



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

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

Well Yellowhammer 30N2-8HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-45497

Other Services

SEC 8 TWP 1N RGE 68W

Elevation

Permanent Datum Ground Level Elevation 5063'

Log Measured From Kelly Bushing 17 FT

Drilling Measured From Kelly Bushing

K.B. 5080'  
D.F. ---  
G.L. 5063'

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Yellowhammer 30N2-8HZ  
Field Wattenberg  
County Weld  
State Colorado

Date	18-FEB-2018			
Run Number	One			
Depth Driller	13522 FT			
Depth Logger	7300 FT			
Bottom Logged Interval	7295 FT			
Top Log Interval	Surface			
Open Hole Size	8.50"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	217°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	0850			
Equipment Number	HD-324			
Location	Fort Lupton, CO			
Recorded By	C. Bryan			
Witnessed By	John McCarthy			
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9 5/8	36	J-55	Surface
Intermediate #1	5 1/2	17	HCP110	Surface
Intermediate #2				
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.

Comments

Log ran as per customer request  
Depth referenced to Marker Joint at 7255 FT  
Adjusted -16 FT to correlate with Marker Joint  
Log ran from 7295 FT 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!!

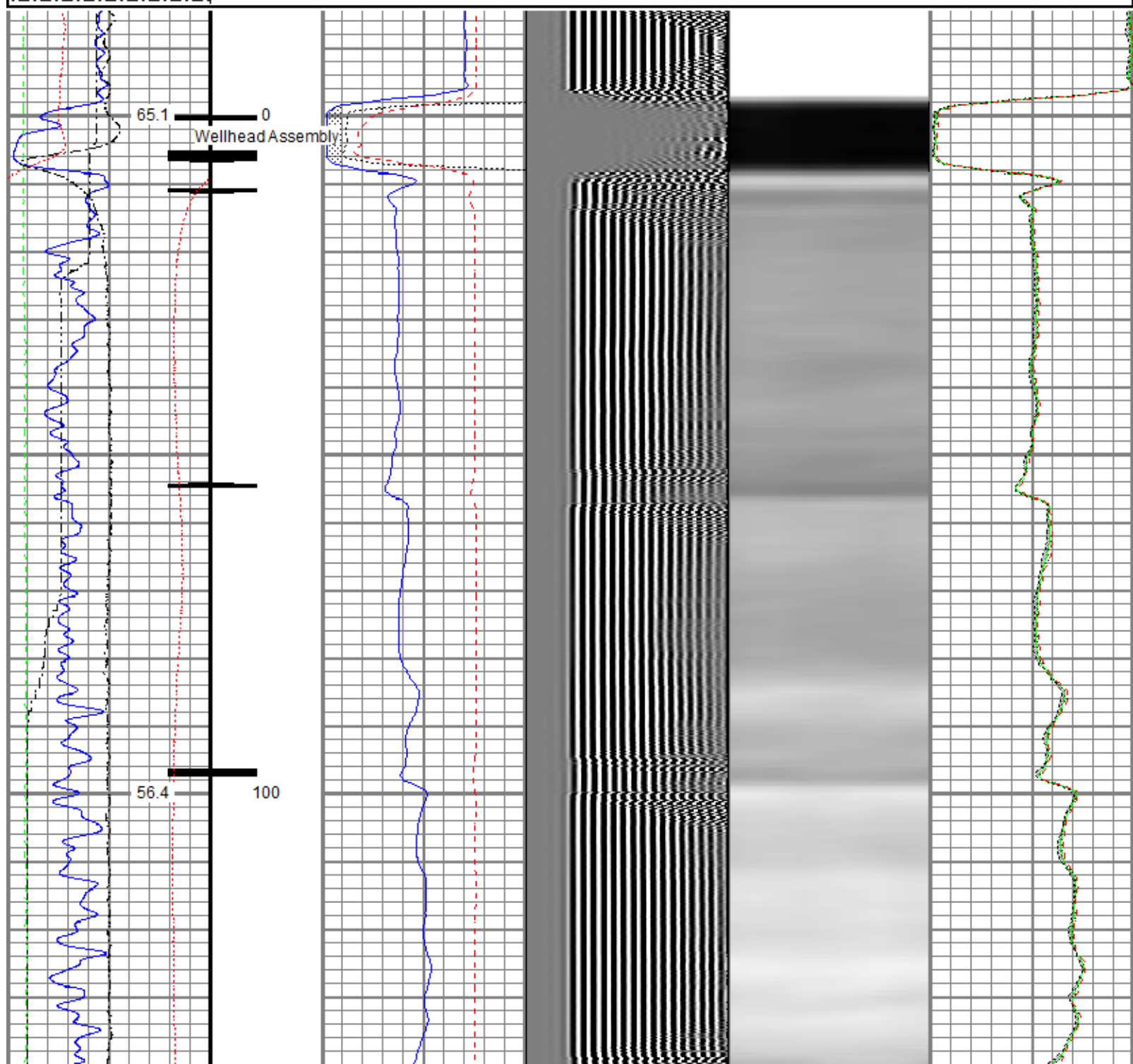
Main Pass

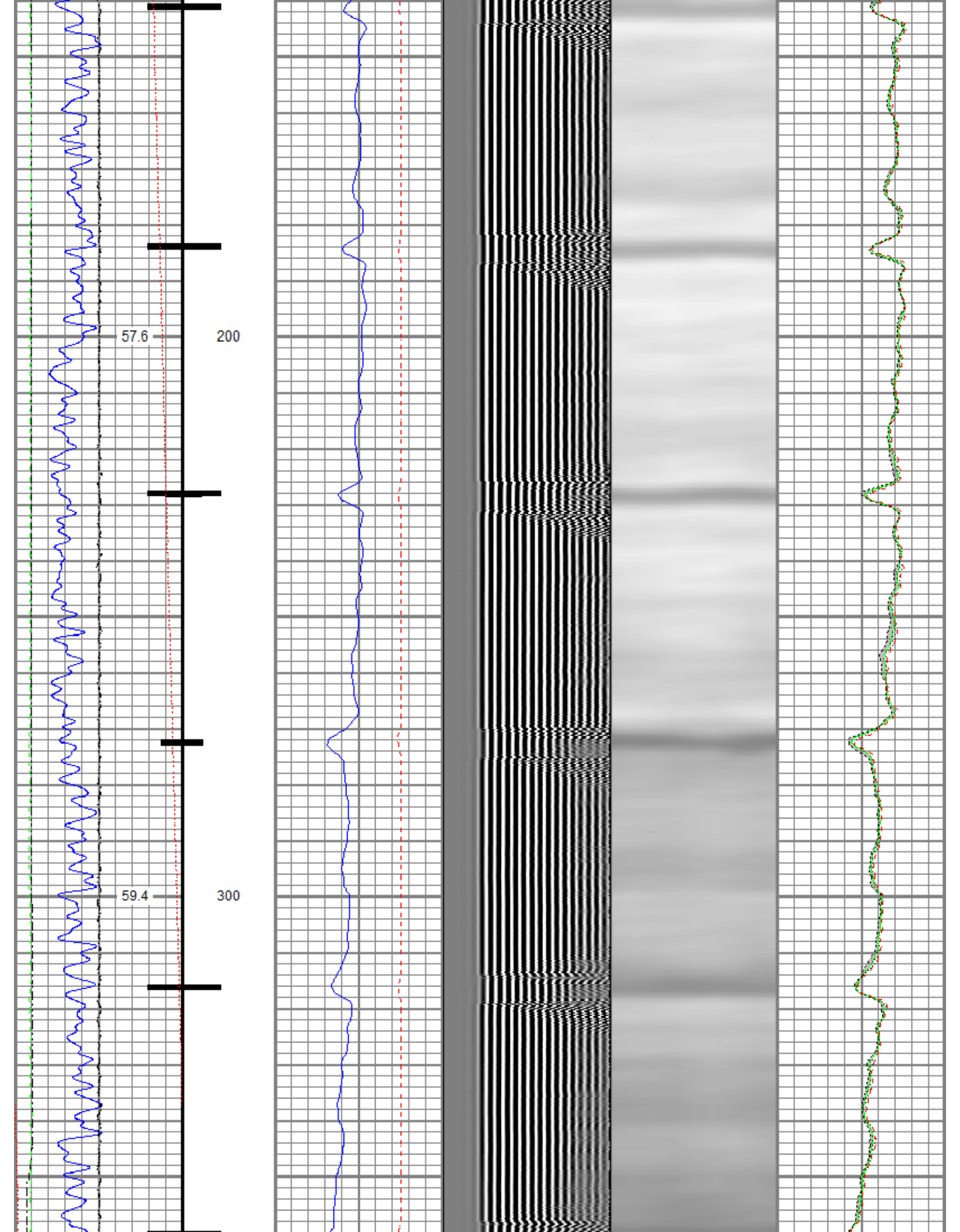


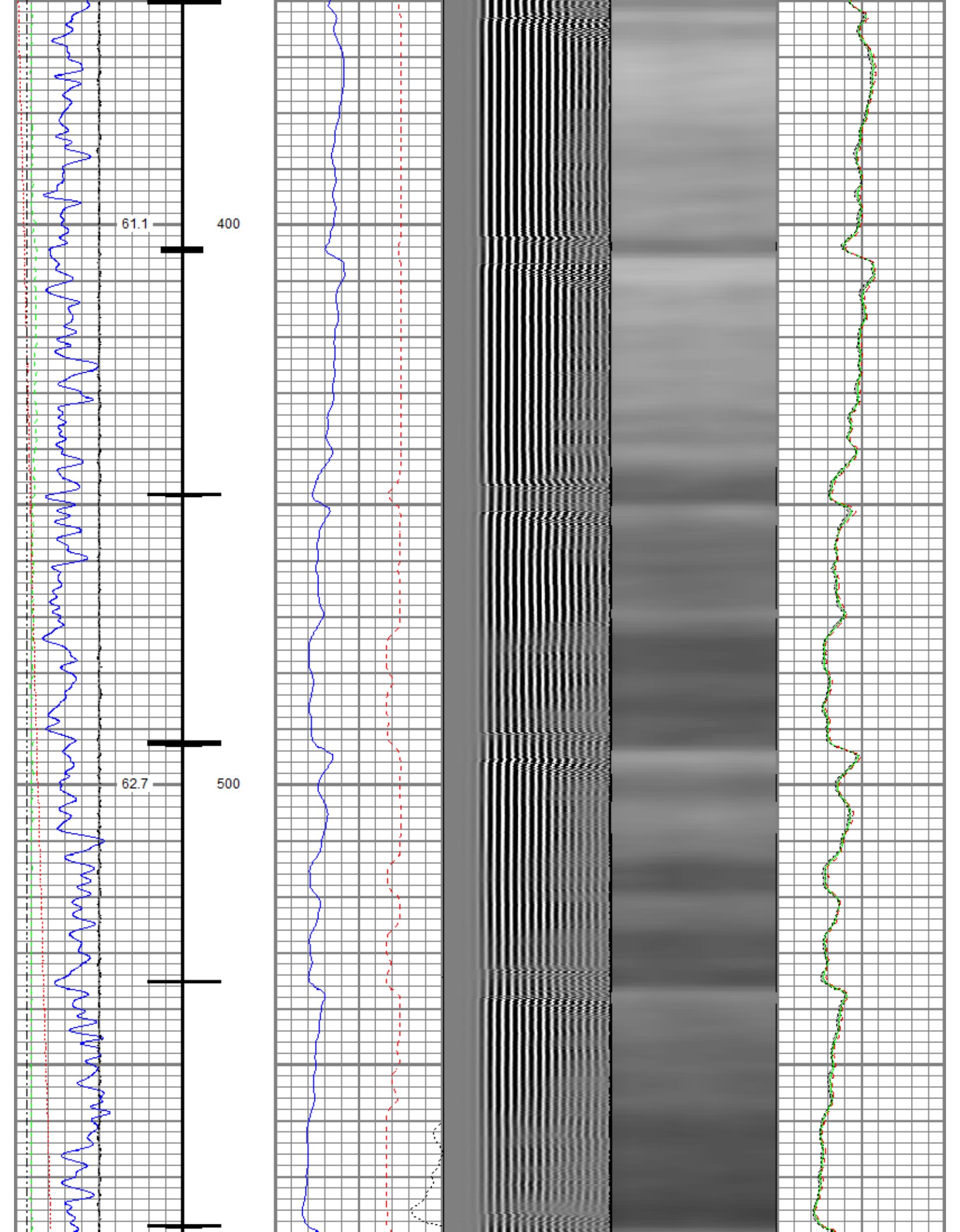
Recorded with 2800 PSI Surface Induced Pressure

Database File yellowhammer\_30n2-8hz\0512345497\_anadarko\_yellowhammer 30n2-8hz\_rbl\_02-18-18.db  
 Dataset Pathname main.2  
 Presentation Format ros\_radrii  
 Dataset Creation Sun Feb 18 10:09:52 2018  
 Charted by Depth in Feet scaled 1:240

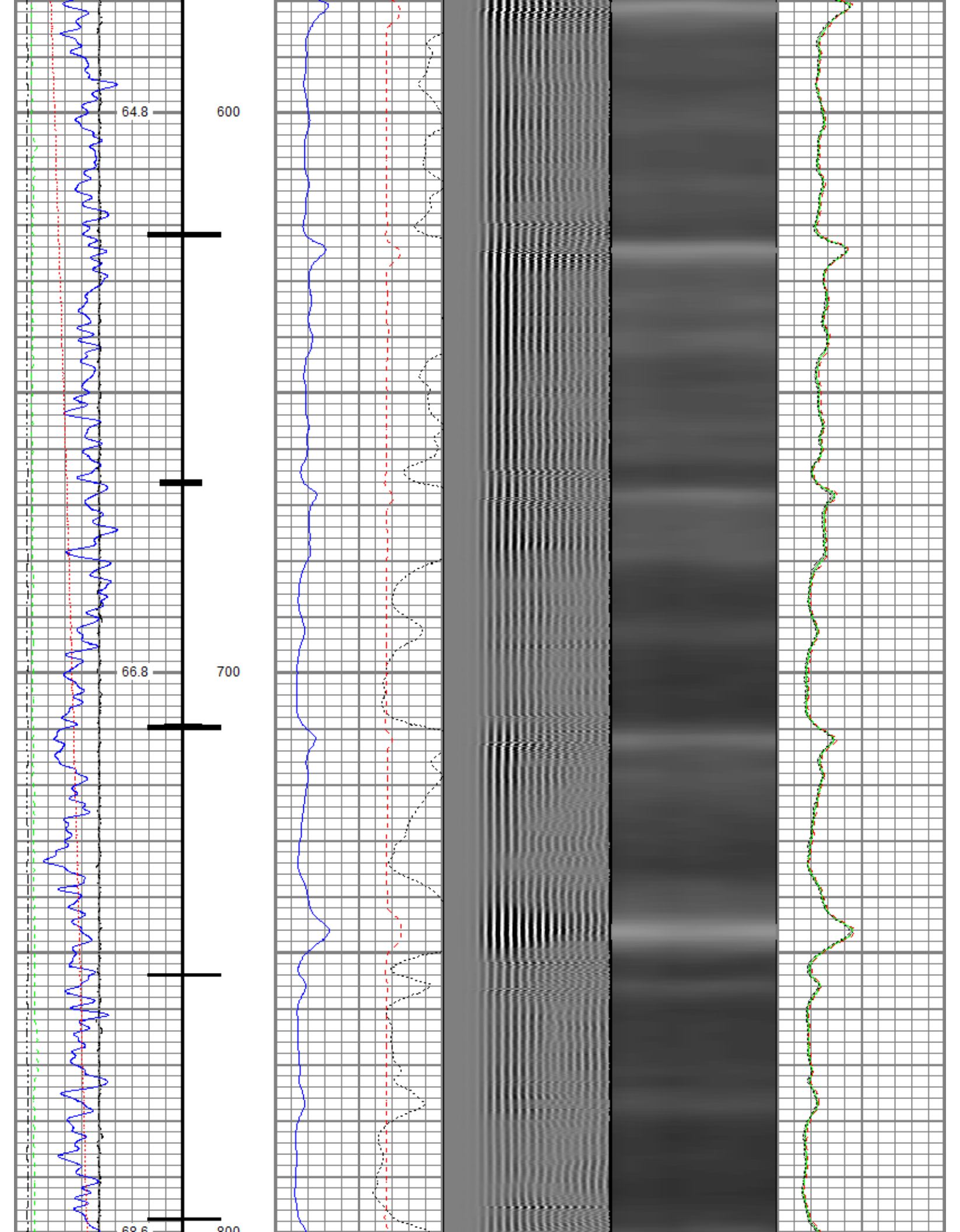
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Casing Collar Locator		0 (mV) 20			0	100
0 Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed		650 (usec) 150			0	100
-150 (ft/min) 150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

