



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Location:	API # : 05-123-43802	Other Services GR/JB
Well	Babcock 14C-33HZ			SEC 4	TWP 2N	RGE 67W
Field	Wattenberg			Ground Level	Elevation	4887'
County	Weld			Log Measured From	Kelly Bushing	20 FT
State	Colorado			Drilling Measured From	Kelly Bushing	

Date	25-JUL-2017
Run Number	Two
Depth Driller	12356 FT
Depth Logger	7510 FT
Bottom Logged Interval	7506 FT
Top Log Interval	Surface
Open Hole Size	7.825"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	235 °F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	15:24
Equipment Number	HD-0331
Location	Fort Lupton, CO
Recorded By	R. Cameron
Witnessed By	Chris Hayes

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	1882 FT		
Intermediate #1	5 1/2	17	P-110	Surface	12347 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 6785 FT
Adjusted +6 FT to correlate to Marker Joint
Log ran from 7506 FT to surface
Log ran with 2800 PSI surface induced pressure
Logging tools were clean and free of debris upon completion of operations

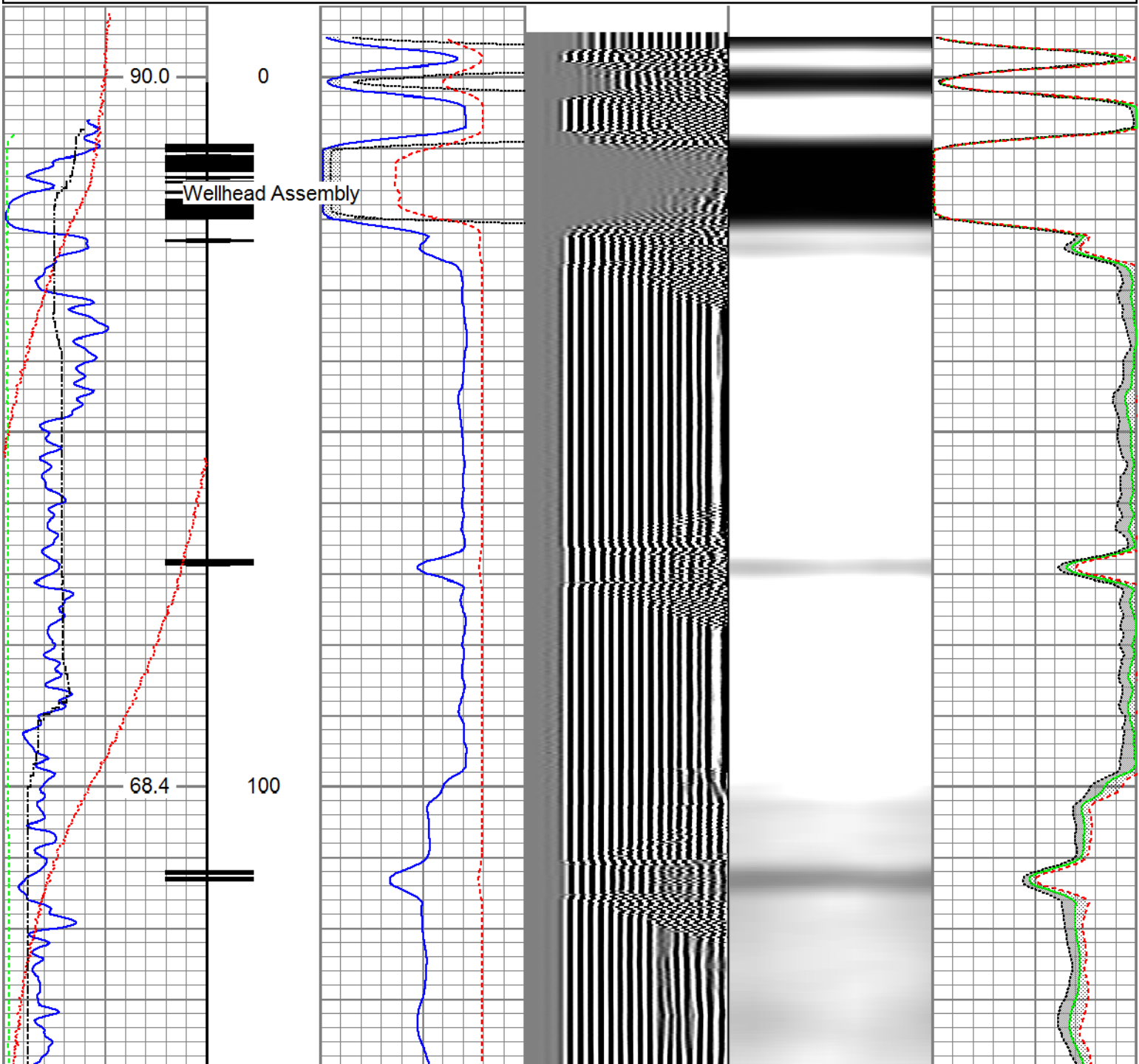
Thank you for choosing Reliance Oilfield Services, LLC!!

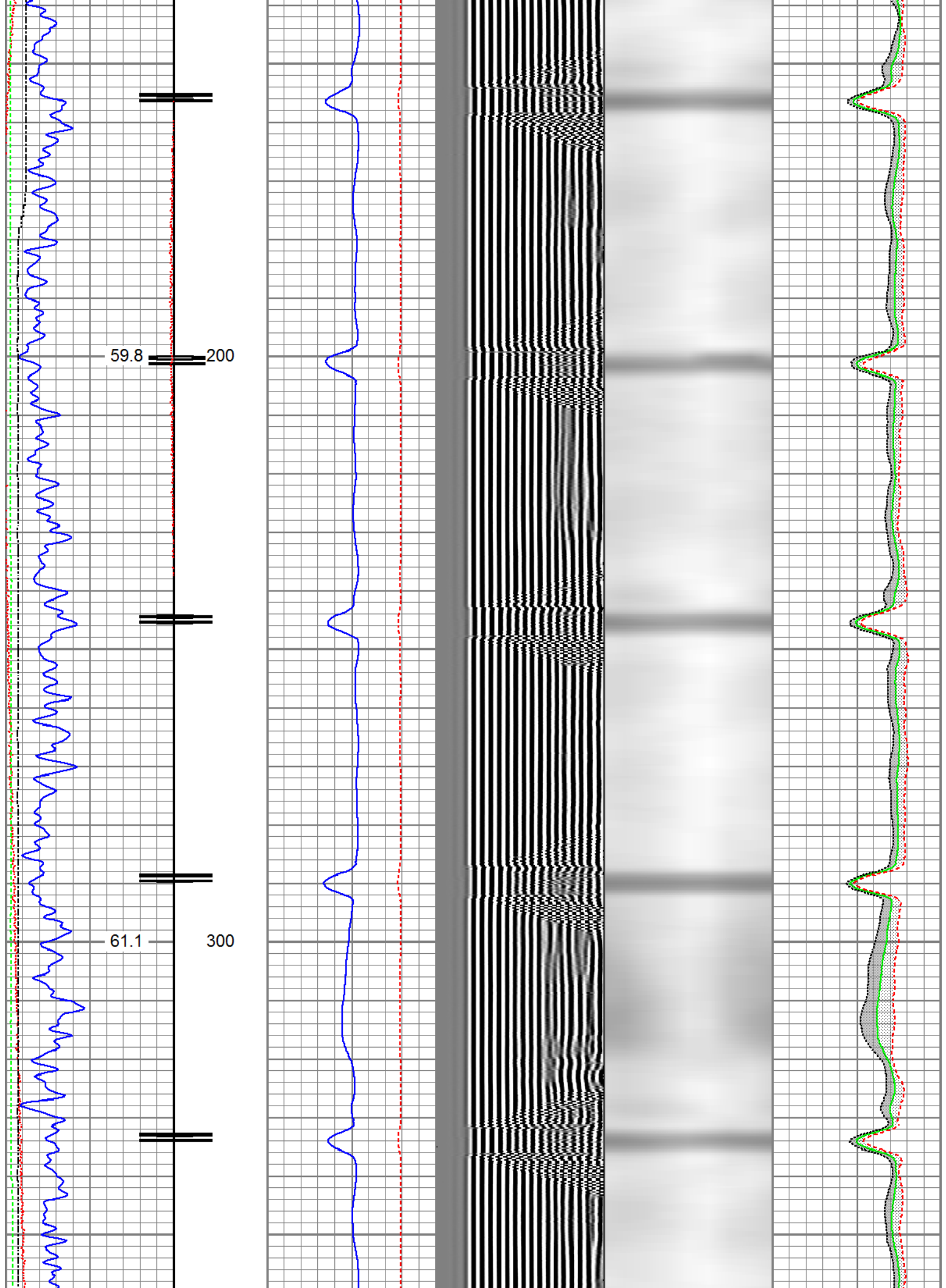


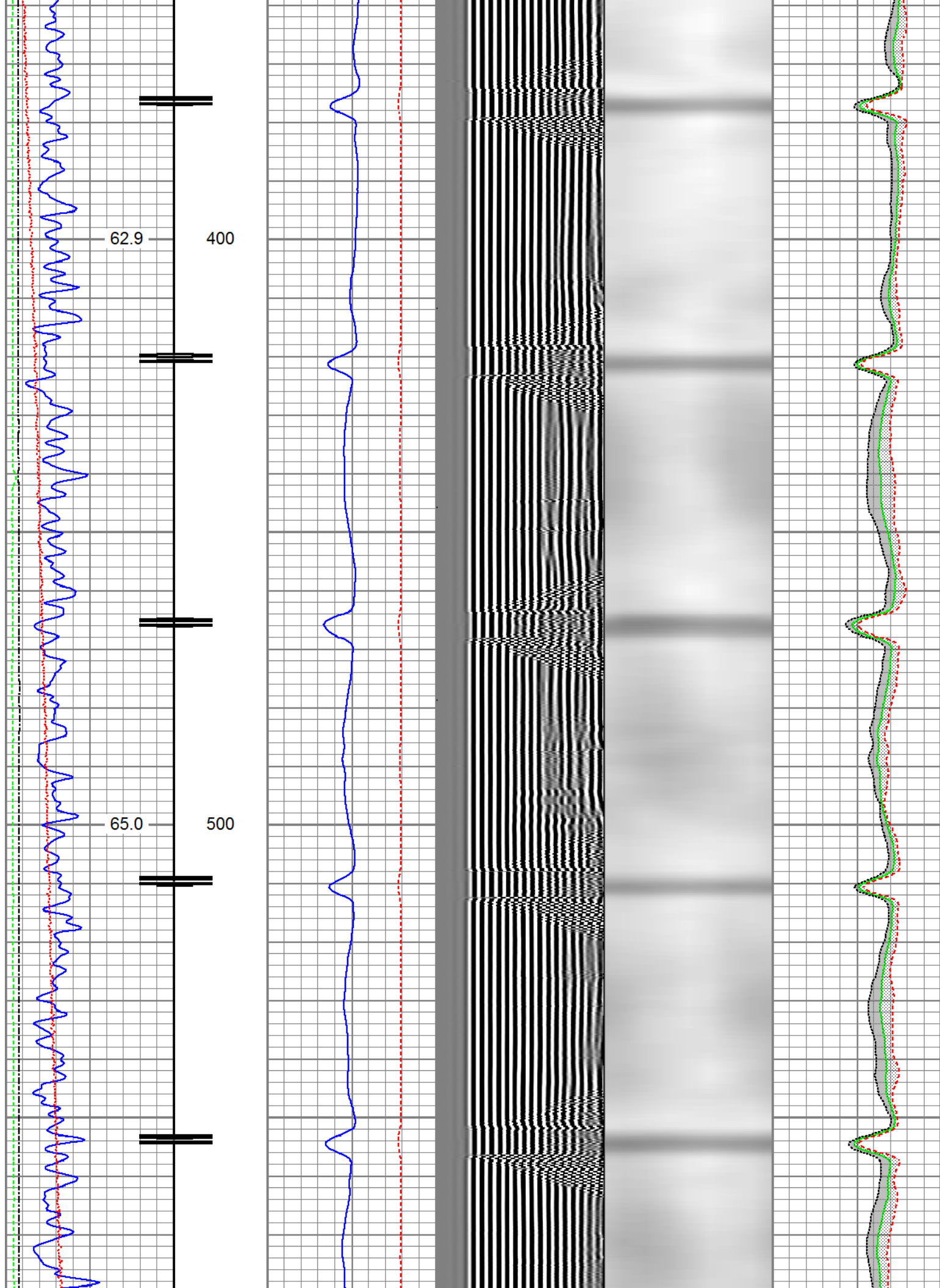
Main Pass

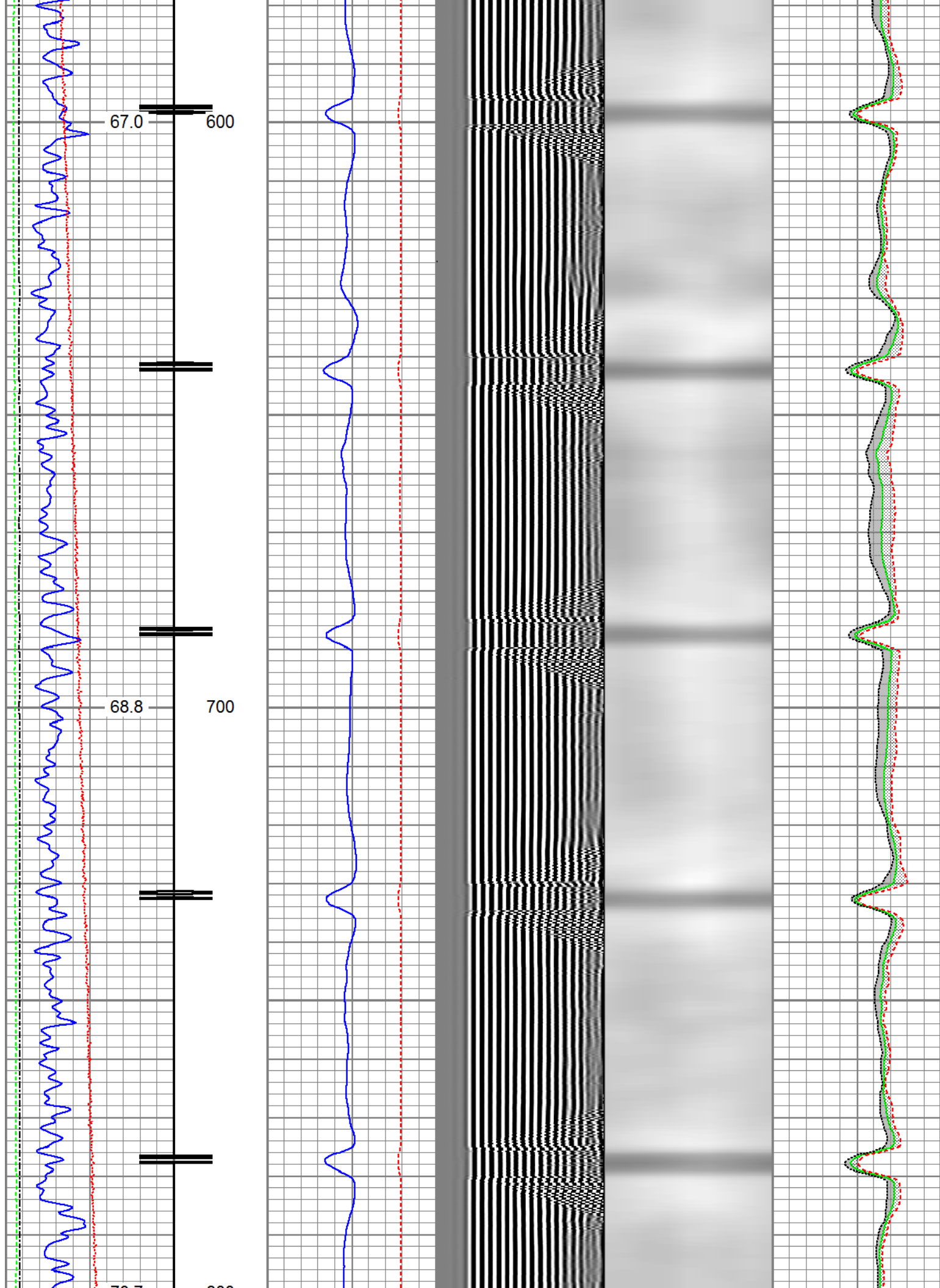
Recorded With 2800 PSI Surface Induced Pressure

