



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

Company	Noble Energy	
Well	Loeffler K01-69-1HN	
Field	Wattenberg	
County	Weld	State
Drilling Measured From	SEC 1 TWP 4N RGE 66W	Other Services
Log Measured From	Ground Level	Elevation
Permanent Datum	24' Kelly Bushing	4666'
Drilling Measured From	Kelly Bushing	Elevation
Drilling Measured From	Kelly Bushing	D.F. 4681'
Drilling Measured From	Kelly Bushing	G.L. 4666'
Location:	API # : 05-123-37735	
BHL: 330' FNL & 535' FEL		
TEMP		
Date	December 7, 2013	
Run Number	1	
Depth Driller	11700'	
Depth Logger	7503'	
Bottom Logged Interval	7490'	
Top Log Interval	Surface	
Open Hole Size	8.125	
Type Fluid	Fresh Water	
Density / Viscosity	8.33	
Max. Recorded Temp.	213 Deg F	
Estimated Cement Top	366'	
Time Well Ready	0.09	
Time Logger on Bottom	1.25	
Equipment Number	13033	
Location	Brighton	
Recorded By	C. Rail	
Witnessed By	Natalie Aaron	
Borehole Record		
Run Number	Bit	From
One	To	Size
Two	Weight	From
Three	To	Bottom
Four	Weight	Bottom
Casing Record	Size	Wgt/Ft
Surface String	9 5/8	36#
Prot. String	7	26#
Production String	4 1/2	11 6#
Liner	6098'	9110'
Short Joint	6098'	9110'

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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 Logged with 2300 PSI To 200'

Repeat Pass Logged with 0 PSI

Estimated Top of Cement @ 366'

Short Joint @ 6098' To 6110'


Thank you for using Allied Wireline.

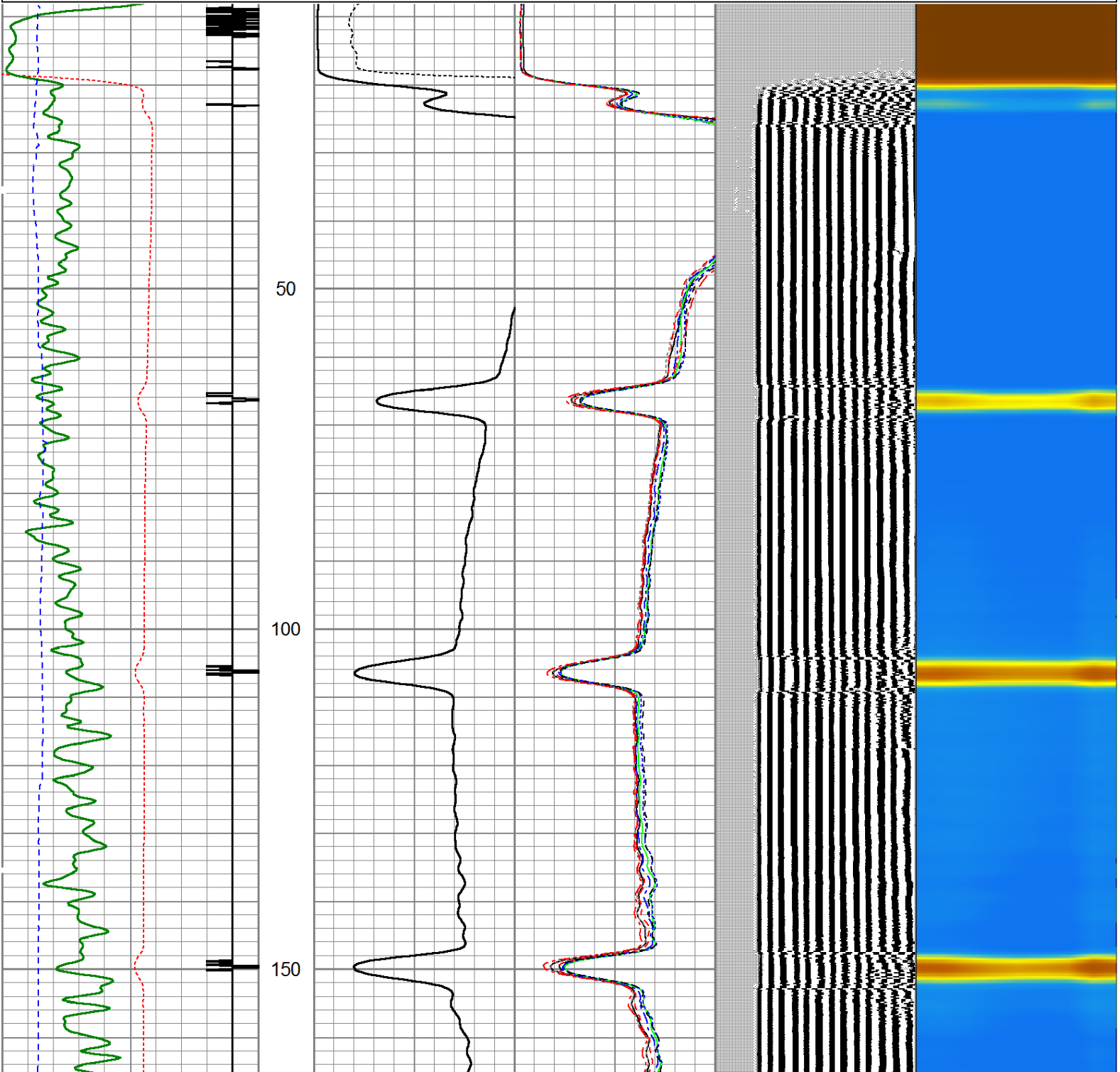
(303)659-4609

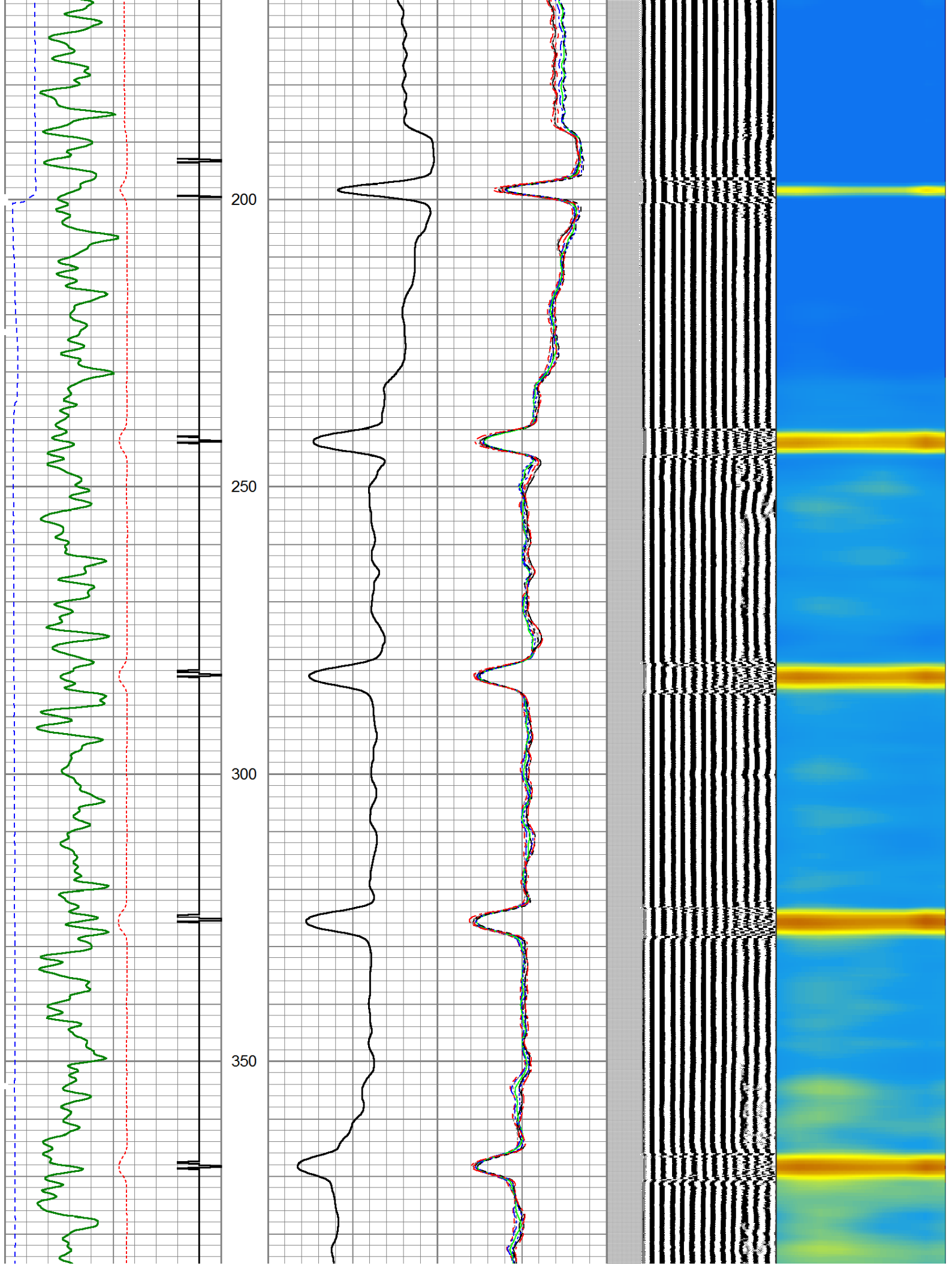


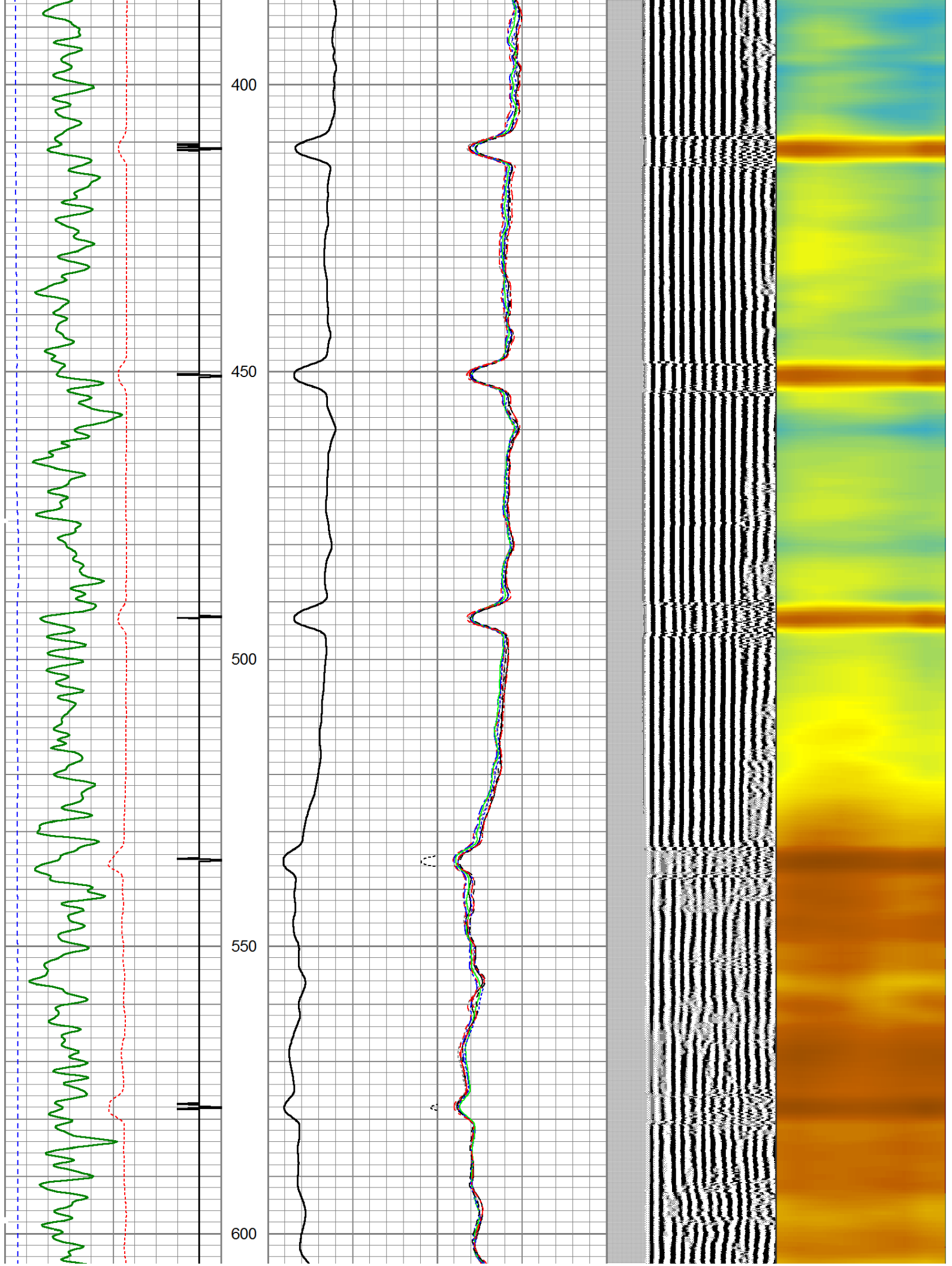
Main Pass ( 2300 PSI )

Database File: noble energy loeffler k01-69-1hn\_rcbl.db  
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Presentation Format: scbl03  
Dataset Creation: Sat Dec 07 03:55:46 2013 by Calc 0  
Charted by: Depth in Feet scaled 1:240

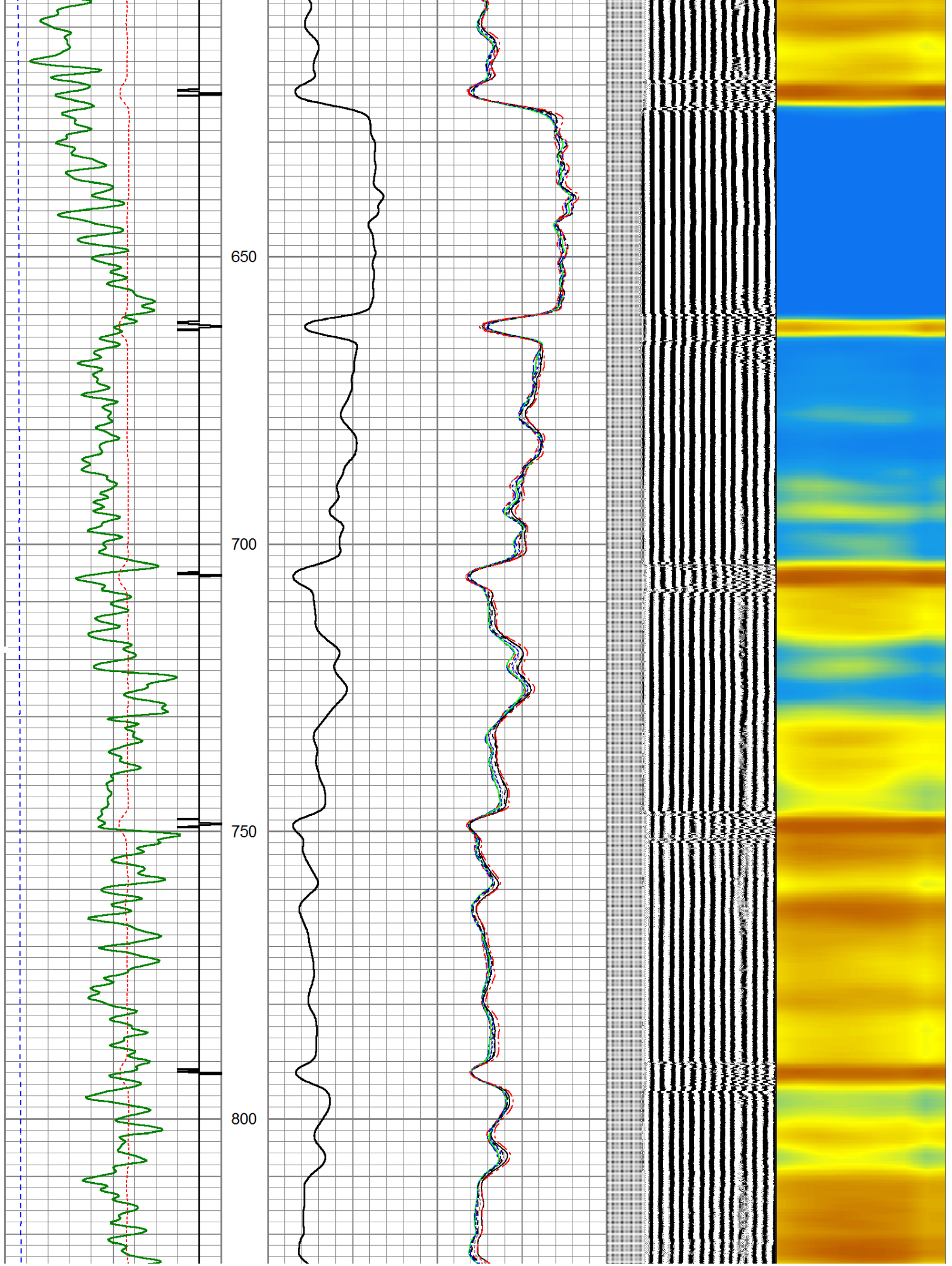
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density		1	Cement Map	8			
9	Casing Collar	-1	Amplified Amplitude		-5	AMPS2	150	200	1200	0						
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150								
0		Line Tension (lb)	2000			-5	AMPS4	150								
						-5	AMPS5	150								
			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

