



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Noble Energy Inc
Well Becker D17-735
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-48856
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 D17-735
Field Wattenberg
County Weld
State Colorado

Date	14-NOV-2020									
Run Number	One									
Depth Driller	15028 FT									
Depth Logger	7312 FT									
Bottom Logged Interval	7300 FT									
Top Log Interval	Surface									
Open Hole Size	8.5"									
Type Fluid	Water									
Density / Viscosity	8.34 lb/gal									
Max. Recorded Temp.	246°F									
E estimated Cement Top	See Log									
Time Well Ready	ROA									
Time Logger on Bottom	15:22									
E equipment Number	HD-0325									
Location	Platteville, CO									
Recorded By	Matt Steinman									
Witnessed By	Mike Stenger									
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	1932.4 FT					
Intermediate #1	5 1/2	17	---	Surface	15013.9 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 6750.4 FT
Adjusted -14 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!!

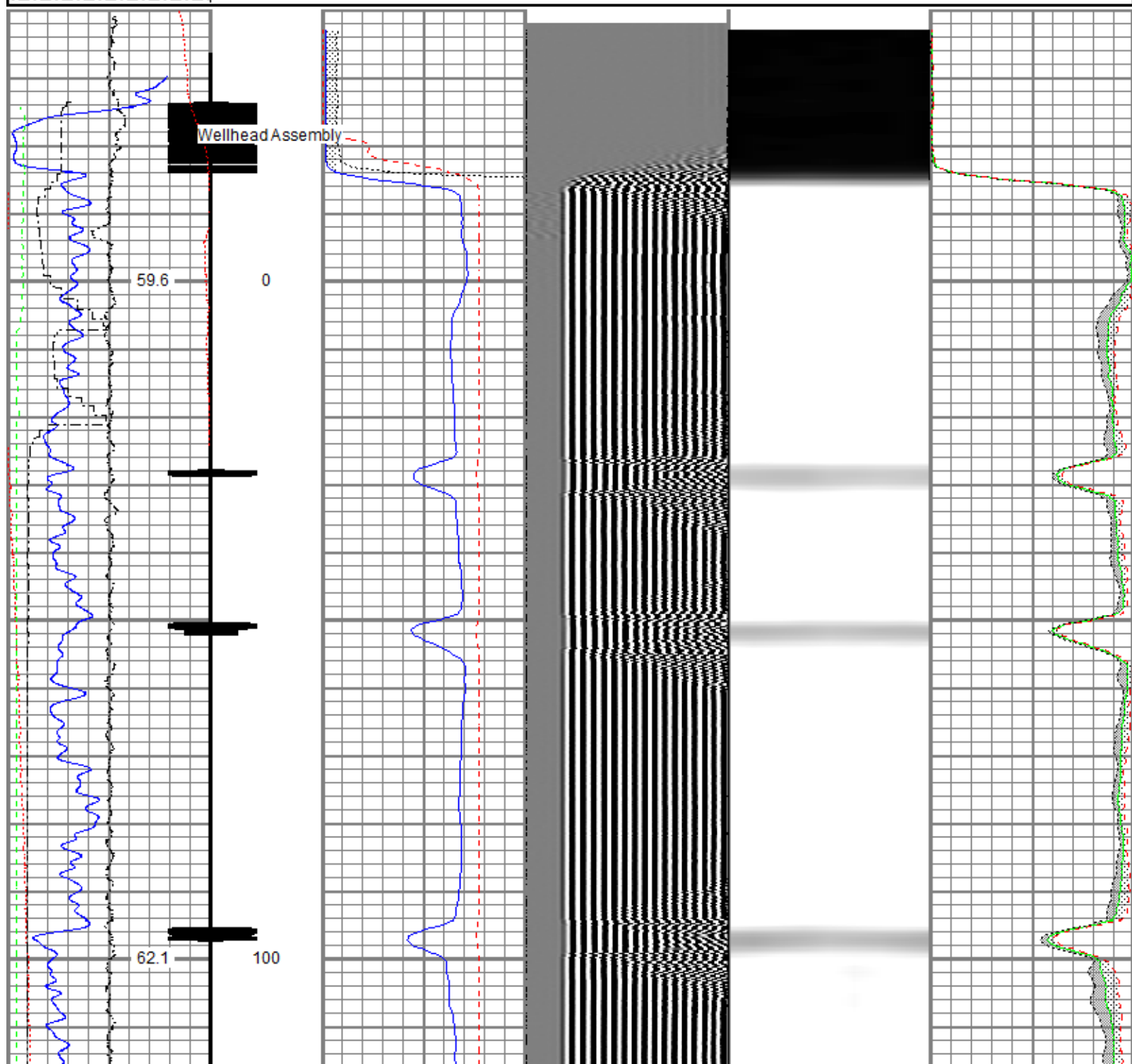
Main Pass

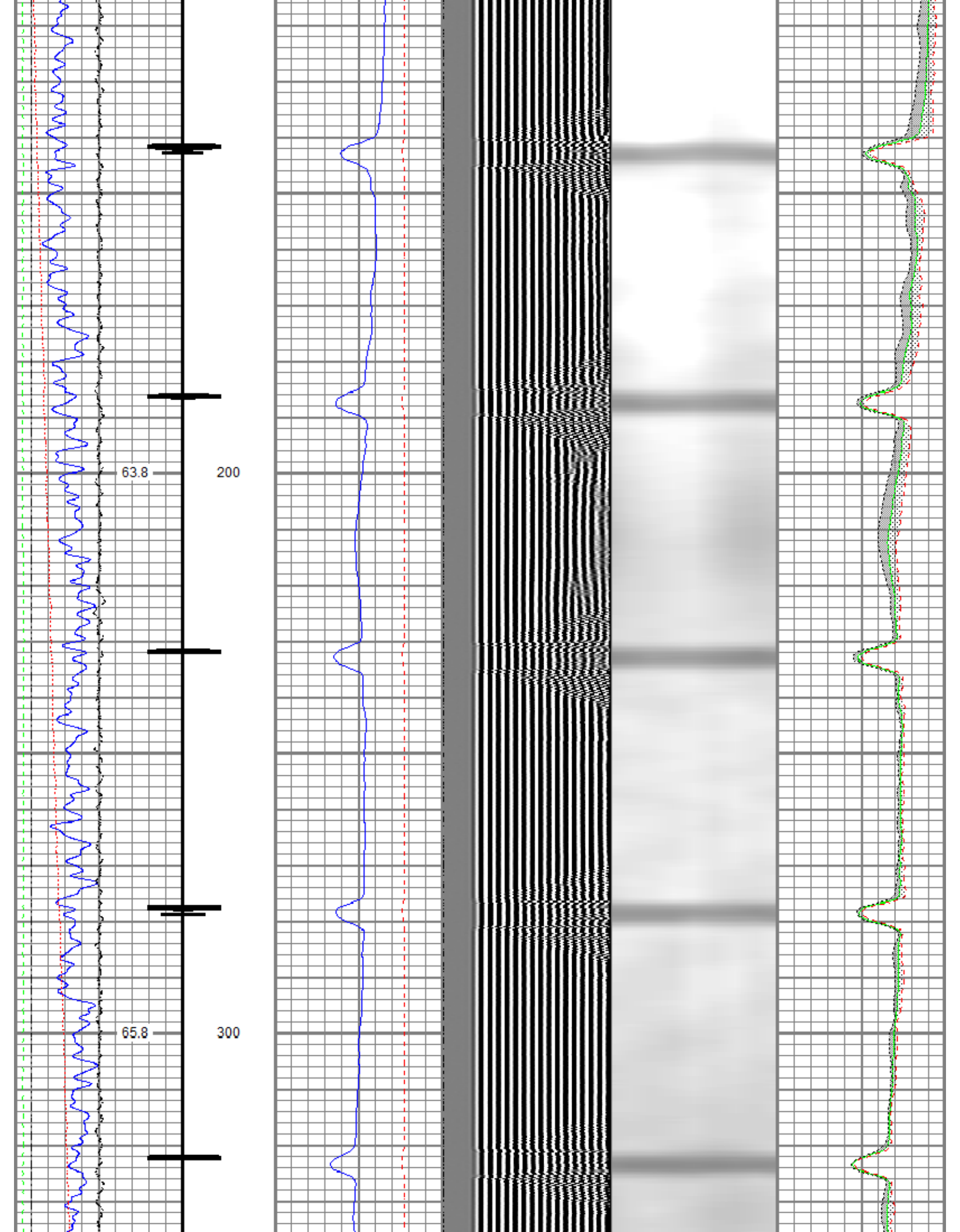


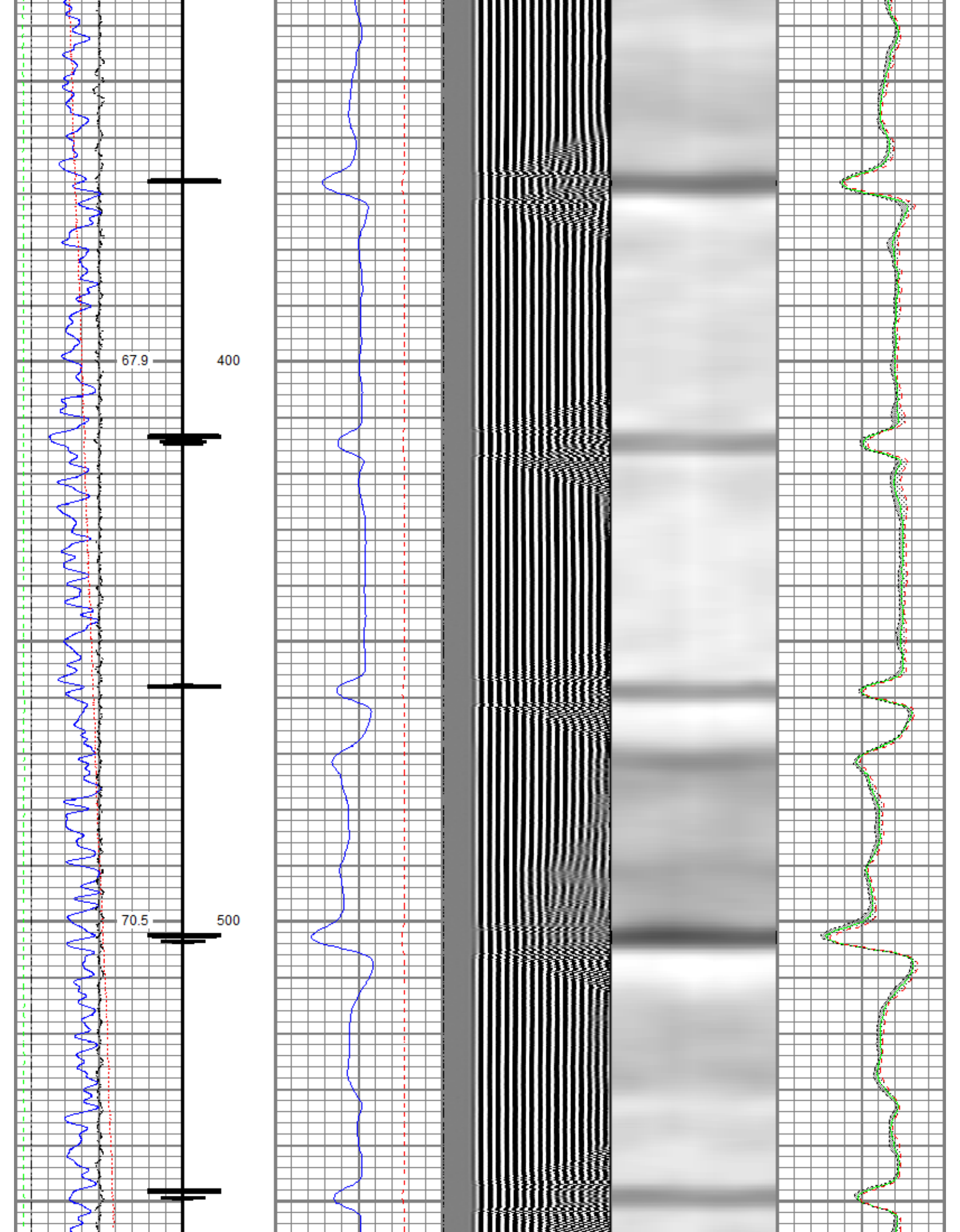
Recorded With 2500 PSI Surface Induced Pressure

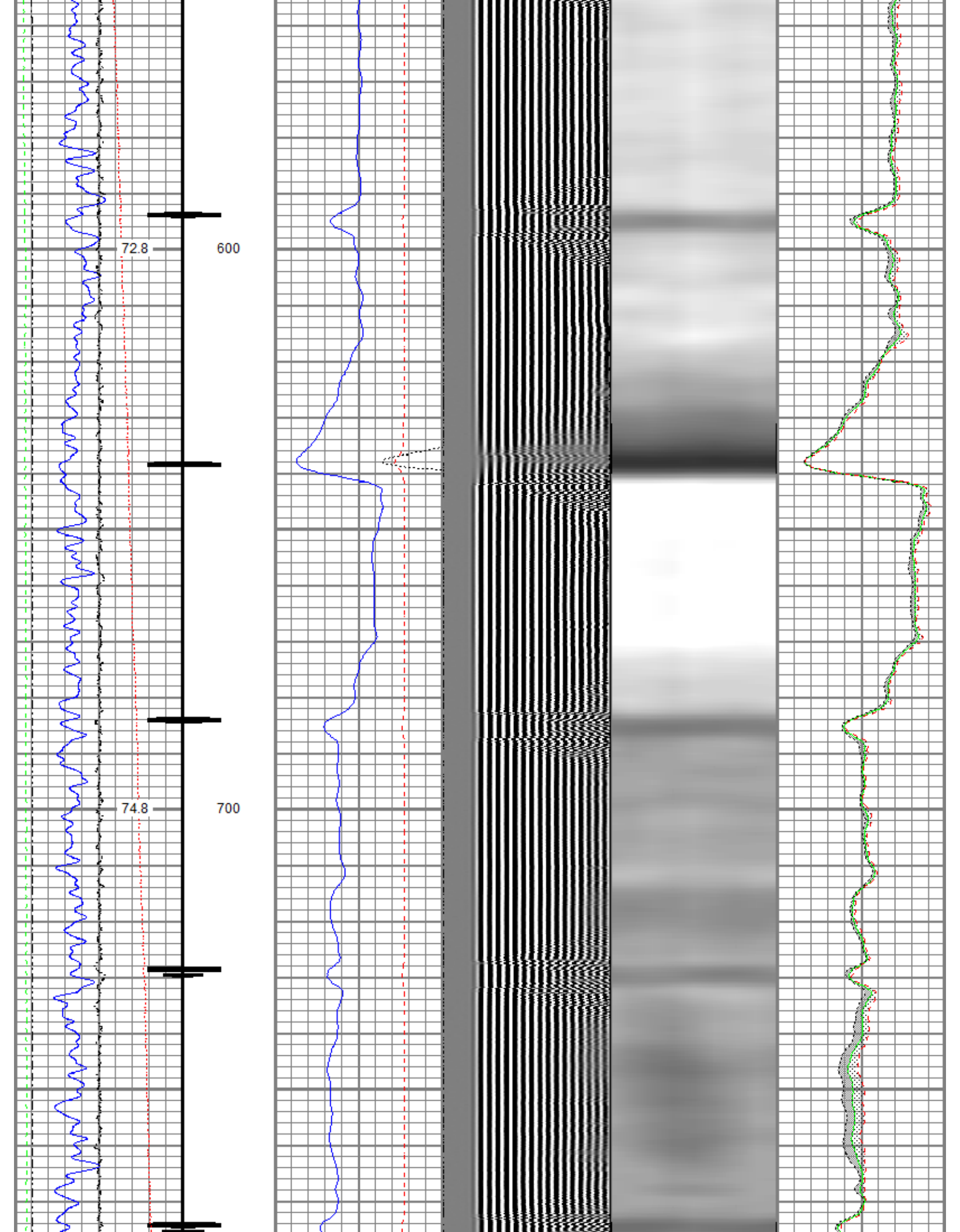
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 Dataset Pathname main/pass1.1
 Presentation Format ros_radri_noble
 Dataset Creation Sat Nov 14 16:35:33 2020
 Charted by Depth in Feet scaled 1:240

