



County Weld State Colorado

K.B.	5067"
D.F.	---
G.L.	5041"

ner			
-----	--	--	--

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.

Thank you for choosing Reliance Oilfield Services, LLC!!

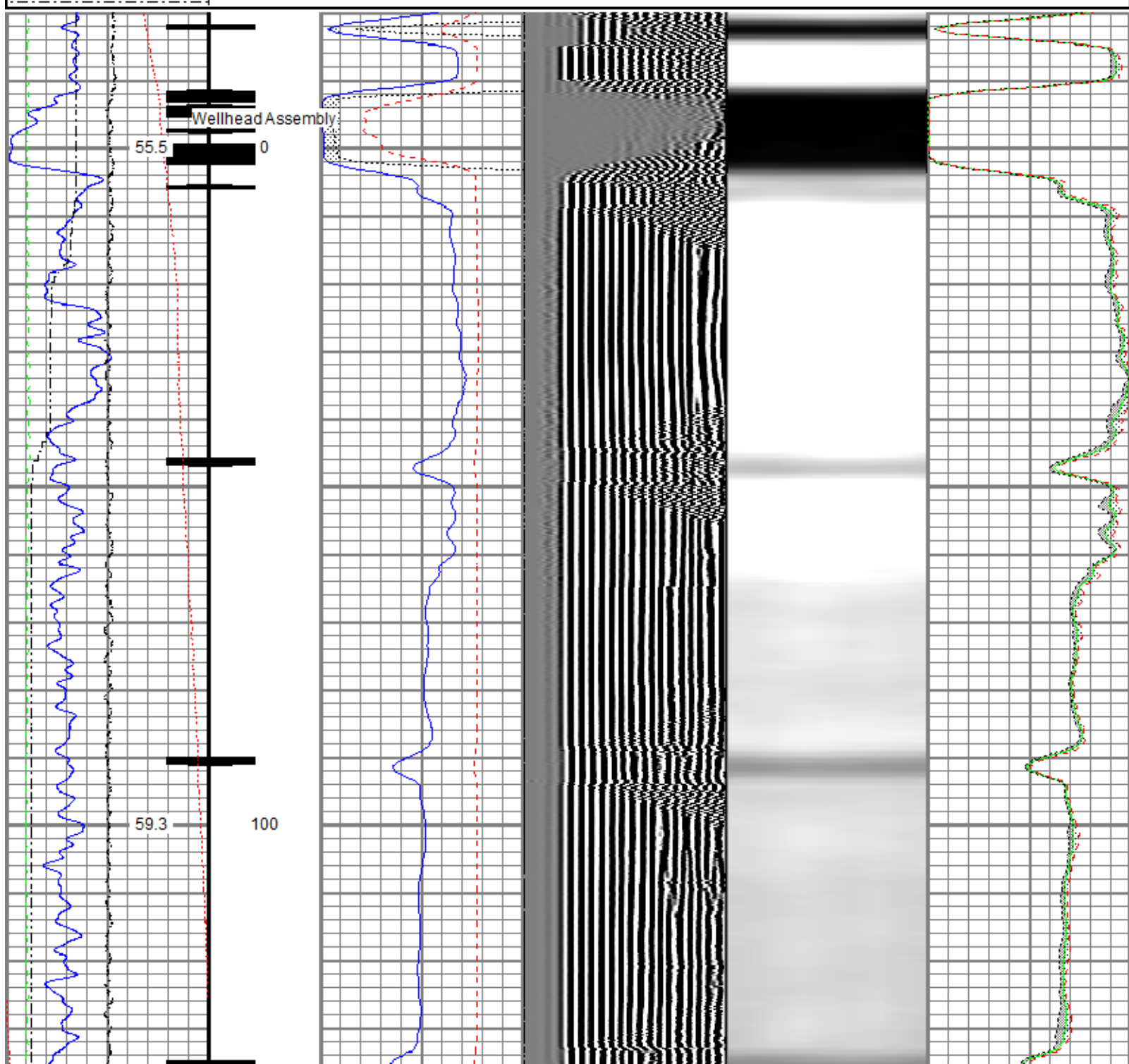
Main Pass

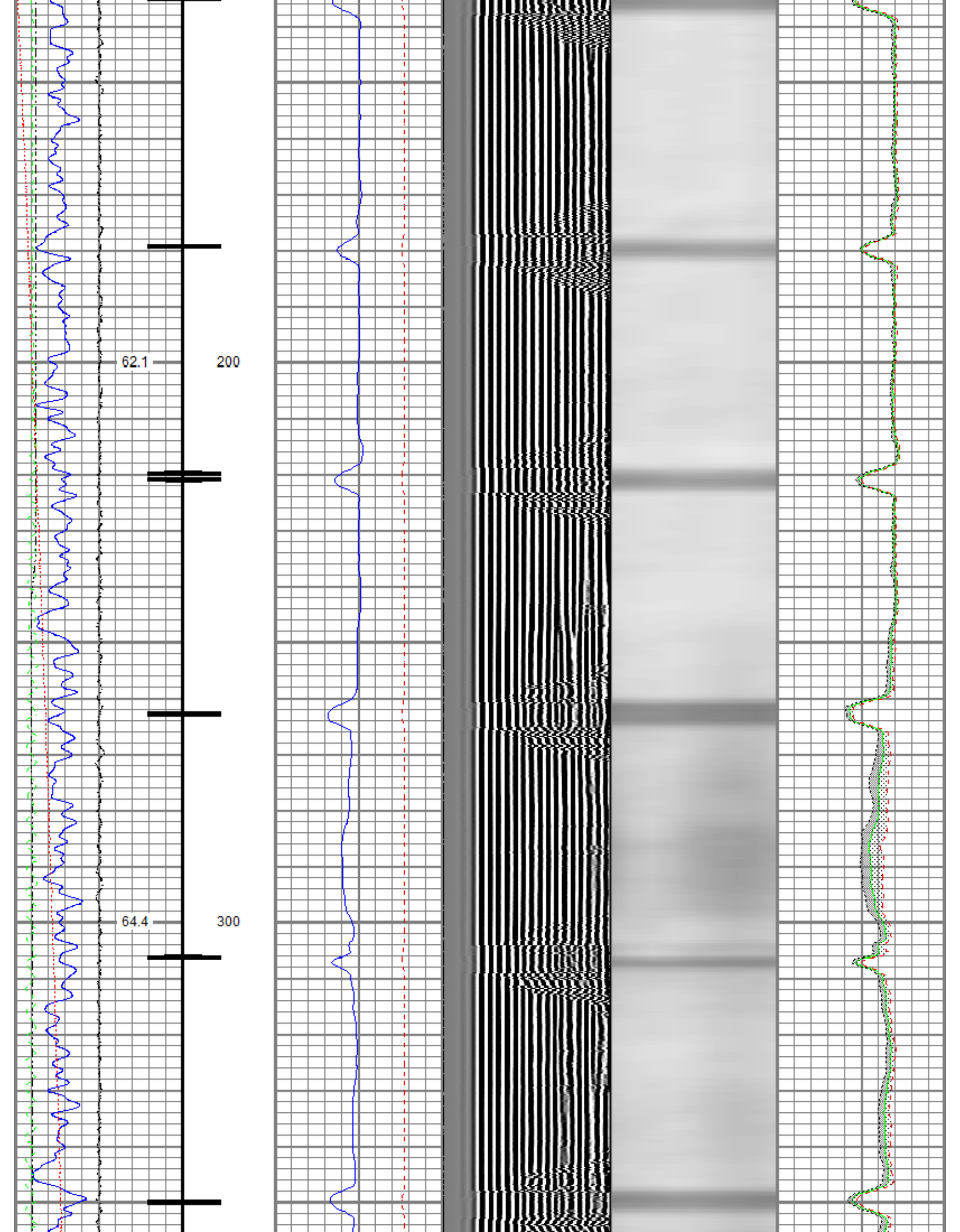


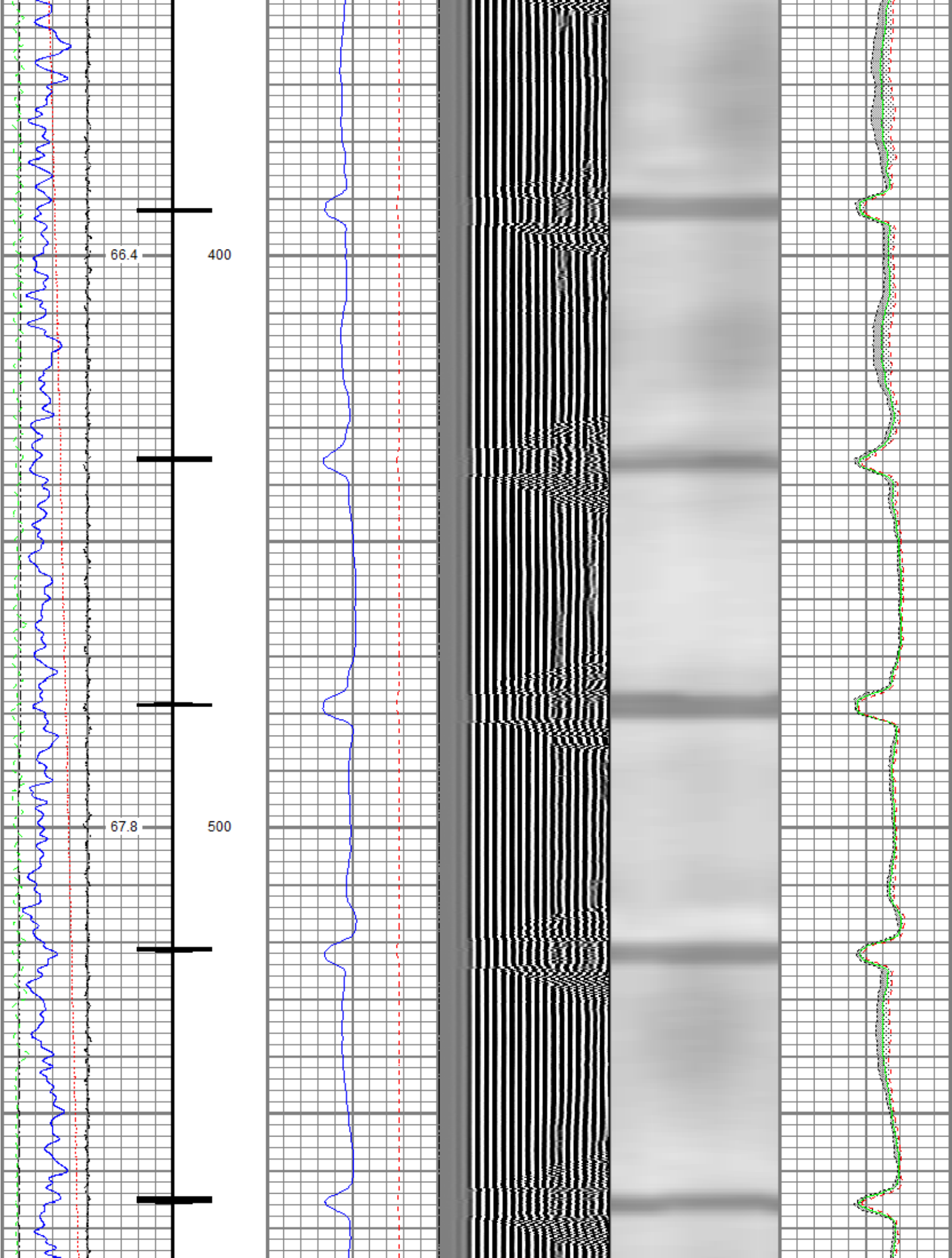
Recorded With 2000 PSI Surface-Induced Pressure

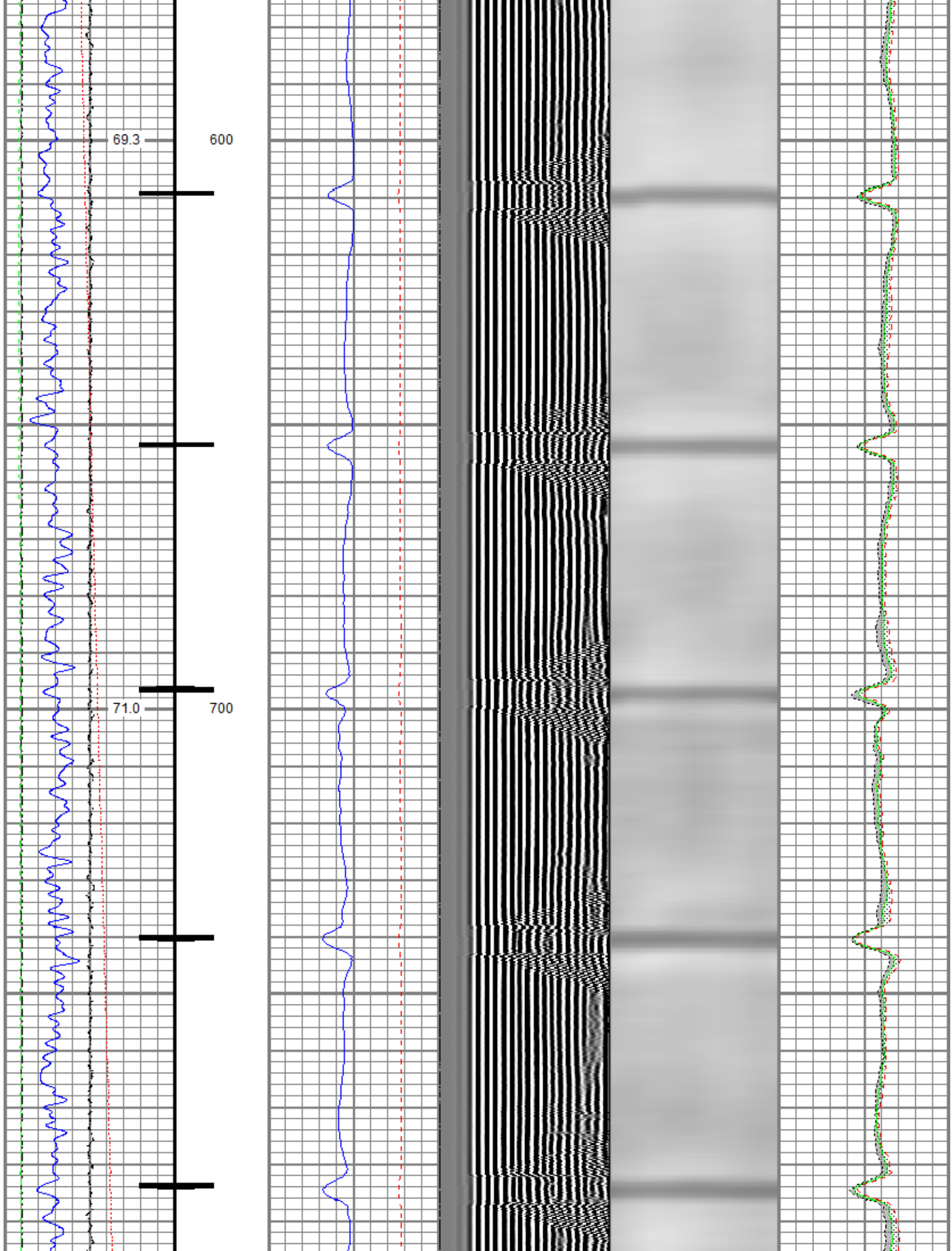
Database File	anadarko\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18_2800
Dataset Pathname	Main.1
Presentation Format	ros_radrii
Dataset Creation	Wed Nov 14 14:10:35 2018
Charted by	Depth in Feet scaled 1:240

