



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Noble Energy Inc

Well Guttersen State D36-771

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-48629

Other Services

SEC 25 TWP 3N RGE 64W

Elevation

Permanent Datum Ground Level Elevation 4787'

Log Measured From Kelly Bushing 30 FT

Drilling Measured From Kelly Bushing

K.B. 4817'
D.F. ---
G.L. 4787'

Company Noble Energy Inc
Well Guttersen State D36-771
Field Wattenberg
County Weld
State Colorado

Date	05-AUG-2020					
Run Number	One					
Depth Driller	14802 FT					
Depth Logger	7137 FT					
Bottom Logged Interval	7125 FT					
Top Log Interval	Surface					
Open Hole Size	8.5"					
Type Fluid	Water					
Density / Viscosity	8.34 lb/gal					
Max. Recorded Temp.	230°F					
E estimated Cement Top	See Log					
Time Well Ready	ROA					
Time Logger on Bottom	12:00					
E equipment Number	HD-361					
Location	Platteville, CO					
Recorded By	C. Sisneros					
Witnessed By	Andy Dockins					
Borehole Record						
Run Number	Bit	From	To	Size	Weight	To
Tubing Record						
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom	
Surface Casing	9 5/8	36	J-55	Surface	1954.2 FT	
Intermediate #1	5 1/2	17	P-110	Surface	14782 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 6464.9 FT
Adjusted -31 FT to correlate to 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!!

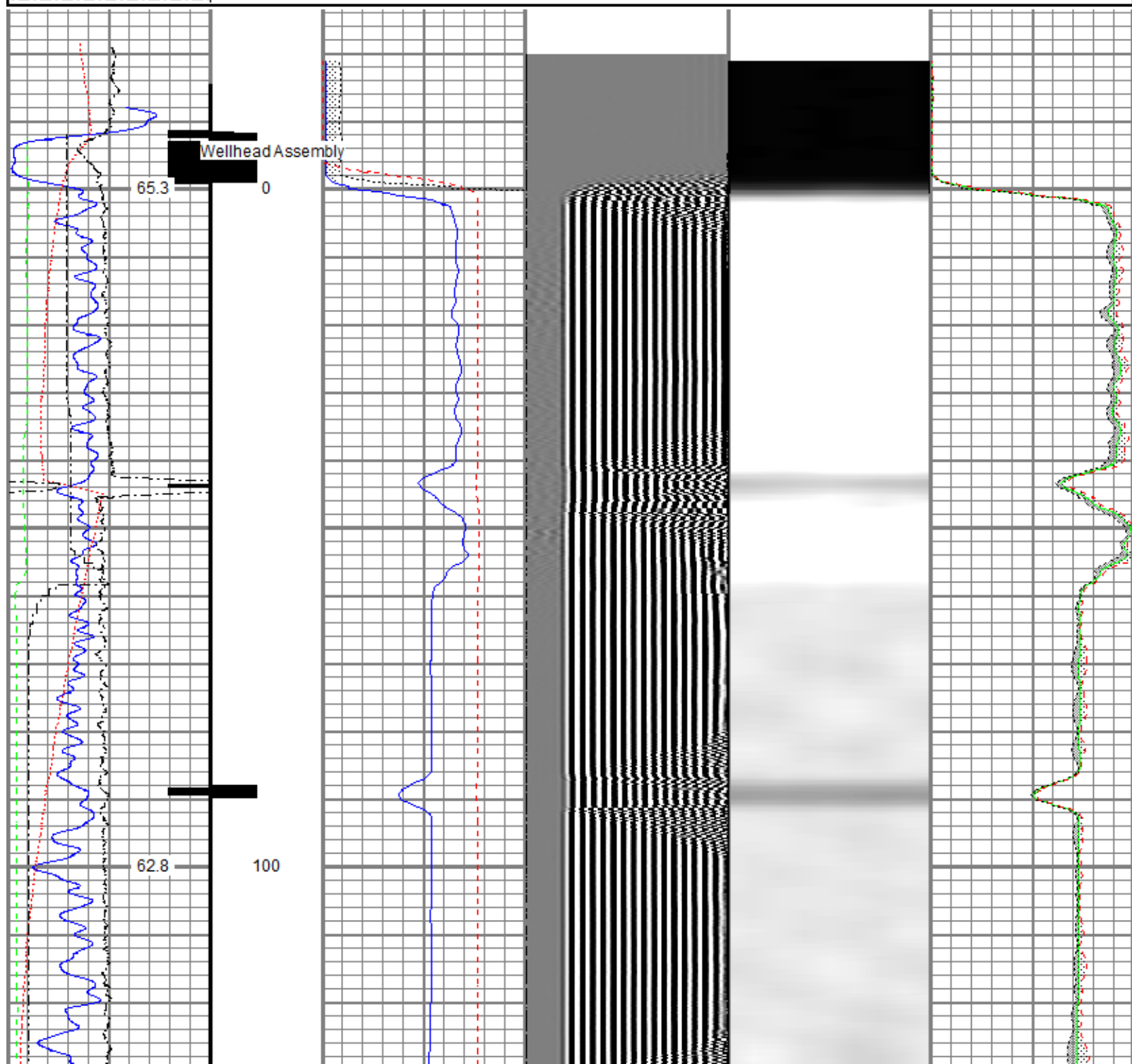
Main Pass

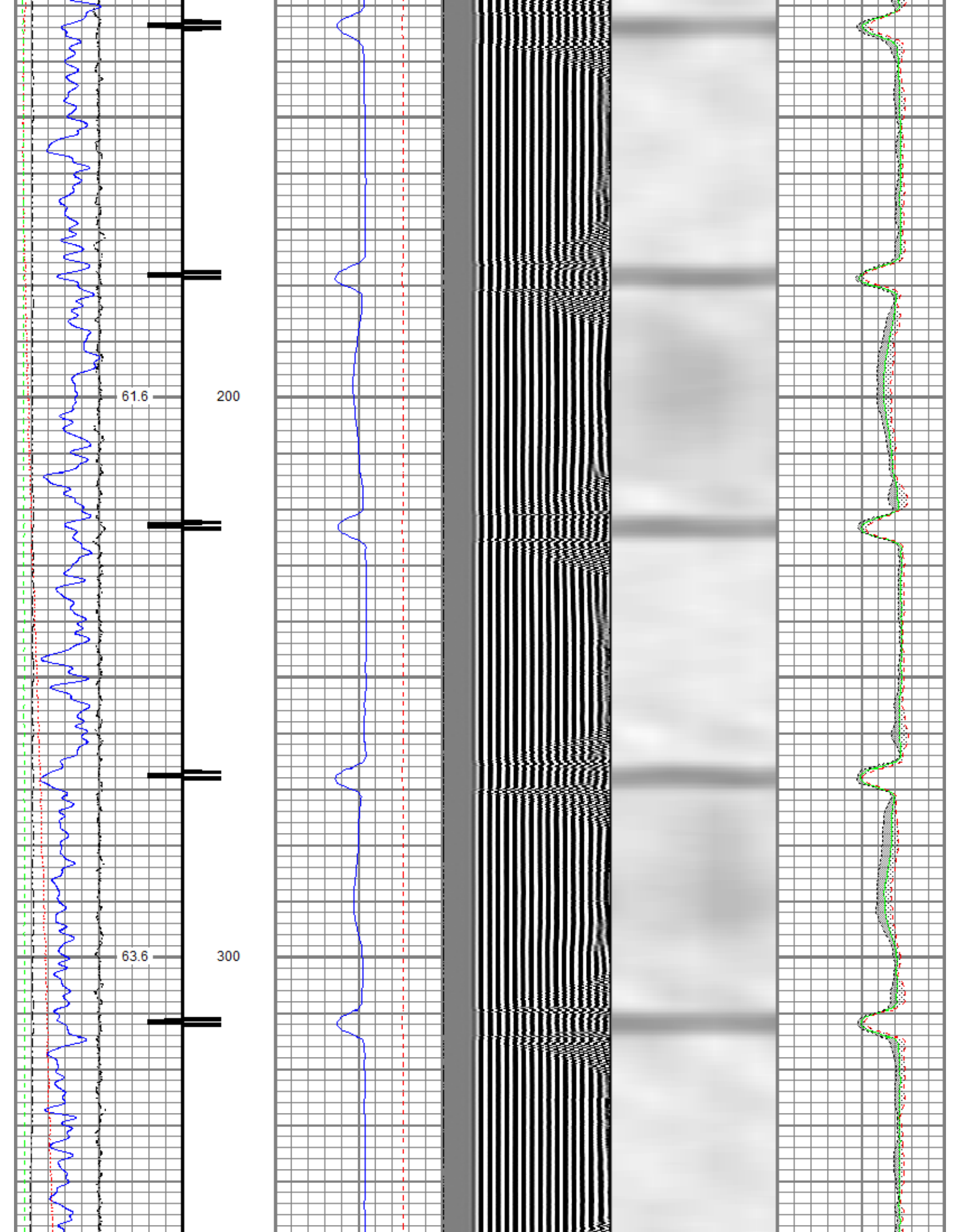


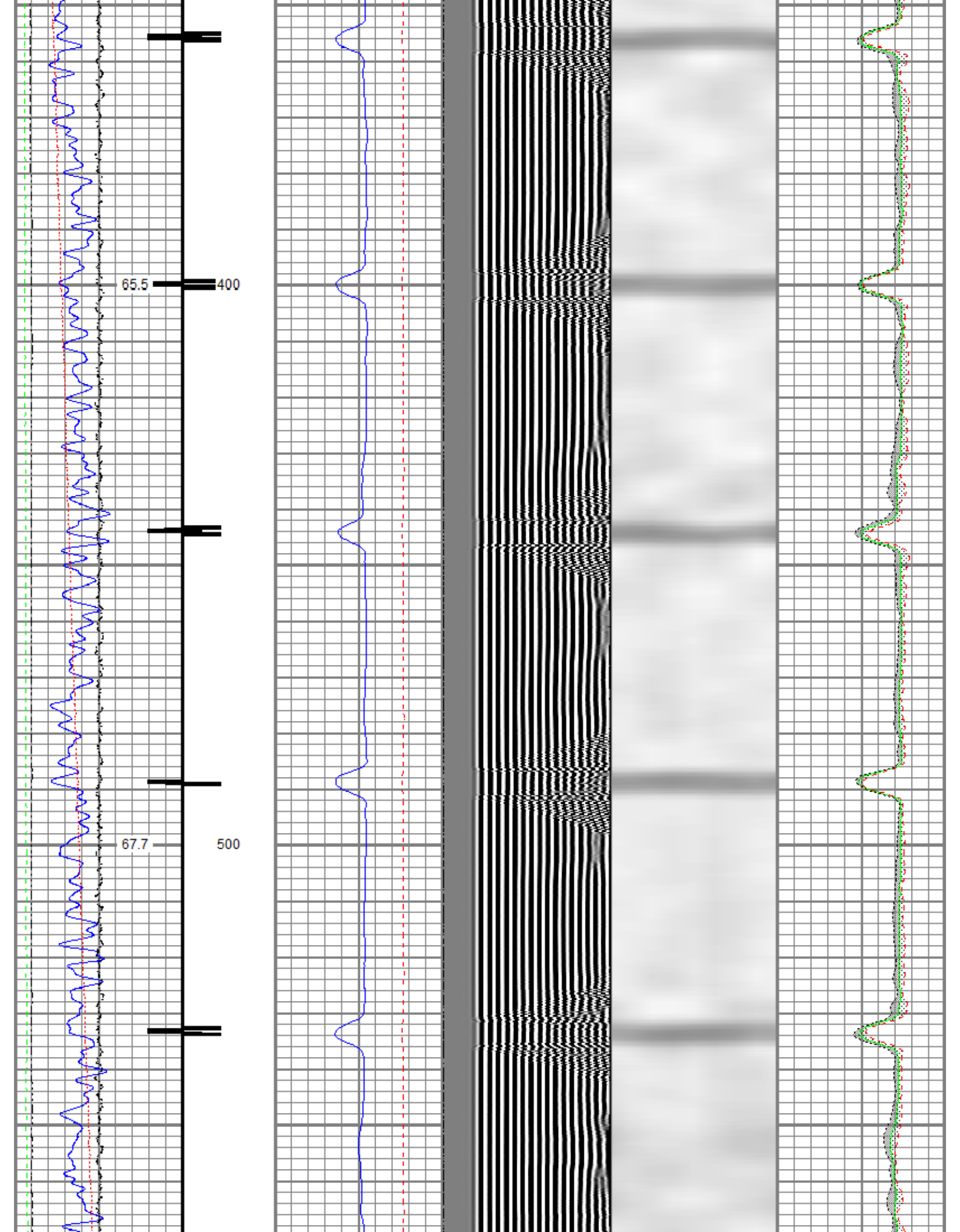
Recorded With 2500 PSI Surface Induced Pressure

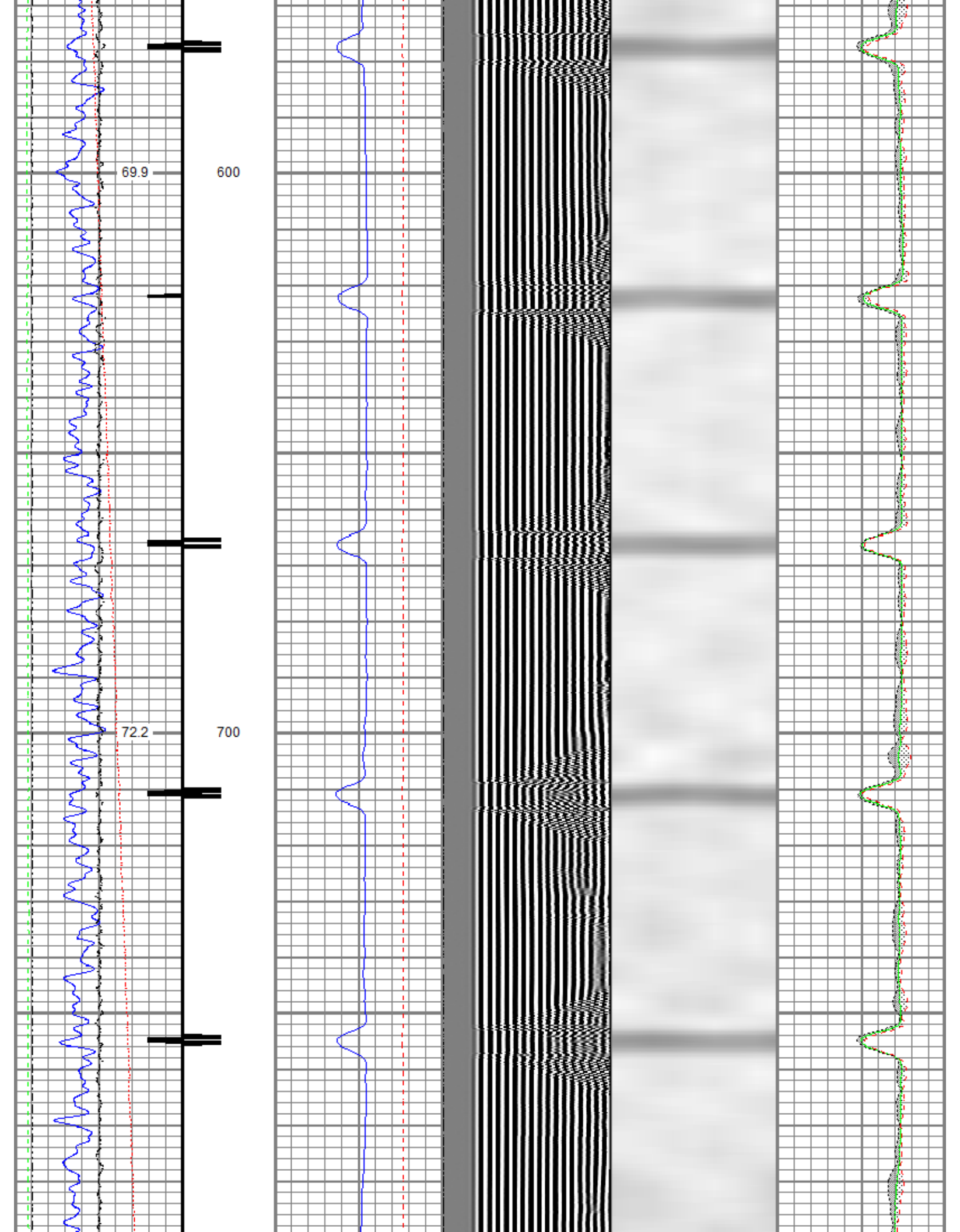
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 Dataset Pathname main.1
 Presentation Format ros_radri_noble
 Dataset Creation Wed Aug 05 13:20:17 2020
 Charted by Depth in Feet scaled 1:240

