



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well RW 29N-29HZ  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05-123-44622

Other Services  
Gauge Ring

SEC 29 TWP 3N RGE 65W

Permanent Datum Ground Level Elevation 4886'  
Log Measured From Kelly Bushing 17 FT  
Drilling Measured From Kelly Bushing

Elevation  
K.B. 4903'  
D.F. 4902'  
G.L. 4886'

Date 28-OCT-2017

Run Number	Two
Depth Driller	12434 FT
Depth Logger	7422 FT
Bottom Logged Interval	7415 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	250°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	0745
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	J. Amidei
Witnessed By	Ronnie Van Buskirk

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size (in)	Weight (lb/ft)	From	To

Casing Record	Size (in)	Wgt (lb/ft)	Grade	Top	Bottom
Surface Casing	9 5/8	36	J-55	Surface	1861 FT
Intermediate #1	5 1/2	20	HCP-110	Surface	12423 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

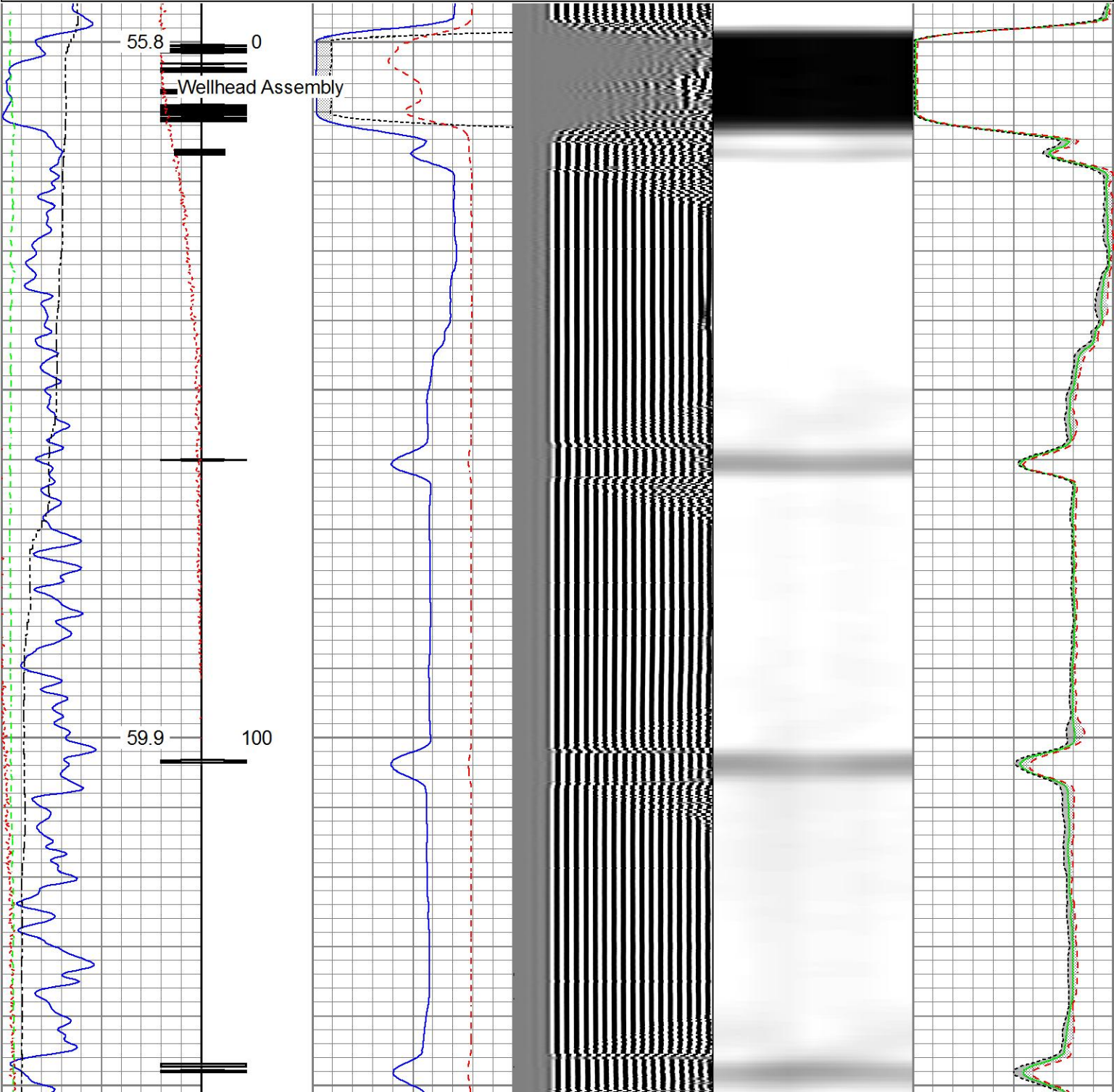
Log ran as per customer request  
Depth referenced to Casing Tally reported Marker Joint at 6297 FT  
Adjusted -8 FT to correlate with Marker Joint  
Log Ran From 7430 FT to Surface  
Gauge Ring/Junk Basket ran 7471 FT possible in heel to surface  
Log ran with 2800 PSI Surface Induced Pressure  
Logging tools were clean and free of any debris upon completion of operations  
  
Thank you for choosing Reliance Oilfield Services, LLC!!



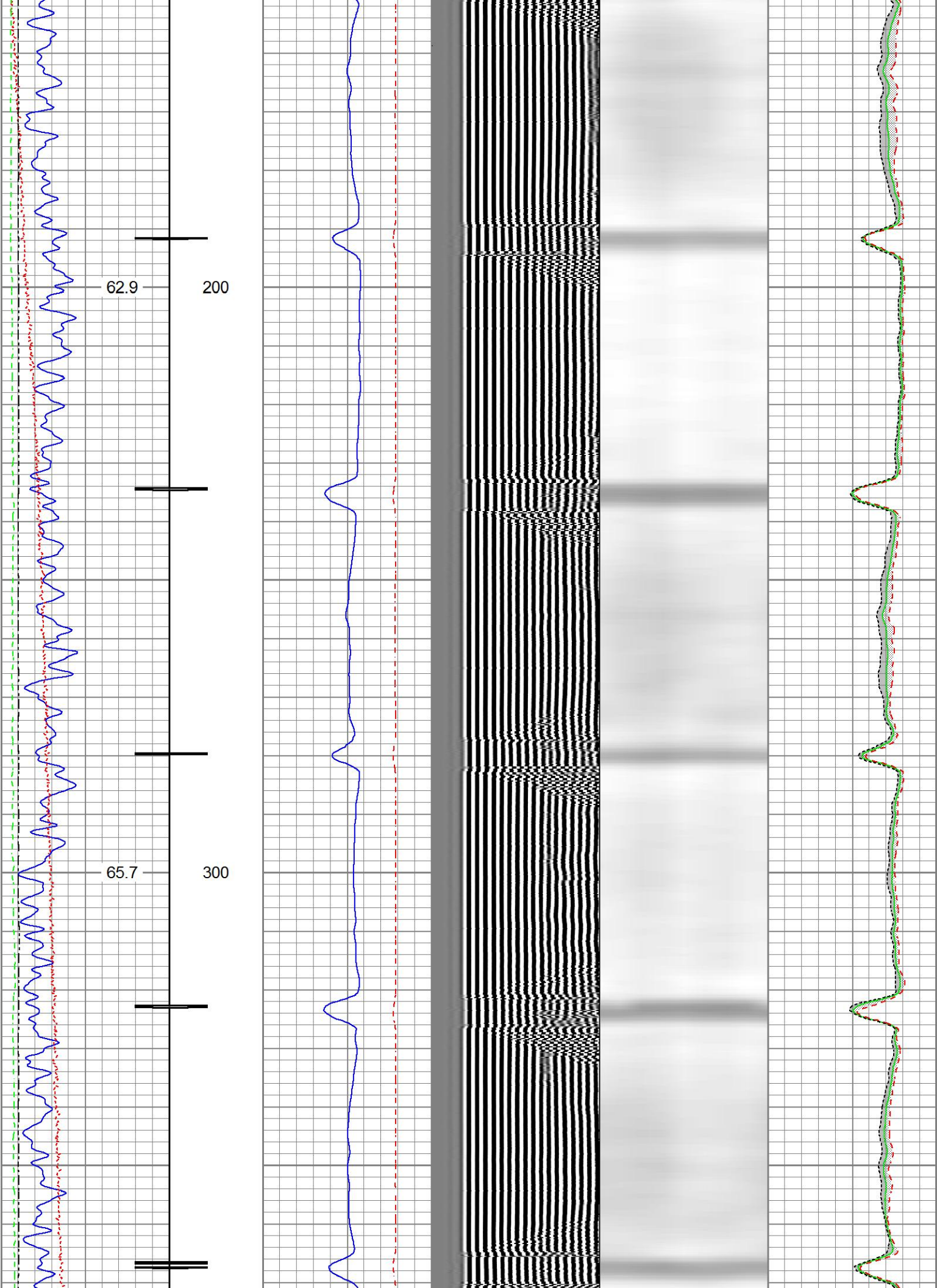
Main Pass

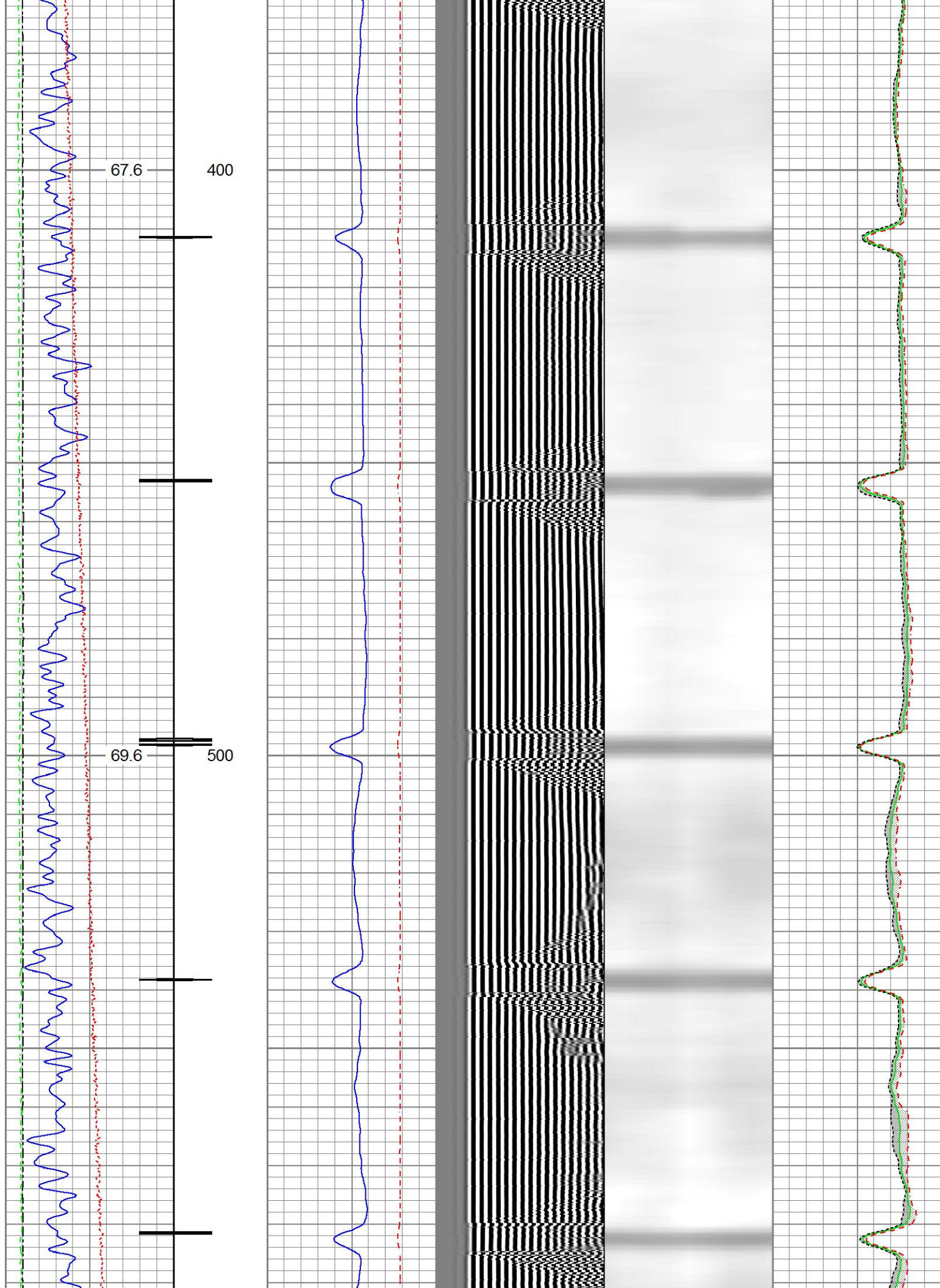
Recorded With 2800 PSI Surface Induced Pressure

