



County Weld State Colorado

Elevation
K.B. 5001'
D.F. ---
G.L. 4980'

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.

Log ran as per customer request
Depth referenced to Marker Joint at 6351 FT
Adjusted +3 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7375 FT with no debris
Log ran from 50 FT above RBP
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!!

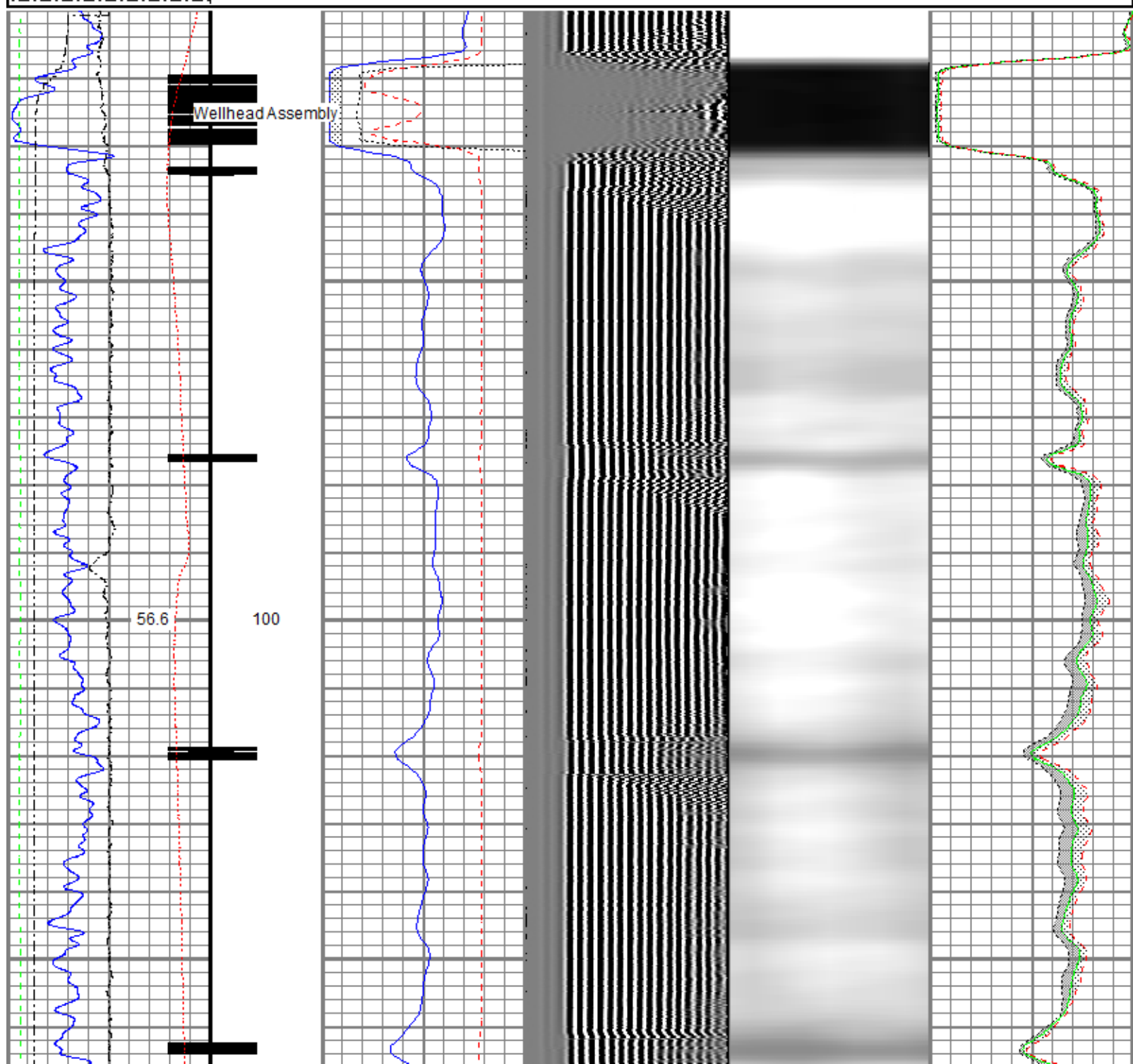
Main Pass

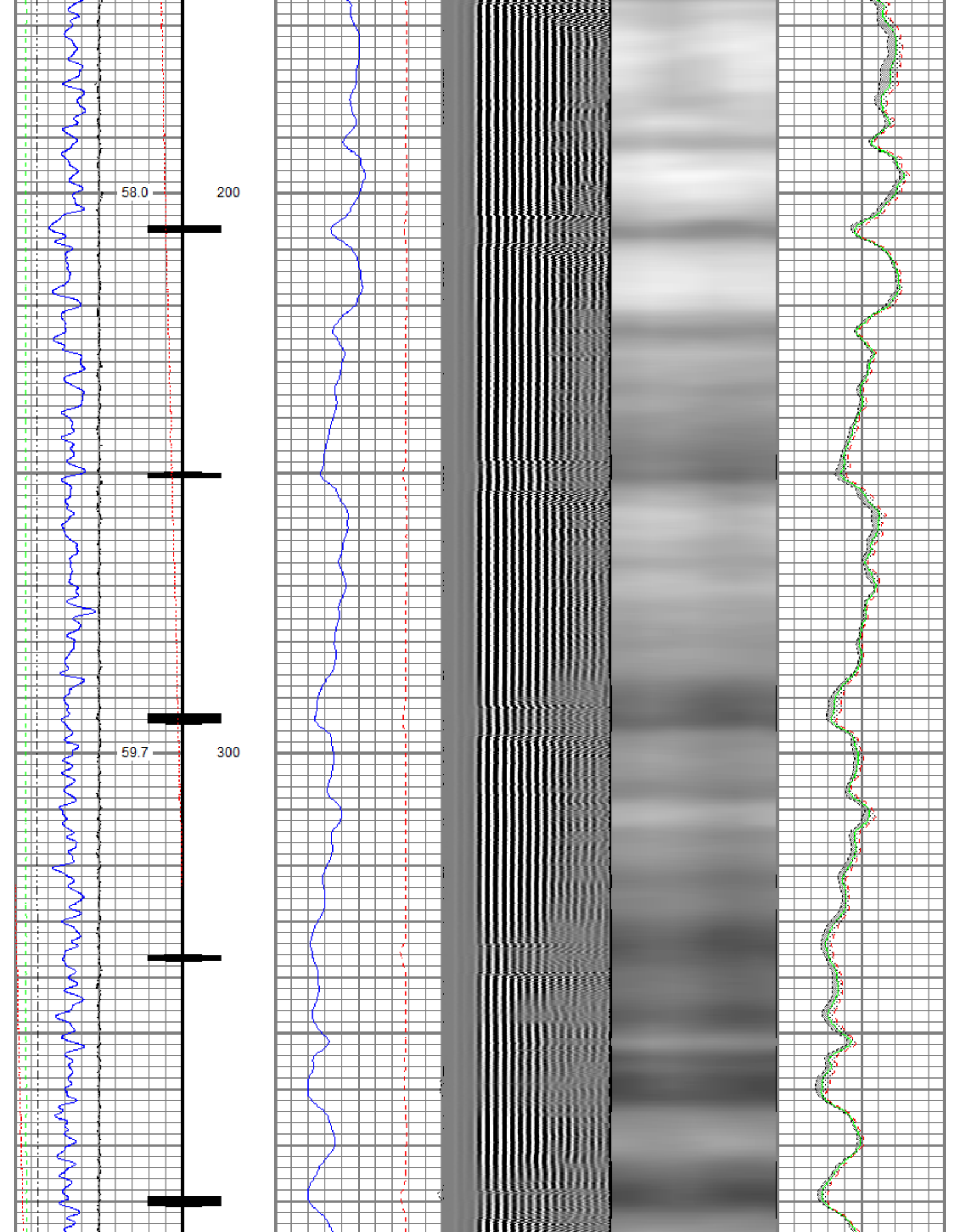


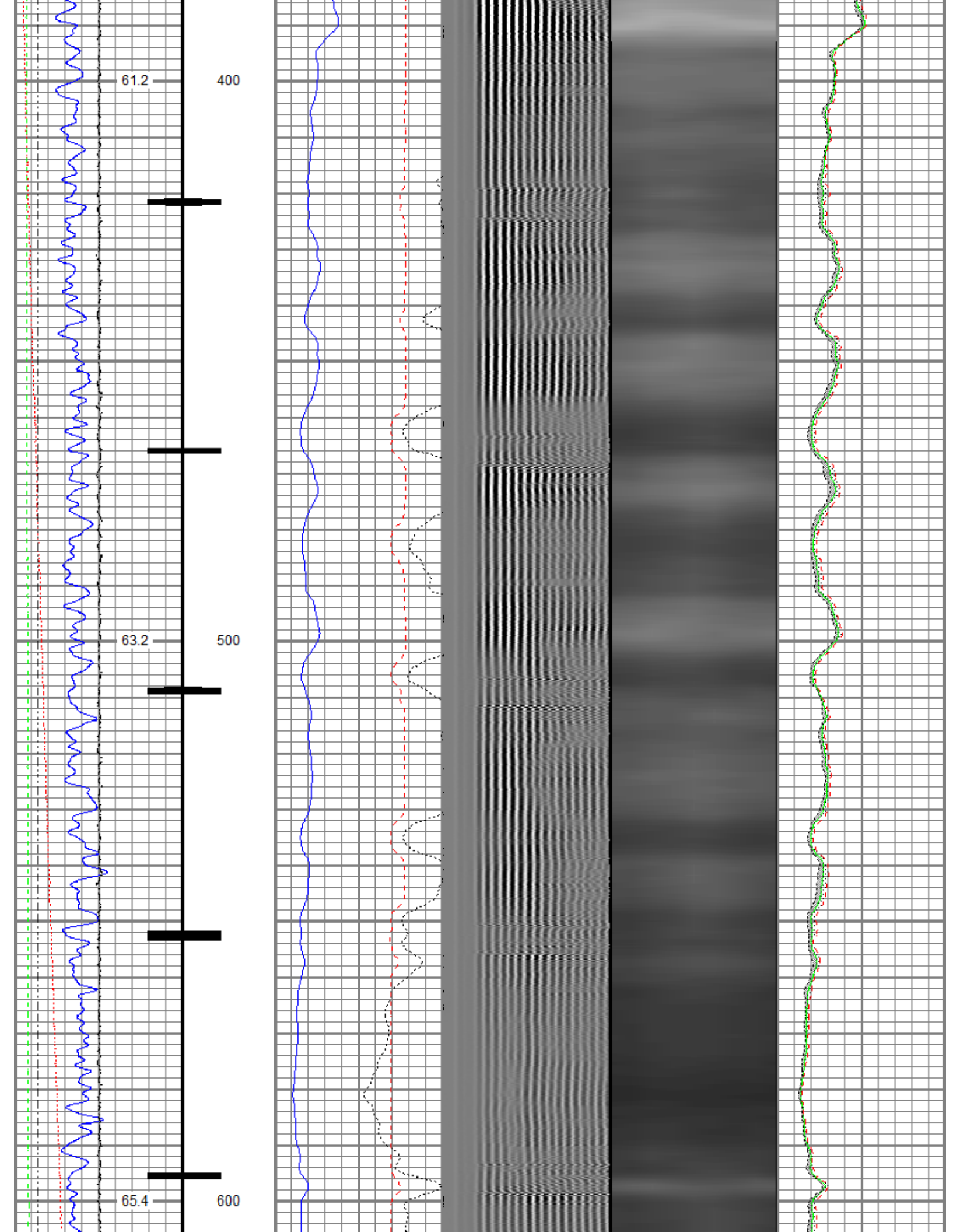
Recorded With 2000 PSI Surface-Induced Pressure

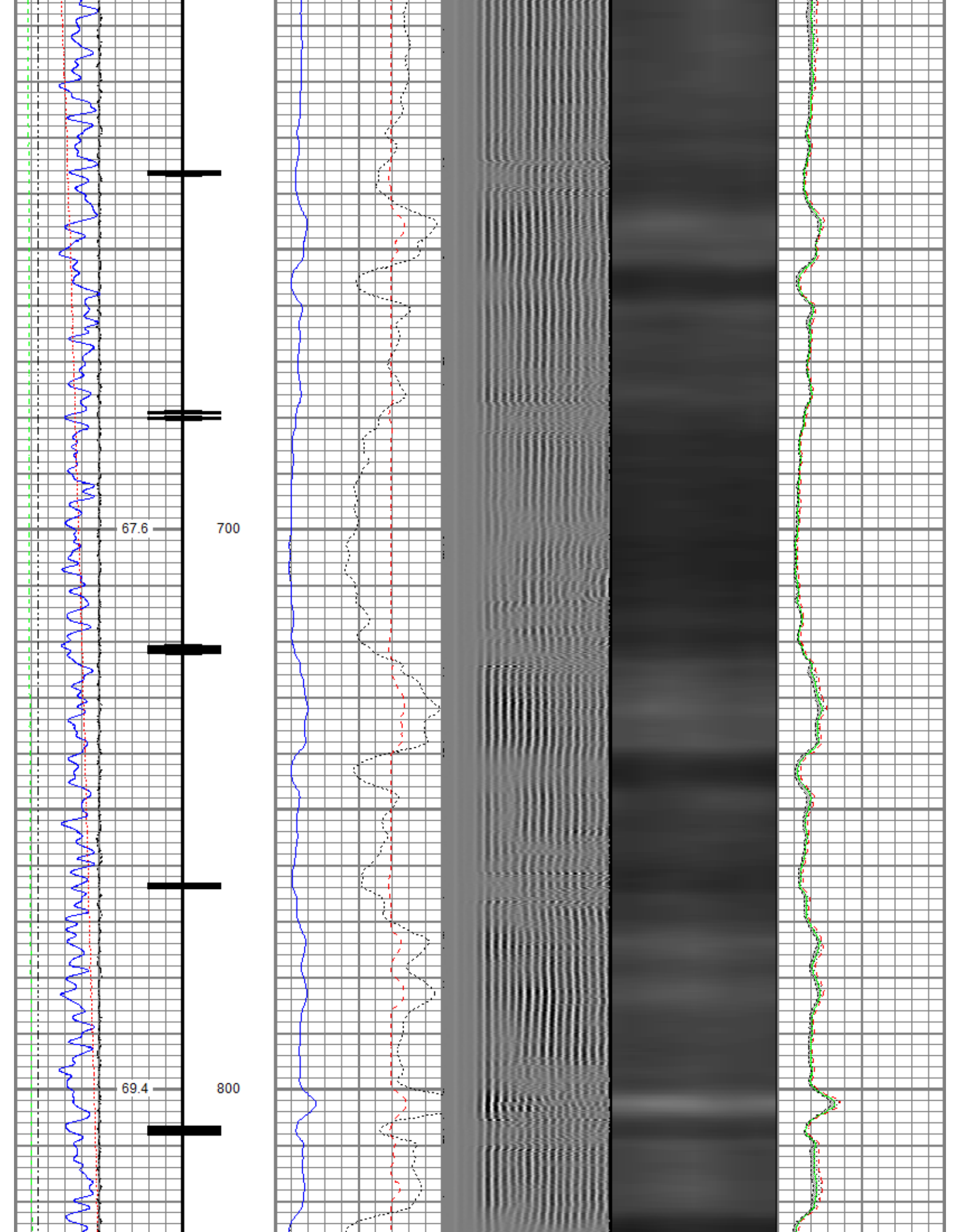
Database File anadarko\putter 27-4hz\0512345135_anadarko_putter 27-4hz_rbl_02-24-18.db
 Dataset Pathname pass4.1
 Presentation Format ros_radrii
 Dataset Creation Sat Feb 24 13:56:01 2018
 Charted by Depth in Feet scaled 1:240

