



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Noble Energy Inc
Well Becker D17-745
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-48934
SEC 5 TWP 3N RGE 64W
Permanent Datum Ground Level Elevation 4747'
Log Measured From Kelly Bushing 30 FT
Drilling Measured From Kelly Bushing
Other Services
Elevation
K.B. 4777'
D.F. ---
G.L. 4747'

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Well Becker D17-745
Field Wattenberg
County Weld
State Colorado

Date	15-NOV-2020			
Run Number	One			
Depth Driller	15101 FT			
Depth Logger	7477 FT			
Bottom Logged Interval	7465 FT			
Top Log Interval	Surface			
Open Hole Size	8.5"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	247°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	08:58			
Equipment Number	HD-0325			
Location	Platteville, CO			
Recorded By	Matt Steinman			
Witnessed By	Mike Stenger			
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	---	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

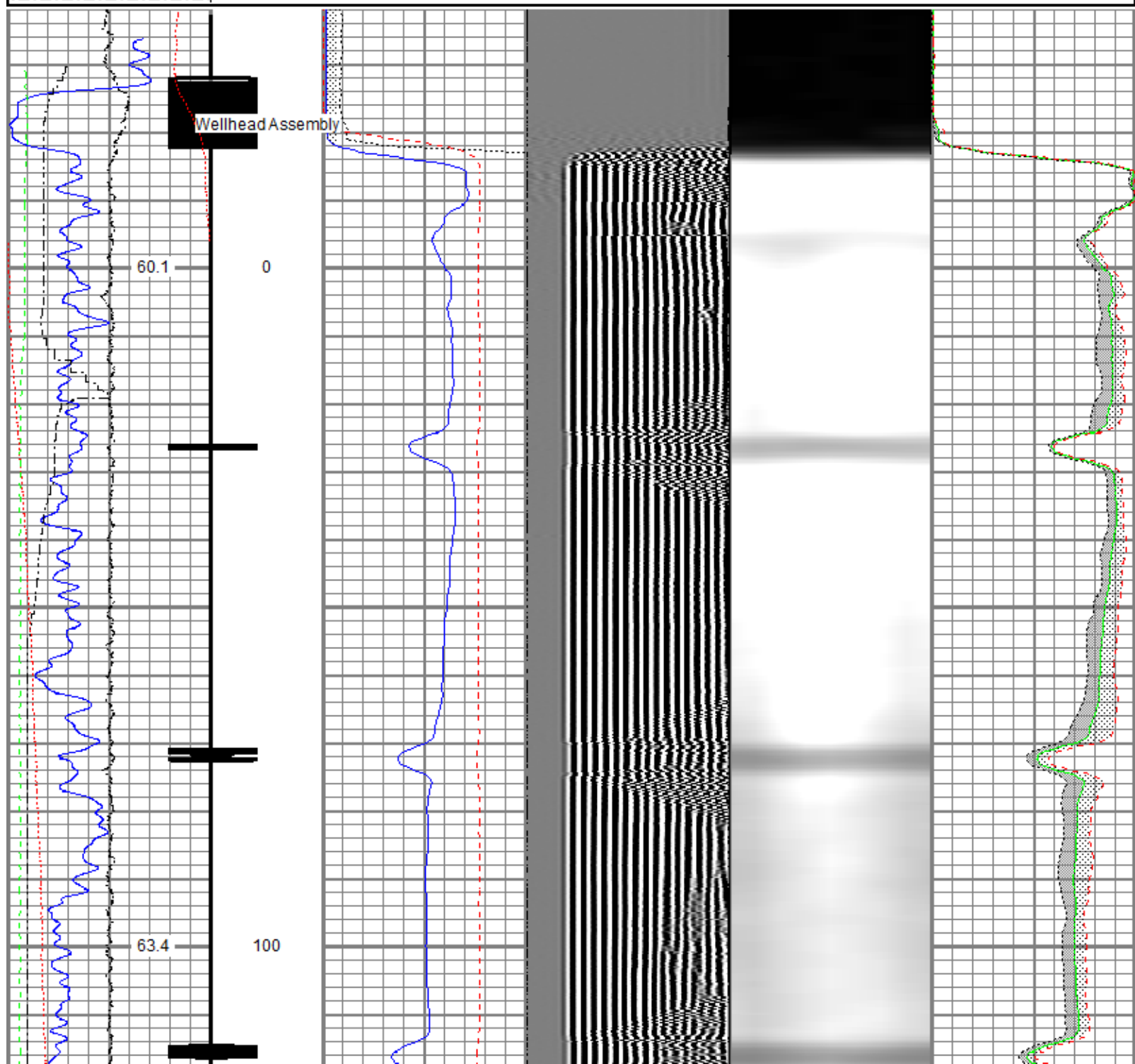
Log ran as per customer request
Depth referenced to Casing Tally reported Marker Joint at 6822.0 FT
Adjusted -13 FT to correlate with Marker Joint
Log ran with 2500 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations
Thank you for choosing Reliance Oilfield Services, LLC!!

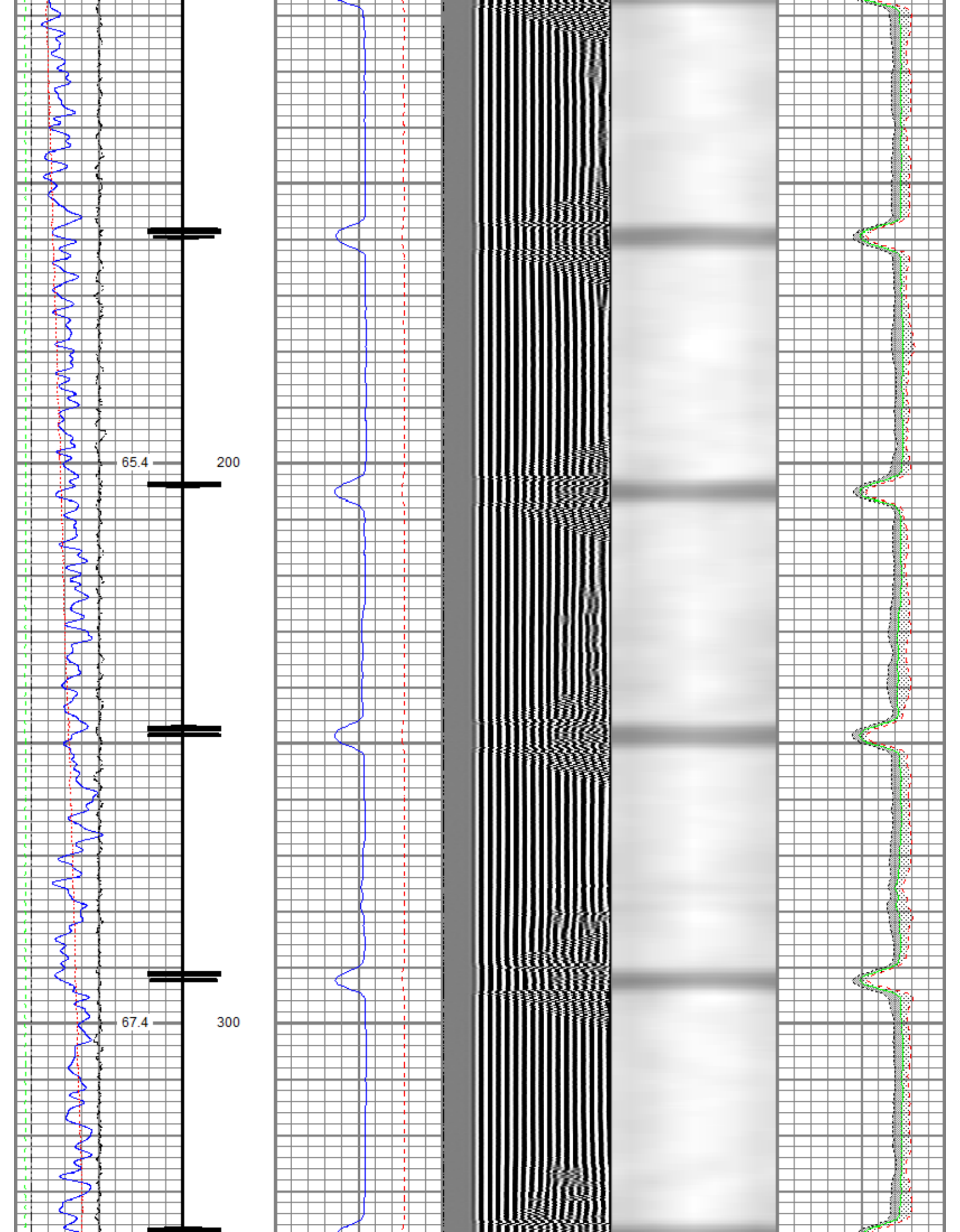
Main Pass

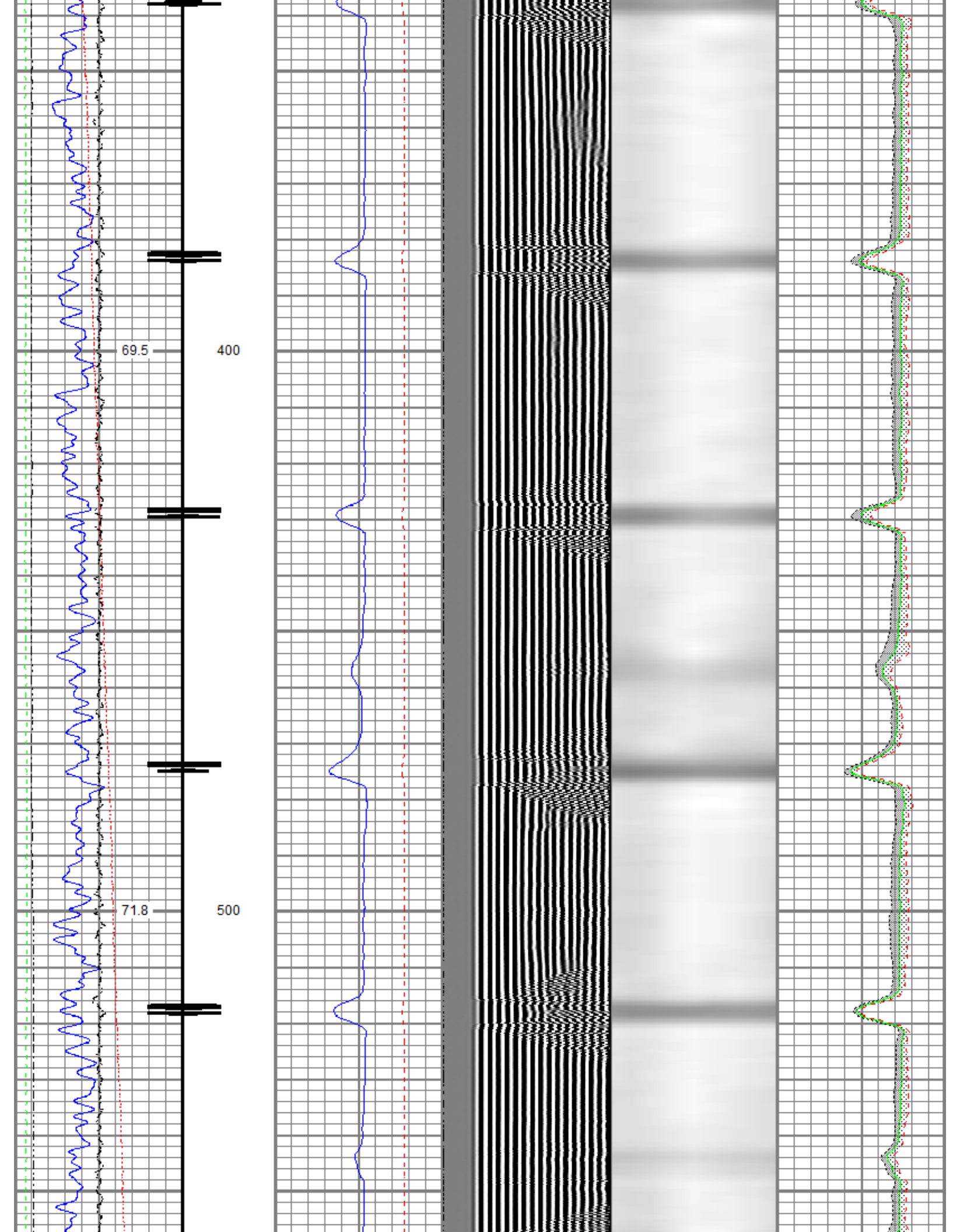


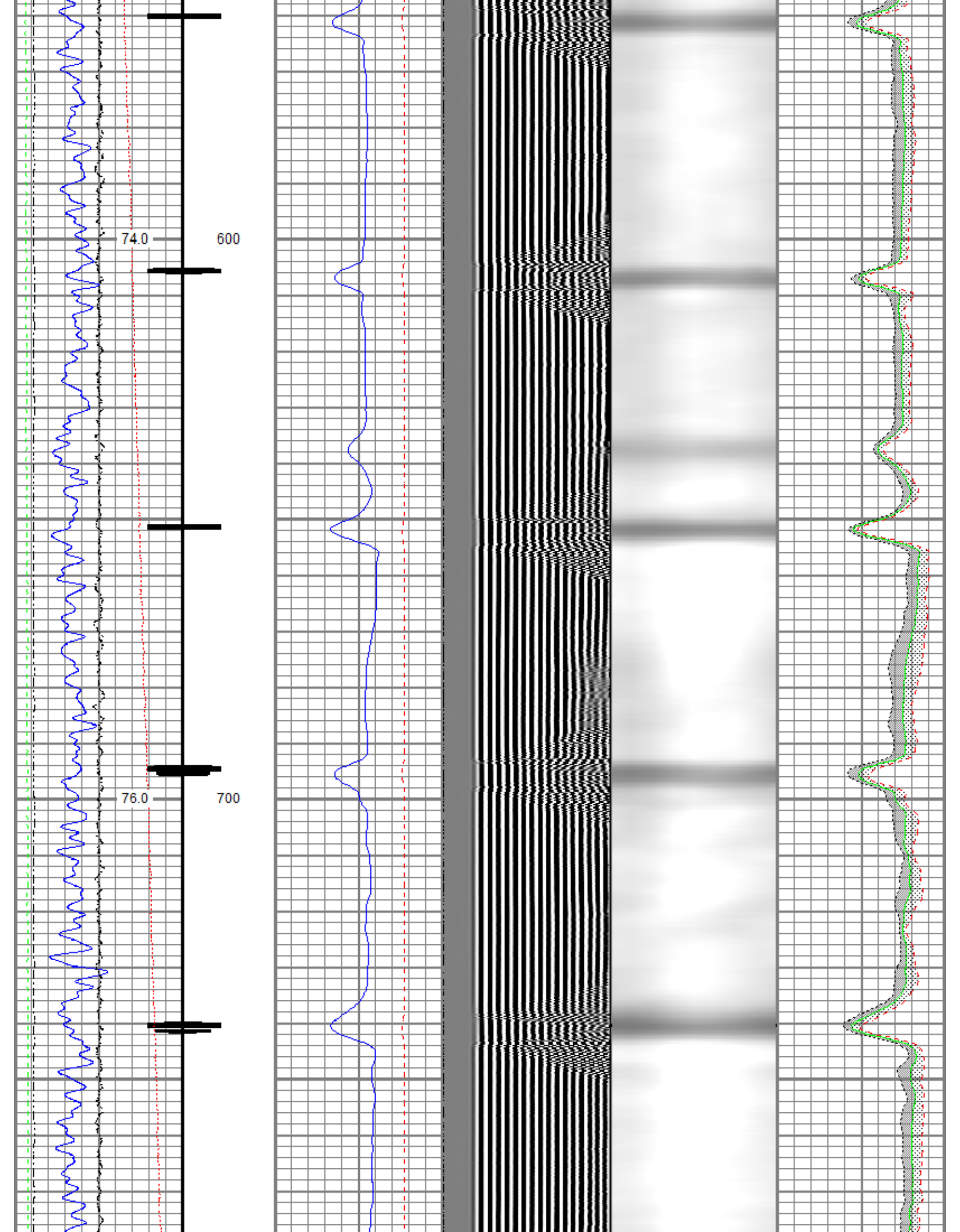
Database File becker d17-745\noble_becker d17-745_rbl_11-15-20.db
 Dataset Pathname main/pass1.1
 Presentation Format ros_radri_noble
 Dataset Creation Sun Nov 15 10:11:01 2020
 Charted by Depth in Feet scaled 1:240

