



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company TEP Rocky Mountain LLC  
Well Youberg SR 521-12  
Field Rulison  
County Garfield  
State Colorado

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Location: API #: 05-045-23433

SEC 12 TWP 7S RGE 94W  
1890' FNL & 2125' FEL

Permanent Datum Ground Level Elevation 7254'  
Log Measured From Kelly Bushing 24 FT  
Drilling Measured From Kelly Bushing

Other Services  
Elevation  
K.B. 7278'  
D.F. 7277'  
G.L. 7254'

Date 05-JUL-2017

Run Number	One
Depth Driller	9554 FT
Depth Logger	9460 FT
Bottom Logged Interval	9450 FT
Top Log Interval	Surface
Open Hole Size	8.75"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	238°F
Estimated Cement Top	See Log
Time Well Ready	22:00
Time Logger on Bottom	23:30
Equipment Number	HDO359
Location	Grand Junction
Recorded By	Michael Kochevar
Witnessed By	---

Borehole Record  
Run Number Bit From To Size Weight From To

Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1100 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9554 FT
Intermediate #2					
Liner					

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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

Log ran as per customer request  
Depth referenced to Kelly Bushing at 24 FT  
Ground Level 1 FT below cut pipe  
Marker joint logged at 5332 FT- 5554 FT  
Log ran from 9450 FT to surface  
Recorded with 0 PSI surface induced pressure

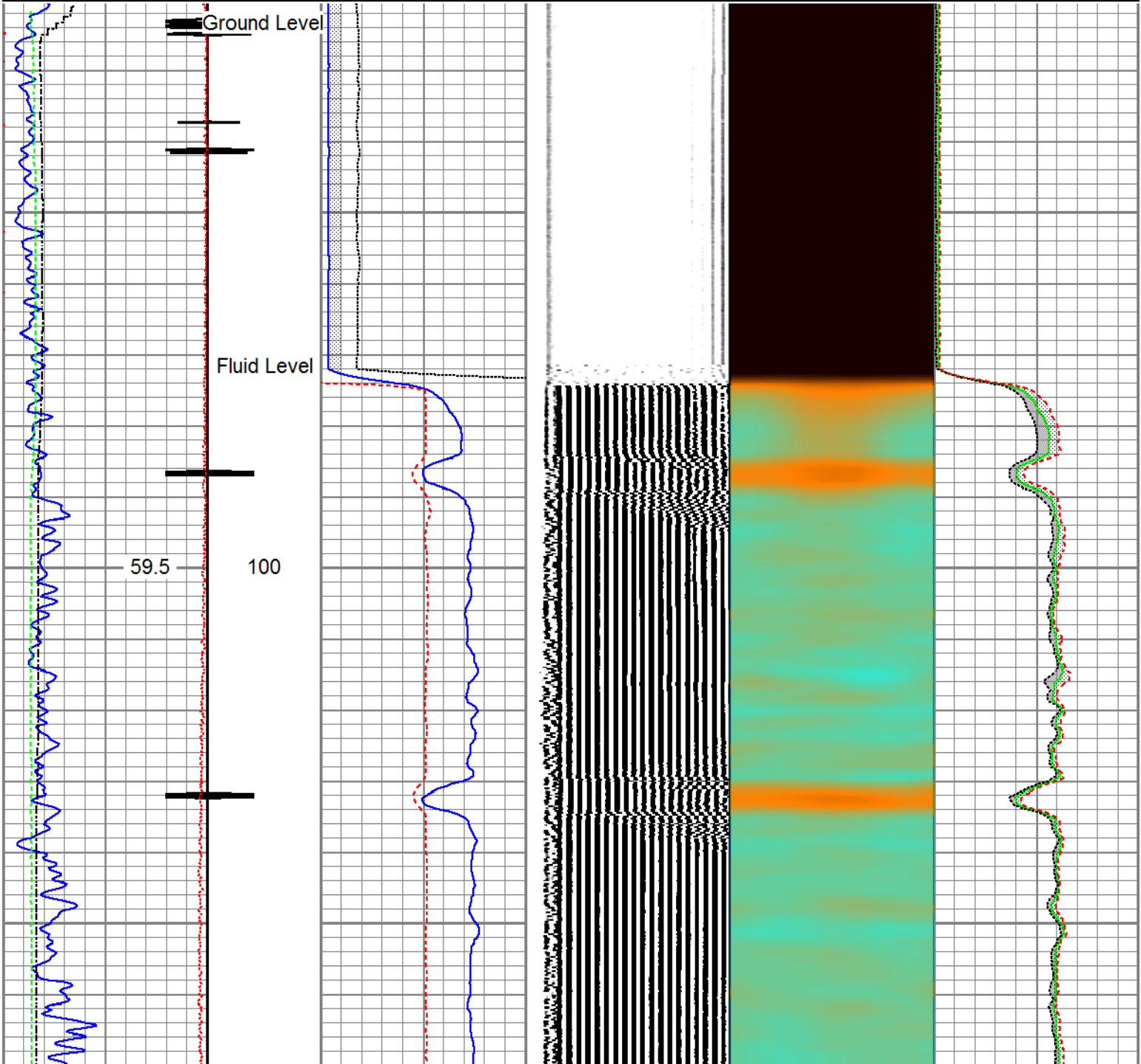
Thank you for choosing Reliance Oilfield Services, LLC!!

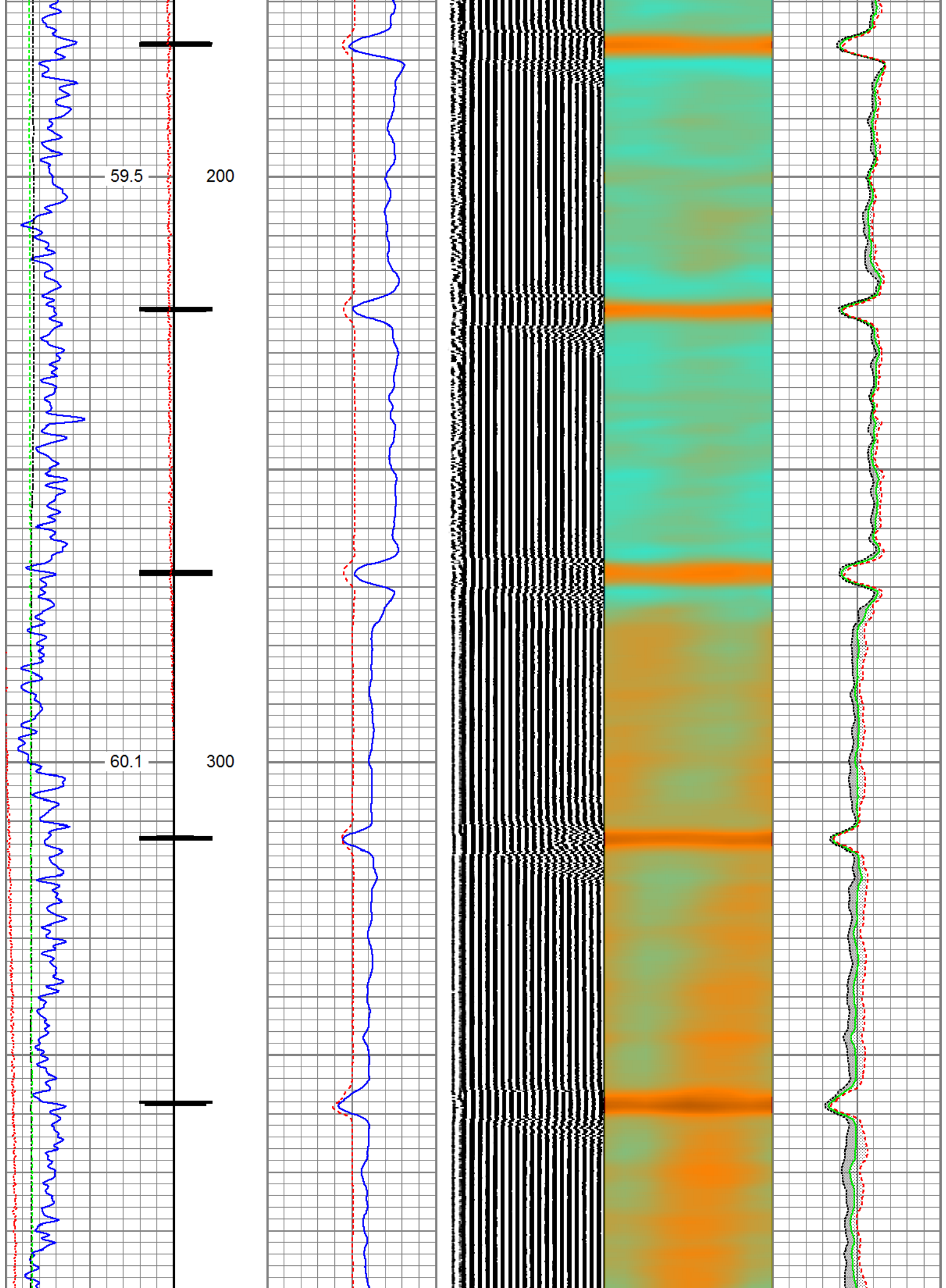


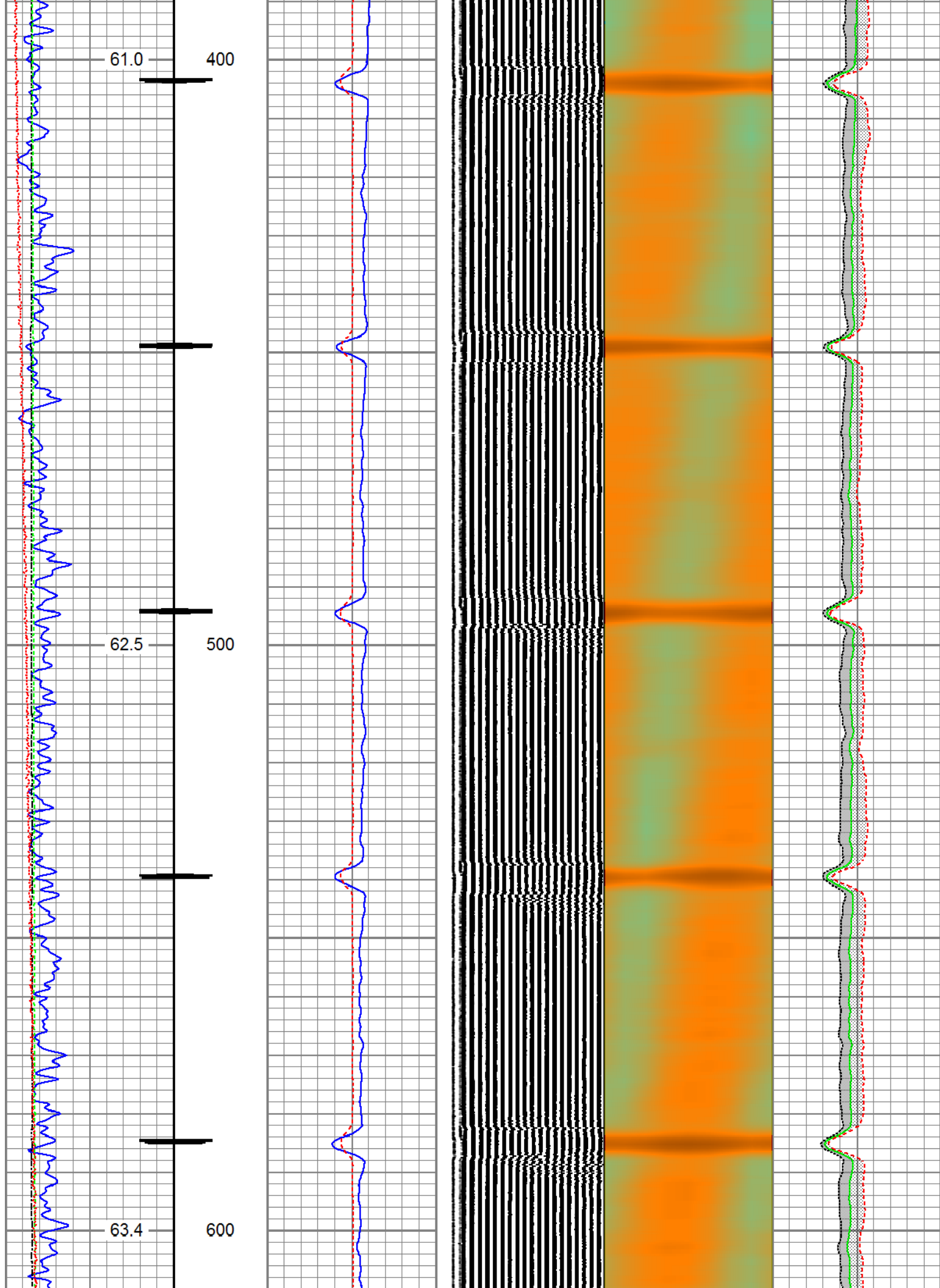
Main Pass

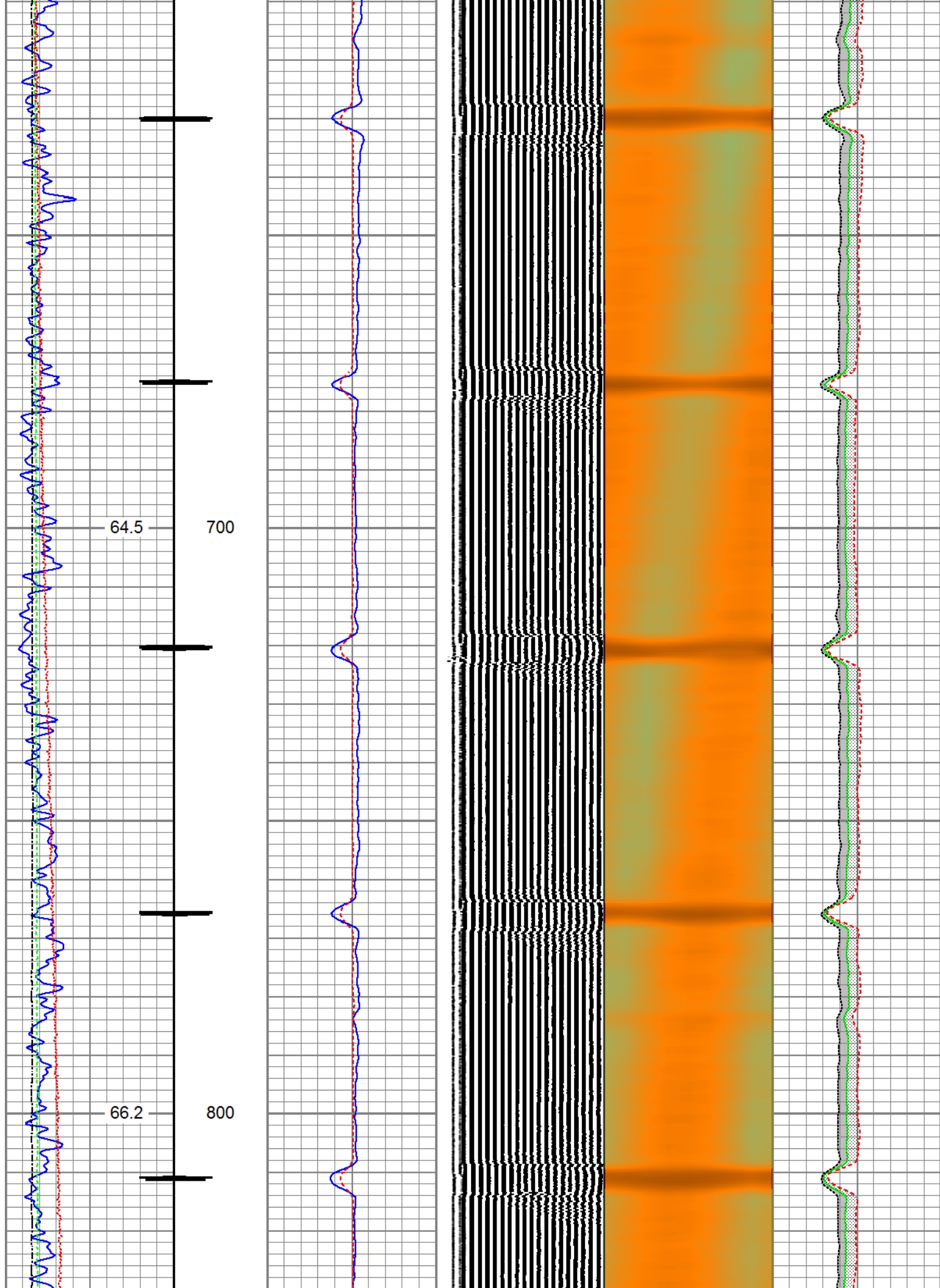
Recorded with 0 PSI Surface Induced Pressure

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 150
Line Speed	3' Travel Time			Maximum Amplitude
-150 (ft/min) 150	300 (usec) 200			0 150
Line Tension				
0 (lb) 2000				
Temperature				
0 (degF) 20				

