



Radial Cement Bond
Gamma Ray
Casing Collar Log

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

Well Pettinger 18-3HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-47354

Other Services
JB/GR
RBP
RBL 0 PSI

SEC 18 TWP 1N RGE 65W

Elevation

Permanent Datum Ground Level Elevation 4996'
Log Measured From Kelly Bushing 21 FT
Drilling Measured From Kelly Bushing

K.B. 5017'
D.F. ---
G.L. 4996'

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Well Pettinger 18-3HZ
Field Wattenberg
County Weld
State Colorado

Date	25-OCT-2018	Four		
Run Number		13019 FT		
Depth Driller		6651 FT		
Depth Logger		6637 FT		
Bottom Logged Interval		Surface		
Top Log Interval		7.875'		
Open Hole Size		Water		
Type Fluid		8.34 lb/gal		
Density / Viscosity		217°F		
Max. Recorded Temp.		See Log		
Estimated Cement Top		ROA		
Time Well Ready		13:50		
Time Logger on Bottom		HD-363		
Equipment Number		Platteville, CO		
Location		M Hayes		
Recorded By		Justin McMillan		
Witnessed By				
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				

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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 6613 FT
Adjusted -1 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7732 FT
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!!

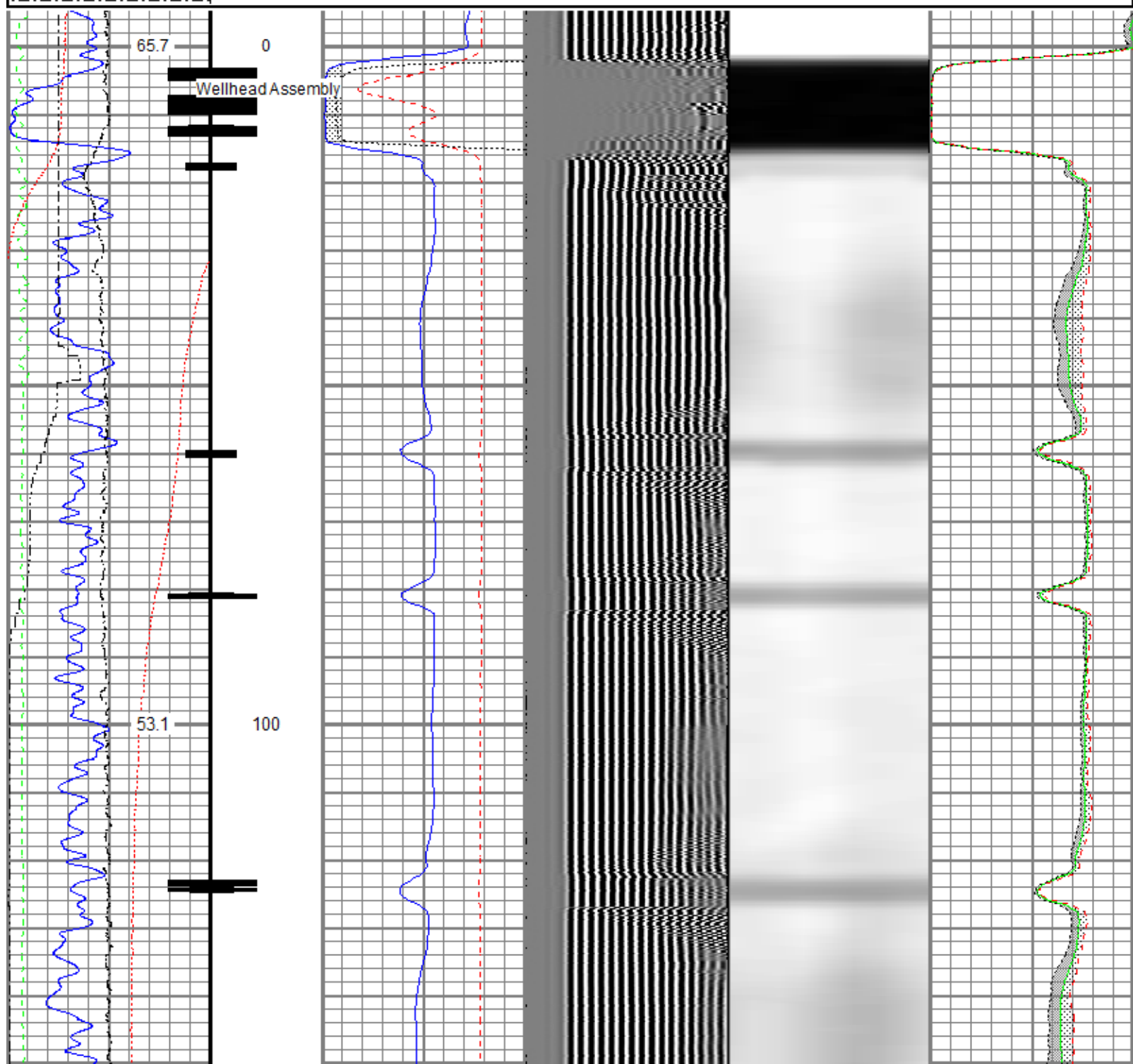
Main Pass

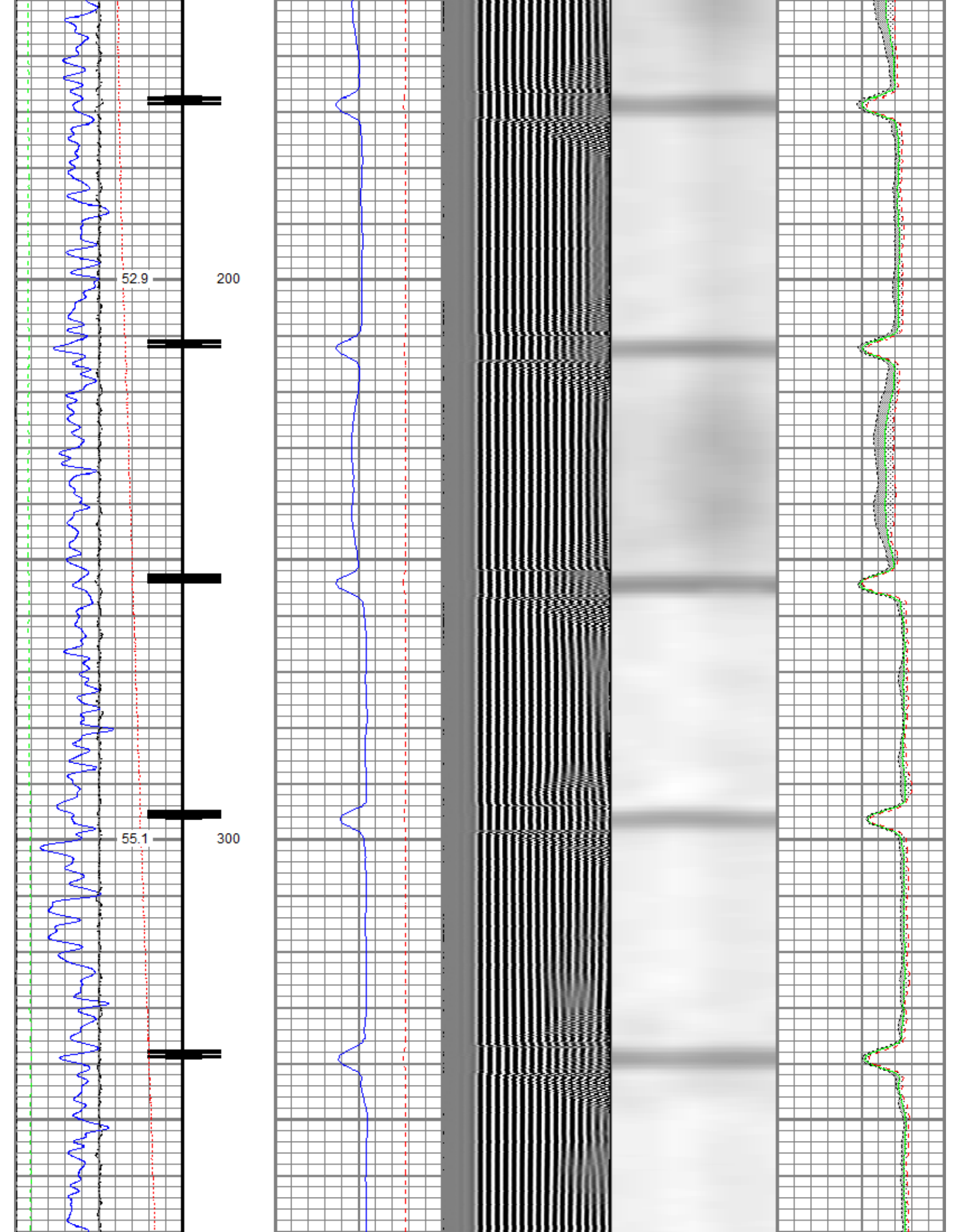


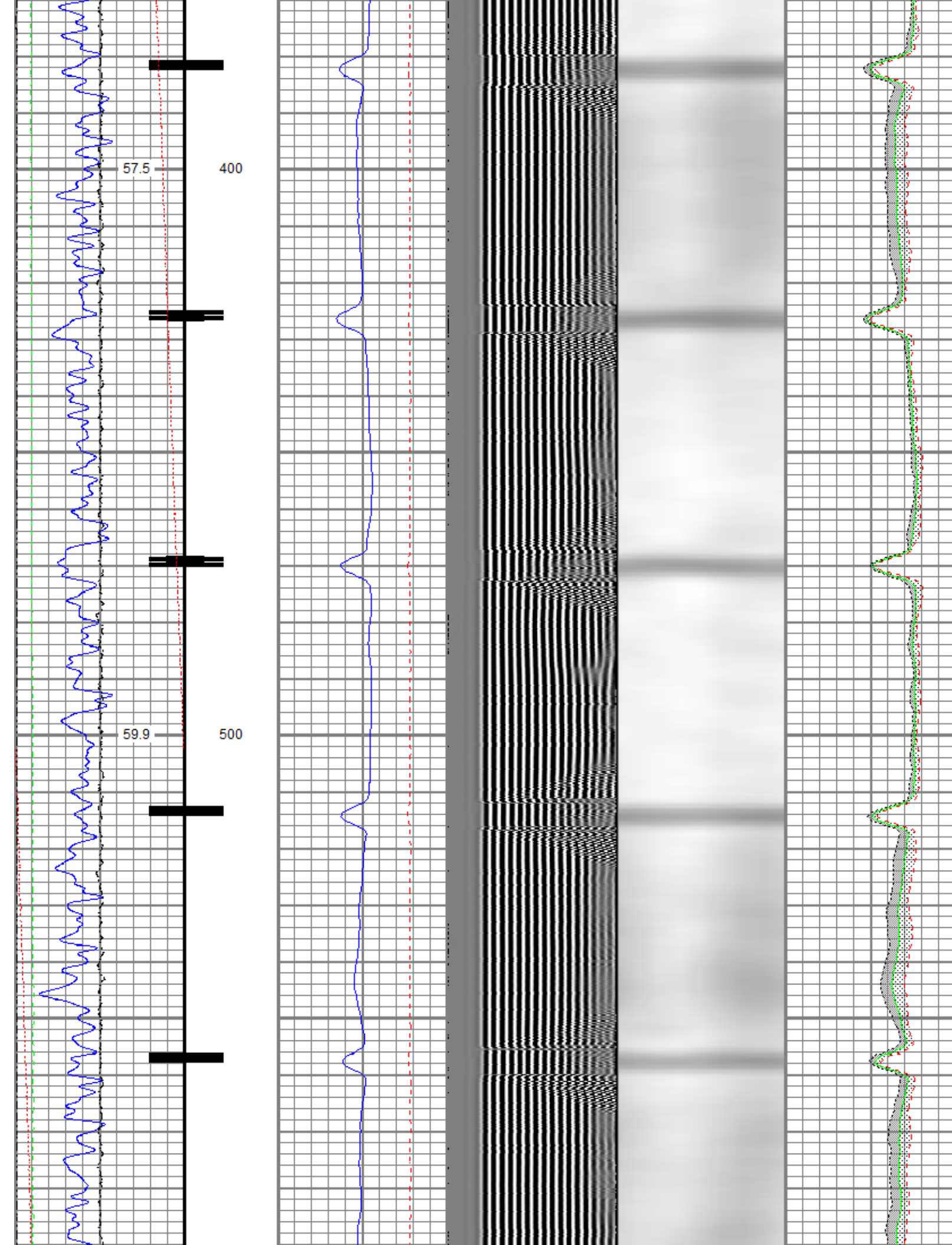
Recorded With 2800 PSI Surface Induced Pressure

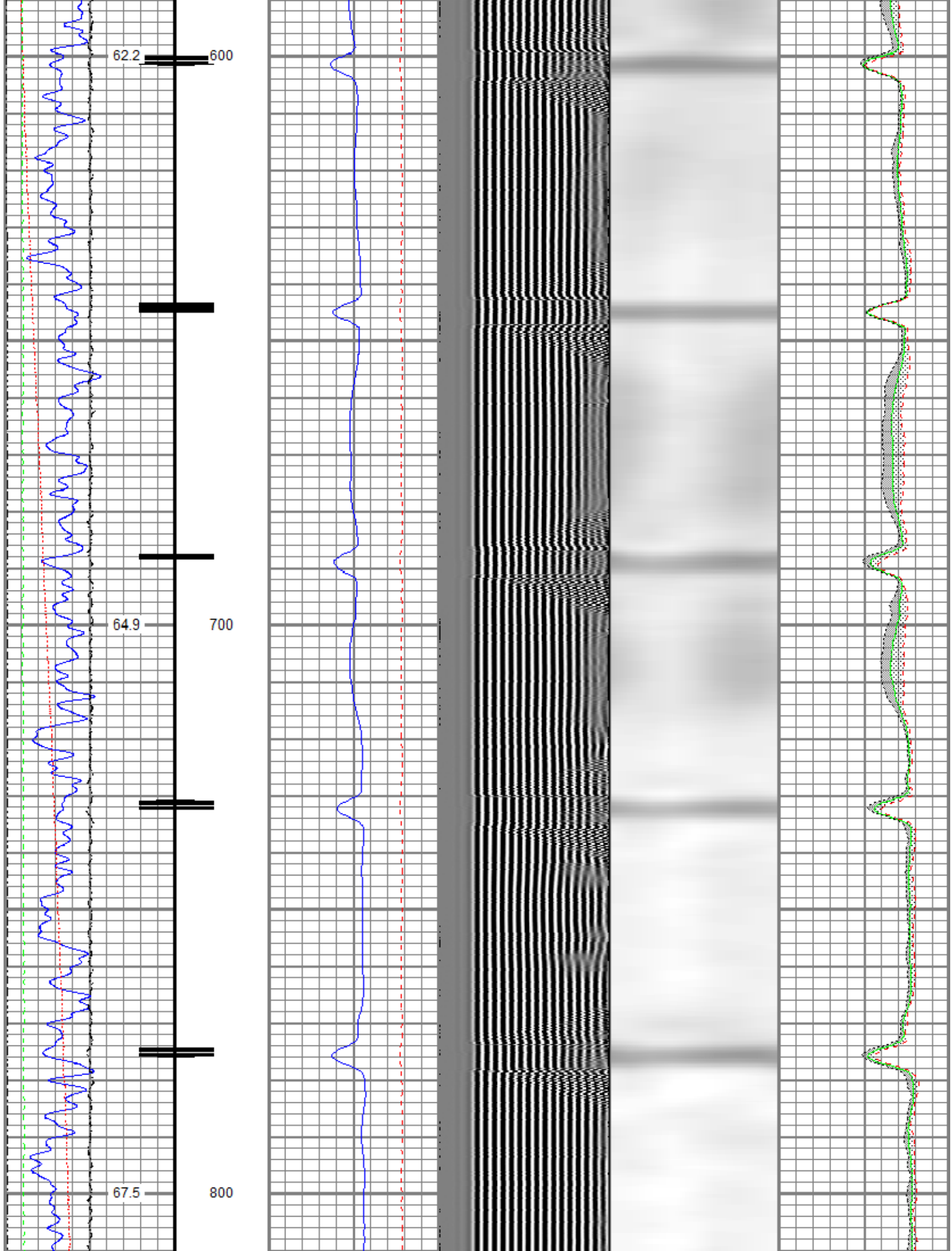
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 Dataset Pathname pass6
 Presentation Format ros_radrii
 Dataset Creation Thu Oct 25 14:22:39 2018
 Charted by Depth in Feet scaled 1:240

