



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Noble Energy Inc.	
Well		Rampart A33-780	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-50934	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
SEC 20 TWP 6N RGE 64W		Elevation 4707'	
		Elevation ---	
K.B. 4737 FT		D.F. ---	
G.L. 4707 FT			
Date		07-OCT-2021	
Run Number		ONE	
Depth Driller		17282 FT	
Depth Logger		7463 FT	
Bottom Logged Interval		7449 FT	
Top Log Interval		Surface	
Open Hole Size		8.5"	
Type Fluid		Water	
Density / Viscosity		8.34 lb/gal	
Max. Recorded Temp.		239°F	
Estimated Cement Top		SEE LOG	
Time Well Ready		ROA	
Time Logger on Bottom		14:25	
Equipment Number		HD-0324	
Location		Plateville, CO	
Recorded By		C. Sinerios	
Witnessed By		C. Schendzielos	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		5 1/2	
Intermediate #2		17	
Liner		P110	
		Top	
		Bottom	
		1948.4 FT	
		17267.1 FT	

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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 6580.3 FT
Adjusted -28 FT to correlate with Marker Joint
Log ran with 2500 PSI Surface Induced Pressure
Logging tools were clean and free of any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60

Tool Name	Start Depth (ft)	End Depth (ft)	Length (ft)	Weight (lb)	O.D. (in)
TEMP	14.16				
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				
LOCTIM	0.00				
UTCTIM	0.00				

Dataset: noble_rampart a33-780_rbl_10-07-21.db: field/well/run1/main.1

Total length: 18.10 ft

Total weight: 203.60 lb

O.D.: 3.25 in

Fishing Neck

SO BS CENT-2750-4500
Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer

Probe Radii-2750 RBT (071220)
Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub

SO BS CENT-2750-4500
Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer

Probe GR-CCL-2750 6PB (FW1810-001)
Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT

Probe CENT-2750
Probe 2-3/4" Electric Inline Bowspring Centralizer

Gamma Ray Calibration Report

Serial Number:	FW1810-001	
Tool Model:	2750 6PB	
Performed:	Mon Oct 19 14:19:51 2020	
Calibrator Value:	637.0	GAPI
Background Reading:	100.1	cps
Calibrator Reading:	1264.5	cps
Sensitivity:	0.5471	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	071220	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	-71.812	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.696	0.800	71.921	102.191	0.797
CAL	0.642	0.642				
5'	-0.001	0.602	0.800	71.921	117.919	0.887
SUM						
S1	0.001	0.682	0.000	100.000	146.786	-0.075
S2	0.000	0.667	0.000	100.000	150.047	-0.034
S3	0.000	0.667	0.000	100.000	149.889	-0.032
S4	0.001	0.689	0.000	100.000	145.209	-0.078
S5	0.001	0.711	0.000	100.000	140.740	-0.131
S6	0.001	0.713	0.000	100.000	140.397	-0.105
S7	0.000	0.715	0.000	100.000	139.902	-0.027
S8	0.001	0.696	0.000	100.000	143.919	-0.104

Air Zero Calibration, performed Wed Oct 6 10:24:53 2021:

	Raw (v)		Calibrated (v)		Results
	Zero		Zero		Offset
3'	0.006		0.000		-0.000
5'	0.010		0.000		-0.001
SUM					
S1	0.007		0.000		0.000
S2	0.007		0.000		0.000
S3	0.009		0.000		0.000
S4	0.008		0.000		0.000
S5	0.008		0.000		0.001
S6	0.007		0.000		0.001
S7	0.008		0.000		0.000
S8	0.007		0.000		0.001

Temperature Calibration Report

Serial Number:	071220
Tool Model:	2750 RBT

Tool Model: 2750 RBL
Performed: Mon Oct 19 14:19:51 2020

	Reference	Reading
Low Reference:	100.00 degF	109.43 degF
High Reference:	350.00 degF	405.87 degF
Gain:	0.84	
Offset:	7.72	
Delta Spacing	1	

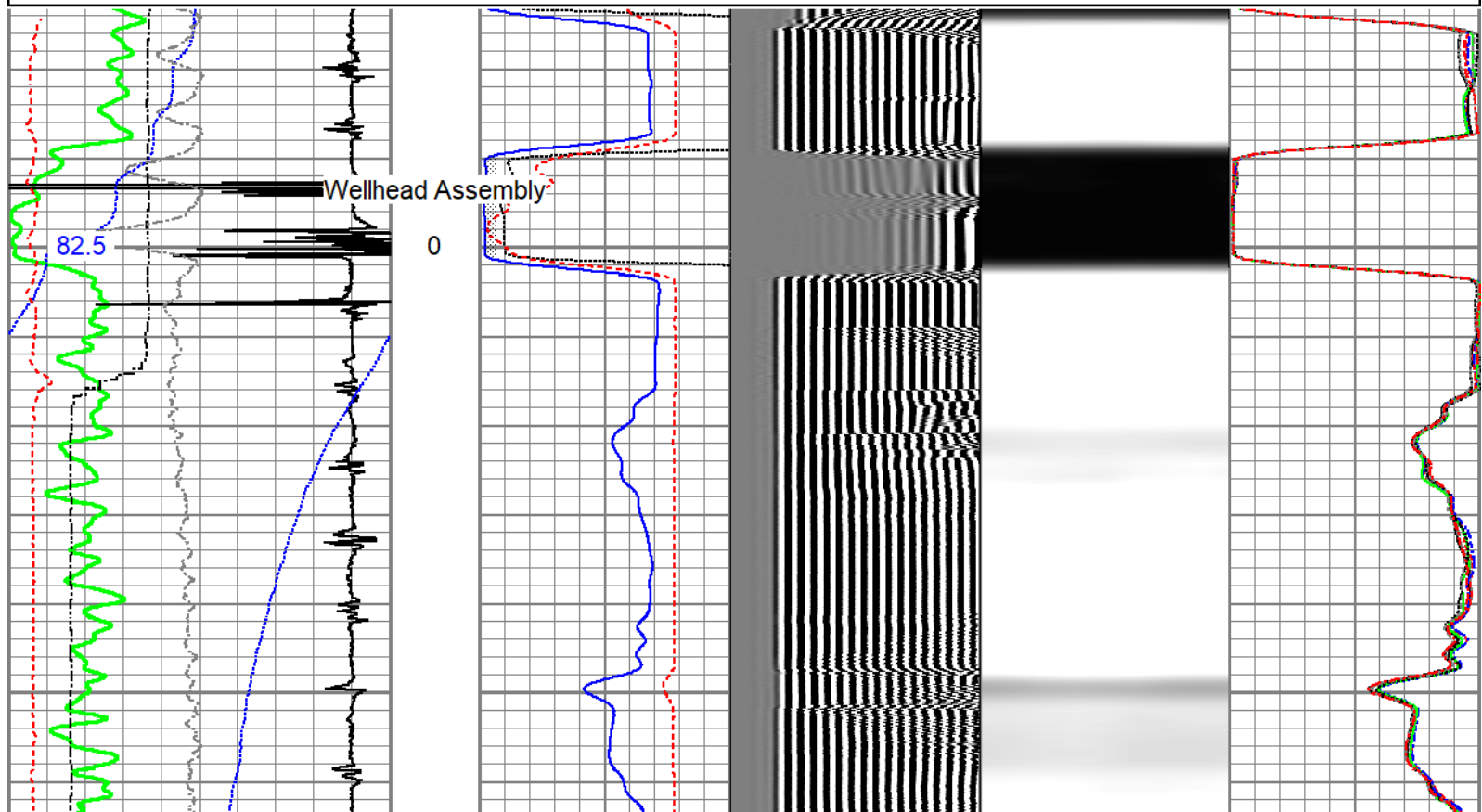


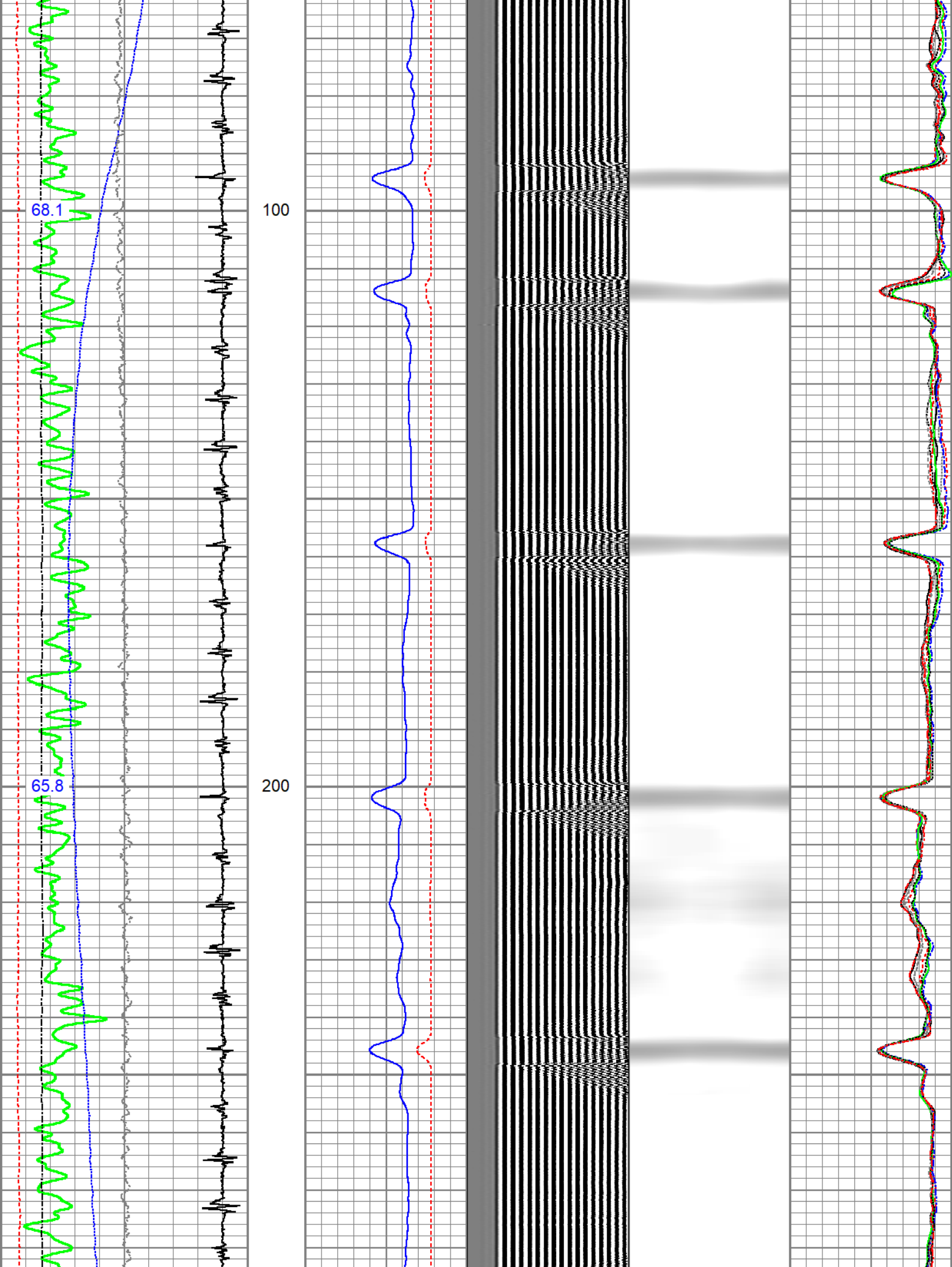
Main Pass

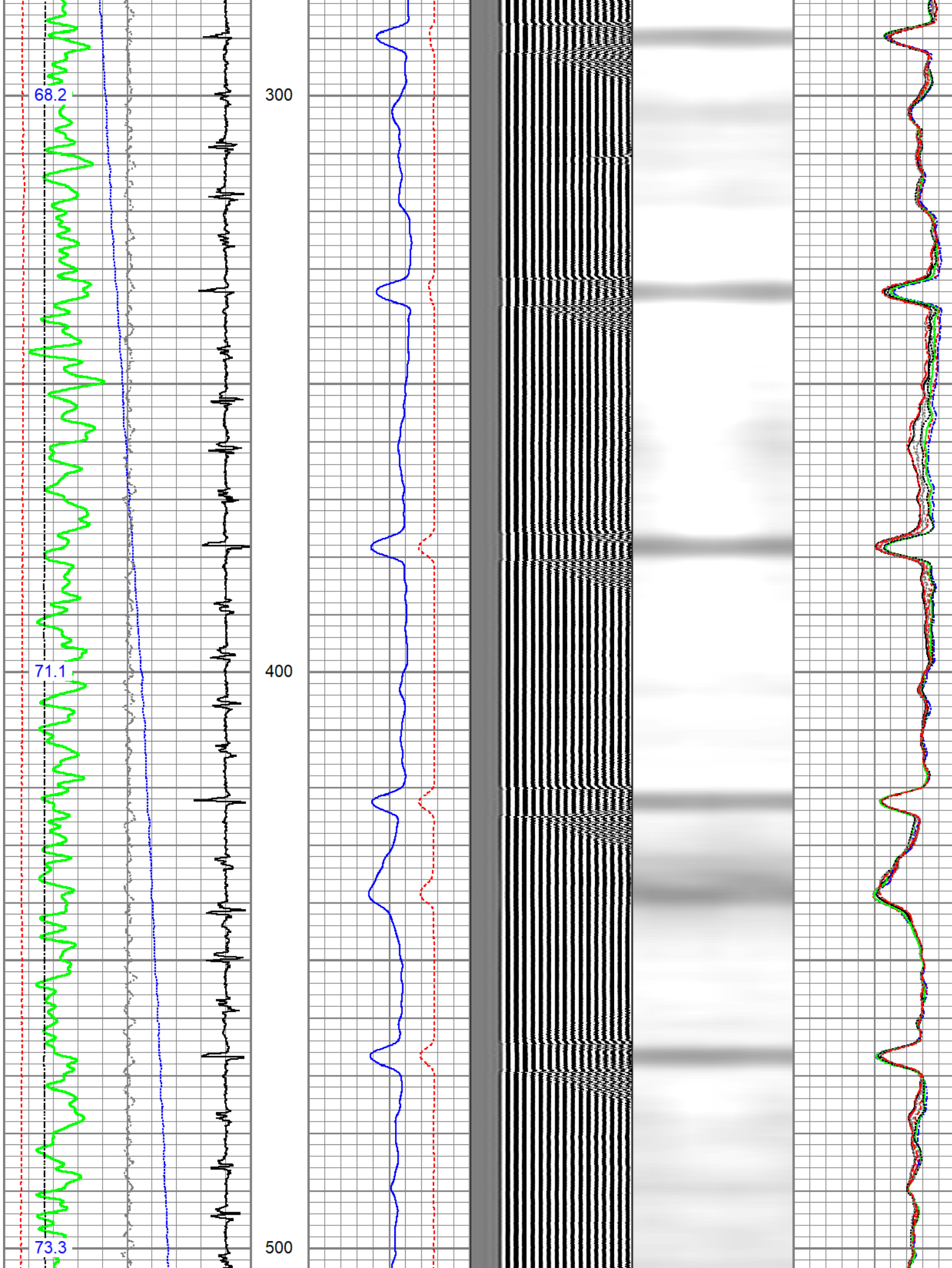
Recorded with 2500 PSI Surface Induced Pressure

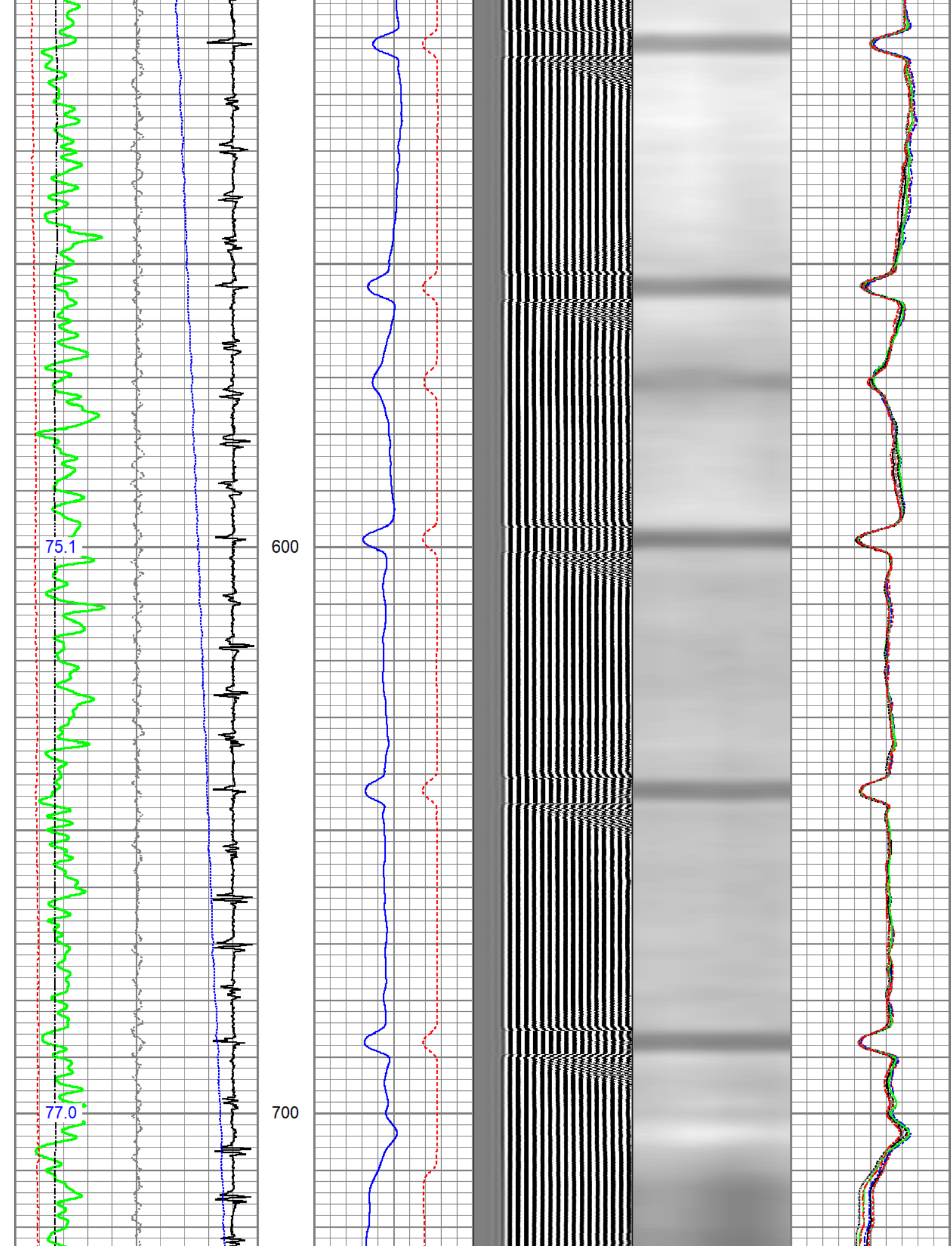
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Dataset Pathname	main.1
Presentation Format	edge_rbl_noble
Dataset Creation	Thu Oct 07 15:46:36 2021
Charted by	Depth in Feet scaled 1:240

