



Radial Cement Bond
Gamma Ray
Casing Collar Log

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

Well Castle Pines 19-10HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-47710

SEC 19 TWP 2N RGE 66W

Permanent Datum Ground Level Elevation 4876'
Log Measured From Kelly Bushing 26 FT
Drilling Measured From Kelly Bushing

Other Services
GR/JB
RBP
RBL 0 PSI
Elevation
K.B. 4902'
D.F. ---
G.L. 4876'

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Castle Pines 19-10HZ
Field Wattenberg
County Weld
State Colorado

Date	16-MAR-2019			
Run Number	Two			
Depth Driller	18778 FT			
Depth Logger	7034 FT			
Bottom Logged Interval	7020 FT			
Top Log Interval	Surface			
Open Hole Size	---			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	230°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	12:38			
Equipment Number	HD-0325			
Location	Platteville, CO			
Recorded By	J. Morrison			
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	HCP-110	Surface
Intermediate #2				
Inner				

<<< Fold Here >>>

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 Top at 6924 FT
Adjusted 0 FT to correlate with Marker Joint Top
Gauge Ring/Junk Basket ran to 7624 FT with no debris
5.50" RBP Set at 7044 FT
Recorded with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

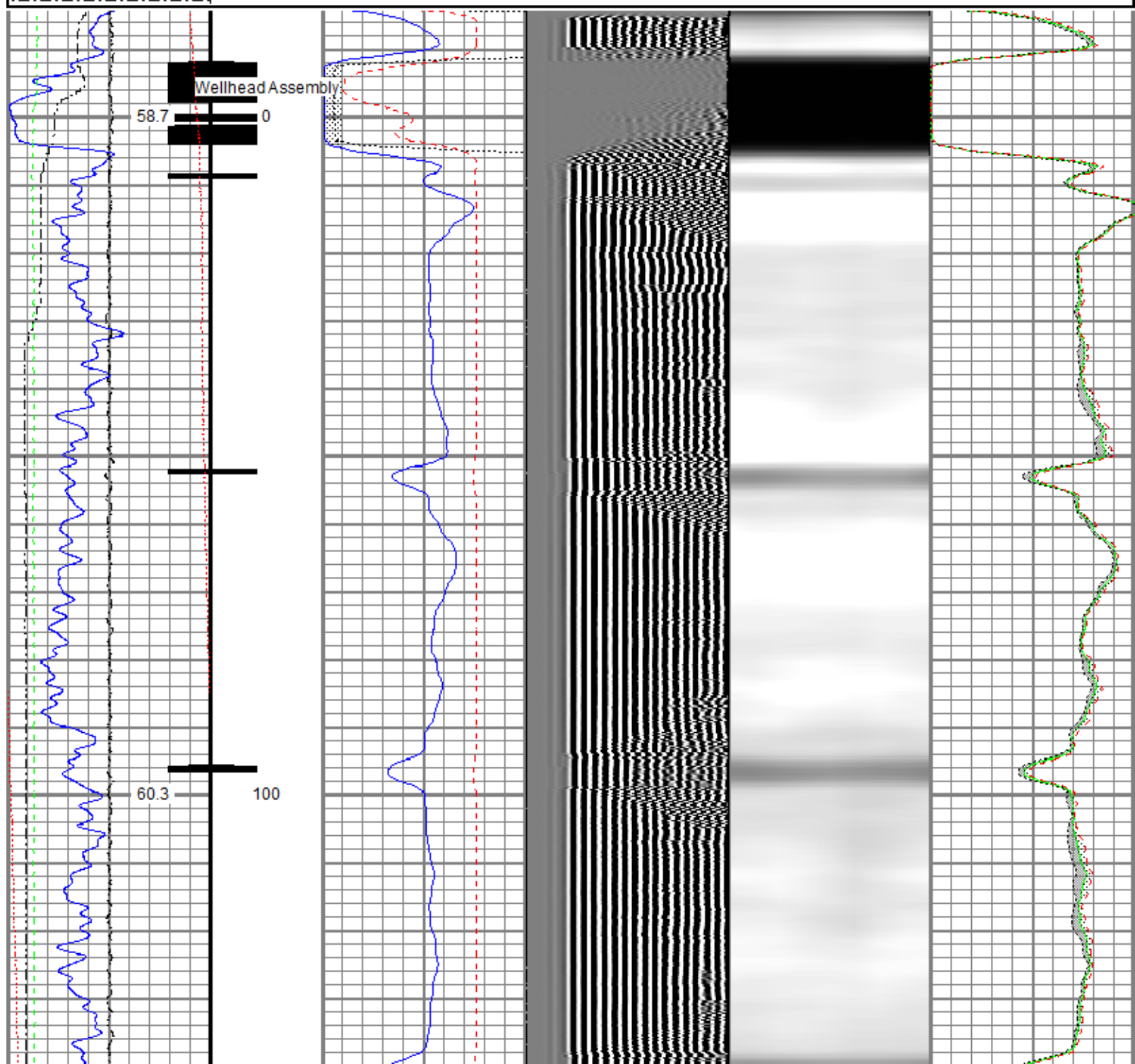
Thank you for choosing Reliance Oilfield Services, LLC!!

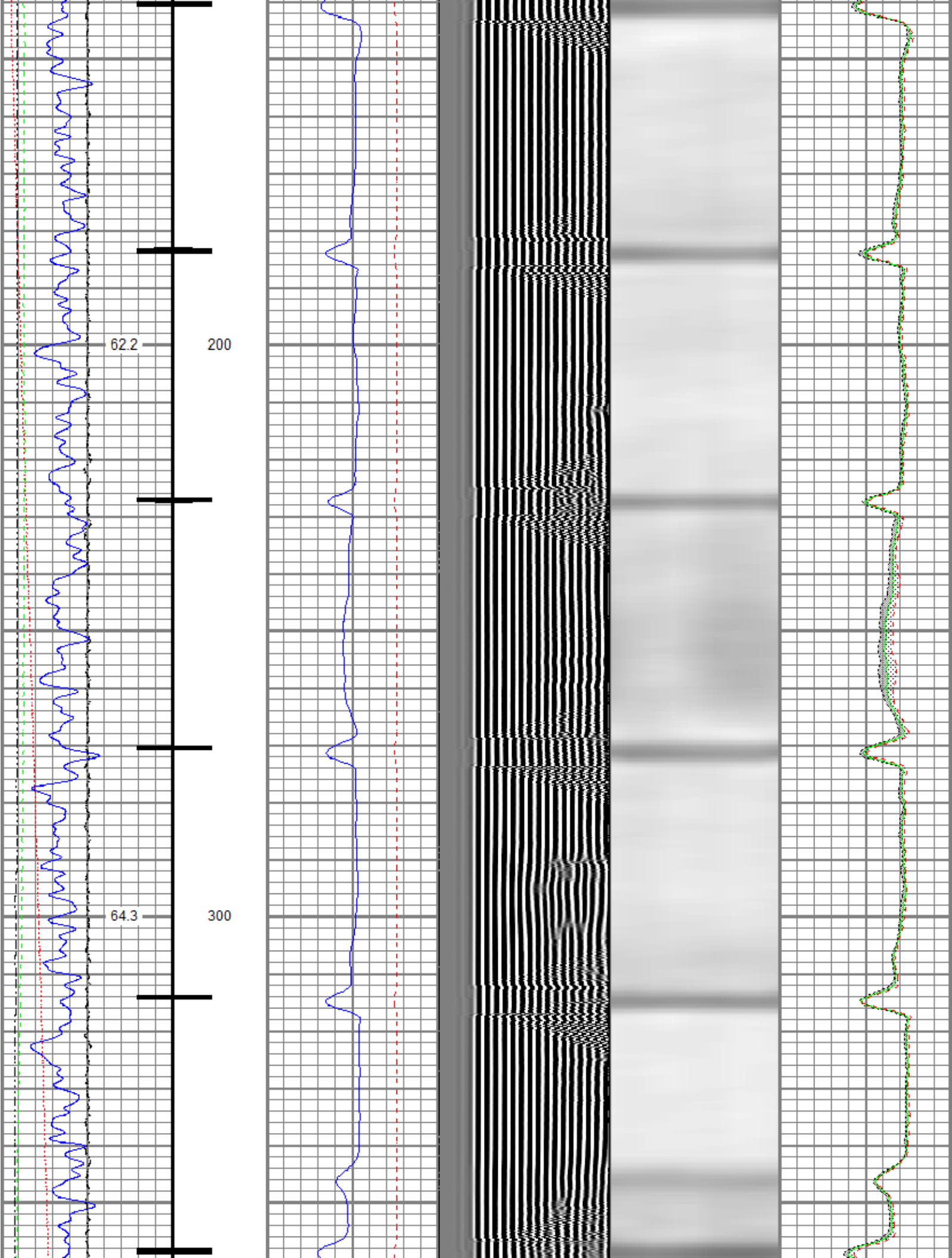
Main Pass

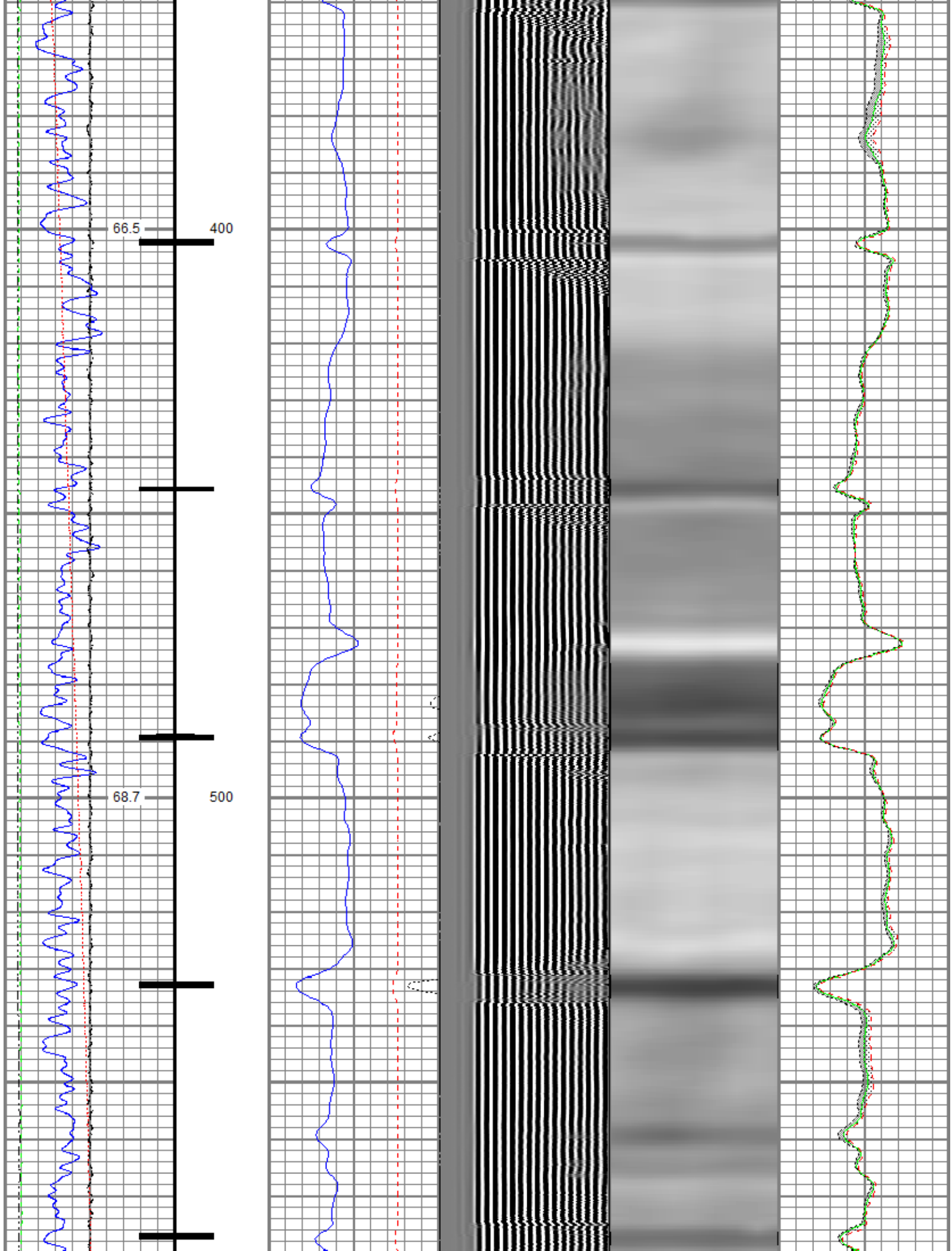


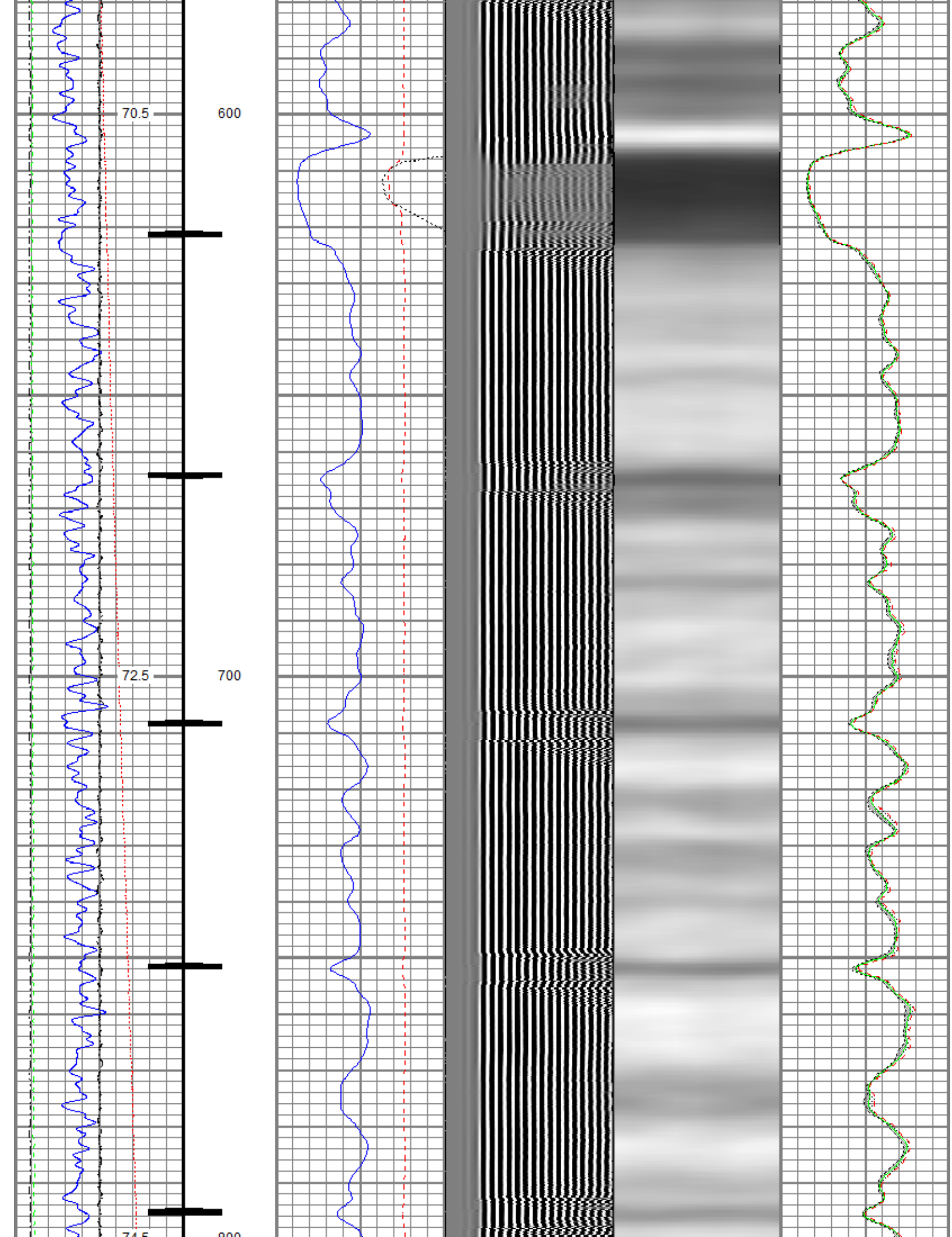
Database File anadarko_castle pines 19-10hz\0512347710_anadarko_castle pines 19-10hz_rbl_03-16-19_2800 psi.db
 Dataset Pathname Main
 Presentation Format ros_radri
 Dataset Creation Sat Mar 16 12:41:18 2019
 Charted by Depth in Feet scaled 1:240