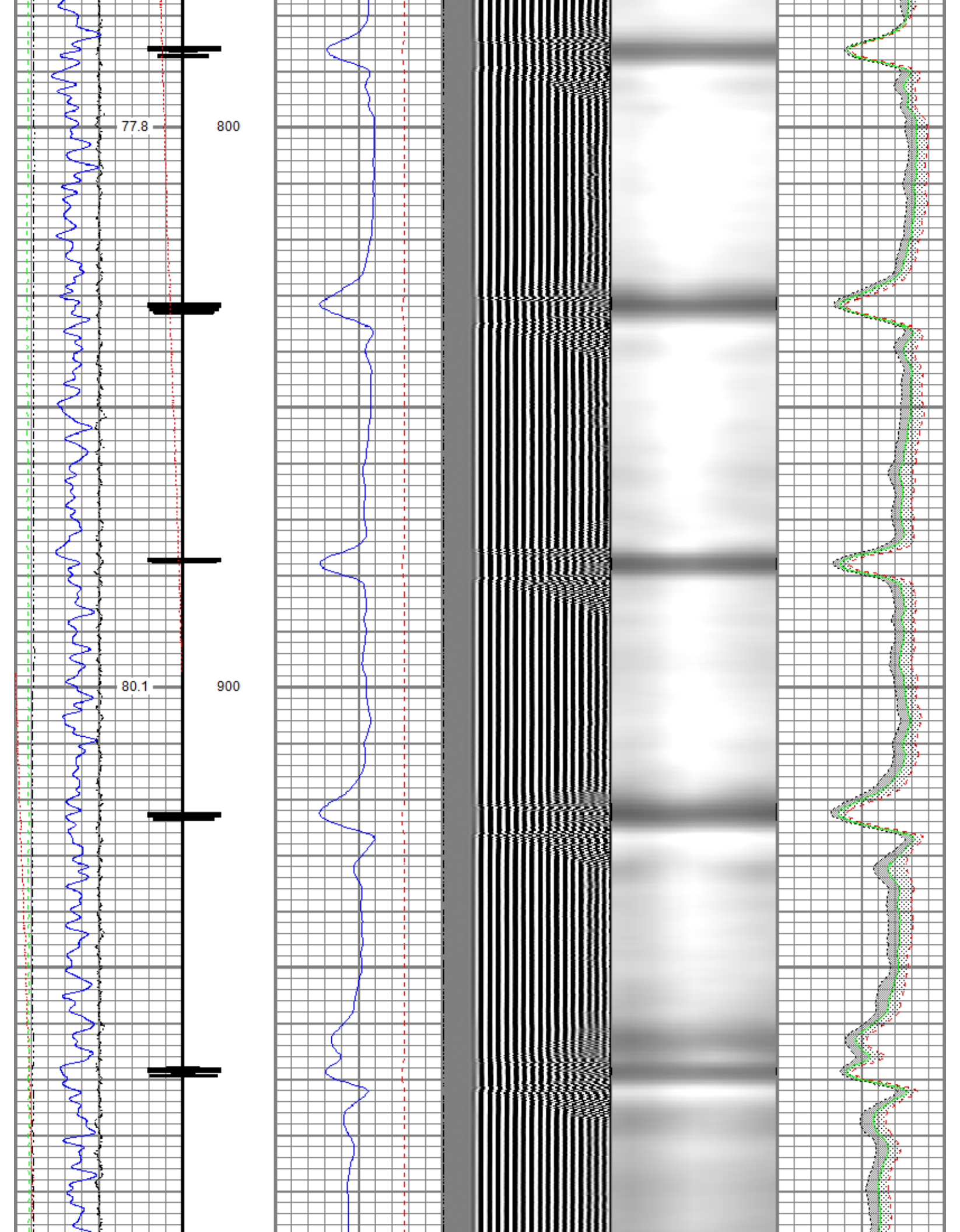
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Log	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