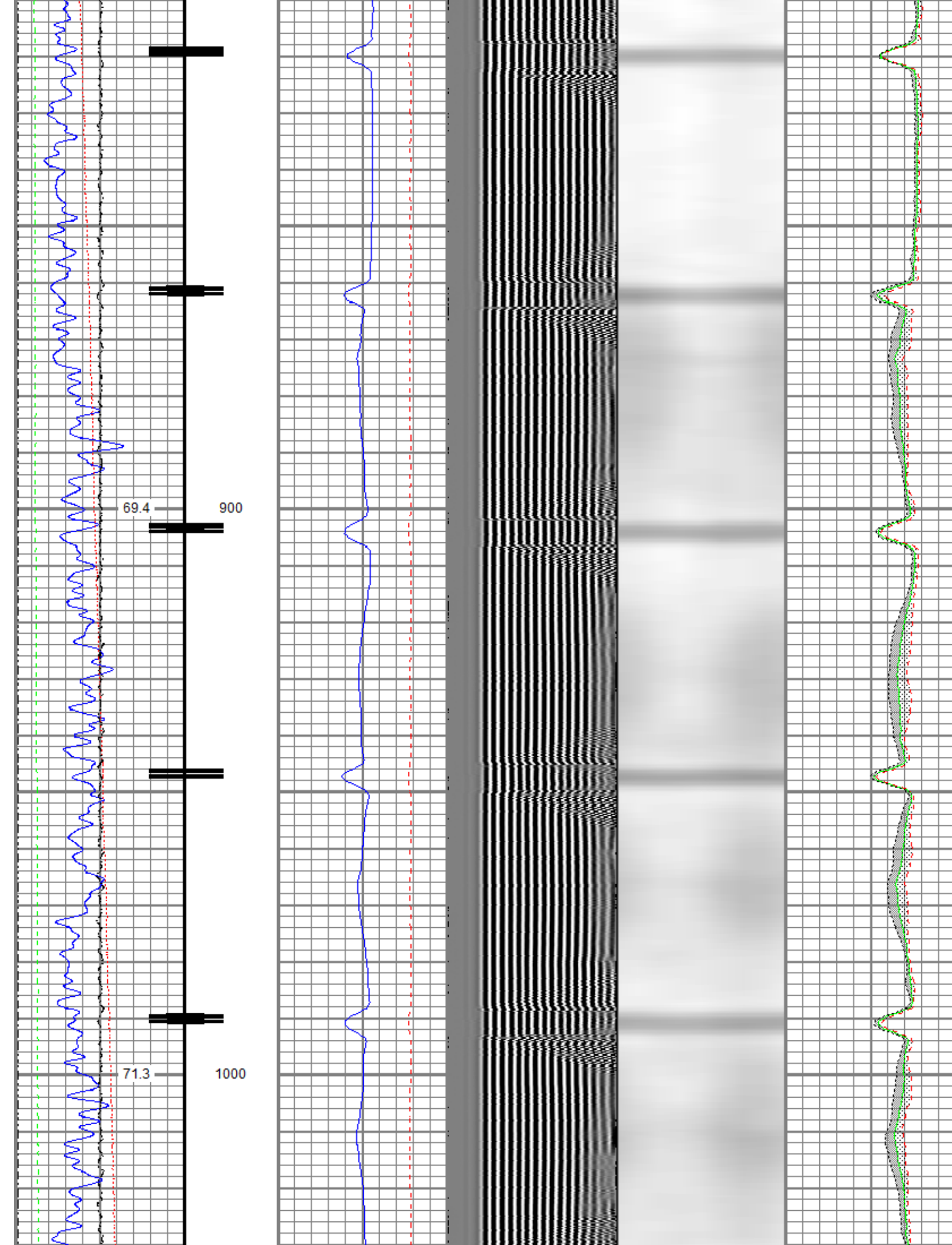
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
(ft/min) 150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

