



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

Company		Noble Energy	
Well		Loeffler K01-67-1HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-35835	
SEC 1 TWP 4N RGE 66W		TEMP	
Permanent Datum		Ground Level	
Log Measured From		Elevation	
Drilling Measured From		4666'	
Date		December 12, 2013	
Run Number		1	
Depth Driller		11190'	
Depth Logger		7252'	
Bottom Logged Interval		7239'	
Top Log Interval		Surface	
Open Hole Size		8.125	
Type Fluid		Fresh Water	
Density / Viscosity		8.33	
Max. Recorded Temp.		210 Deg F	
Estimated Cement Top		2470'	
Time Well Ready		11:45	
Time Logger on Bottom		13:05	
Equipment Number		13033	
Location		Brighton	
Recorded By		C. Rail	
Witnessed By		Natalie Aaron	
Borehole Record		Tubing Record	
Run Number		Bit	
One		From	
Two		To	
Three		Size	
Four		Weight	
Casing Record		From	
Surface String		To	
Prot. String		Size	
Production String		Weight	
Liner		From	
Short Joint		To	

<<< Fold Here >>>

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 16' KB.

Main Pass Logged with 1700 PSI
Repeat Pass Logged with 1700 PSI

Estimated Top of Cement @ 2470'

Short Joint @ 5984' To 5999'

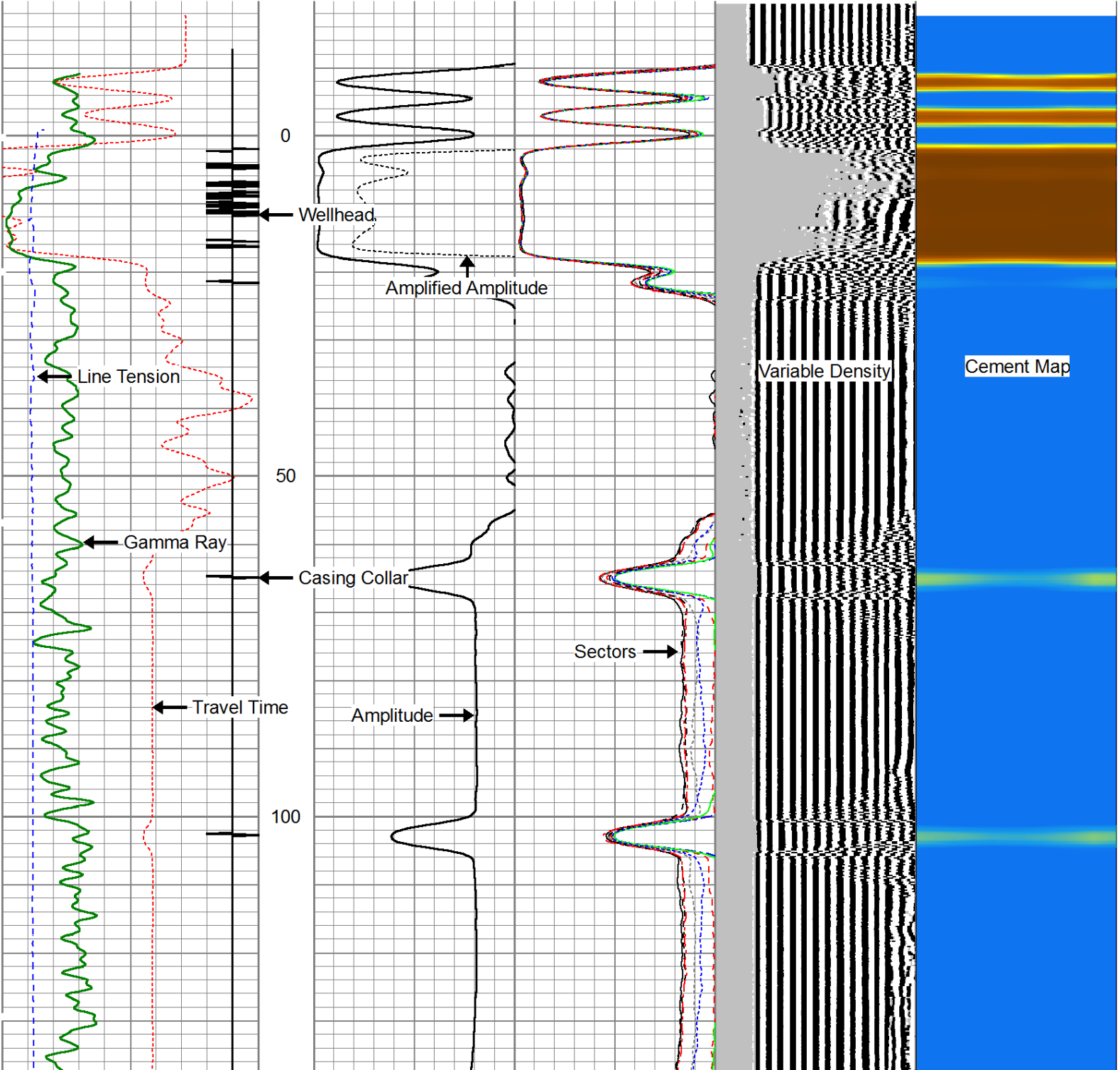
Thank you for using Allied Wireline.
(303)659-4609

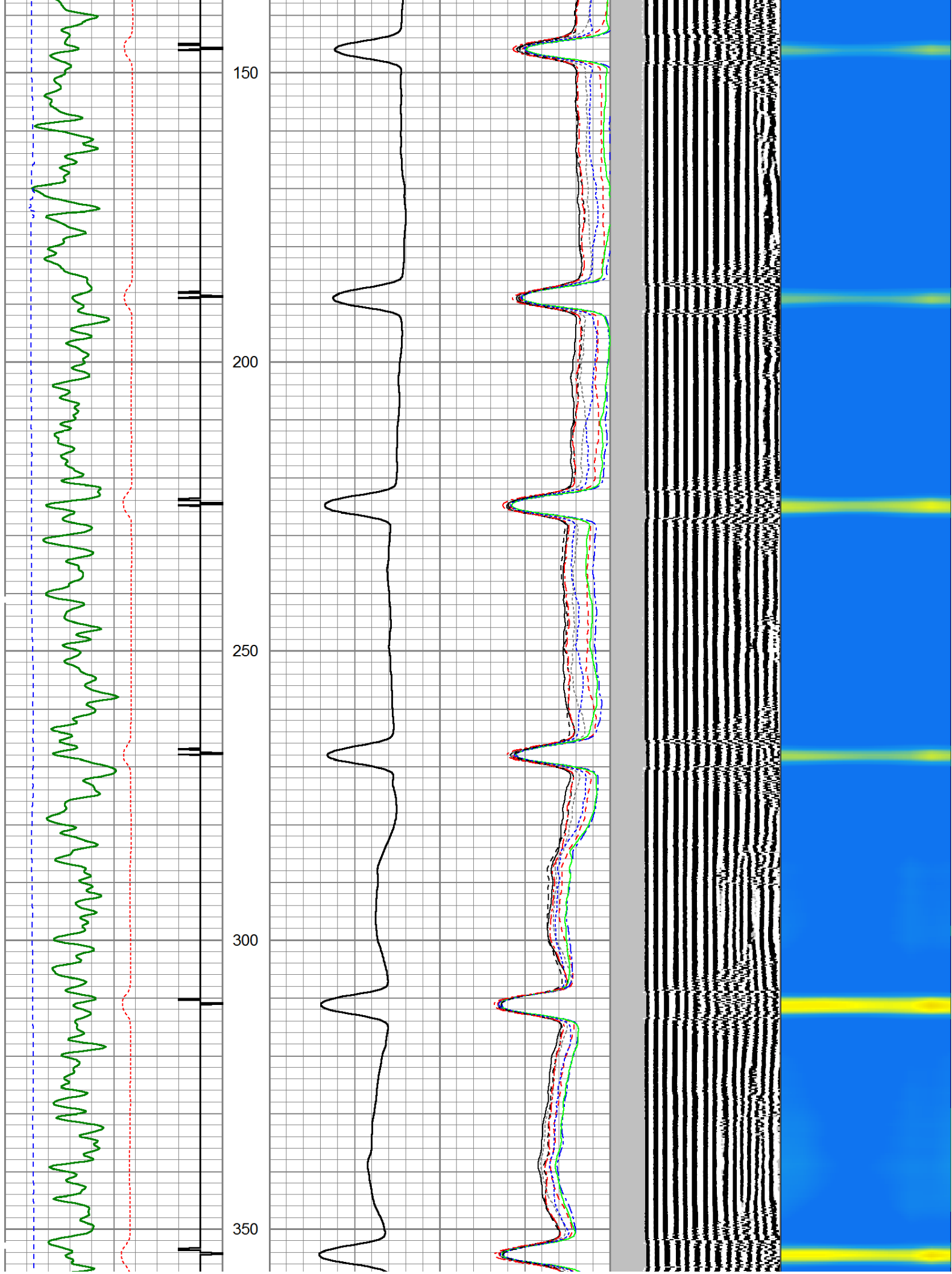


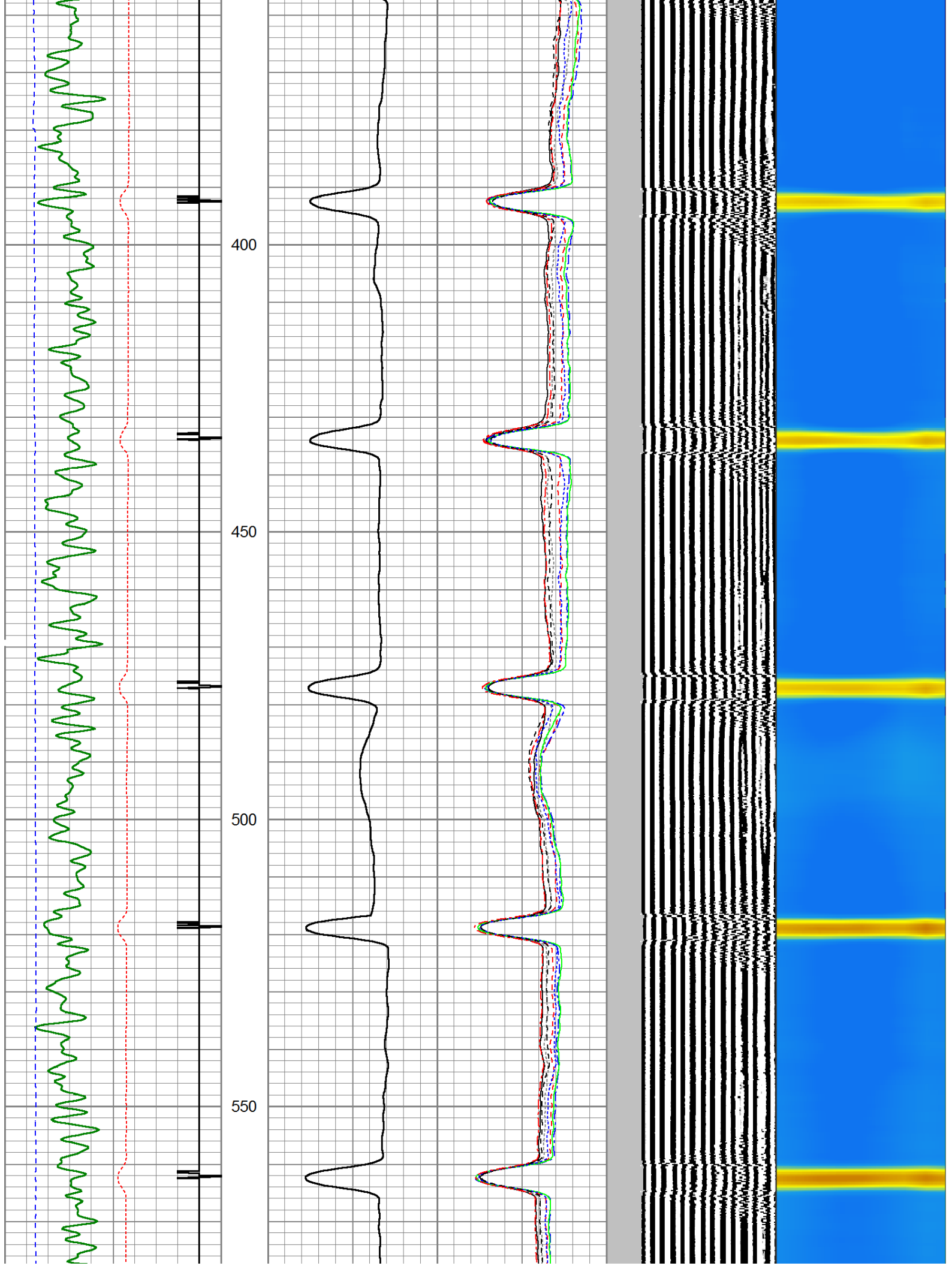
Main Pass (1700 PSI)

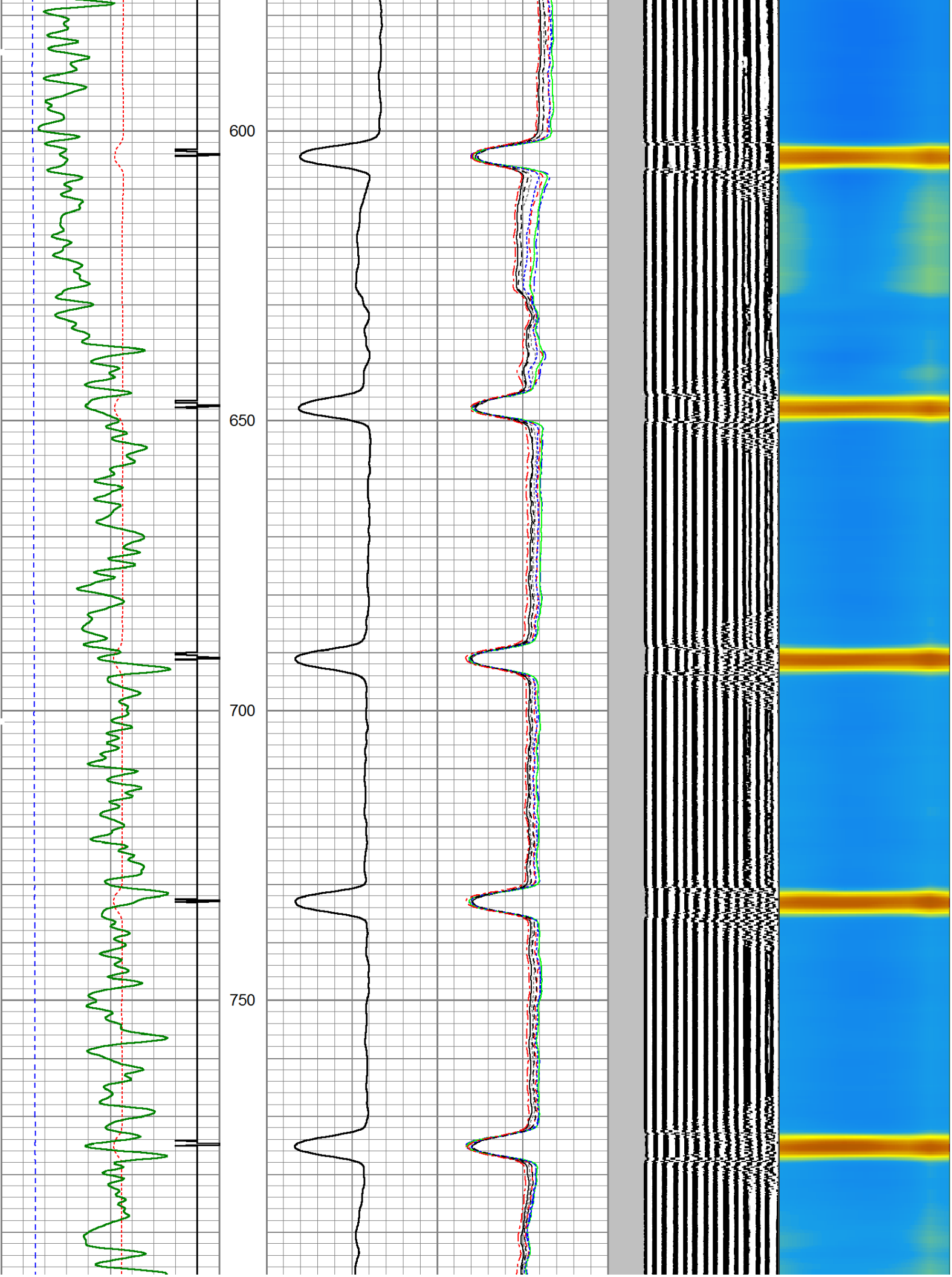
Database File: noble energy loeffler k01-67-1hn.db
Dataset Pathname: merge1
Presentation Format: scbl03
Dataset Creation: Fri Dec 13 09:22:26 2013
Charted by: Depth in Feet scaled 1:240

