



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

Company		Noble Energy	
Well		Crow Creek State AC36-75-1HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-37421	
SEC 36 TWP 7N RGE 63W		TEMP	
Permanent Datum		Ground Level	
Log Measured From		24' Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4847'	
Other Services		Elevation	
K.B. 4871'		D.F. 4870'	
G.L. 4847'			
Date		December 14, 2013	
Run Number		1	
Depth Driller		11240'	
Depth Logger		7015'	
Bottom Logged Interval		7002'	
Top Log Interval		Surface	
Open Hole Size		8.125	
Type Fluid		Fresh Water	
Density / Viscosity		8.33	
Max. Recorded Temp.		220 Deg F	
Estimated Cement Top		890'	
Time Well Ready		12:55	
Time Logger on Bottom		13:38'	
Equipment Number		13033	
Location		Brighton	
Recorded By		C. Rail	
Witnessed By		Bill Mansfield	
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 24' KB.

Main Pass & Repeat Pass Logged with 0 PSI

Estimated Top of Cement @ 890'

Short Joint @ 5797' To 5810'

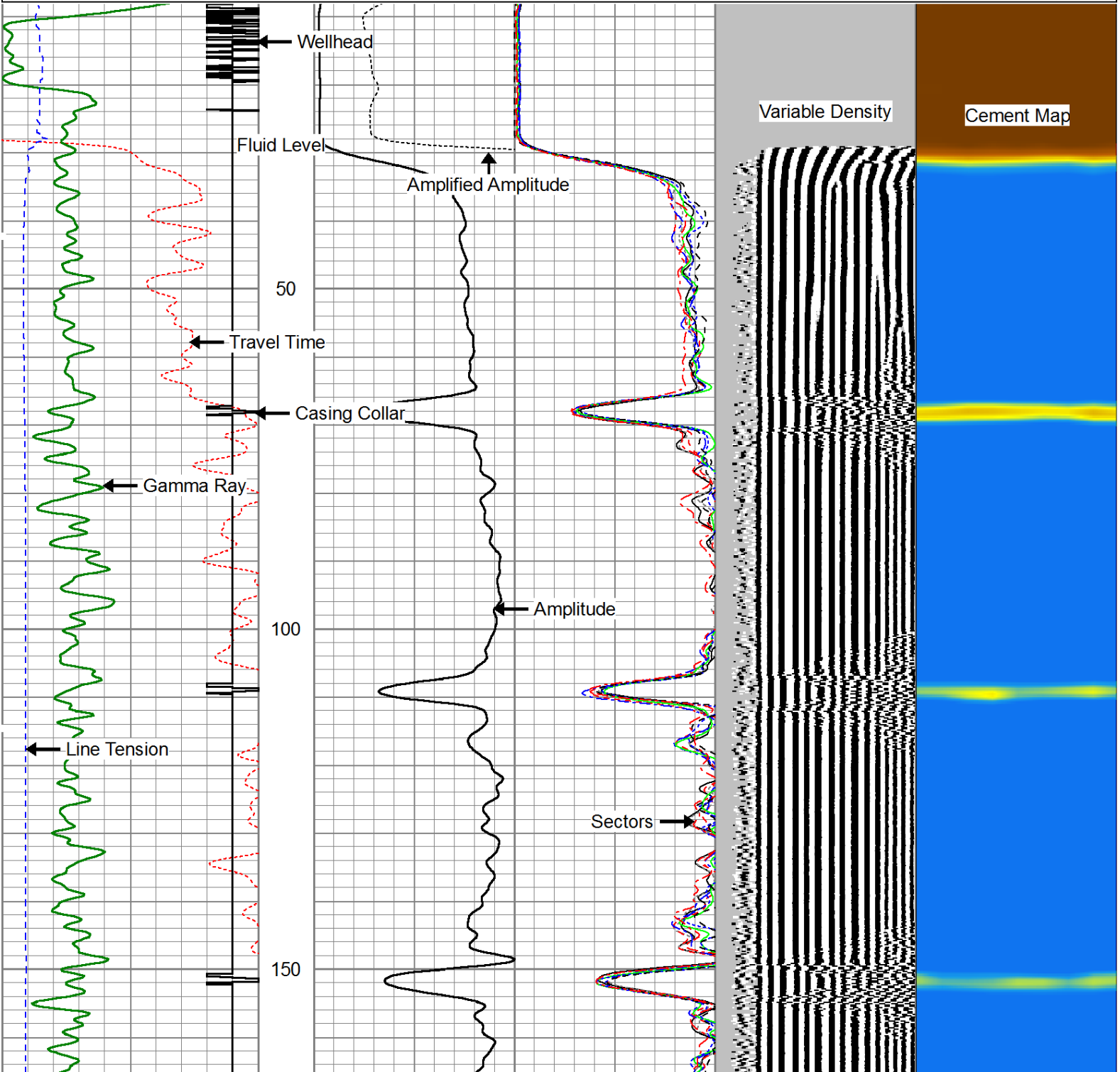
Thank you for using Allied Wireline.
(303)659-4609

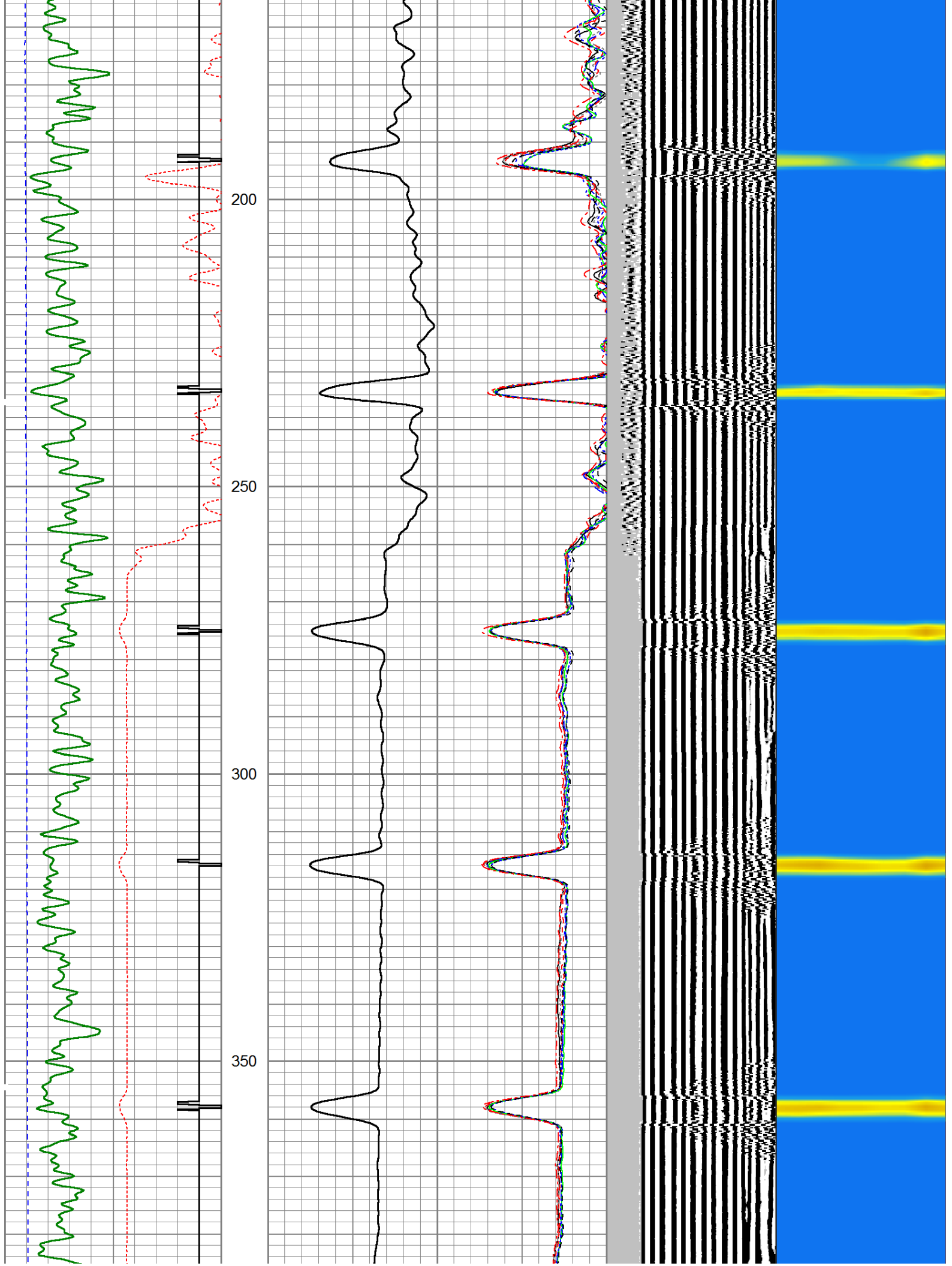


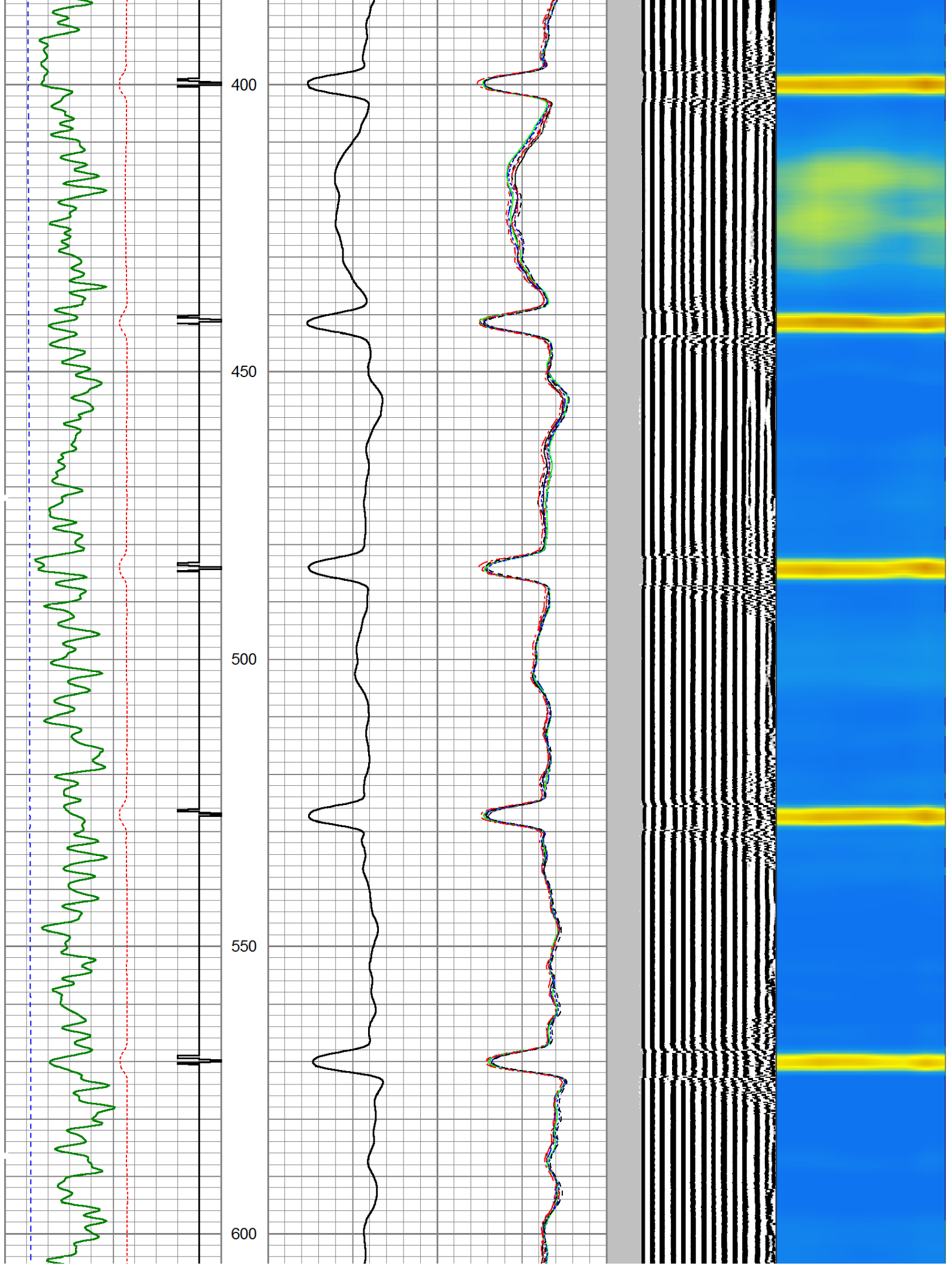
Main Pass (0 PSI)

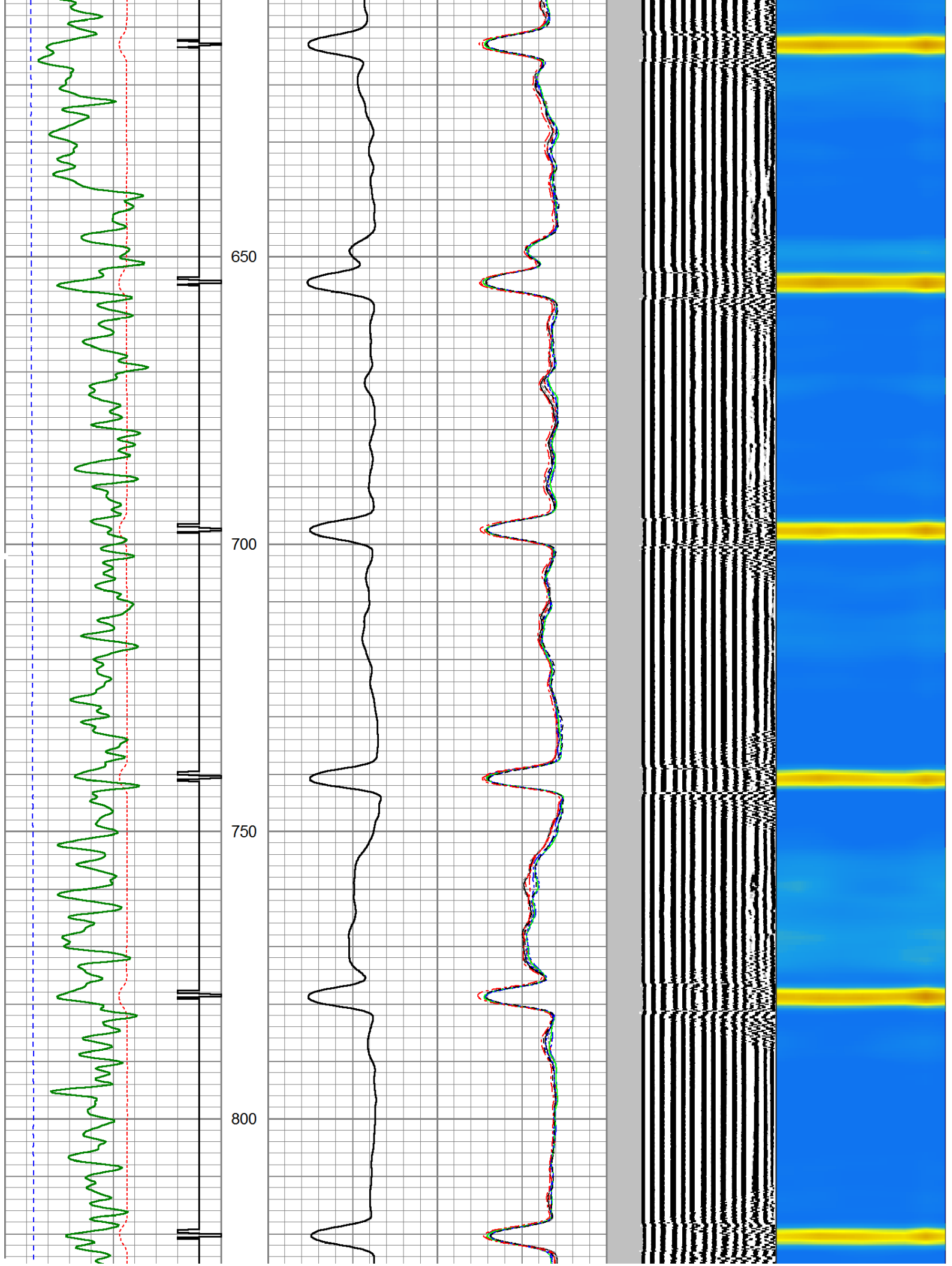
Database File: noble energy crow creek state ac36-75-1hn_rcbl.db
Dataset Pathname: pass7.1
Presentation Format: scbl03
Dataset Creation: Sat Dec 14 16:19:44 2013 by Calc 0
Charted by: Depth in Feet scaled 1:240

