



Nine

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

Country U.S.A.

Company Antero Resources

Well Trunk 2H

Field Marcellus

County Tyler

State WV

Country U.S.A.

Location: API #: 47-095-02816

Other Services

SEC TWP RGE
Permanent Datum Ground Level Elevation 937'
Log Measured From Kelly Bushing 30'
Drilling Measured From Kelly Bushing

Elevation

K.B. 967'
D.F. 967'
G.L. 937'

Company Antero Resources
Well Trunk 2H
Field Marcellus
County Tyler
State WV

Date 02-April-2023

Run Number ONE

Depth Driller 20,217'

Depth Logger 6,793'

Bottom Logged Interval 6,699'

Top Log Interval Surface

Open Hole Size NA

Type Fluid Fresh Water

Density / Viscosity 8.6 LB/GAL

Max. Recorded Temp. 139.0

Estimated Cement Top N/A

Time Well Ready 14:00

Time Logger on Bottom 14:40

Equipment Number 116

Location Charleroi, PA

Recorded By Calvin Drummond

Witnessed By Cory Porter

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To
Casing Record							
Surface String		13.375"		Wg/Ft		Top	Bottom
Prot. String		9.625"		54.5#		Surface	607'
Production String		5.5		36#		Surface	3,450'
Liner				23#		Surface	20,217'

RECEIVED
Office of Oil and Gas
AUG 21 2023
WV Department of
Environmental Protection

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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 at (5,657' - 5,667')
Depth Correction +2

Main Pass 1500 PSI
Repeat Pass 0 PSI

Thank You For Choosing Nine Energy Service Wireline.Charleroi,PA

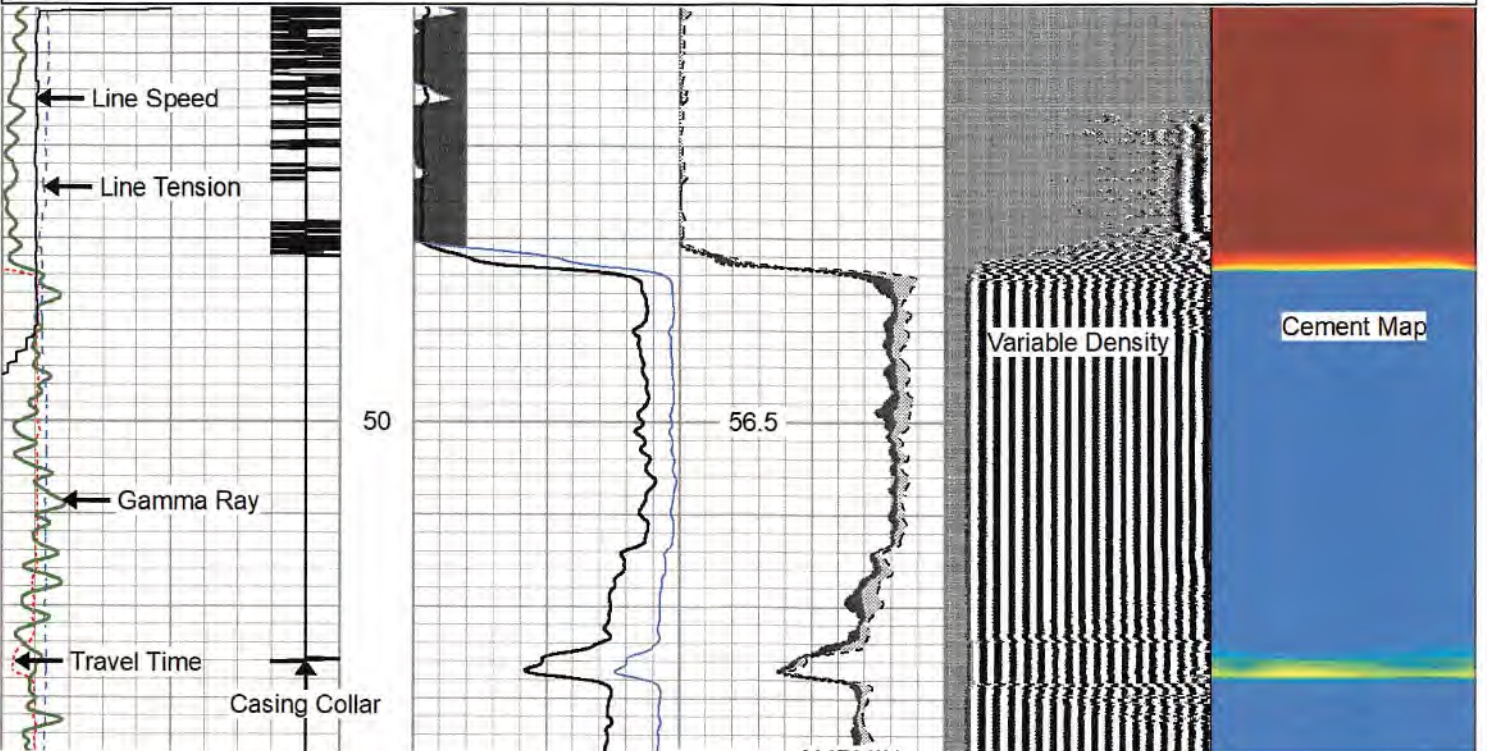
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Office of Oil and Gas
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WV Department of
Environmental Protection

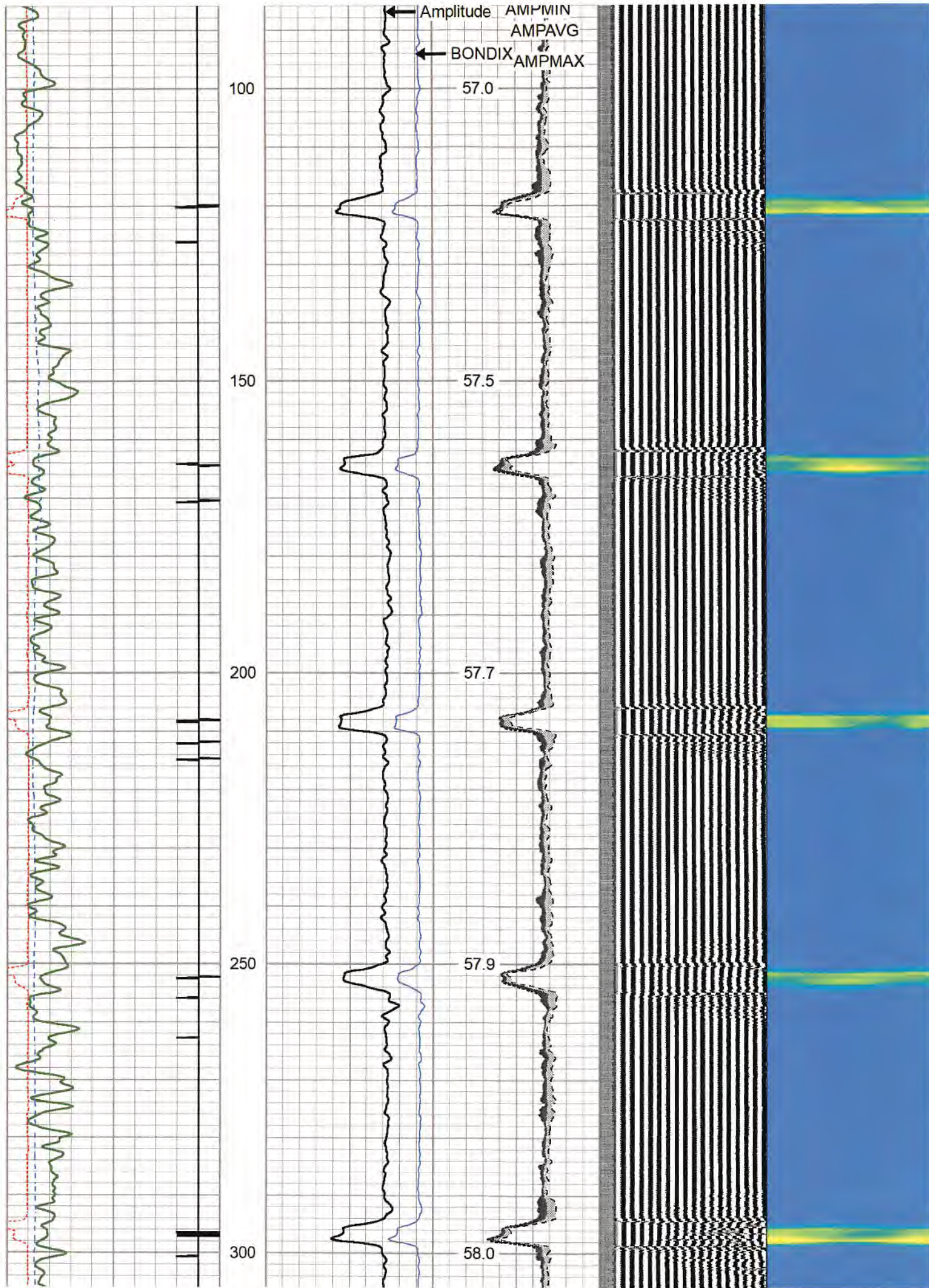


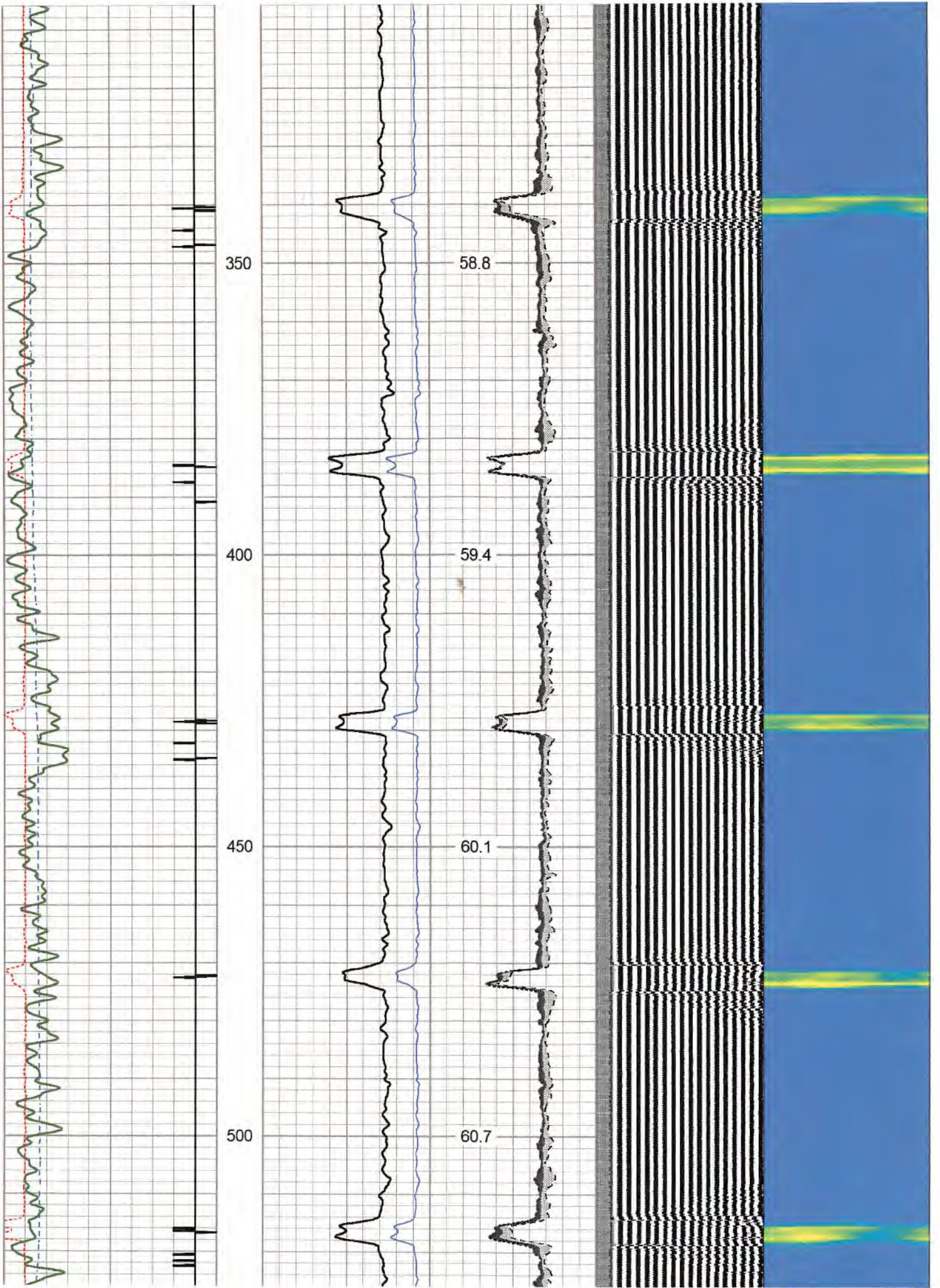
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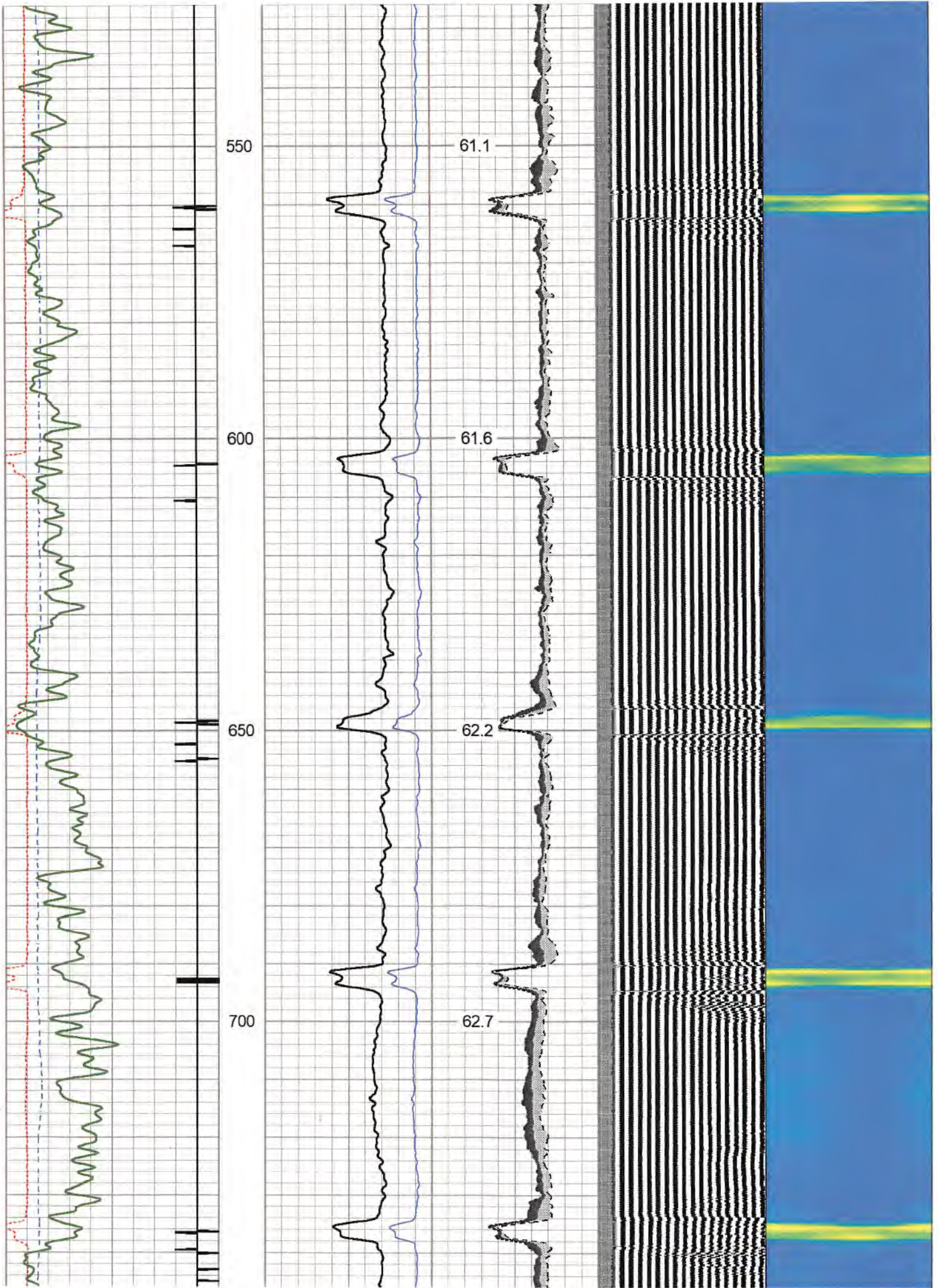
Database File antero_trunk_2h_rcbl_02_april_2023.db
Dataset Pathname pass4
Presentation Format rcbl-bond index for antero 1020
Dataset Creation Sun Apr 02 14:43:57 2023
Charted by Depth in Feet scaled 1:240