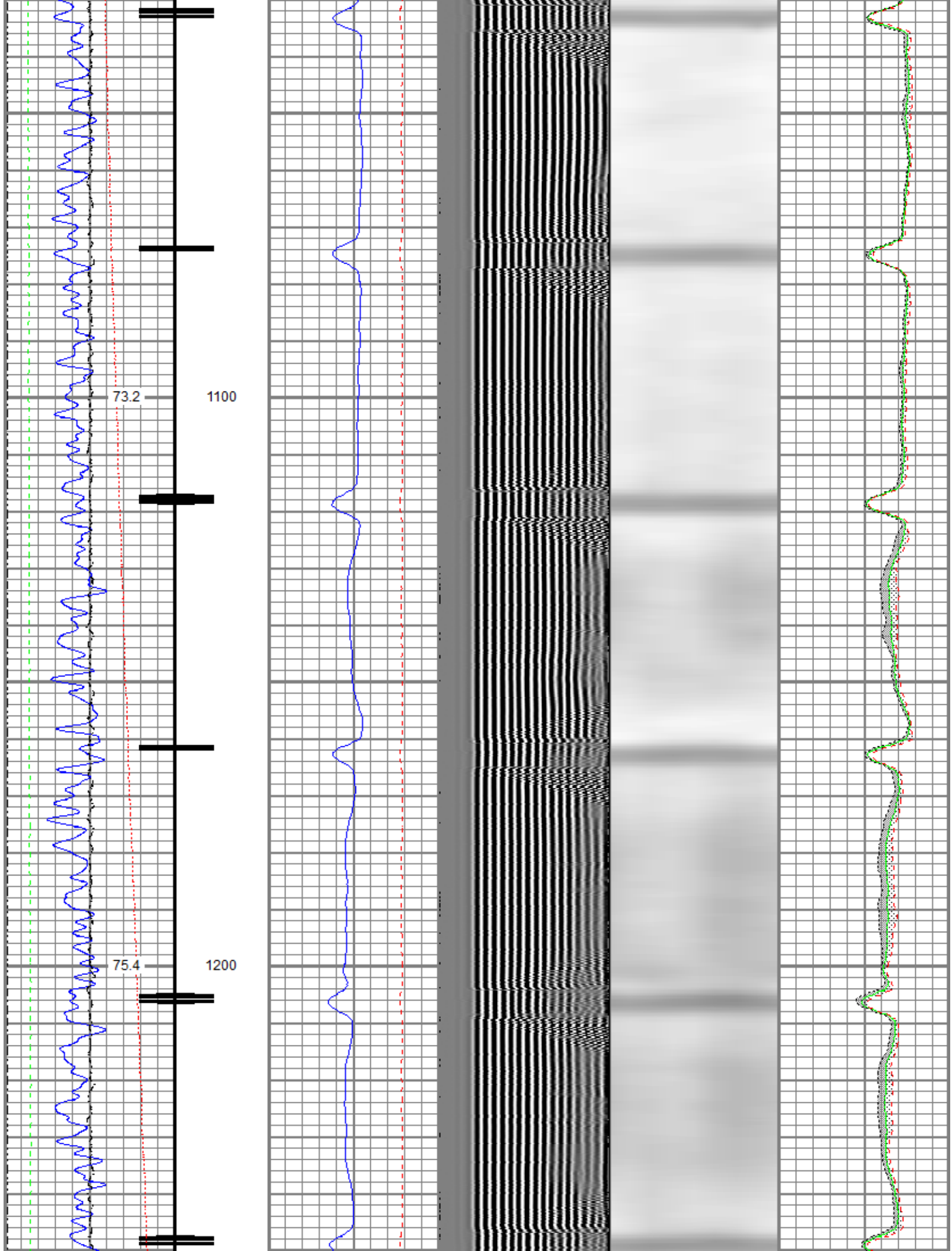


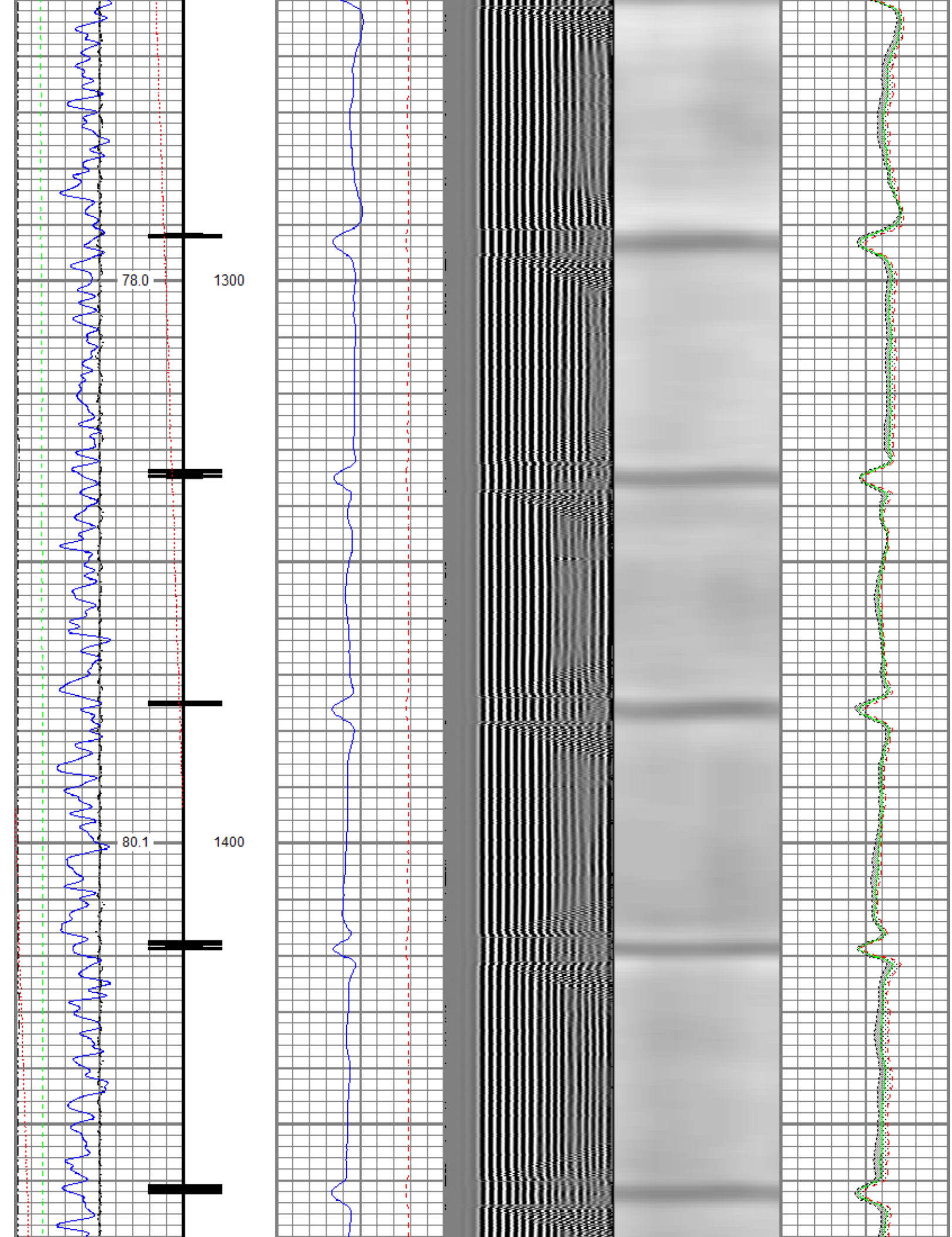


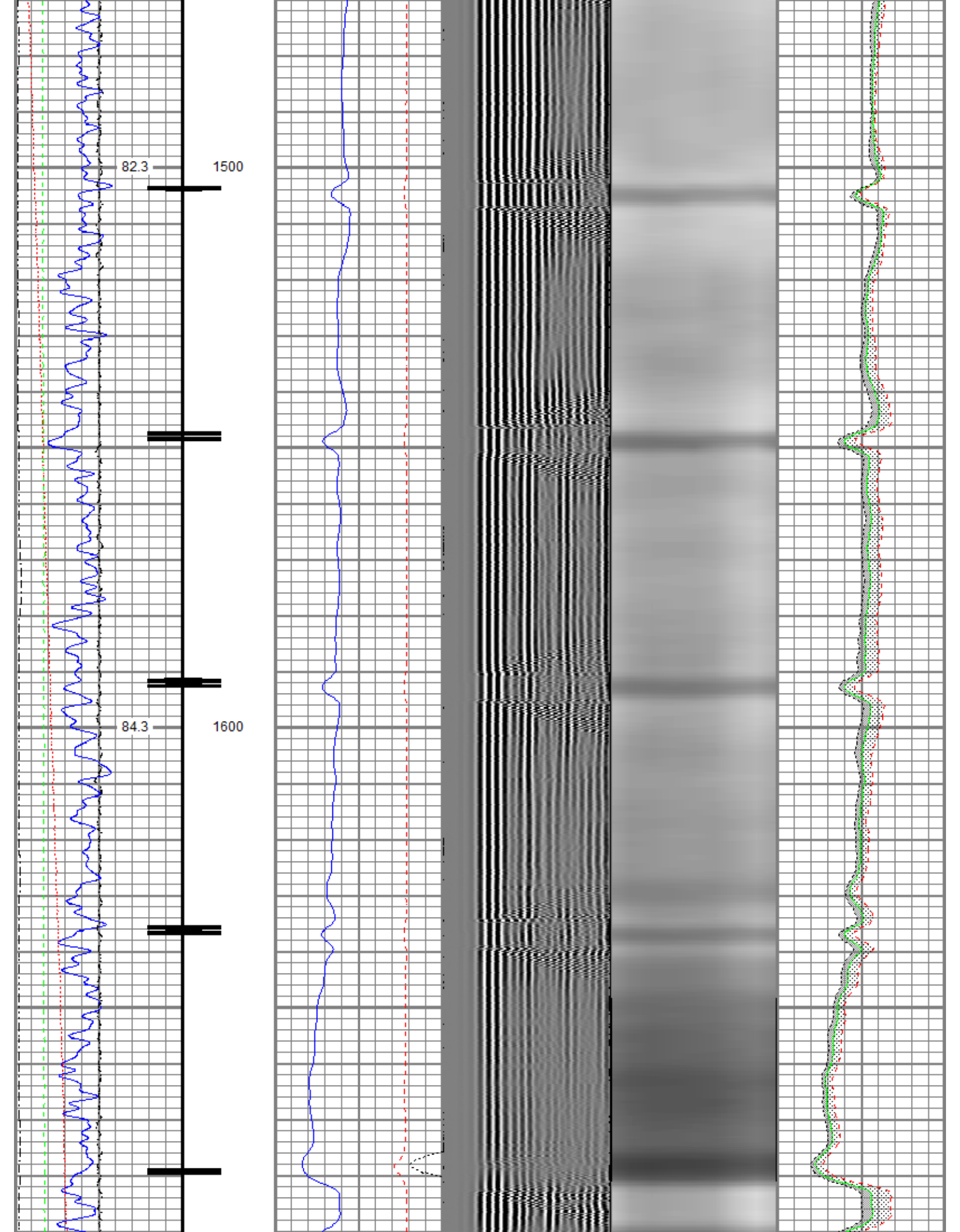


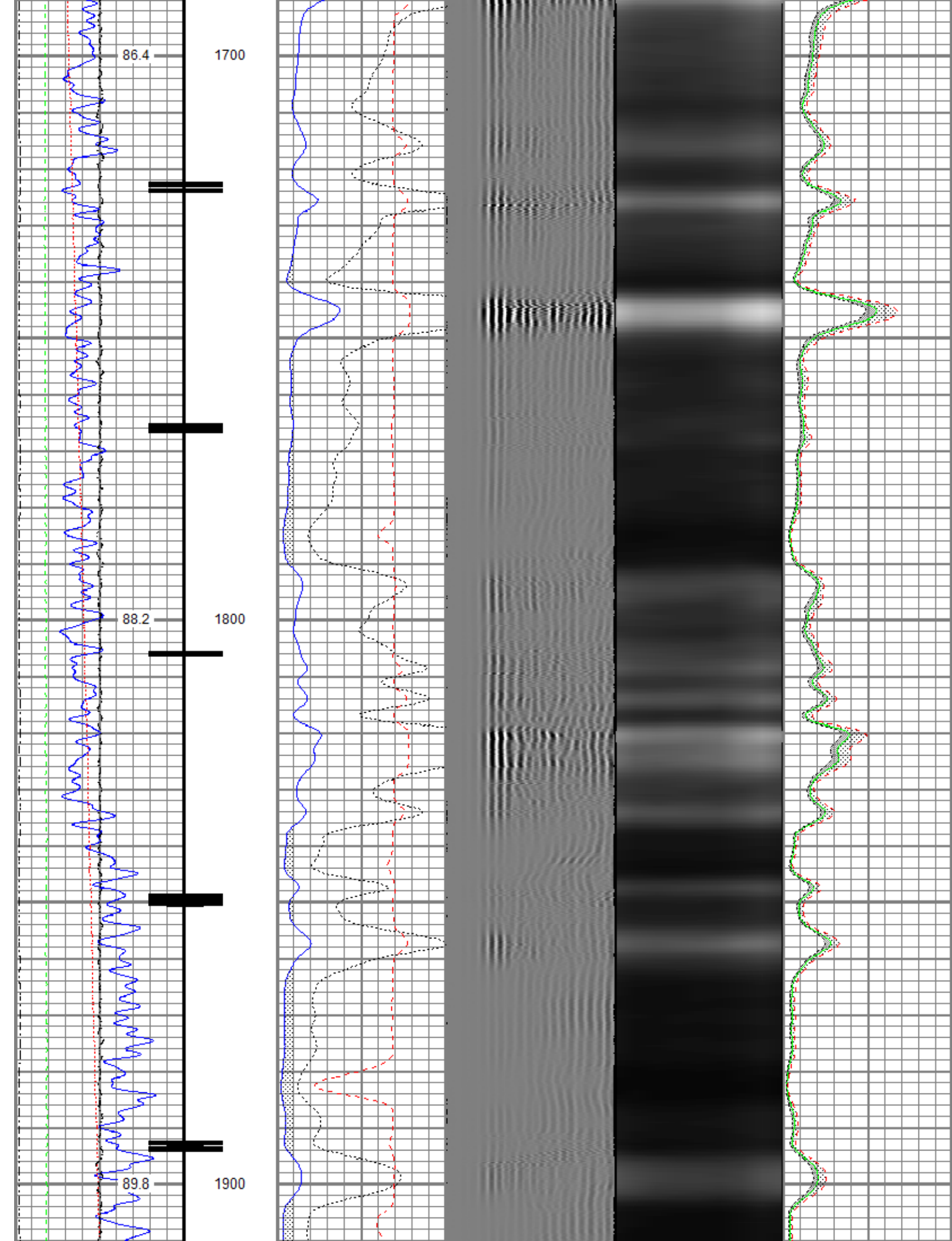


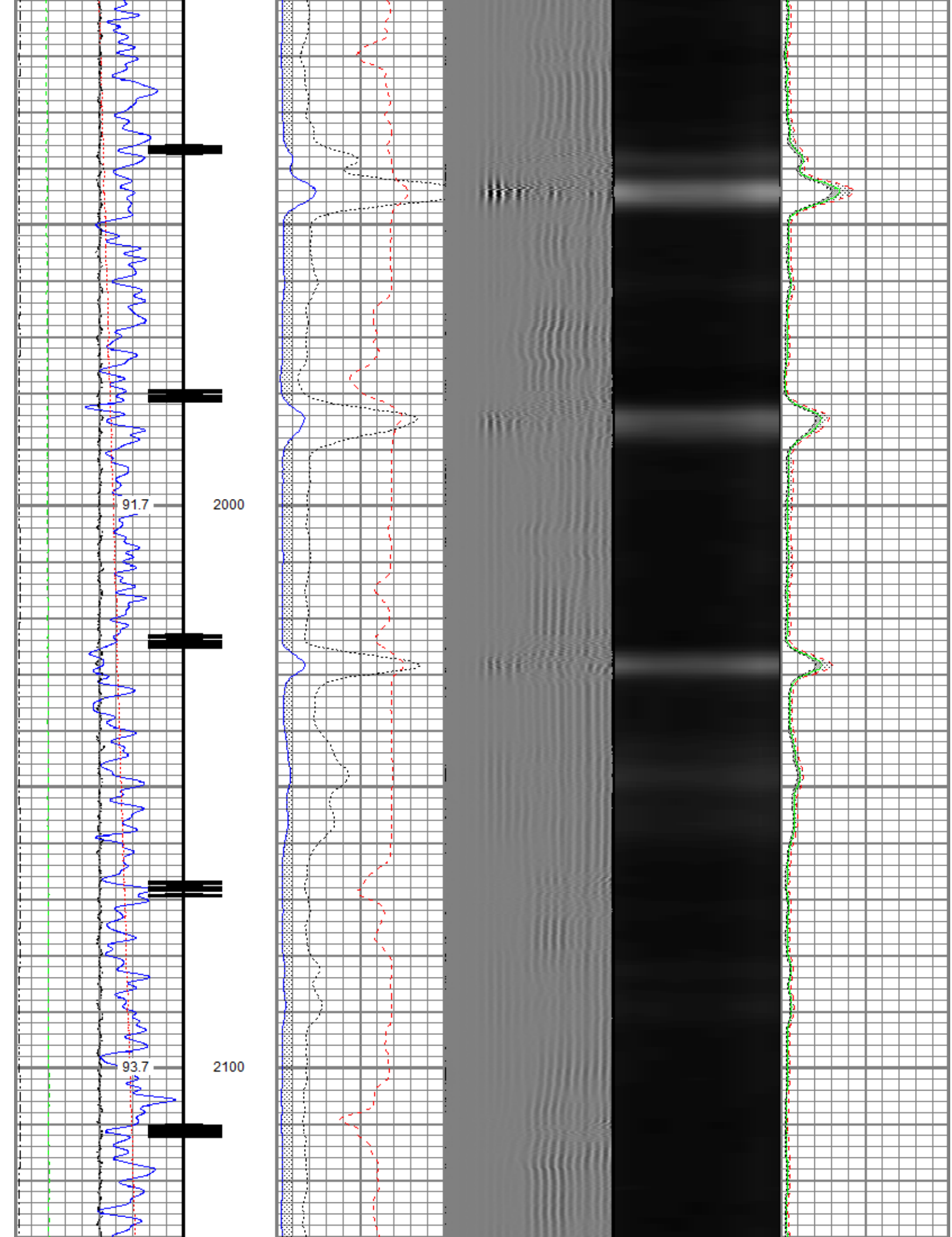


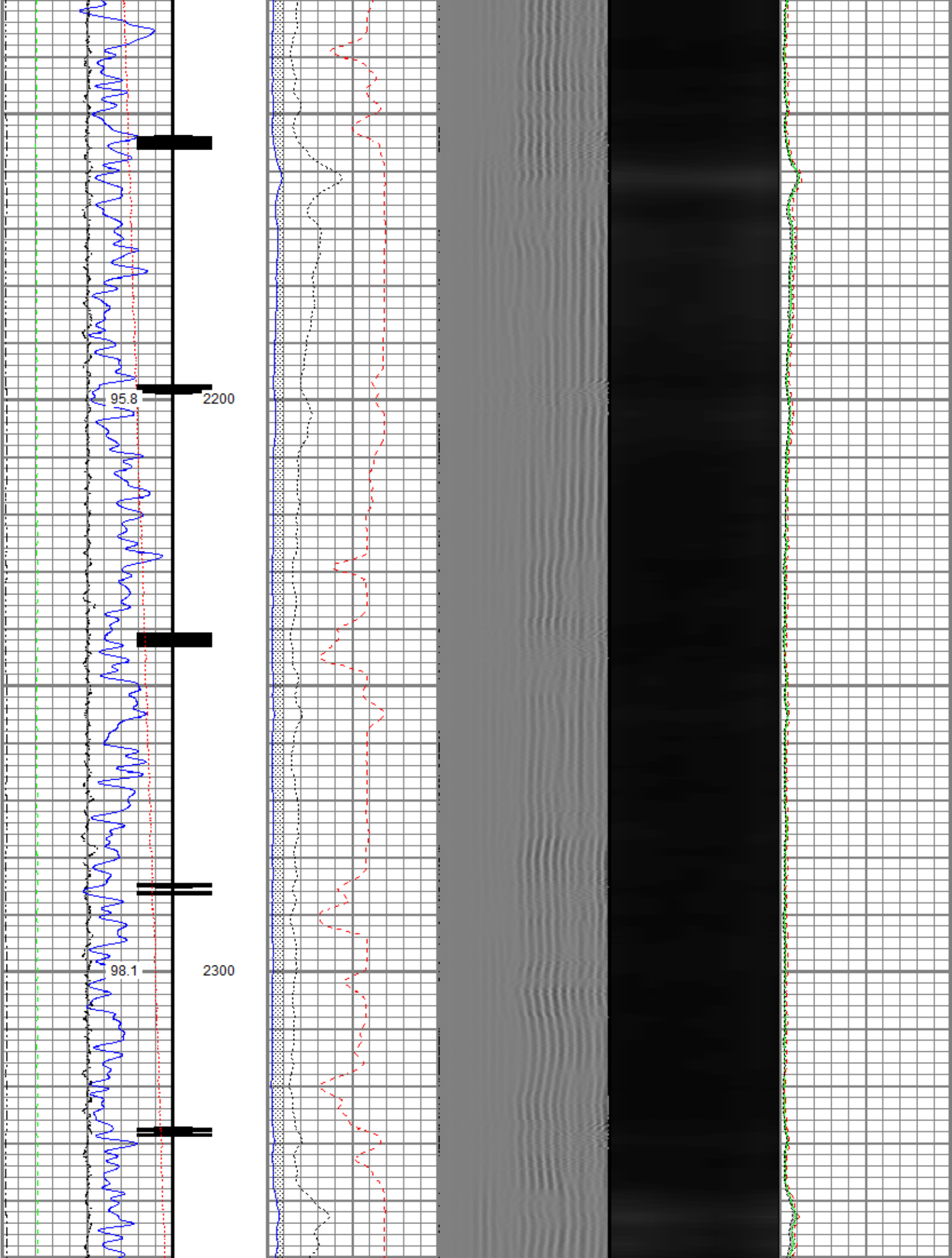


