



Radial Cement Bond
Gamma Ray
Casing Collar Log

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

Well Quarter Circle 24-7HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-46268

SEC 24 TWP 1N RGE 67W

Permanent Datum Ground Level Elevation 4941'
Log Measured From Kelly Bushing 20 FT
Drilling Measured From Kelly Bushing

Other Services
JB GR
RBP
RBL 0 PSI
Elevation
K.B. 4961'
D.F. ---
G.L. 4941'

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Well Quarter Circle 24-7HZ
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State Colorado

Date	14-JUL-2018																						
Run Number	Four																						
Depth Driller	17469 FT																						
Depth Logger	6592 FT																						
Bottom Logged Interval	6577 FT																						
Top Log Interval	Surface																						
Open Hole Size	---																						
Type Fluid	Water																						
Density / Viscosity	8.34 lb/gal																						
Max. Recorded Temp.	213°F																						
Estimated Cement Top	See Log																						
Time Well Ready	ROA																						
Time Logger on Bottom	12:00																						
Equipment Number	HD-363																						
Location	Platteville, CO																						
Recorded By	M. Hayes																						
Witnessed By	Justin McMillan																						
Borehole Record												Tubing Record											
Run Number	Bit	From	To	Size	Weight	From	To																
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom																		
Surface Casing	9 5/8	36	J-55	Surface	1834 FT																		
Intermediate #1	5 1/2	17	HCP 110	Surface	17458 FT																		
Intermediate #2																							
Liner																							

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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 6522 FT
Adjusted -3.5 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7800 FT with no debris
Log ran from 6577 FT to surface
Log ran with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

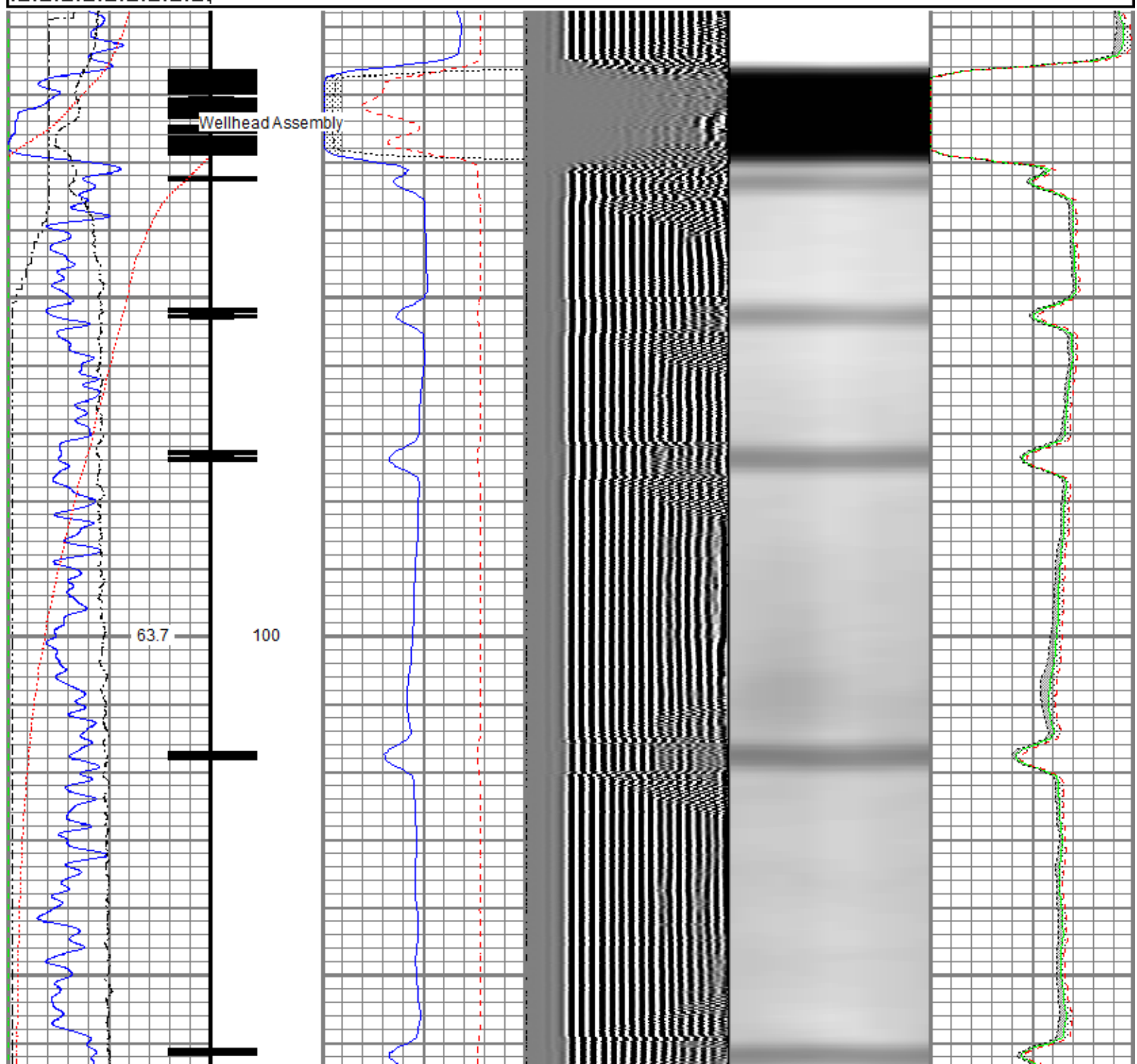
Thank you for choosing Reliance Oilfield Services, LLC!!

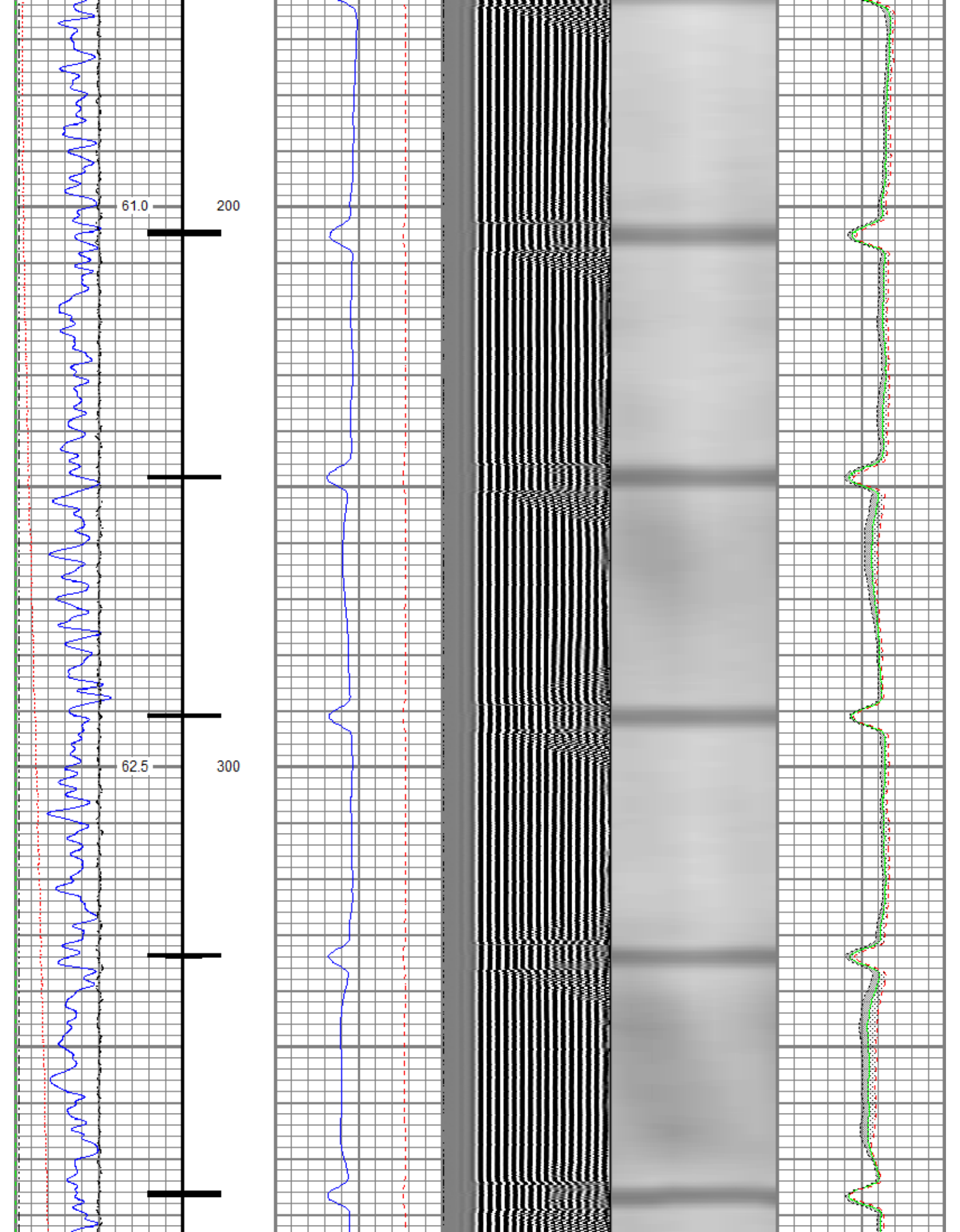
Main Pass

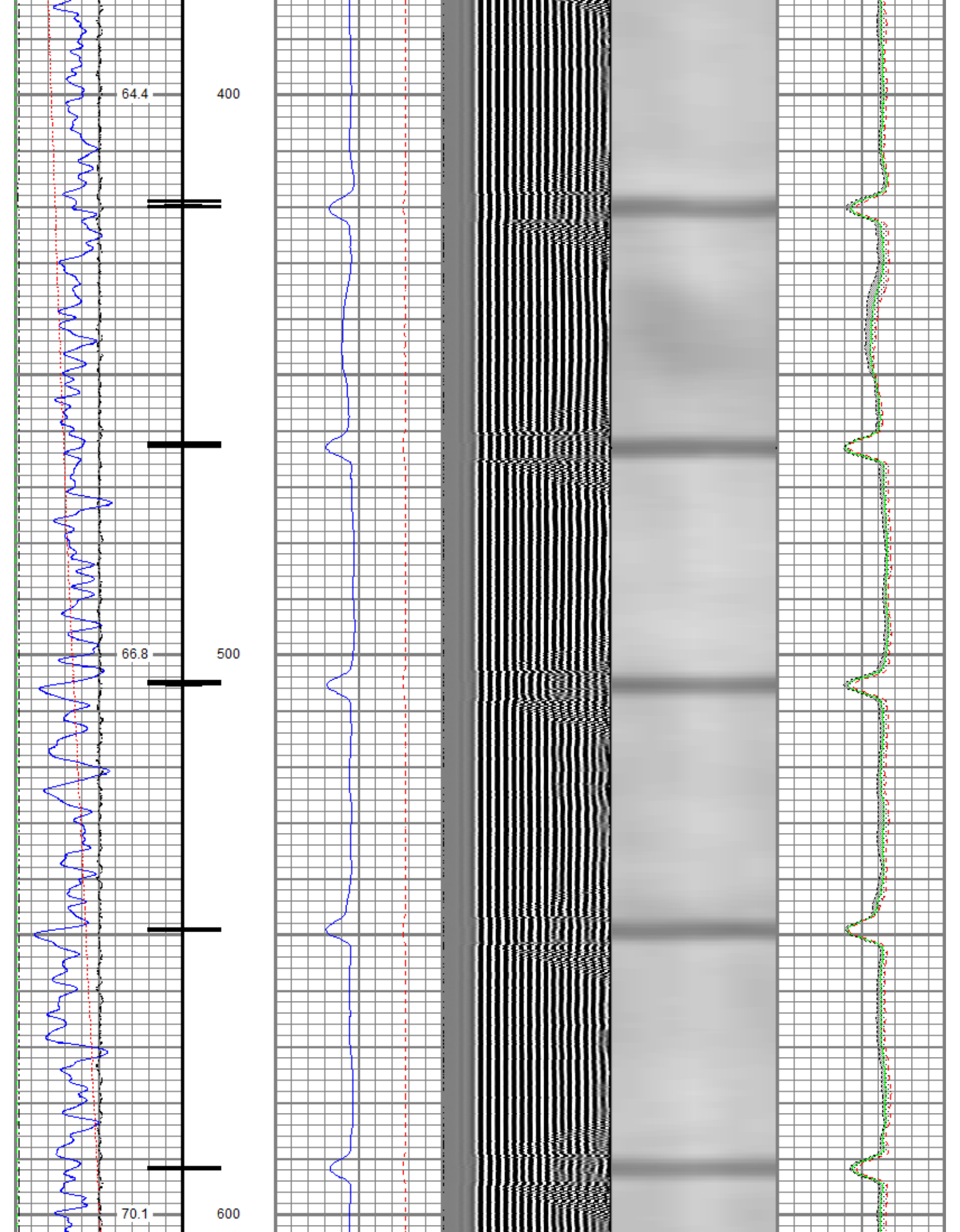


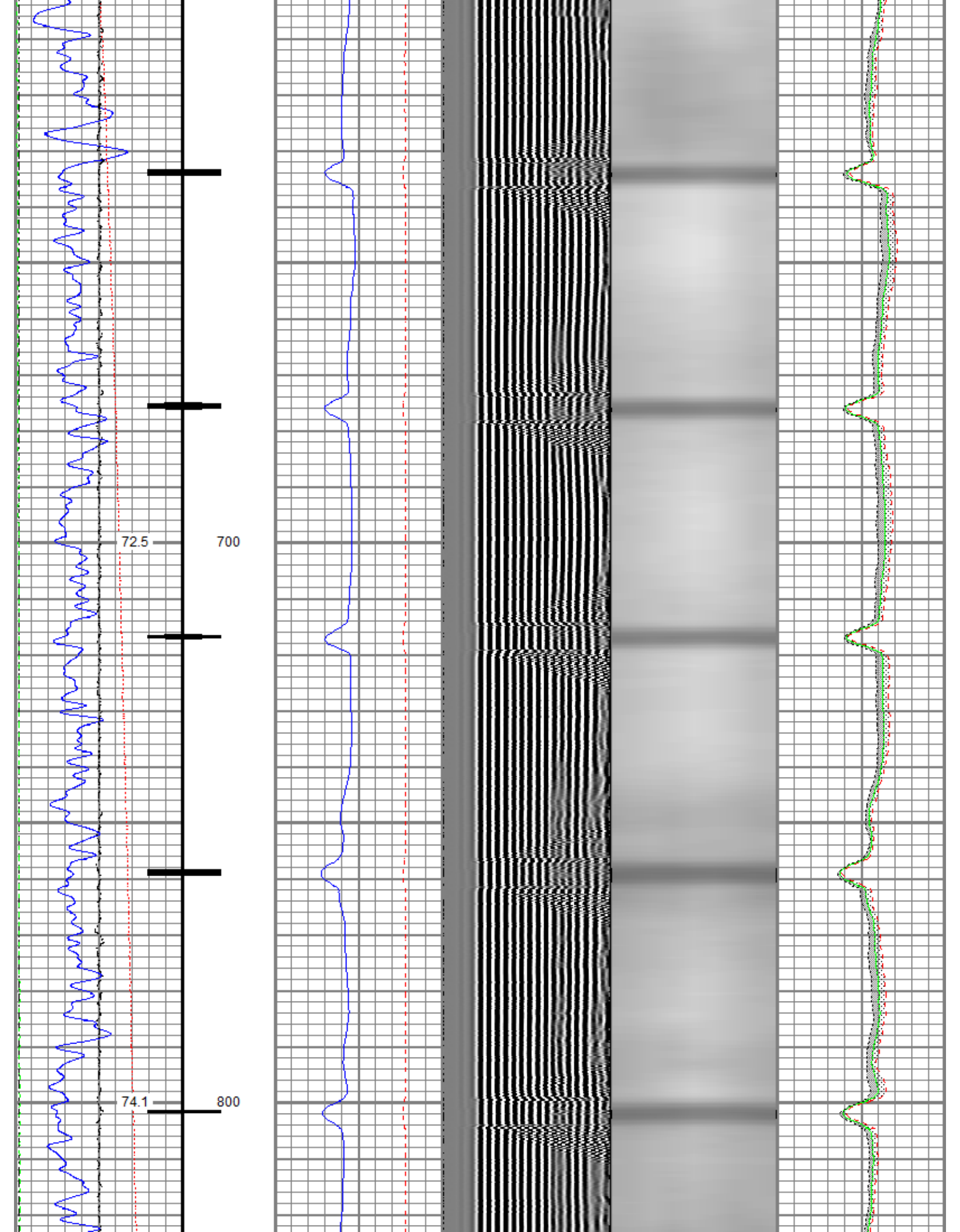
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Dataset Pathname	pass4
Presentation Format	ros_radri
Dataset Creation	Sat Jul 14 11:59:19 2018
Charted by	Depth in Feet scaled 1:240