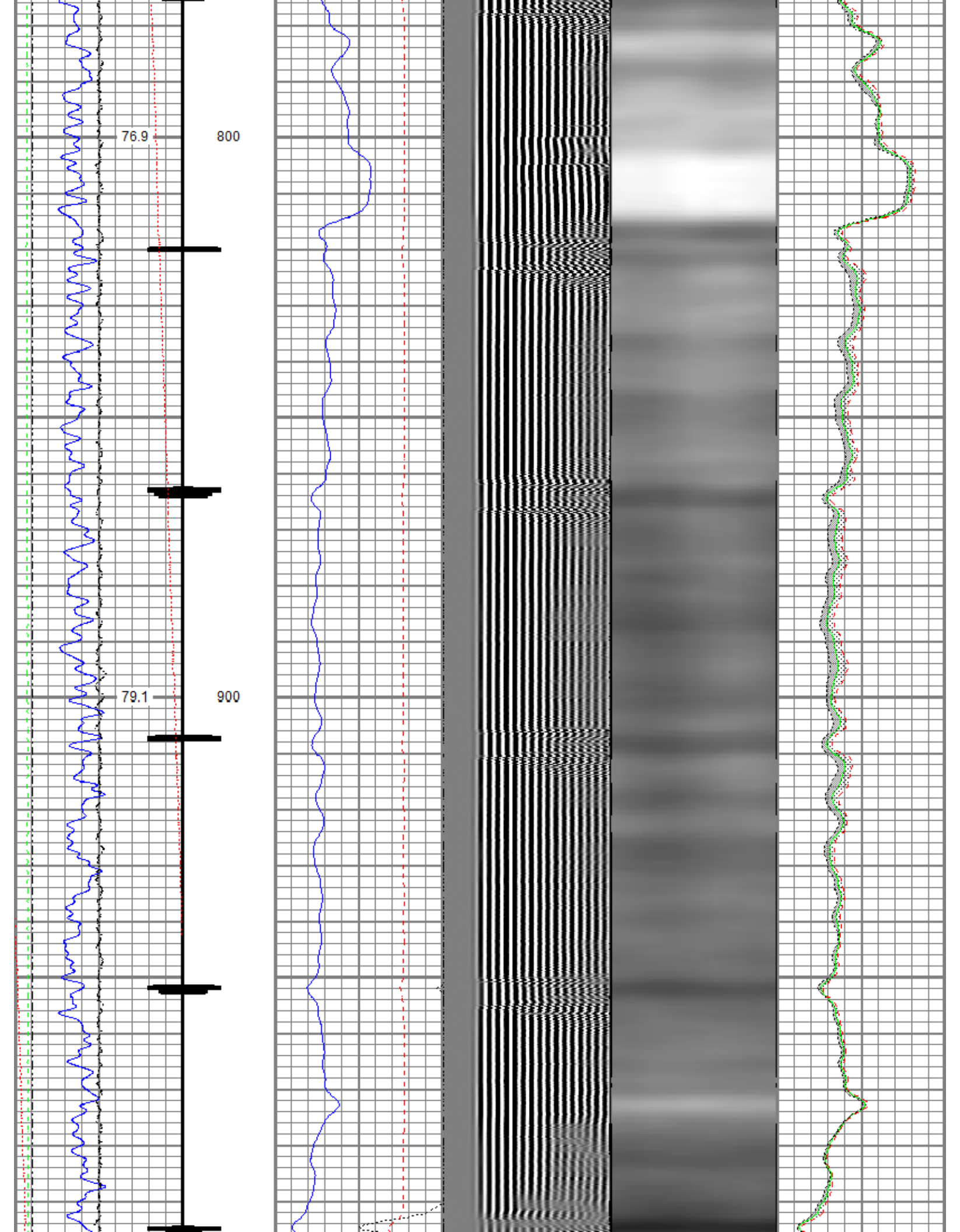
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

