



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Land 28N-29HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-42394	
SEC 32 TWP 2N RGE 66W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4899'	
Gauge Ring		K.B. 4919'	
		D.F. 4918'	
		G.L. 4899'	
Date		16-AUG-2016	
Run Number		Two	
Depth Driller		12948 FT	
Depth Logger		7420 FT	
Bottom Logged Interval		7403 FT	
Top Log Interval		Surface	
Open Hole Size		7.875"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gal	
Max. Recorded Temp.		234°F	
Estimated Cement Top		474 FT	
Time Well Ready		ROA	
Time Logger on Bottom		17.12	
Equipment Number		HD-0343	
Location		Fort Lupton, CO	
Recorded By		Robert Fogarty	
Witnessed By		Chris Hayes	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		5 1/2	
Intermediate #2		17	
Liner		Wgt (lbs/ft)	
		36	
		JD BTC	
		HCP 110	
		Top	
		Surface	
		Bottom	
		1857 FT	
		12938 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 6566 FT
Adjusted log +4.8 FT to correlate with Marker JointTop
Log ran from as deep as possible in heel to surface
Log ran with 2800 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!!

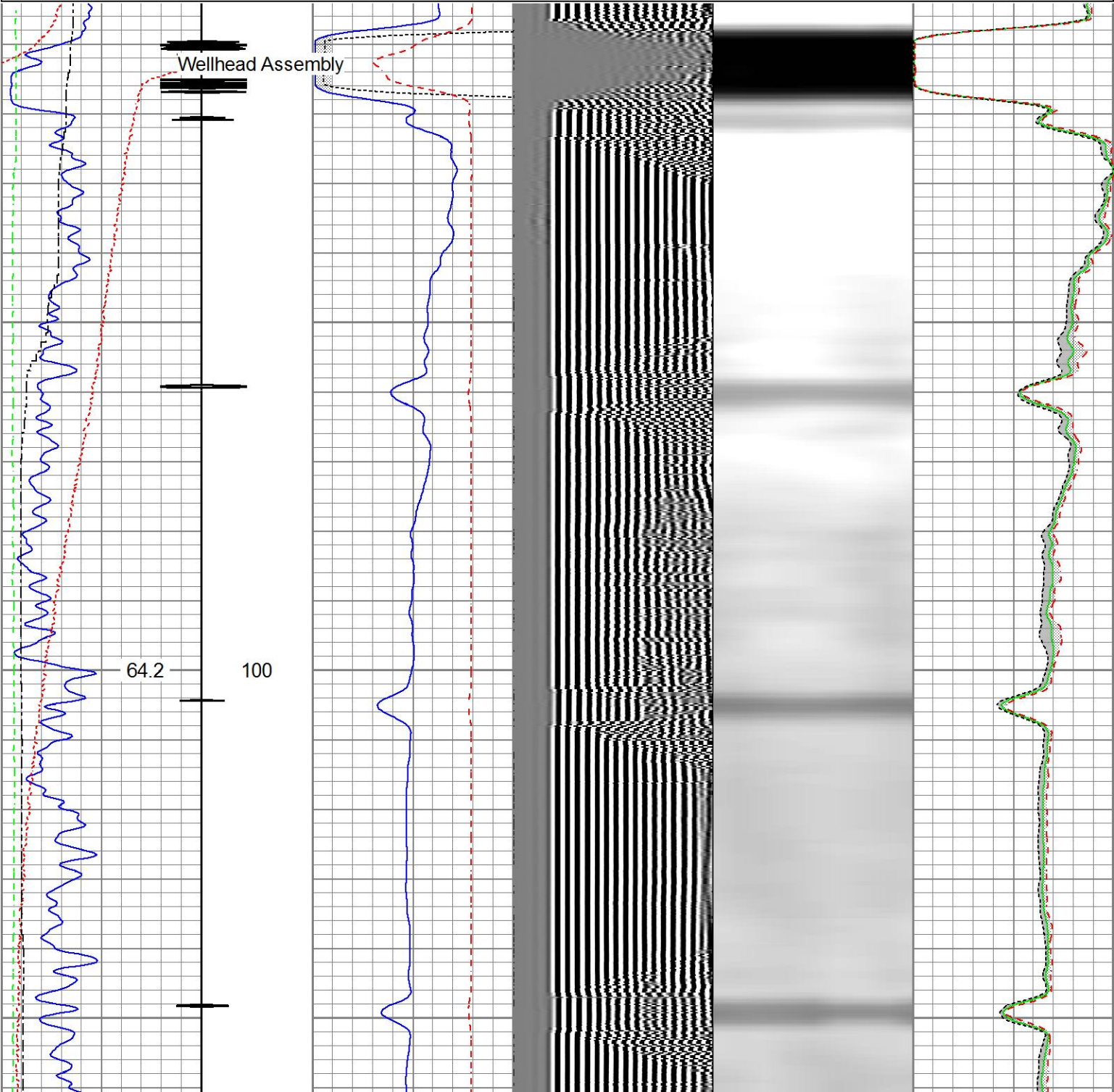


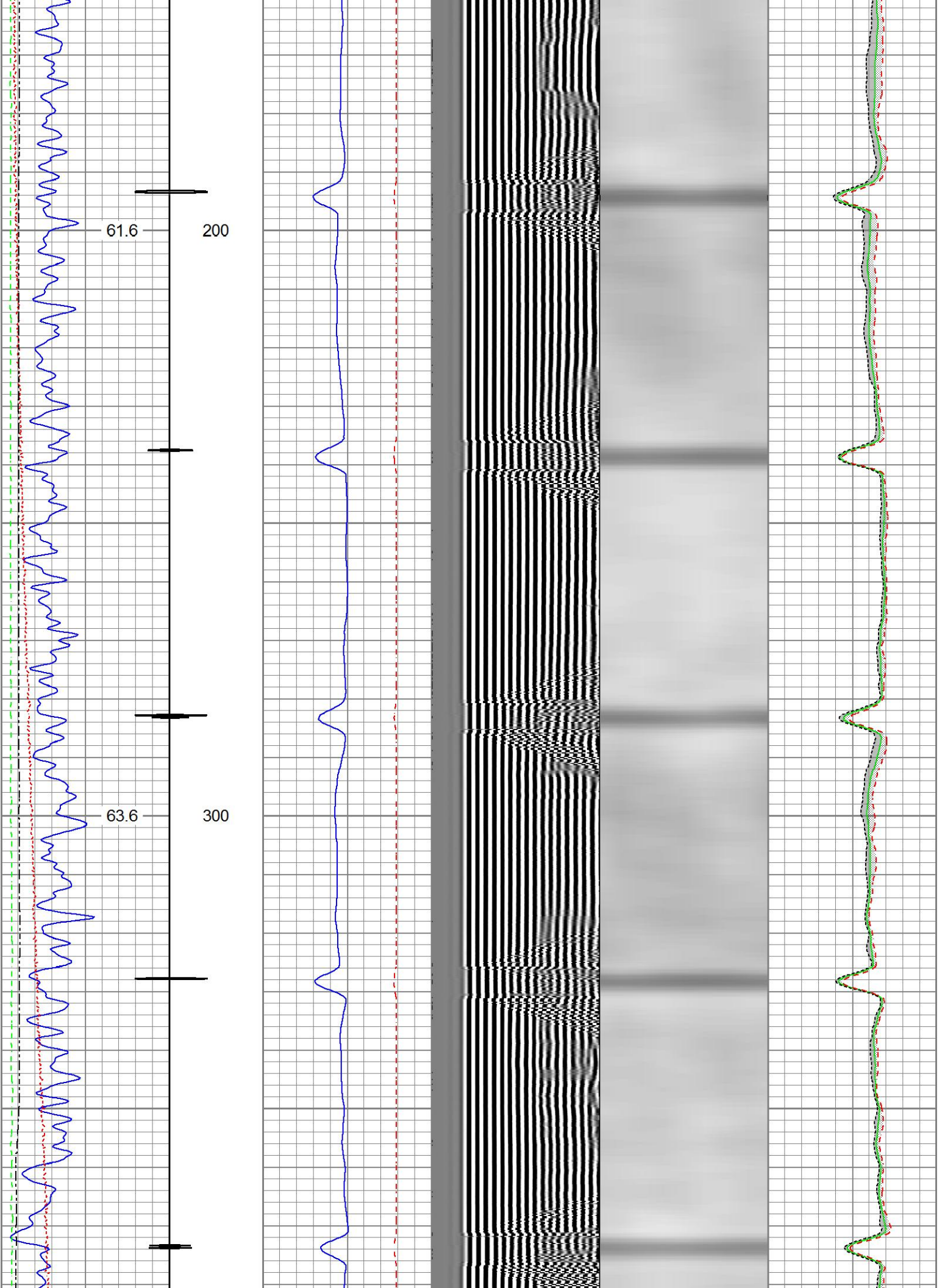
Main Pass

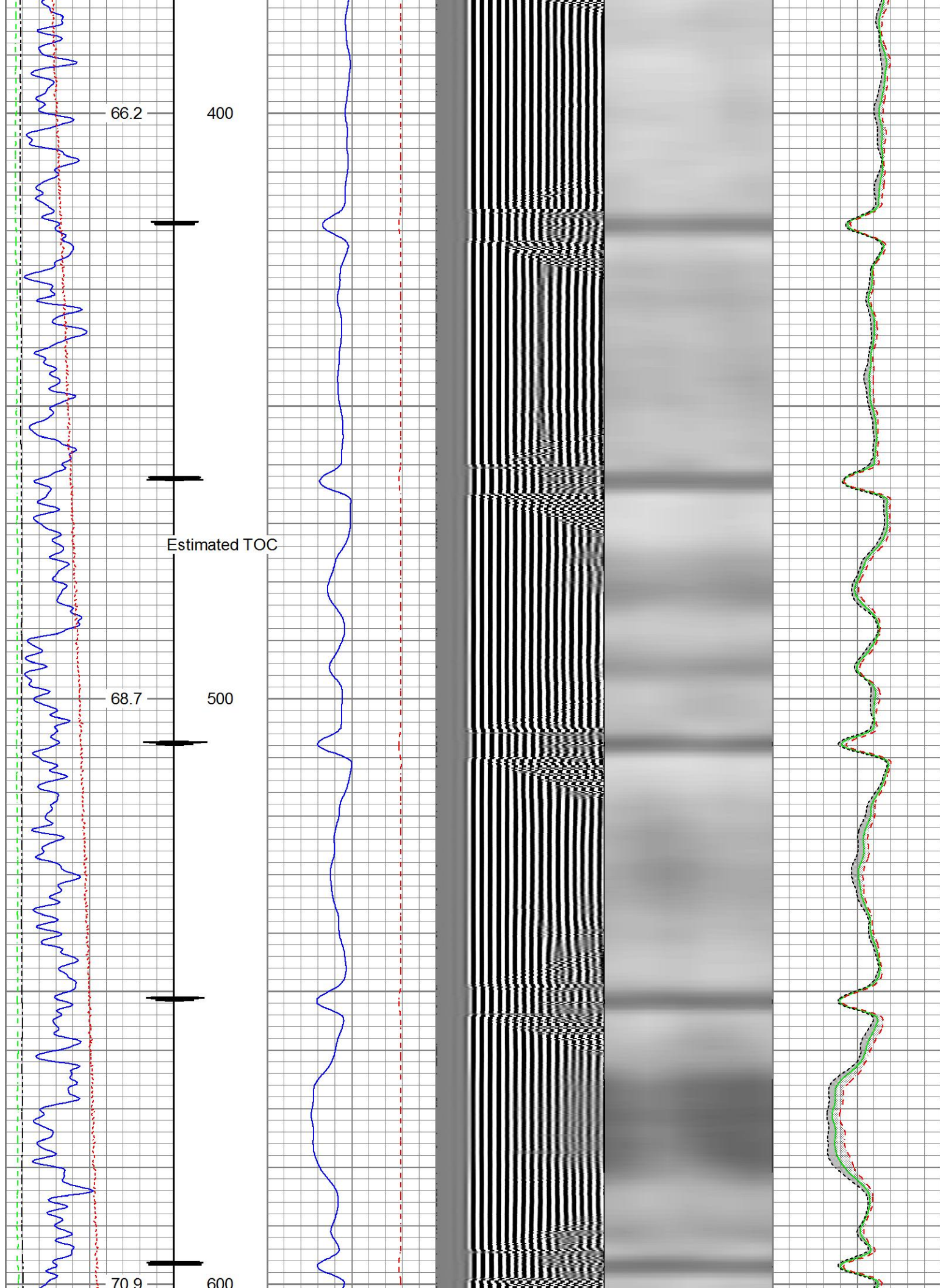
Recorded with 2800 PSI Surface Induced Pressure

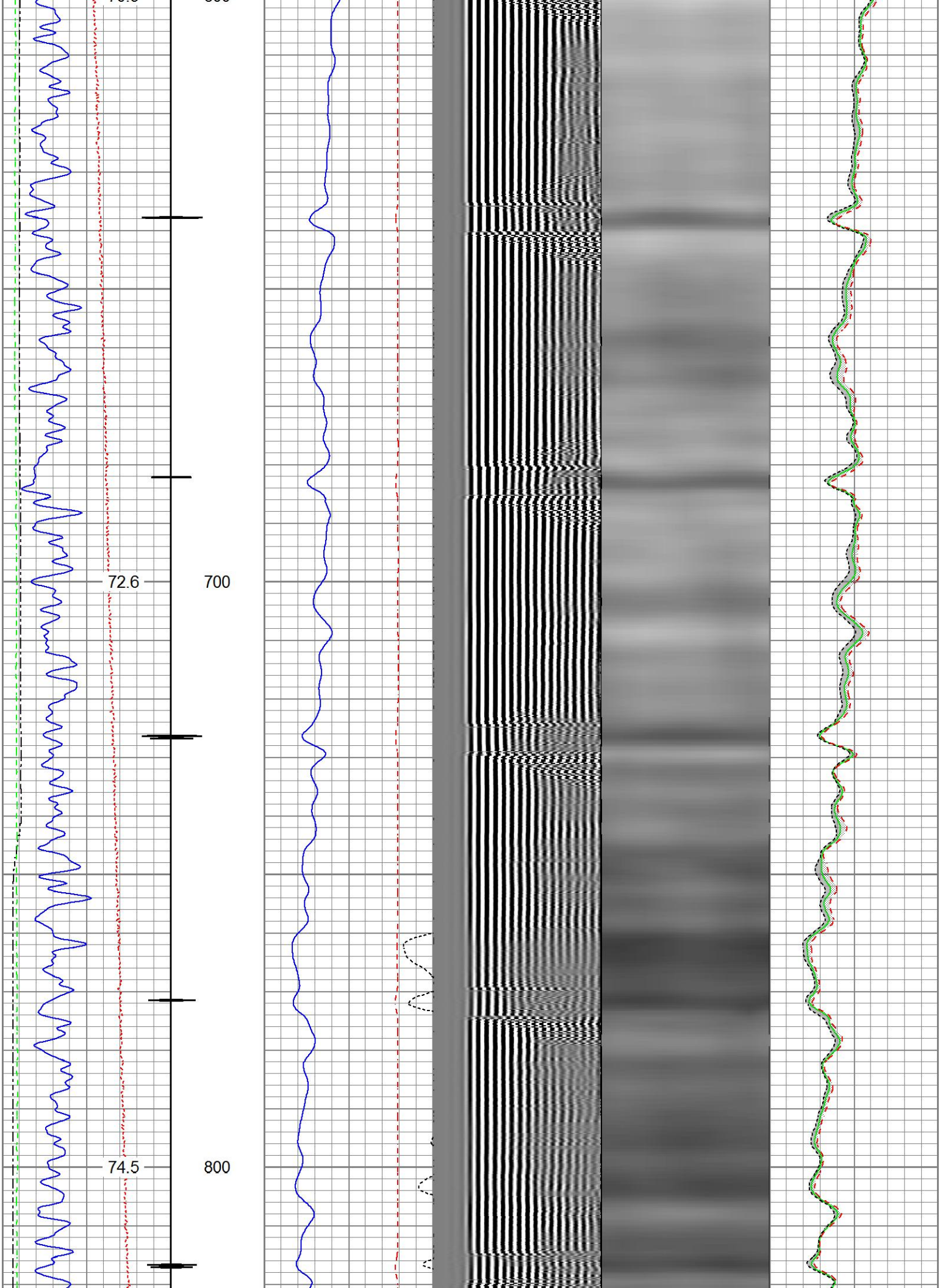
Database File	0512342394_anadarko_land_28n-29hz_08-16-16_rbl_w8.db
Dataset Pathname	main
Presentation Format	ros_radri
Dataset Creation	Tue Aug 16 18:12:32 2016
Charted by	Depth in Feet scaled 1:240