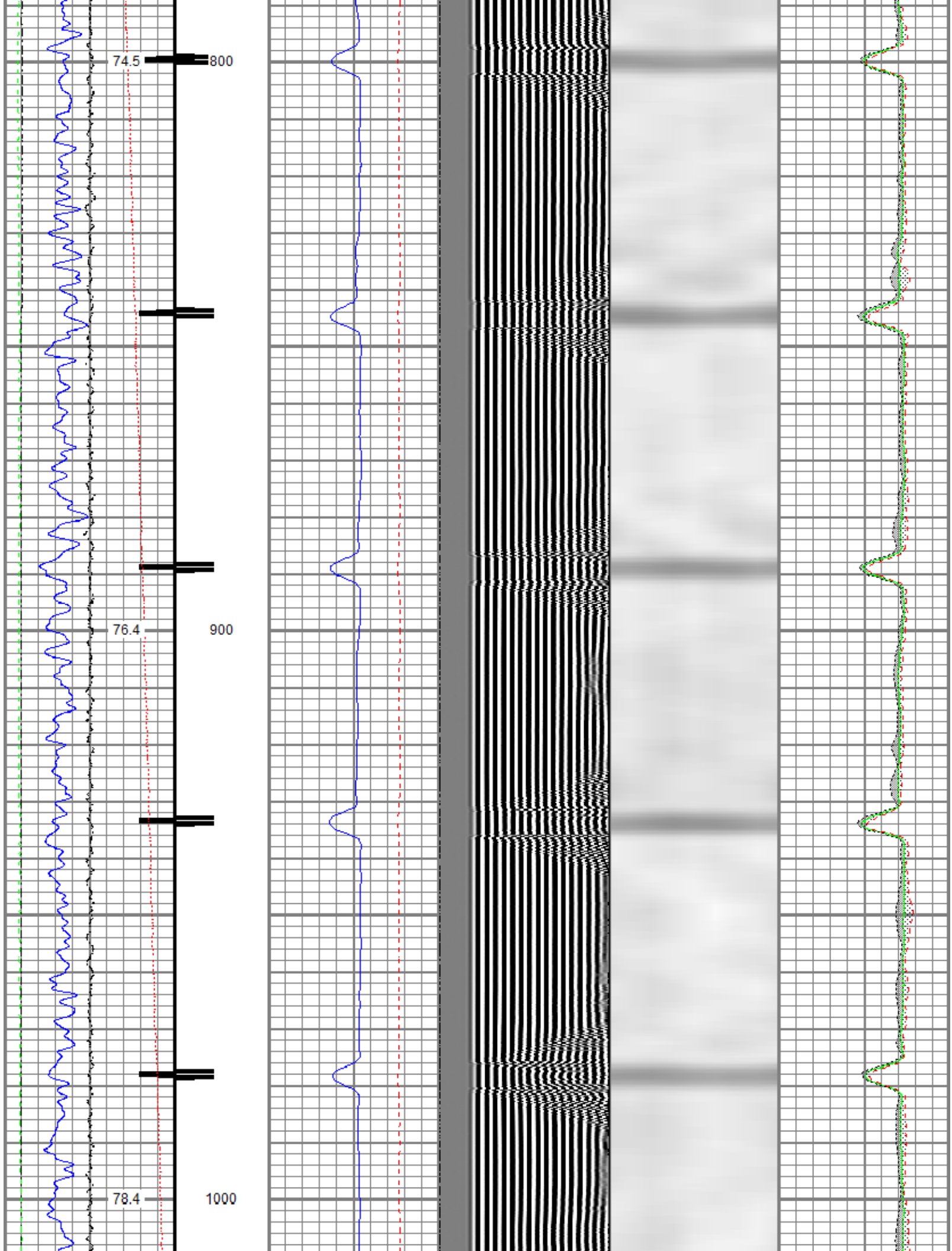
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

