



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.		Company Kerr-McGee Oil & Gas Onshore, L.P.	
Well Hudson 13C-35HZ		Well Hudson 13C-35HZ	
Field Wattenberg		Field Wattenberg	
County Weld		County Weld	
State Colorado		State Colorado	
Location: Lat: 40.115897 Long: -104.638397		API # : 05-123-35946	
SEC 26 TWP 2N RGE 65W		Other Services	
Permanent Datum Ground Level Elevation 4909'		Elevation	
Log Measured From Kelly Bushing 16'		K.B. 4925'	
Drilling Measured From Kelly Bushing		D.F. 4909'	
Date 25-Apr-2013			
Run Number	ONE		
Depth Driller	16,845		
Depth Logger	6,678		
Bottom Logged Interval	6,678		
Top Log Interval	Surface		
Open Hole Size	8.75"		
Type Fluid	Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	N/A		
Estimated Cement Top	1,215		
Time Well Ready	N/A		
Time Logger on Bottom	N/A		
Equipment Number	HD 134		
Location	Fort Lupton, CO		
Recorded By	Ryan Harris		
Witnessed By	Keith Kallsen		
Borehole Record		Tubing Record	
Run Number	Bit From To	Size	Weight From To
Casing Record	Size	Wgt/Ft	Top Bottom
Surface String	9 5/8"	36.0	Surface 1,323
Prot. String	7"	26.0	Surface 6,646
Production String			
Liner	4 1/2"	11.6	6,646 16,845

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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.

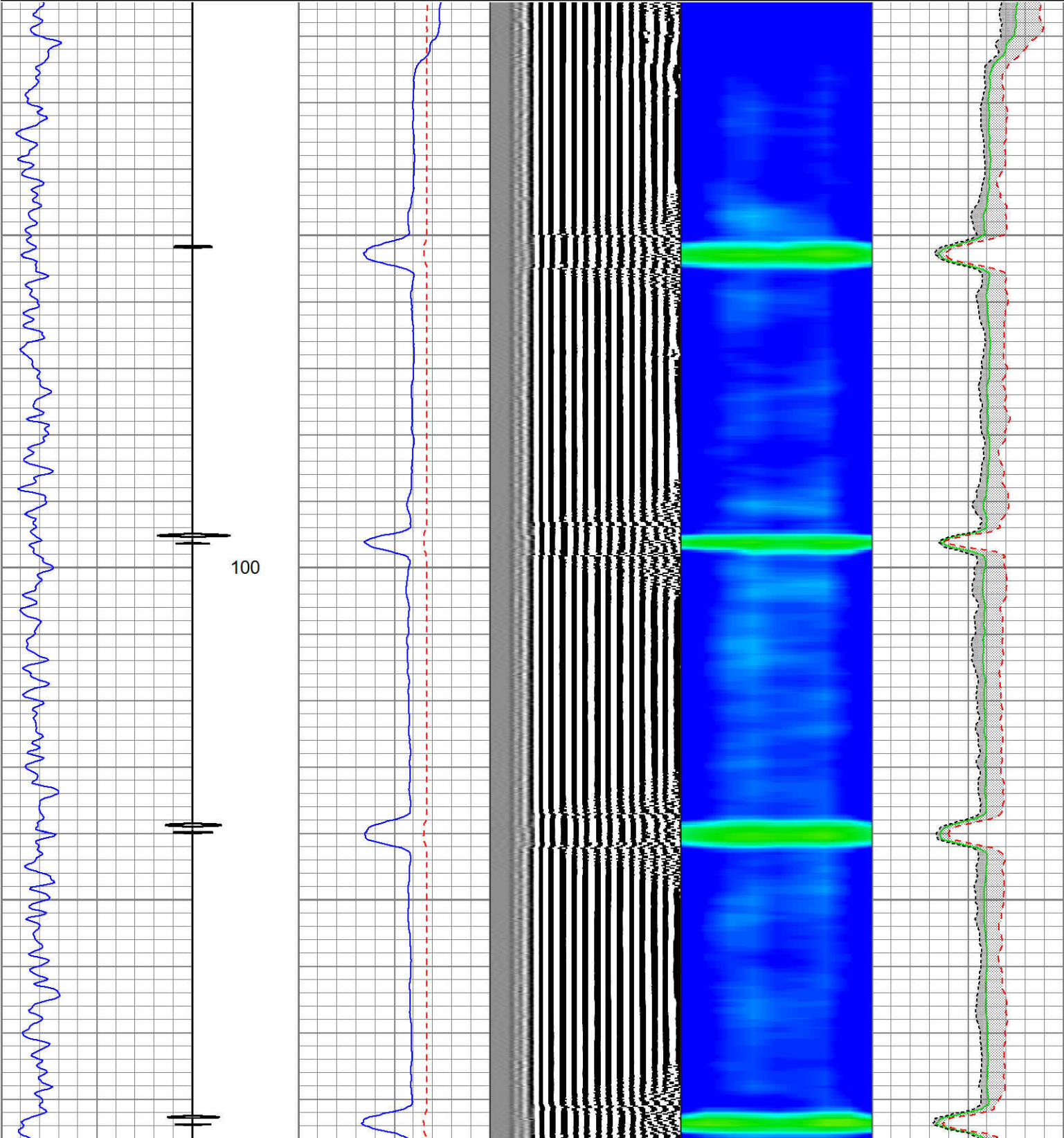
Comments

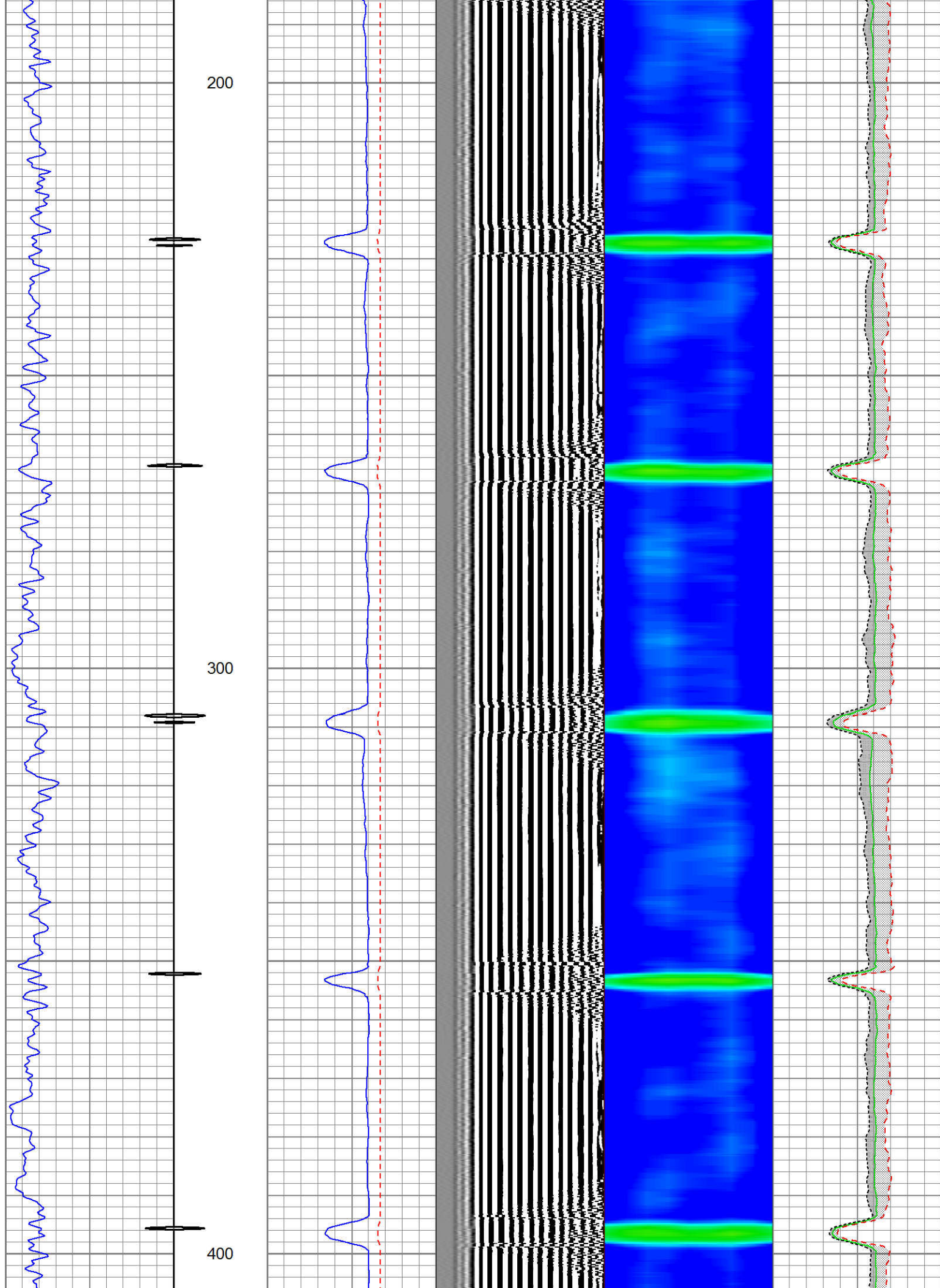
Radial Cement Bond is Primary Log
Correlated to Casing Tally Reported Liner Top @ 6646'
Run RCBL from just below Liner Top to Surface
RCBL Logged with 2800 PSI Induced pressure @ surface
Estimated Top of Cement @ 1215'
Corrected @ Liner Top with zero @ KB

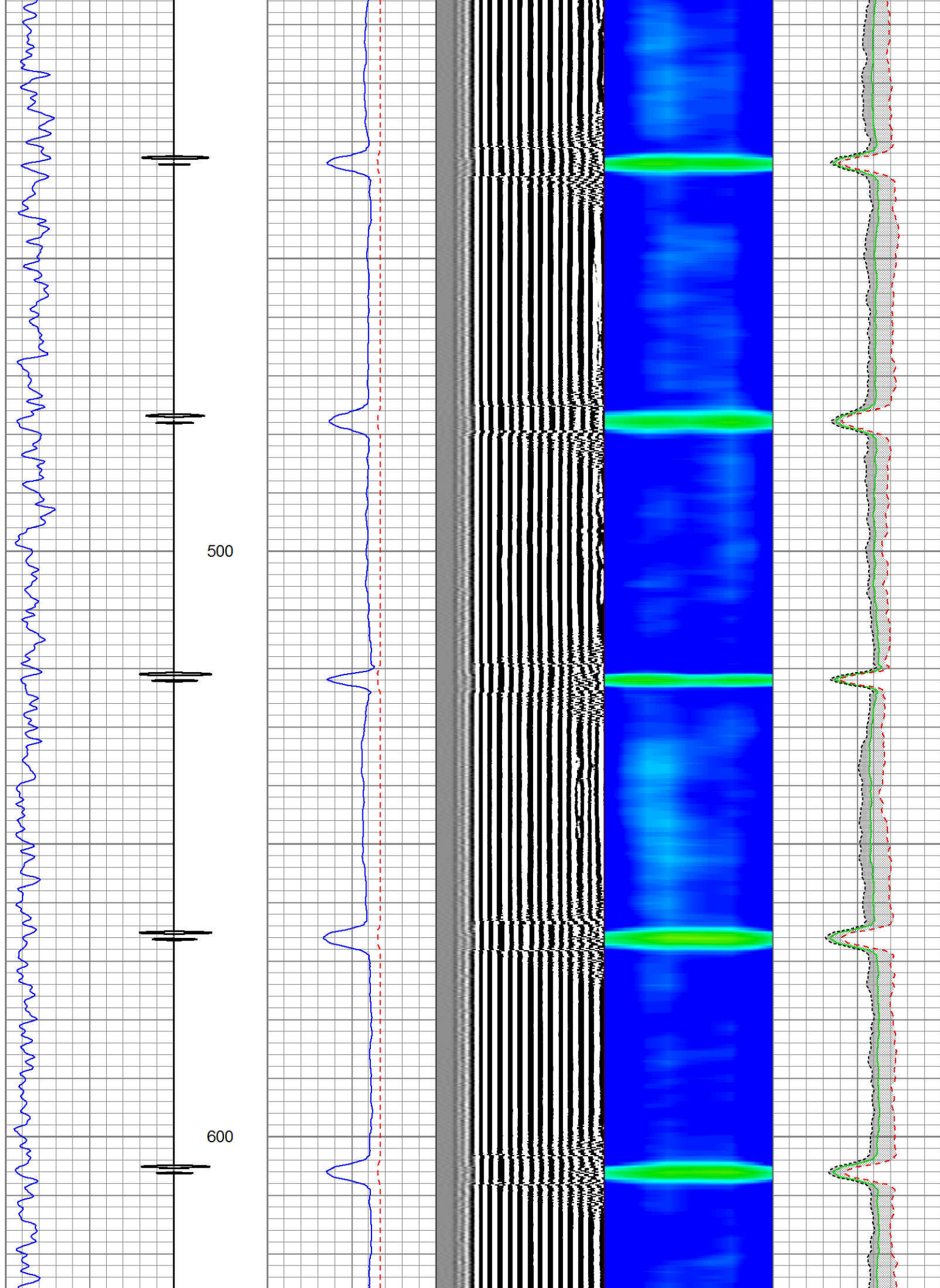
Thank you for choosing FMC Technologies Completion Services