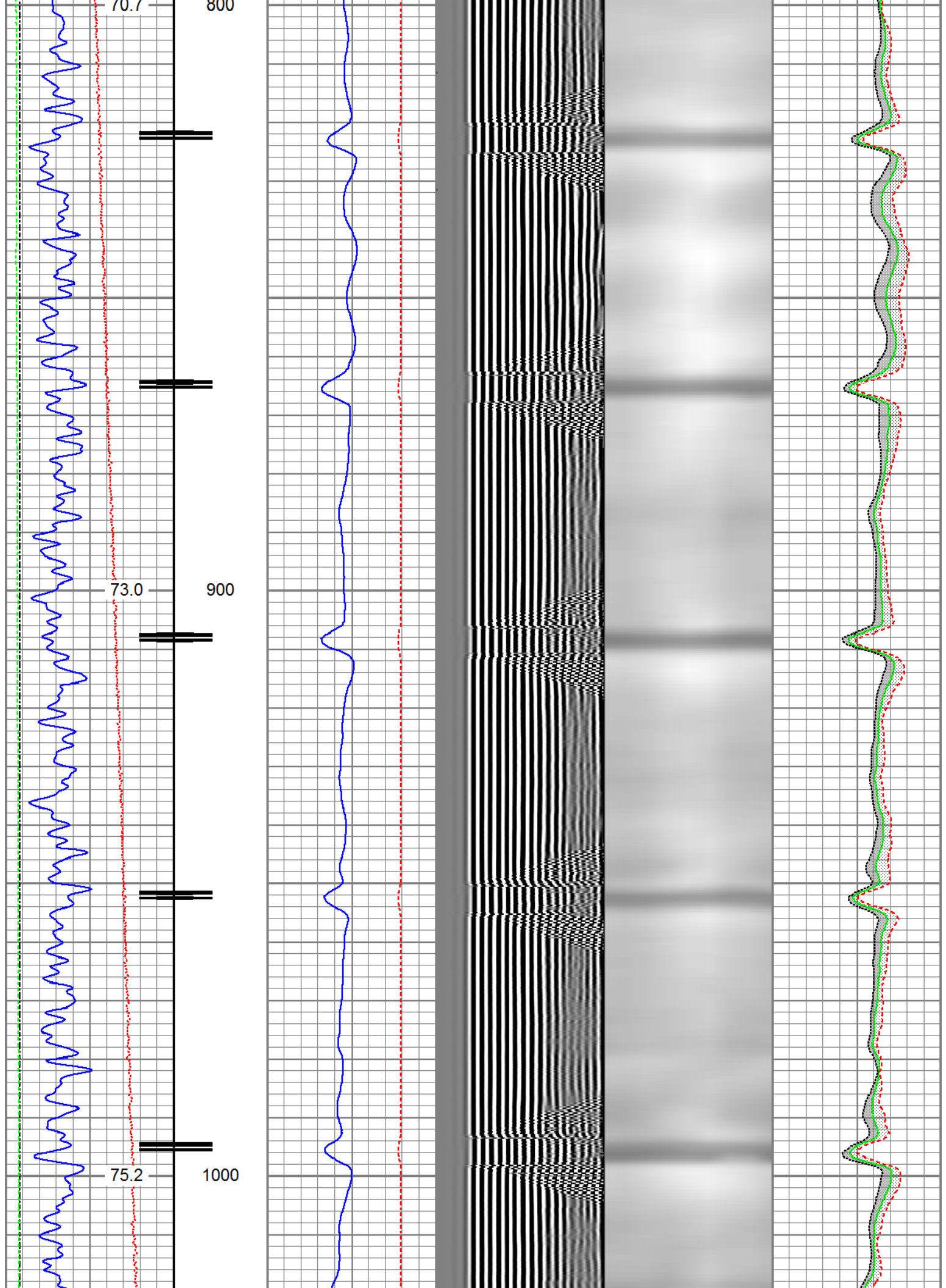
<div>Gamma Ray</div> <div>0 (GAPI) 120</div> <div>Casing Collar Locator</div>	<div>3' Amplitude</div> <div>0 (mV) 100</div> <div>3' Amplitude x 5</div> <div>0 (mV) 20</div> <div>3' Travel Time</div> <div>650 (usec) 150</div>	<div>5' Variable Density Log</div> <div>200 1200</div>	<div>Sector Map</div>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