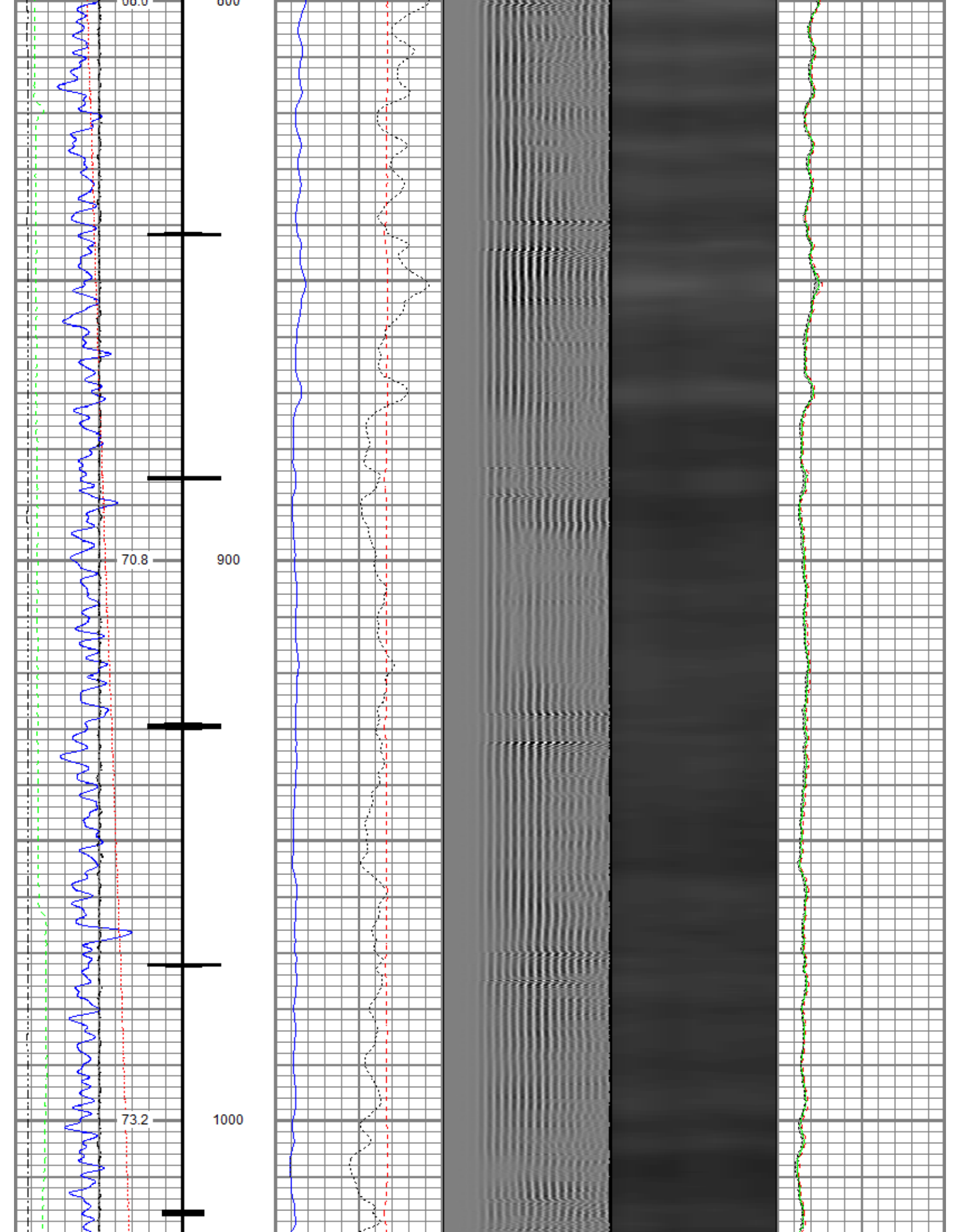


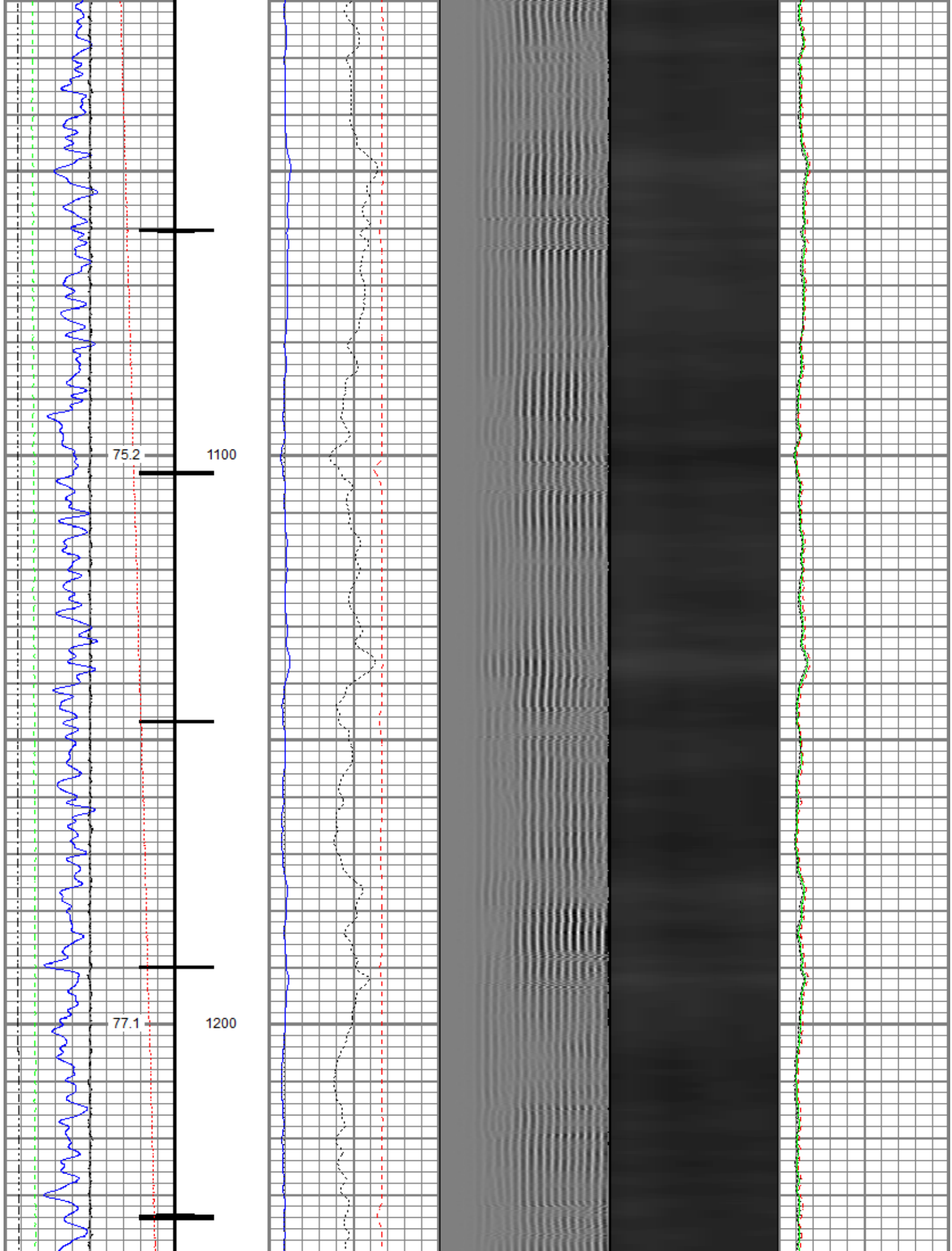


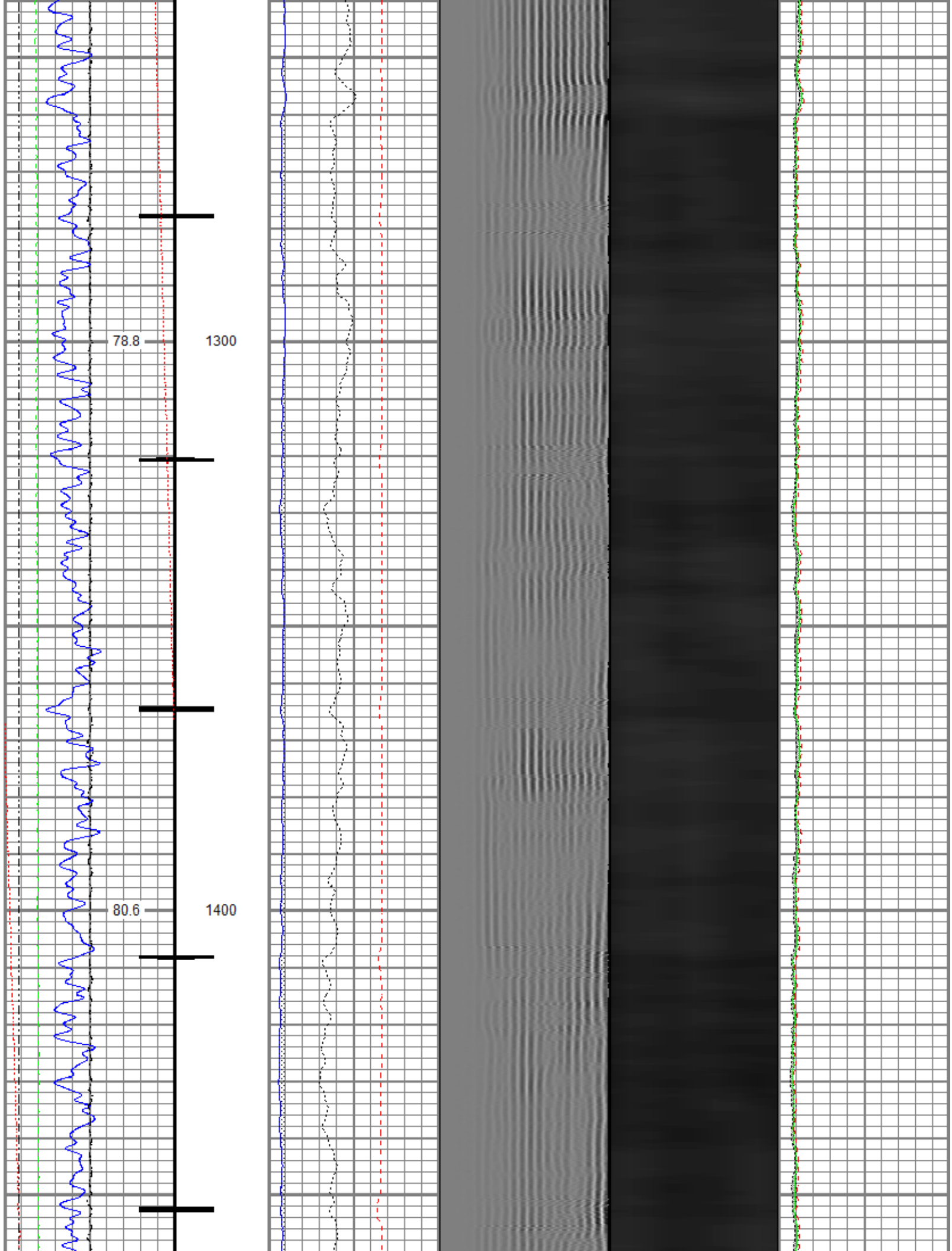




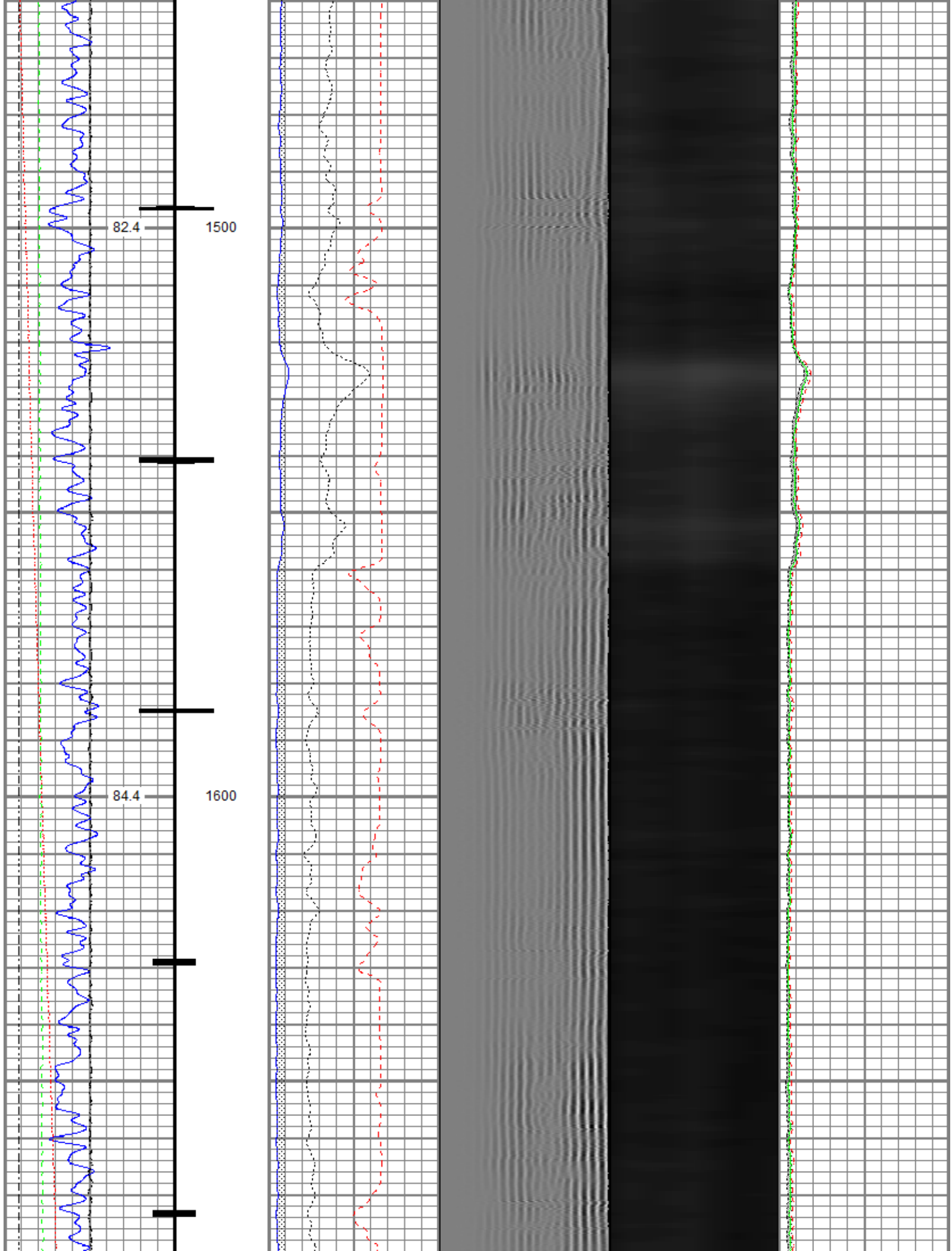


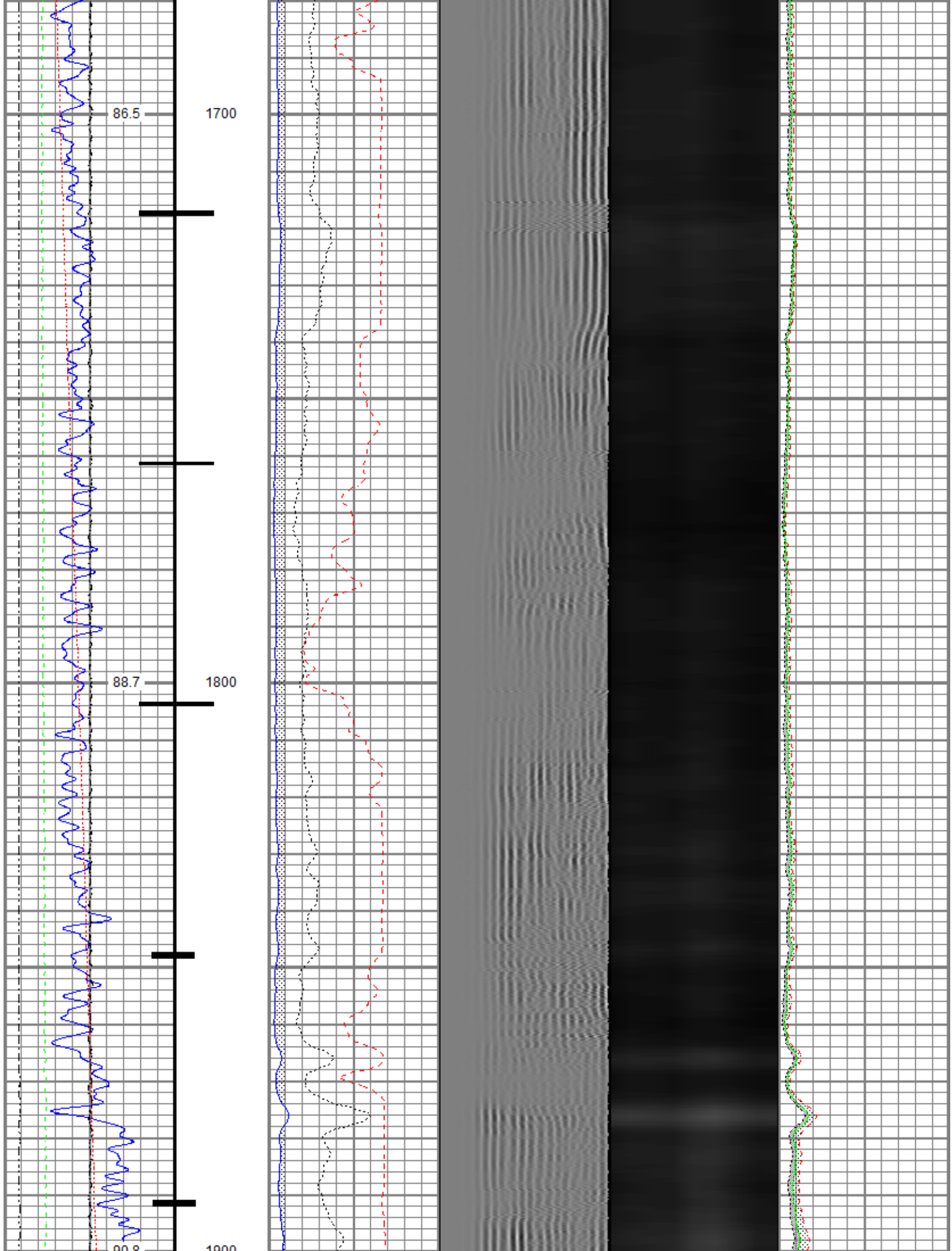


