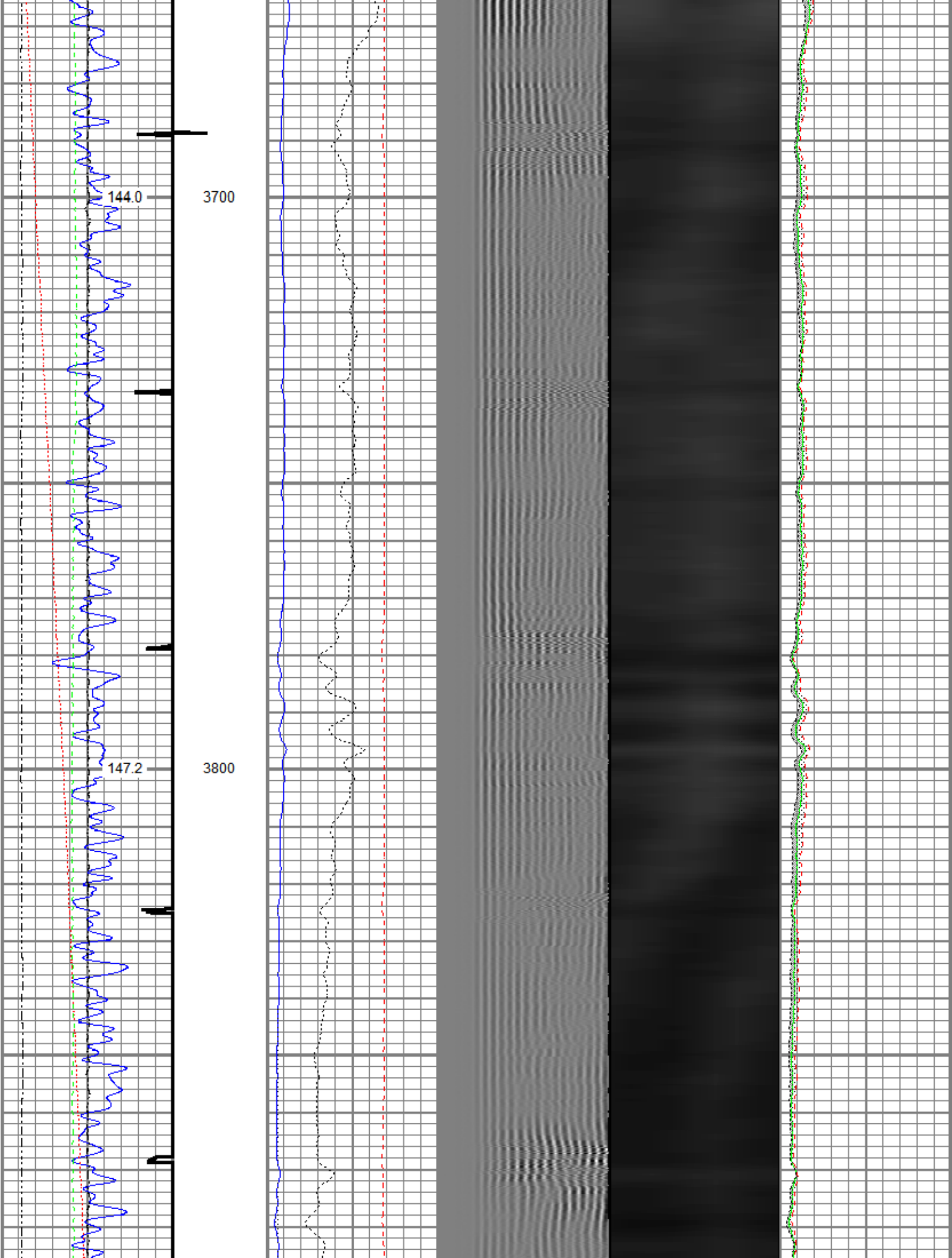


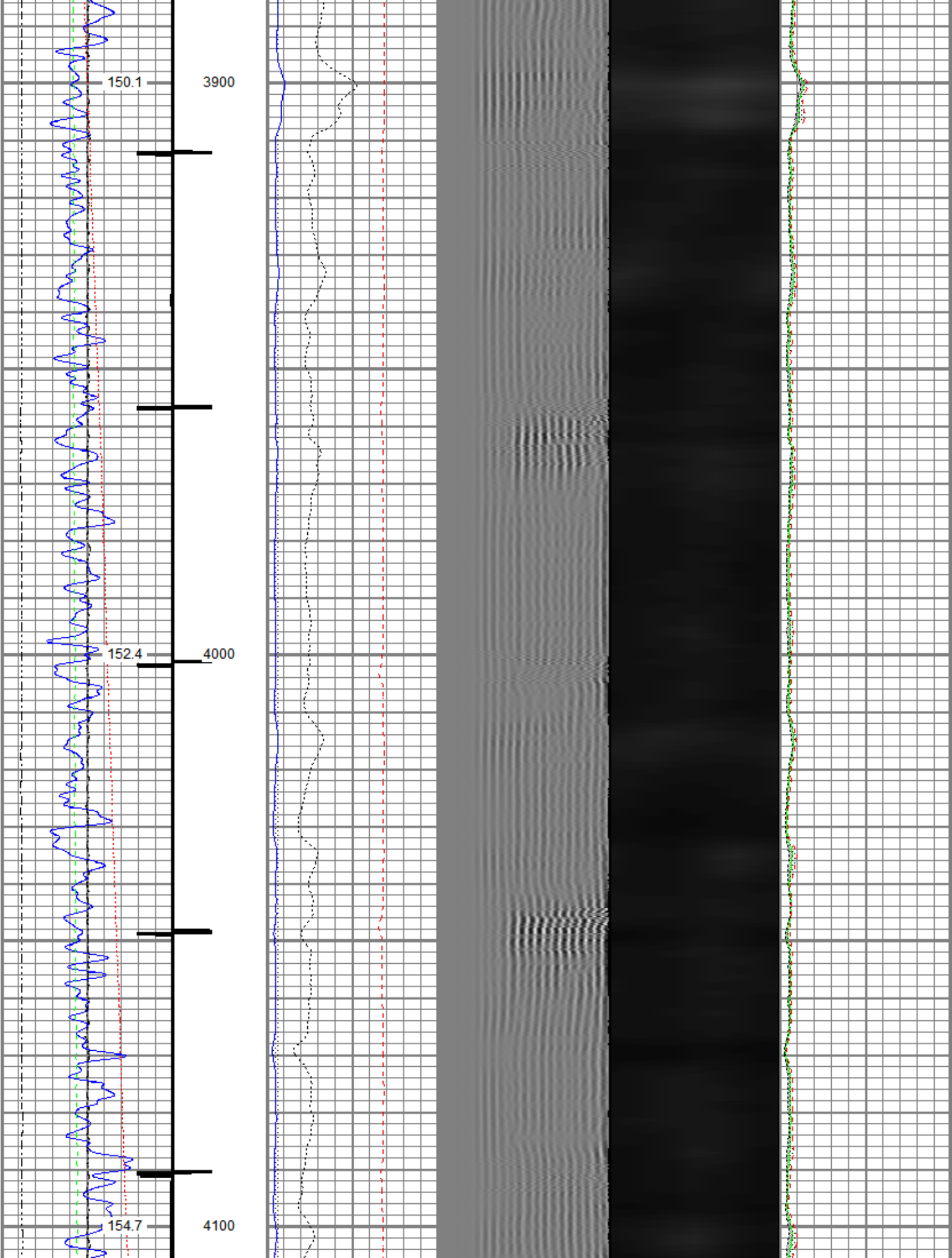




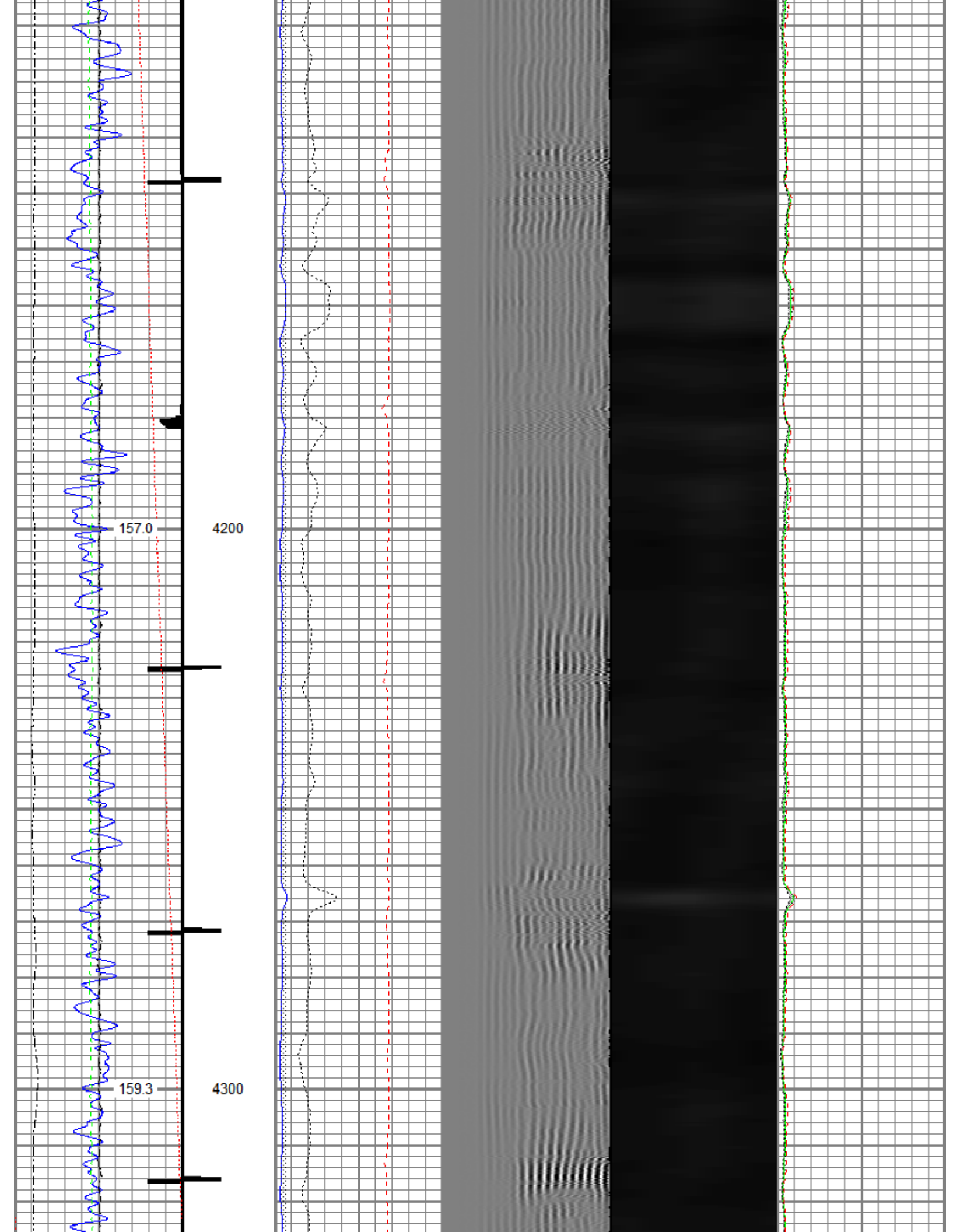