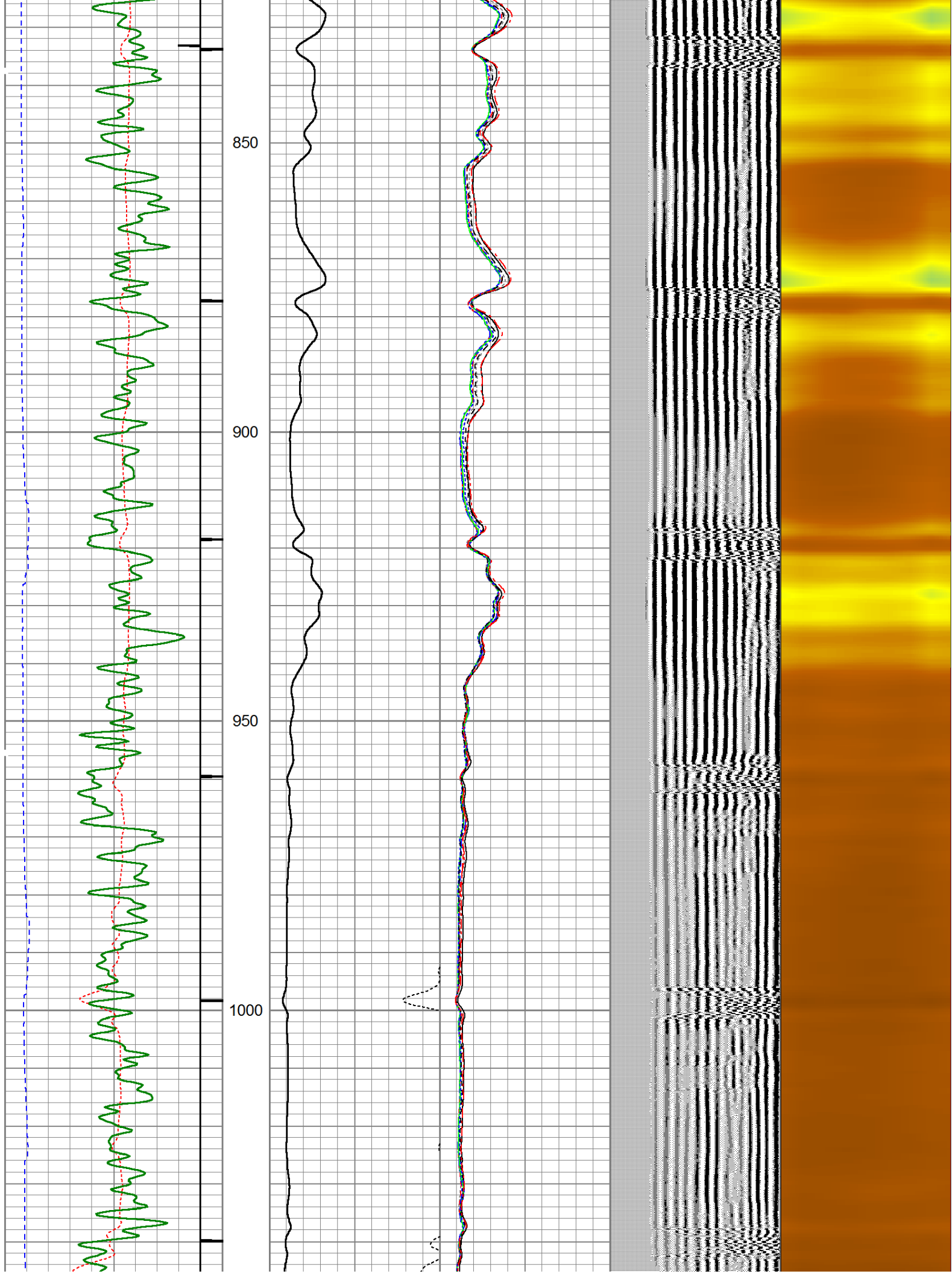


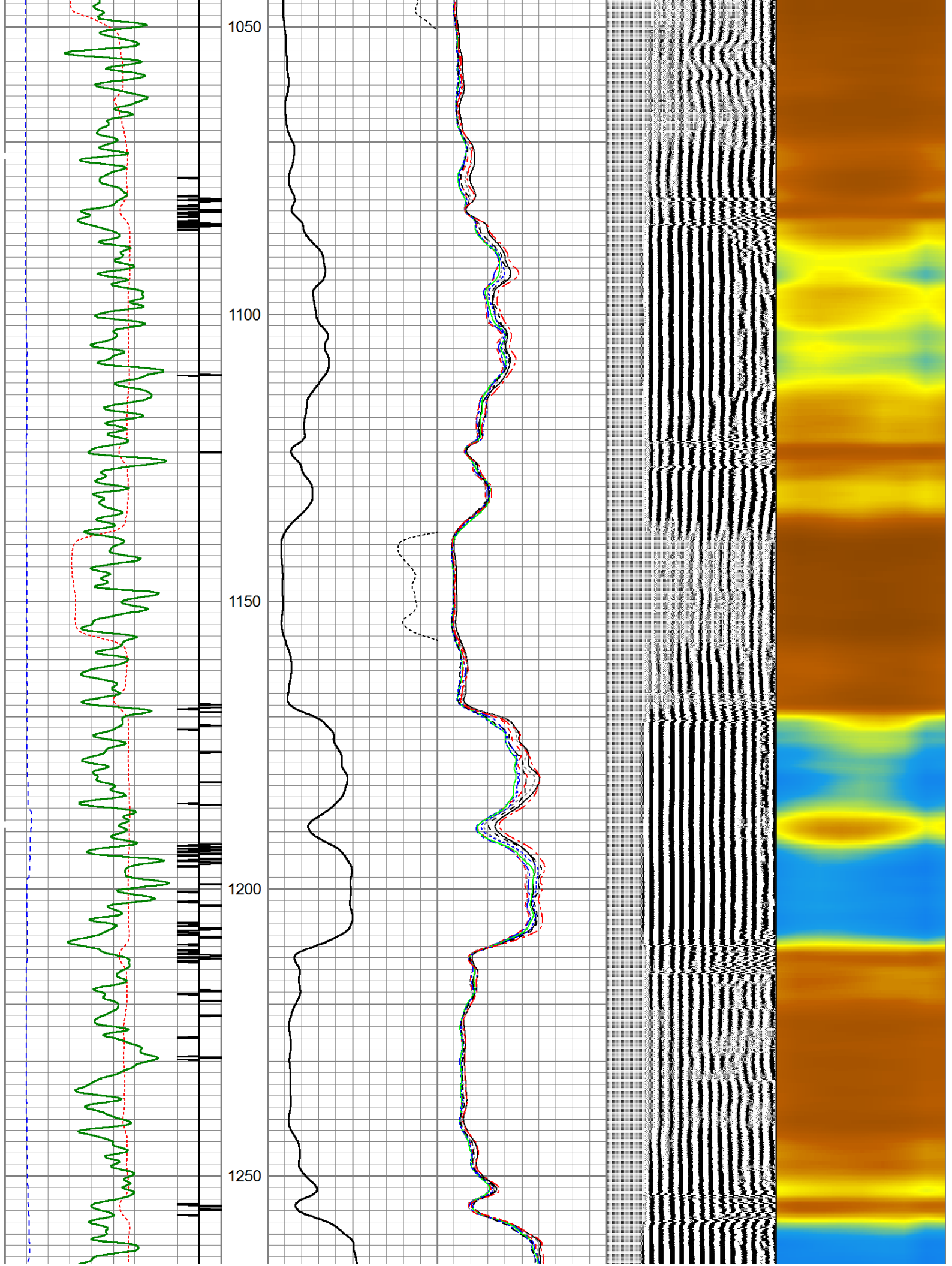




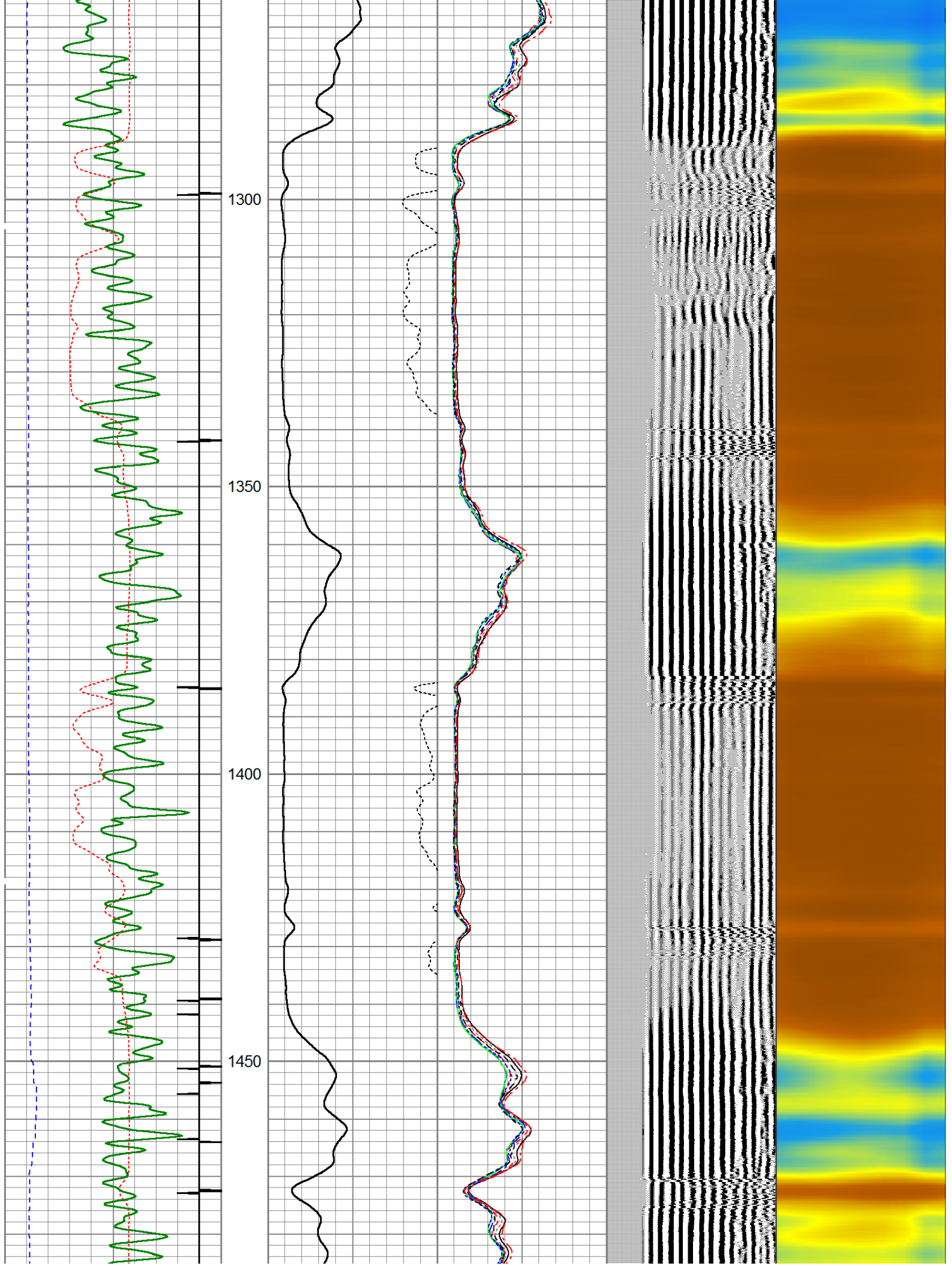




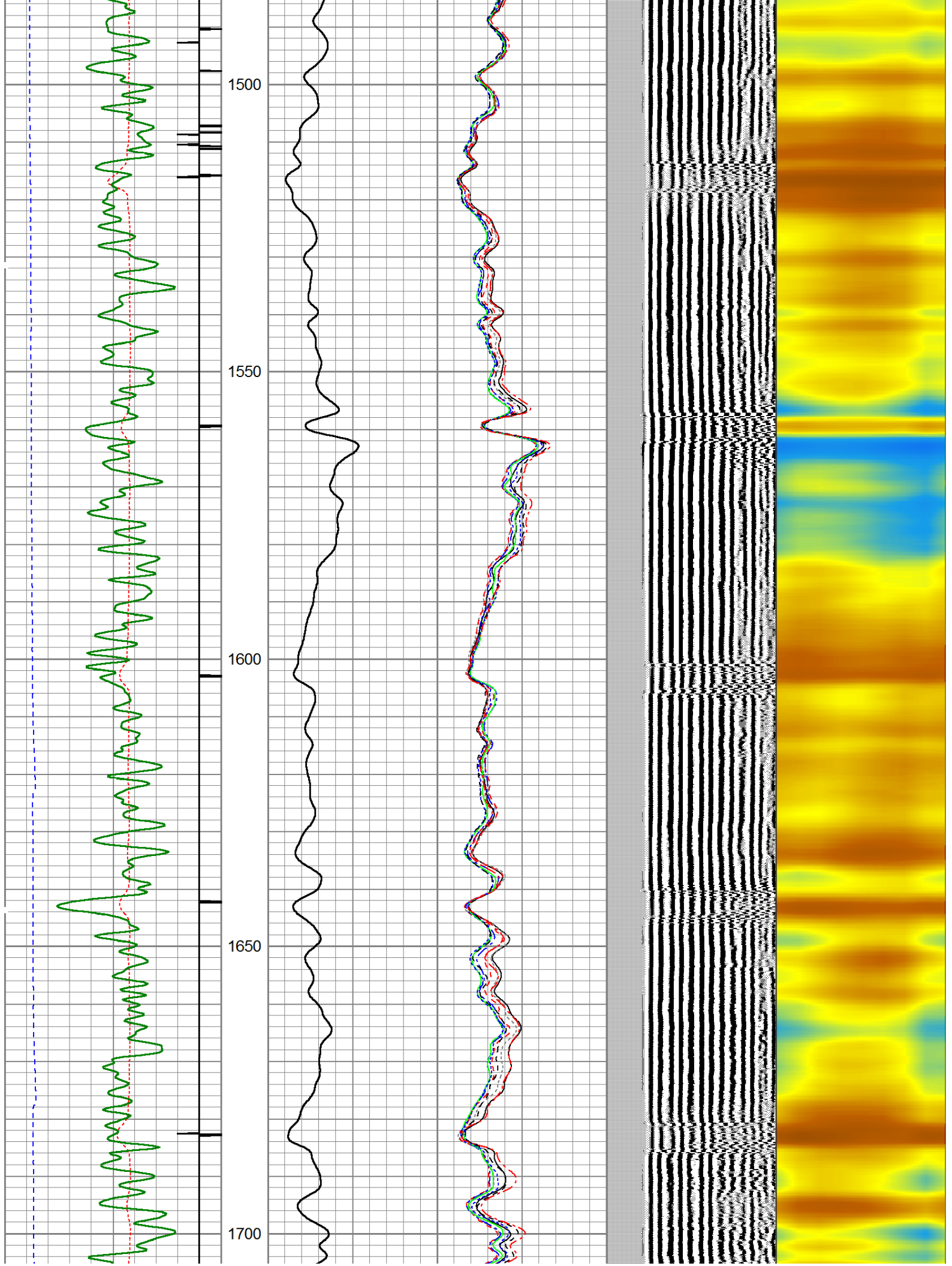


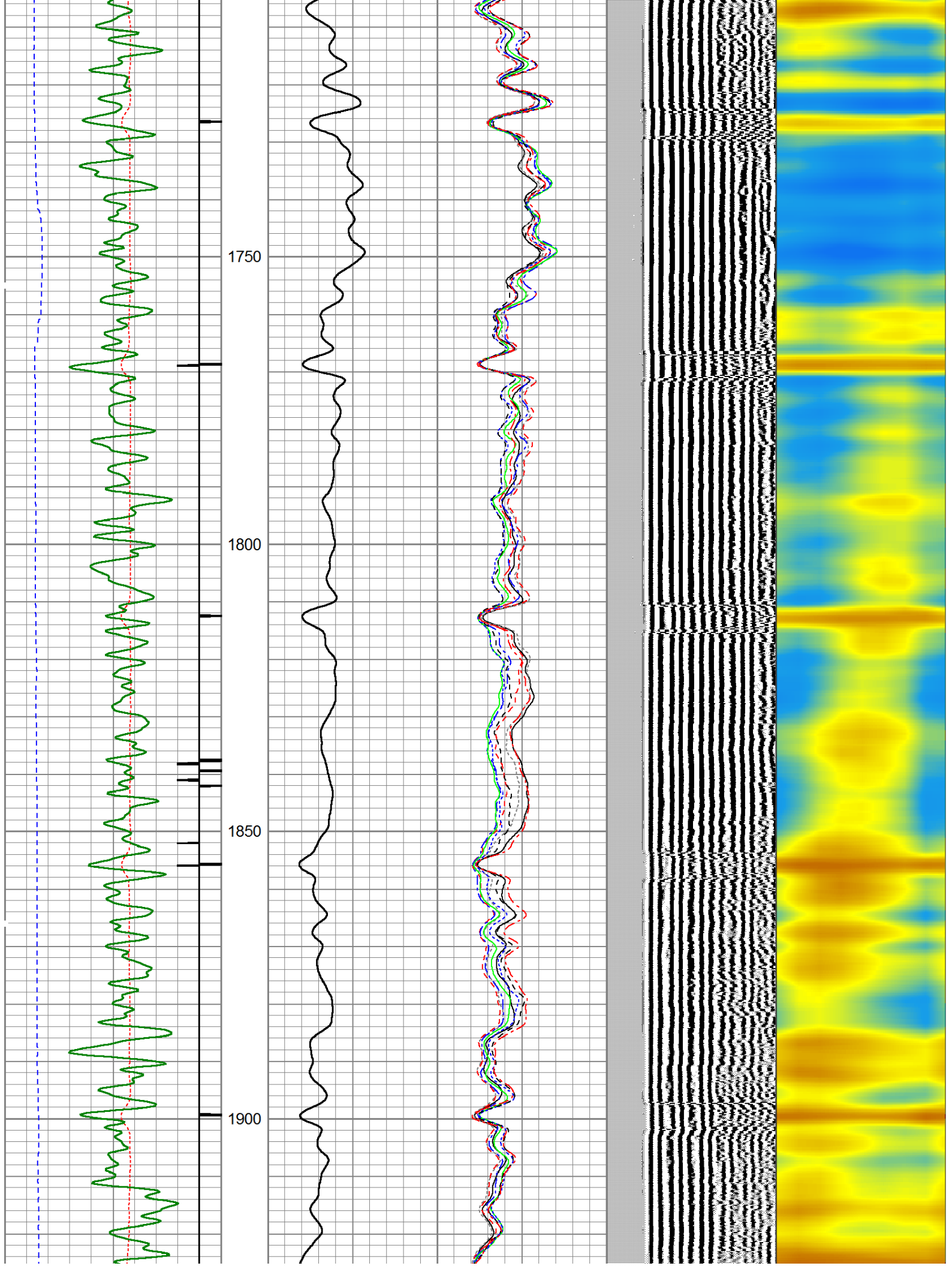




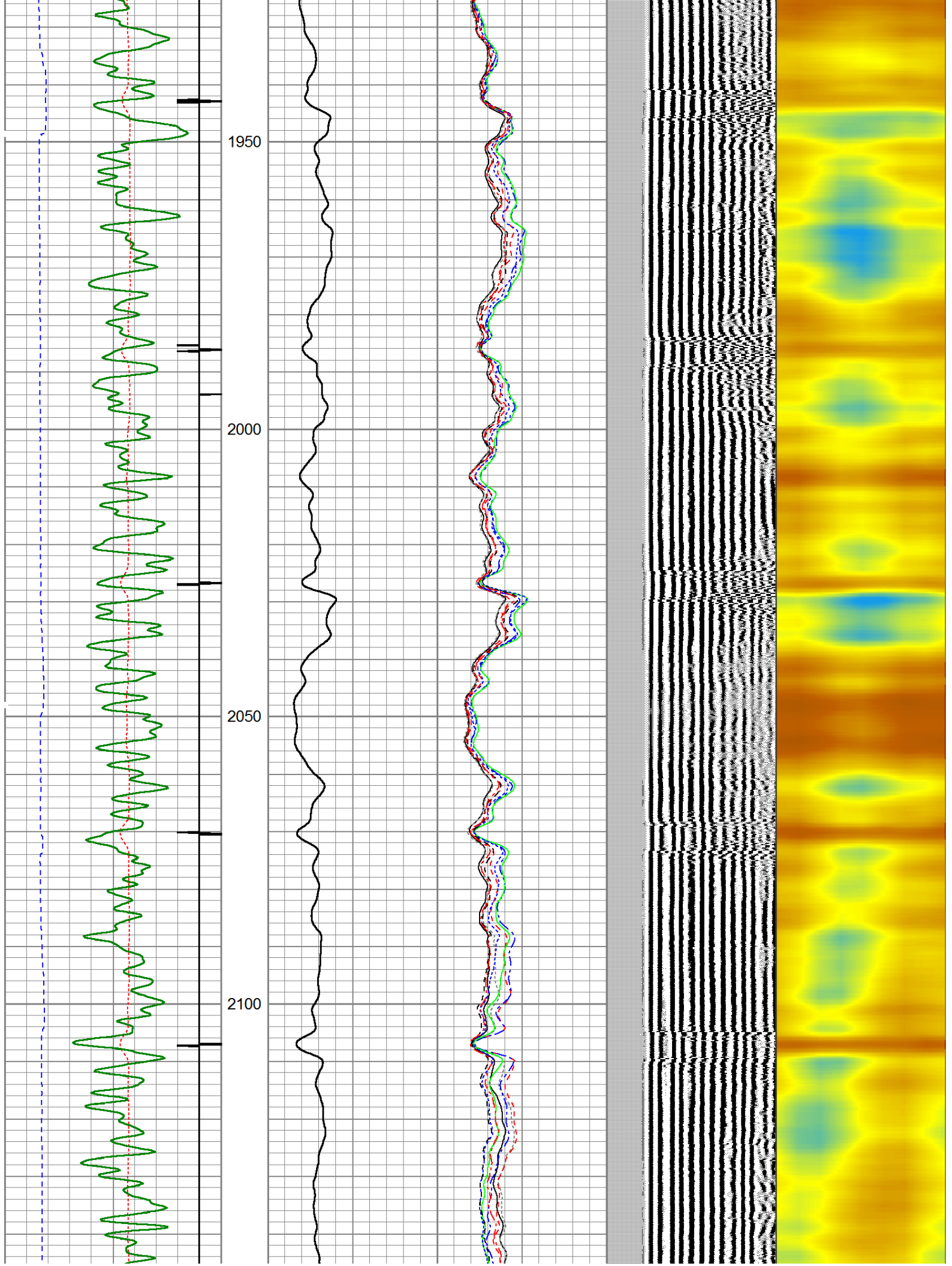


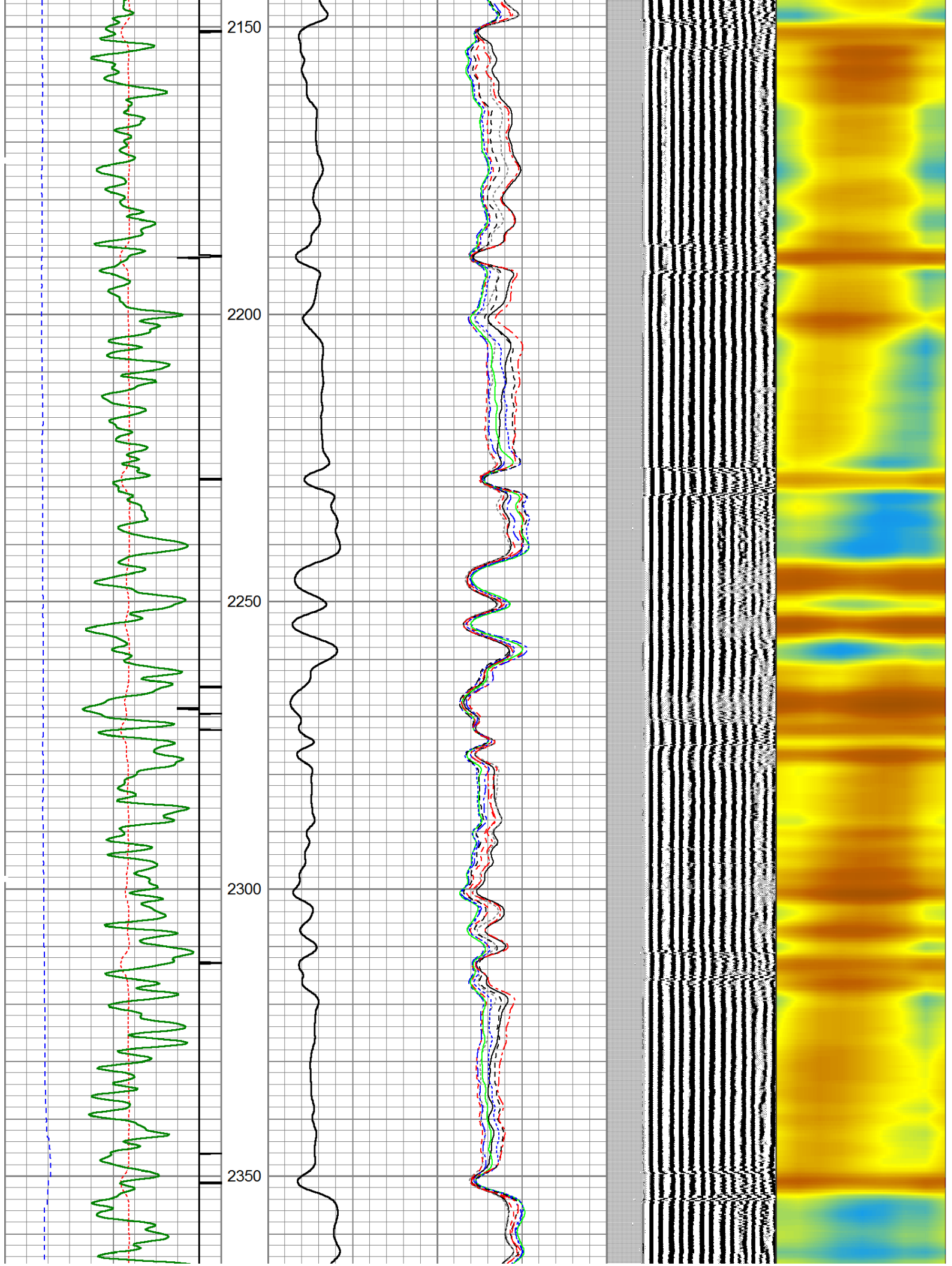




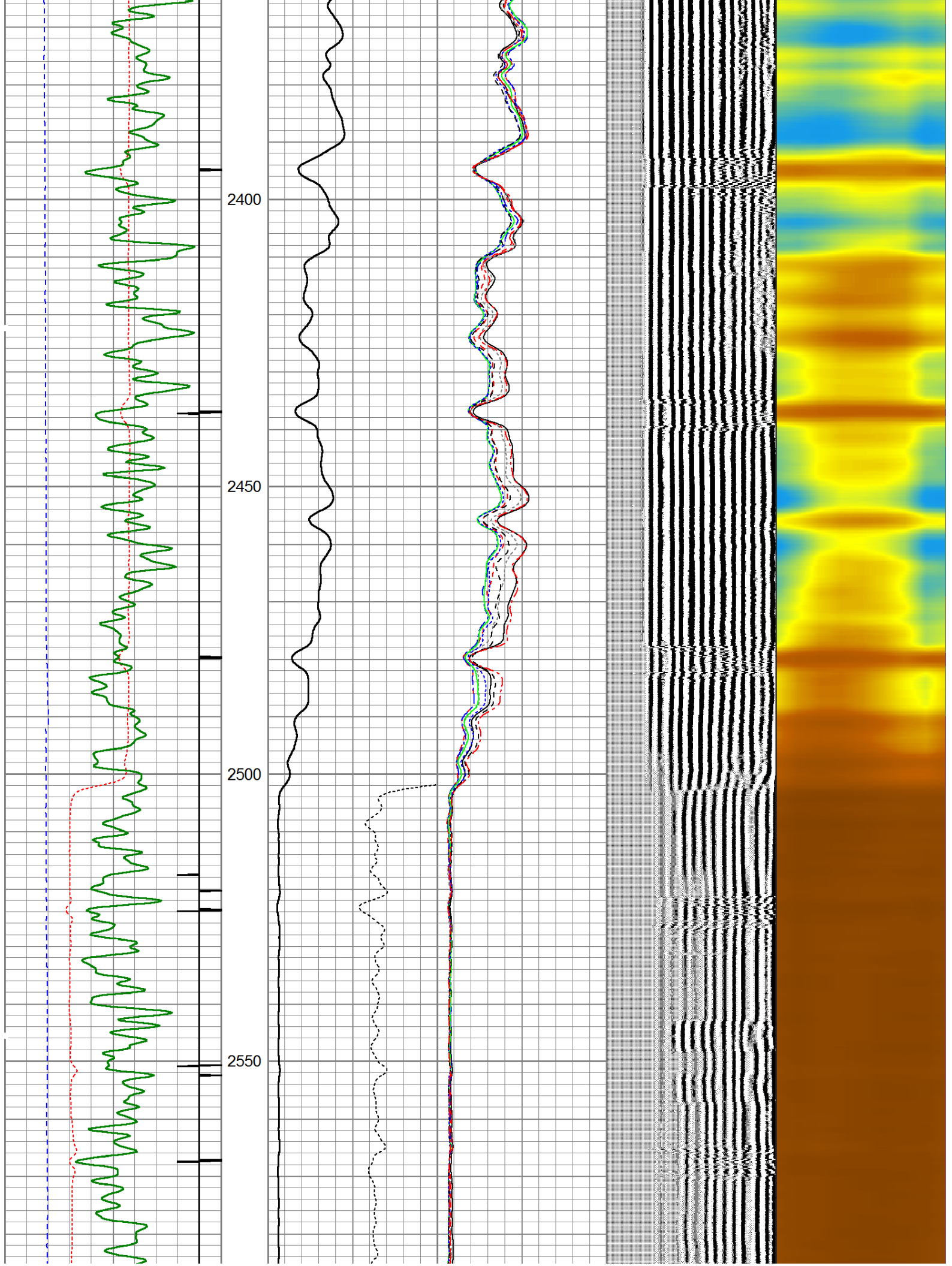


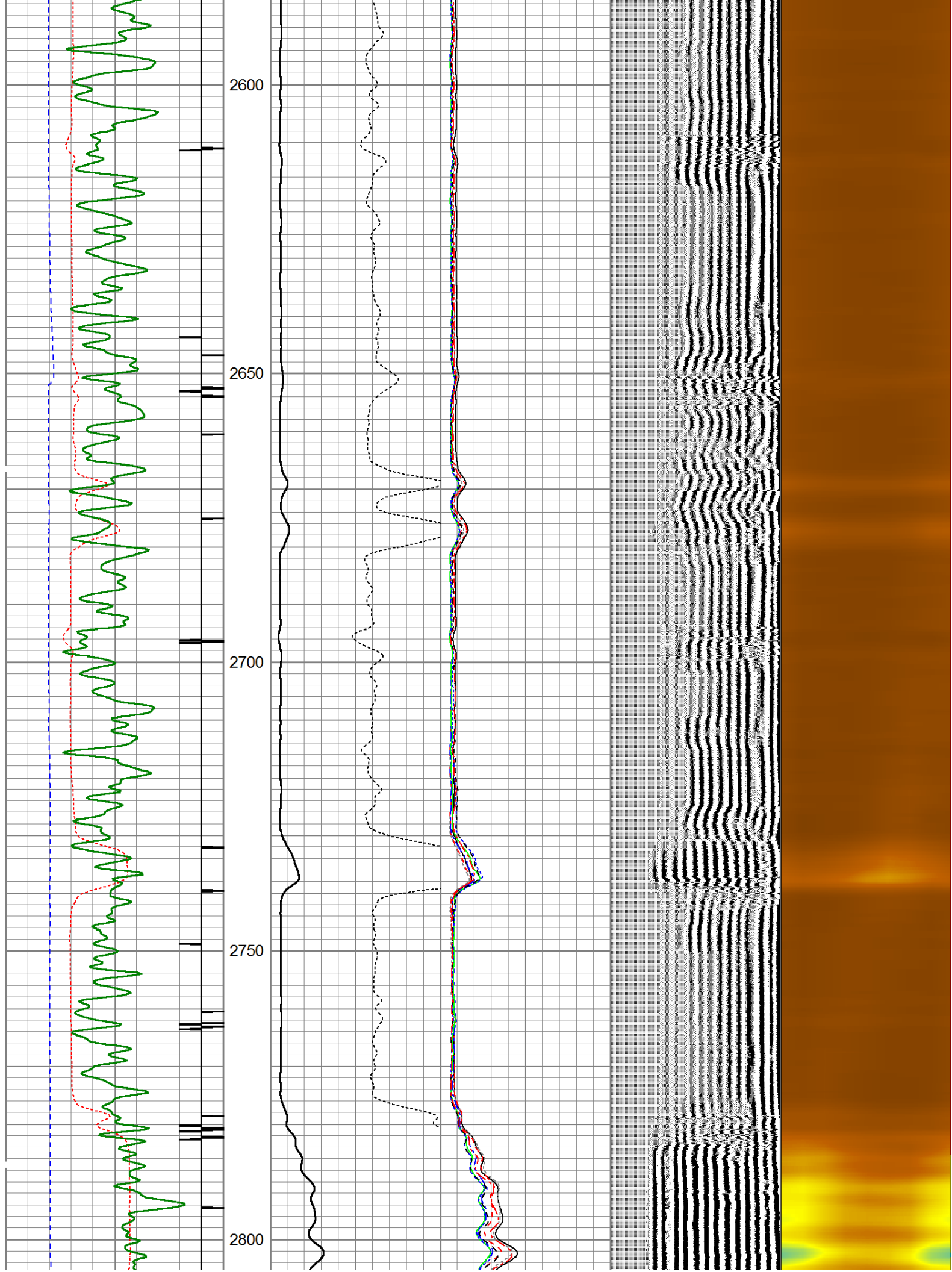




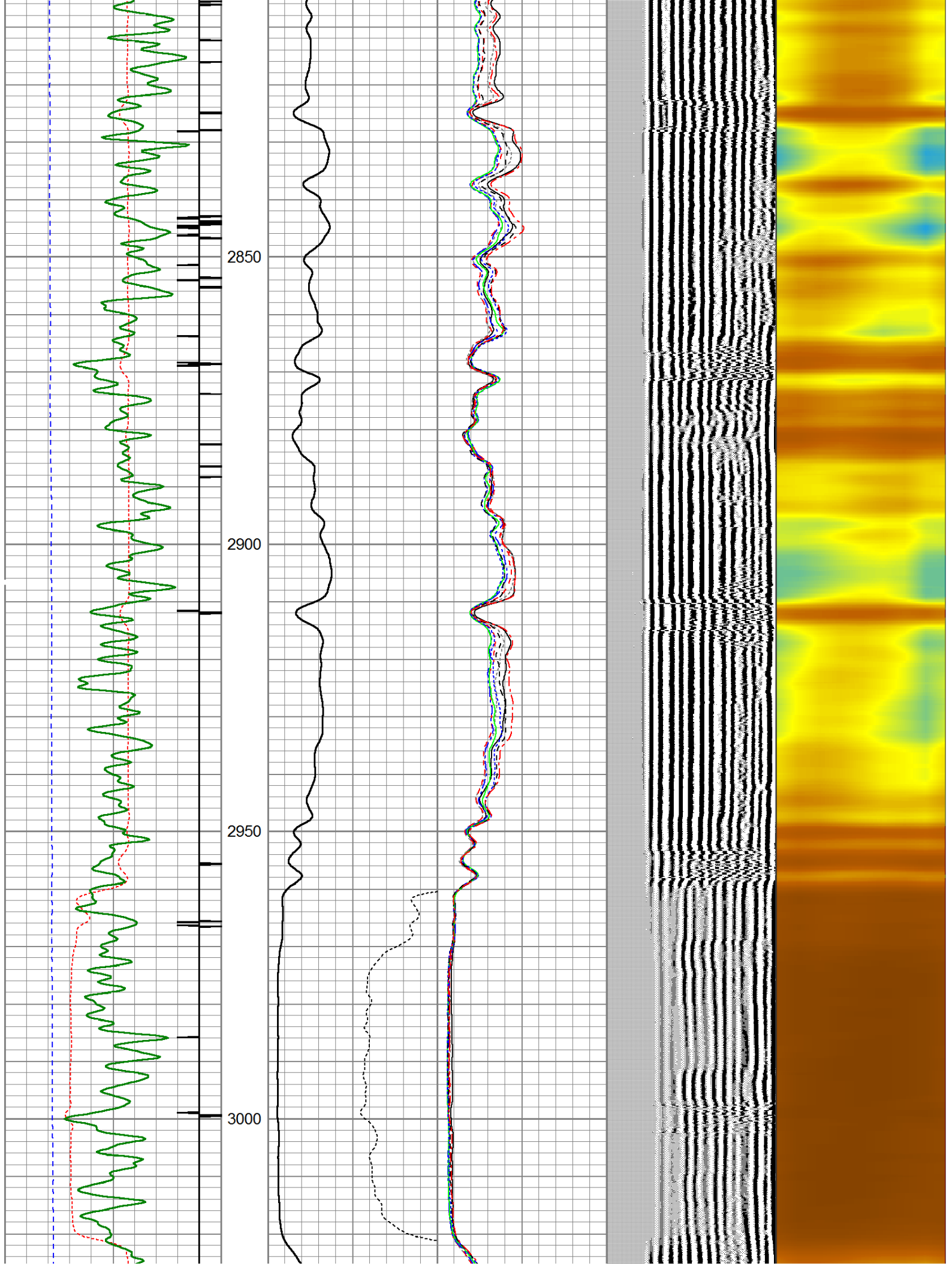


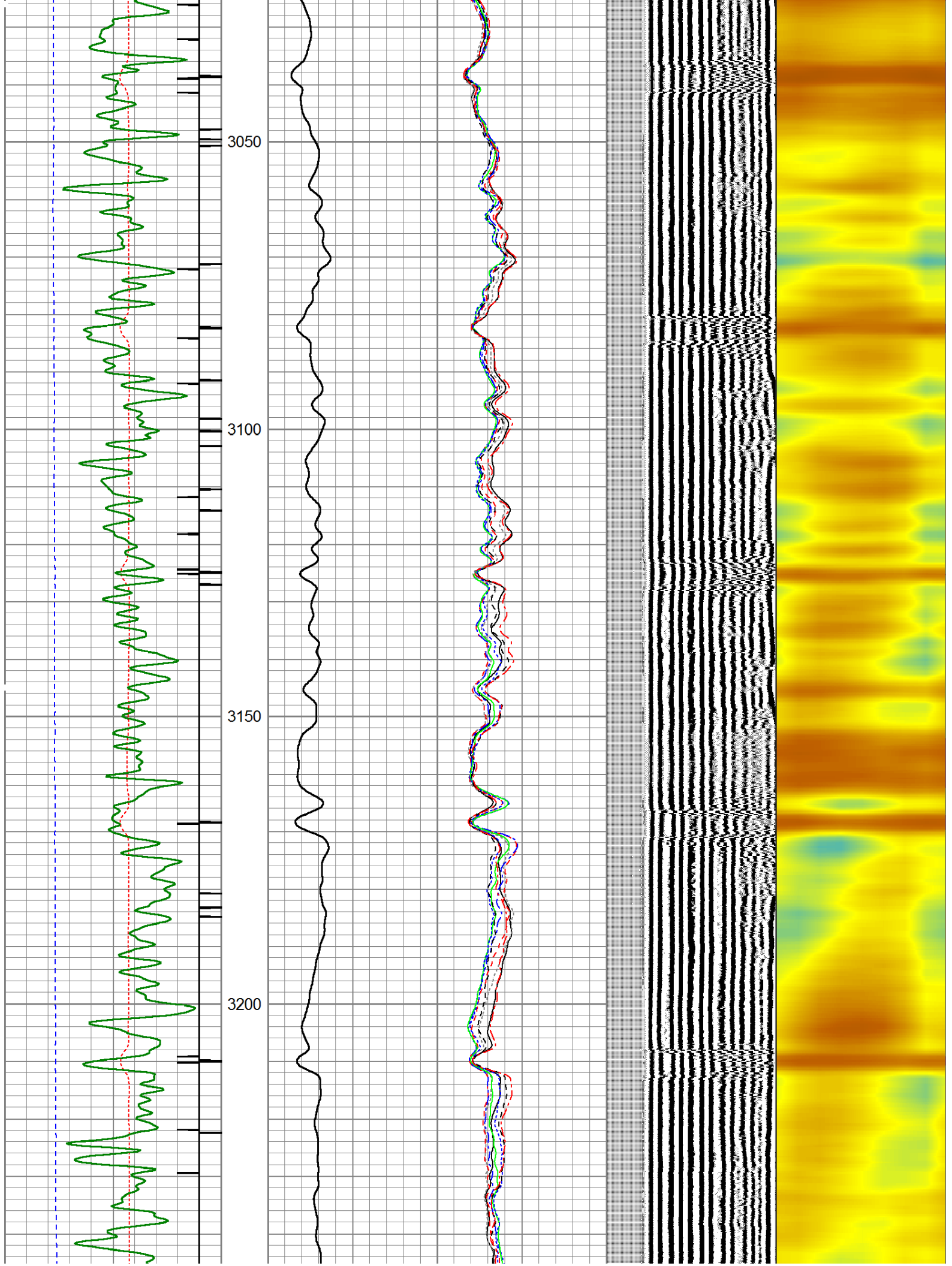




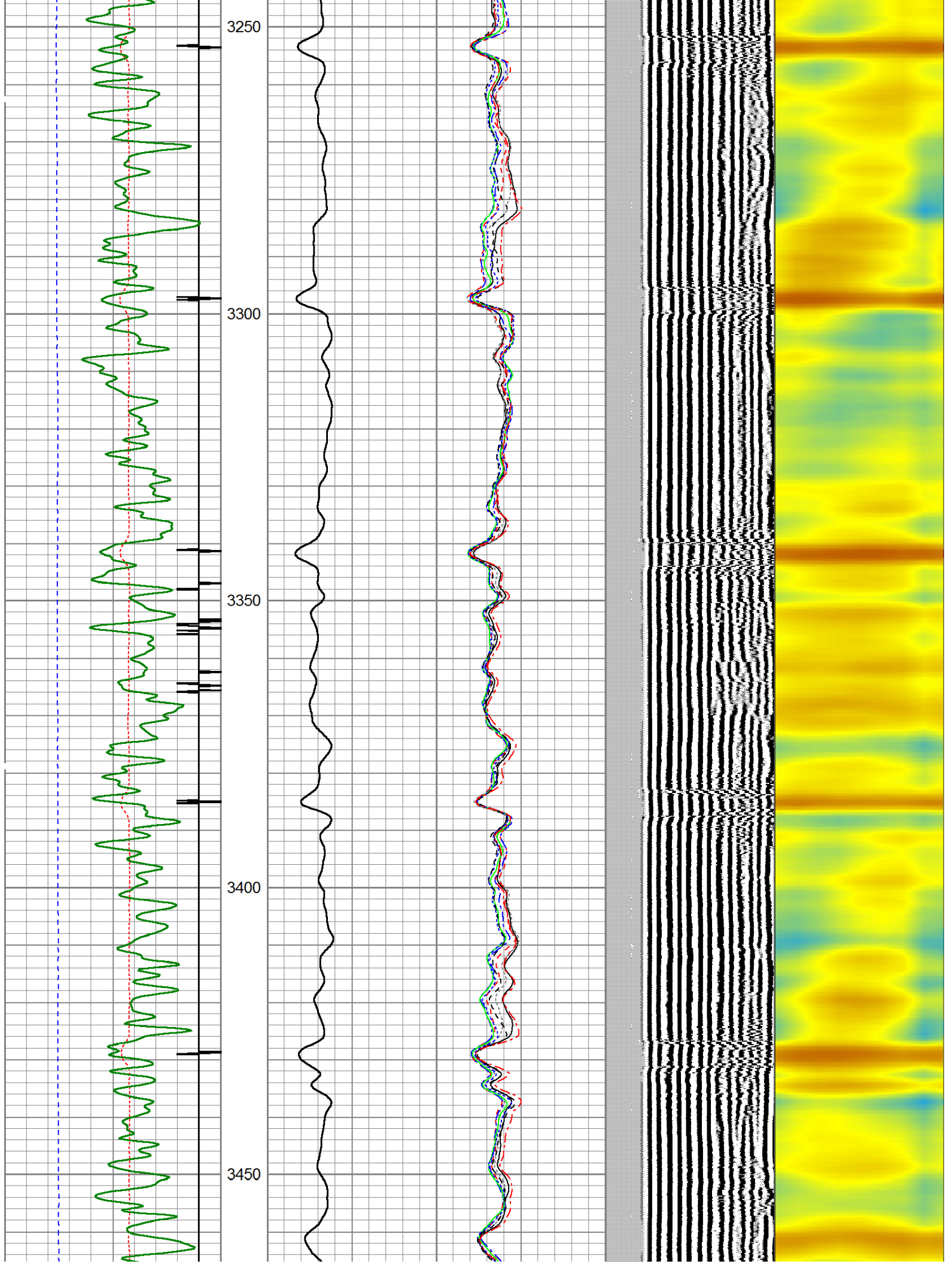


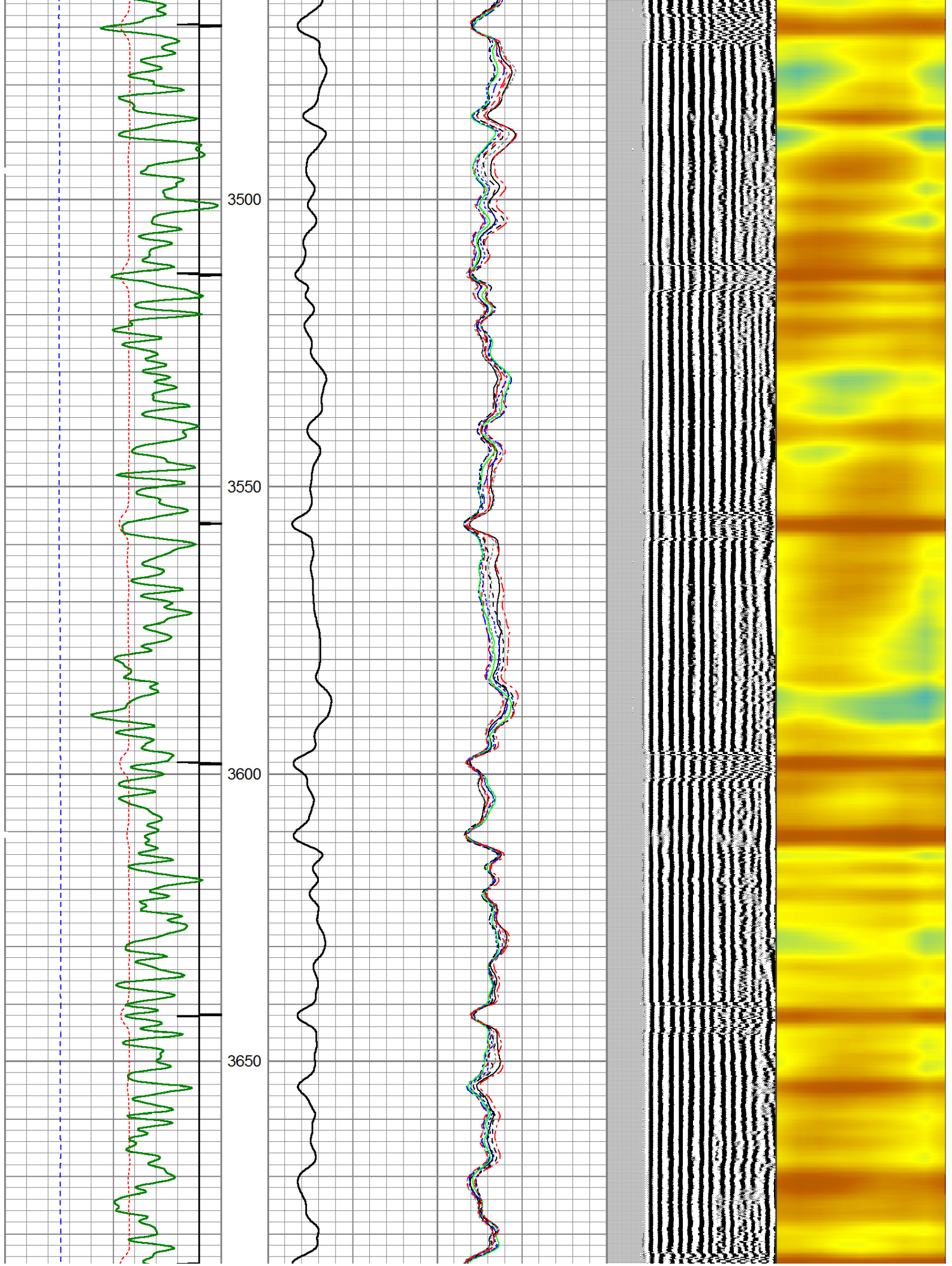