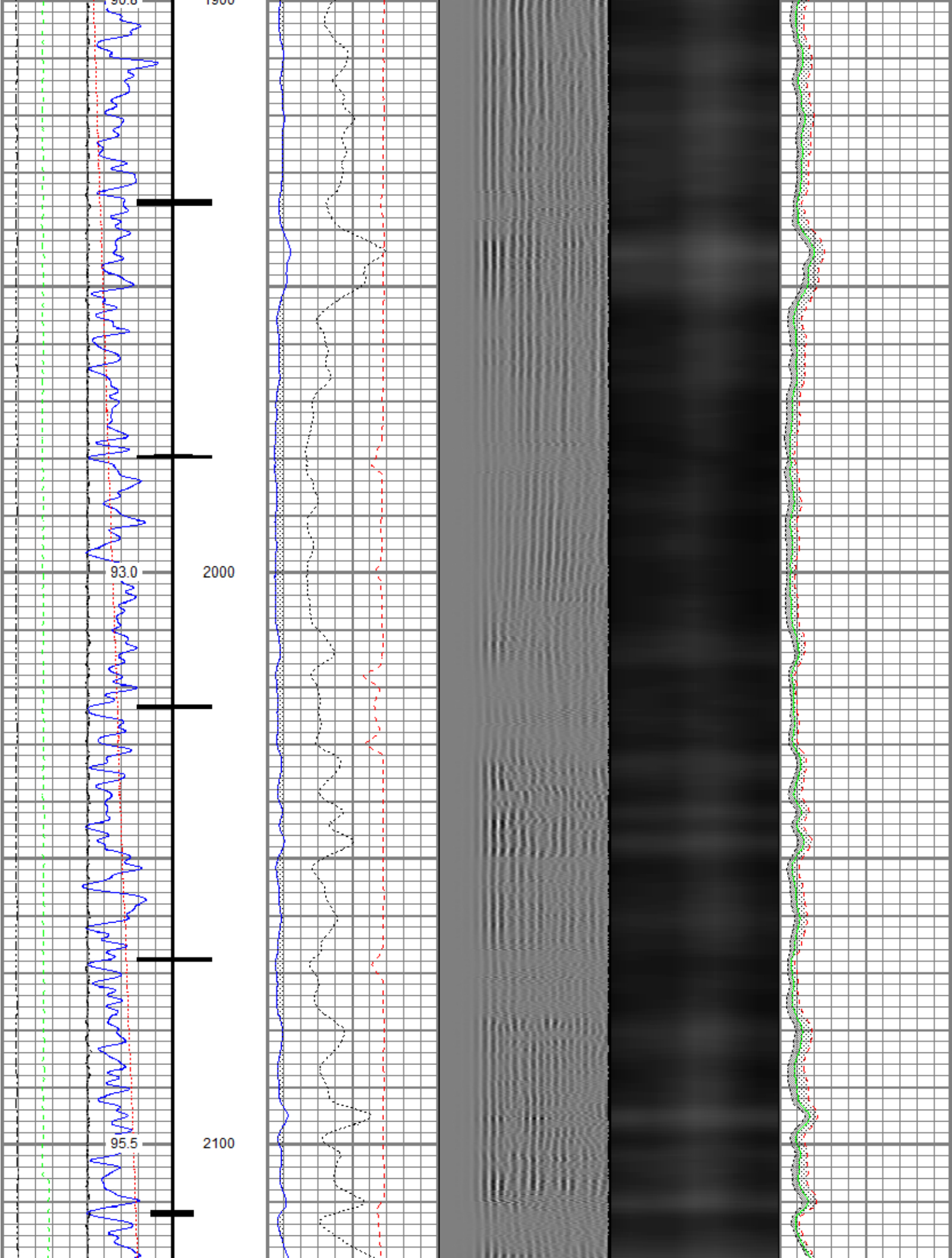


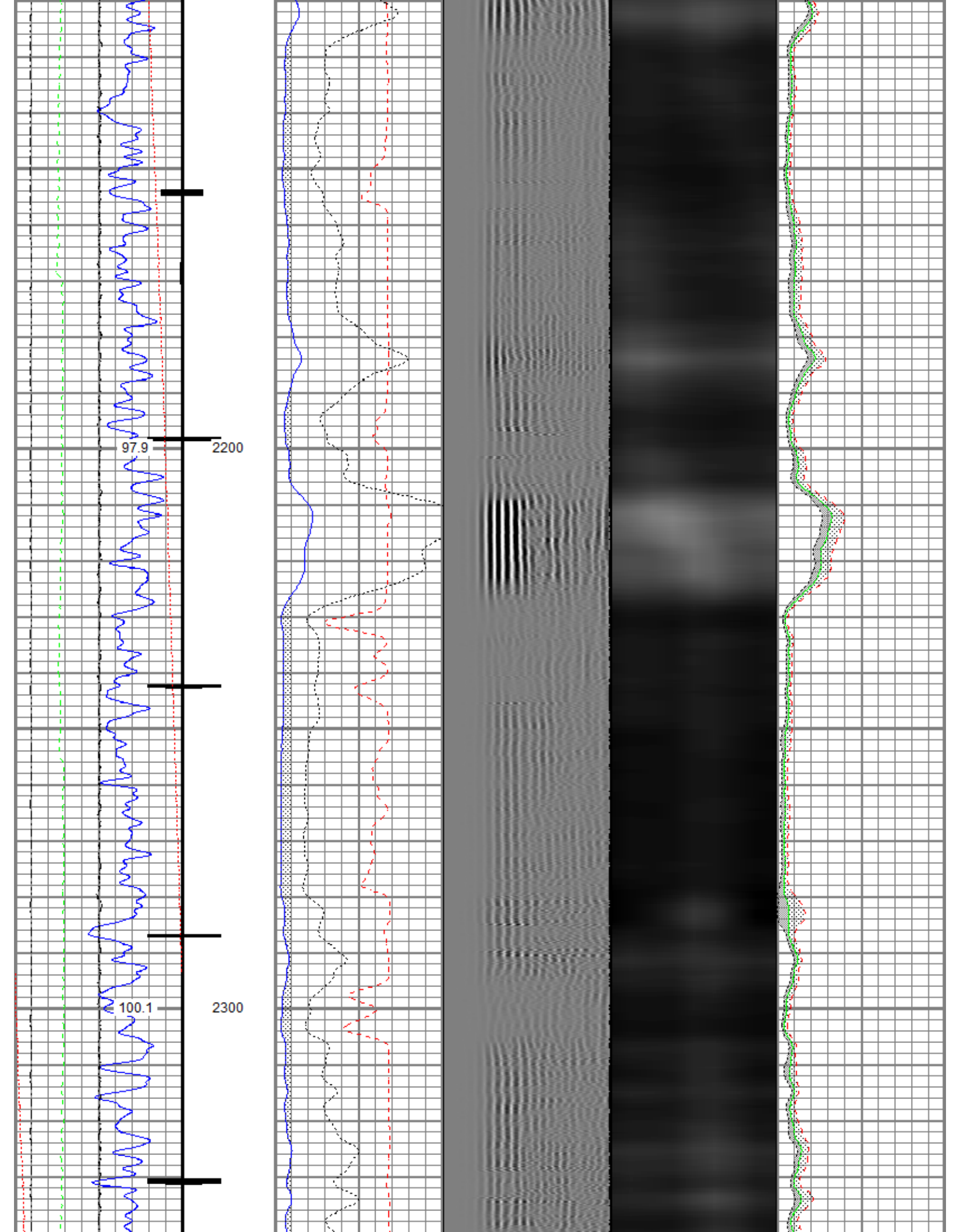




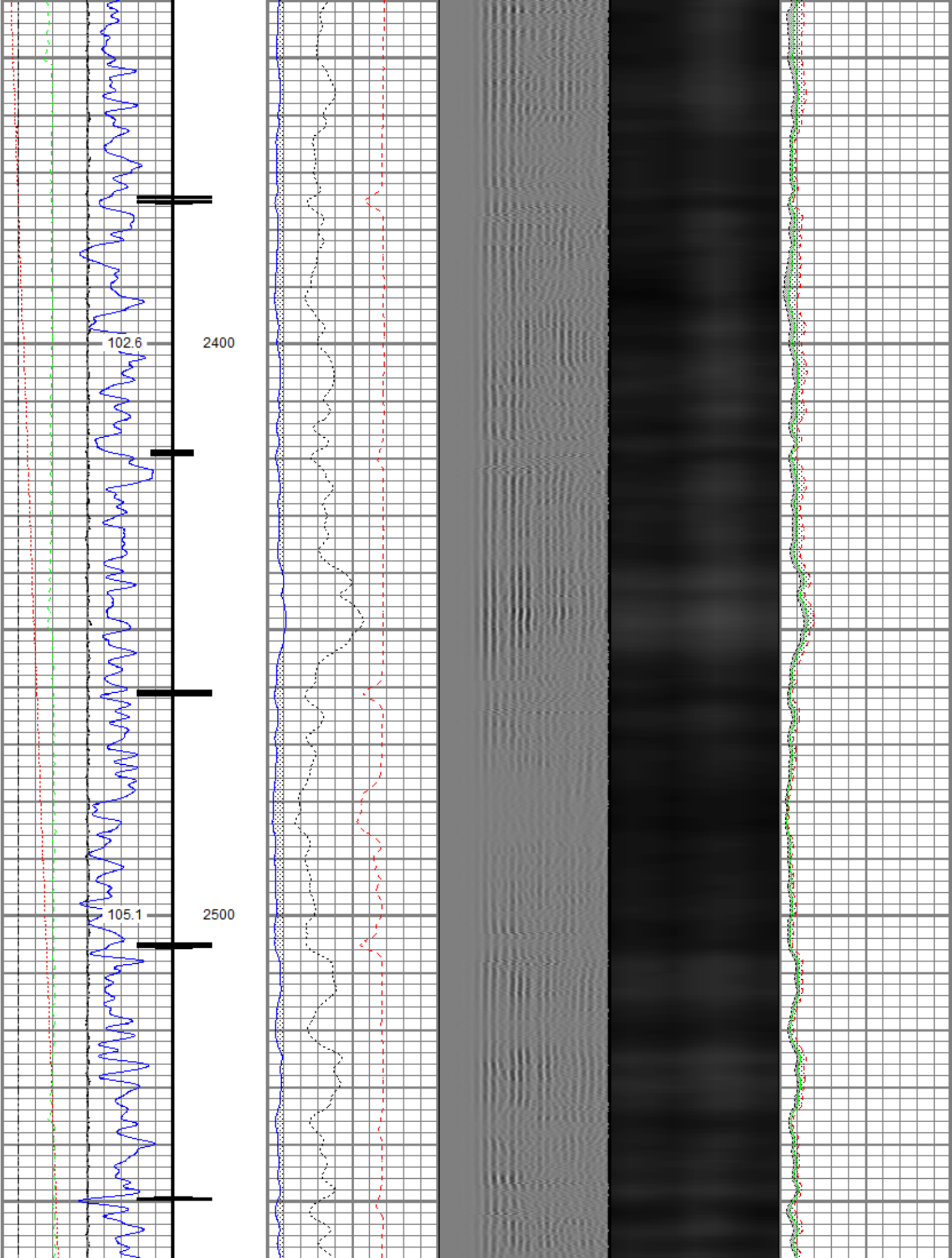


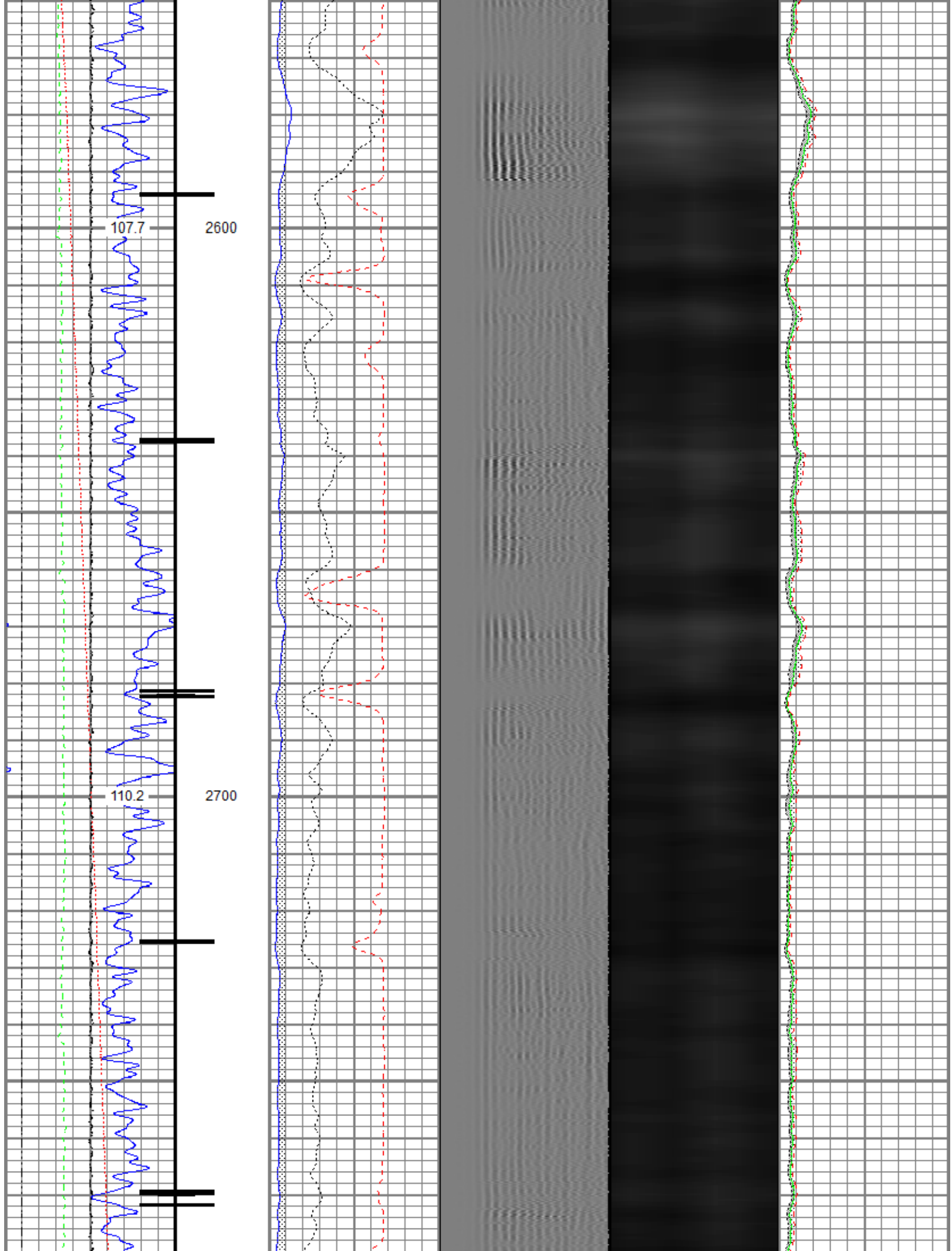


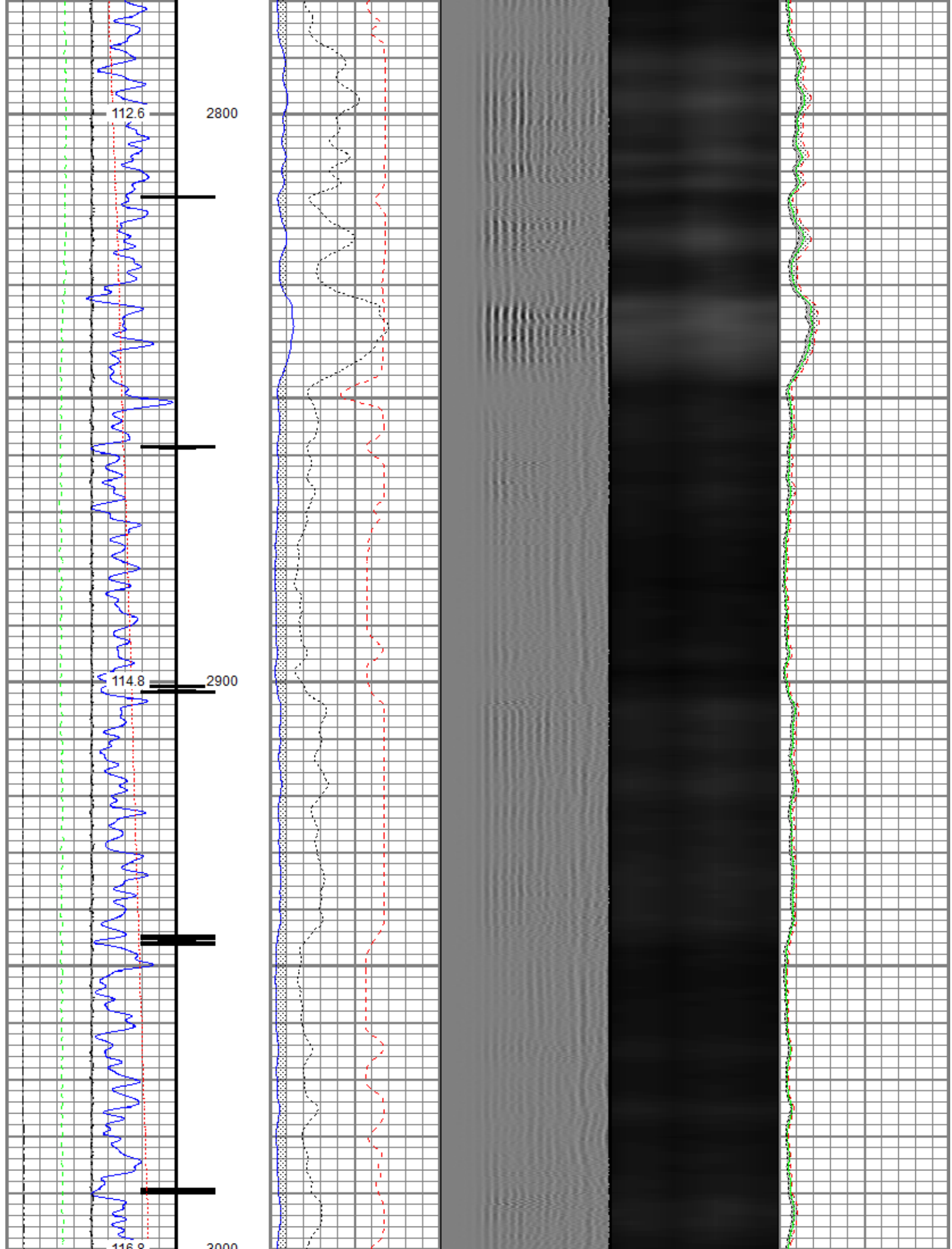


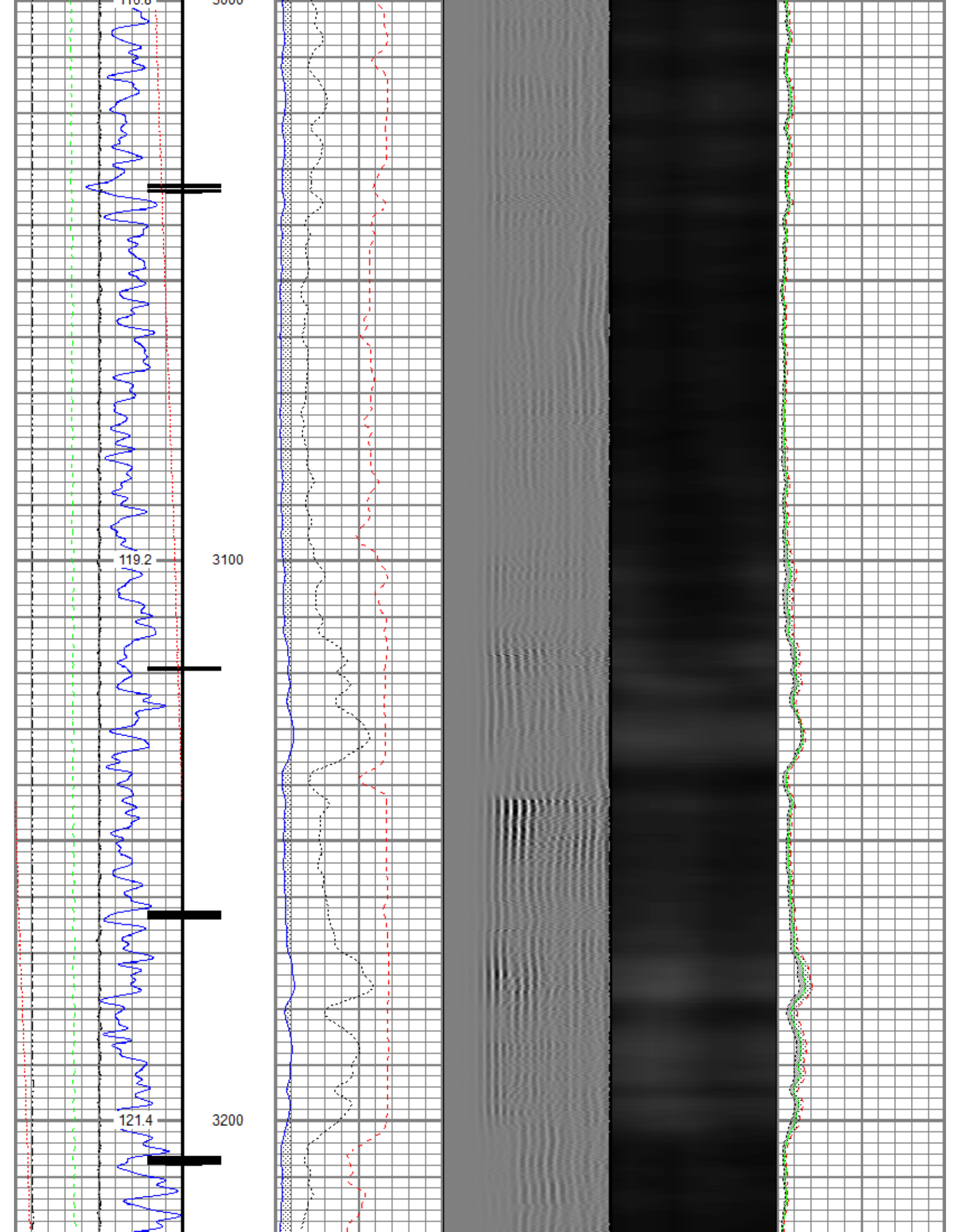




