



Radial Cement Bond
Gamma Ray
Casing Collar Log

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

Well MC 3-1HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-49758

SEC 3 TWP 1N RGE 68W

Permanent Datum Ground Level Elevation 5044'
Log Measured From Kelly Bushing 26 FT
Drilling Measured From Kelly Bushing

Other Services
JBGR
RBP/CNL
RBL 0 PSI
Elevation
K.B. 5070'
D.F. ---
G.L. 5044'

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well MC 3-1HZ
Field Wattenberg
County Weld
State Colorado

Date	10-AUG-2019			
Run Number	Two			
Depth Driller	19933 FT			
Depth Logger	7874 FT			
Bottom Logged Interval	7860 FT			
Top Log Interval	Surface			
Open Hole Size	8.50"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	231°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	13:52			
Equipment Number	HD-361			
Location	Platteville, CO			
Recorded By	J. Morrison			
Witnessed By	John McCarthy			
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	HCP-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 Reliance OFS 0 PSI Bond Log dated 09-AUG-2019
Adjusted +9 FT to correlate with Reliance OFS 0 PSI Bond Log
5.50" RBP Set at 7884 FT
Gauge Ring/Junk Basket ran to 8594 FT
Recorded 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!!

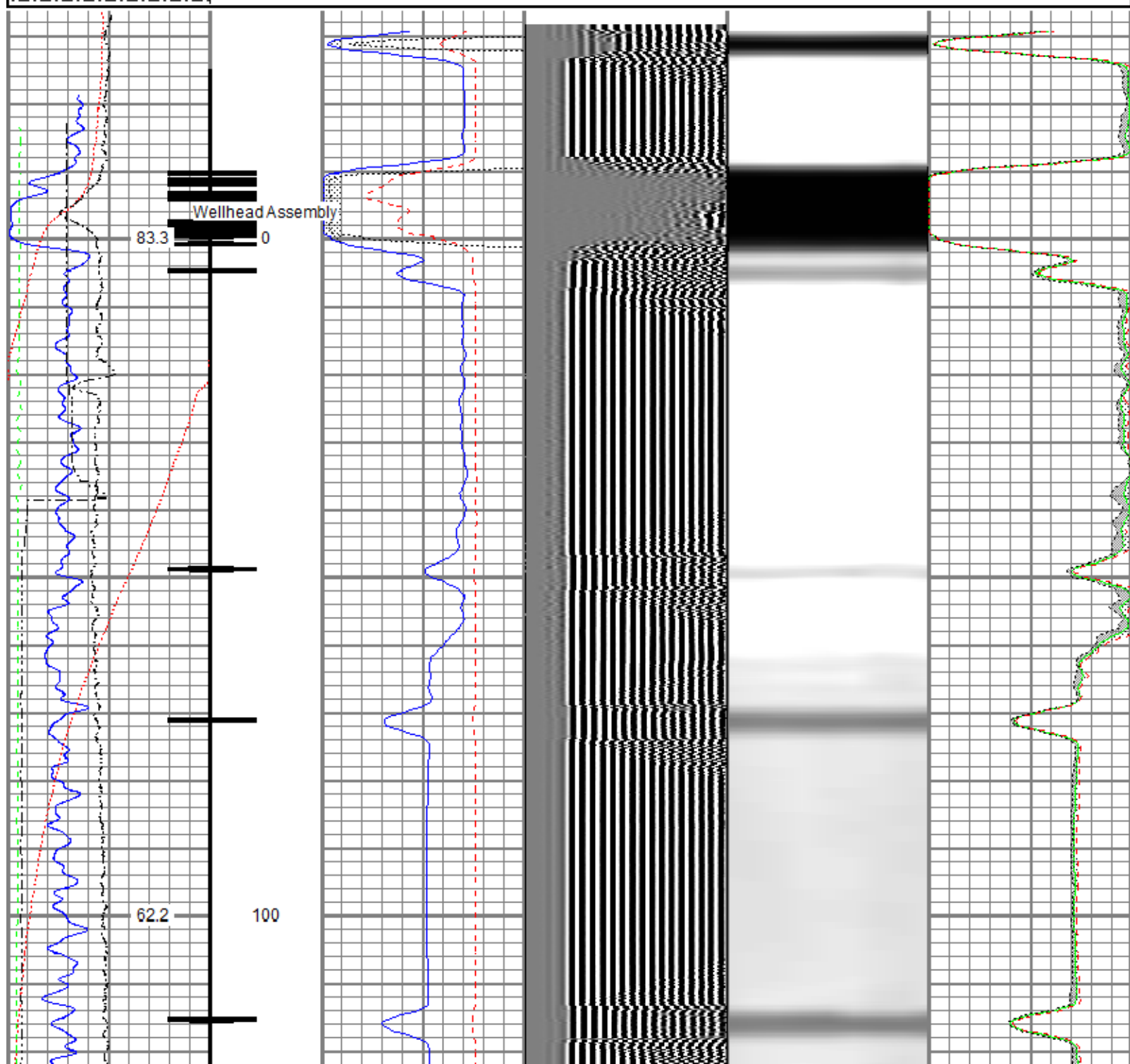
Main Pass

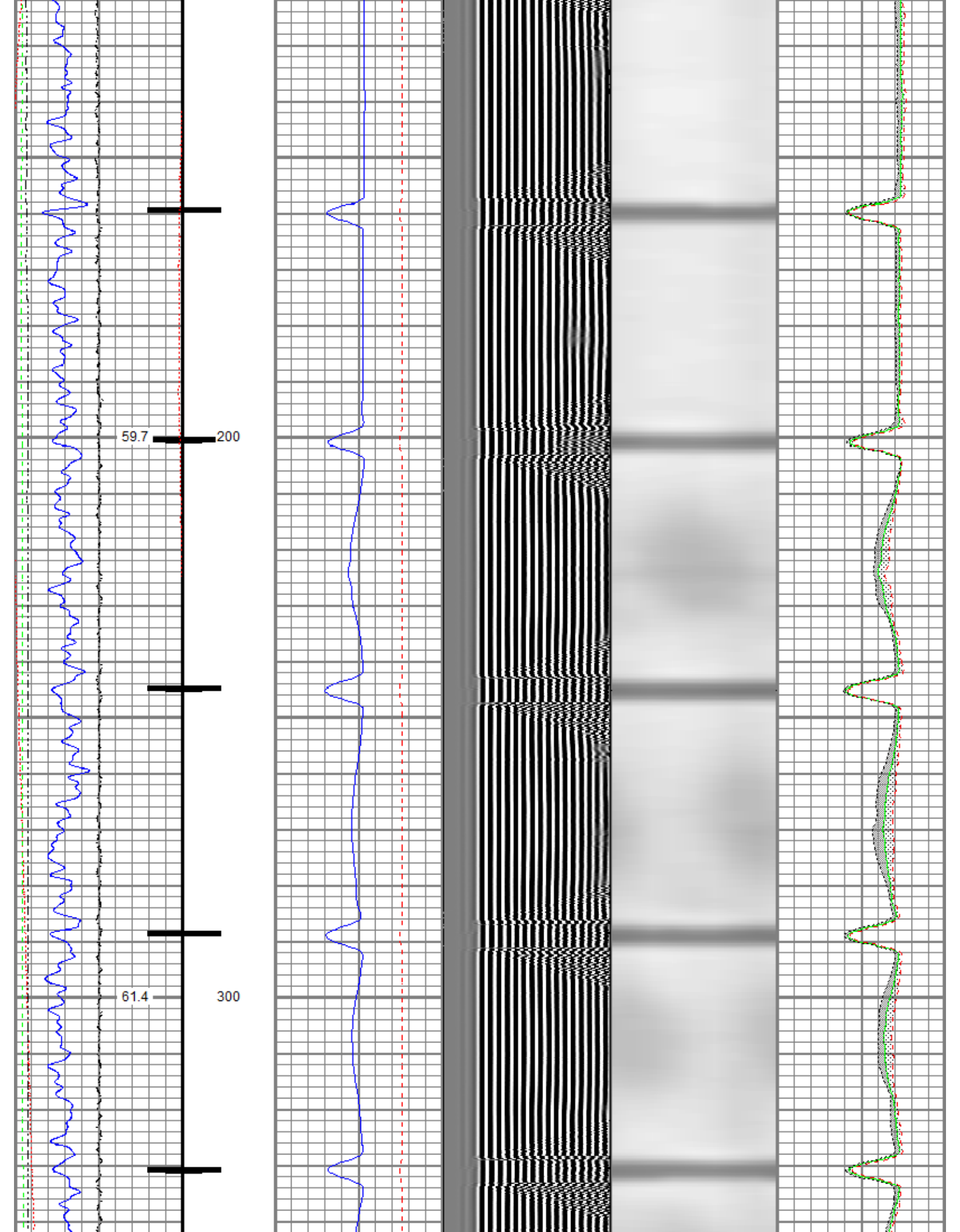


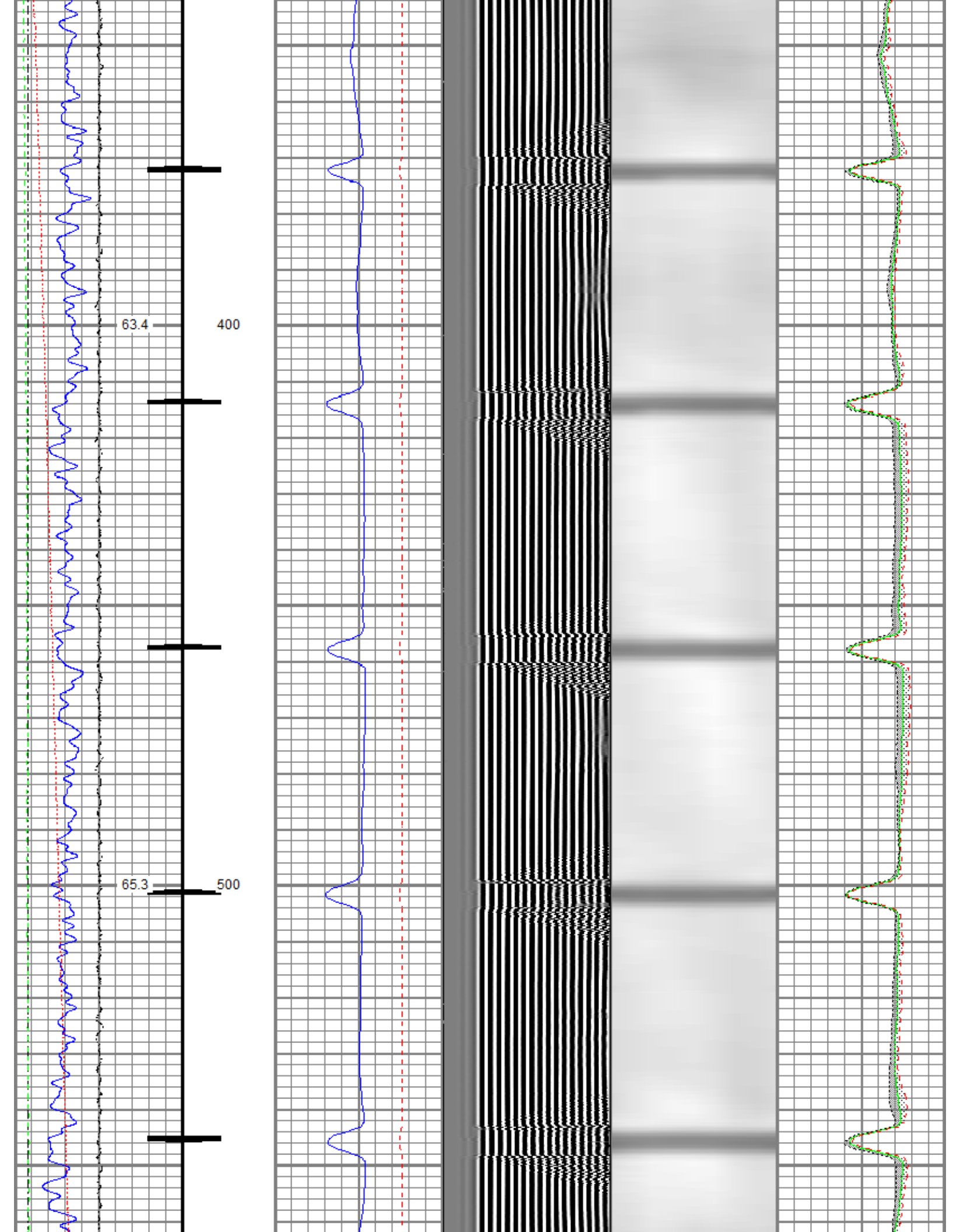
Recorded With 2800 PSI Surface Induced Pressure

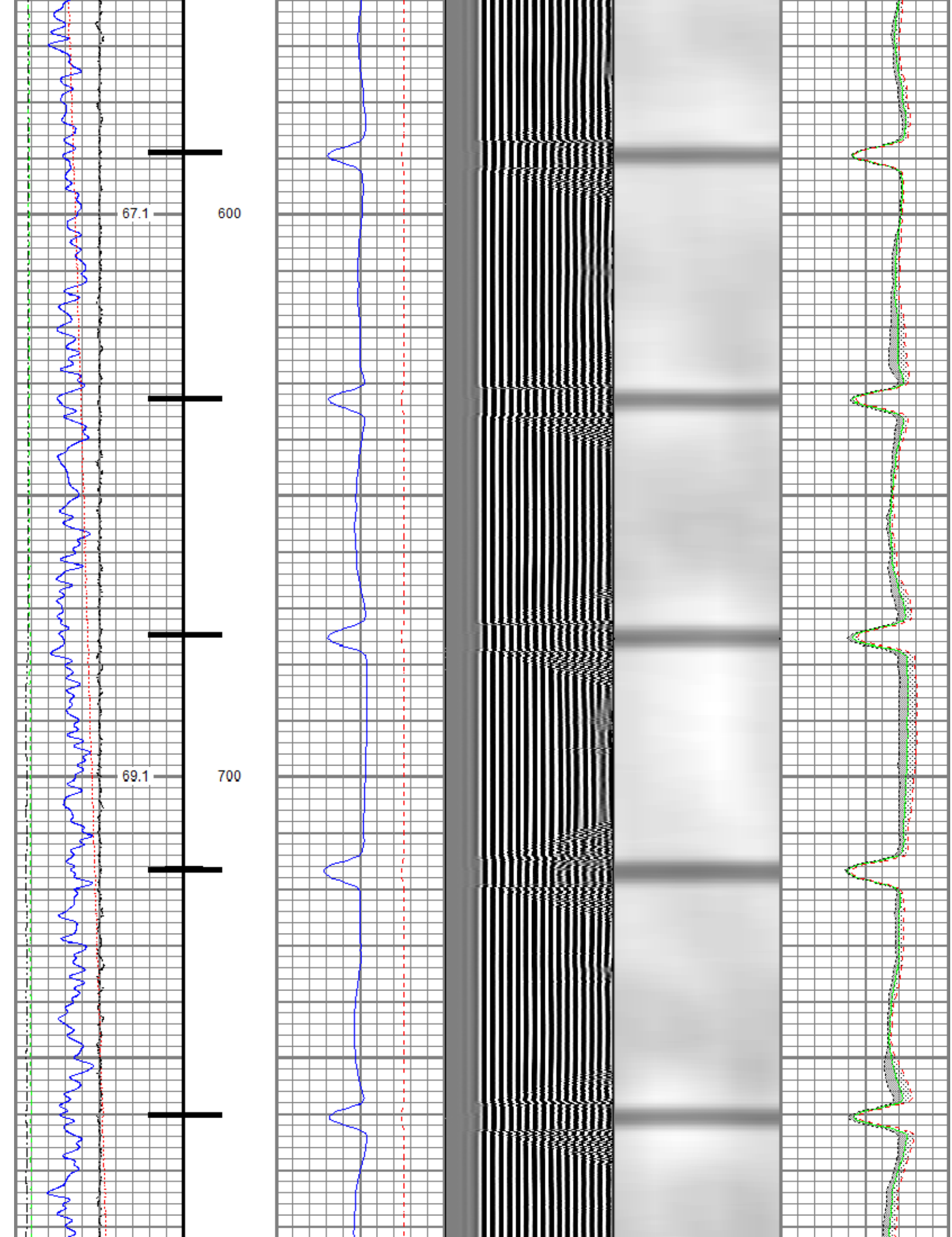
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 Dataset Pathname Main.2
 Presentation Format ros_radrii
 Dataset Creation Wed Aug 14 14:39:44 2019
 Charted by Depth in Feet scaled 1:240

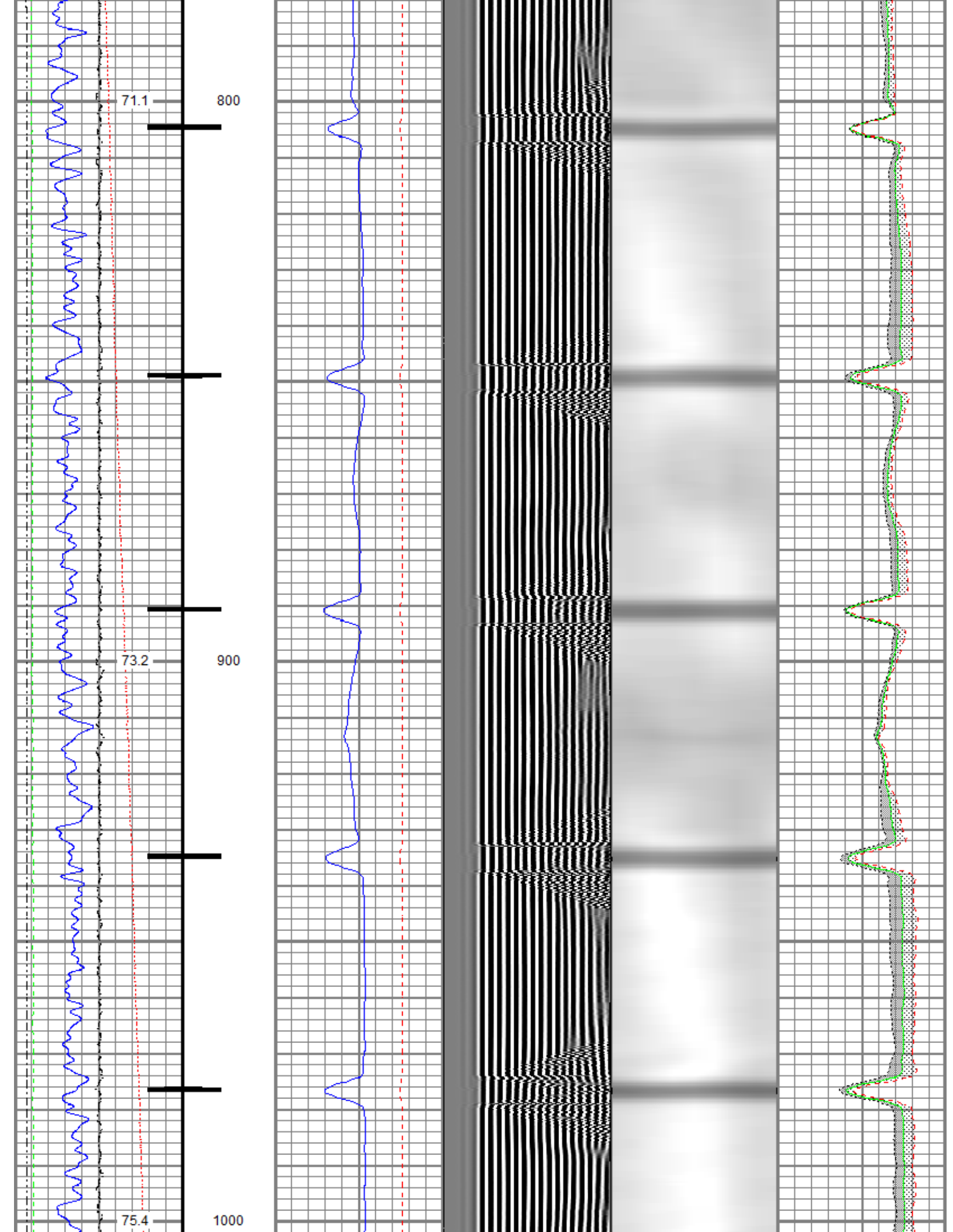
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
0 Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