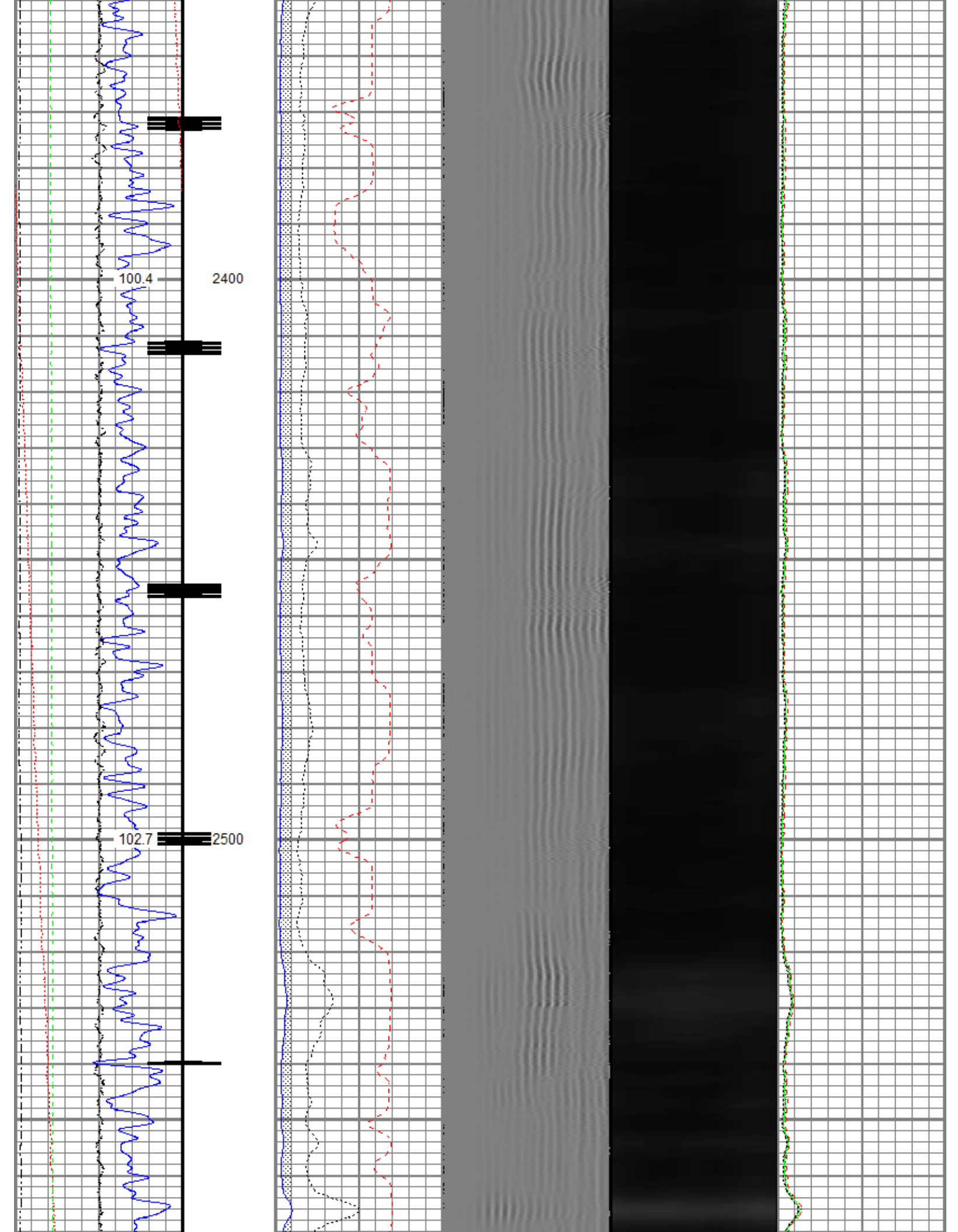


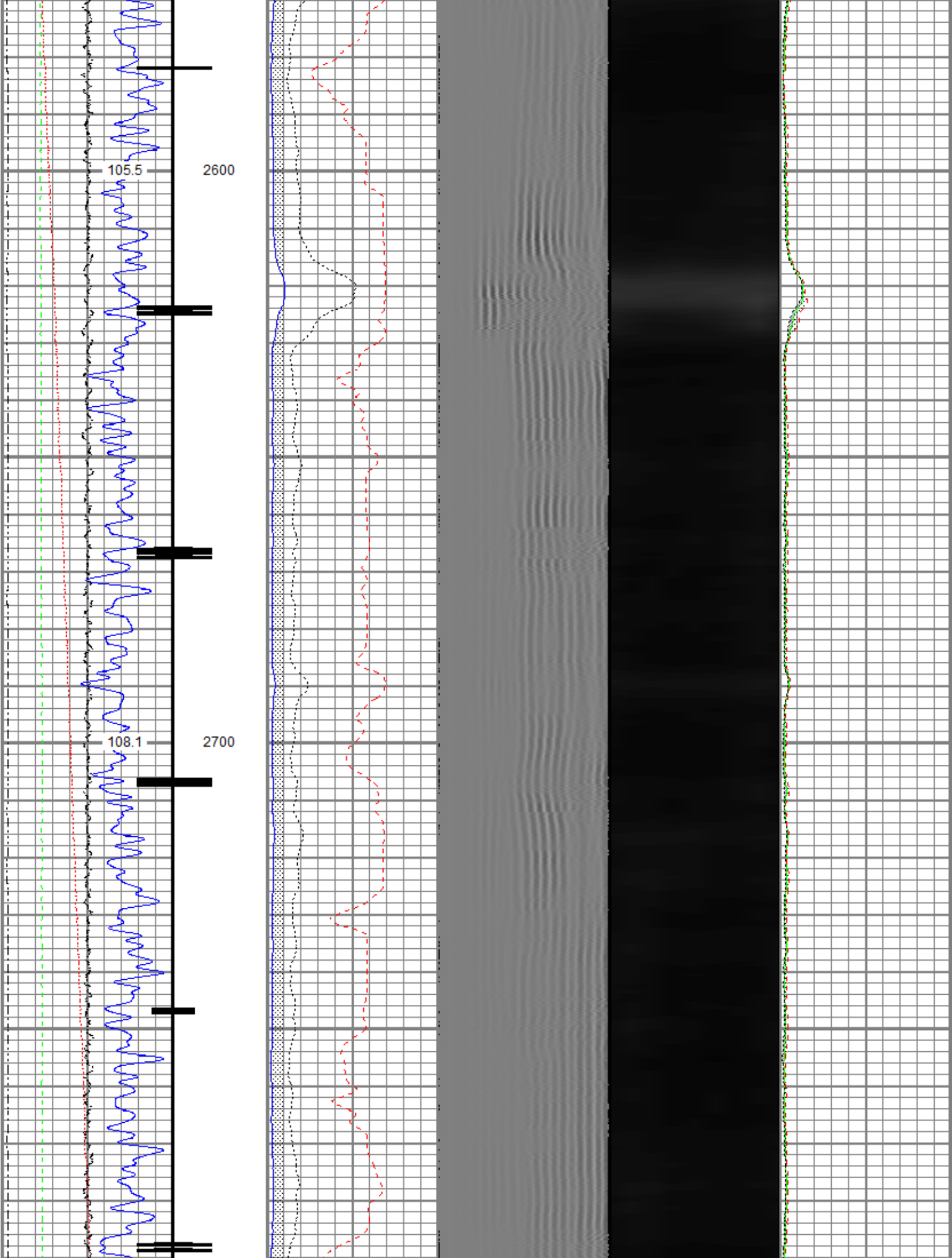


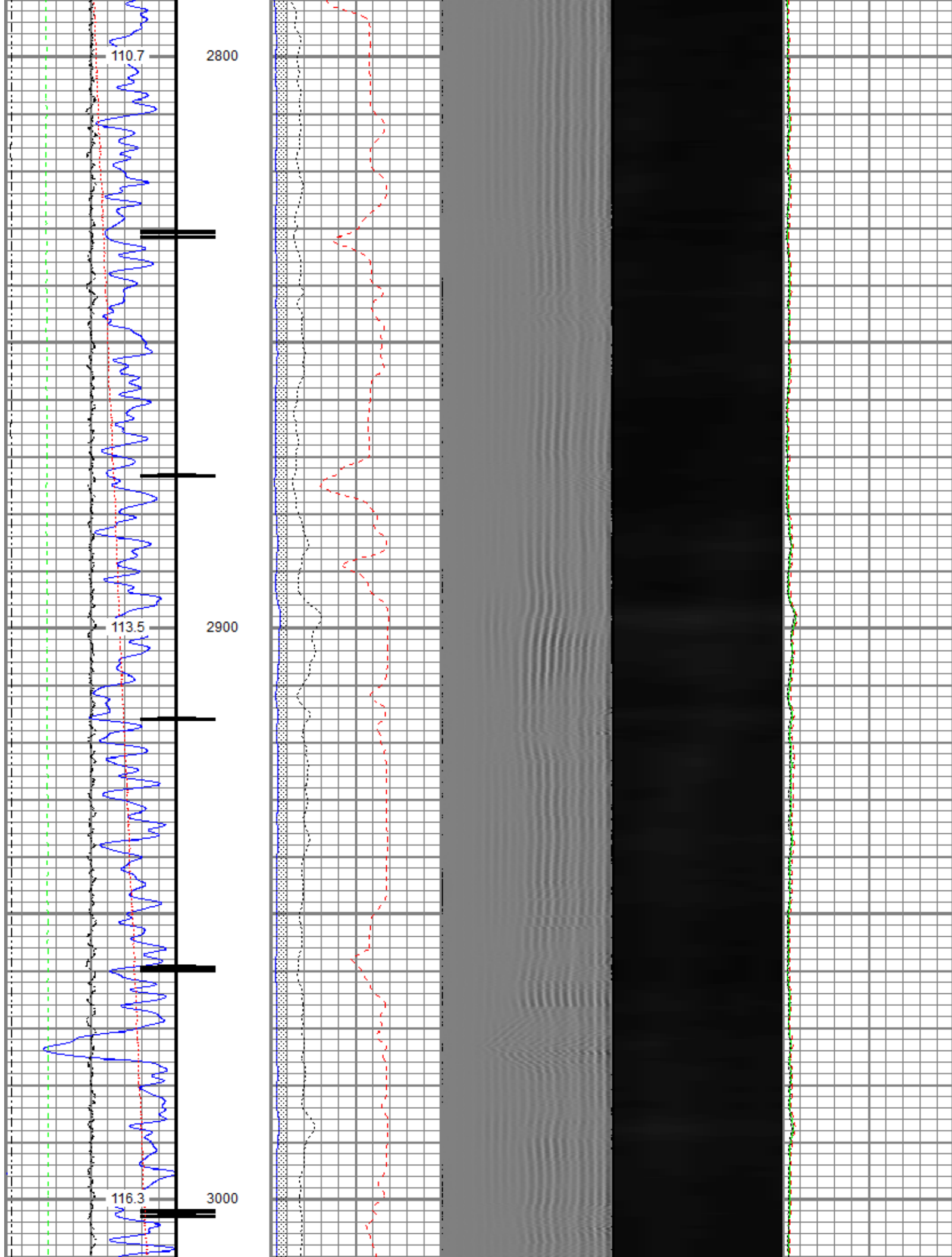


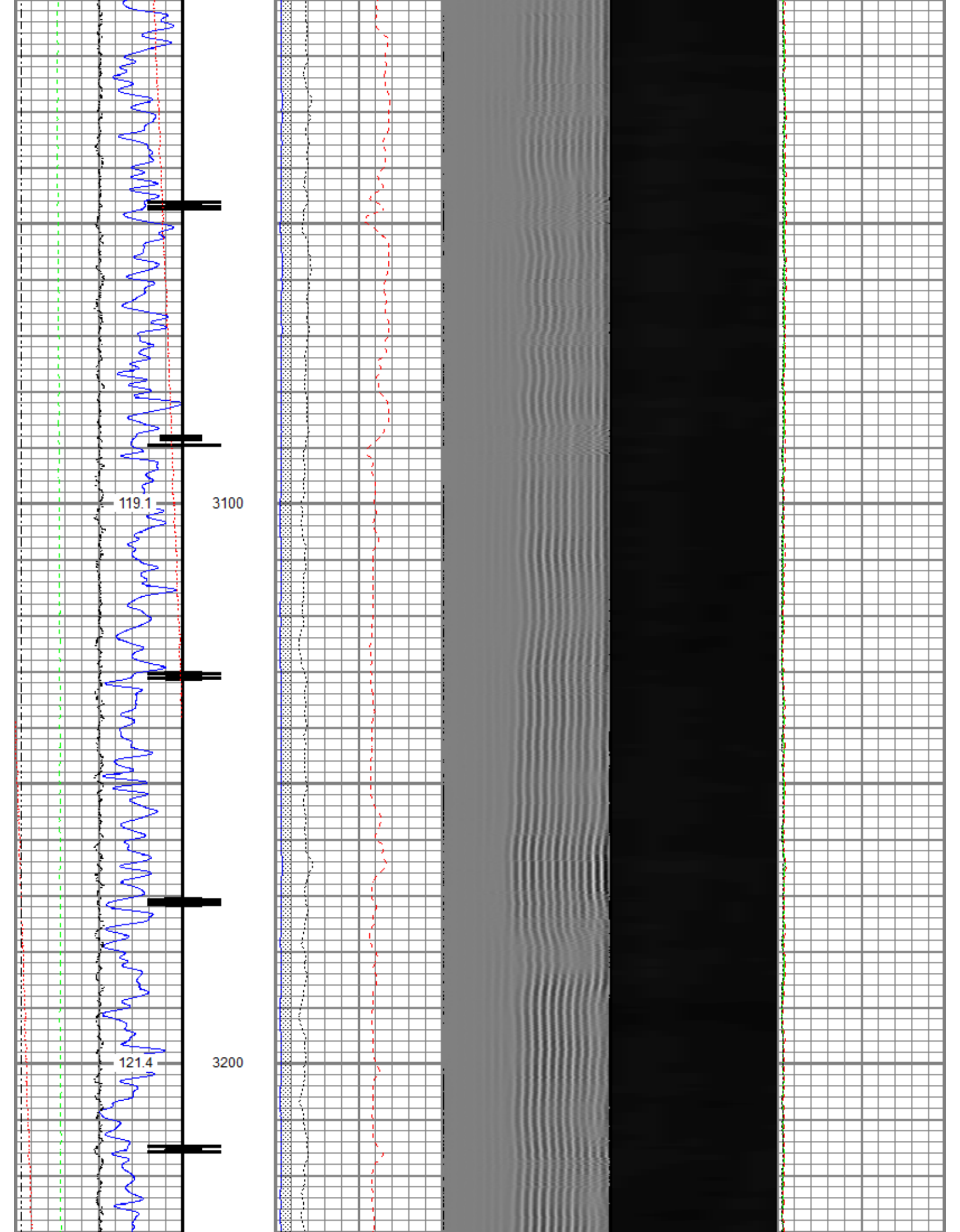


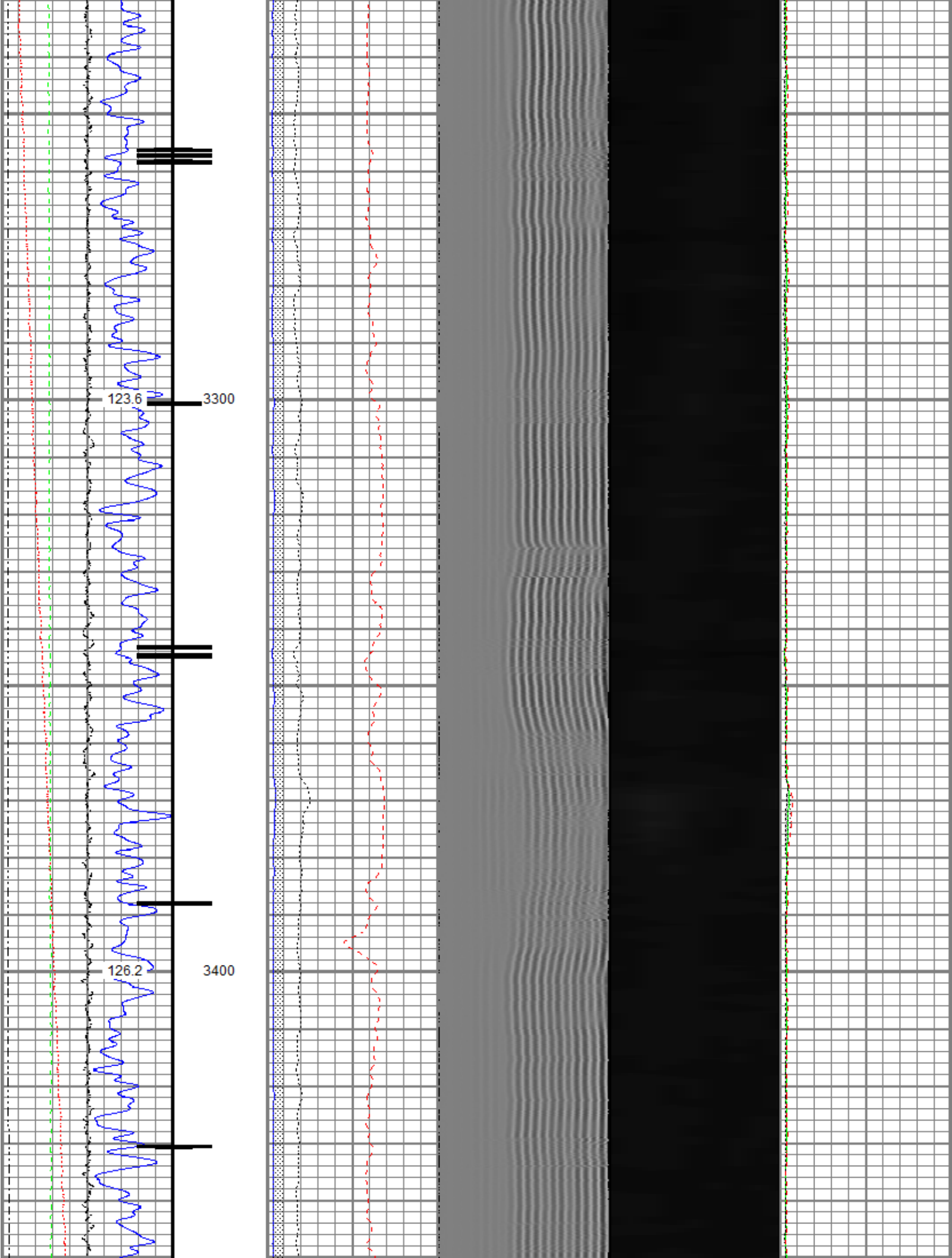


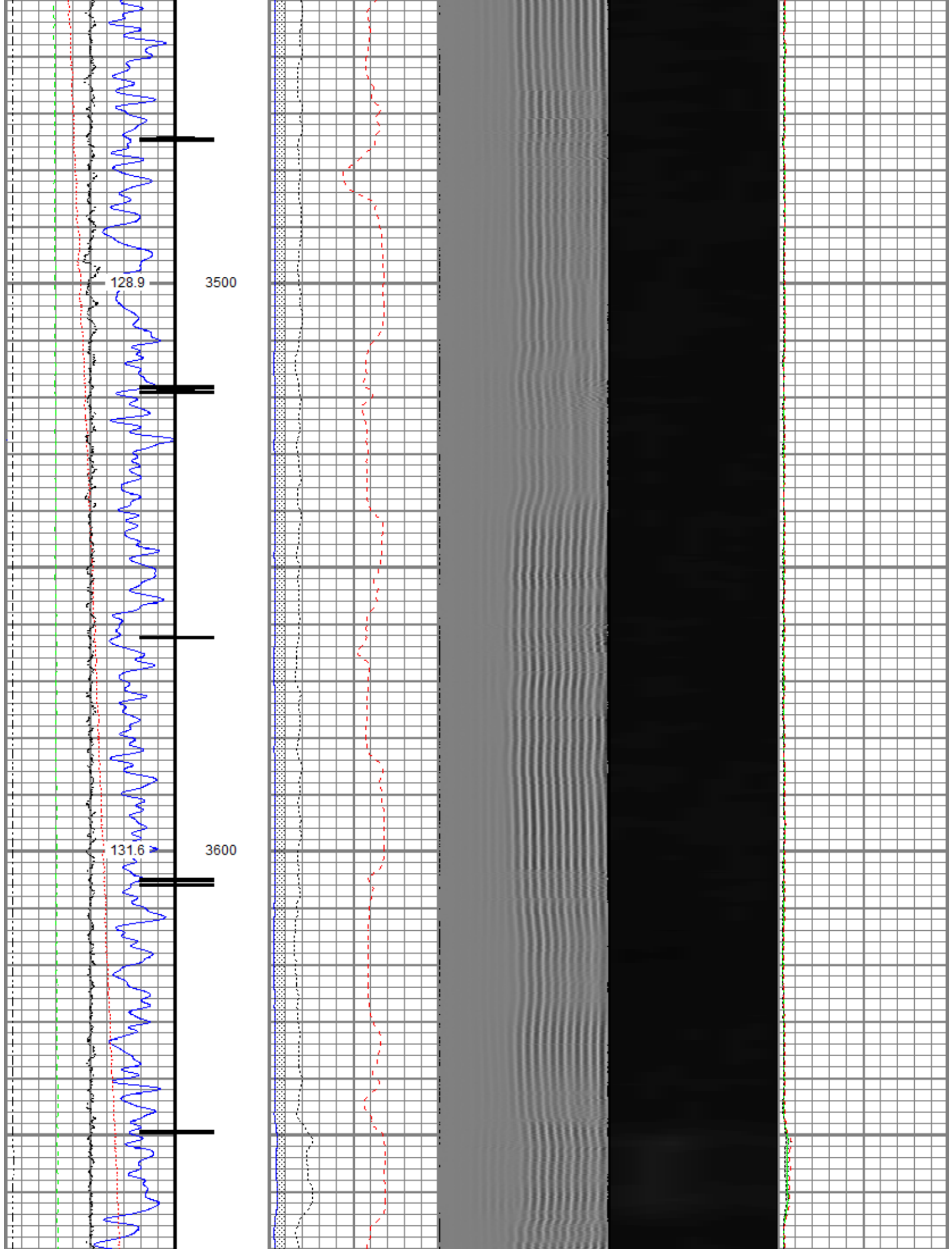