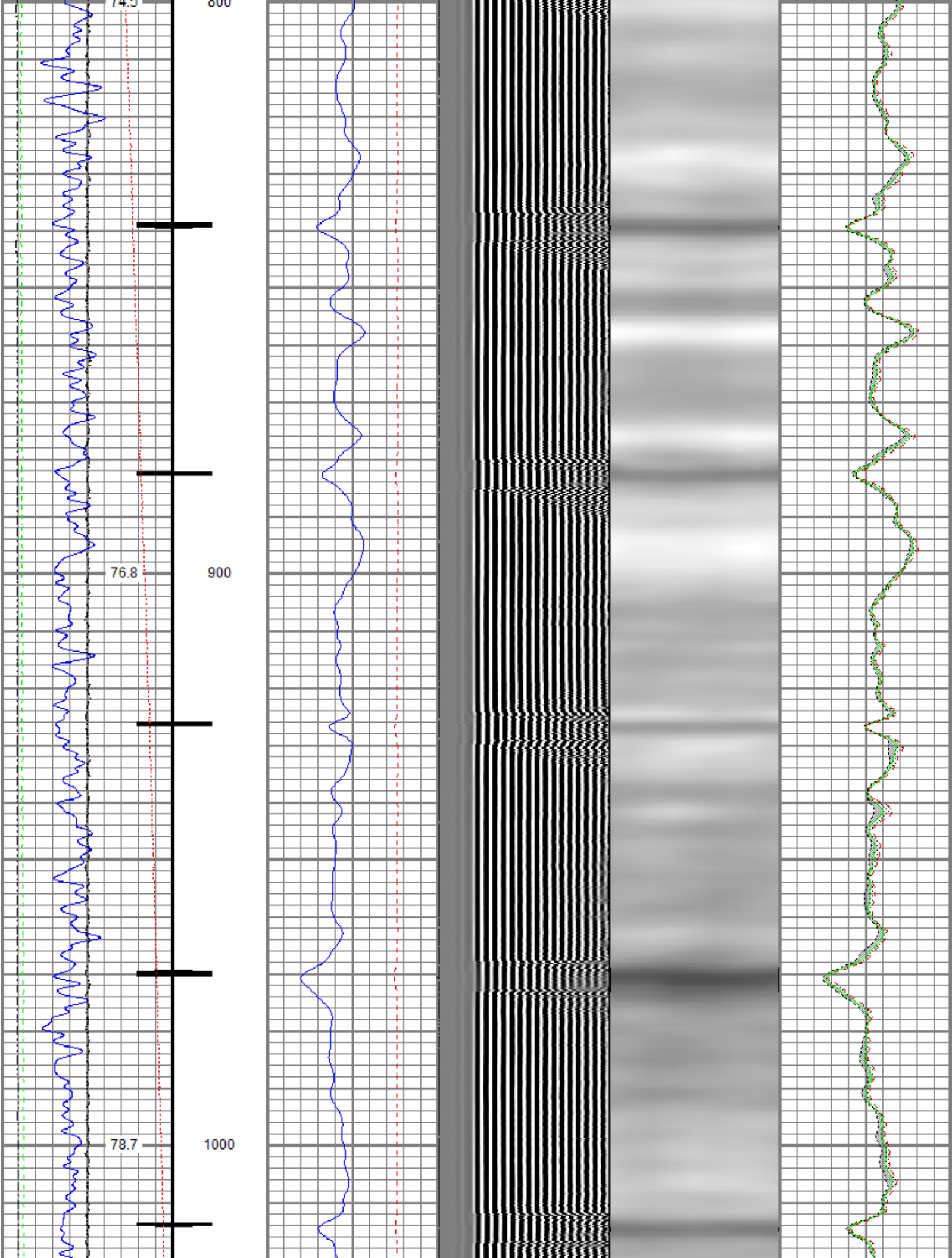
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