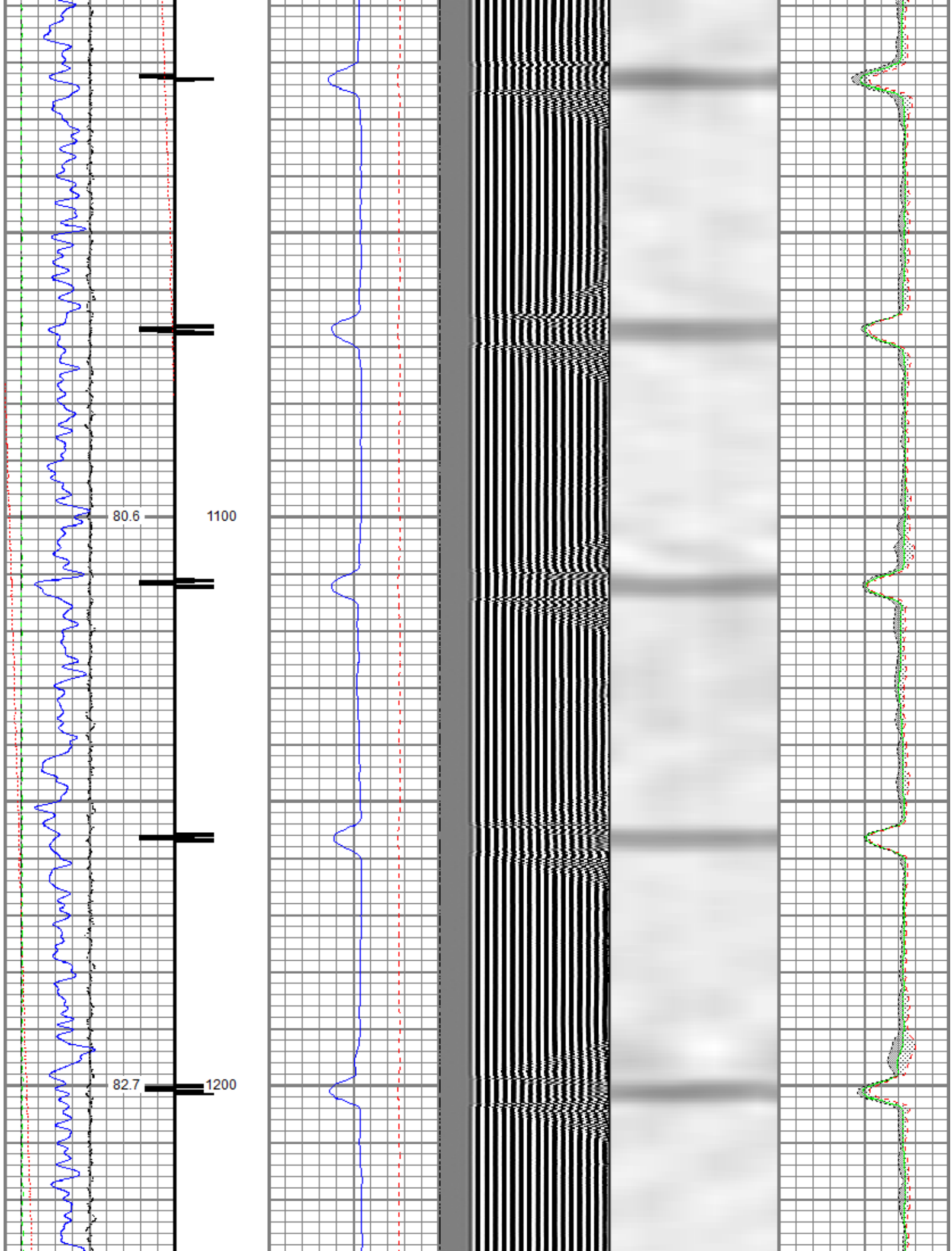


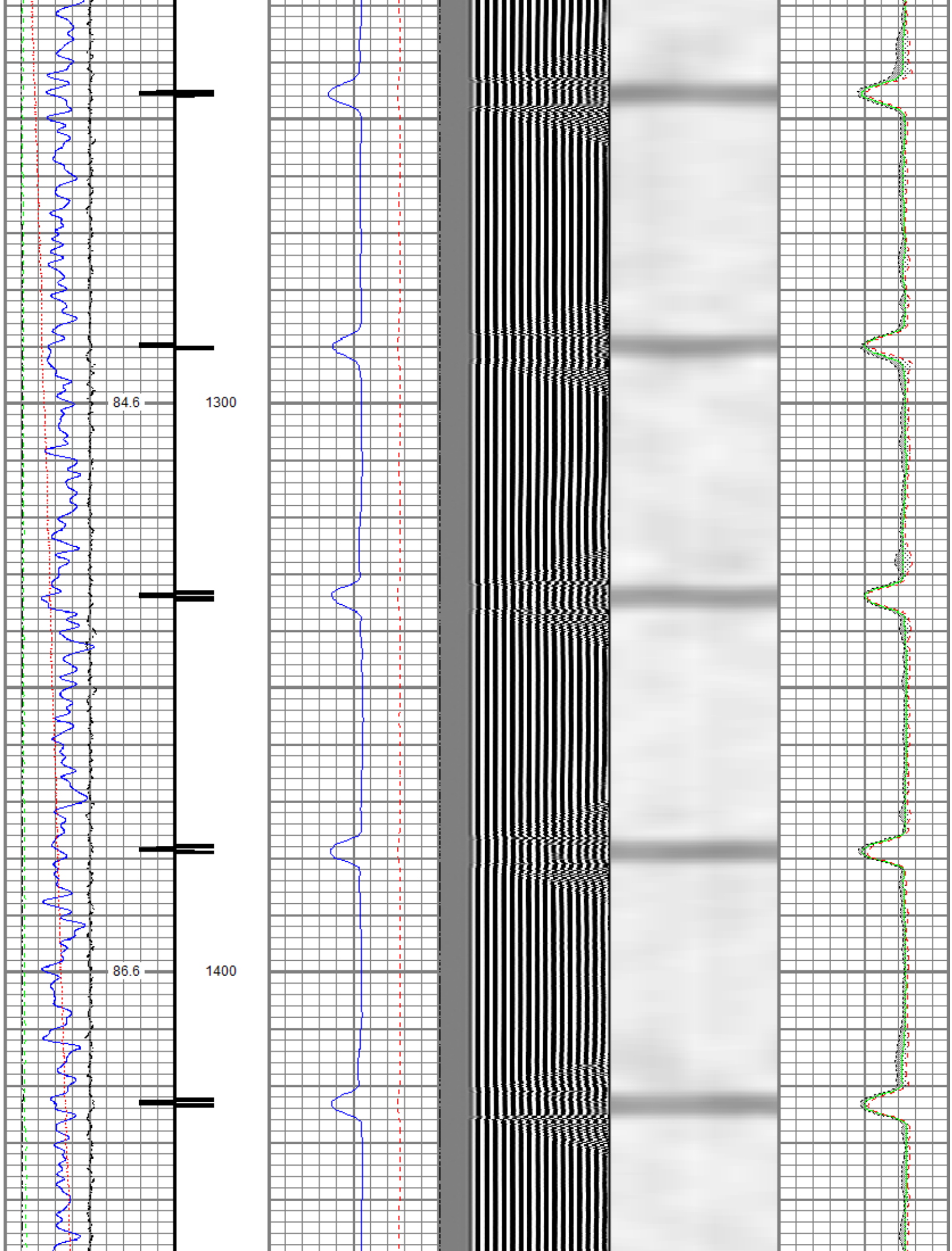


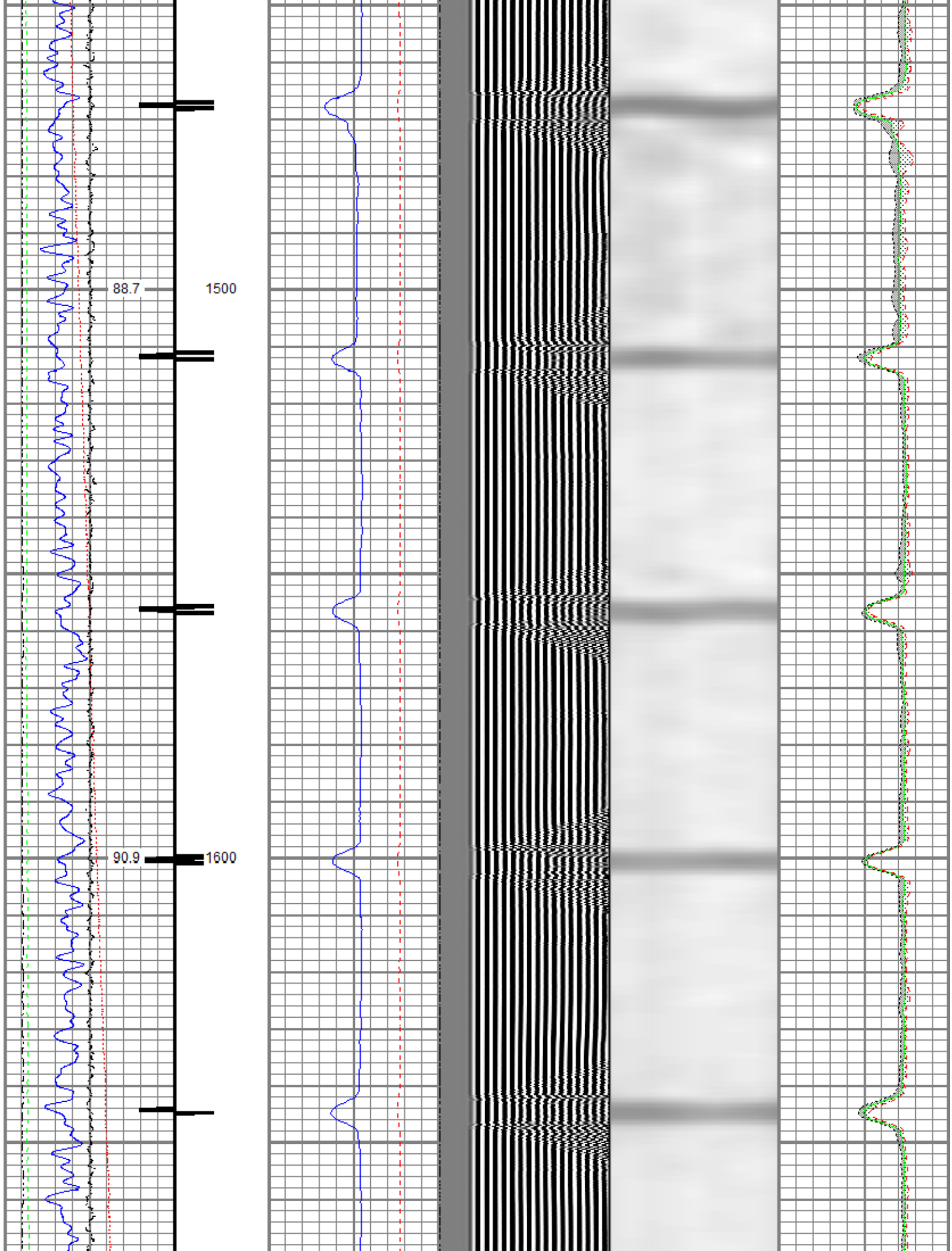


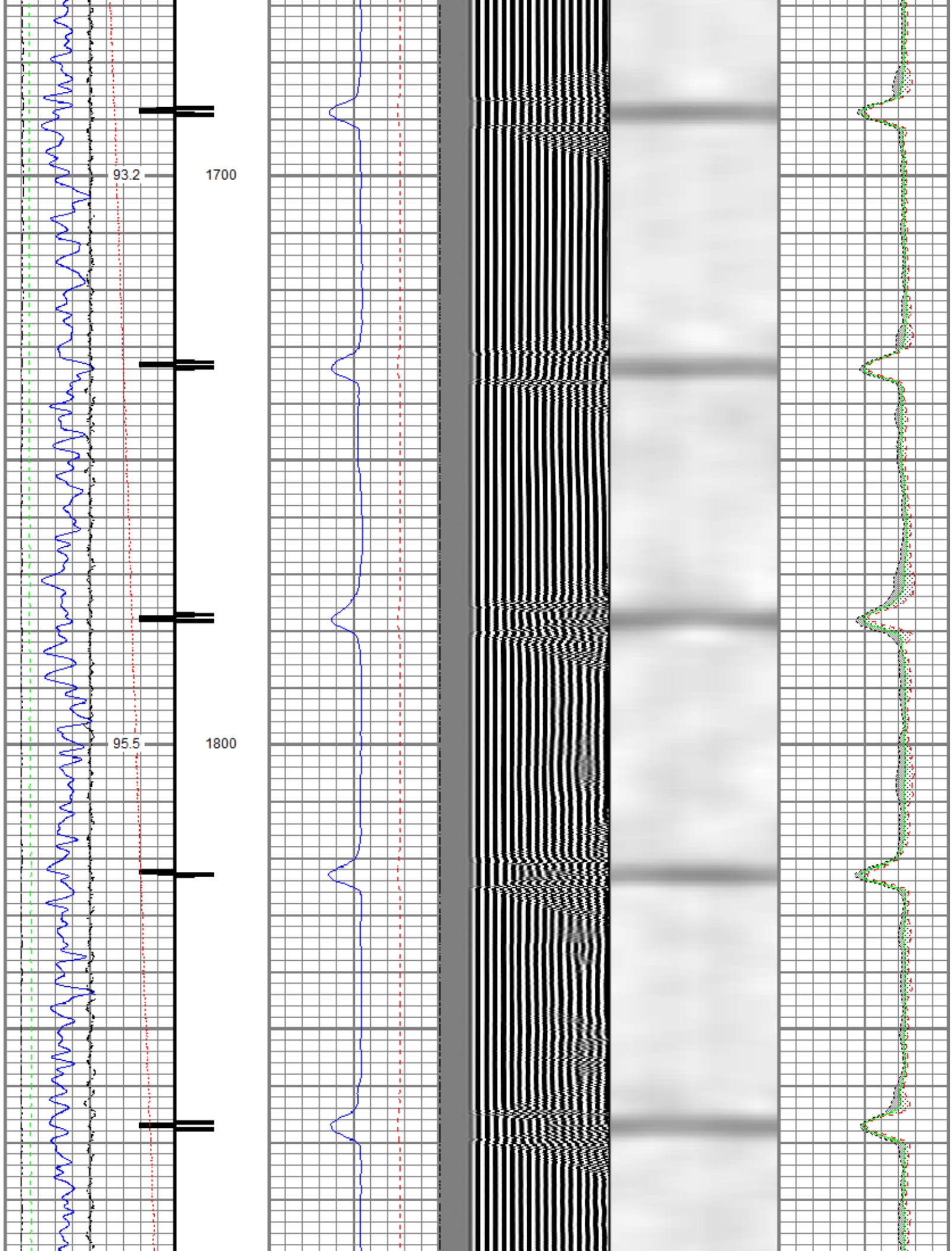


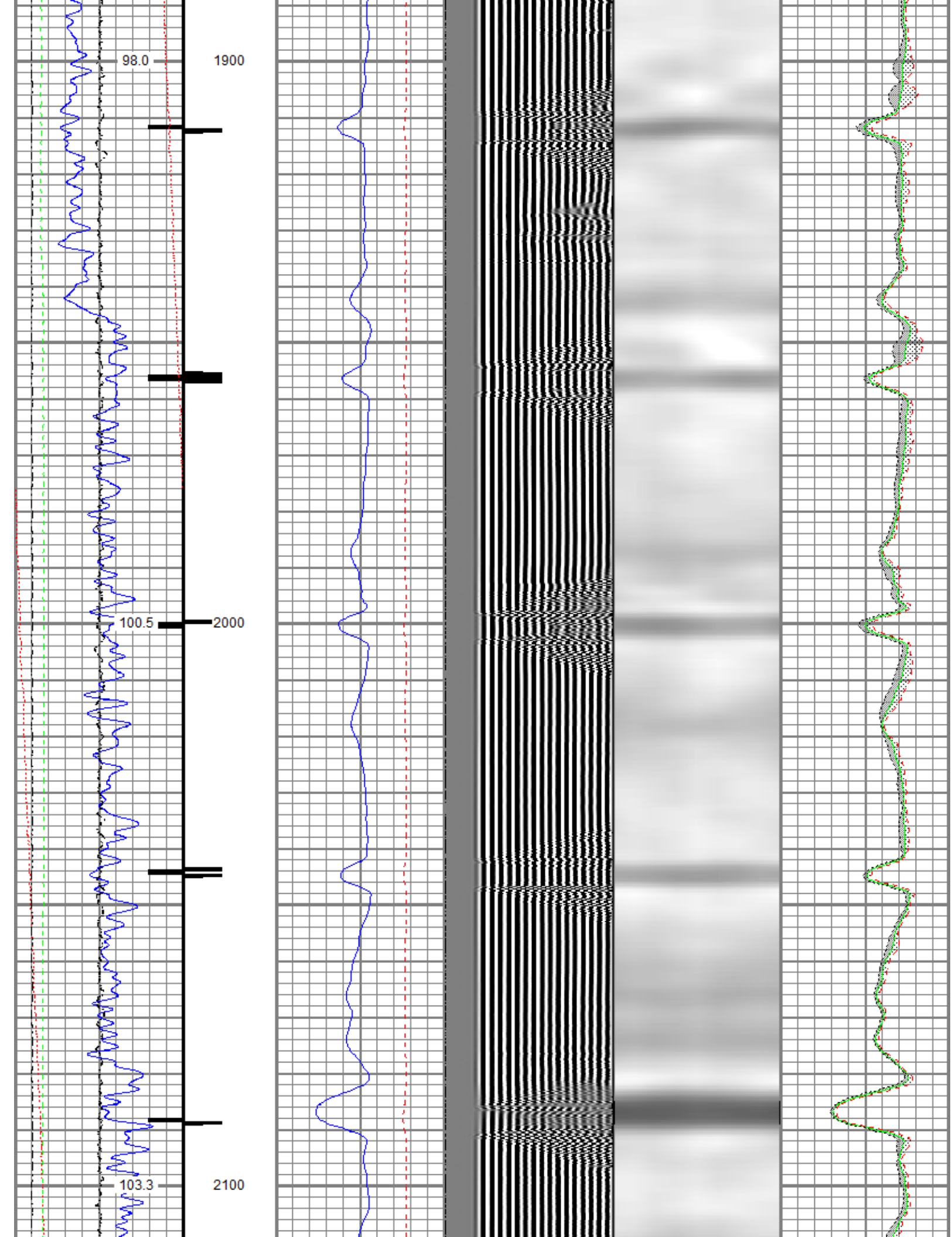


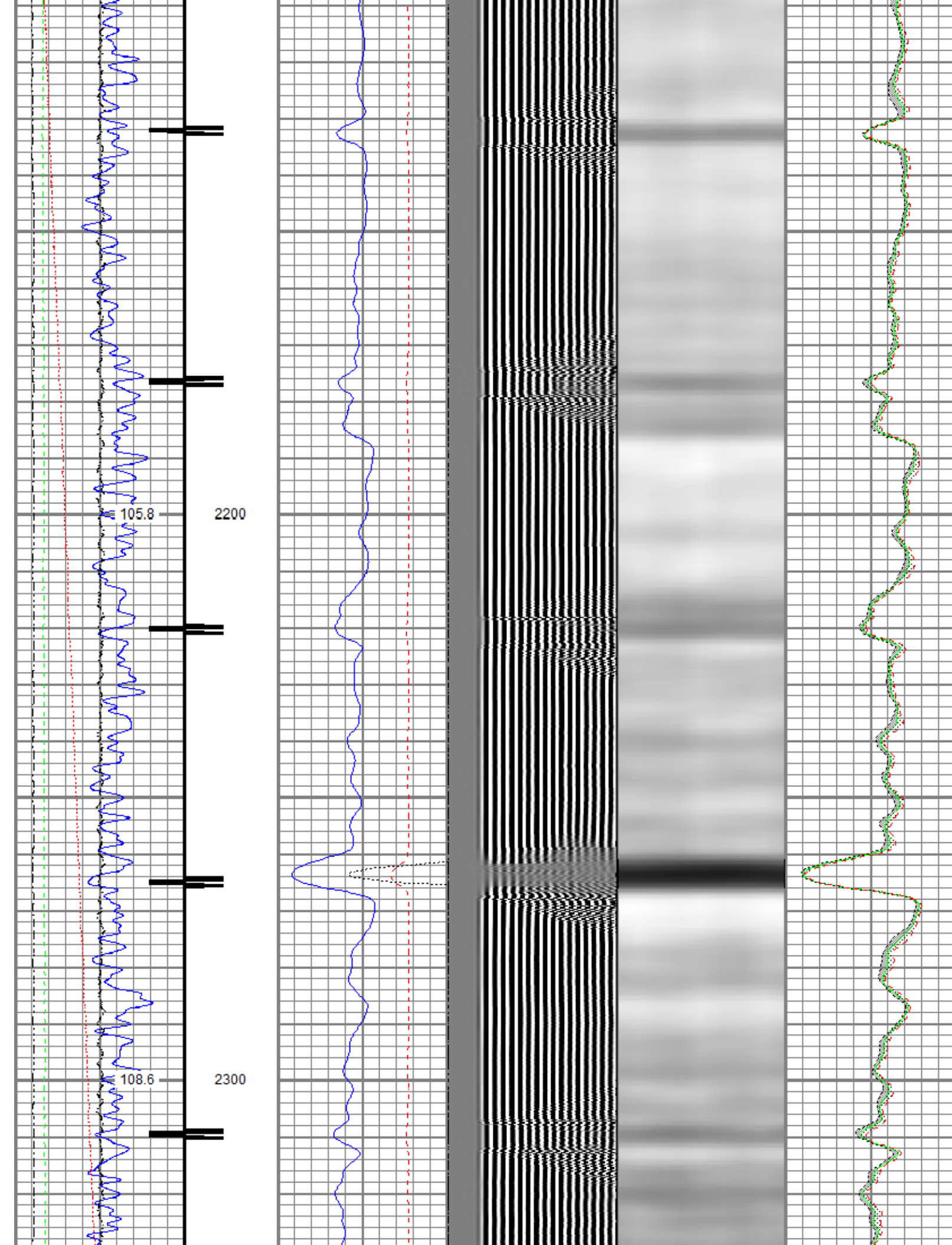


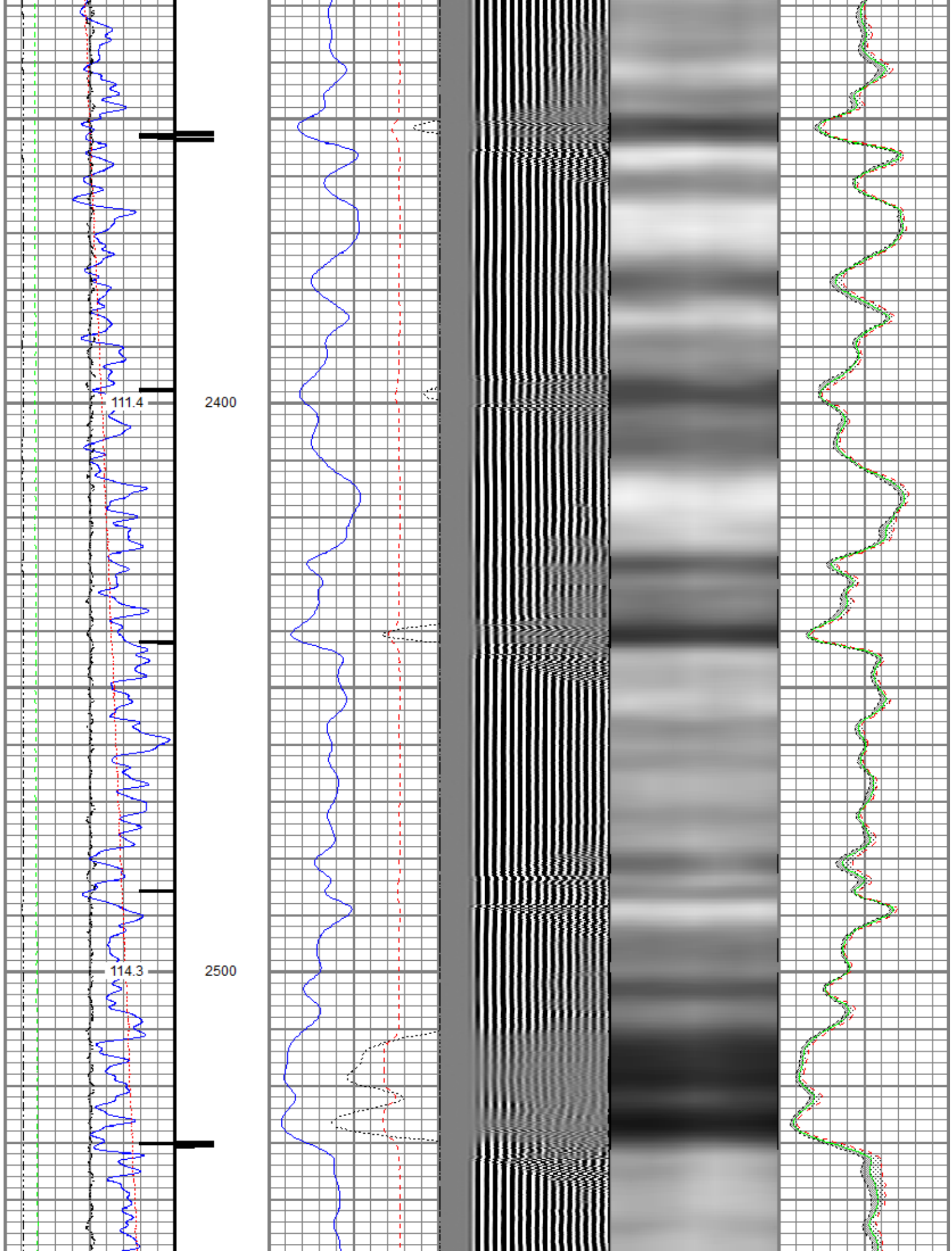


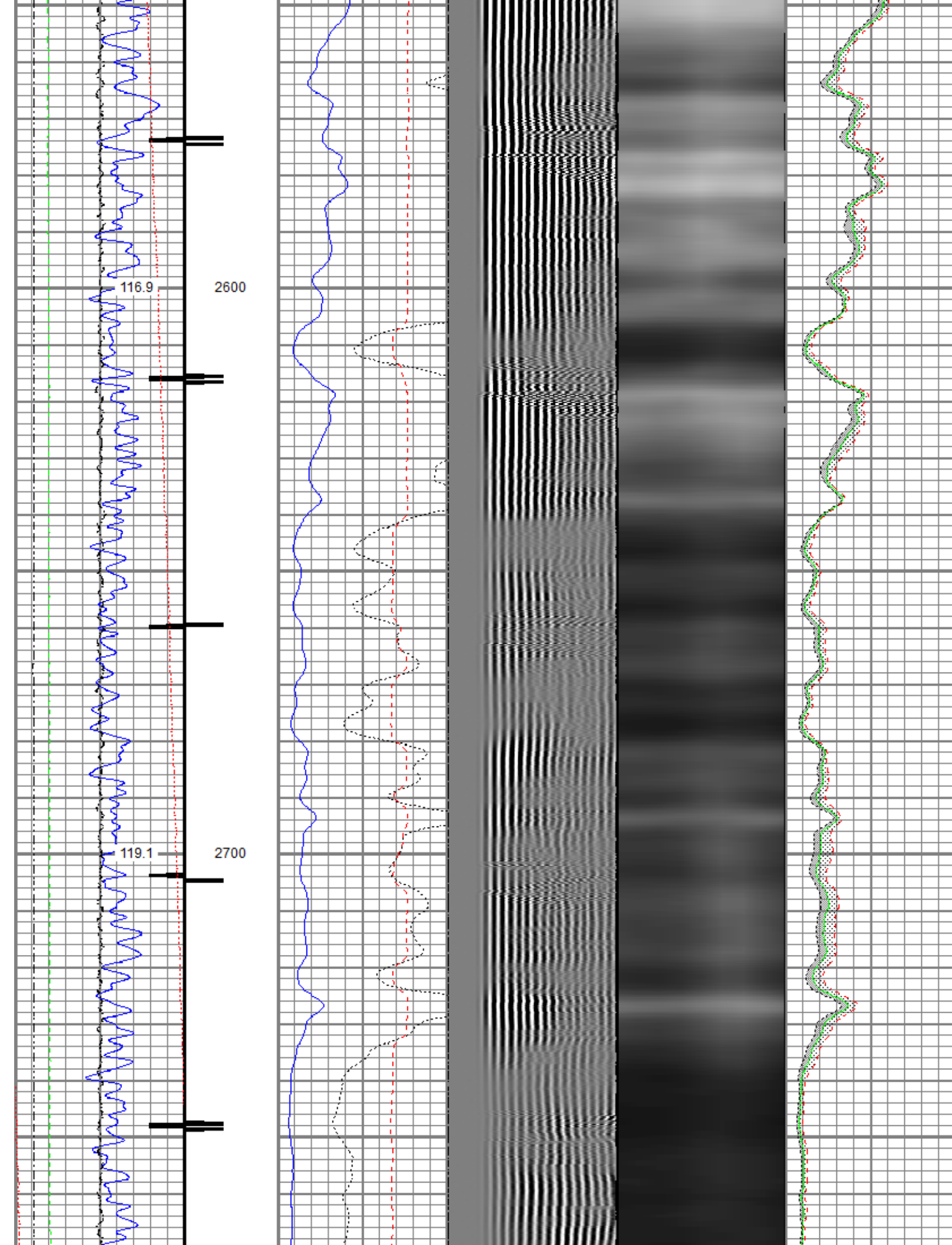


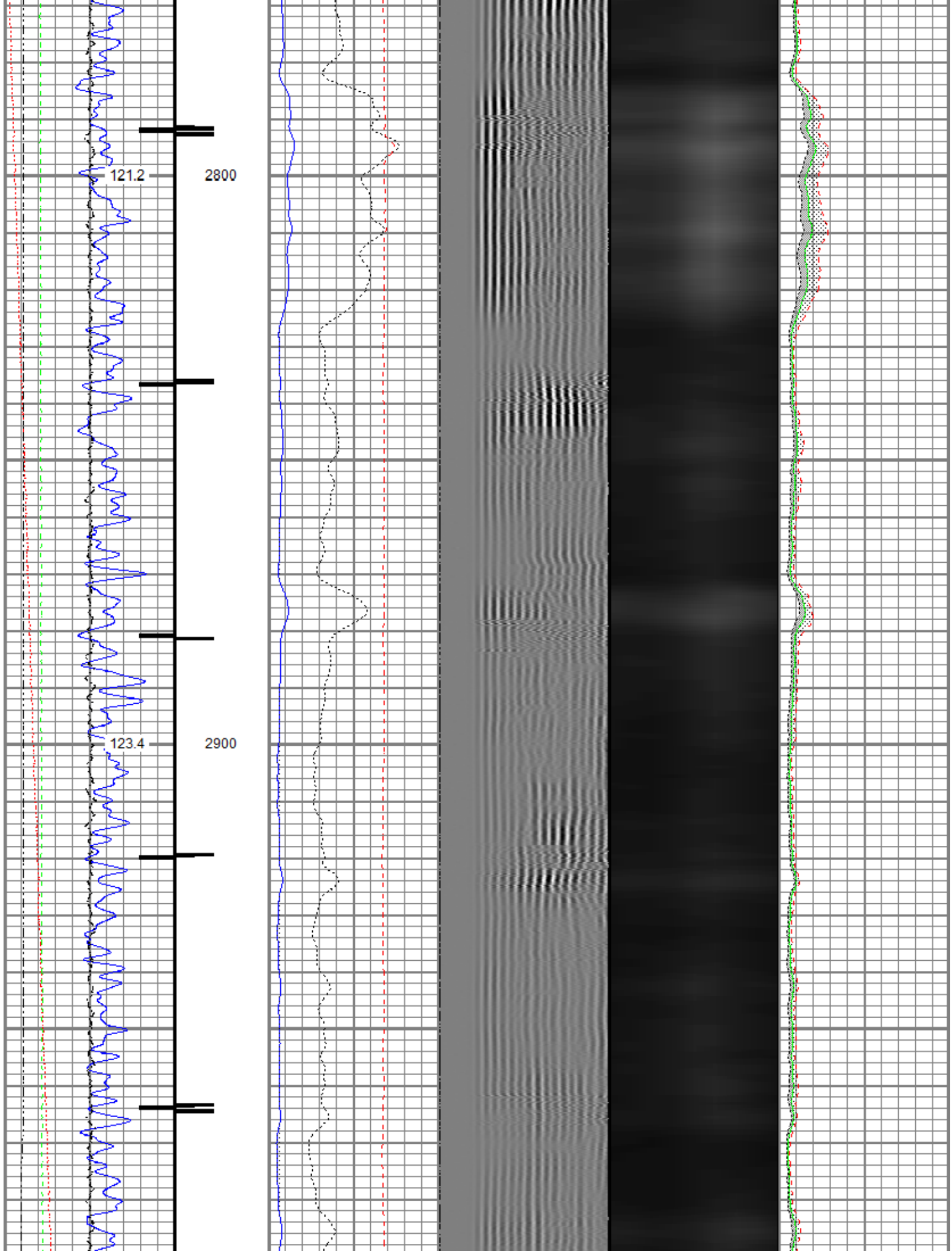


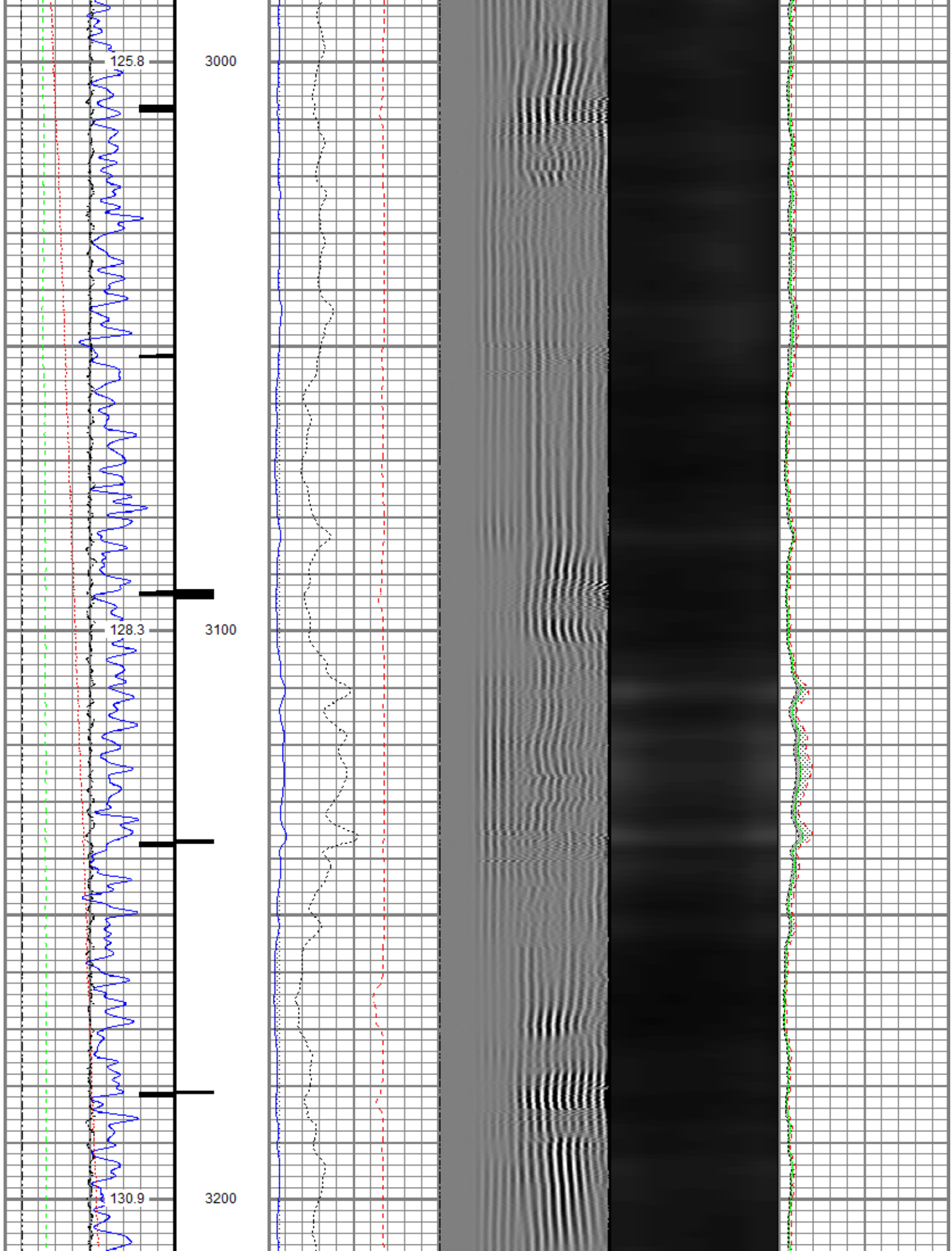


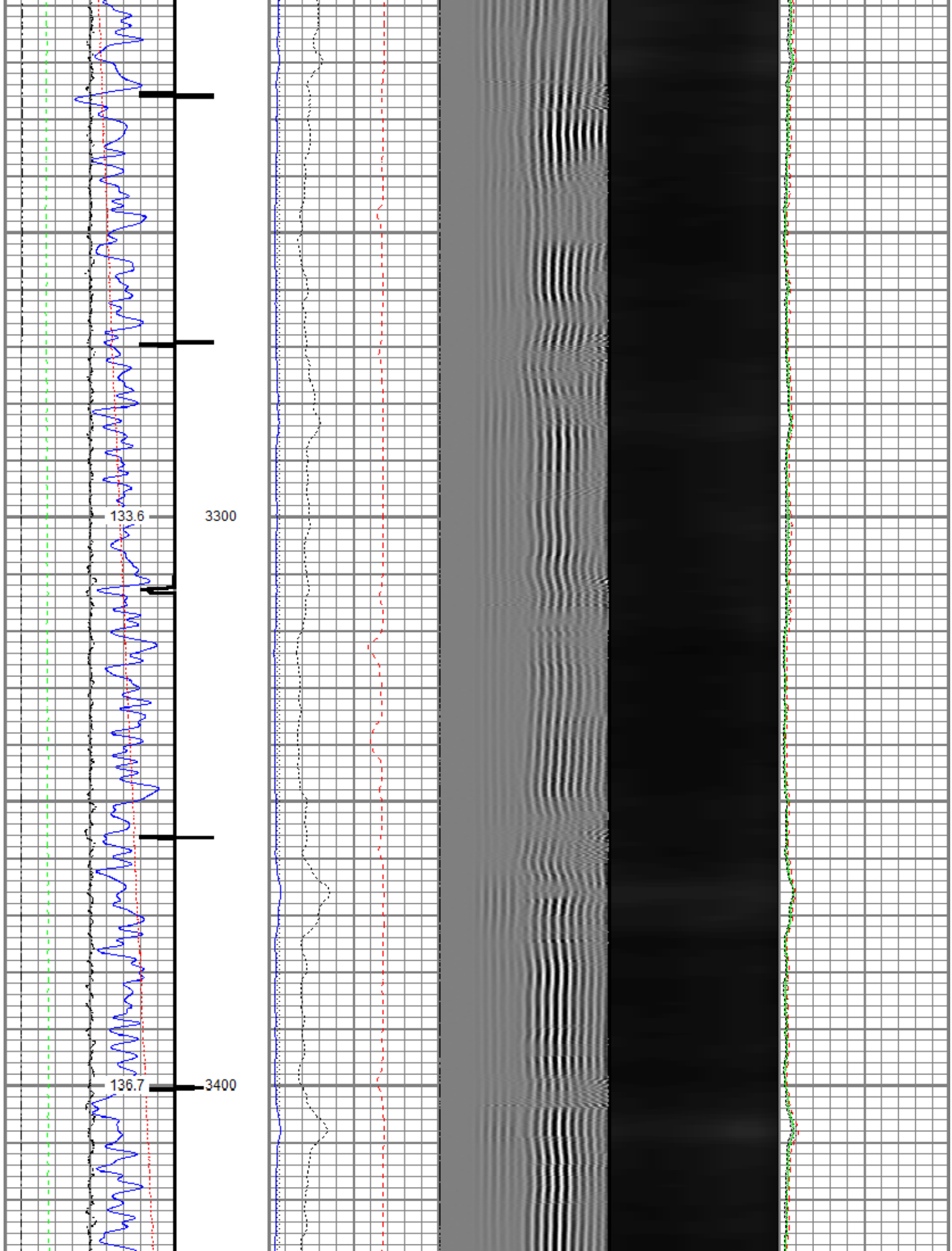


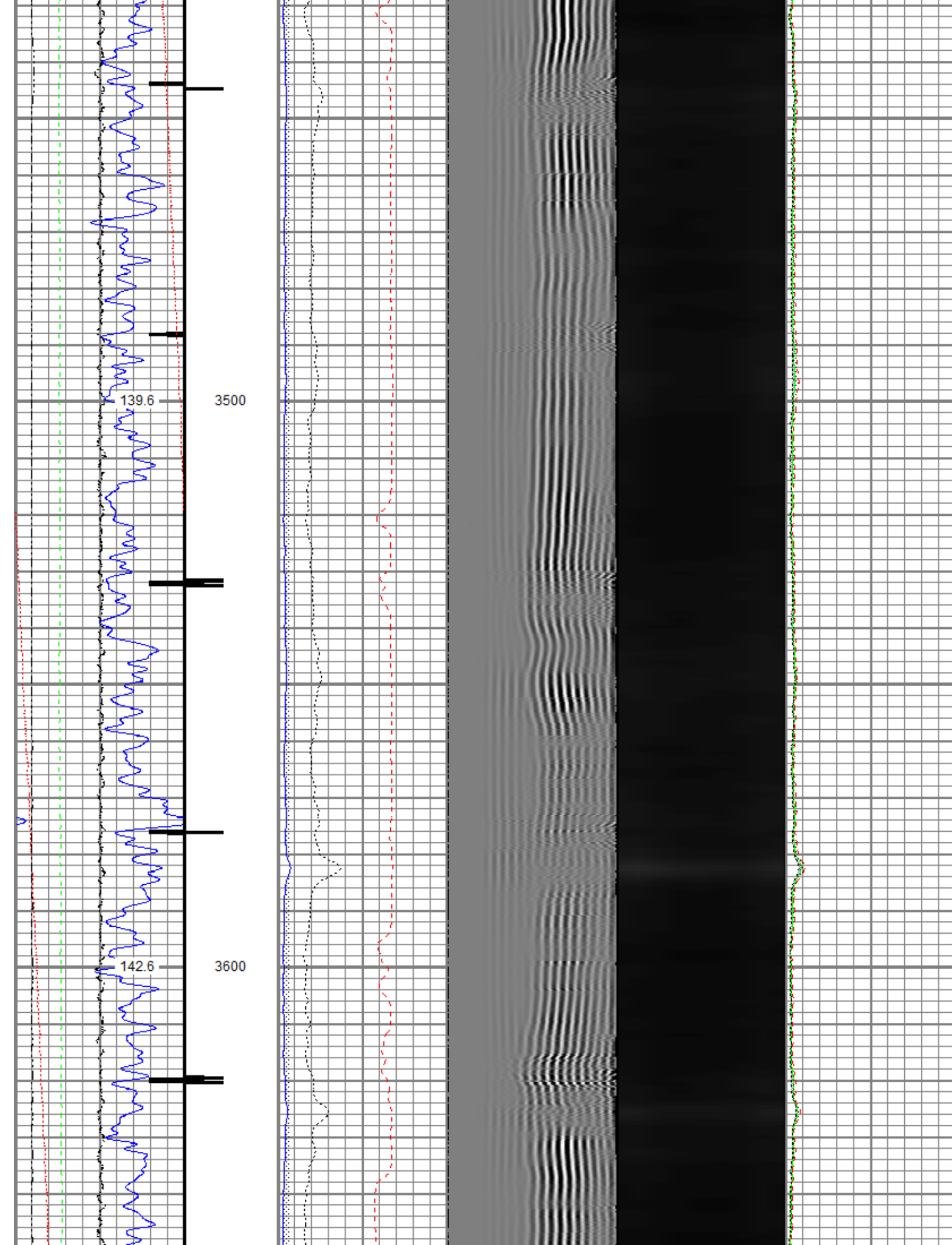


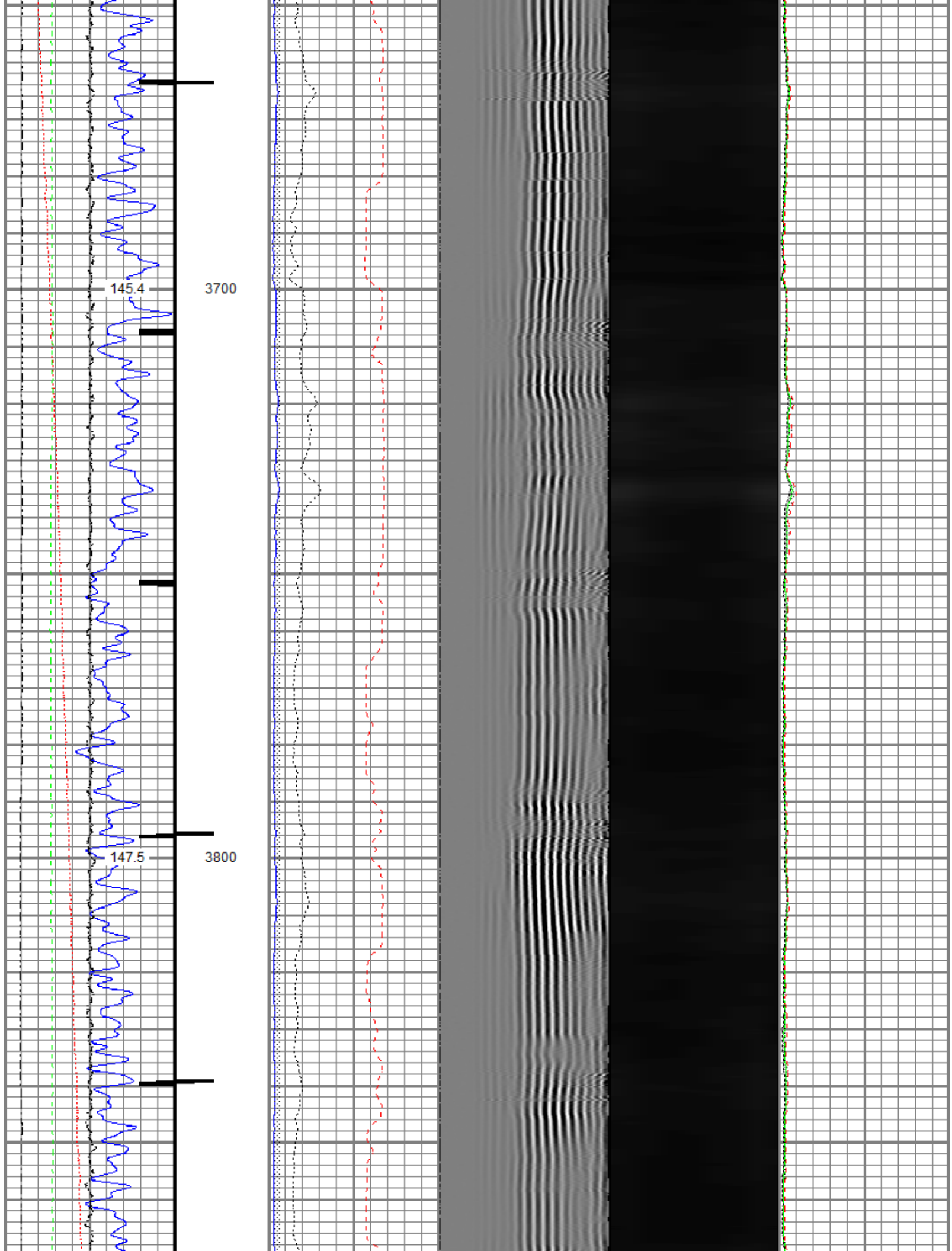


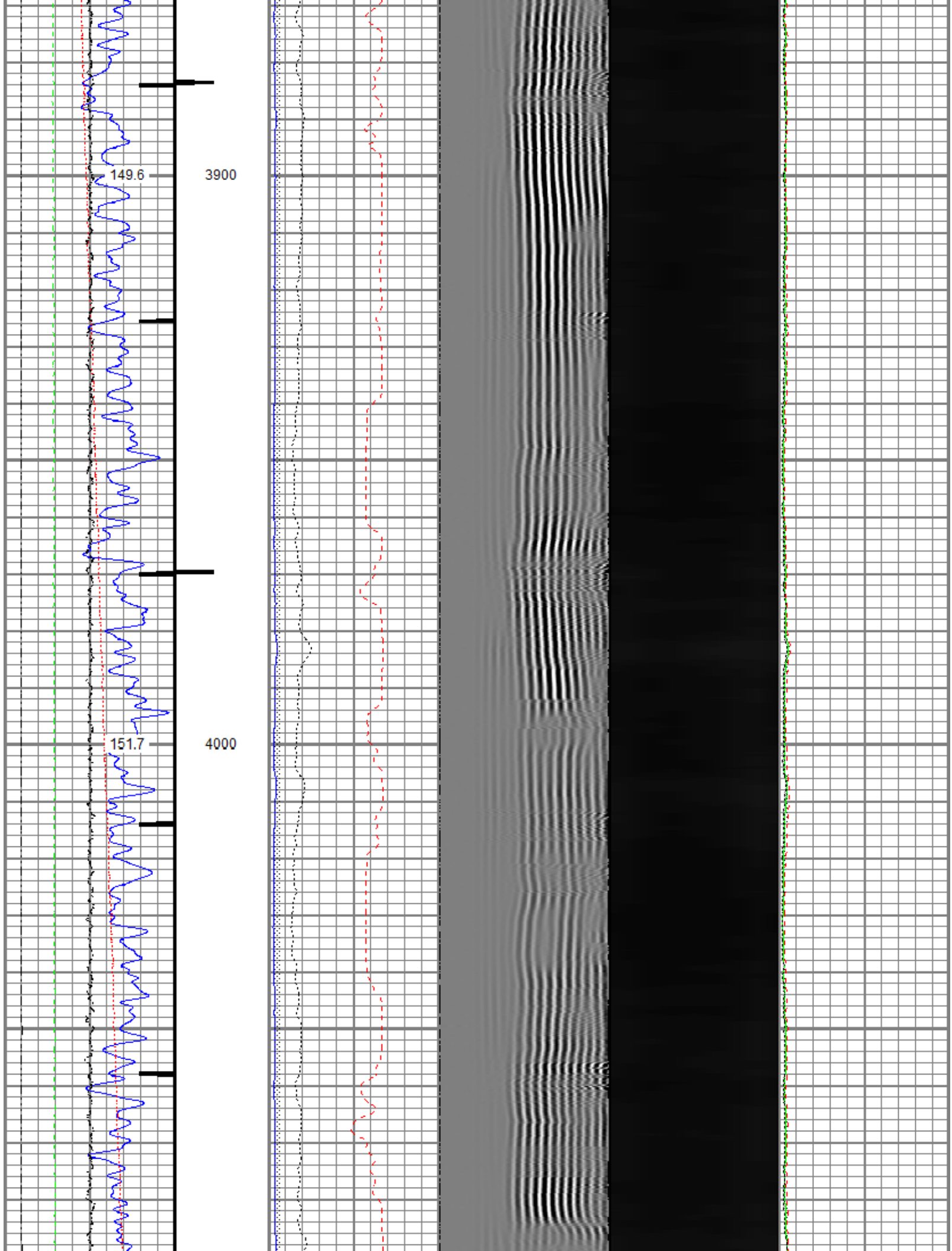