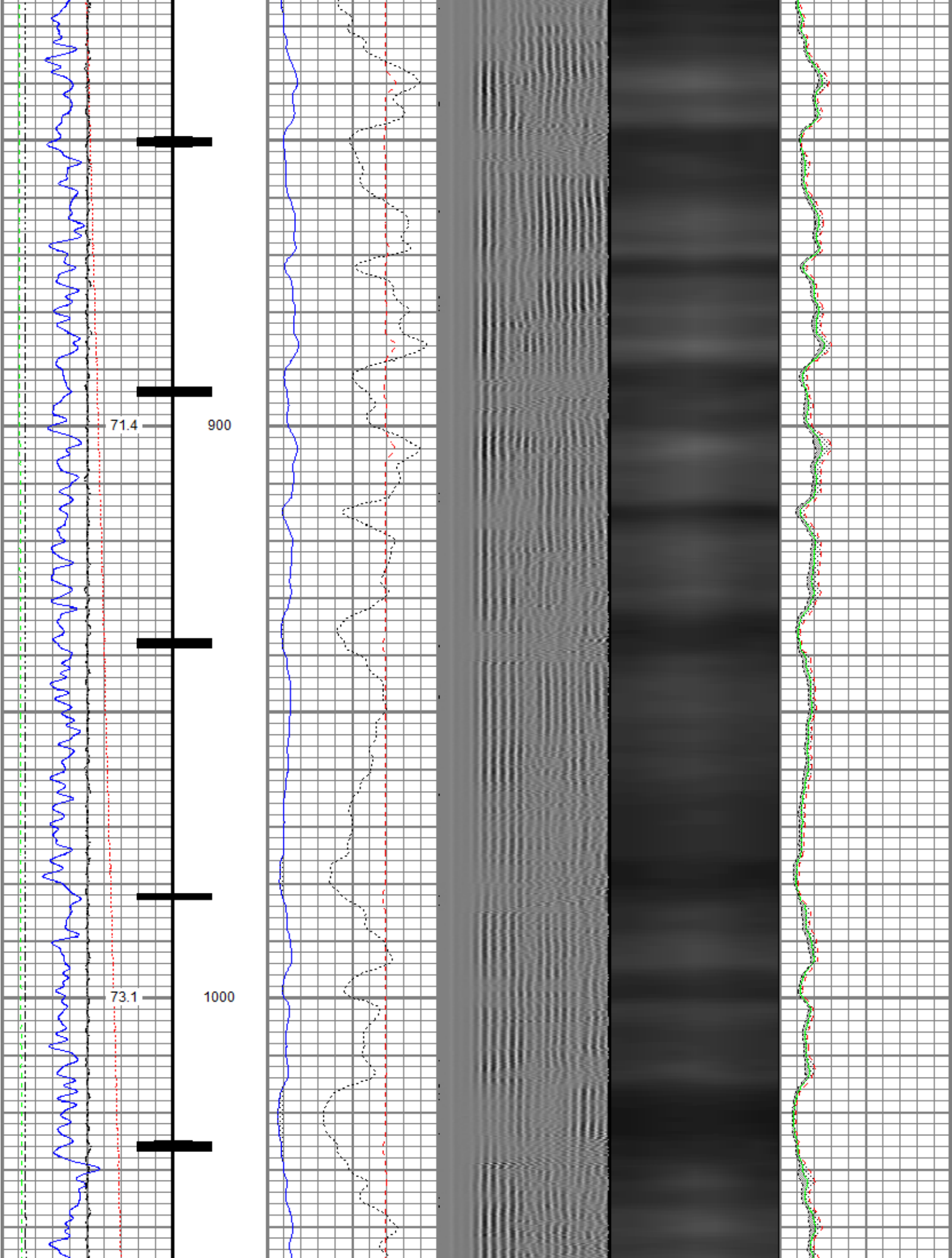
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