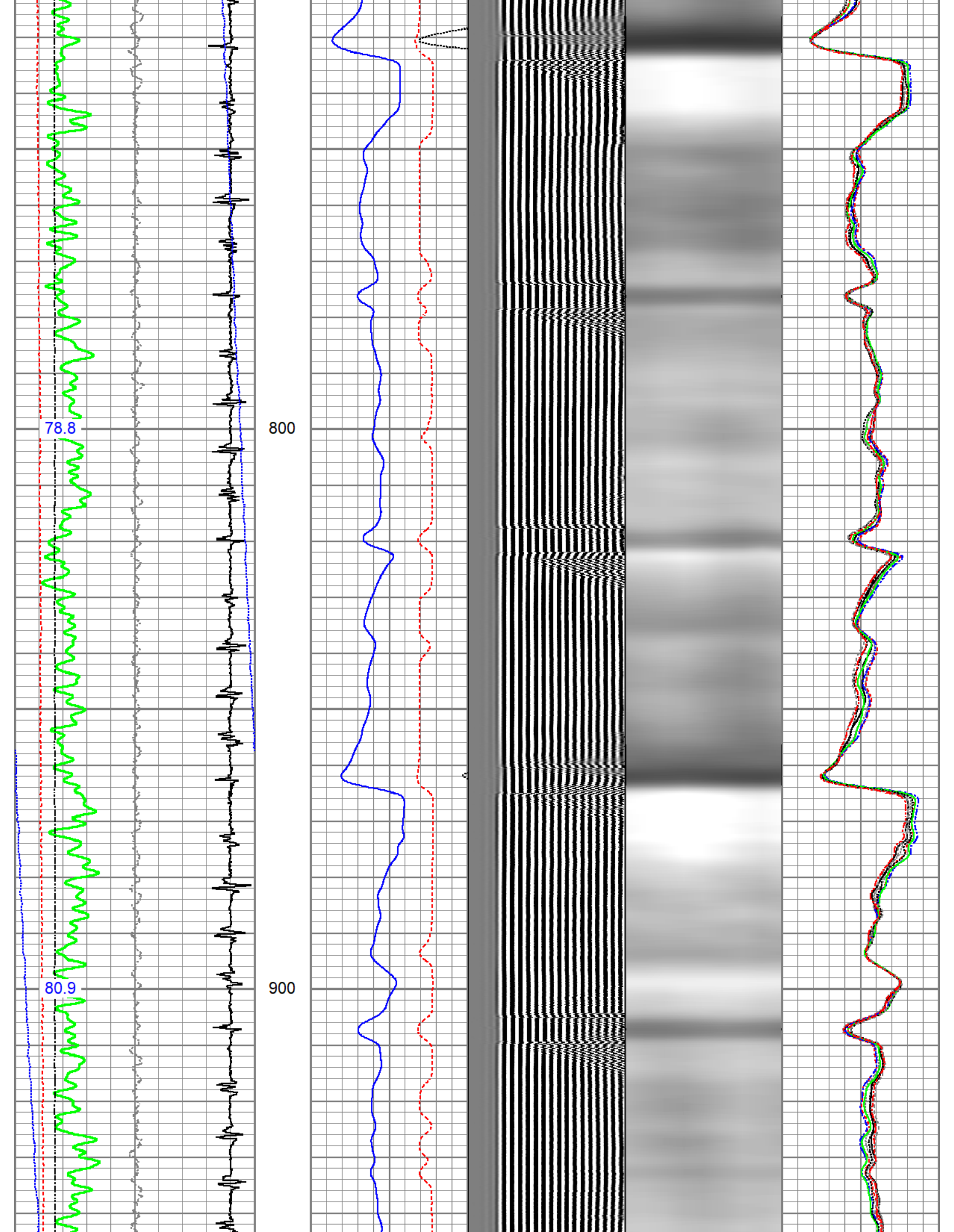
0	Gamma Ray (GAPI)	120	3' Amplitude	5' Variable Density	Sector Map	0	AMP S1	100
4.5	Casing Collar Locator	1.1	0 (mV) 100	200 (usec) 1200		0	AMP S2	100
0	Temperature (degF)	20	3' Amplitude x 5			0	AMP S3	100
-150	Line Speed (ft/min)	150	0 (mV) 20			0	AMP S4	100
0	Line Tension (lb)	2000	3' Travel Time			0	AMP S5	100
	Differential Temperature		650 (usec) 150			0	AMP S6	100
-2	(degF)	2				0	AMP S7	100
Temperature						0	AMP S8	100
(degF)								