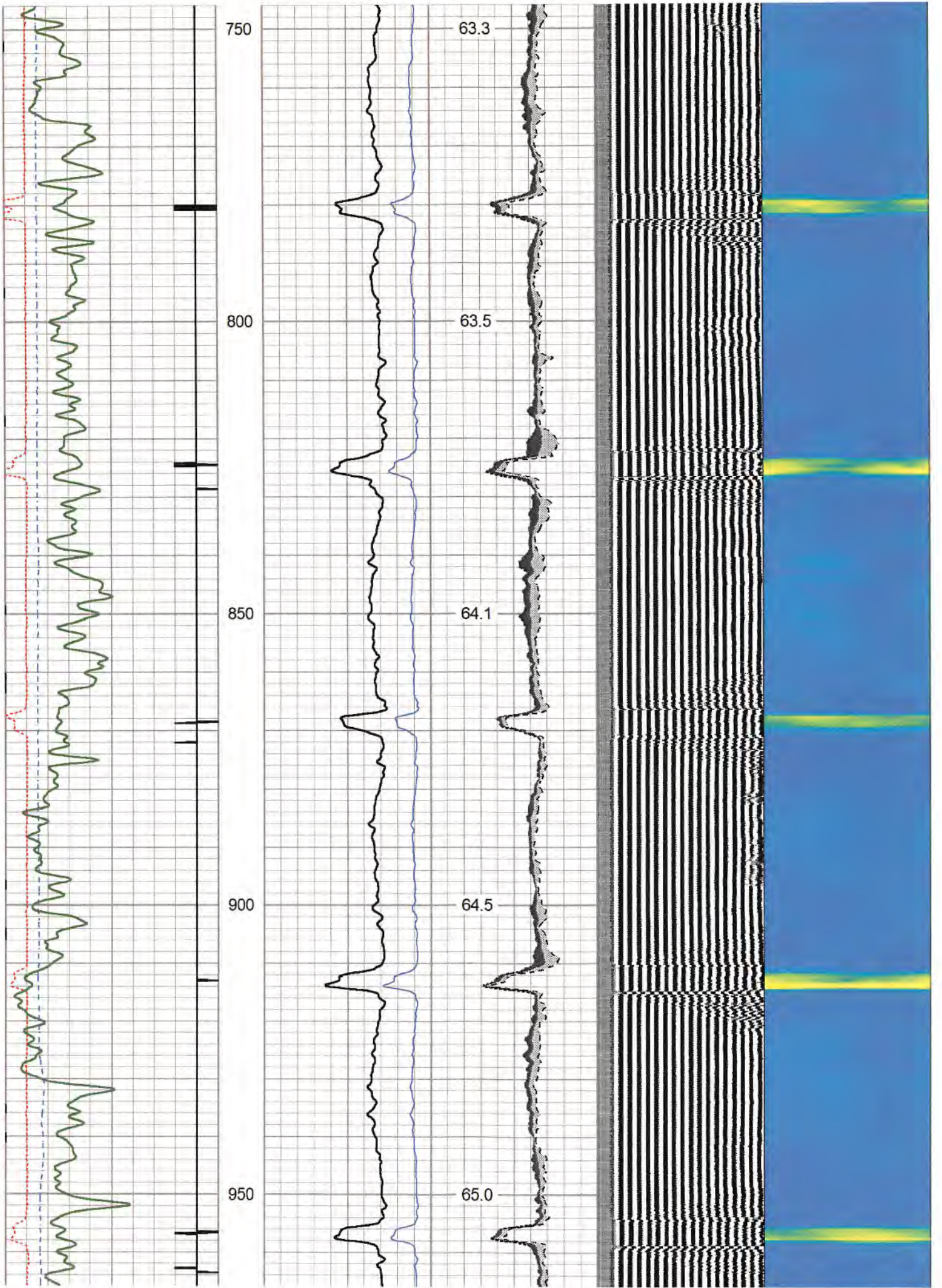
268	Travel Time (usec)	168	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	300 (usec)	1200		
0	Gamma Ray (GAPI)	150	0	AMPAVG	150	TEMP						
Line Speed						(degF)						
-100	(ft/min)	100										
0	Line Tension (lb)	2000										