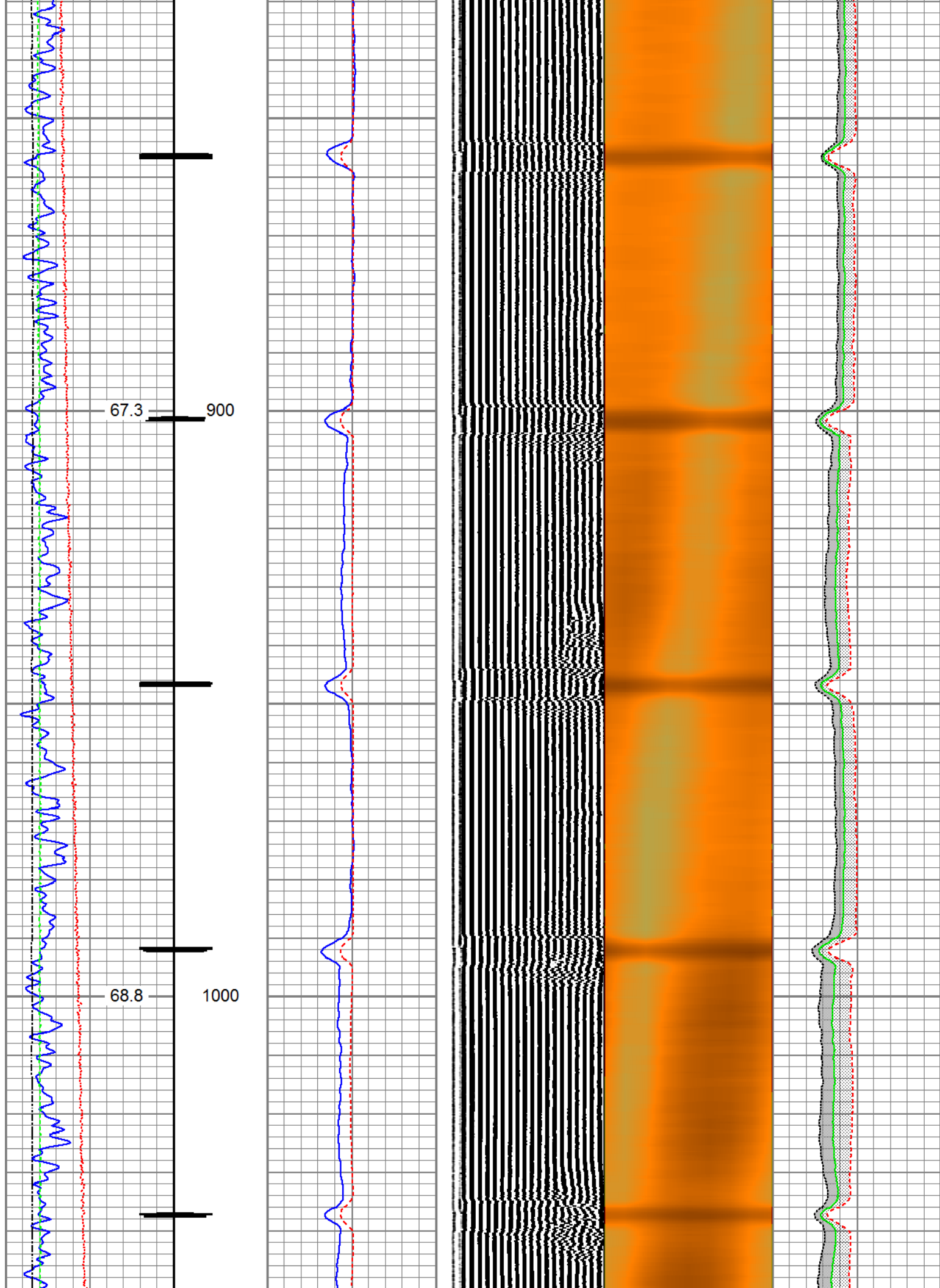


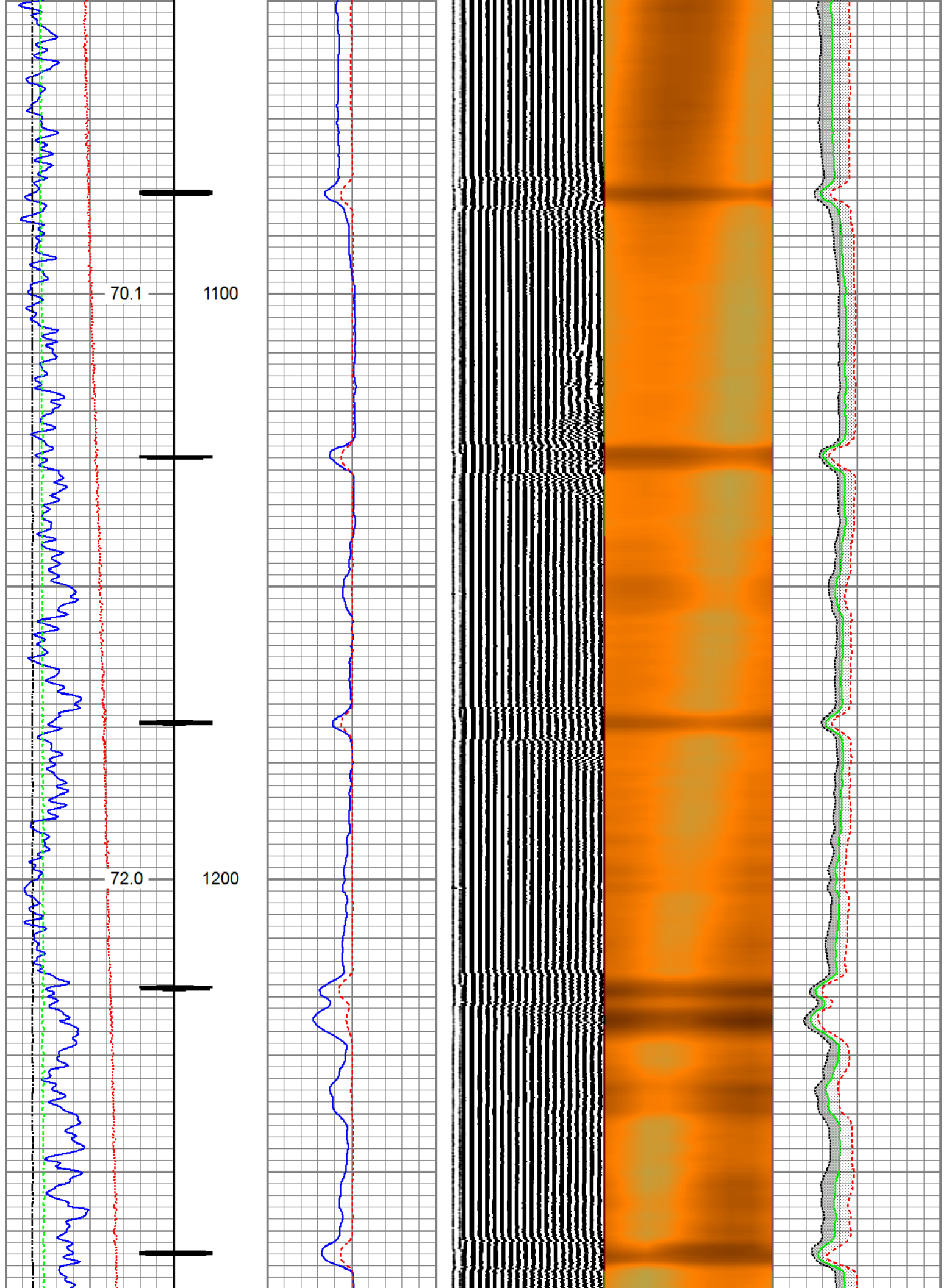


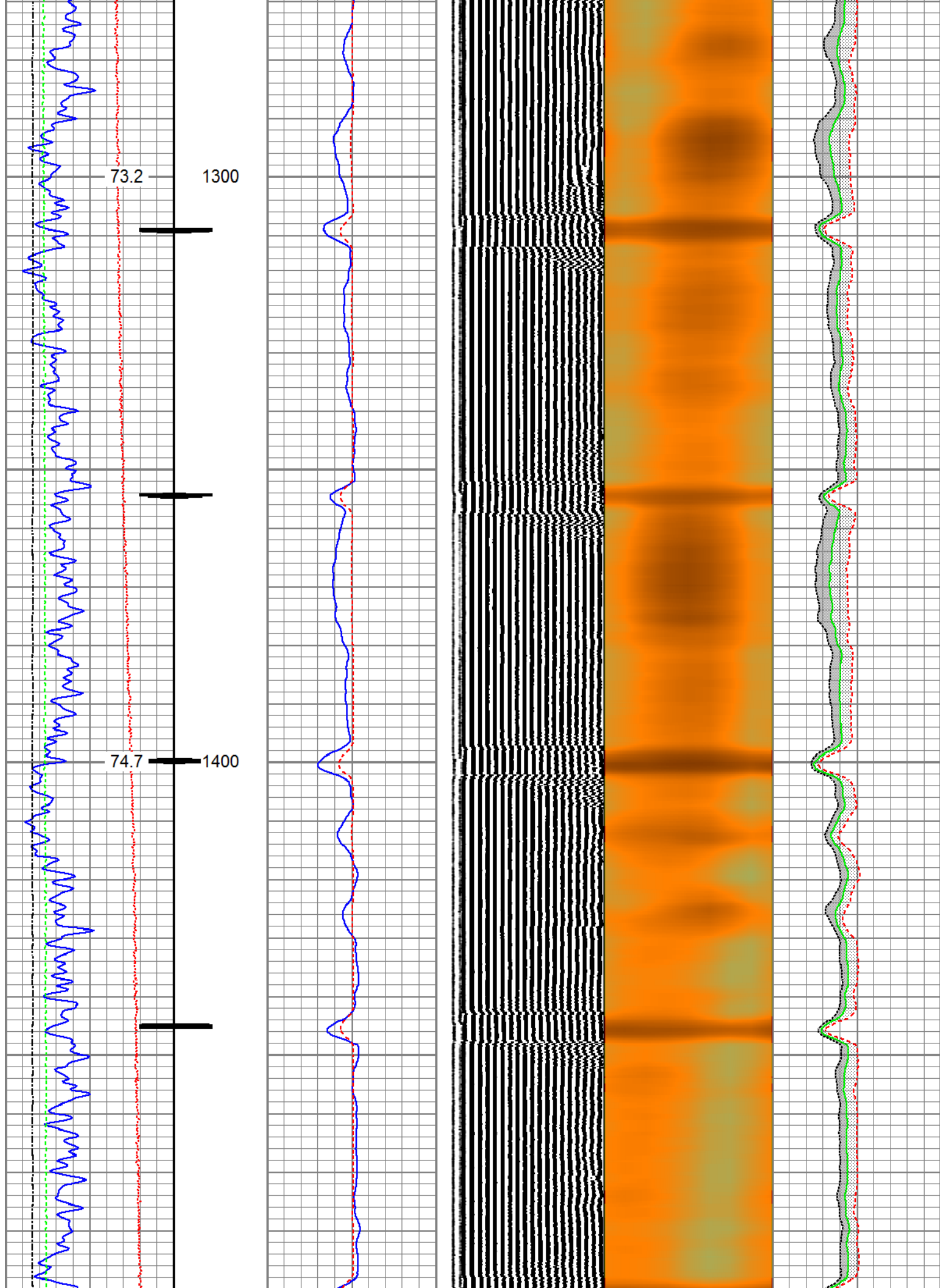




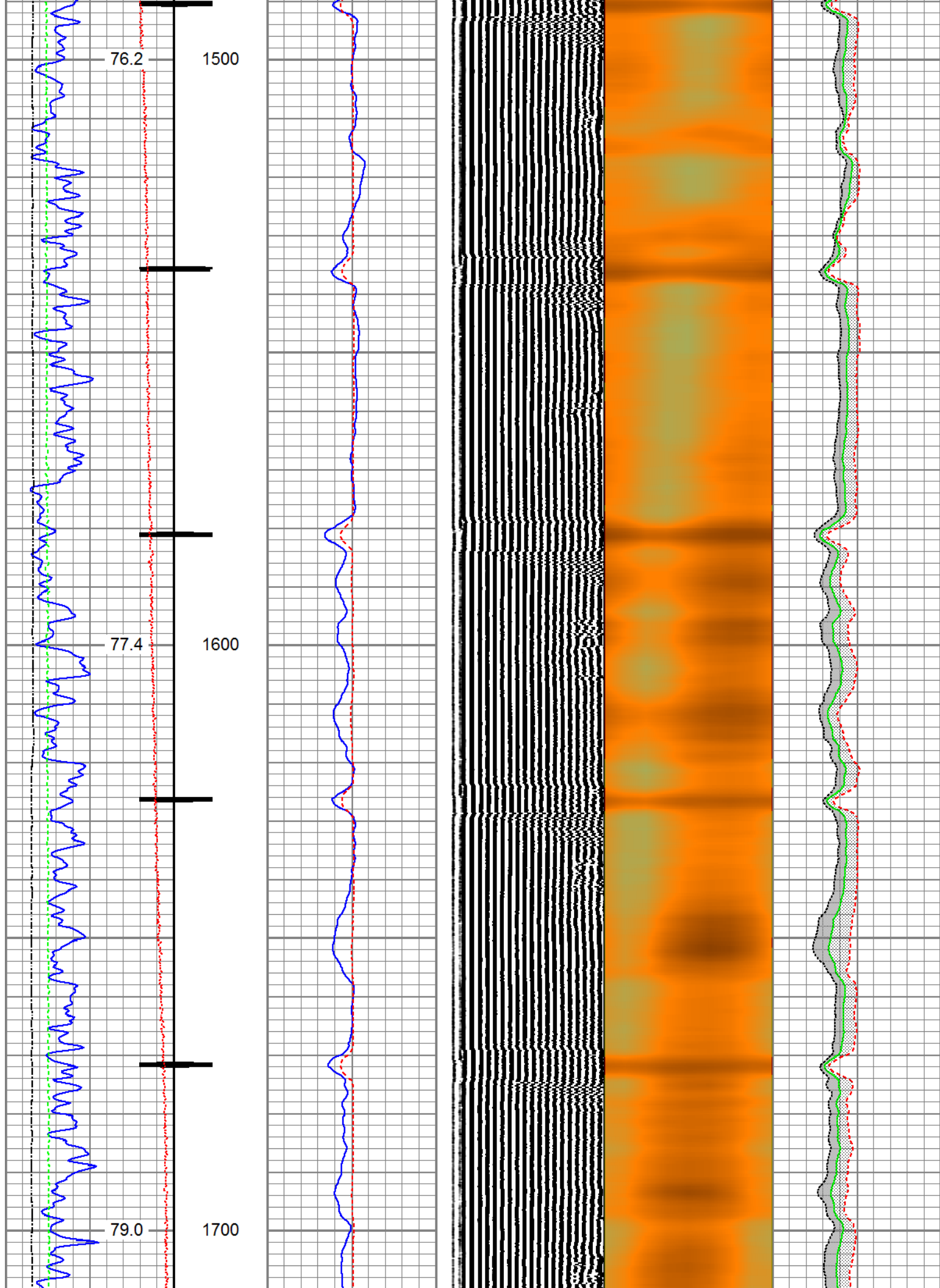


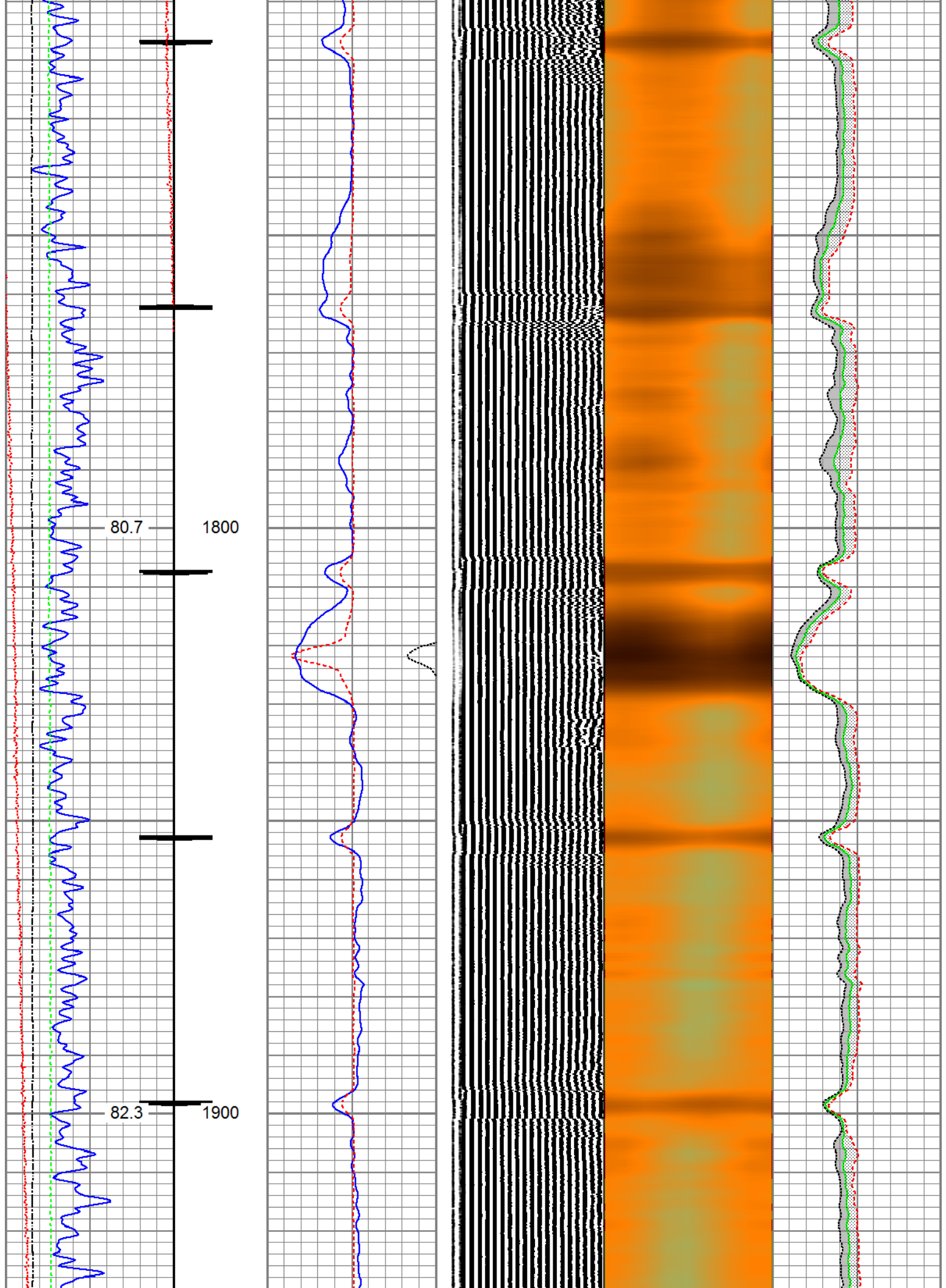


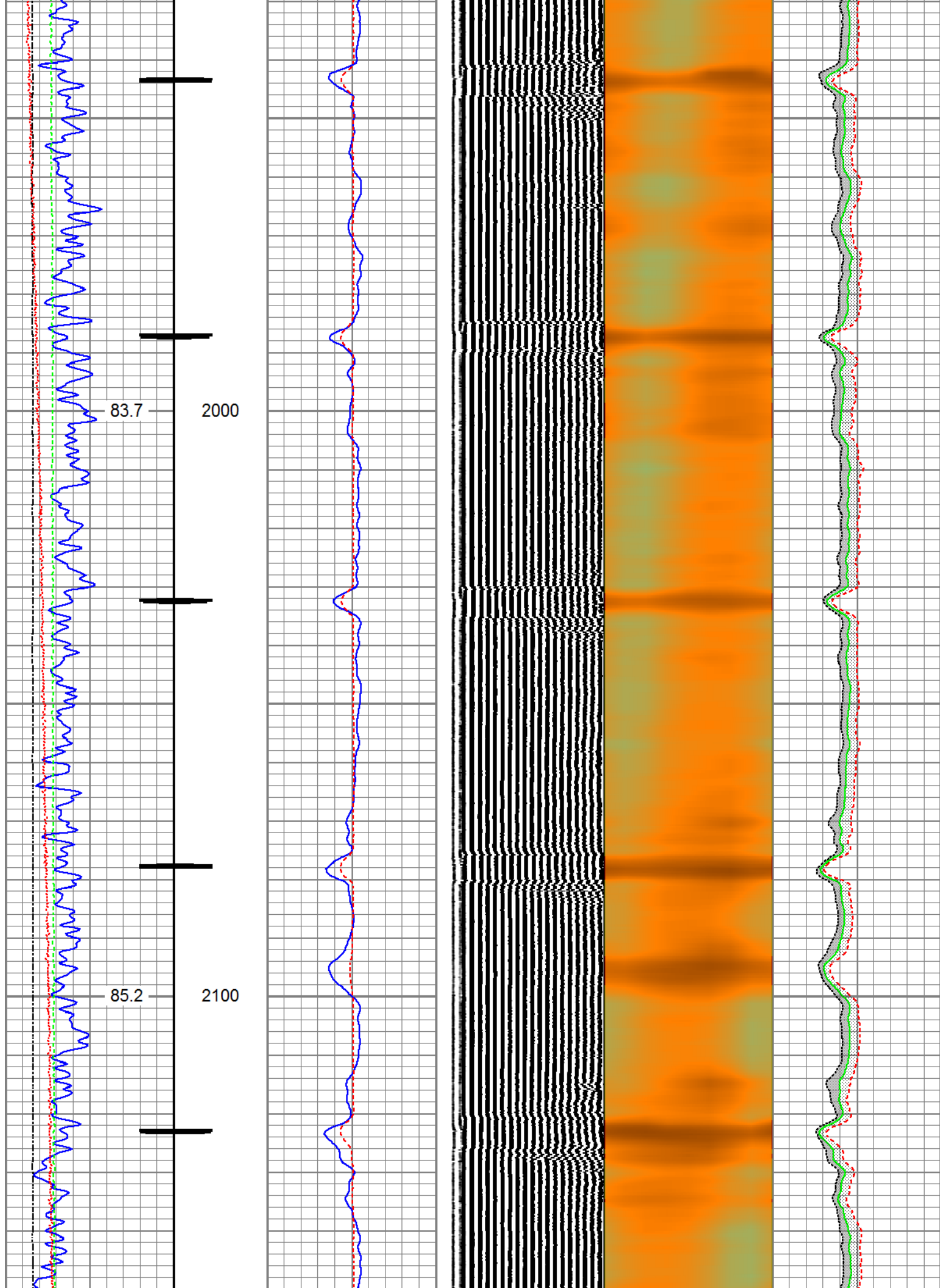


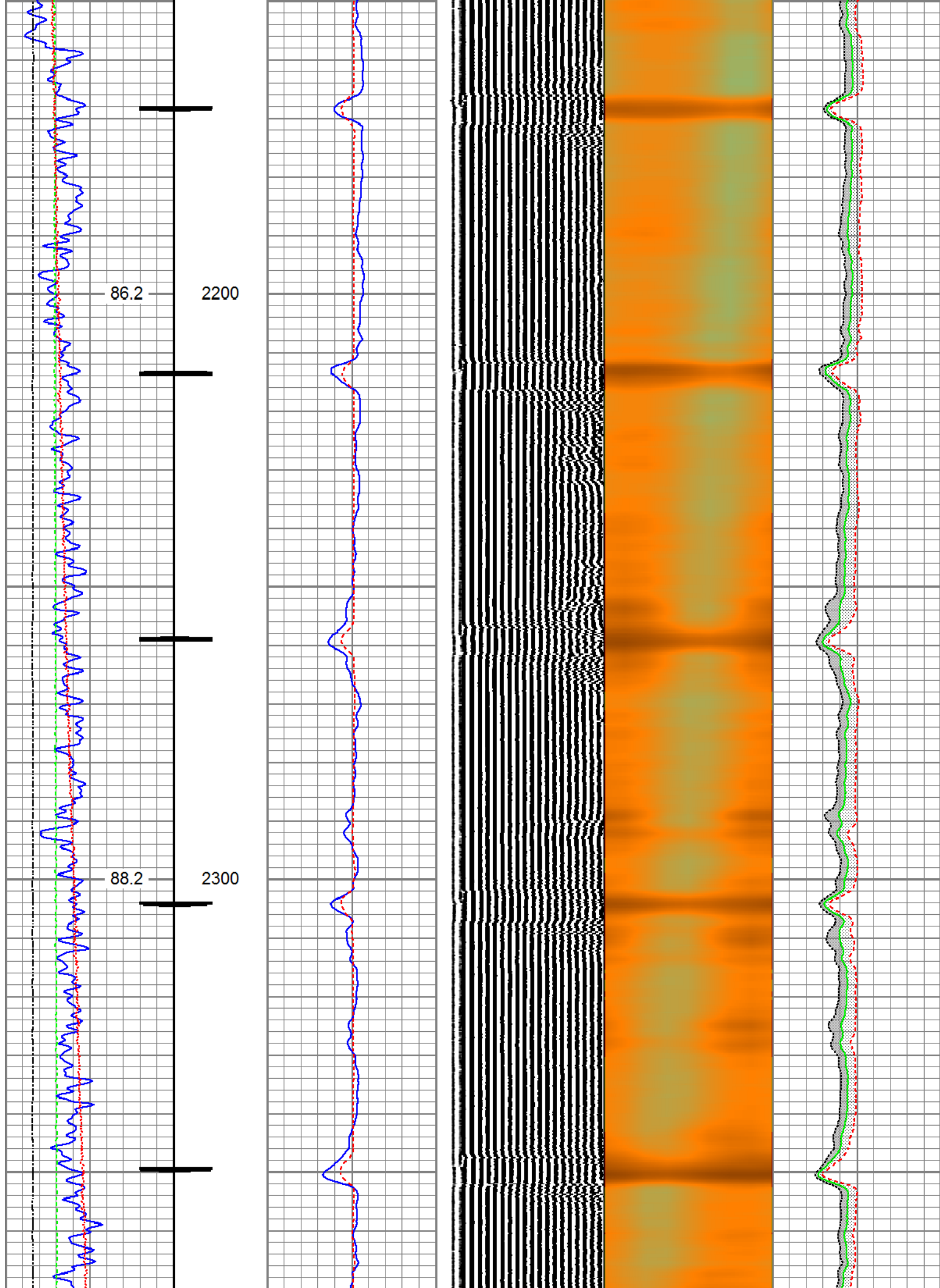