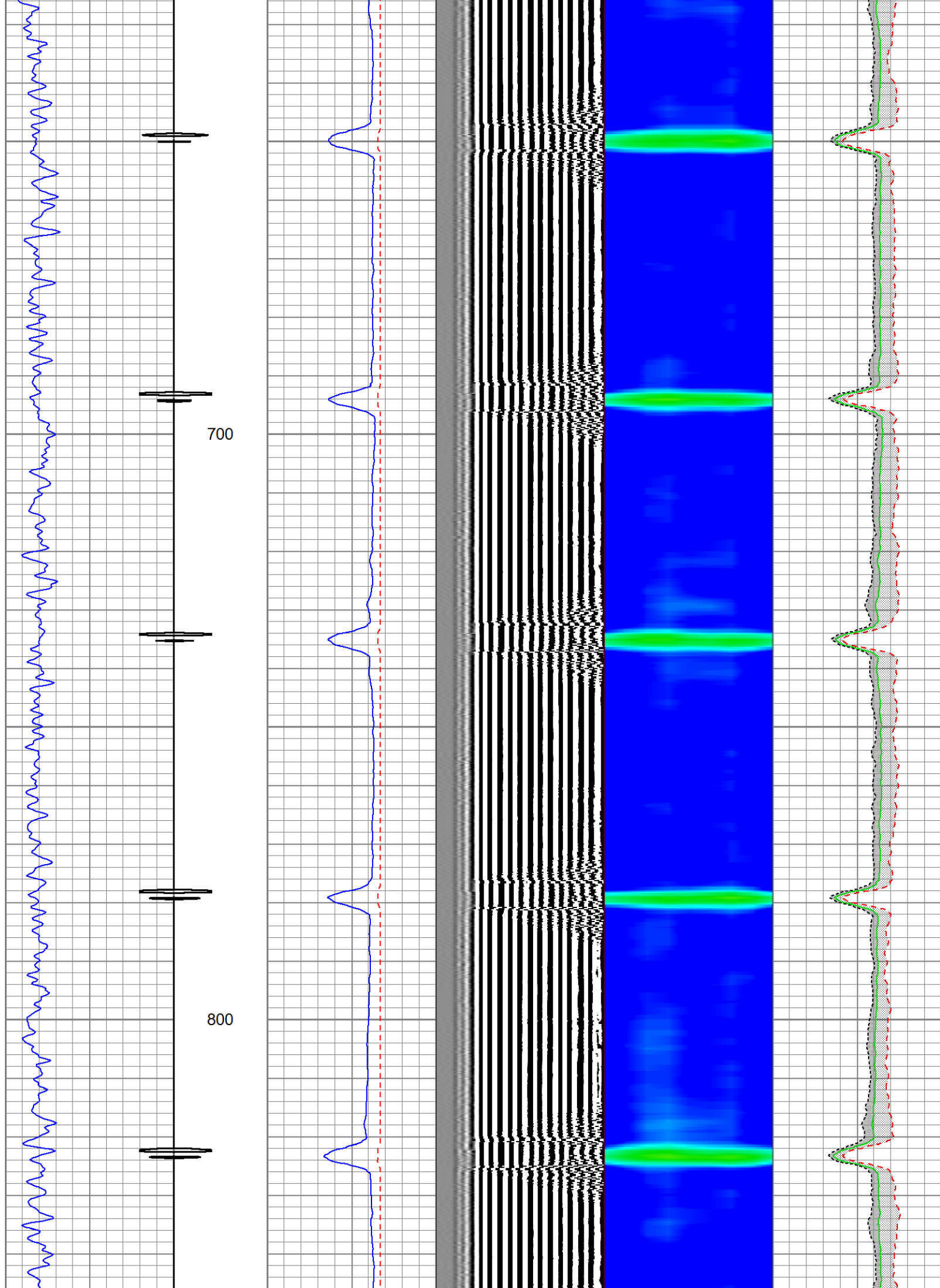
Main Pass 2800 PSI

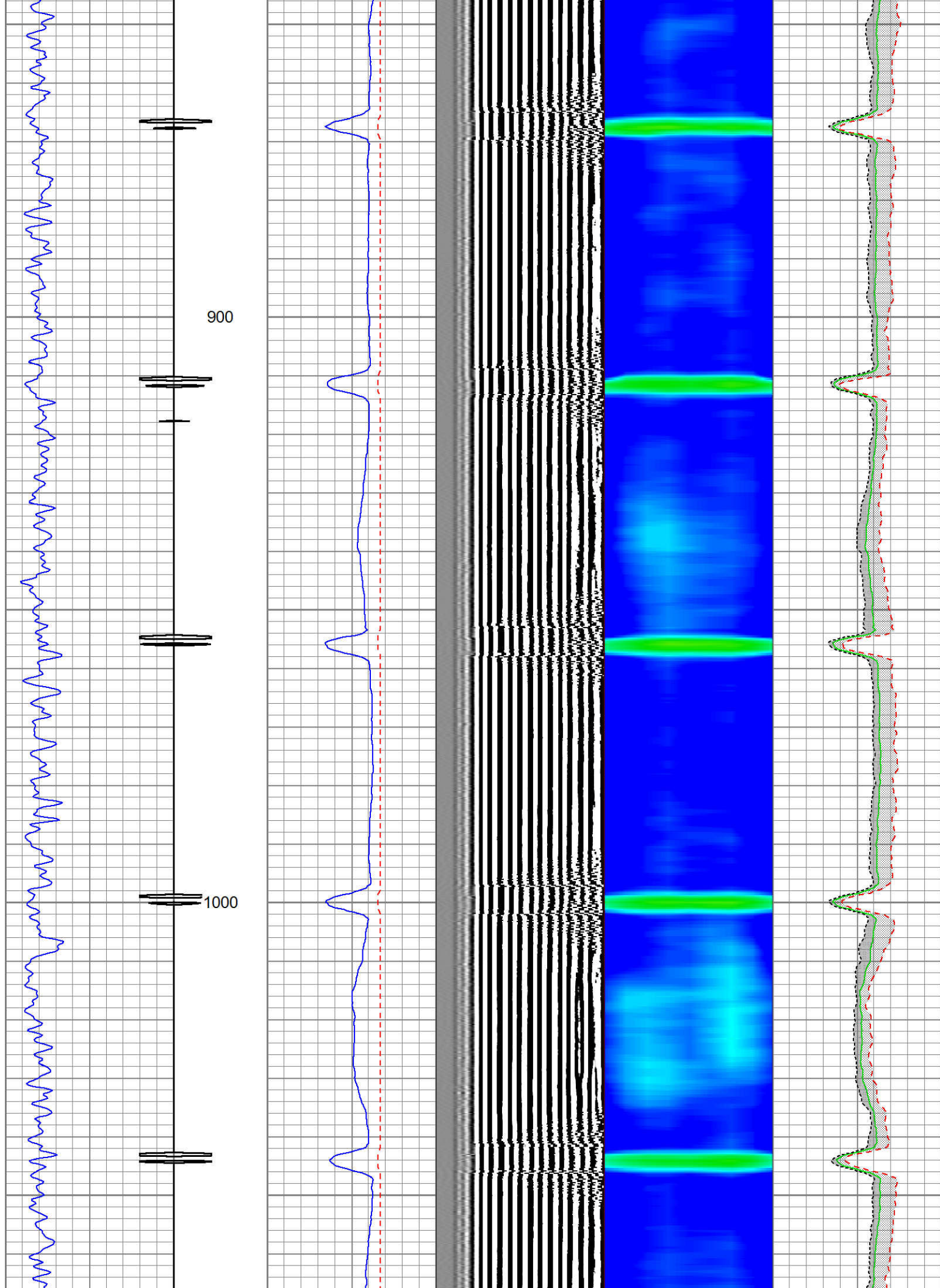
Gamma Ray		3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude	
0	(GAPI) 200	0	(mV) 100			0	100
Collar Locator		3' Amplitude x 5				200	1200
		0	(mV) 20			0	100
		3' Travel Time				Maximum Amplitude	
		650	(usec) 150			0	100