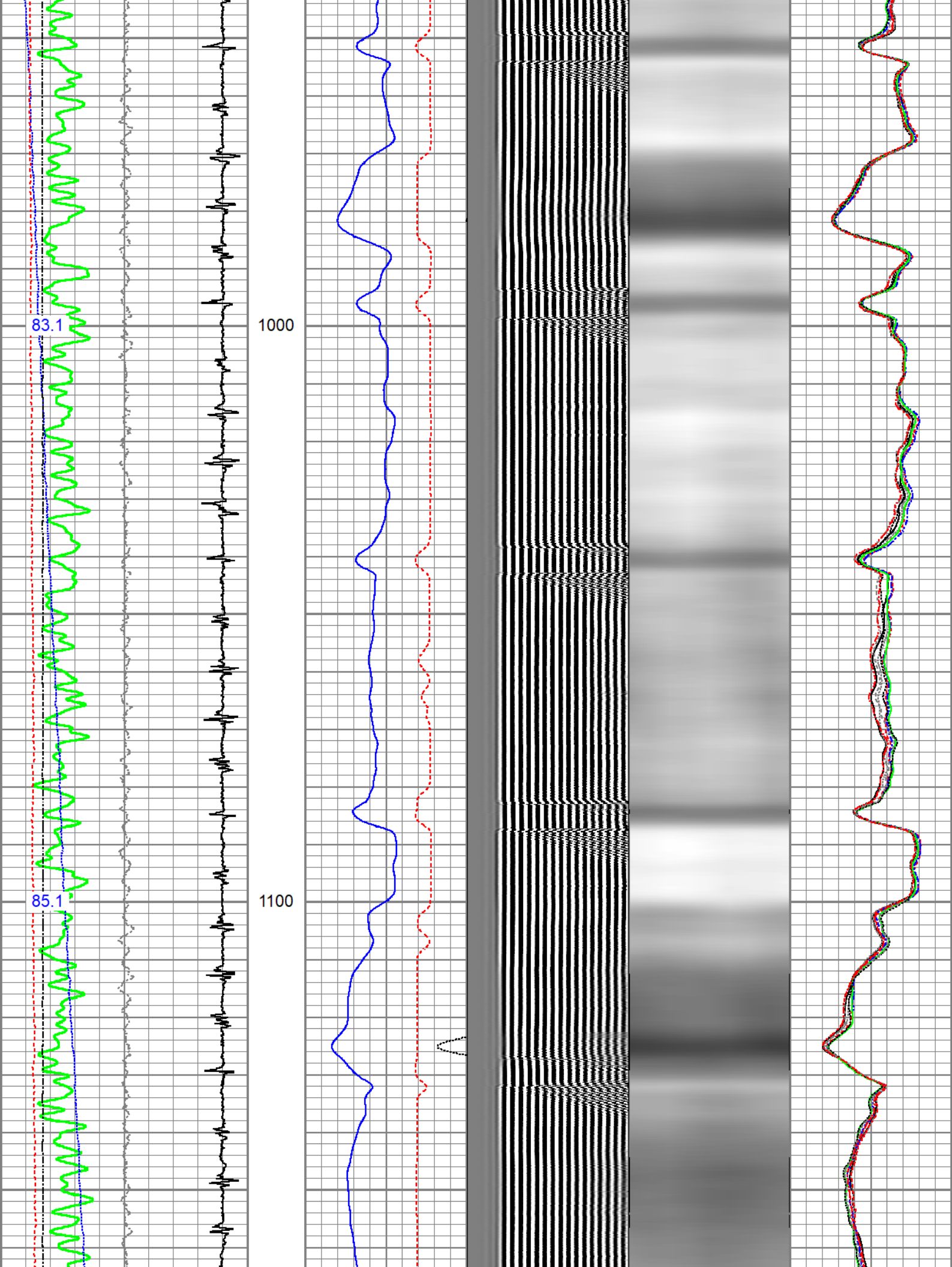


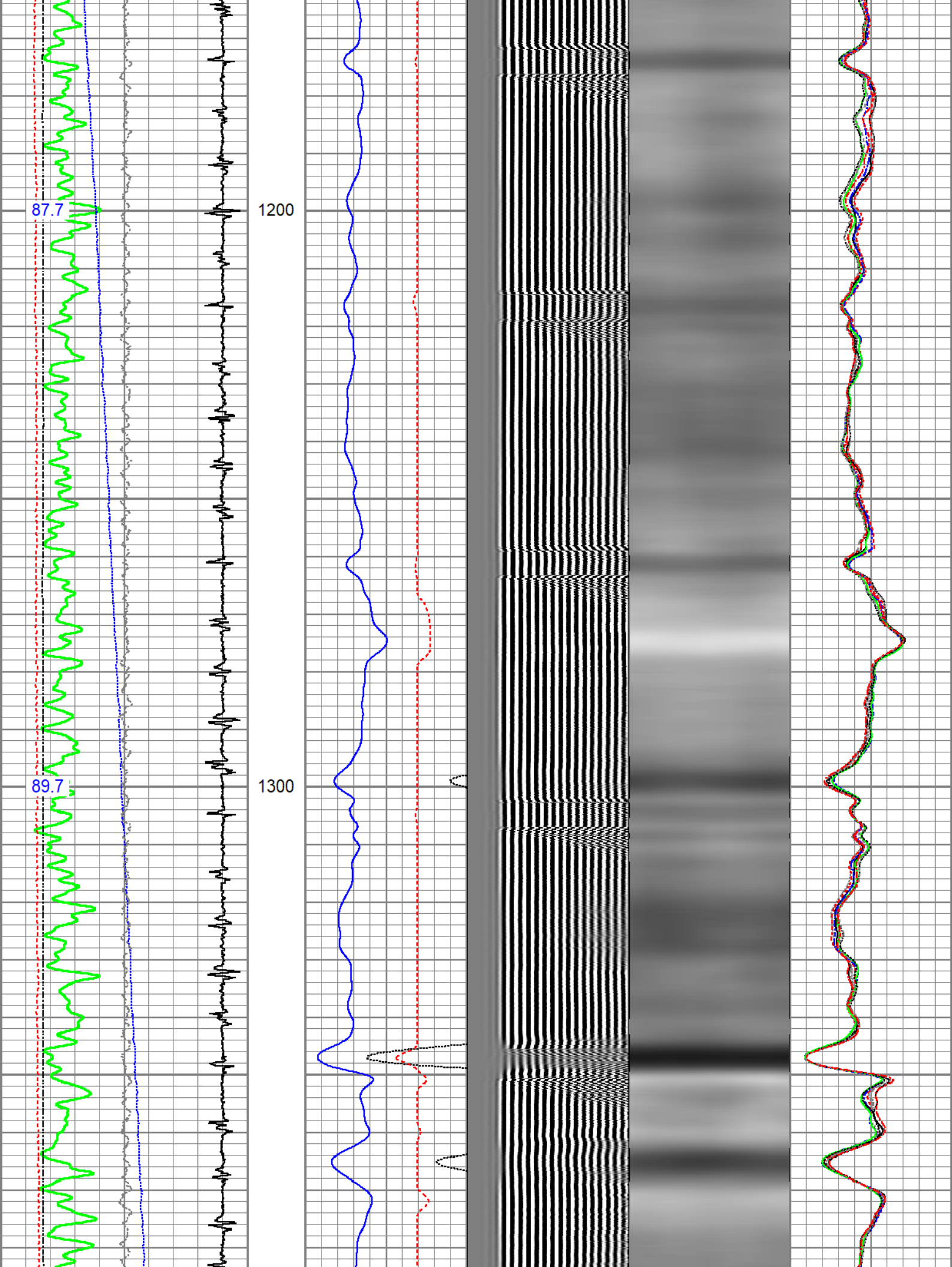


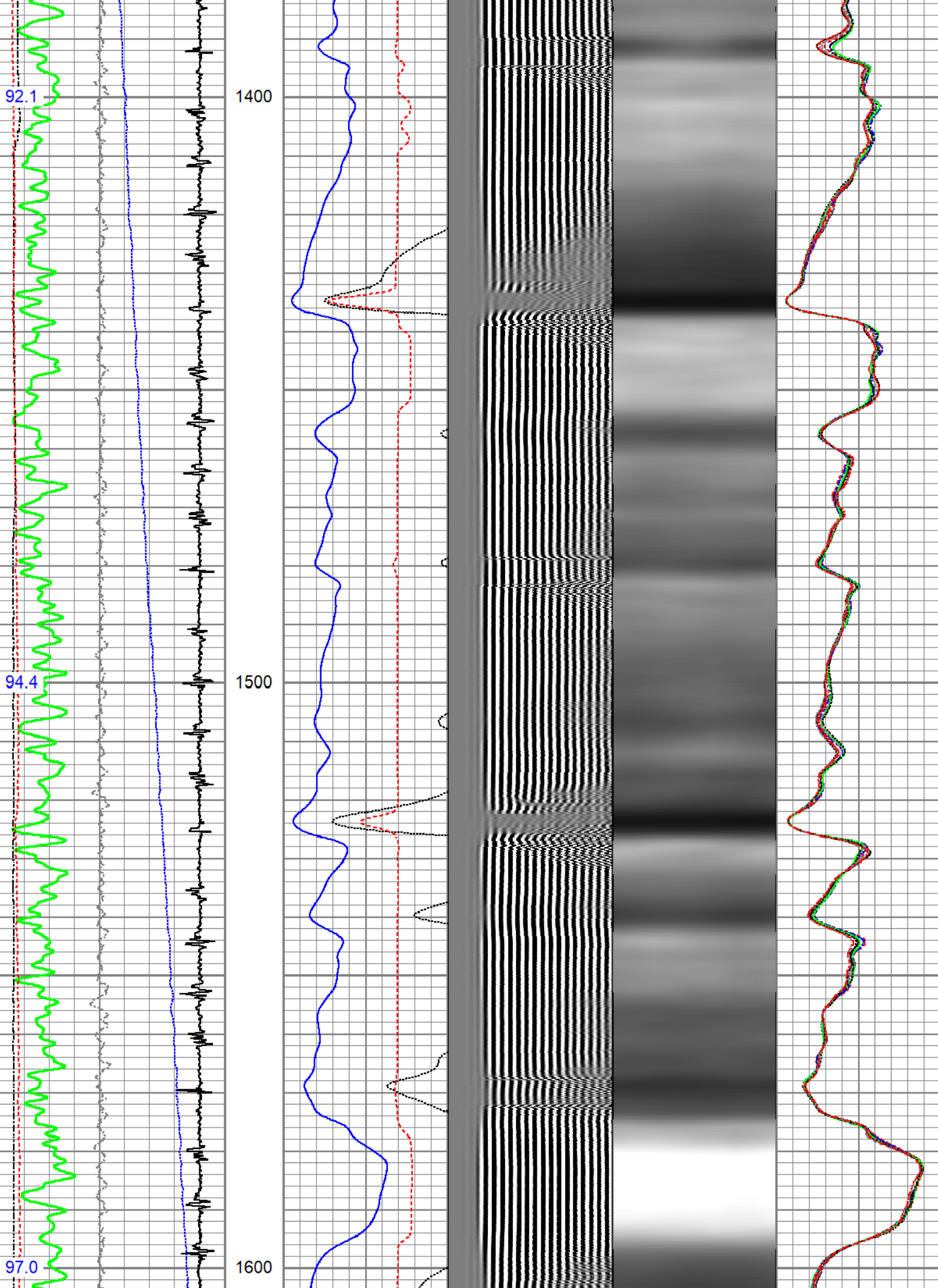


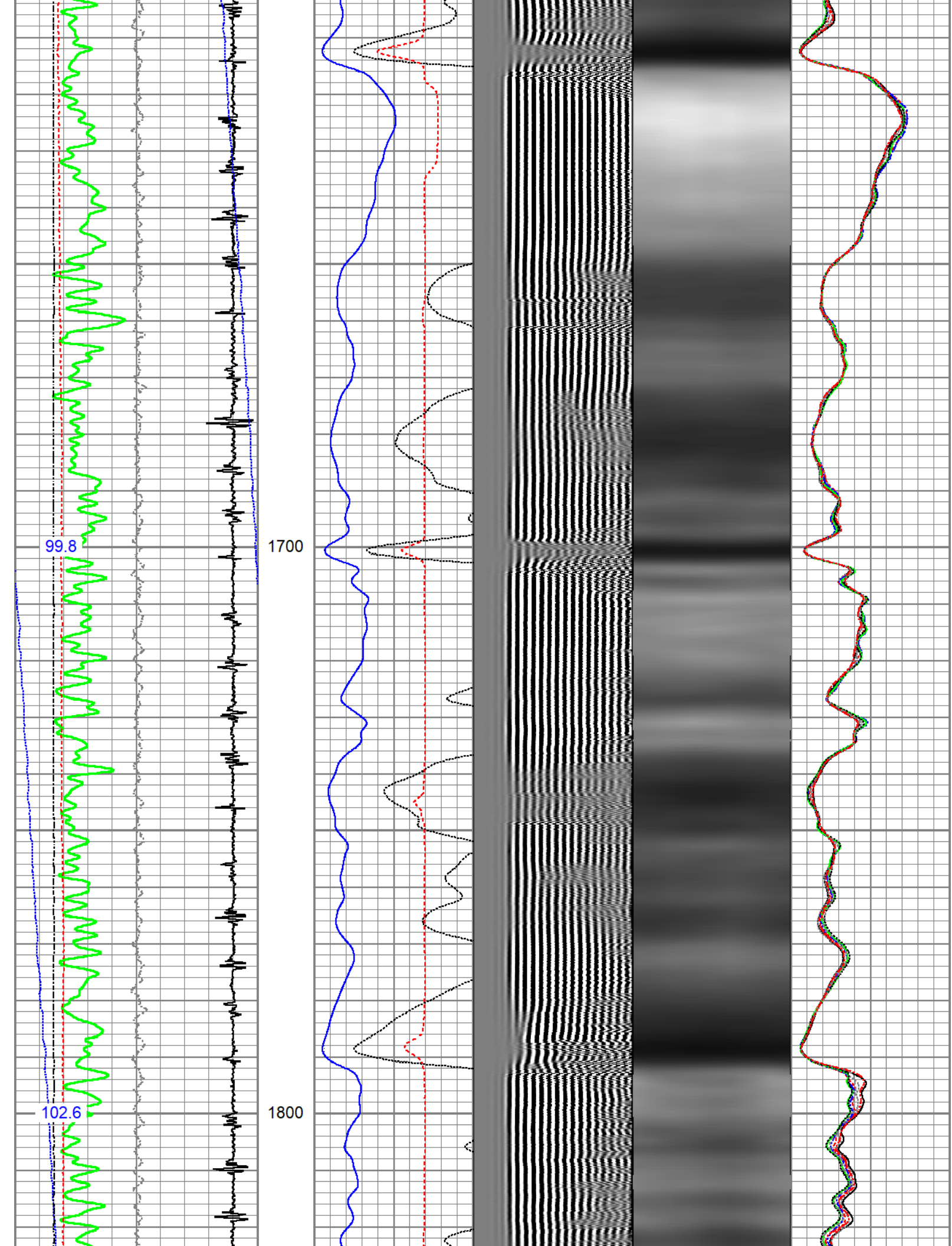


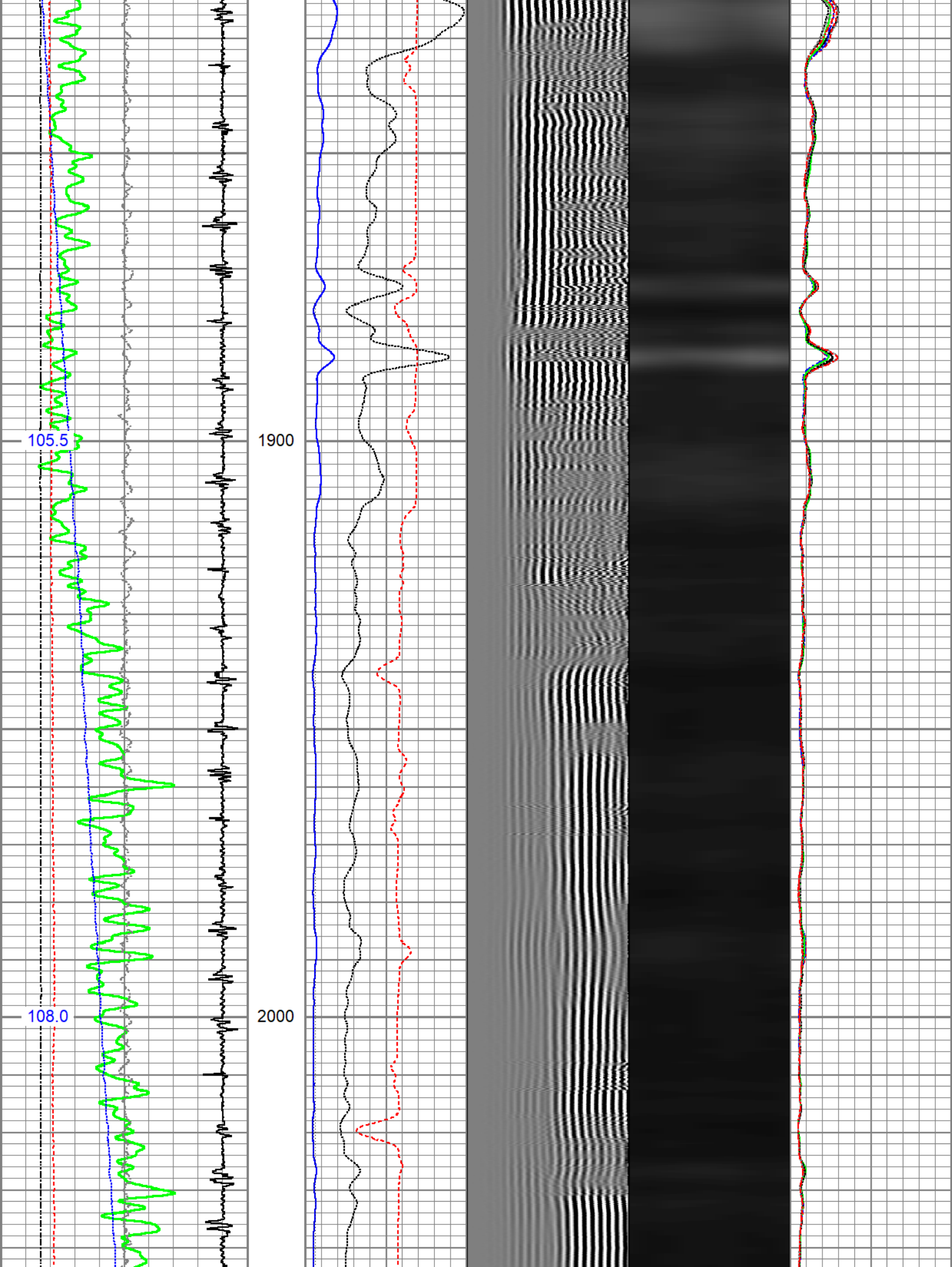


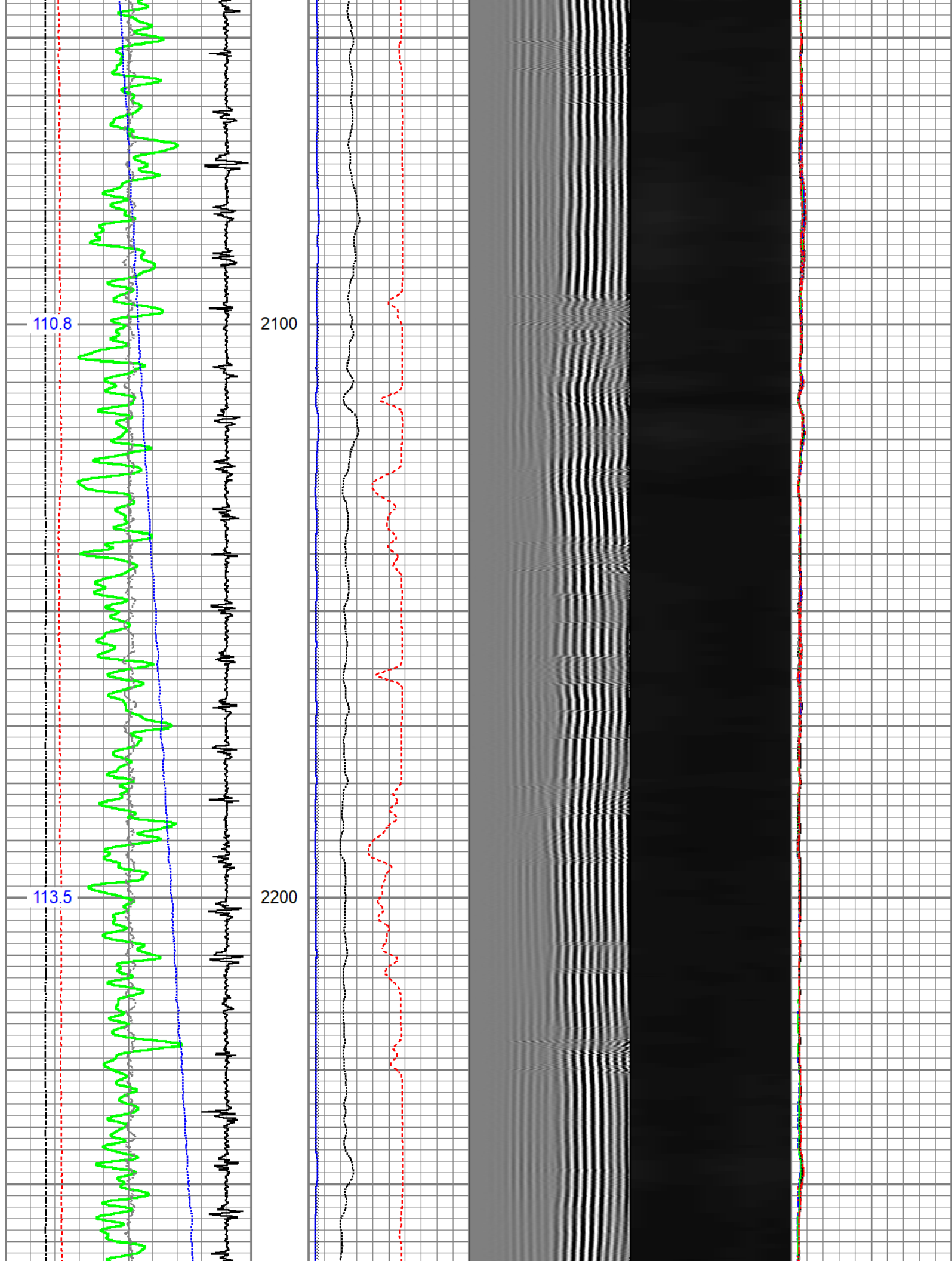


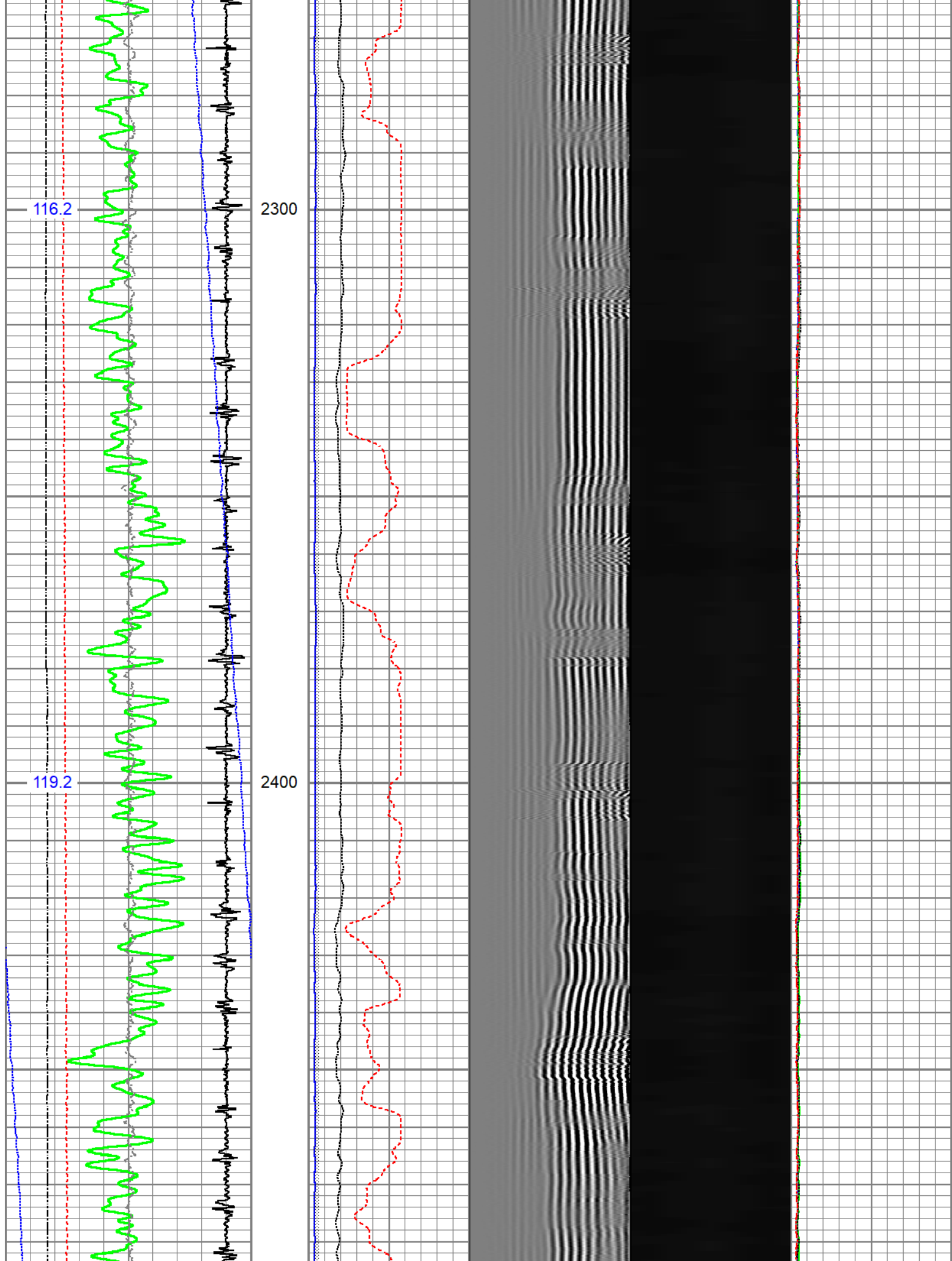


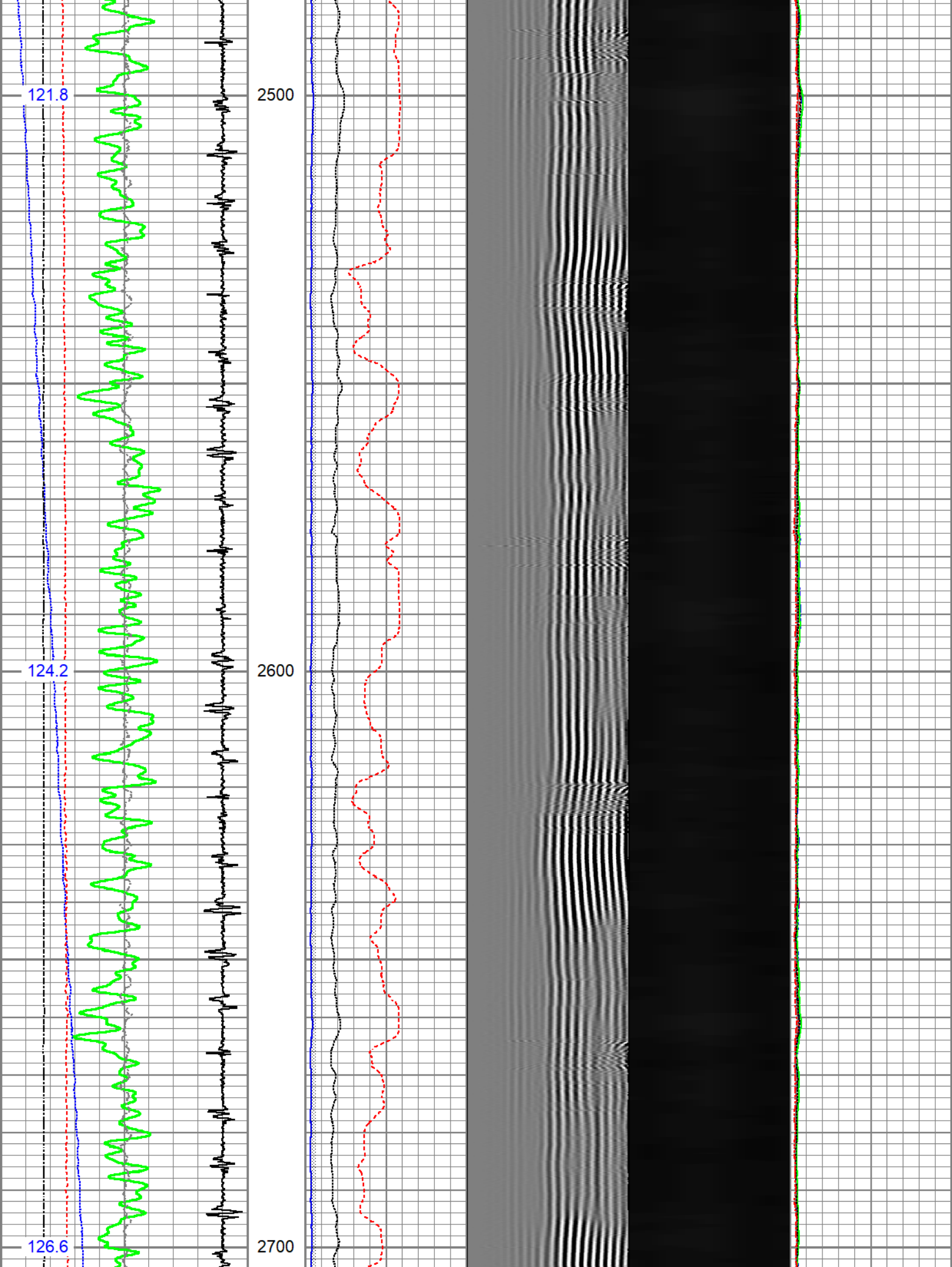










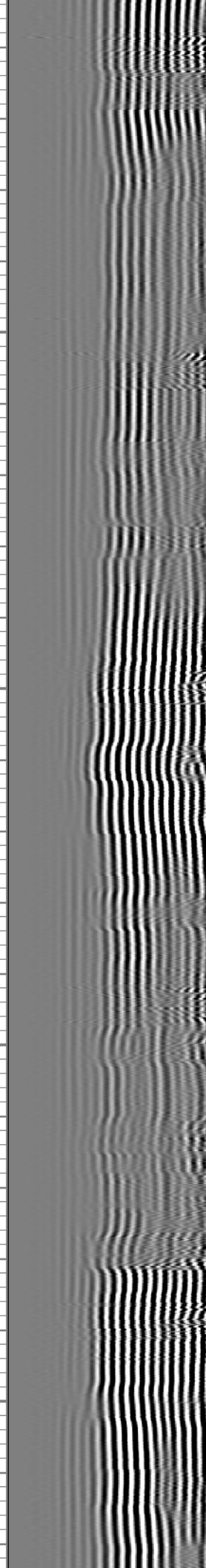
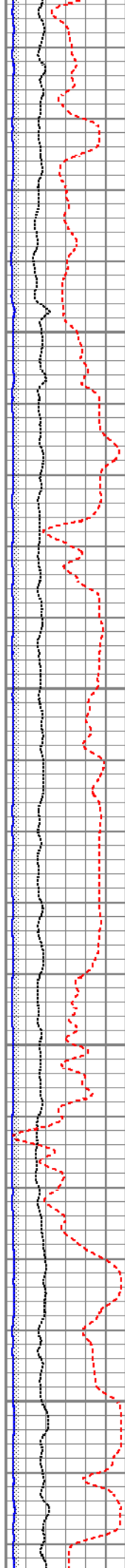
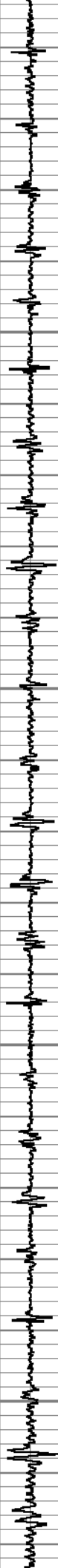
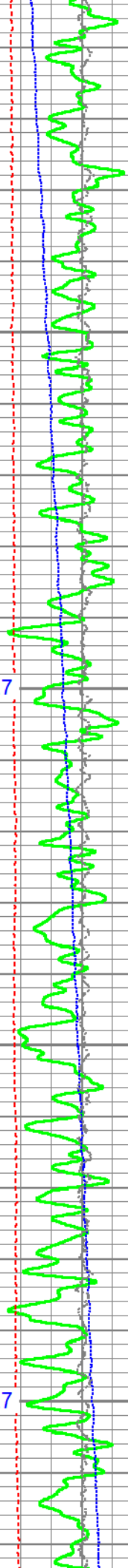


