



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr-McGee Oil & Gas Onshore, L.P.					
Well		Waterfront 7-34X					
Field		Wattenberg					
County		Weld					
State		Colorado					
Location:		API # : 05-123-25574					
SEC 34 TWP 3N RGE 68W		Other Services Gauge Ring CIBP					
Permanent Datum		Ground Level		Elevation		4939'	
Log Measured From		Kelly Bushing		15 FT			
Drilling Measured From		Kelly Bushing					
Date		22-DEC-2016					
Run Number		THREE					
Depth Driller		7515 FT					
Depth Logger		7043 FT					
Bottom Logged Interval		7038 FT					
Top Log Interval		Surface					
Open Hole Size		---					
Type Fluid		Water					
Density / Viscosity		8.34 lb/gal					
Max. Recorded Temp.		220 °F					
Estimated Cement Top		1918 FT					
Time Well Ready		ROA					
Time Logger on Bottom		7.46					
Equipment Number		HD-0324					
Location		Fort Lupton, CO					
Recorded By		C.Bryan					
Witnessed By		Luis Morales					
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt (lb/ft)		Grade	
Surface Casing		8 5/8		24		J-55	
Intermediate #1		4 1/2		11.6		I-80	
Intermediate #2						Surface	
Liner						Top	
						Bottom	
						876 FT	
						7515 FT	

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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 Marker Joint Top at 6962 FT
Adjusted Log -7 FT to correlate with Marker Joint Top
Log ran from 7043 FT to surface
Log ran with 0 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

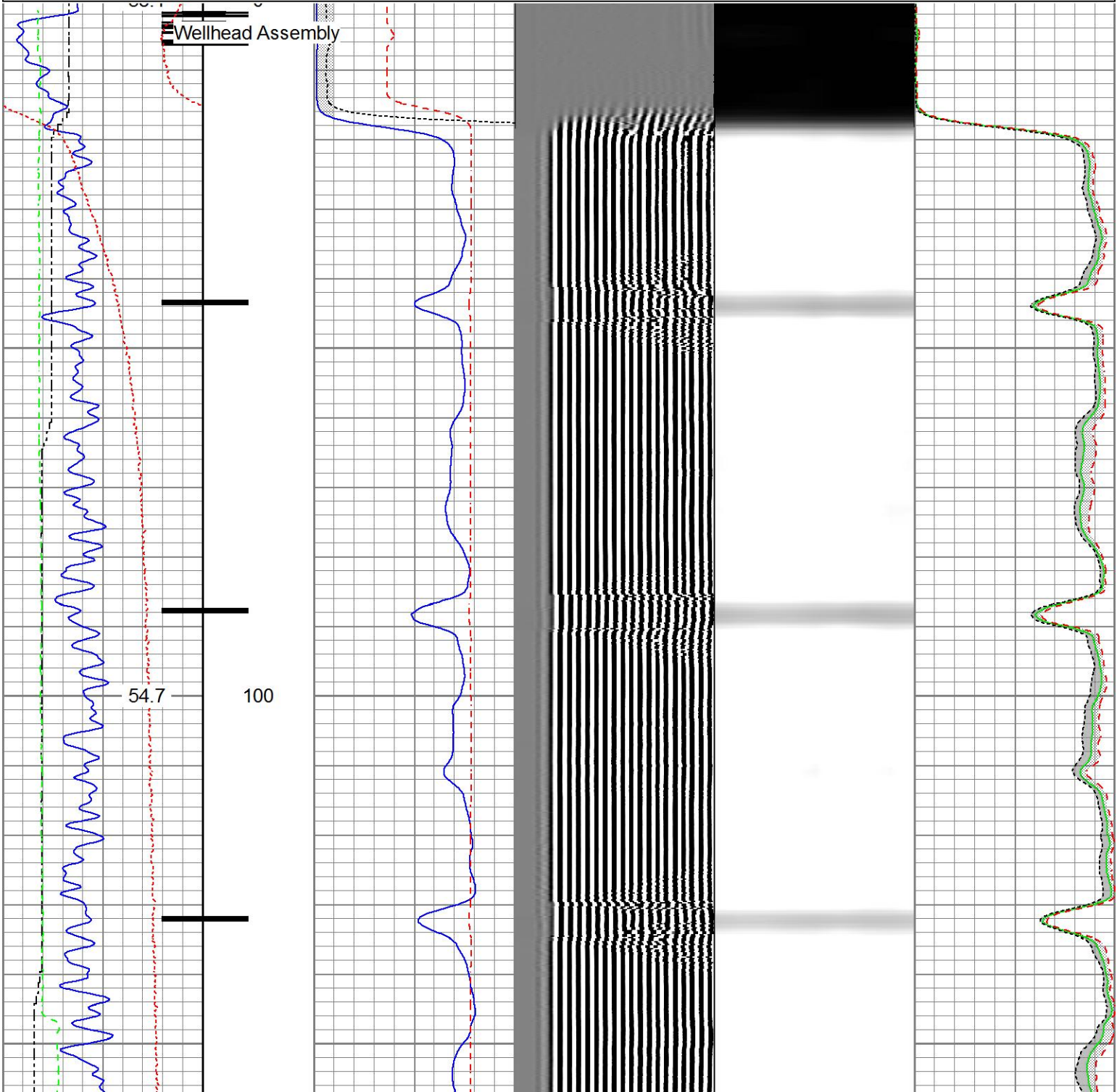
Thank you for choosing Reliance Oilfield Services, LLC!!

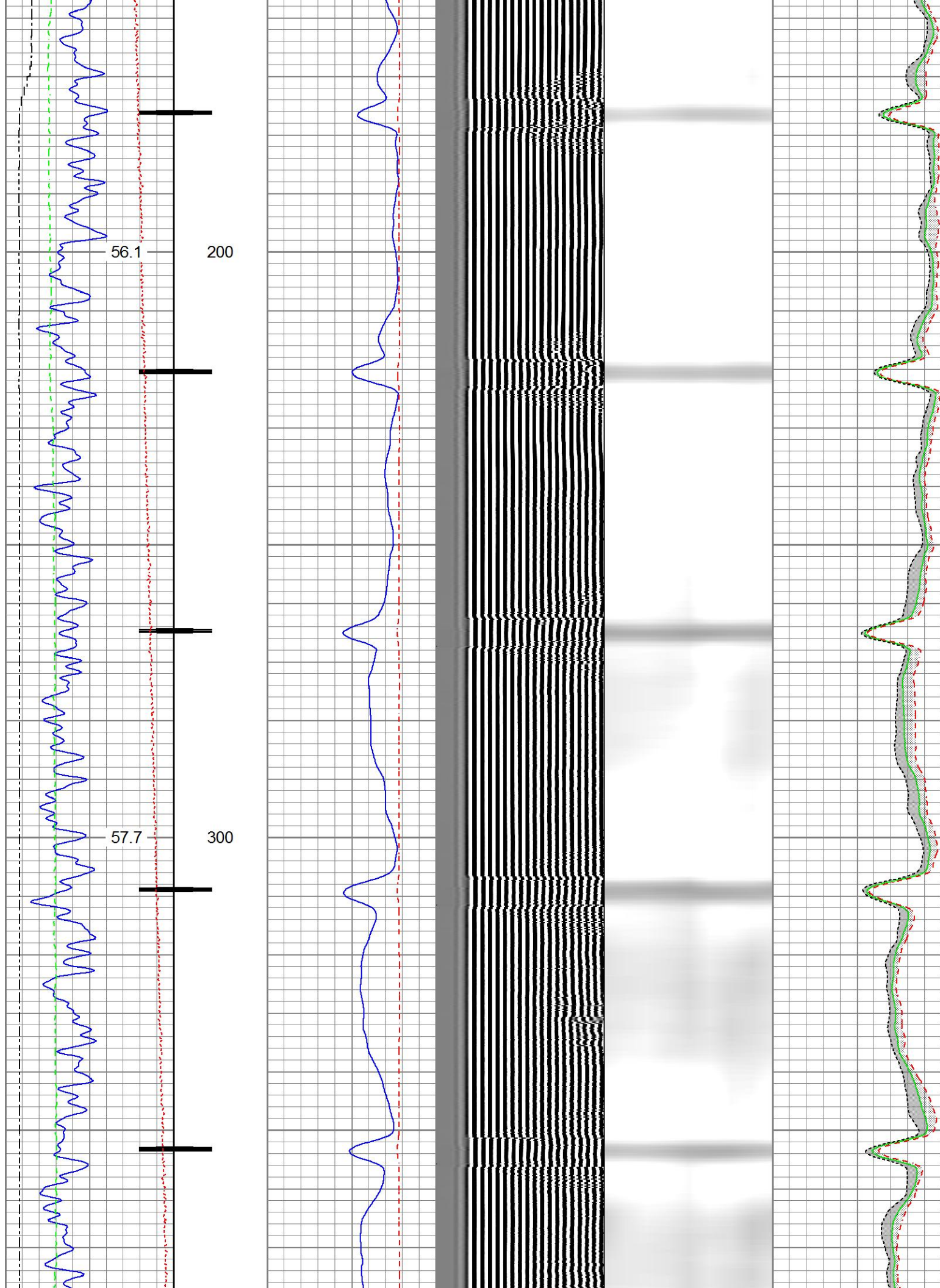


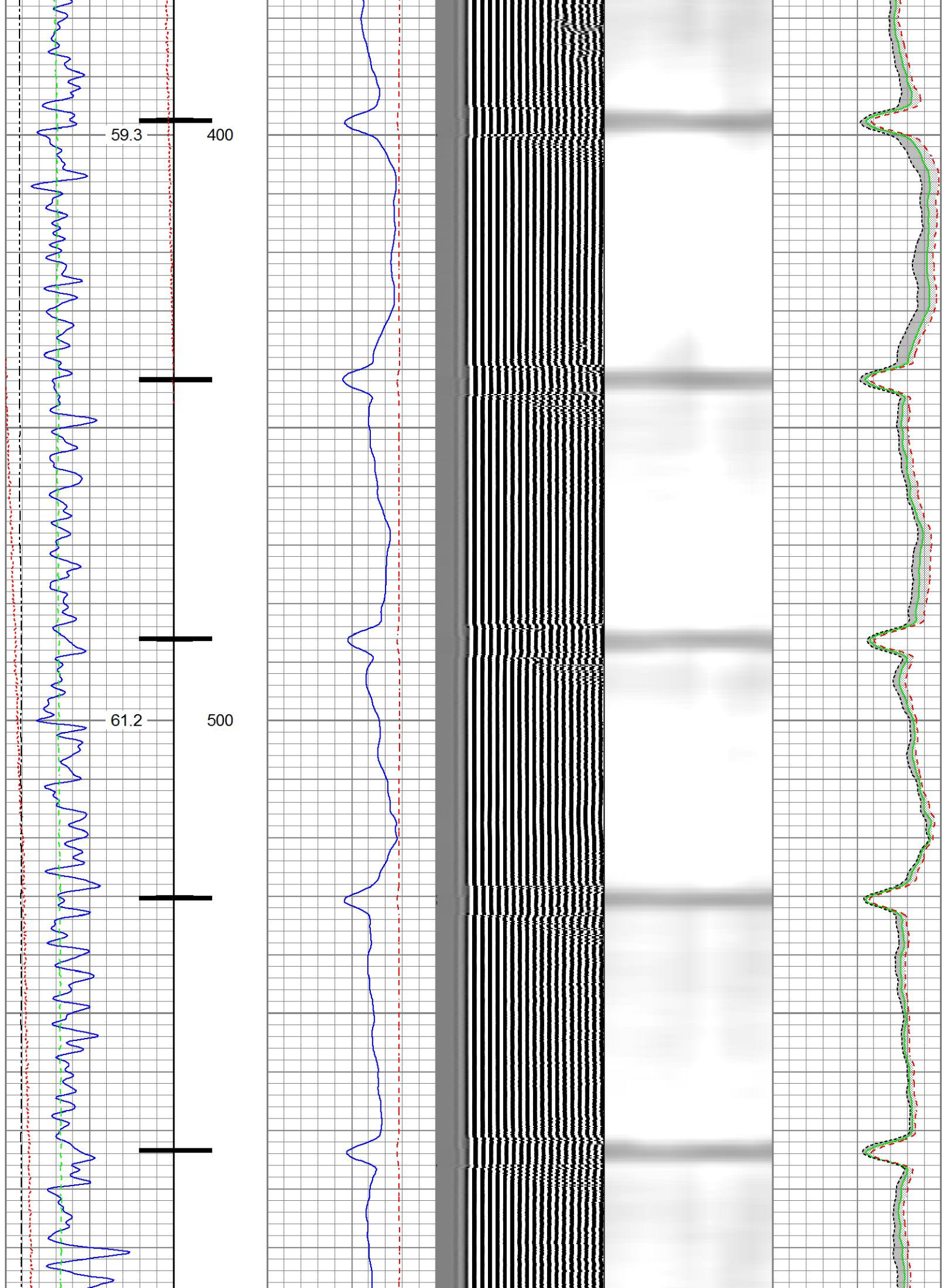
Main Pass

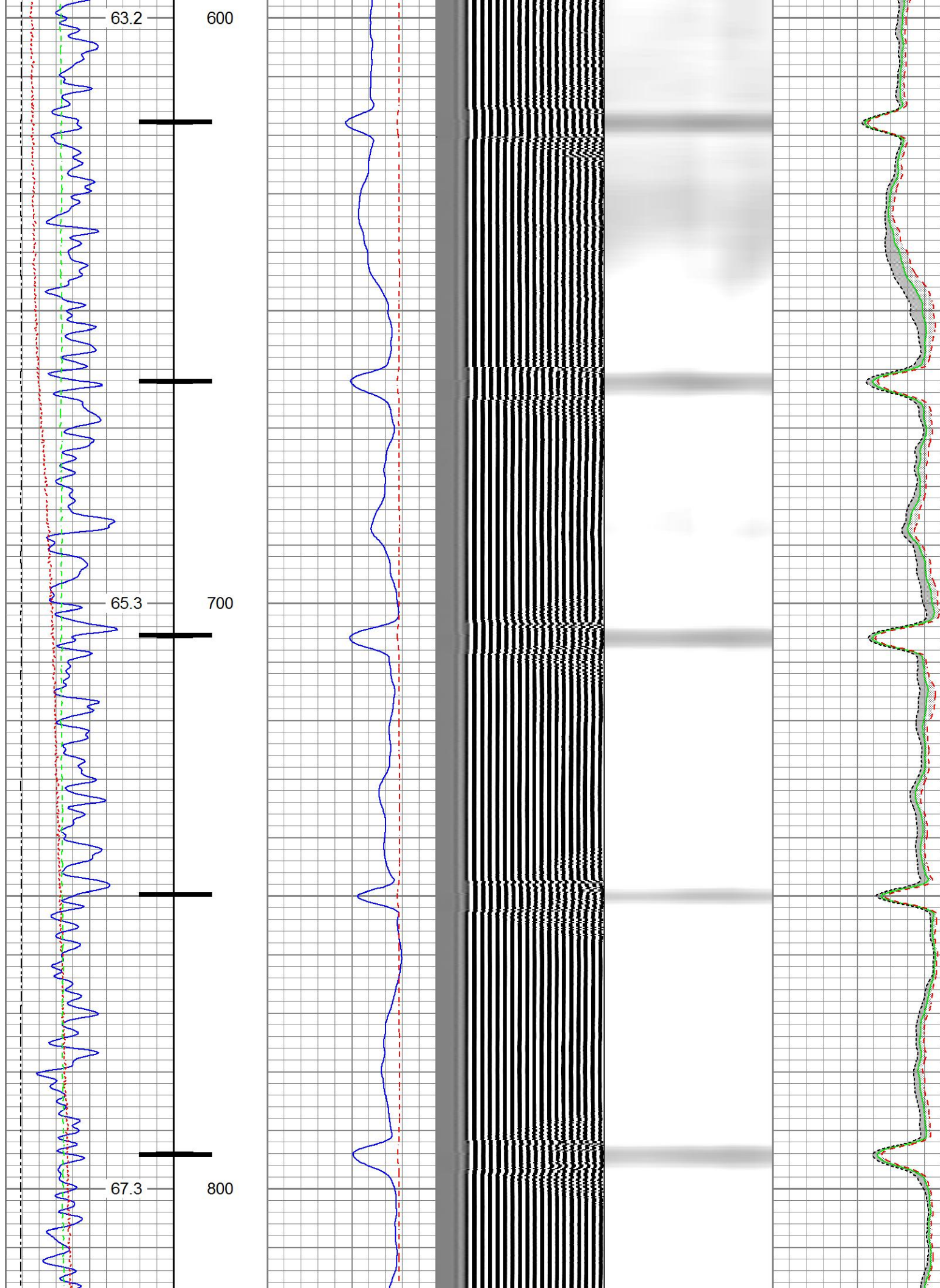
Recorded with 0 PSI Surface Induced Pressure