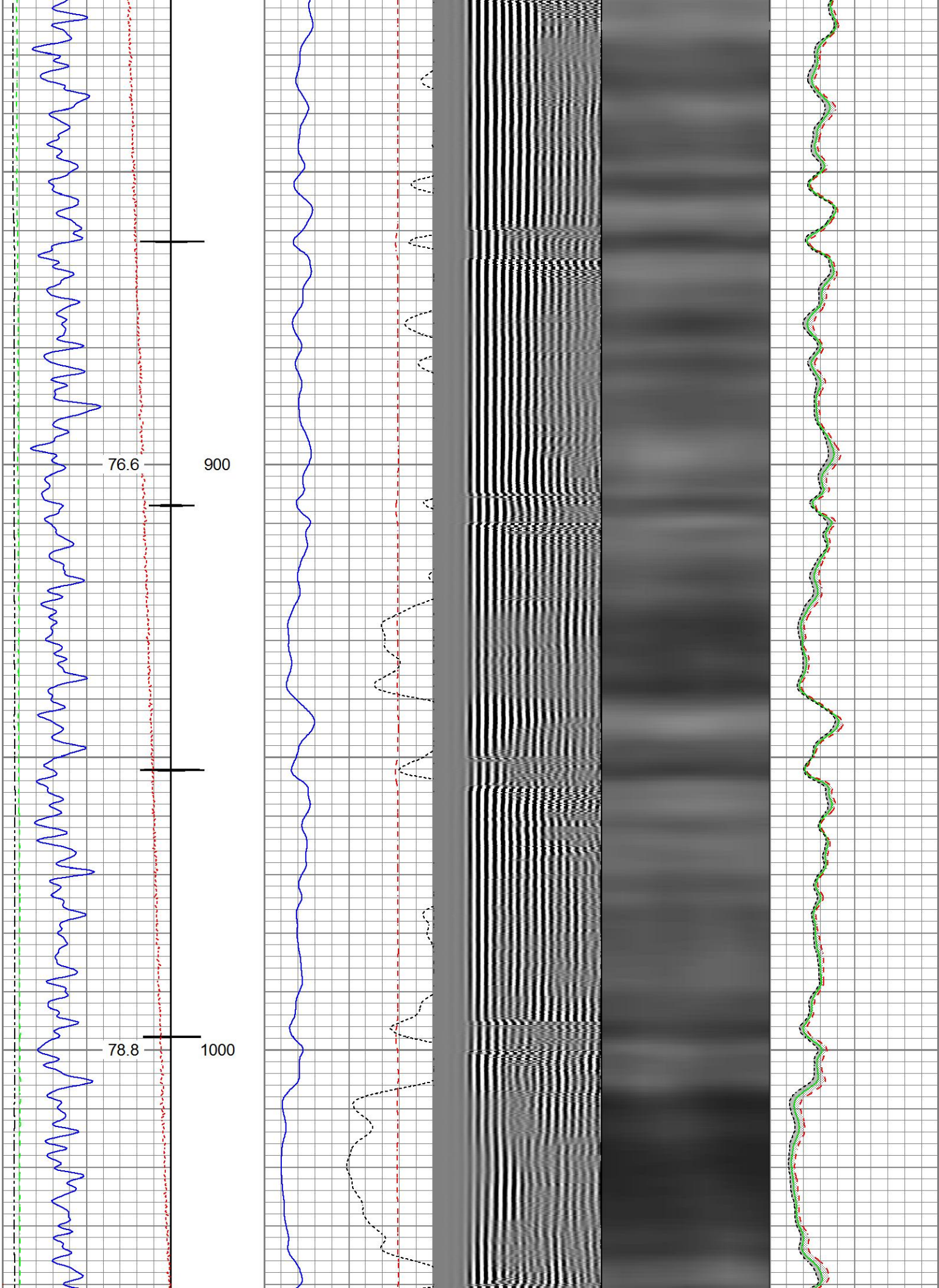
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min)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