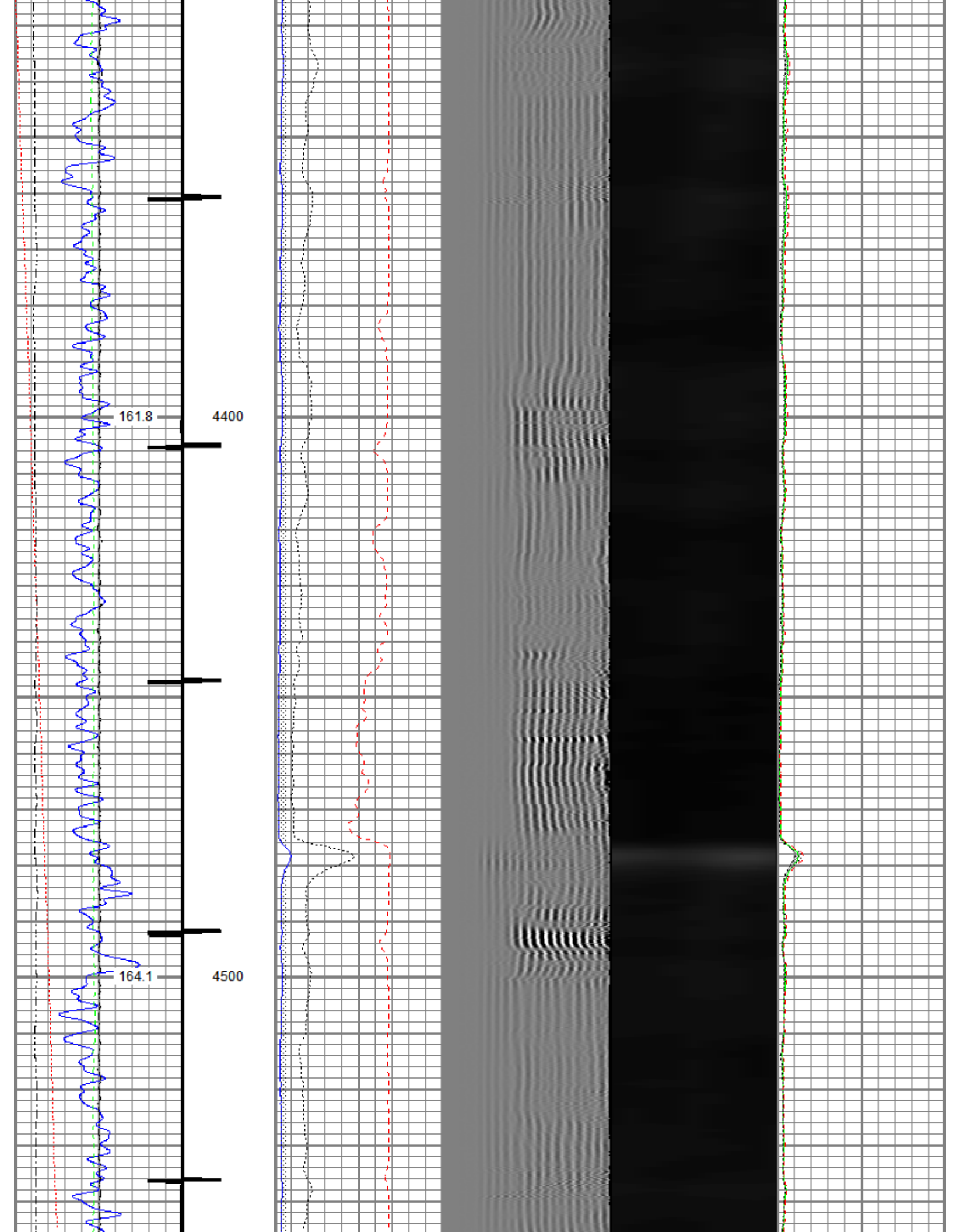


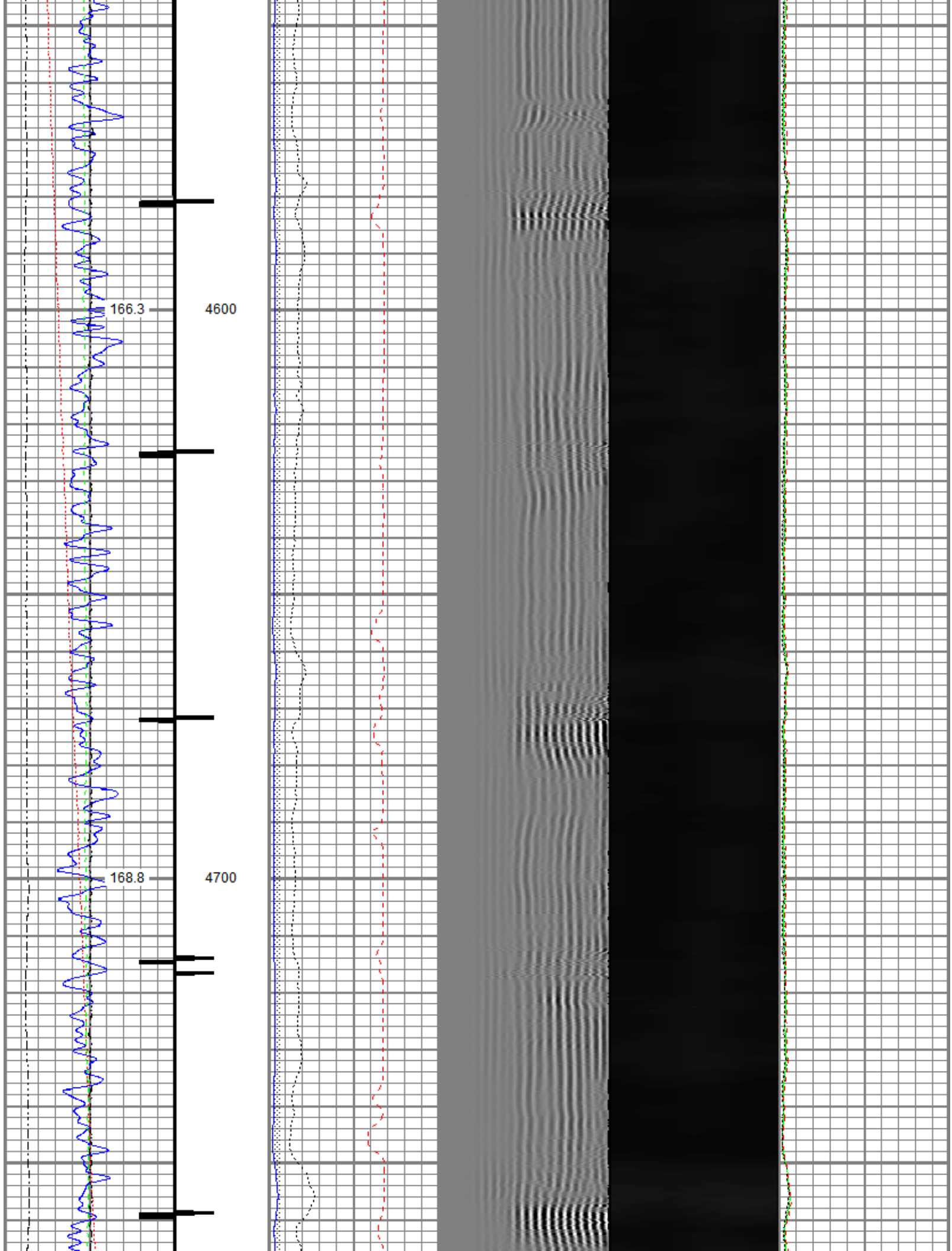


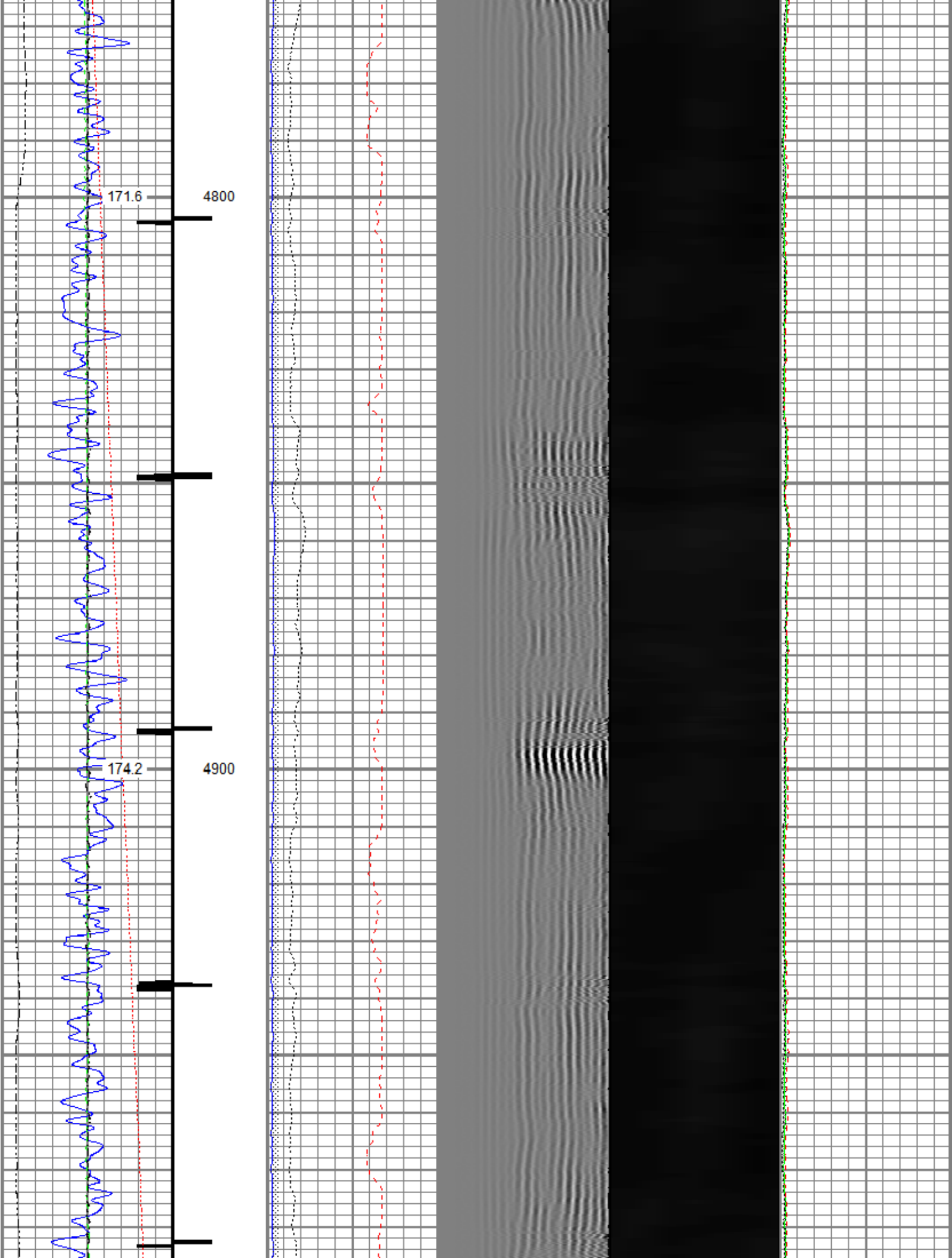




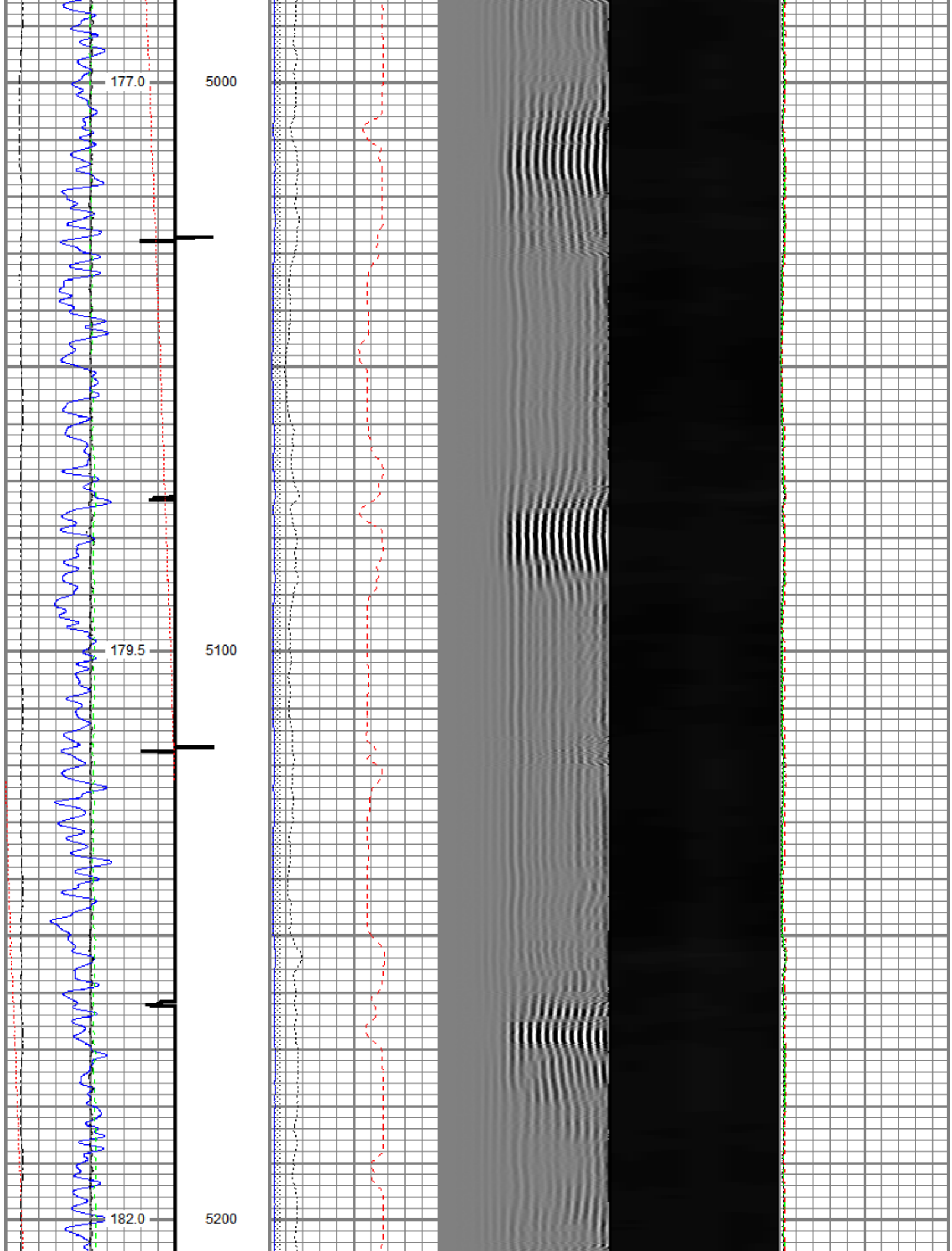