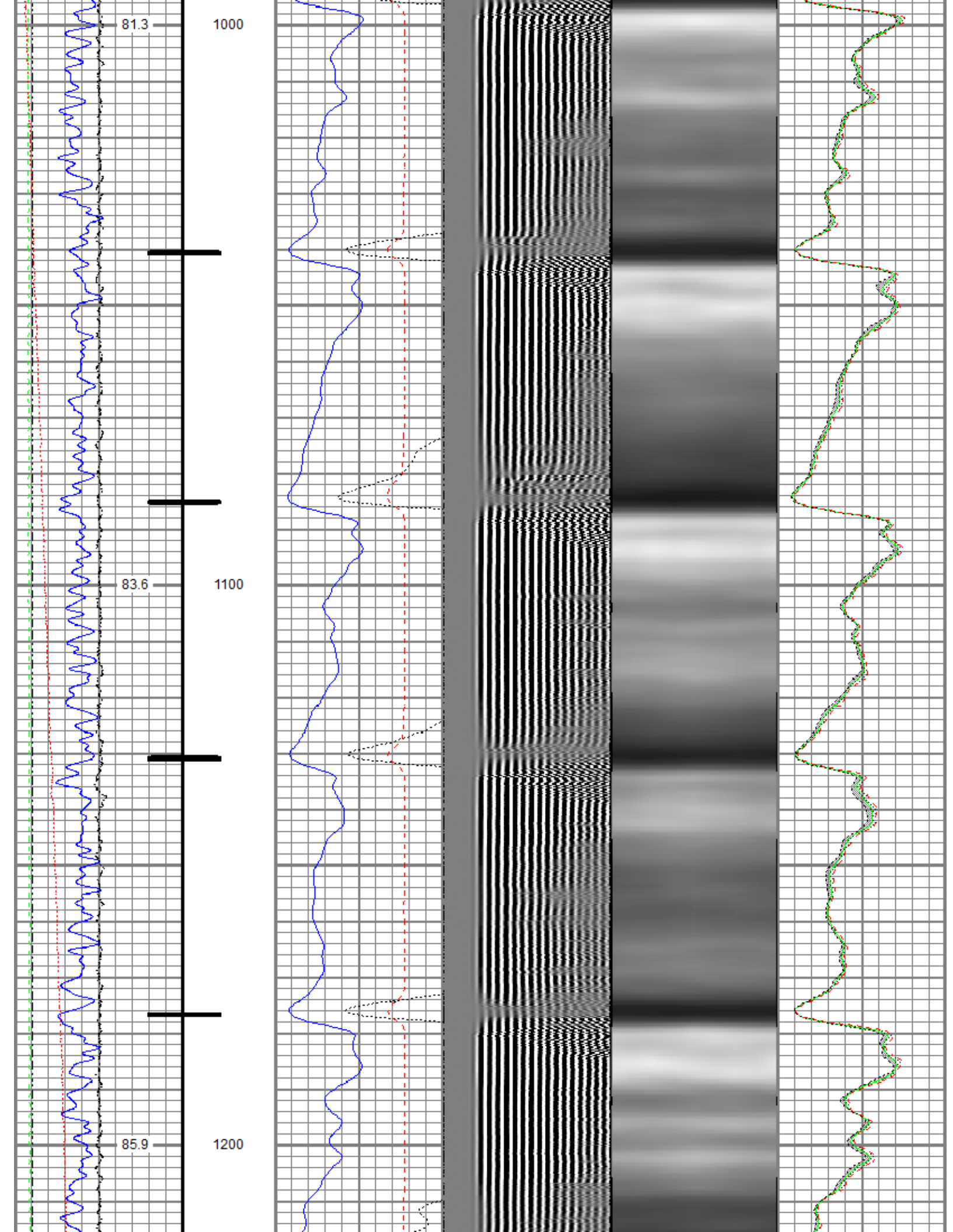


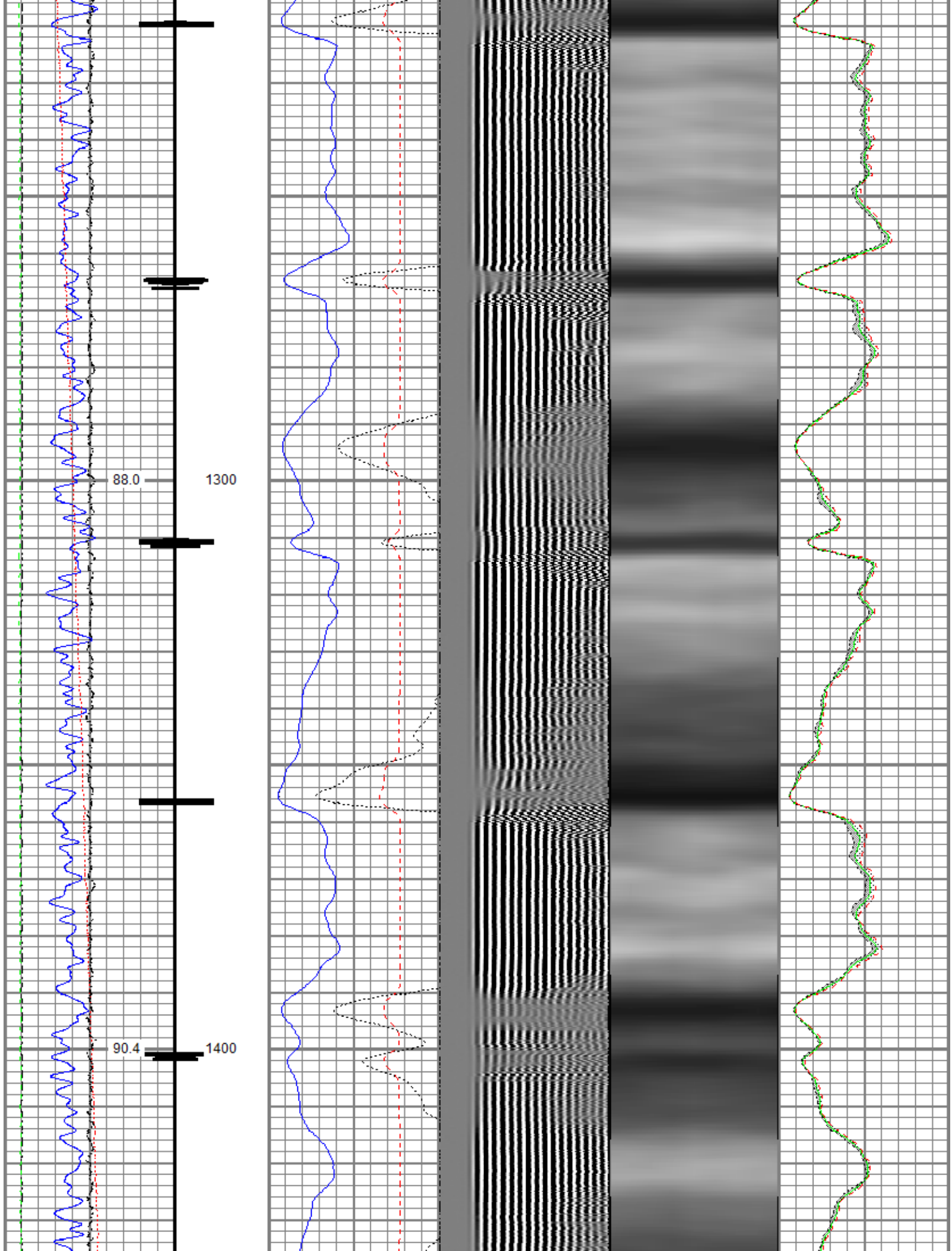


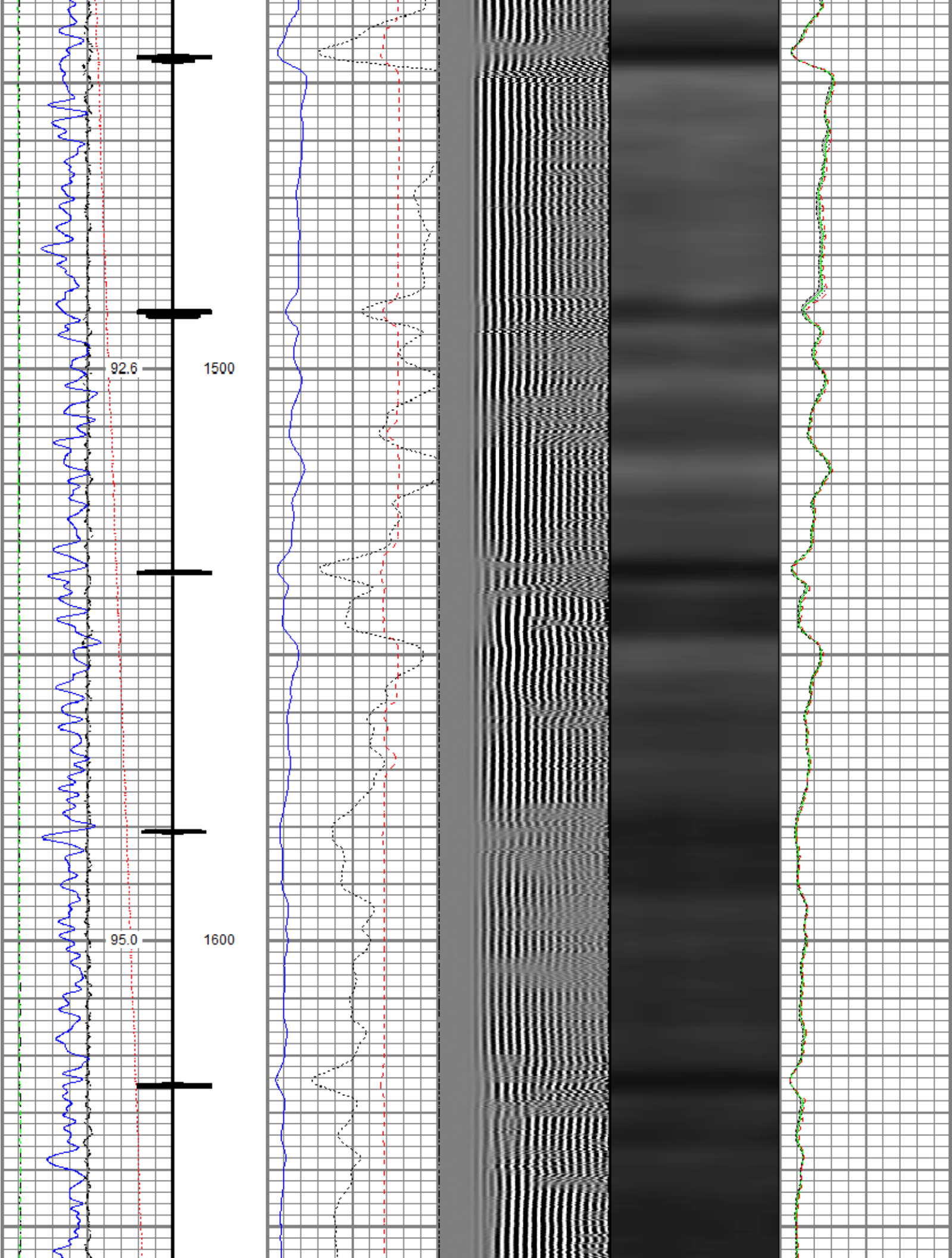


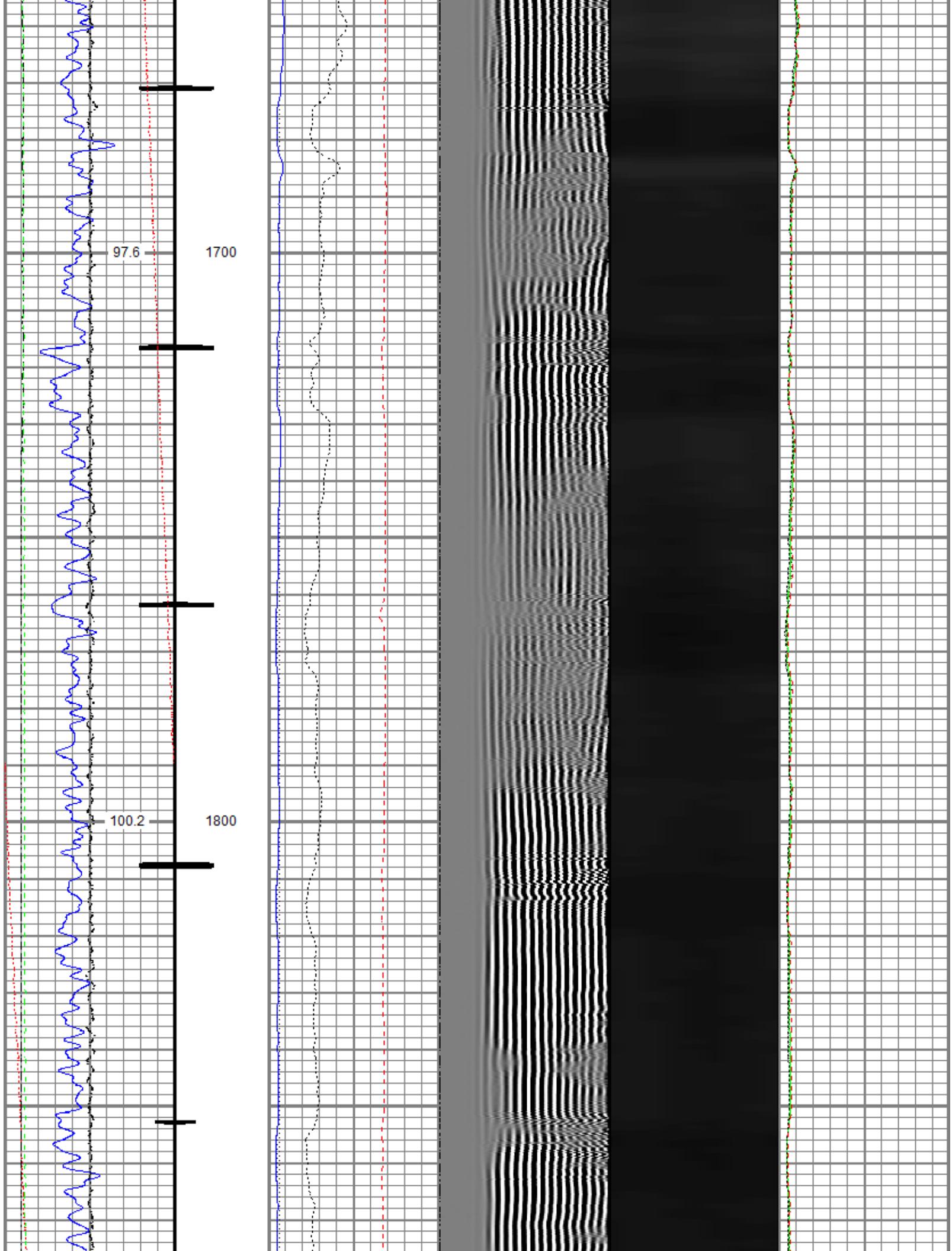


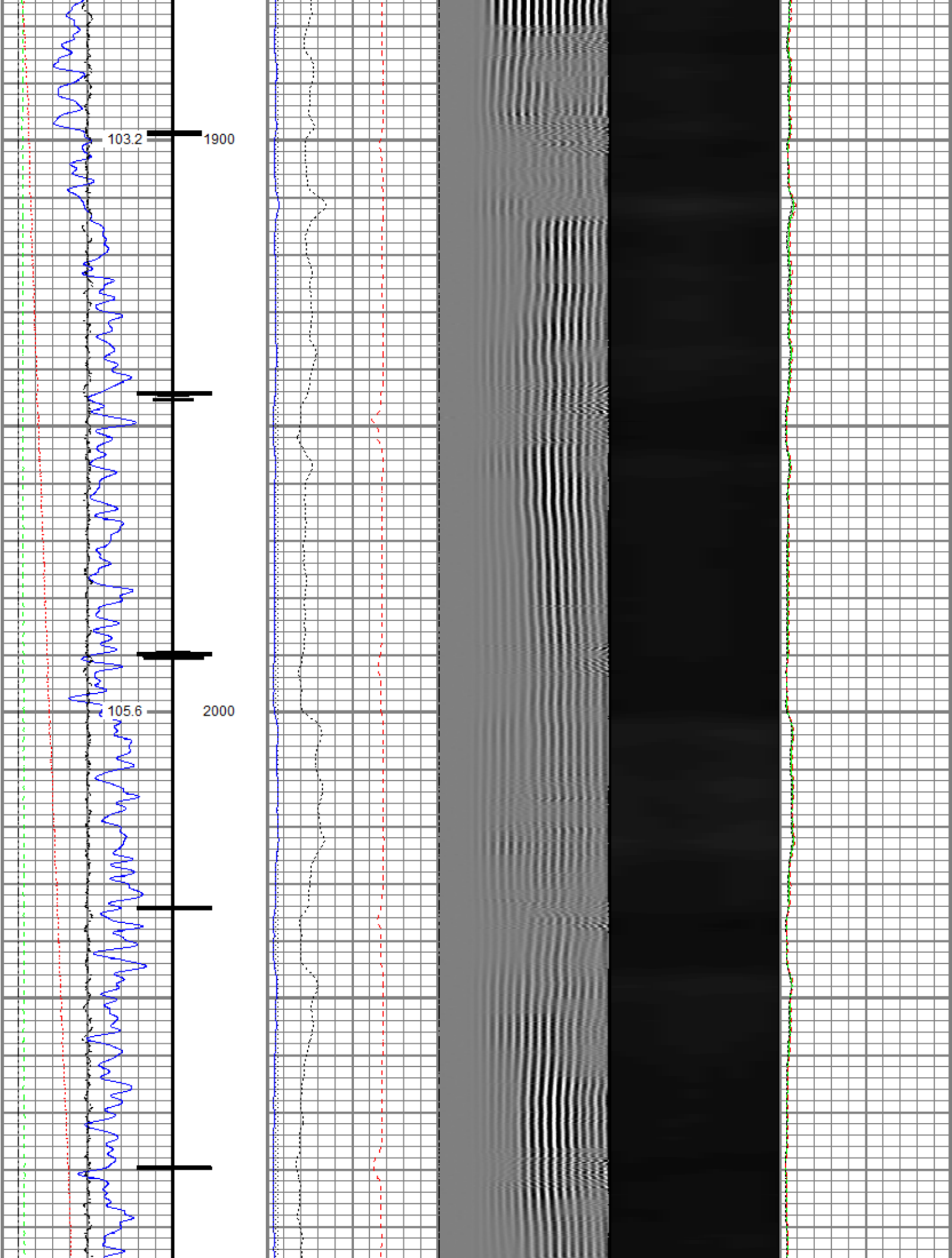


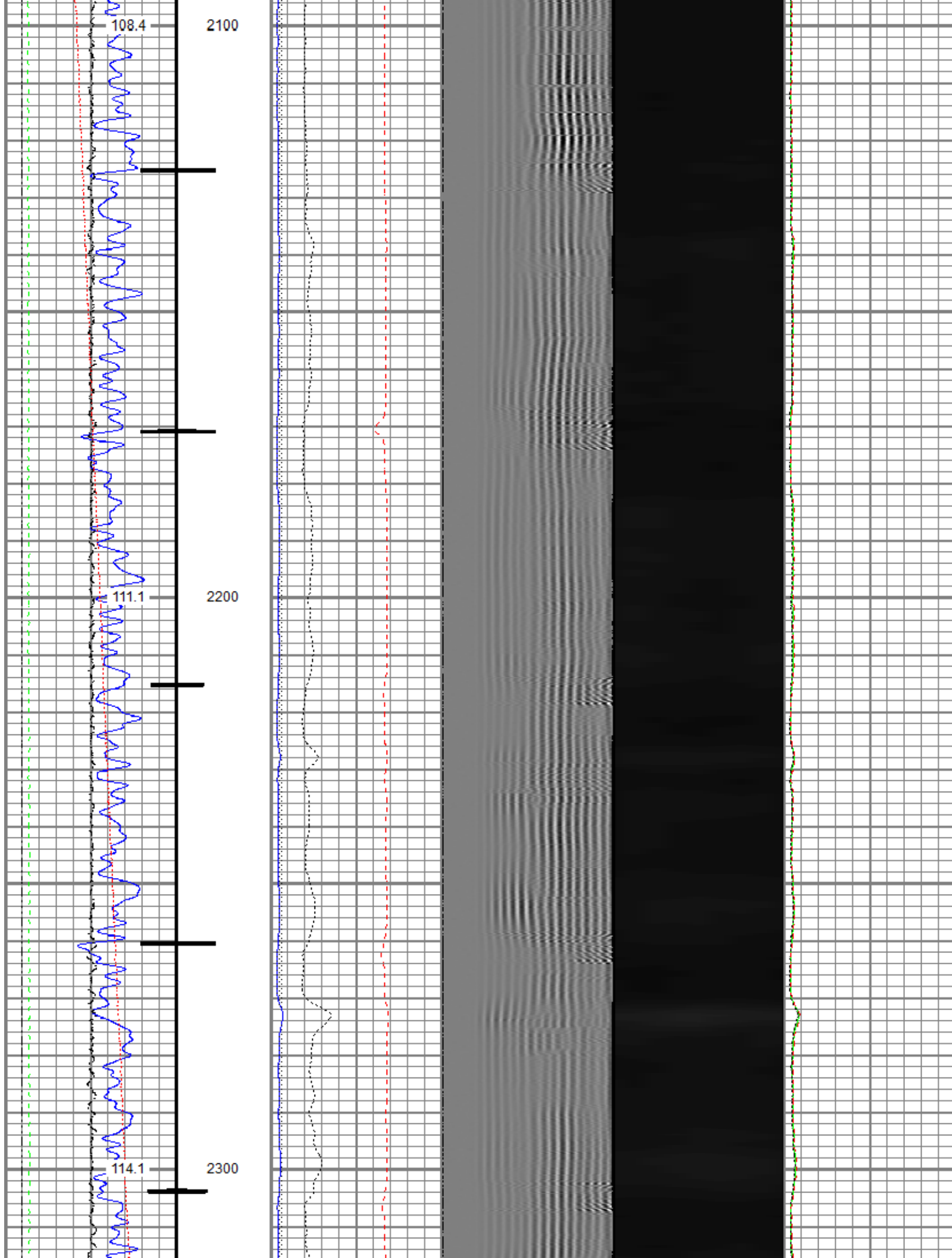


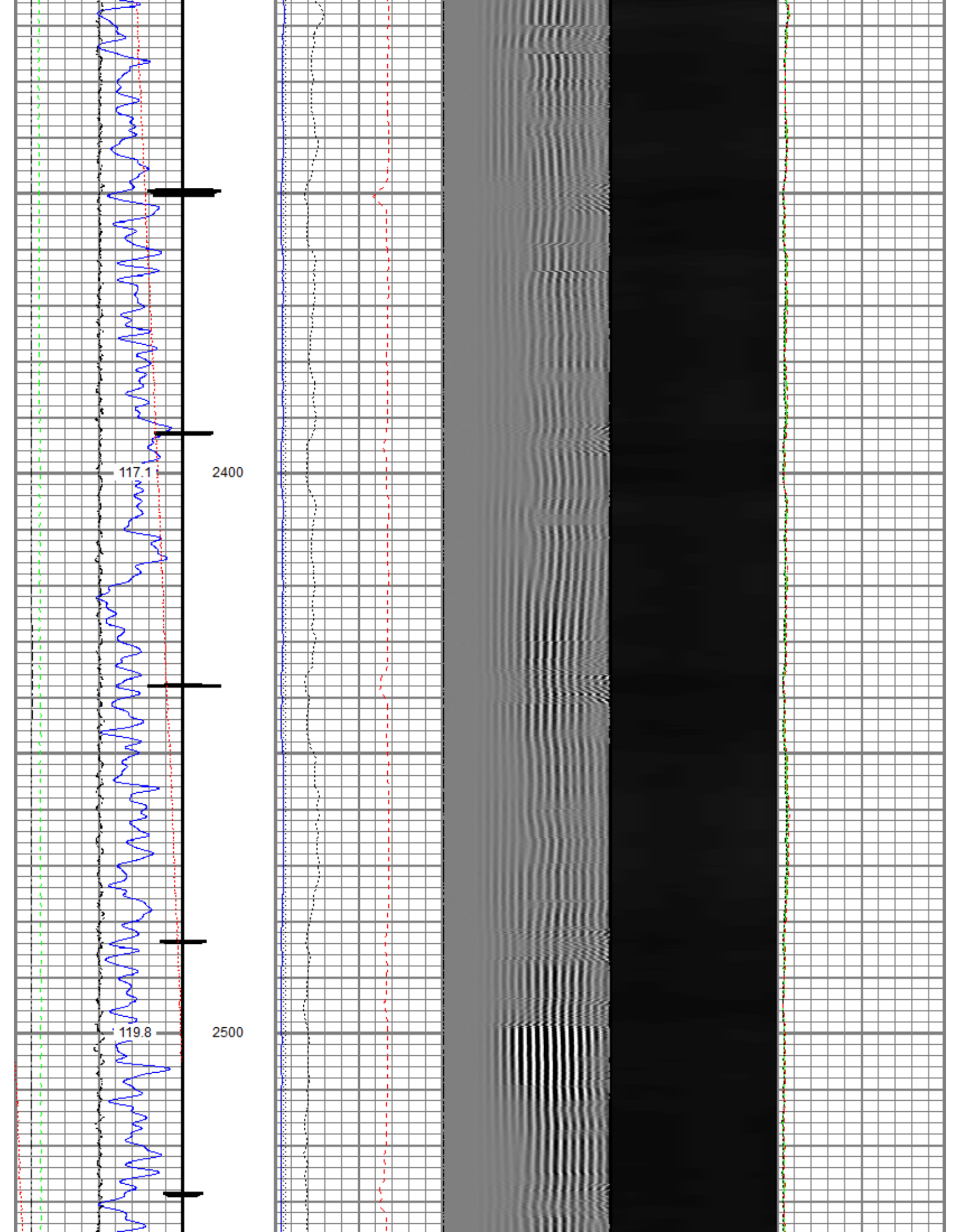


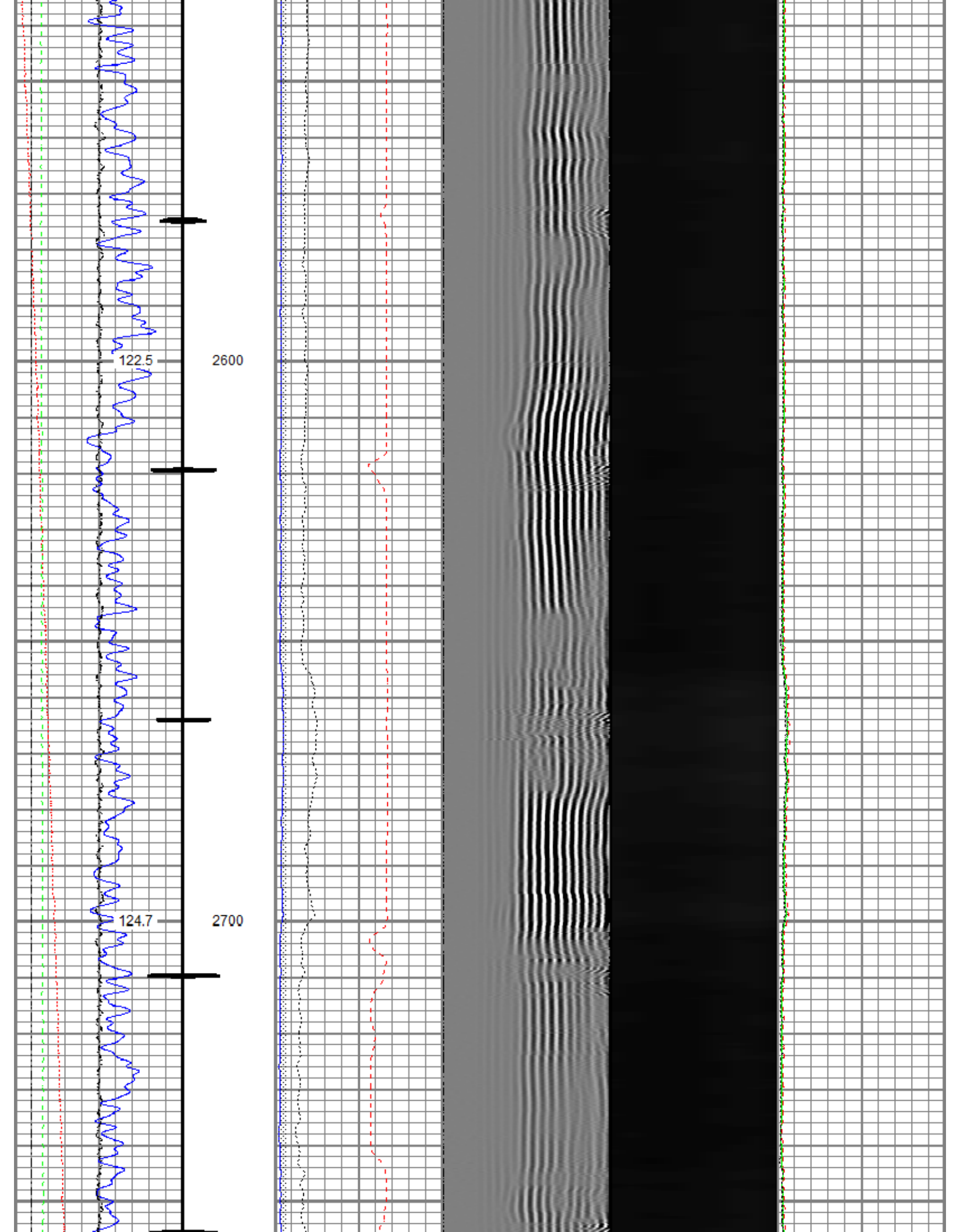


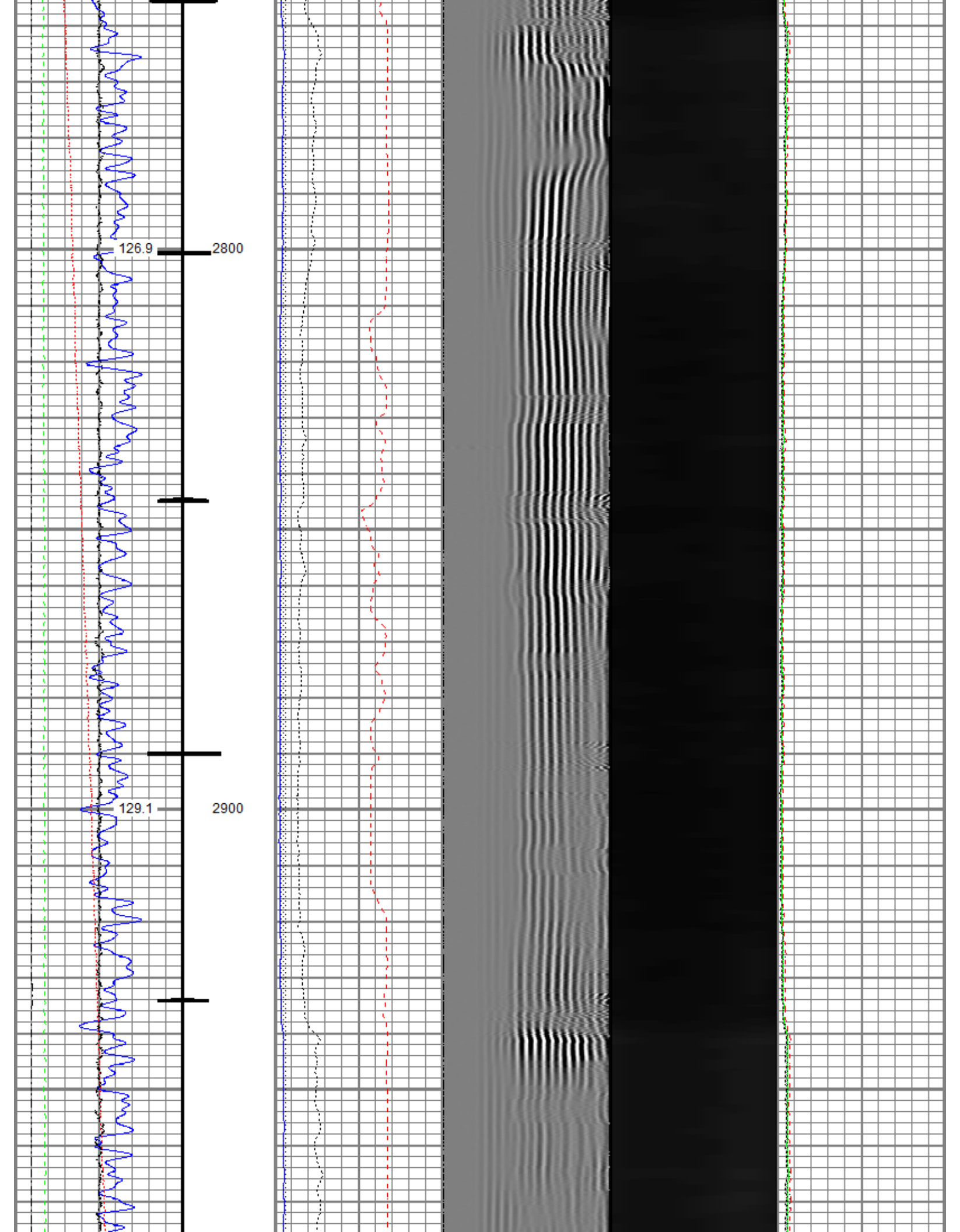


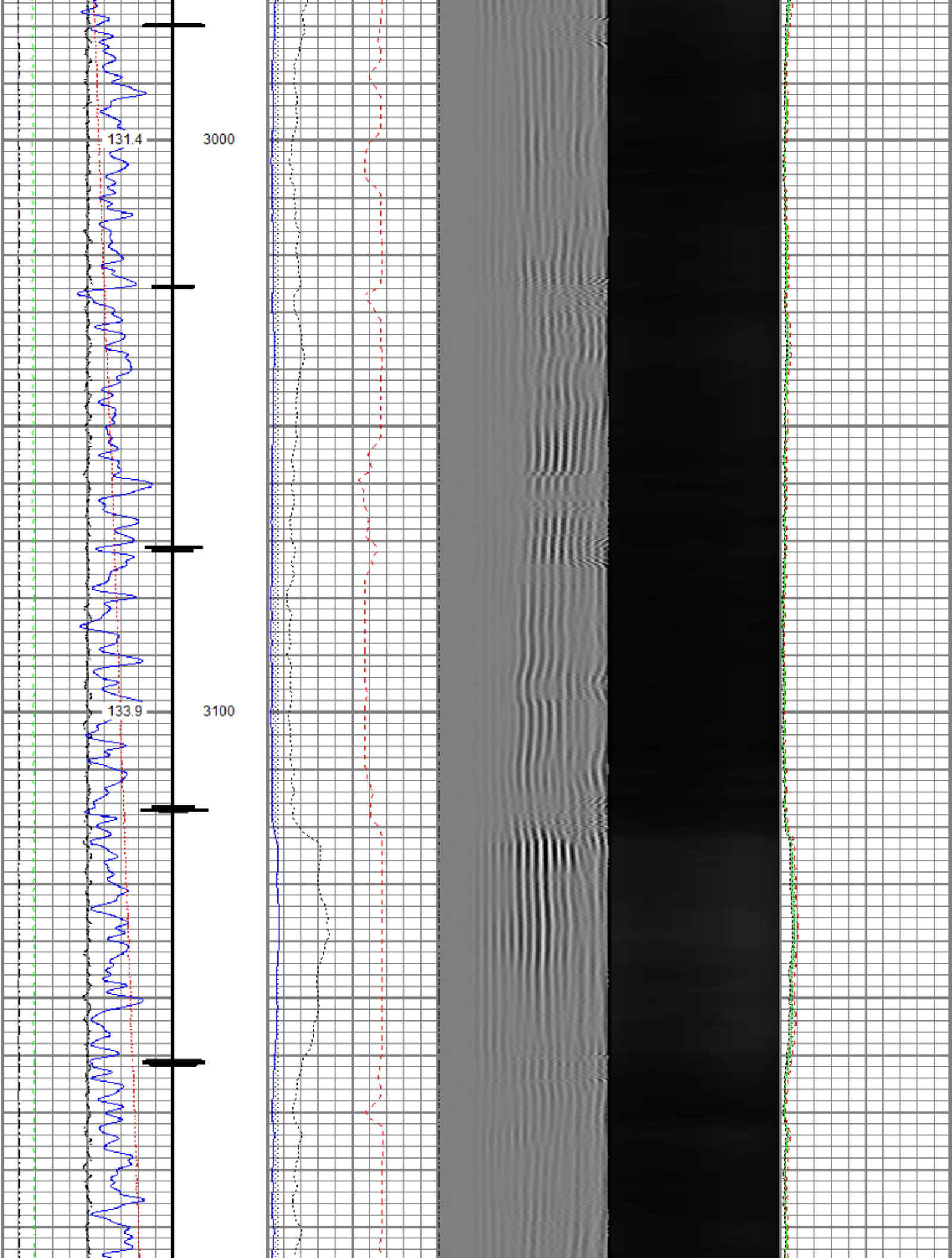


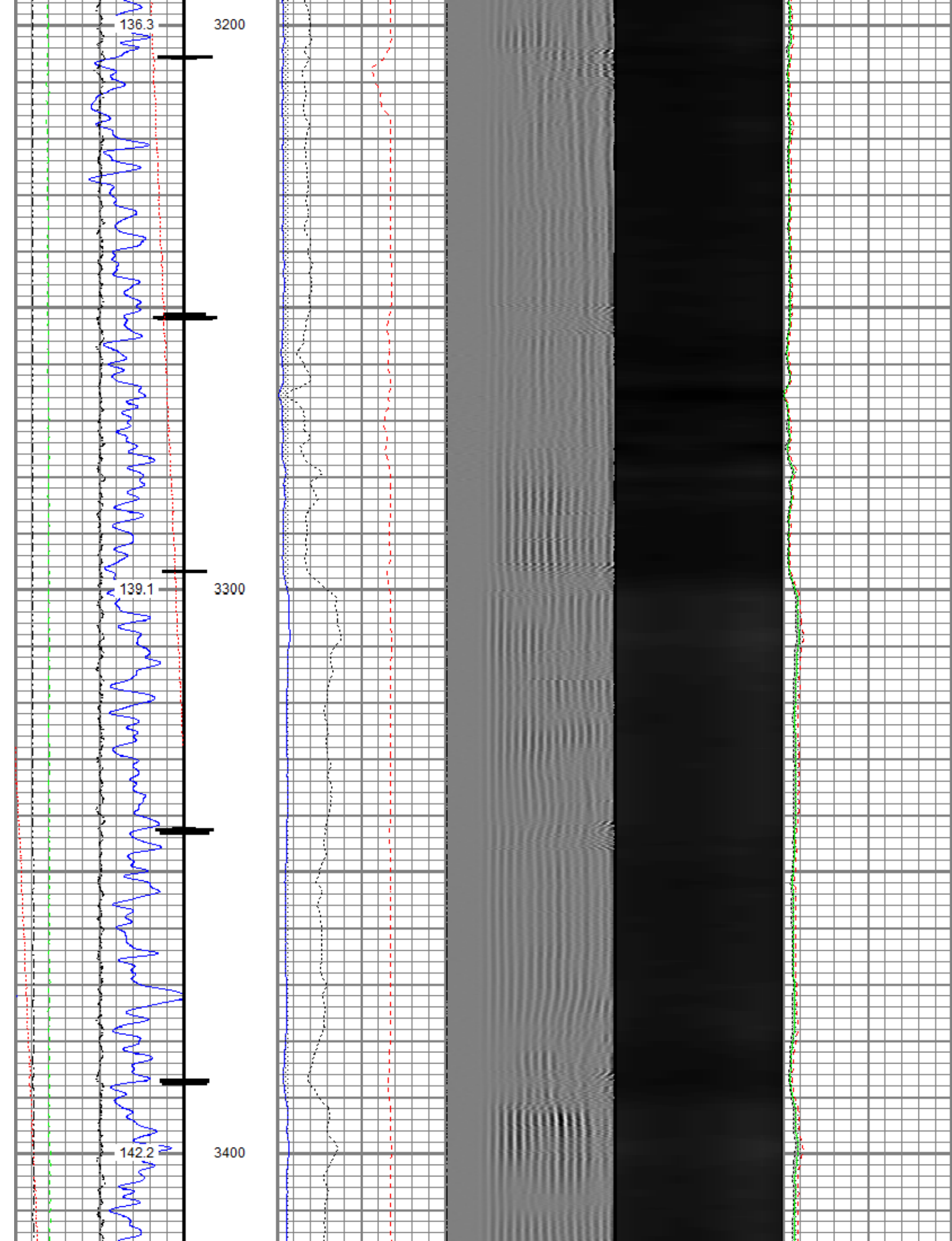


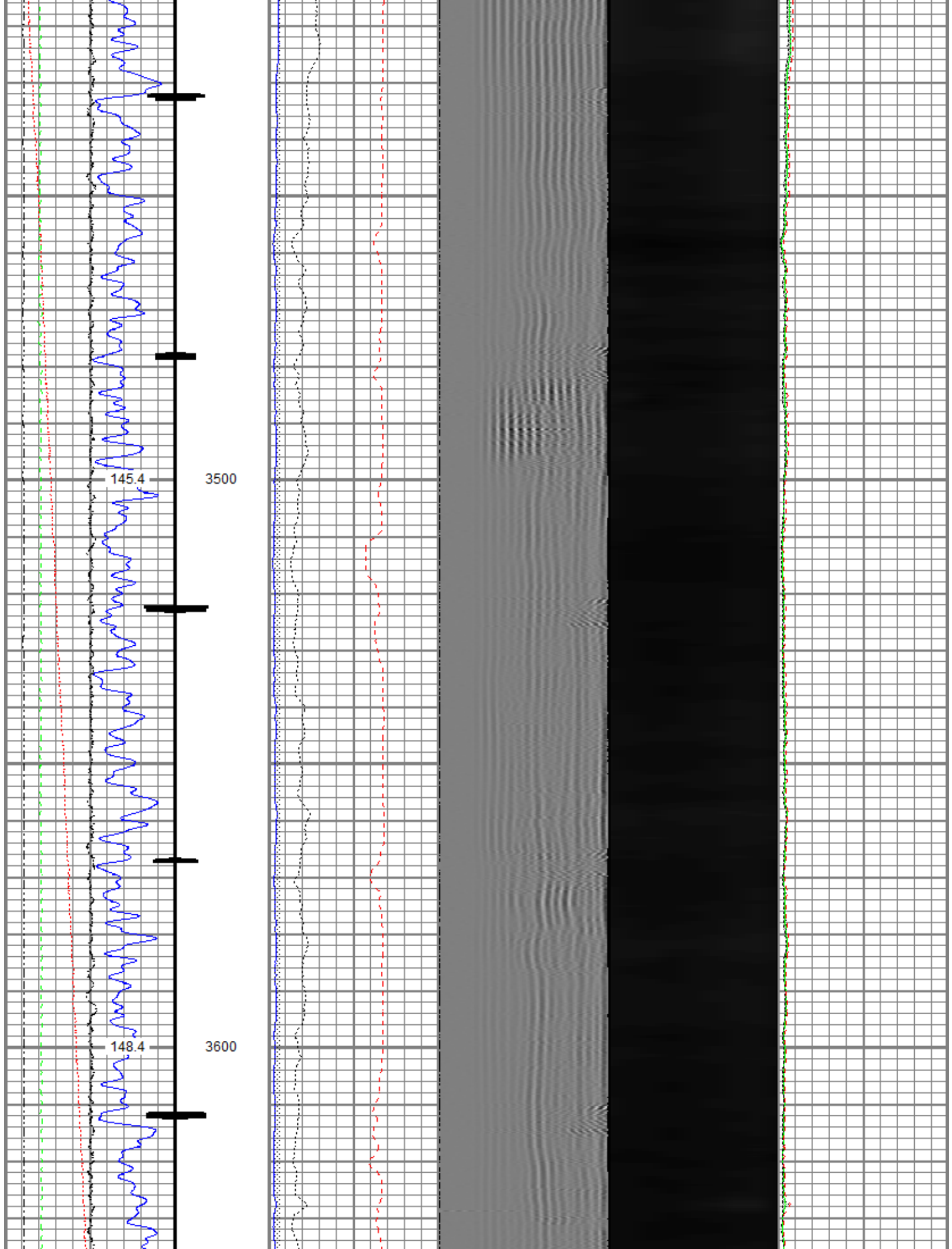


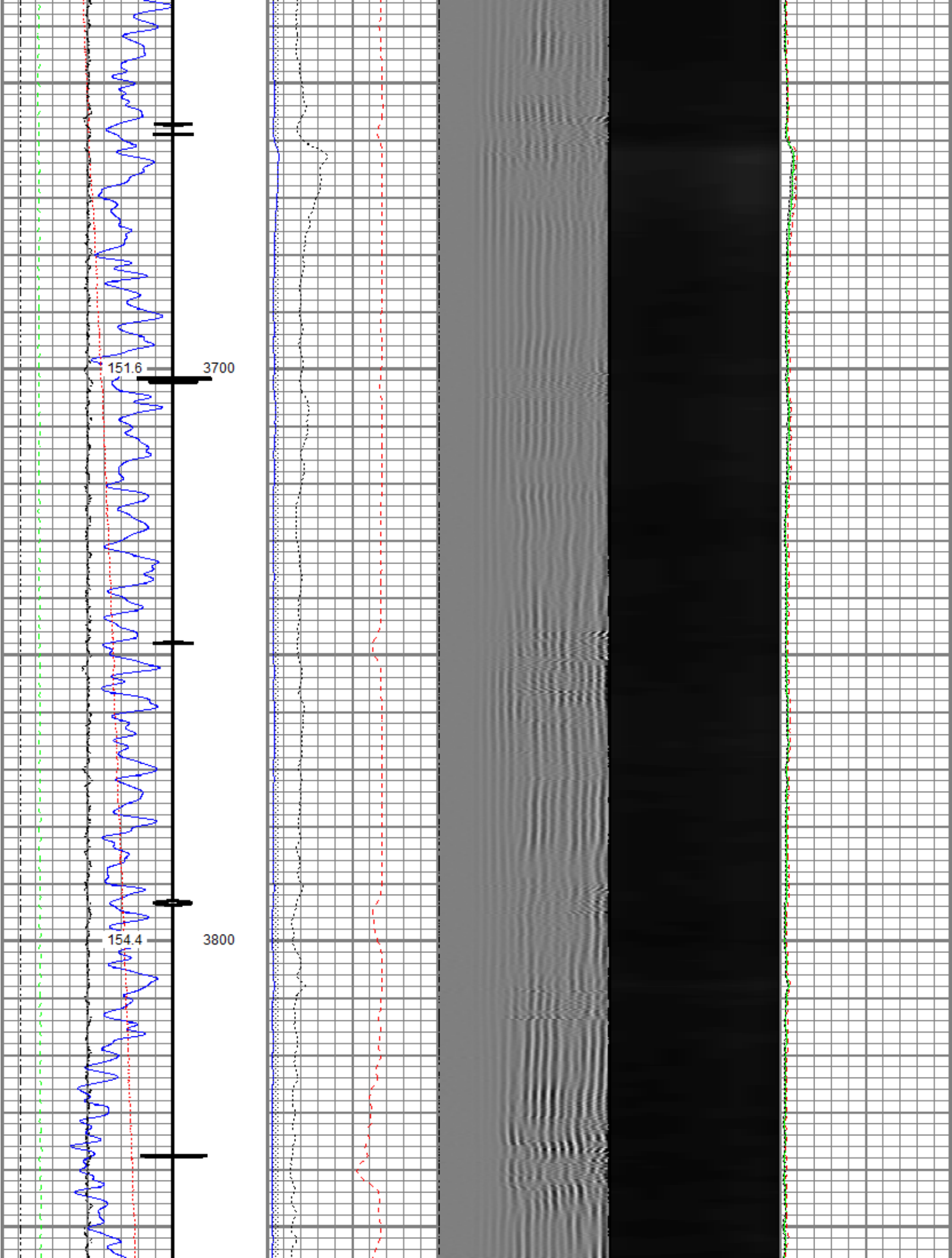


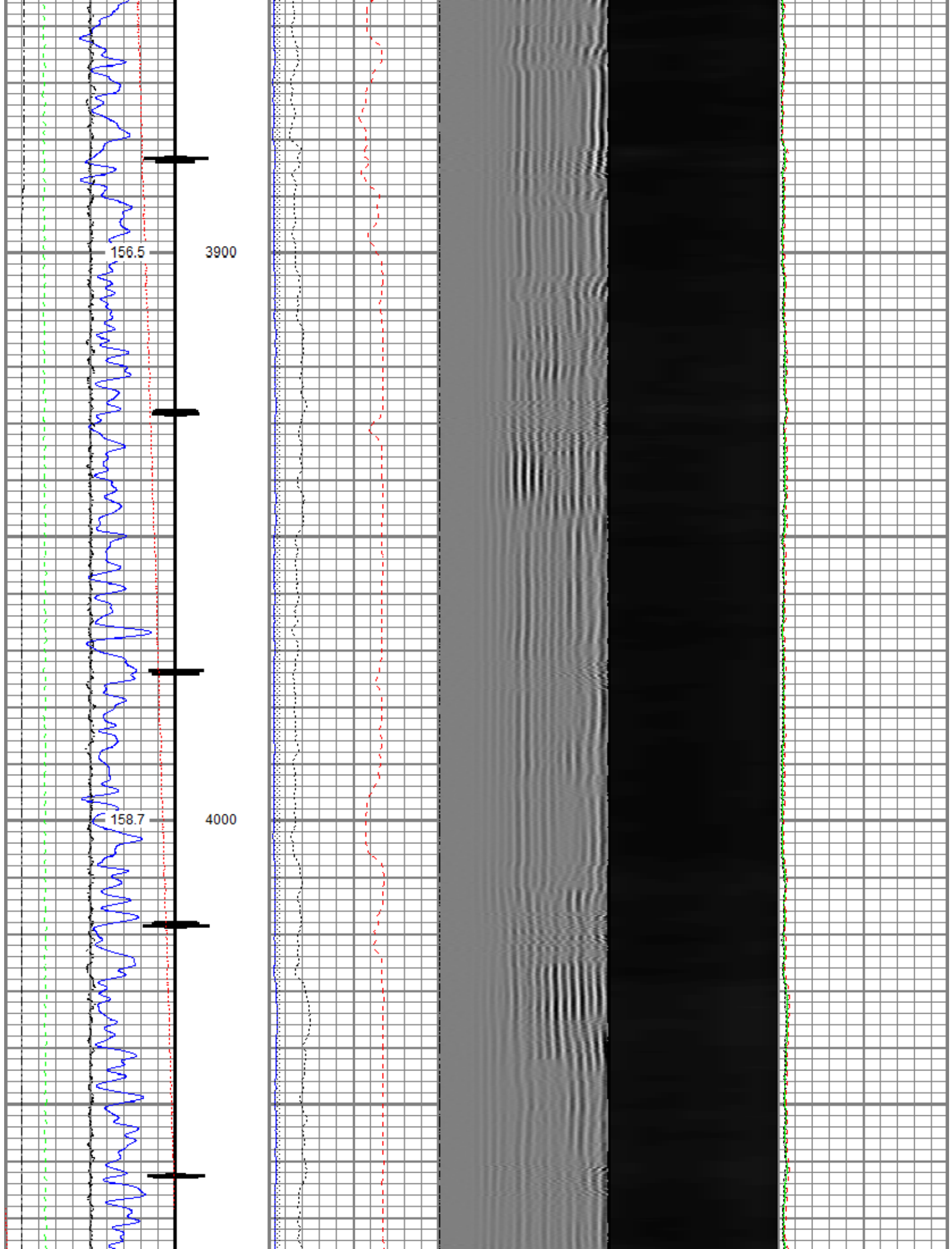