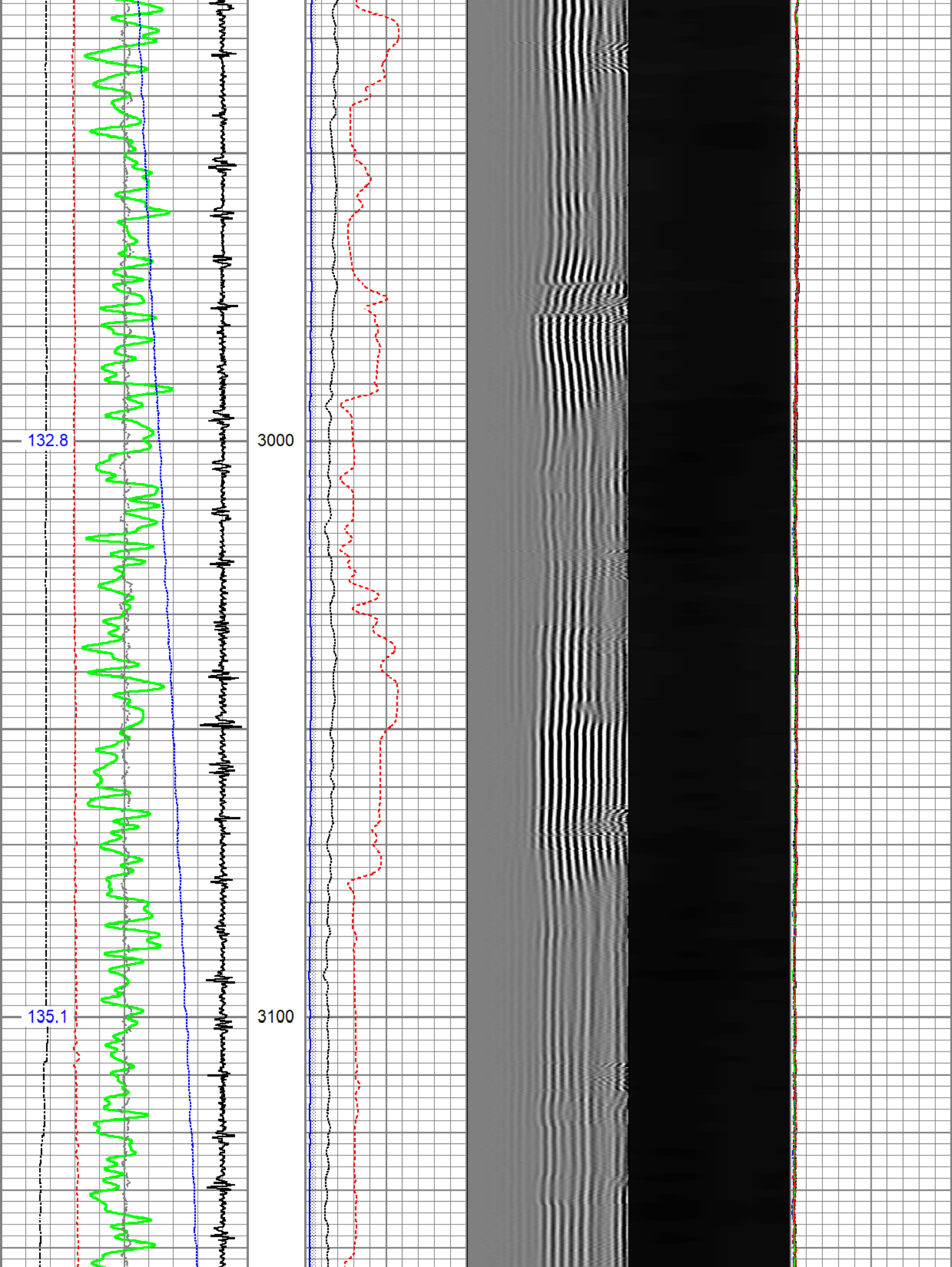
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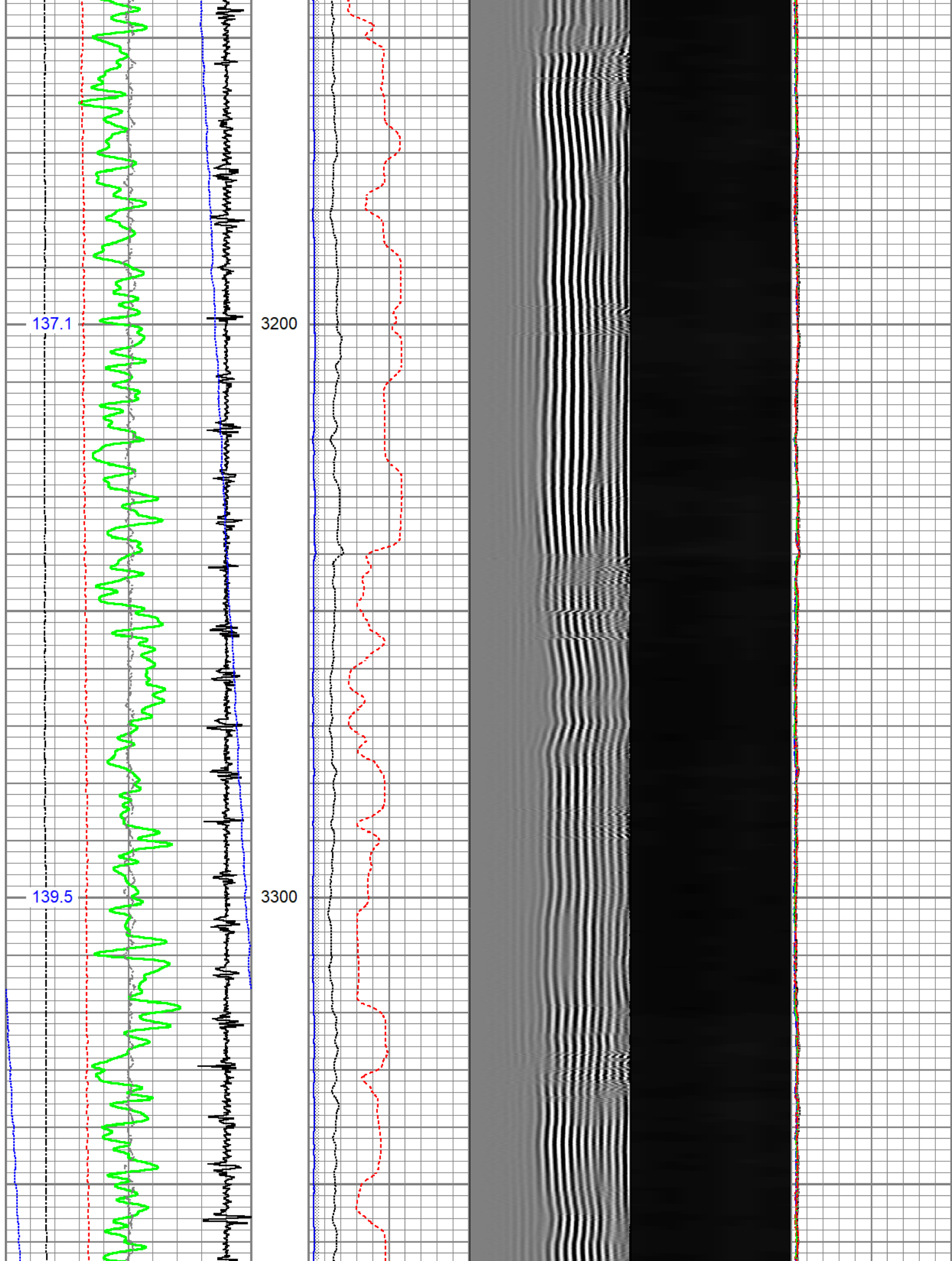
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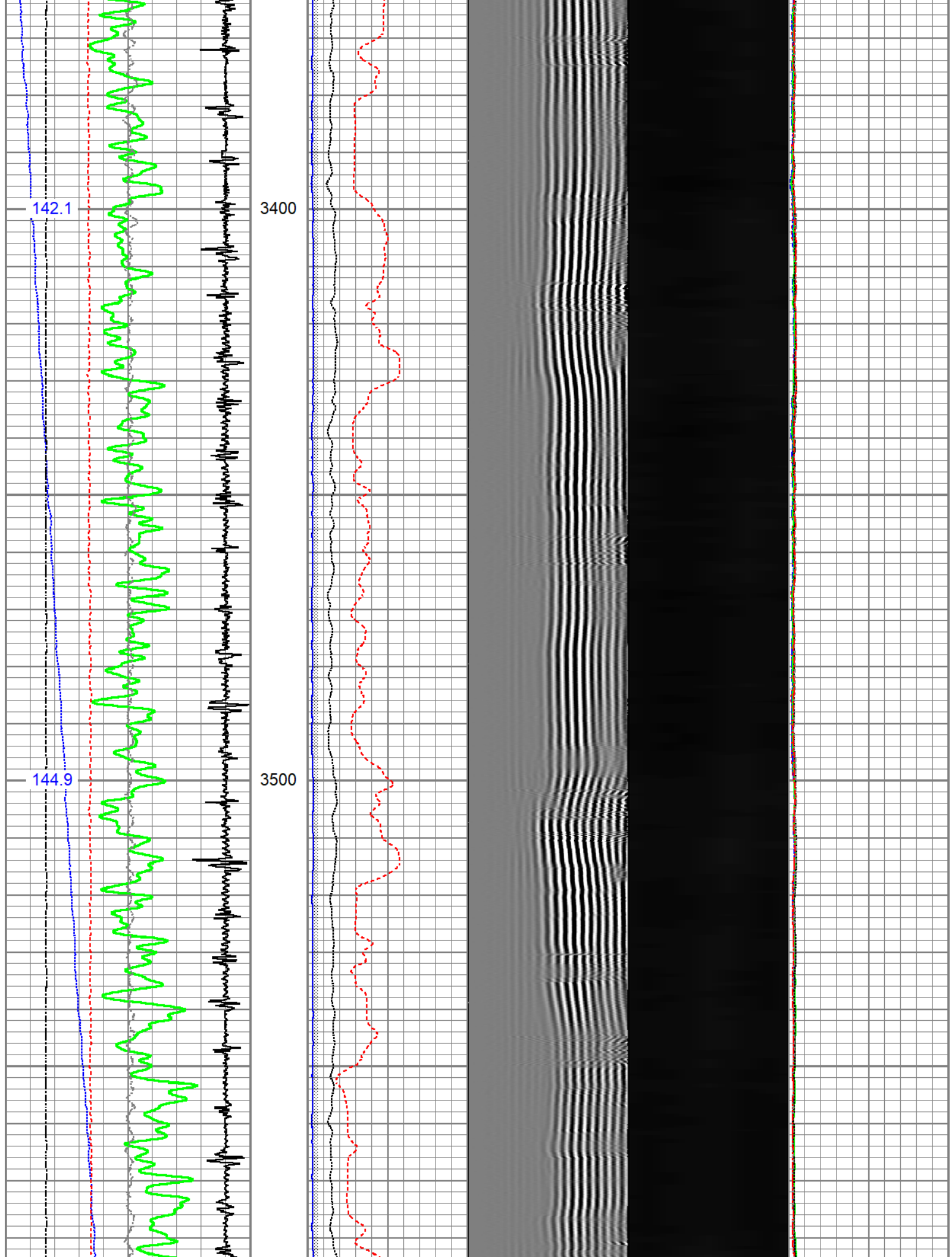
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147.7

