



**RADIAL CEMENT BOND LOG
VARIABLE DENSITY LOG
GAMMA/CCL/TEMP**

Company ANTERO RESOURCES
Well PETER 1H
Field SOUTH CANTON
County DODDRIDGE
State WV

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Well PETER 1H
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Location: API #: 47-017-06933

Permanent Datum	GROUND LEVEL Elevation	1334'	Other Services
Log Measured From	KELLY BUSHING 30'	K.B. 1,364'	
Drilling Measured From	KELLY BUSHING	D.F. 1,364' G.L. 1,334'	

Date	JANUARY 11, 2023		
Run Number	ONE		
Depth Driller	14,995'		
Depth Logger	7,464'		
Bottom Logged Interval	7,474'		
Top Log Interval	SURFACE		
Open Hole Size	NA		
Type Fluid	FRESH WATER		
Density / Viscosity	8.6 LB/GAL		
Max. Recorded Temp.	147 DEG.F.		
Estimated Cement Top	3,533'		
Time Well Ready	18:40		
Time Logger on Bottom	19:20		
Equipment Number	116		
Location	CHARLEROI, PA		
Recorded By	M.MCNALLY		
Witnessed By	BRYAN HEMARD		

Run Number	Borehole Record		Tubing Record			
	Bit	From	To	Weight	From	To
Casing Record						
Conductor String						
Surface String						
Intermediate String		13.375"		54.5#	SURFACE	884'
Intermediate String		9.625"		36#	SURFACE	3,316'
Production String		5.5"		20#	SURFACE	14,995'

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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 CORRELATED TO MARKER JOINT
DEPTH SHIFT -14'
MARKER JOINT 6,250'-6,260'
MAIN PASS LOGGED WITH 1500 PSI
REPEAT PASS LOGGED WITH 0 PSI

THANK YOU FOR USING NINE ENERGY SERVICES

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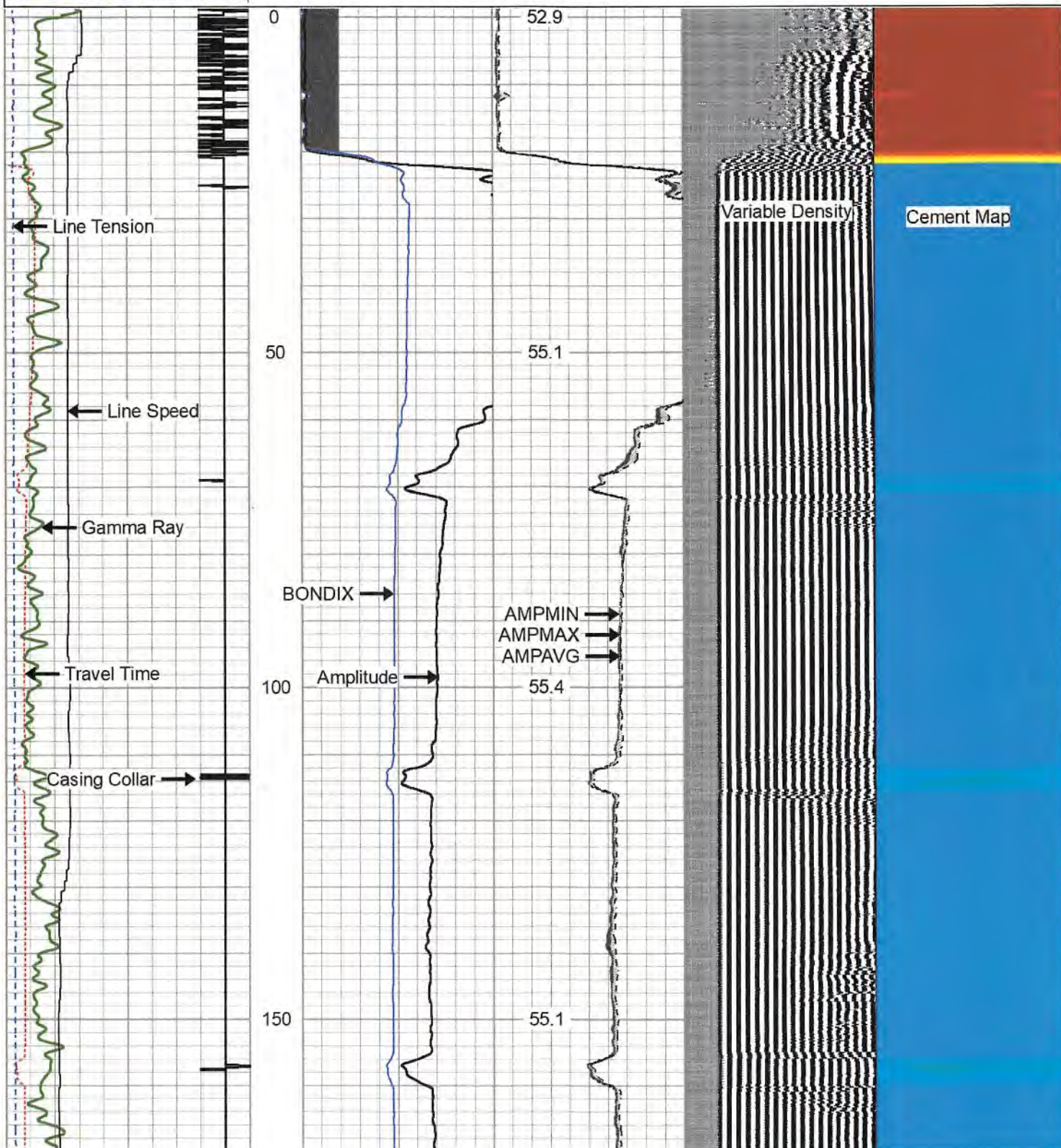
WV Department of Environmental Protection

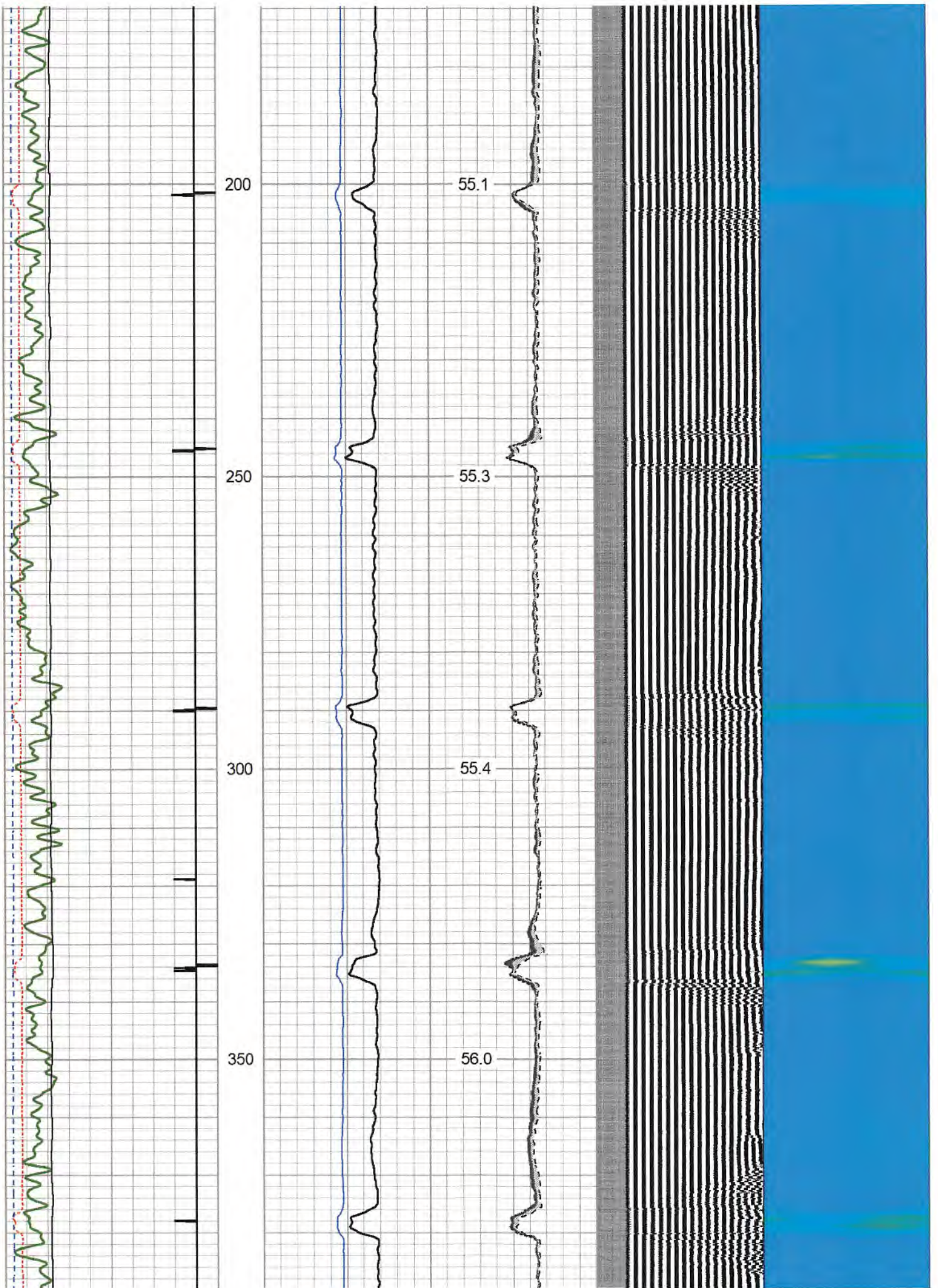


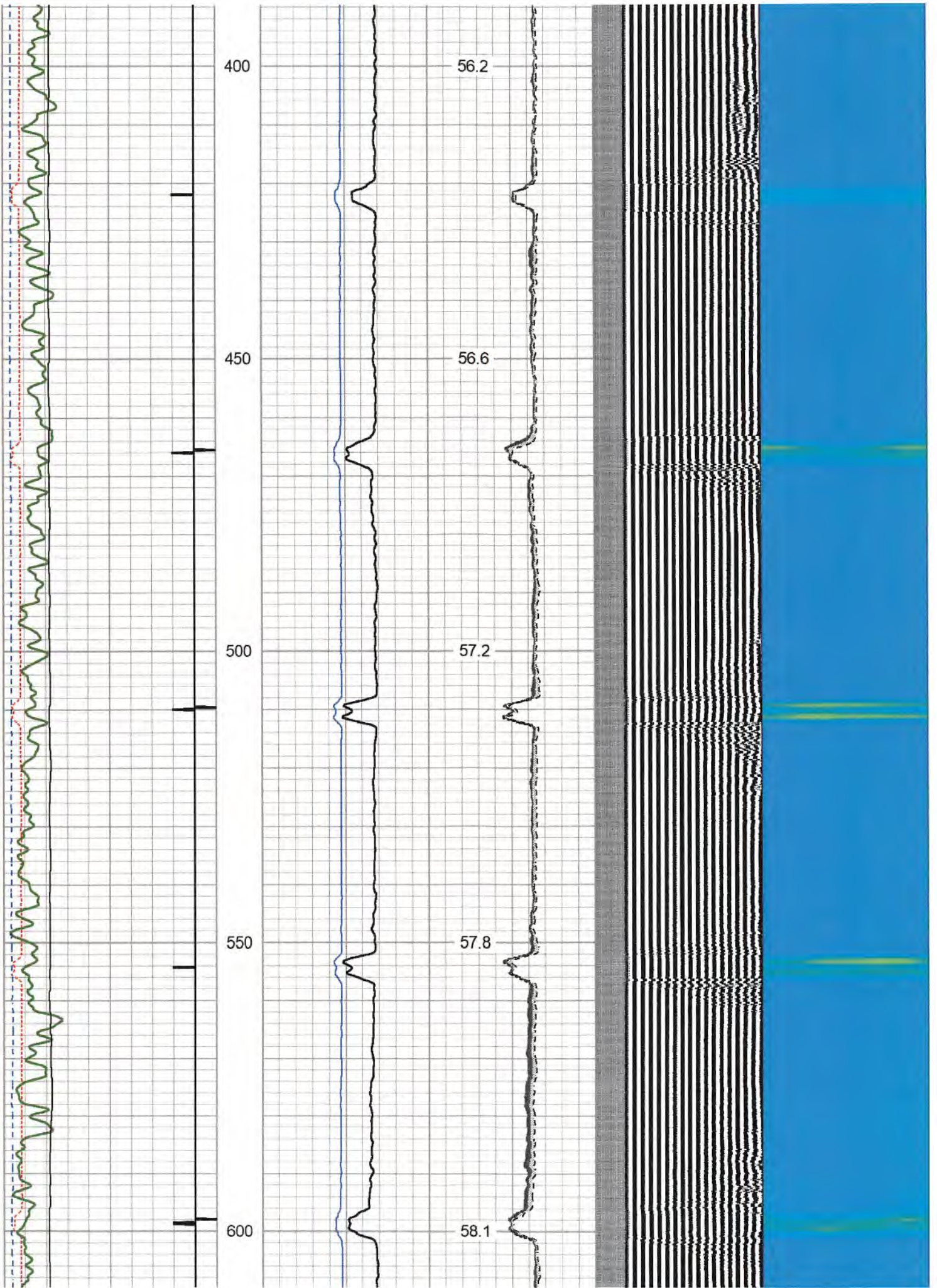
MAIN PASS 1,500 PSI

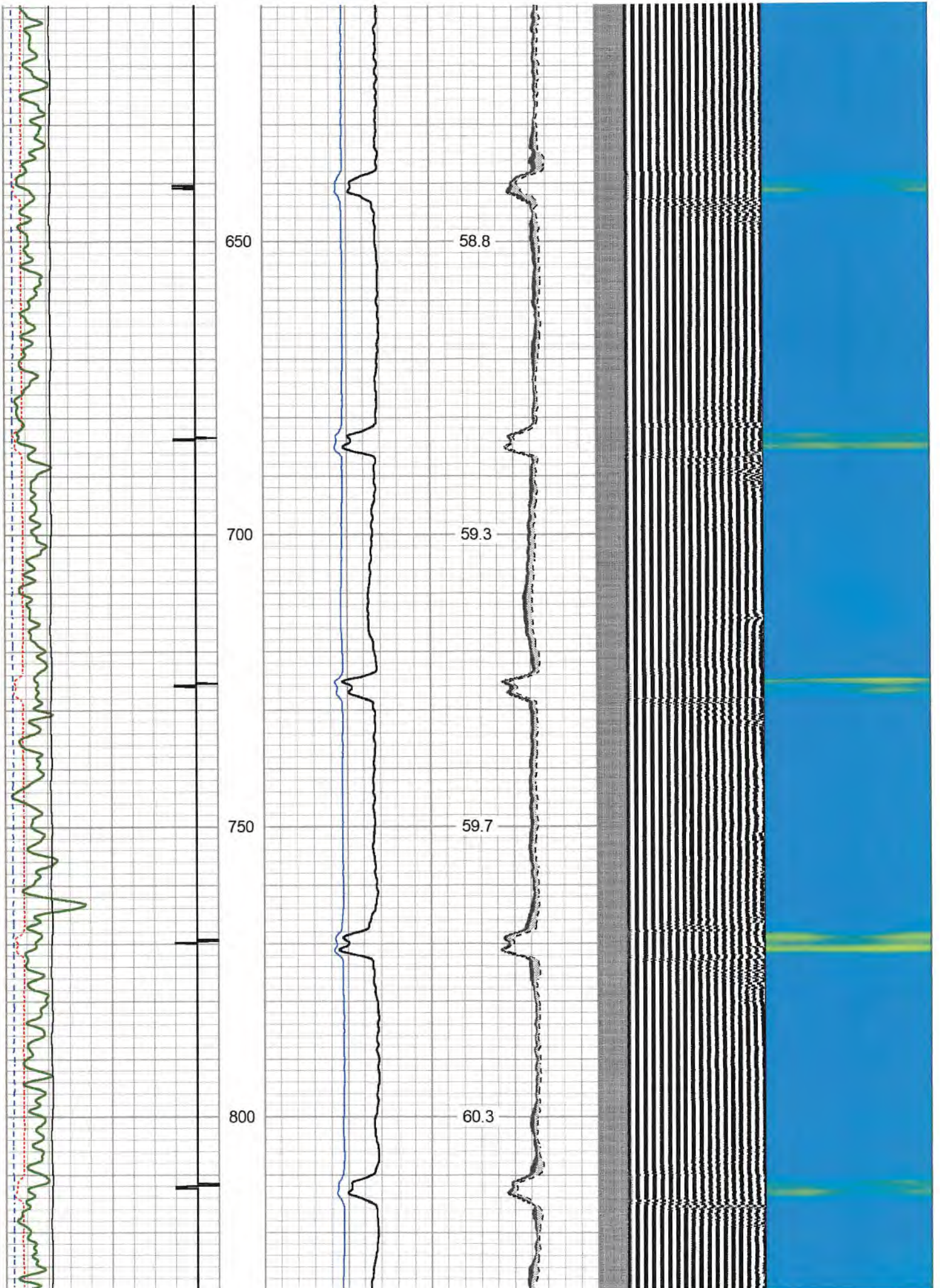
Database File antero_peter_1h_rcbl_11_jan_2023.db
 Dataset Pathname peter1h/run1/pass5.1
 Presentation Format rcbl 2
 Dataset Creation Wed Jan 11 20:36:51 2023
 Charted by Depth in Feet scaled 1:240