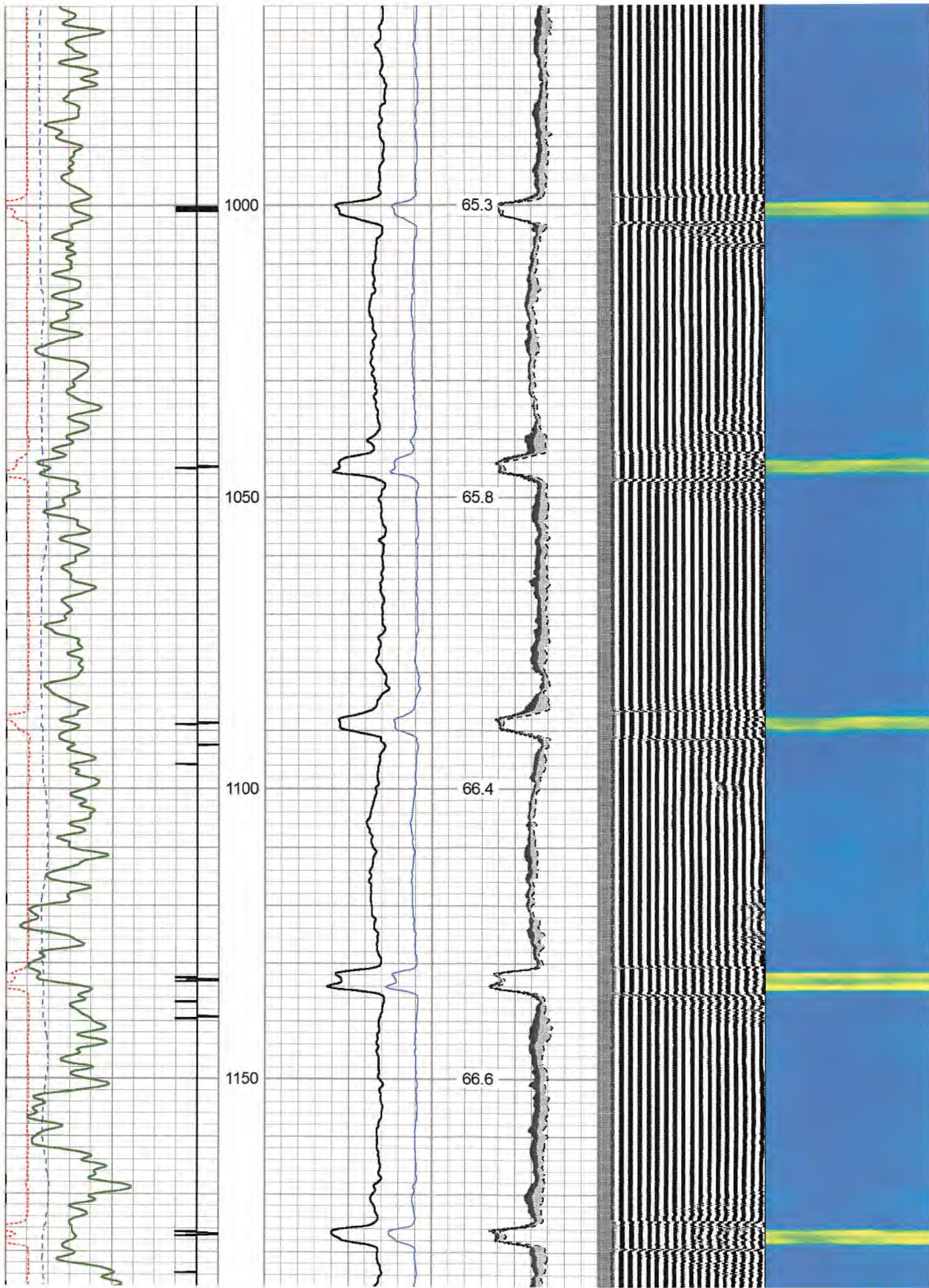


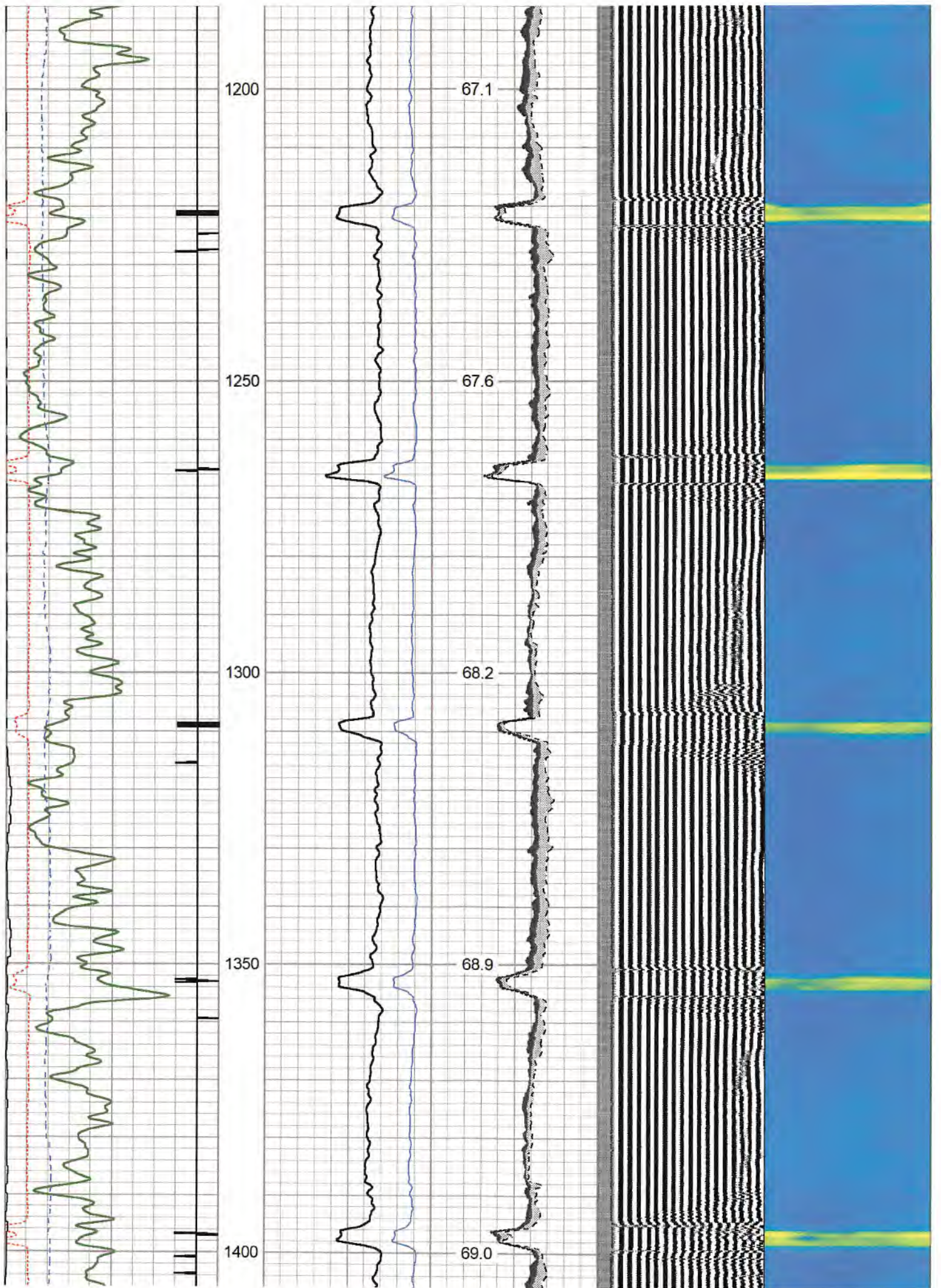


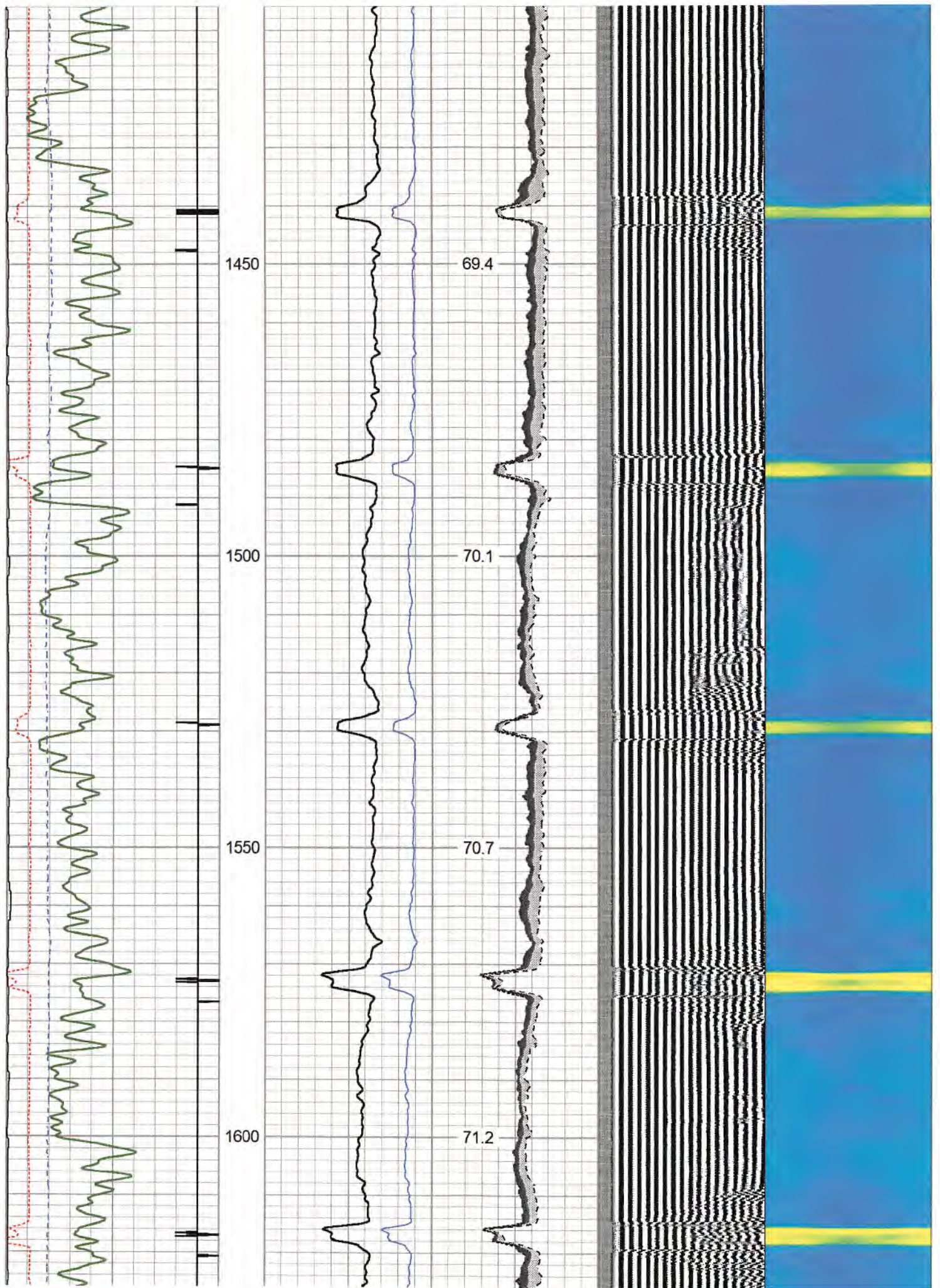


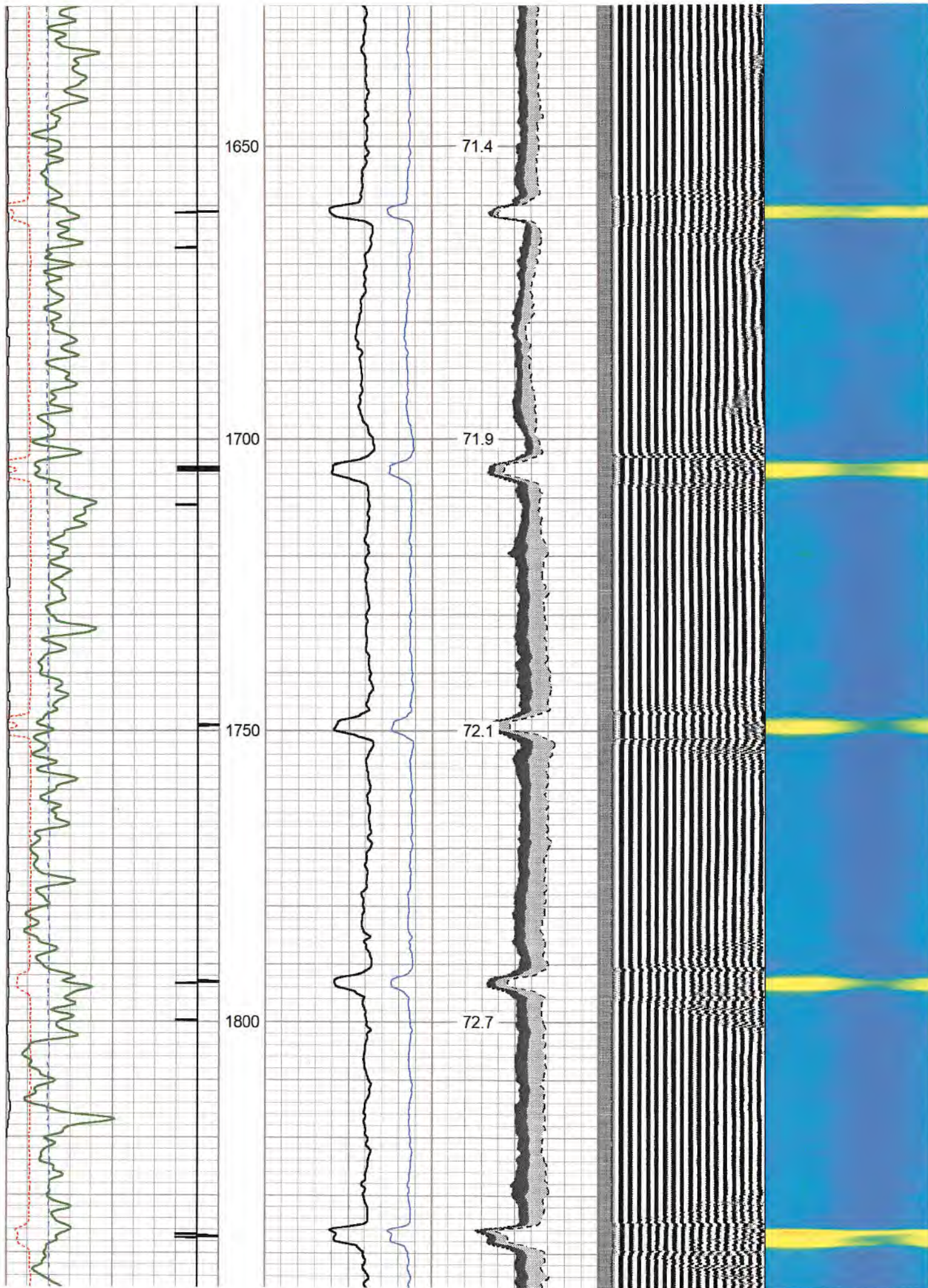


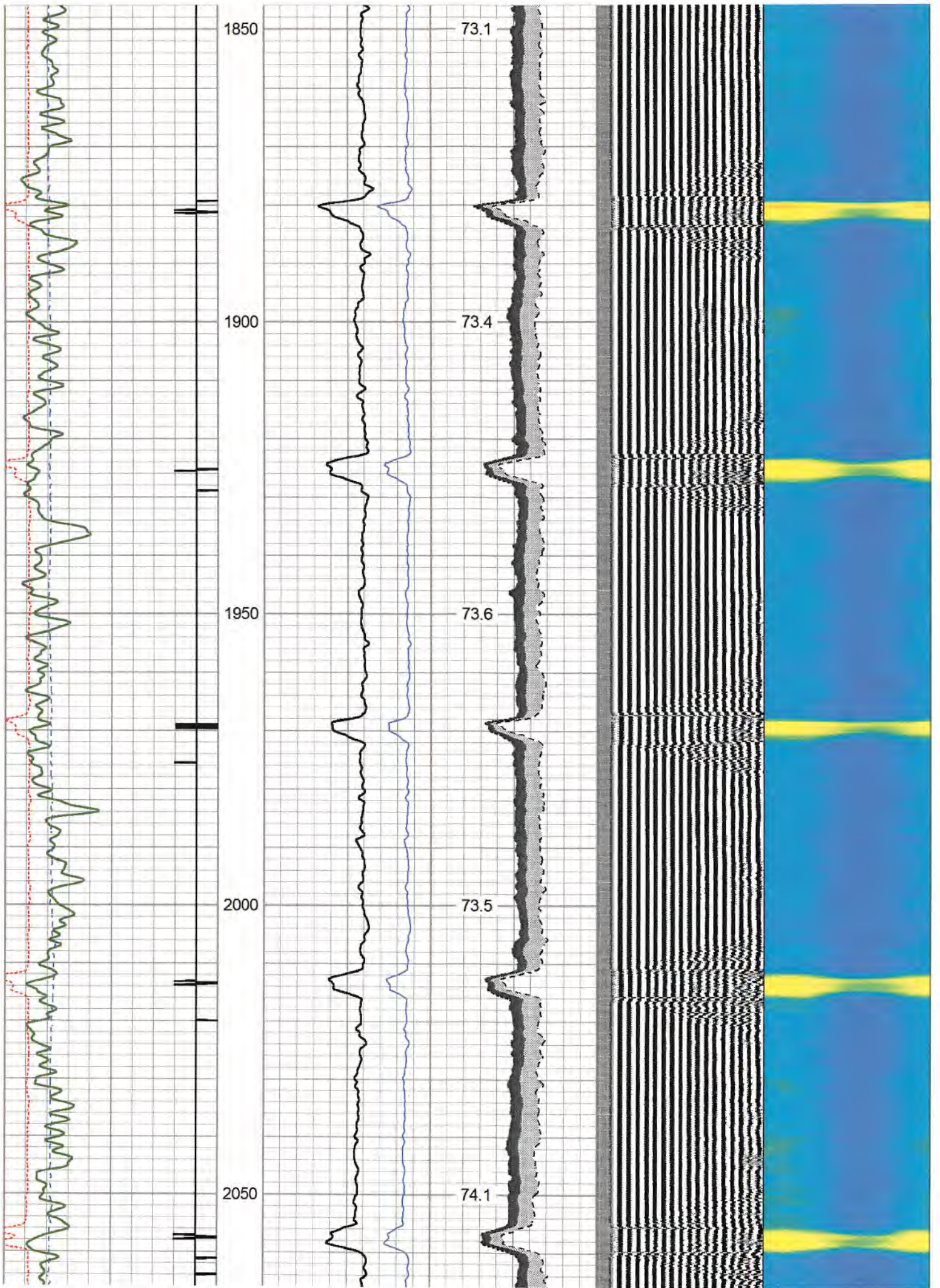


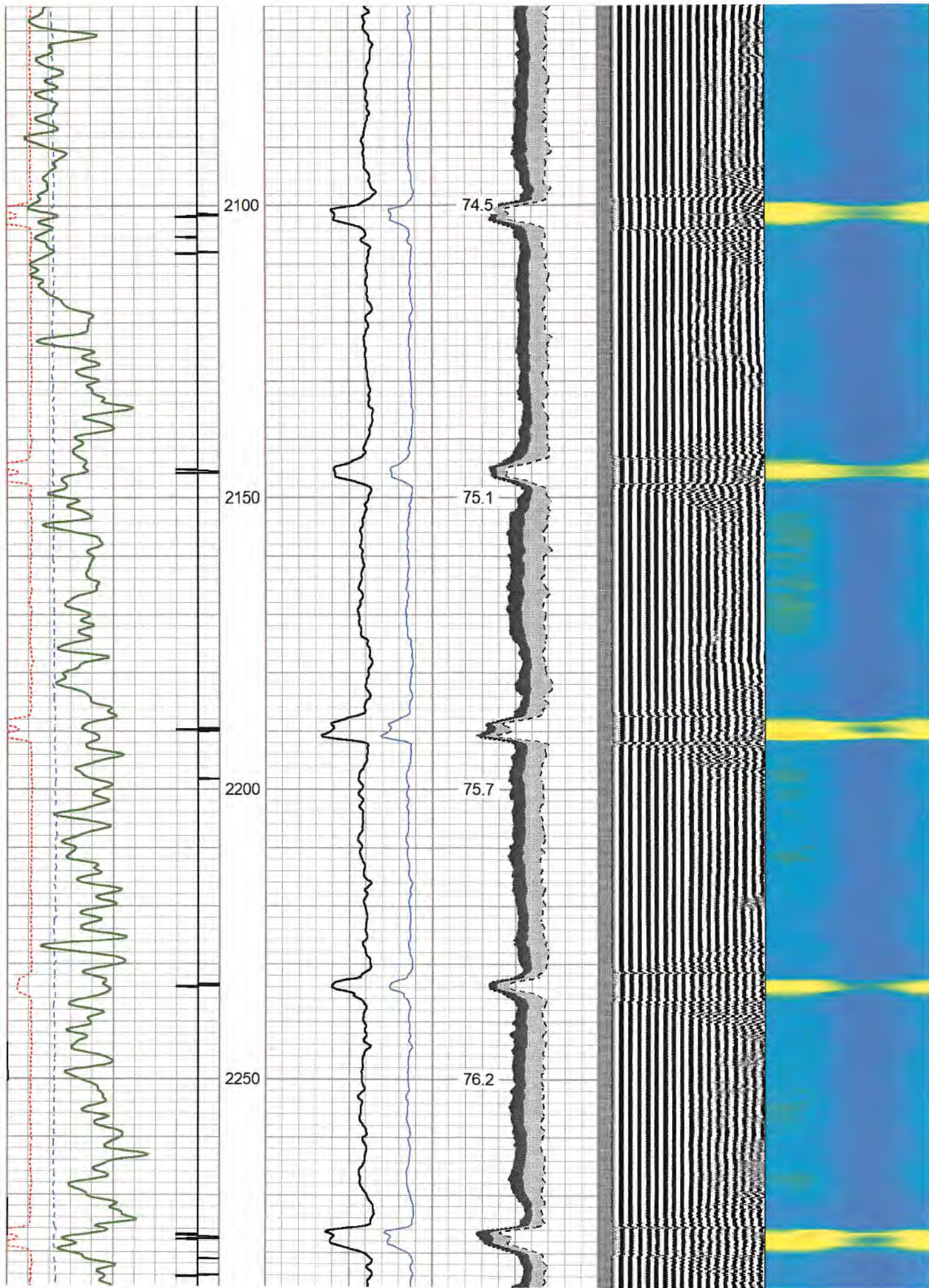