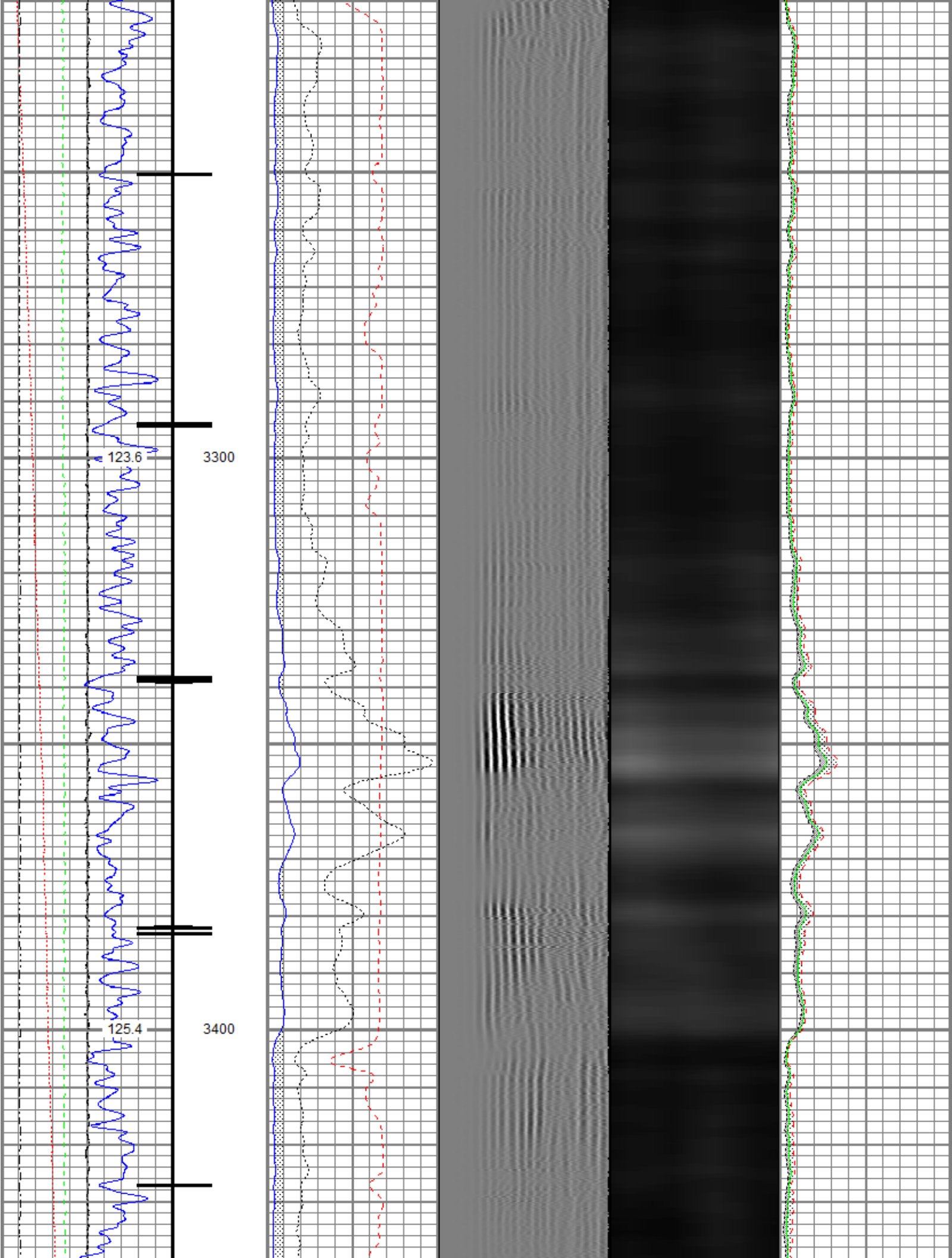


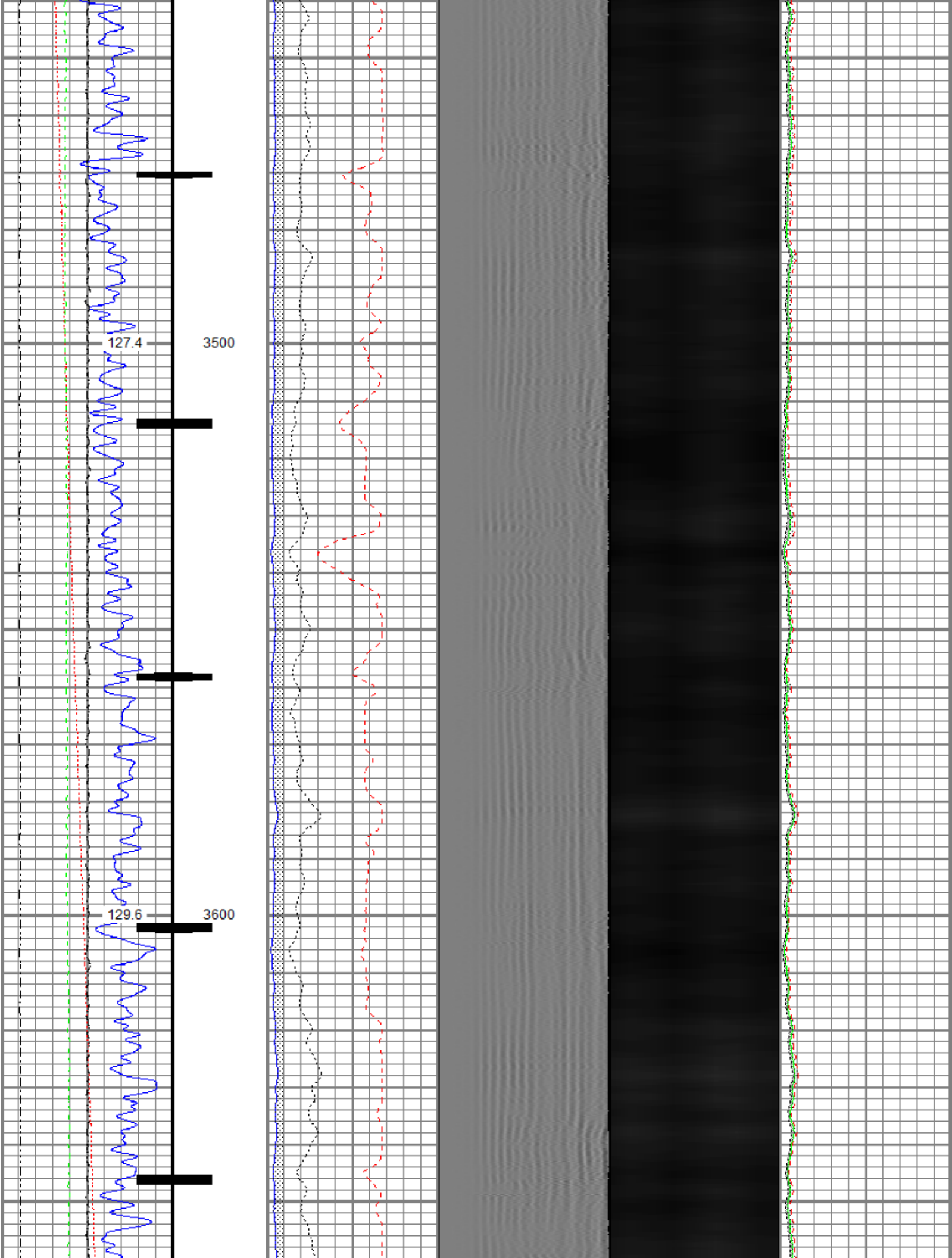


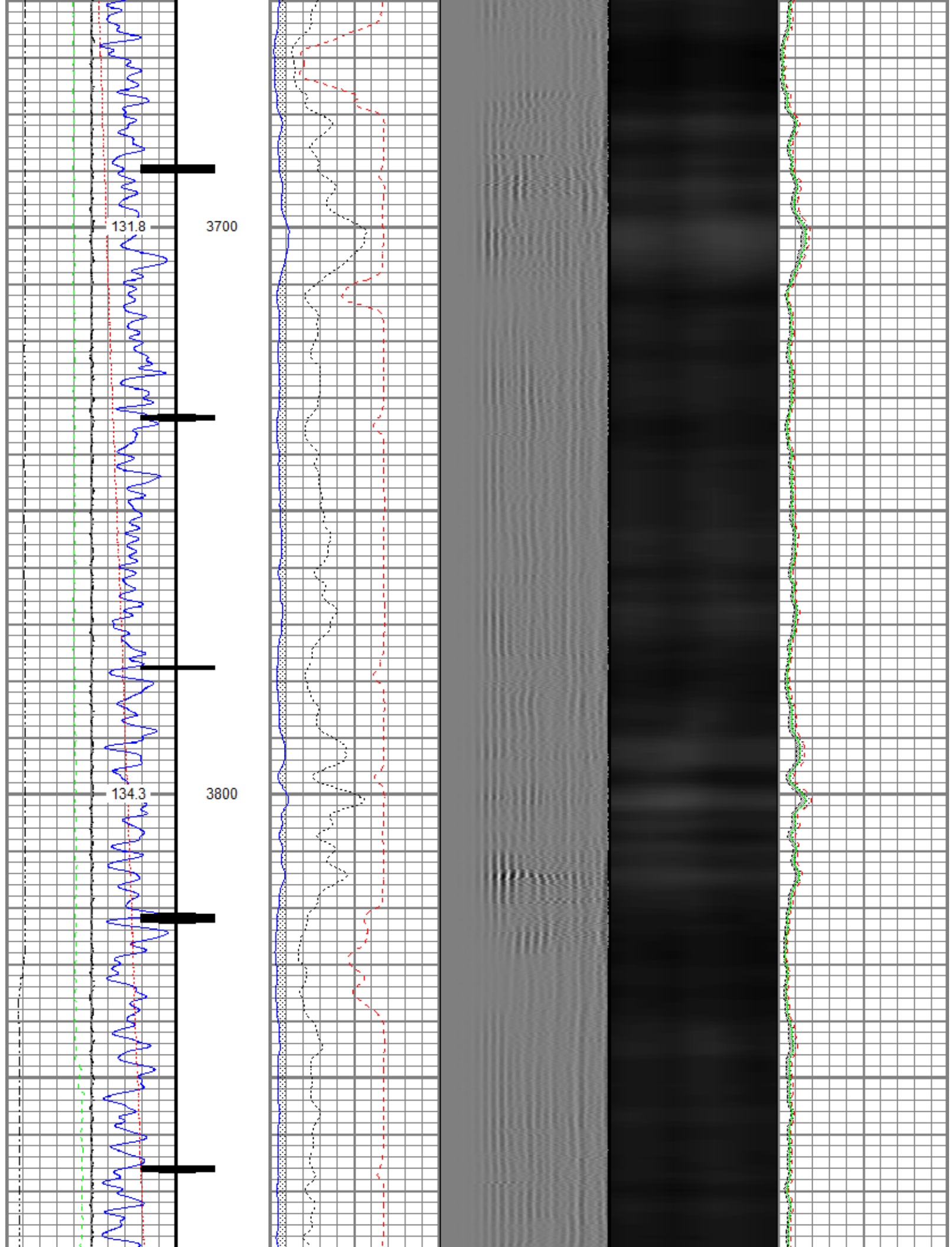


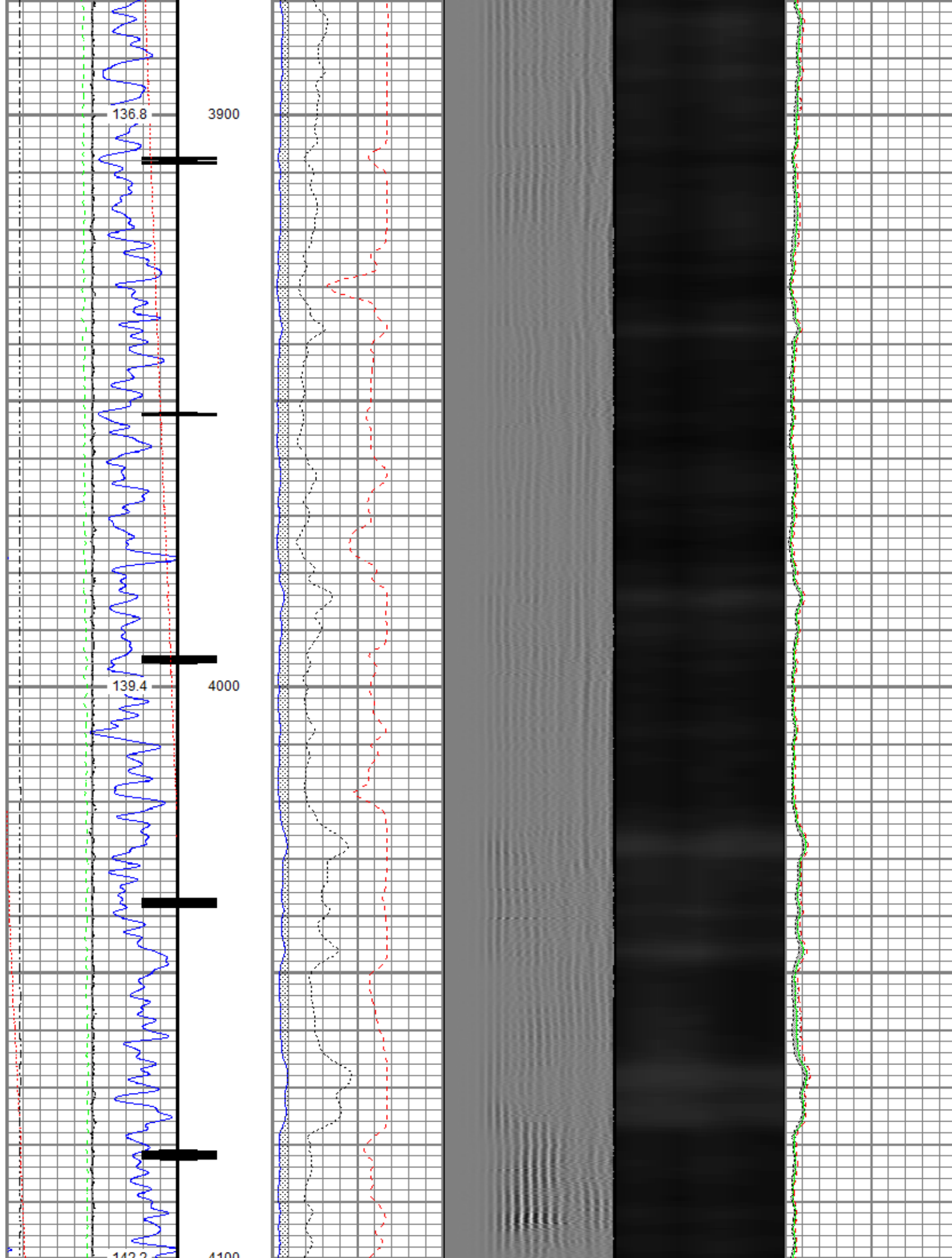




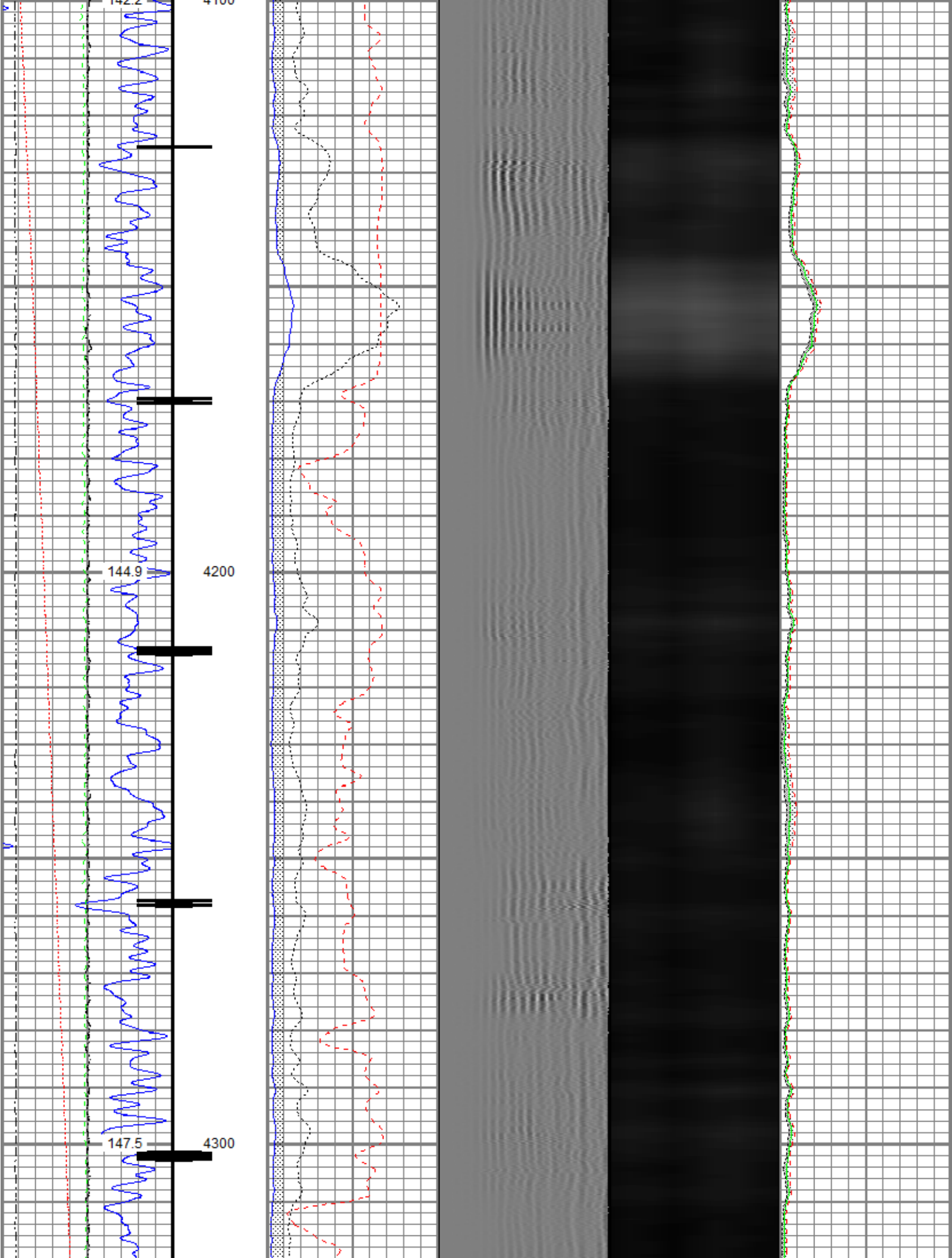


