



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

Company		Noble Energy	
Well		Crow Creek State AC36-77HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-37131	
SEC 36 TWP 7N RGE 63W		None	
Permanent Datum		Ground Level Elevation 4788'	
Log Measured From		Kelly Bushing 24' APD	
Drilling Measured From		Kelly Bushing	
Date		November 5, 2013	
Run Number		One	
Depth Driller		11083'	
Depth Logger		6833'	
Bottom Logged Interval		6819'	
Top Log Interval		Surface	
Open Hole Size		8 3/4"	
Type Fluid		Water	
Density / Viscosity		8.34	
Max. Recorded Temp.		-	
Estimated Cement Top		1320'	
Time Well Ready		15:50	
Time Logger on Bottom		16:21	
Equipment Number		13034	
Location		Brighton, CO	
Recorded By		C. Rall	
Witnessed By		Bill Mansfield	
Recorded By		R. Grissom	
Witnessed By		R. Grissom	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size	
Surface String		9 5/8"	
Prot. String		7"	
Production String		4.5"	
Liner		4.5"	
Short Joint		4.5"	

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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

Well Logged using 24' KB

Main Pass and Repeat Pass logged with zero Pressure on surface

Short Joint: 5665' To 5679'

Estimated Top of Cement: 1320'

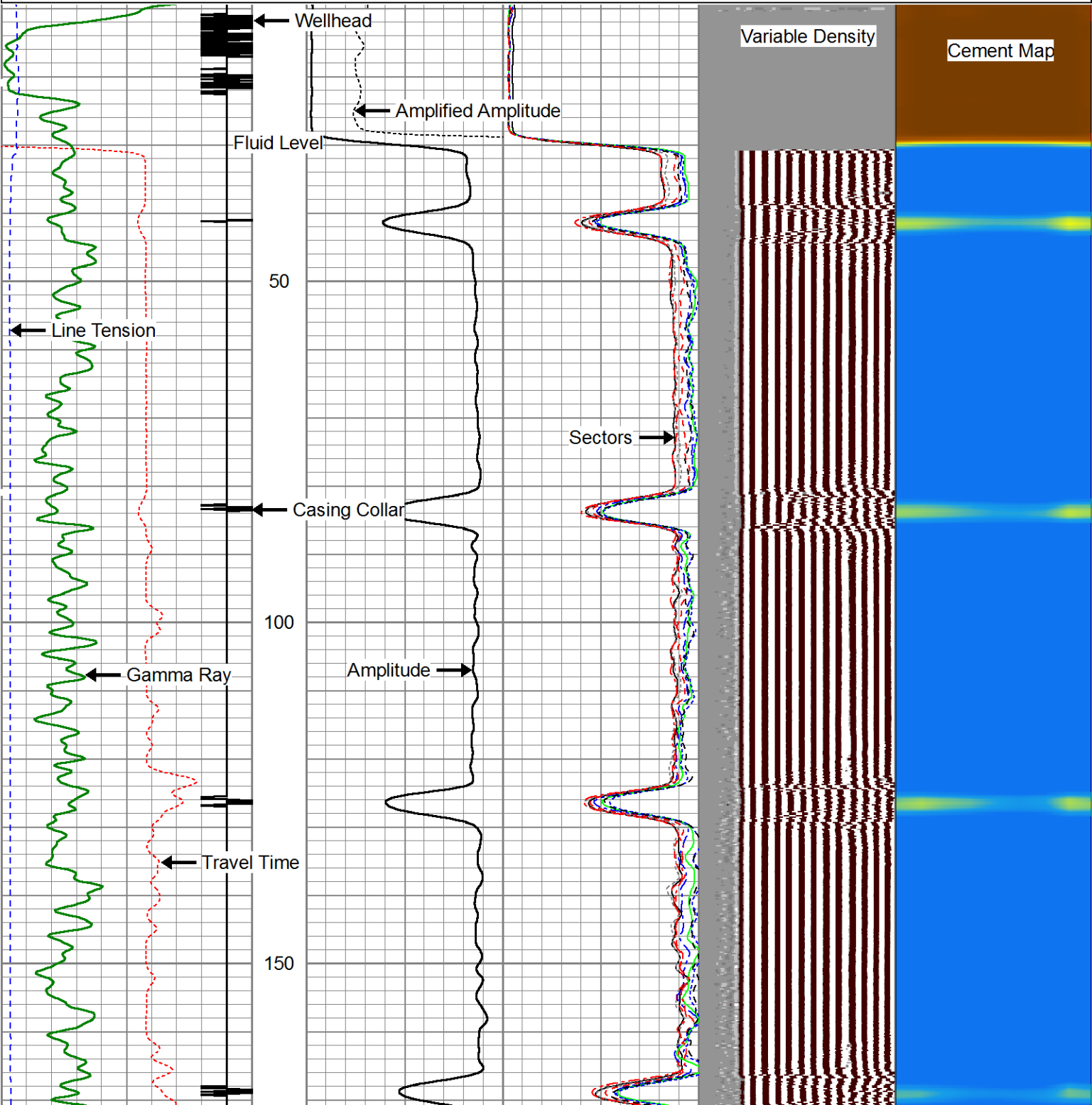
Thank You for using Allied Wireline

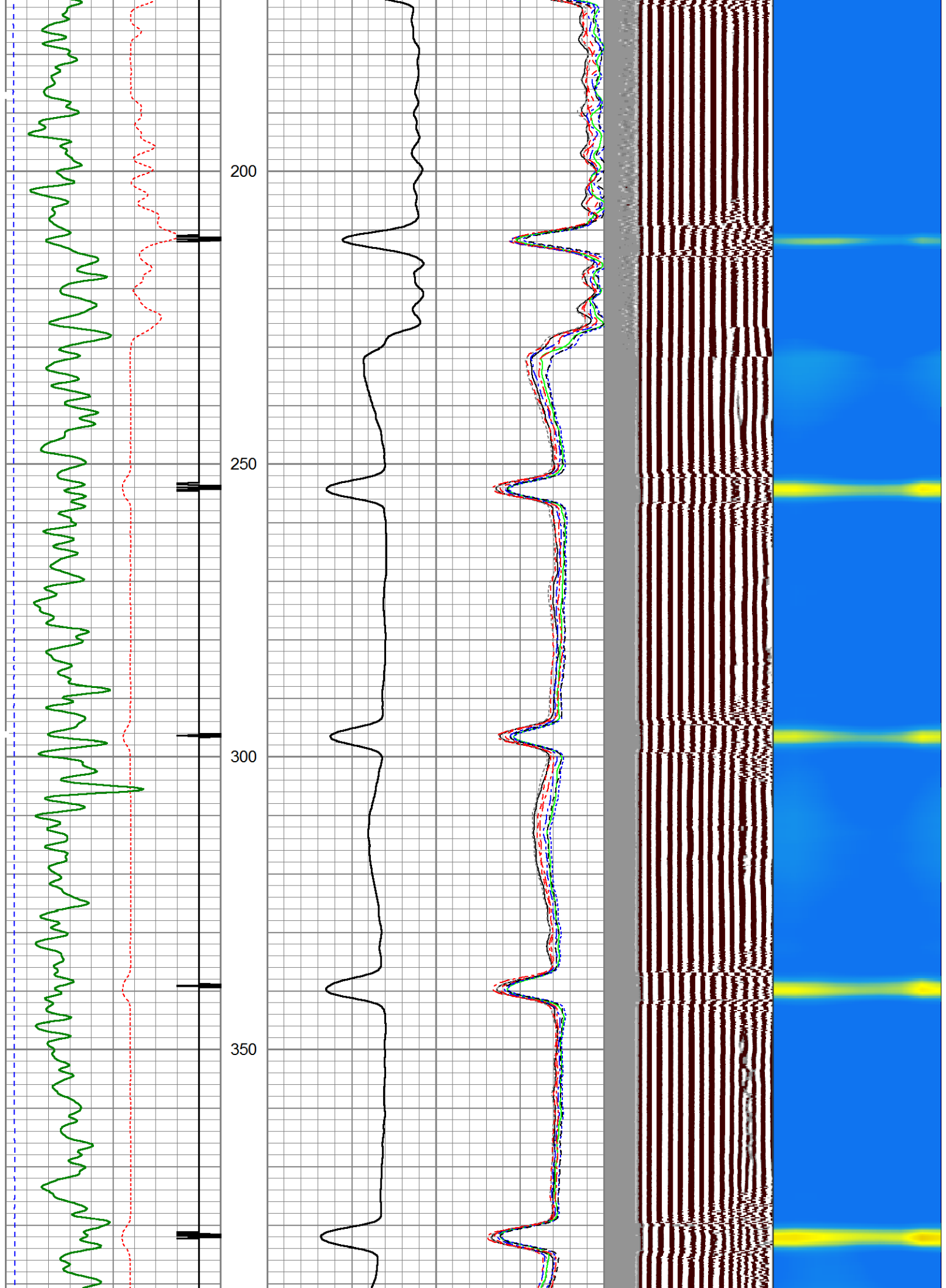
(303)659-4609

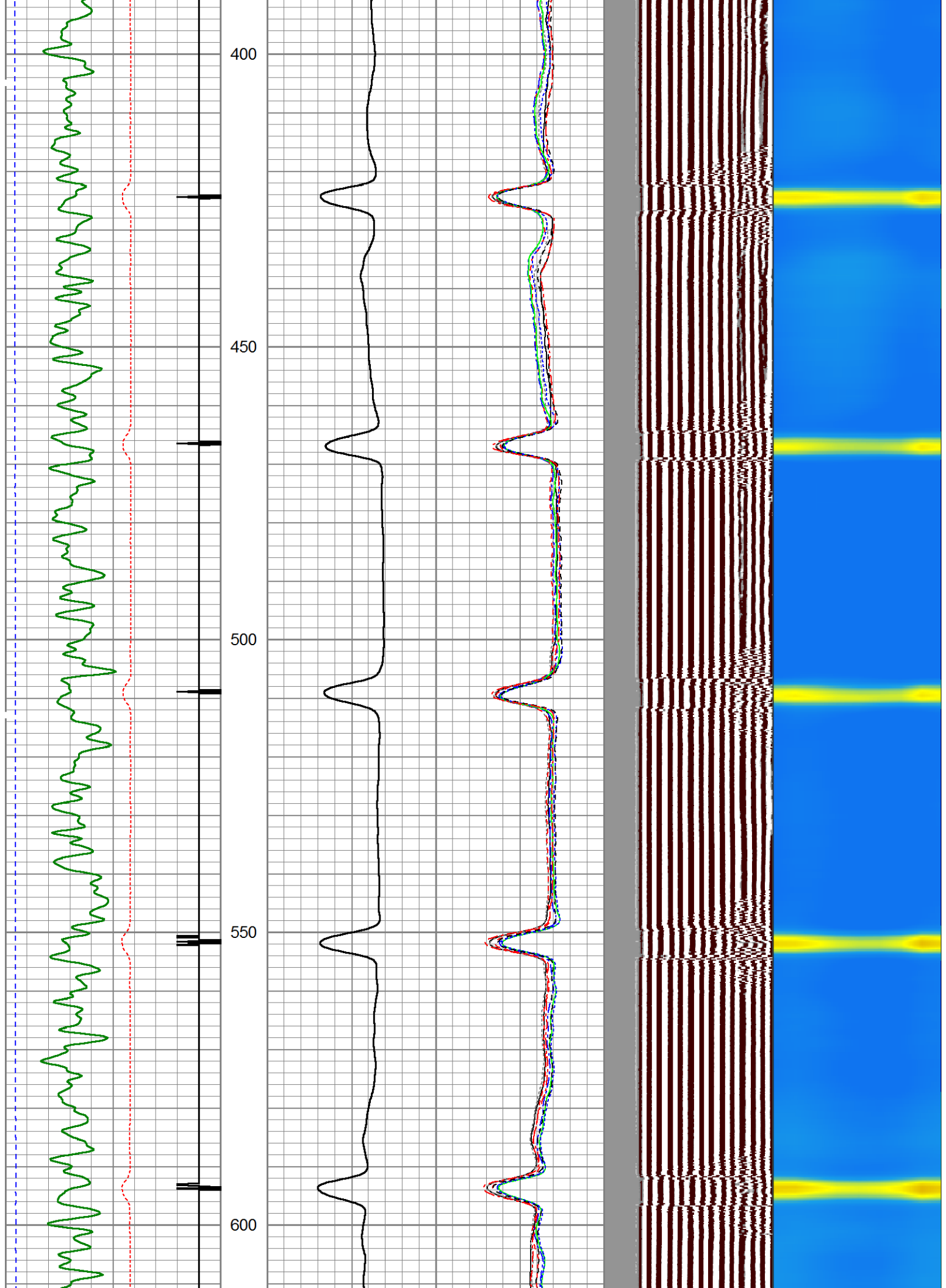


Main Pass ( 0 PSI )

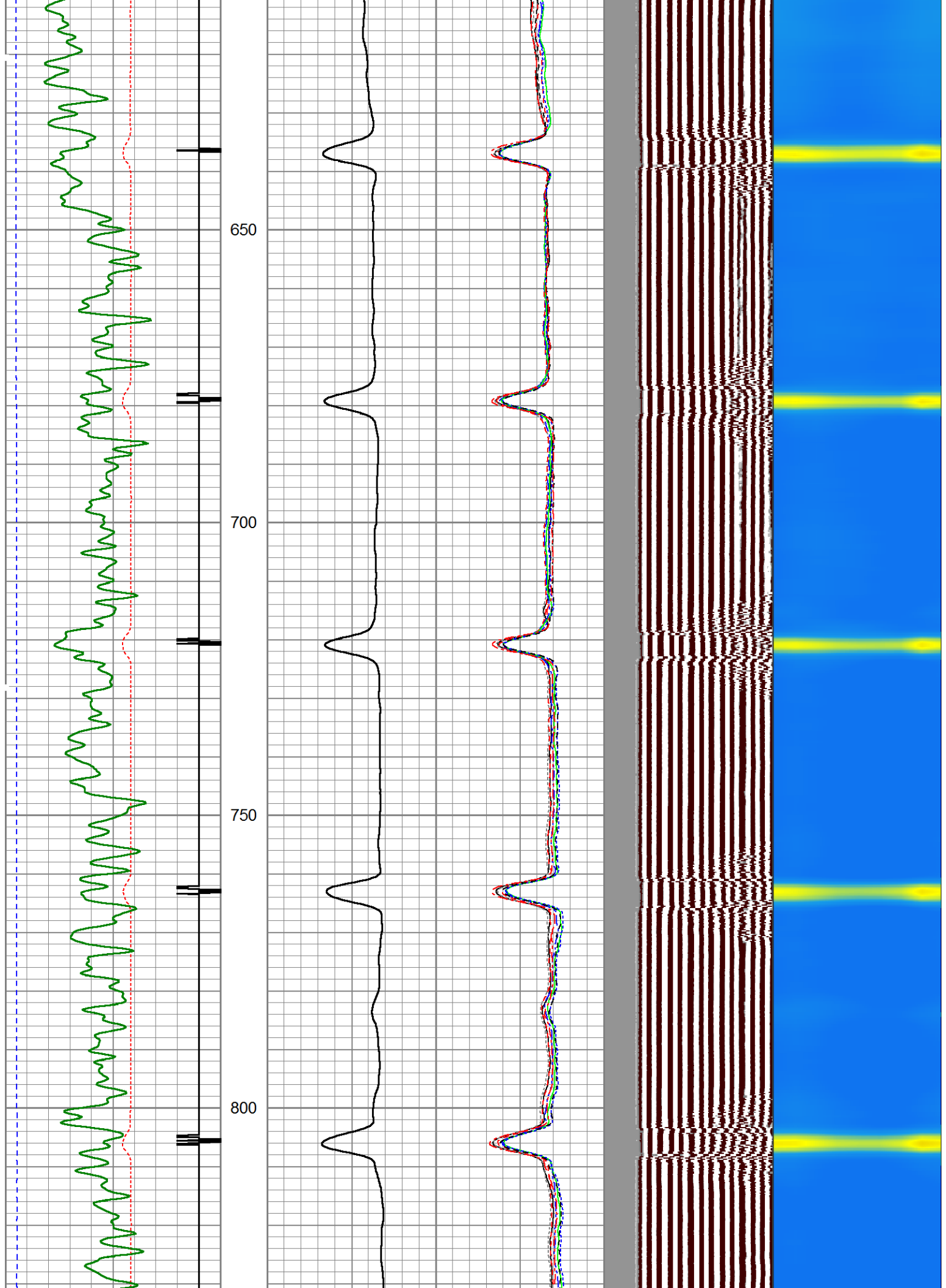
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	5000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				