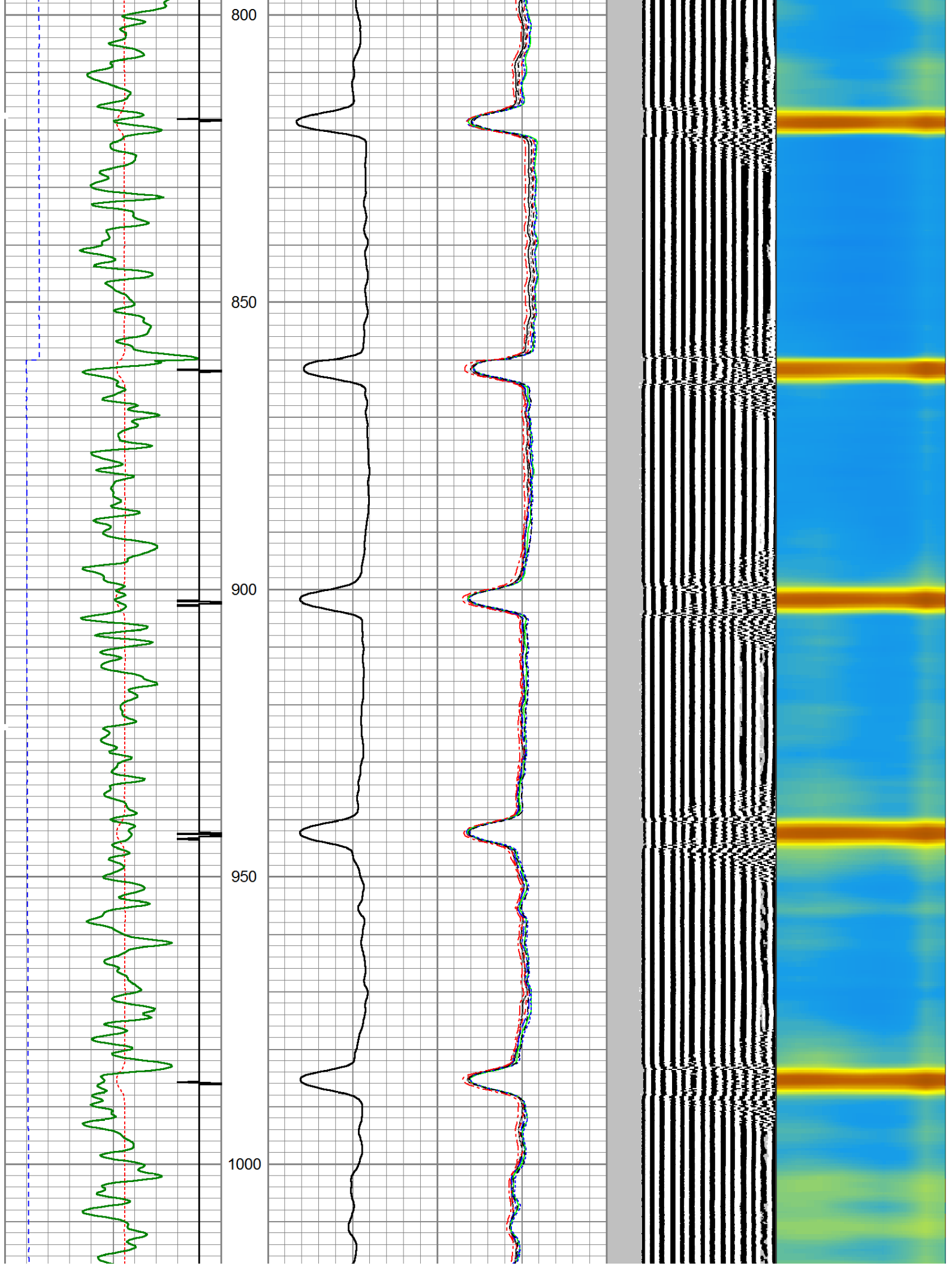
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150		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

