



**Radial Cement Bond  
Gamma Ray  
Casing Collar Log**

**Company** Kerr-McGee Oil & Gas Onshore, L.P.  
**Well** MAE J 8-2HZ  
**Field** Wattenberg  
**County** Weld **State** Colorado

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**Location:** SEC 8 TWP 1N RGE 68W  
 API #: 05-123-50520  
 Permanent Datum Ground Level Elevation 5083'  
 Log Measured From Ground Level 0 FT  
 Drilling Measured From Kelly Bushing  
 Other Services  
 JBGR  
 RBP  
 Elevation  
 K.B. 5103'  
 D.F. ---  
 G.L. 5083'

Date	13-MAY-2020	
Run Number	Three	
Depth Driller	13627 FT	
Depth Logger	7460 FT	
Bottom Logged Interval	7448 FT	
Top Log Interval	Surface	
Open Hole Size	7.875"	
Type Fluid	Water	
Density / Viscosity	8.34 lb/gal	
Max. Recorded Temp.	222°F	
E. estimated Cement Top	See Log	
Time Well Ready	ROA	
Time Logger on Bottom	13.23	
E. equipment Number	HD-361	
Location	Platteville, CO	
Recorded By	W. Wacker	
Witnessed By	Kyle Carver	
Run Number	Borehole Record	
	Bit	From To
Casing Record	Tubing Record	
	Size (in)	Weight From To
Surface Casing	9.5/8	36
Intermediate #1	5.1/2	17
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**

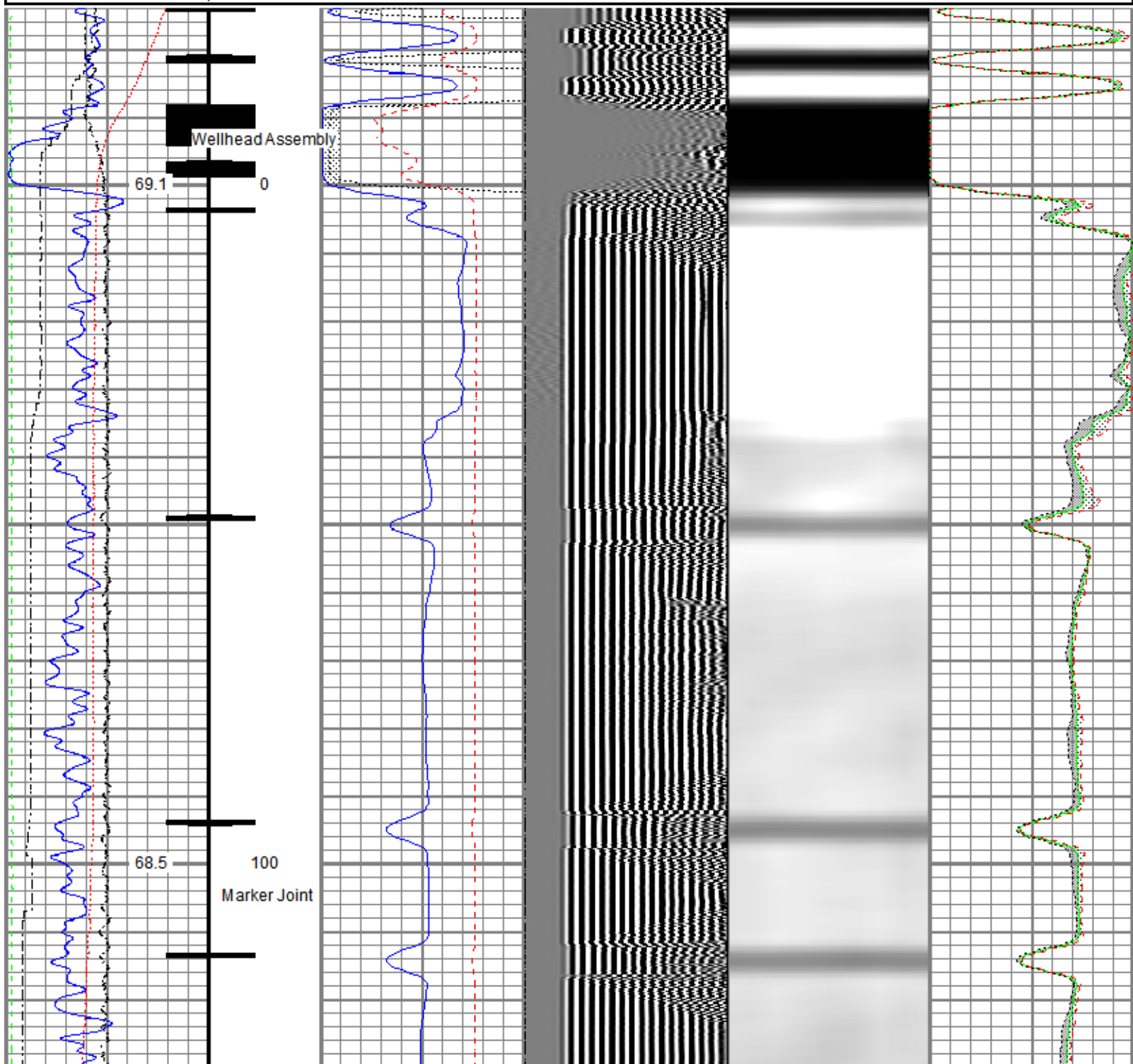
**Log ran as per customer request**  
**Depth referenced to Casing Tally reported Marker Joint at 7404 FT**  
**Adjusted +1 FT to correlate with Marker Joint**  
**Gauge Ring/Junk Basket ran to 8276 FT**  
**Retrievable Bridge Plug set at 7500 FT**  
**Log ran with 2800 PSI Surface Induced Pressure**  
**Logging tools were clean and free of debris upon completion of operations**

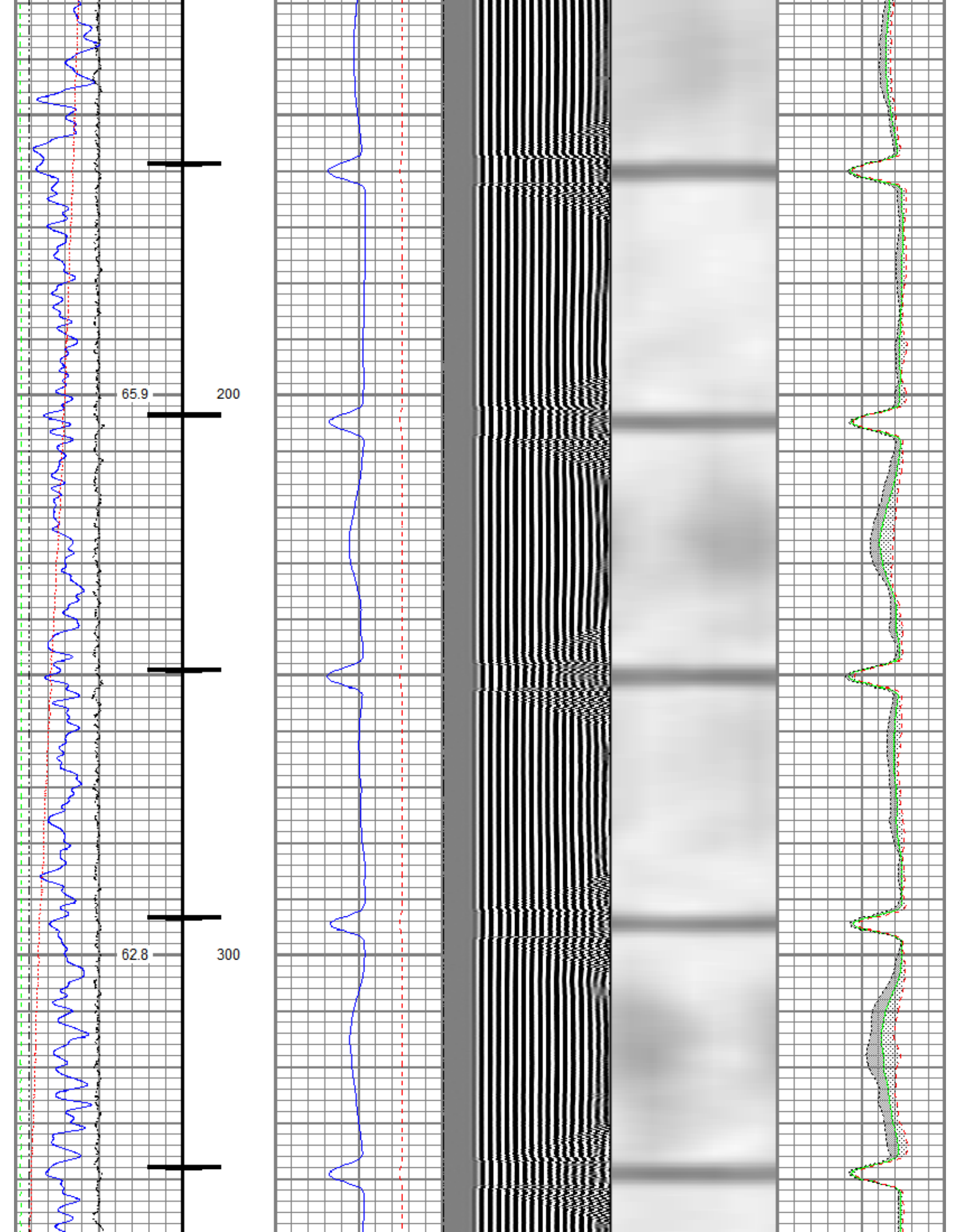
**Thank you for choosing Reliance Oilfield Services, LLC!!**

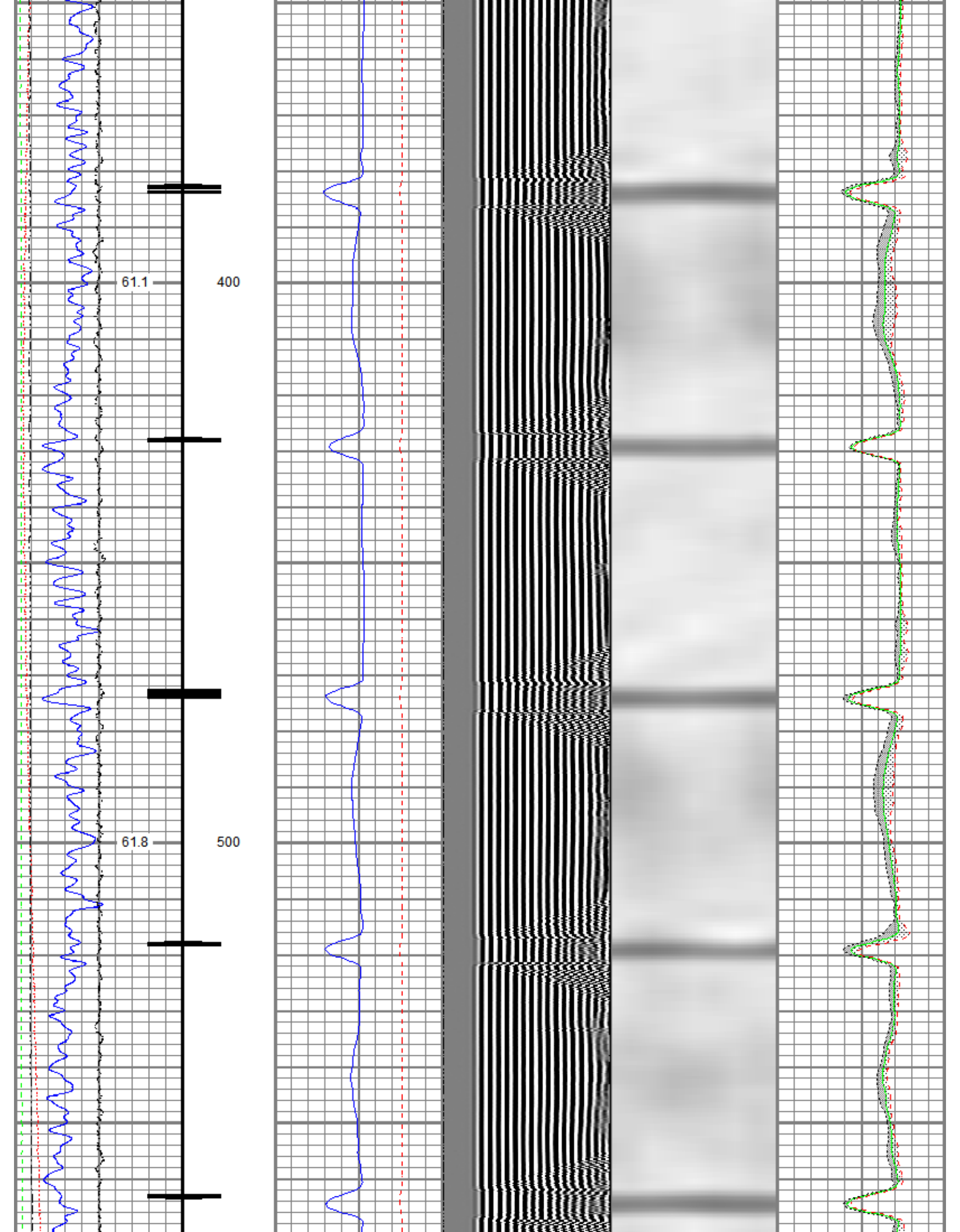
# Recorded with 2800 PSI Surface Induced Pressure

Database File      oxy\0512350520\_oxy\_mae j 8-2hz\_rbl\_05-13-20\processed\_0512350520\_oxy\_mae j 8-2hz\_rbl\_05-13-20.db  
 Dataset Pathname    main.3  
 Presentation Format    ros\_radrii  
 Dataset Creation      Thu May 14 09:14:39 2020  
 Charted by            Depth in Feet scaled 1:240

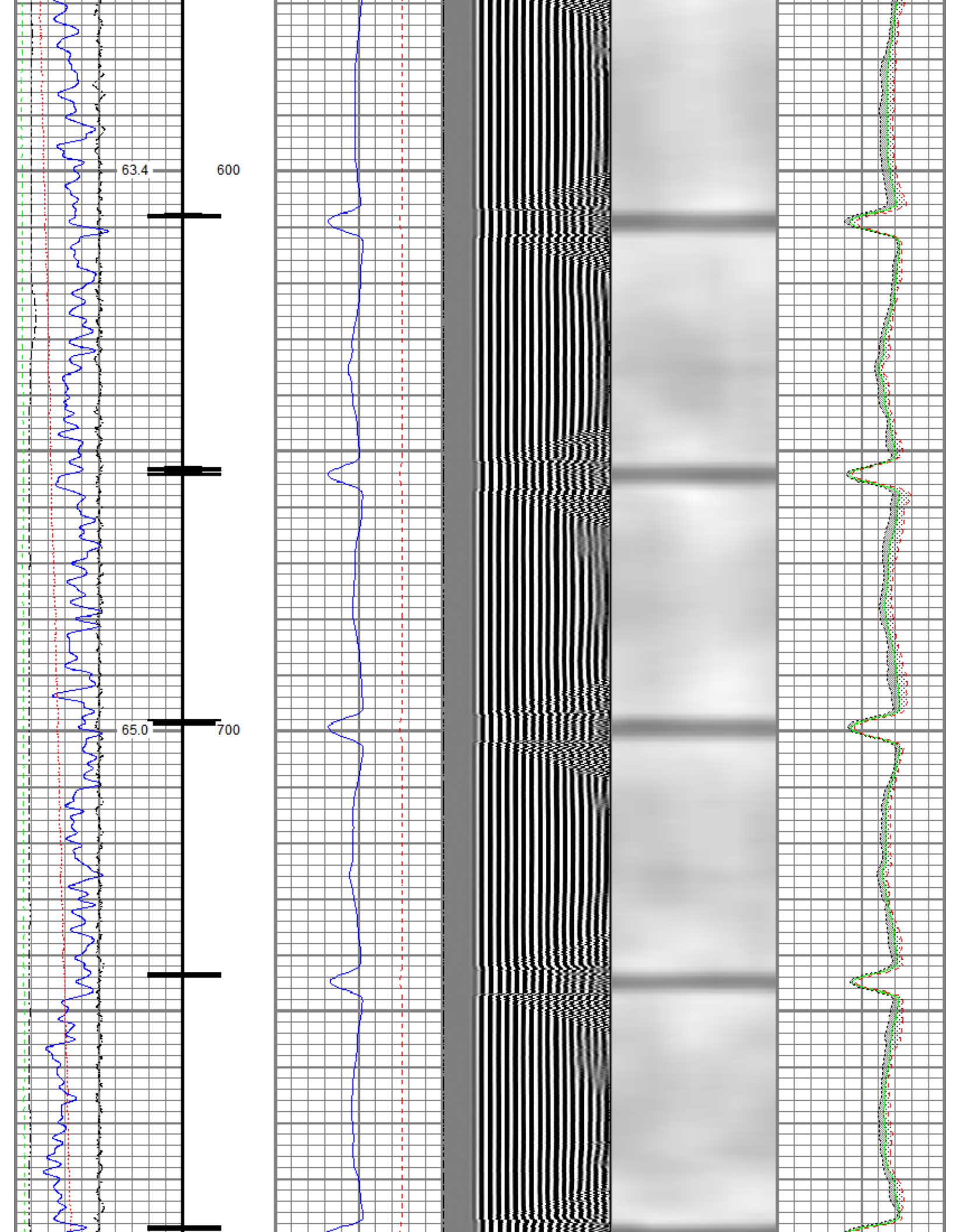
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