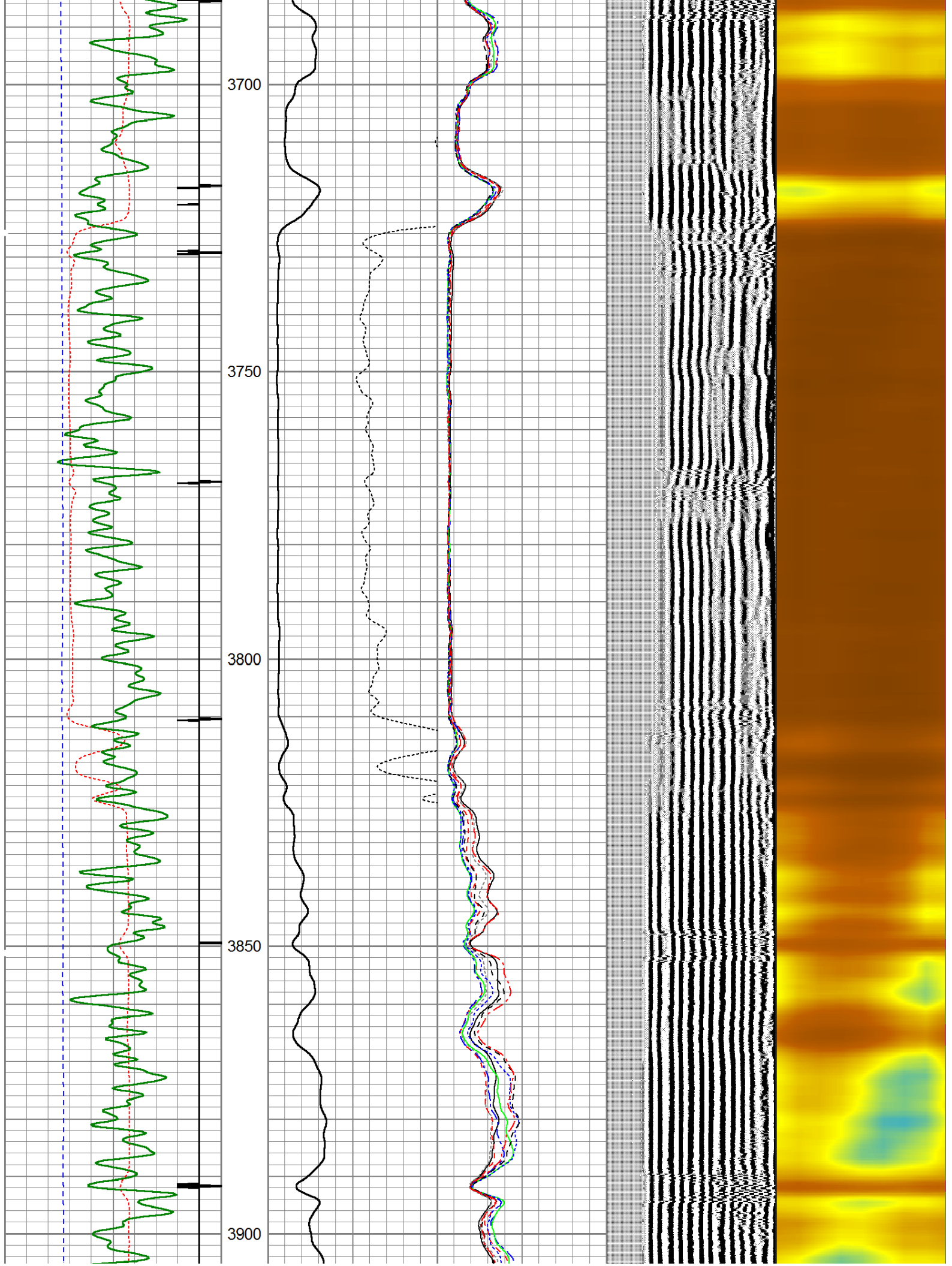




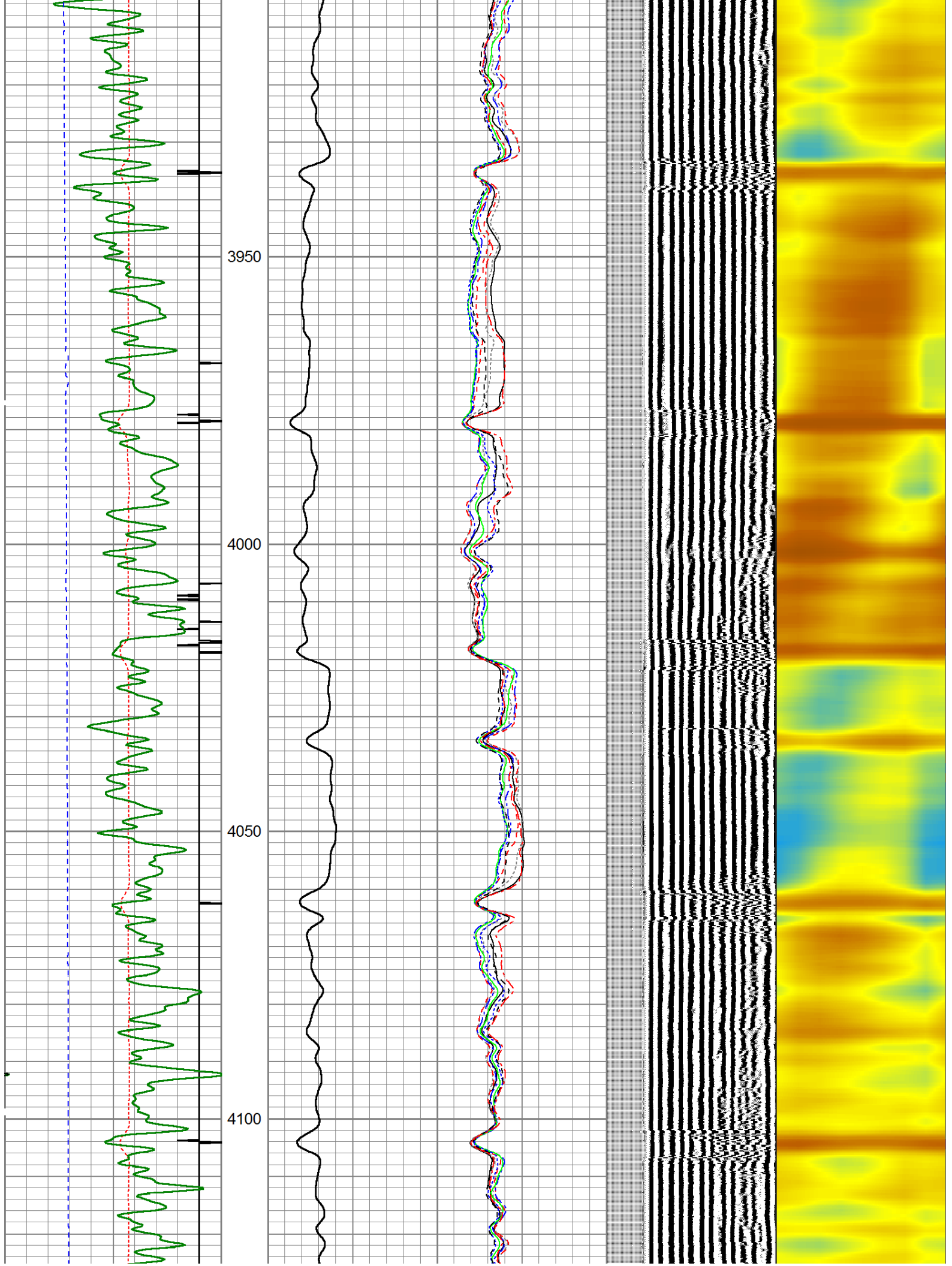




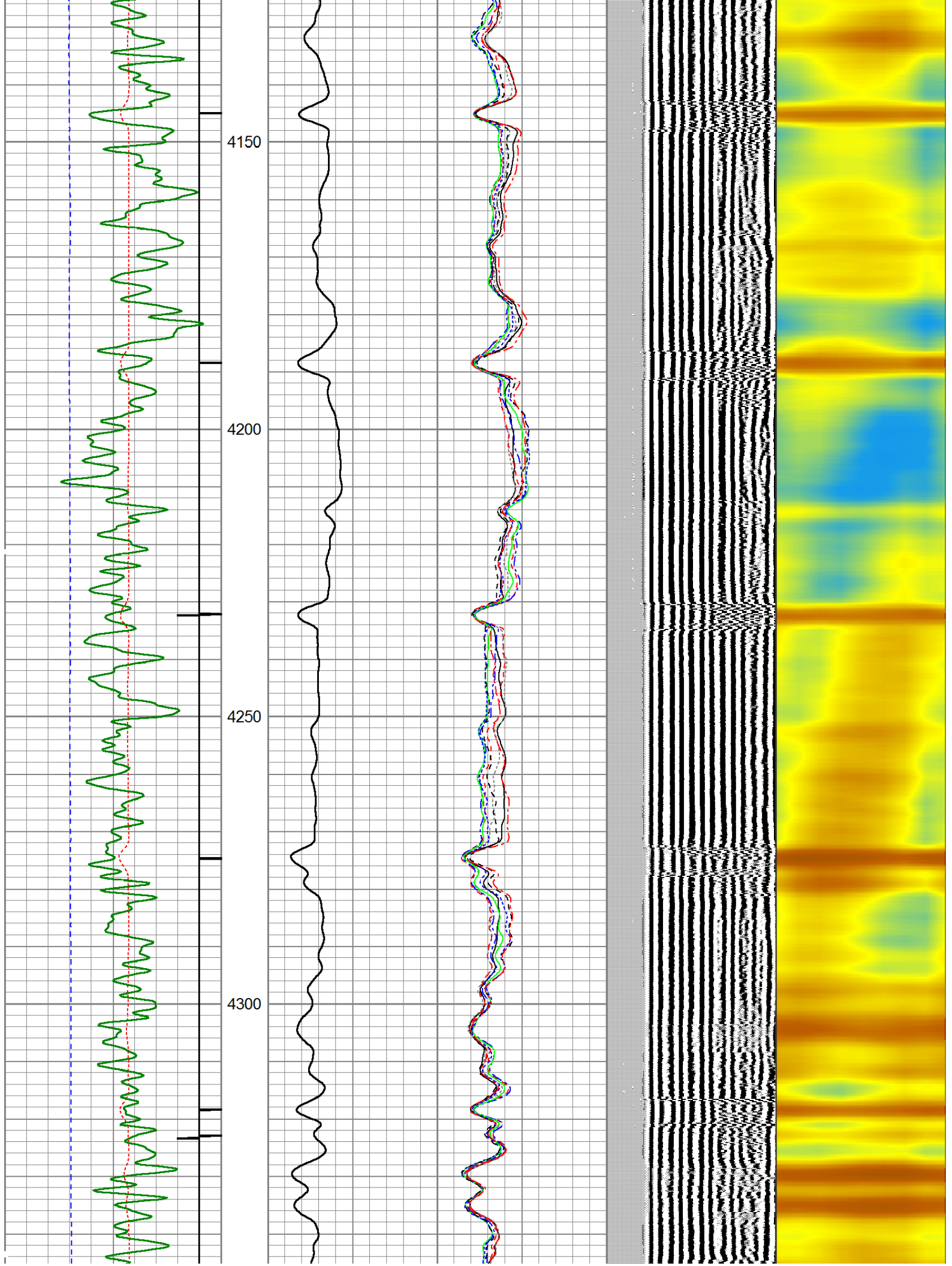


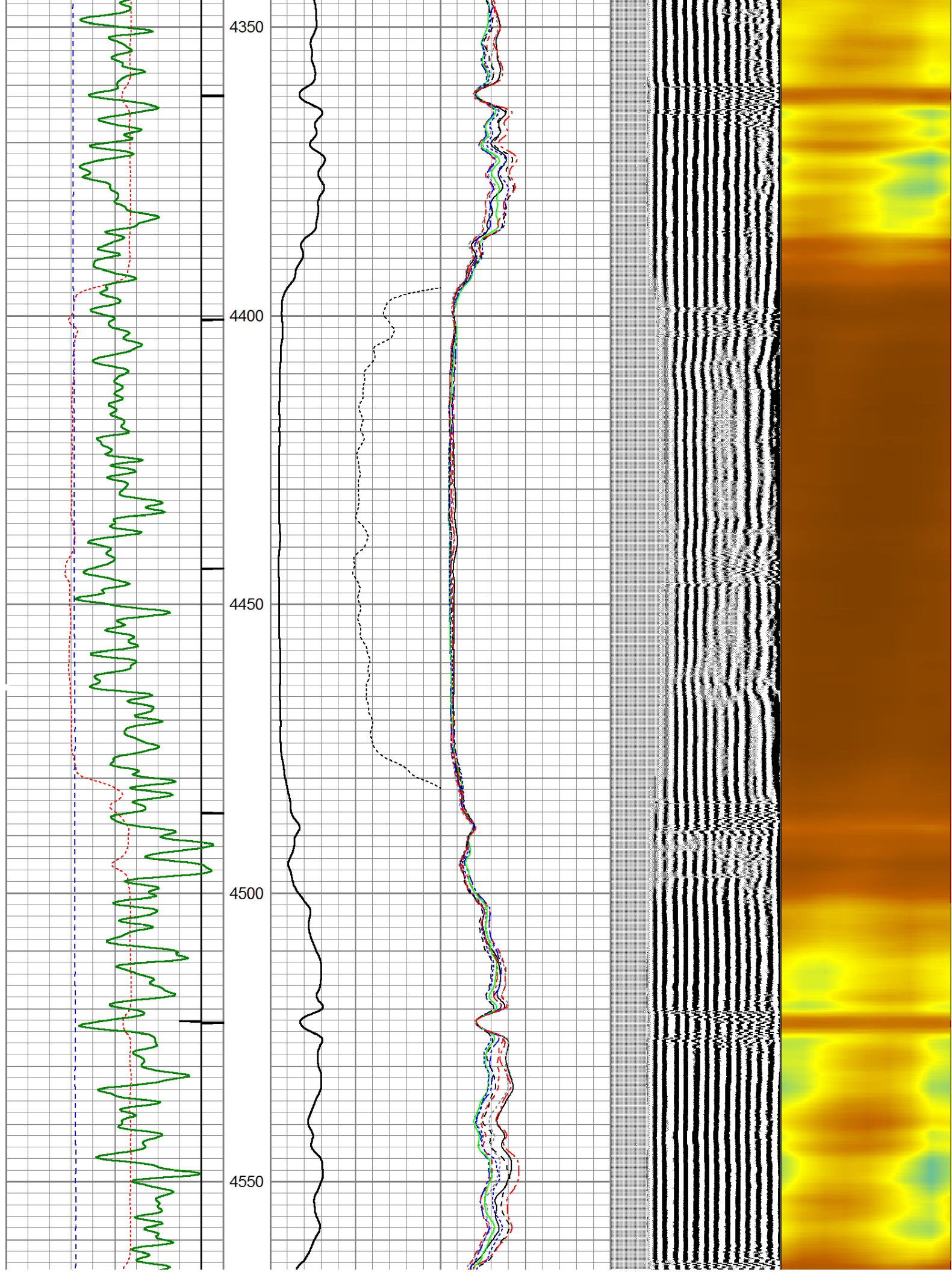


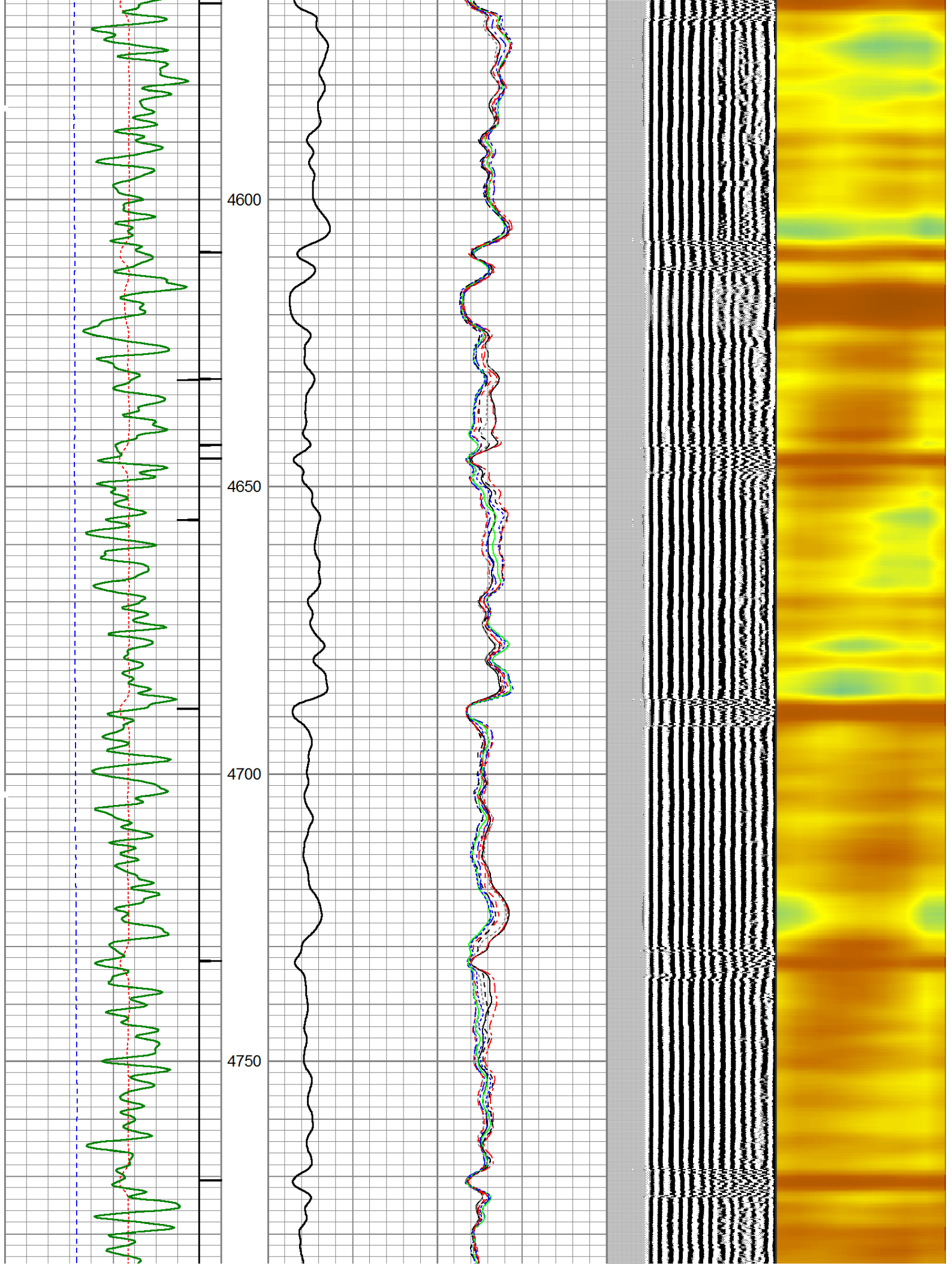




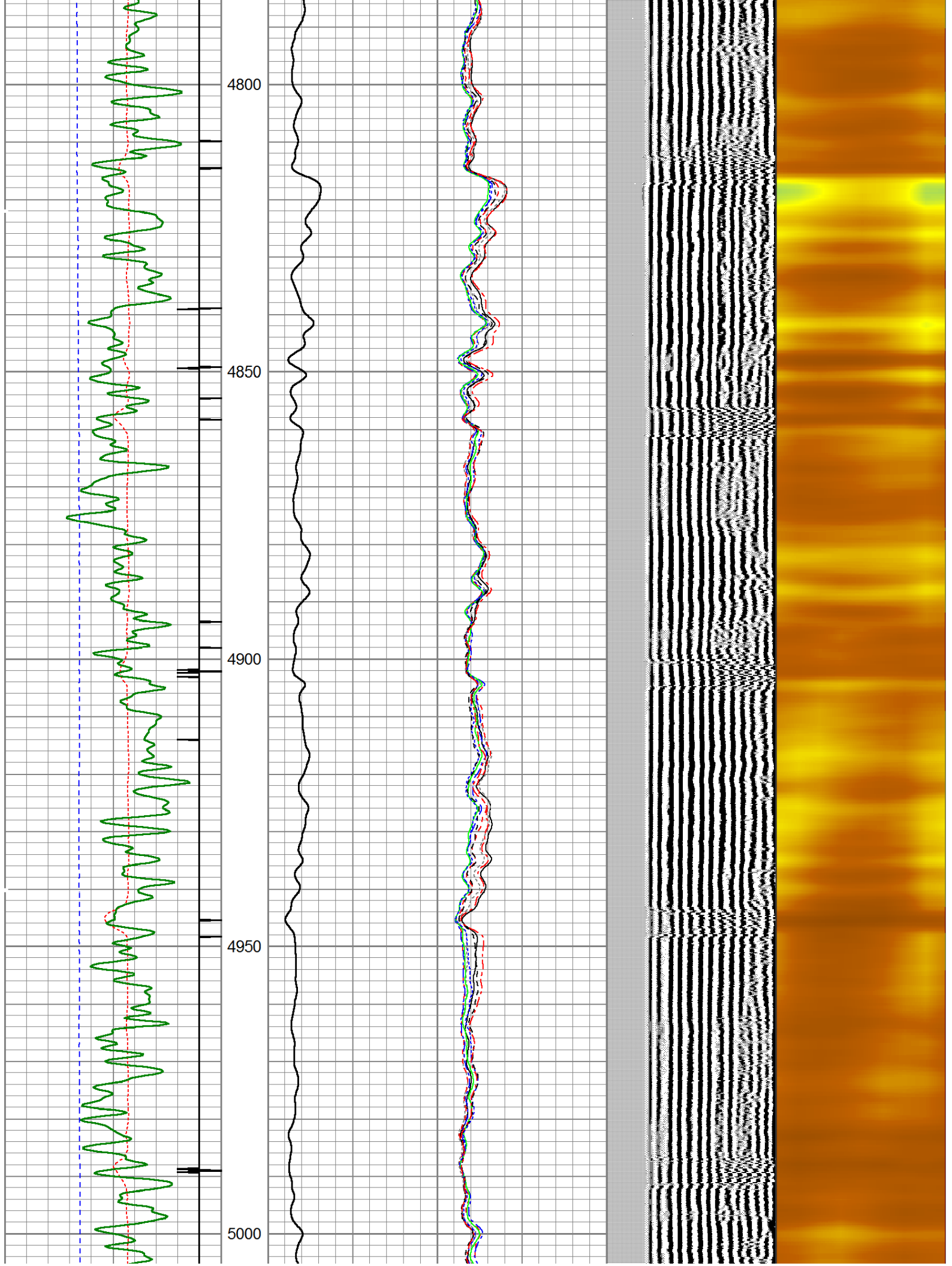


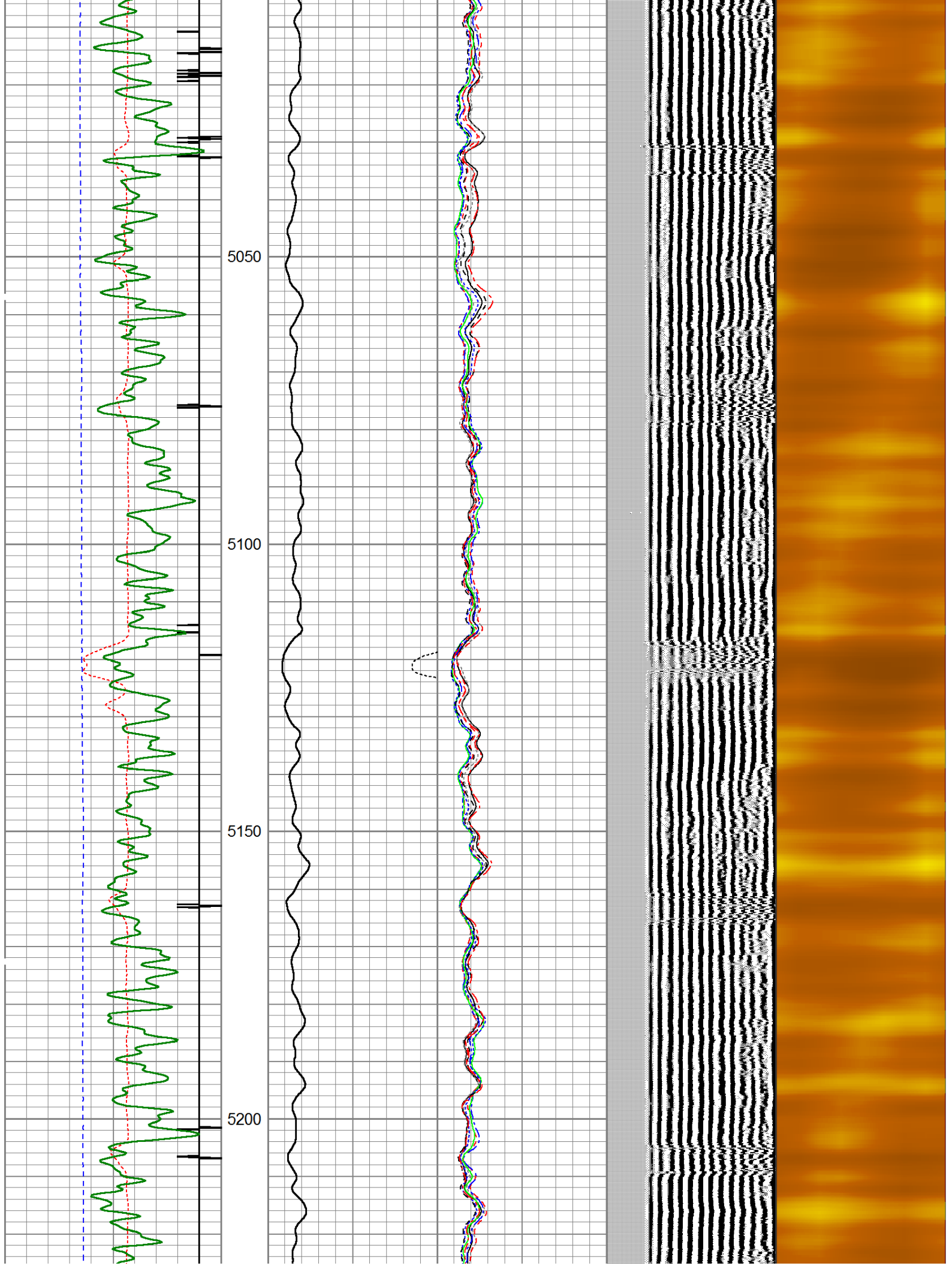


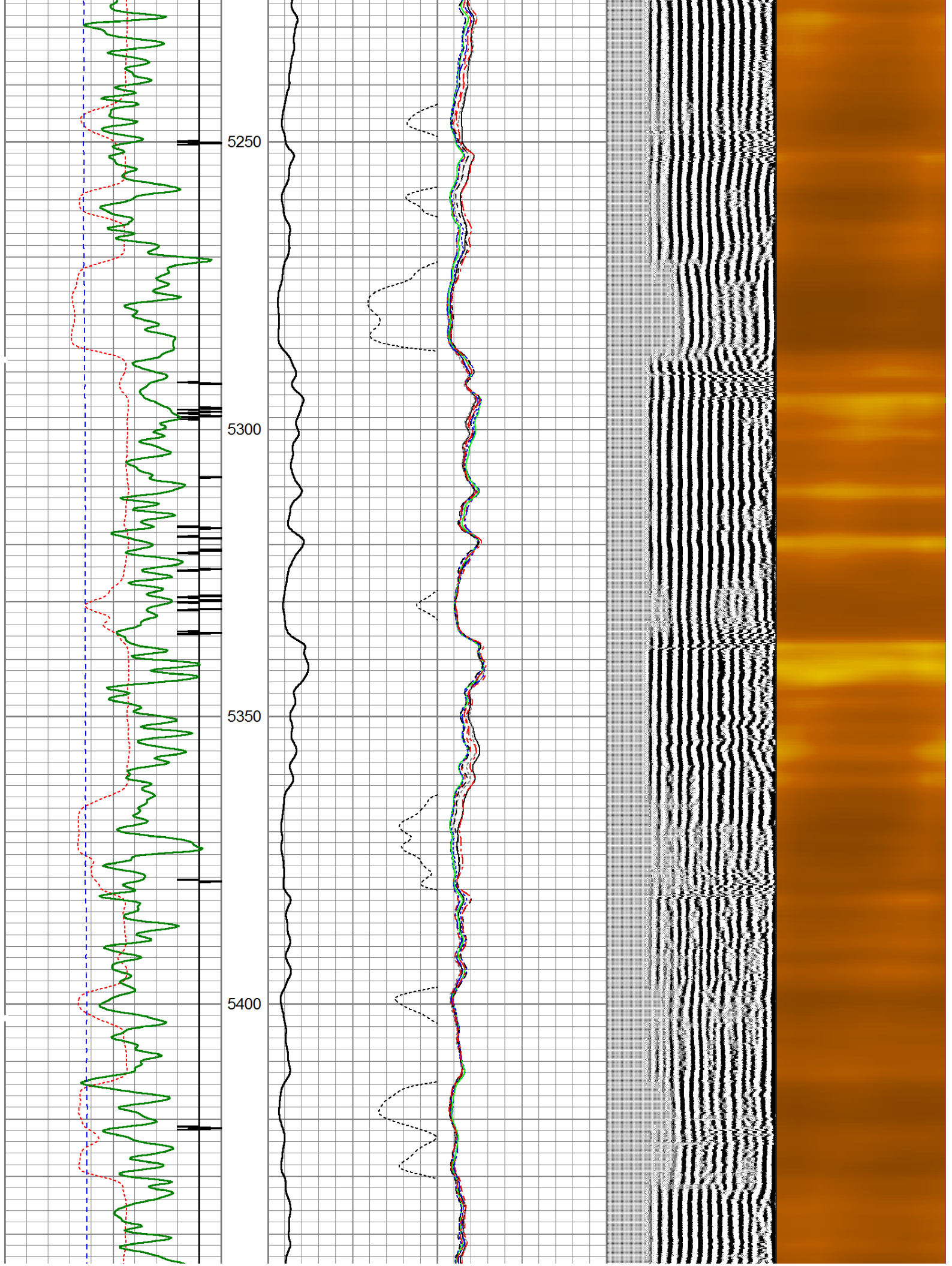




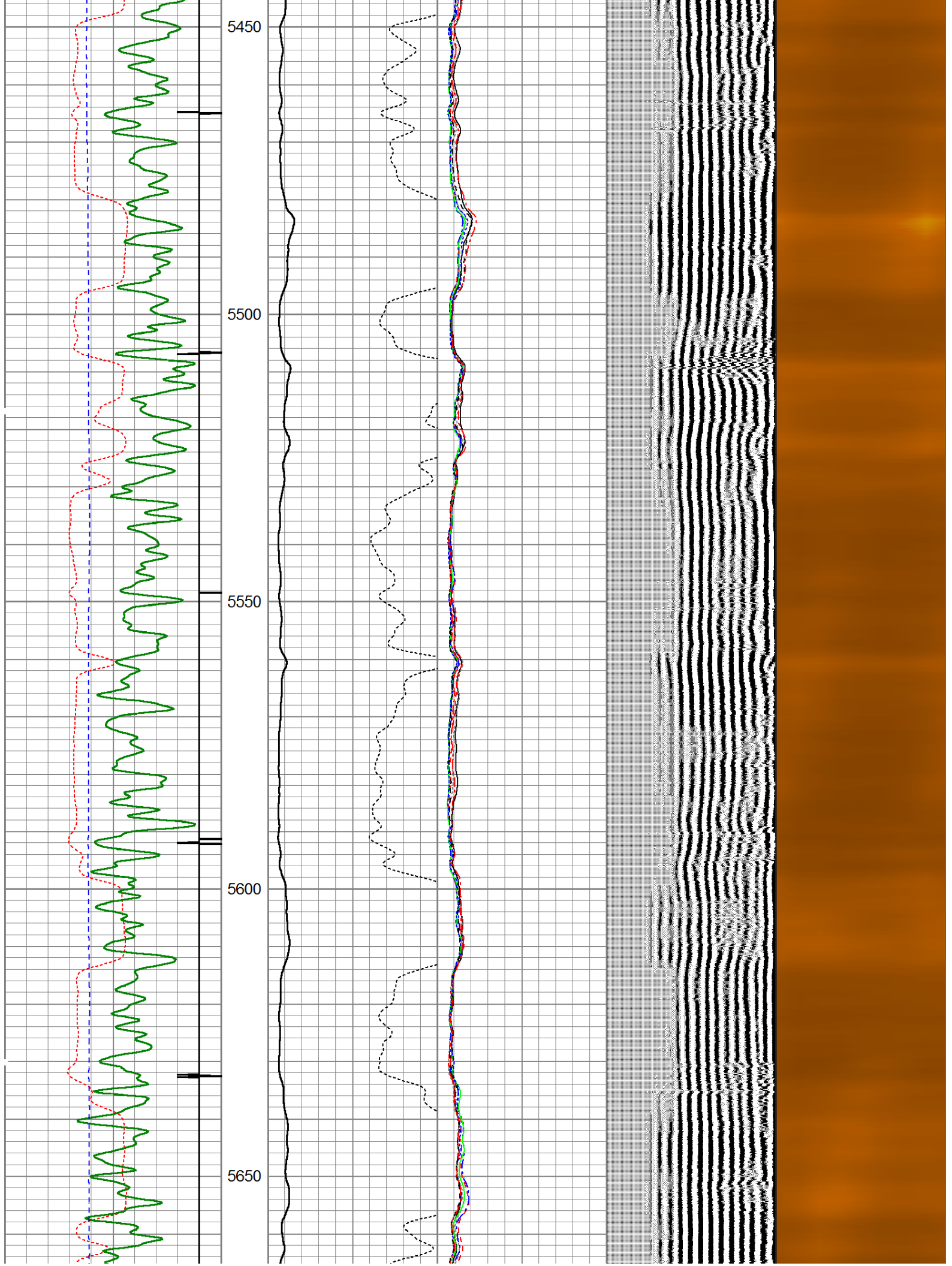


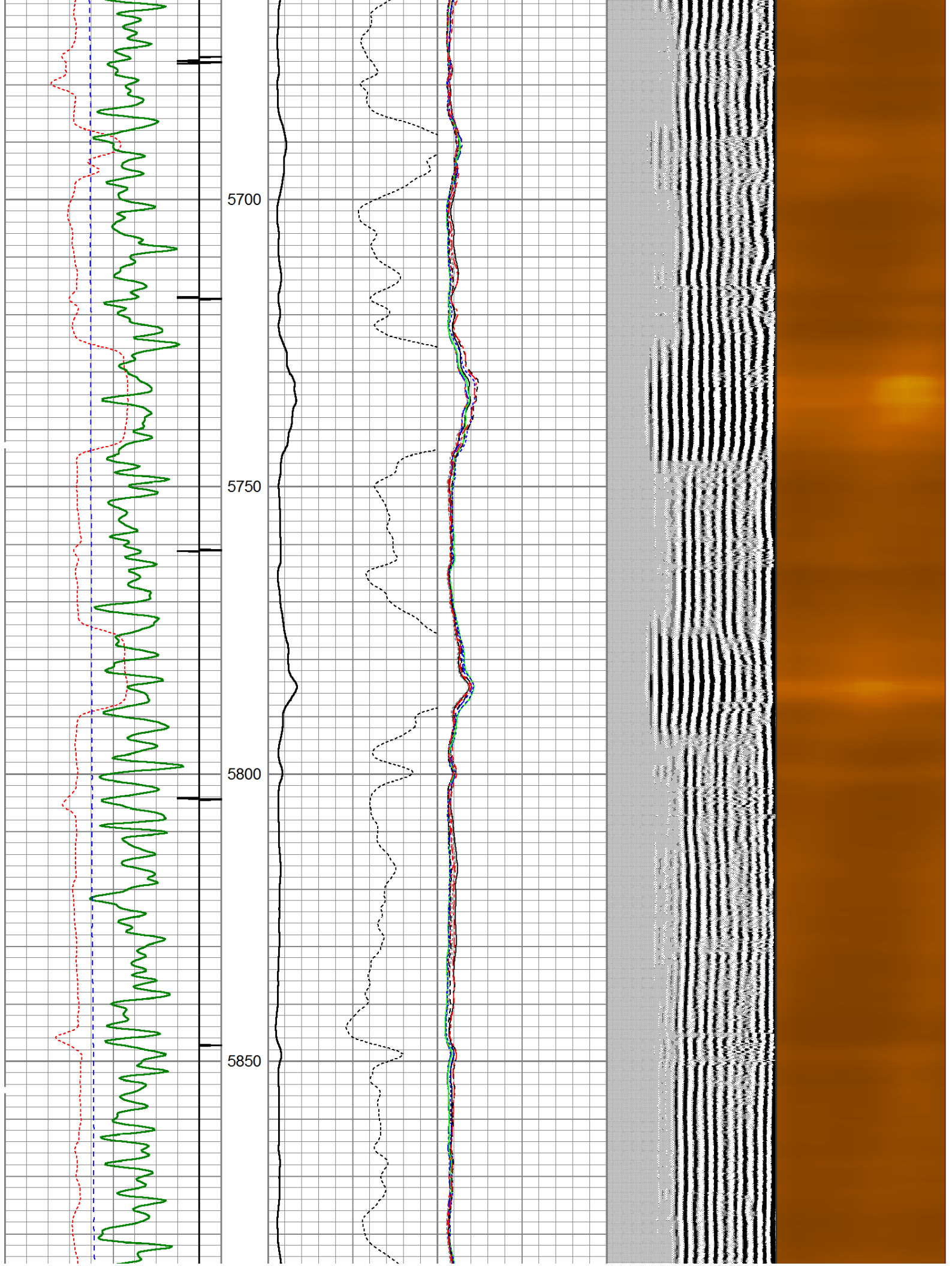




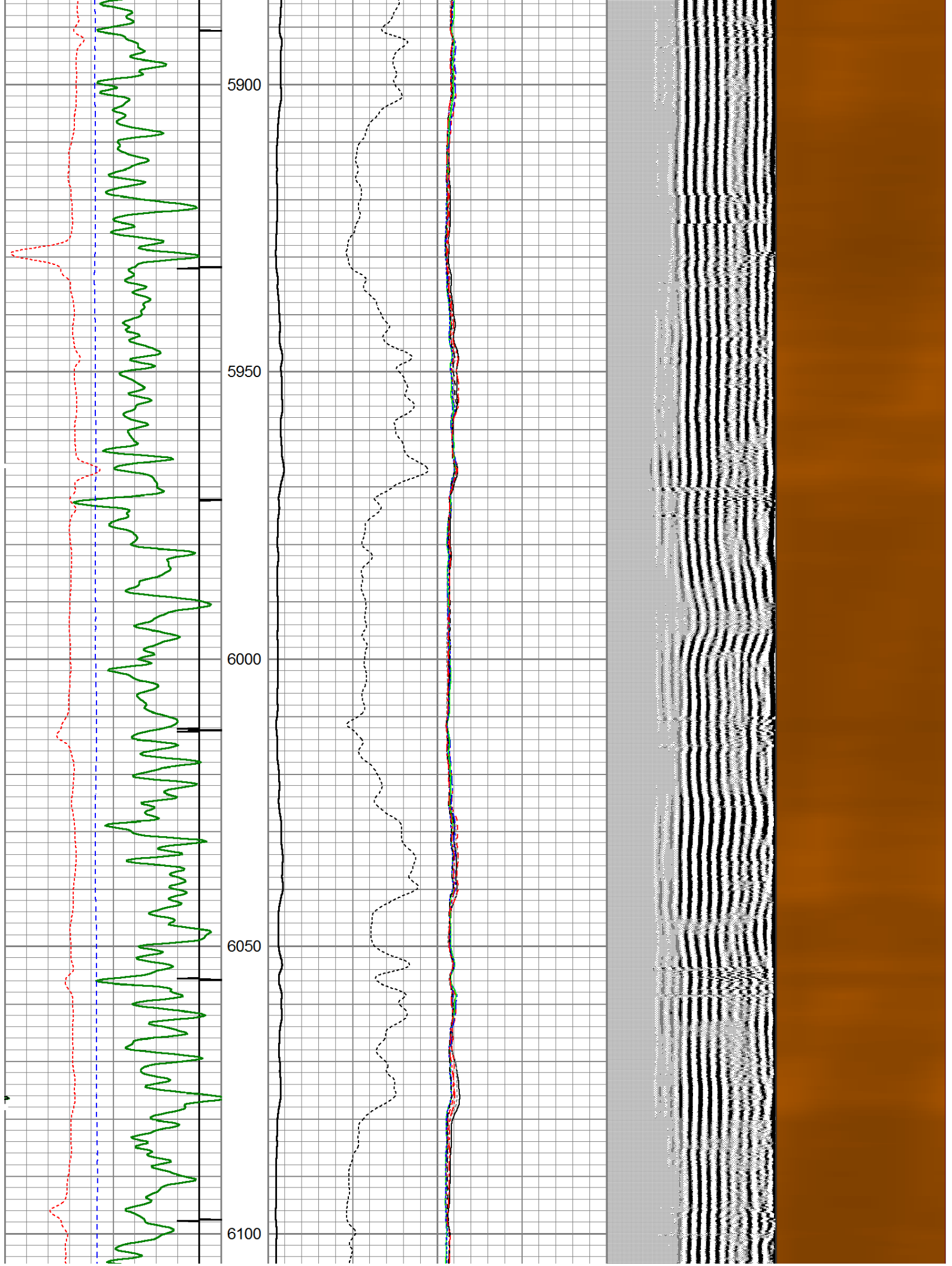




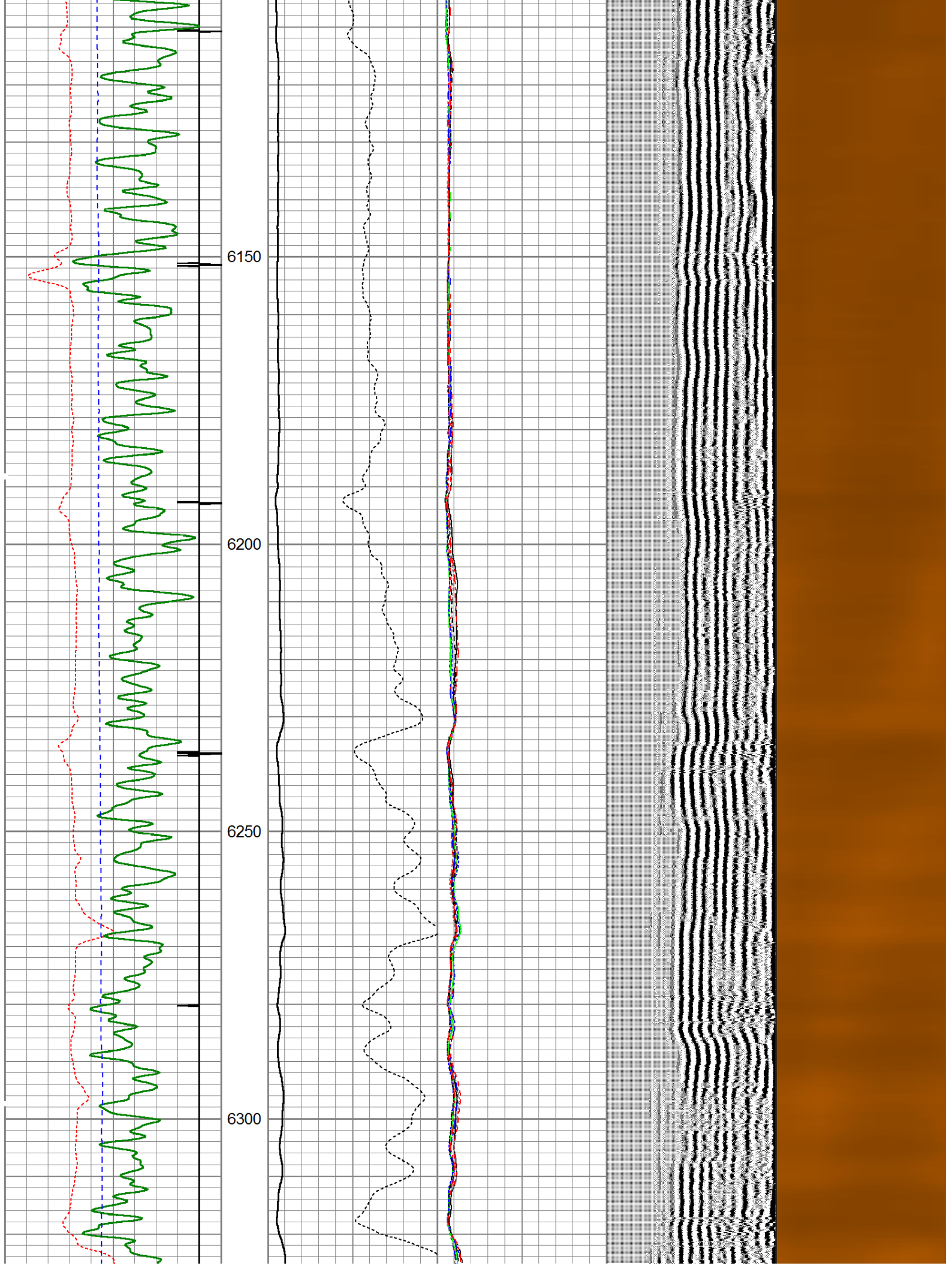