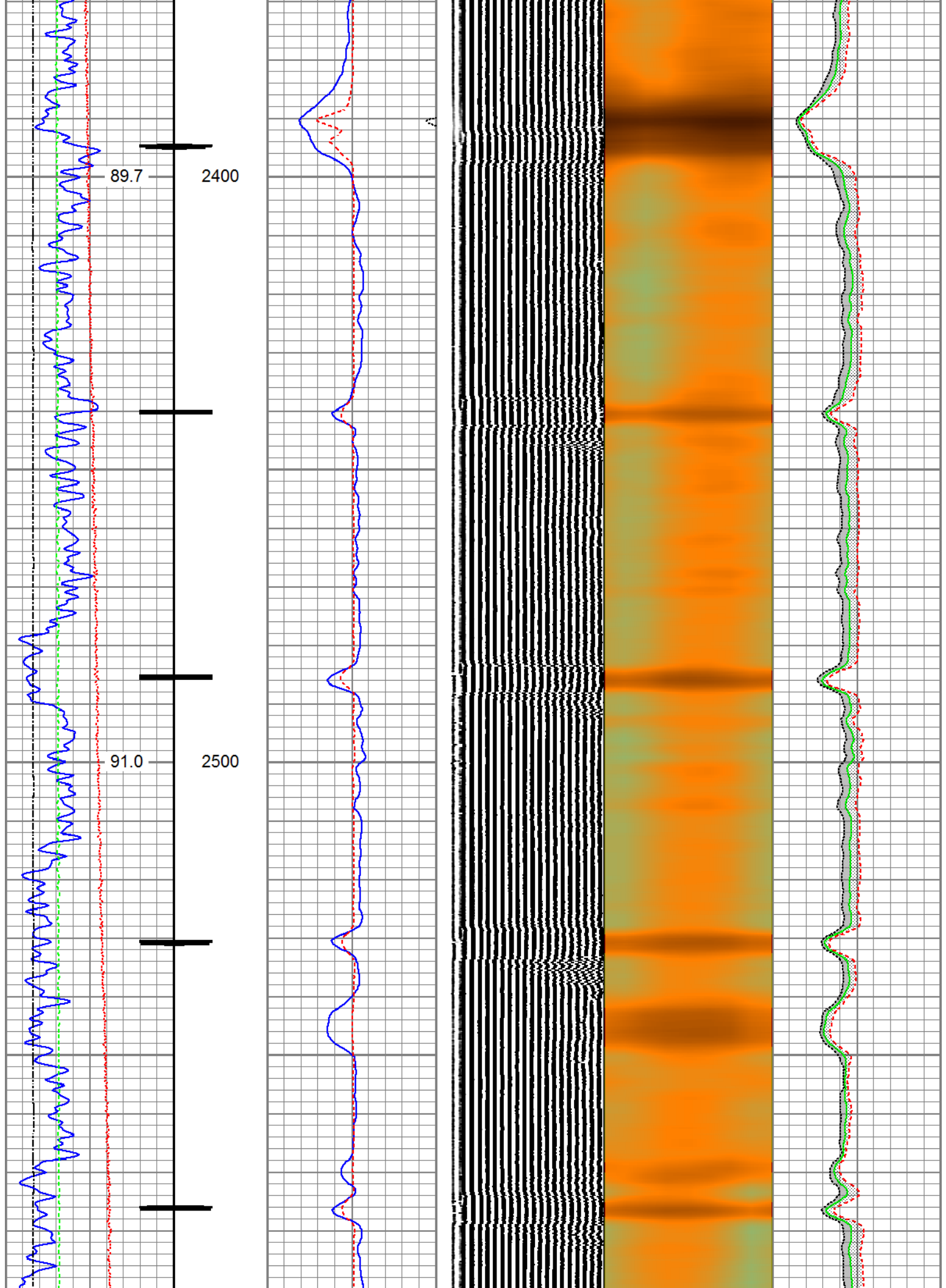




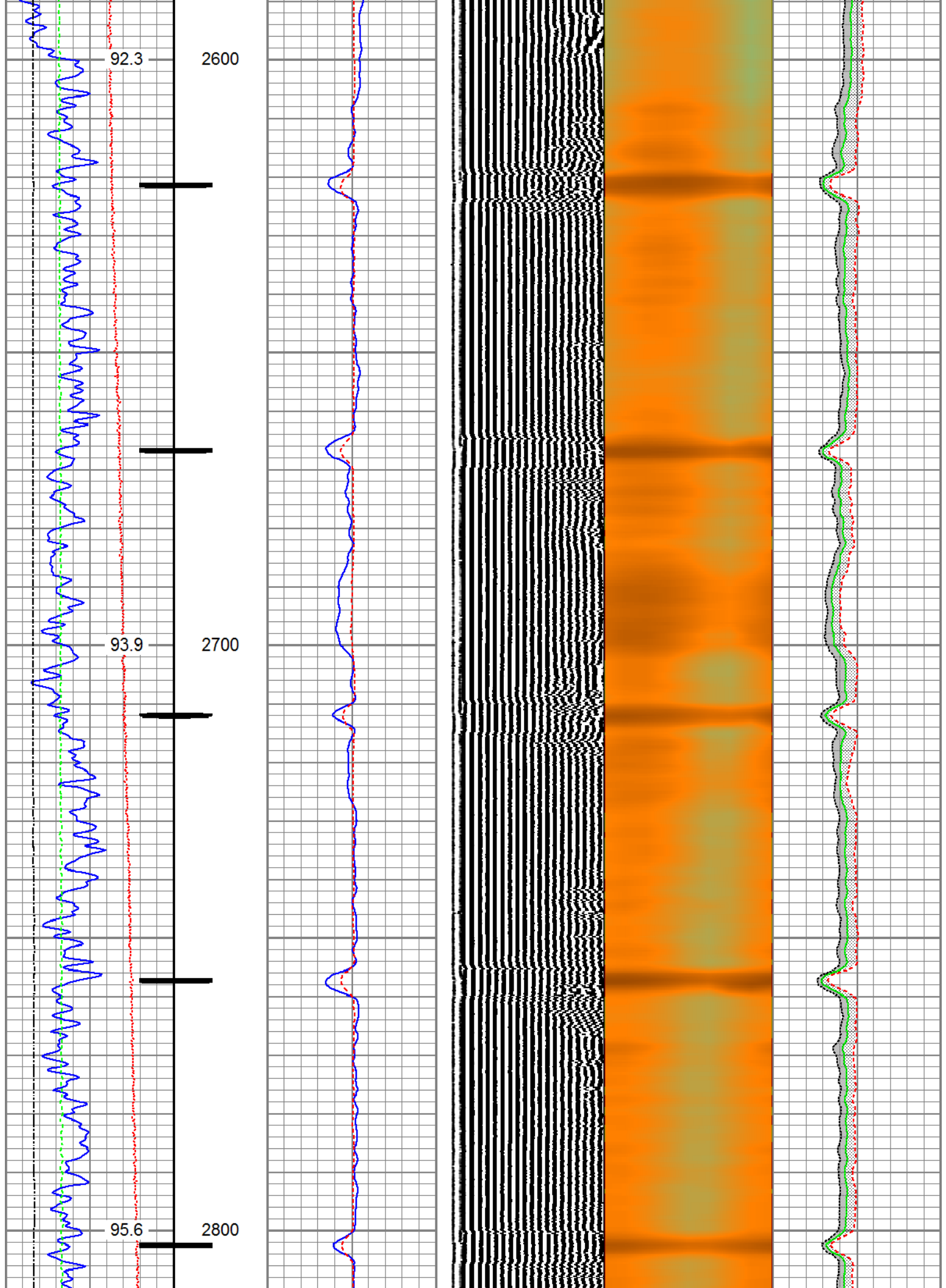


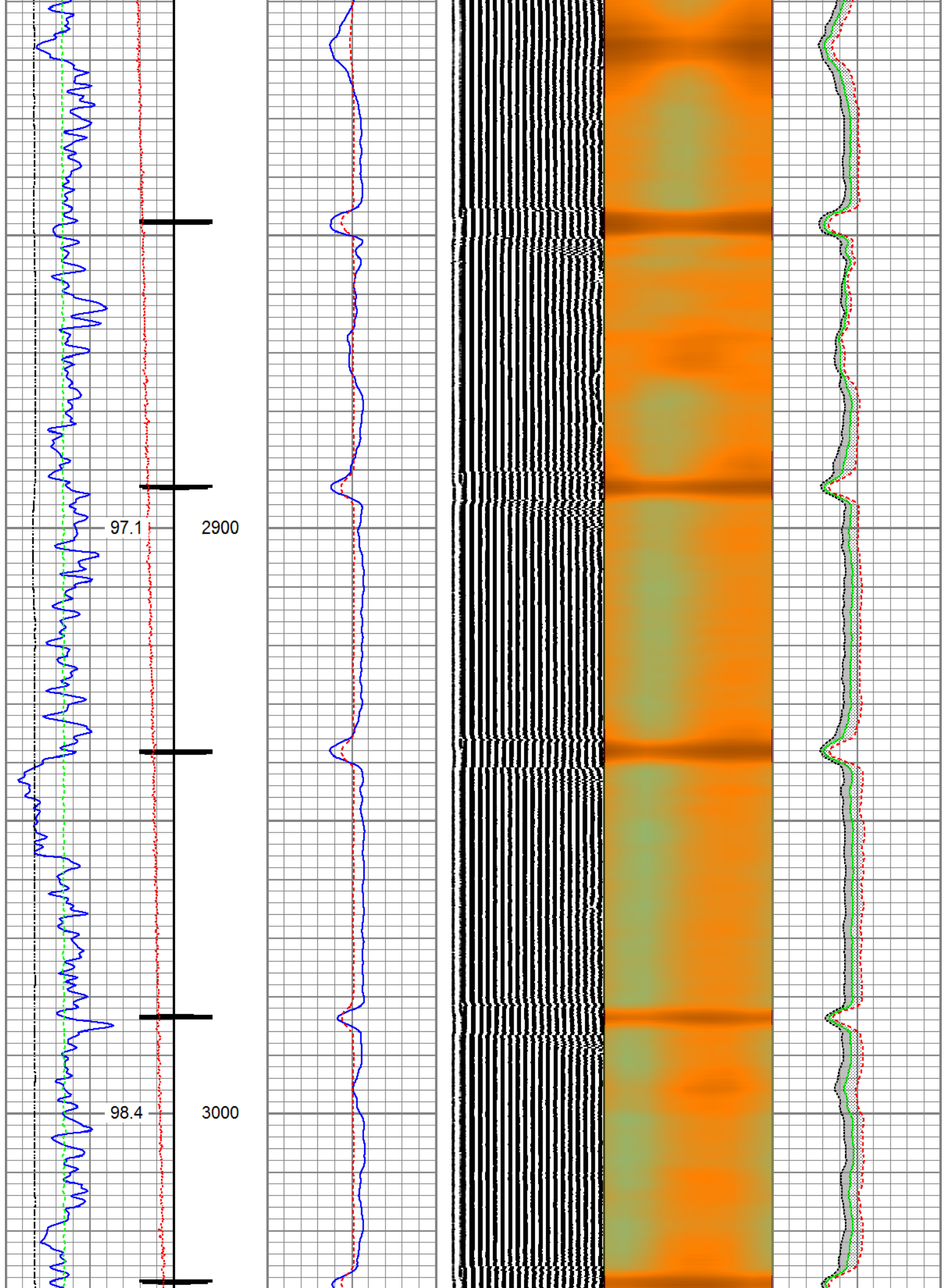


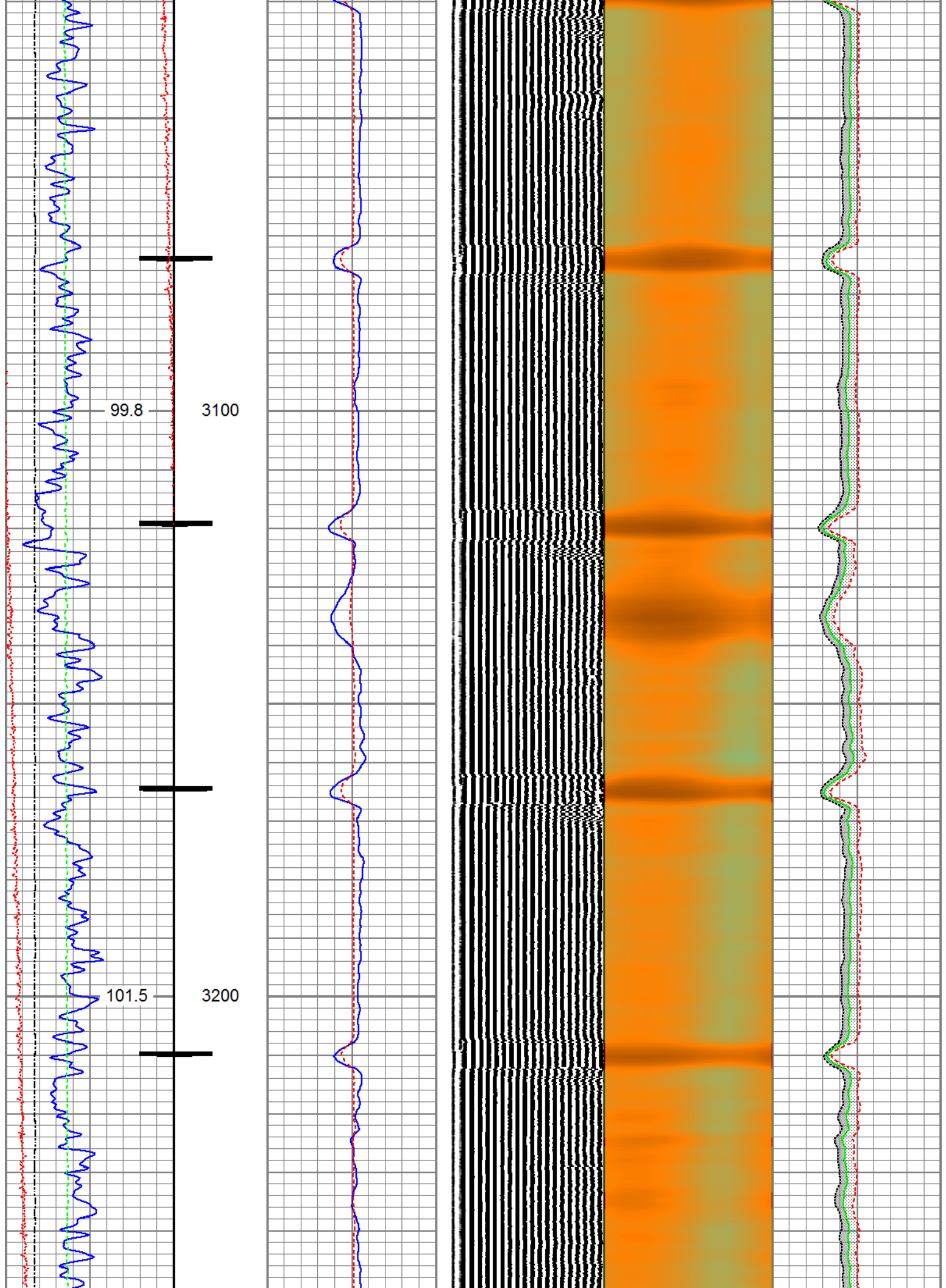


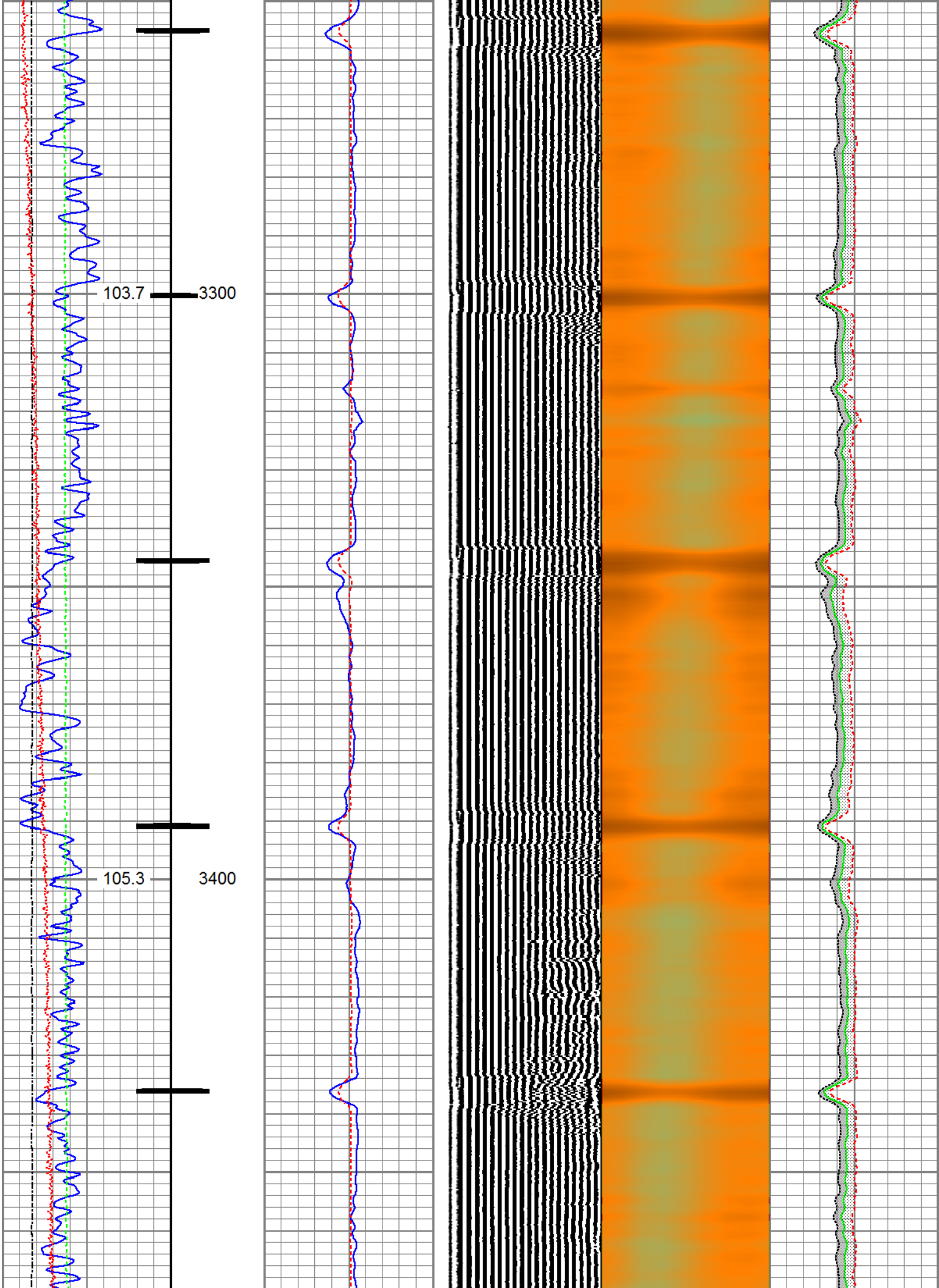




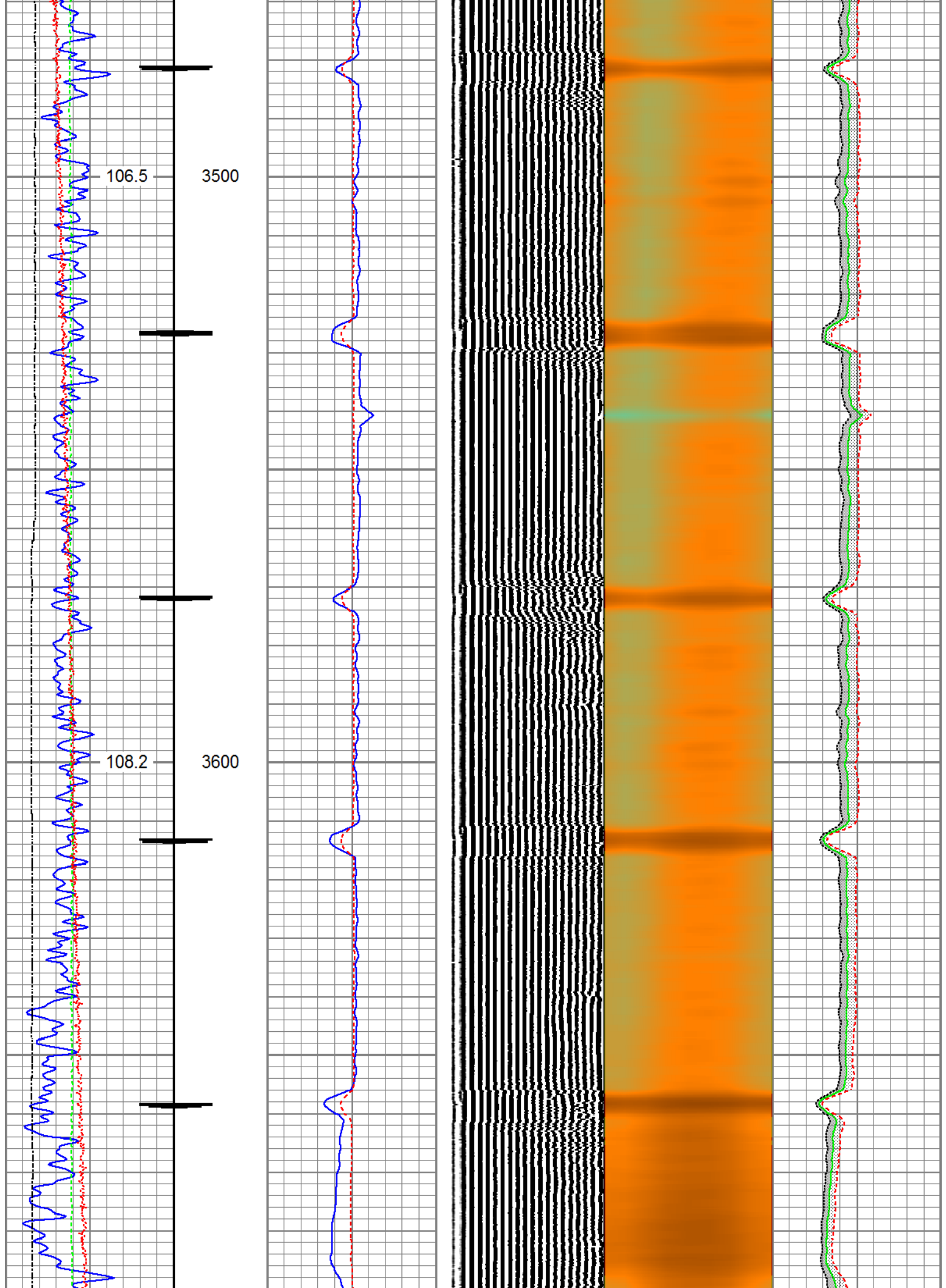