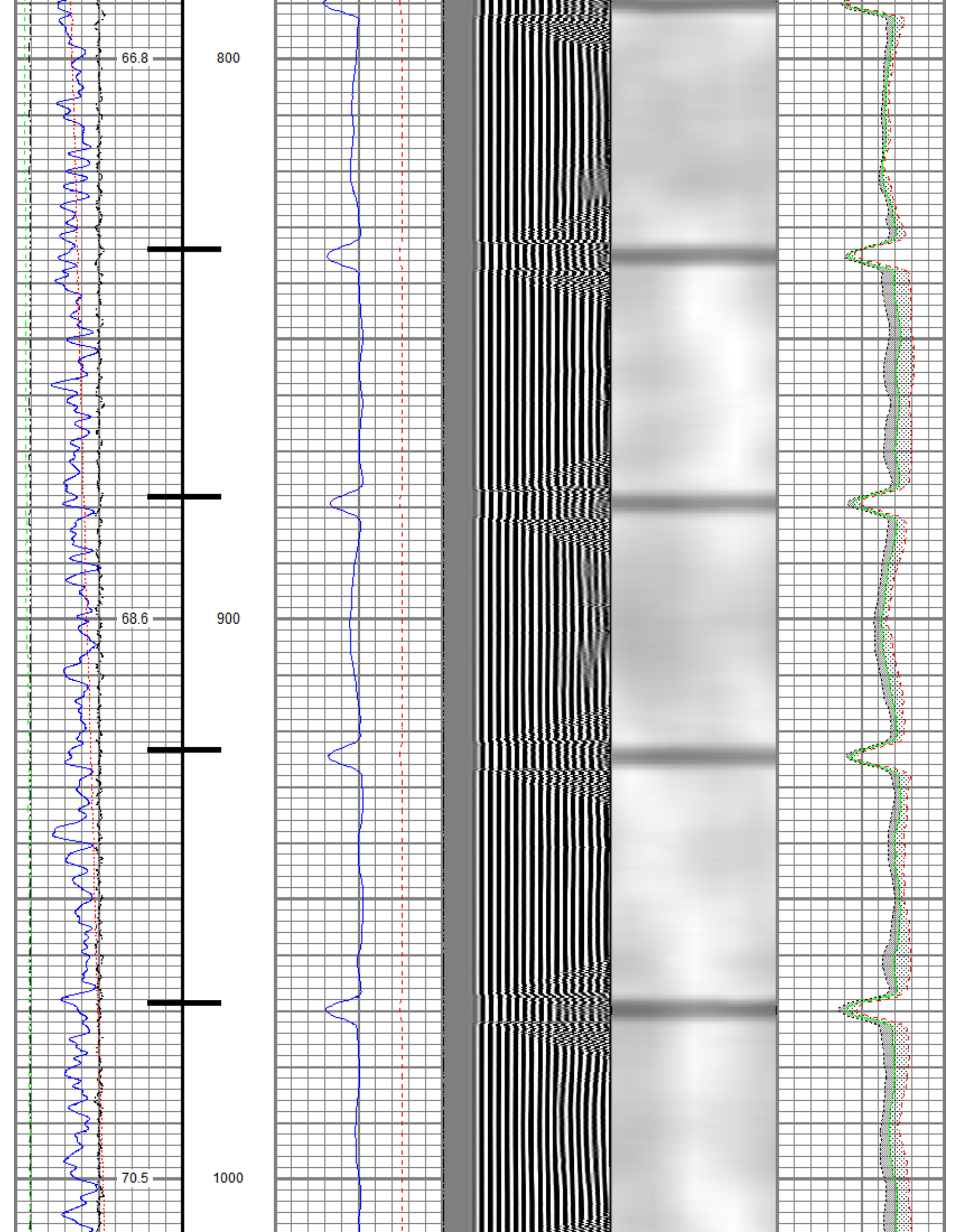


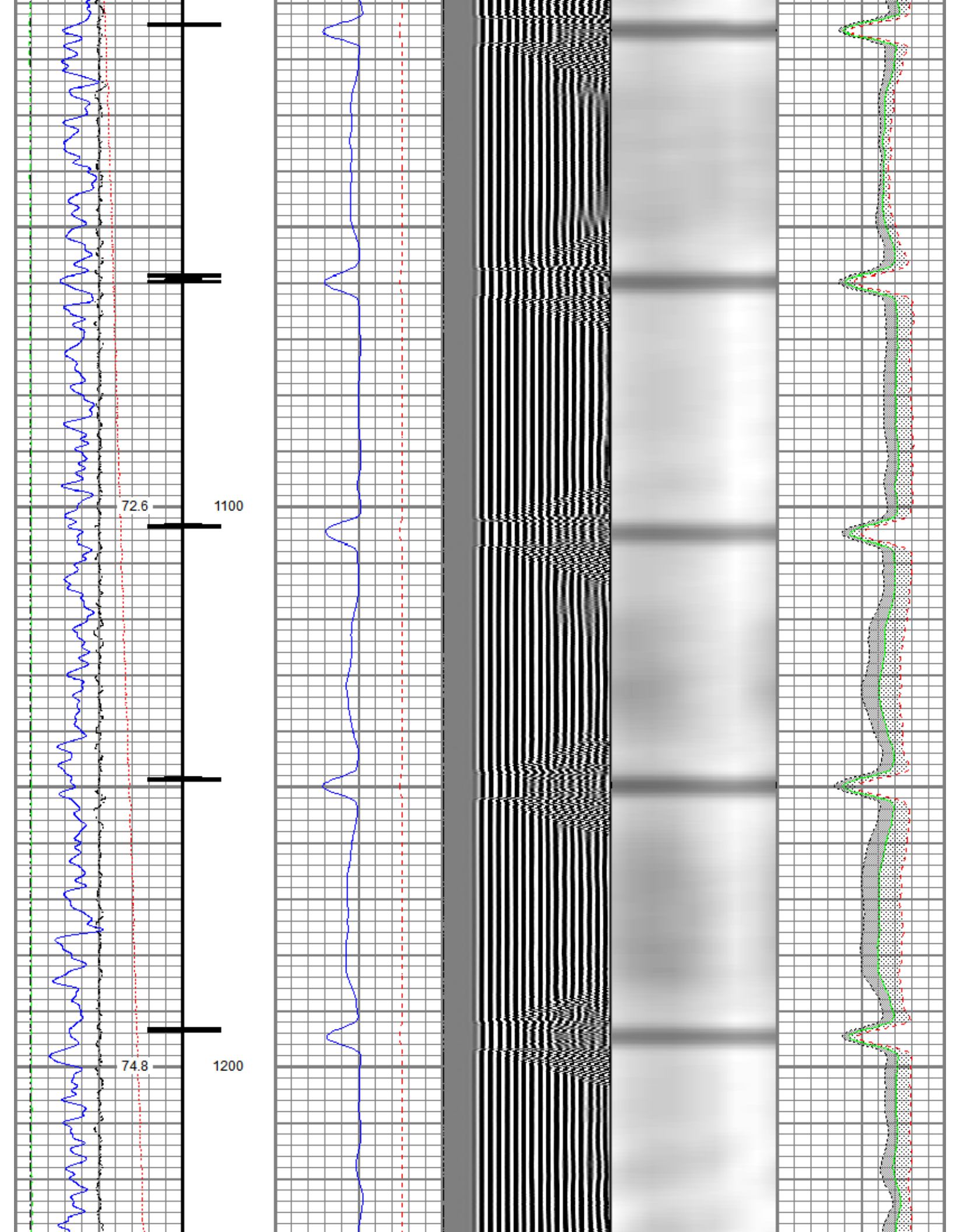


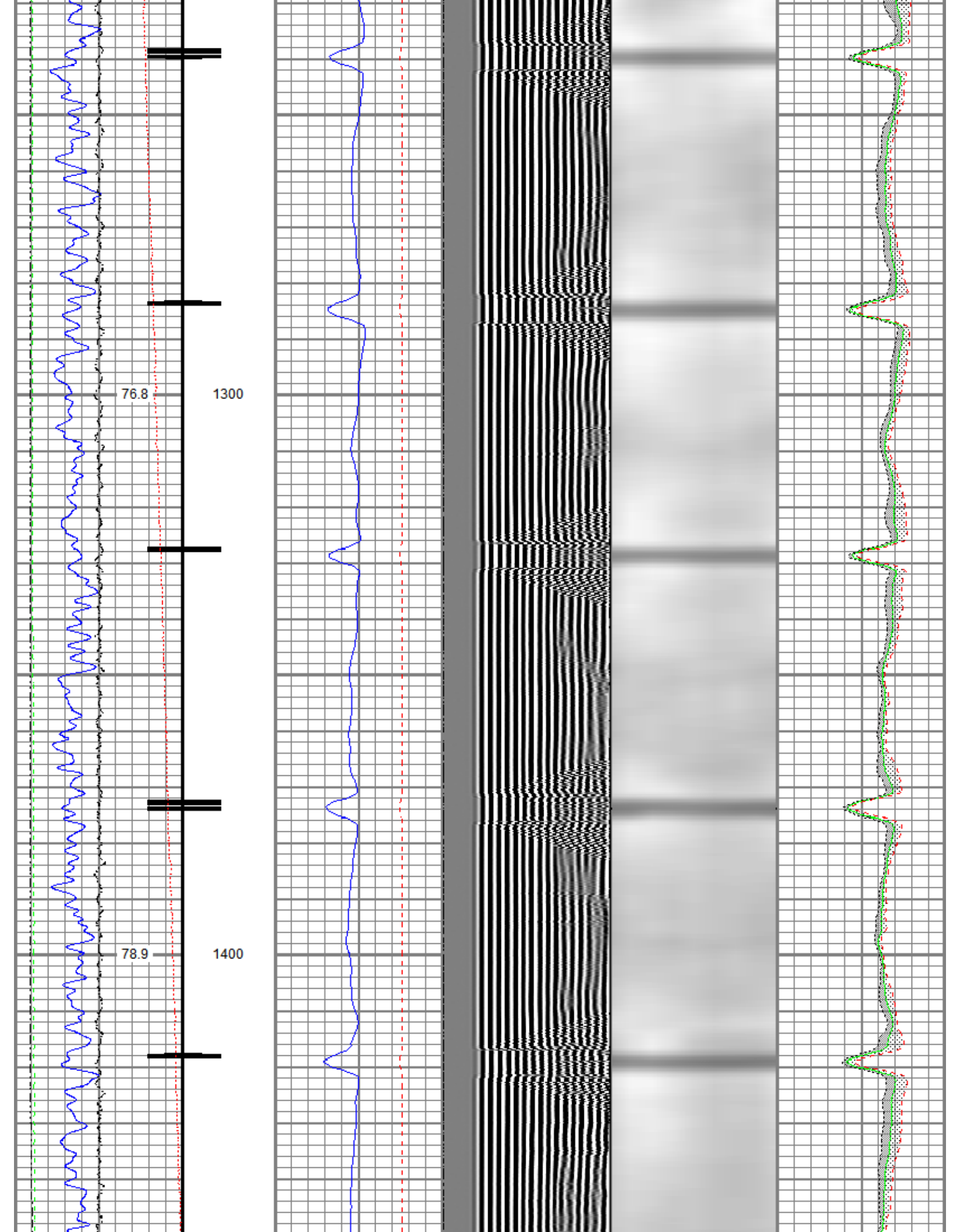




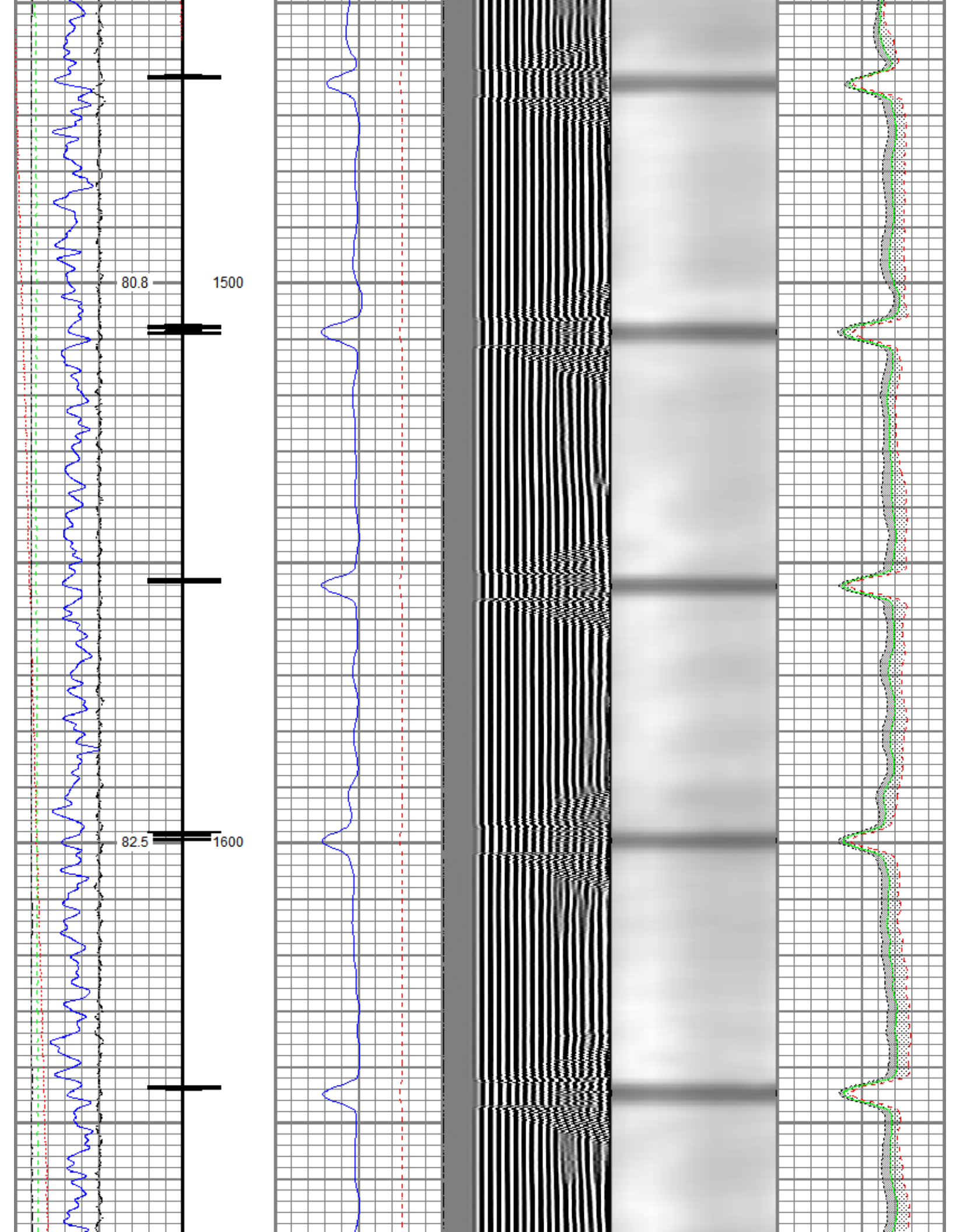


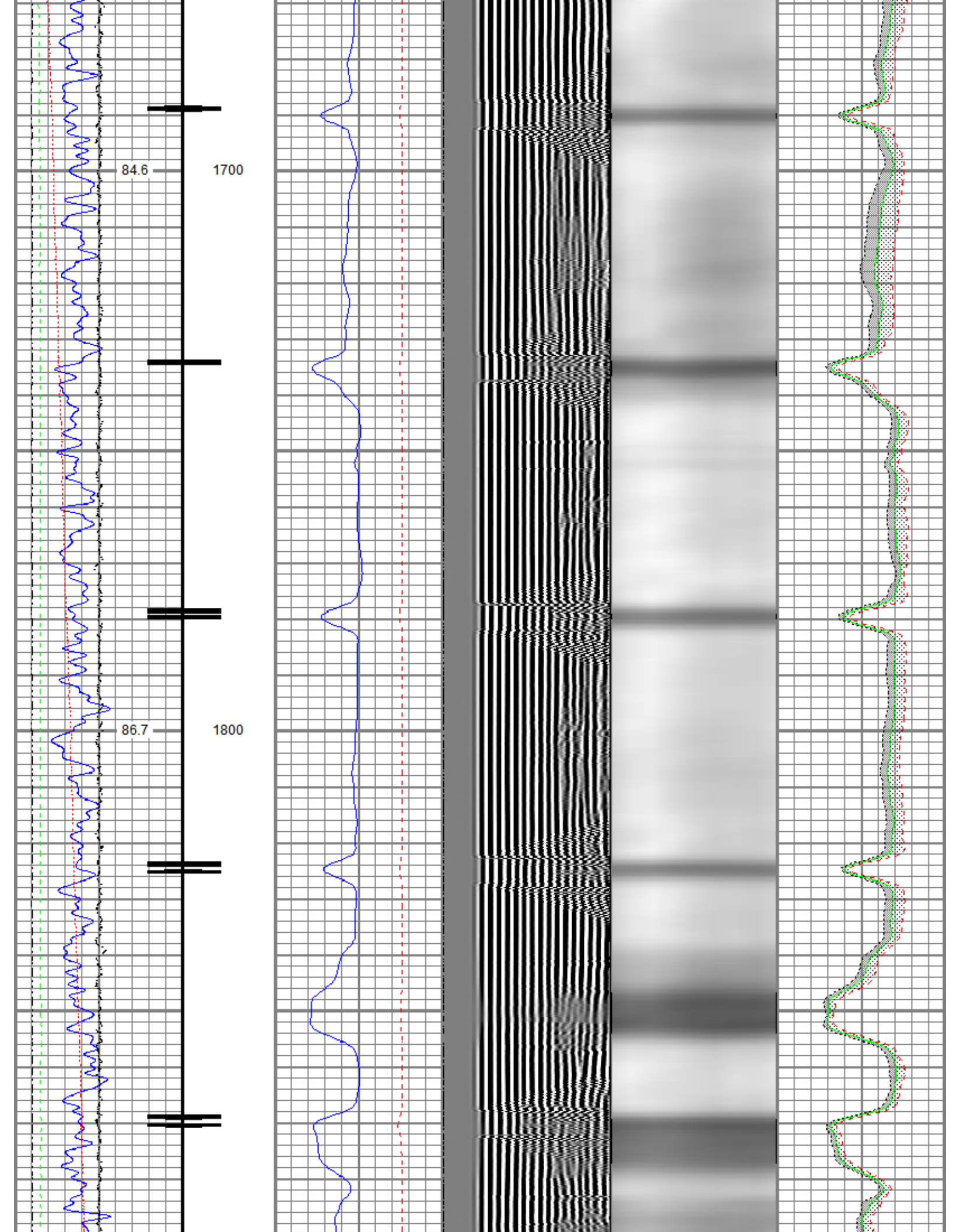