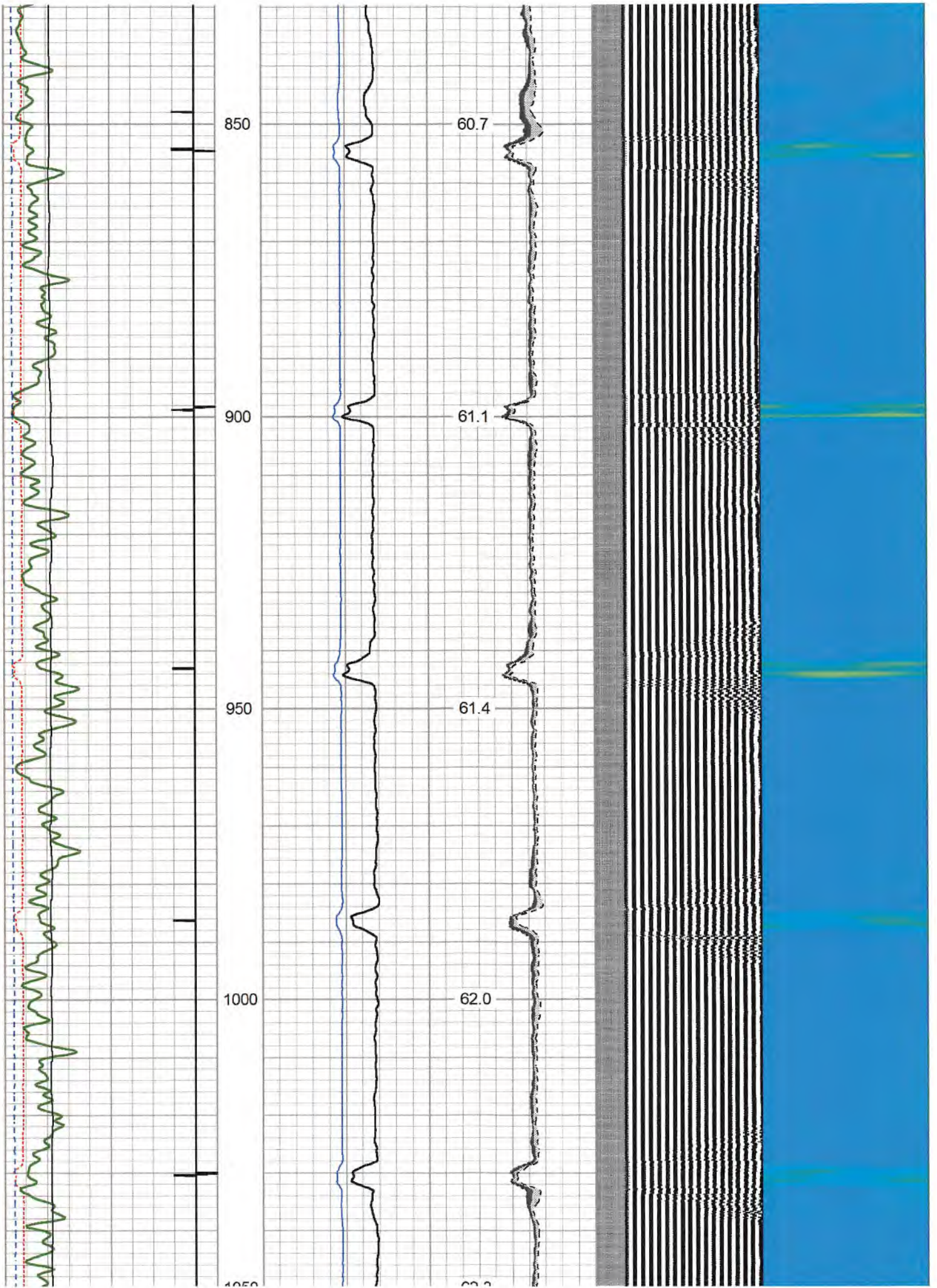
270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										