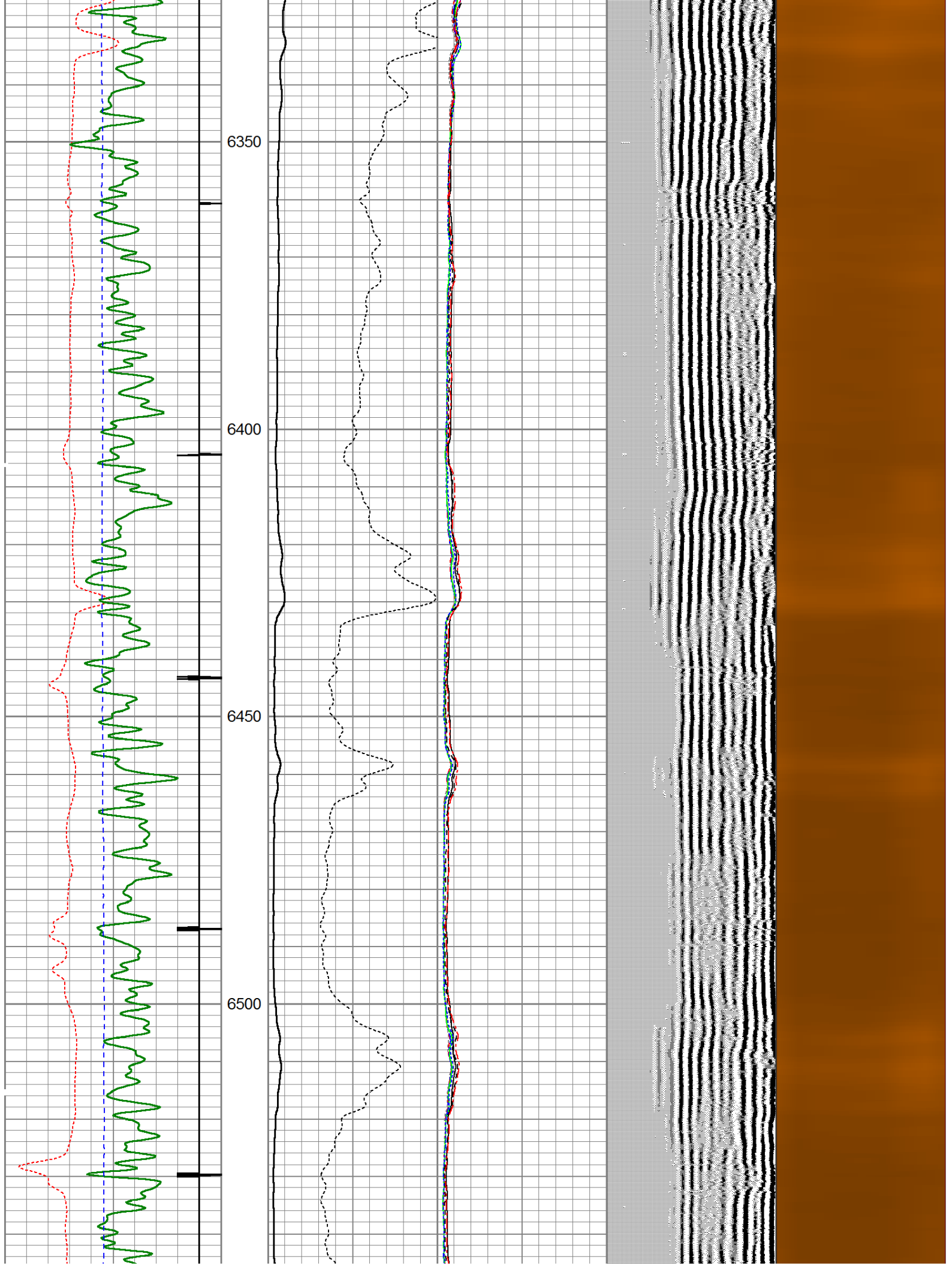




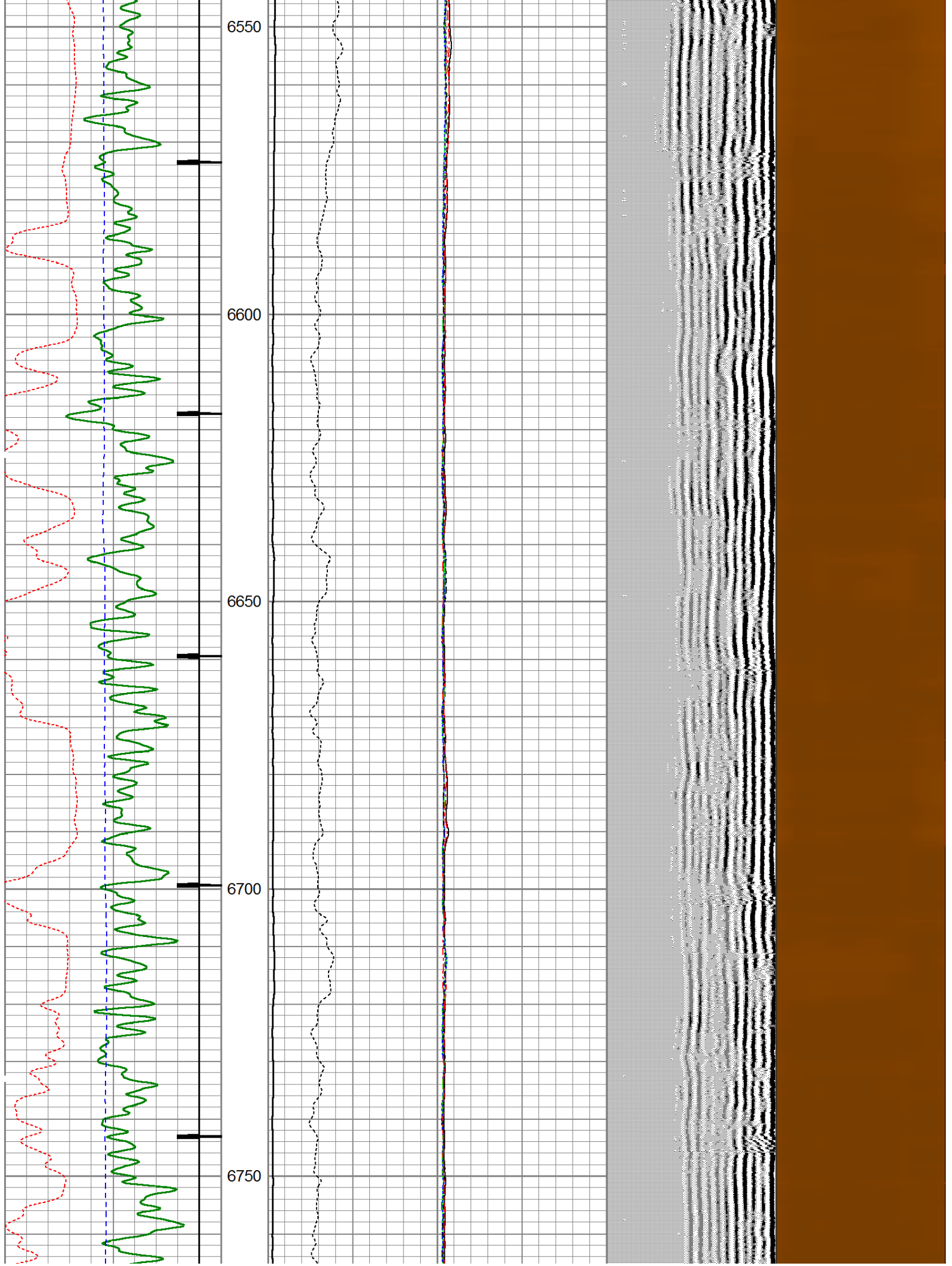




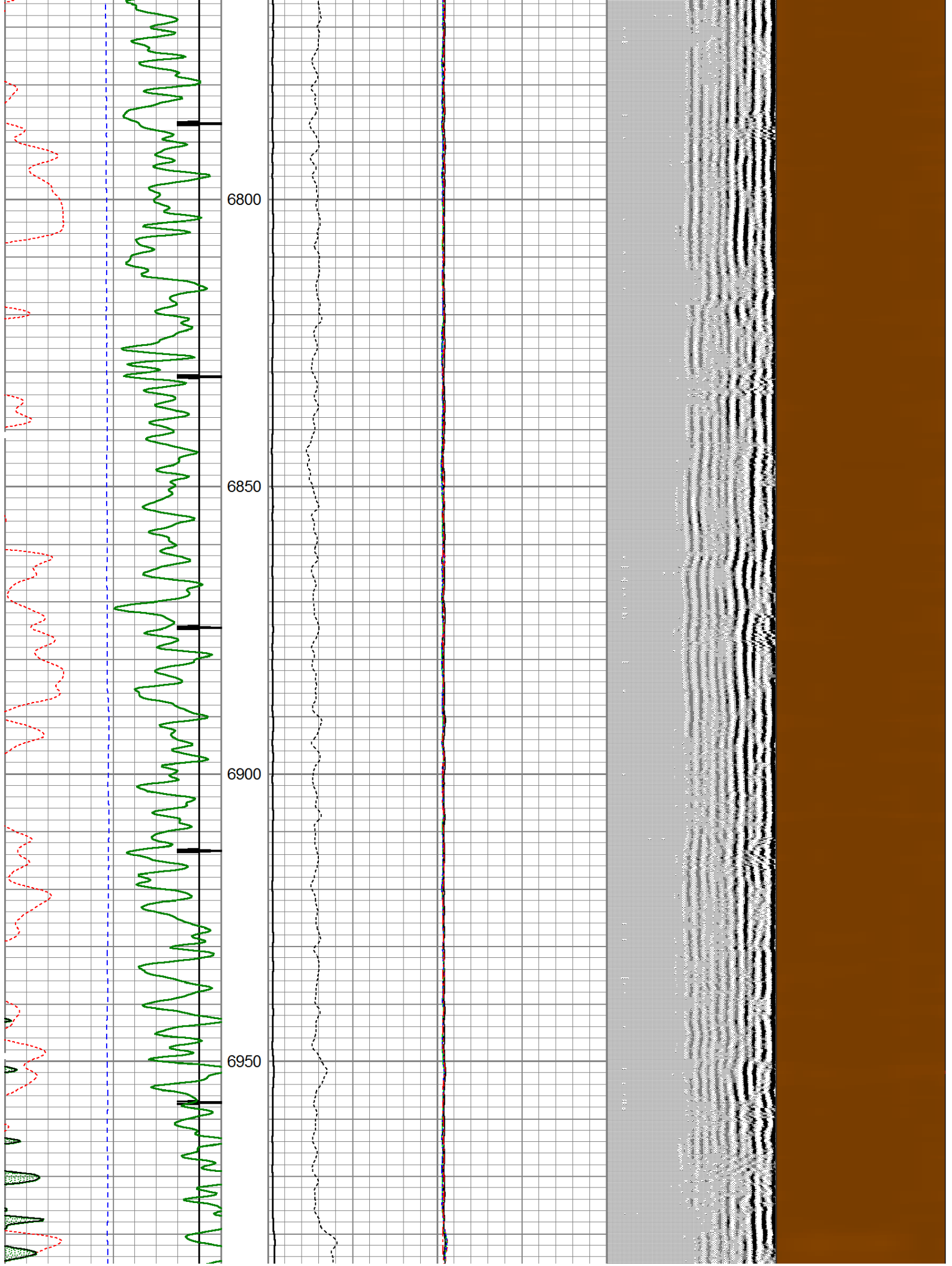


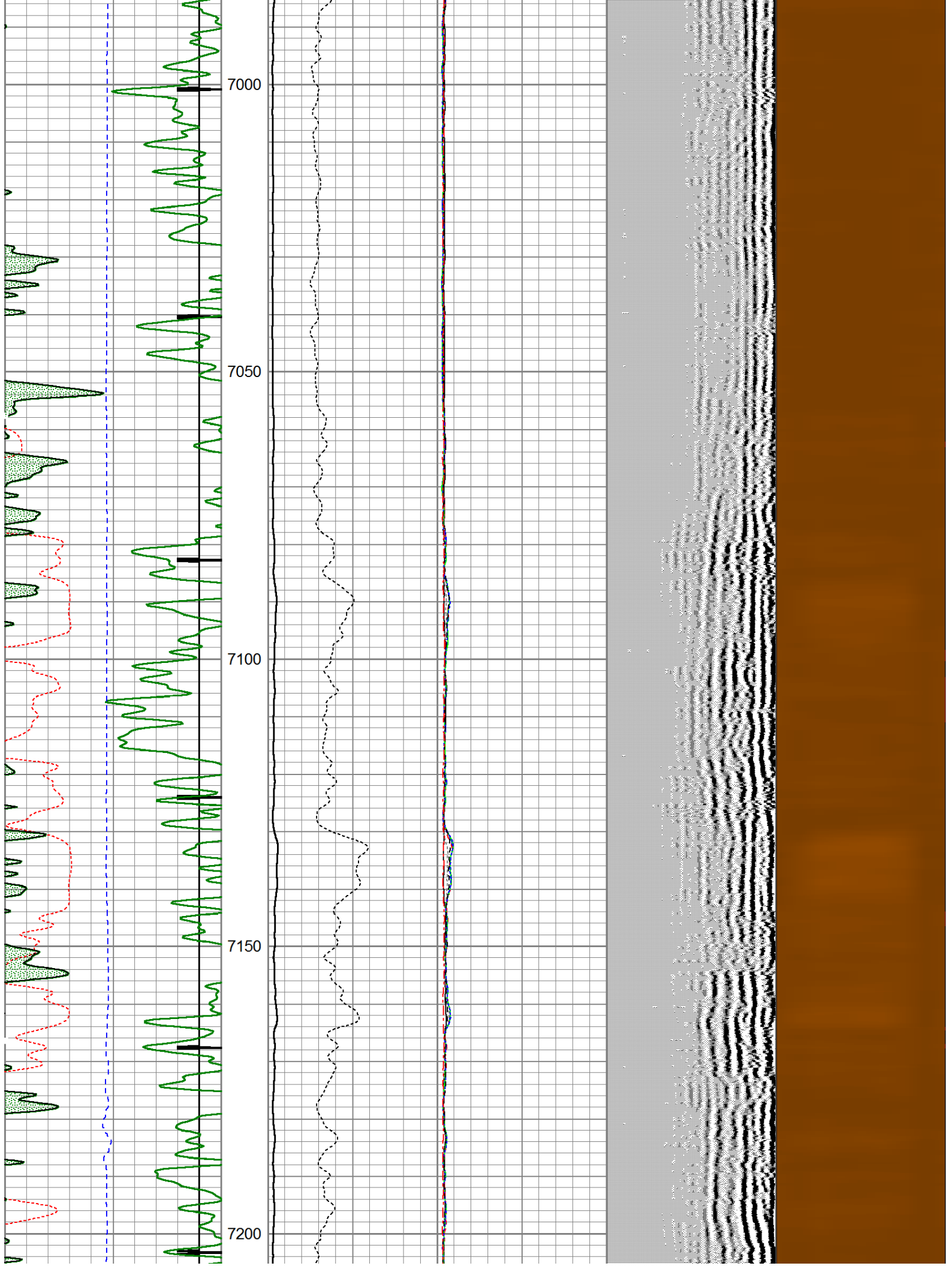




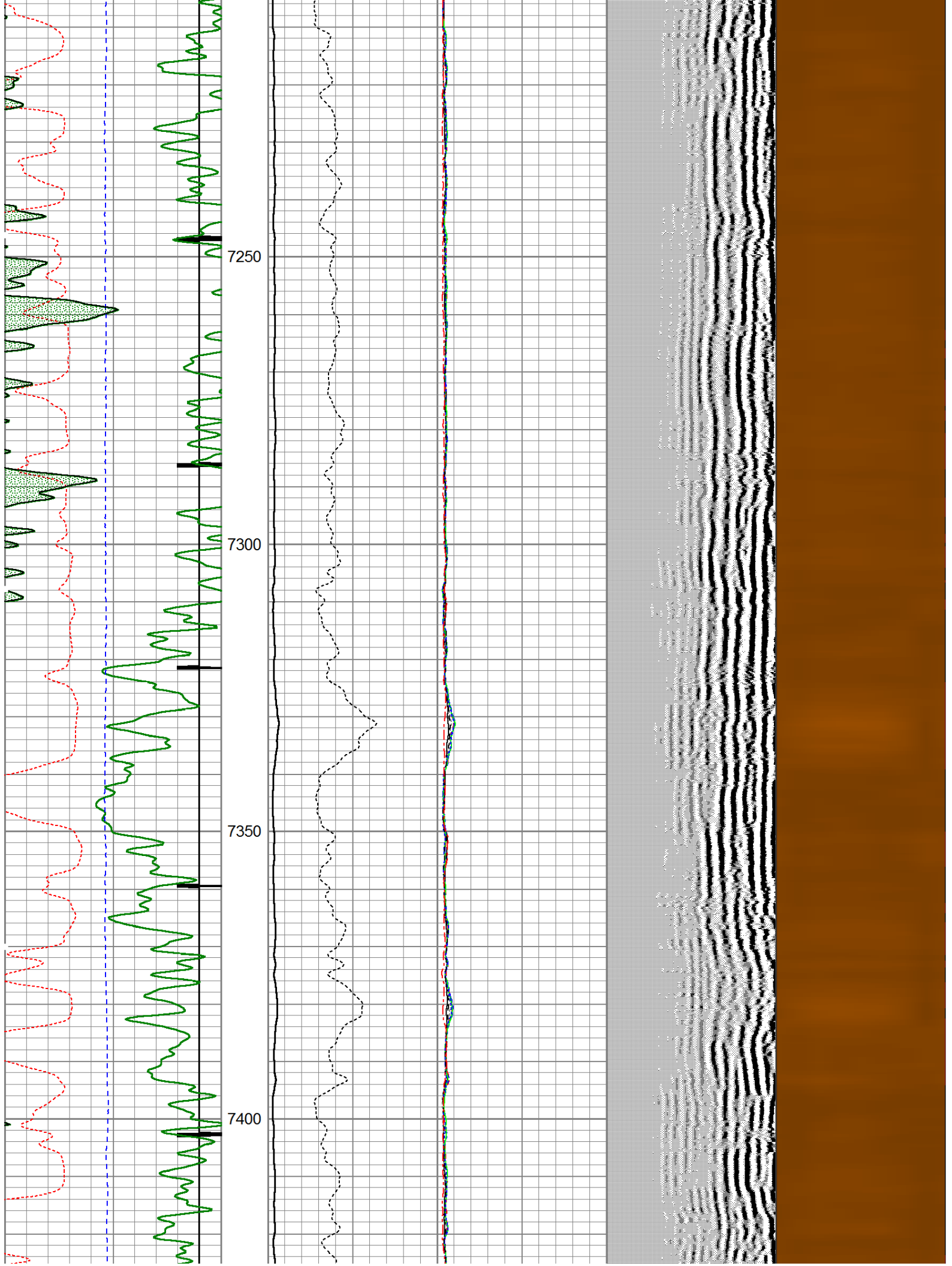




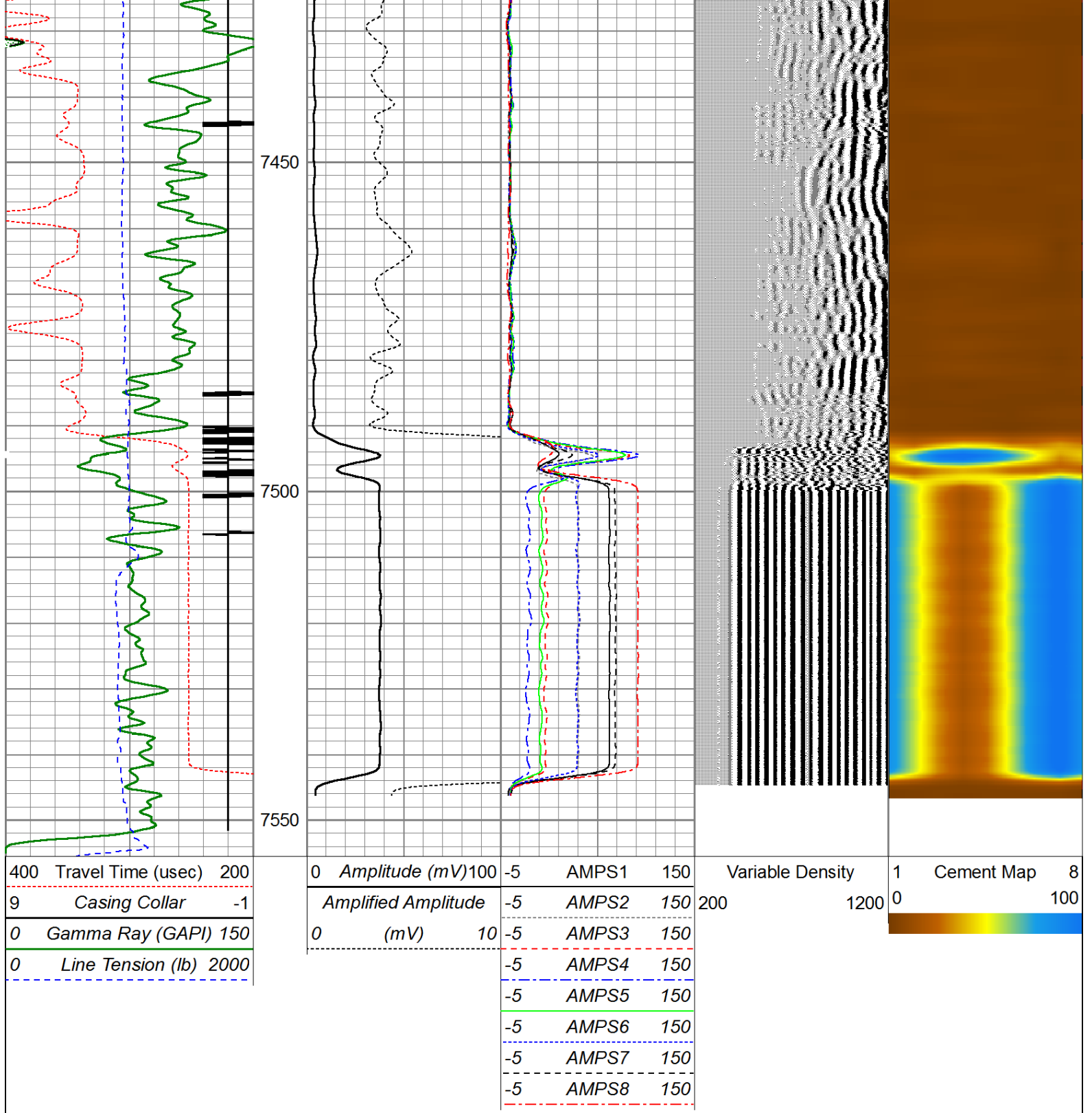






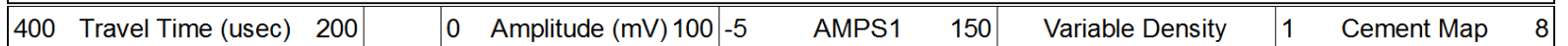






# Repeat Pass ( 0 PSI )

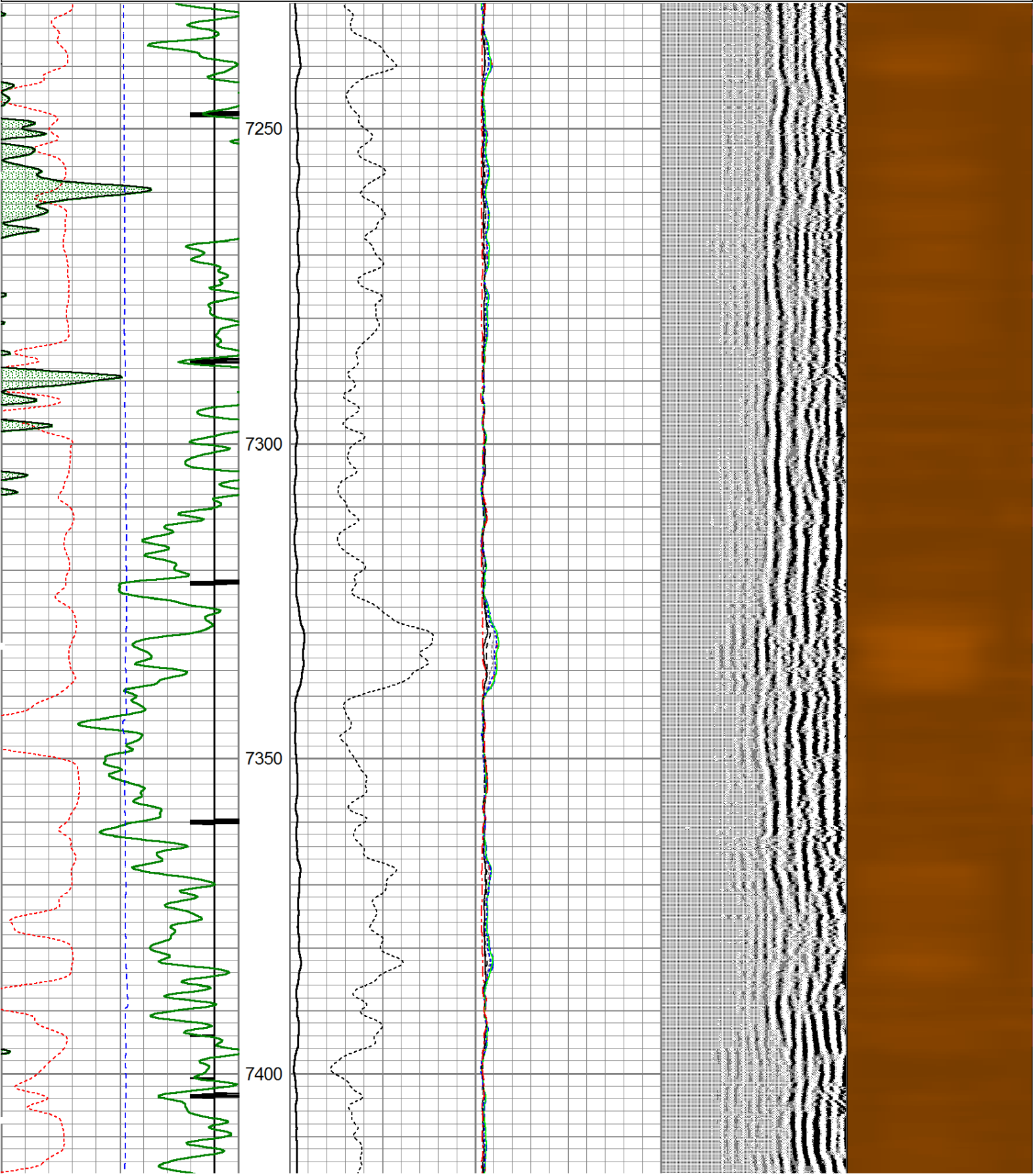
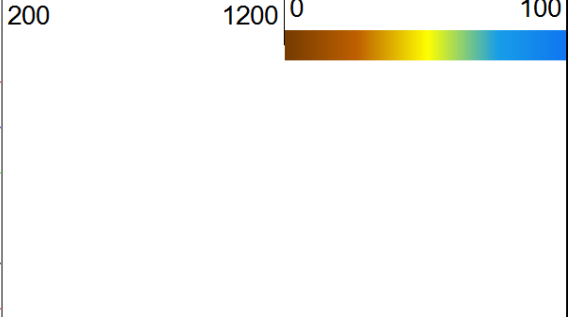
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 Presentation Format: scbl03  
 Dataset Creation: Sat Dec 07 01:06:20 2013 by Log 0  