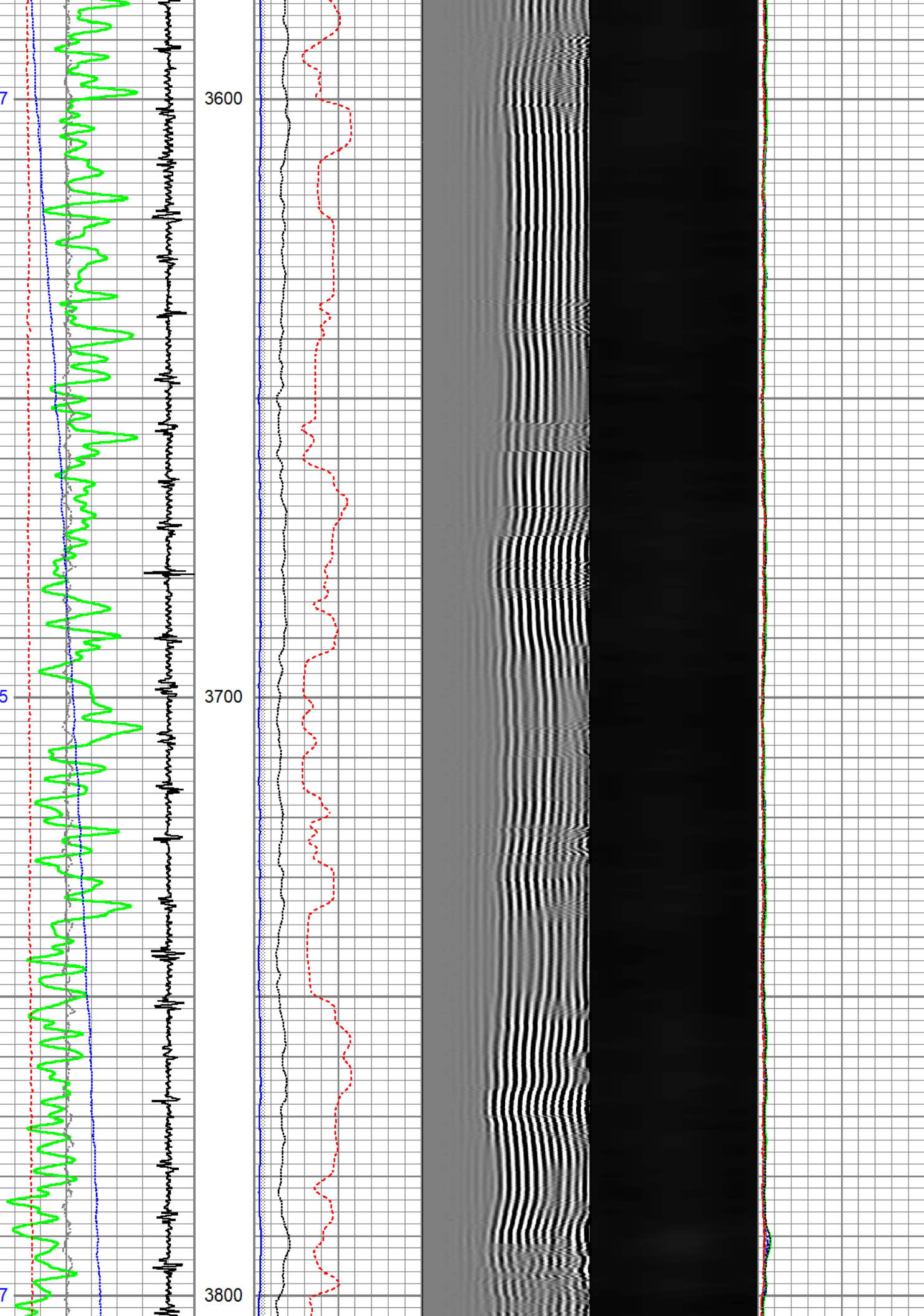
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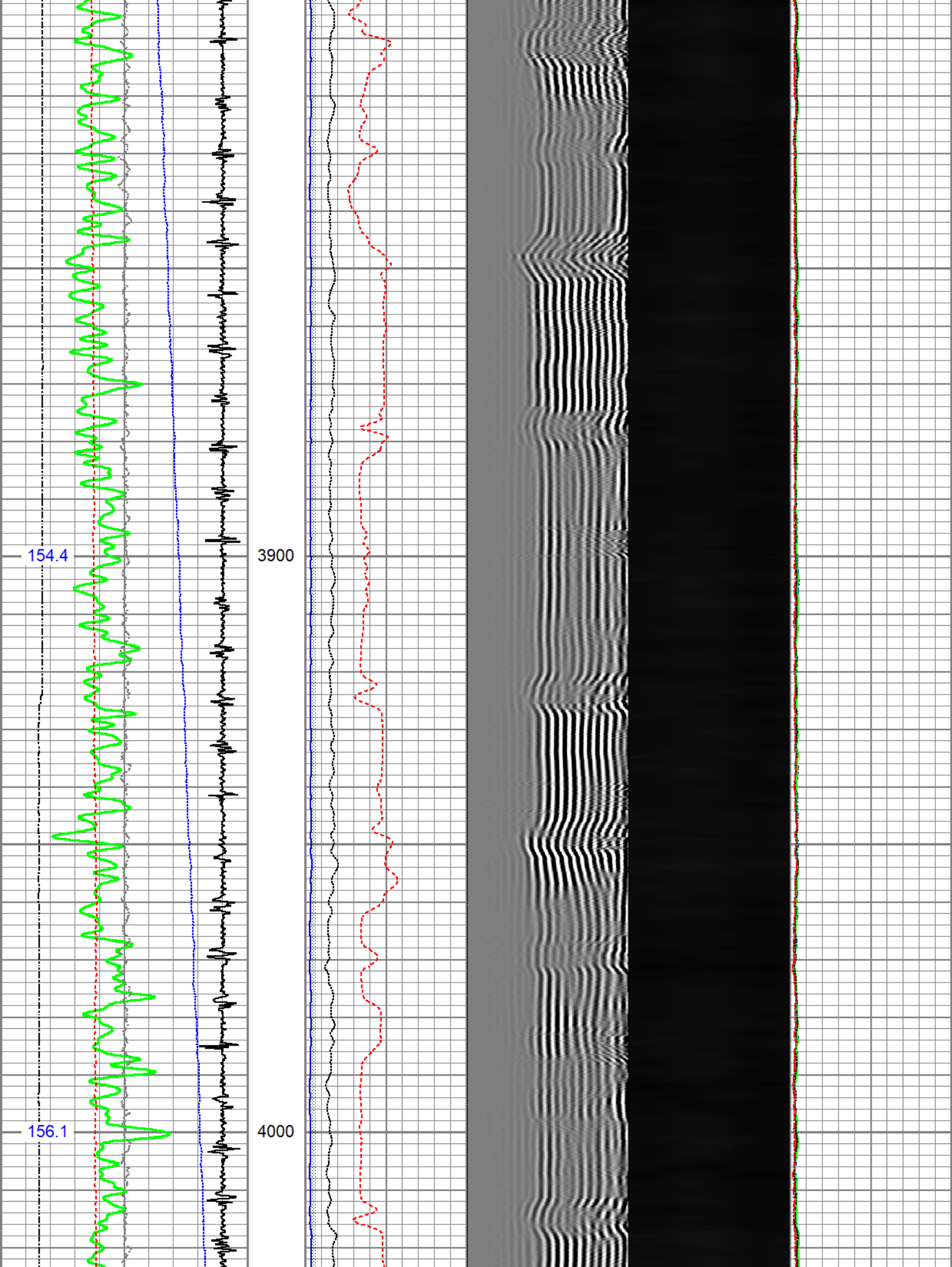
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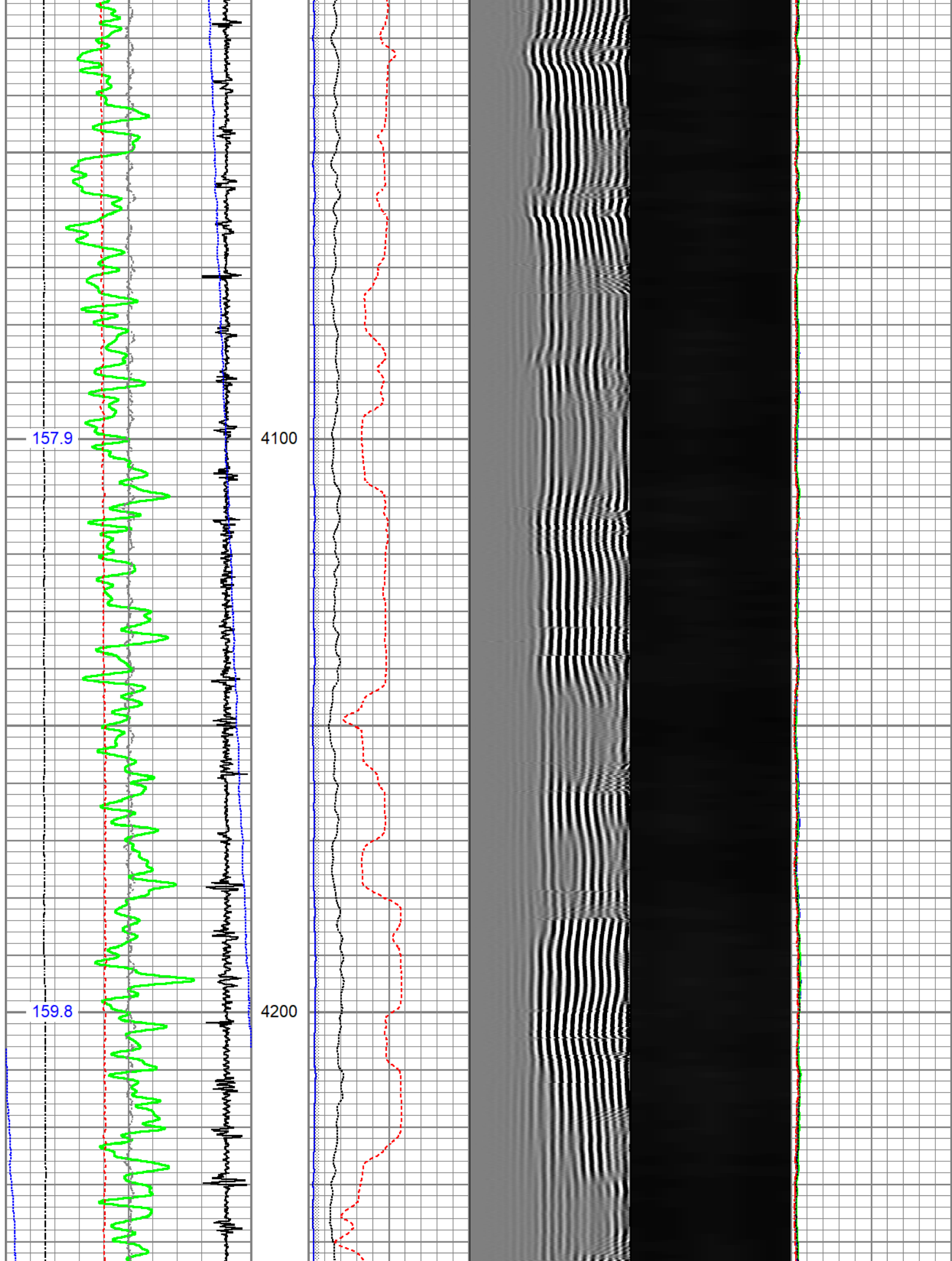
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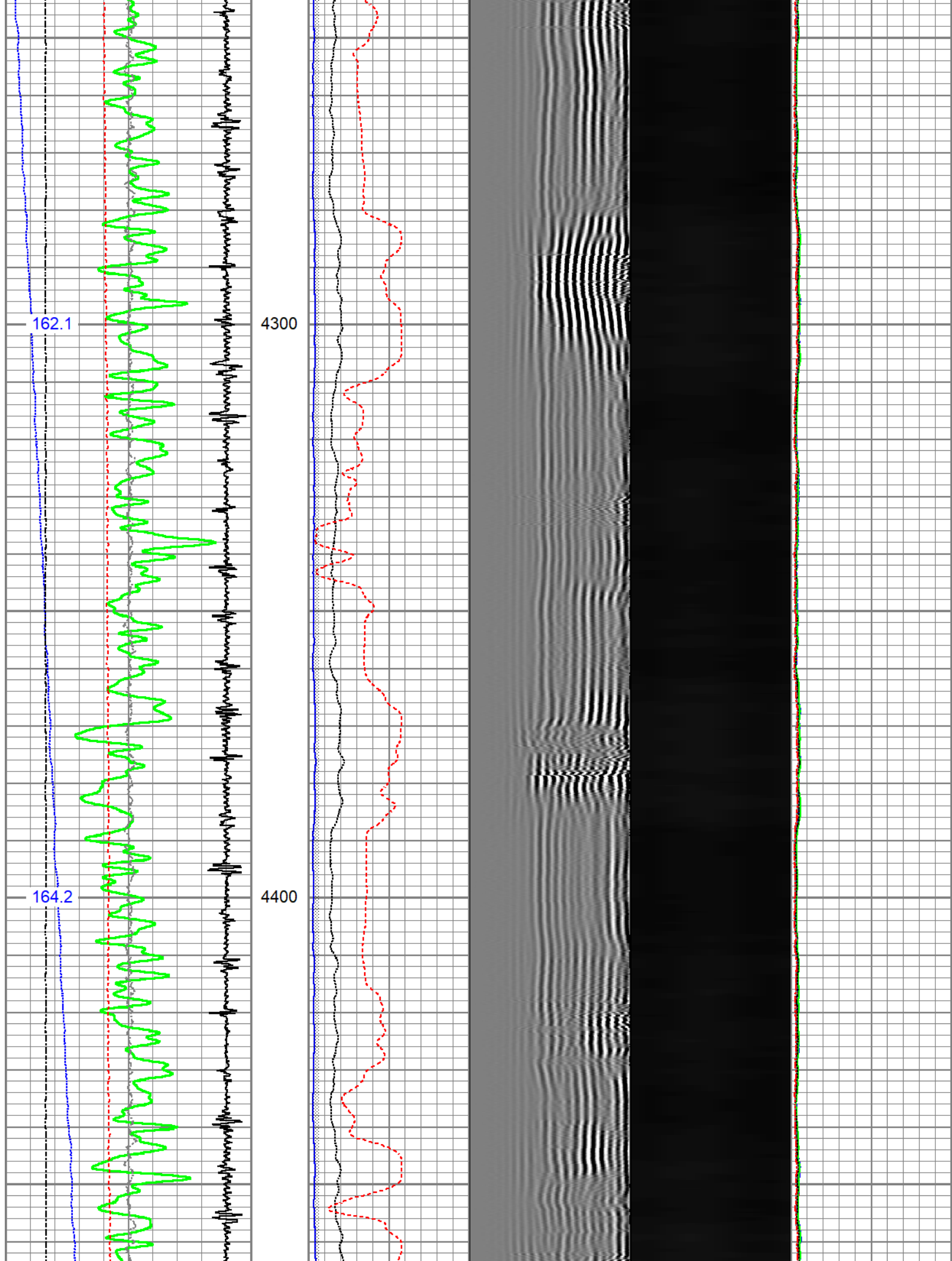
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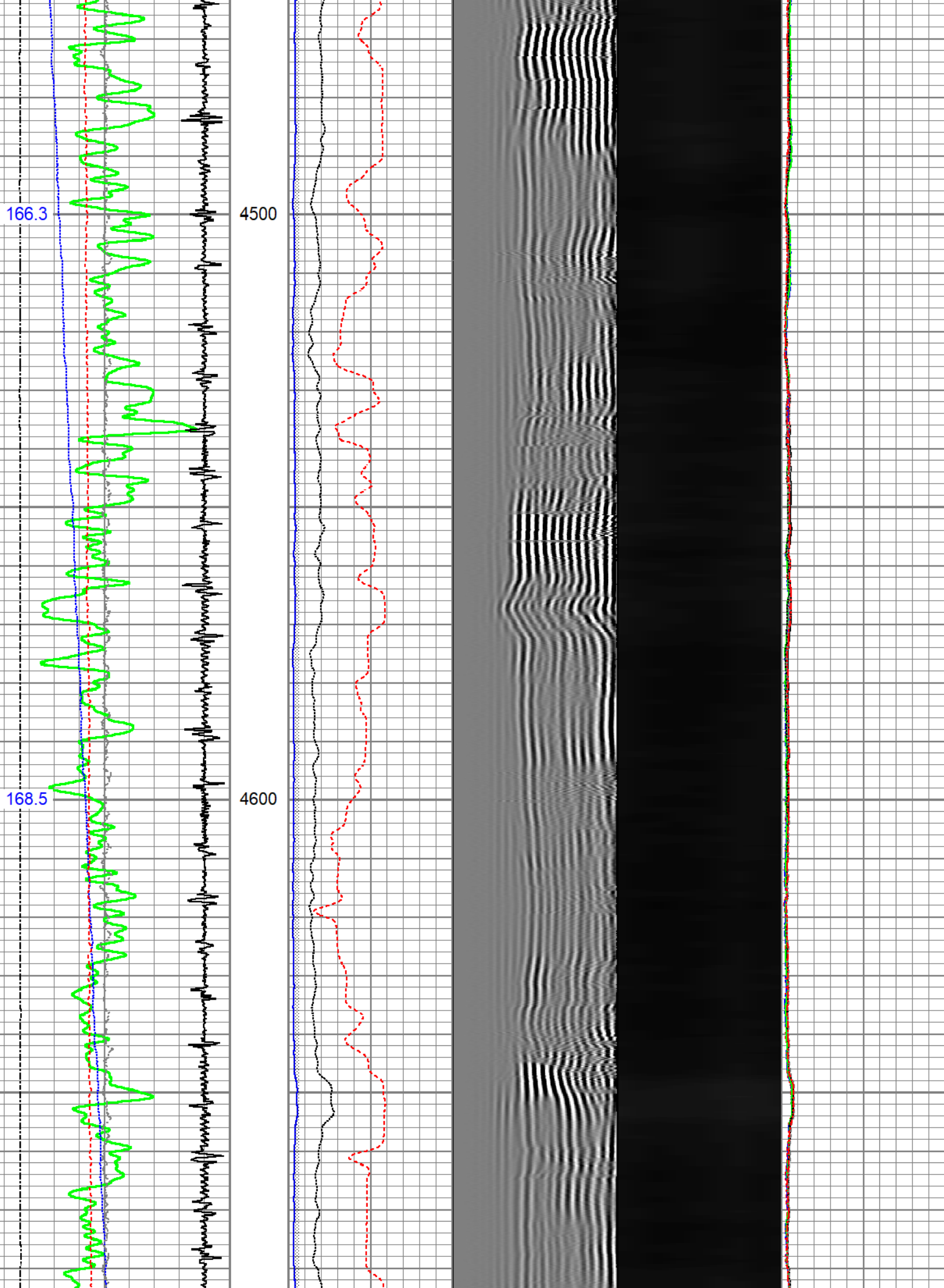