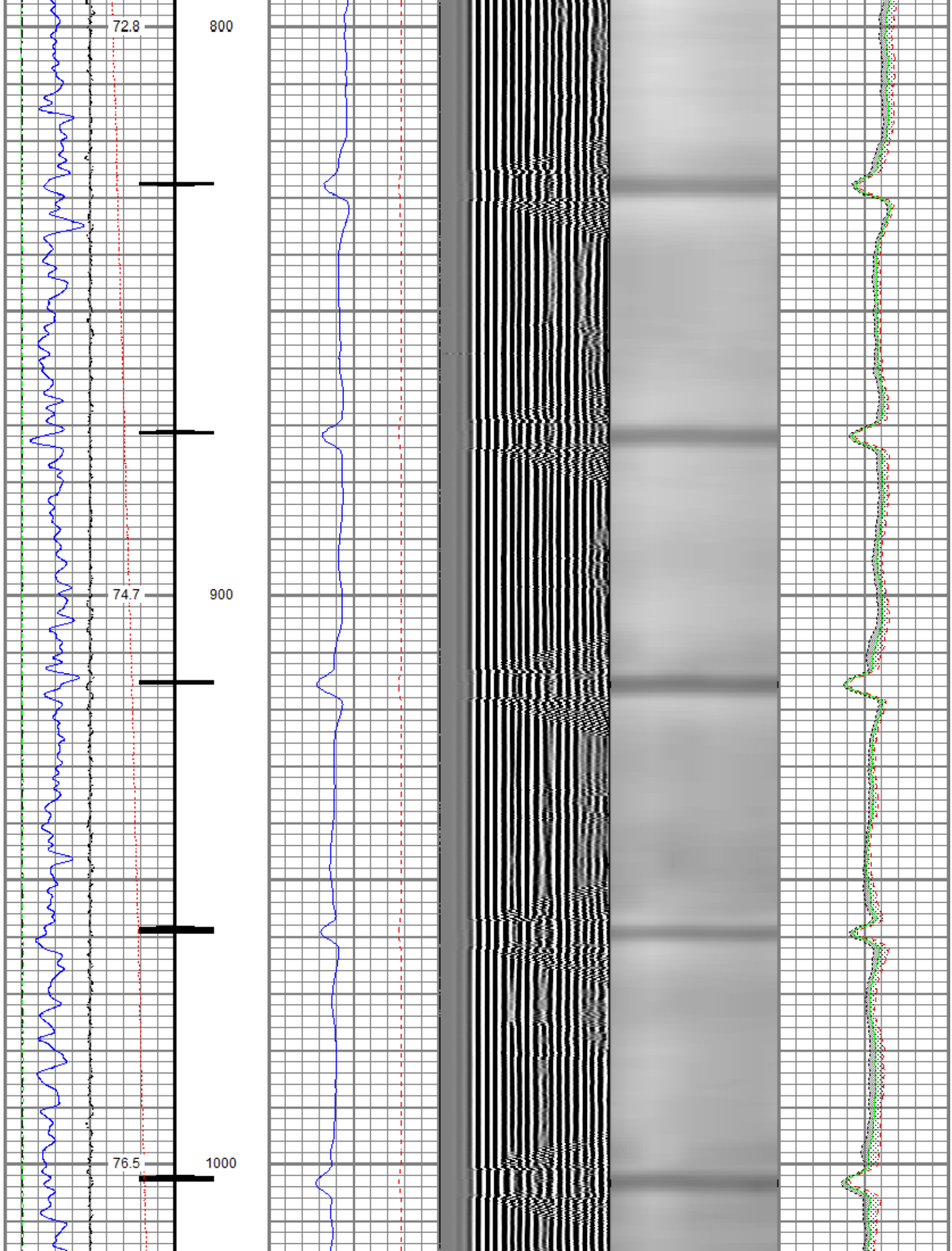
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
(ft/min) 150						
Line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