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

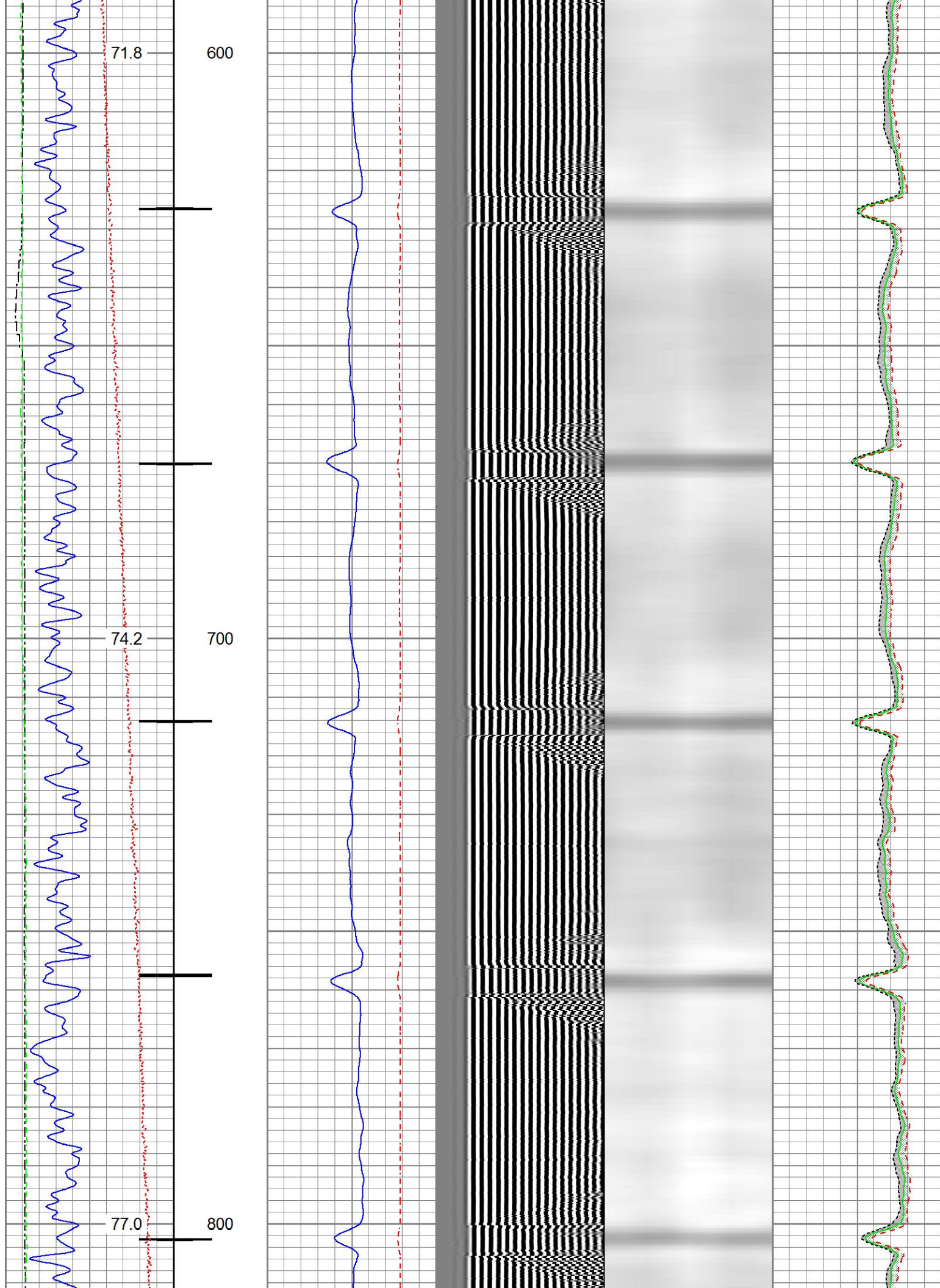


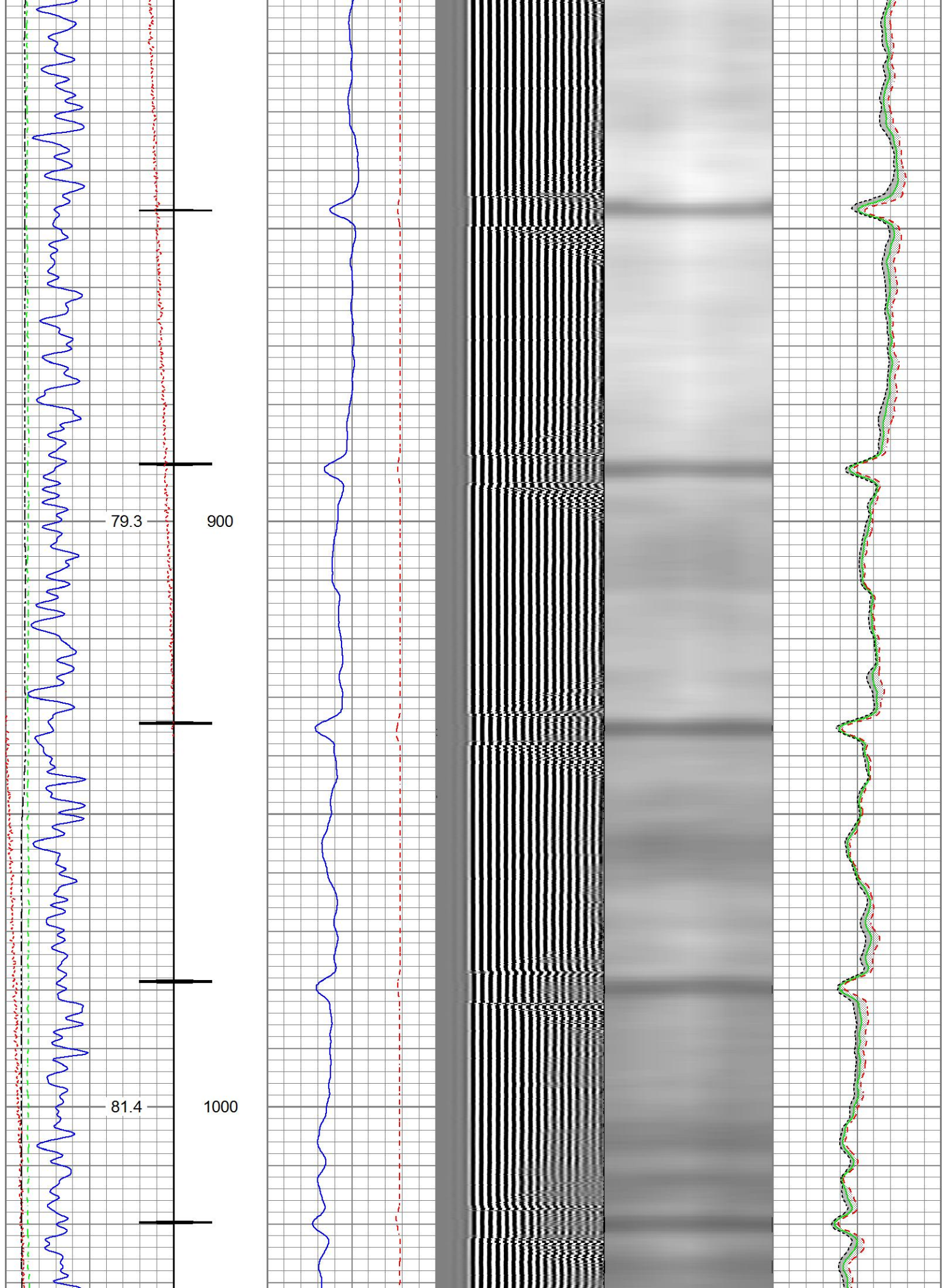




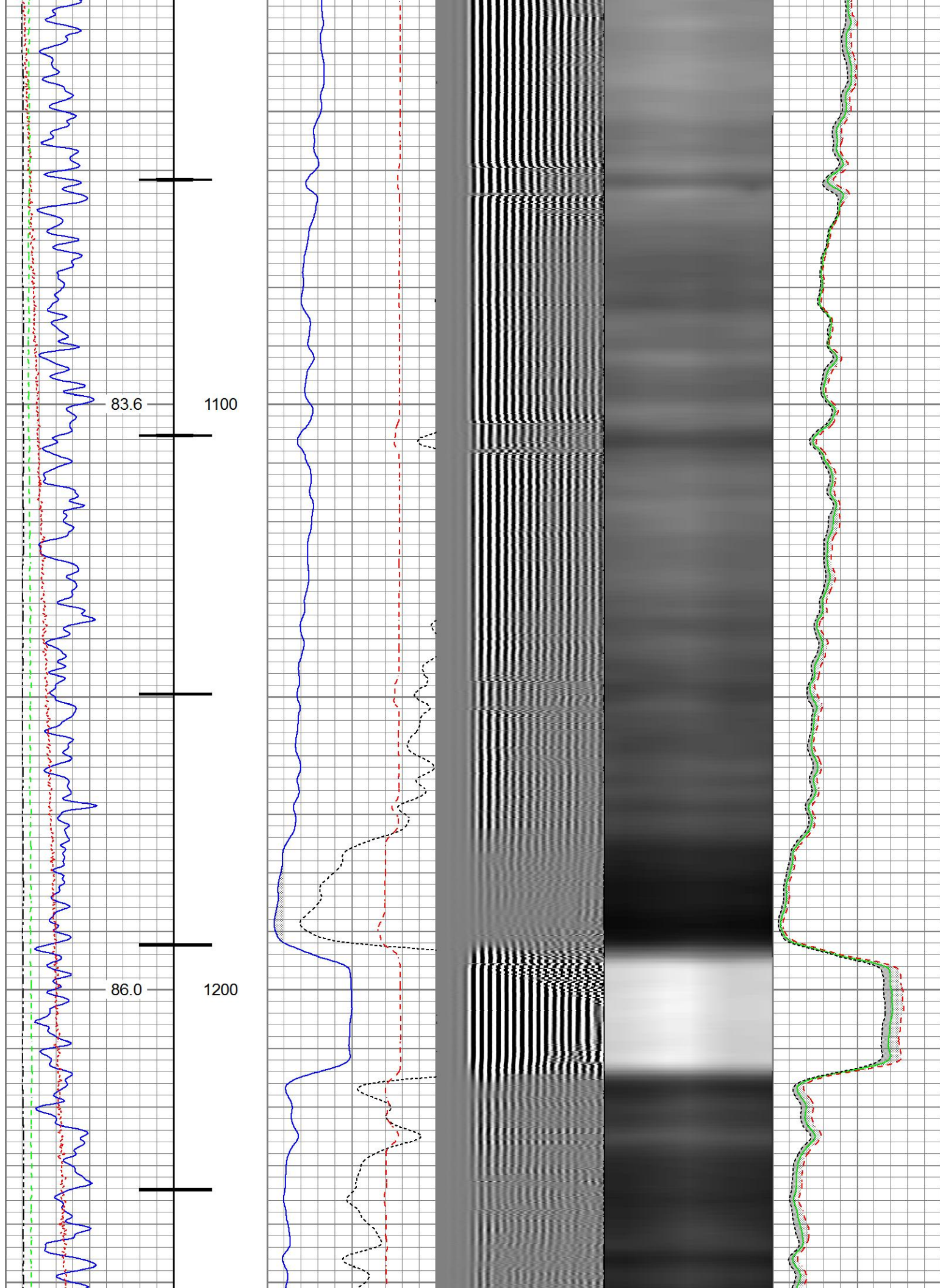


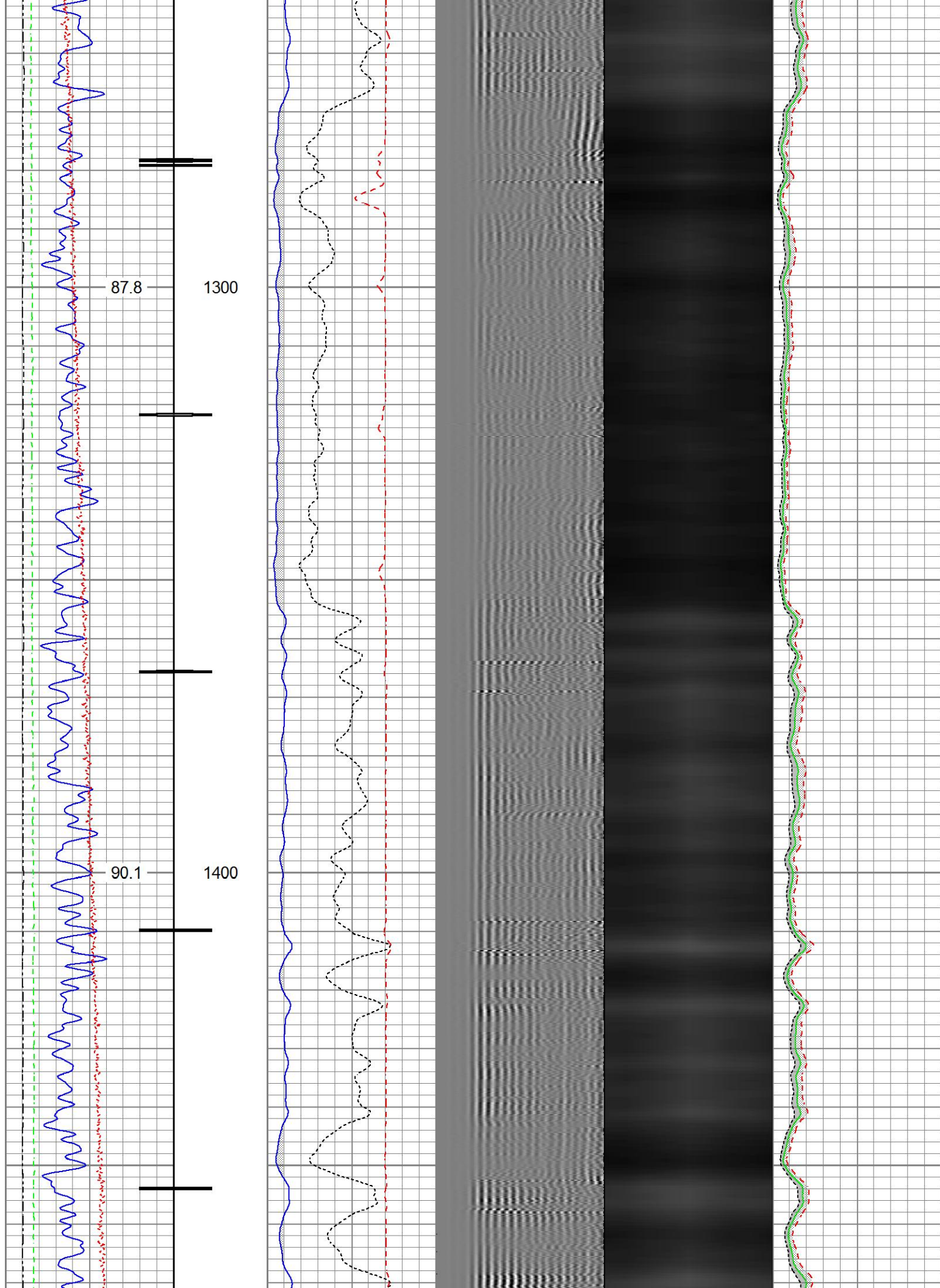




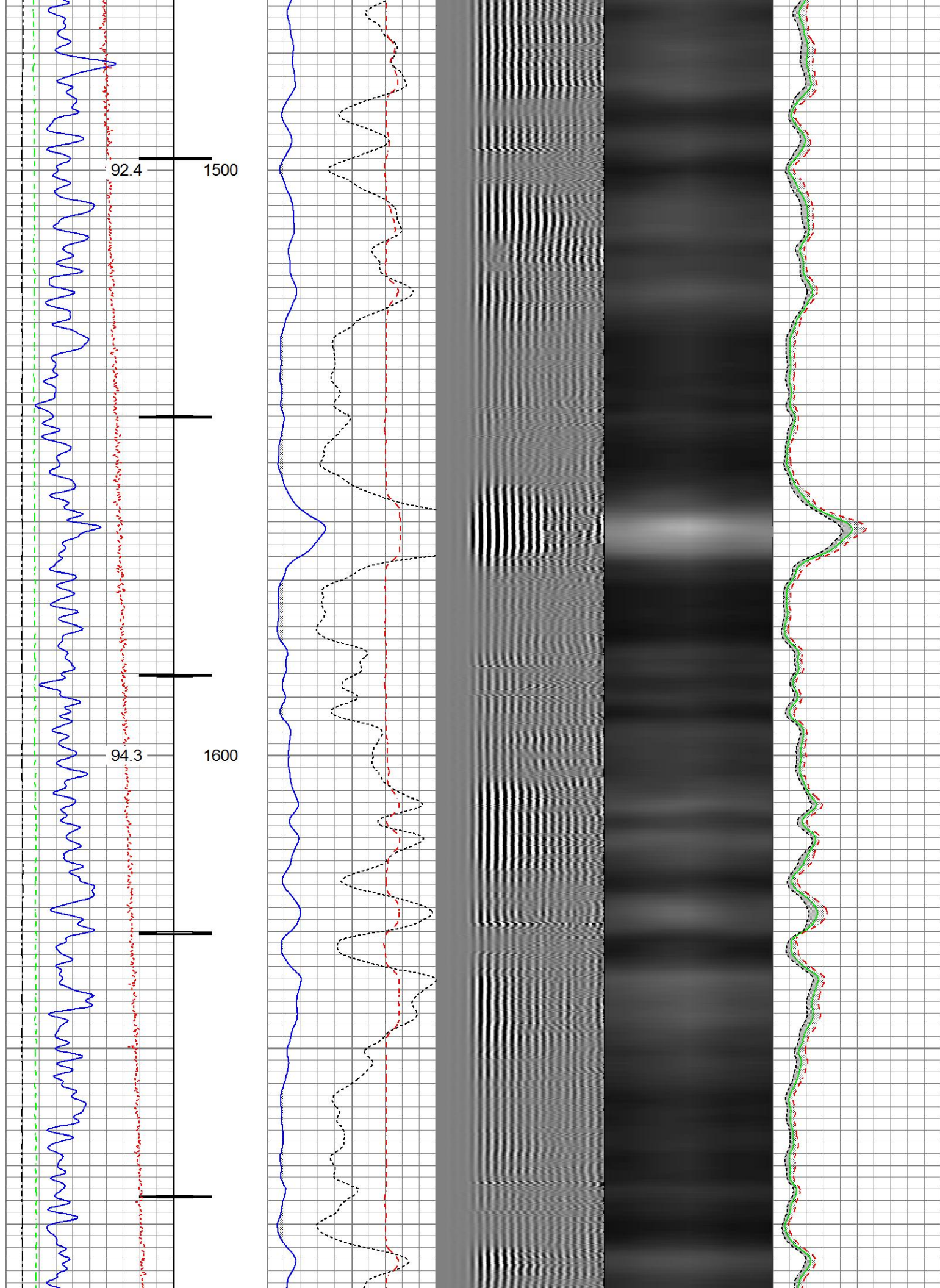


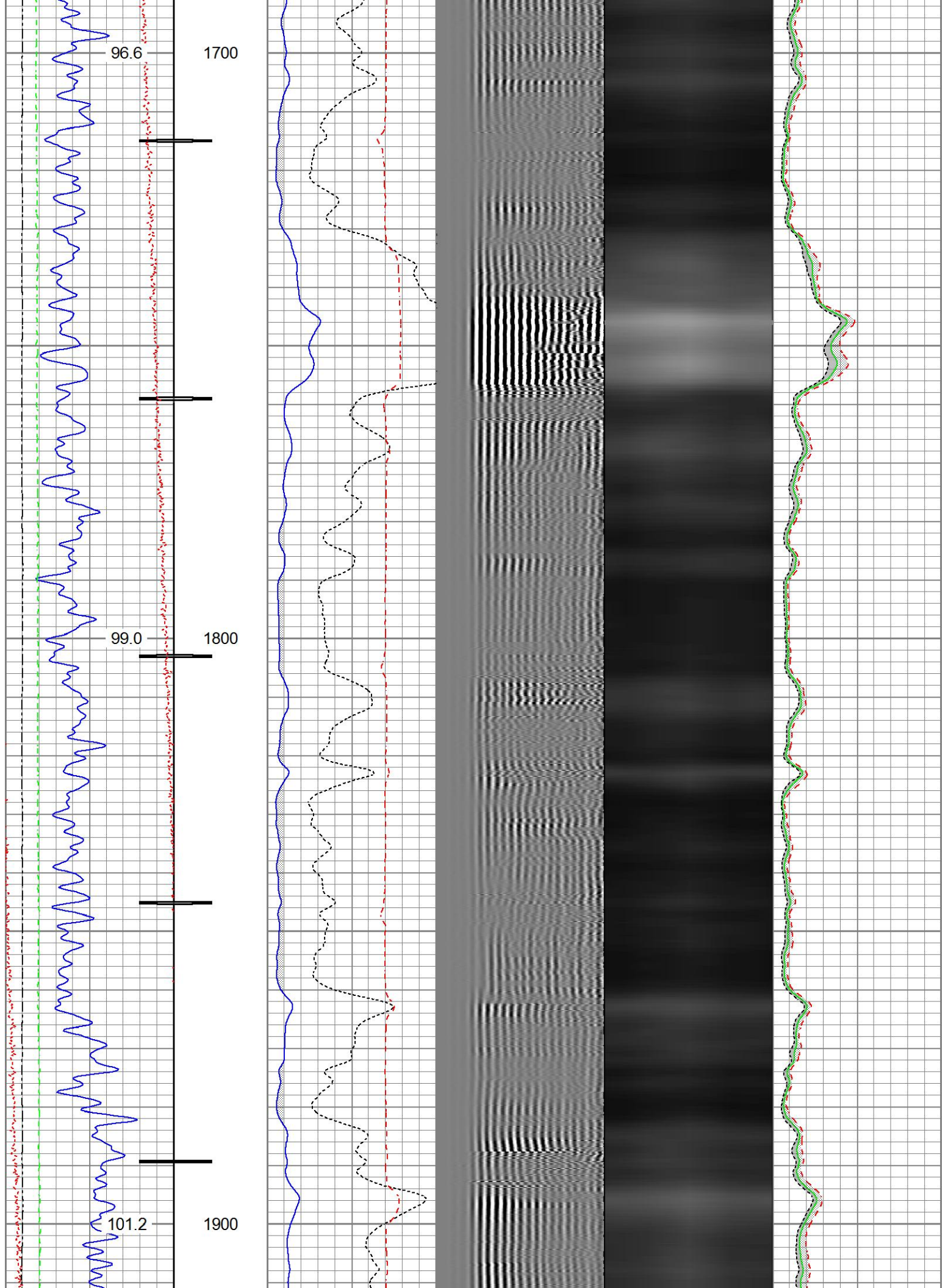




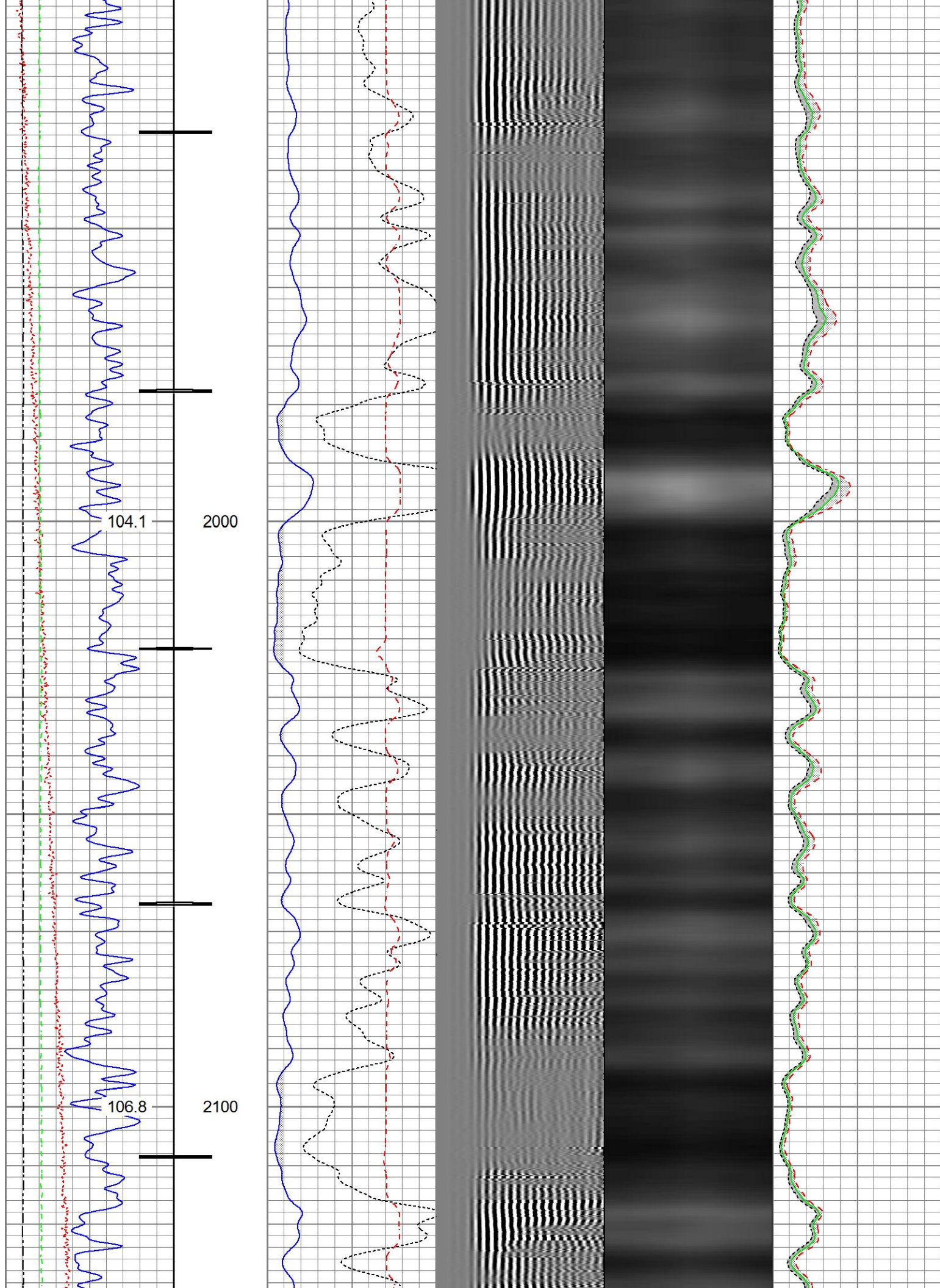




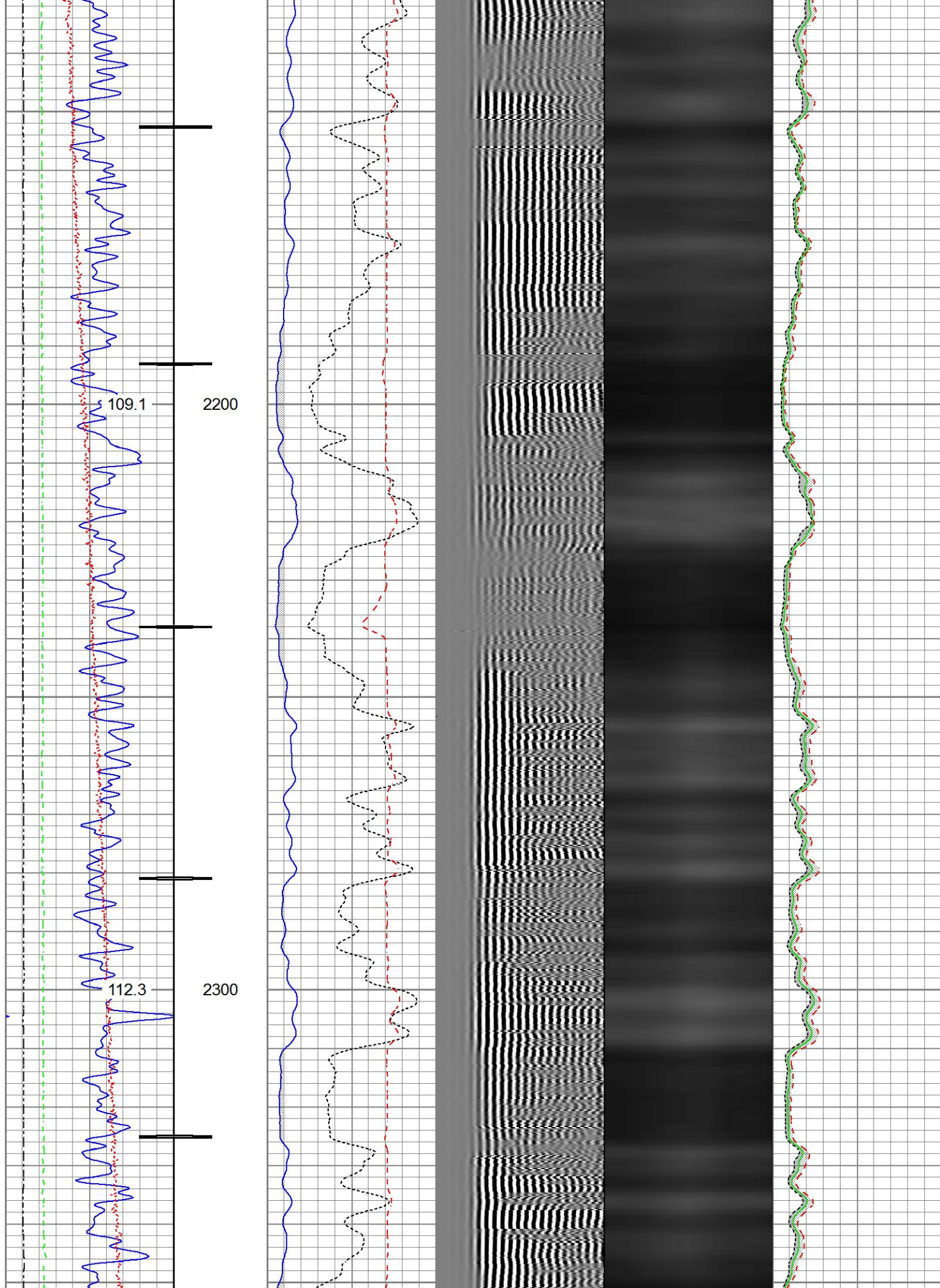




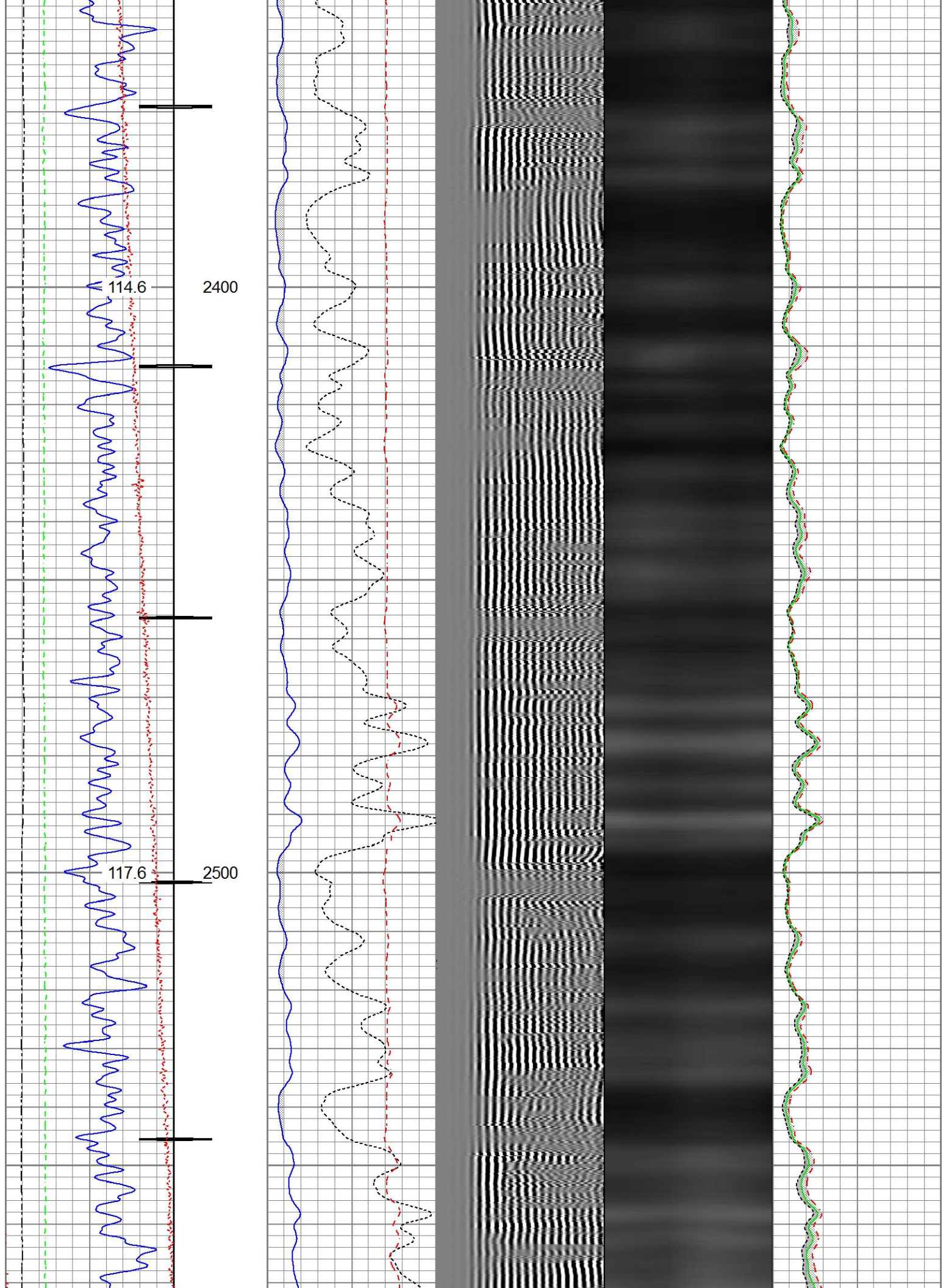




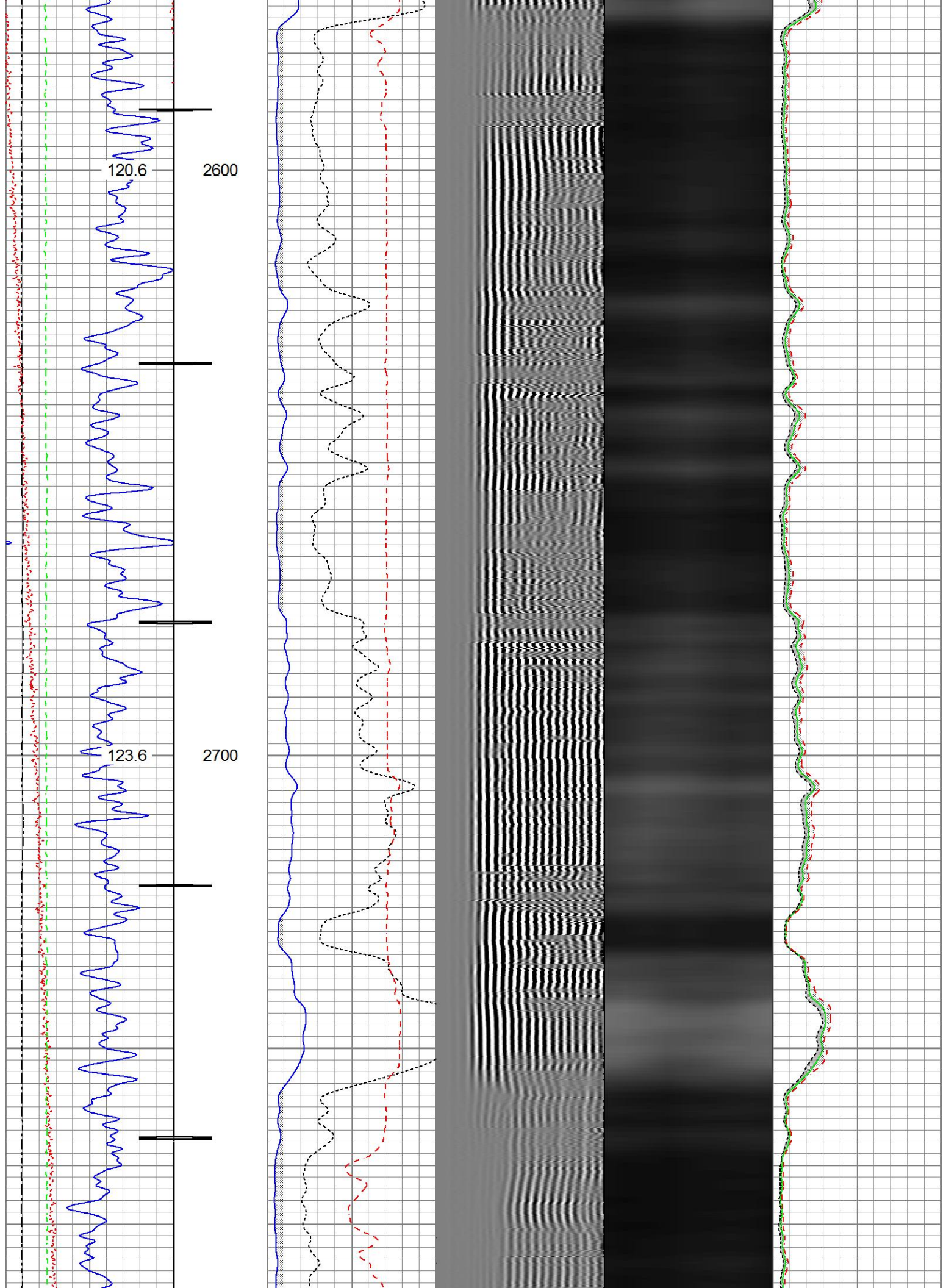




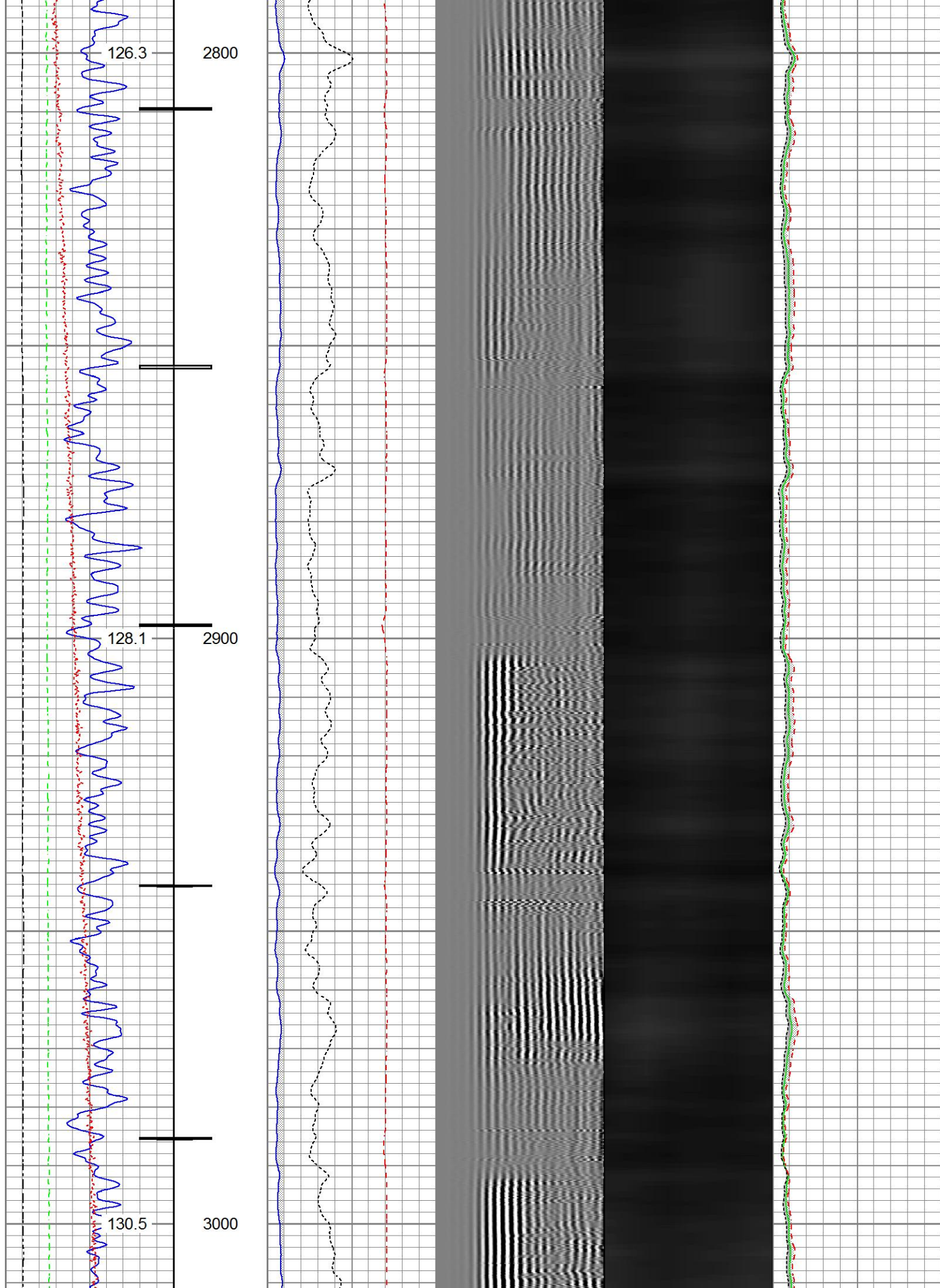


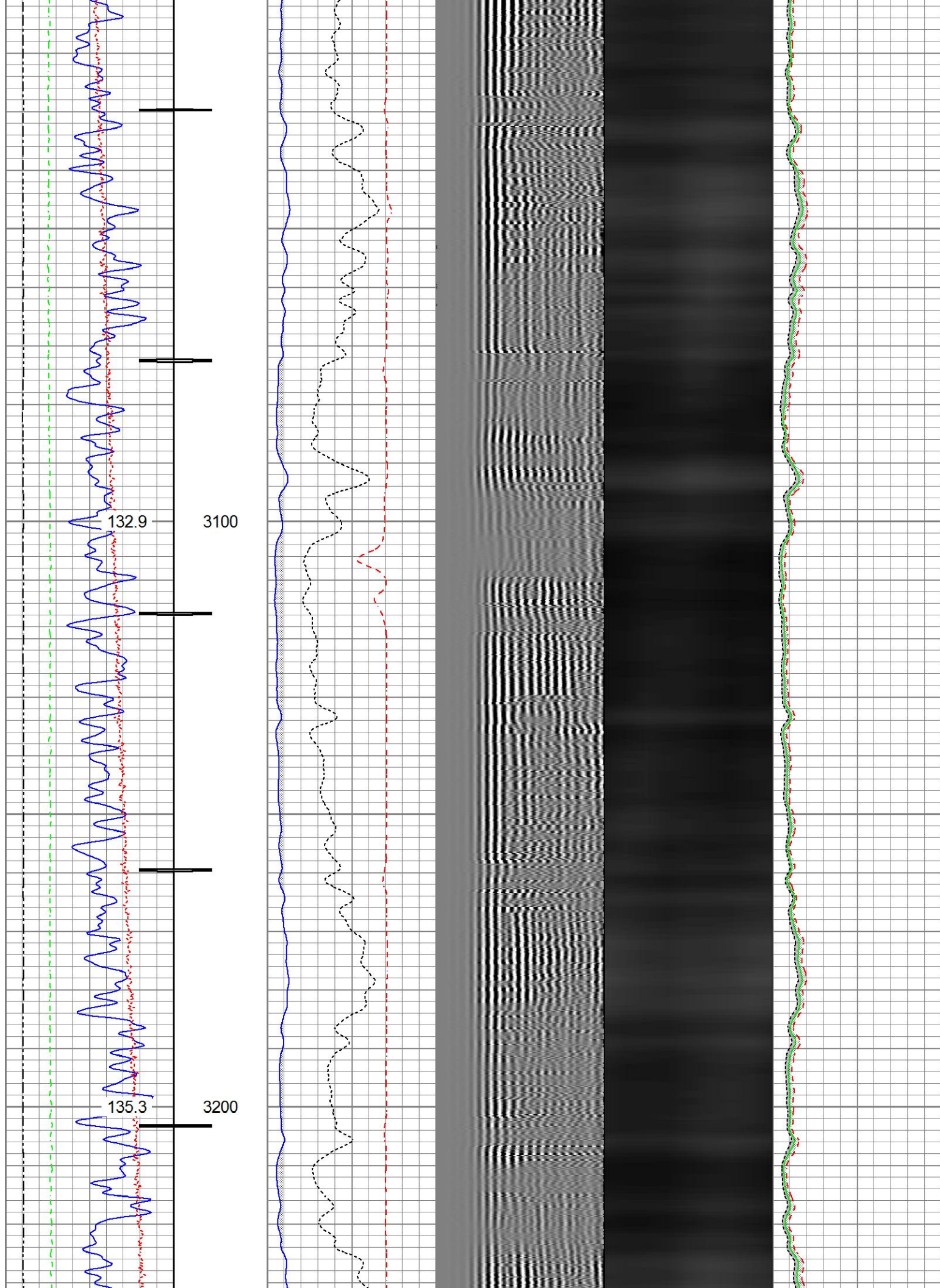