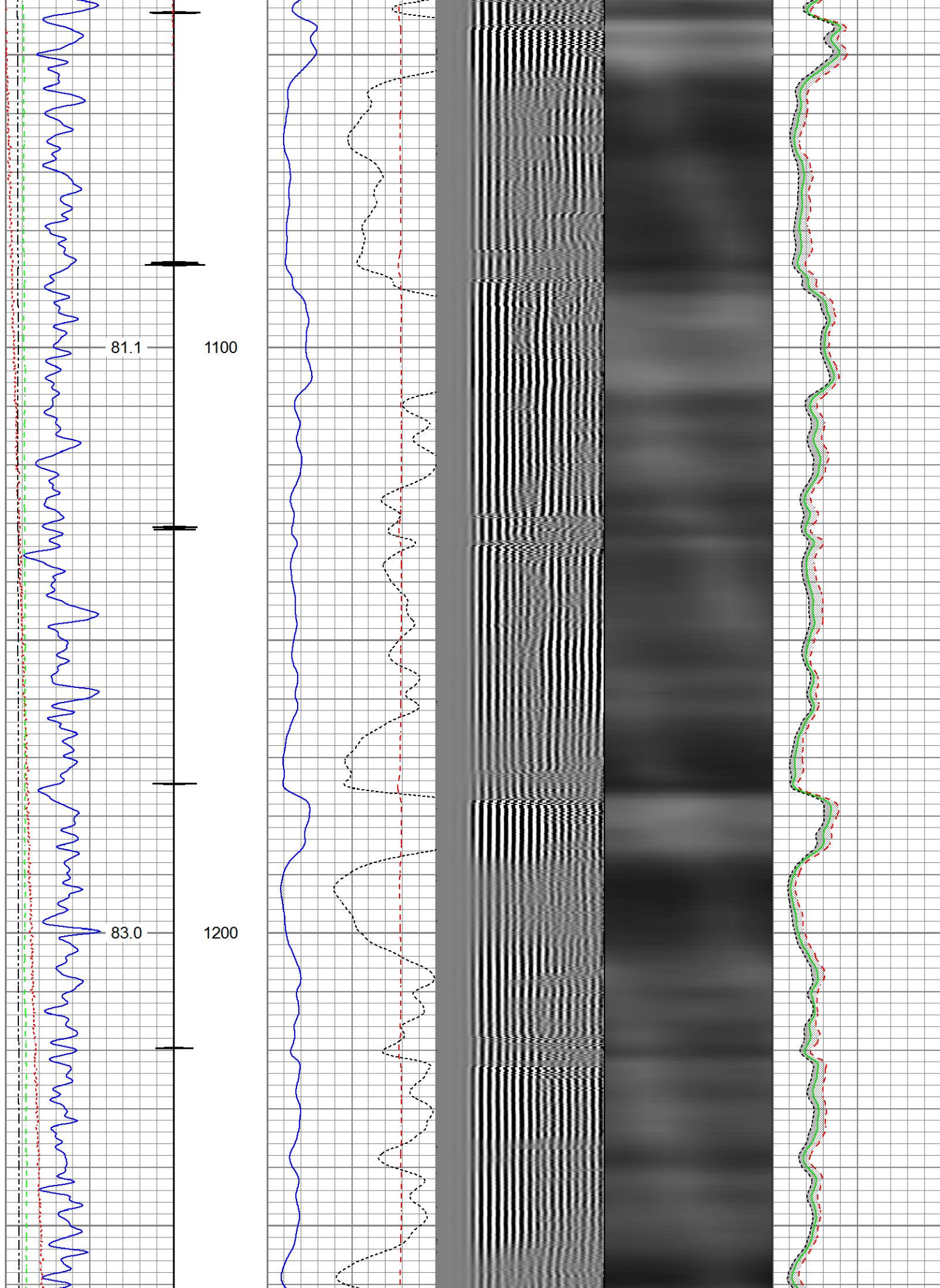


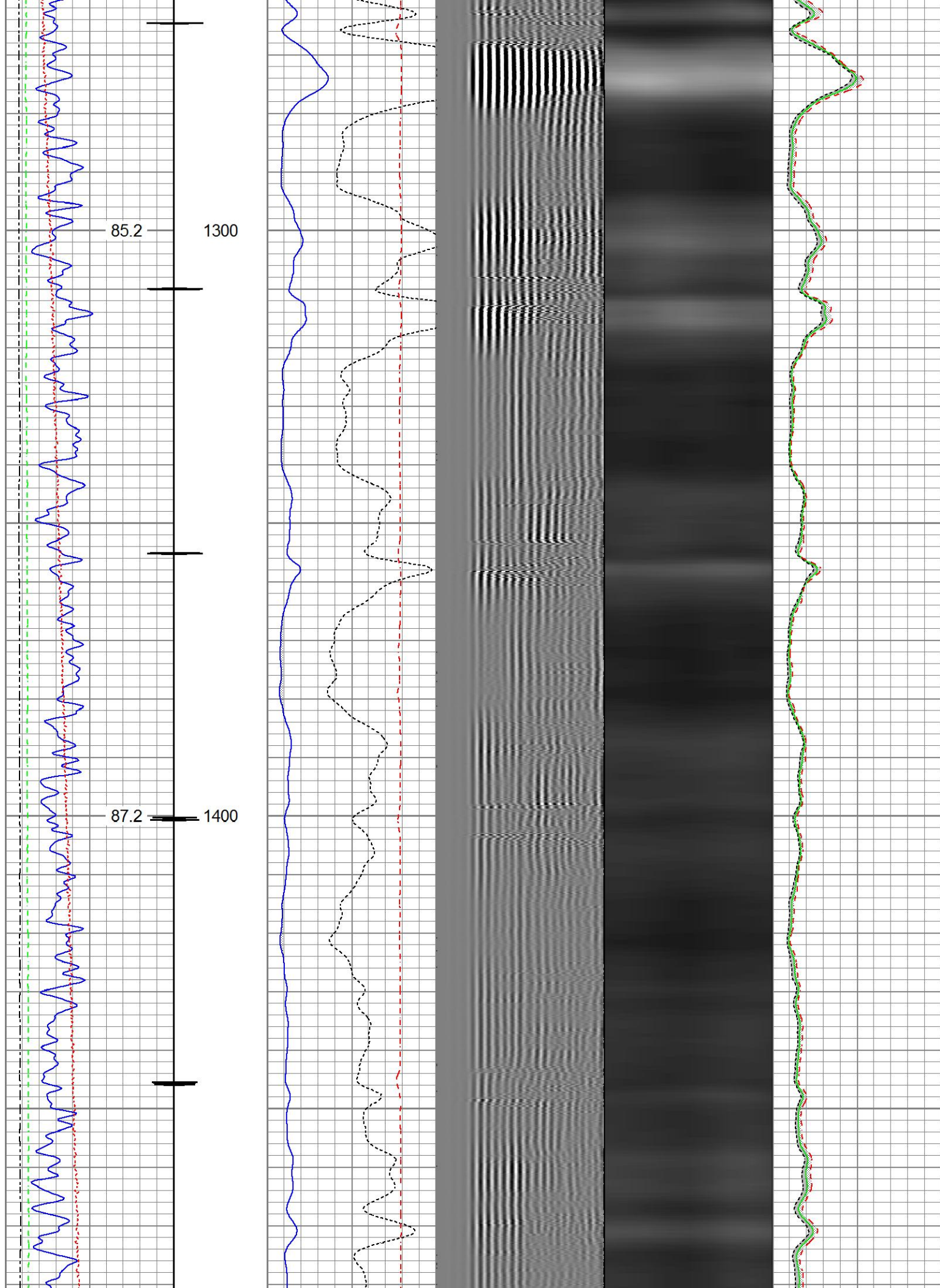


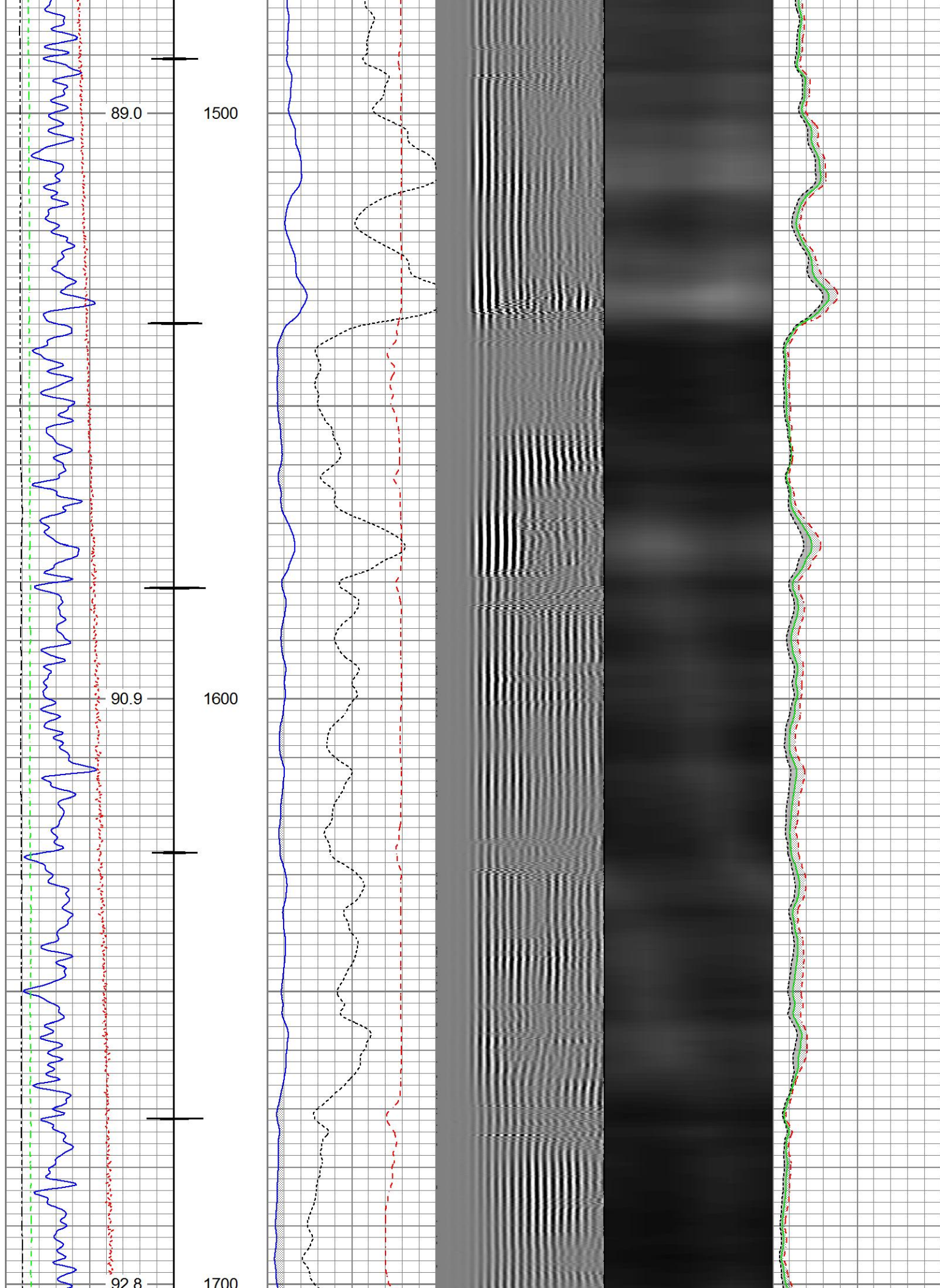


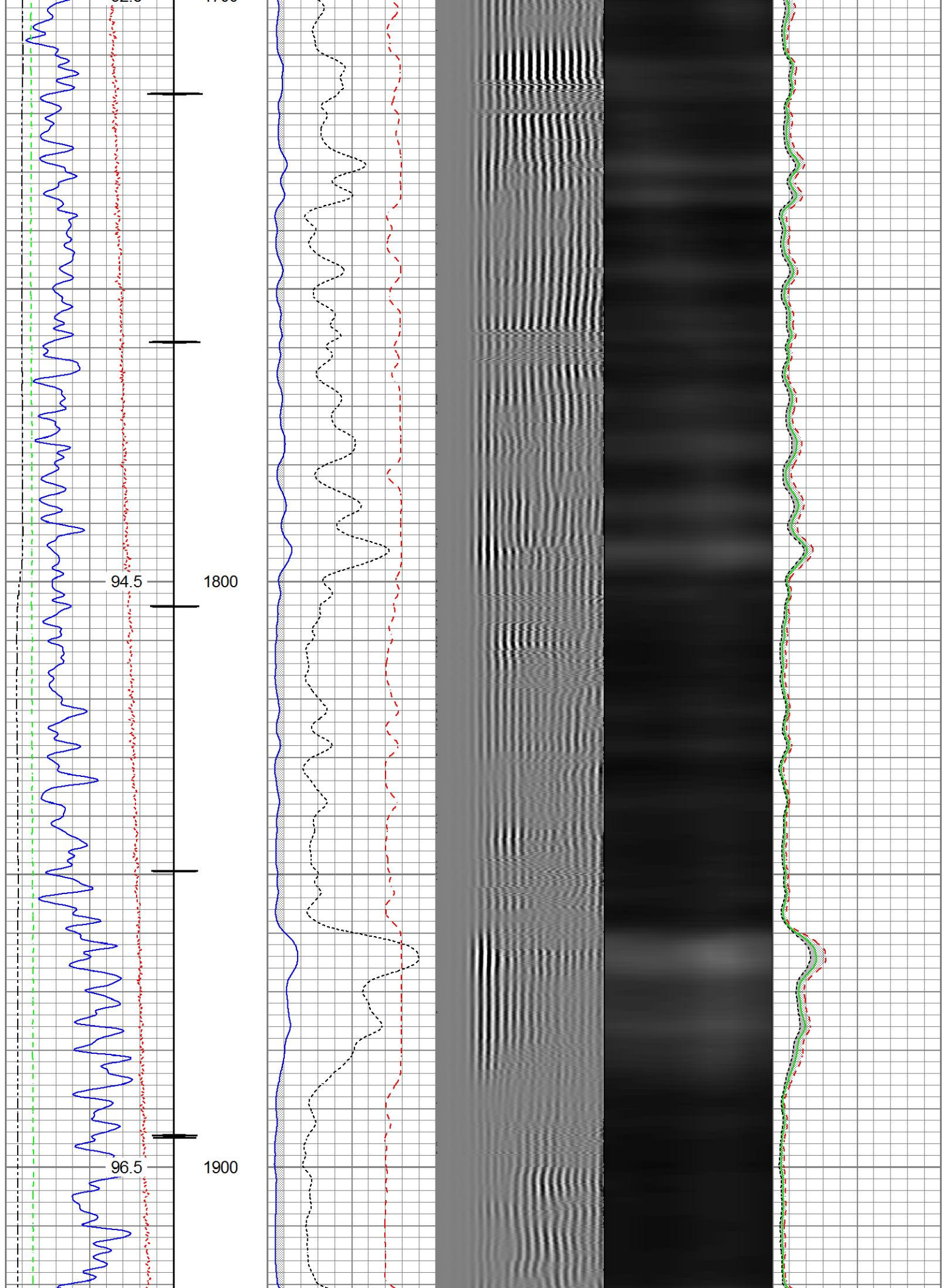


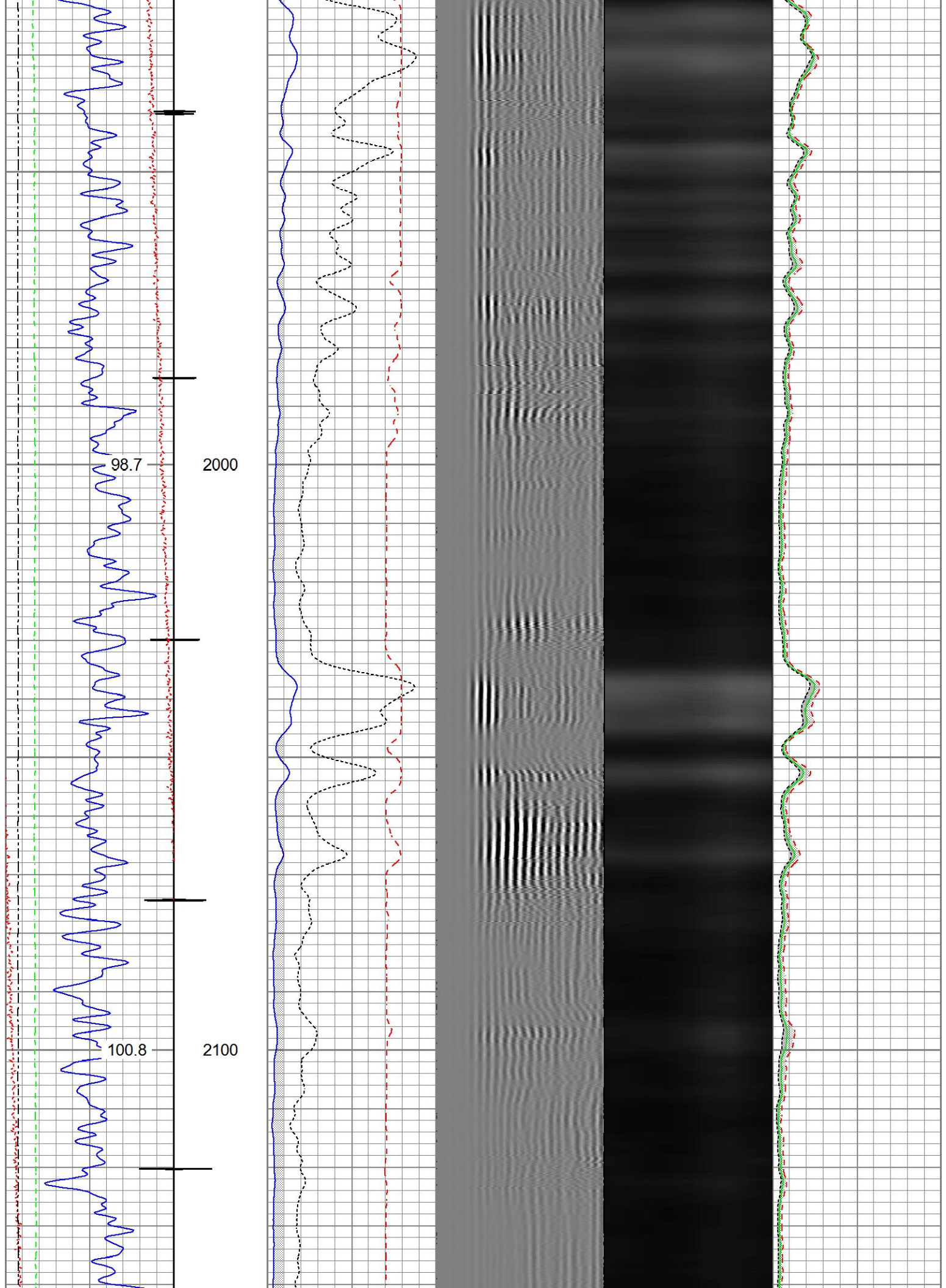


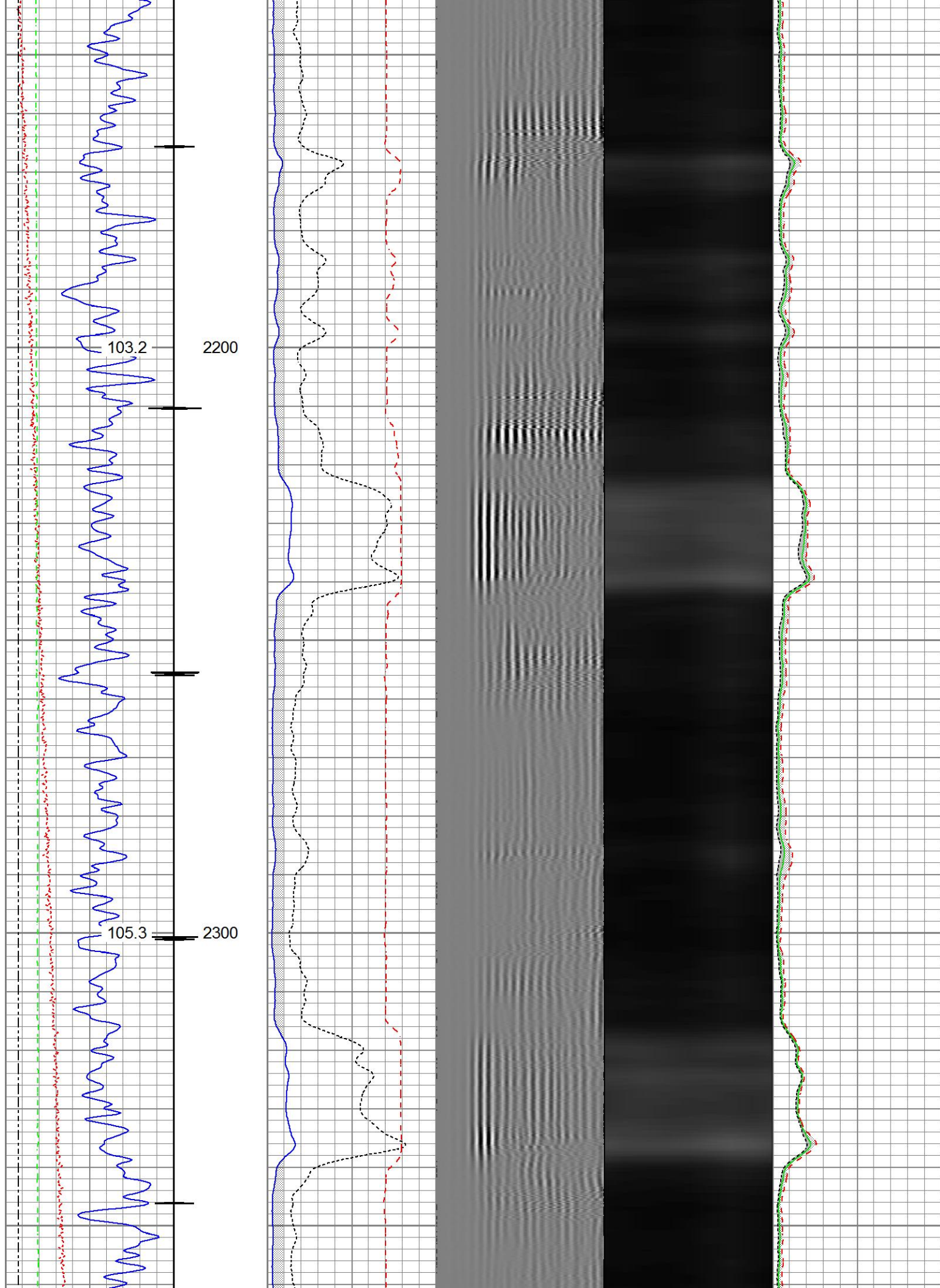


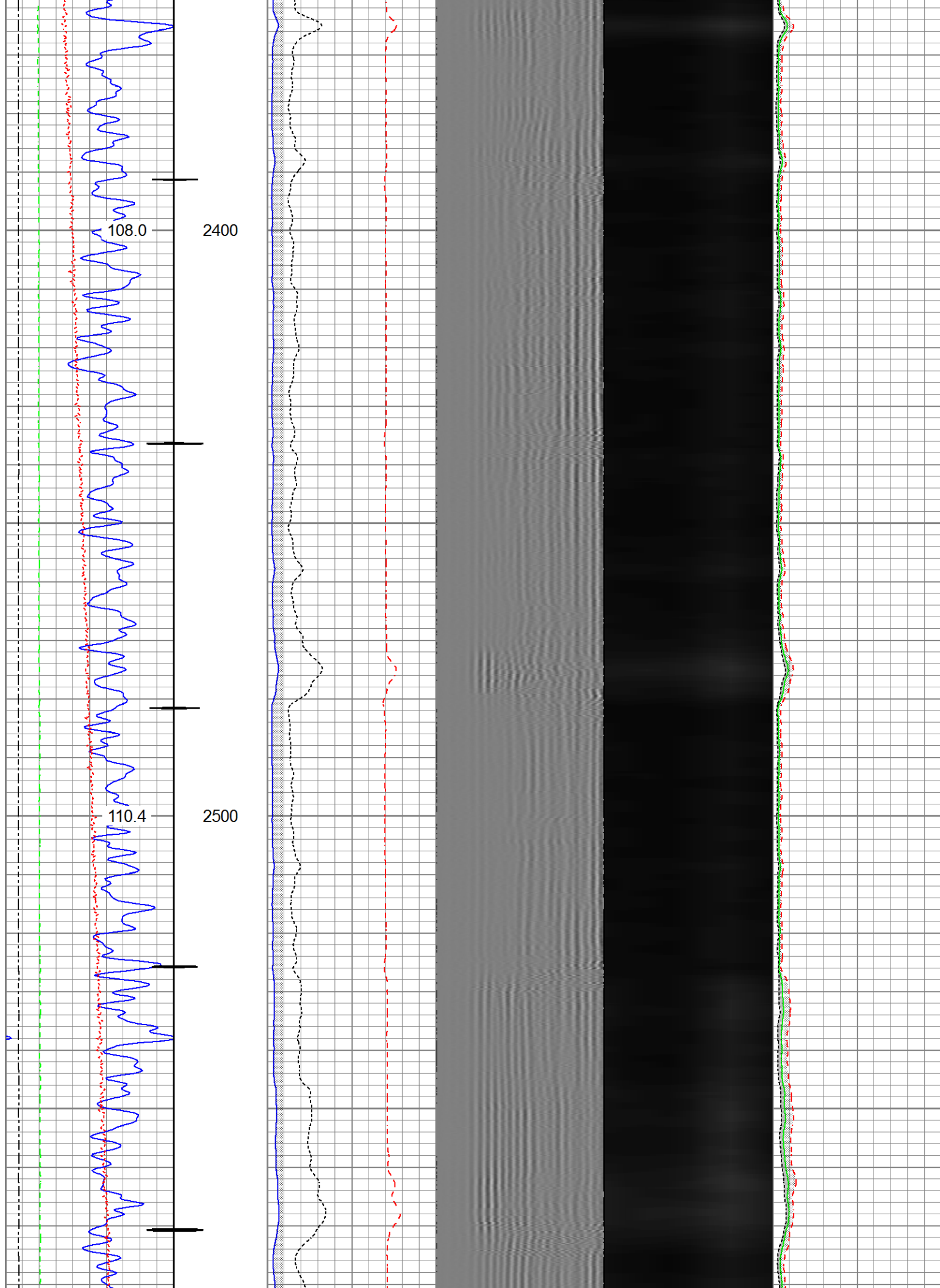


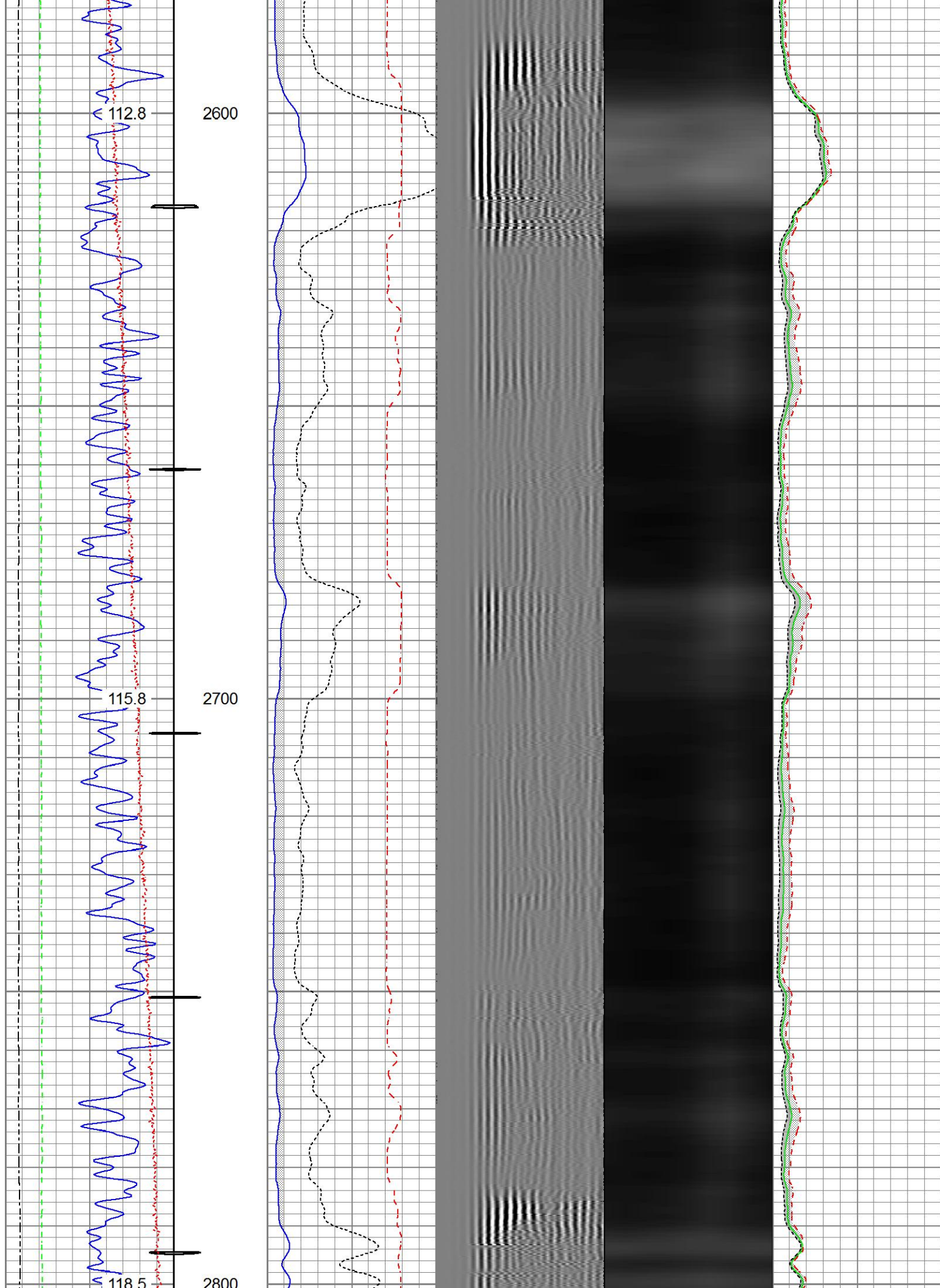


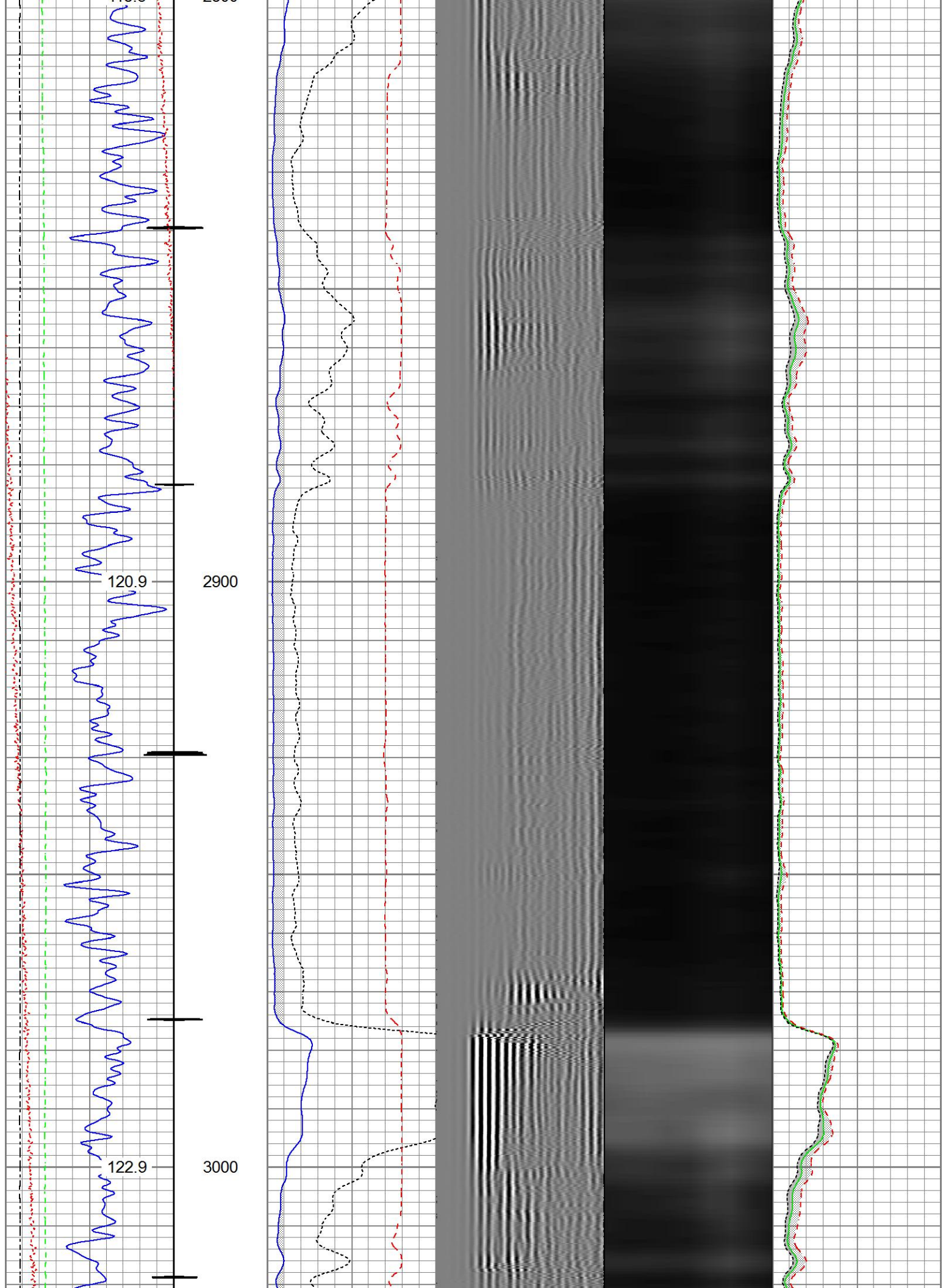


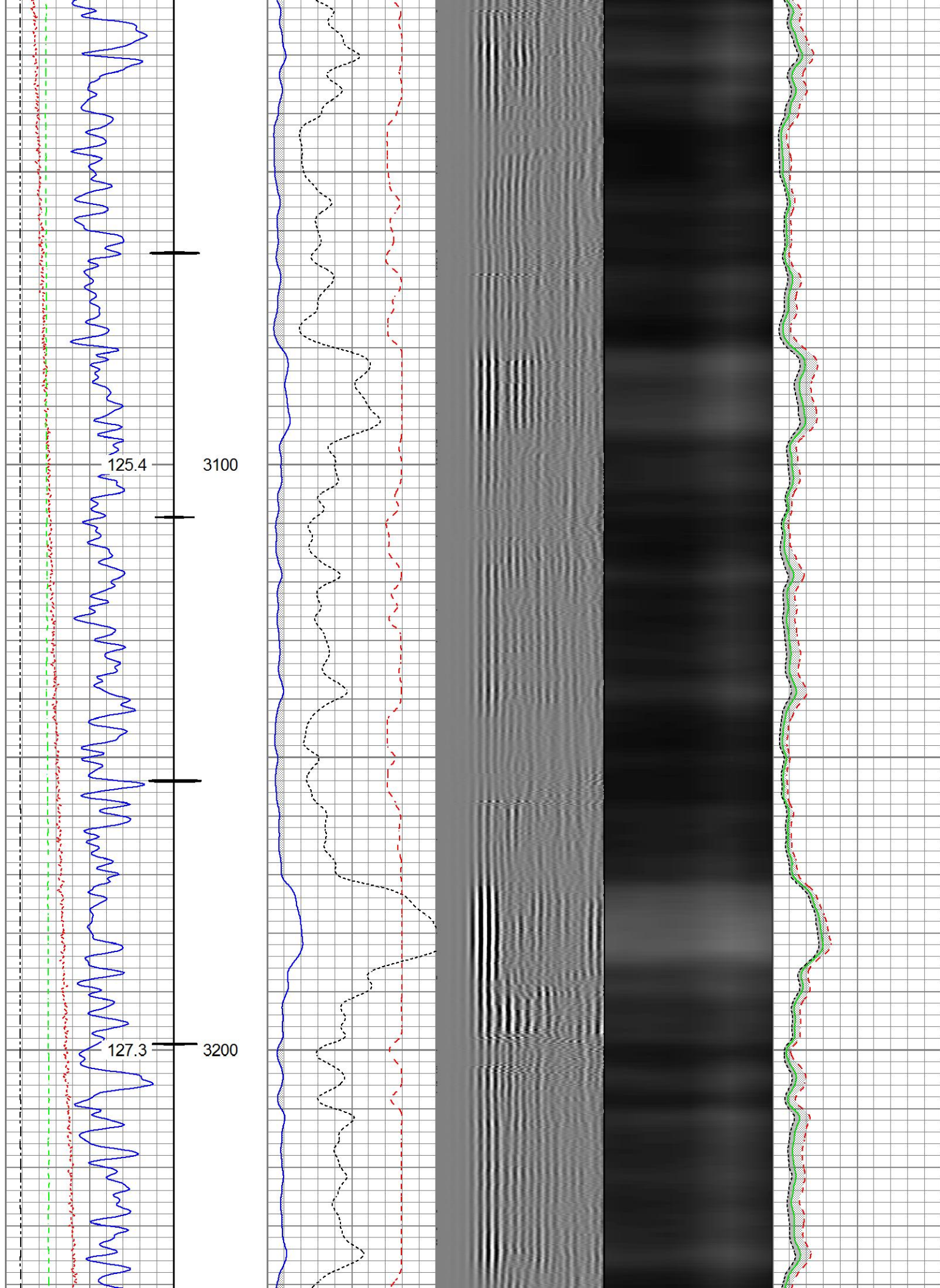


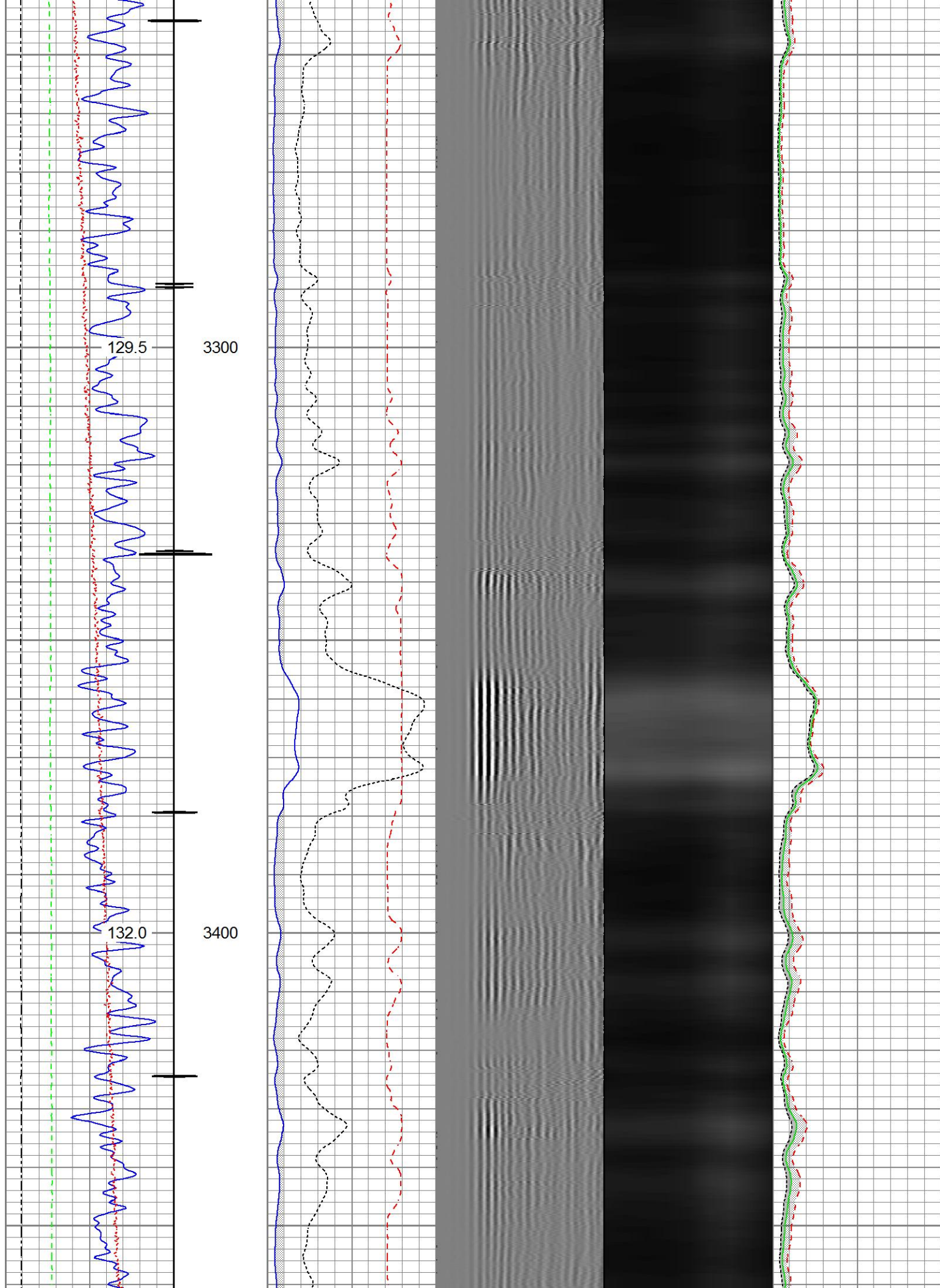


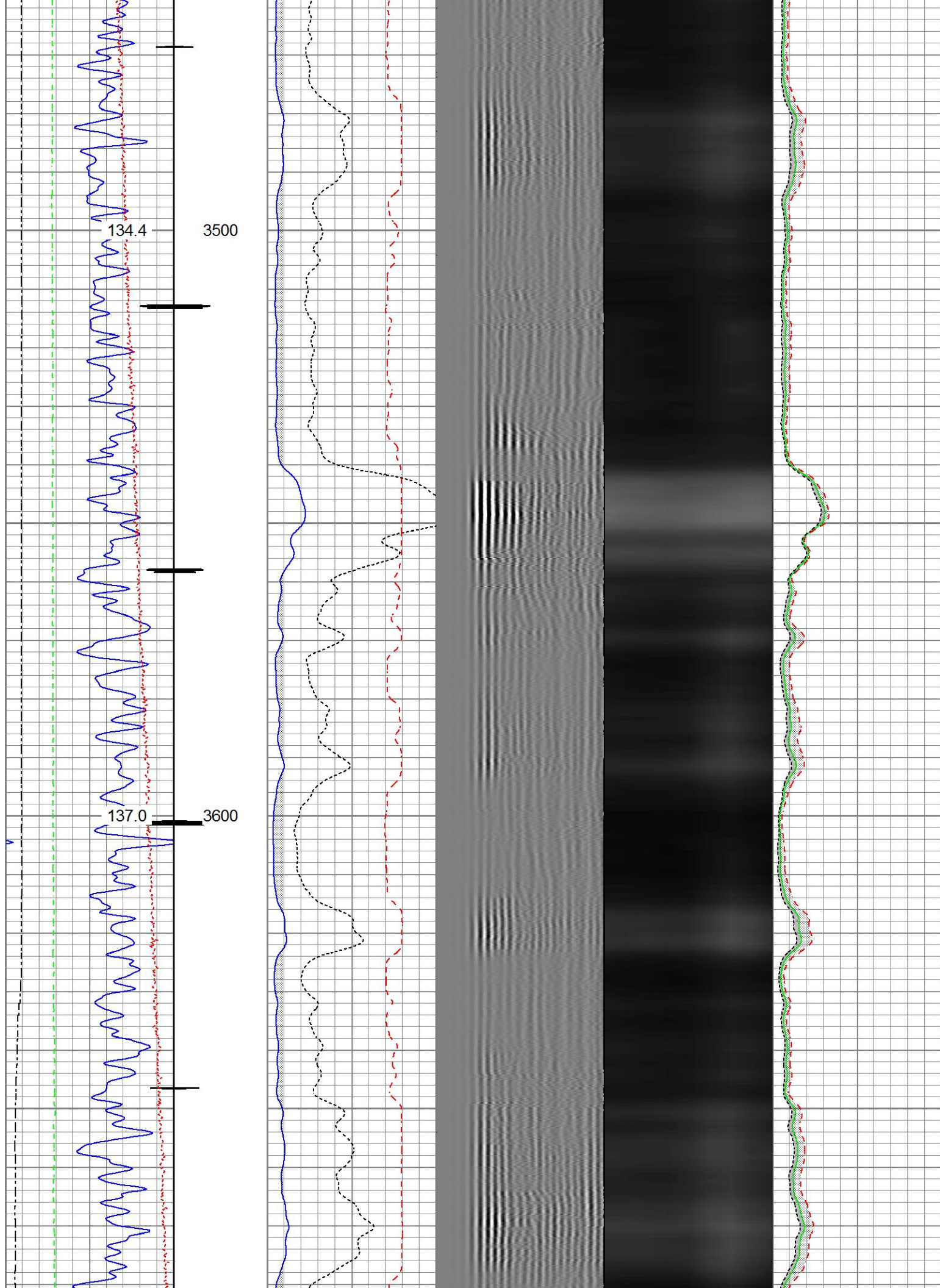


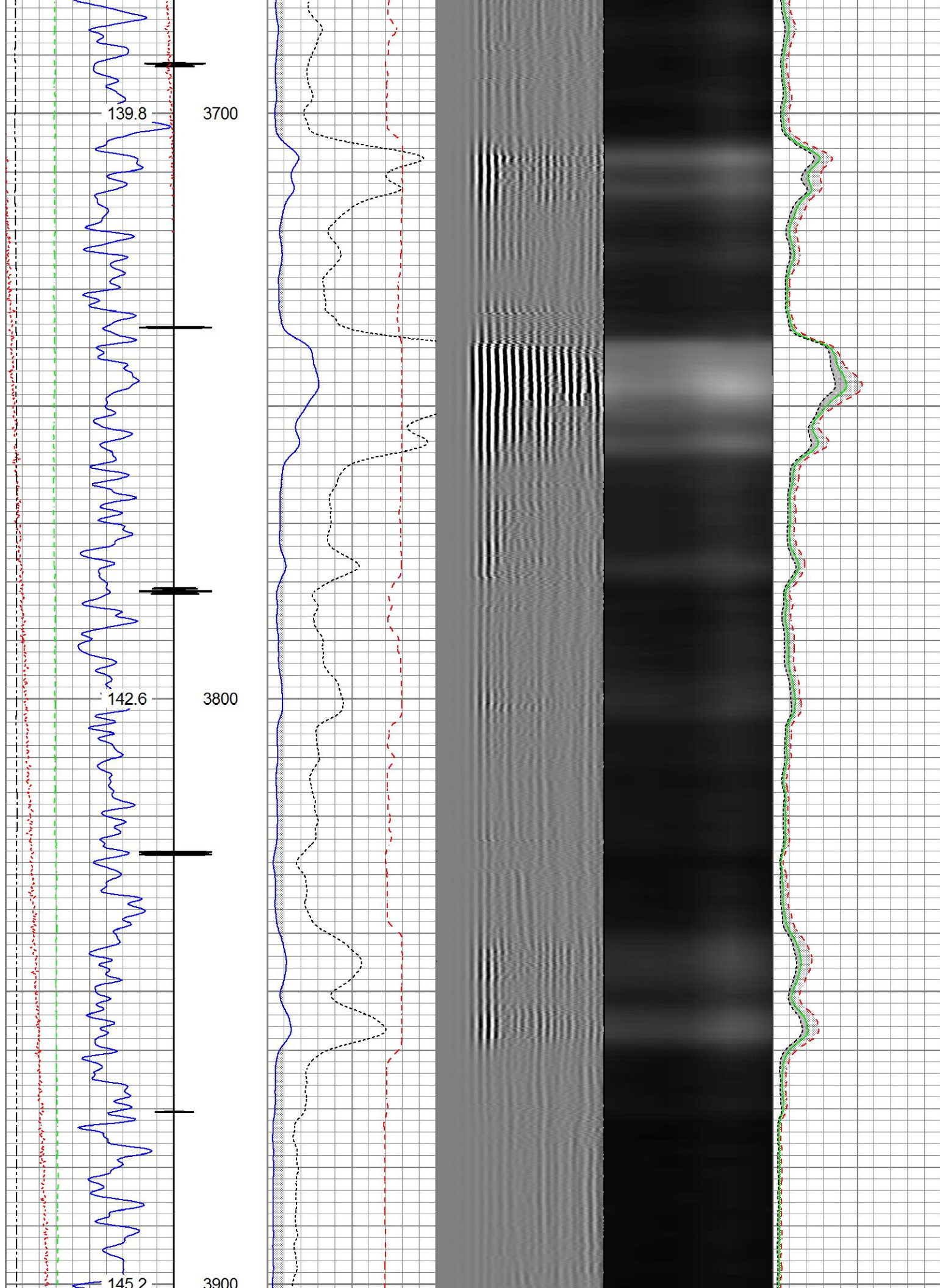


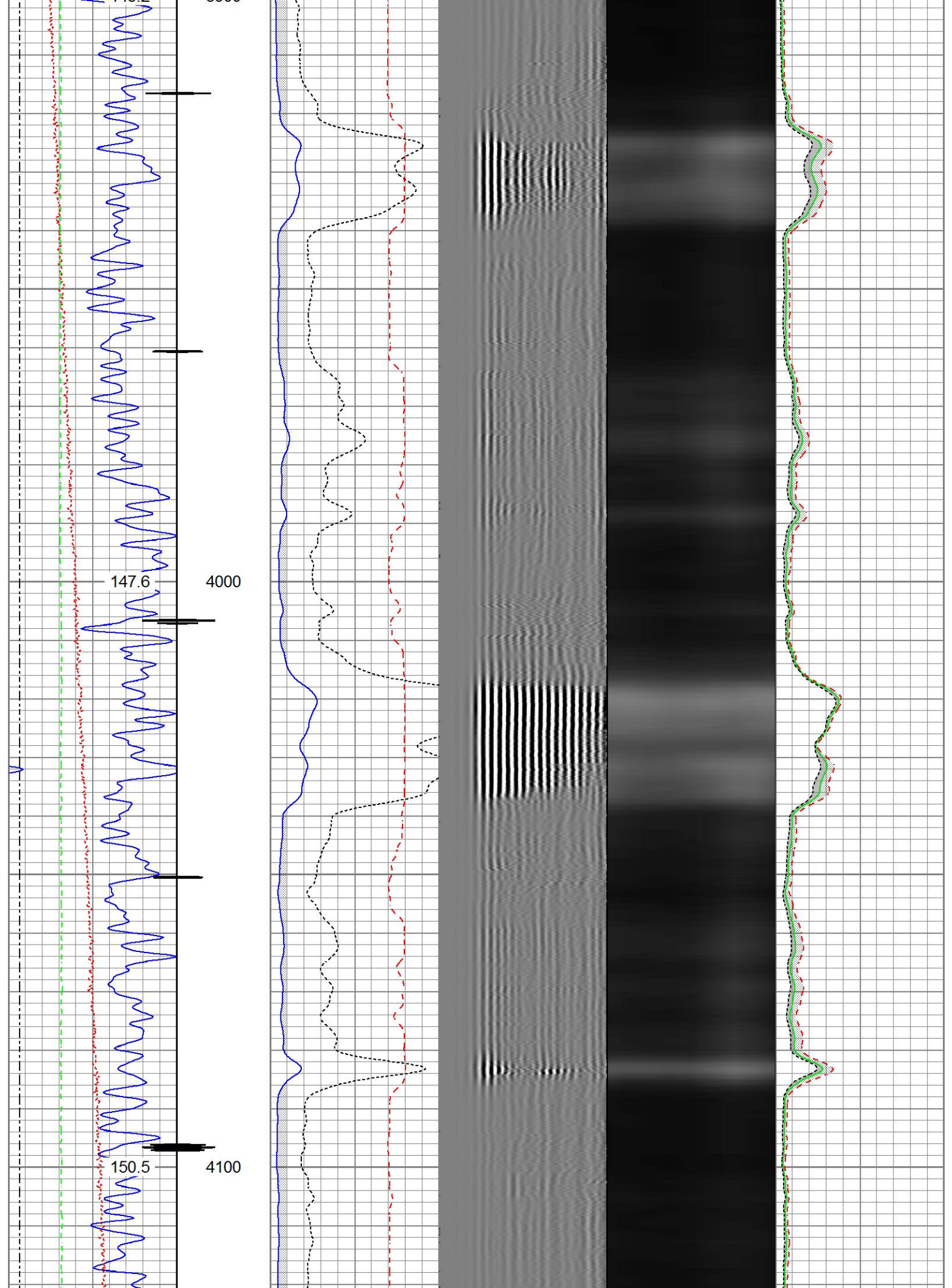


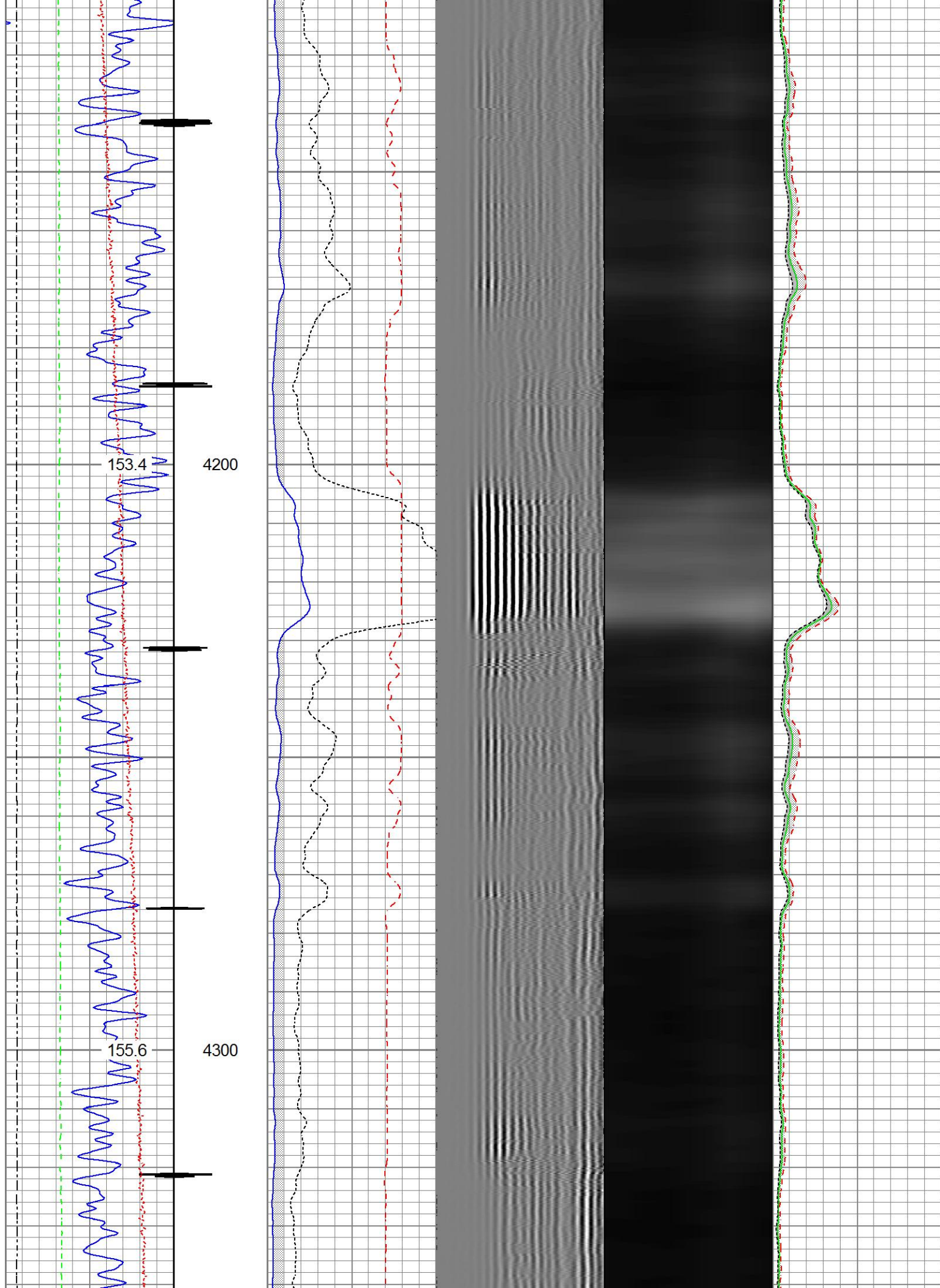


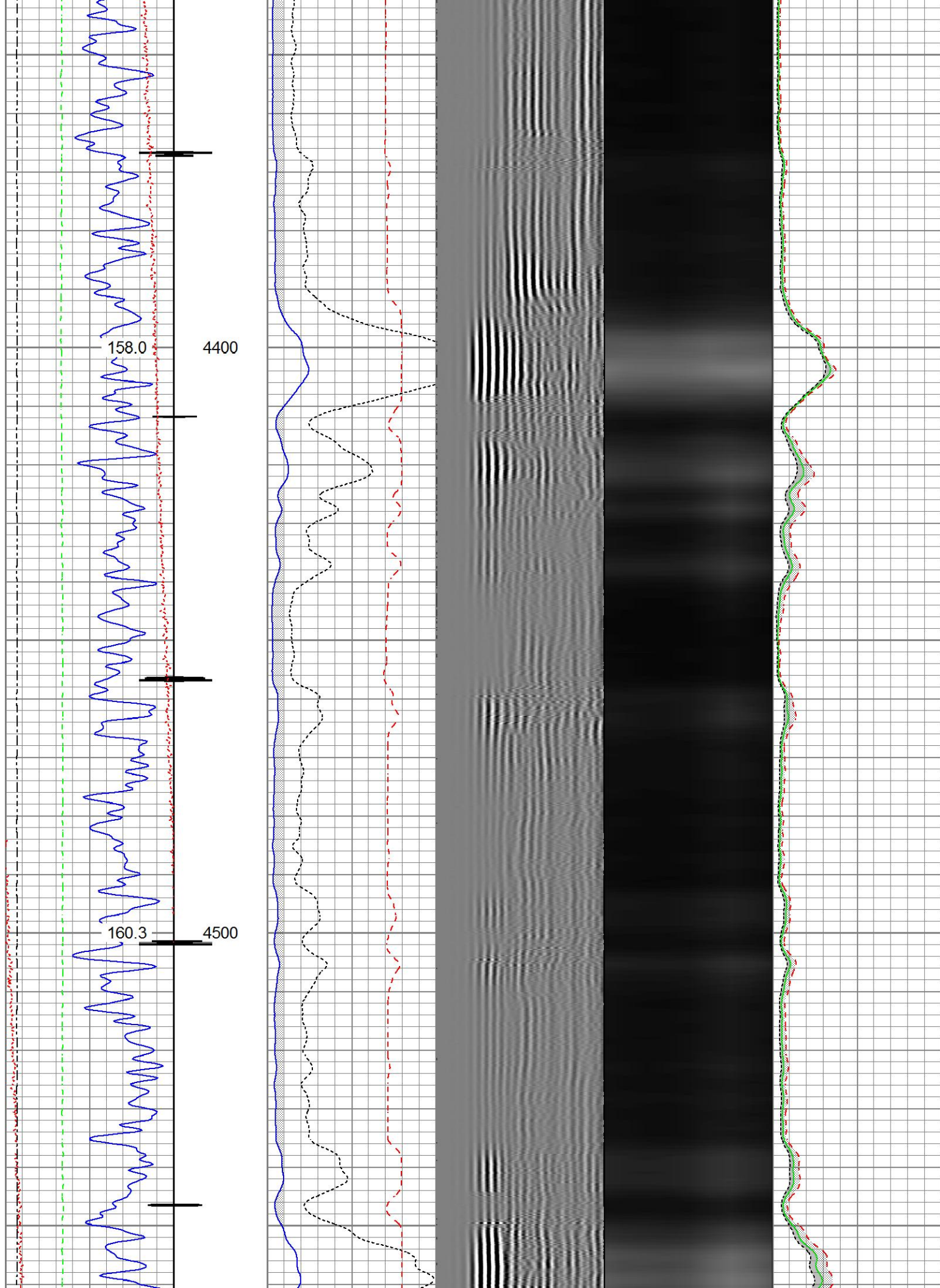