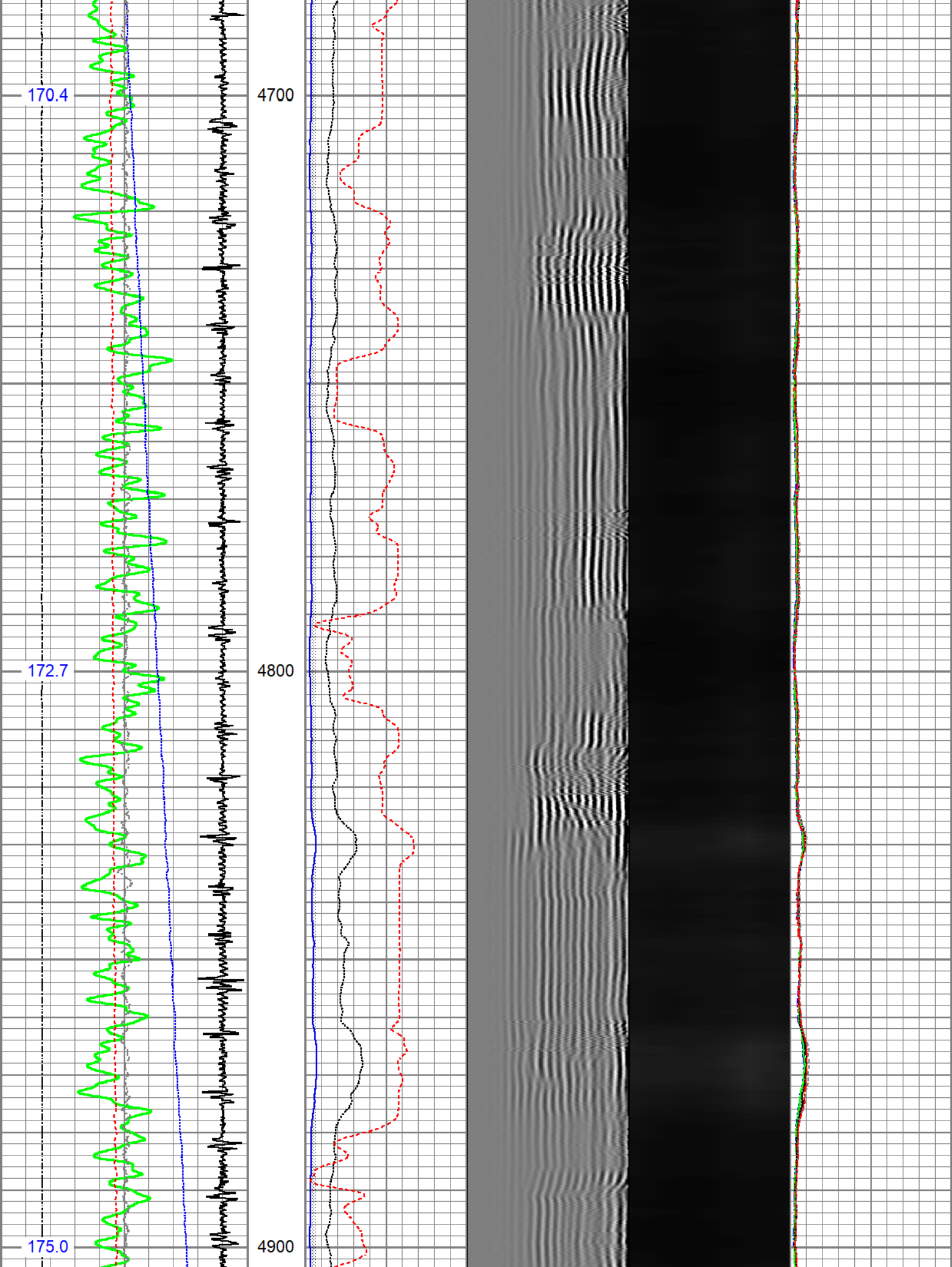
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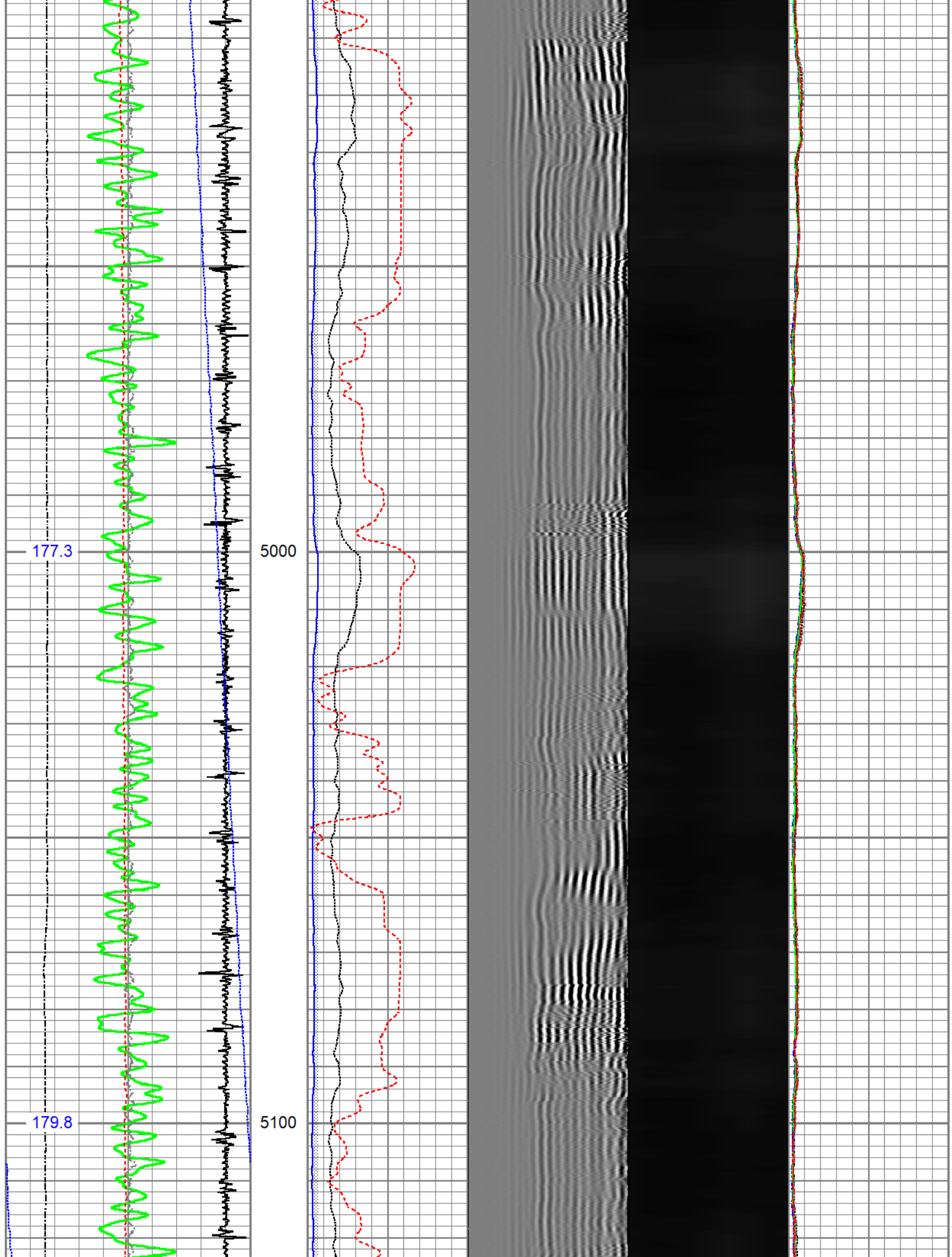
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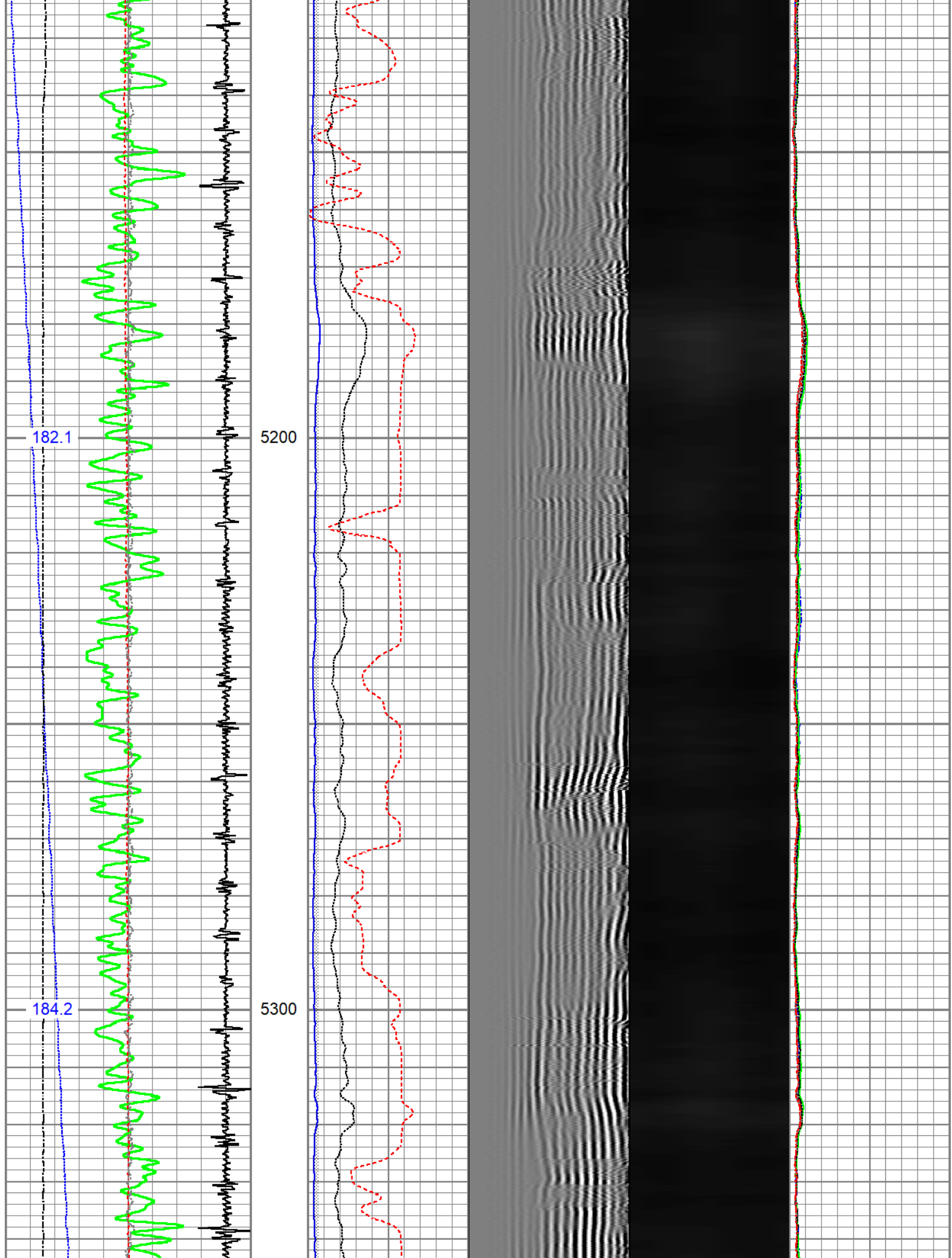
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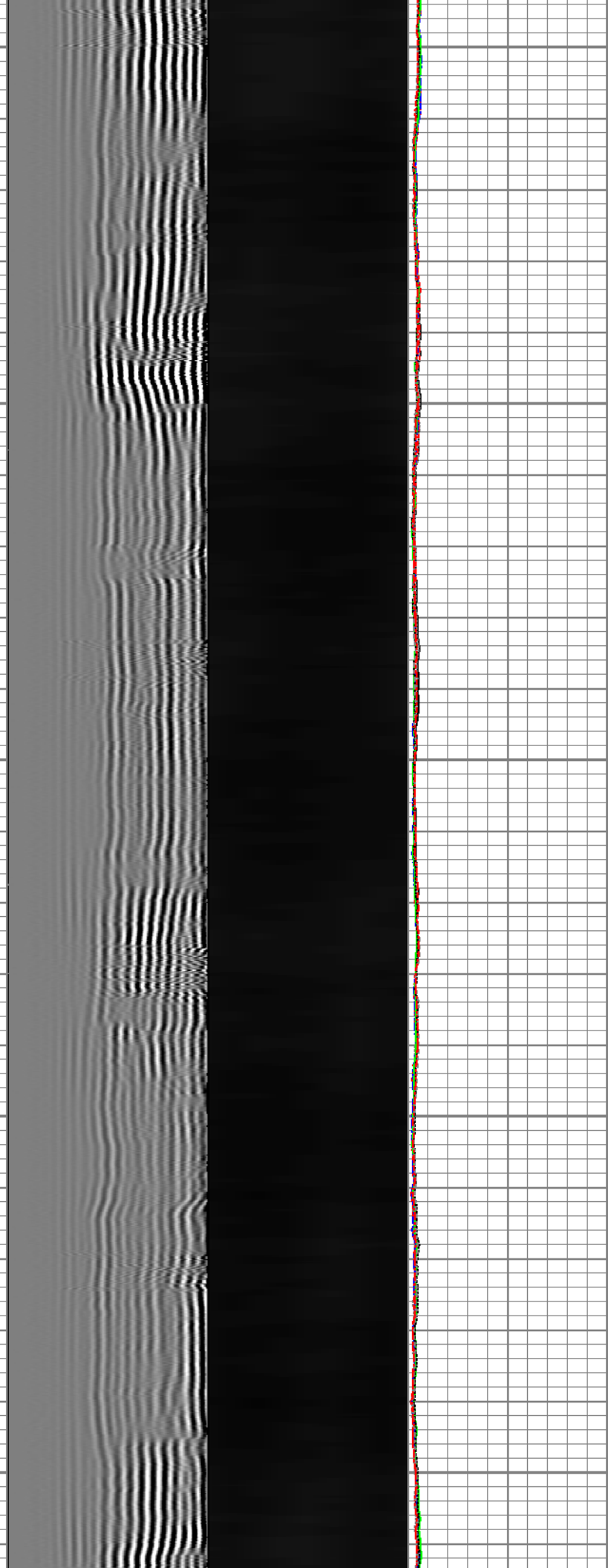
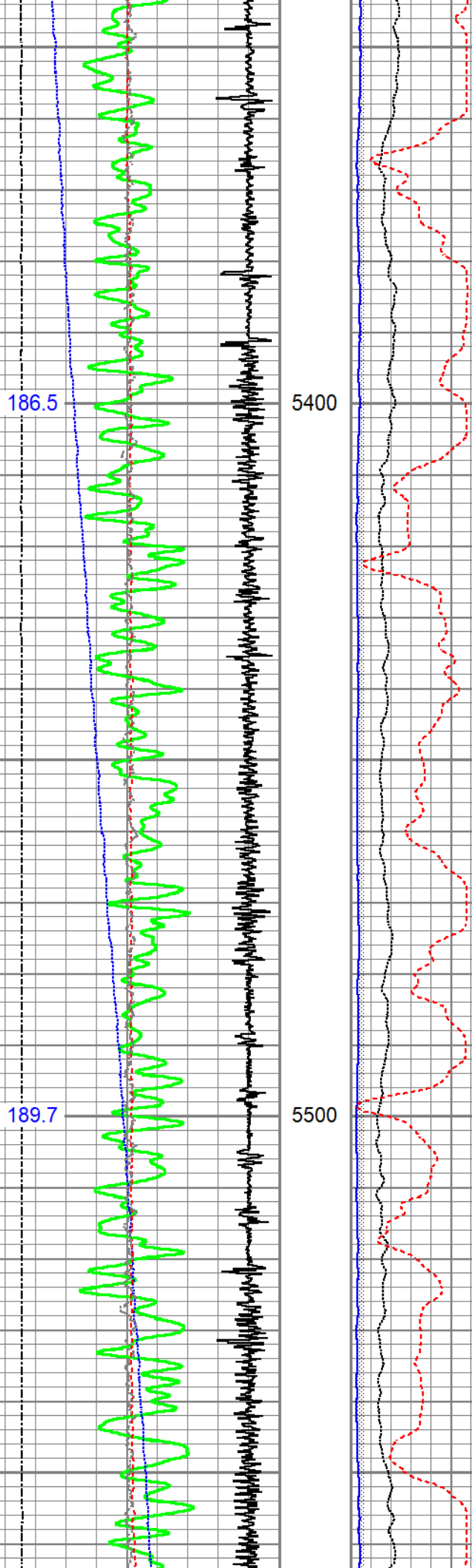
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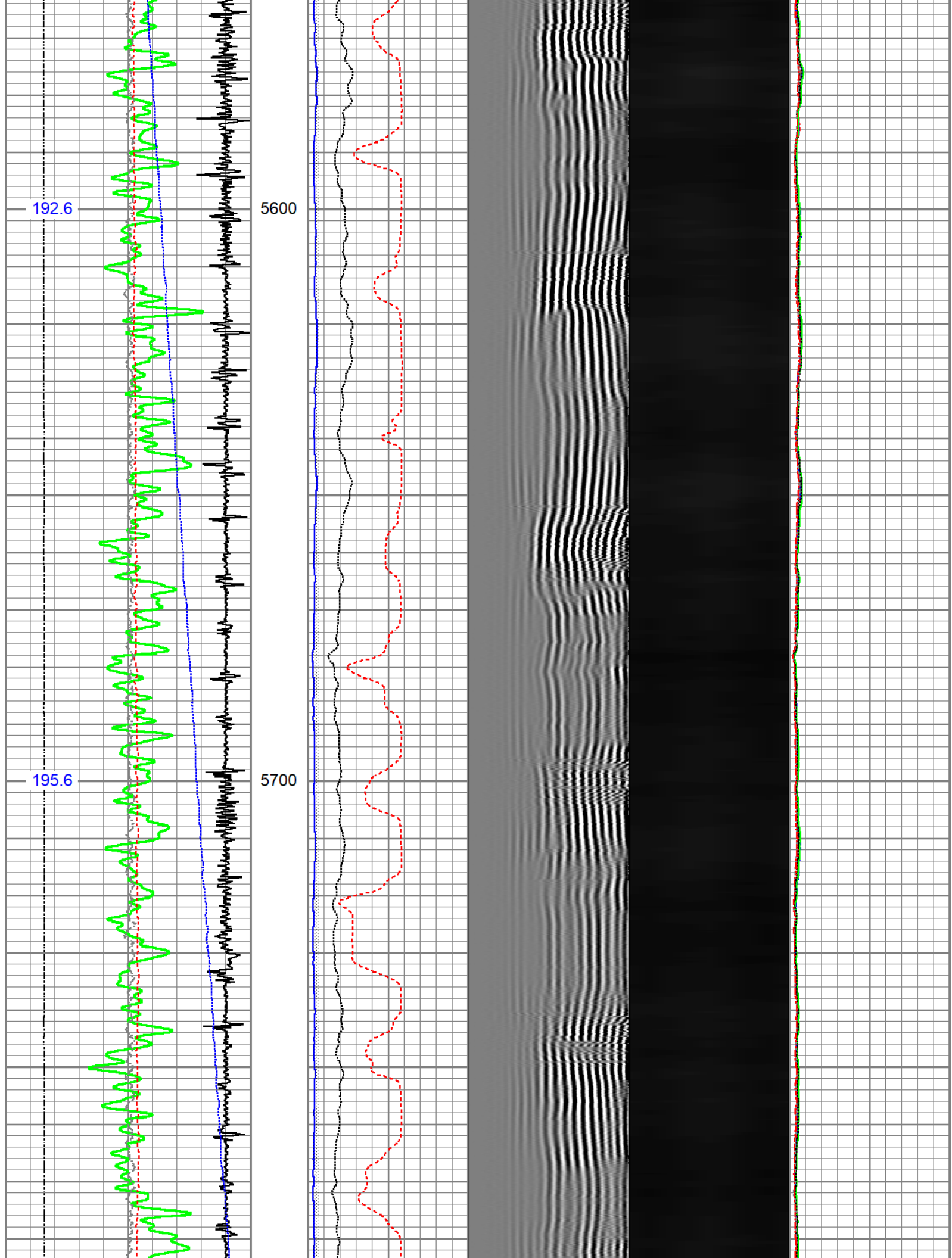