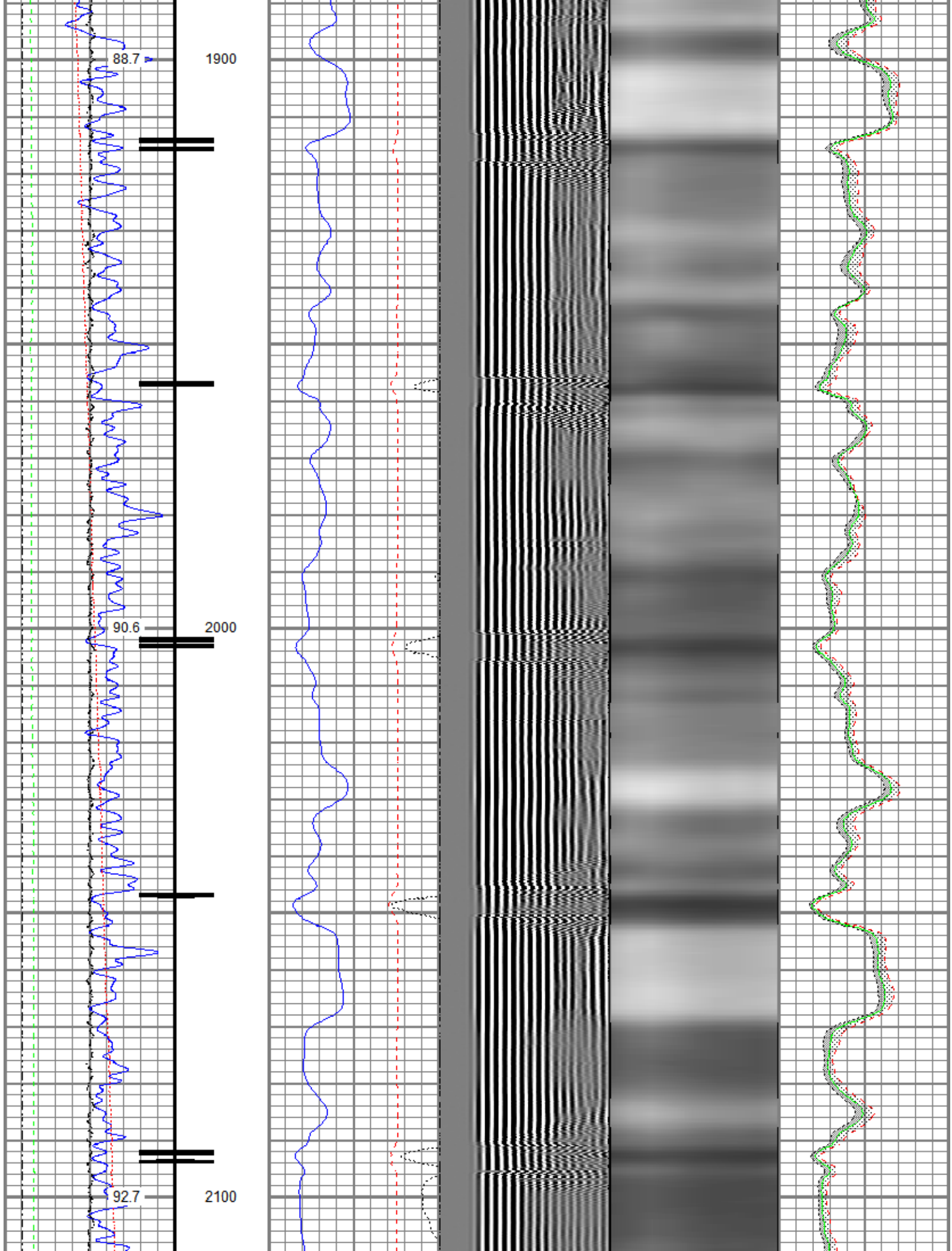




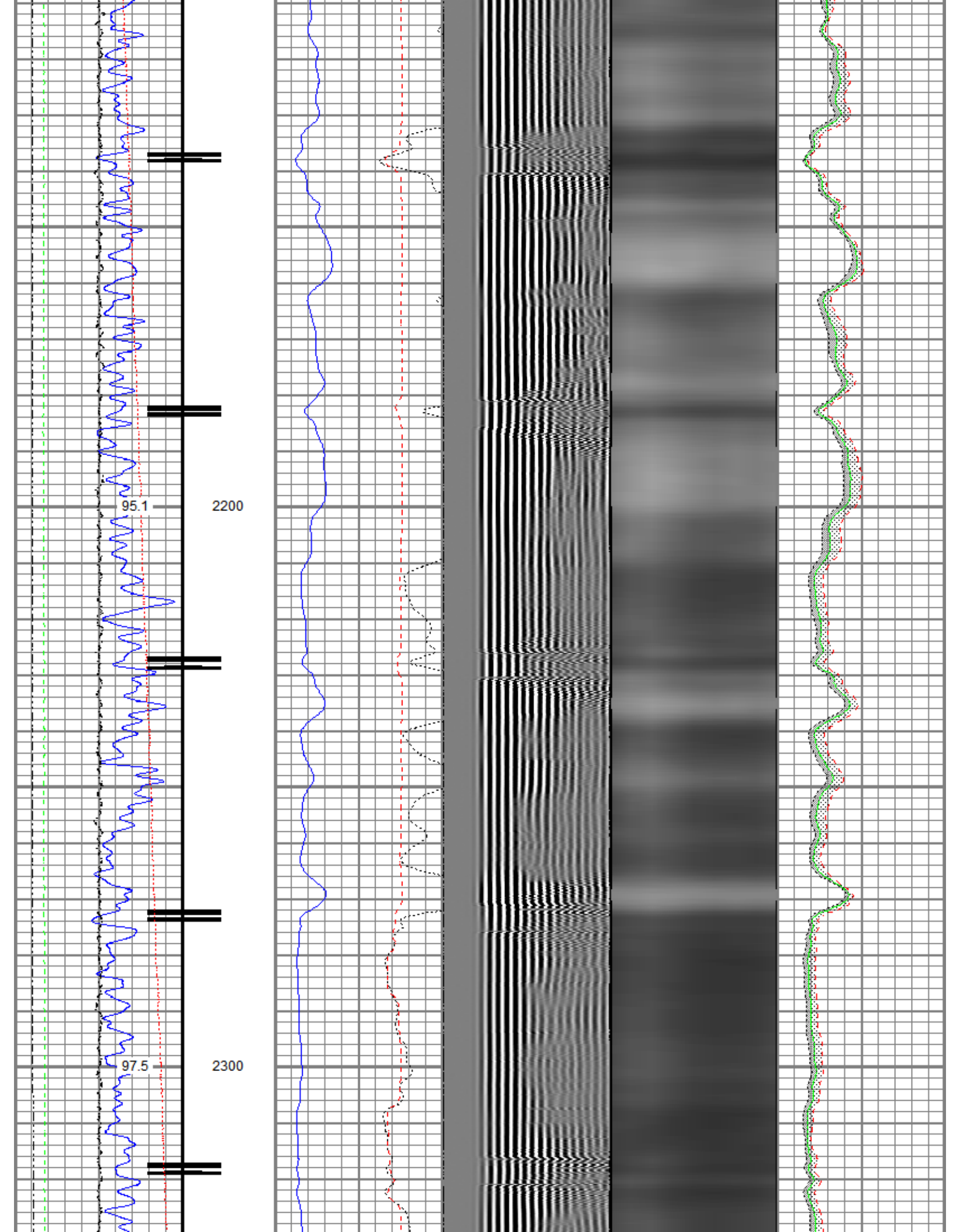




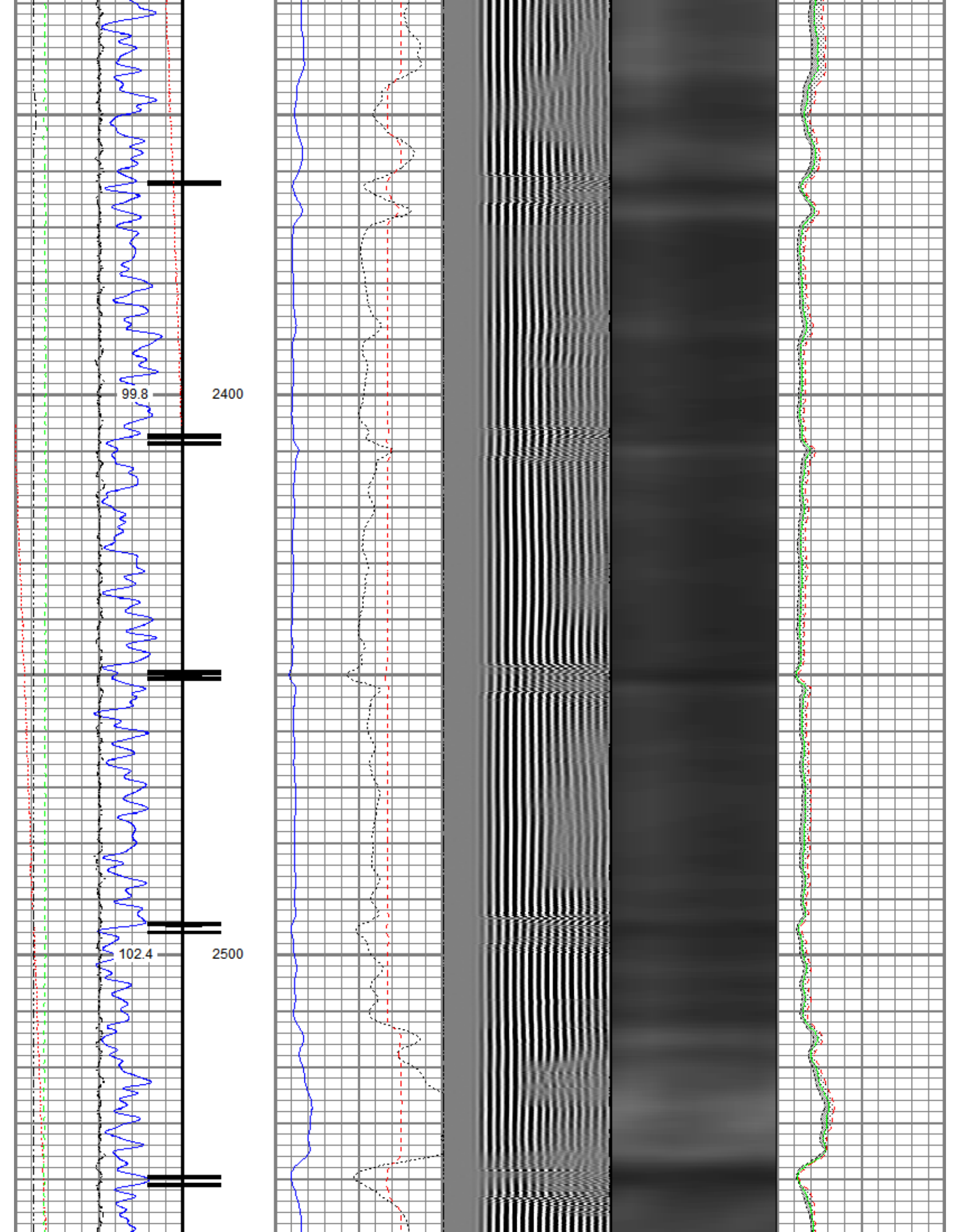


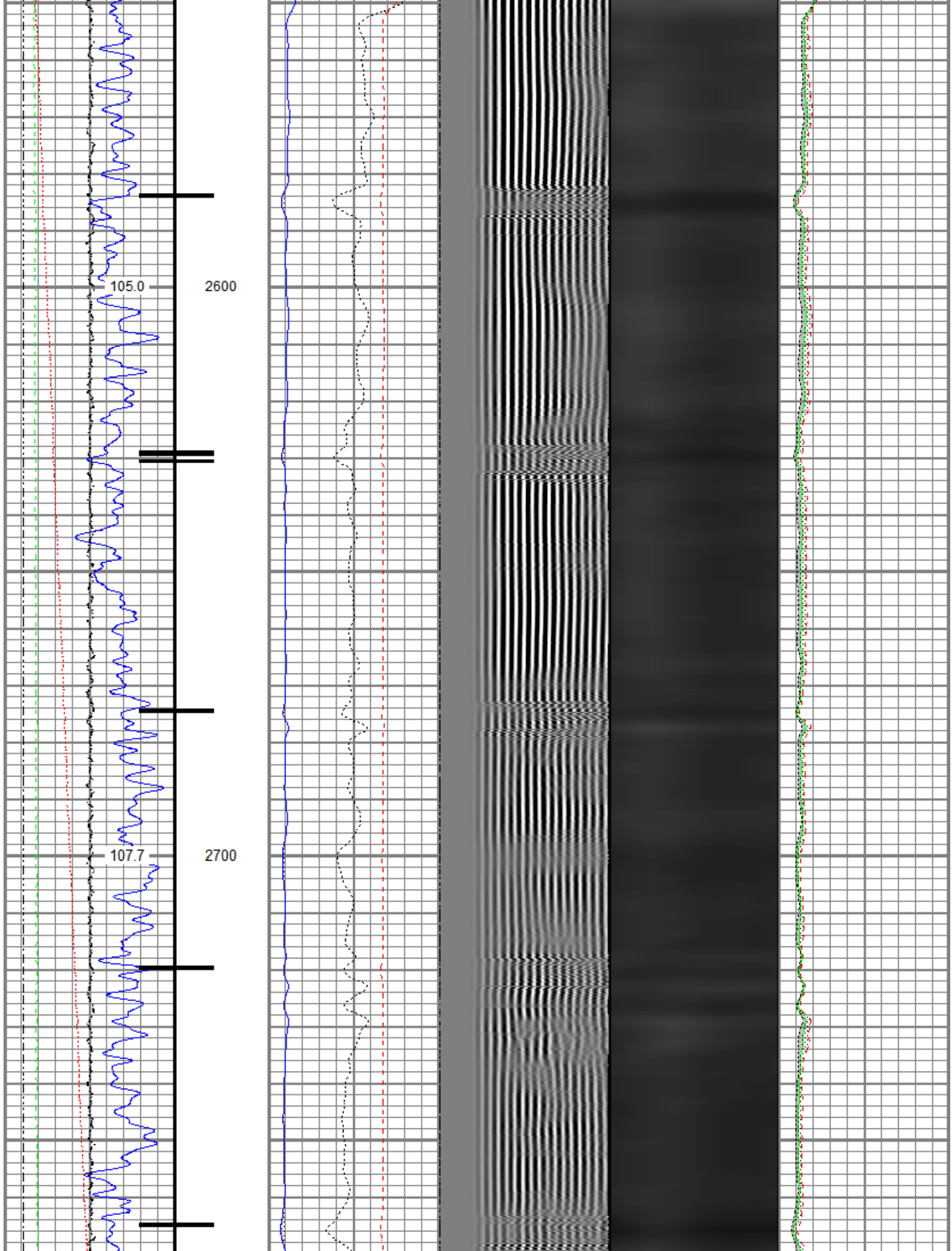


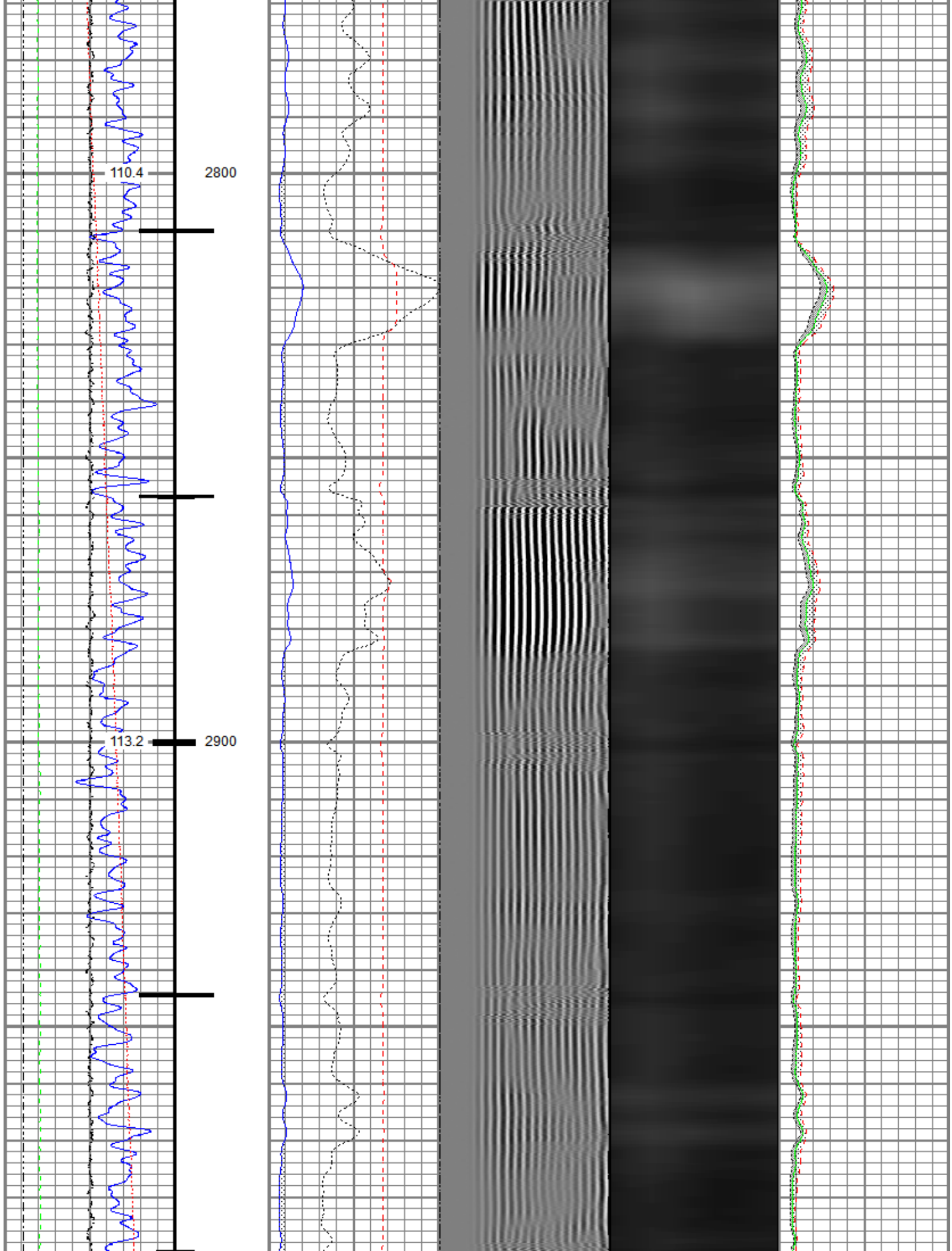