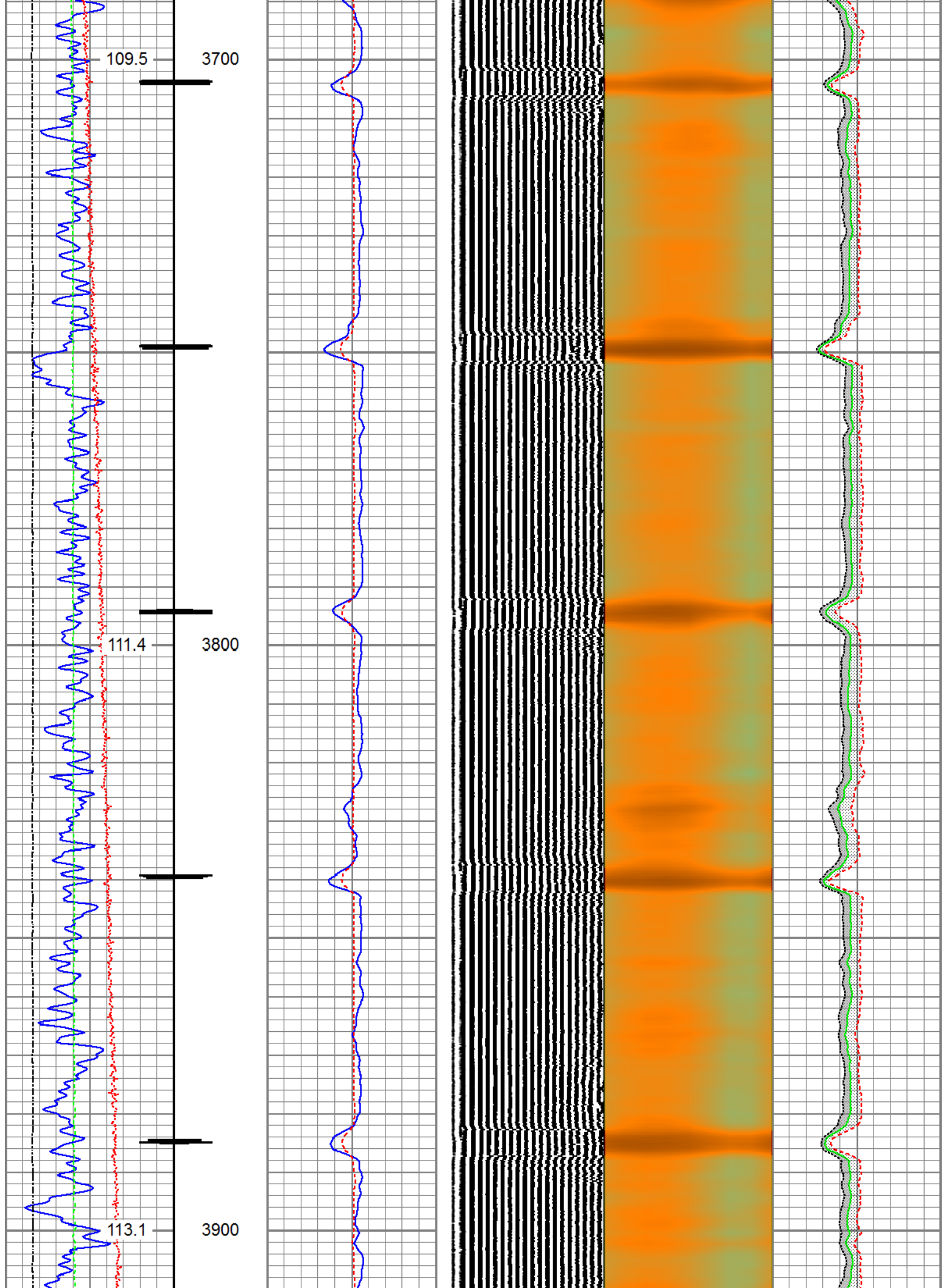


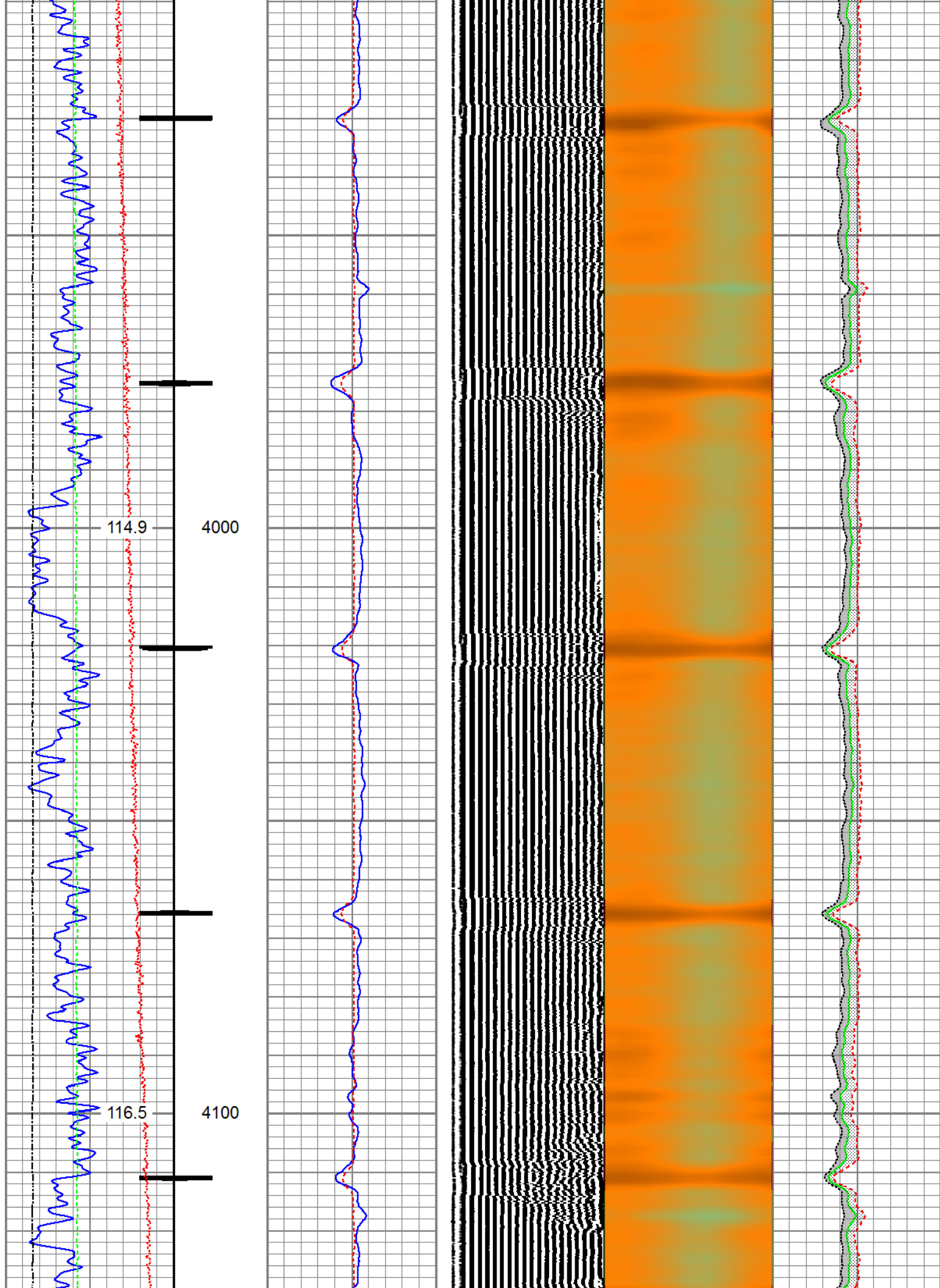


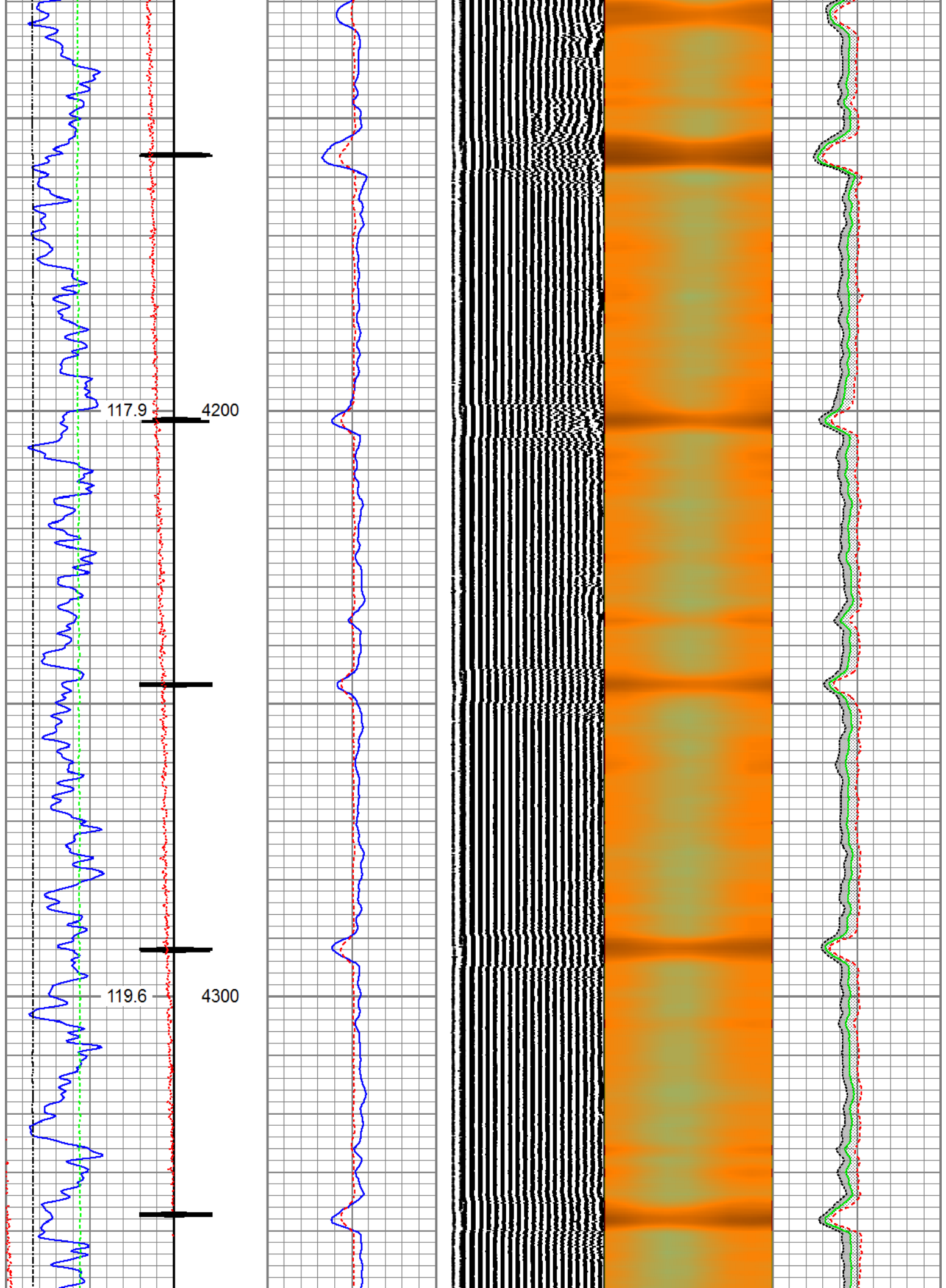


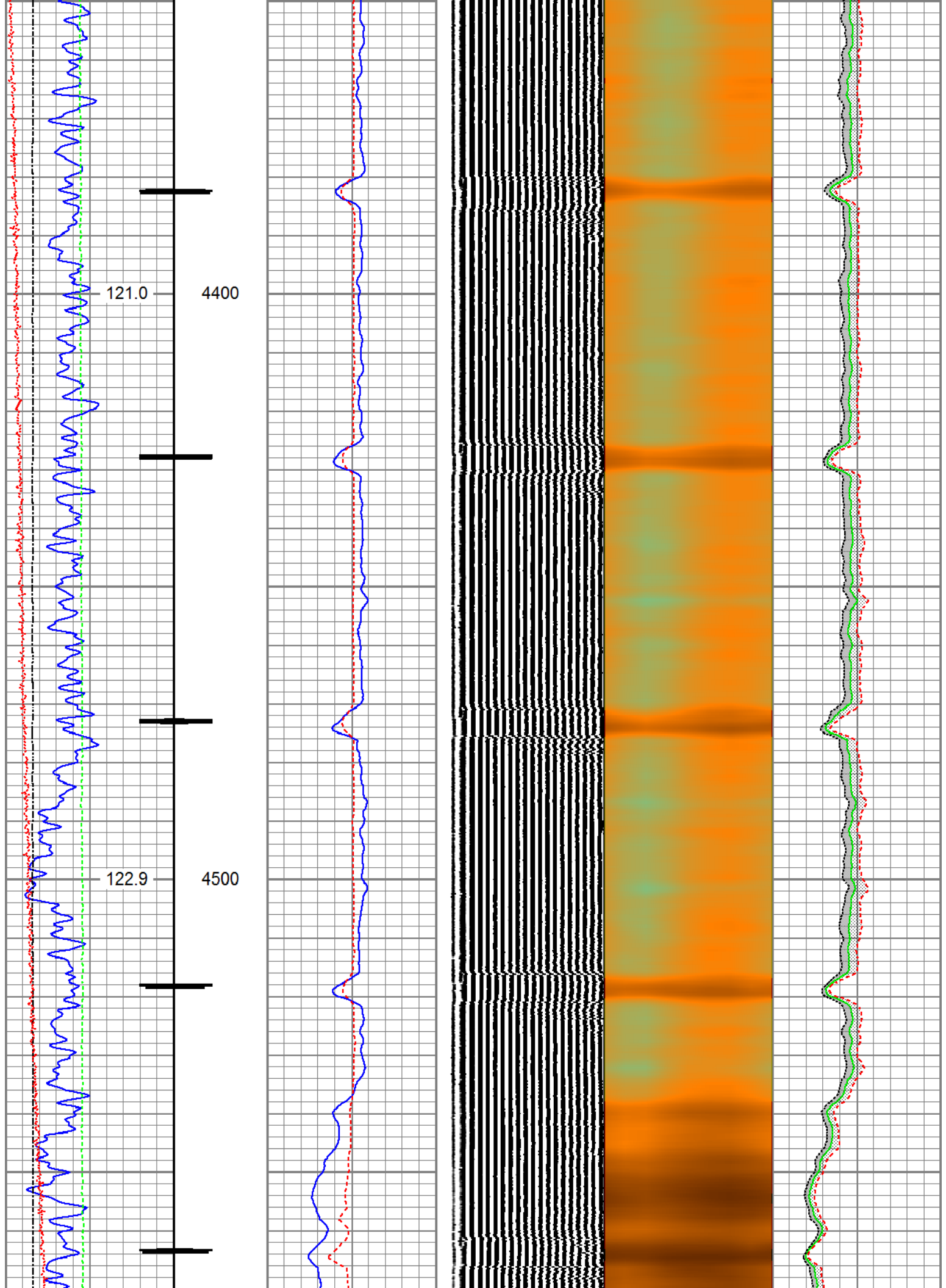




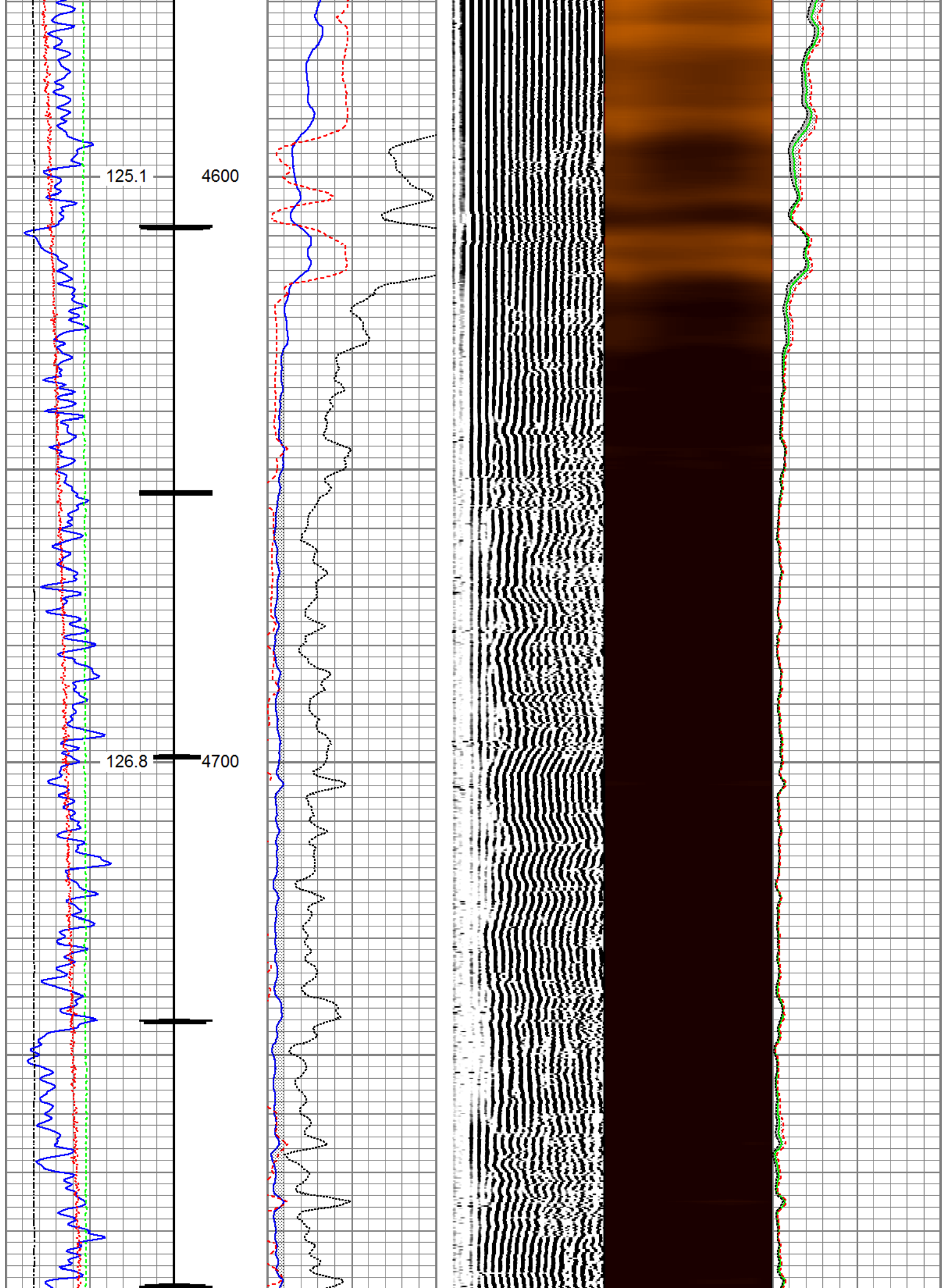




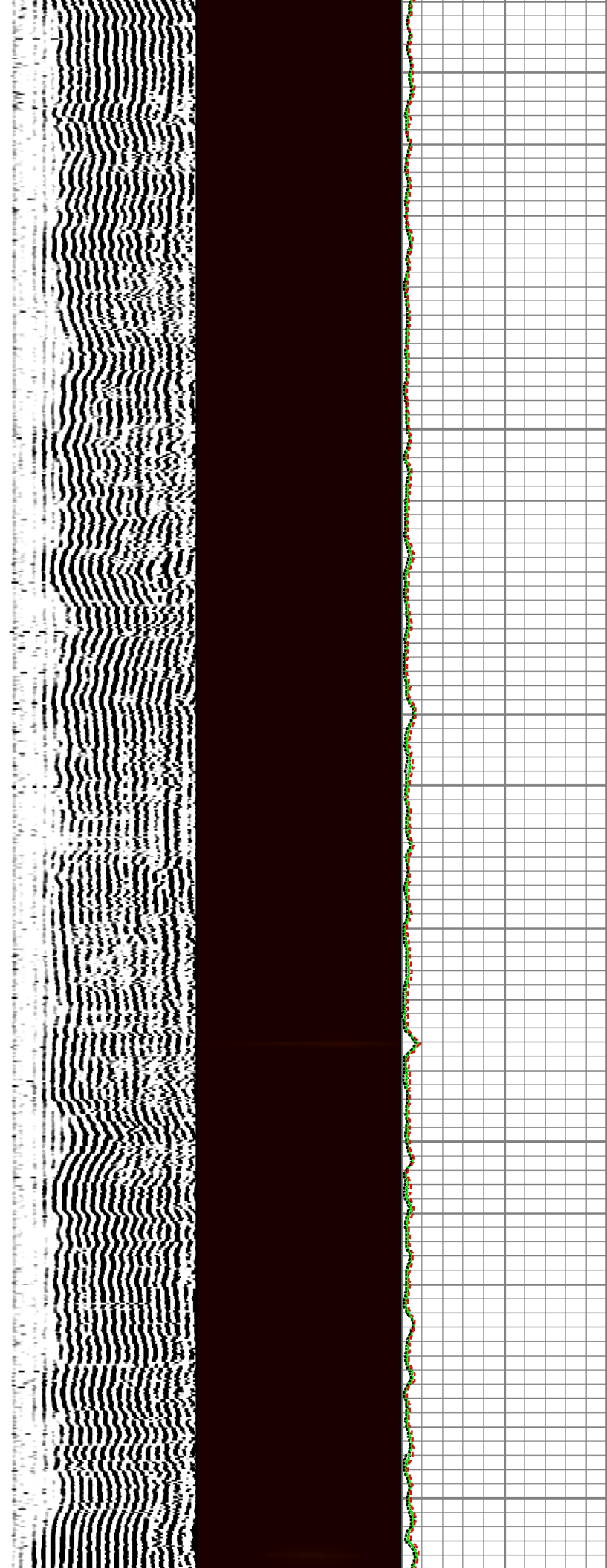
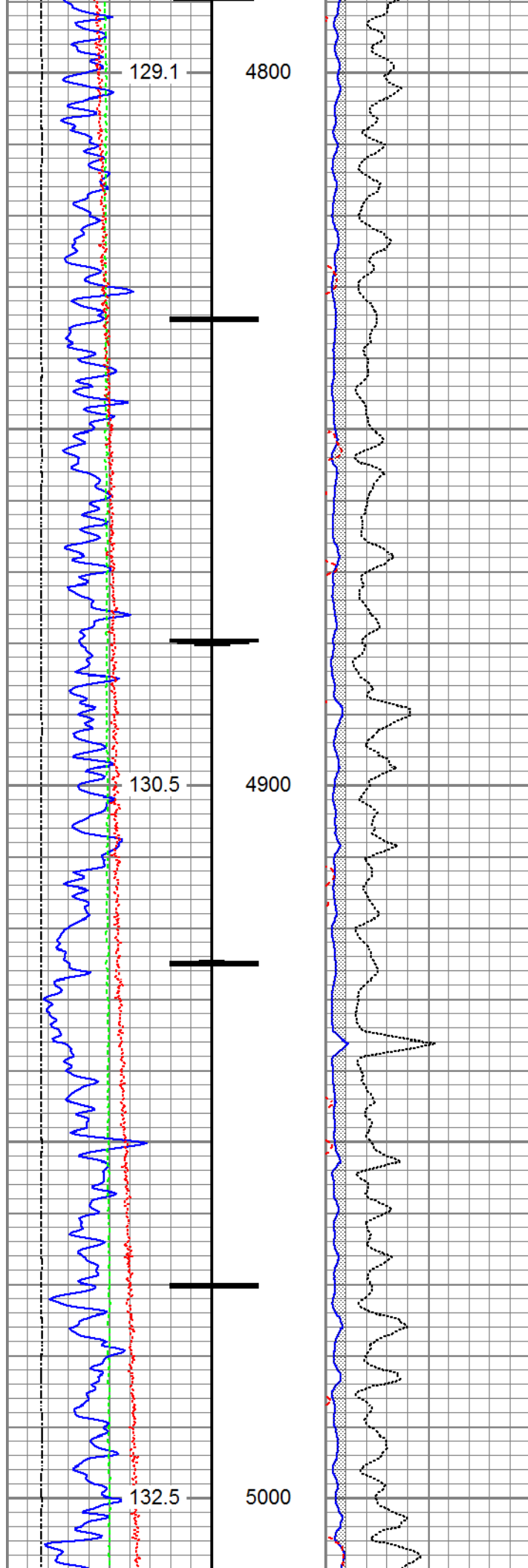