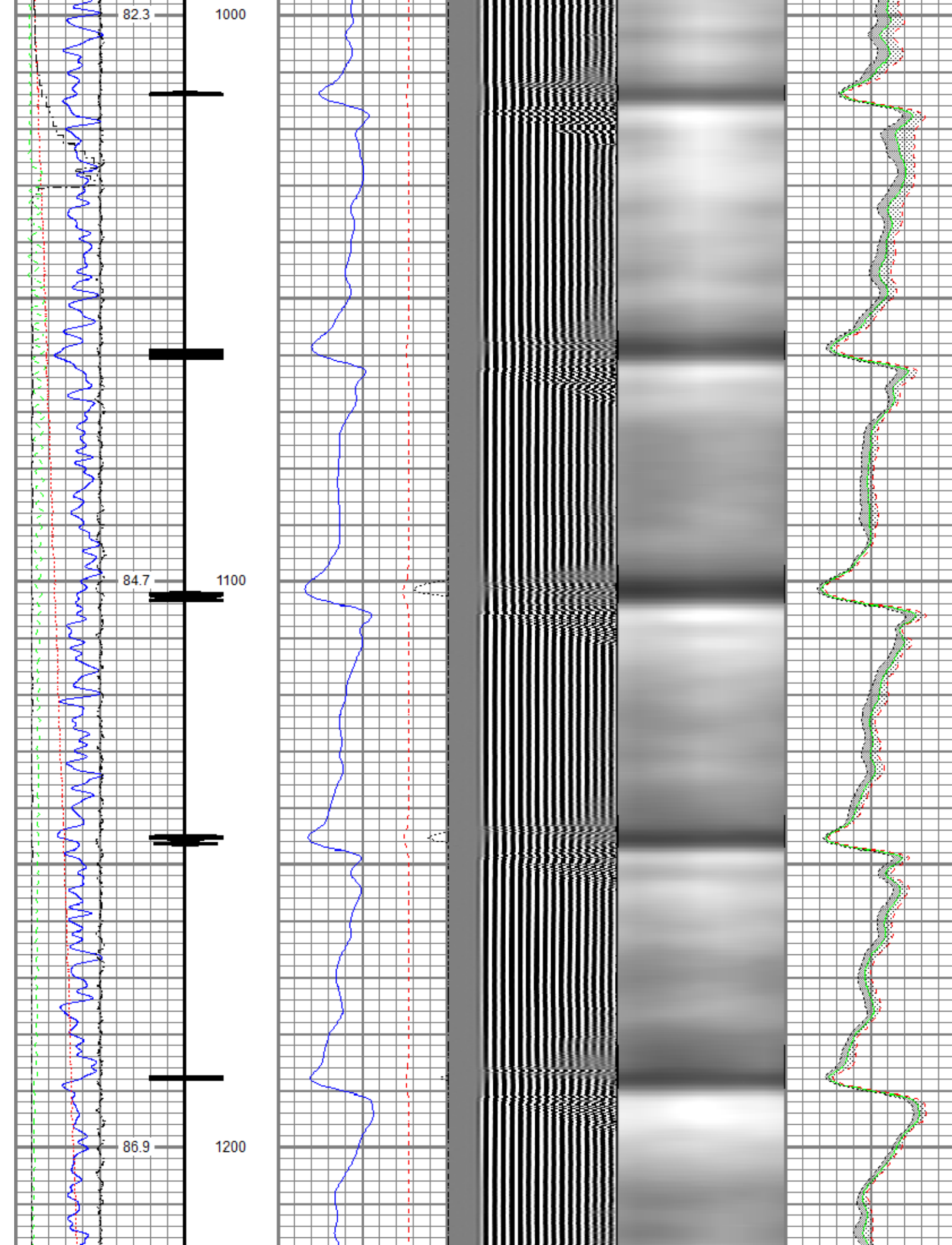


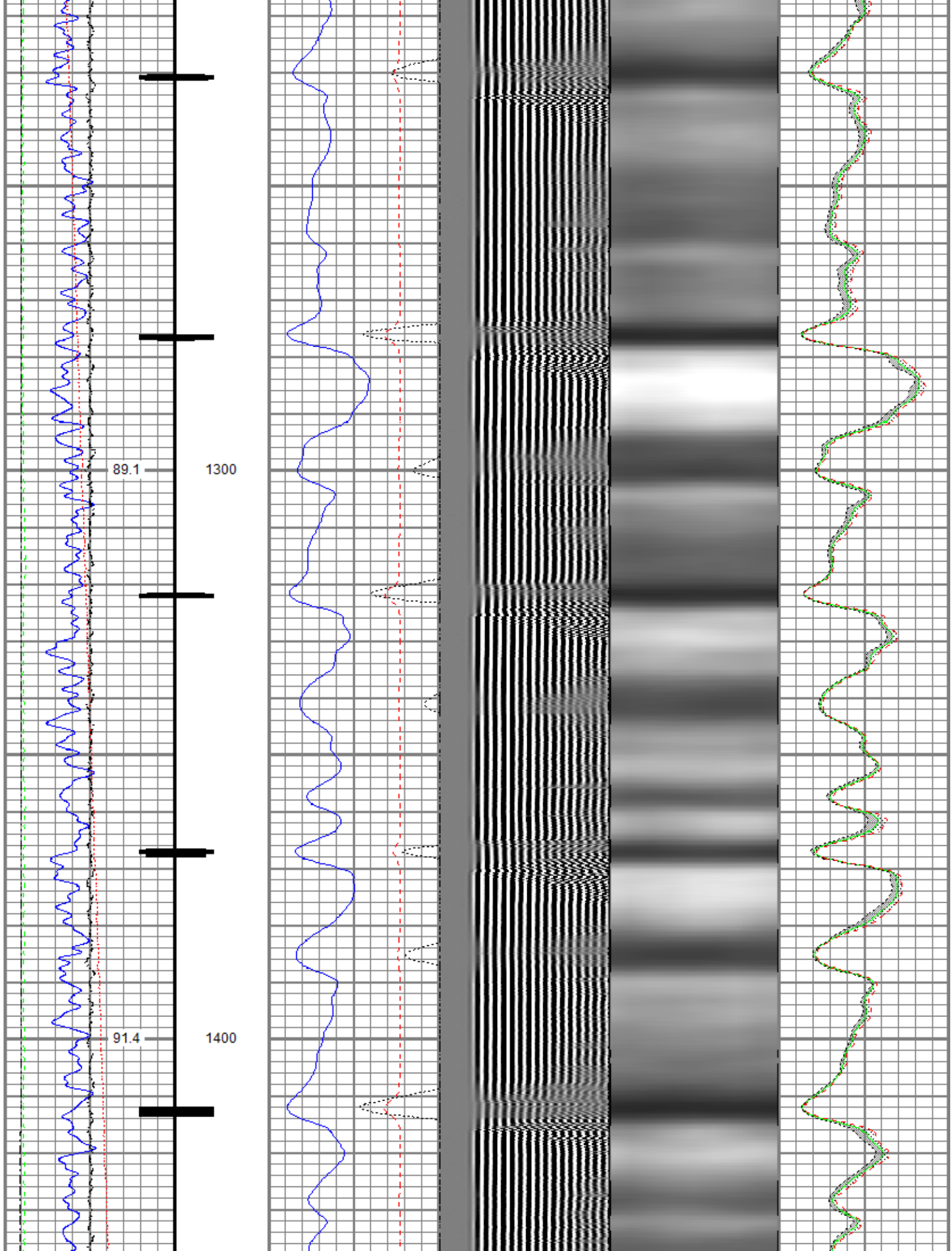


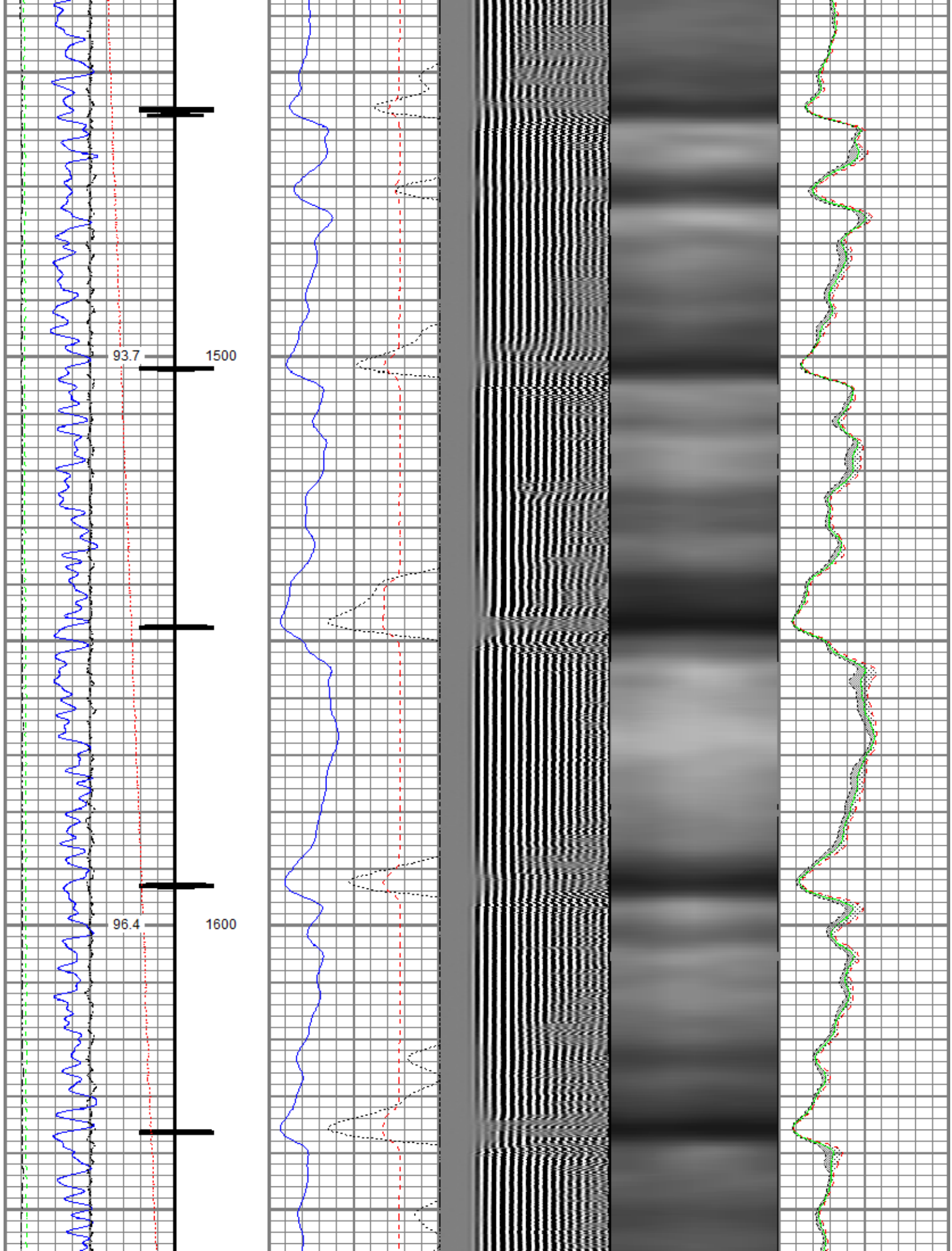


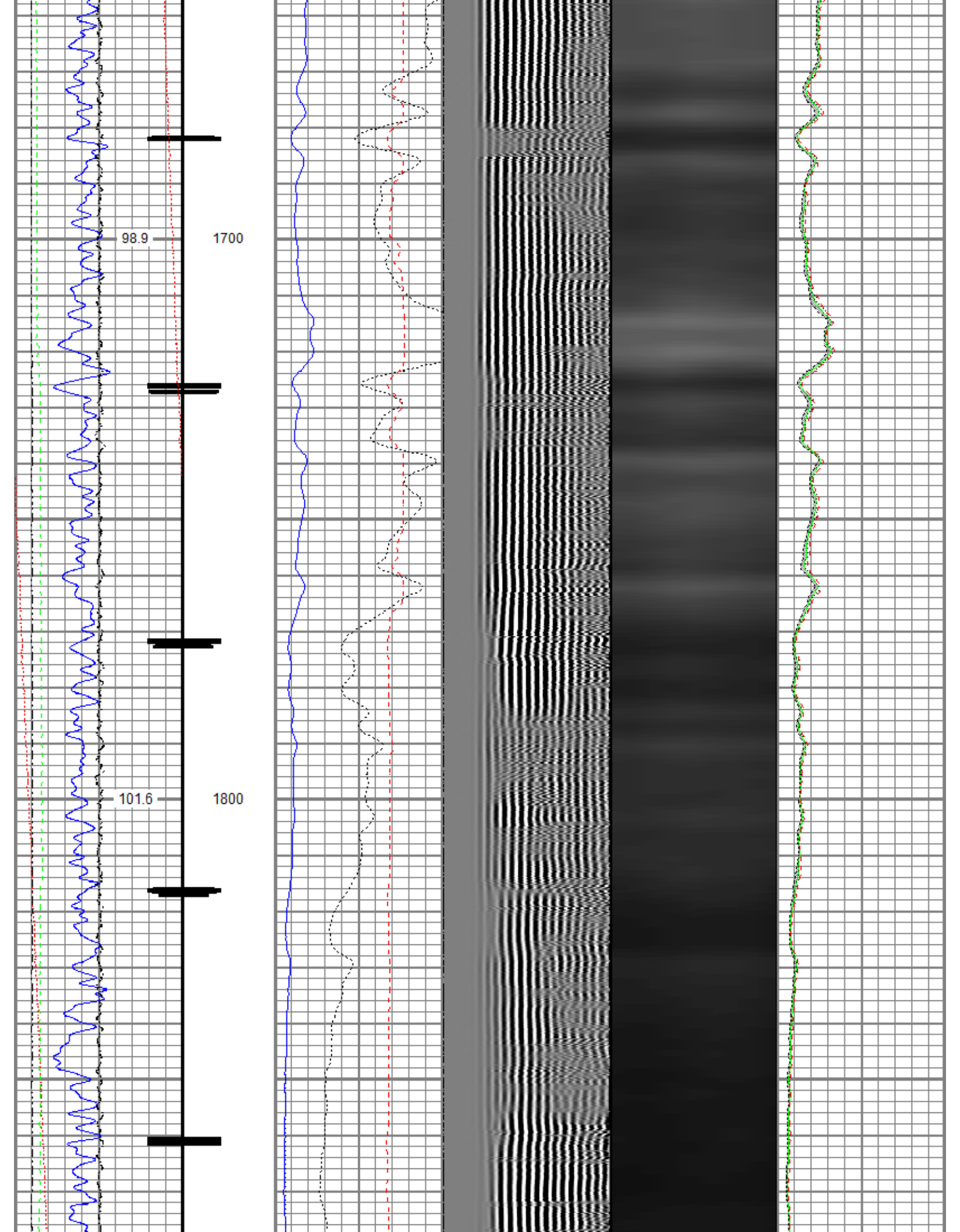


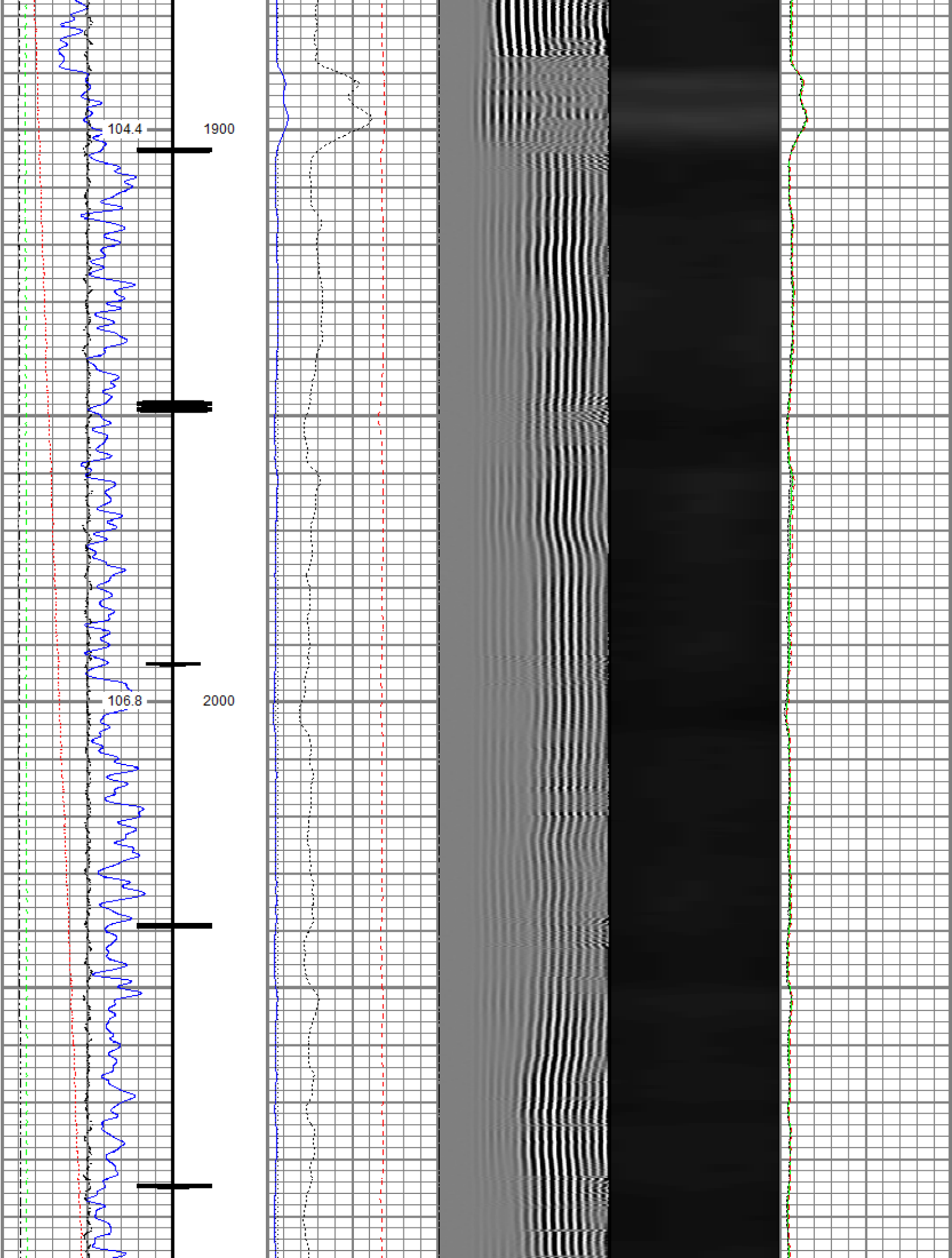


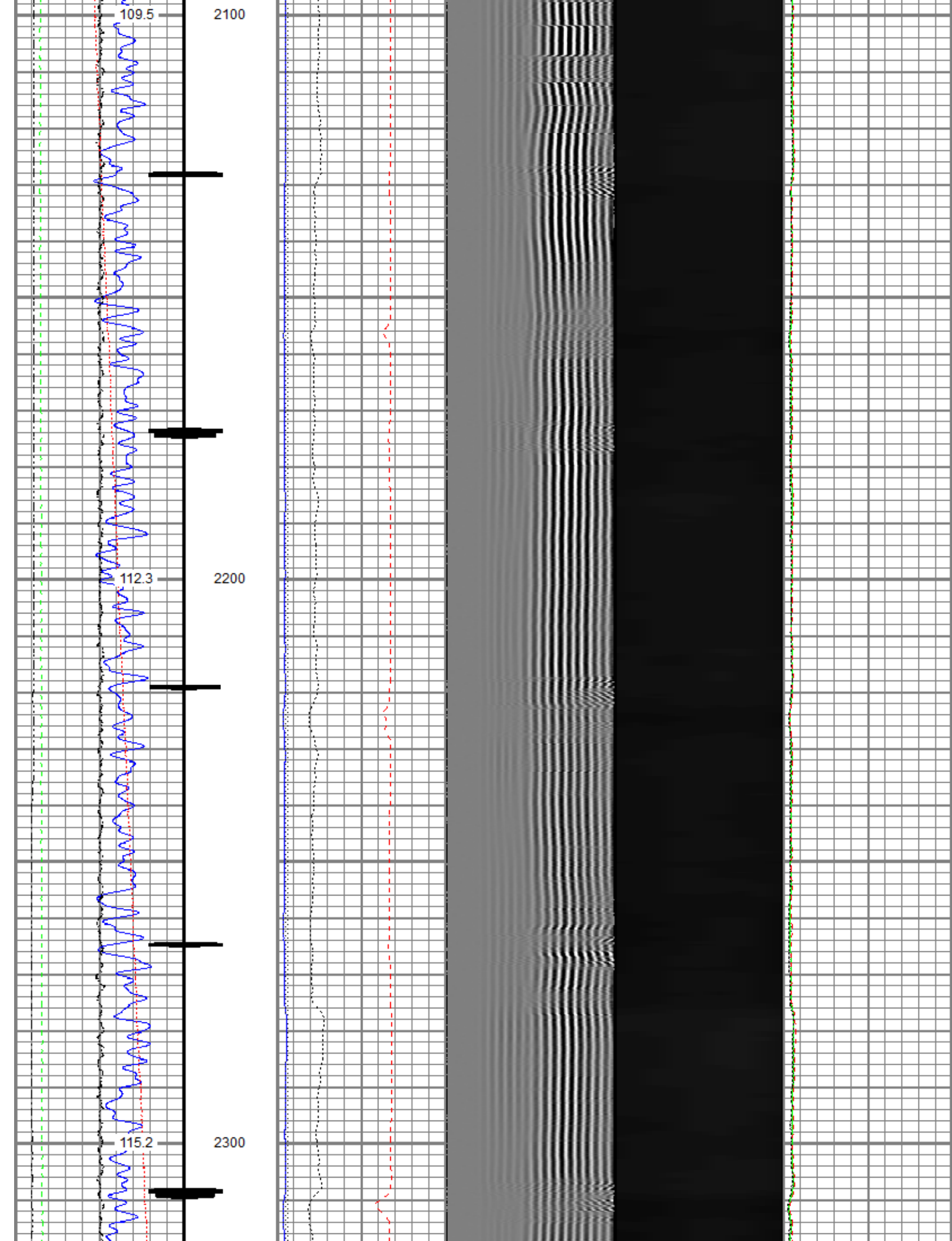


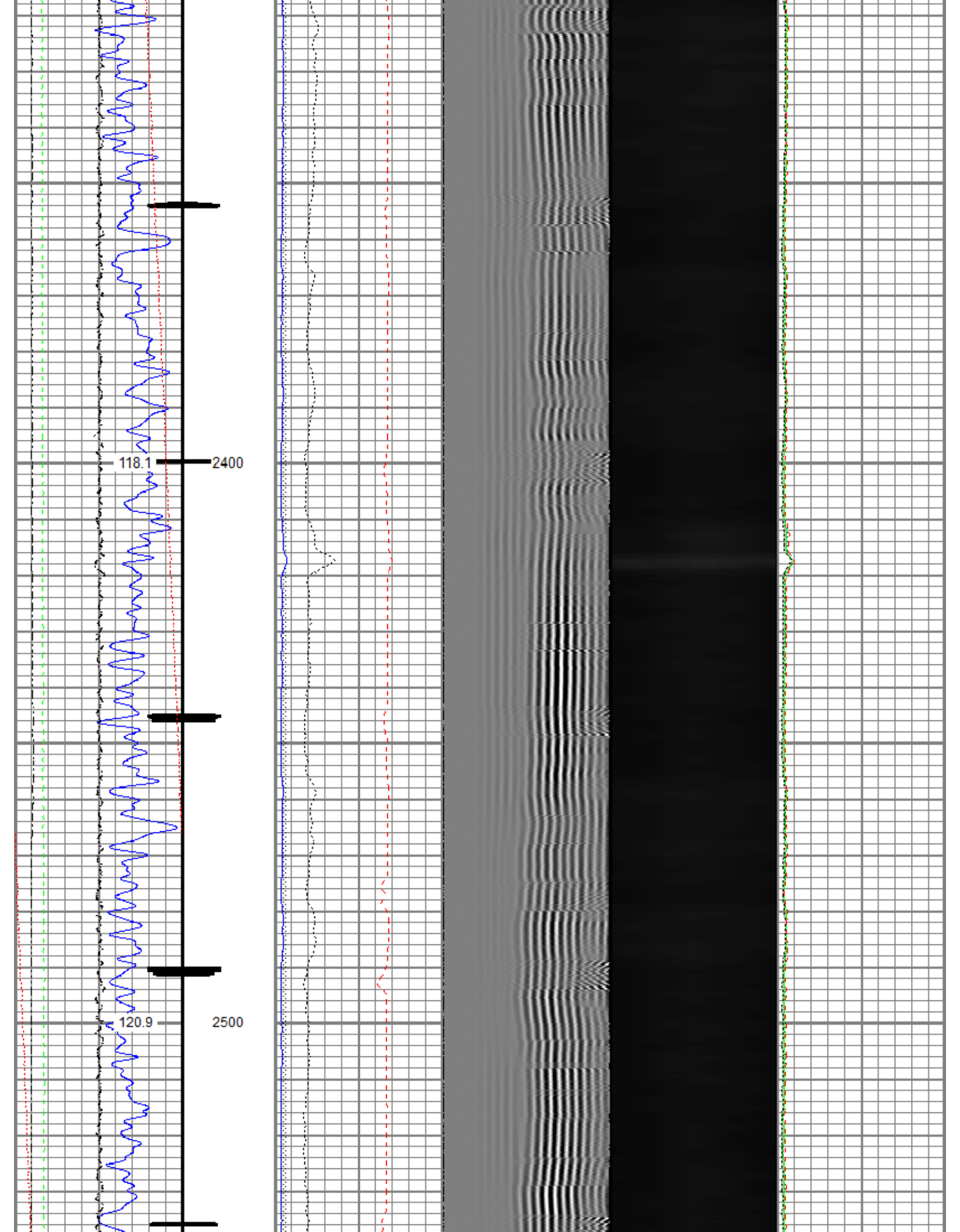


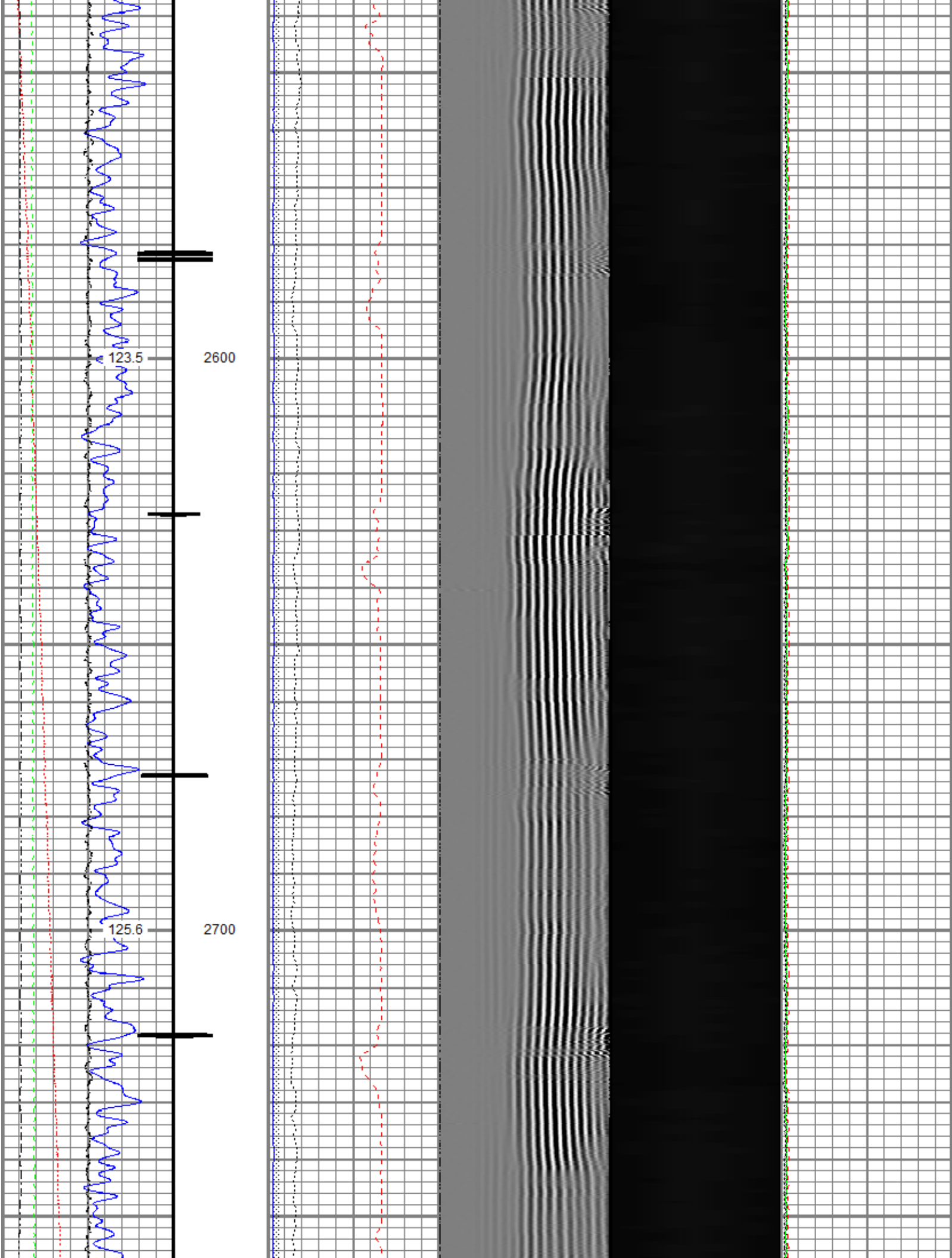


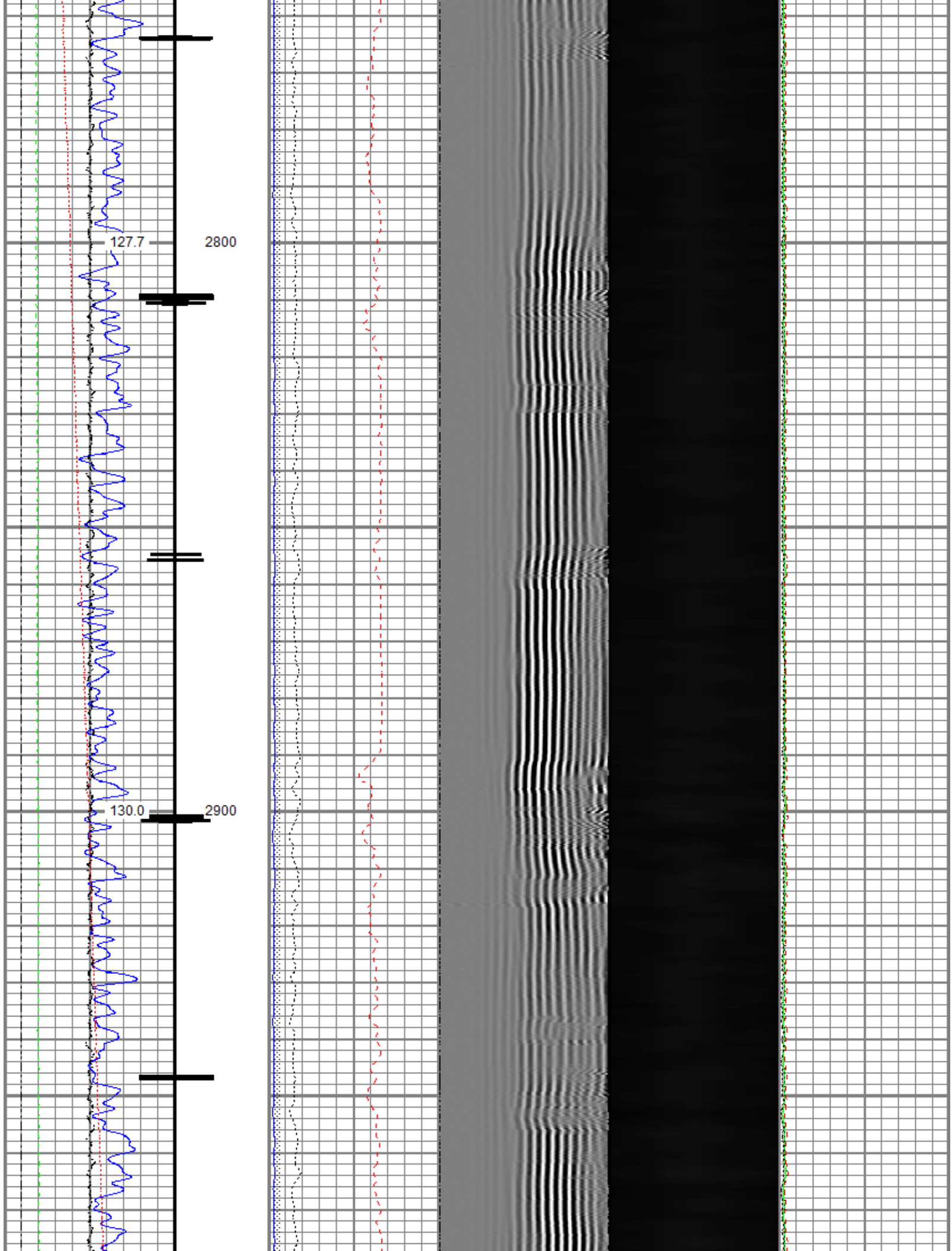


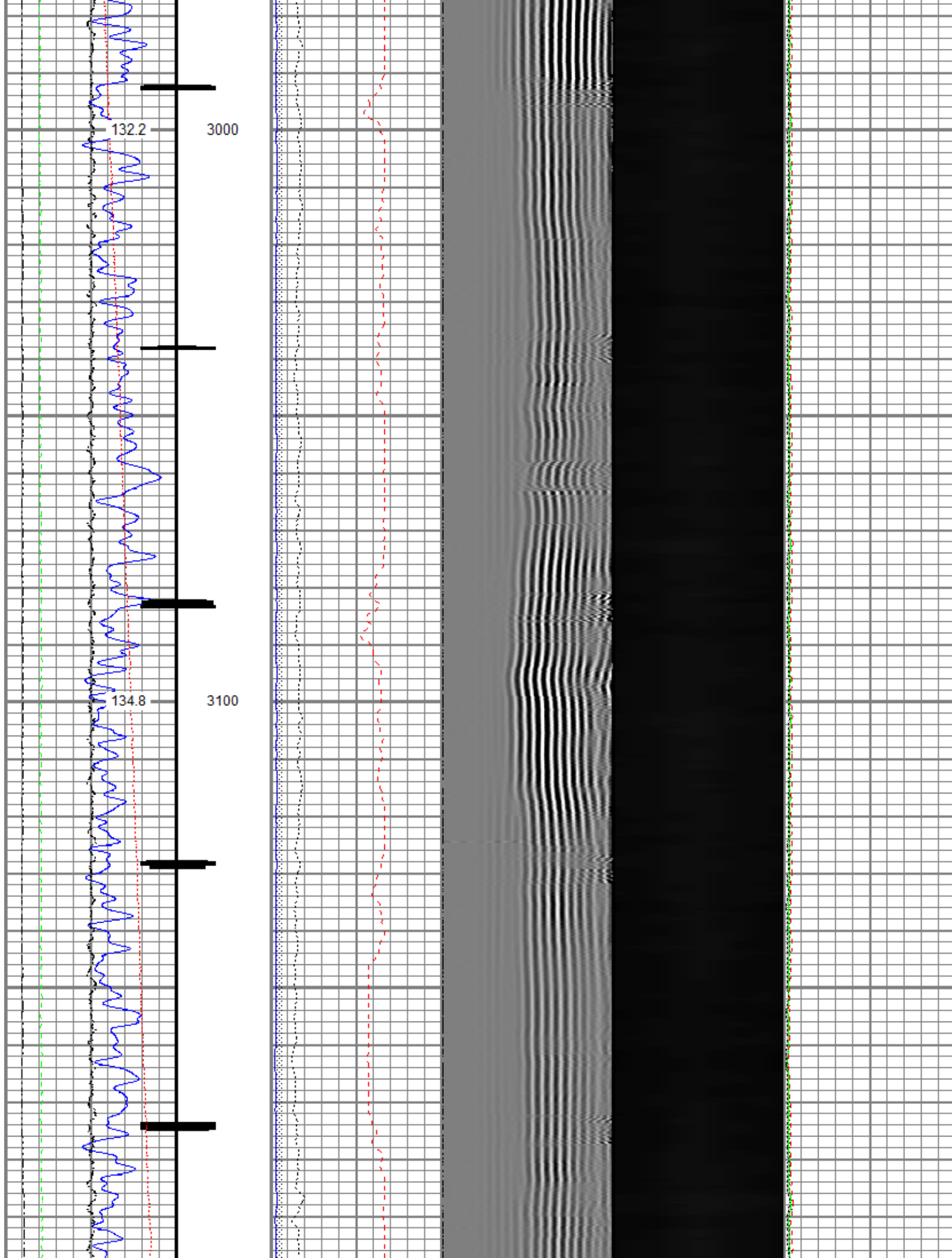


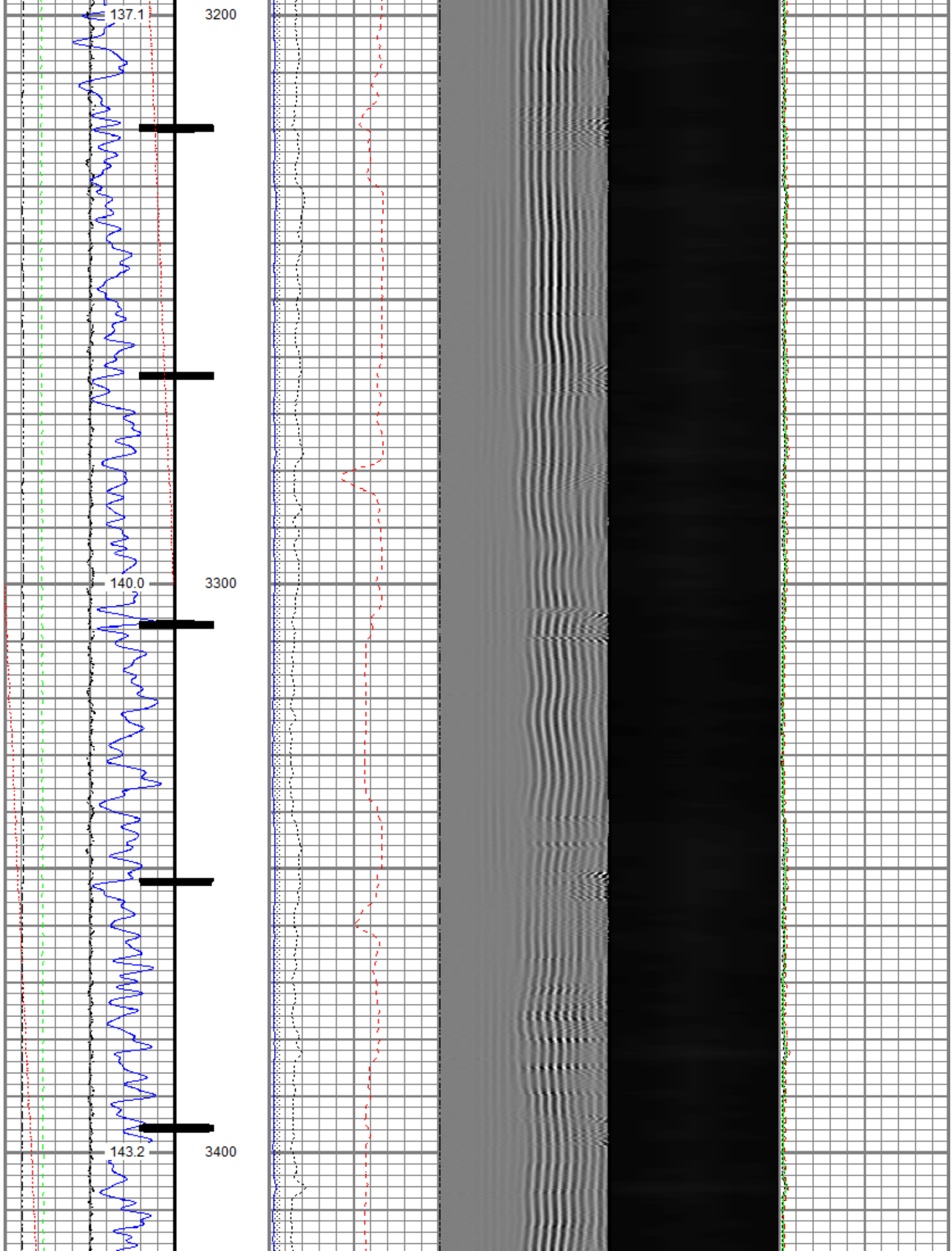


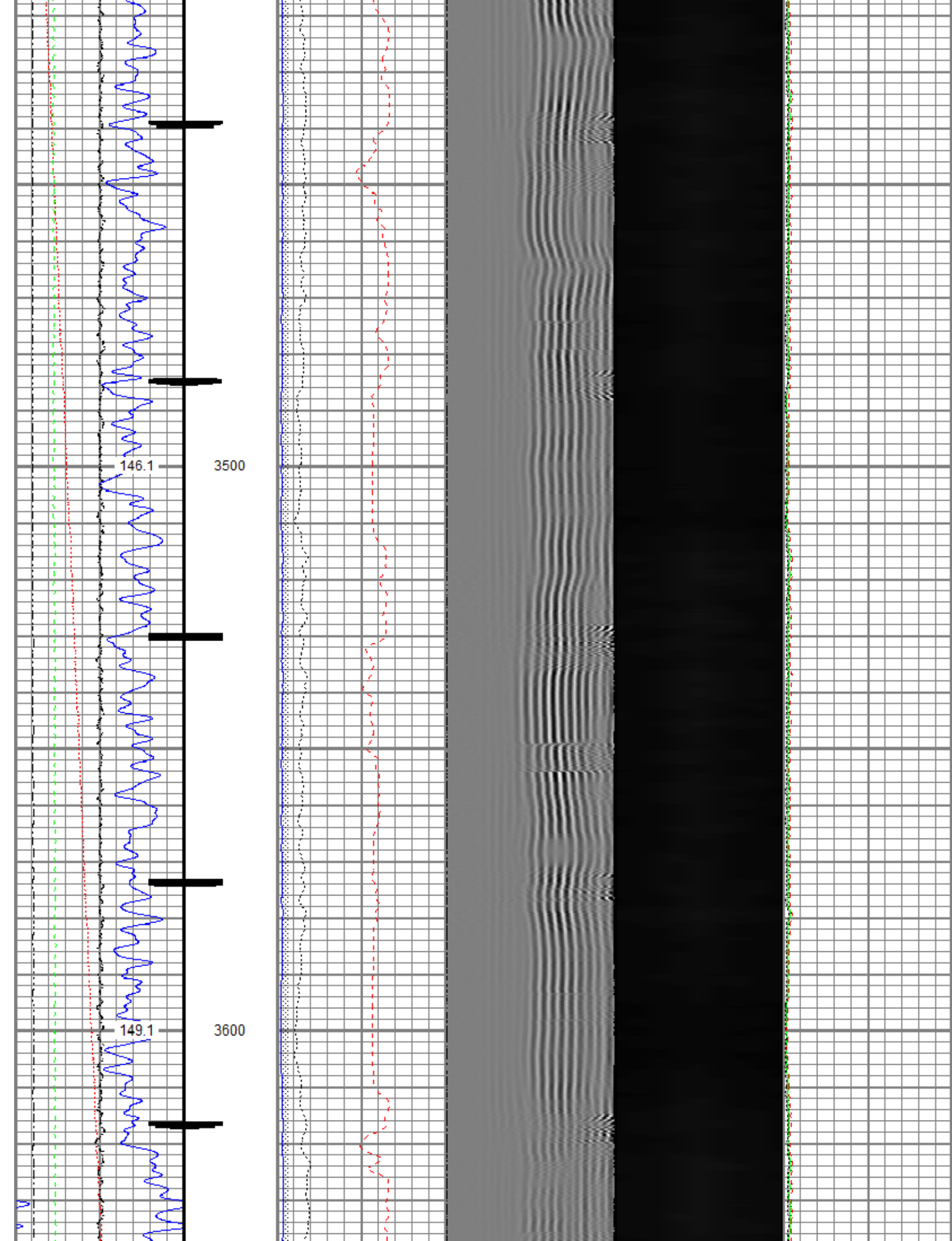


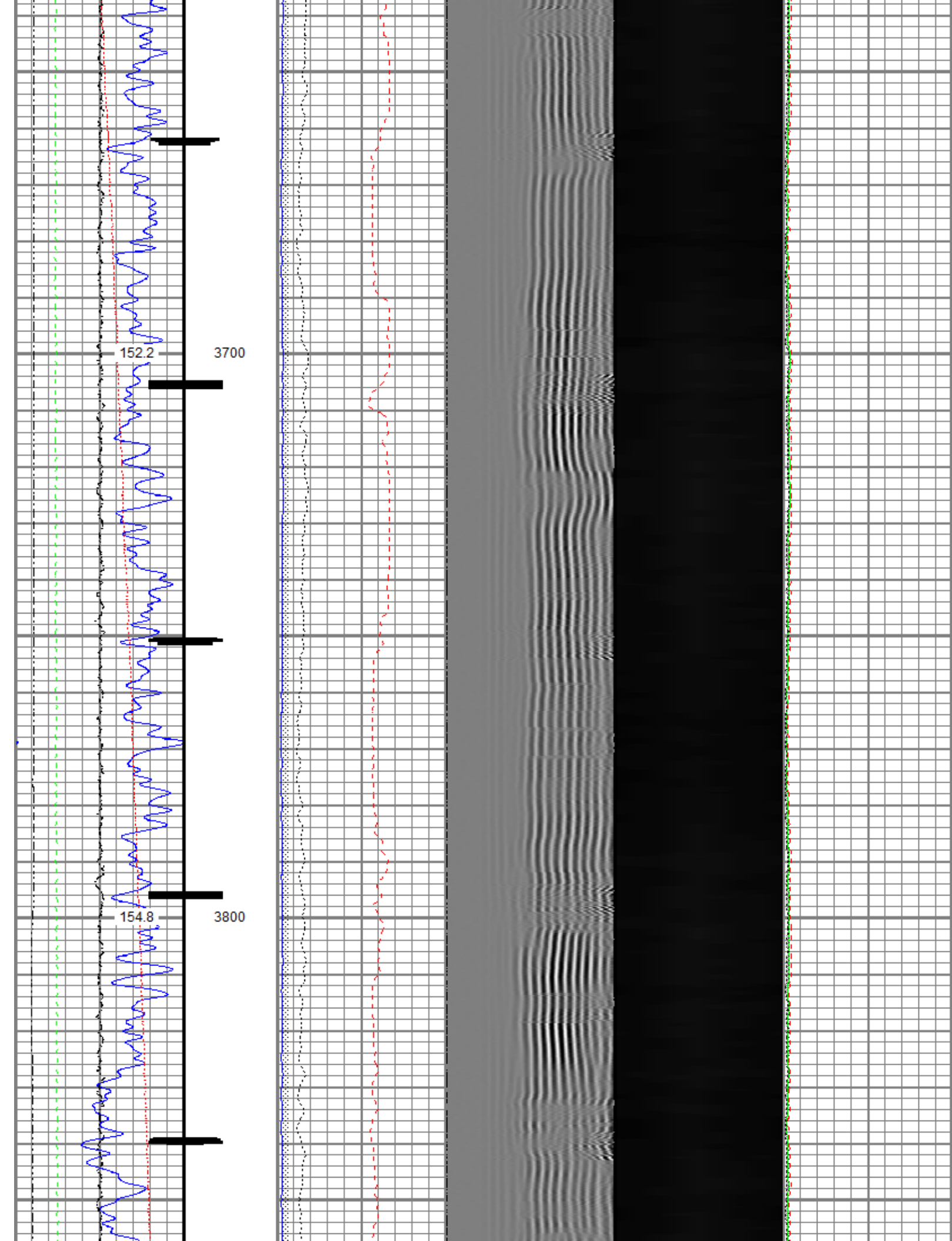


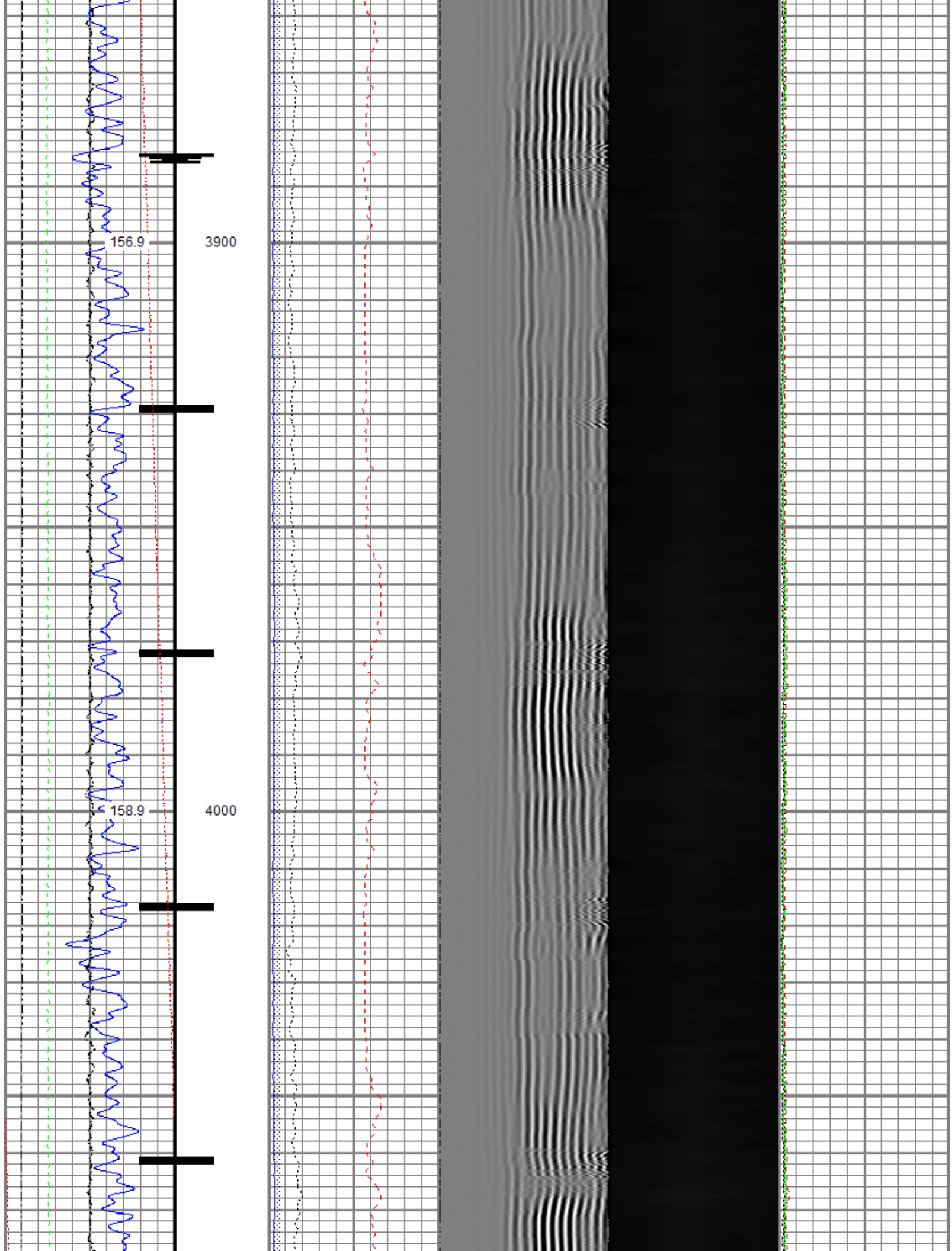


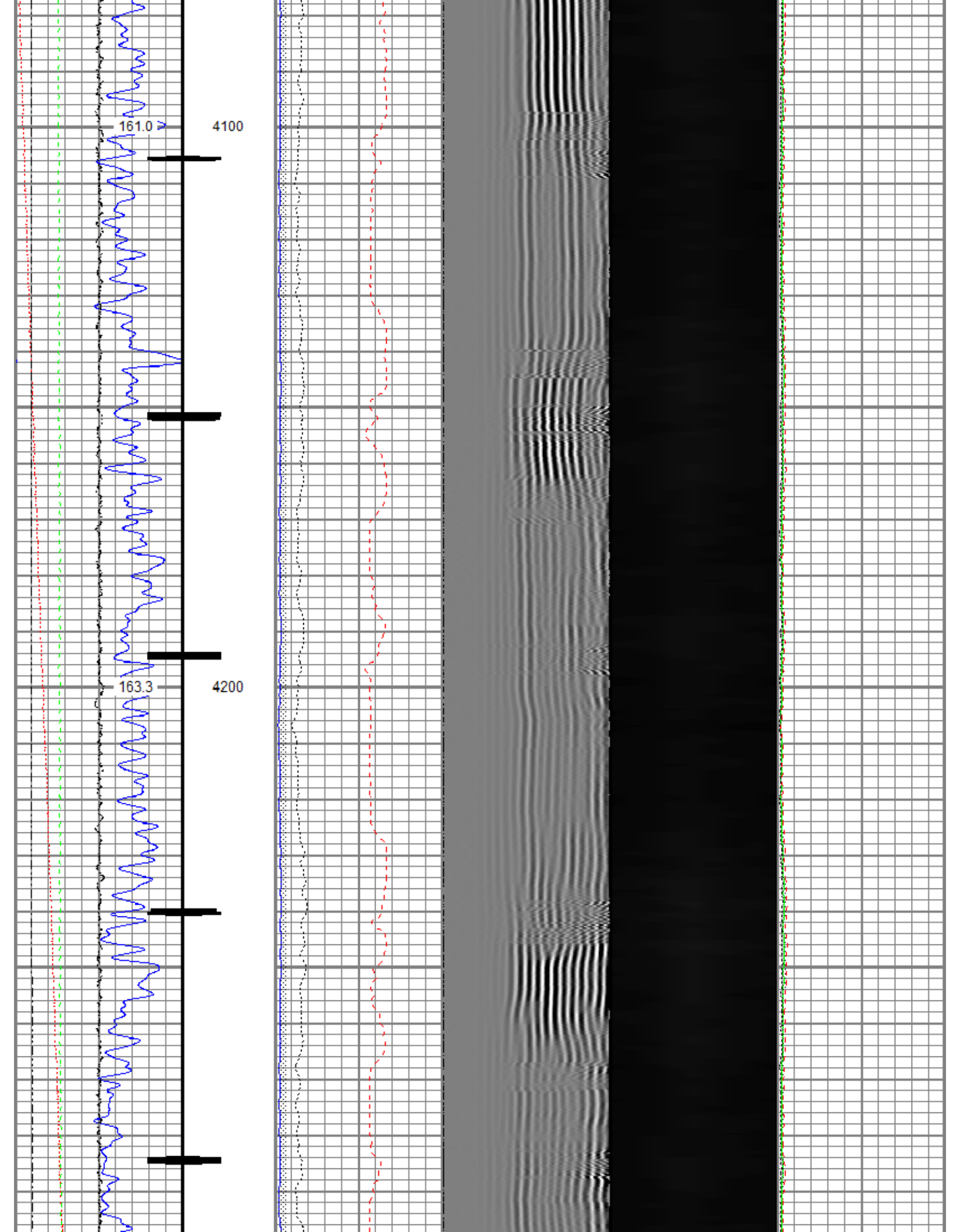


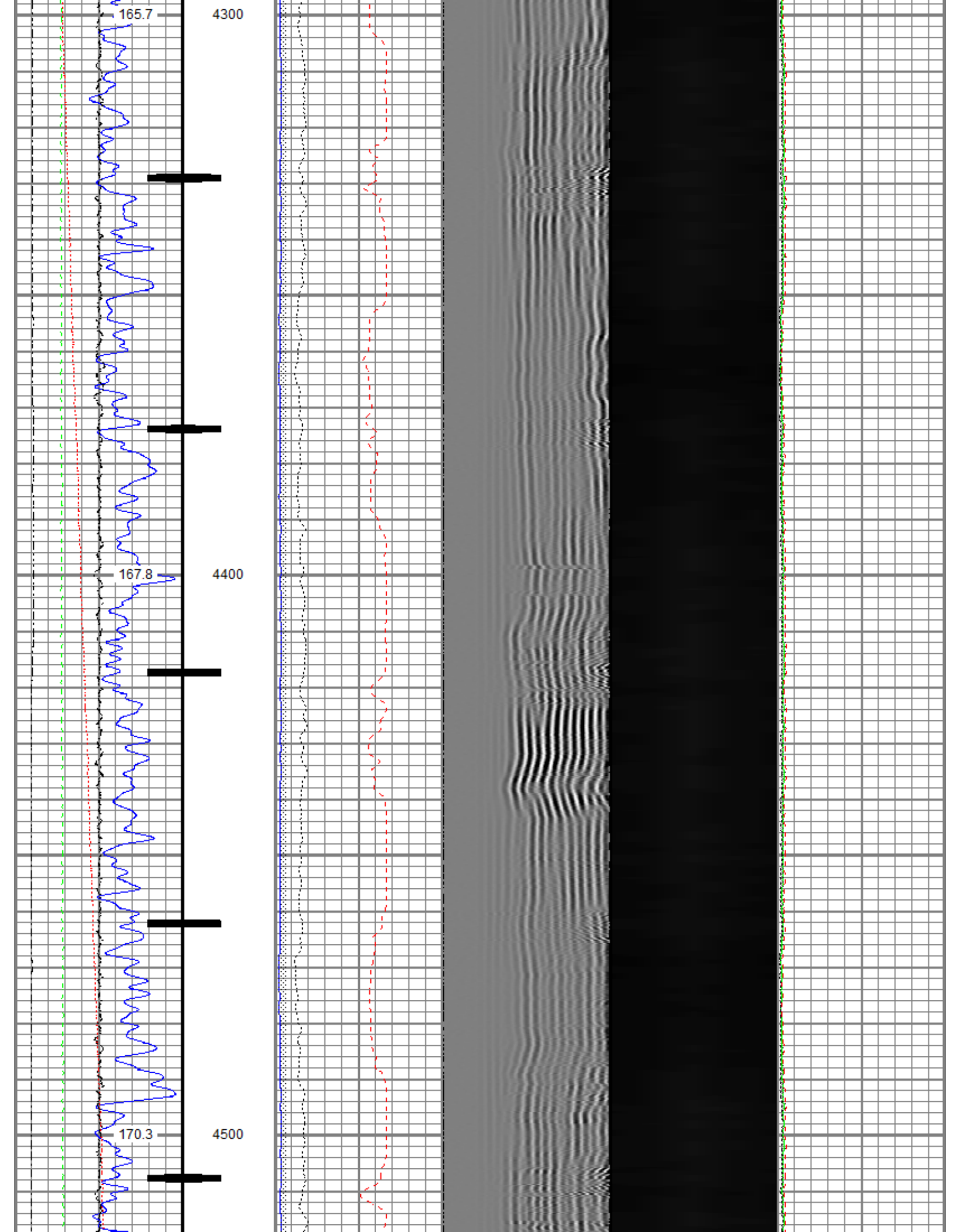


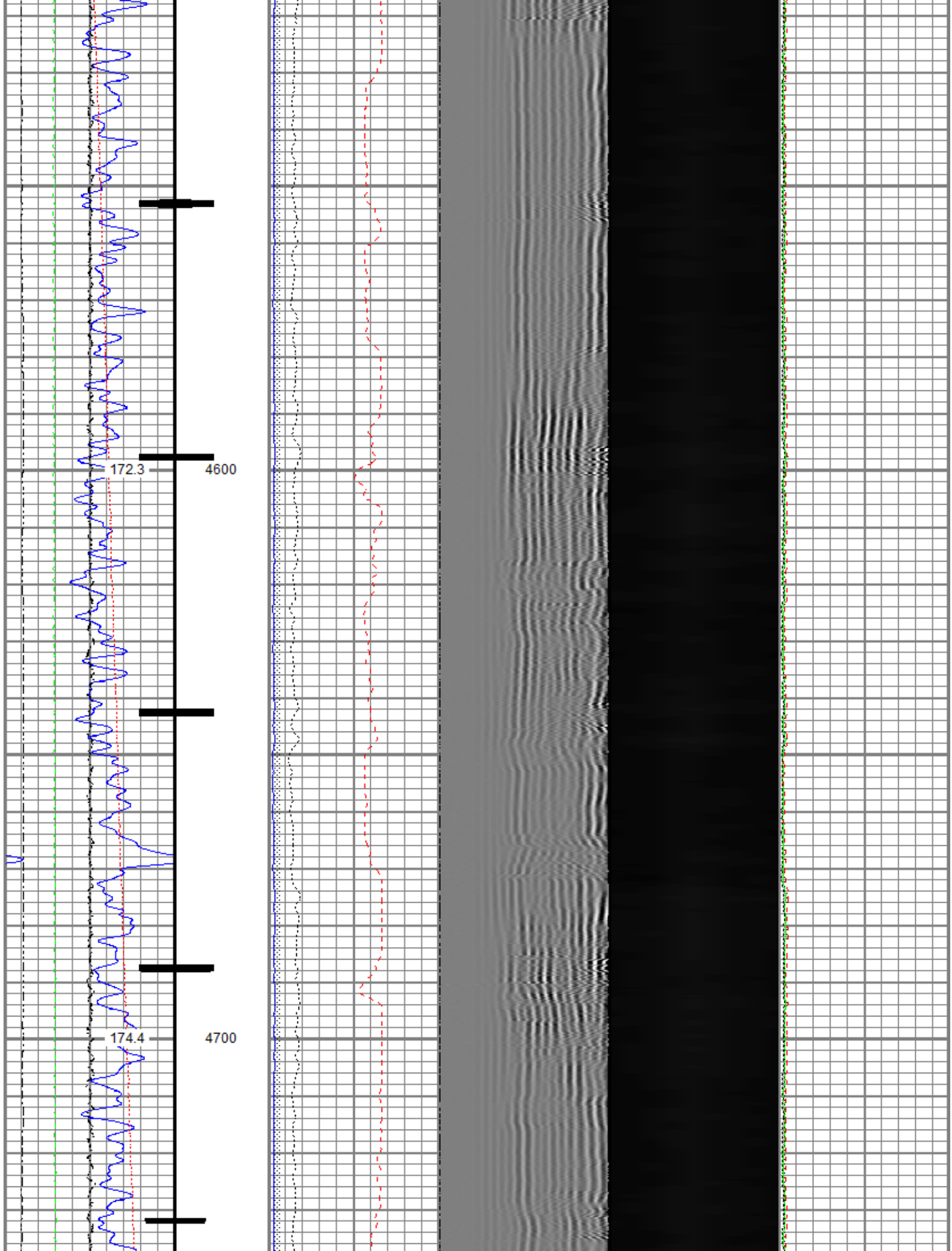


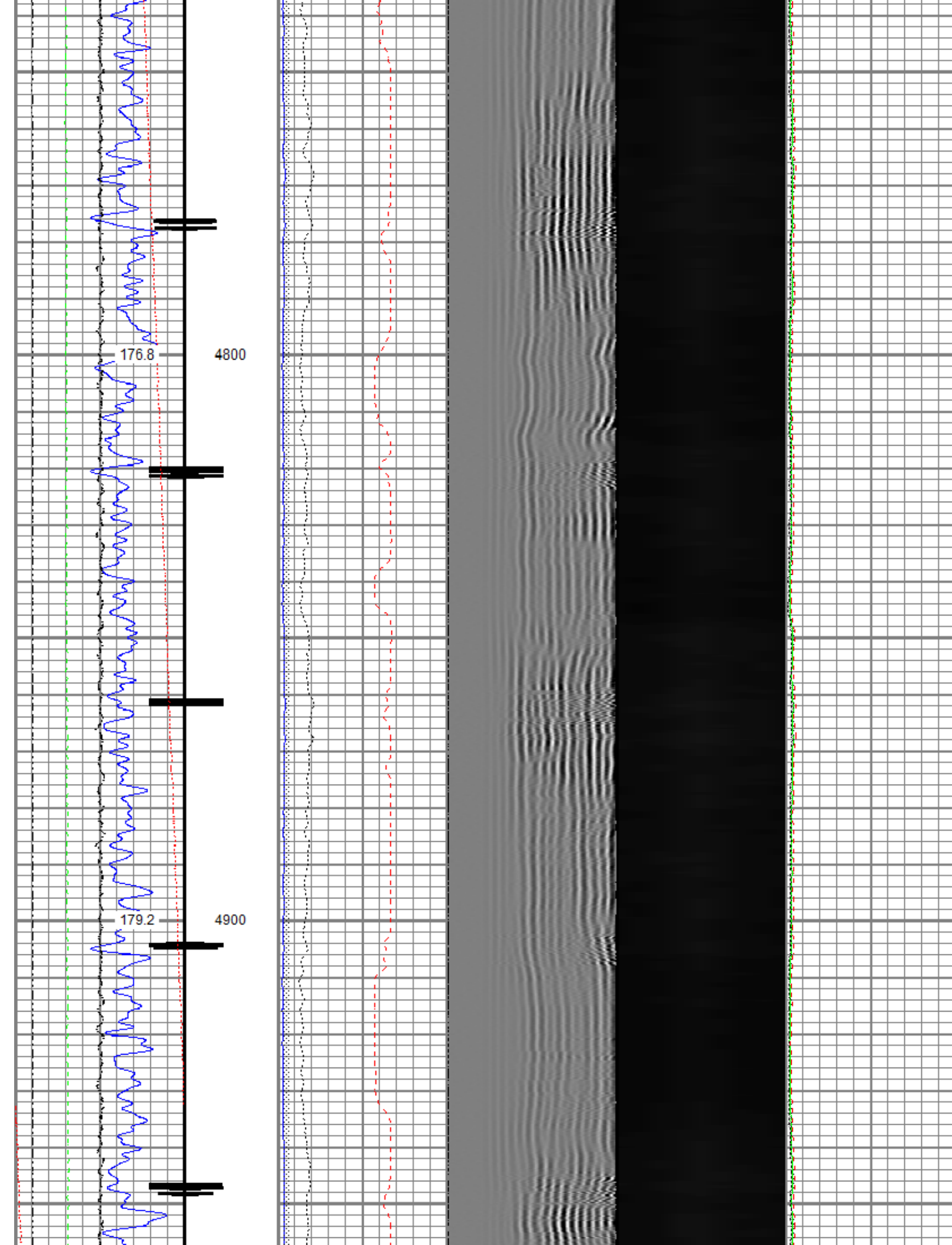