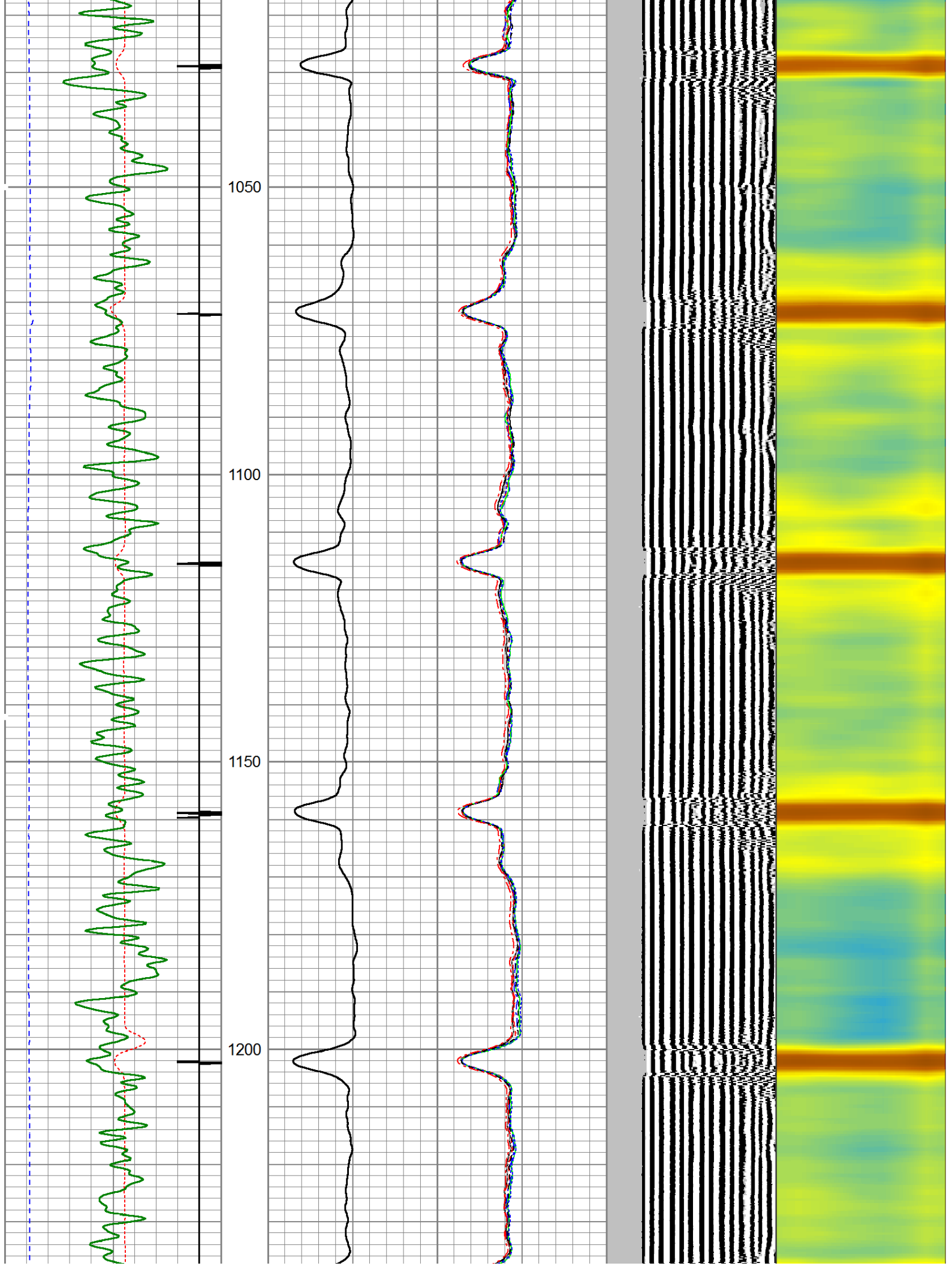


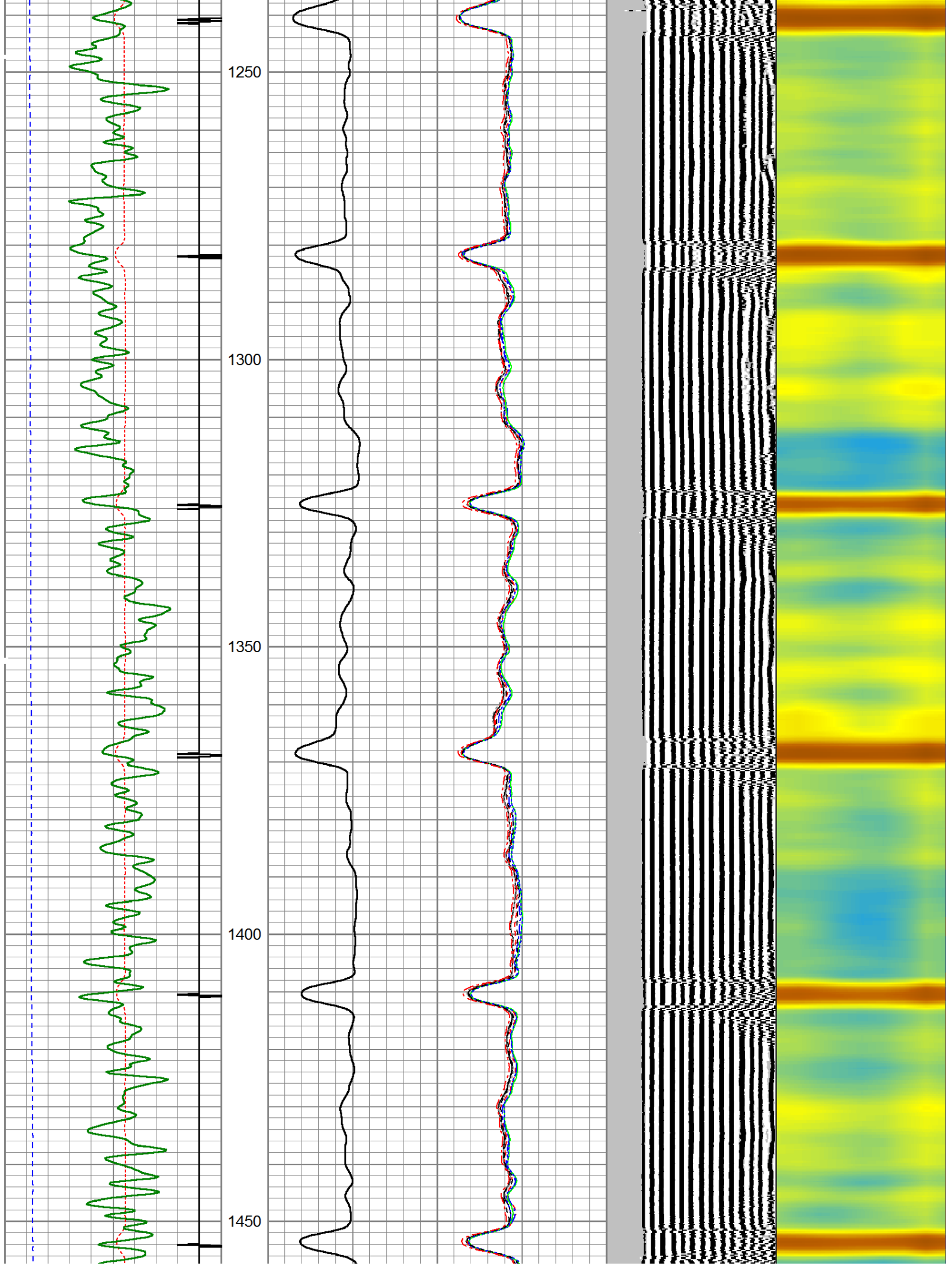


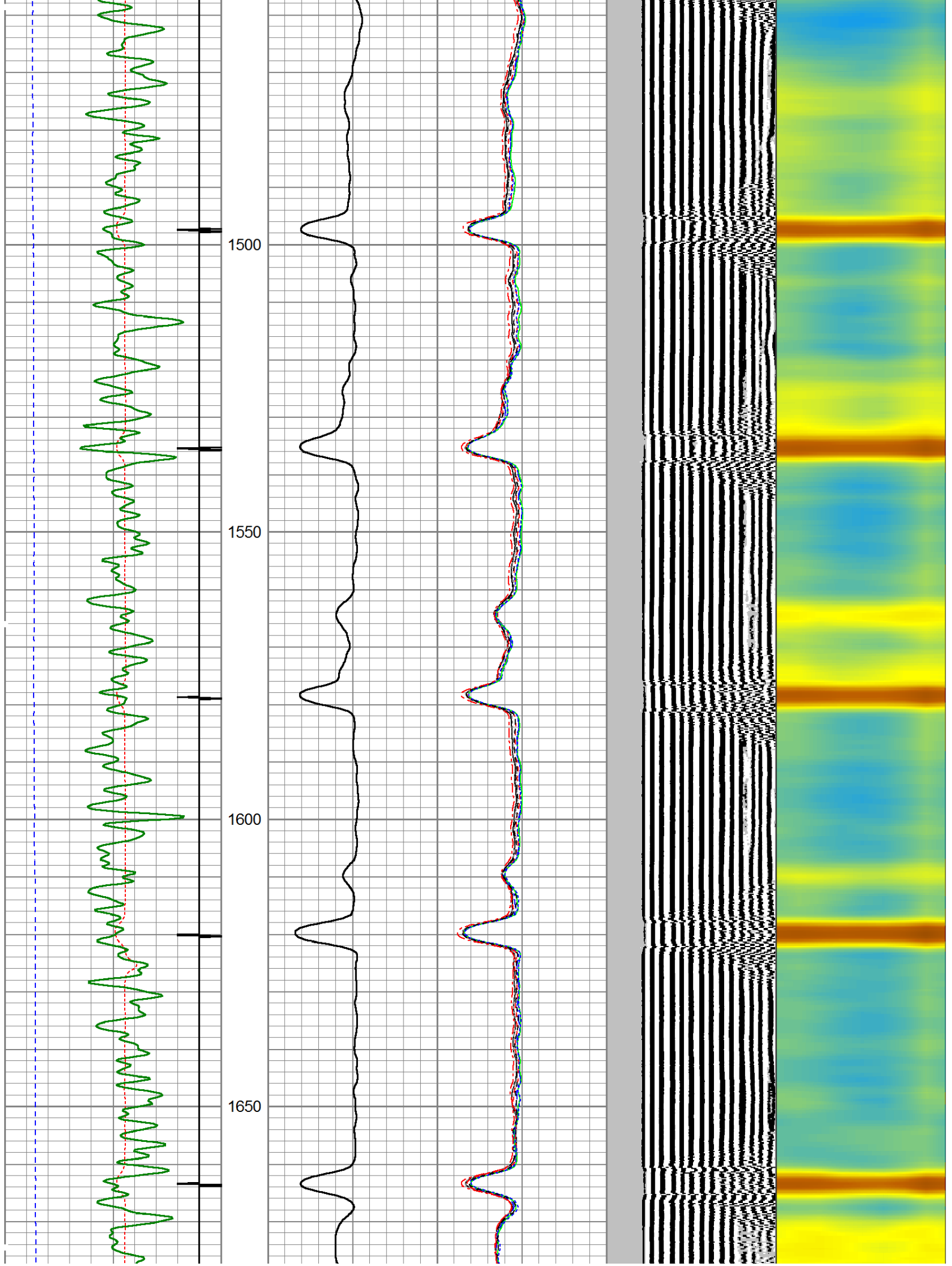


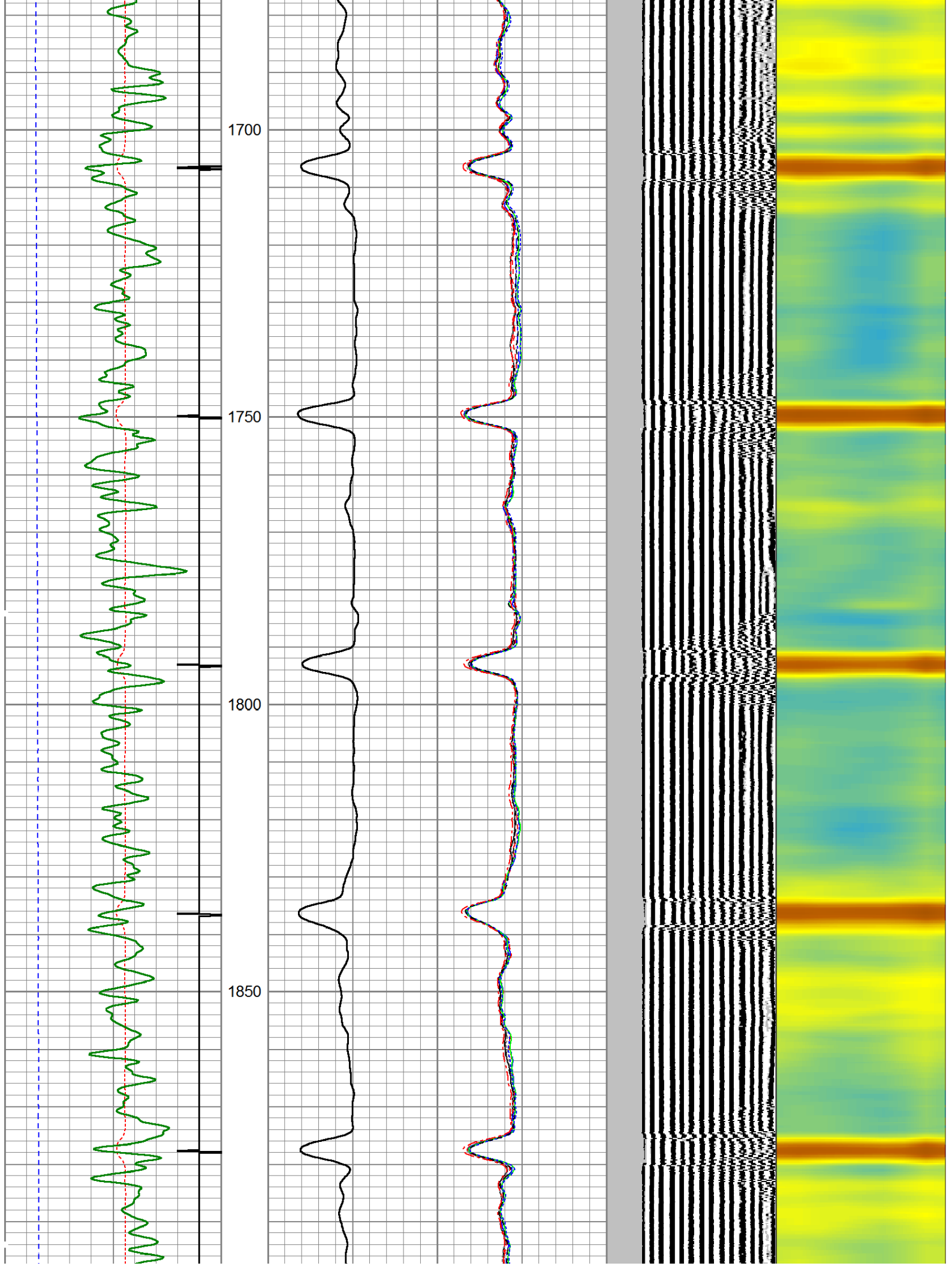


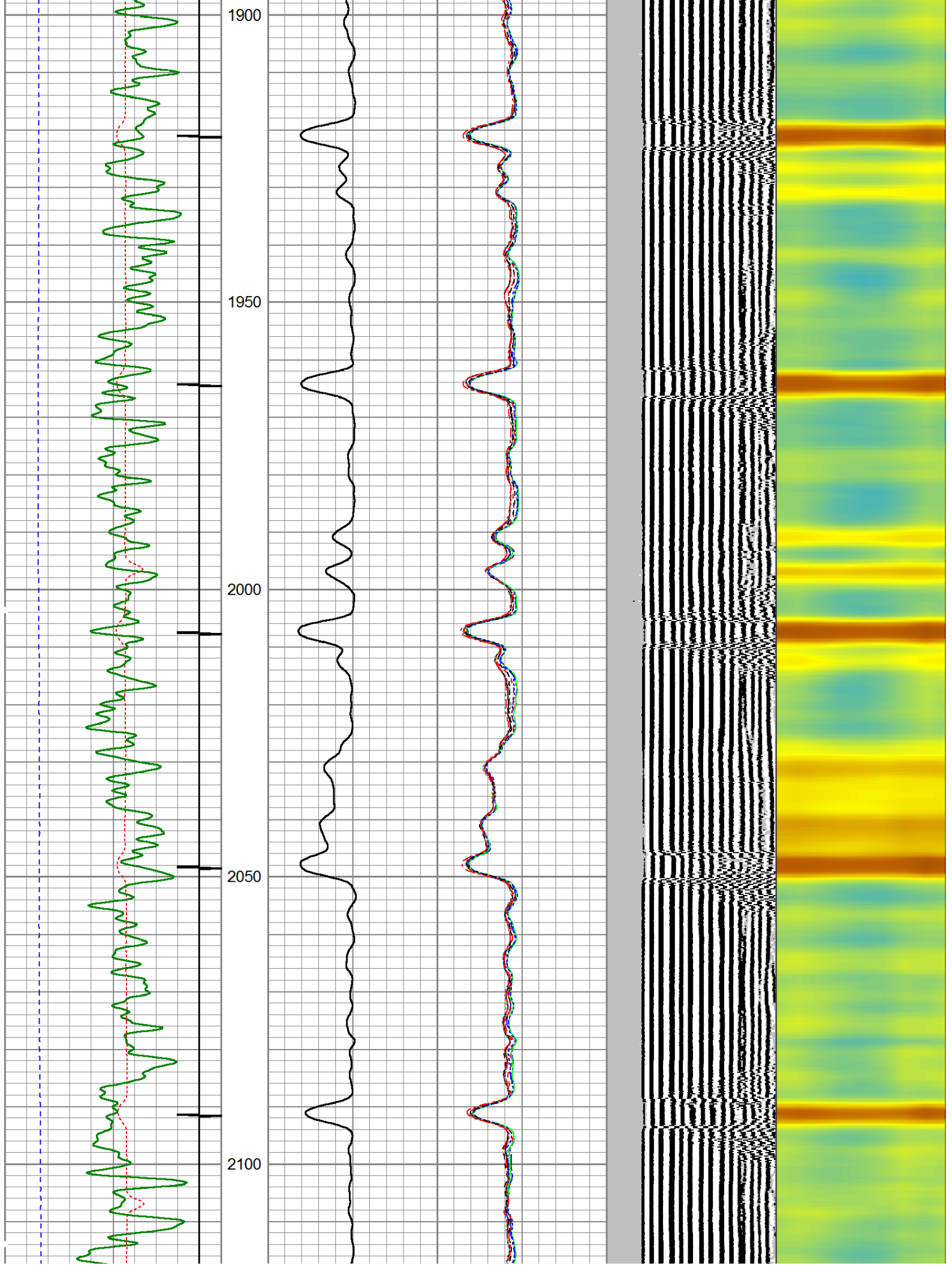


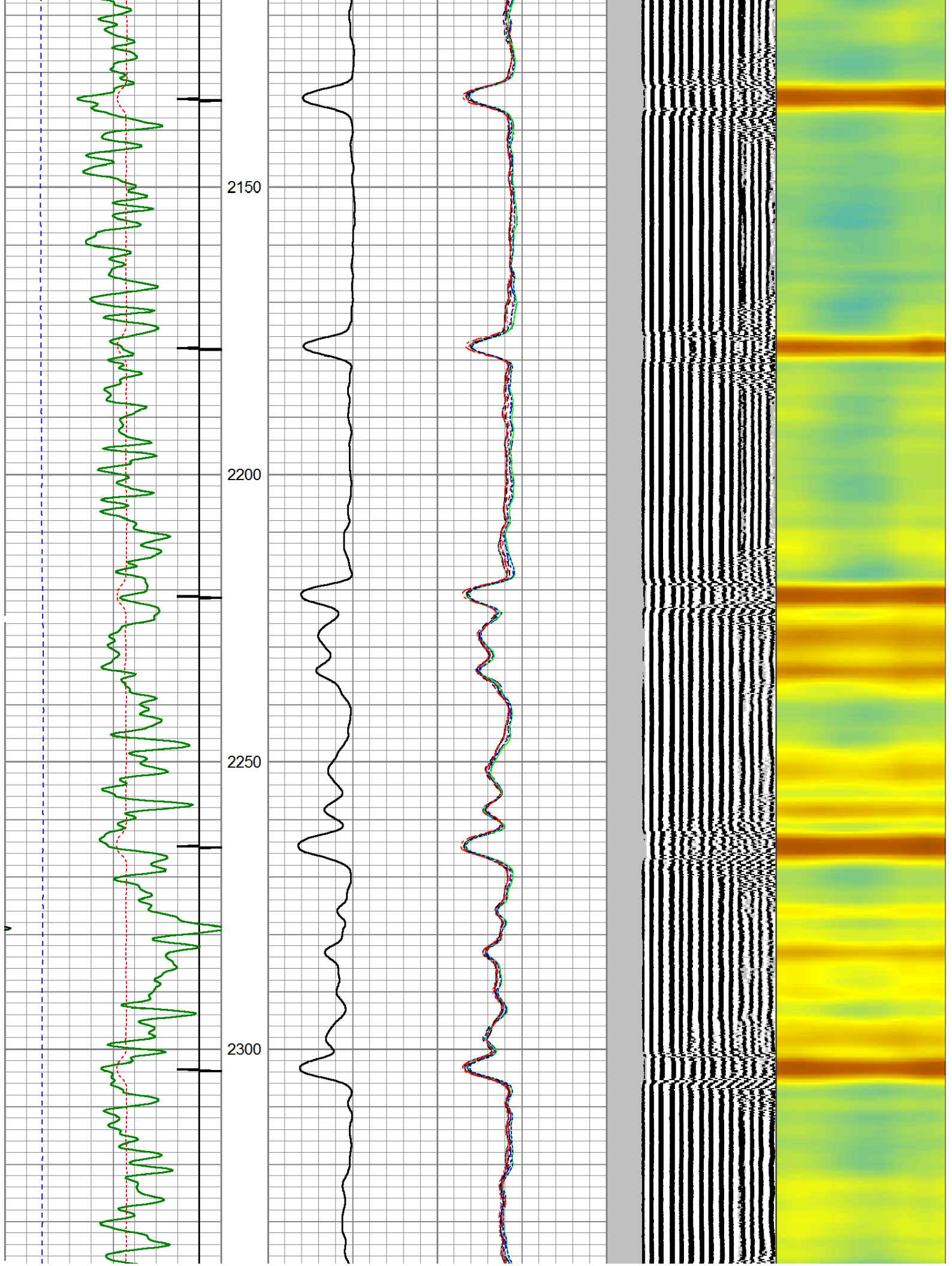


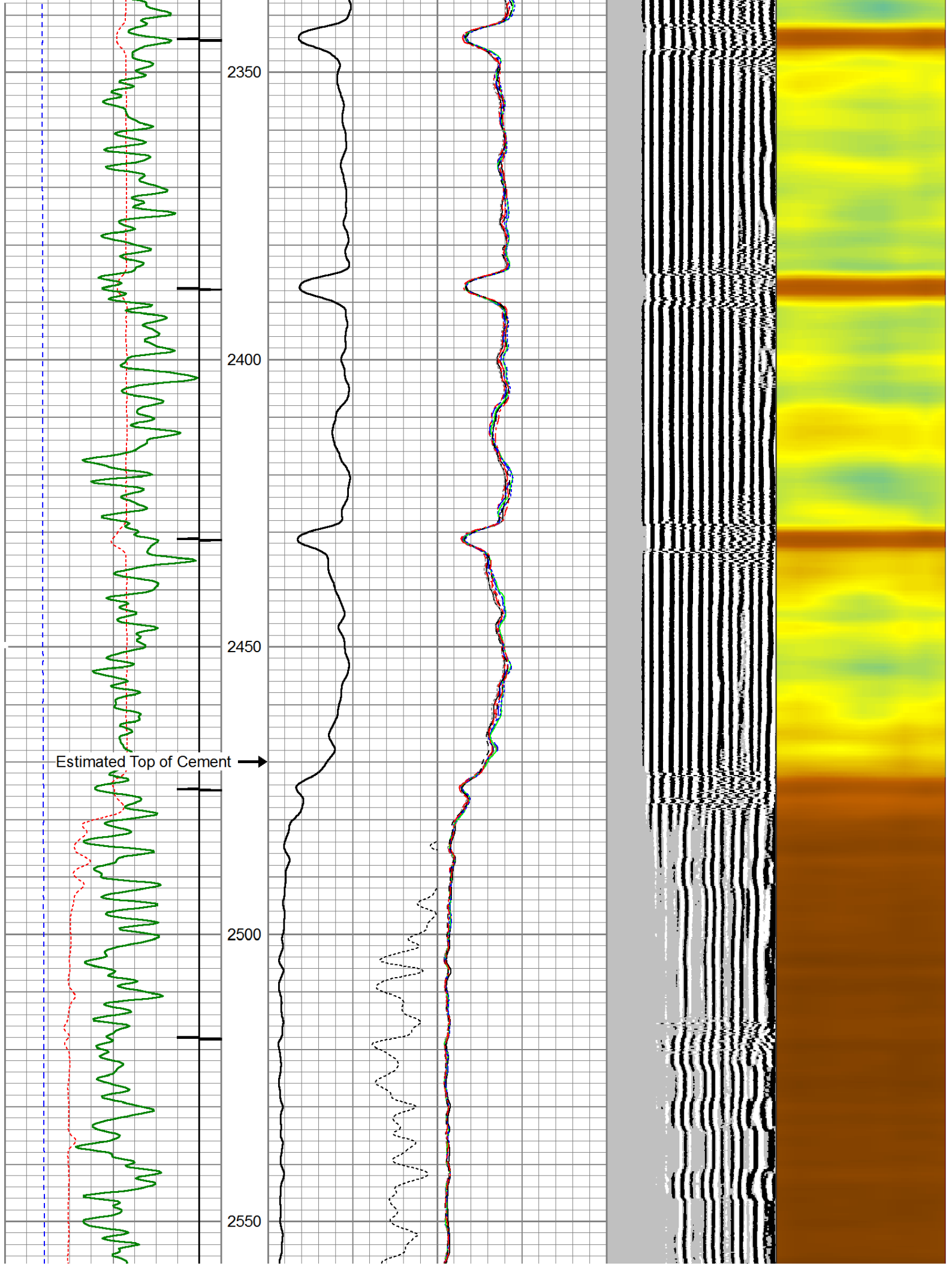


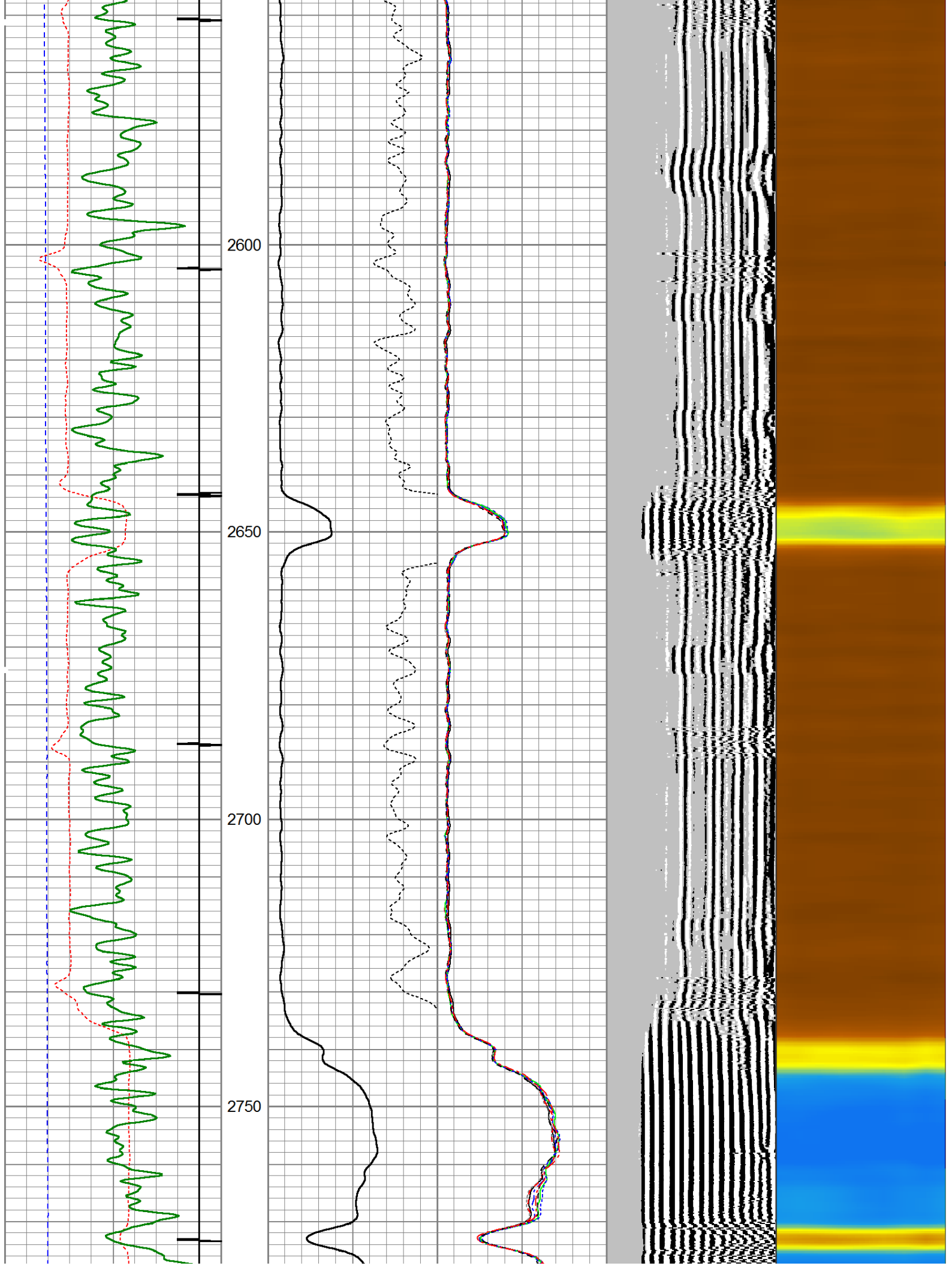


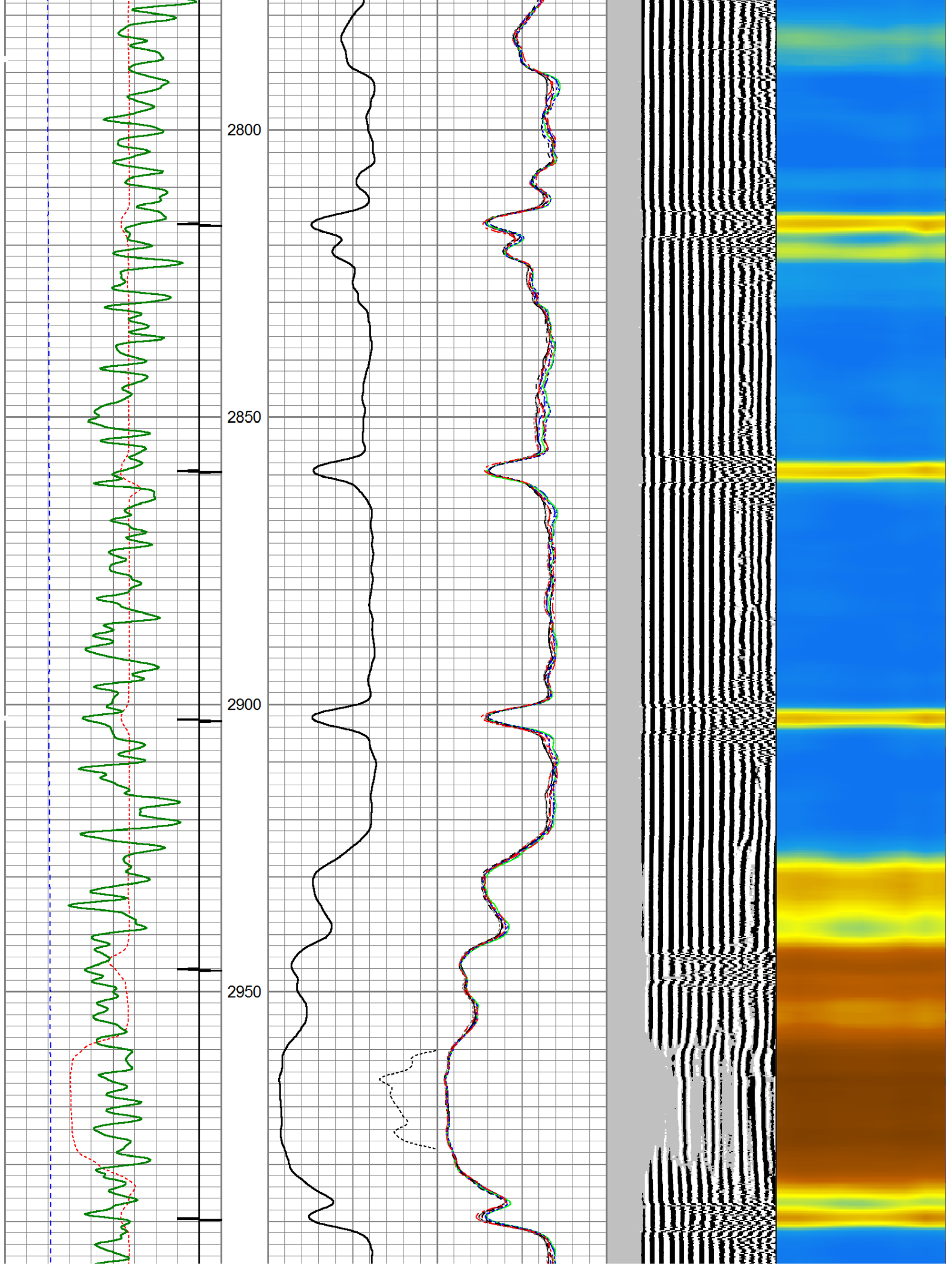


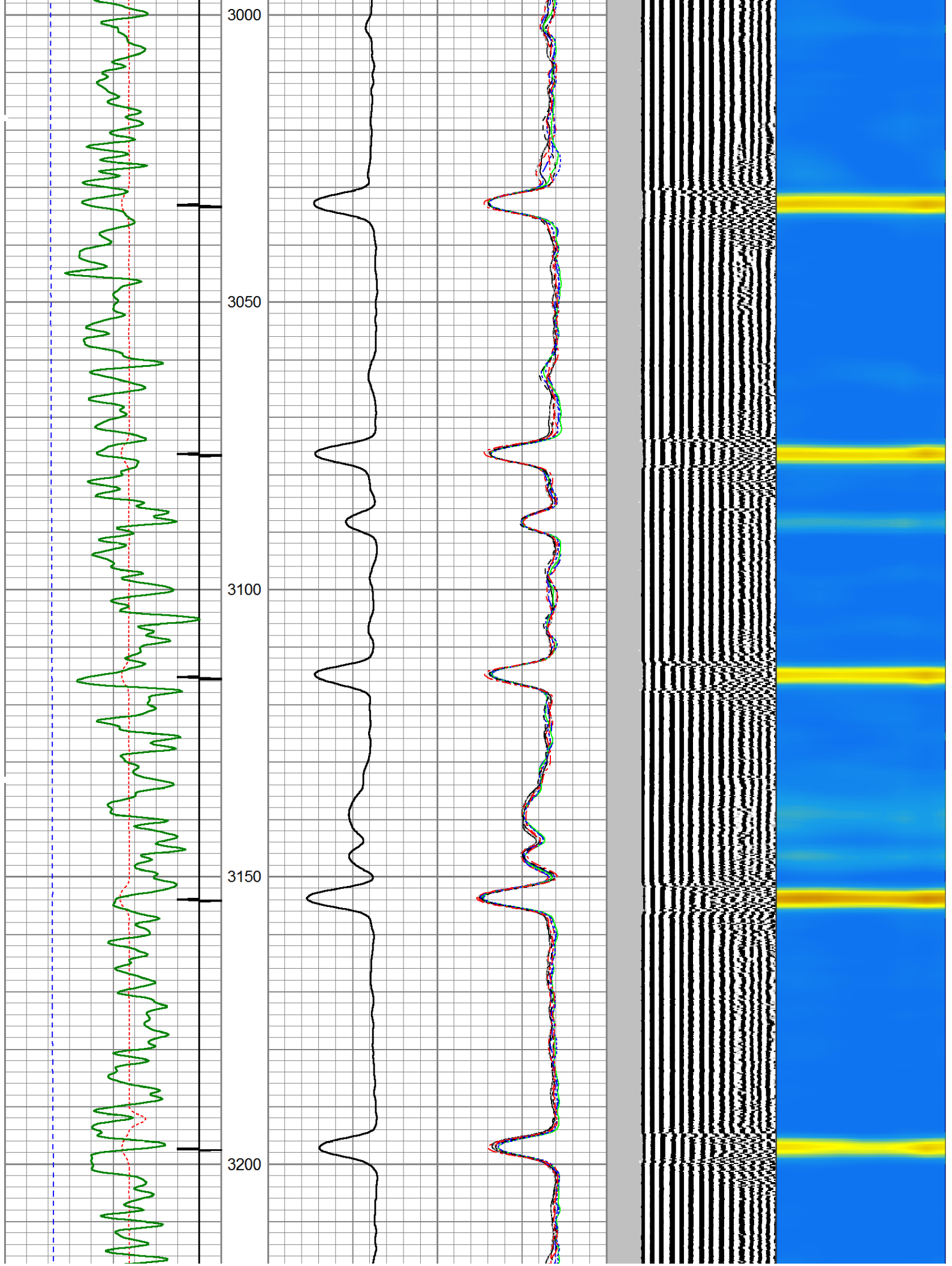


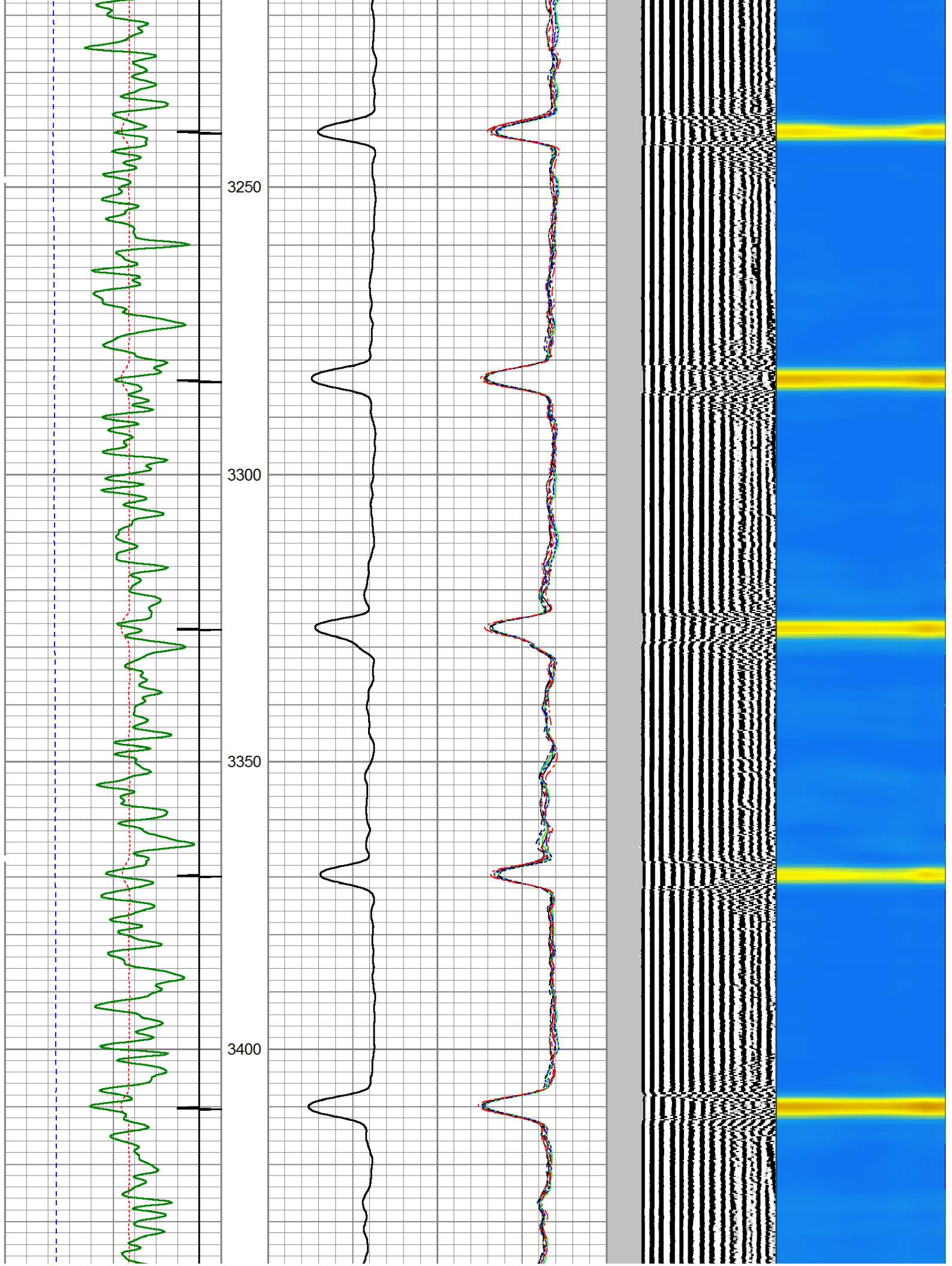


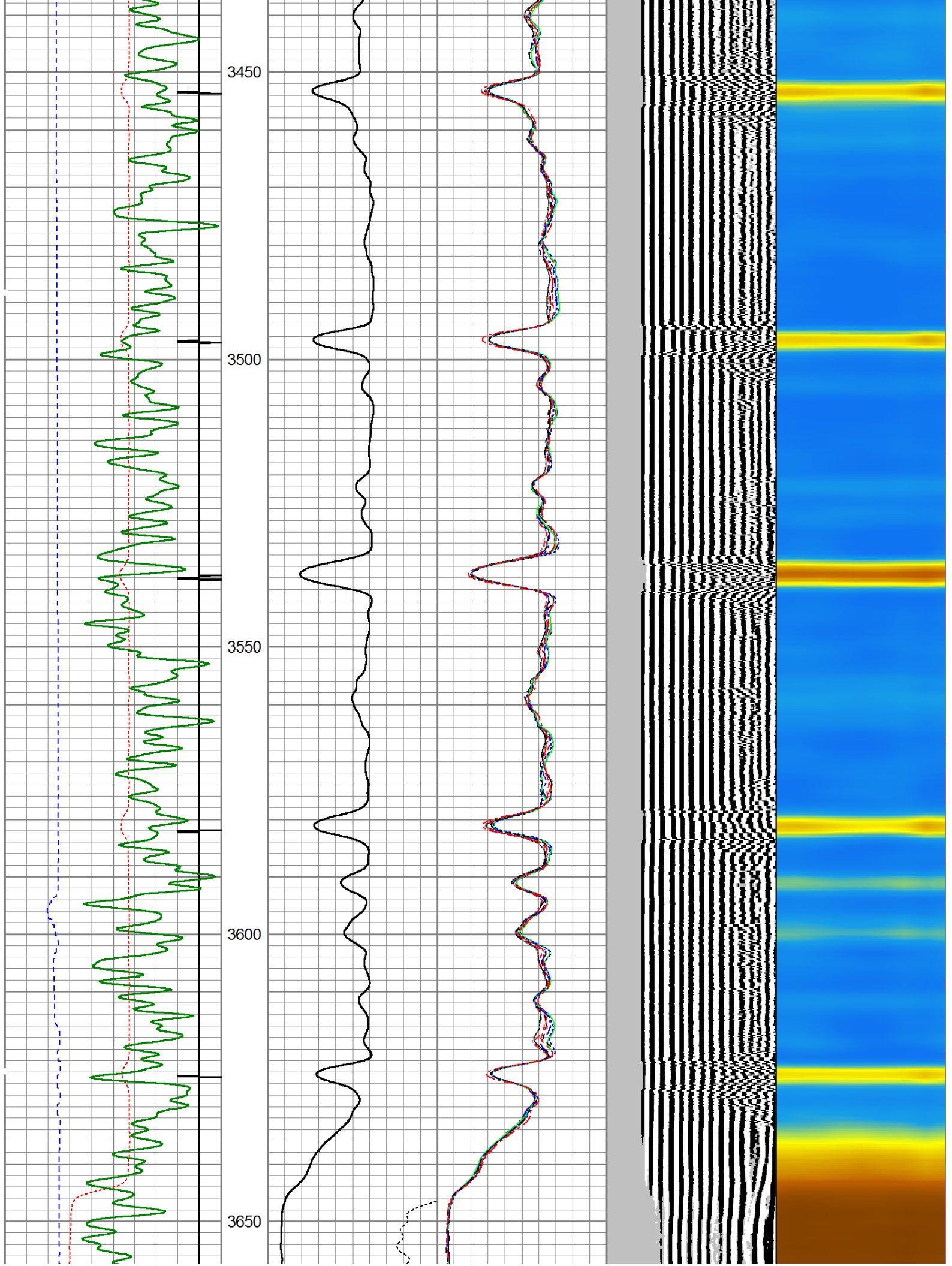


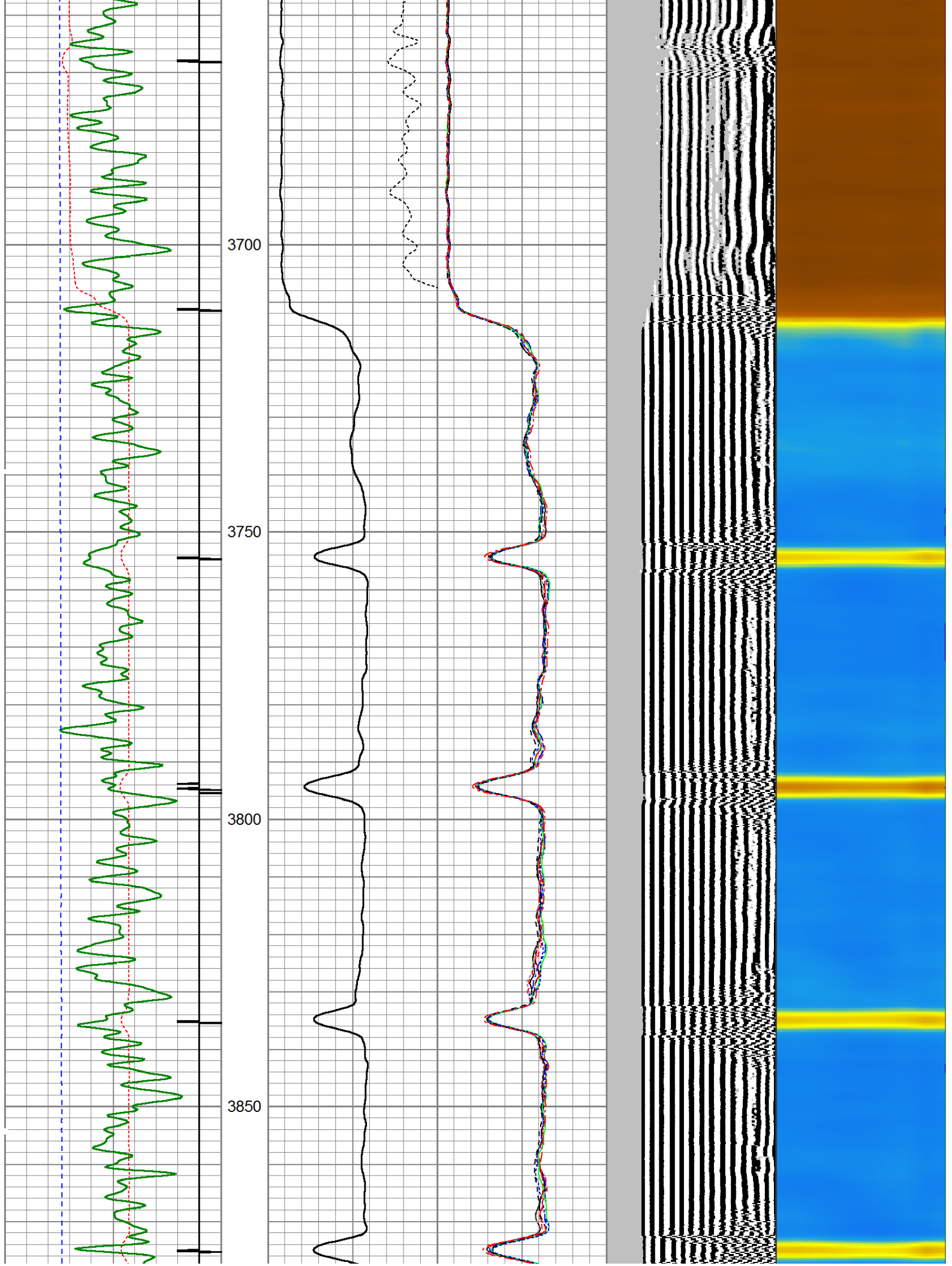


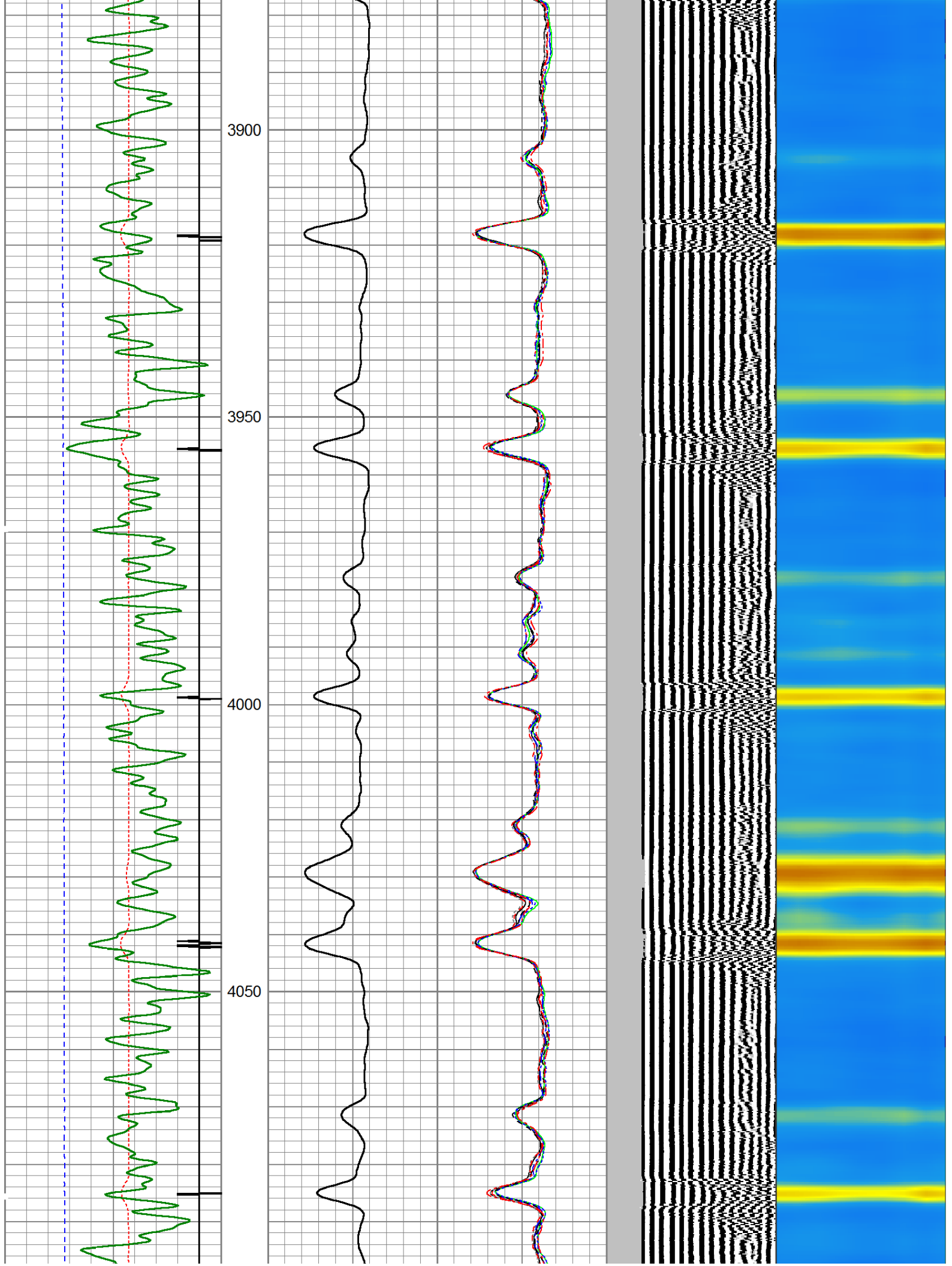


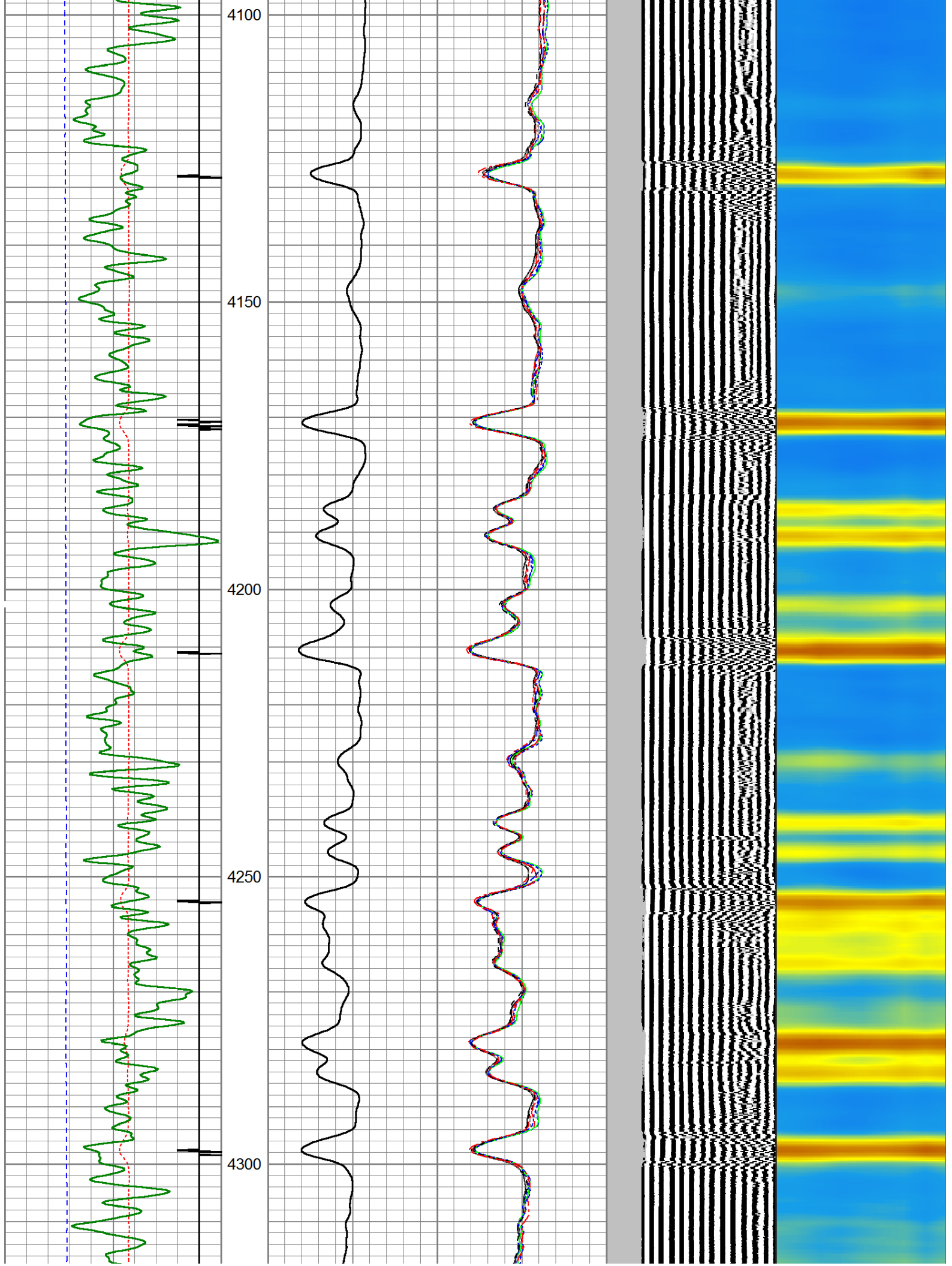