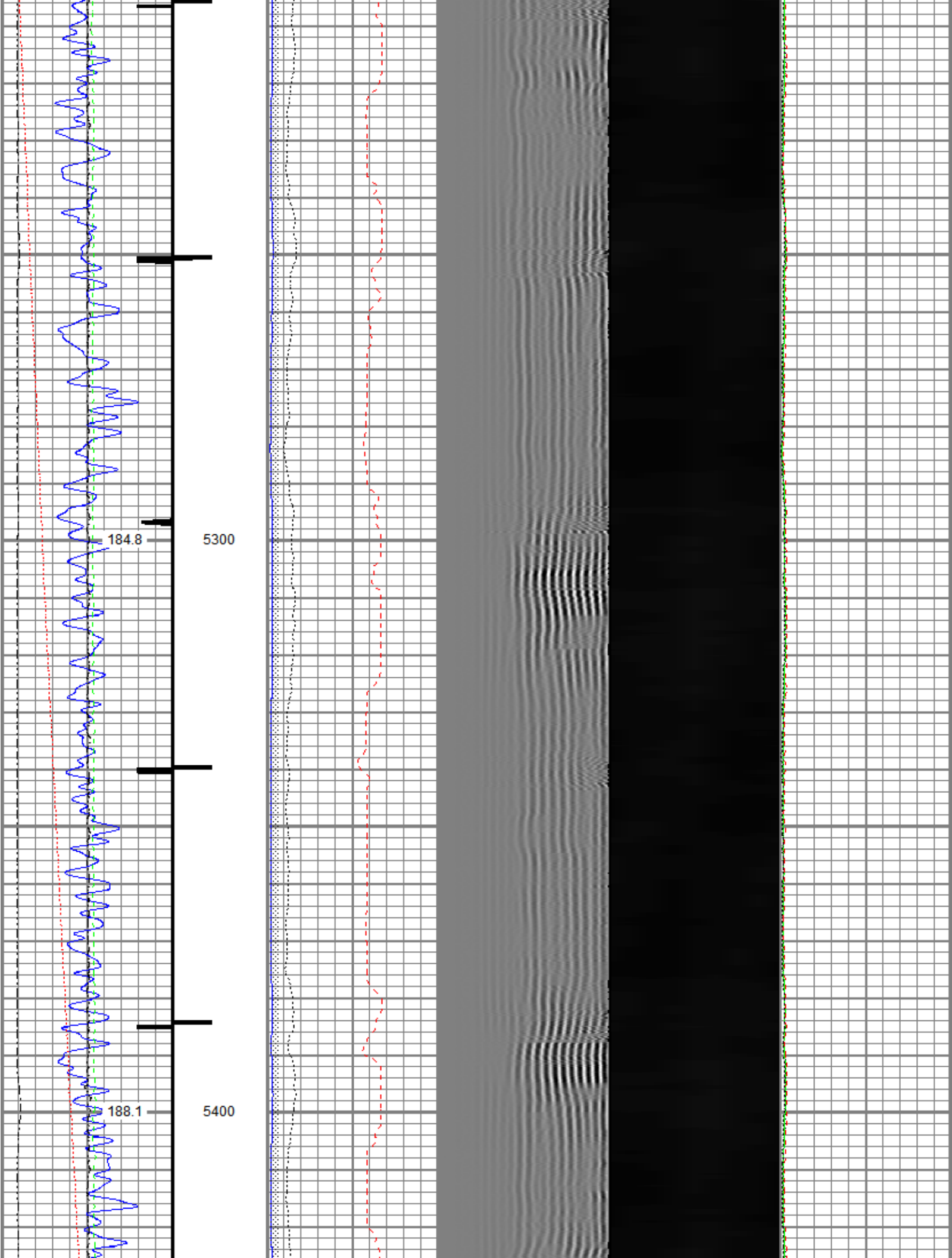


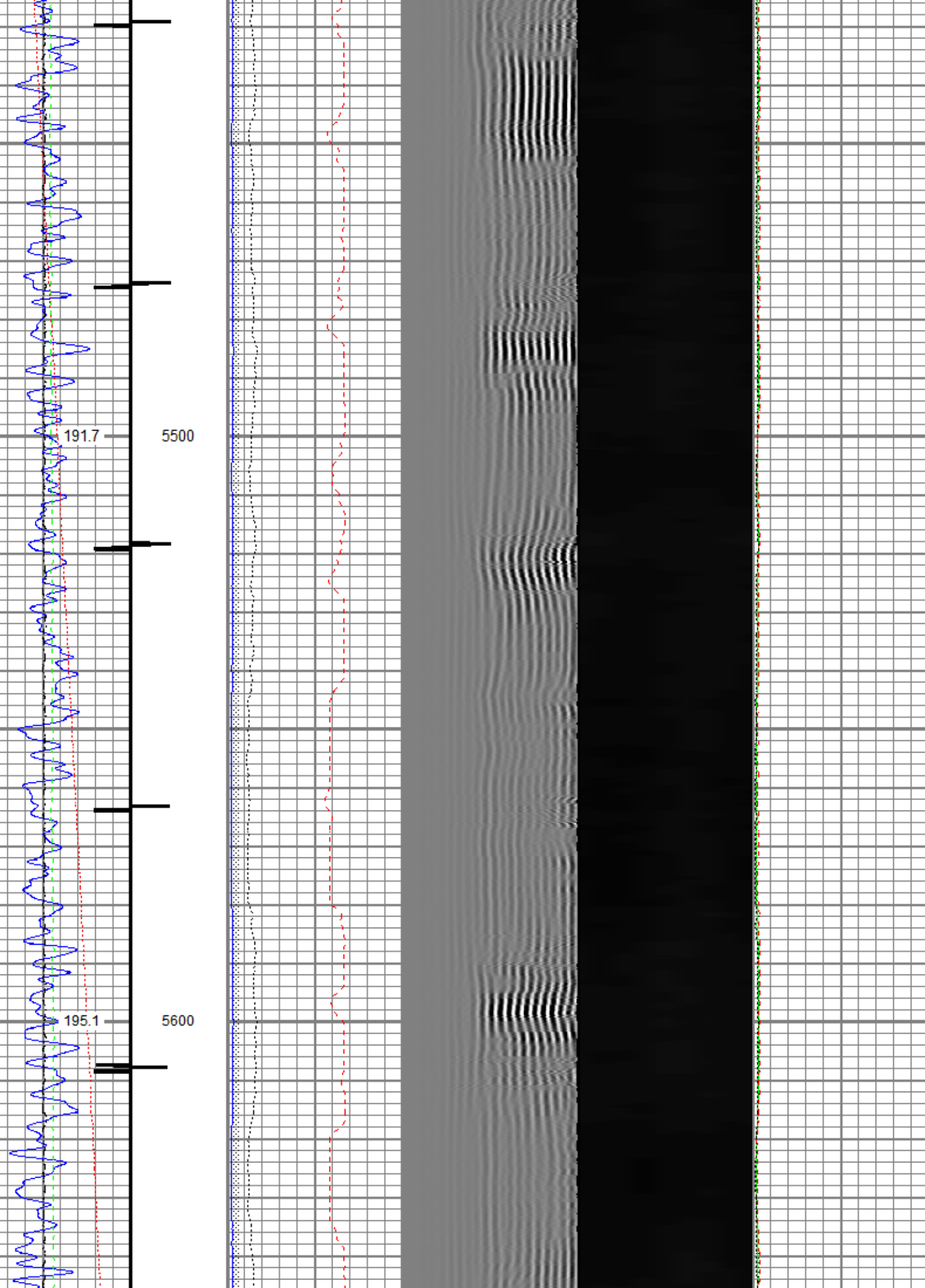


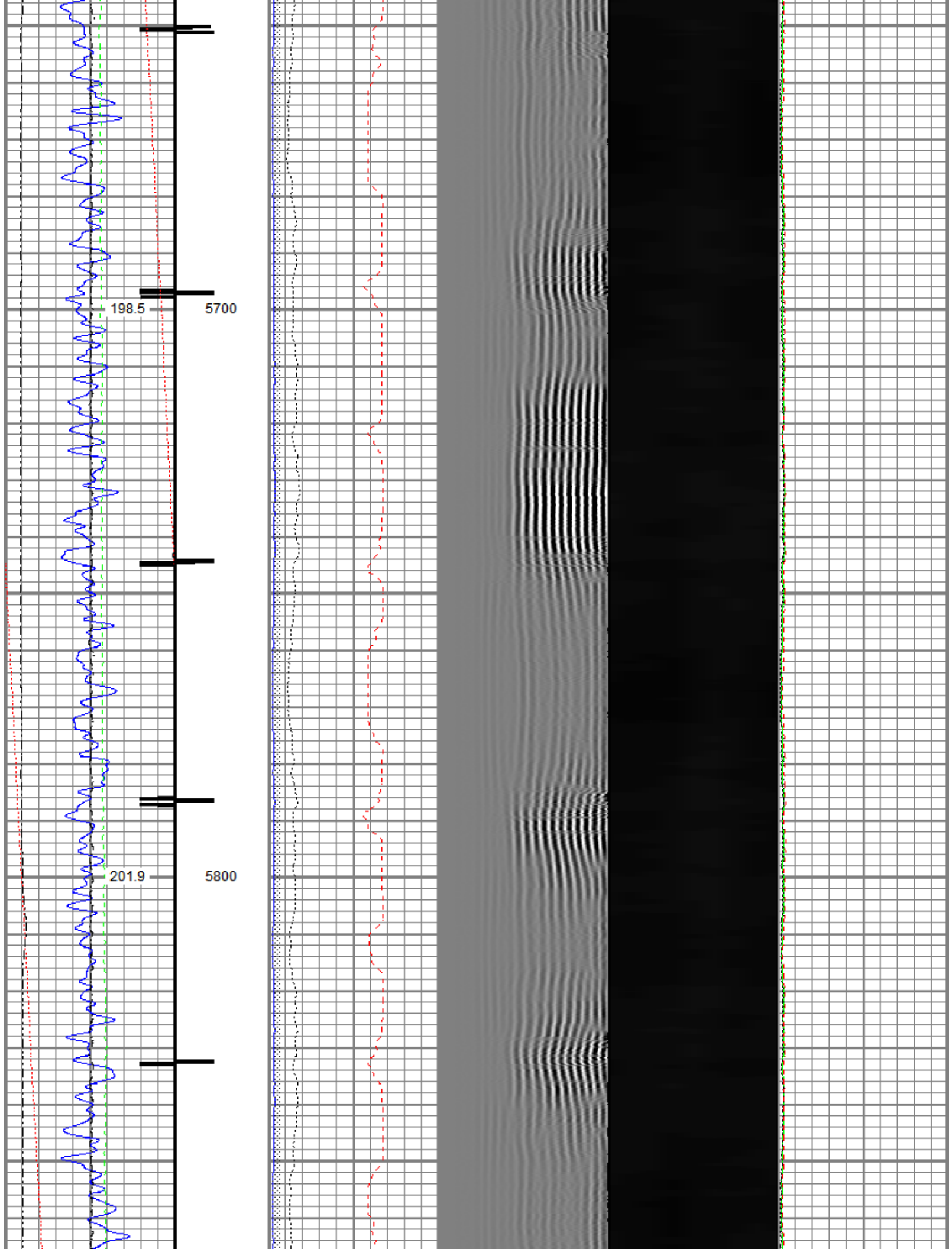