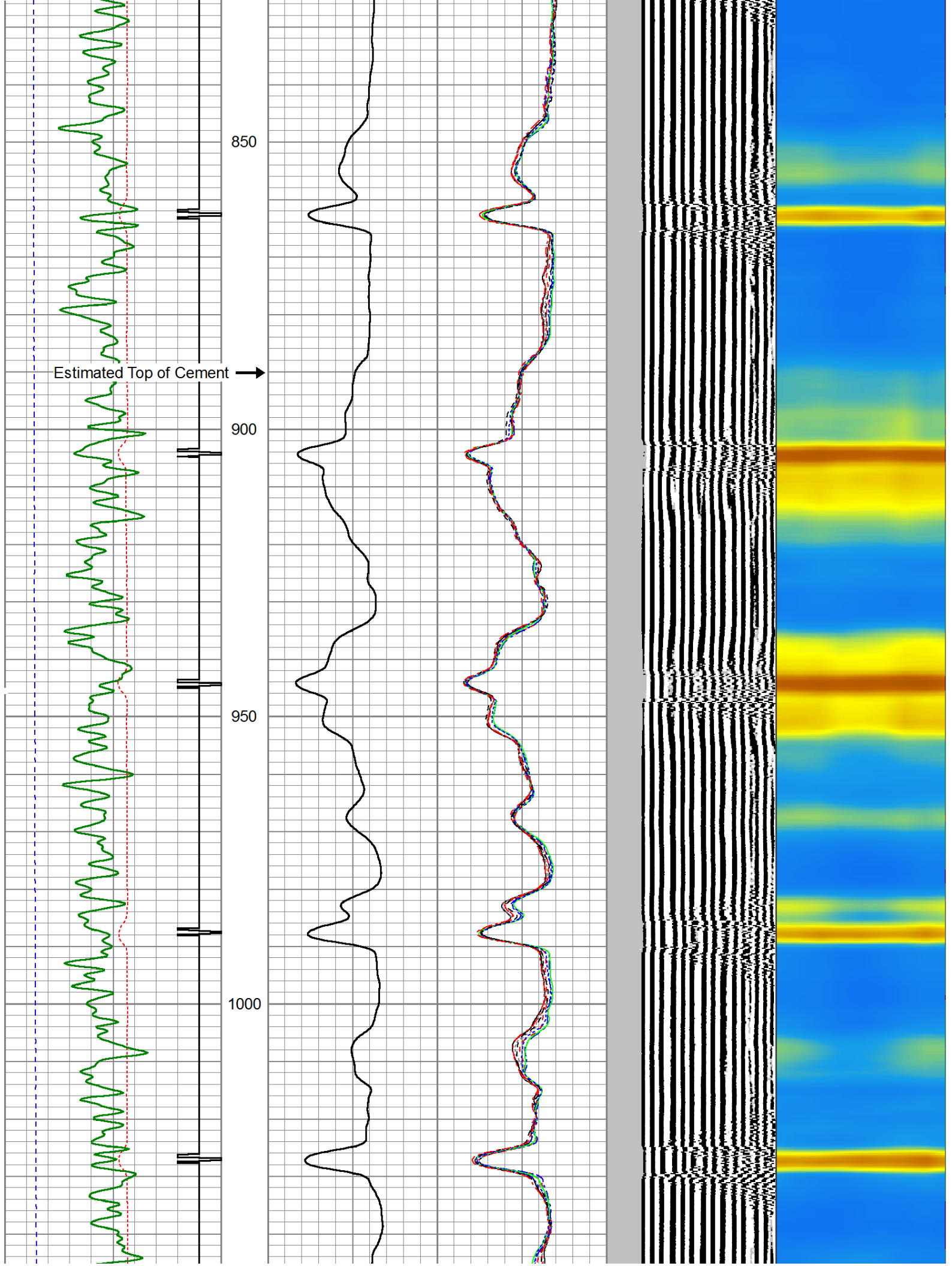
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150		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