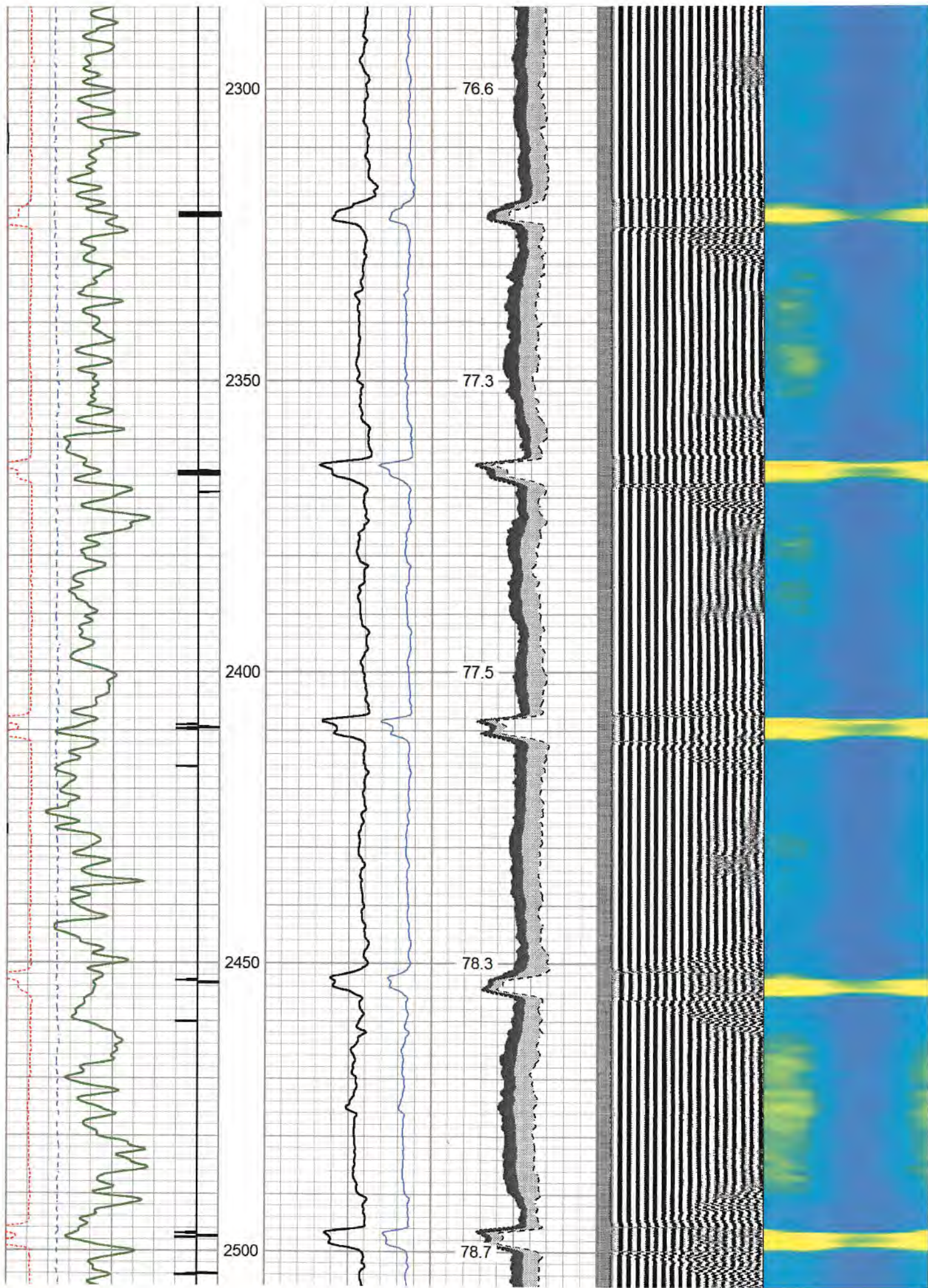


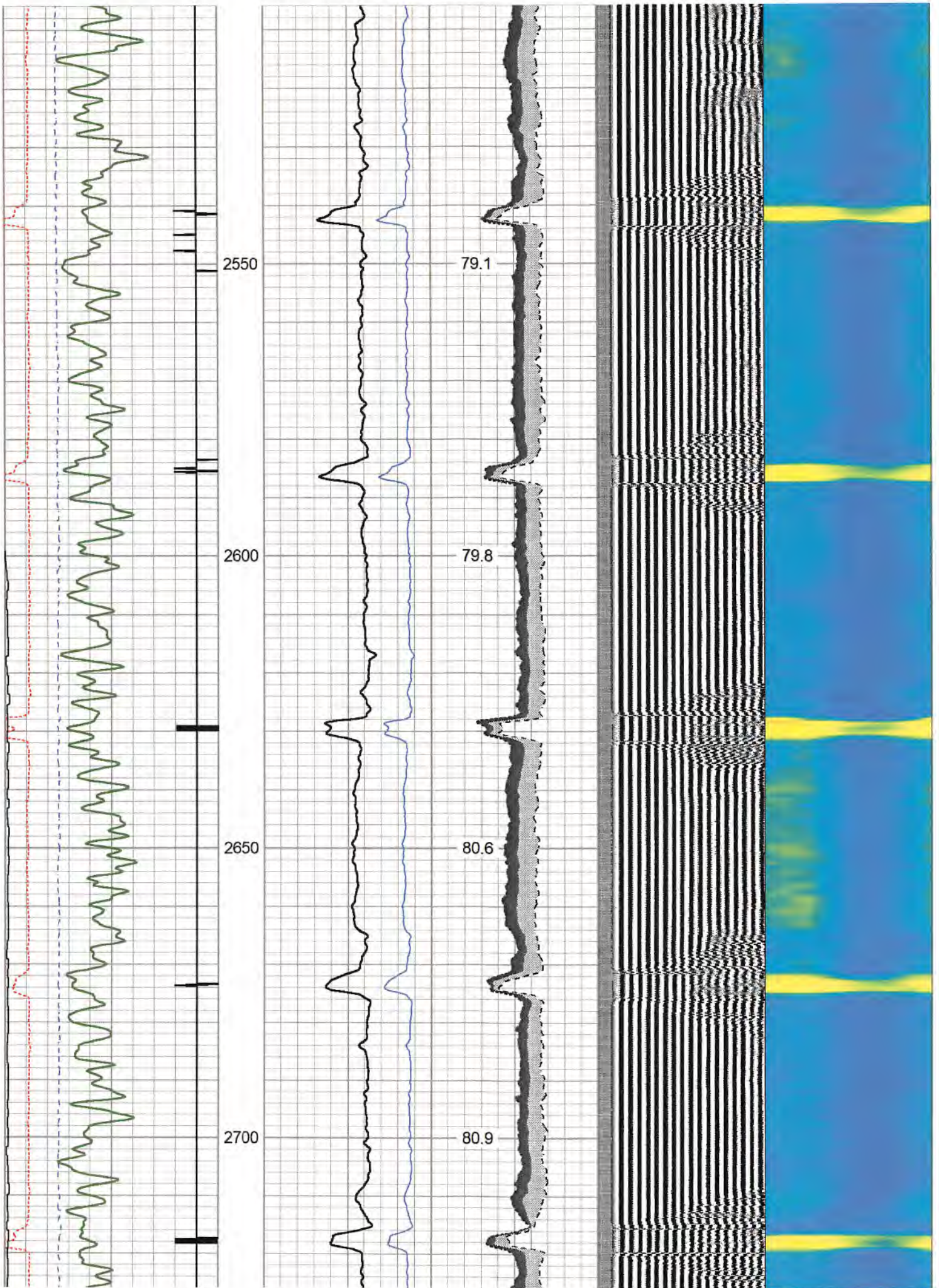


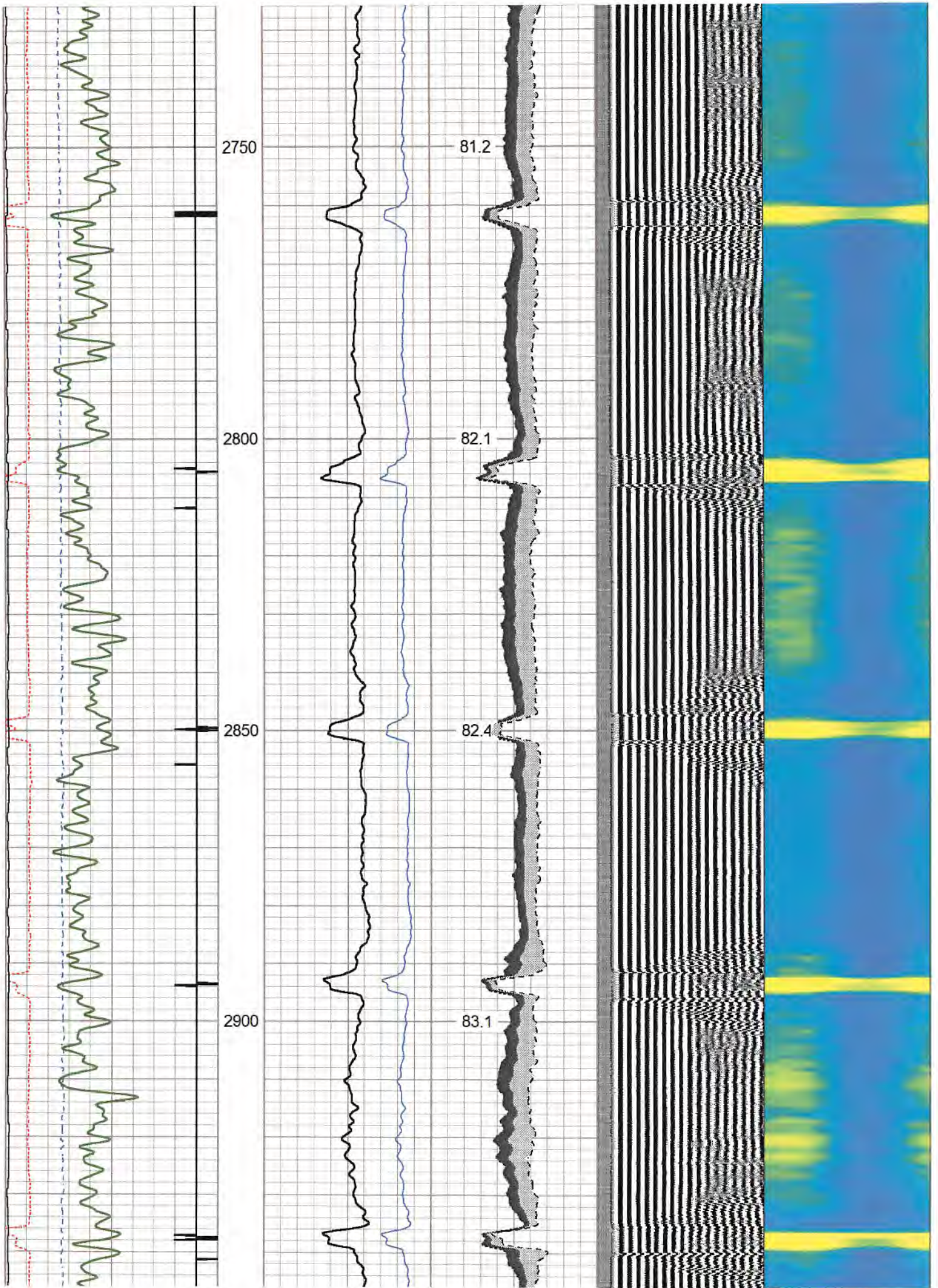


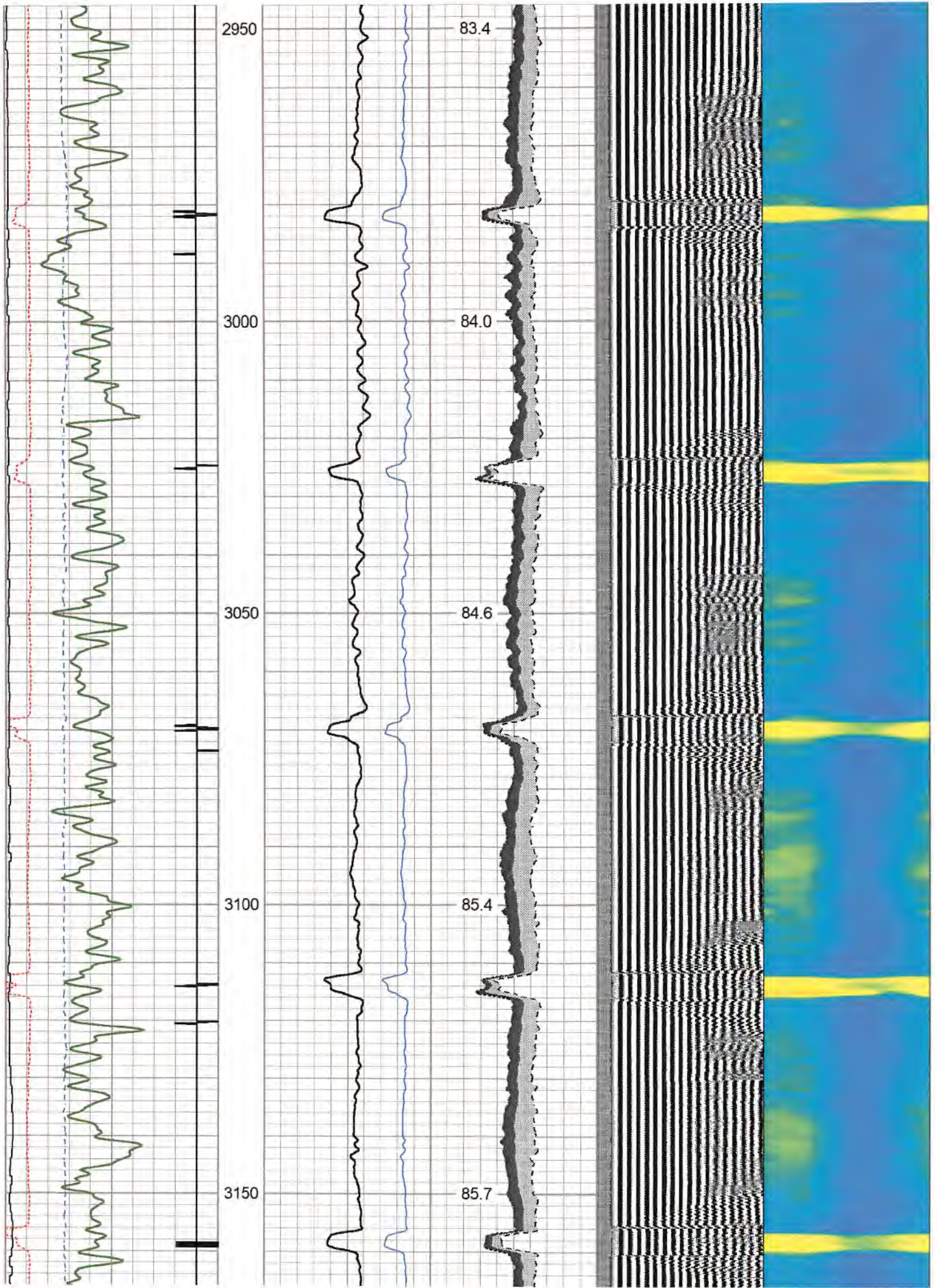


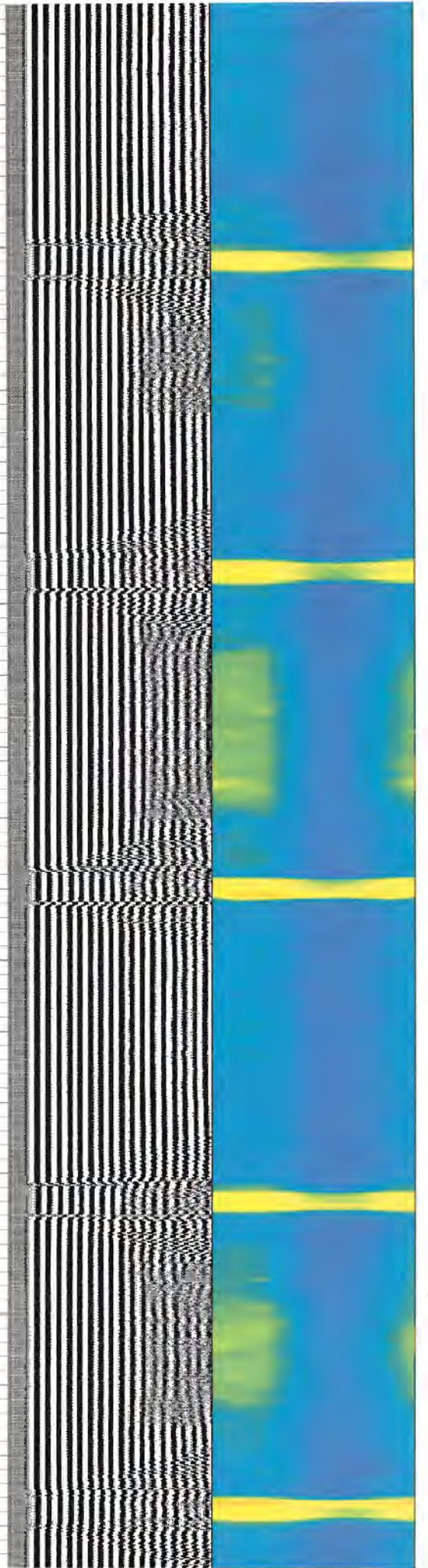
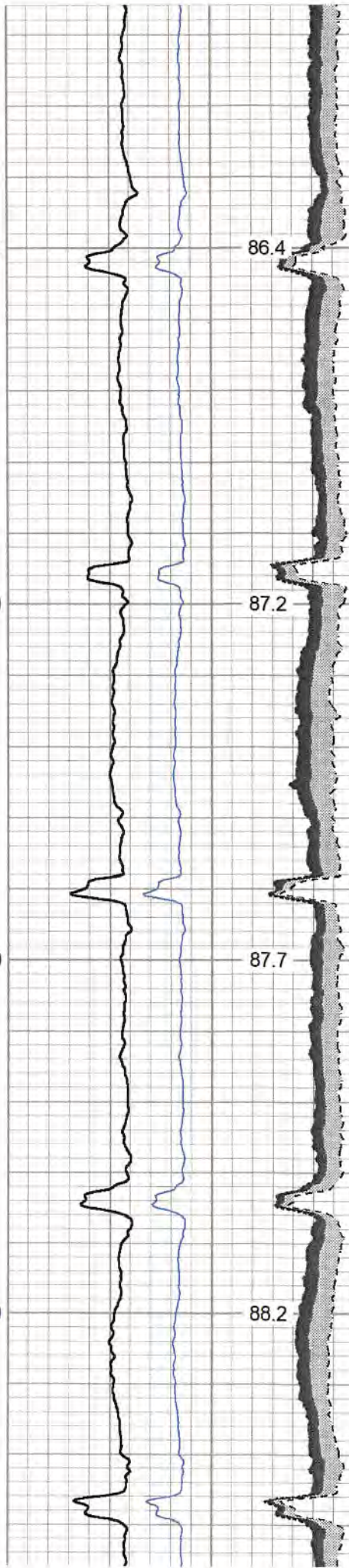
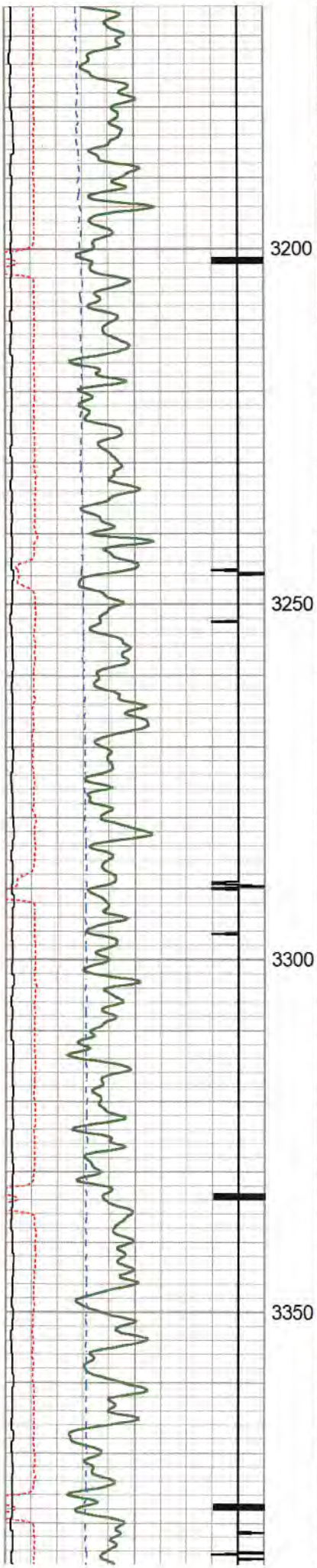