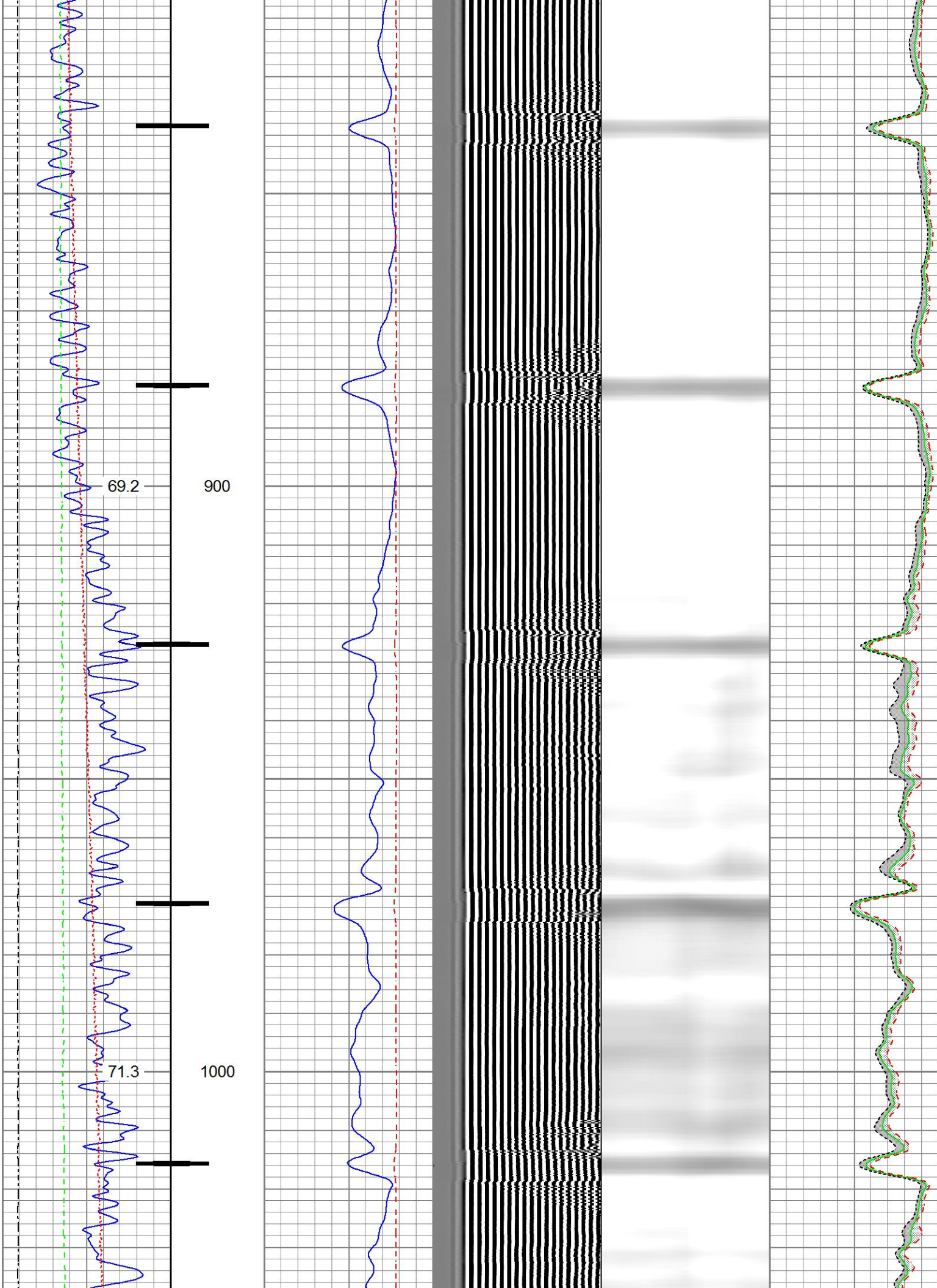
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