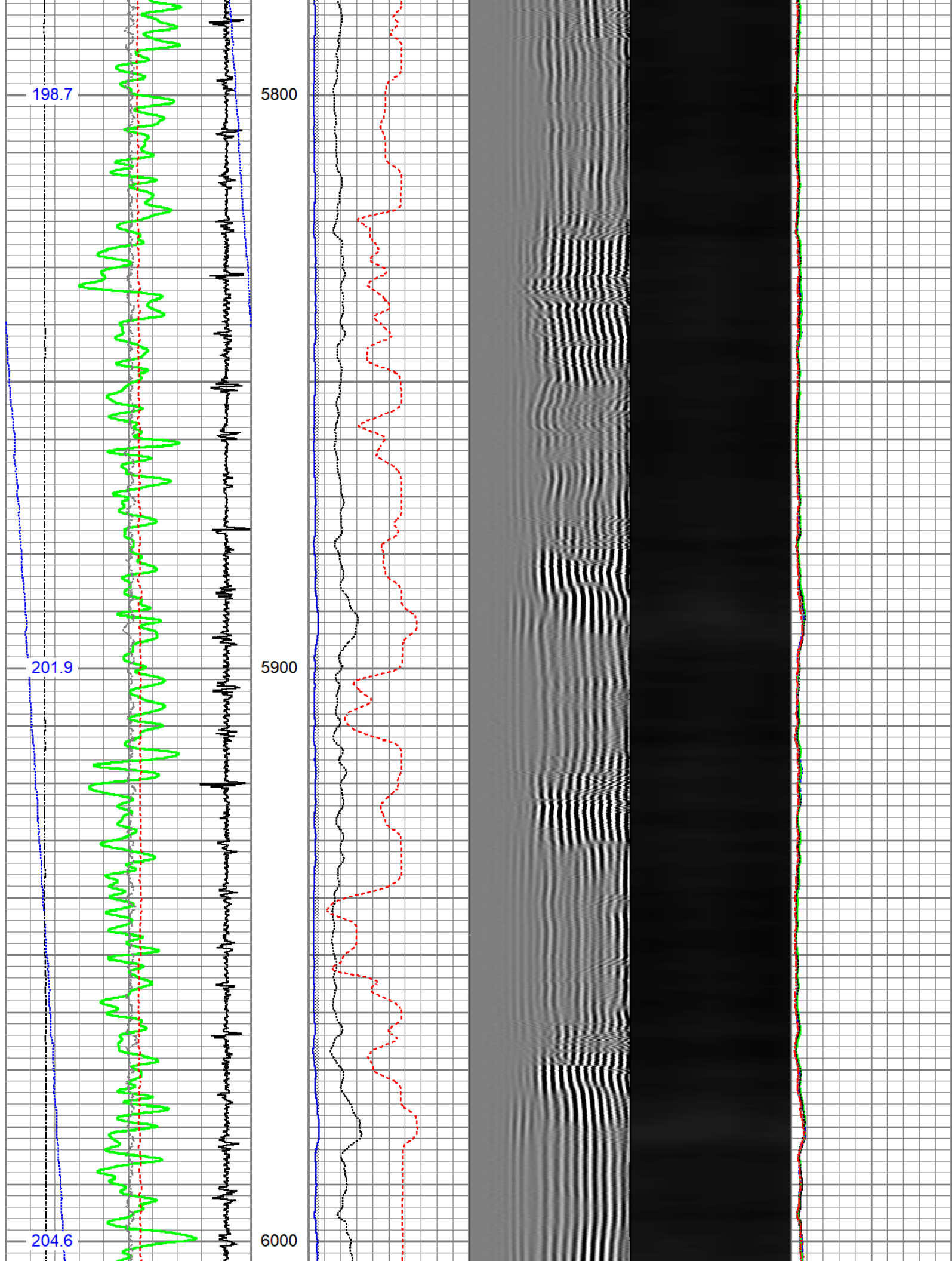










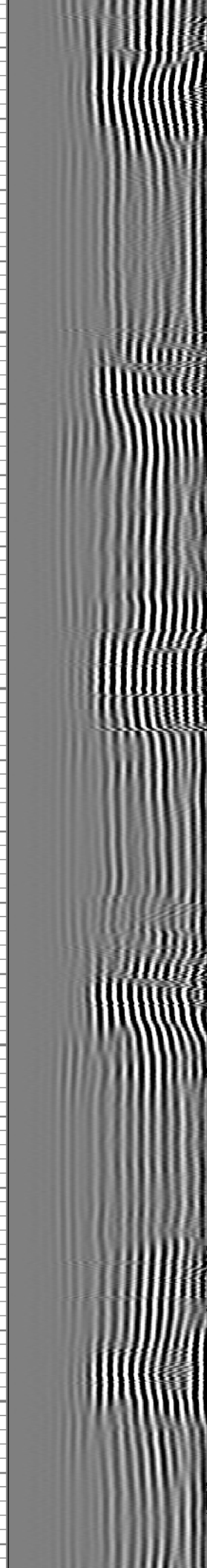
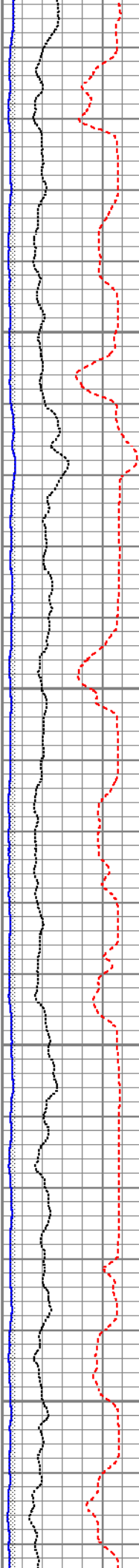
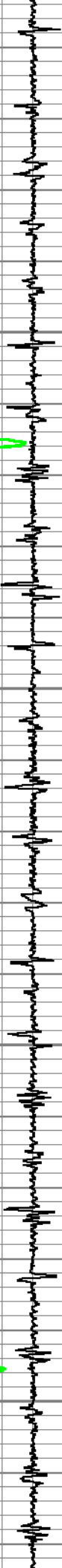
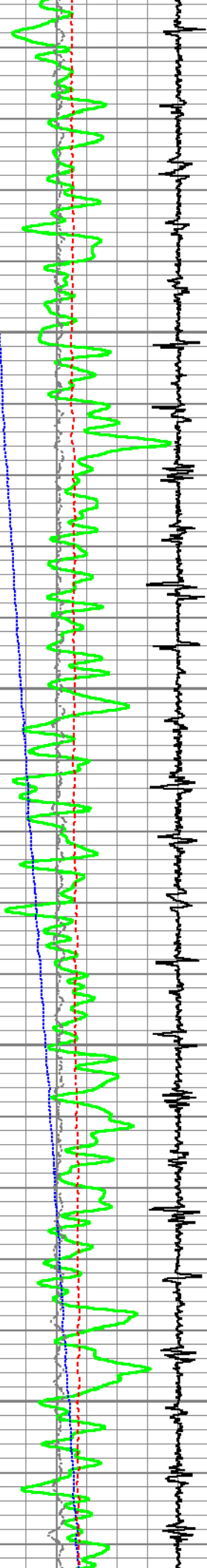


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210.8

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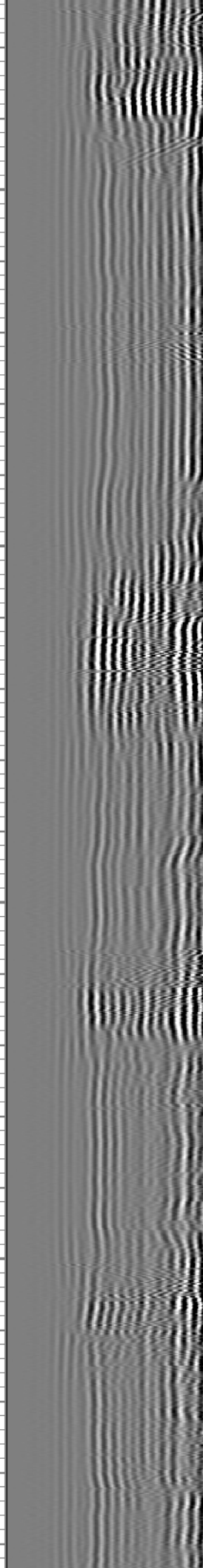
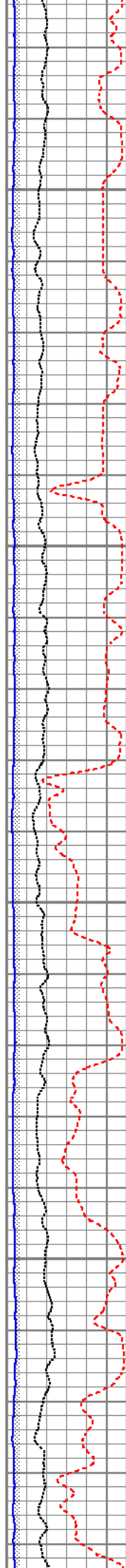
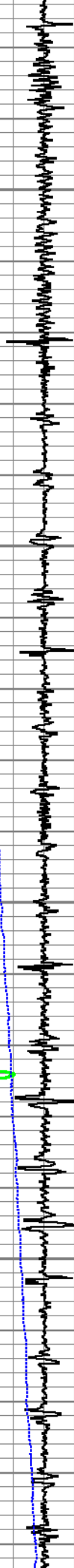
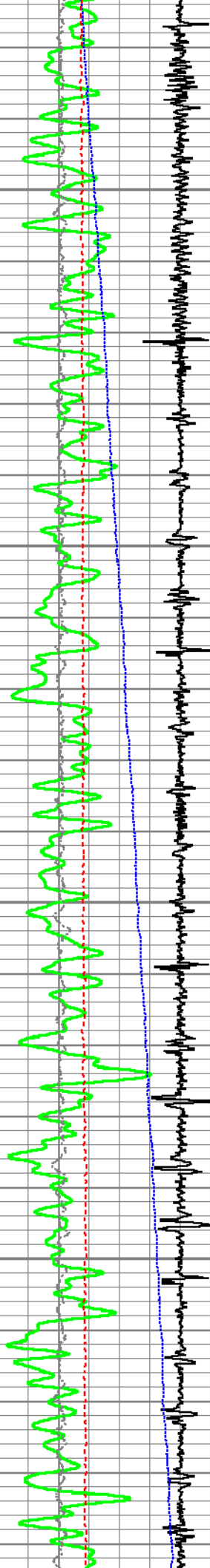


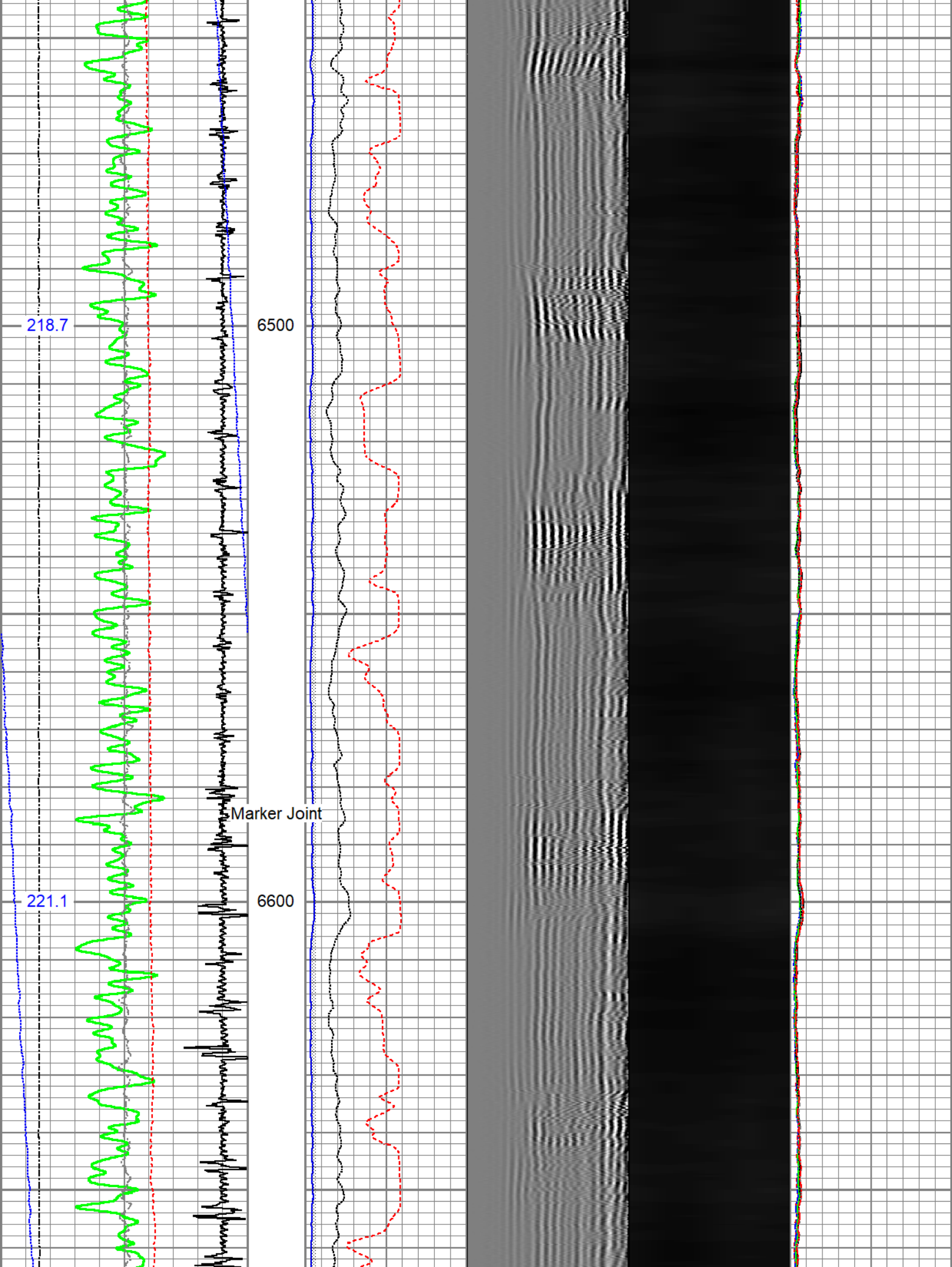
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216.4