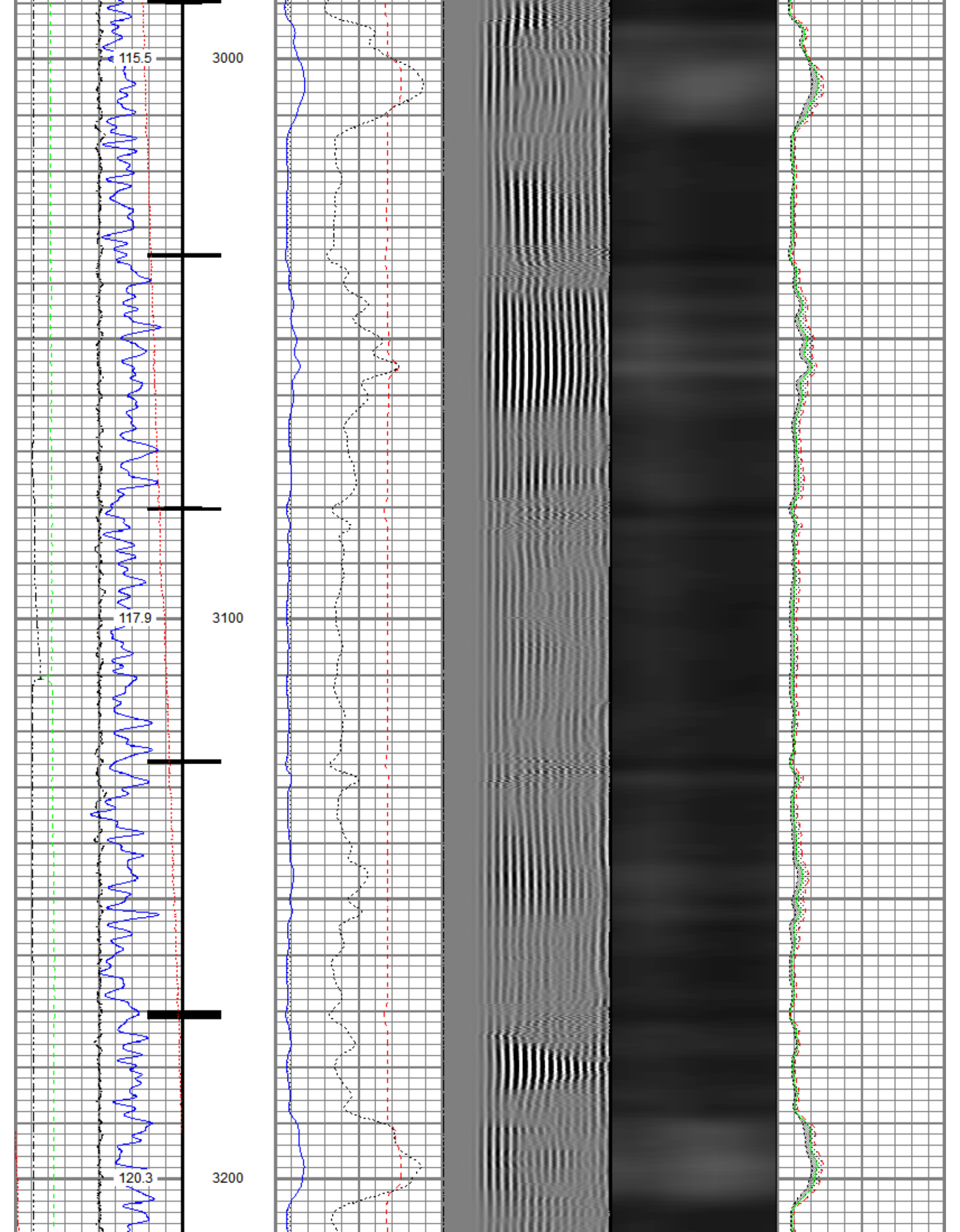




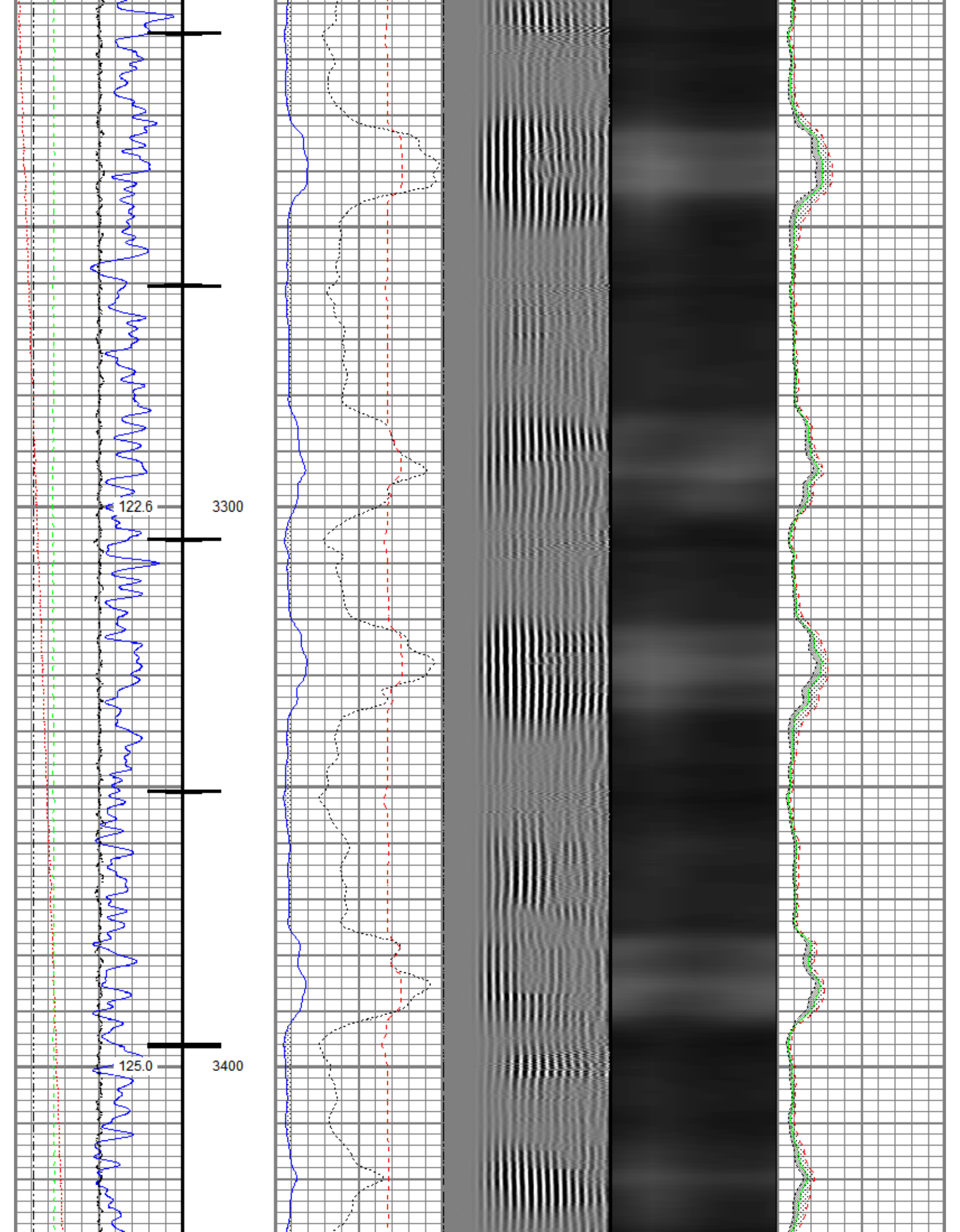


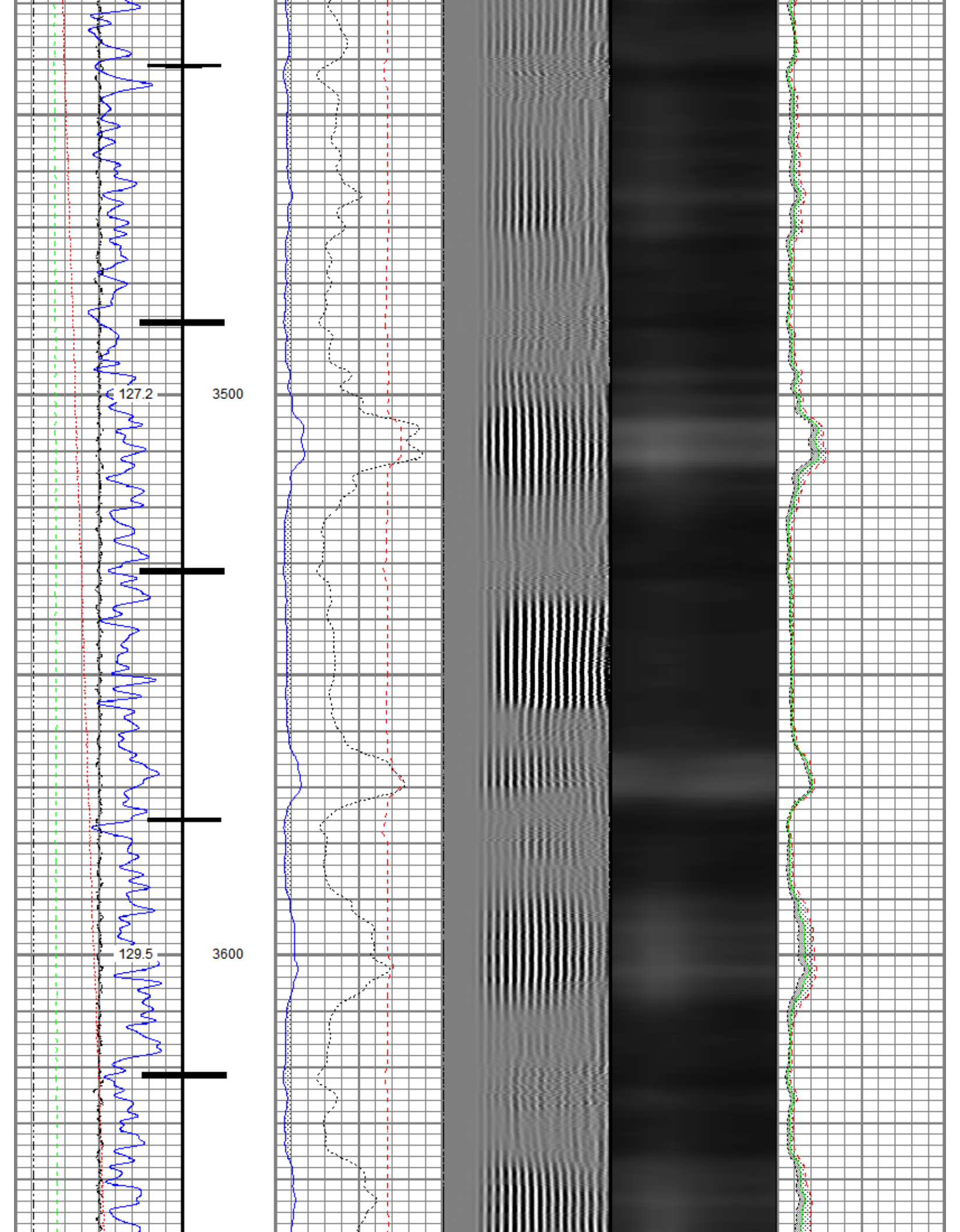


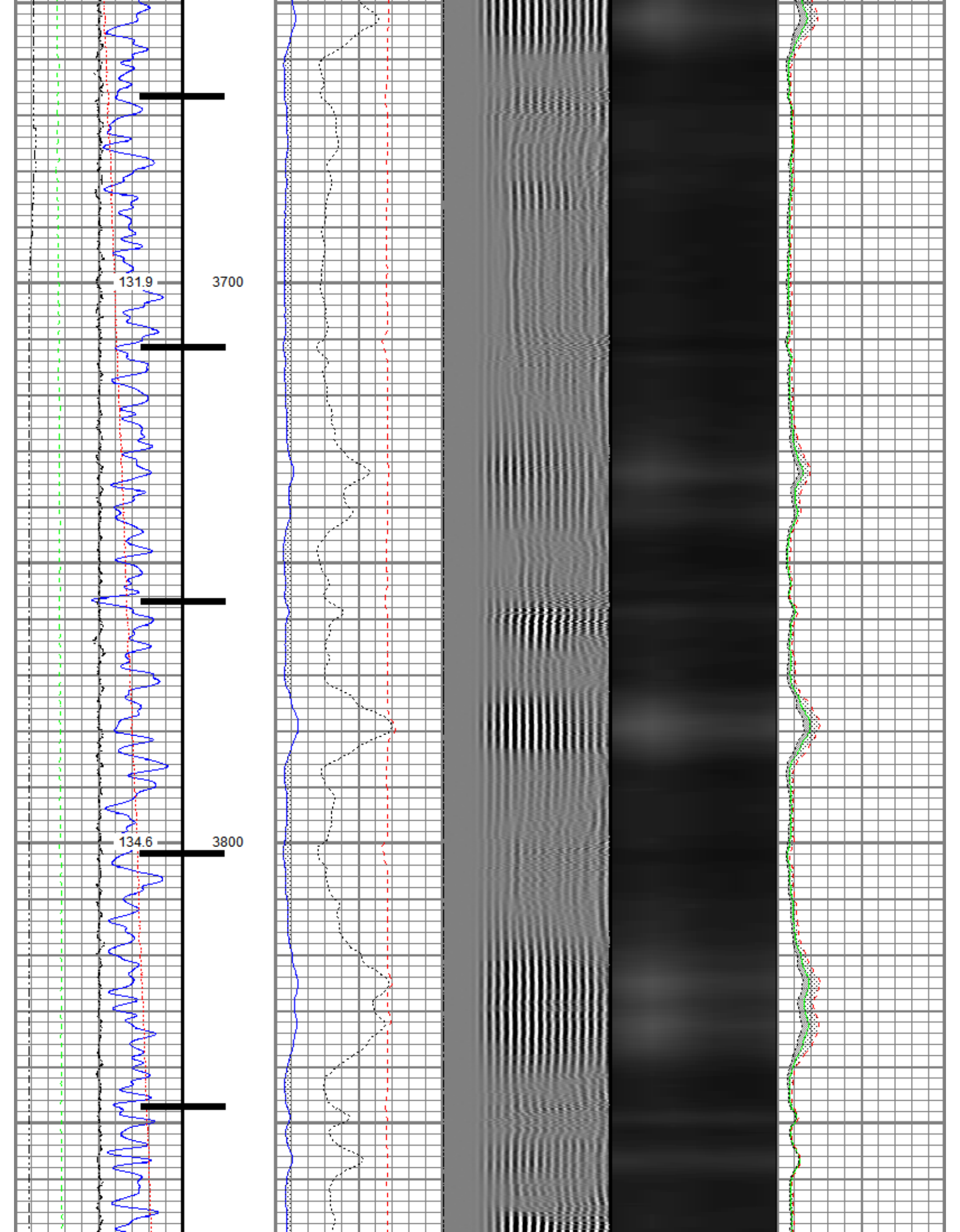


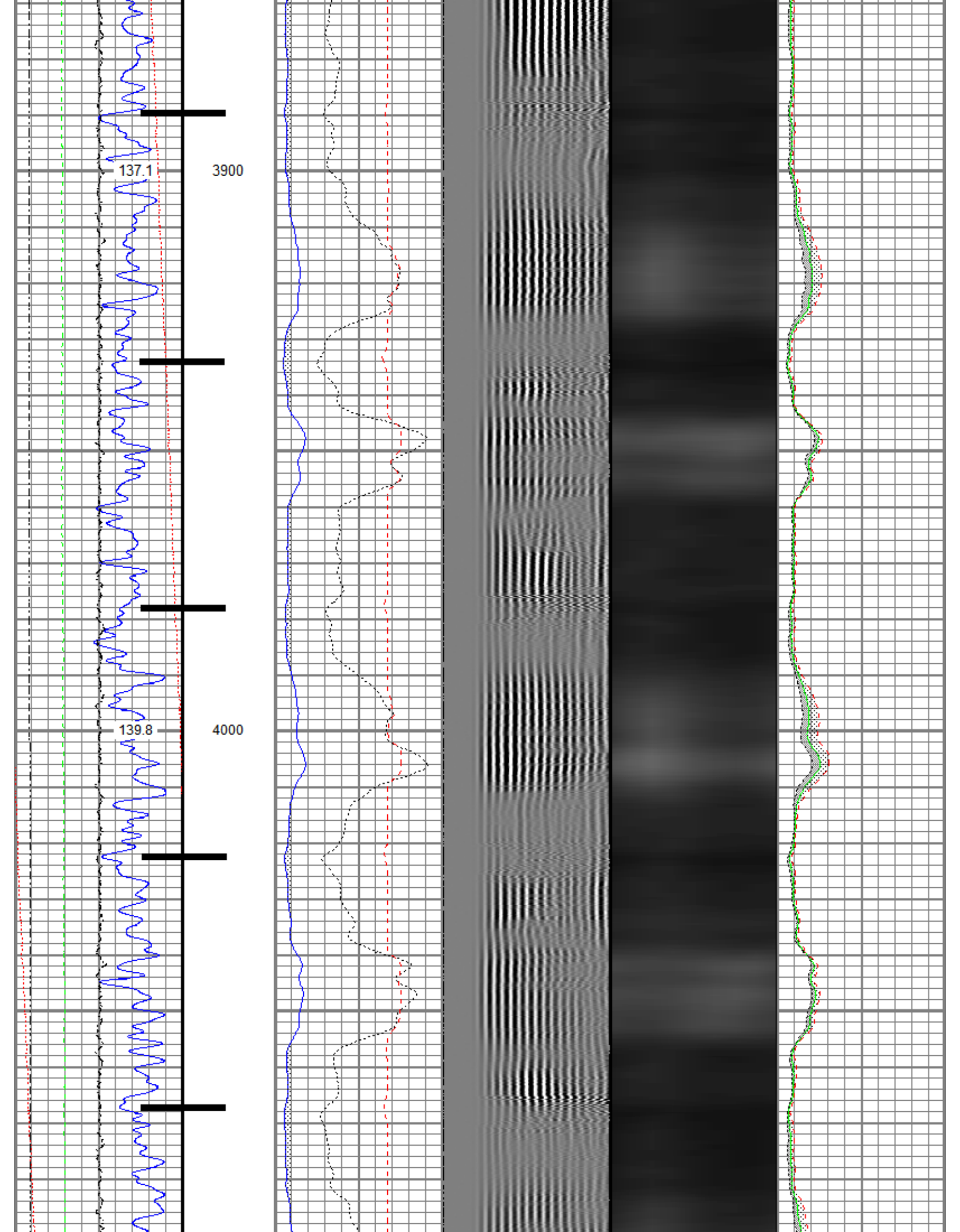




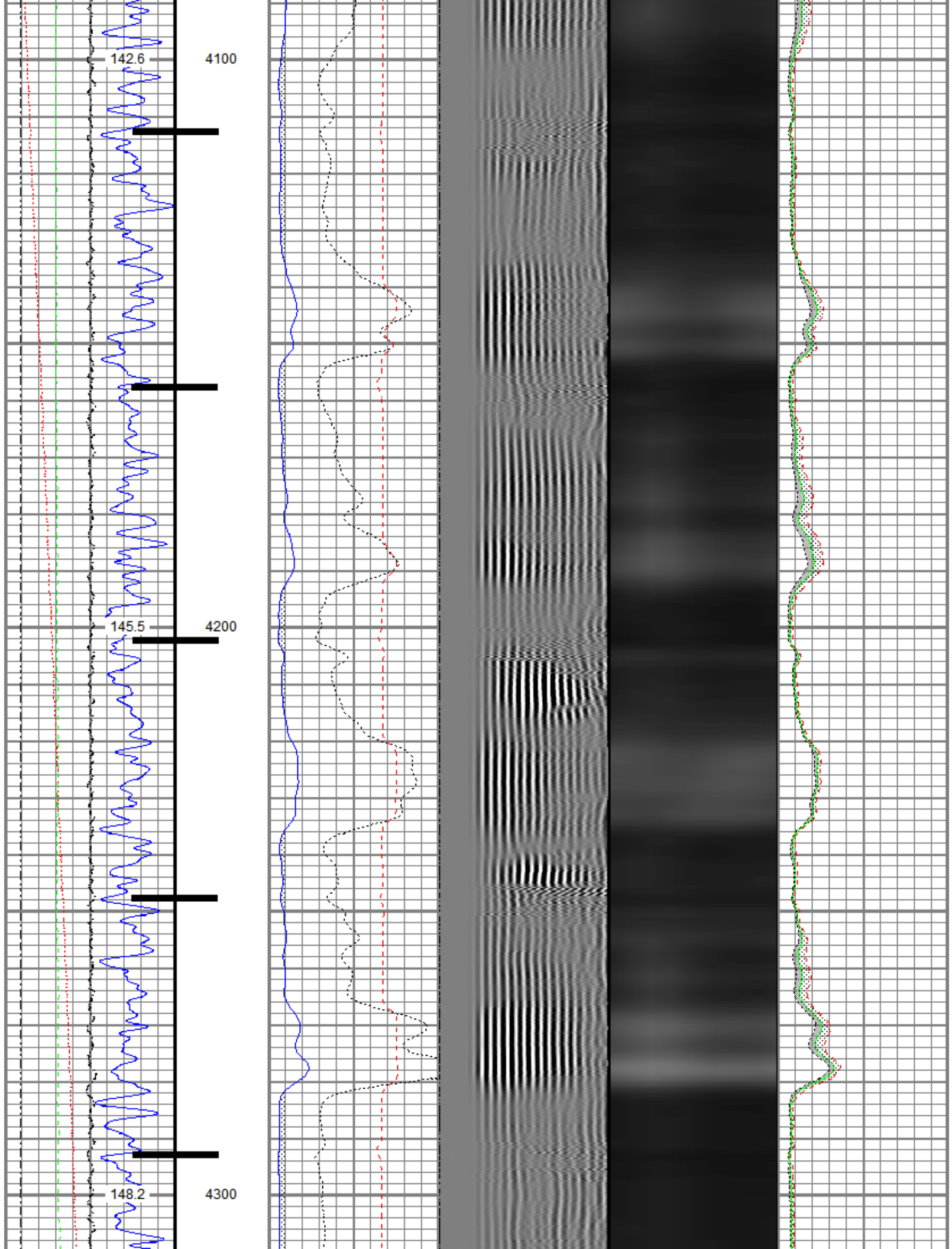


