



Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCL

Company		Noble Energy	
Well		Rohn State LD09-67-1HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-37537	
SEC 9 TWP 9N RGE 58W		None	
Permanent Datum		Ground Level	
Log Measured From		Elevation	
Drilling Measured From		4729'	
Other Services		Elevation	
		K.B. 4753'	
		D.F. 4752'	
		G.L. 4729'	
Date		November 17, 2013	
Run Number		1	
Depth Driller		9448'	
Depth Logger		5927'	
Bottom Logged Interval		5918'	
Top Log Interval		Surface	
Open Hole Size		8.125	
Type Fluid		Fresh Water	
Density / Viscosity		8.33	
Max. Recorded Temp.		-	
Estimated Cement Top		1128'	
Time Well Ready		9:00	
Time Logger on Bottom		9:39	
Equipment Number		13033	
Location		Brighton	
Recorded By		C. Rall	
Witnessed By		B. Mansfield	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
One			
Two			
Three			
Four			
Casing Record		Size	
Surface String		9 5/8	
Prot. String		Wgt/Ft	
Production String		36#	
Liner		Top	
Short Joint		Bottom	
		1251'	
		Surface	
		6102'	
		Surface	
		5920'	
		9435'	
		4726'	
		4740'	

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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

Primary Log on Well. Well Logged using 24' KB.

Main Pass and Repeat Pass Logged with Zero Pressure on Surface

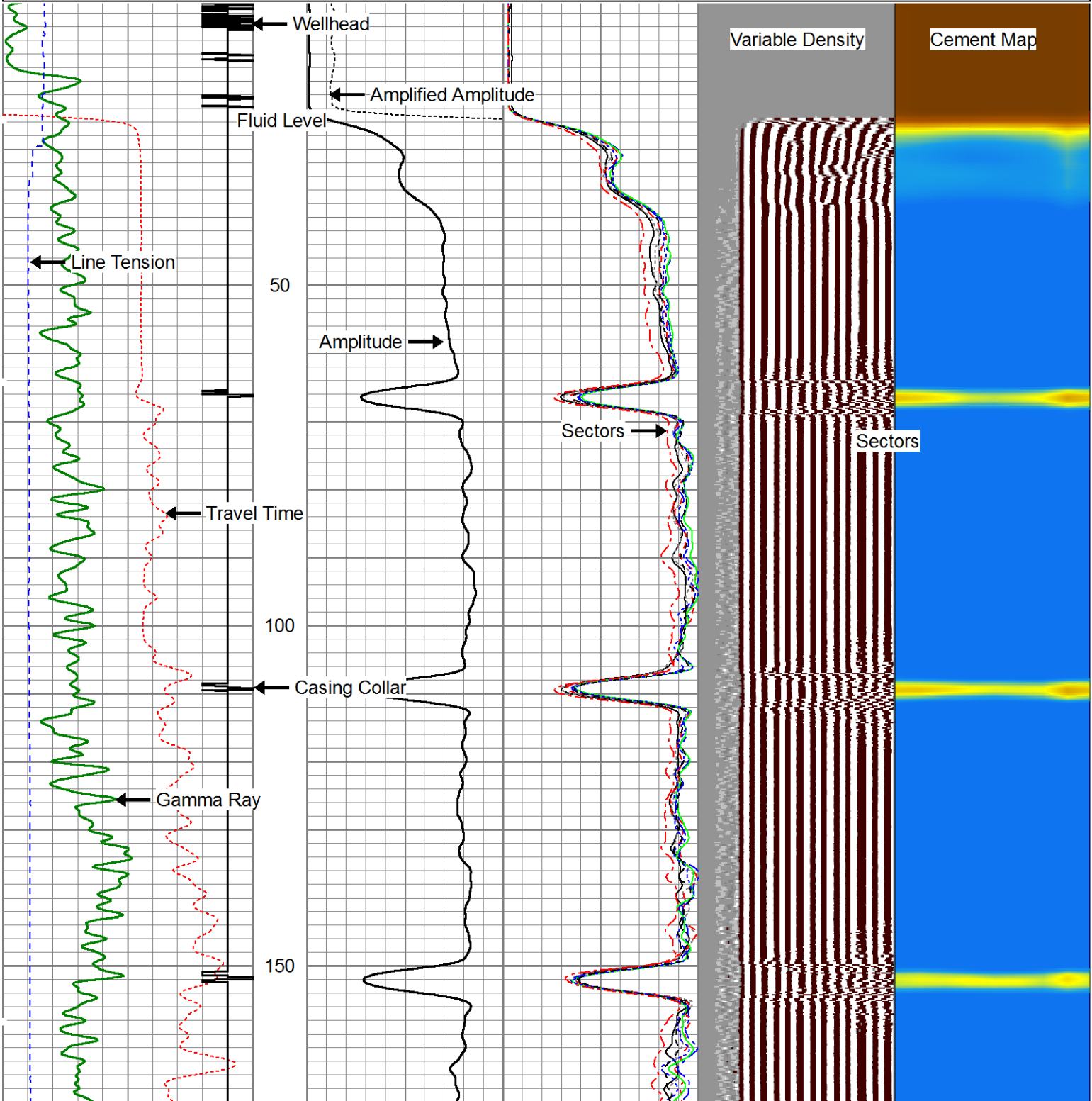
Estimated Top of Cement @ 1128'

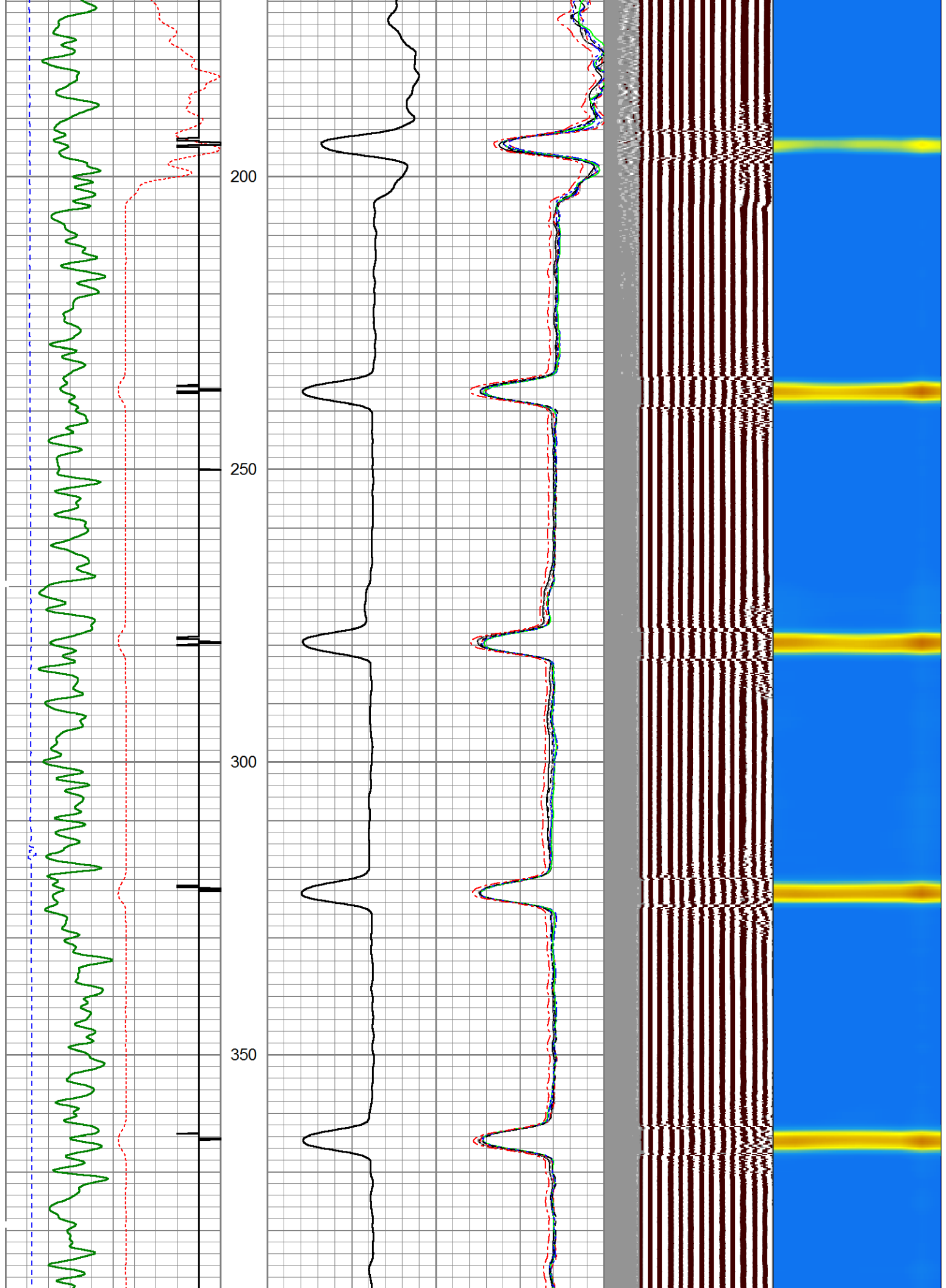
Thank you for using Allied Wireline.
(303)659-4609

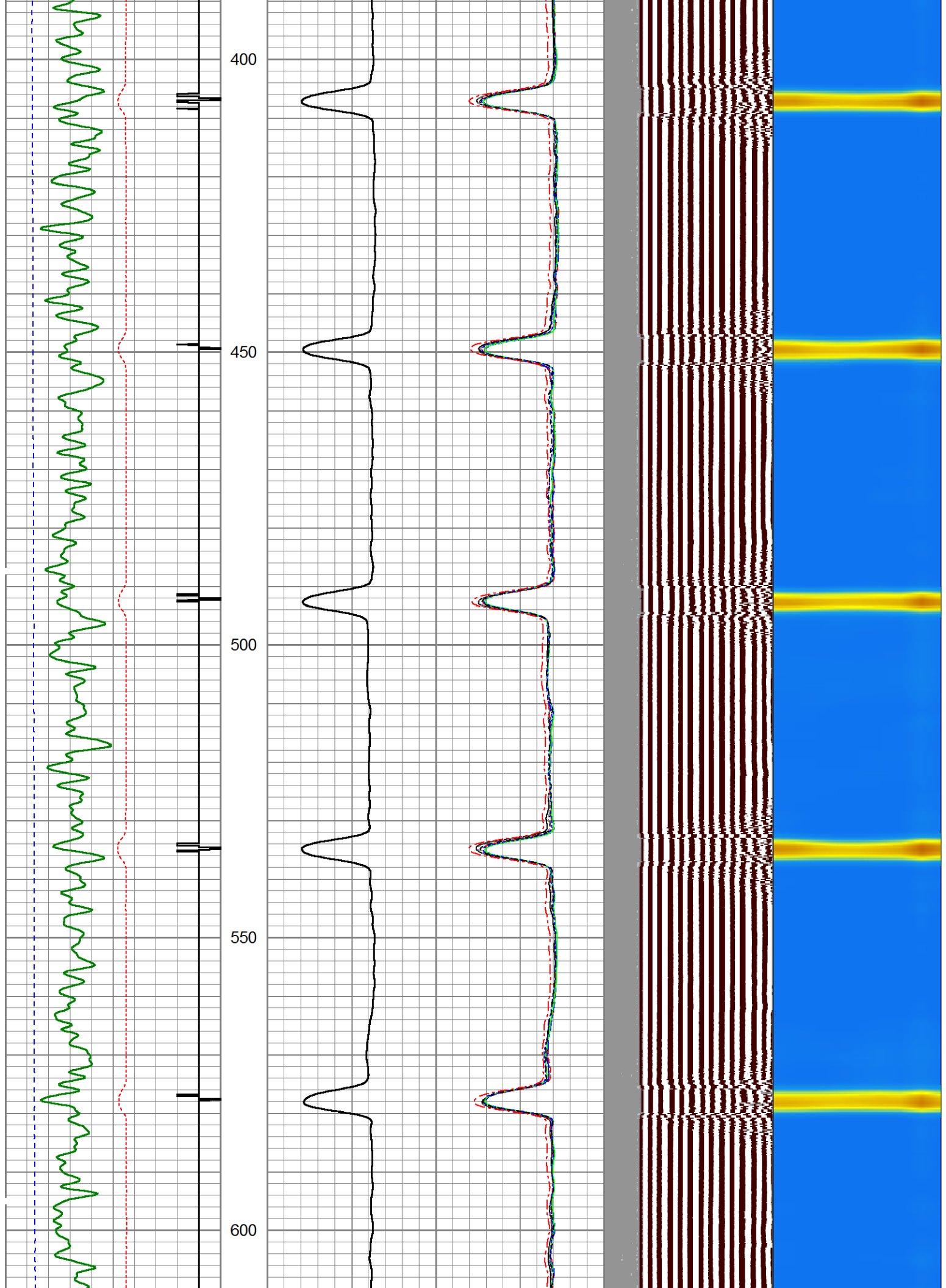


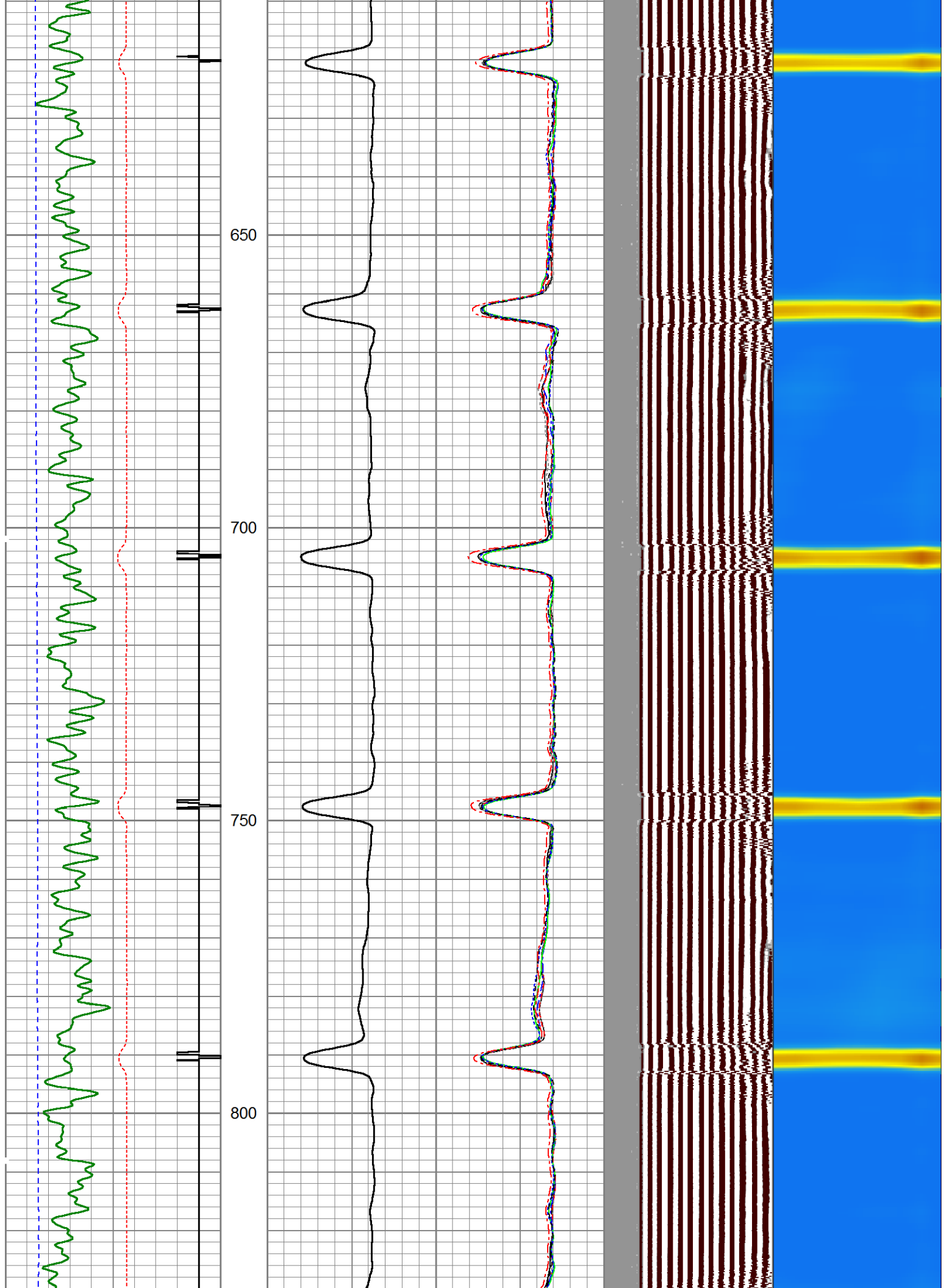
Main Pass (0 PSI)