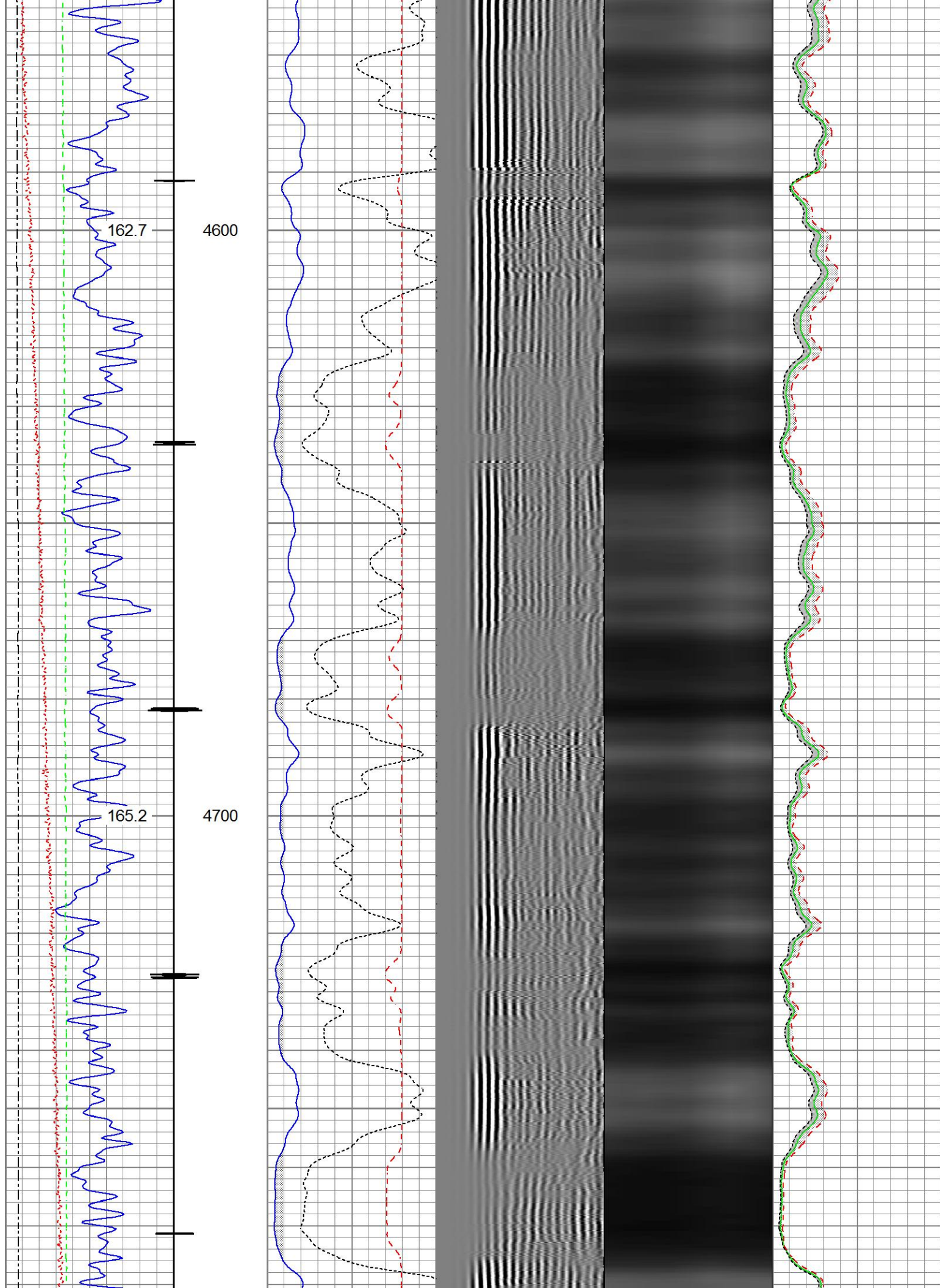


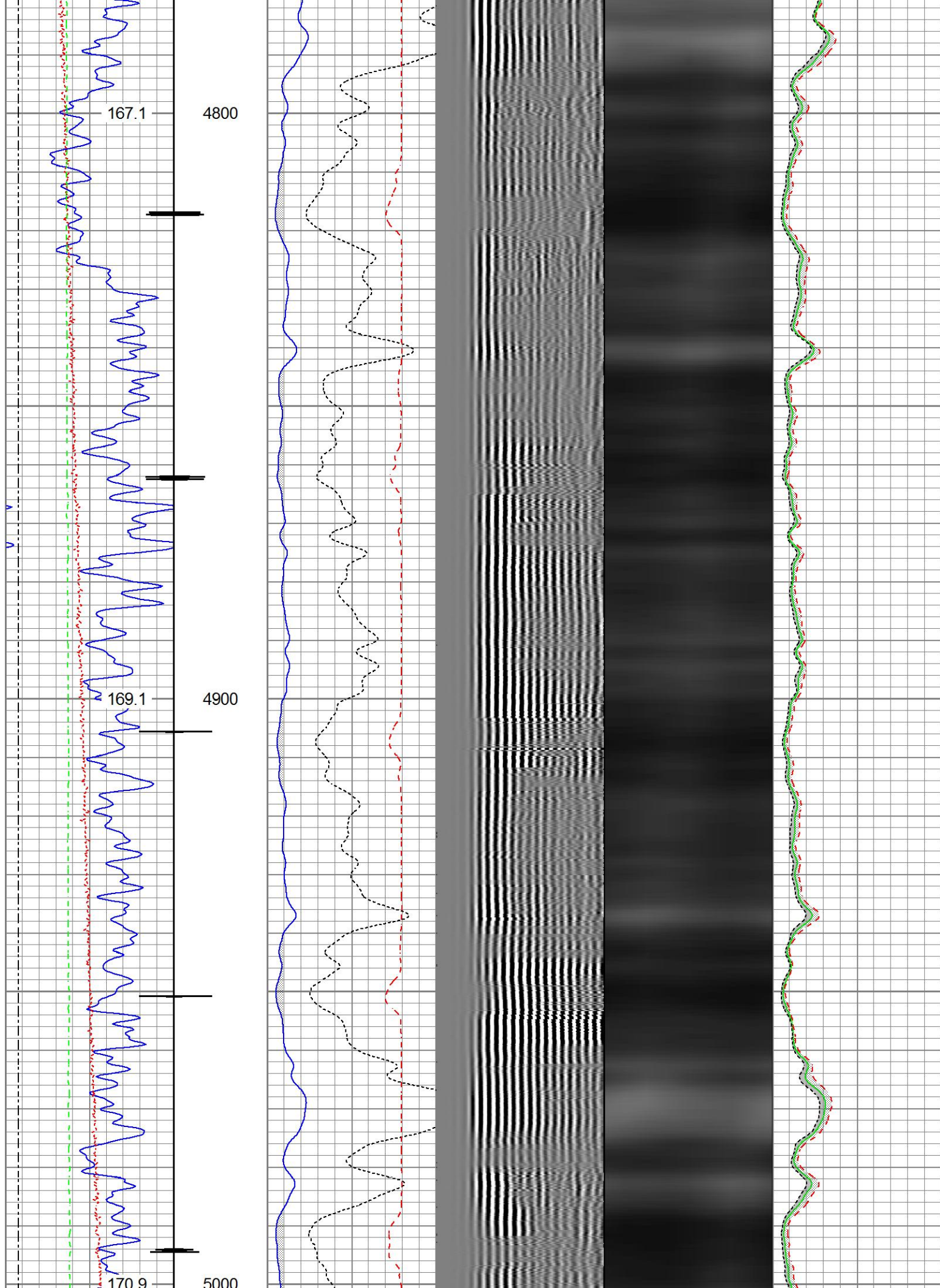


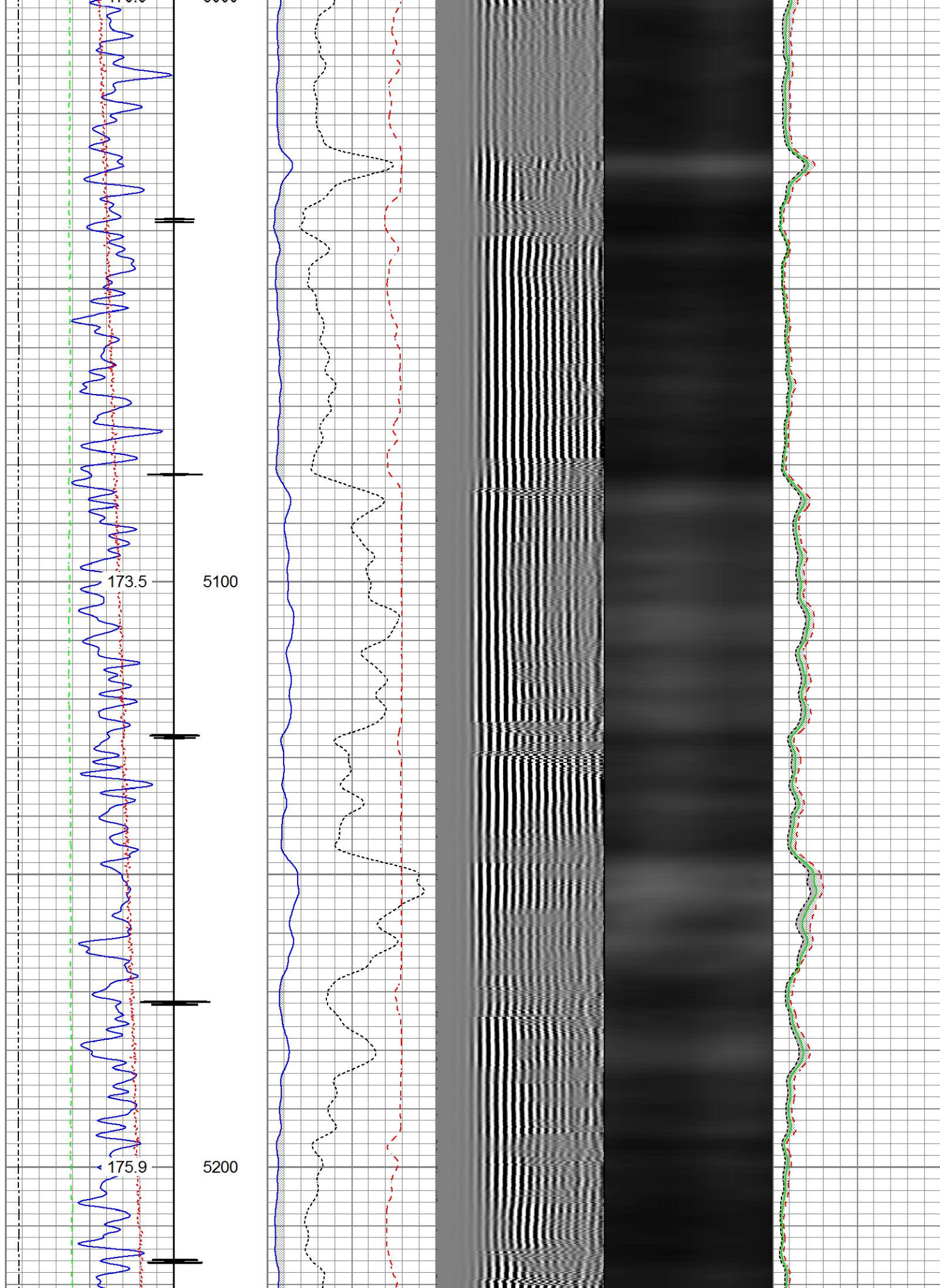


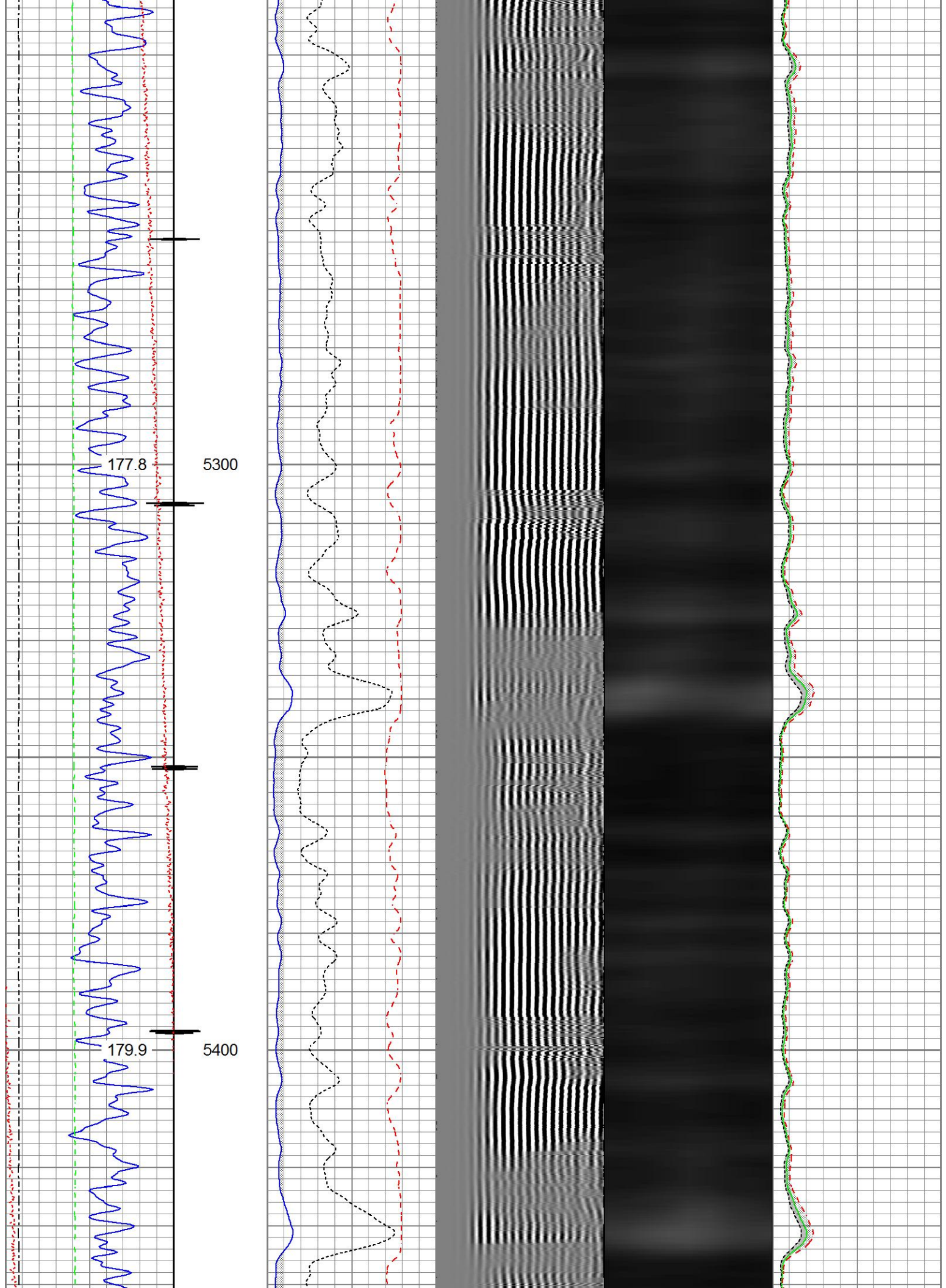


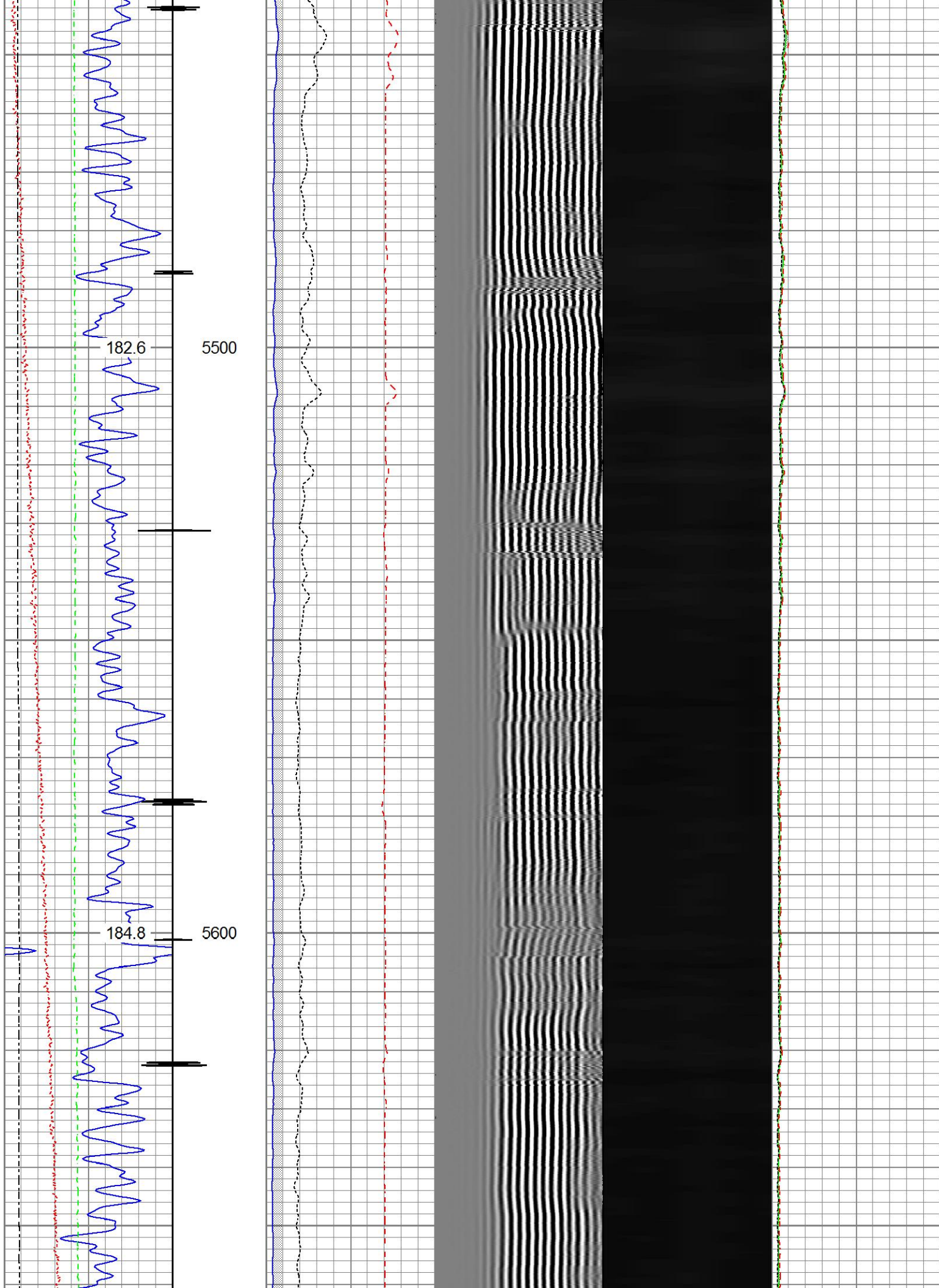


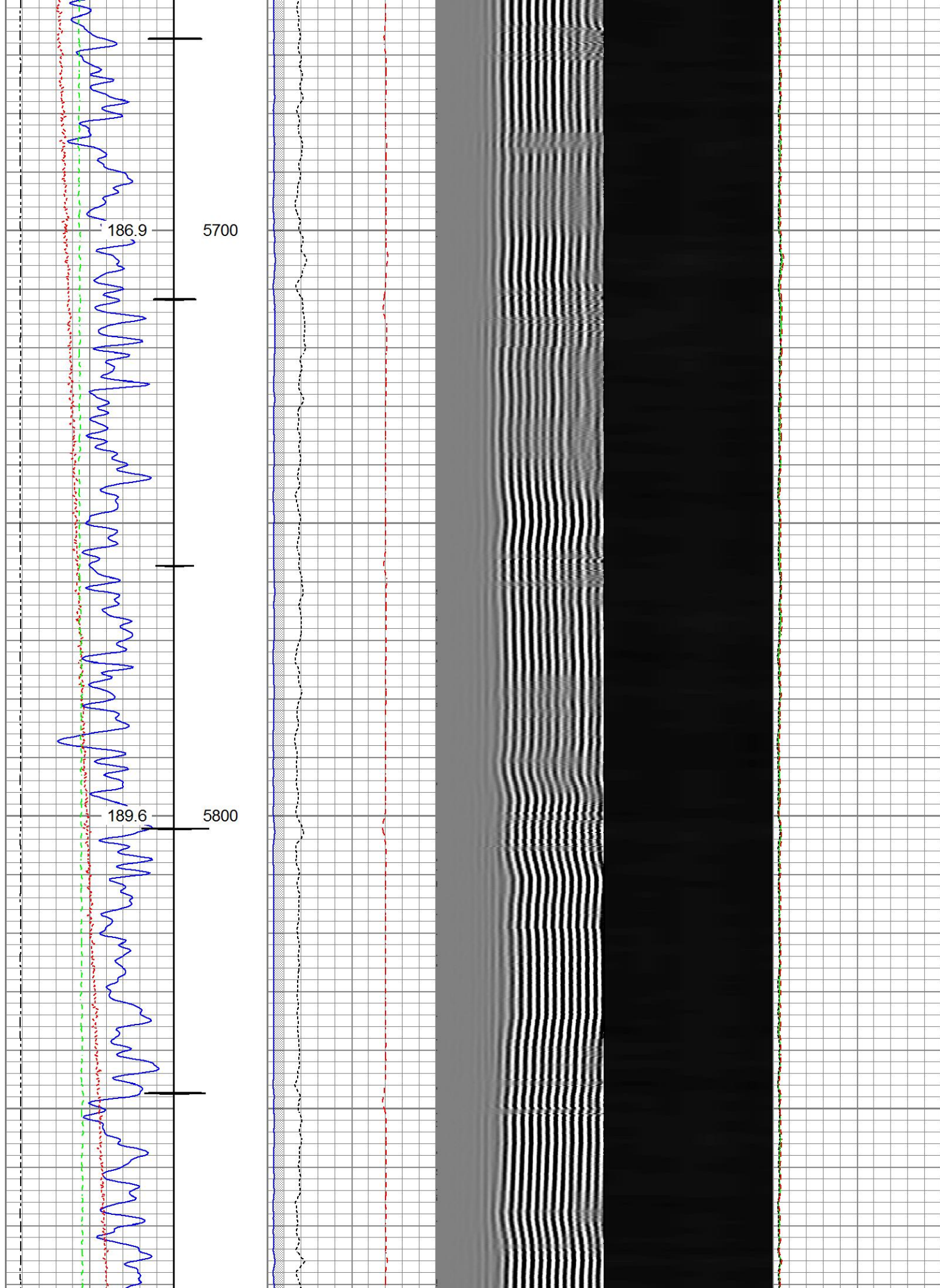


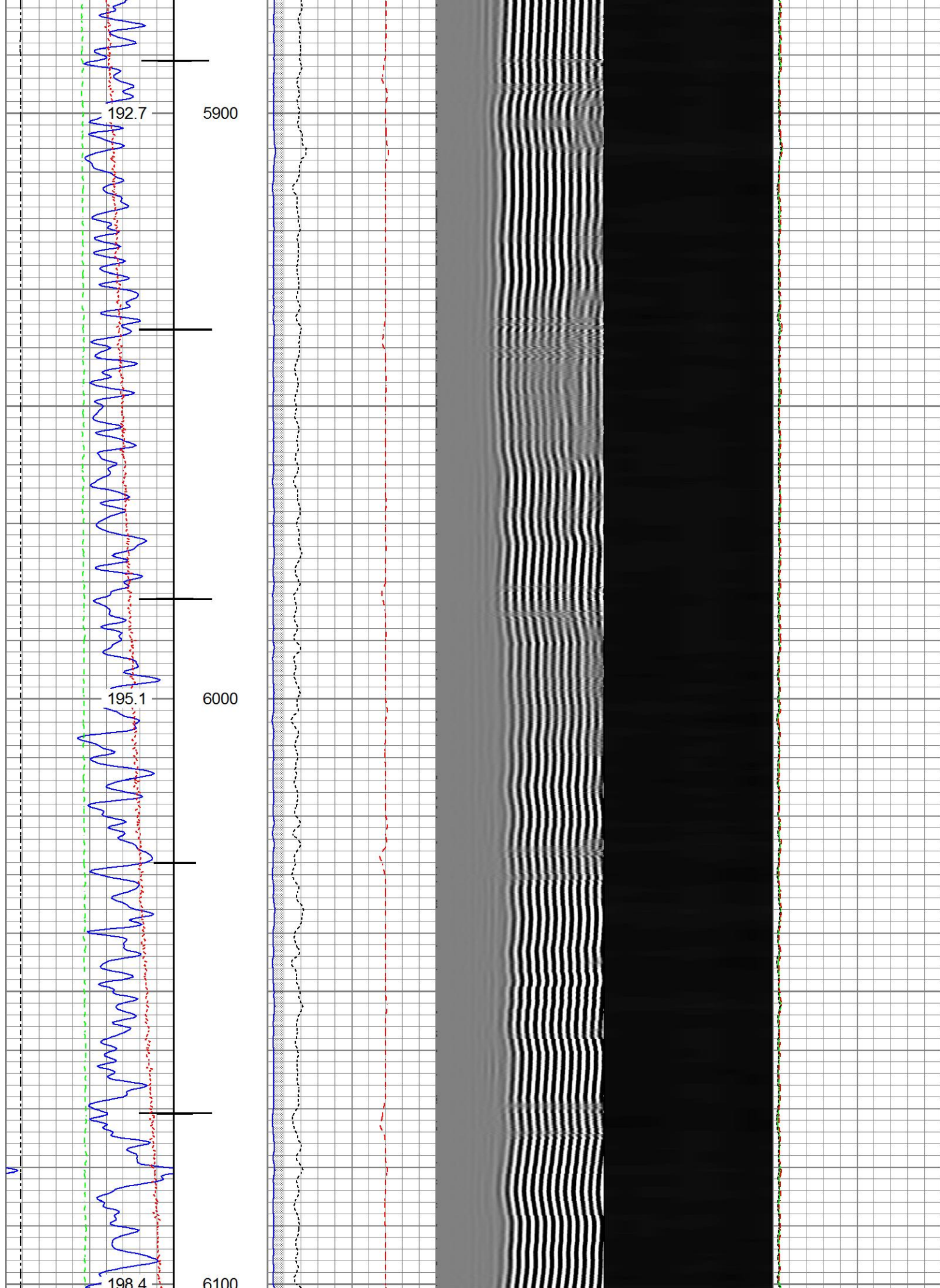


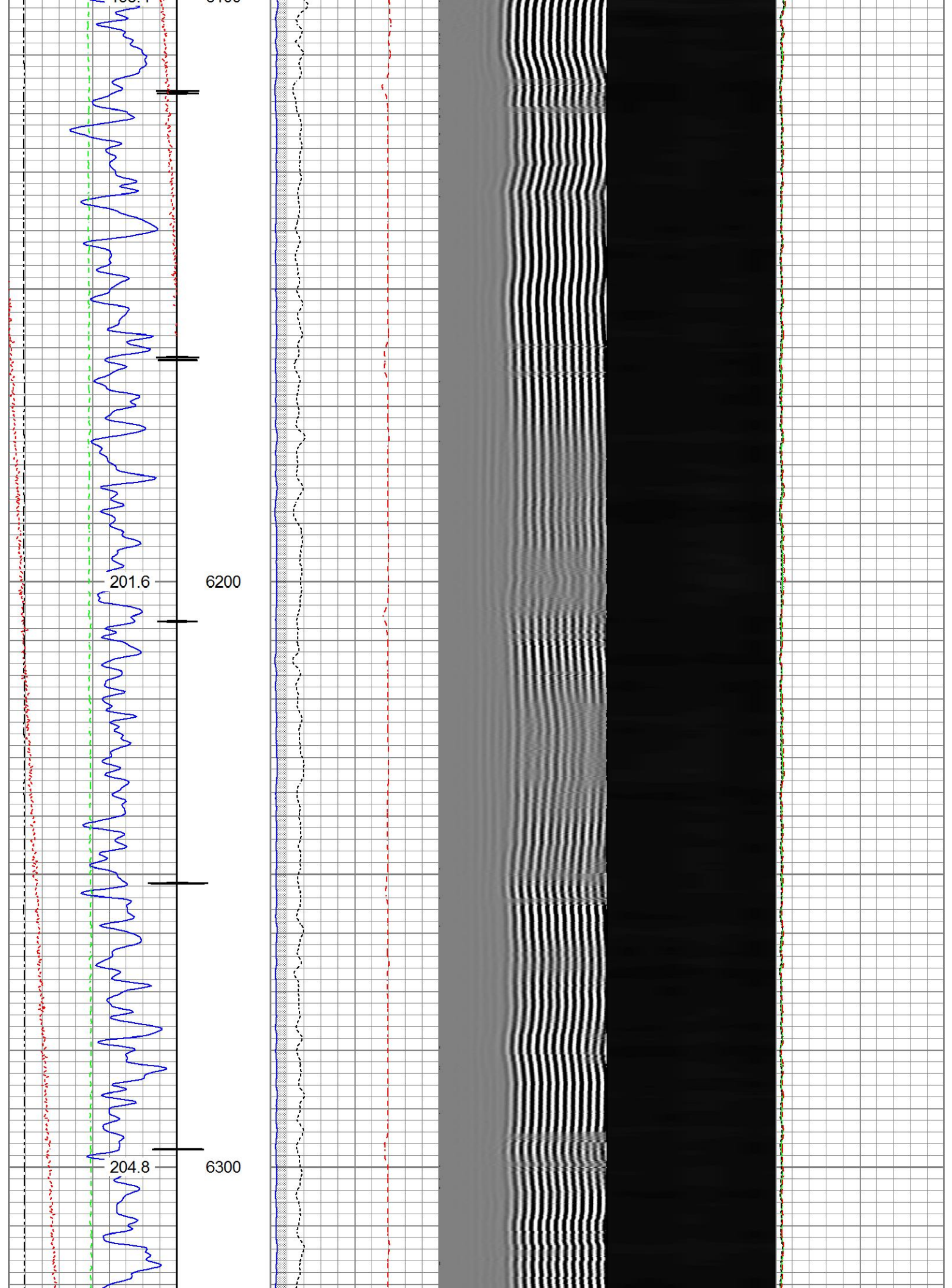


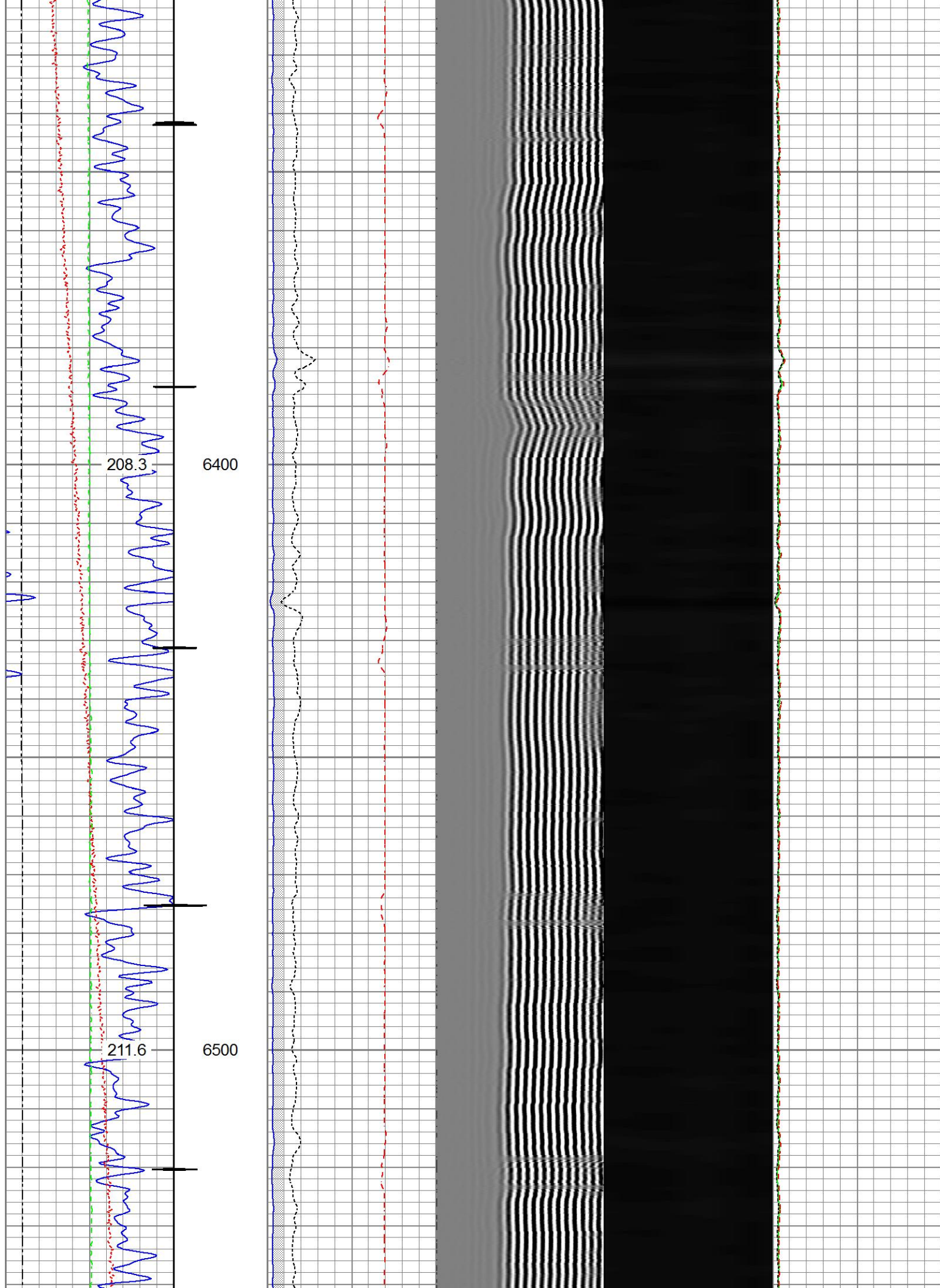


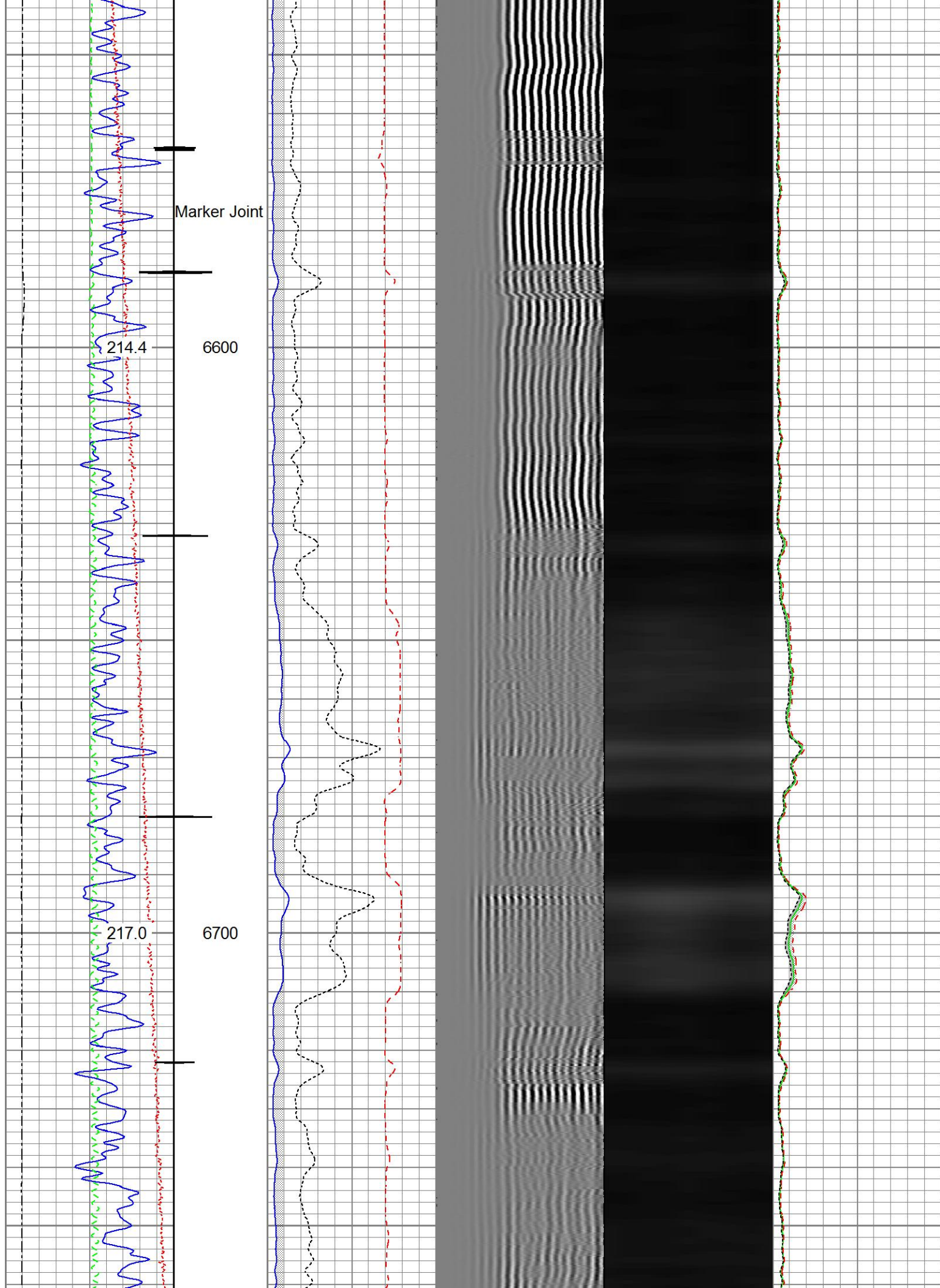


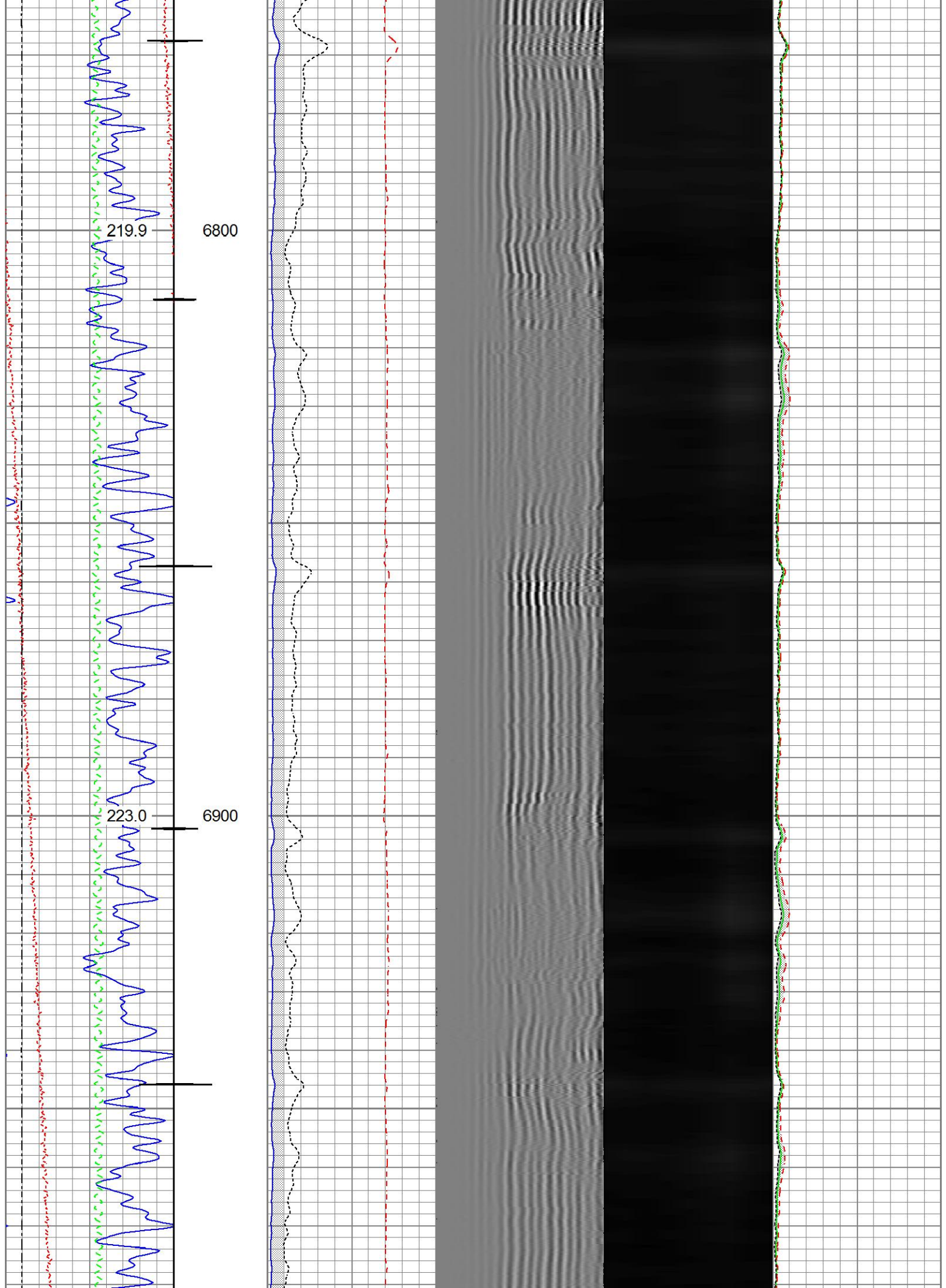


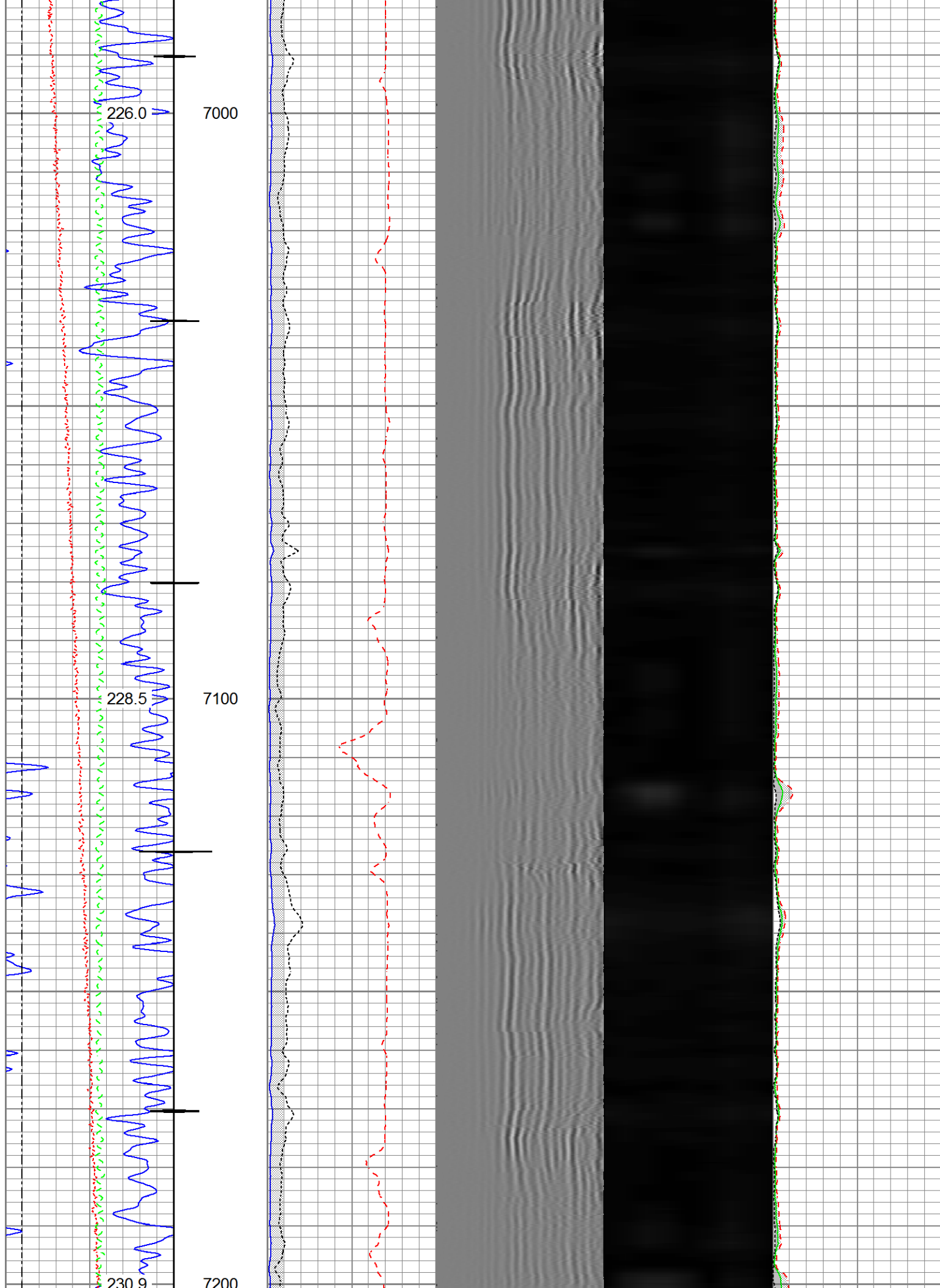


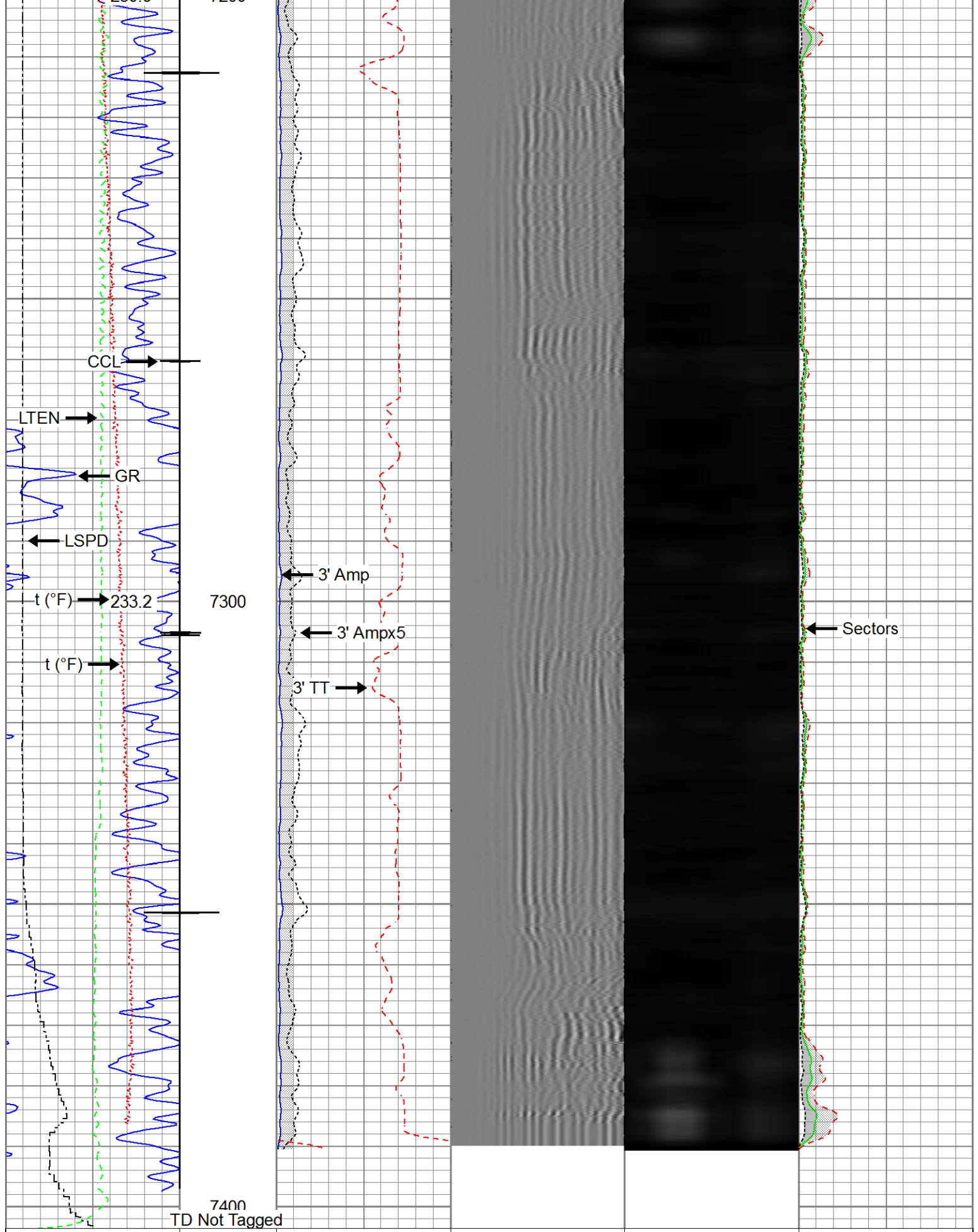












Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude (mV)
0 120	0 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5 (mV)			Minimum Amplitude (mV)