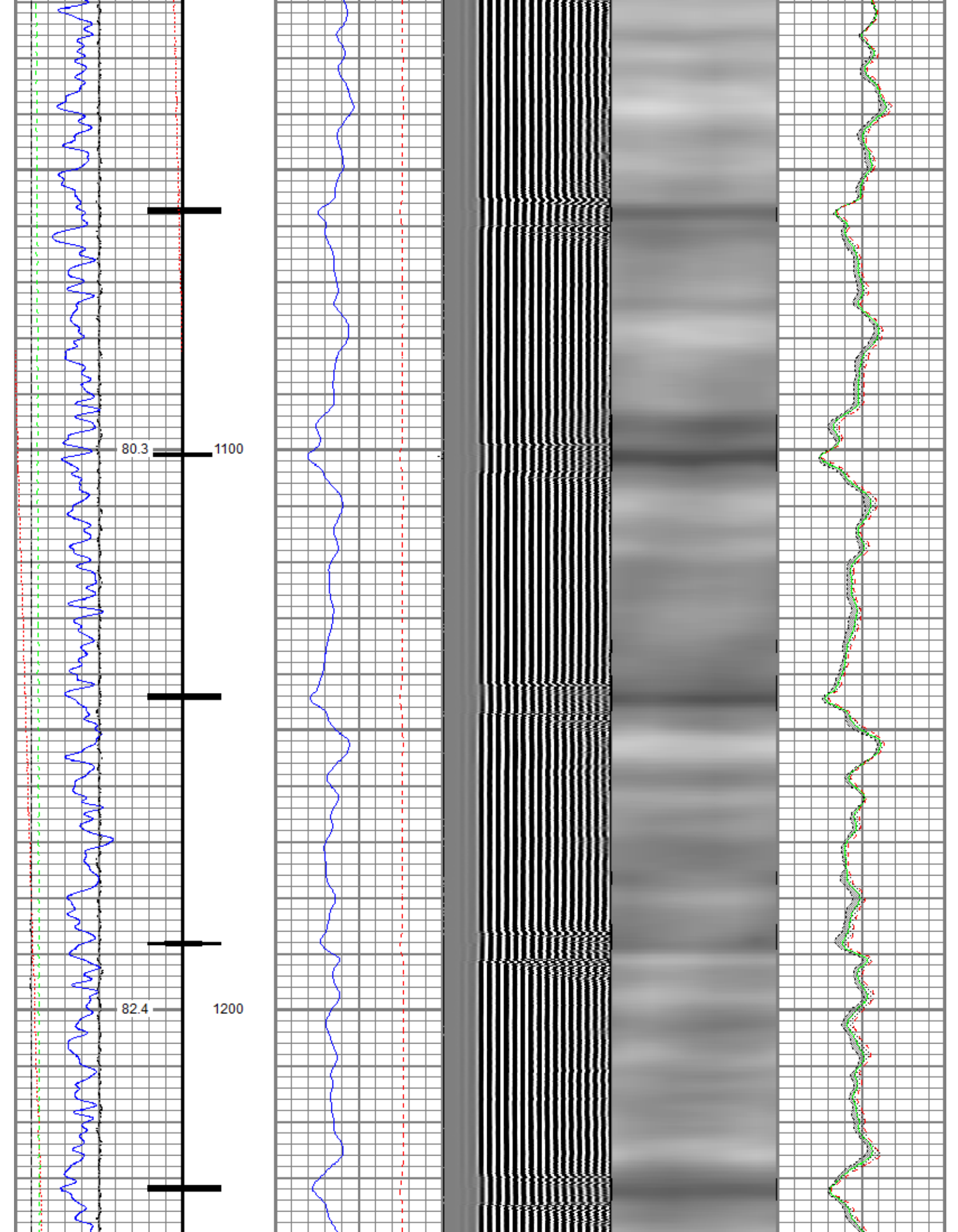


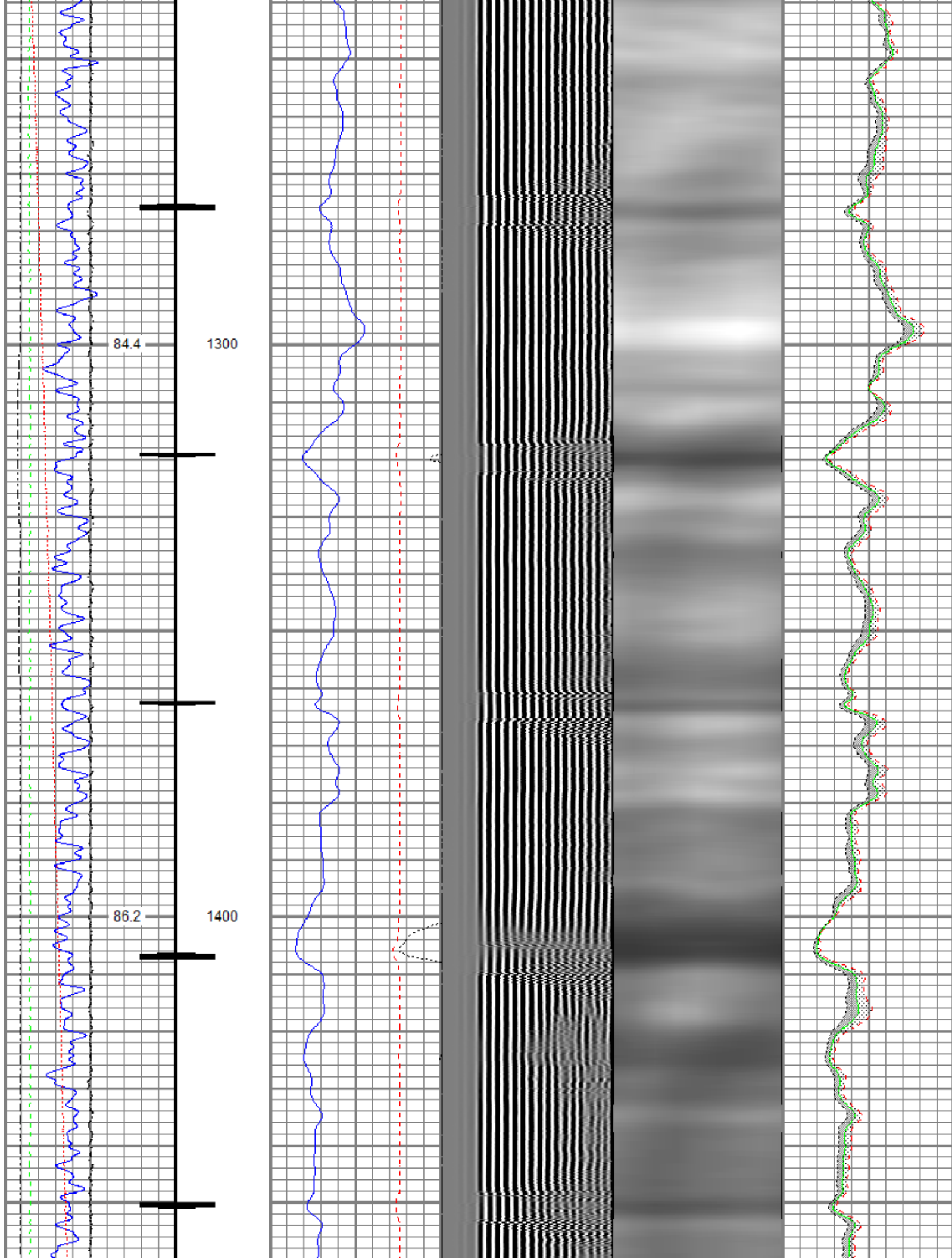


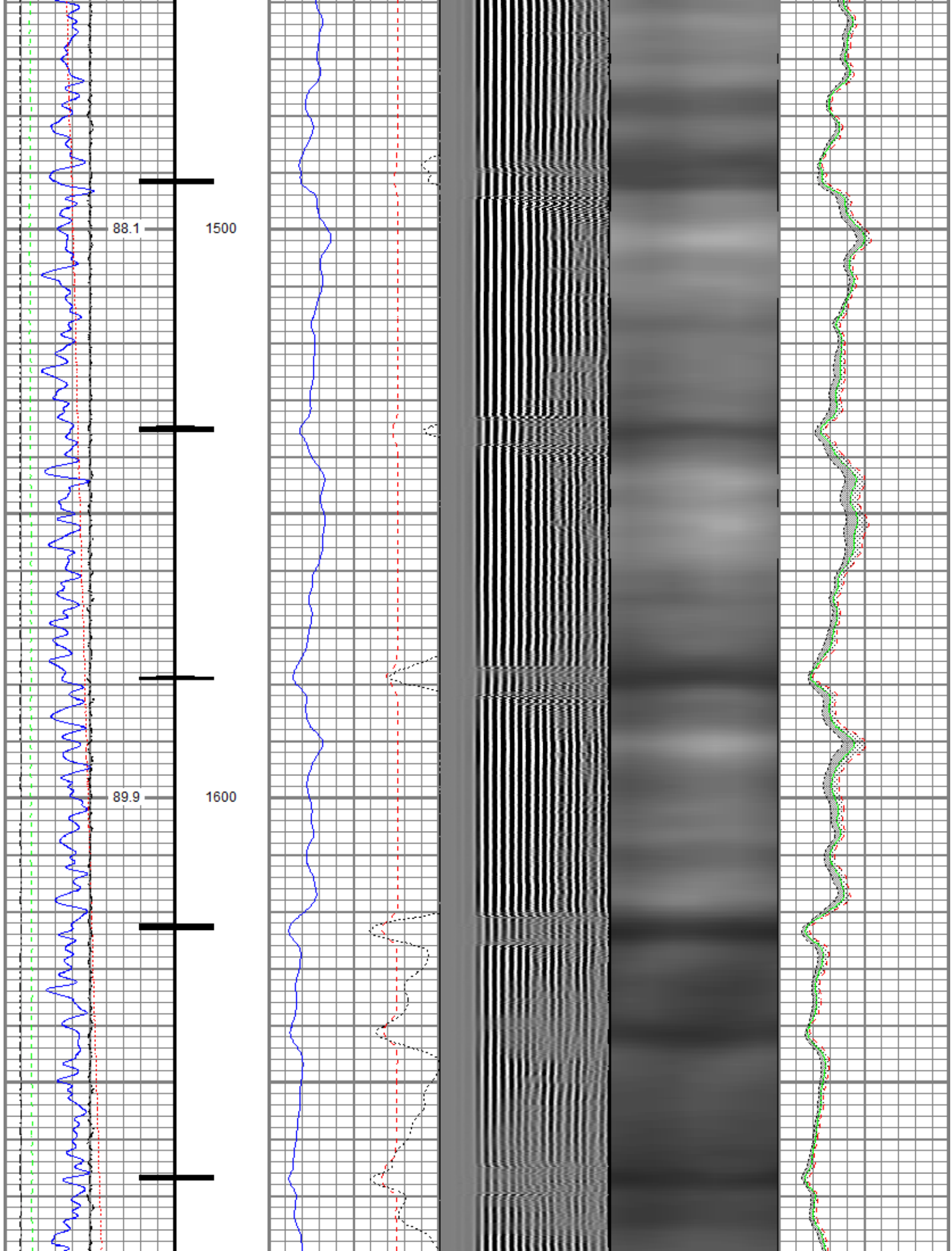


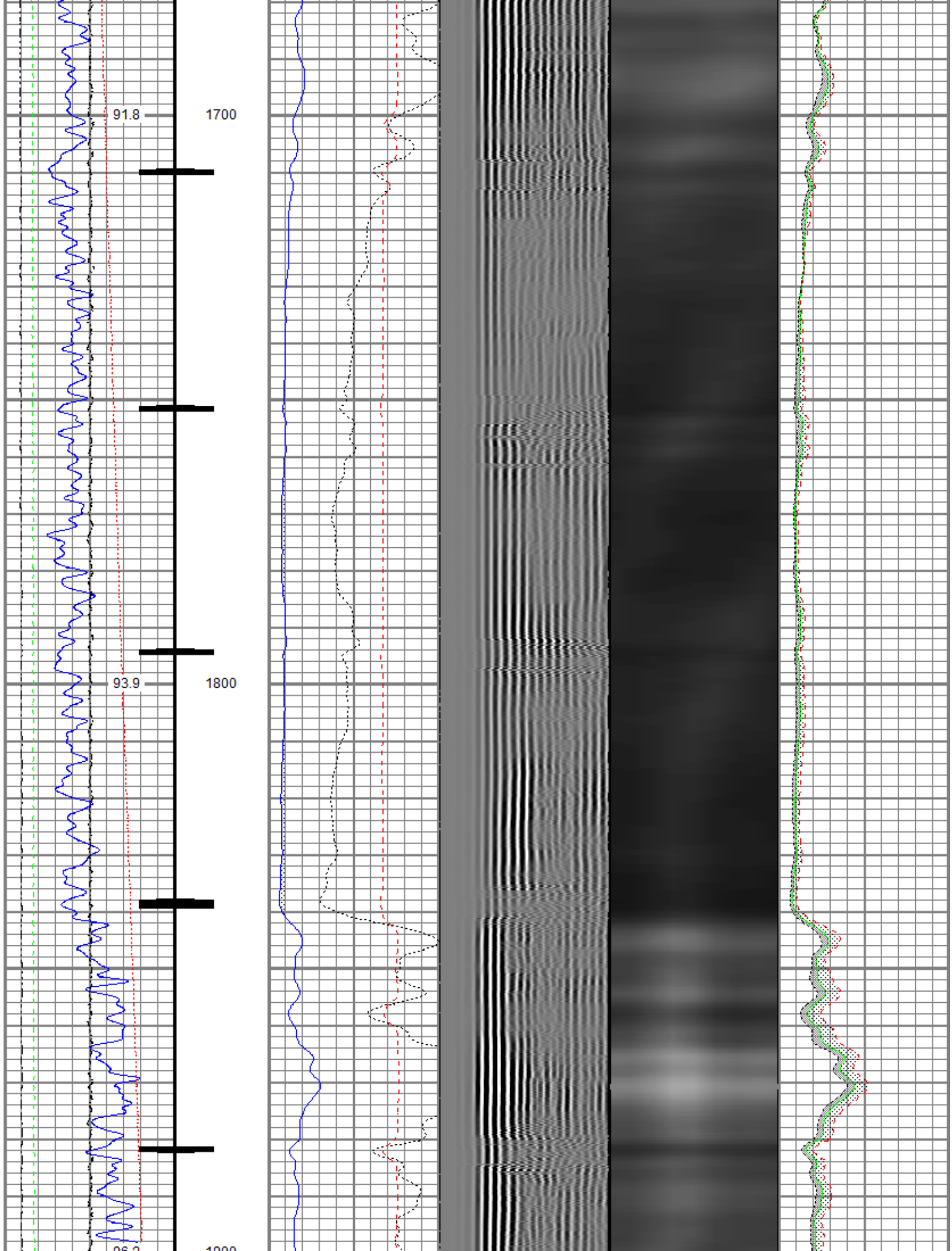


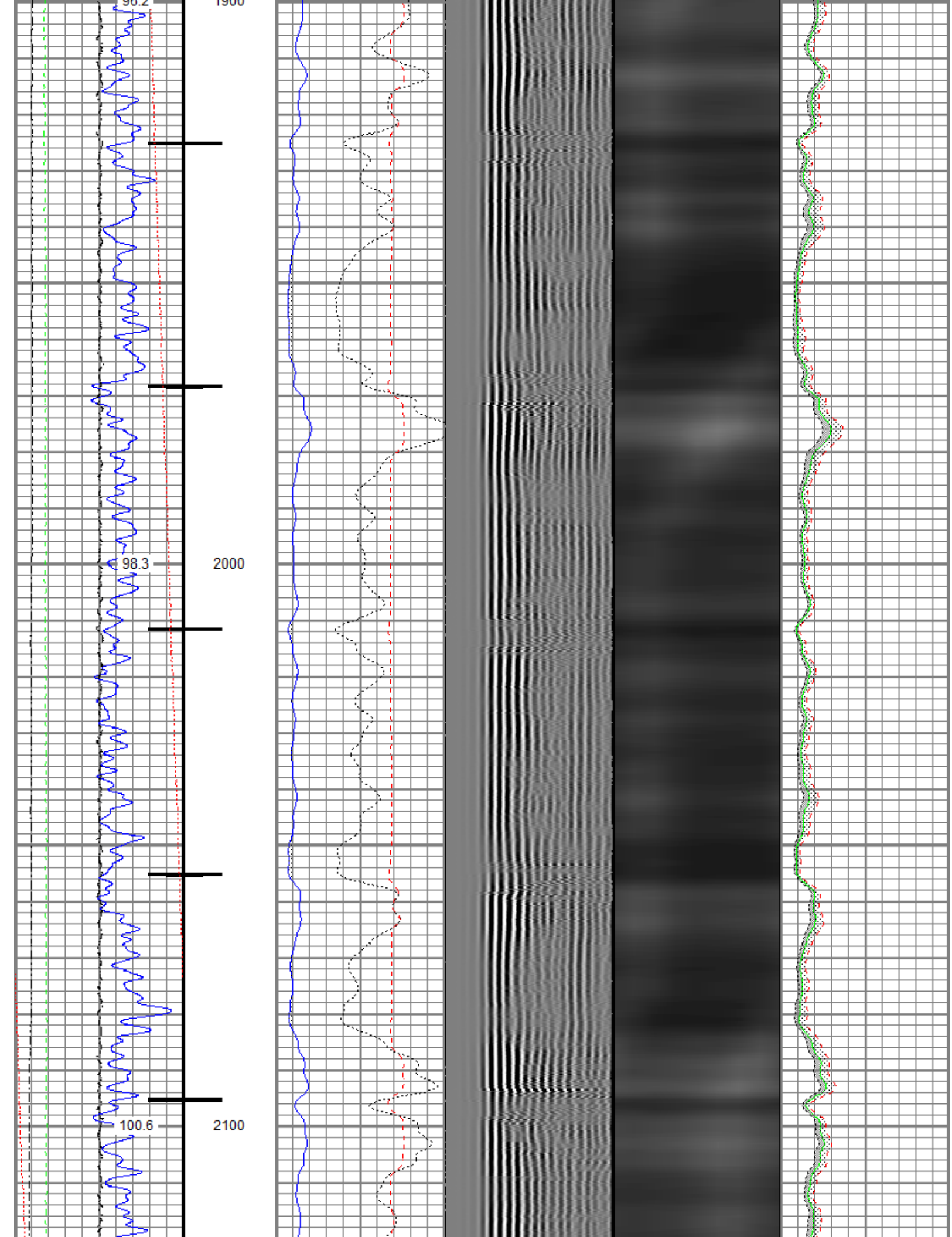


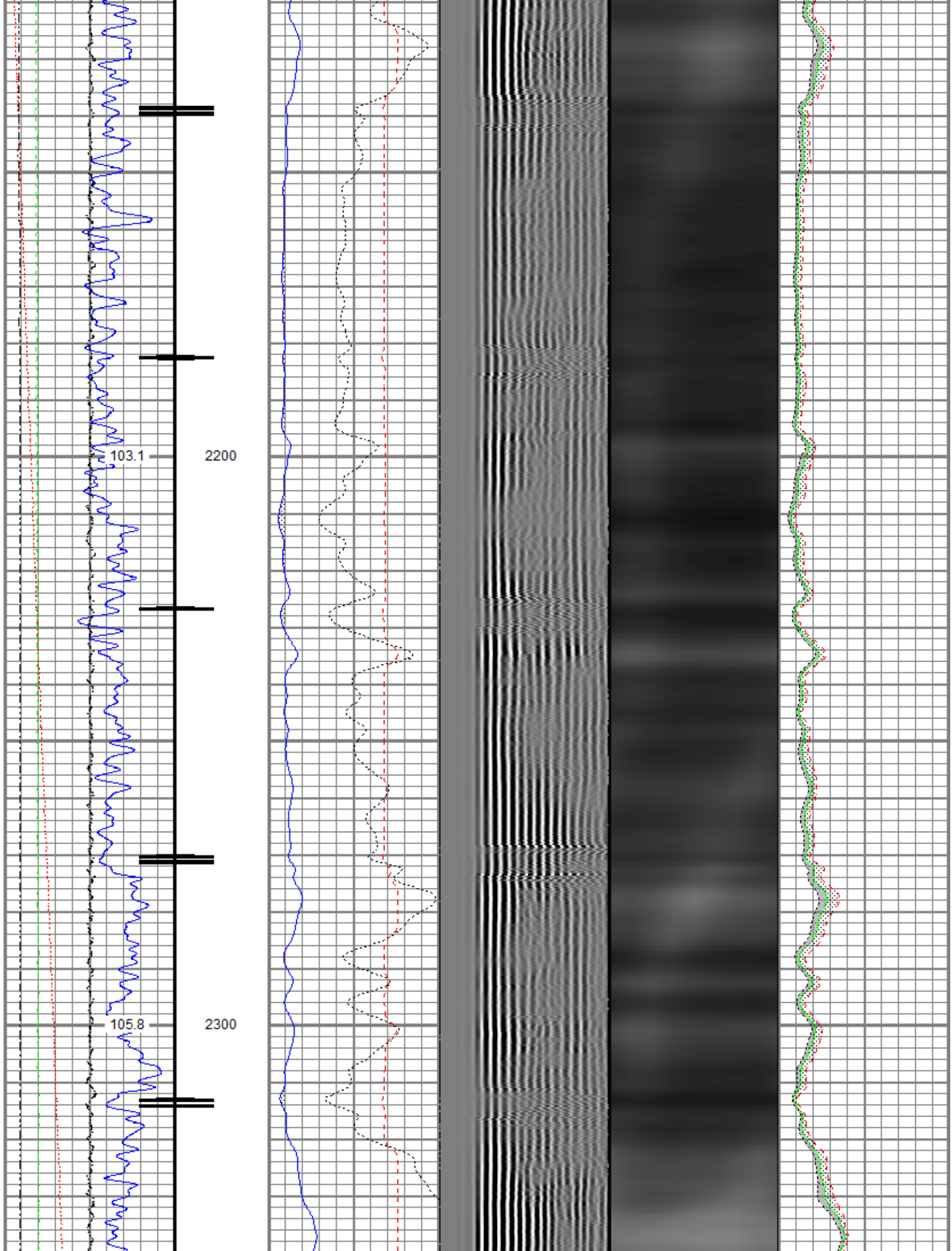