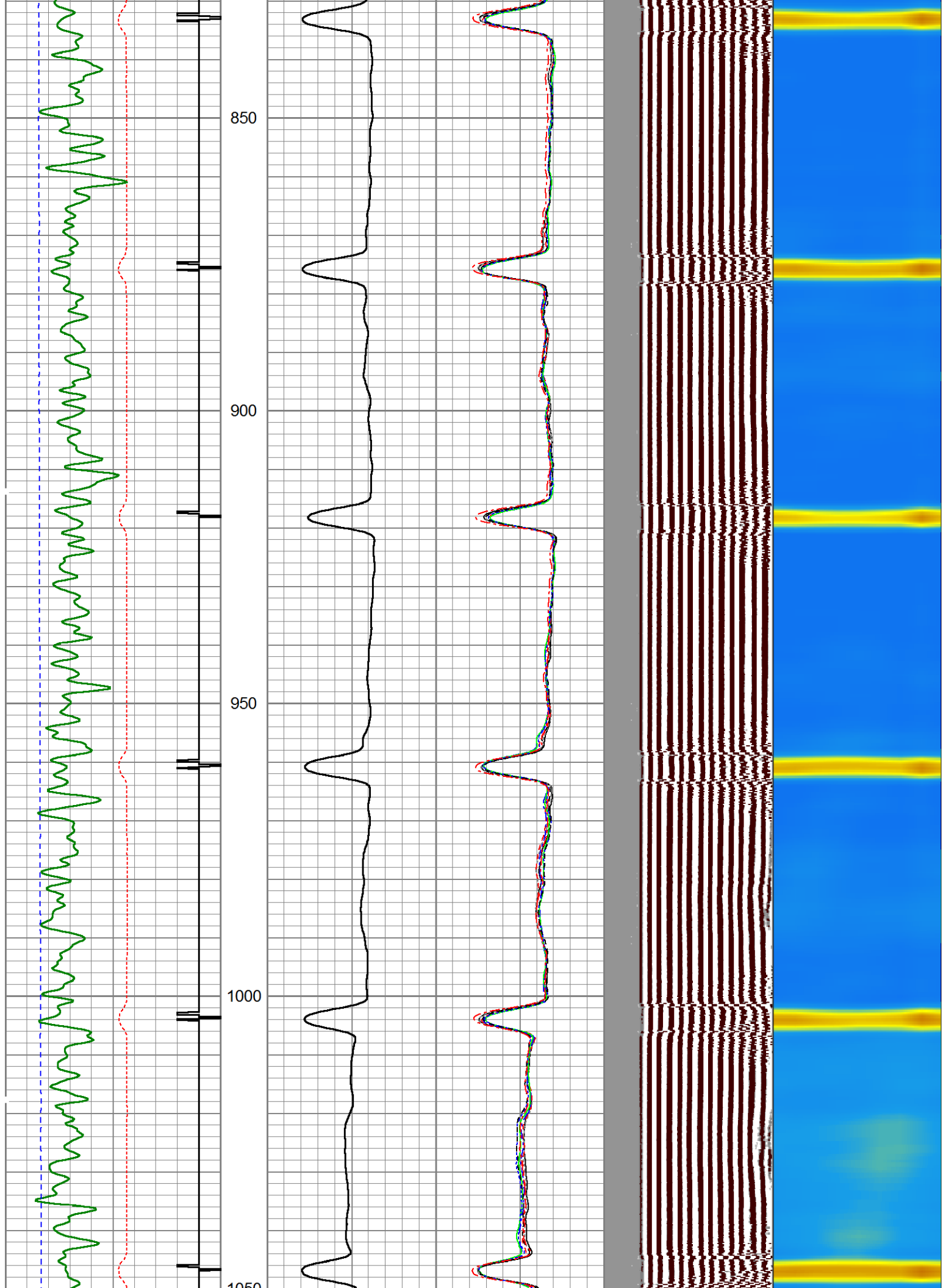
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				