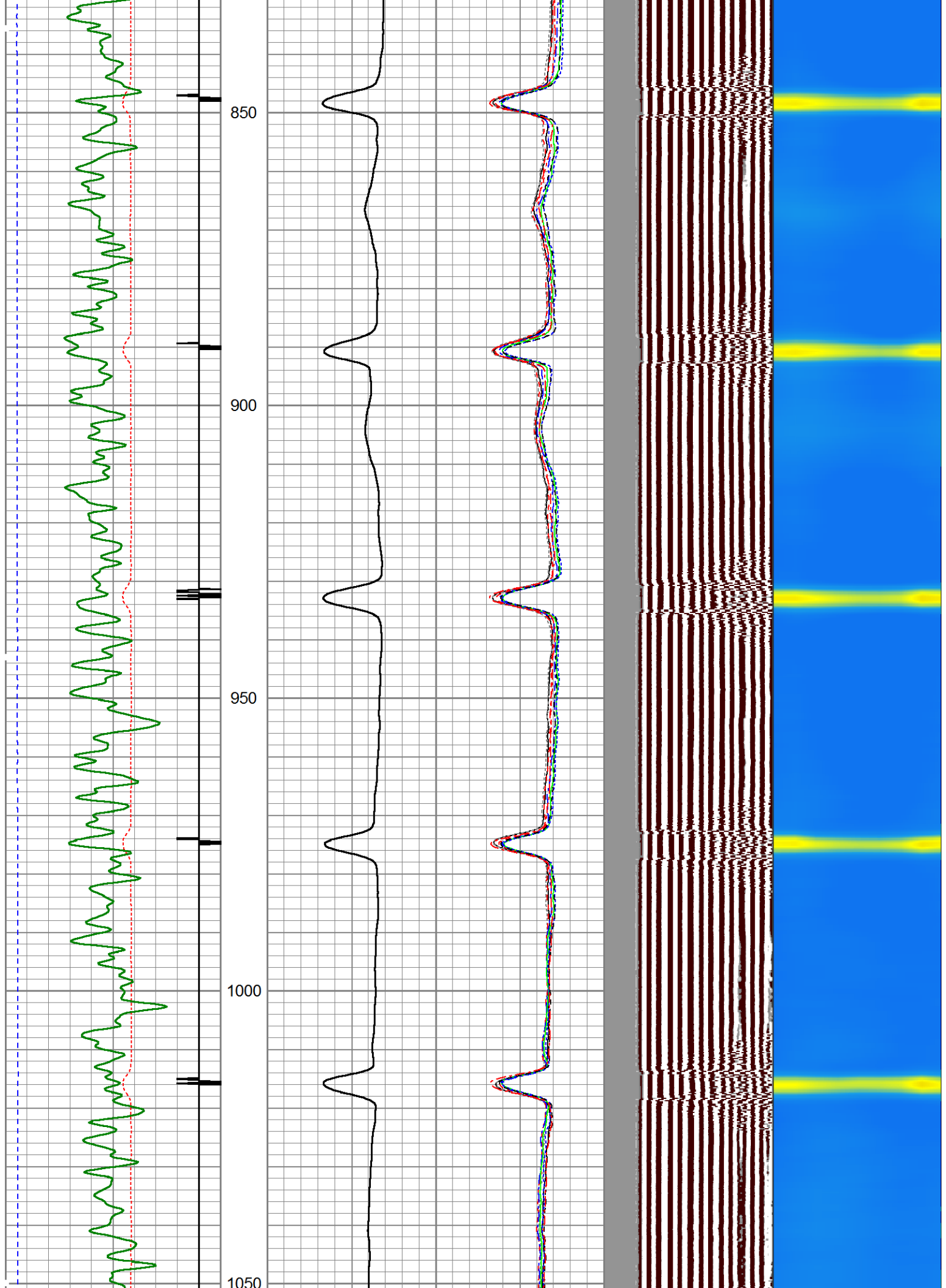


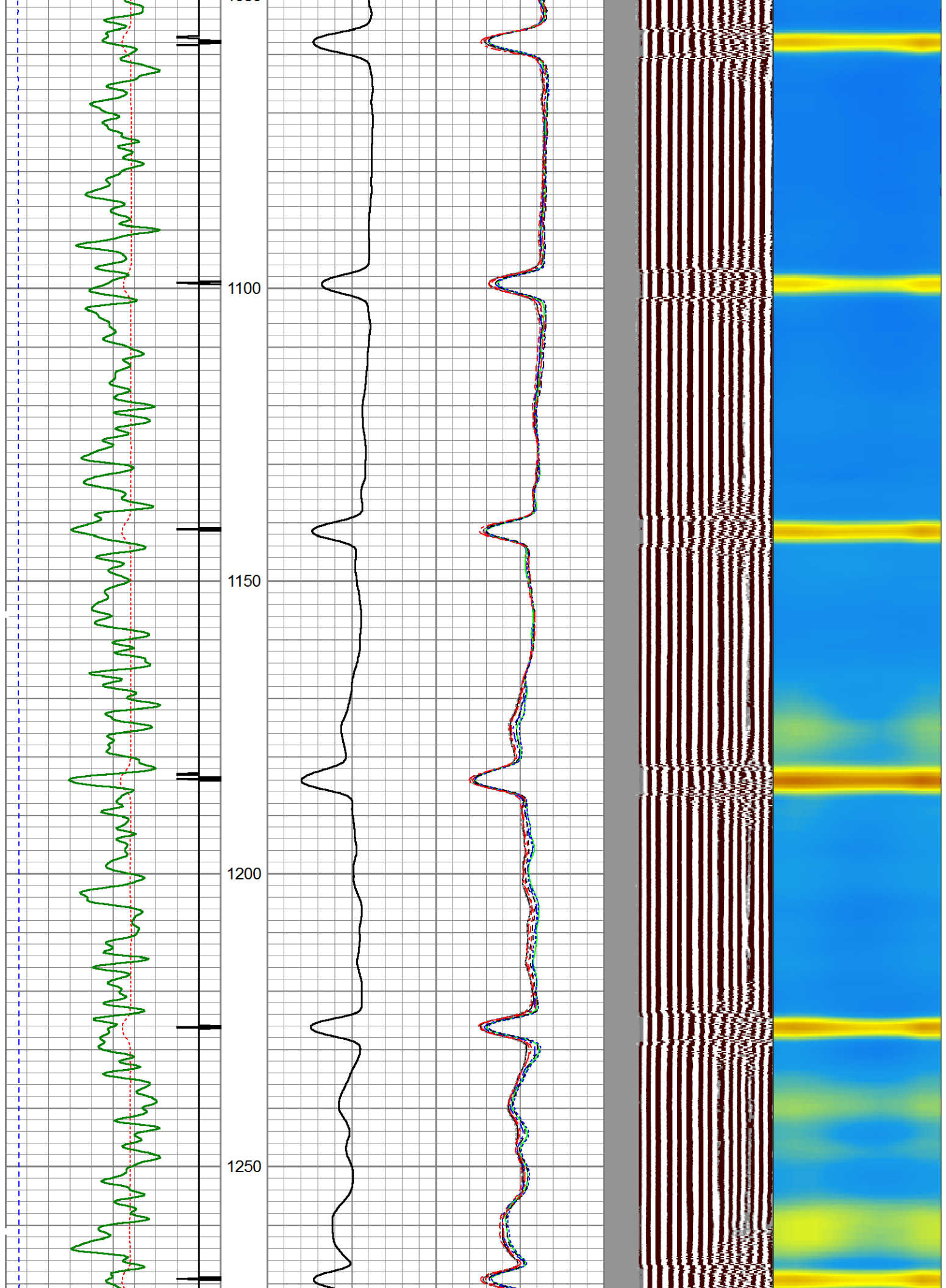


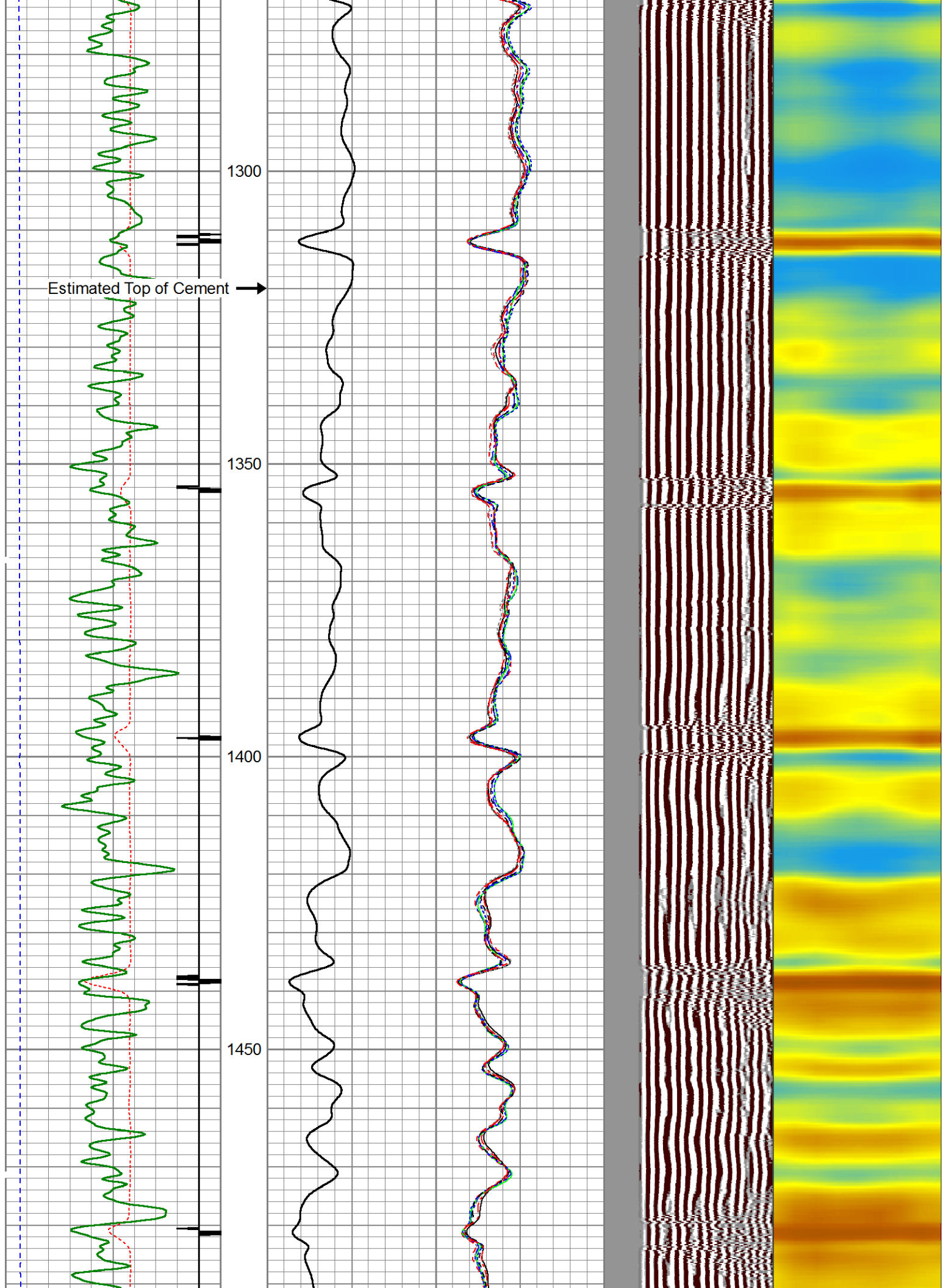


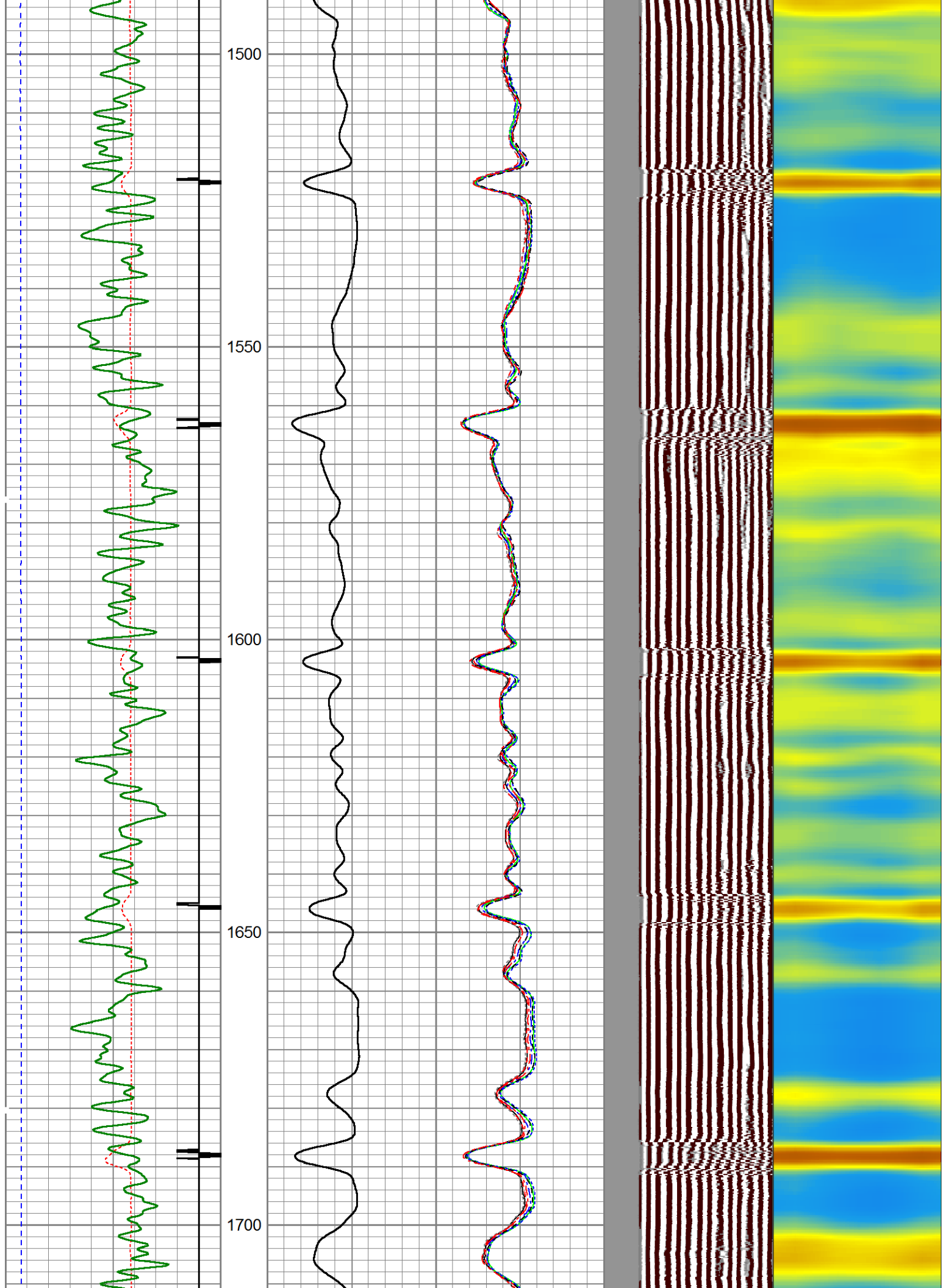




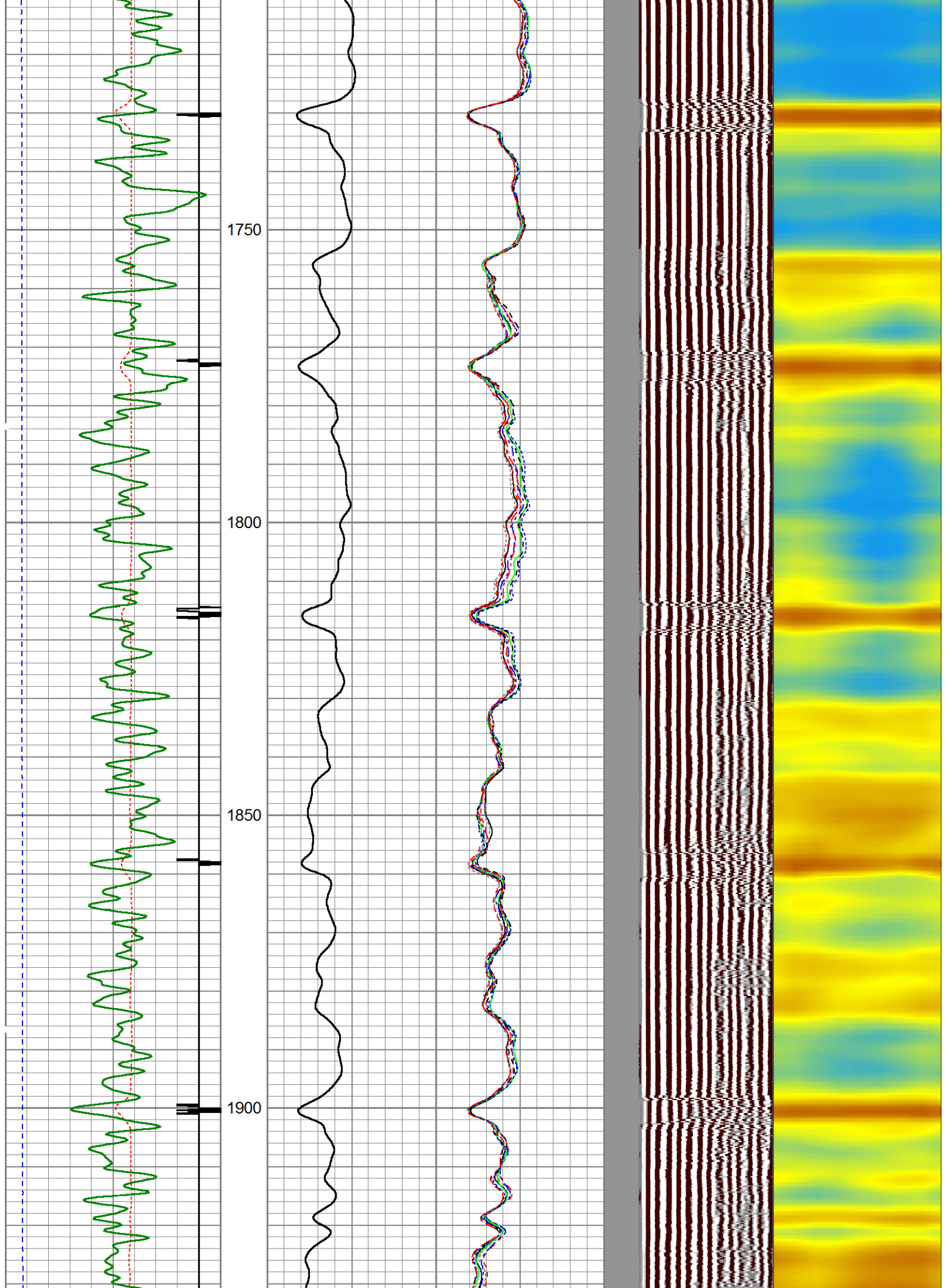




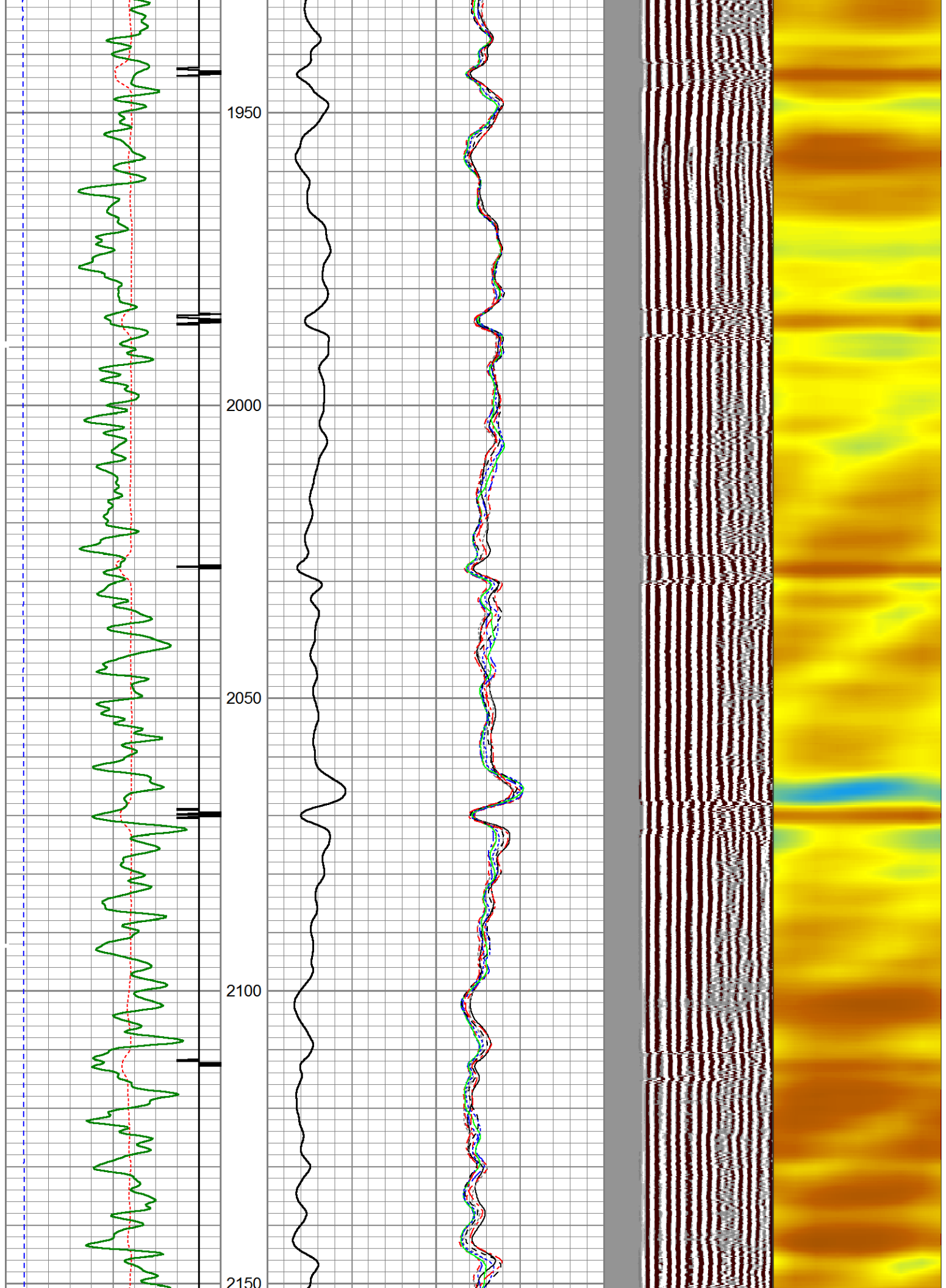


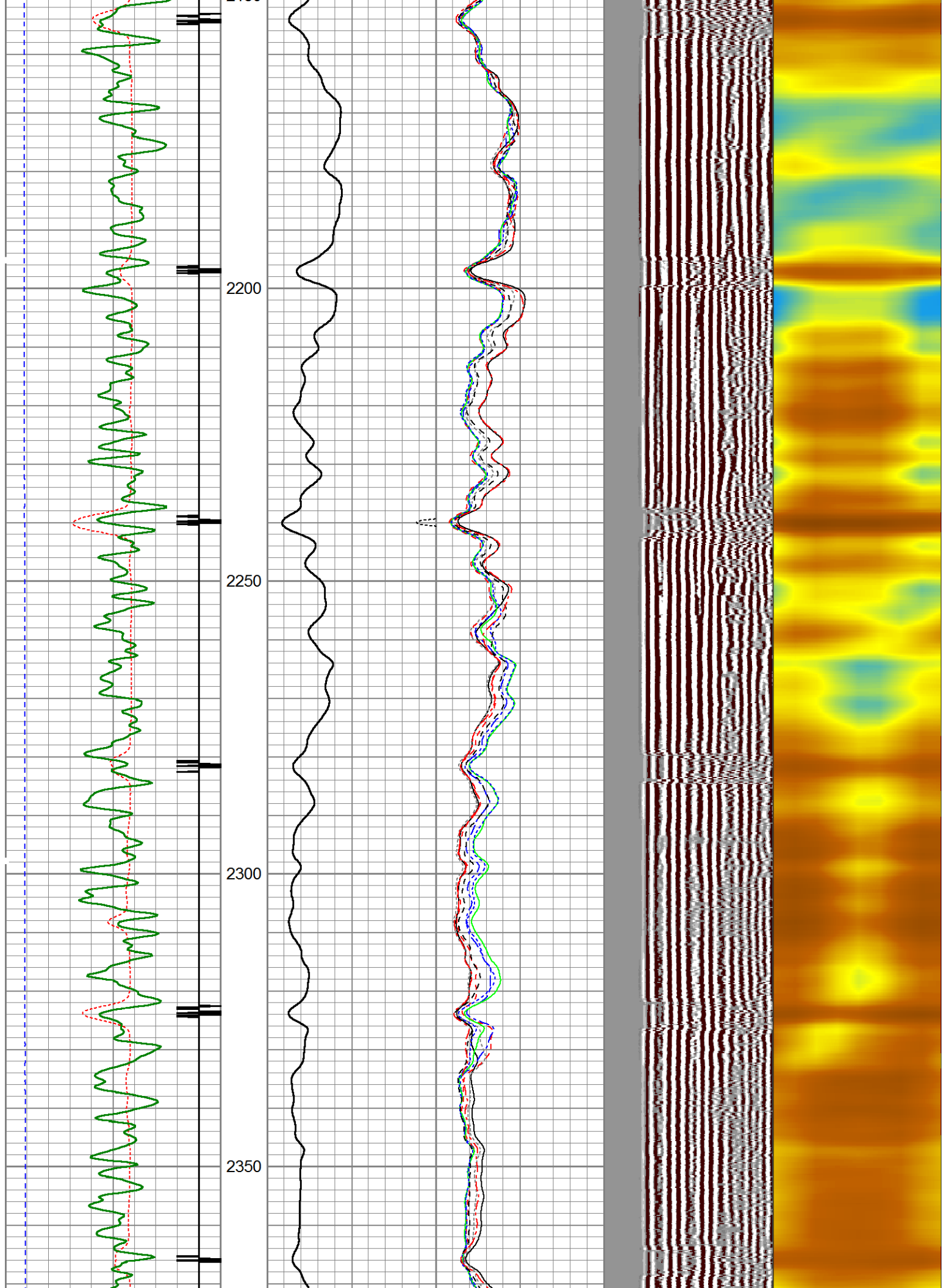


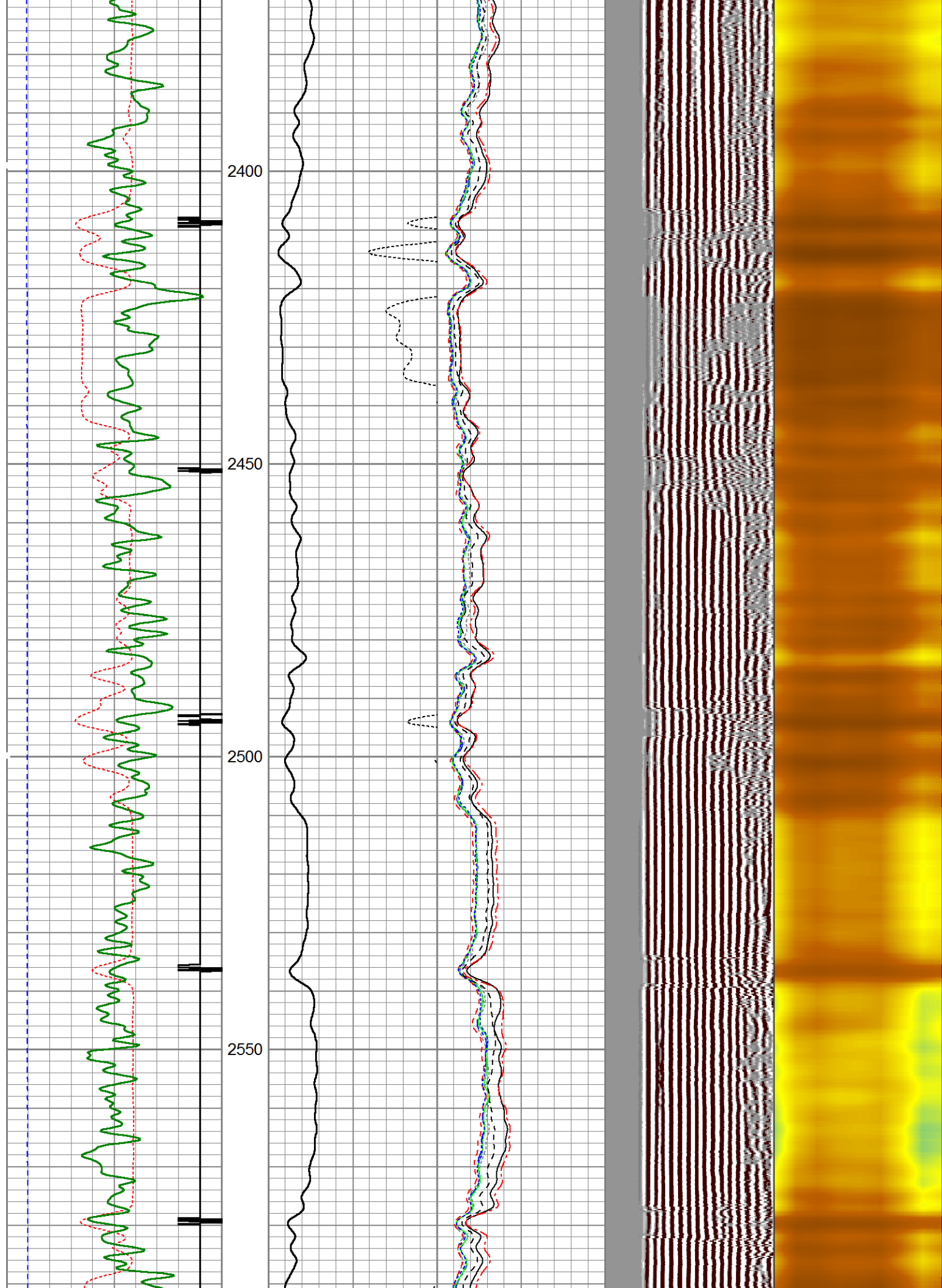


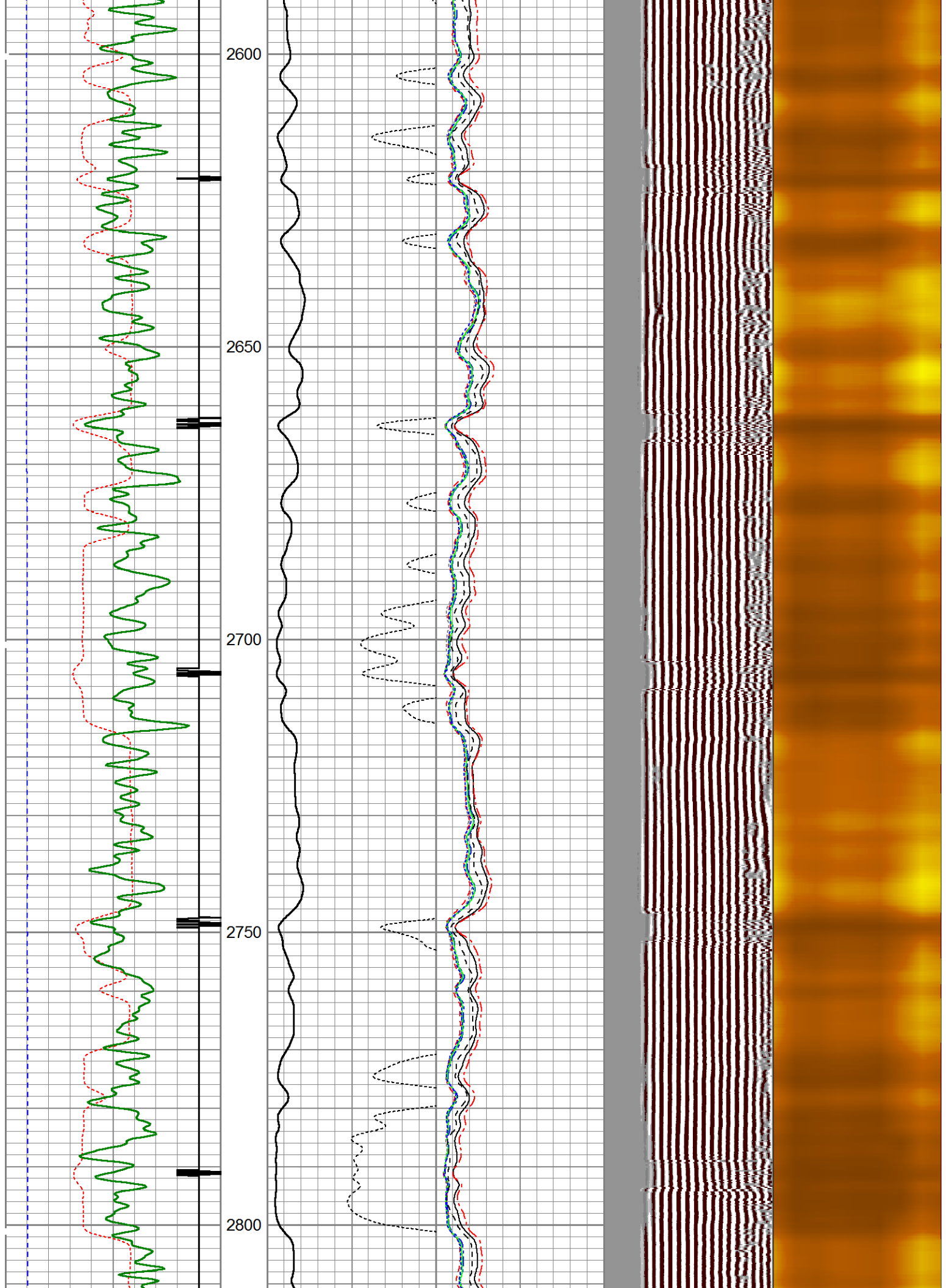




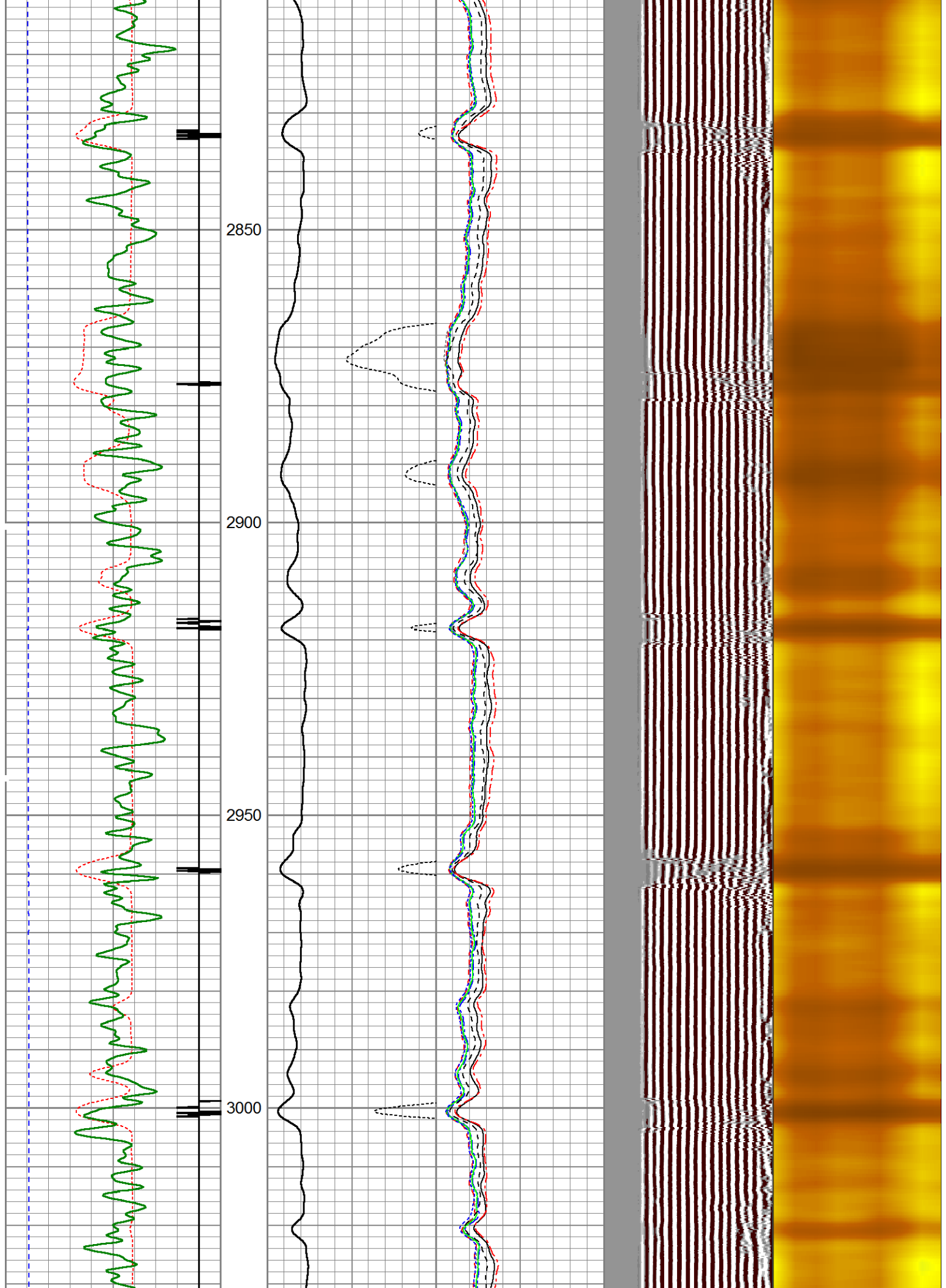


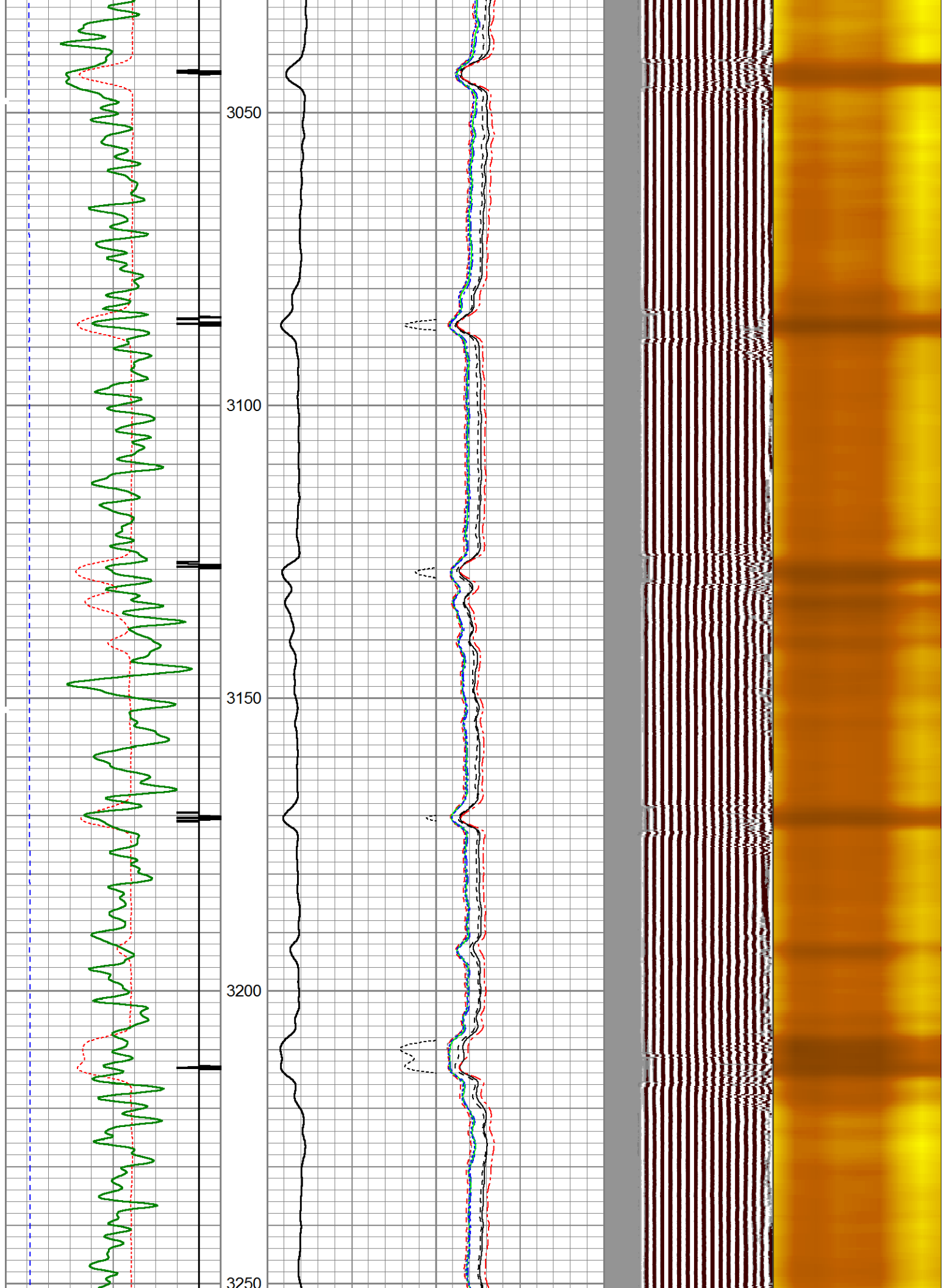