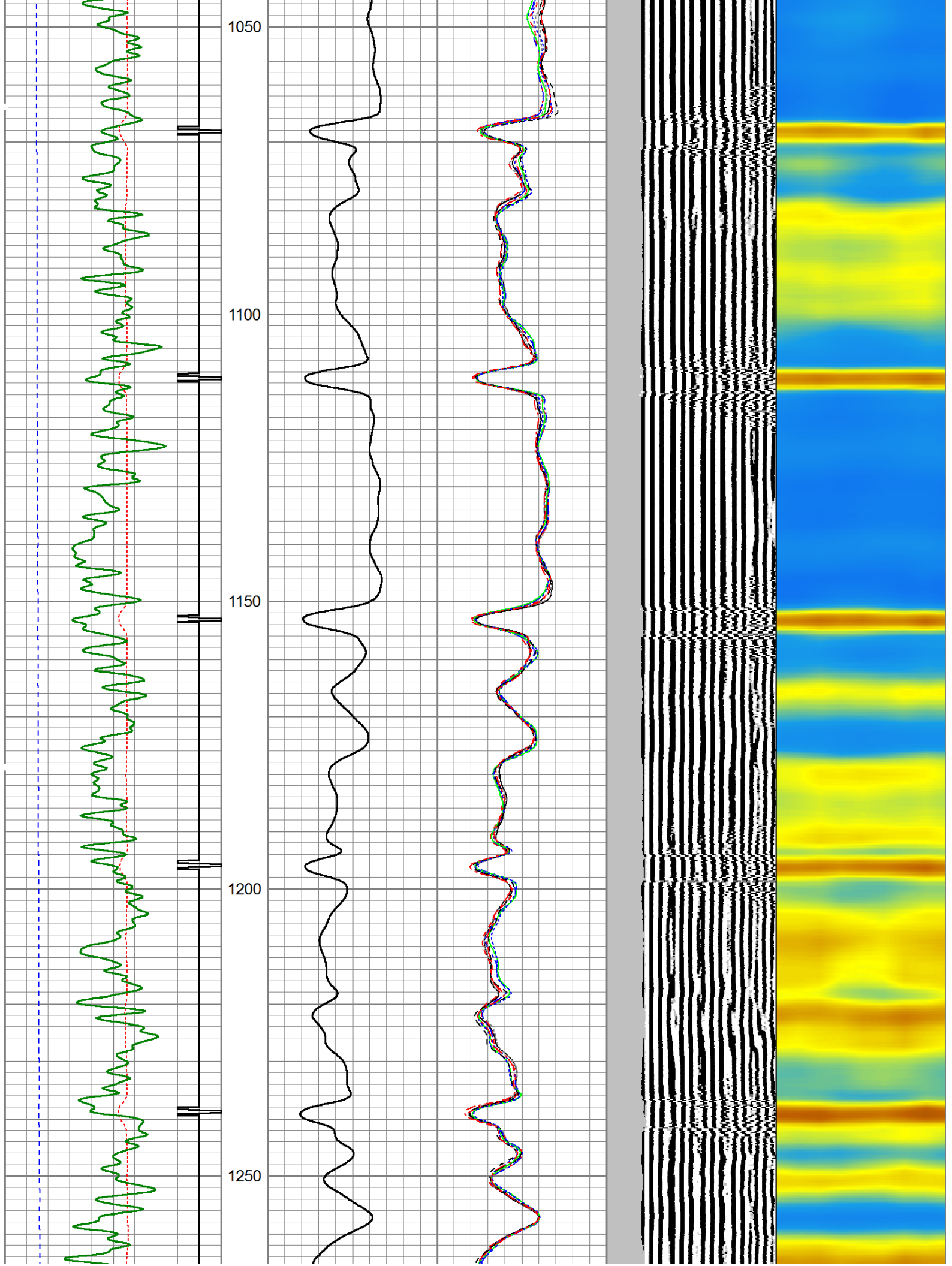


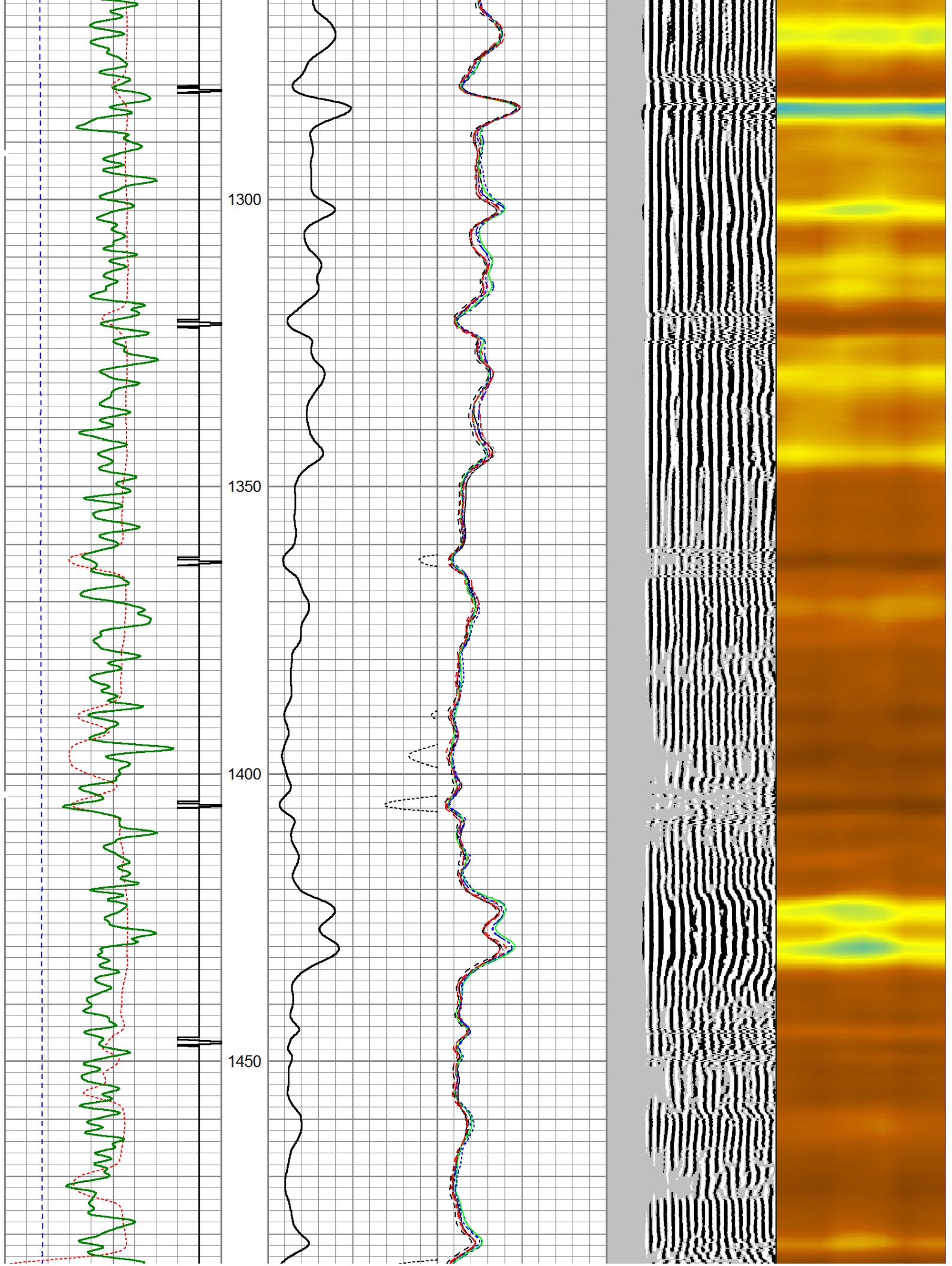


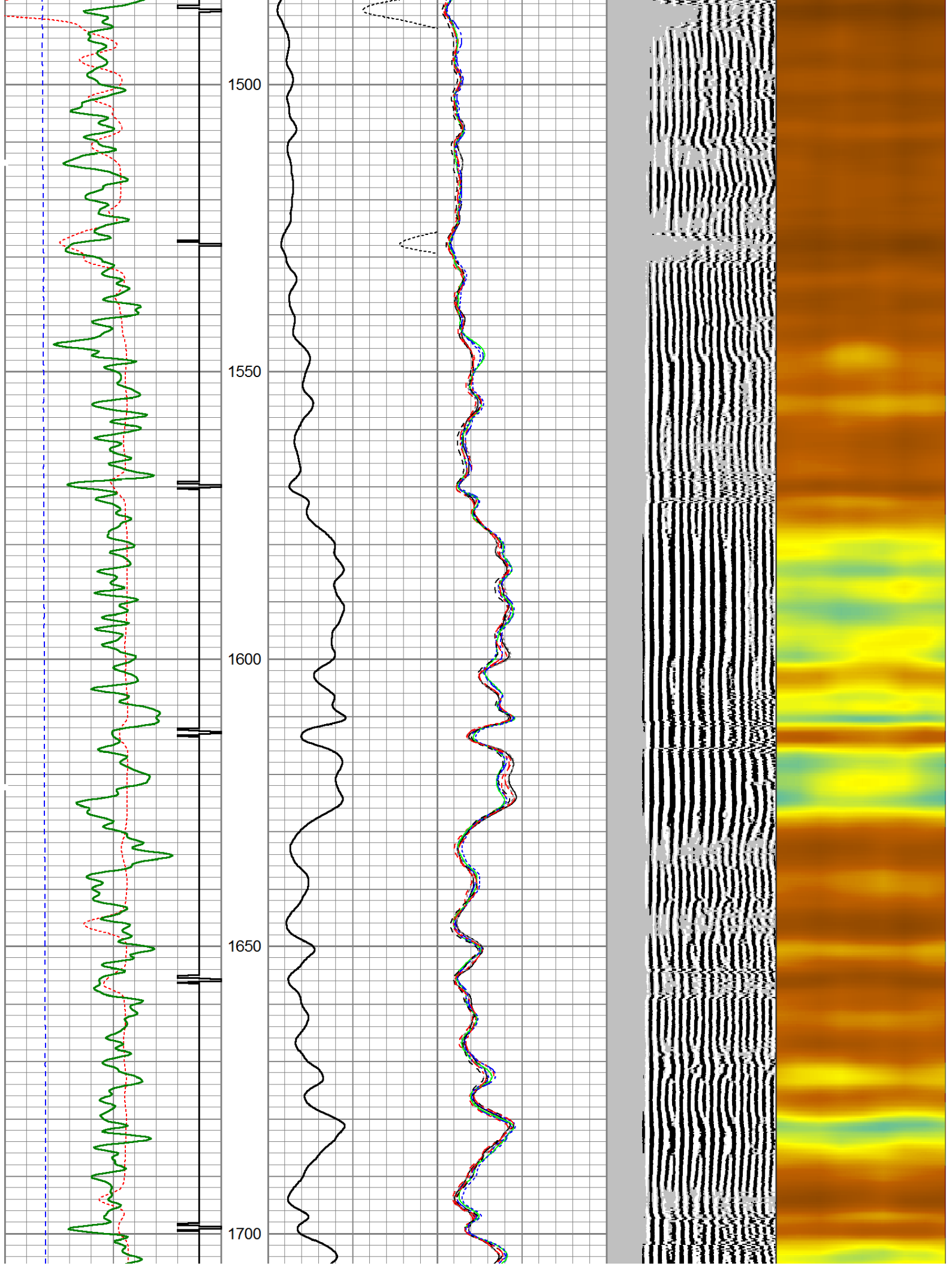


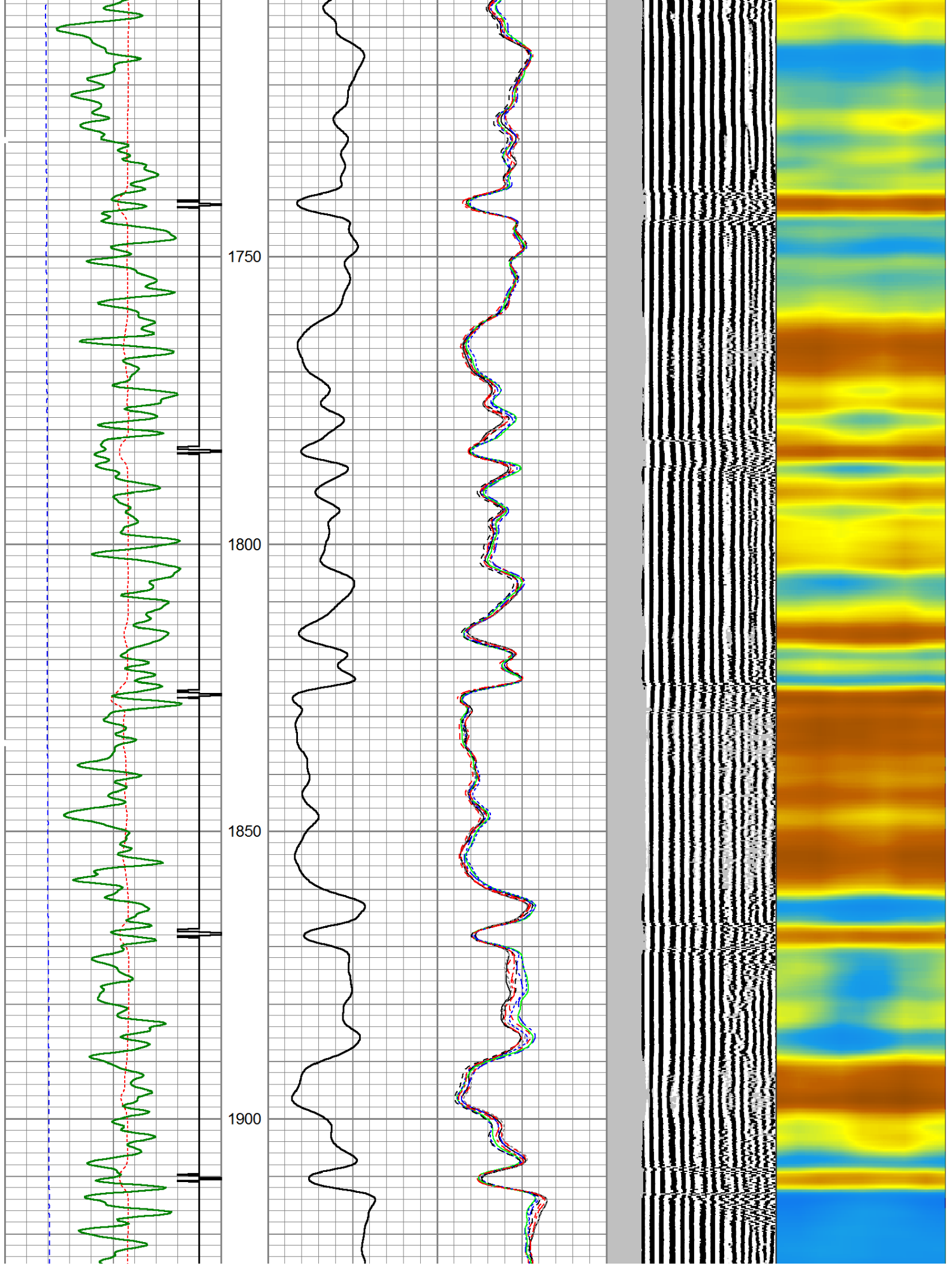


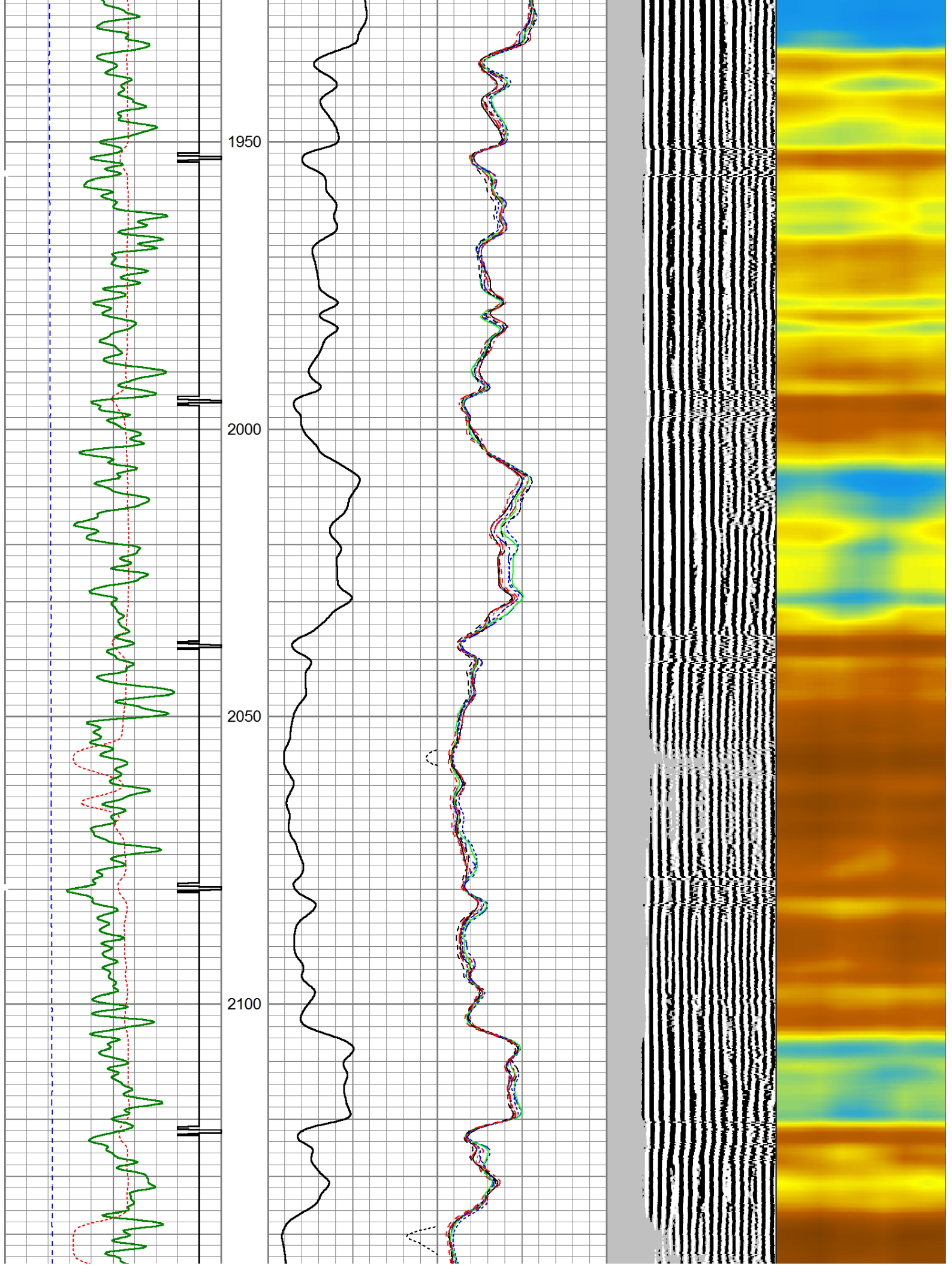


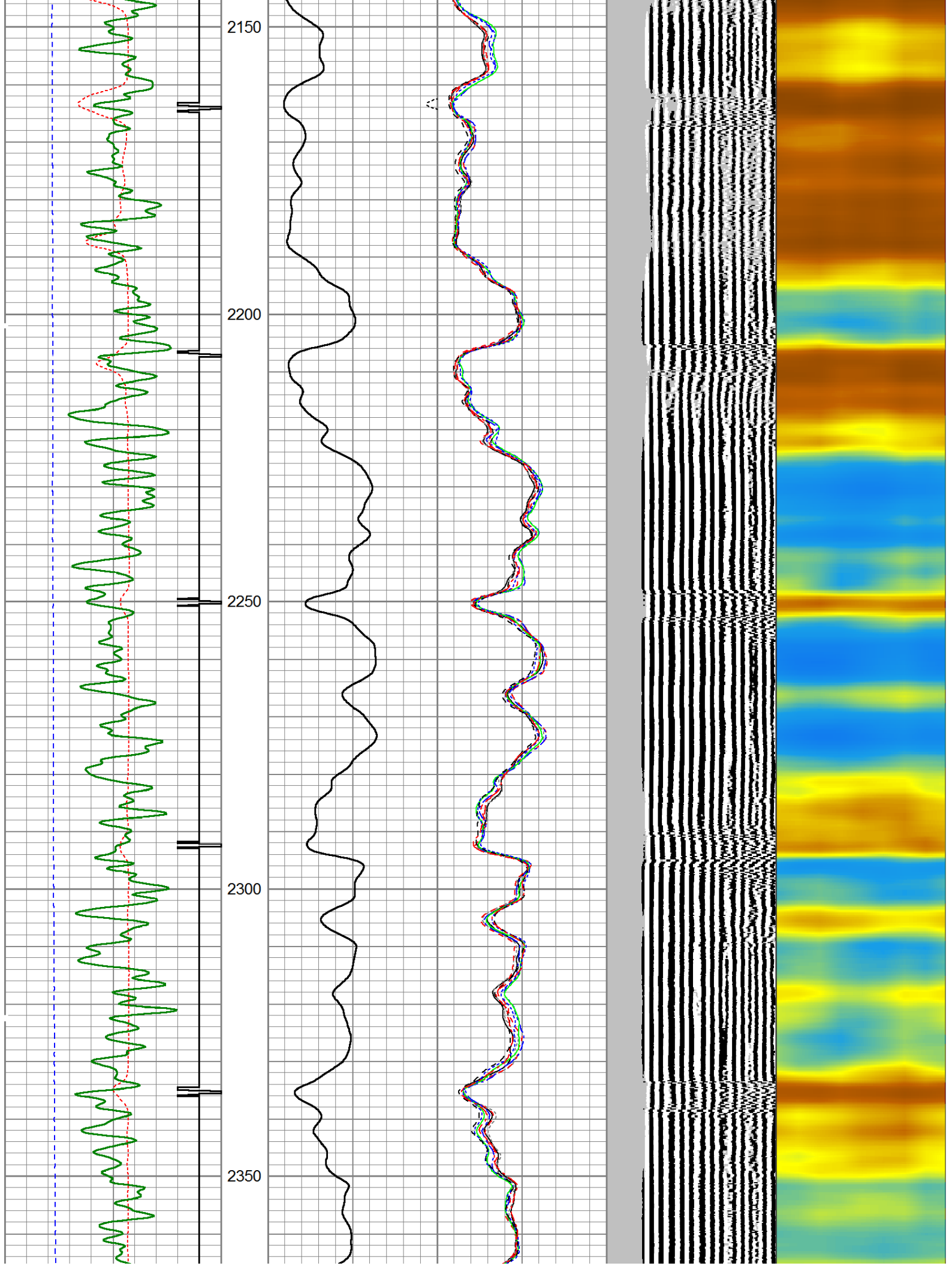


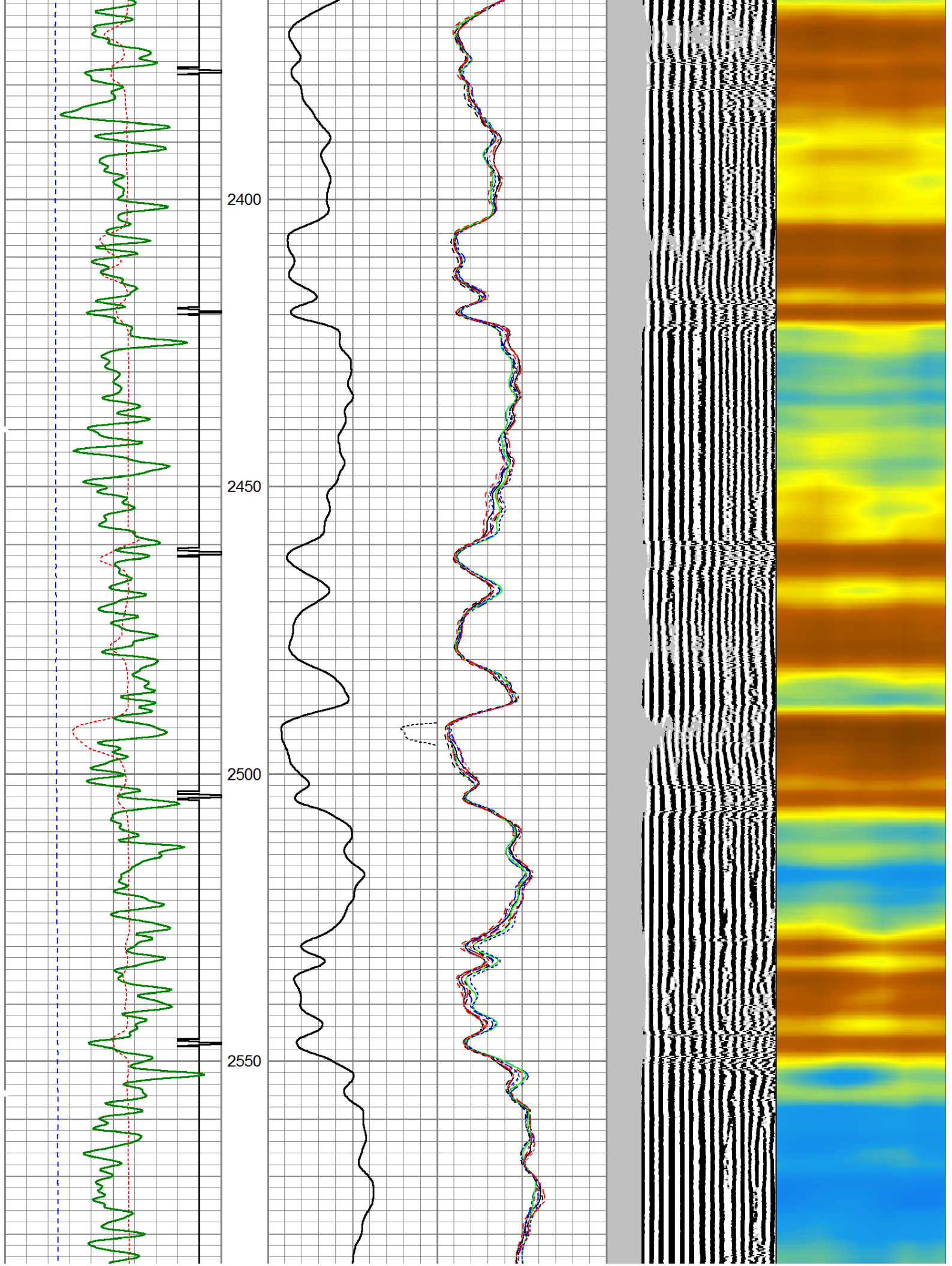


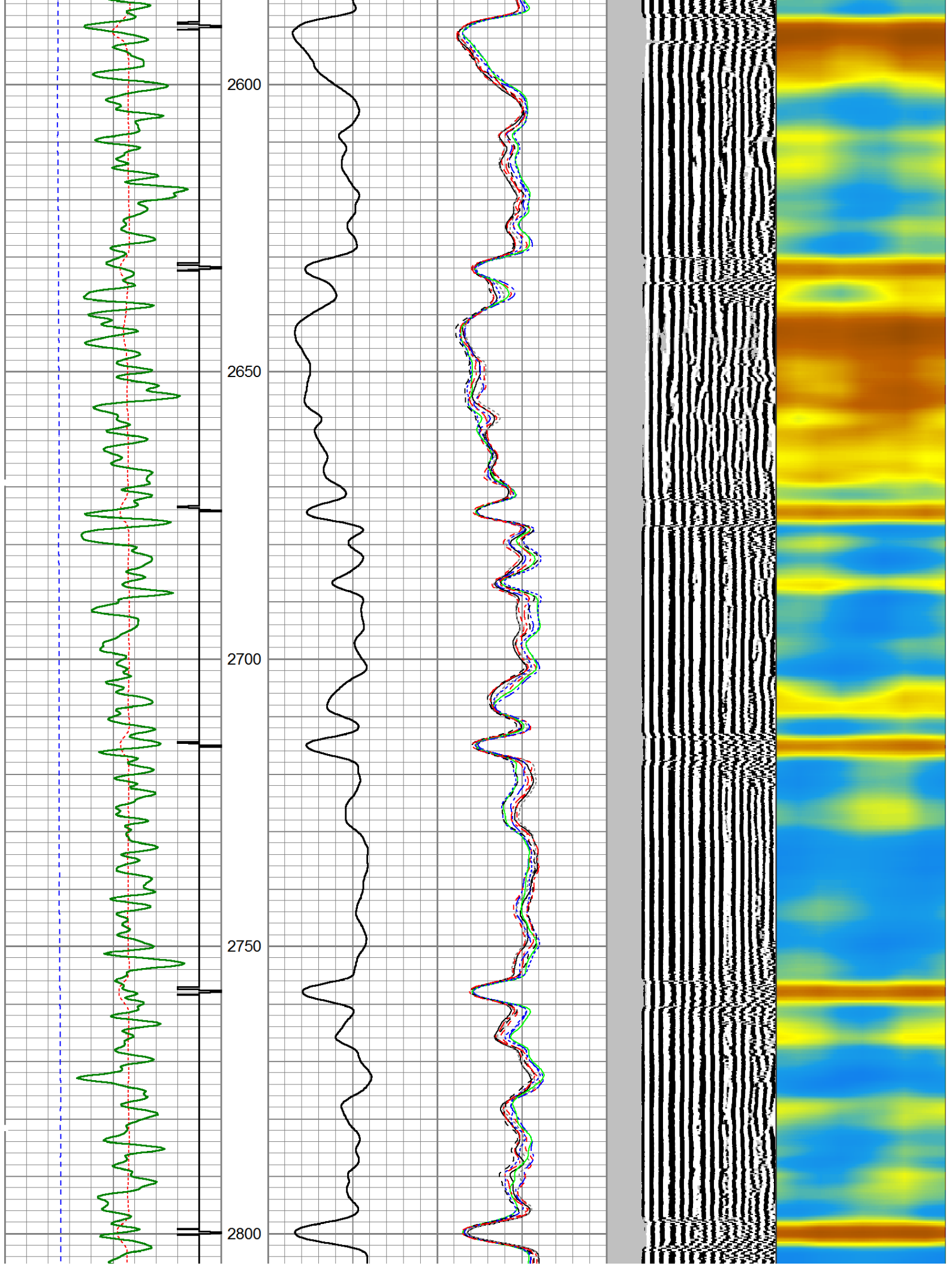


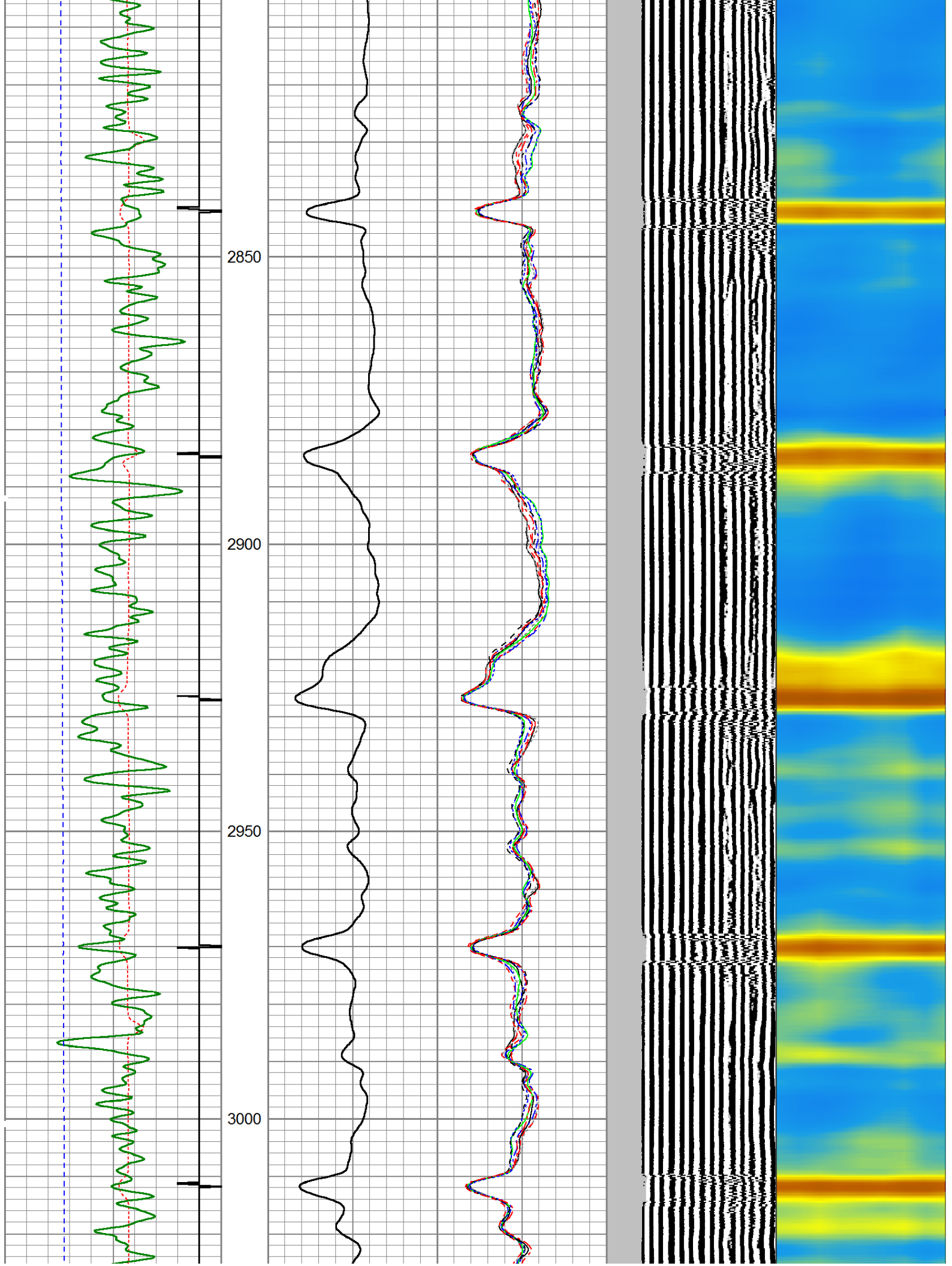


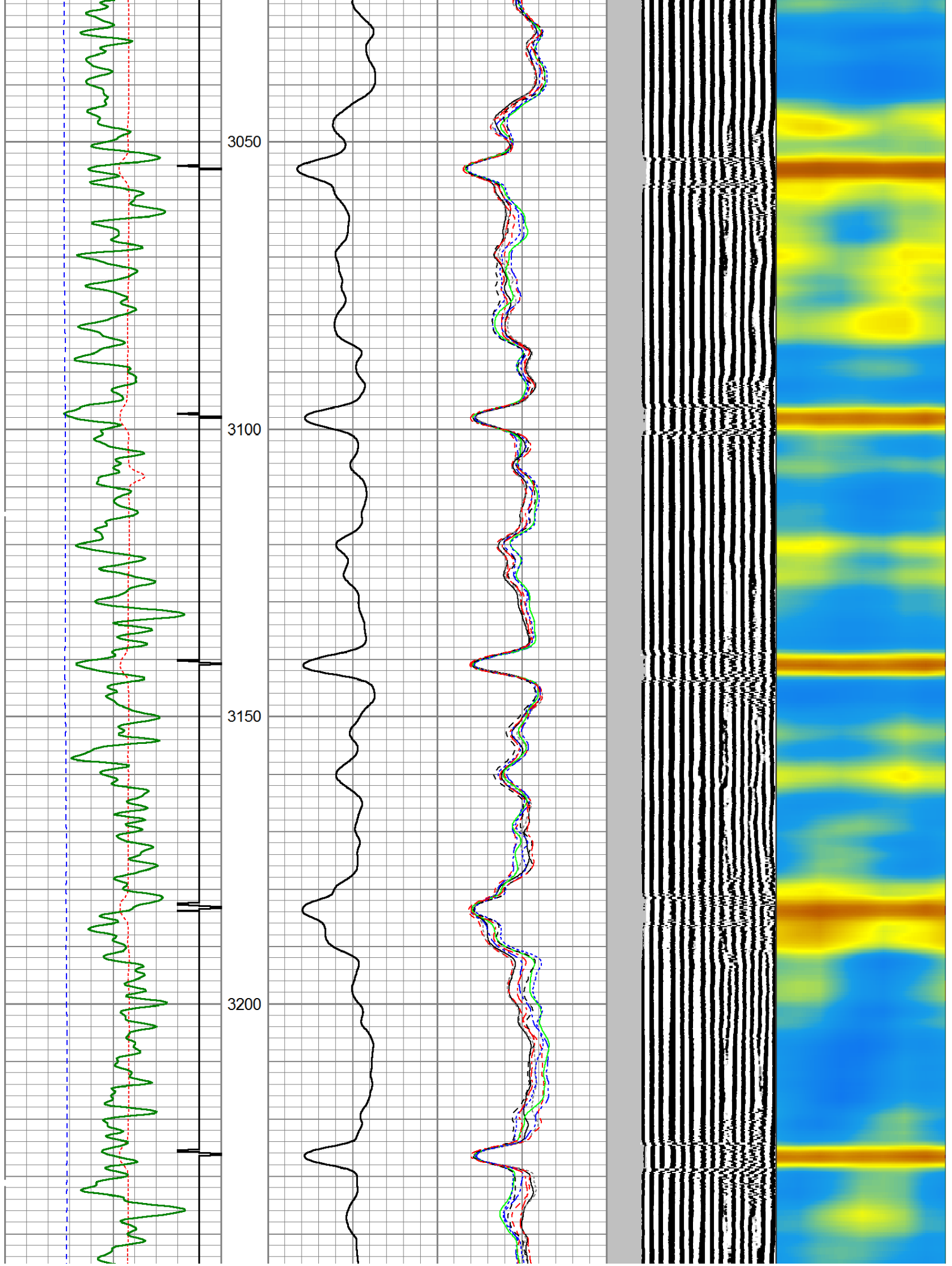


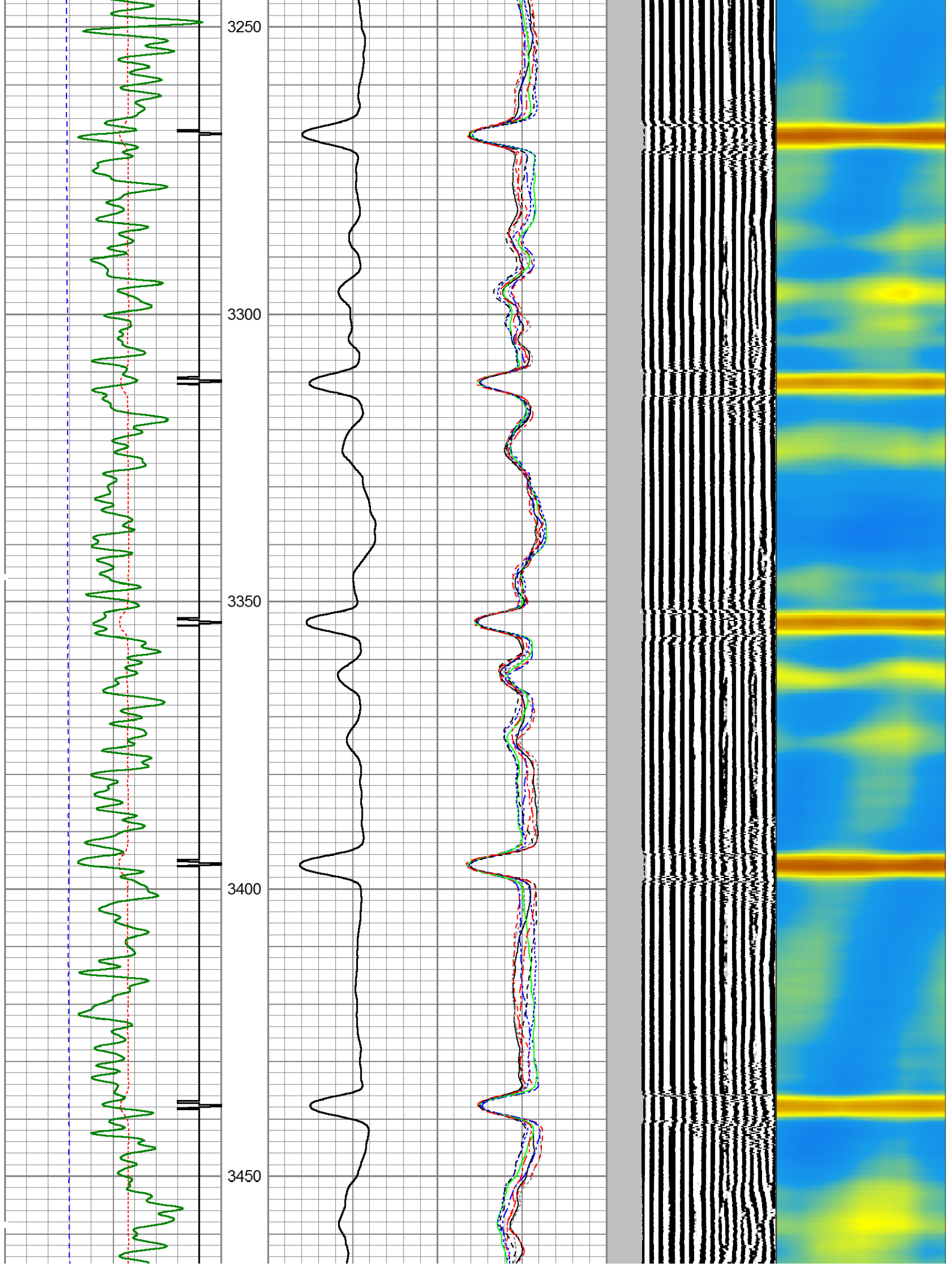


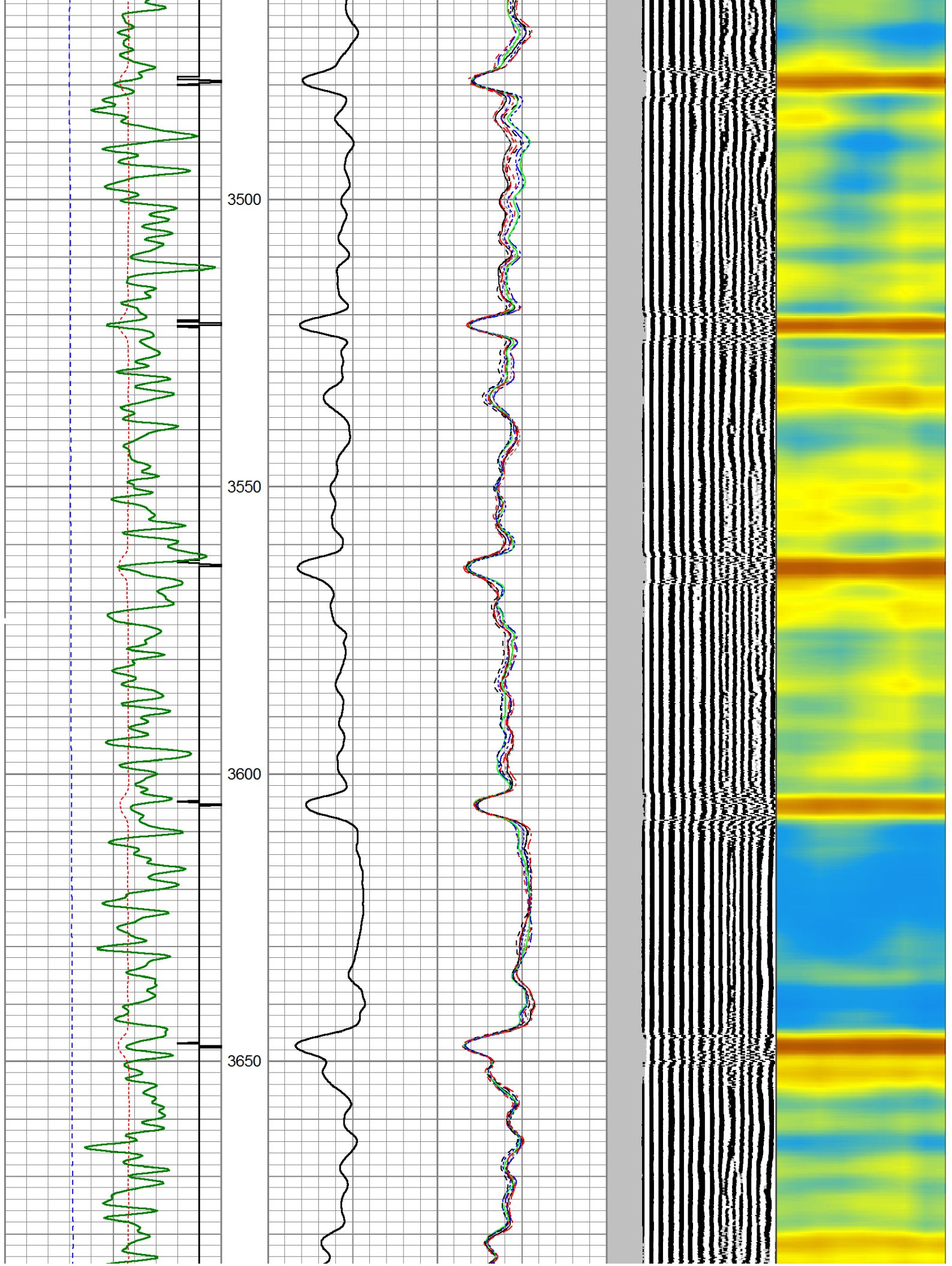


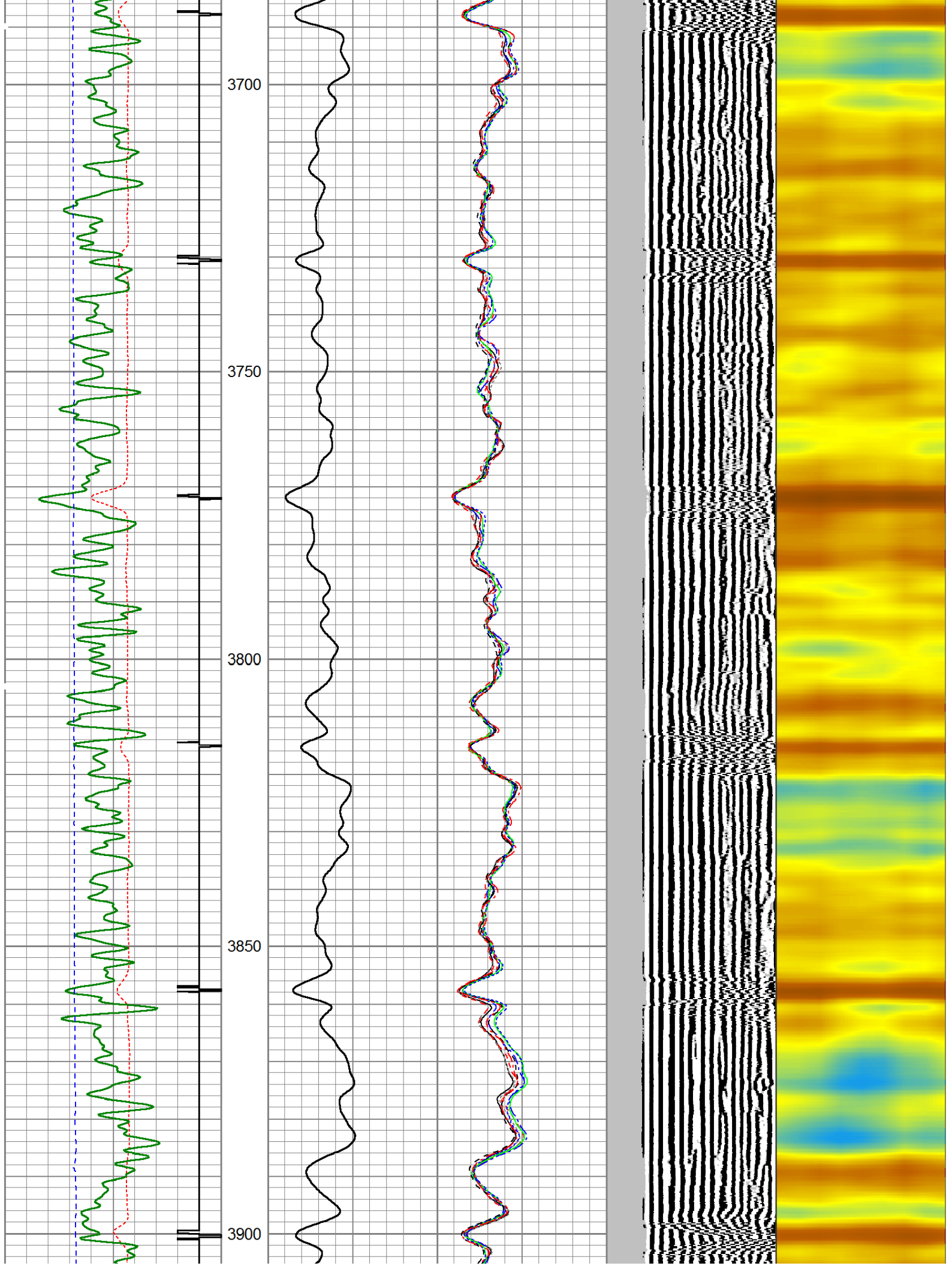