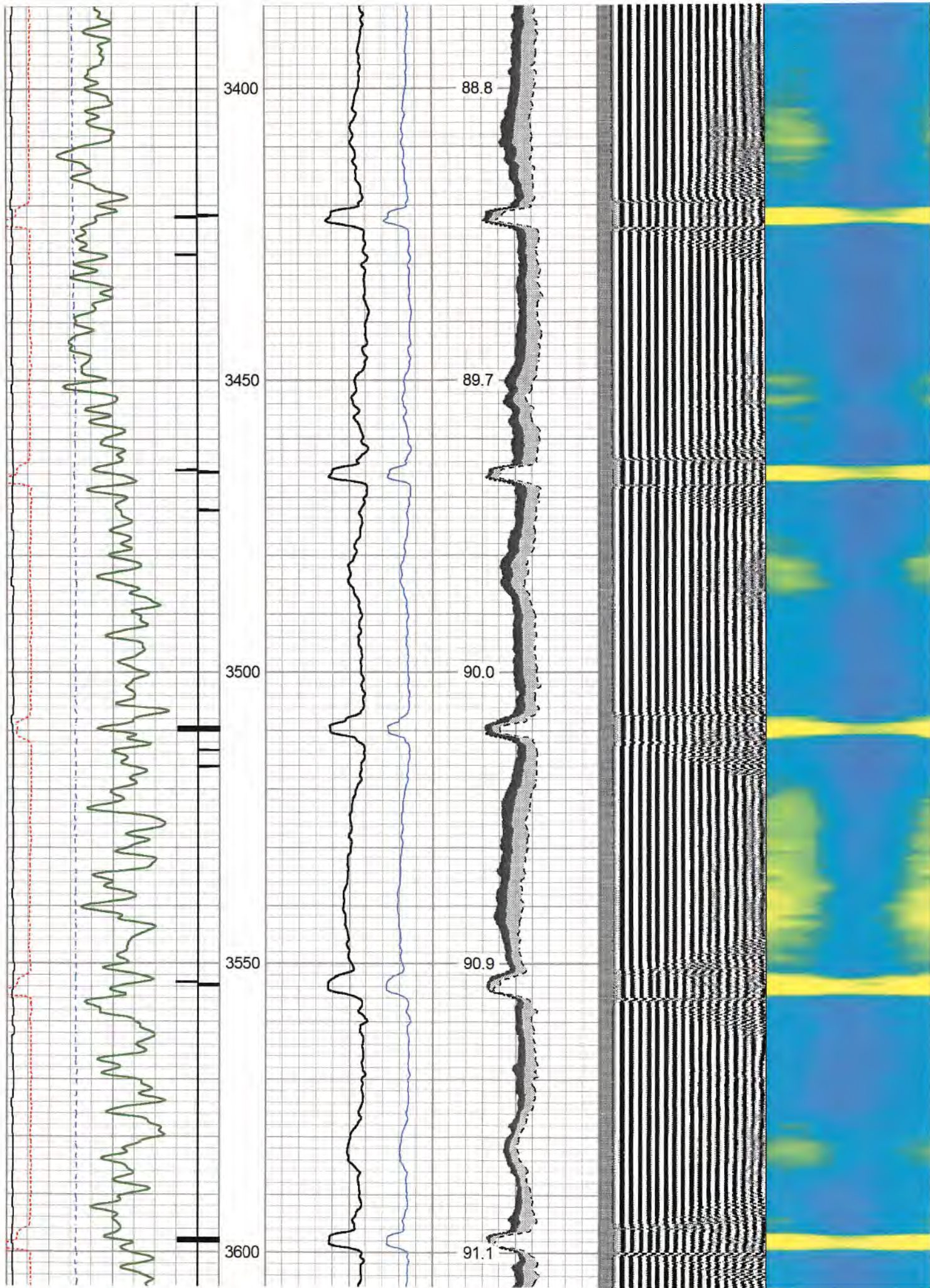


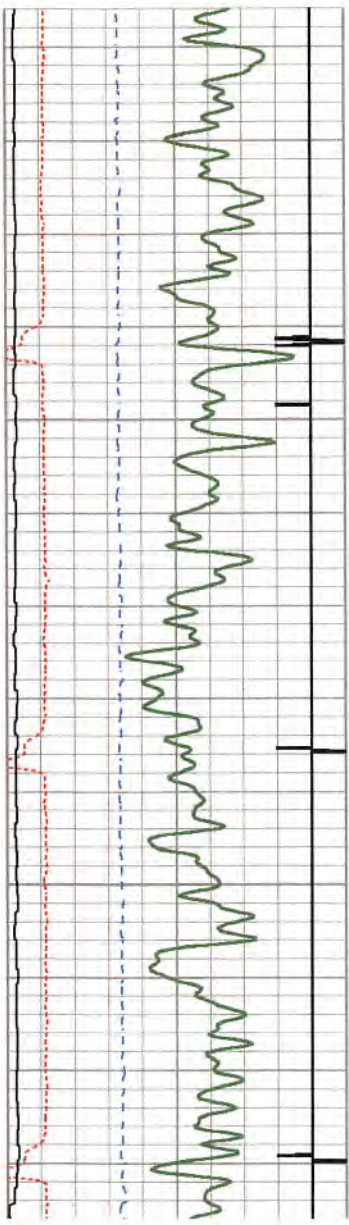






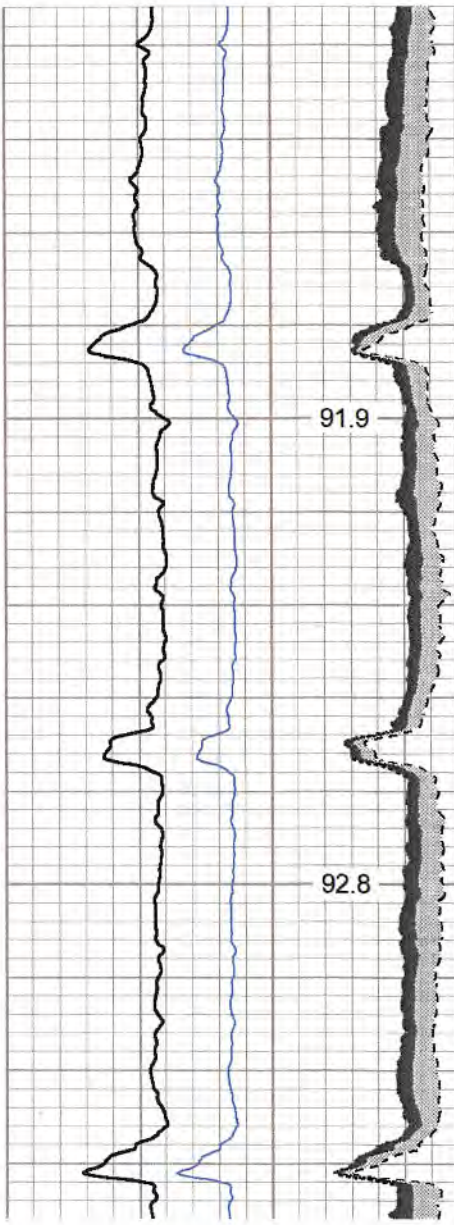






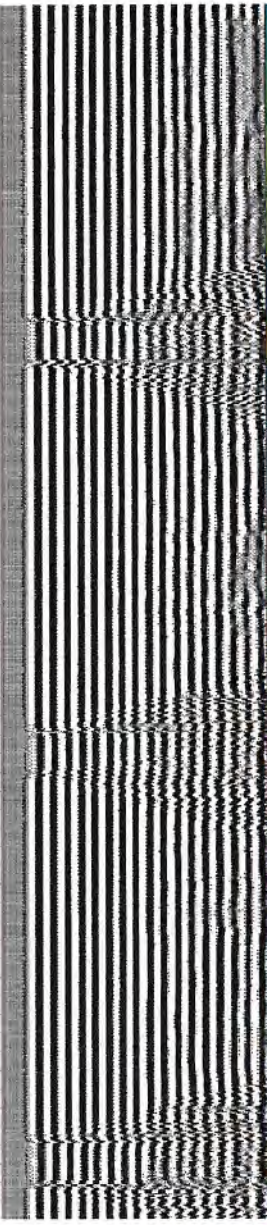
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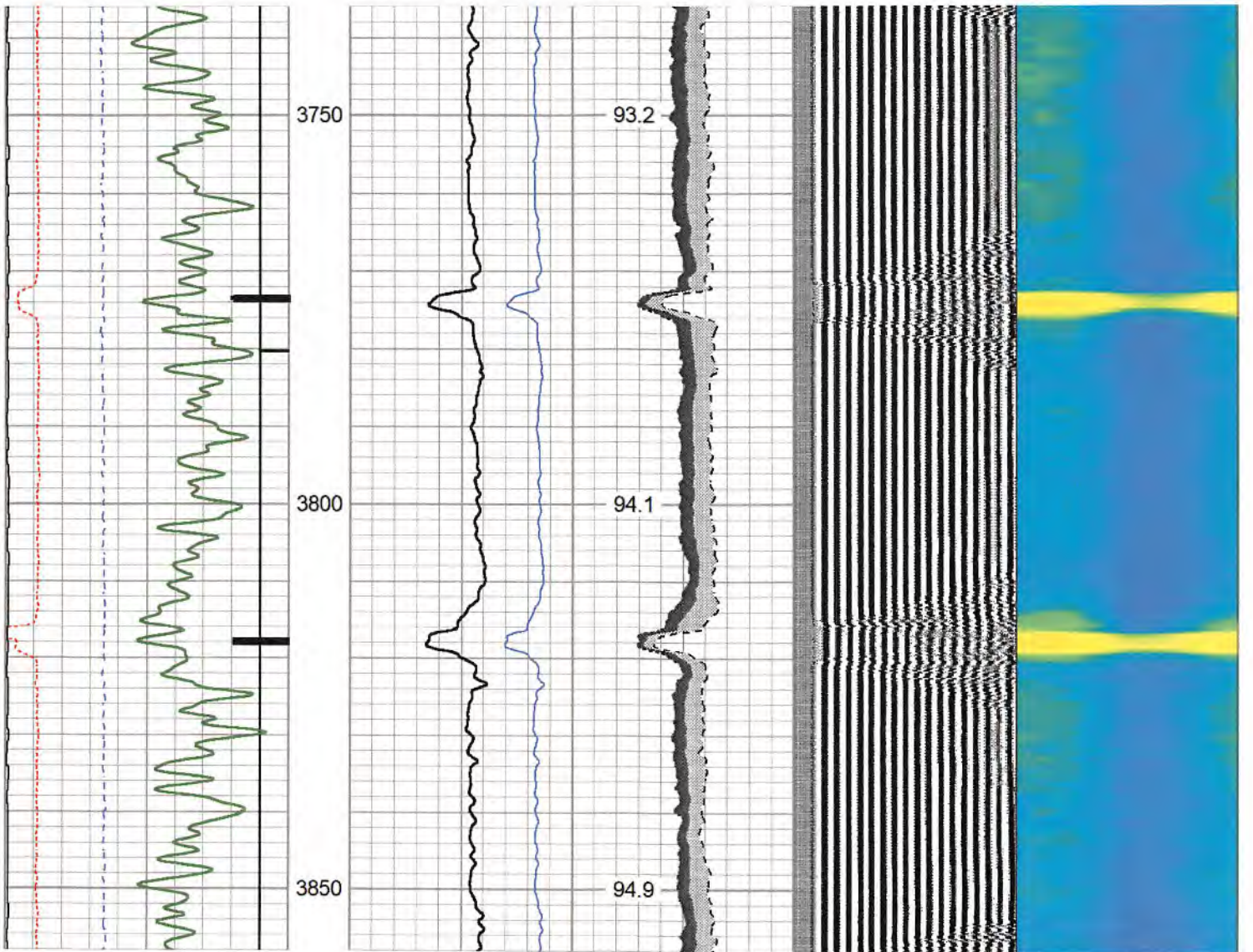
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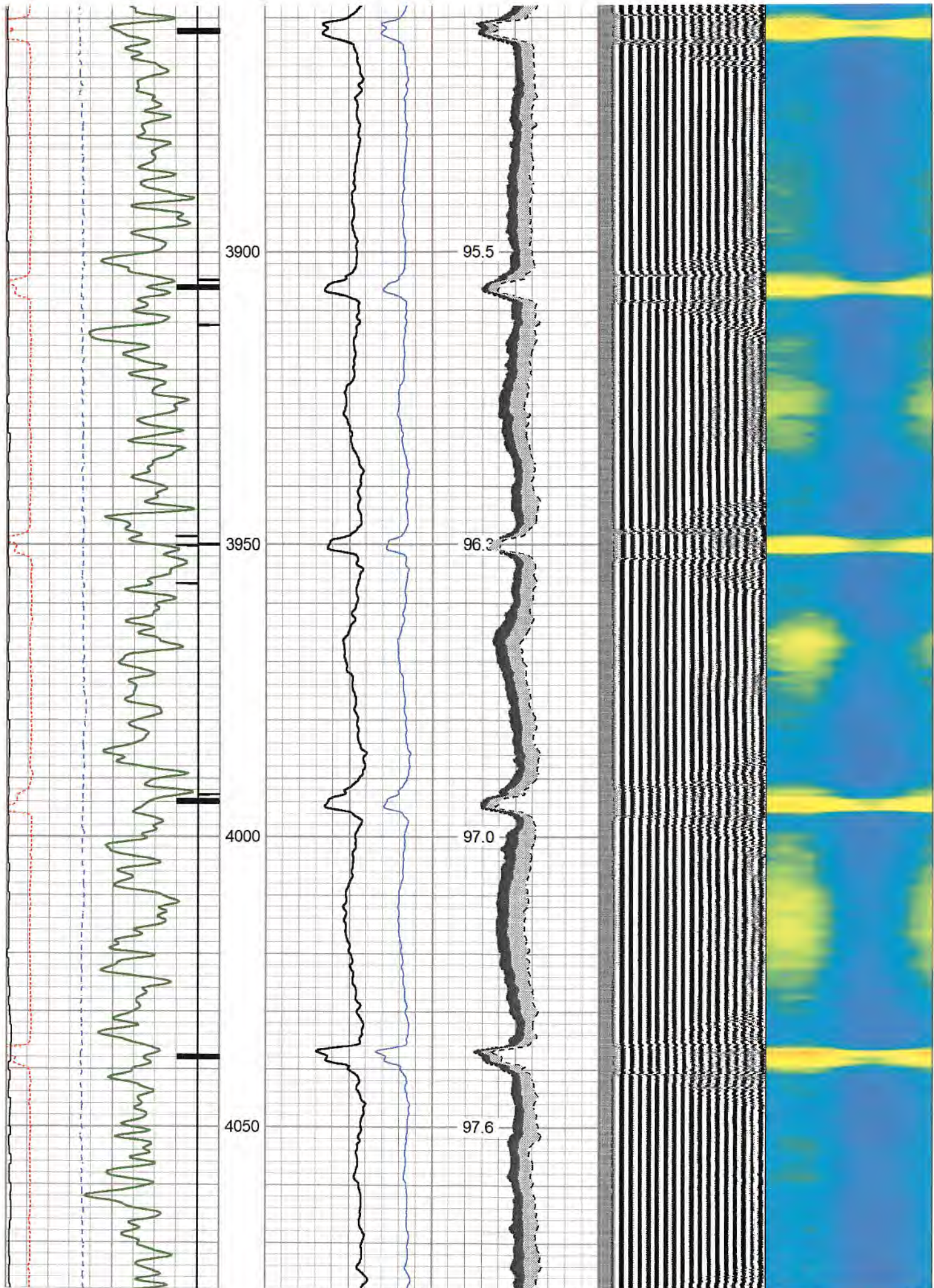