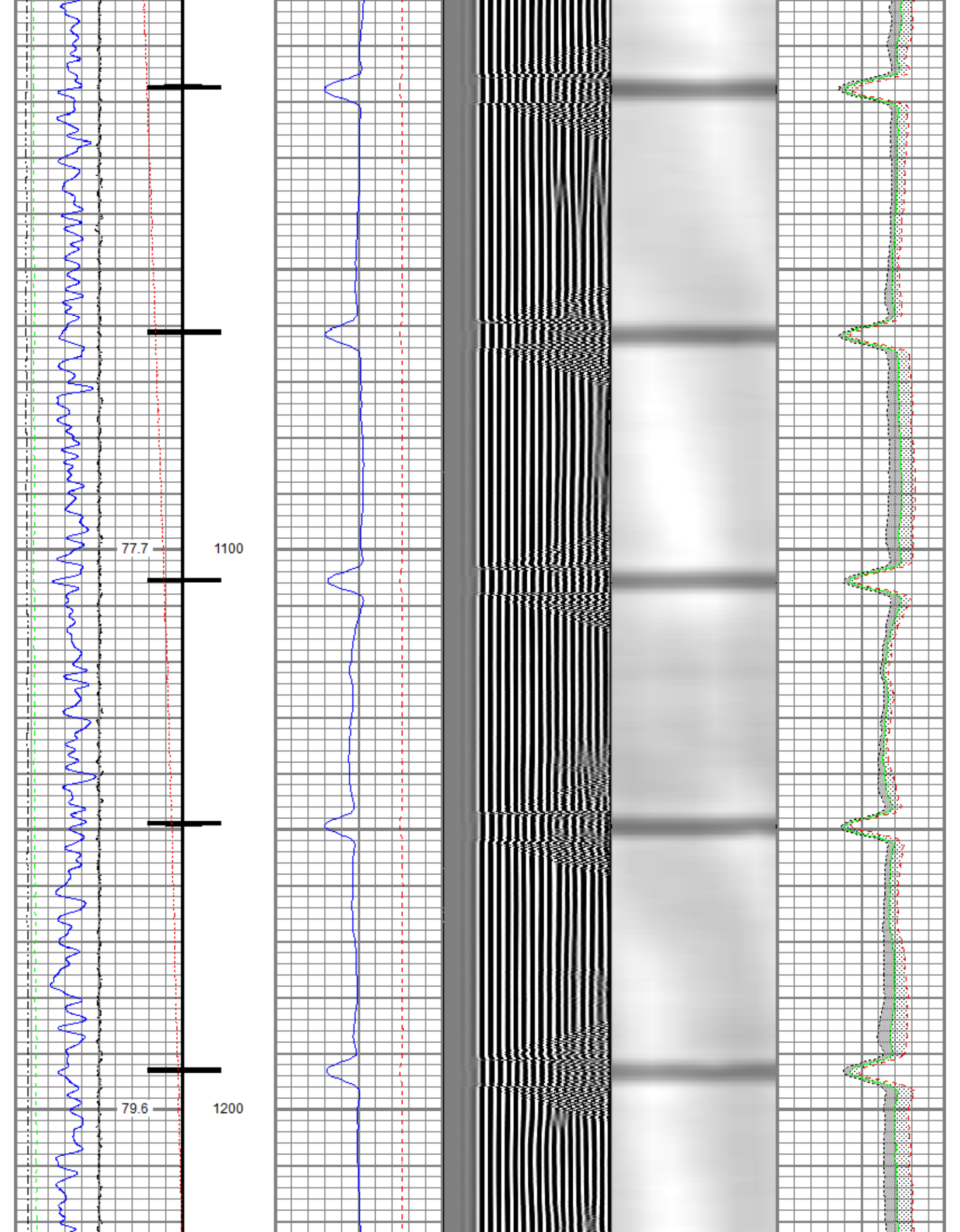


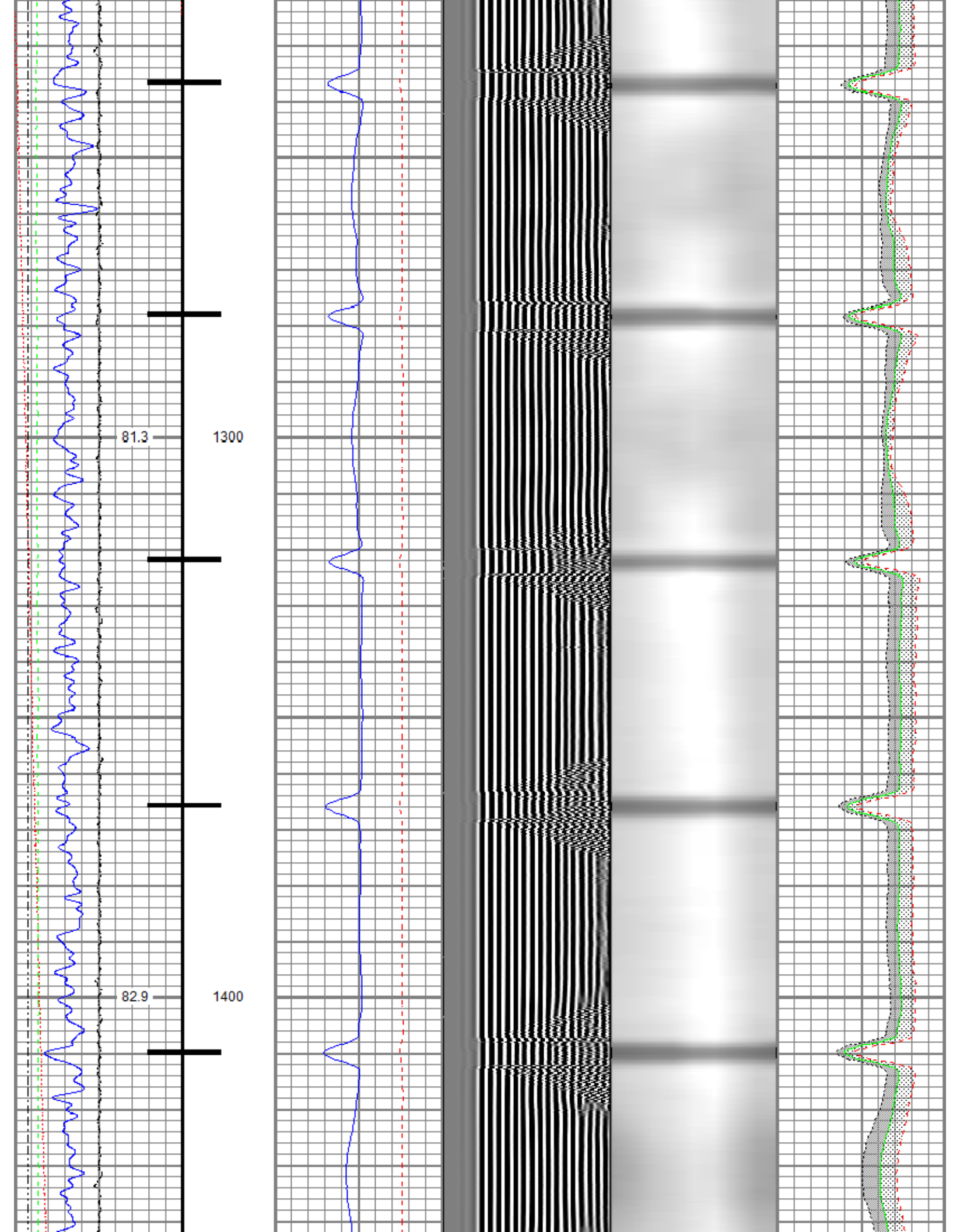


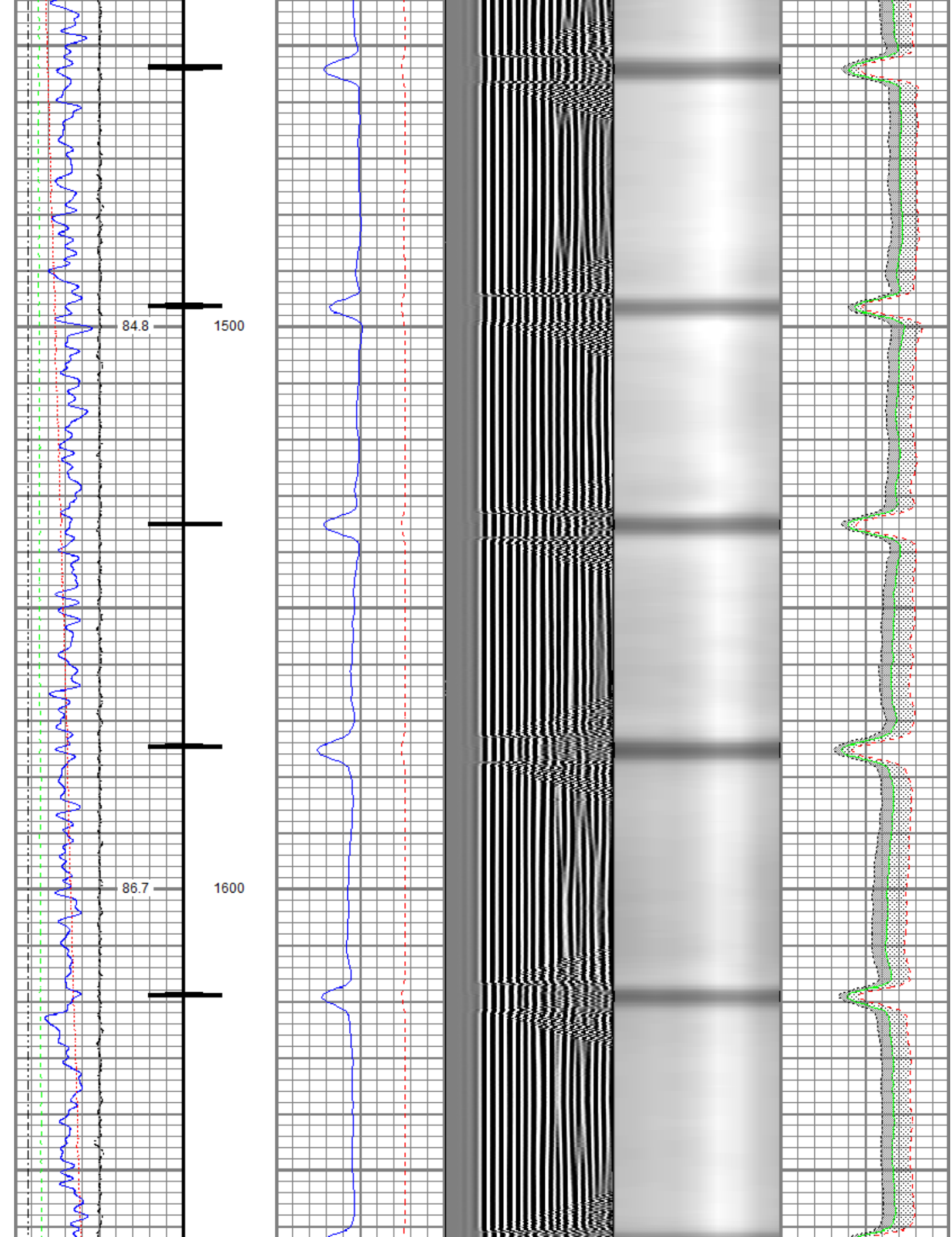


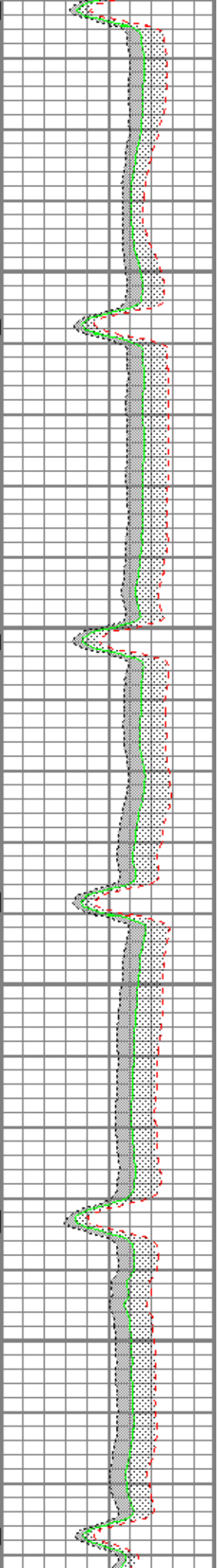
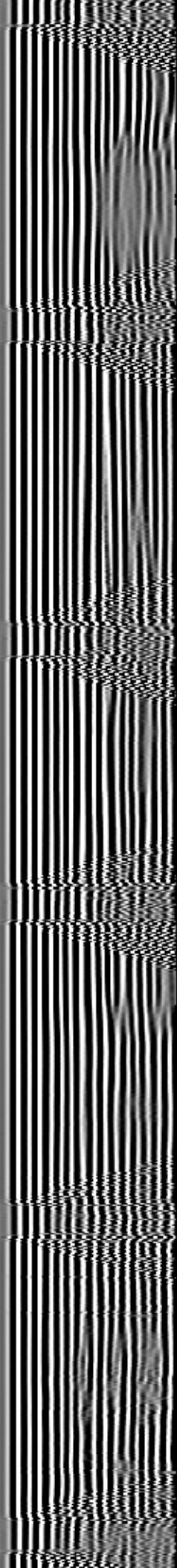
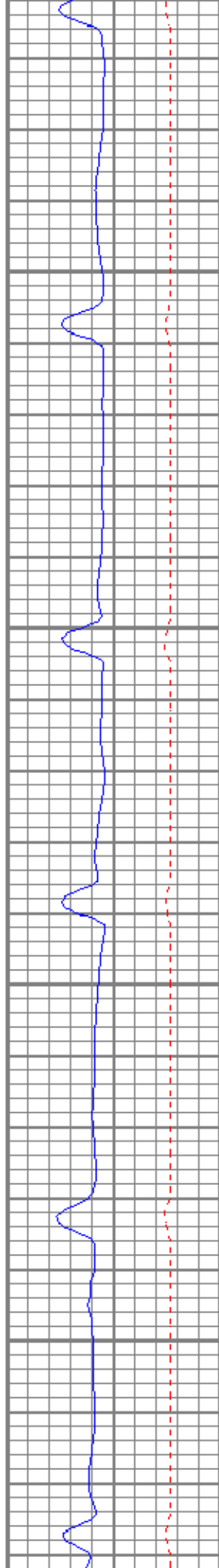
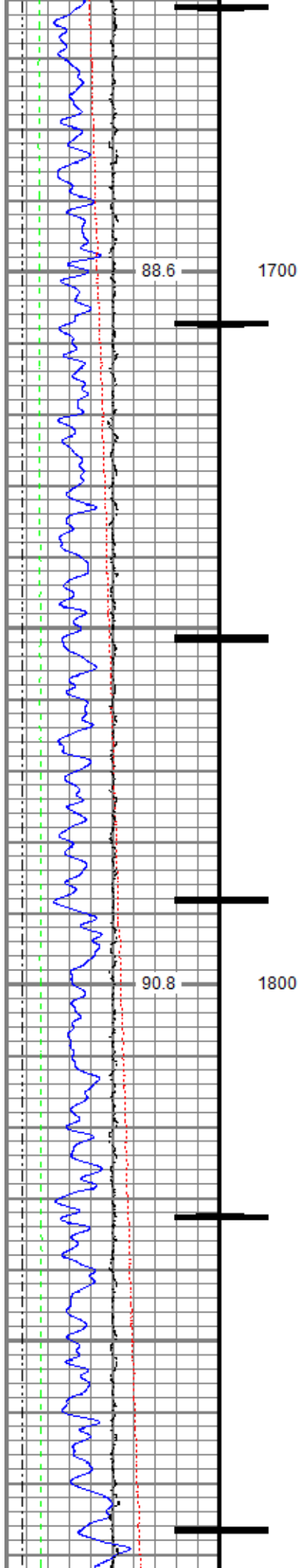