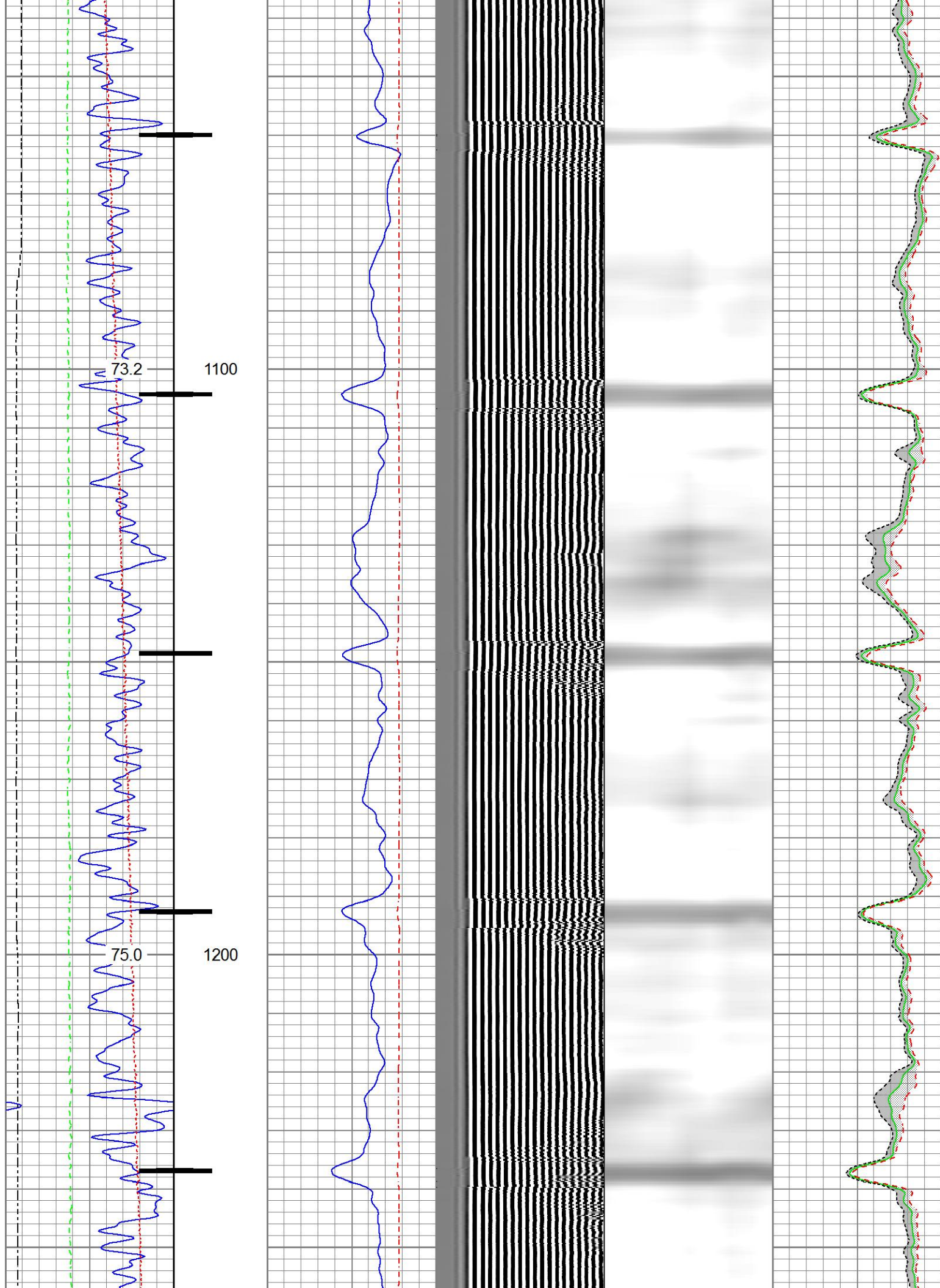


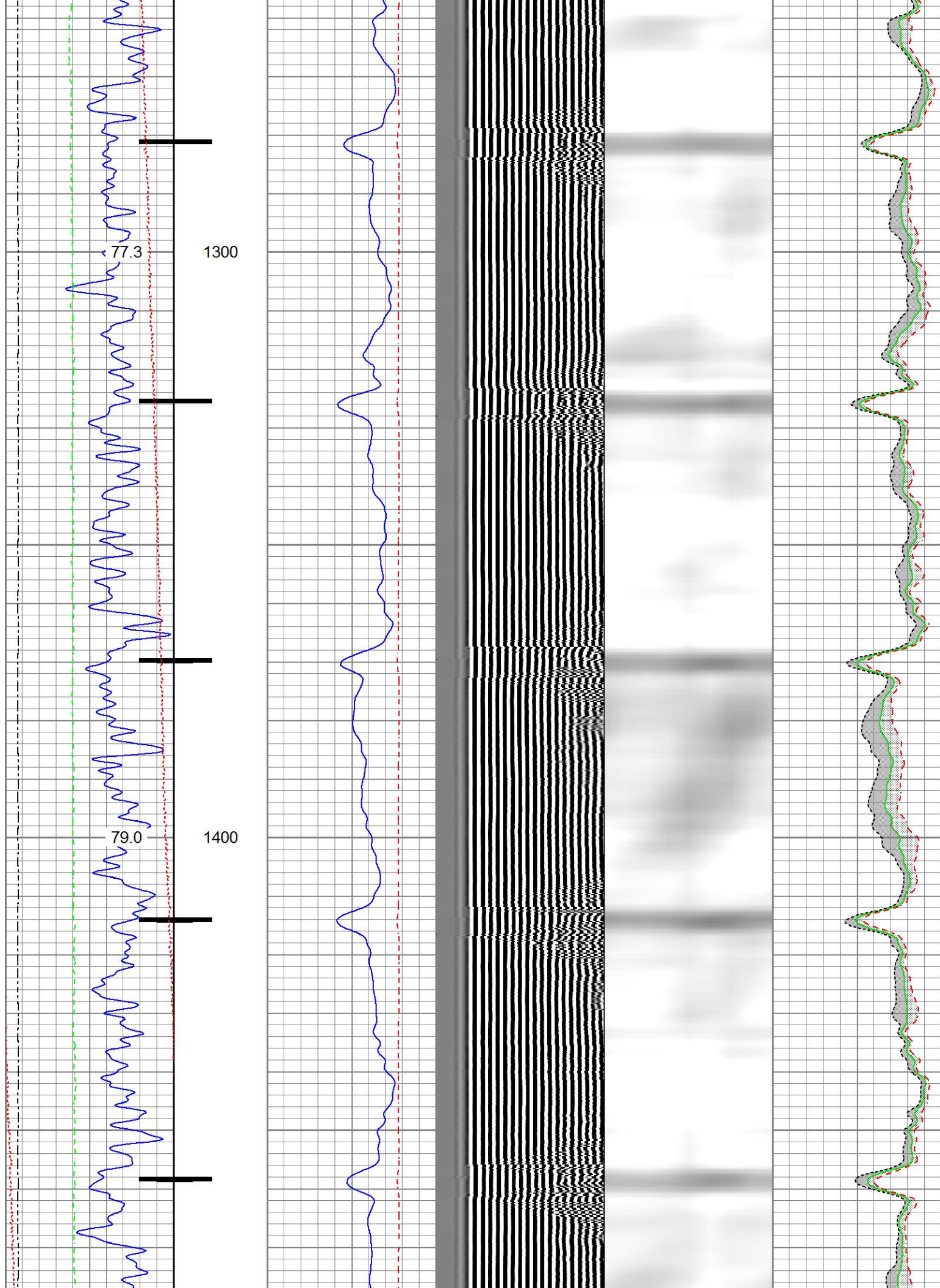


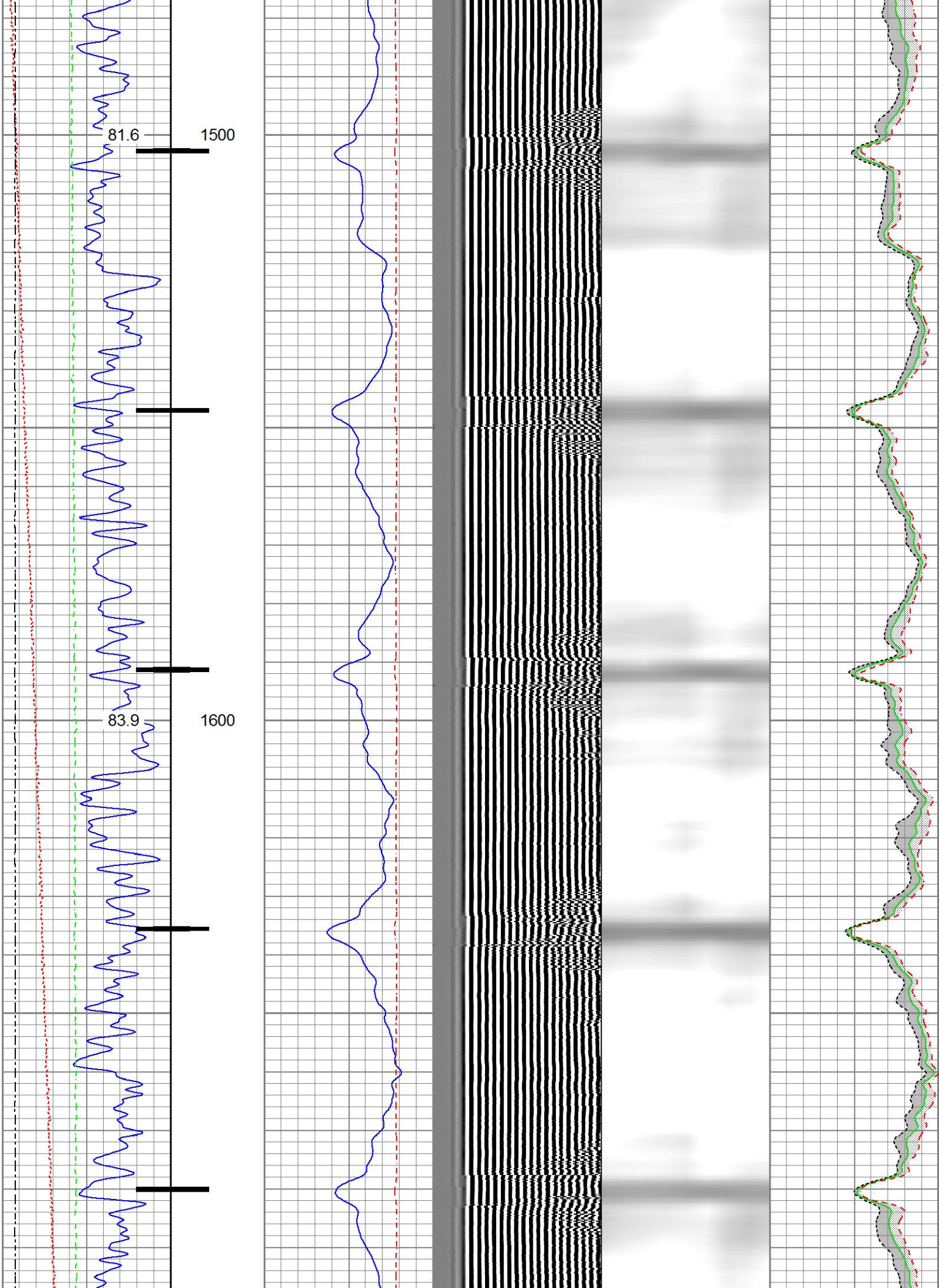


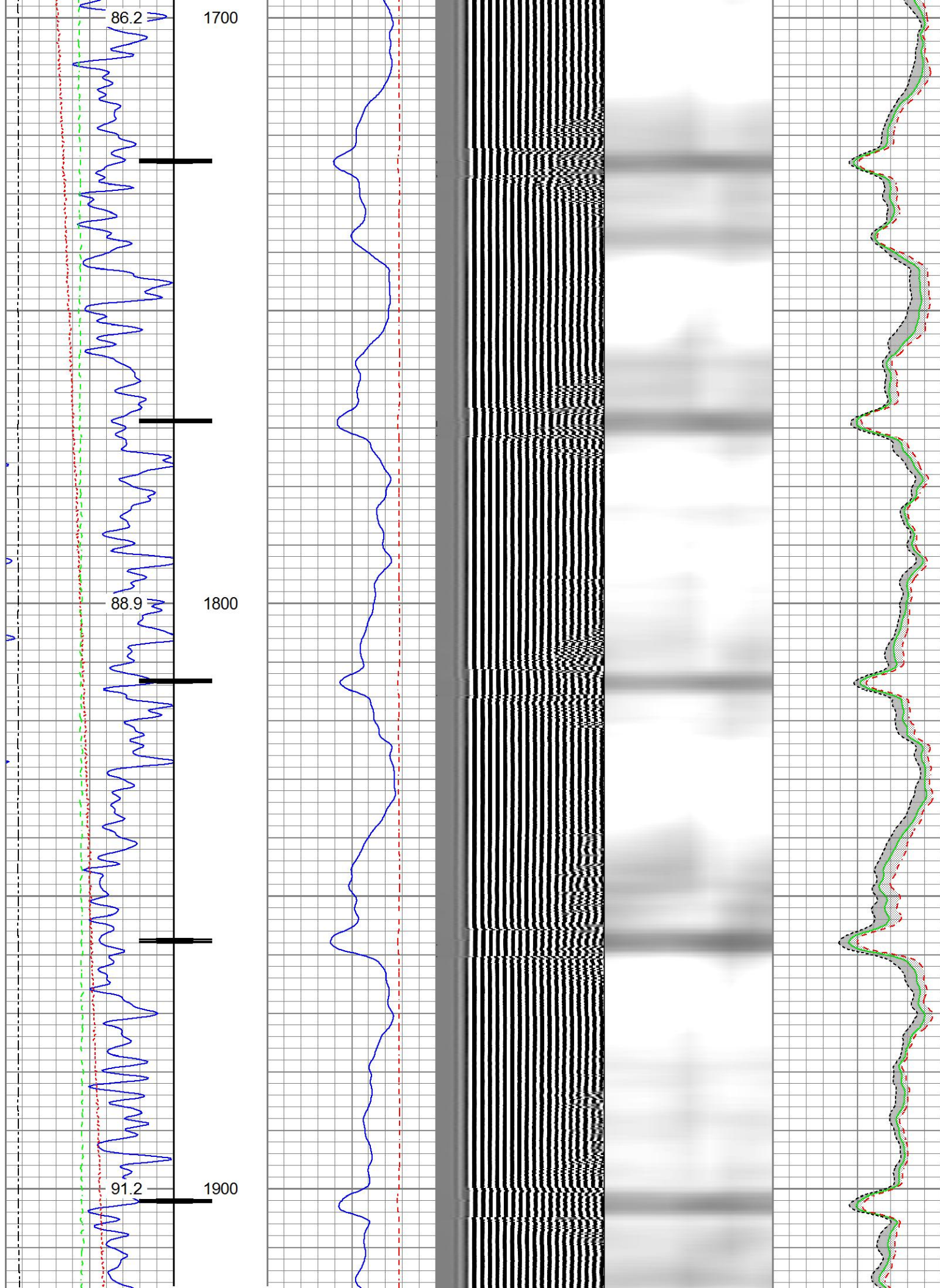


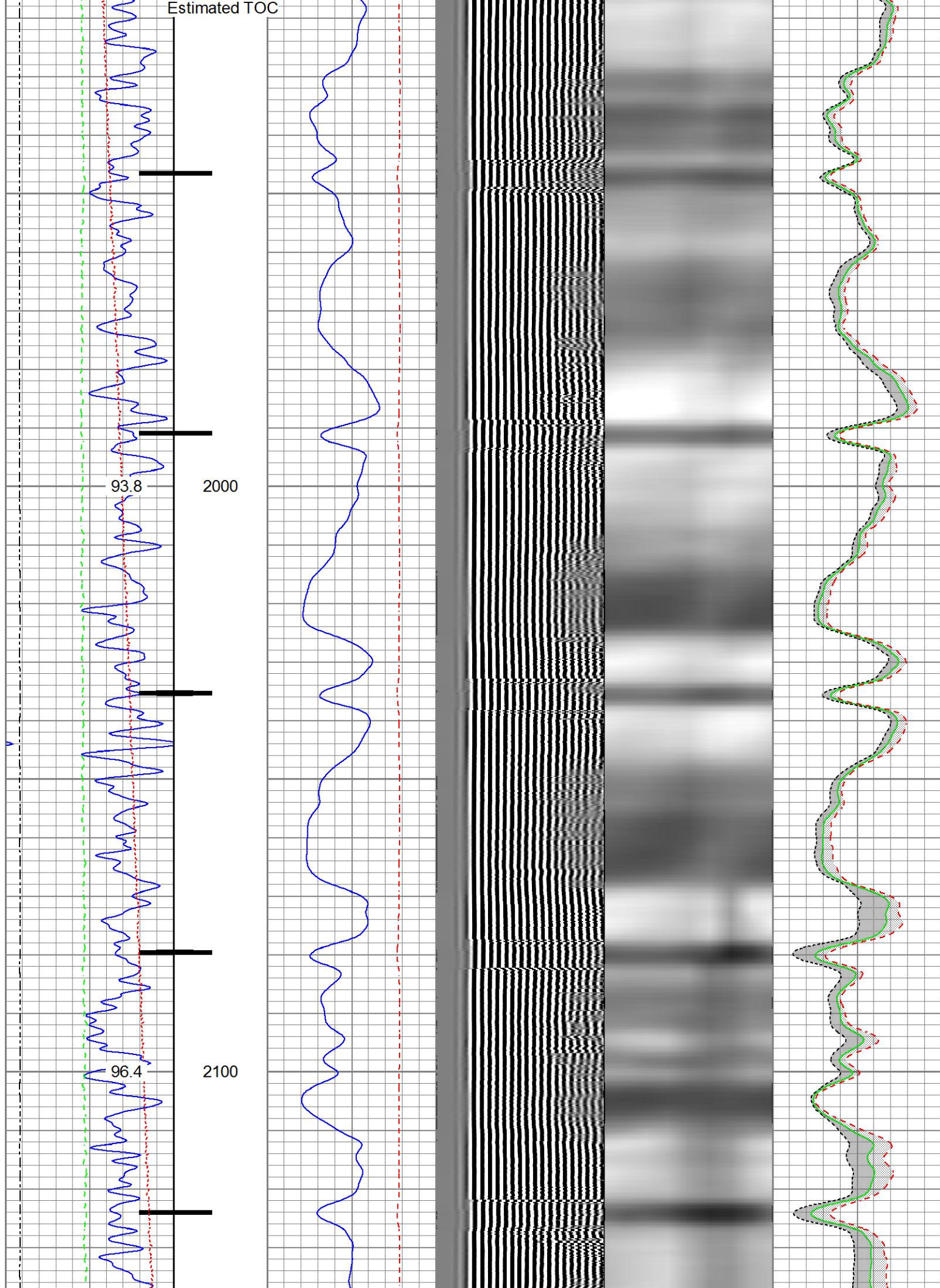


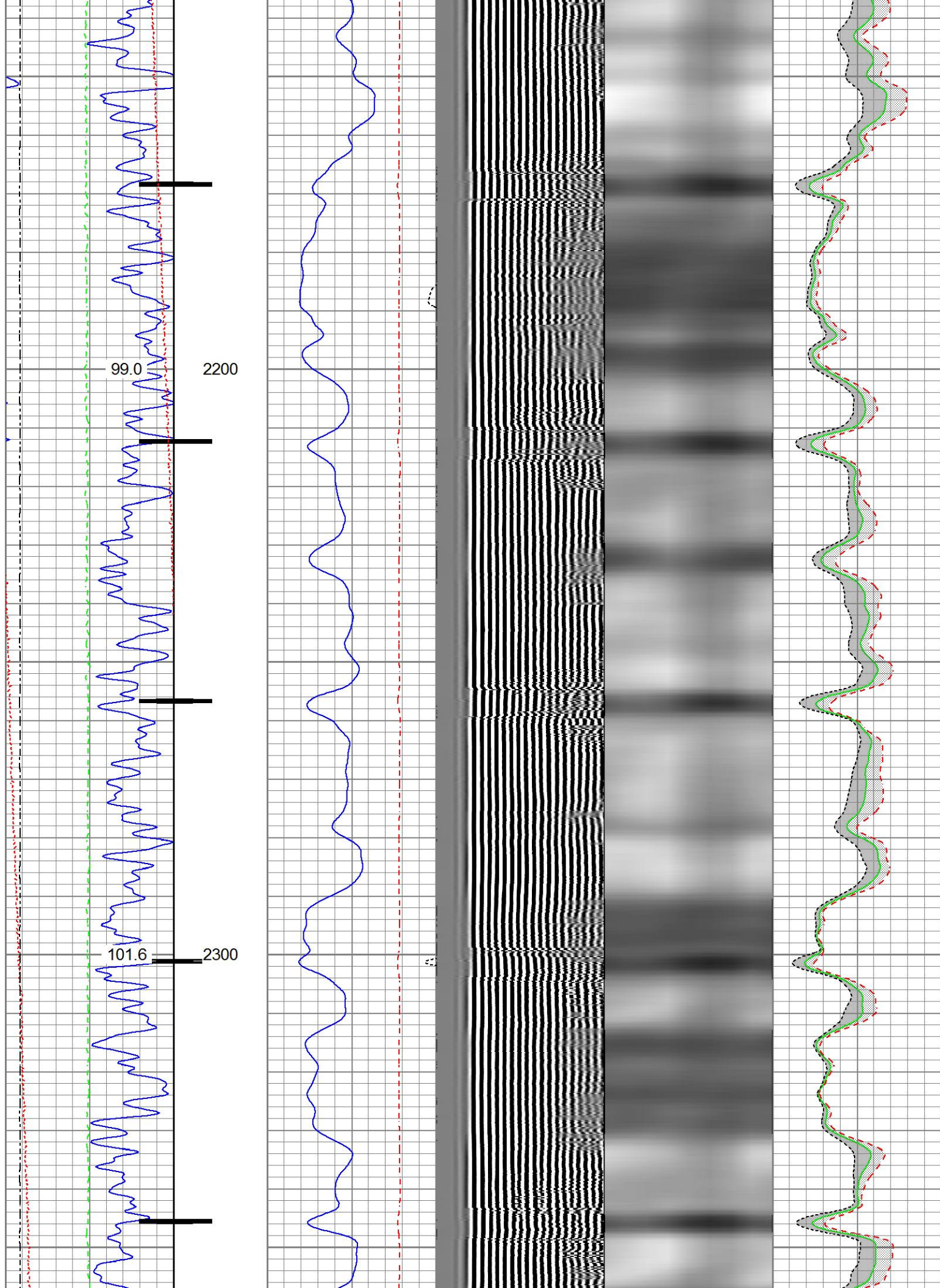


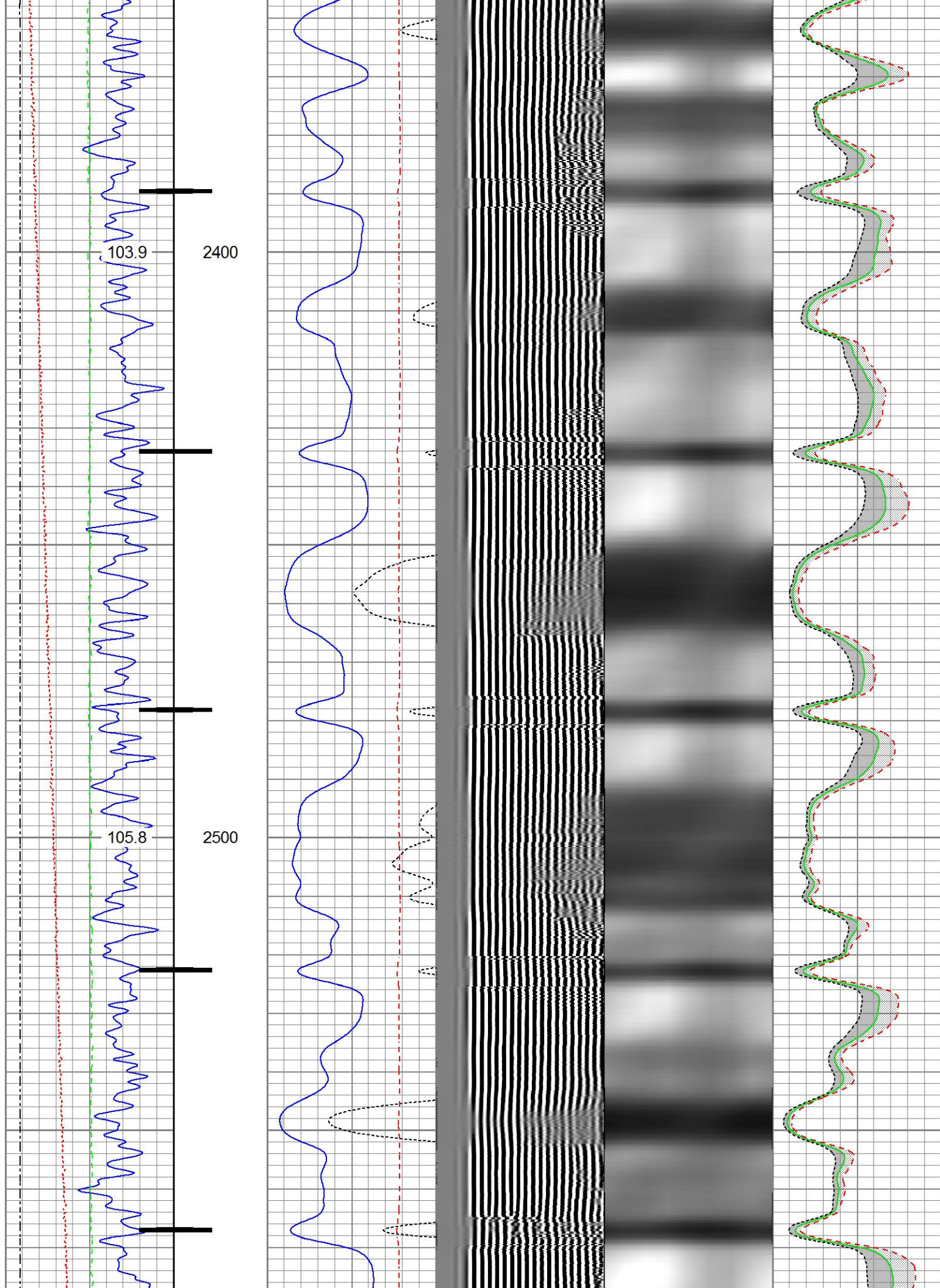


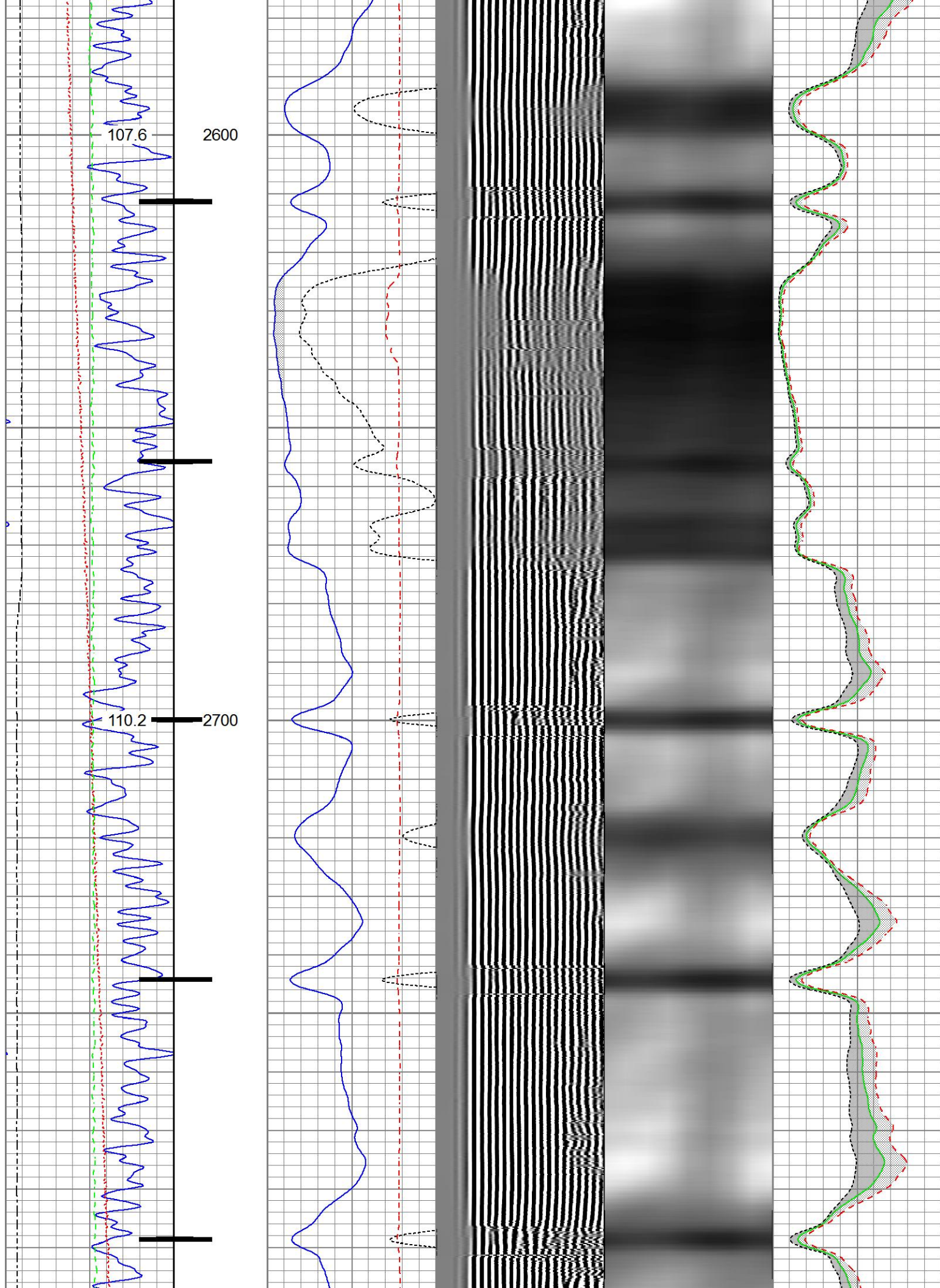


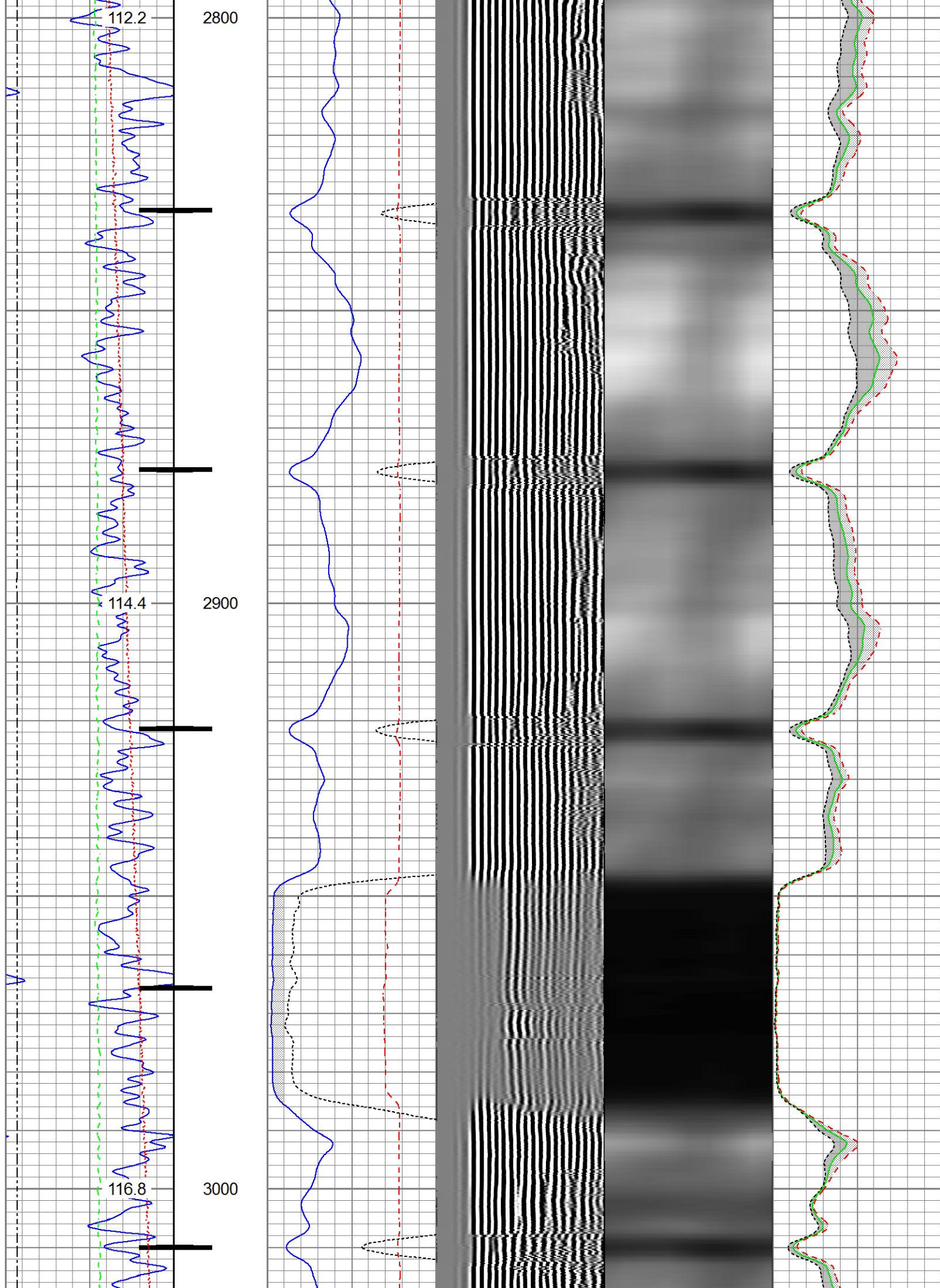


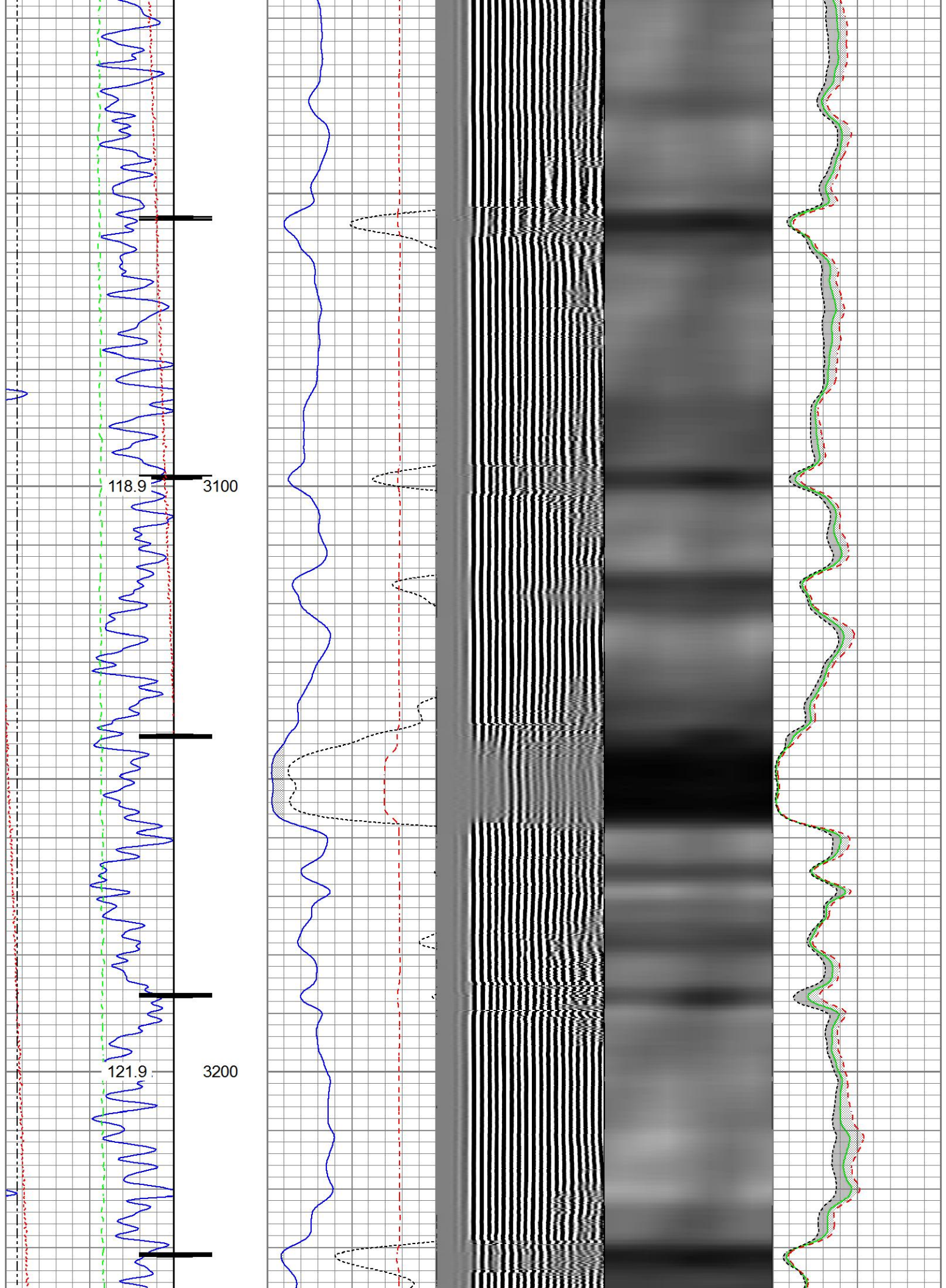


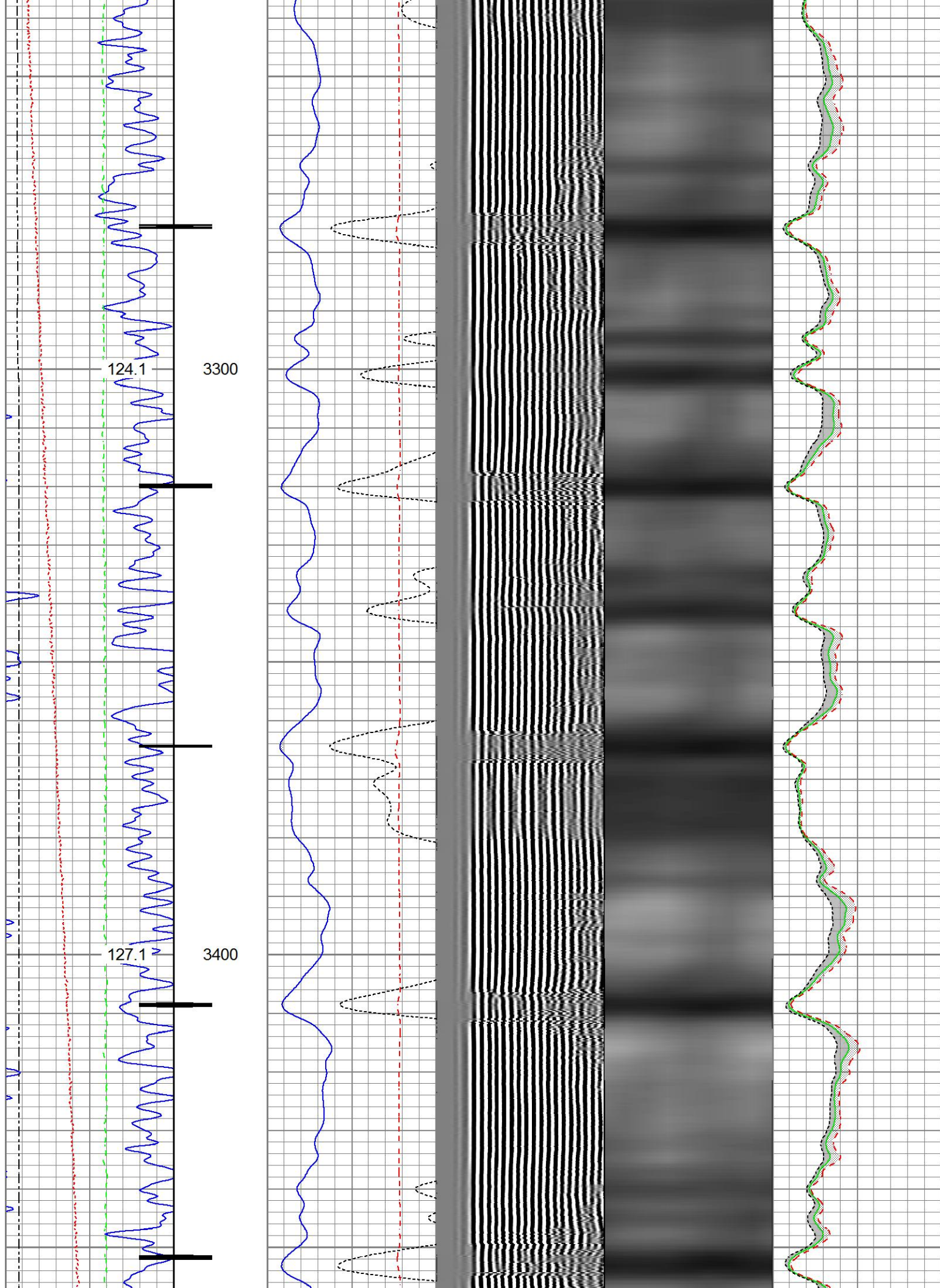


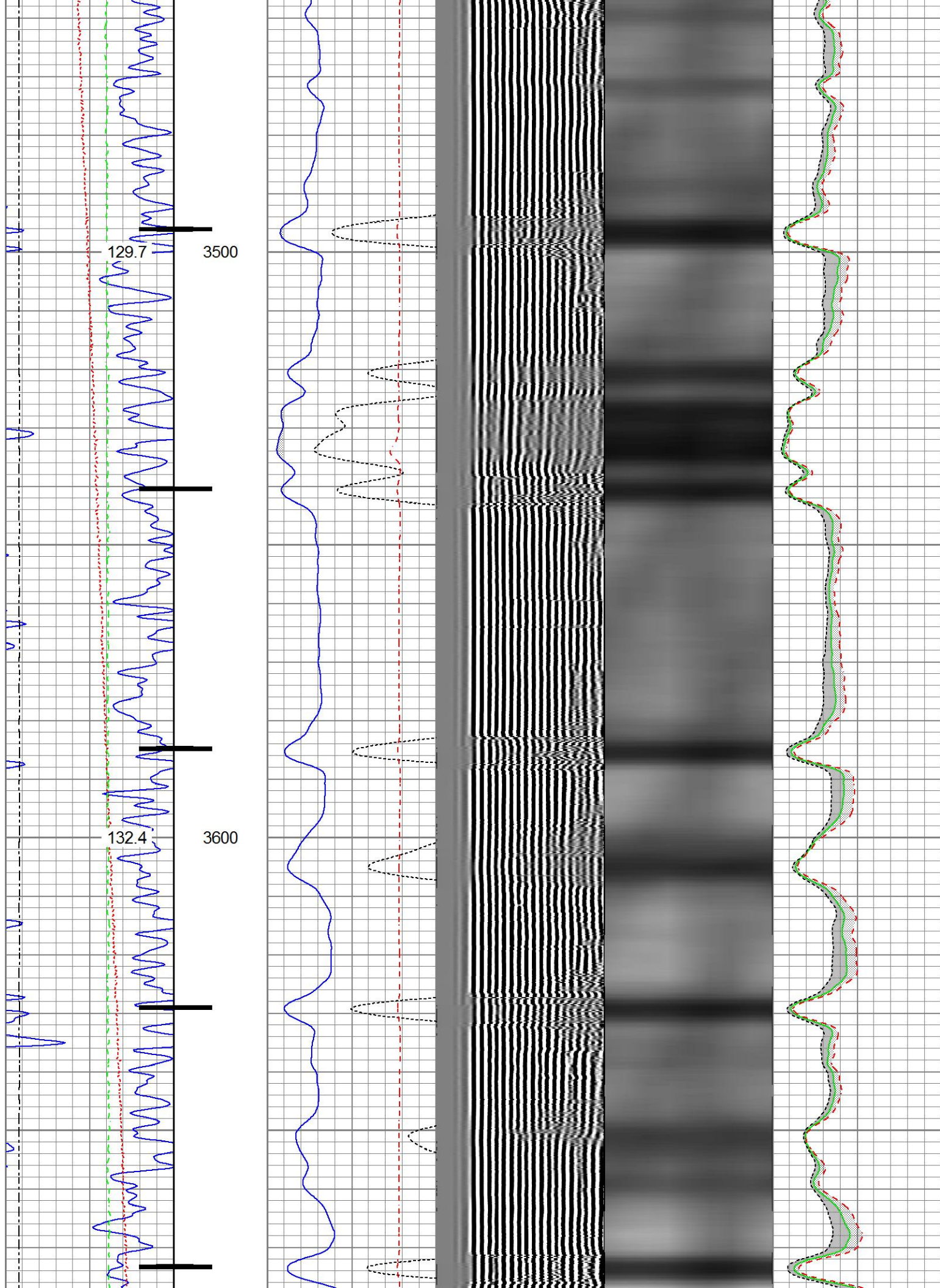


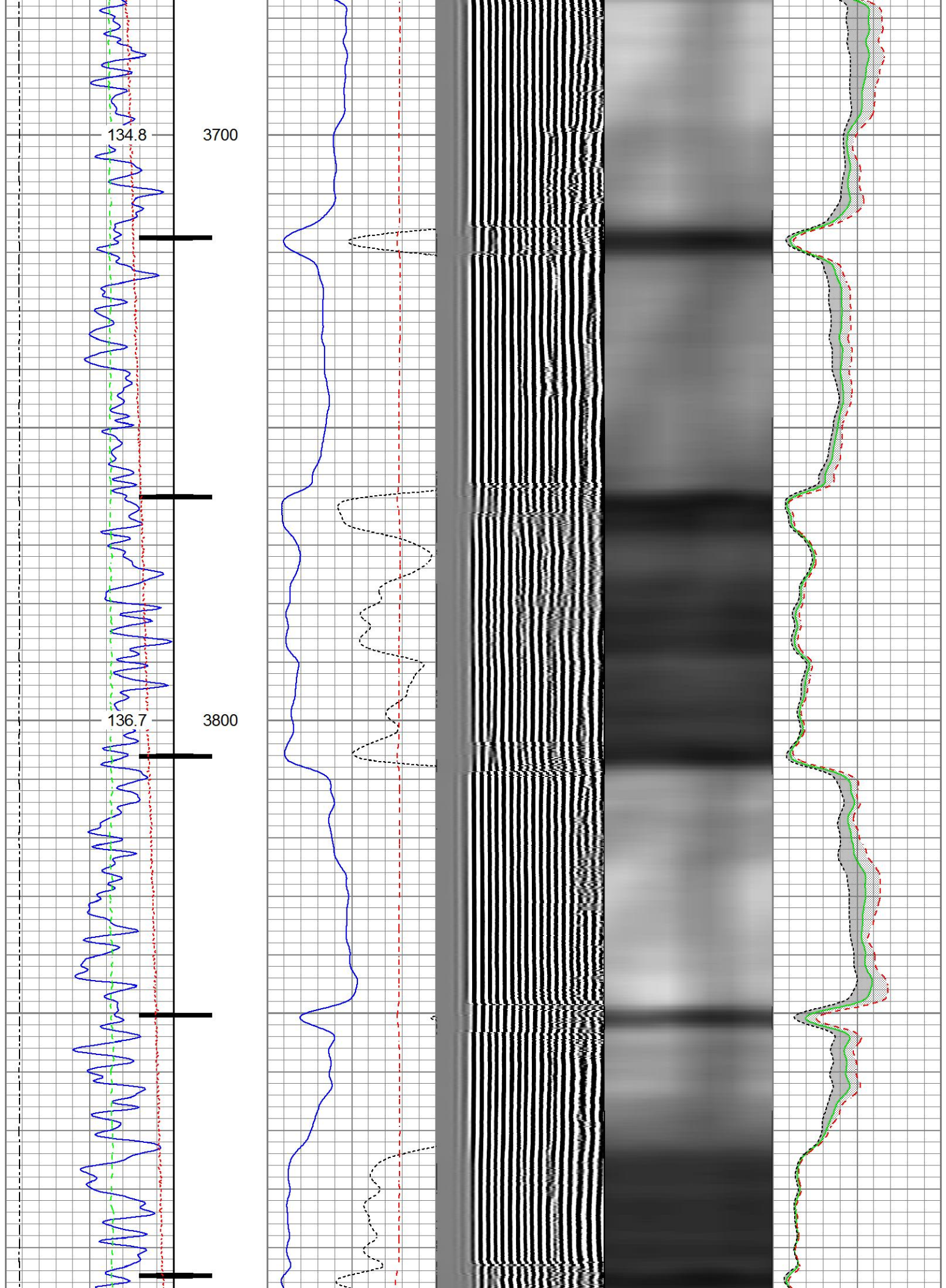


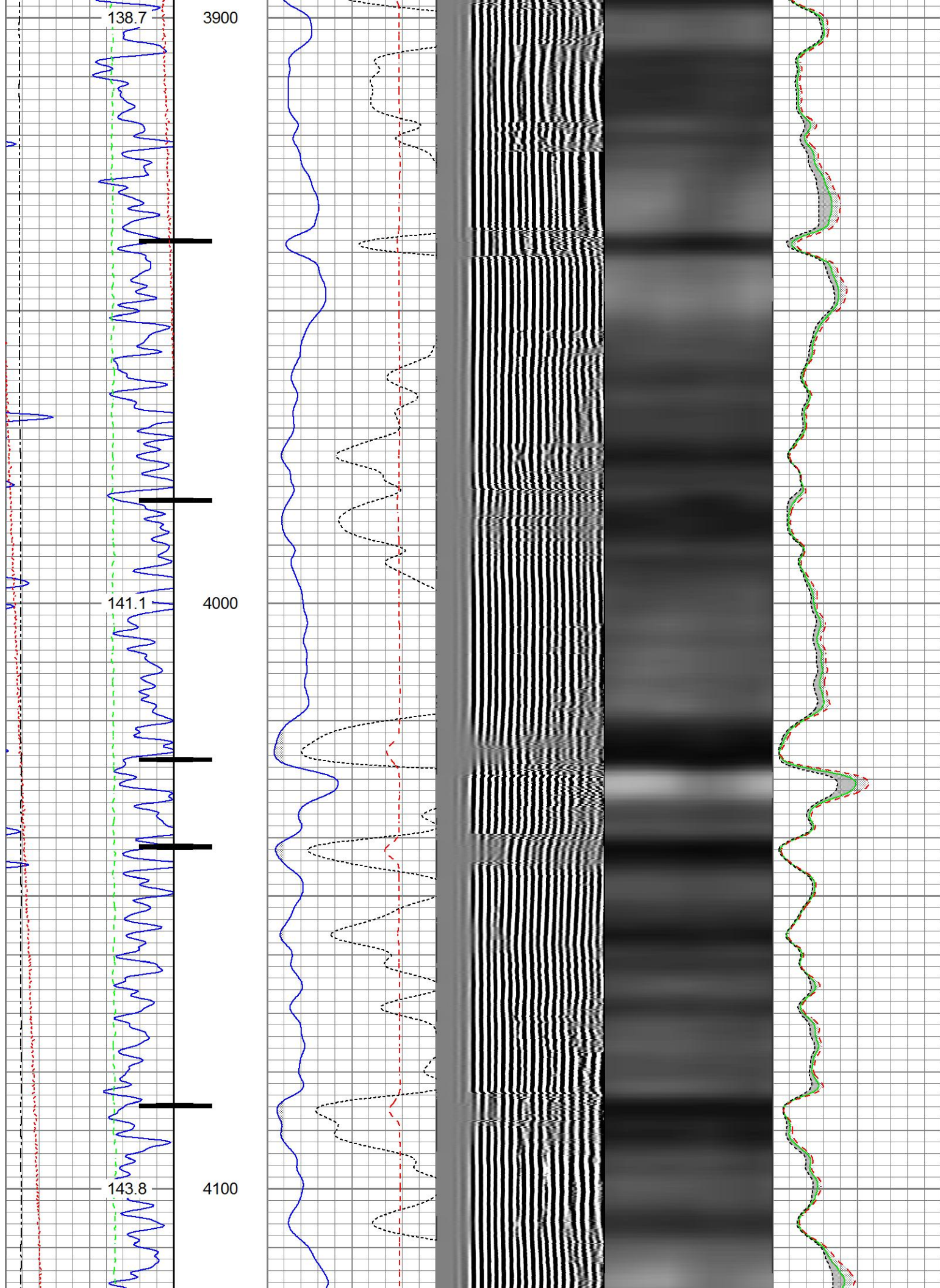


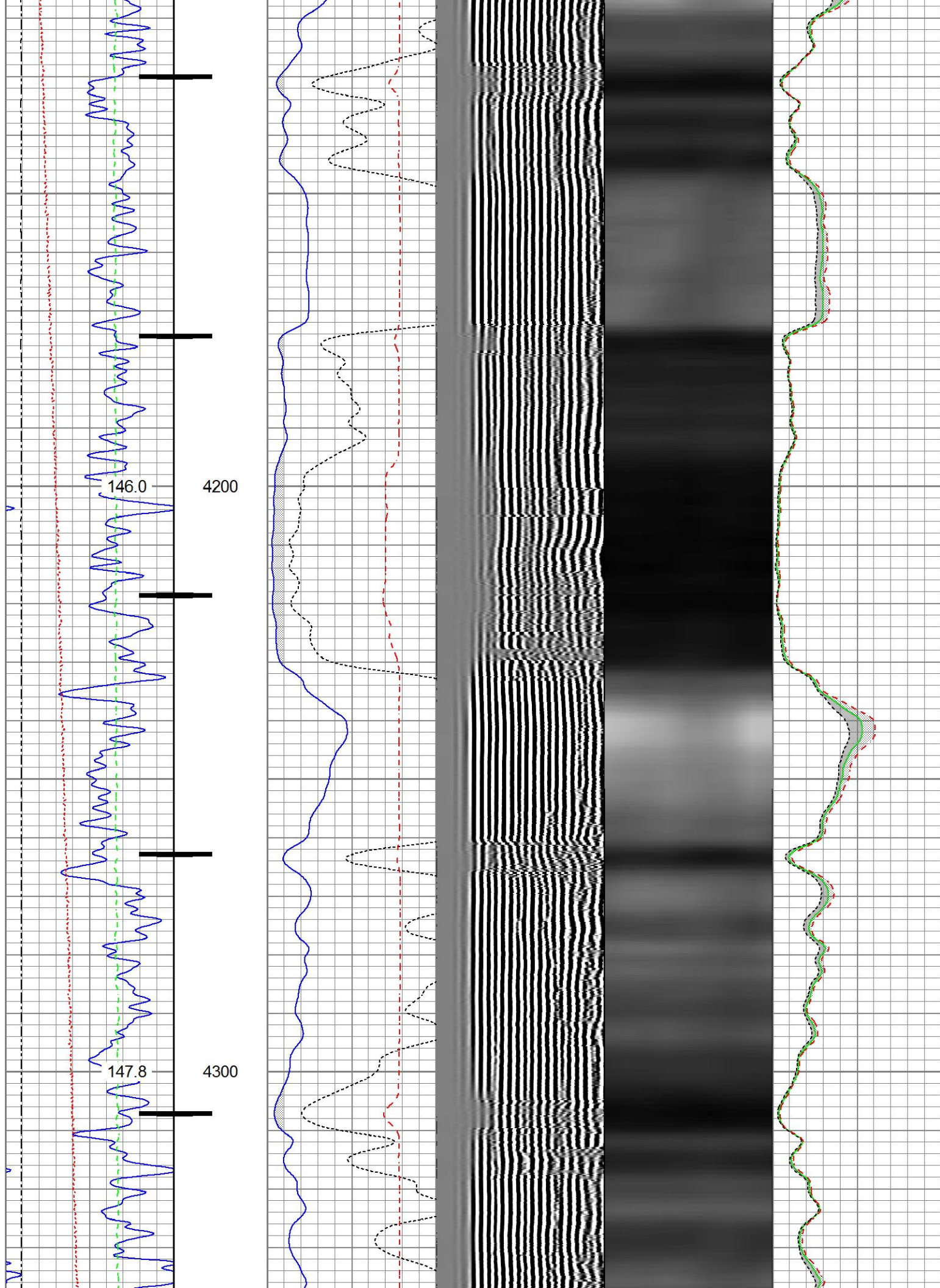


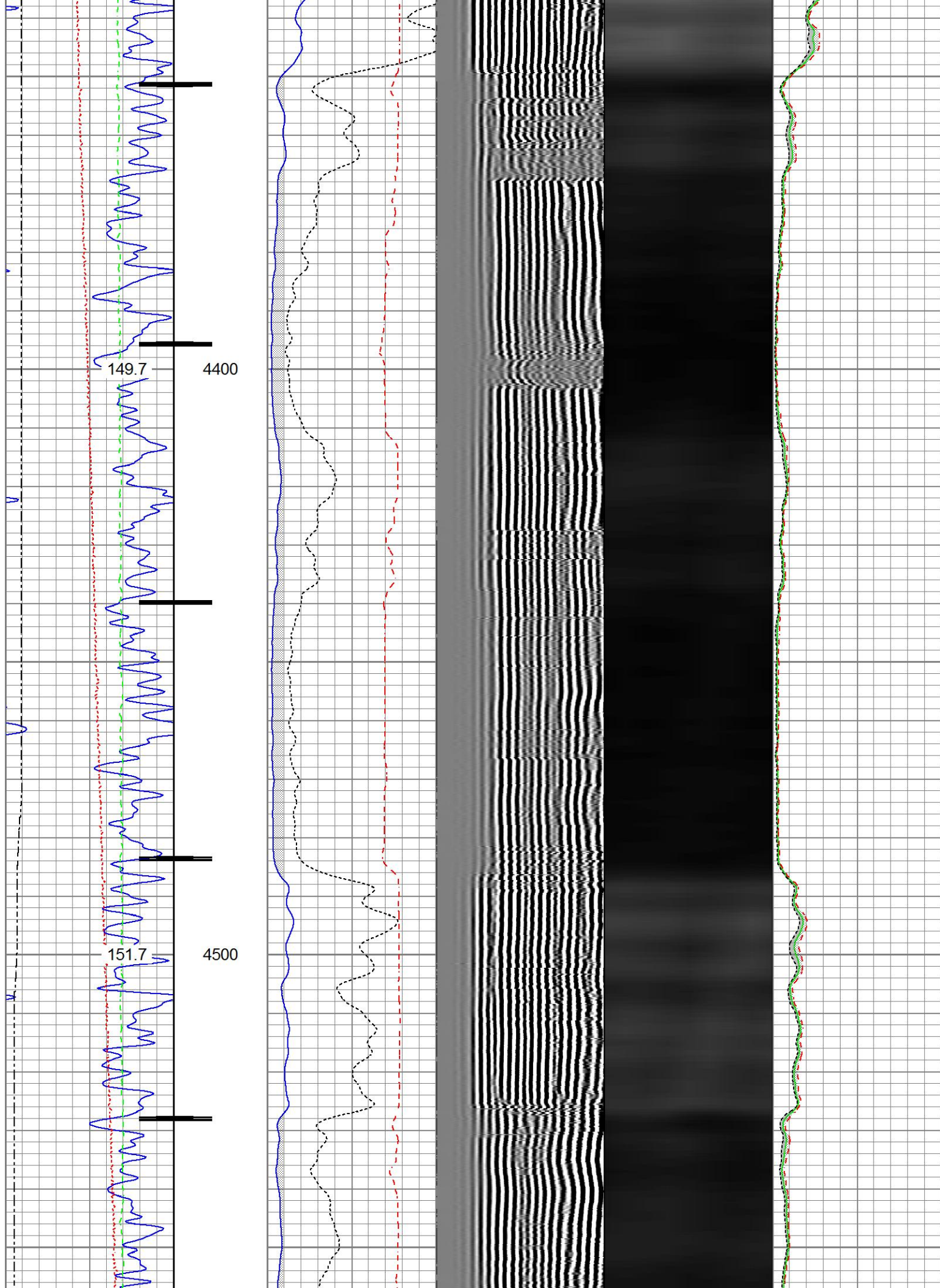