 Charted by: Depth in Feet scaled 1:240

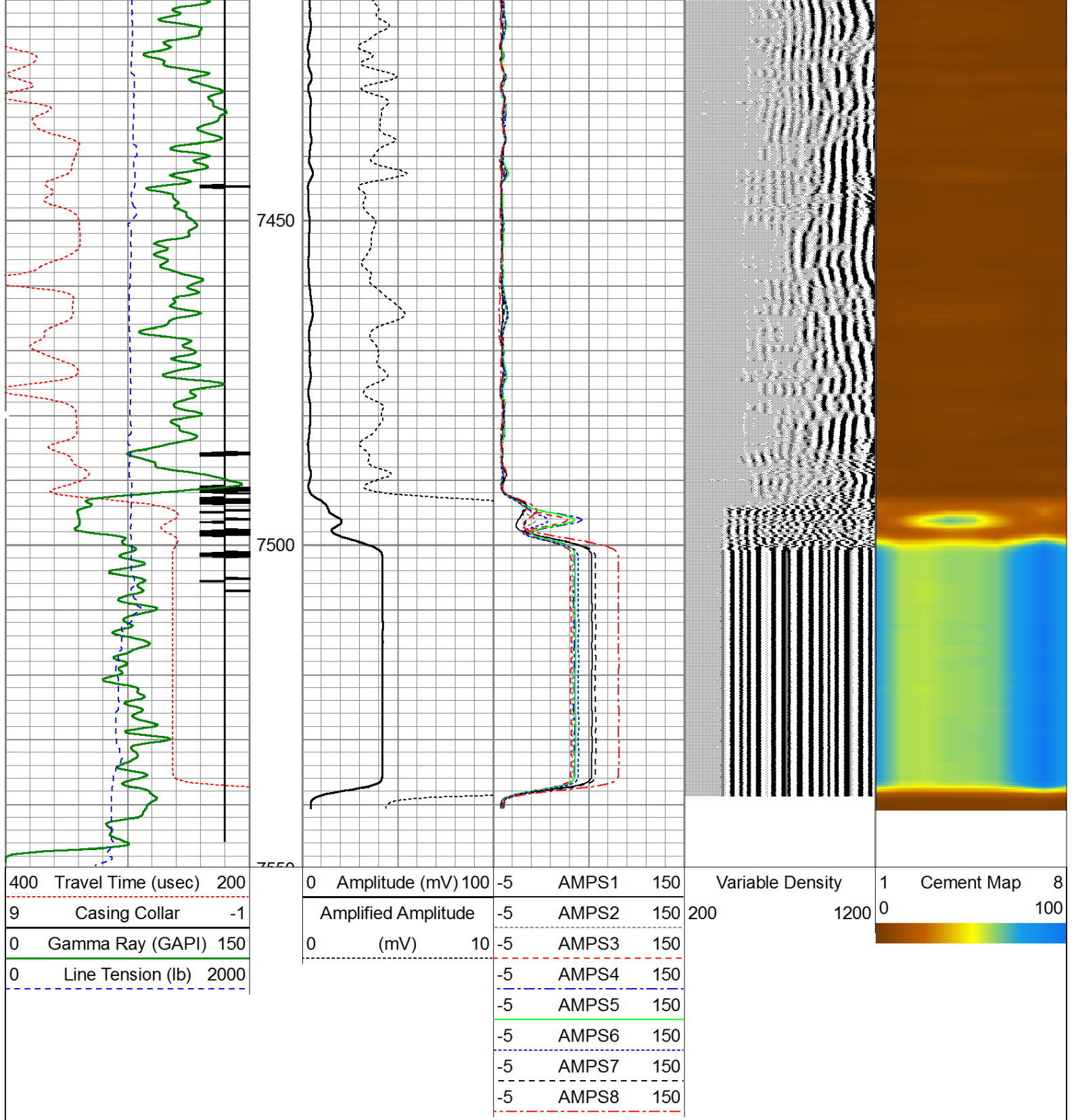


9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	2000

0	Amplified Amplitude (mV)	10
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-5	AMPS2	150
-5	AMPS3	150
-5	AMPS4	150
-5	AMPS5	150
-5	AMPS6	150
-5	AMPS7	150
-5	AMPS8	150





### Calibration Report

Database File: noble energy loeffler k01-69-1hn\_rcbl.db  
Dataset Pathname: pass4.1  
Dataset Creation: Sat Dec 07 03:55:46 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

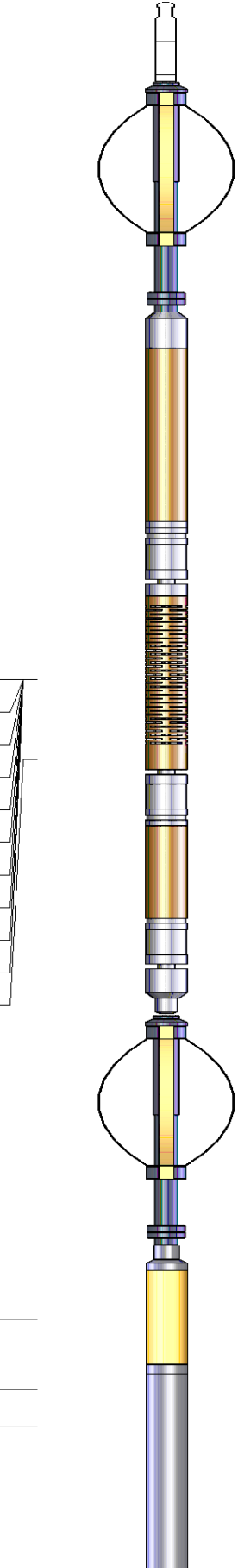