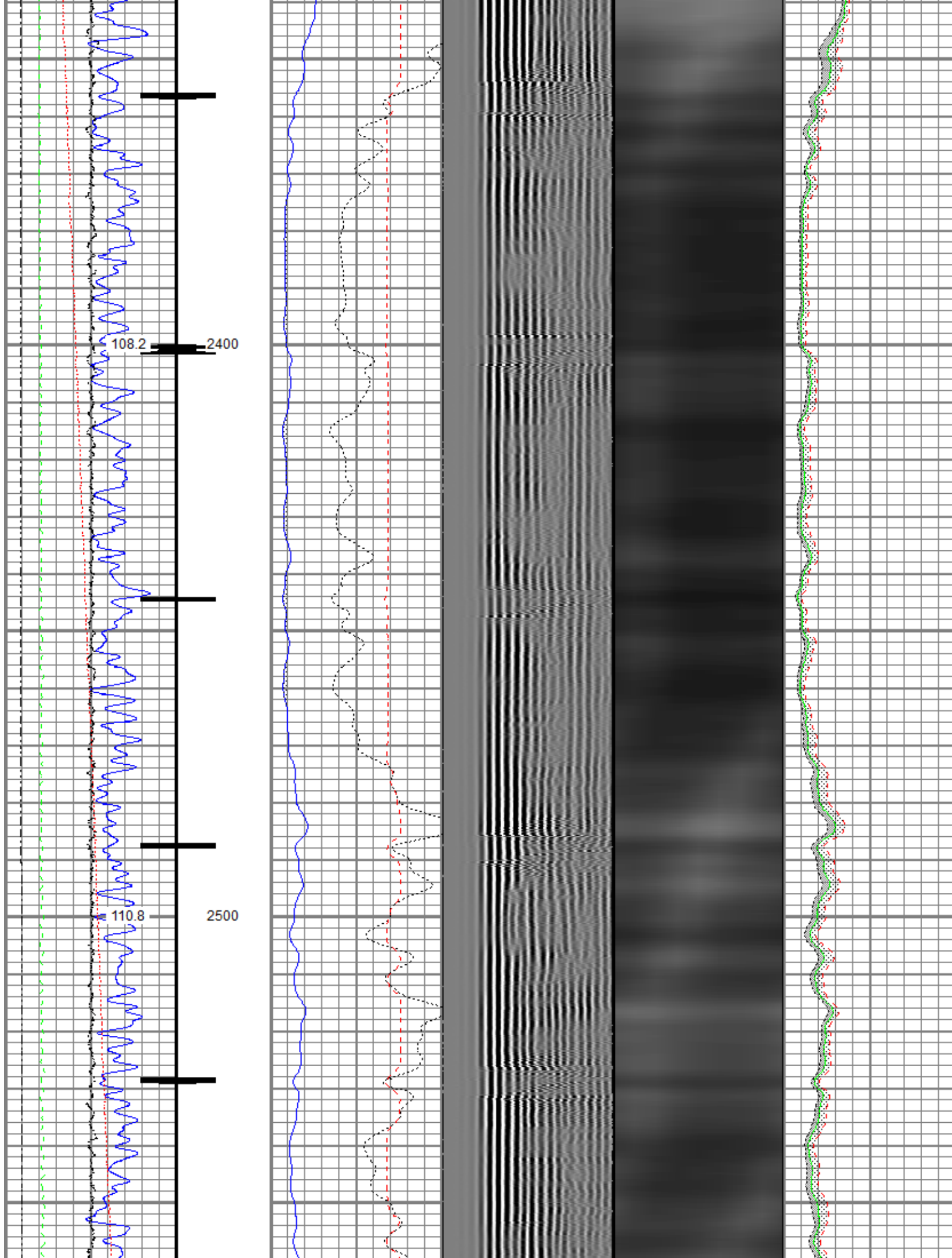


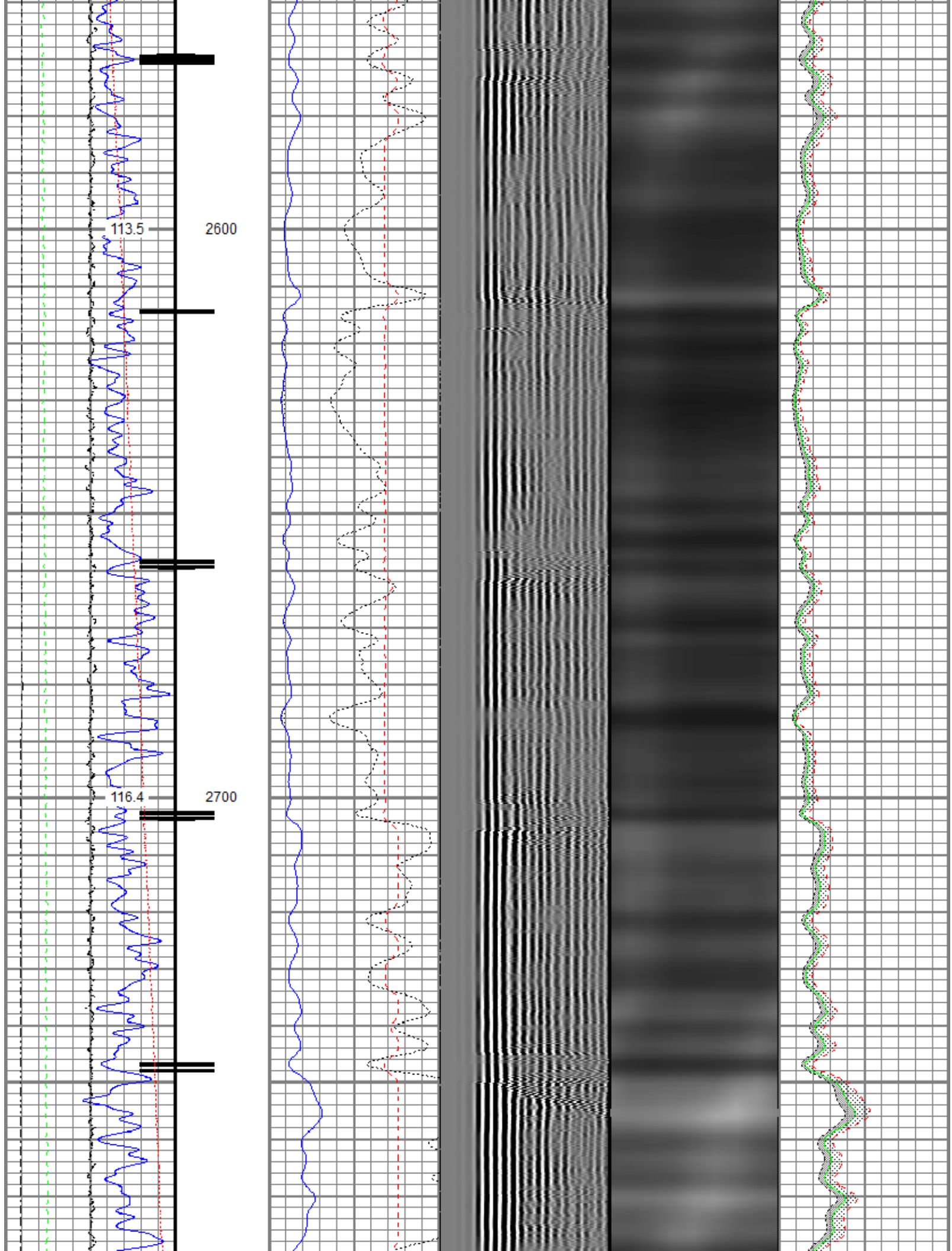


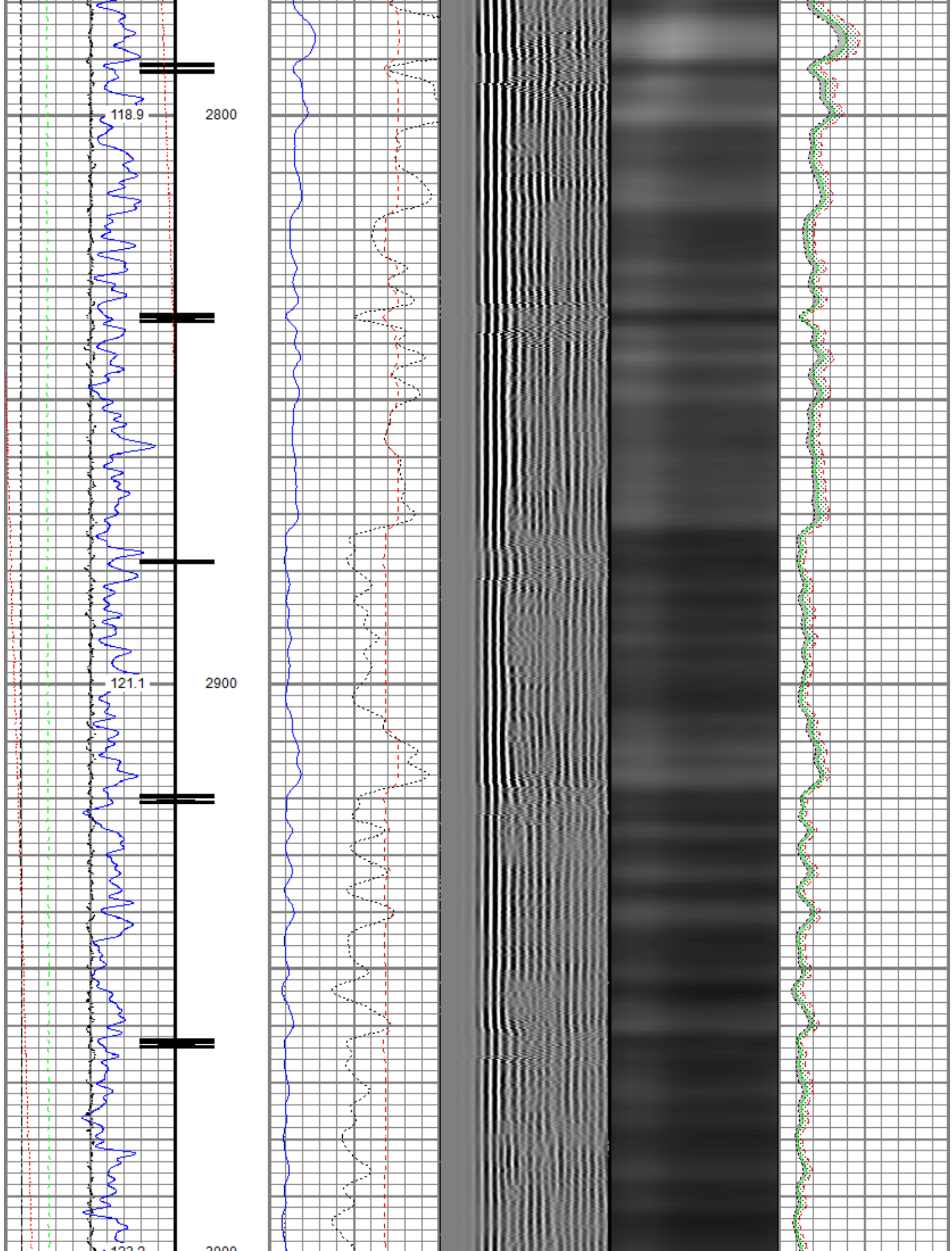


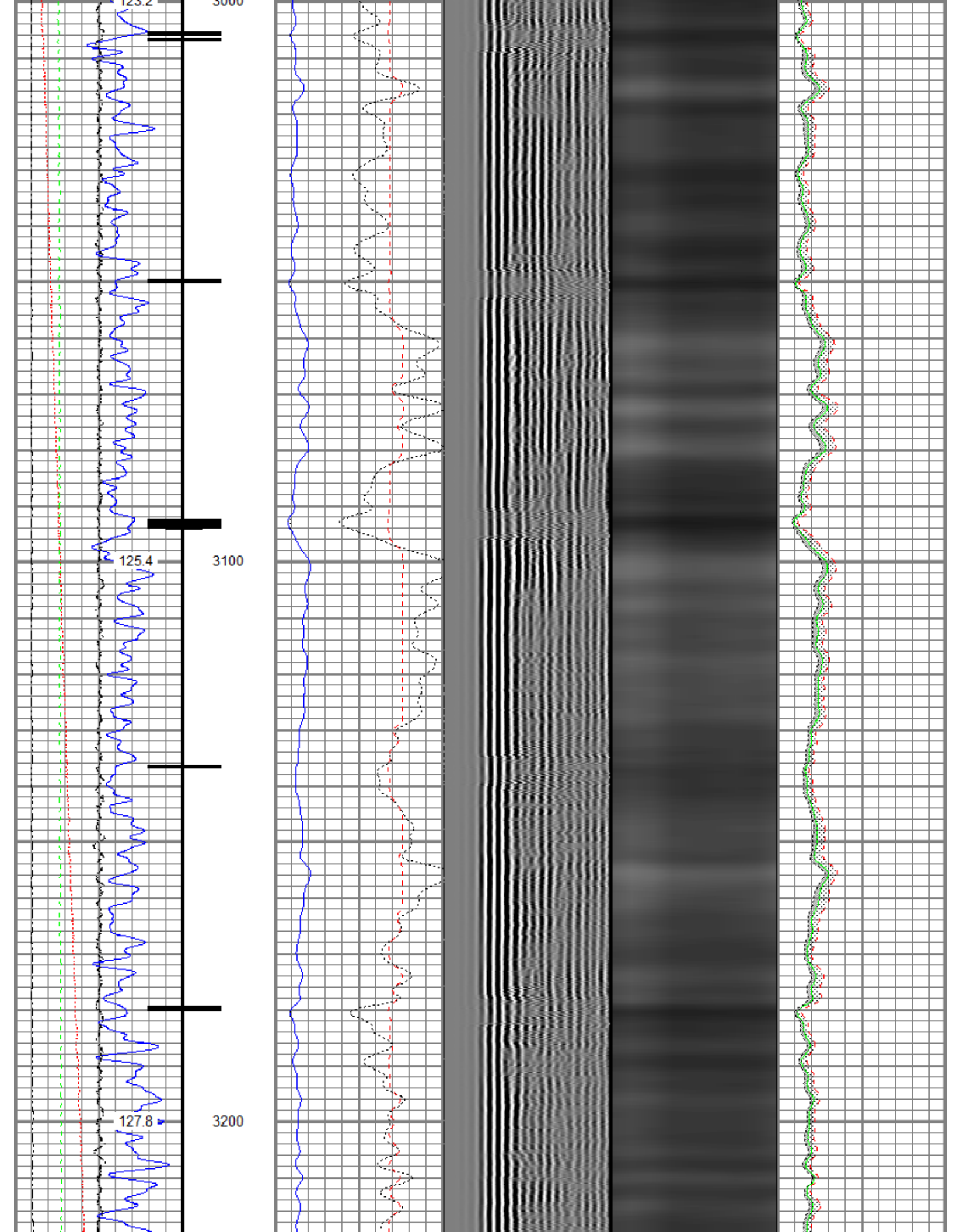


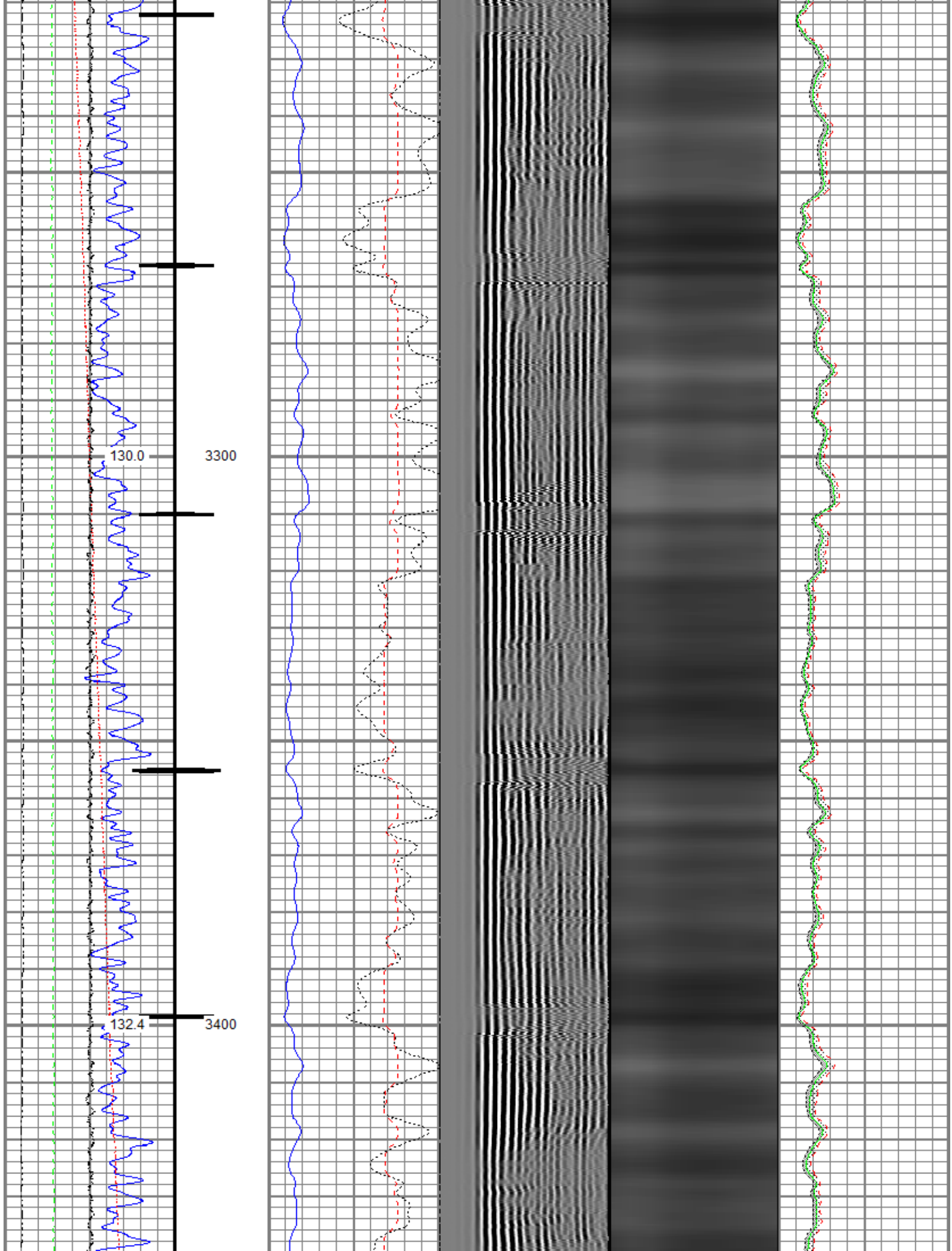


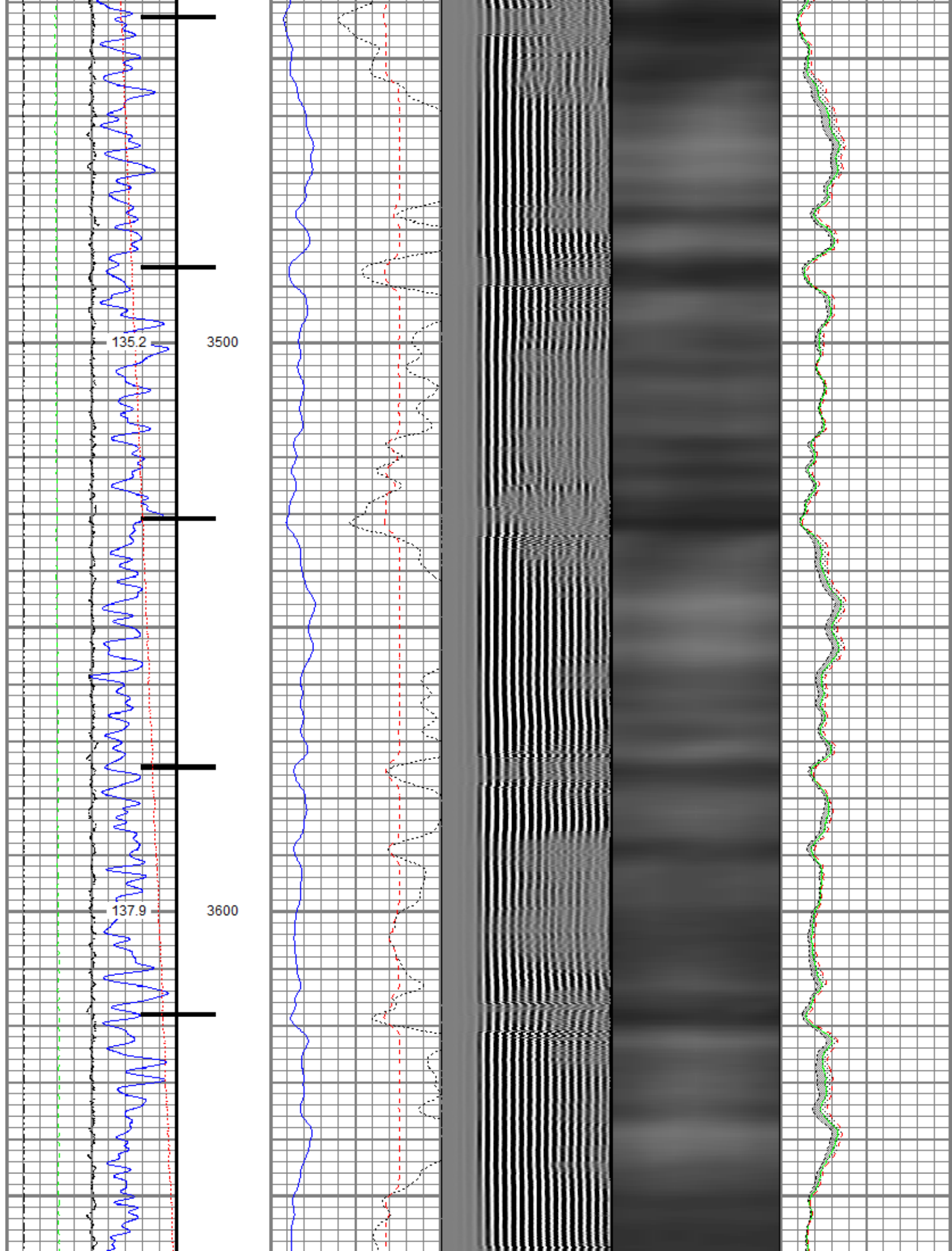