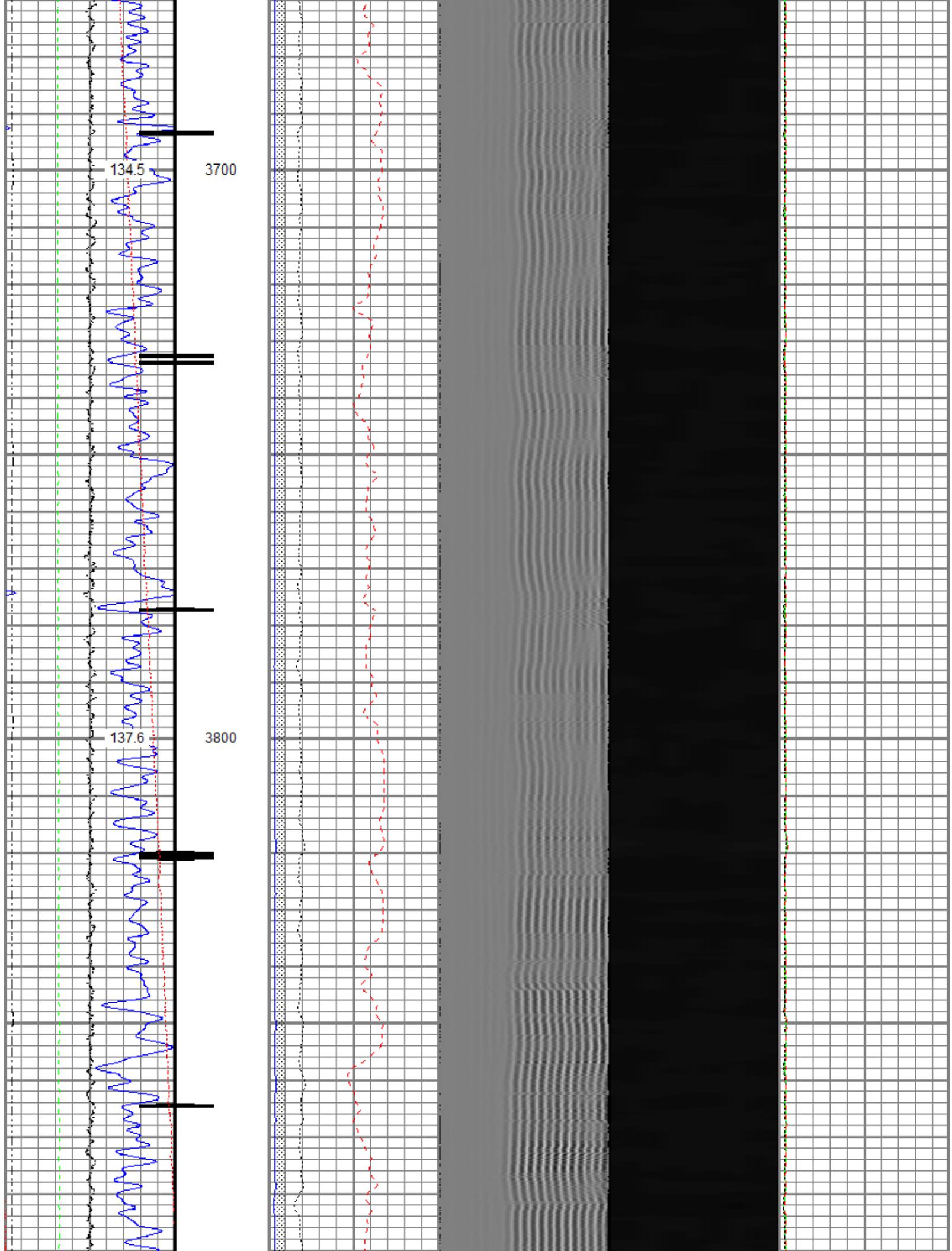


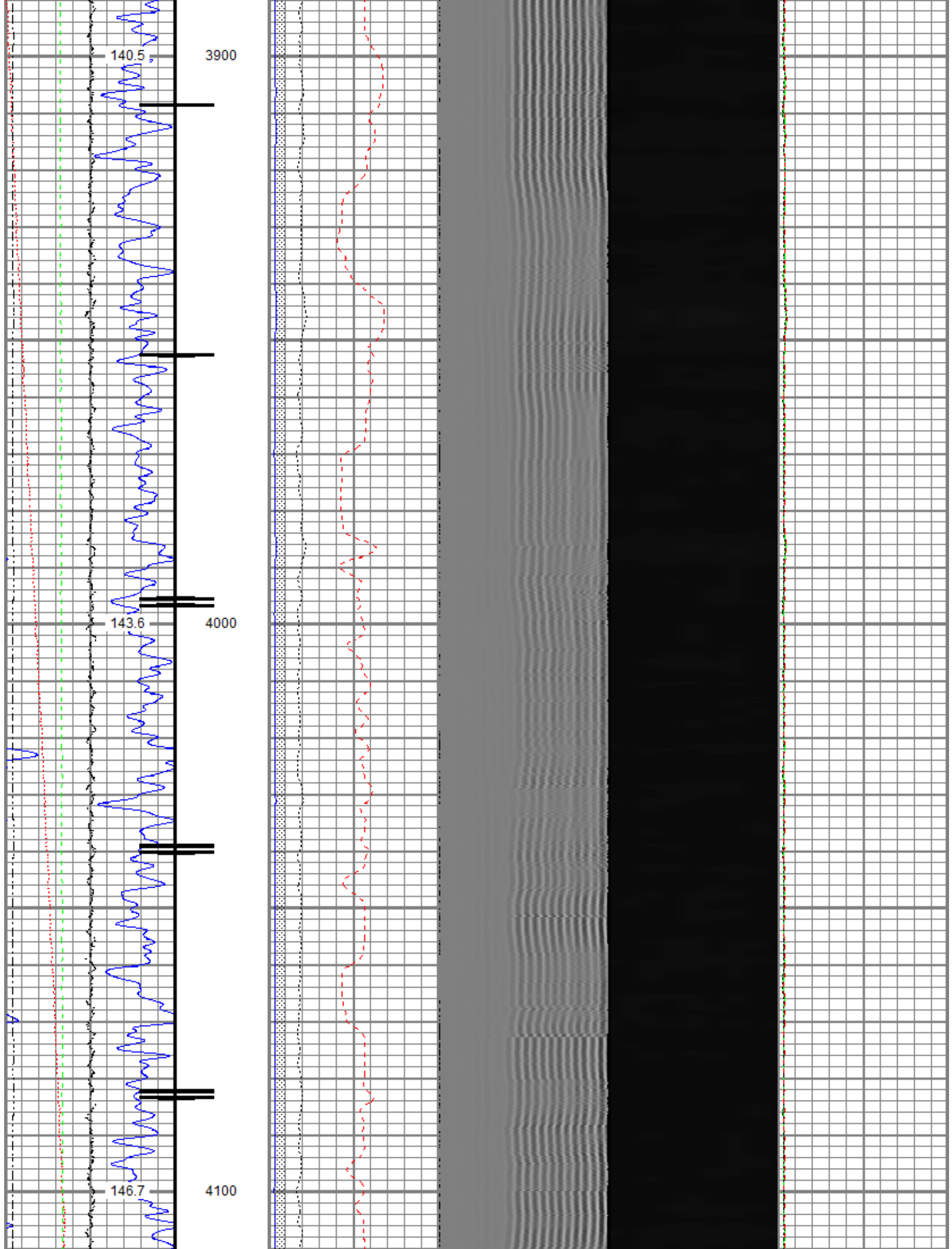


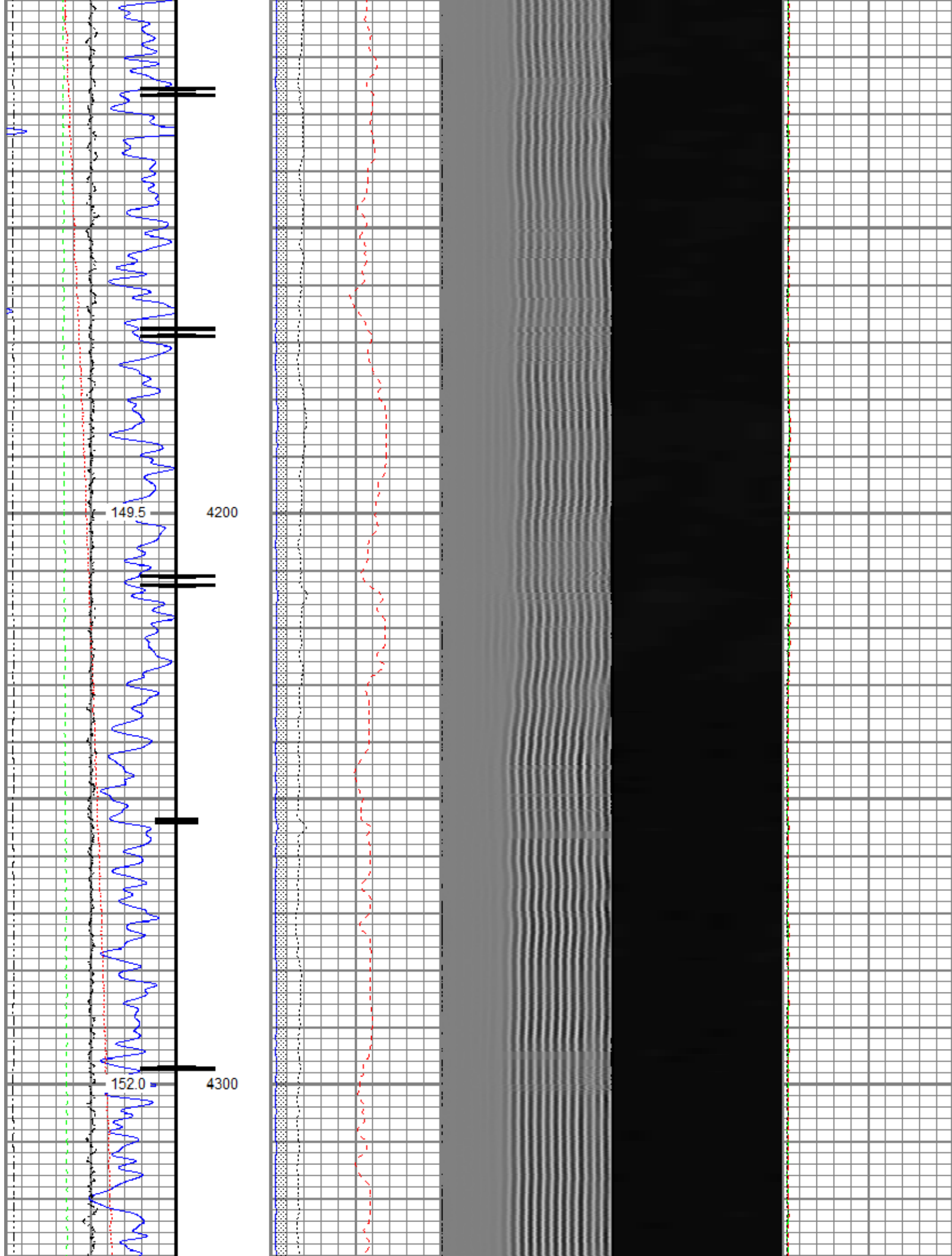


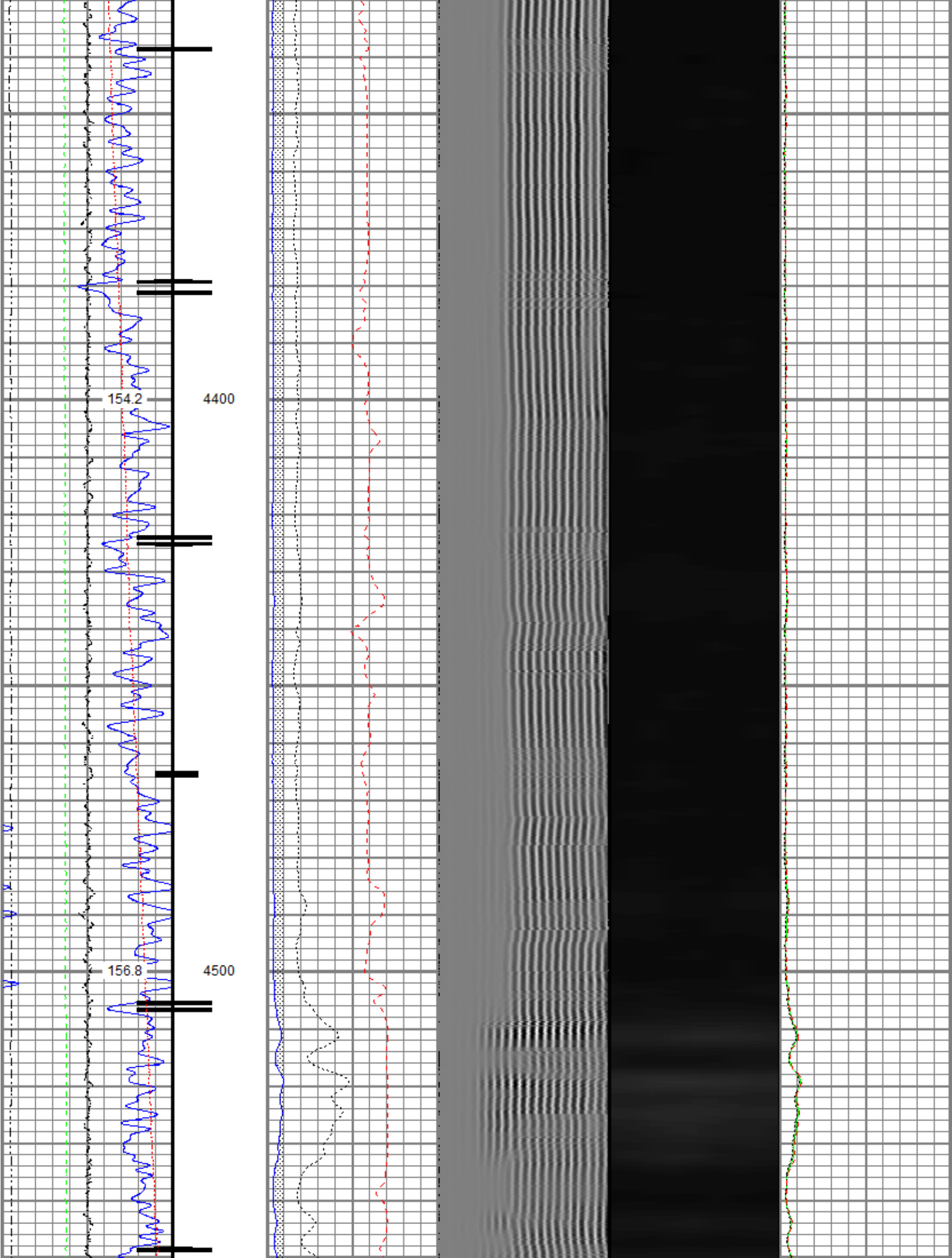


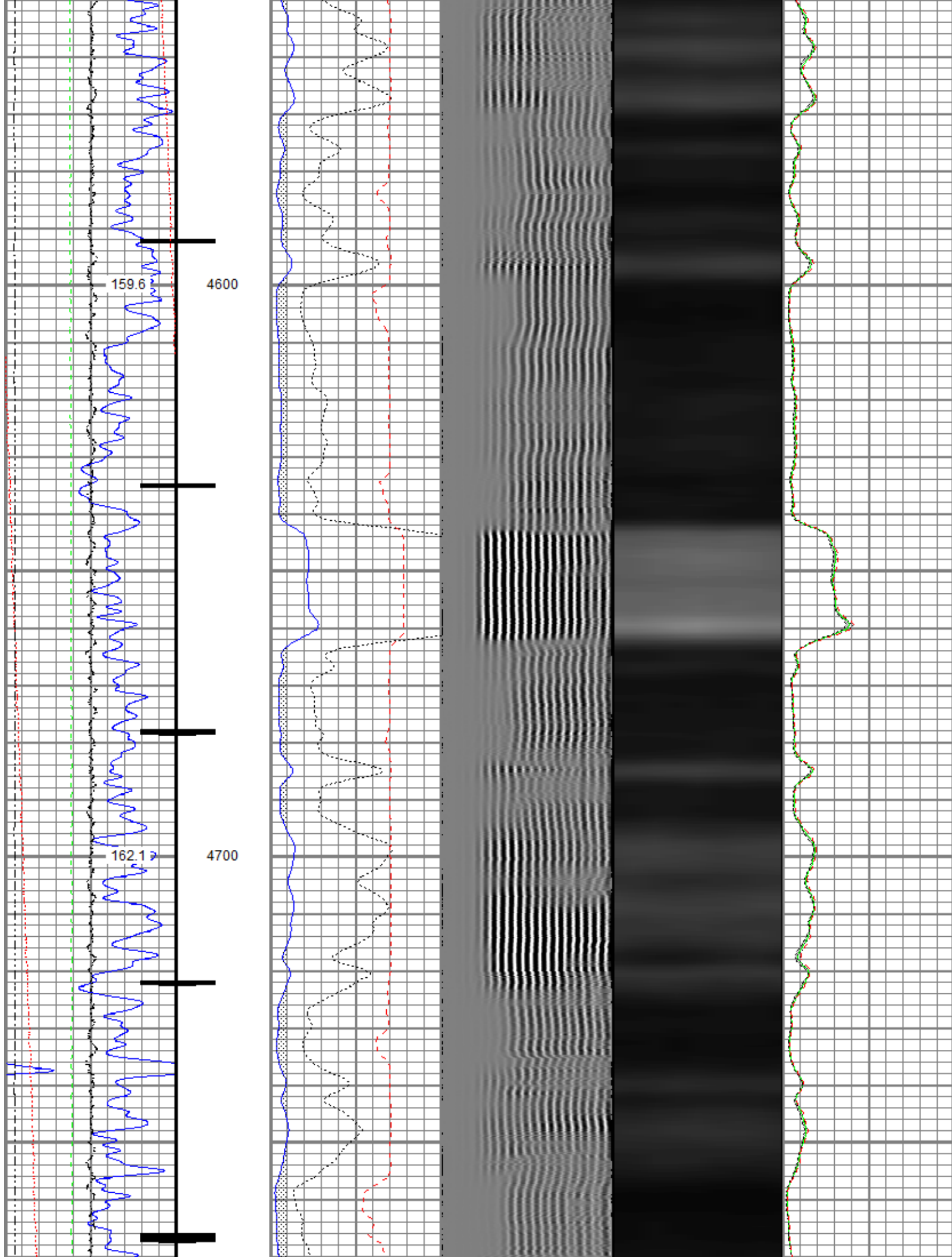


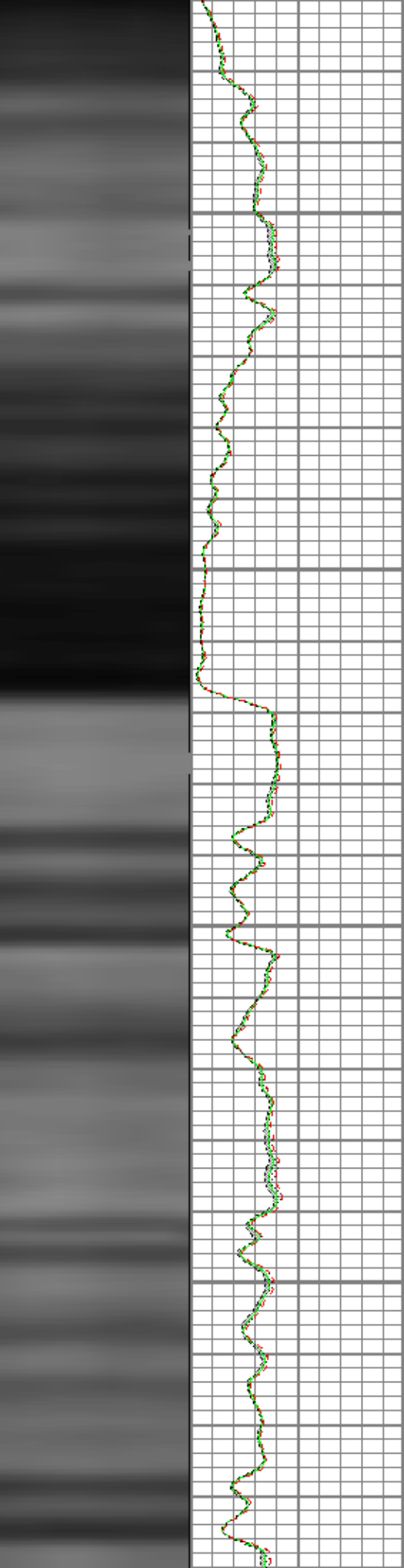