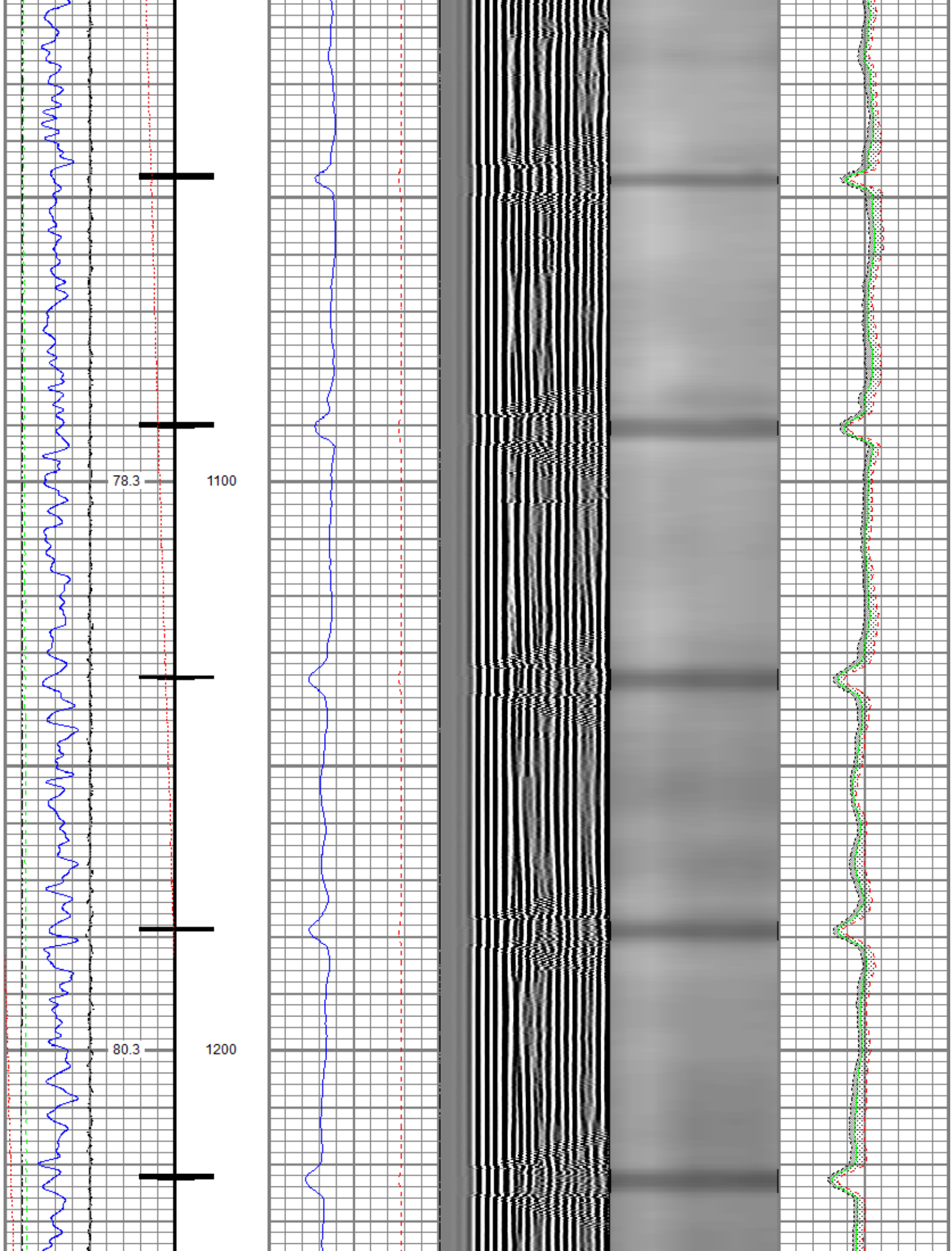


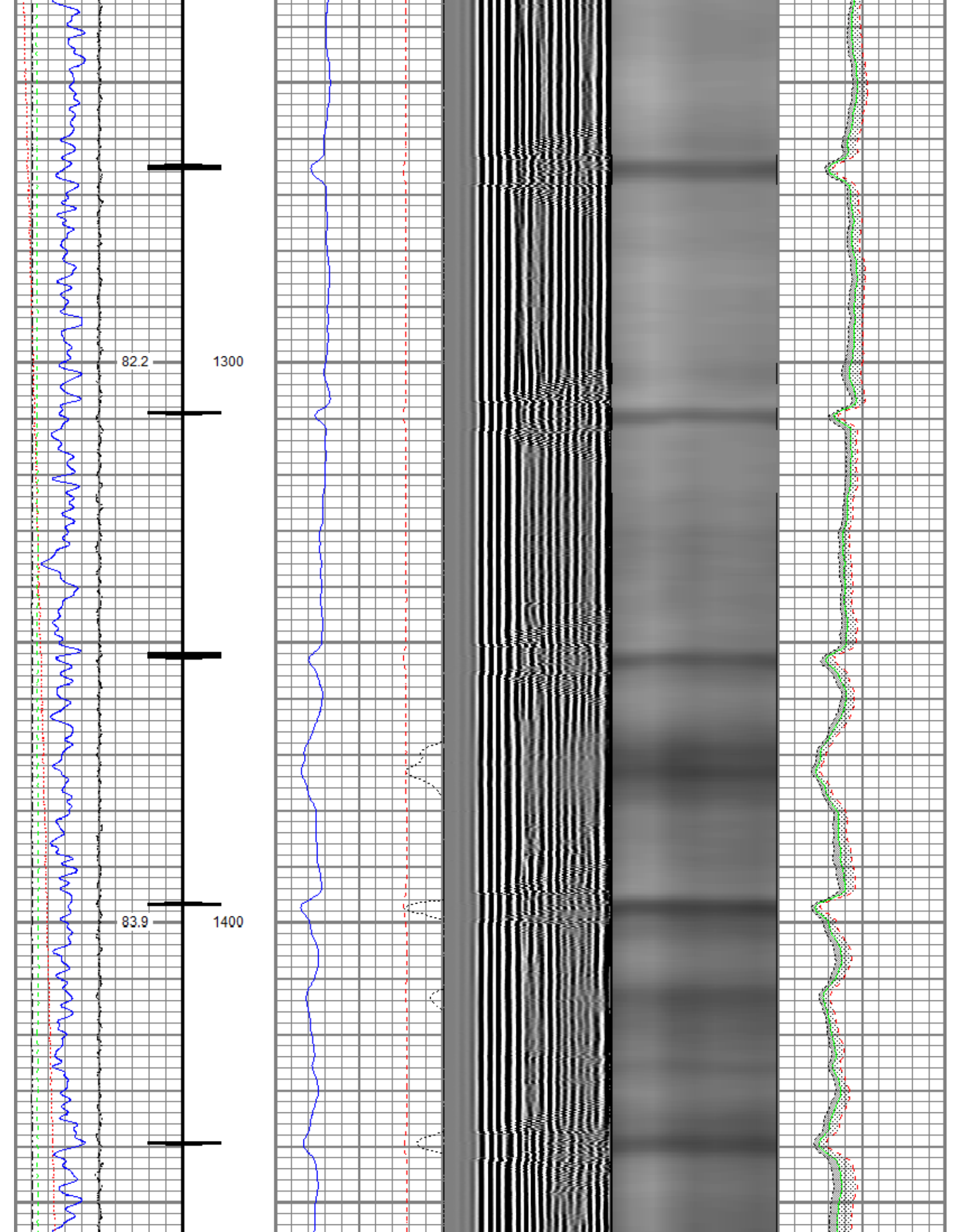


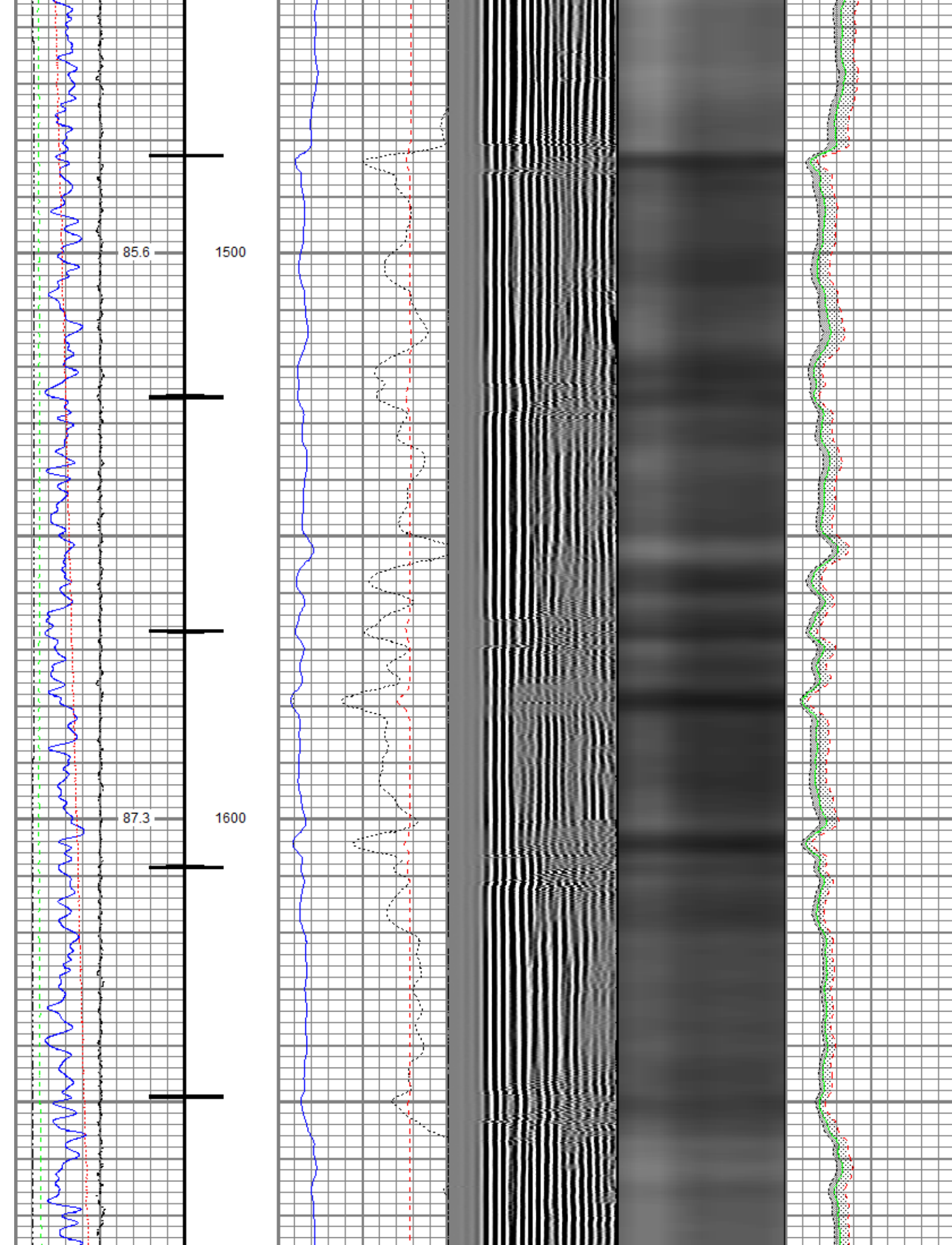


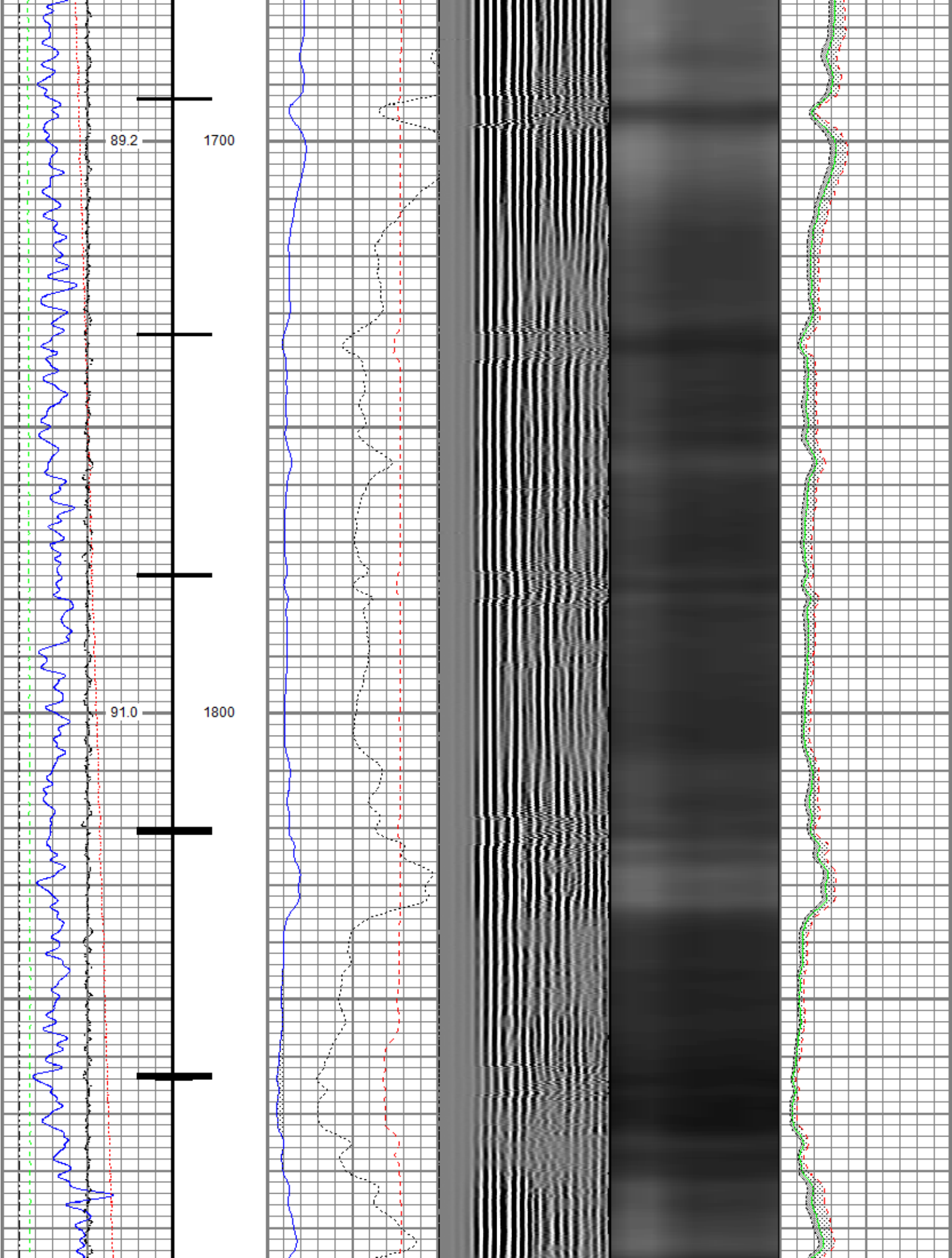


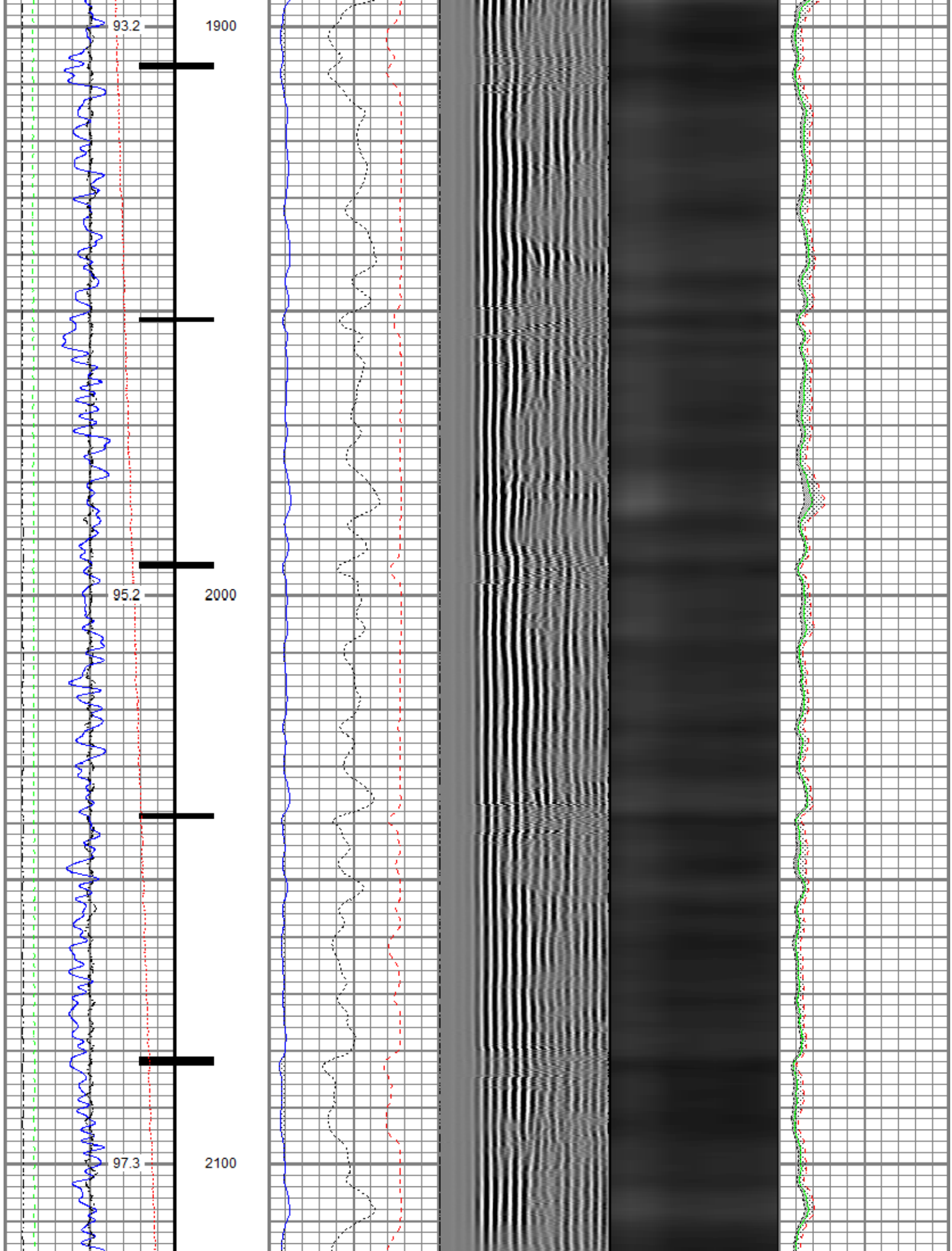


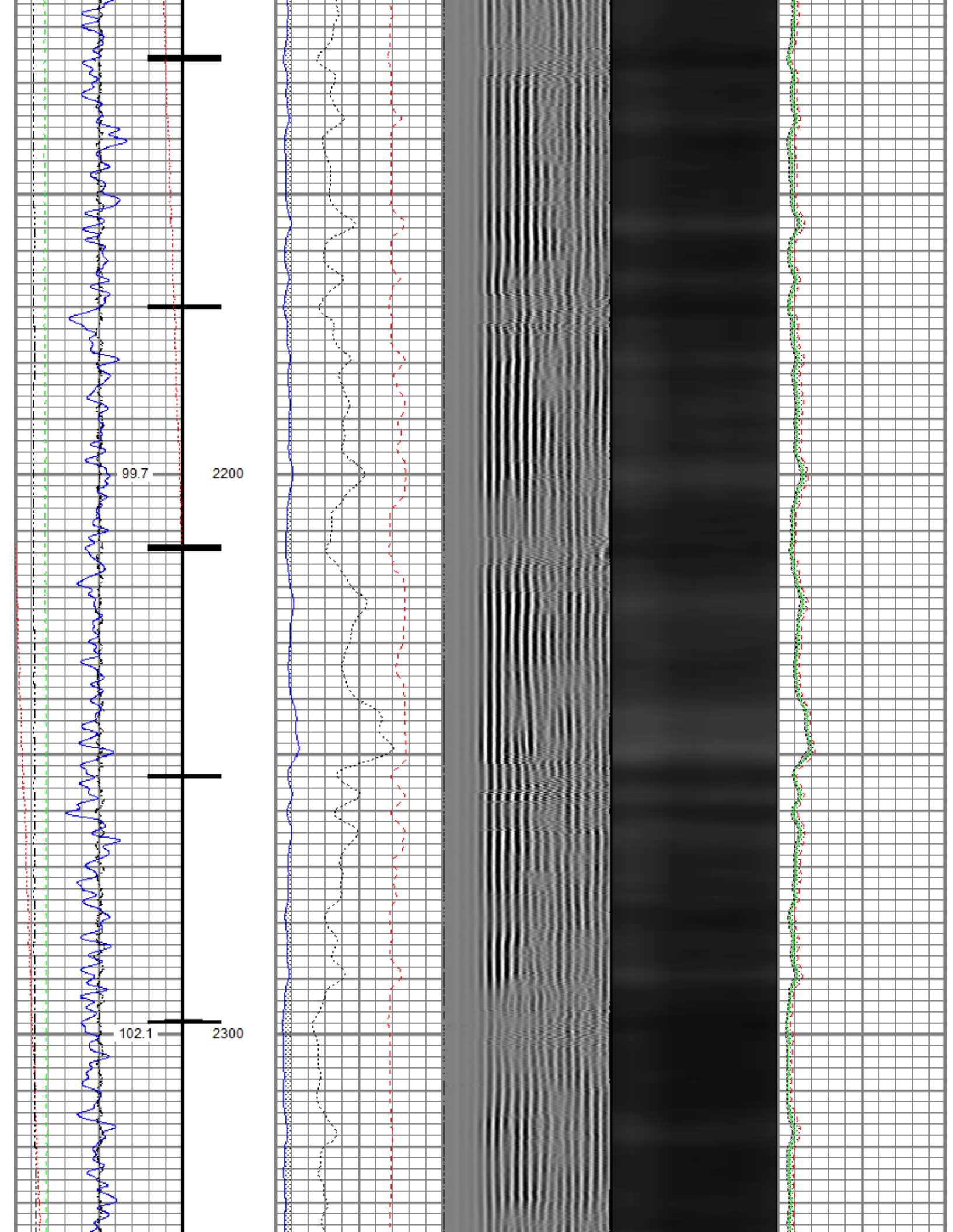


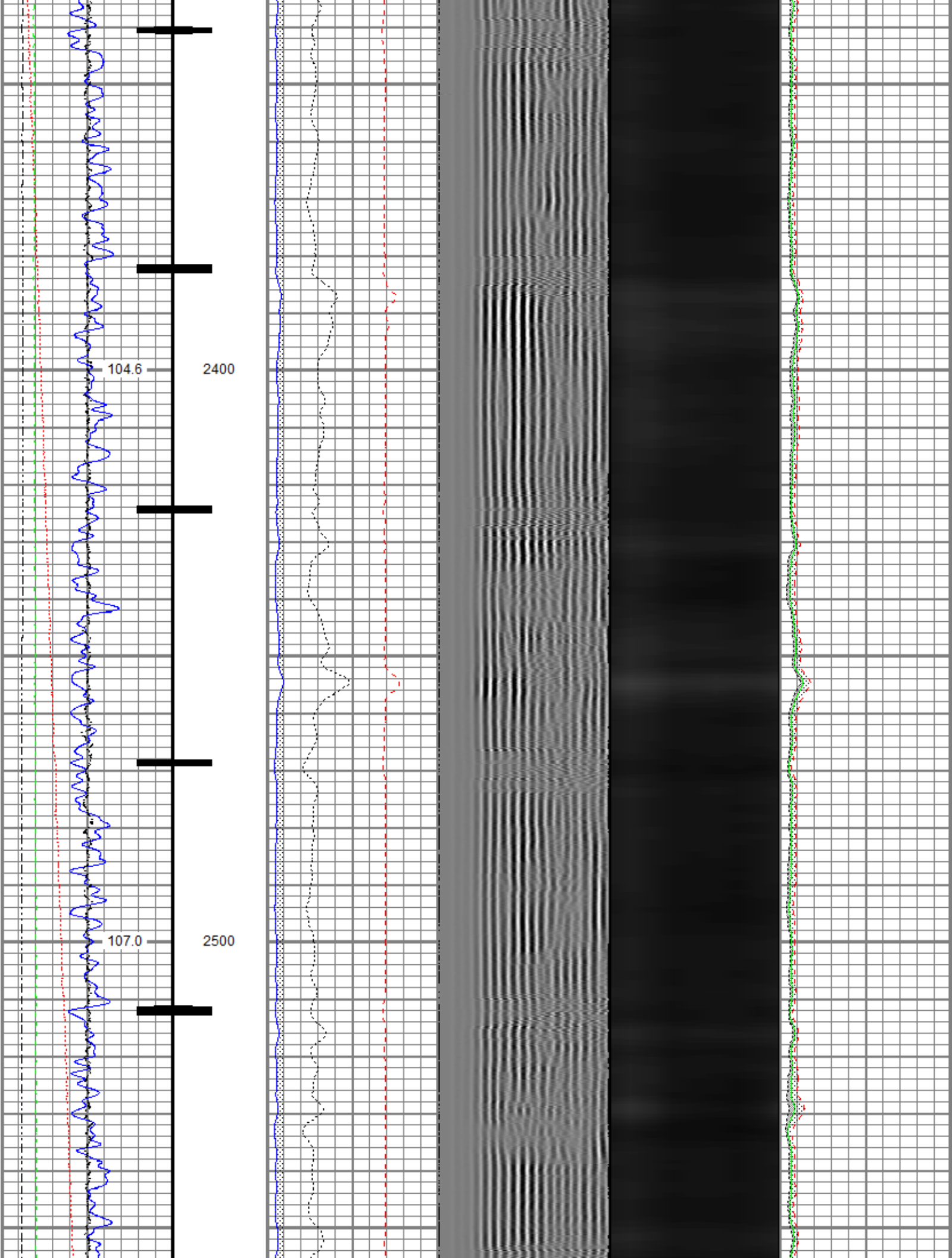


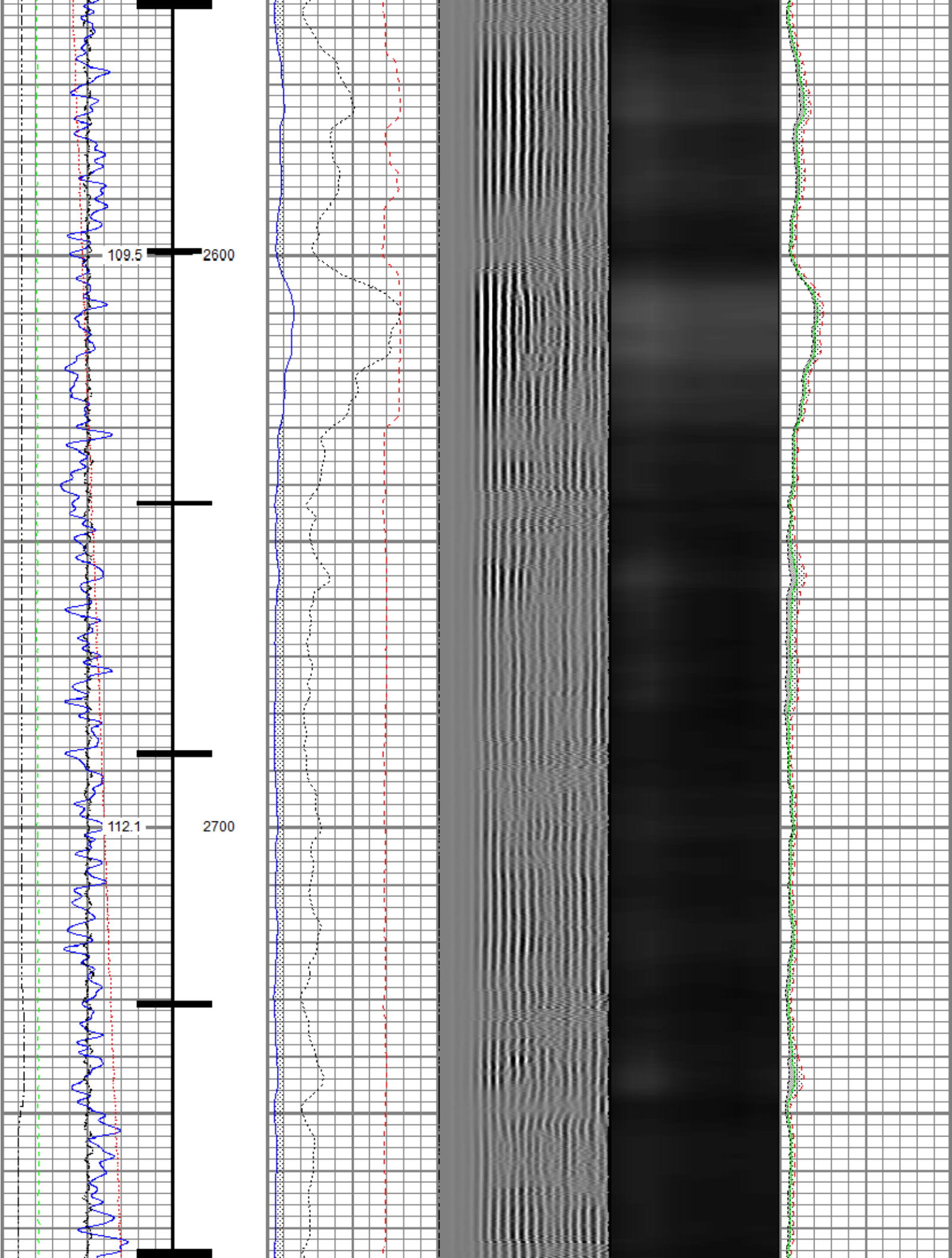


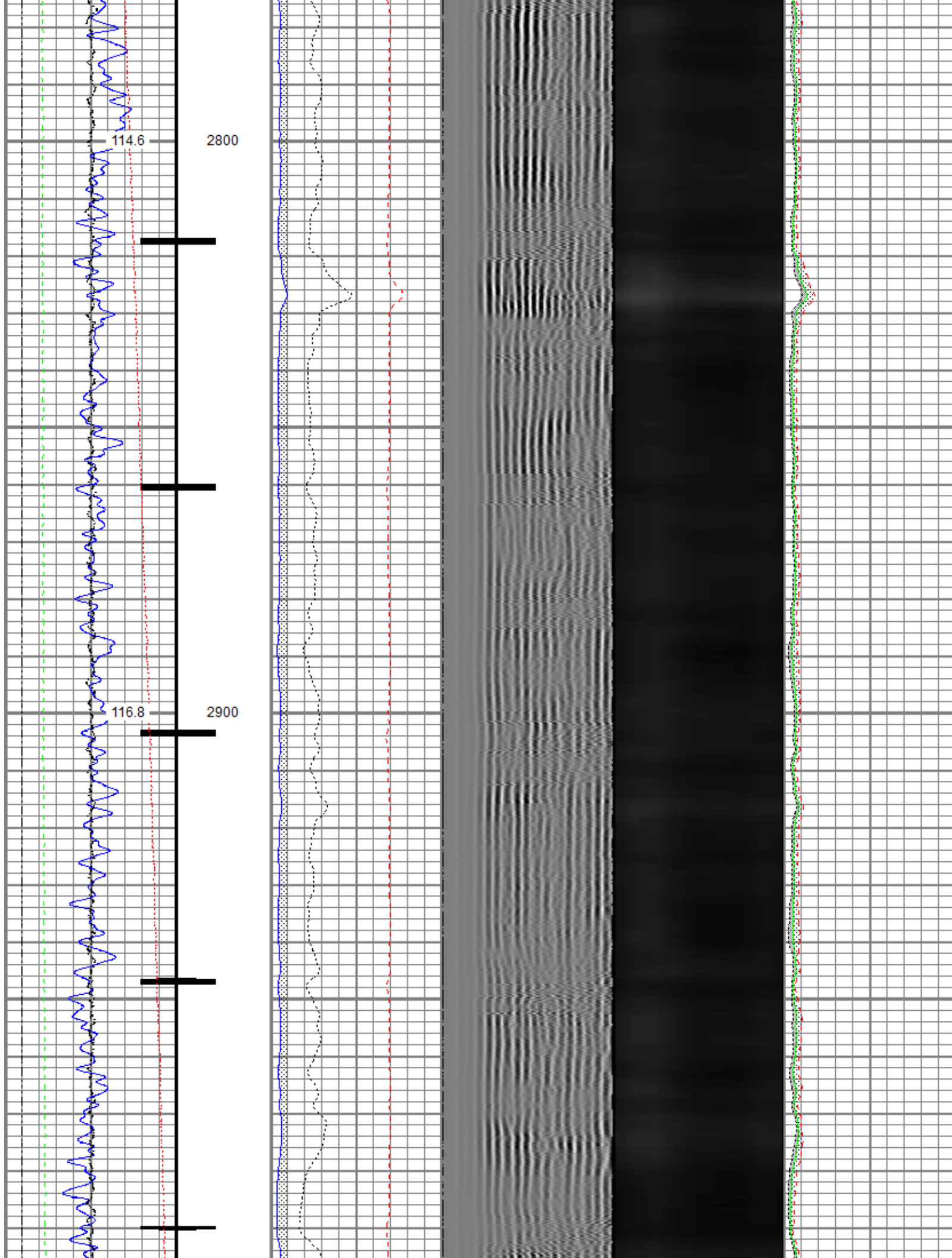


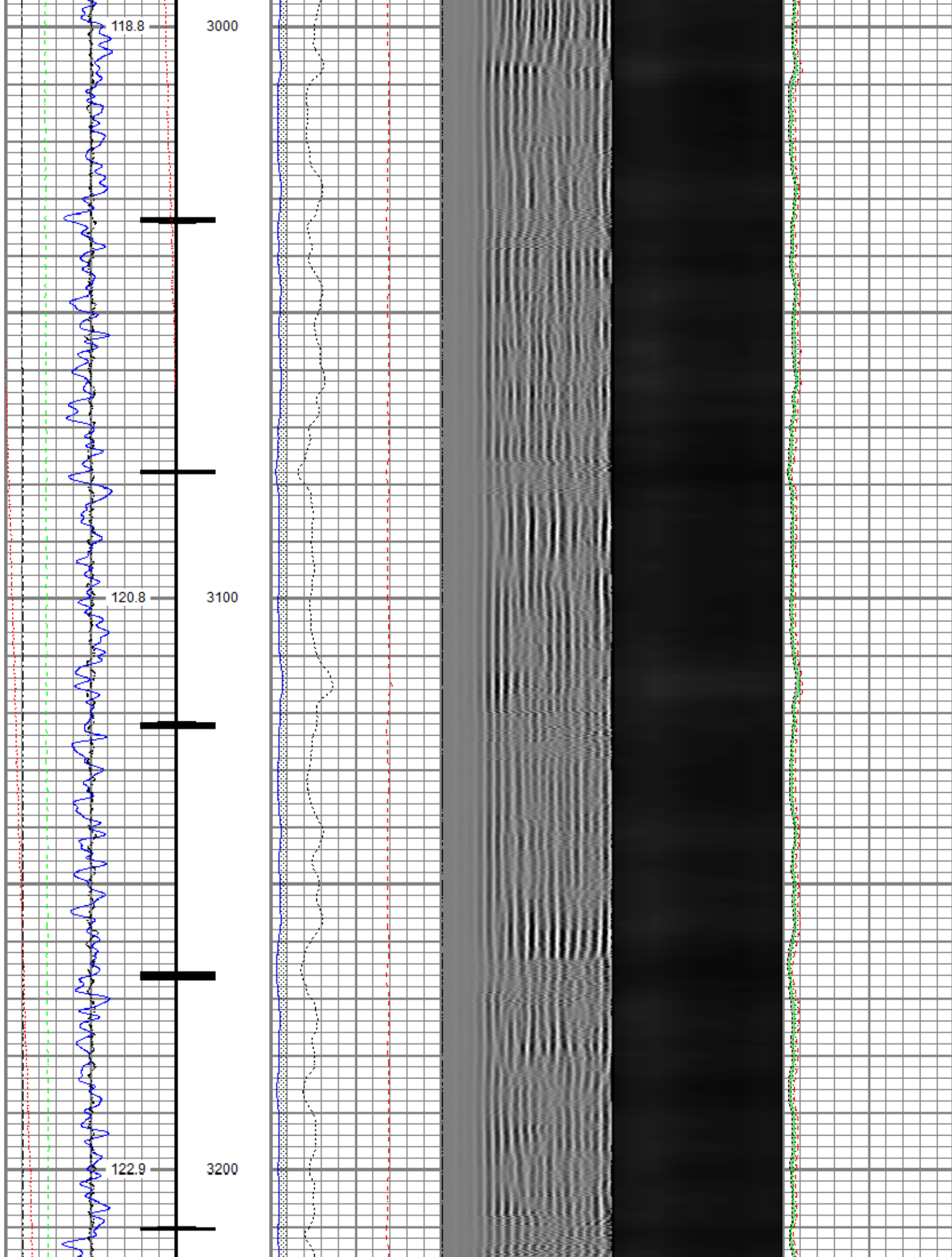


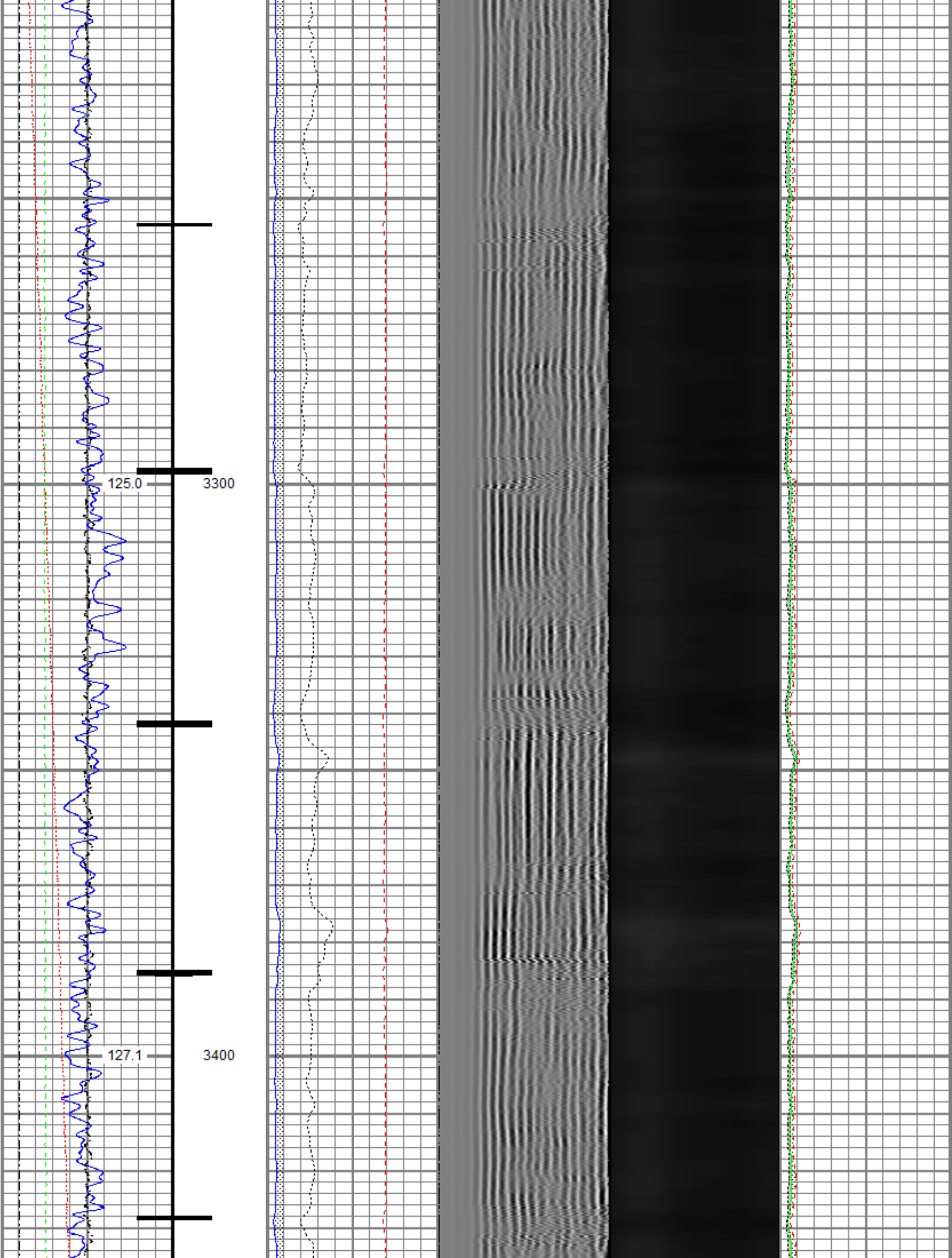


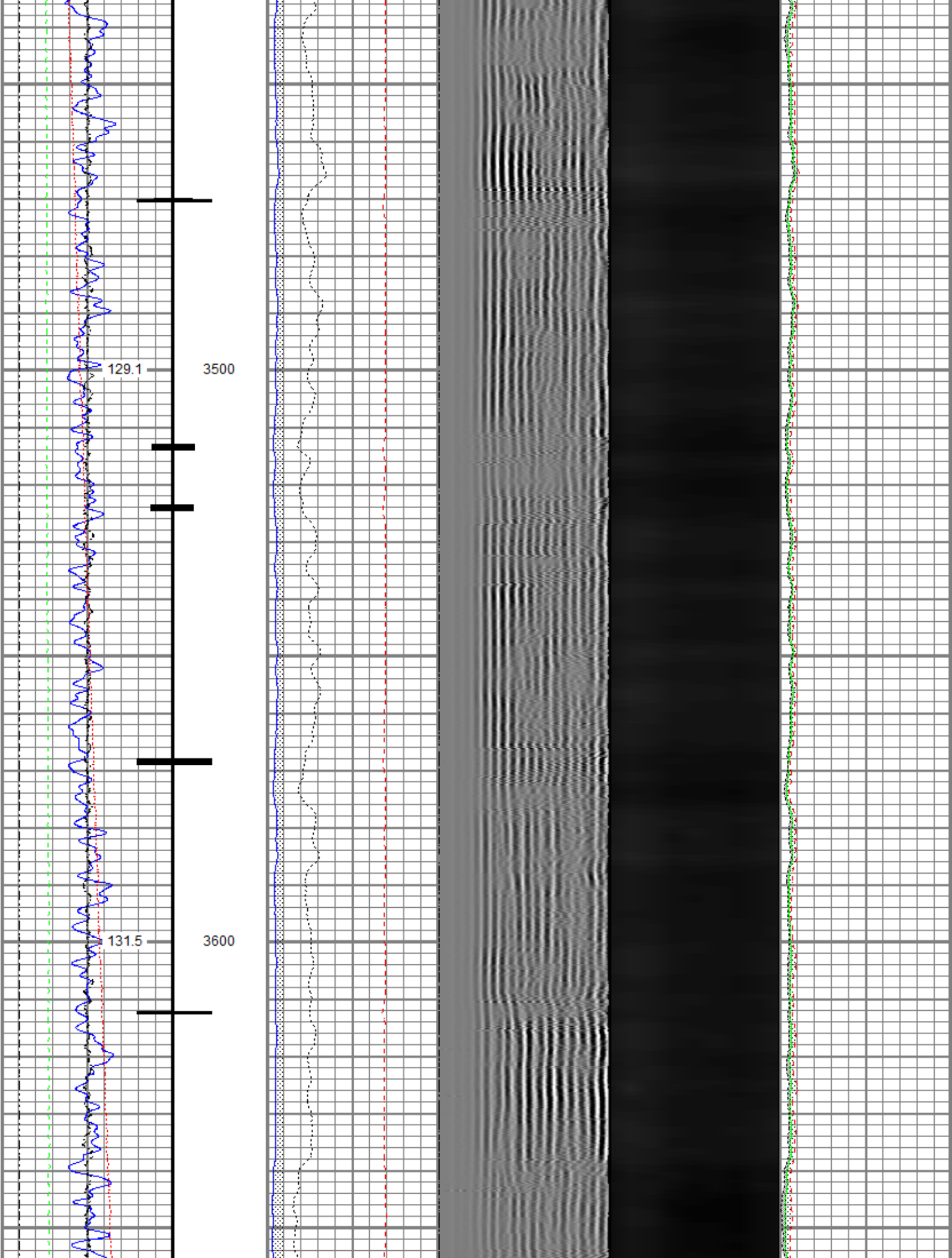


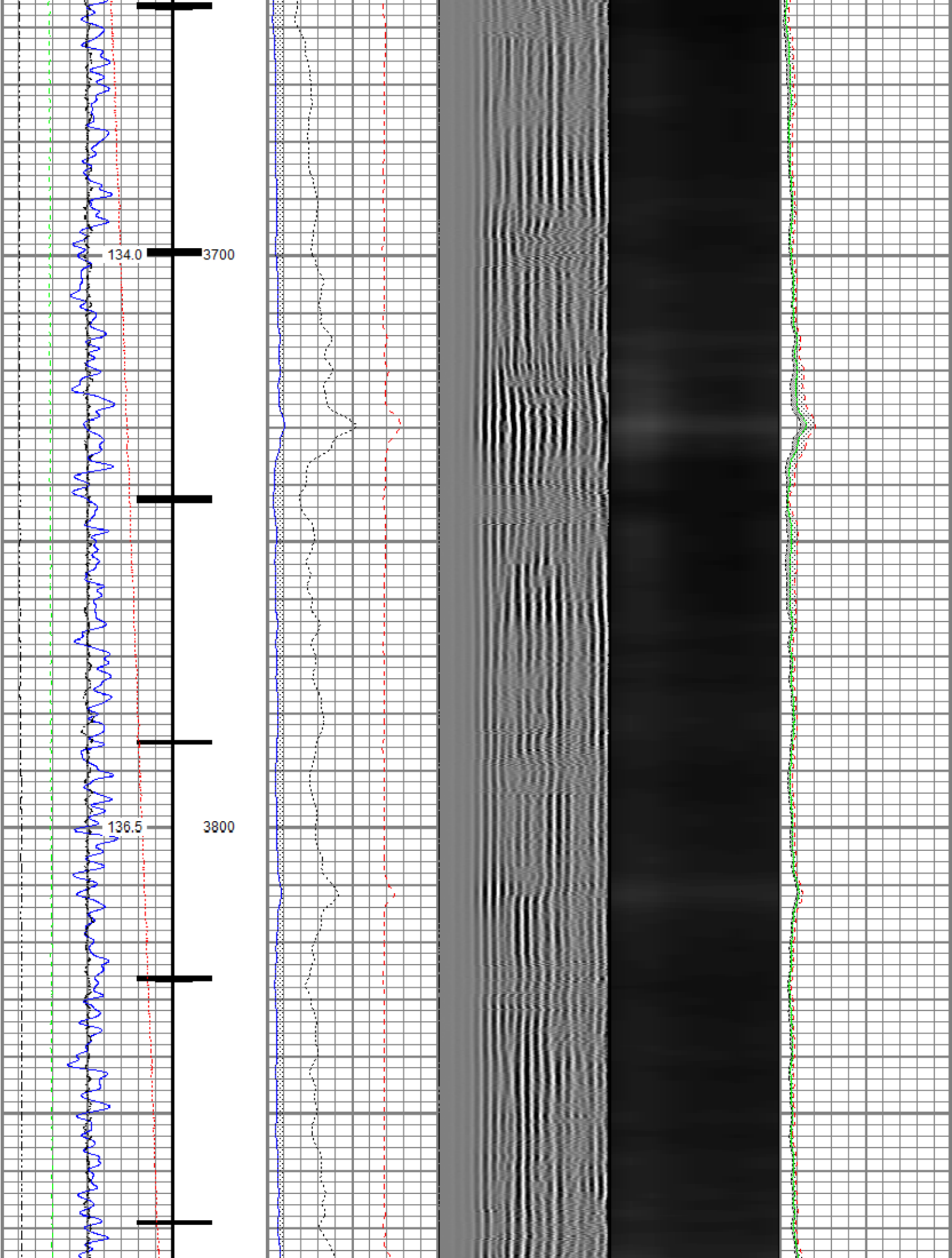


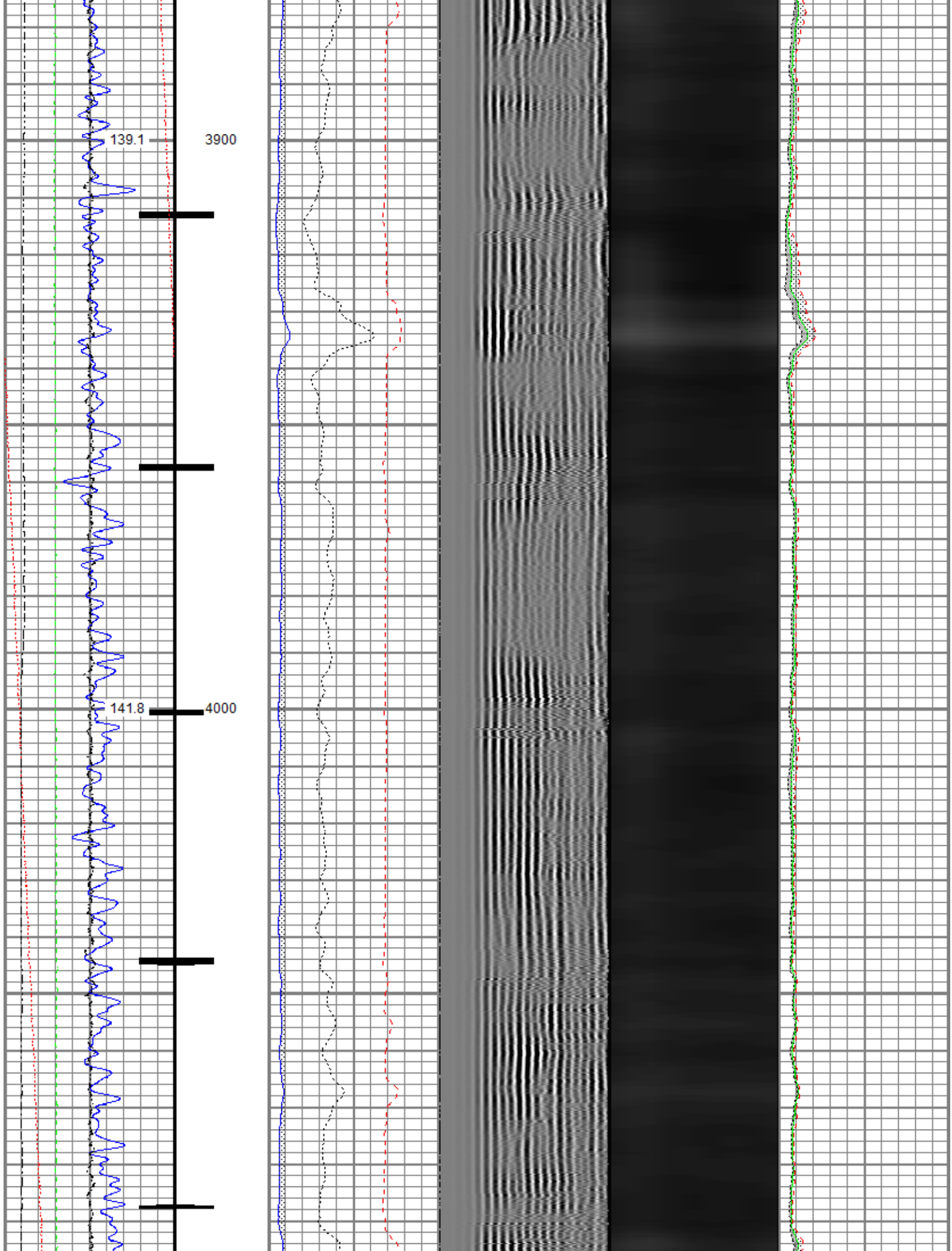


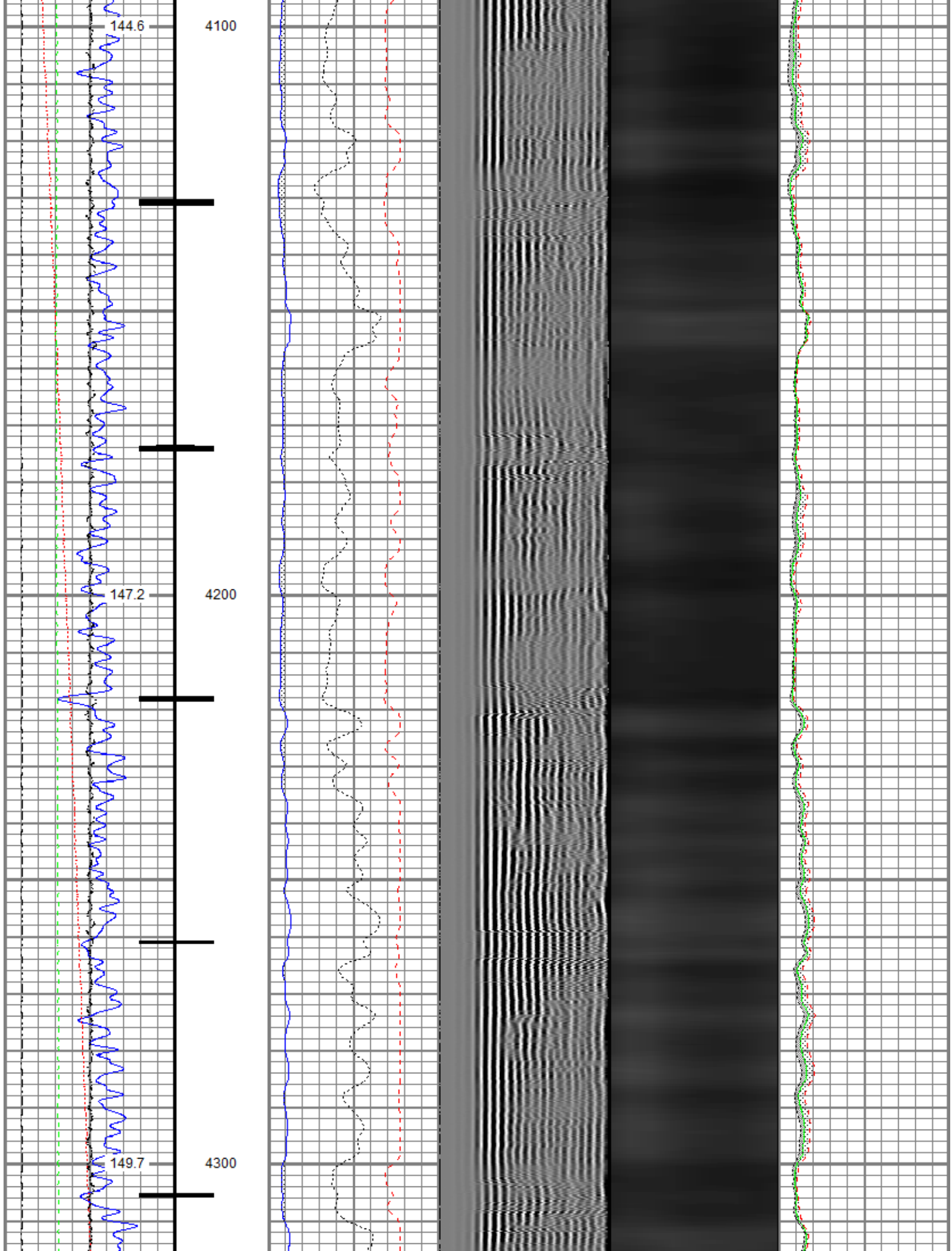


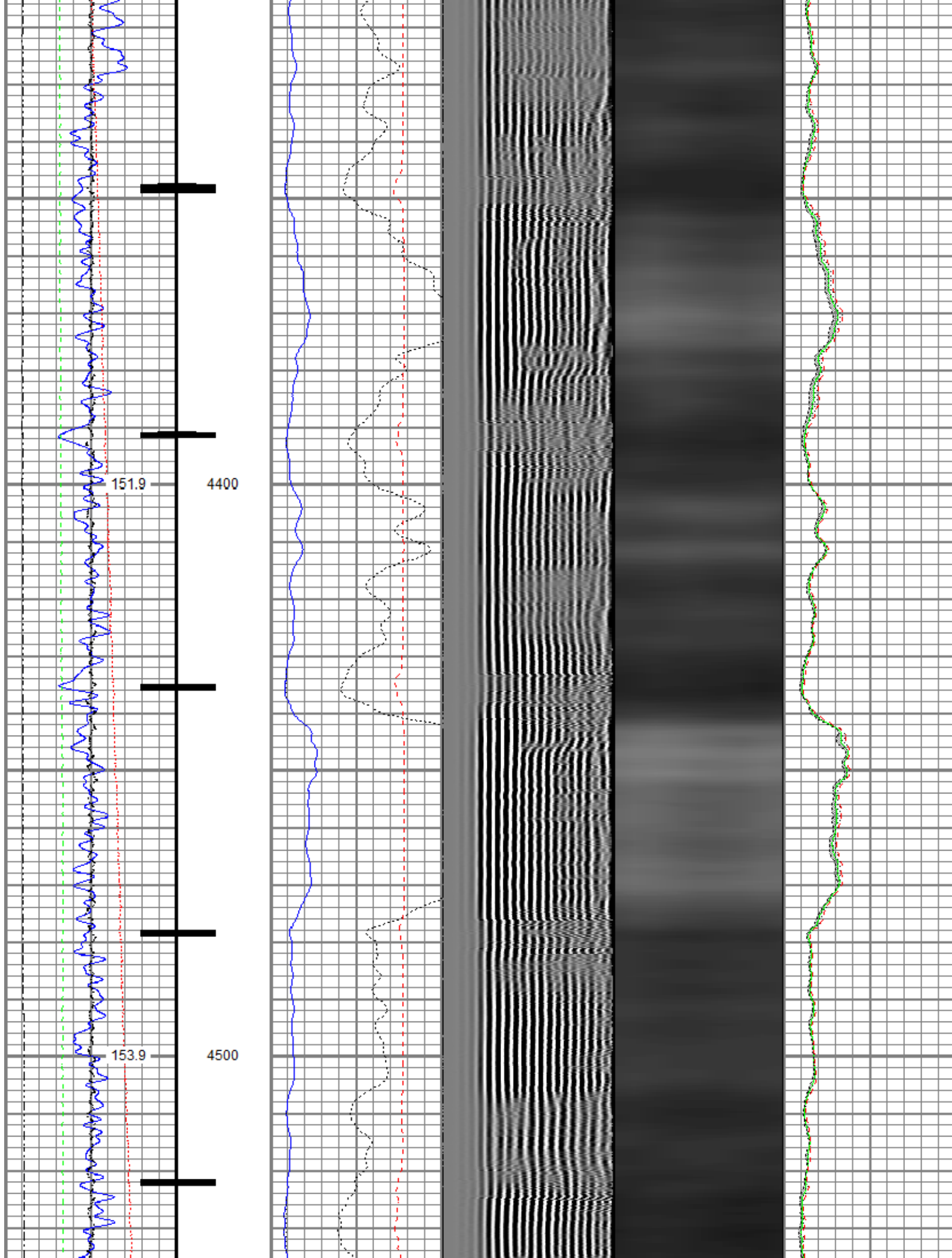


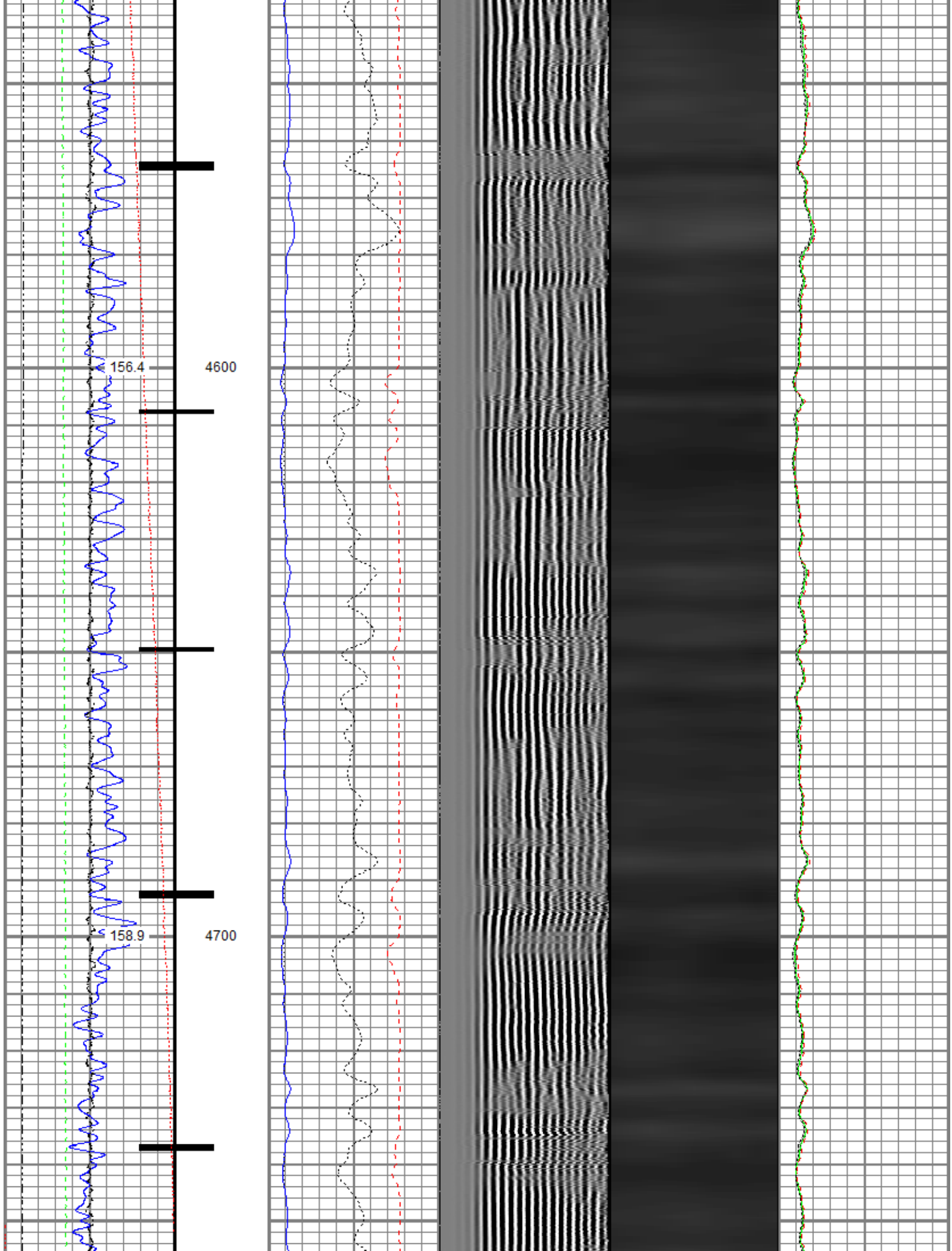


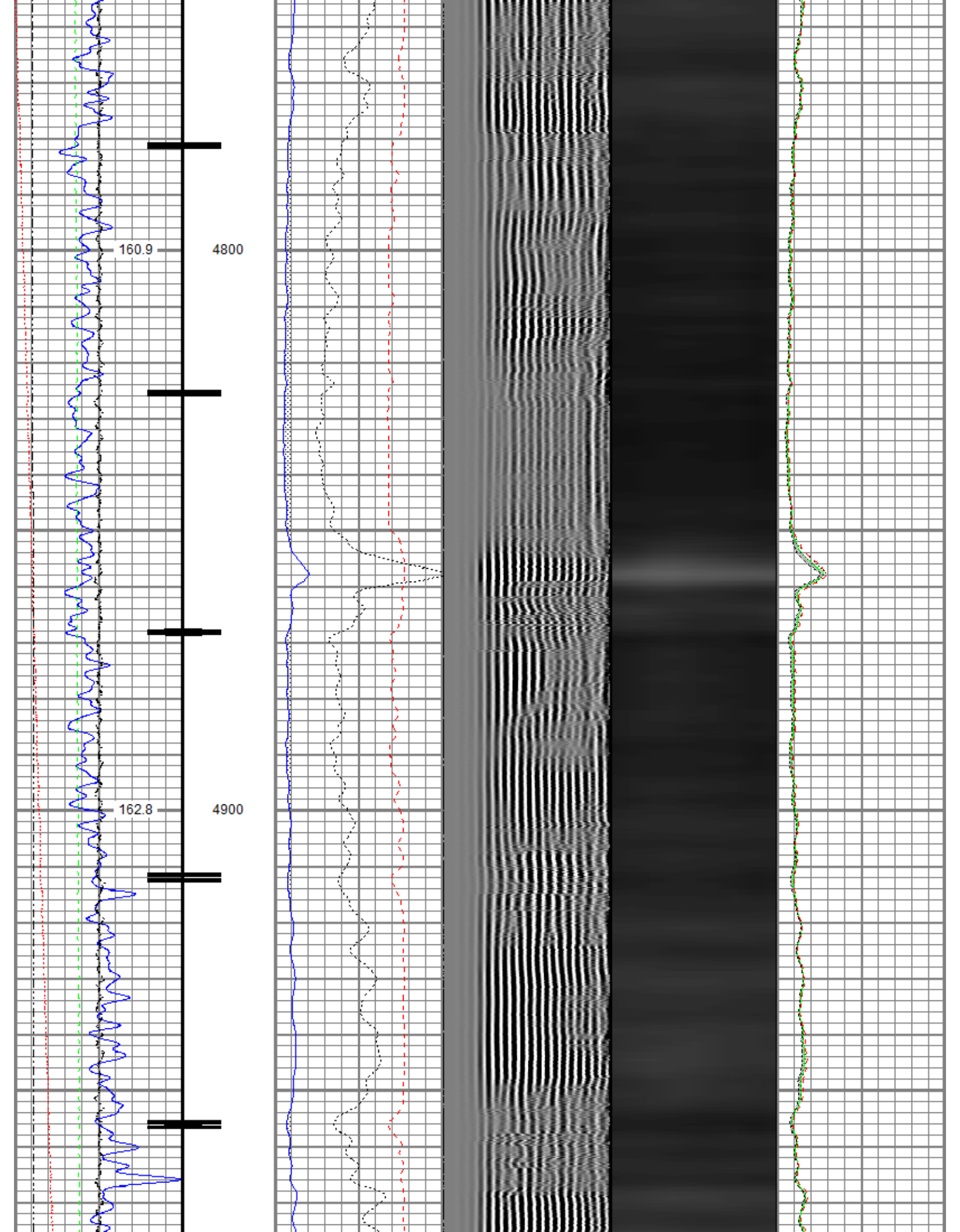