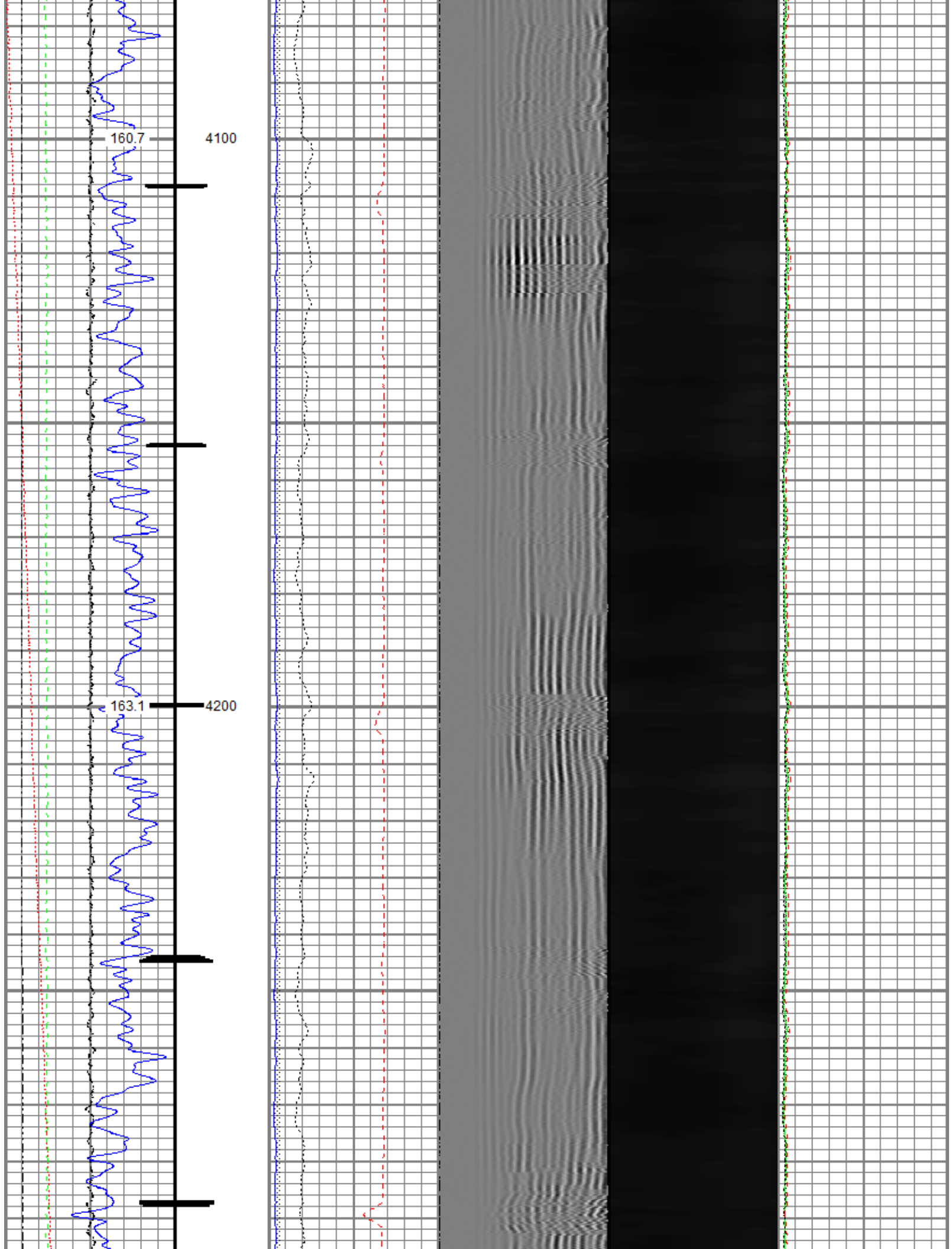


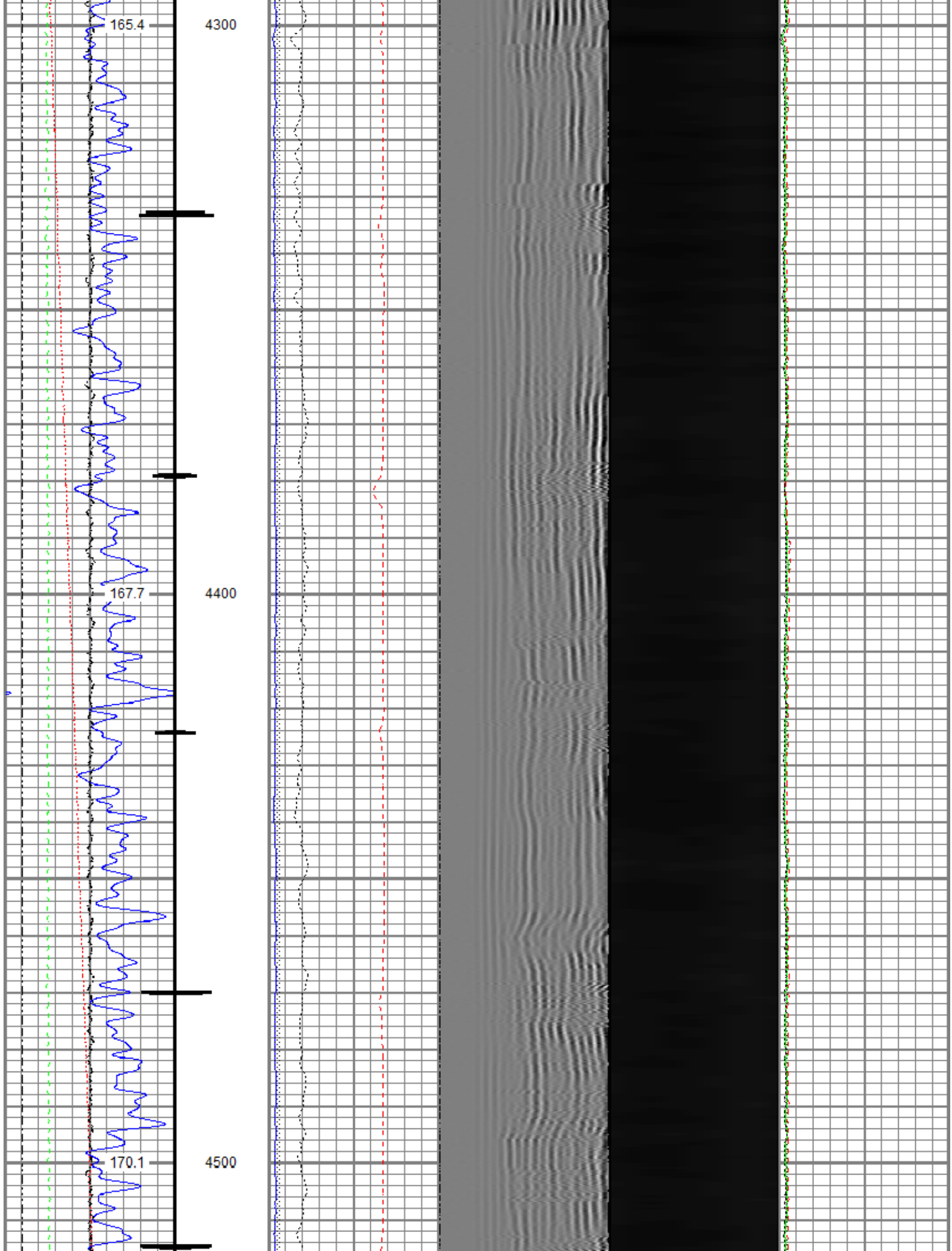


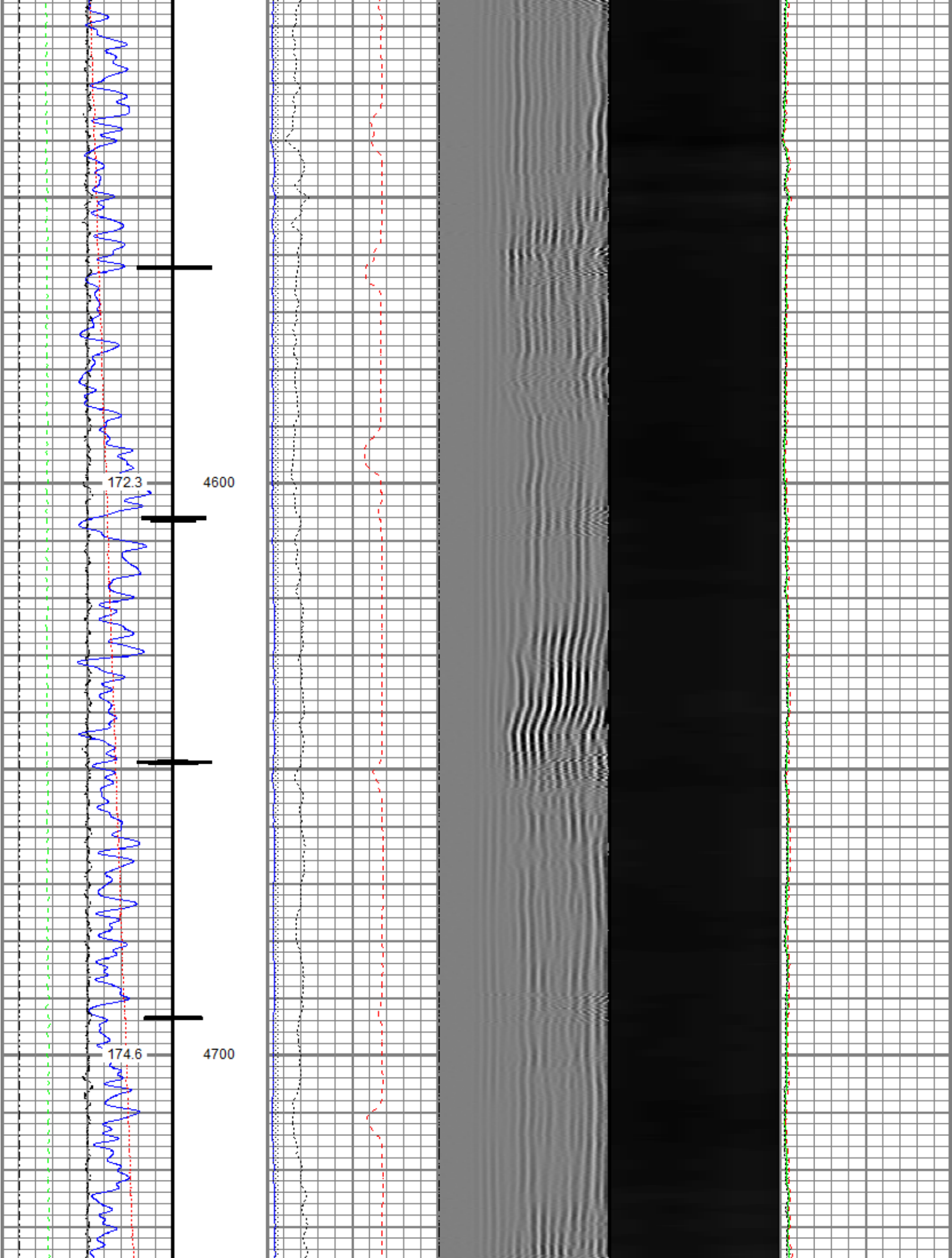


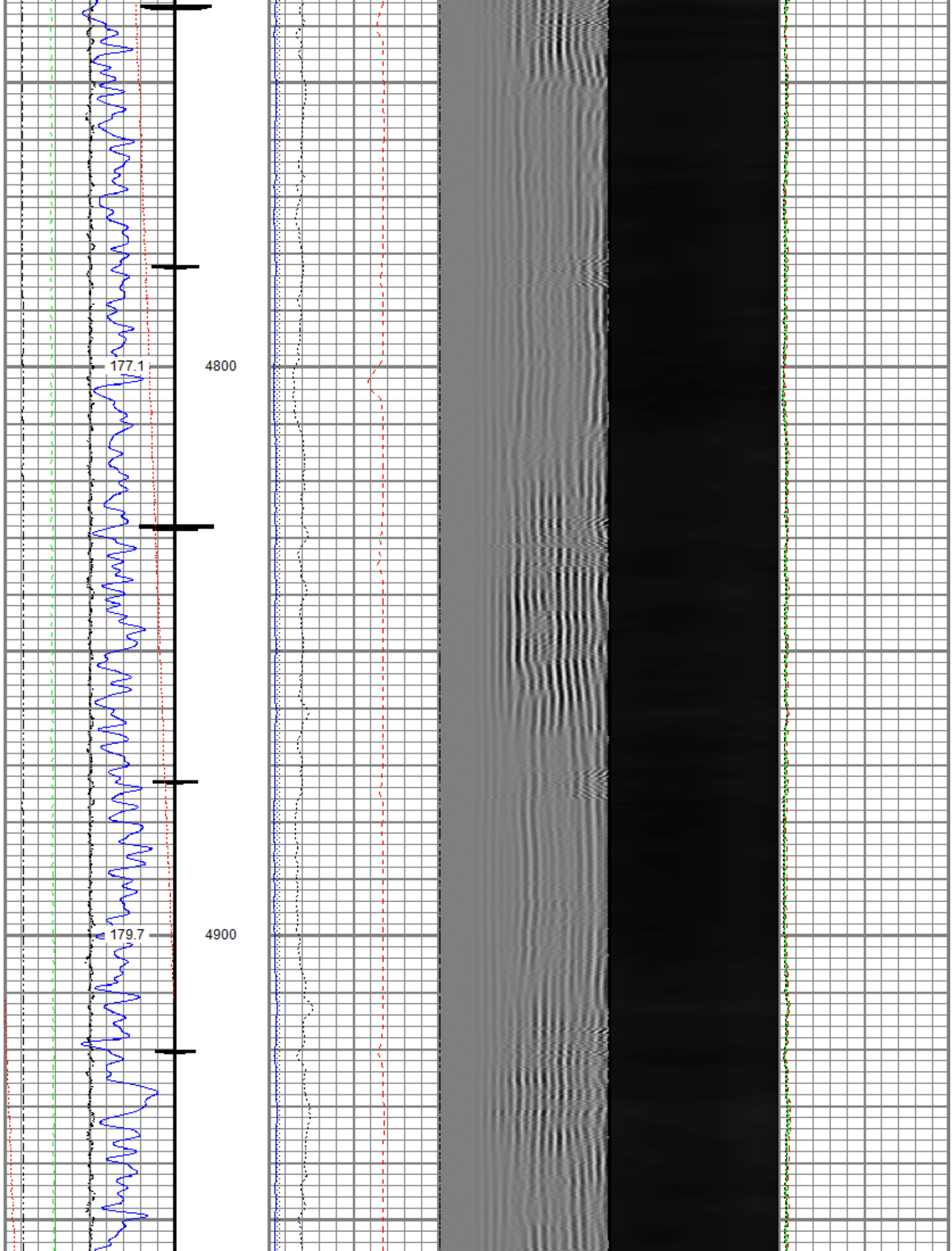


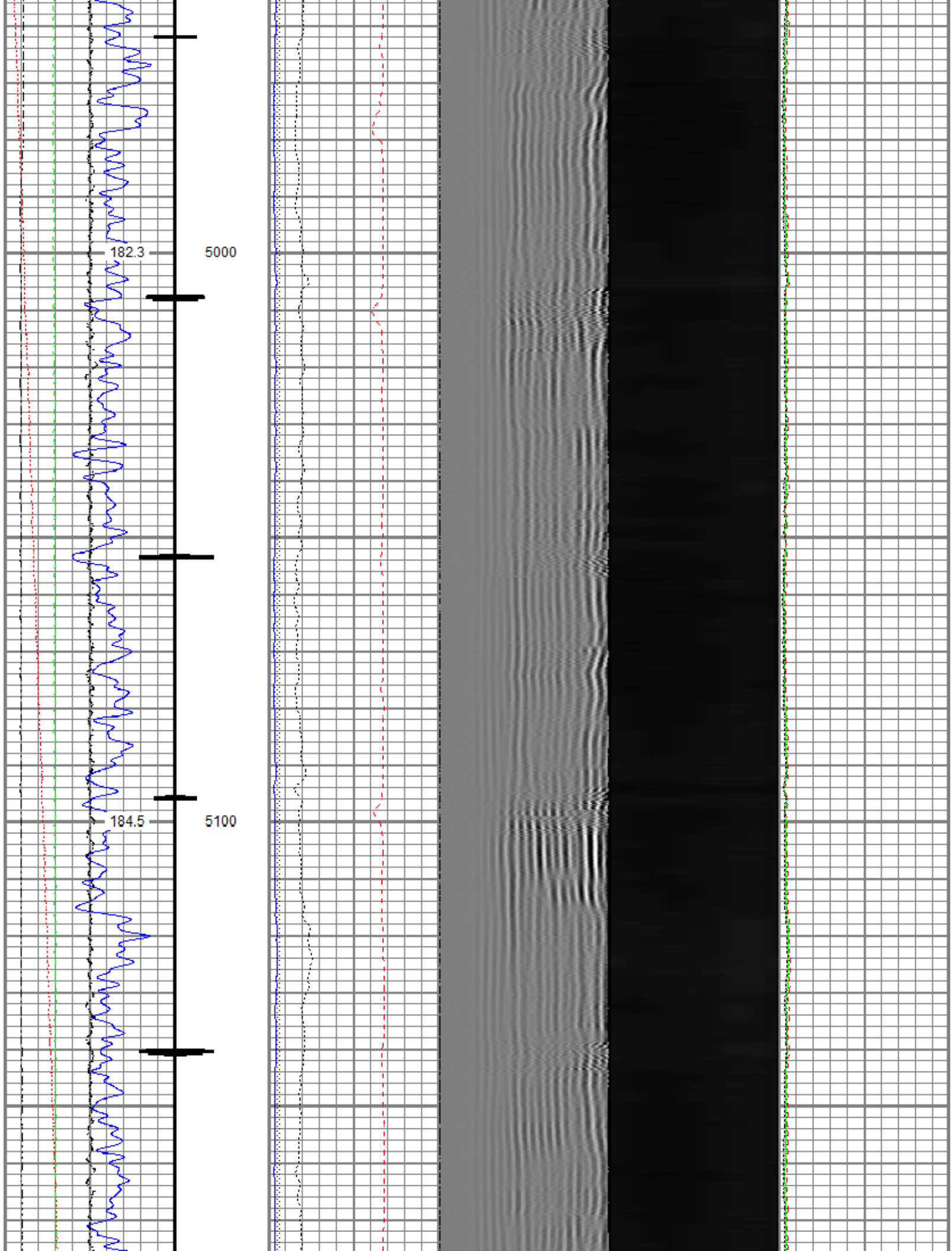


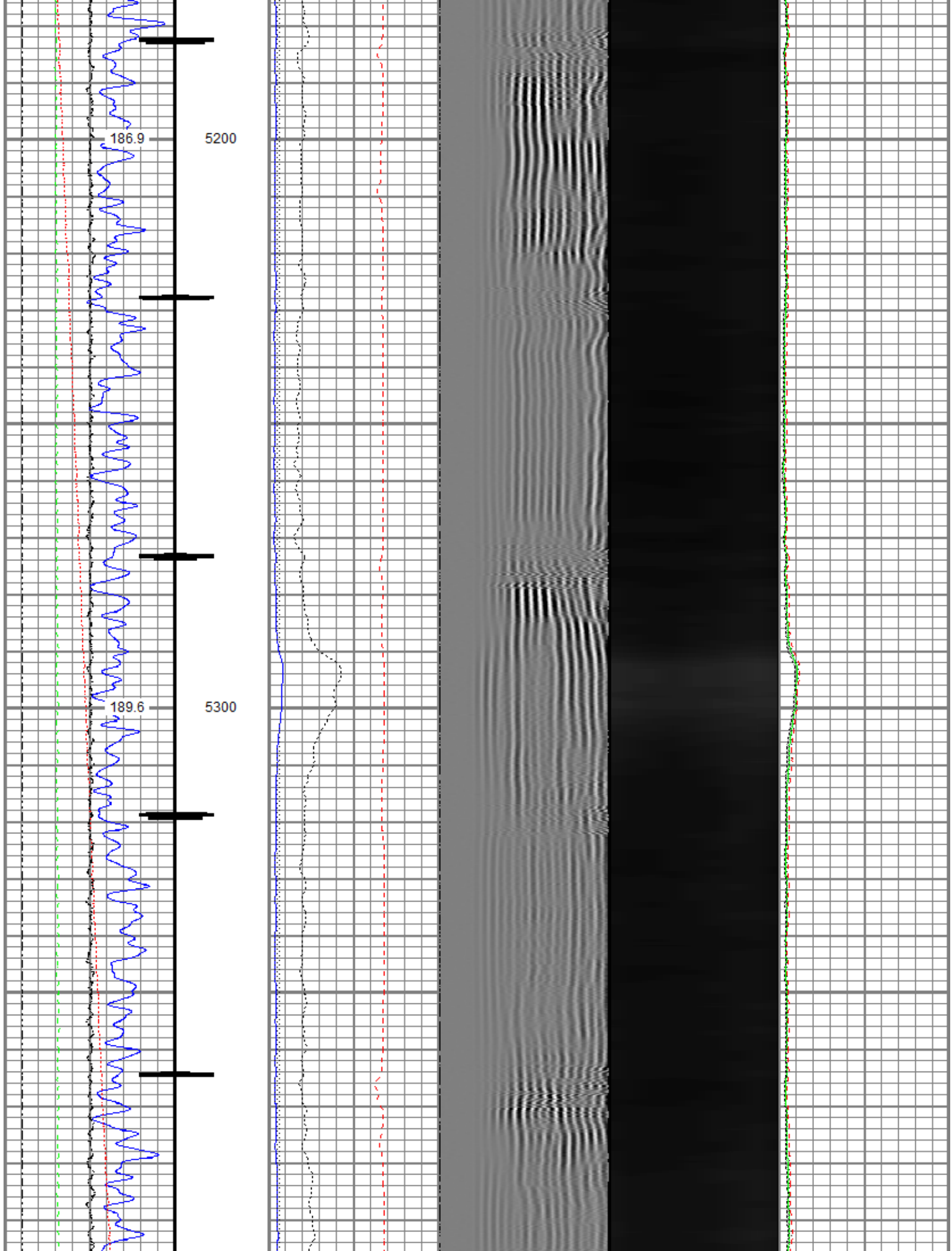


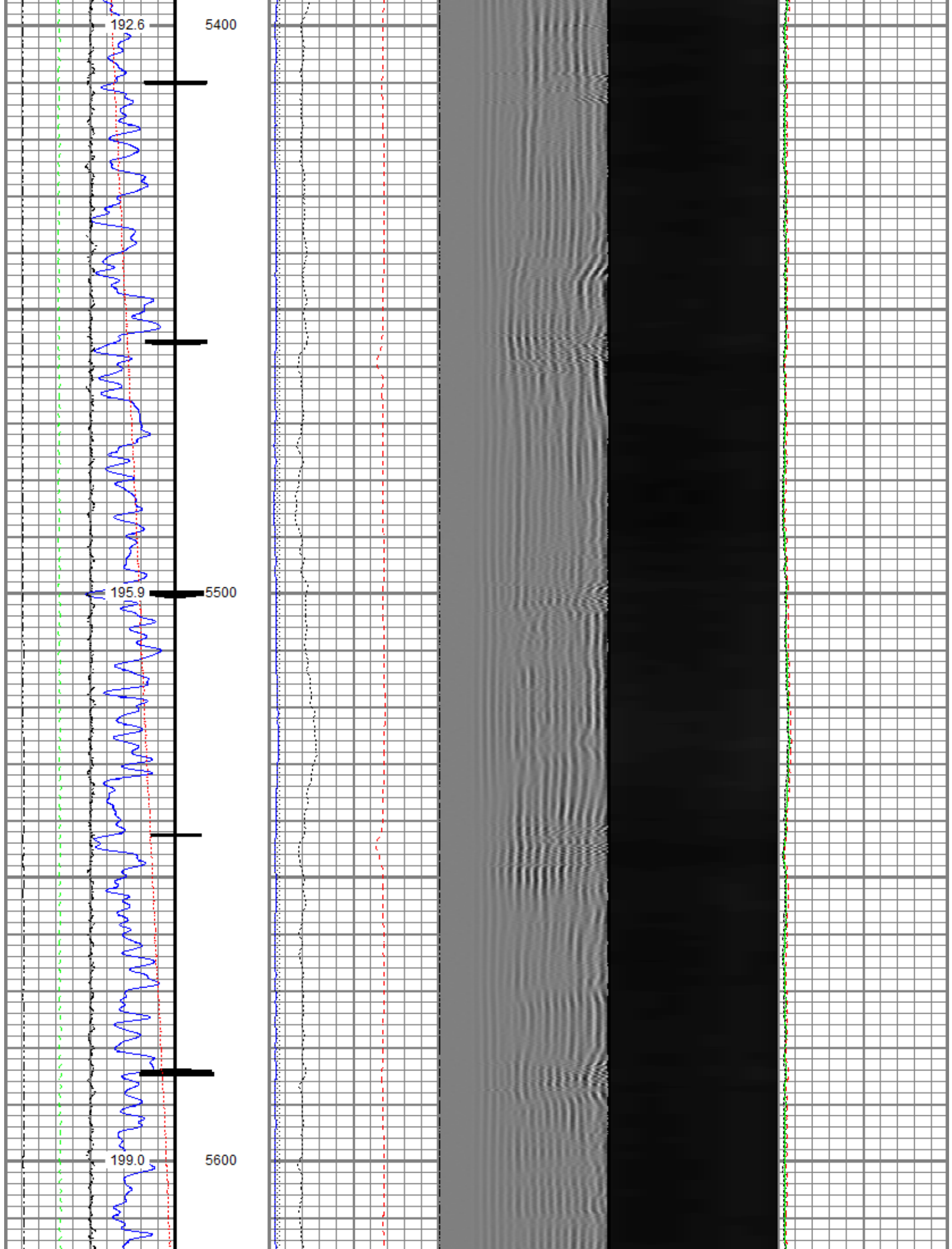


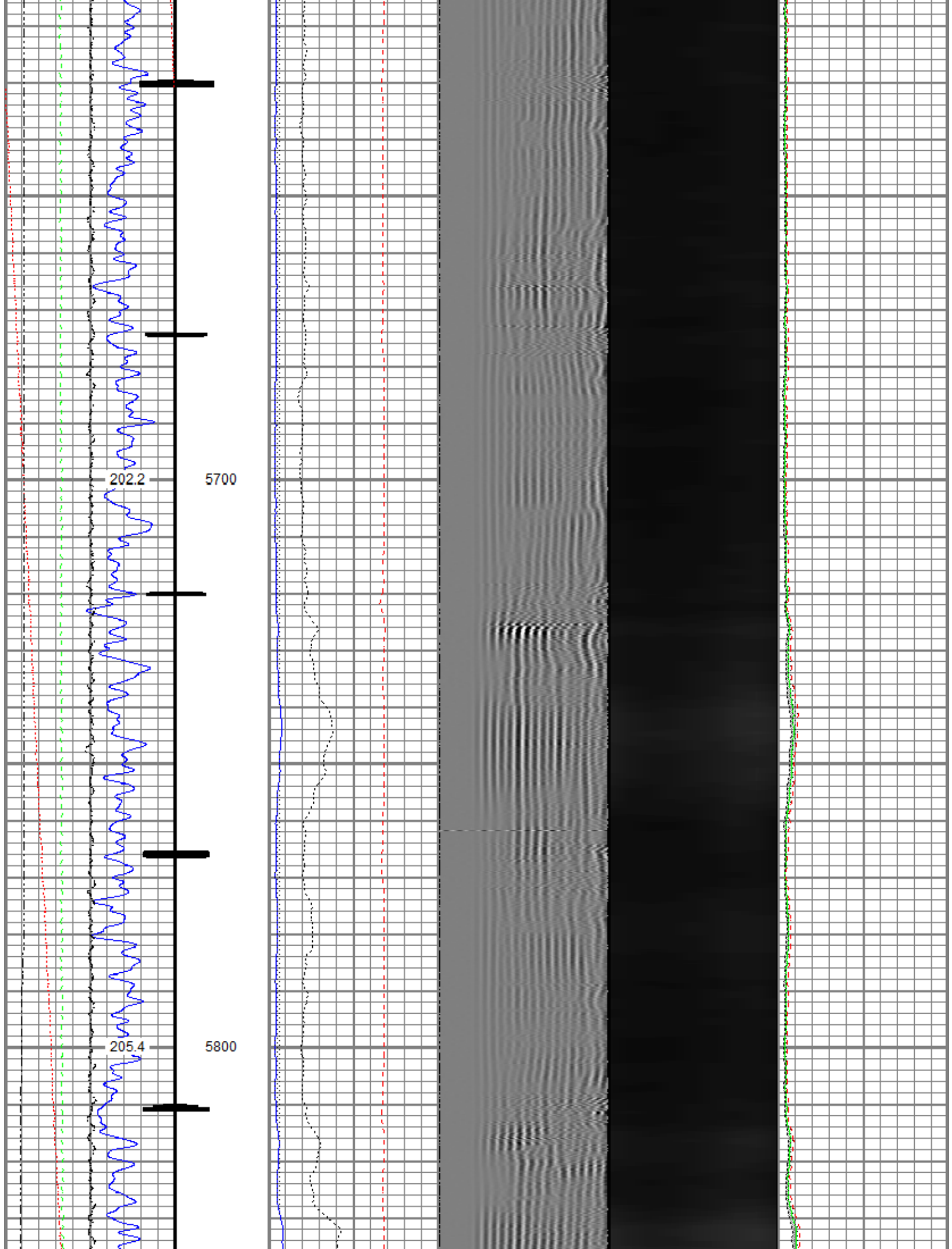


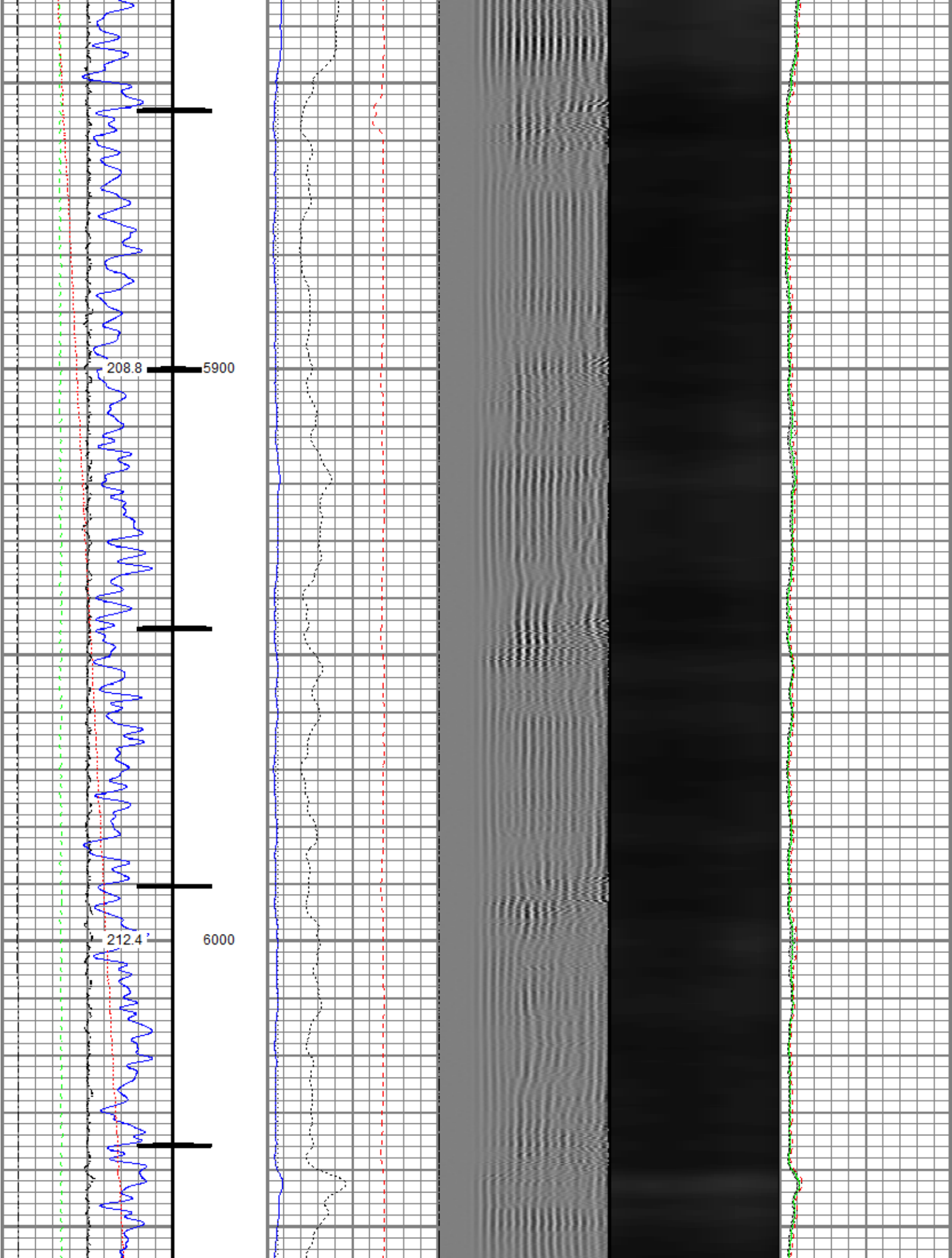


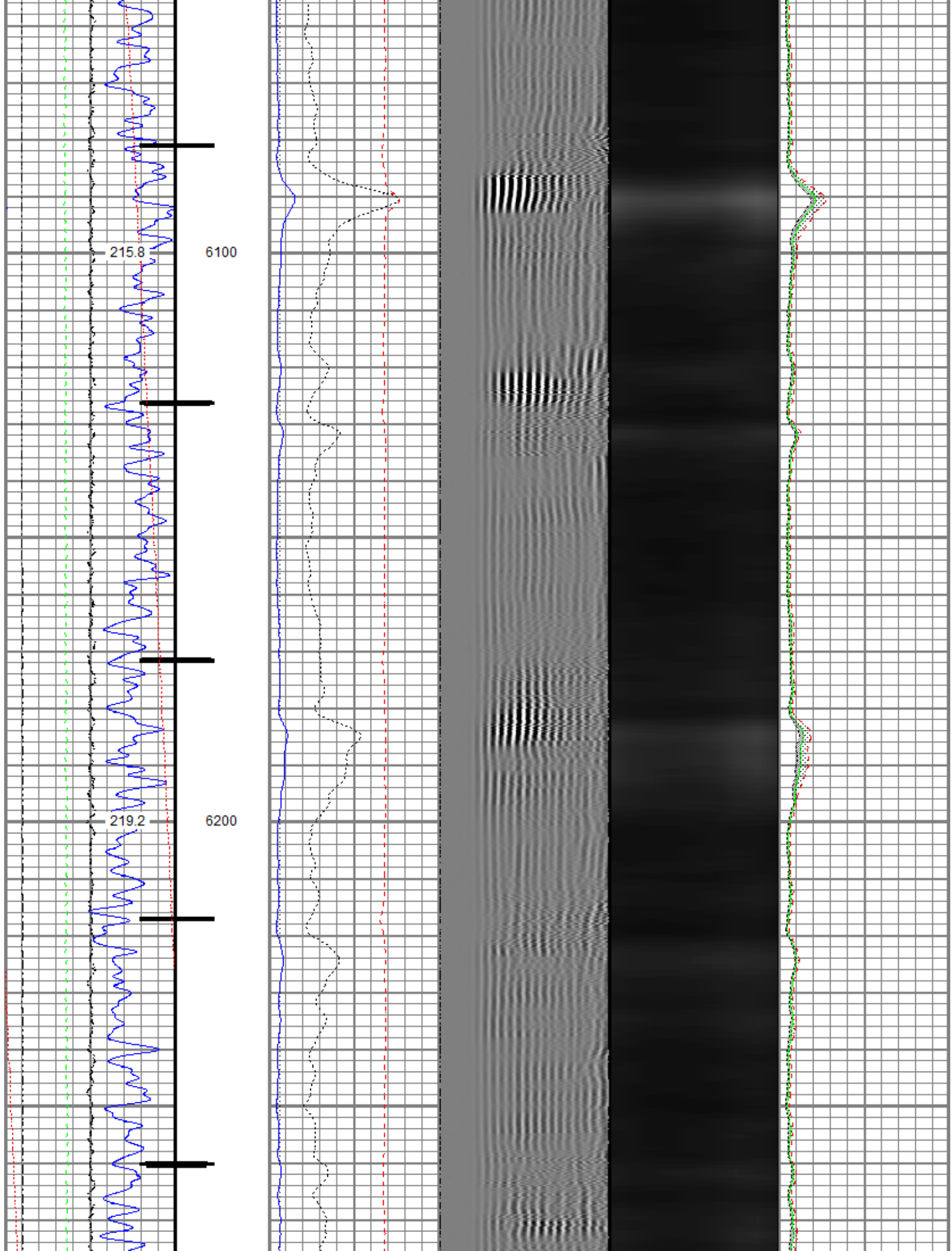


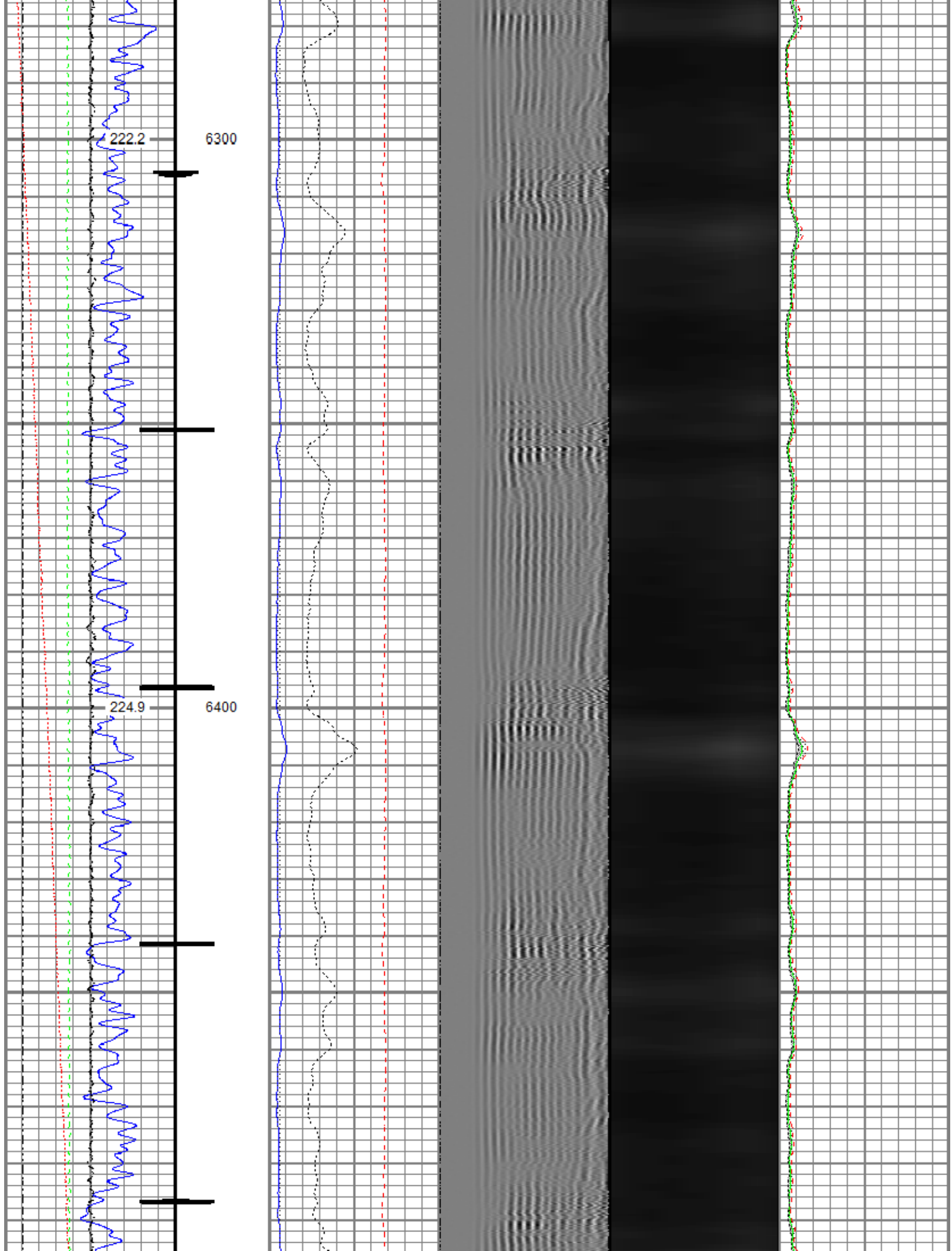


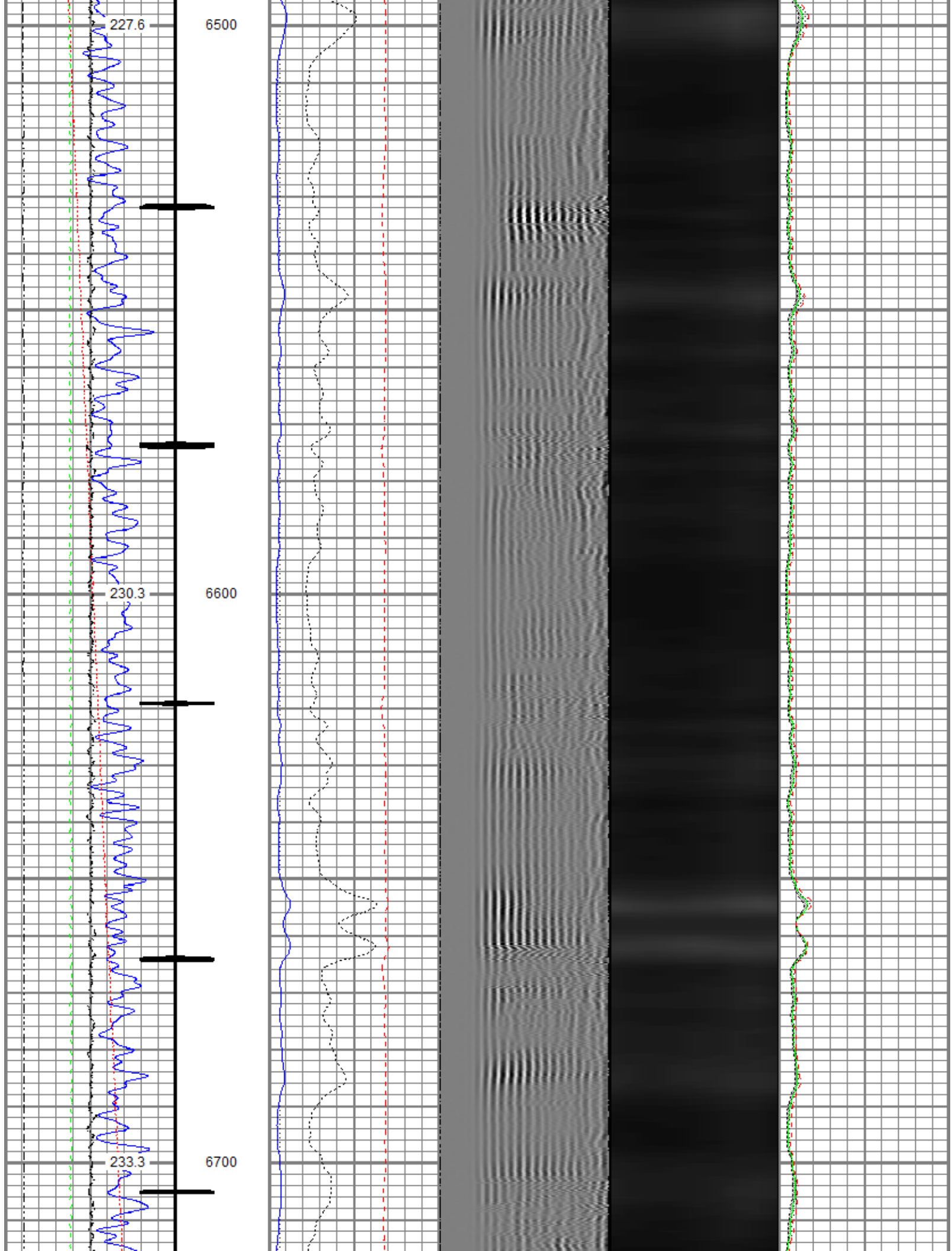












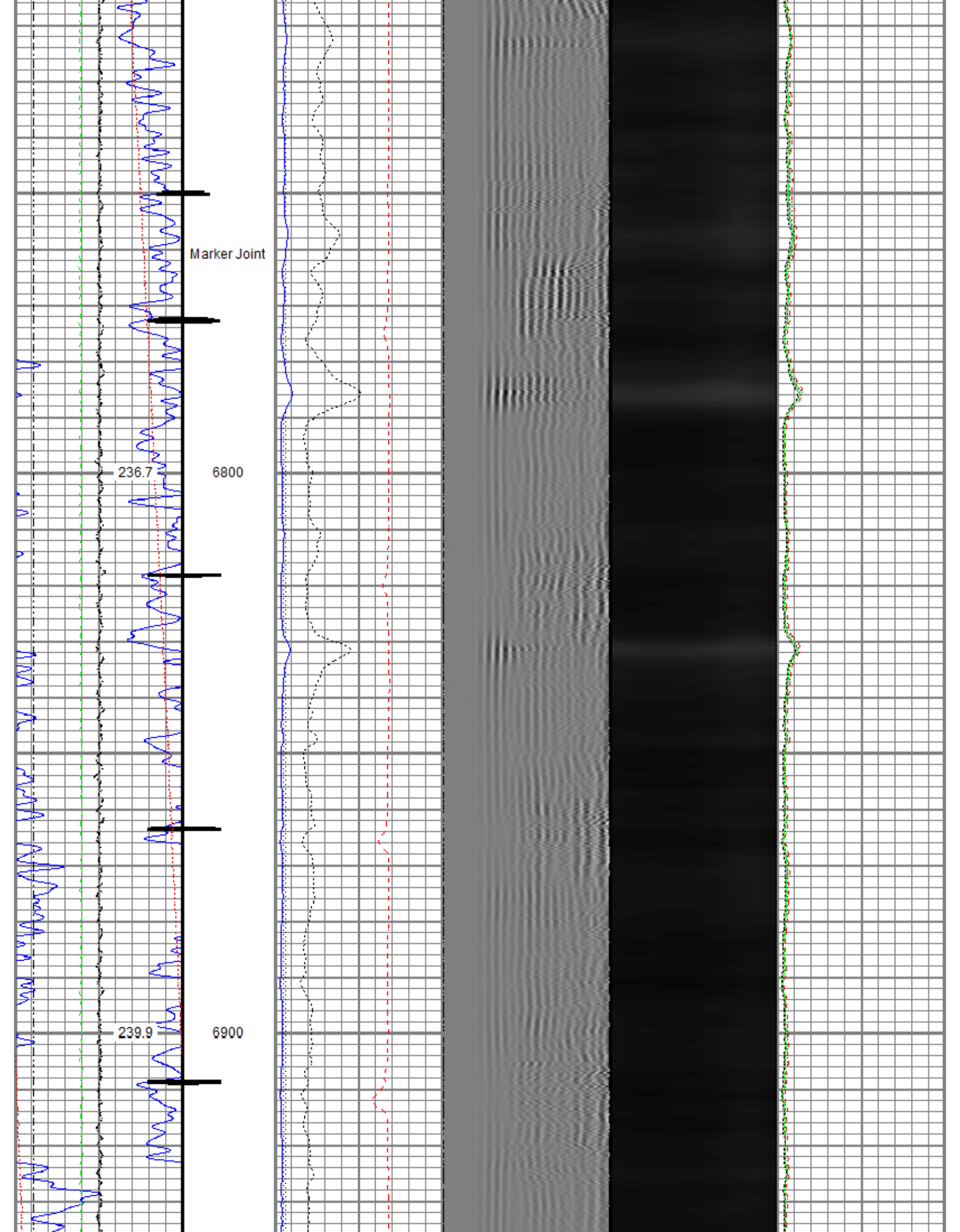
Marker Joint

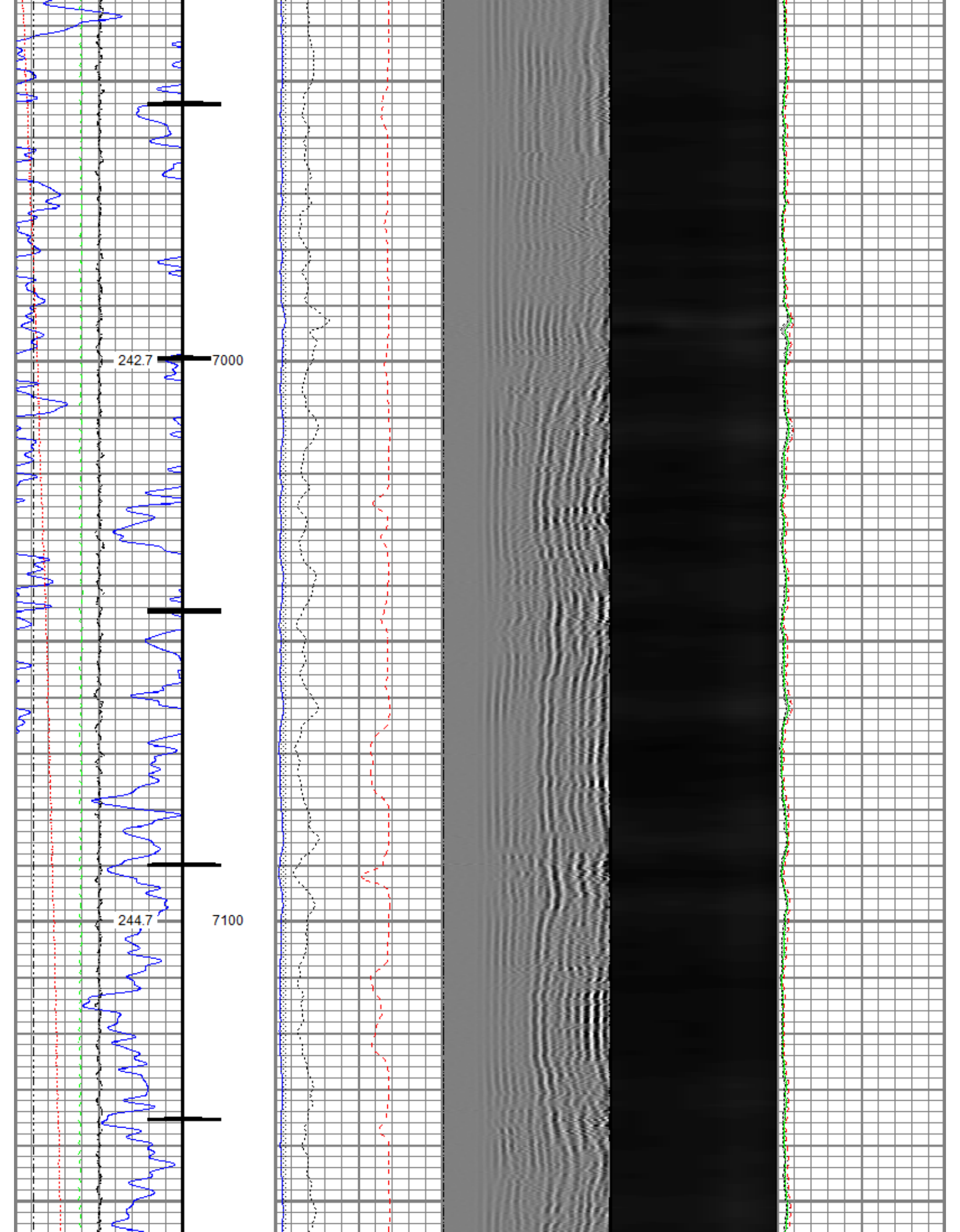