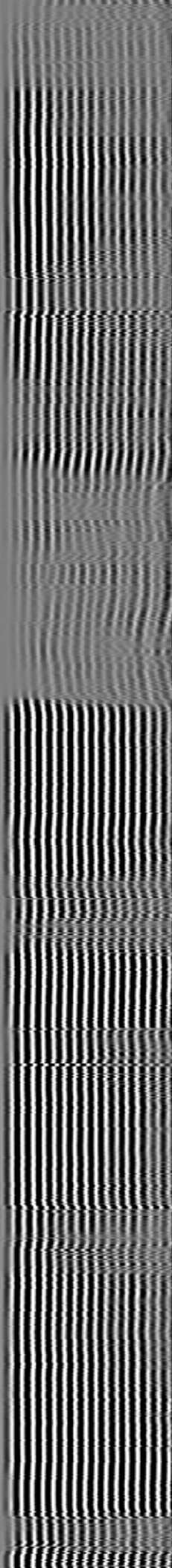
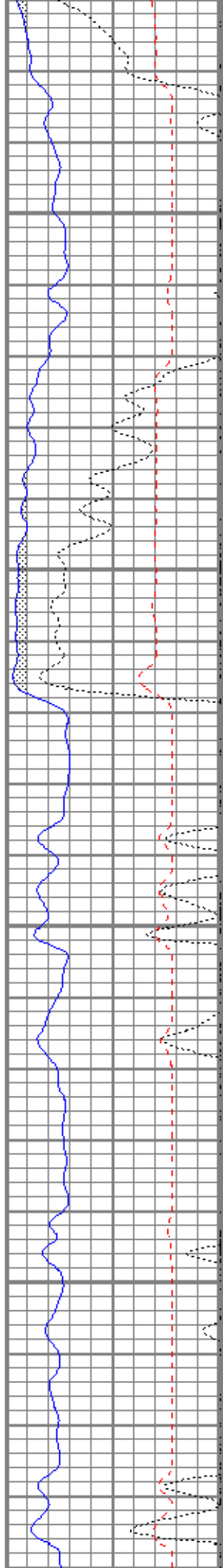
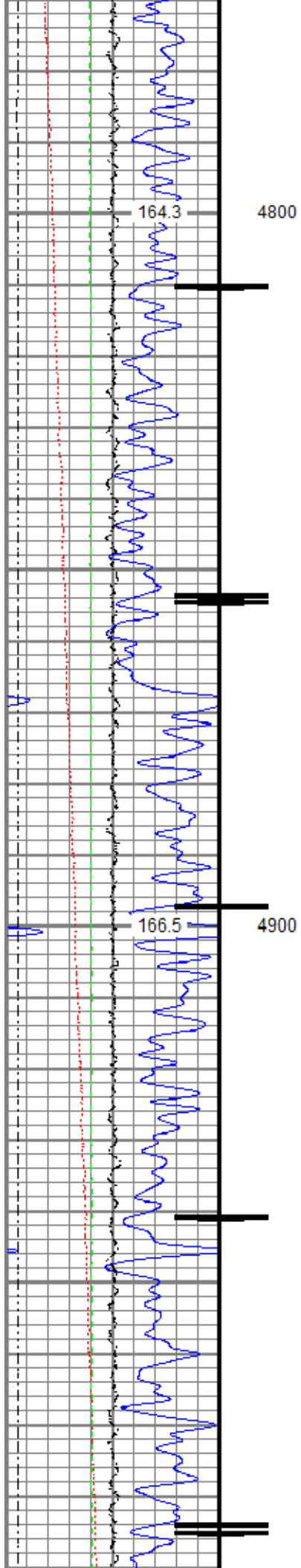


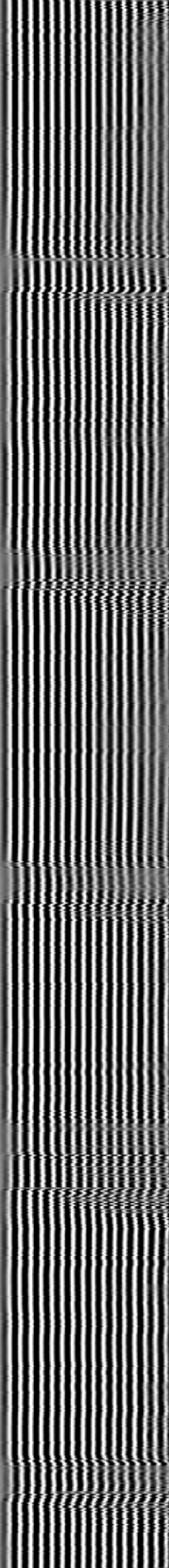
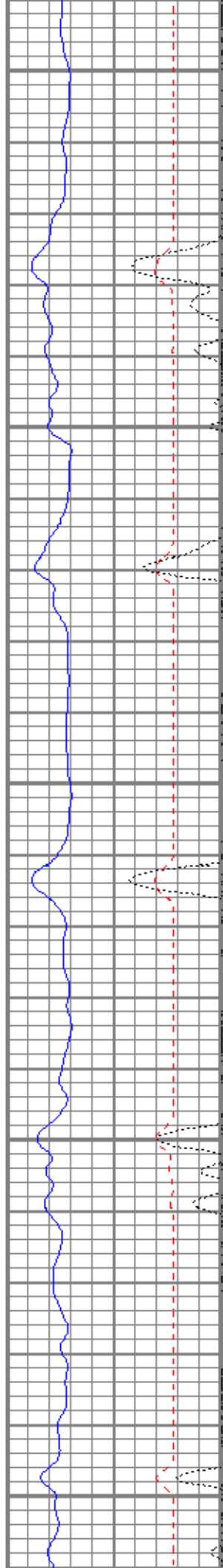
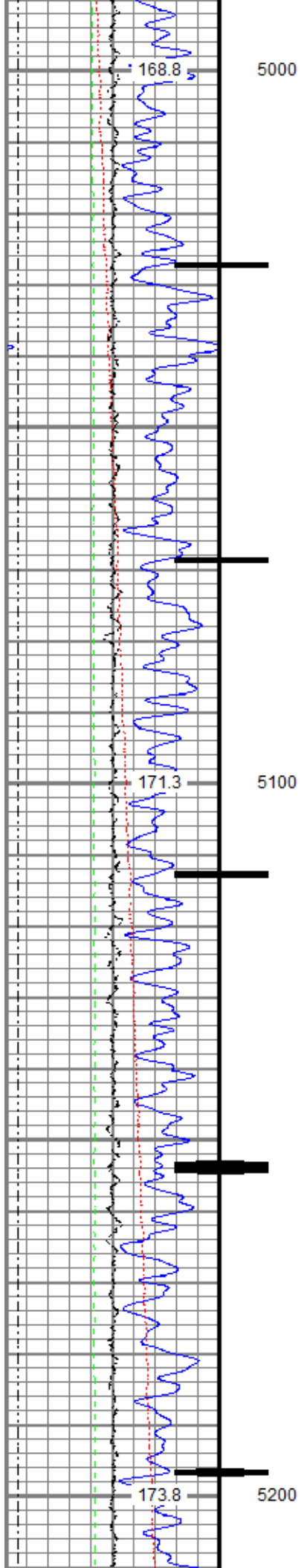