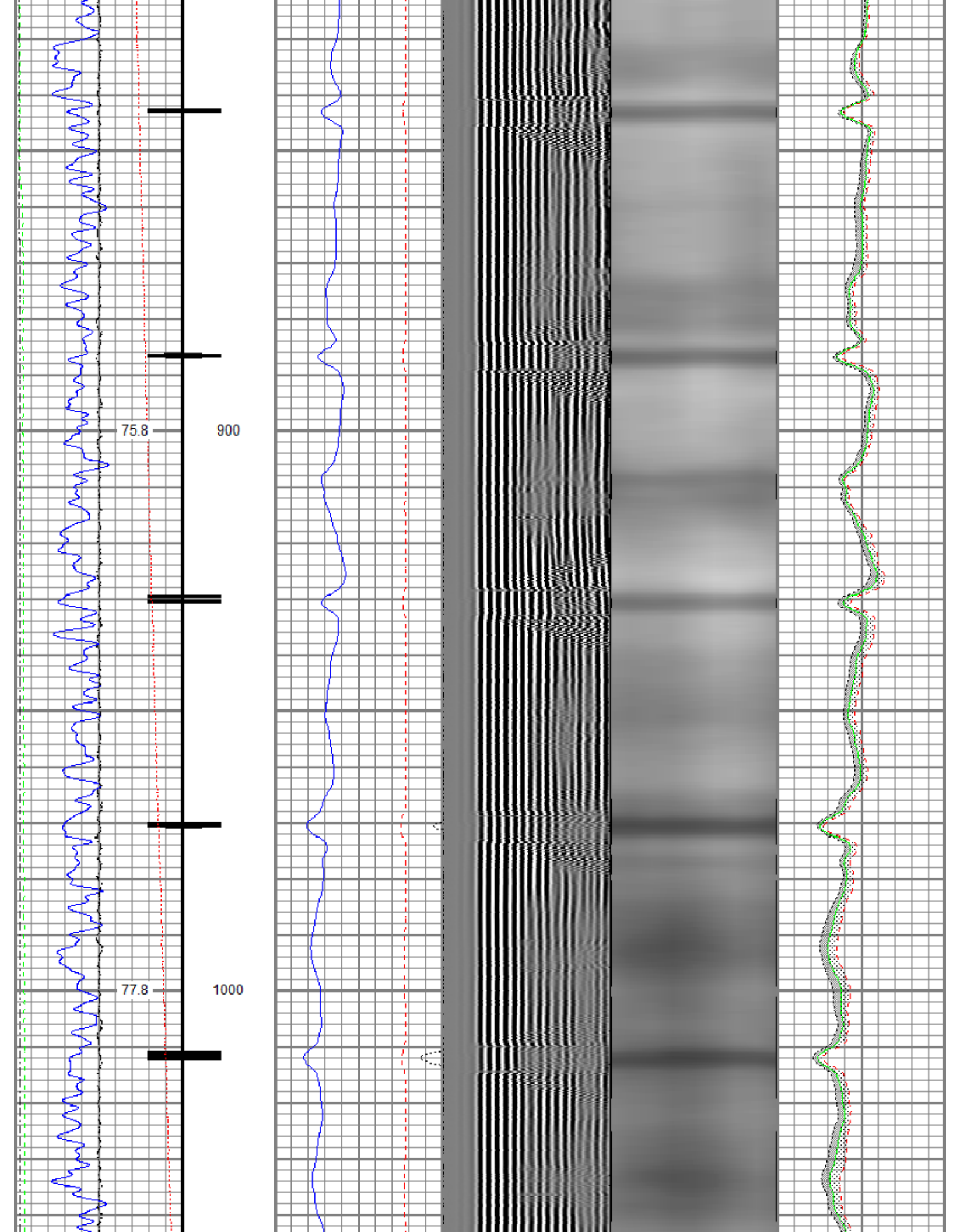
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200	1200		Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
(ft/min) 150					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