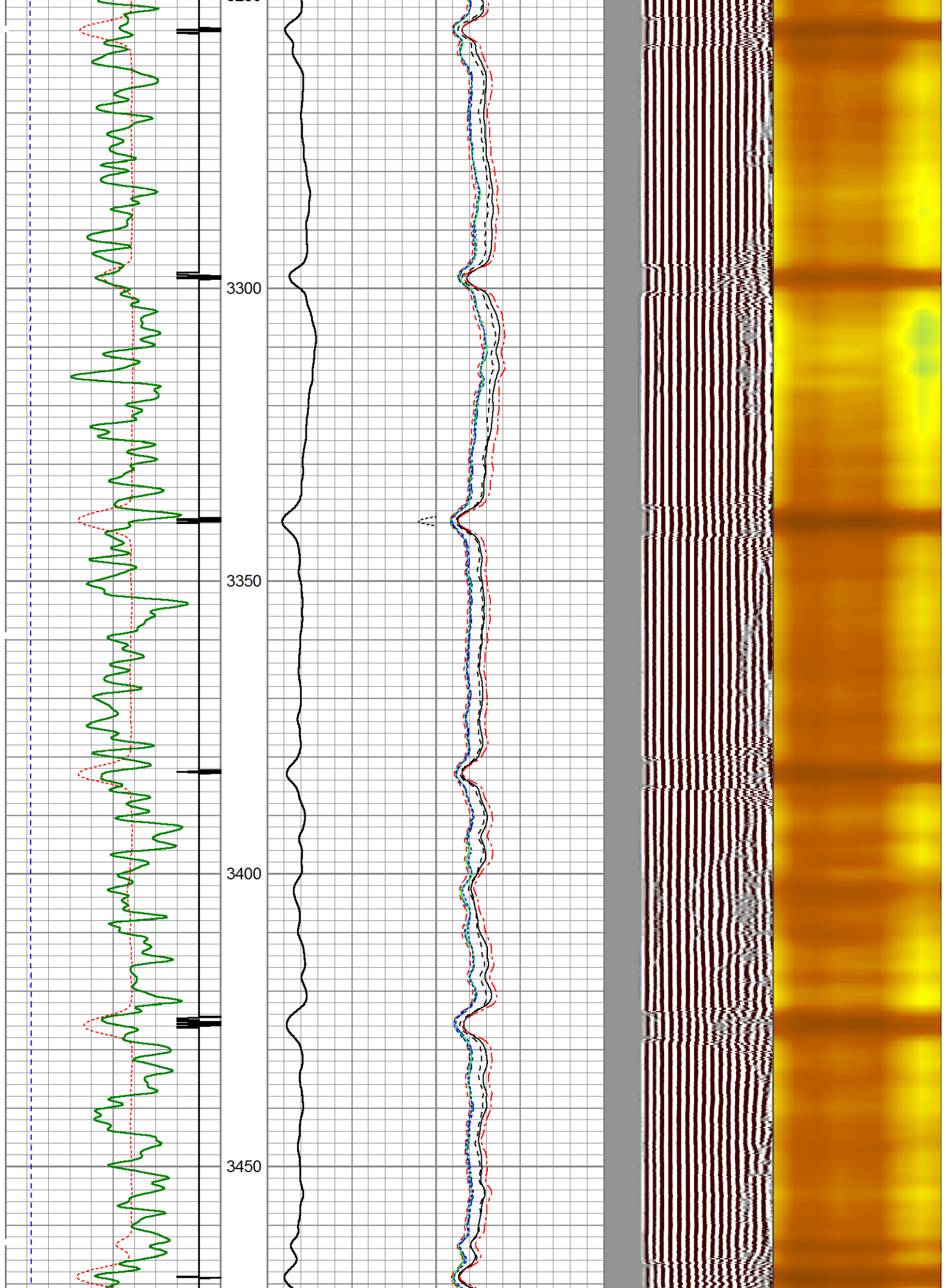


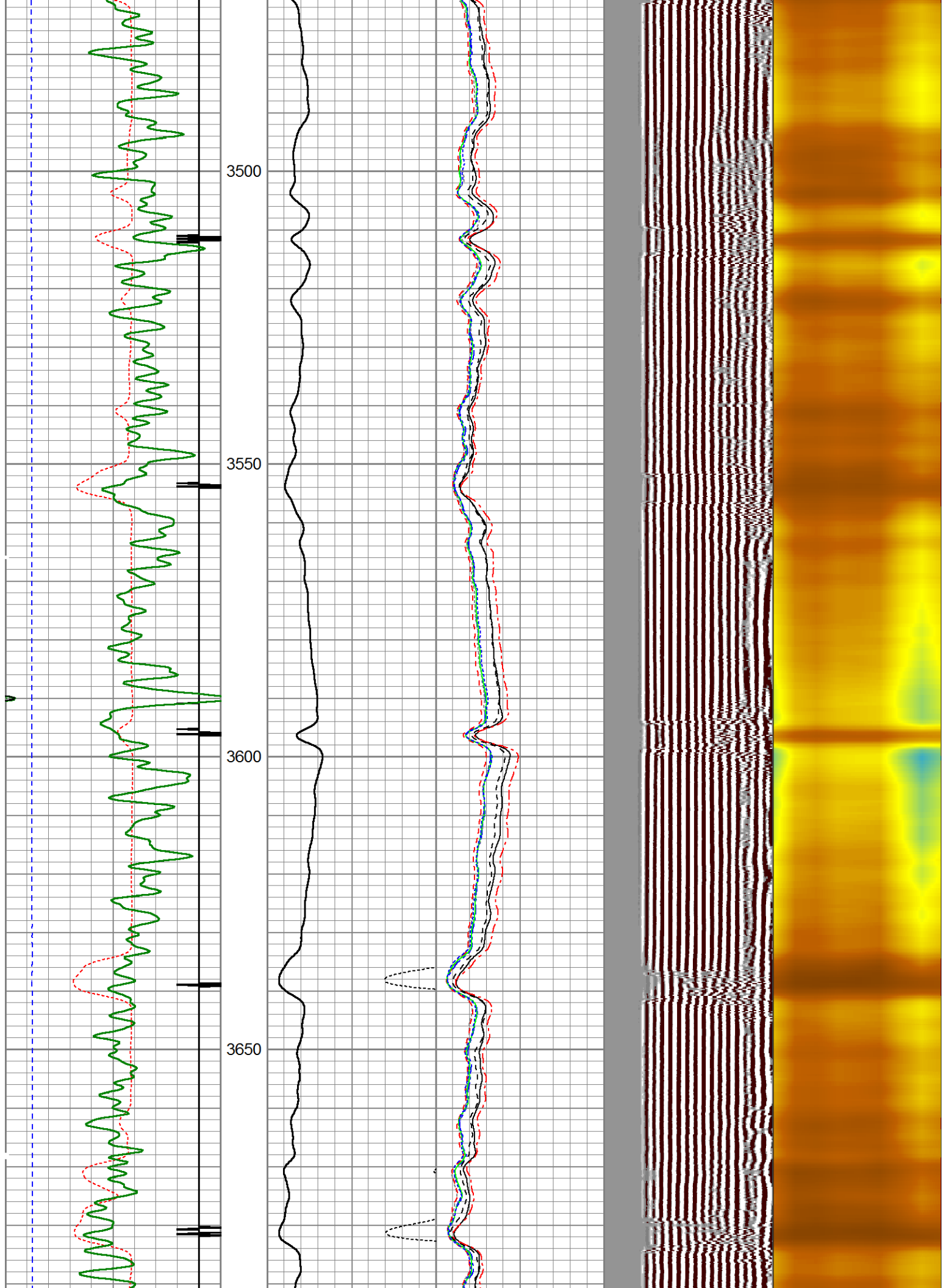


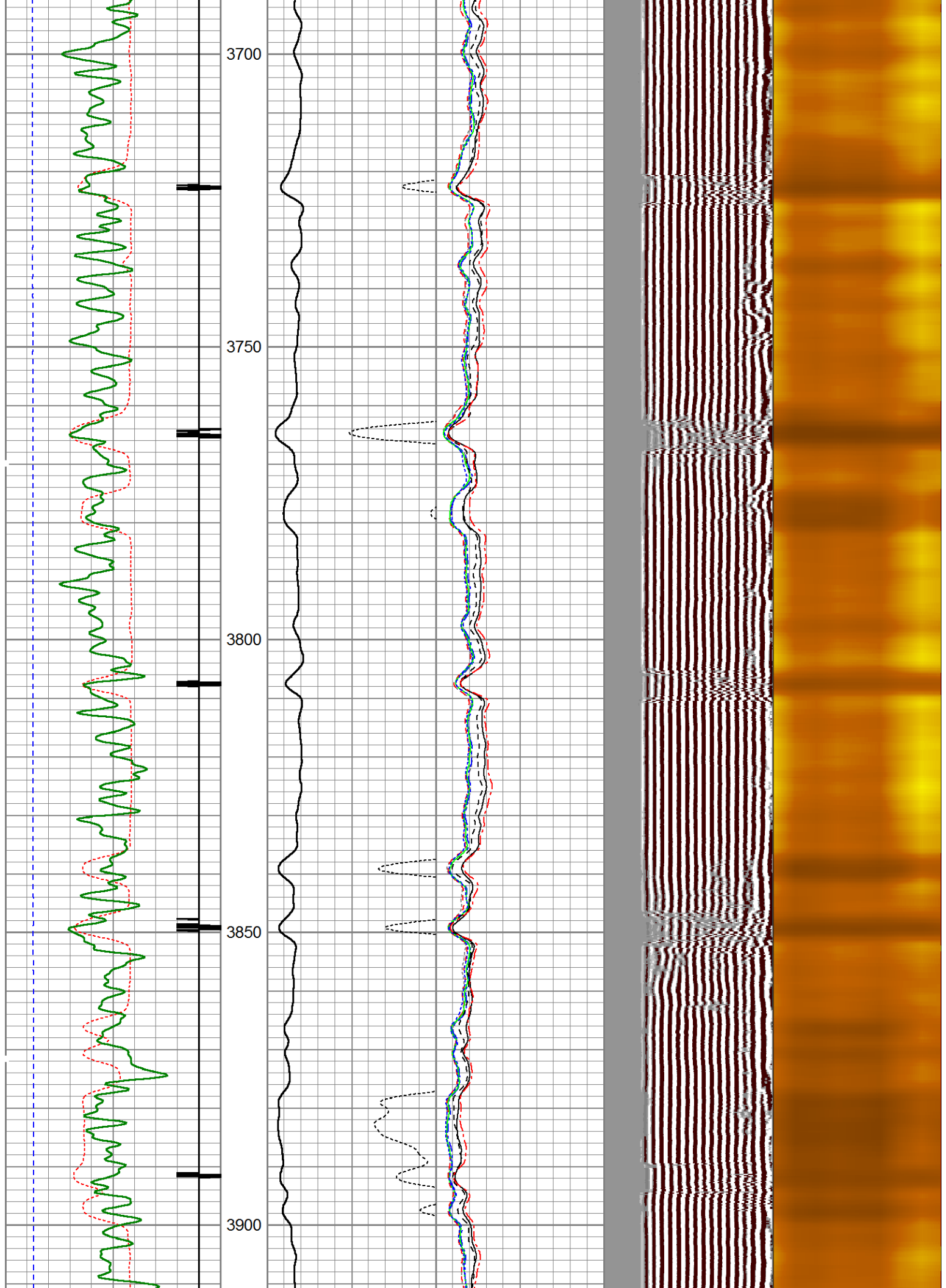


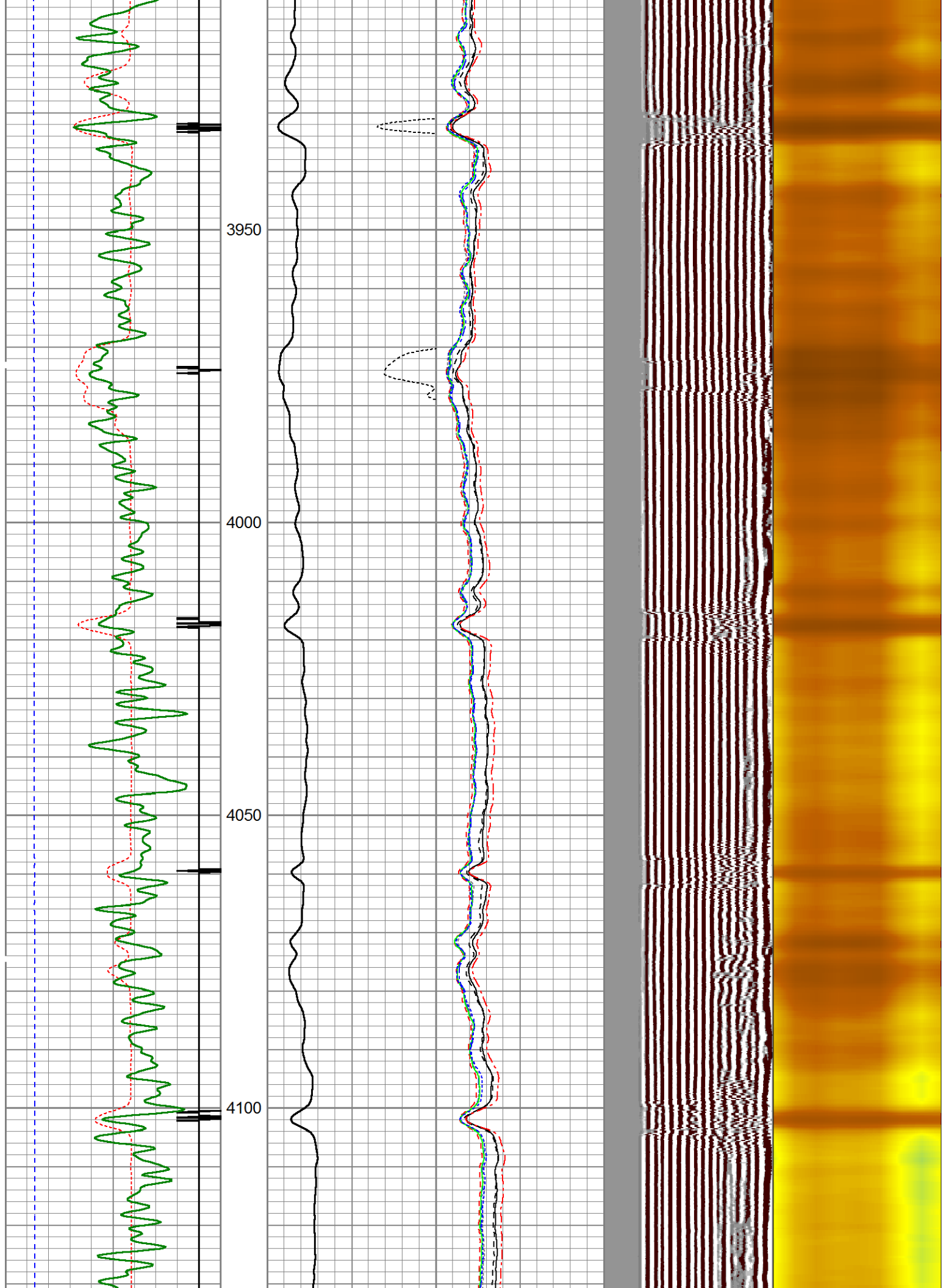


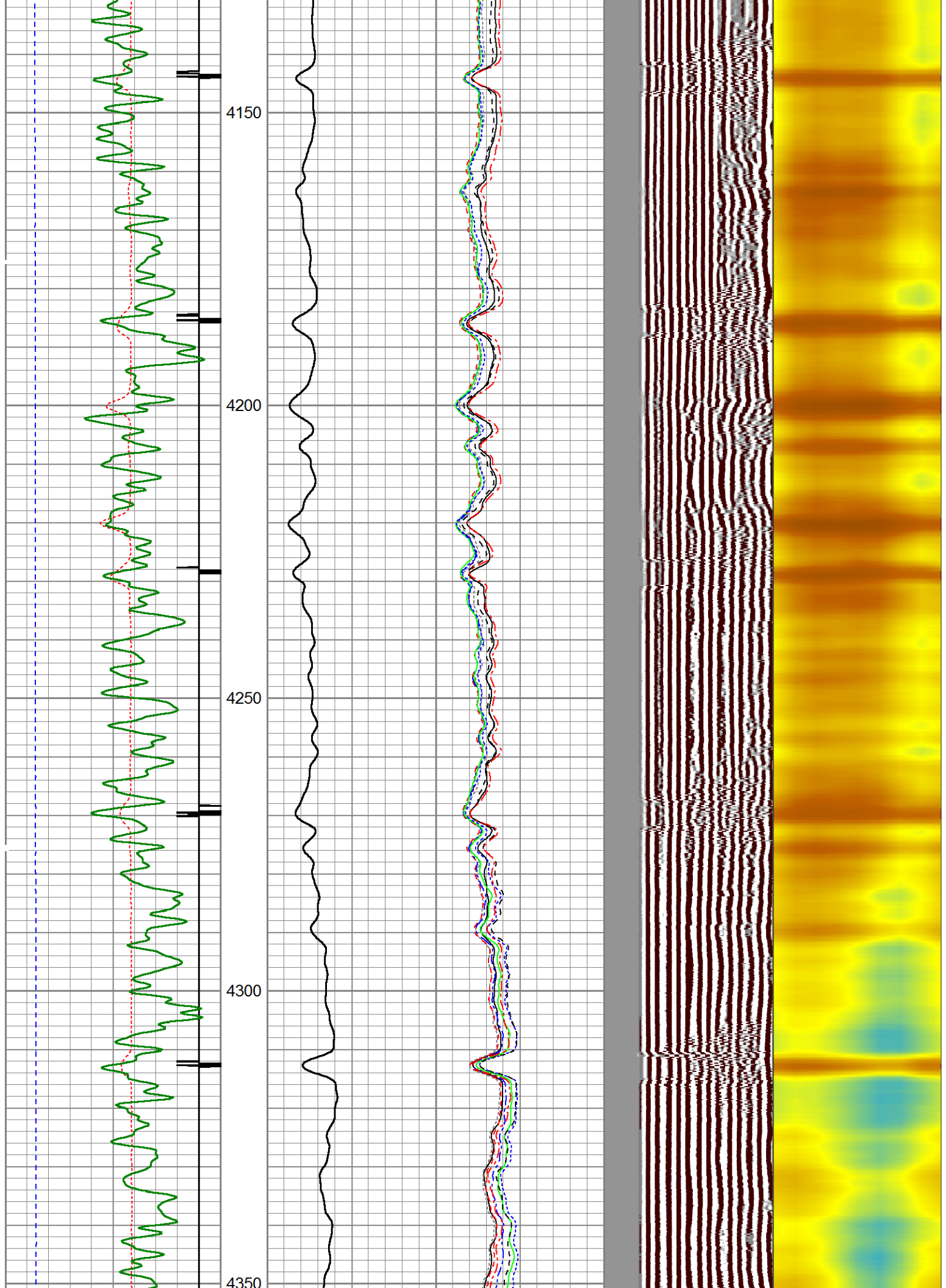




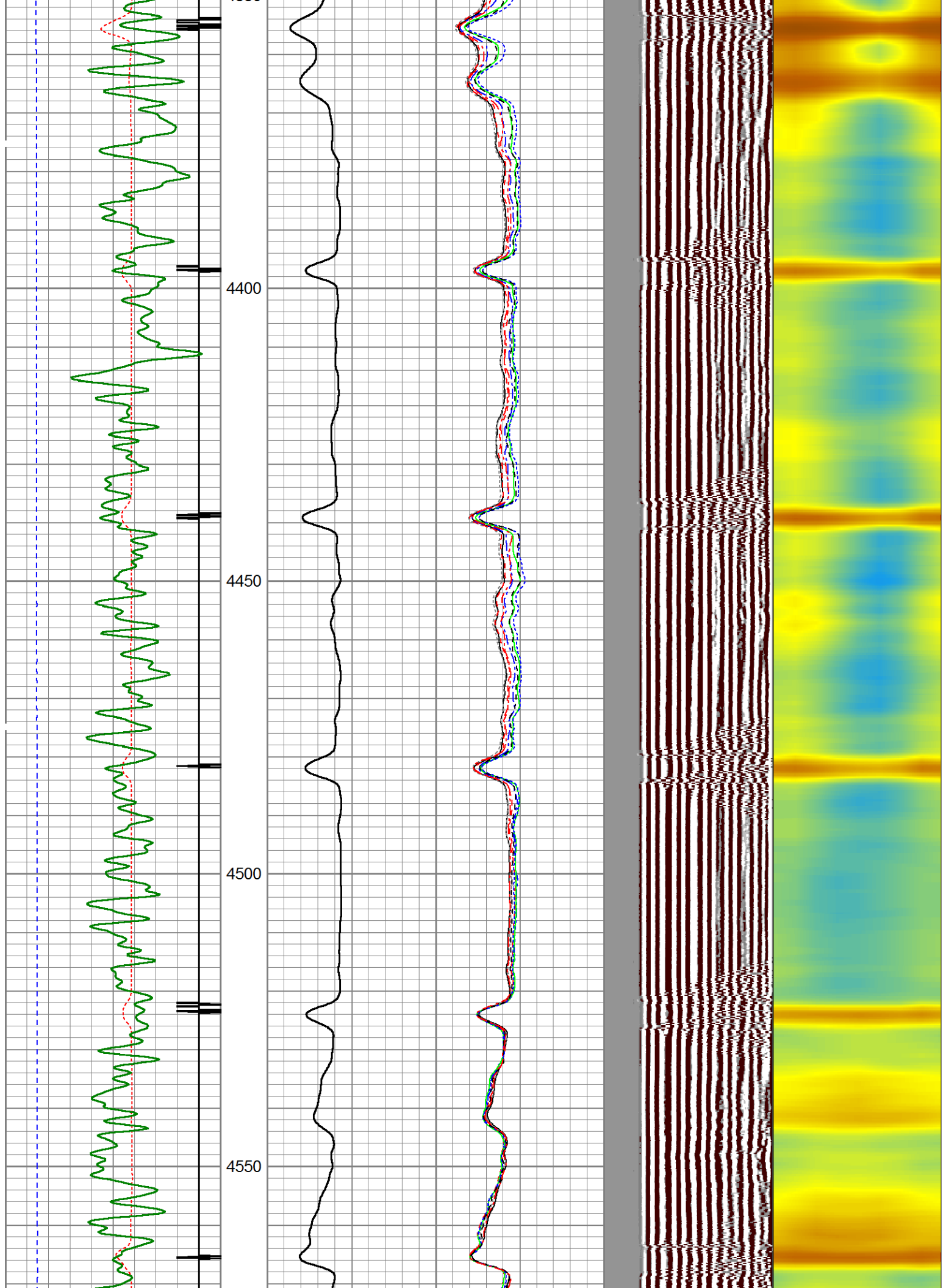




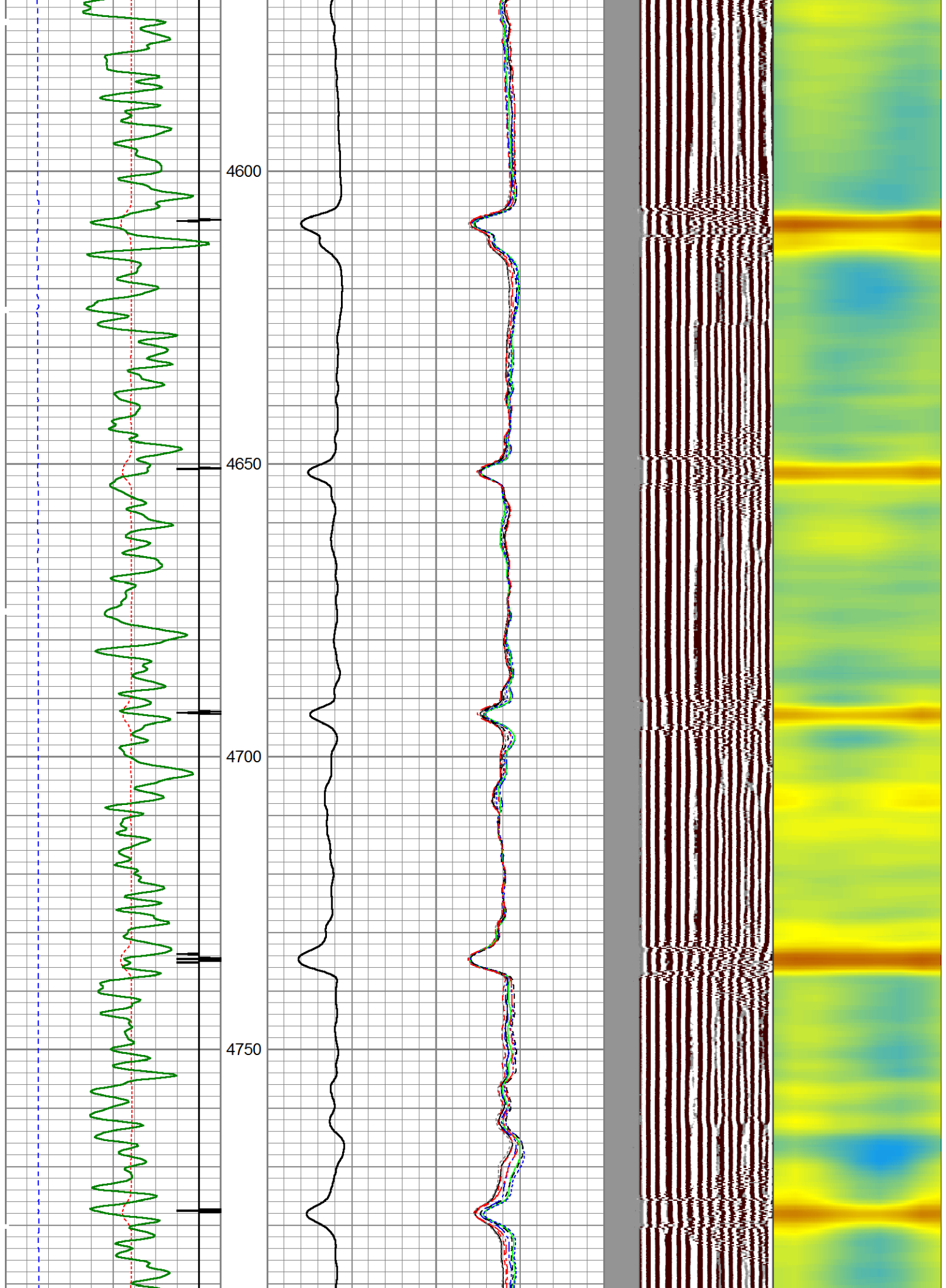


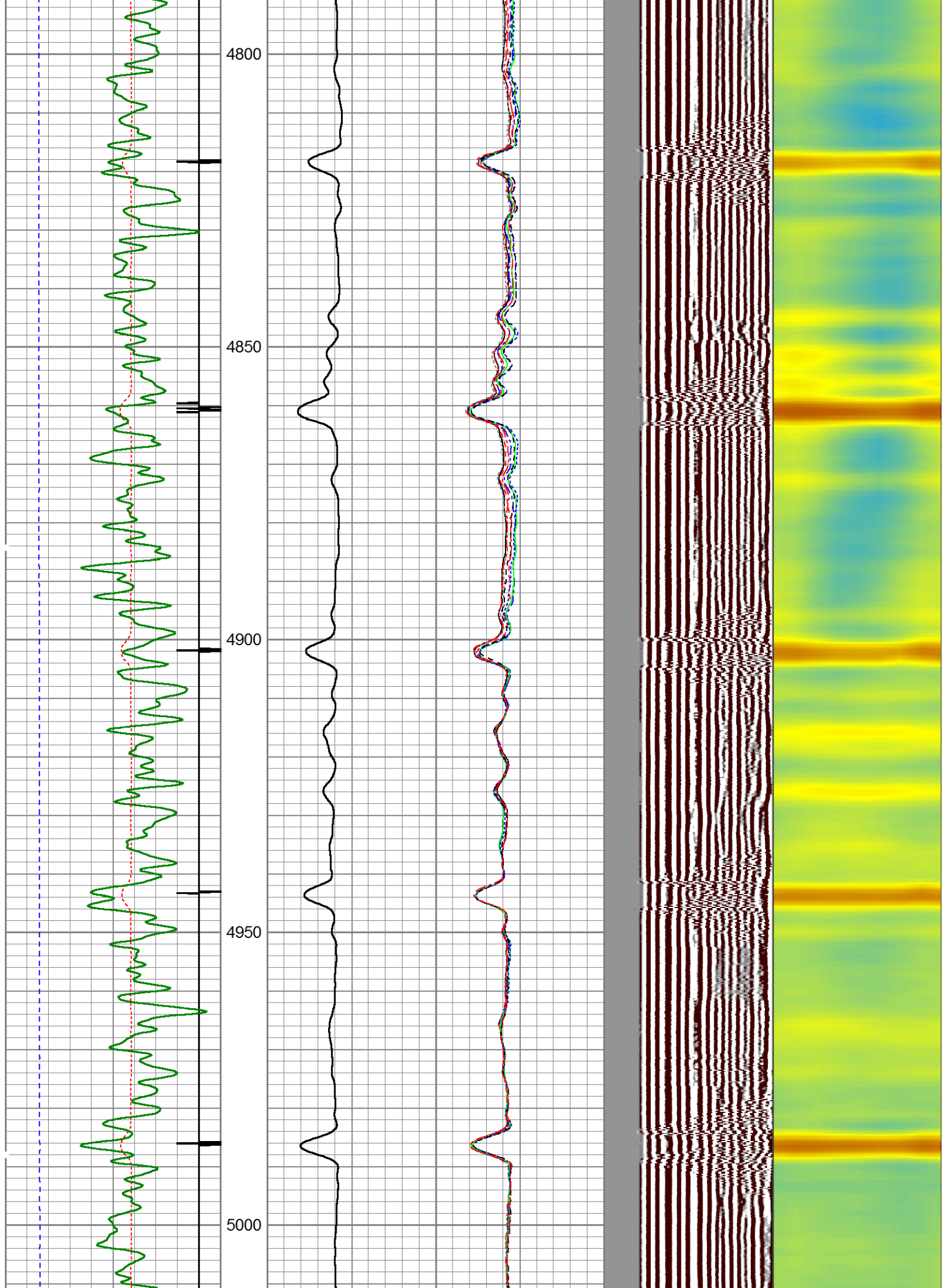


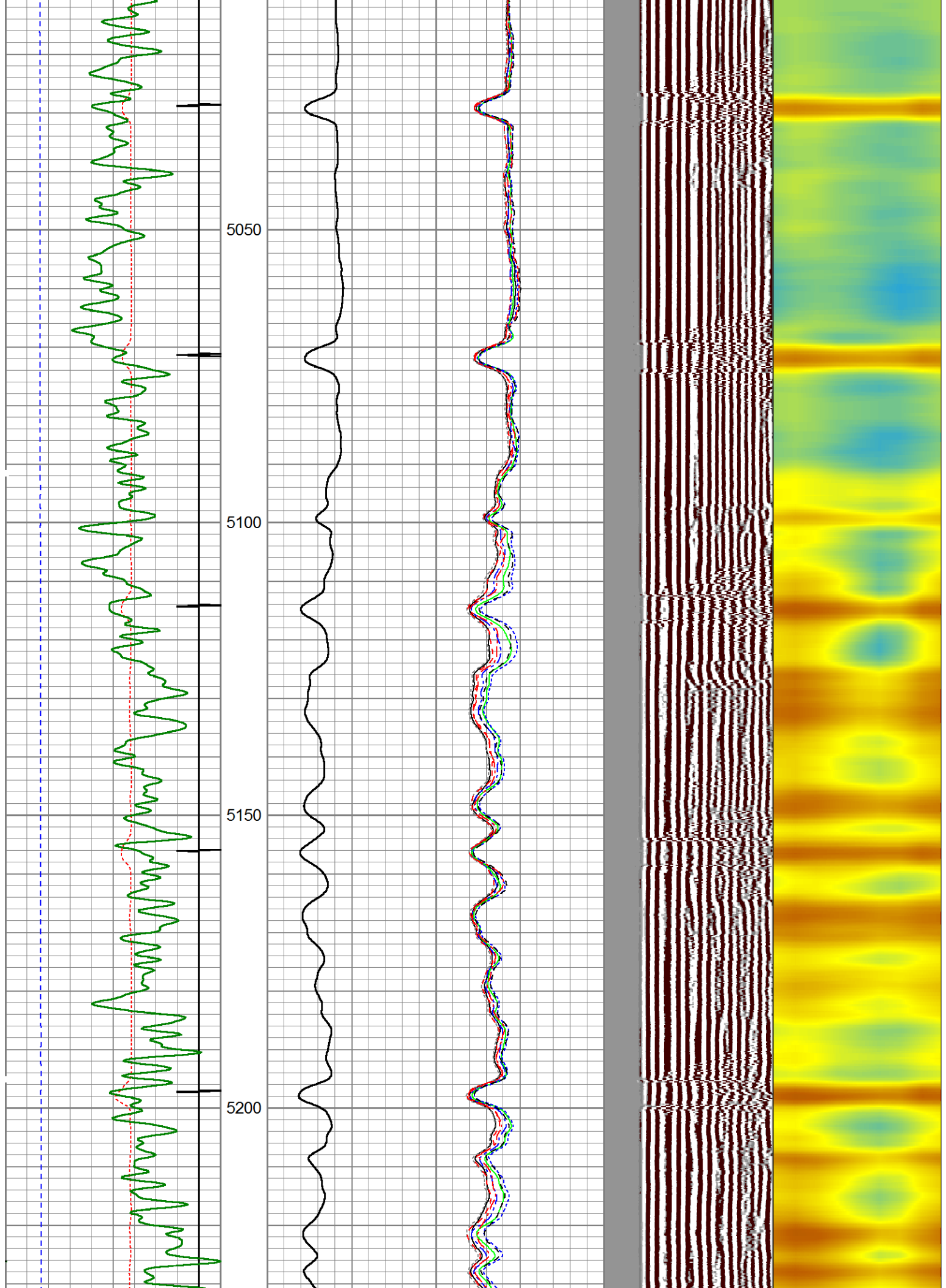


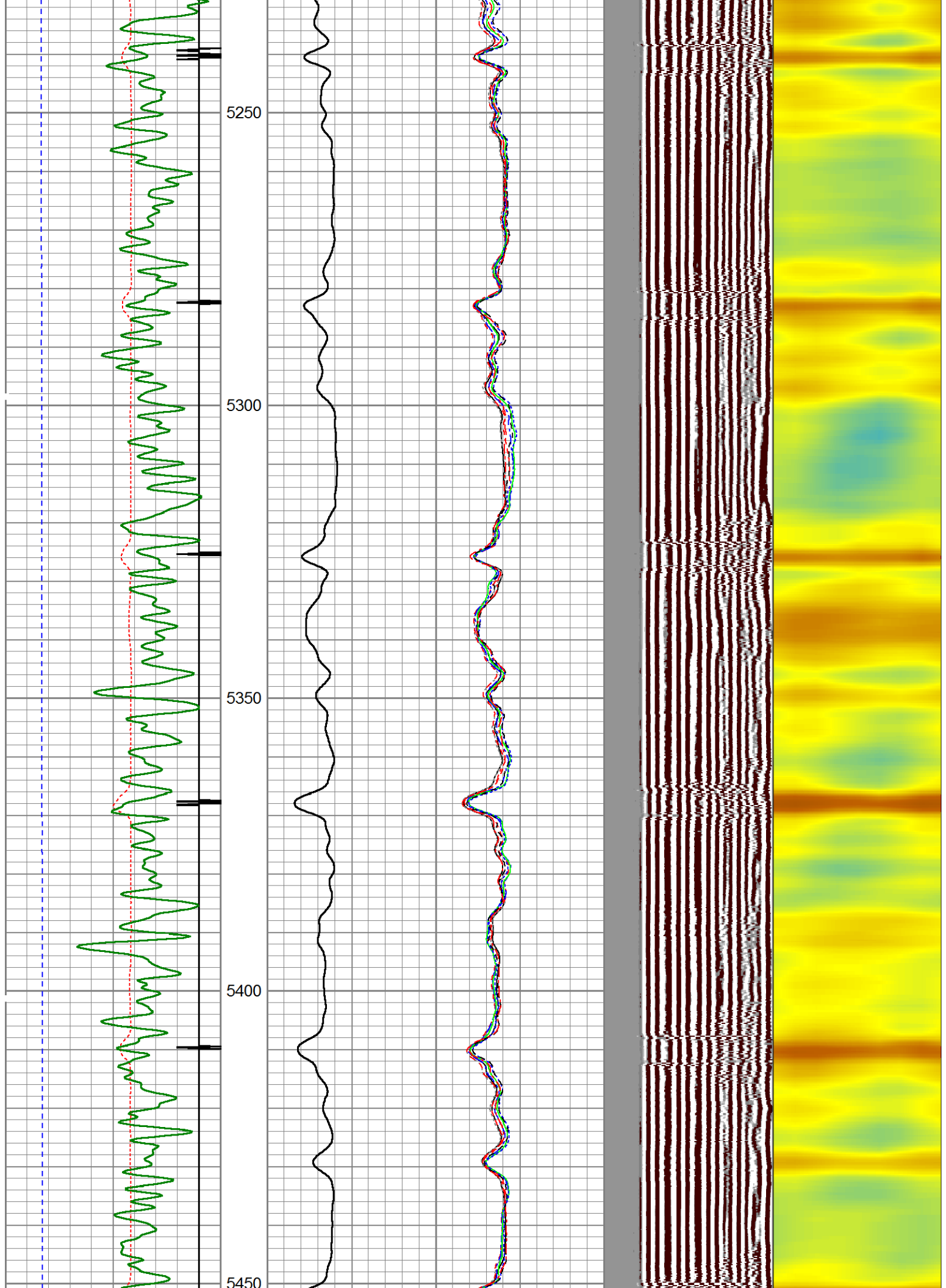