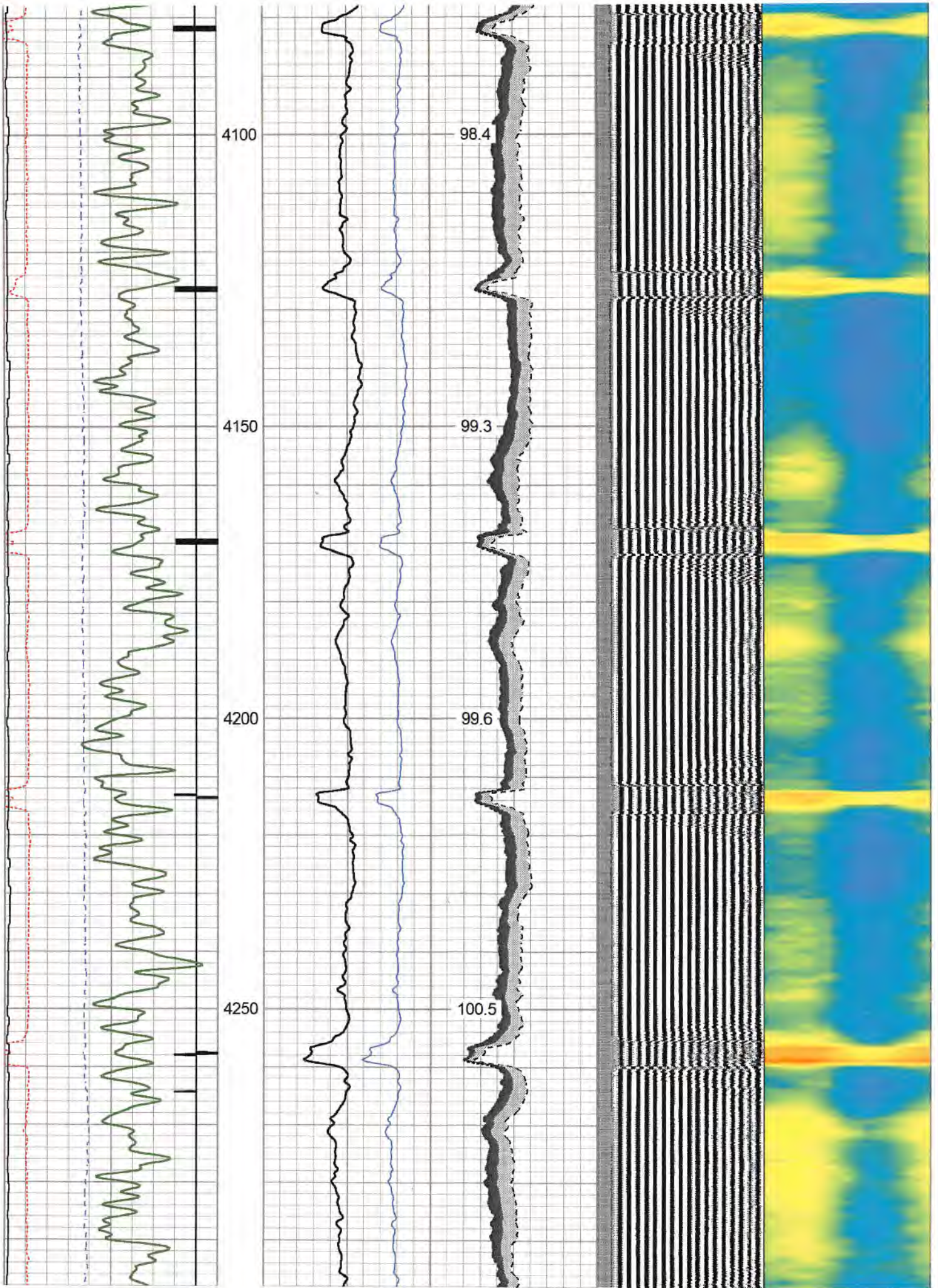
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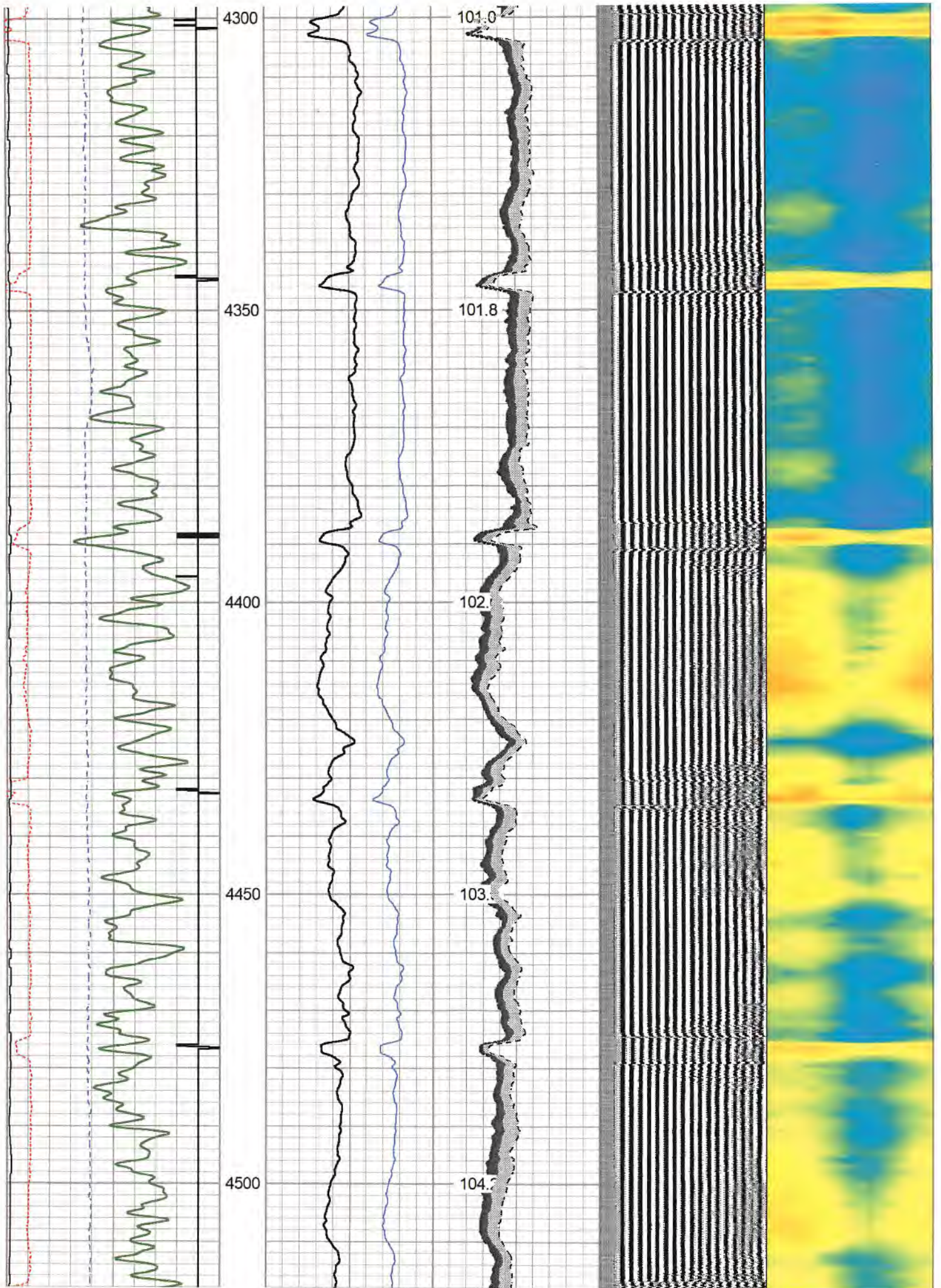
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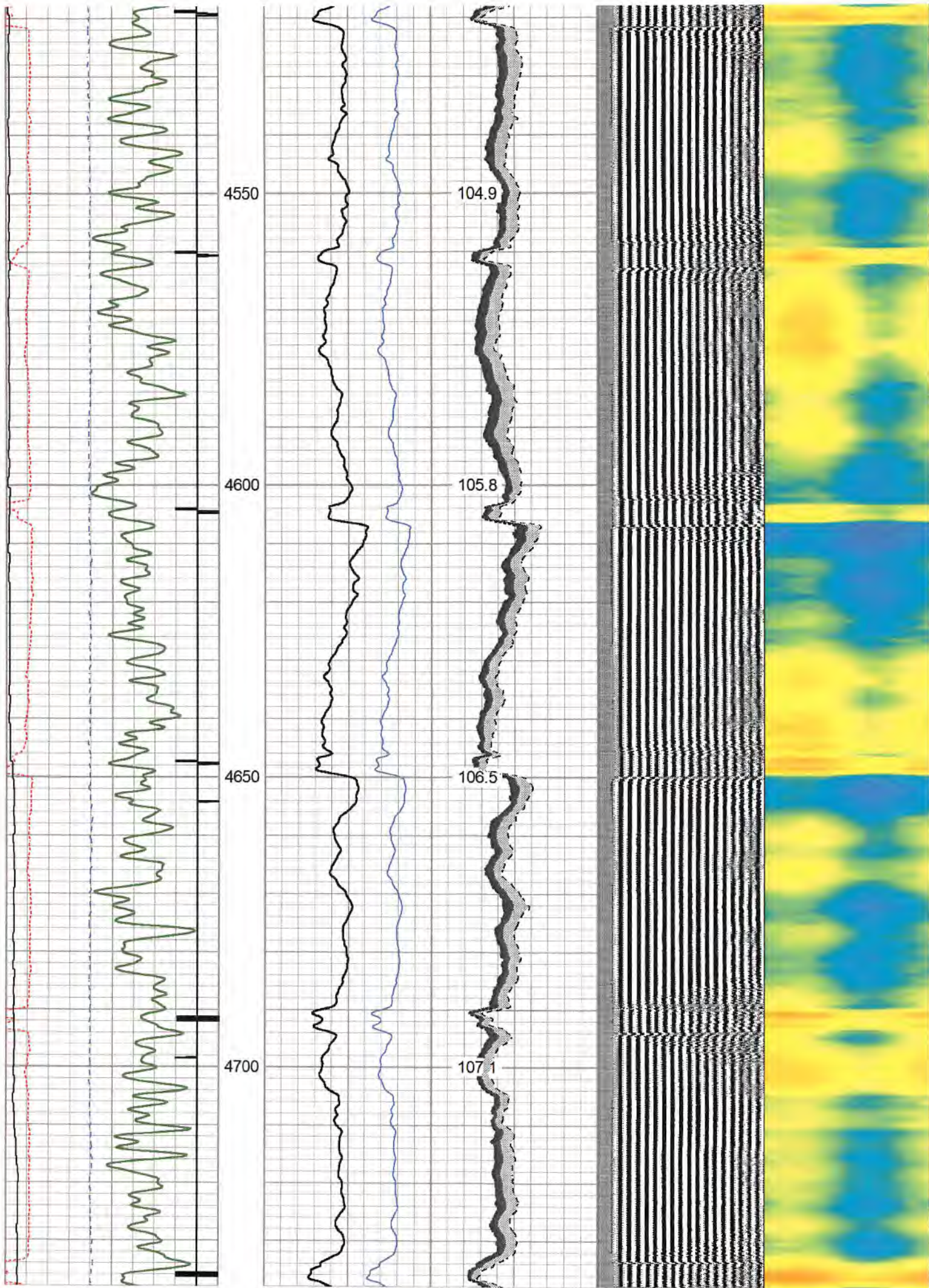