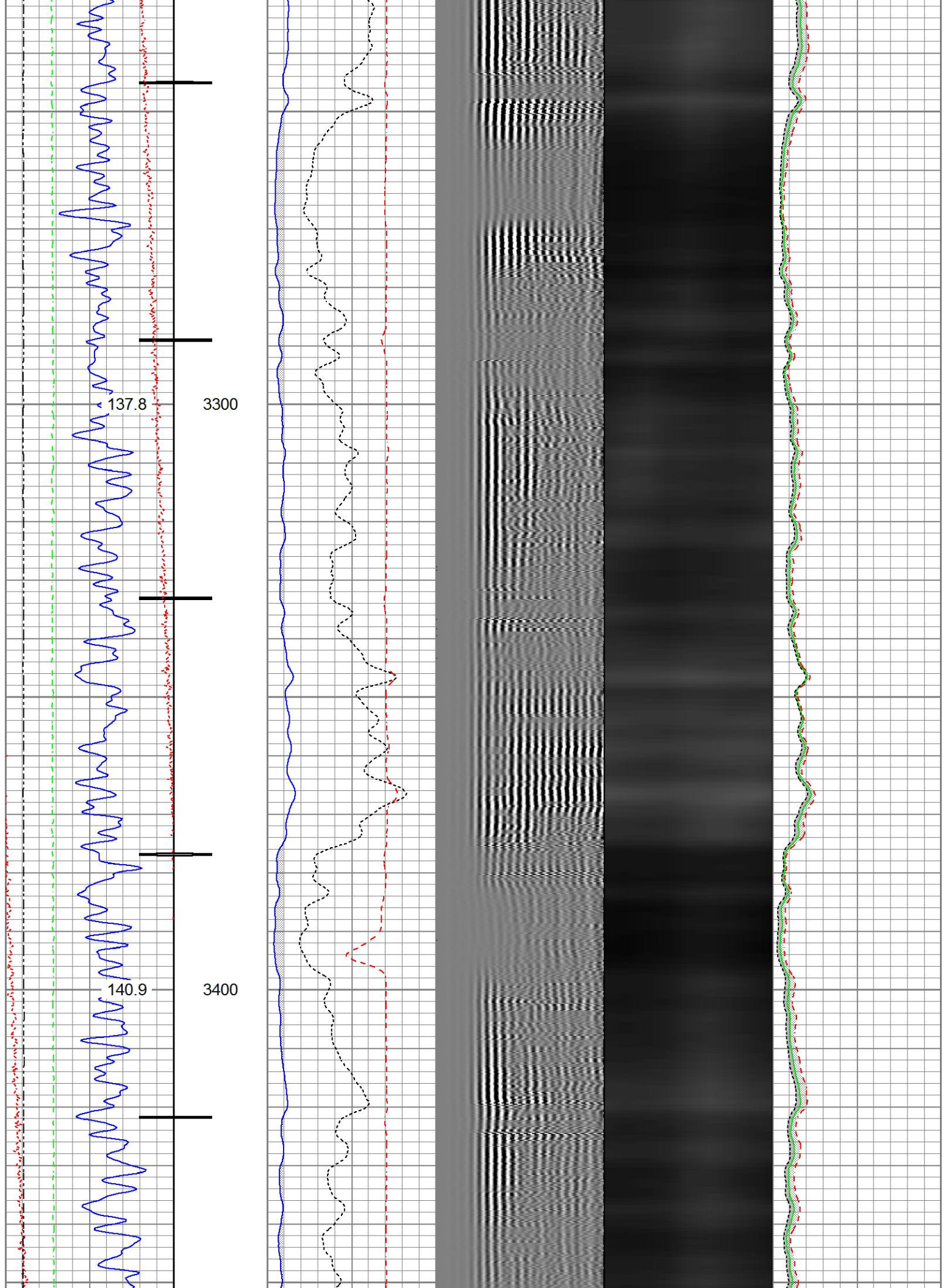


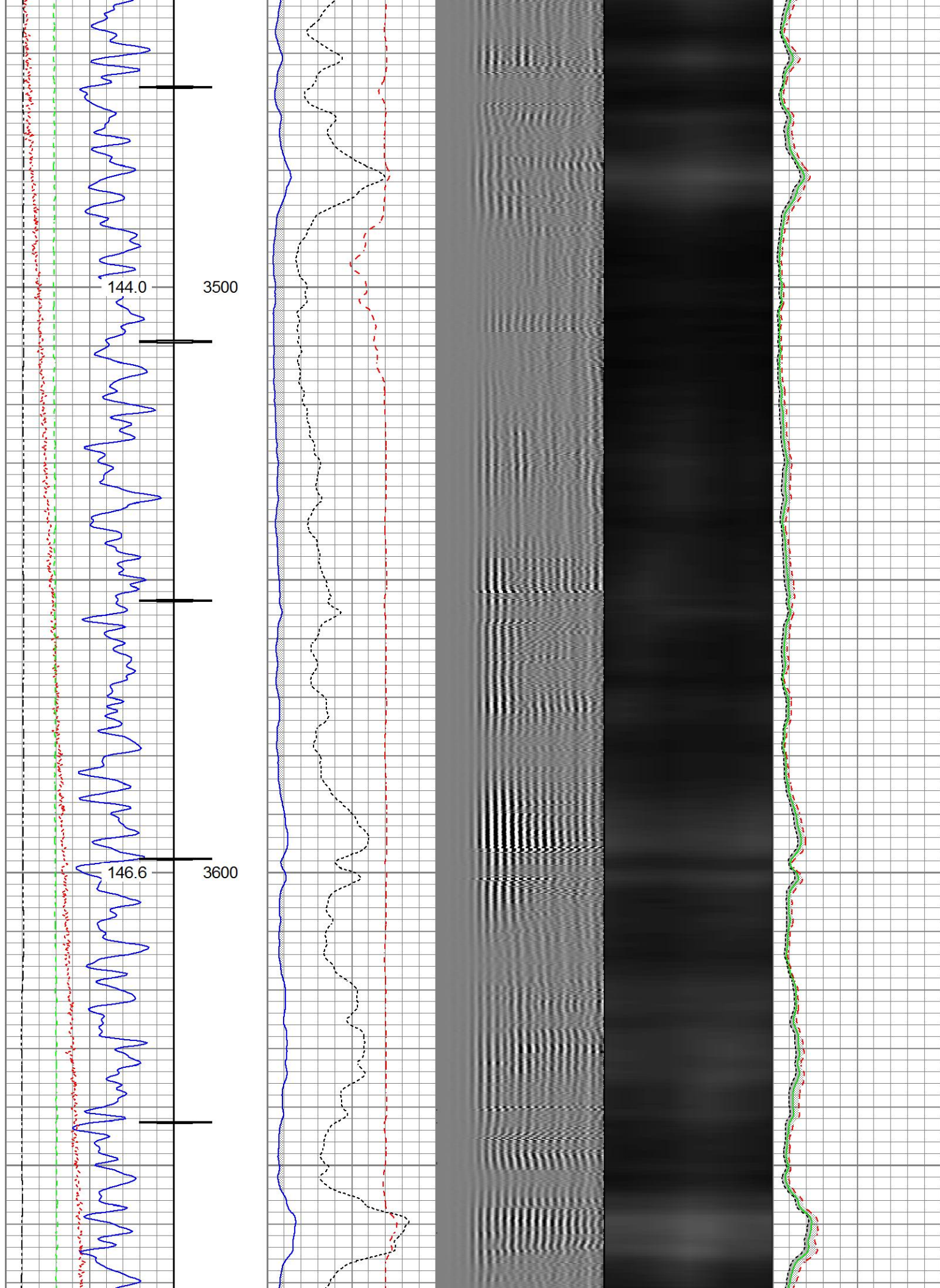




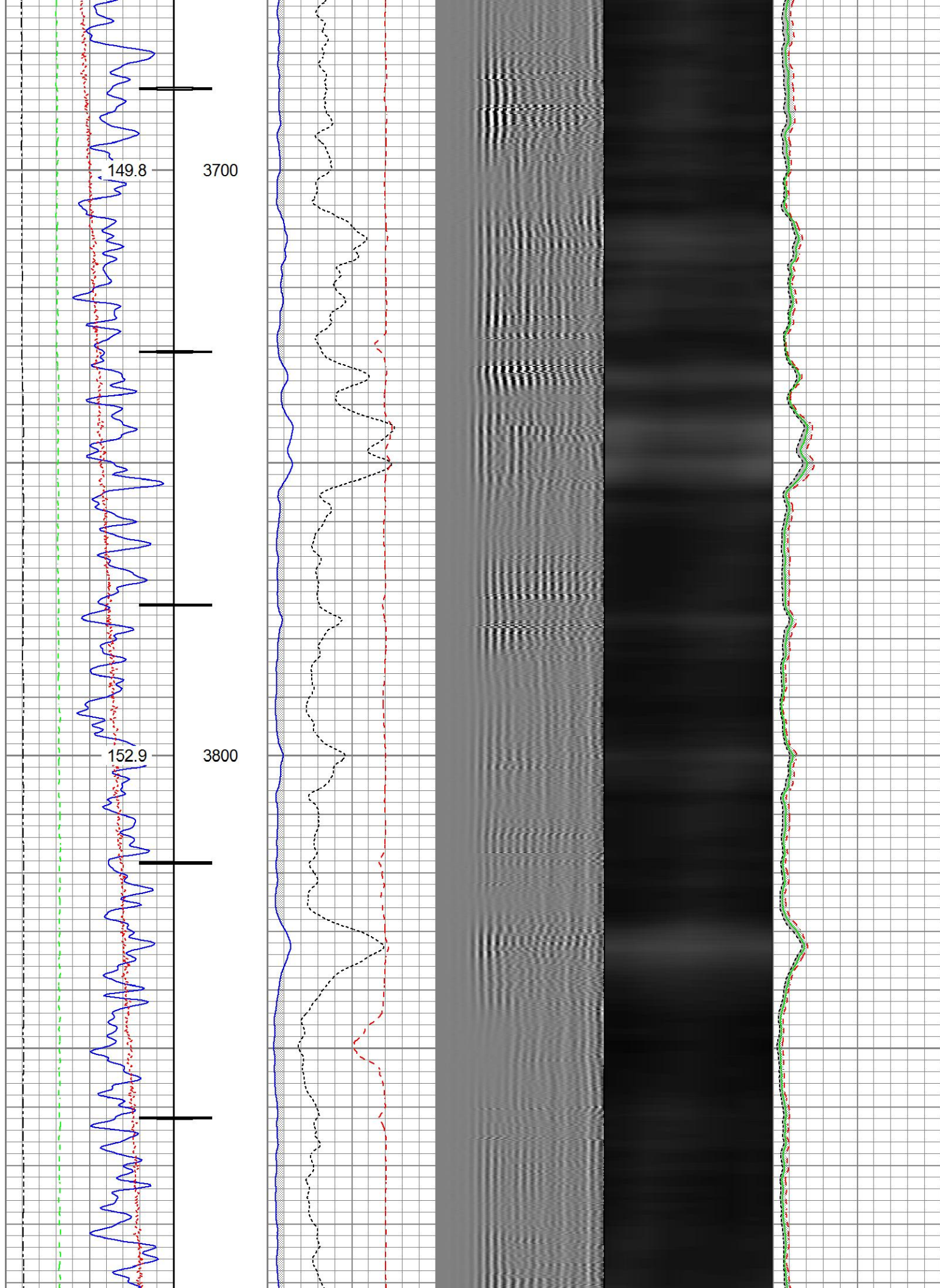


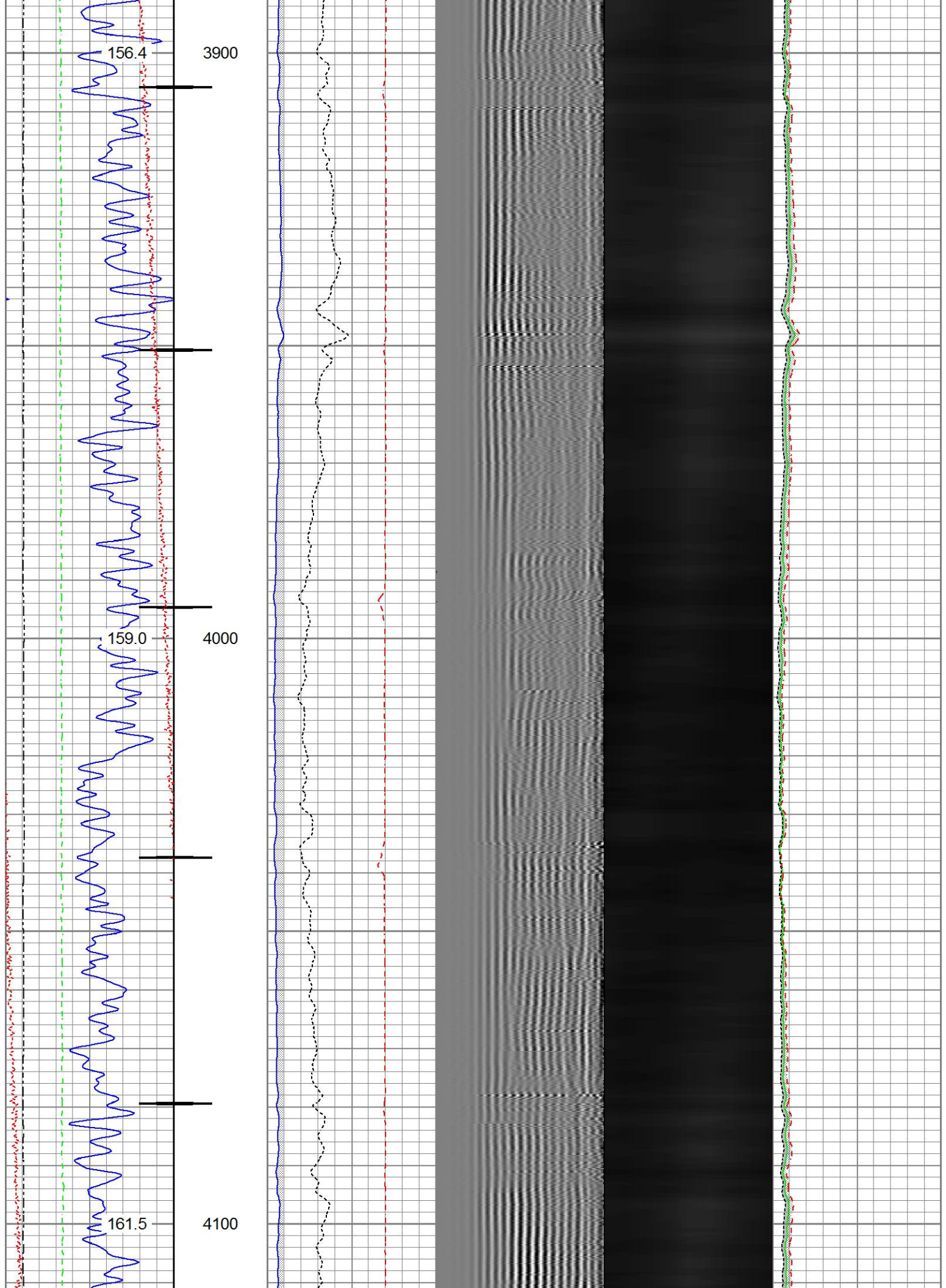




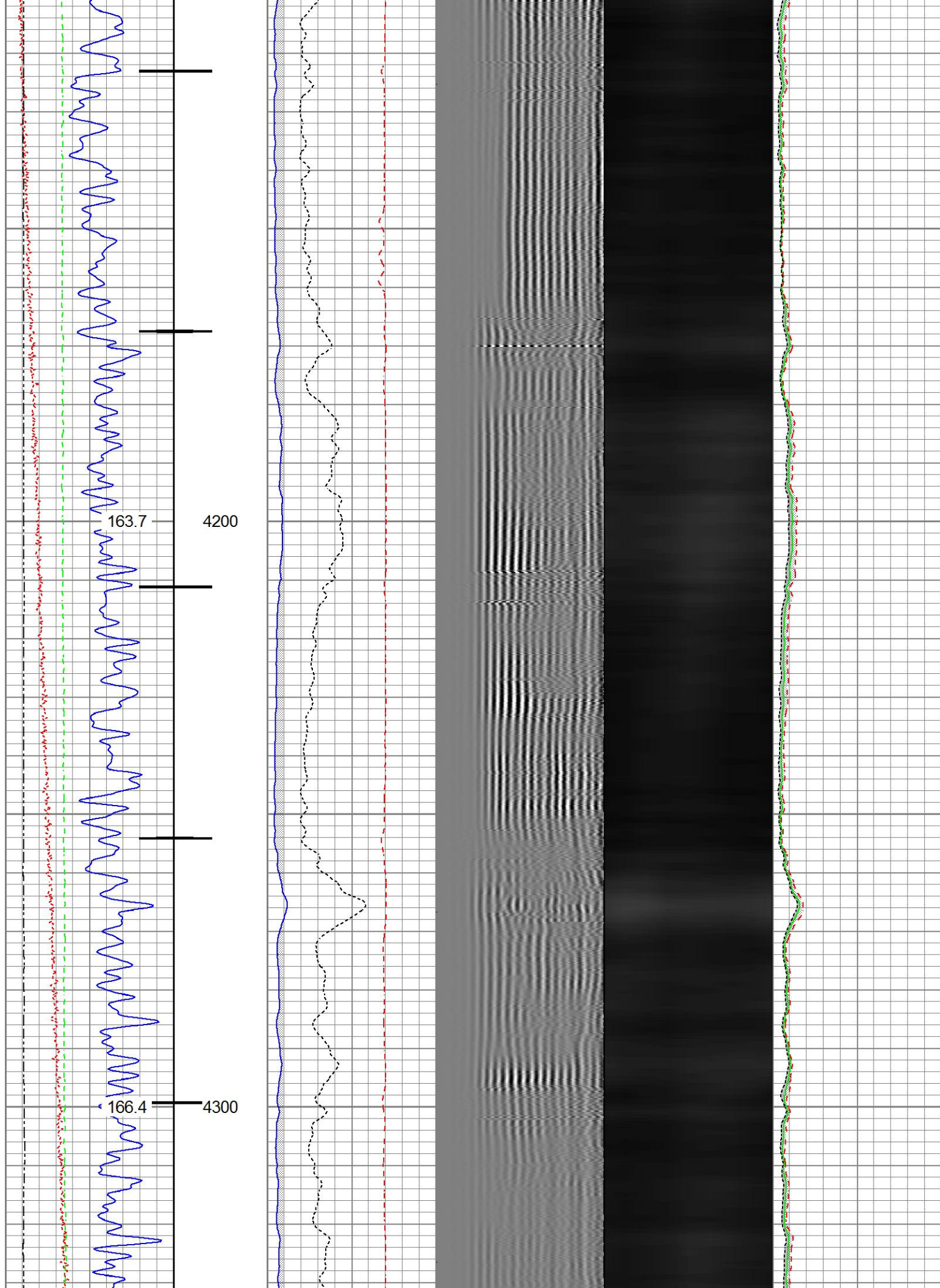


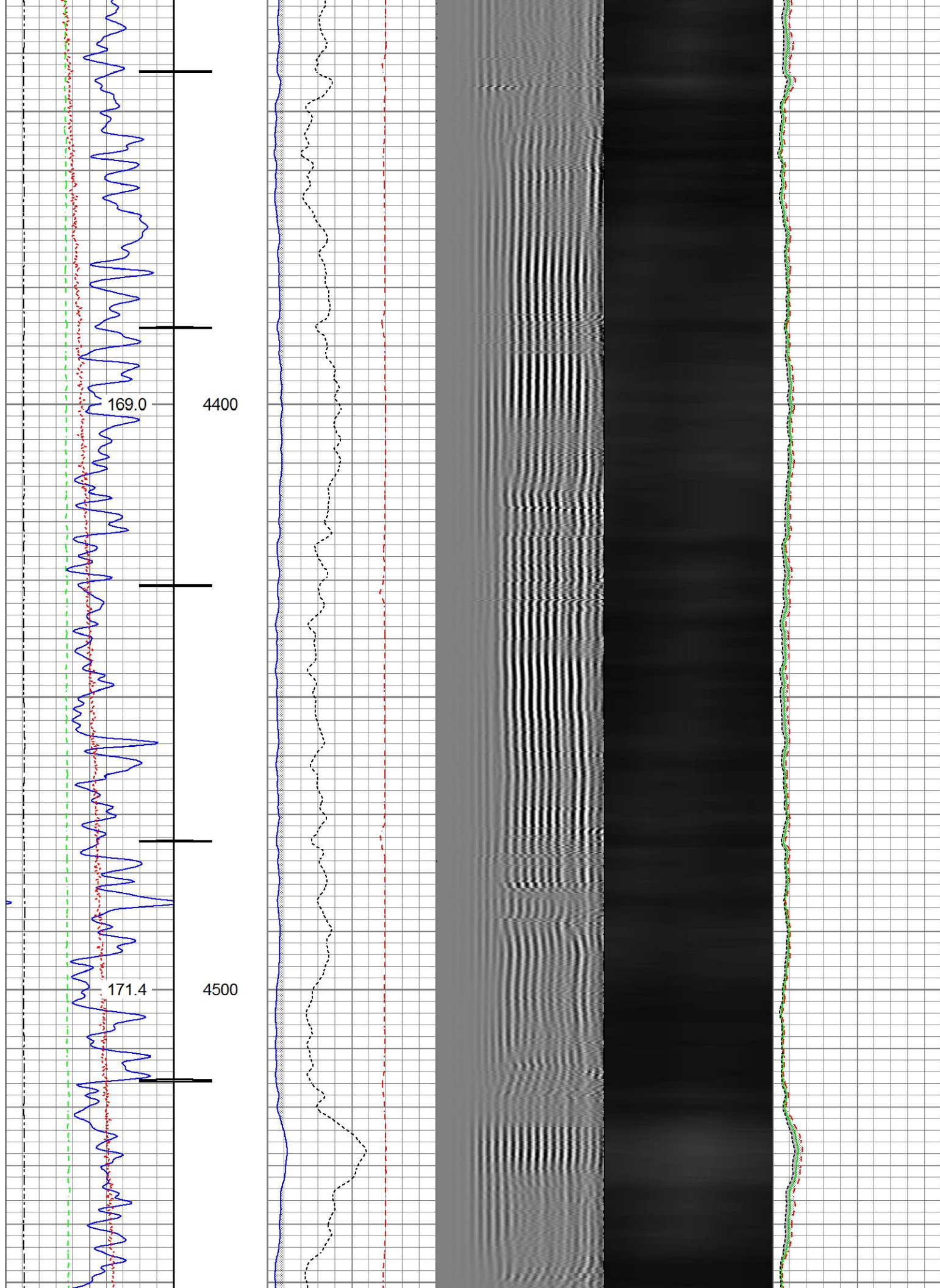




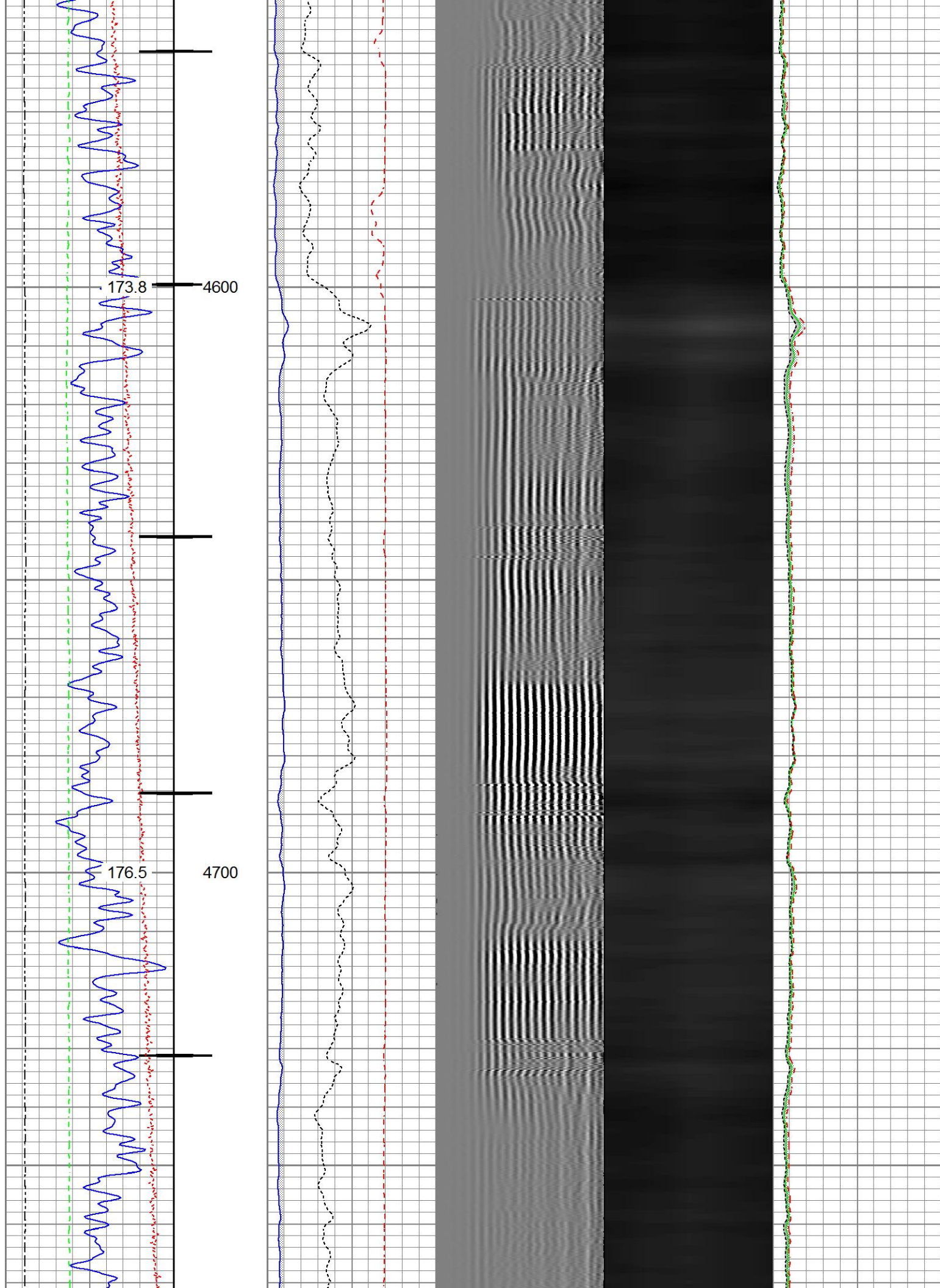


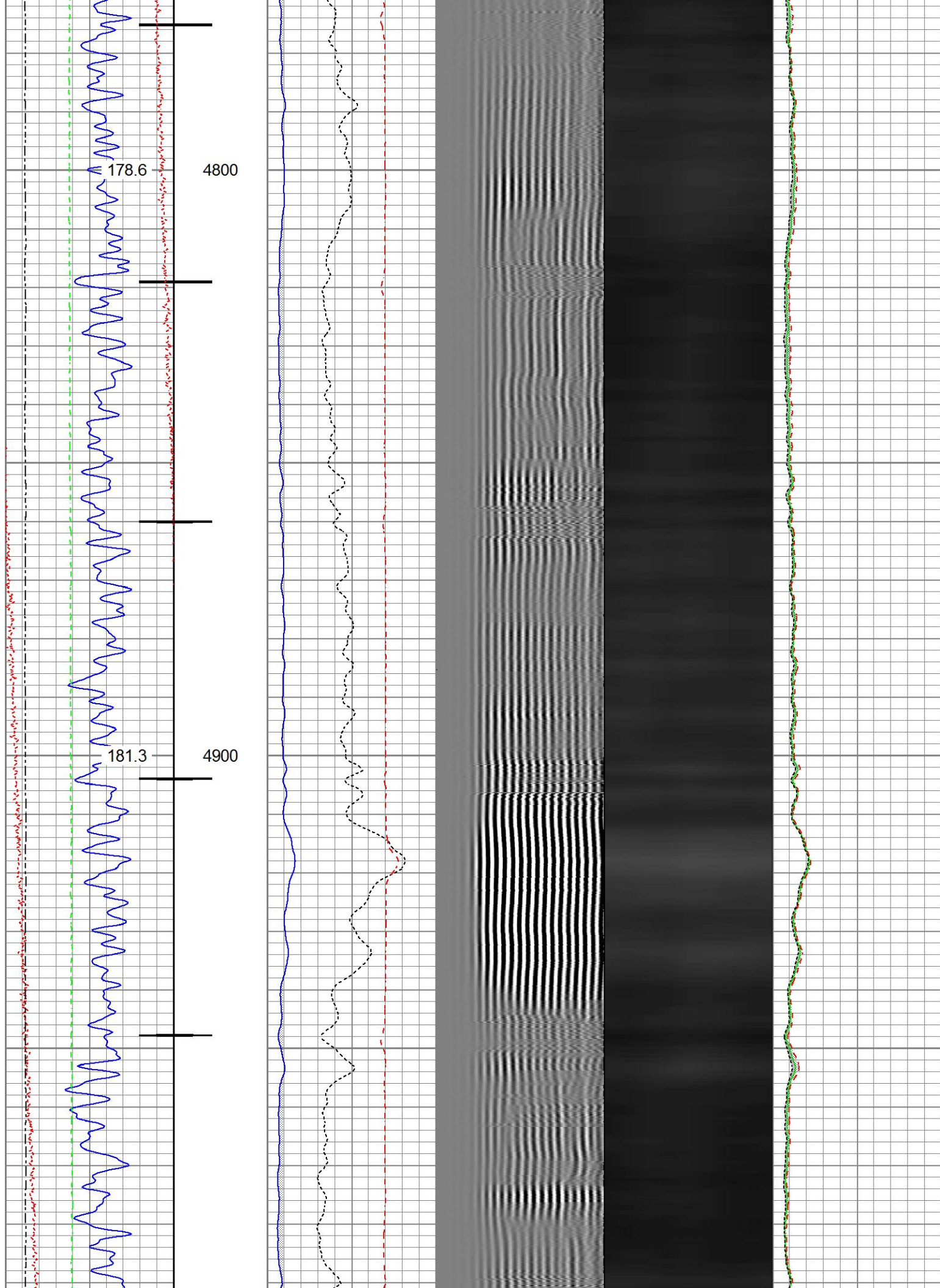




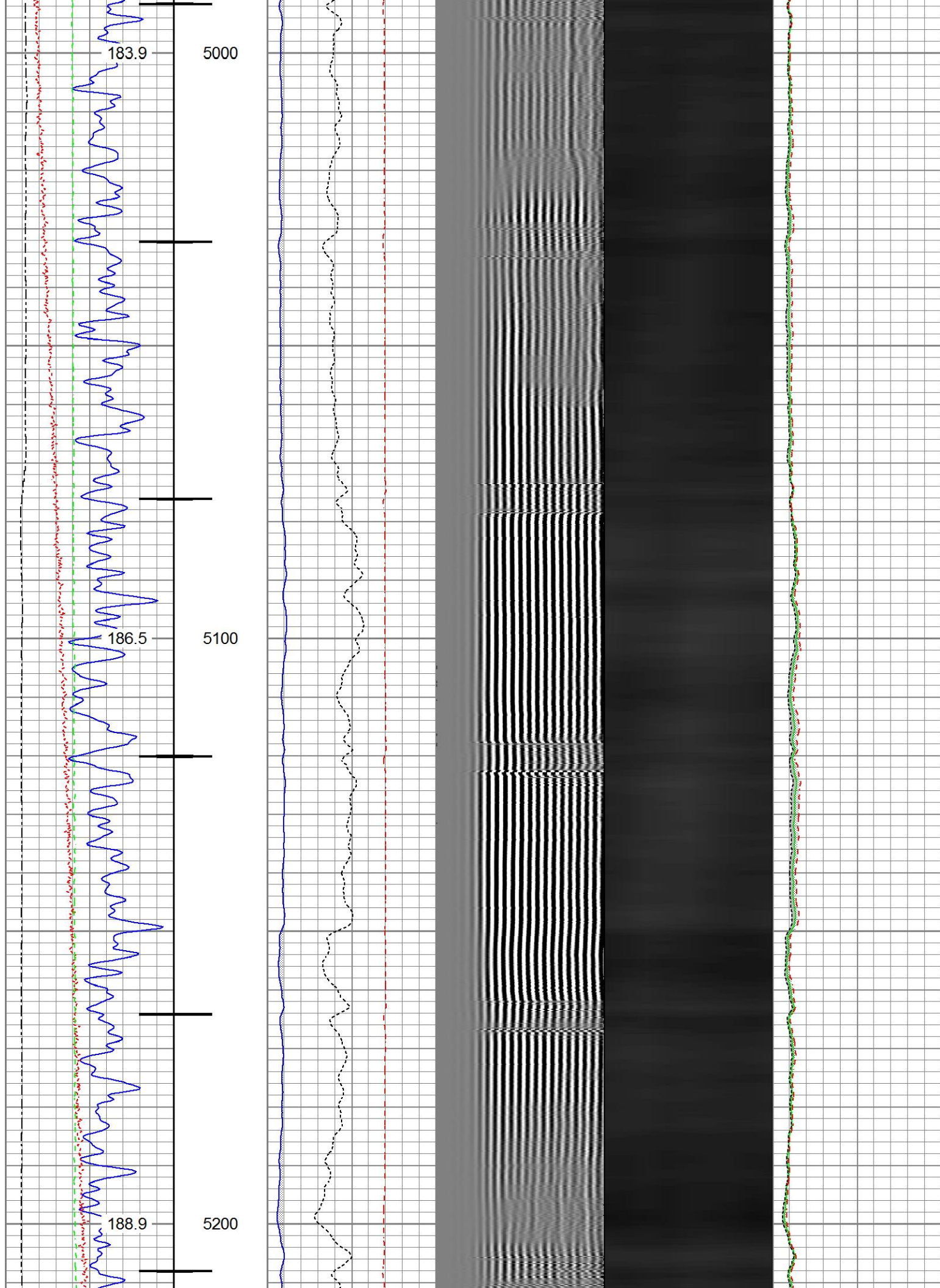


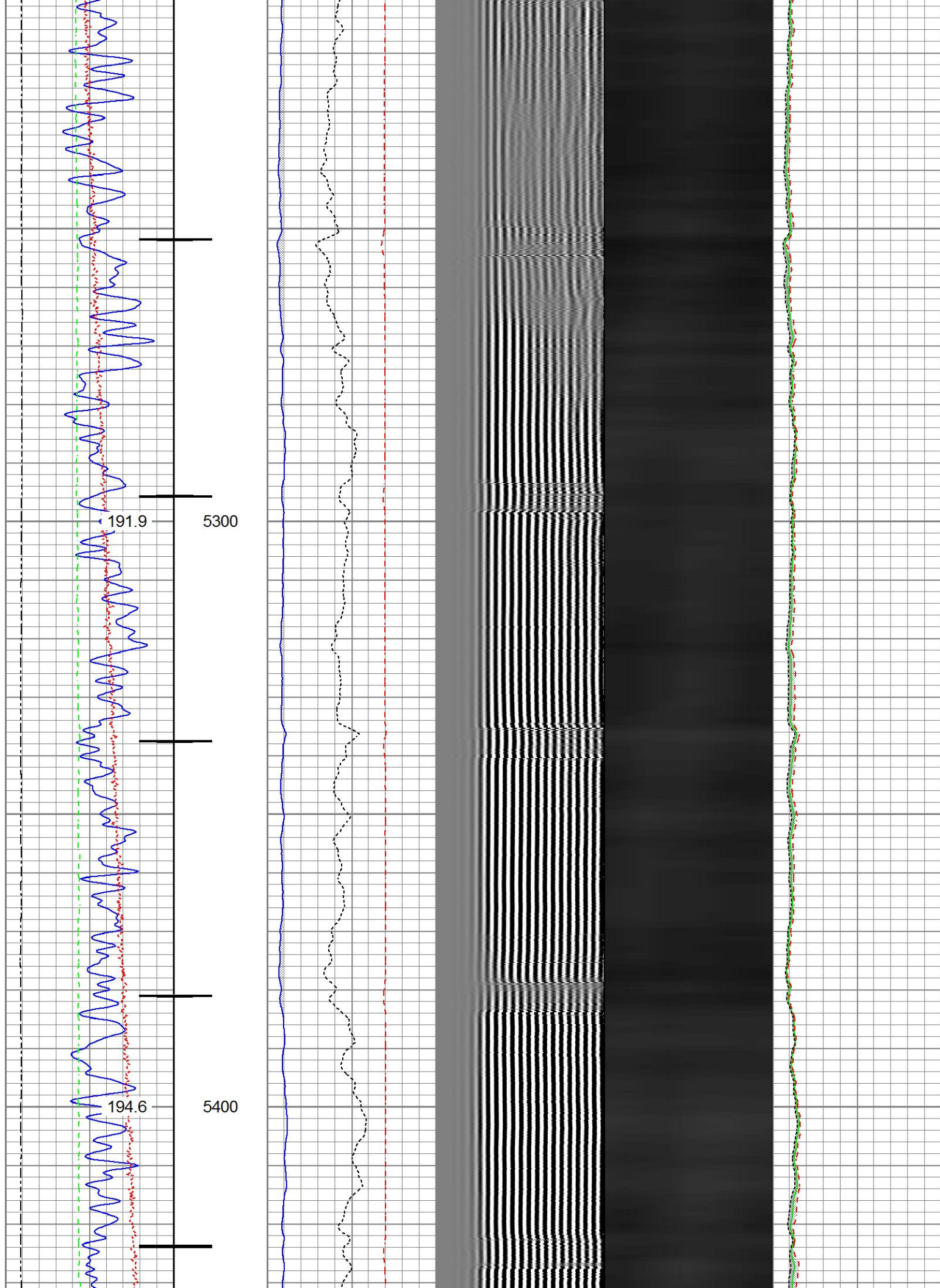




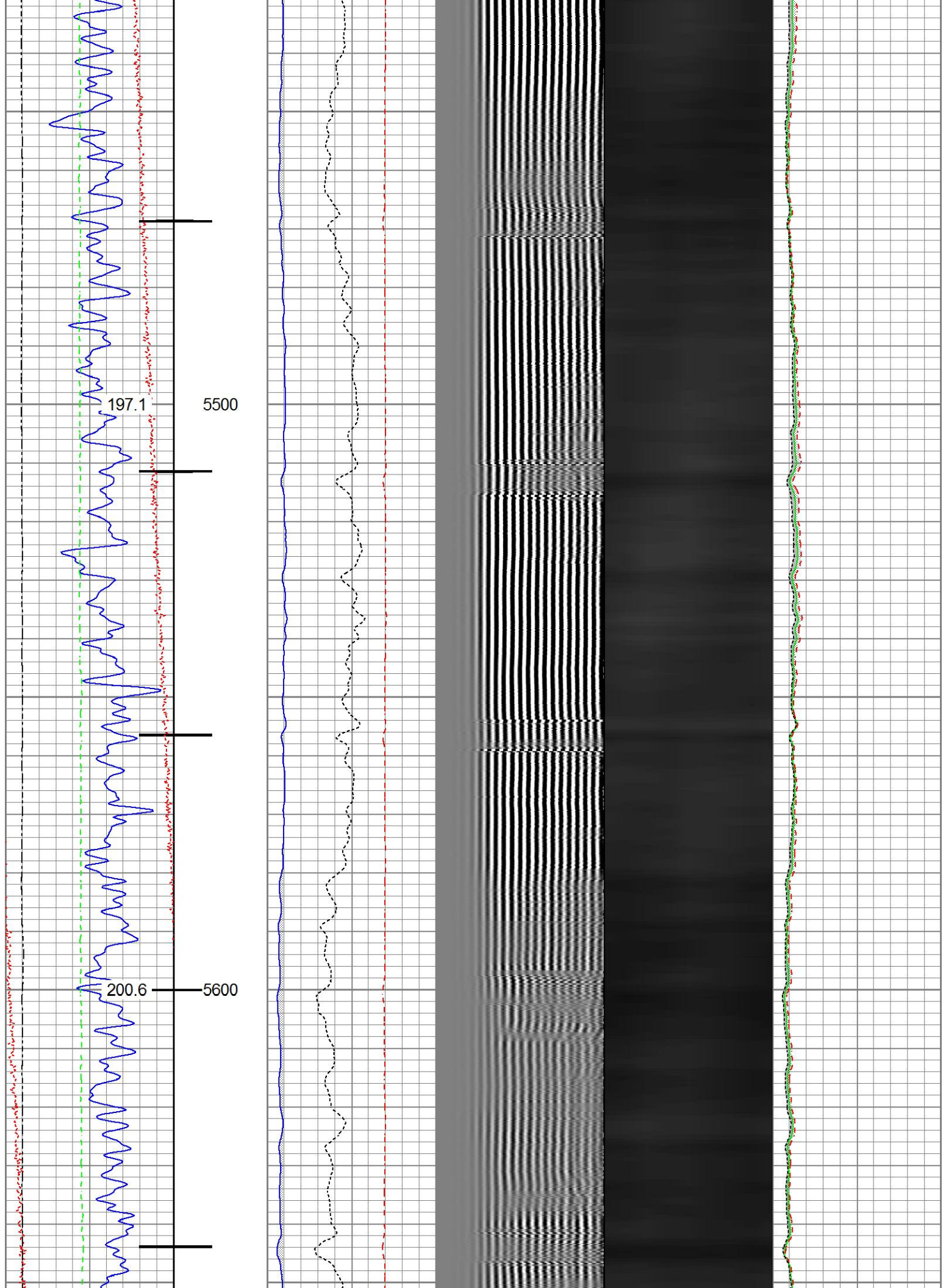


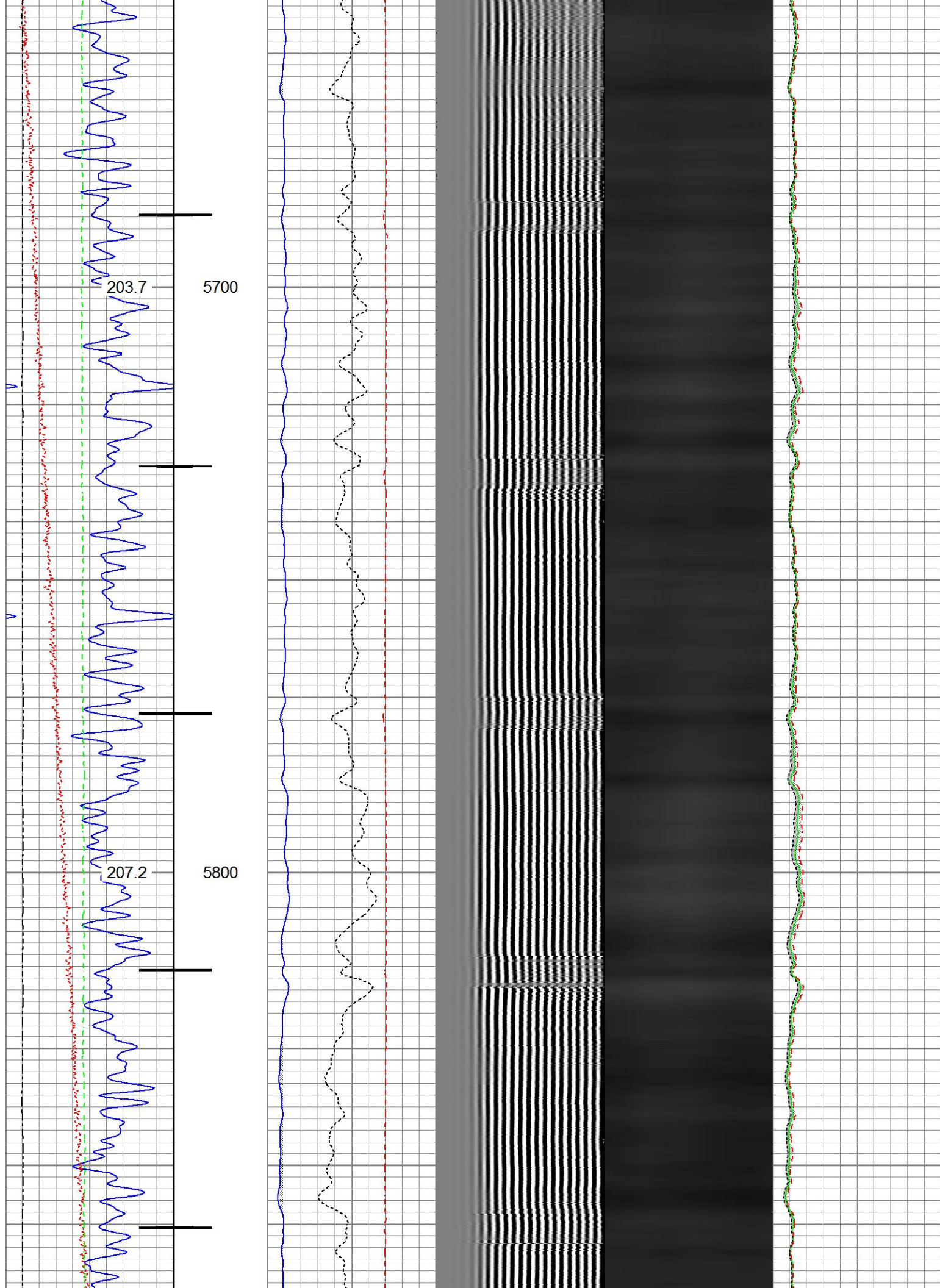




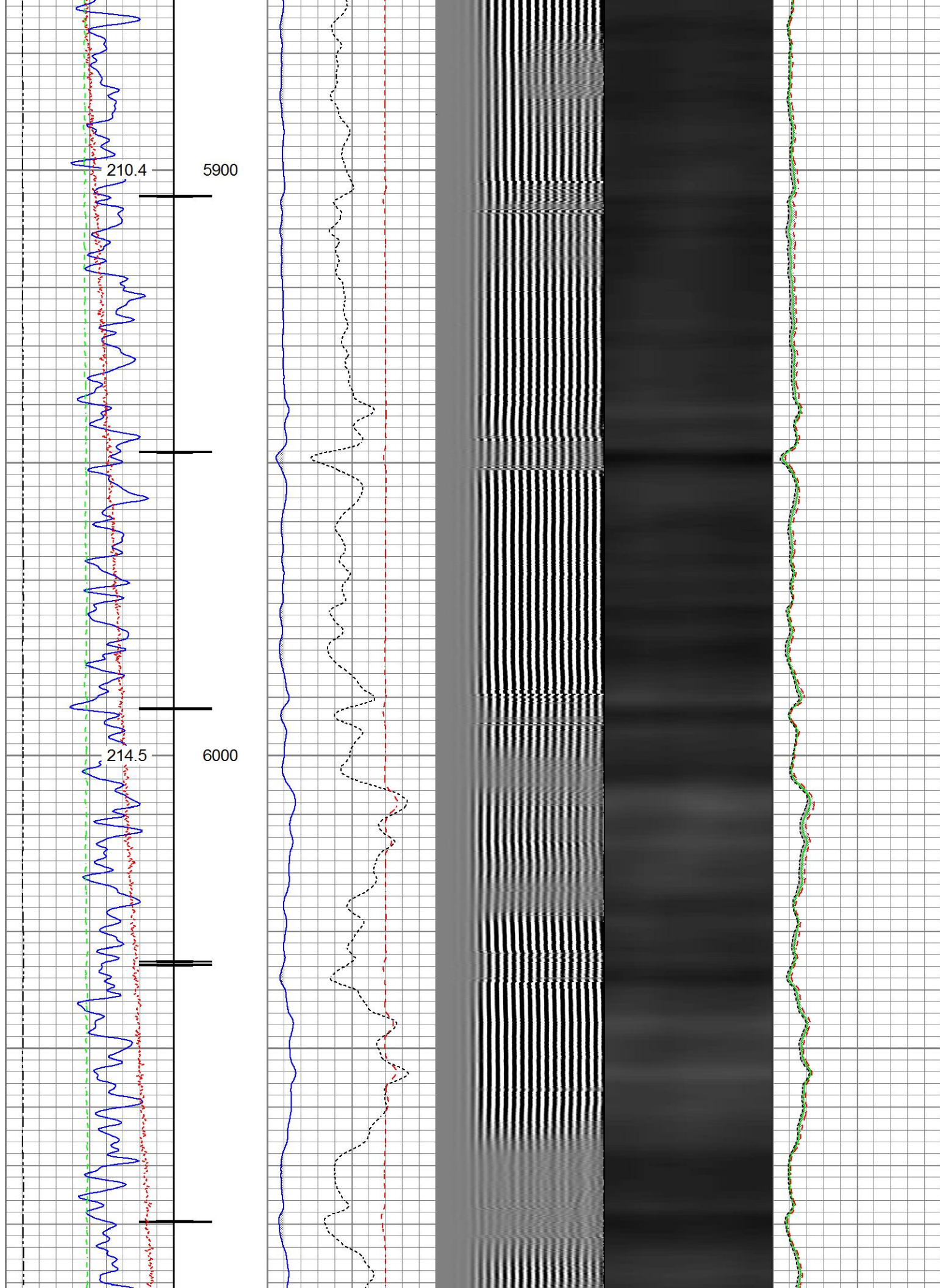


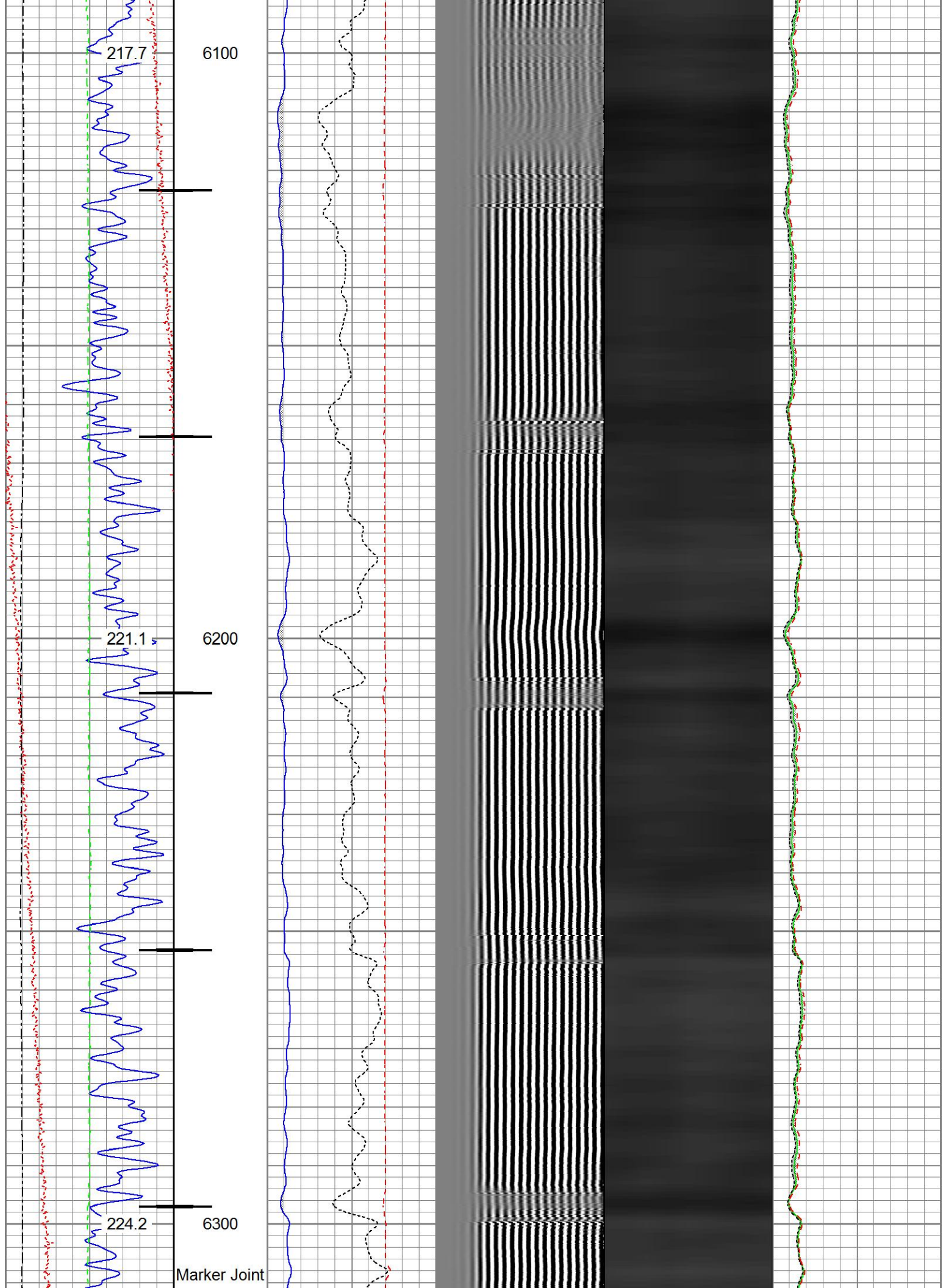