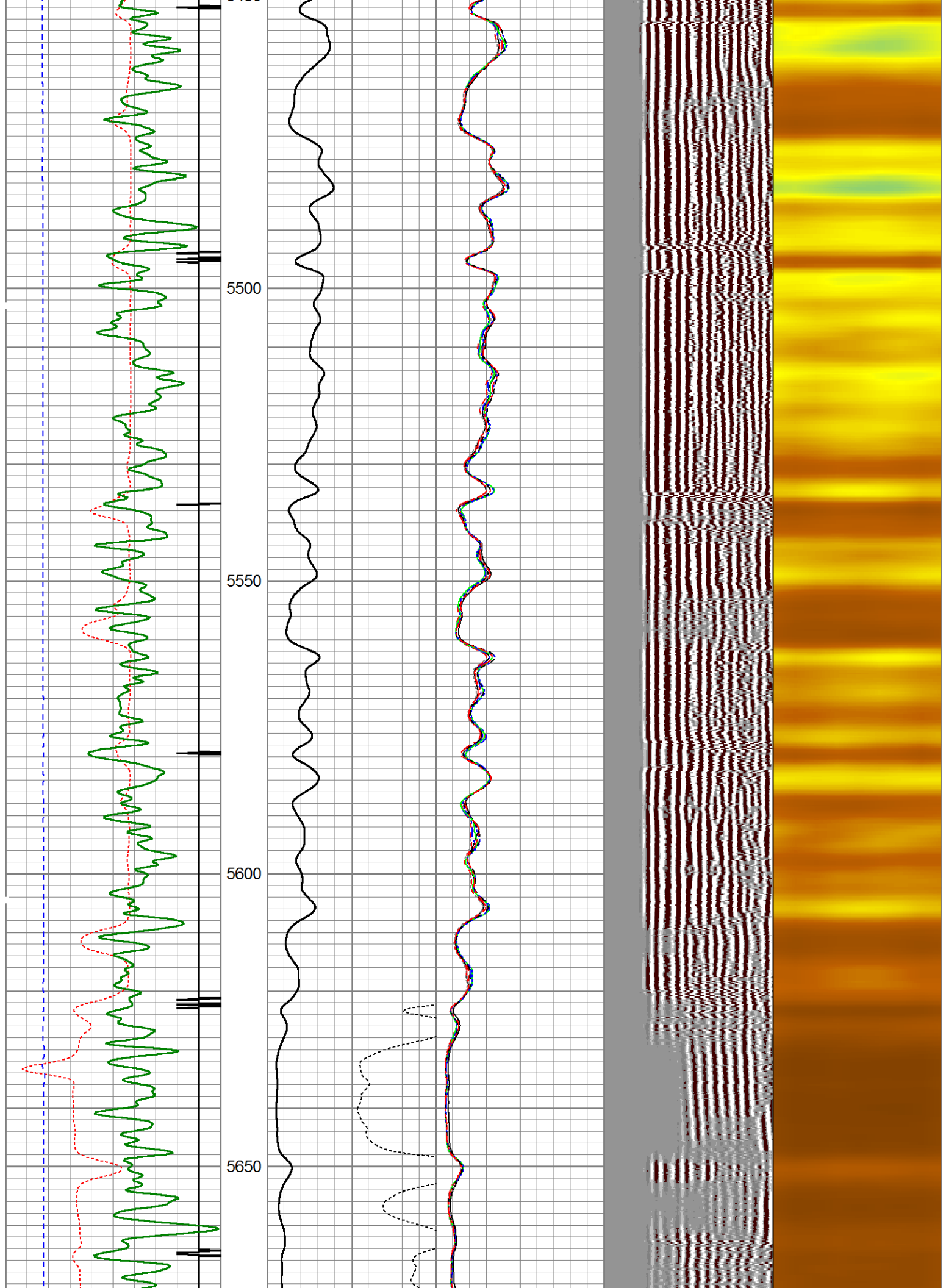




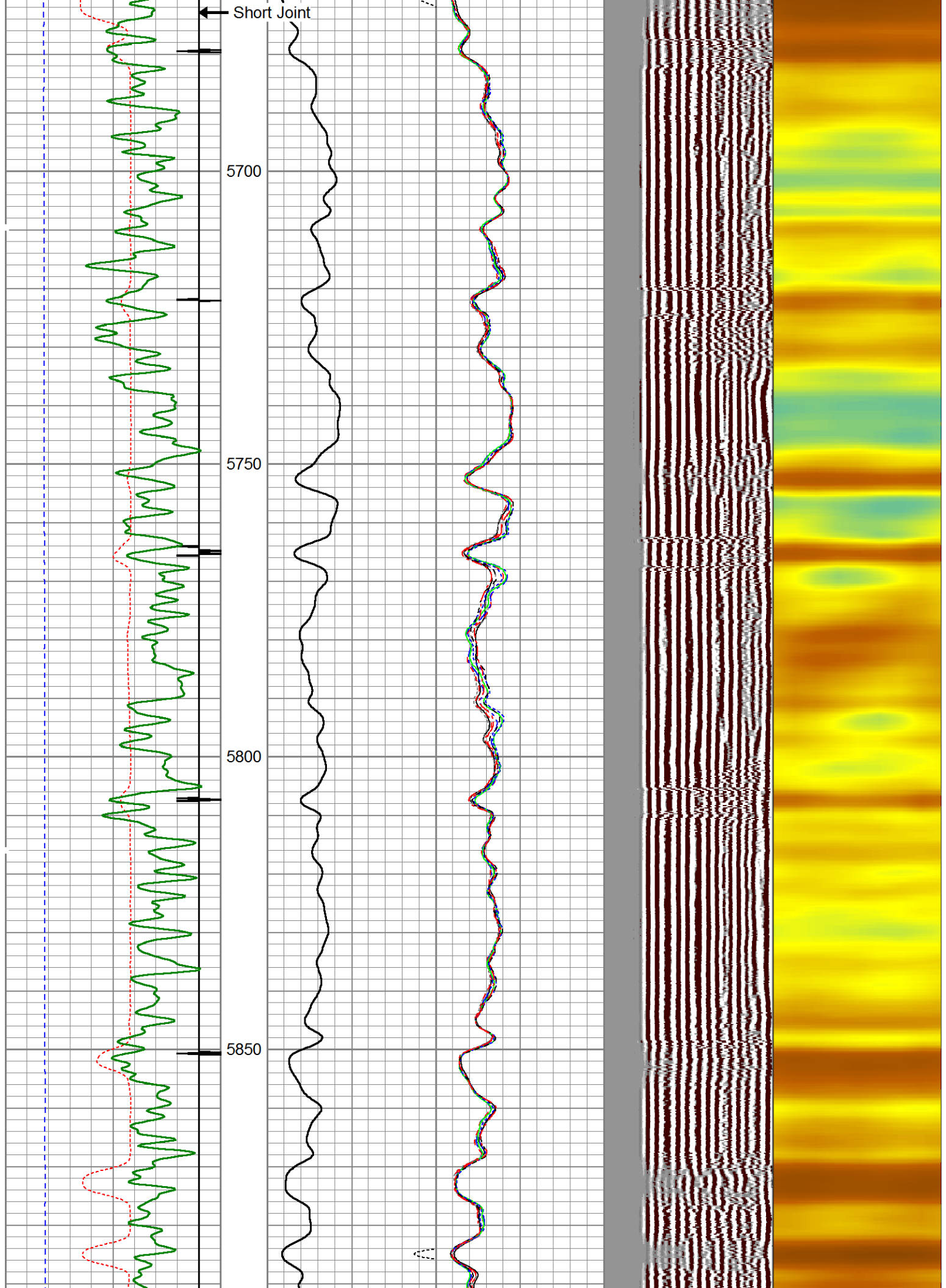


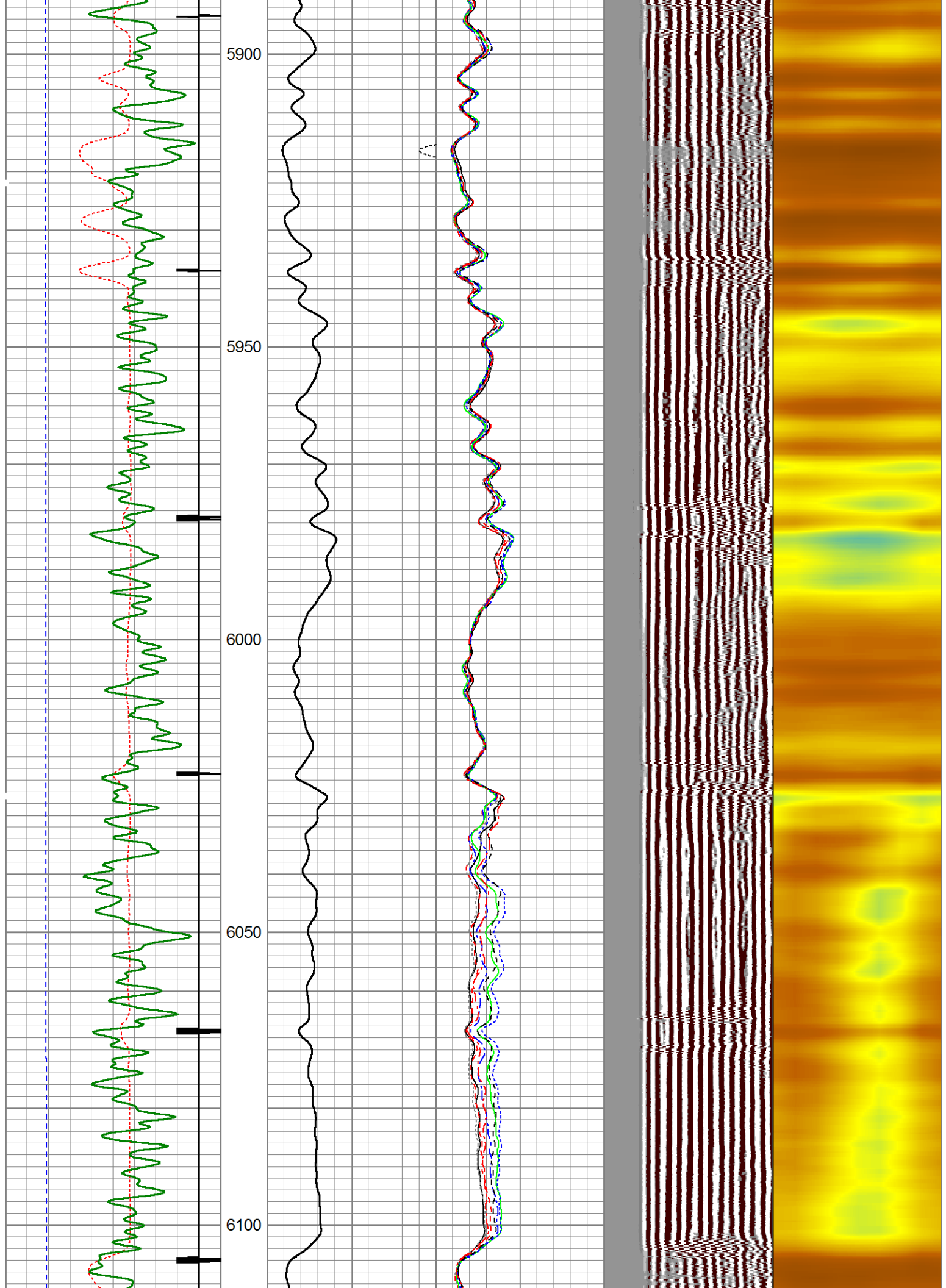


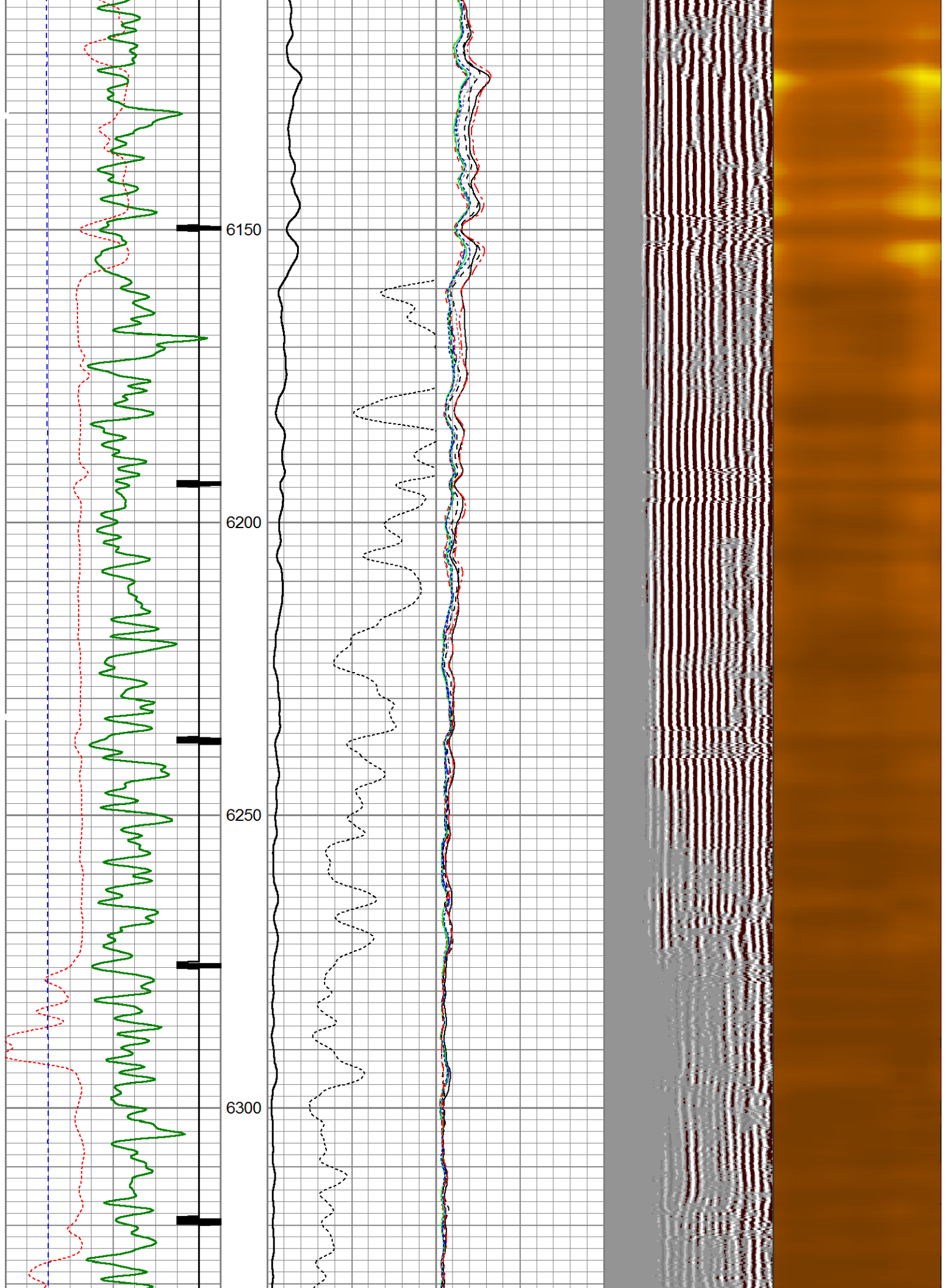


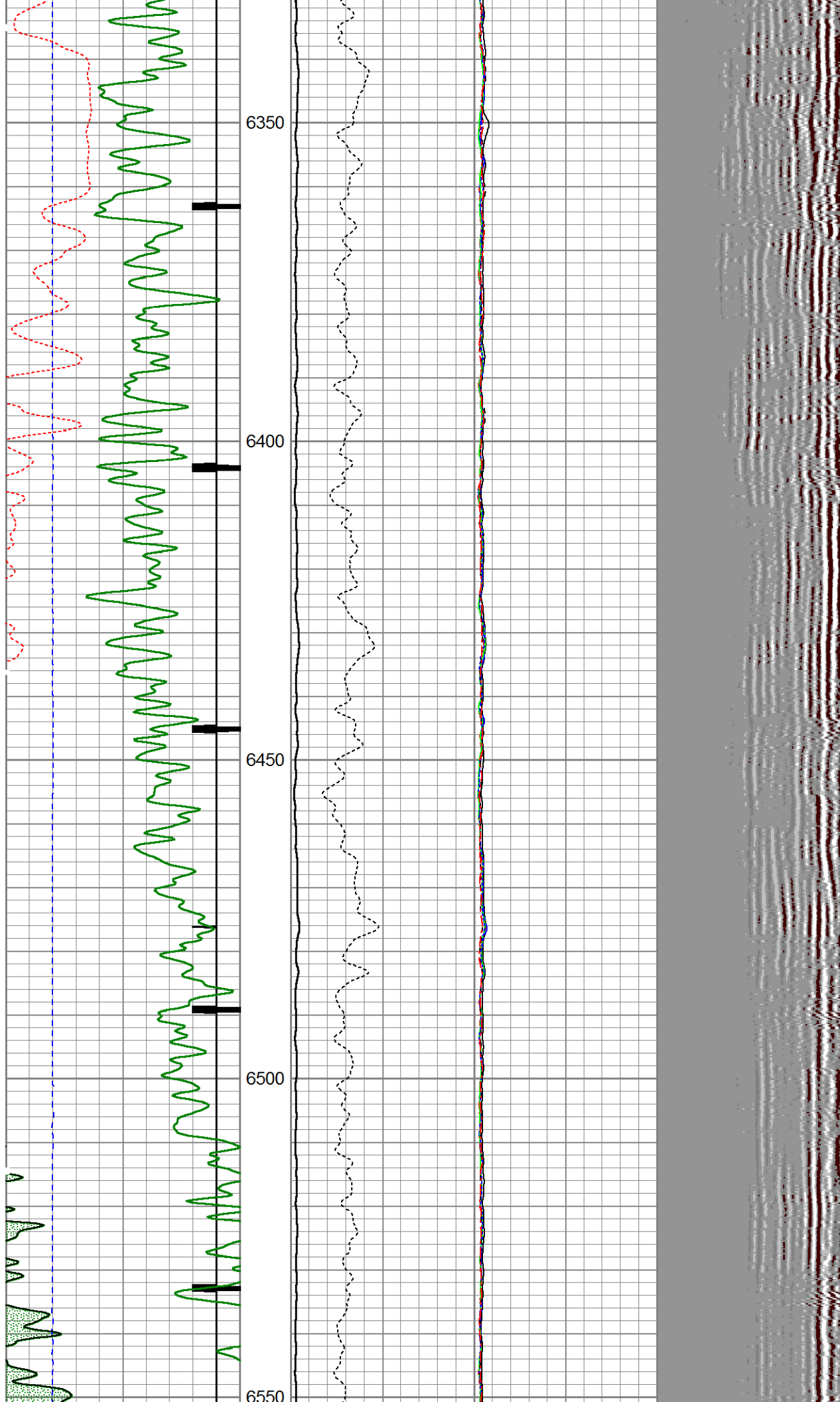


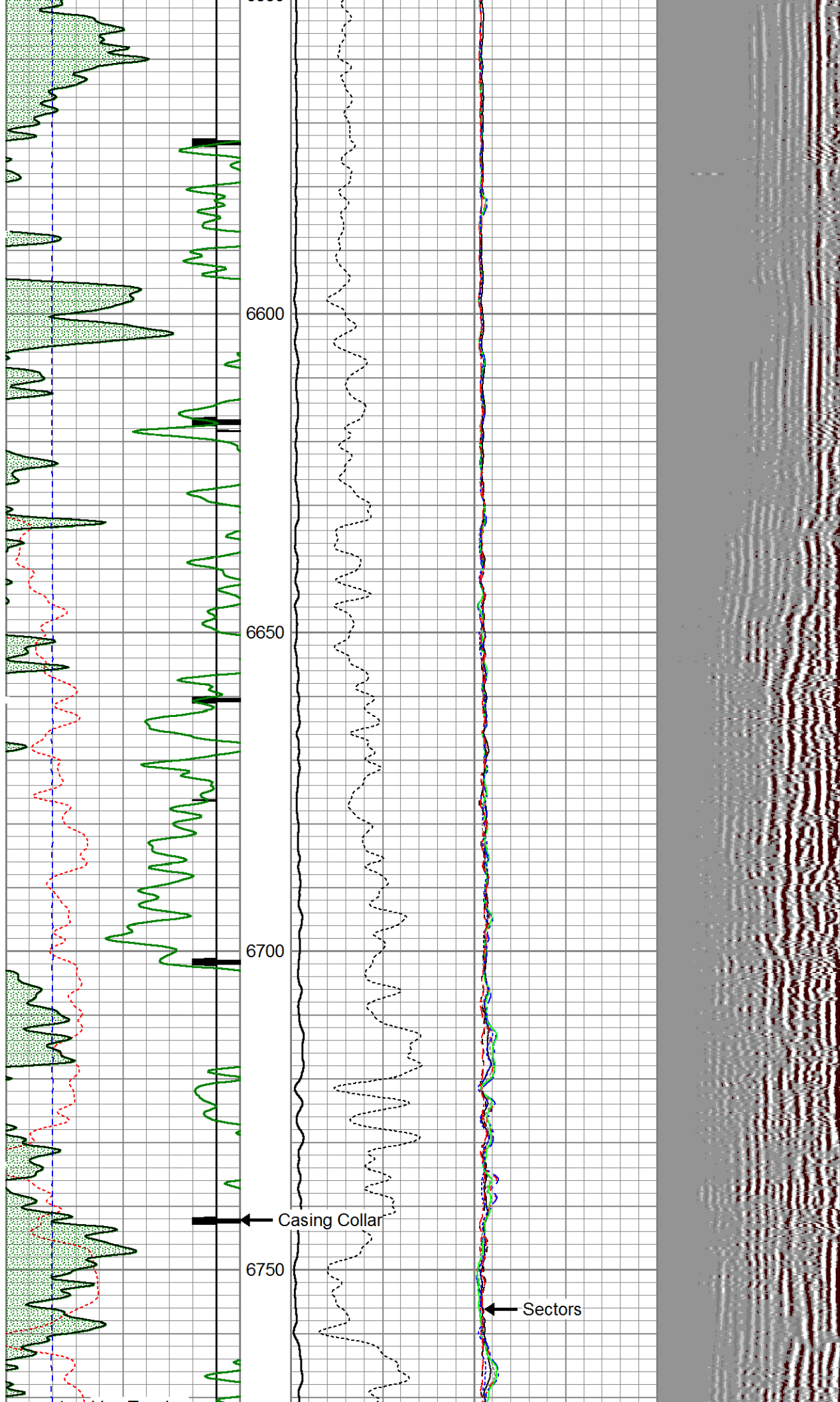




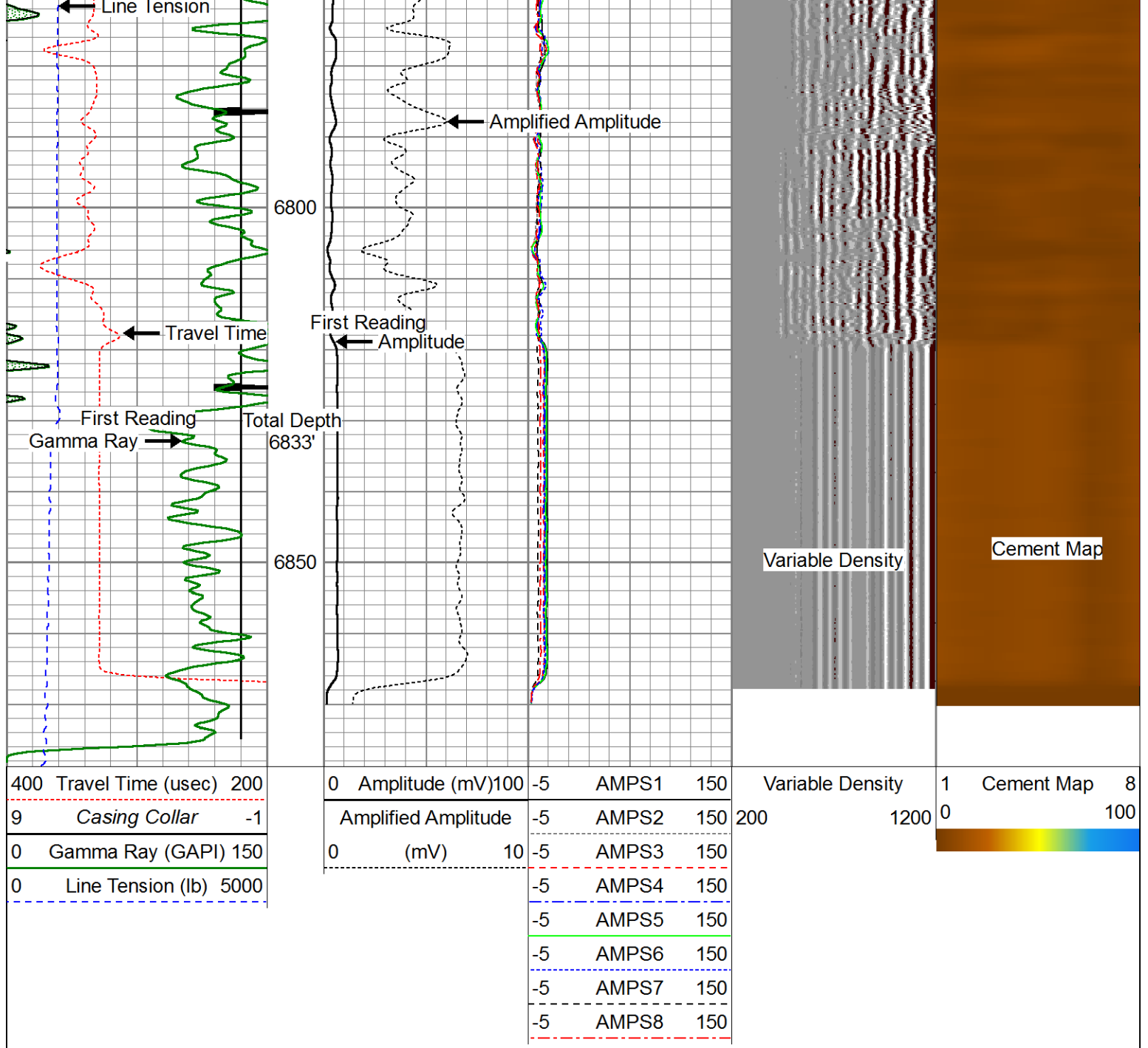






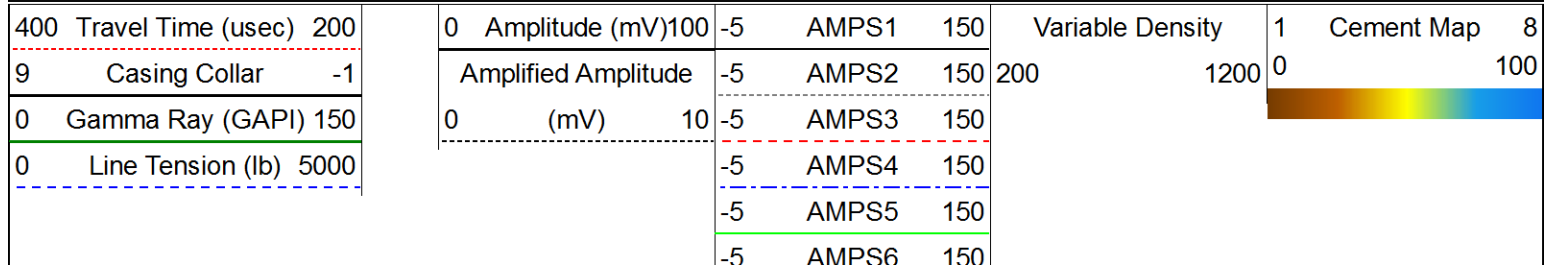




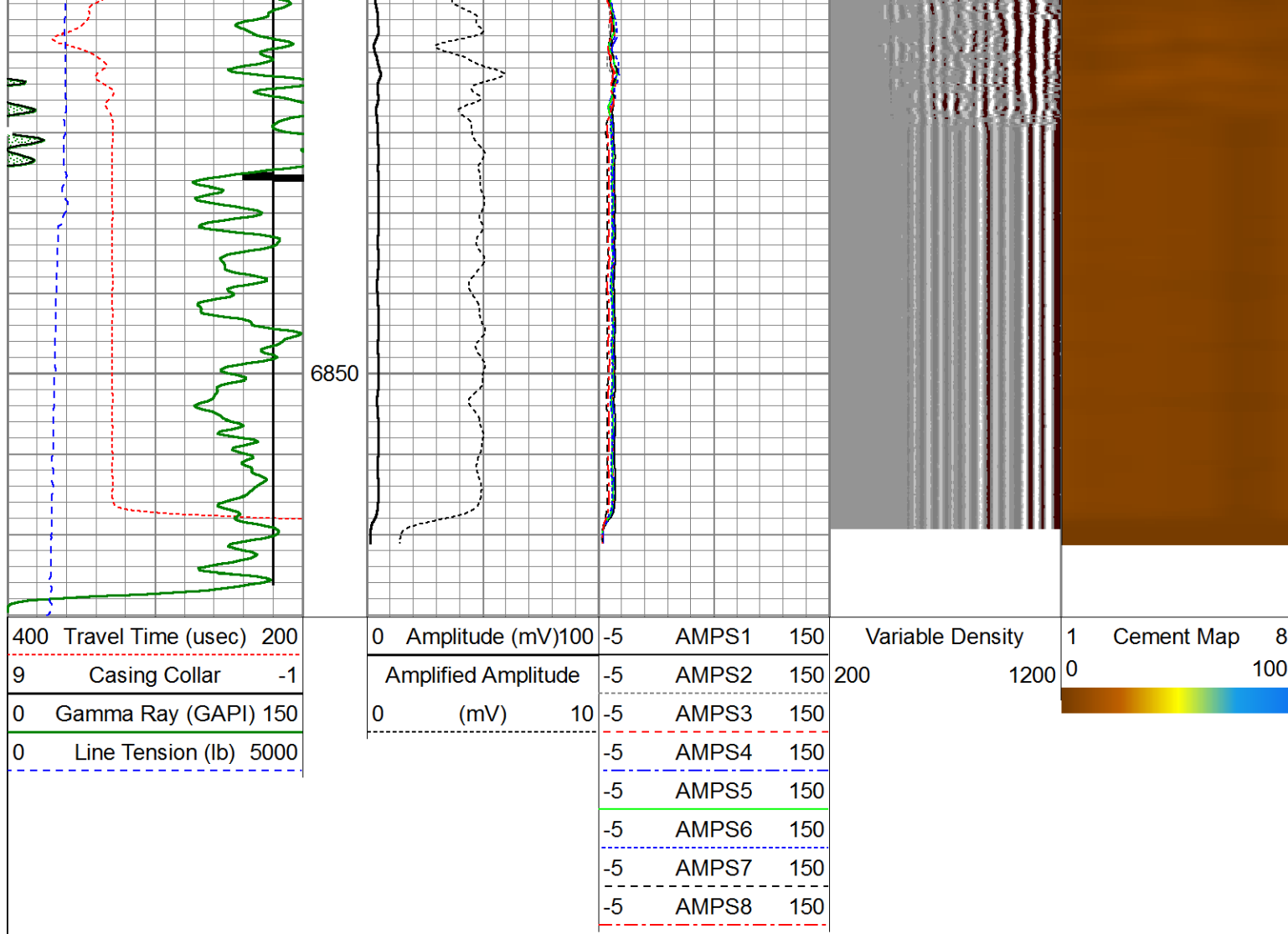