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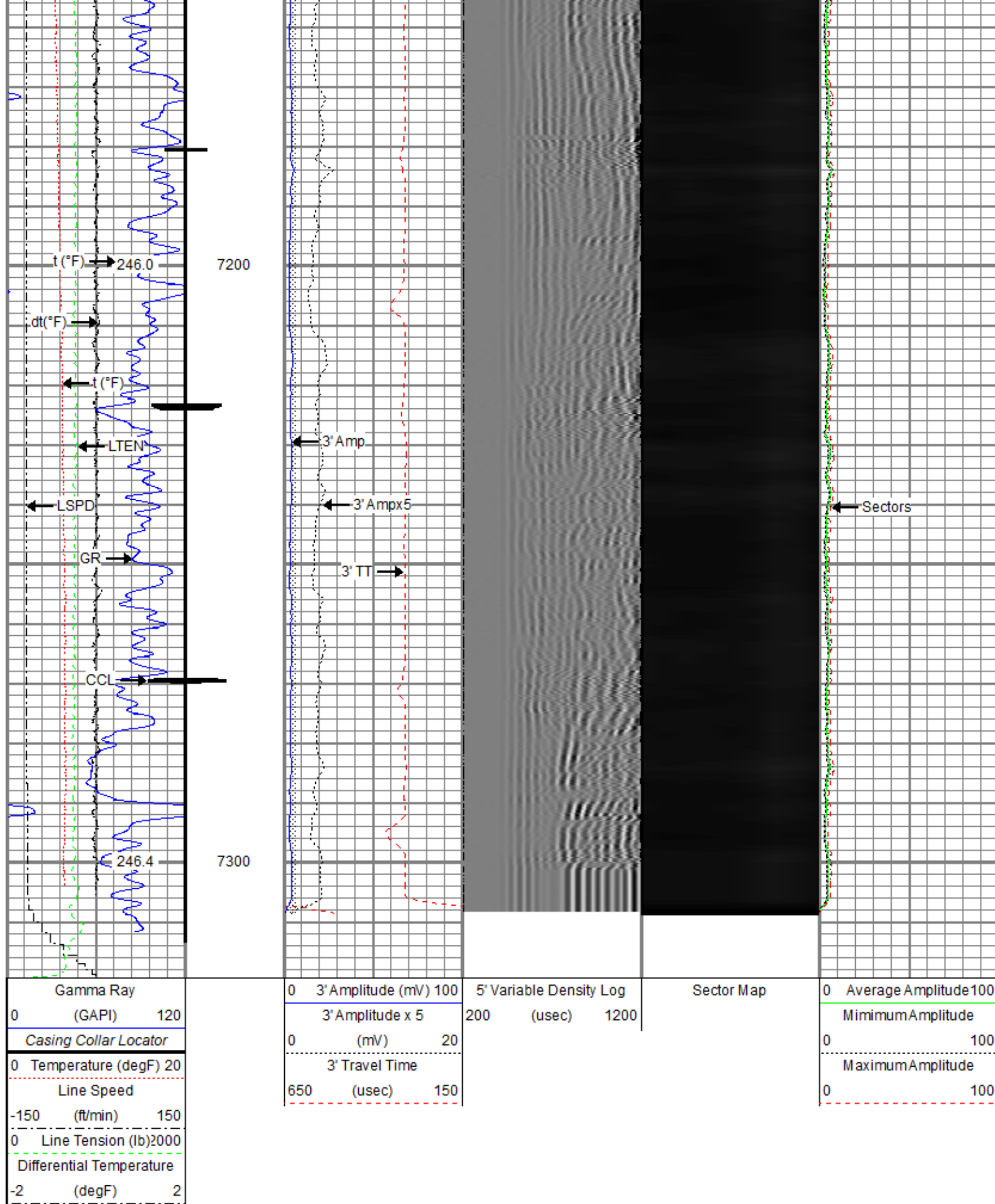
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239.9

6900



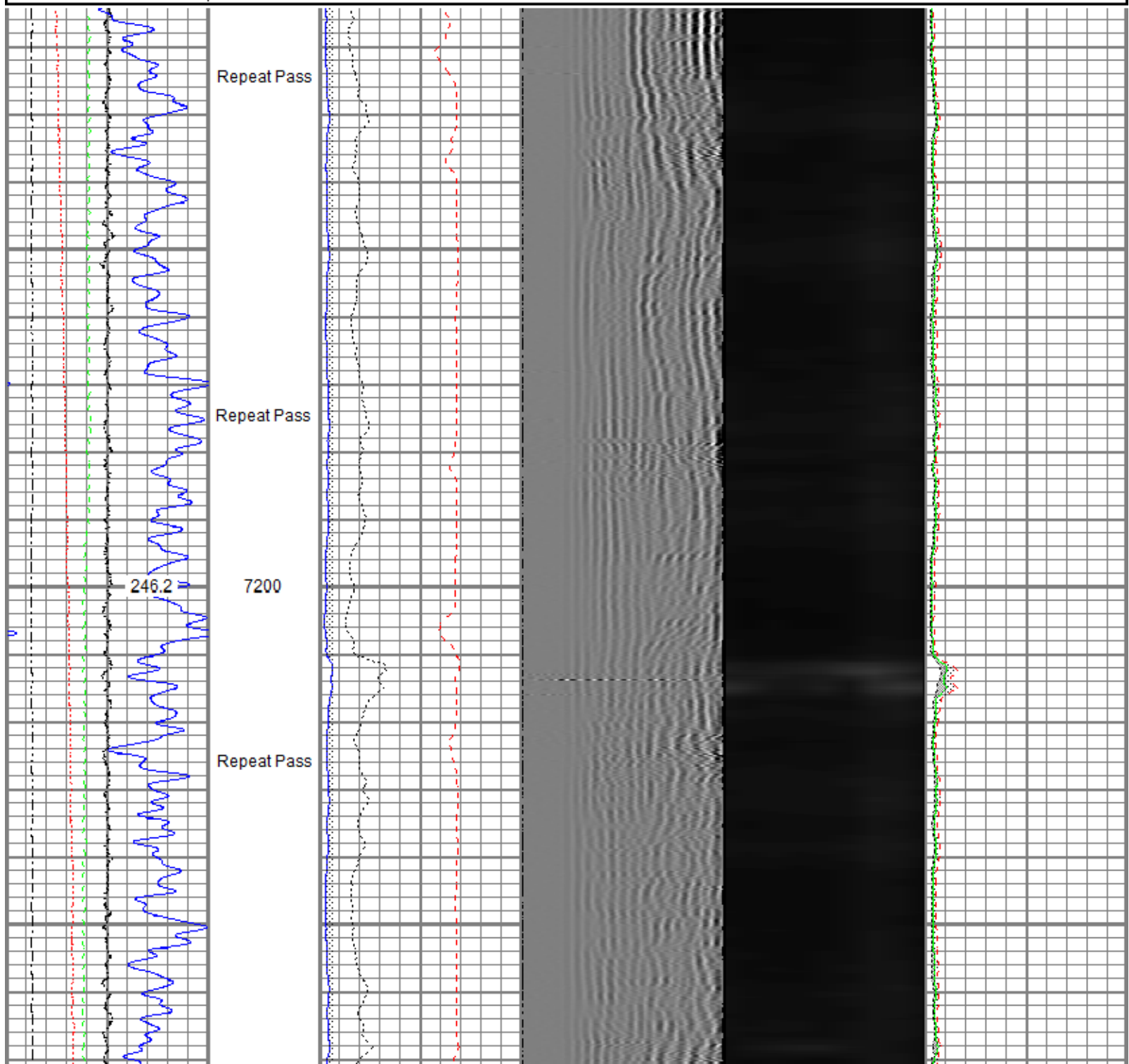


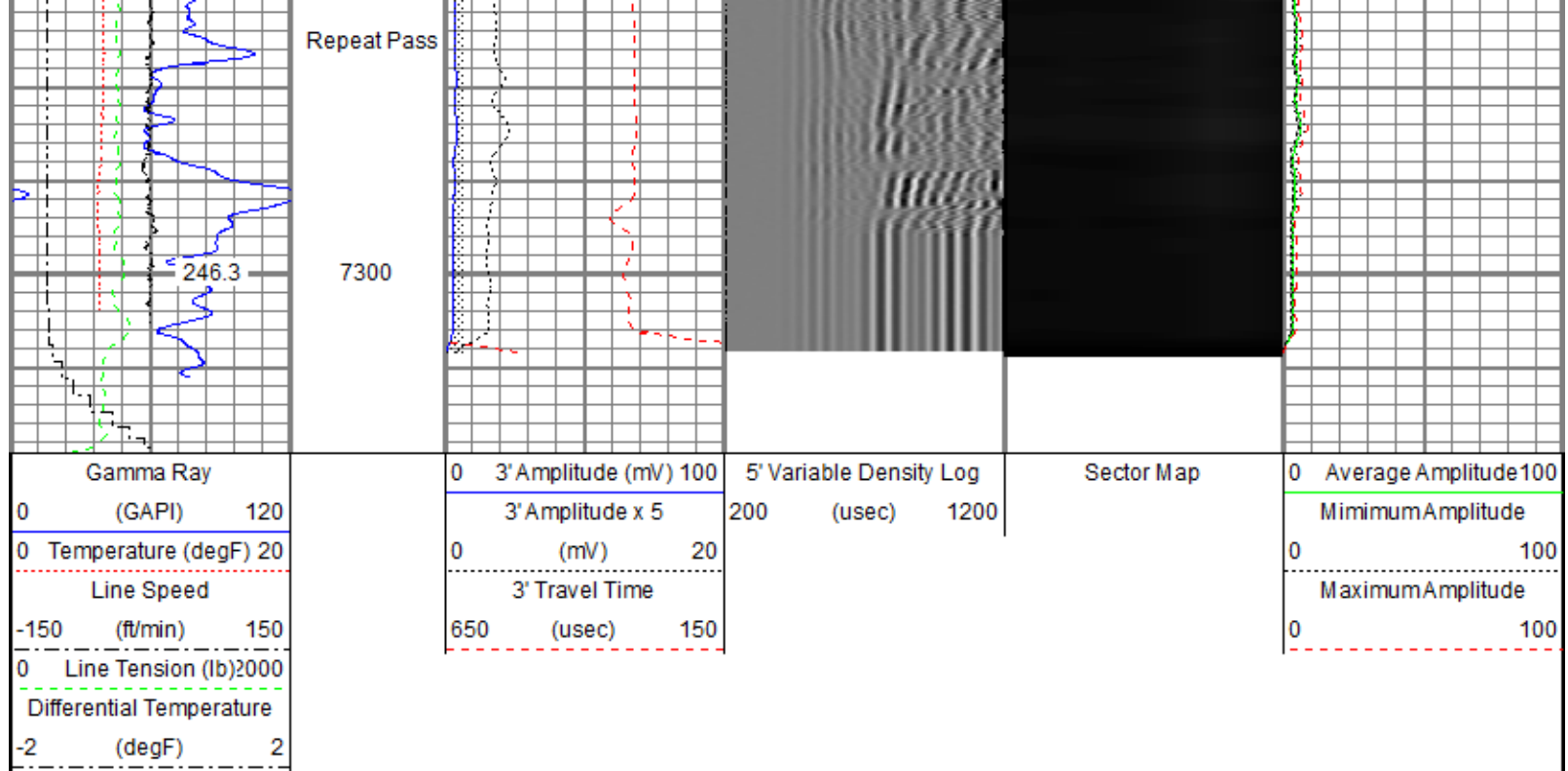


Repeat Pass

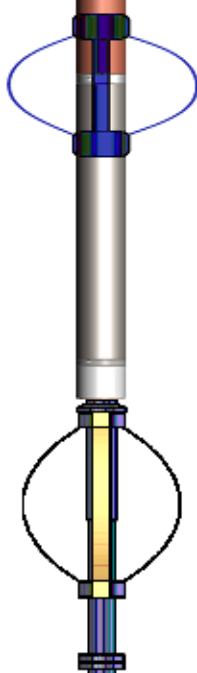
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Dataset Pathname repeat/pass1.3
Presentation Format ros_radri_noble
Dataset Creation Mon Nov 16 10:23:31 2020
Charted by Depth in Feet scaled 1:240

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	
Temperature (degF)	20	(mV)	20			0	100	