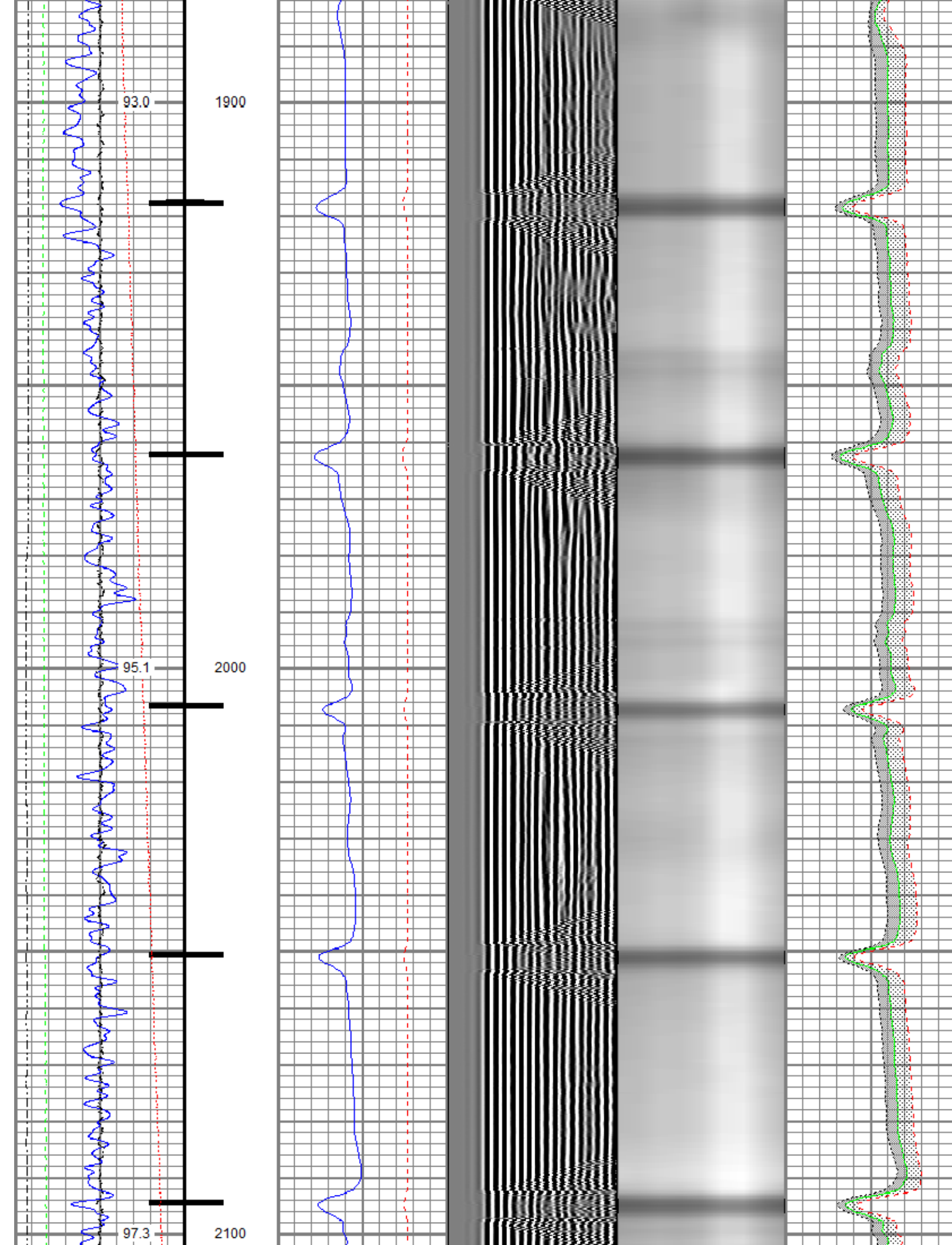


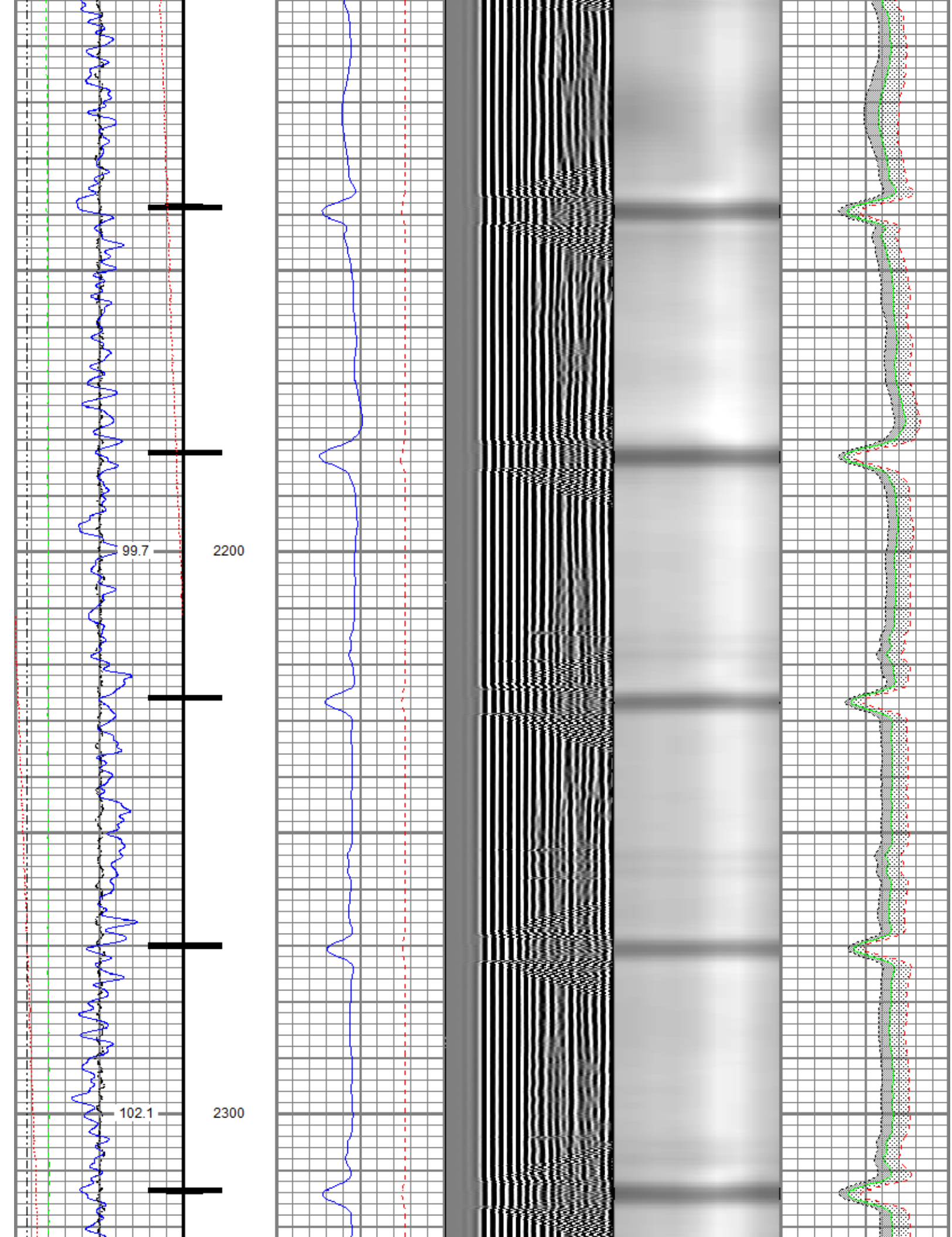


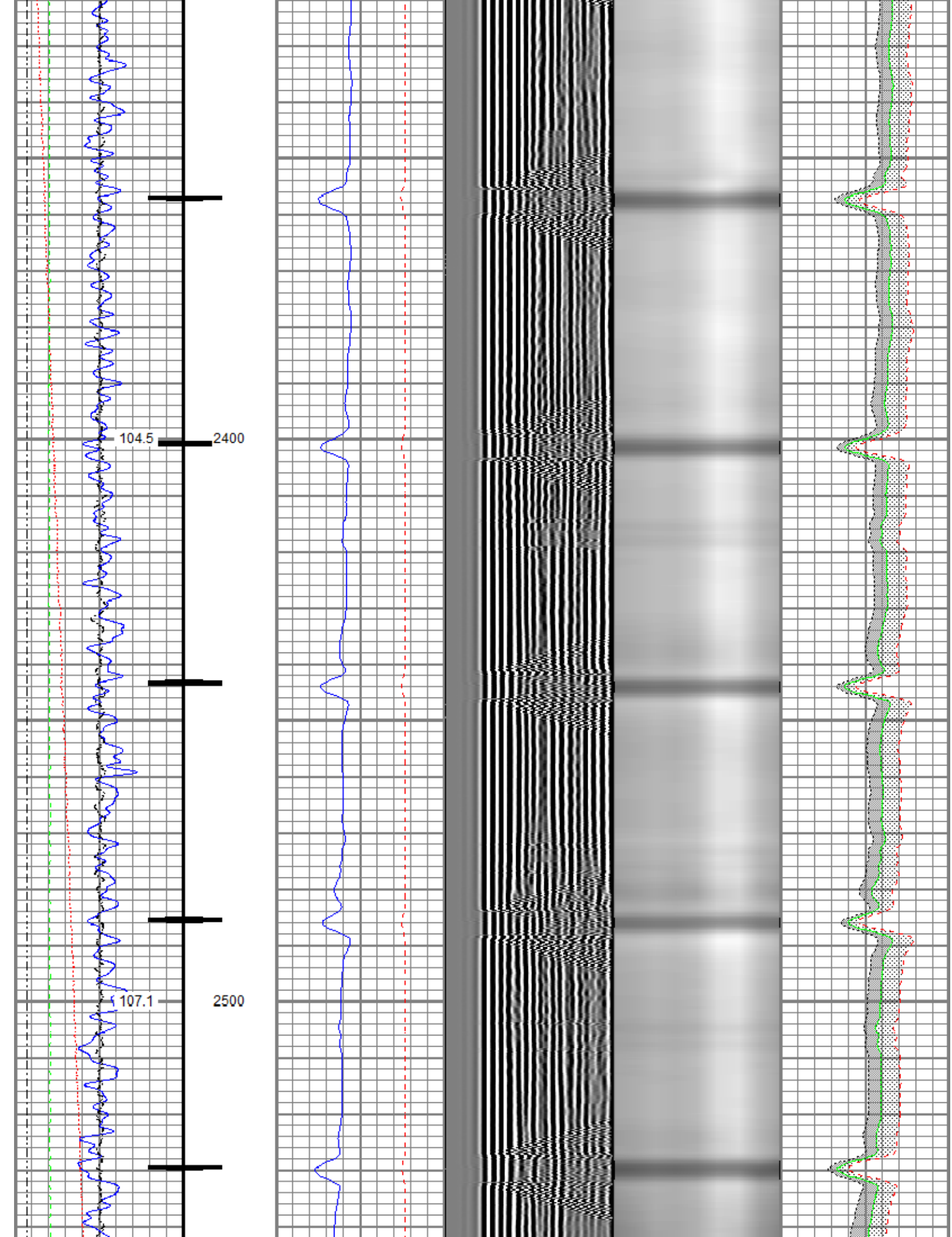


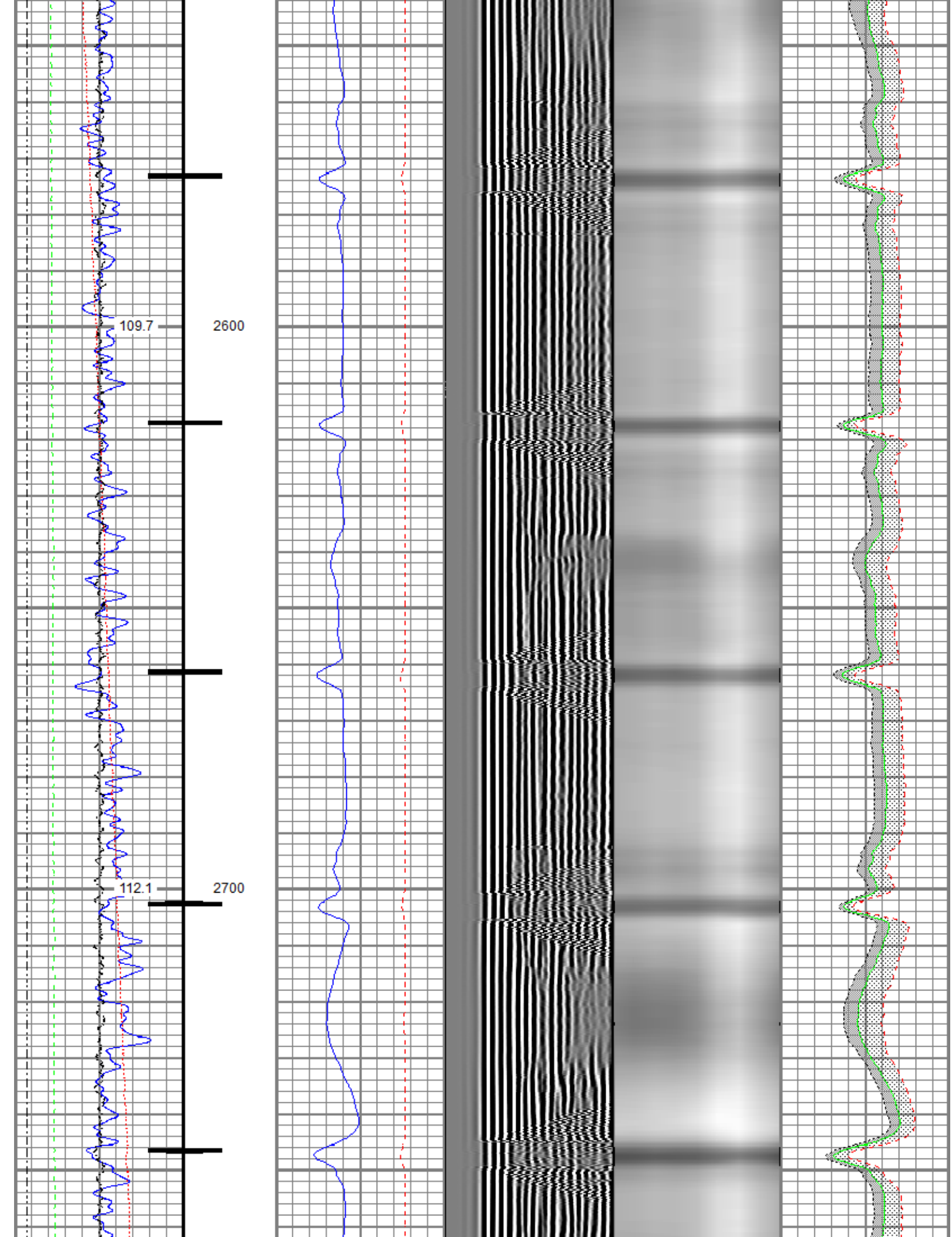


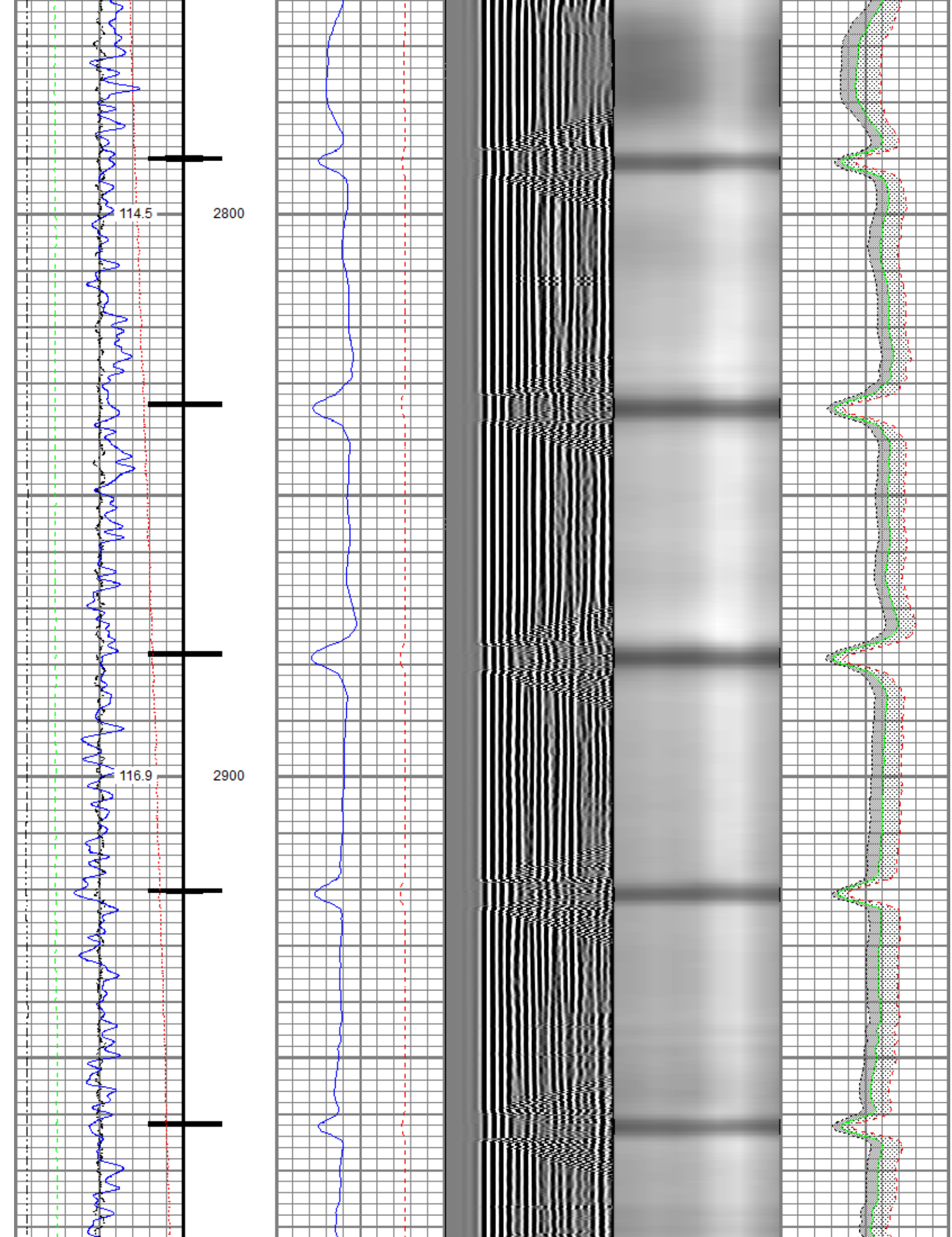


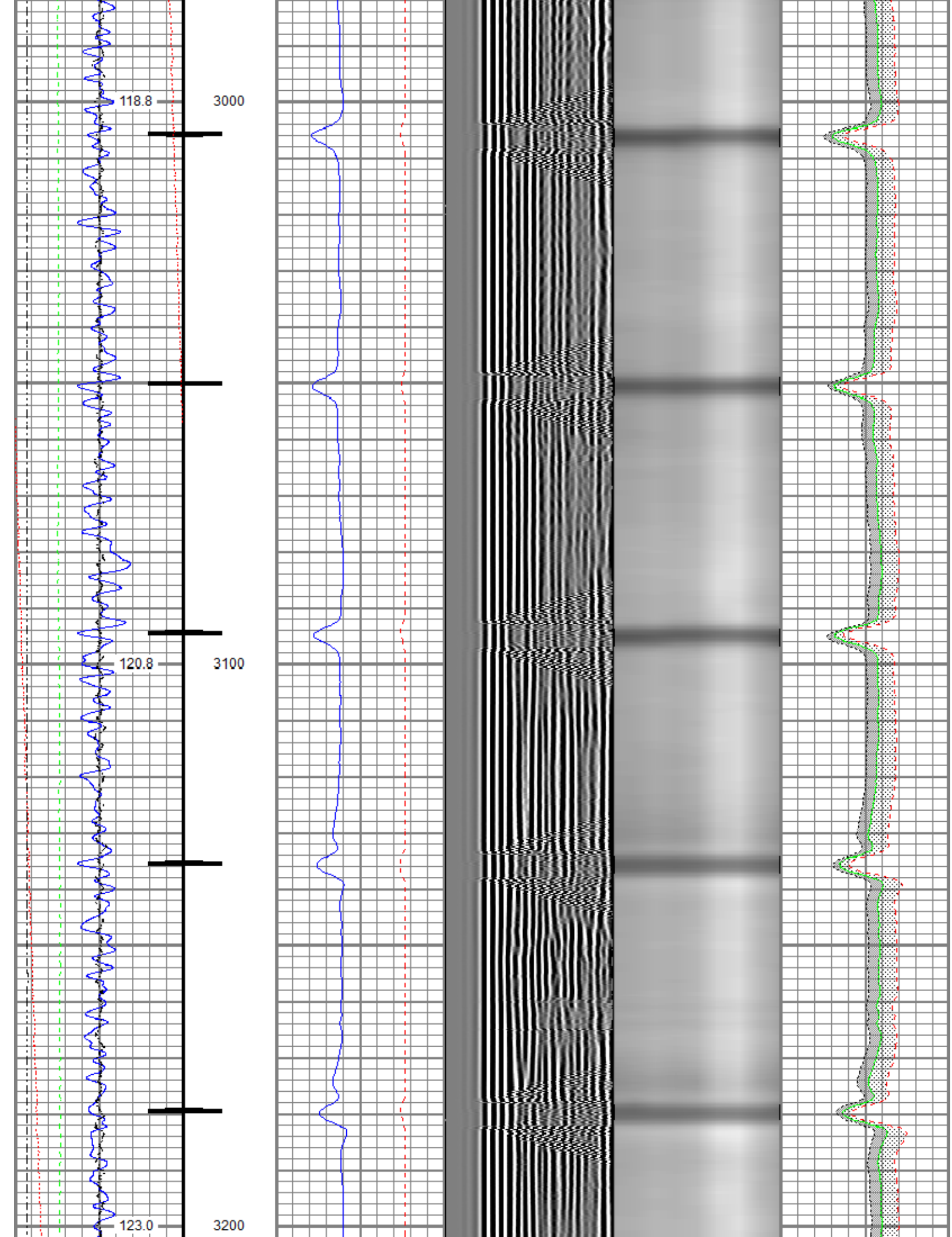


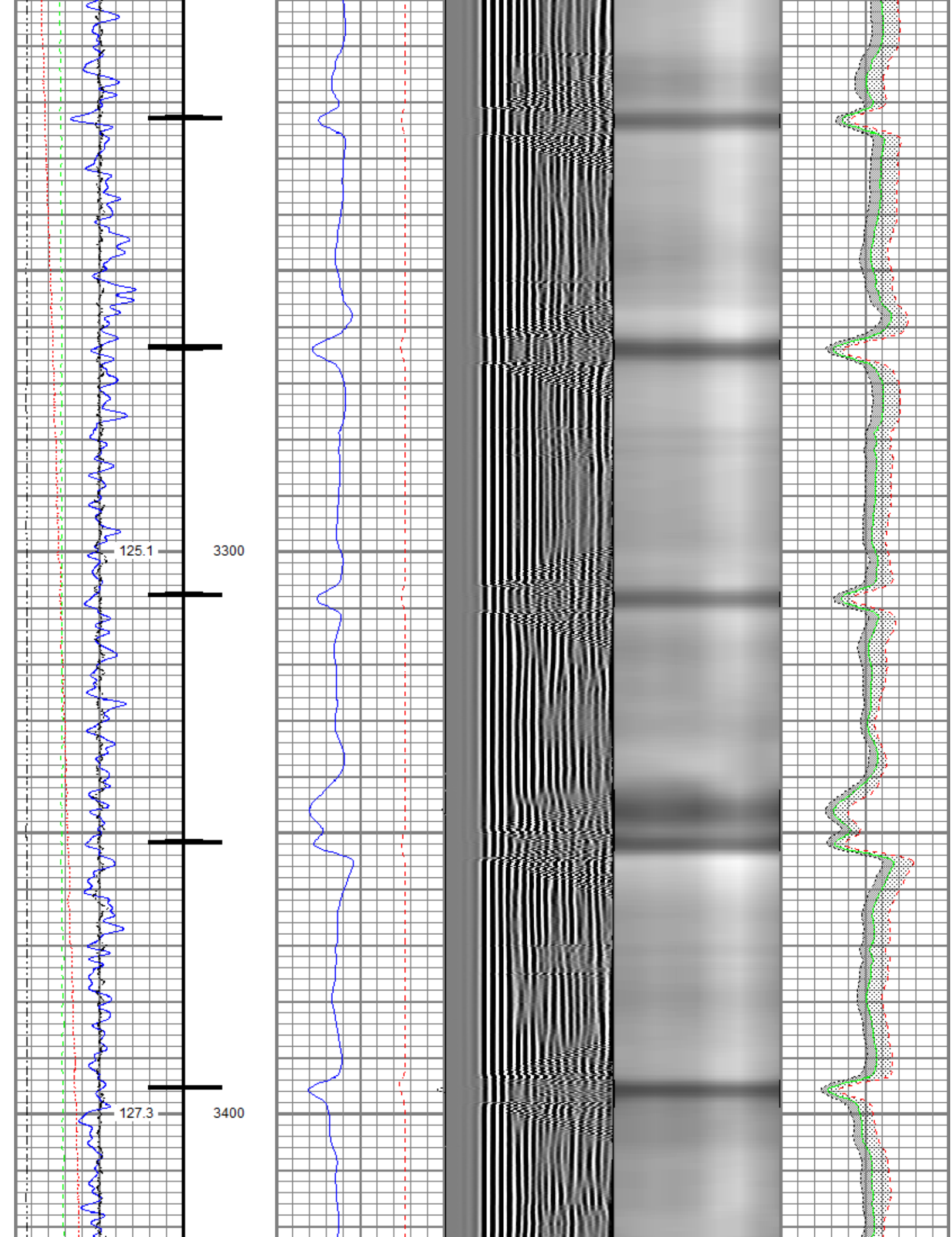


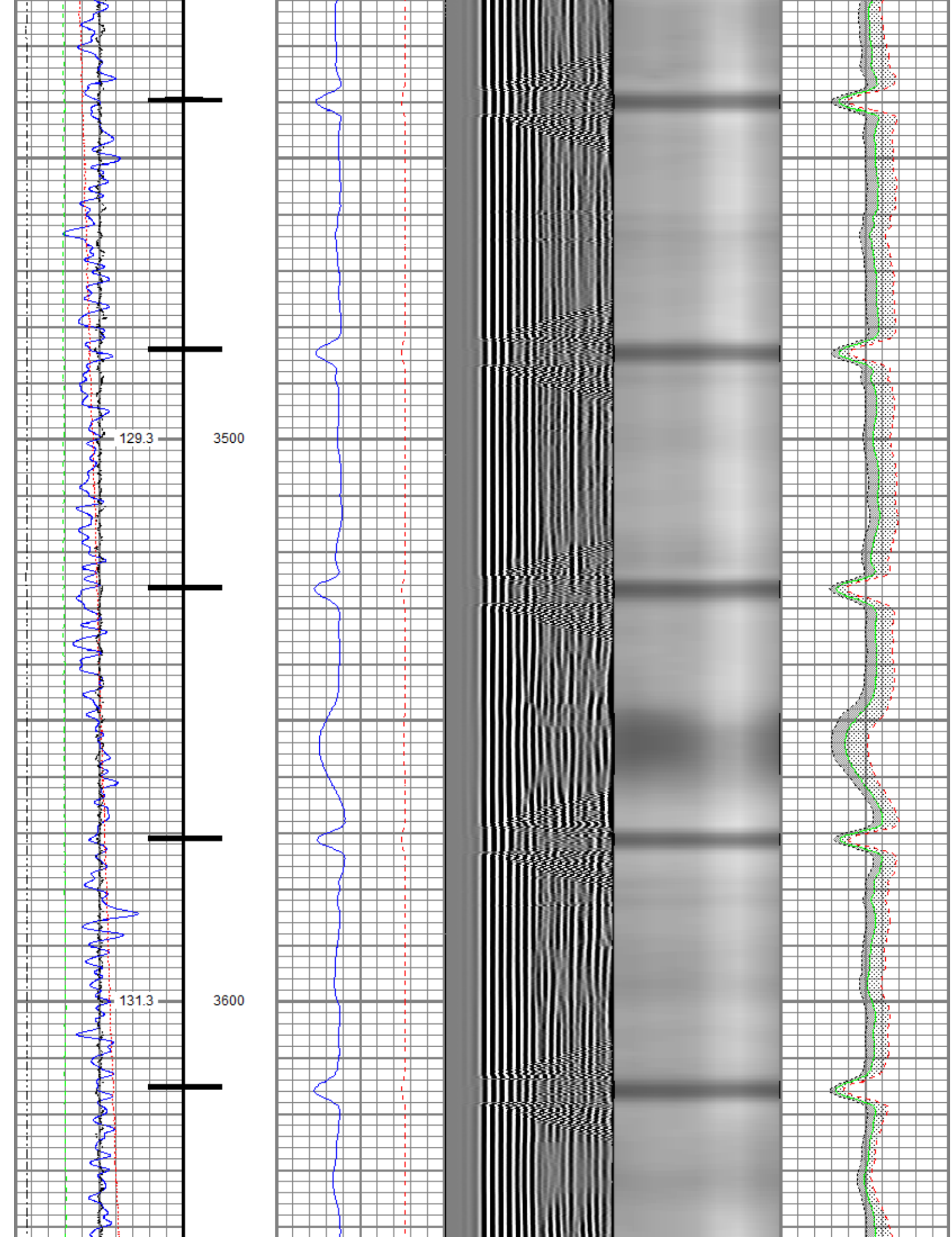


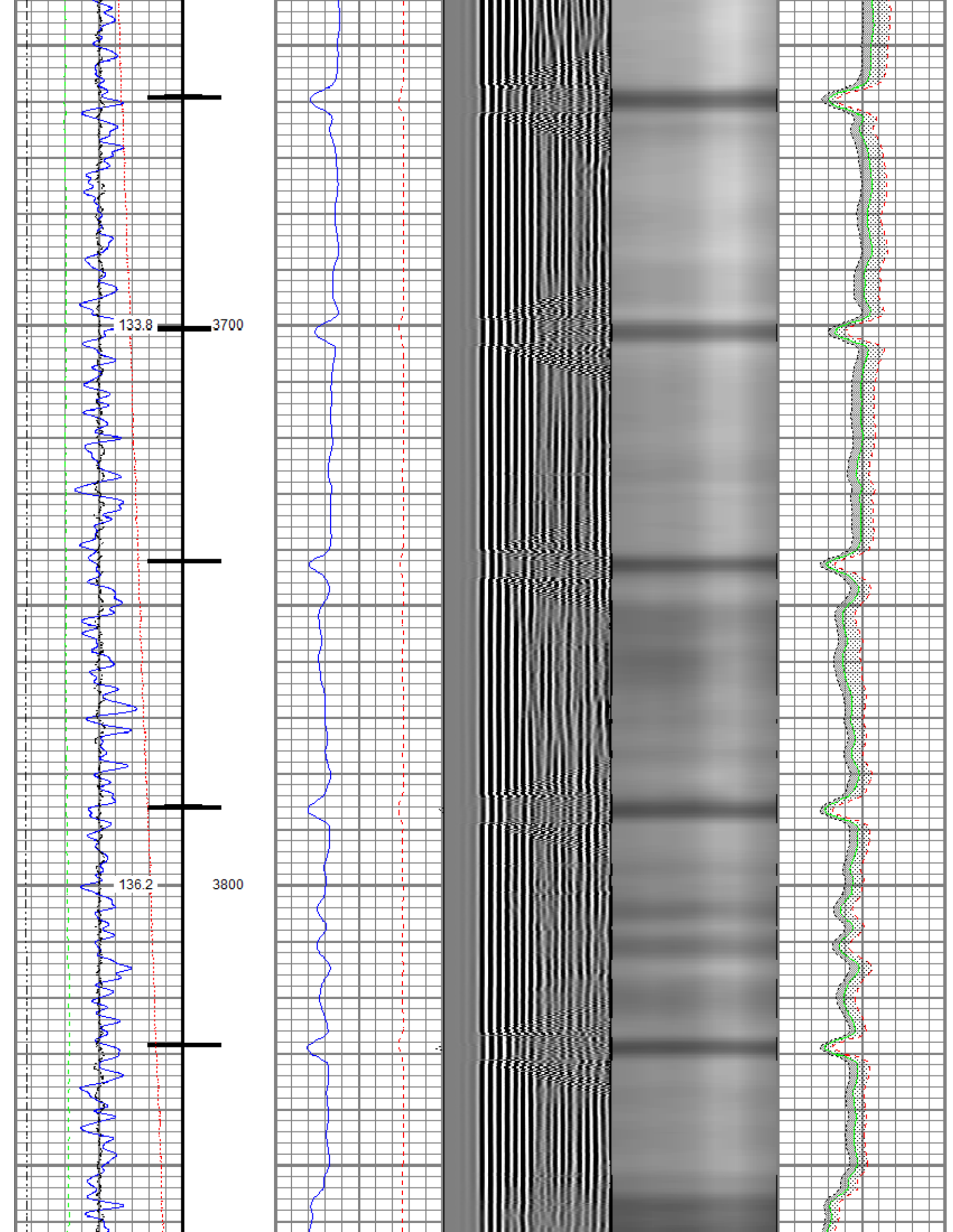


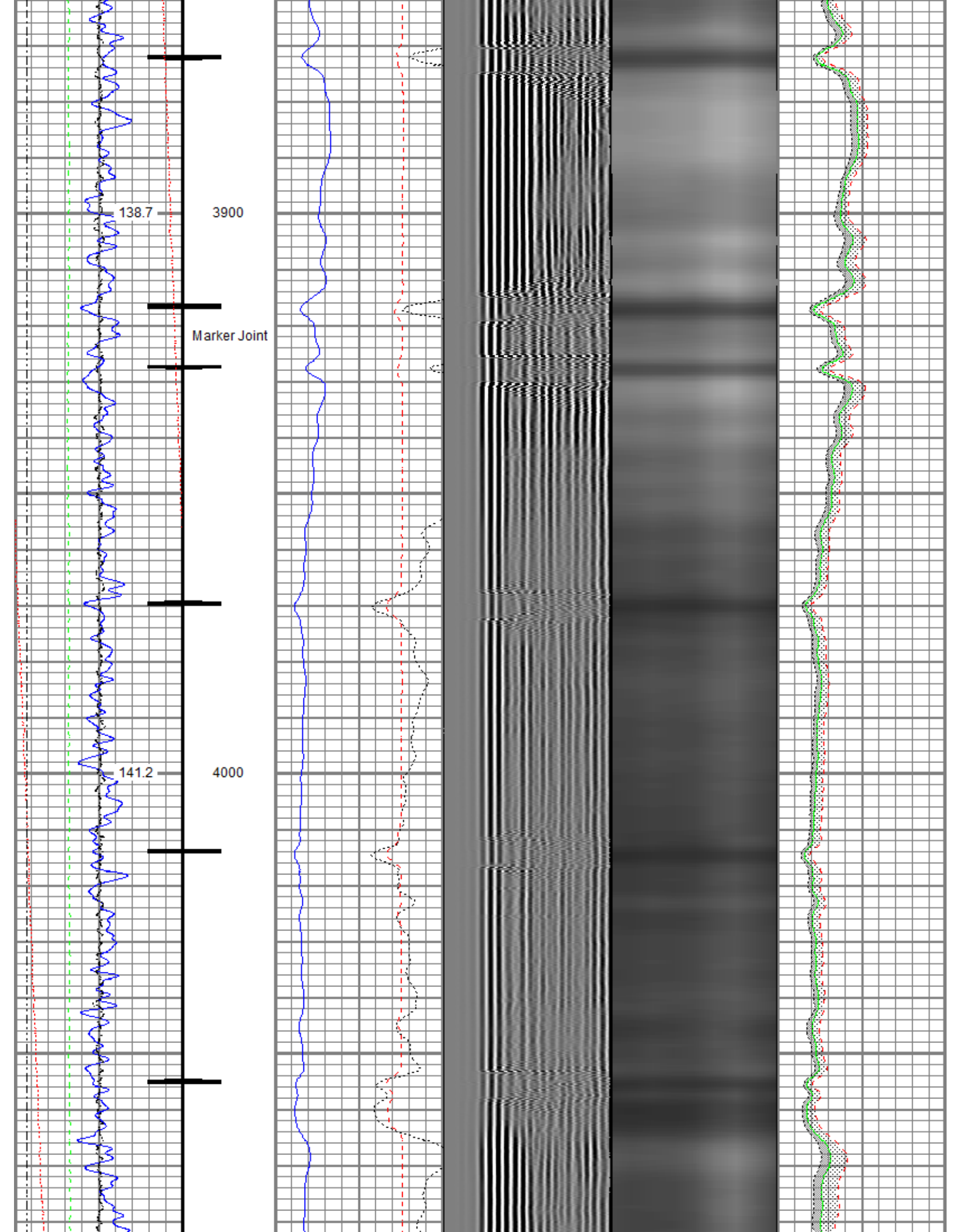


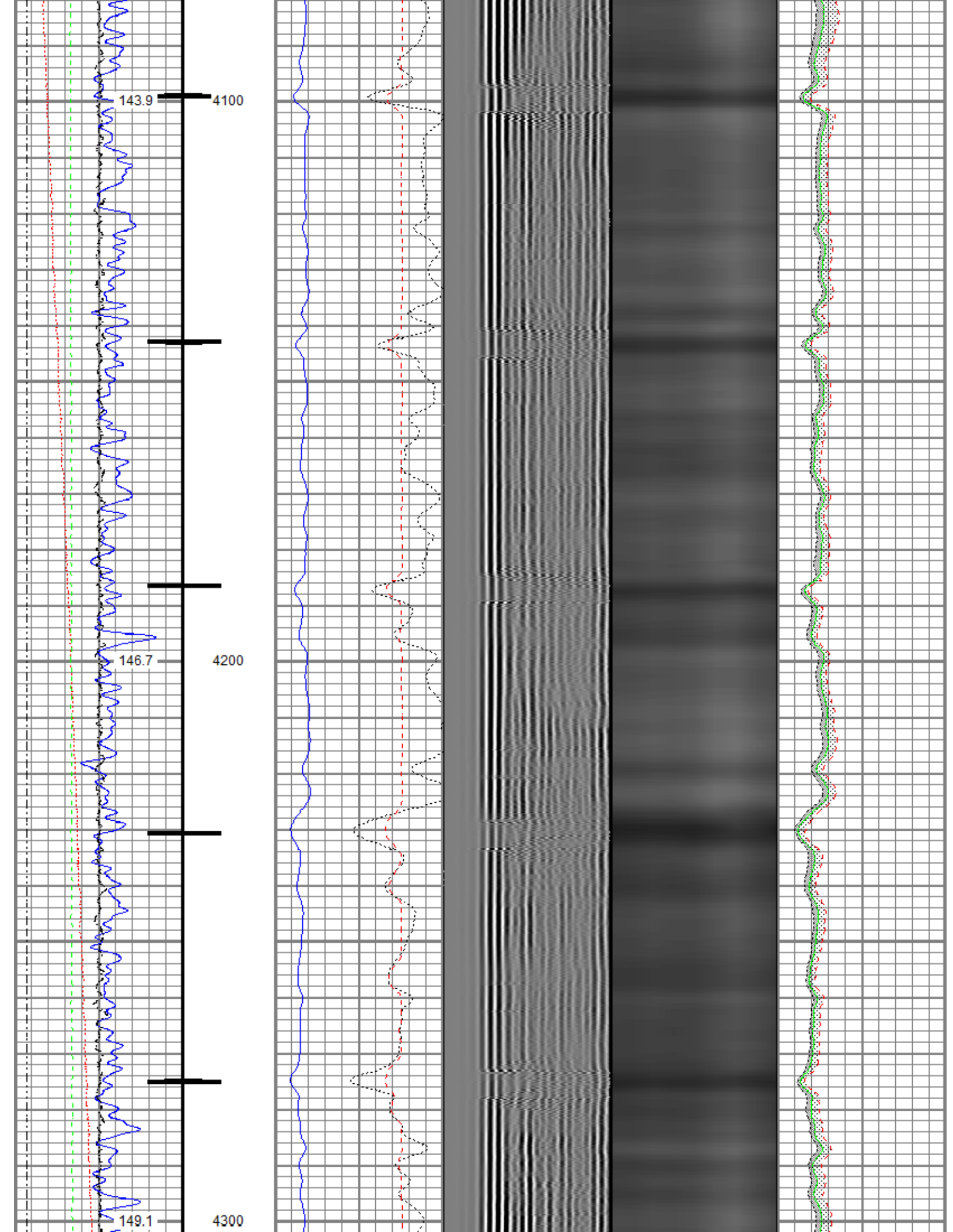


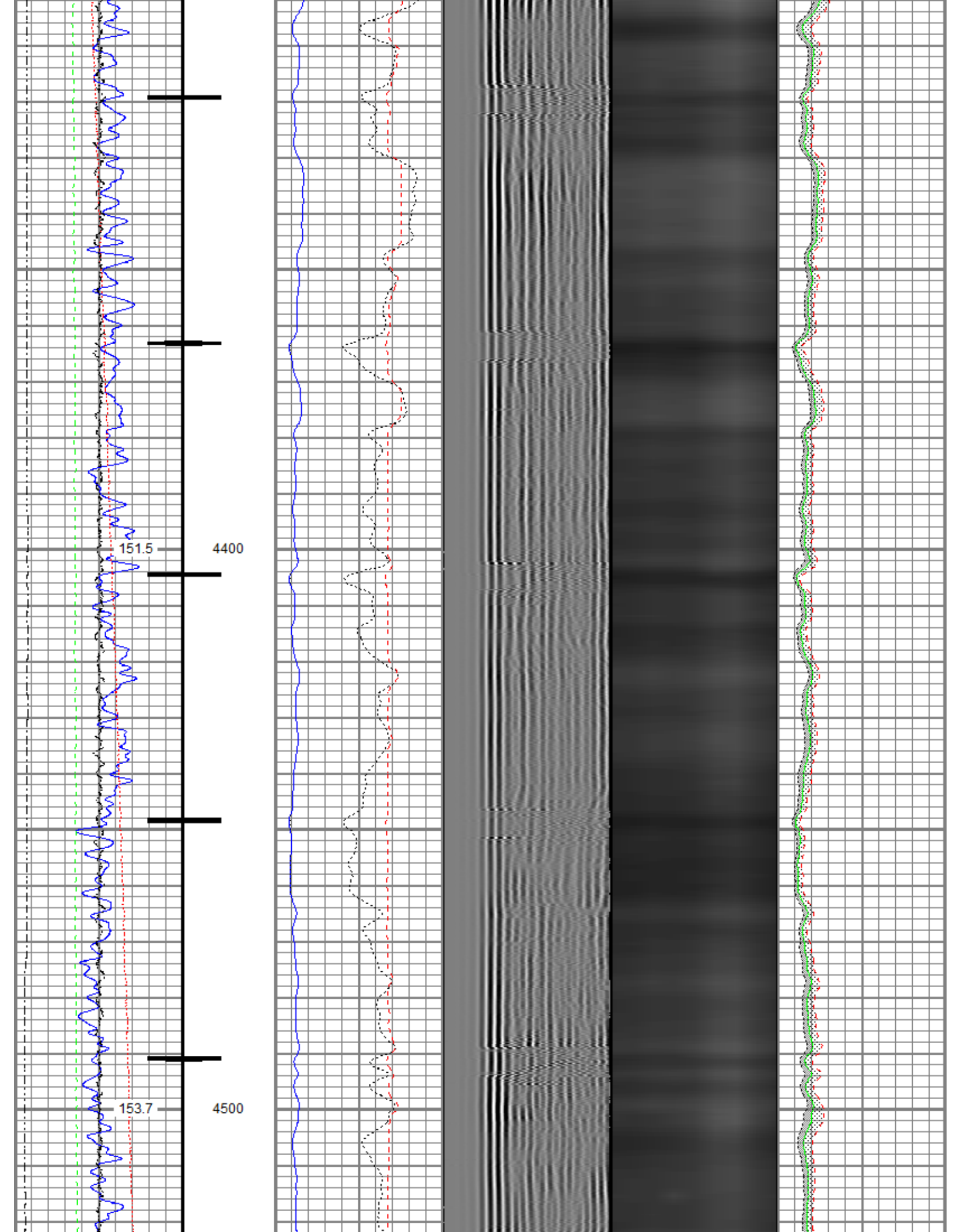


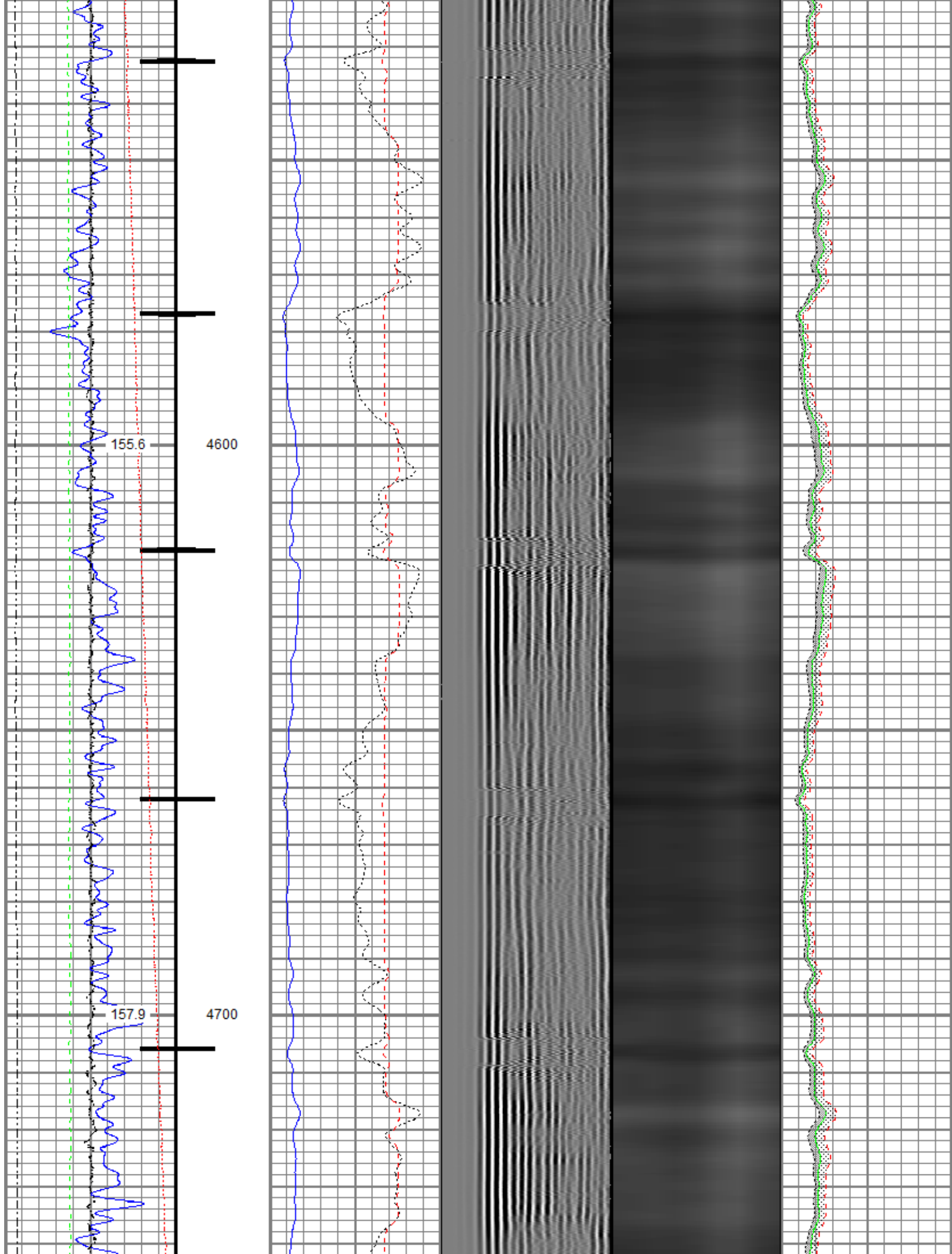


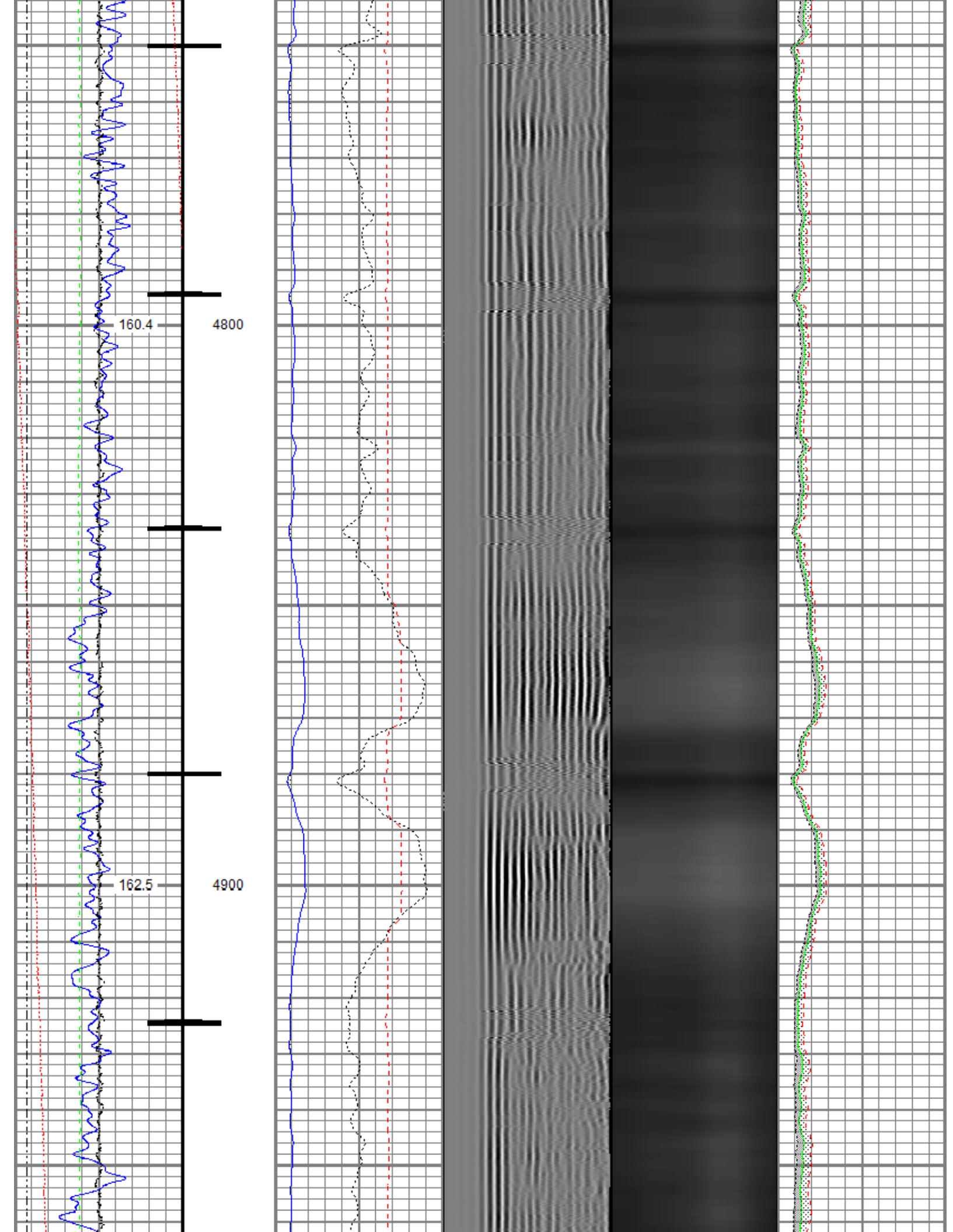


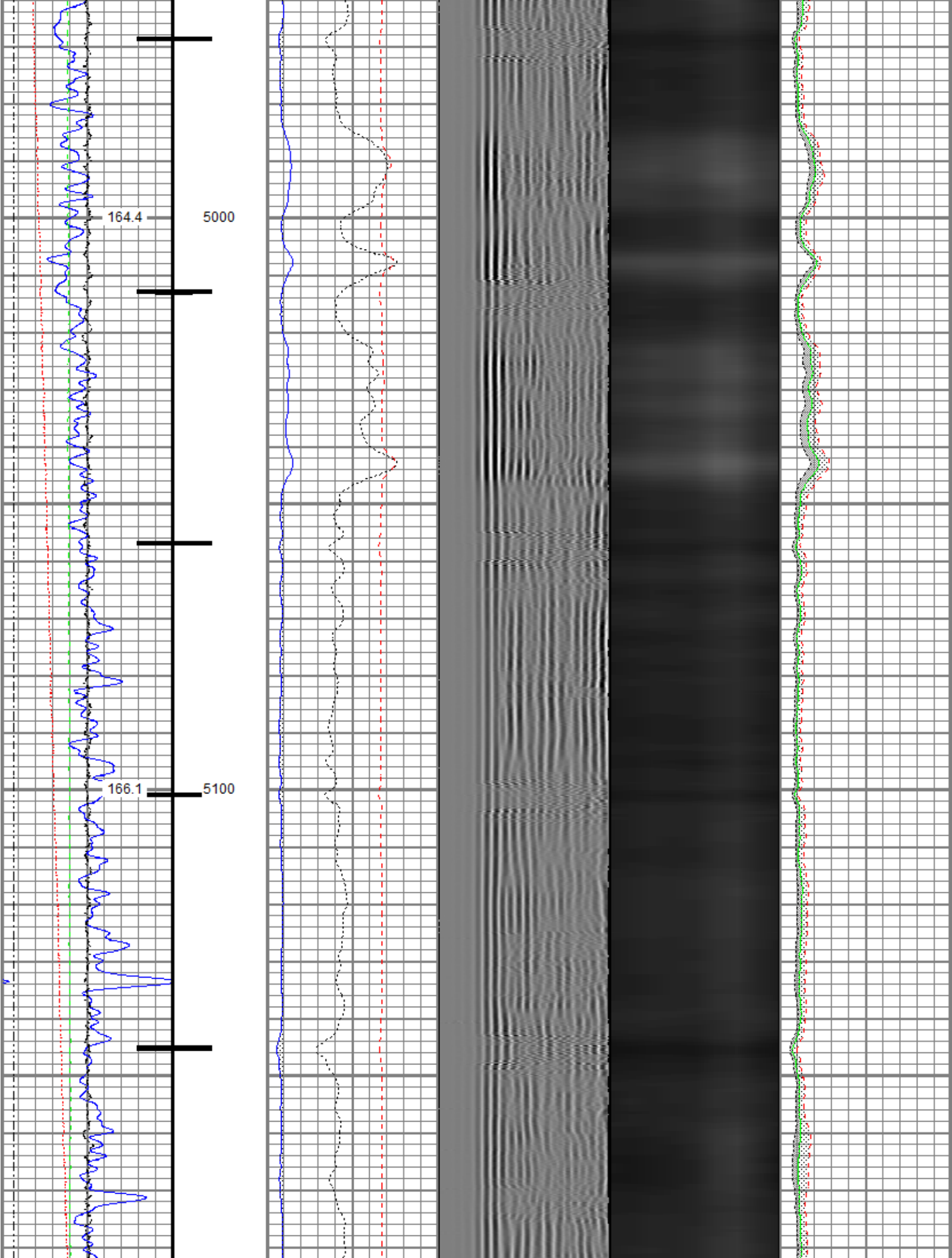


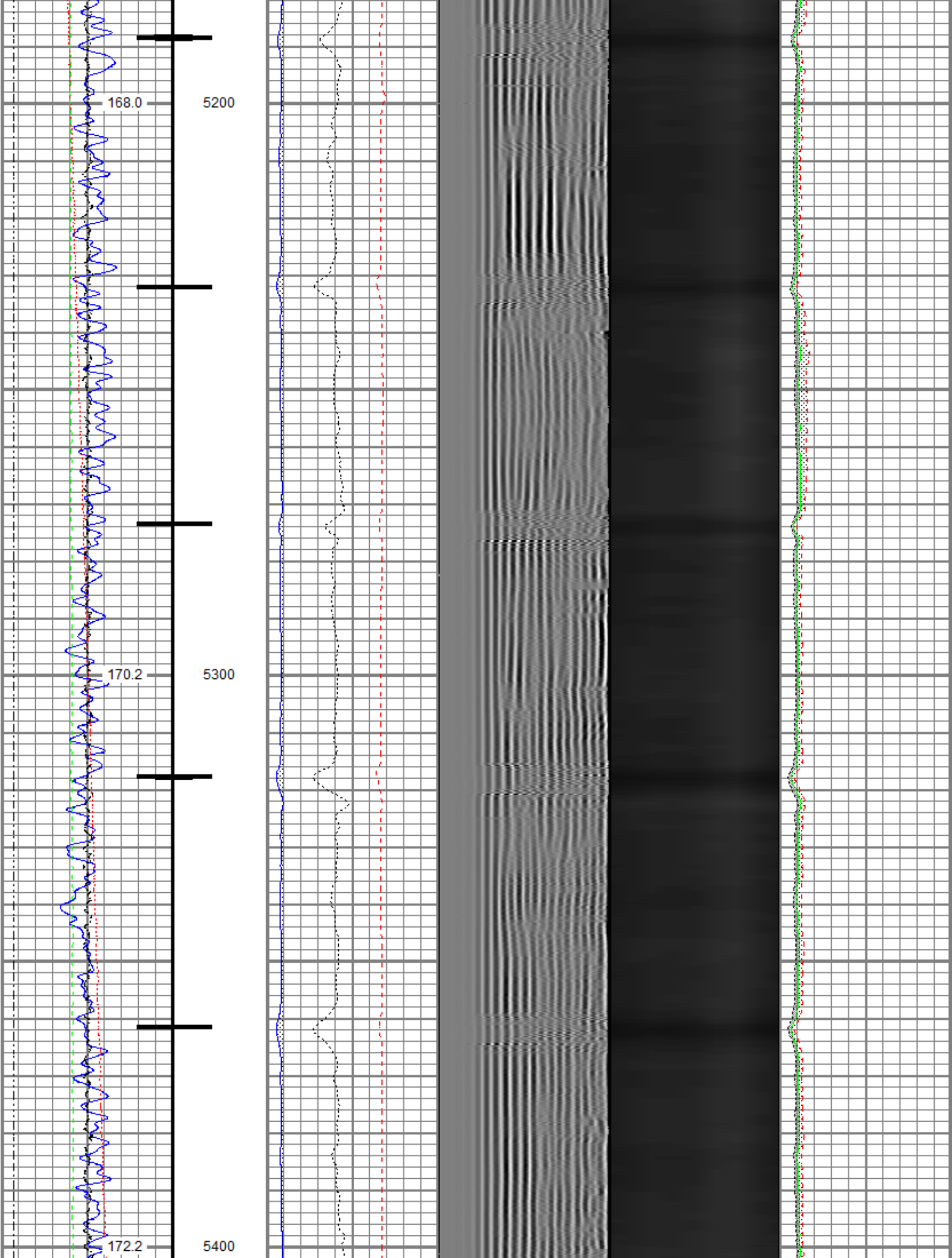