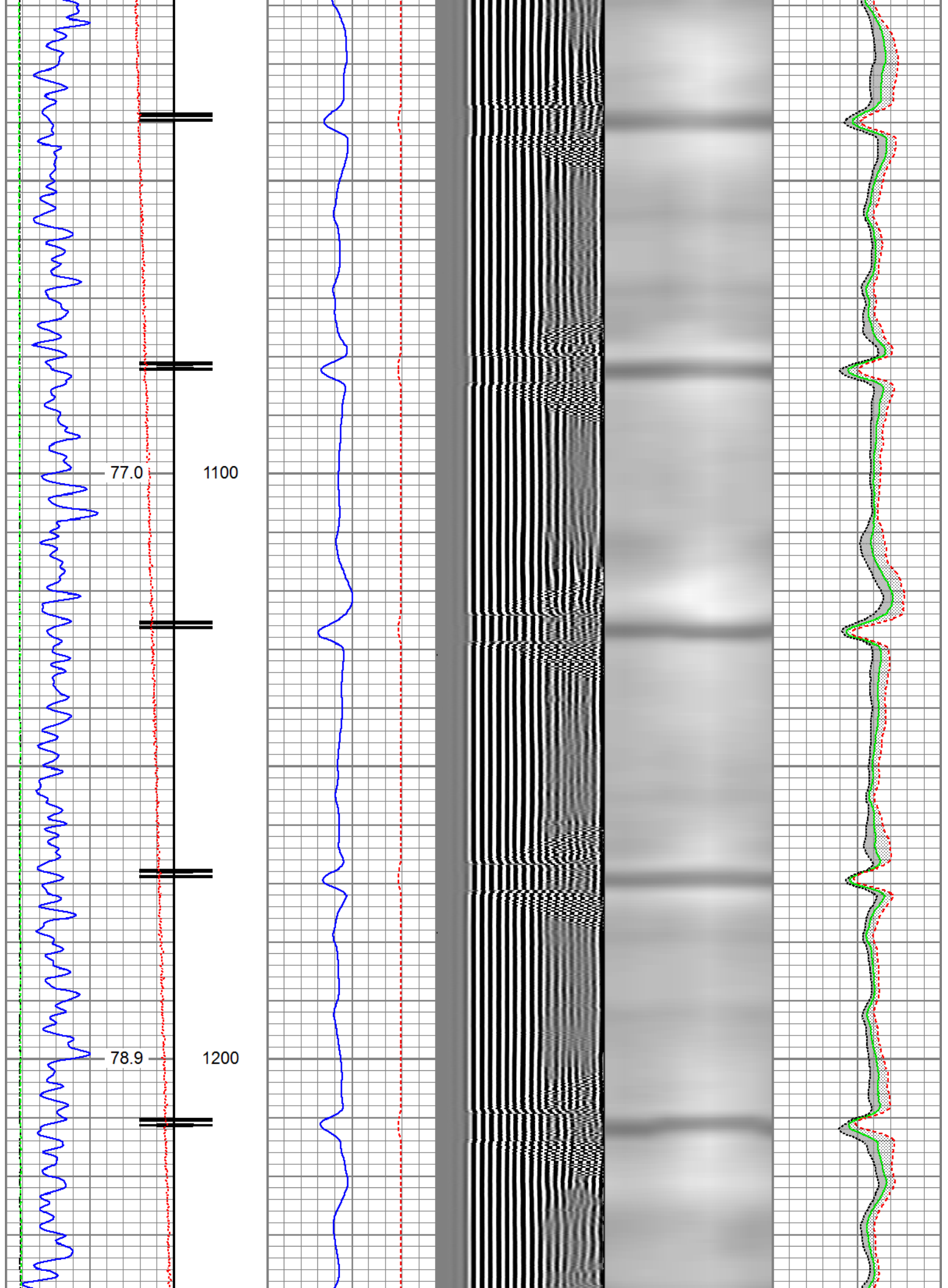


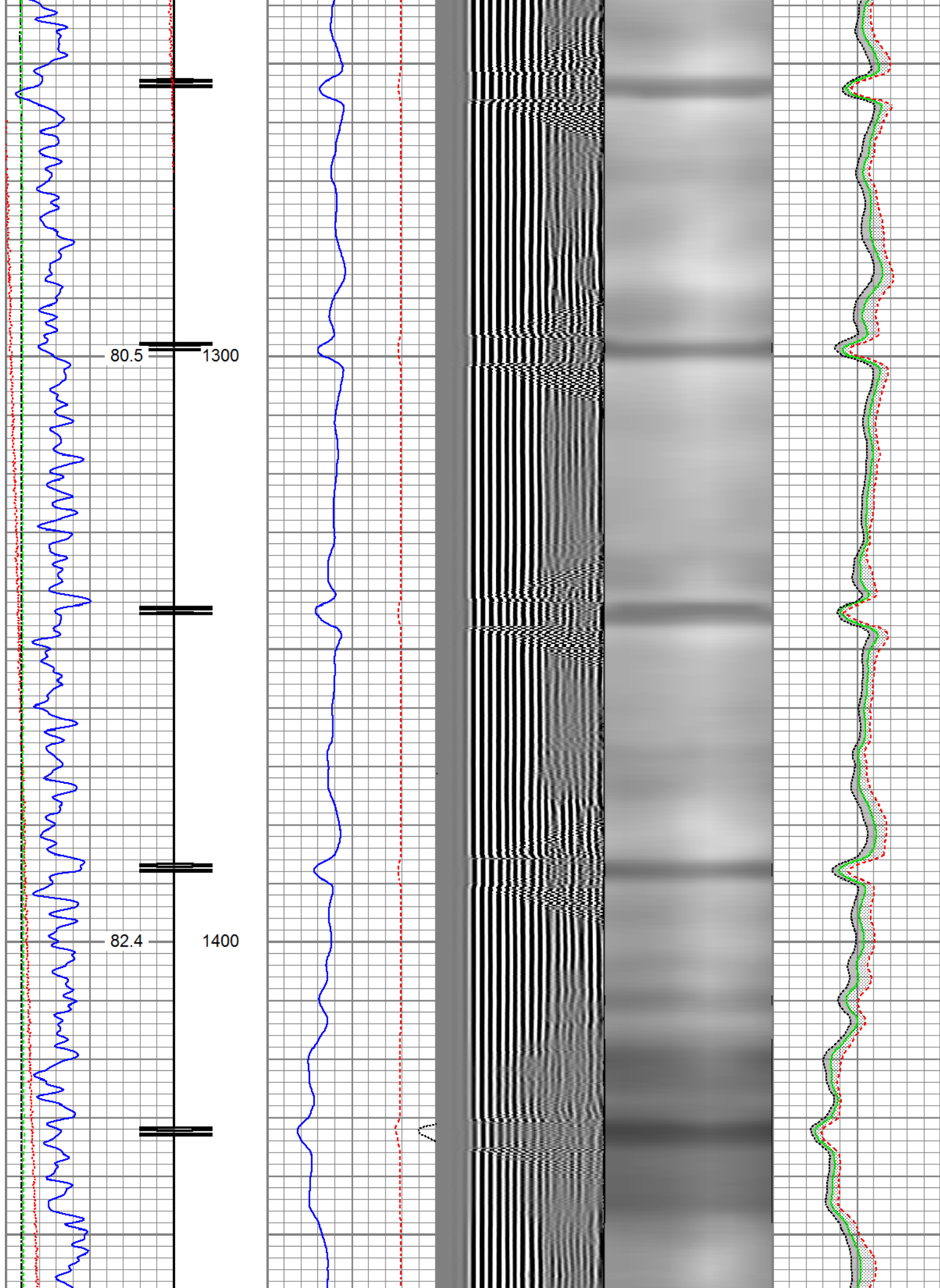


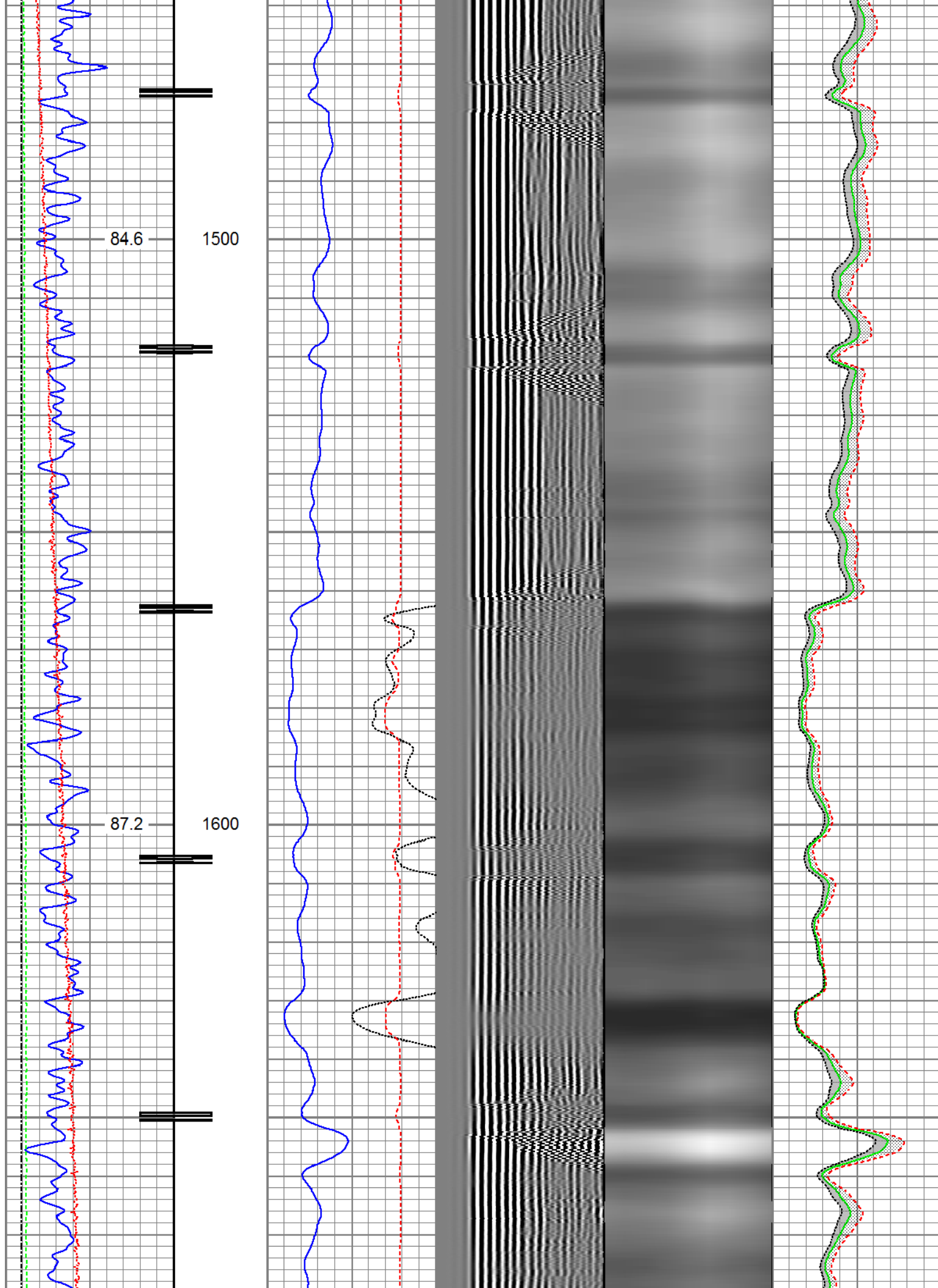


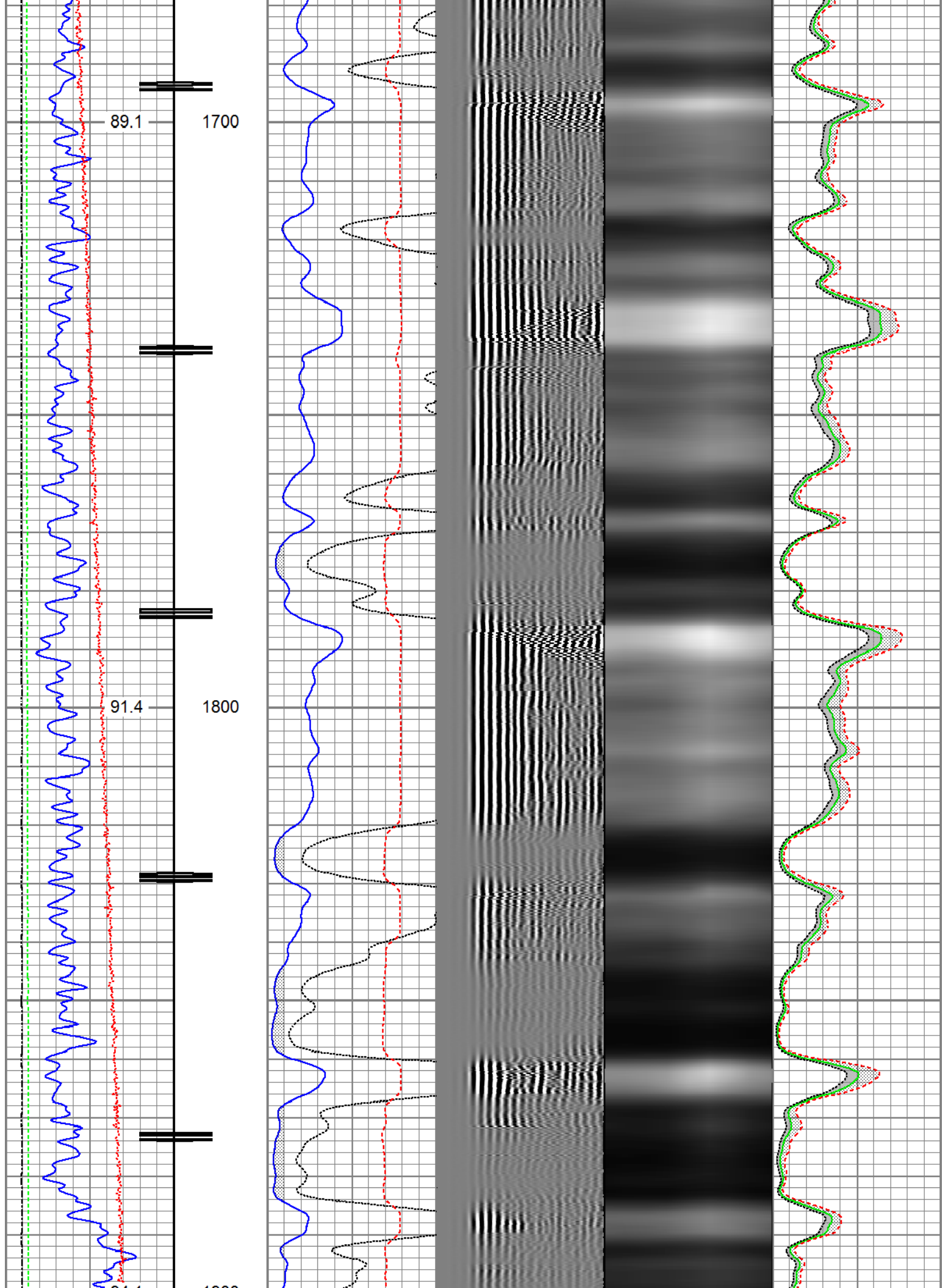


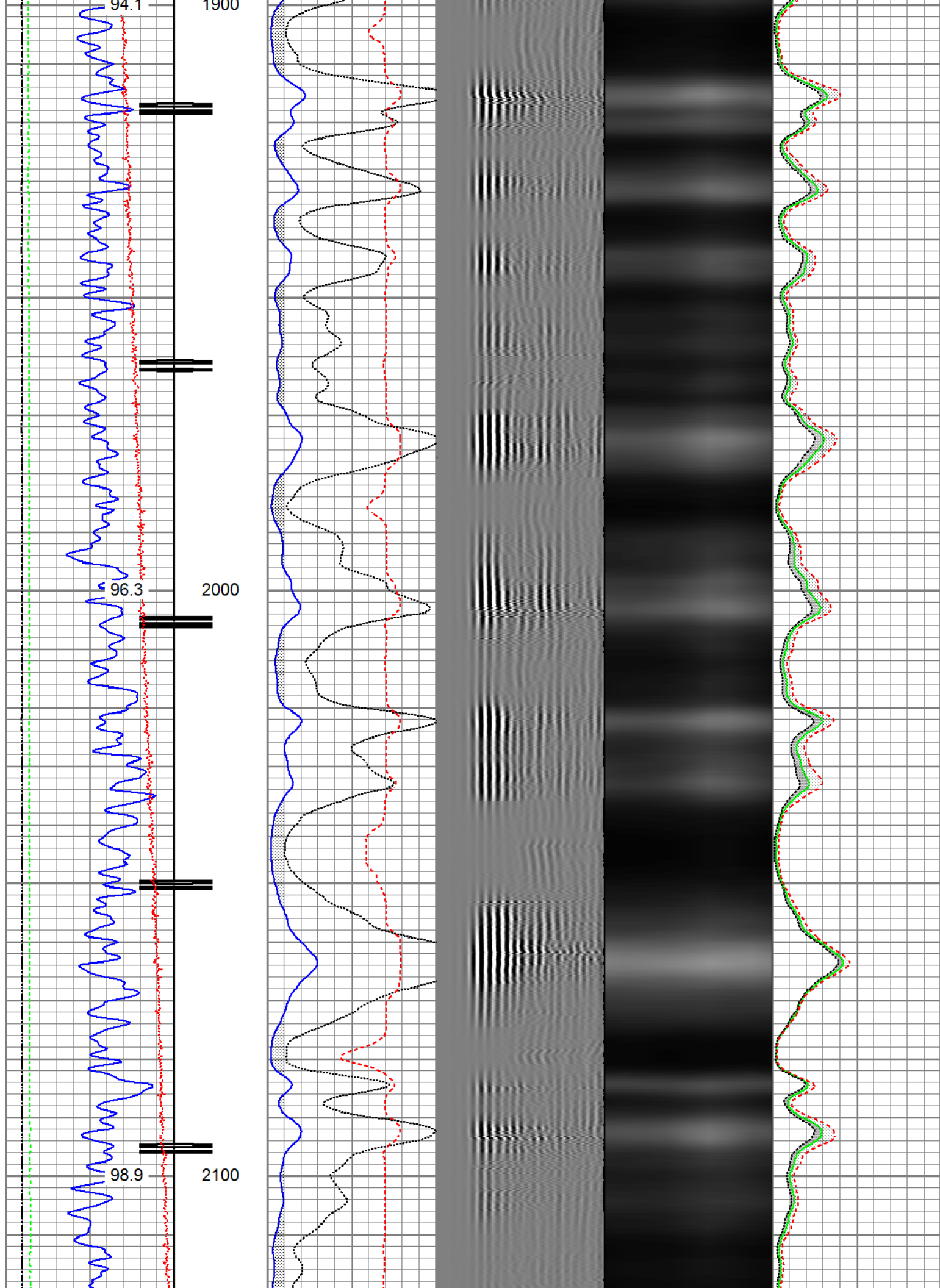


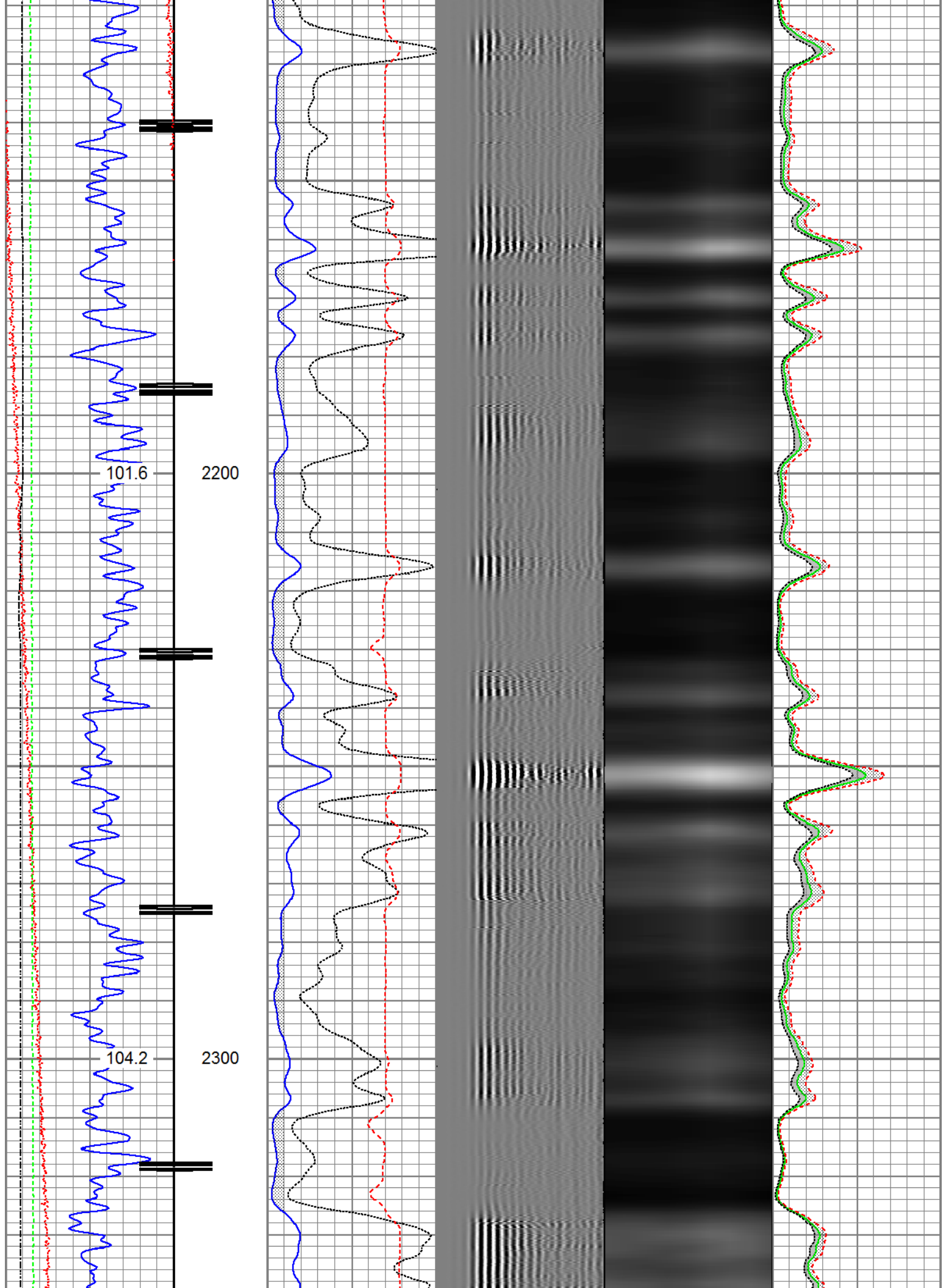


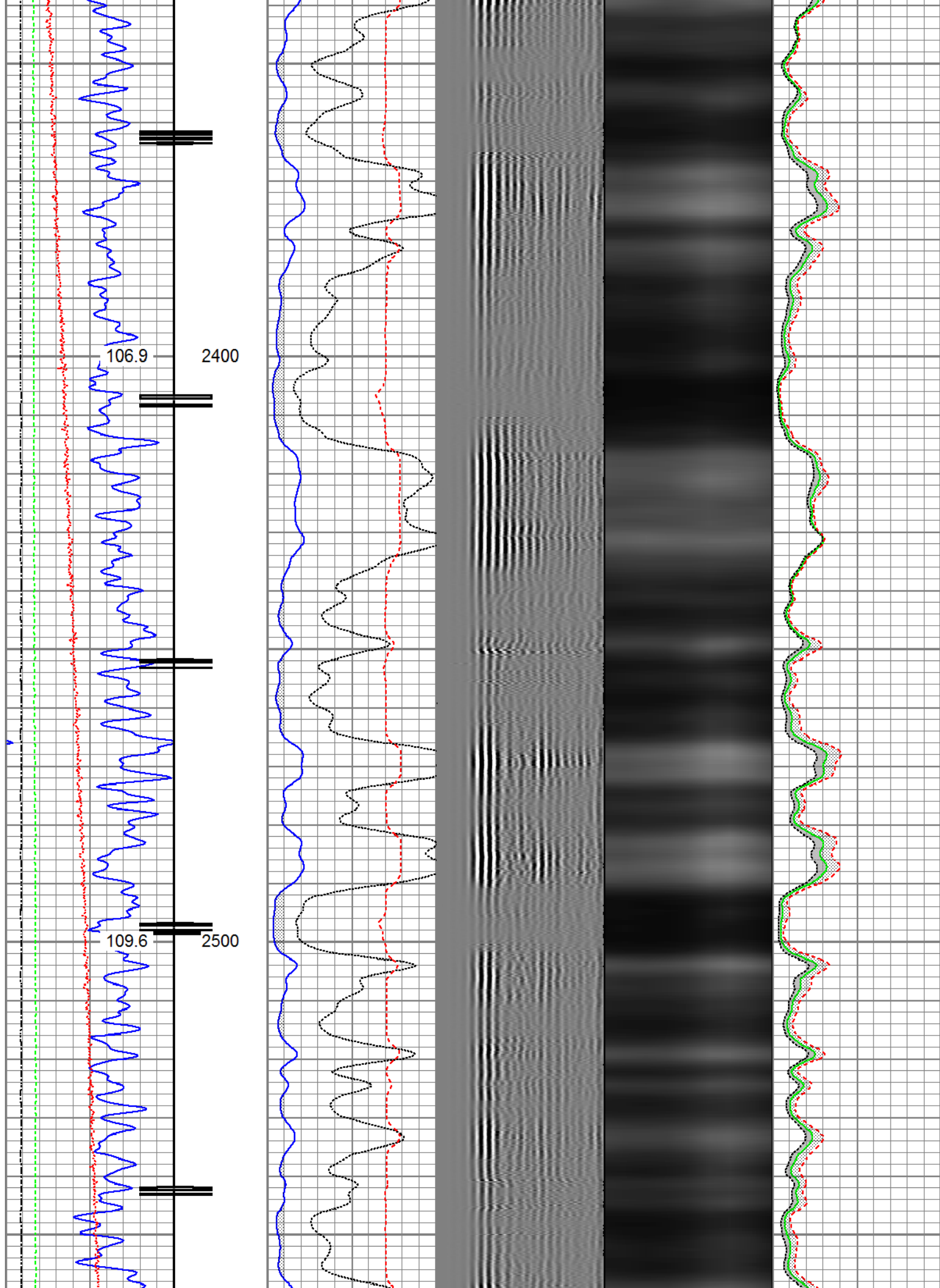


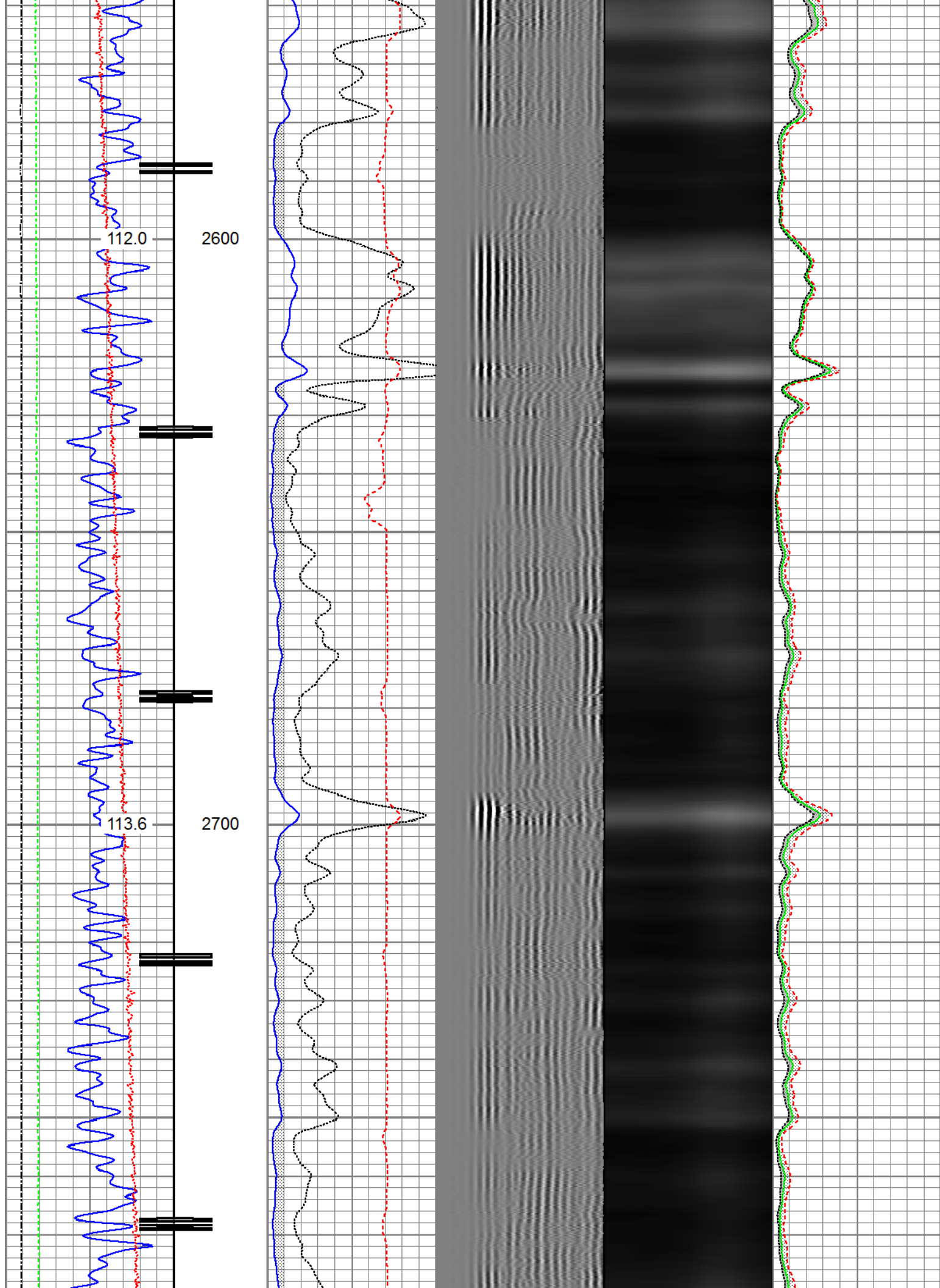


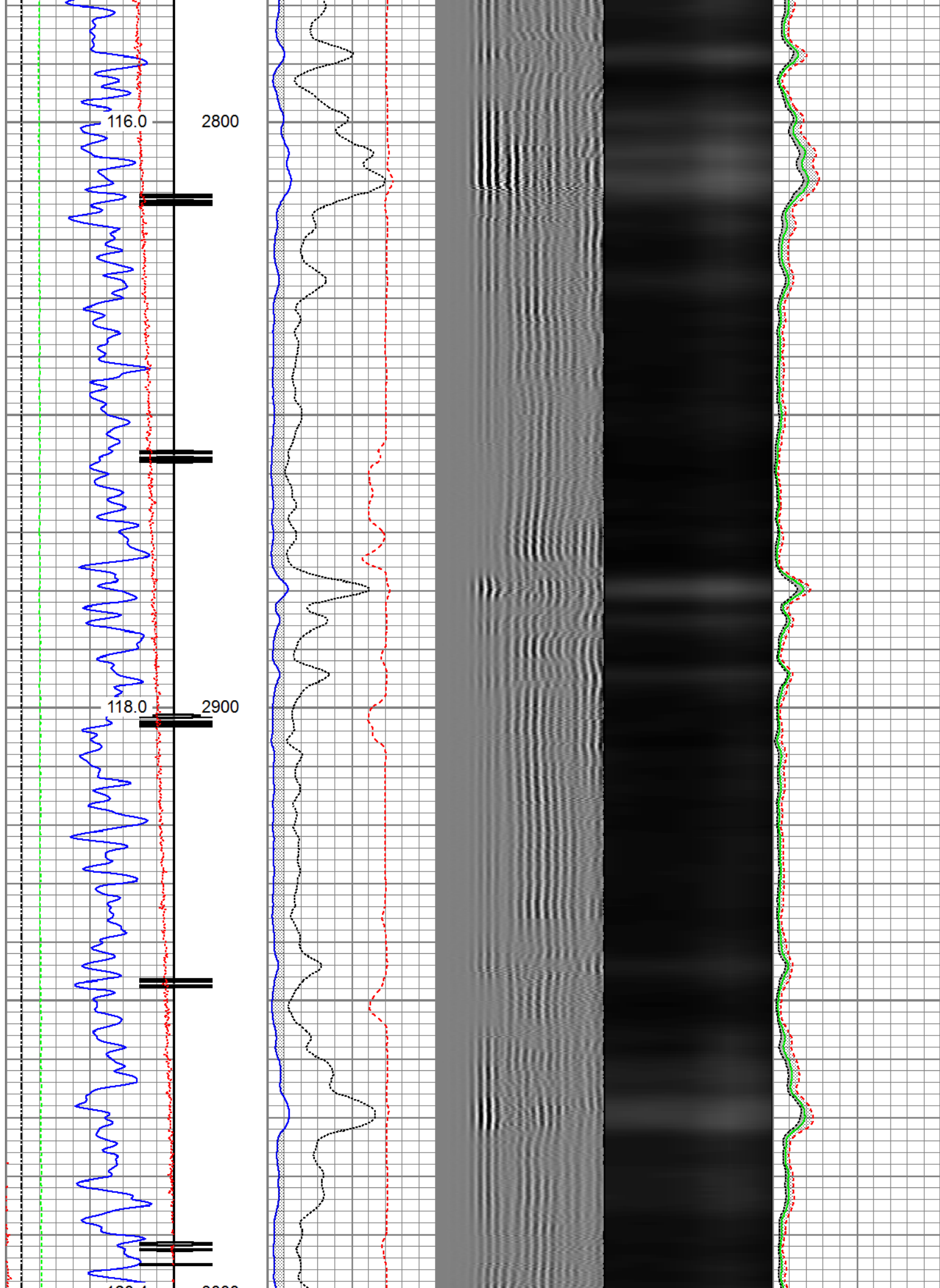


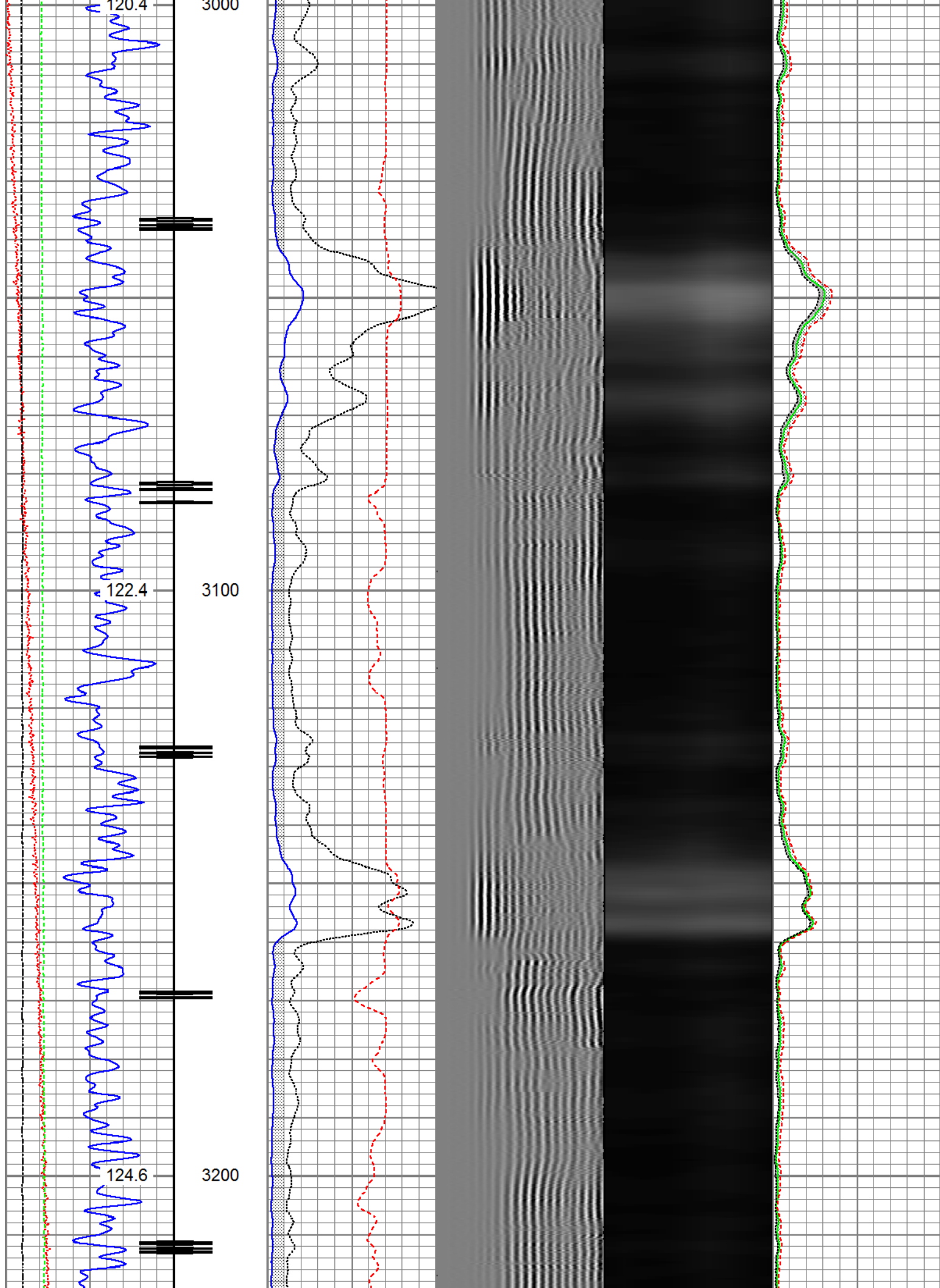


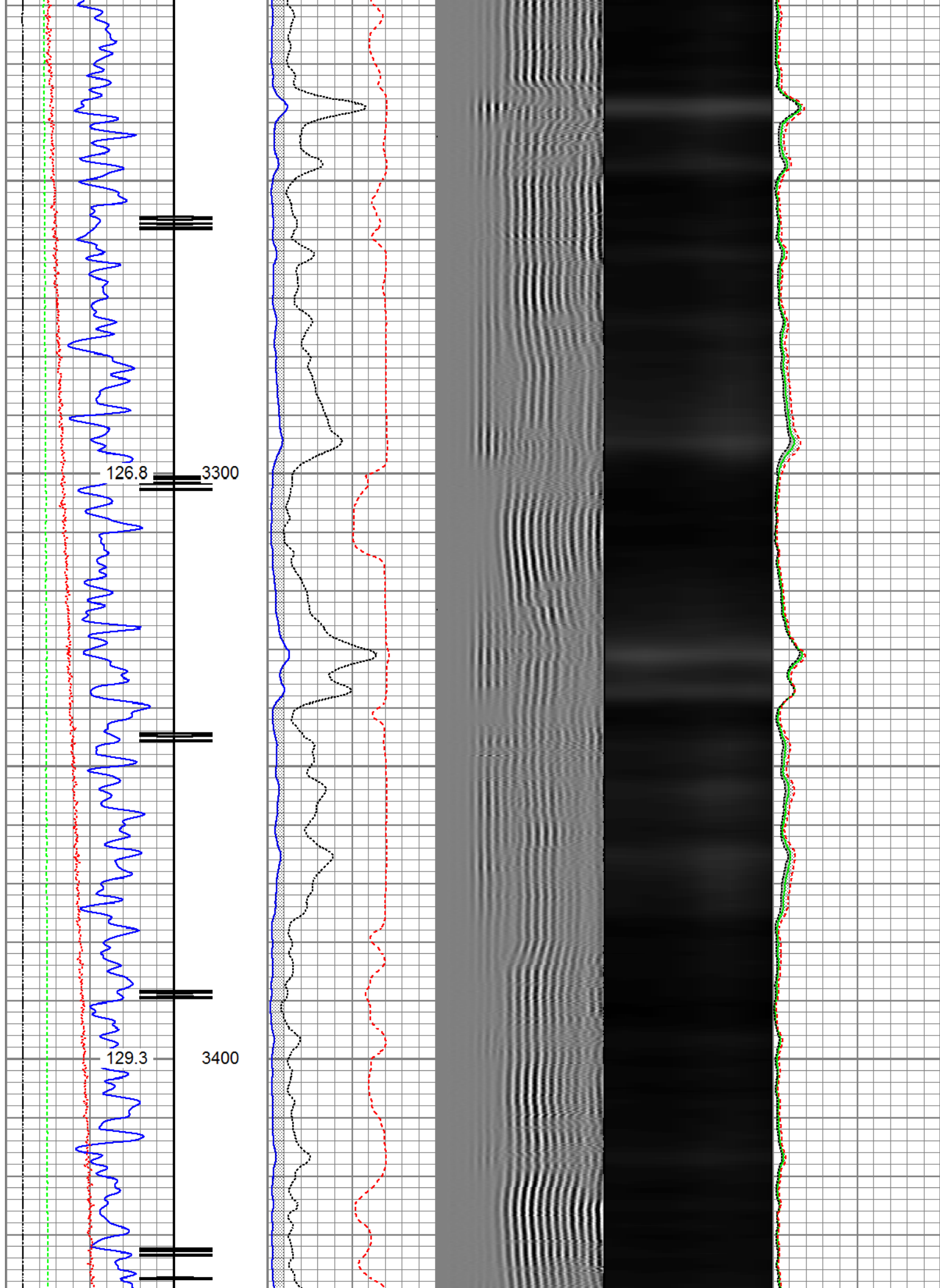


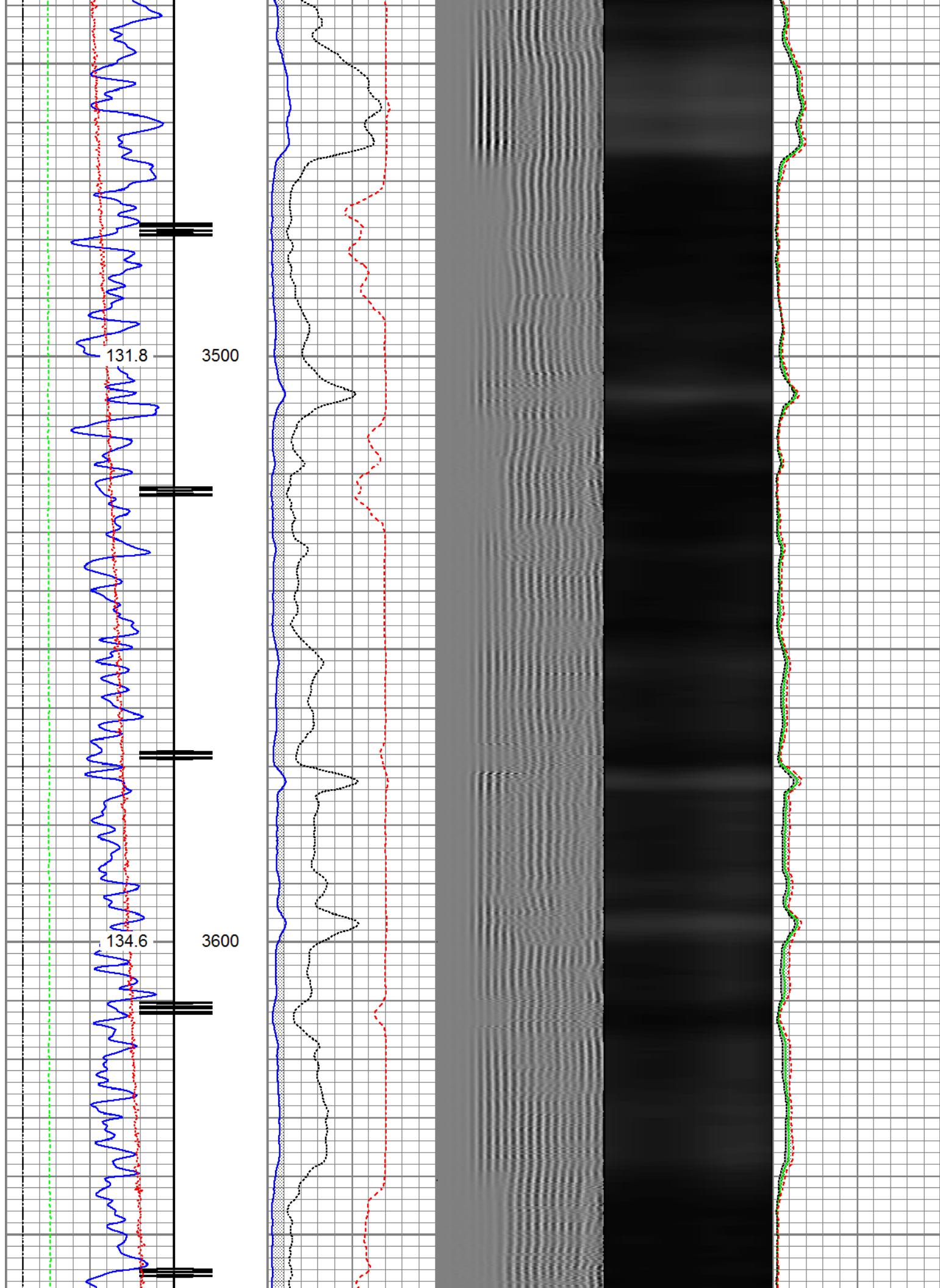


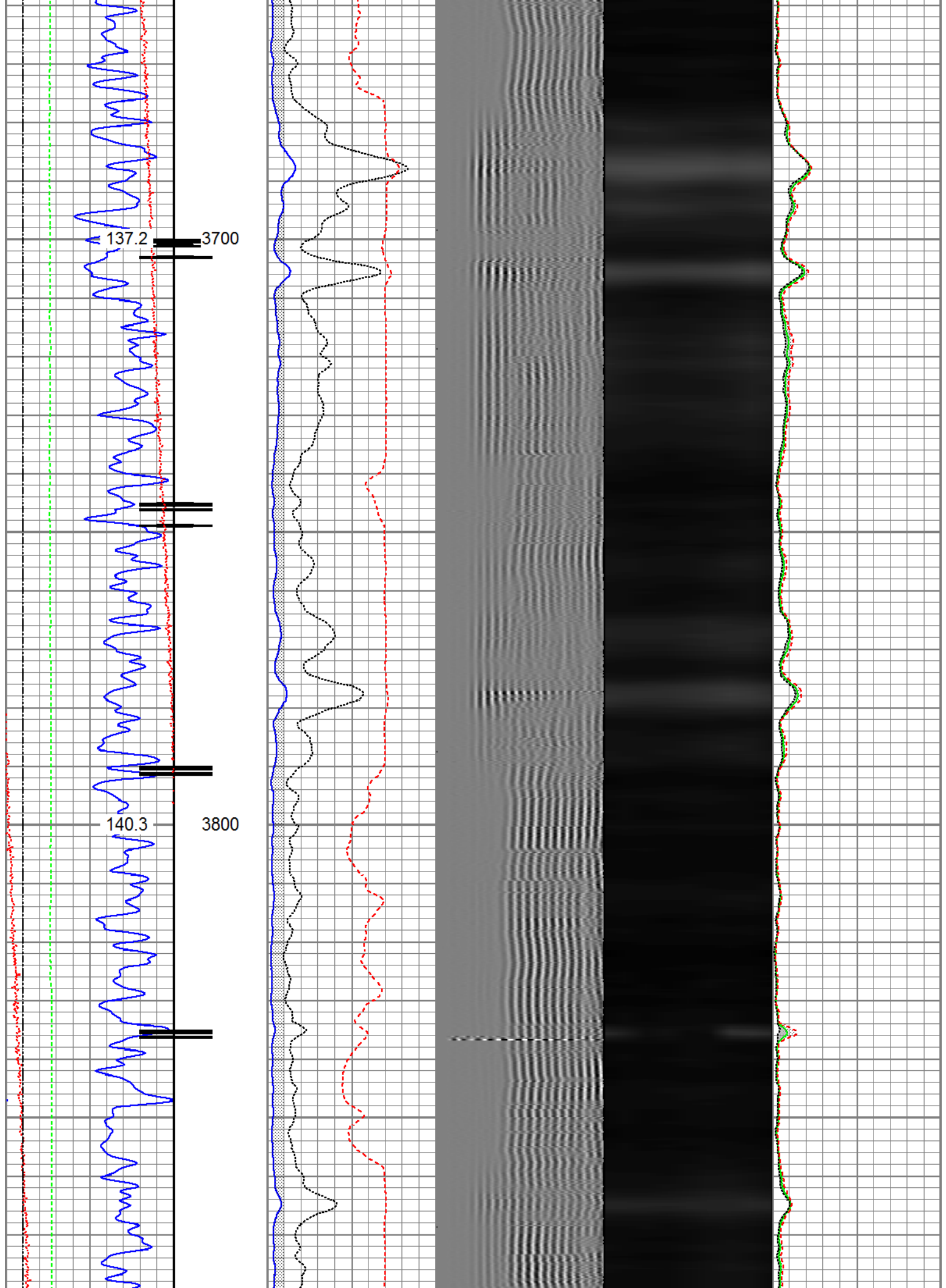


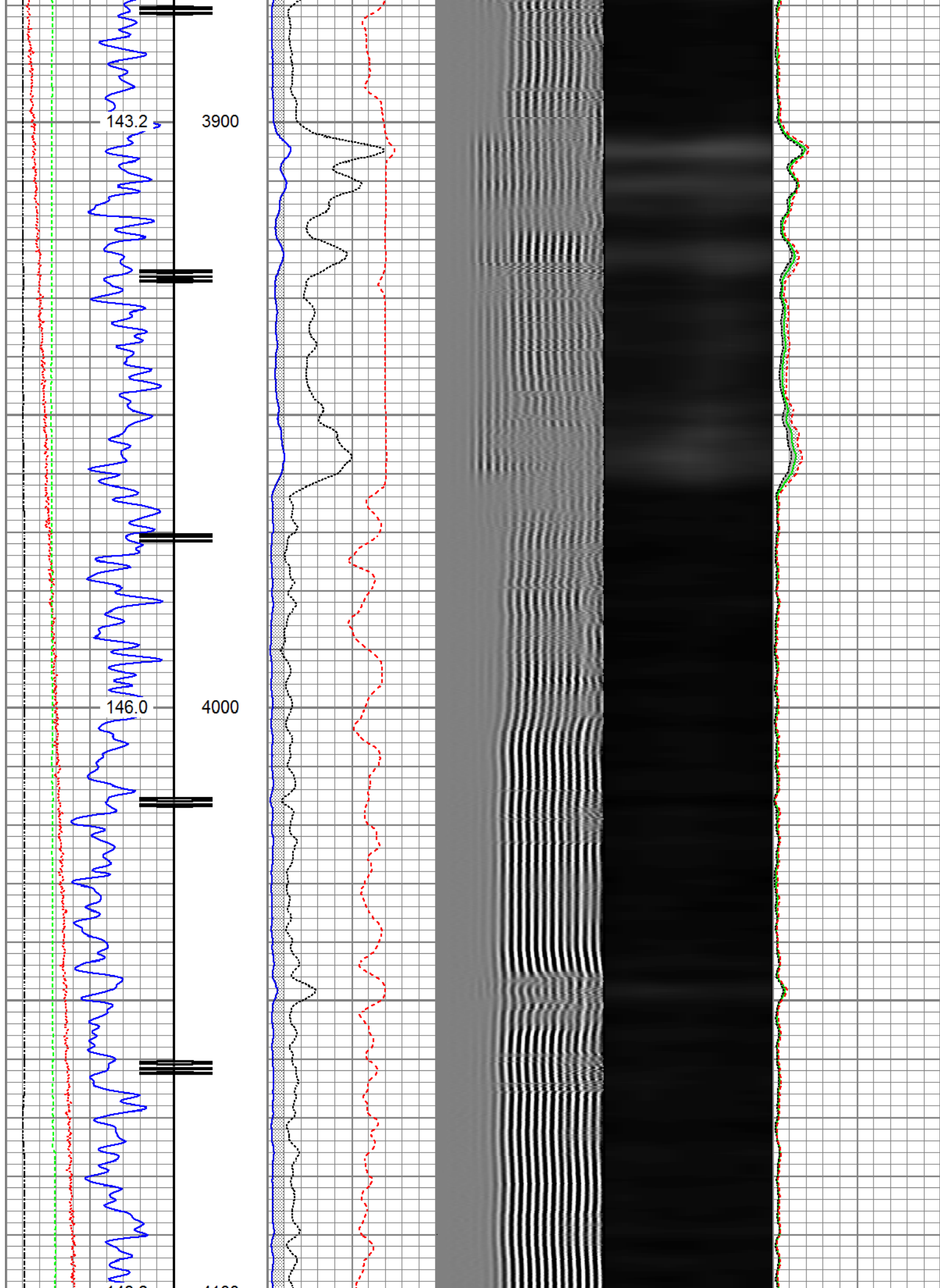


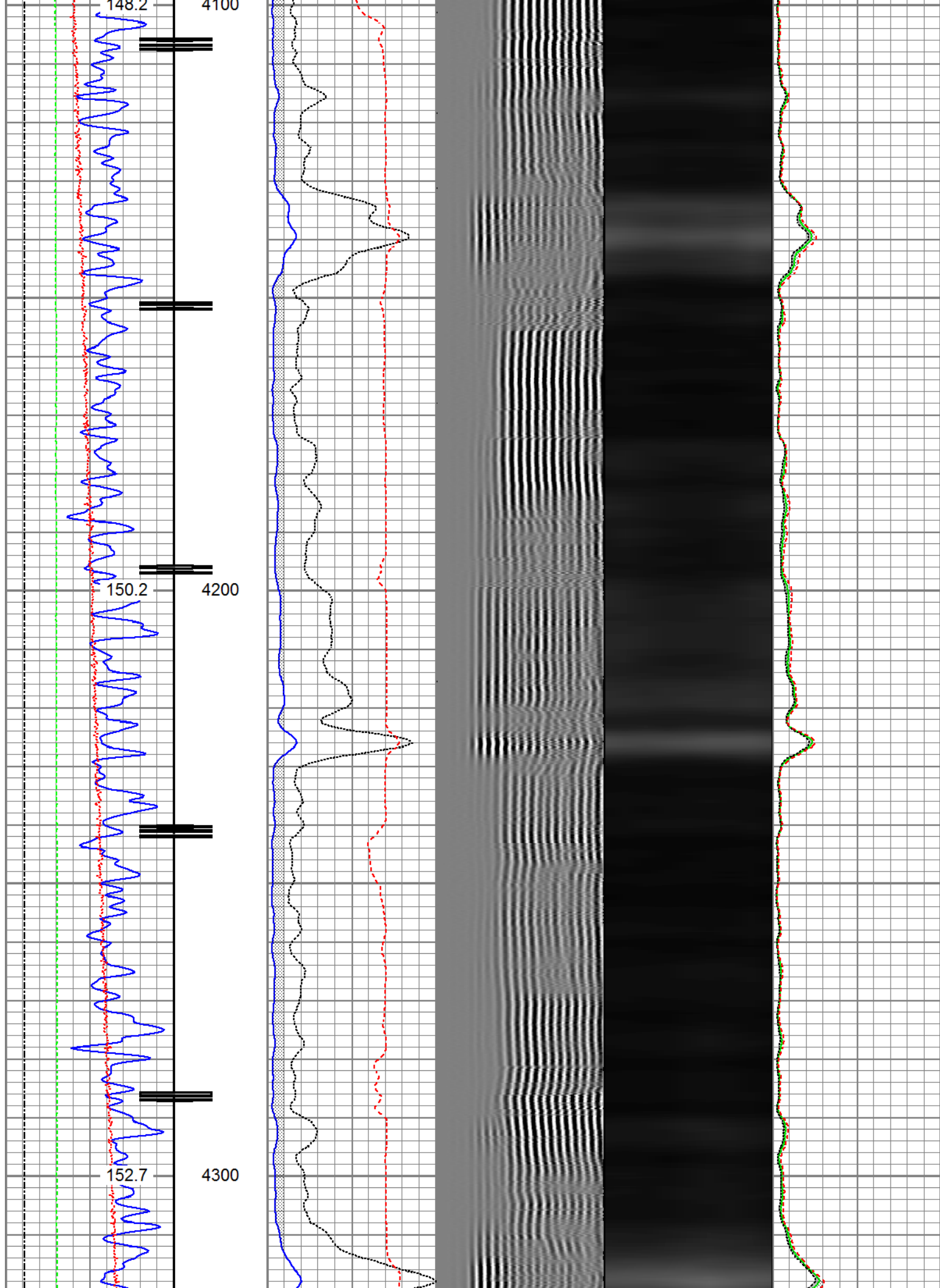