# Repeat Pass ( 0 PSI )

Database File: c:\users\engineers\desktop\brtn logs\noble\crow creek state ac36-77hn\_rcbl\noble energy crow creek stat  
 Dataset Pathname: pass2  
 Presentation Format: scbl03  
 Dataset Creation: Tue Nov 05 16:20:54 2013 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240







**Calibration Report**

Database File: c:\users\engineers\desktop\brtn logs\noble\crow creek state ac36-77hn\_rcbl\noble energy crow creek state  
 Dataset Pathname: pass5  
 Dataset Creation: Tue Nov 05 17:44:06 2013 by Calc 7.0 B1

**Gamma Ray Calibration Report**

Serial Number: 110108-Dig  
 Tool Model: Probe275  
 Performed: Tue Nov 05 09:42:00 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.8500 GAPI/cps

**Segmented Cement Bond Log Calibration Report**

Serial Number: 101224  
 Tool Model: Probe

Calibration Casing Diameter: 7.000 in  
 Calibration Depth: 702.267 ft

Master Calibration, performed Tue Nov 05 14:28:58 2013:

Raw (v)	Calibrated (mv)	Results
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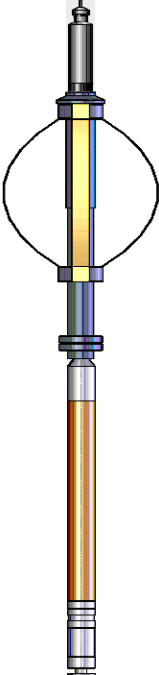
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.014	0.619	1.000	62.165	101.225	1.456
CAL	-0.003	0.712				
5'	0.008	0.605	1.000	62.165	102.469	0.138
SUM						
S1	0.013	0.702	0.000	100.000	145.161	-1.862
S2	0.014	0.615	0.000	100.000	166.548	-2.344
S3	0.011	0.543	0.000	100.000	187.731	-2.026
S4	0.009	0.539	0.000	100.000	188.604	-1.651
S5	0.012	0.566	0.000	100.000	180.484	-2.084
S6	0.011	0.611	0.000	100.000	166.680	-1.906
S7	0.013	0.658	0.000	100.000	154.908	-2.004
S8	0.013	0.696	0.000	100.000	146.550	-1.930

Internal Reference Calibration, performed Mon Oct 10 09:42:03 2005:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.003	0.712	1.000	0.000

Air Zero Calibration, performed Mon Oct 10 09:41:05 2005:

	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
			Probe275 2.75" Centralizer	2.88	2.75	20.00