6300

6400



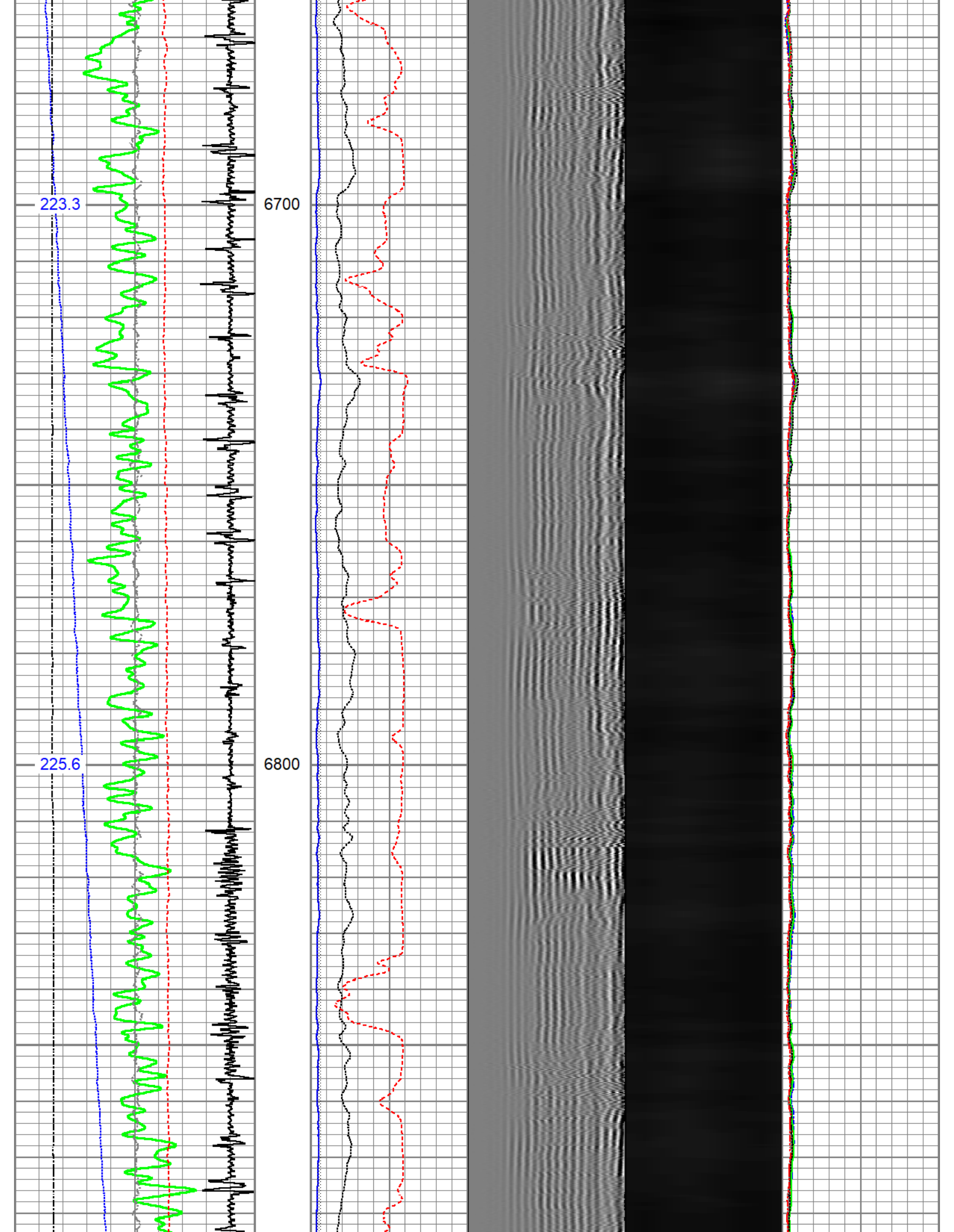


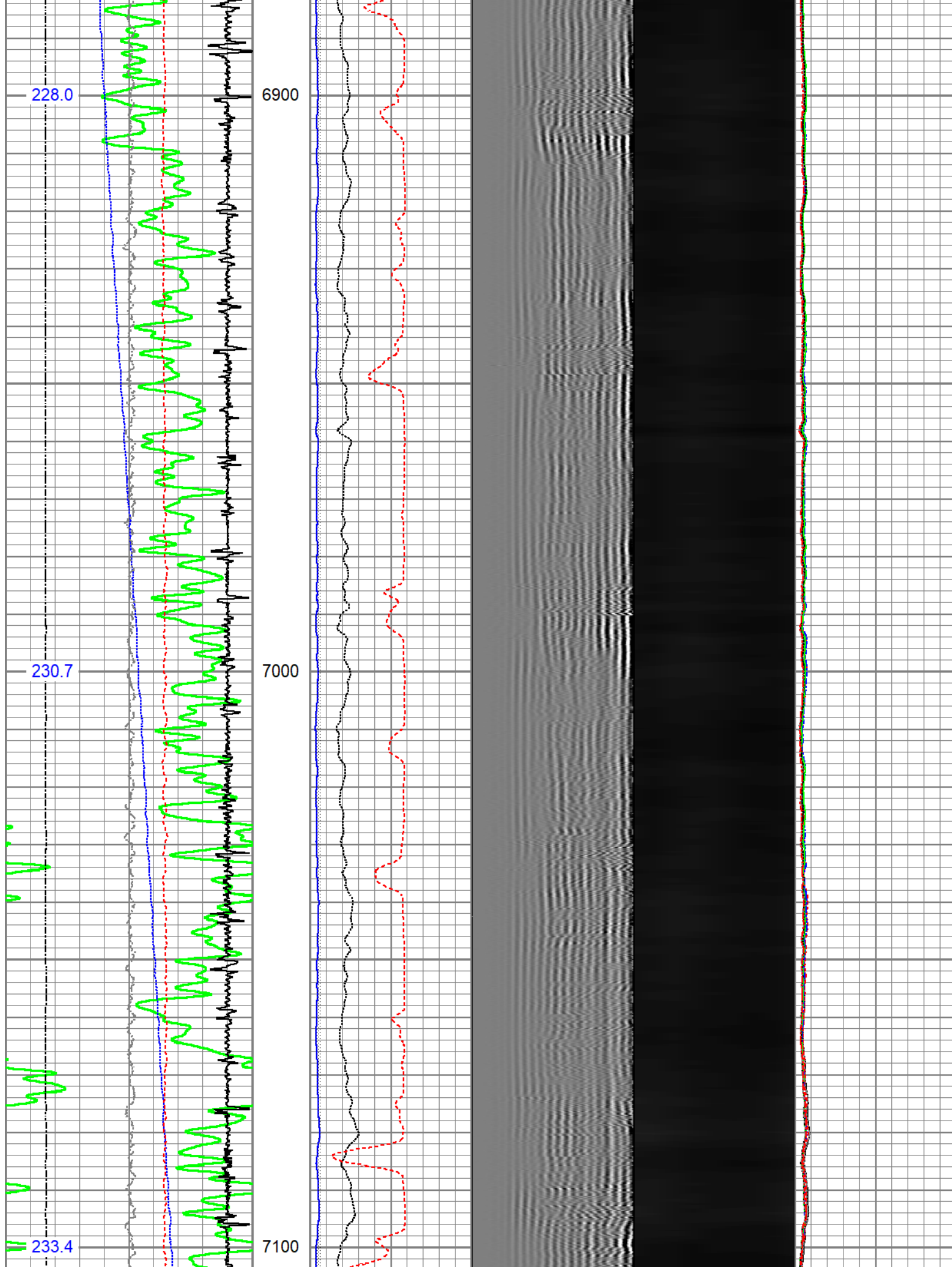
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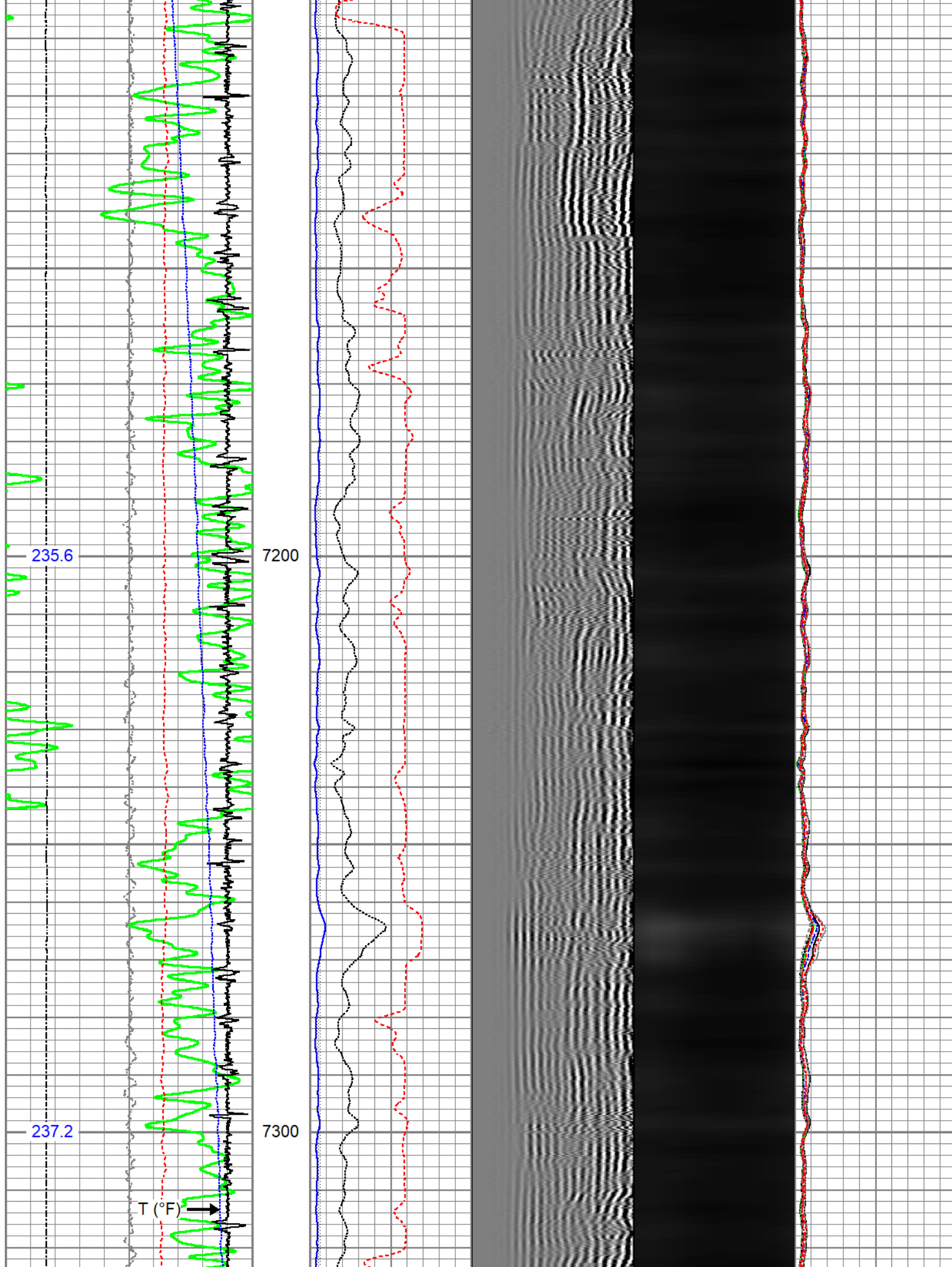
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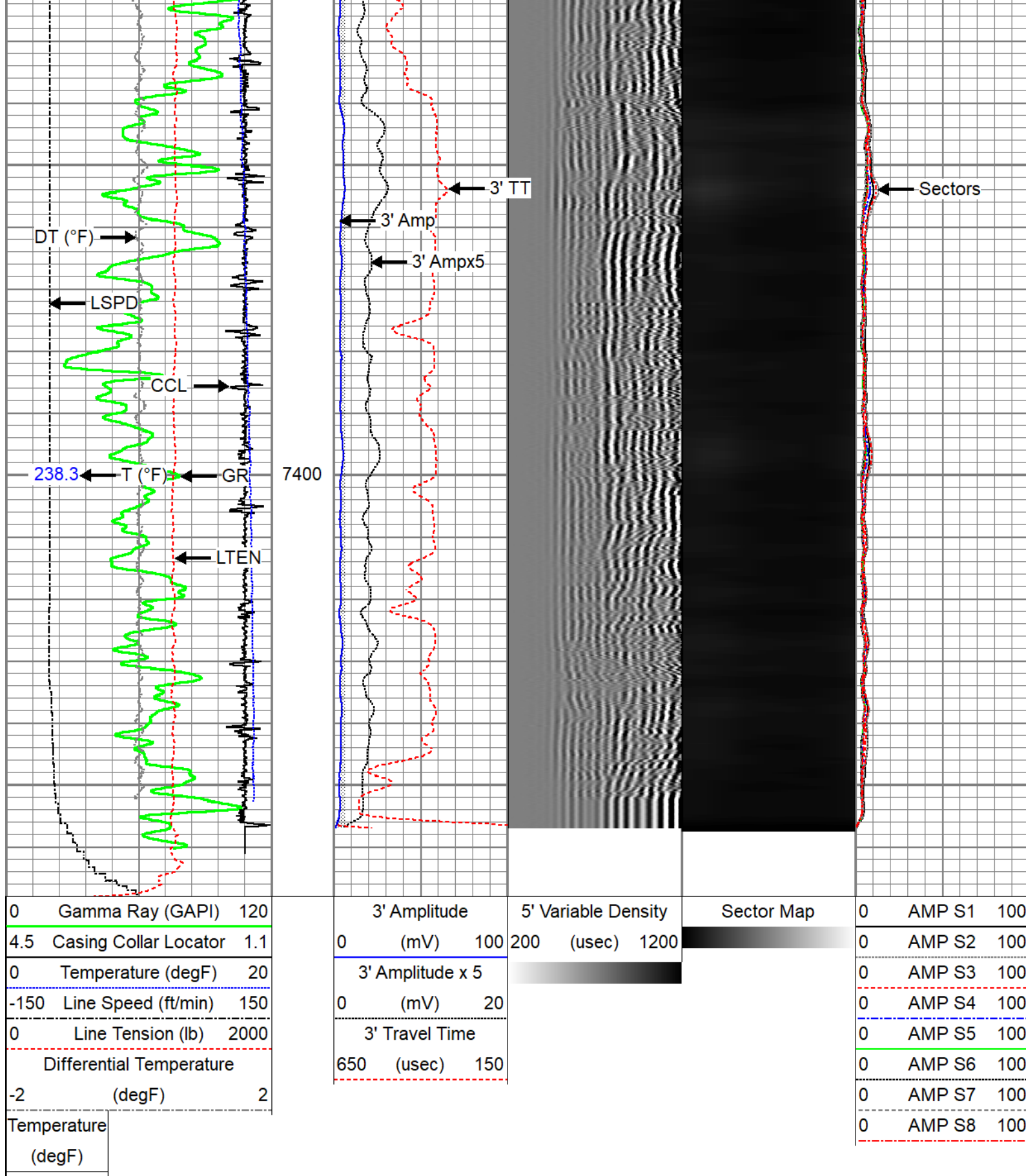
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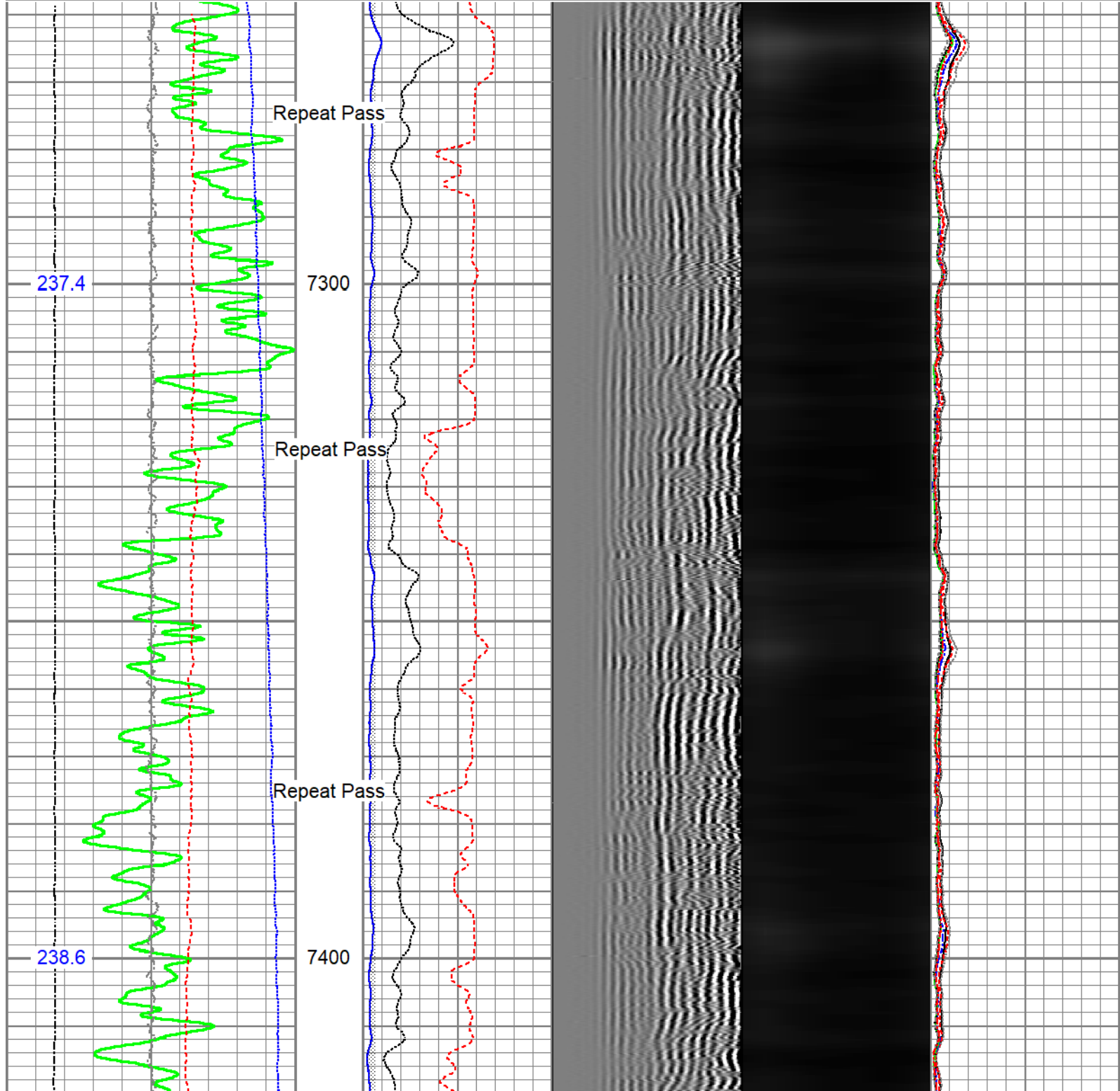
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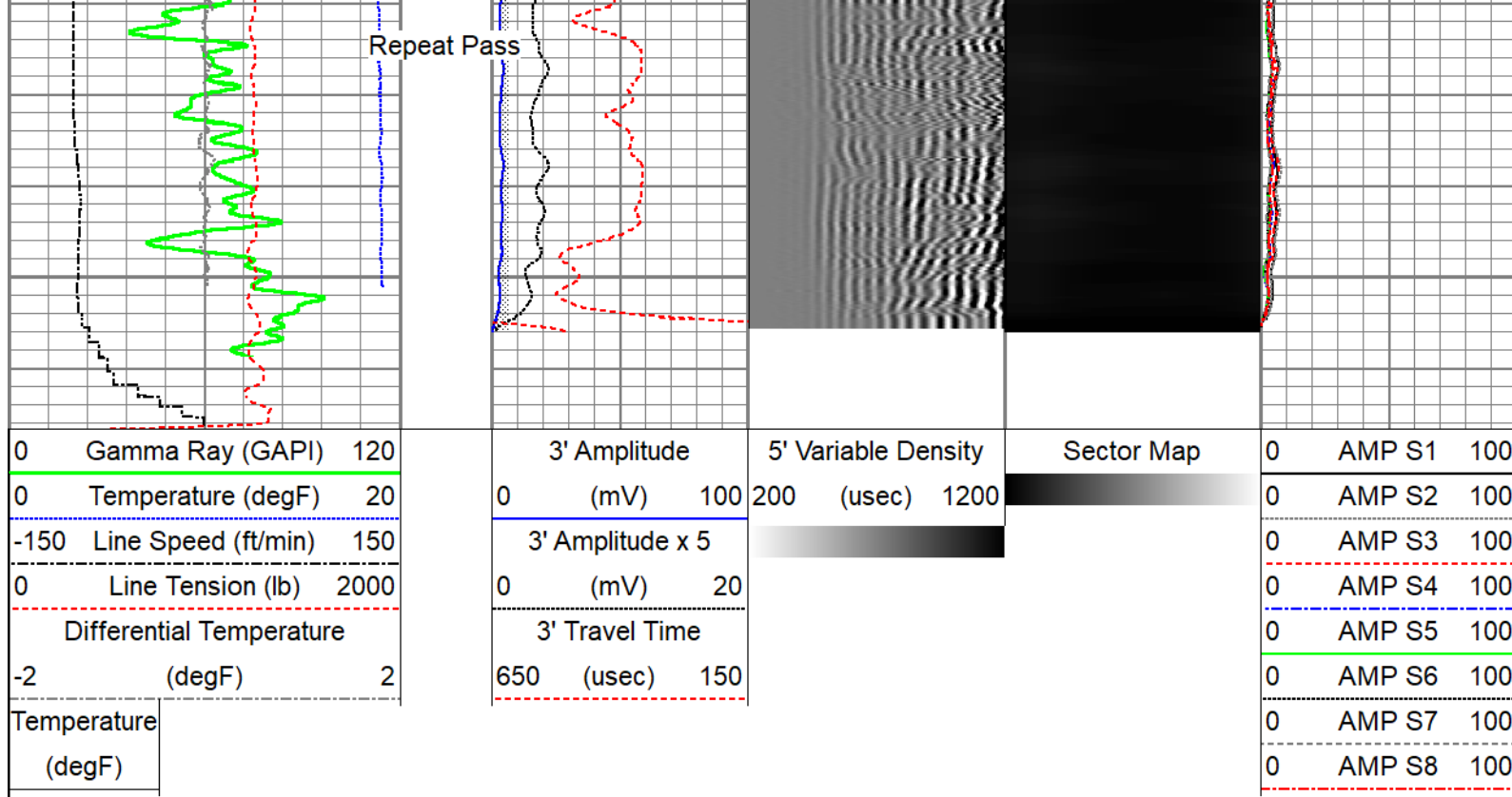
Recorded with 2500 PSI Surface Induced Pressure



Database File	noble_energy_rampart.d55766	noble_rampart.d55766_ibl_10_07_21.ab
Dataset Pathname	repeat	
Presentation Format	edge_rbl_noble	
Dataset Creation	Thu Oct 07 14:26:49 2021	
Charted by	Depth in Feet scaled 1:240	

0	Gamma Ray (GAPI)	120		3' Amplitude	5' Variable Density	Sector Map	0	AMP S1	100
0	Temperature (degF)	20	0	(mV)	100		0	AMP S2	100
-150	Line Speed (ft/min)	150		3' Amplitude x 5			0	AMP S3	100
0	Line Tension (lb)	2000	0	(mV)	20		0	AMP S4	100
Differential Temperature				3' Travel Time			0	AMP S5	100
-2	(degF)	2	650	(usec)	150		0	AMP S6	100
Temperature							0	AMP S7	100
(degF)							0	AMP S8	100





Company	Noble Energy Inc.
Well	Rampart A33-780
Field	Wattenberg
County	Weld
State	Colorado