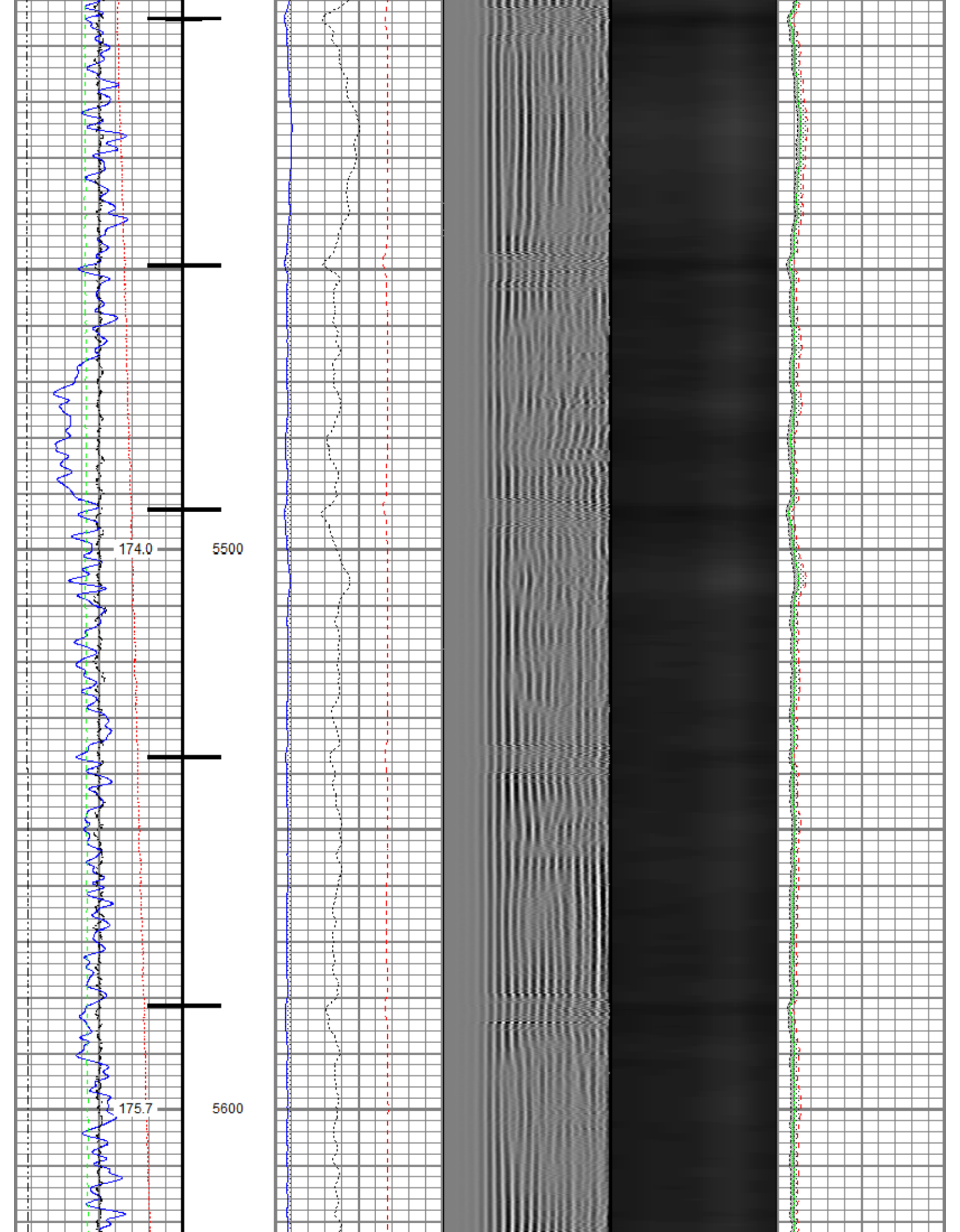


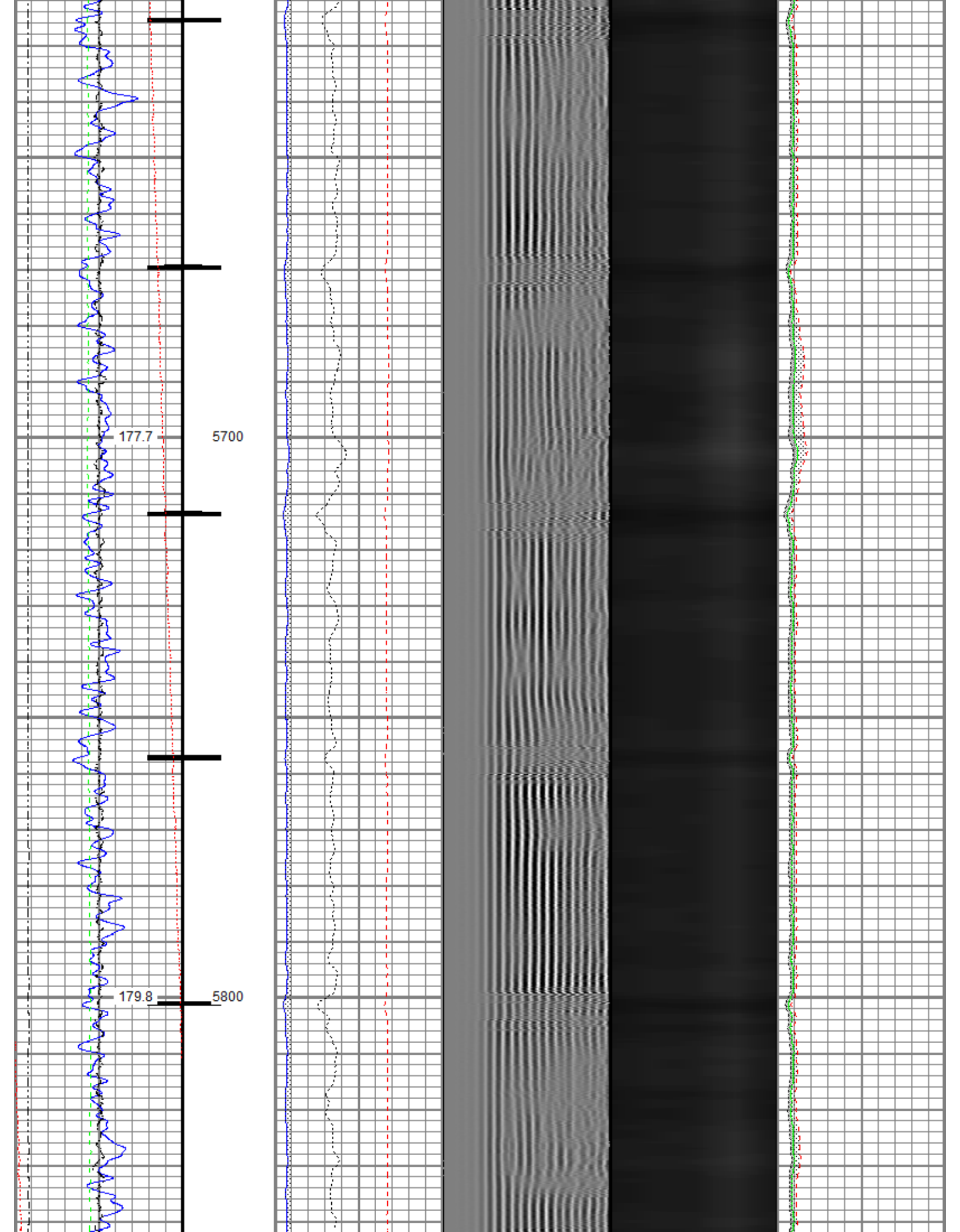


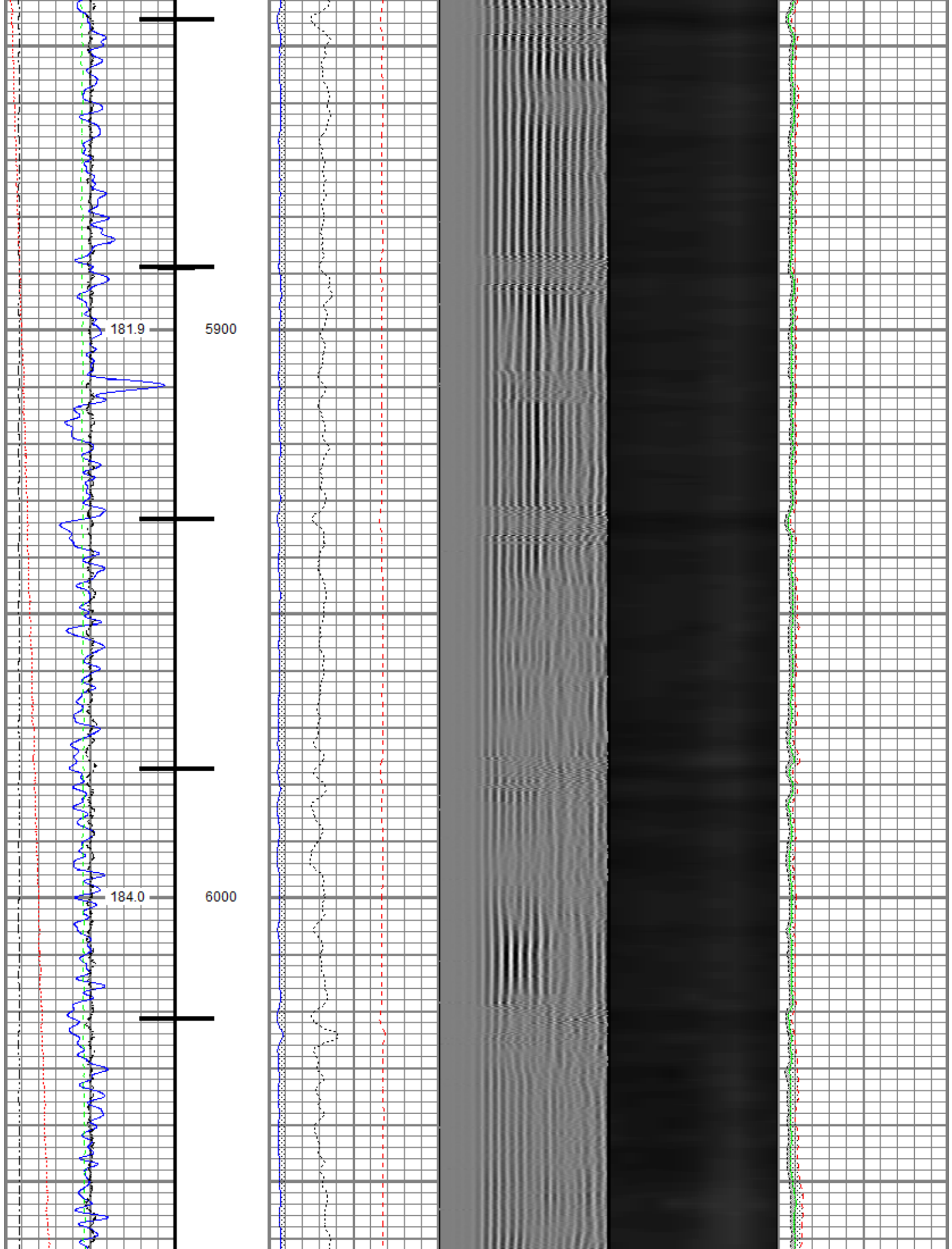


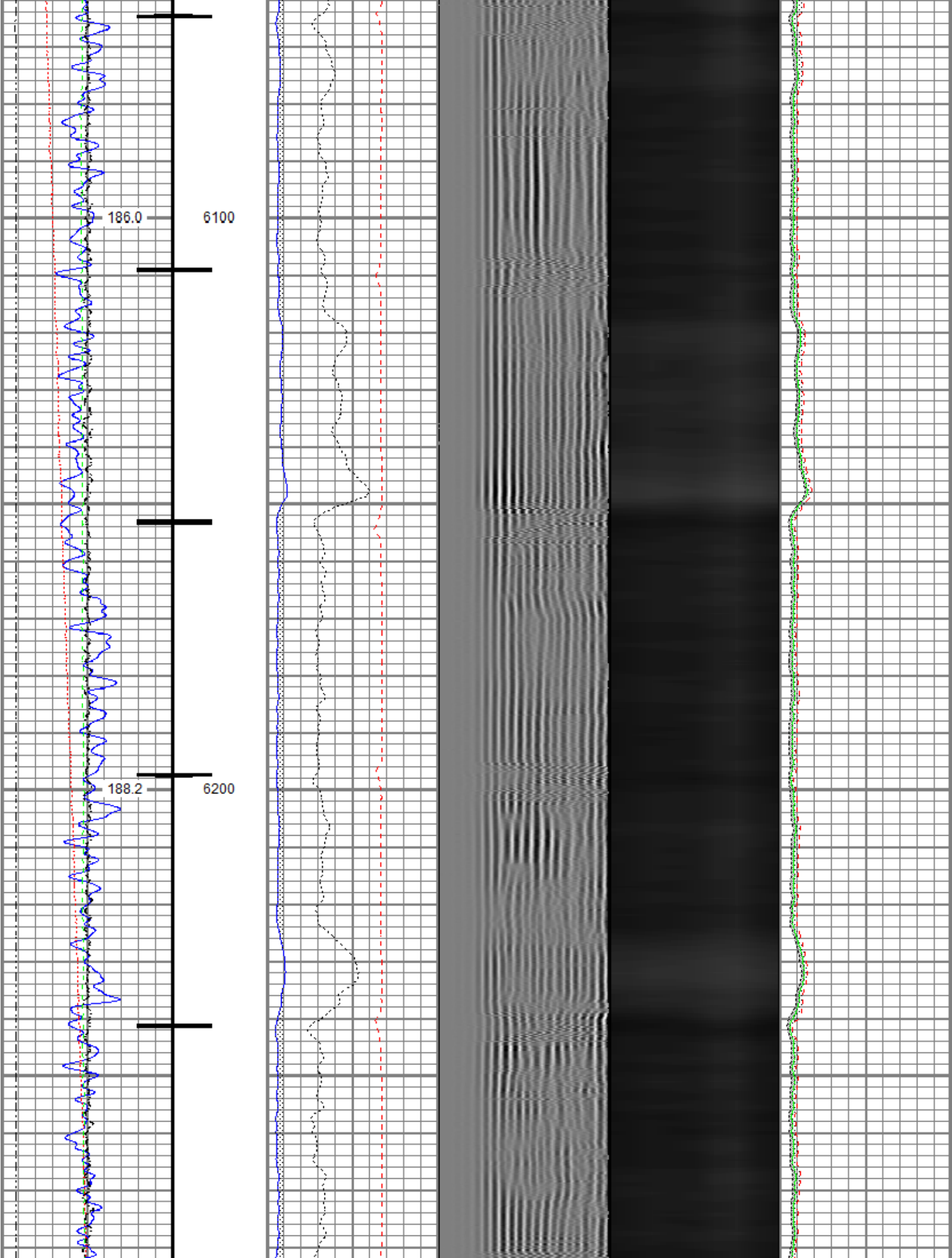


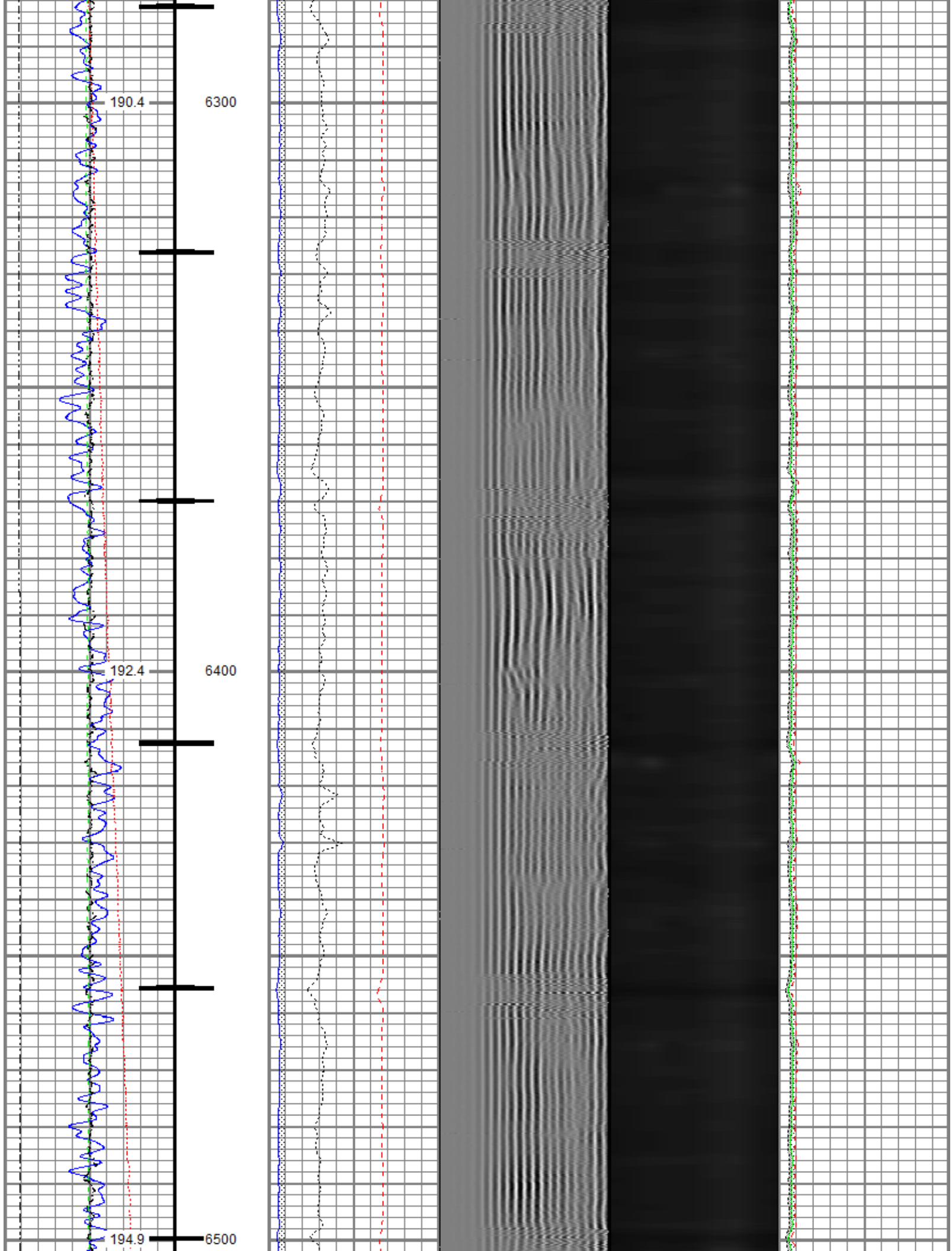


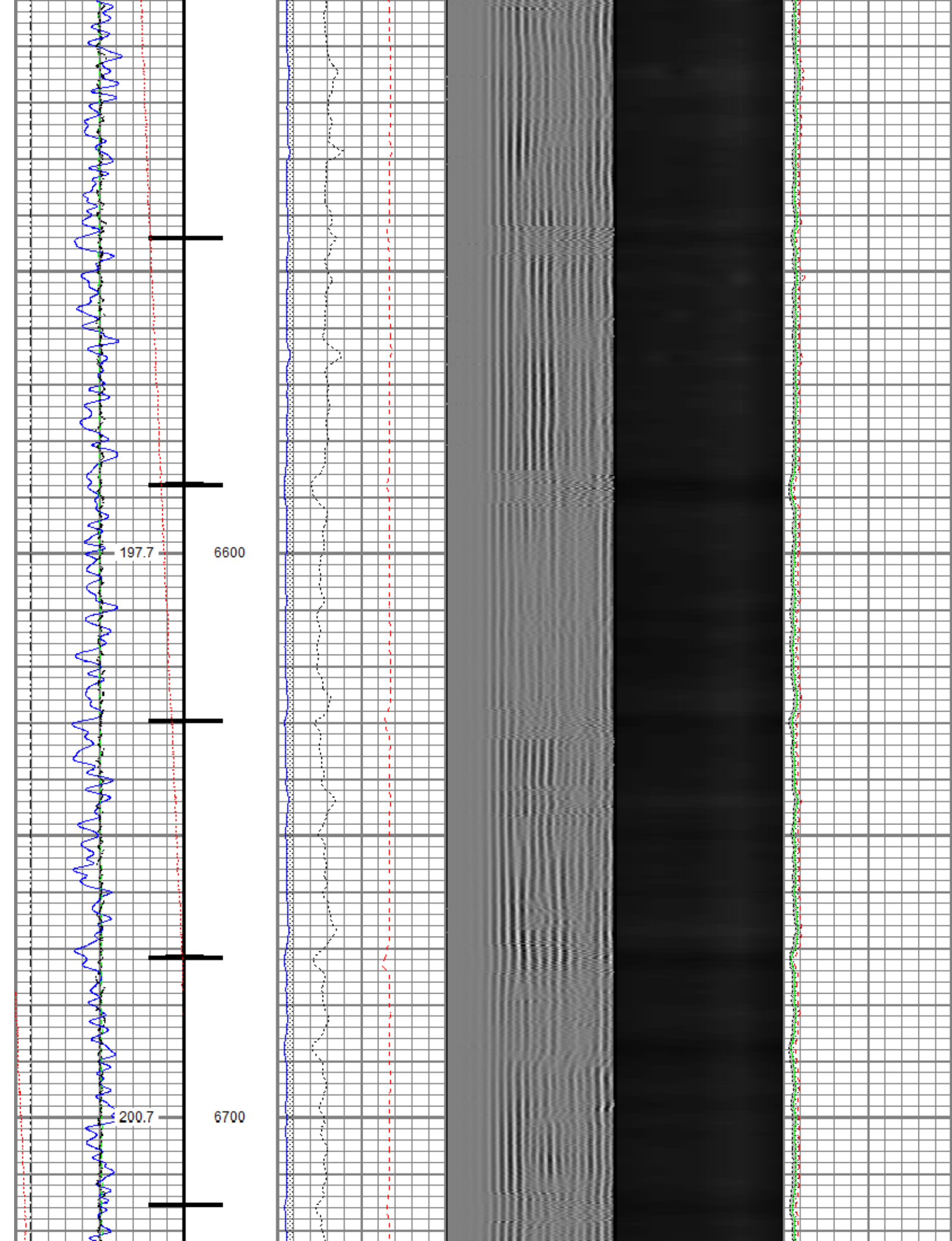


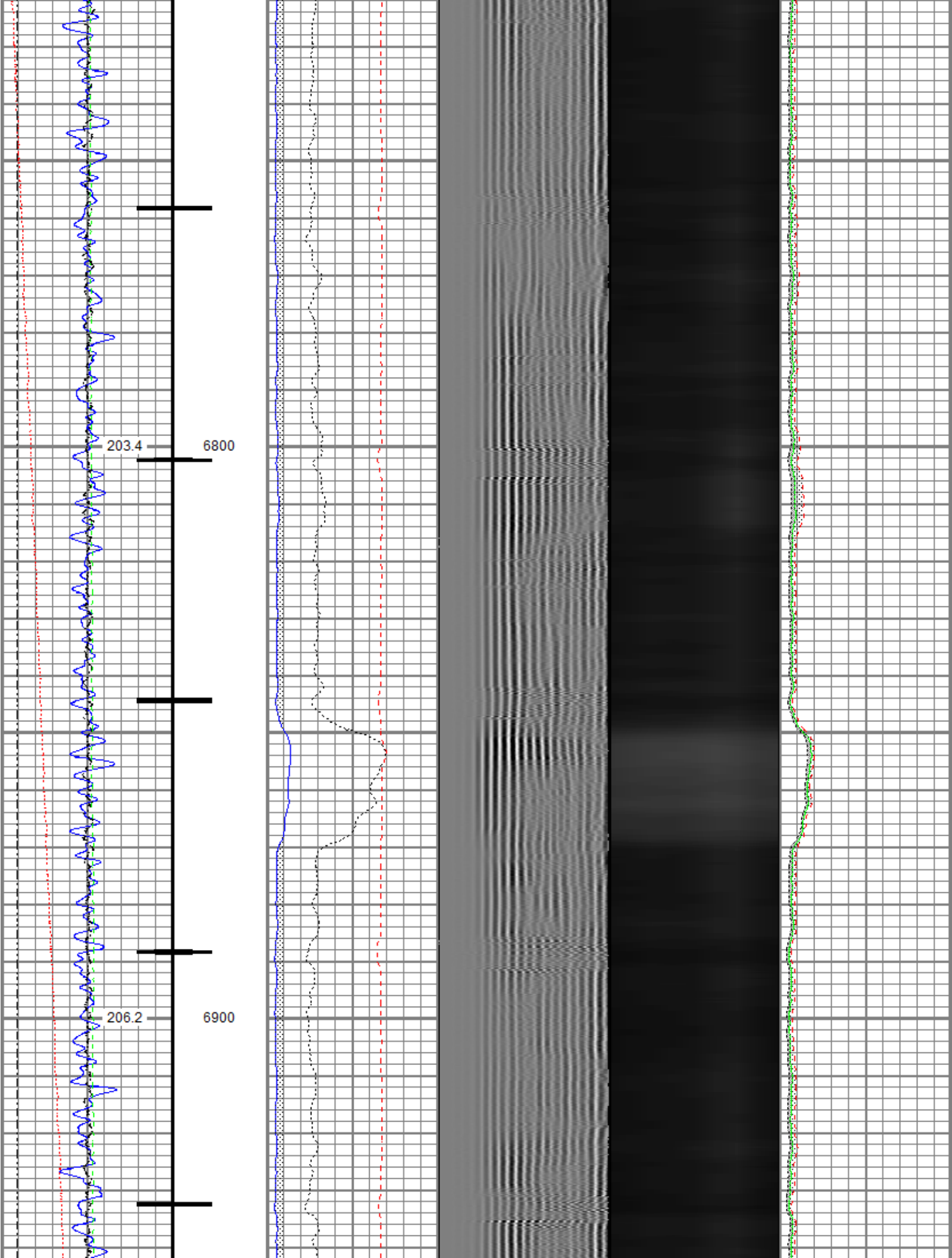


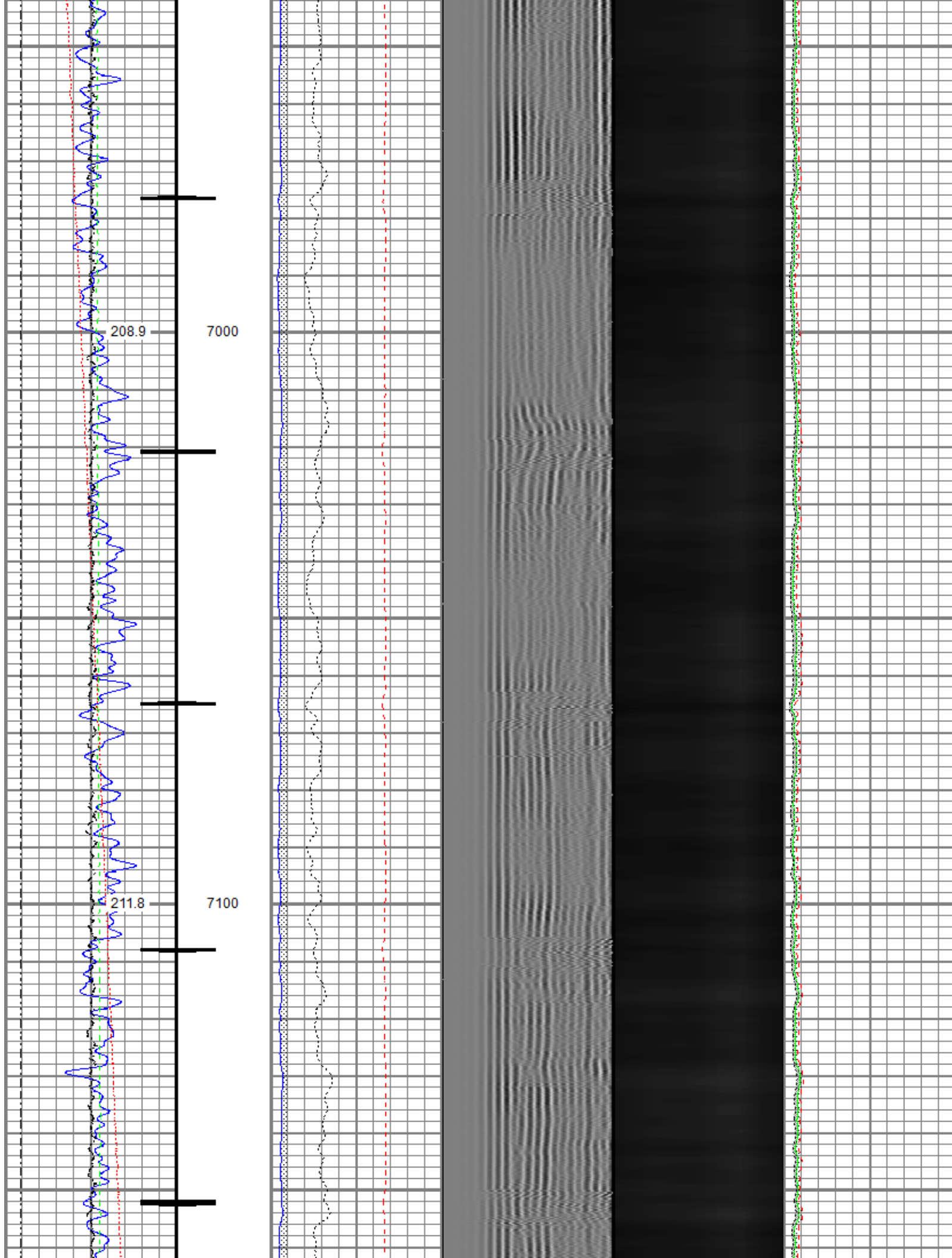


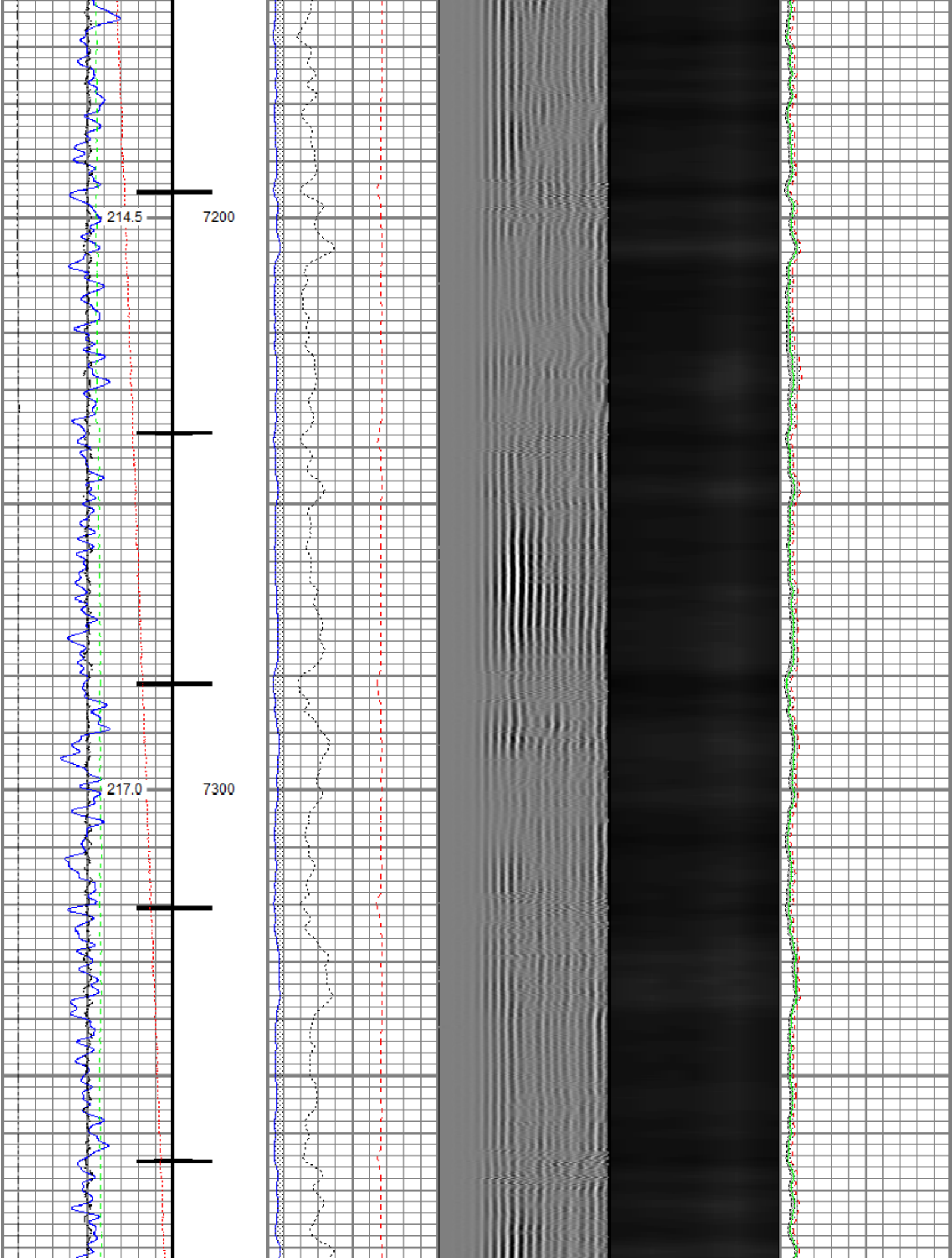


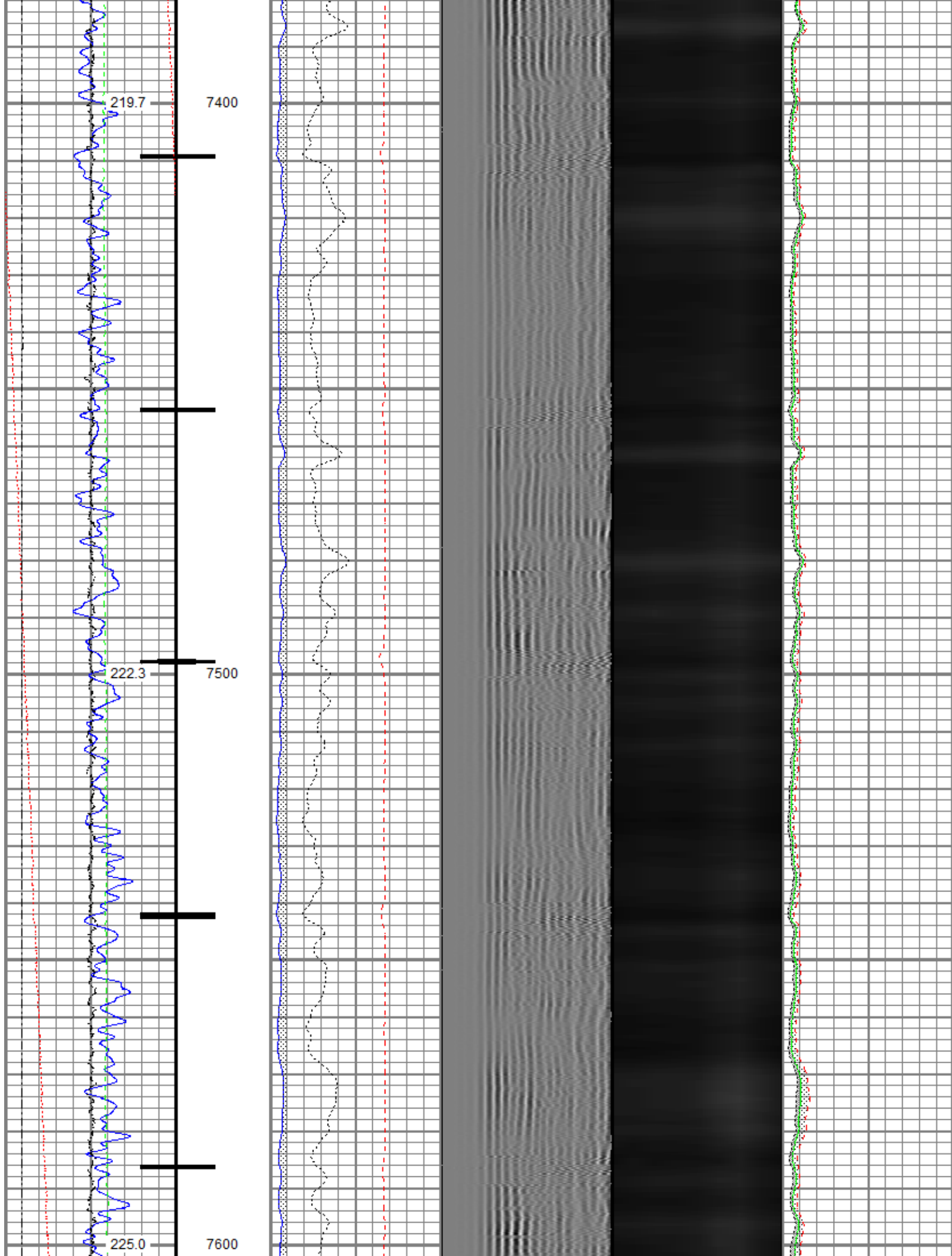


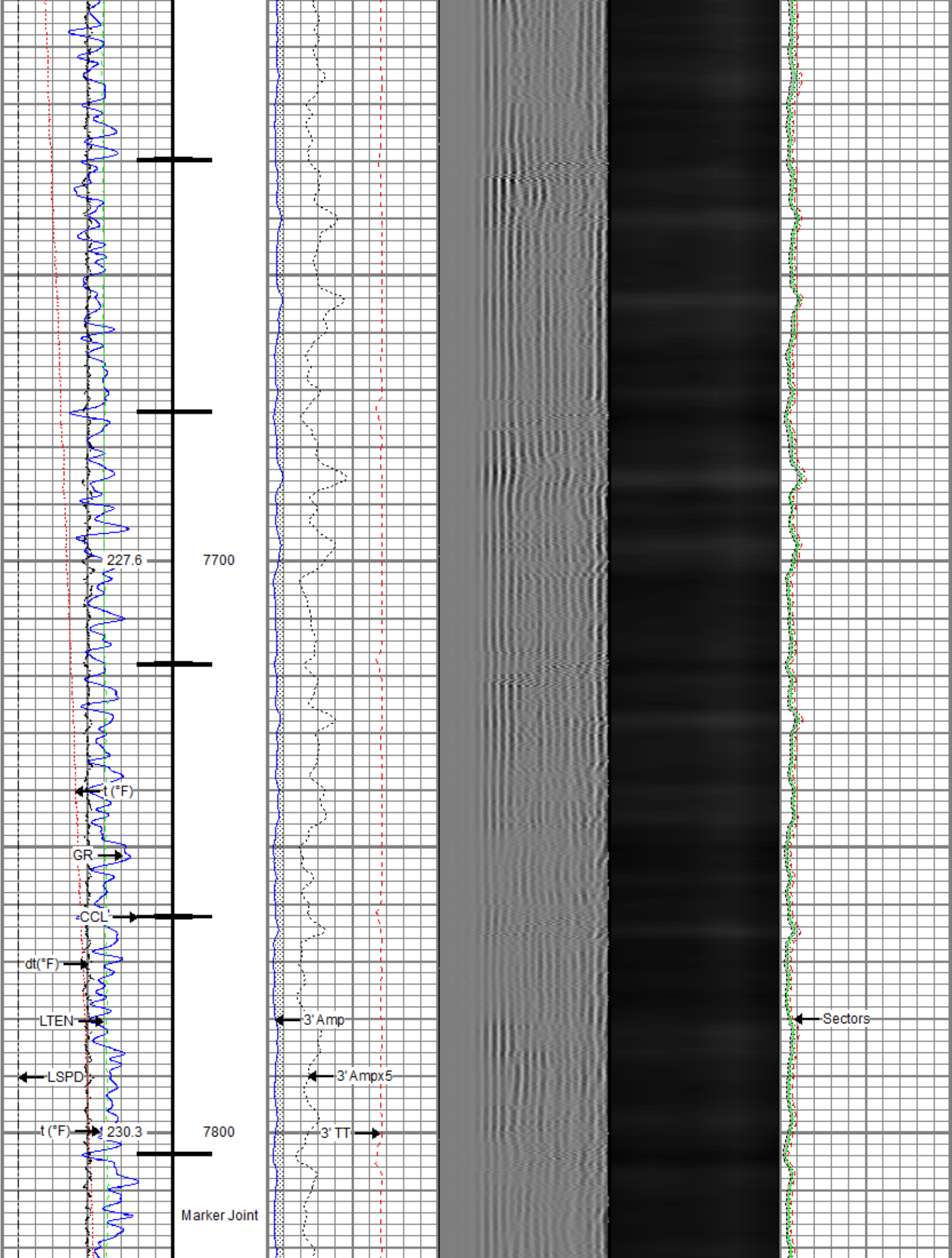


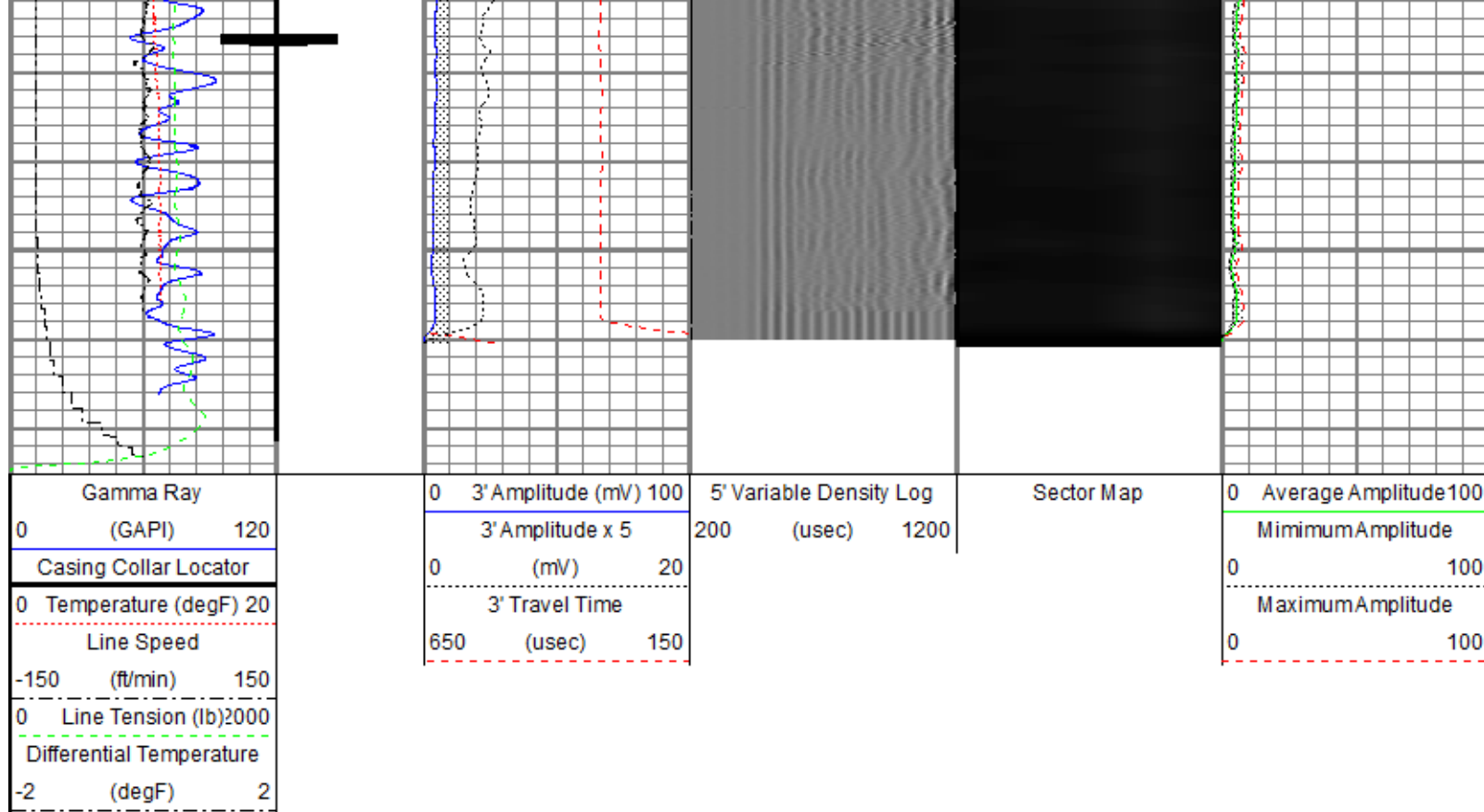








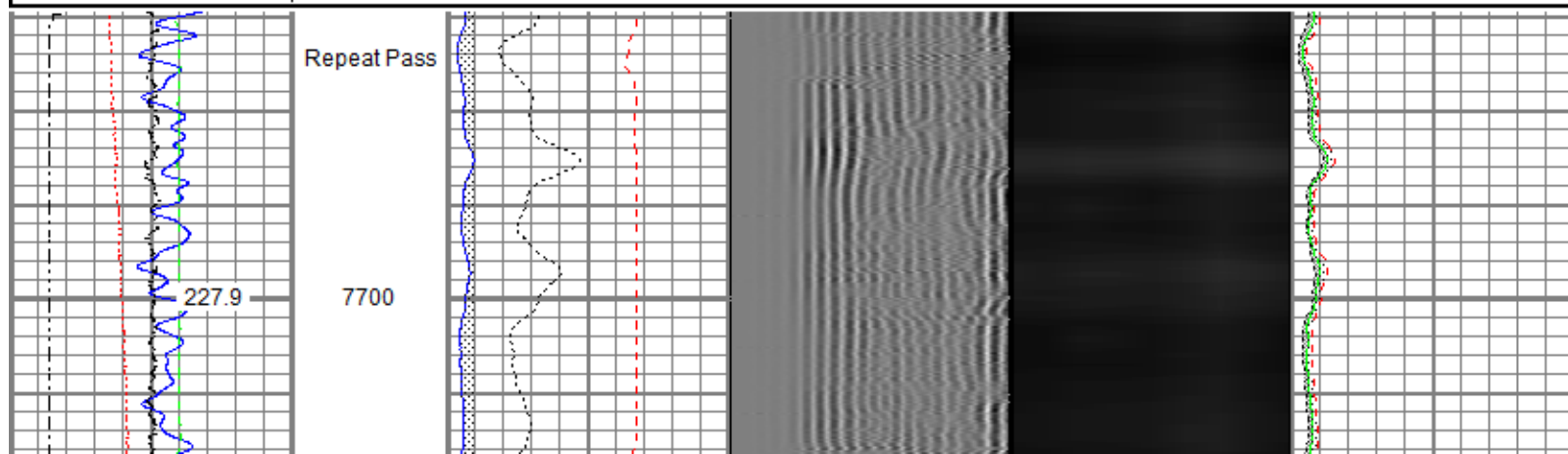
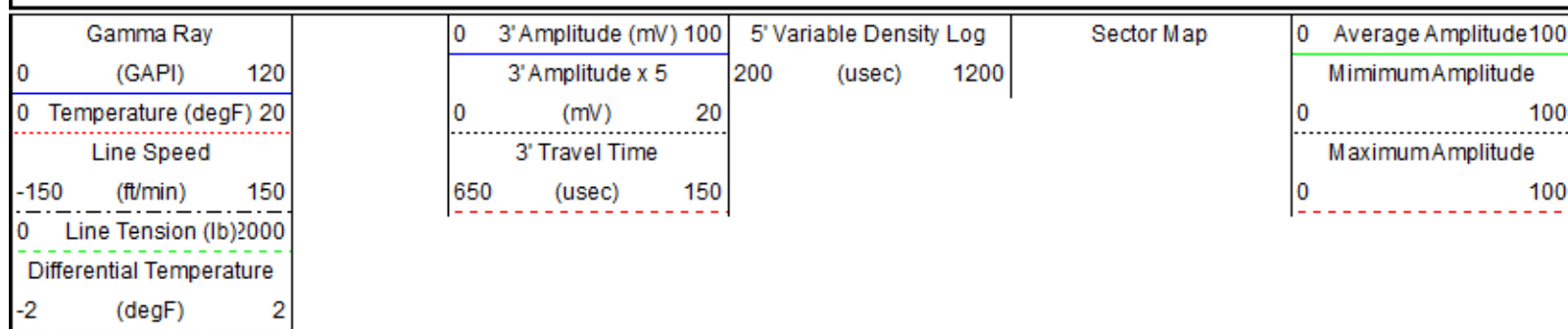


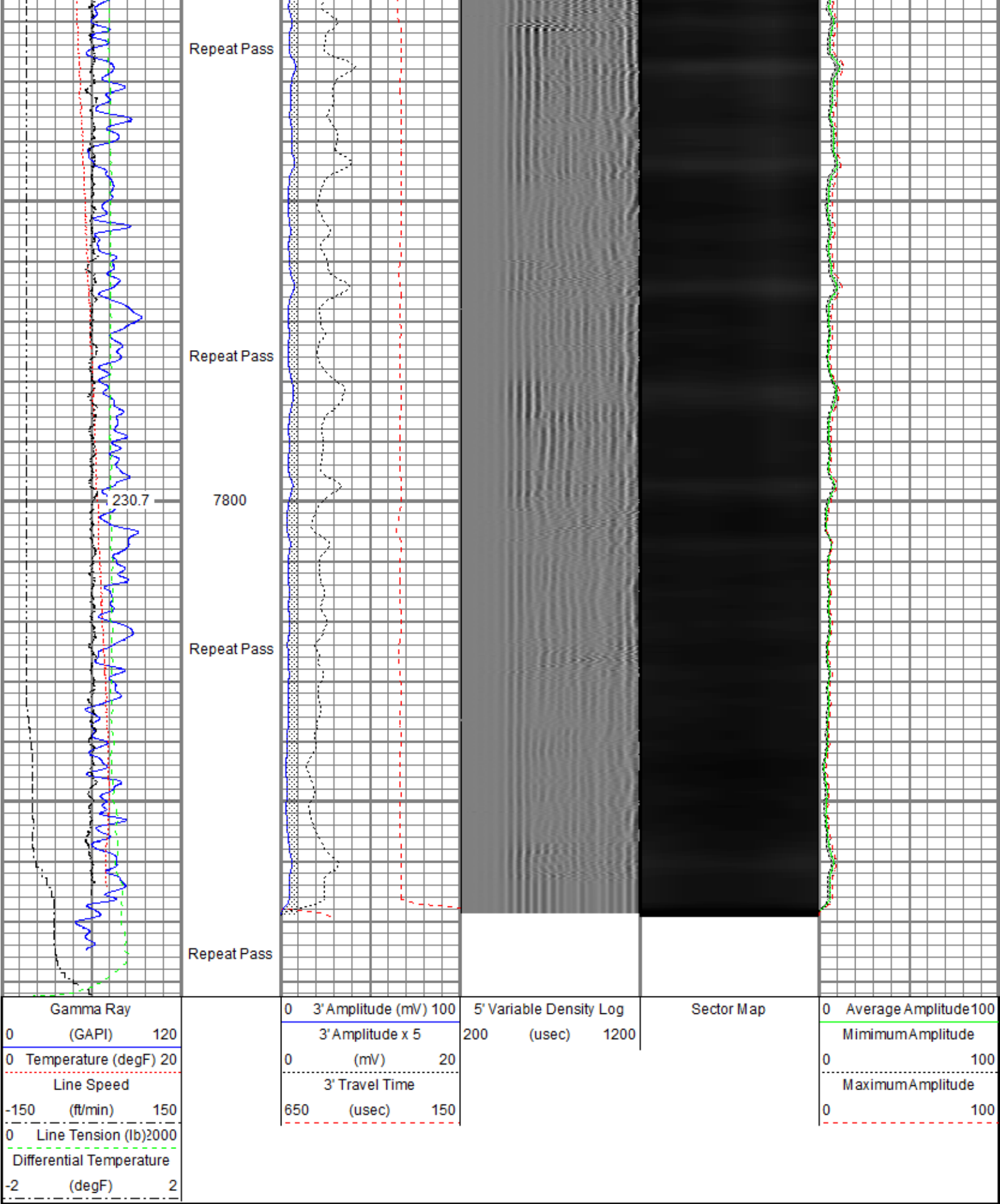



Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File 0512349758_anadarko_mc 3-1hz_rbl_08-10-19_2800 psi\anadarko_mc_3-1hz_rbl.db
 Dataset Pathname Repeat.2
 Presentation Format ros_radrii
 Dataset Creation Wed Aug 14 14:59:47 2019
 Charted by Depth in Feet scaled 1:240





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	1.03	1.44	3.60

			1" Fishing Neck			
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
TEMP	17.04					
WVFS8	14.81		Probe Radii-2750 RBT (FW1308-091) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	14.81					
WVFS6	14.81					
WVFS5	14.81					
WVFS4	14.81					
WVFS3	14.81					
WVFS2	14.81					
WVFS1	14.81					
WVFCAL	14.81					
WVF3FT	14.81					
WVF5FT	13.81					
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
CCL\$2	6.80					
CCL\$1	6.80					
GR	5.46		Probe GR-CCL-2750 6PB (FW1810-001) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
Dataset: anadarko_mc_3-1hz_rbl.db: field/well/run1/Main.2 Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in						

Calibration Report

Database File c:\programdata\warrior\data\0512349758_anadarko_mc_3-1hz_rbl_08-10-19_2800 psi\anadarko_mc_3-1hz_rbl.db

Gamma Ray Calibration Report

Serial Number:	FW1810-001	
Tool Model:	2750 6PB	
Performed:	Sat Nov 10 12:22:37 2018	
Calibrator Value:	637.0	GAPI
Background Reading:	100.1	cps
Calibrator Reading:	1264.5	cps