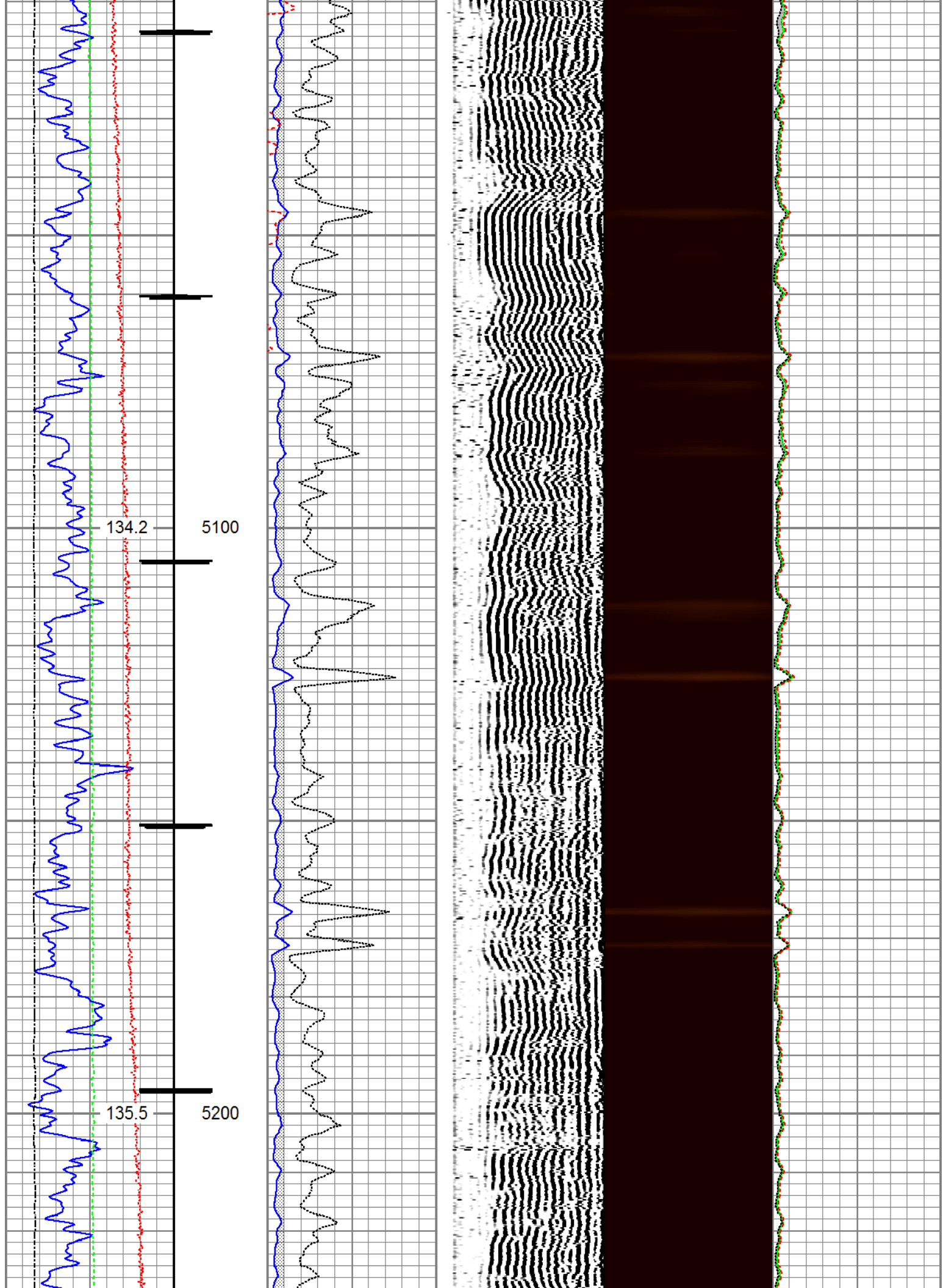


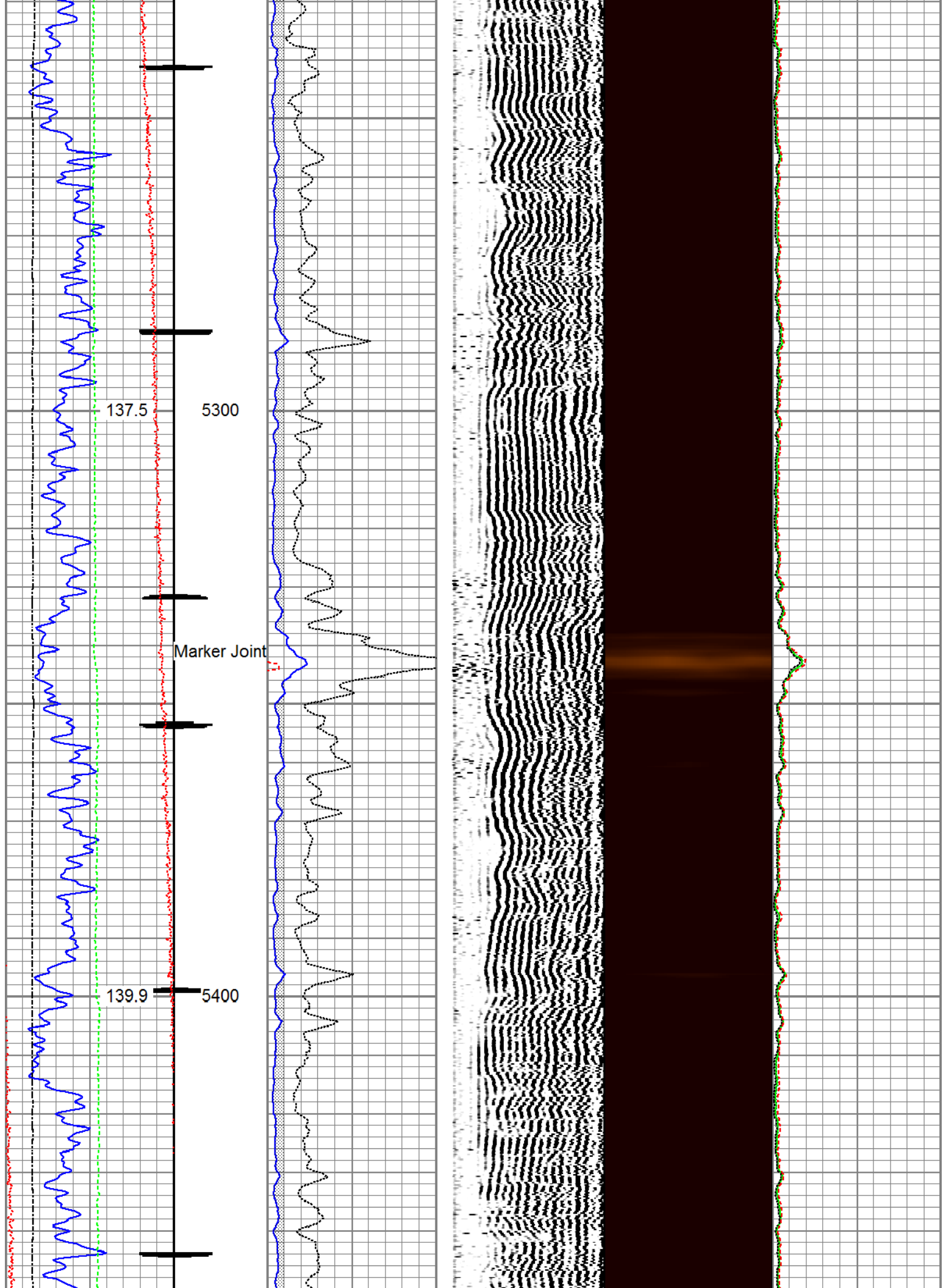


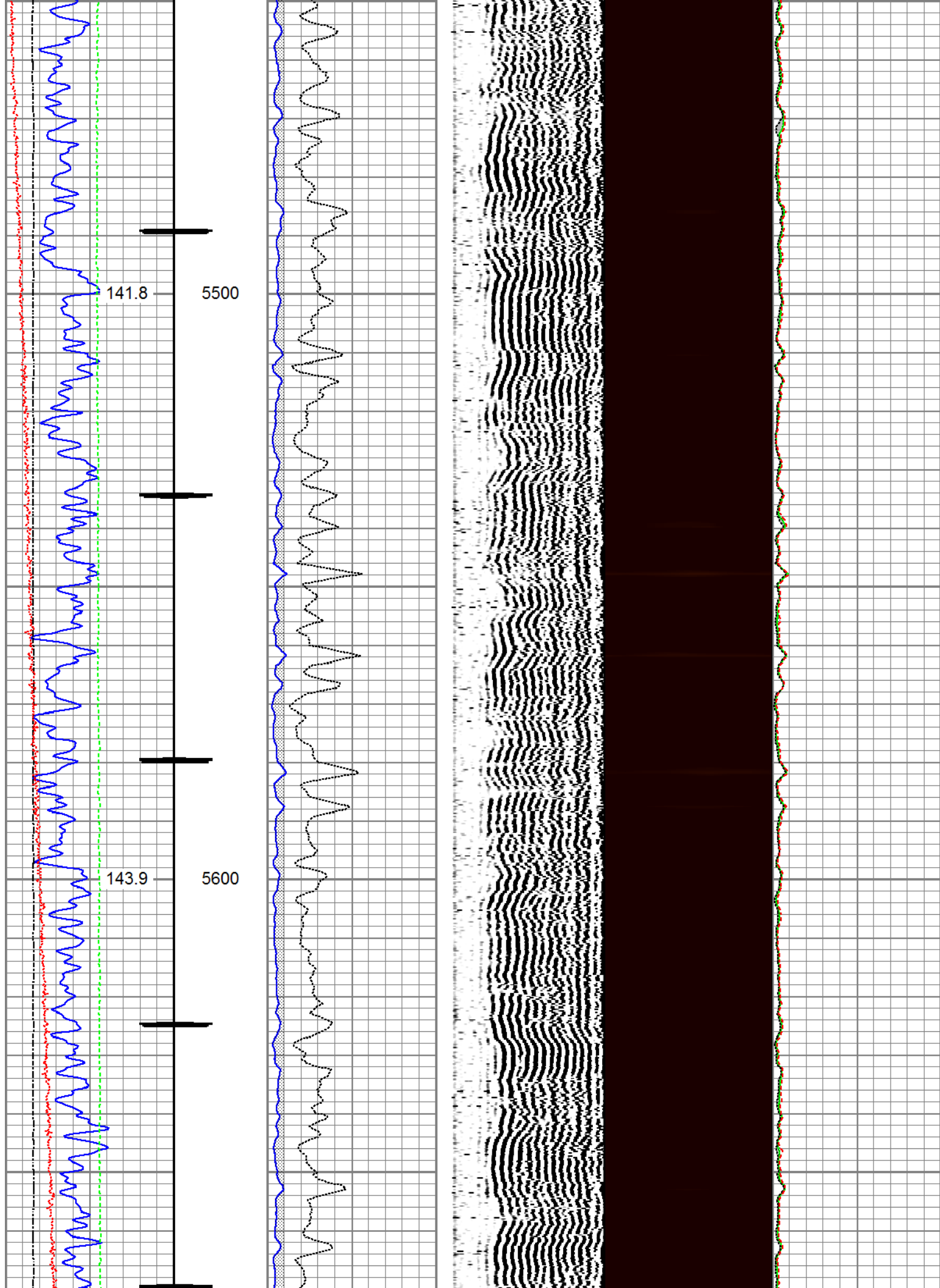




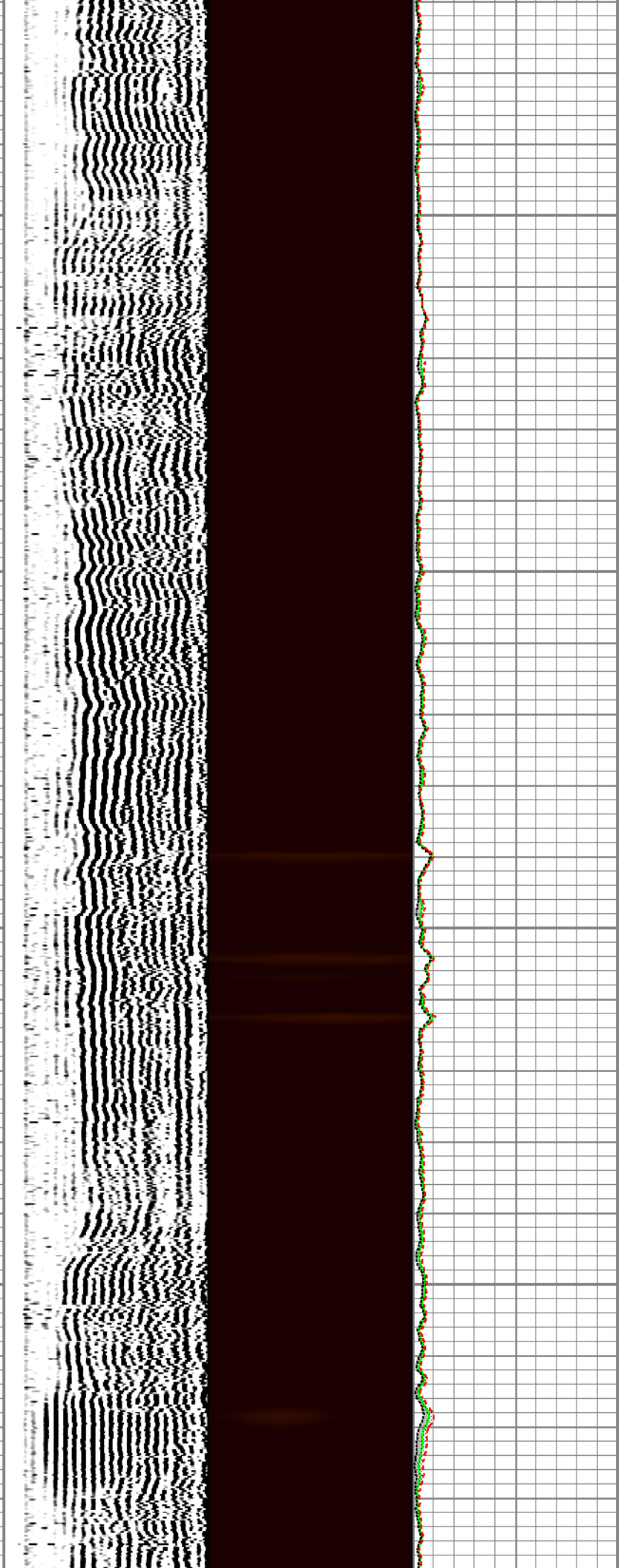
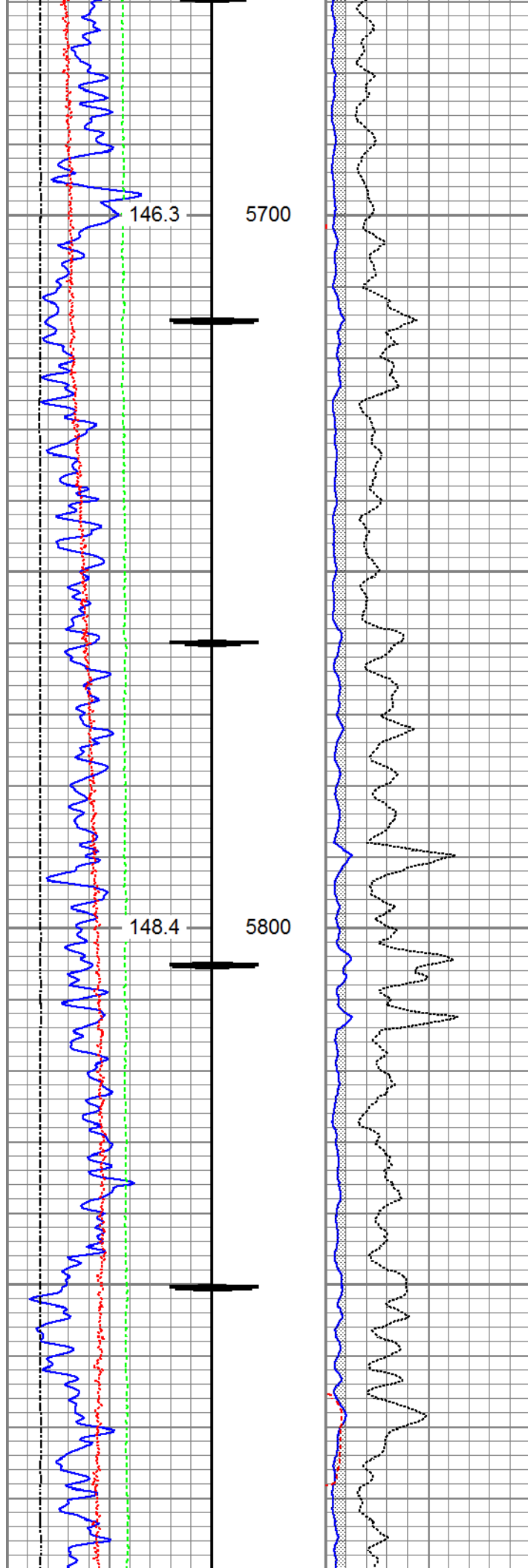