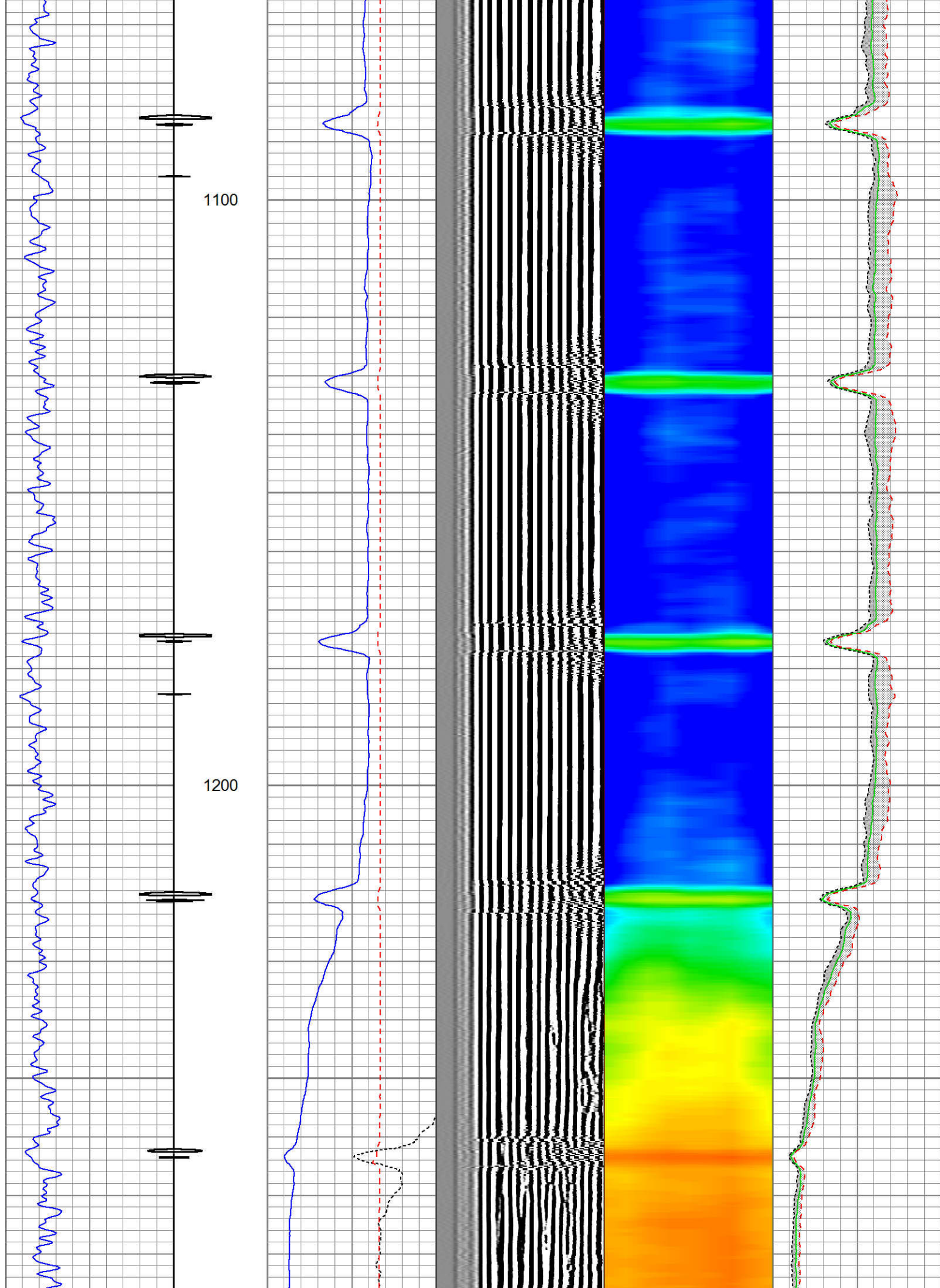


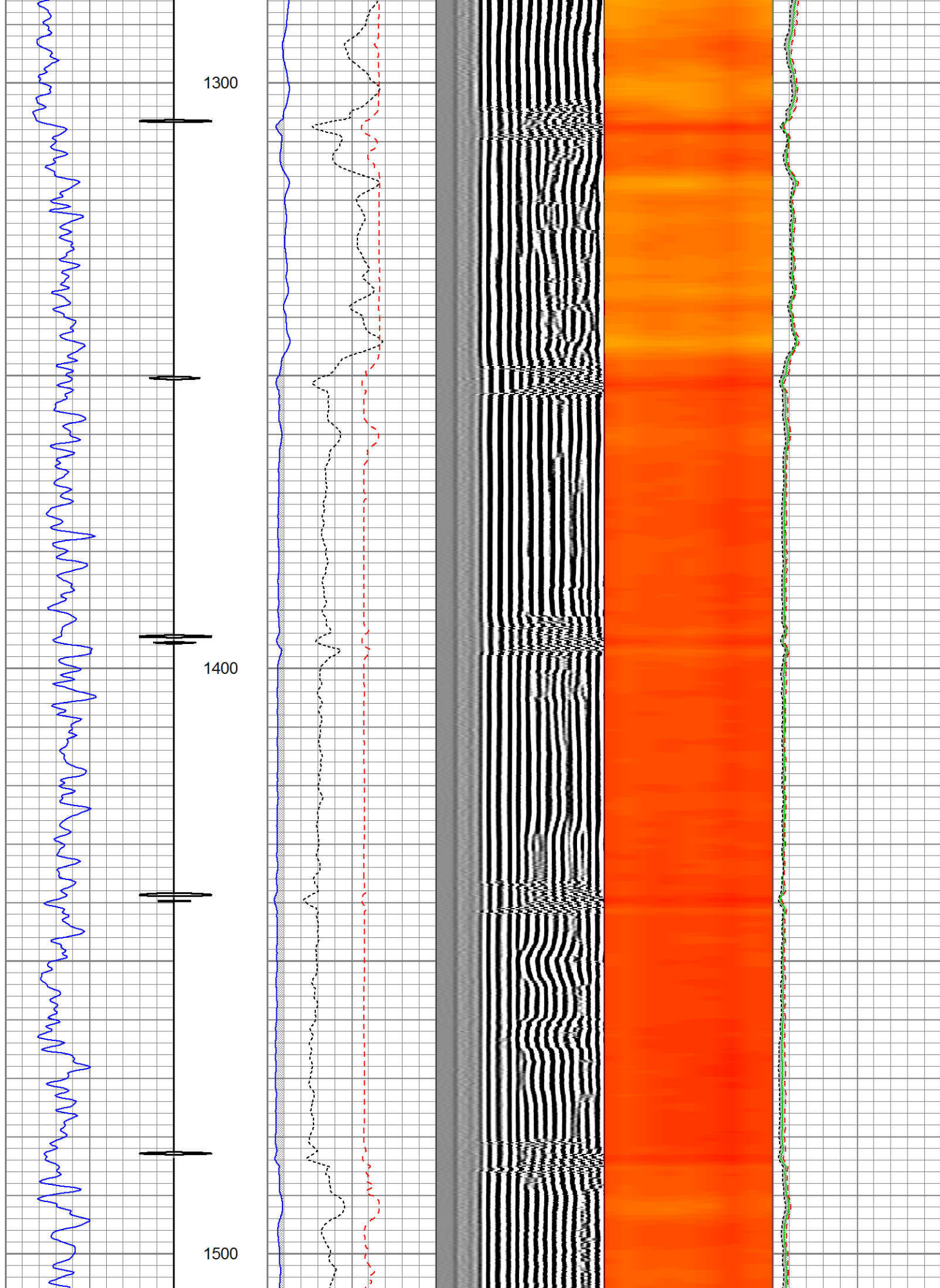


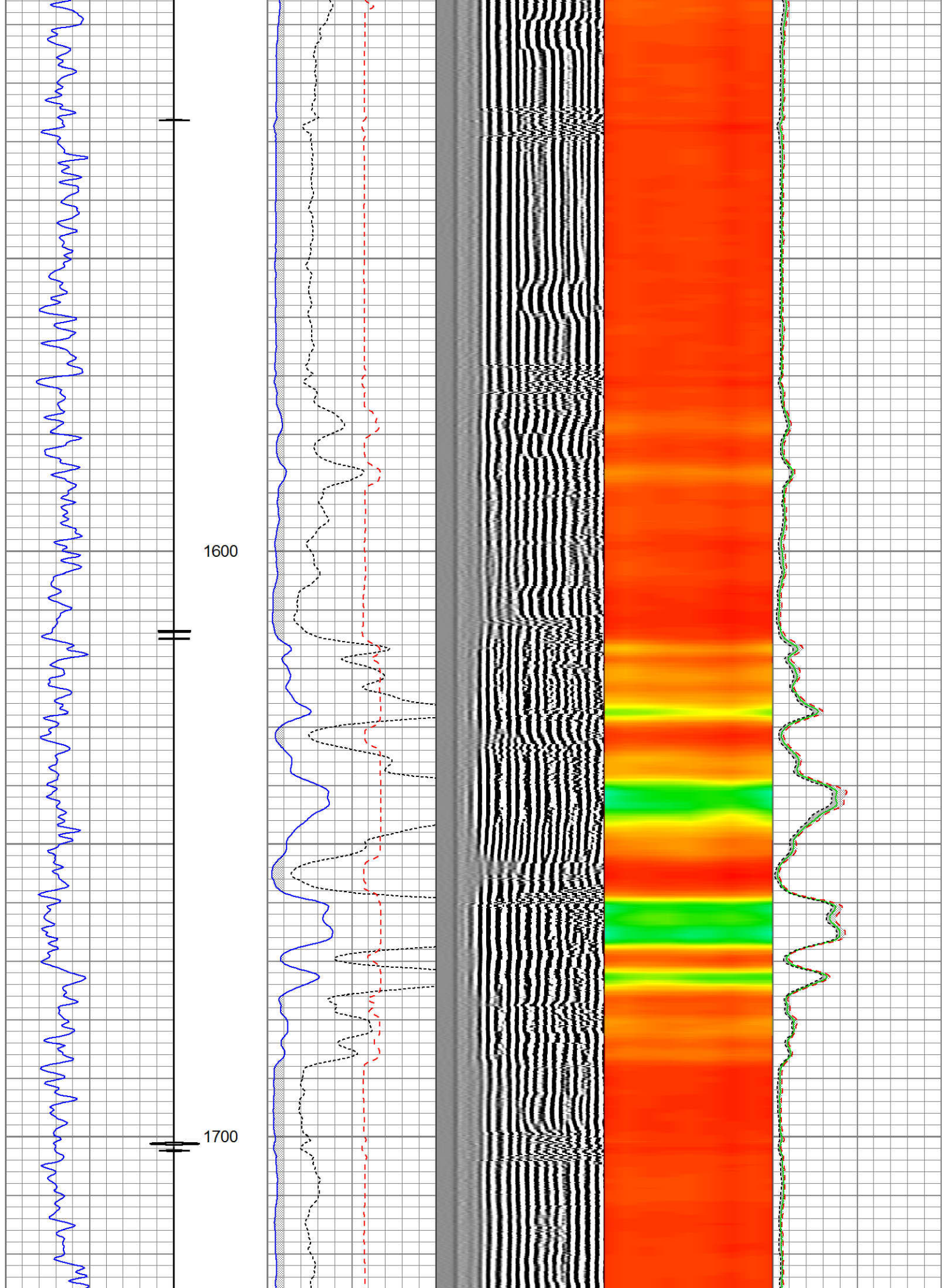


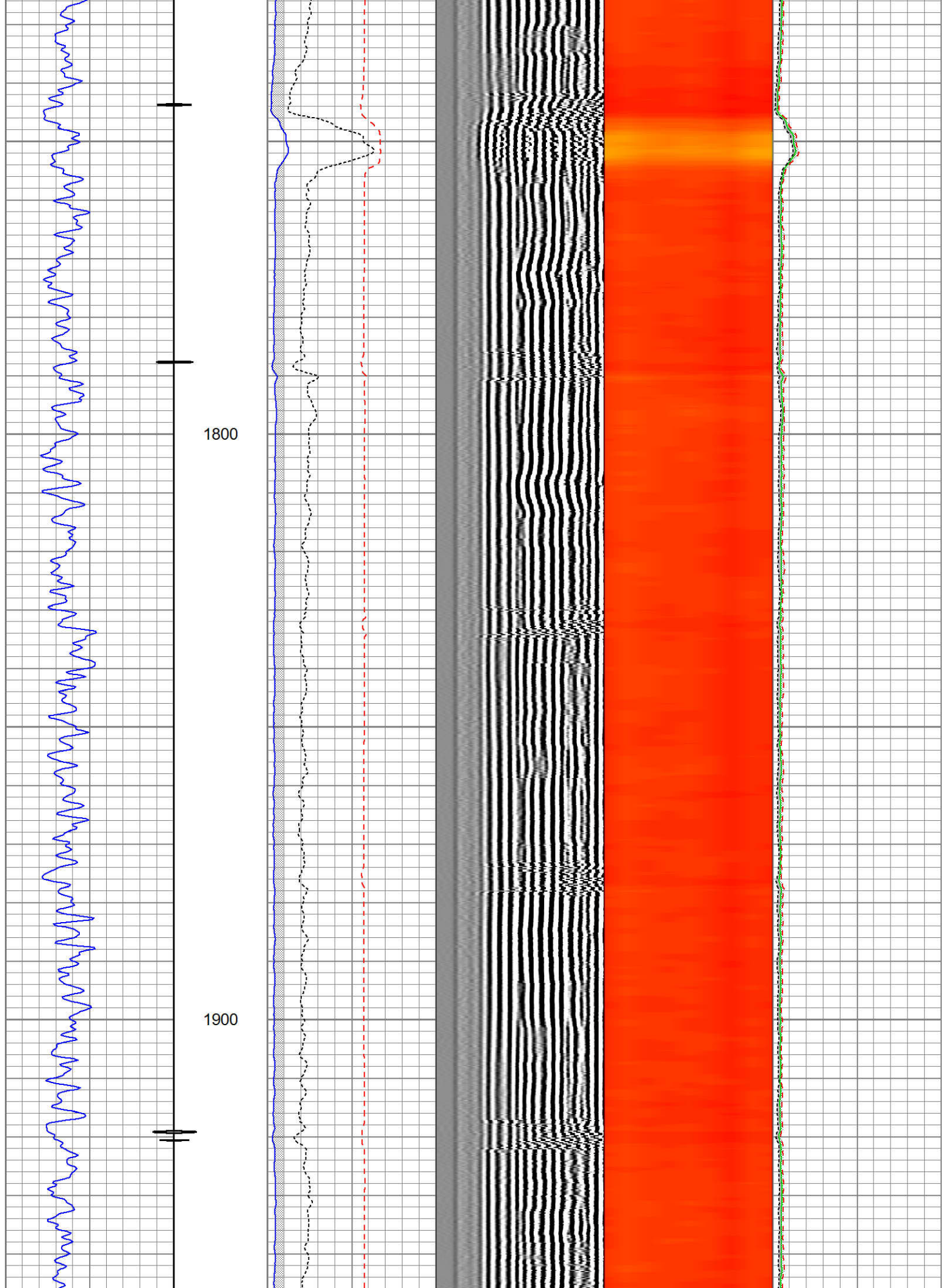


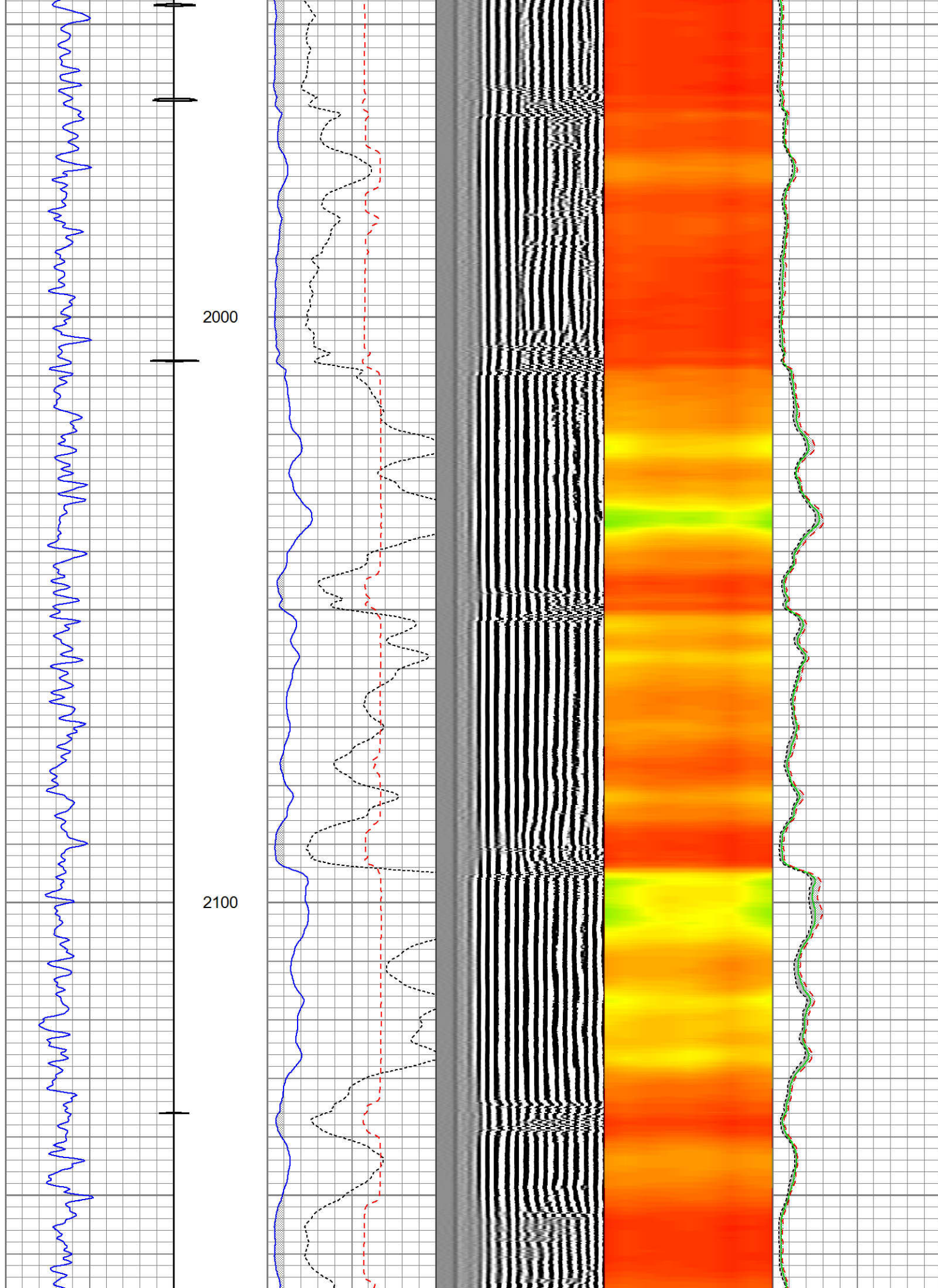


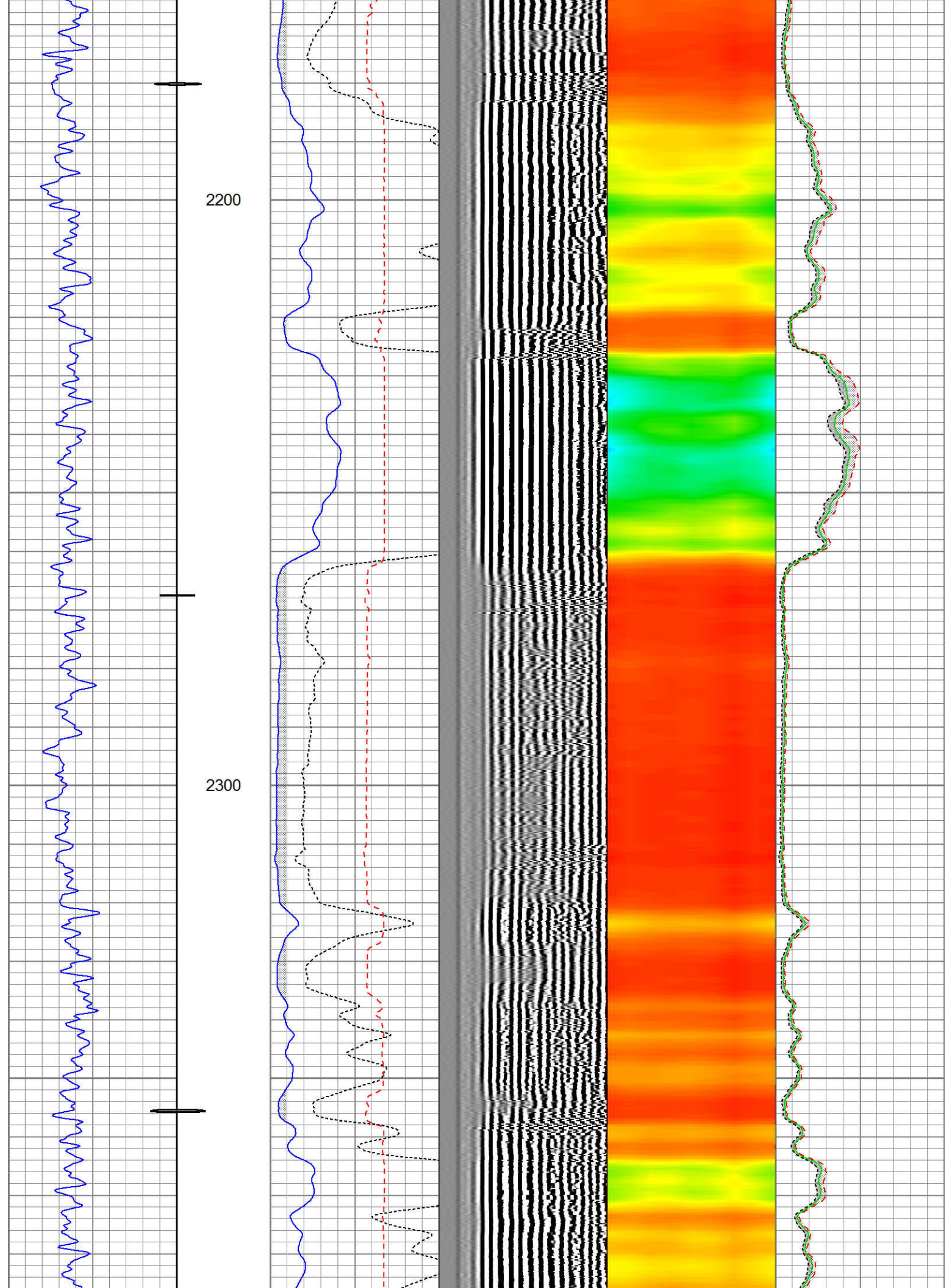


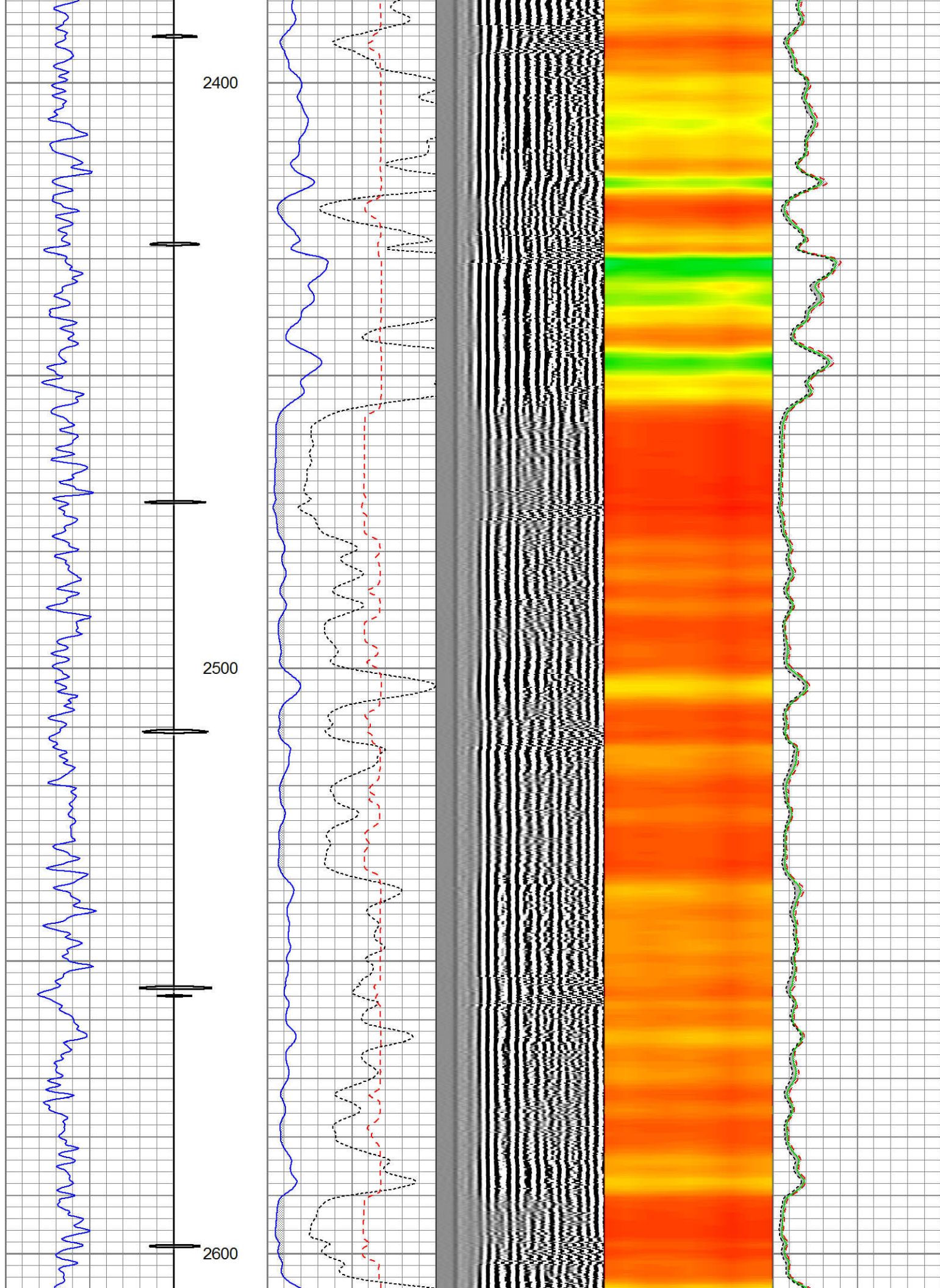


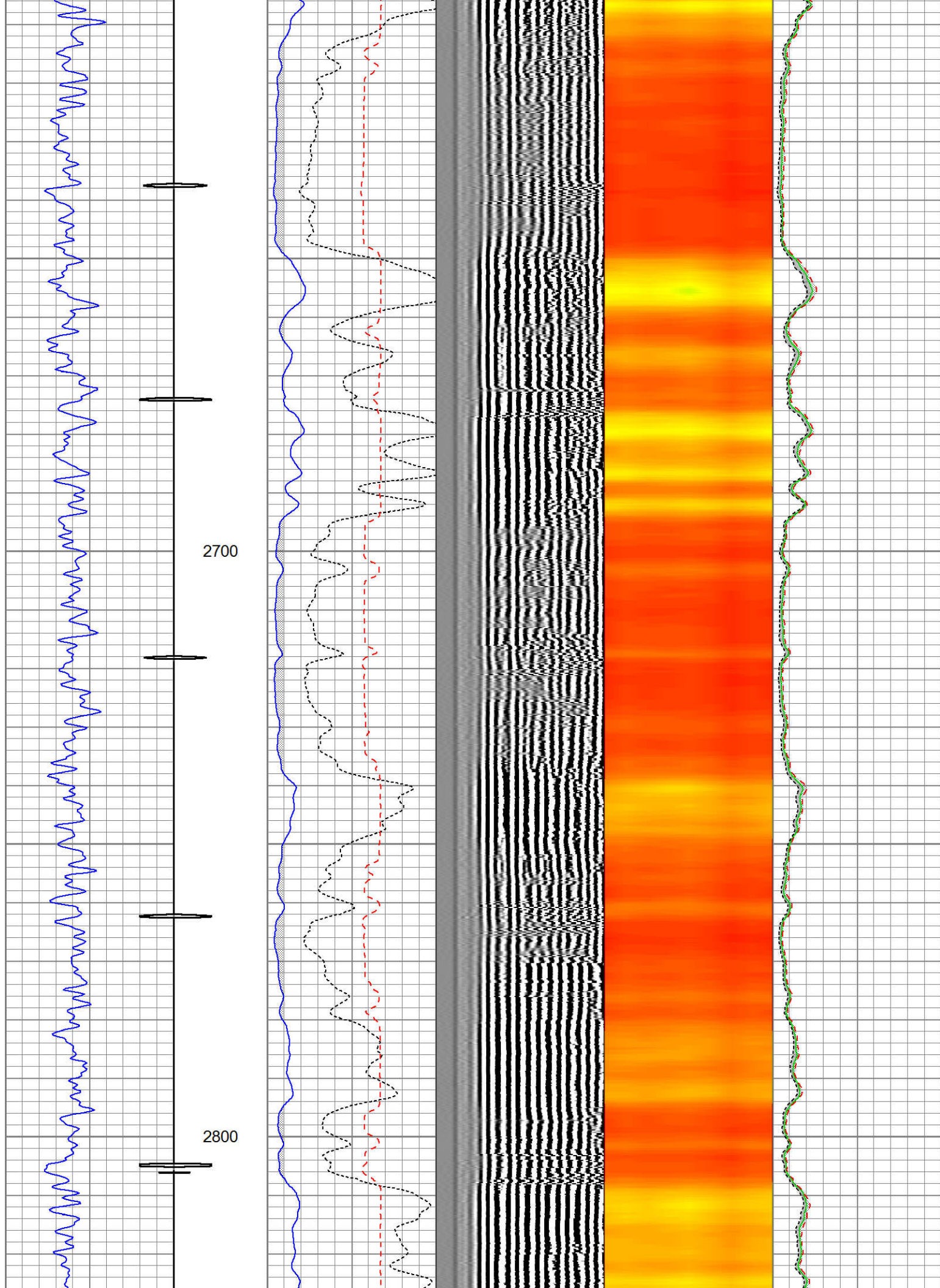


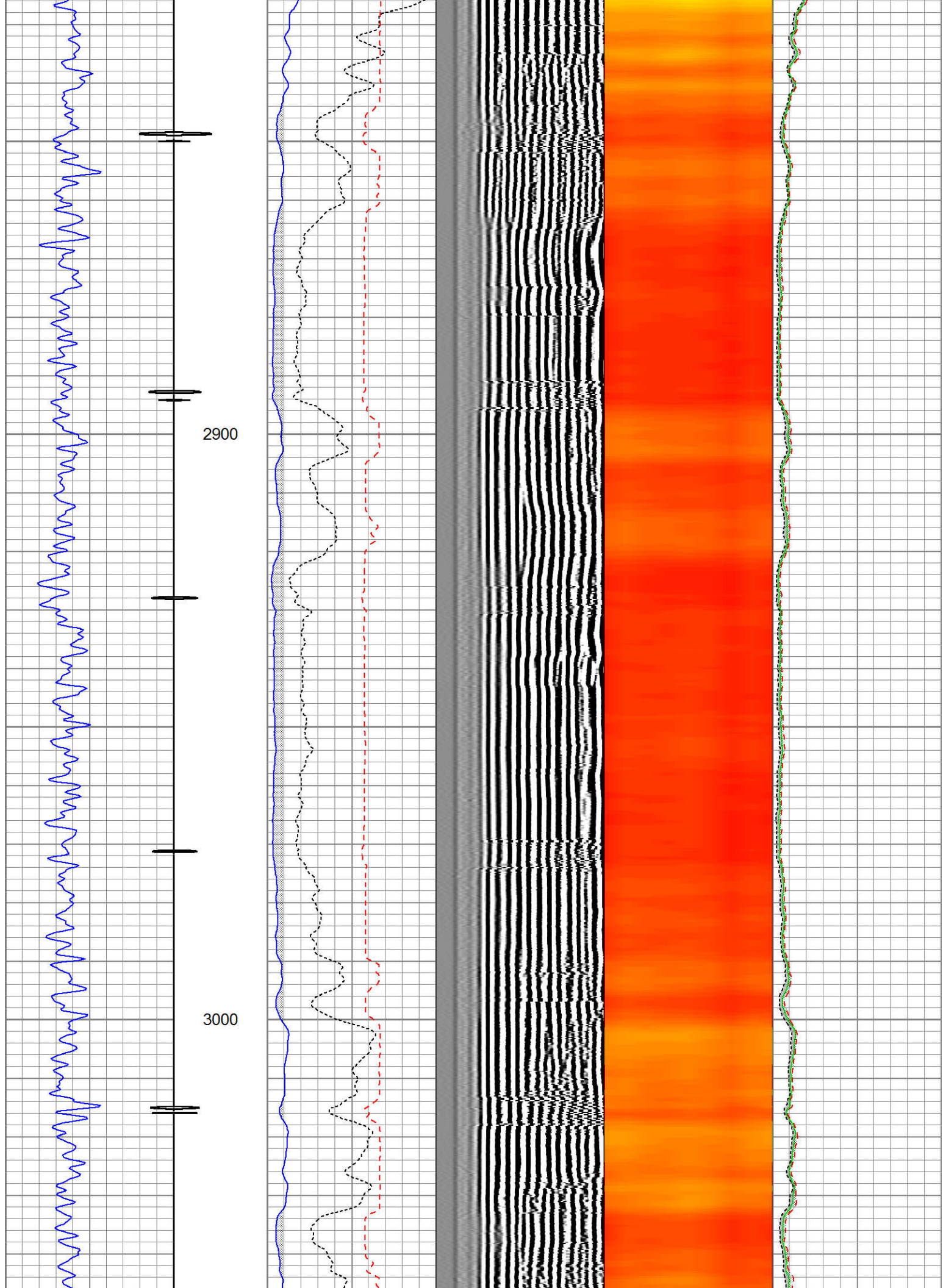


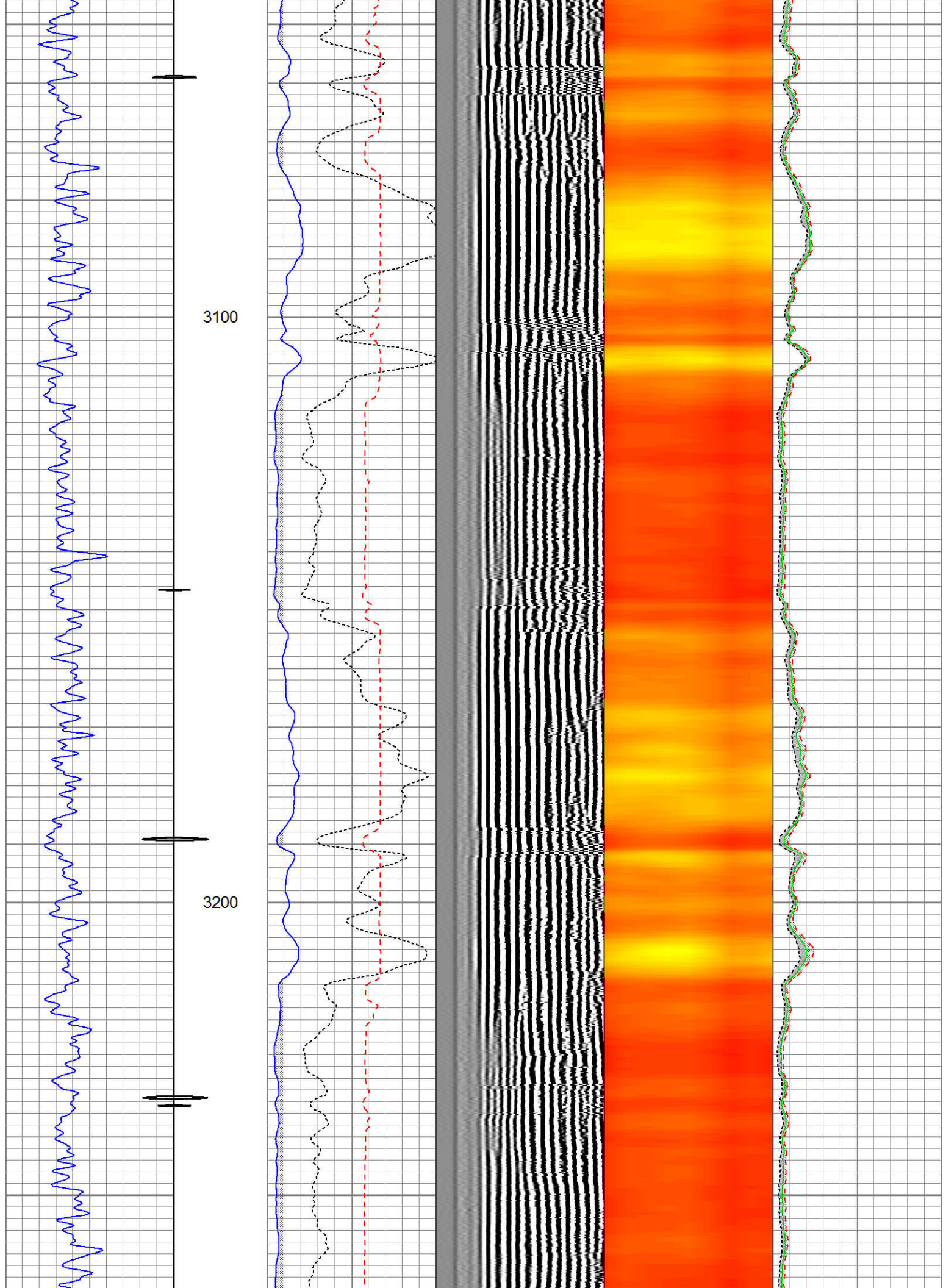


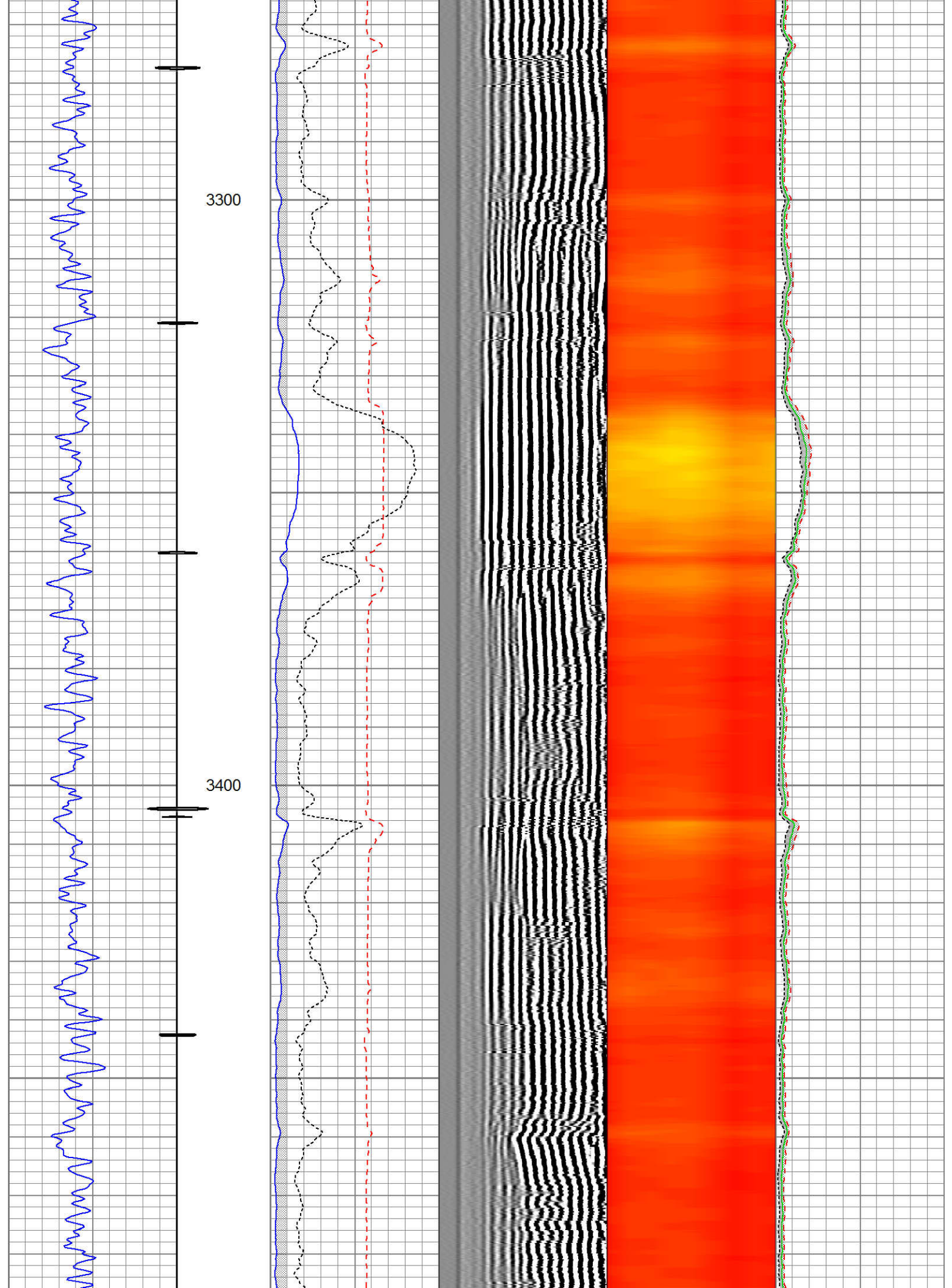


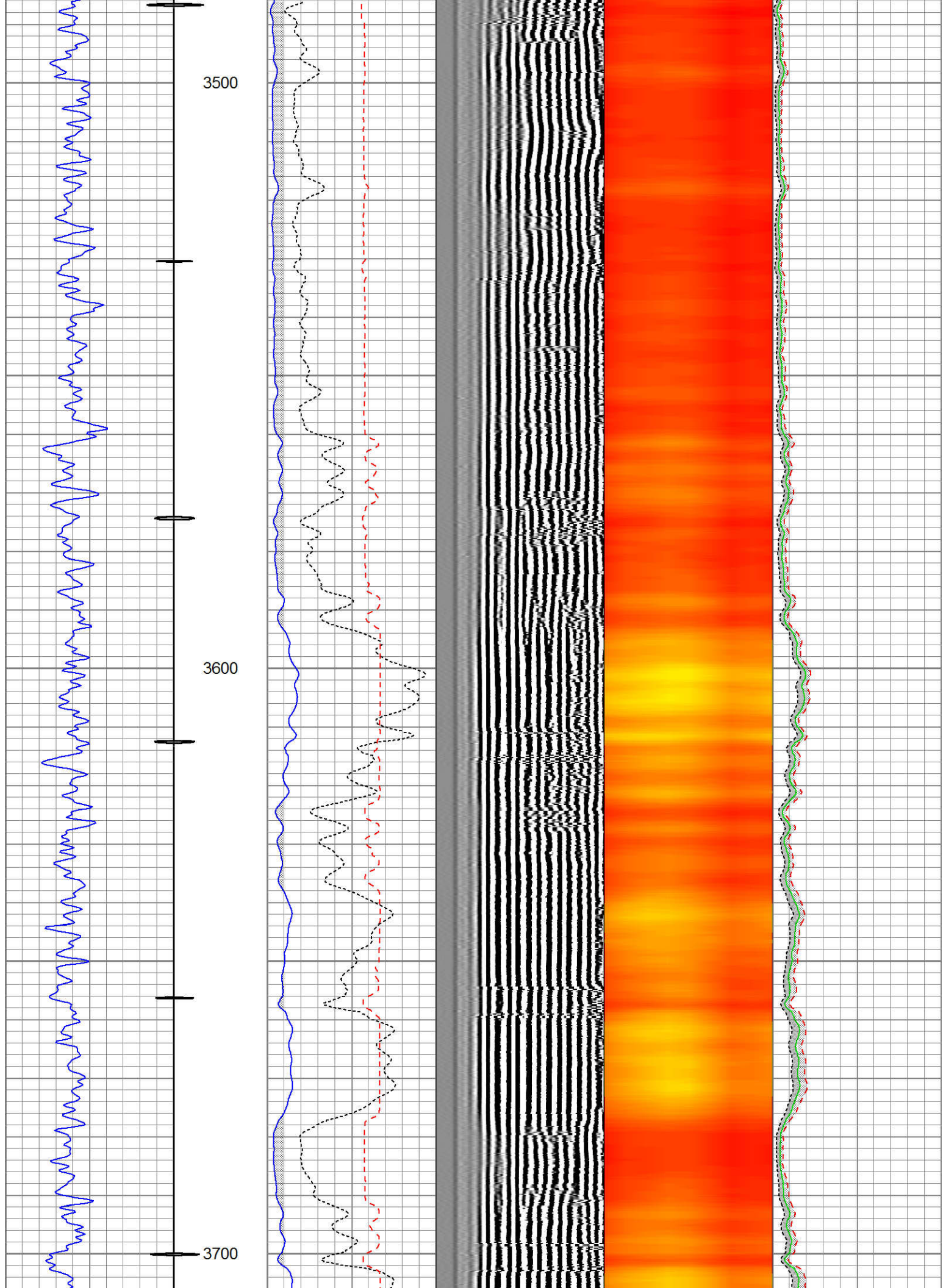


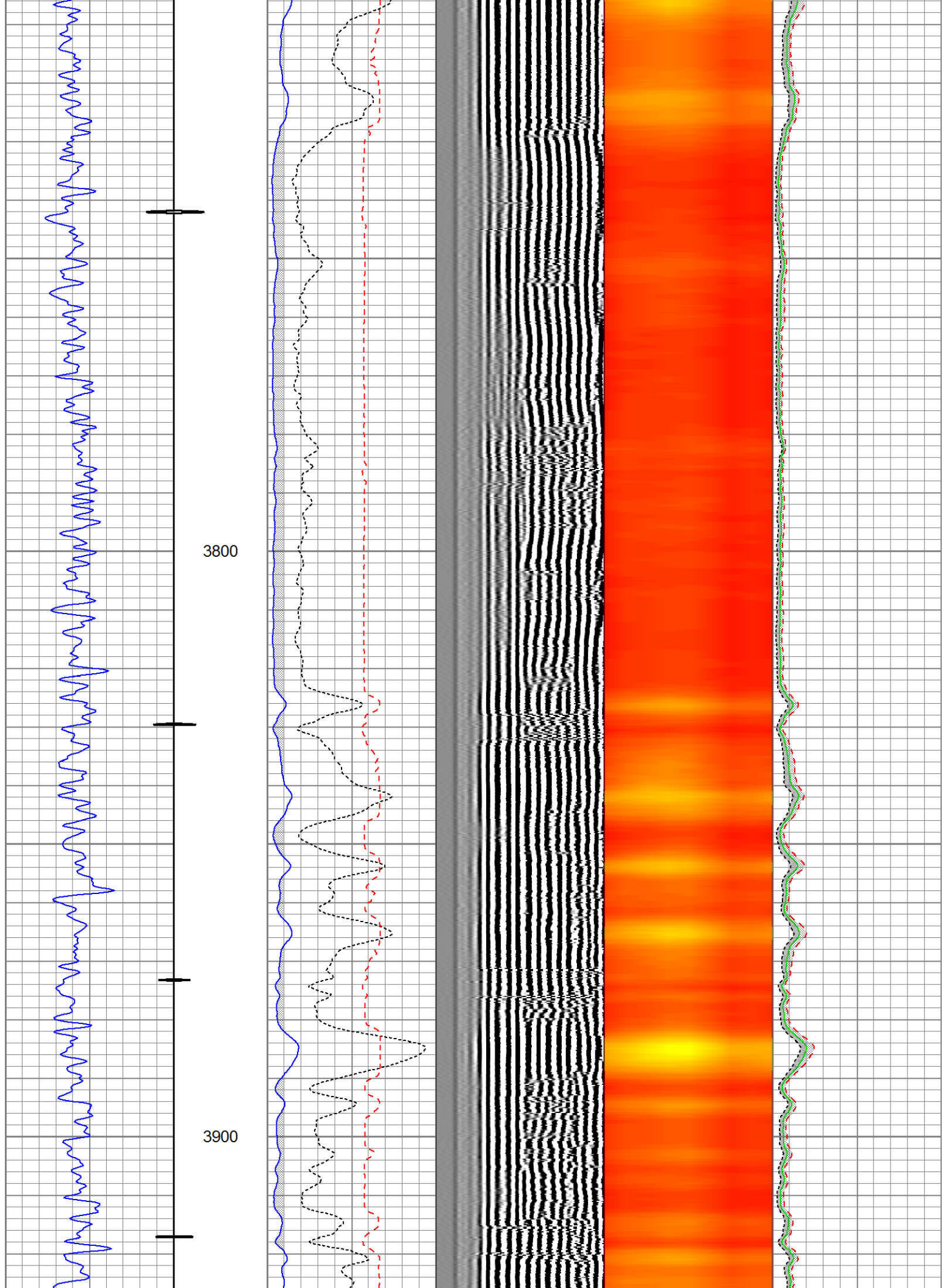


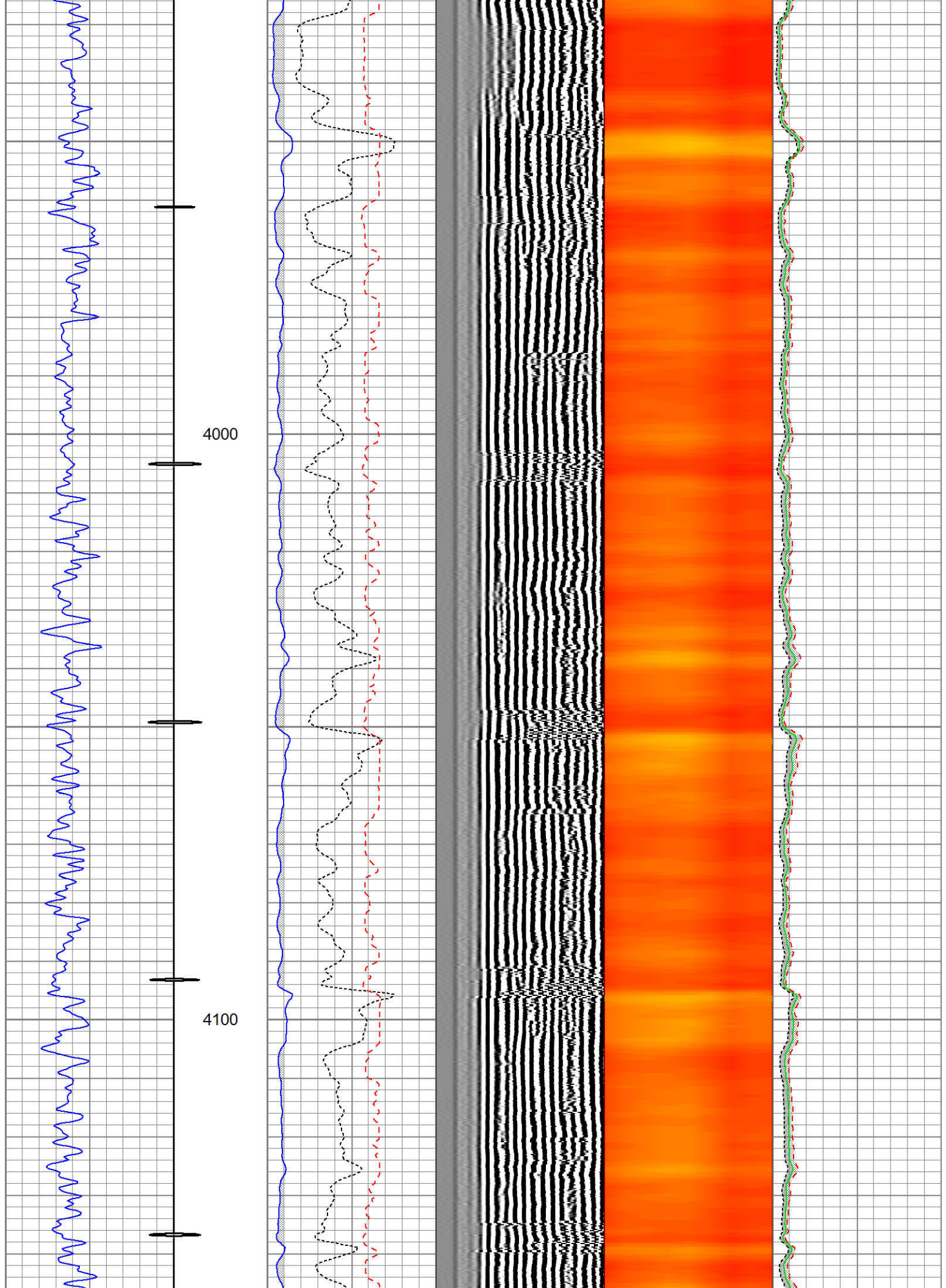


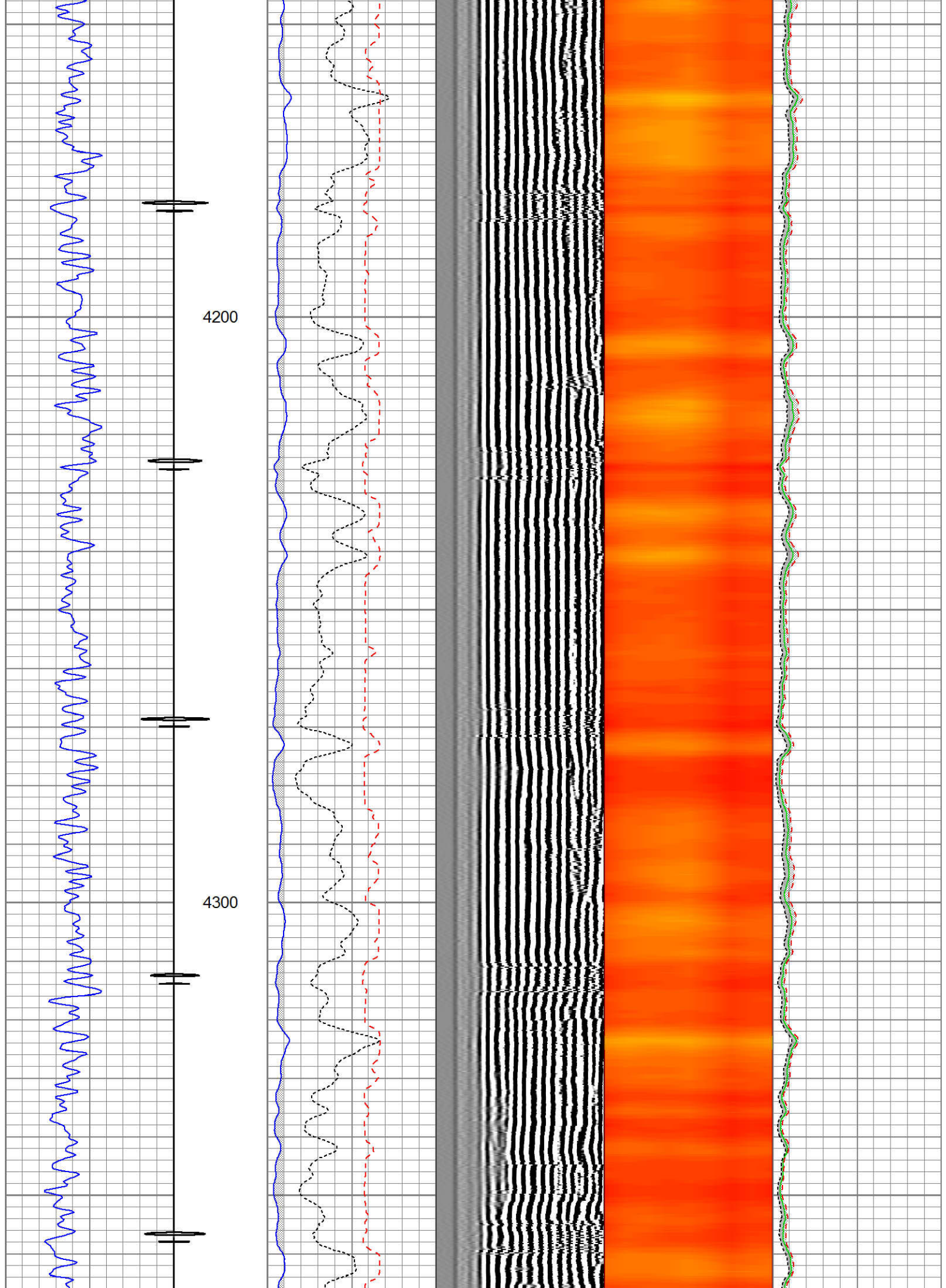