Temperature	0 20			0 100

Temperature	0 (degF) 20	3' Travel Time	0 (mV) 20	Maximum Amplitude	0 100
Line Speed	-150 (ft/min) 150	650 (usec) 150			
Line Tension	0 (lb) 2000				

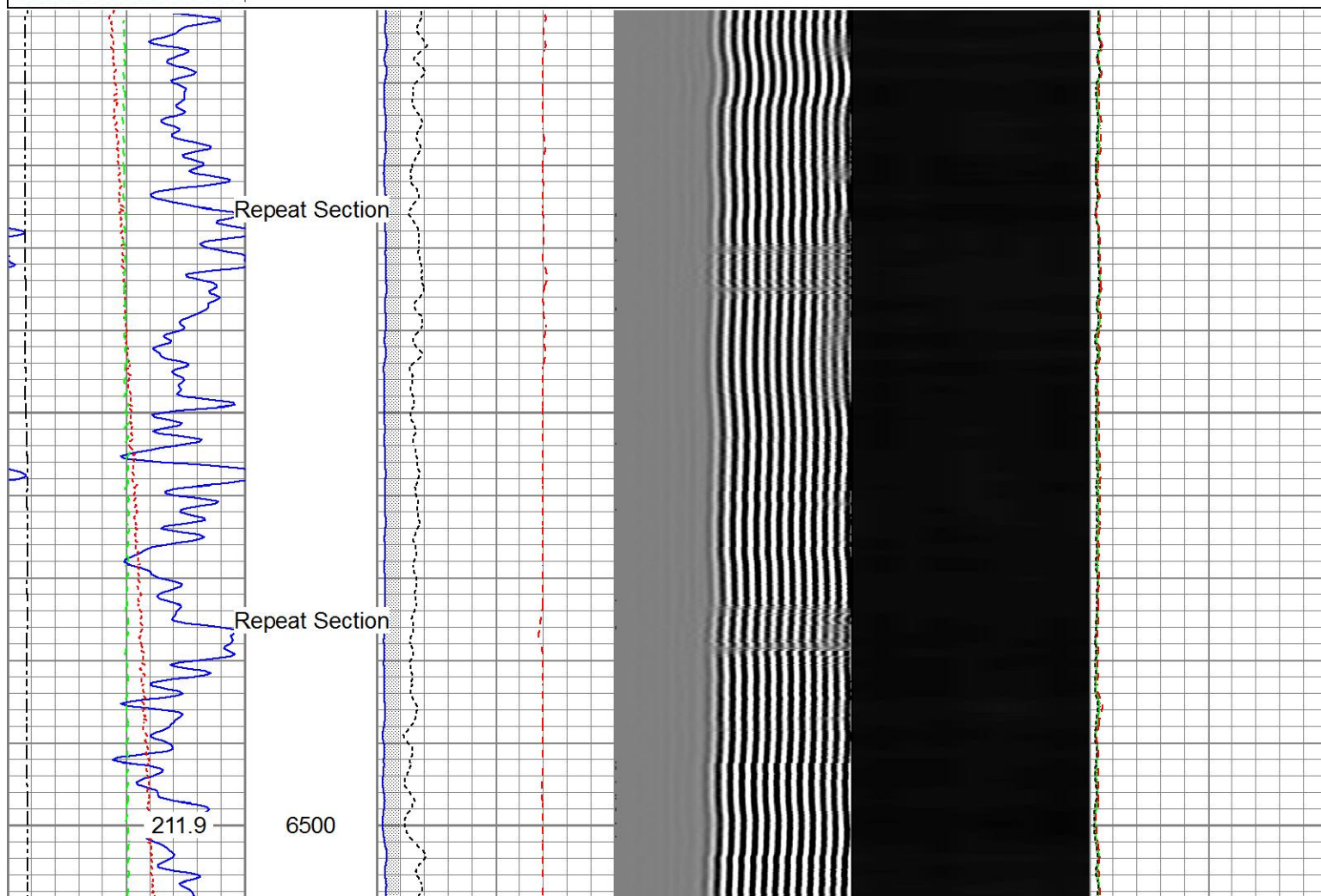


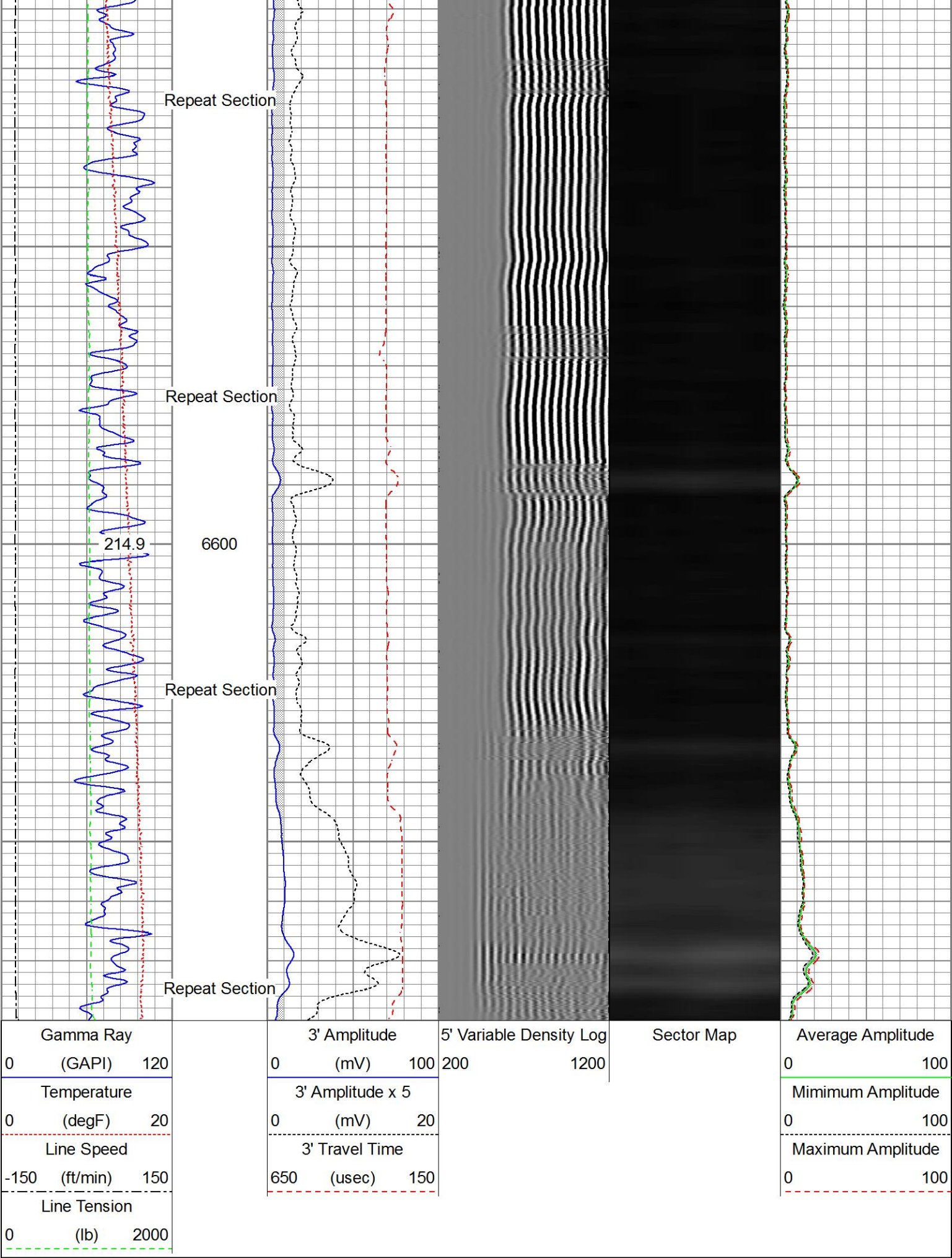
Repeat Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File 0512342394_anadarko_land_28n-29hz_08-16-16_rbl_w8.db
Dataset Pathname pass1.1
Presentation Format ros_radrii
Dataset Creation Tue Aug 16 17:03:40 2016
Charted by Depth in Feet scaled 1:240

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





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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				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