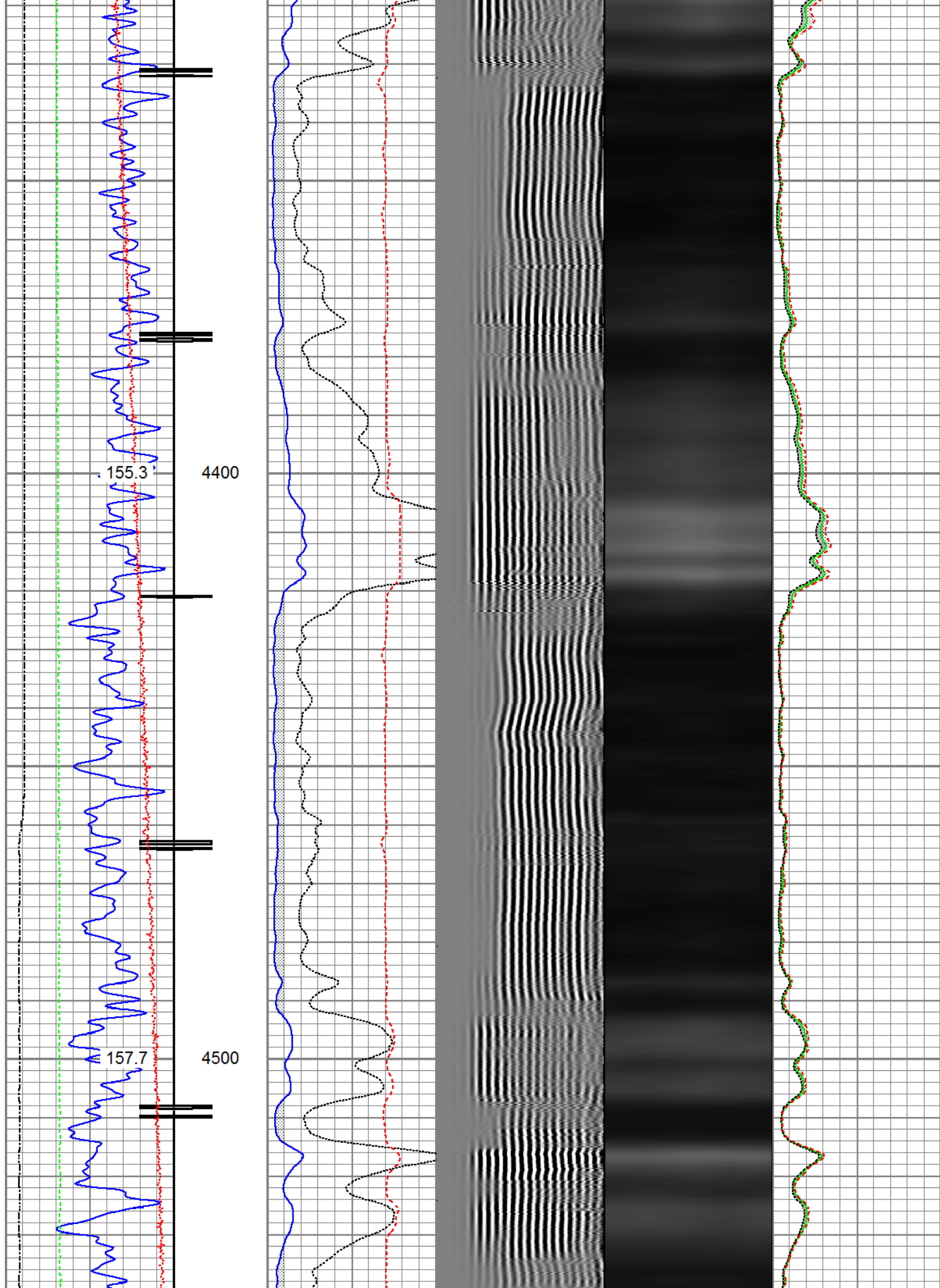


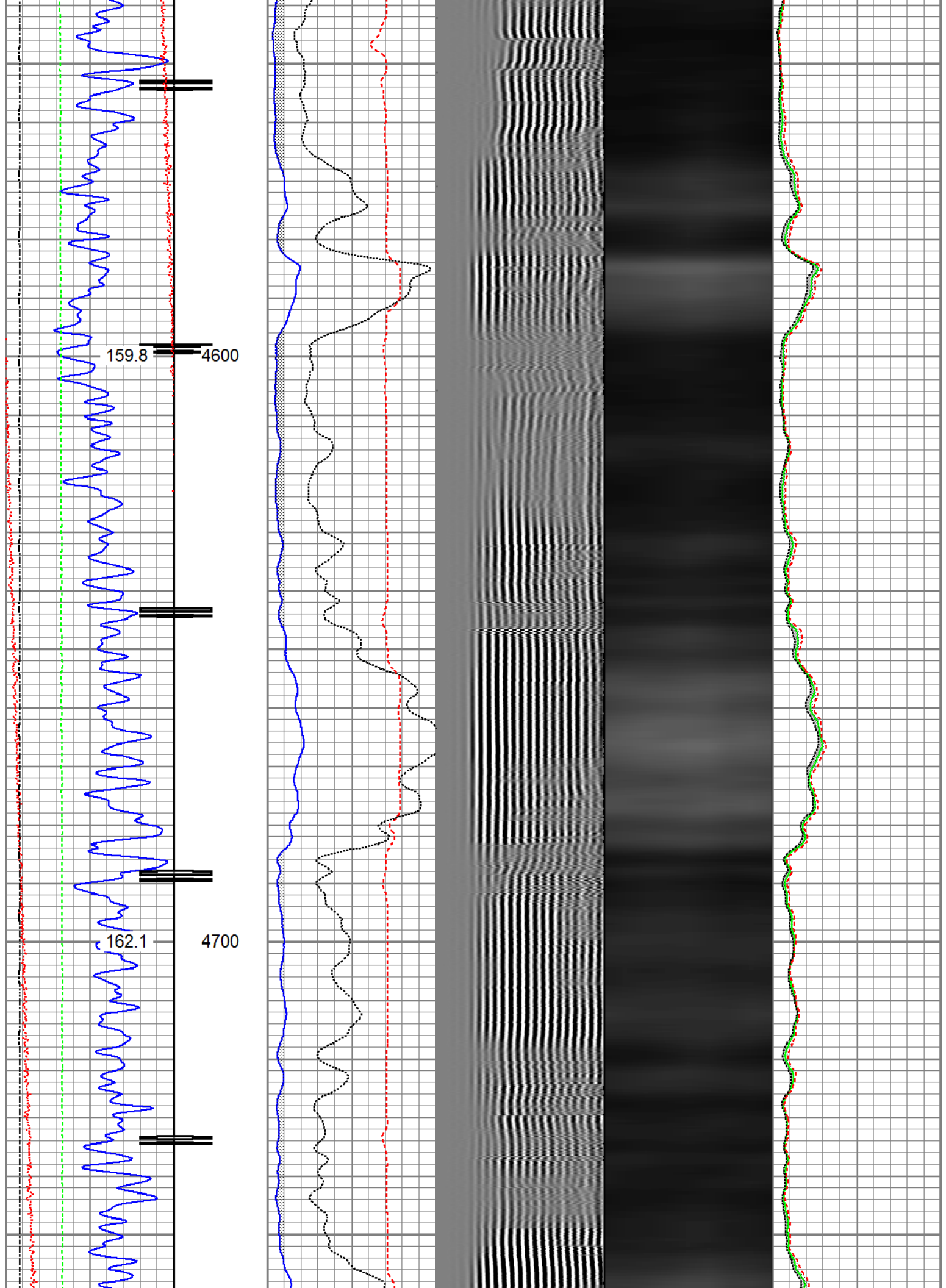


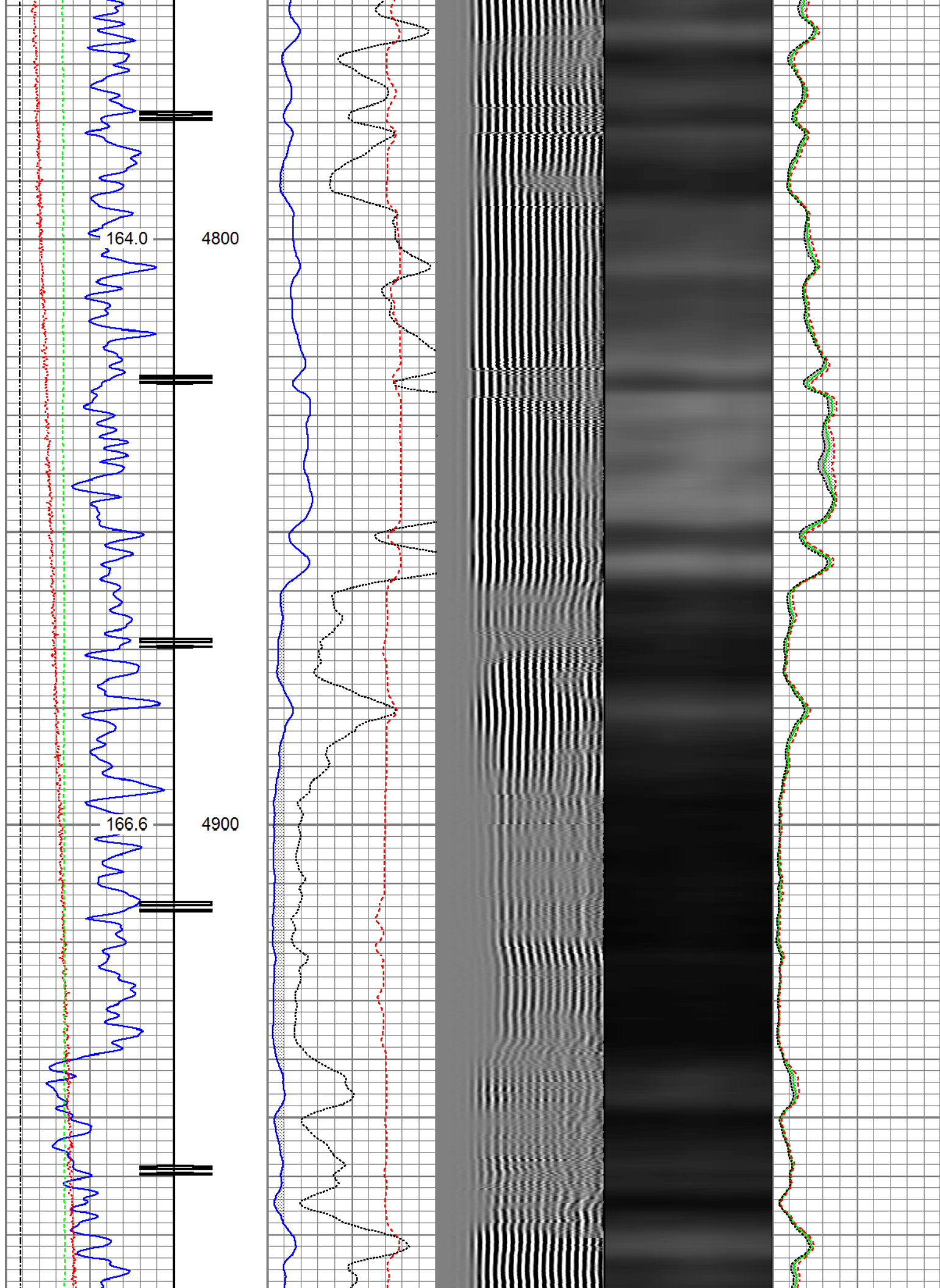


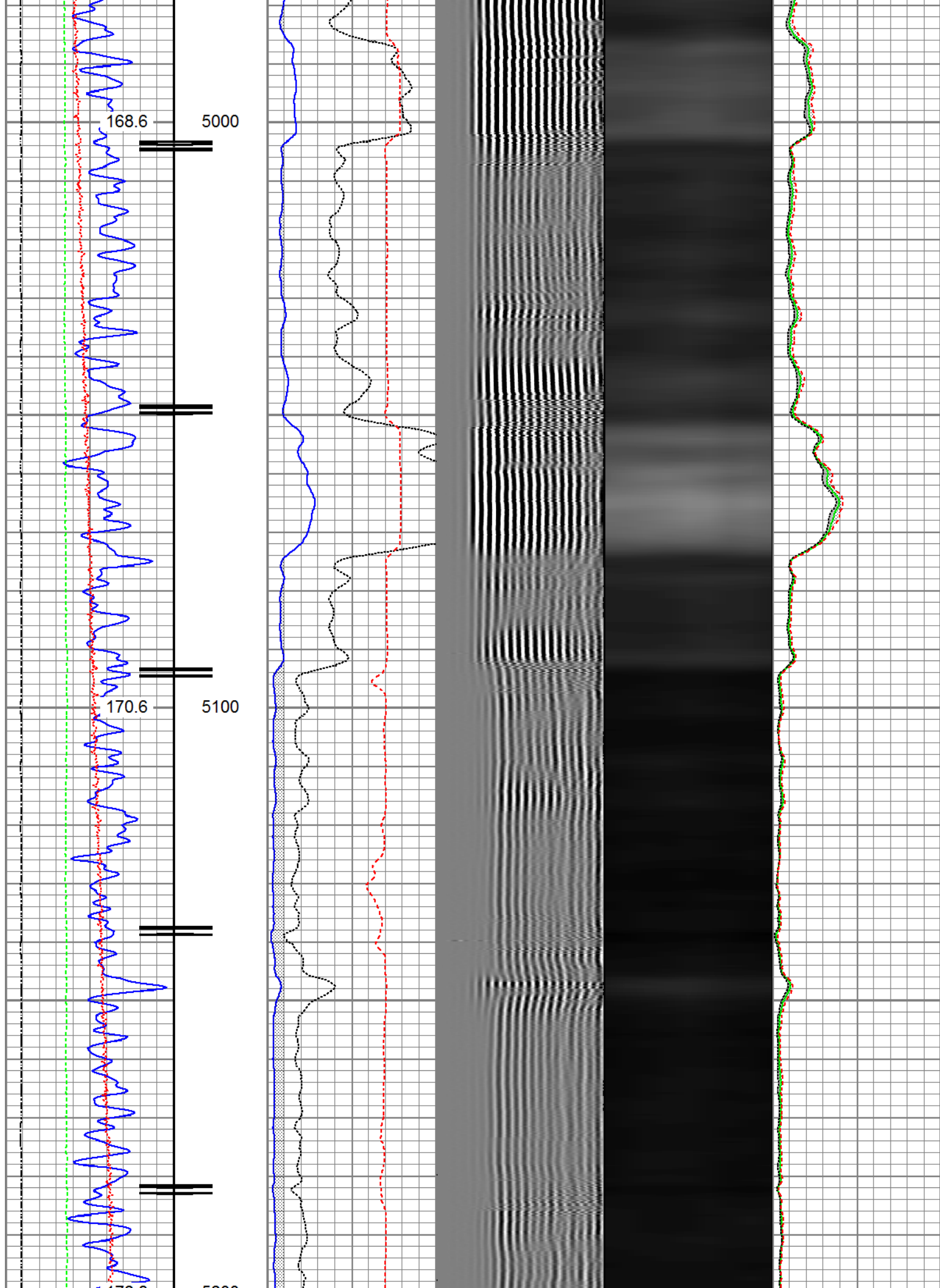


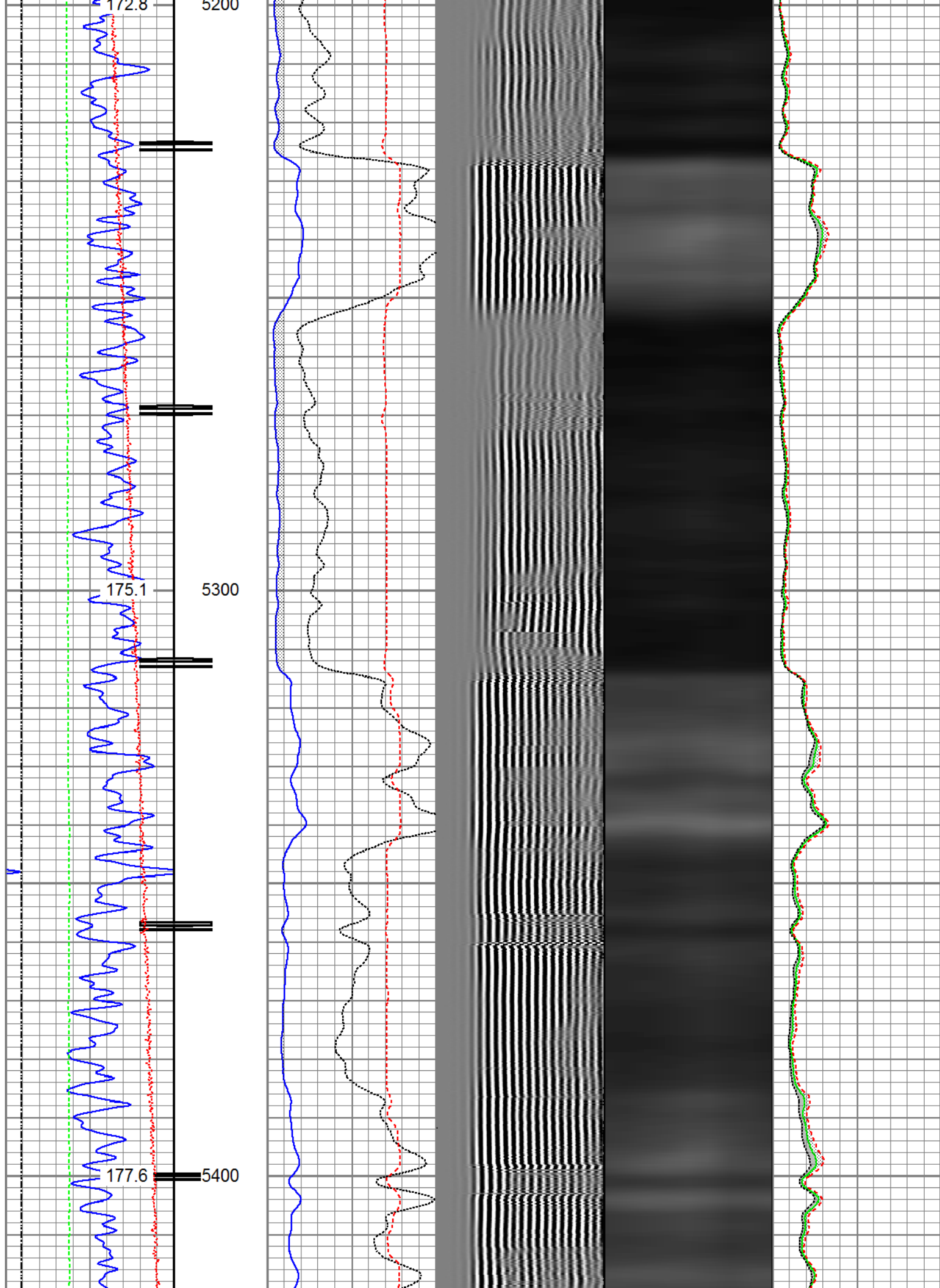


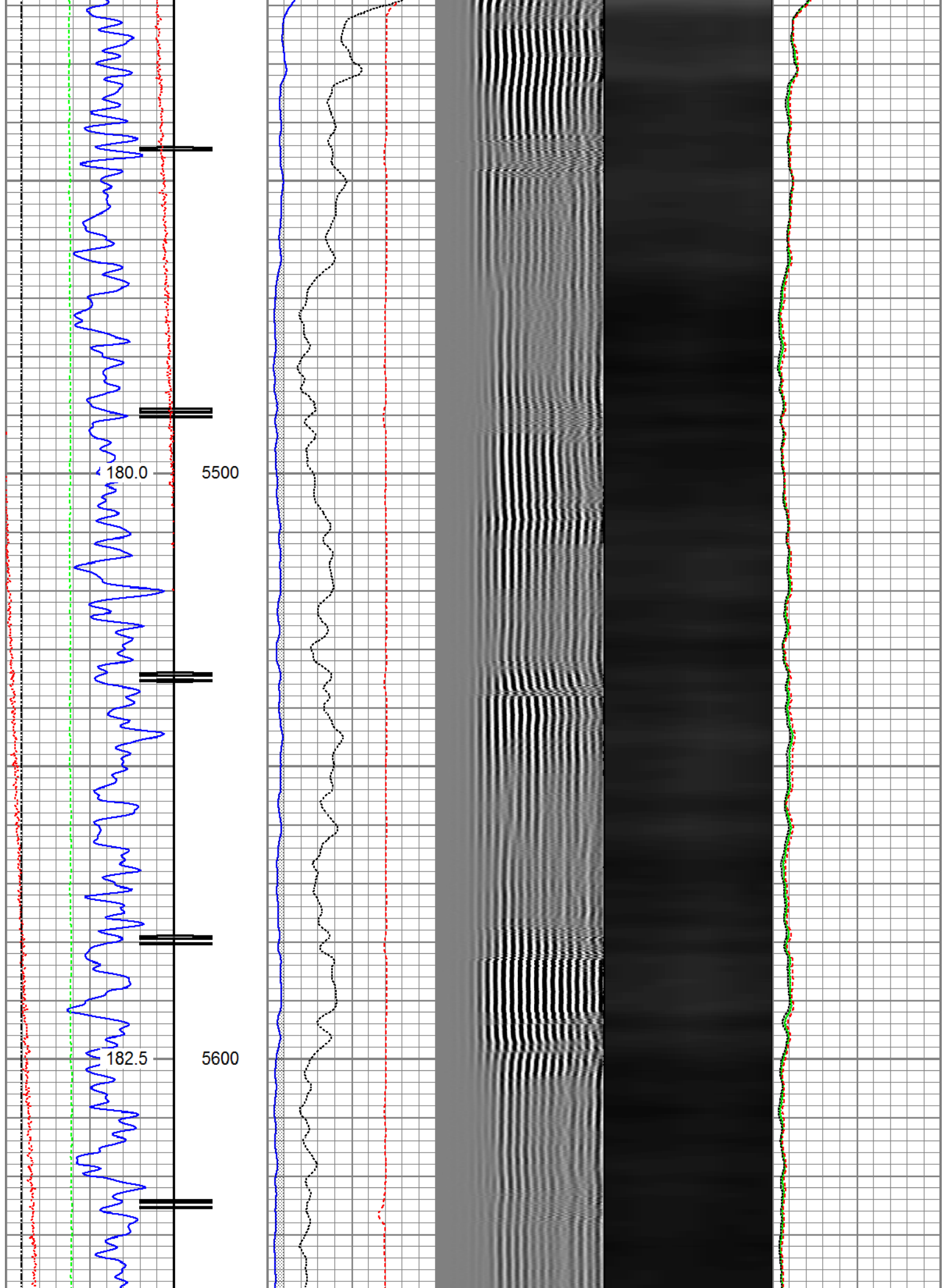


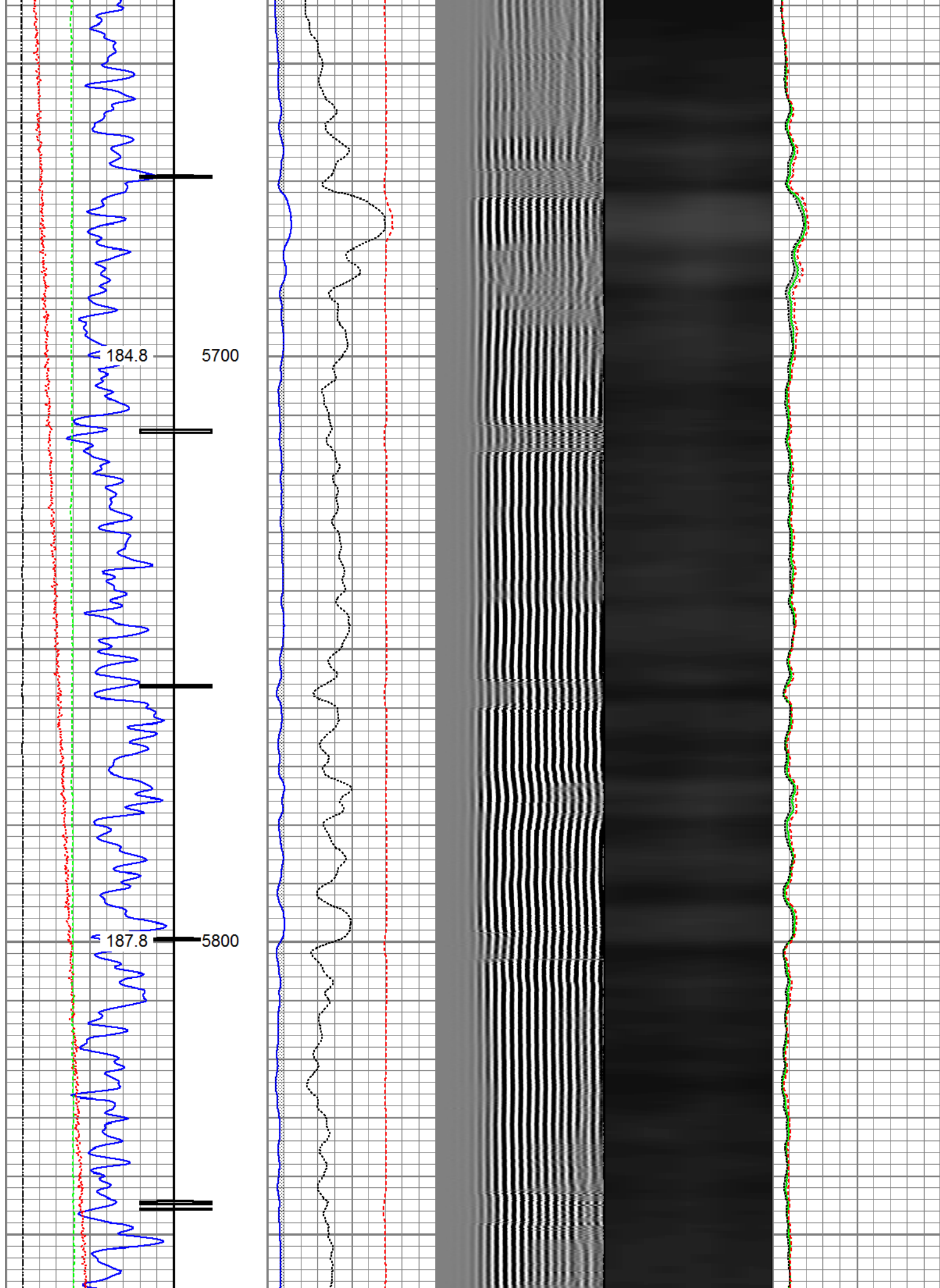


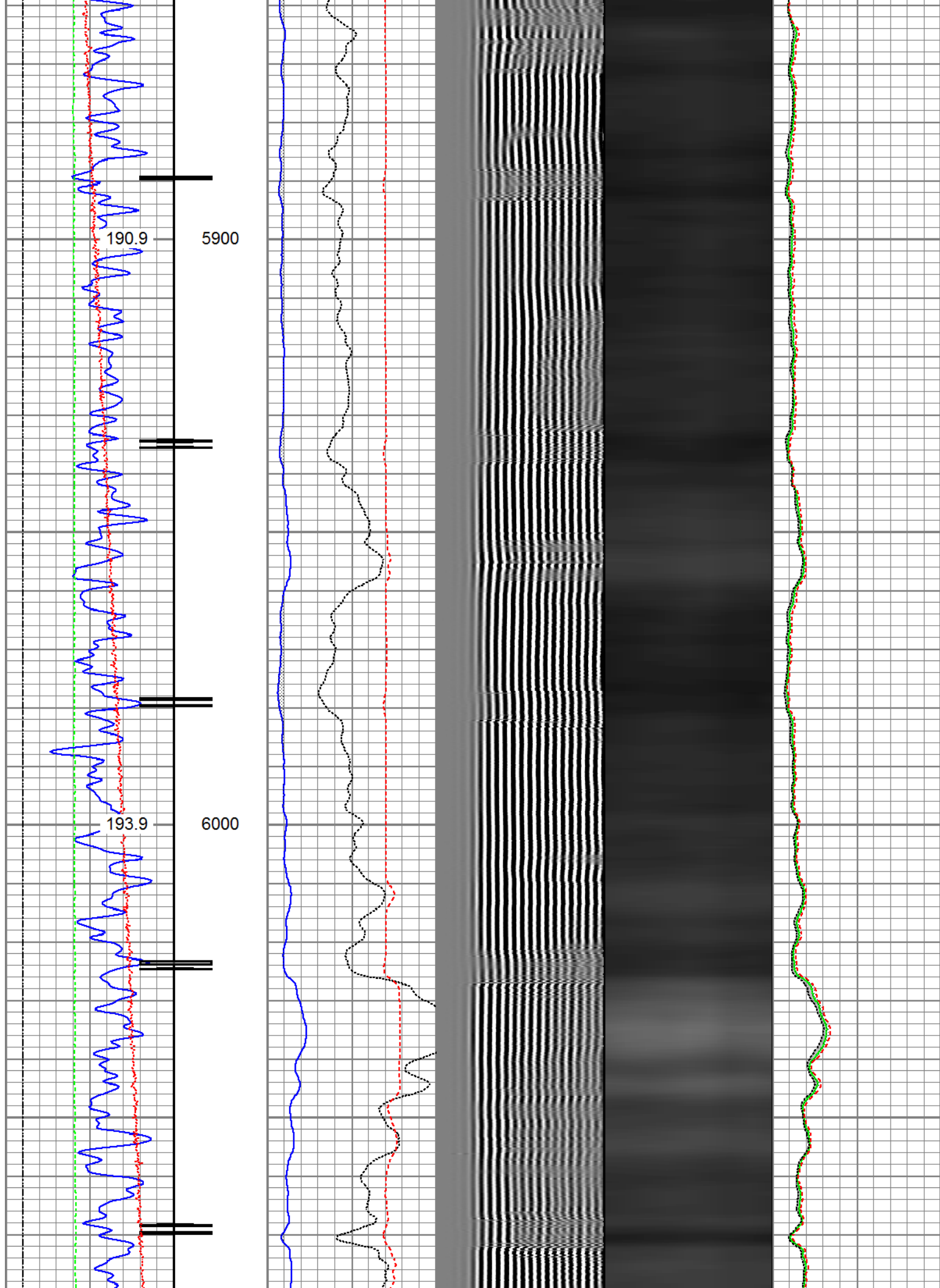


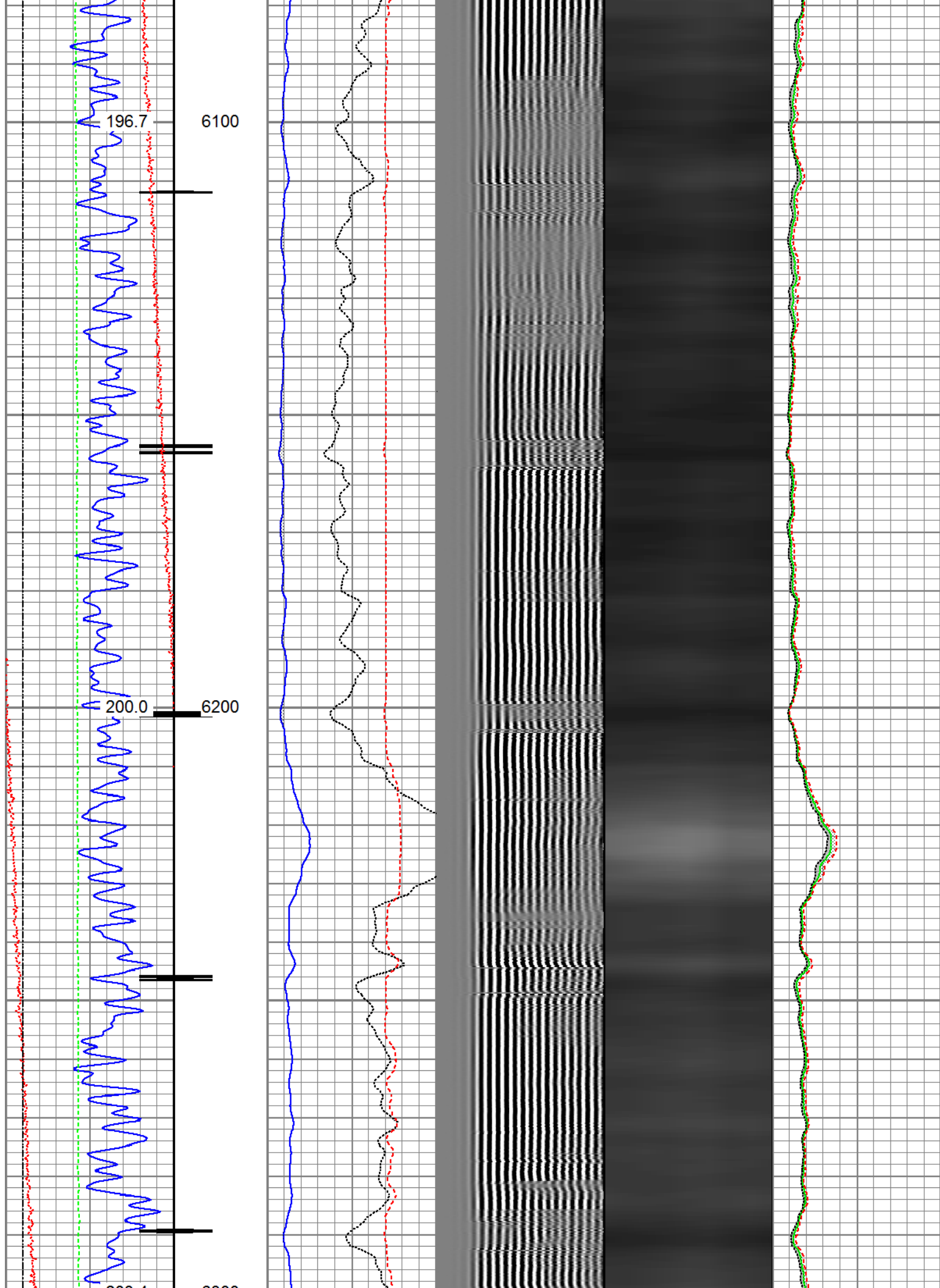


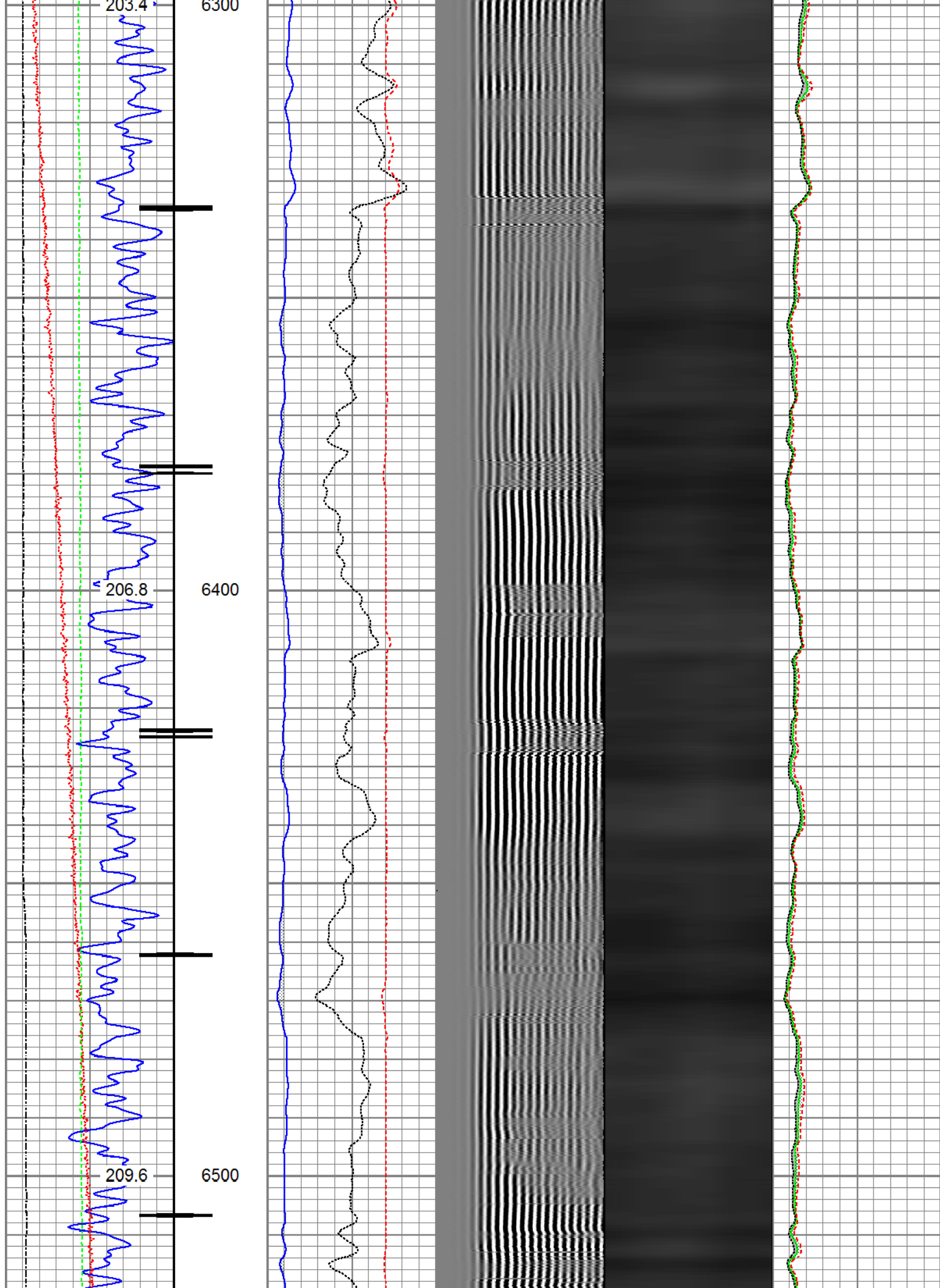


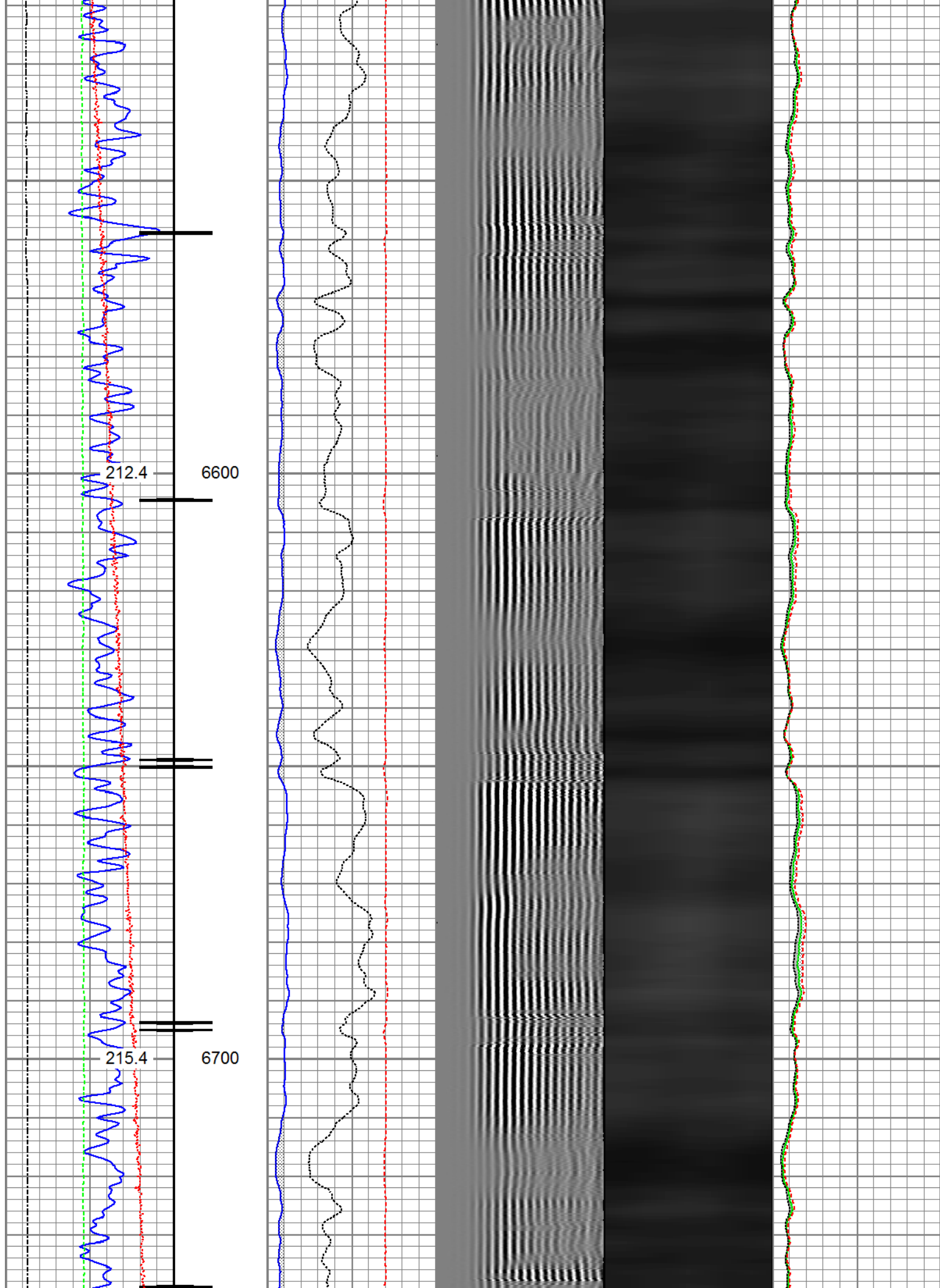


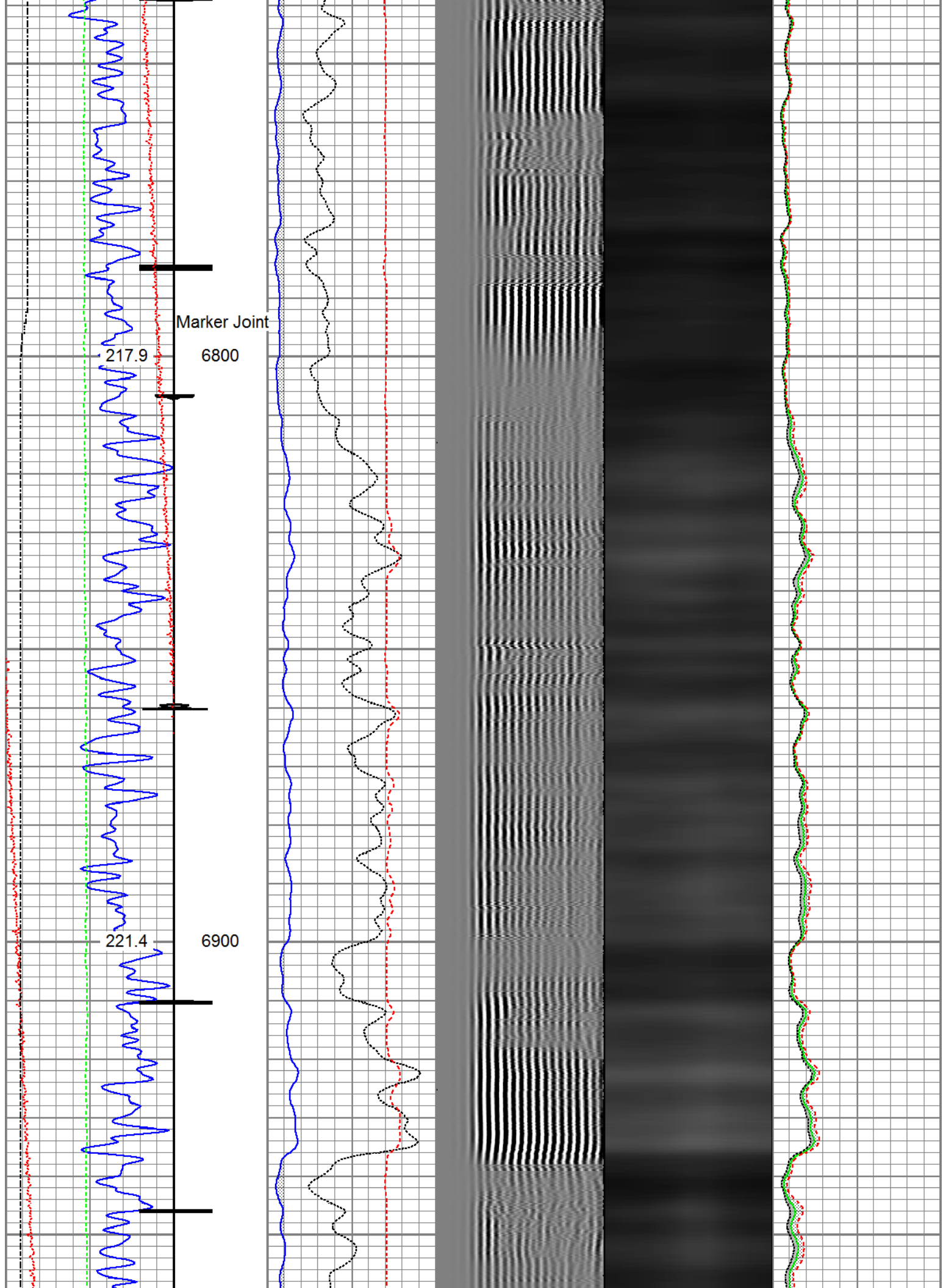


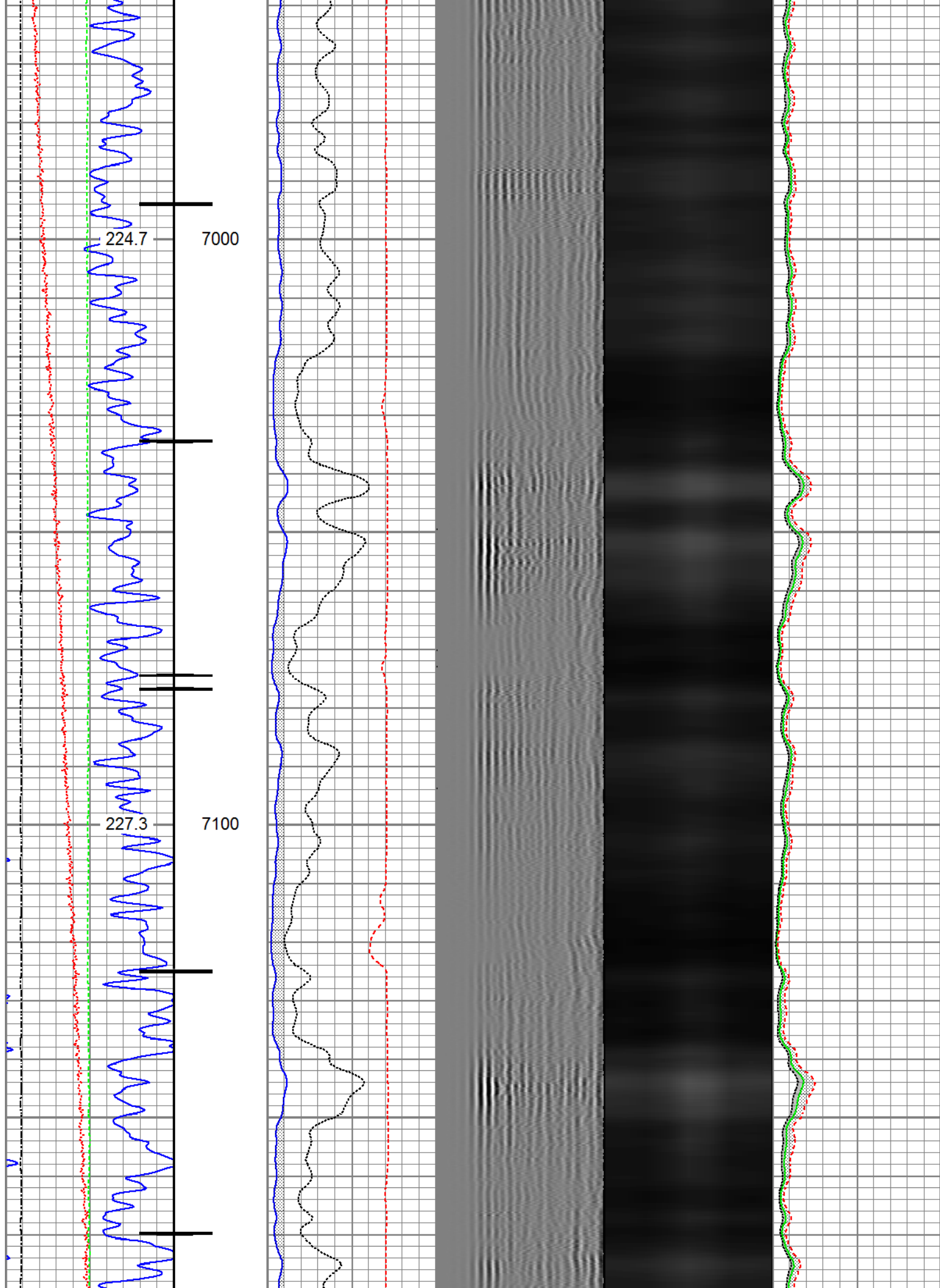


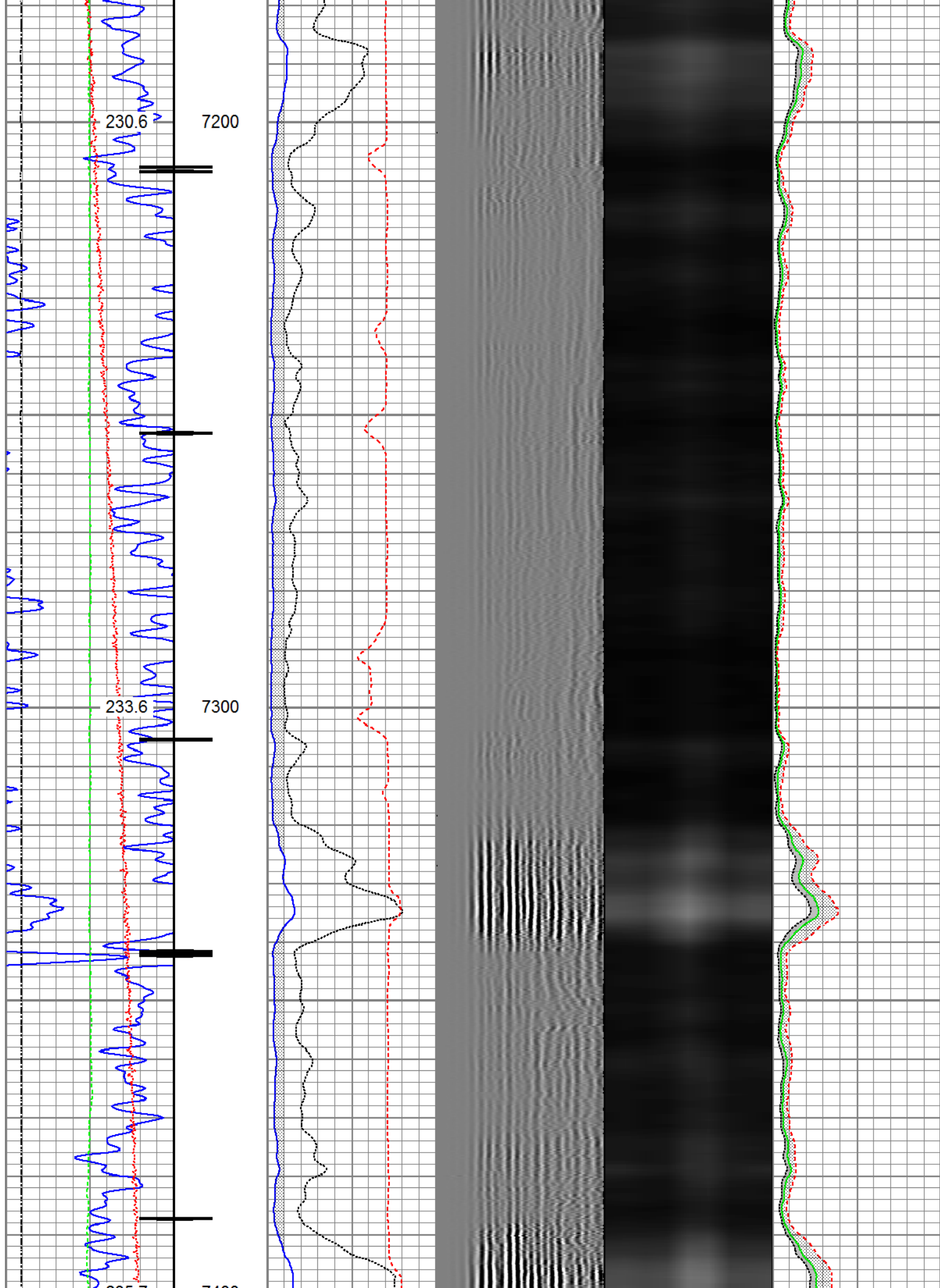