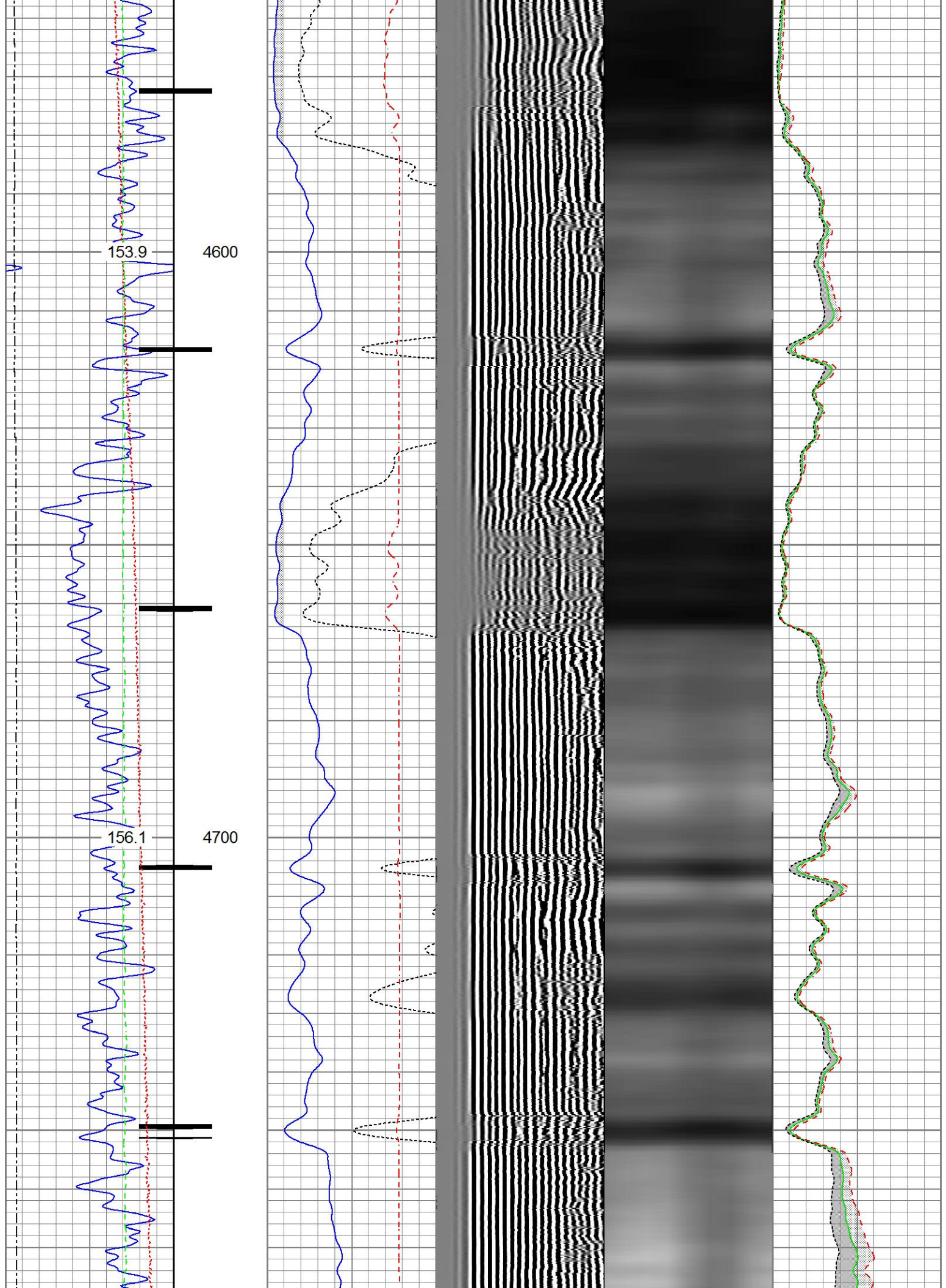


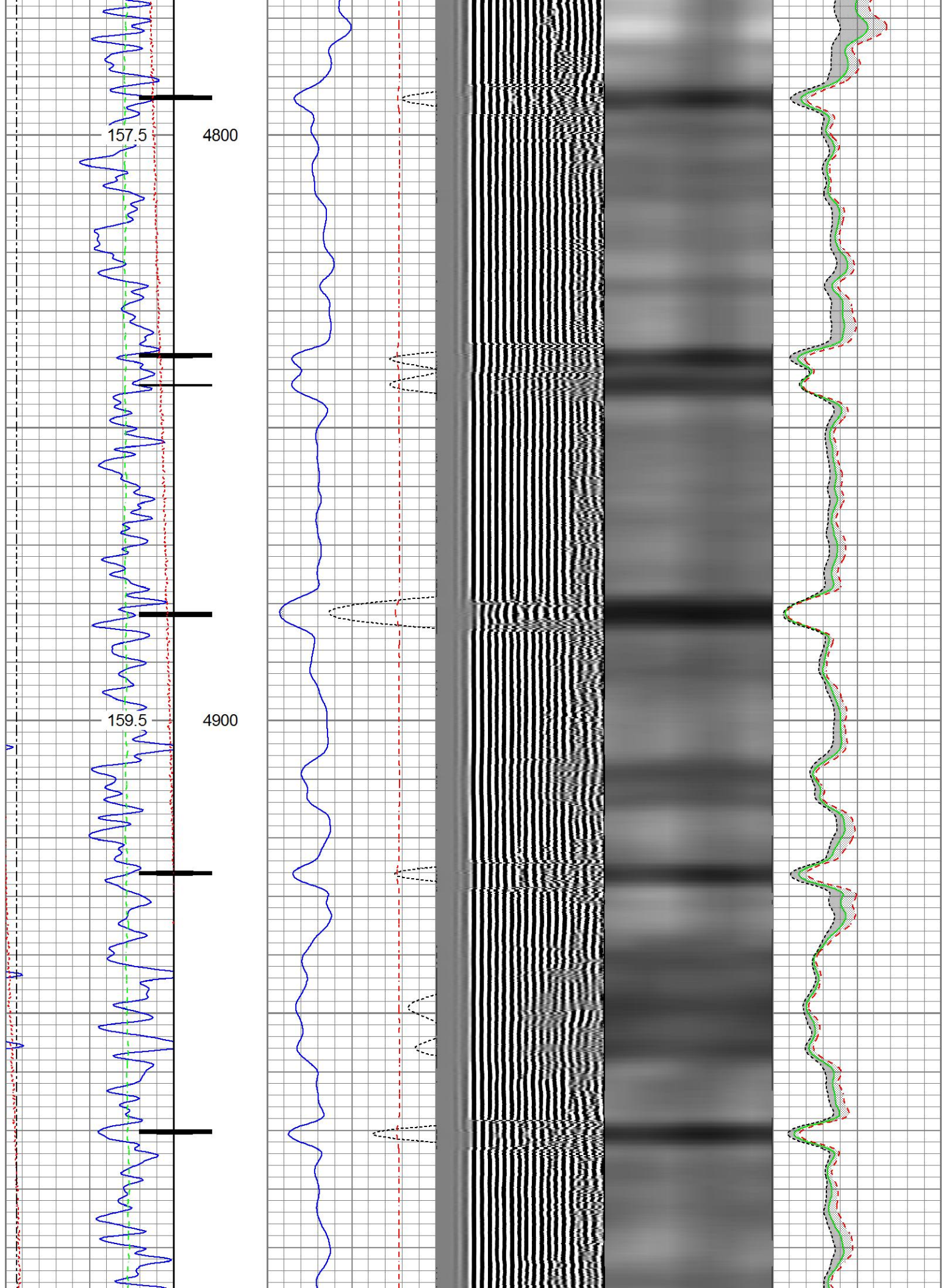


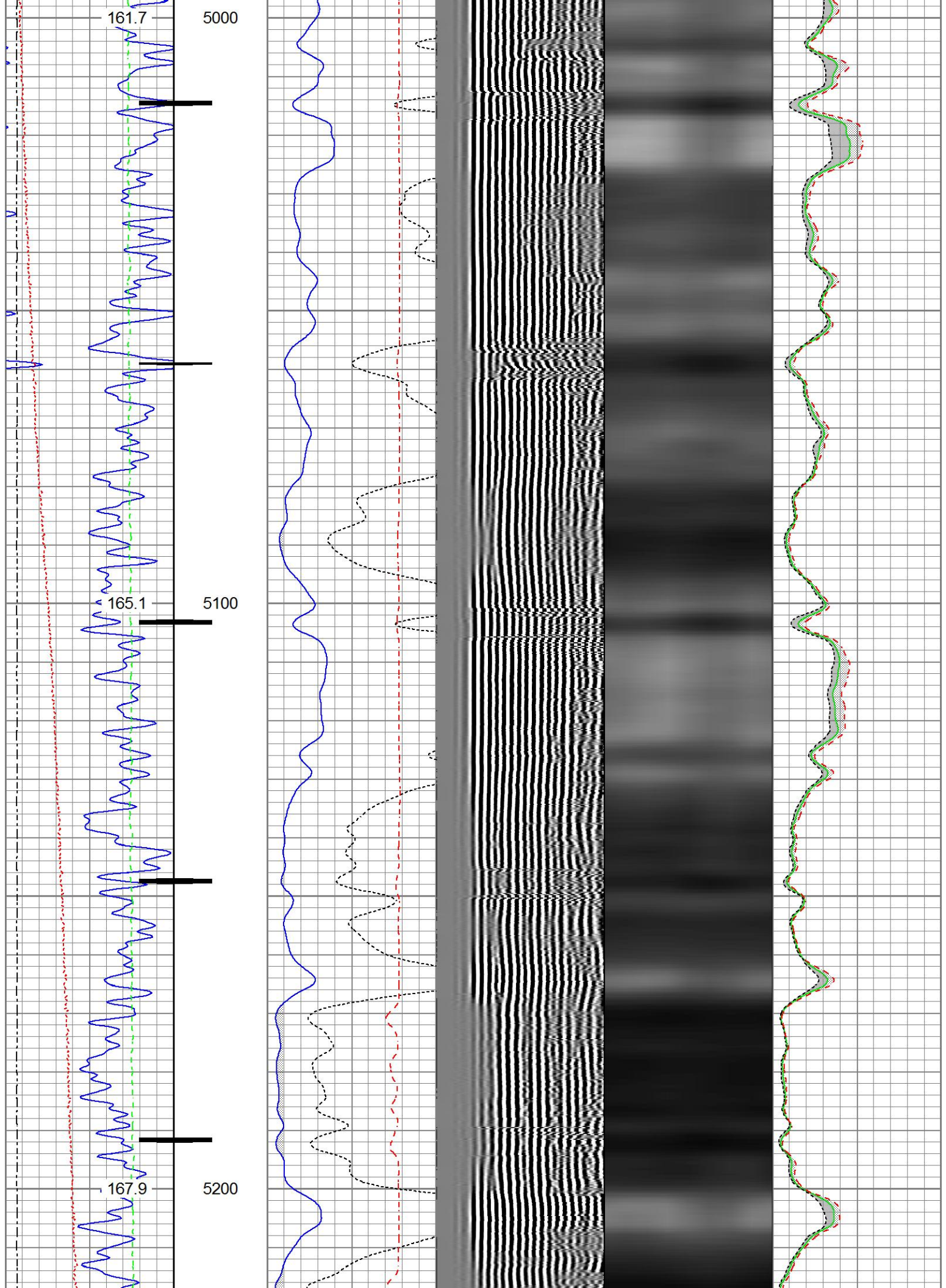


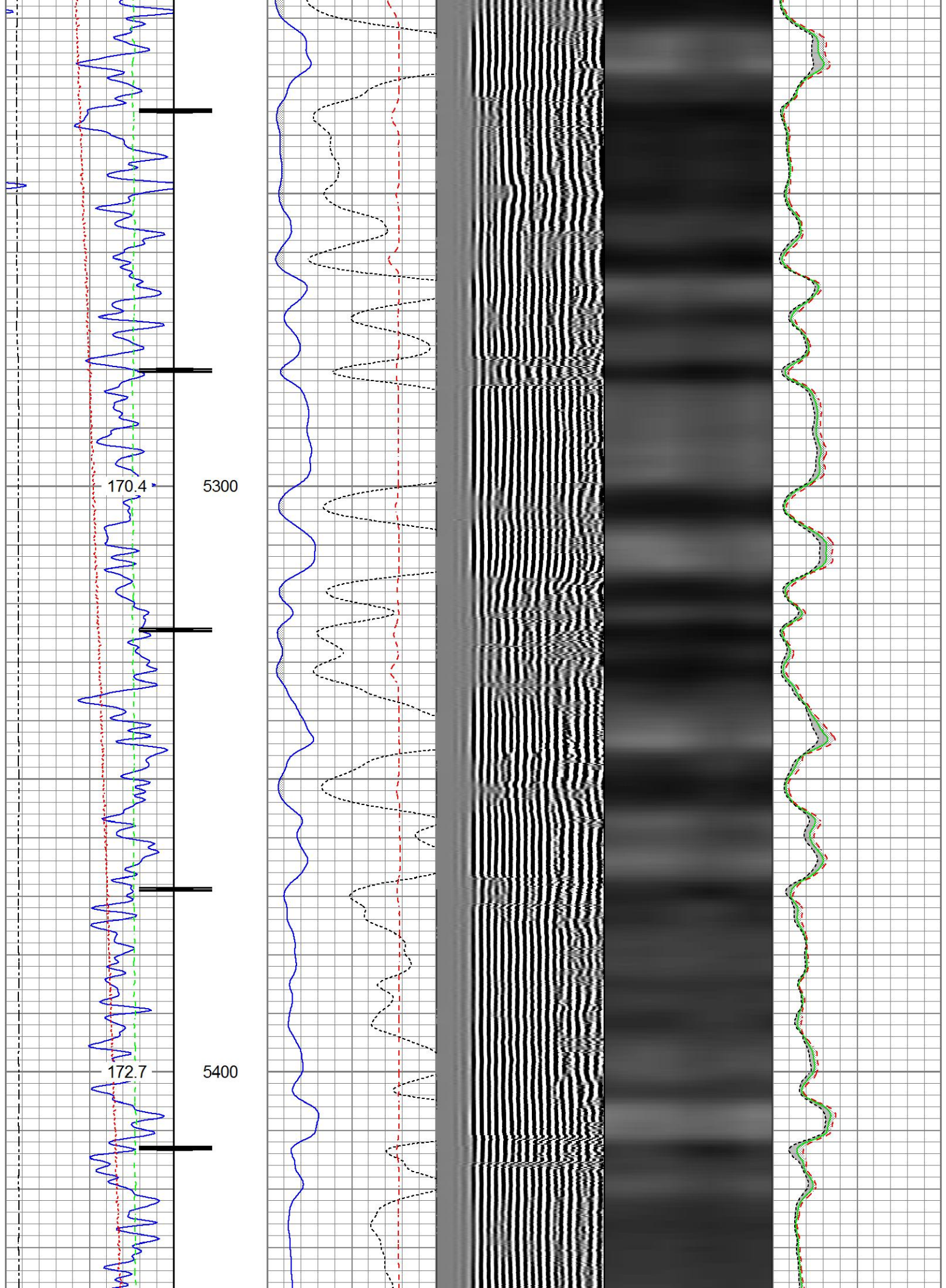


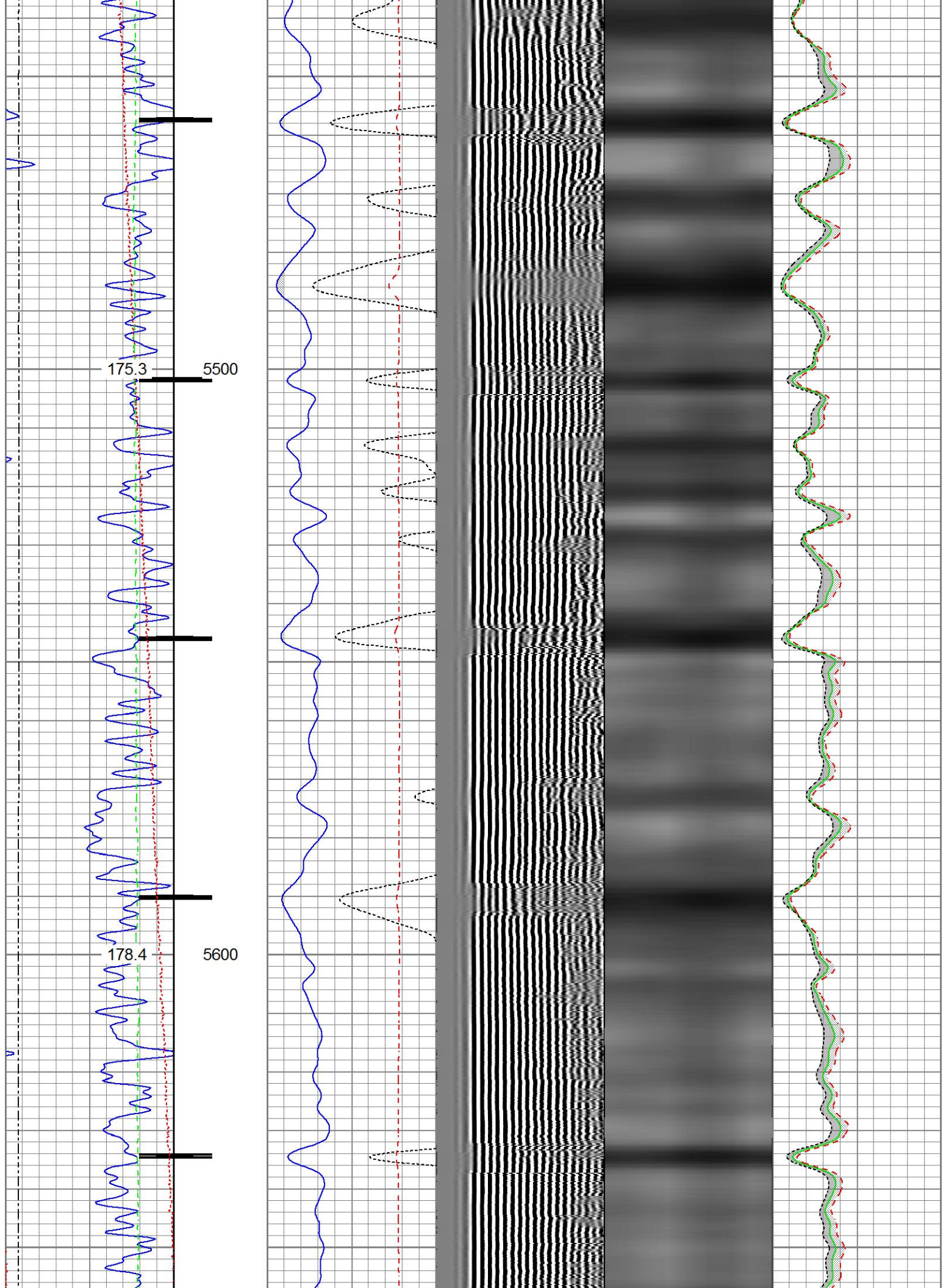


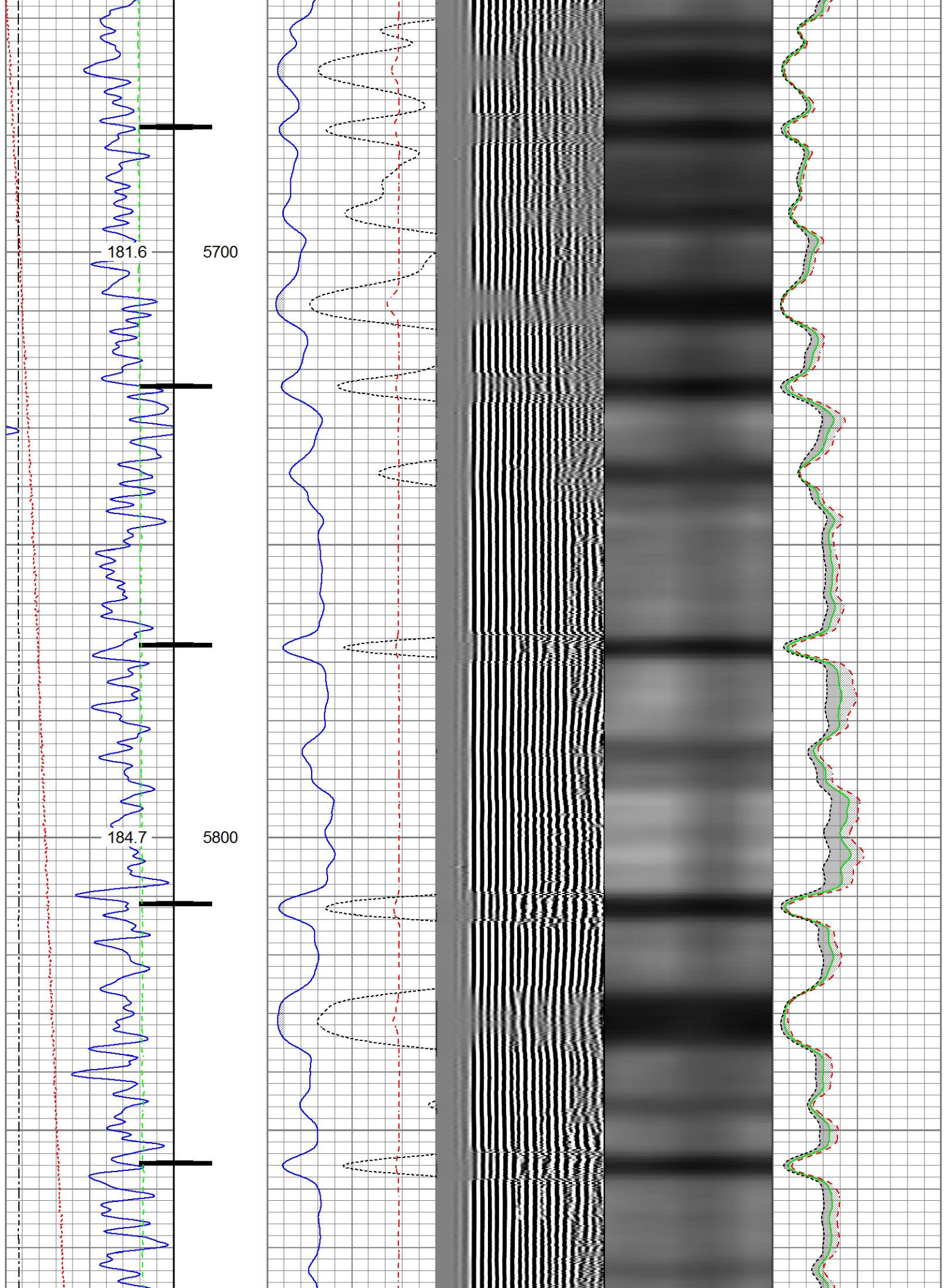


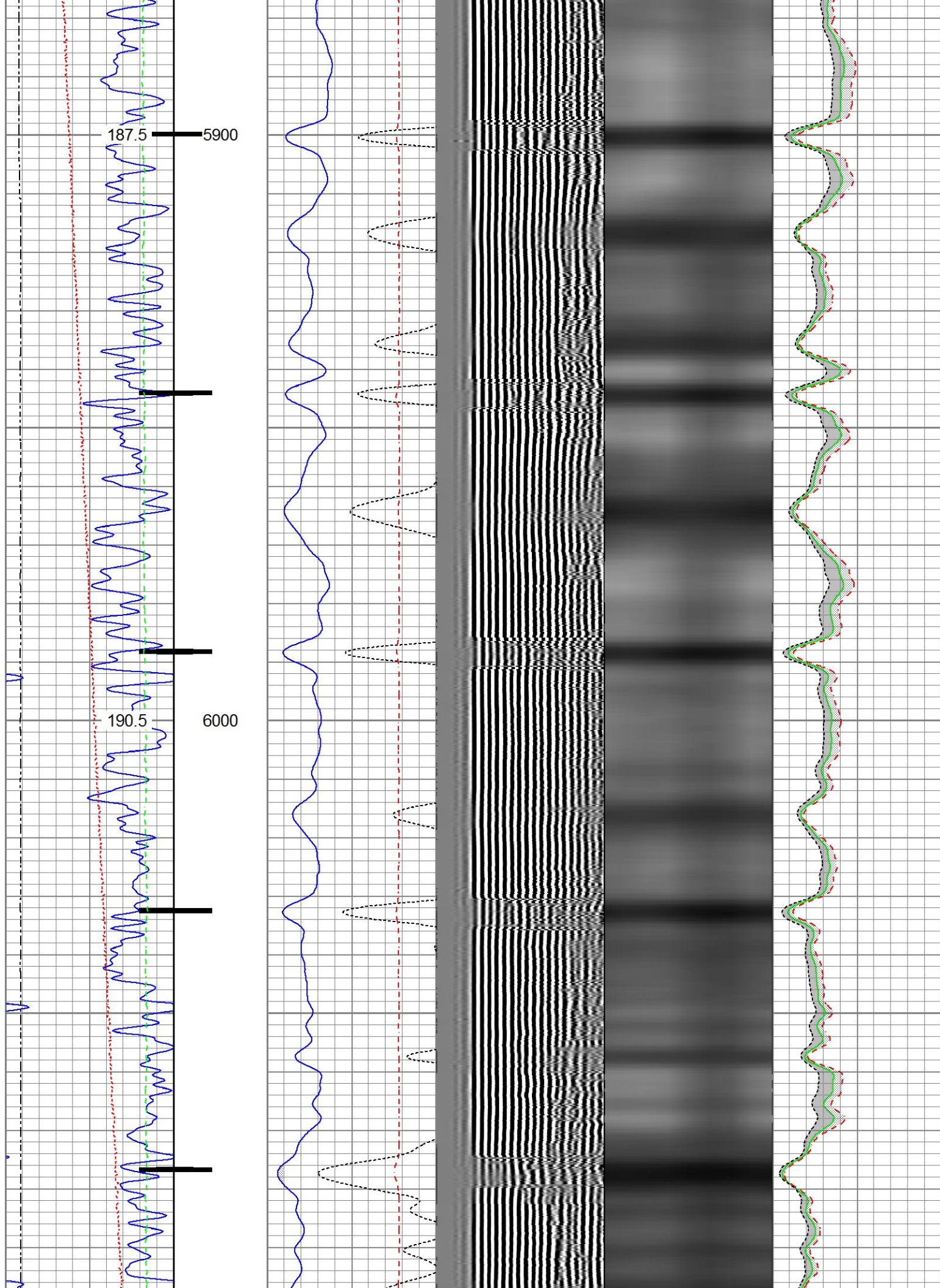


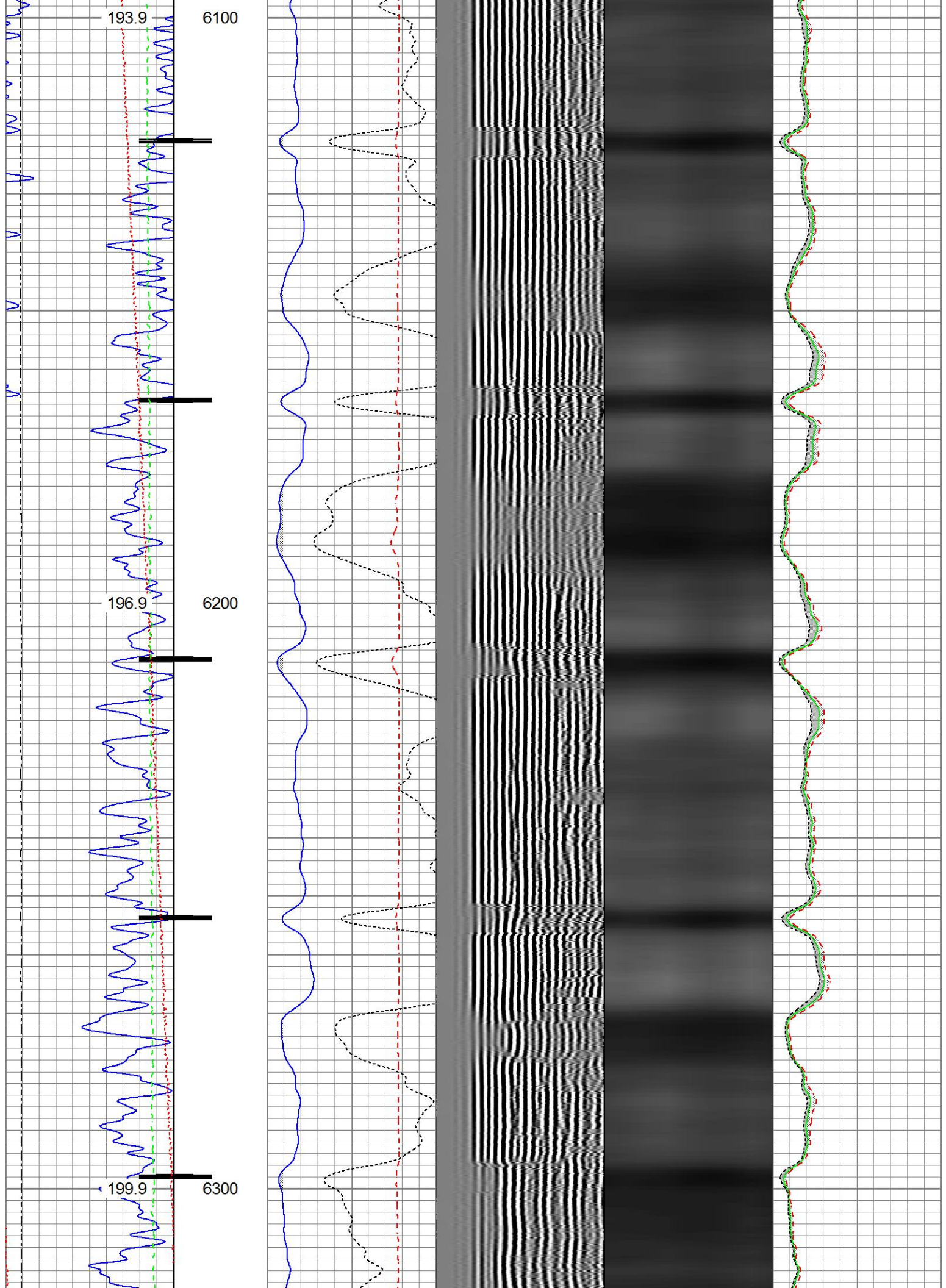


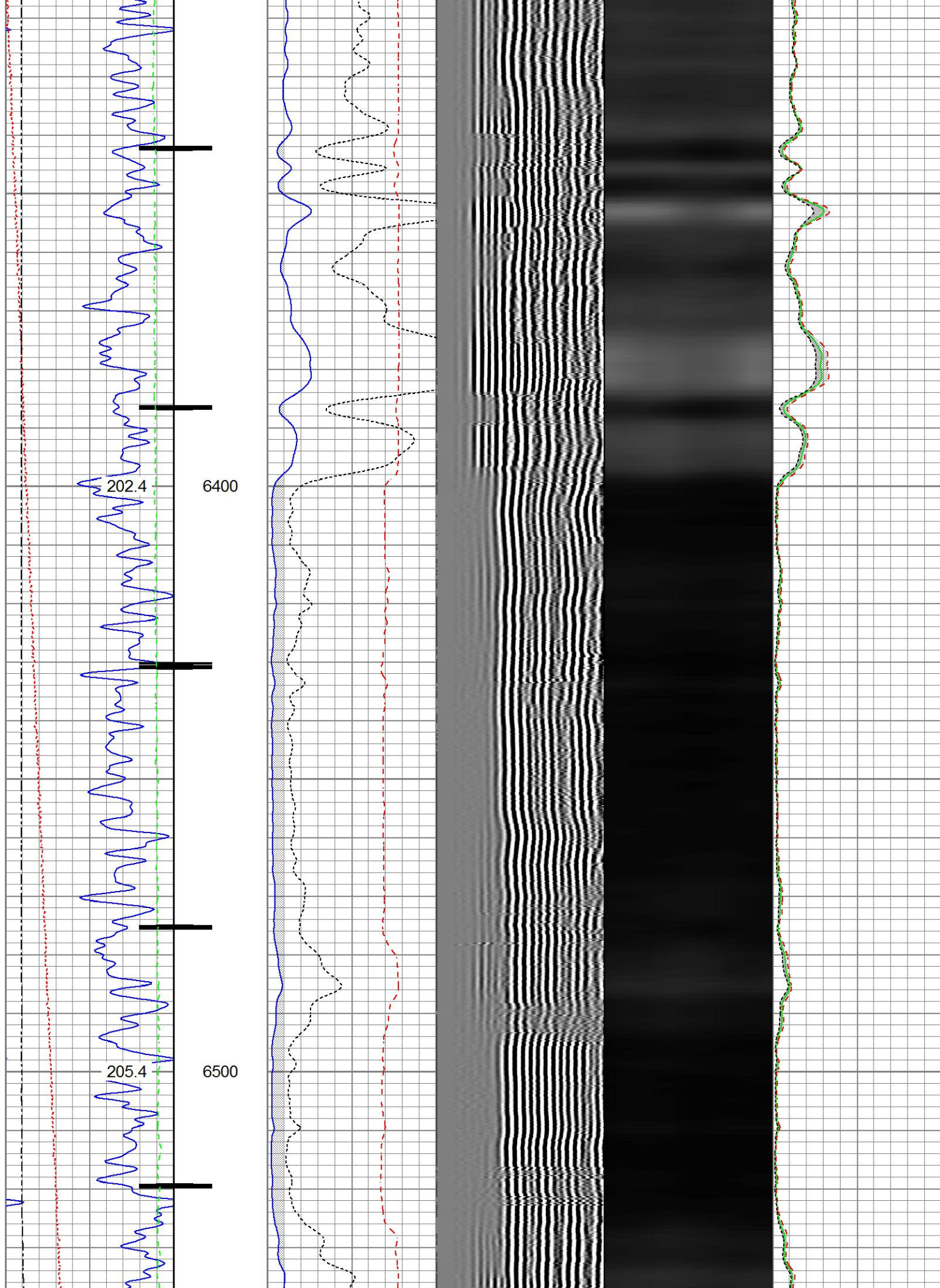


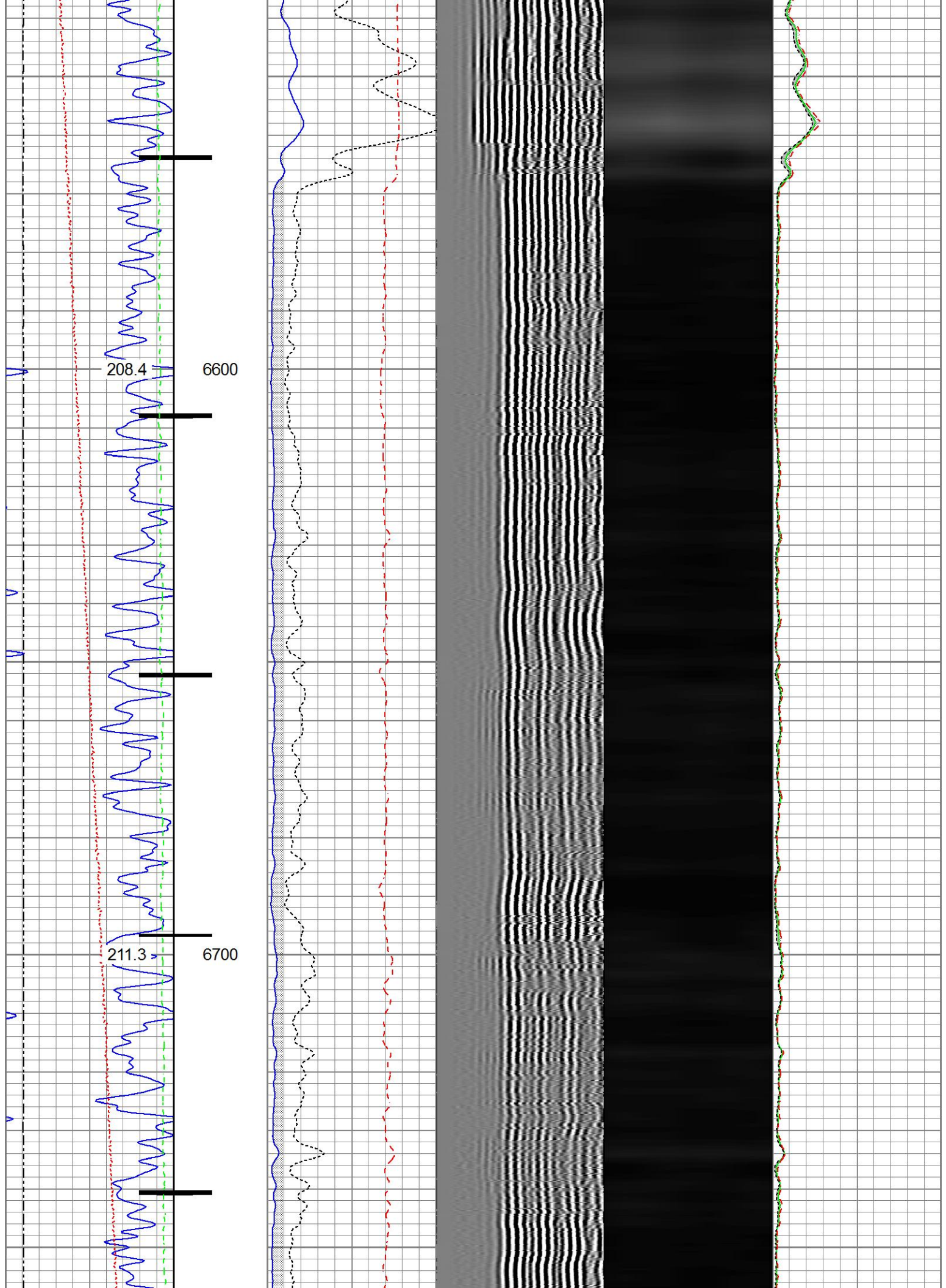


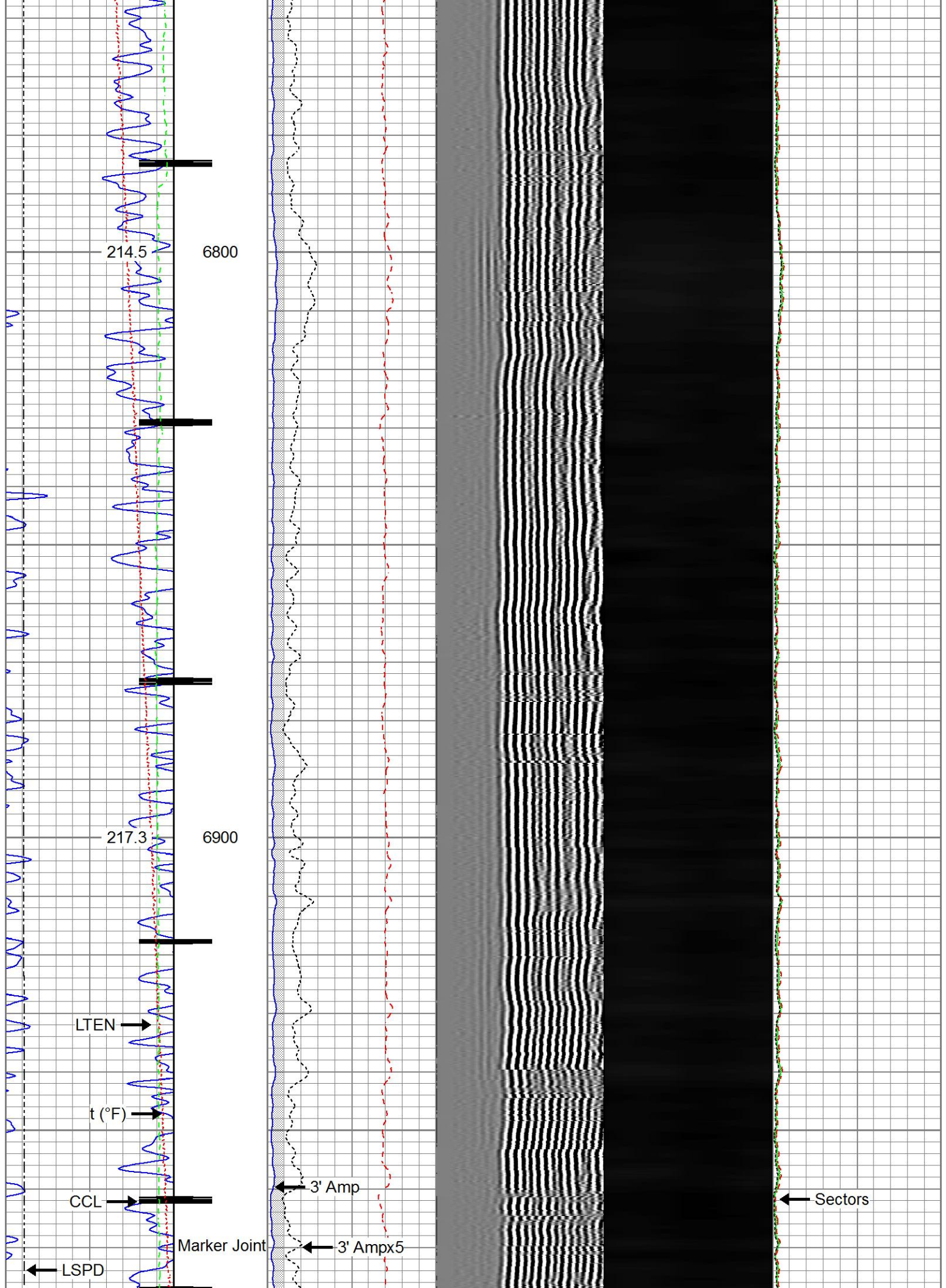


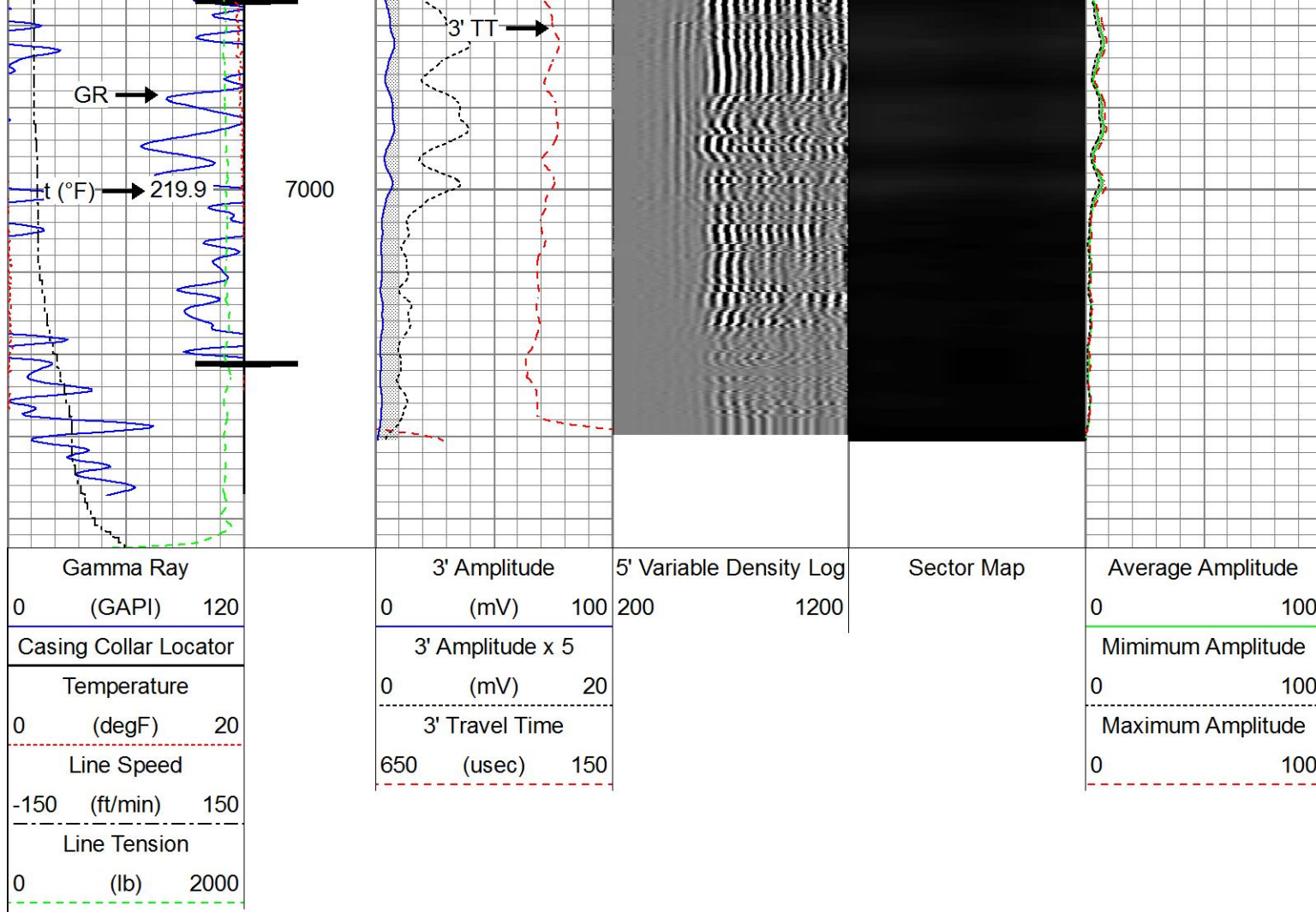








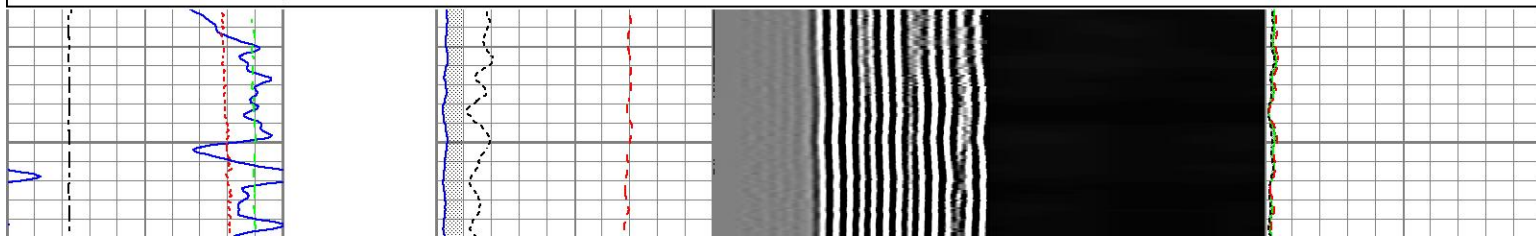
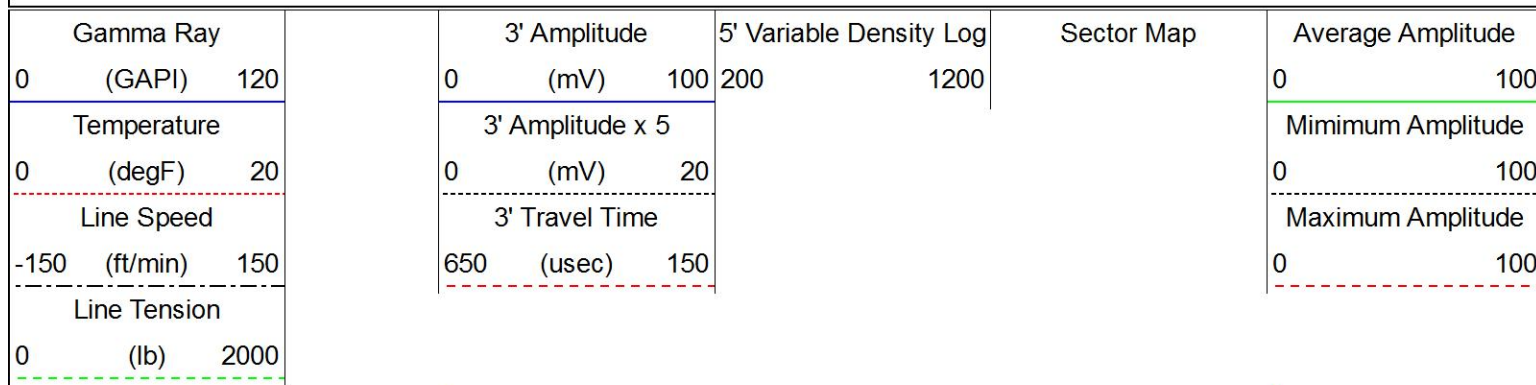


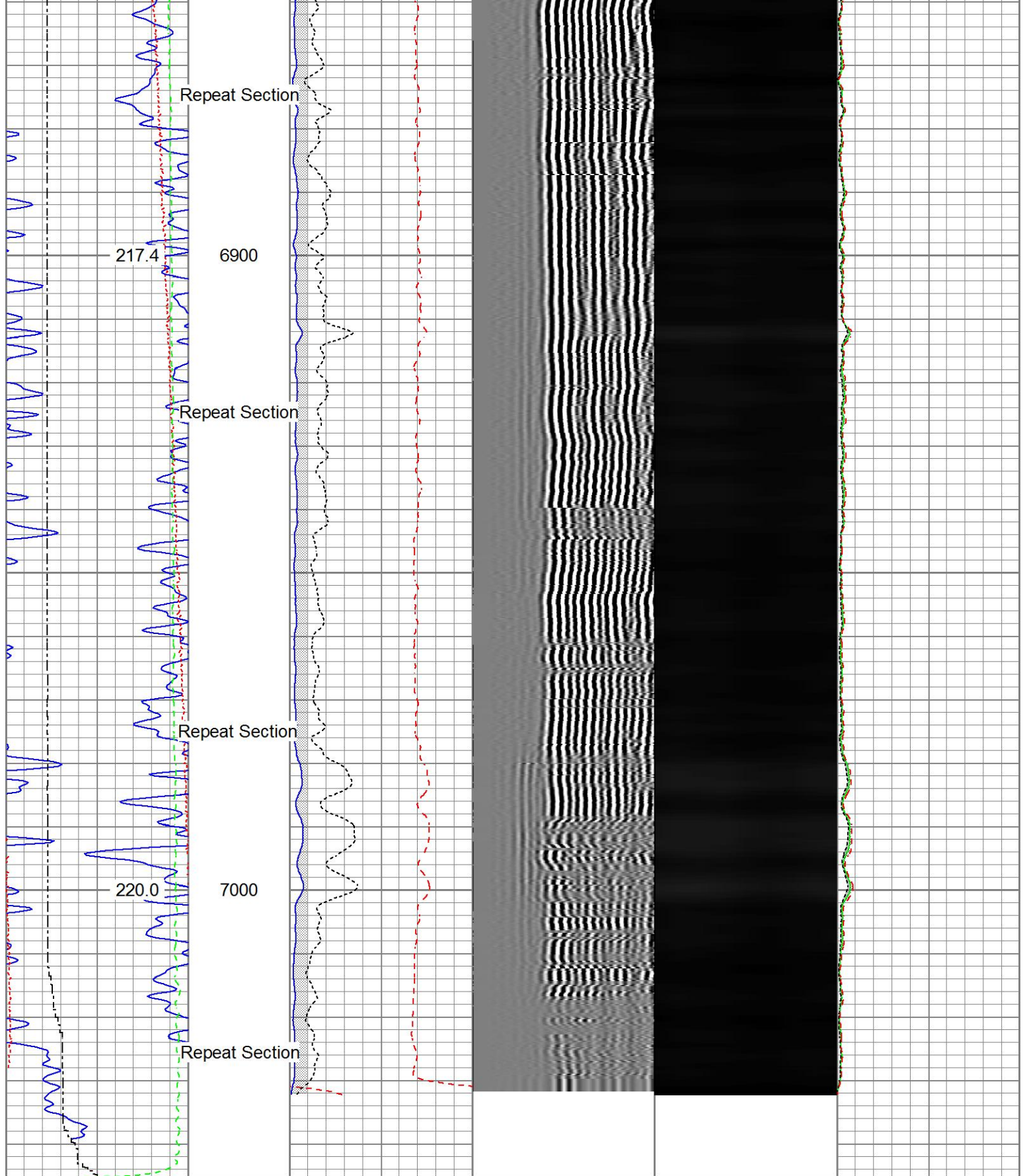


Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File 20161222\0512325574_anadarko_waterfront 7-34x_12-22-16_rbl.db
 Dataset Pathname repeat.1
 Presentation Format ros_radil
 Dataset Creation Thu Dec 22 11:54:57 2016
 Charted by Depth in Feet scaled 1:240





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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Temp	16.72		Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck	1.69	5.40	
			Probe_ELine_BowSpring_Centralizer-P_EE2.88_275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	20.00	
			Probe_RADII-C-P_RBT_2750 (FW1302-009.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	2.75	105.00	
WVFS8	14.55					
WVFS7	14.55					
WVFS6	14.55					
WVFS5	14.55					
WVFS4	14.55					
WVFS3	14.55					
WVFS2	14.55					
WVFS1	14.55					
WVFCAL	14.55					
WVF3FT	14.55					
WVF5FT	13.55					
HeadVolt	10.30					
DCCL	6.51		Probe_ELine_BowSpring_Centralizer-P_EE2.88_275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	20.00	
CCL	6.51		Probe_GR_CCL-P_CGR_2750_S (FW1304.543) Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	55.00	
GR	3.77		Probe_ELine_BowSpring_Centralizer-P_EE2.88_275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	20.00	

Total length: 23.40 ft
Total weight: 225.40 lb
O.D.: 2.75 in

Calibration Report

Database File D:\Warrior\Data\20161222\0512325574_Anadarko_Waterfront 7-34X_12-22-16_RBL.db