Temp	16.75					
WVFS8	14.58			Probe_RADII-C-P_RBT_2750 (FW1305-099.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	2.75	105.00
WVFS7	14.58					
WVFS6	14.58					
WVFS5	14.58					
WVFS4	14.58					
WVFS3	14.58					
WVFS2	14.58					
WVFS1	14.58					
WVFCAL	14.58					
WVF3FT	14.58					
WVF5FT	13.58					
HeadVolt	10.33			Probe_ELine_BowSpring_Centralizer-P_EE2.88.275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	20.00
DCCL	6.51					
CCL	6.51			Probe_GR_CCL-P_CGR_2750_S (FW1304.573) 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
Dataset: 0512342394_Anadarko_Land_28N-29HZ_08-16-16_RBL_w8.db: field/well/run1/main Total length: 23.43 ft Total weight: 225.40 lb O.D.: 2.75 in						

Calibration Report

Database File 0512342394_Anadarko_Land_28N-29HZ_08-16-16_RBL_w8.db
 Dataset Pathname main
 Dataset Creation Tue Aug 16 18:12:32 2016

Gamma Ray Calibration Report

Serial Number: FW1307-038
 Tool Model: P_CGR_2750_S
 Performed: Wed Aug 10 15:05:44 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: FW1305-096
 Tool Model: P_RBT_2750

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 20.000 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.727	0.800	71.921	97.893	0.776
CAL	0.742	0.747				
5'	0.000	0.756	0.800	71.921	94.031	0.793
SUM						
S1	-0.002	0.709	0.000	100.000	140.712	0.284
S2	0.001	0.710	0.000	100.000	141.009	-0.126
S3	0.003	0.719	0.000	100.000	139.684	-0.365
S4	0.003	0.733	0.000	100.000	136.812	-0.351
S5	0.001	0.752	0.000	100.000	133.079	-0.090
S6	0.000	0.755	0.000	100.000	132.530	-0.053
S7	0.002	0.744	0.000	100.000	134.723	-0.205
S8	0.001	0.736	0.000	100.000	136.153	-0.159

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.742	0.747	1.000	0.000

Air Zero Calibration, performed Tue Aug 16 12:47:47 2016:

	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

S3	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



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Land 28N-29HZ
Field	Wattenberg
County	Weld
State	Colorado