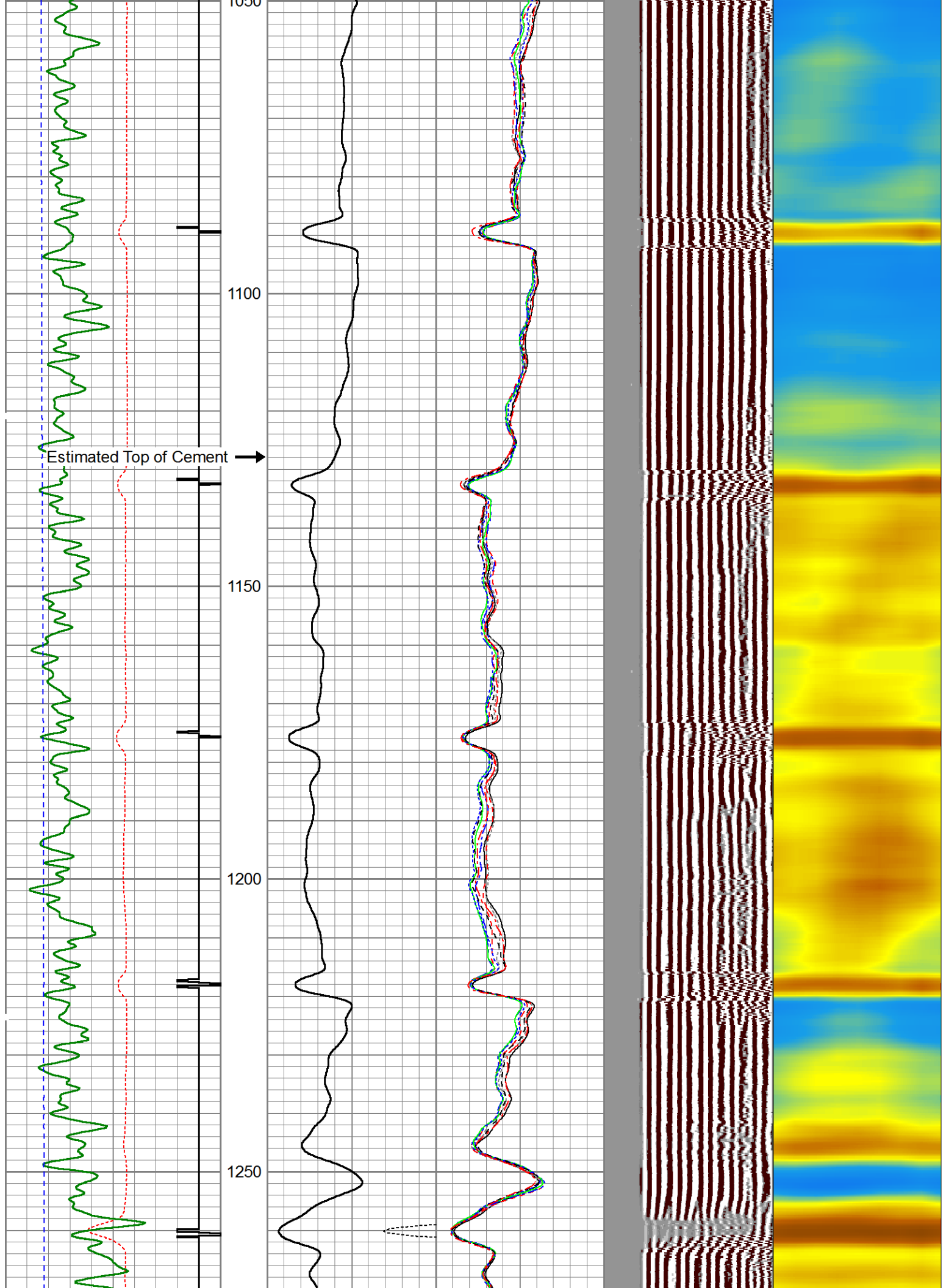


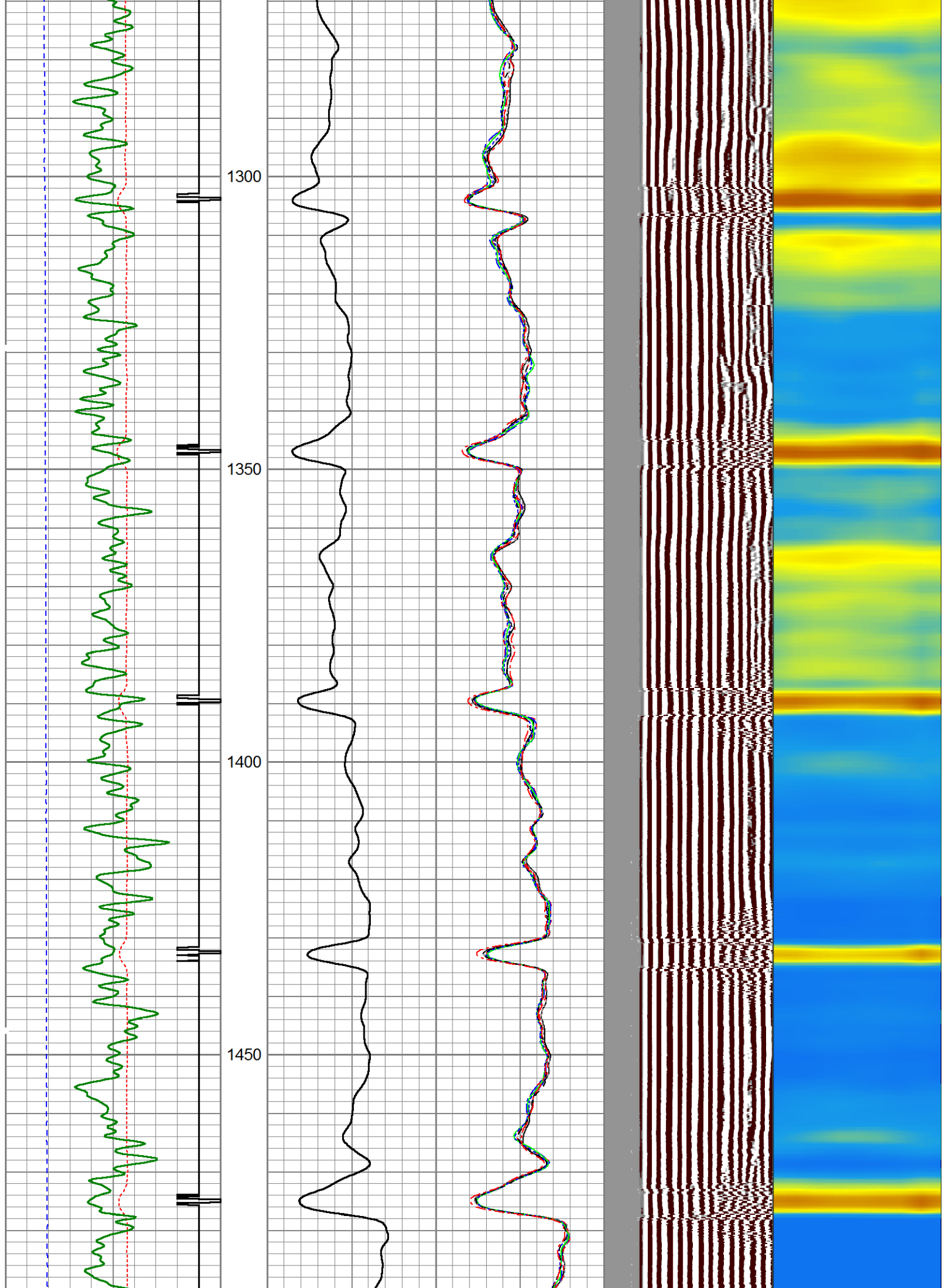


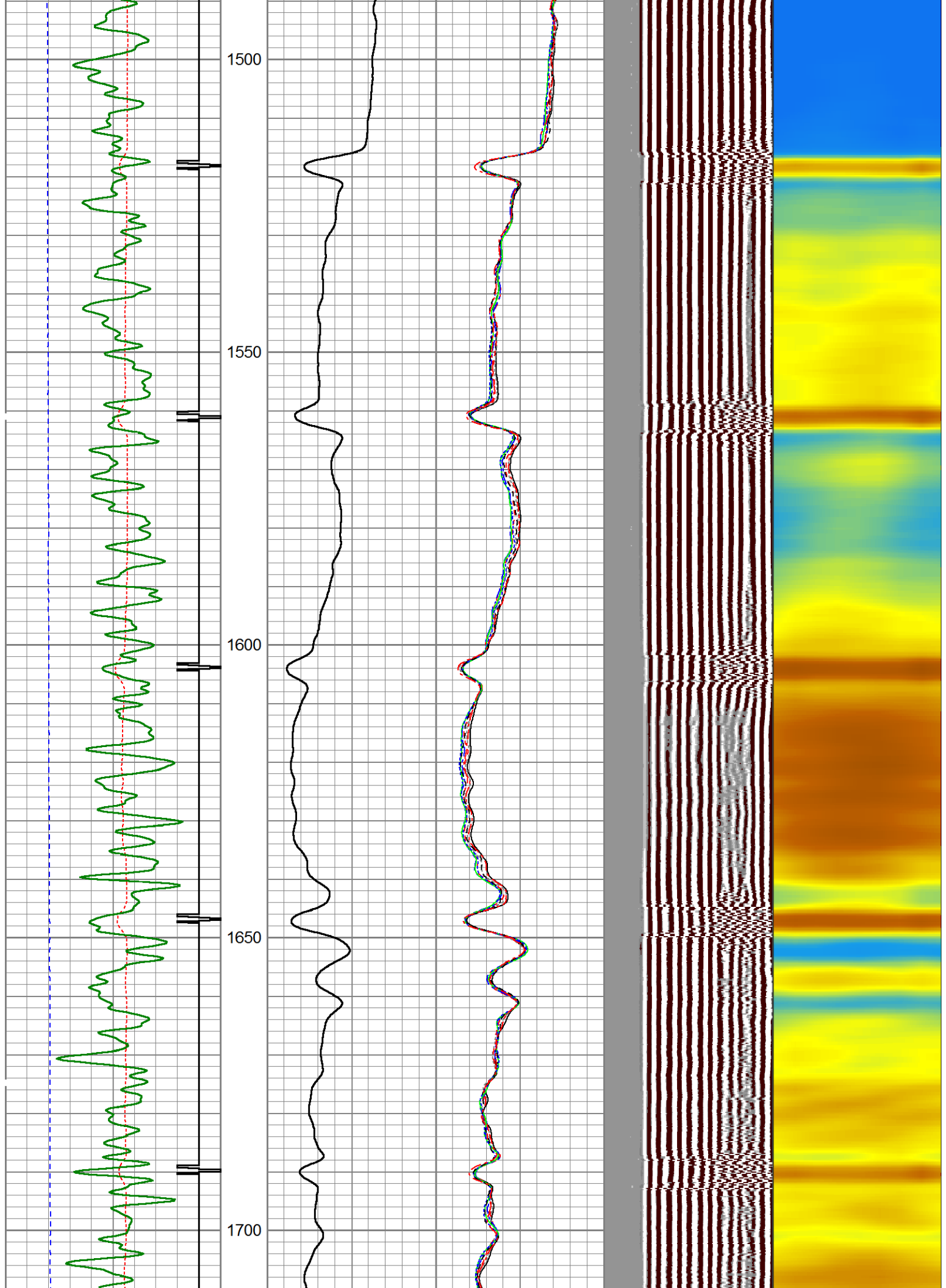


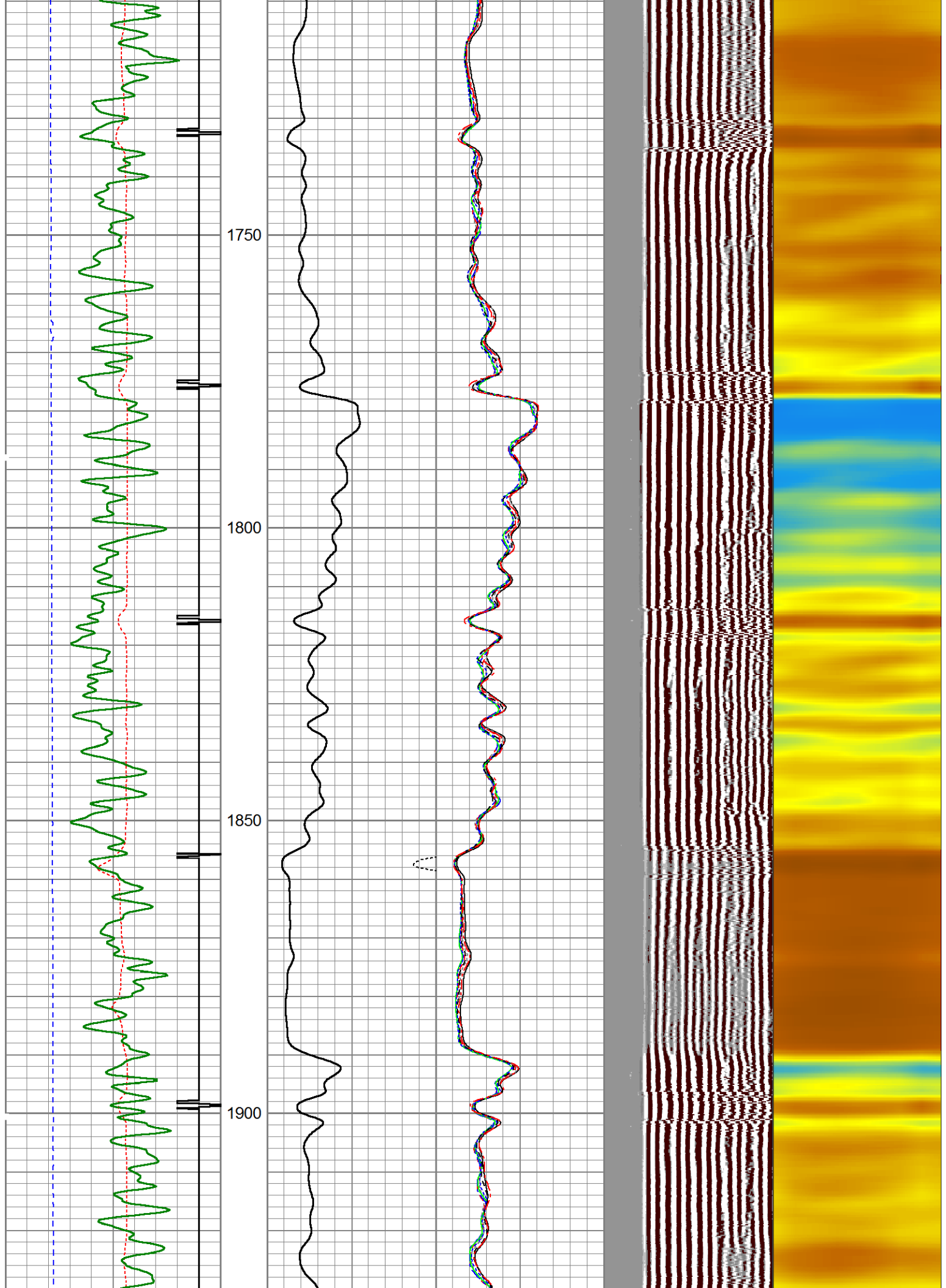


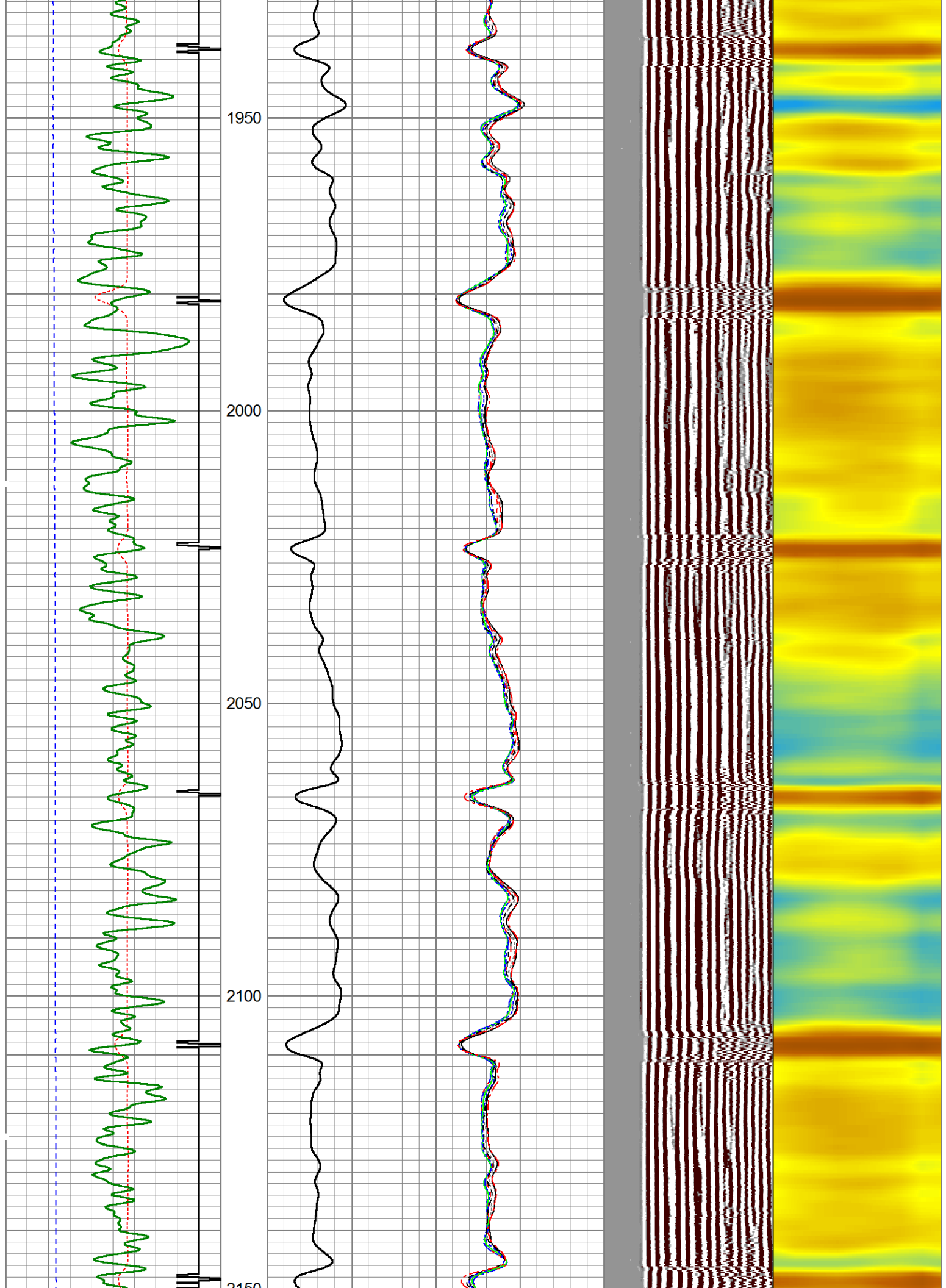