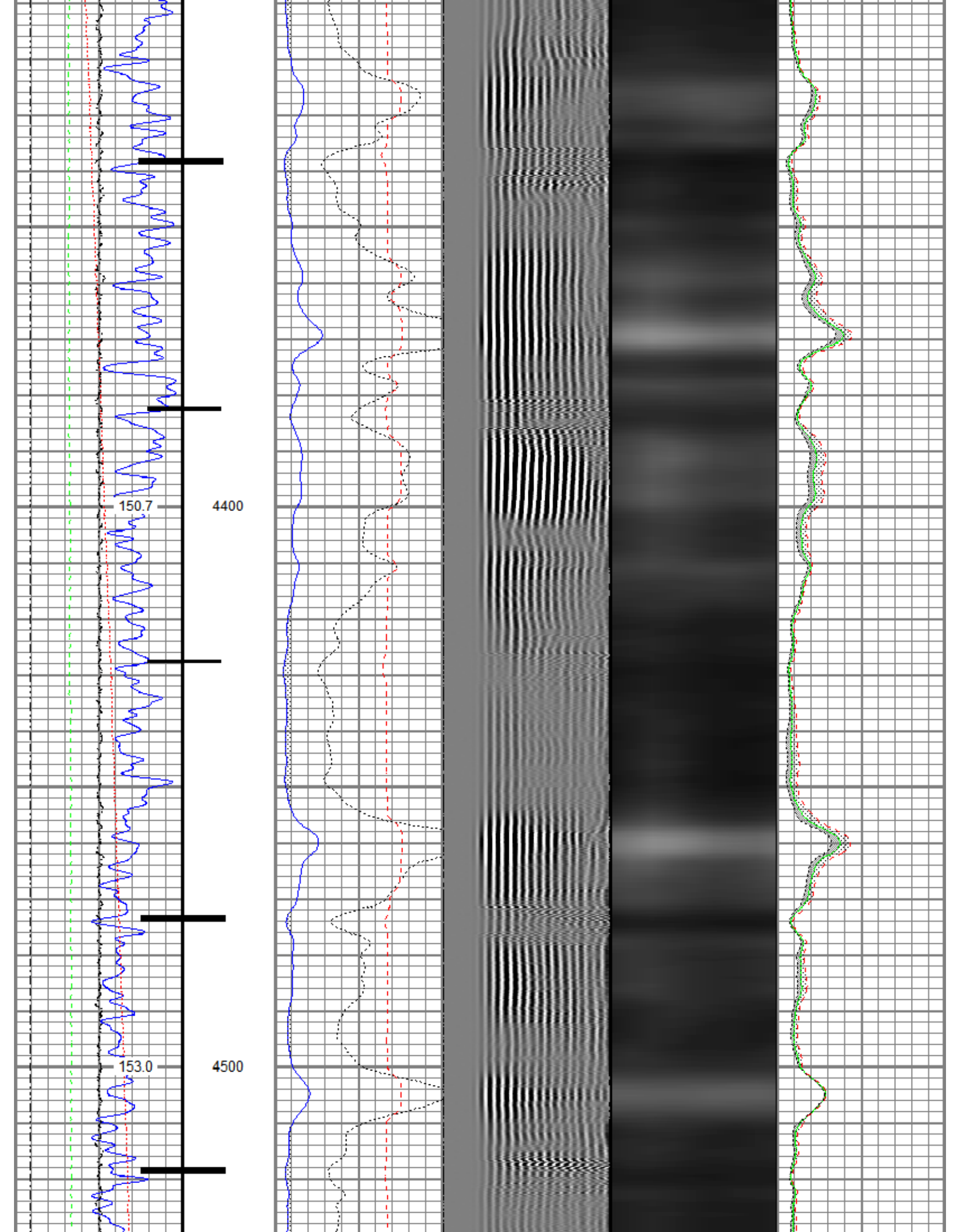






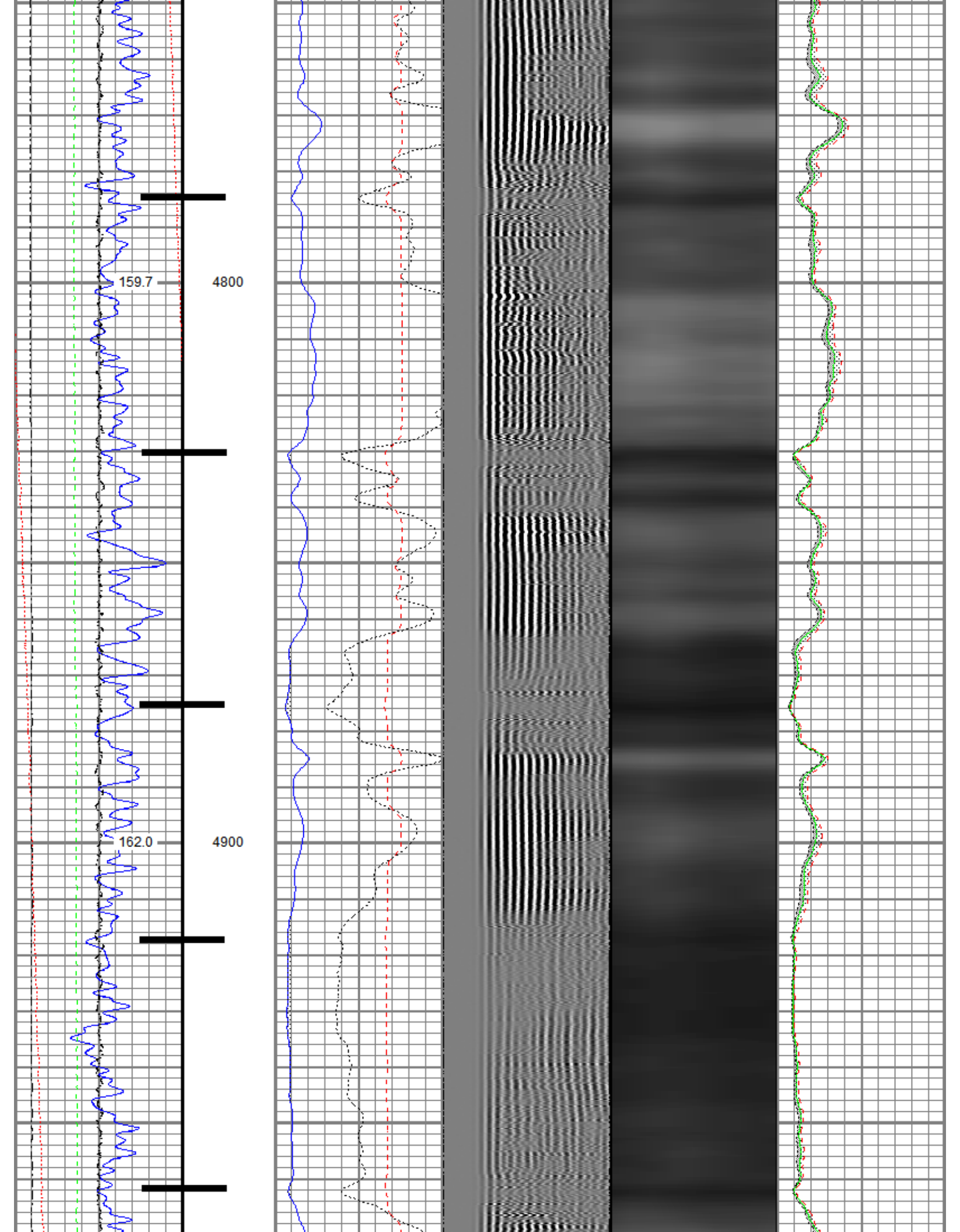




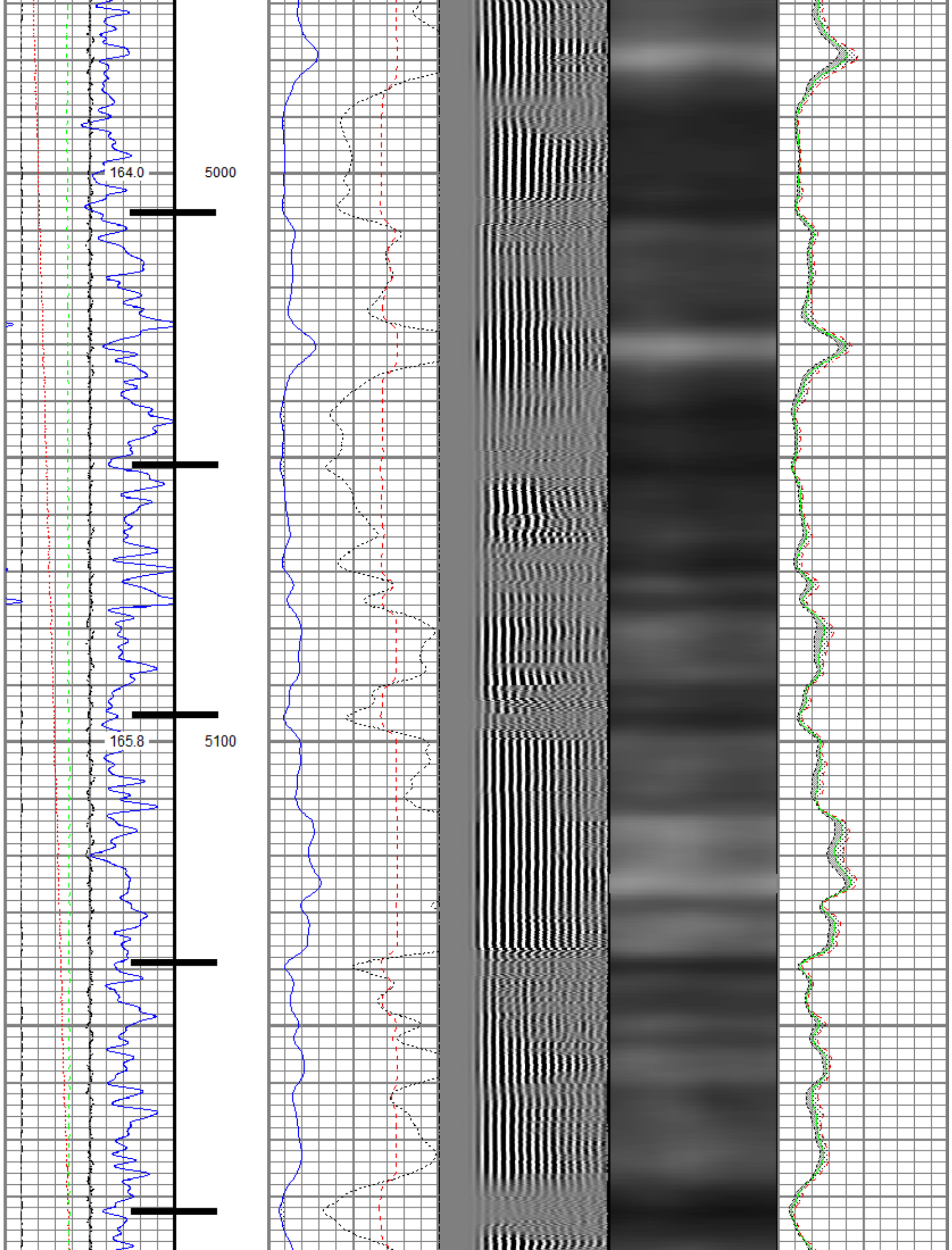












167.8

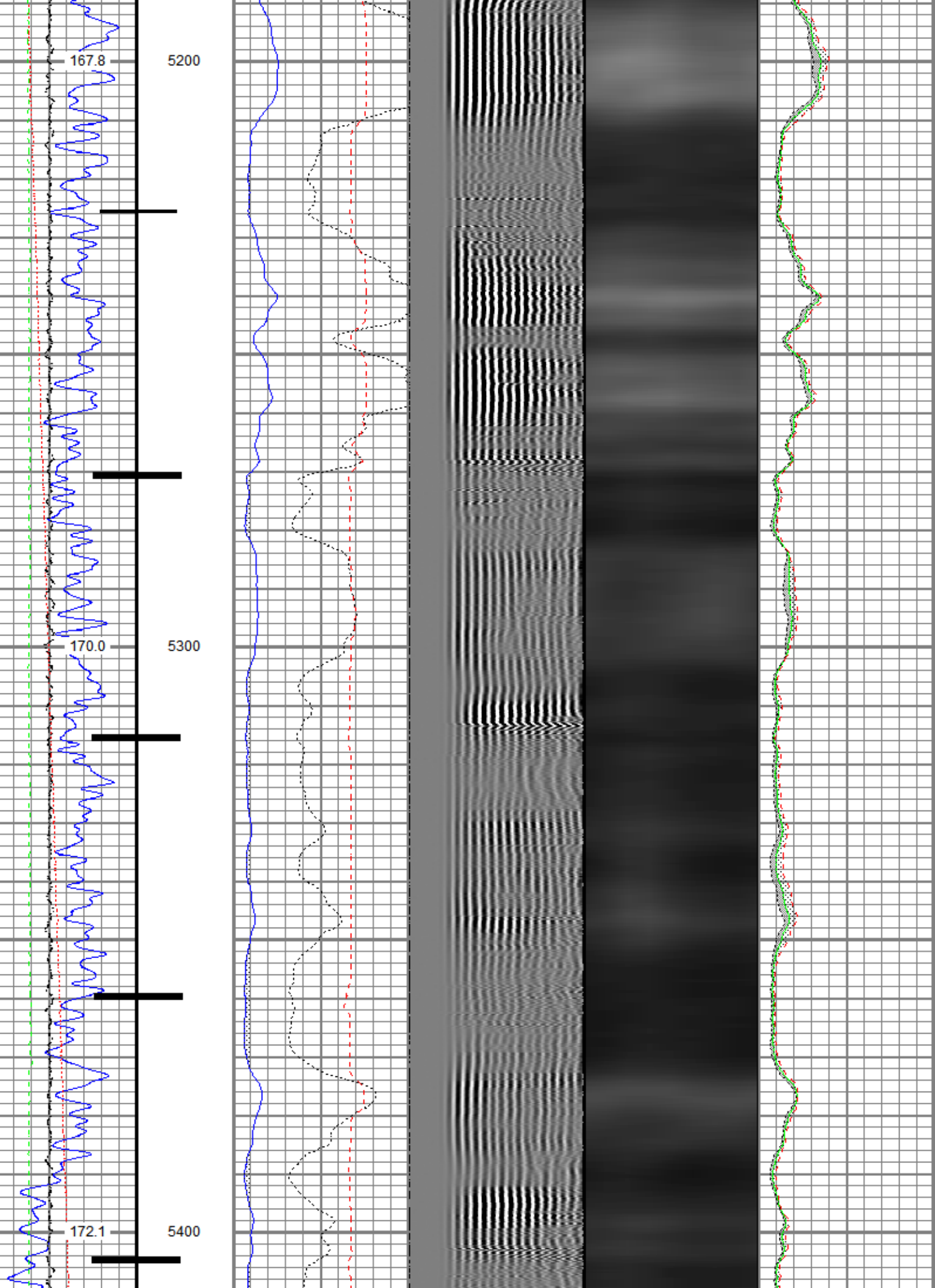