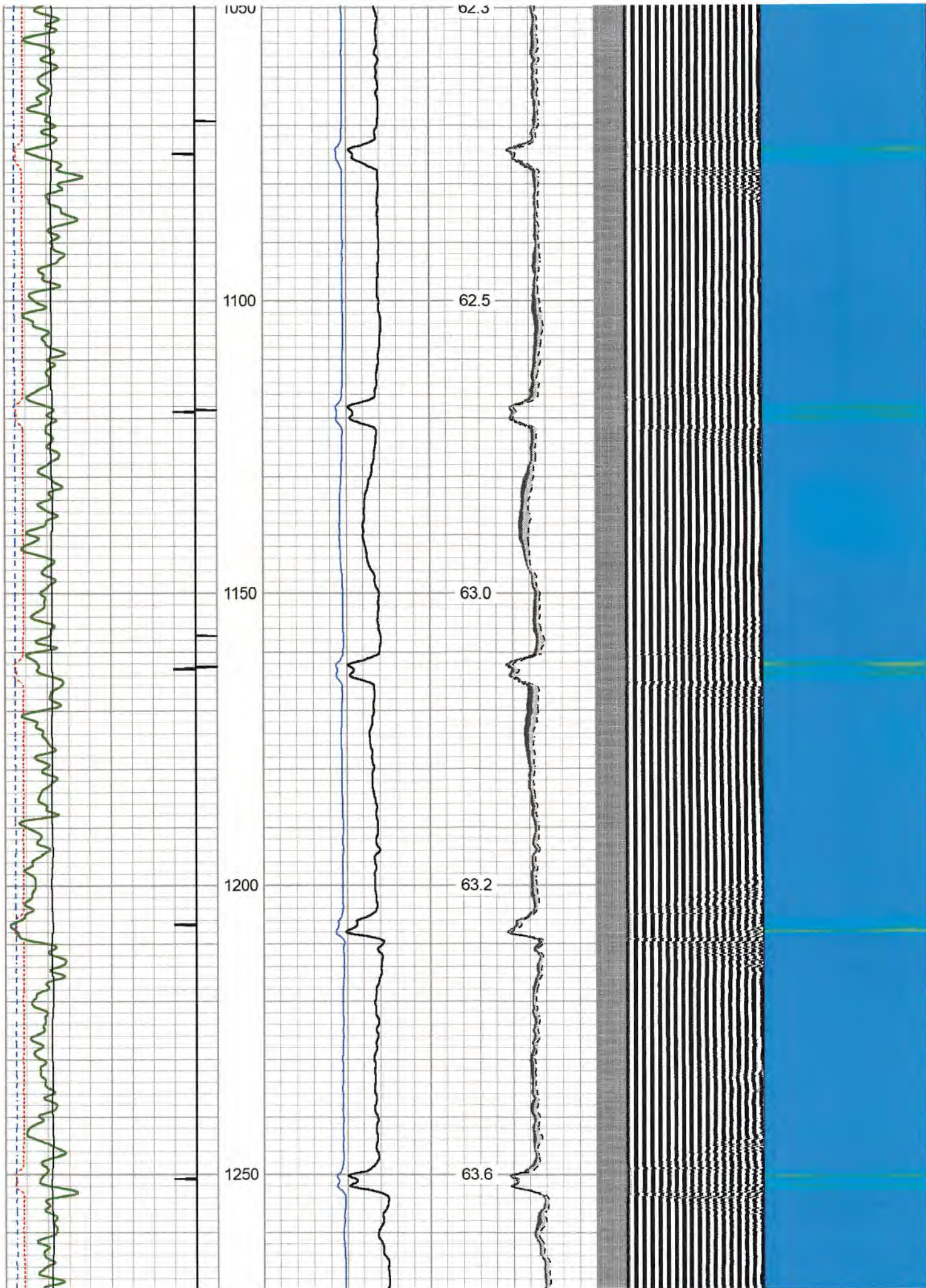


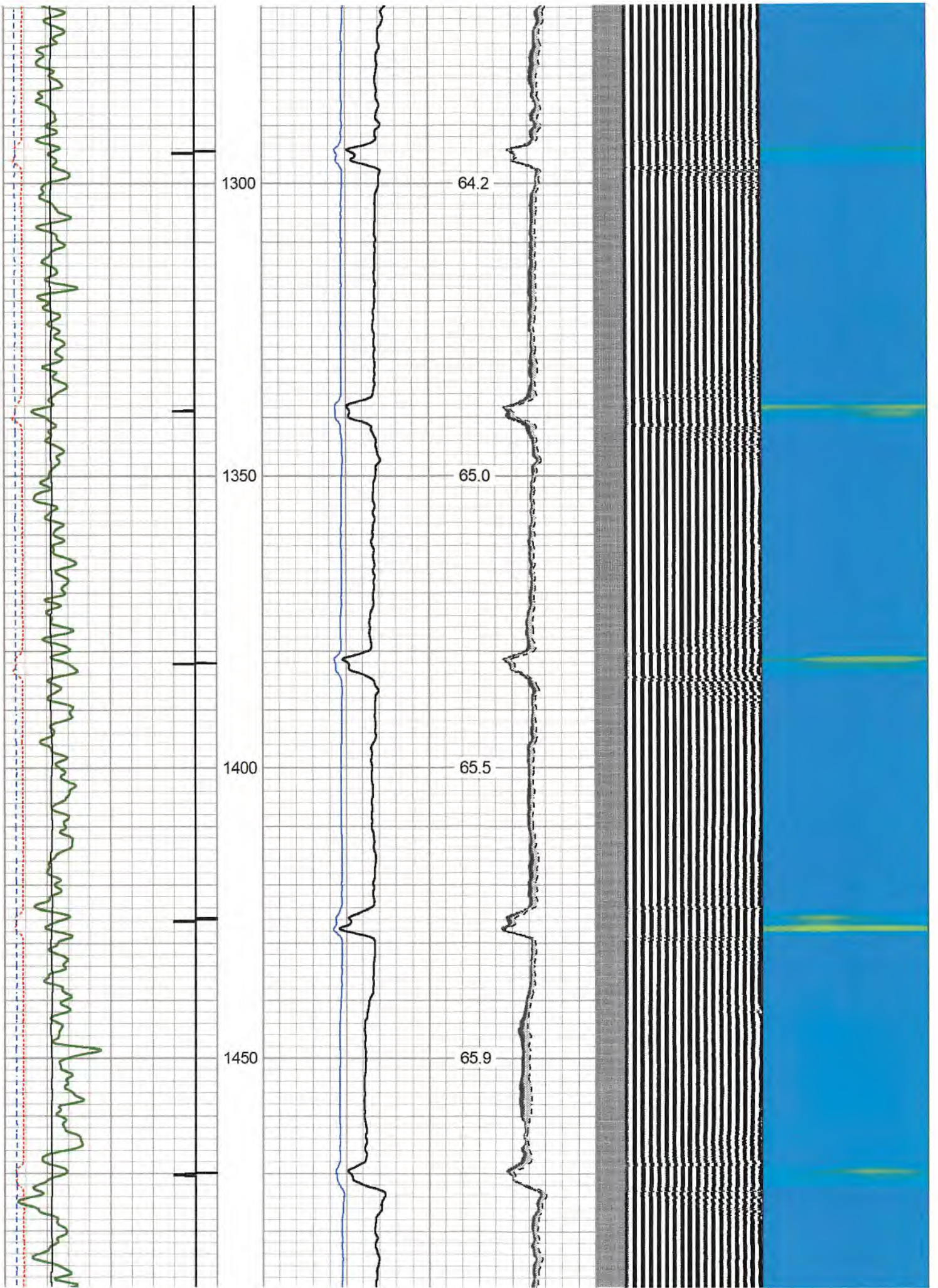


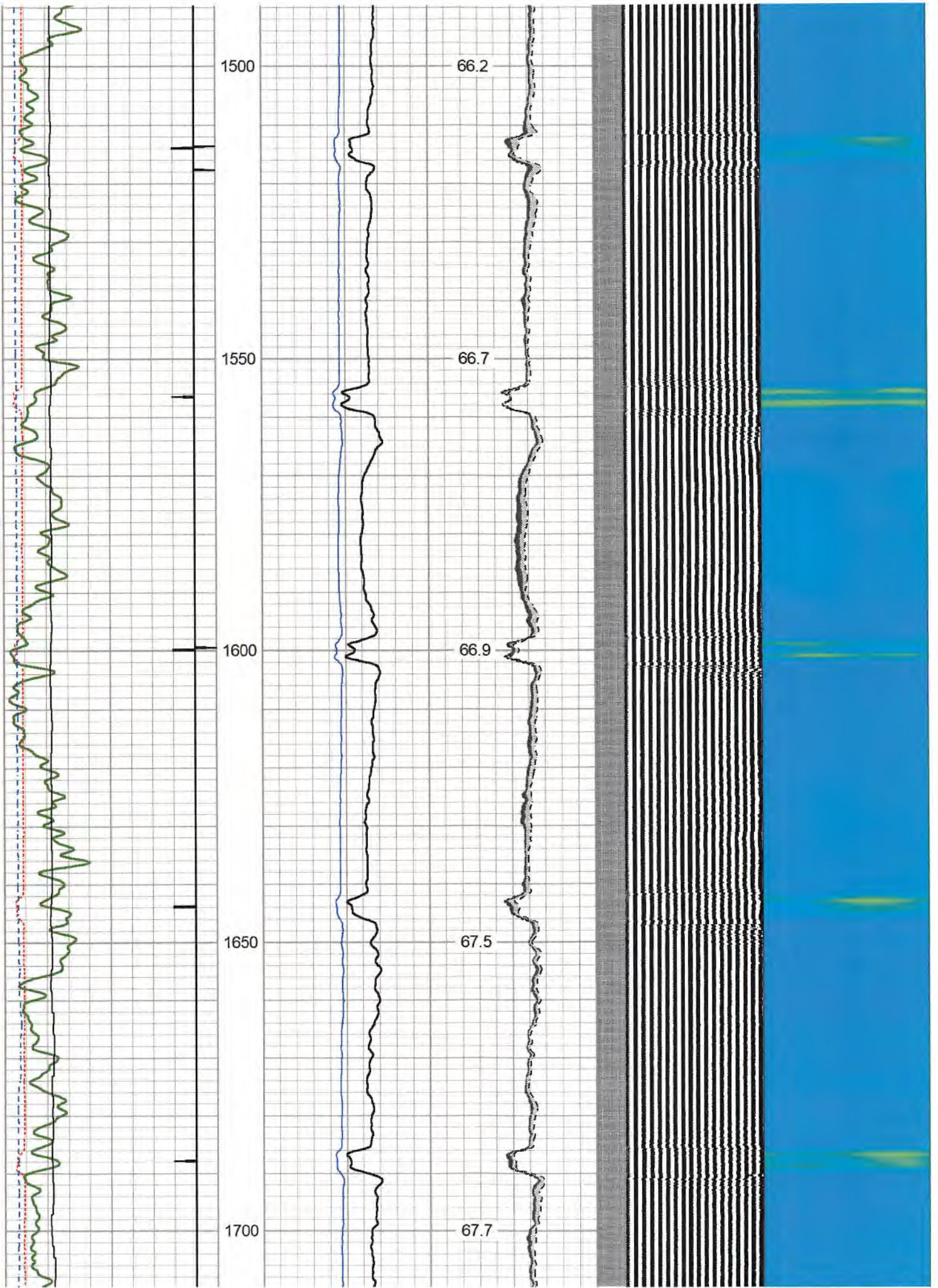


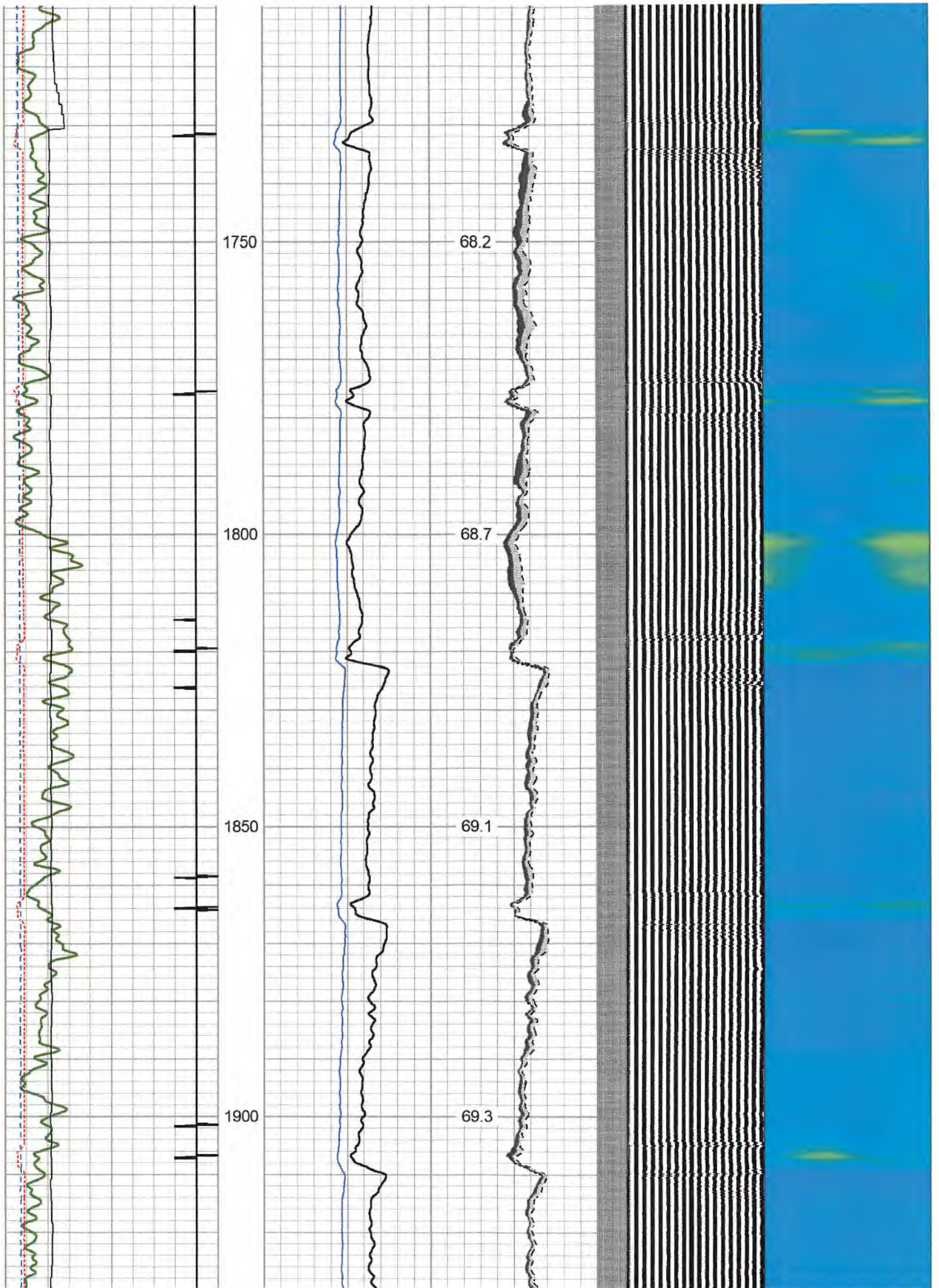


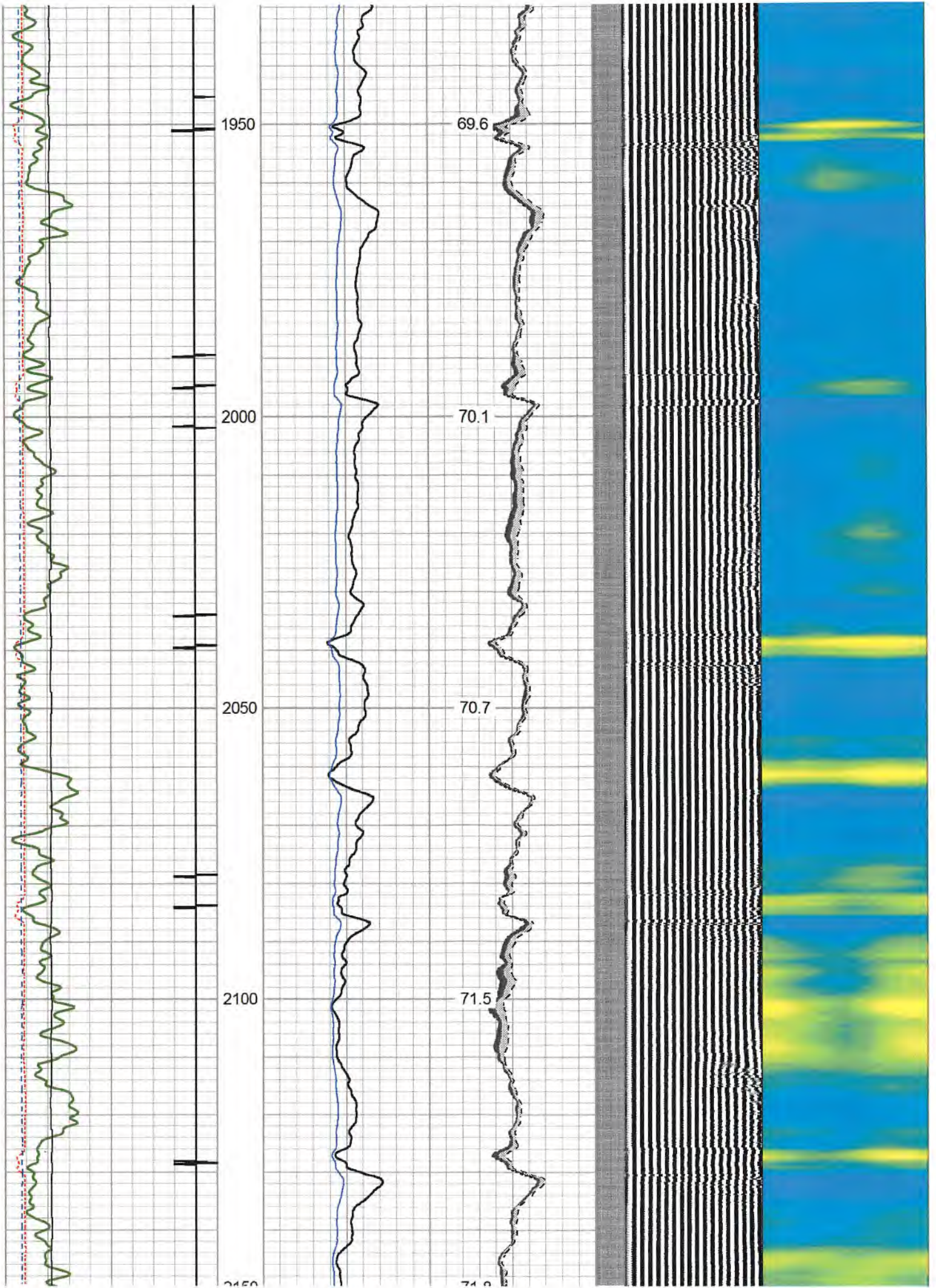


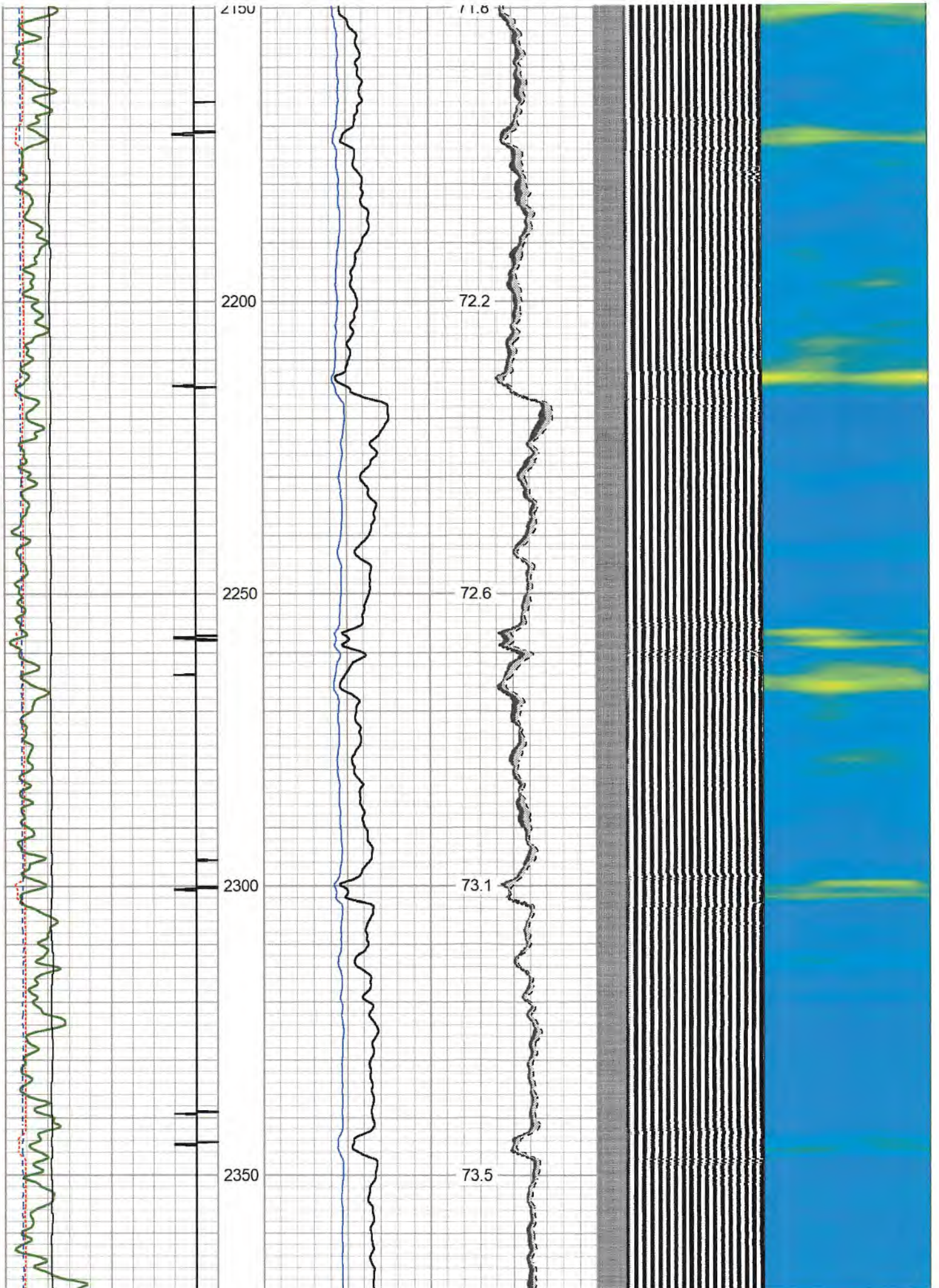


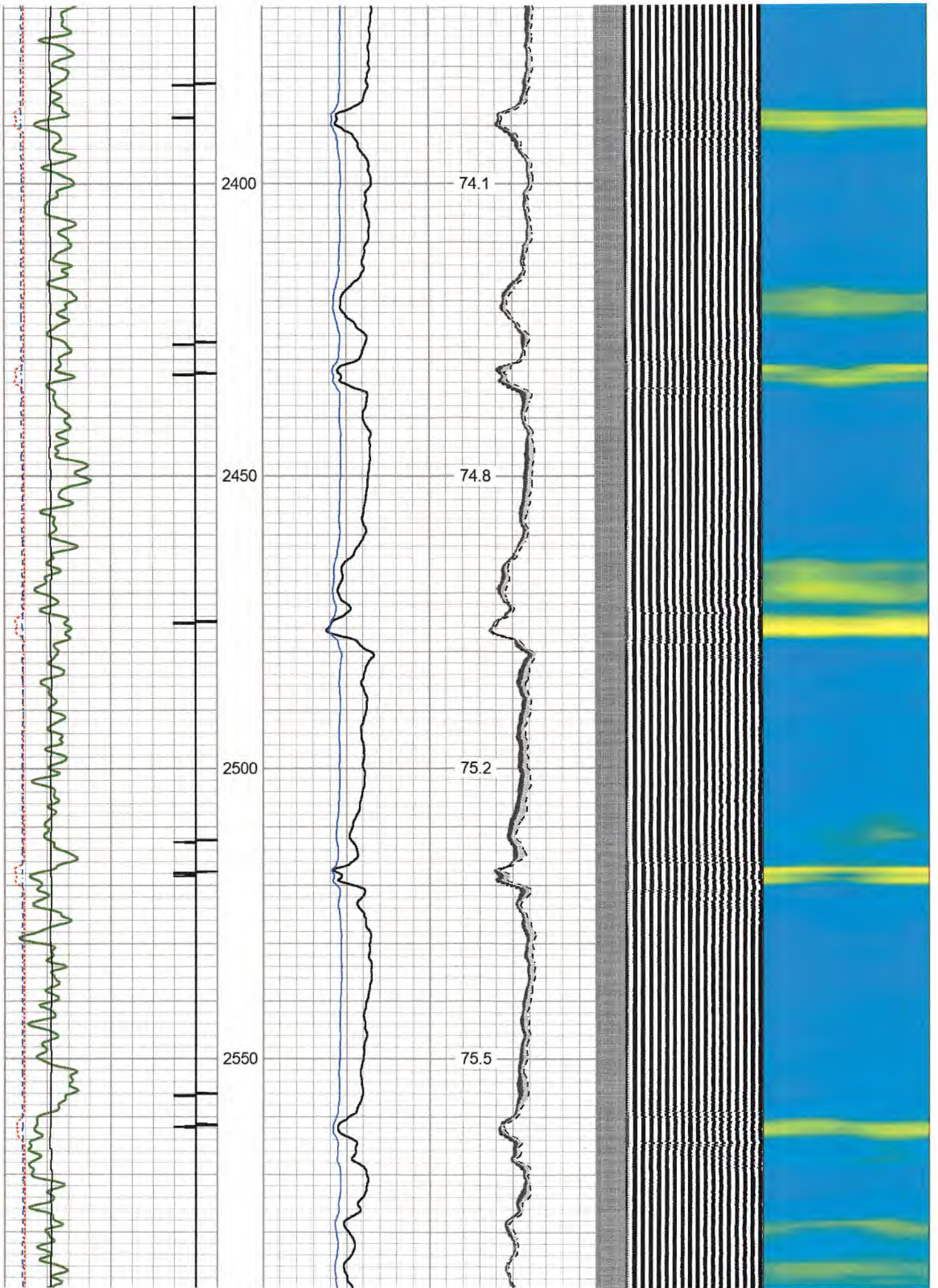


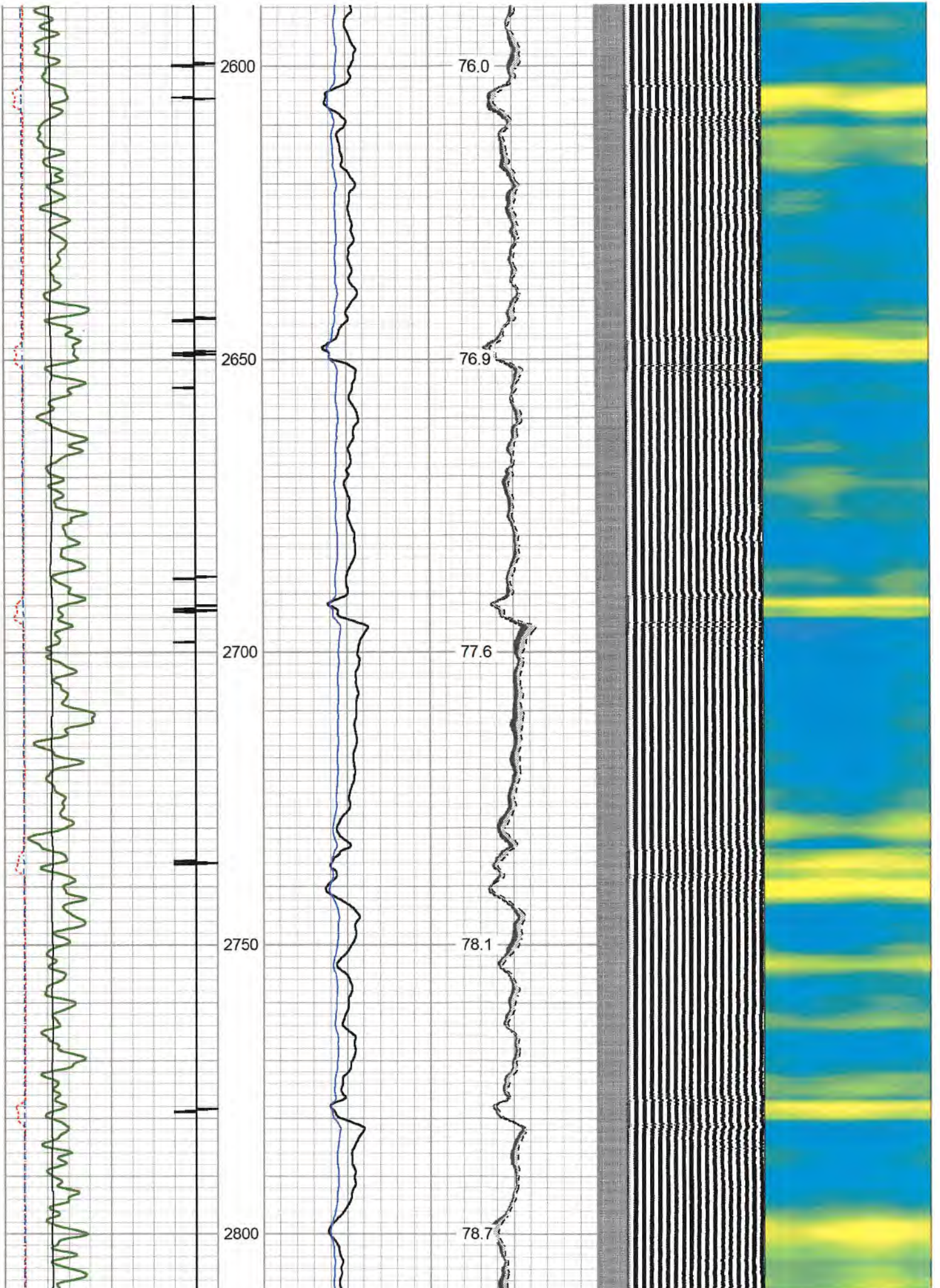


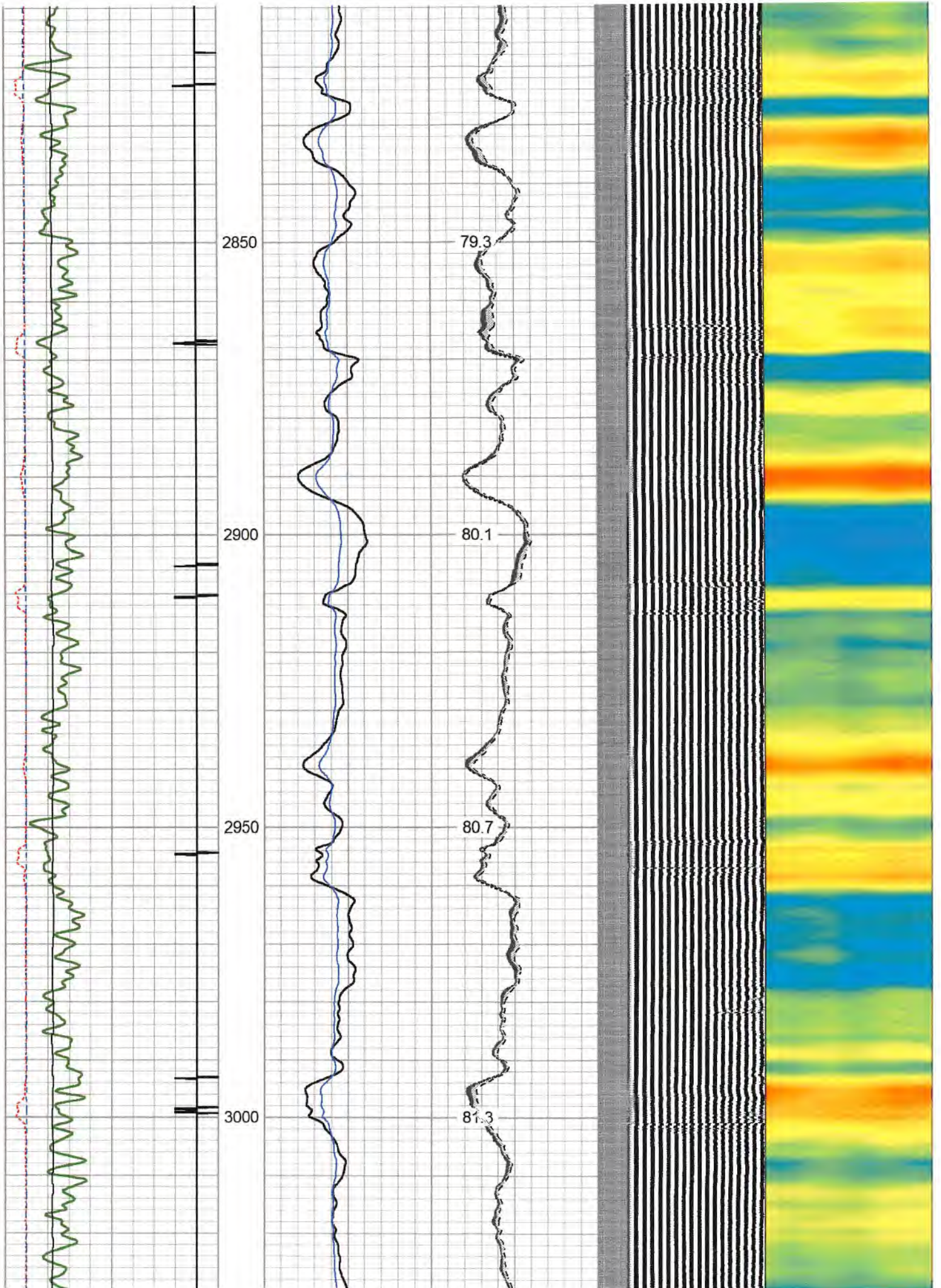


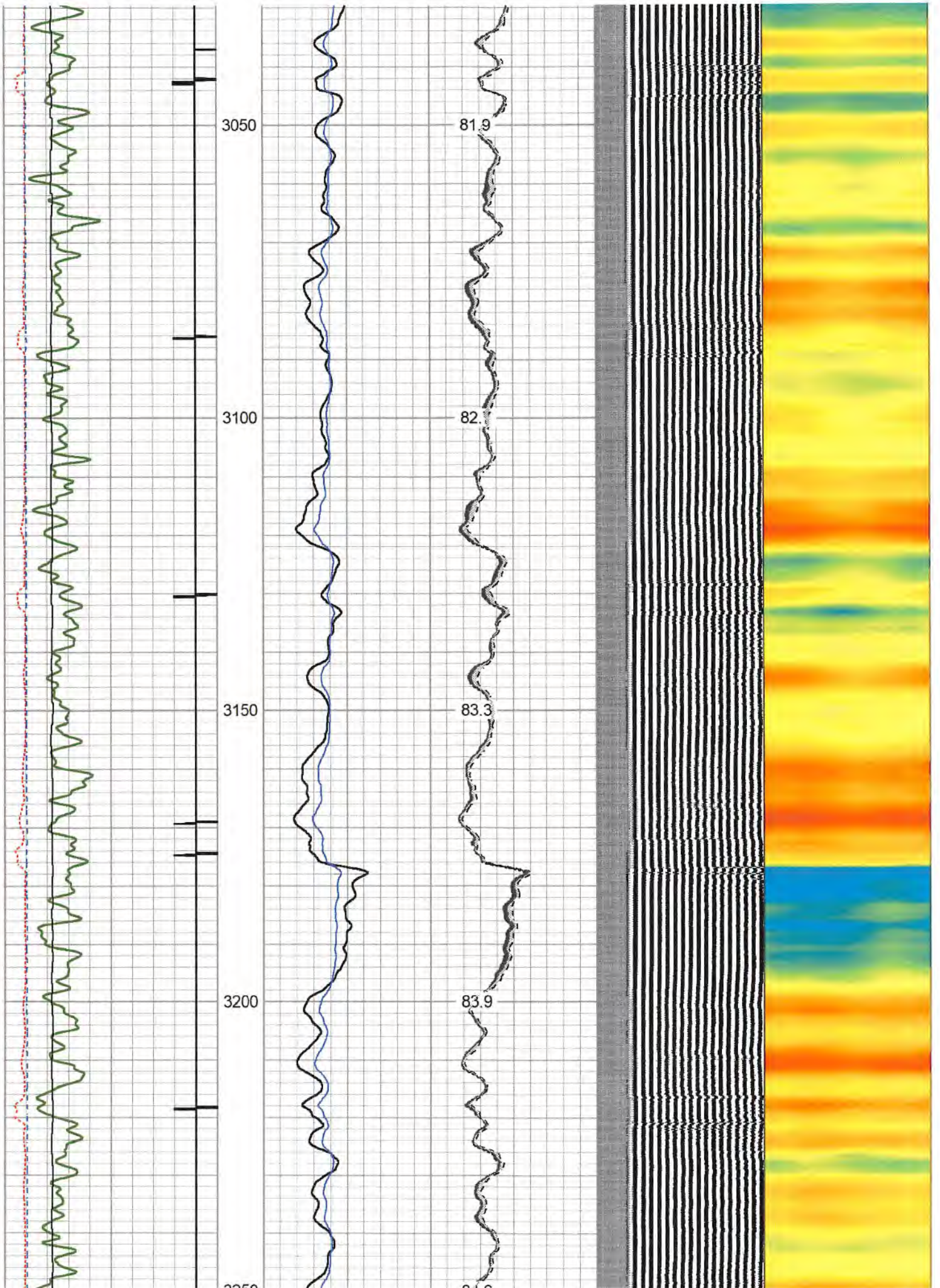


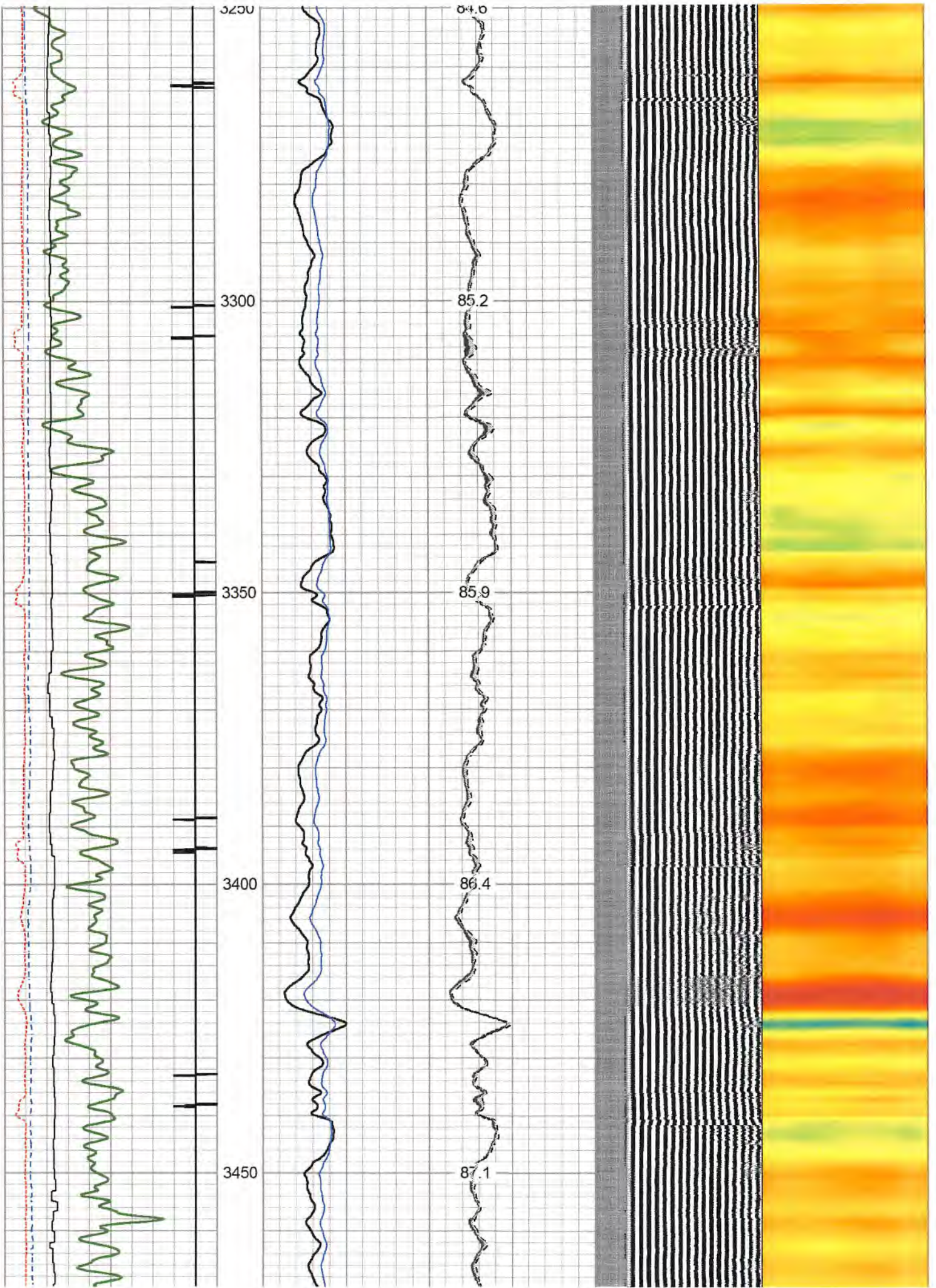


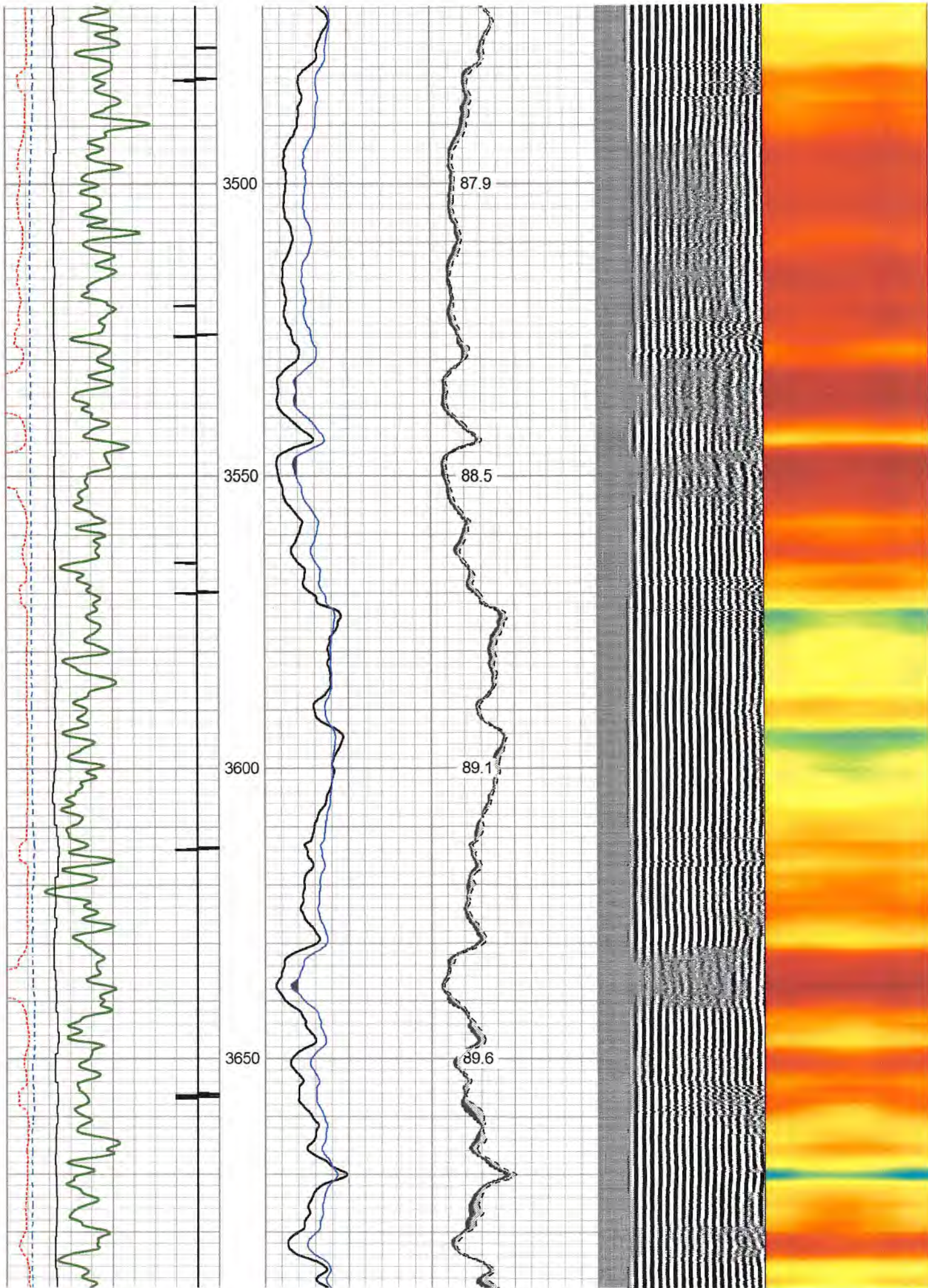


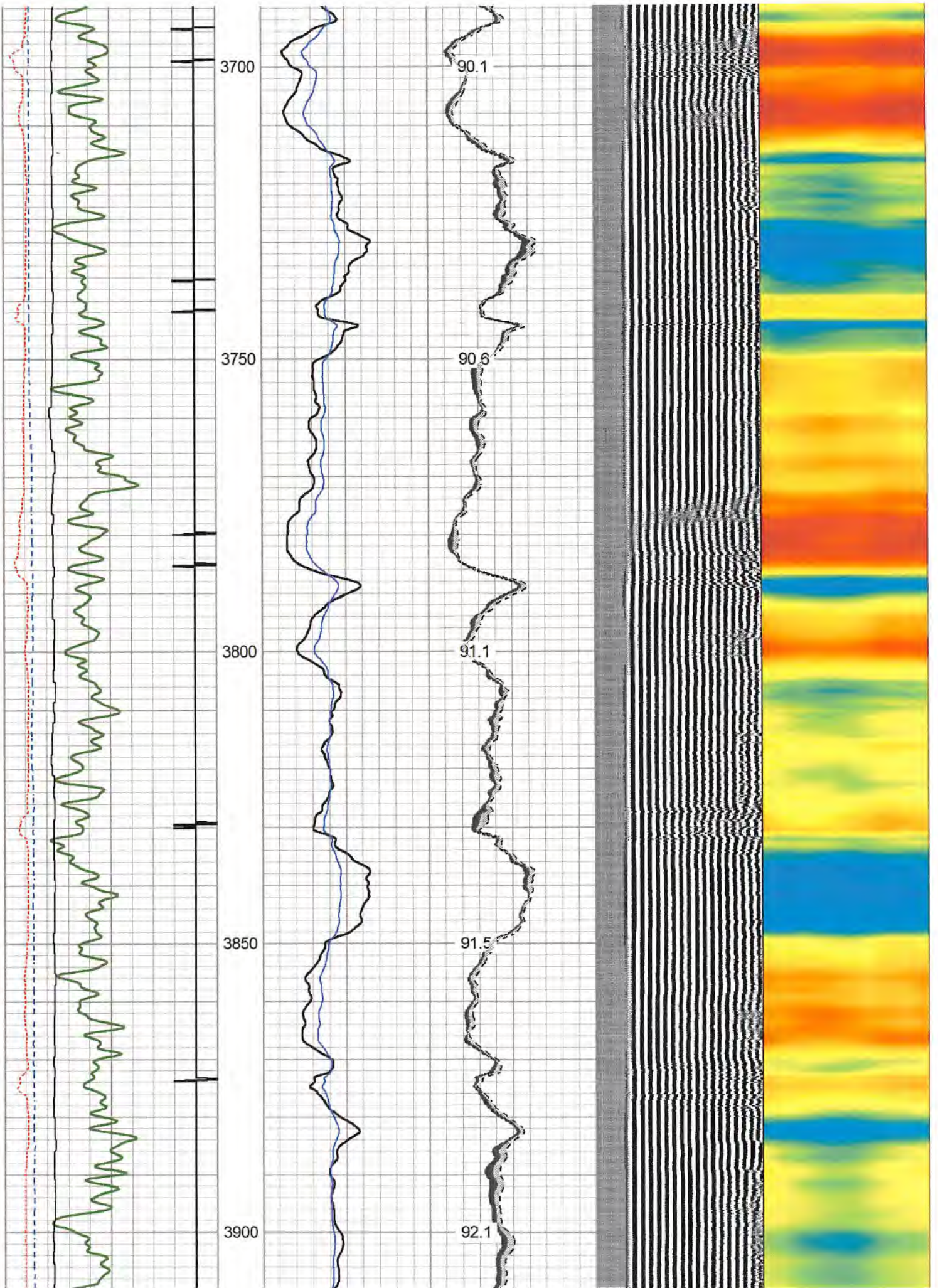


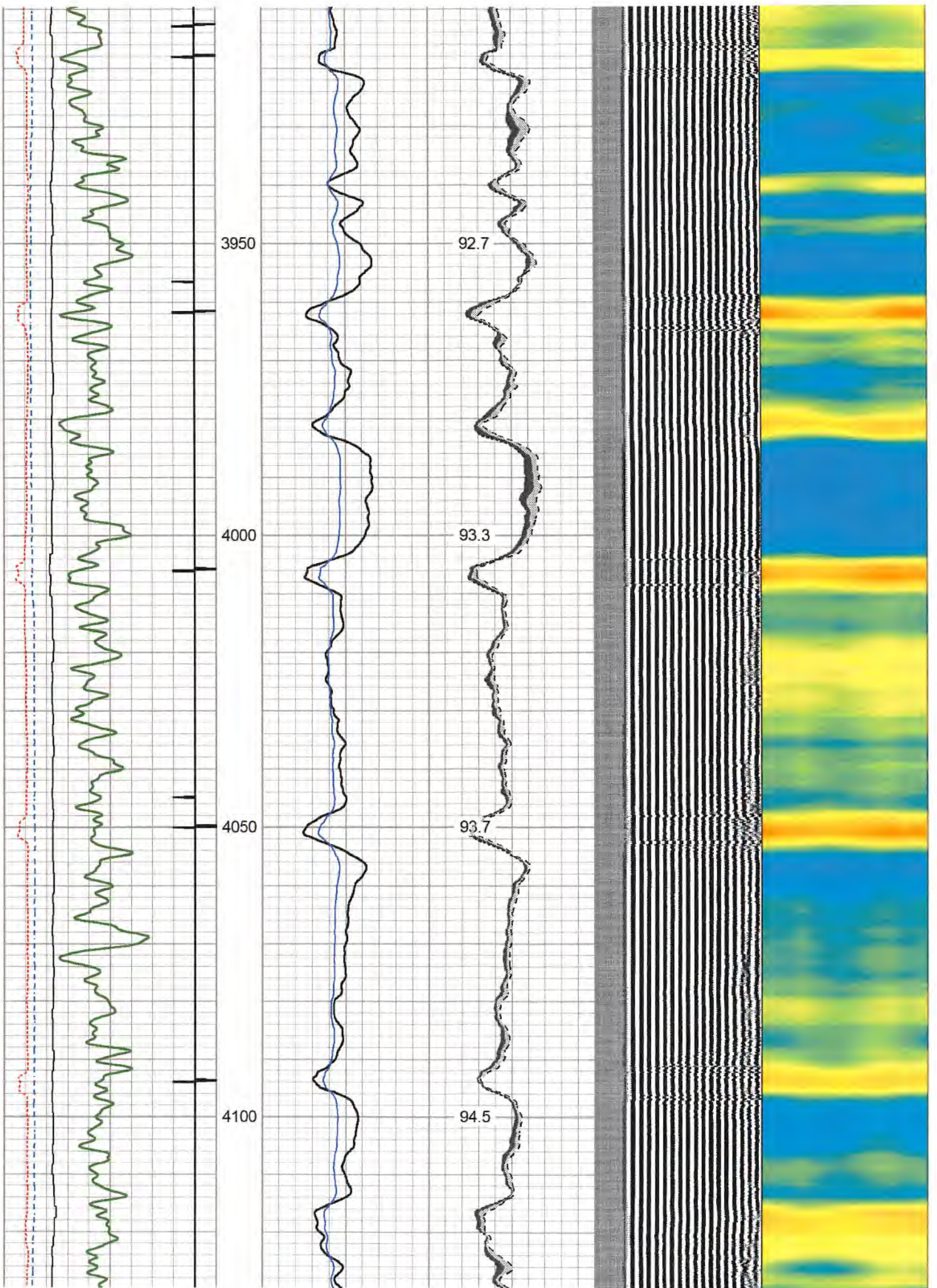


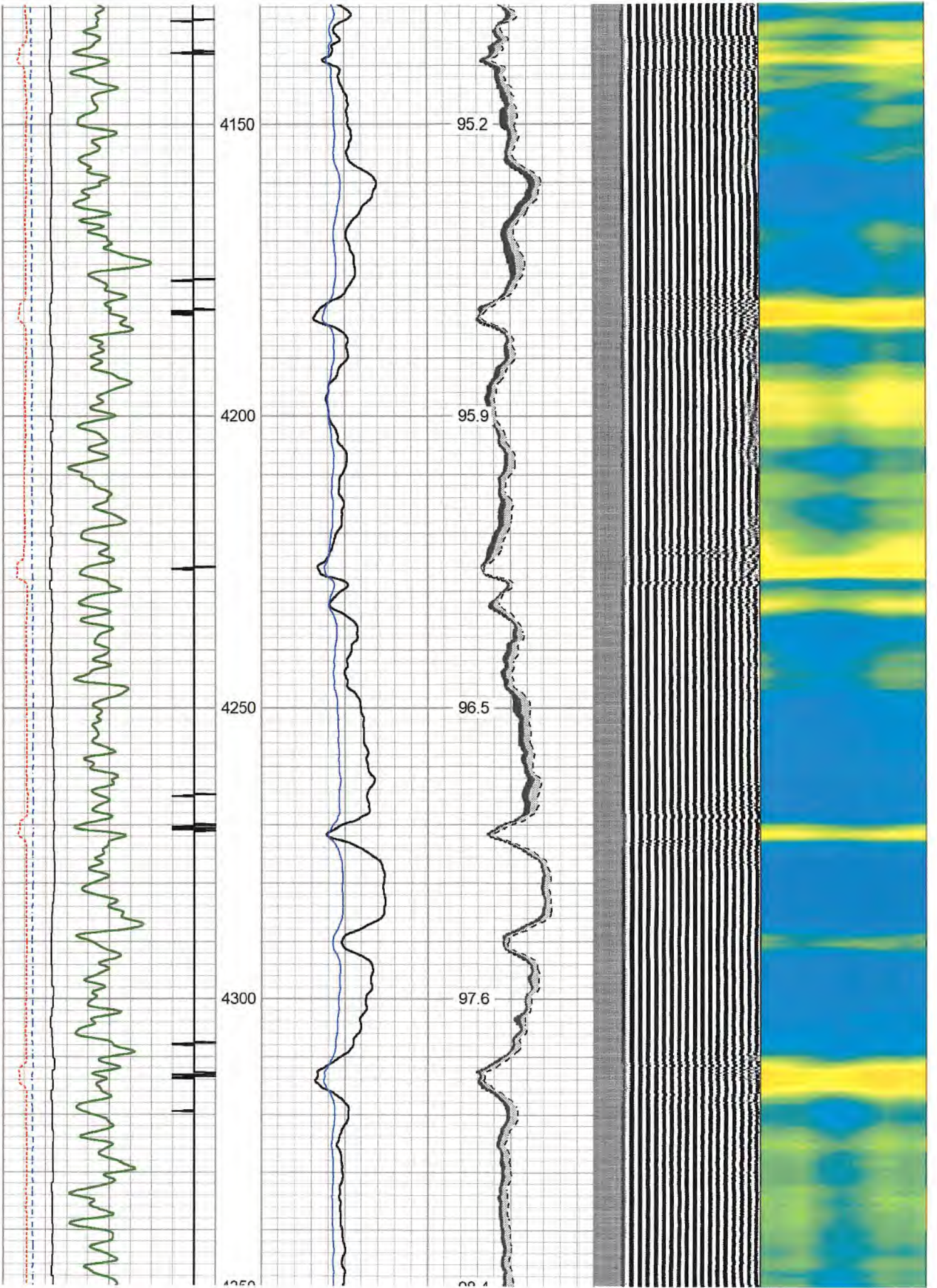


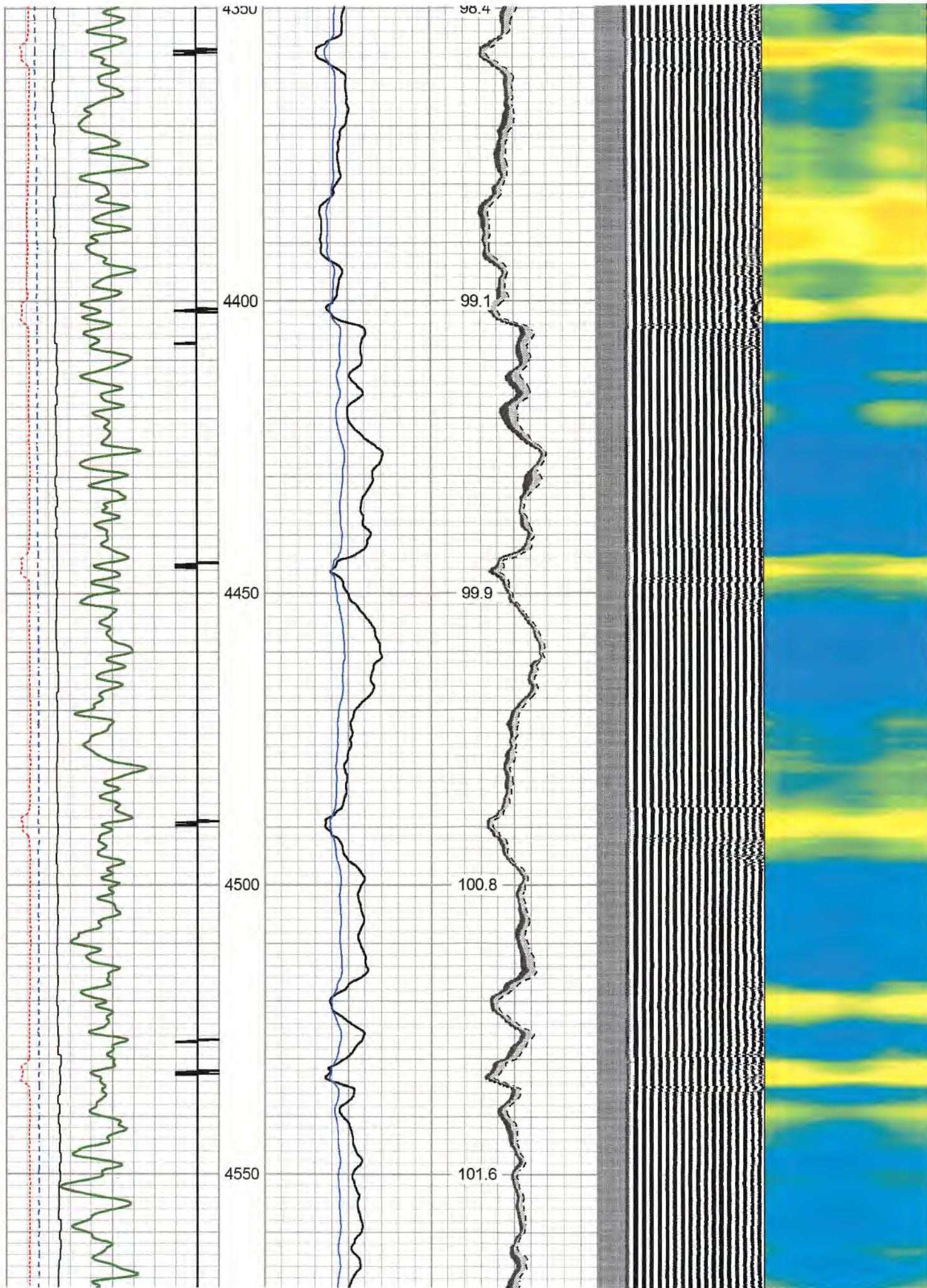


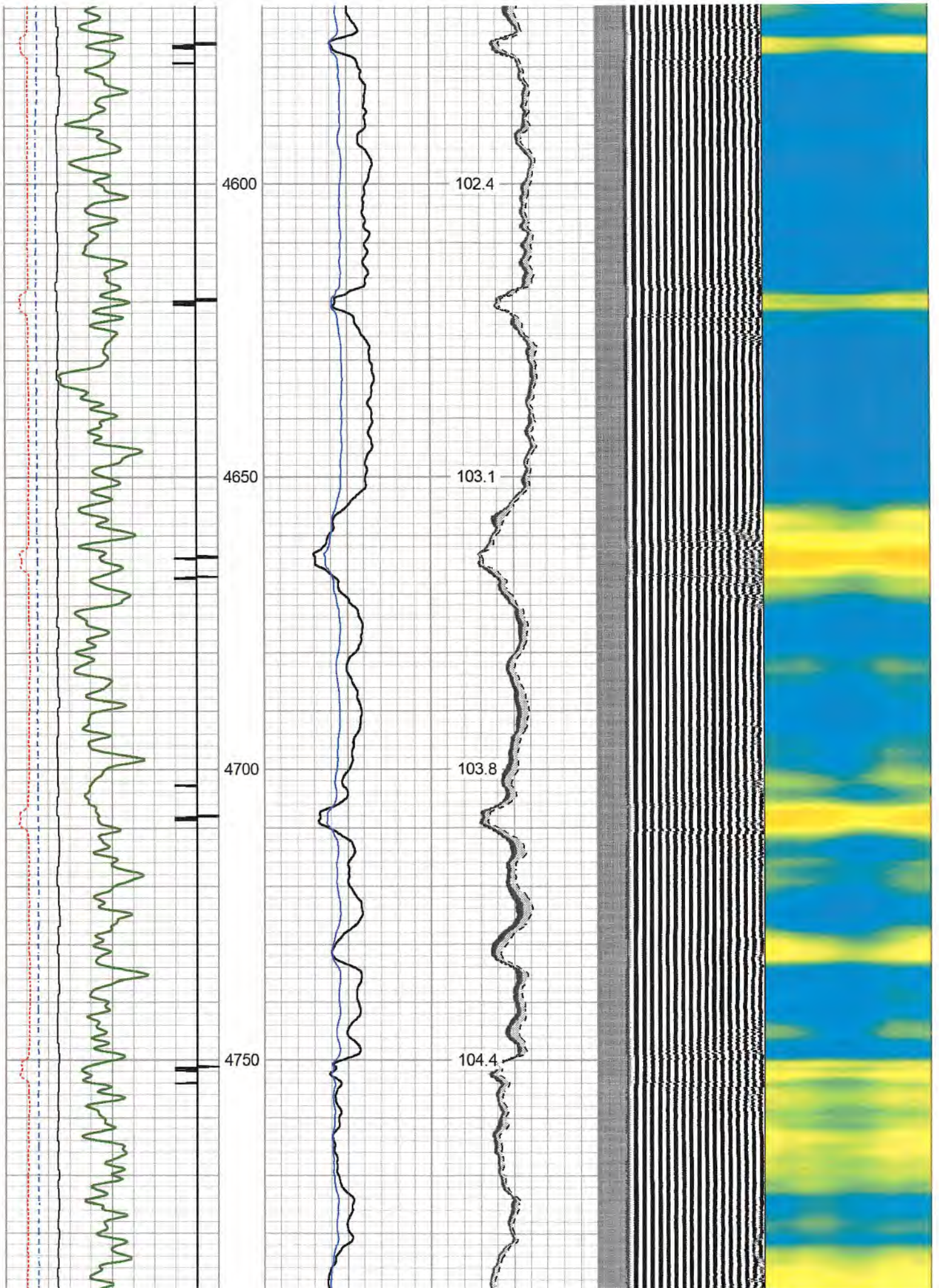