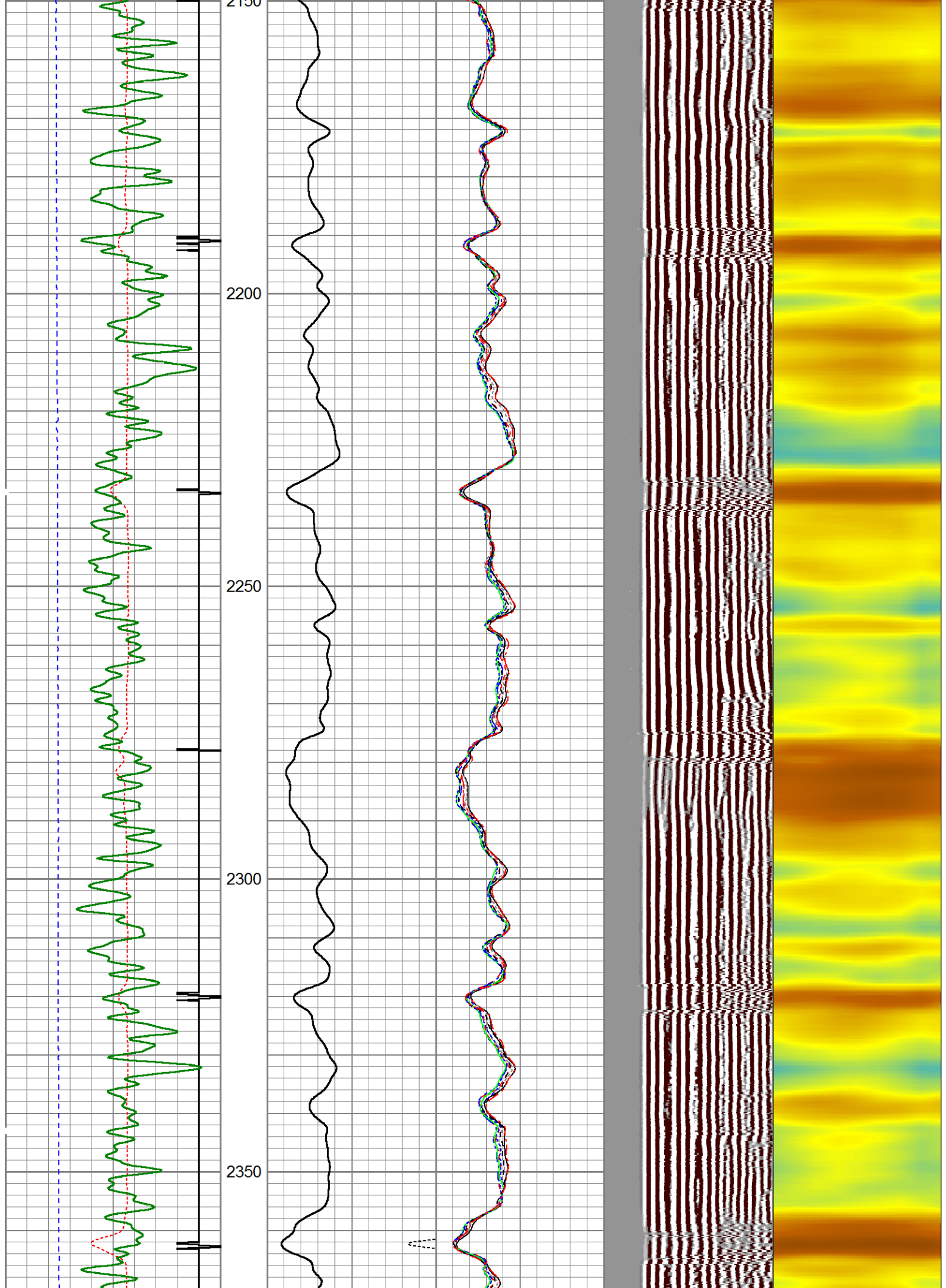


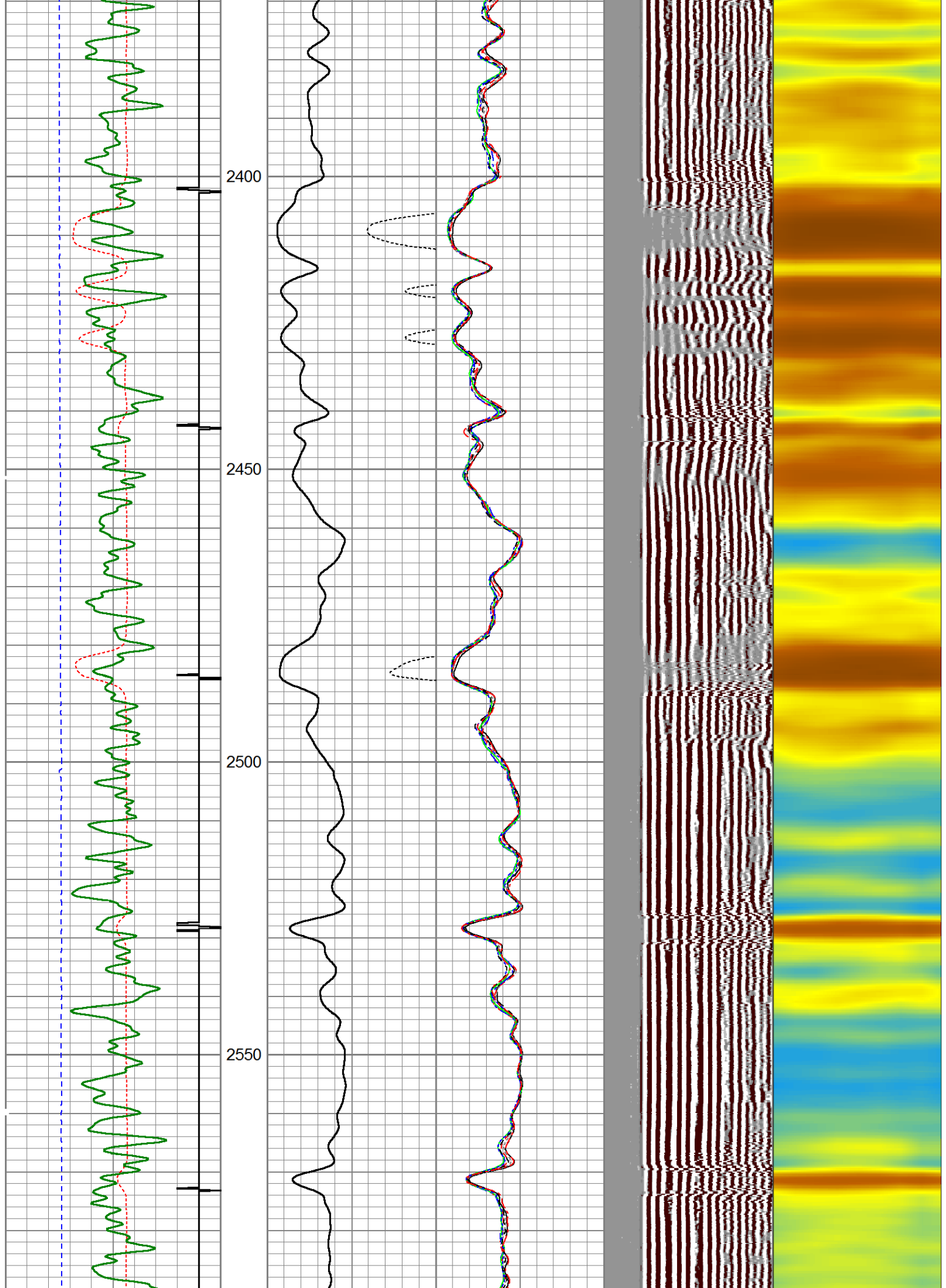


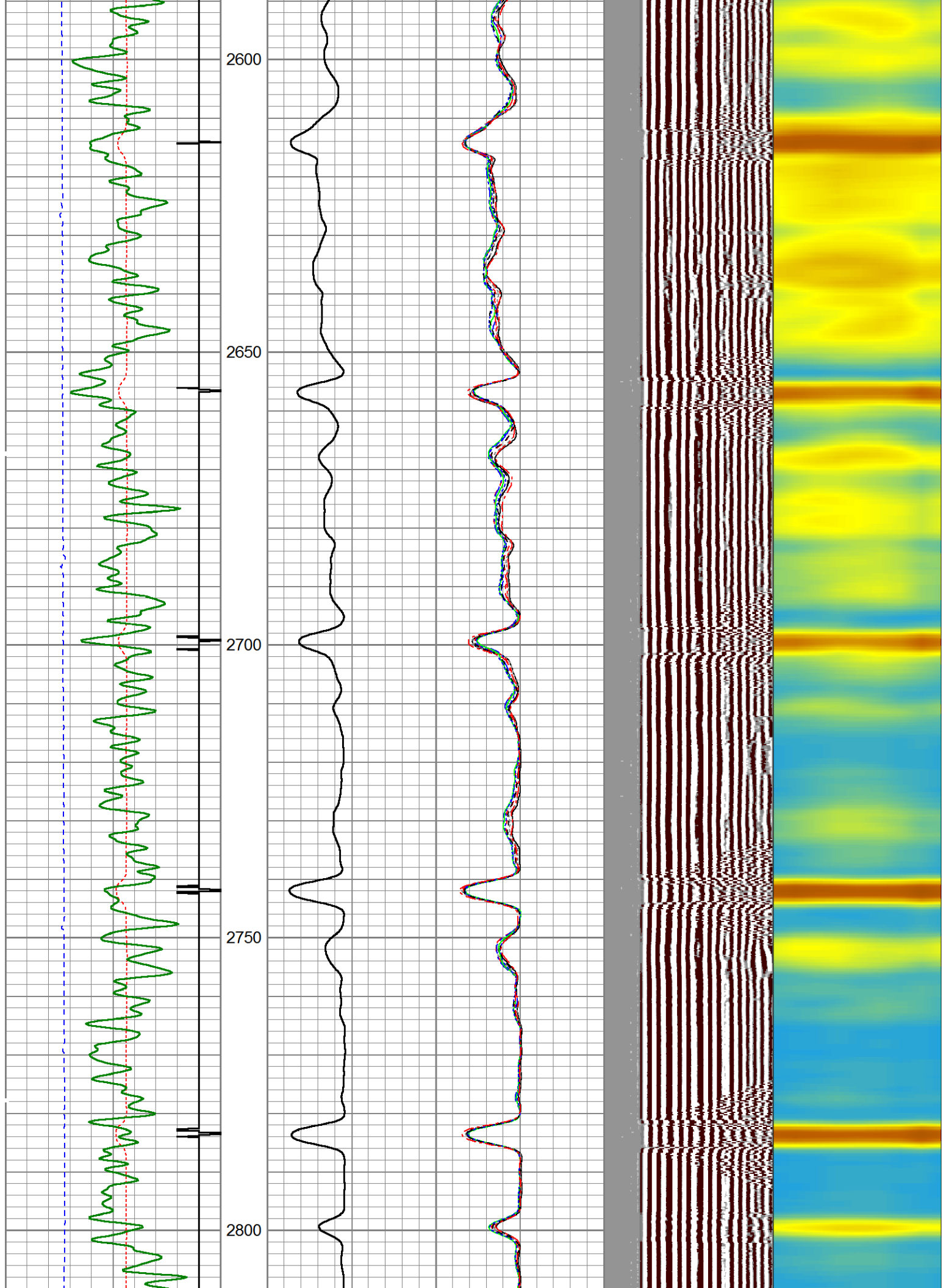


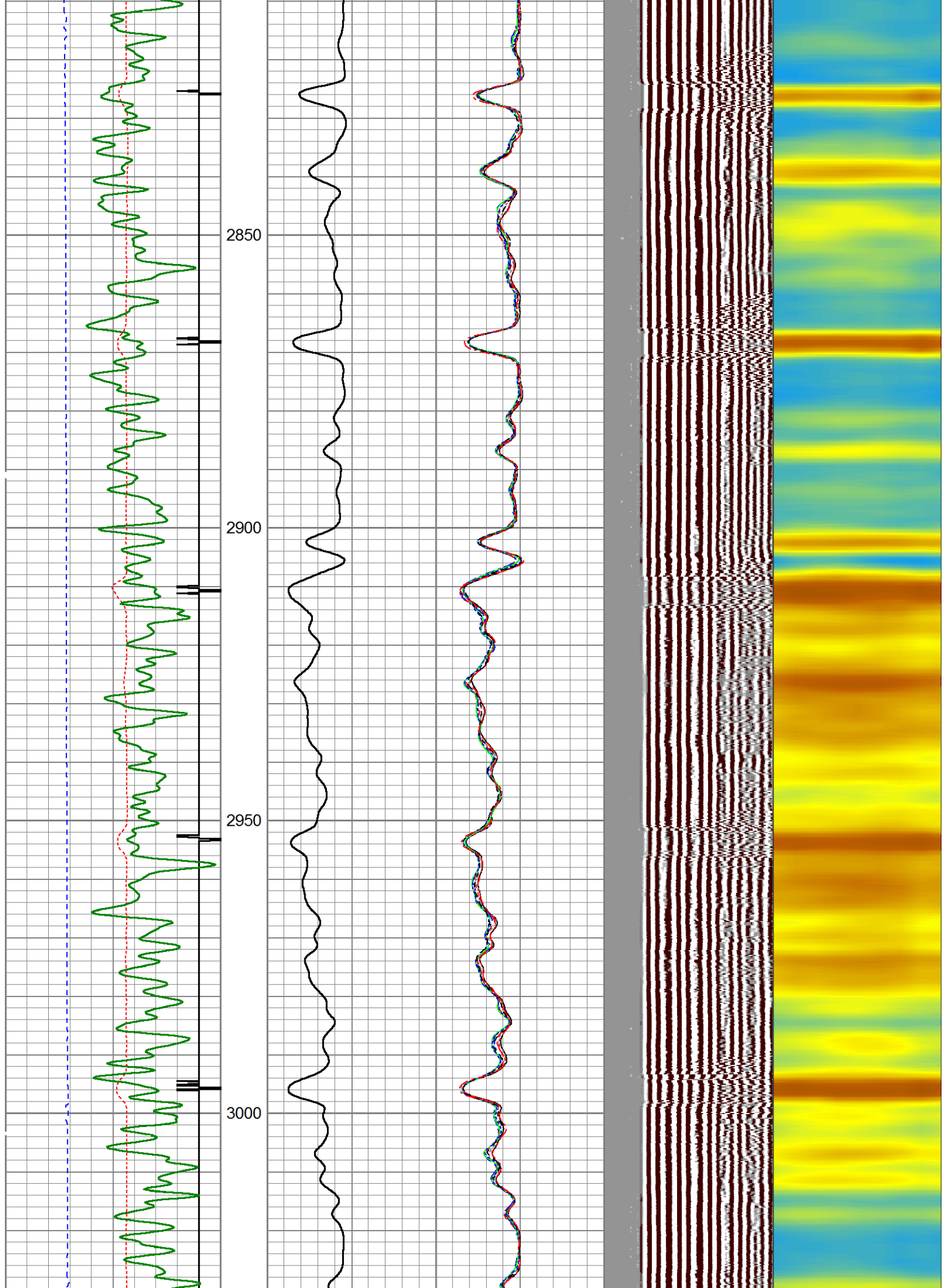