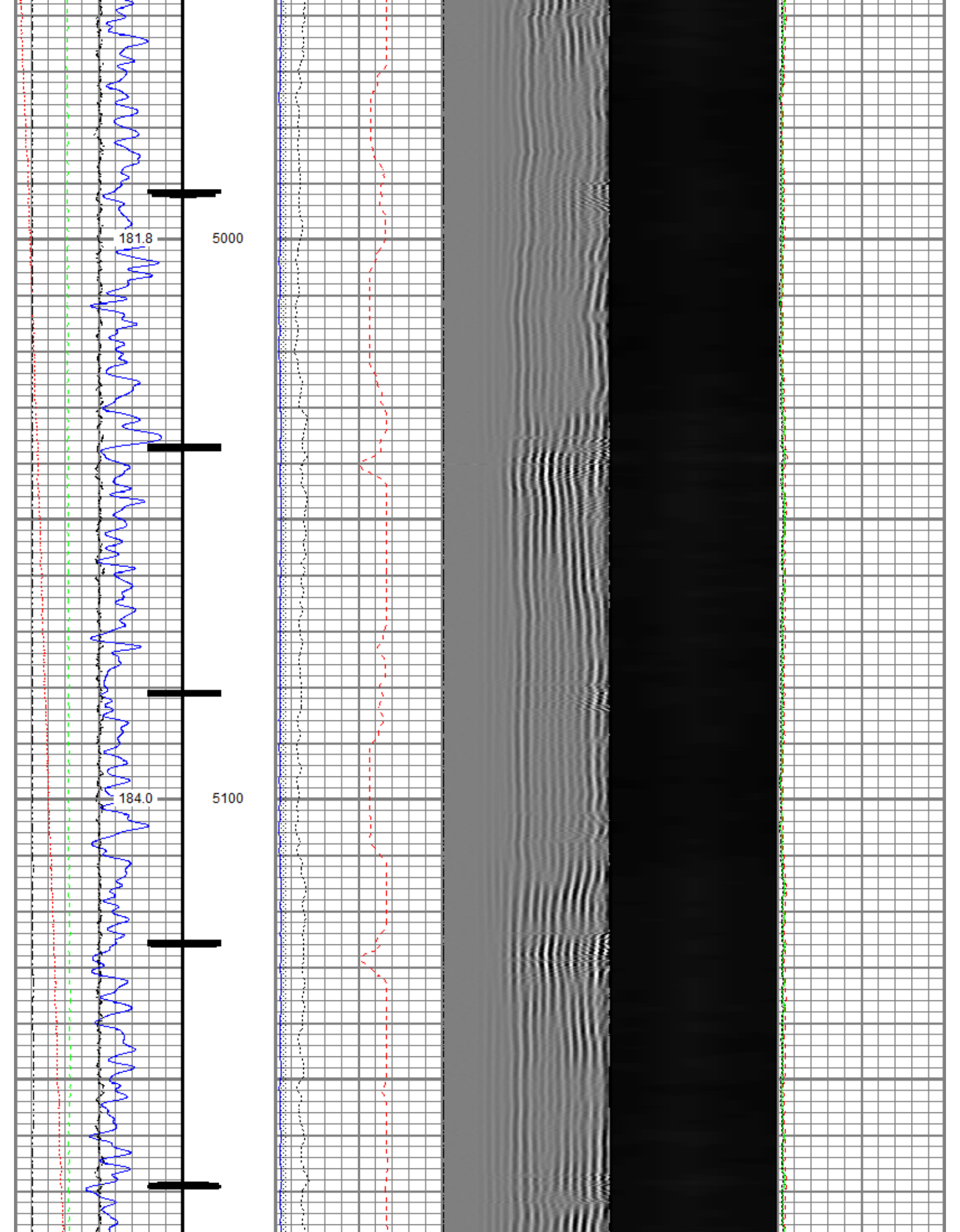


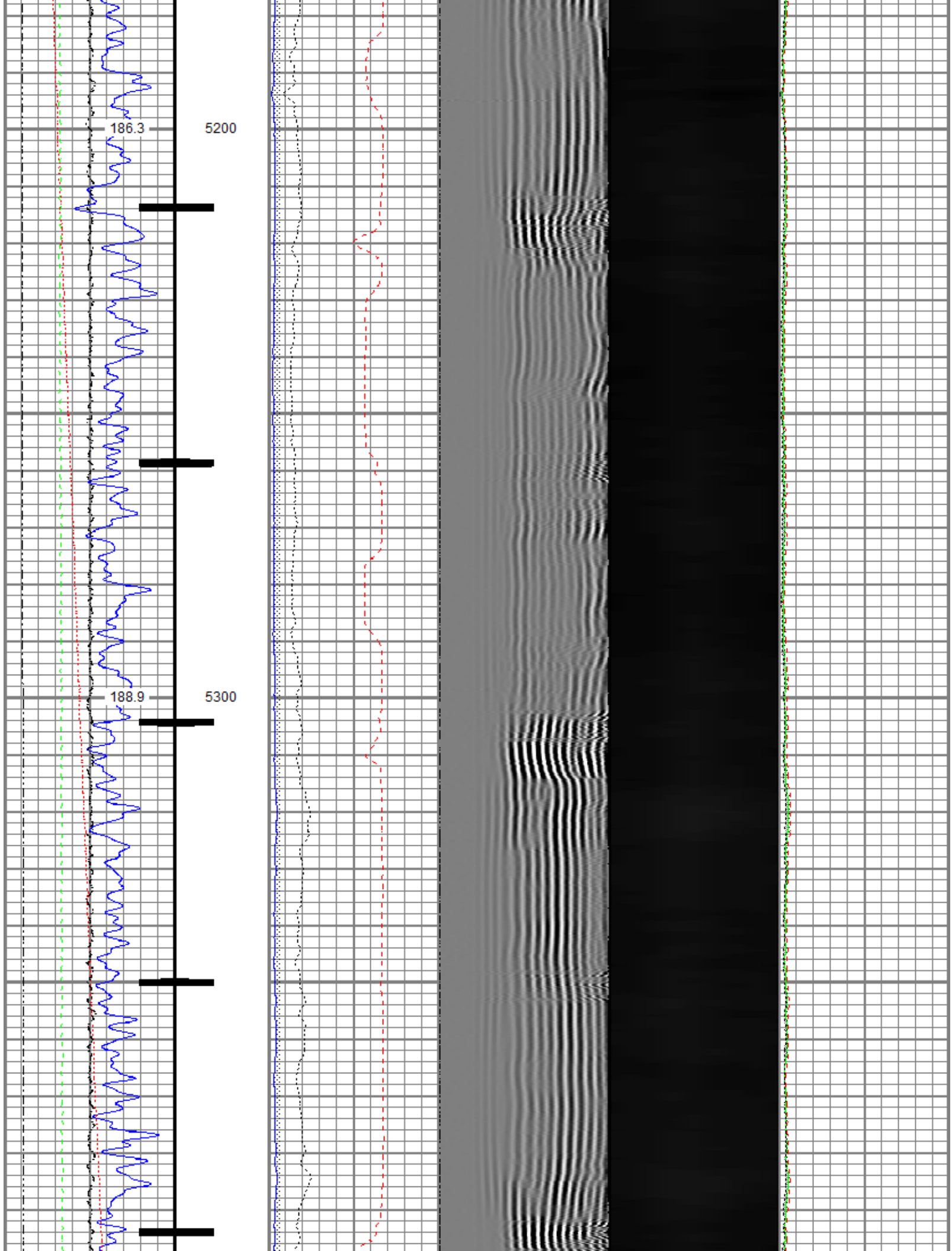


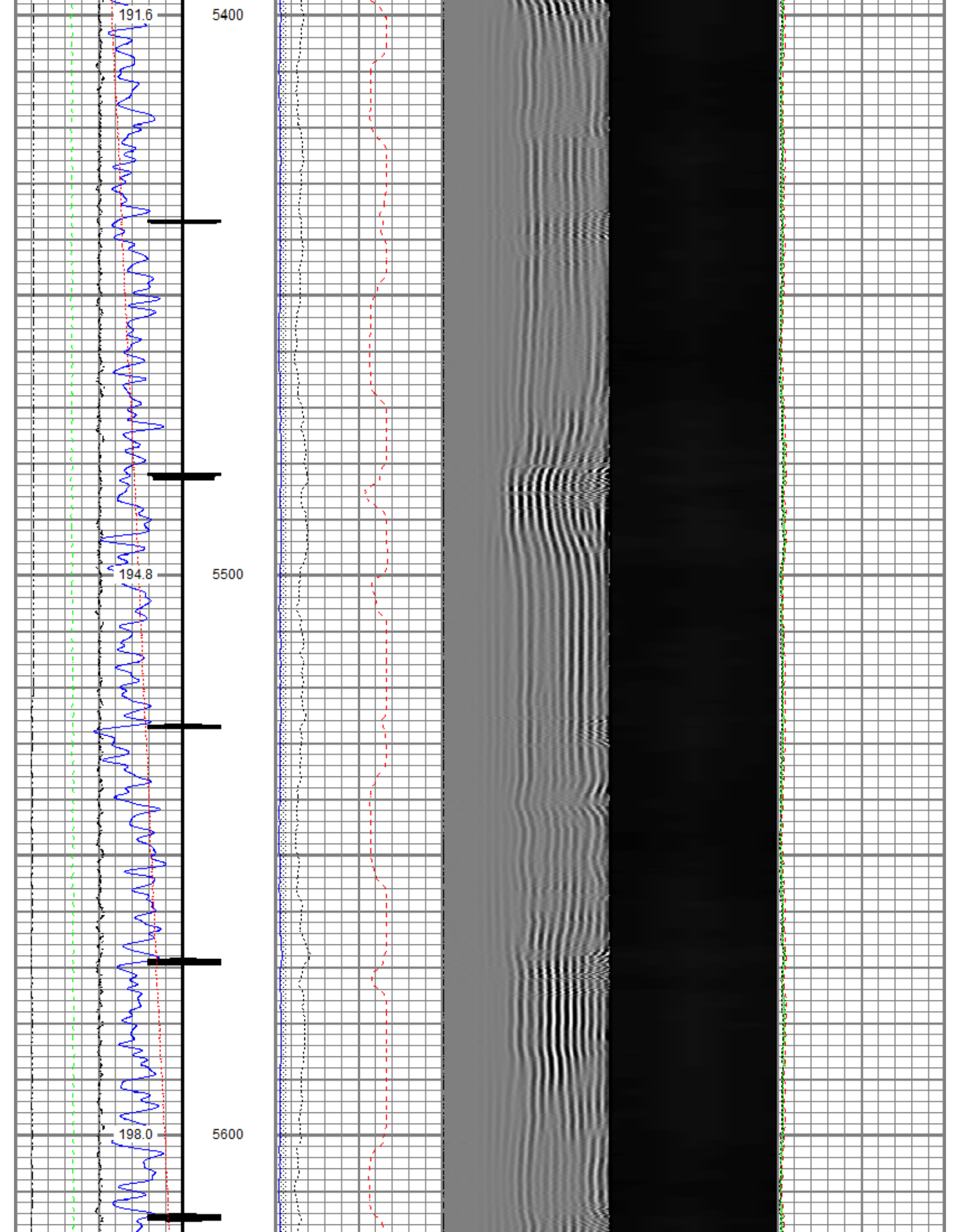


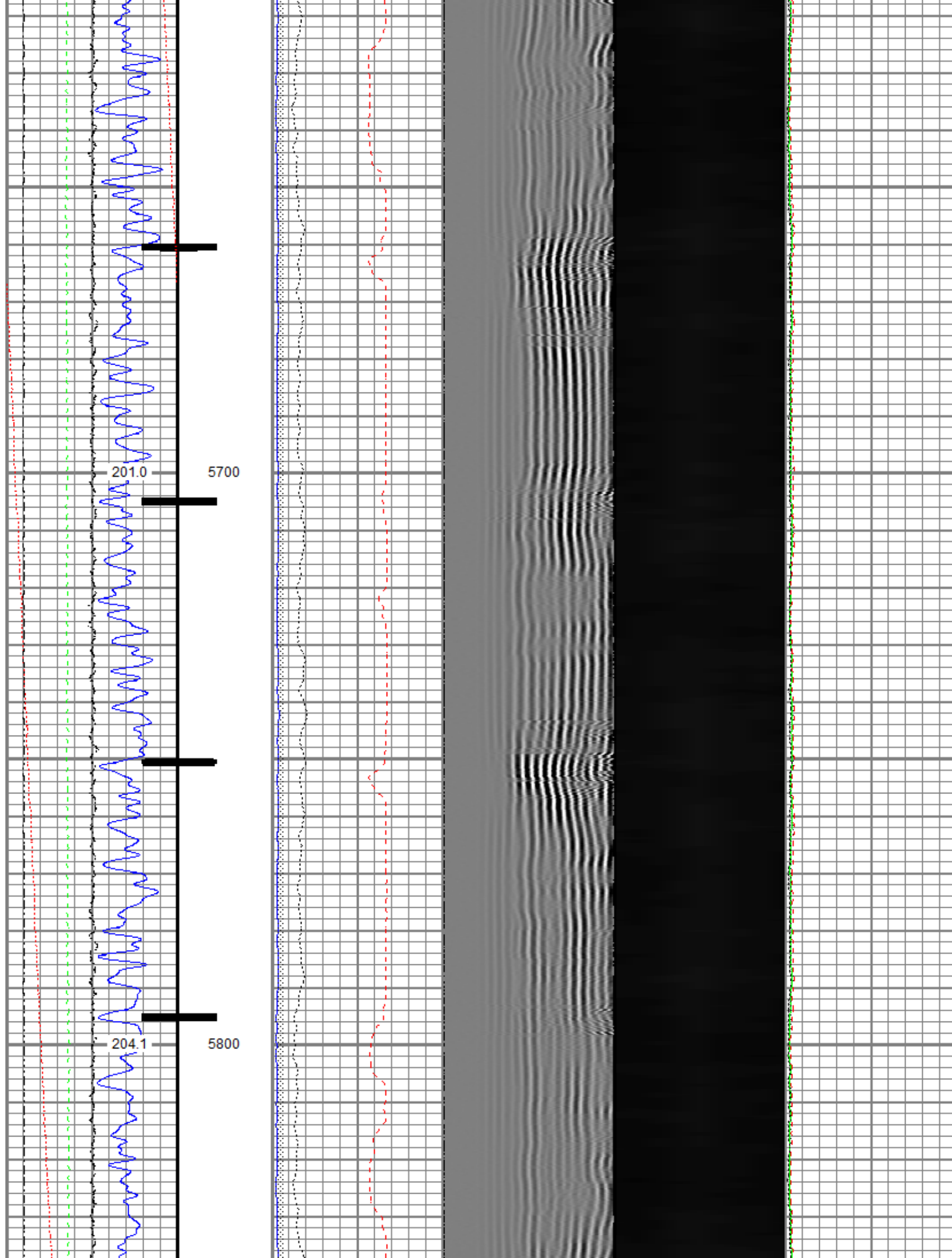


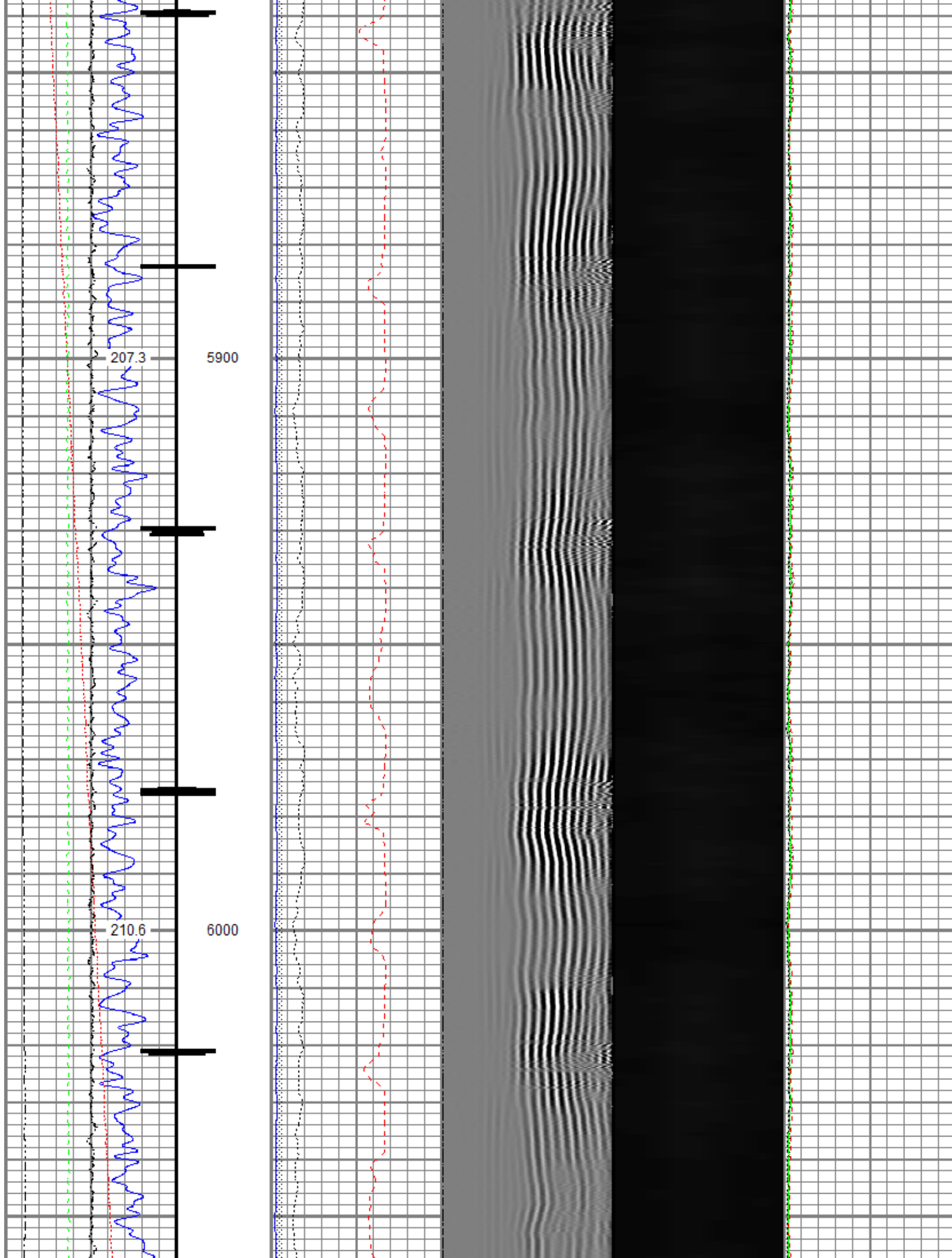


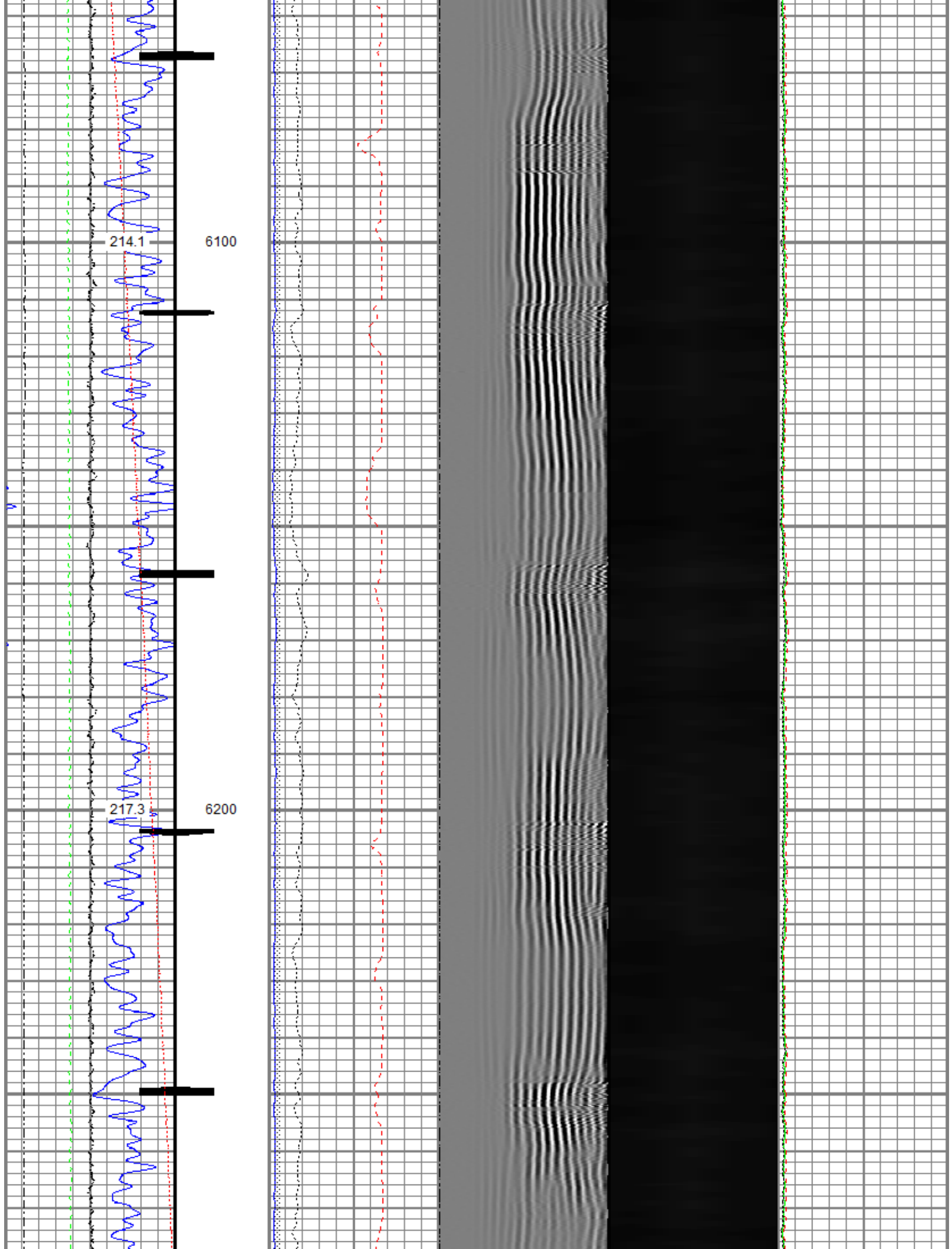


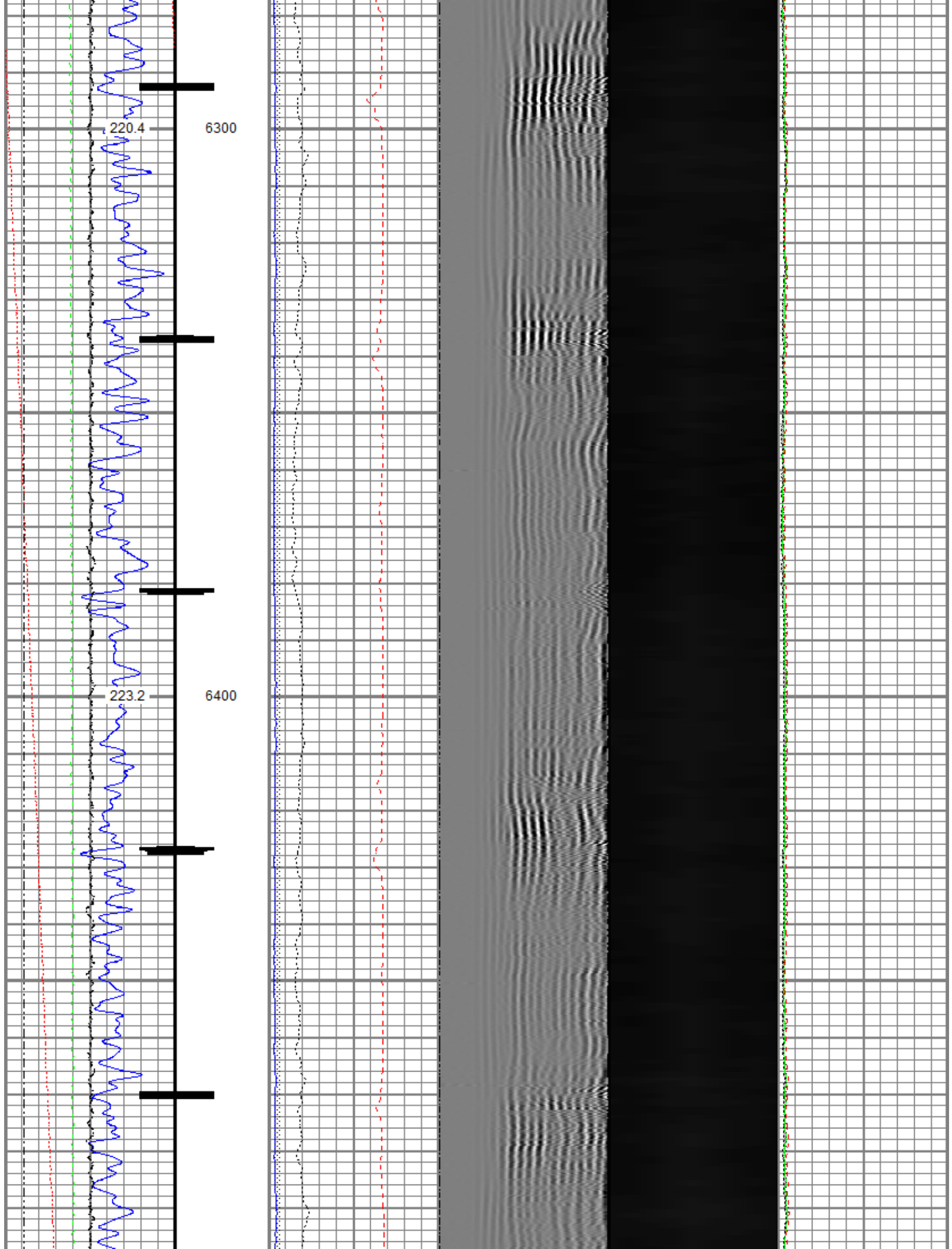


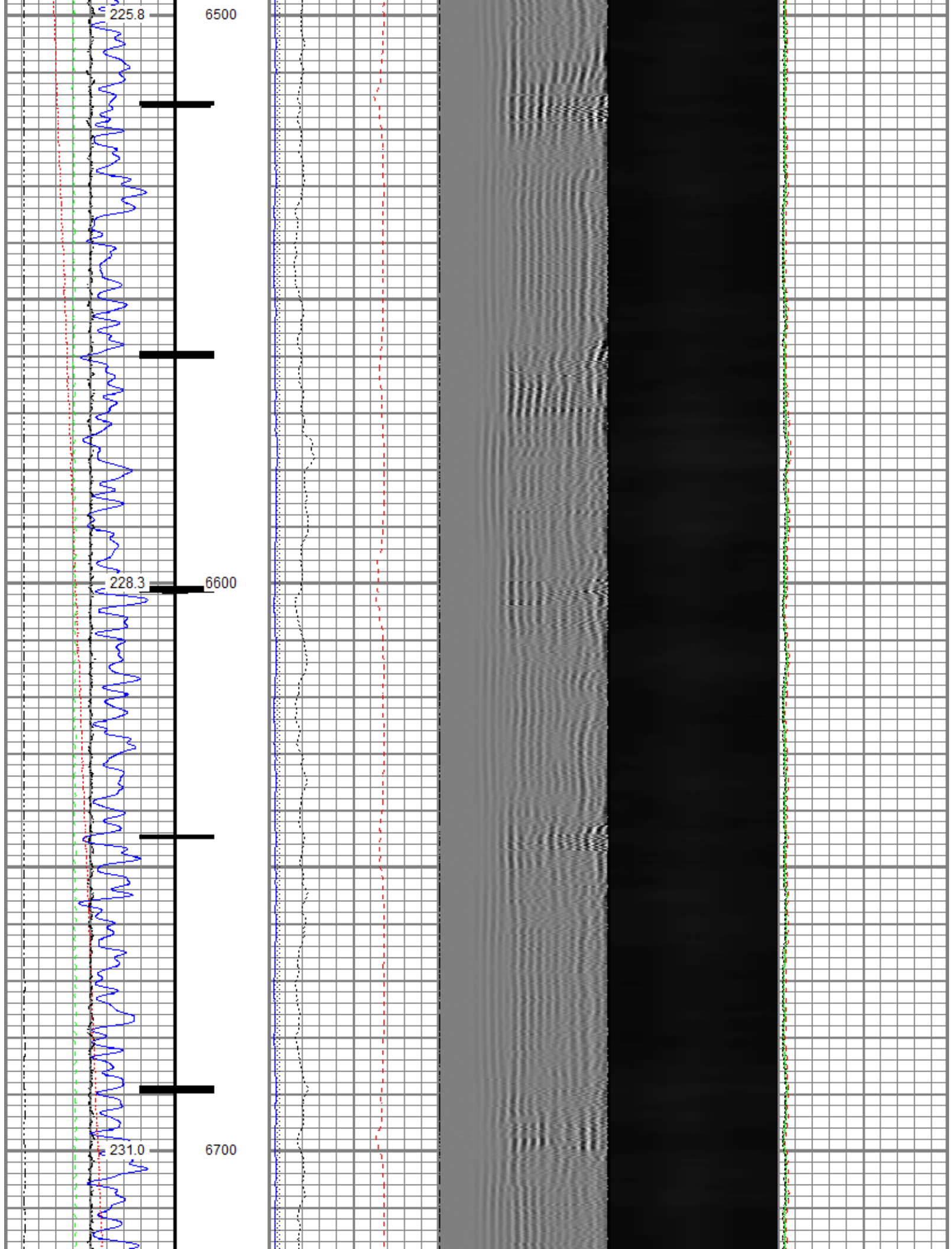


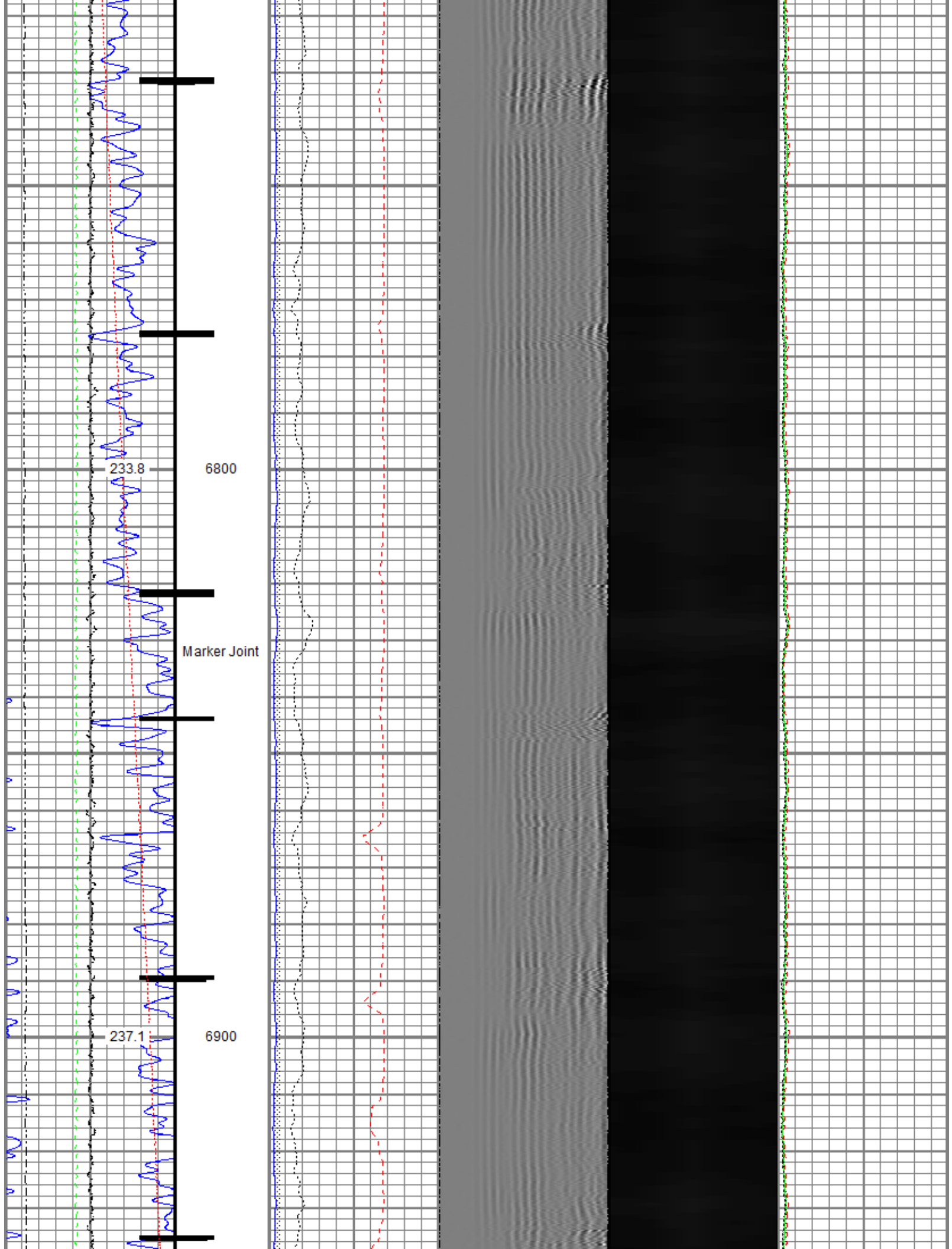


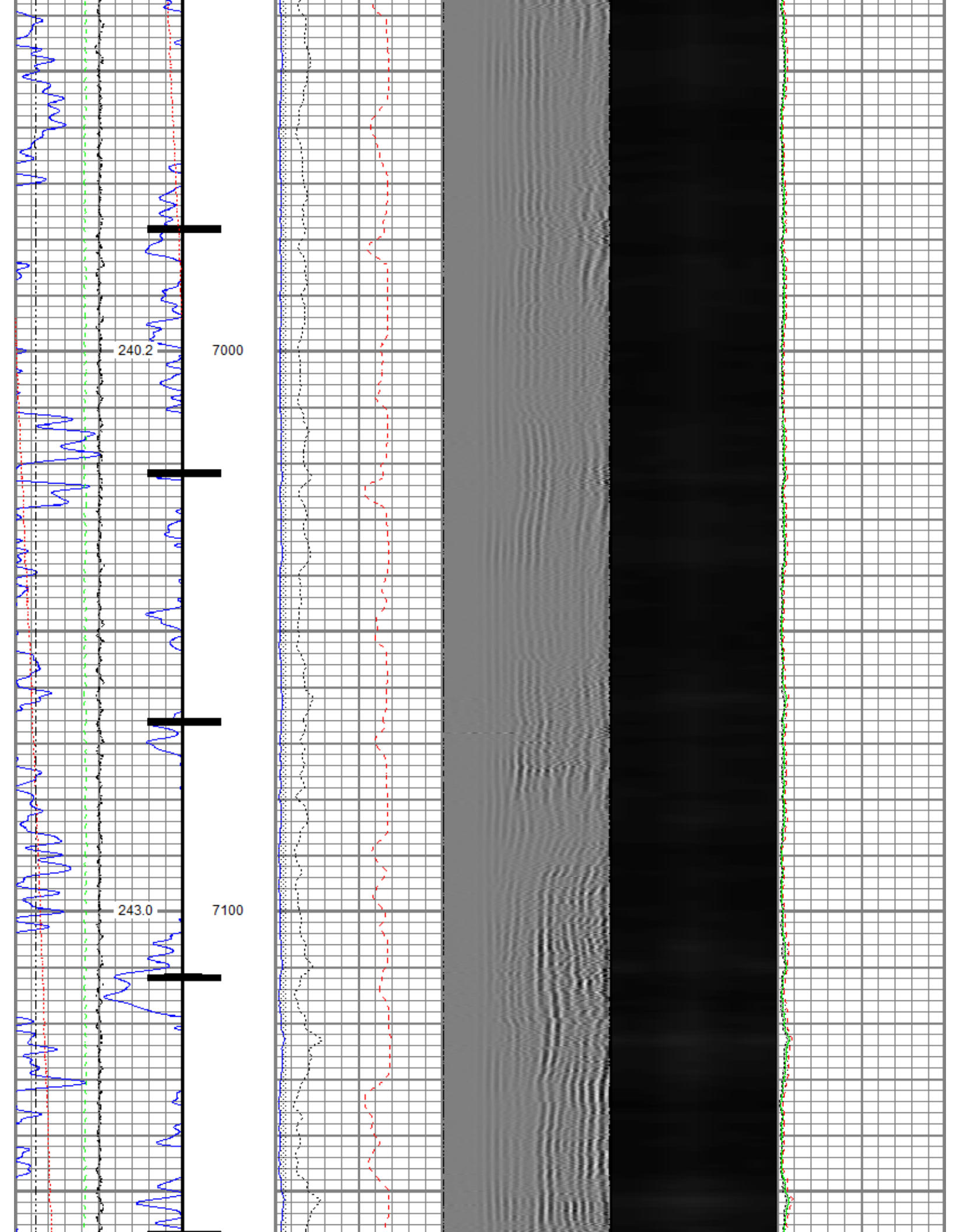


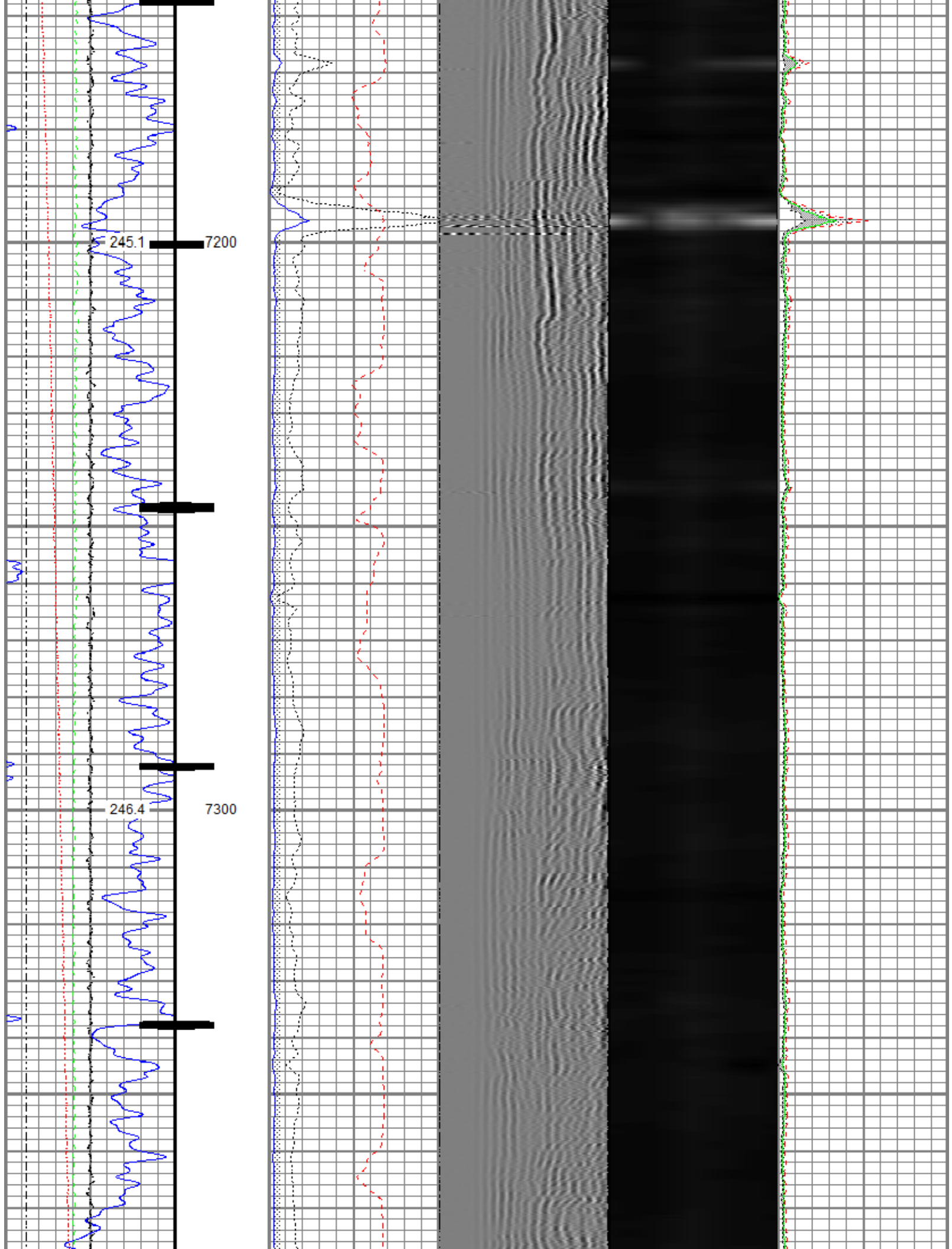


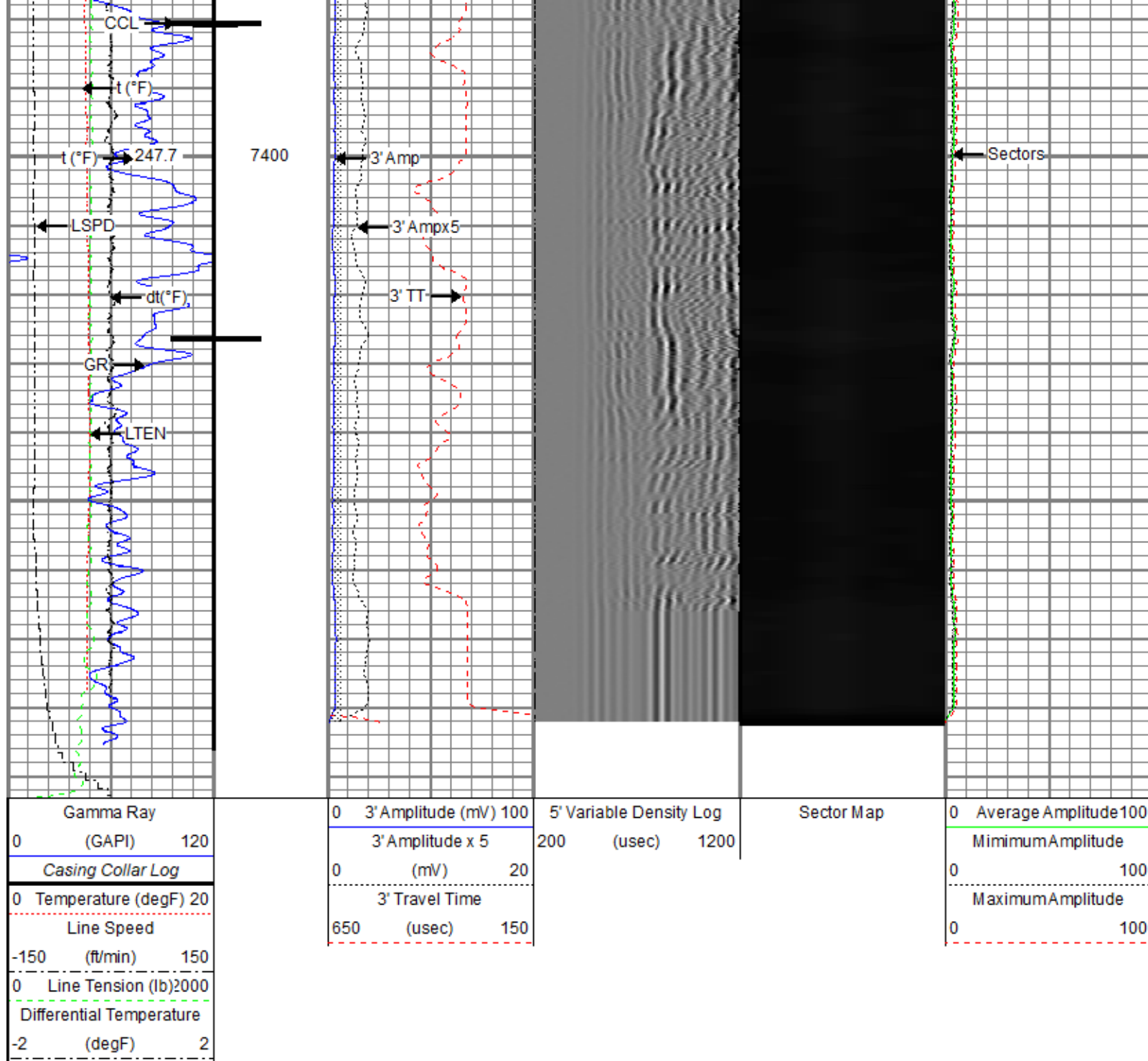








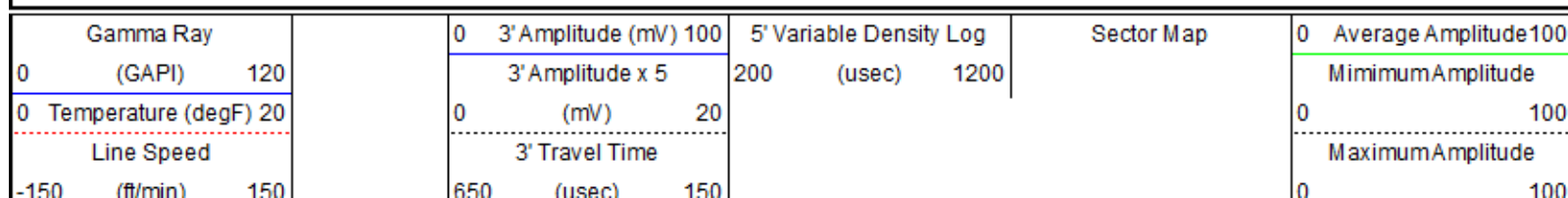




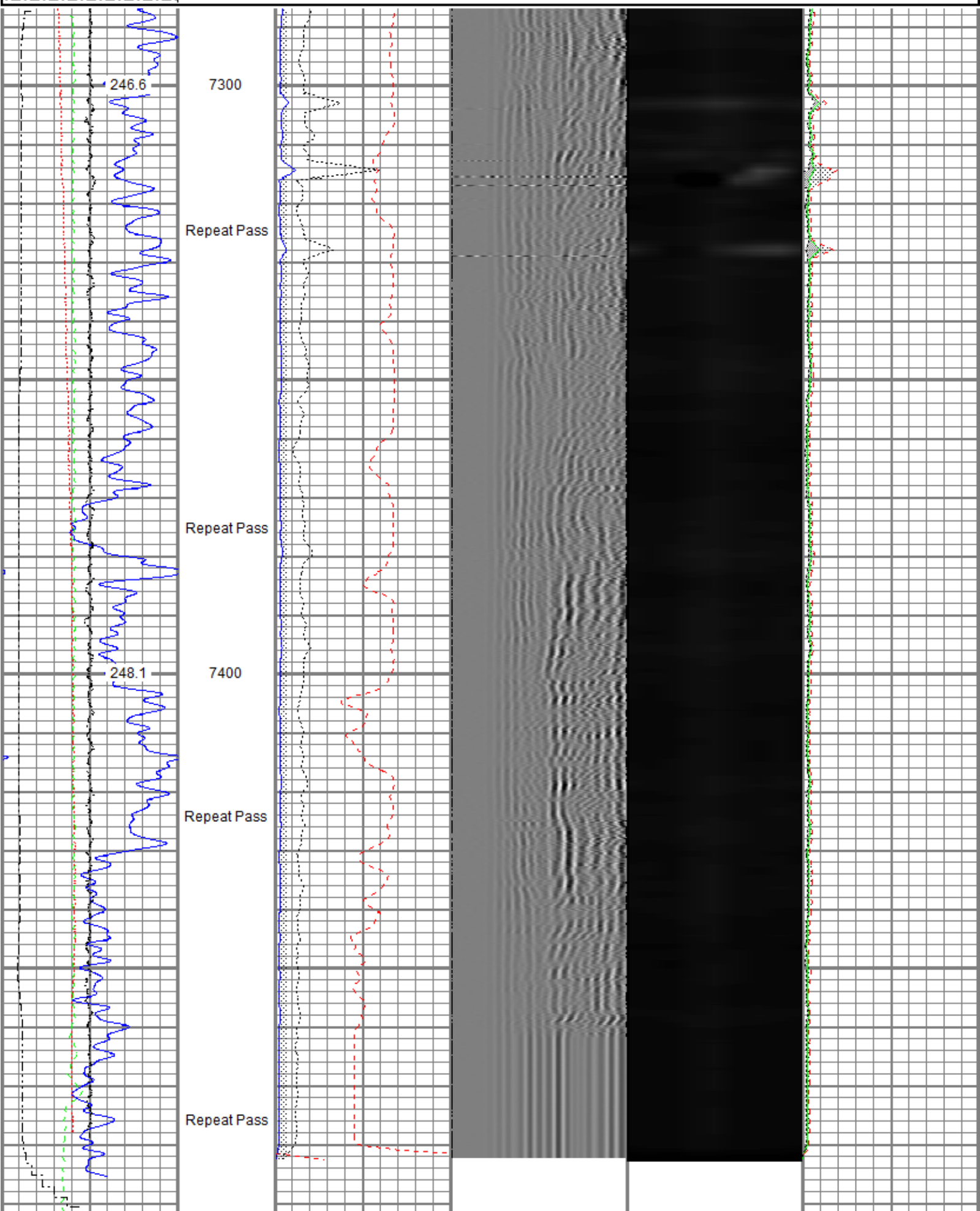
Repeat Pass

Recorded With 2500 PSI Surface Induced Pressure

Database File becker d17-745\noble_becker d17-745_rbl_11-15-20.db