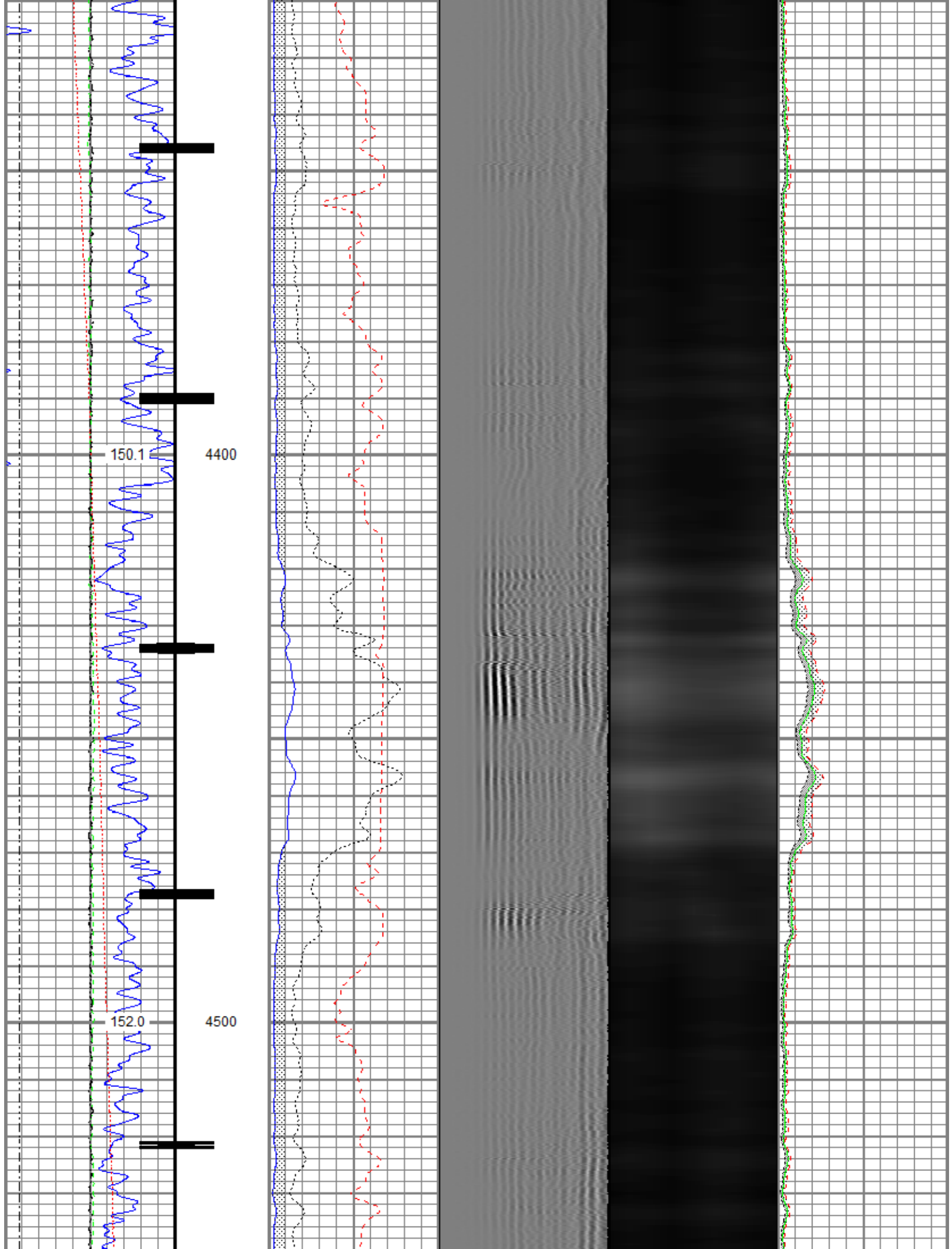


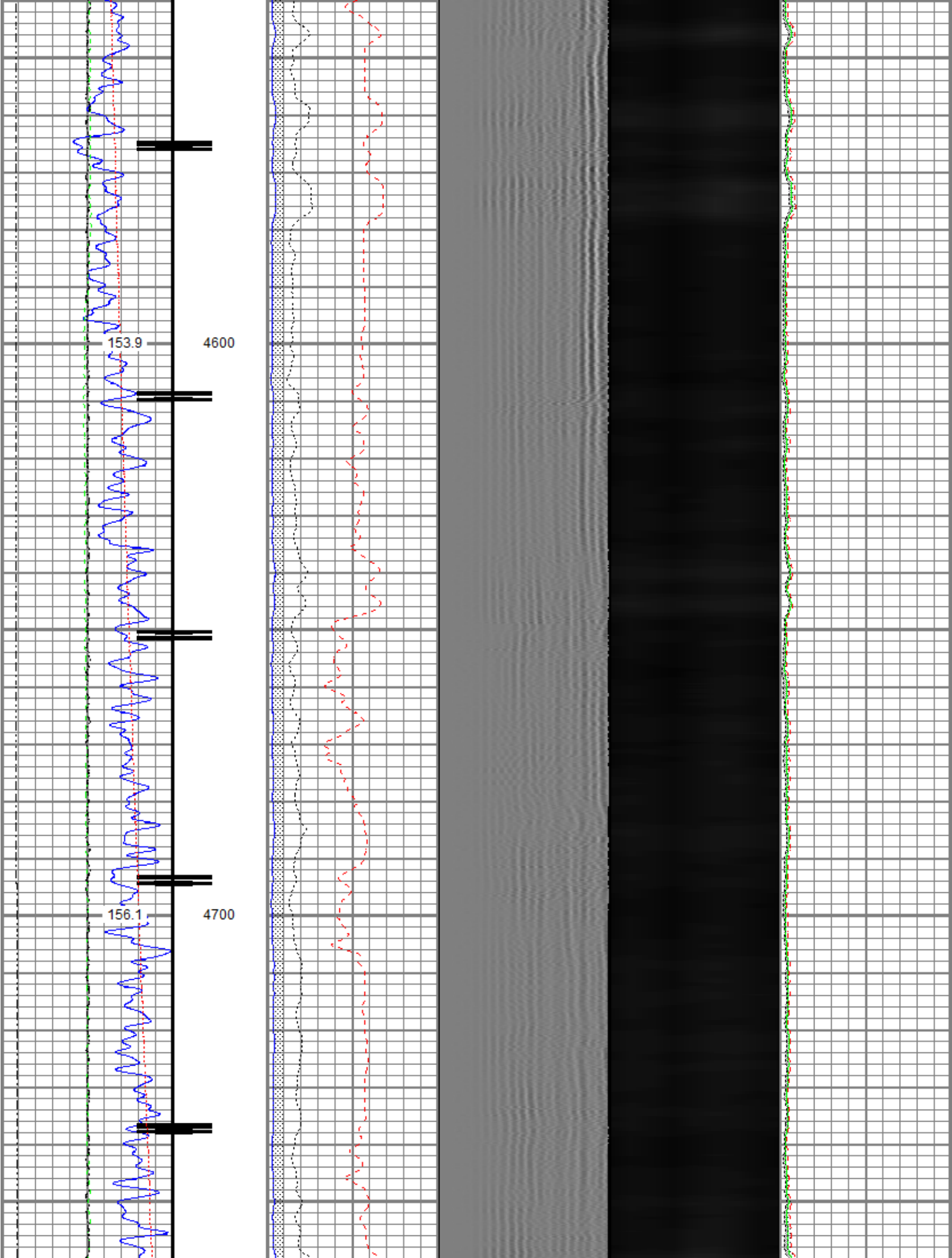


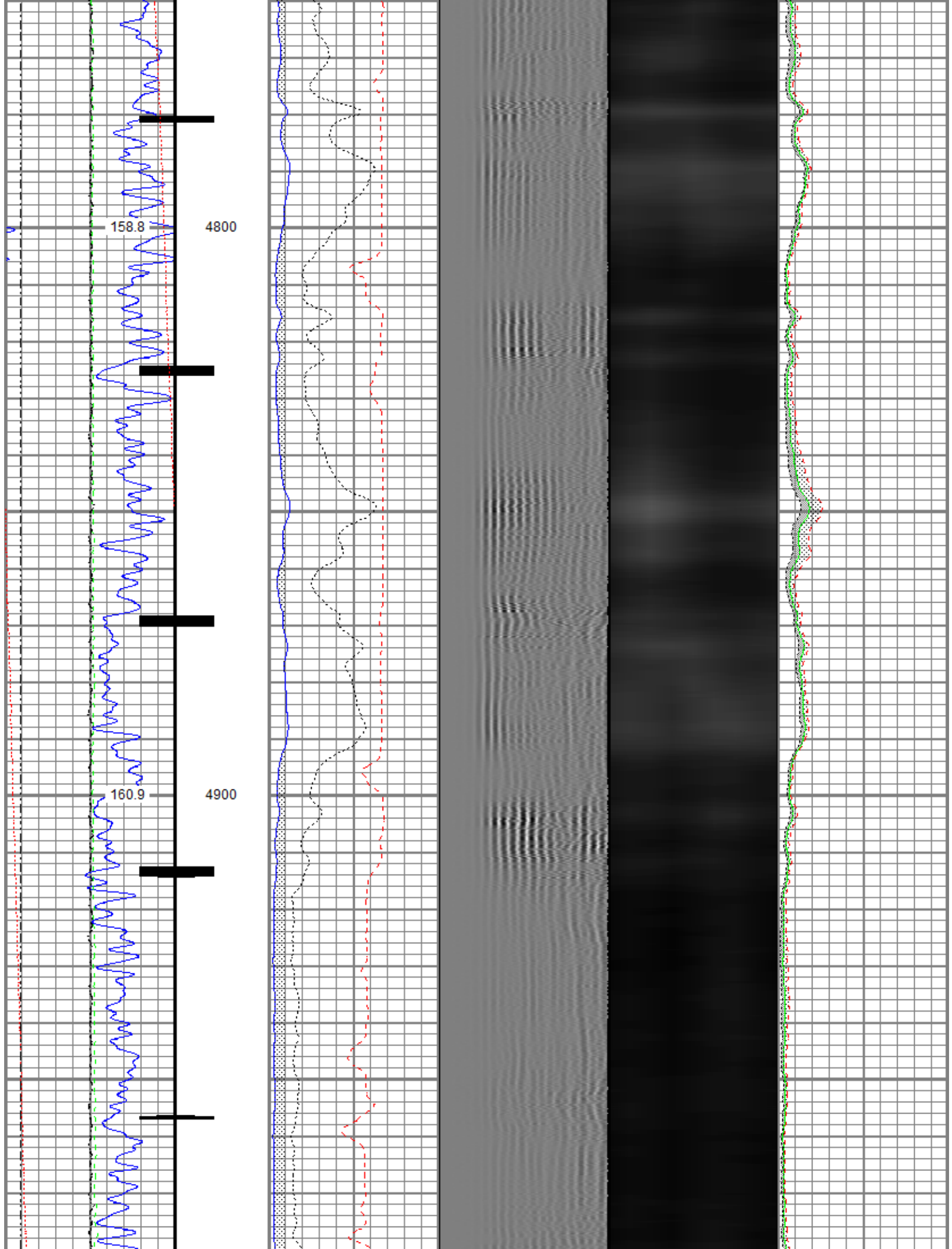




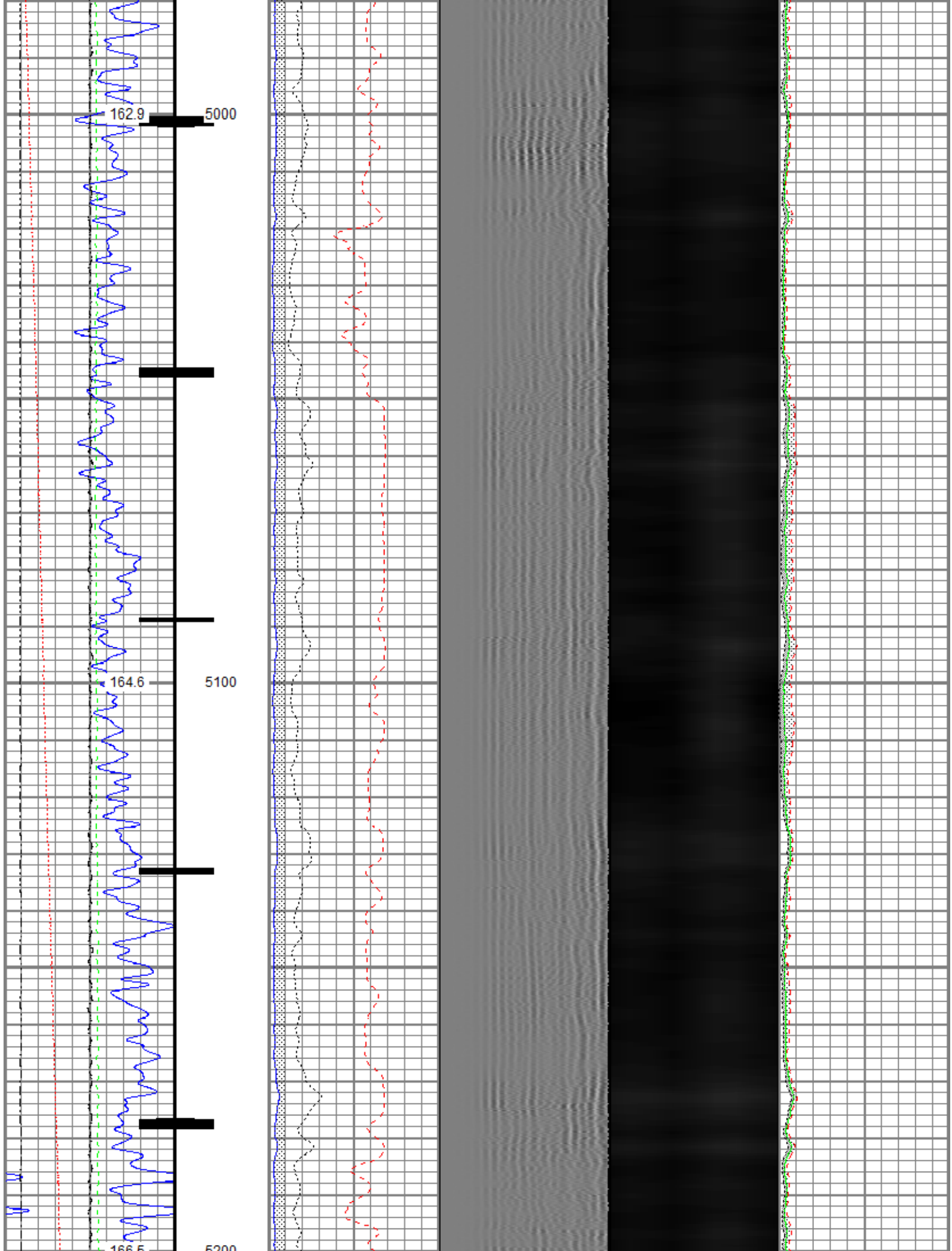


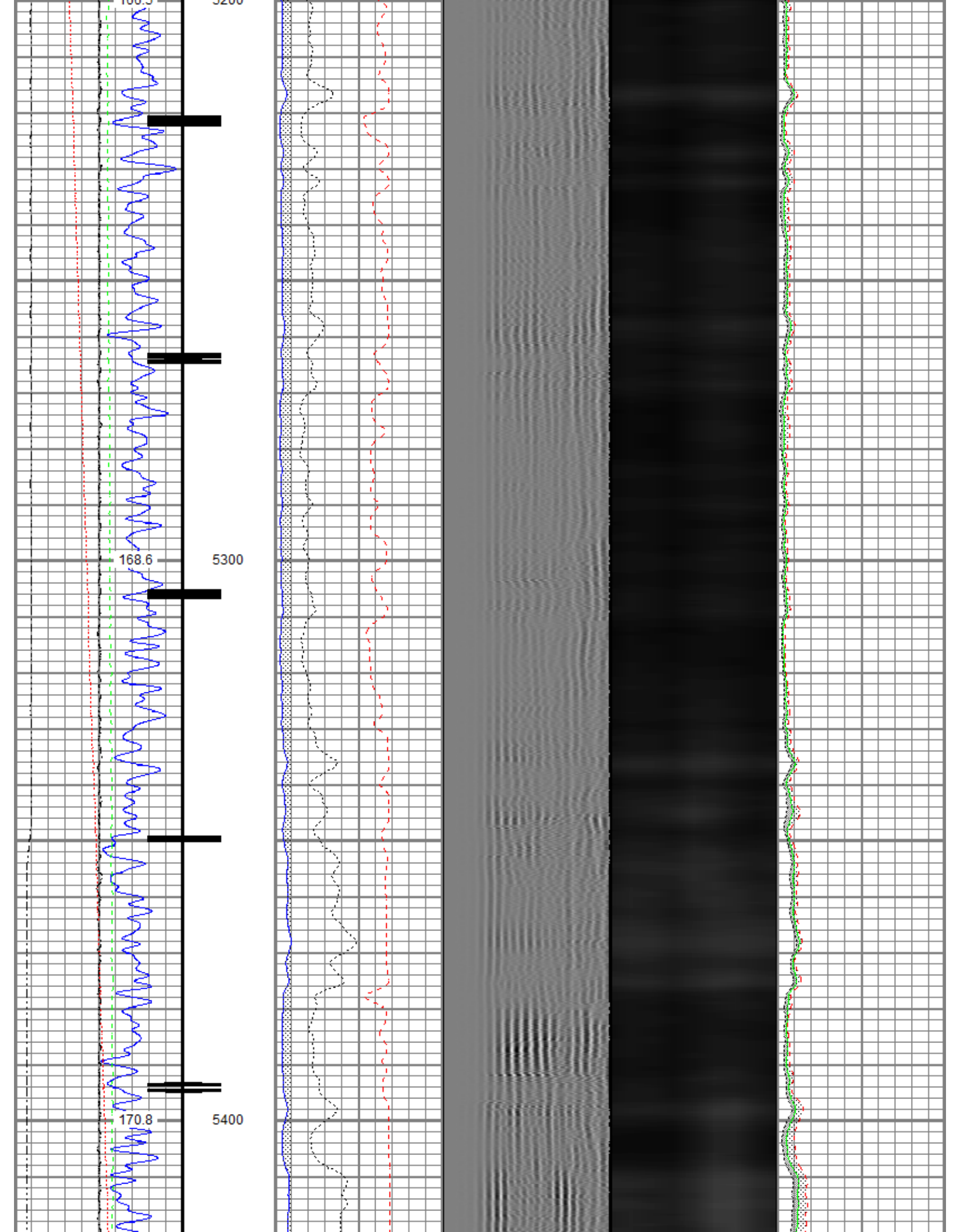