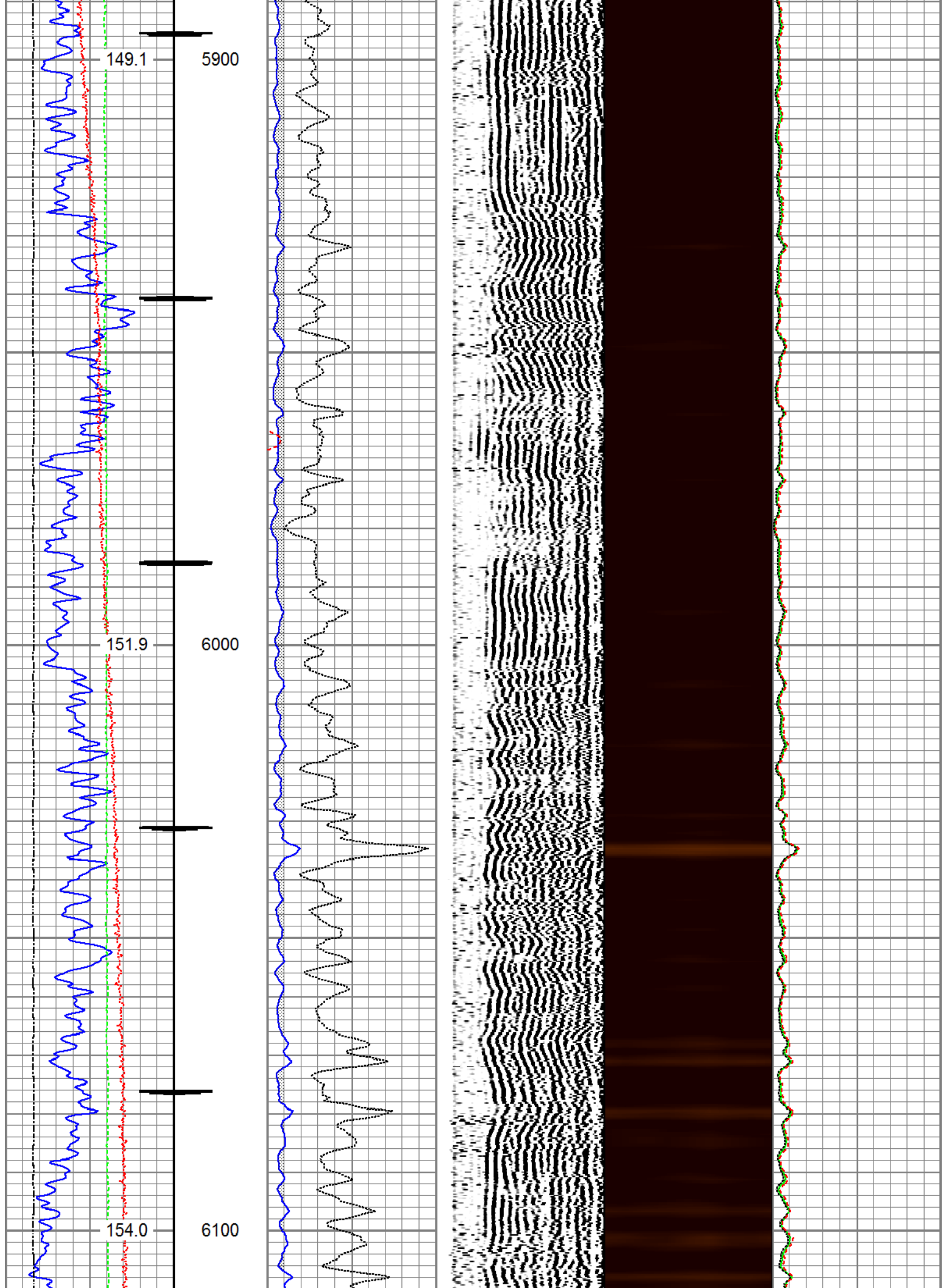


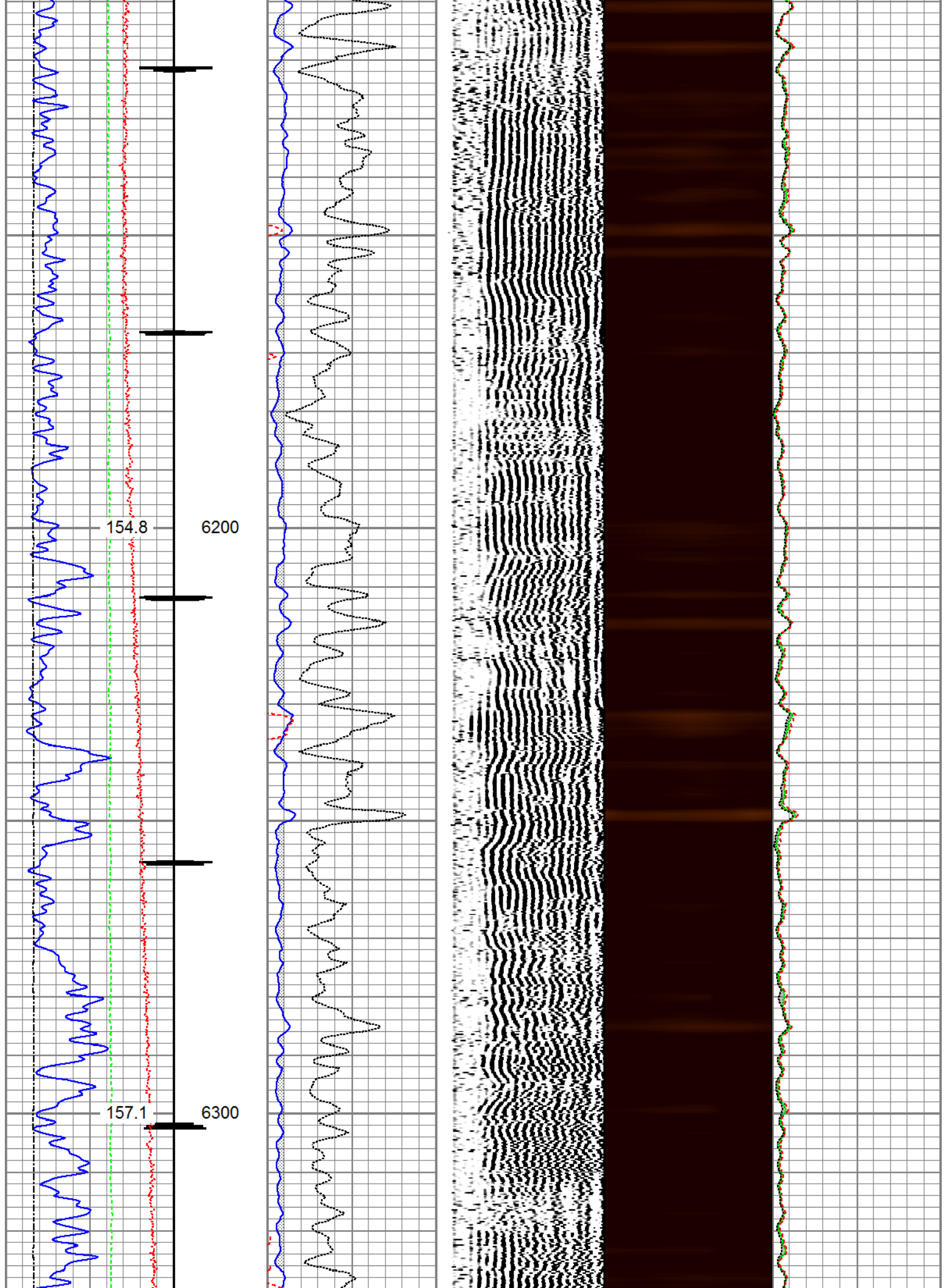


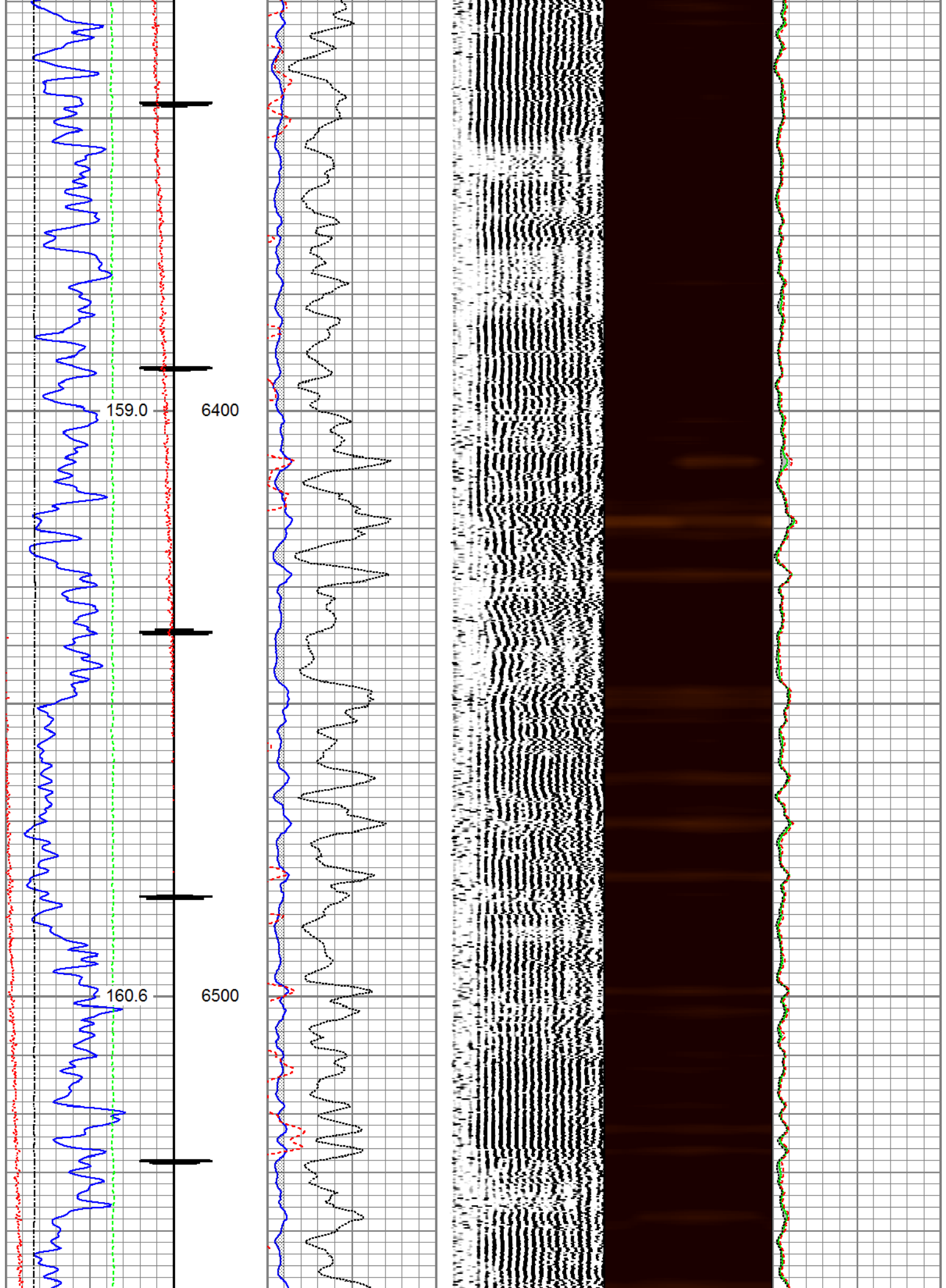




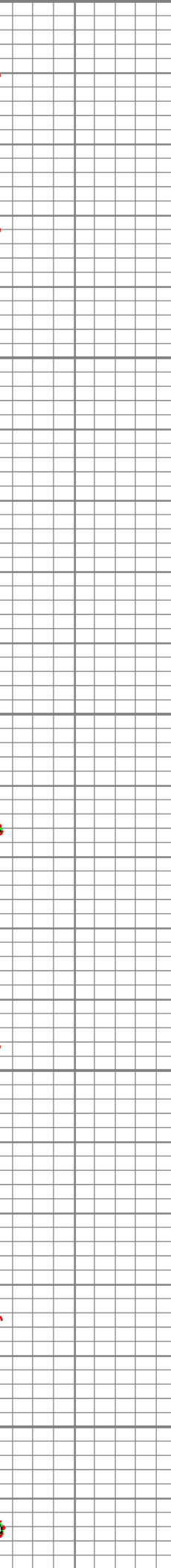
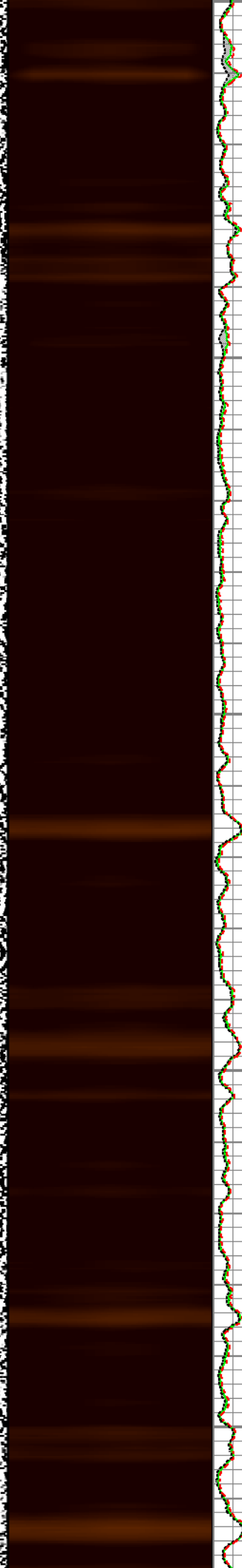
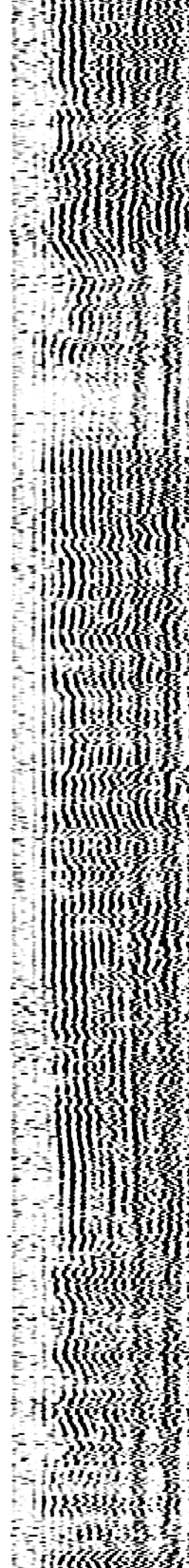
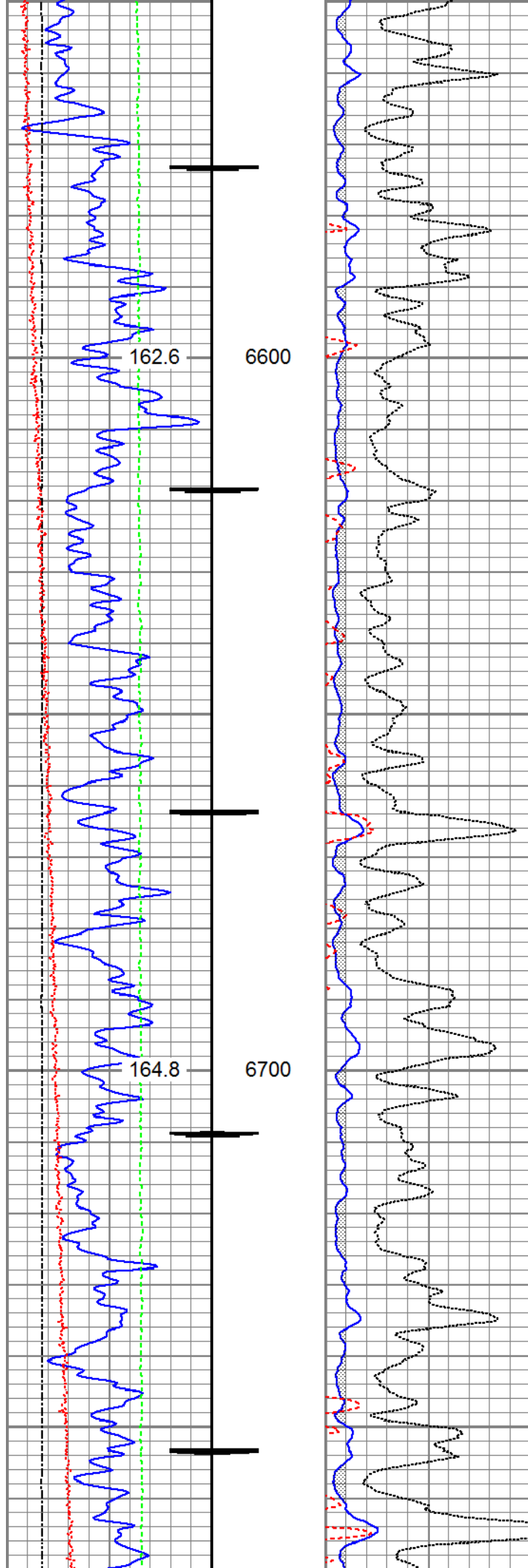




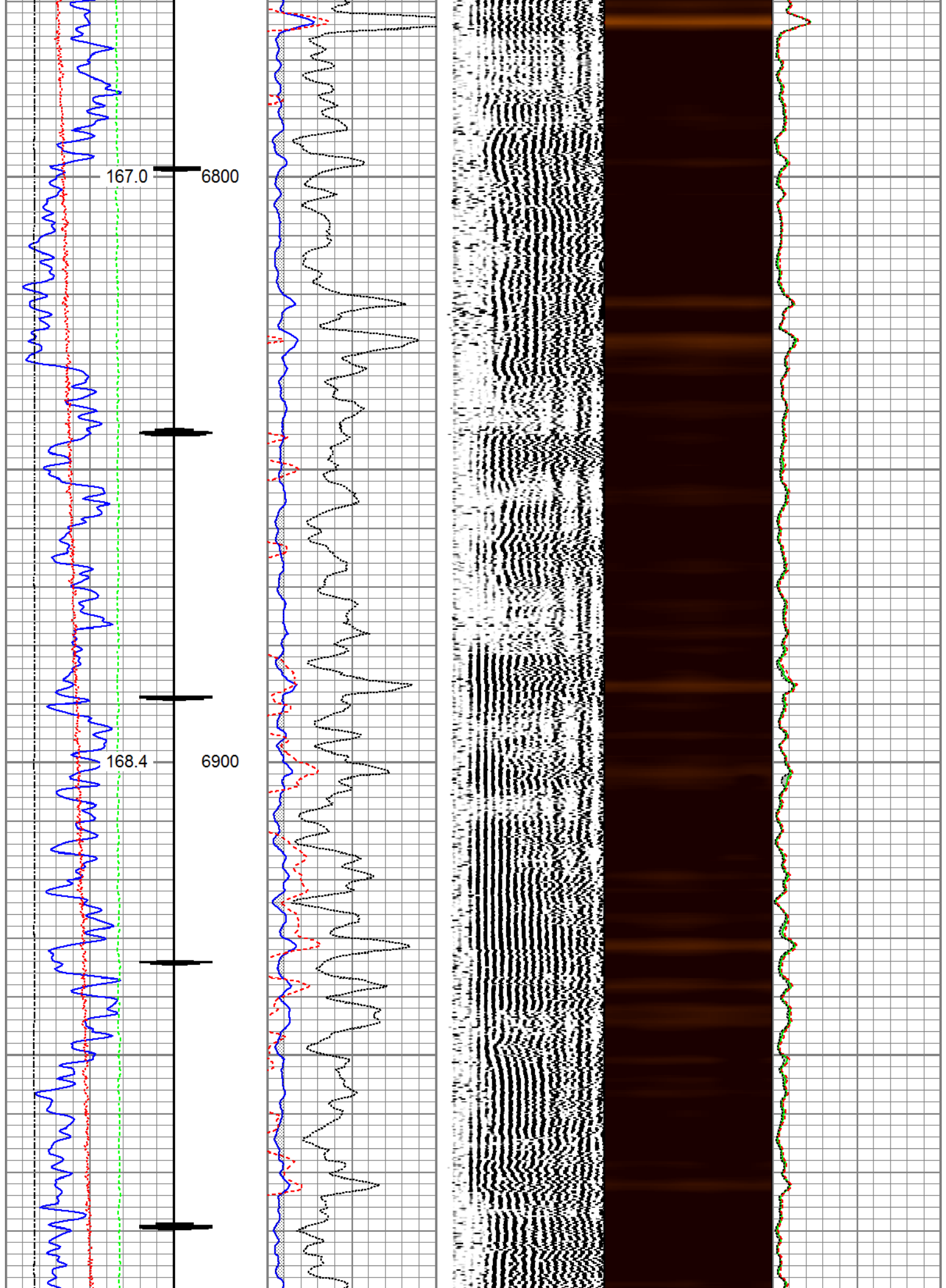


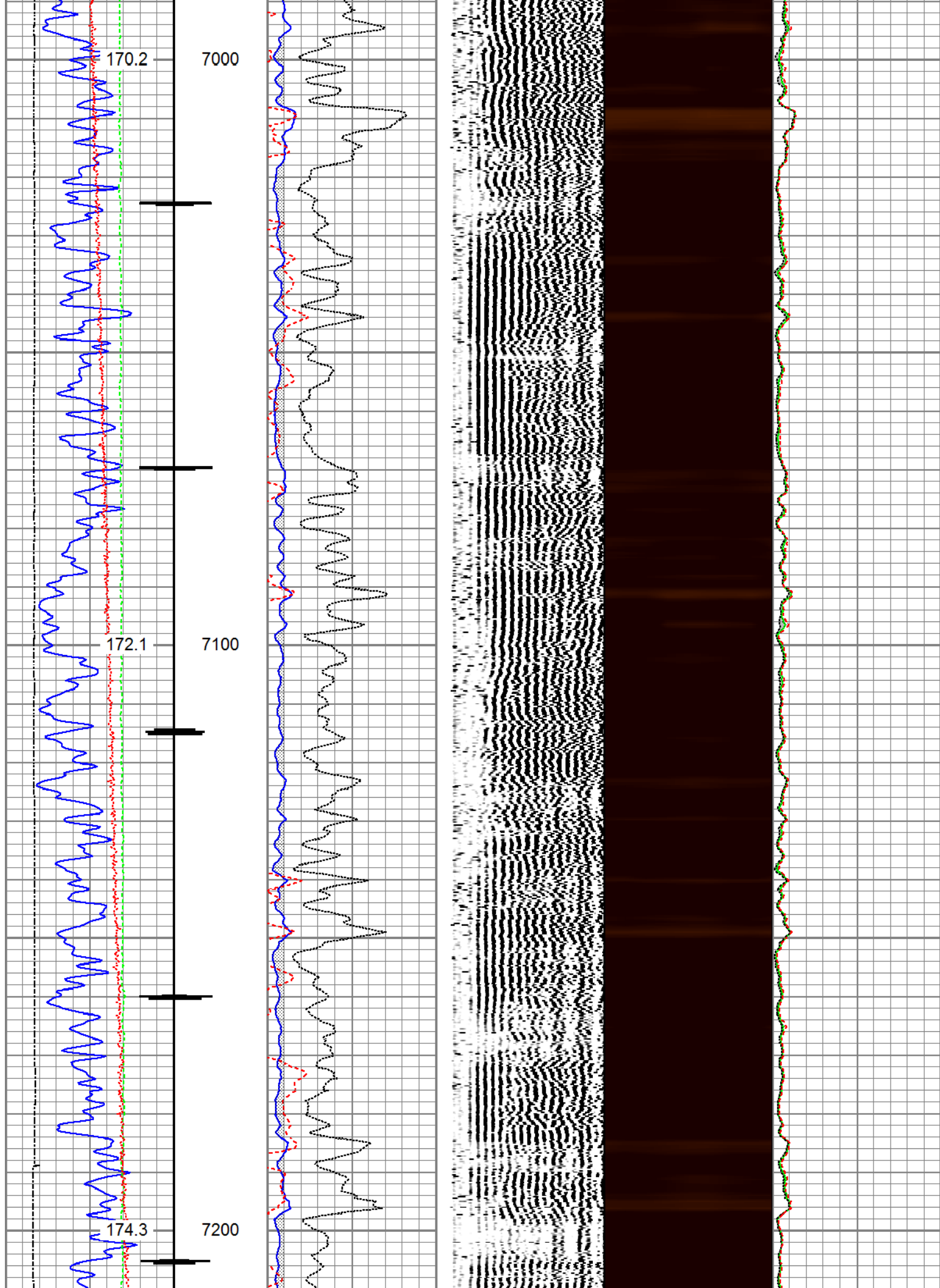


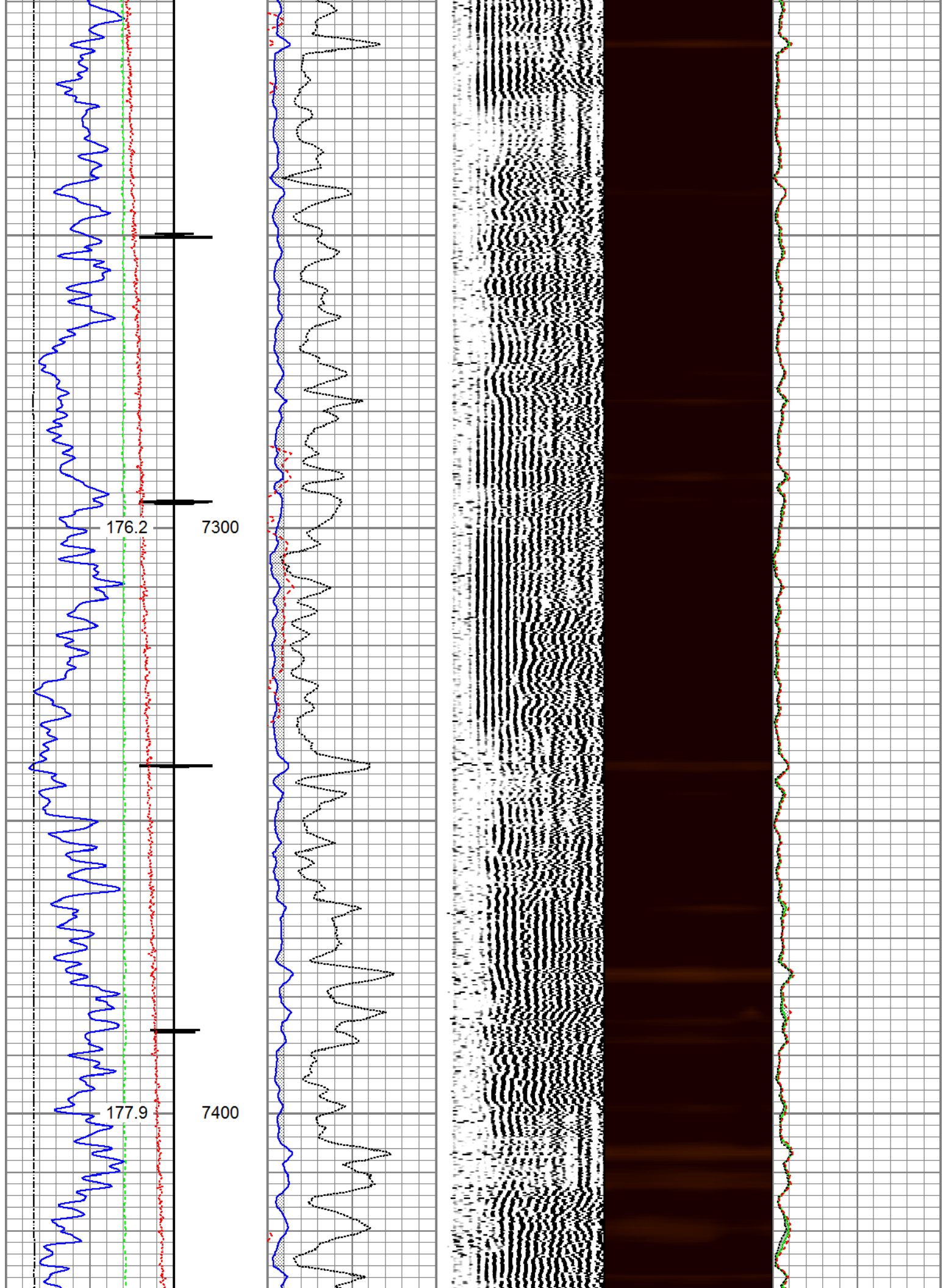




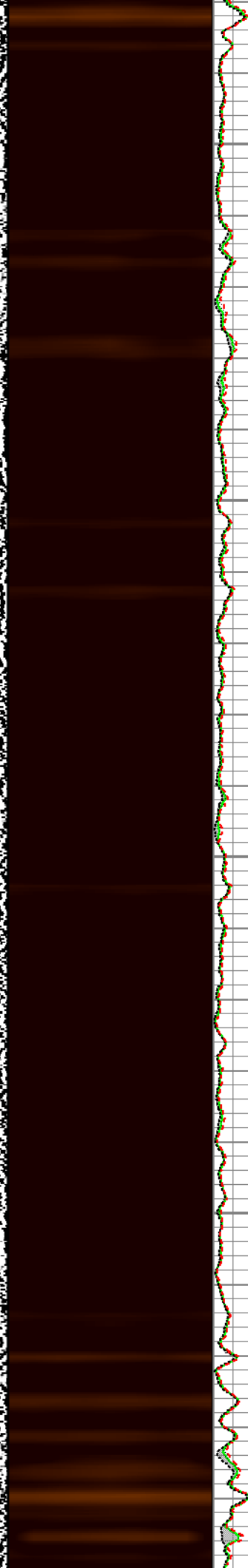
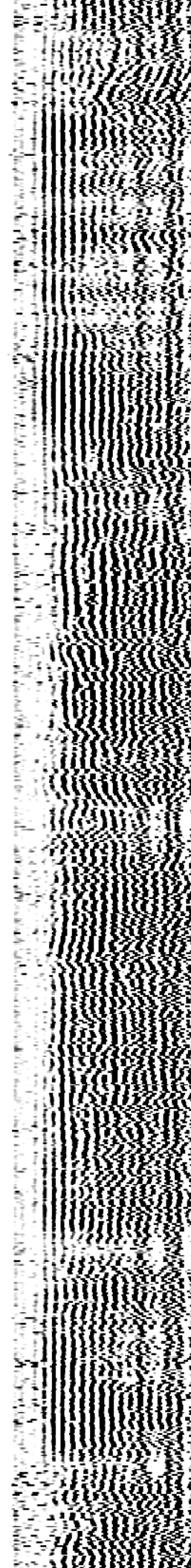
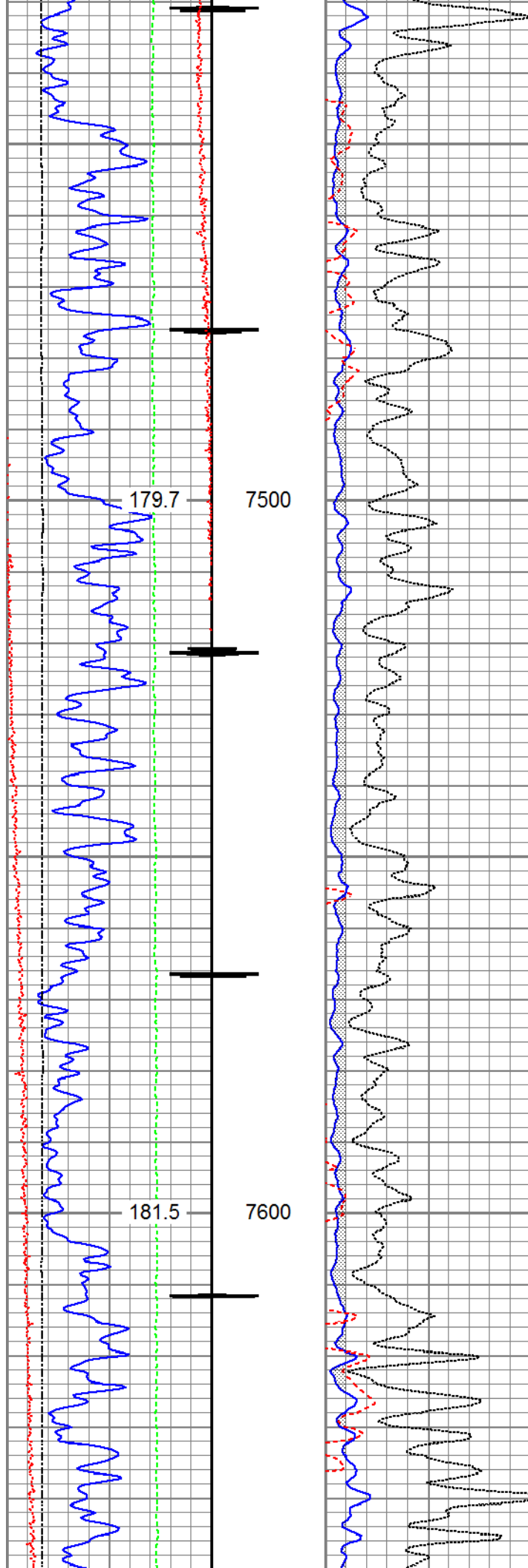