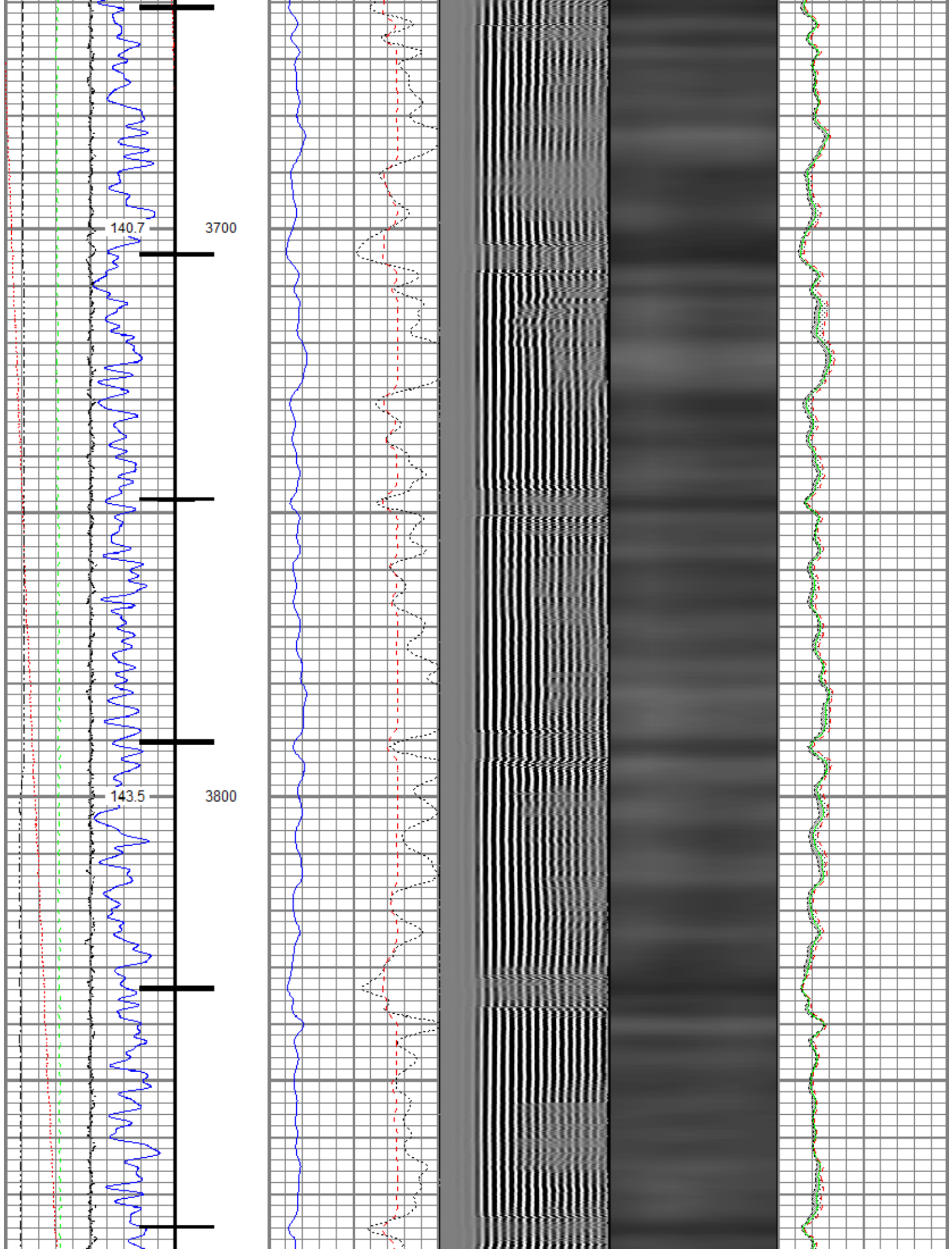


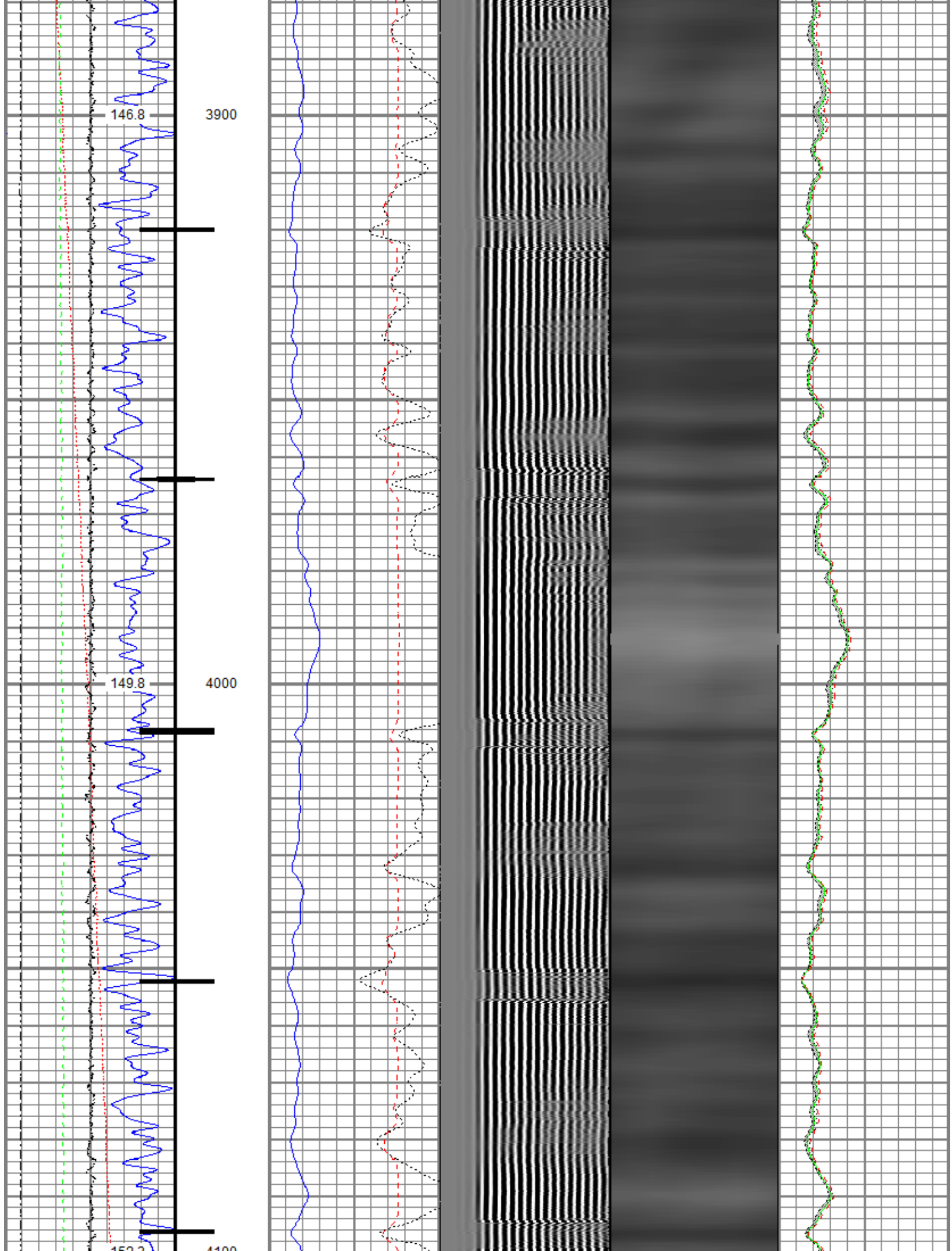


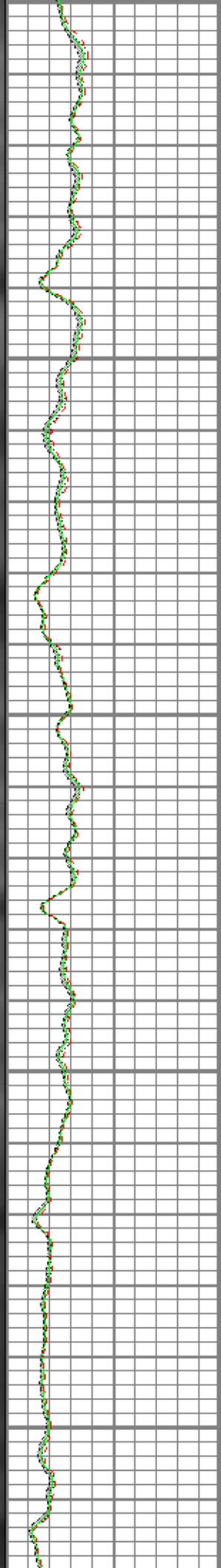
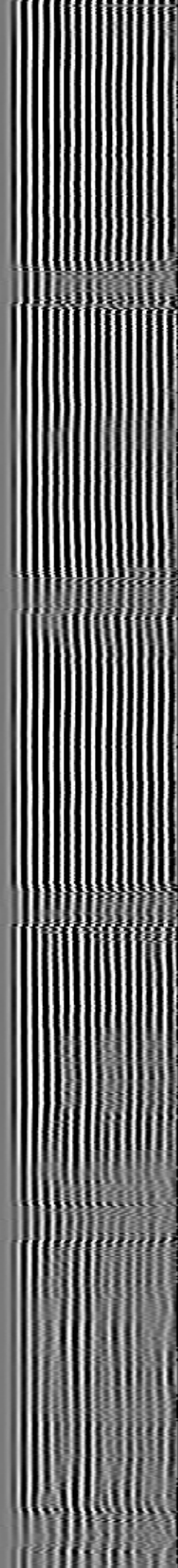
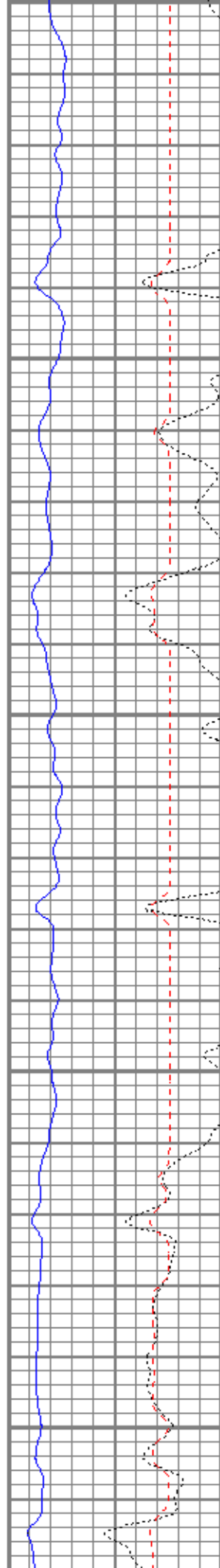
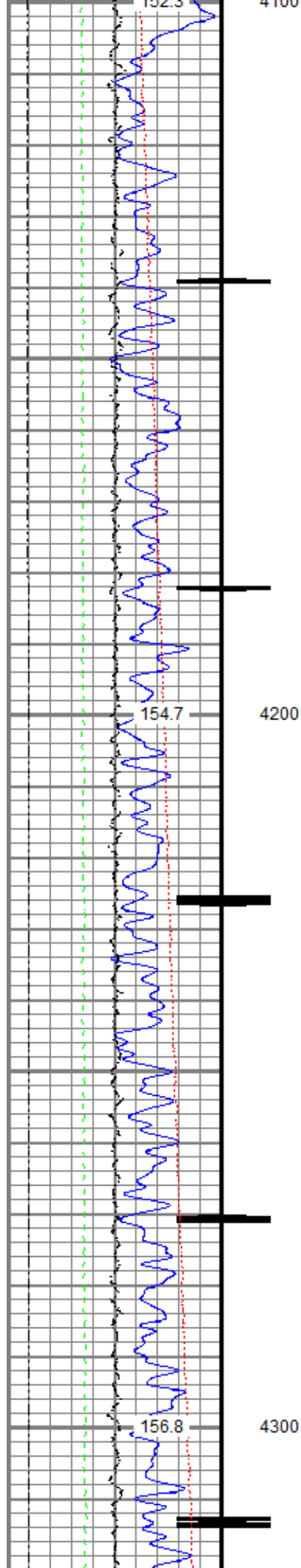