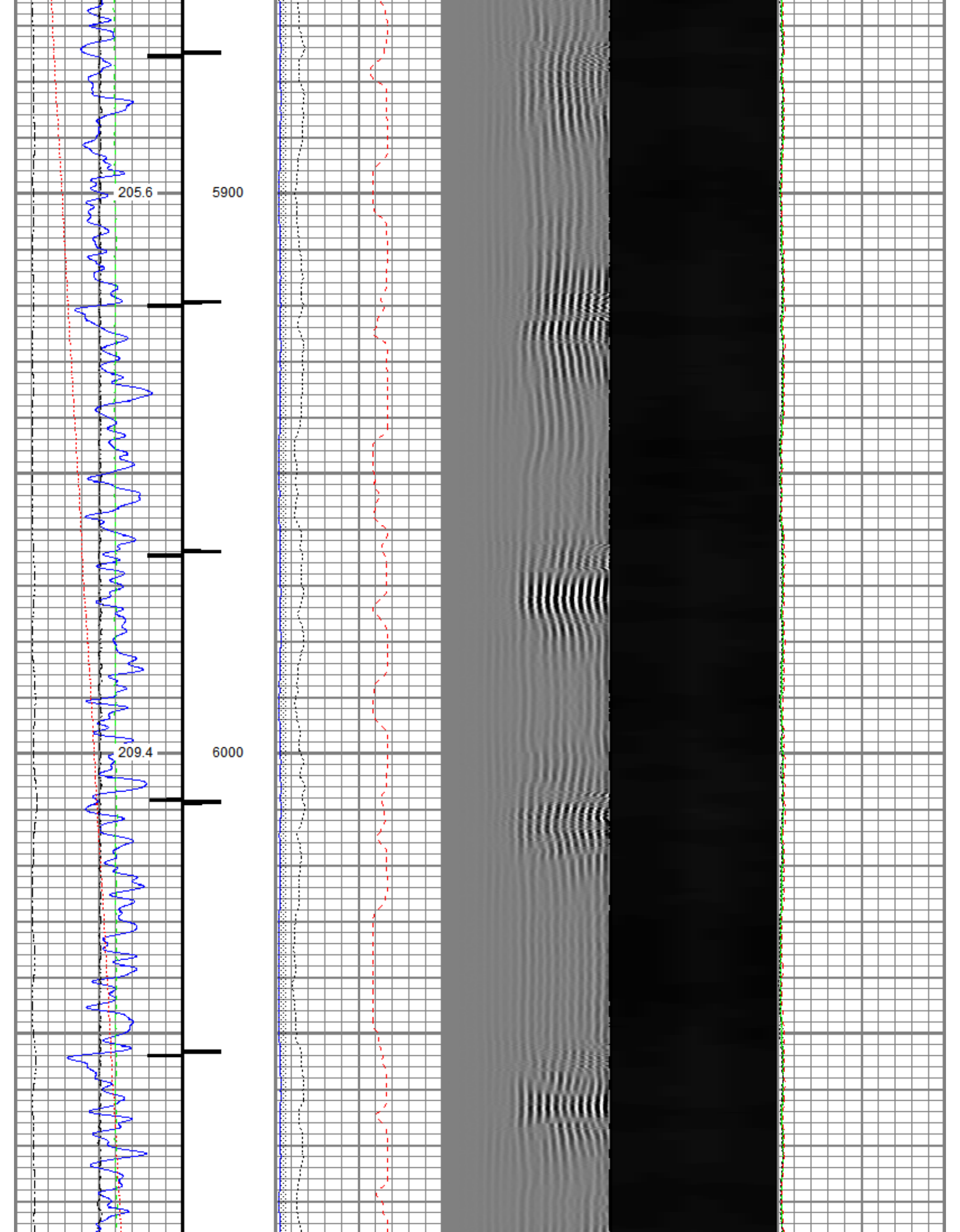


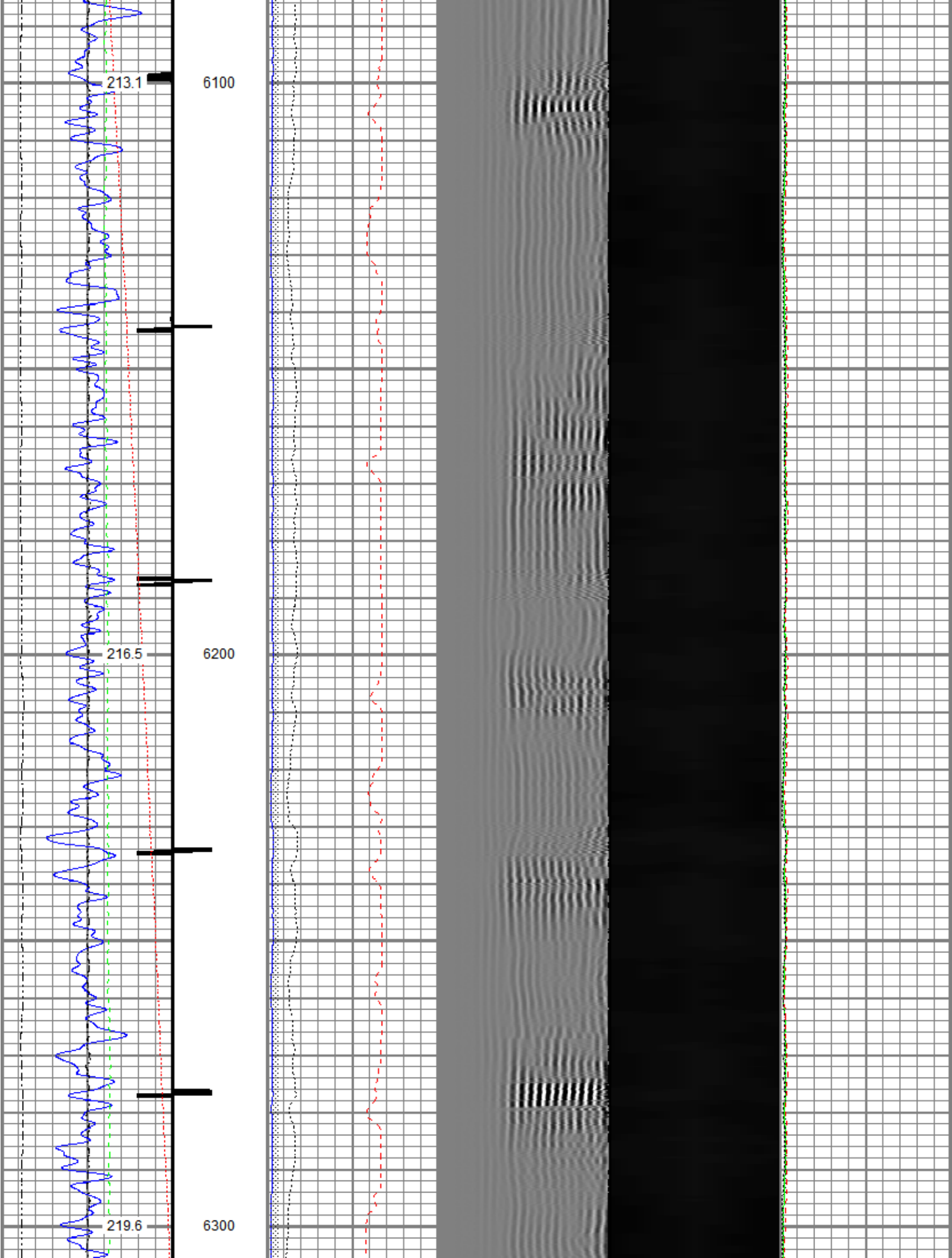


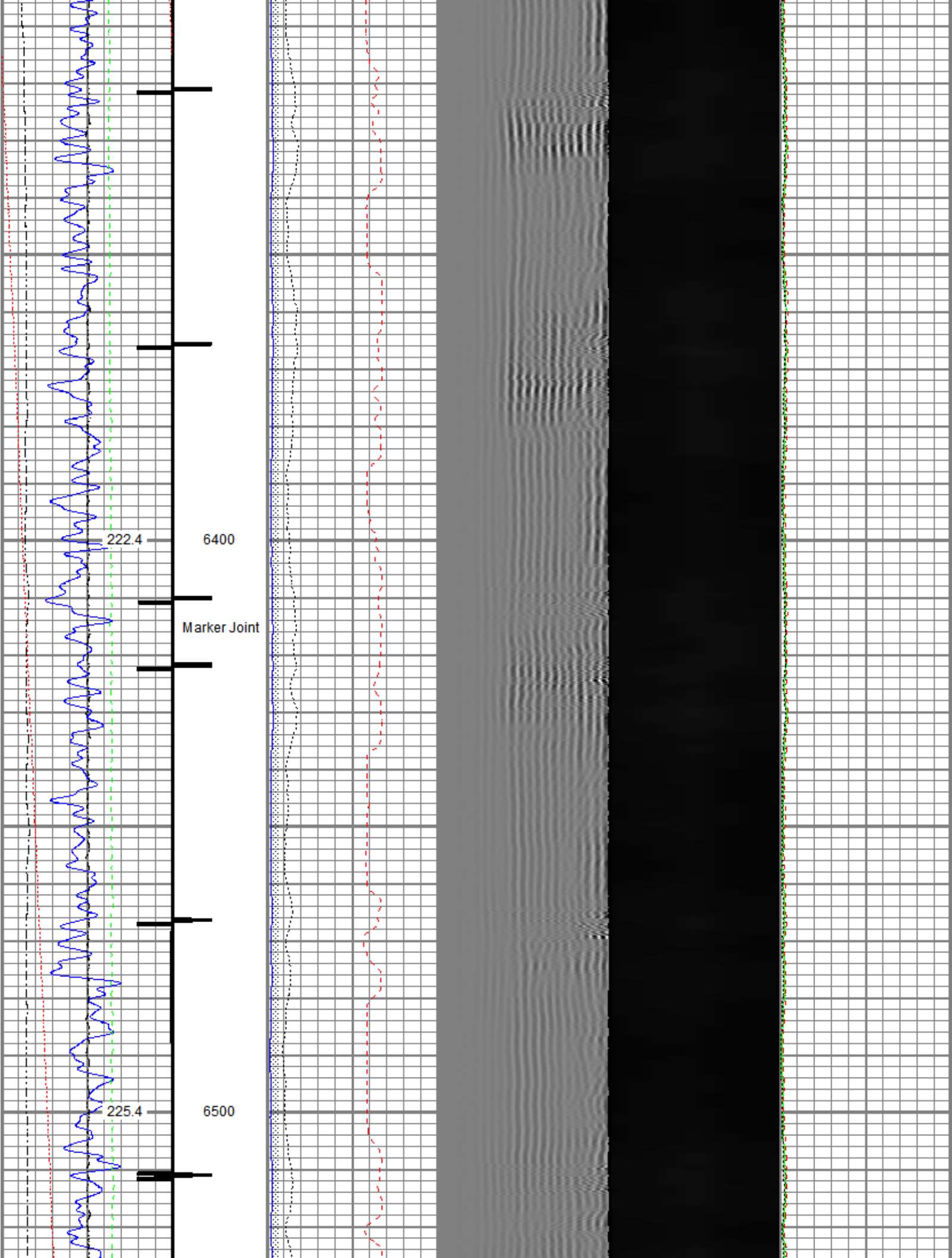


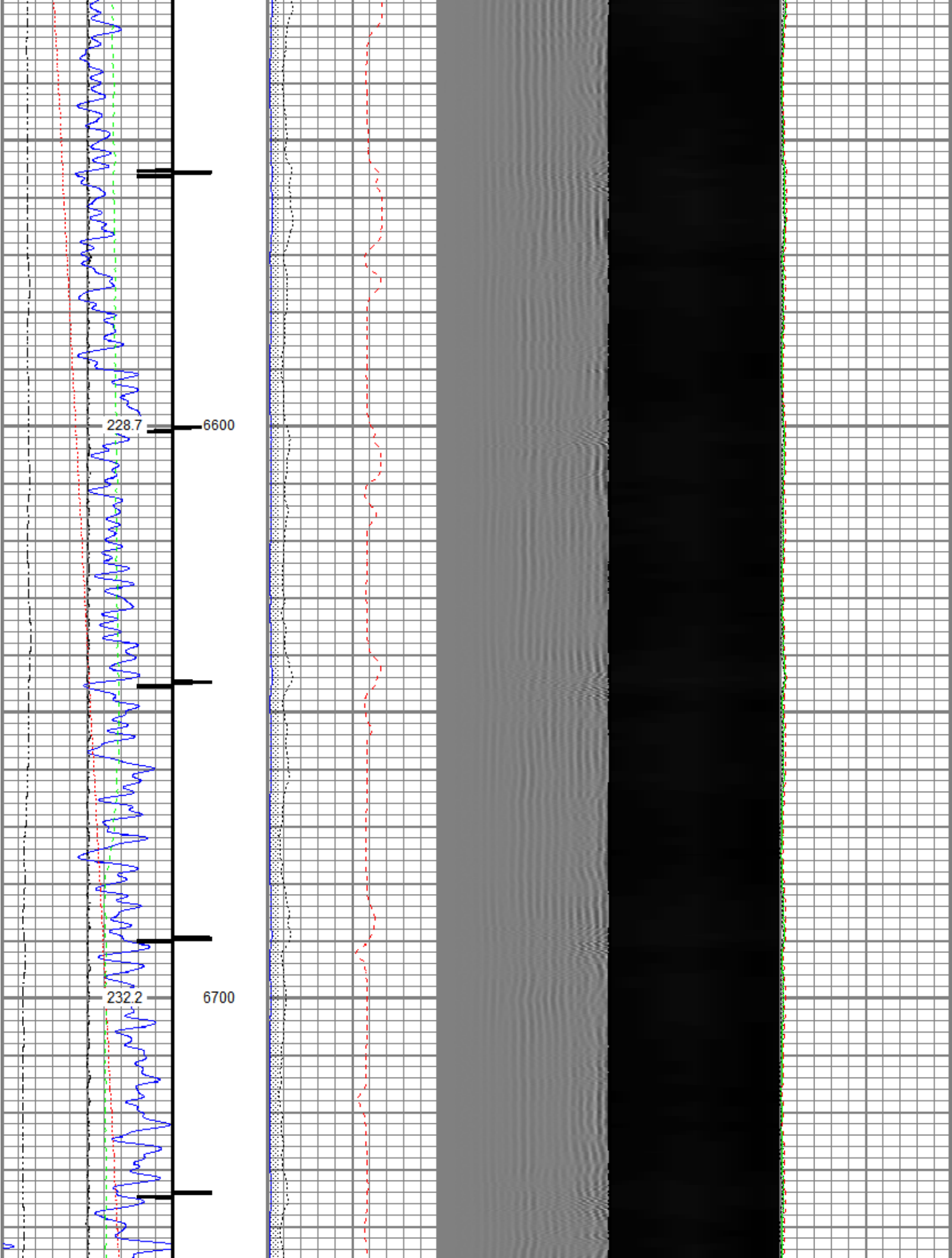