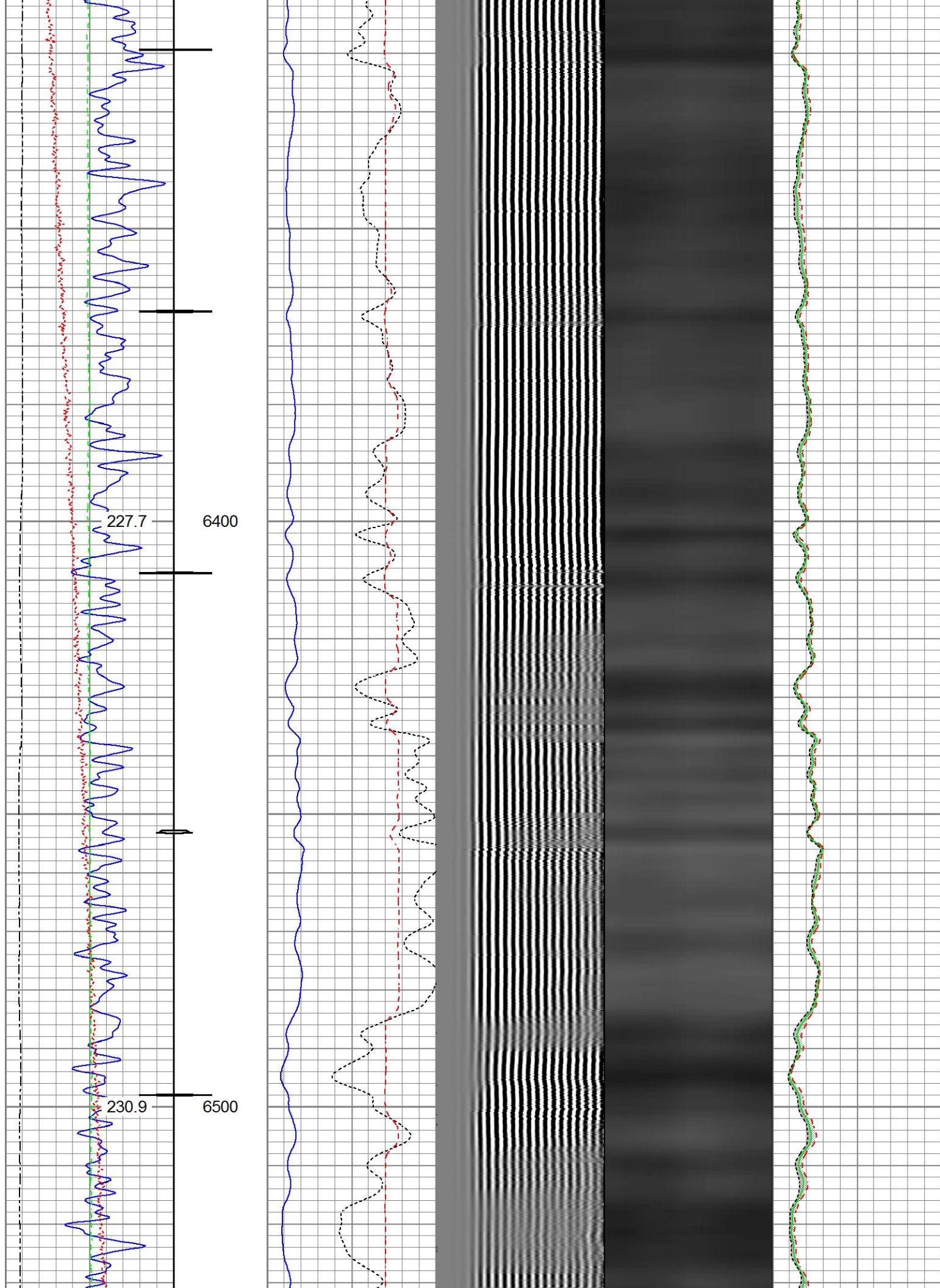


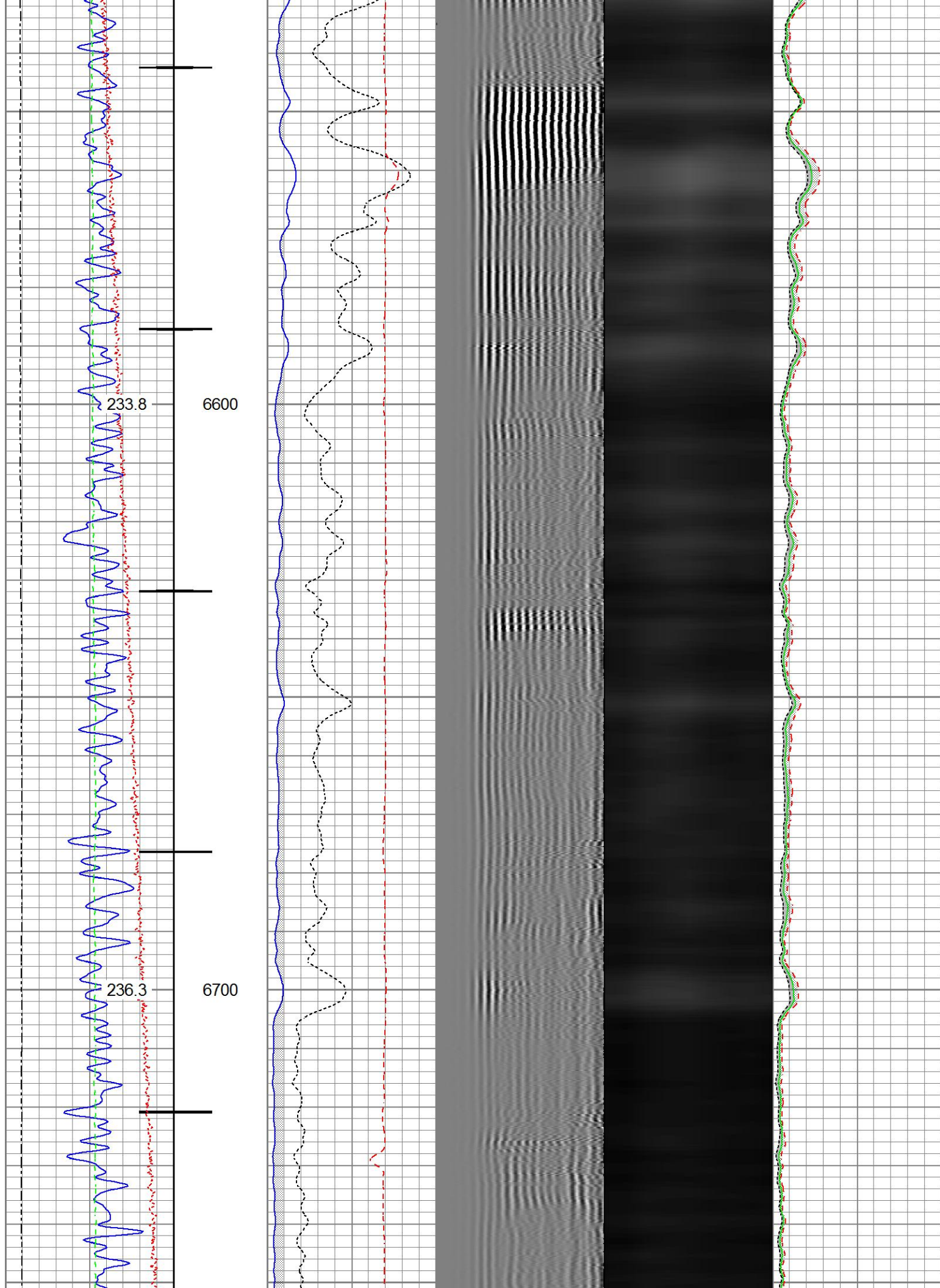




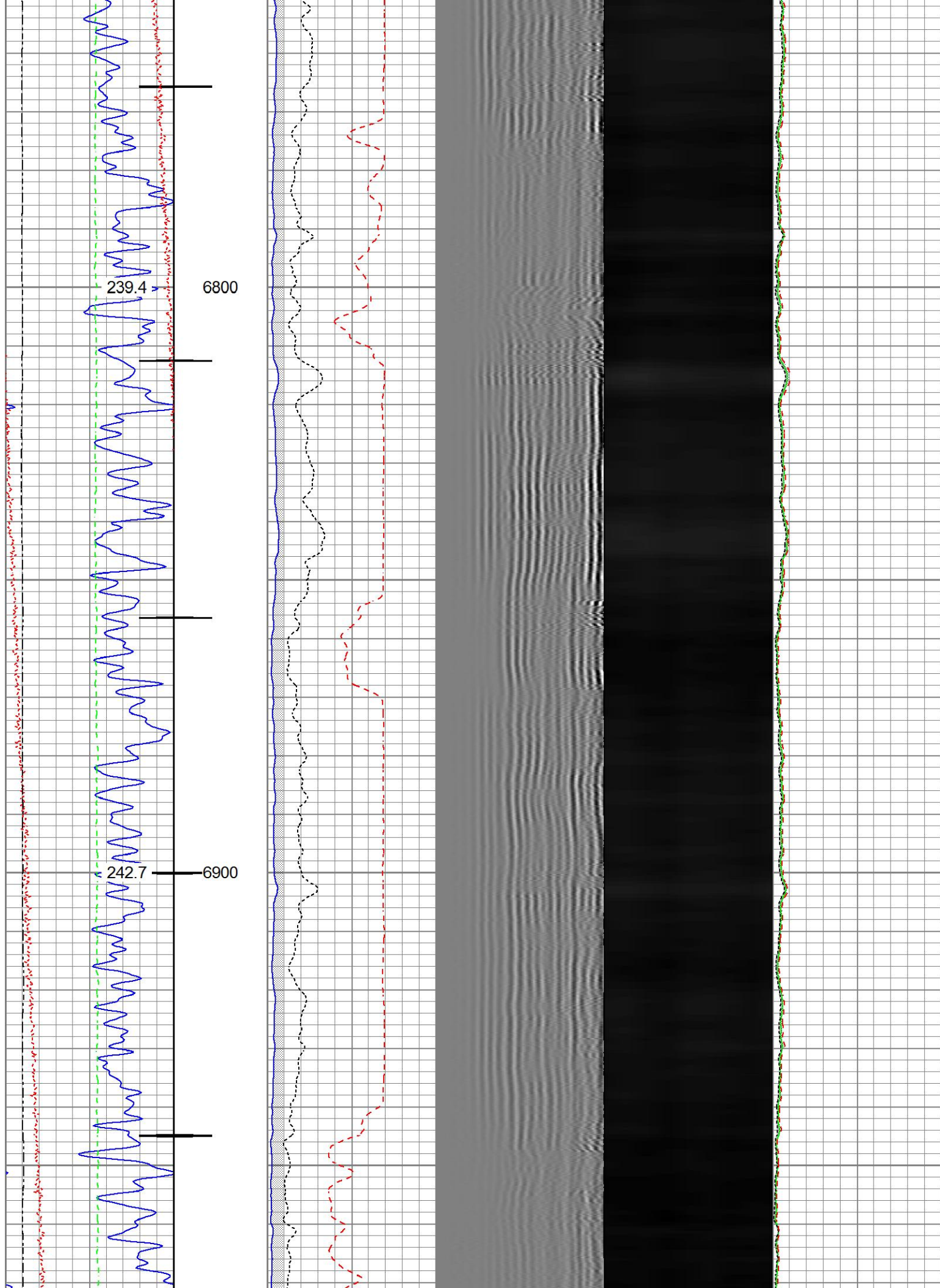


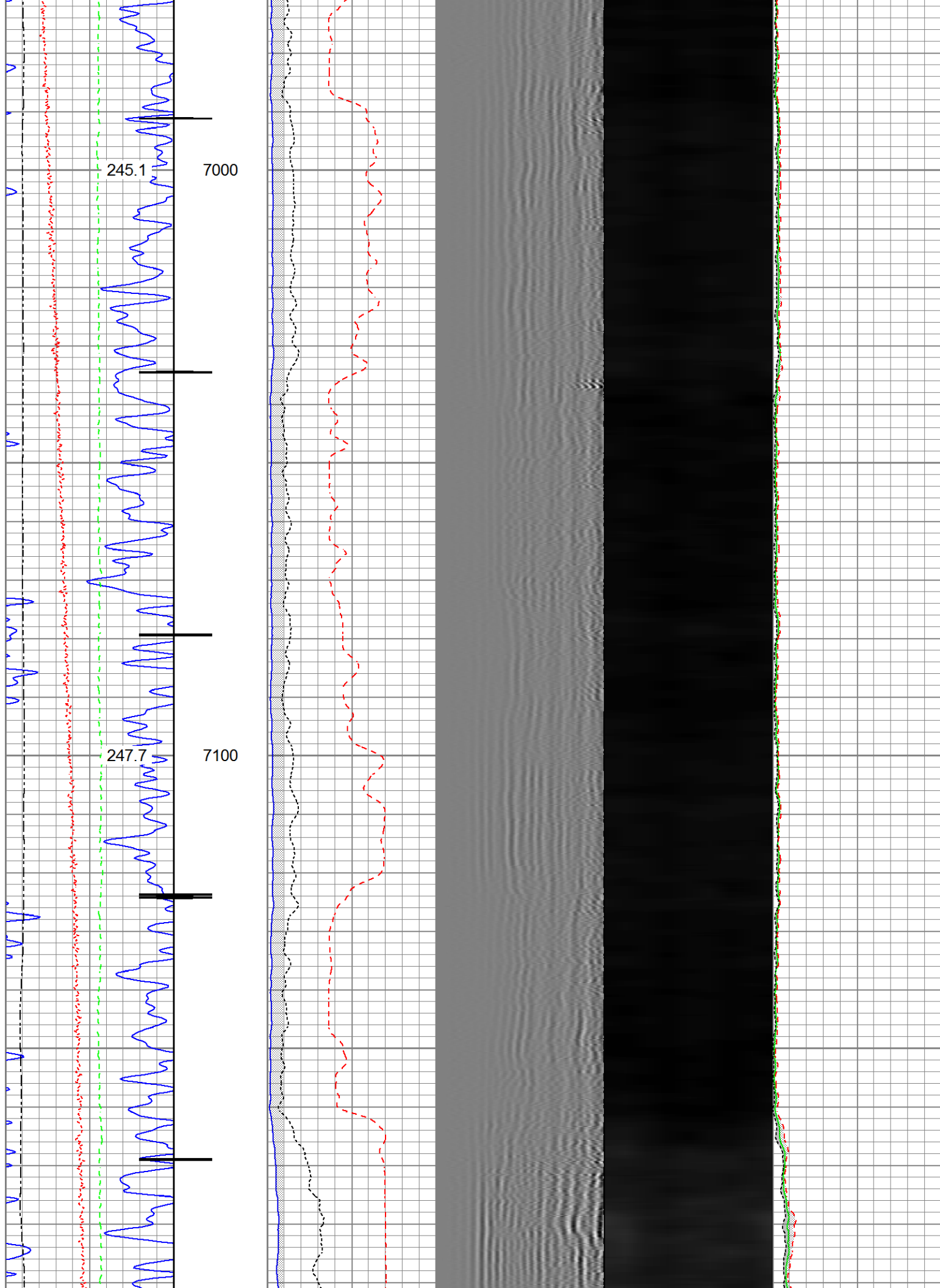




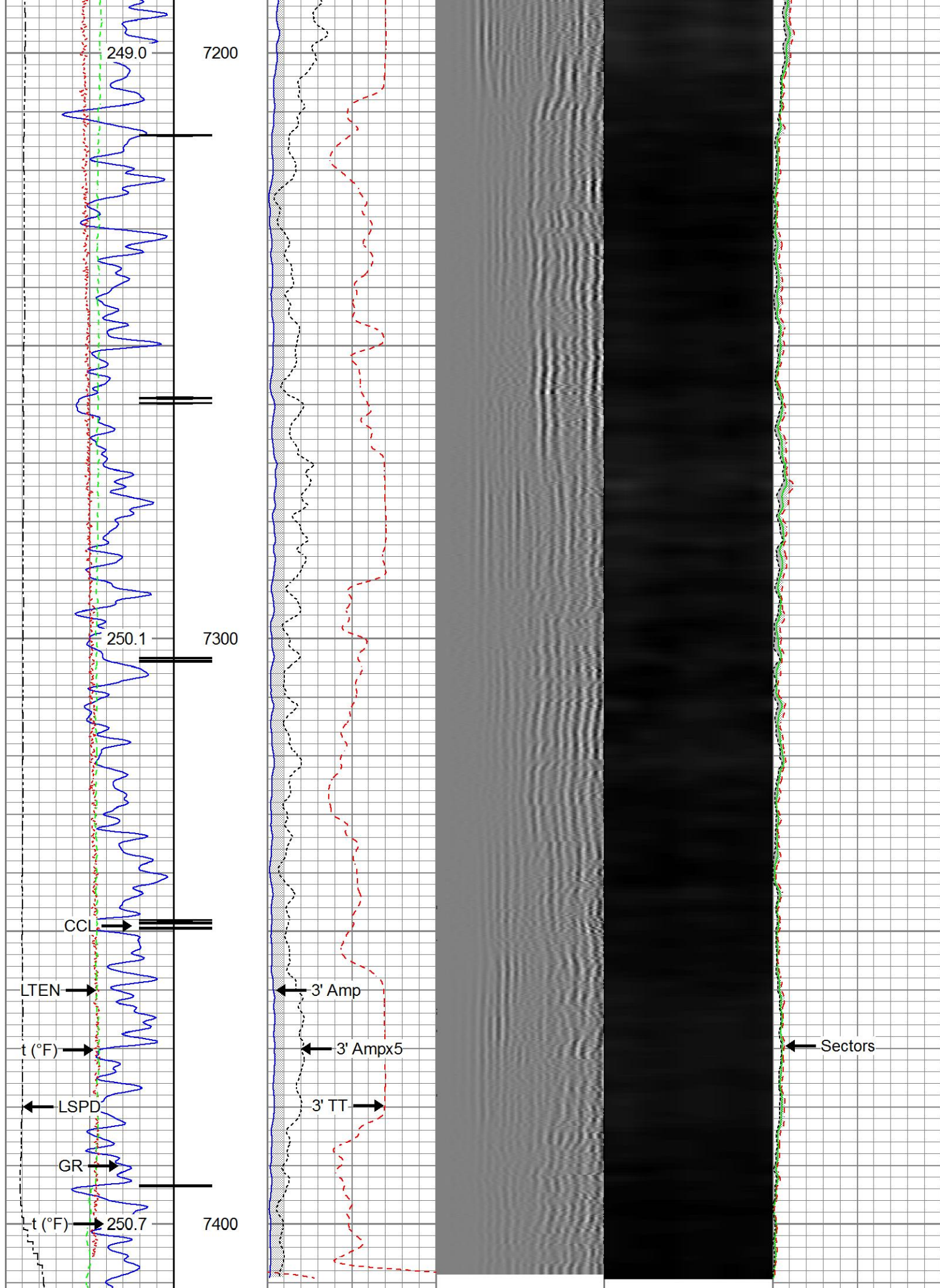


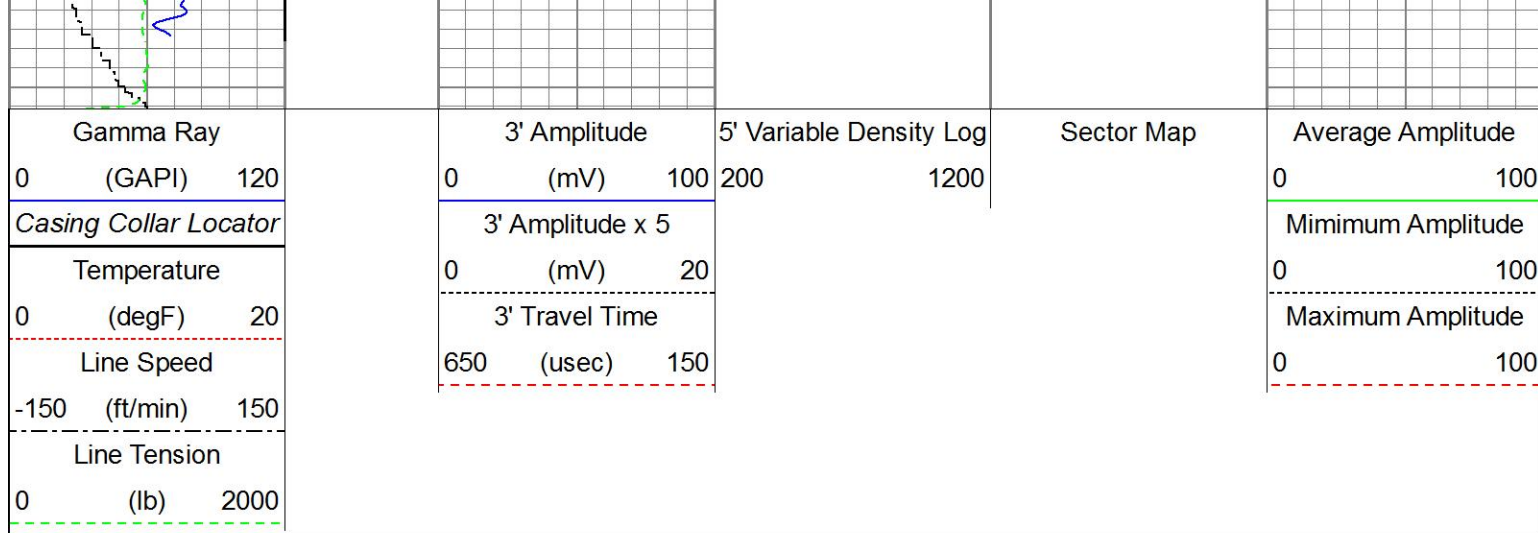








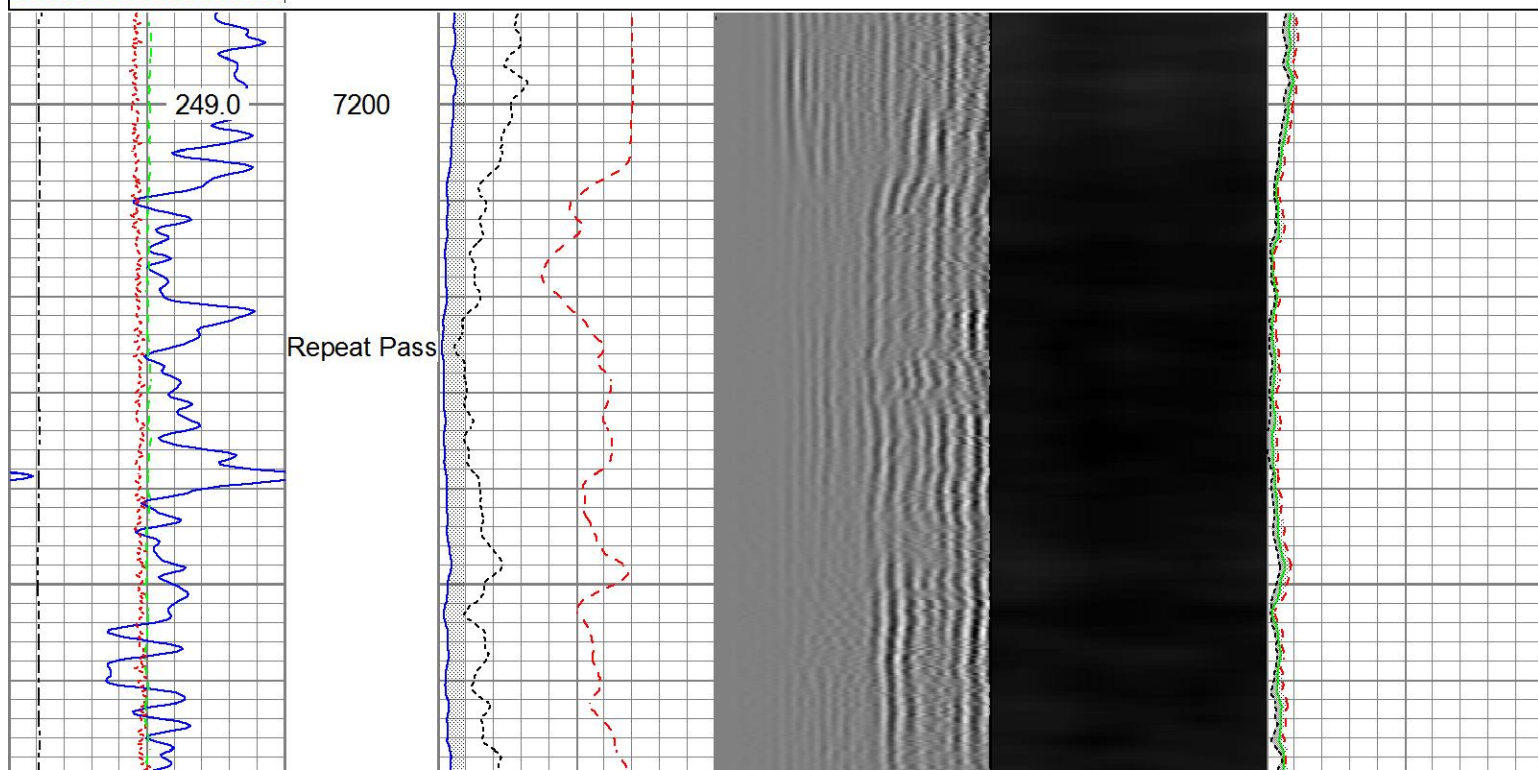
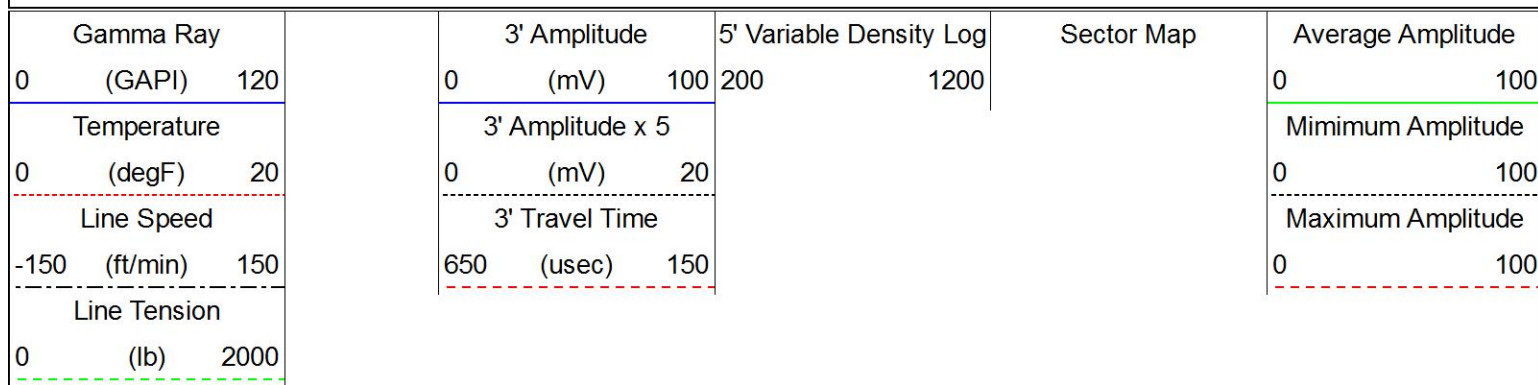




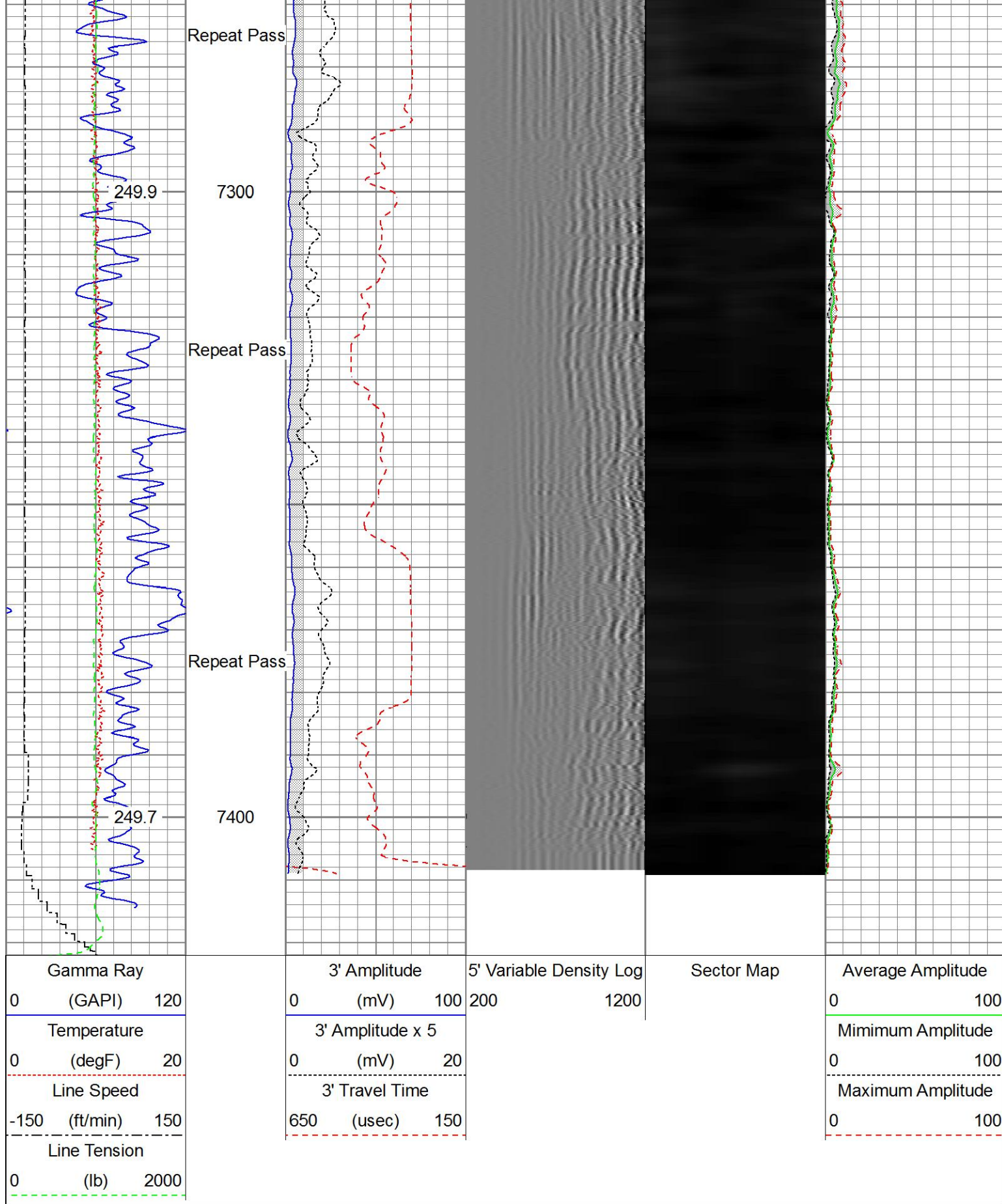
## Repeat Pass

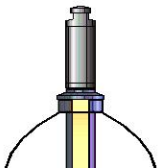
Recorded With 2800 PSI Surface Induced Pressure

Database File: anadarko\_rw 29n-29hz\0512344622\_anadarko\_rw 29n-29hz\_rbl\_10-28-17.db  