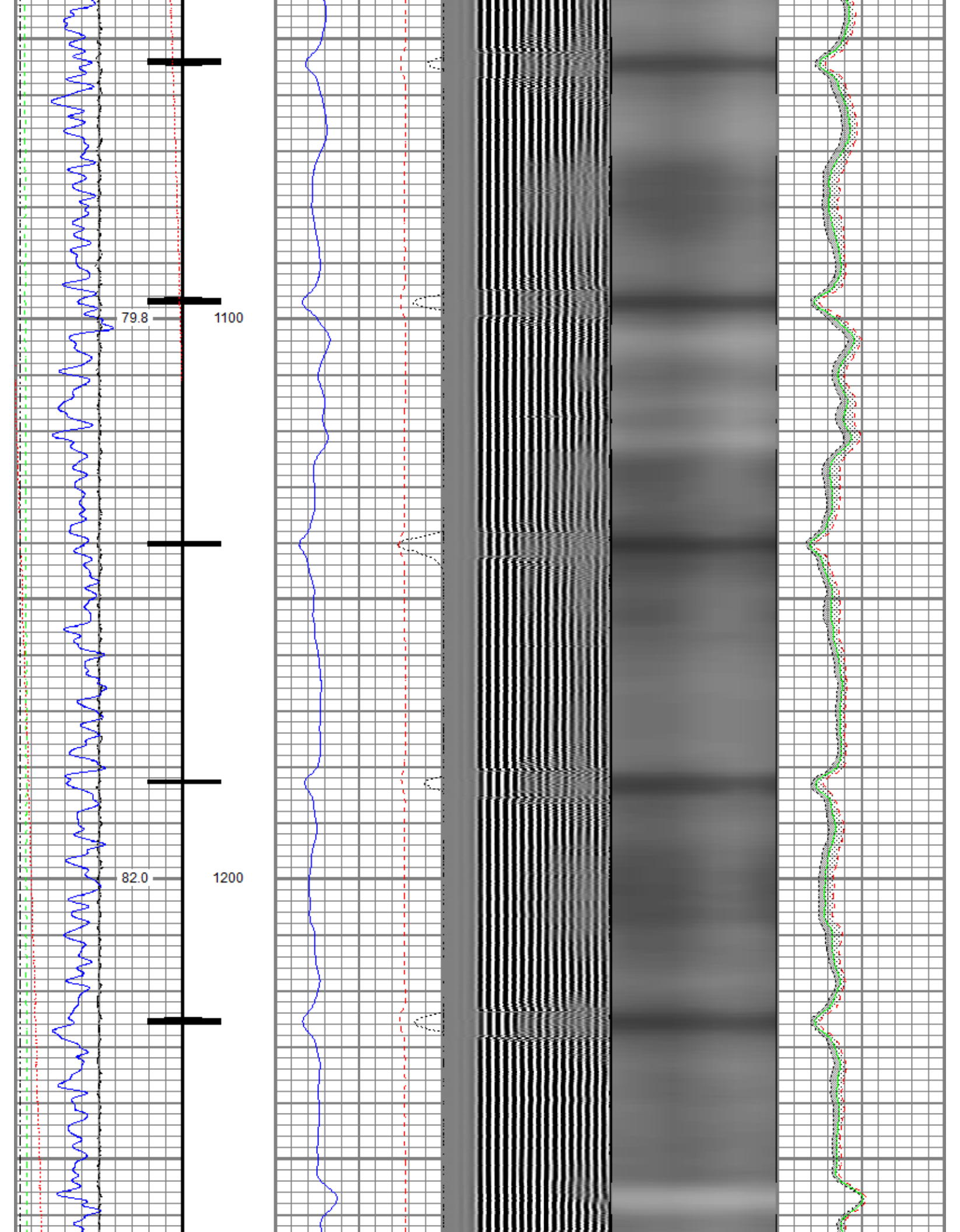


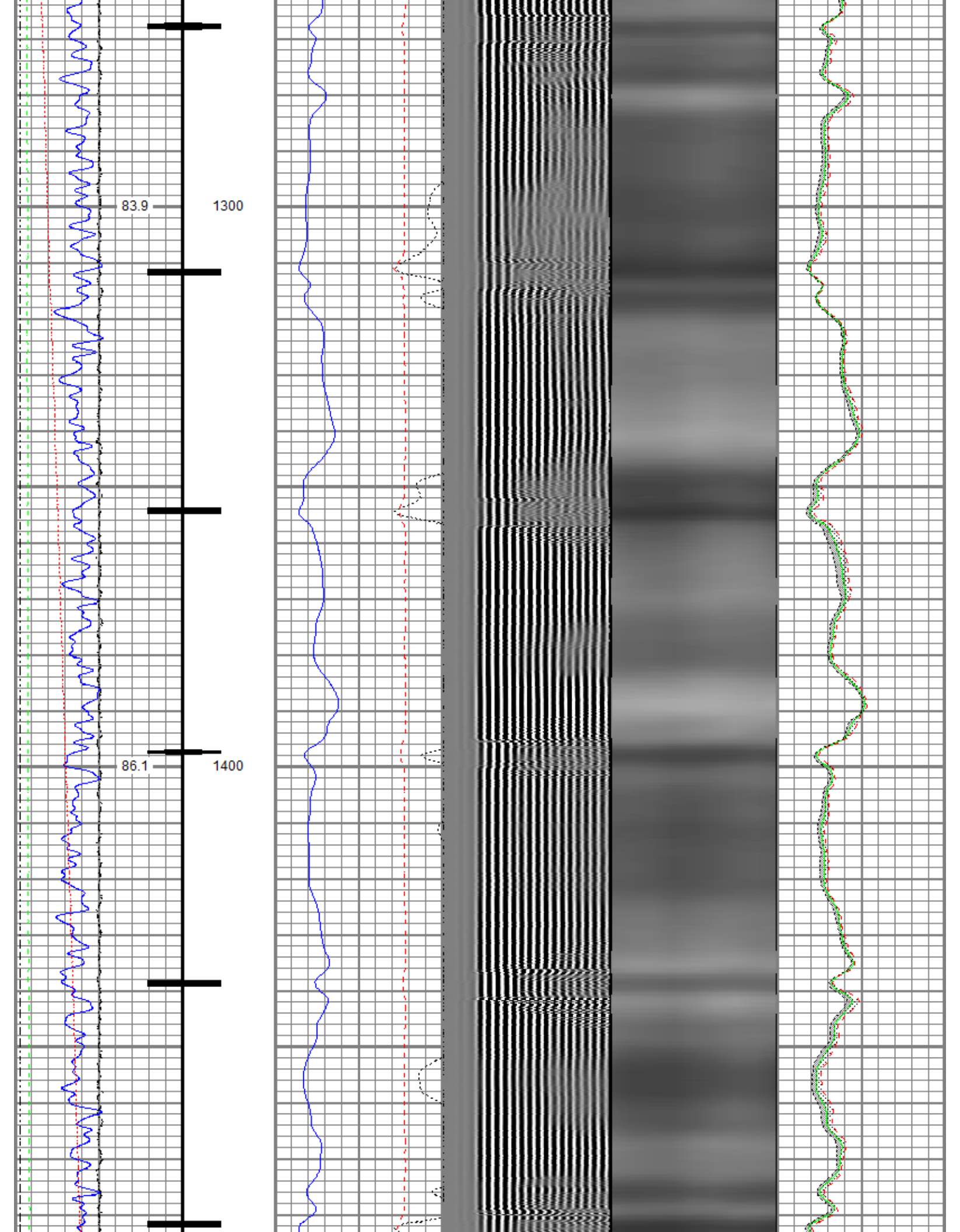


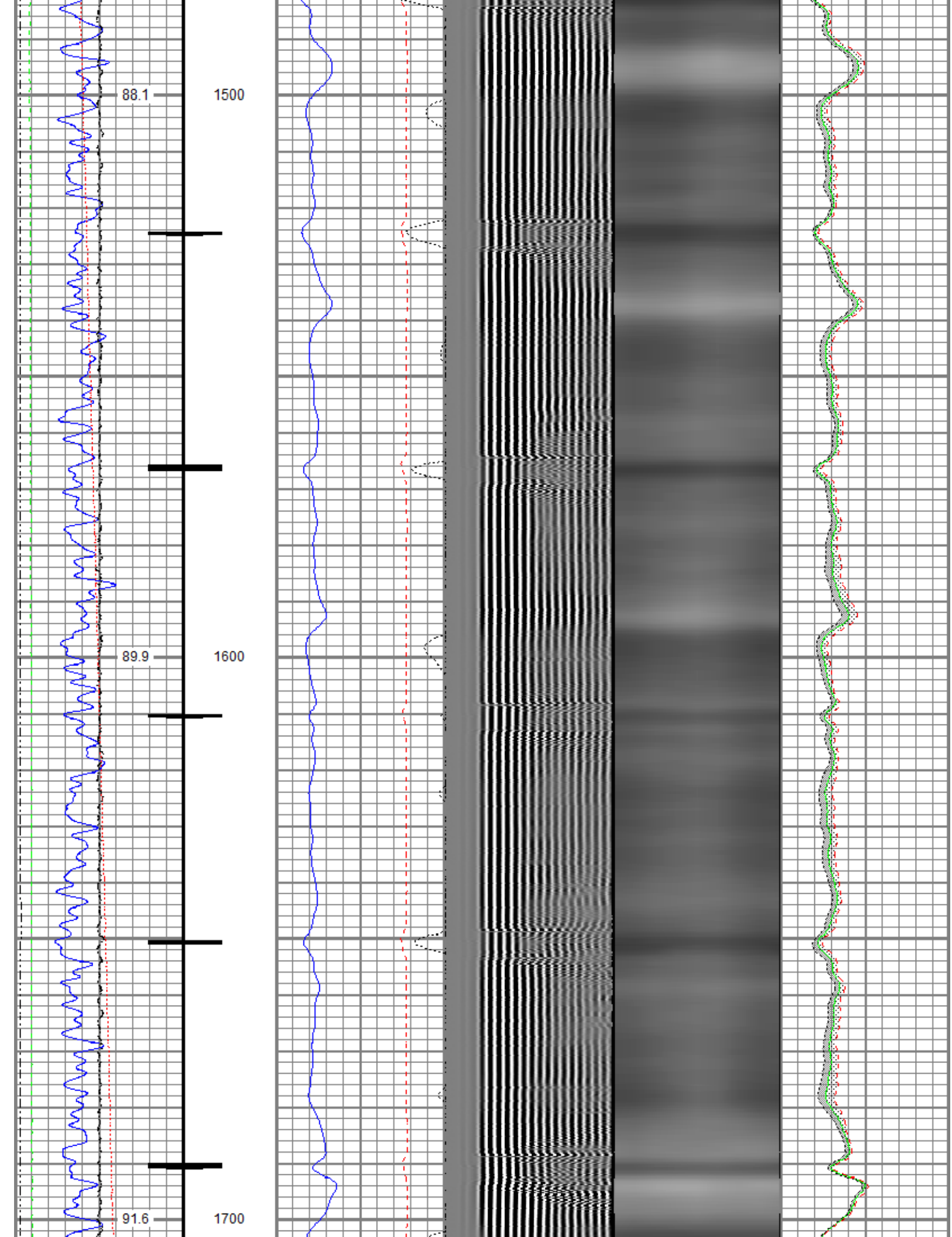


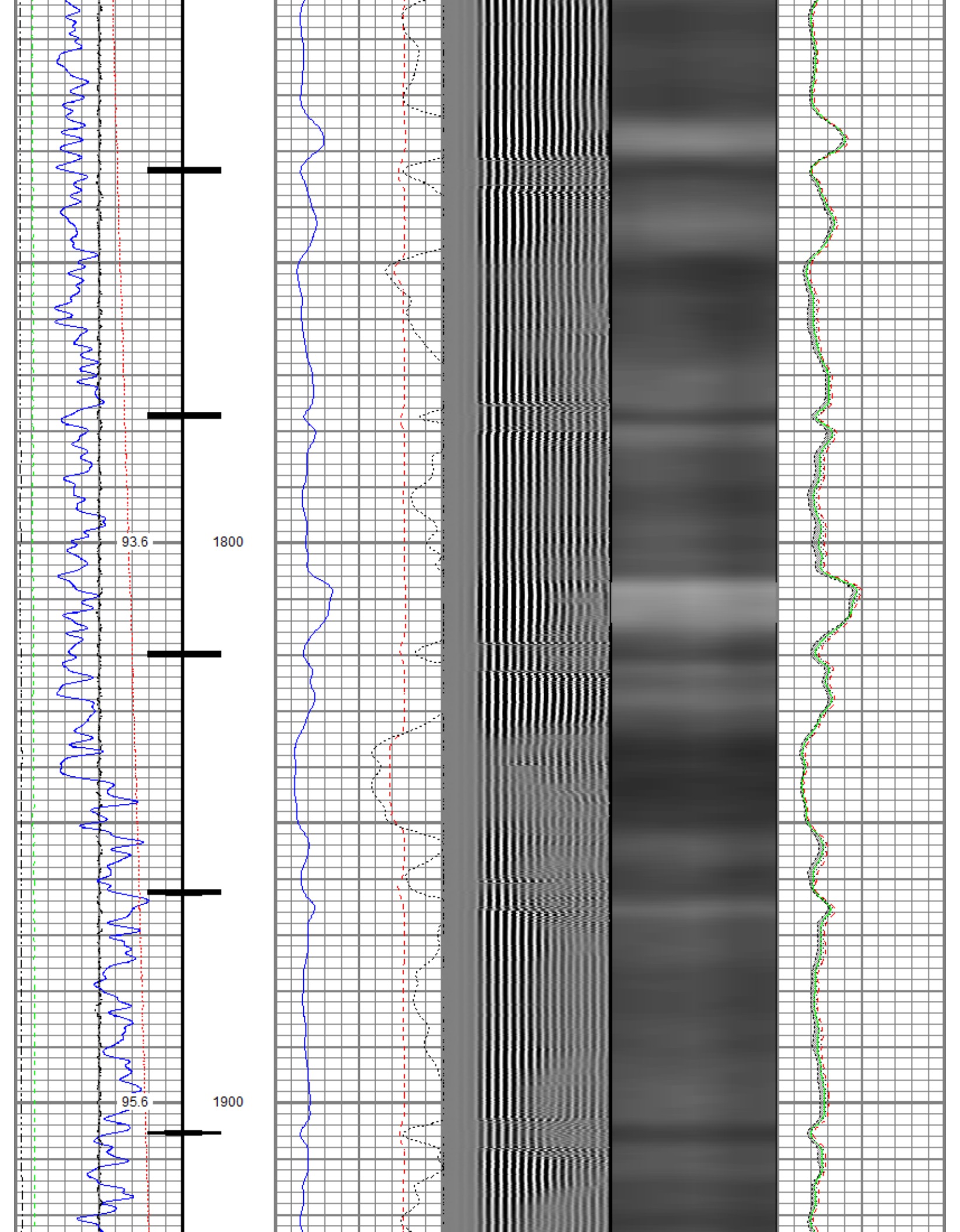


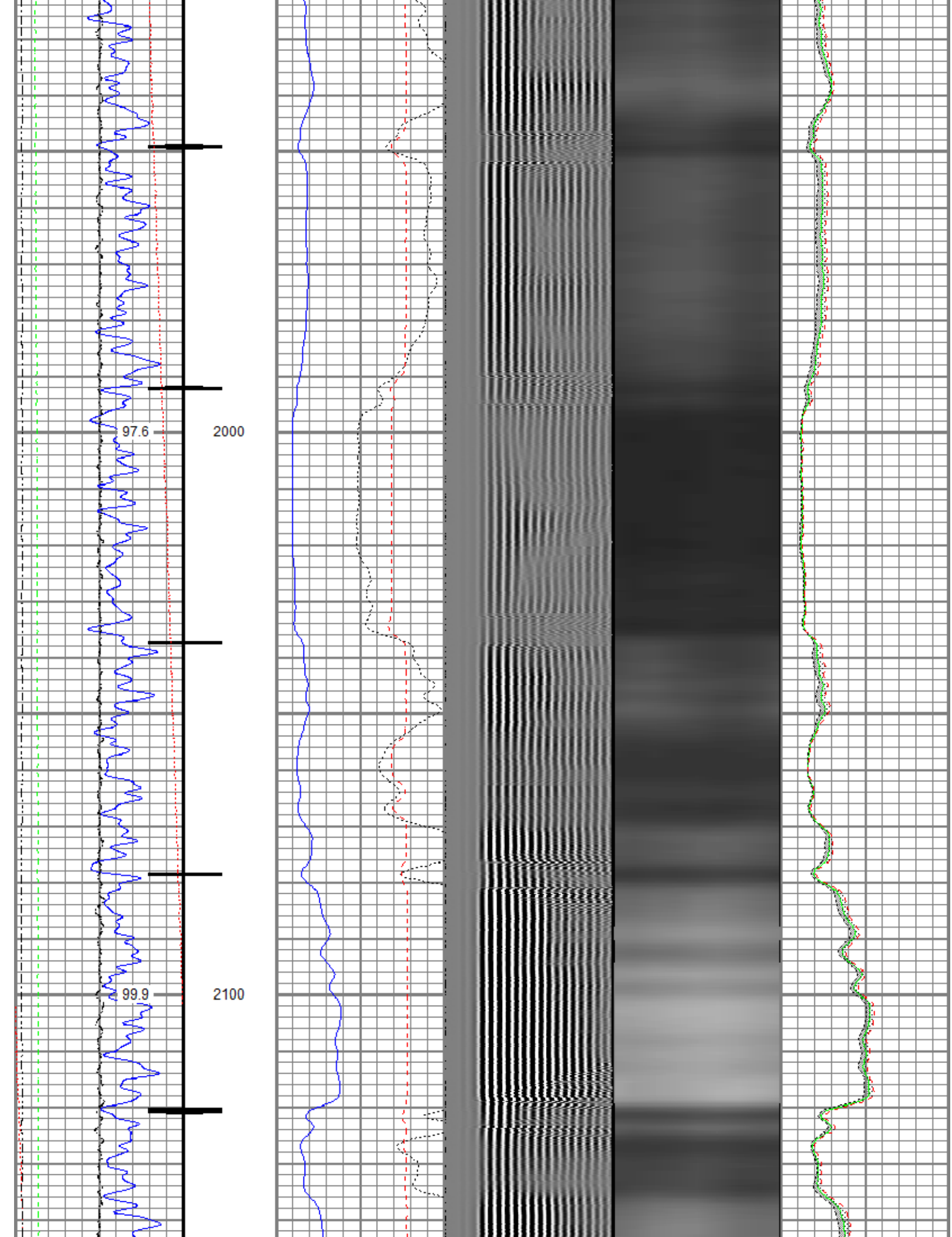


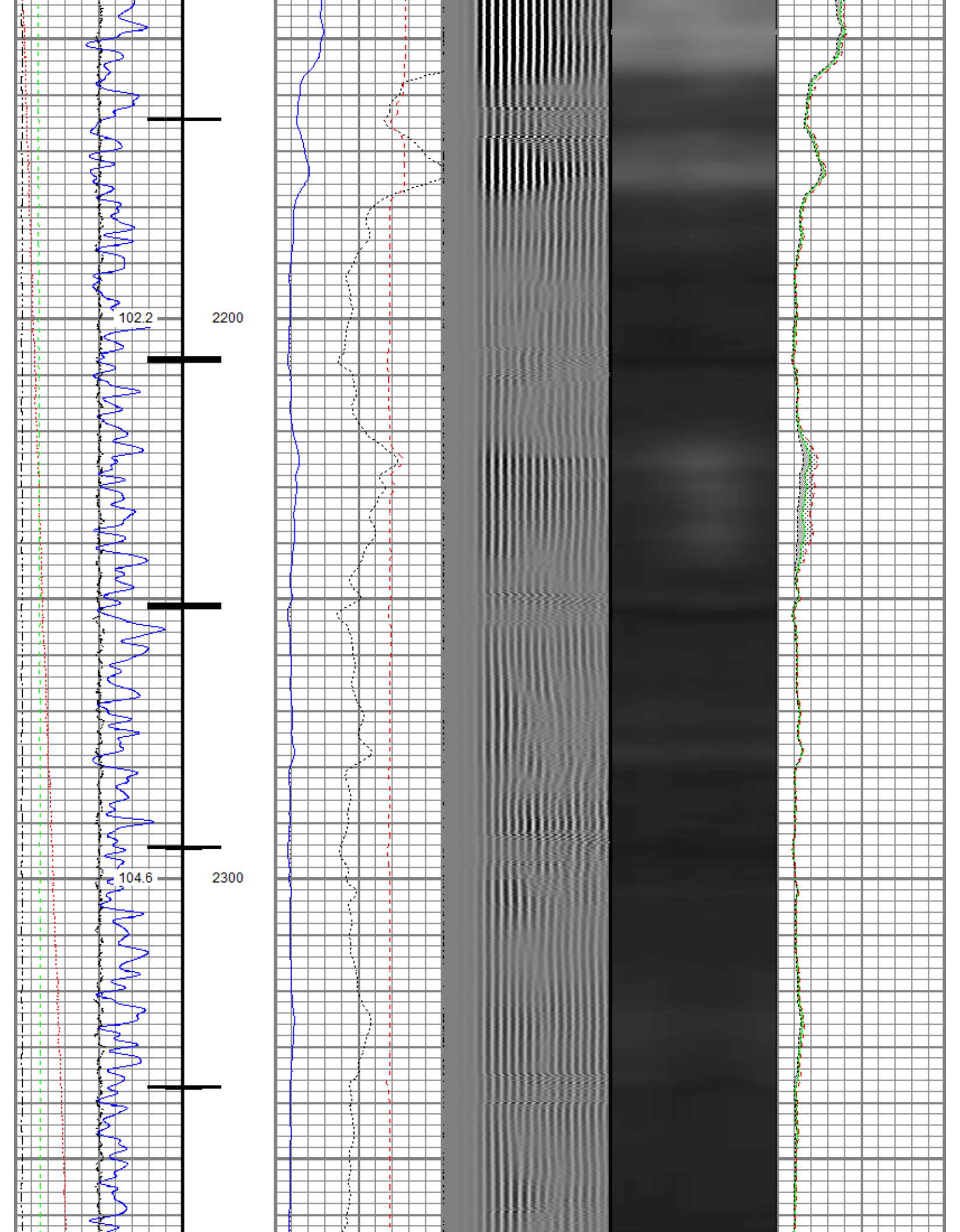


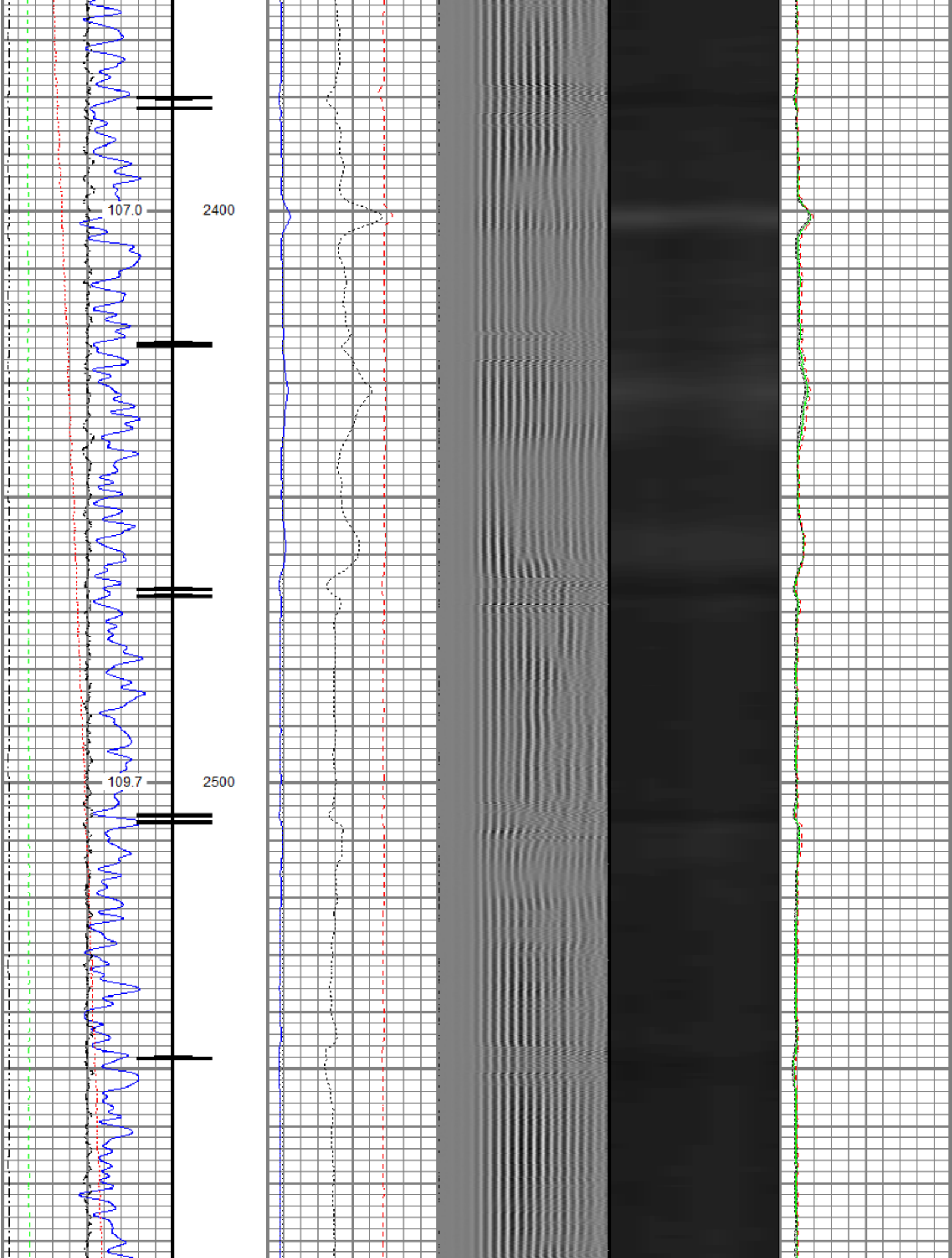


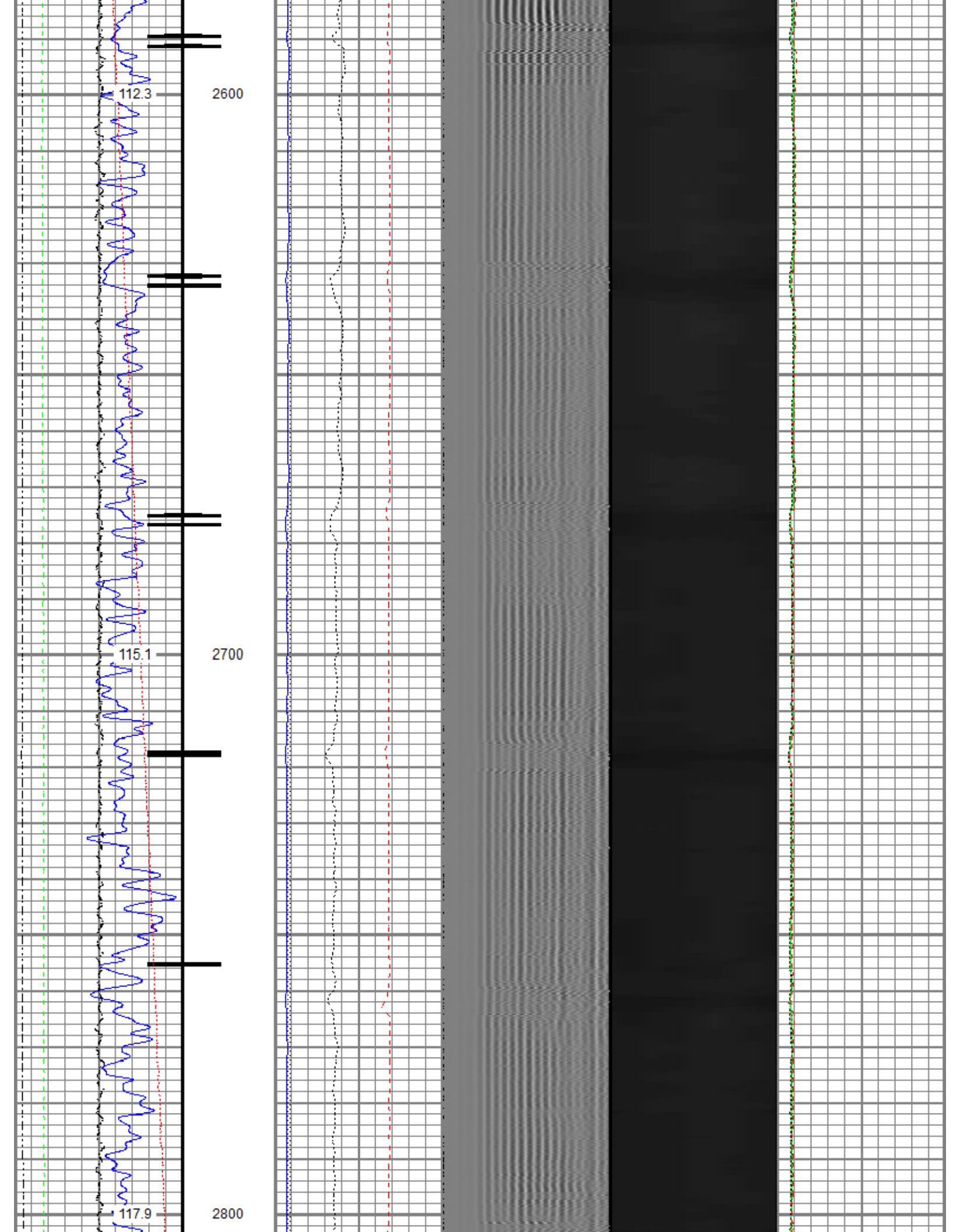


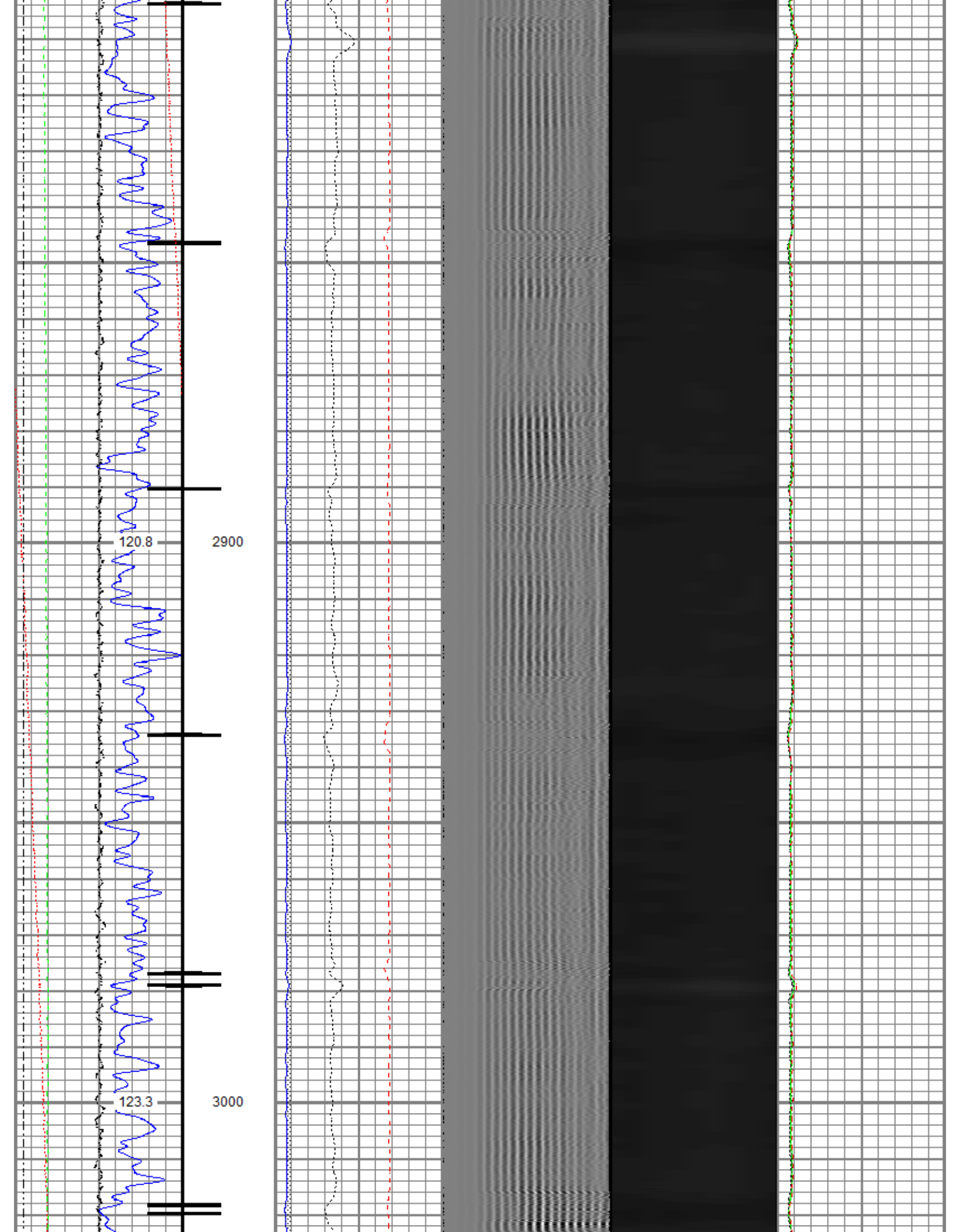


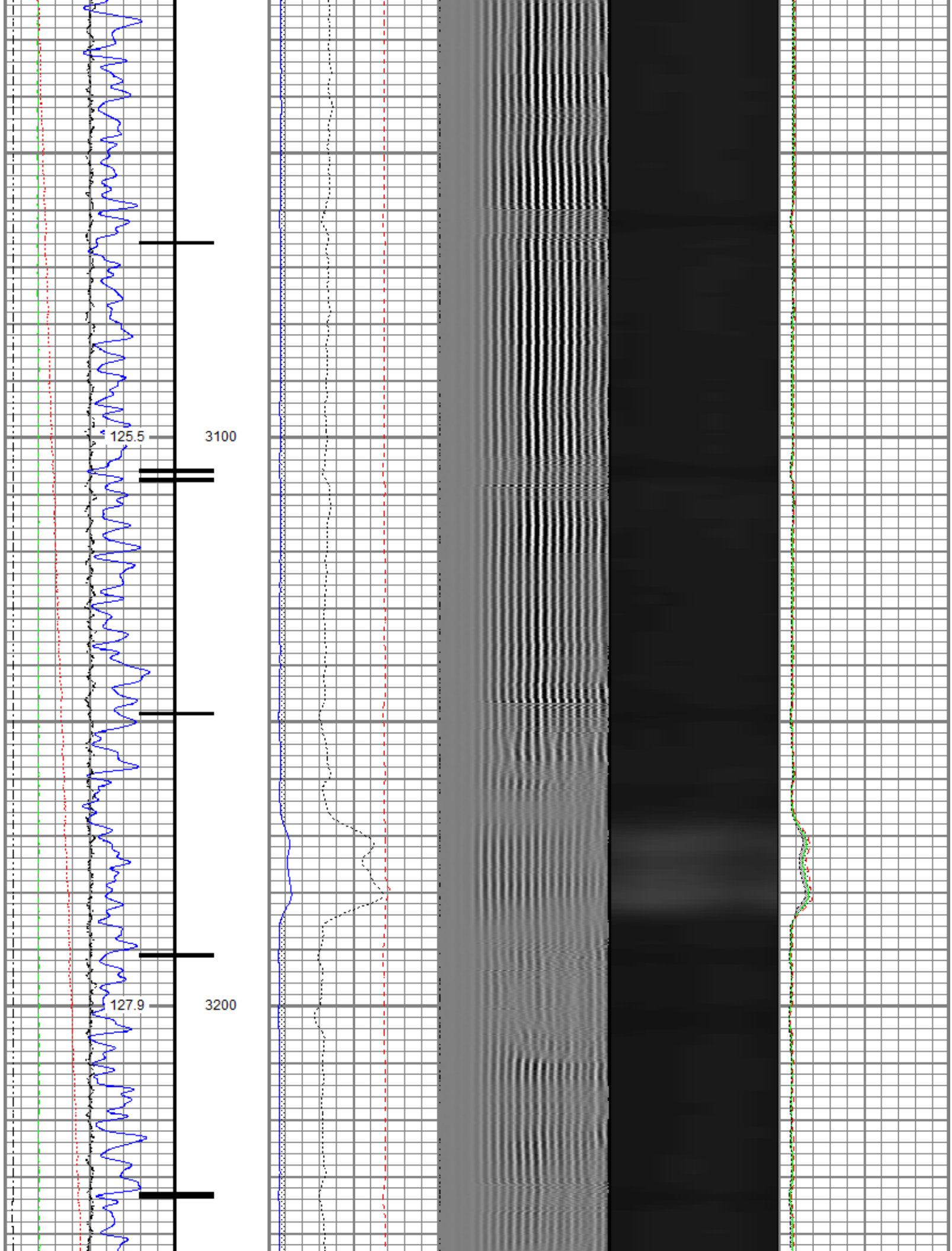


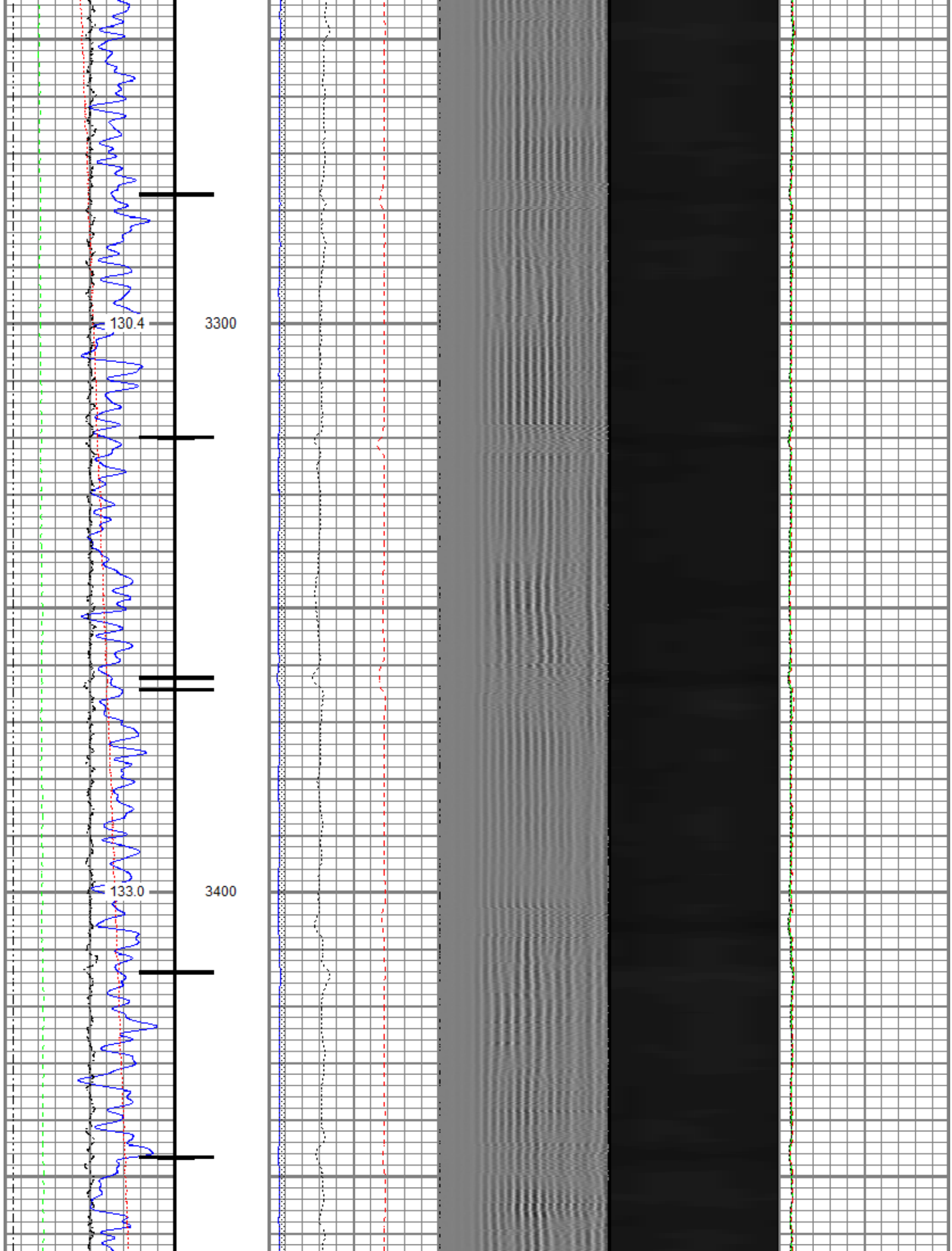


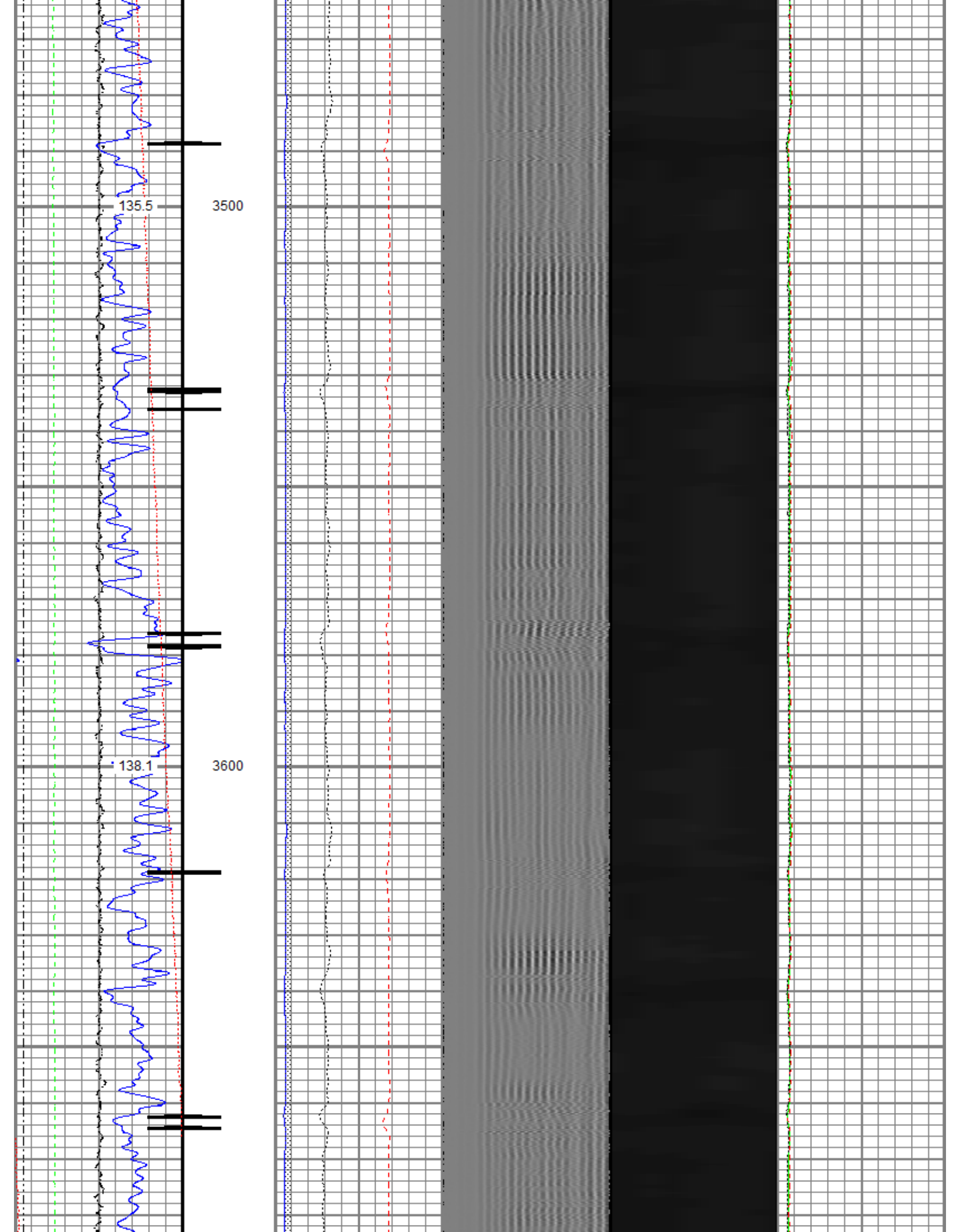


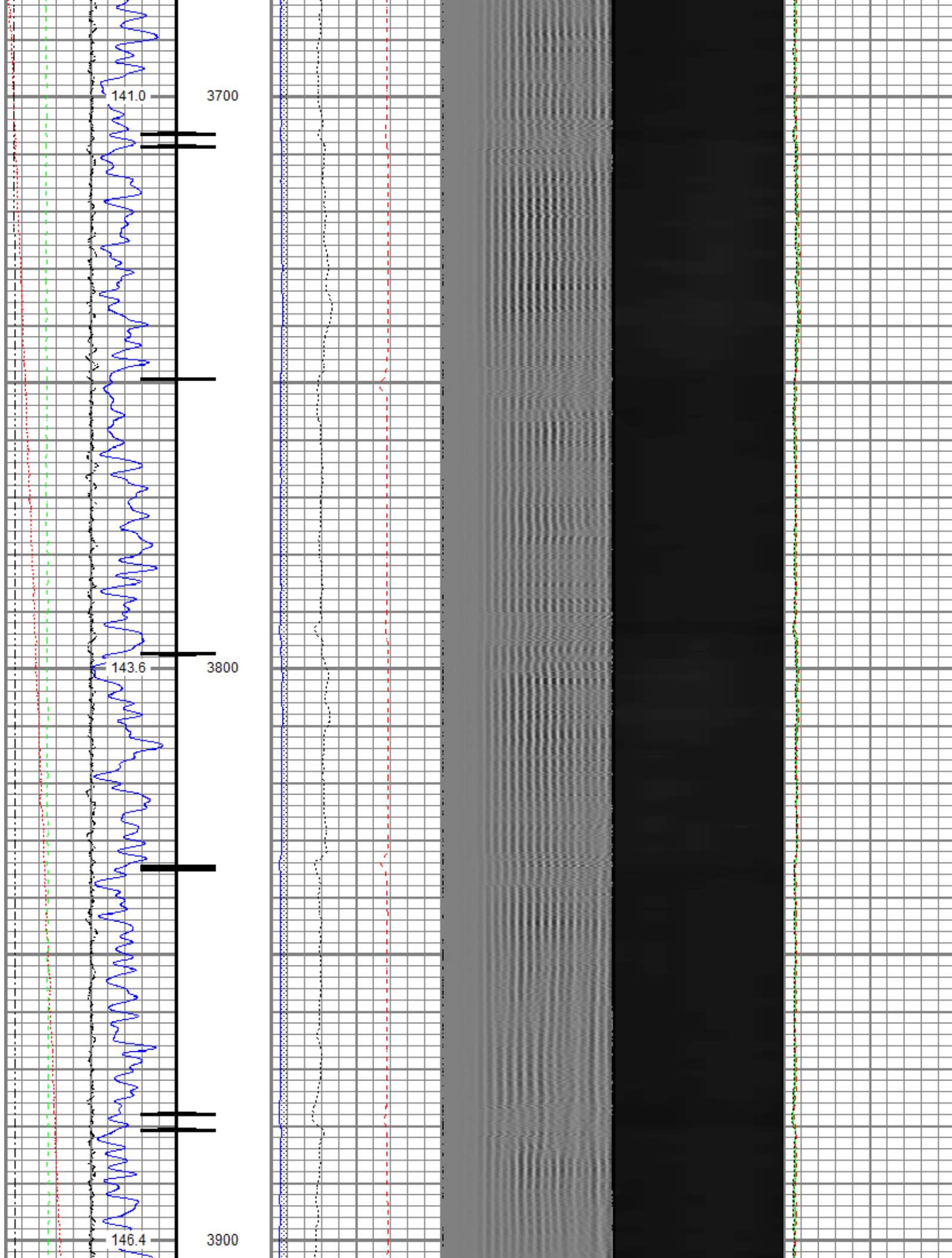


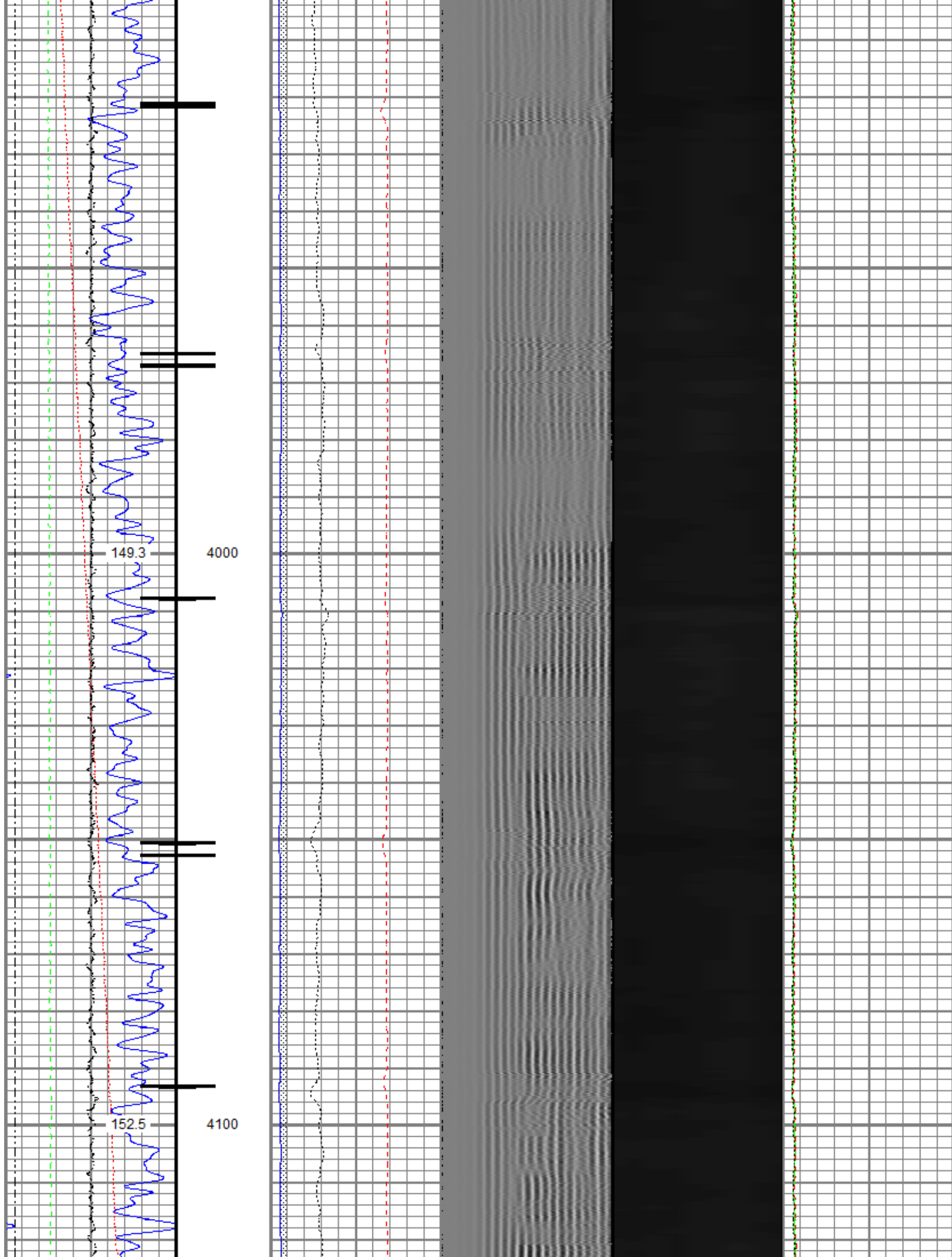