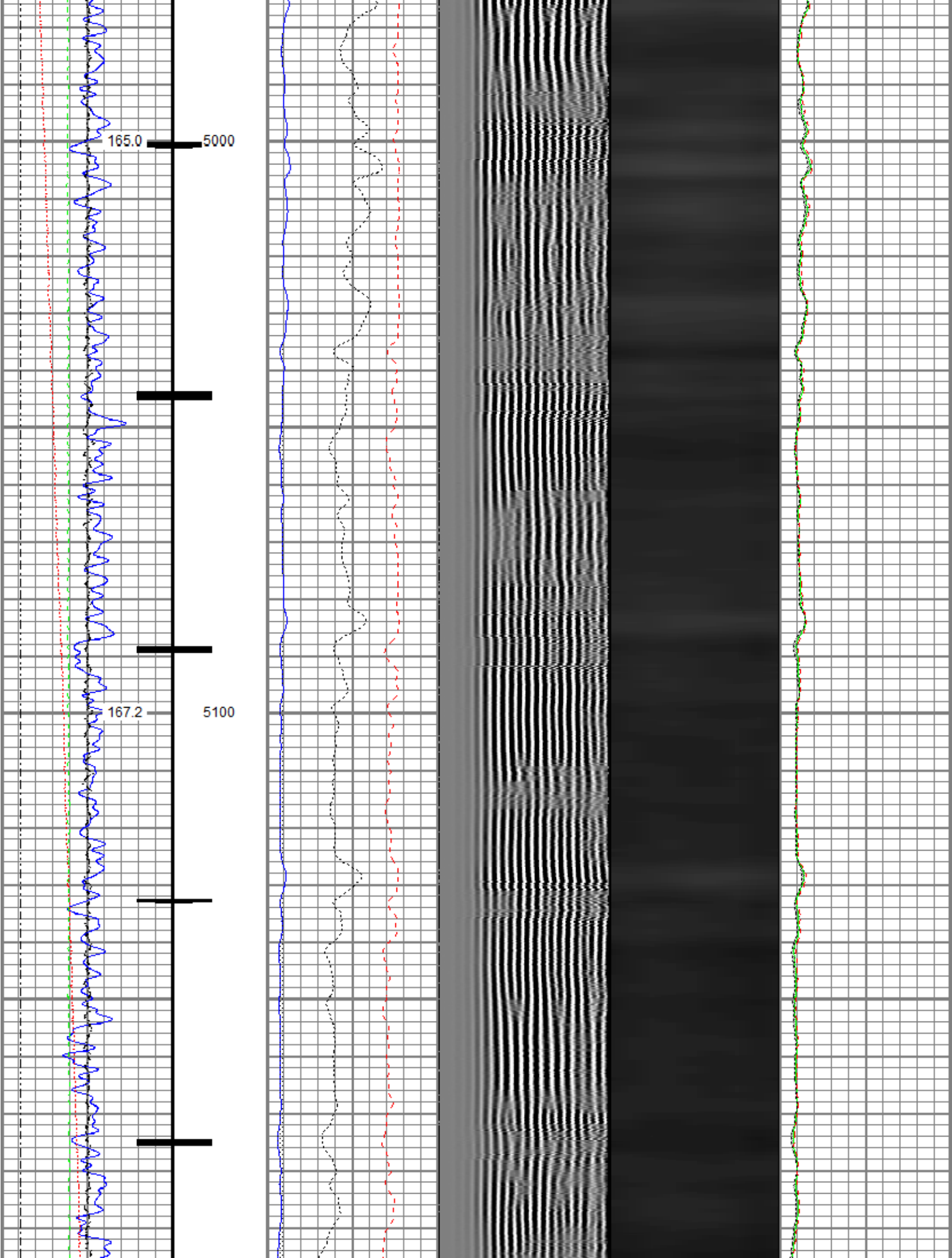












169.4

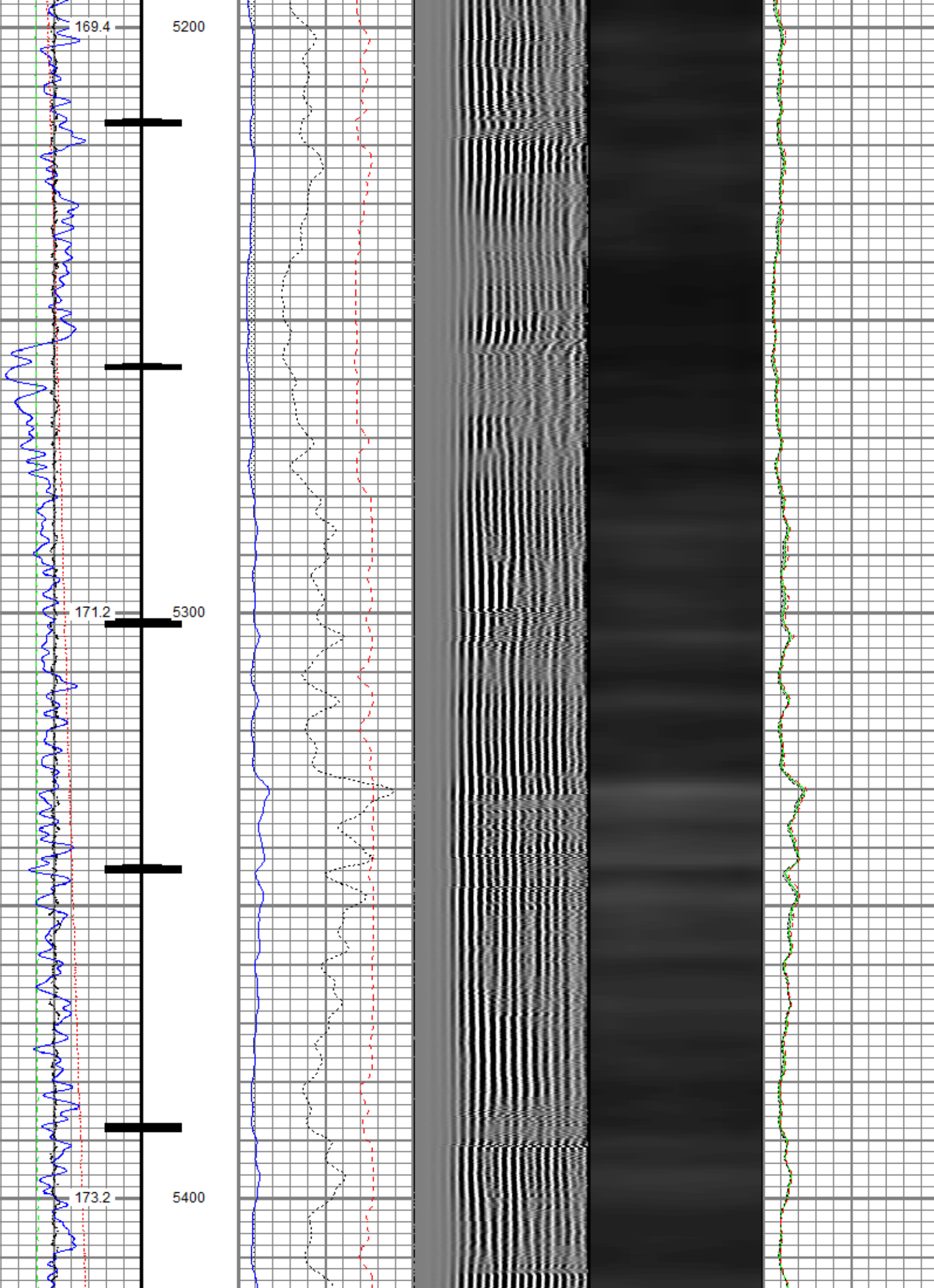
5200

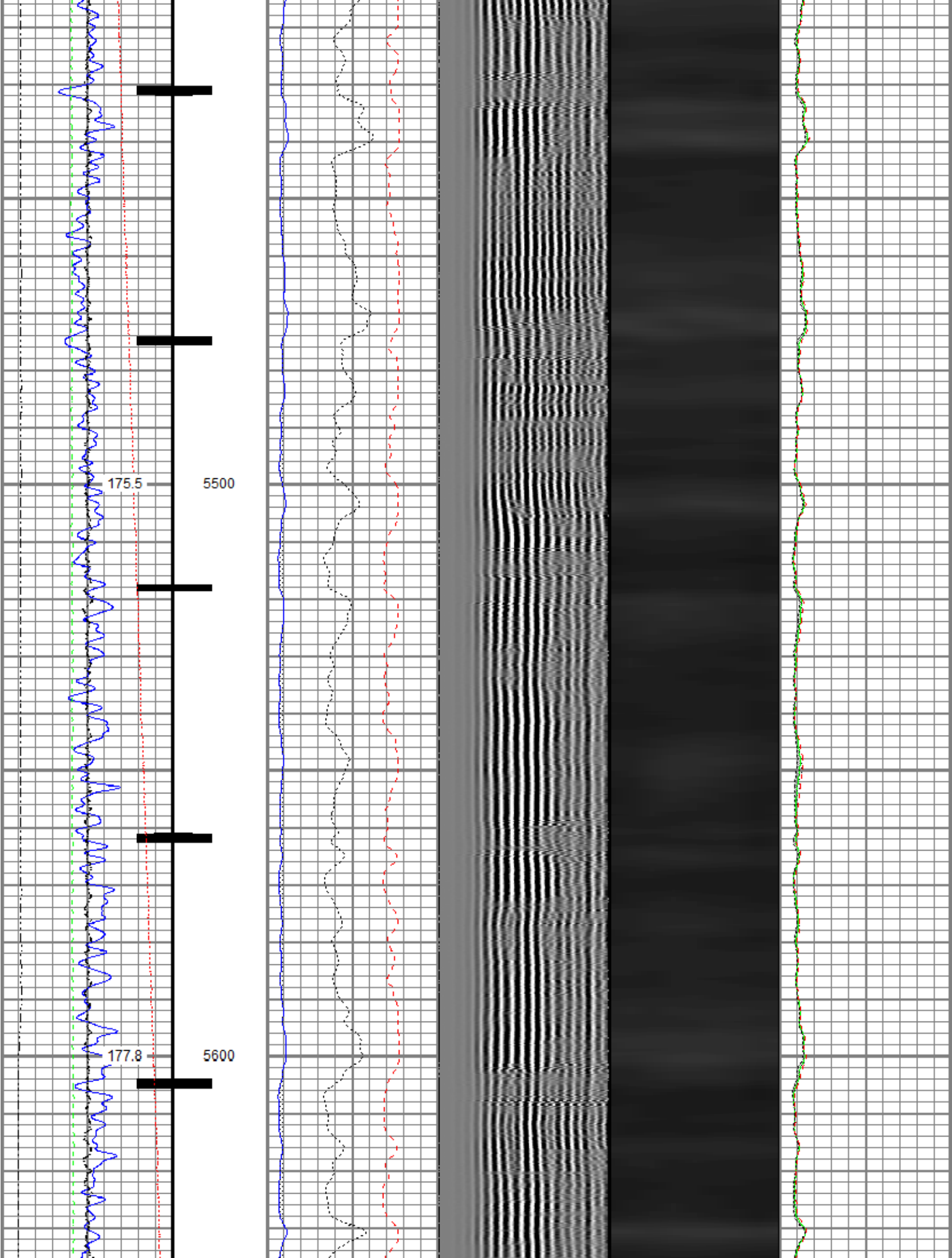
171.2

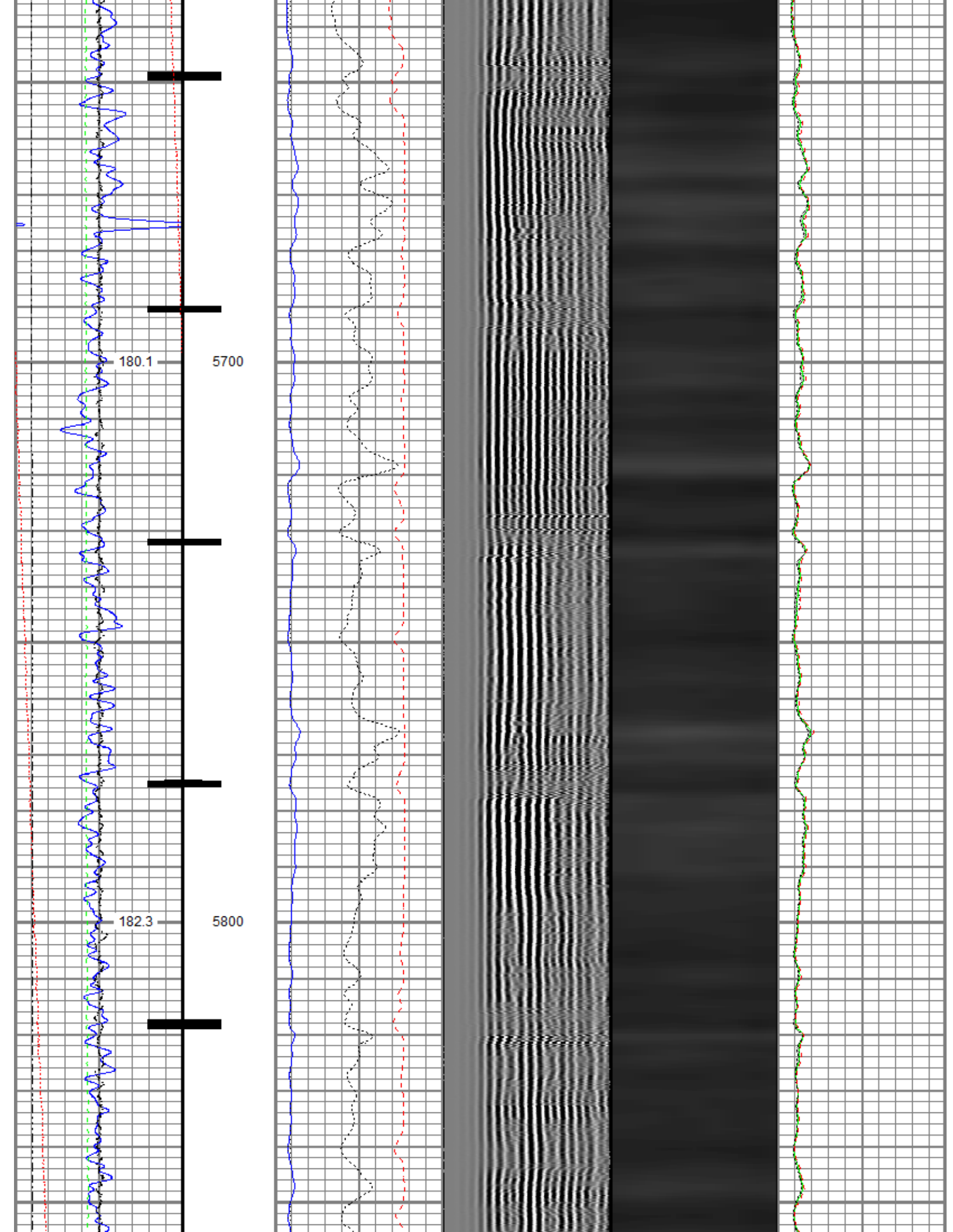
5300

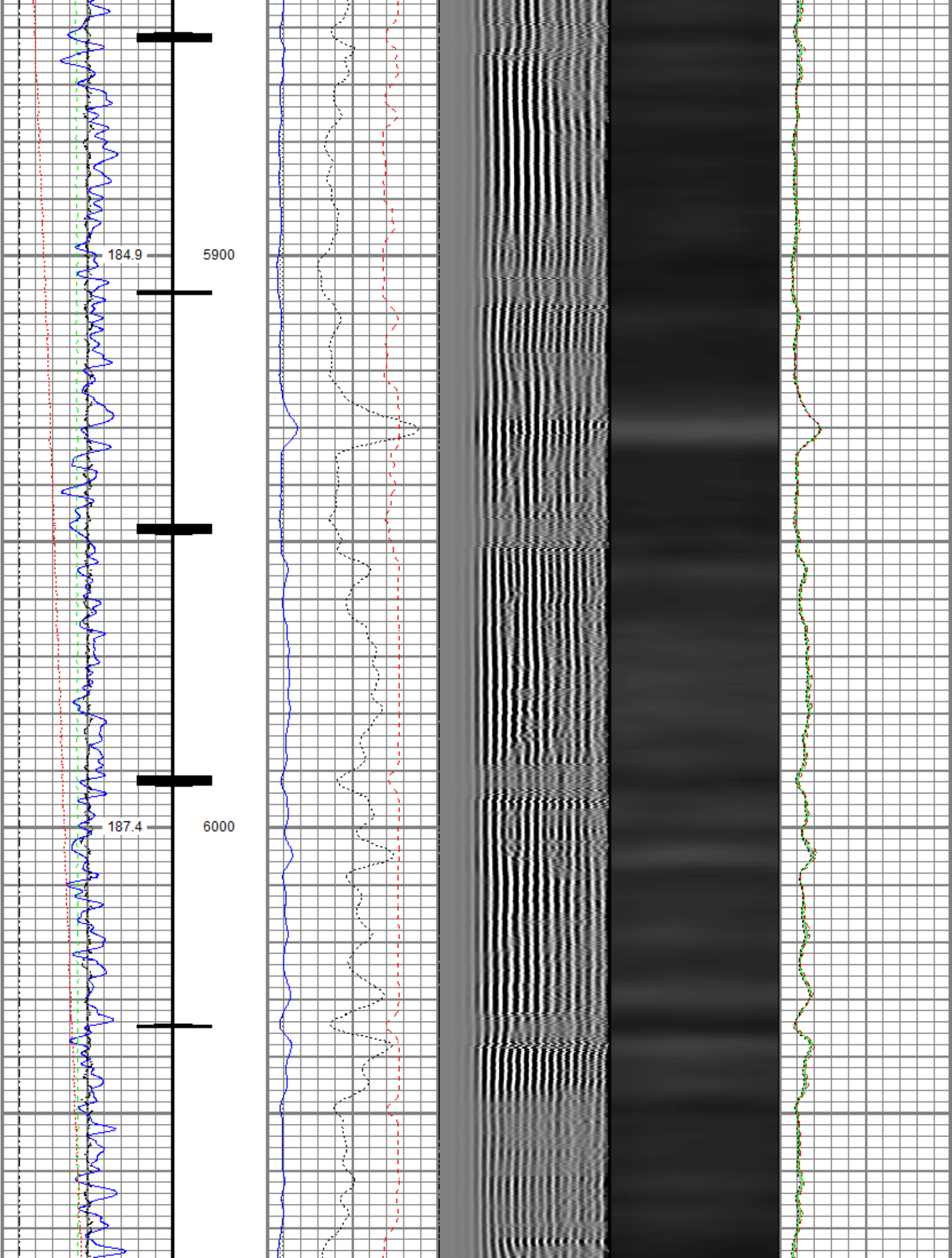
173.2

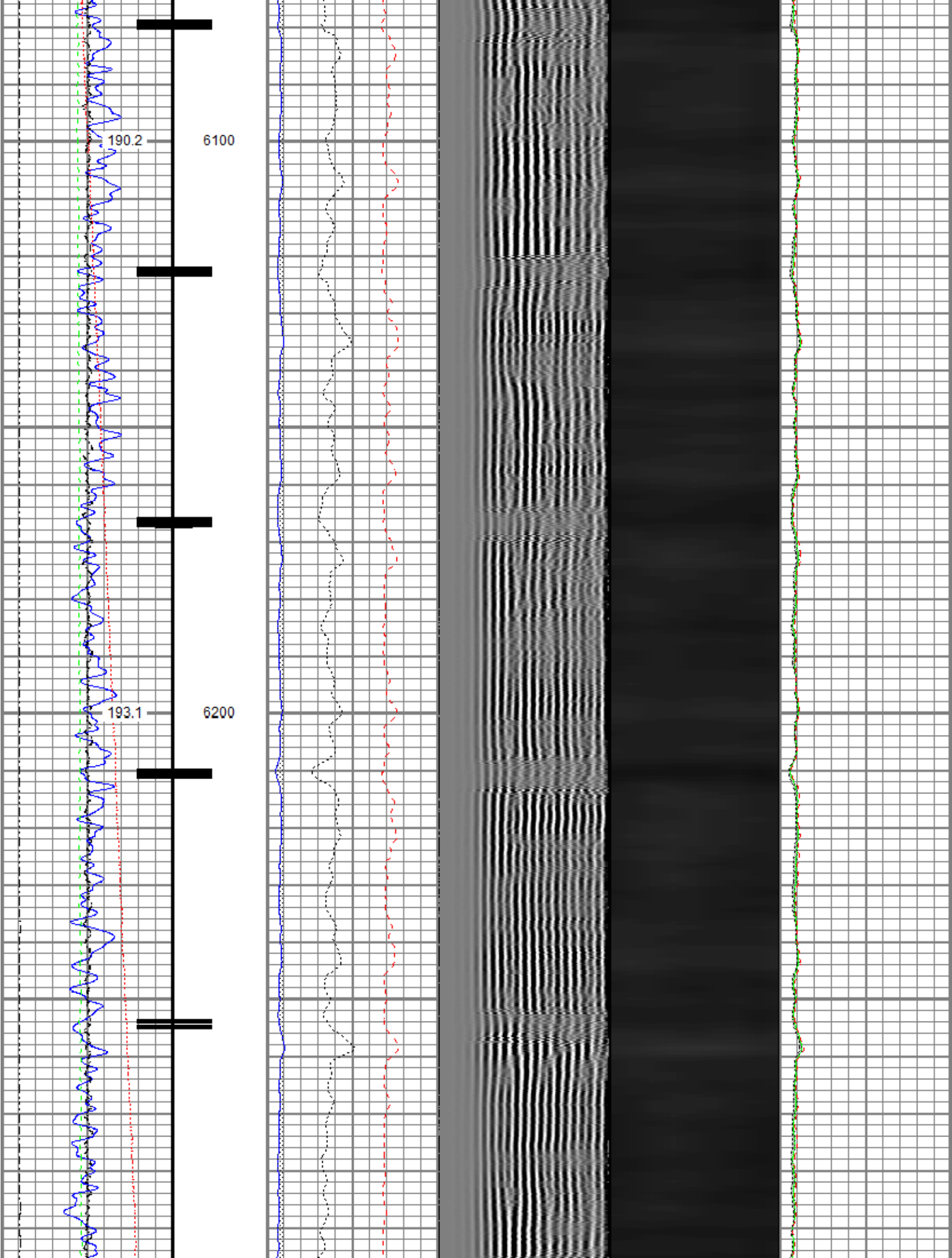
5400

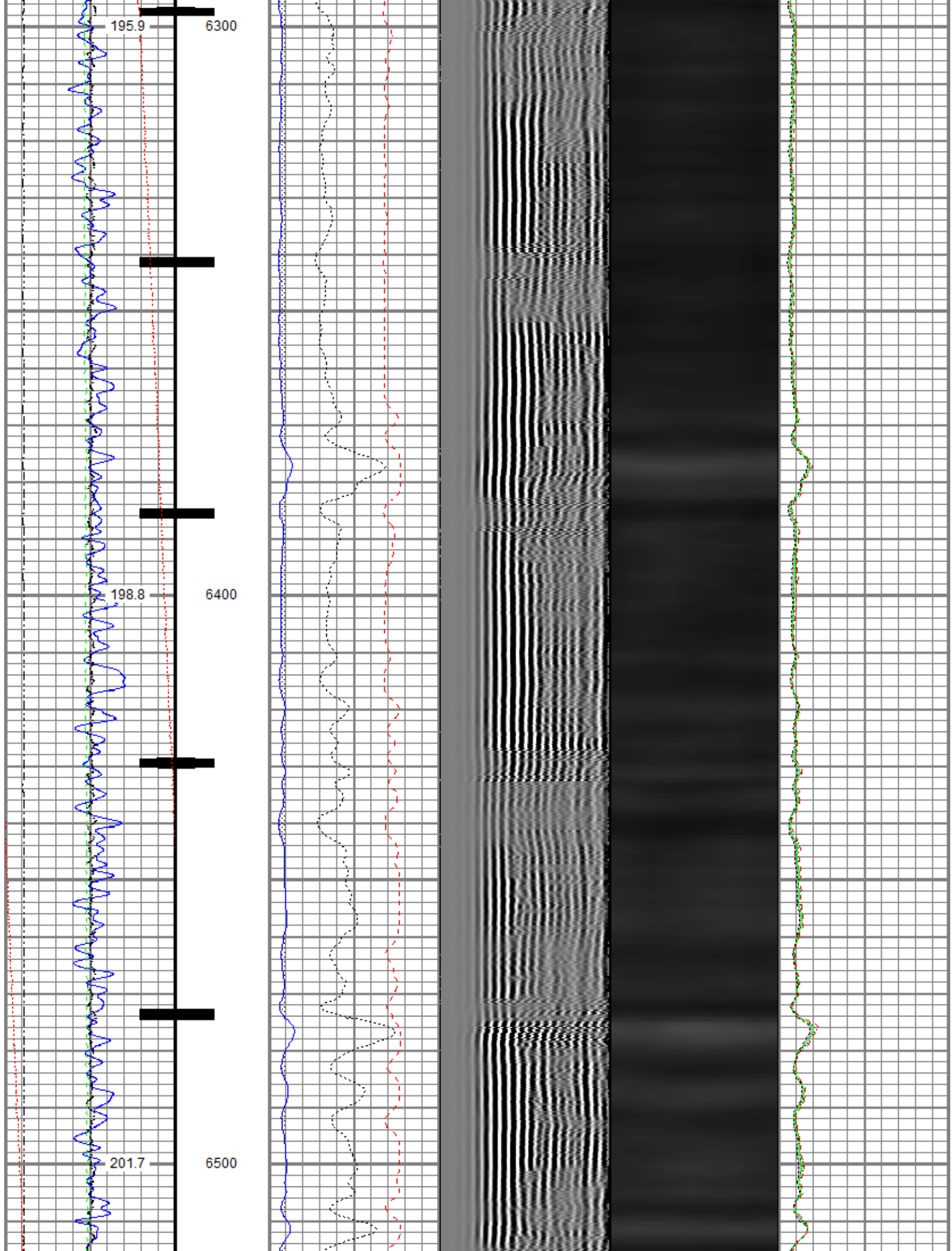


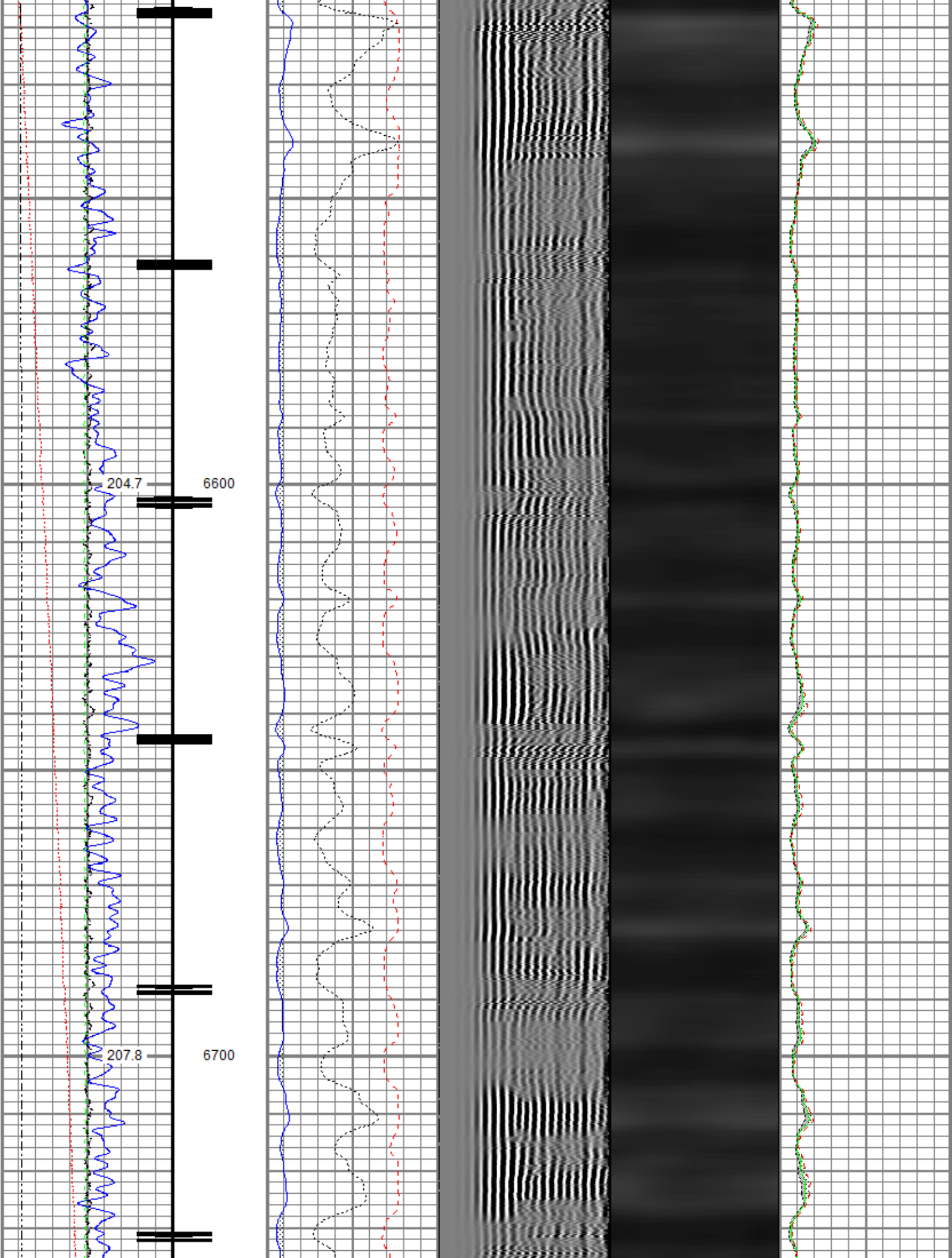


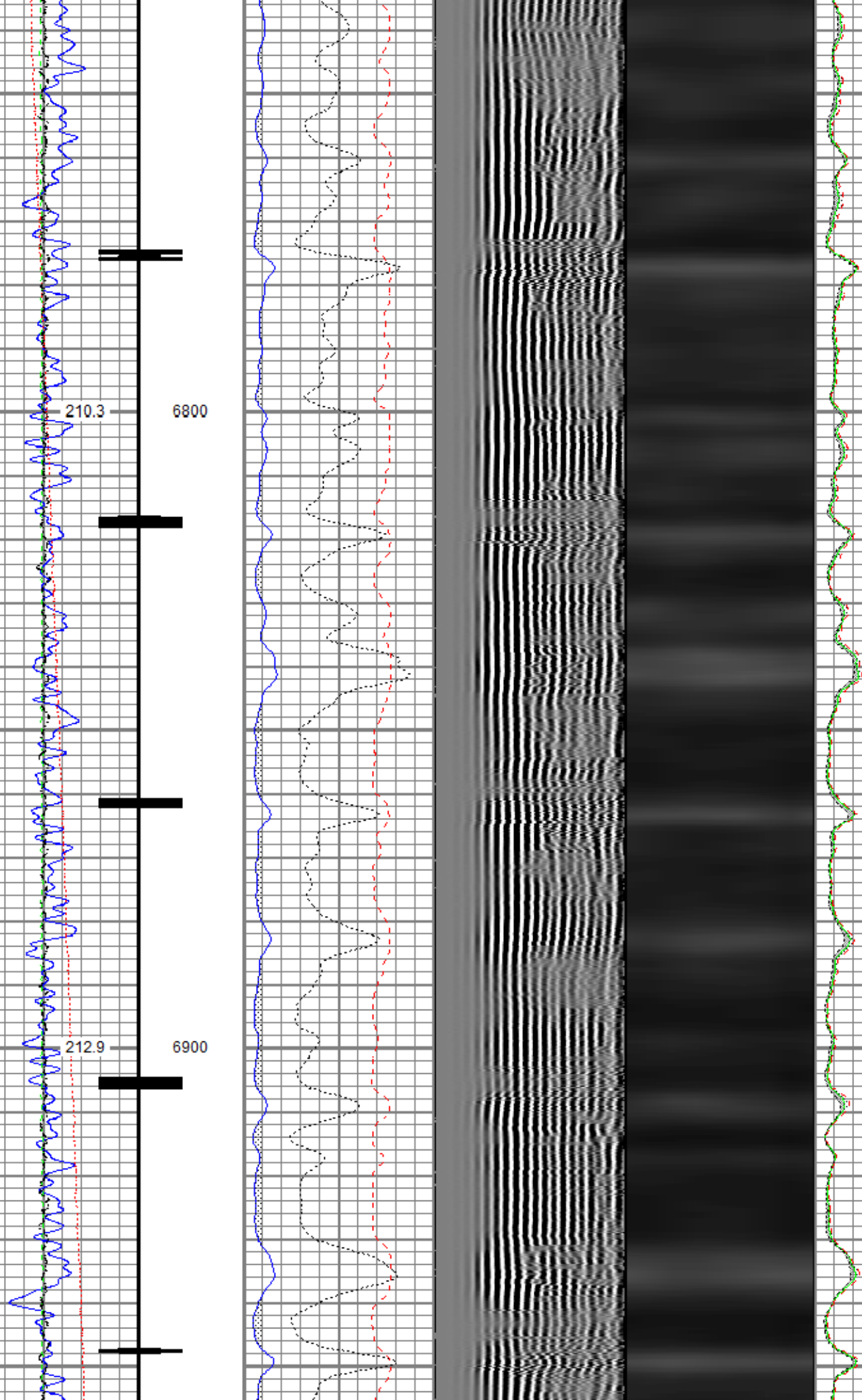


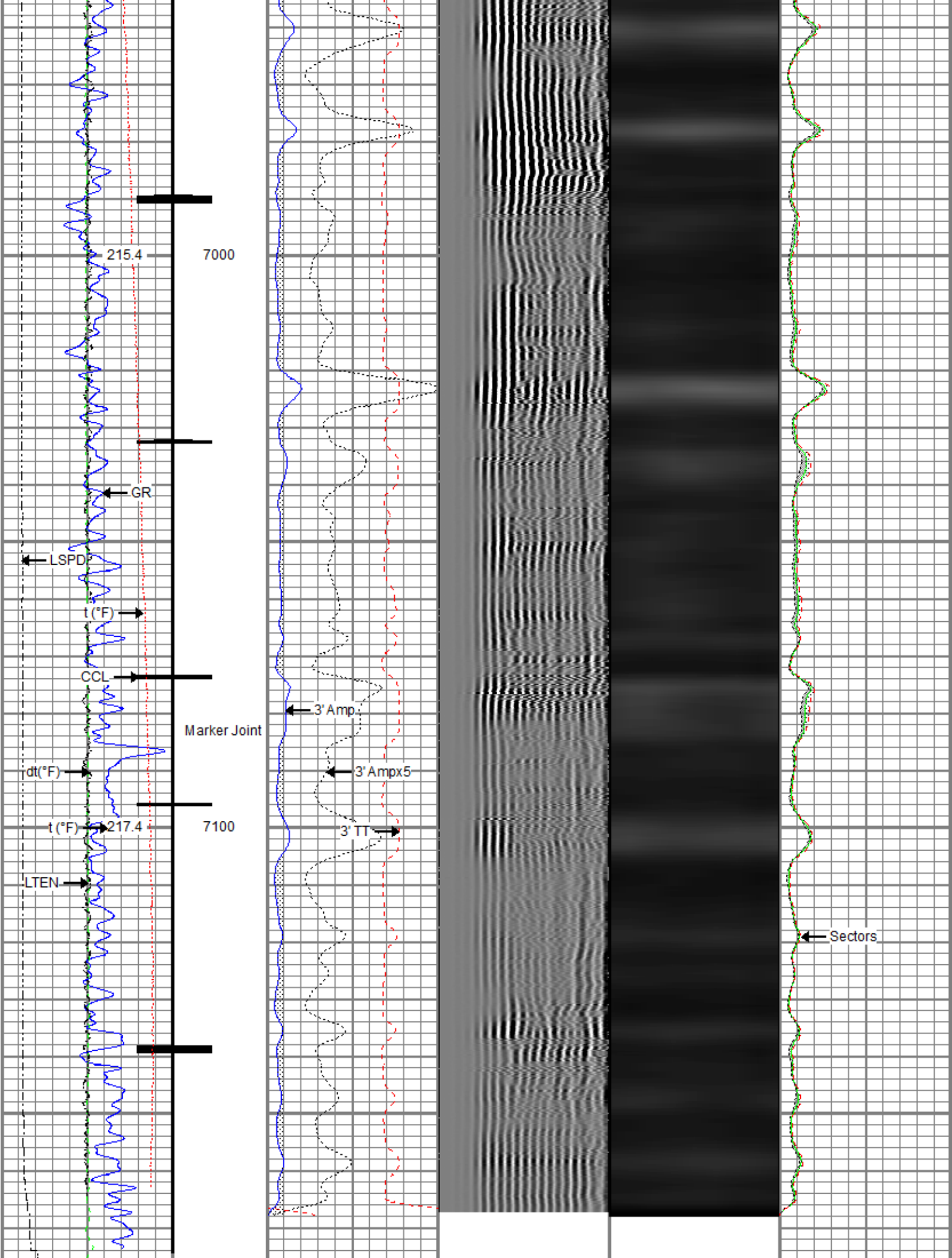












Gamma Ray	0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
(GAPI)	120	3' Amplitude x 5	200	1200			Minimum Amplitude	
Casing Collar Locator		(mV)	20			0		100
Temperature (degF)	20	3' Travel Time					Maximum Amplitude	
Line Speed		(usec)	150			0		100
(ft/min)	150					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