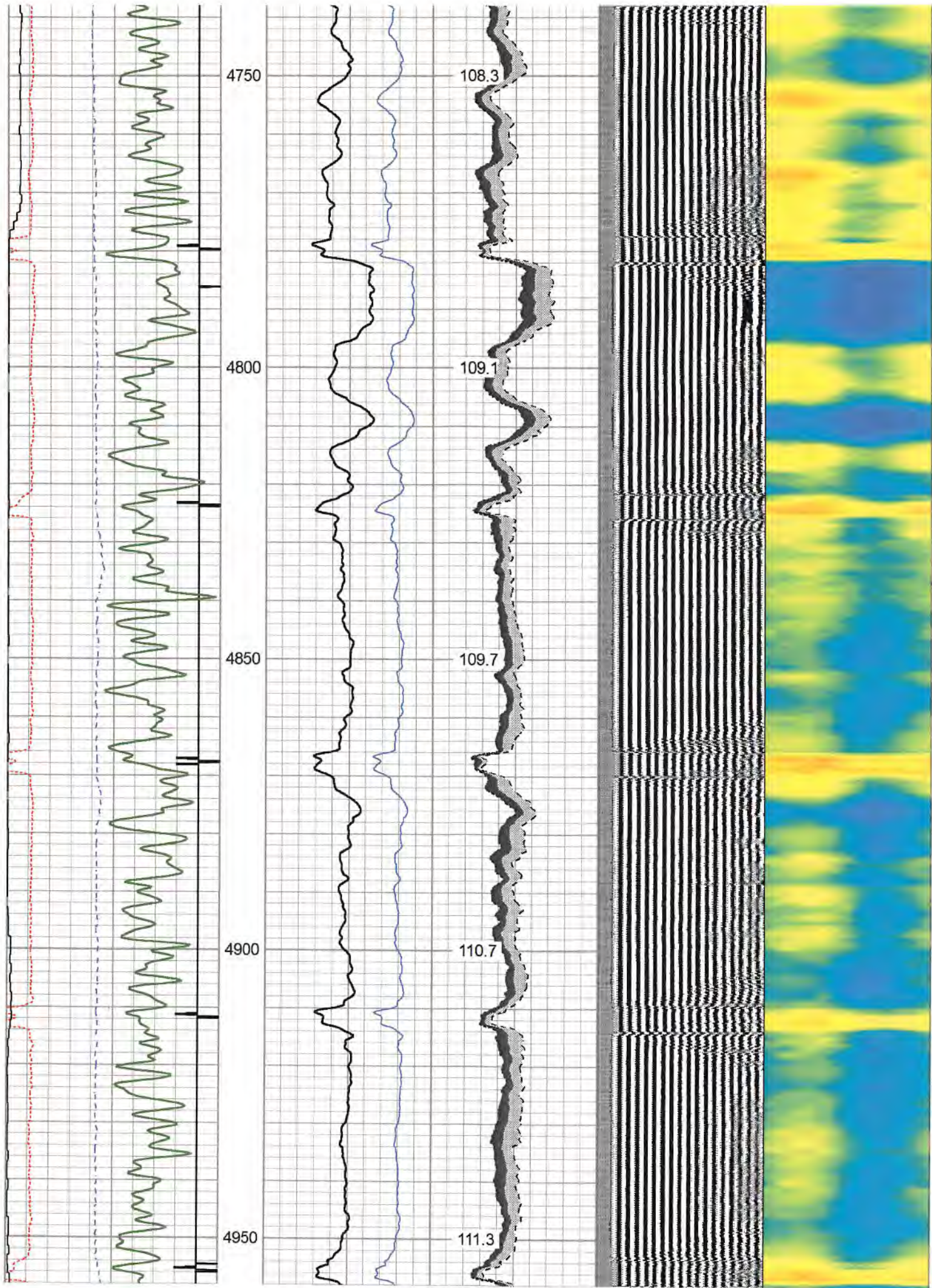


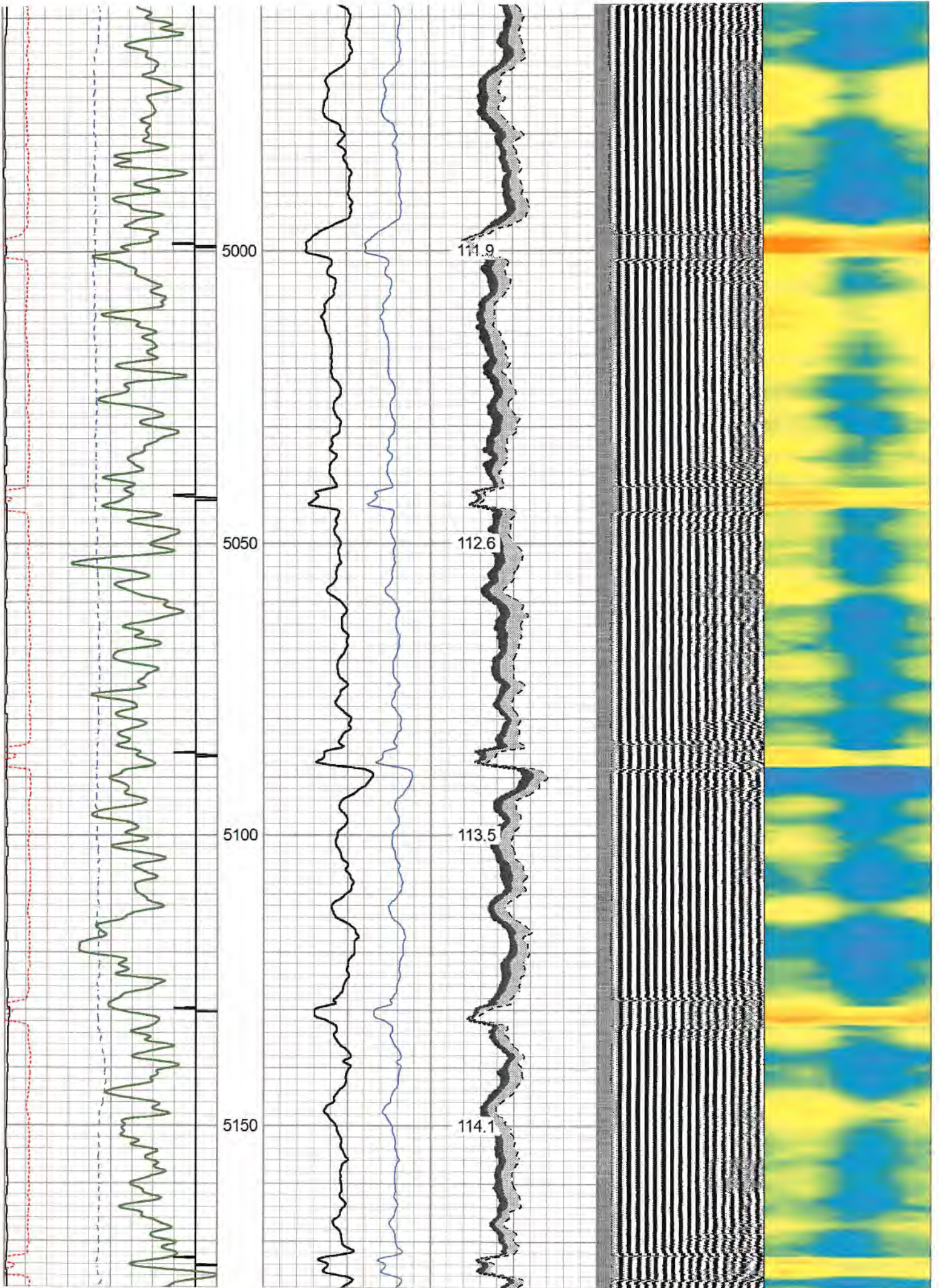


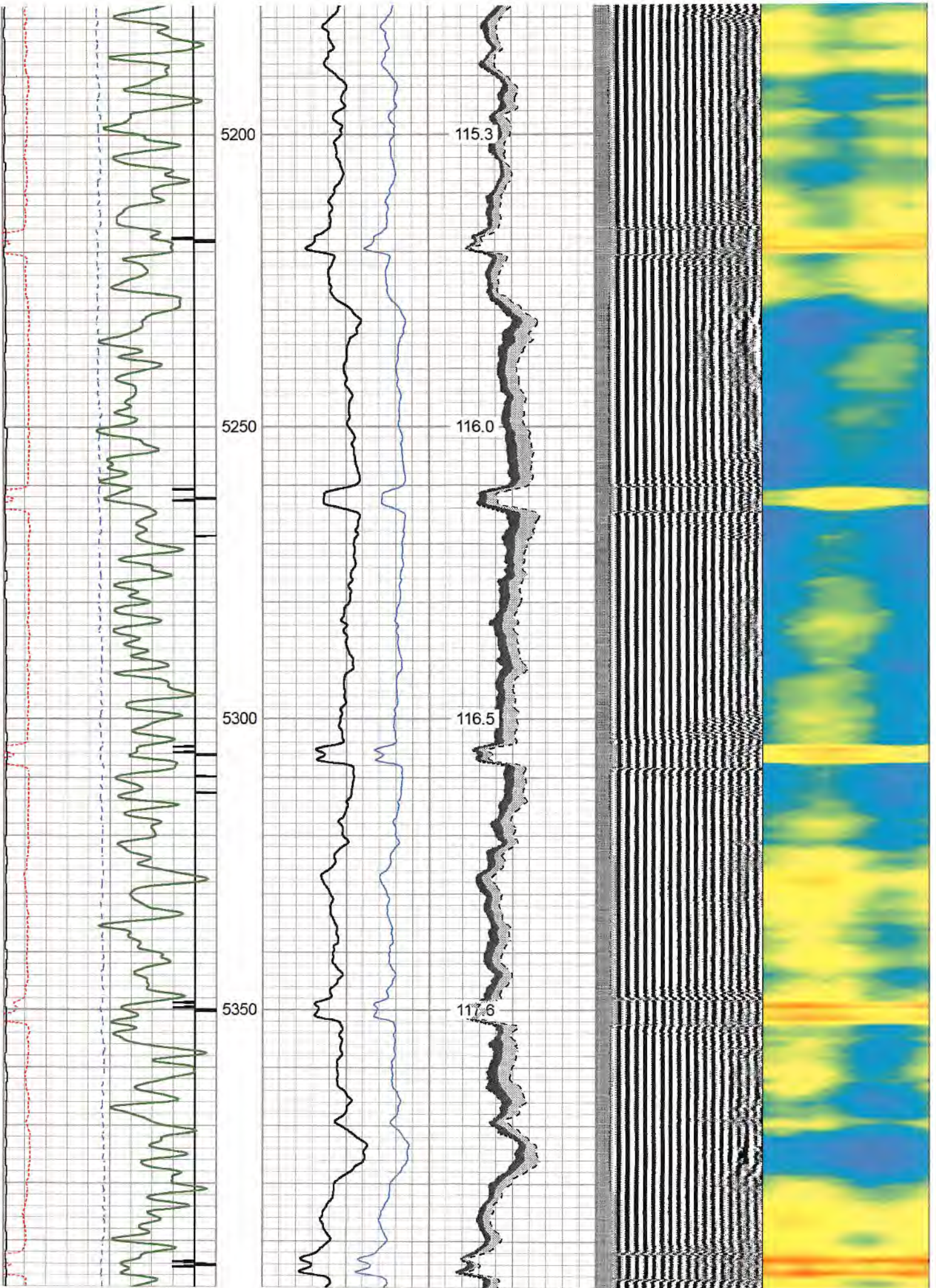


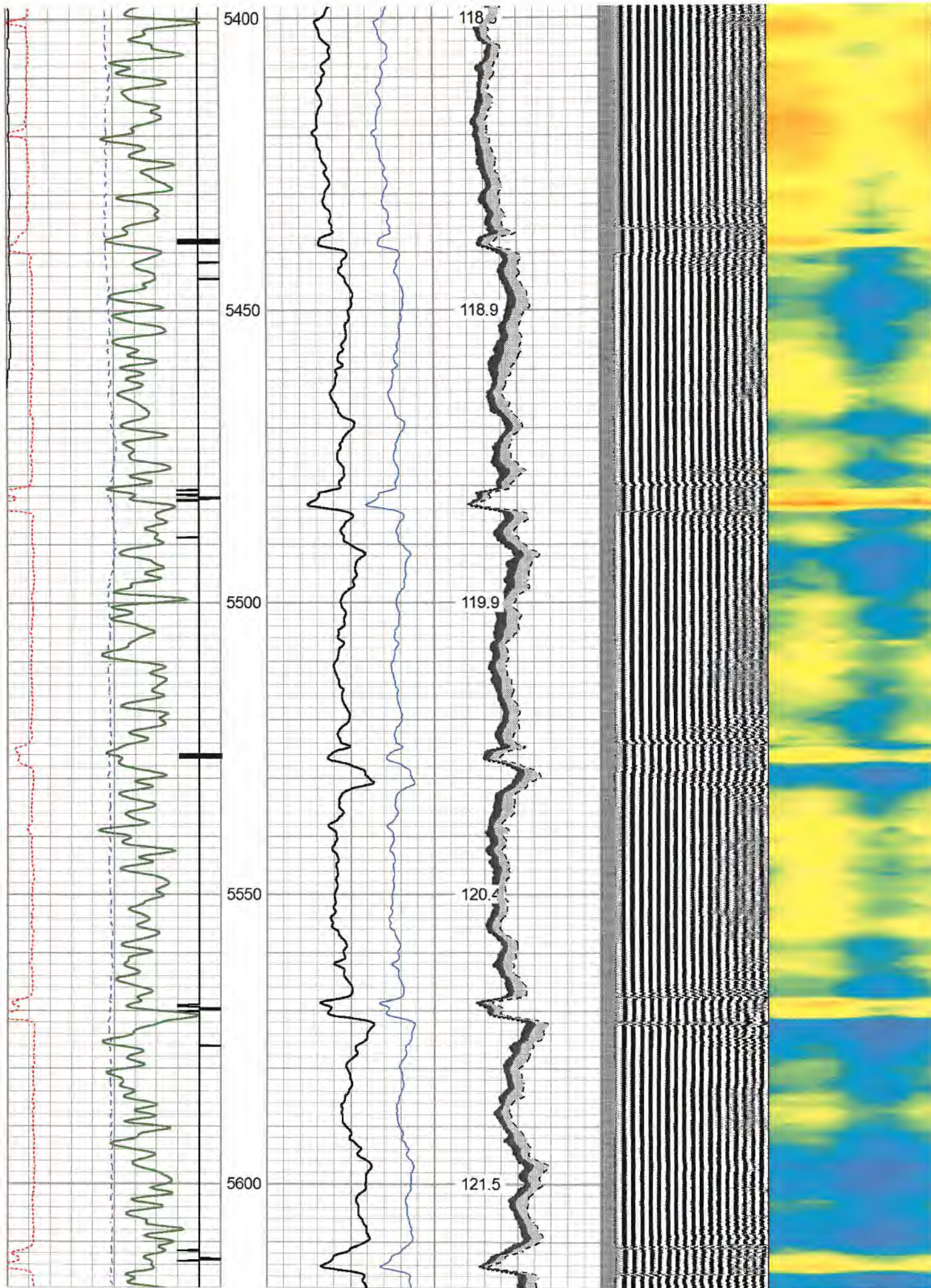


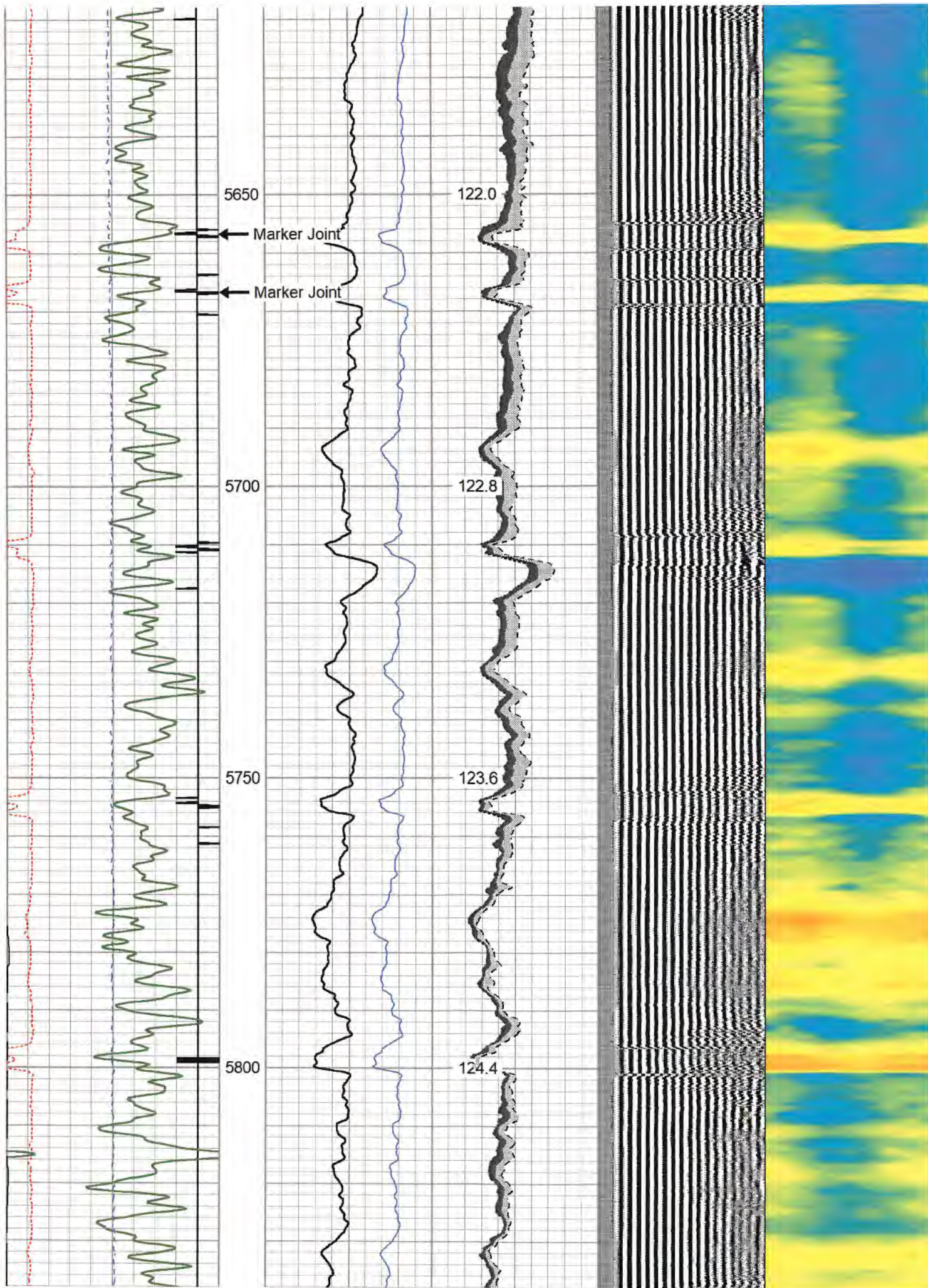


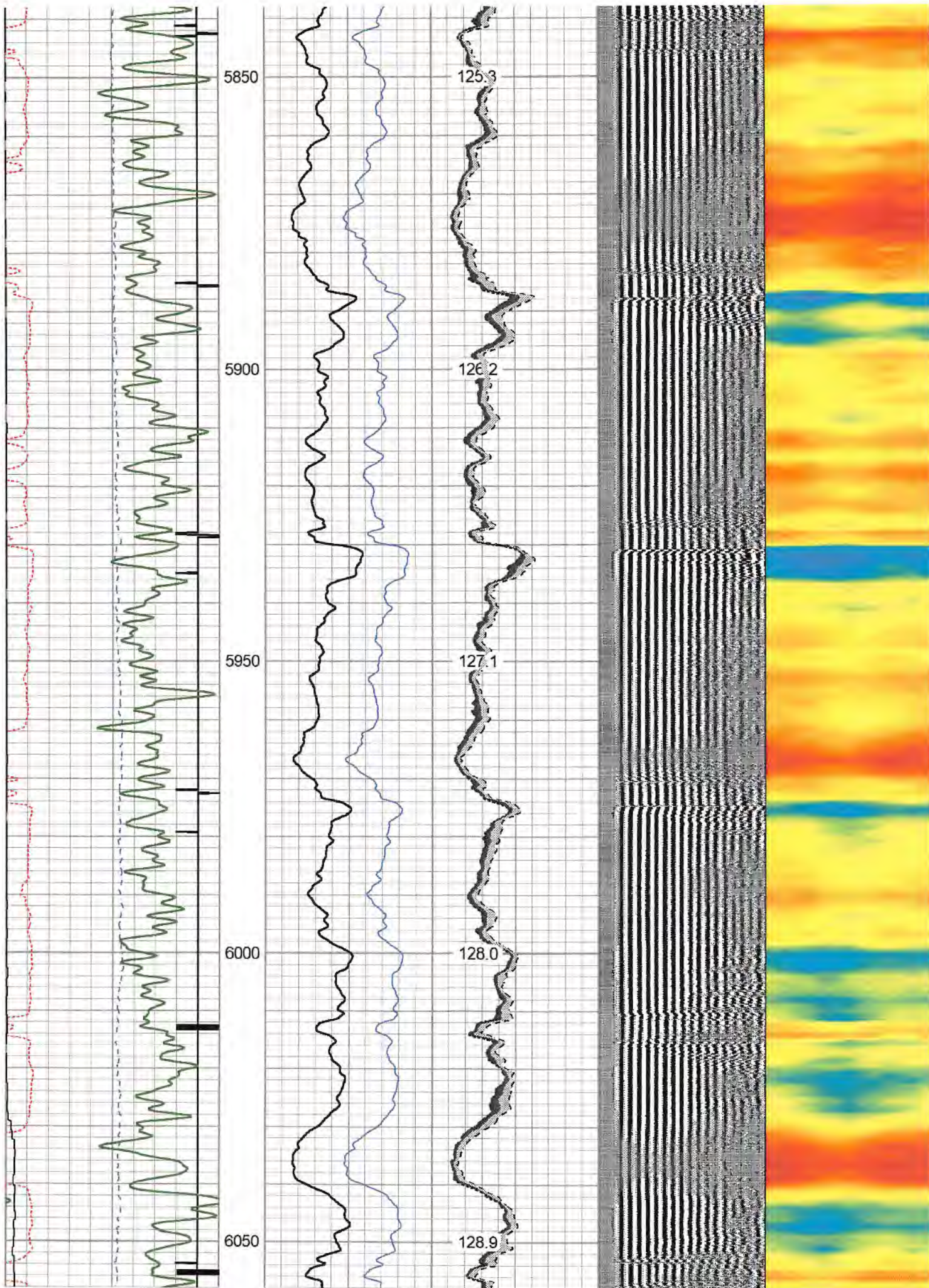