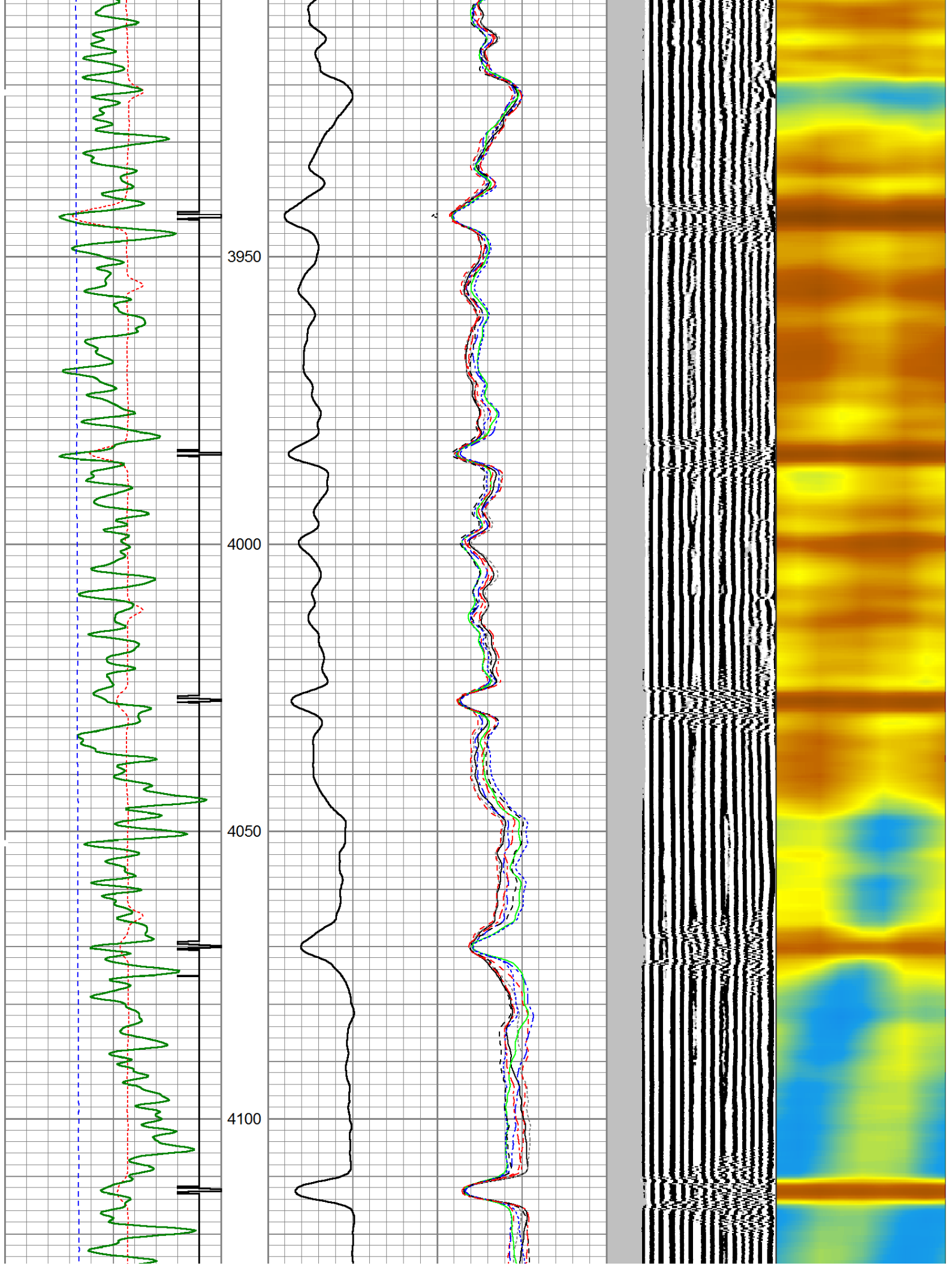


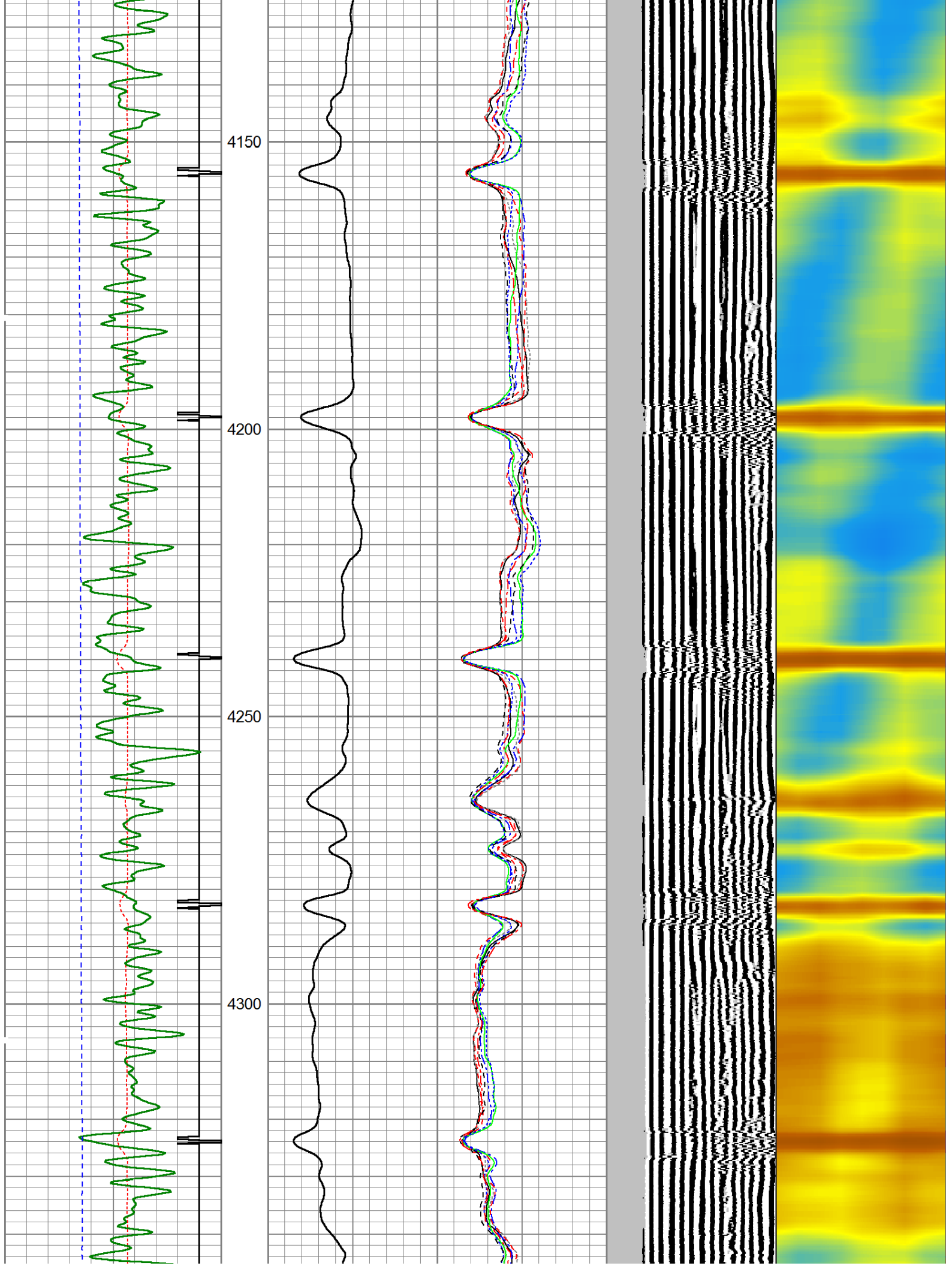


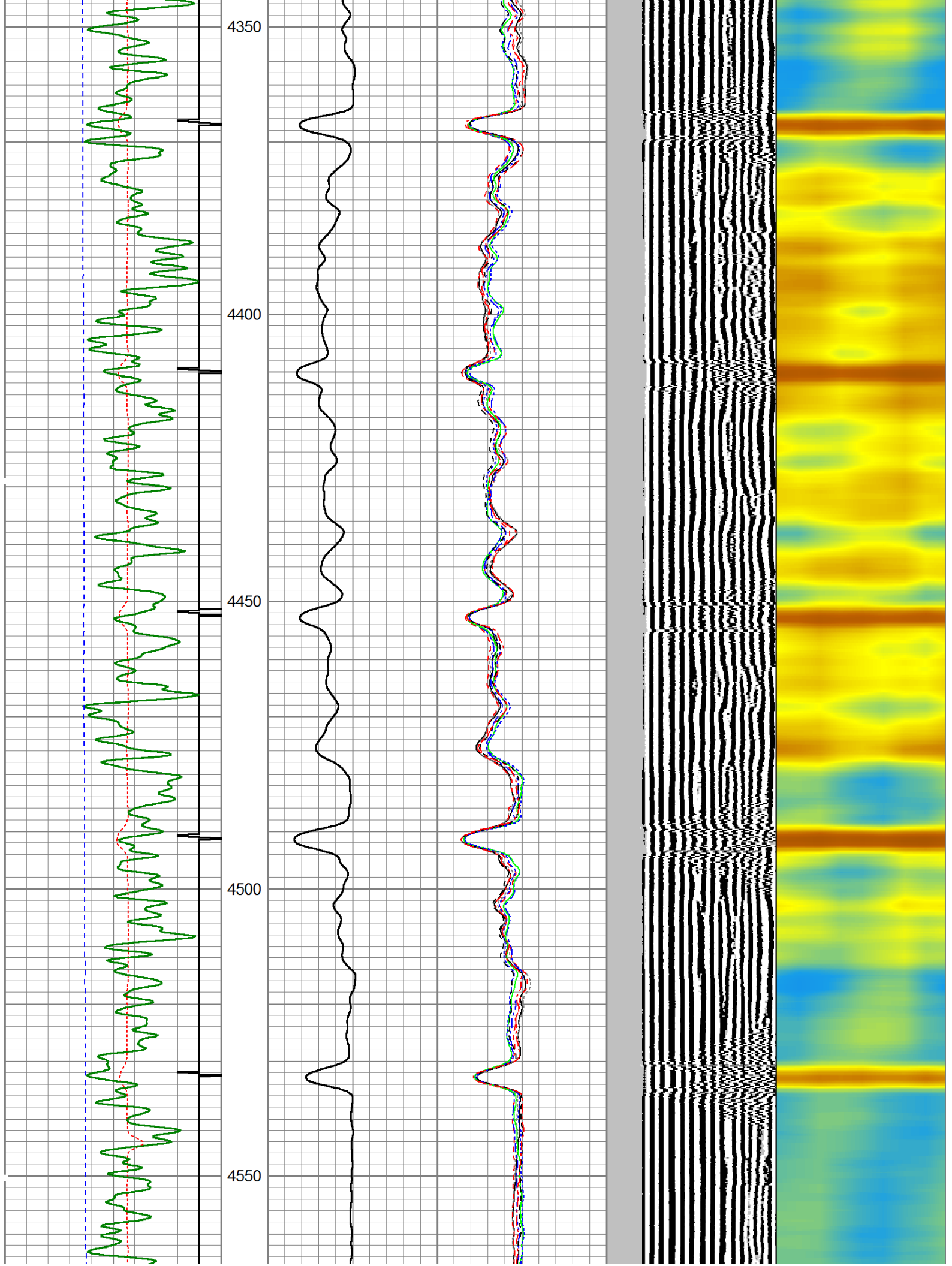


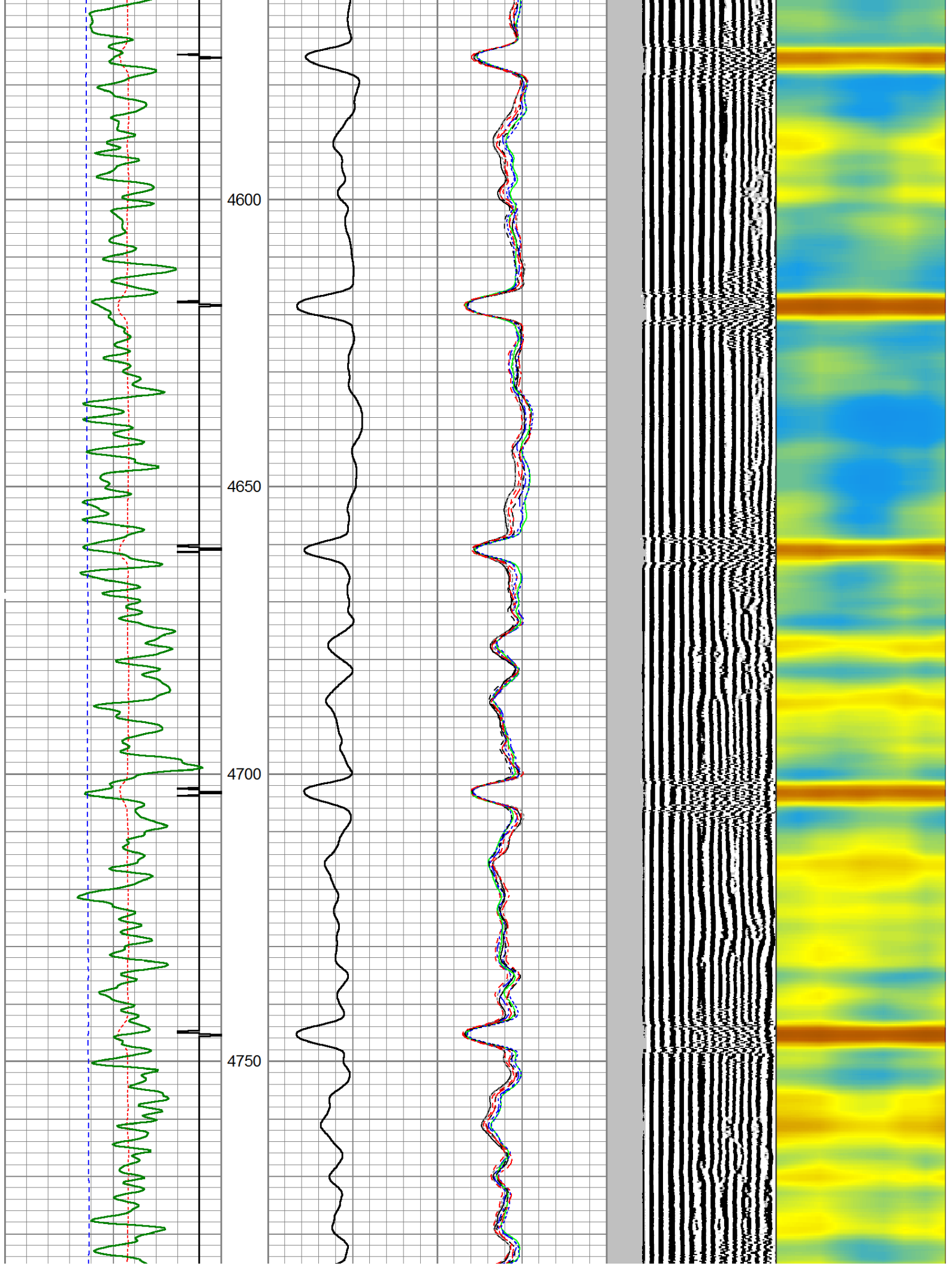


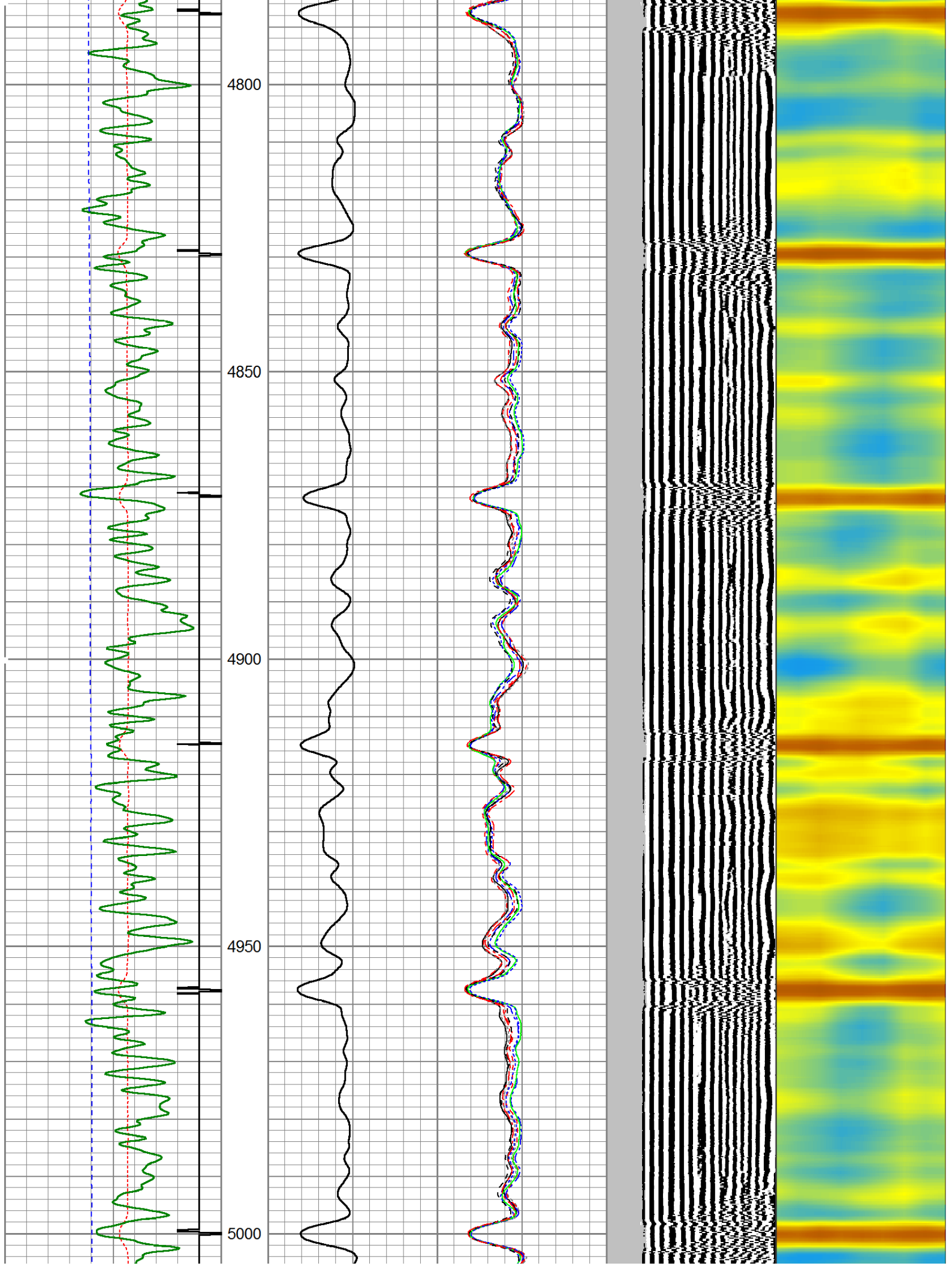


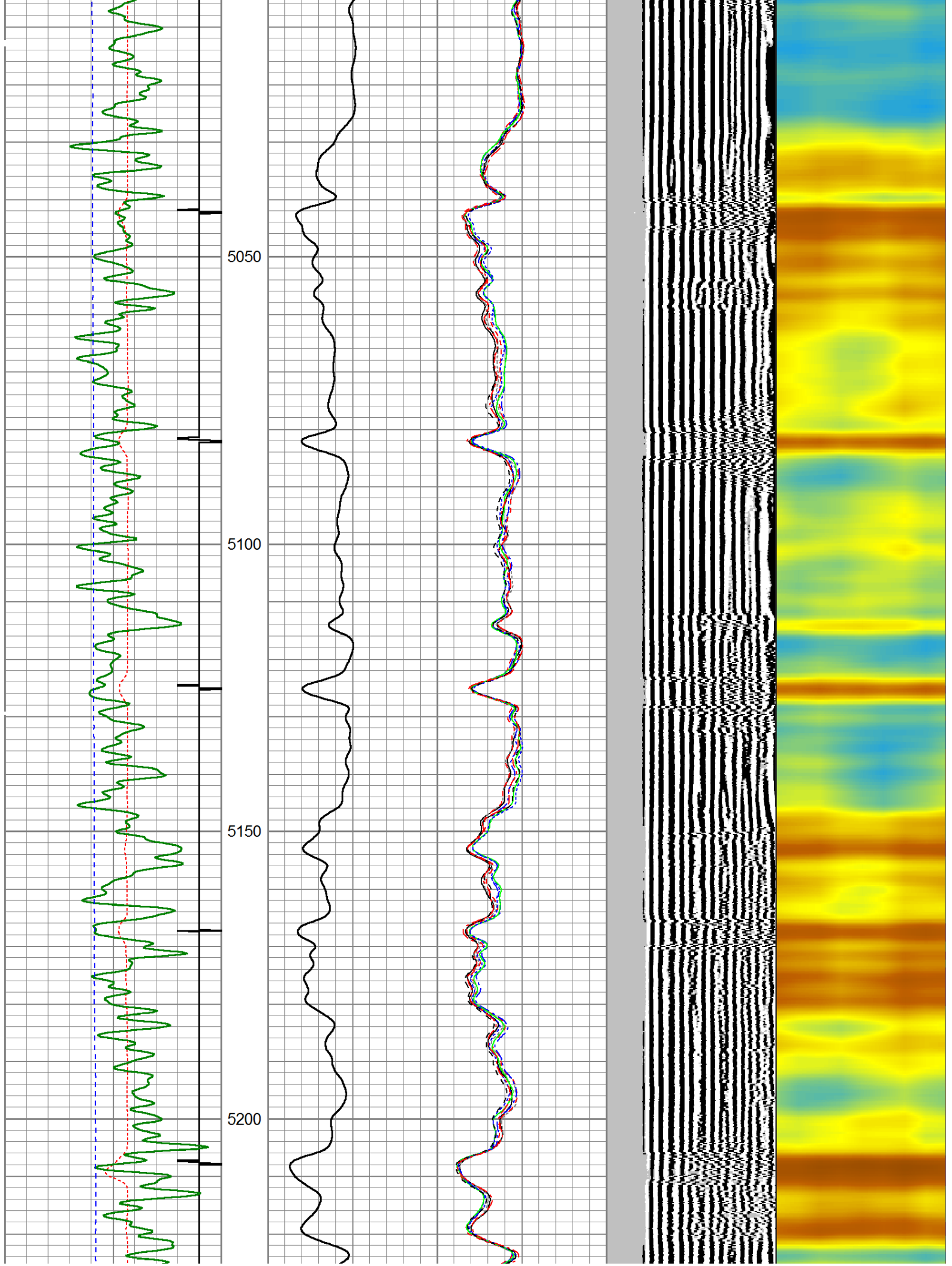


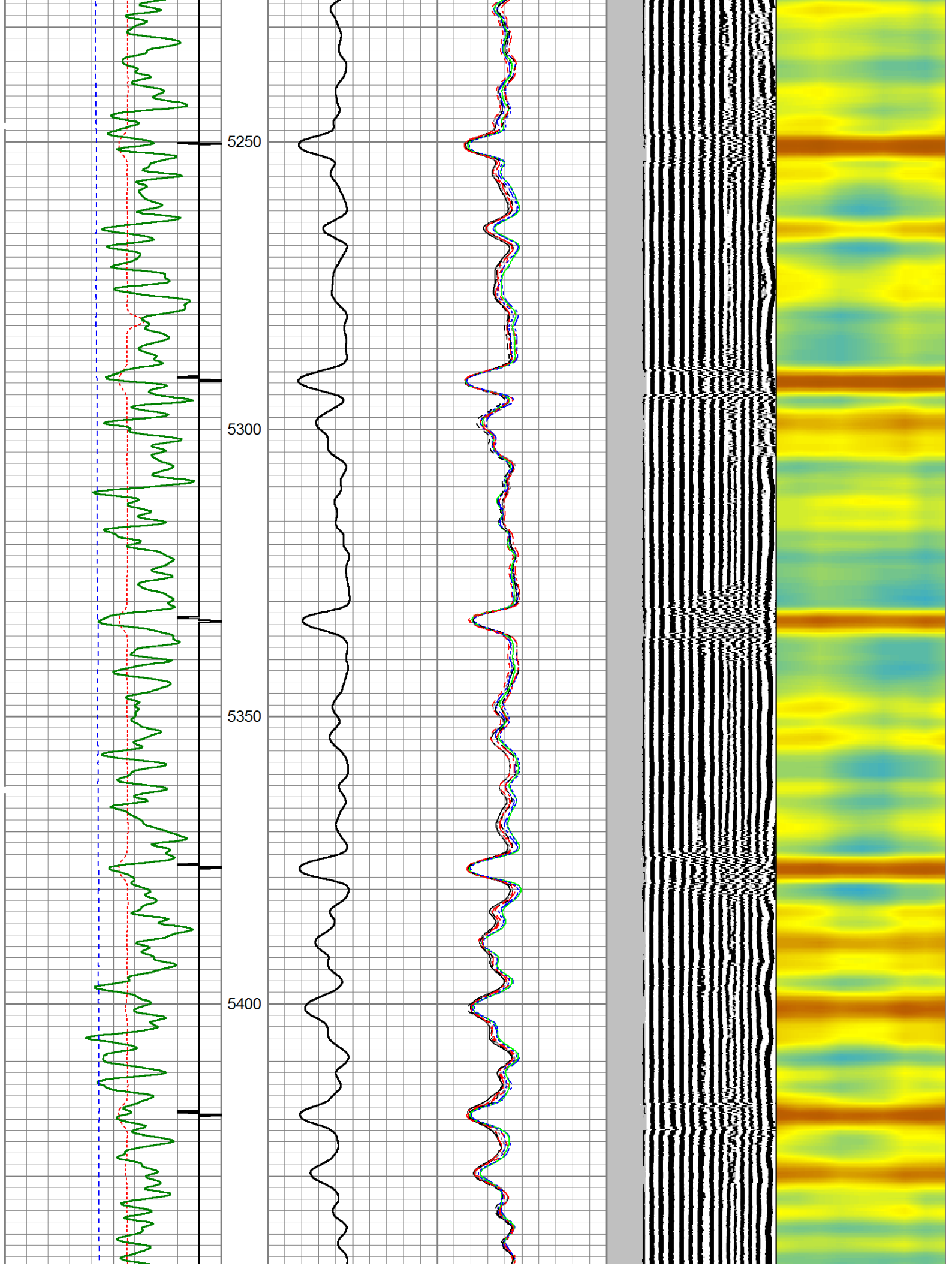


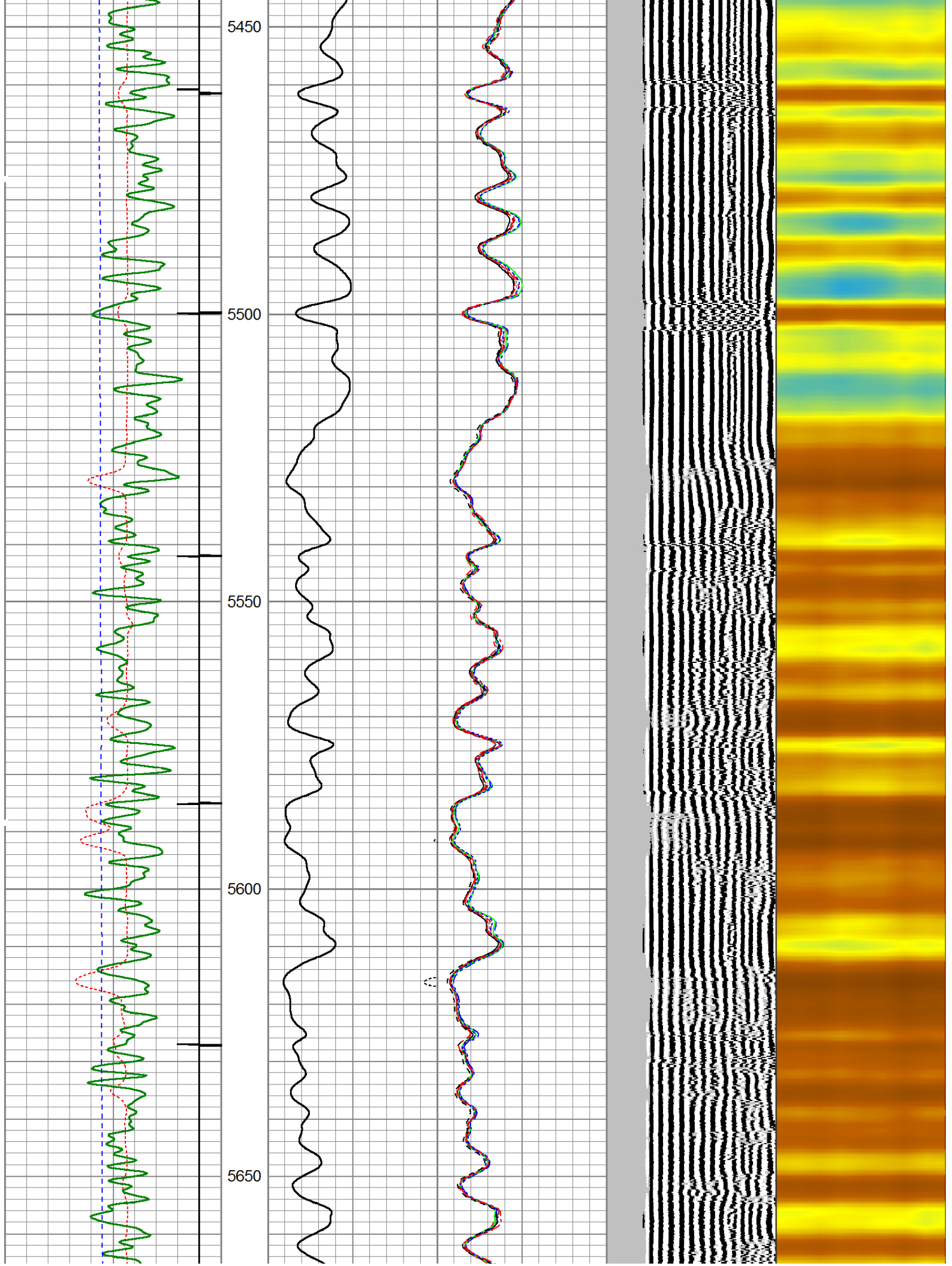


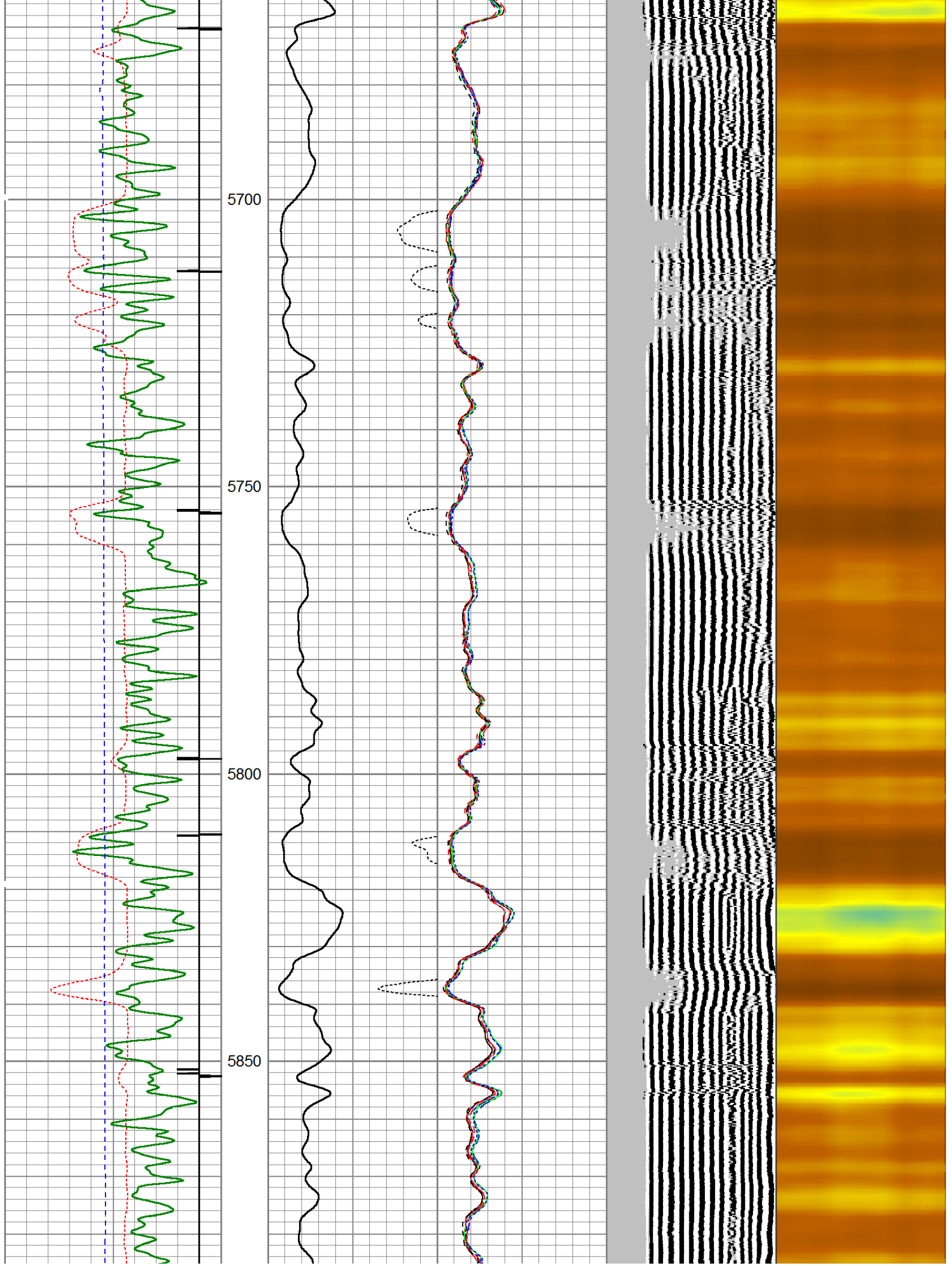


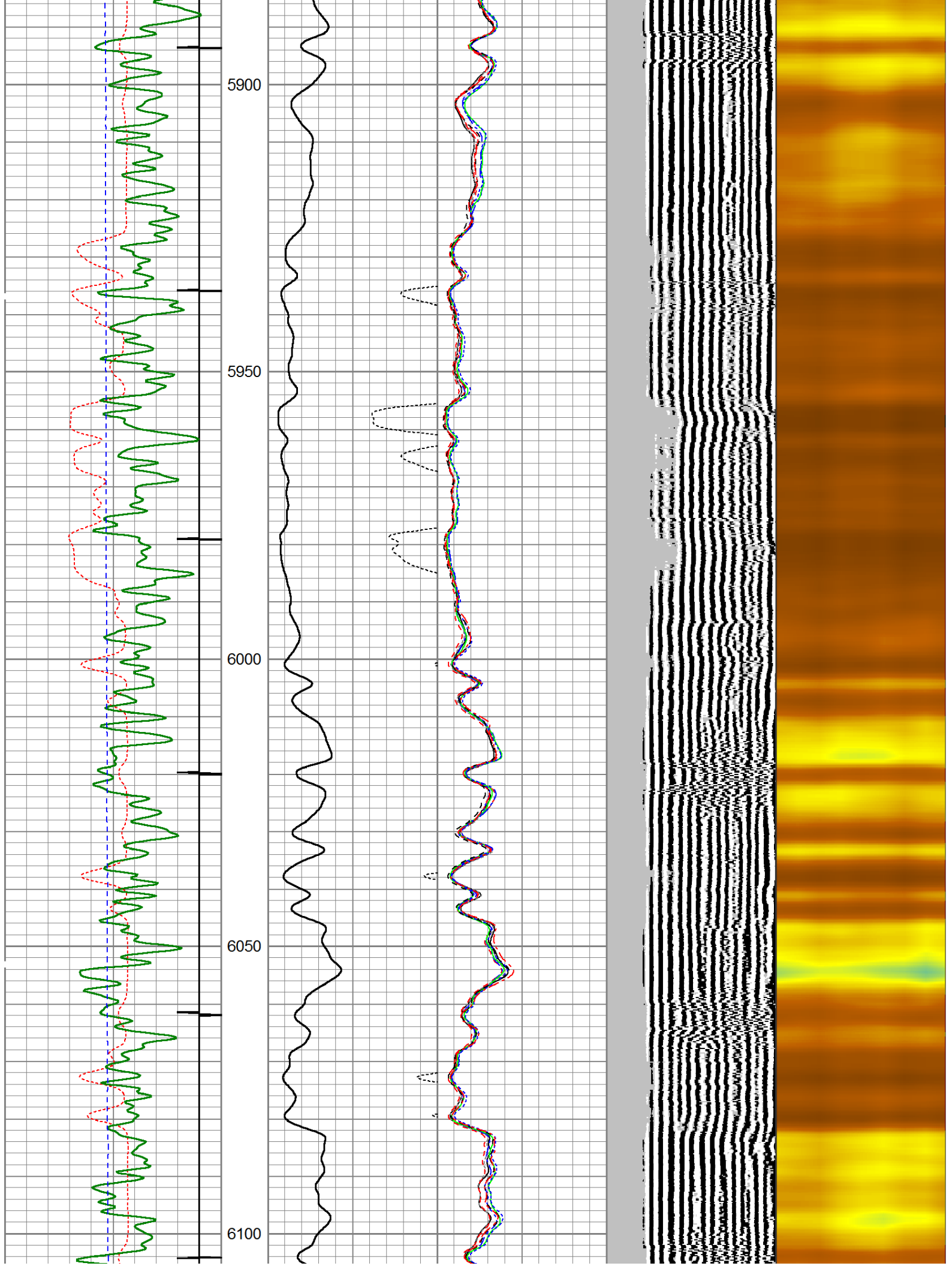


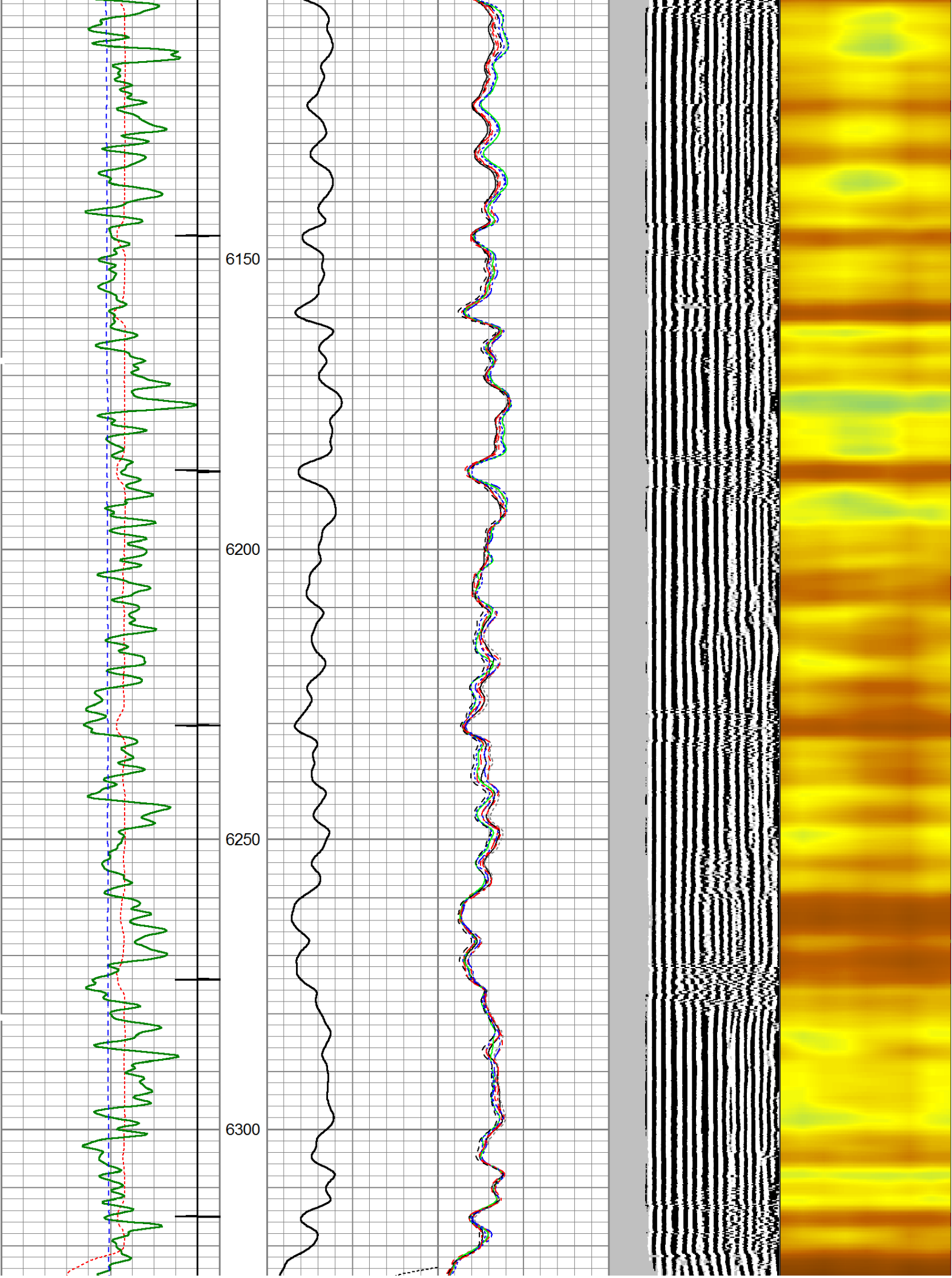


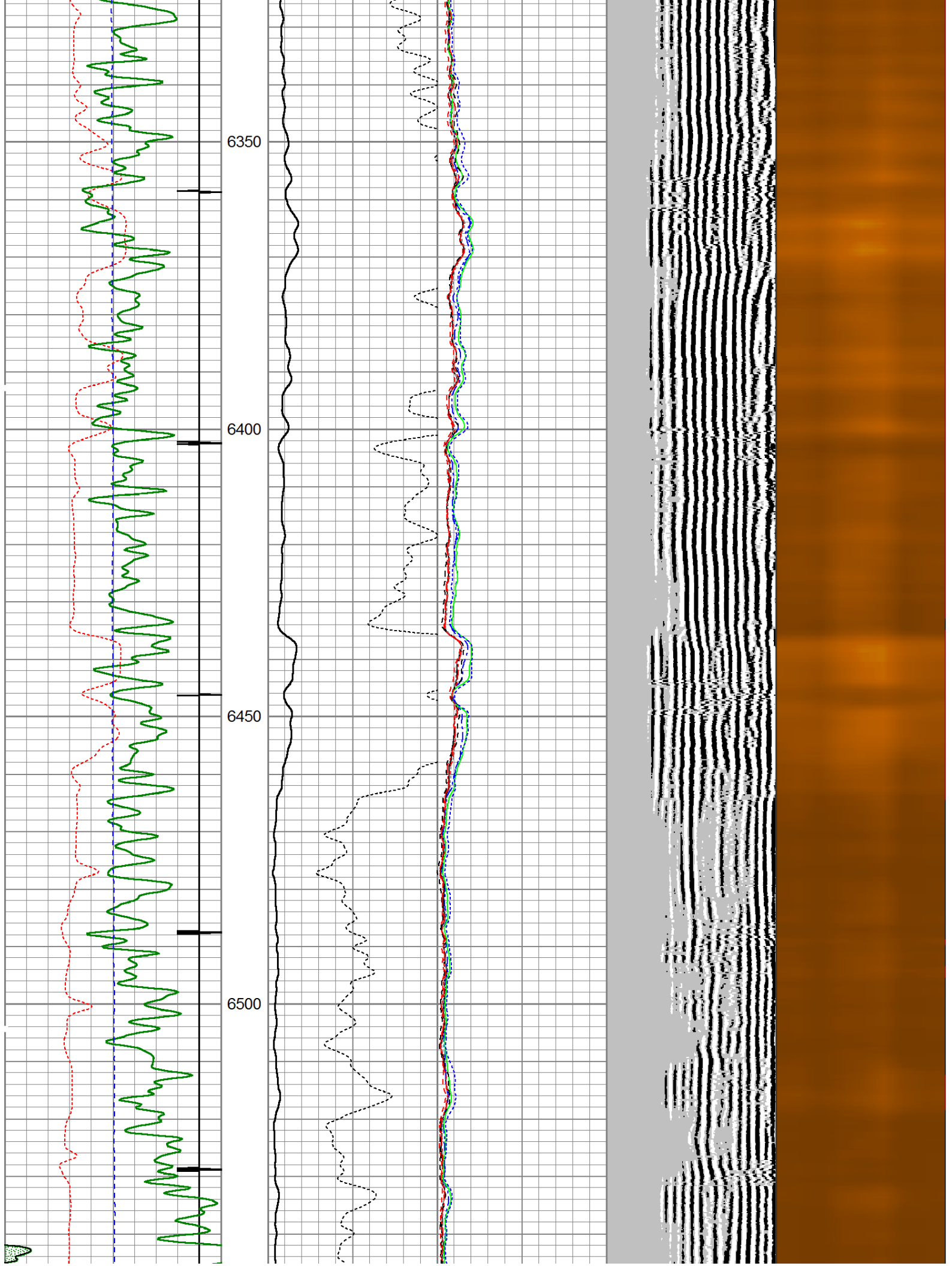


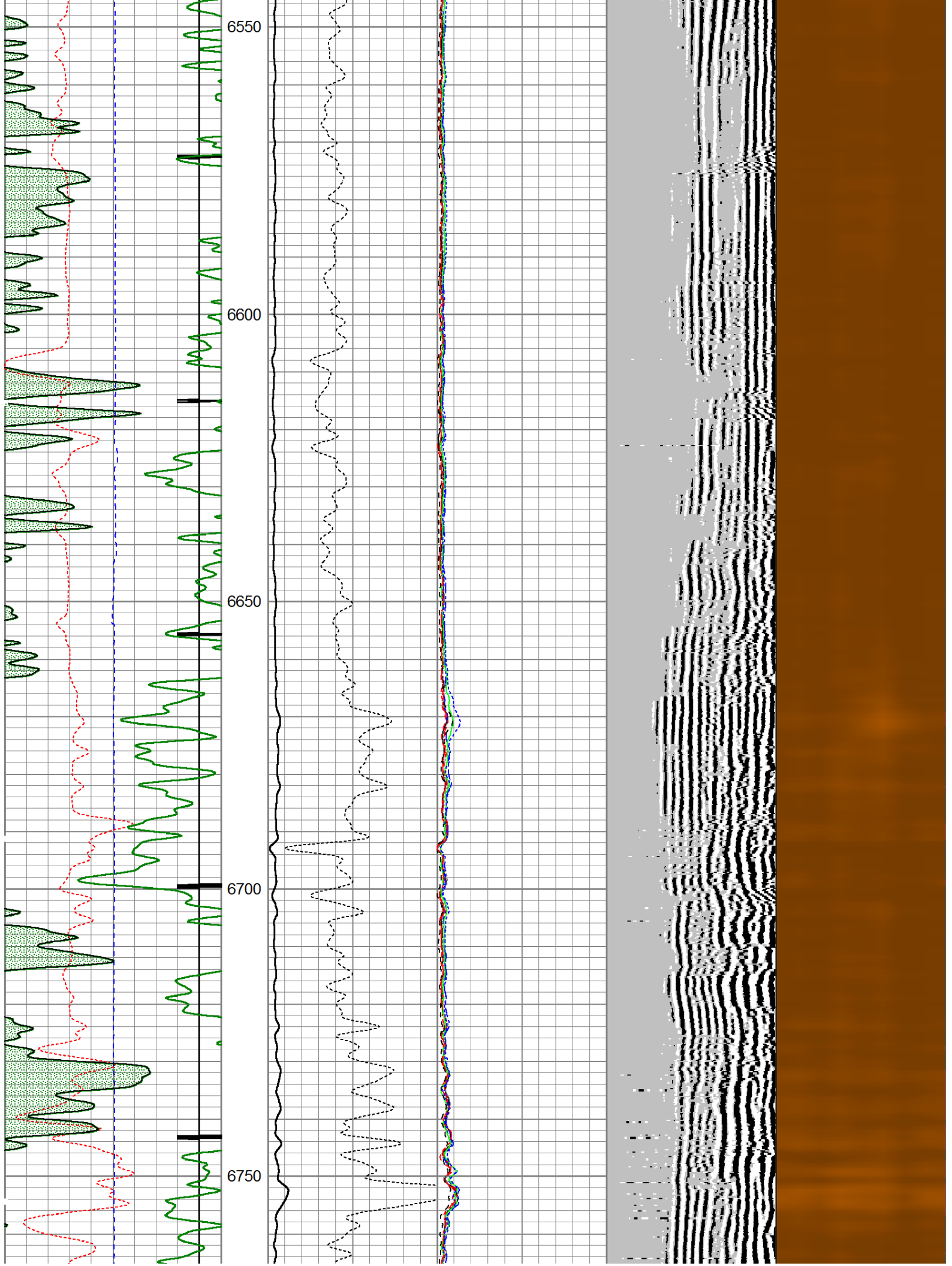