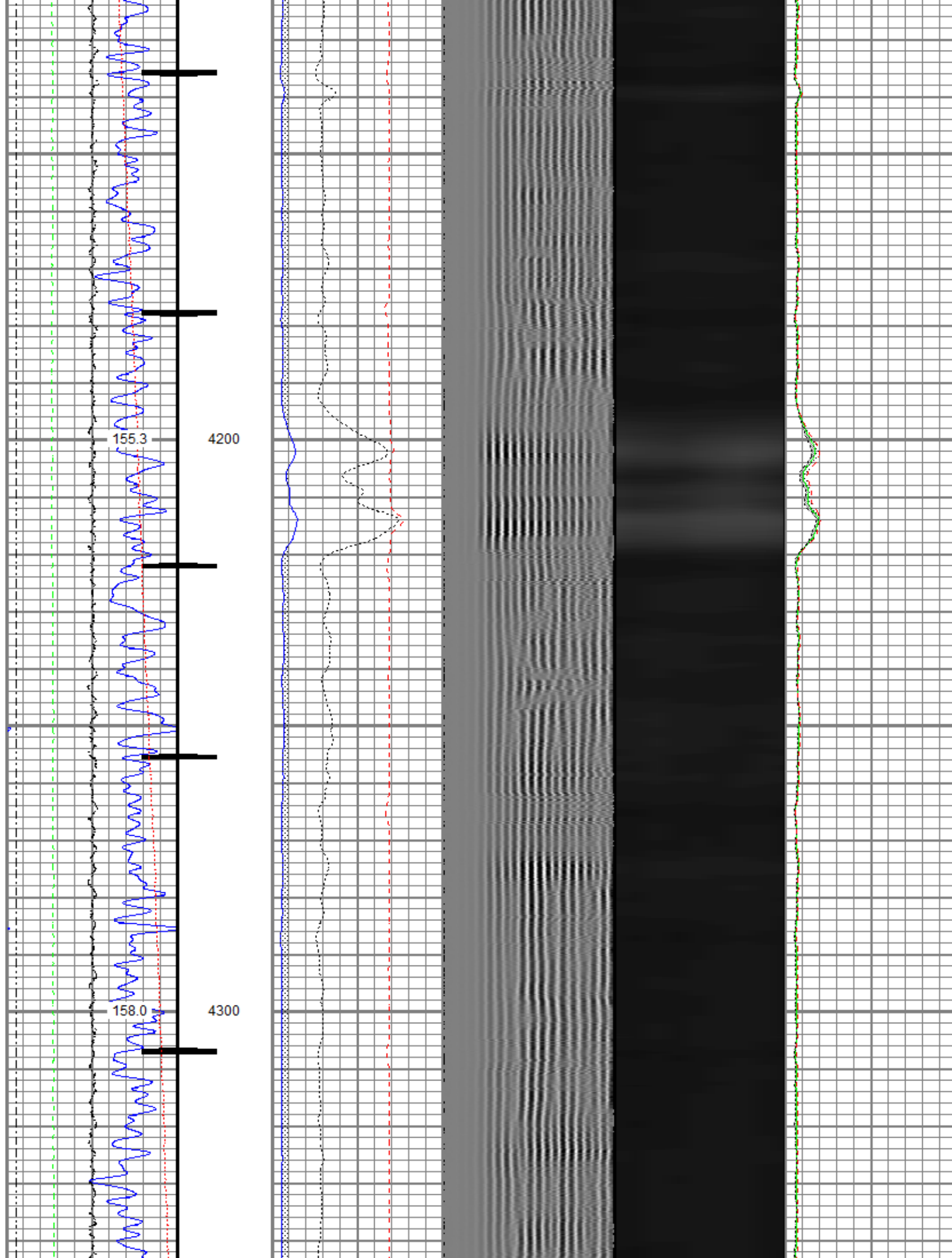


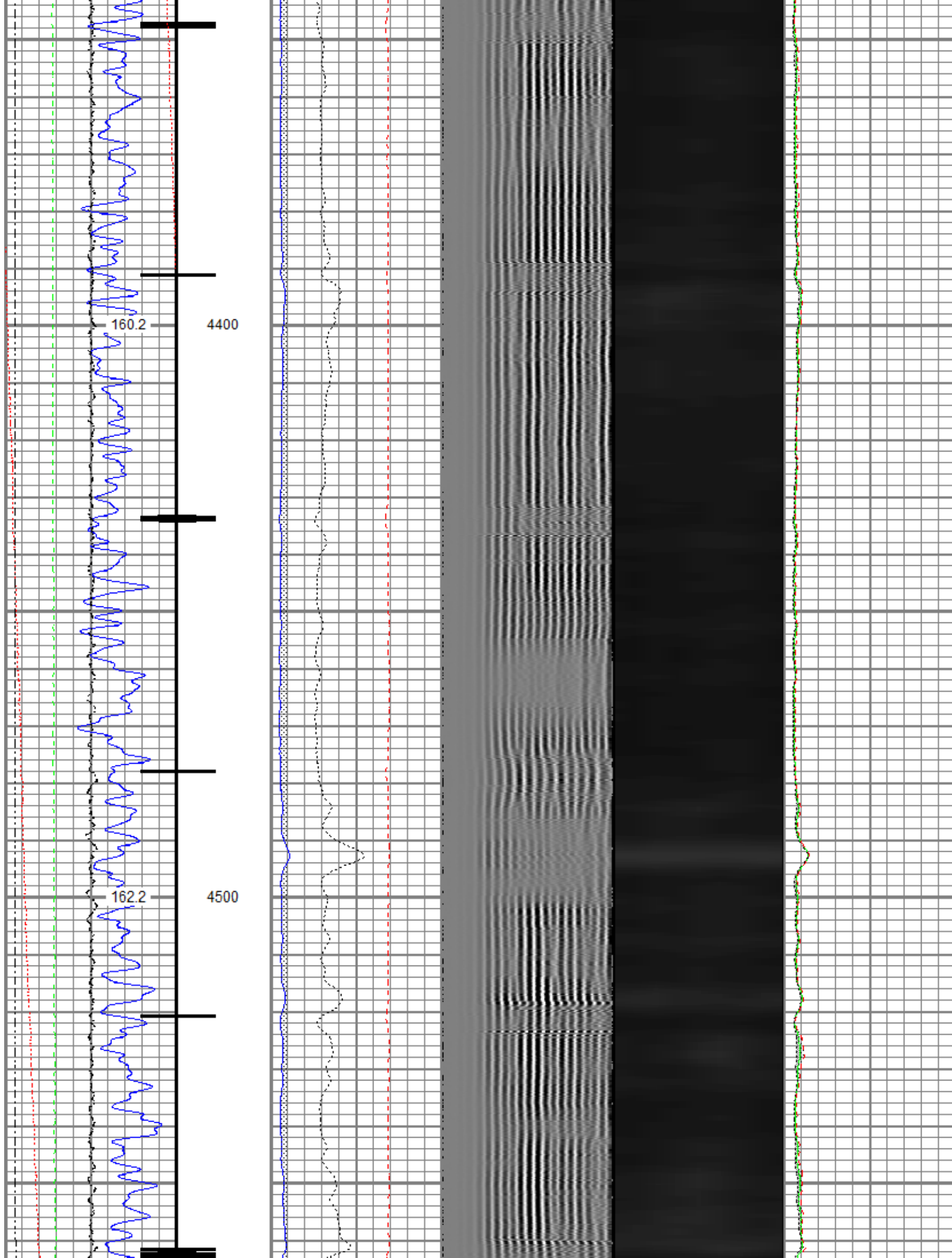


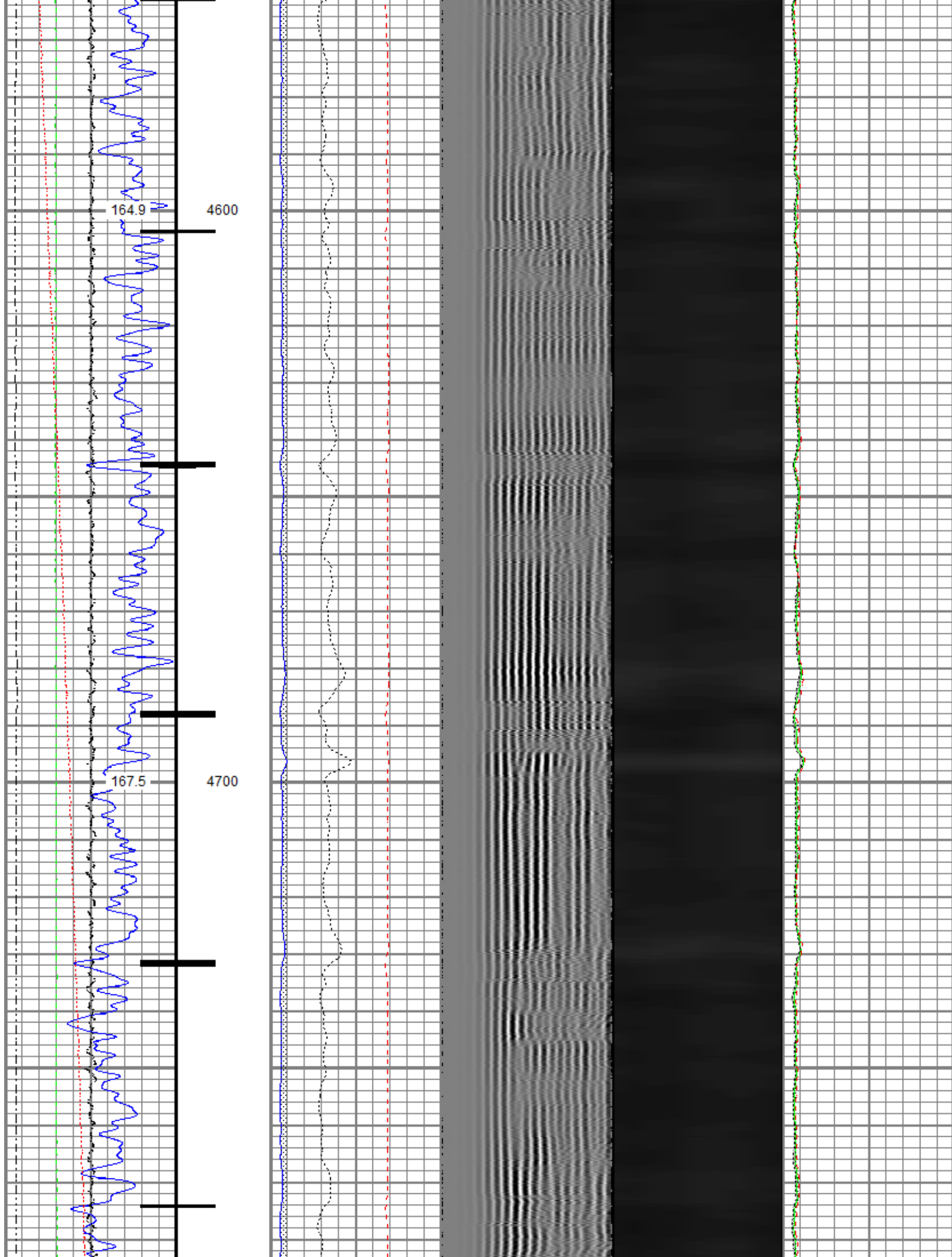


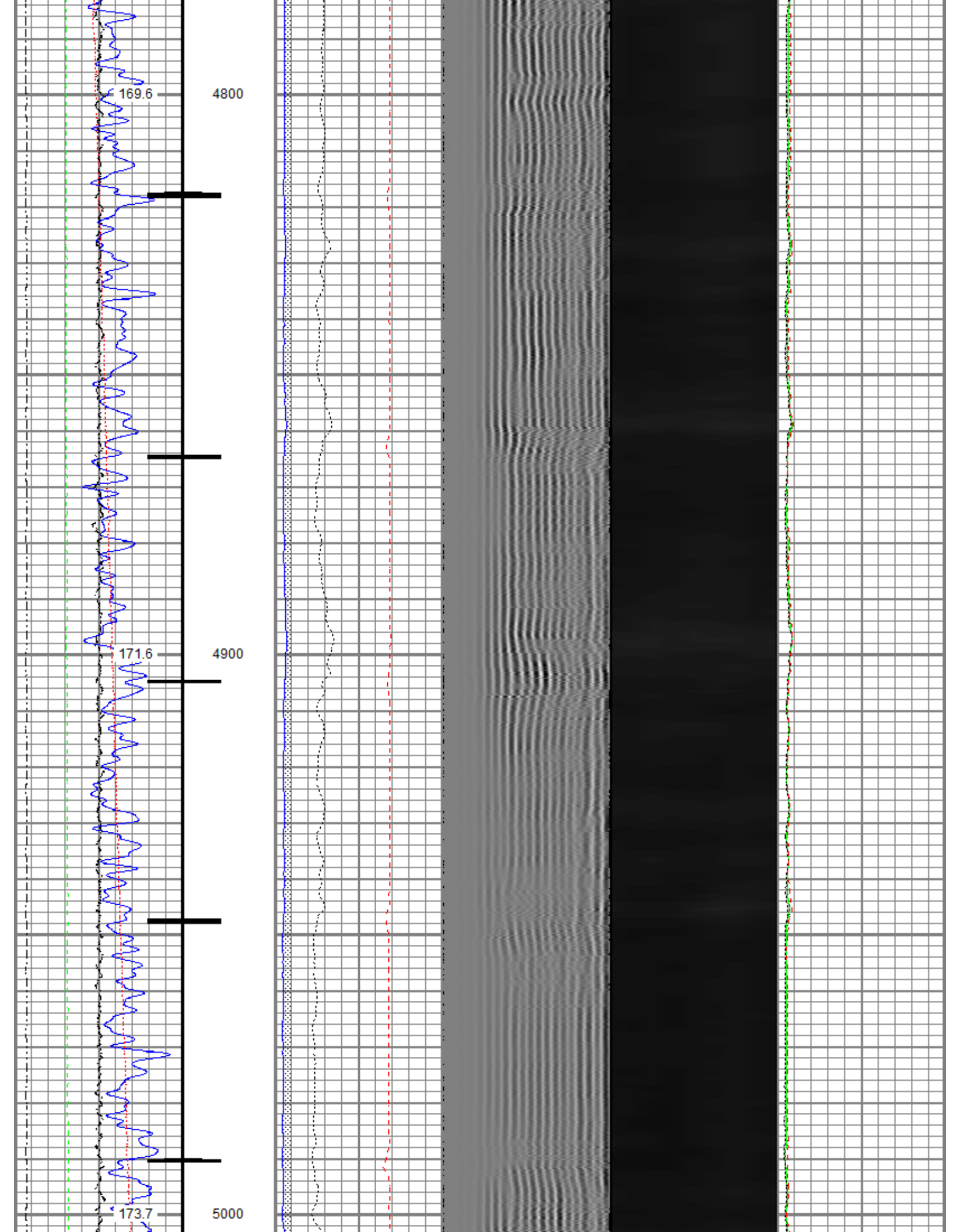


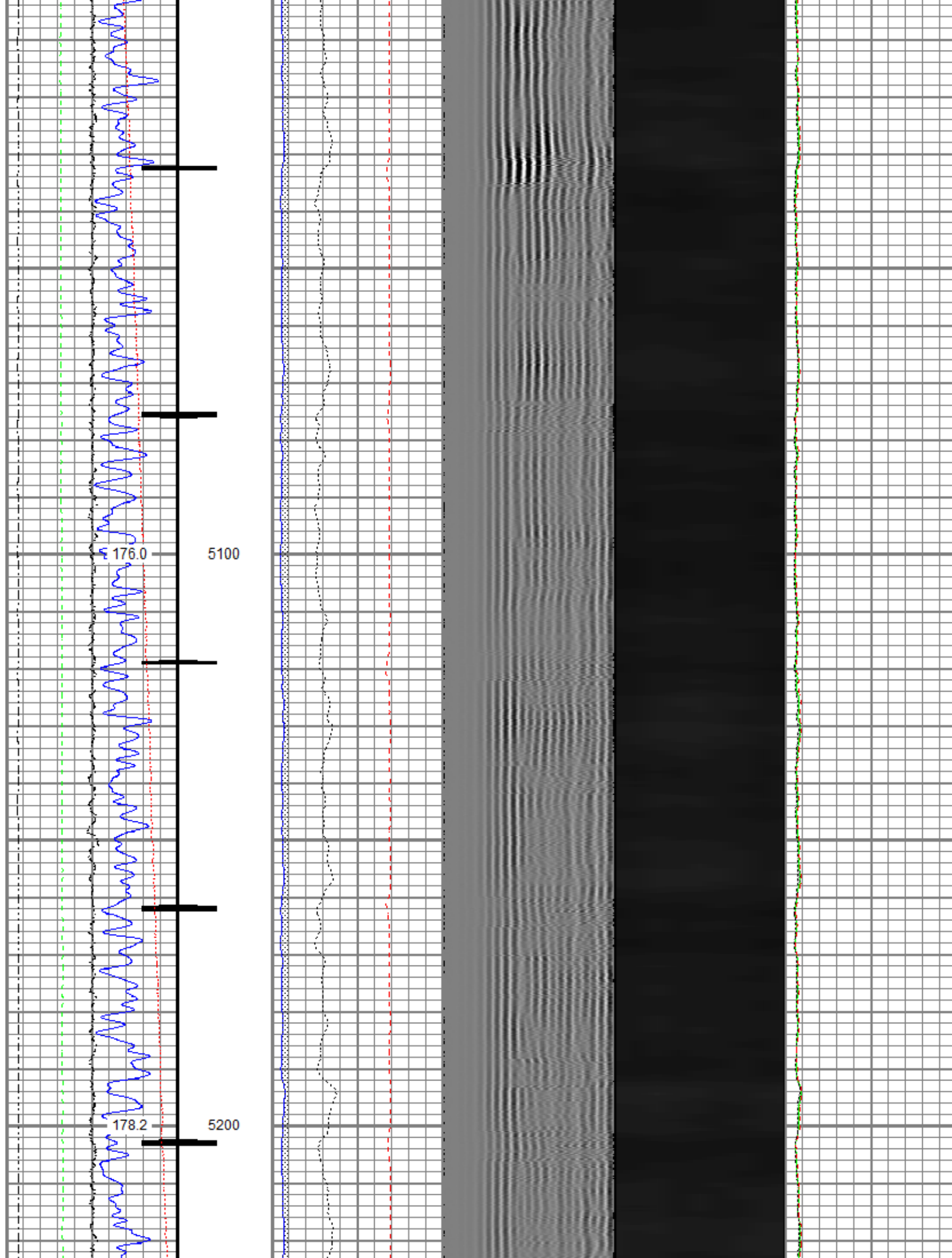


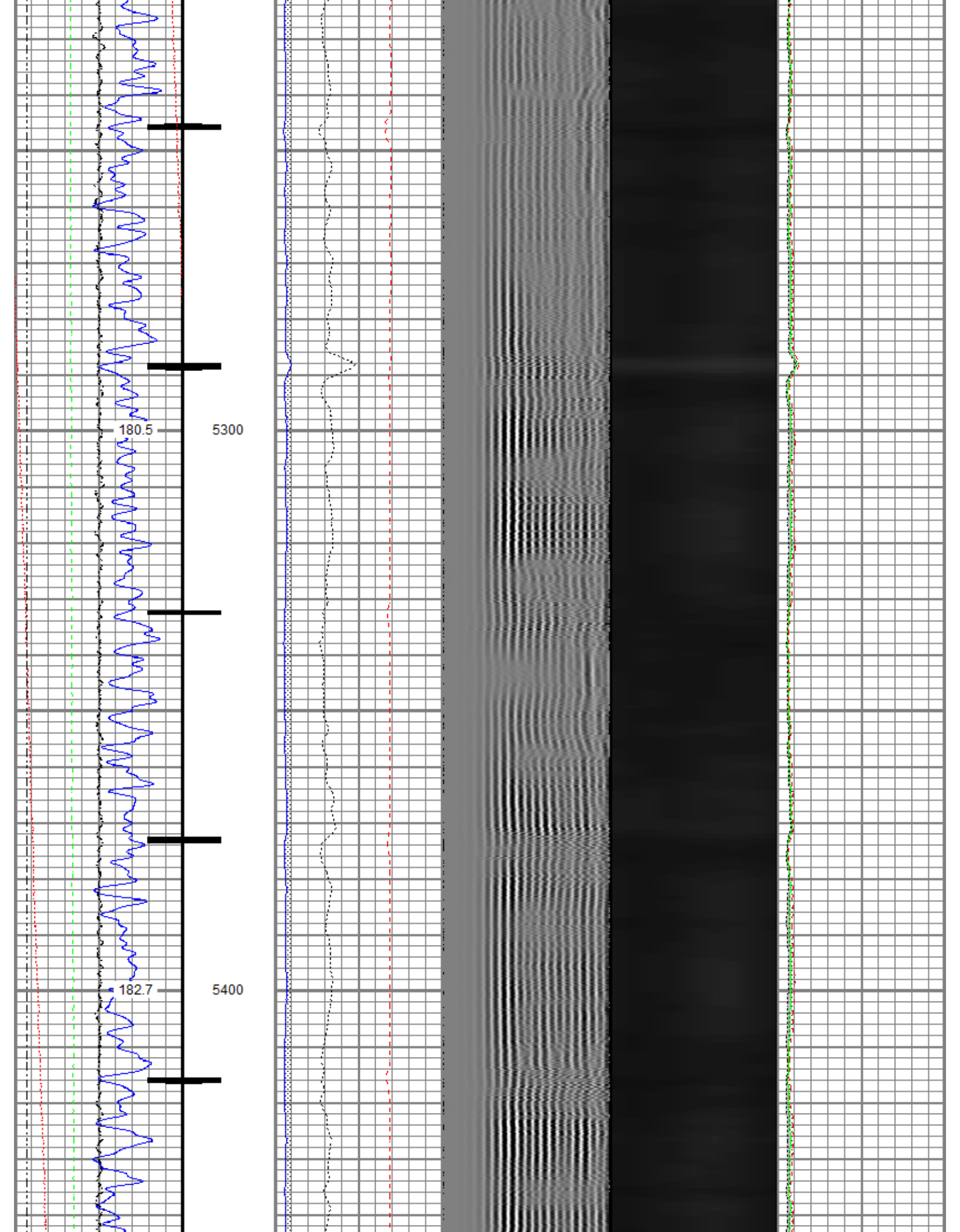


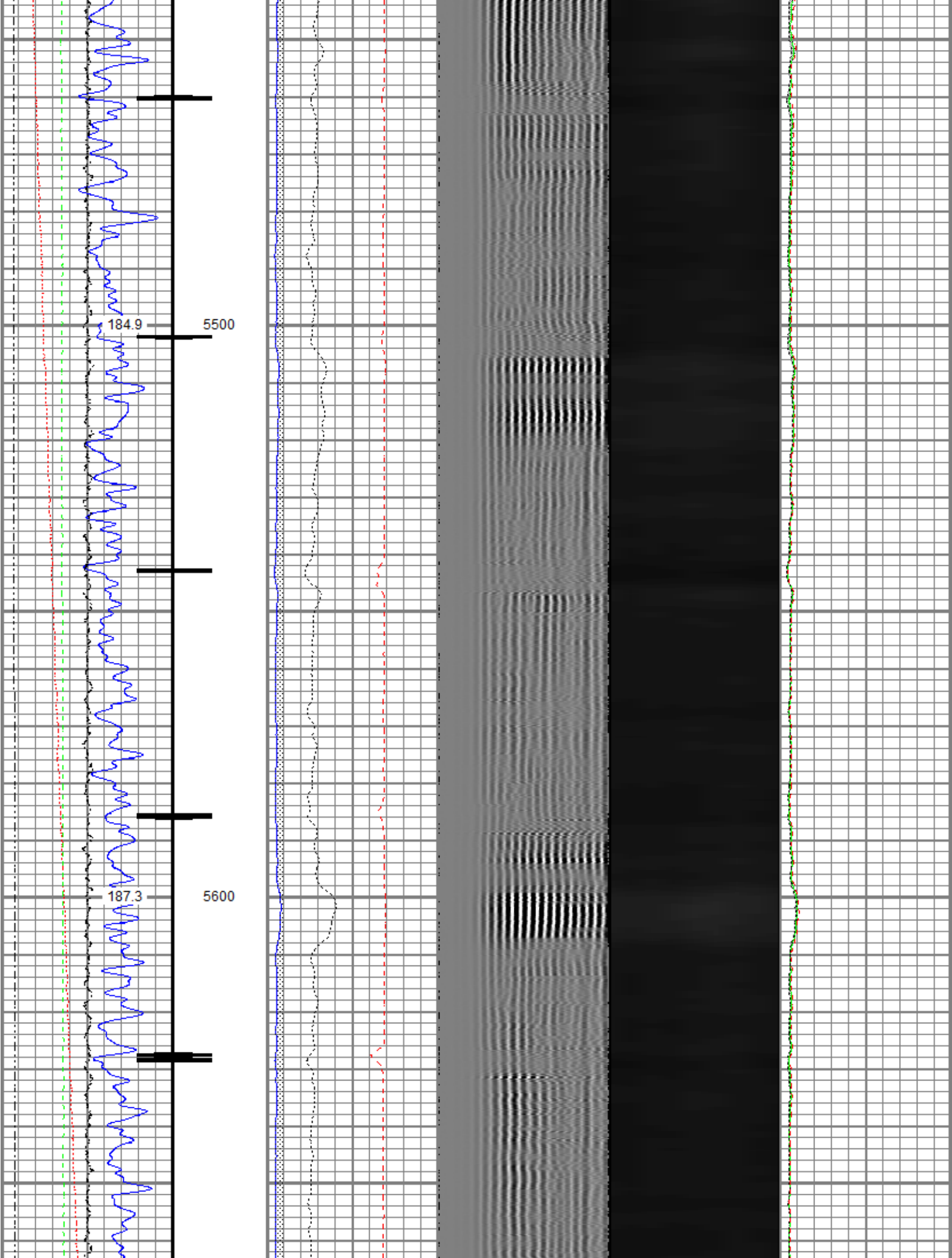


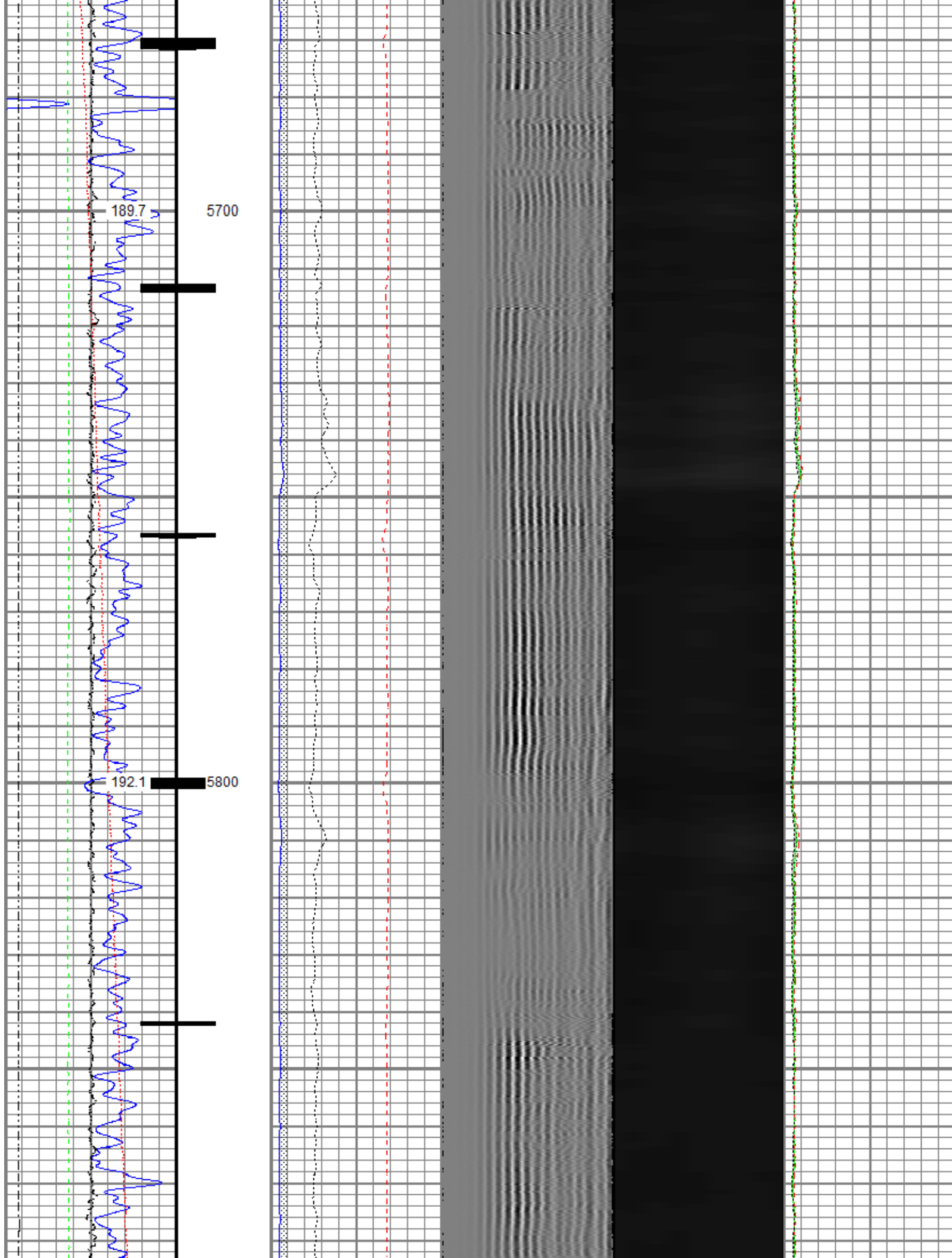


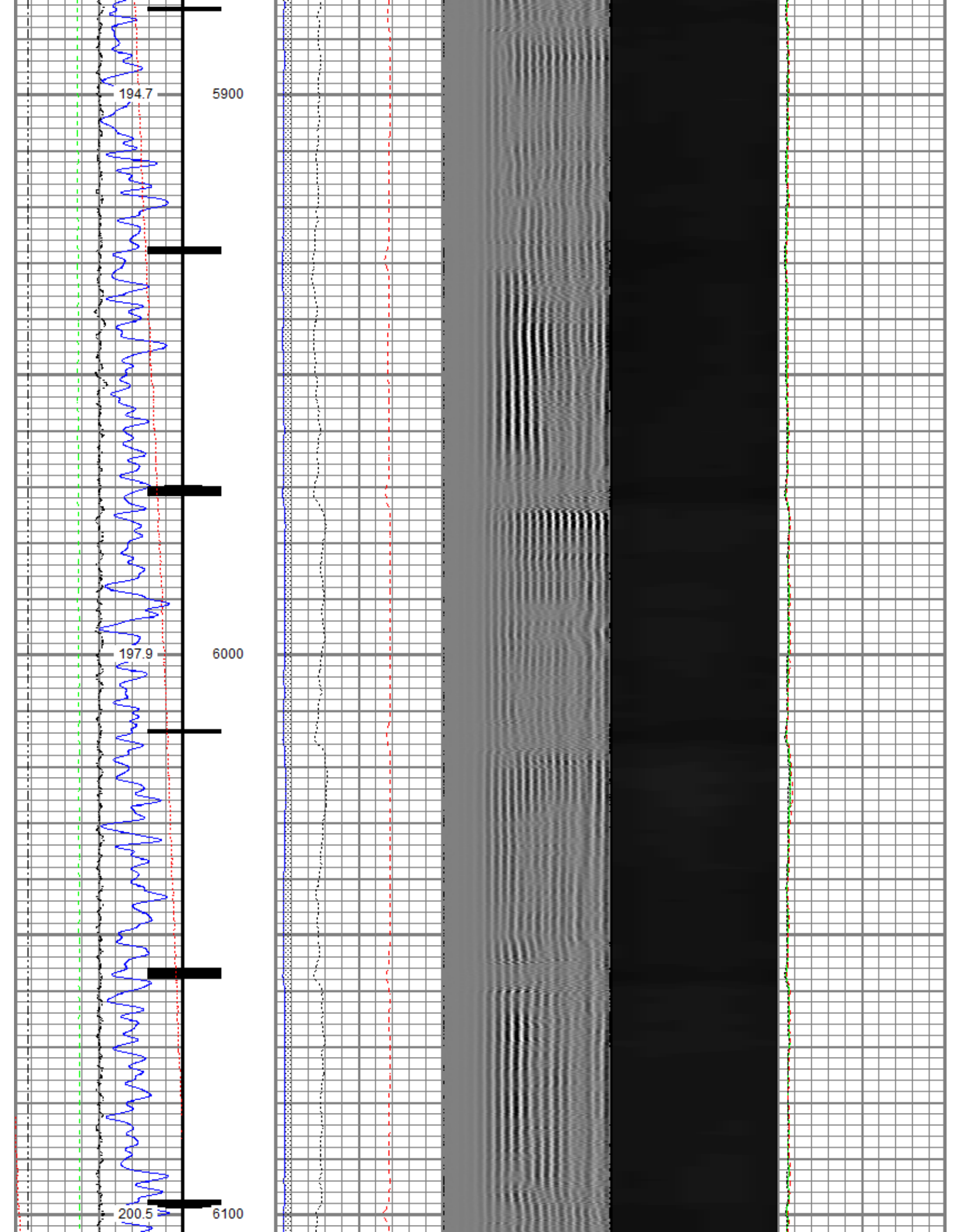


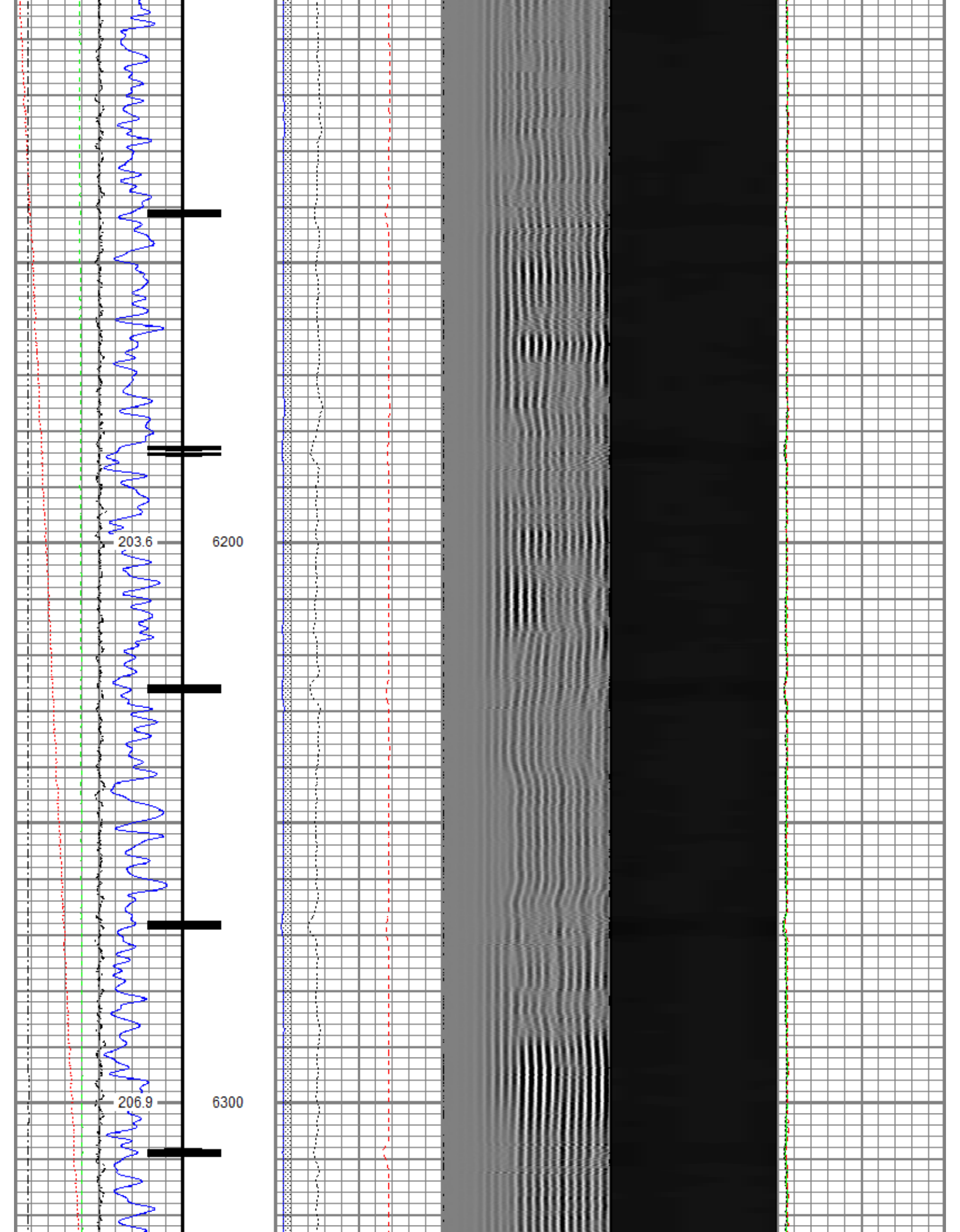


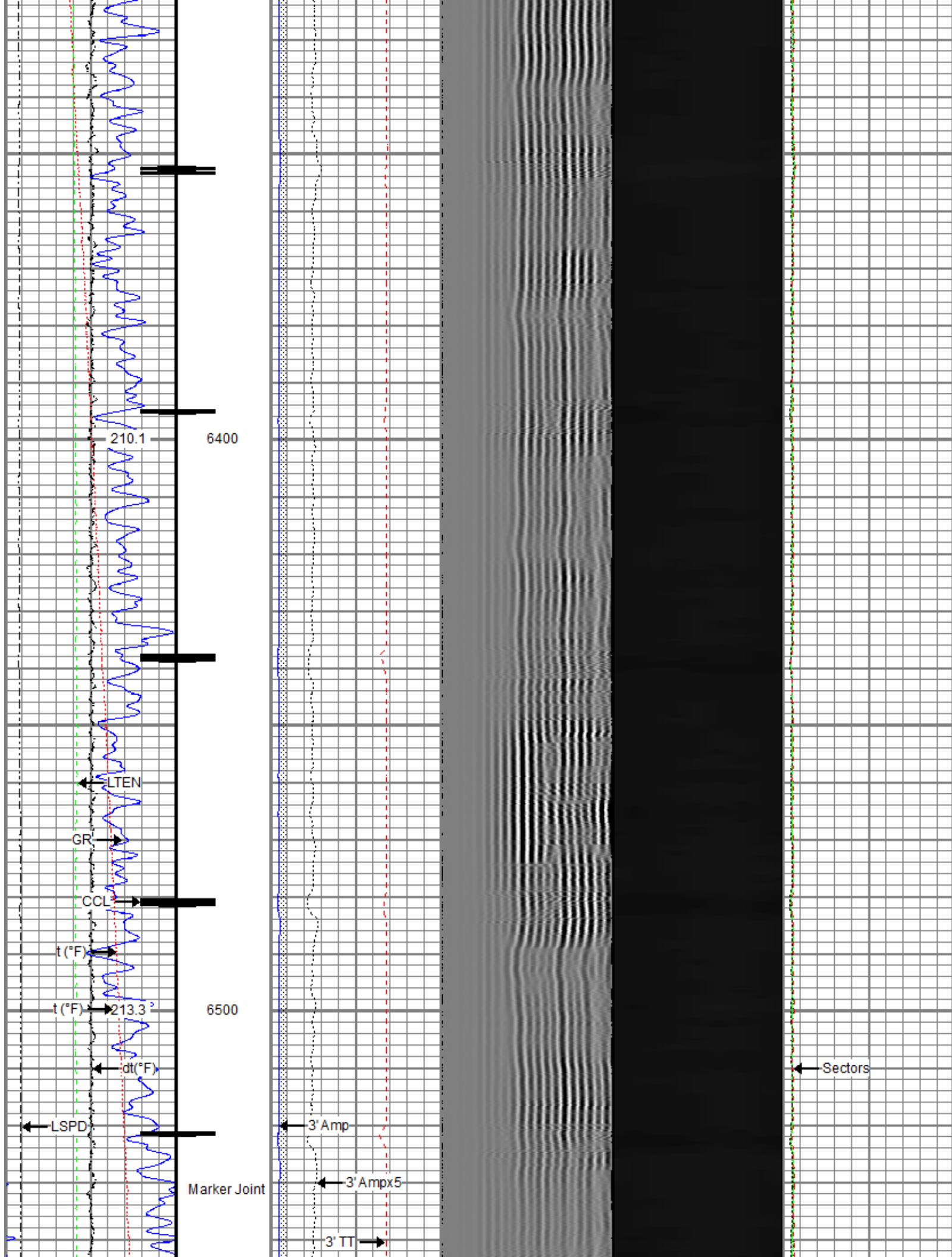


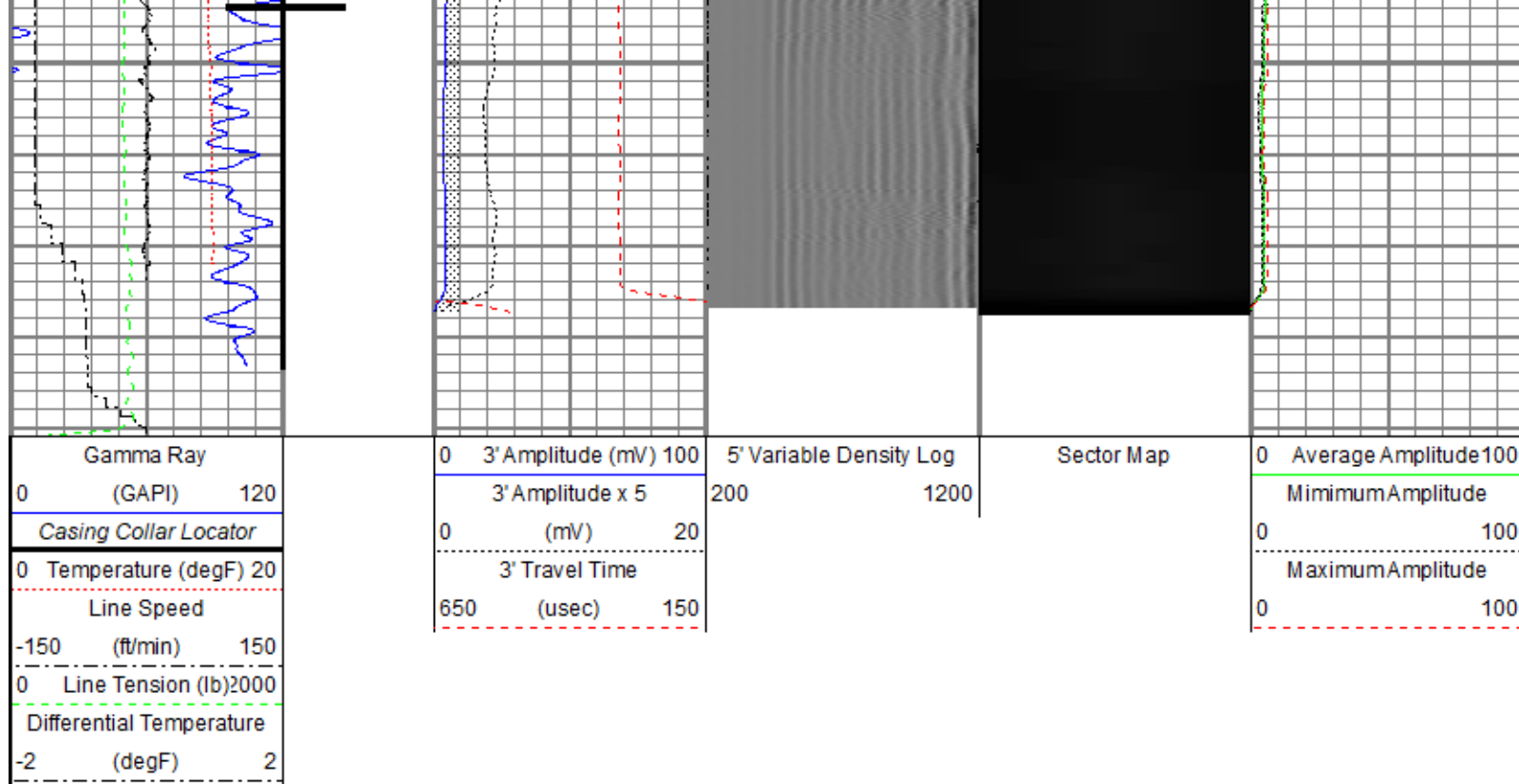








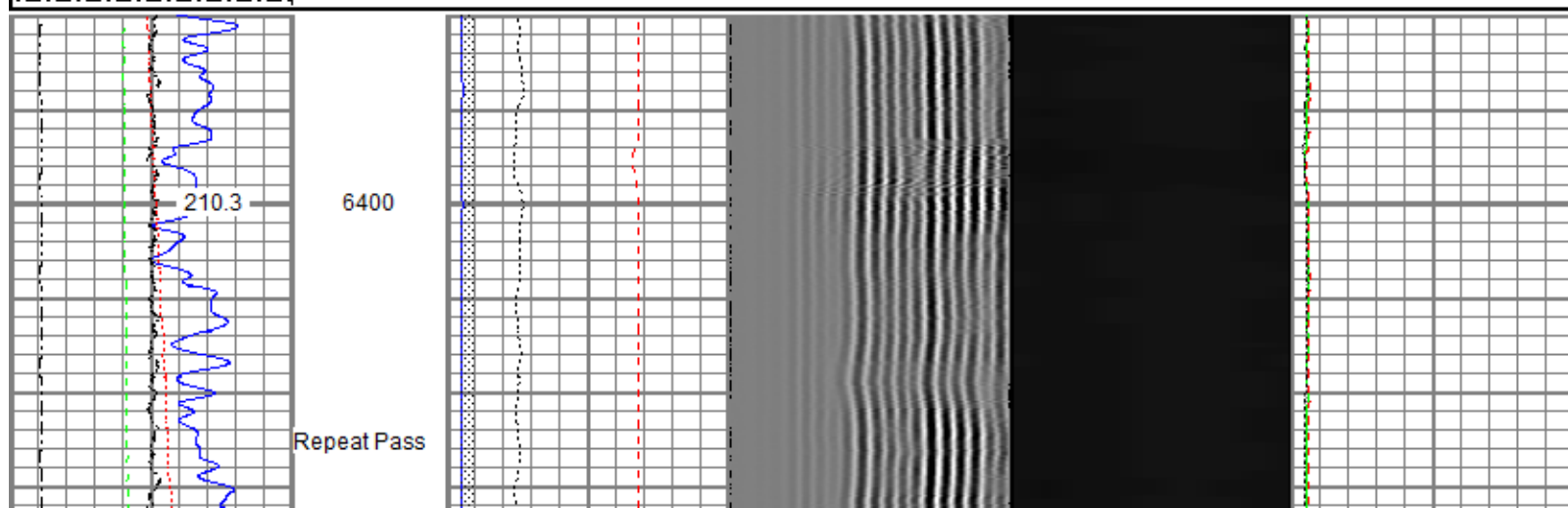
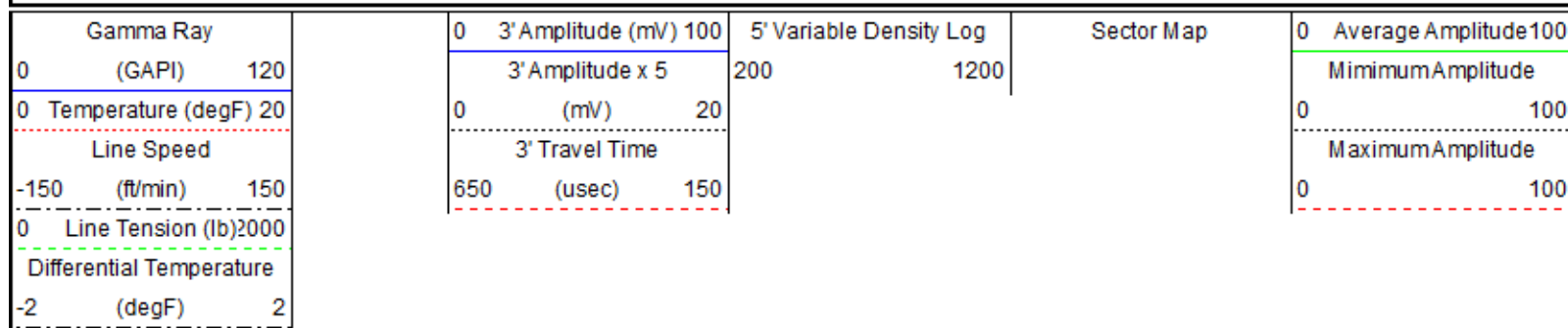