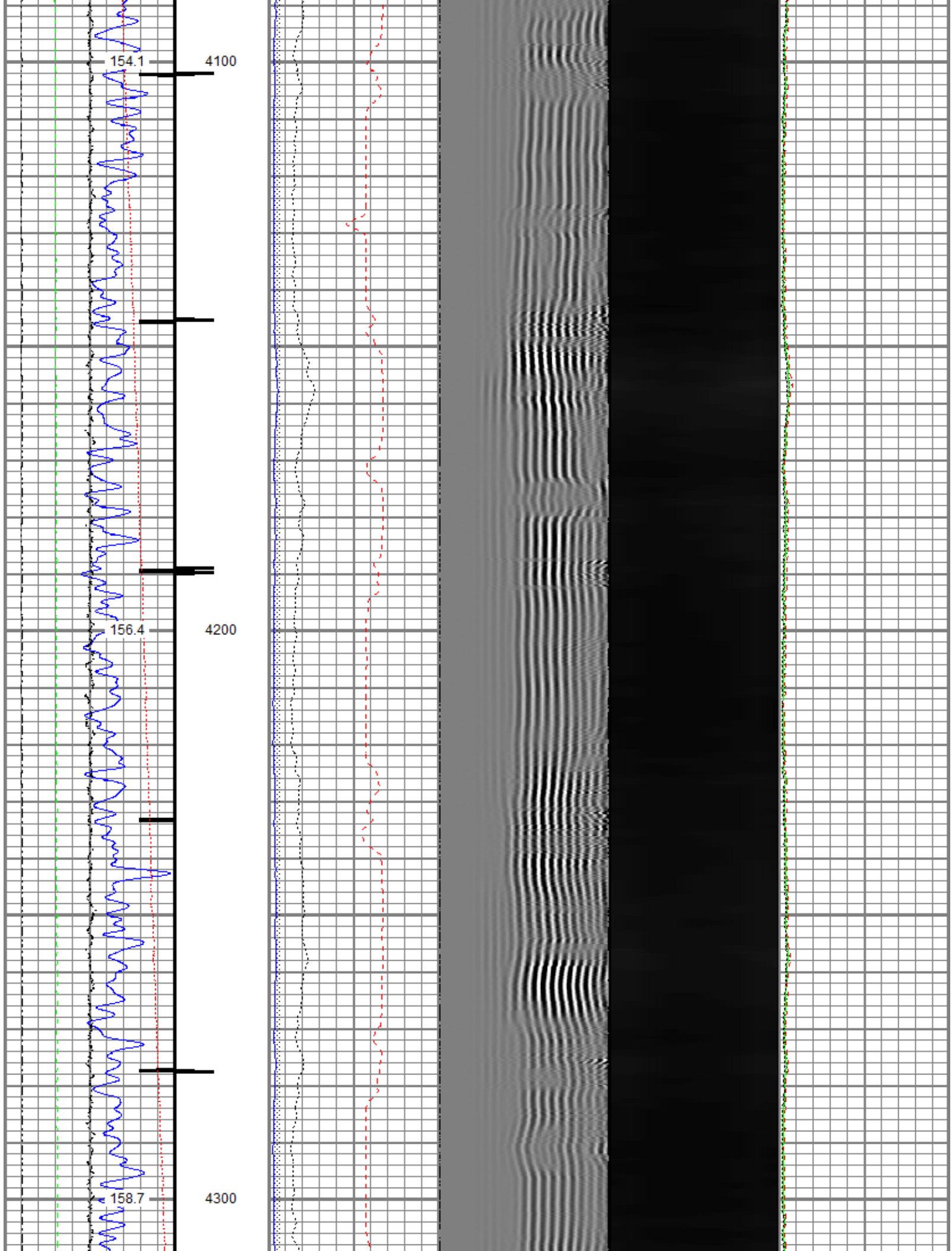


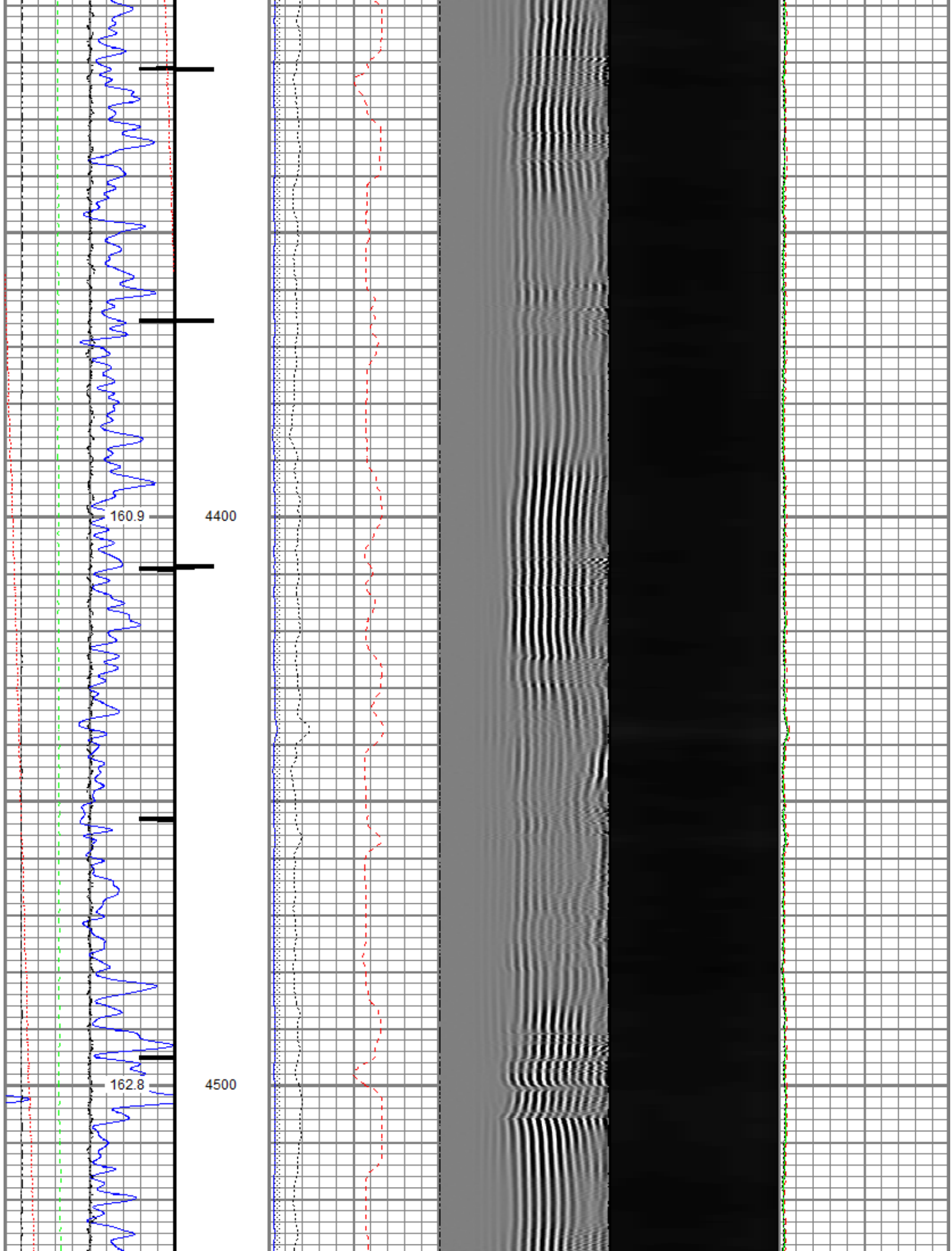


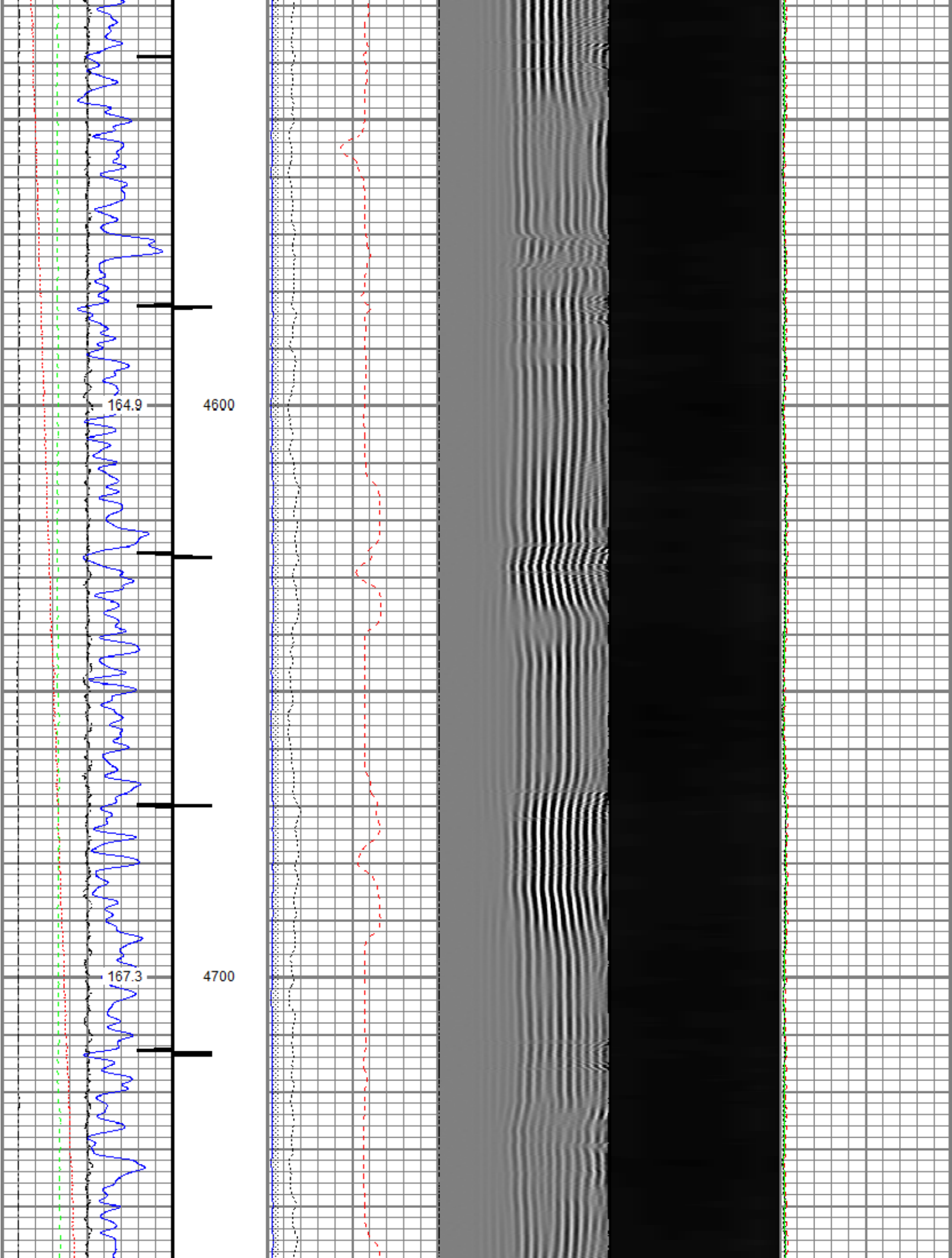


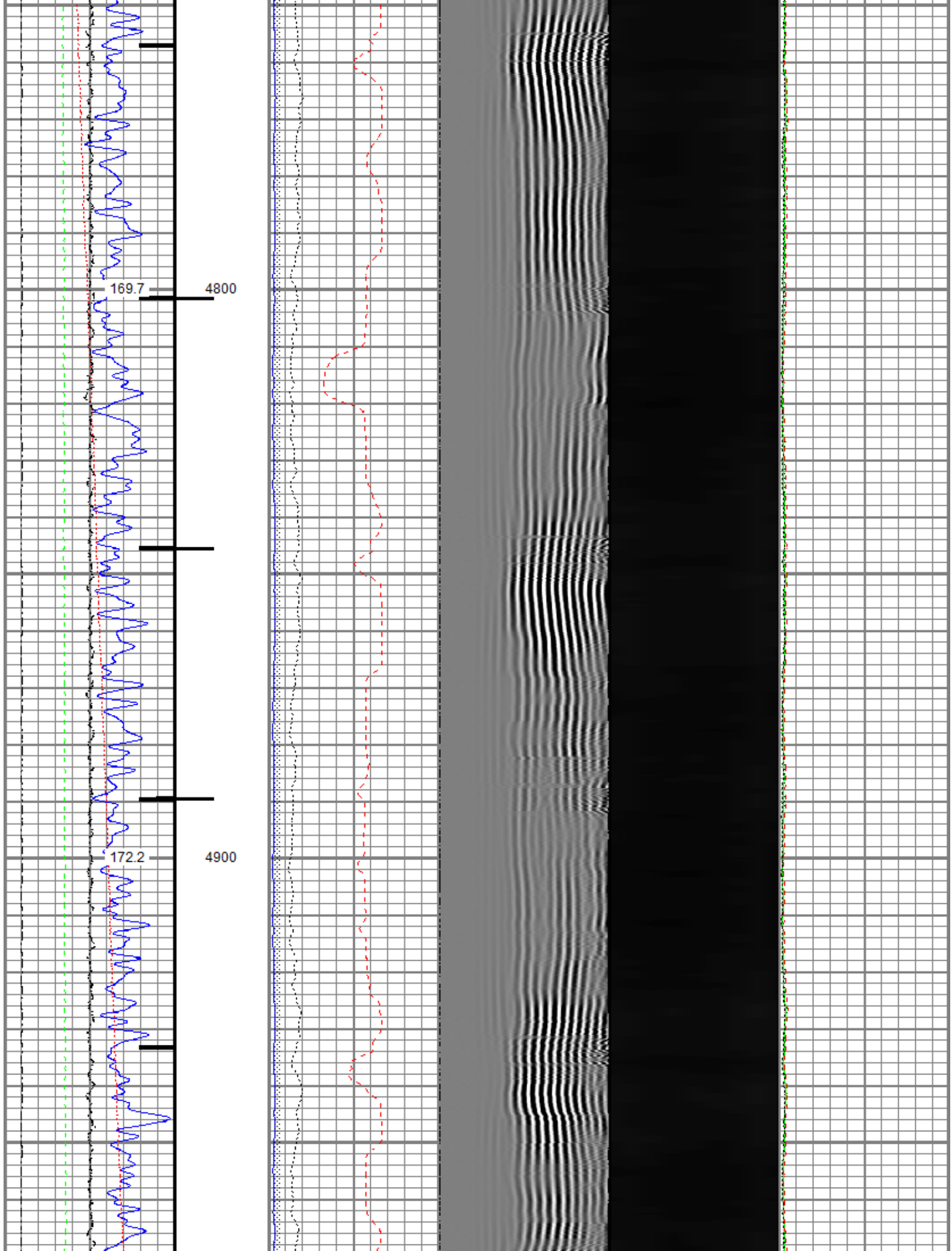


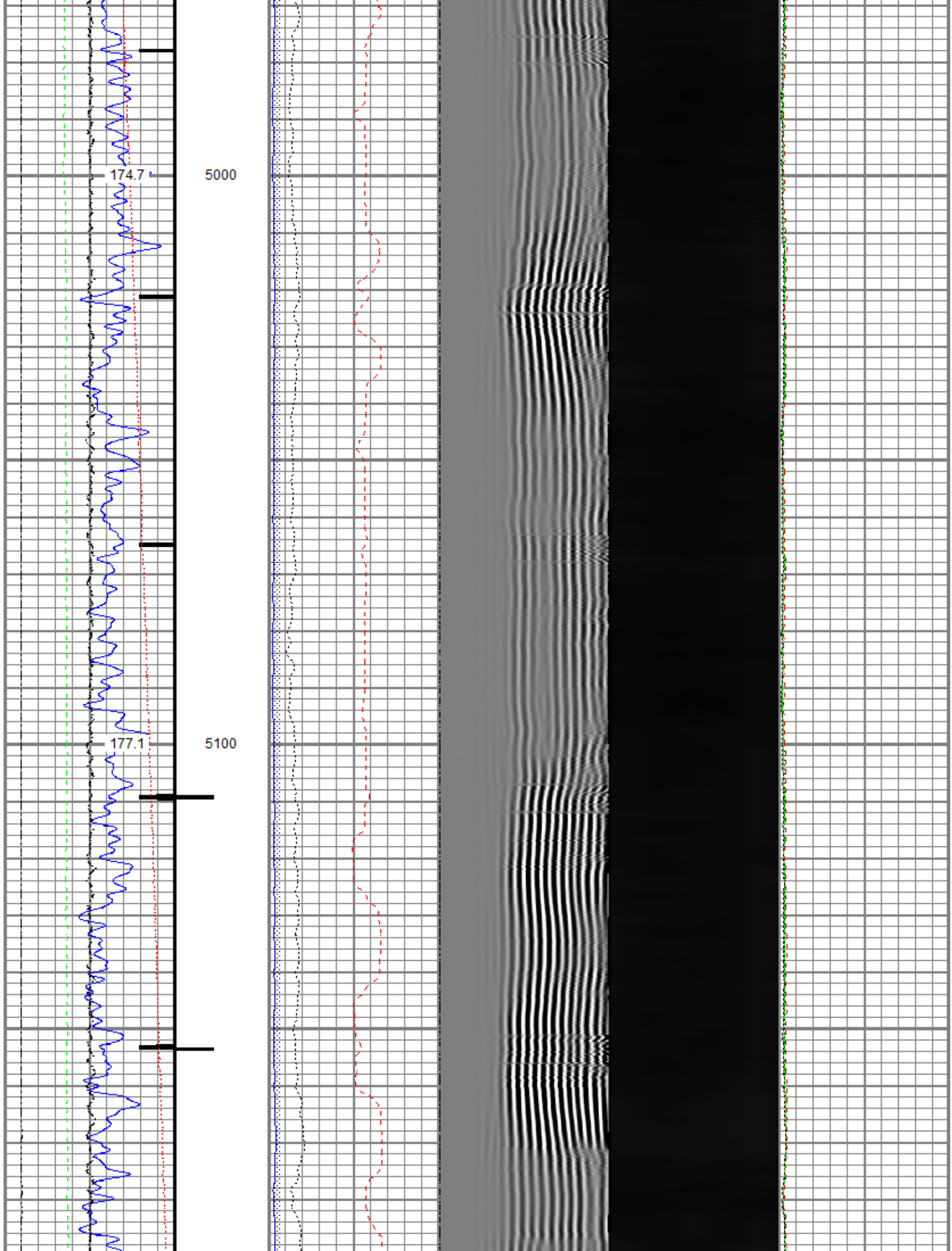


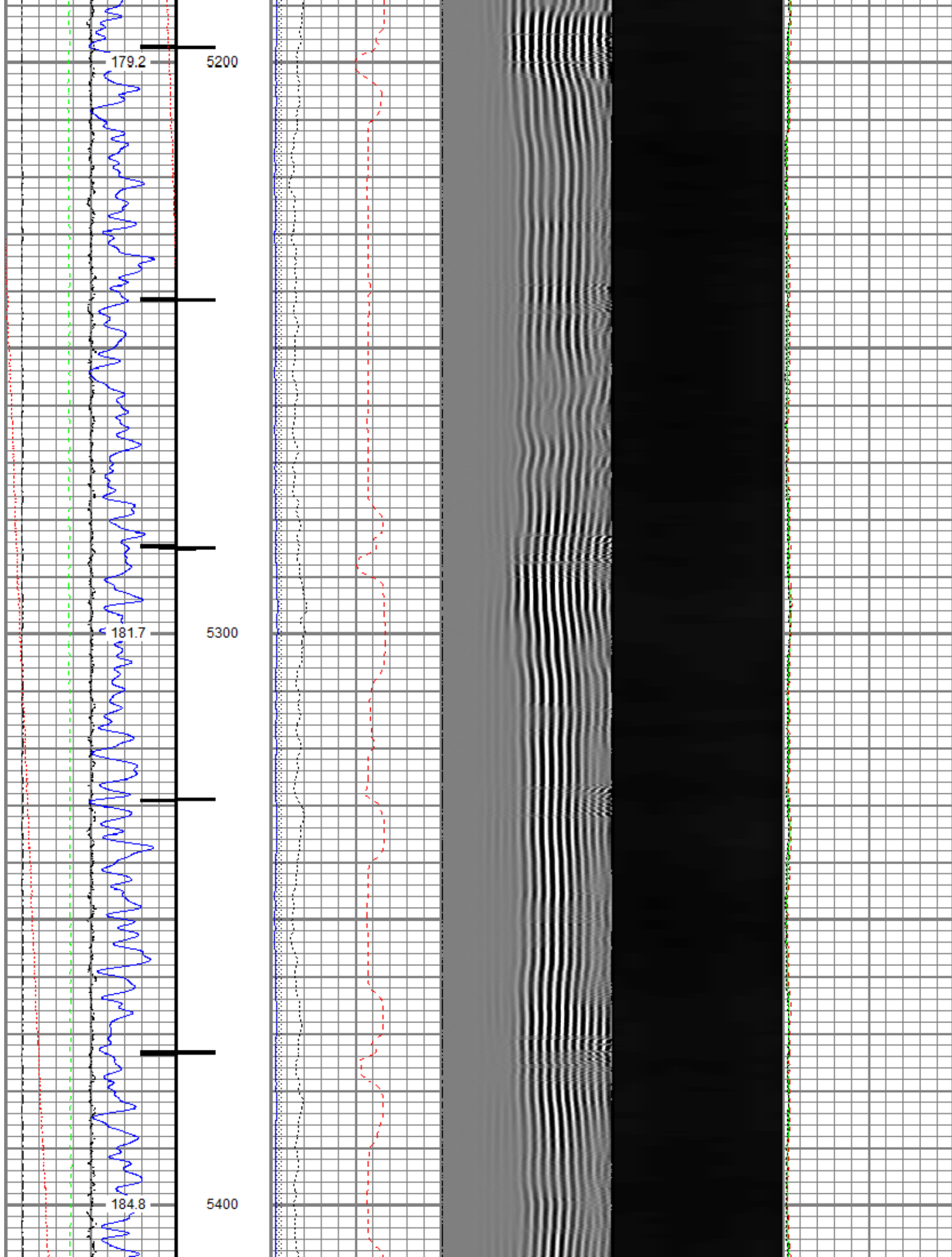


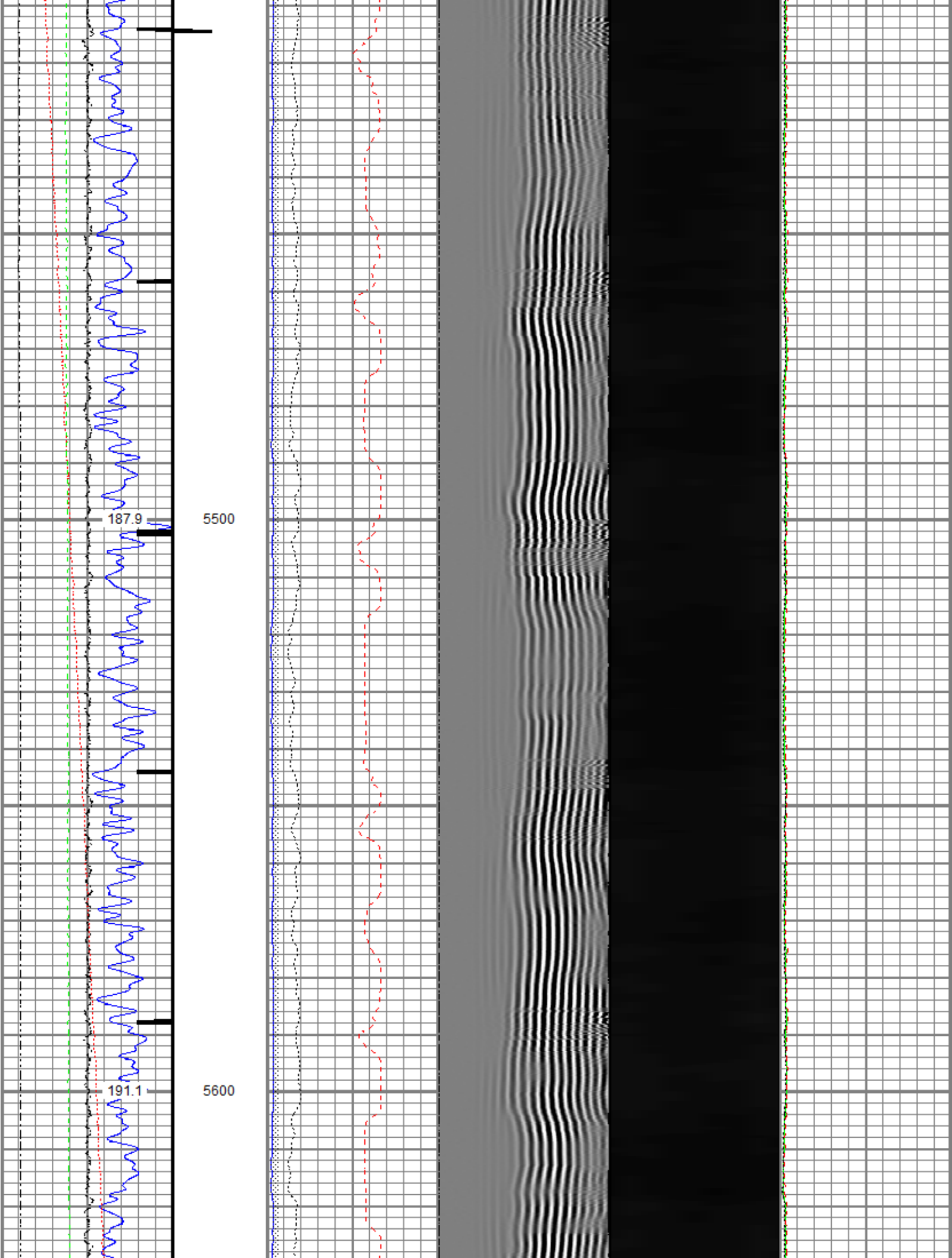


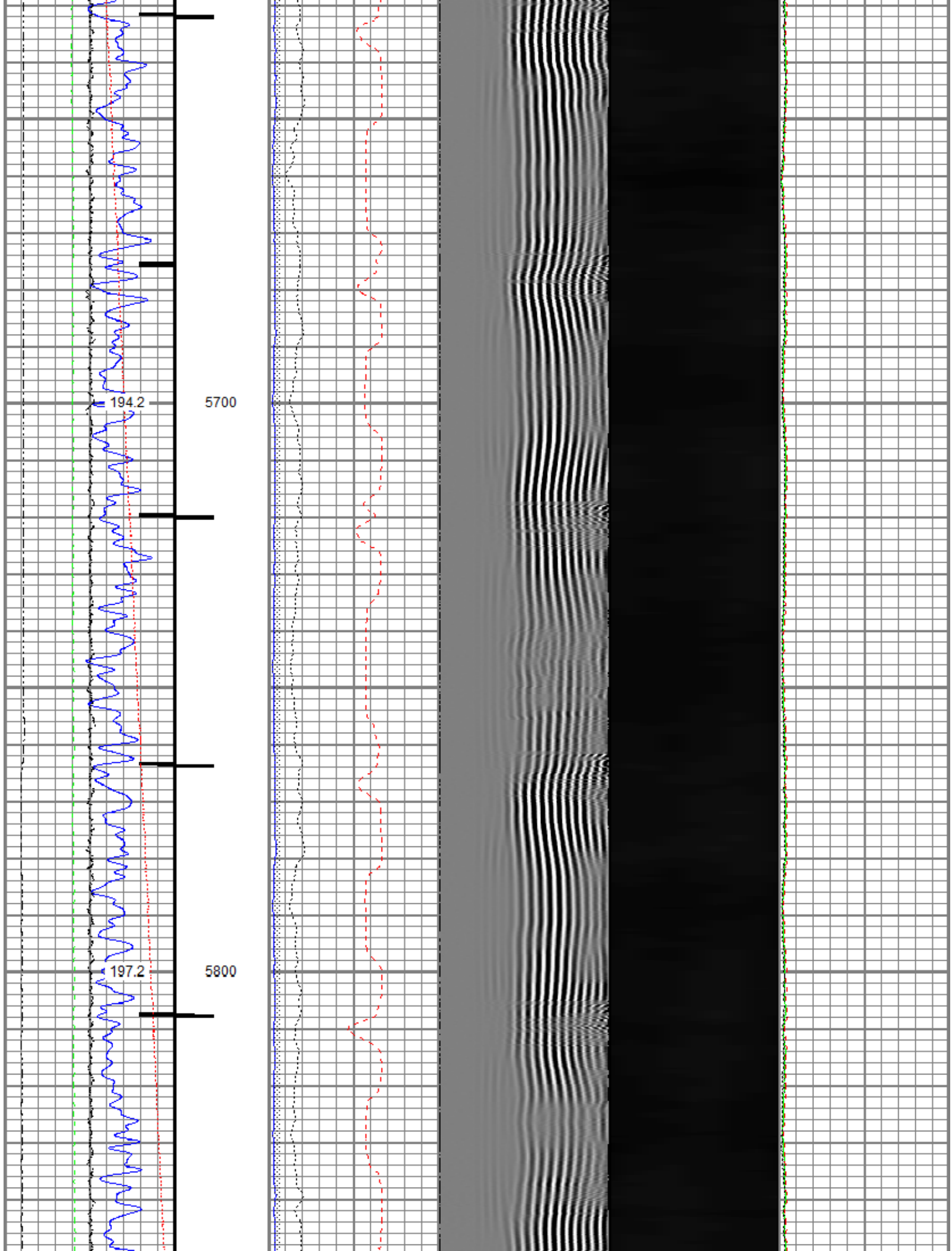


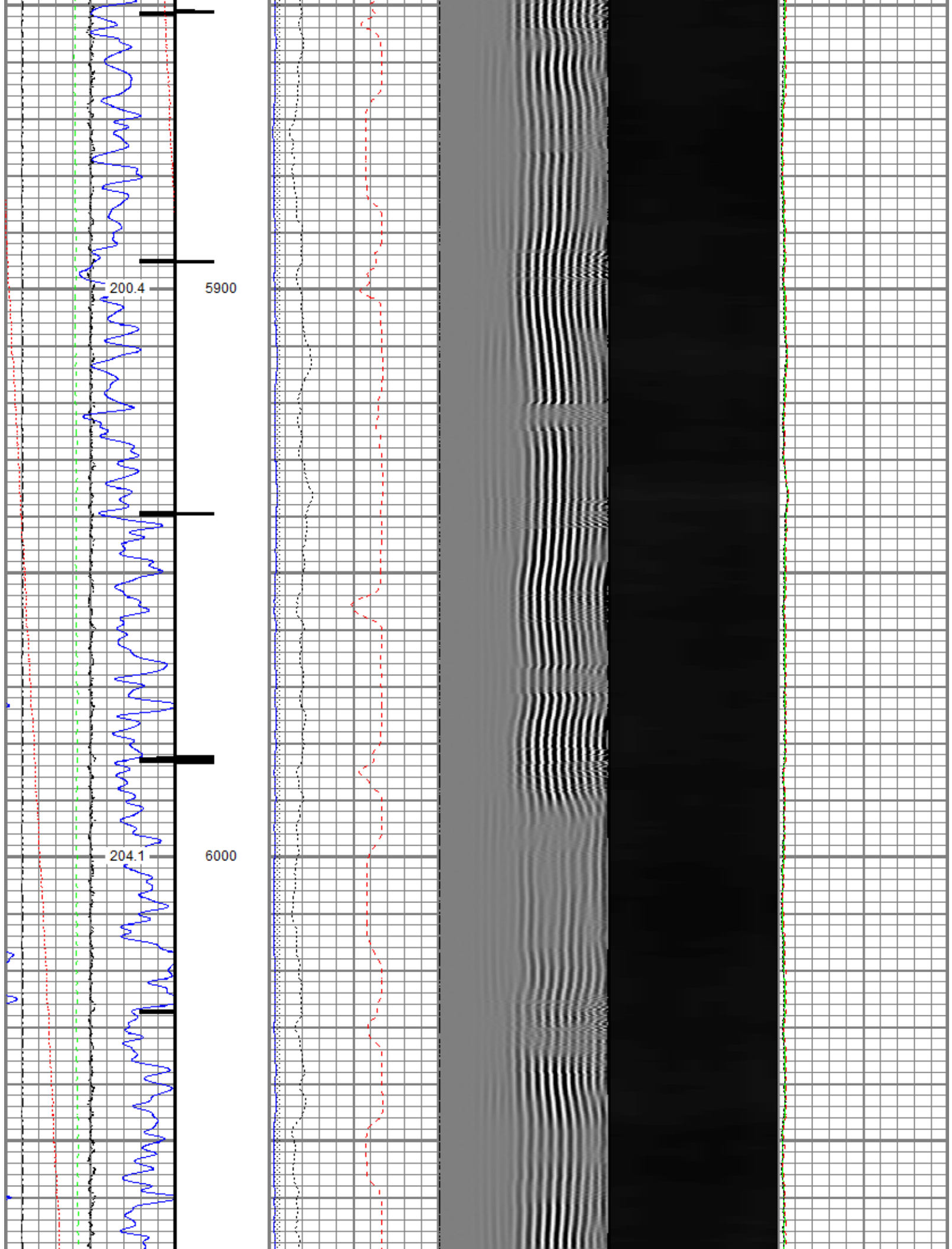


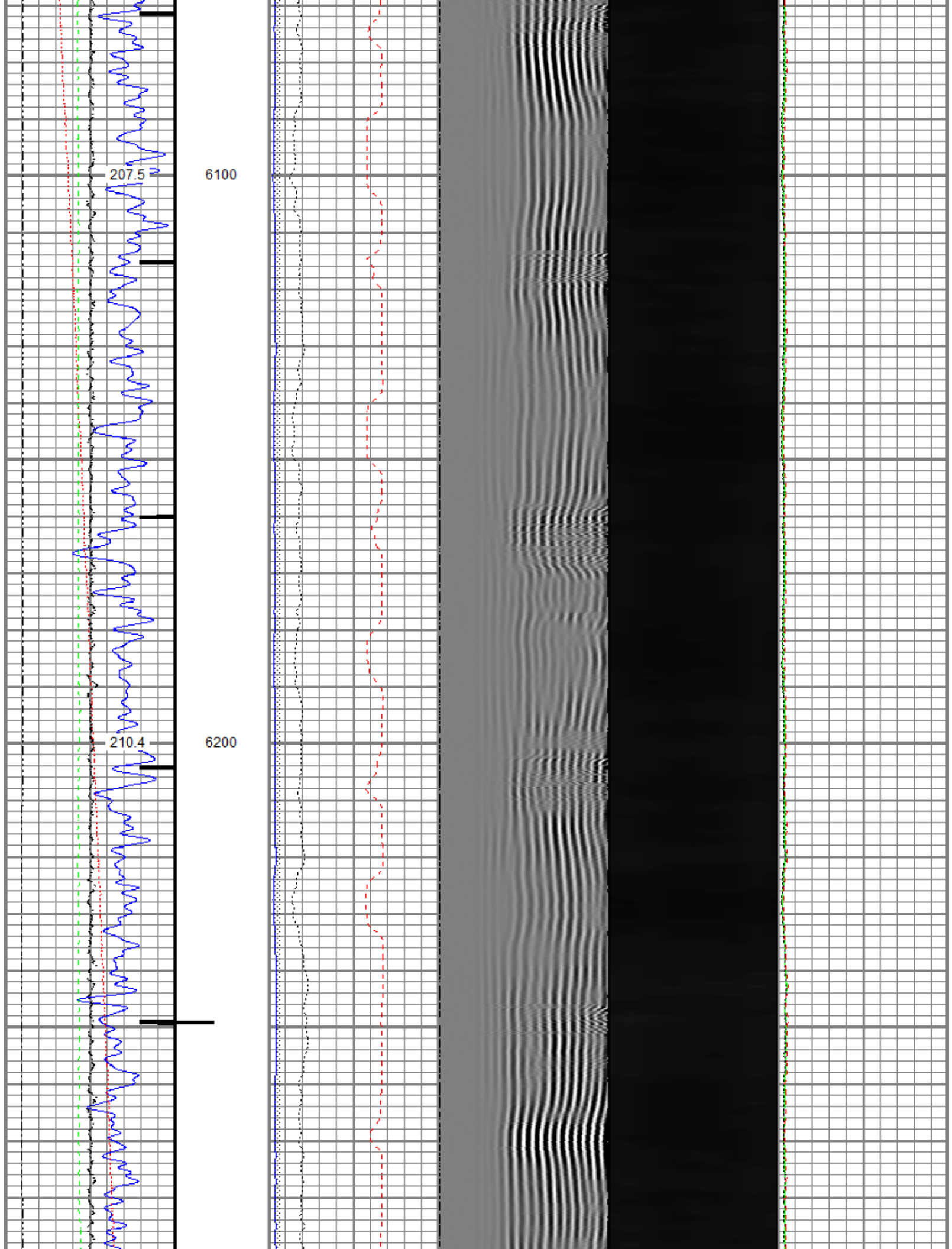


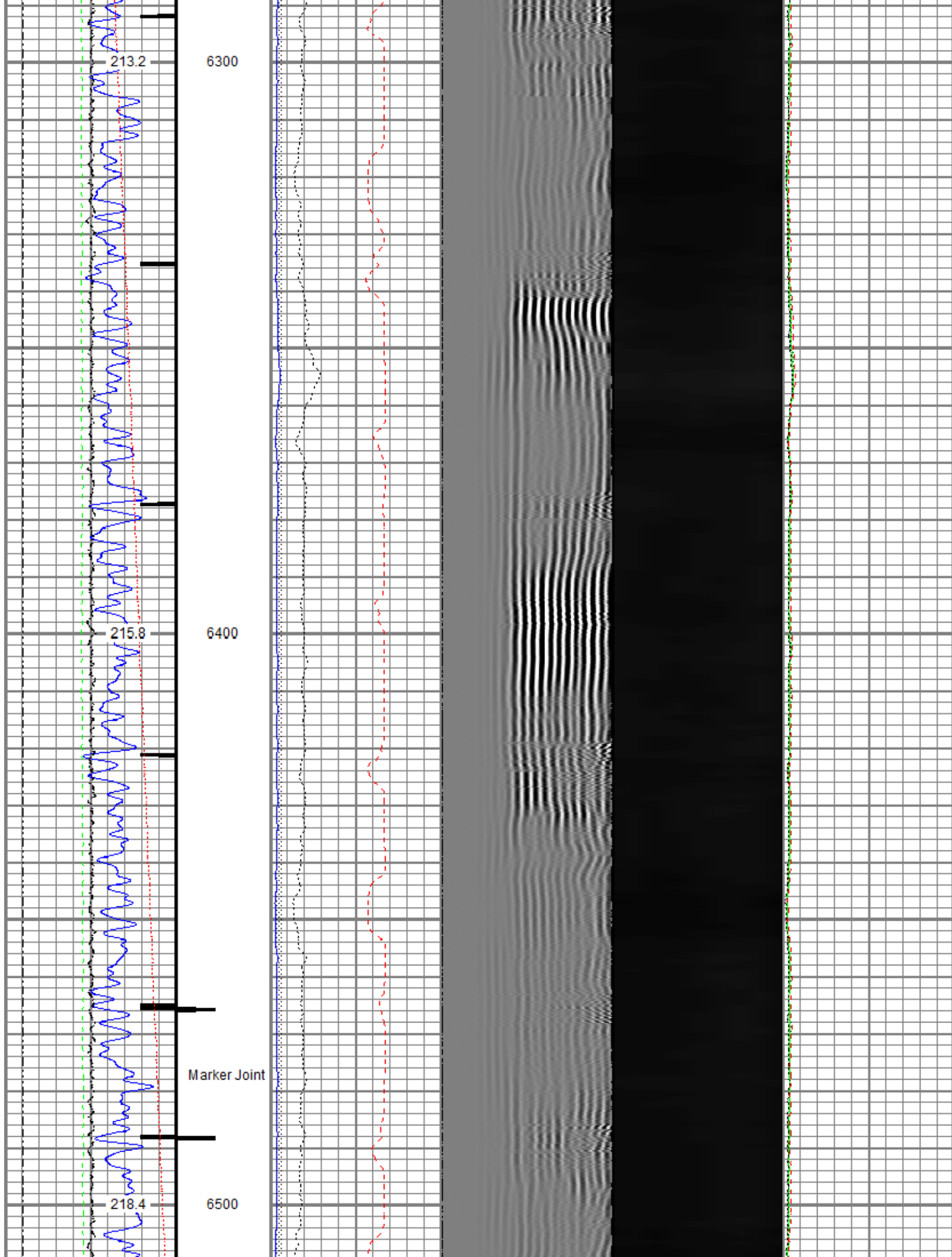


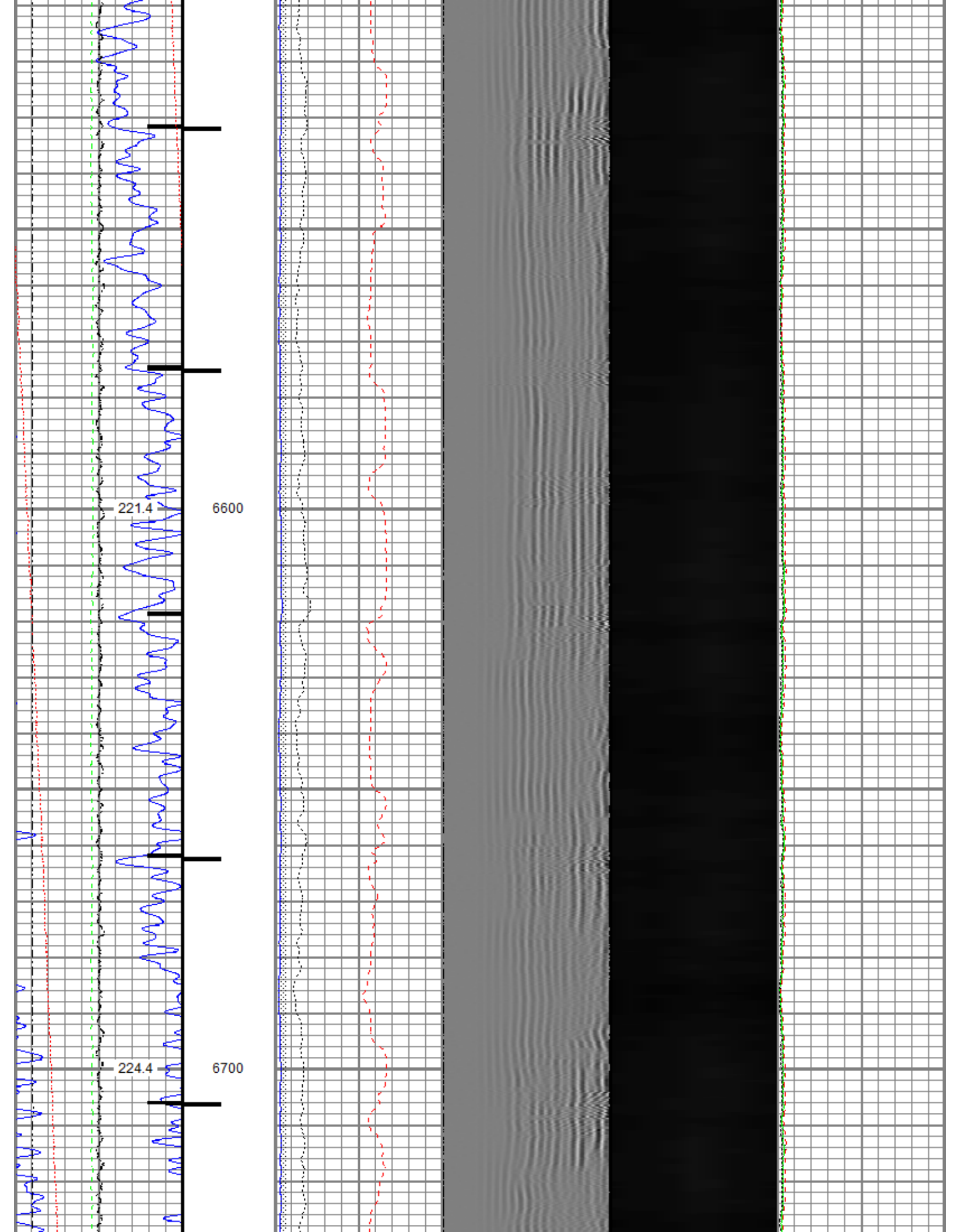


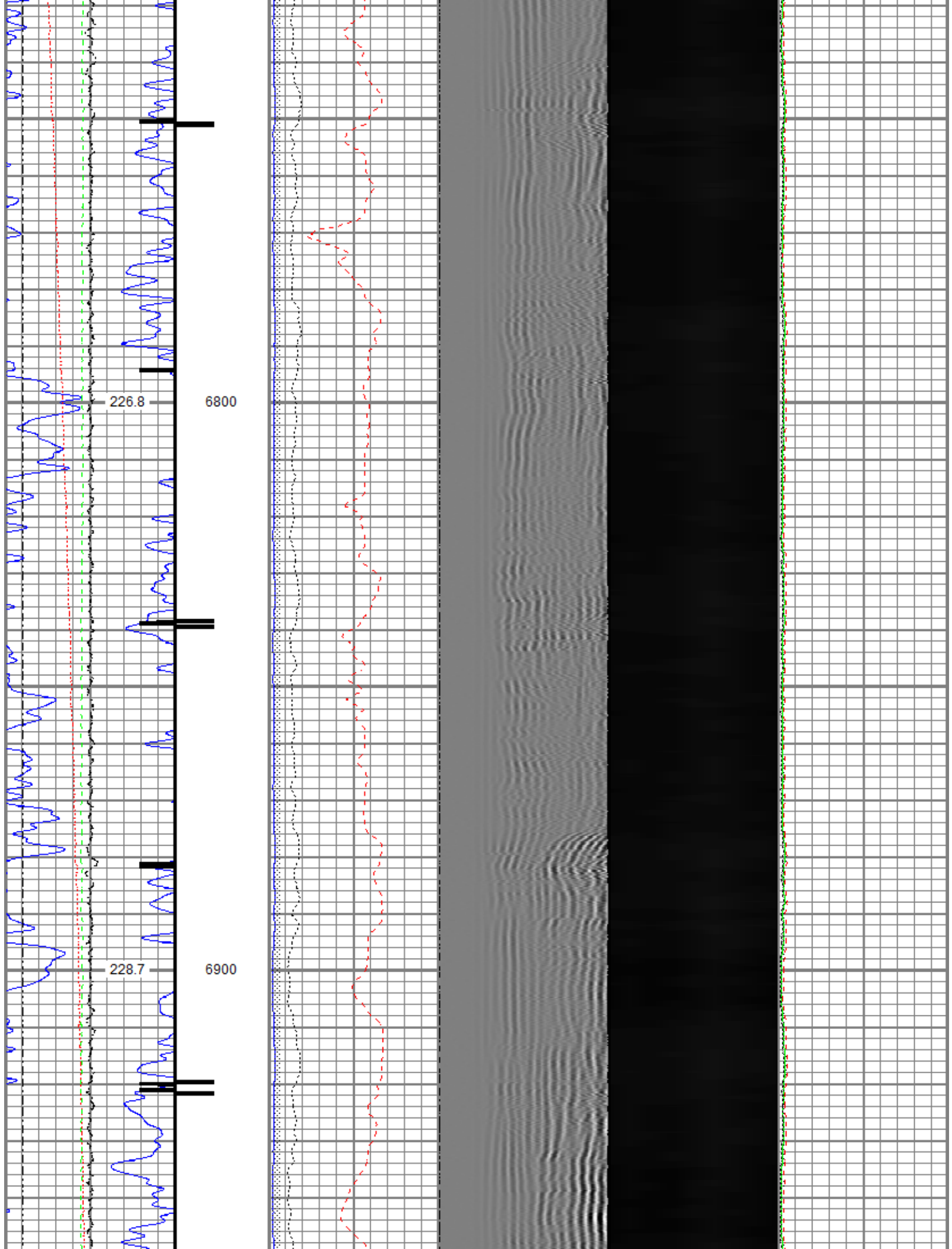