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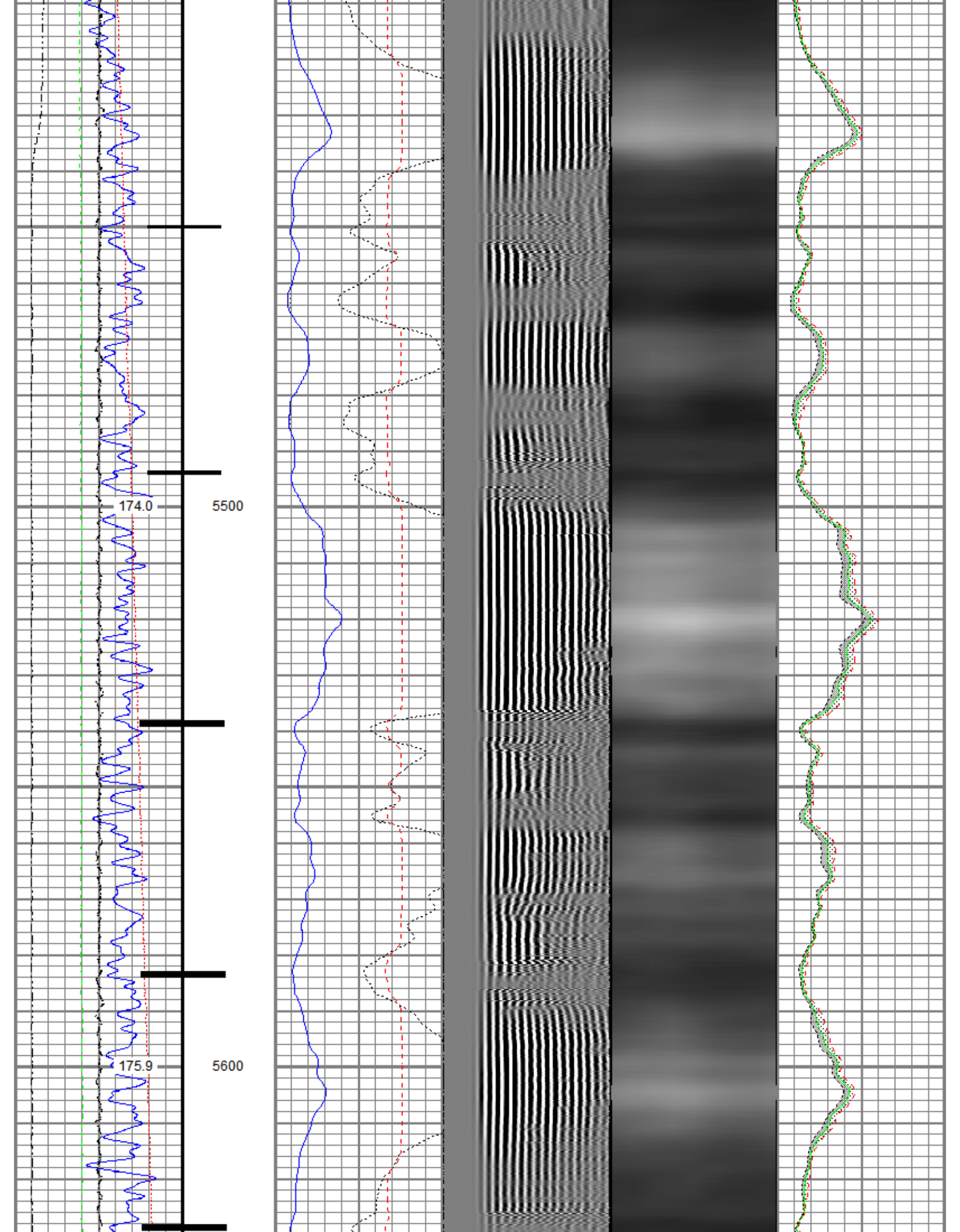
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5300

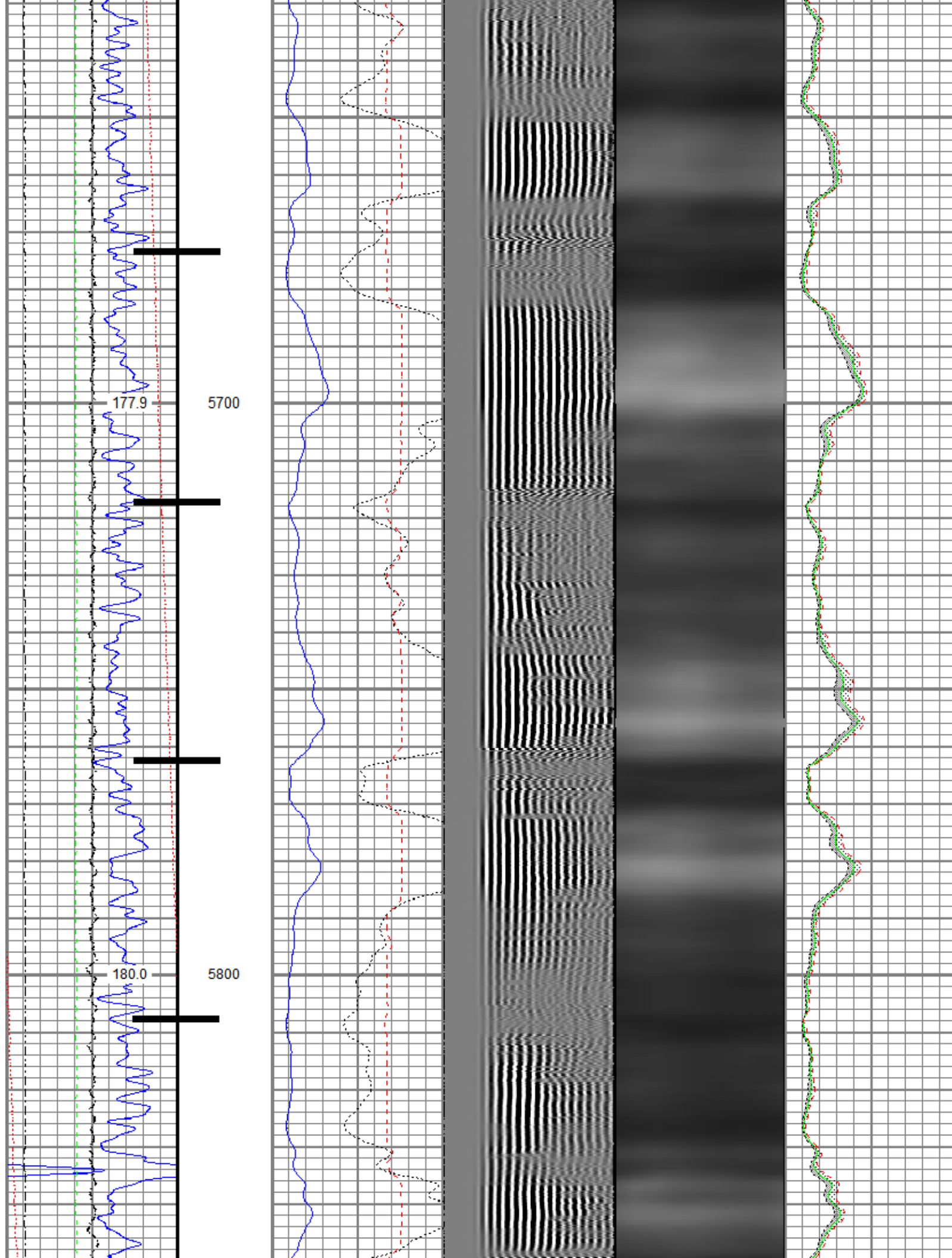
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5400