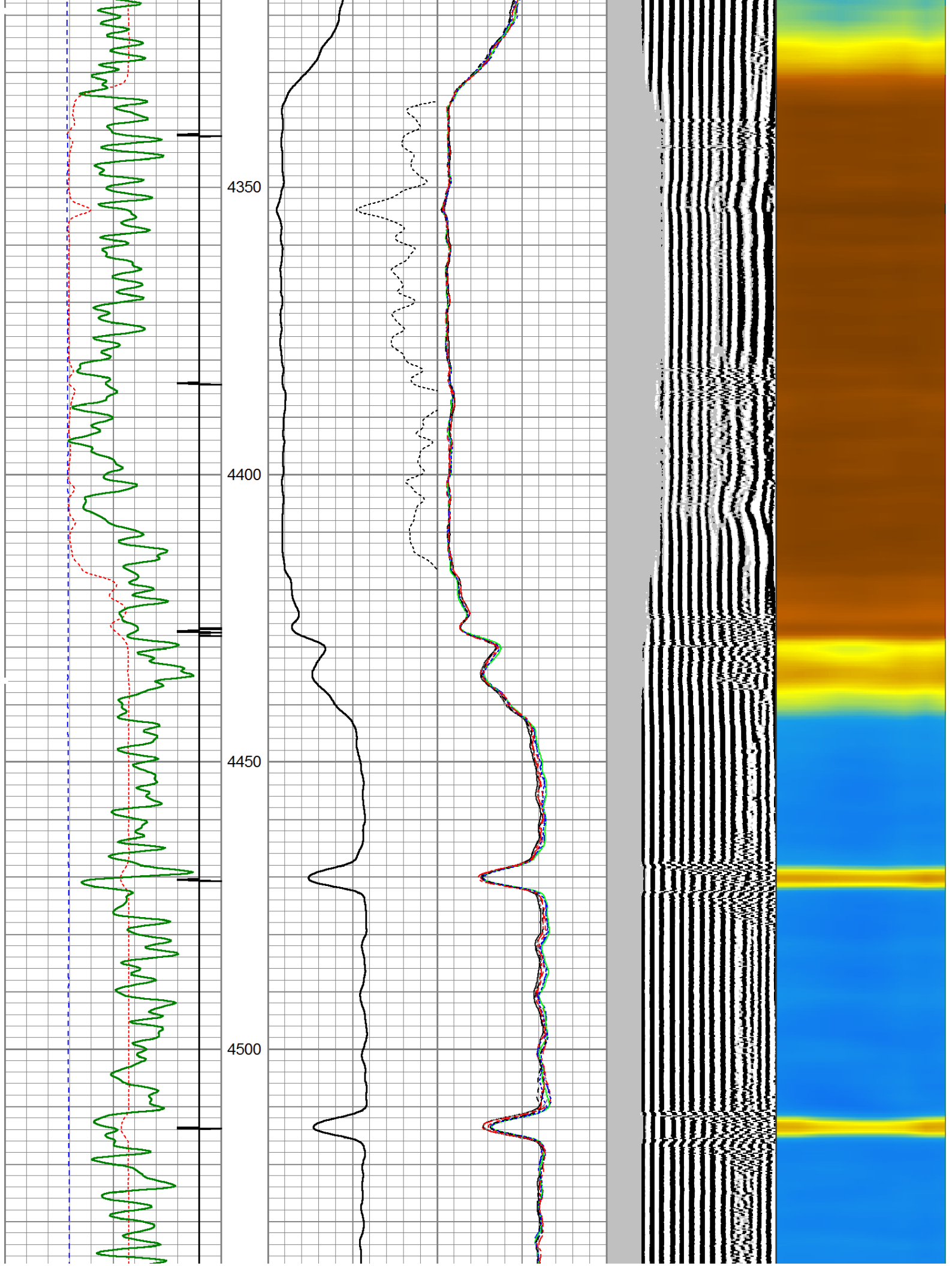


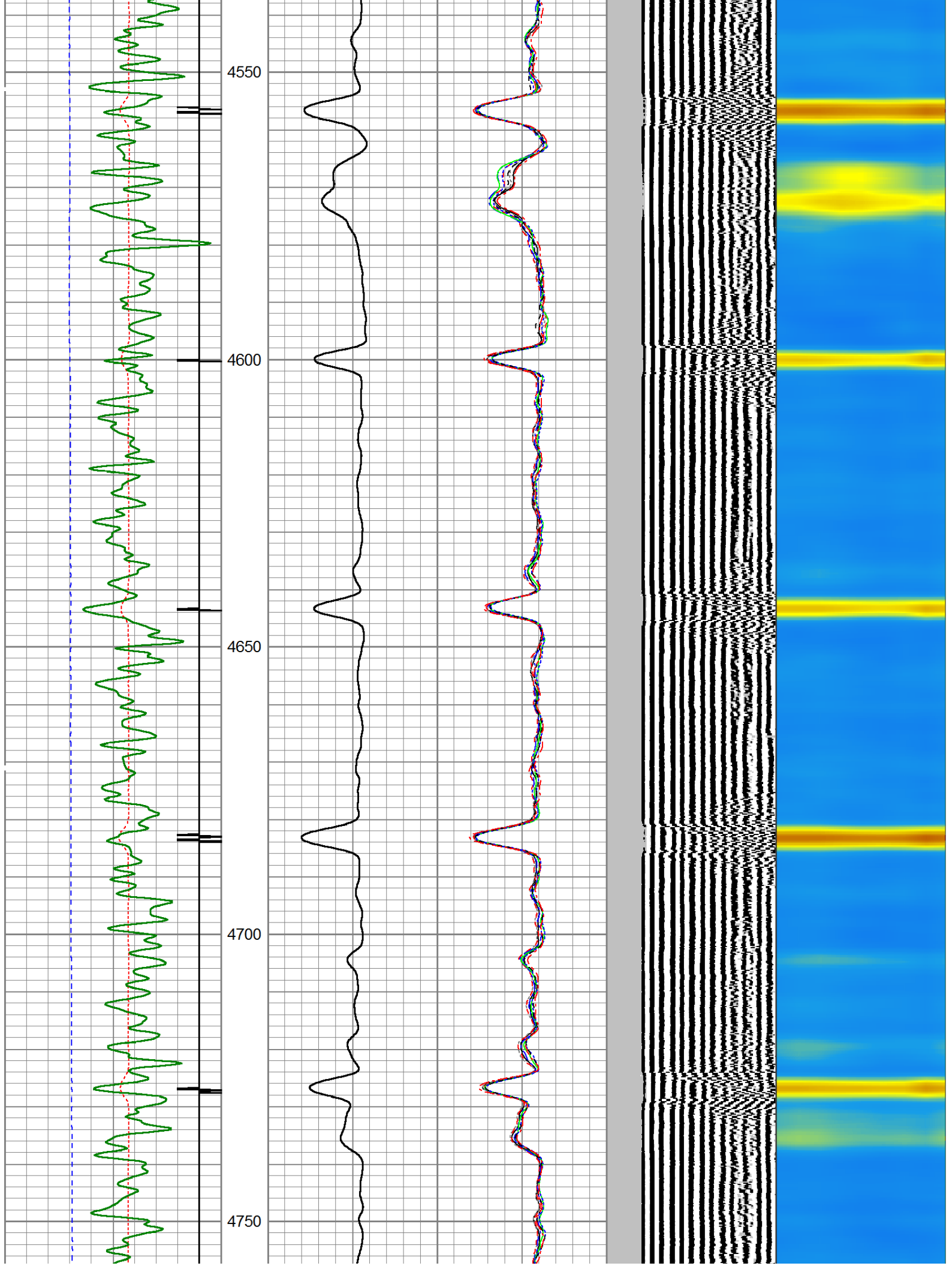


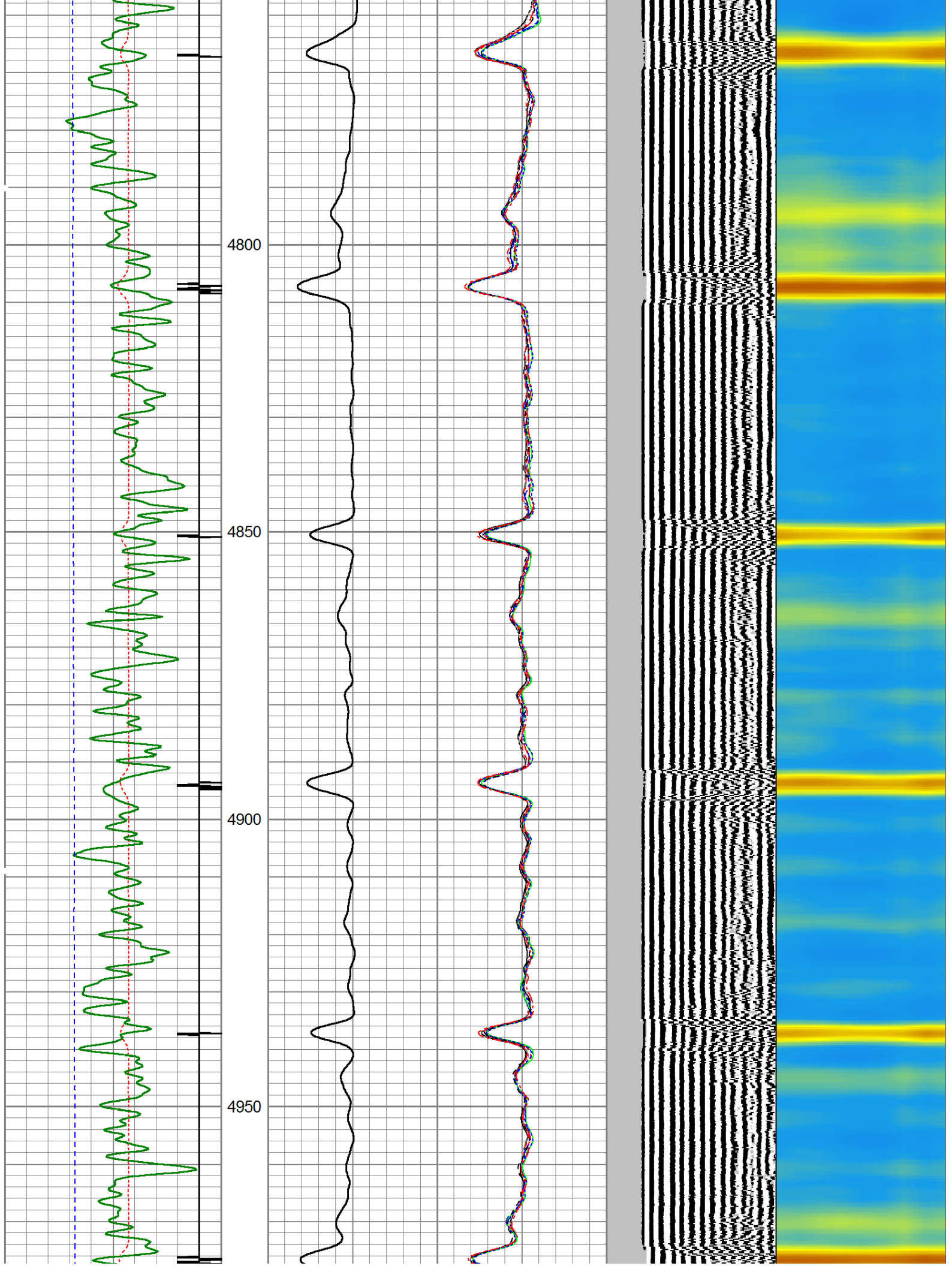


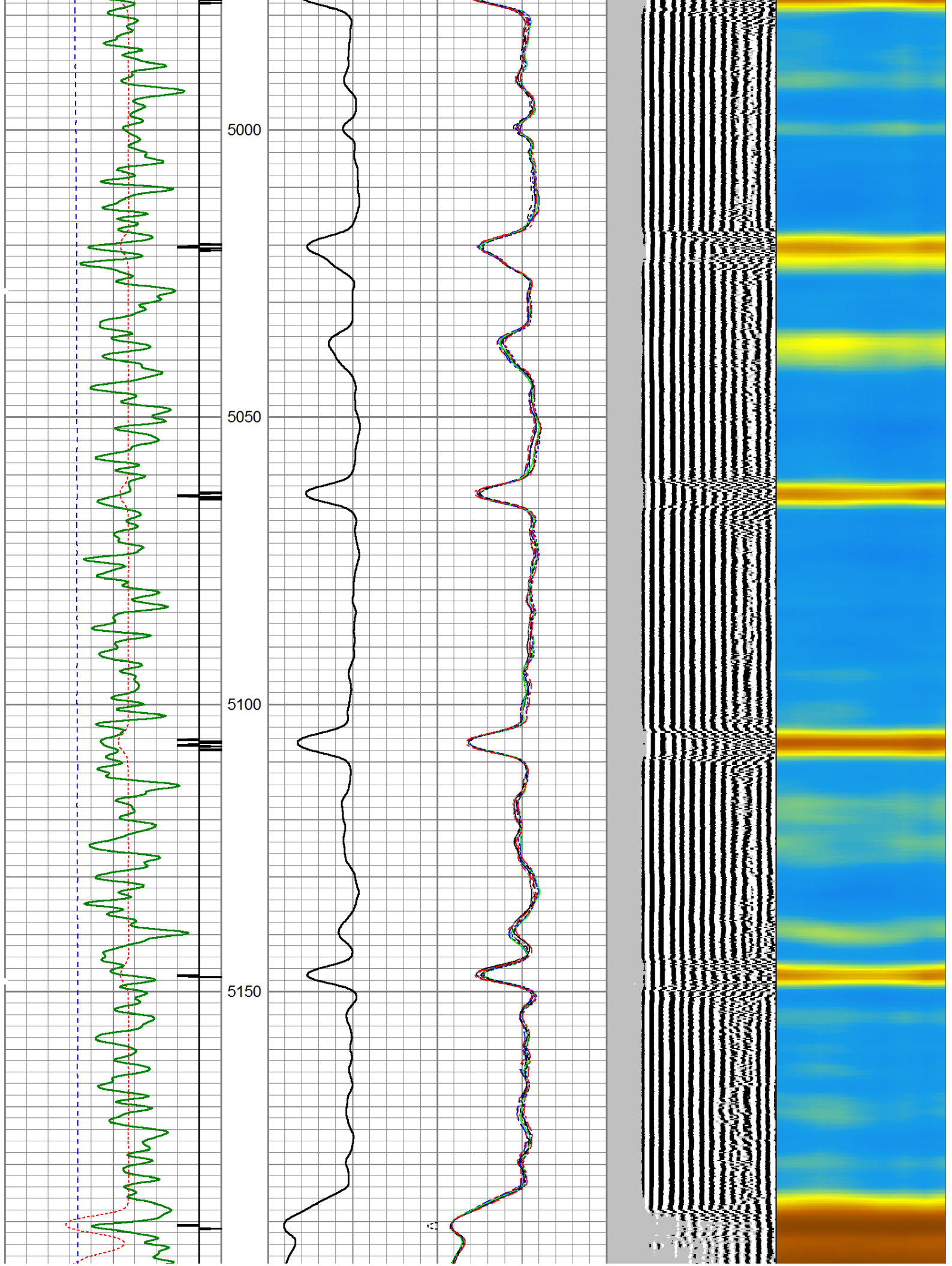


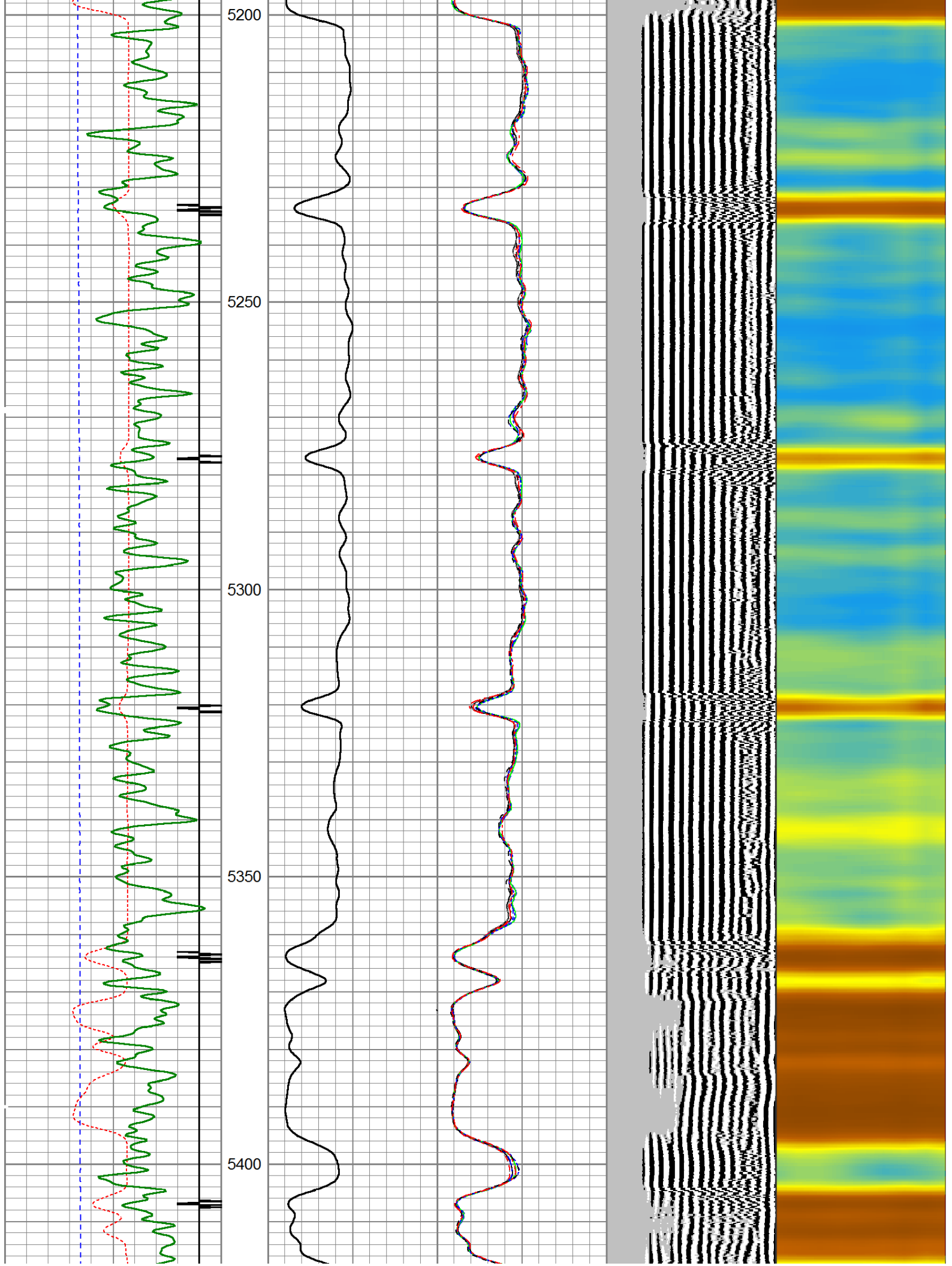


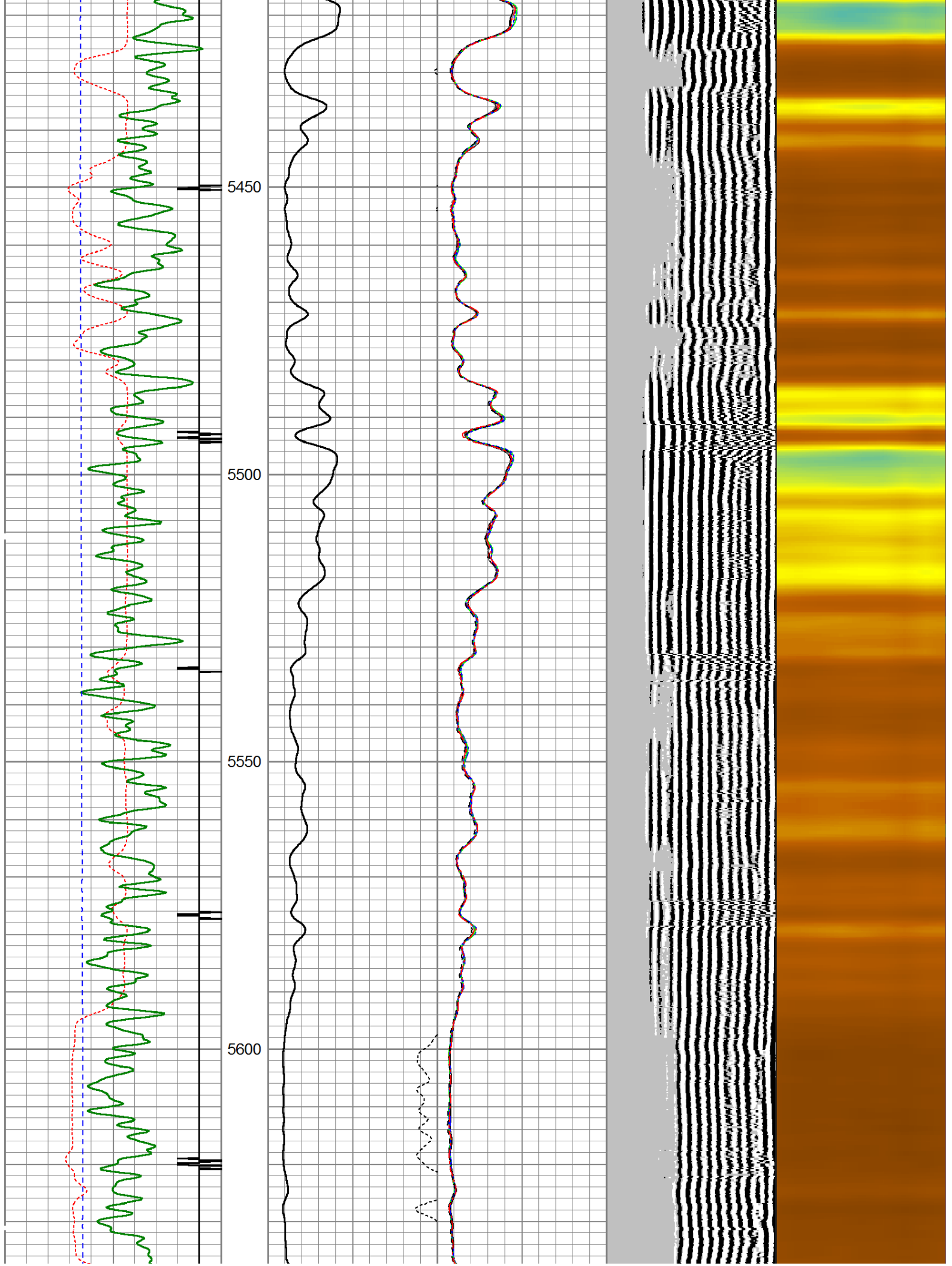


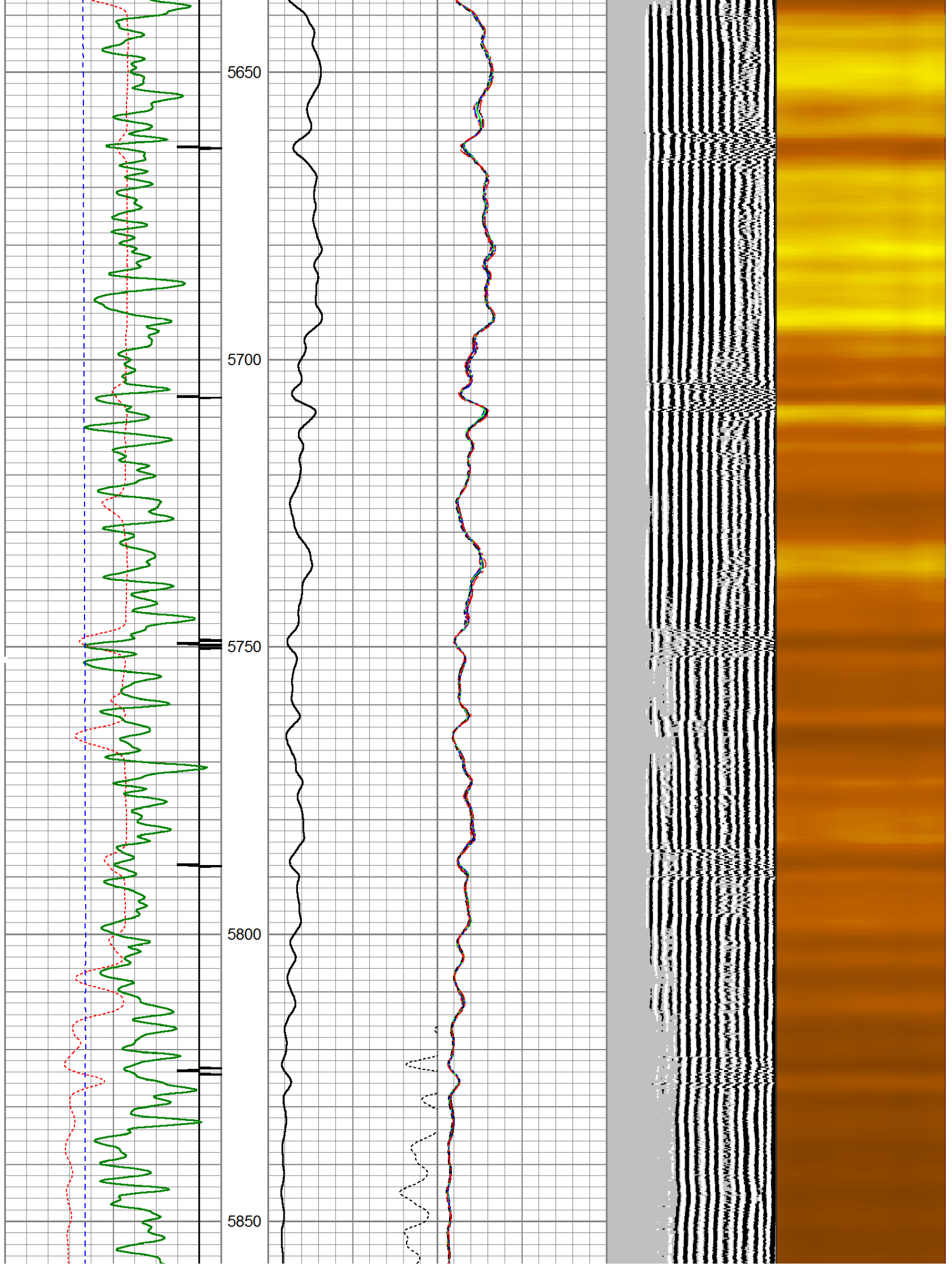


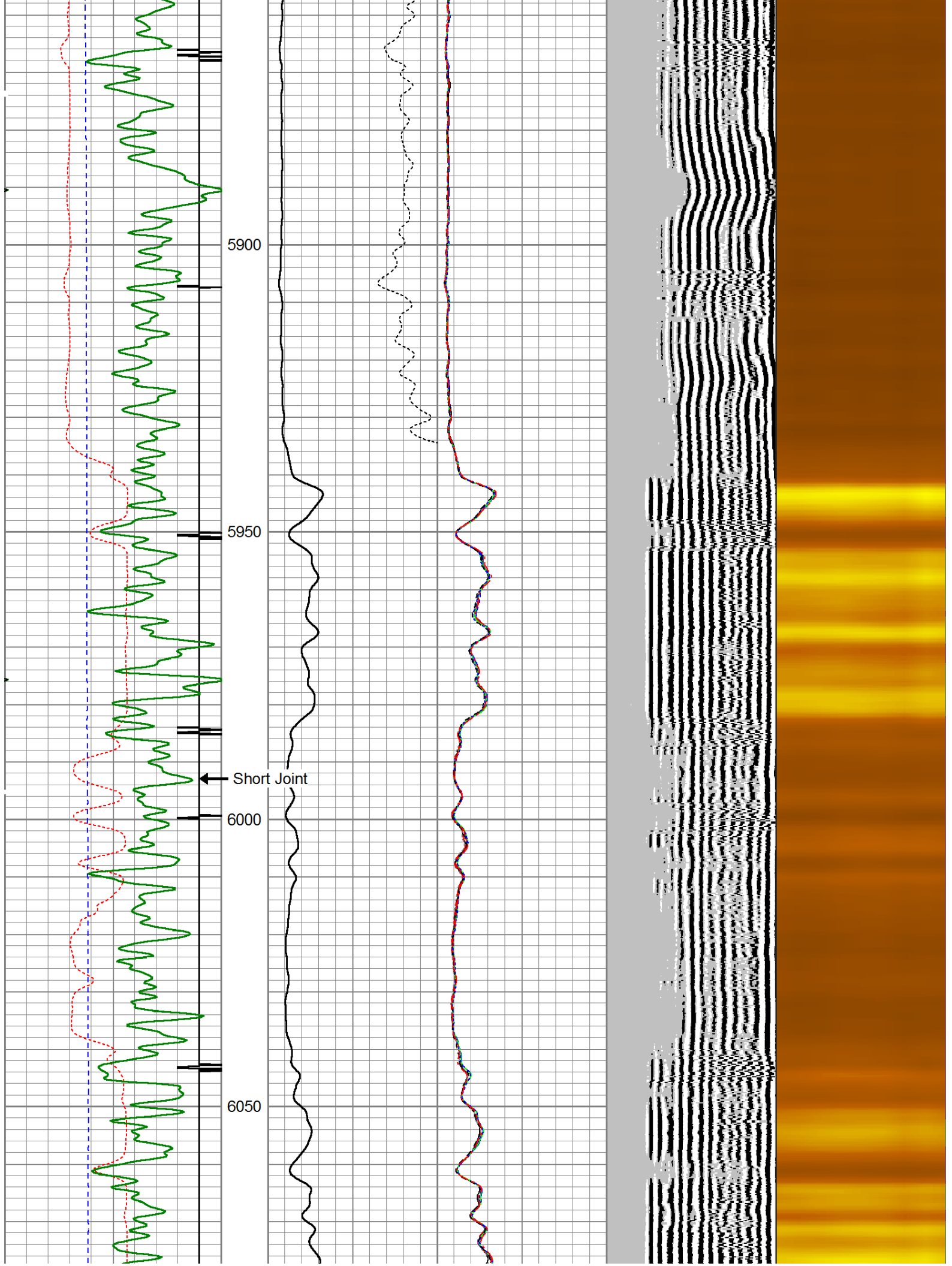


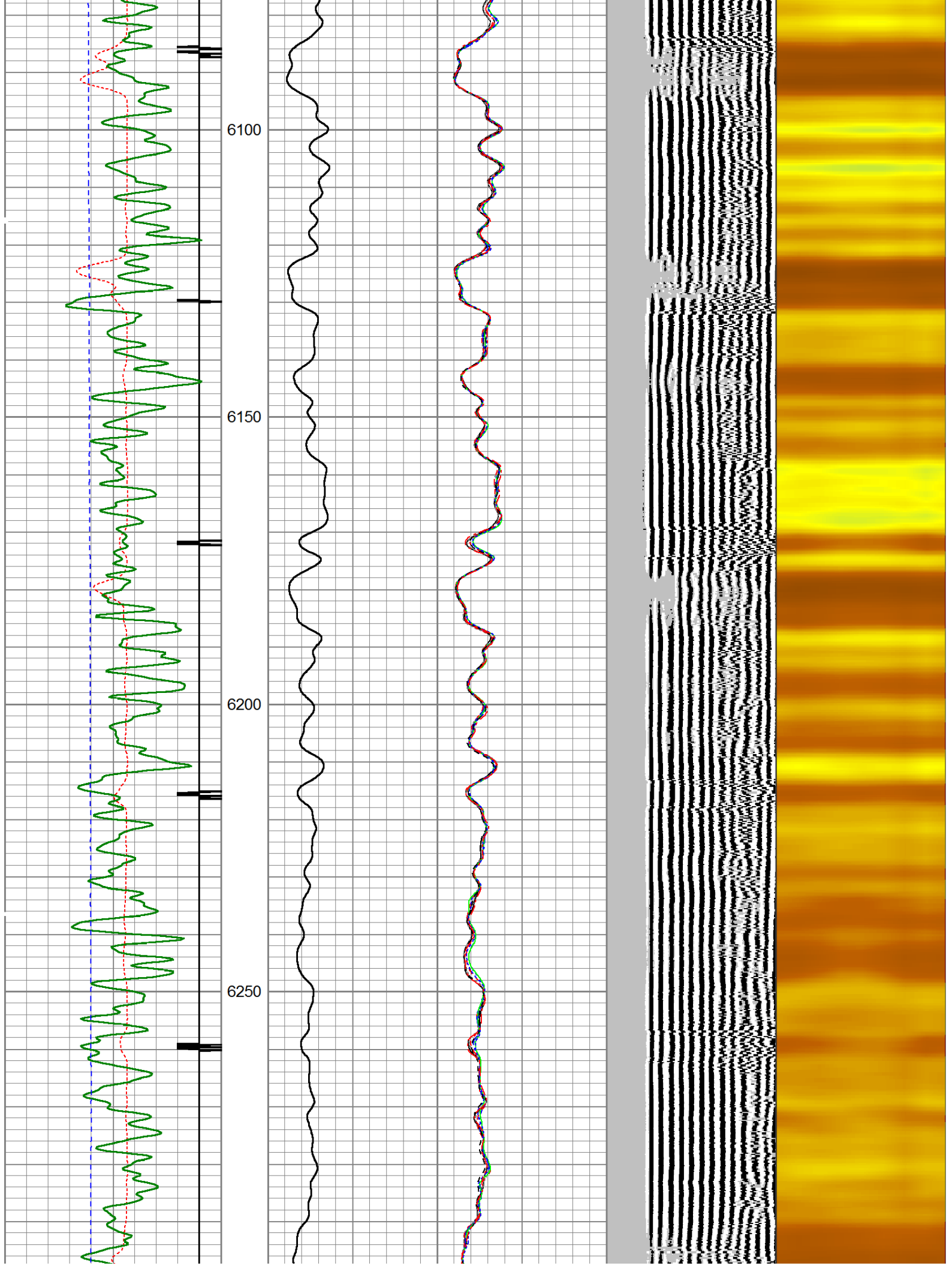


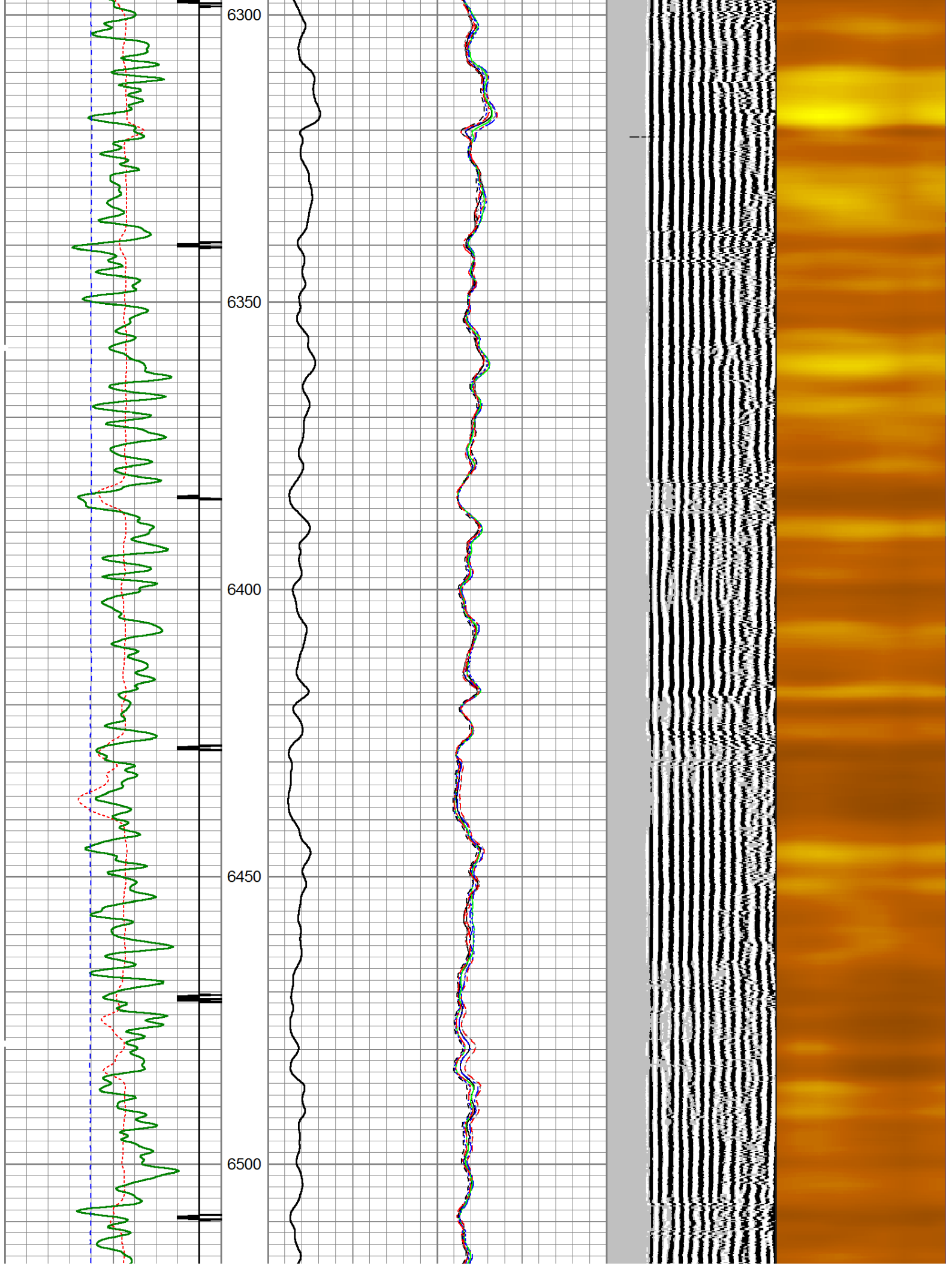


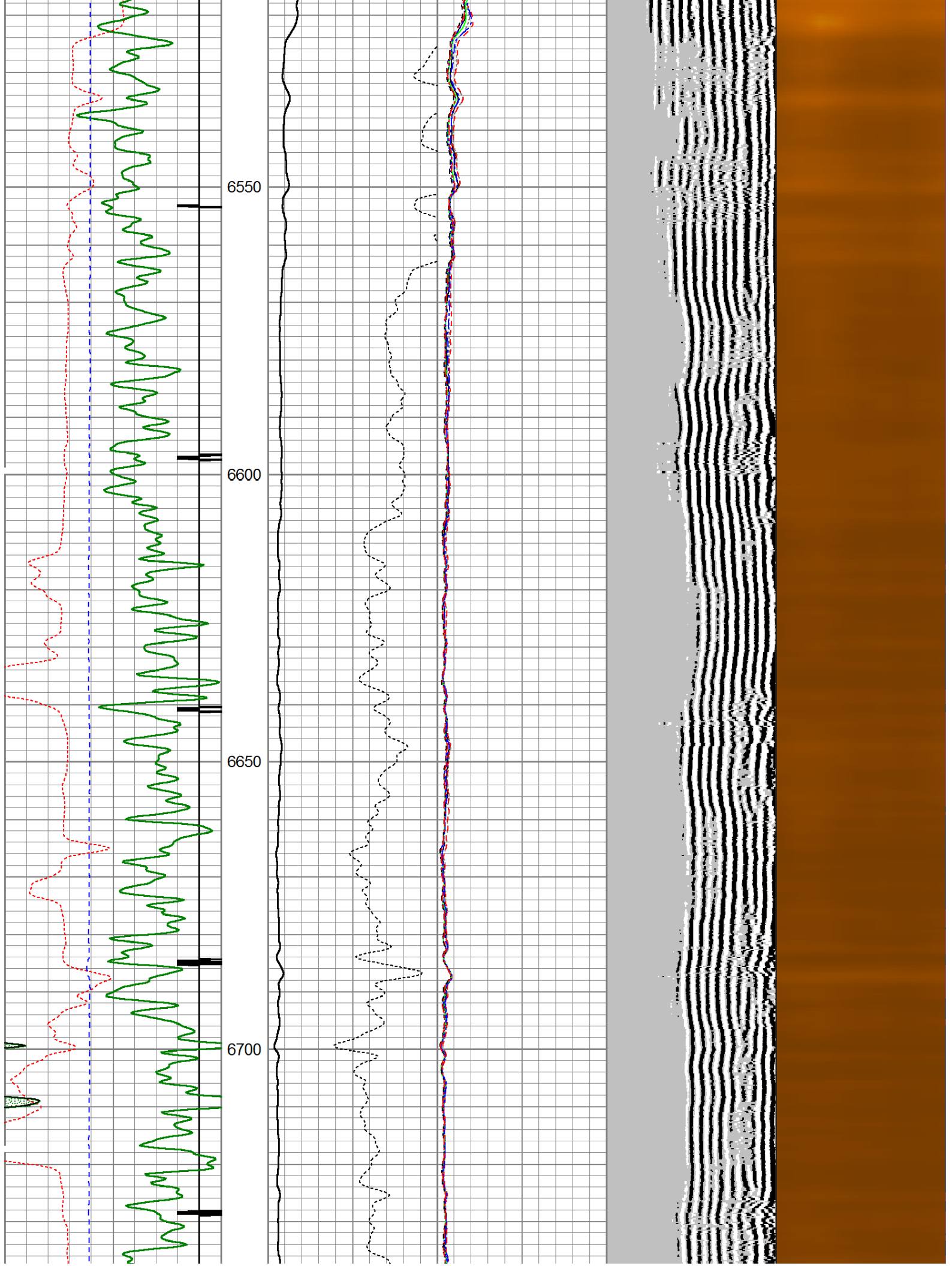


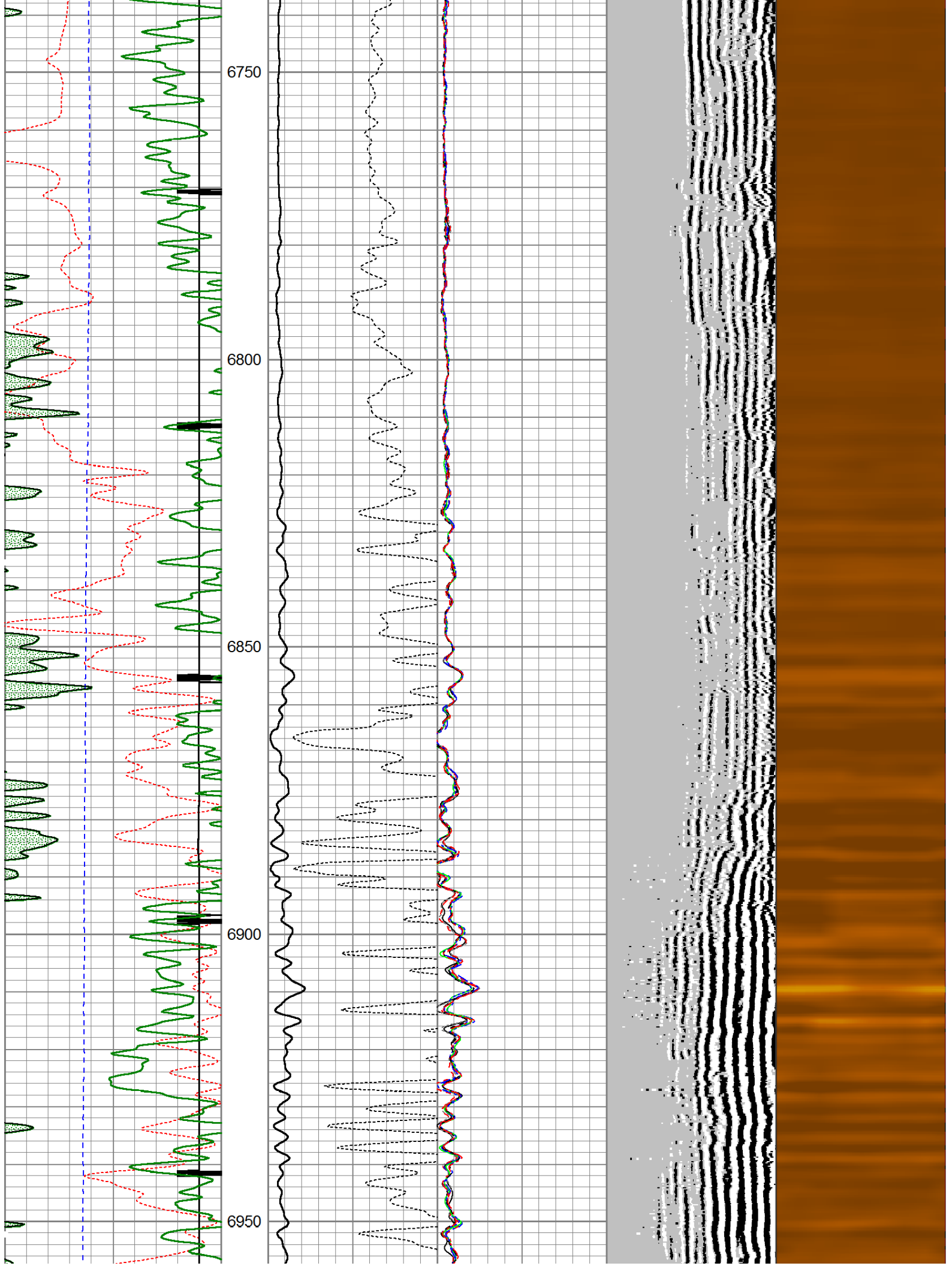


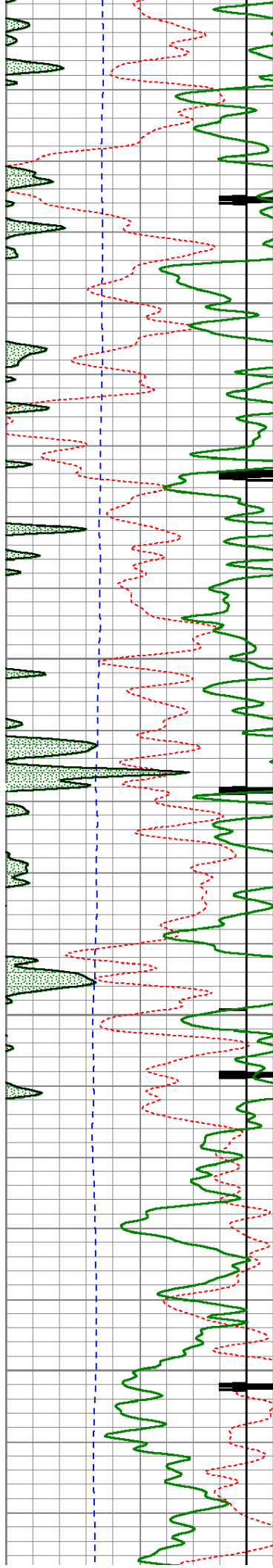










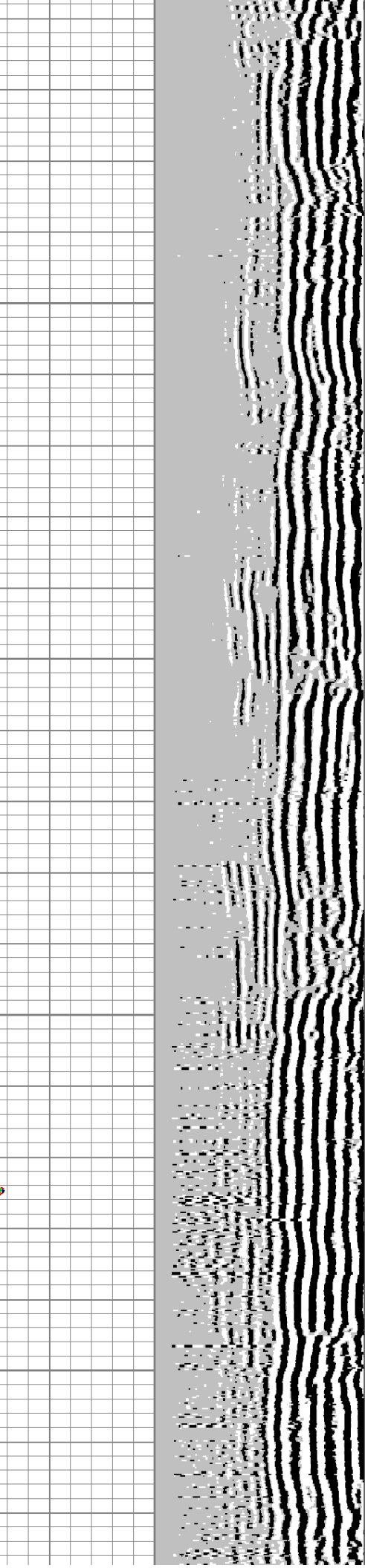