Differential Temperature
-2 (degF) 2

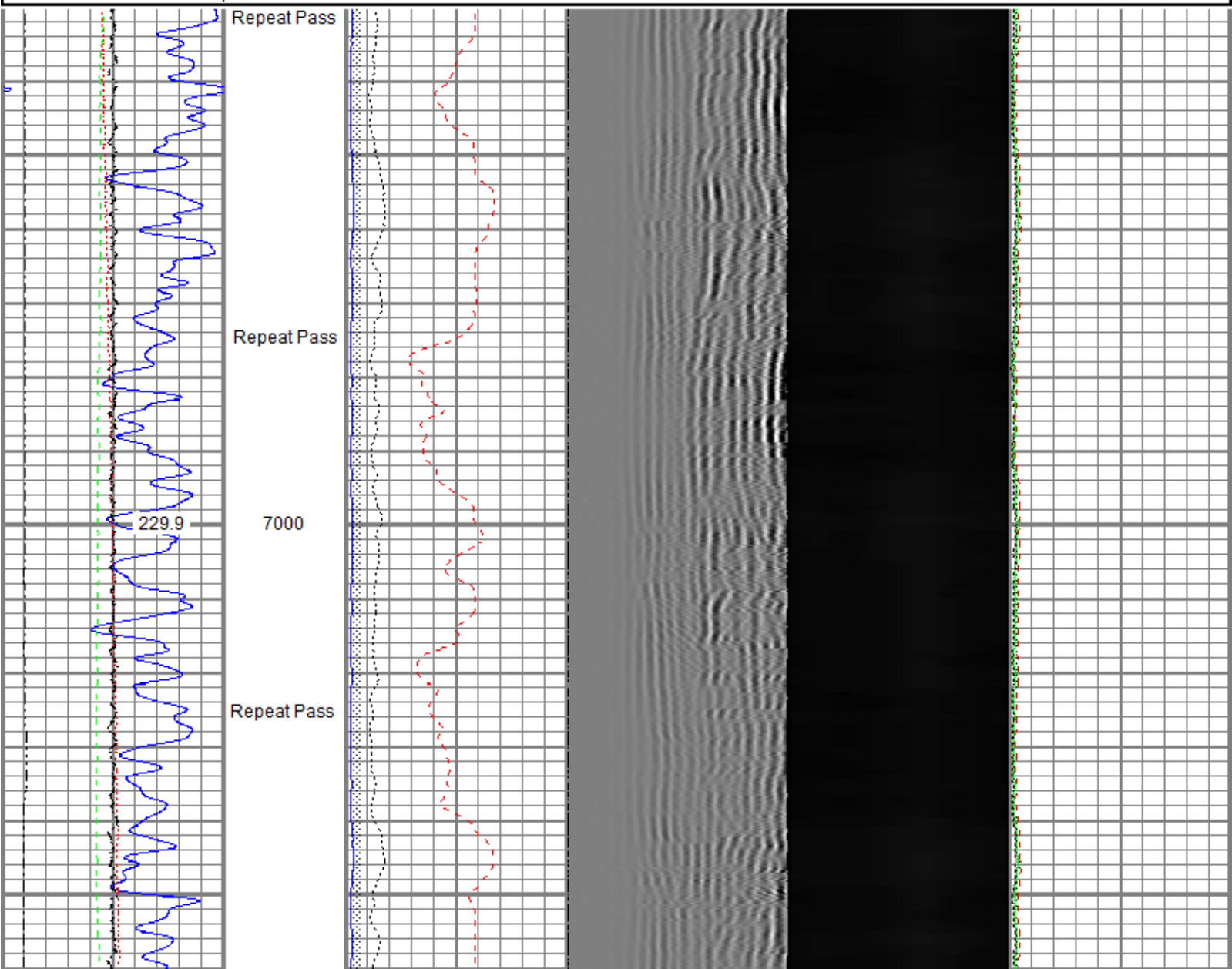


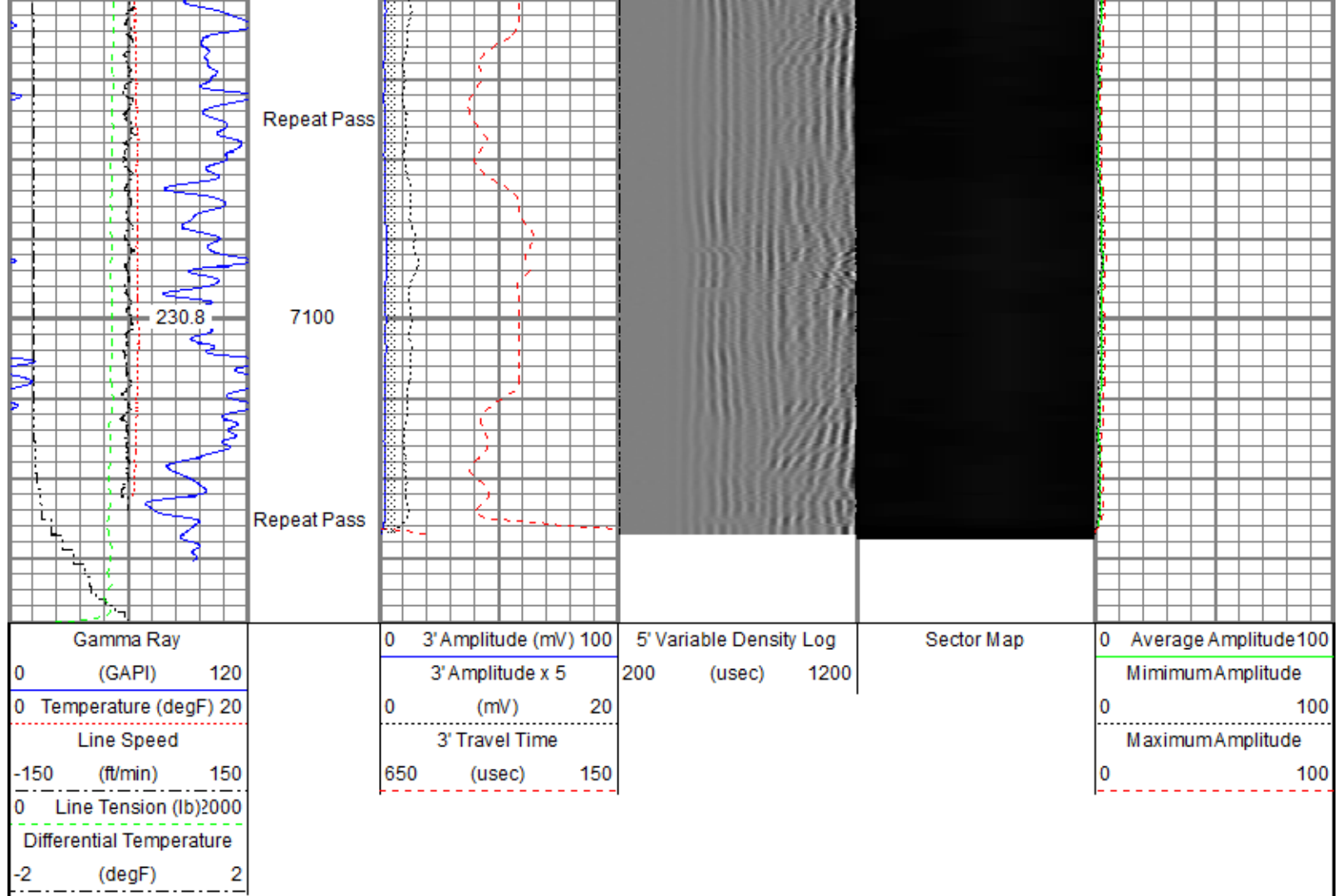
Repeat Pass

Recorded With 2500 PSI Surface Induced Pressure

Database File noble\noble_guttersen state d36-771_rbl_08-05-20\processed_noble_guttersen state d36-771_rbl_08-05-20.db
Dataset Pathname repeat.2
Presentation Format ros_radri_noble
Dataset Creation Thu Aug 06 11:56:22 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
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	18.10		Titan CHD-16875 GO	1.03	1.69	5.40