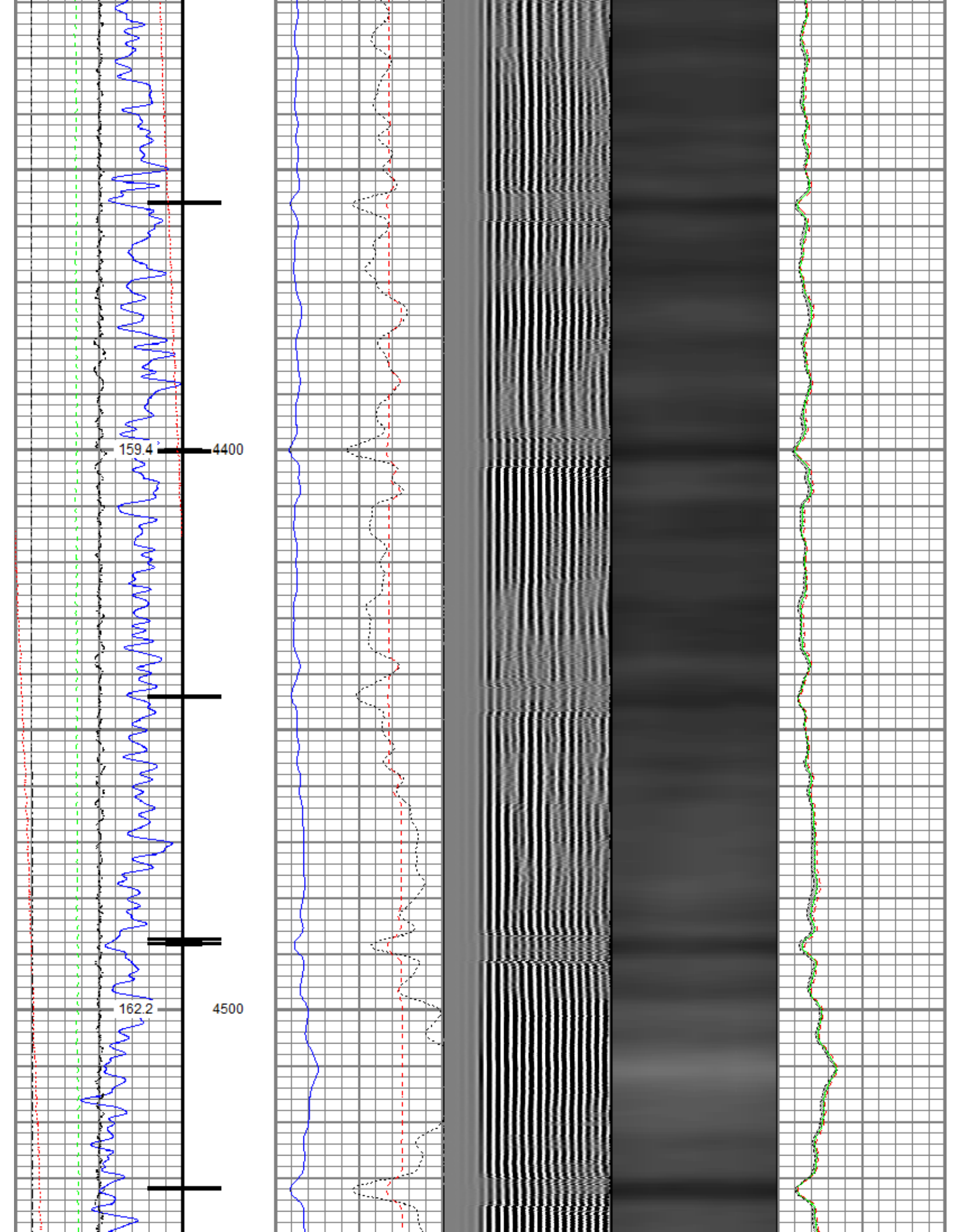


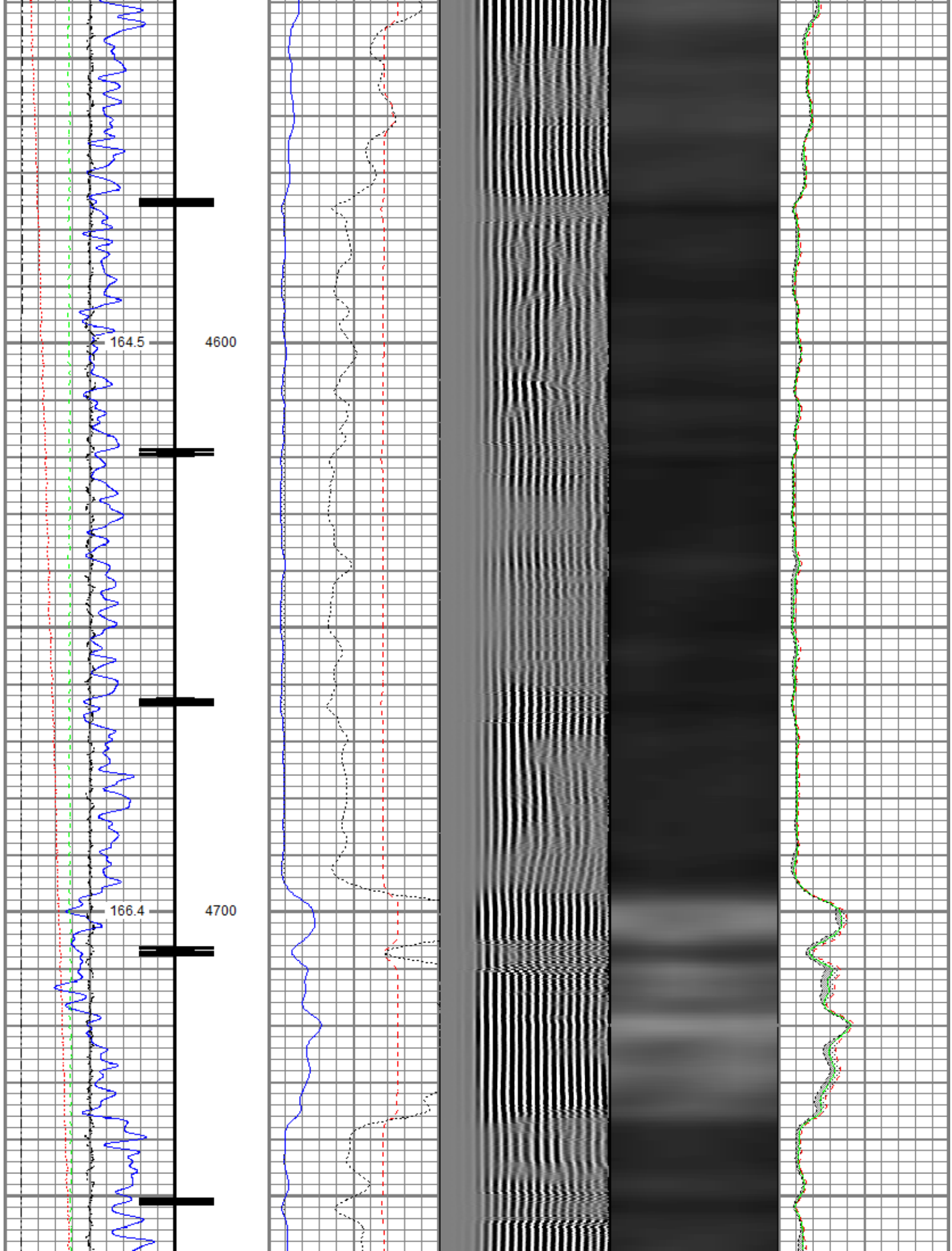


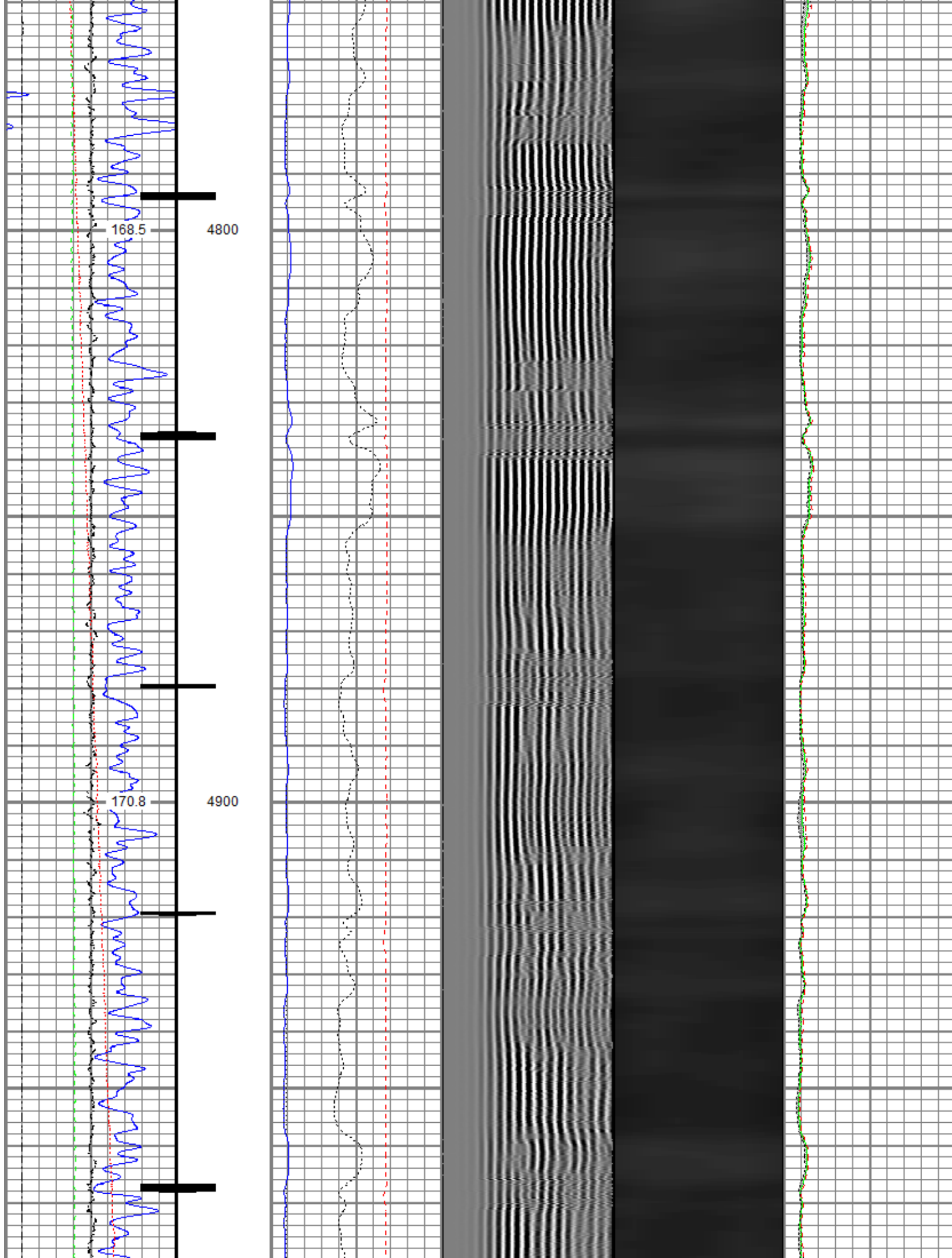


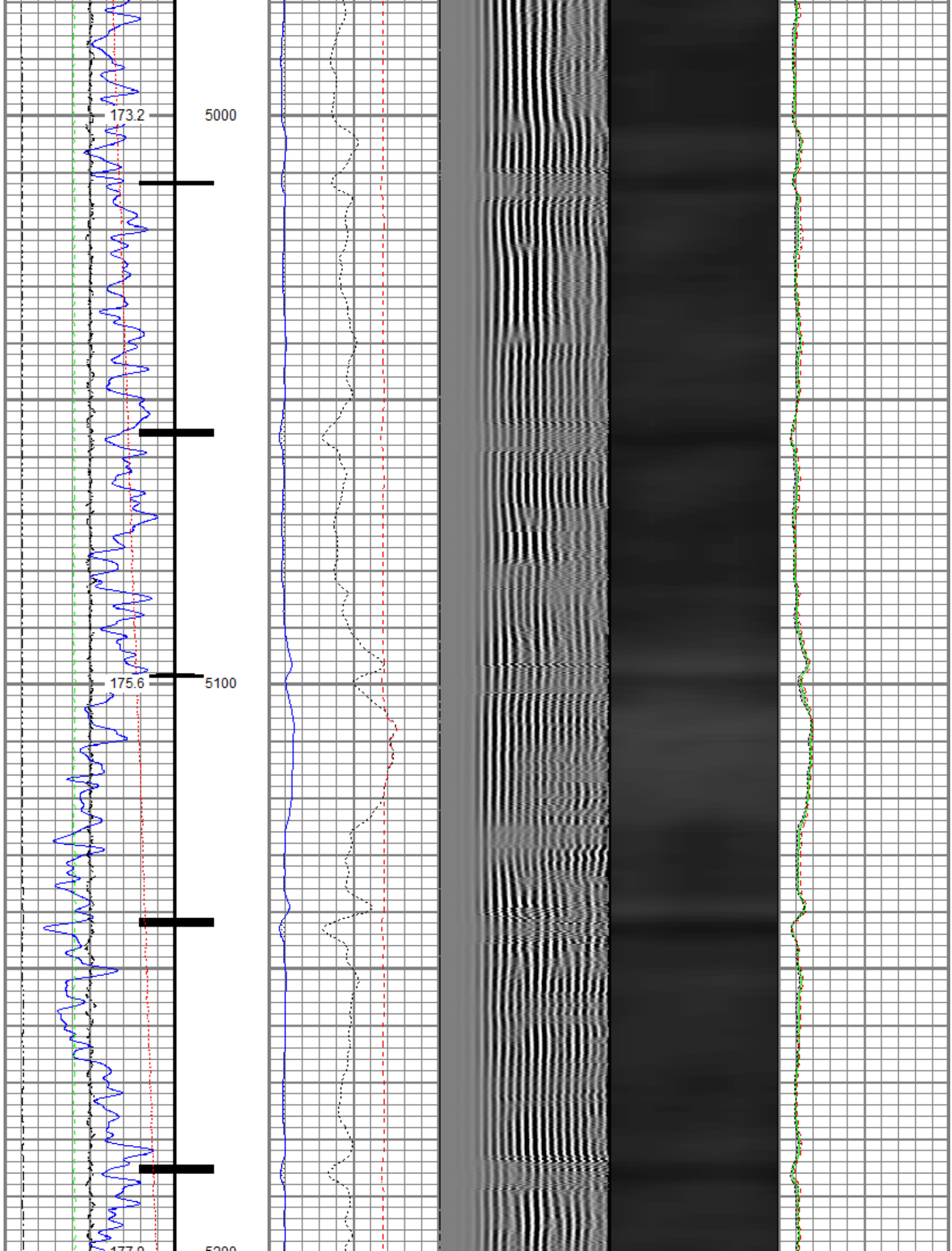


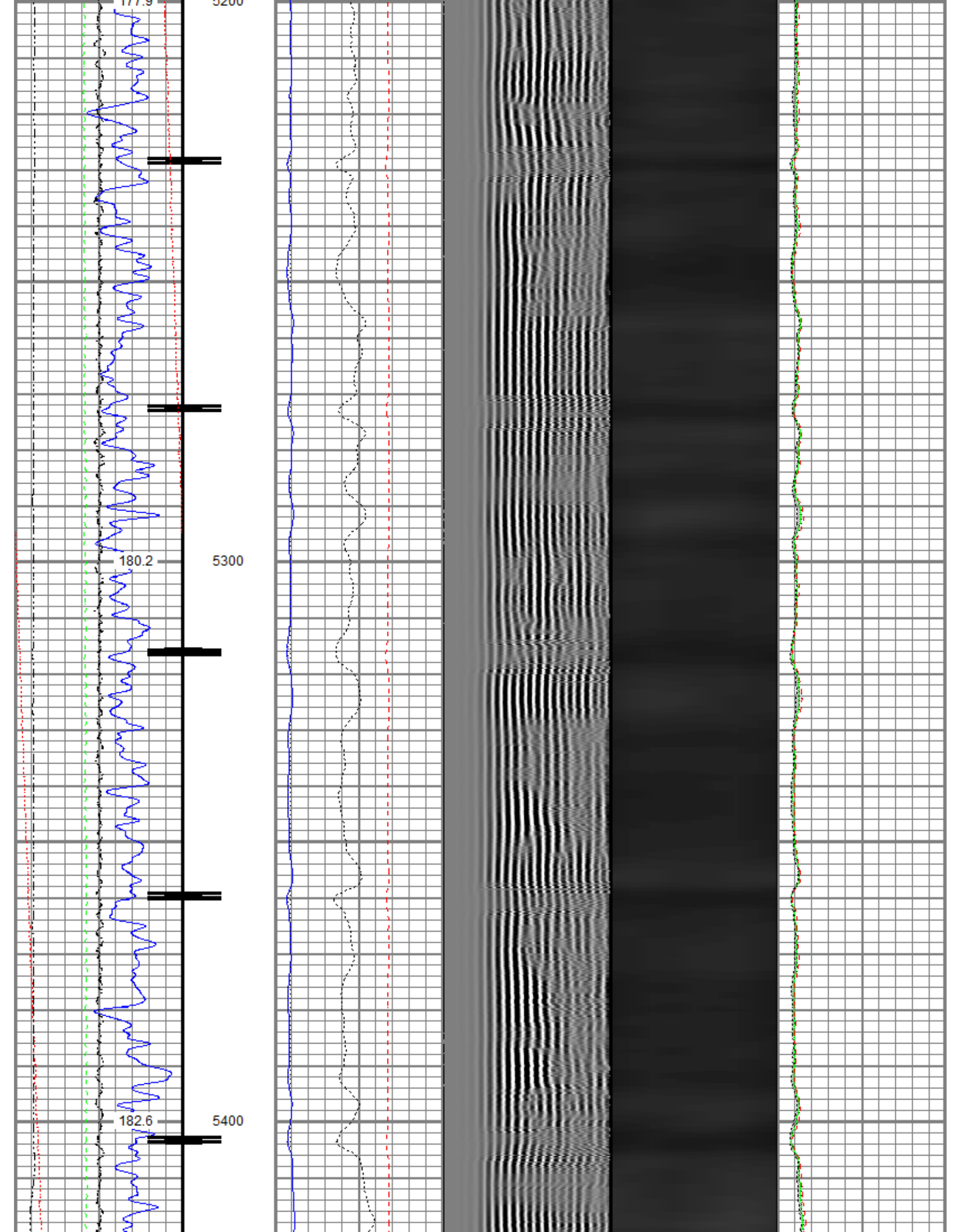


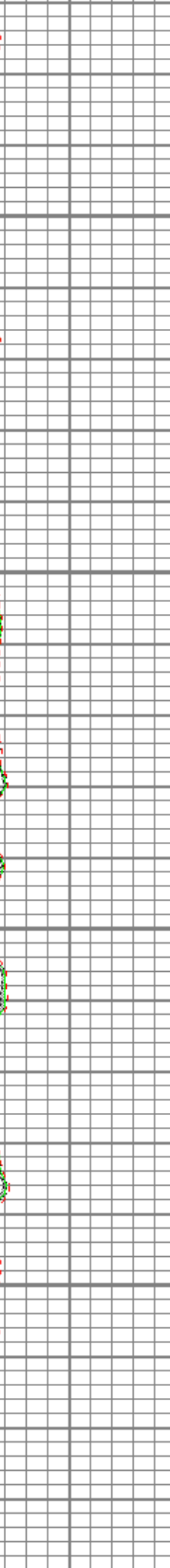
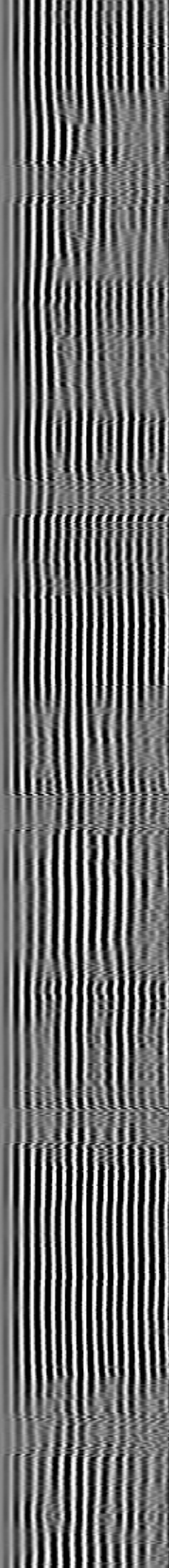
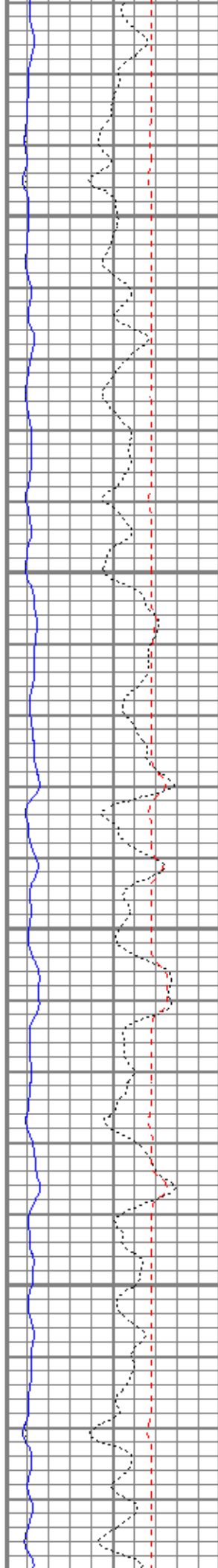
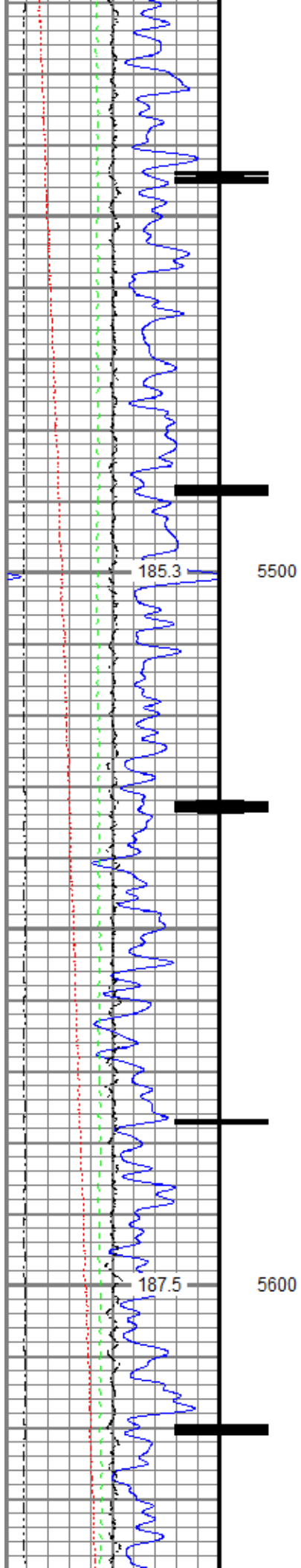