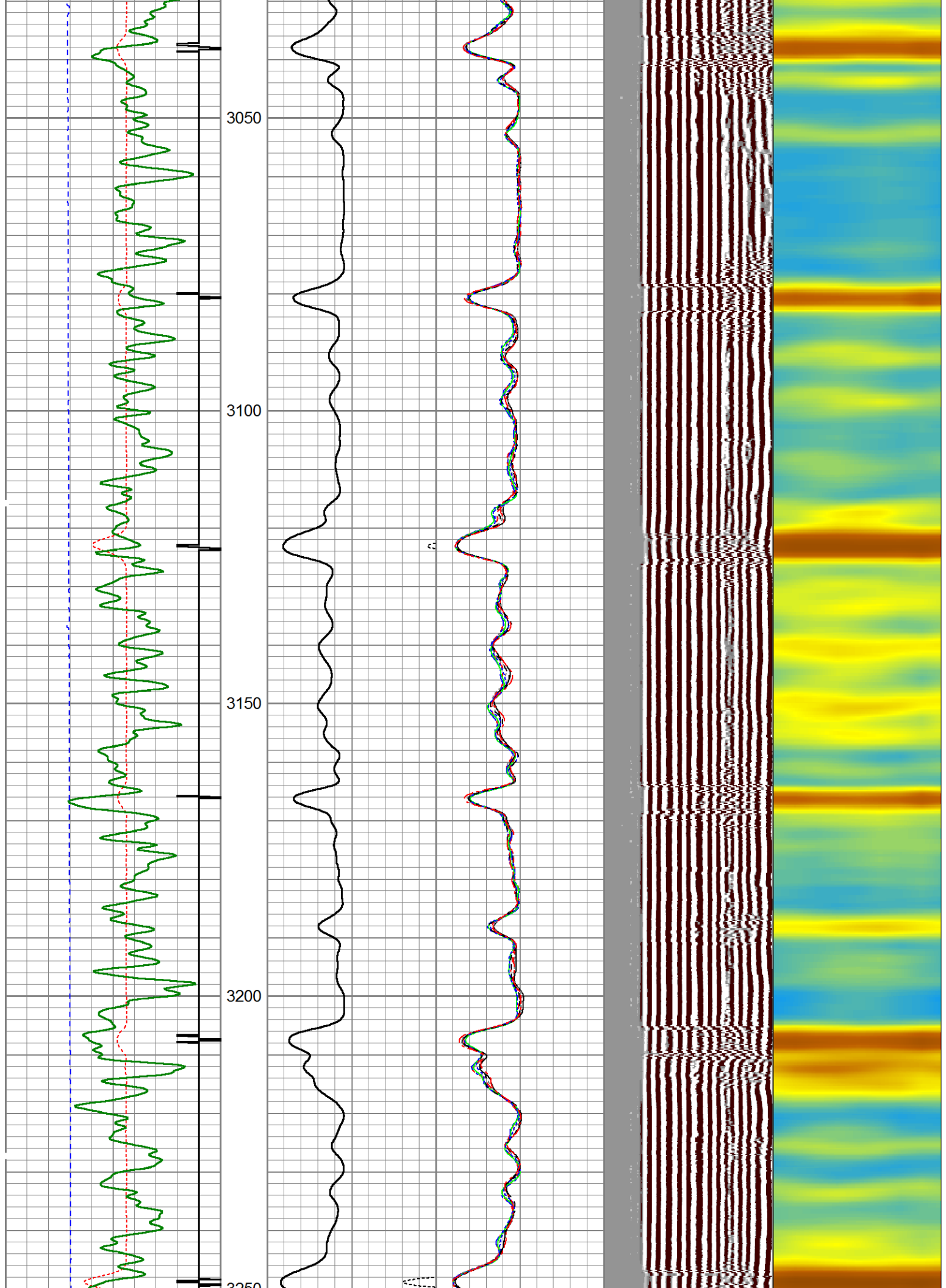


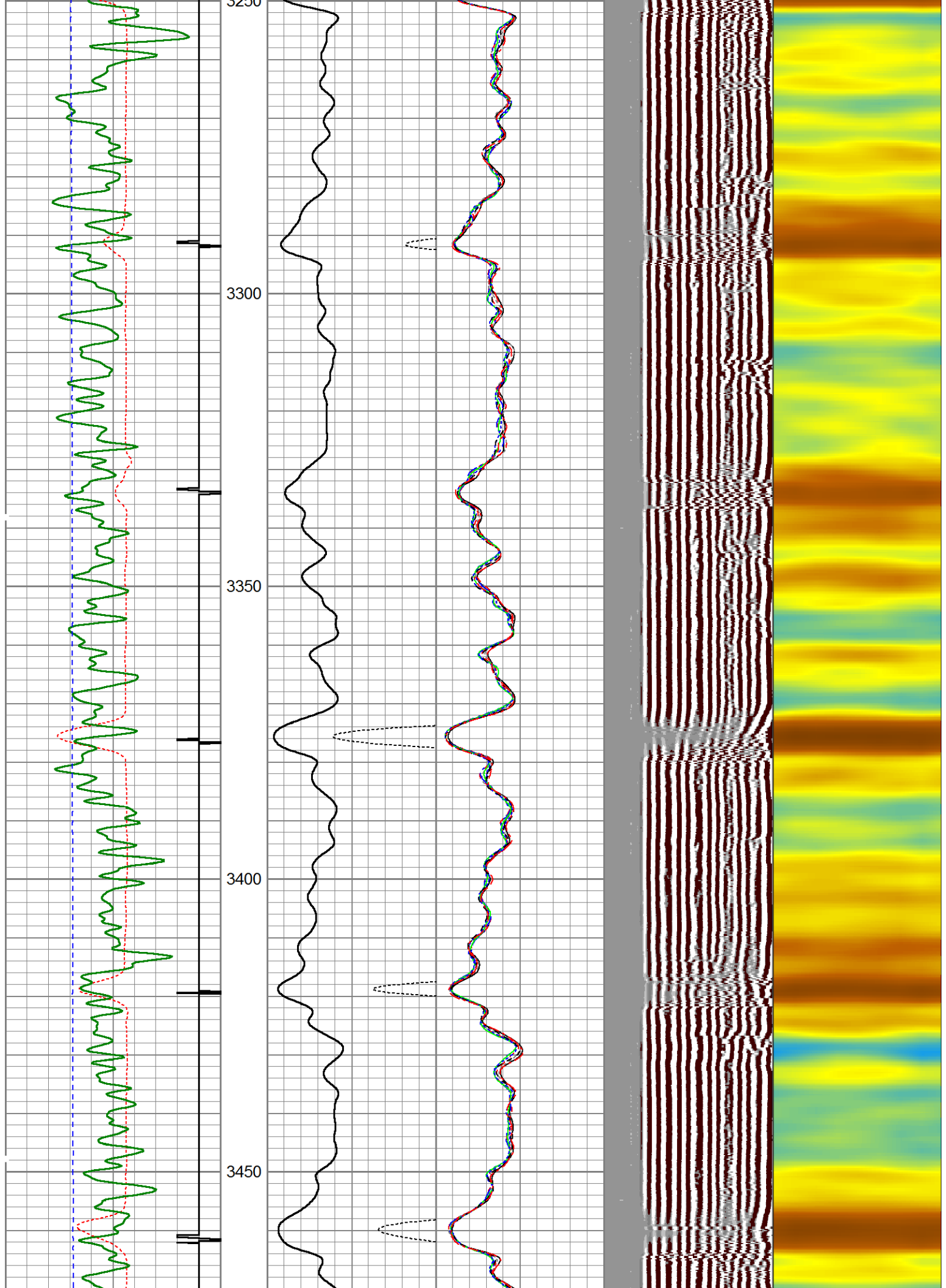


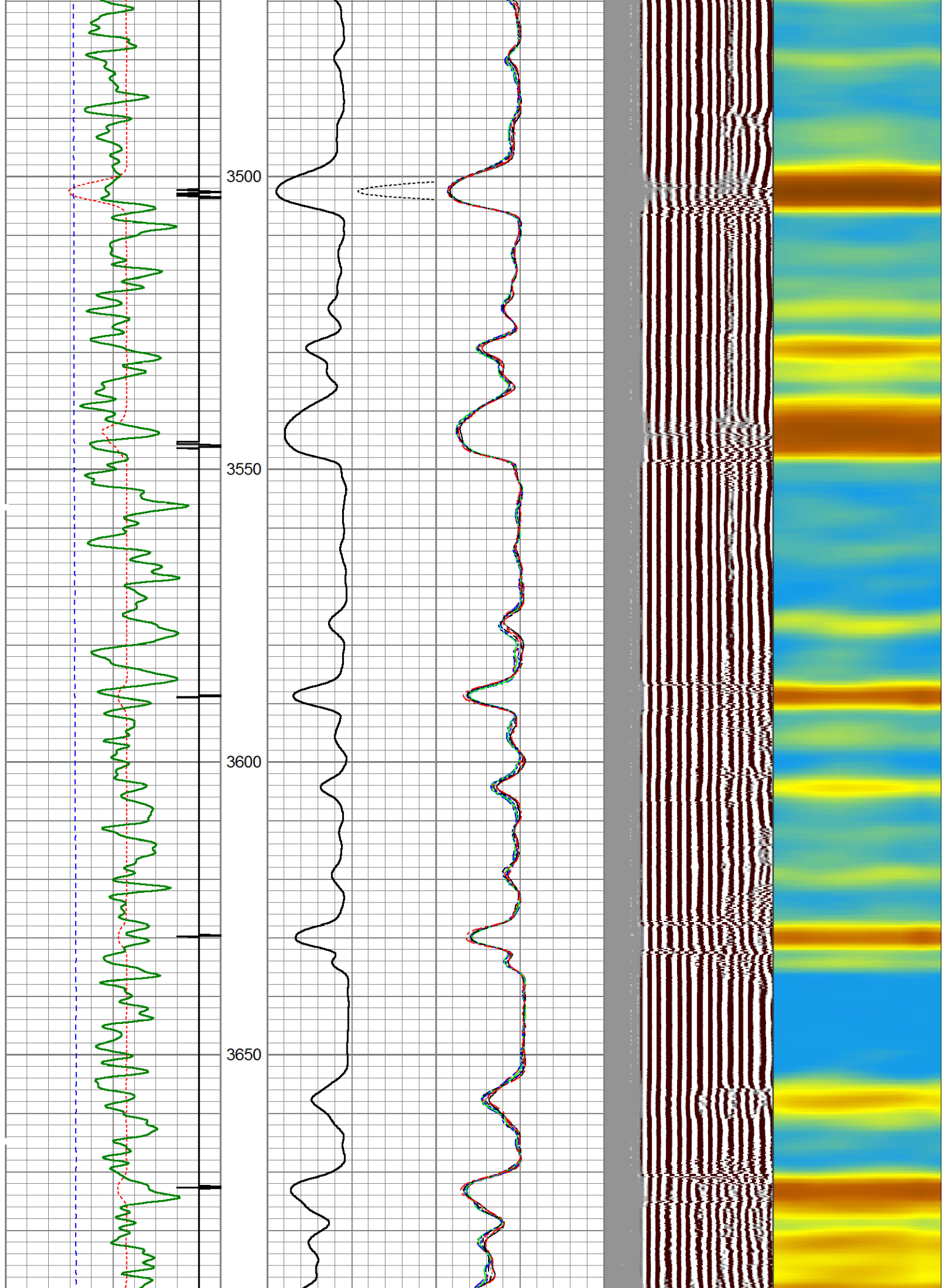


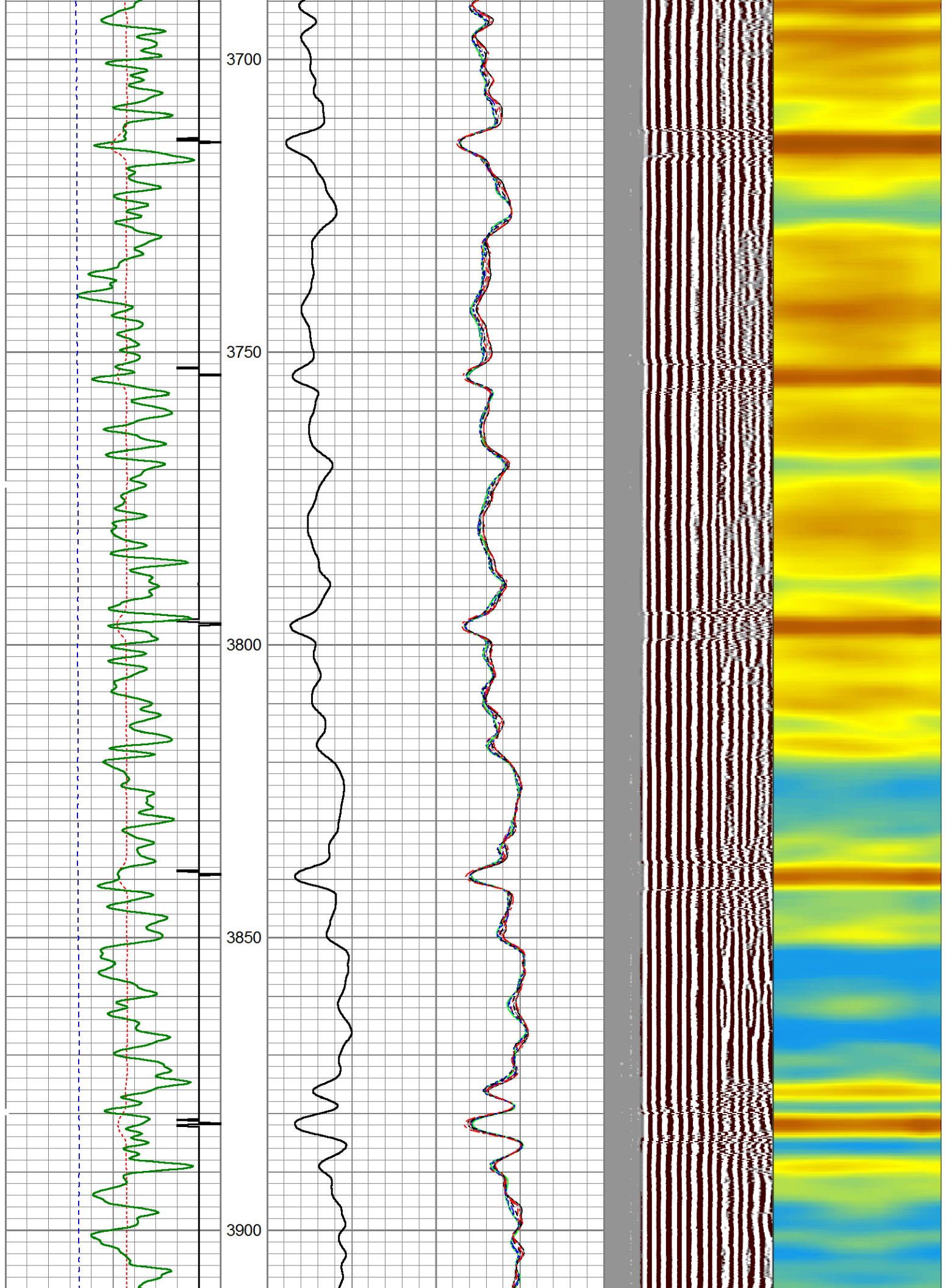


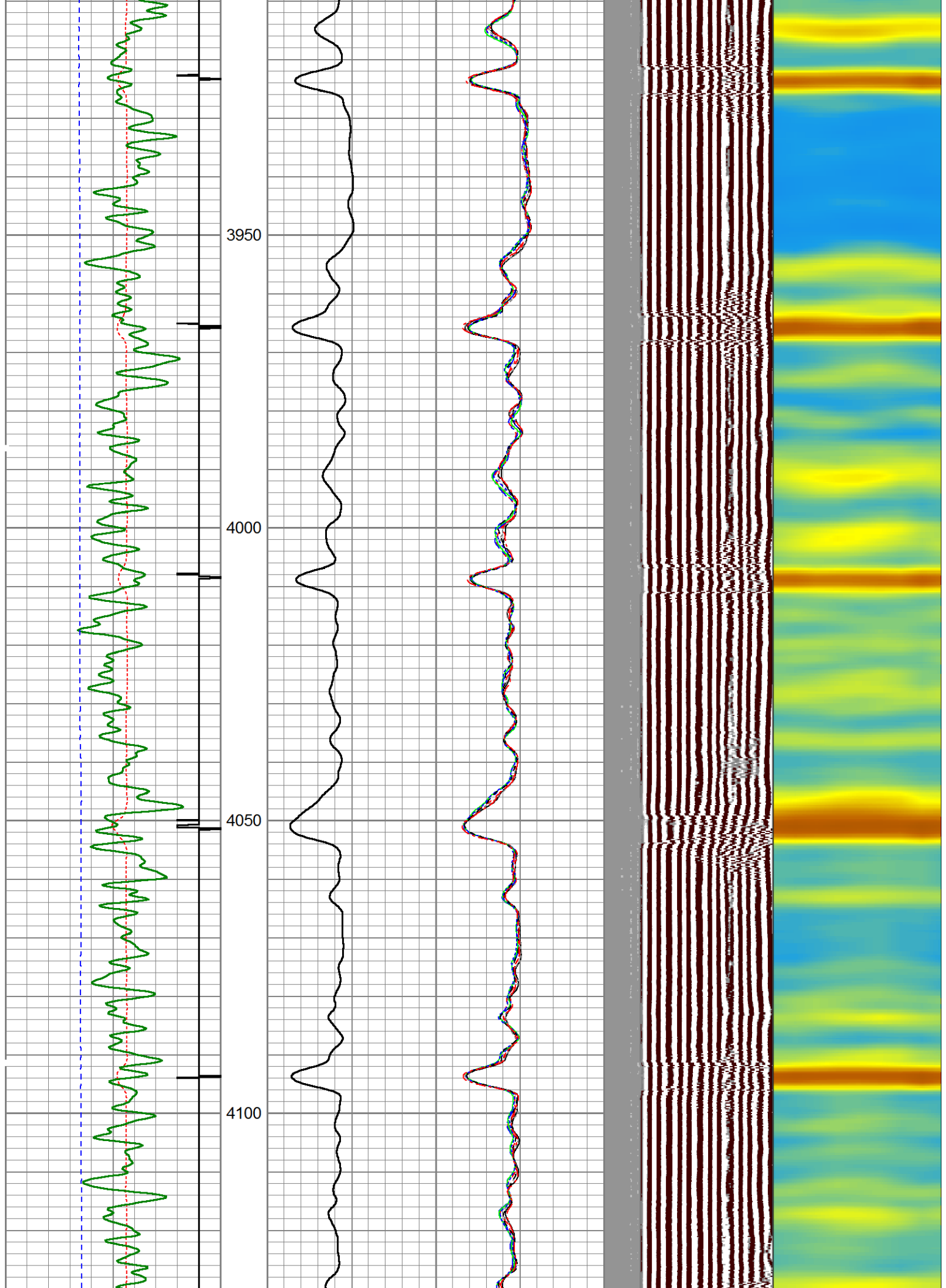