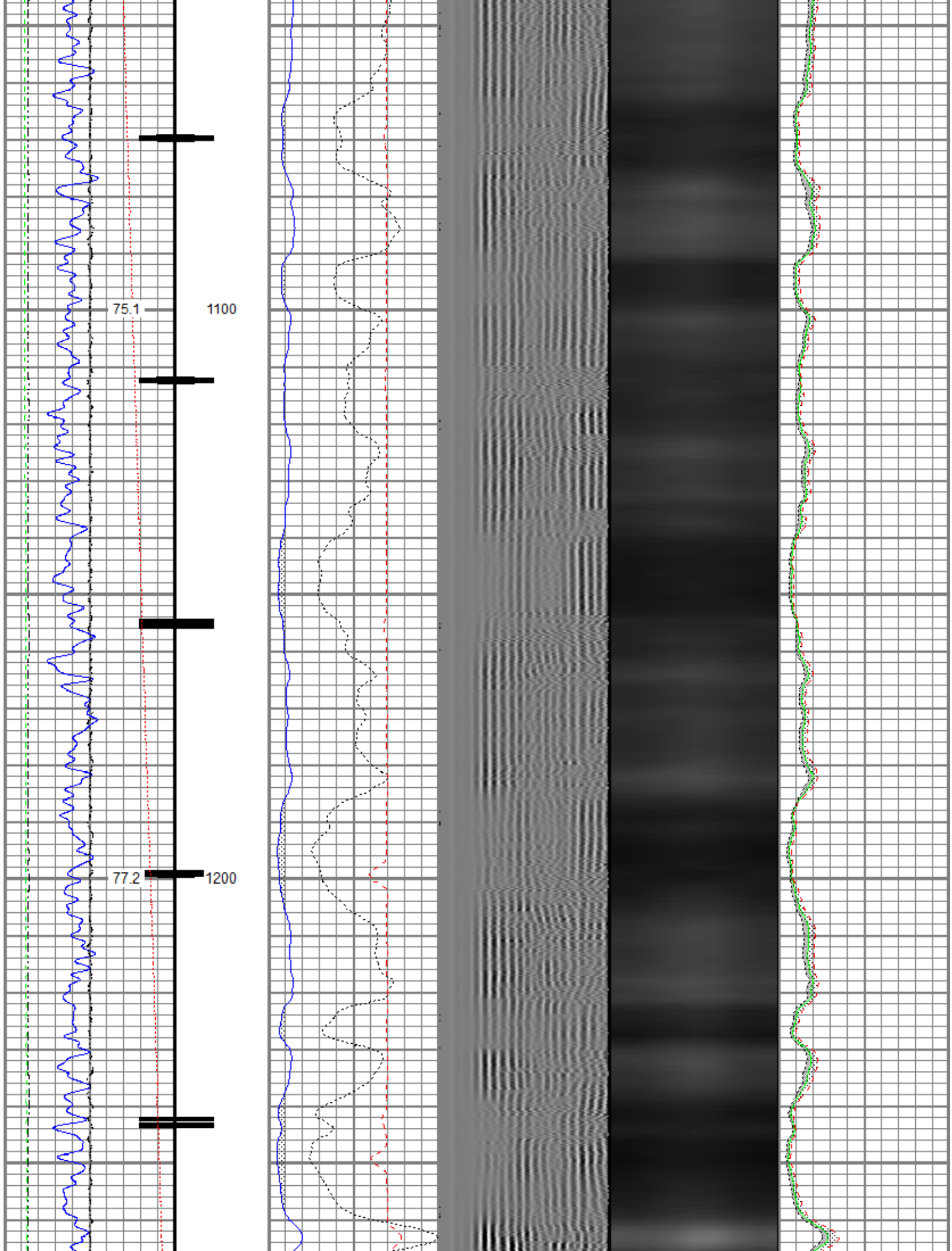


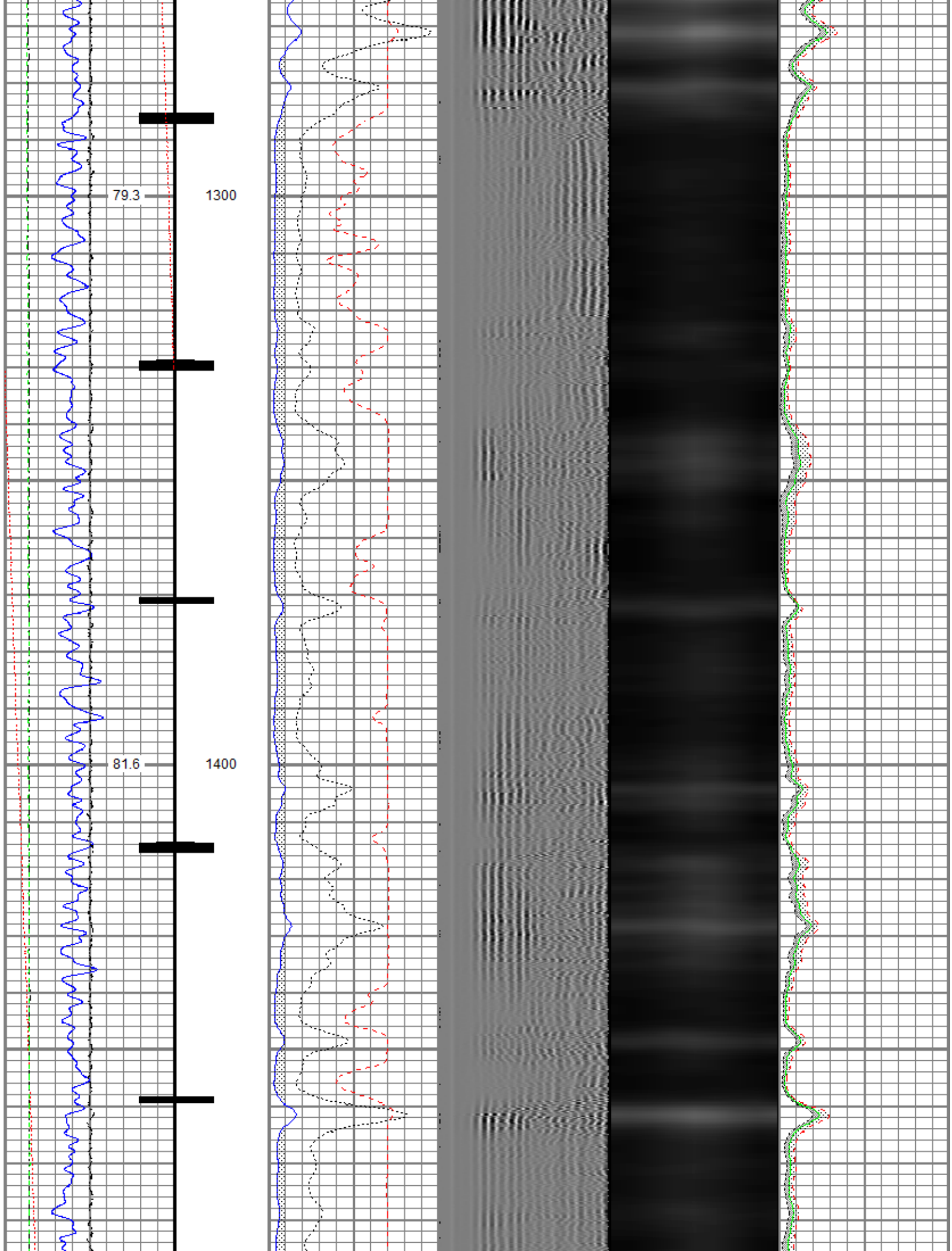


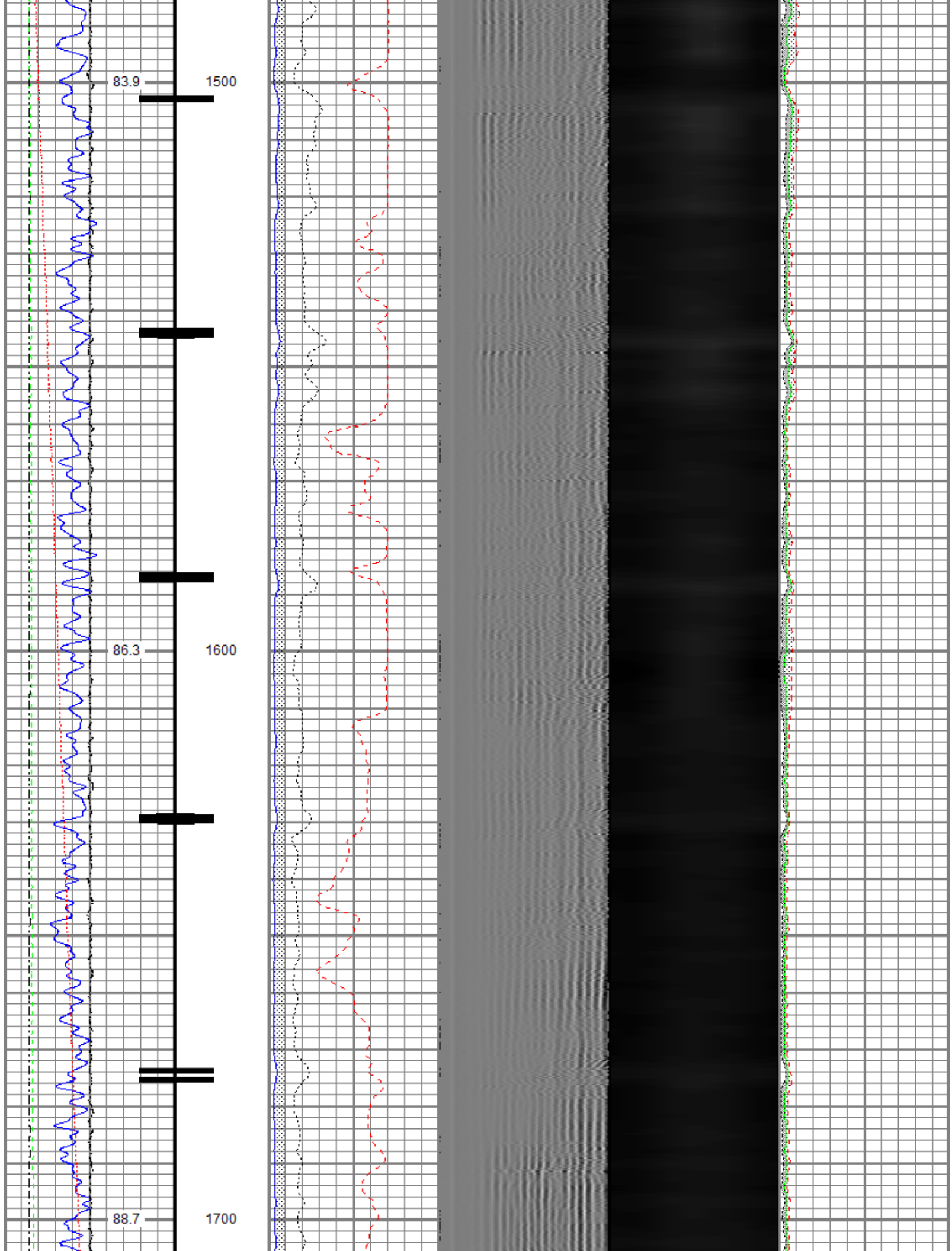


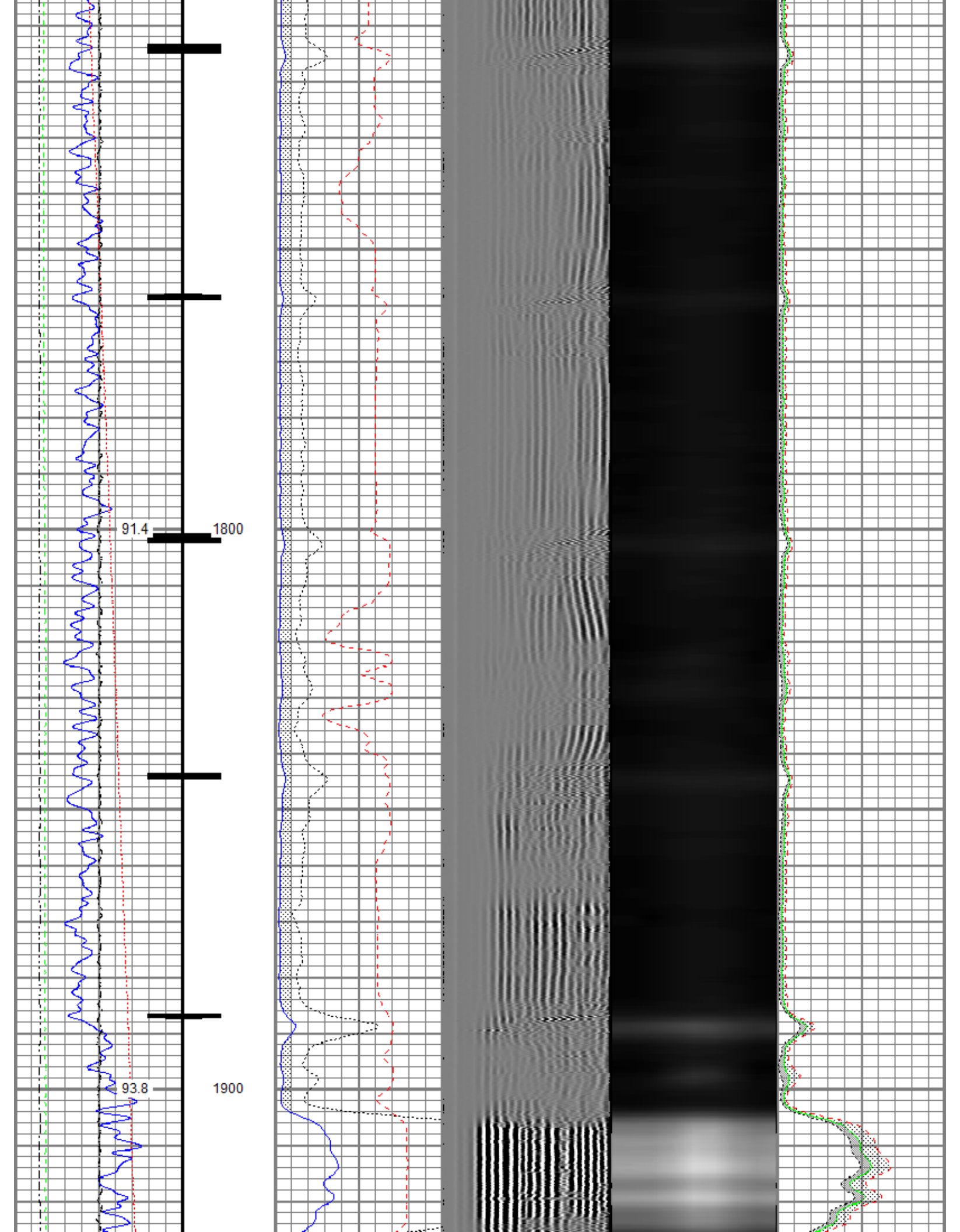


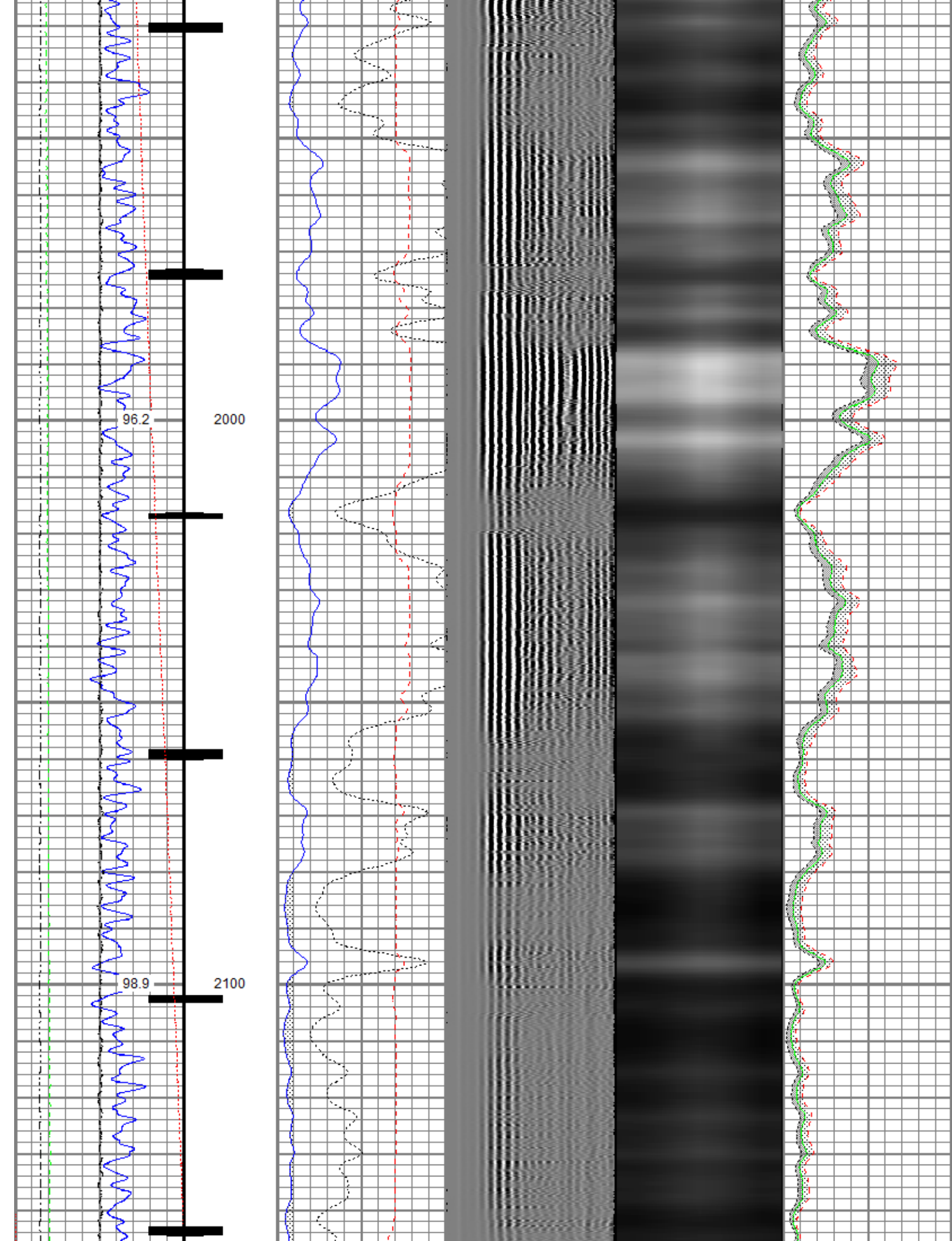


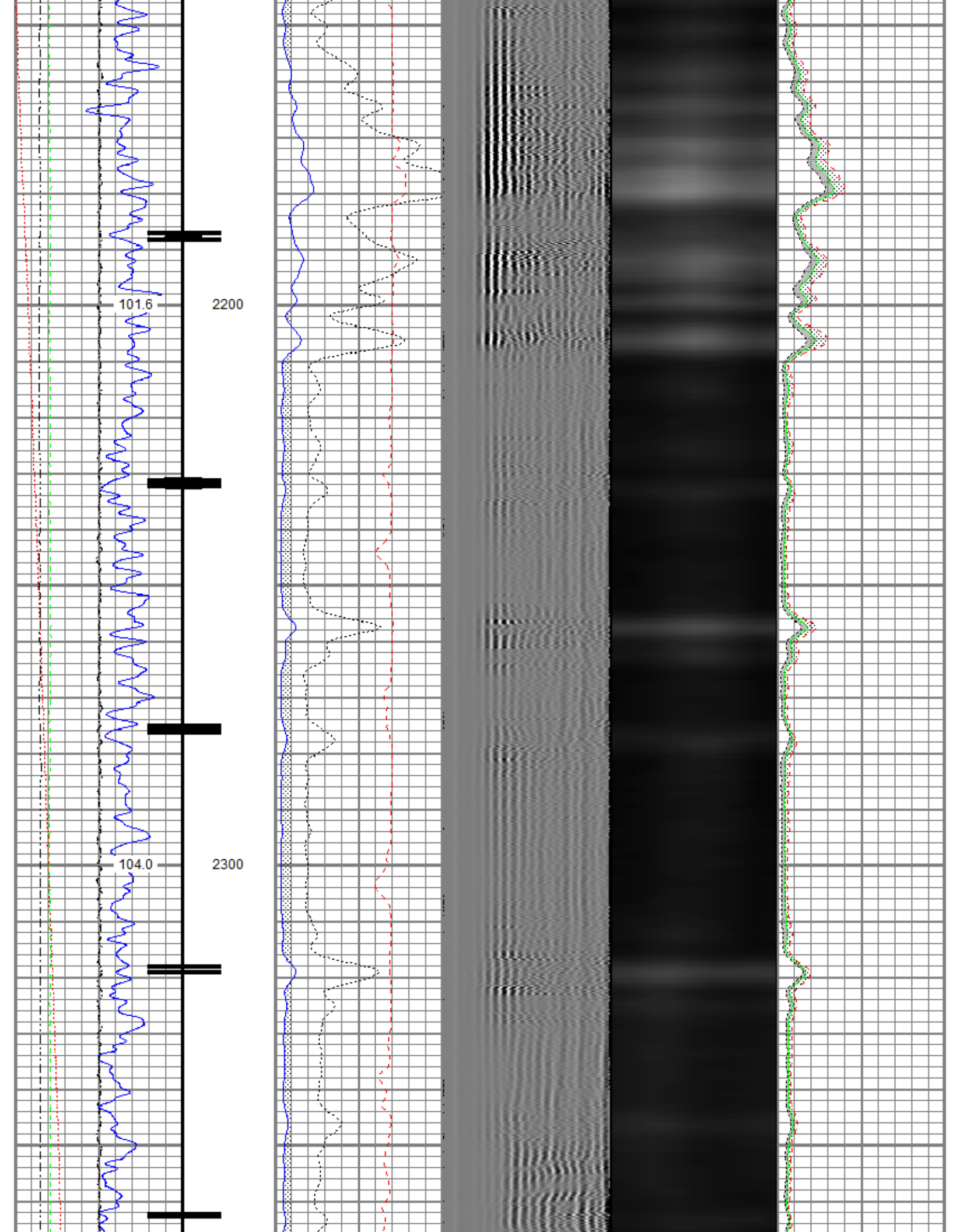


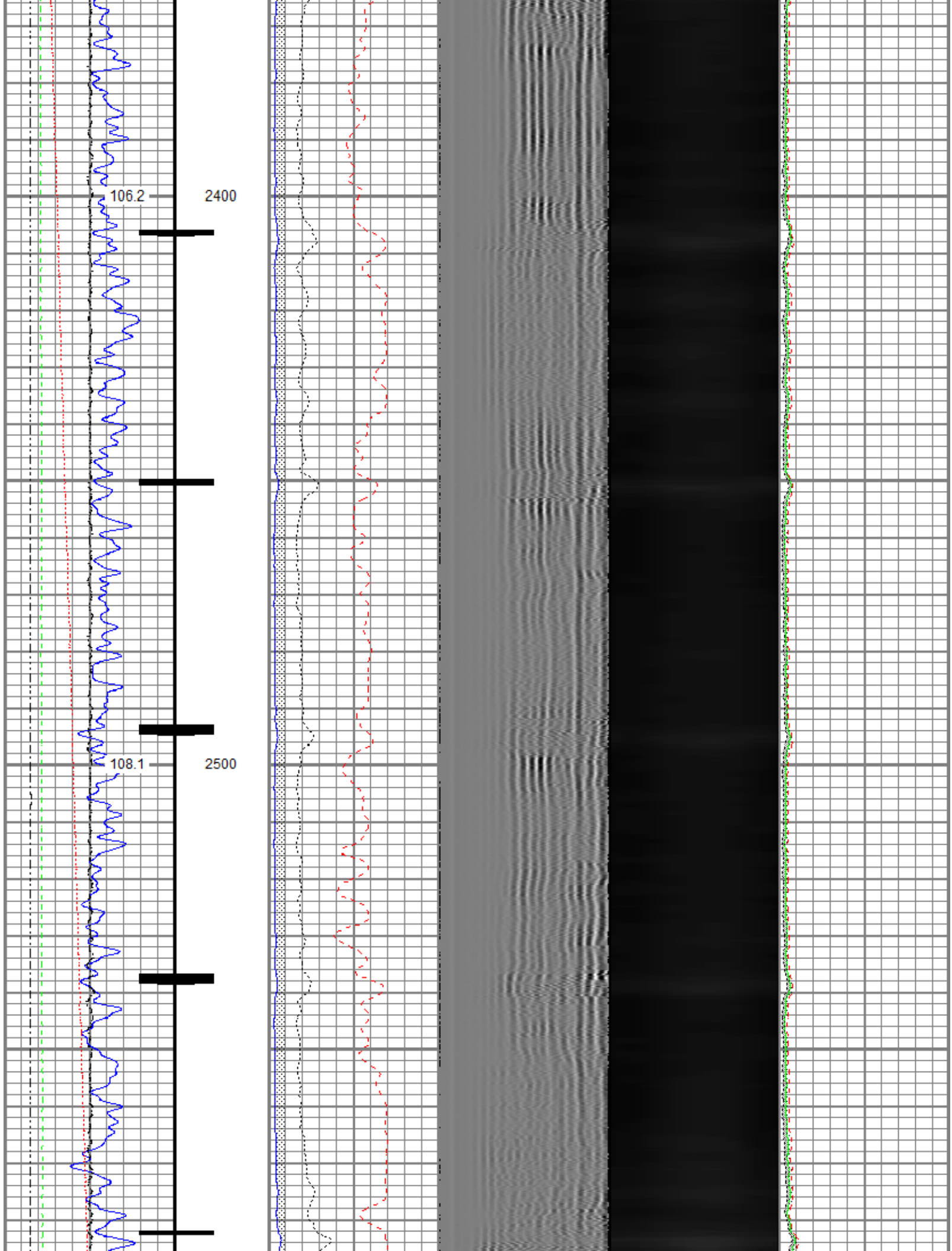


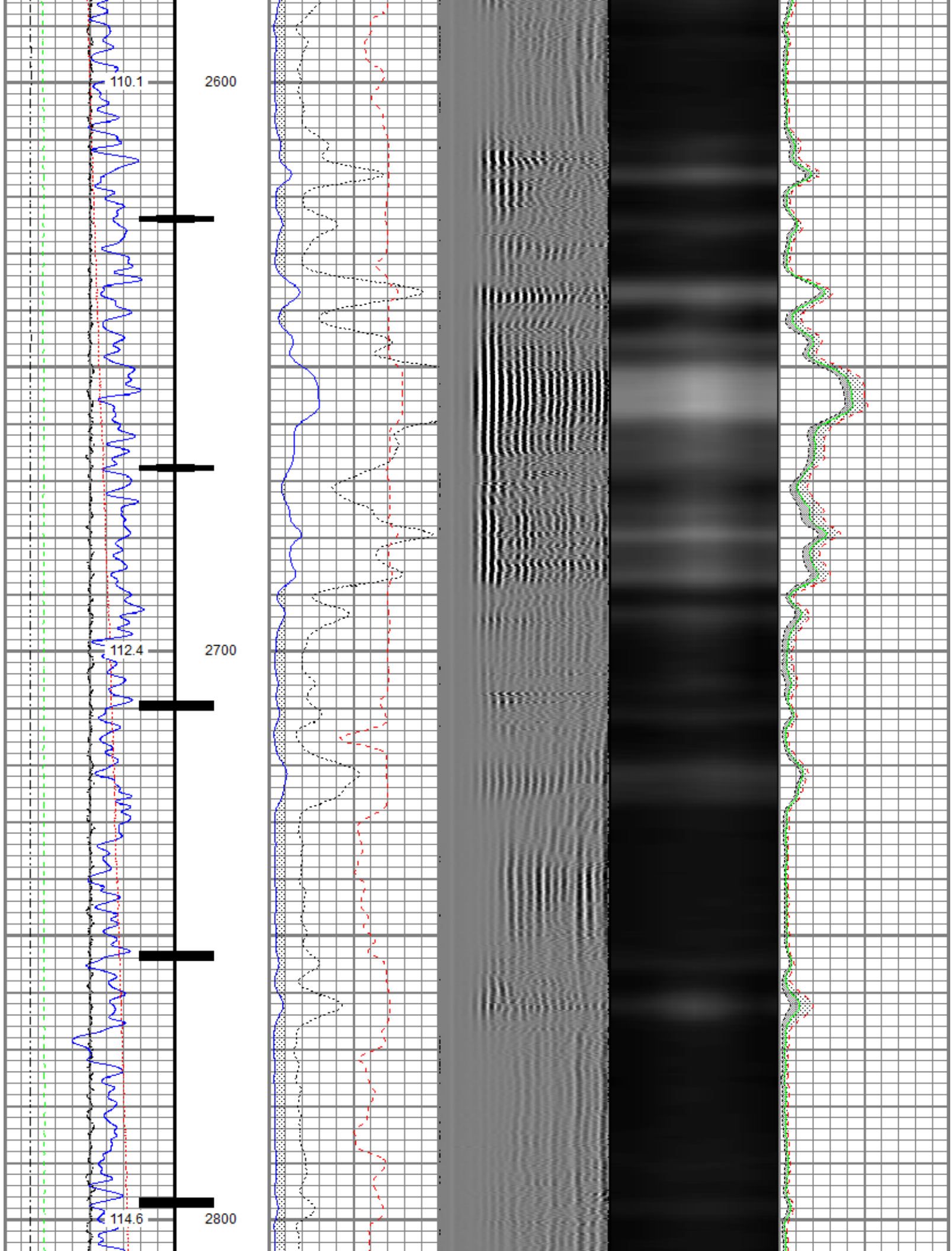


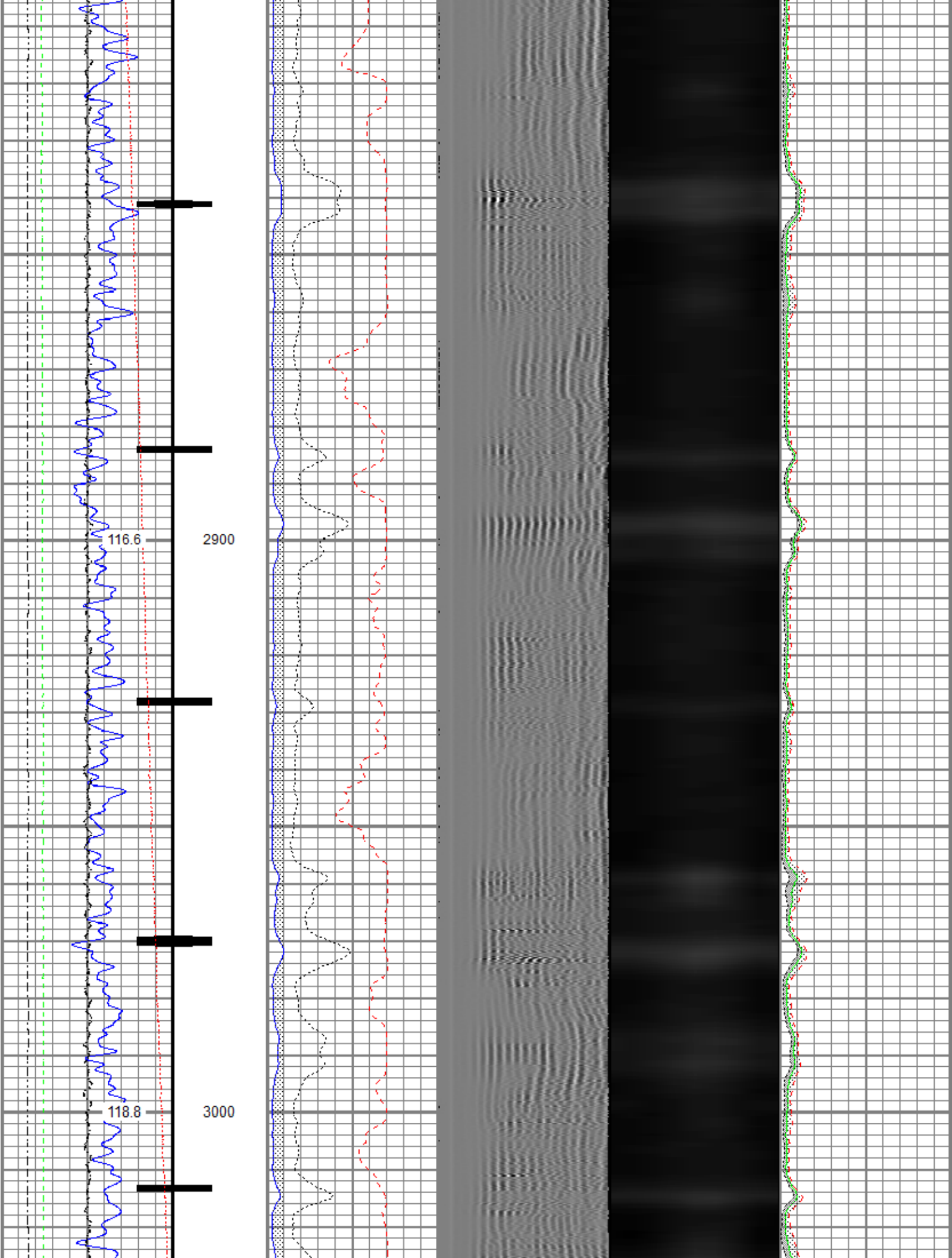


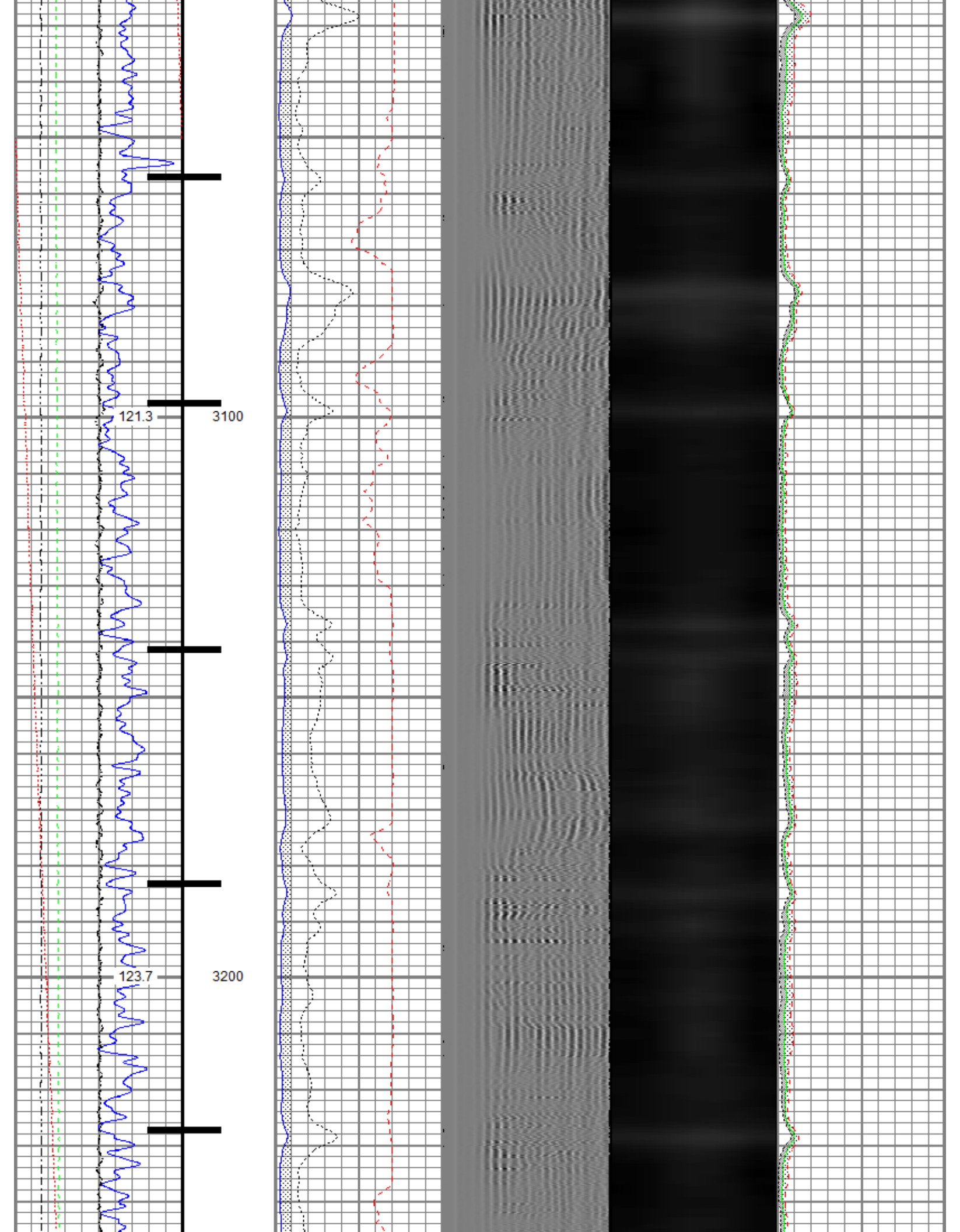


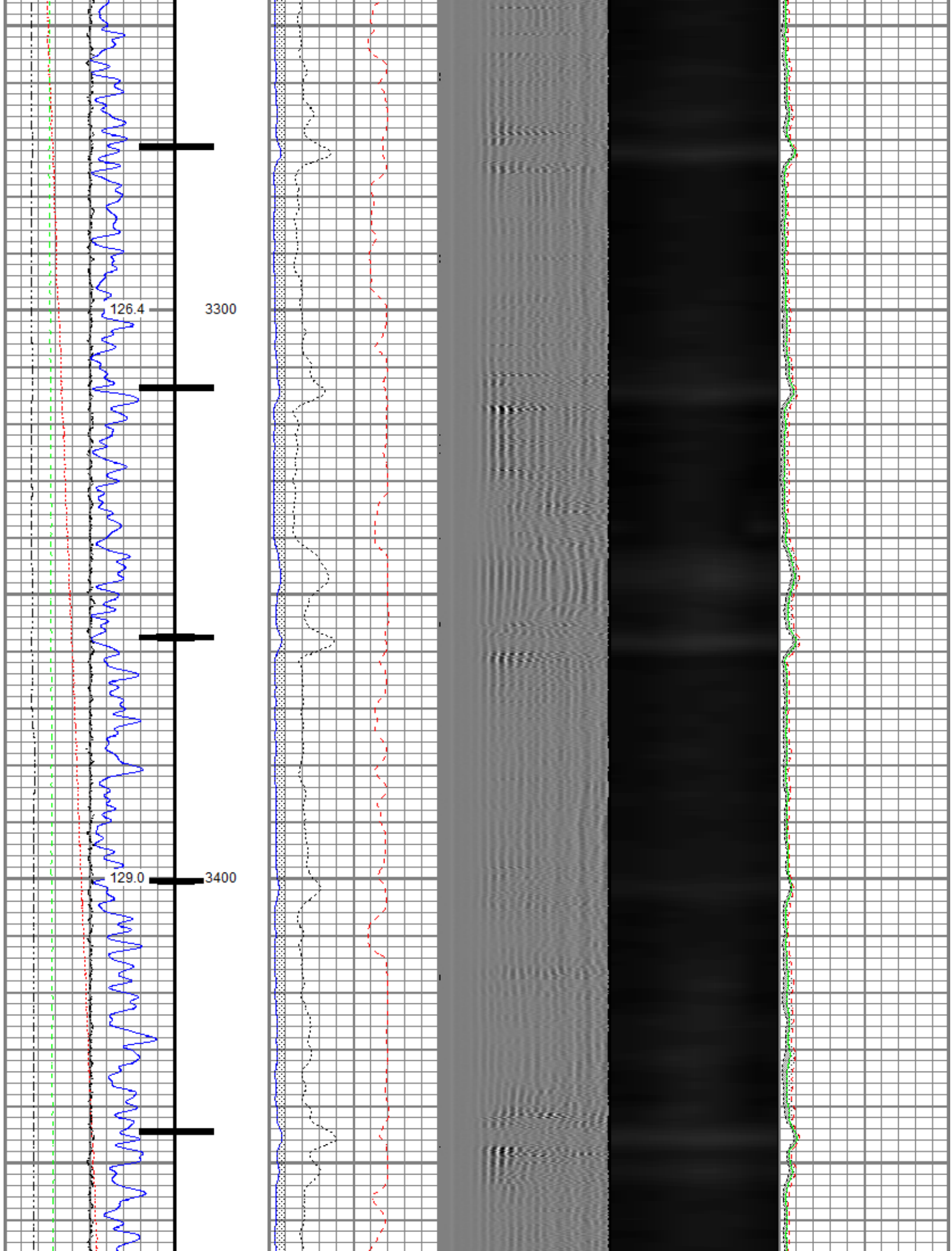


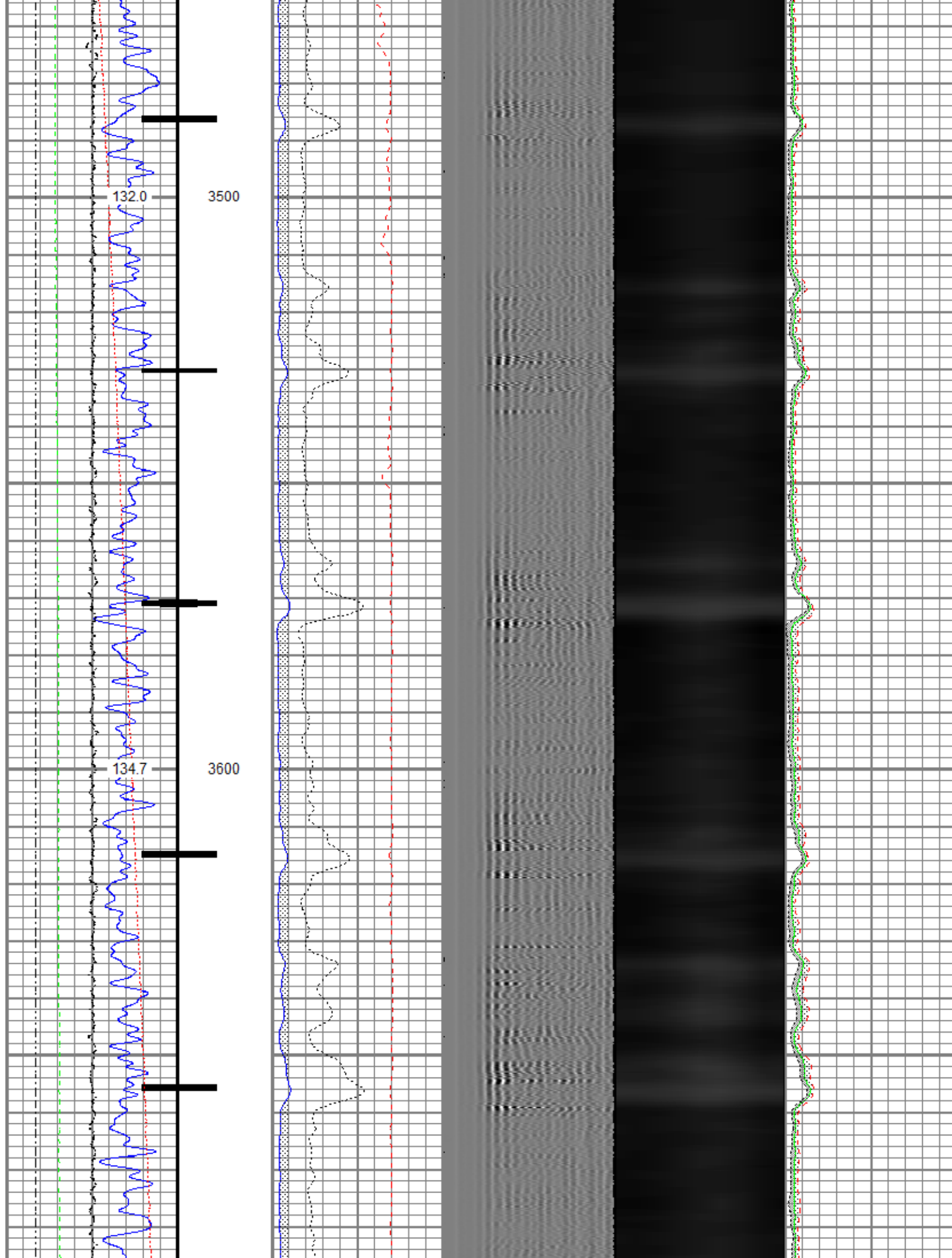


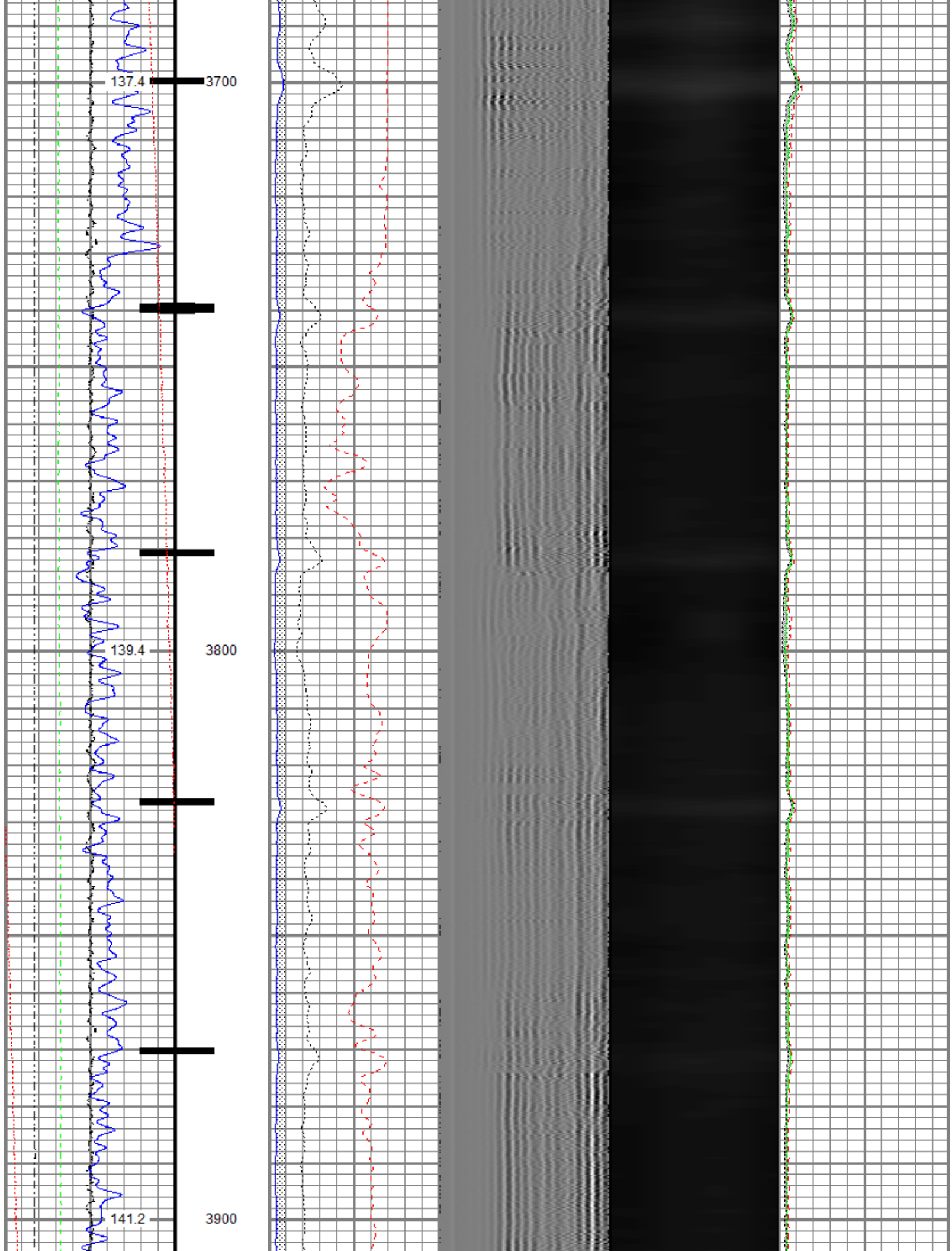


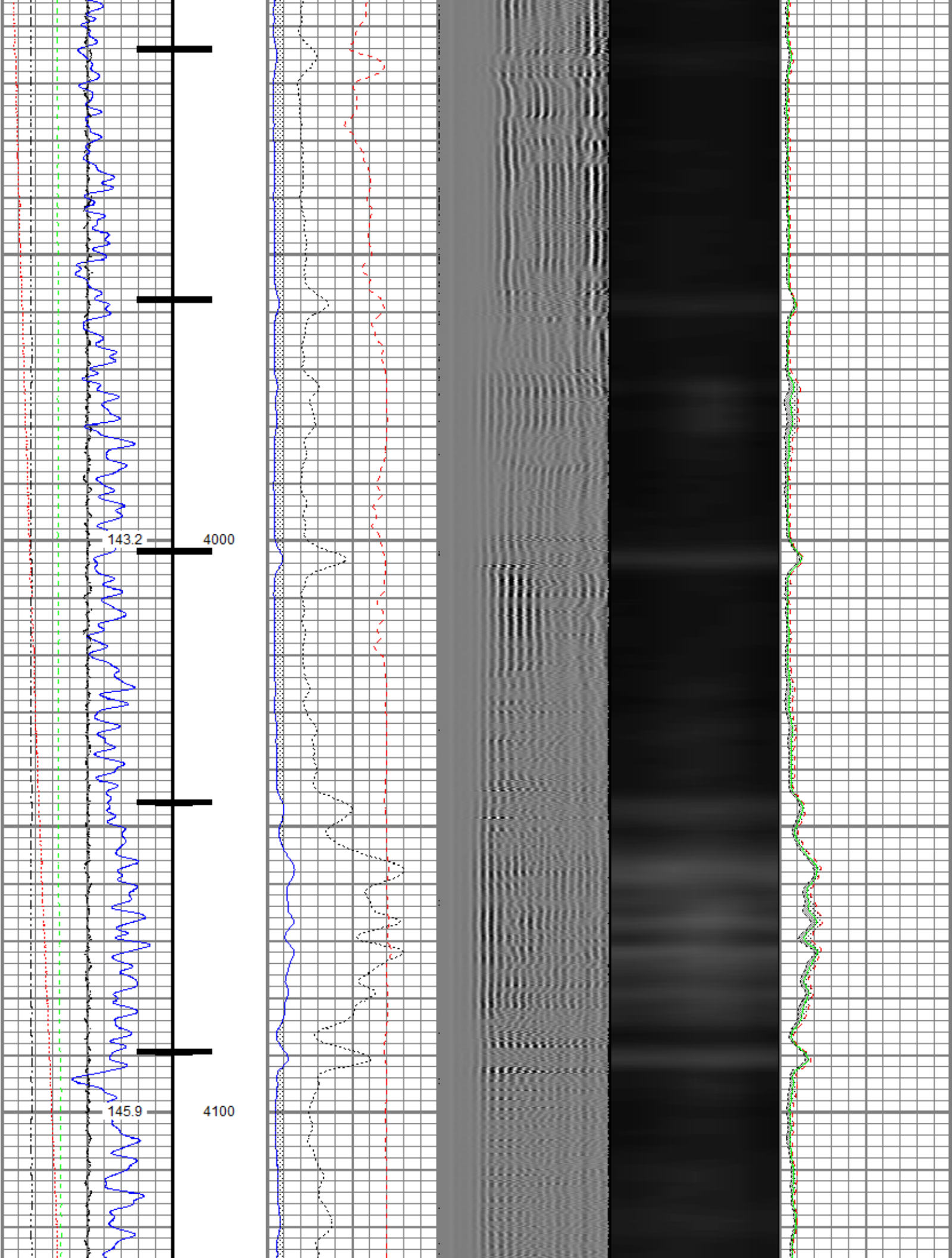


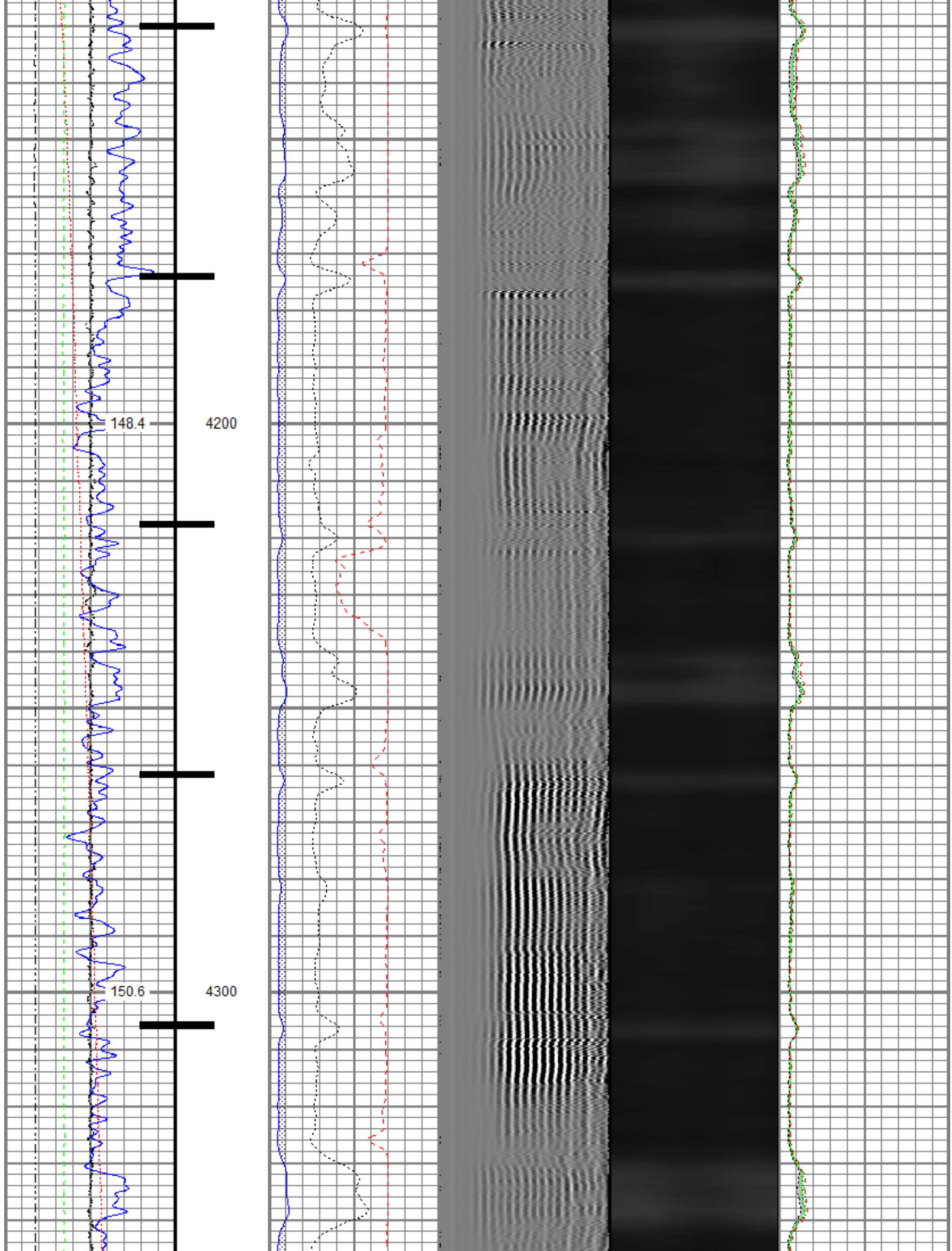


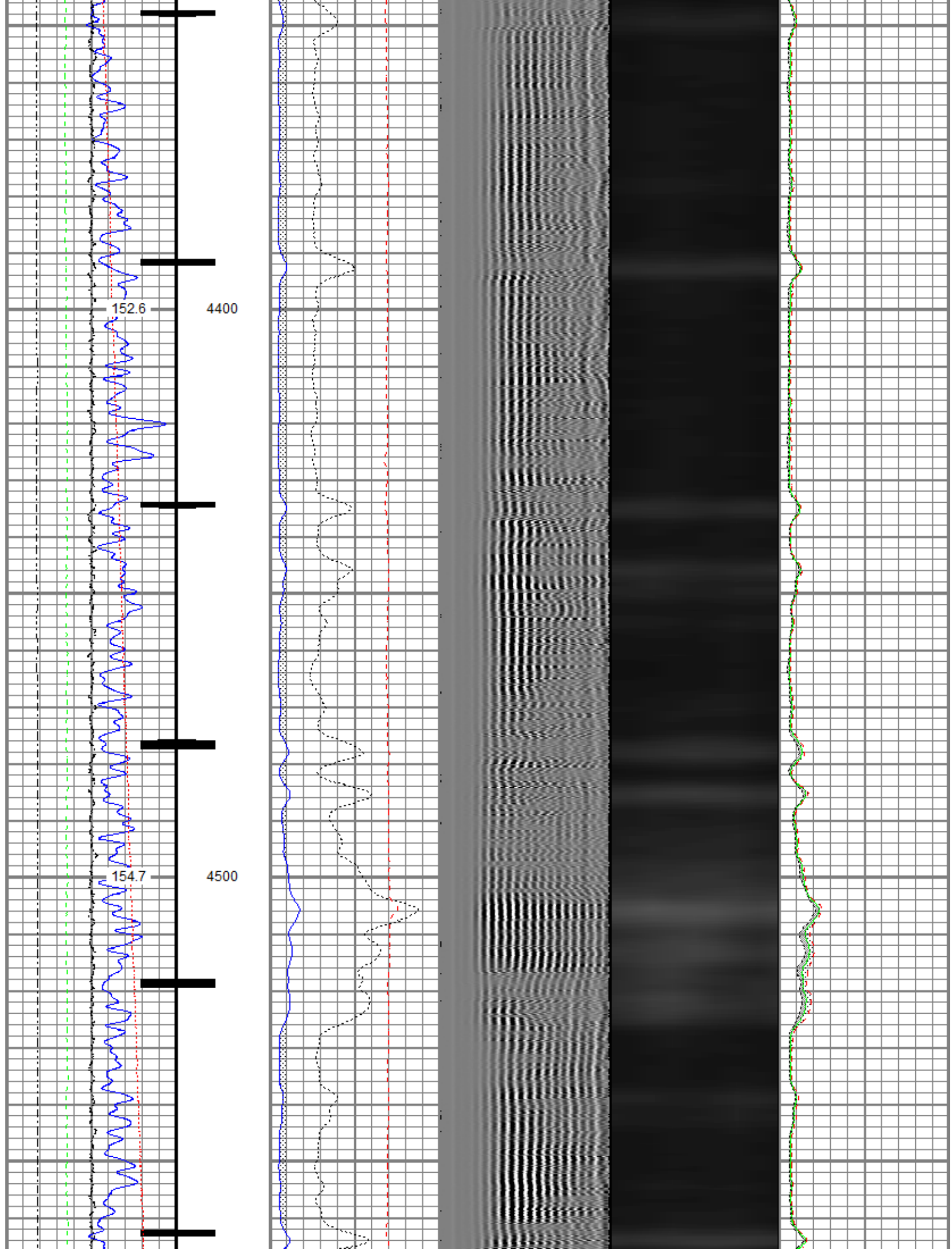


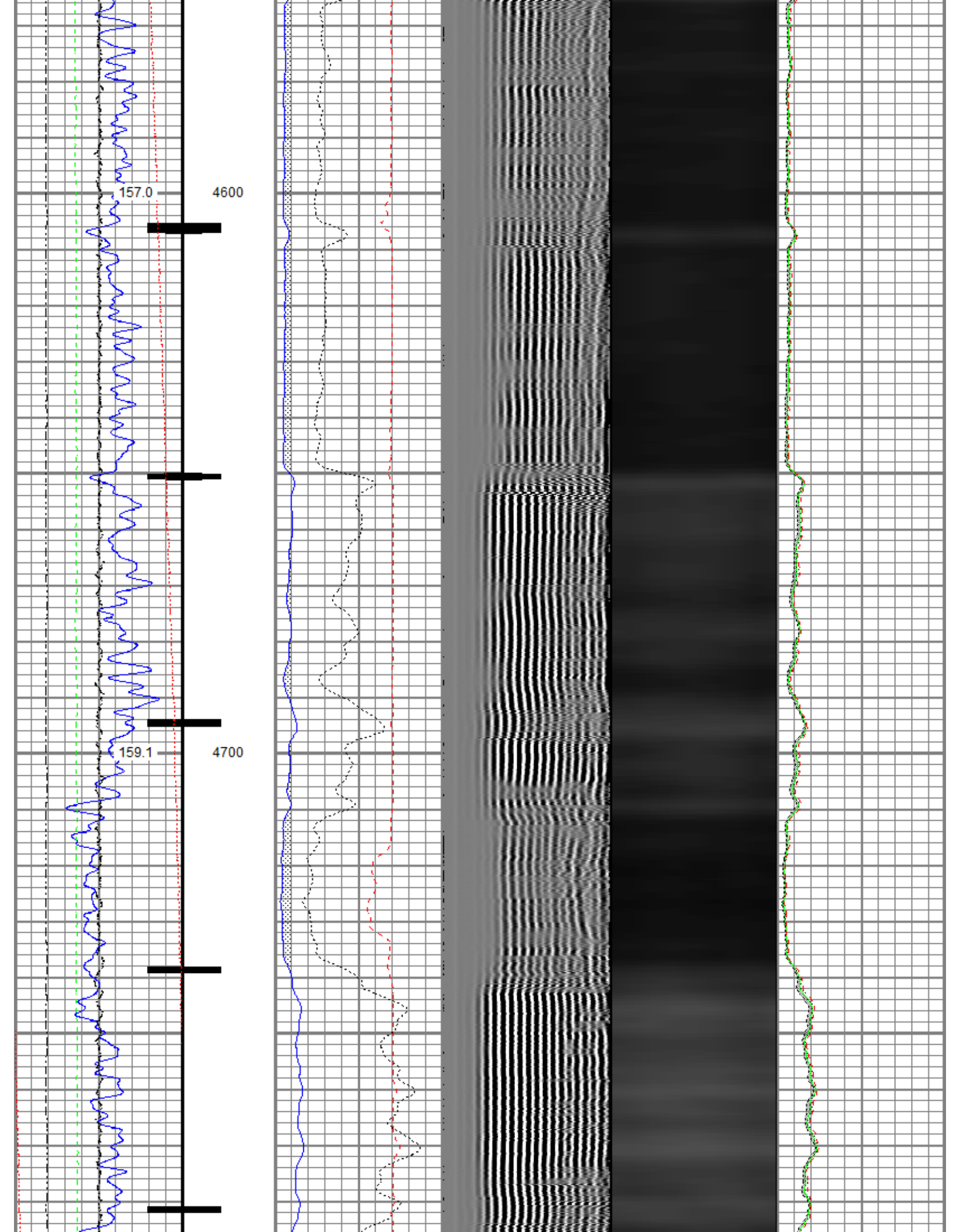