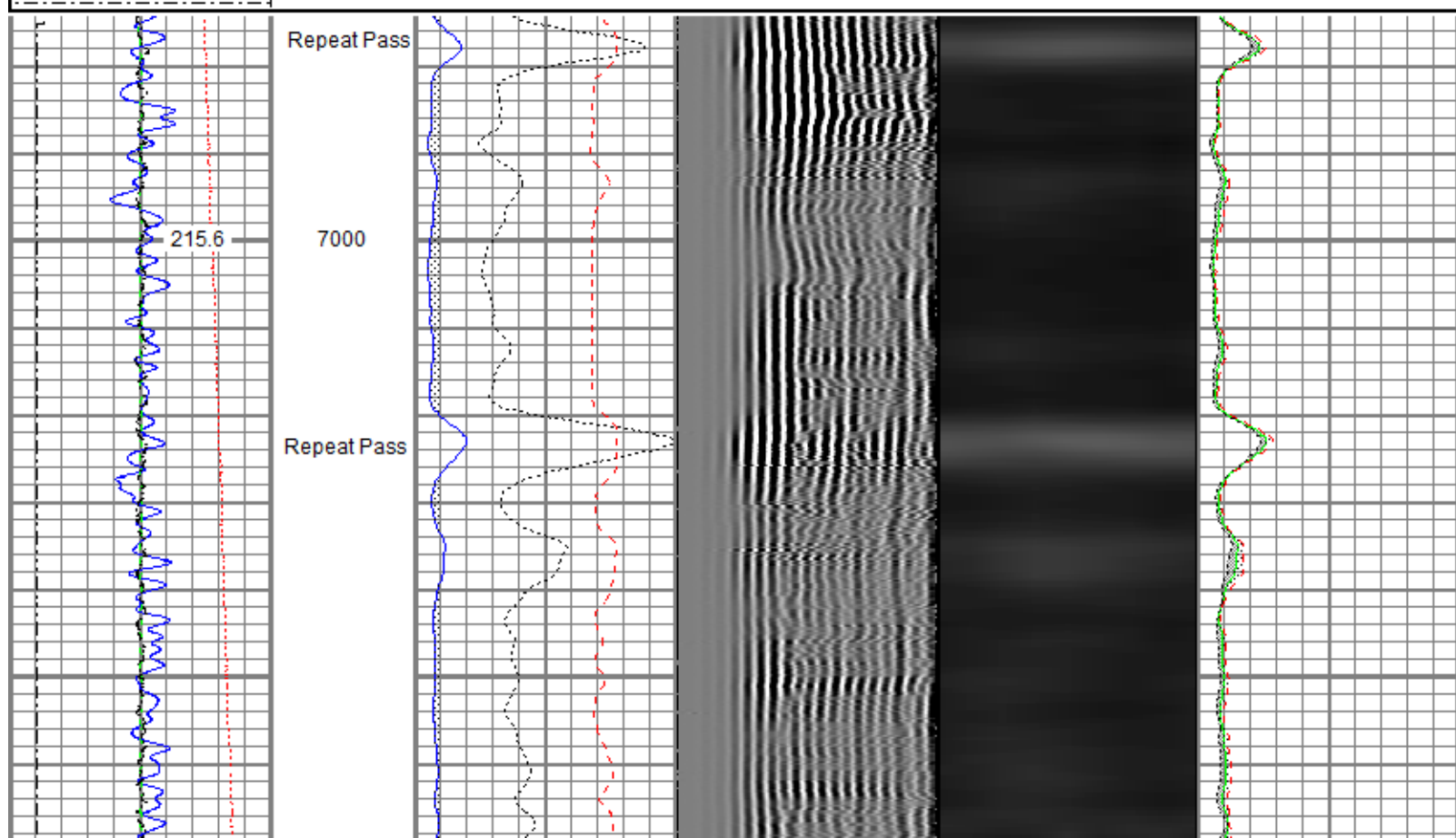


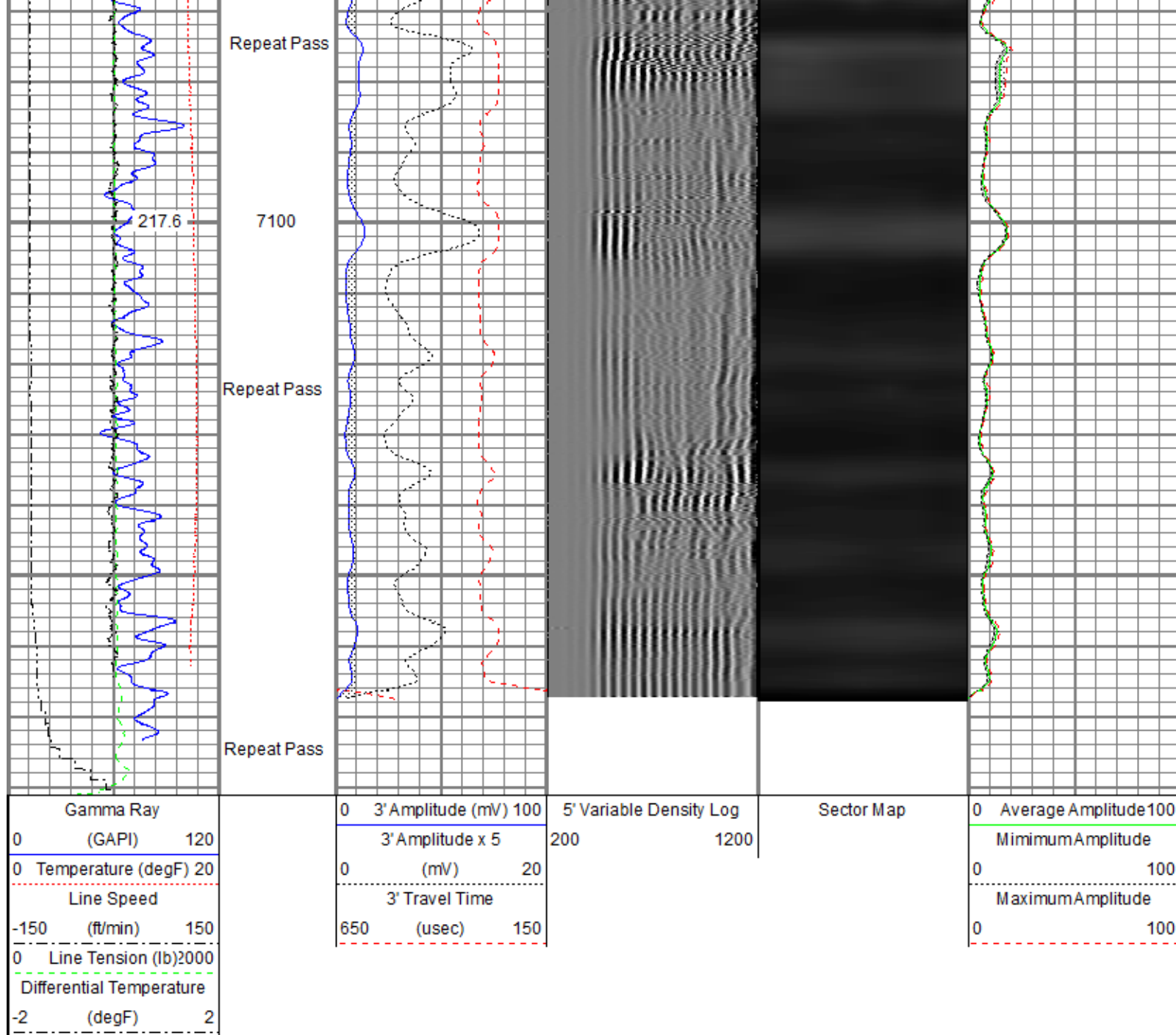
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

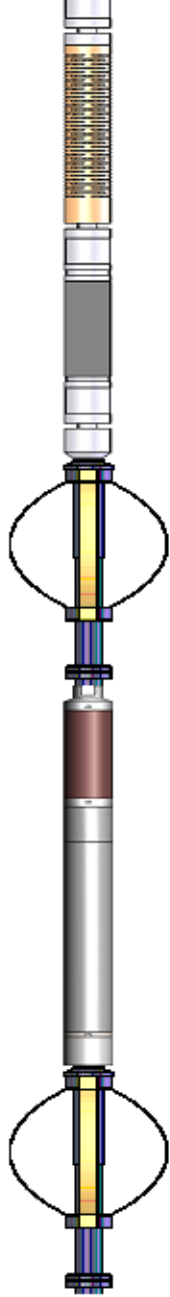
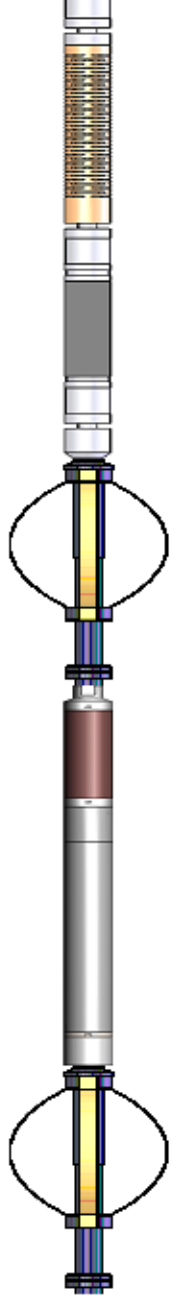
Database File anadarko\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18_2800
Dataset Pathname Repeat.2
Presentation Format ros_radri
Dataset Creation Wed Nov 14 14:17:57 2018
Charted by Depth in Feet scaled 1:240

Gamma Ray	0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
(GAPI)	120	3' Amplitude x 5	200	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)
TEMP	17.04		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			Probe CENT-2750	2.88	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer			