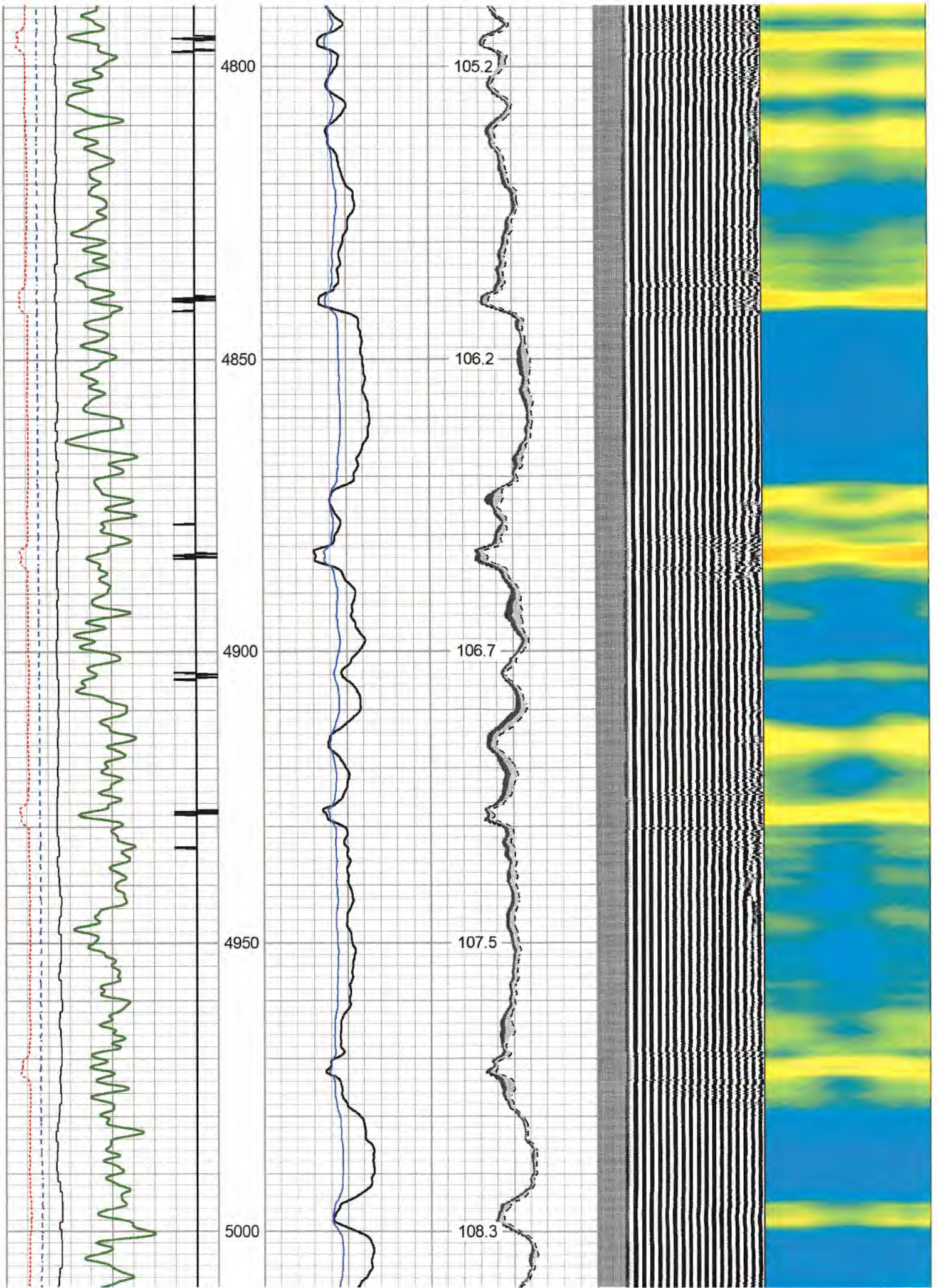


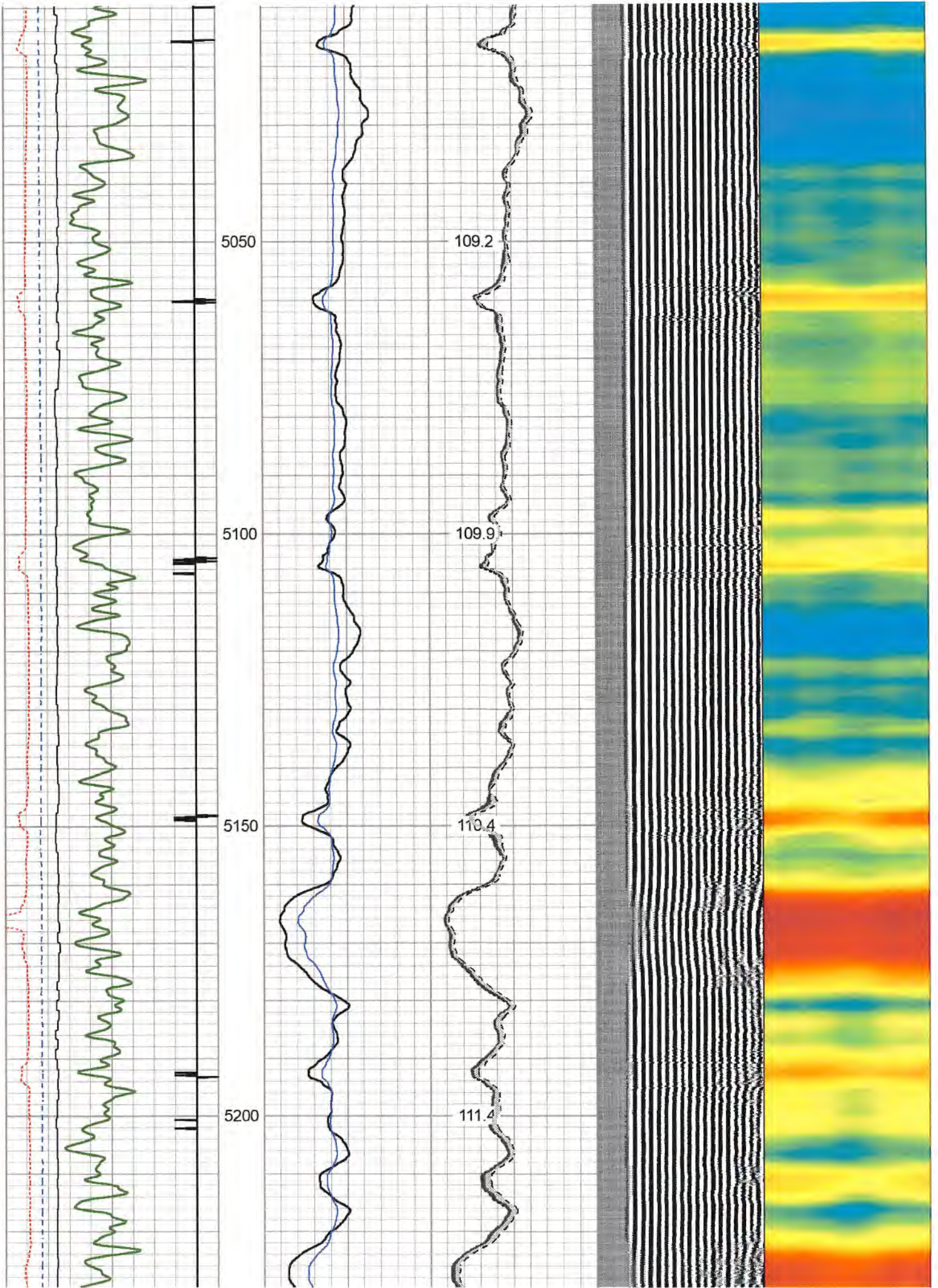


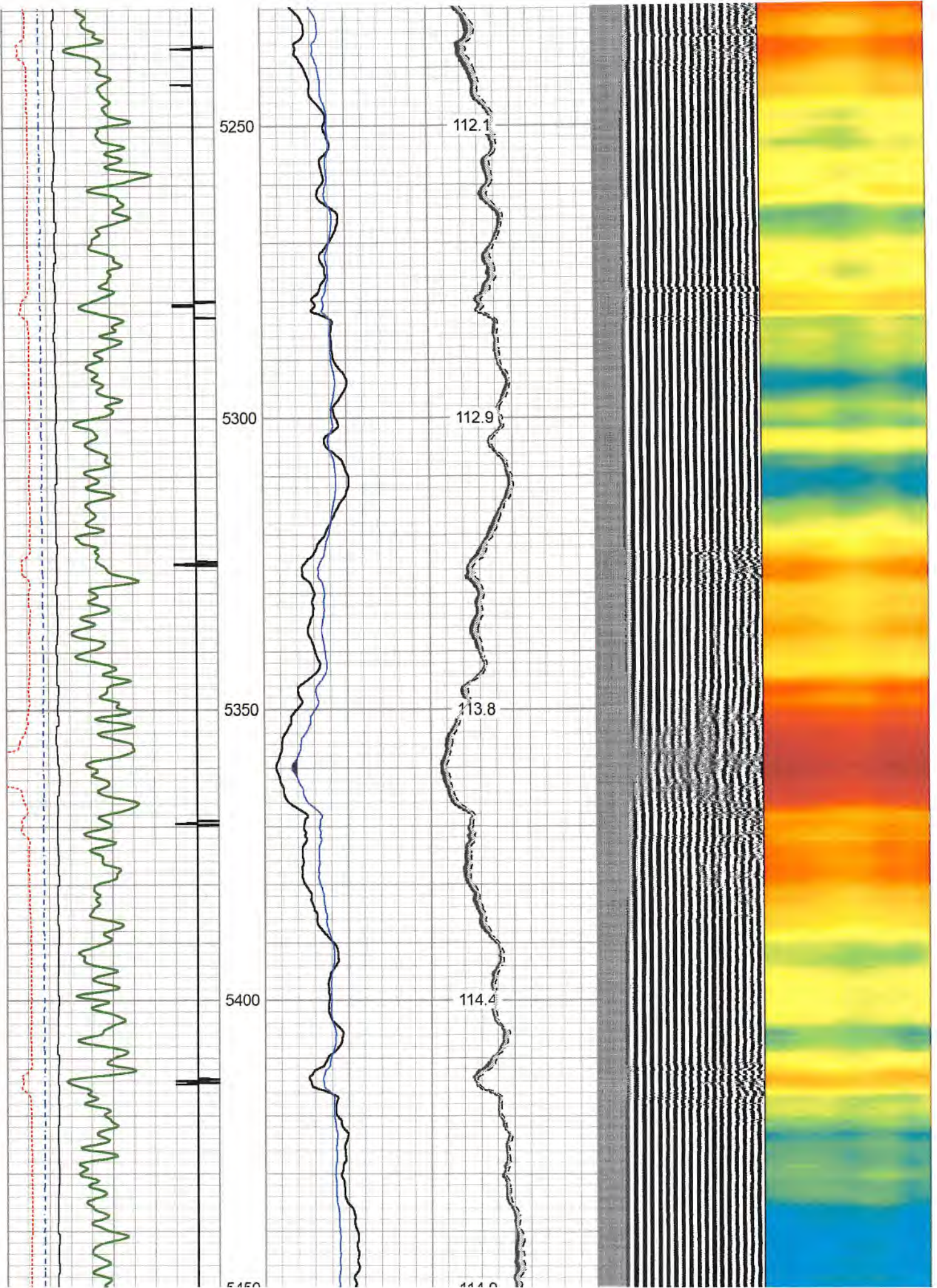


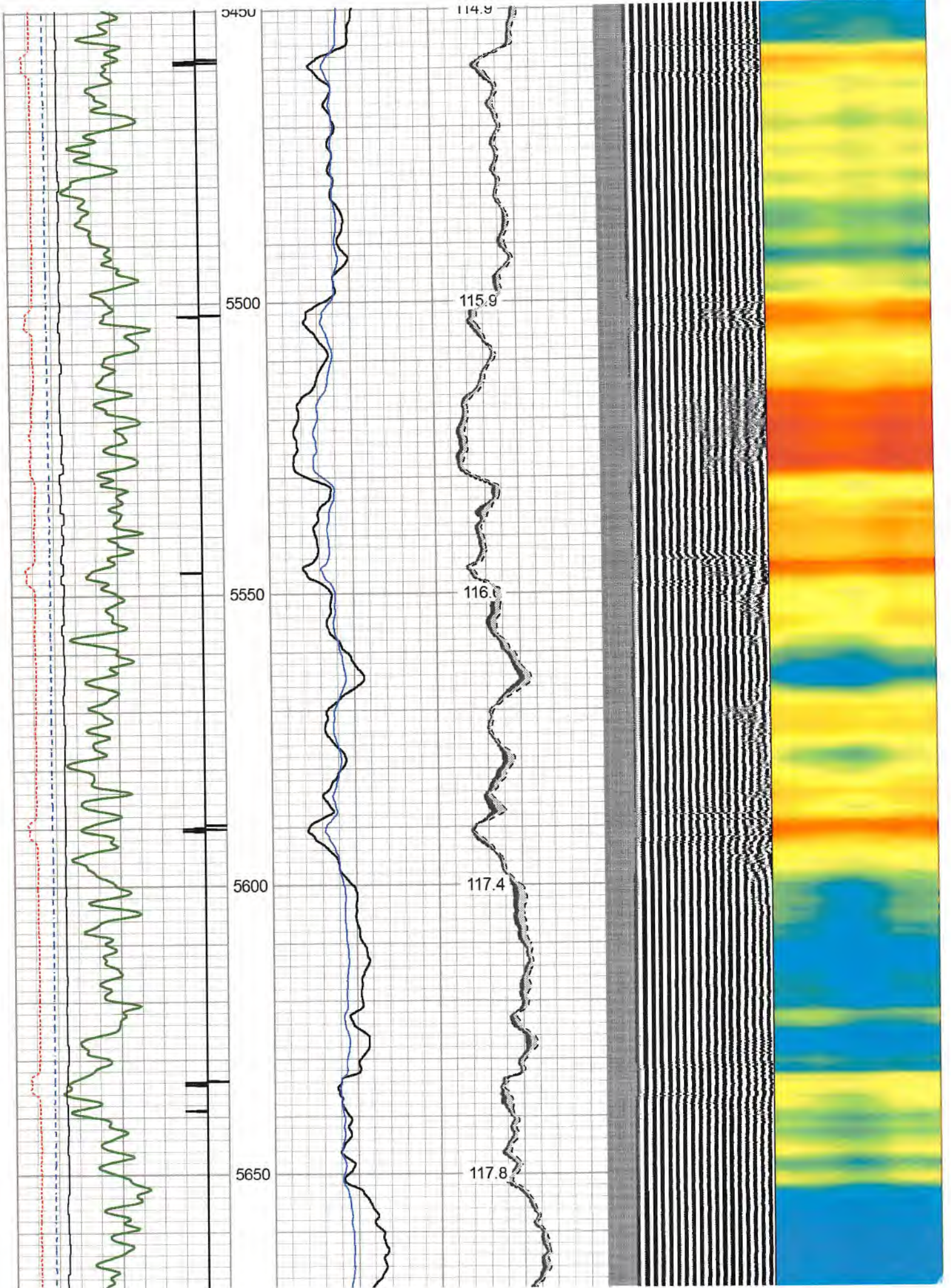


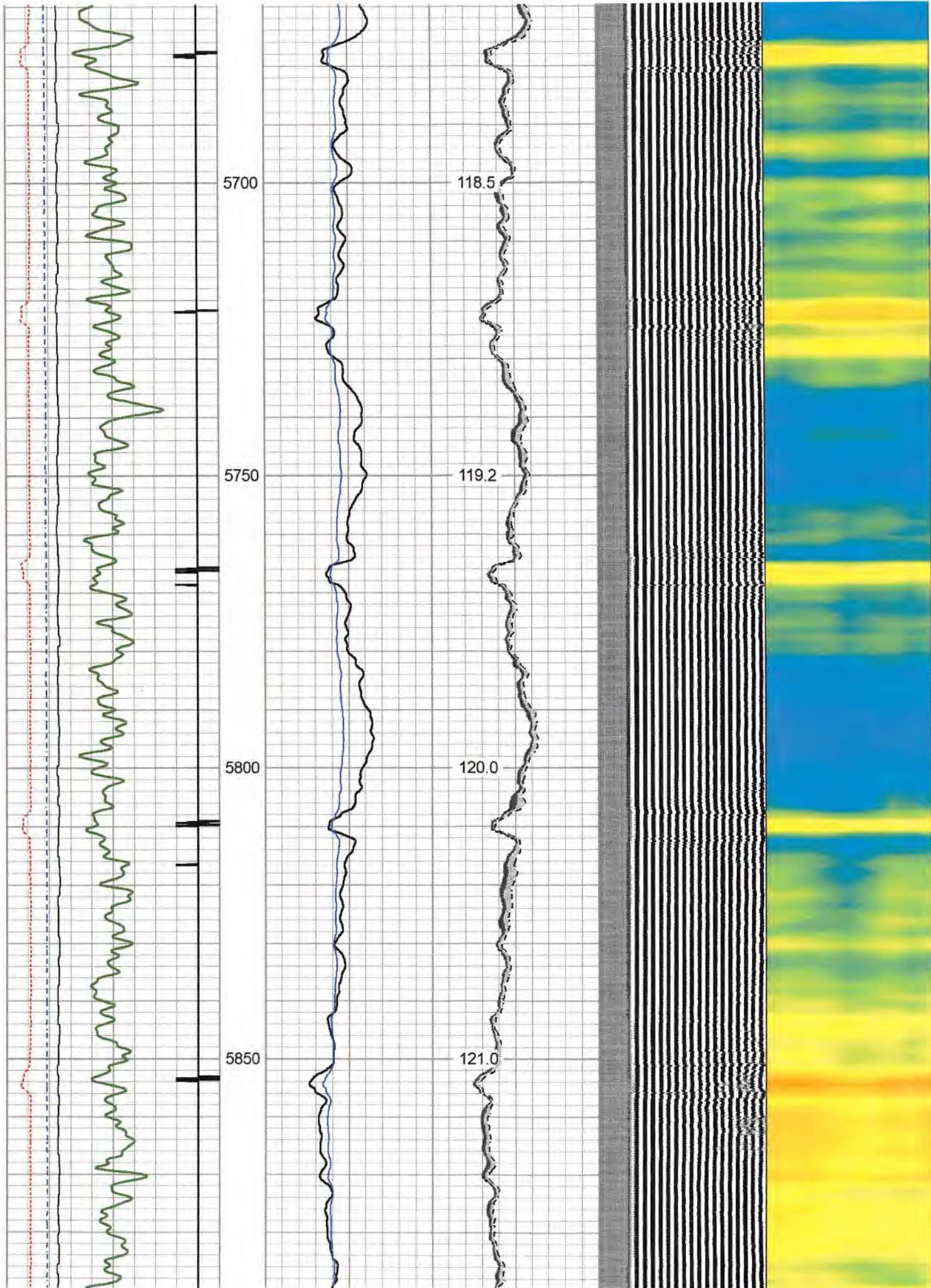


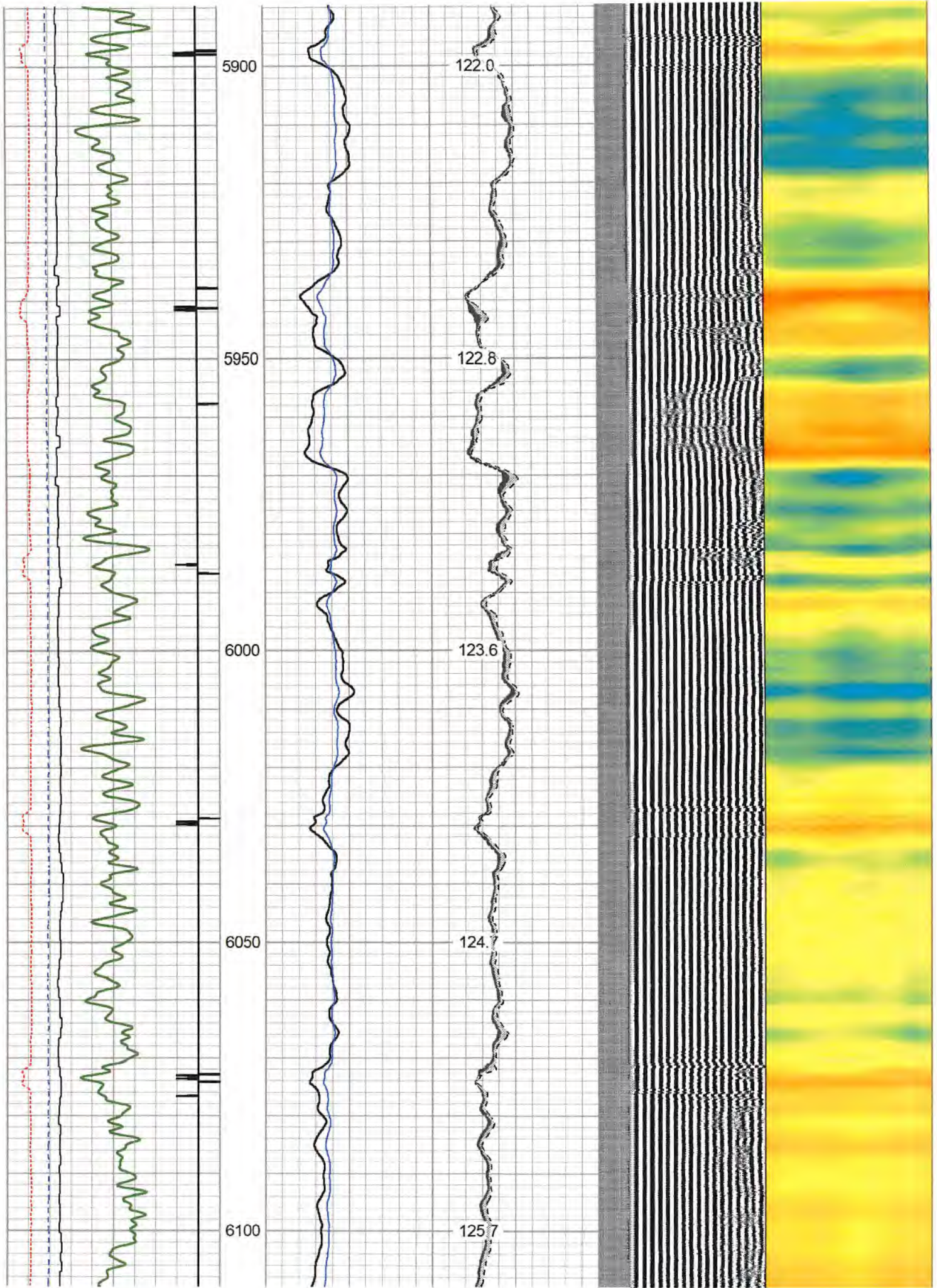


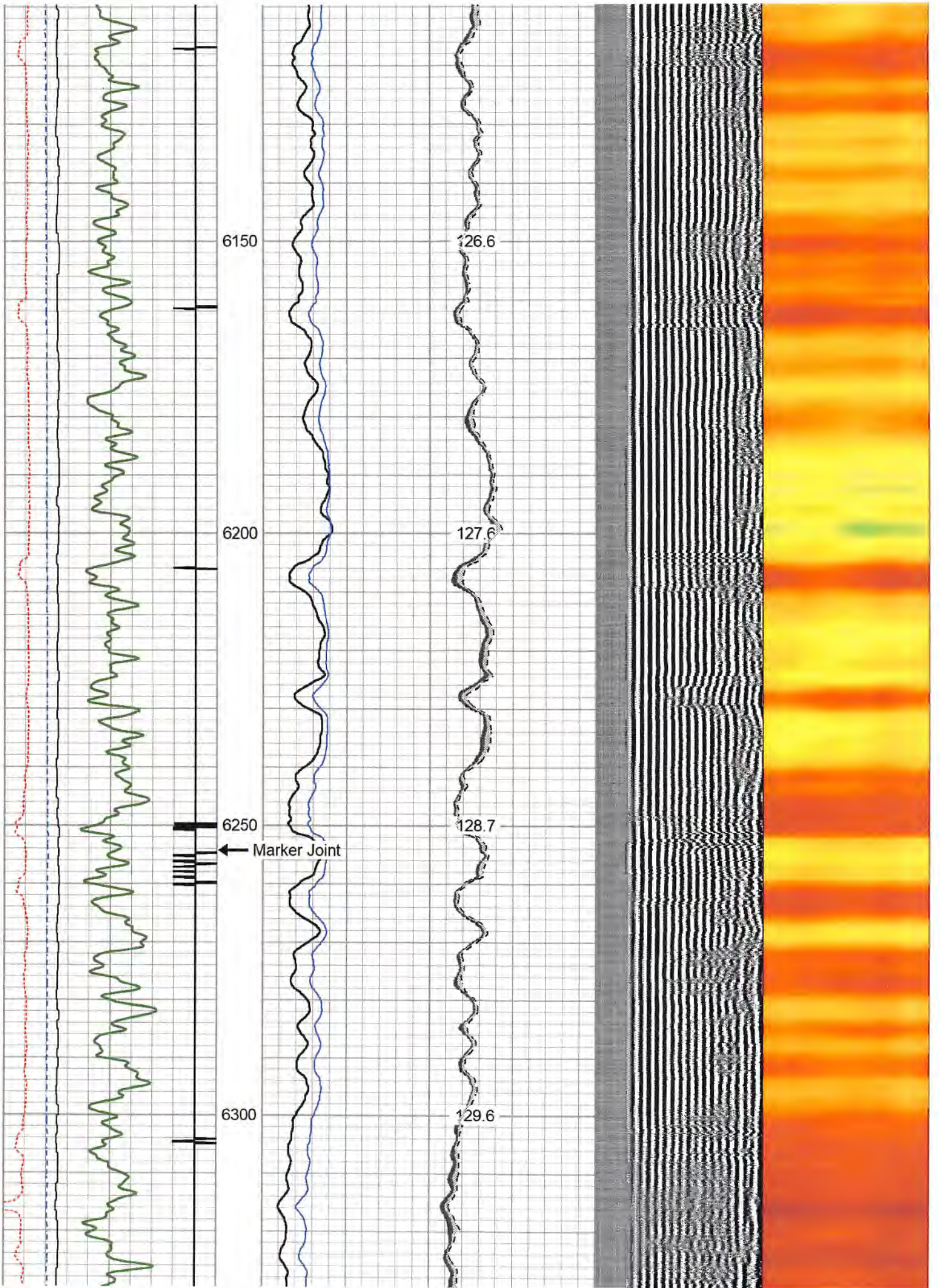


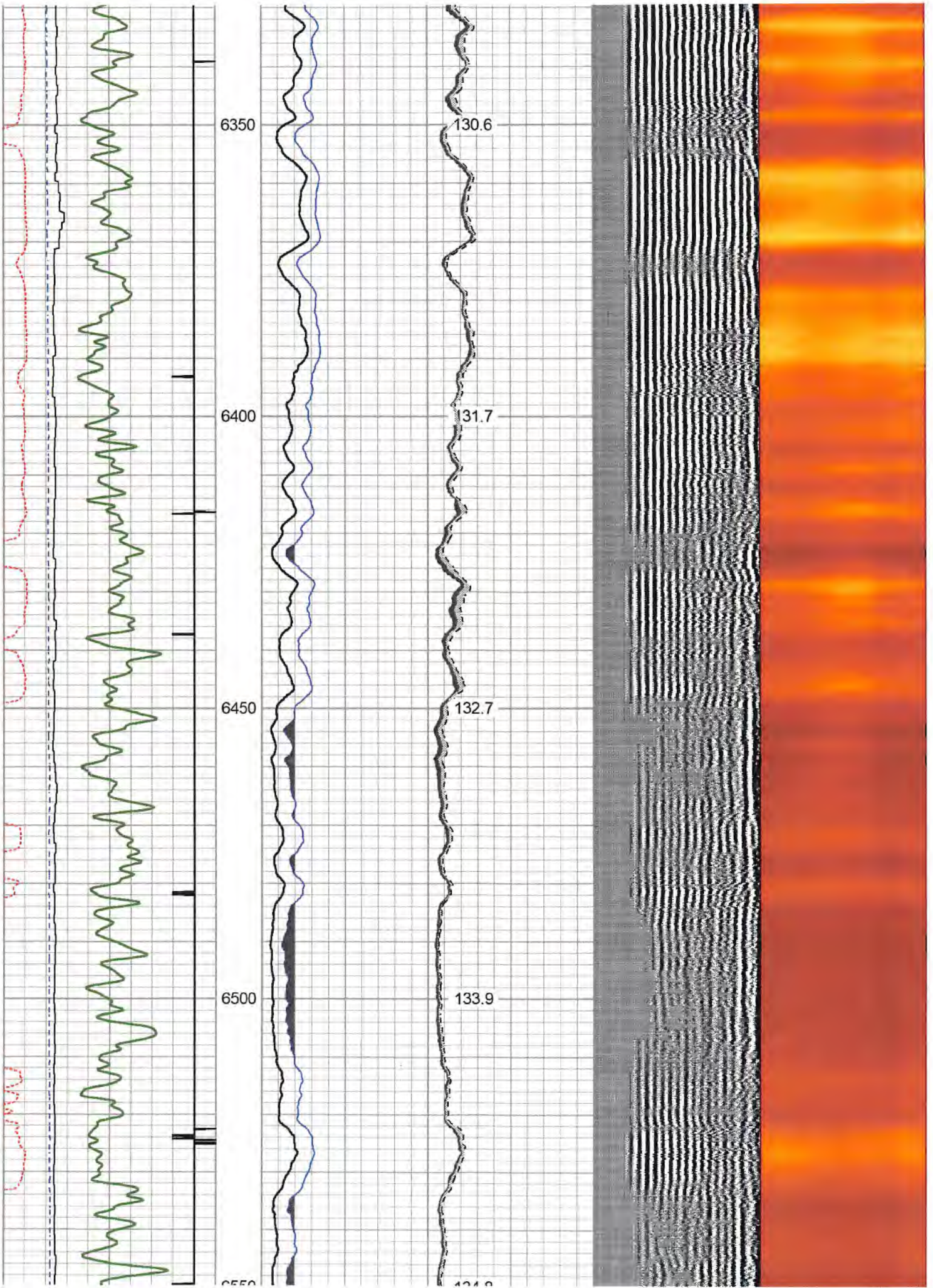


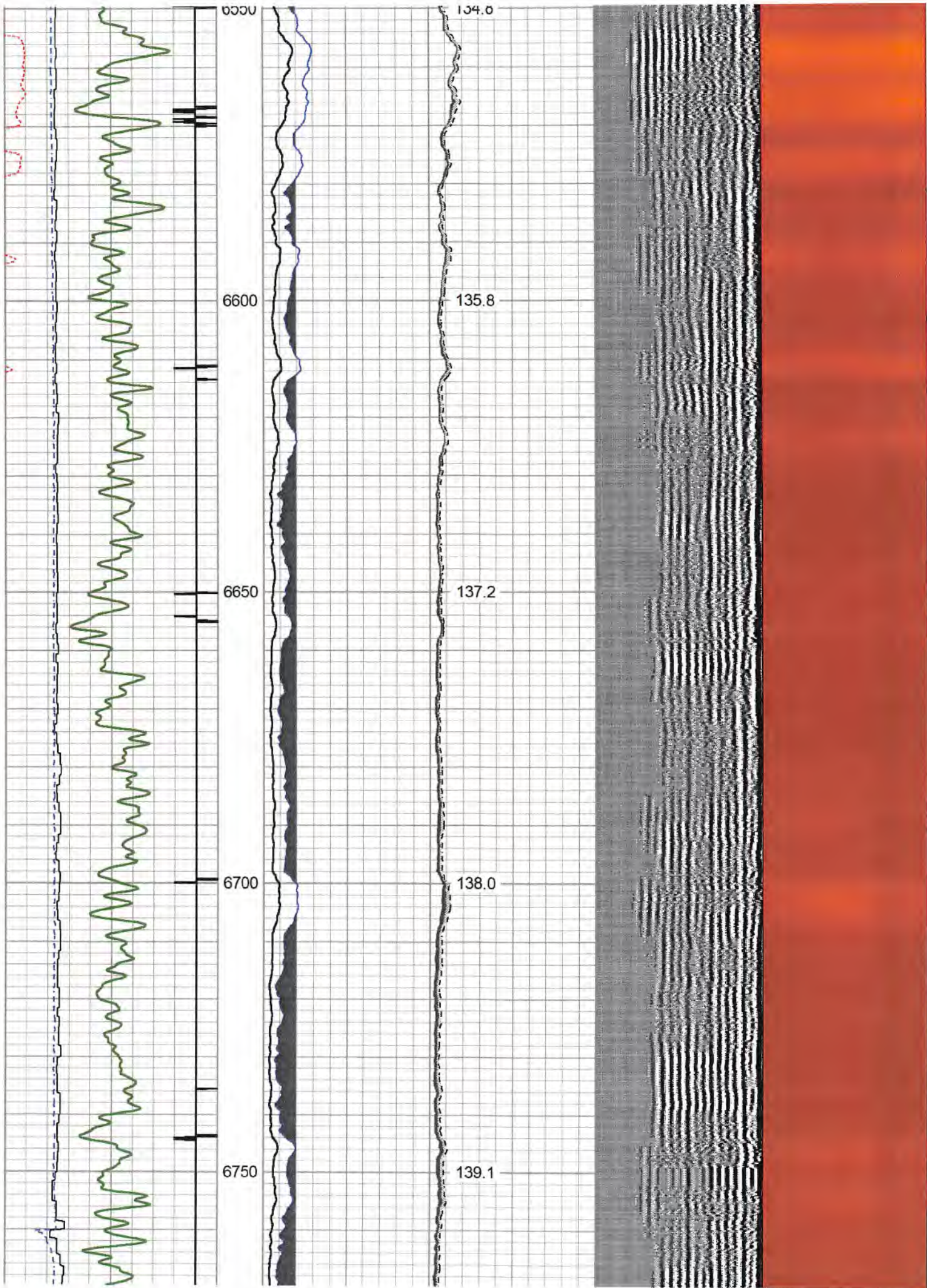


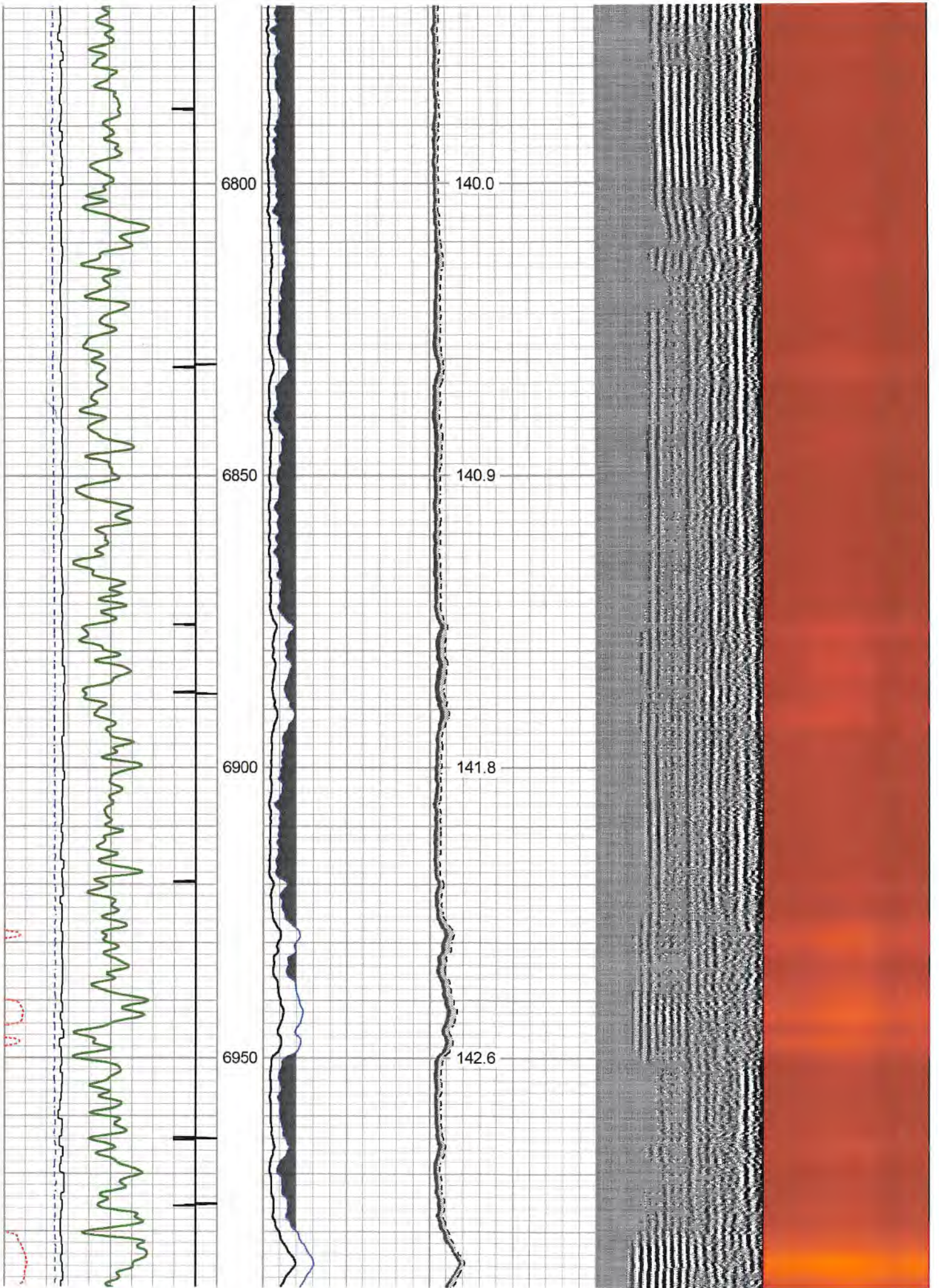


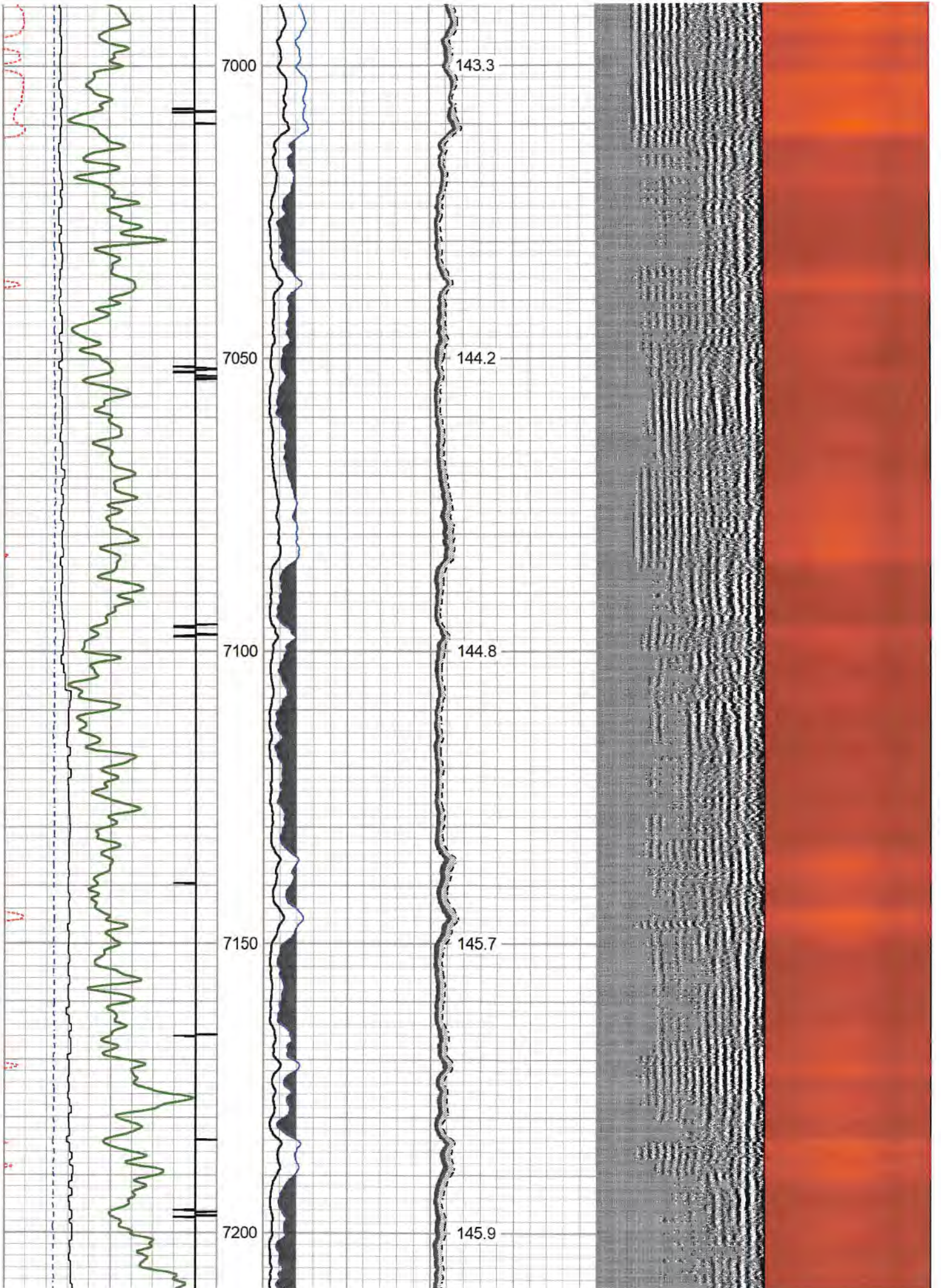


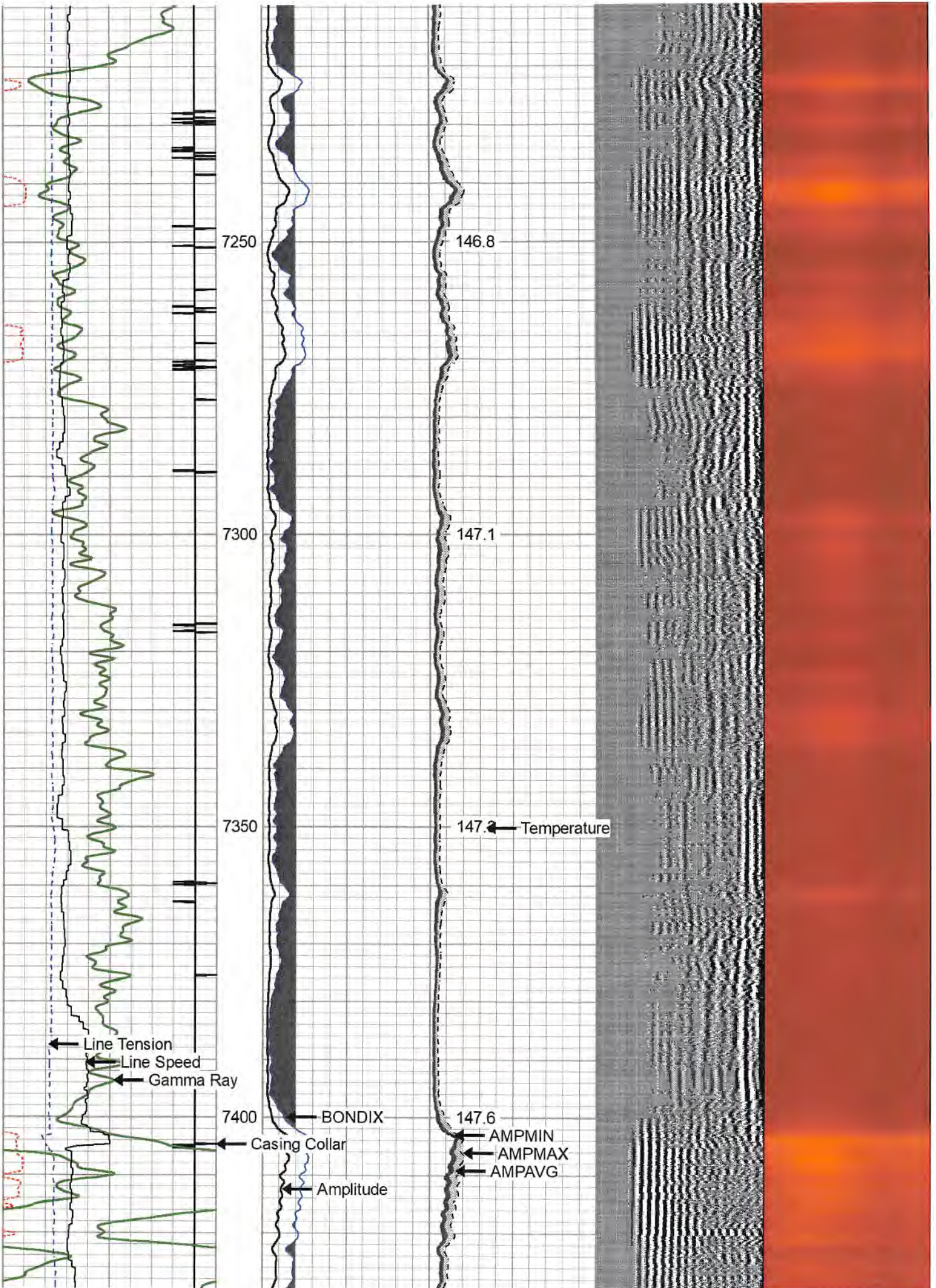


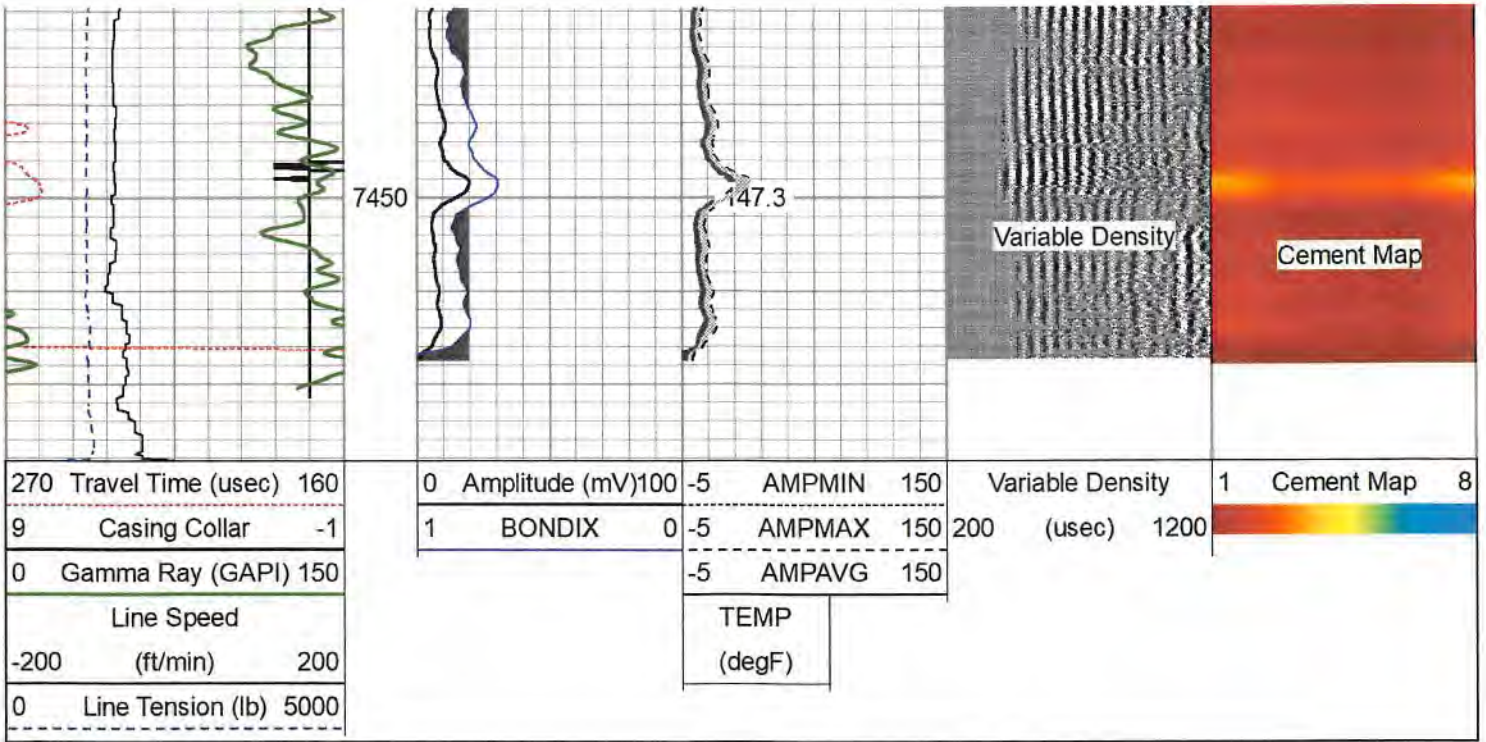






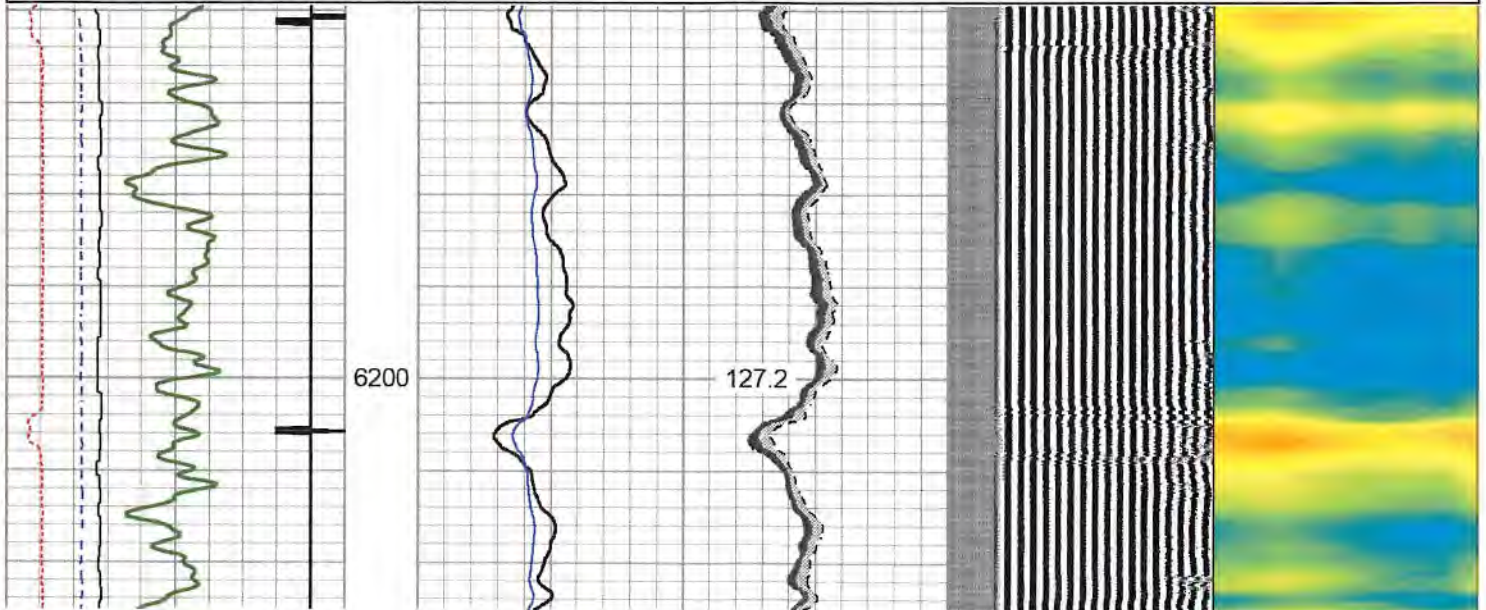
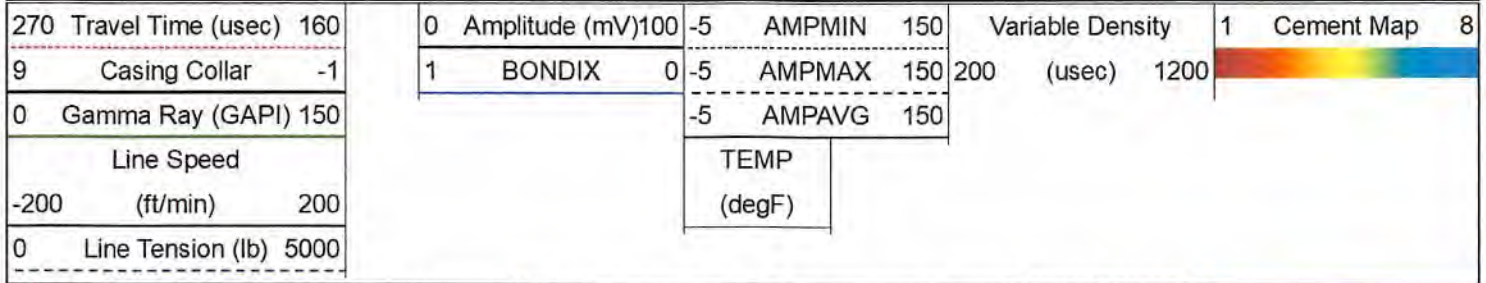


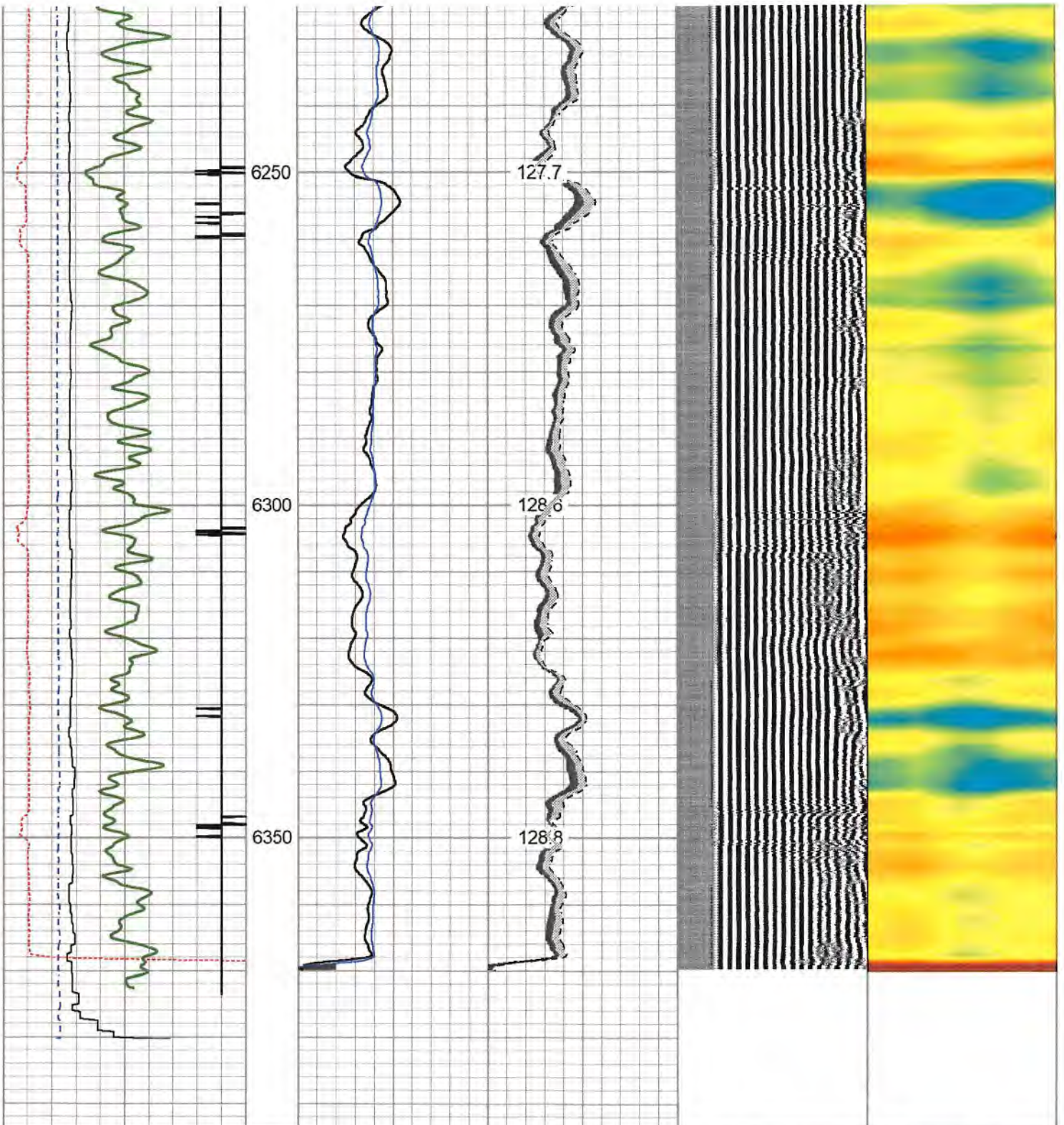





REPEAT PASS 0 PSI

Database File antero_peter_1h_rcbl_11_jan_2023.db