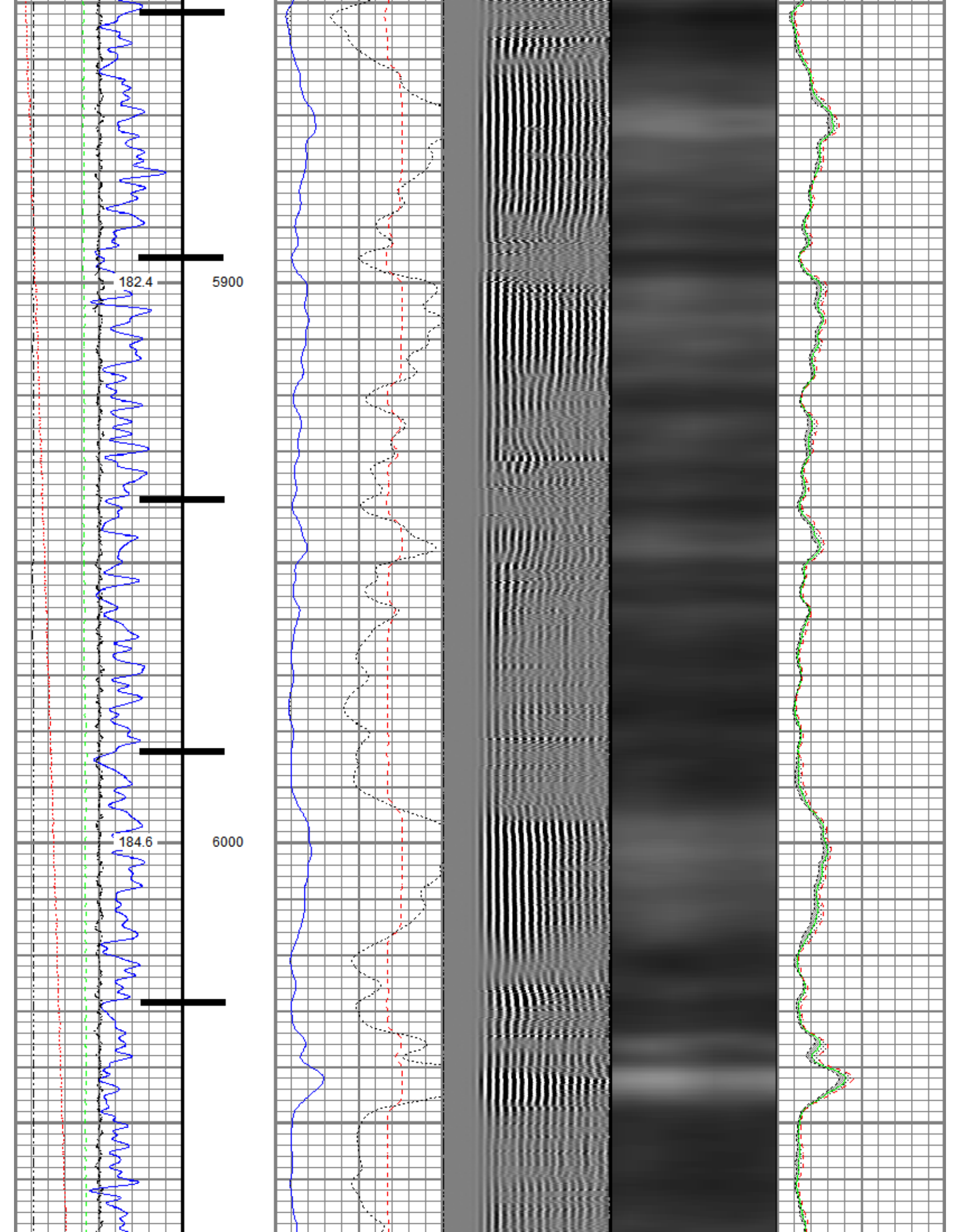


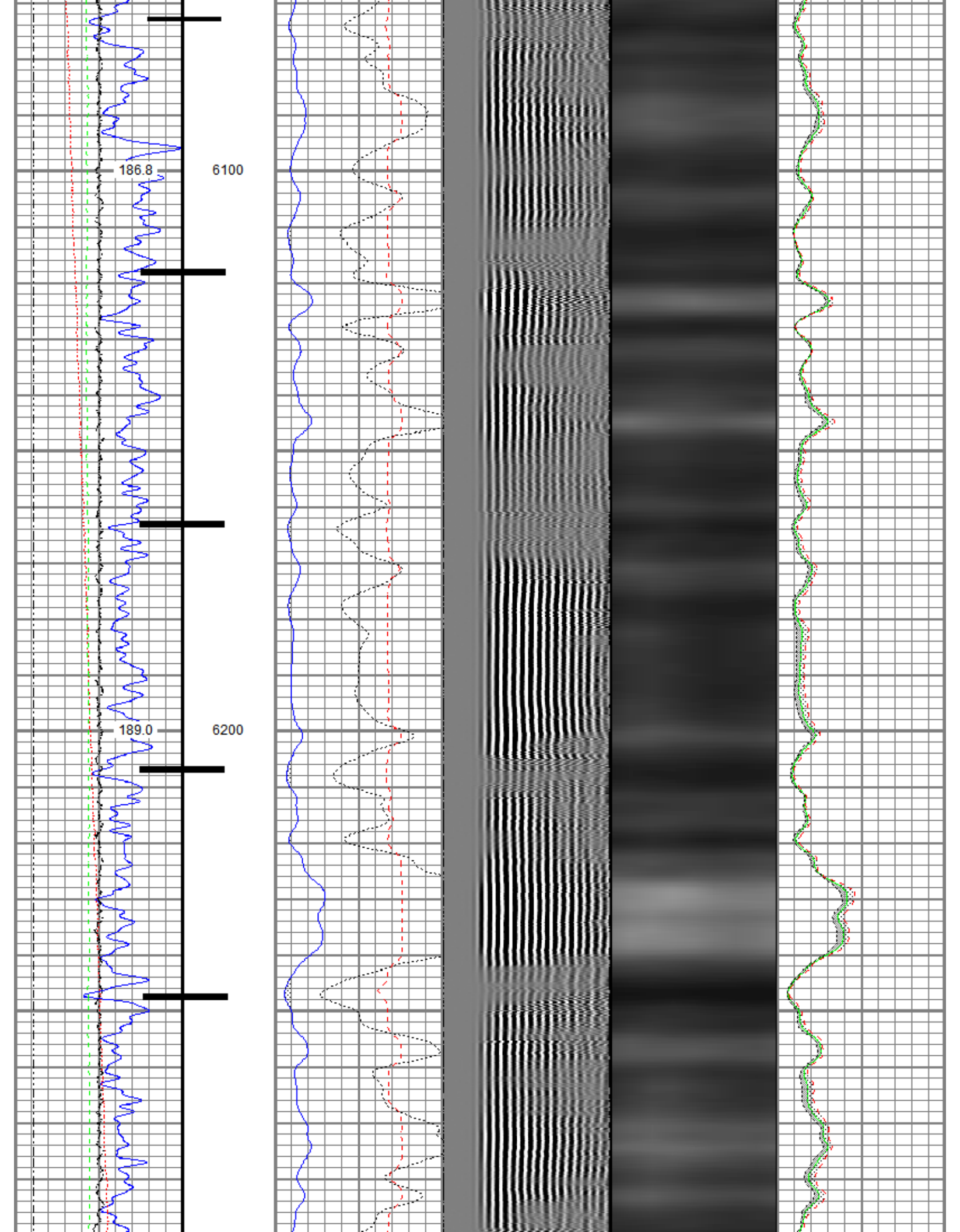


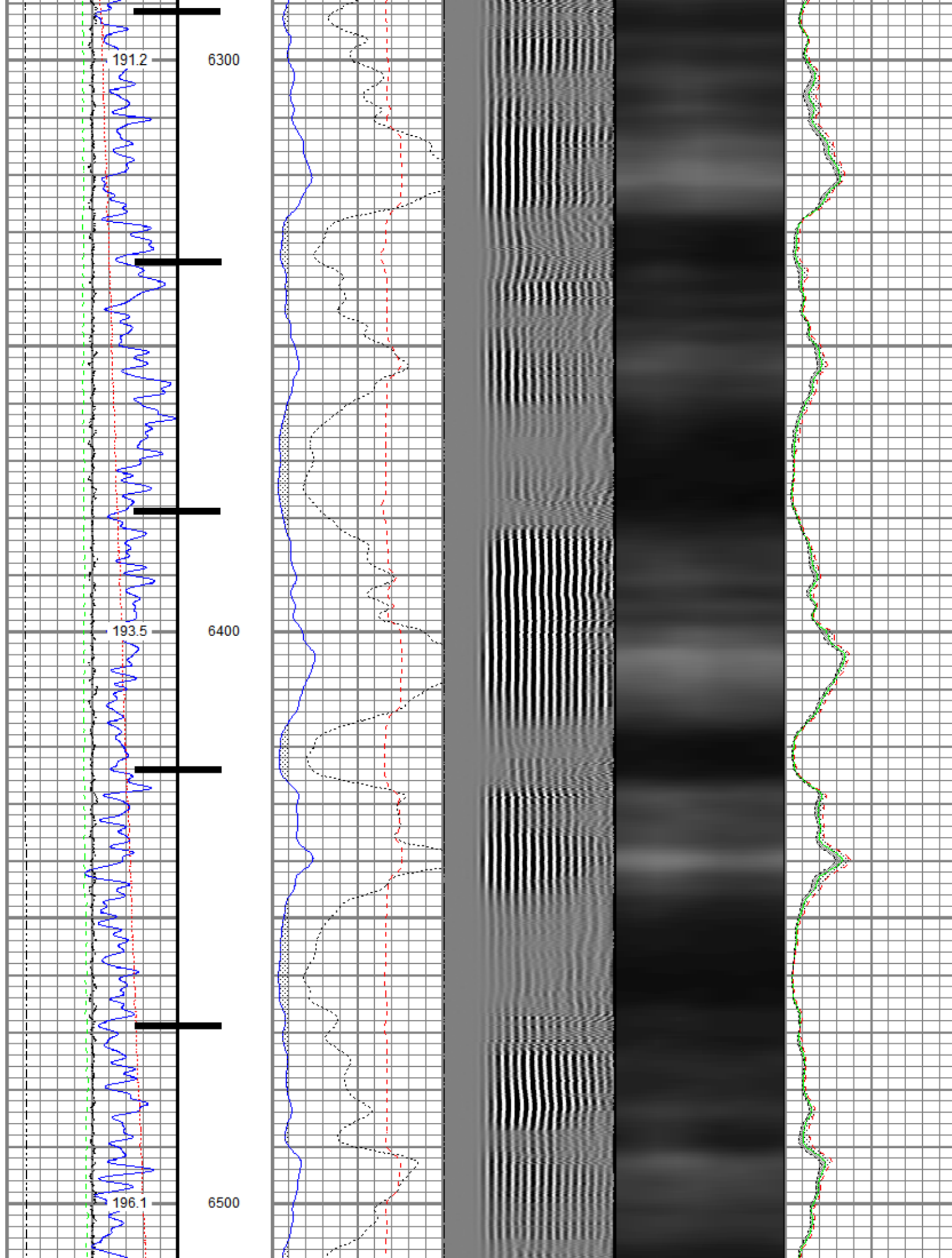




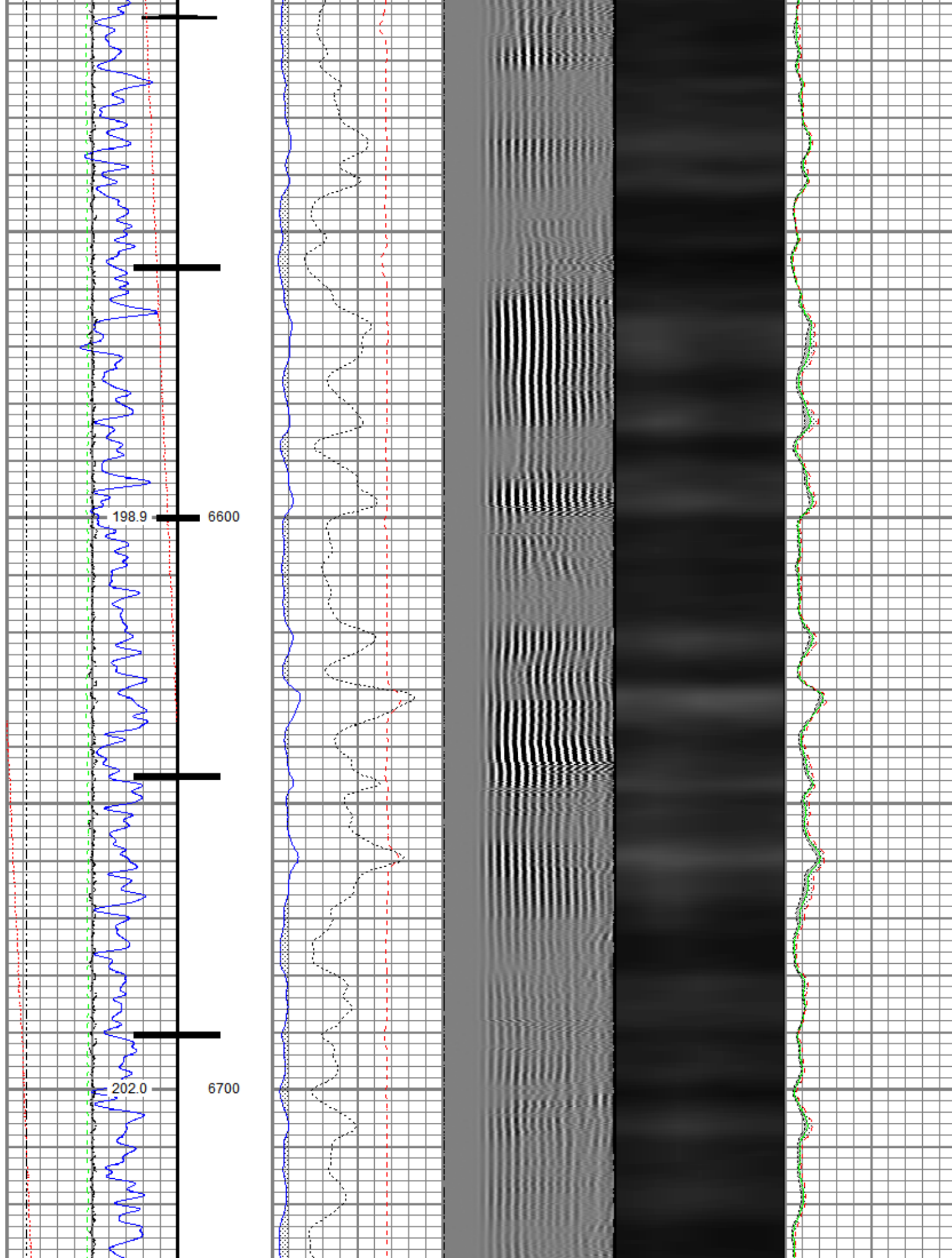




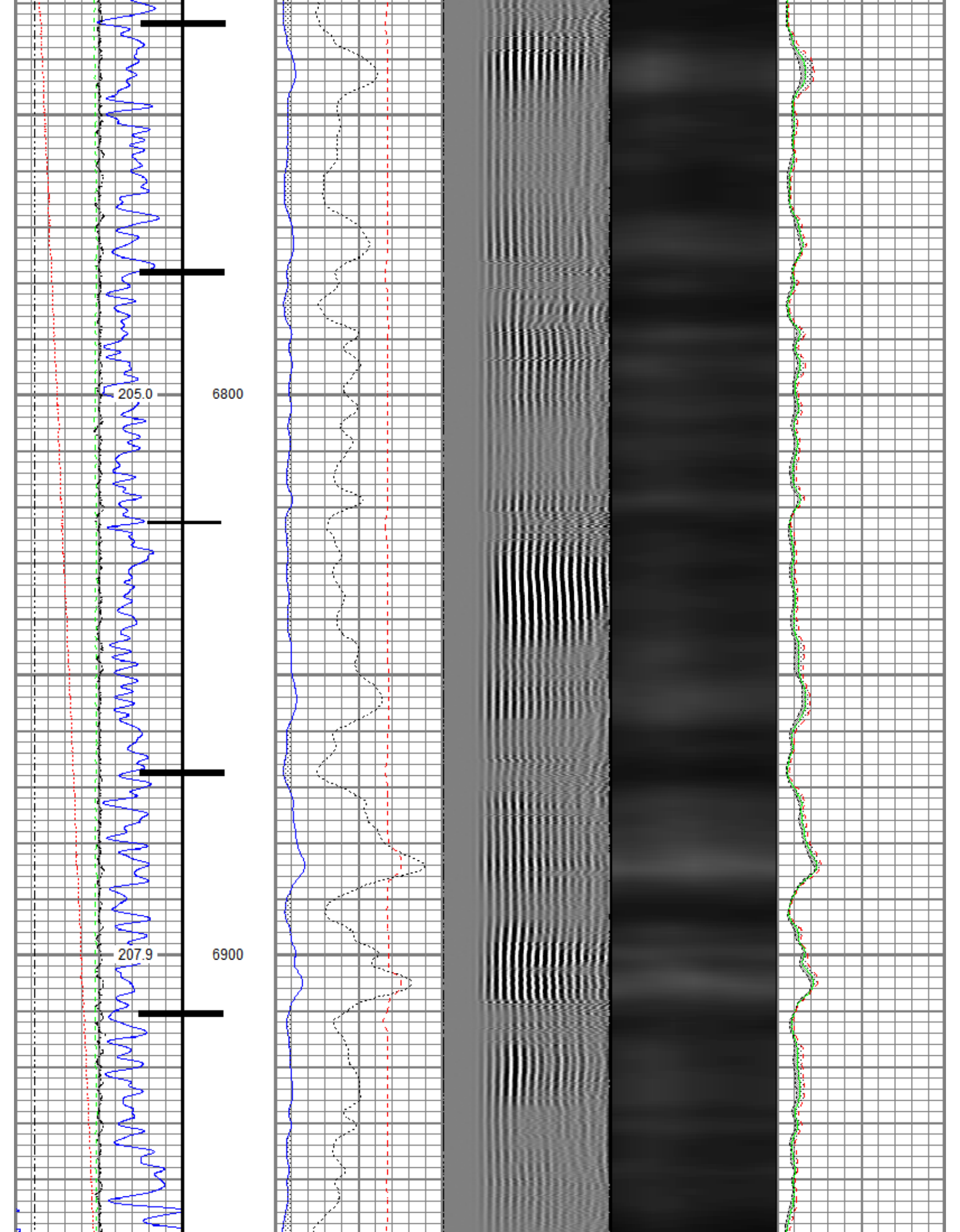


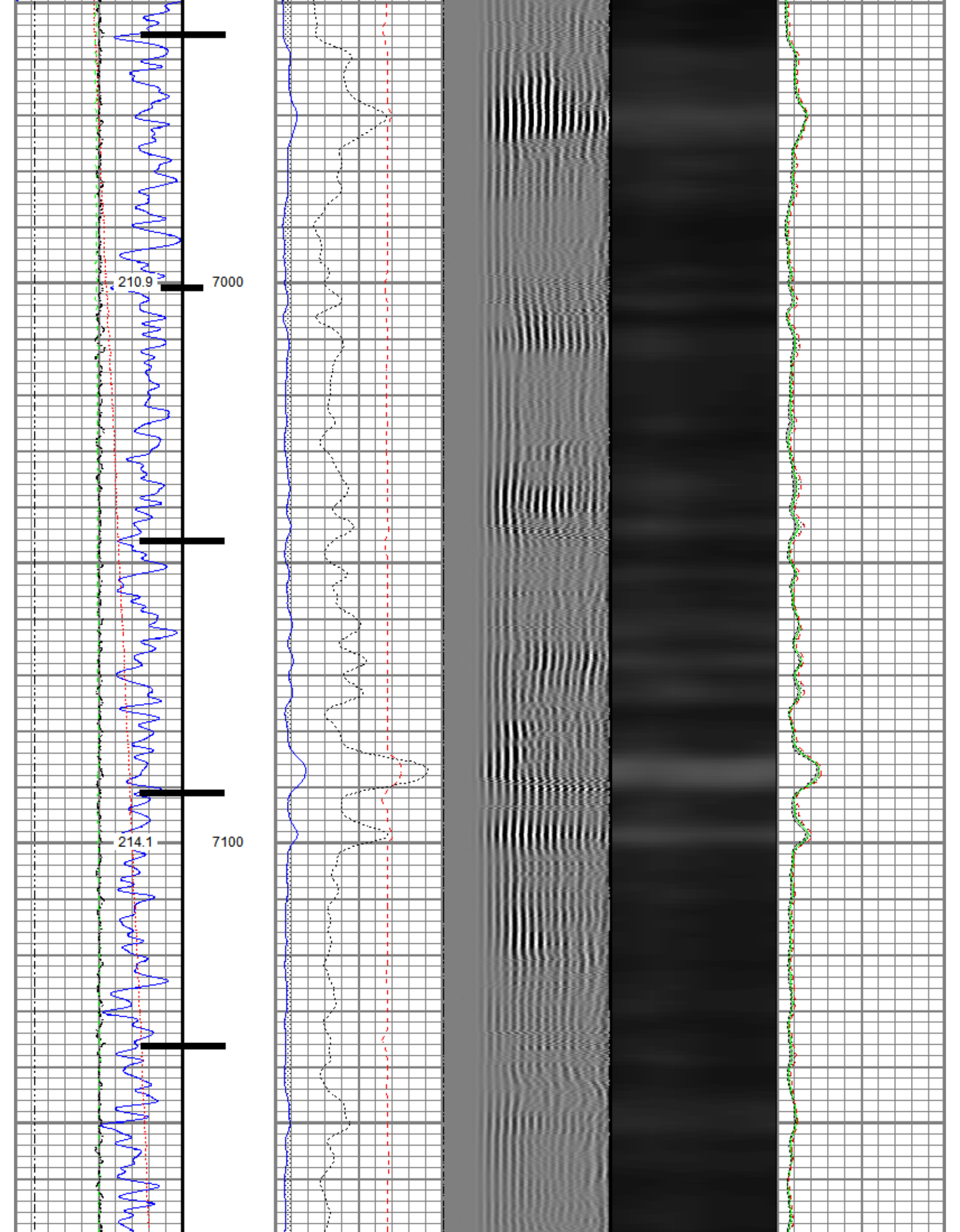


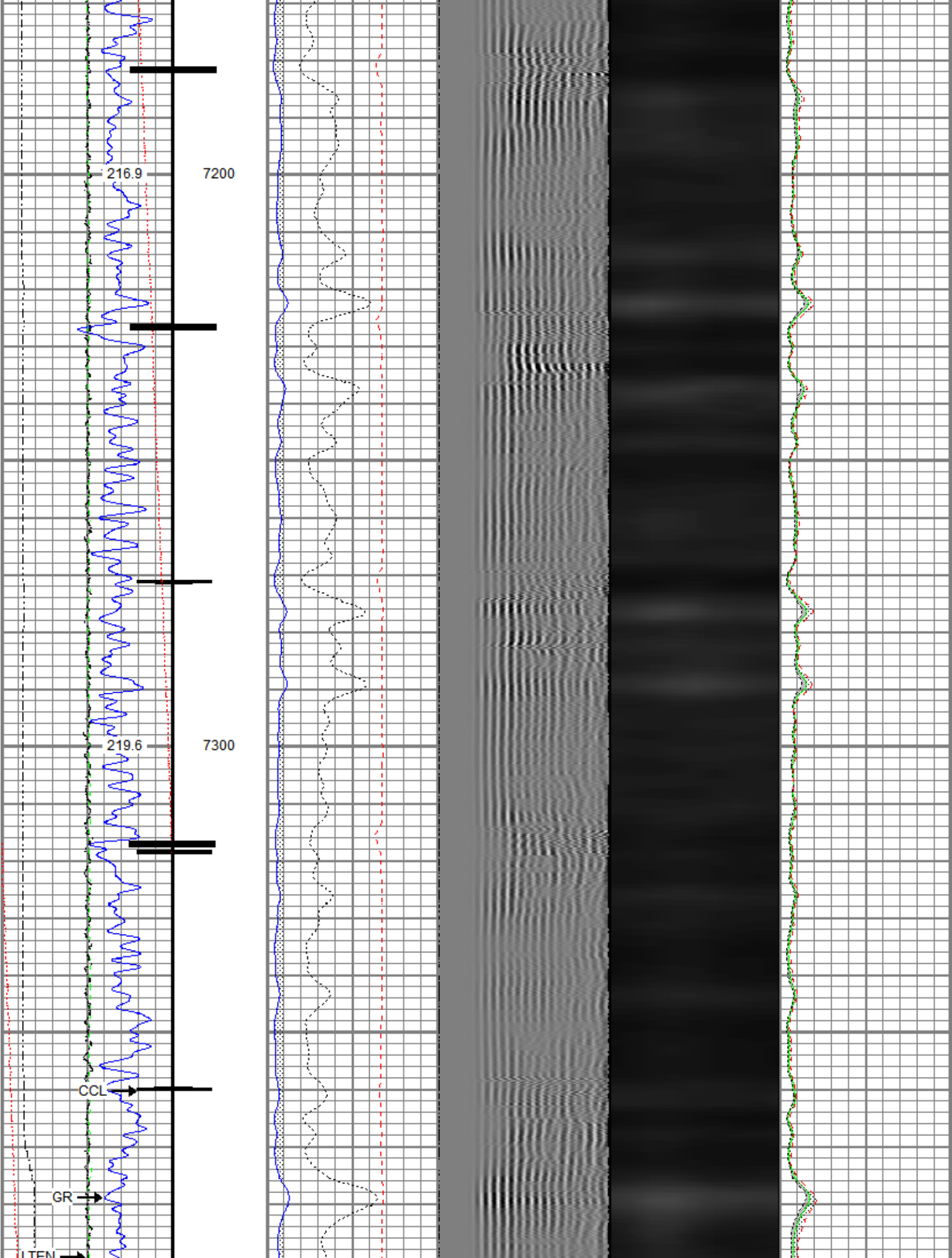


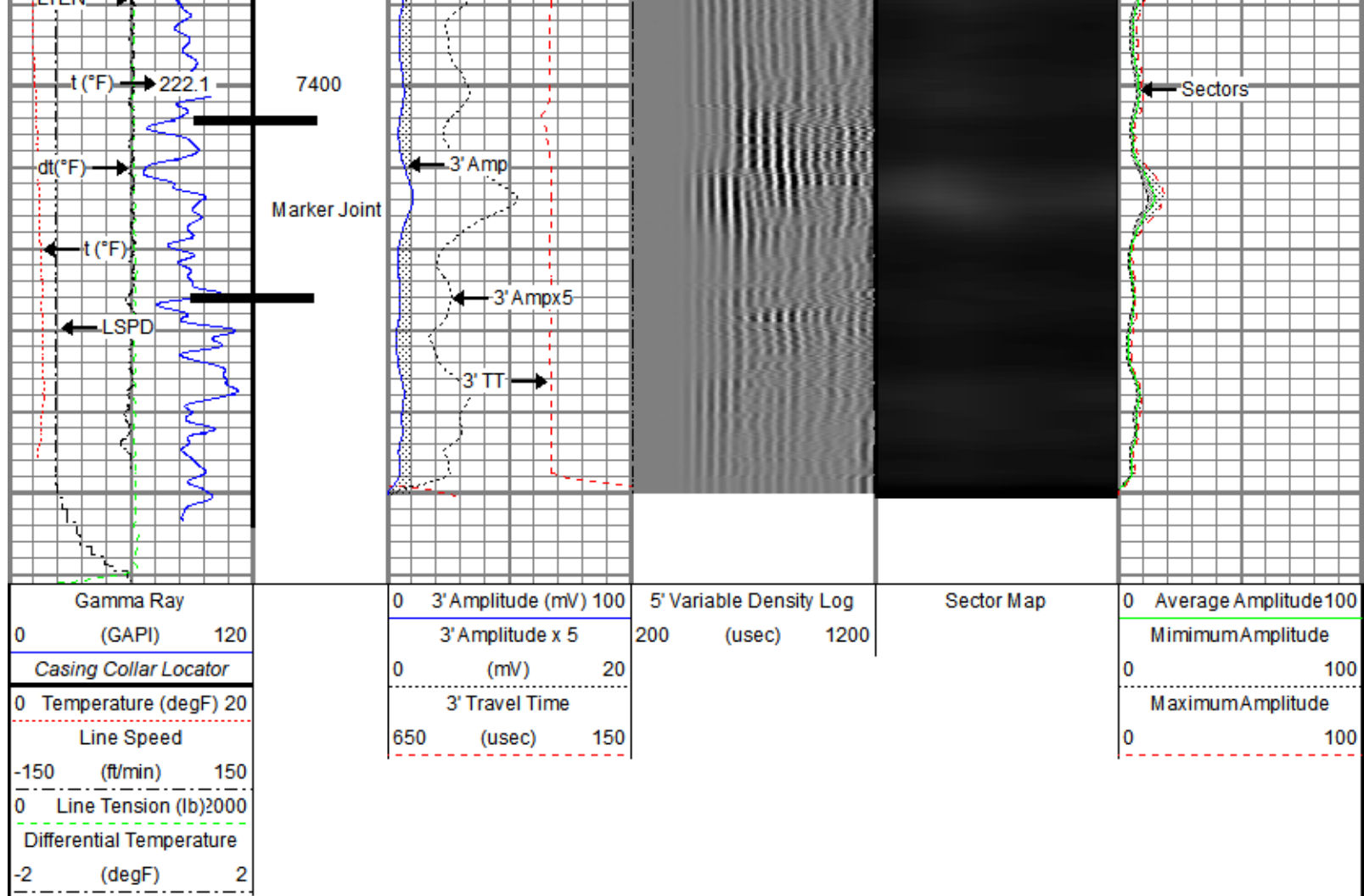








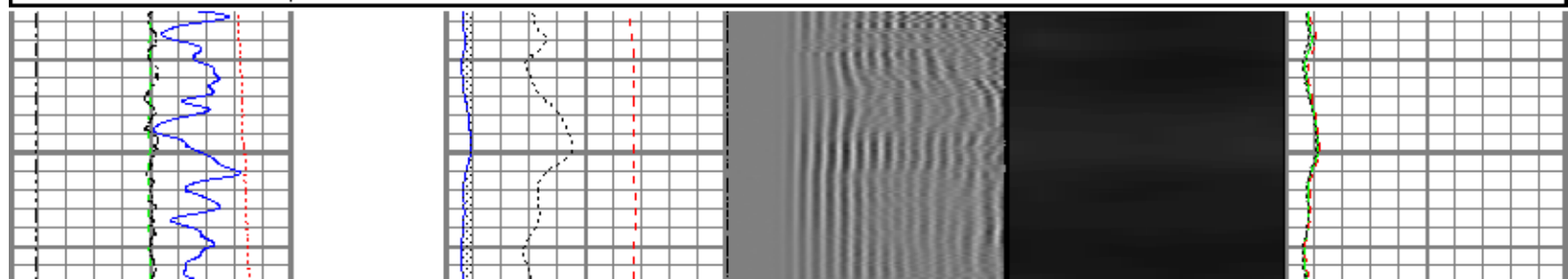
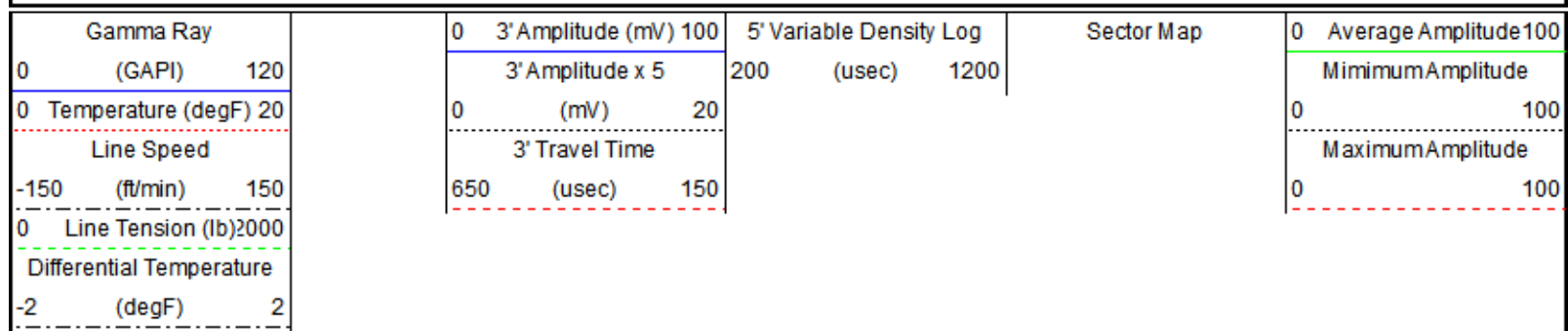




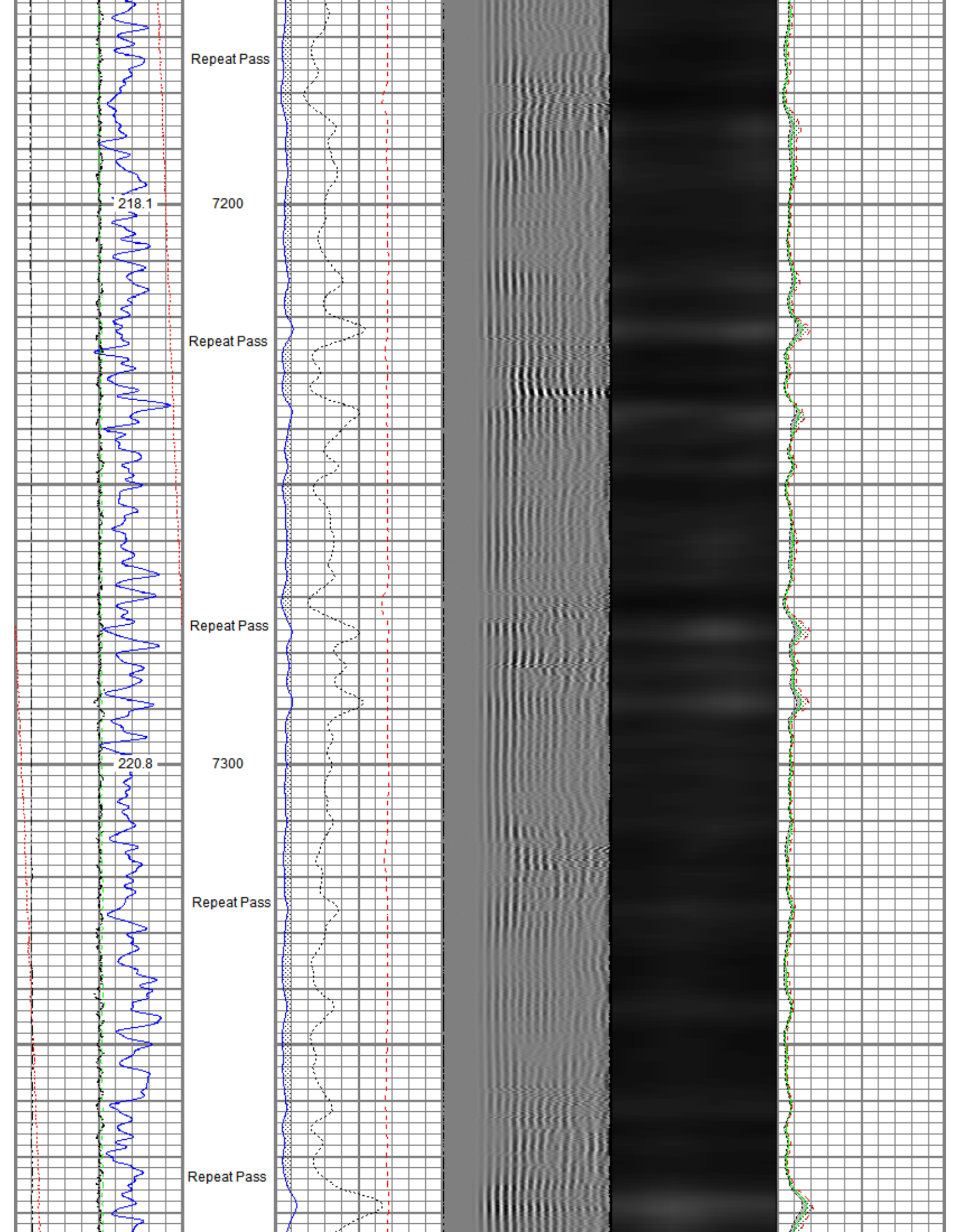
## Repeat Pass

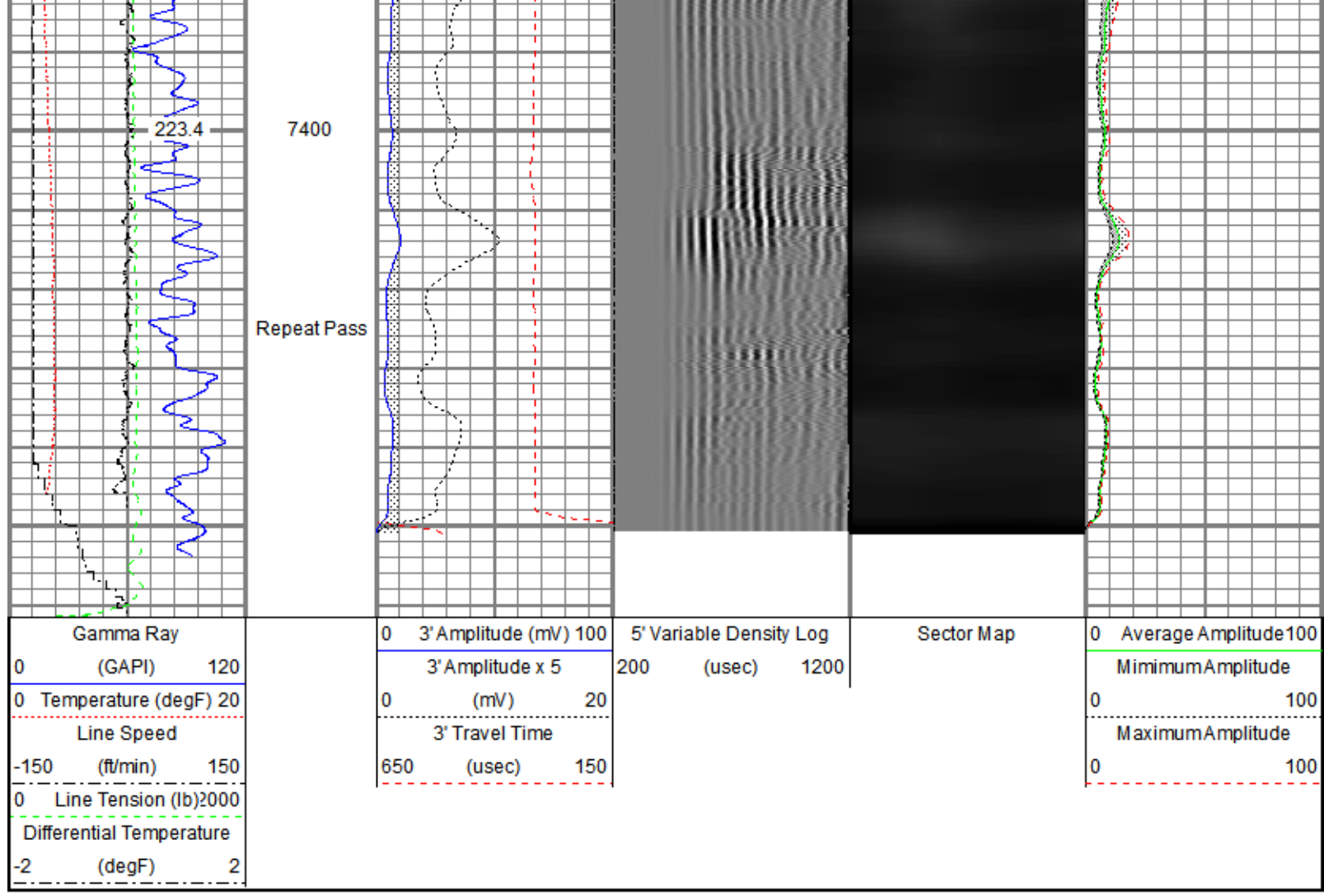
Recorded With 2800 PSI Surface Induced Pressure

Database File: oxy\0512350520\_oxy\_mae j 8-2hz\_rbl\_05-13-20\processed\_0512350520\_oxy\_mae j 8-2hz\_rbl\_05-13-20.db  
 Dataset Pathname: repeat.2  
 Presentation Format: ros\_radrii  
 Dataset Creation: Thu May 14 09:21:50 2020  
 Charted by: Depth in Feet scaled 1:240

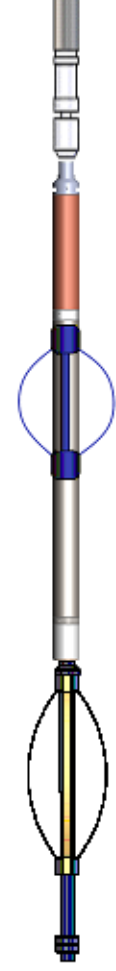








Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
ErrCt	18.10		Titan CHD-16875 GO	1.03	1.69	5.40	
RBT_HV	17.07		Titan 1-11/16" Assembled Electric Cable Head with 1" Fishing Neck				
			SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	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				
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