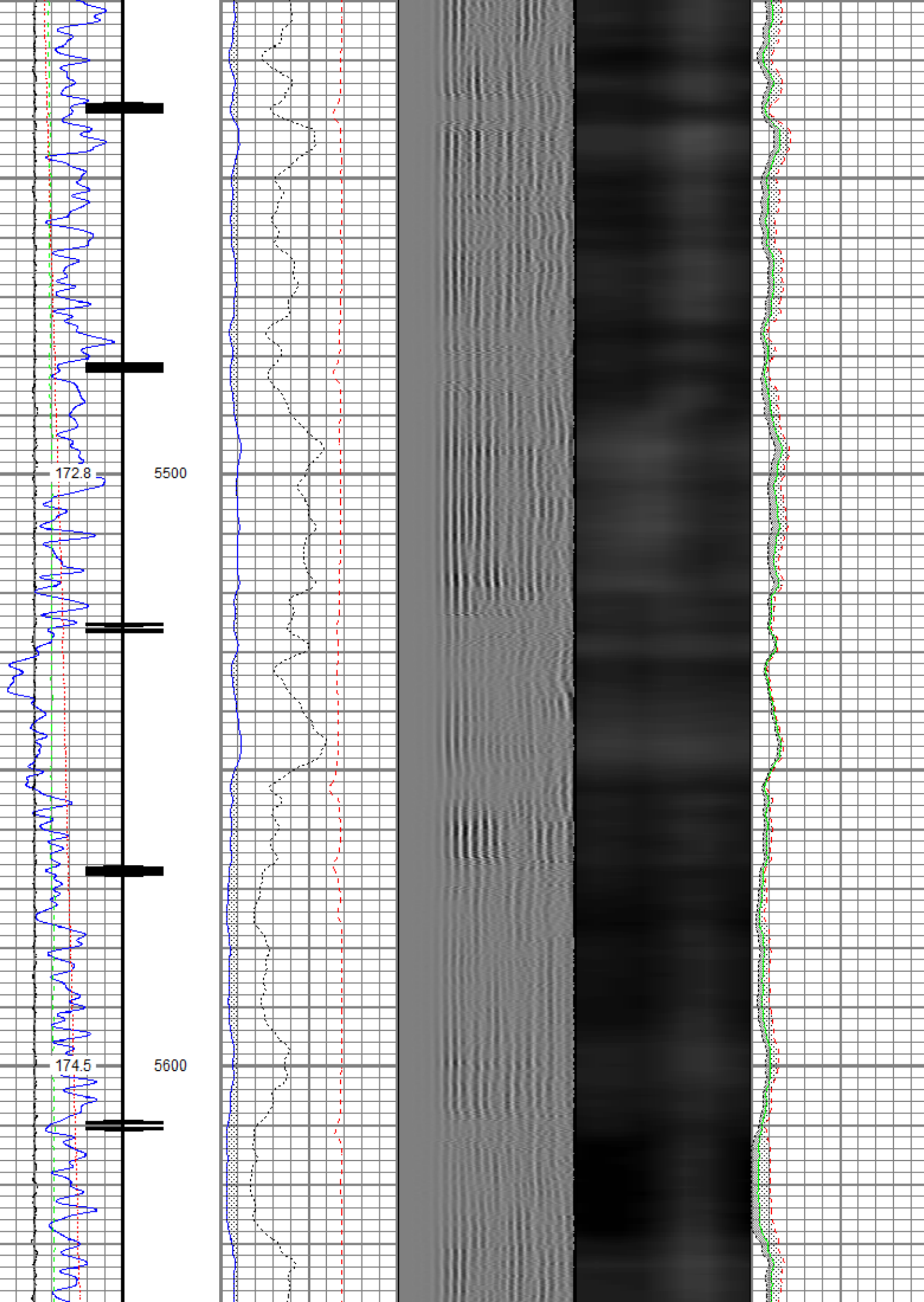


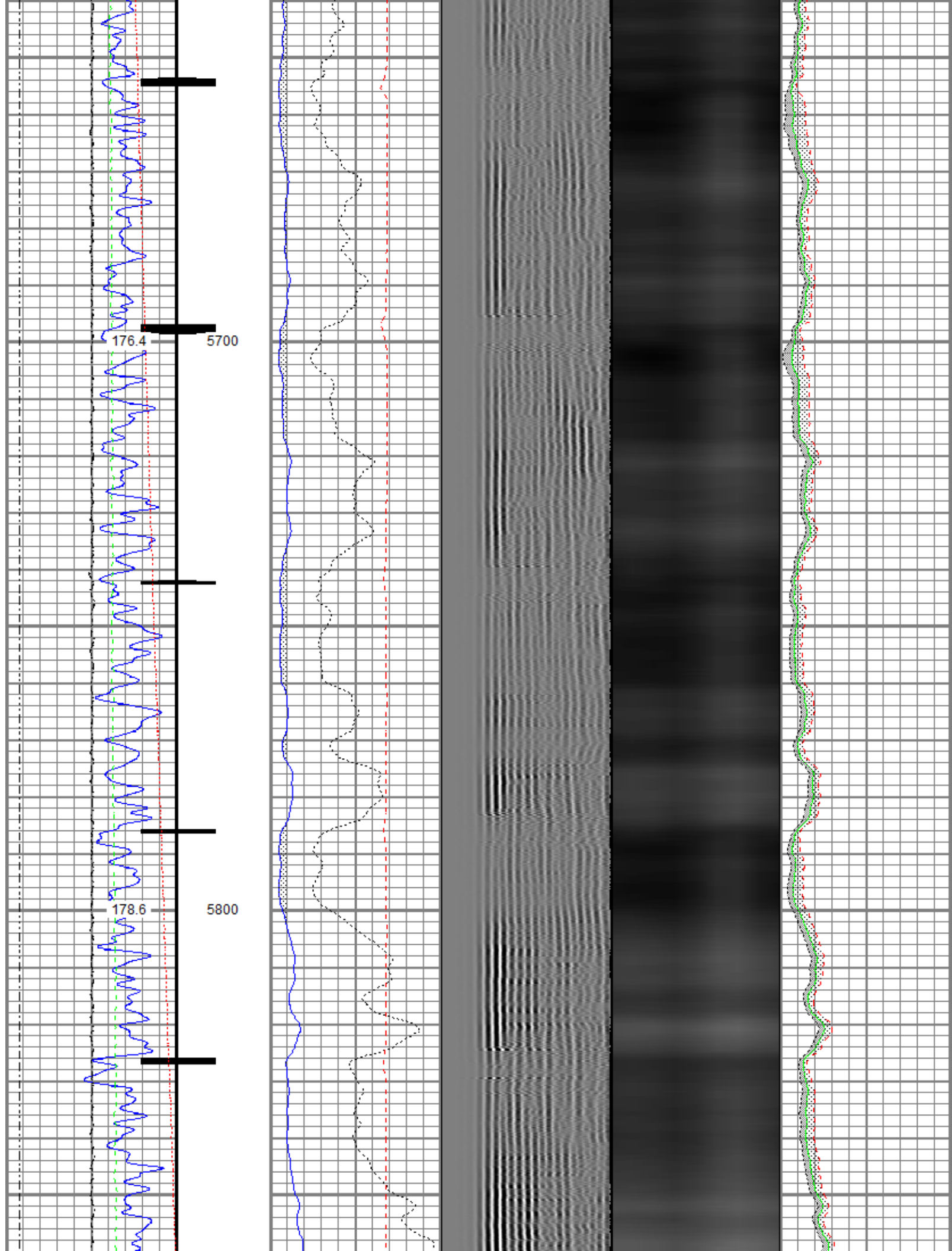




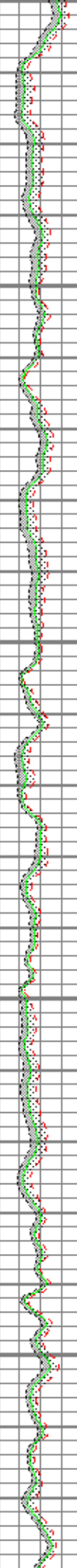
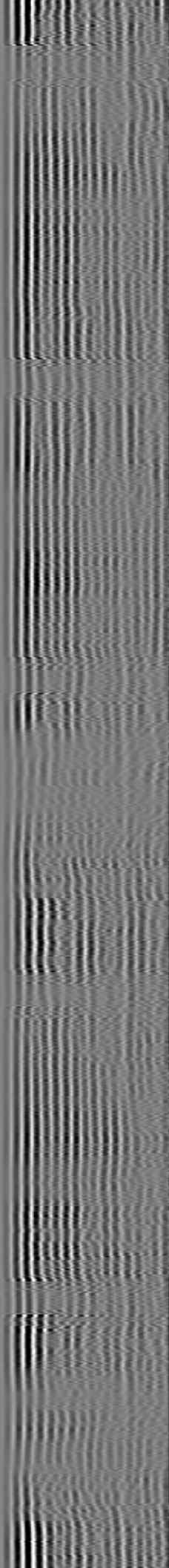
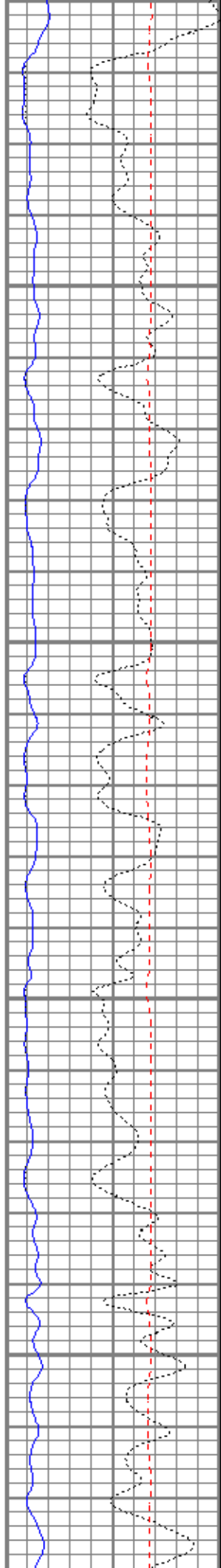
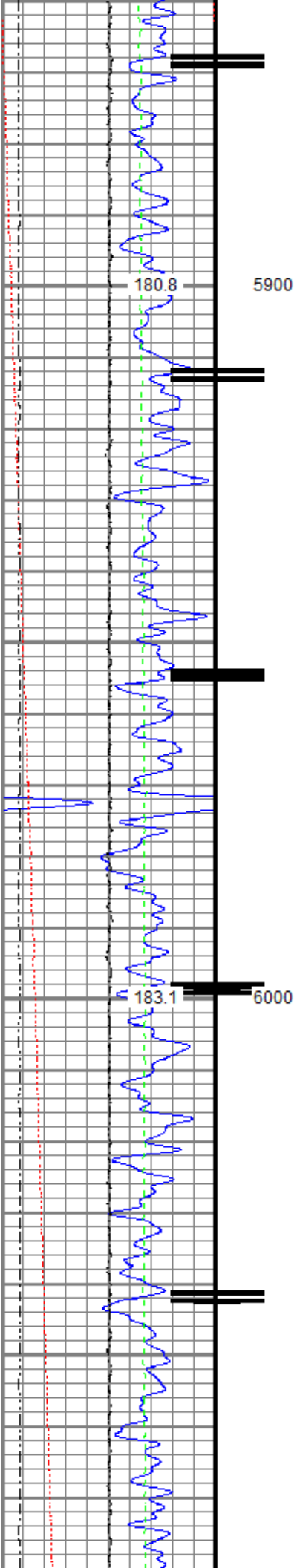