 Dataset Pathname peter1h/run1/pass3
 Presentation Format rcbl 2
 Dataset Creation Wed Jan 11 19:04:28 2023
 Charted by Depth in Feet scaled 1:240





270	Travel Time (uSec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200 (uSec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV
TEMP	7.875	147	5.5	0.361	20	71.9	2.2
MINATTN db/ft	PERFS	PPT usec	SRFTEMP degF	TDEPTH ft			
10.8	No	261	48	7474			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 CASEWGHT : Casing Weight
 MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
 MINATTN : Minimum Attenuation
 PERFS : Perforation Flag
 PPT : Predicted Pipe Time
 SRFTEMP : Surface Temperature
 TDEPTH : Total Depth

Calibration Report

Database File antero_peter_1h_rcbl_11_jan_2023.db
 Dataset Pathname peter1h/run1/pass5.1
 Dataset Creation Wed Jan 11 20:36:51 2023

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun Nov 13 11:04:25 2022
 Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.5000 GAPI/cps

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Segmented Cement Bond Log Calibration Report

Serial Number: 2.75"
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 339.675 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.881	2.200	71.921	79.834	1.615
CAL	0.993	1.456				
5'	-0.005	0.900	2.200	71.921	77.077	2.576
SUM						
S1	0.089	0.889	0.000	100.000	125.048	-11.146
S2	0.006	0.813	0.000	100.000	123.882	-0.732
S3	-0.001	0.871	0.000	100.000	114.770	0.086