		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\_0512350520\_oxy\_mae j 8-2hz\_rbl\_05-13-20.db: field/well/run1/main.3  
 Total length: 18.10 ft  
 Total weight: 207.40 lb  
 O.D.: 3.25 in

Calibration Report	
Database File	c:\programdata\warrior\data\oxy\0512350520_oxy_mae j 8-2hz_rbl_05-13-20\processed_0512350520_oxy_mae j 8-2hz_rbl_05-
Dataset Pathname	main.3
Dataset Creation	Thu May 14 09:14:39 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:	0.000 ft

Master Calibration, performed (Derived):			
Raw (v)		Calibrated (mv)	
Zero	Cal	Zero	Cal
		Gain	Offset

	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	0.656	0.800	71.921	109.950	-0.183
CAL	0.634	0.599				
5'	0.008	0.562	0.800	71.921	128.470	-0.263
SUM						
S1	0.006	0.642	0.000	100.000	157.150	-0.877
S2	0.008	0.682	0.000	100.000	148.412	-1.235
S3	0.008	0.719	0.000	100.000	140.608	-1.065
S4	0.007	0.697	0.000	100.000	145.075	-1.048
S5	0.008	0.666	0.000	100.000	152.020	-1.280
S6	0.008	0.652	0.000	100.000	155.253	-1.280
S7	0.008	0.632	0.000	100.000	160.300	-1.230
S8	0.008	0.634	0.000	100.000	159.555	-1.236

Air Zero Calibration, performed Wed May 13 12:45:41 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** Kerr-McGee Oil & Gas Onshore, L.P.  
**Well** MAE J 8-2HZ  
**Field** Wattenberg  
**County** Weld



County  
State

Area  
Colorado