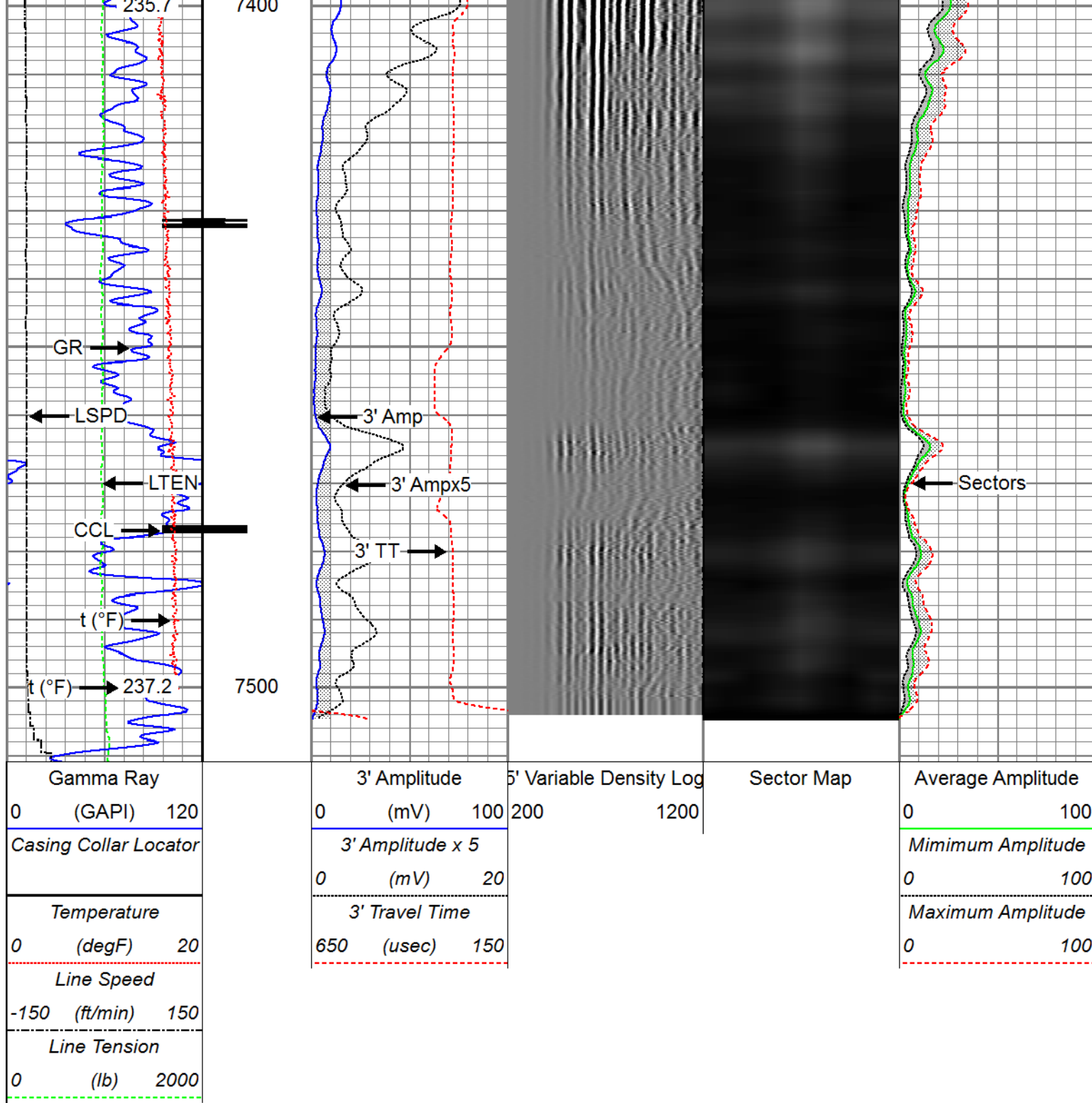








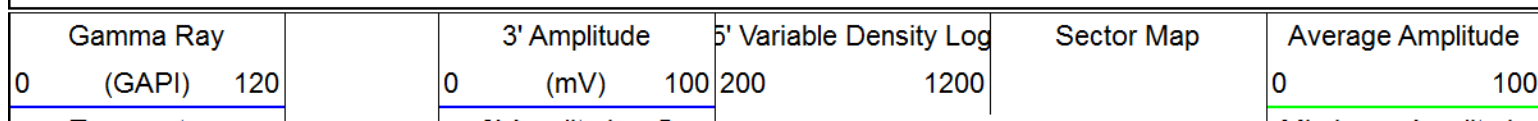




Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

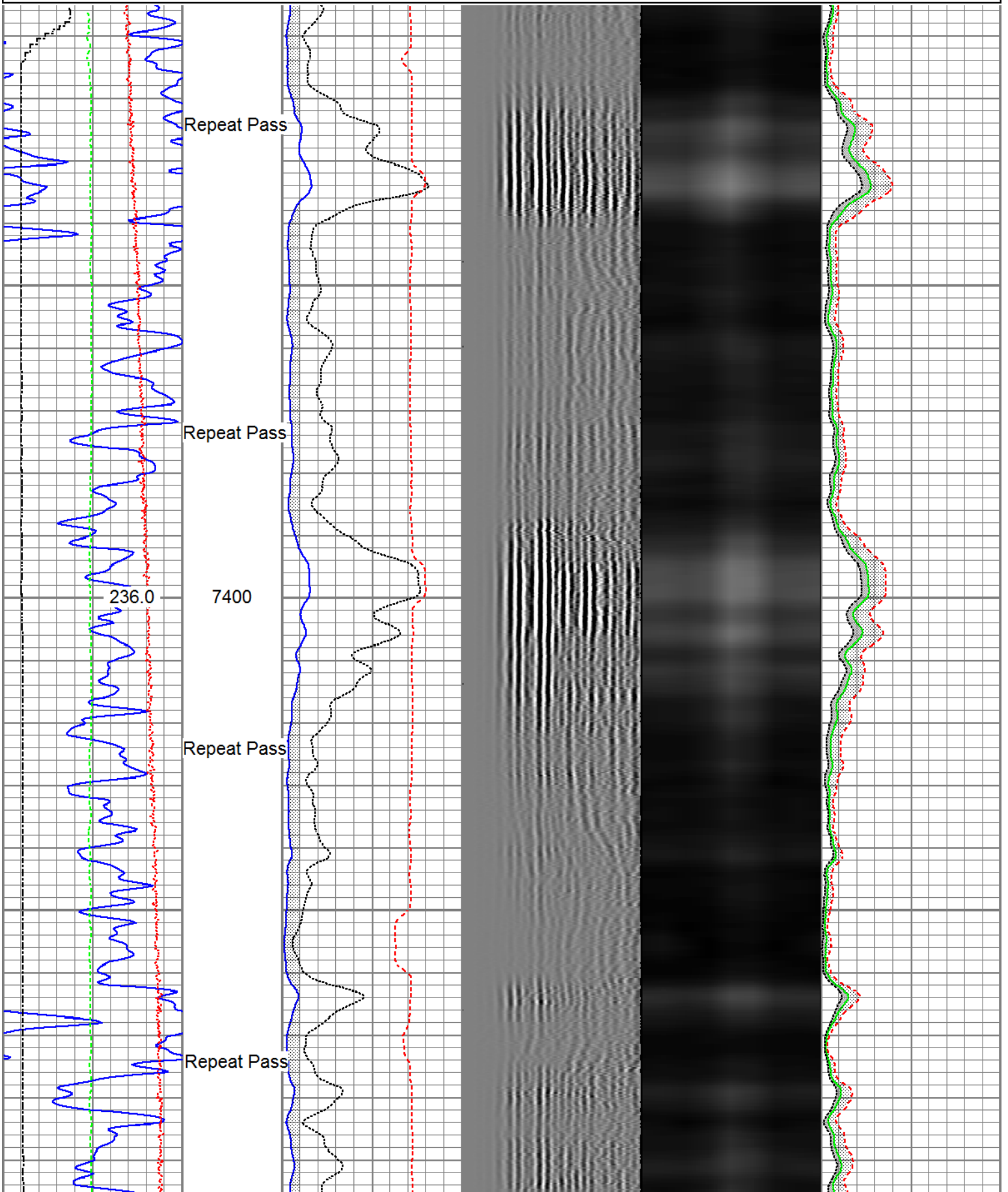
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 Dataset Pathname pass2
 Presentation Format ros_radri
 Dataset Creation Tue Jul 25 15:23:58 2017
 Charted by Depth in Feet scaled 1:240




Temperature		
0	(degF)	20
Line Speed		
-150	(ft/min)	150
Line Tension		
0	(lb)	2000

3' Amplitude x 5		
0	(mV)	20
3' Travel Time		
650	(usec)	150

Minimum Amplitude		
0		100
Maximum Amplitude		
0		100