Sensitivity:	0.5471	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1308-091	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	23.229	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.010	0.626	0.800	71.921	115.534	-0.374
CAL	0.672	0.672				
5'	0.024	0.492	0.800	71.921	151.959	-2.797
SUM						
S1	0.006	0.630	0.000	100.000	160.186	-0.956
S2	0.009	0.621	0.000	100.000	163.360	-1.425
S3	0.007	0.608	0.000	100.000	166.490	-1.226
S4	0.007	0.605	0.000	100.000	167.190	-1.229
S5	0.009	0.624	0.000	100.000	162.567	-1.487
S6	0.009	0.634	0.000	100.000	159.841	-1.404
S7	0.008	0.644	0.000	100.000	157.341	-1.288
S8	0.009	0.655	0.000	100.000	154.870	-1.418

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.672	0.672	1.000	0.000

Air Zero Calibration, performed Sat Aug 10 13:20:19 2019:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.008		0.000		0.000	
5'	0.008		0.000		-0.000	
SUM						
S1	0.004		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	0.006		0.000		0.000	
S6	0.006		0.000		0.000	
S7	0.006		0.000		0.000	
S8	0.007		0.000		-0.000	

Temperature Calibration Report

Serial Number:	FW1308-091
Tool Model:	2750 RBT
Performed:	Mon Oct 01 11:32:16 2018

	Reference	Reading
Low Reference:	100.00 degF	104.72 degF
High Reference:	350.00 degF	392.24 degF
Gain:	0.87	
Offset:	8.94	
Delta Spacing	1	



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Well	MC 3-1HZ
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County	Weld
State	Colorado