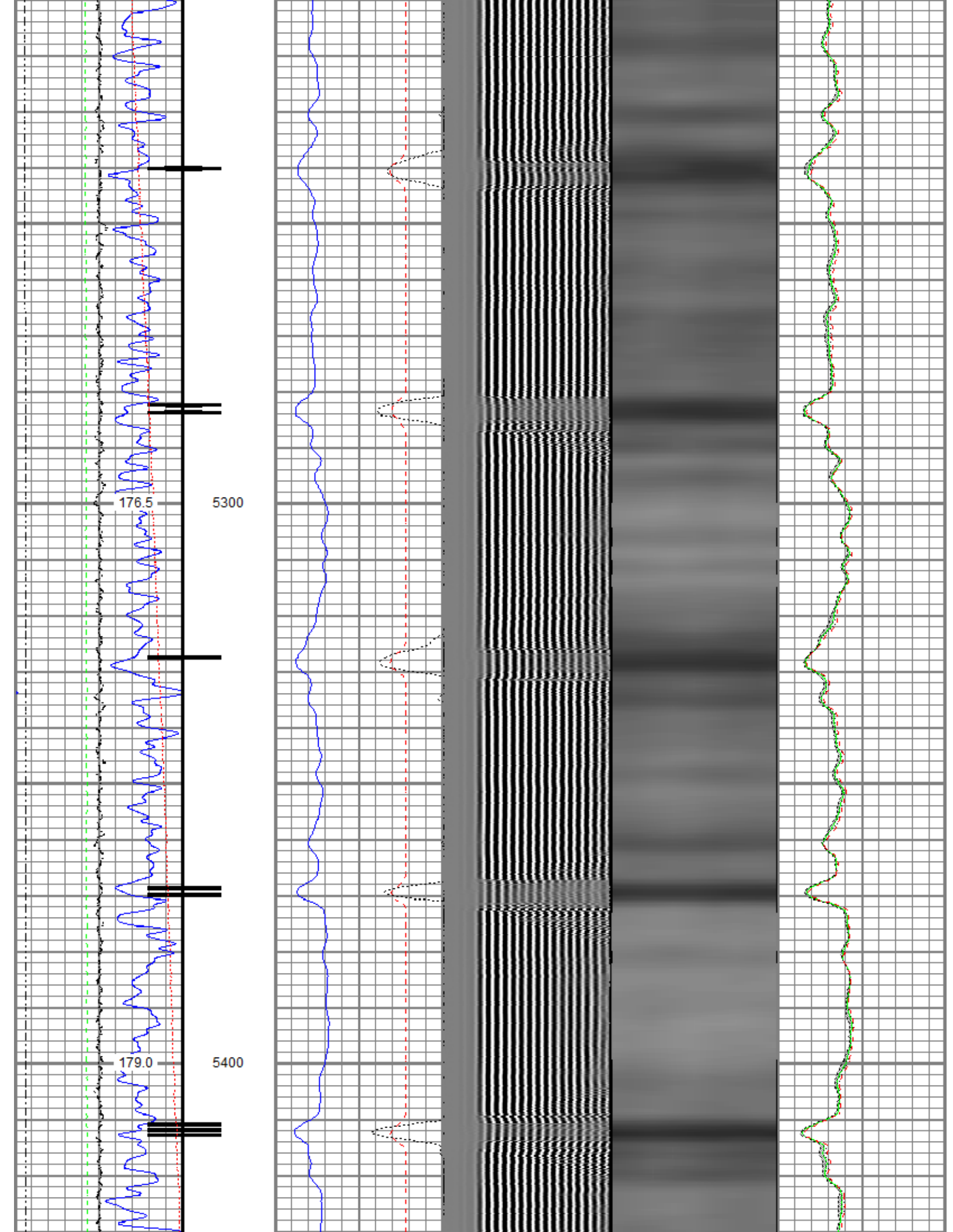


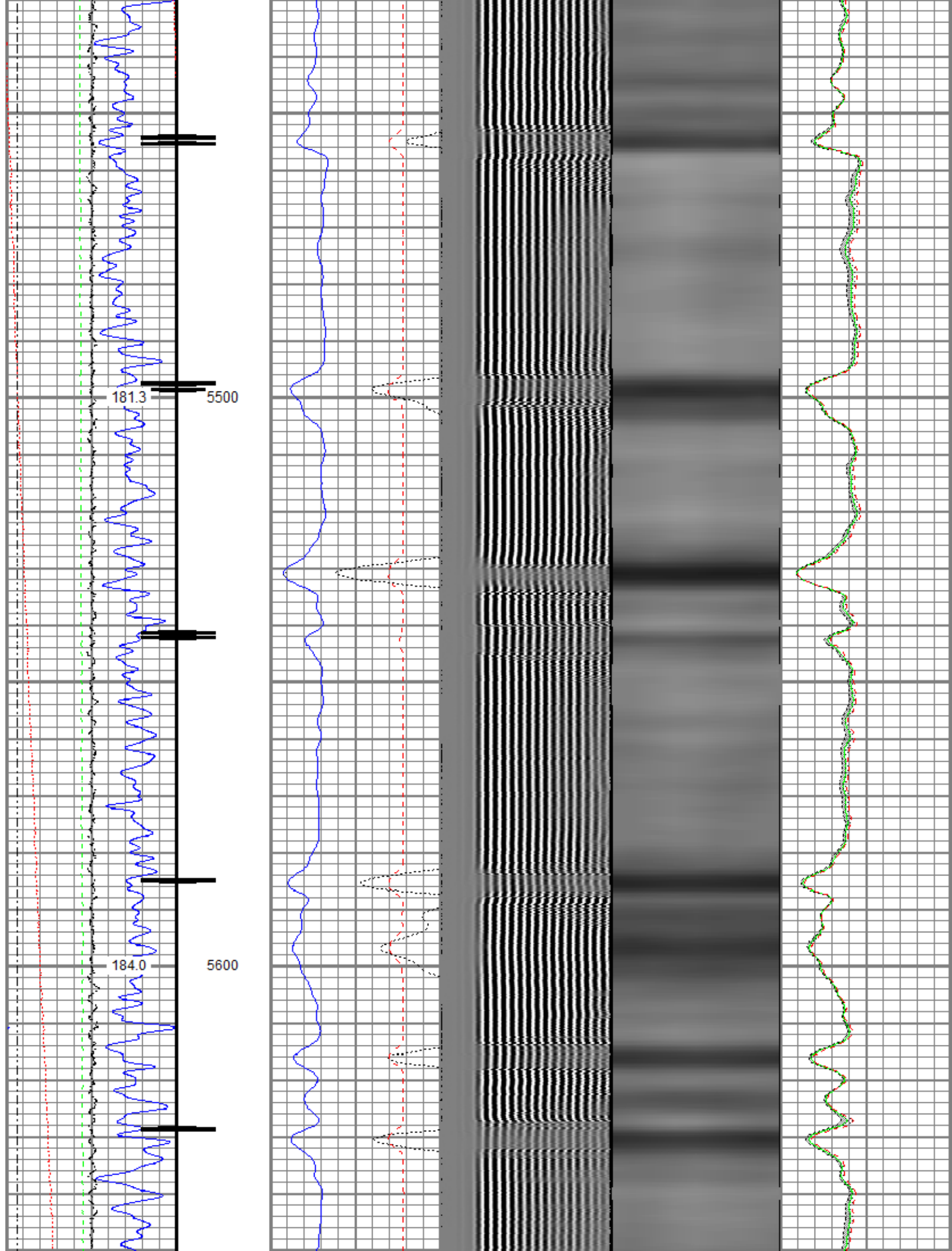


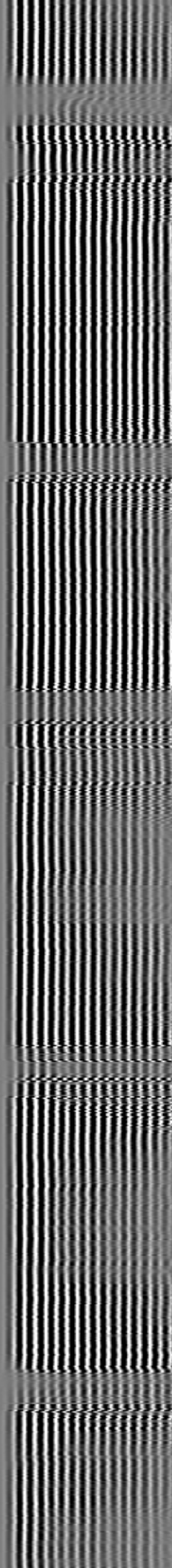
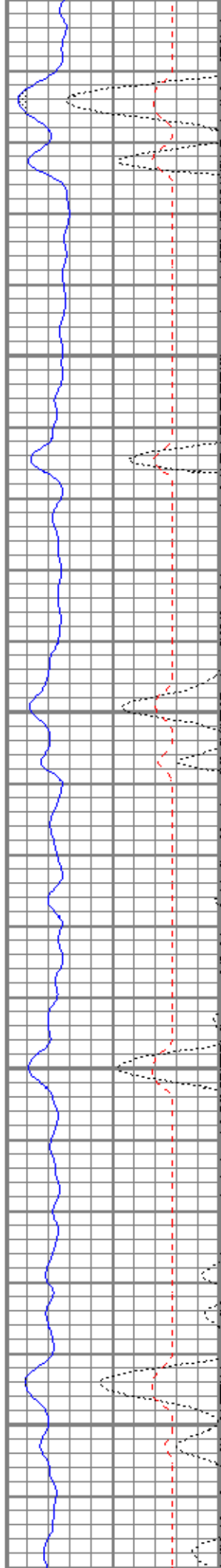
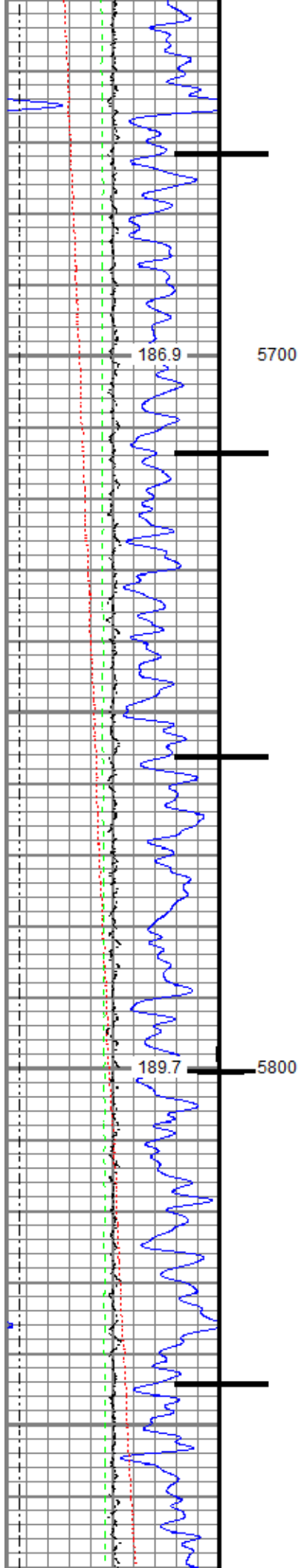


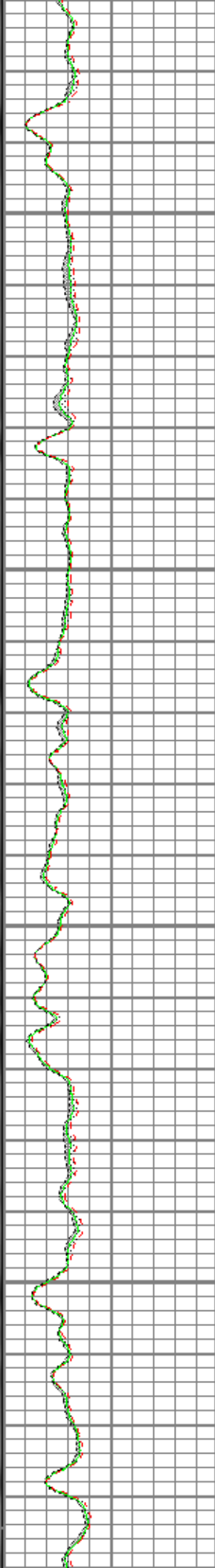
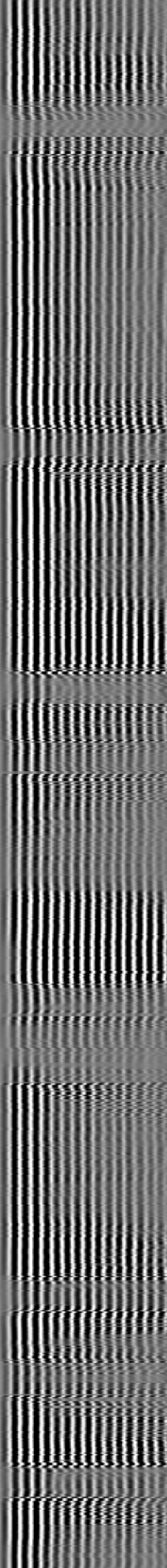
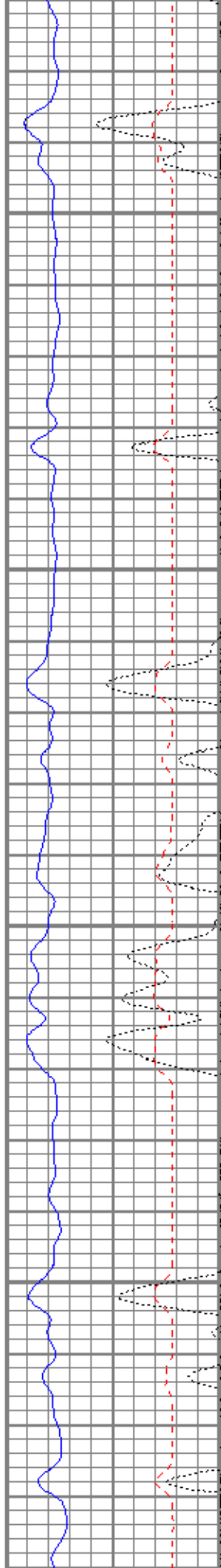
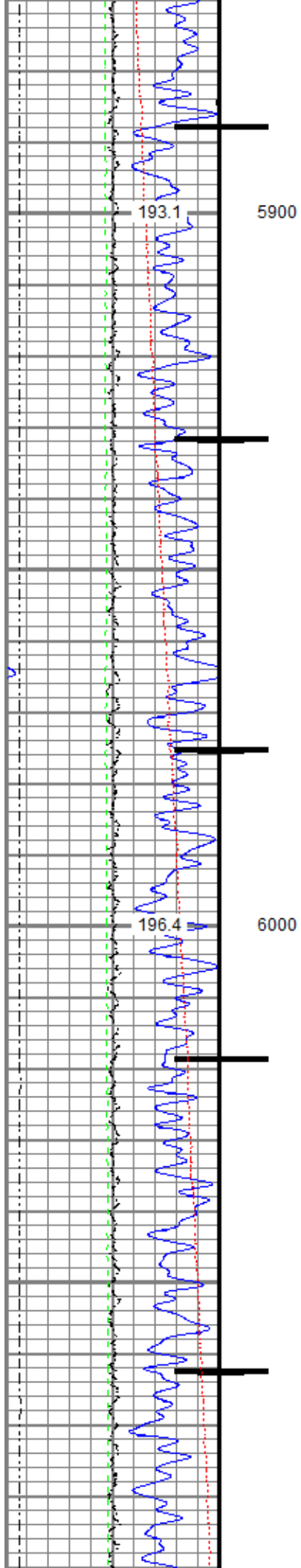