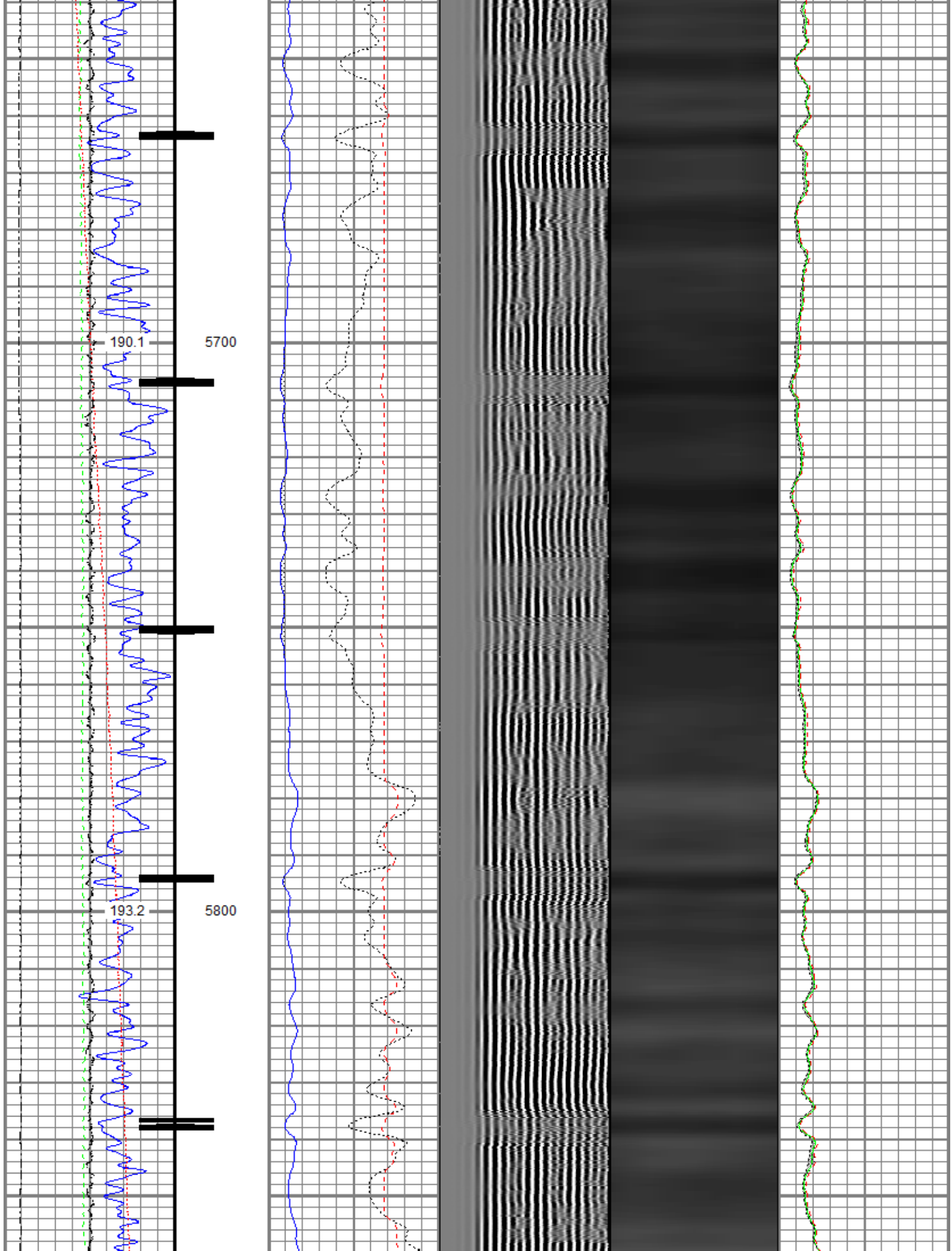


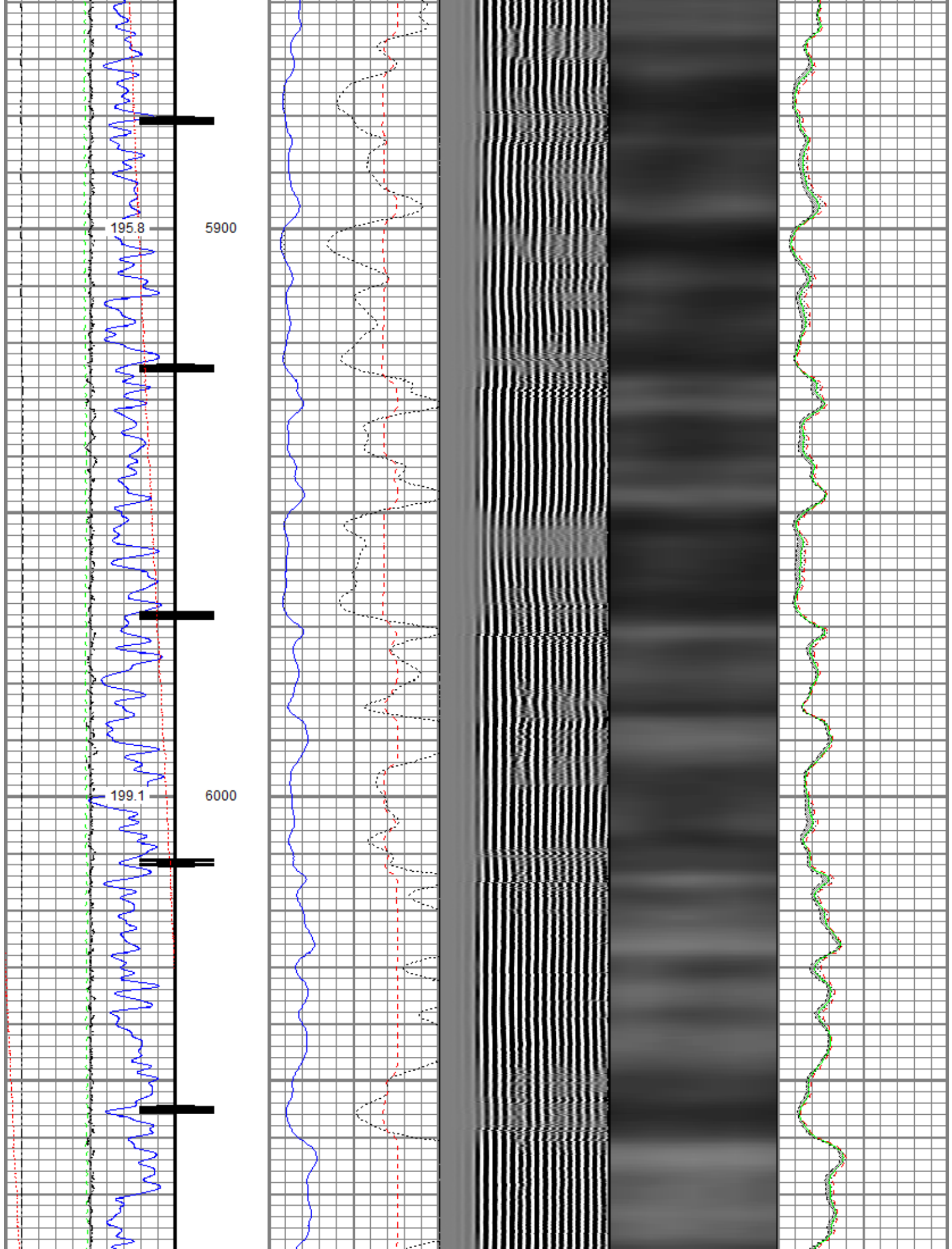


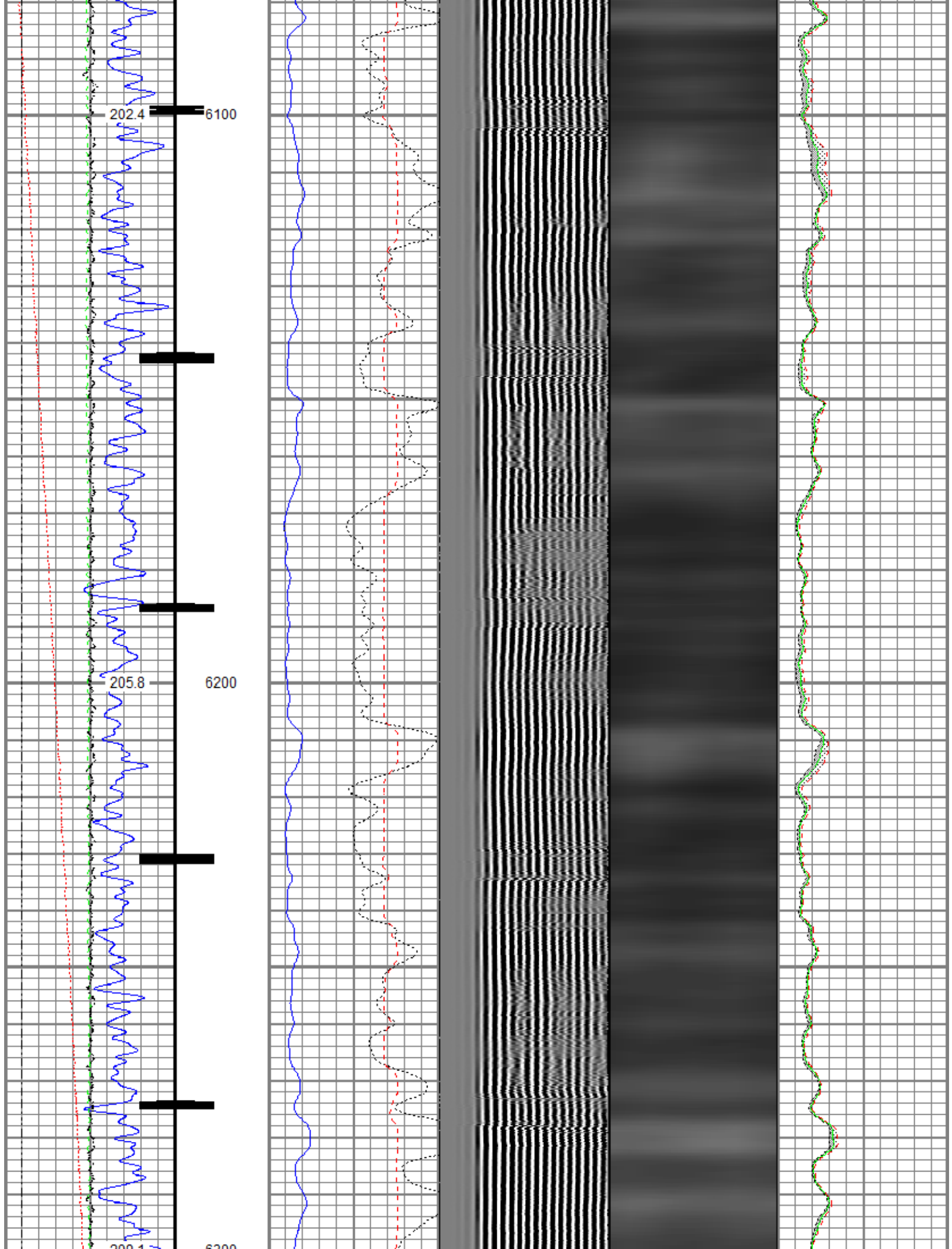


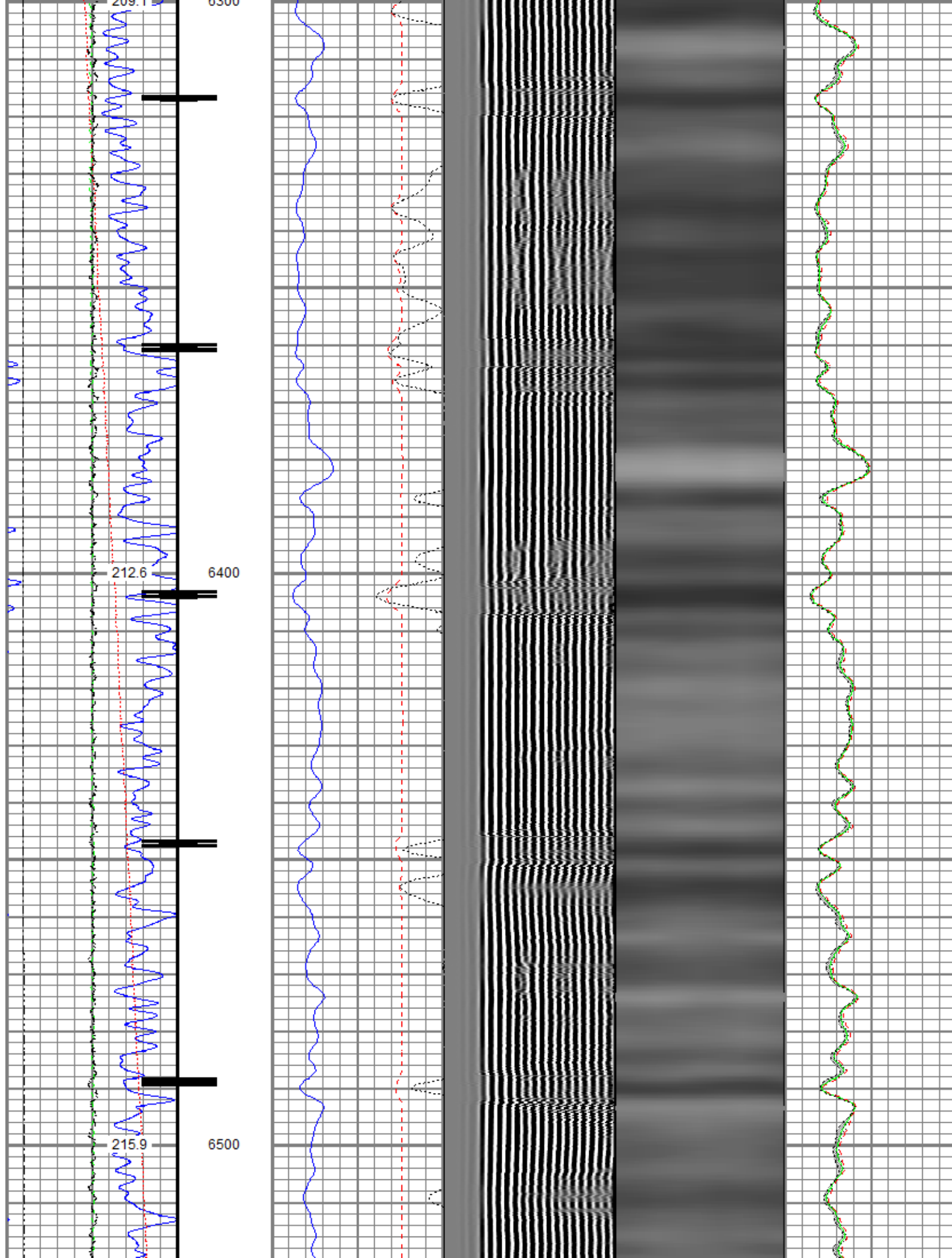


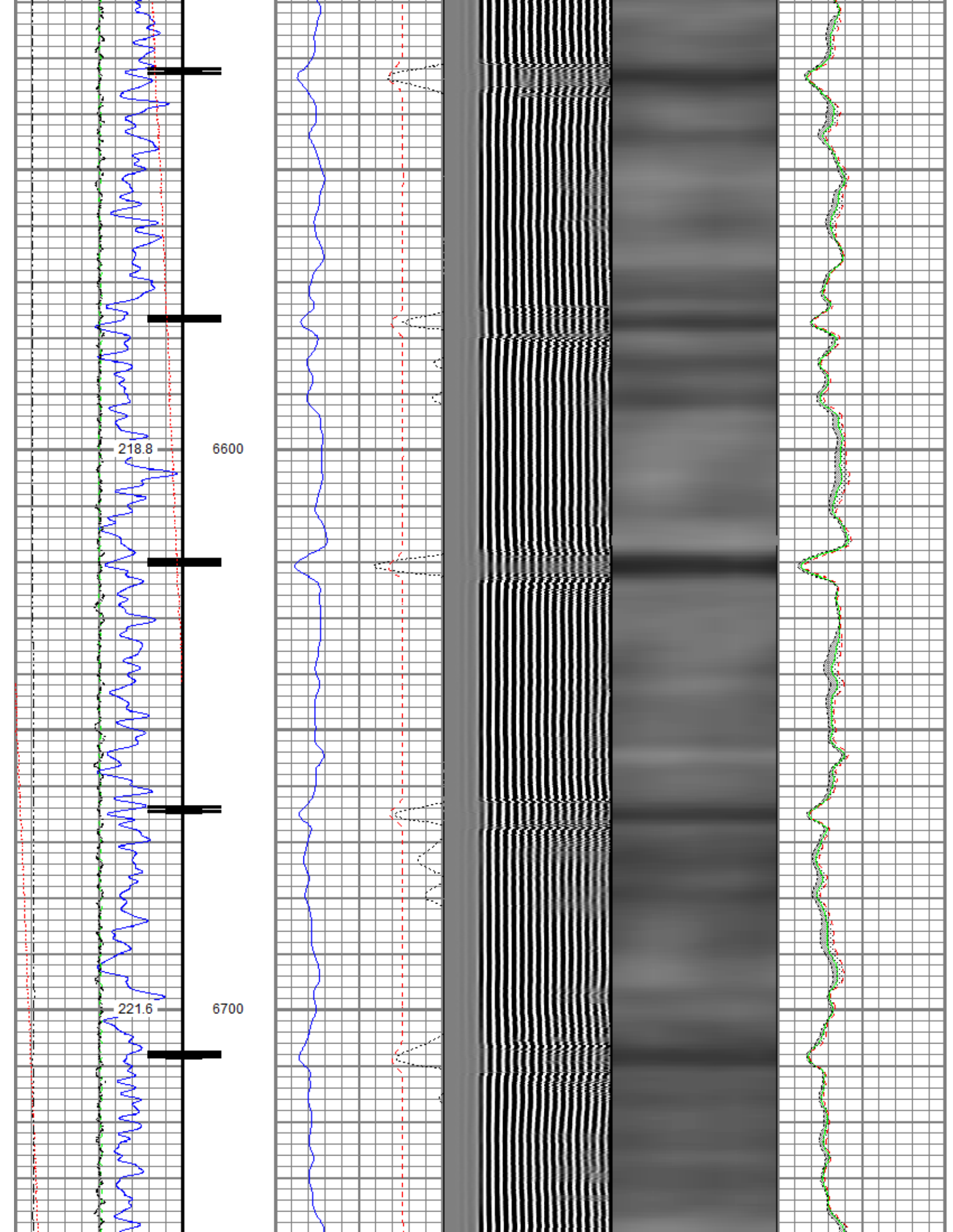


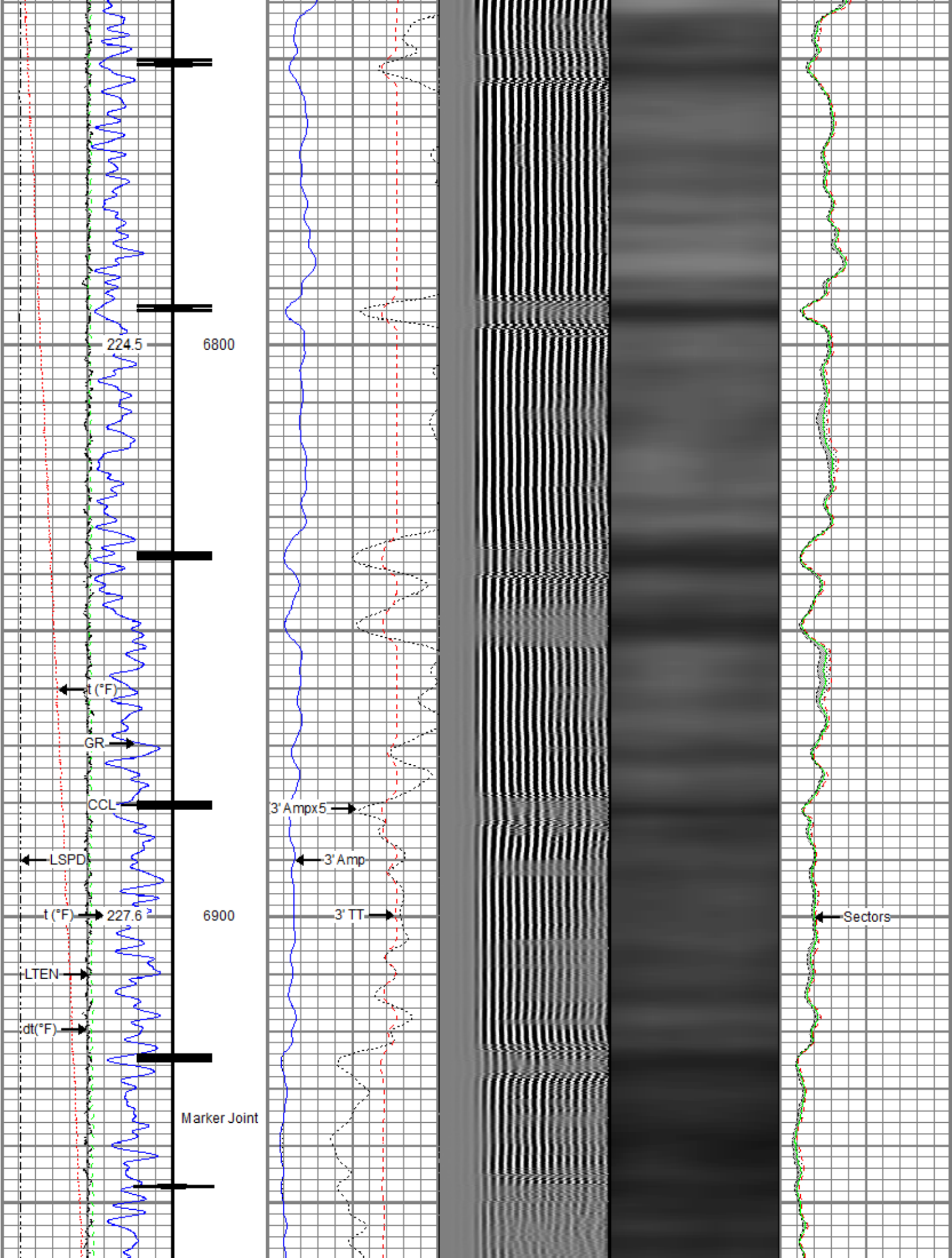


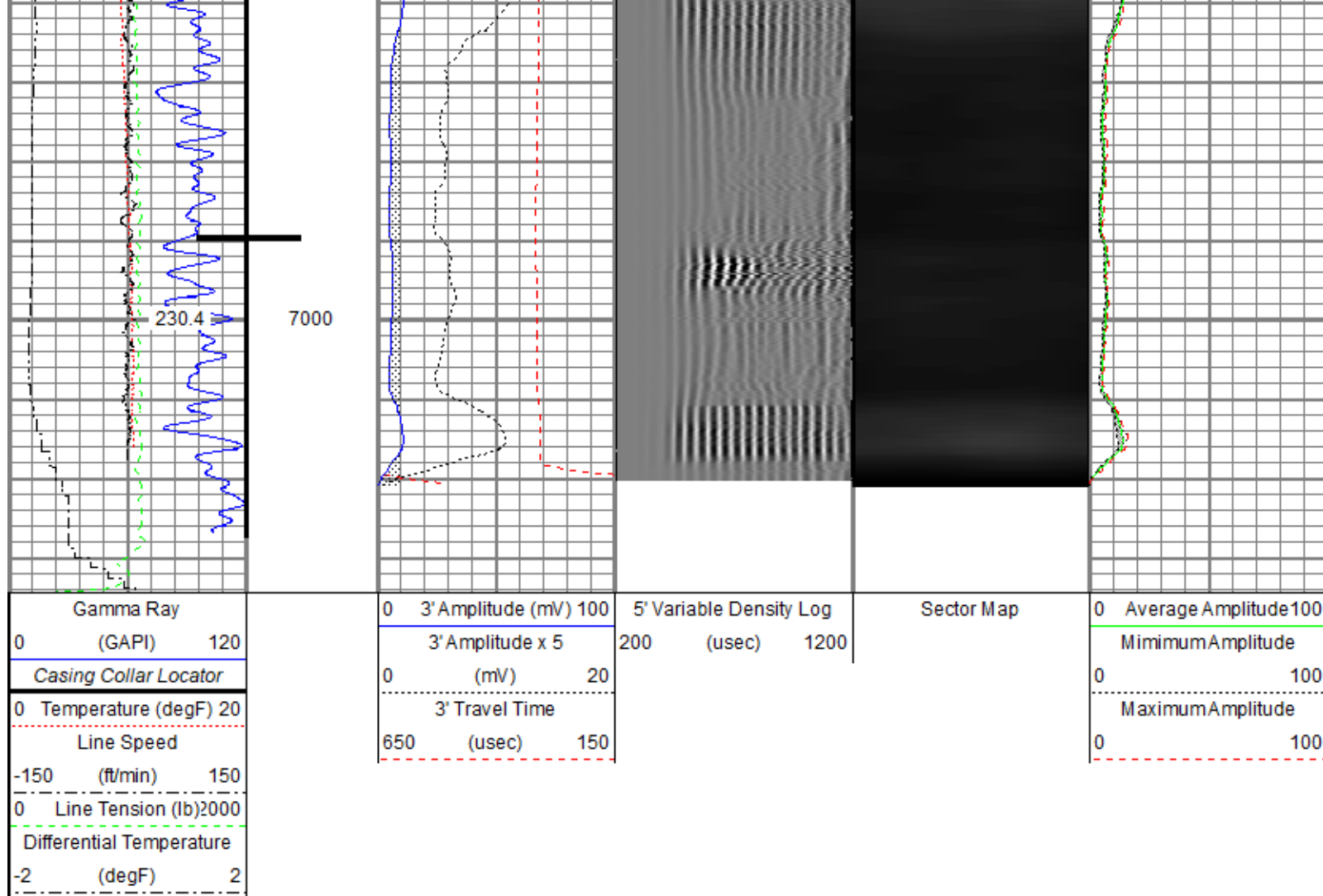








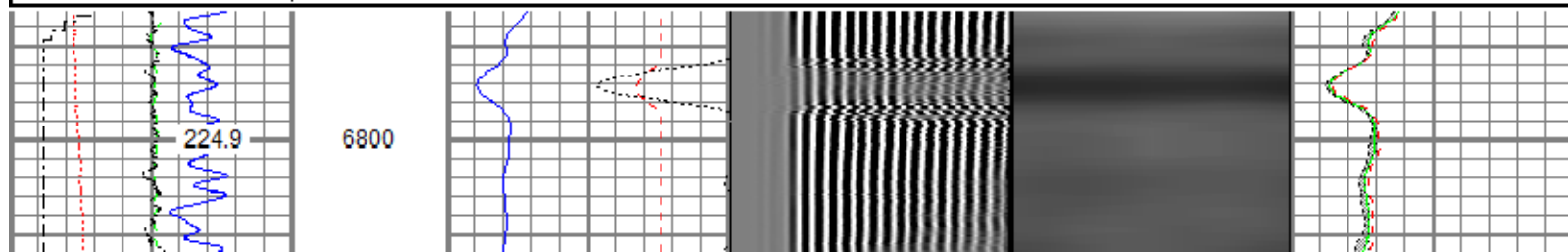
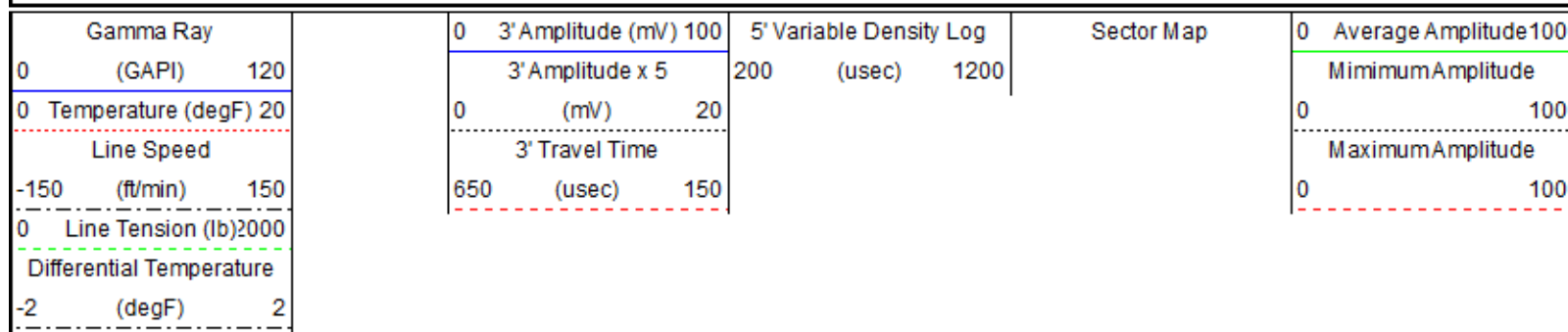




Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File: anadarko_castle pines 19-10hz\0512347710_anadarko_castle pines 19-10hz_rbl_03-16-19_2800 psi.db
 Dataset Pathname: Repeat
 Presentation Format: ros_radri
 Dataset Creation: Sat Mar 16 12:37:51 2019
 Charted by: Depth in Feet scaled 1:240



Repeat Pass

Repeat Pass

228.1

6900

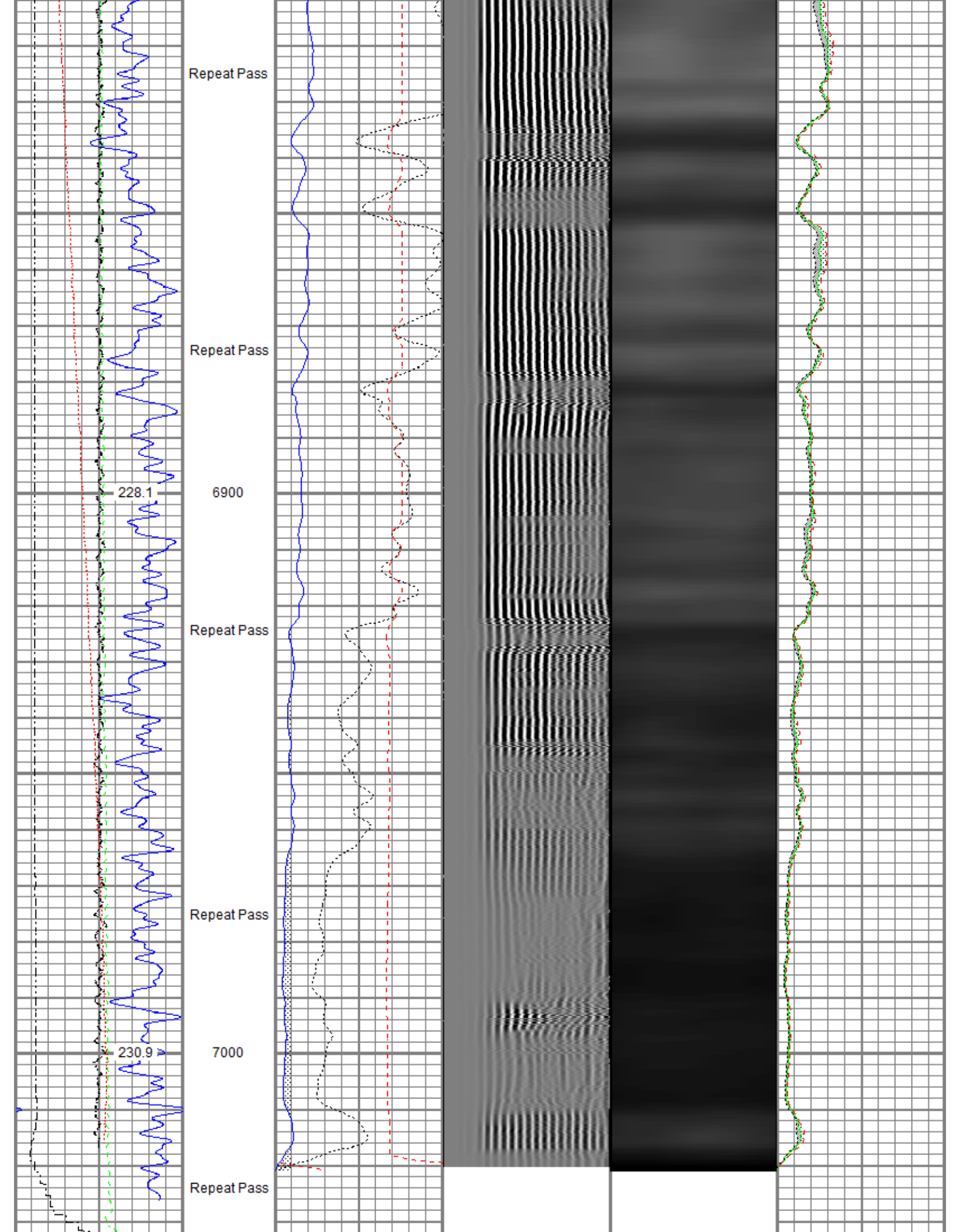
Repeat Pass

Repeat Pass

230.9

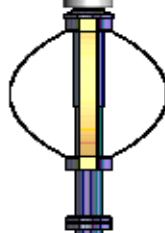
7000

Repeat Pass



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 (usec) 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)
			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: 0512347710_Anadarko_Castle Pines 19-10HZ_RBL_03-16-19_2800 PSI.db: field/well/run1/Main
Total length: 23.86 ft
Total weight: 223.60 lb
O.D.: 2.75 in

Calibration Report

Database File C:\ProgramData\Warrior\Data\Anadarko_Castle Pines 19-10HZ\0512347710_Anadarko_Castle Pines 19-10HZ_RBL_03-16-19_2
Dataset Pathname Main
Dataset Creation Sat Mar 16 12:41:18 2019