S4	-0.005	0.919	0.000	100.000	108.216	0.544
S5	-0.009	0.936	0.000	100.000	105.804	0.944
S6	-0.013	0.949	0.000	100.000	104.002	1.314
S7	0.000	0.920	0.000	100.000	108.707	-0.042
S8	0.004	0.871	0.000	100.000	115.335	-0.424

Internal Reference Calibration, performed Wed NOV 23 14:17:52 2011:

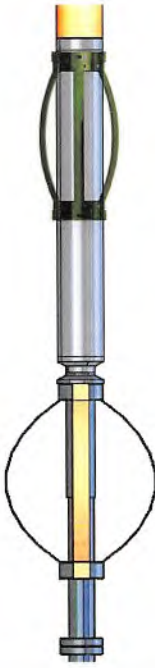
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.993	1.456	1.000	0.000

Air Zero Calibration, performed Wed Jan 11 18:02:46 2023:


	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	Length (ft)	O.D. (in)	Weight (lb)
			CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
			CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
Temp	14.10		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	11.86					
WVFS7	11.86					
WVFS6	11.86					
WVFS5	11.86					
WVFS4	11.86					
WVFS3	11.86					
WVFS2	11.86					
WVFS1	11.86					
WV3FT	11.86					
WV5FT	10.86					
HeadVolt	7.61					
WVFCAL	7.61					
CCL	6.71					

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GR	5.38		GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
			CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
			Centralizer-Probe_2.75 Bowspring Centralizer	2.83	2.75	24.00

Dataset: antero_peter_1h_rcbl_11_jan_2023.db: field/peter1h/run1/pass5.1
 Total length: 18.03 ft
 Total weight: 182.00 lb
 O.D.: 4.88 in

	Company	ANTERO RESOURCES
	Well	PETER 1H
	Field	SOUTH CANTON
	County	DODDRIDGE
	State	WV

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