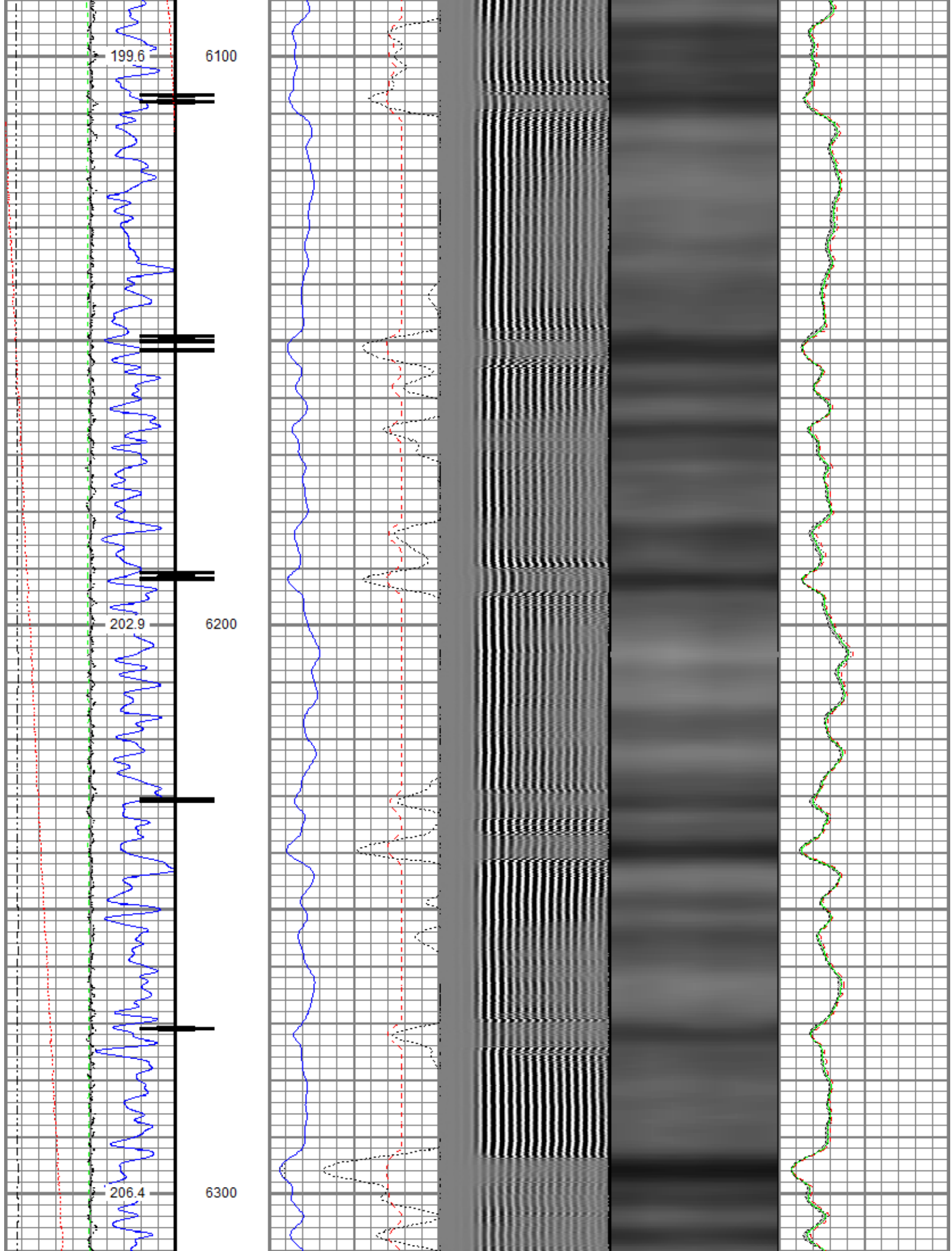


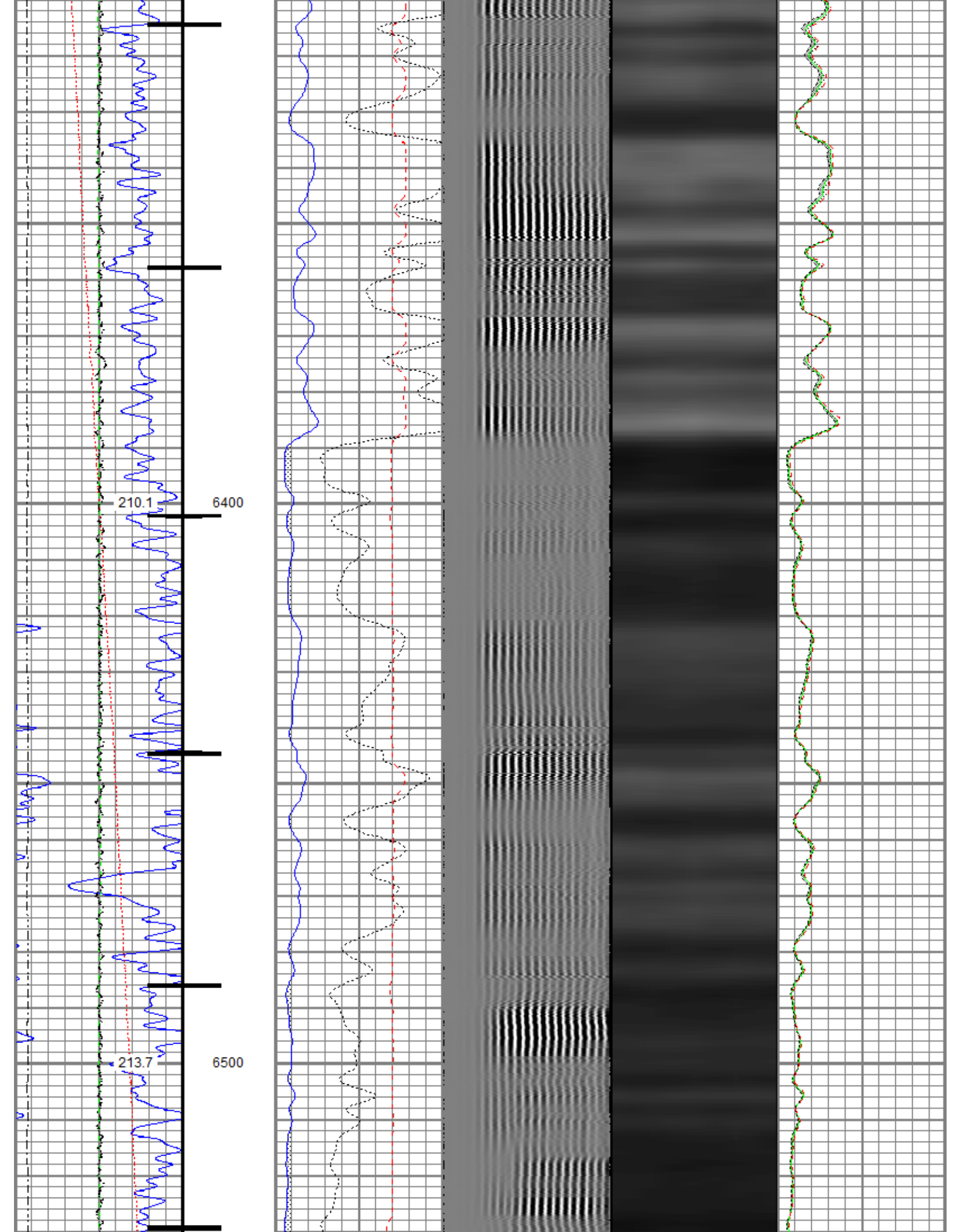


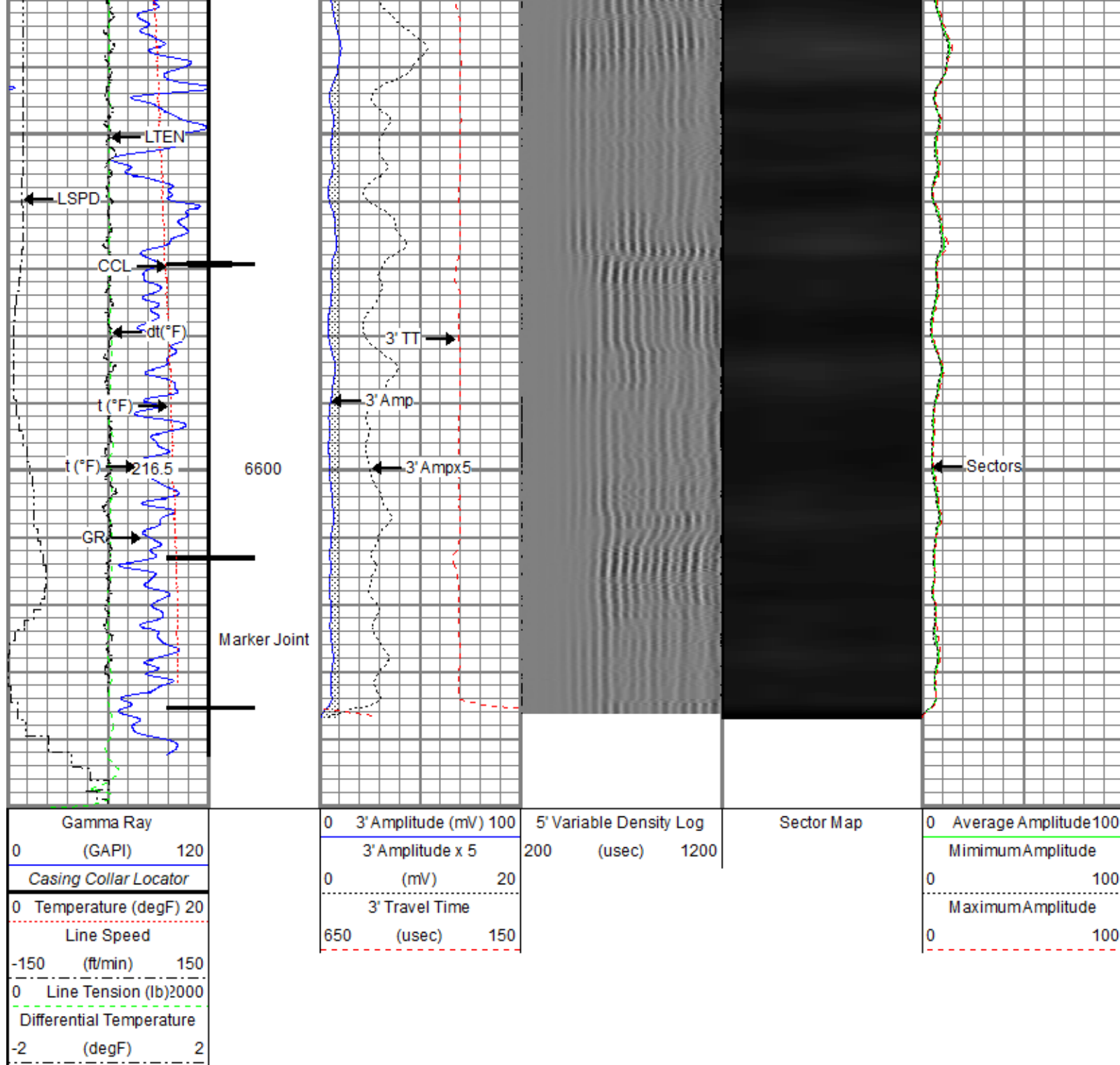








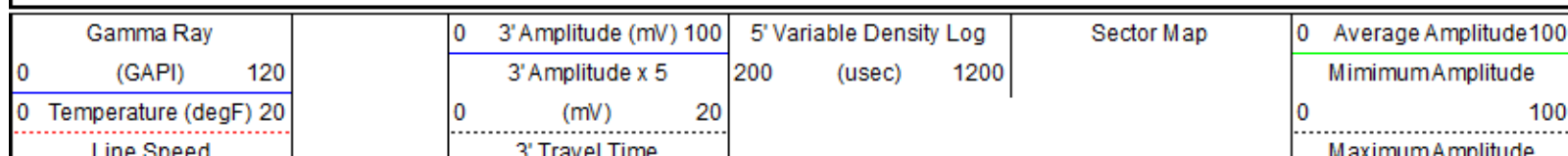




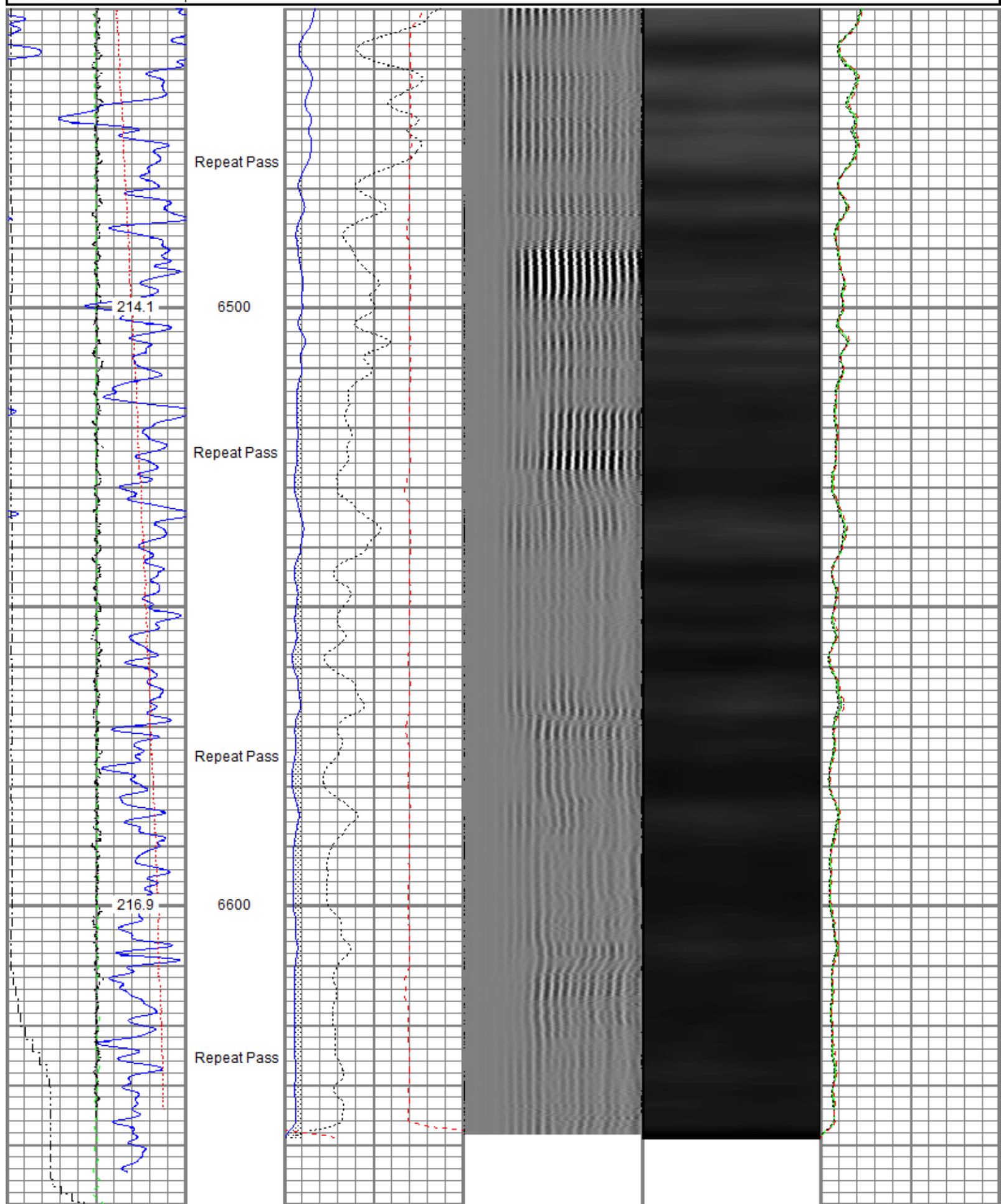
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File 01_anadarko\pettinger 18-3hz\0512347354_anadarko_pettinger 18-3hz_rbl_10-25-18_2800 psi.db
 Dataset Pathname pass4
 Presentation Format ros_radri
 Dataset Creation Thu Oct 25 14:19:10 2018
 Charted by Depth in Feet scaled 1:240

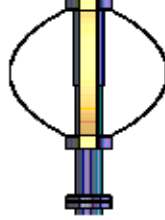


Line Speed		Wave Time		Maximum Amplitude	
-150	(ft/min)	150	650	(usec)	150
0	Line Tension (lb)2000		0	100	
Differential Temperature					
-2	(degF)	2			



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)
TEMP	17.04		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 (120855) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS8	14.81					
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					
CCL\$2	6.80		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
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: 0512347354_Anadarko_Pettinger 18-3HZ_RBL_10-25-18_2800 PSI.db: field/well/run1/pass6
Total length: 23.86 ft
Total weight: 223.60 lb
O.D.: 2.75 in

Calibration Report

Database File C:\ProgramData\Warrior\Data\01_Anadarko\Pettinger 18-3HZ\0512347354_Anadarko_Pettinger 18-3HZ_RBL_10-25-18_2800 P
Dataset Pathname pass6
Dataset Creation Thu Oct 25 14:22:39 2018

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: 120855
Tool Model: 2750 RBT

Calibration Casing Diameter: 5.500 in
Calibration Depth: -17.496 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.334	0.800	71.921	213.367	0.608
CAL	0.004	0.374				
5'	0.001	0.311	0.800	71.921	229.306	0.674
SUM						
S1	0.001	0.327	0.000	100.000	306.934	-0.223
S2	0.001	0.344	0.000	100.000	291.551	-0.319
S3	0.001	0.351	0.000	100.000	285.395	-0.277
S4	0.001	0.342	0.000	100.000	293.513	-0.390
S5	0.001	0.340	0.000	100.000	295.153	-0.273
S6	0.001	0.335	0.000	100.000	299.223	-0.328
S7	0.001	0.323	0.000	100.000	310.135	-0.268
S8	0.001	0.325	0.000	100.000	308.348	-0.285


Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.374	1.000	0.000

Air Zero Calibration, performed Thu Oct 25 08:35:25 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.004	0.000	-0.000
5'	0.004	0.000	-0.000
SUM			
S1	0.004	0.000	-0.000
S2	0.004	0.000	0.000
S3	0.004	0.000	-0.000
S4	0.004	0.000	0.000
S5	0.004	0.000	-0.000
S6	0.004	0.000	0.000
S7	0.004	0.000	-0.000
S8	0.004	0.000	-0.000

Temperature Calibration Report				
Serial Number:	120855			
Tool Model:	2750 RBT			
Performed:	Mon Oct 01 11:32:15 2018			
	Reference		Reading	
Low Reference:	100.00 degF		112.30 degF	
High Reference:	350.00 degF		394.75 degF	
Gain:	0.89			
Offset:	0.60			
Delta Spacing	1			

	Company	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Pettinger 18-3HZ
	Field	Wattenberg
	County	Weld
	State	Colorado