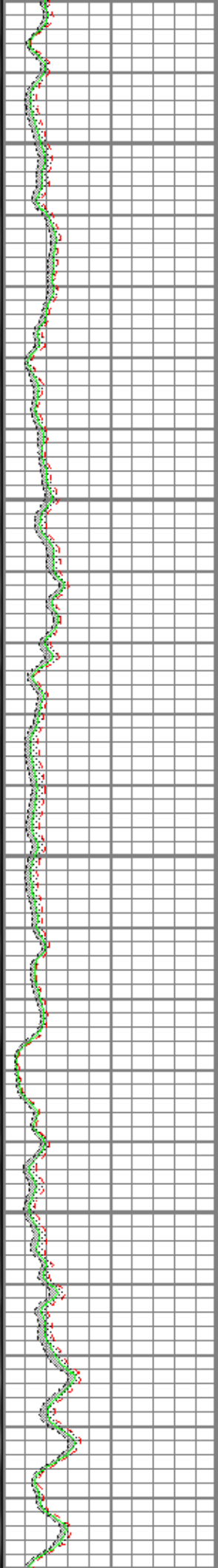
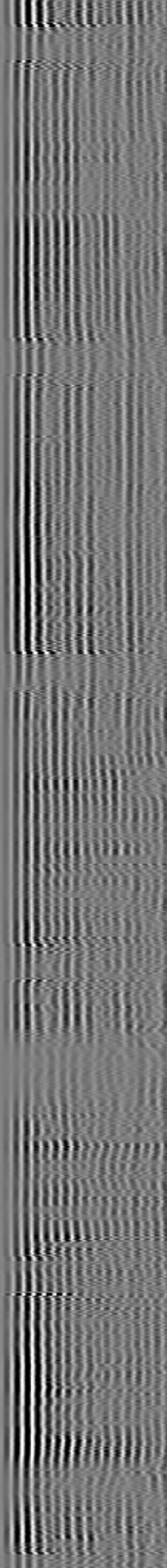
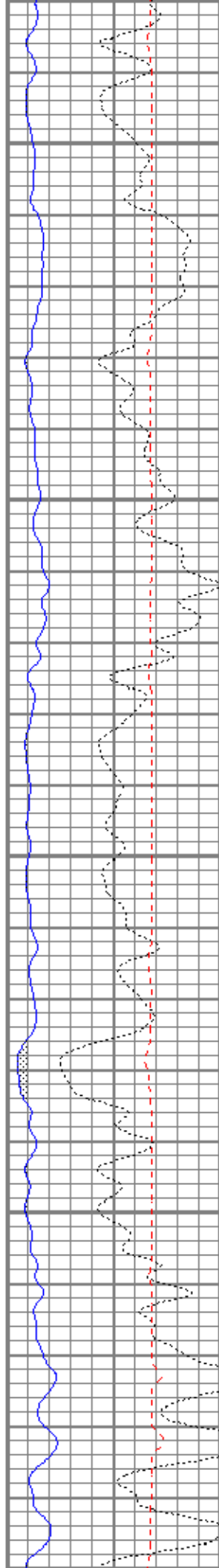
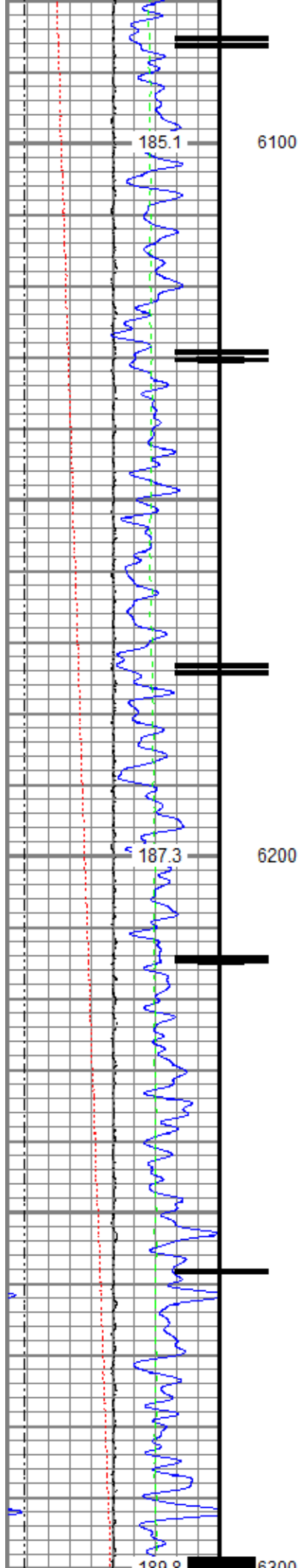