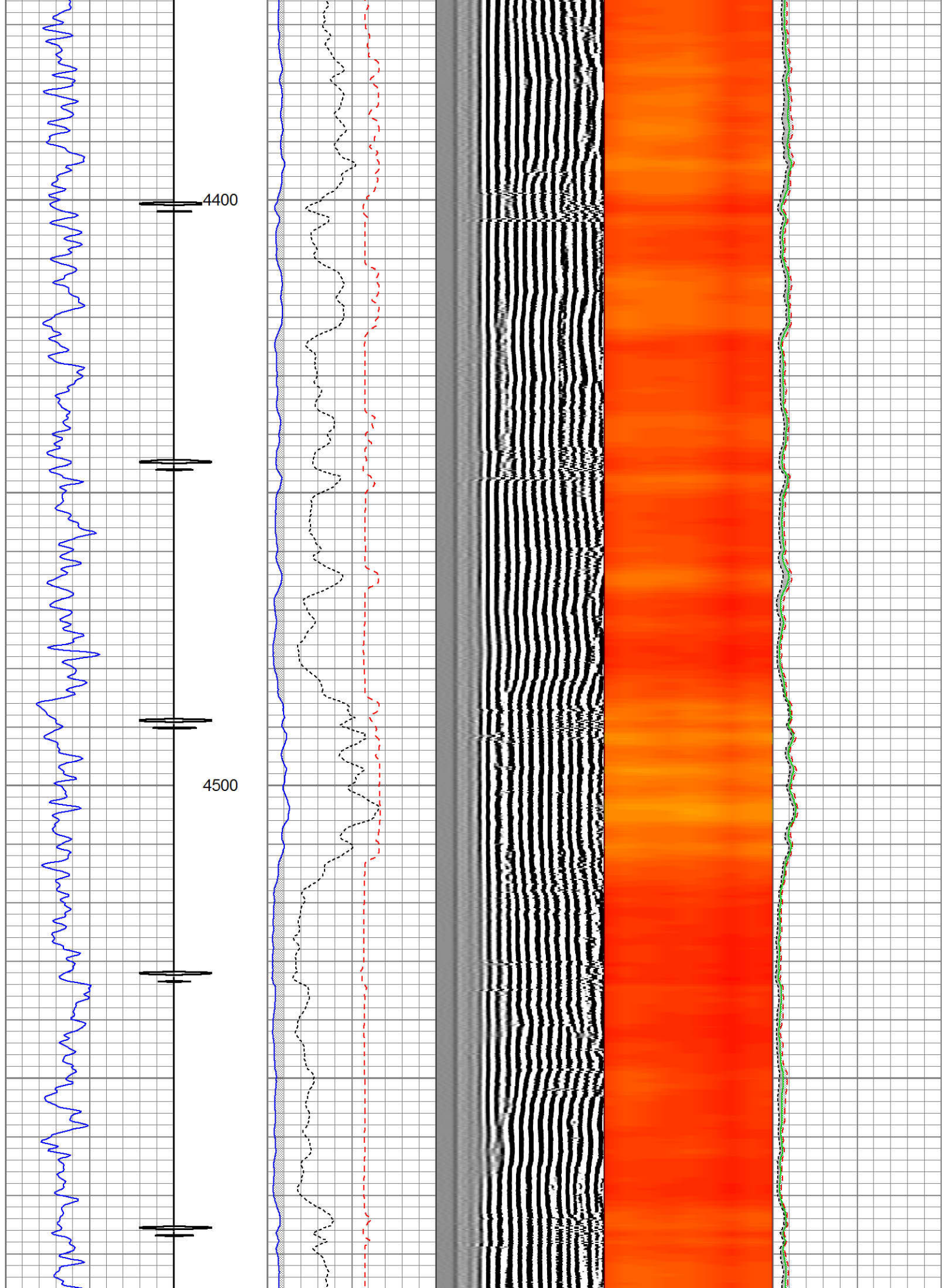


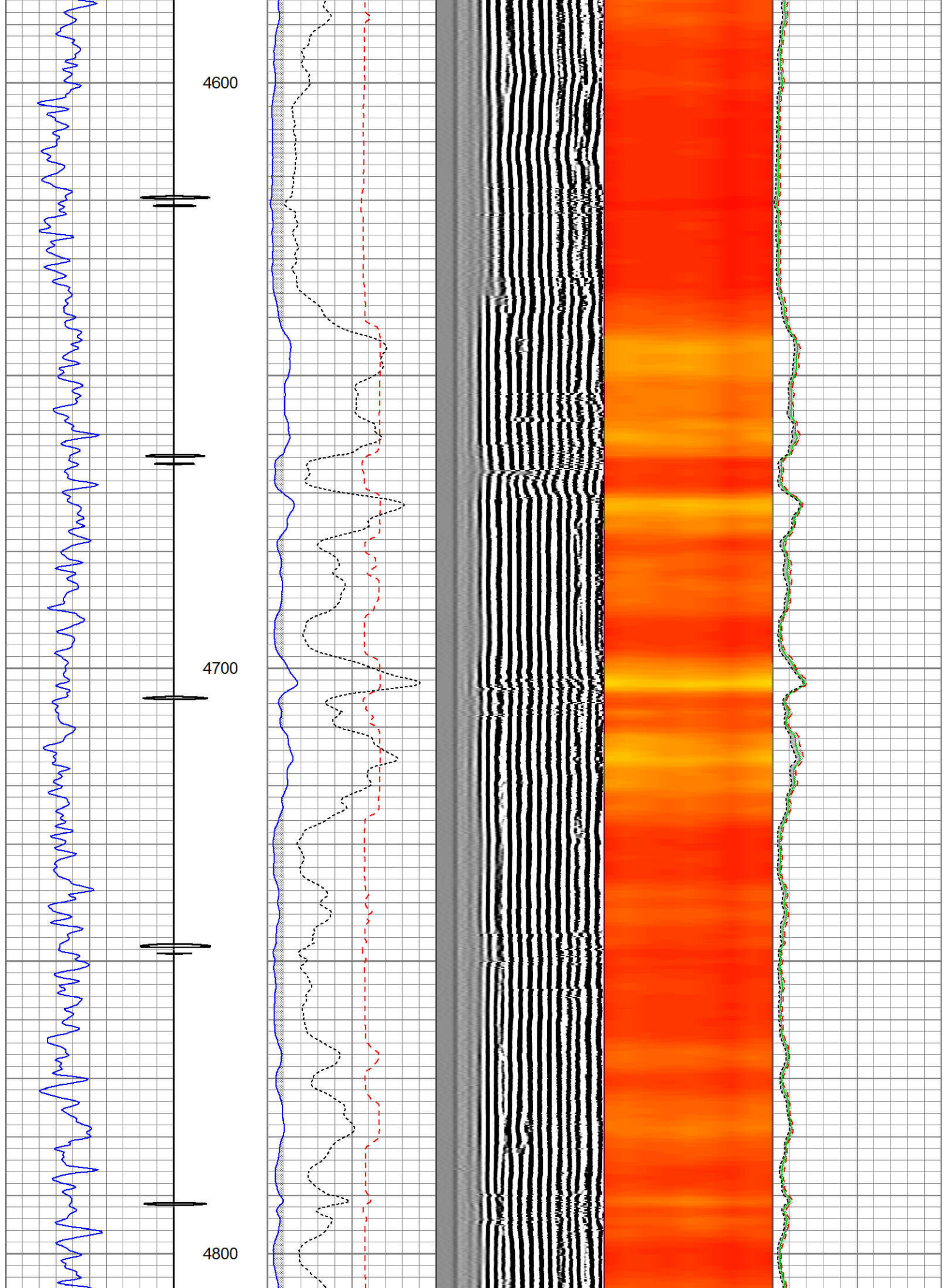


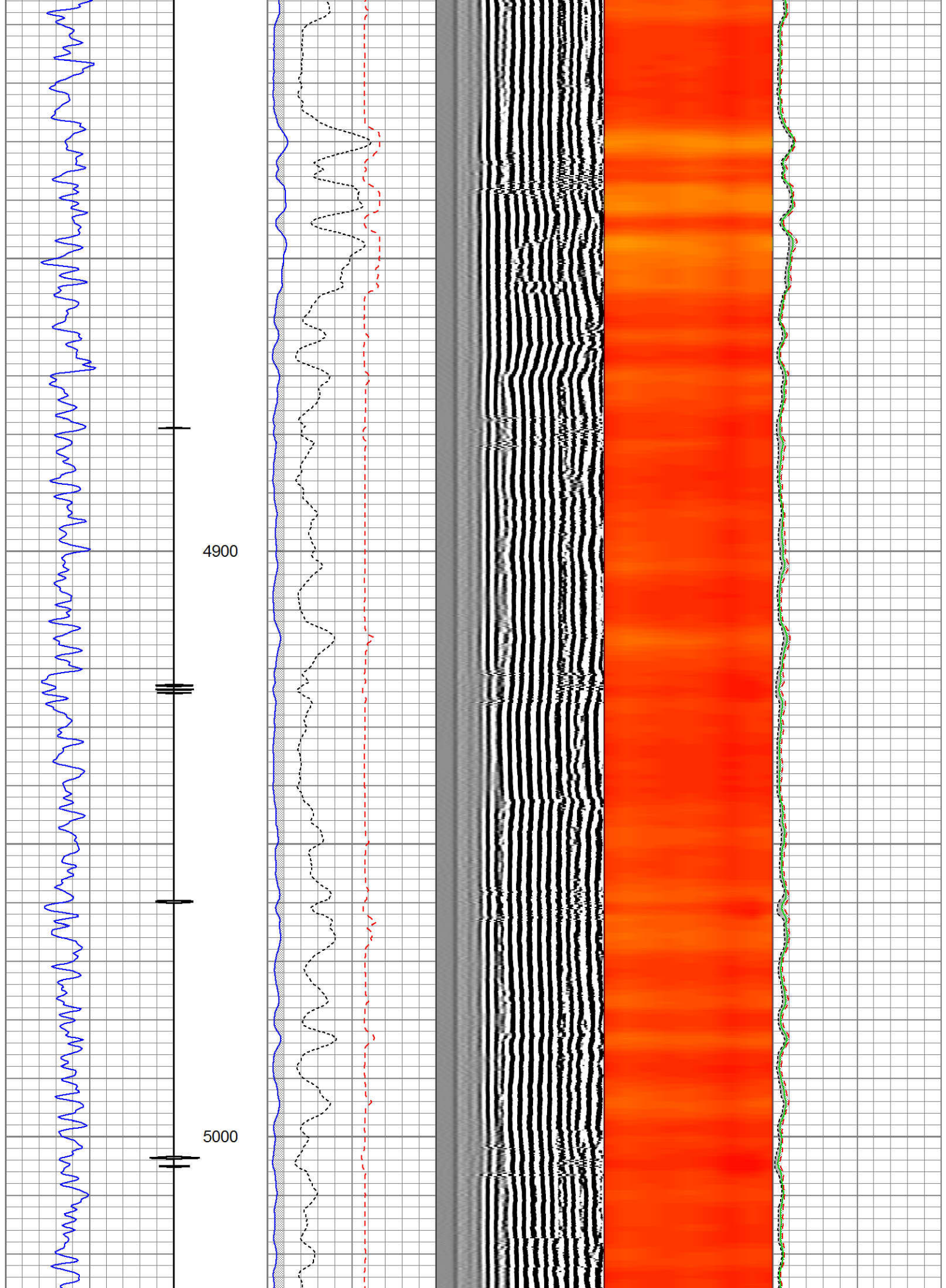


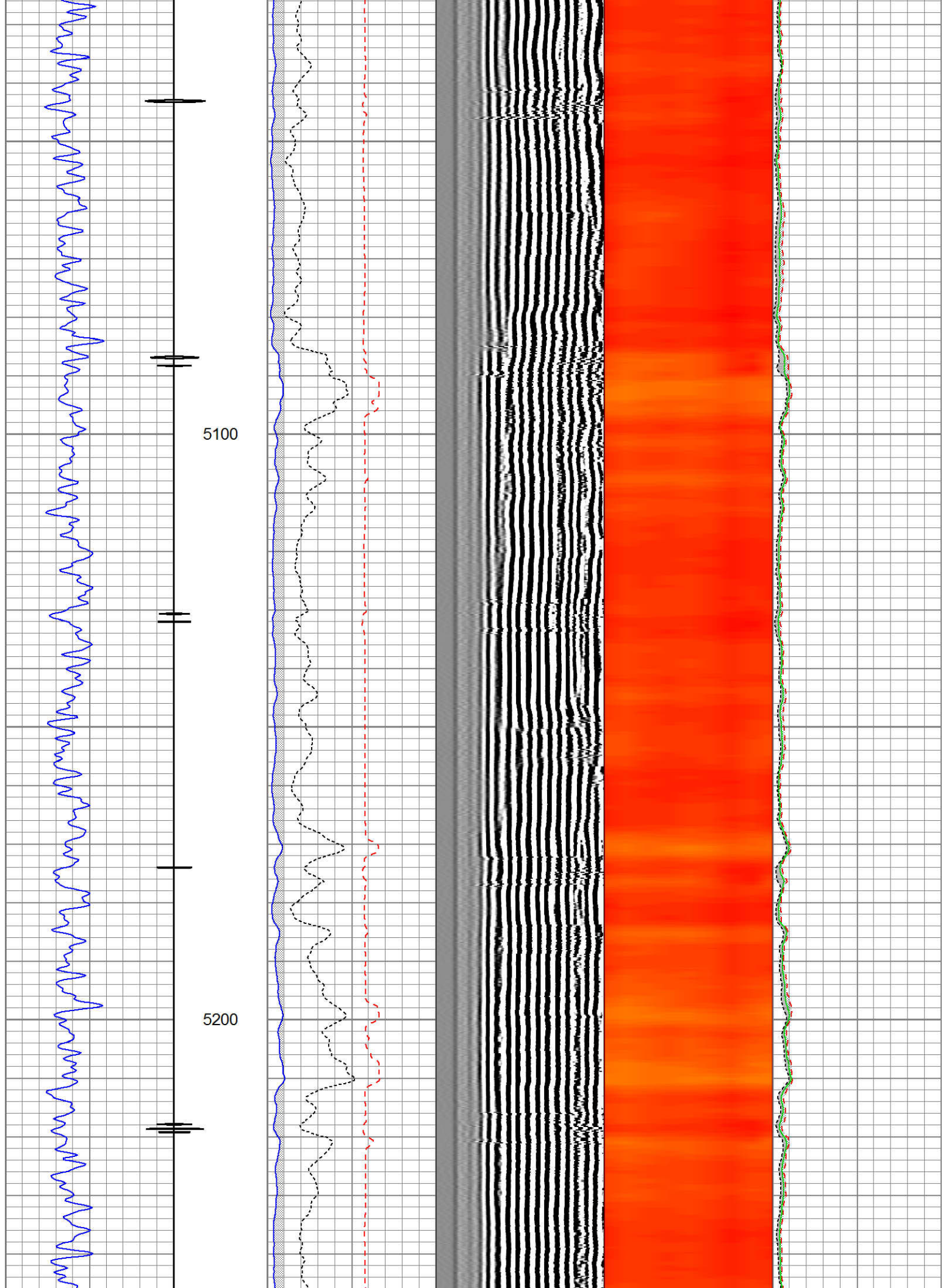


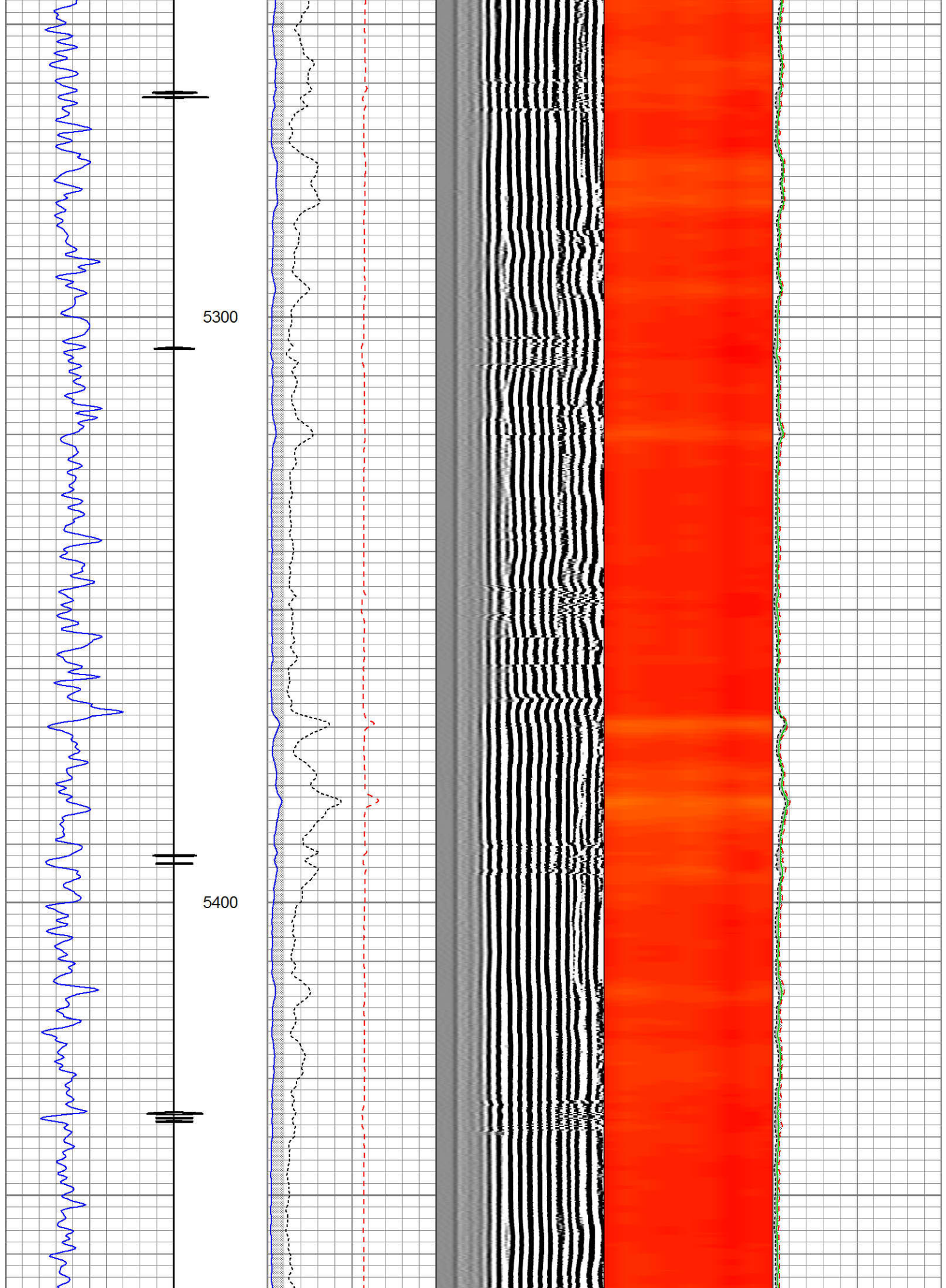


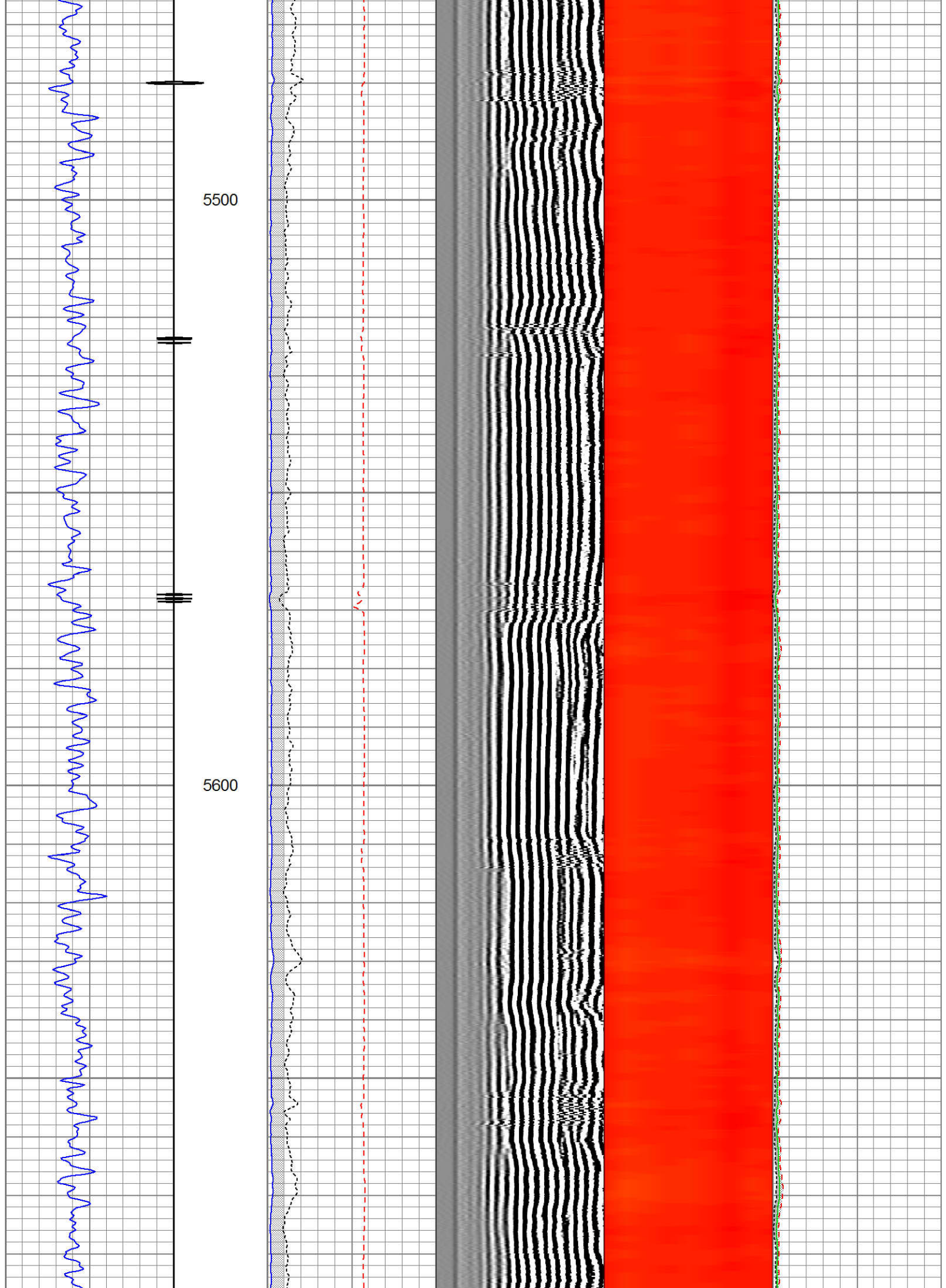


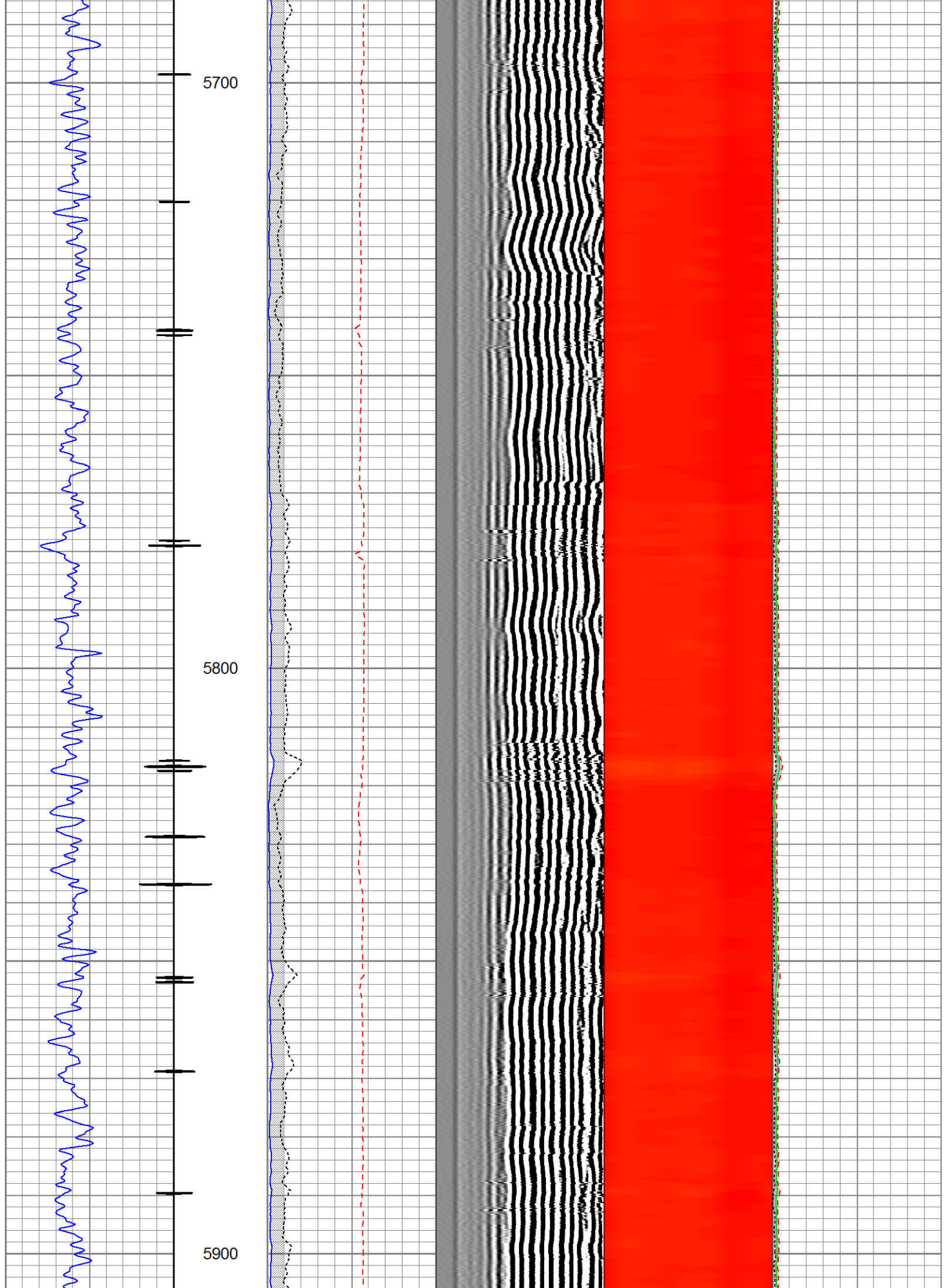


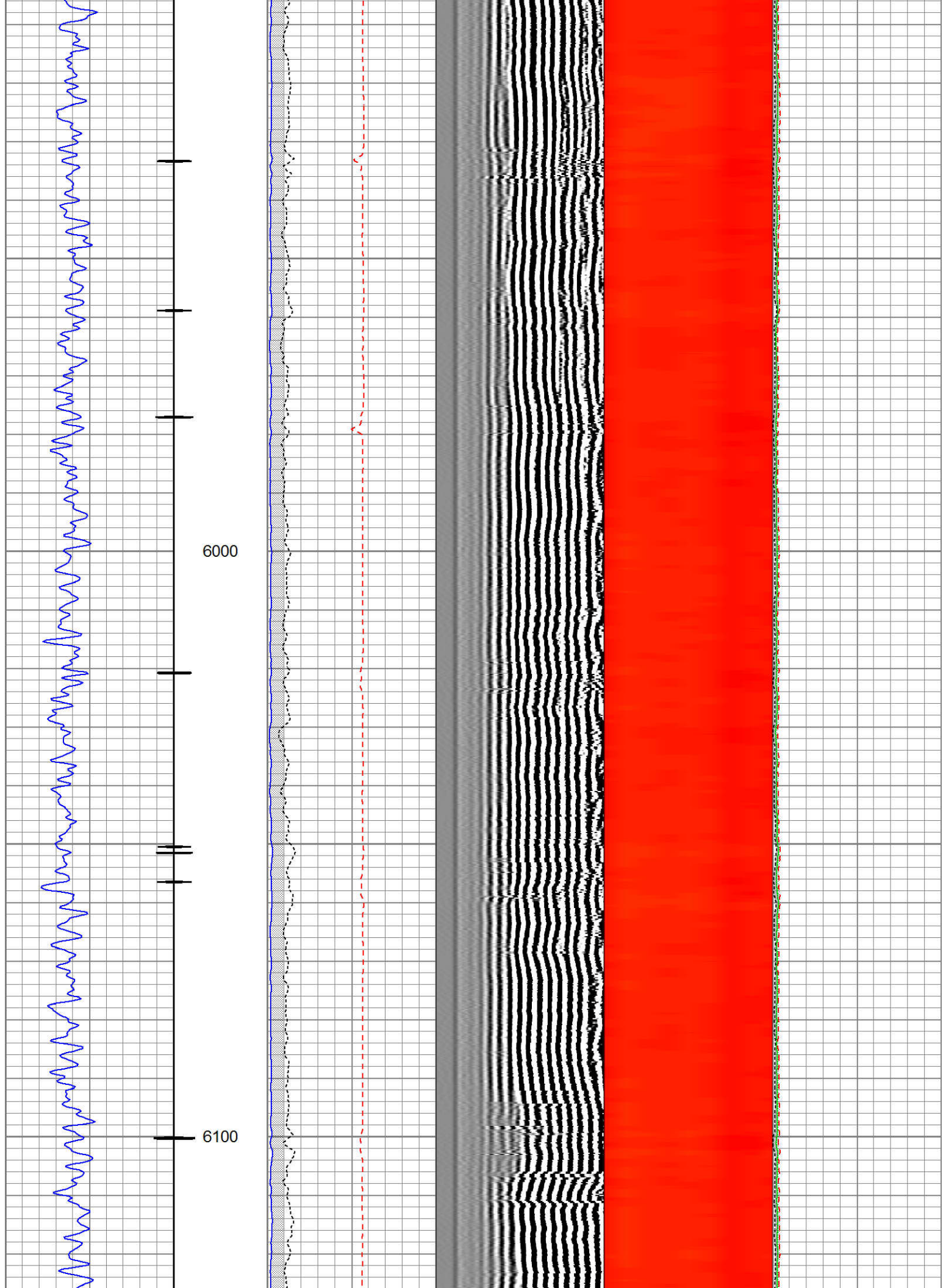


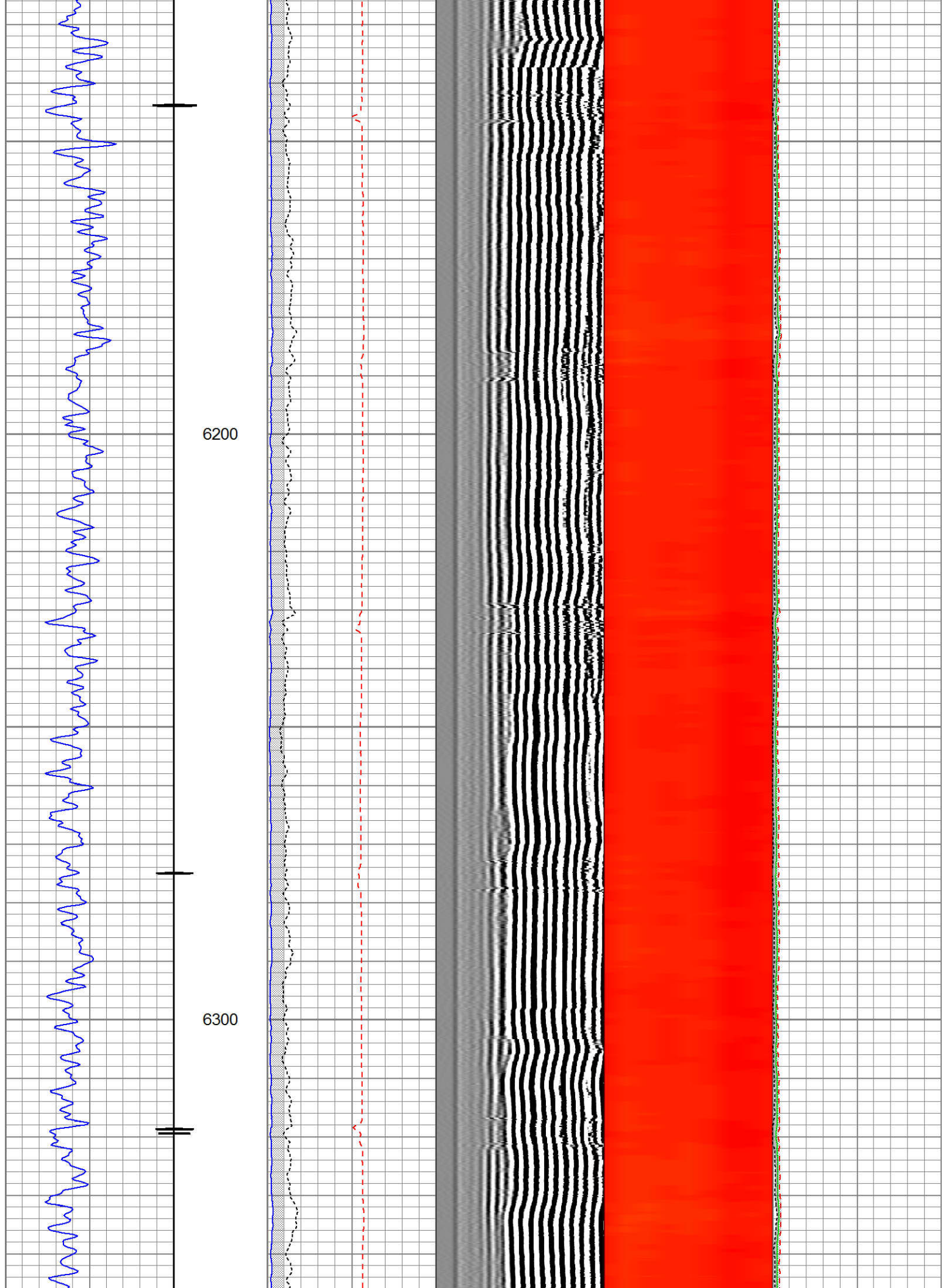


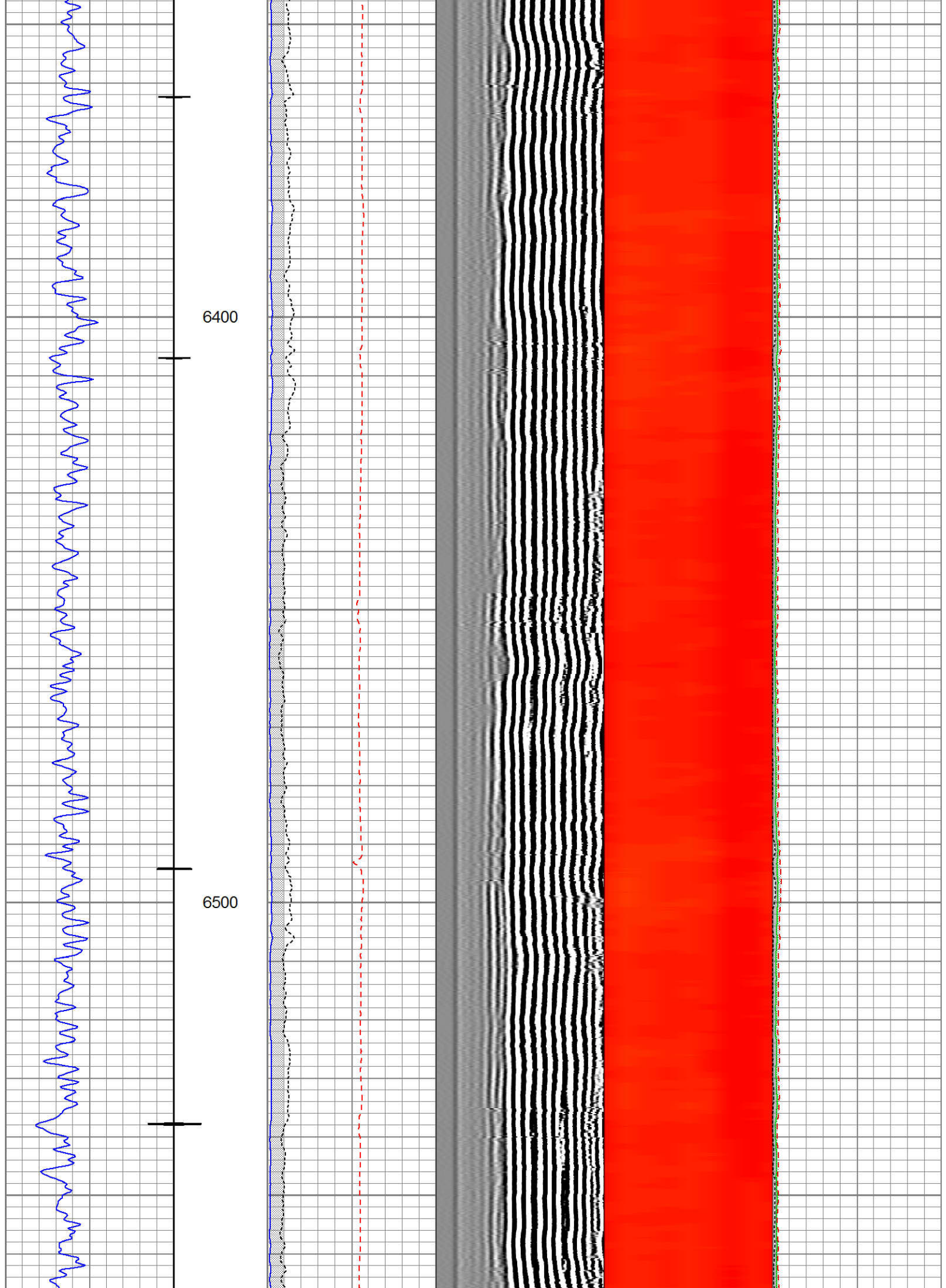


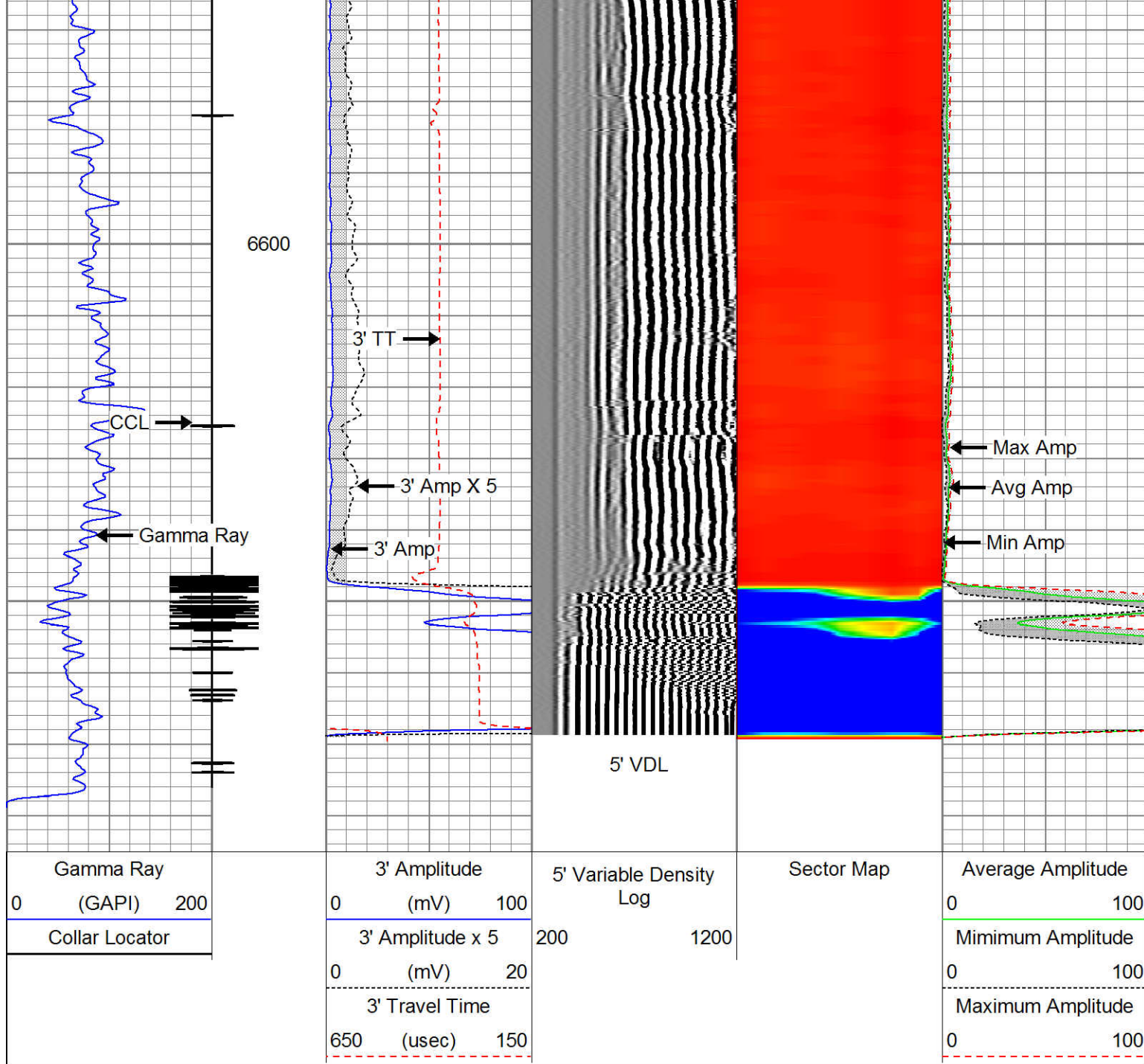






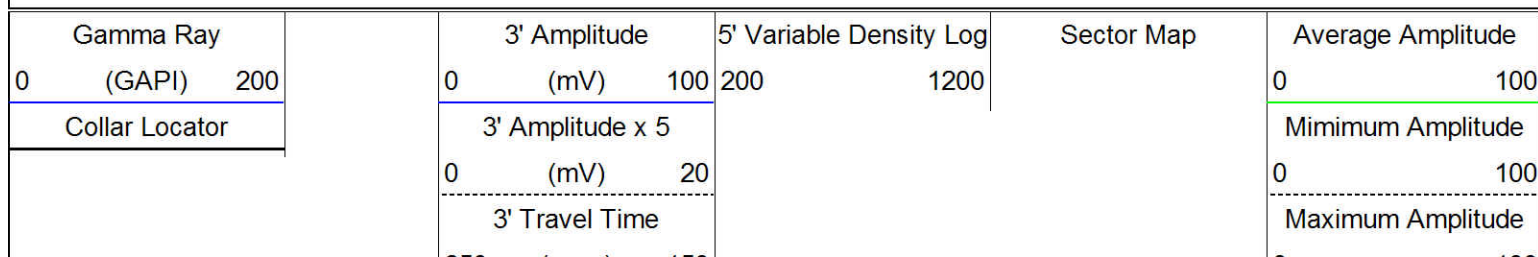






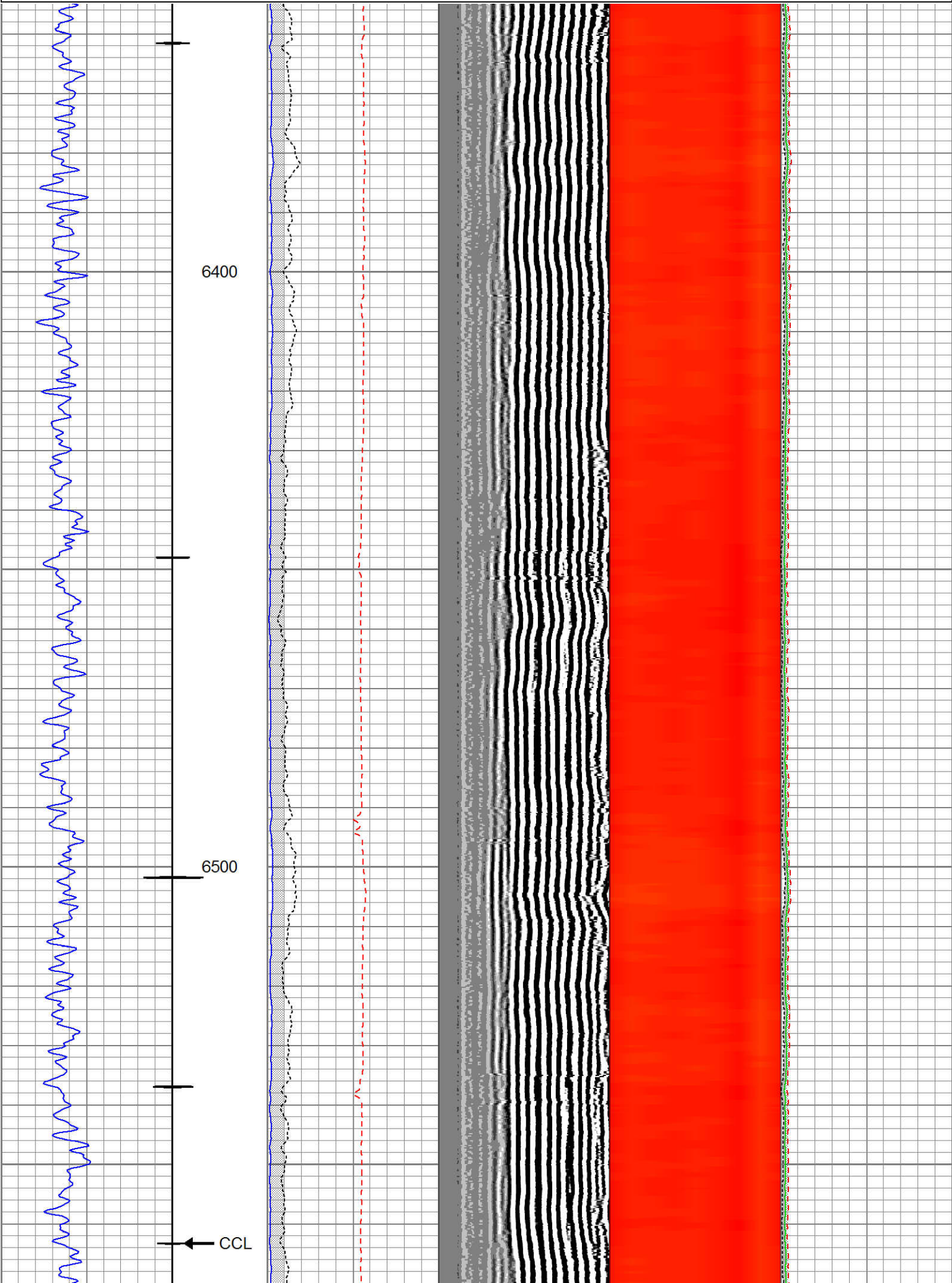
Repeat Pass 2800 PSI

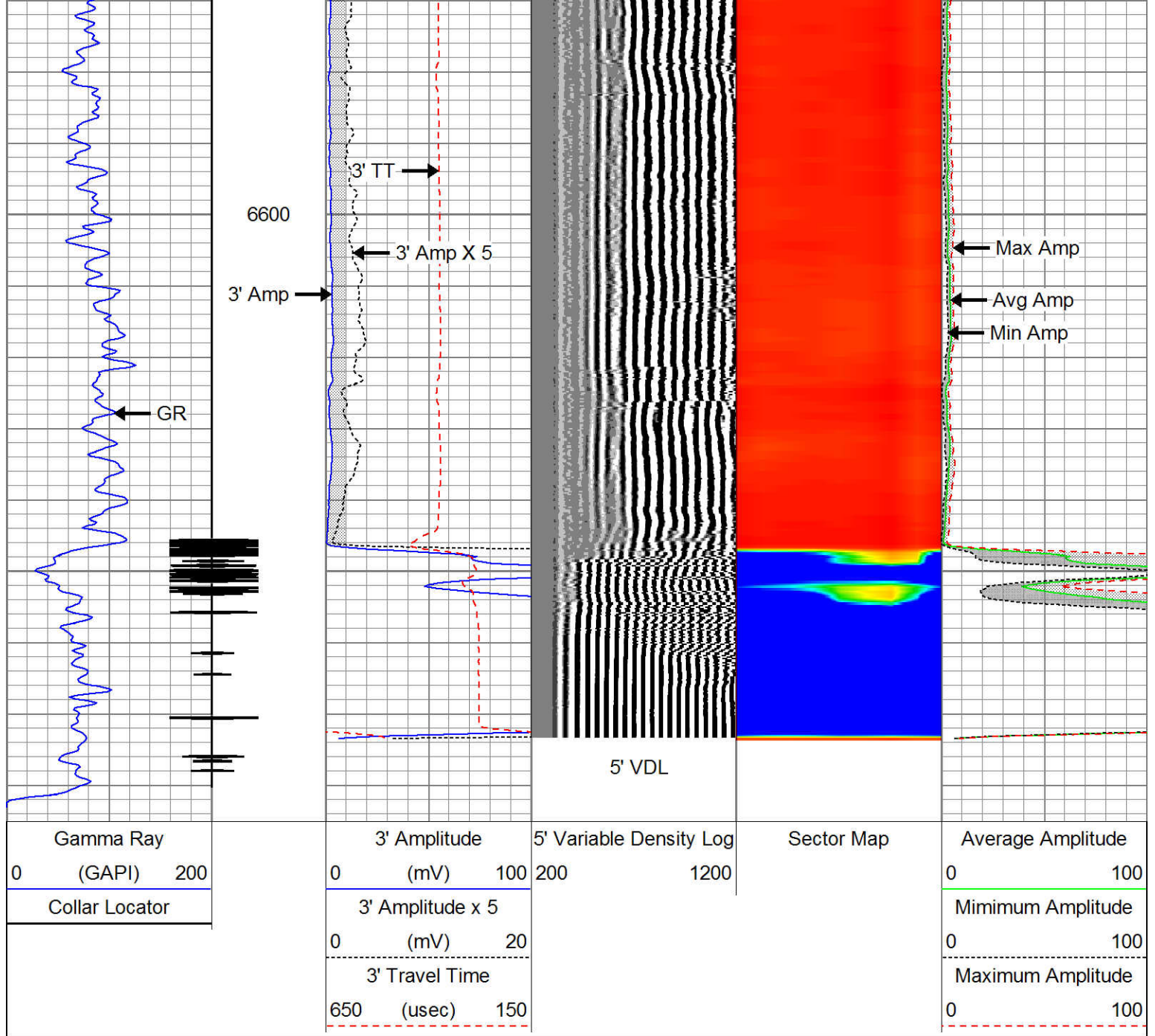