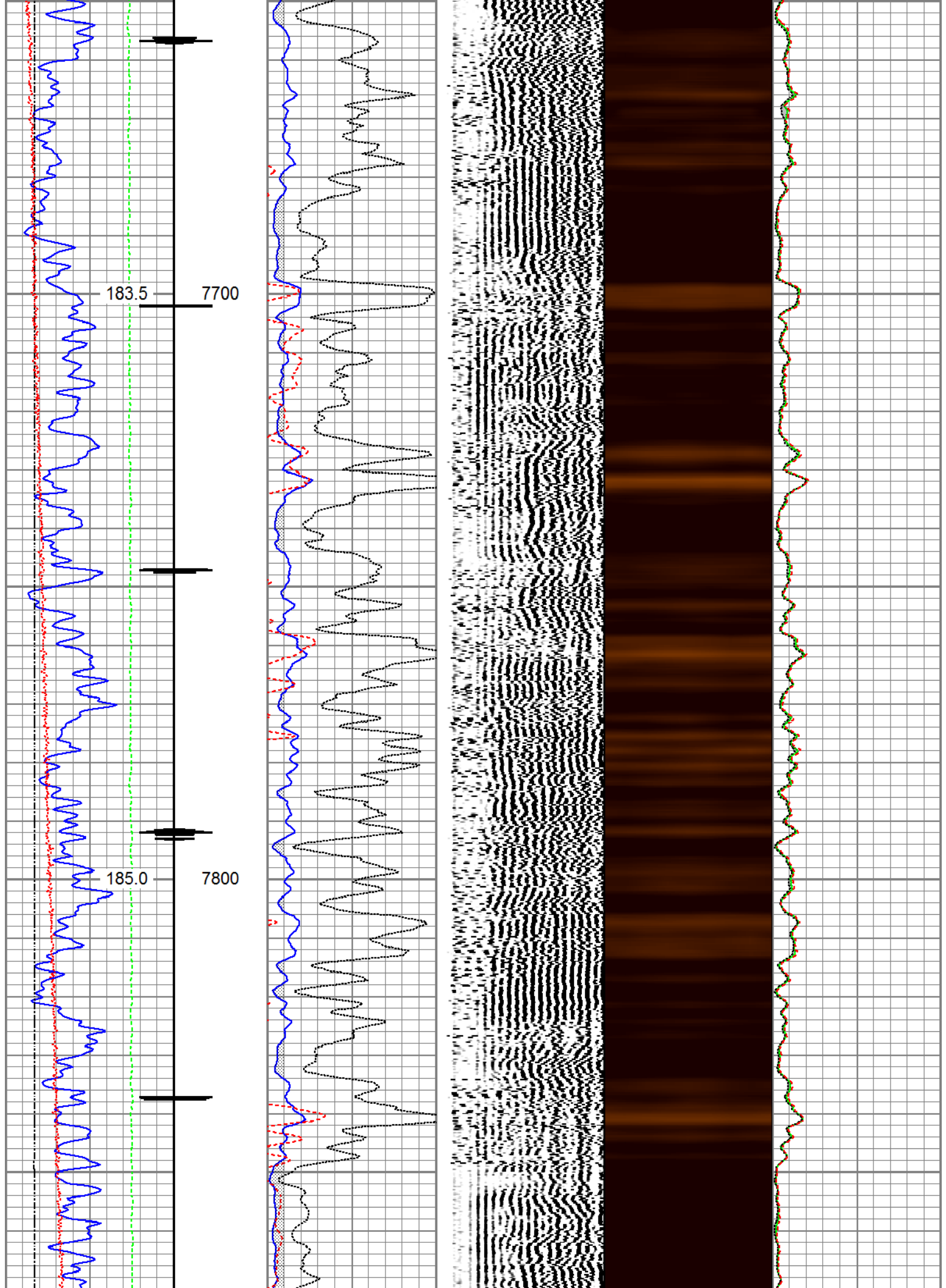


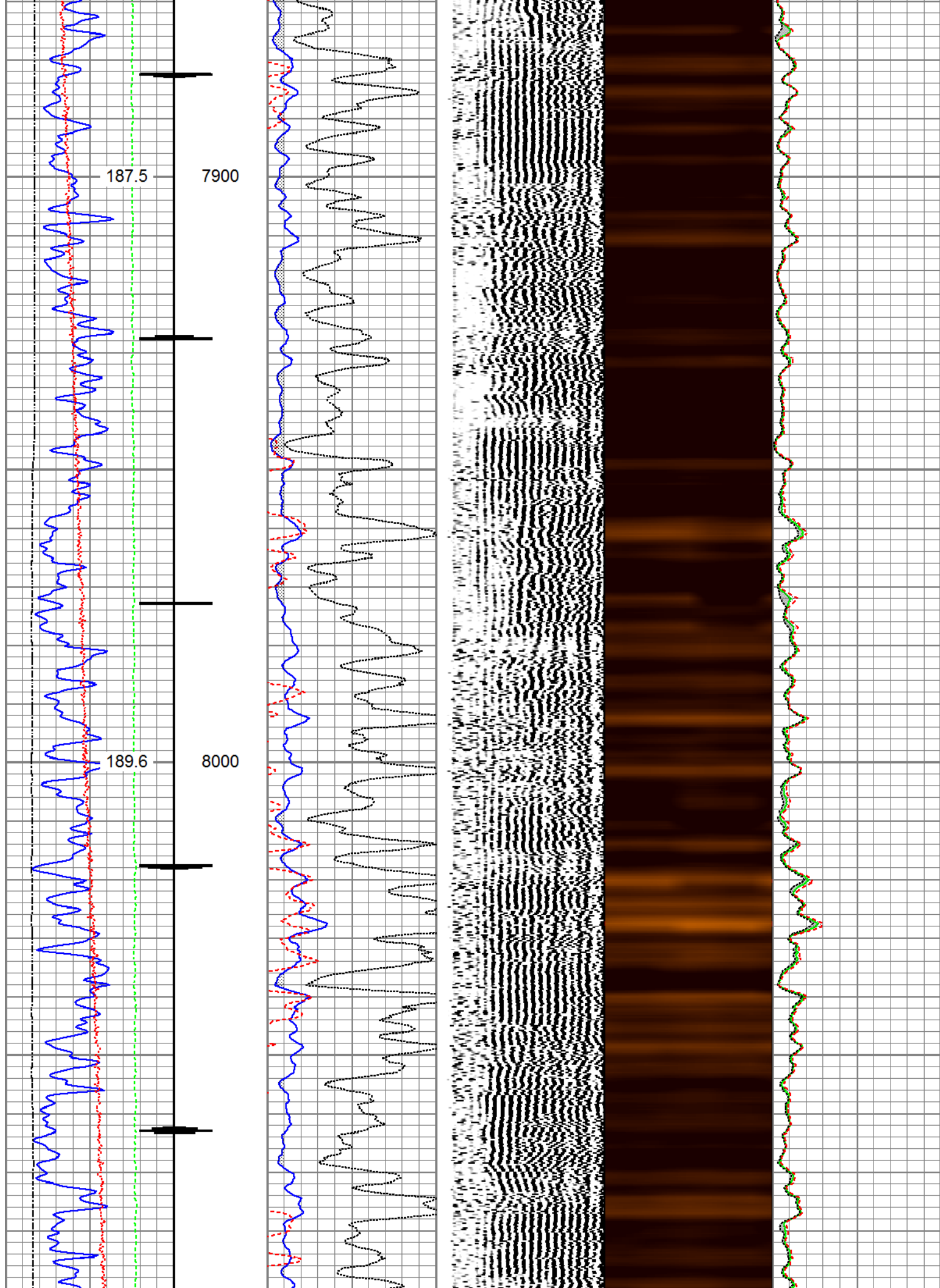


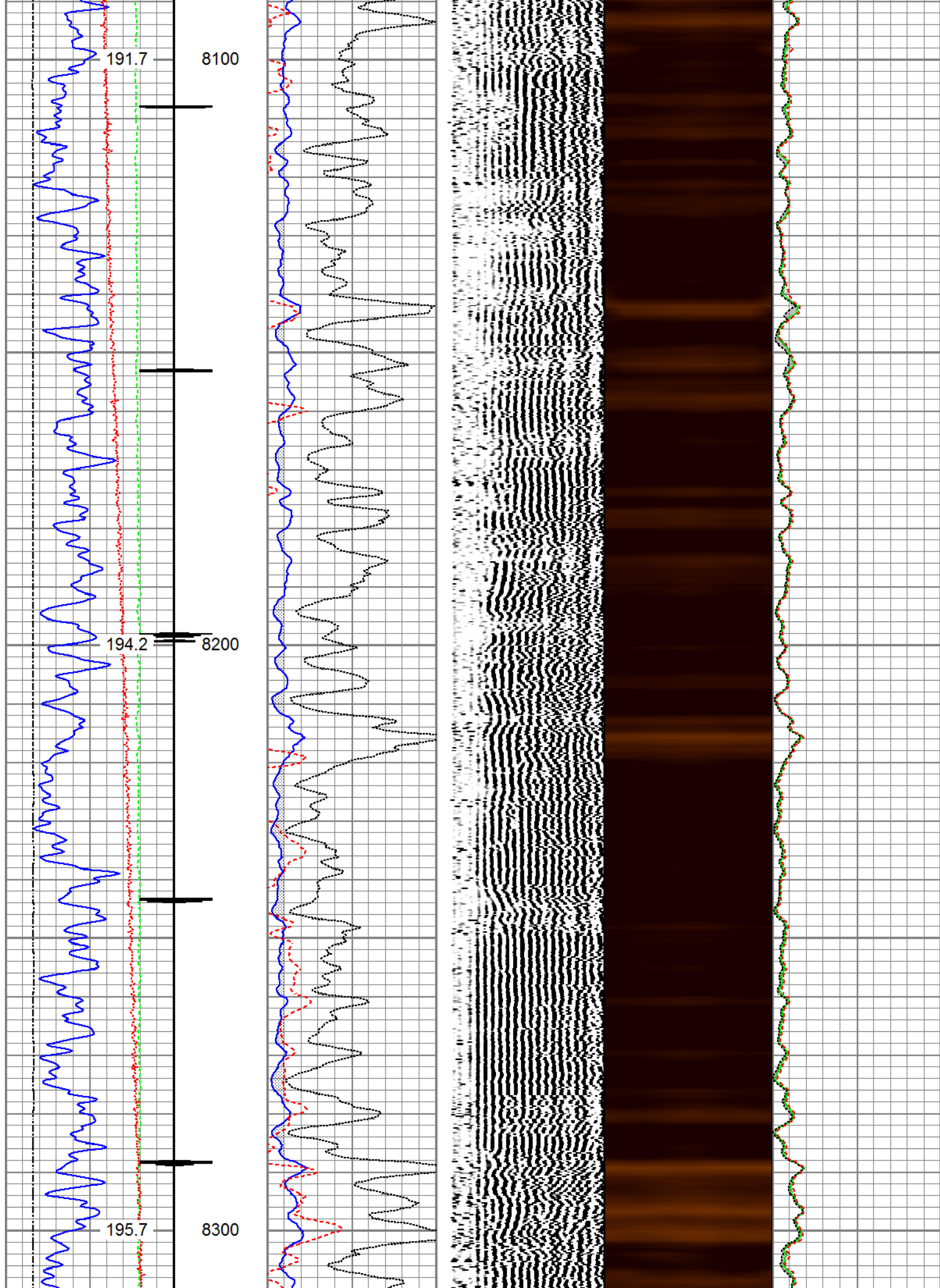




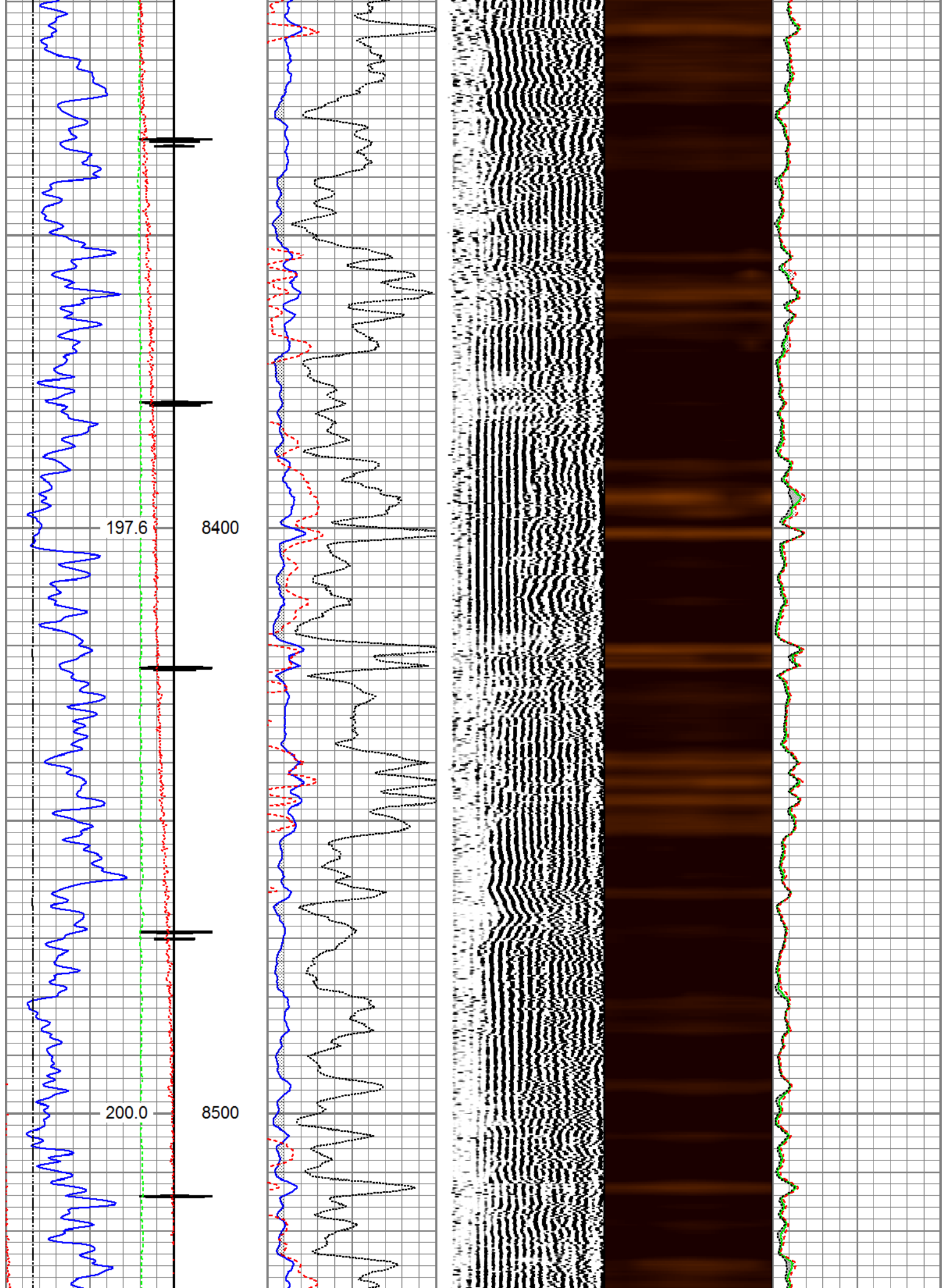




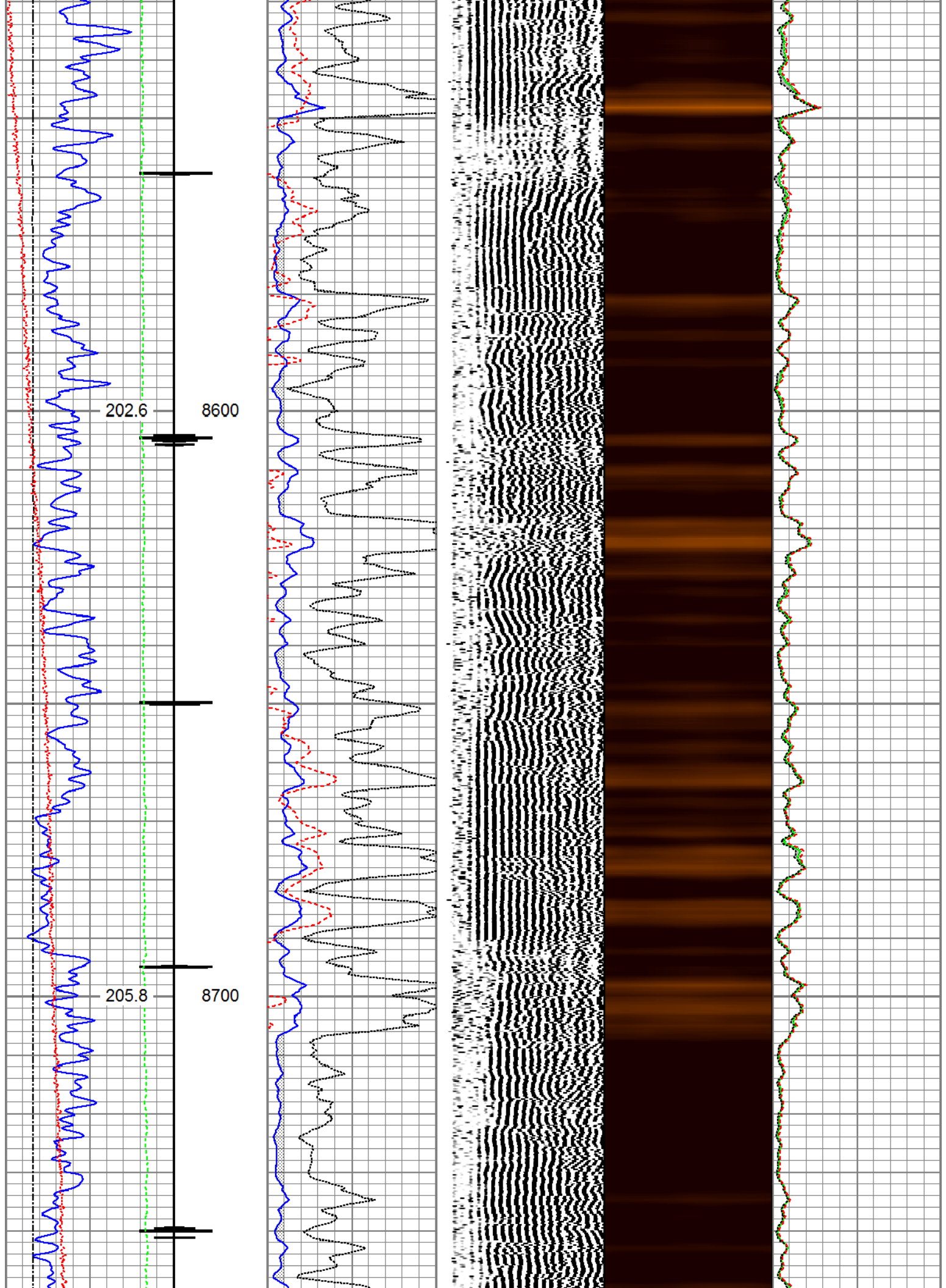


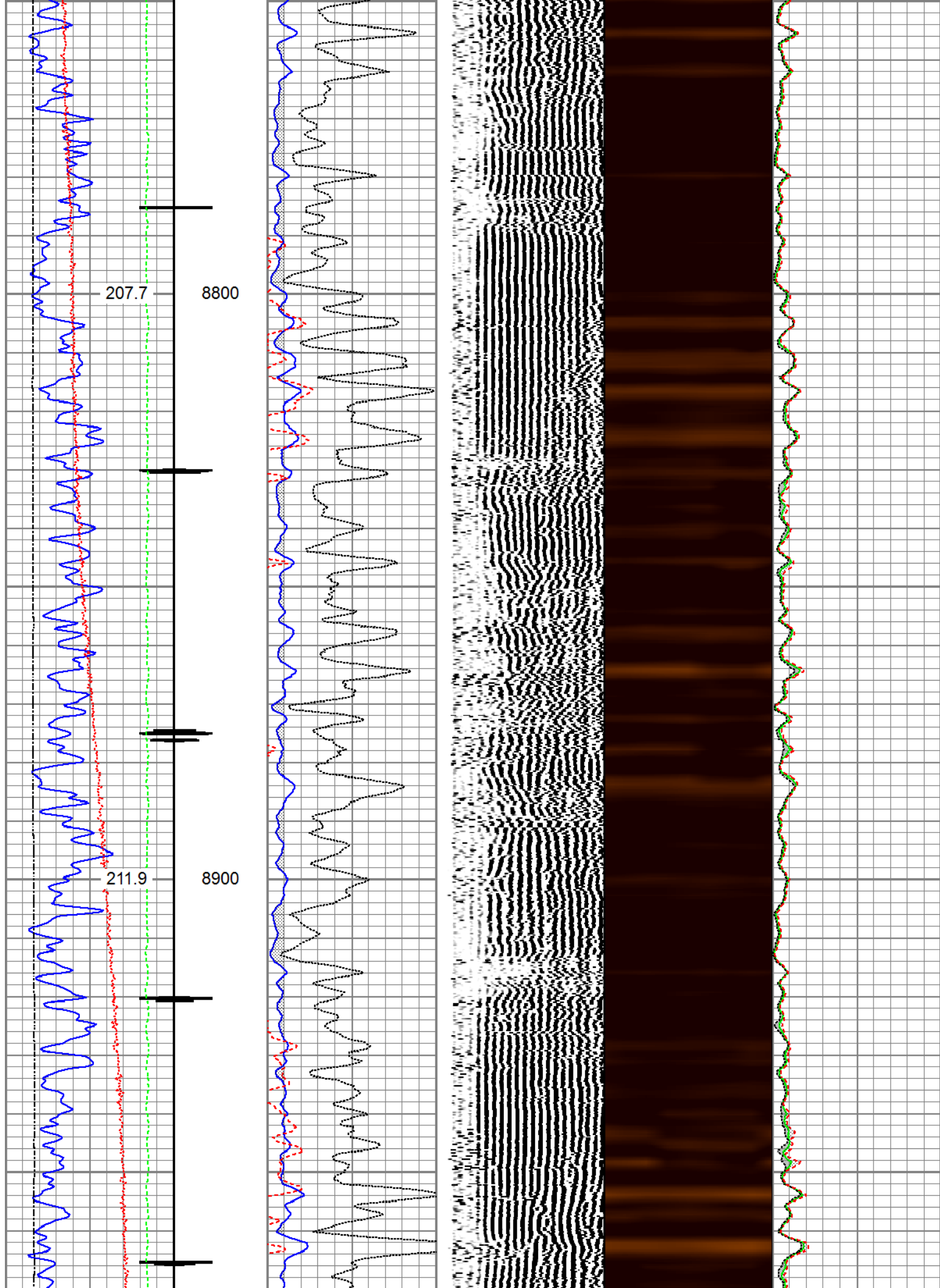


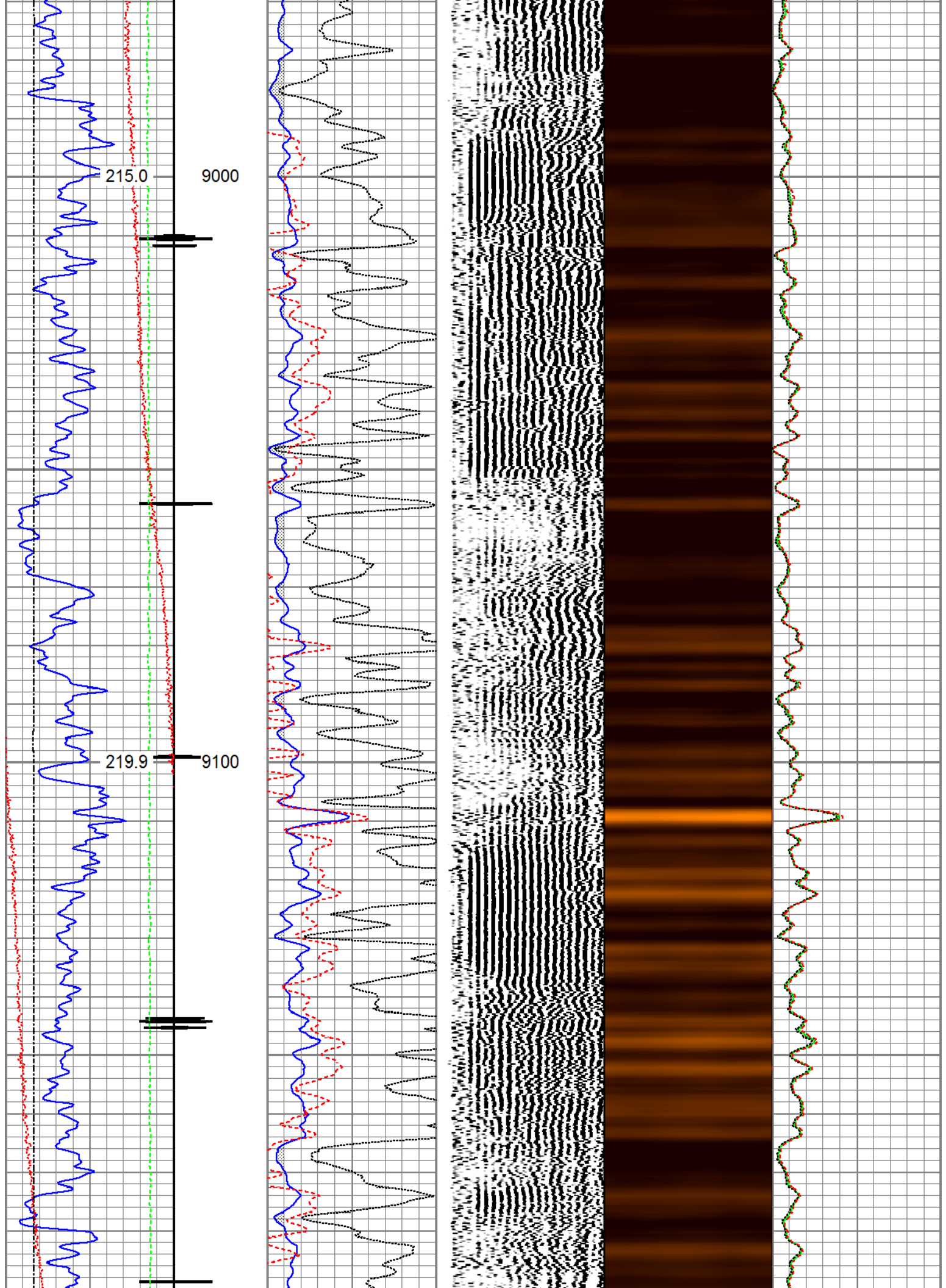




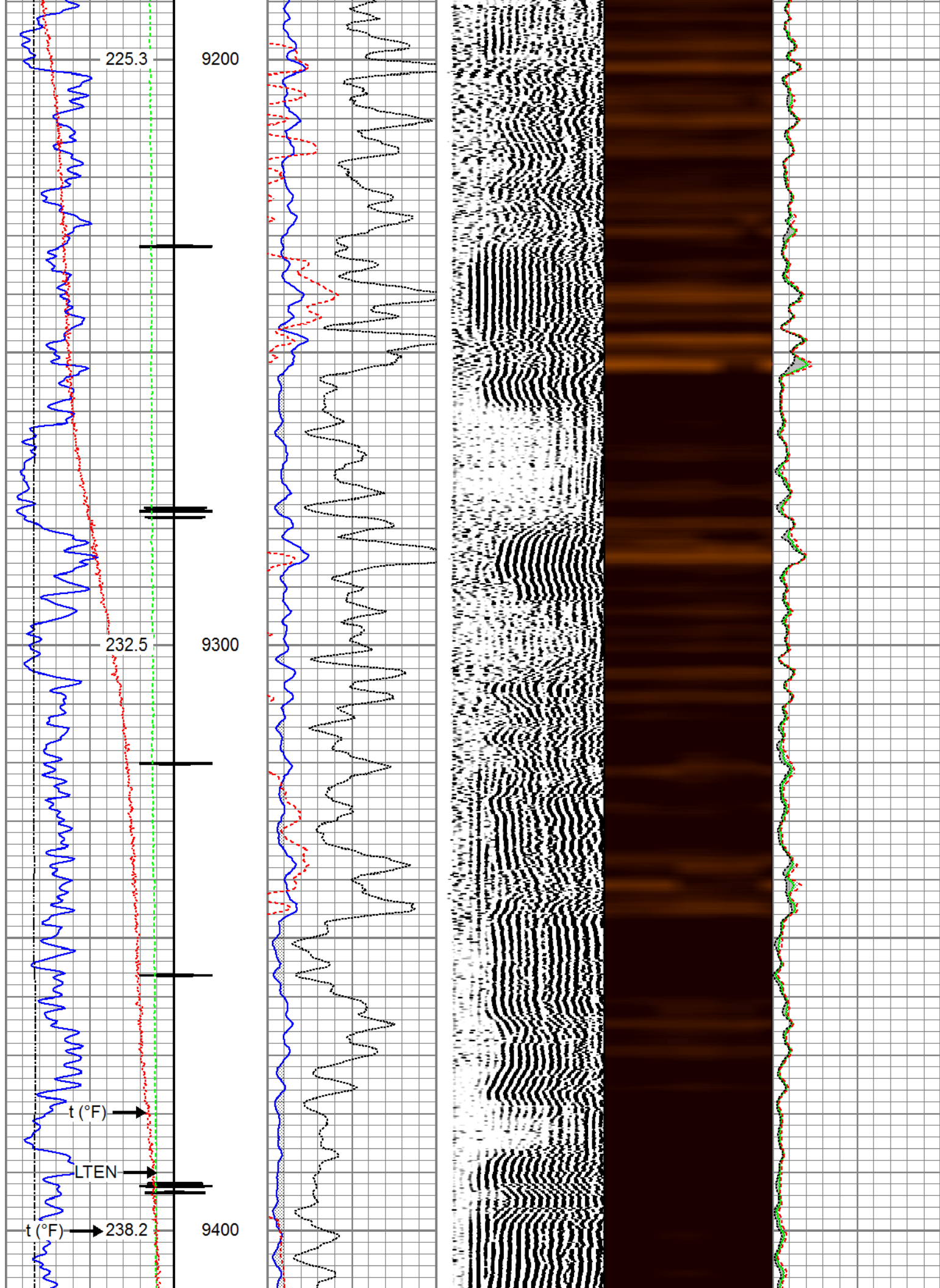




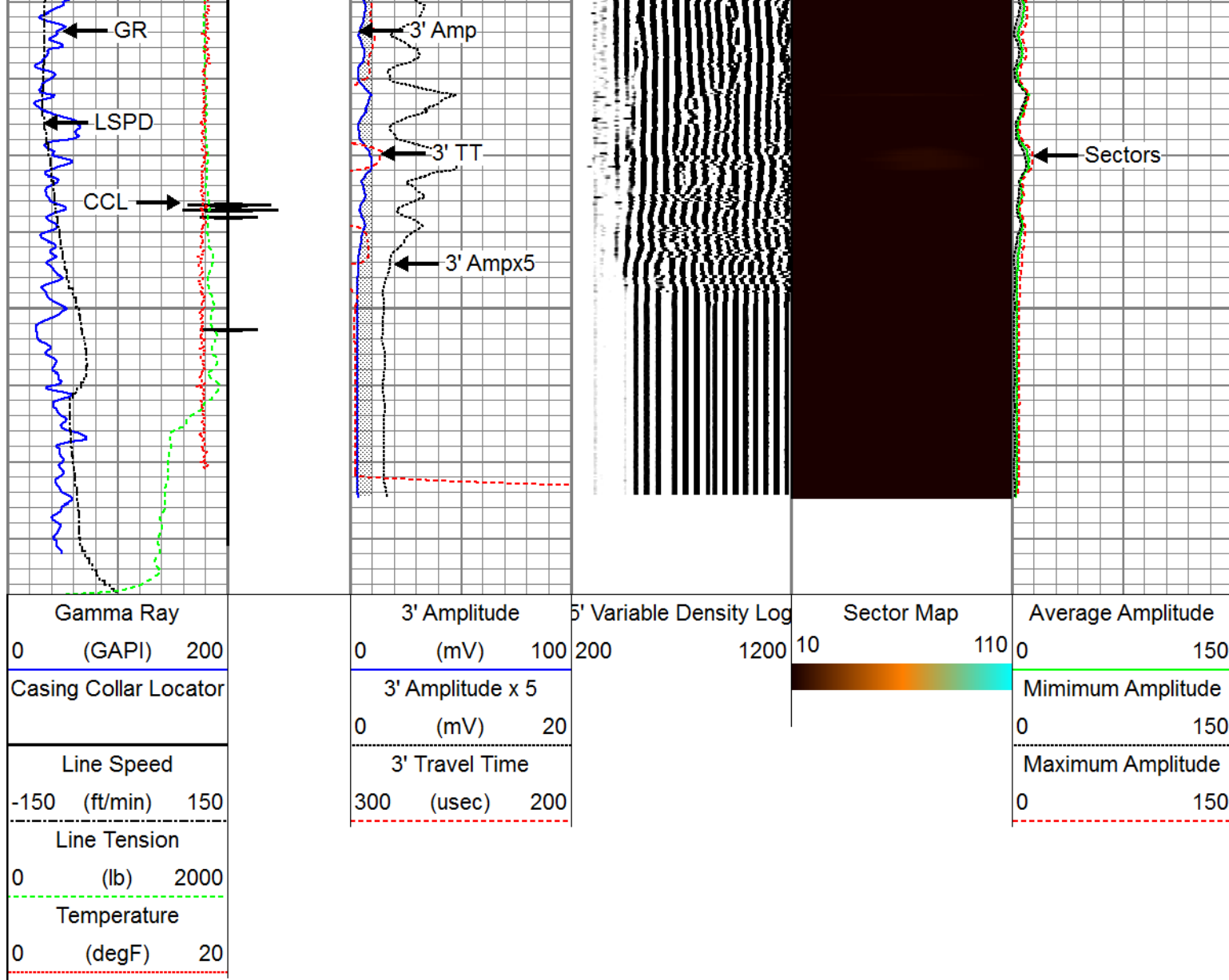








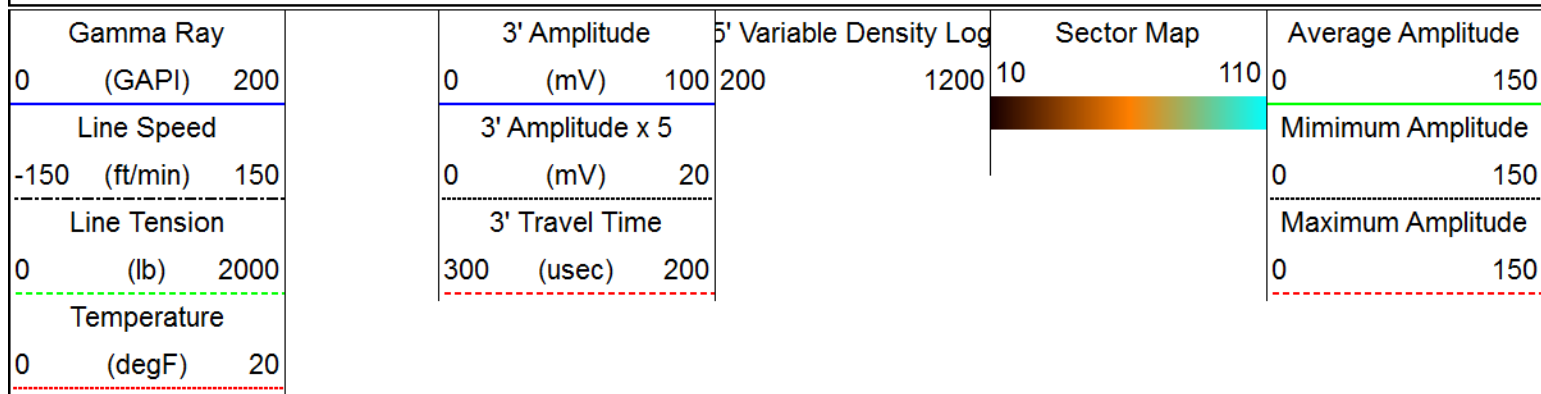


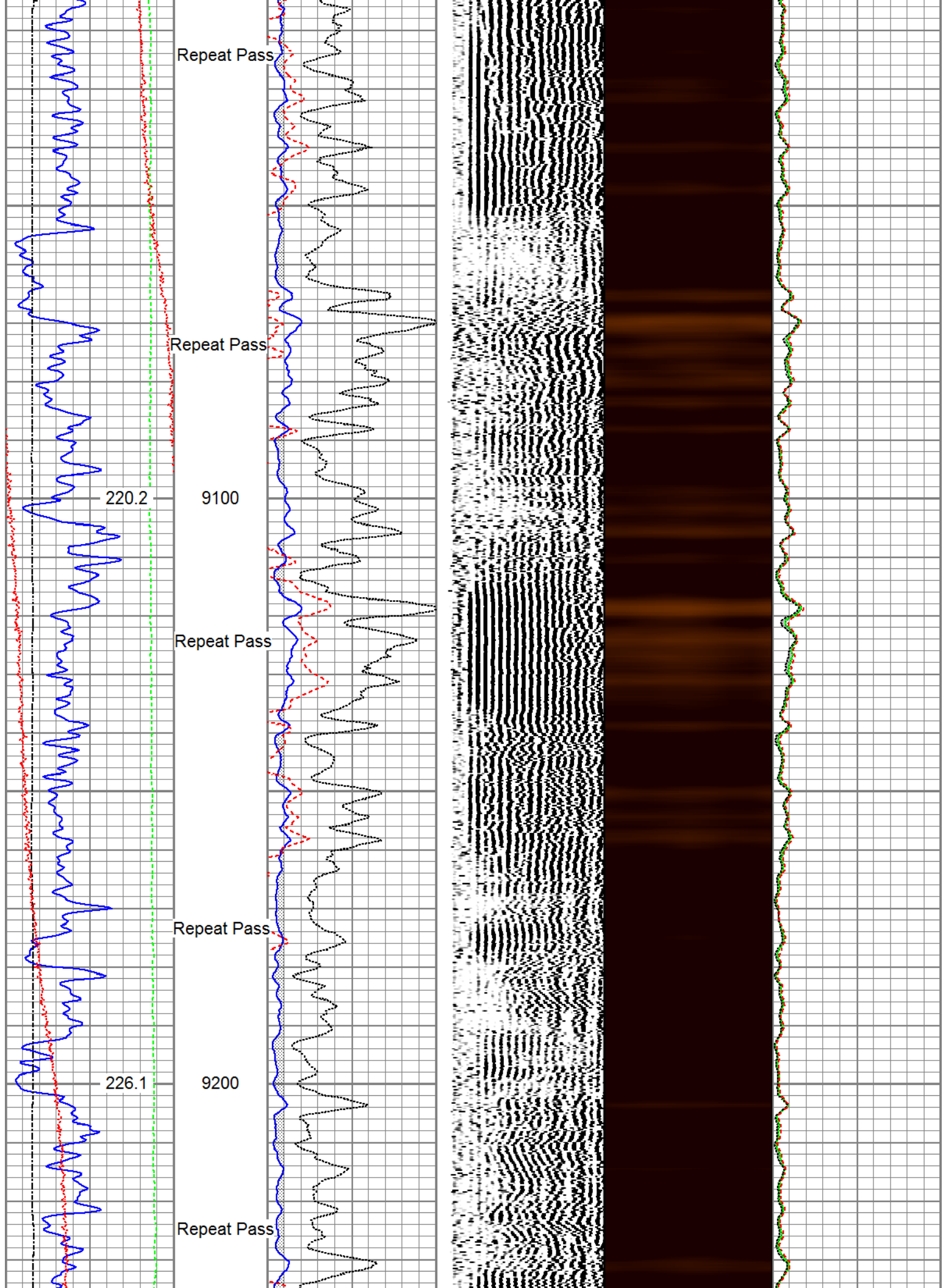


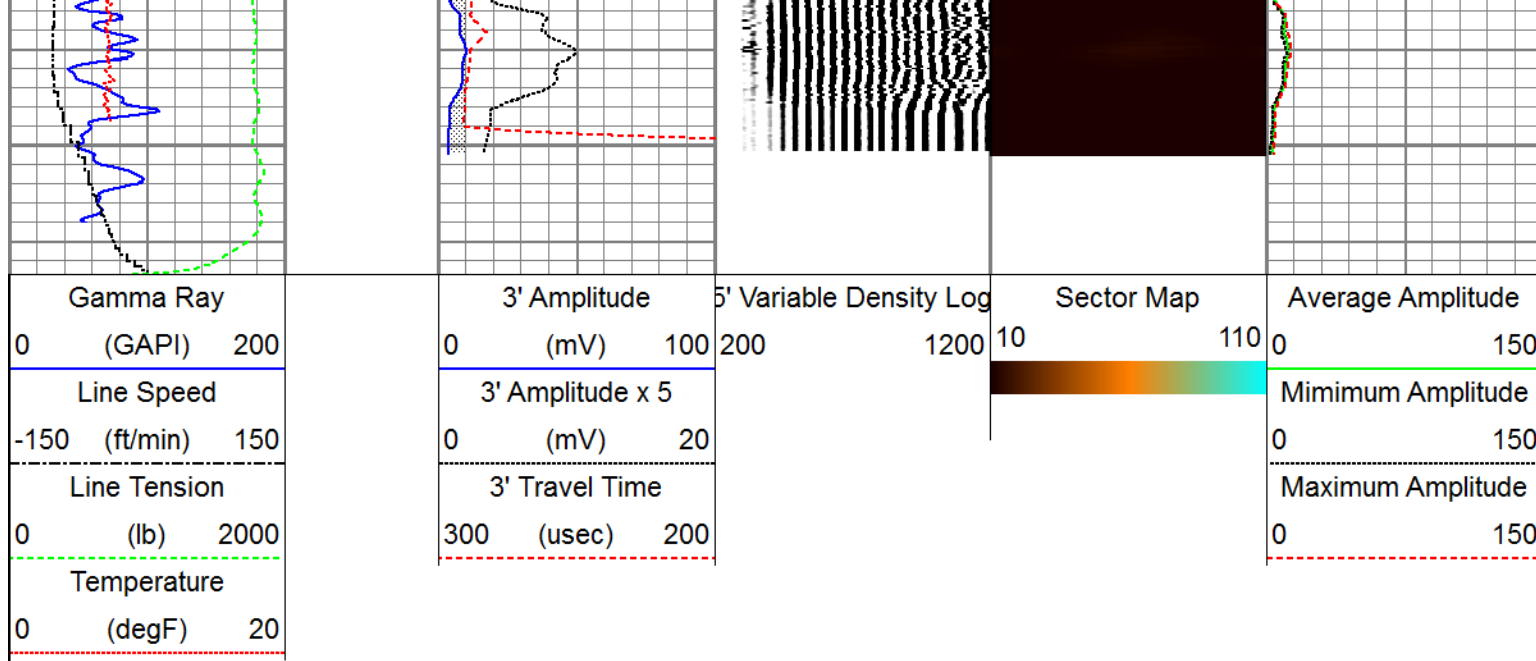
## Repeat Pass

Recorded with 0 PSI Surface Induced Pressure

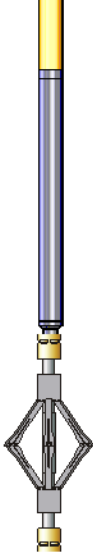
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 Dataset Pathname pass2.1  
 Presentation Format ros\_rbt004\_tep  
 Dataset Creation Thu Jul 06 15:51:14 2017  
 Charted by Depth in Feet scaled 1:240







Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Temp	16.05		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
			Probe_RADII-C-P_RBT_2750 (FW1305-09) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	989.19	2.75	105.00
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

DCCL	6.18		Probe_GR_CCL-P_CGR_2750_S (FW1211-4.54) Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	55.00	
CCL	6.18					
GR	3.44		DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
Dataset: tep_youberg sr 521-12_rbl_07-05-17.db: field/well/run1/pass4.1 Total length: 22.40 ft Total weight: 261.40 lb O.D.: 2.75 in						