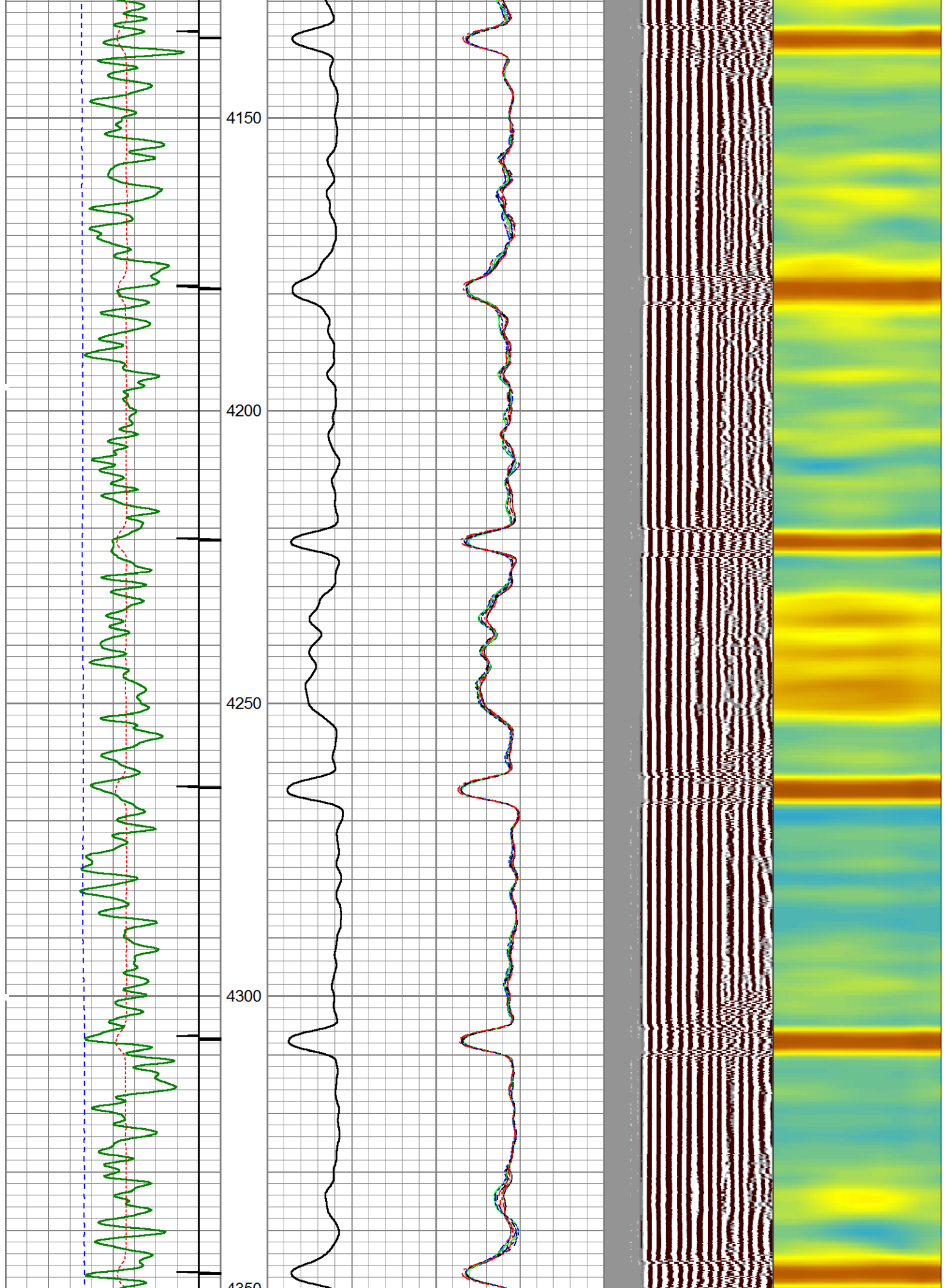


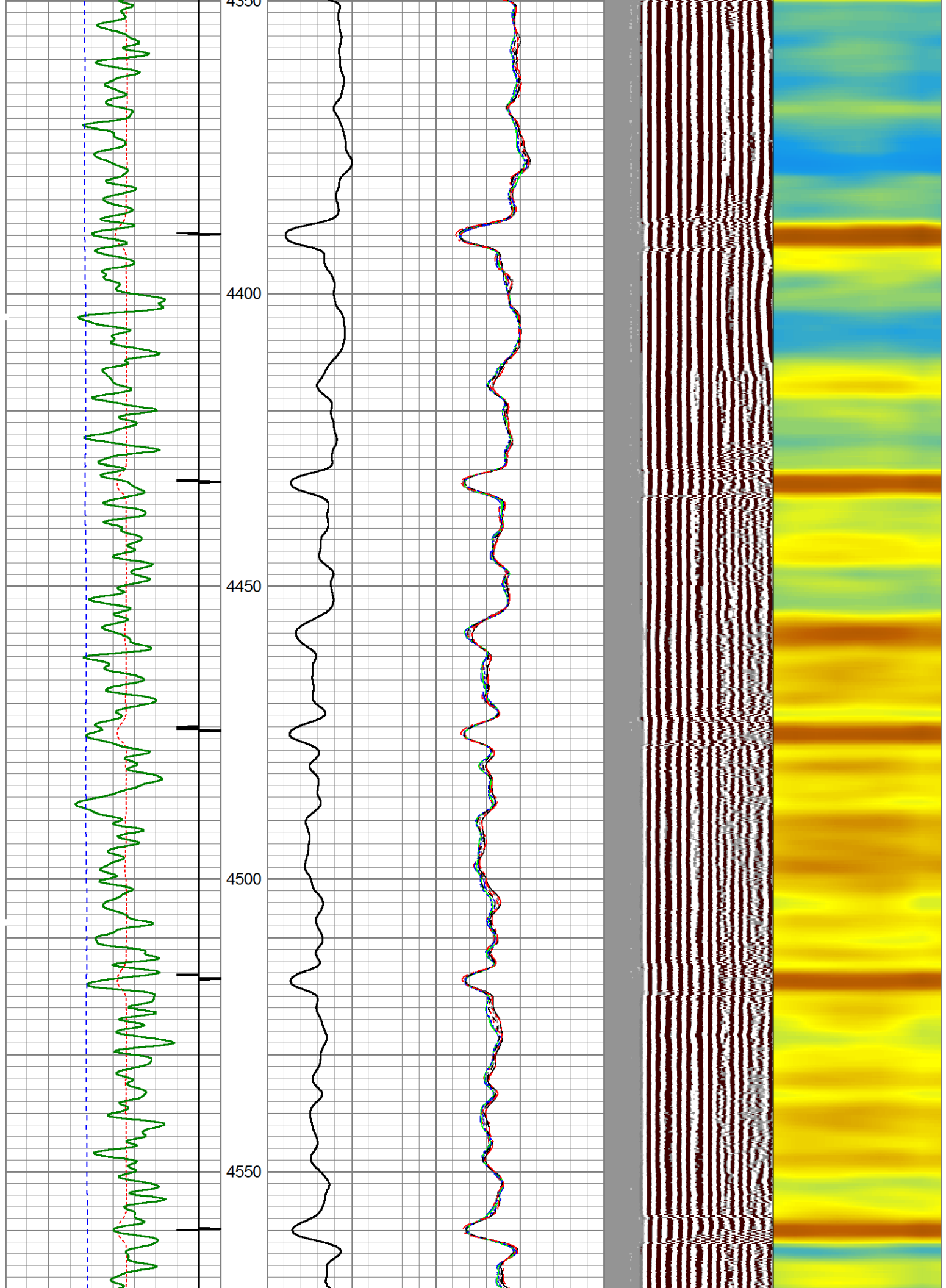


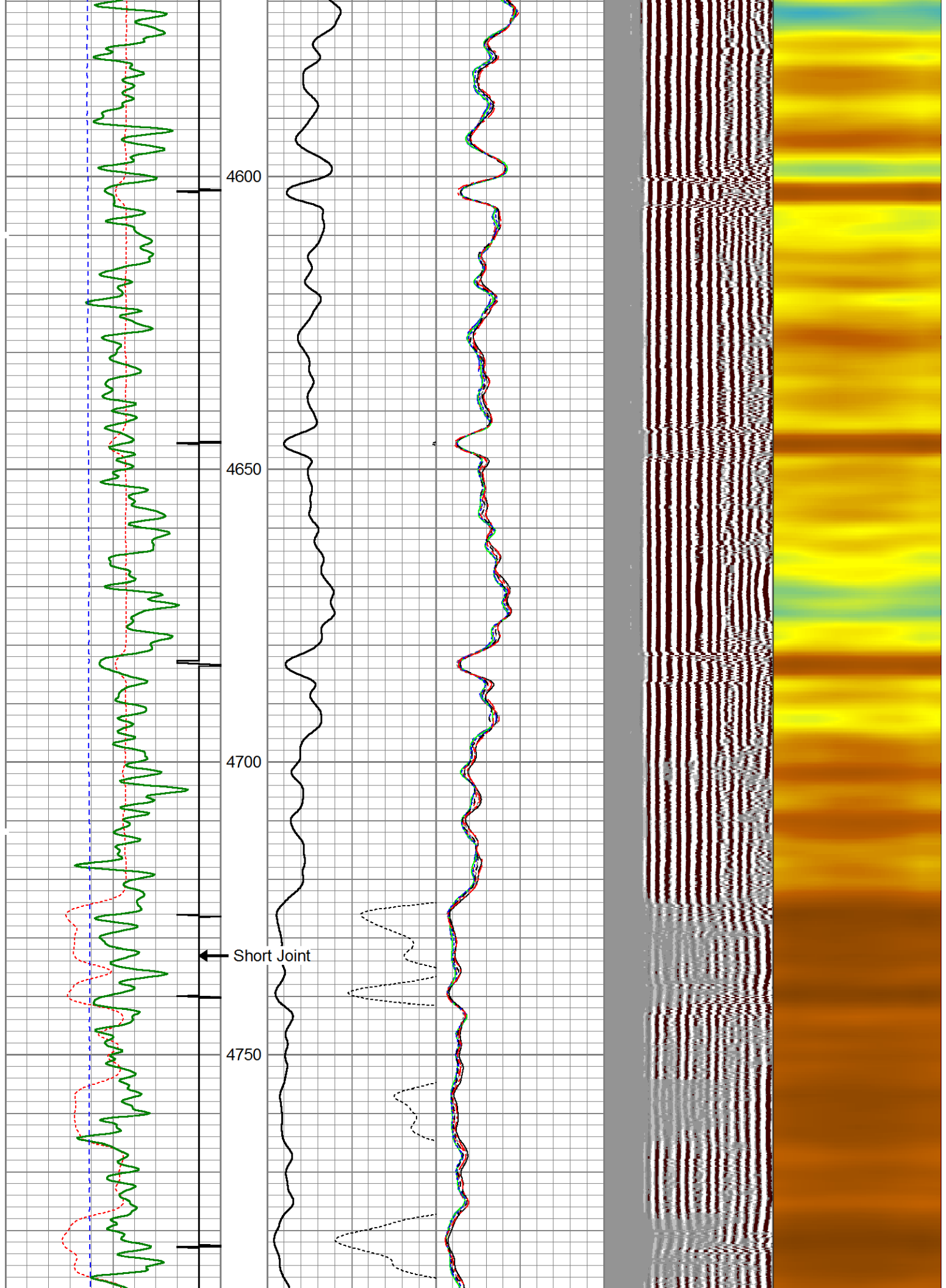


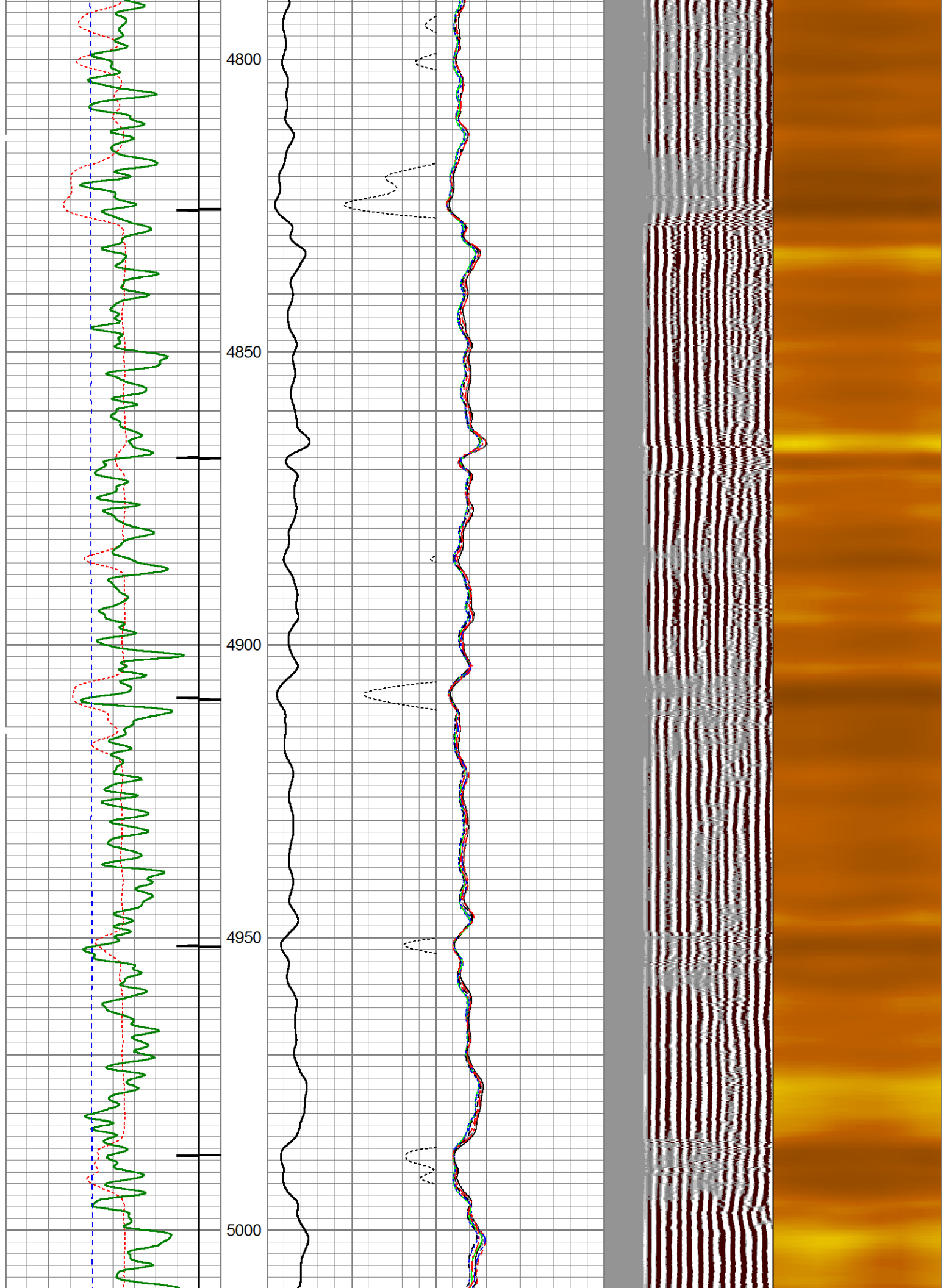