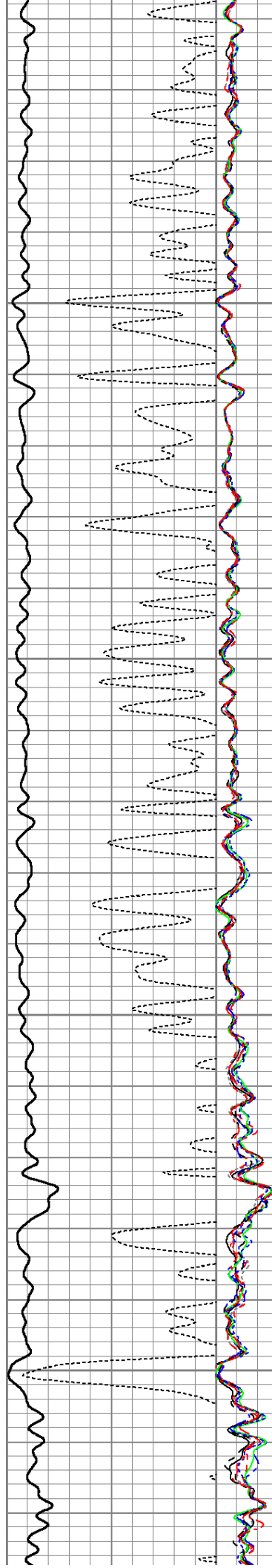


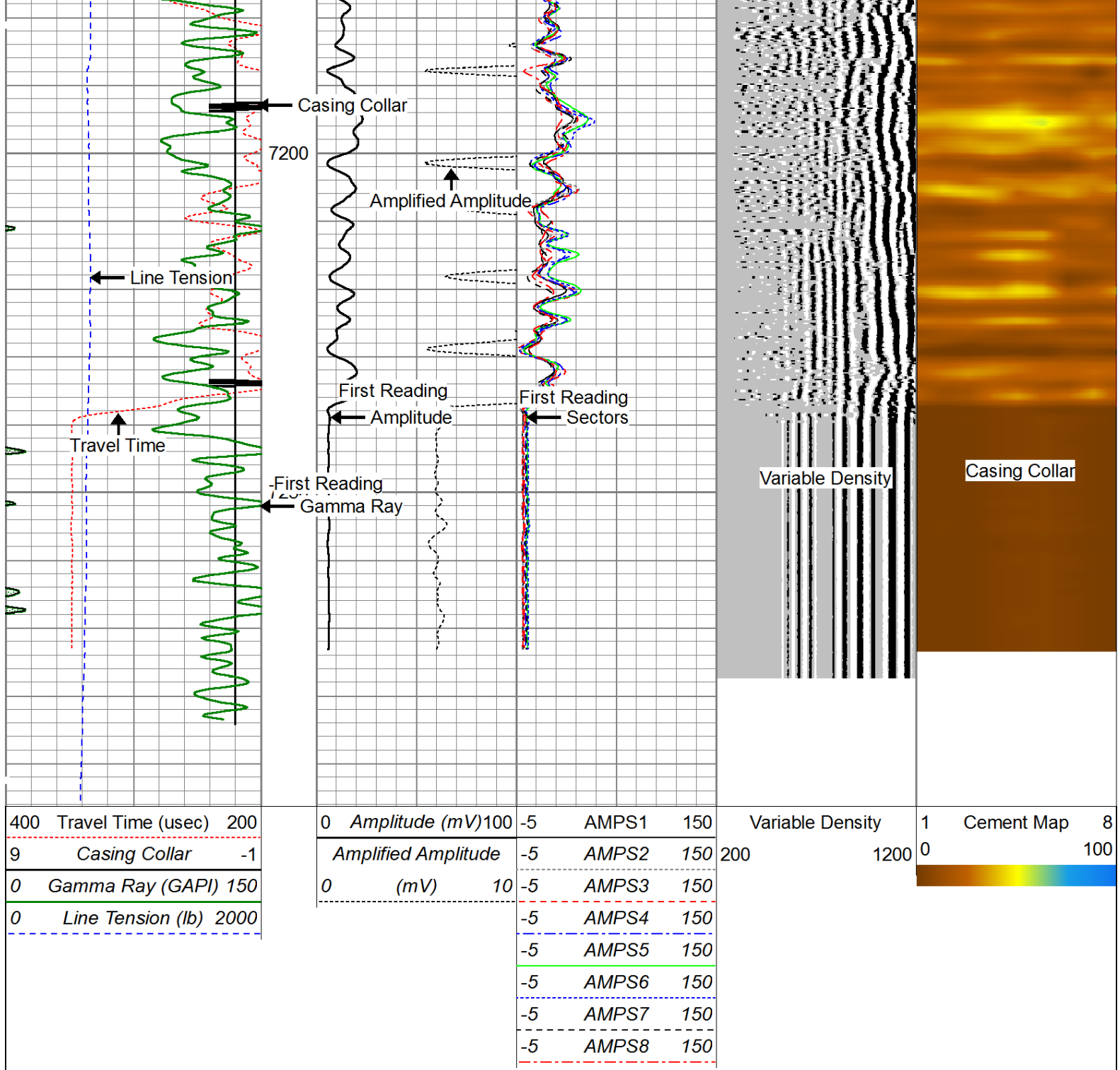
7000

7050

7100

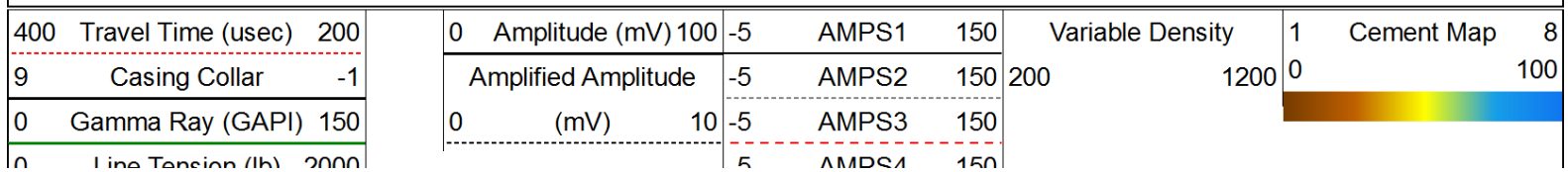
7150





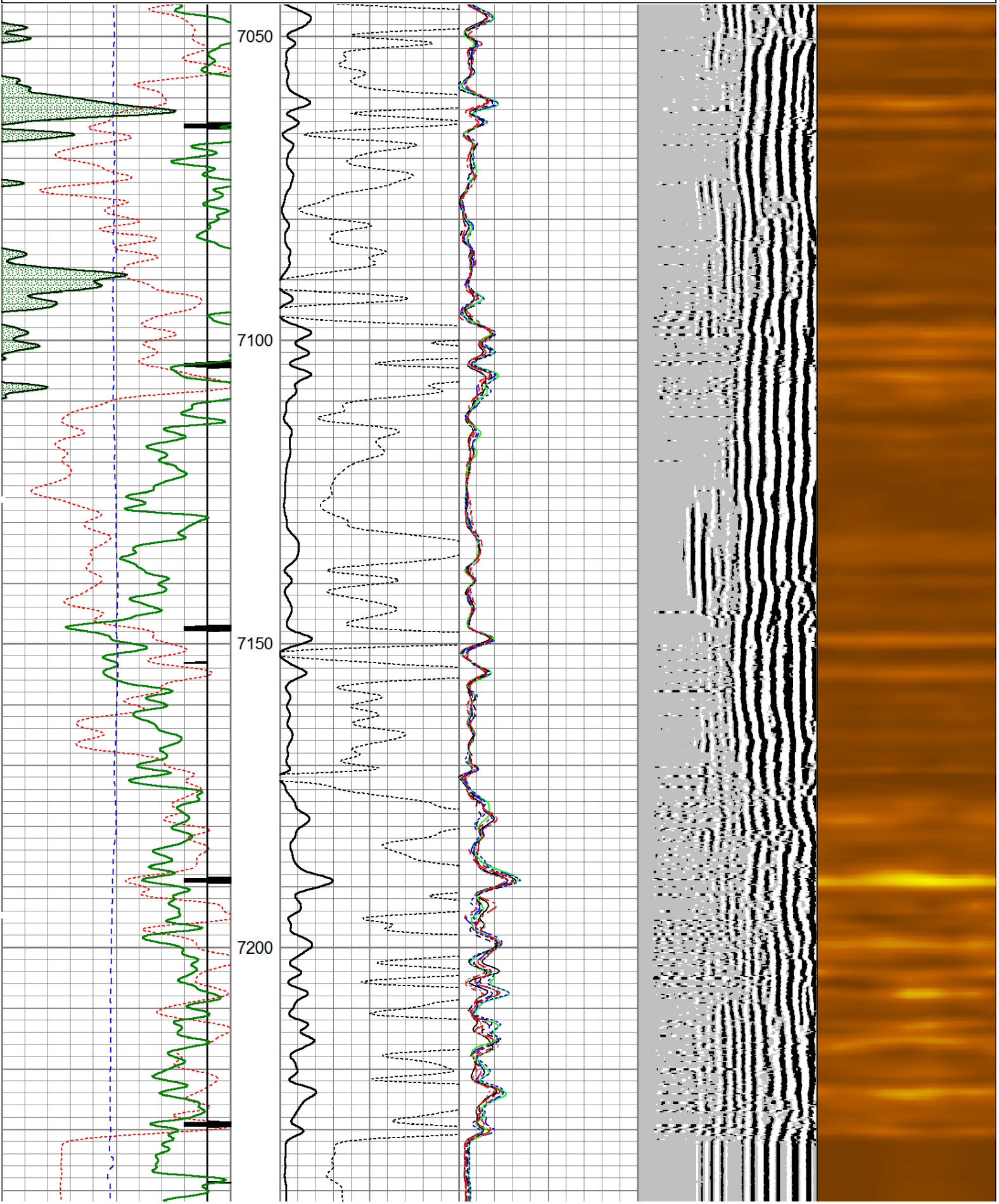
Repeat Pass (1700 PSI)

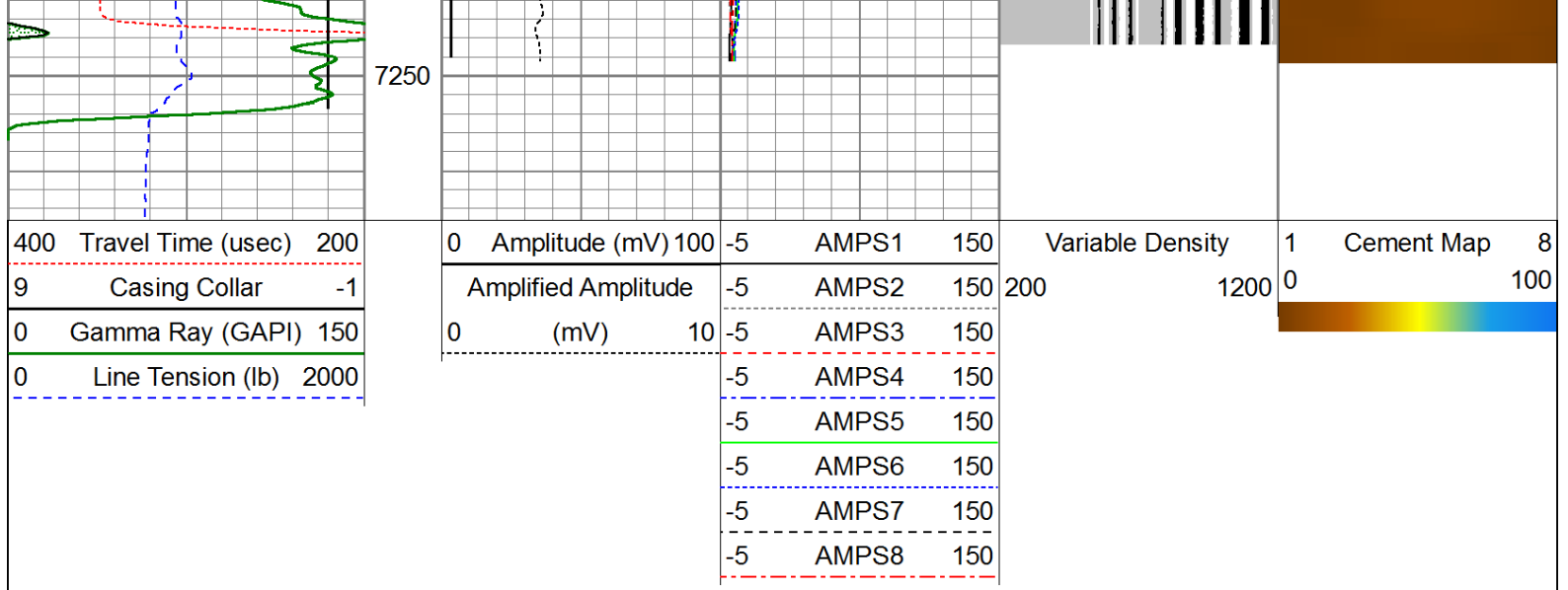
Database File: noble energy loeffler k01-67-1hn.db
 Dataset Pathname: pass5
 Presentation Format: scbl03
 Dataset Creation: Thu Dec 12 13:04:00 2013 by Log 0
 Charted by: Depth in Feet scaled 1:240



Line Version (10/2000)

-5	AMPS4	150
-5	AMPS5	150
-5	AMPS6	150
-5	AMPS7	150
-5	AMPS8	150



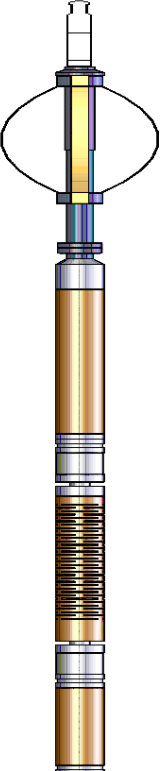



Calibration Report						