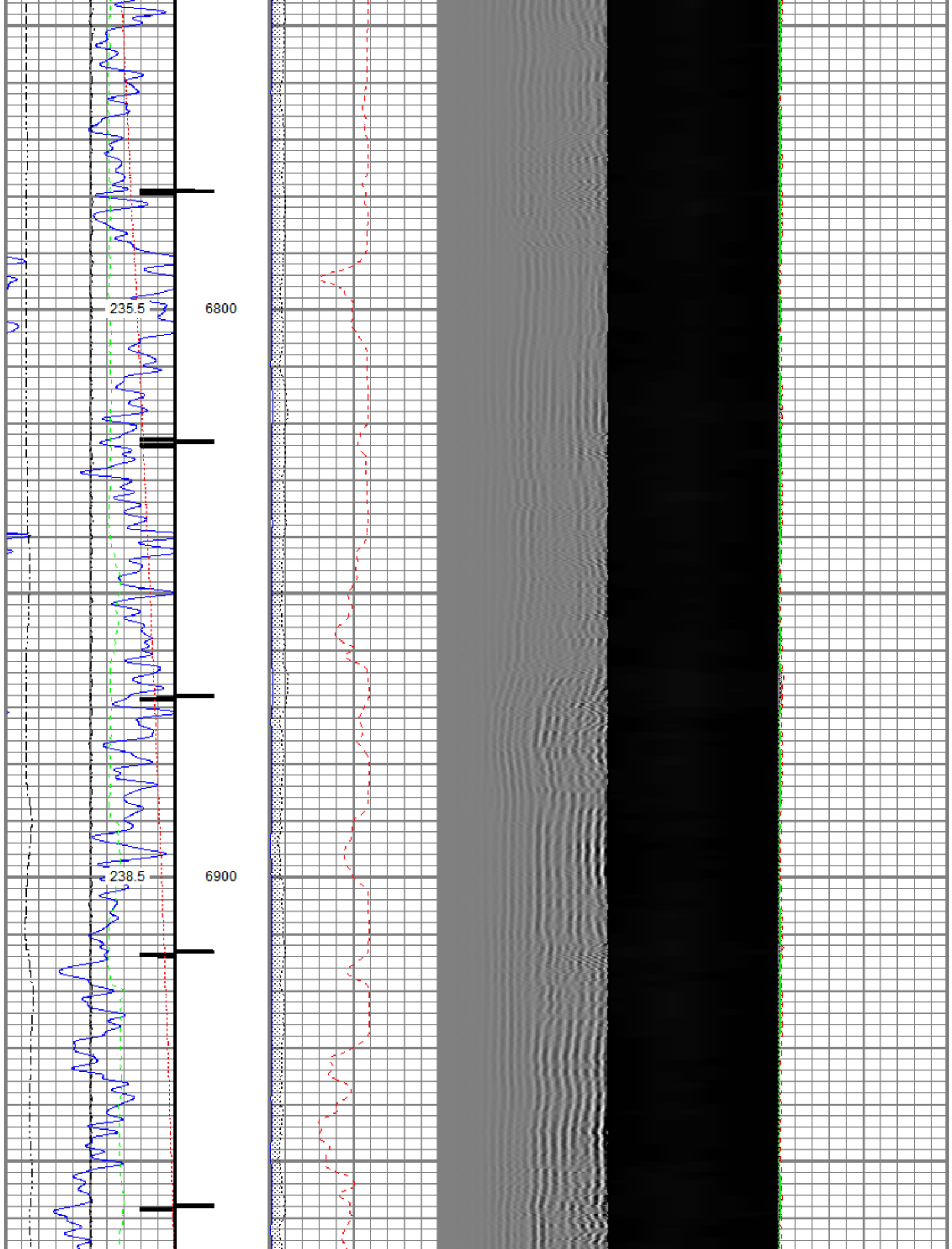


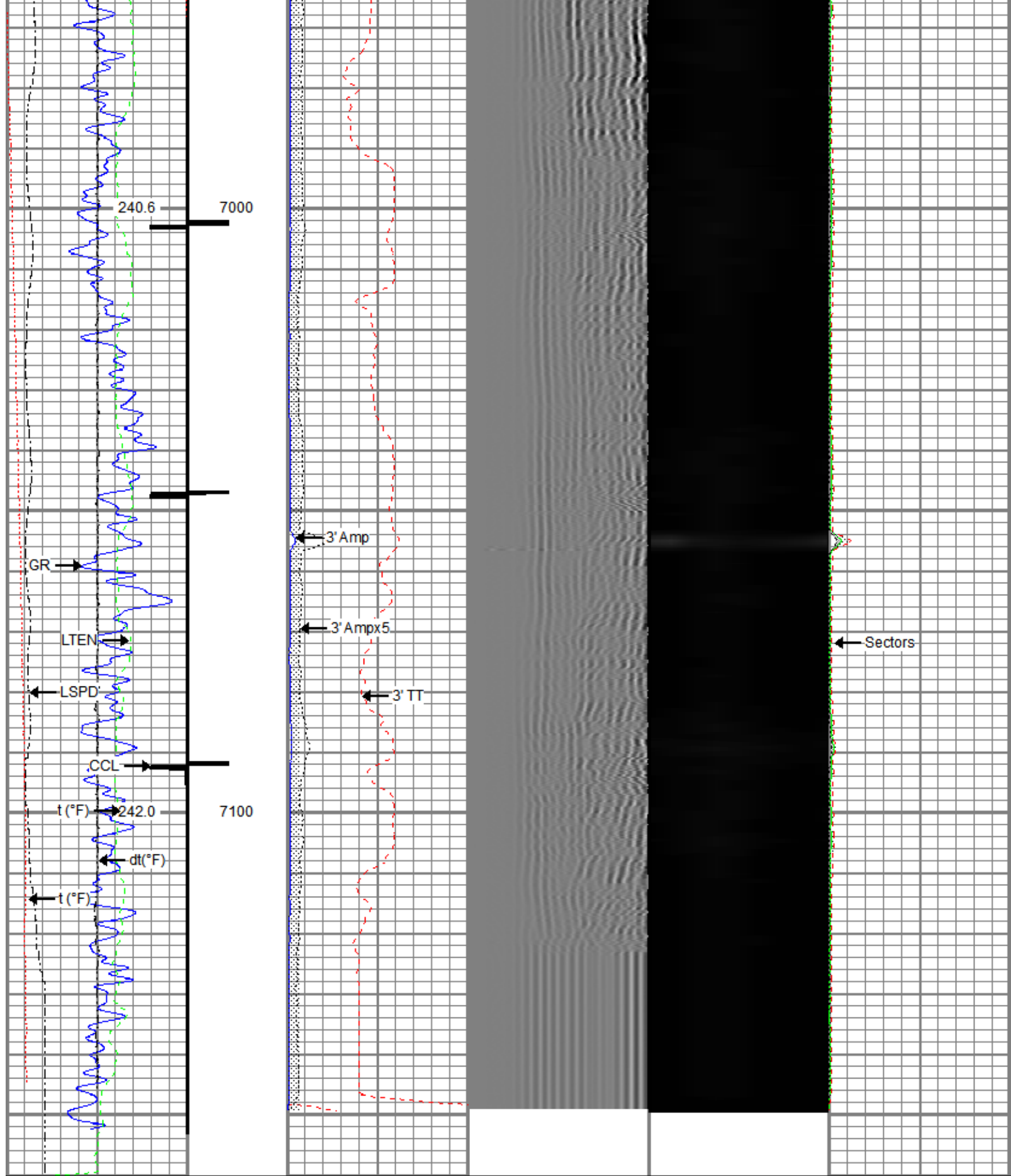













Gamma Ray		0 3' Amplitude (mV) 100		5' Variable Density Log		Sector Map		0 Average Amplitude 100	
0	(GAPI) 120	3' Amplitude x 5		200	(usec) 1200			Minimum Amplitude	
Casing Collar Locator		0 (mV) 20				0		100	
0 Temperature (degF) 20		3' Travel Time						Maximum Amplitude	
Line Speed		650 (usec) 150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