Gamma Ray Calibration Report

Serial Number: 101001
Tool Model: 2750 6PB
Performed: Mon Oct 01 11:32:32 2018

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: -110.932 ft

Master Calibration, performed Sat Mar 16 12:23:55 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	0.628	0.800	71.921	113.903	0.433
CAL	0.727	0.722				
5'	0.002	0.498	0.800	71.921	143.180	0.556
SUM						
S1	0.003	0.631	0.000	100.000	159.163	-0.478
S2	0.003	0.658	0.000	100.000	152.644	-0.508
S3	0.004	0.659	0.000	100.000	152.603	-0.561
S4	0.004	0.639	0.000	100.000	157.476	-0.624
S5	0.004	0.641	0.000	100.000	157.070	-0.674
S6	0.004	0.639	0.000	100.000	157.519	-0.598
S7	0.003	0.614	0.000	100.000	163.880	-0.541
S8	0.003	0.625	0.000	100.000	160.808	-0.455

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.727	0.722	1.000	0.000

Air Zero Calibration, performed Sat Mar 16 07:07:11 2019:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.007	0.000	-0.000
5'	0.007	0.000	0.000
SUM			
S1	0.003	0.000	0.000
S2	0.008	0.000	-0.000
S3	0.006	0.000	-0.000
S4	0.007	0.000	-0.000
S5	0.006	0.000	0.000
S6	0.007	0.000	0.000
S7	0.006	0.000	0.000
S8	0.006	0.000	-0.000

Temperature Calibration Report

Serial Number: FW1308-091
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:16 2018

	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: Castle Pines 19-10HZ
Field: Wattenberg
County: Weld
State: Colorado