Database File: kmg hudson 13c-35hz-rbl.db
 Dataset Pathname: repeat
 Presentation Format: rbt007
 Dataset Creation: Fri May 03 13:12:06 2013 by Calc SCH 120126
 Charted by: Depth in Feet scaled 1:240



650 (usec) 150

0 100





Sensor	Offset (m)	Schematic	Description	Len (m)	OD (mm)	Wt (kg)
Temp	5.08		Titan_1_11_16	0.32	42.86	2.27
			Probe_IL_BS_Cent	0.88	69.85	4.54
			Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer			

WVF3FT	4.44		Probe_RADII-C-2-3/4" (FW1302-001in7") 2.81 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe		69.85	45.36
WVFCAL	4.44					
WVFS1	4.44					
WVFS2	4.44					
WVFS3	4.44					
WVFS4	4.44					
WVFS5	4.44					
WVFS6	4.44					
WVFS7	4.44					
WVFS8	4.44					
WVF5FT	4.14					
RHeadVolt	3.15					
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	0.88	69.85	4.54
CCL	2.01					
DCCL	2.01					
GR	1.60					
			Probe_CCL_GR-2.75"Digital (FW1302-12C1.40 Probe 2-3/4" Digital CCL / Gamma Ray Combined		69.85	24.95
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	0.88	69.85	4.54
Dataset: kmg hudson 13c-35hz-rbl.db: field/well/run1/proc3 Total Length: 7.15 m Total Weight: 86.18 kg O.D.: 69.85 mm						

Calibration Report		
Database File:	kmg hudson 13c-35hz-rbl.db	
Dataset Pathname:	proc3	