RBT_HV	17.07		Titan 1-11/16" Assembled Electric Cable Head with 1" Fishing Neck			
			SO BS CENT-2750-5500	1.50	3.25	11.00
			Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer			
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					

Tool Joint	Length (ft)	Weight (lb)	O.D. (in)	Notes	Length (ft)	Weight (lb)	O.D. (in)
WVFS4	11.93						
WVFS3	11.93						
WVFS2	11.93						
WVFS1	11.93						
WVFCAL	11.93						
WVF3FT	11.93						
WVF5FT	10.93						
CCL\$2	6.80						
CCL\$1	6.80						
GR	5.46			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
				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
LOCTIM	0.00						
UTCTIM	0.00						
Dataset: processed_noble_guttersen state d36-771_rbl_08-05-20.db: field/well/run1/main.1 Total length: 18.10 ft Total weight: 229.40 lb O.D.: 3.25 in							

	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.672	0.800	71.921	105.912	0.768
CAL	0.641	0.635				
5'	-0.000	0.668	0.800	71.921	106.509	0.809
SUM						
S1	0.000	0.663	0.000	100.000	150.854	-0.041
S2	0.000	0.697	0.000	100.000	143.457	-0.011
S3	0.000	0.738	0.000	100.000	135.588	-0.060
S4	-0.000	0.726	0.000	100.000	137.634	0.024
S5	0.001	0.694	0.000	100.000	144.225	-0.089
S6	0.000	0.683	0.000	100.000	146.595	-0.053
S7	0.000	0.673	0.000	100.000	148.609	-0.032
S8	0.001	0.654	0.000	100.000	153.010	-0.083

Air Zero Calibration, performed Wed Aug 05 08:01:38 2020:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.008	0.000	0.000
5'	0.008	0.000	-0.000
SUM			
S1	0.006	0.000	-0.000
S2	0.008	0.000	-0.000
S3	0.008	0.000	0.000
S4	0.008	0.000	-0.000
S5	0.007	0.000	0.000
S6	0.008	0.000	-0.000
S7	0.008	0.000	-0.000
S8	0.007	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 Guttersen State D36-771
Field Wattenberg
County Weld

County
State

Area
Colorado