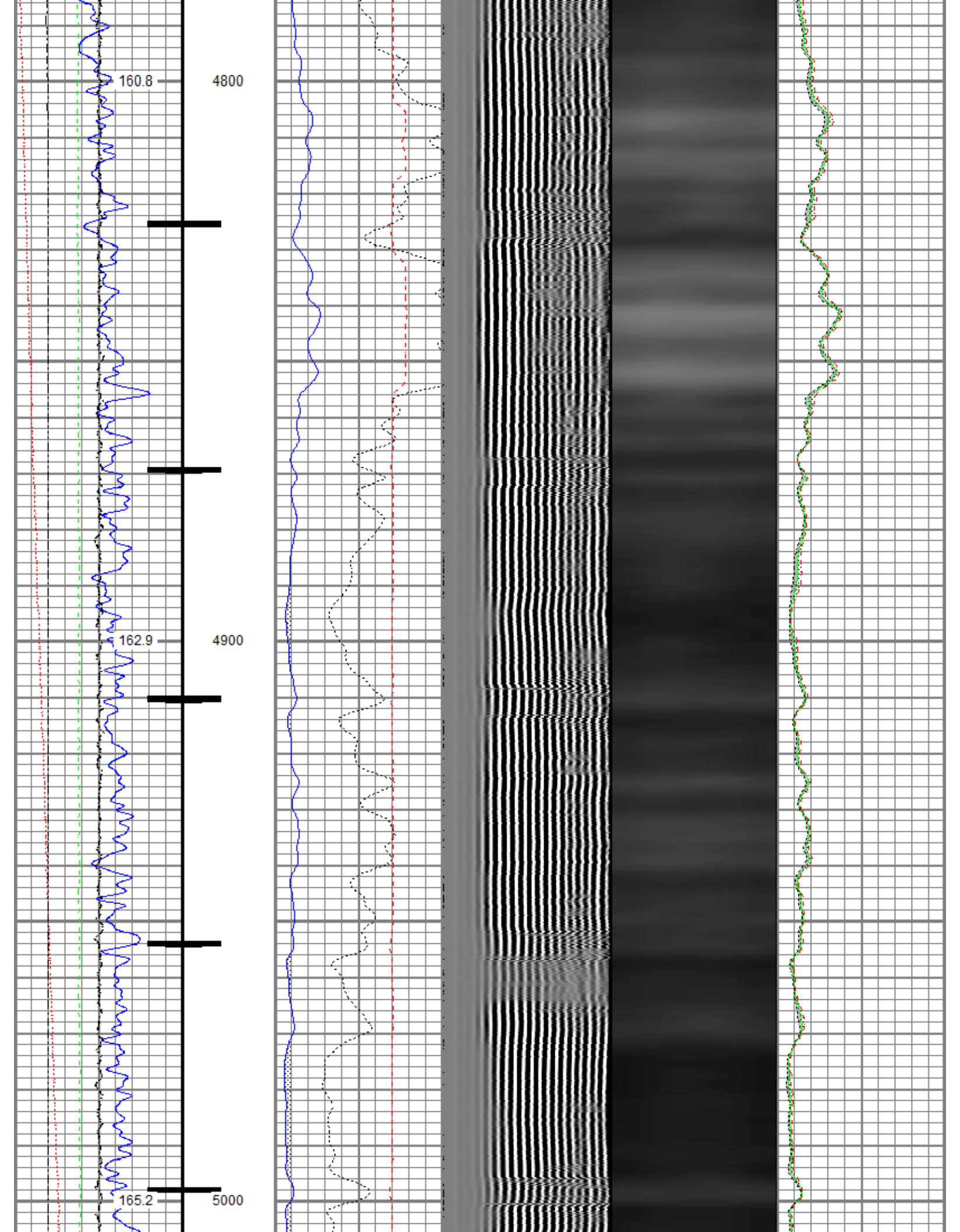


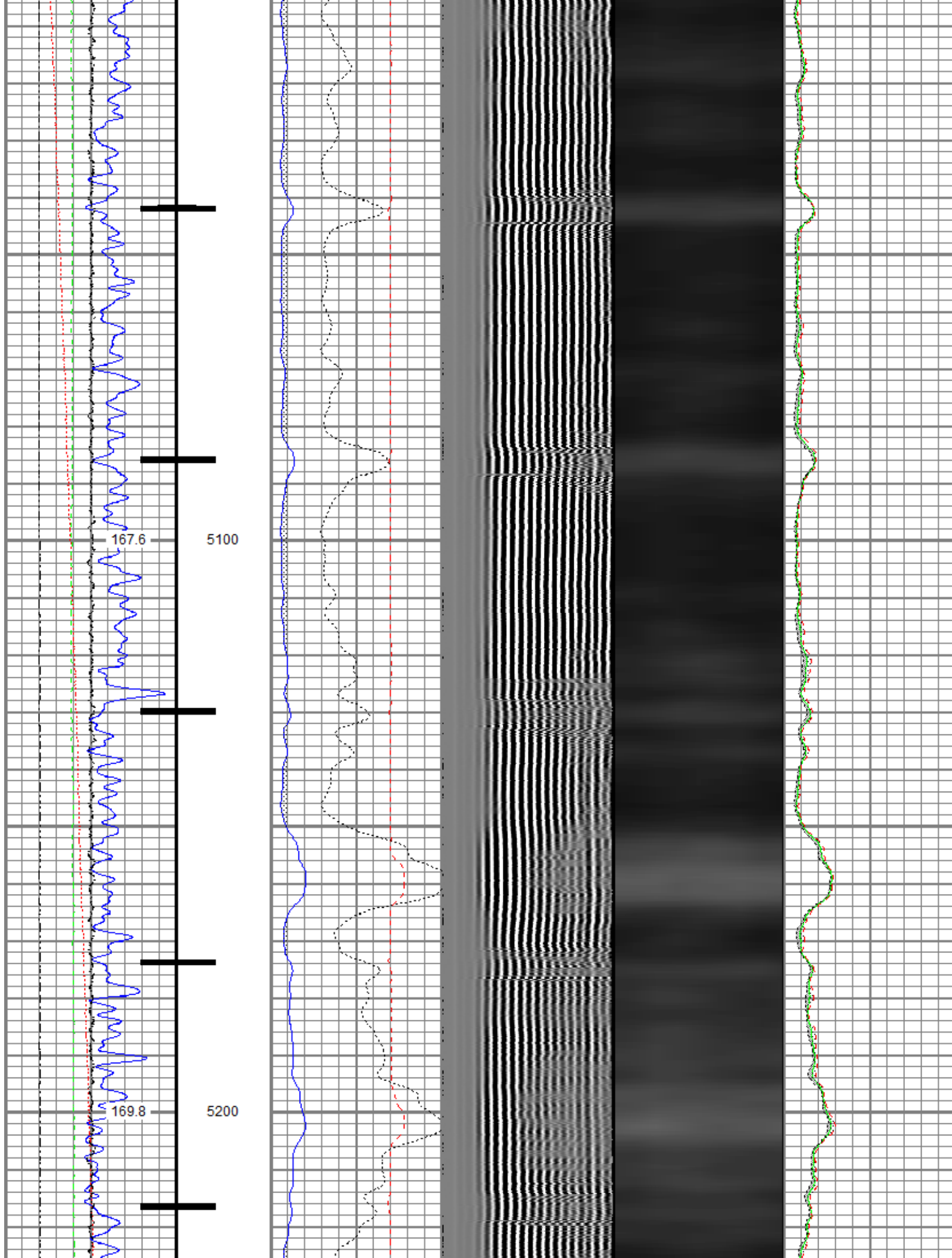


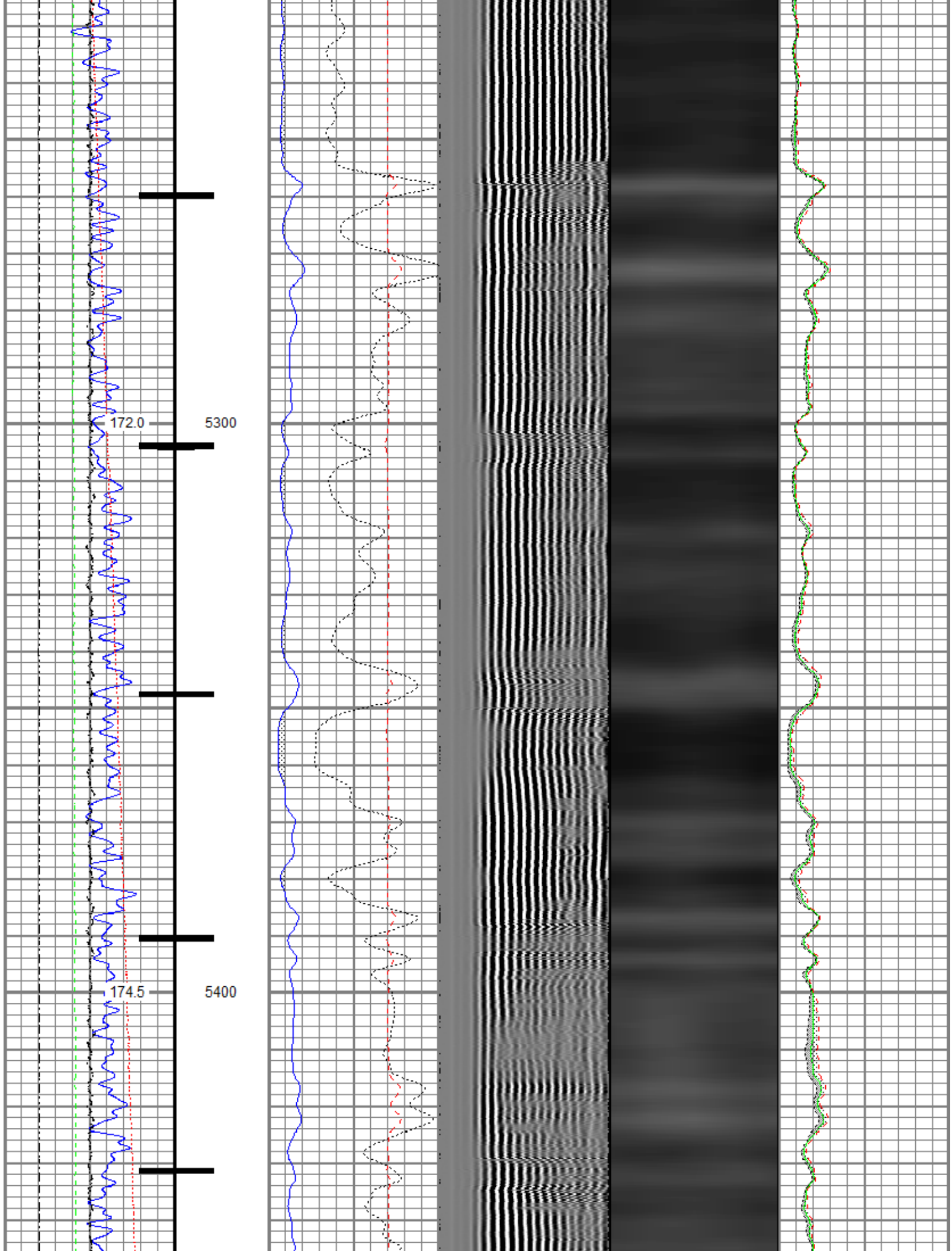


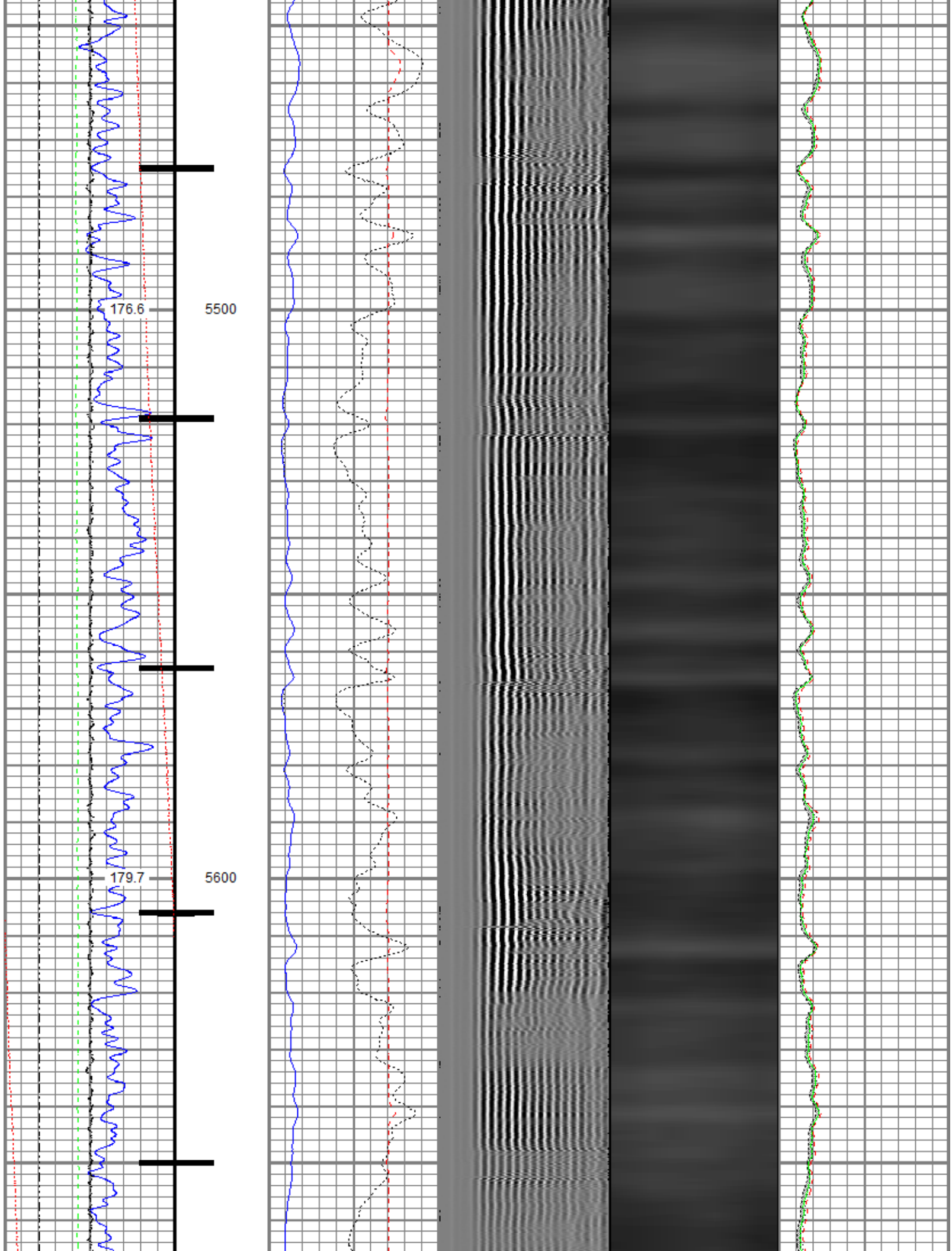


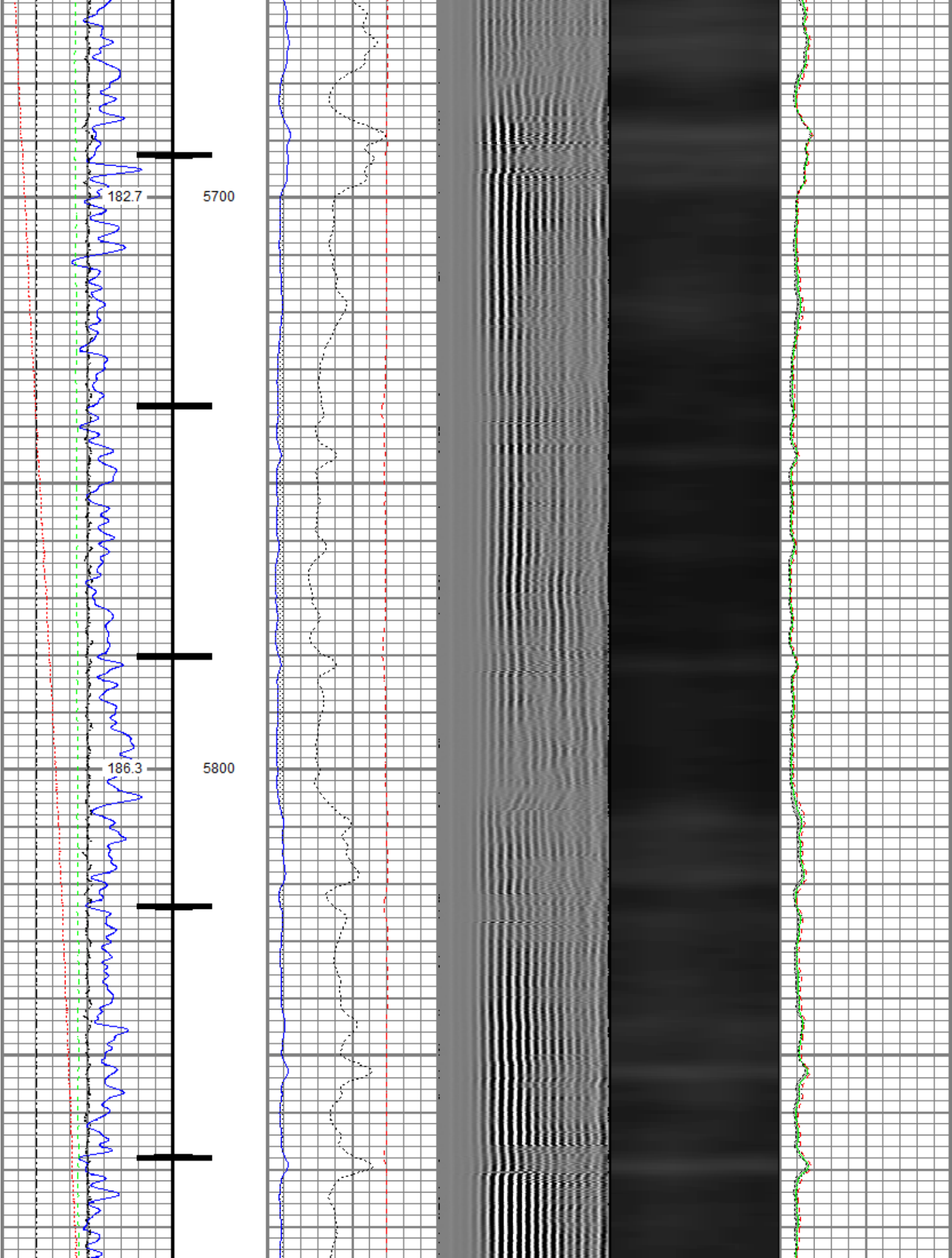


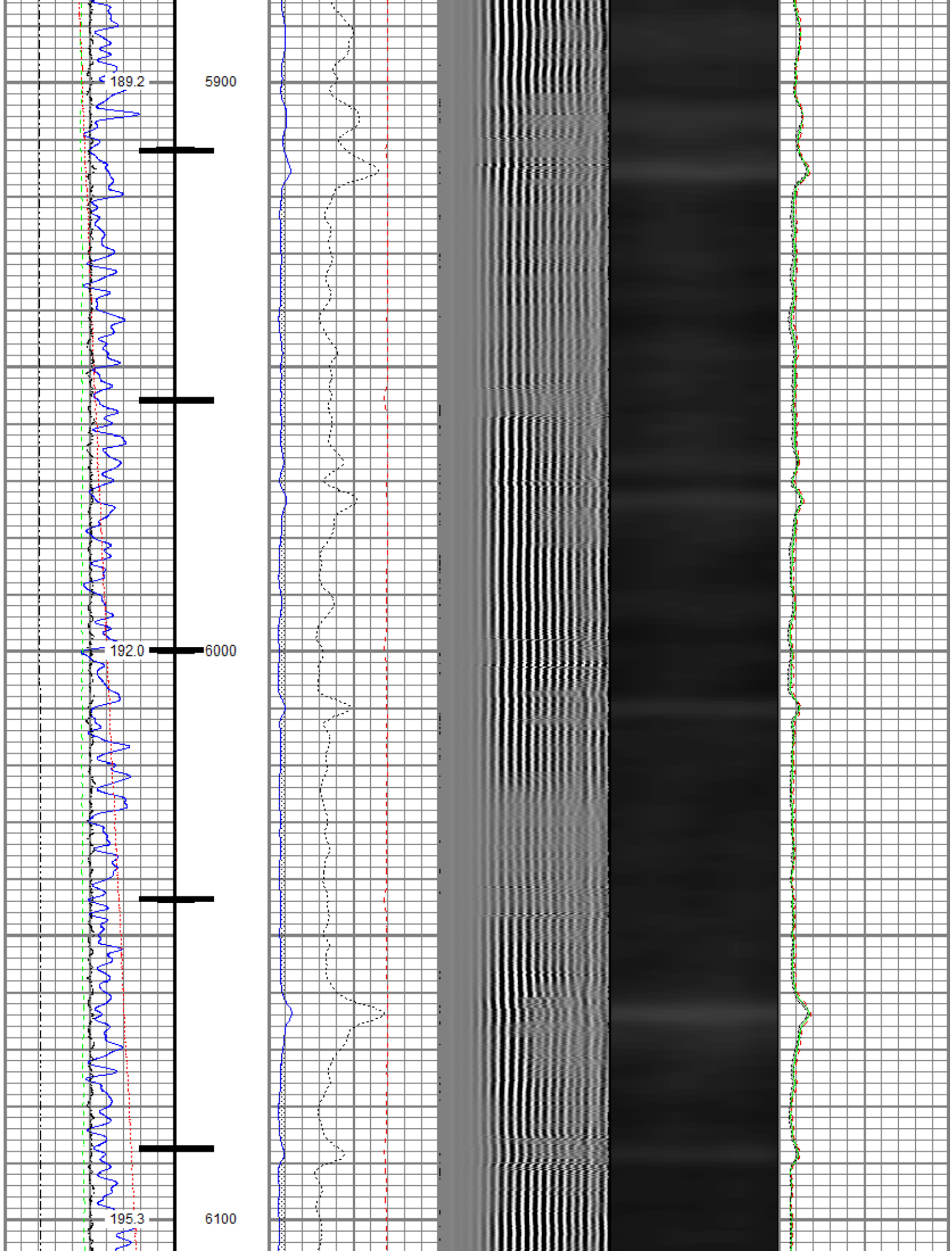


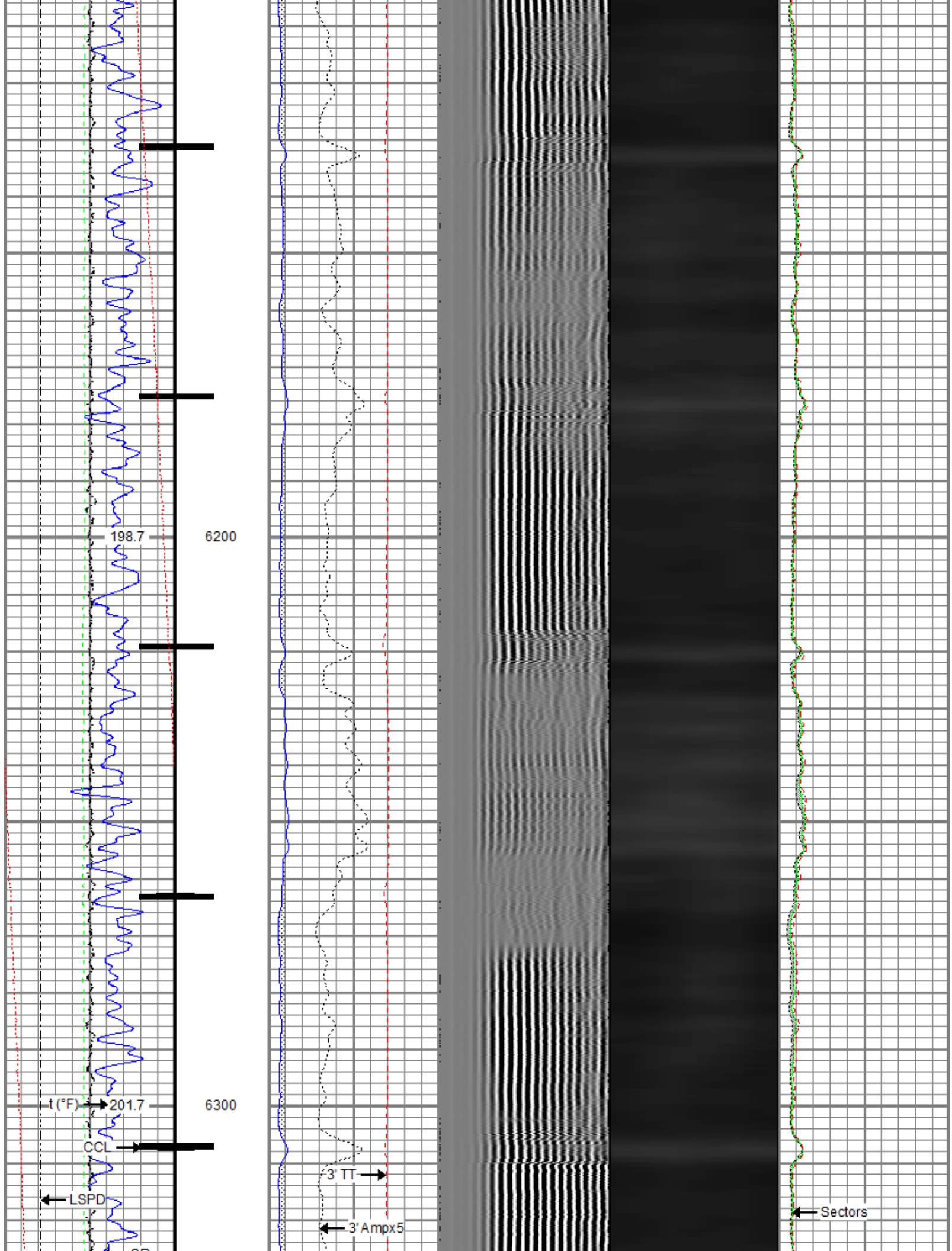


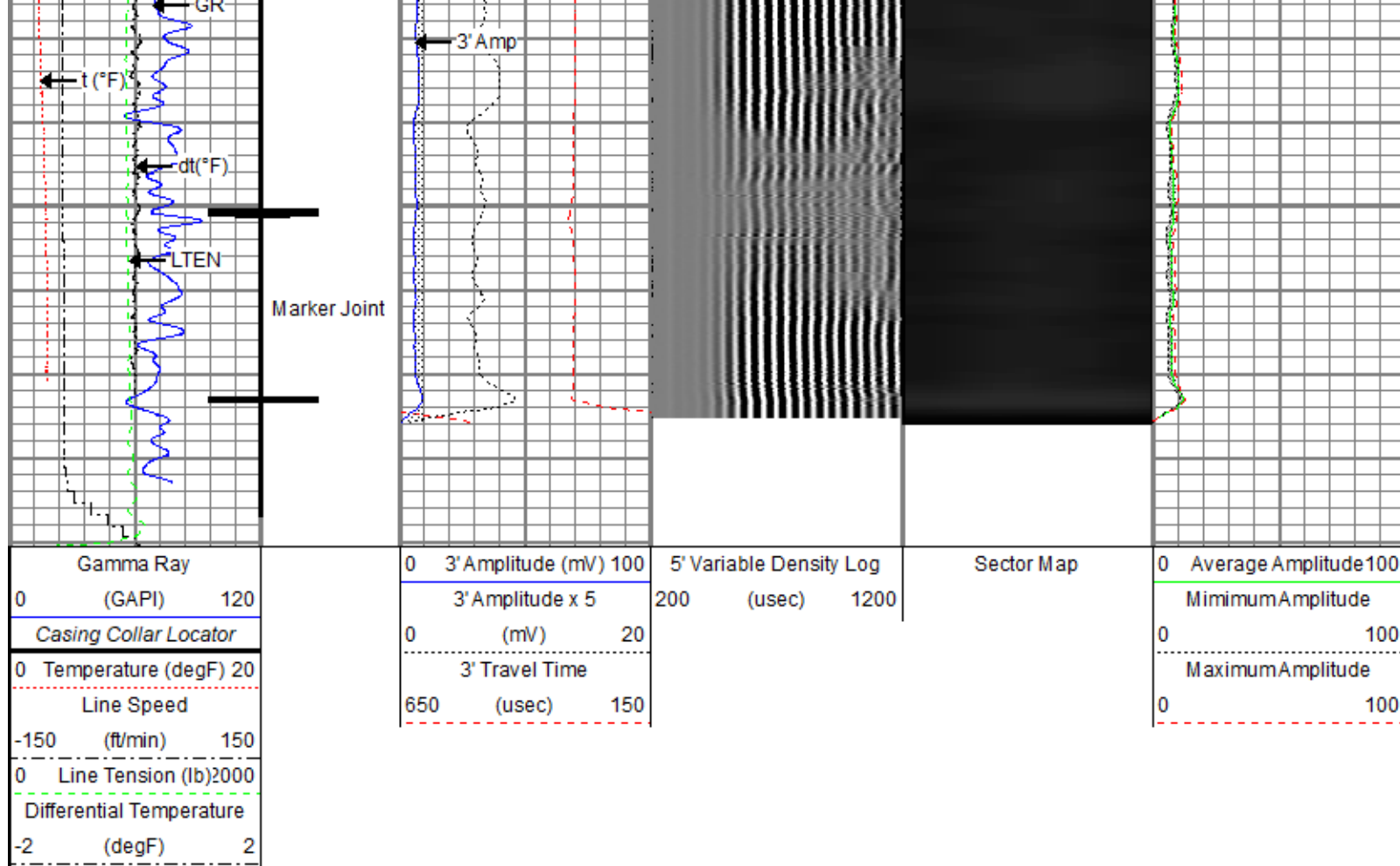








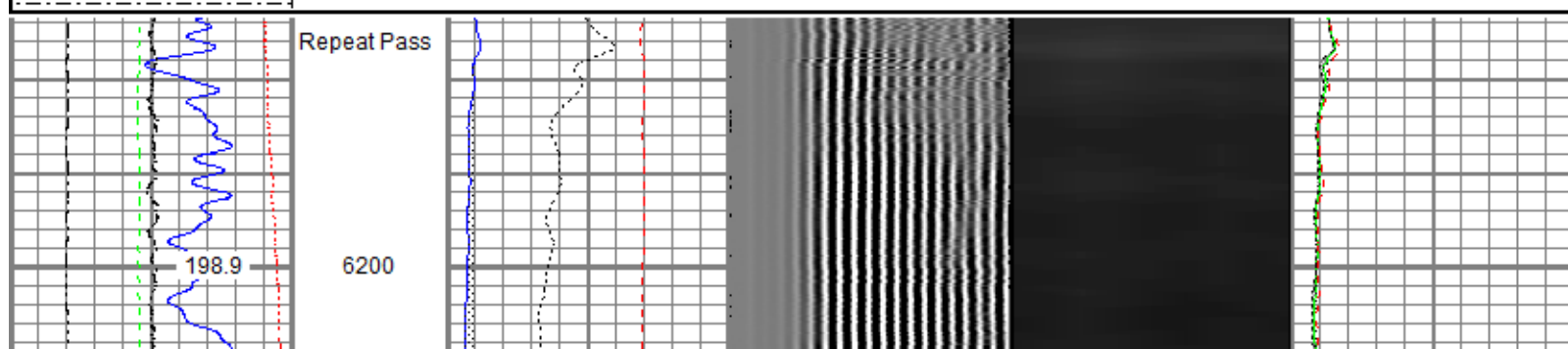
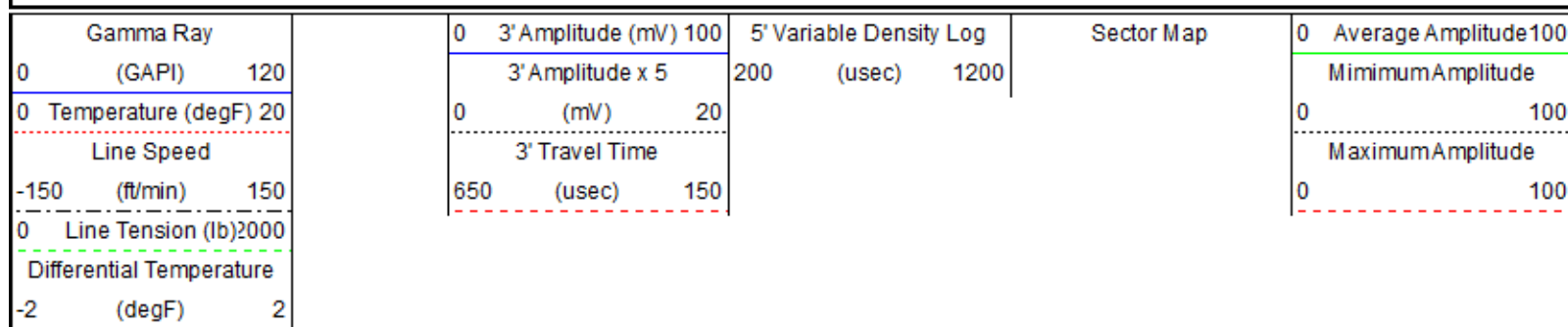


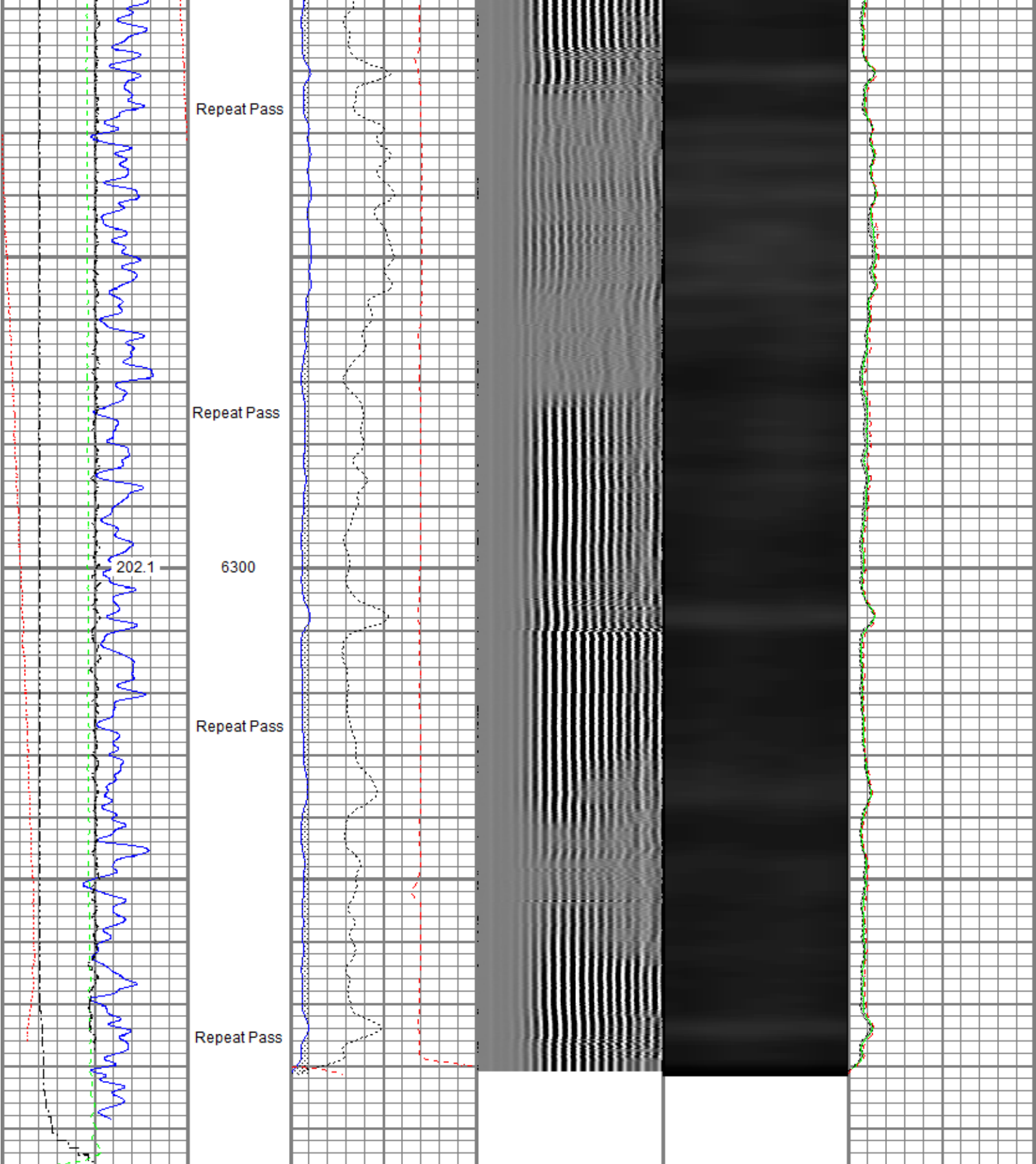


Repeat Pass

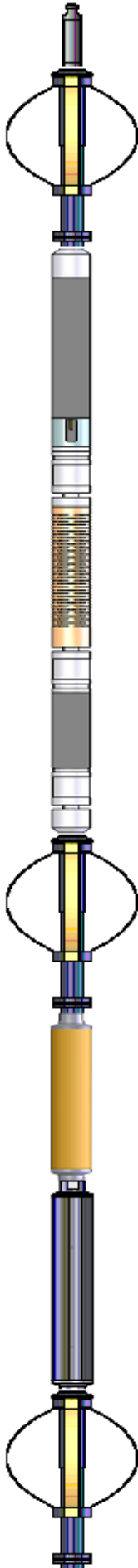
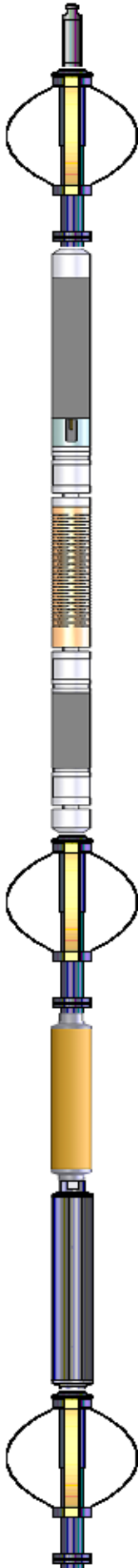
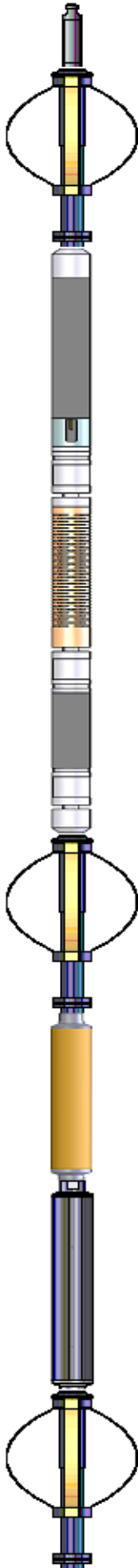
Recorded With 2800 PSI Surface Induced Pressure

Database File anadarko\putter 27-4hz\0512345135_anadarko_putter 27-4hz_rbl_02-24-18.db