DCCL CCL	6.51 6.51		Probe_GR_CCL-P_CGR_2750_S (FW1307-4.54) Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	55.00
GR	3.77				
			Probe_ELine_BowSpring_Centralizer-P_EB52.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	20.00
Dataset: PROCESSED_0512343802_Anadarko_Babcock 14C-33HZ_RBL_07-25-17.db: field/well/run1/pass4 Total length: 23.40 ft Total weight: 225.40 lb O.D.: 2.75 in					

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\anadarko babcock 14c-33hz_25 jul 2017_rb\PROCESSED_05123438
Dataset Pathname	pass4
Dataset Creation	Tue Jul 25 15:27:19 2017

Gamma Ray Calibration Report		
Serial Number:	FW1307-038	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:43:09 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	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:	18.057	ft

Master Calibration, performed Tue Jul 25 08:08:19 2017:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.002	0.702	0.800	71.921	101.624	0.577
CAL	0.002	0.735				
5'	0.002	0.682	0.800	71.921	104.674	0.569
SUM						
S1	0.001	0.698	0.000	100.000	143.510	-0.201
S2	0.001	0.697	0.000	100.000	143.724	-0.214
S3	0.002	0.694	0.000	100.000	144.403	-0.277
S4	0.002	0.691	0.000	100.000	145.012	-0.251
S5	0.002	0.694	0.000	100.000	144.391	-0.252

S6	0.002	0.699	0.000	100.000	143.355	-0.261
S7	0.002	0.703	0.000	100.000	142.703	-0.279
S8	0.002	0.702	0.000	100.000	142.797	-0.312

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.735	1.000	0.000

Air Zero Calibration, performed Tue Jul 25 08:08:38 2017:

	Raw (v)		Calibrated (v)		Results
	Zero		Zero		Offset
3'	0.002		0.000		0.000
5'	0.002		0.000		0.000
SUM					
S1	0.001		0.000		-0.000
S2	0.002		0.000		-0.000
S3	0.002		0.000		0.000
S4	0.002		0.000		-0.000
S5	0.002		0.000		-0.000
S6	0.002		0.000		-0.000
S7	0.002		0.000		0.000
S8	0.002		0.000		0.000



Company Kerr-McGee Oil & Gas Onshore, L.P.
 Well Babcock 14C-33HZ
 Field Wattenberg
 County Weld
 State Colorado