 Dataset Pathname: pass2.1  
 Presentation Format: ros\_radrii  
 Dataset Creation: Mon Oct 30 08:39:15 2017  
 Charted by: Depth in Feet scaled 1:240







Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck		1.69	5.40

			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88_275	2.75	20.00
Temp	16.72					
WVFS8	14.55		Probe_RADII-C-P_RBT_2750 (FW1302-009.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe		2.75	105.00
WVFS7	14.55					
WVFS6	14.55					
WVFS5	14.55					
WVFS4	14.55					
WVFS3	14.55					
WVFS2	14.55					
WVFS1	14.55					
WVFCAL	14.55					
WVF3FT	14.55					
WVF5FT	13.55					
HeadVolt	10.30					
			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88_275	2.75	20.00
DCCL	6.51					
CCL	6.51					
GR	5.30		Probe_GR_CCL-P_CGR_2750_S (FW1214.543) Probe 2-3/4" Digital CCL / Gamma Ray Combined		2.75	55.00
			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88_275	2.75	20.00
Dataset: 0512344622_Anadarko_ RW 29N-29HZ_RBL_10-28-17.db: field/well/run1/pass4.1 Total length: 23.40 ft Total weight: 225.40 lb O.D.: 2.75 in						

Calibration Report		
Database File	C:\ProgramData\Warrior\Data\Anadarko_ RW 29N-29HZ\0512344622_Anadarko_ RW 29N-29HZ_RBL_10-	
Dataset Pathname	pass4.1	
Dataset Creation	Sat Oct 28 08:53:49 2017	



## Gamma Ray Calibration Report

Serial Number:	FW1212-026	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Oct 28 08:13:19 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	GAPI/cps

## Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-001	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	-5.140	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.005	0.667	0.800	71.921	105.786	1.375
CAL	0.723	0.781				
5'	-0.011	0.612	0.800	71.921	114.199	2.055
SUM						
S1	-0.002	0.685	0.000	100.000	145.643	0.250
S2	0.000	0.679	0.000	100.000	147.230	-0.018
S3	-0.003	0.677	0.000	100.000	147.079	0.487
S4	-0.003	0.674	0.000	100.000	147.761	0.420
S5	-0.009	0.675	0.000	100.000	146.259	1.264
S6	-0.008	0.687	0.000	100.000	143.931	1.162
S7	-0.004	0.695	0.000	100.000	143.212	0.539
S8	-0.007	0.692	0.000	100.000	143.023	1.008

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.723	0.781	1.000	0.000

Air Zero Calibration, performed Fri Oct 27 14:17:26 2017:

	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



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	RW 29N-29HZ
Field	Wattenberg
County	Weld
State	Colorado