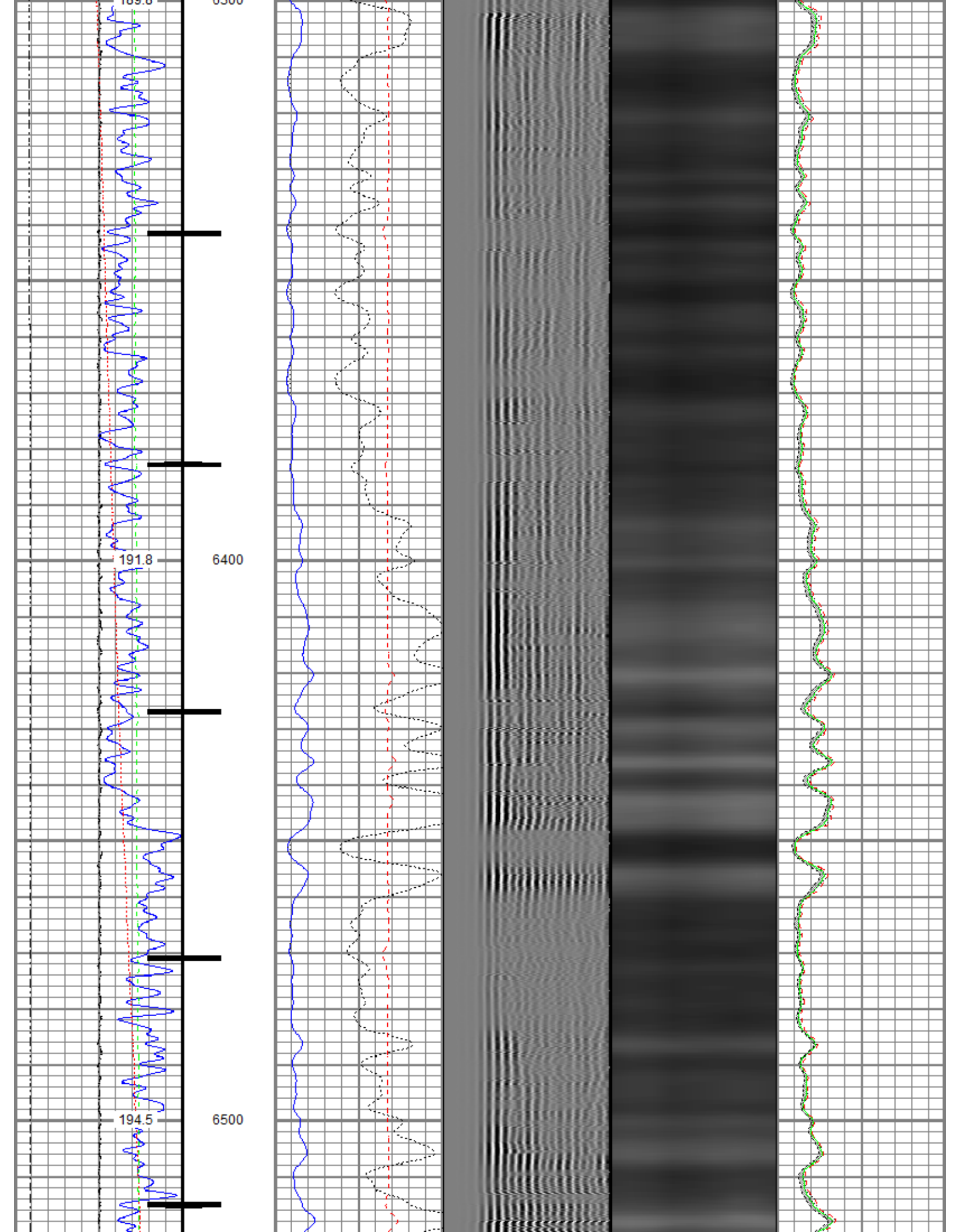


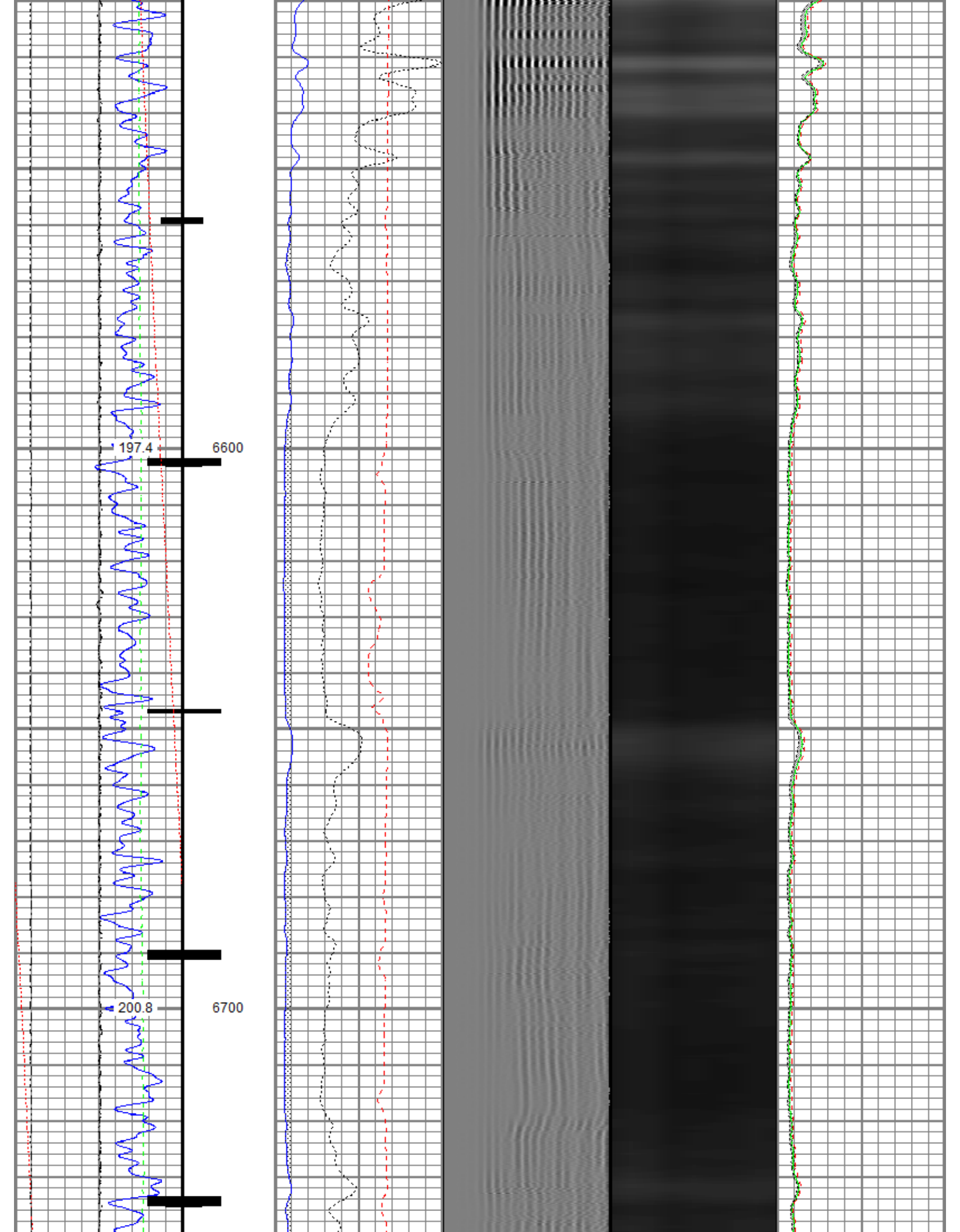




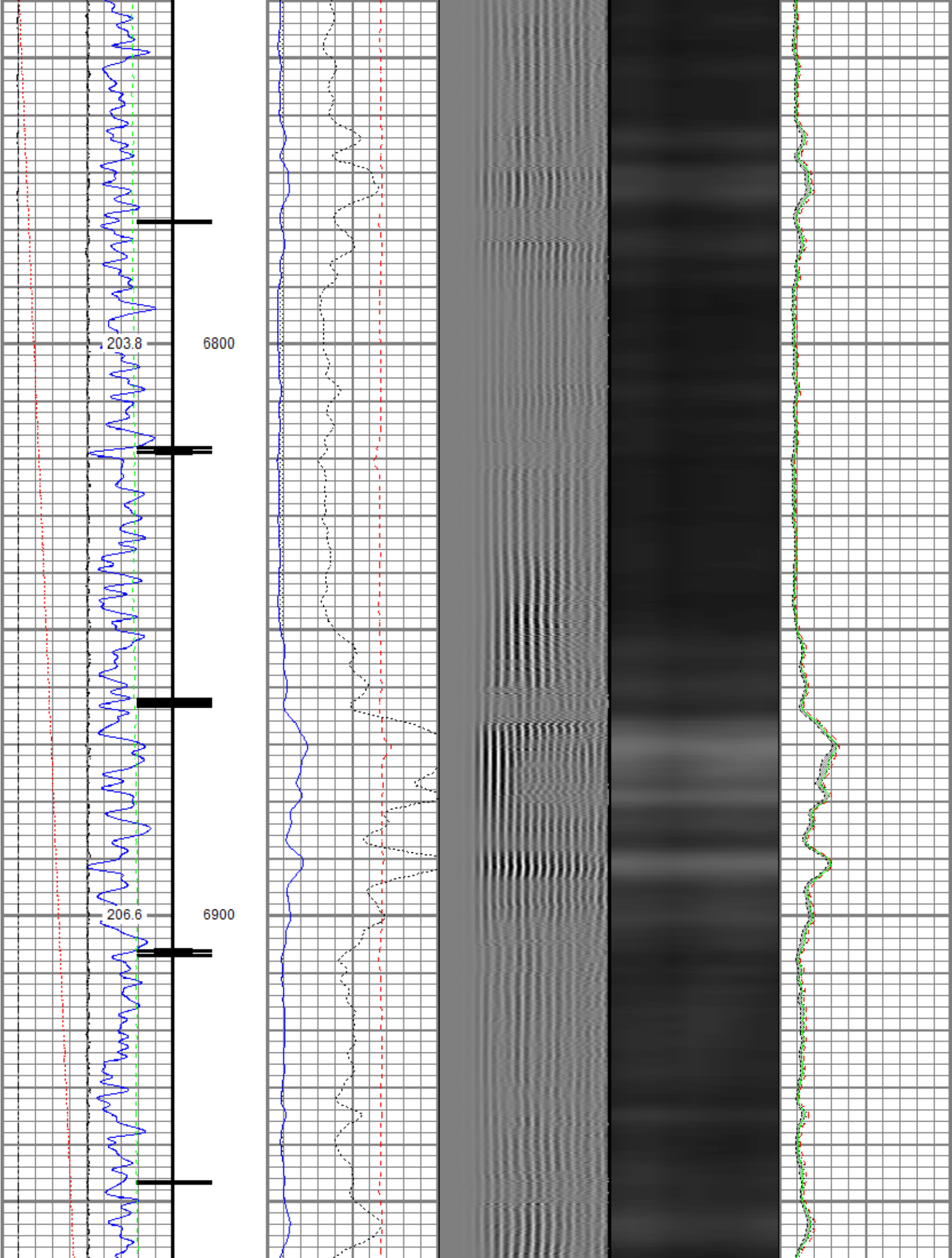


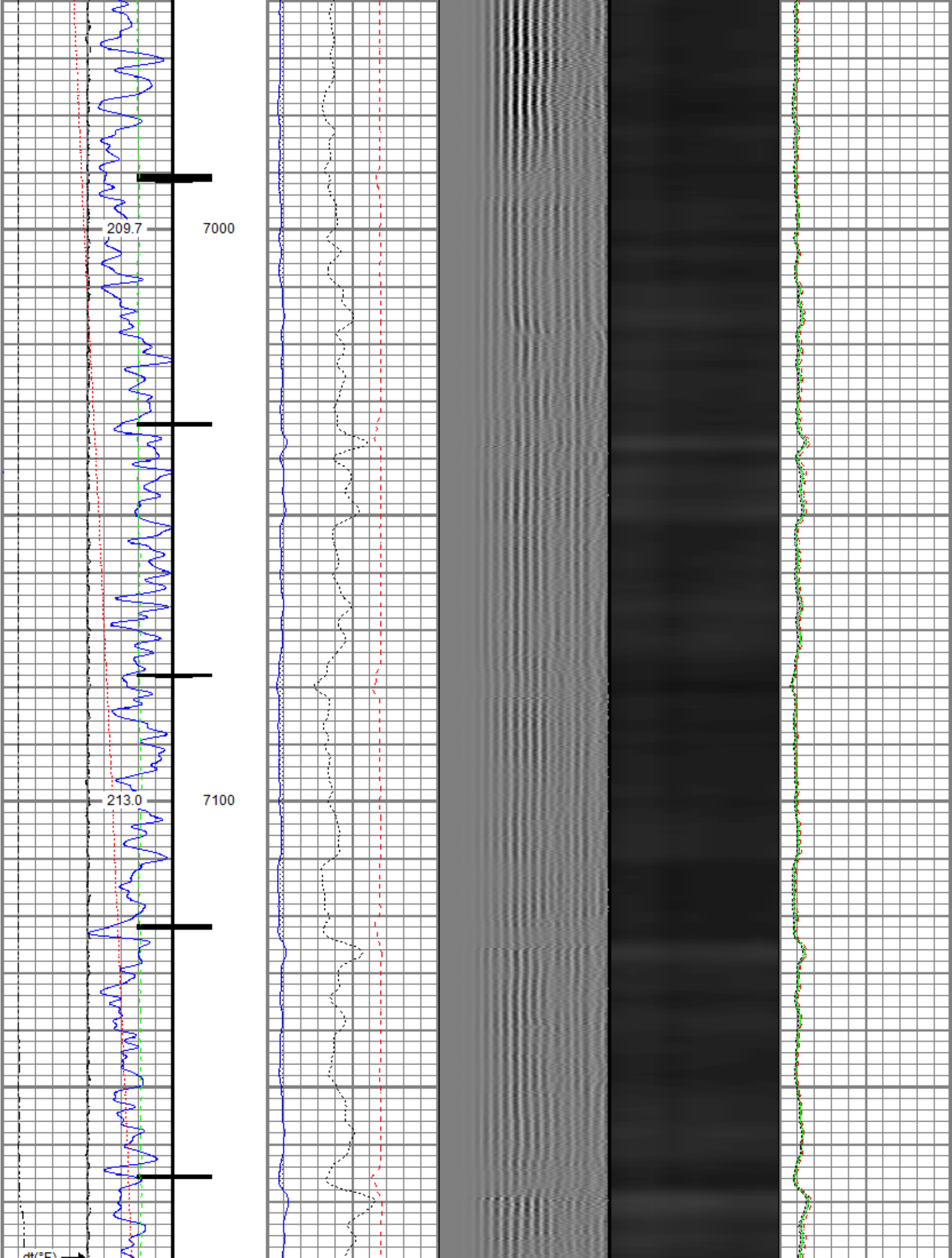


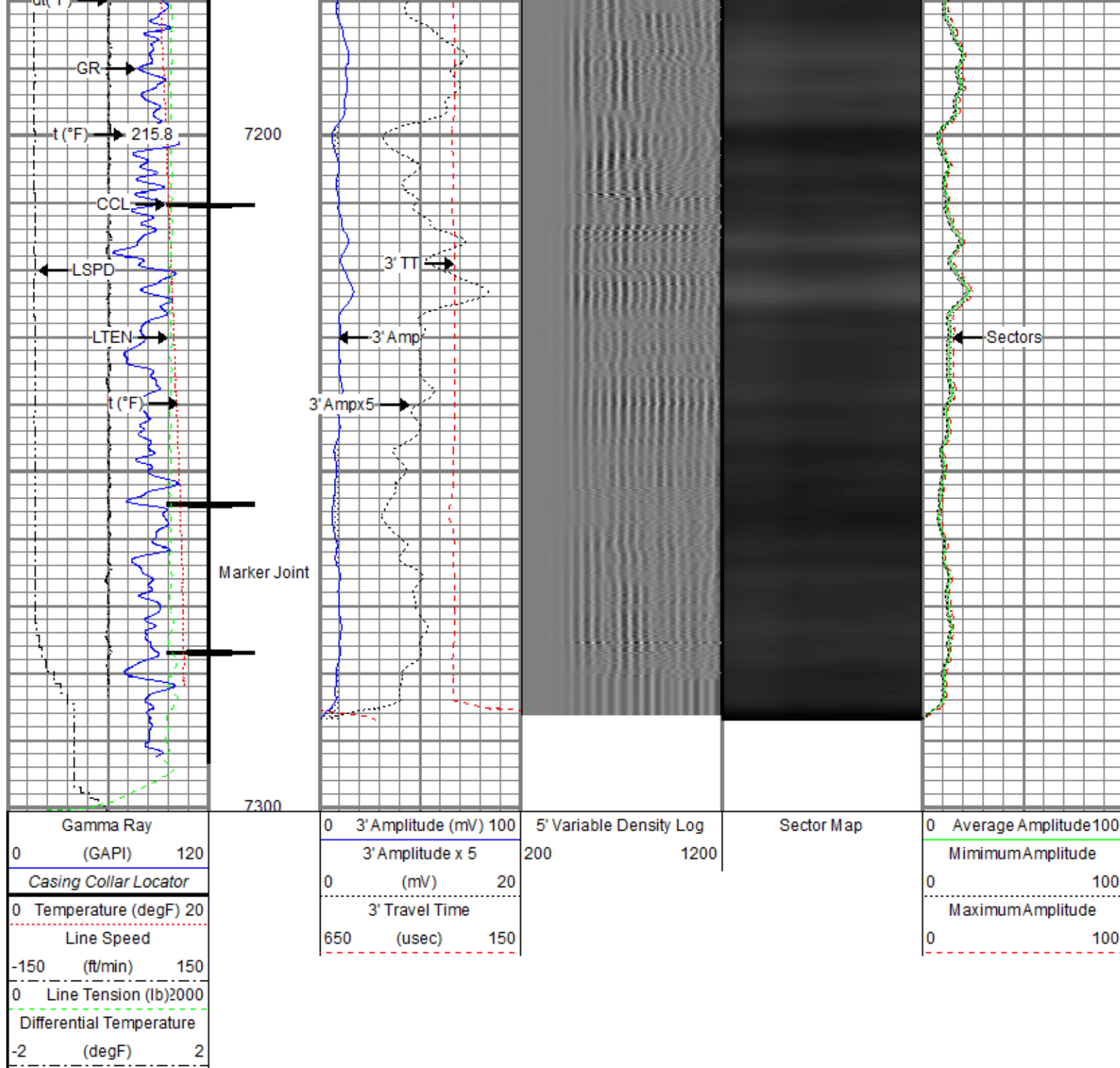








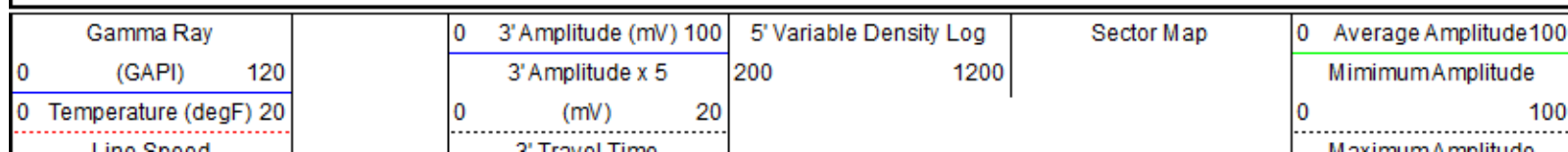




## Repeat Pass

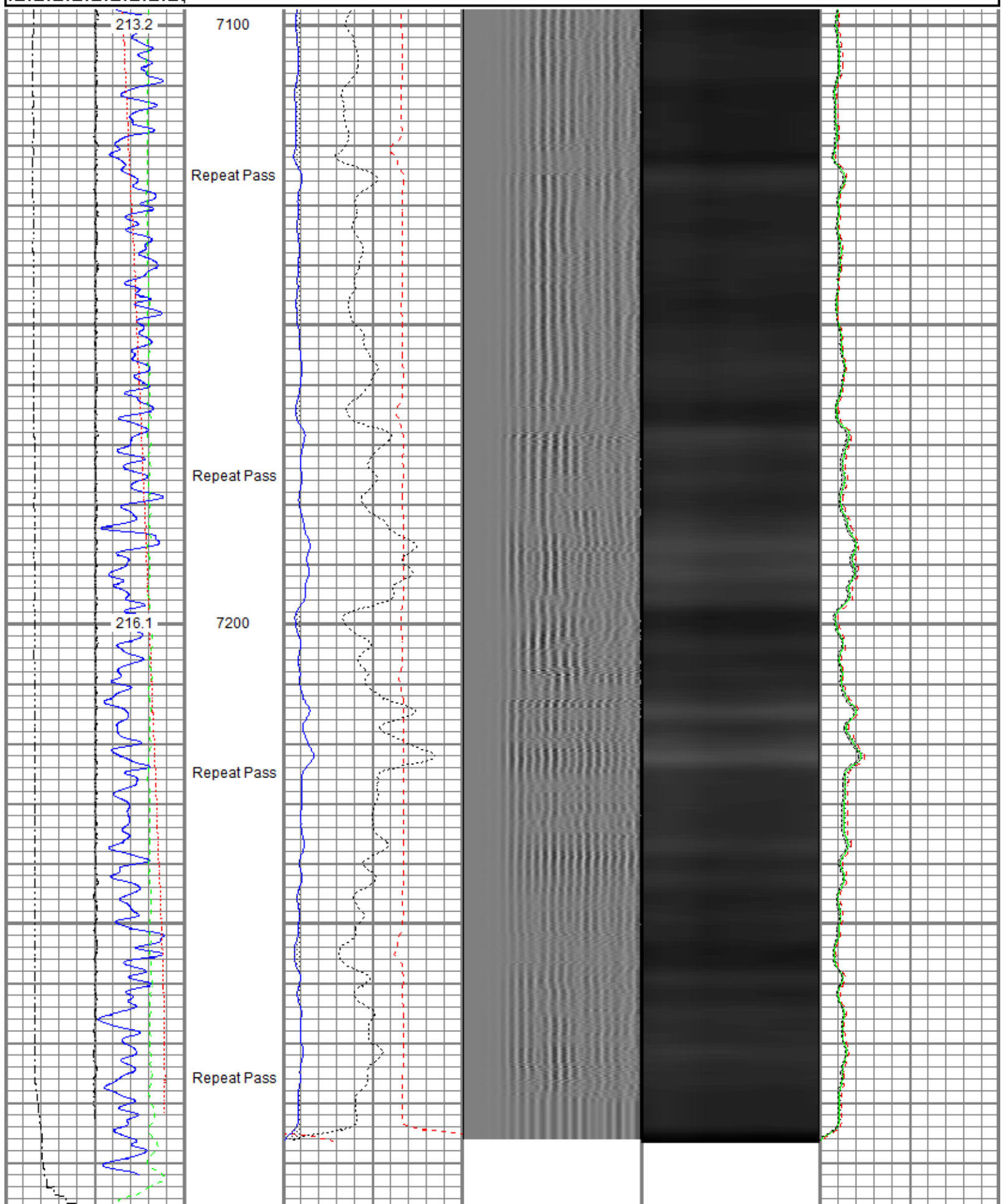
Recorded with 2800 PSI Surface Induced Pressure

Database File yellowhammer\_30n2-8hz\0512345497\_anadarko\_yellowhammer 30n2-8hz\_rbl\_02-18-18.db  
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 Presentation Format ros\_radri  
 Dataset Creation Sun Feb 18 10:15:37 2018  
 Charted by Depth in Feet scaled 1:240



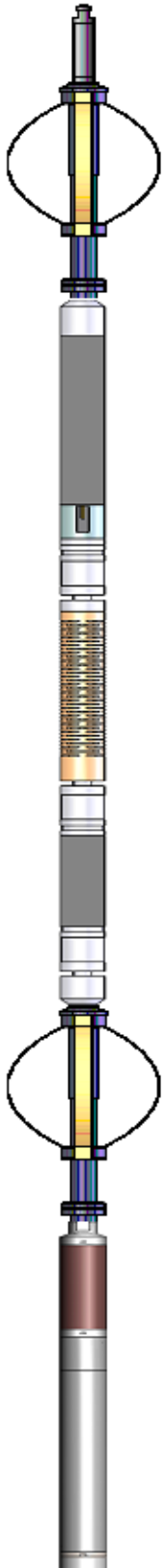
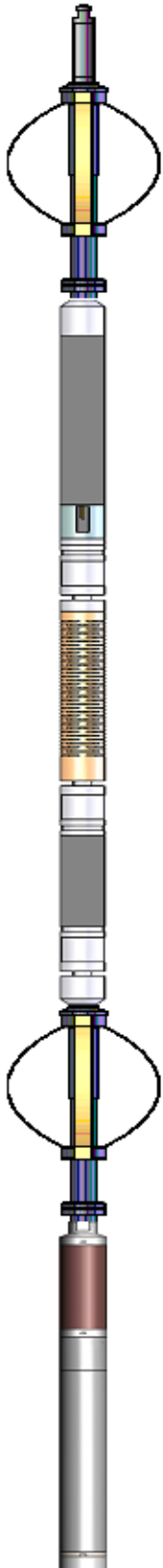
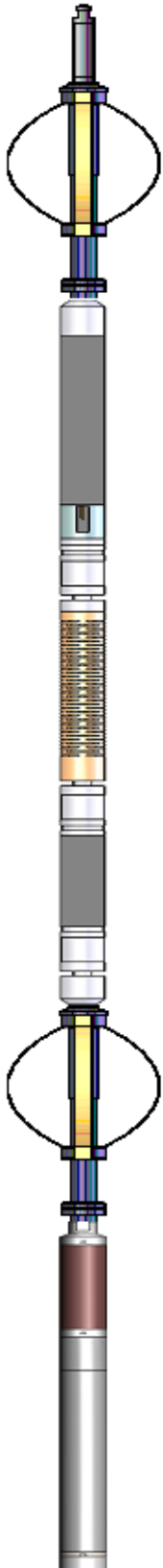
Maximum Amplitude

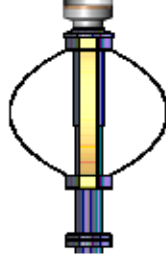
0 100





7300										
Gamma Ray		0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map		0	Average Amplitude	100
0	(GAPI)	120	3' Amplitude x 5		200	1200		Minimum Amplitude		
0	Temperature (degF)	20	0	(mV)	20			0		100
Line Speed				3' Travel Time				Maximum Amplitude		
-150	(ft/min)	150	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	17.33		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 (FW1302-002) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS8	15.09					
WVFS7	15.09					
WVFS6	15.09					
WVFS5	15.09					
WVFS4	15.09					
WVFS3	15.09					
WVFS2	15.09					
WVFS1	15.09					
WVFCAL	15.09					
WVF3FT	15.09					
WVF5FT	14.09					
CCL\$2 CCL\$1	7.08		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
	7.08					
GR	5.75		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 ADPT-6P-GO Probe 2-3/4" 6-Pin Top to GO Bottom Adaptor Sub	0.28	2.75	2.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
Dataset: 0512345497_Anadarko_Yellowhammer 30N2-8HZ_RBL_02-18-18.db: field/well/run1/main.2 Total length: 24.15 ft Total weight: 225.60 lb O.D.: 2.75 in						

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\yellowhammer_30n2-8hz\0512345497_Anadarko_Yellowhammer 30N2-8HZ_RBL_02-18-18.db
Dataset Pathname	main.2
Dataset Creation	Sun Feb 18 10:09:52 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:	FW1302-002	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	-101.109	ft

Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.391	0.800	71.921	182.221	0.648
CAL	0.007	0.497				
5'	0.000	0.360	0.800	71.921	197.828	0.782
SUM						
S1	-0.001	0.372	0.000	100.000	268.608	0.173
S2	-0.005	0.363	0.000	100.000	272.123	1.353
S3	-0.004	0.368	0.000	100.000	268.861	1.022
S4	0.001	0.386	0.000	100.000	259.895	-0.207
S5	0.001	0.419	0.000	100.000	239.474	-0.230
S6	0.001	0.431	0.000	100.000	232.646	-0.277
S7	0.001	0.418	0.000	100.000	239.633	-0.180
S8	0.001	0.399	0.000	100.000	251.100	-0.185

Internal Reference Calibration, performed (Not Performed):						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.007	0.497	1.000	0.000

	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

## Temperature Calibration Report

Serial Number: FW1302-002  
Tool Model: 2750 RBT  
Performed: Sun Nov 12 13:28:07 2017

	Reference	Reading
Low Reference:	100.00 degF	110.72 degF
High Reference:	350.00 degF	409.18 degF

Gain: 0.84  
Offset: 7.26  
Delta Spacing 1



**Company** Kerr-McGee Oil & Gas Onshore, L.P.  
**Well** Yellowhammer 30N2-8HZ  
**Field** Wattenberg  
**County** Weld  
**State** Colorado