WVFS8	14.81		Probe Radii-2750 RBT (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00	
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						
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 (FW1810-044) 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: 0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18_2800 psi.db: field/well/run1/Main.1 Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in							

Calibration Report		
Database File	c:\programdata\warrior\data\anadarko\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18\0512347103_anadarko_cowboy 21-3hz_rbl_11-12-18	
Dataset Pathname	Main.1	
Dataset Creation	Wed Nov 14 14:10:35 2018	
Gamma Ray Calibration Report		
Serial Number:	FW1810-044	
Tool Model:	2750 6PB	
Performed:	Tue Oct 30 12:04:00 2018	
Calibrator Value:	637.0	GAPI
Background Reading:	105.3	cps
Calibrator Reading:	1221.0	cps
Sensitivity:	0.5709	GAPI/cps
Segmented Cement Bond Log Calibration Report		

Serial Number: FW1302-001
Tool Model: 2750 RBT
Calibration Casing Diameter: 5.500 in
Calibration Depth: -24.900 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	1.203	0.800	71.921	59.184	0.715
CAL	1.192	1.170				
5'	0.001	1.287	0.800	71.921	55.315	0.735
SUM						
S1	0.003	1.275	0.000	100.000	78.627	-0.257
S2	0.003	1.228	0.000	100.000	81.632	-0.223
S3	0.002	1.198	0.000	100.000	83.665	-0.191
S4	0.003	1.172	0.000	100.000	85.537	-0.231
S5	0.002	1.216	0.000	100.000	82.391	-0.173
S6	0.003	1.295	0.000	100.000	77.398	-0.199
S7	0.003	1.317	0.000	100.000	76.078	-0.201
S8	0.002	1.284	0.000	100.000	78.007	-0.164

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.192	1.170	1.000	0.000

Air Zero Calibration, performed Mon Nov 12 06:24:07 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.009		0.000		-0.001	
5'	0.016		0.000		0.000	
SUM						
S1	0.005		0.000		0.001	
S2	0.009		0.000		0.001	
S3	0.009		0.000		-0.000	
S4	0.010		0.000		0.000	
S5	0.010		0.000		-0.000	
S6	0.010		0.000		0.000	
S7	0.009		0.000		0.000	
S8	0.009		0.000		-0.000	

Temperature Calibration Report

Serial Number: FW1302-001
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:14 2018

	Reference	Reading
Low Reference:	100.00 degF	107.47 degF
High Reference:	350.00 degF	404.08 degF
Gain:	0.84	
Offset:	9.42	
Delta Spacing	1	



RELIANCE
OILFIELD SERVICES

Well

Cowboy 21-3HZ

Field

Wattenberg

County

Weld

State

Colorado