Dataset Creation:	Fri May 03 13:08:13 2013 by Calc SCH 120126	
Gamma Ray Calibration Report		
Serial Number:	FW1302-120	
Tool Model:	2.75"Digital	
Performed:	Mon Apr 01 19:31:37 2013	
Calibrator Value:	100.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	150.0	cps
Sensitivity:	0.6667	GAPI/cps
Segmented Cement Bond Log Calibration Report		

Serial Number: FW1302-001in7"
Tool Model: 2-3/4"

Calibration Casing Diameter: 7.000 in
Calibration Depth: 442.740 ft

Master Calibration, performed Thu Apr 25 15:13:22 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.017	0.695	0.800	62.165	90.512	-2.765
CAL	1.062	1.062				
5'	0.017	0.774	0.800	62.165	81.103	-0.581
SUM						
S1	0.049	0.661	0.000	62.165	101.697	-3.022
S2	0.017	0.716	0.000	62.165	88.938	-1.506
S3	0.017	0.738	0.000	62.165	86.142	-1.435
S4	0.017	0.719	0.000	62.165	88.597	-1.513
S5	0.017	0.674	0.000	62.165	94.638	-1.637
S6	0.017	0.514	0.000	62.165	94.989	-2.124
S7	0.018	0.327	0.000	62.165	92.977	-3.528
S8	0.017	0.140	0.000	62.165	91.864	-2.745

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.062	1.062	1.000	0.000

Air Zero Calibration, performed Wed Dec 31 17:00:00 1969:

	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	



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State Colorado