Dataset Pathname repeat/pass1.1
Presentation Format ros_radri_noble
Dataset Creation Mon Nov 16 10:13:29 2020
Charted by Depth in Feet scaled 1:240



0 Line Tension (lb) 2000
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)
ErrCt	19.60		SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
RBT_HV	17.07		Titan CHD-16875 GO Titan 1-11/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
TEMP	14.16					
RBT_ACCZ	11.93		Probe Radii ACC-2750 RBTa (FW1302-002) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub and Accelerometer	9.39	2.75	105.00
RBT_ACCY	11.93					
RBT_ACCX	11.93					
WVFSYNC	11.93					
WVFS8	11.93					
WVFS7	11.93					
WVFS6	11.93					
WVFS5	11.93					
WVFS4	11.93					
WVFS3	11.93					
WVFS2	11.93					
WVFS1	11.93					
WVFCAL	11.93					
WVF3FT	11.93					
WVF5FT	10.93		SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
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

Dataset:	Noble_Becker D17-745_RBL_11-15-20.db: field/well/main/pass1.1
Total length:	19.60 ft
Total weight:	229.40 lb
O.D.:	3.25 in

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\Becker D17-745\Noble_Becker D17-745_RBL_11-15-20.db
Dataset Pathname	main/pass1.1
Dataset Creation	Sun Nov 15 10:11:01 2020

Gamma Ray Calibration Report

Serial Number:	101001
Tool Model:	2750 6PB

Room Number:	2730 GFD	
Performed:	Tue Dec 03 09:24:53 2019	
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 RBTa		
Calibration Casing Diameter:	5.500		in
Calibration Depth:	8.759		ft

Master Calibration, performed (Derived):