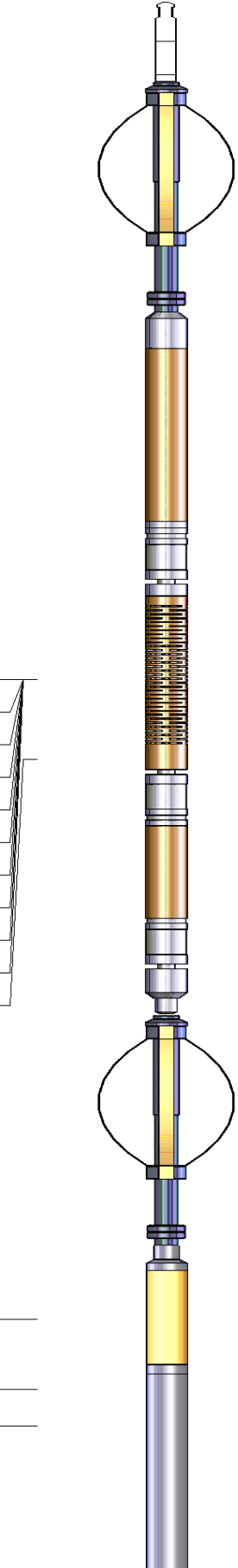
Serial Number:	101225		
Tool Model:	Probe		
Calibration Casing Diameter:	7.000	in	
Calibration Depth:	312.747	ft	


Master Calibration, performed Fri Dec 06 17:28:42 2013:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.026	0.626	1.000	62.165	119.666	4.403
CAL	-0.030	0.881				
5'	-0.019	0.600	1.000	62.165	98.948	2.842
SUM						
S1	-0.010	0.694	0.000	100.000	142.057	1.356
S2	-0.017	0.756	0.000	100.000	129.342	2.236
S3	-0.023	0.749	0.000	100.000	129.446	2.999
S4	-0.021	0.699	0.000	100.000	138.845	2.983
S5	-0.022	0.627	0.000	100.000	154.078	3.337
S6	-0.021	0.570	0.000	100.000	168.994	3.606
S7	-0.022	0.542	0.000	100.000	177.400	3.917
S8	-0.021	0.540	0.000	100.000	178.192	3.726

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	0.881	1.000	0.000

Air Zero Calibration, performed Thu Dec 05 13:36:03 2013:			
	Raw (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)
WVF3FT WVFCAL WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 WVF5FT	11.84		Titan Cable_head	1.00	1.44	10.00
	11.84		Probe275 2.75" Centralizer	2.88	2.75	20.00
	11.84		RBT-Probe (101225) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
	11.84					
	11.84					
	11.84					
	11.84					
	11.84					
	11.84					
	11.84					
	11.84					
	11.84					
	10.84		Probe275 2.75" Centralizer	2.88	2.75	20.00
CCL	3.88		GR-Probe275 (110108-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
TEMP	3.00					
GR	2.54					

					
<div><div>Dataset:</div><div>noble energy loeffler k01-69-1hn_rcbl.db: field/well/run1/pass4.1</div><div>Total Length:</div><div>20.28 ft</div><div>Total Weight:</div><div>197.00 lb</div><div>O.D.</div><div>2.75 in</div></div>					