Database File:	noble energy loeffler k01-67-1hn.db					
Dataset Pathname:	merge1					
Dataset Creation:	Fri Dec 13 09:22:26 2013					
Gamma Ray Calibration Report						
Serial Number:	110108-Dig					
Tool Model:	Probe275					
Performed:	Fri Nov 29 14:39:10 2013					
Calibrator 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:	101225					
Tool Model:	Probe					
Calibration Casing Diameter:	7.000		in			
Calibration Depth:	479.253		ft			
Master Calibration, performed Thu Dec 12 12:57:51 2013:						
Raw (v)		Calibrated (mv)			Results	
Zero	Cal	Zero	Cal	Gain	Offset	

3'	0.005	0.627	1.000	62.165	85.804	6.554
CAL	-0.030	0.868				
5'	-0.020	0.605	1.000	62.165	97.820	2.974
SUM						
S1	-0.004	0.719	0.000	100.000	138.334	0.496
S2	-0.013	0.650	0.000	100.000	150.888	1.940
S3	-0.016	0.574	0.000	100.000	169.579	2.656
S4	-0.018	0.528	0.000	100.000	183.090	3.306
S5	-0.016	0.565	0.000	100.000	172.115	2.778
S6	-0.018	0.653	0.000	100.000	149.100	2.610
S7	-0.012	0.735	0.000	100.000	133.769	1.617
S8	-0.015	0.705	0.000	100.000	138.913	2.093

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	-0.030	0.868	1.000	0.000

Air Zero Calibration, performed Thu Dec 05 13:36:03 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
			Probe275 2.75" Centralizer	2.88	2.75	20.00
WVF3FT	19.72		RBT-Probe (101225) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
WVFCAL	19.72					
WVFS1	19.72					
WVFS2	19.72					
WVFS3	19.72					
WVFS4	19.72					

WVFS5 WVFS6 WVFS7 WVFS8 WVF5FT	19.72 19.72 19.72 19.72 18.72		Probe275 2.75" Centralizer	2.88	2.75	20.00			
CCL TEMP GR	11.75 10.88 10.42		GR-Probe275 (110108-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00			
			Probe275 2.75" Centralizer	2.88	2.75	20.00			
			A Sinker Bar	5.00	2.75	50.00			
Dataset: noble energy loeffler k01-67-1hn.db: field/well/run1/merge1 Total Length: 28.16 ft Total Weight: 267.00 lb O.D.: 2.75 in									