0	Line Tension (lb)	2000
	Differential Temperature	
-2	(degF)	2

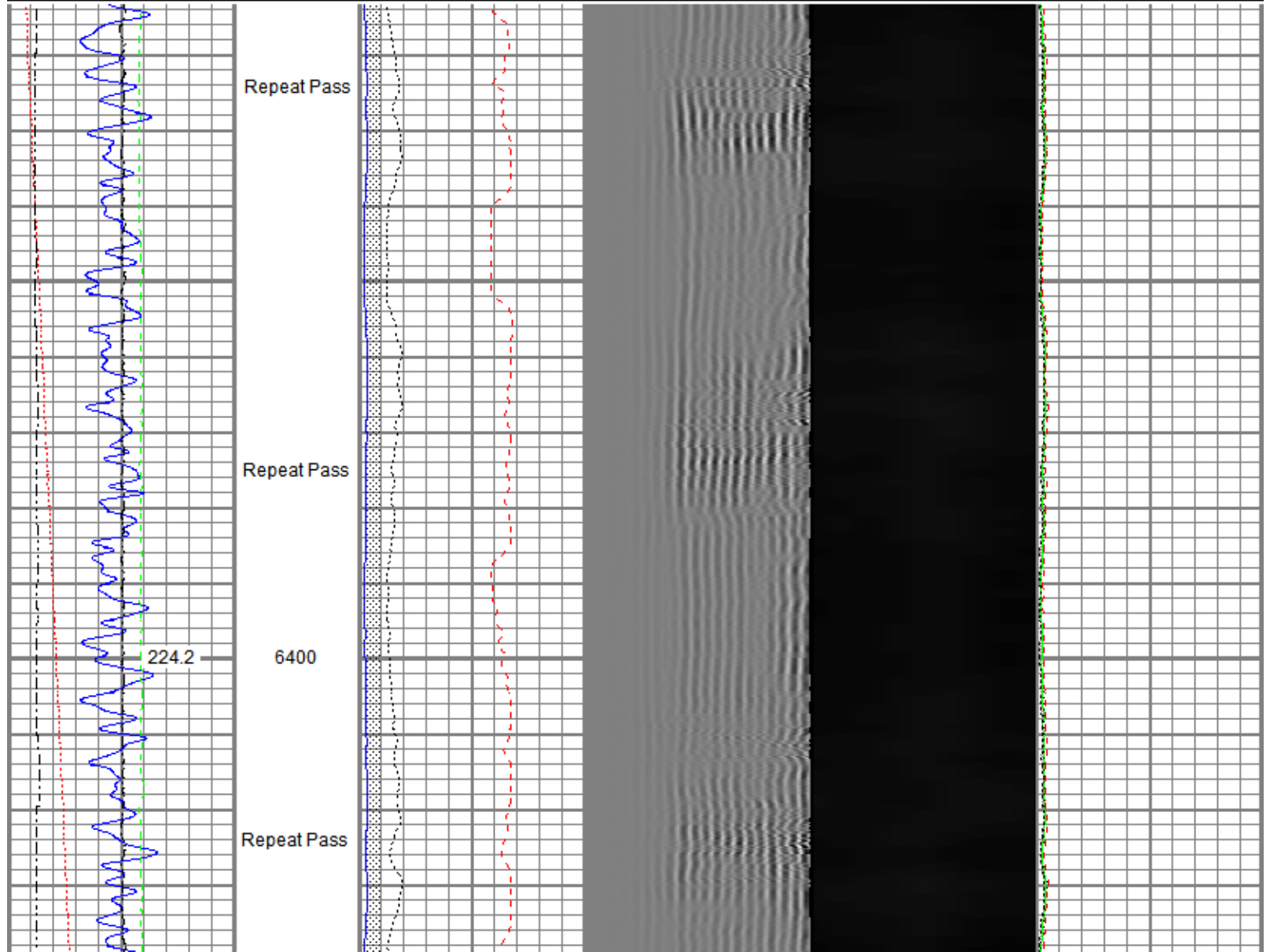


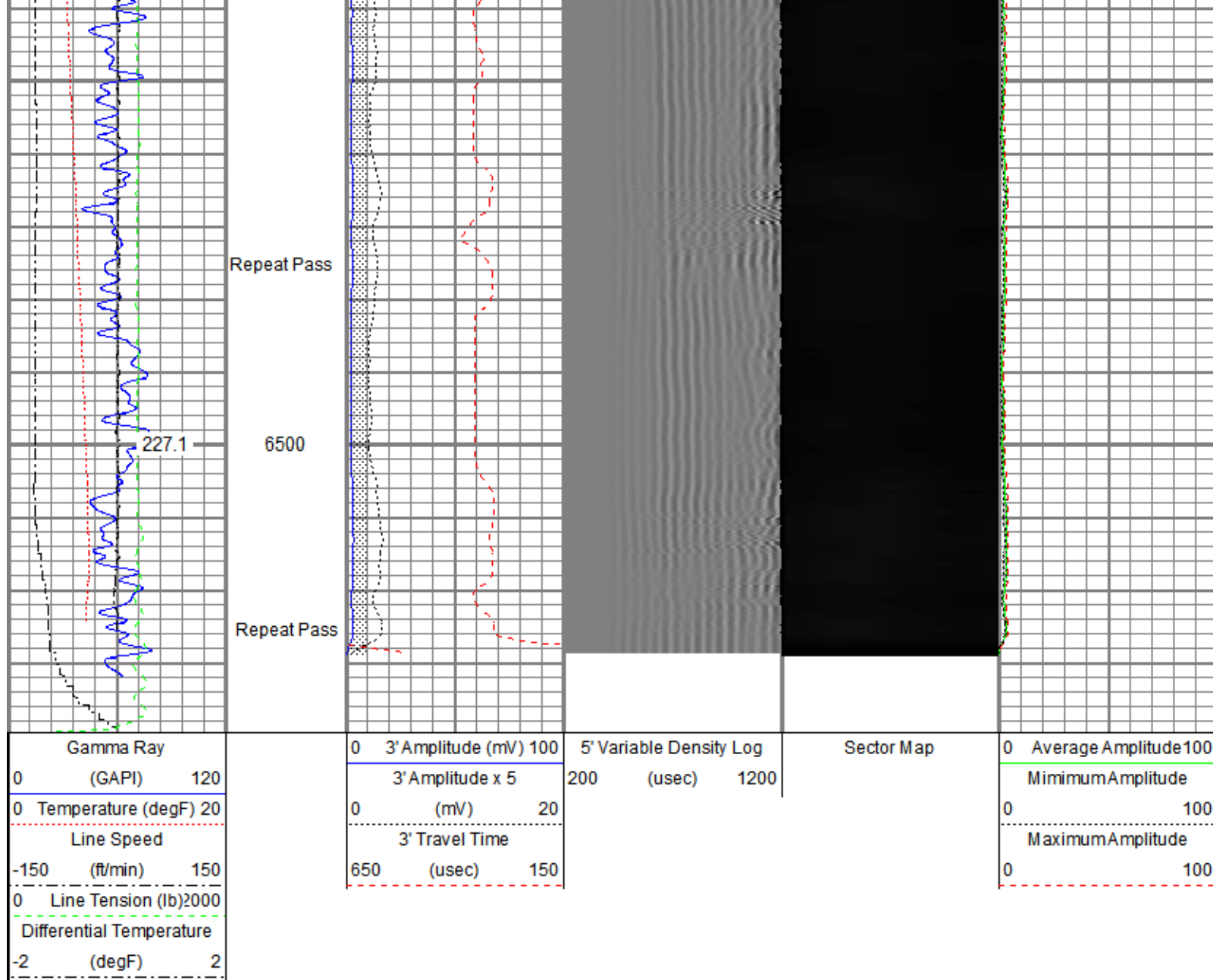
# Repeat Pass

## Recorded With 2500 PSI Surface Induced Pressure

Database File	noble\noble_guttersen d34-759_rbl_05-13-20\processed_noble_guttersen d34-759_rbl_05-13-20.db
Dataset Pathname	pass2.1
Presentation Format	ros_radrii_2
Dataset Creation	Wed May 13 13:24:22 2020
Charted by	Depth in Feet scaled 1:240

<div>Gamma Ray</div> <div>0 (GAPI) 120</div> <div>0 Temperature (degF) 20</div> <div>Line Speed</div> <div>-150 (ft/min) 150</div> <div>0 Line Tension (lb)2000</div> <div>Differential Temperature</div> <div>-2 (degF) 2</div>	<div>0 3' Amplitude (mV) 100</div> <div>3' Amplitude x 5</div> <div>0 (mV) 20</div> <div>3' Travel Time</div> <div>650 (usec) 150</div>	<div>5' Variable Density Log</div> <div>200 (usec) 1200</div>	<div>Sector Map</div>	<div>0 Average Amplitude100</div> <div>MimimumAmplitude</div> <div>0 100</div> <div>MaximumAmplitude</div> <div>0 100</div>
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60
			SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
			Probe Radii-2750 RBT (120855) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
TEMP	14.16					
WVFS8	11.93					
WVFS7	11.93					





Calibration Depth:

91.098

ft

## Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	0.599	0.800	71.921	119.499	0.388
CAL	0.007	0.593				
5'	0.009	0.493	0.800	71.921	146.897	-0.523
SUM						
S1	0.000	0.583	0.000	100.000	171.818	-0.085
S2	0.003	0.601	0.000	100.000	167.276	-0.550
S3	0.004	0.610	0.000	100.000	164.961	-0.677
S4	0.004	0.644	0.000	100.000	156.248	-0.630
S5	0.003	0.634	0.000	100.000	158.345	-0.446
S6	0.002	0.586	0.000	100.000	171.429	-0.407
S7	0.004	0.550	0.000	100.000	183.156	-0.652
S8	0.005	0.557	0.000	100.000	181.194	-0.859

## Air Zero Calibration, performed Wed May 13 07:41:45 2020:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.007		0.000		0.000	
5'	0.007		0.000		0.000	
SUM						
S1	0.007		0.000		-0.000	
S2	0.007		0.000		0.000	
S3	0.007		0.000		0.000	
S4	0.007		0.000		0.000	
S5	0.007		0.000		0.000	
S6	0.007		0.000		-0.000	
S7	0.006		0.000		-0.000	
S8	0.007		0.000		0.000	

## Temperature Calibration Report

Serial Number: 120855  
 Tool Model: 2750 RBT  
 Performed: Wed Dec 18 13:34:18 2019

	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF

Gain: 0.89  
 Offset: 0.60  
 Delta Spacing: 1



Company: Noble Energy Inc  
 Well: Guttersen D34-759  
 Field: Wattenberg  
 County: Weld  
 State: Colorado