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Raw (v)	Calibrated (mv)	Results
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	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.743	0.800	71.921	95.788	0.728
CAL	0.739	0.727				
5'	0.000	0.712	0.800	71.921	99.887	0.778
SUM						
S1	0.001	0.730	0.000	100.000	137.196	-0.085
S2	0.001	0.811	0.000	100.000	123.450	-0.083
S3	0.001	0.843	0.000	100.000	118.711	-0.101
S4	0.001	0.800	0.000	100.000	125.221	-0.125
S5	0.001	0.750	0.000	100.000	133.447	-0.110
S6	0.001	0.722	0.000	100.000	138.694	-0.097
S7	0.001	0.706	0.000	100.000	141.840	-0.078
S8	-0.000	0.716	0.000	100.000	139.562	0.021

Internal Reference Calibration, performed (Not Performed):
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	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.739	0.727	1.000	0.000

Air Zero Calibration, performed Sun Nov 15 08:12:57 2020:

	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
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

Inclinometer Calibration Report					
Performed:	Tue Dec 03 09:24:53 2019				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-891.00	891.00	-1.00	1.00	gee
Y Accelerometer	-899.00	877.00	-1.00	1.00	gee
Z Accelerometer	-7.47	873.36	0.00	1.00	gee

Temperature Calibration Report					
Serial Number:	FW1302-002				
Tool Model:	2750 RBTa				
Performed:	Tue Dec 03 09:24:53 2019				
	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	Noble Energy Inc
	Well	Becker D17-745
	Field	Wattenberg
	County	Weld
	State	Colorado