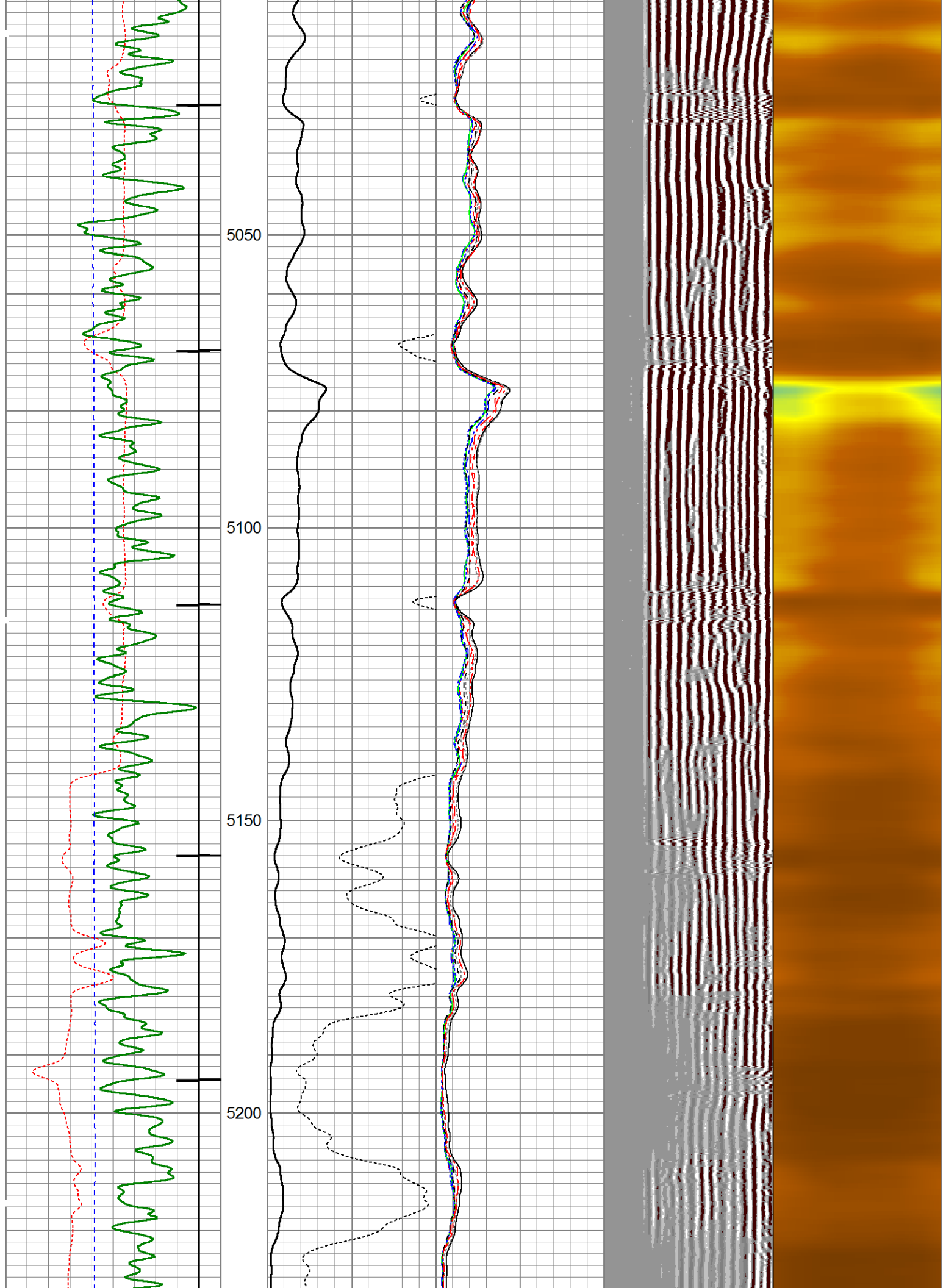


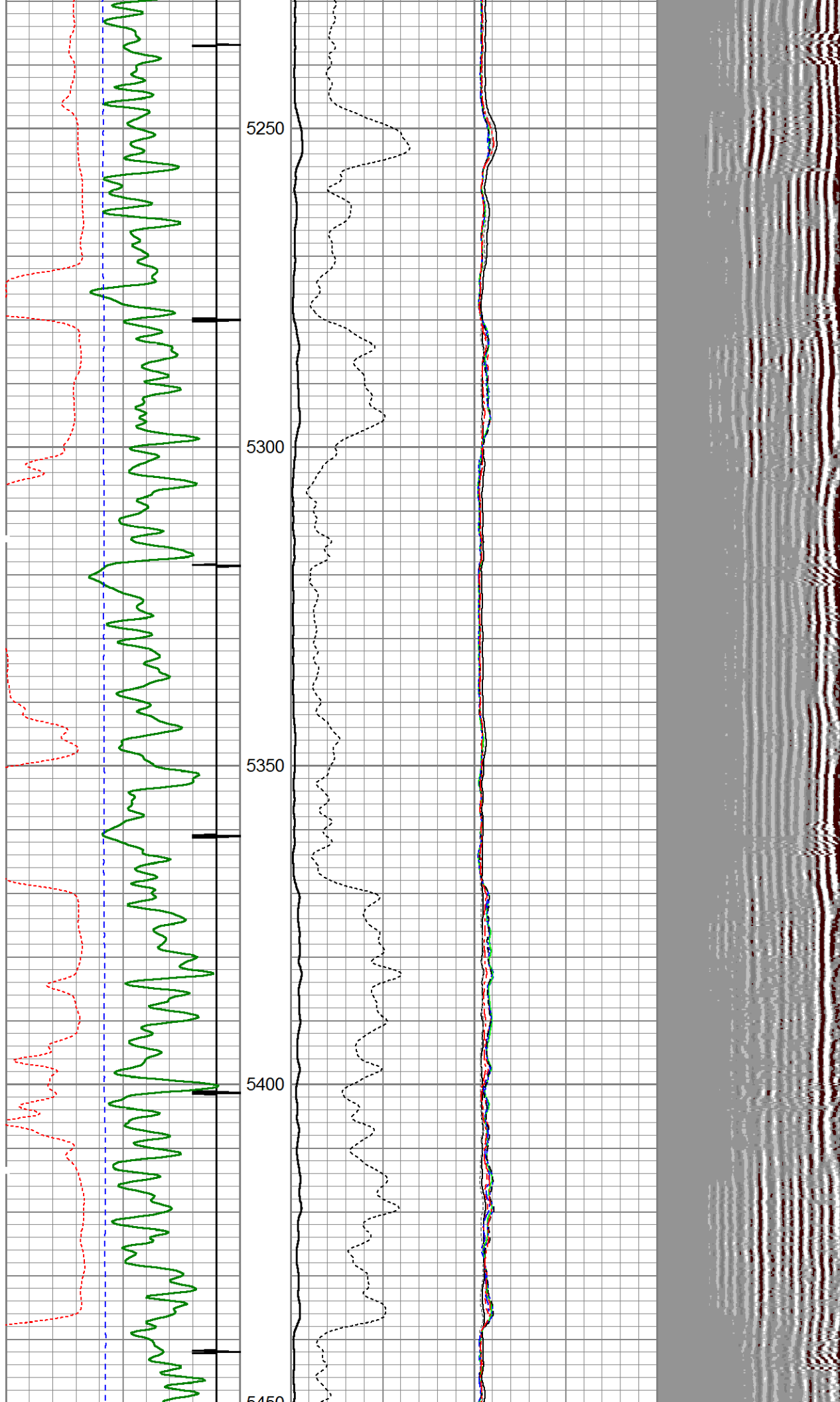


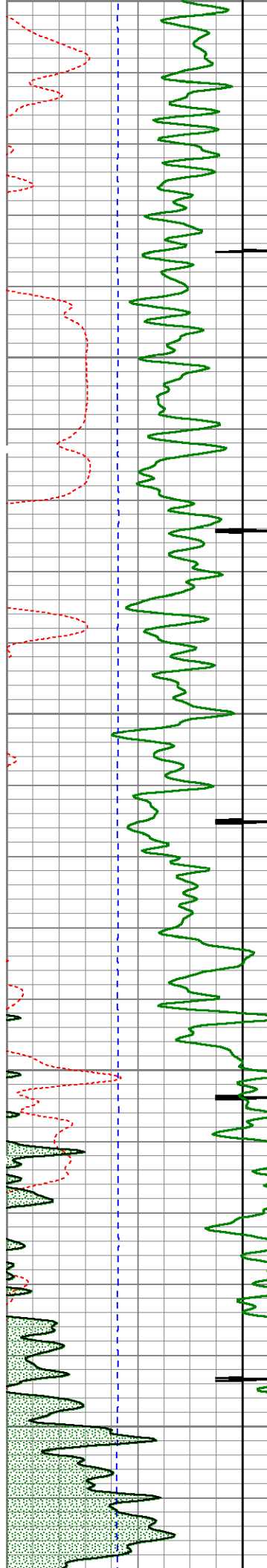




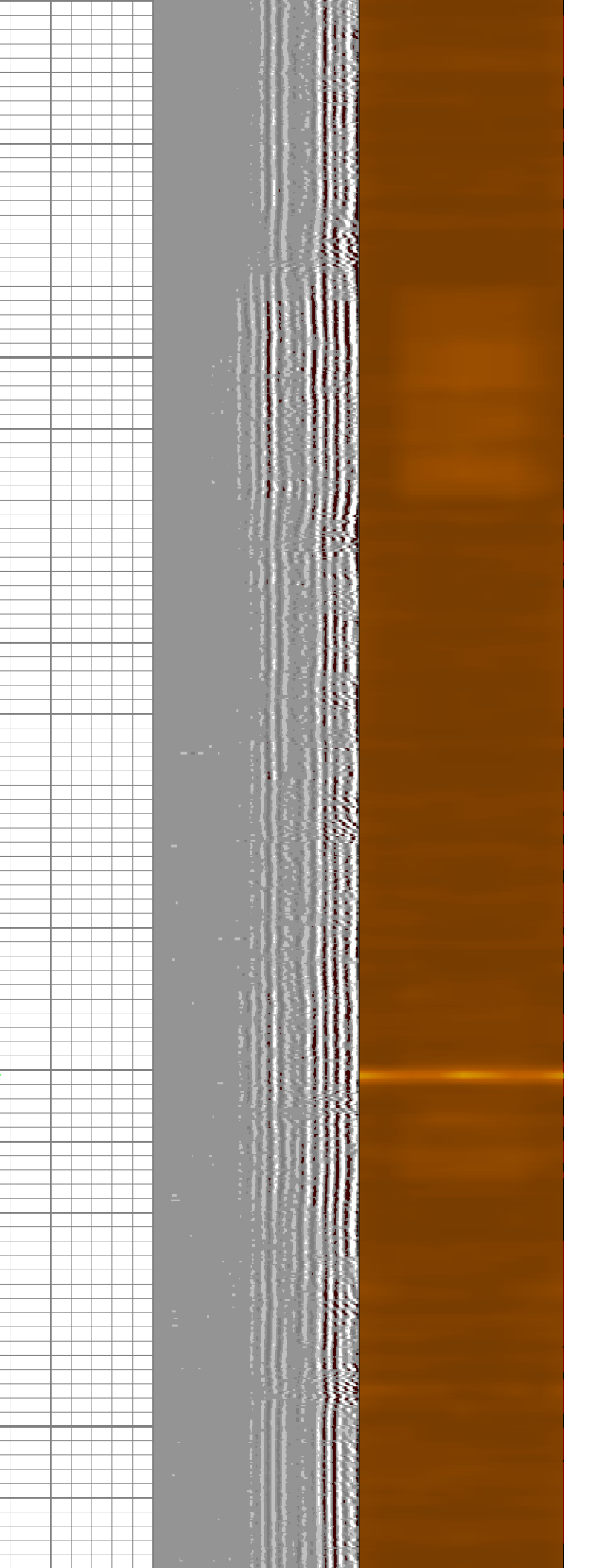
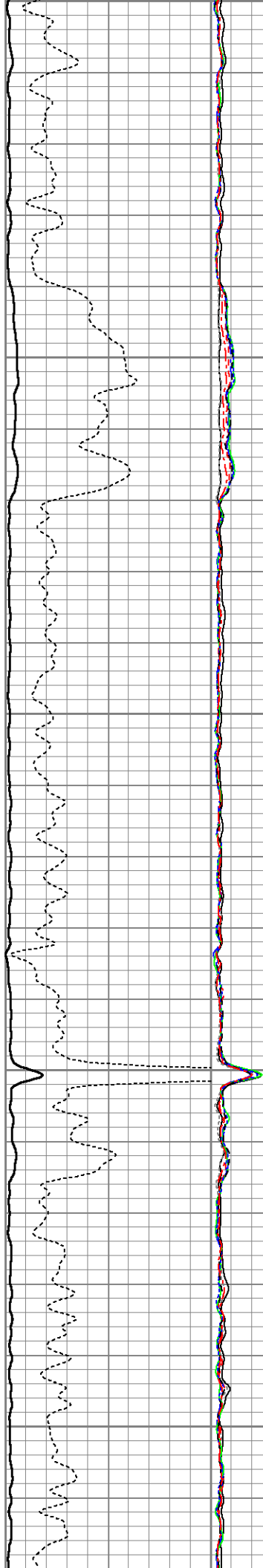