Line Speed		3' Travel Time					Maximum Amplitude	
(ft/min)	150	(usec)	150			0	100	
Line Tension (lb)	2000							
Differential Temperature								
(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)	9.39	2.75	105.00
RBT_ACCY	11.93		Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub and Accelerometer			
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		SO BS CENT-2750-5500	1.50	3.25	11.00
WVF5FT	10.93		Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer			
CCL\$2	6.80		Probe GR-CCL-2750 6PB (101001)	4.80	2.75	55.00
CCL\$1	6.80		Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT			
GR	5.46					
			Probe CENT-2750	2.88	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer			
LOCTIM	0.00					
UTCTIM	0.00					
Dataset:		Noble_Becker D17-735_RBL_11-14-20.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\Noble\Noble_Becker D17-735_RBL_11-14-20\Noble_Becker D17-735_RBL_11-14-20.db		
Dataset Pathname	main/pass1.1		
Dataset Creation	Sat Nov 14 16:35:33 2020		
Gamma Ray Calibration Report			
Serial Number:	101001		
Tool Model:	2750 6PB		
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:	-78.902	ft	

Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.738	0.800	71.921	96.445	0.726
CAL	0.731	0.727				
5'	0.000	0.687	0.800	71.921	103.485	0.779
SUM						
S1	0.001	0.705	0.000	100.000	141.900	-0.088
S2	0.001	0.764	0.000	100.000	130.948	-0.088
S3	0.001	0.808	0.000	100.000	123.953	-0.096
S4	0.001	0.801	0.000	100.000	125.002	-0.097
S5	0.000	0.770	0.000	100.000	120.055	-0.090

S5	0.000	0.770	0.000	100.000	129.855	-0.019
S6	0.001	0.750	0.000	100.000	133.407	-0.120
S7	0.001	0.726	0.000	100.000	137.931	-0.144
S8	0.001	0.719	0.000	100.000	139.247	-0.114

Air Zero Calibration, performed Sat Nov 14 08:37:01 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			



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