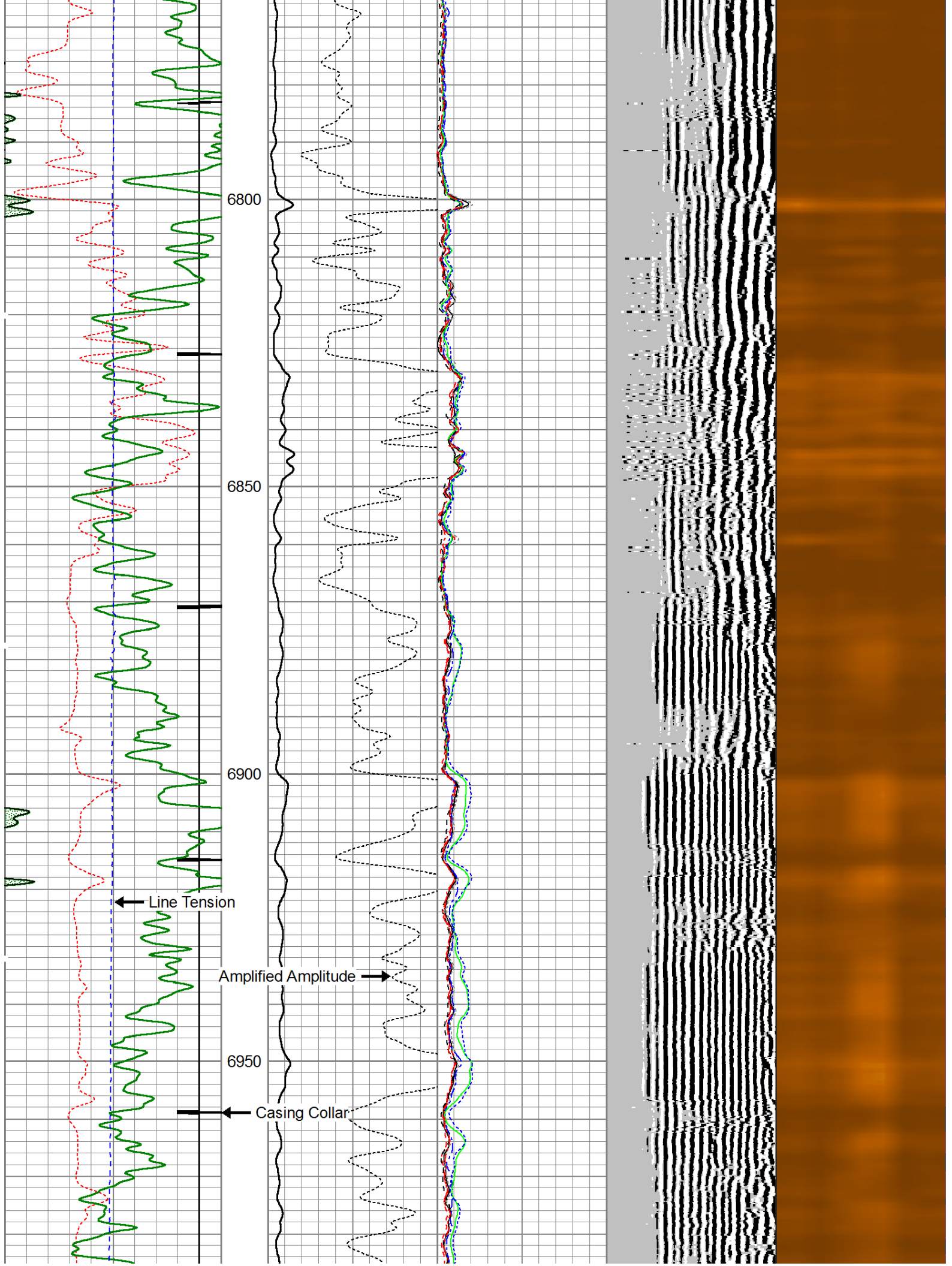


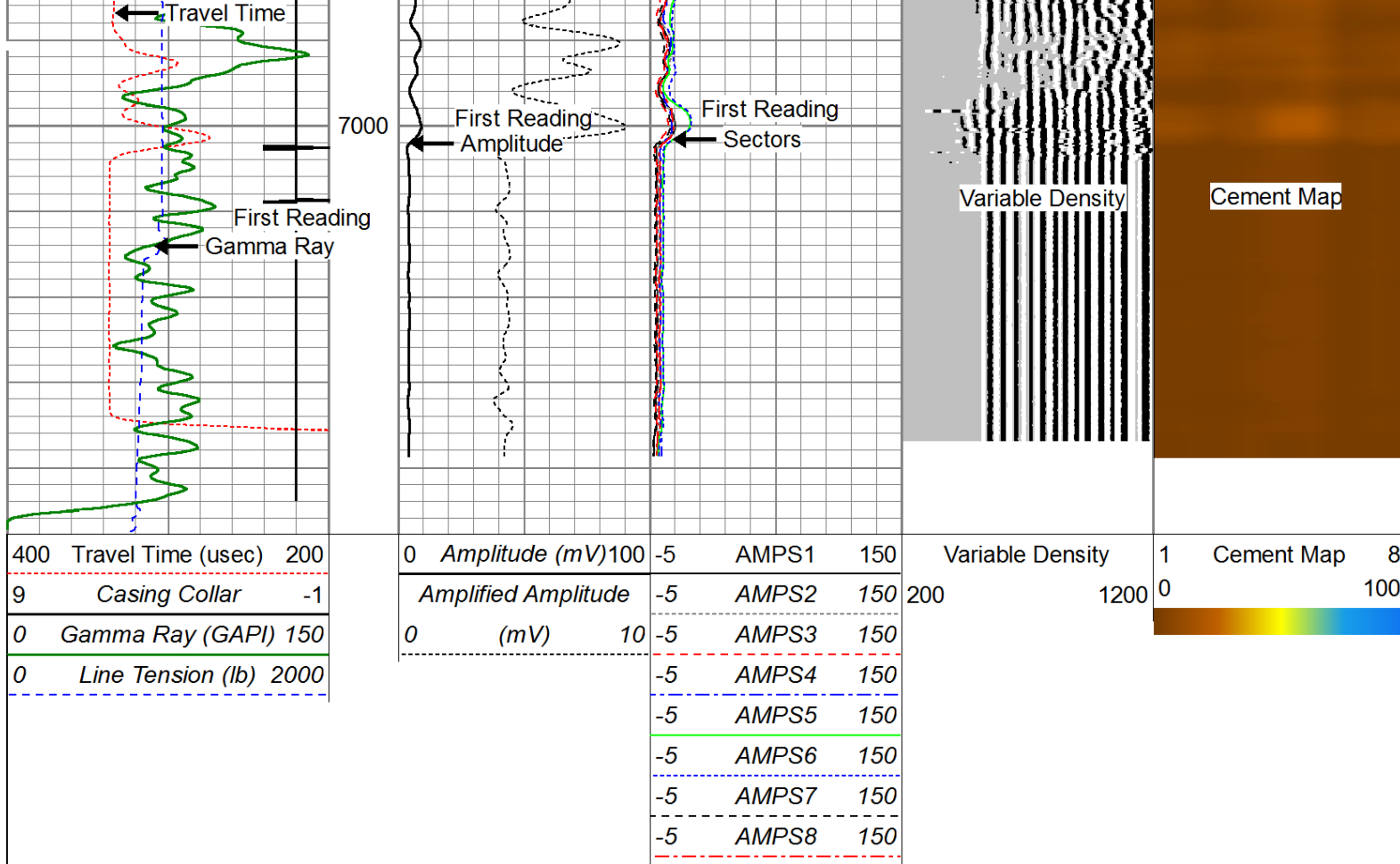






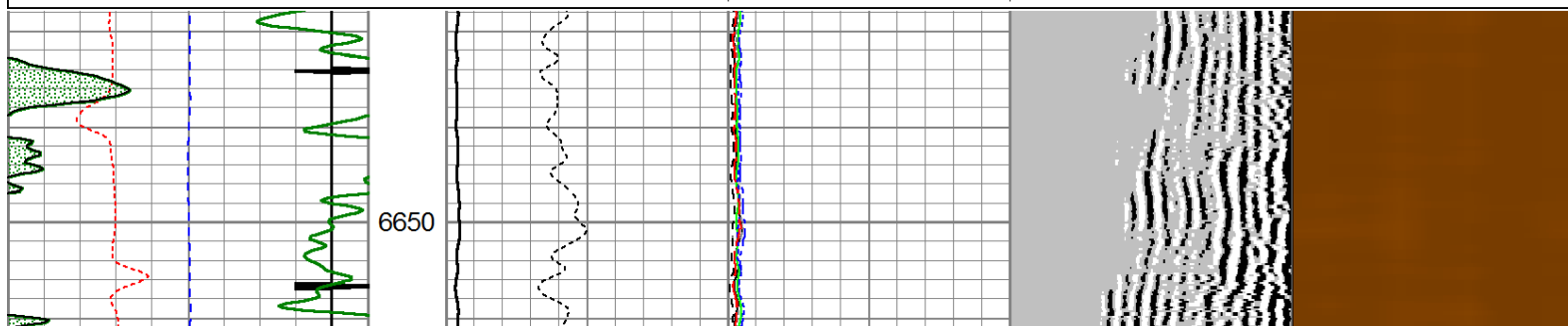
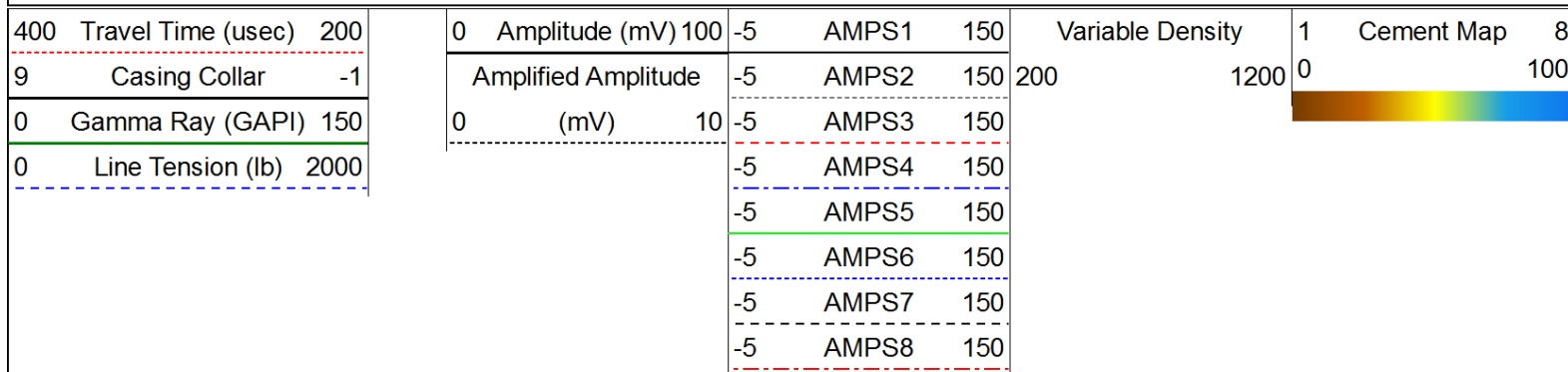


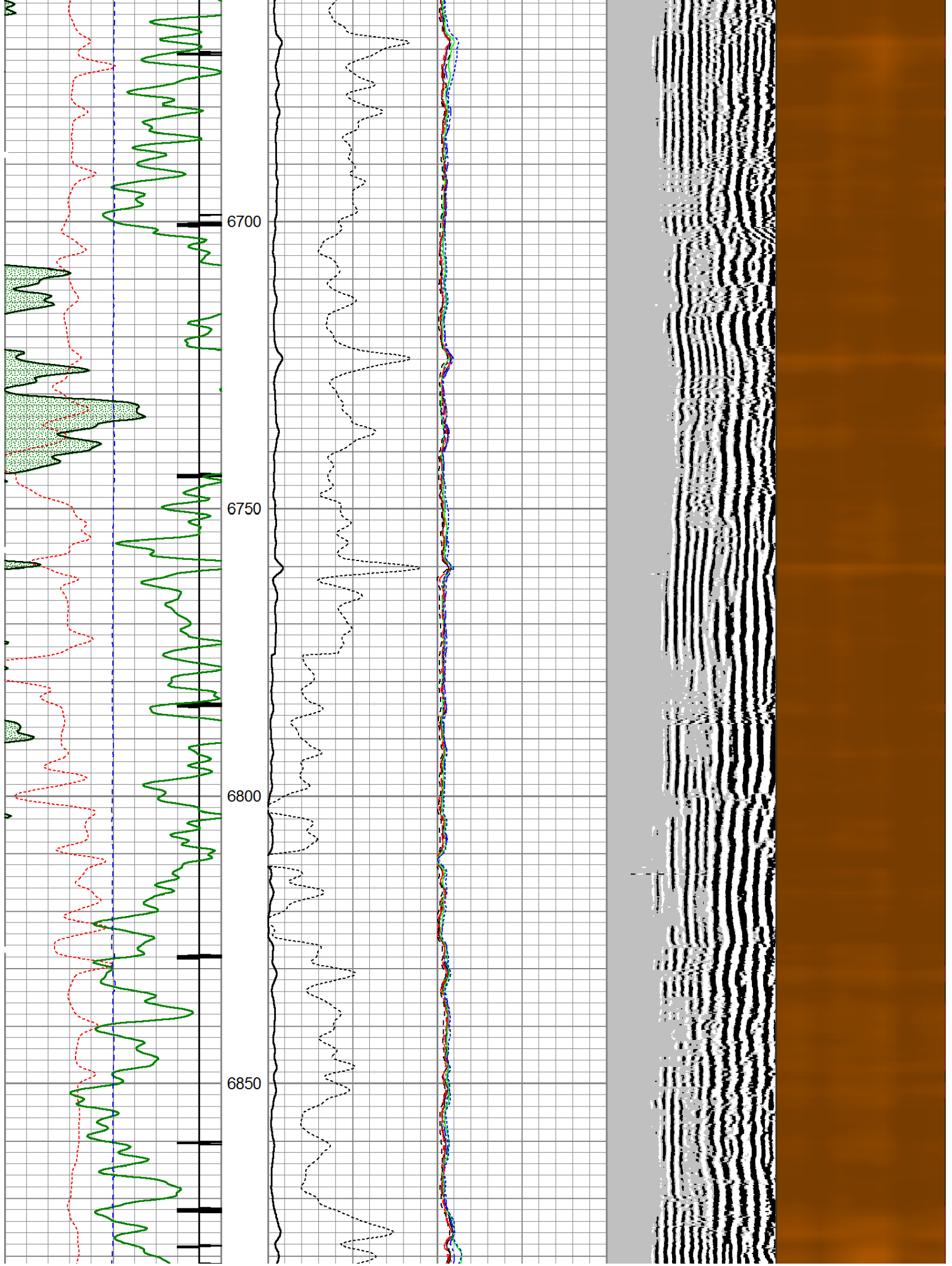


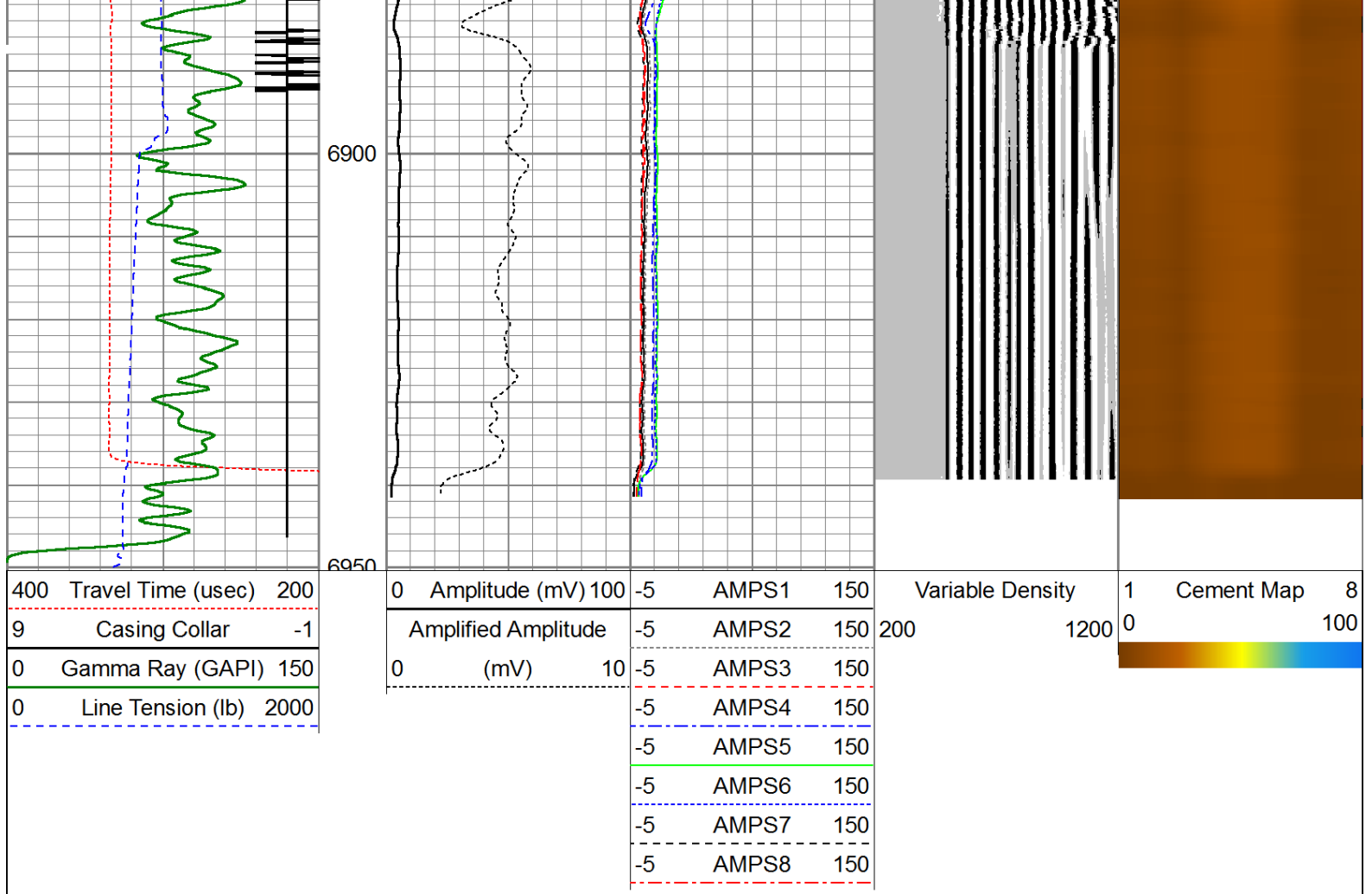


Repeat Pass (0 PSI)

Database File: noble energy crow creek state ac36-75-1hn_rcbl.db
 Dataset Pathname: pass3
 Presentation Format: scbl03
 Dataset Creation: Sat Dec 14 13:36:52 2013 by Log 0
 Charted by: Depth in Feet scaled 1:240







Calibration Report					