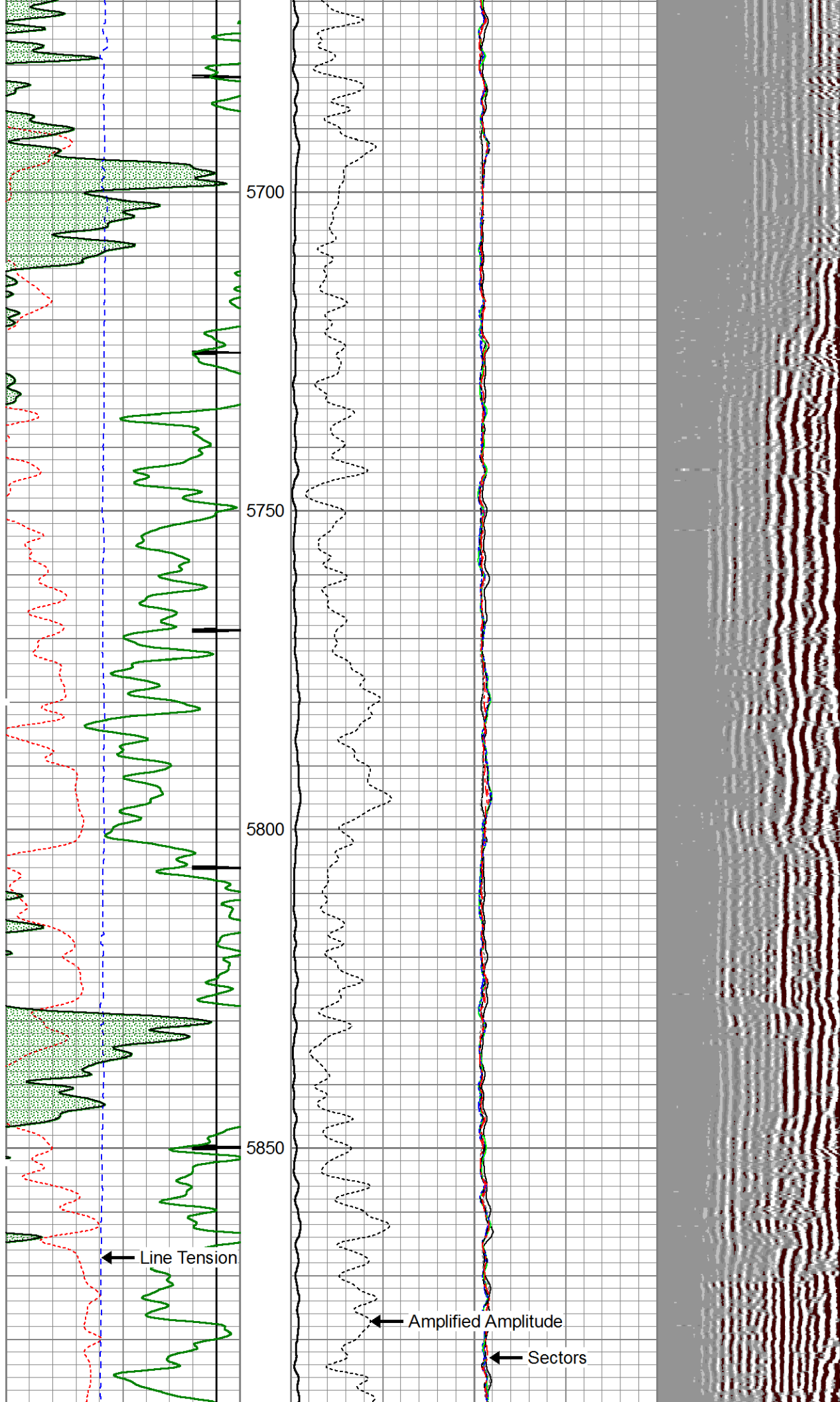


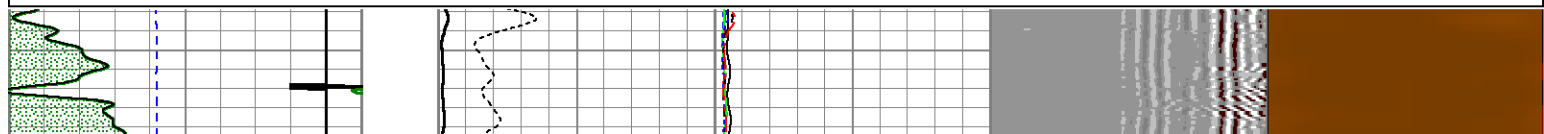
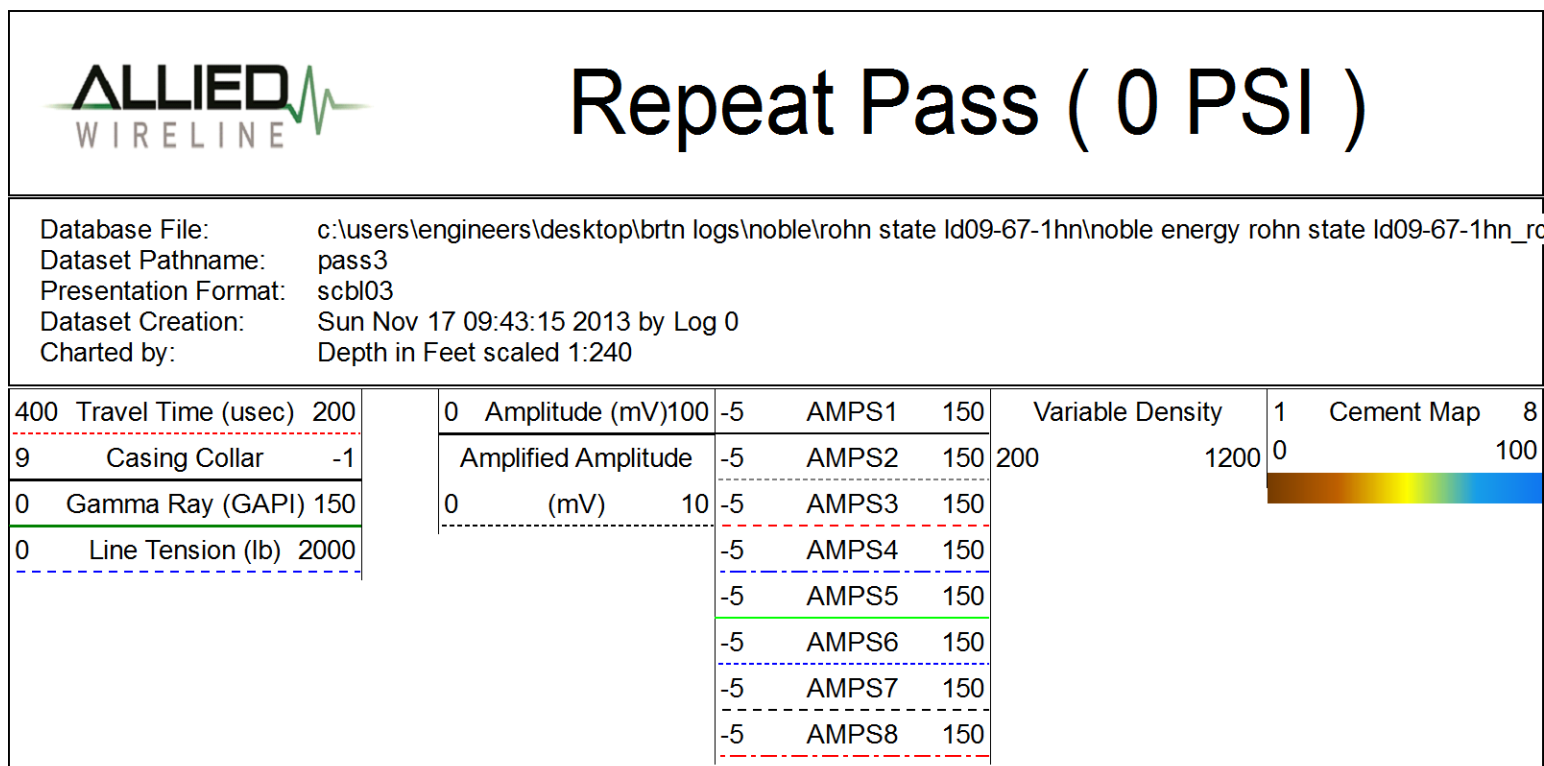
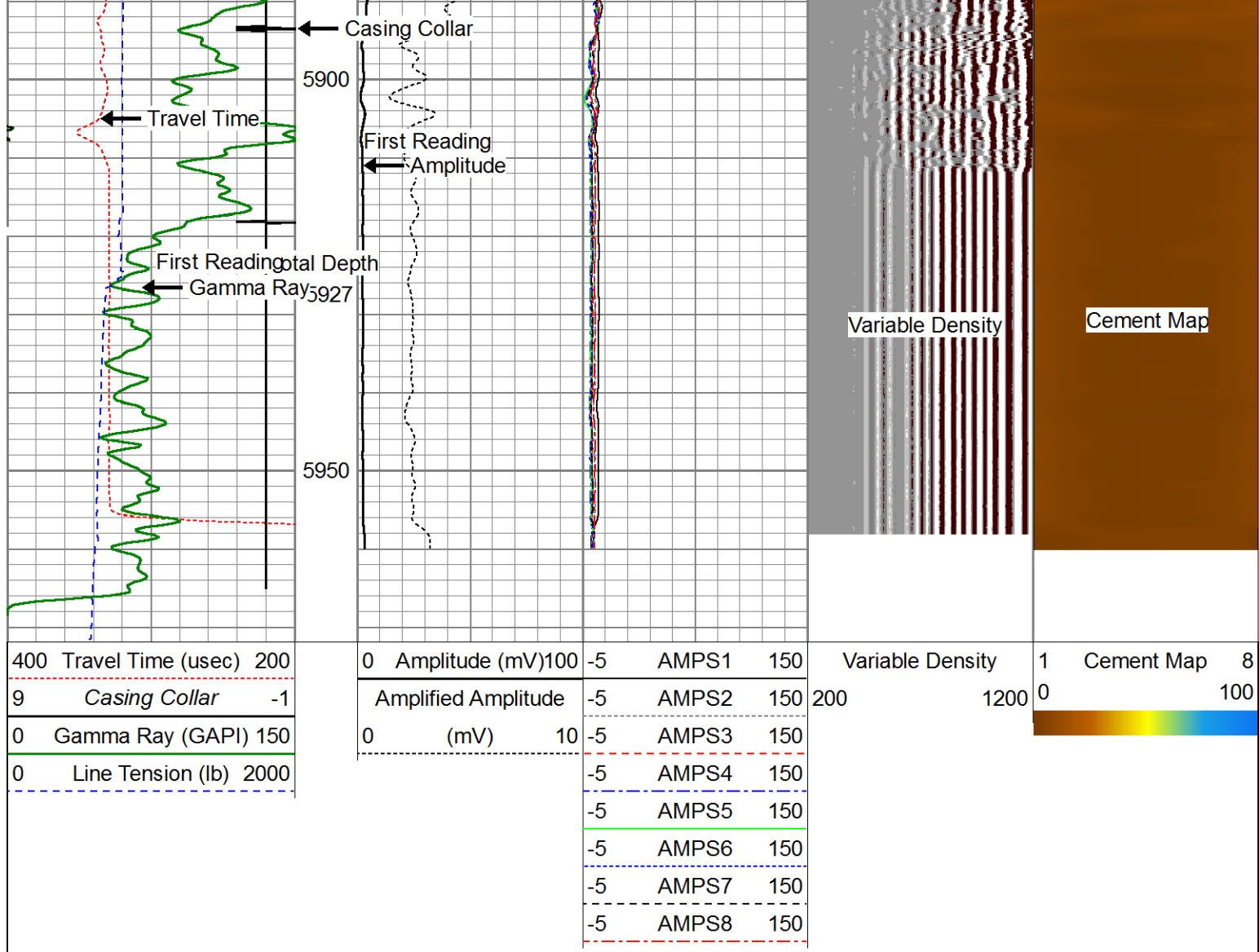


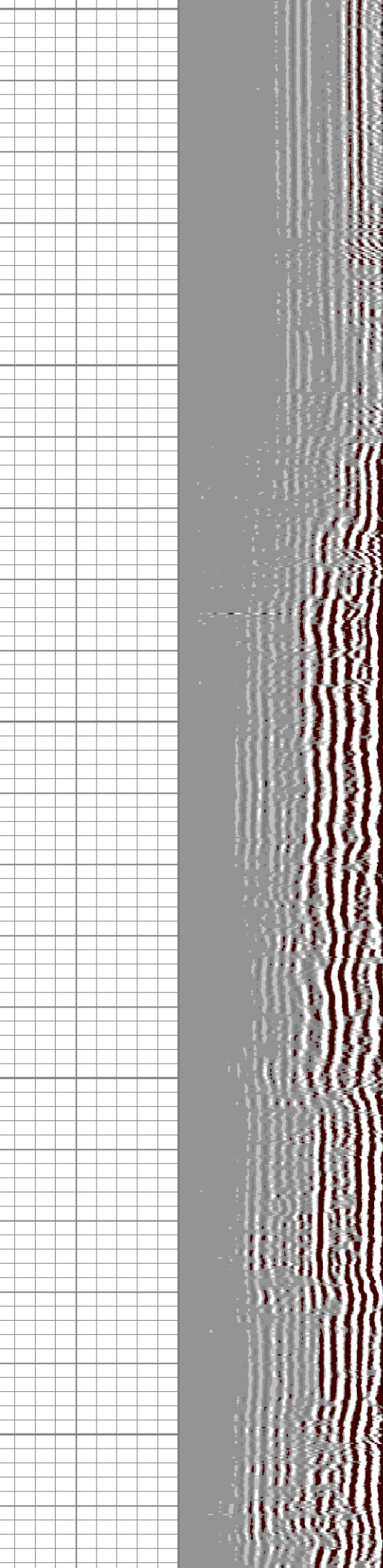
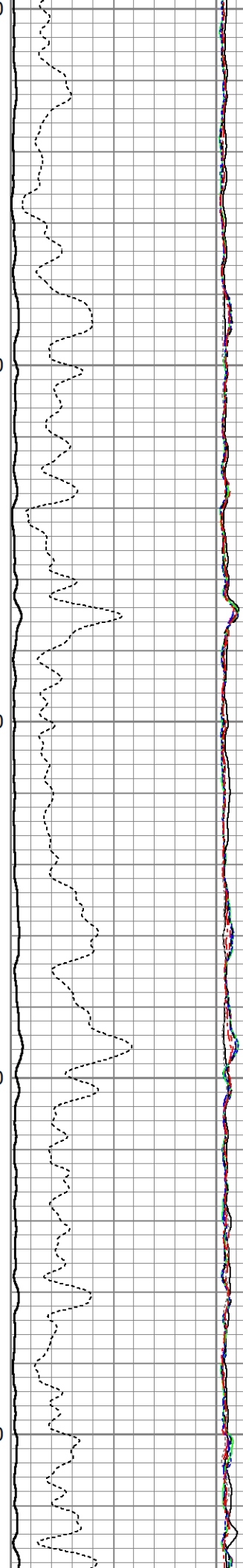
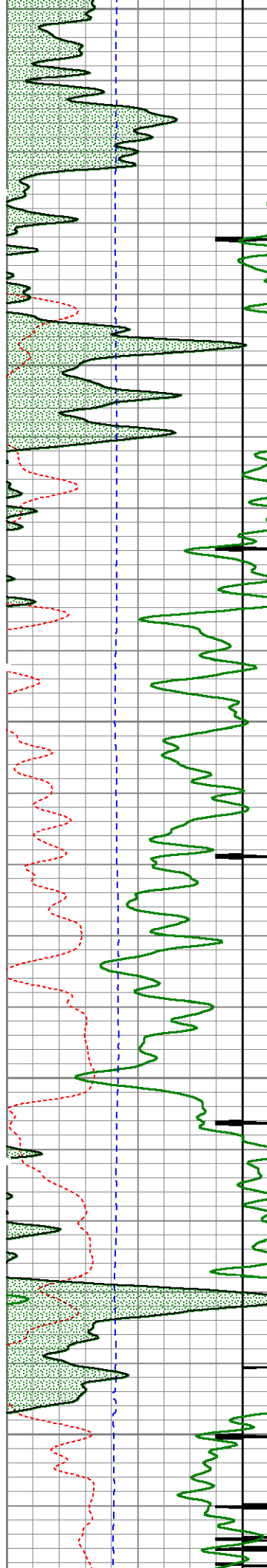


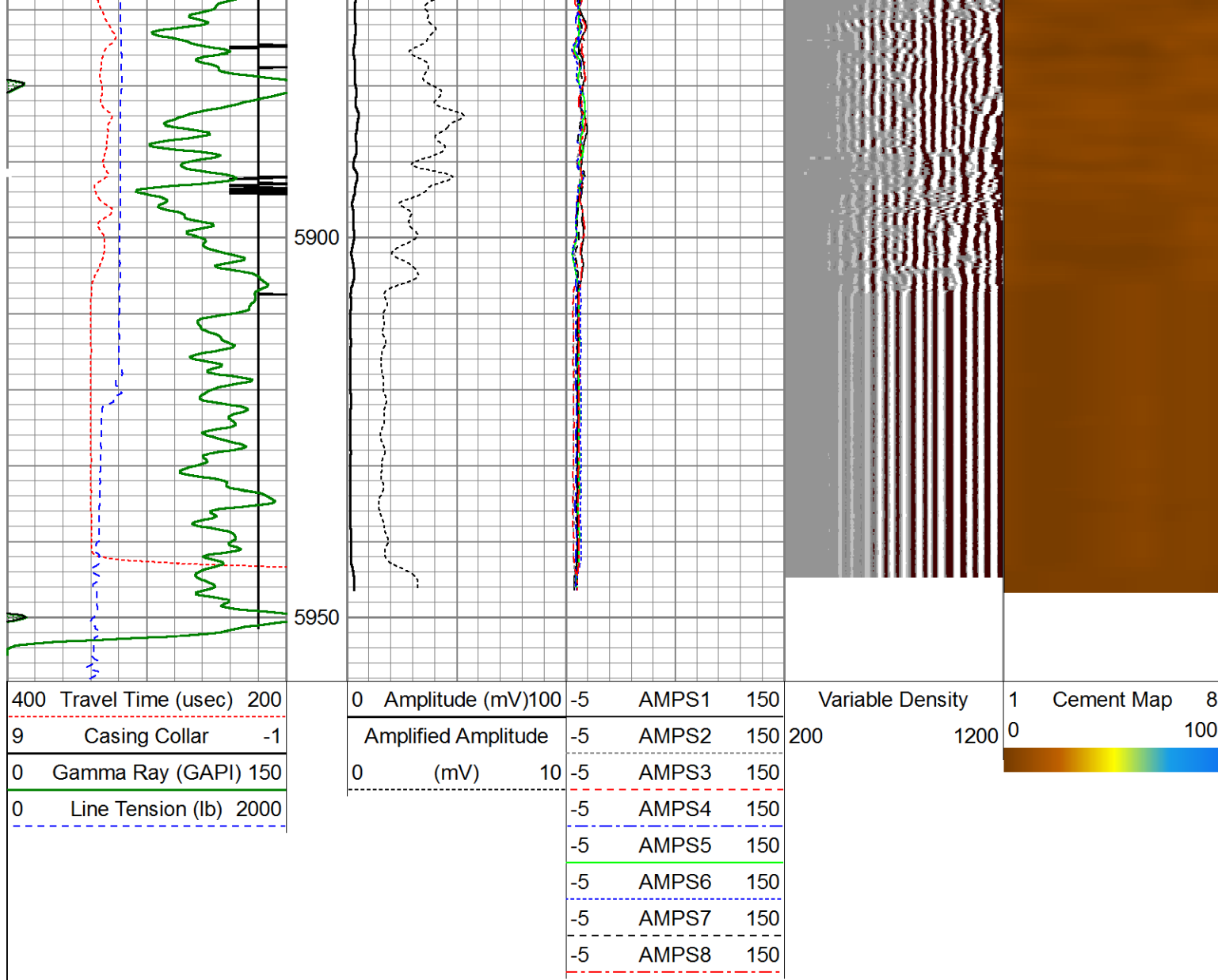
5450 5500 5550 5600 5650











Calibration Report			
Database File:	c:\users\engineers\desktop\brtn logs\noble\rohrn state ld09-67-1hn\noble energy rohn state ld09-67-1hn_rcb		
Dataset Pathname:	pass5		
Dataset Creation:	Sun Nov 17 09:51:04 2013 by Log 0		
Gamma Ray Calibration Report			
Serial Number:	110108-Dig		
Tool Model:	Probe275		
Performed:	Mon Jul 01 16:56:15 2013		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.8500	GAPI/cps	
Temperature Calibration Report			
Serial Number:	110108-Dig		
Tool Model:	Probe275		
Performed:	Sun Jun 13 13:33:21 1993		
	Reference	Reading	

Low Reference:	0.00	degF	0.00	cps
High Reference:	1.00	degF	1.00	cps
Gain:	1.00			
Offset:	0.00			
Delta Spacing	2			

Segmented Cement Bond Log Calibration Report

Serial Number:	111107		
Tool Model:	Probe		
Calibration Casing Diameter:	7.000	in	
Calibration Depth:	959.738	ft	

Master Calibration, performed Sun Nov 17 09:20:22 2013:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.024	0.627	1.000	62.165	93.955	3.263
CAL	-0.030	0.954				
5'	-0.019	0.512	1.000	62.165	115.182	3.186
SUM						
S1	-0.009	0.670	0.000	100.000	147.349	1.329
S2	-0.013	0.704	0.000	100.000	139.412	1.862
S3	-0.019	0.701	0.000	100.000	138.942	2.631
S4	-0.017	0.675	0.000	100.000	144.426	2.481
S5	-0.018	0.622	0.000	100.000	156.375	2.806
S6	-0.018	0.583	0.000	100.000	166.305	3.053
S7	-0.020	0.556	0.000	100.000	173.497	3.450
S8	-0.019	0.555	0.000	100.000	174.328	3.275

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.030	0.954	1.000	0.000

Air Zero Calibration, performed Thu Oct 17 08:50:08 2013:

	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	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Titan Cable_head	1.00	1.44	10.00