 Dataset Pathname pass2.2
 Presentation Format ros_radri
 Dataset Creation Mon Feb 26 10:55:20 2018
 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)			Minimum Amplitude	
0	Temperature (degF)	0	(mV)	20		0		100
Line Speed		3' Travel Time					Maximum Amplitude	
-150	(ft/min)	650	(usec)	150		0		100
0	Line Tension (lb)							
	2000							
Differential Temperature								
-2	(degF)							
2								

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	18.23		Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
			Probe Radii-2750 RBT (FW1308-091) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS8	16.00					
WVFS7	16.00					
WVFS6	16.00					
WVFS5	16.00					
WVFS4	16.00					
WVFS3	16.00					
WVFS2	16.00					
WVFS1	16.00					
WVFCAL	16.00					
WVF3FT	16.00					
WVF5FT	15.00					
CCL\$2 CCL\$1	7.38		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
	7.38		Probe CCL-2750 SA (FW1307-076) Probe 2-3/4" Digital Six Magnet Logging CCL	2.66	2.75	35.00
GR	5.24		Probe GR-2750 SA (FW1307-078) Probe 2-3/4" Digital Stand Alone Gamma Ray	3.33	2.75	55.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00

Dataset: 0512345135_anadarko_putter 27-4hz_rbl_02-24-18.db: field/well/run1/pass4.1

Total length: 25.06 ft

Total weight: 258.60 lb
O.D.: 2.75 in

Calibration Report

Database File c:\programdata\warrior\data\anadarko\putter 27-4hz\0512345135_anadarko_putter 27-4hz_rbl_02-24-18.db