Dataset Pathname main.1
Dataset Creation Thu Dec 22 08:59:10 2016

Gamma Ray Calibration Report

Serial Number: FW1307-038
Tool Model: P_CGR_2750_S
Performed: Thu Nov 10 10:56:13 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.6 cps

Sensitivity: 0.6300 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1302-002
Tool Model: P_RBT_2750

Calibration Casing Diameter: 4.500 in
Calibration Depth: 2.950 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	1.539	0.800	81.196	52.268	0.760
CAL	0.007	2.138				
5'	0.000	1.310	0.800	81.196	61.389	0.782
SUM						
S1	0.000	1.560	0.000	100.000	64.128	-0.011
S2	0.000	1.485	0.000	100.000	67.377	-0.028
S3	0.001	1.462	0.000	100.000	68.427	-0.038
S4	0.001	1.536	0.000	100.000	65.145	-0.057
S5	0.001	1.835	0.000	100.000	54.511	-0.047
S6	0.001	2.035	0.000	100.000	49.179	-0.055
S7	0.001	1.975	0.000	100.000	50.665	-0.040
S8	0.001	1.701	0.000	100.000	58.805	-0.047

Internal Reference Calibration, performed Wed Sep 14 11:34:04 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.007	2.138	1.000	0.000

Air Zero Calibration, performed Wed Dec 21 14:47:47 2016:

	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	0.007	0.000	0.000
S8	0.007	0.000	0.000

	Company	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Waterfront 7-34X
	Field	Wattenberg
	County	Weld
	State	Colorado