Database File:	noble energy crow creek state ac36-75-1hn_rcbl.db				
Dataset Pathname:	pass7.1				
Dataset Creation:	Sat Dec 14 16:19:44 2013 by Calc 0				
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: 823.113 ft

Master Calibration, performed Sat Dec 14 13:39:29 2013:

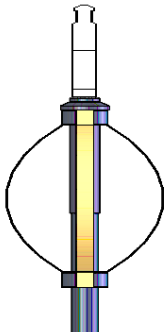
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.032	0.633	1.000	62.165	91.070	4.245
CAL	-0.028	1.029				
5'	-0.019	0.644	1.000	62.165	92.258	2.711
SUM						
S1	0.016	0.682	0.000	100.000	150.078	-2.363
S2	-0.005	0.632	0.000	100.000	157.146	0.740
S3	0.002	0.589	0.000	100.000	170.315	-0.283
S4	-0.015	0.568	0.000	100.000	171.776	2.512
S5	-0.003	0.615	0.000	100.000	161.763	0.468
S6	-0.008	0.689	0.000	100.000	143.417	1.169
S7	0.018	0.725	0.000	100.000	141.527	-2.591
S8	0.002	0.671	0.000	100.000	149.675	-0.360

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	-0.028	1.029	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

Tool Name	Start Depth (ft)	End Depth (ft)	Length (ft)	Weight (lb)	O.D. (in)
WVF3FT	11.84	11.84			
WVFCAL	11.84	11.84			
WVFS1	11.84	11.84			
WVFS2	11.84	11.84			
WVFS3	11.84	11.84			
WVFS4	11.84	11.84			
WVFS5	11.84	11.84			
WVFS6	11.84	11.84			
WVFS7	11.84	11.84			
WVFS8	11.84	11.84			
WVF5FT	10.84	11.84	1.00		
RBT-Probe (101225)			8.75	2.75	90.00
Probe Radii Bond Tool with Digital Telemetry					
Probe275			2.88	2.75	20.00
2.75" Centralizer					
CCL	3.88				
TEMP	3.00				
GR	2.54				
GR-Probe275 (110108-Dig)			4.78	2.75	57.00
Probe 2 3/4" Logging Gamma Ray					
Dataset: noble energy crow creek state ac36-75-1hn_rcbl.db: field/well/run1/pass7.1 Total Length: 20.28 ft Total Weight: 197.00 lb O.D.: 2.75 in					