Dataset Pathname pass4.1
Dataset Creation Sat Feb 24 13:56:01 2018

Gamma Ray Calibration Report

Serial Number: FW1307-078
Tool Model: 2750 SA
Performed: Sun Nov 12 06:08:32 2017

Calibrator Value: 637.0 GAPI

Background Reading: 108.2 cps
Calibrator Reading: 1134.5 cps

Sensitivity: 0.6207 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1308-091
Tool Model: 2750 RBT

Calibration Casing Diameter: 5.500 in
Calibration Depth: 48.410 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.525	0.800	71.921	135.803	0.611
CAL	0.751	0.752				
5'	0.001	0.477	0.800	71.921	149.313	0.662
SUM						
S1	0.001	0.503	0.000	100.000	199.249	-0.248
S2	0.001	0.512	0.000	100.000	195.694	-0.244
S3	0.001	0.532	0.000	100.000	188.375	-0.277
S4	0.002	0.575	0.000	100.000	174.450	-0.287
S5	0.002	0.605	0.000	100.000	165.830	-0.277
S6	0.002	0.579	0.000	100.000	173.088	-0.276
S7	0.002	0.528	0.000	100.000	190.061	-0.294
S8	0.001	0.513	0.000	100.000	195.361	-0.282

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.751	0.752	1.000	0.000

Air Zero Calibration, performed Sat Feb 24 09:58:13 2018:

	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	

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: FW1308-091
Tool Model: 2750 RBT
Performed: Sun Nov 12 13:50:54 2017

	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



Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Putter 27-4HZ
Field Wattenberg
County Weld
State Colorado