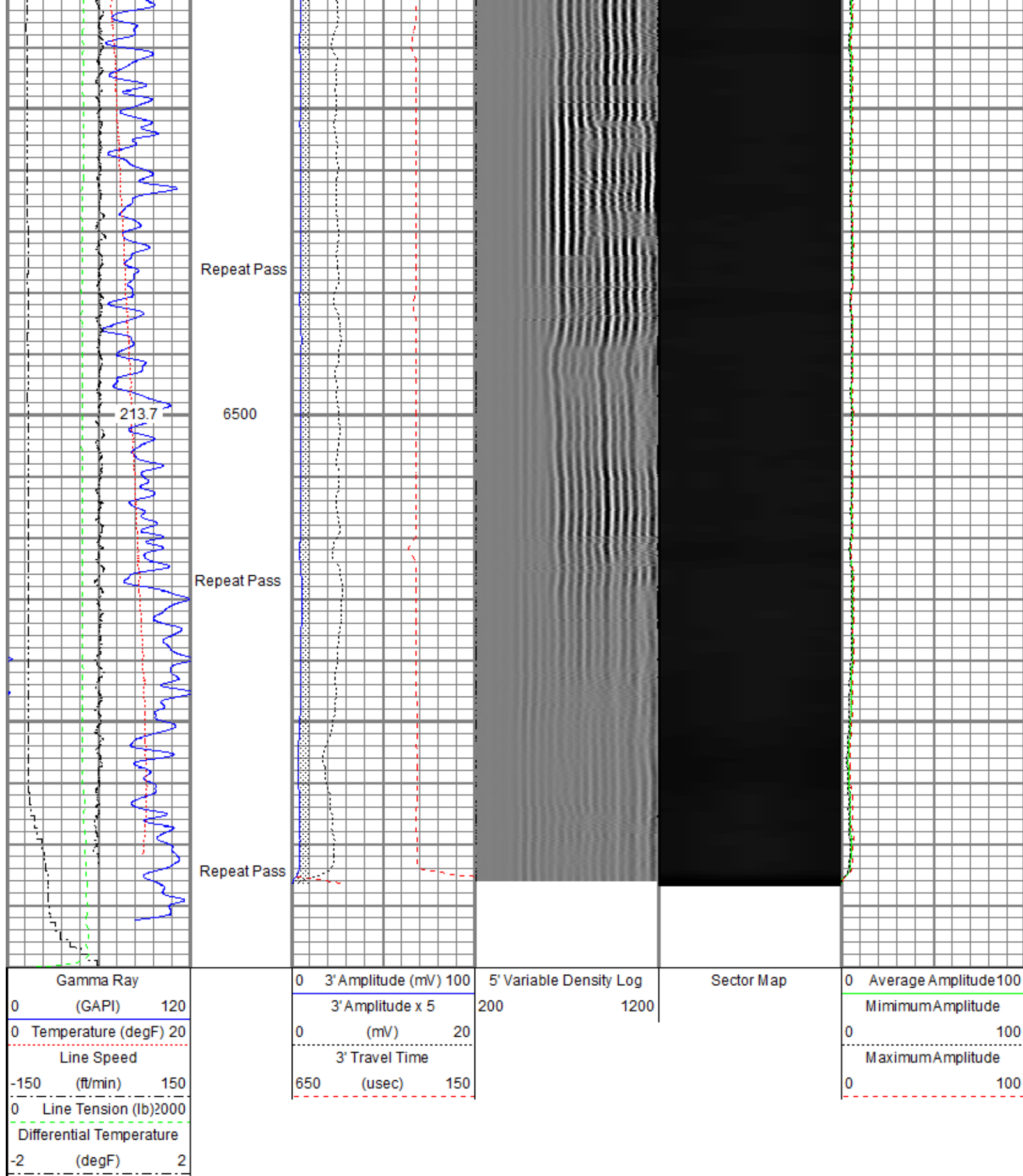


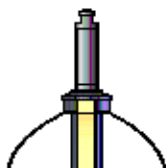
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File 0512346268_anadarko_quarter circle 24-7hz_rbl_07-14-18\processed_0512346268_anadarko_quarter circle 24-7hz_rbl_07-14-18
 Dataset Pathname pass2
 Presentation Format ros_radri
 Dataset Creation Sat Jul 14 11:55:45 2018
 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 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
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					