Calibration Report	
Database File	c:\programdata\warrior\data\tep_youberg sr 521-12_rbl_07-05-17\tep_youberg sr 521-12_rbl_07-05-17
Dataset Pathname	pass4.1
Dataset Creation	Thu Jul 06 15:41:58 2017

Gamma Ray Calibration Report		
Serial Number:	FW1211-081	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:31:52 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	FW1305-098	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	300.022	ft

Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.023	0.712	0.800	81.196	109.522	3.269
CAL	-0.006	0.763				
5'	-0.016	0.716	0.800	81.196	109.894	2.552
SUM						
S1	-0.015	0.727	0.000	100.000	134.773	1.974
S2	-0.012	0.723	0.000	100.000	135.923	1.690
S3	-0.019	0.729	0.000	100.000	133.580	2.562
S4	-0.025	0.753	0.000	100.000	128.549	3.183
S5	-0.020	0.764	0.000	100.000	126.103	2.612



S5	-0.029	0.764	0.000	100.000	126.193	3.612
S6	-0.028	0.746	0.000	100.000	129.174	3.678
S7	-0.021	0.718	0.000	100.000	135.313	2.855
S8	-0.018	0.699	0.000	100.000	139.474	2.519

Internal Reference Calibration, performed Fri May 05 10:29:14 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.006	0.763	1.000	0.000

Air Zero Calibration, performed Wed Jul 05 14:16:55 2017:

	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	



**RELIANCE**  
OILFIELD SERVICES

Company TEP Rocky Mountain LLC  
Well Youberg SR 521-12  
Field Rulison  
County Garfield  
State Colorado