HEADVOLT	10.56		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 (101001) 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: PROCESSED_0512346268_Anadarko_Quarter Circle 24-7HZ_RBL_07-14-18_2800 PSI.db: field/well/run1/pass4 Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in						

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\0512346268_Anadarko_Quarter Circle 24-7HZ_RBL_07-14-18\PROCESSED_0512346268_Anad
Dataset Pathname	pass4
Dataset Creation	Sat Jul 14 11:59:19 2018

Gamma Ray Calibration Report

Serial Number:	101001	
Tool Model:	2750 6PB	
Performed:	Sun Nov 12 11:25:32 2017	
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:	FW1308-091	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	33.896	ft

Master Calibration, performed Sat Jul 14 06:55:18 2018:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	0.676	0.800	71.921	105.914	0.360
CAL	0.004	0.727				
5'	0.004	0.609	0.800	71.921	117.649	0.299
SUM						
S1	0.004	0.673	0.000	100.000	149.364	-0.562
S2	0.004	0.681	0.000	100.000	147.721	-0.613
S3	0.004	0.685	0.000	100.000	146.892	-0.572
S4	0.004	0.680	0.000	100.000	147.929	-0.655
S5	0.004	0.682	0.000	100.000	147.444	-0.621
S6	0.005	0.687	0.000	100.000	146.579	-0.669
S7	0.004	0.682	0.000	100.000	147.532	-0.616
S8	0.004	0.683	0.000	100.000	147.253	-0.602

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.727	1.000	0.000

Air Zero Calibration, performed Sat Jul 14 06:55:43 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero			Offset
3'	0.004		0.000			-0.000
5'	0.004		0.000			-0.000
SUM						
S1	0.004		0.000			0.000
S2	0.004		0.000			-0.000
S3	0.004		0.000			0.000
S4	0.004		0.000			0.000
S5	0.004		0.000			0.000
S6	0.004		0.000			0.000
S7	0.004		0.000			0.000
S8	0.005		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	Quarter Circle 24-7HZ
Field	Wattenberg
County	Weld
State	Colorado