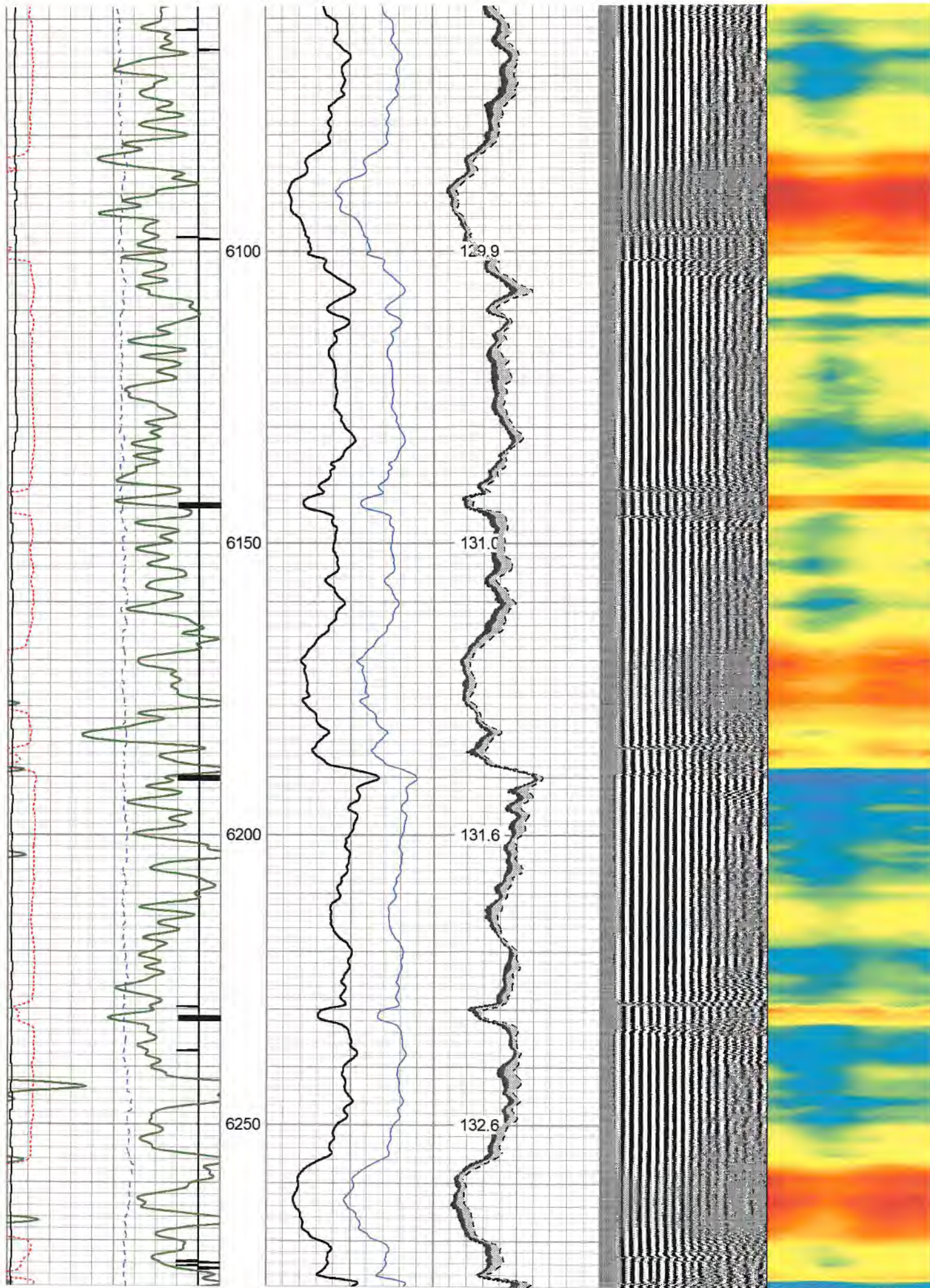


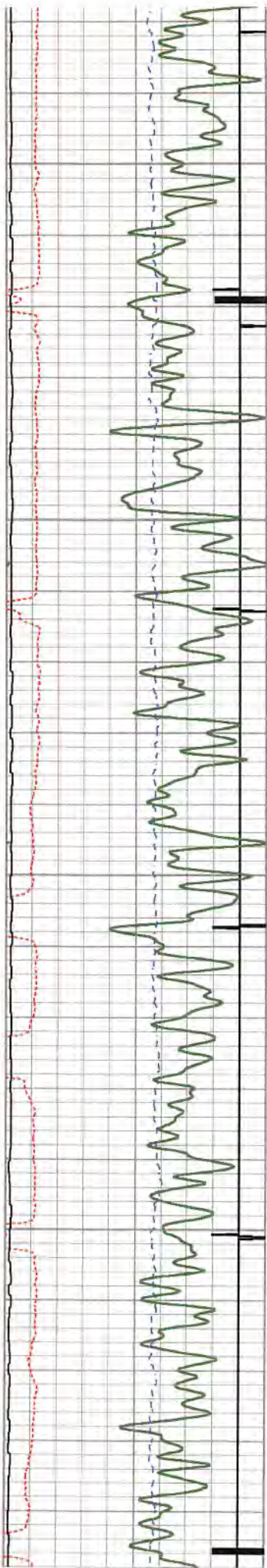










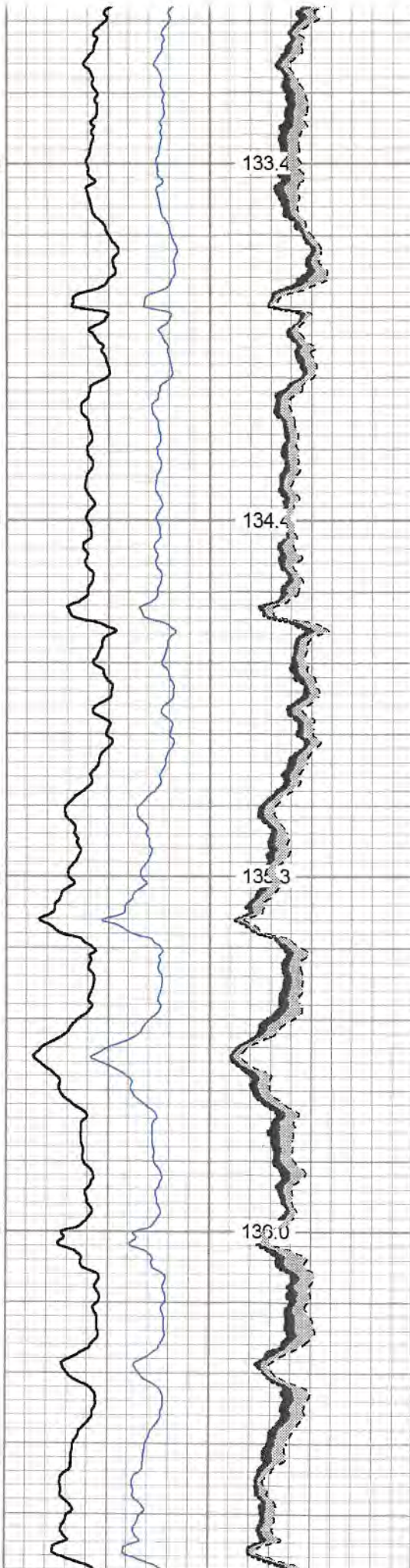


6300

6350

6400

6450

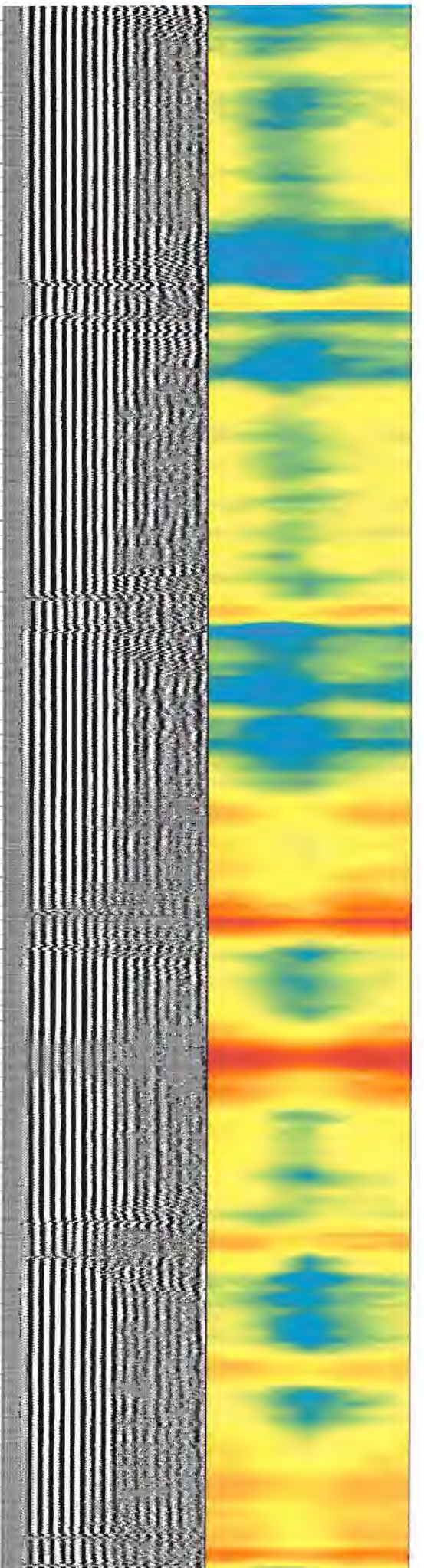


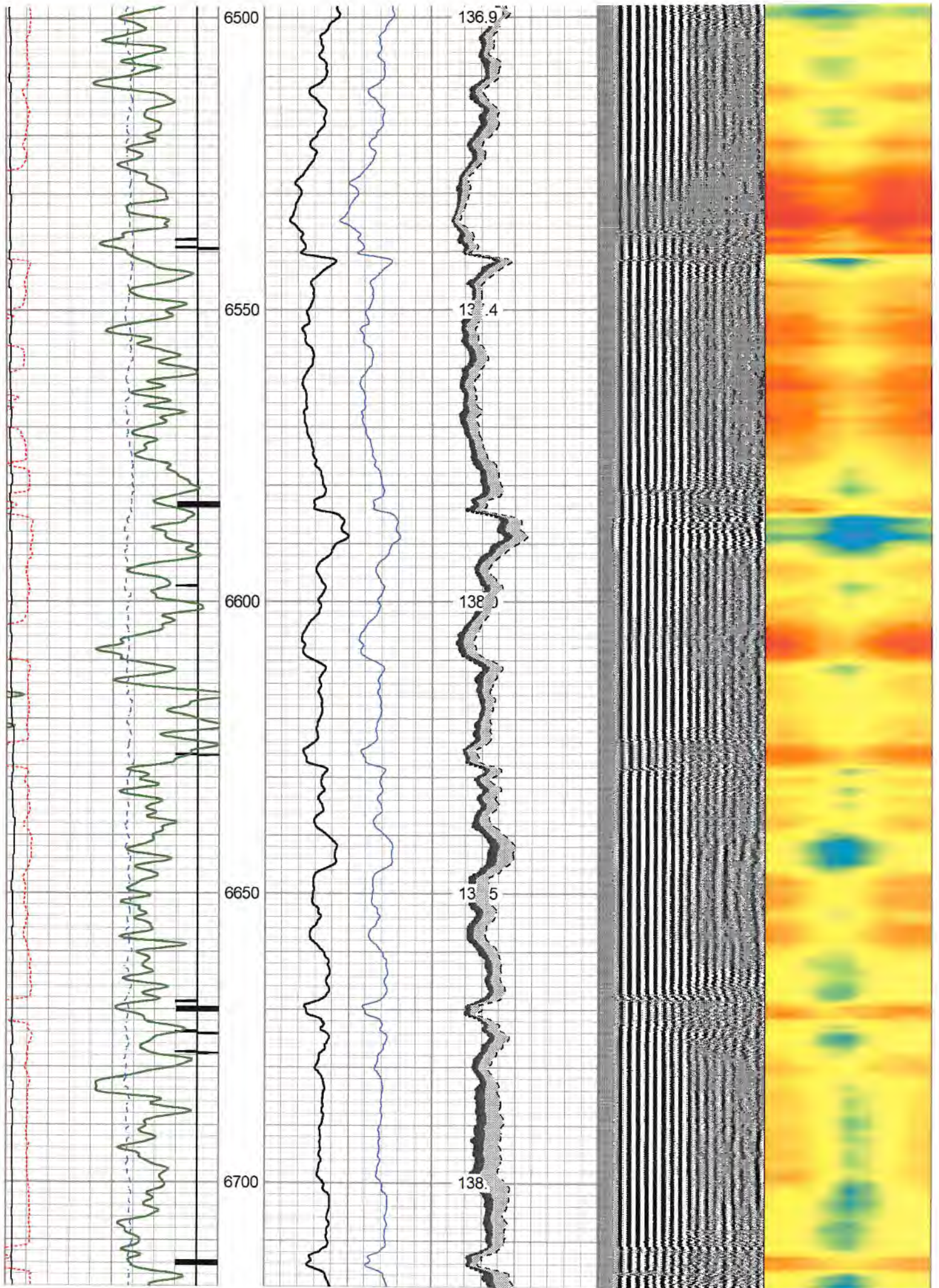
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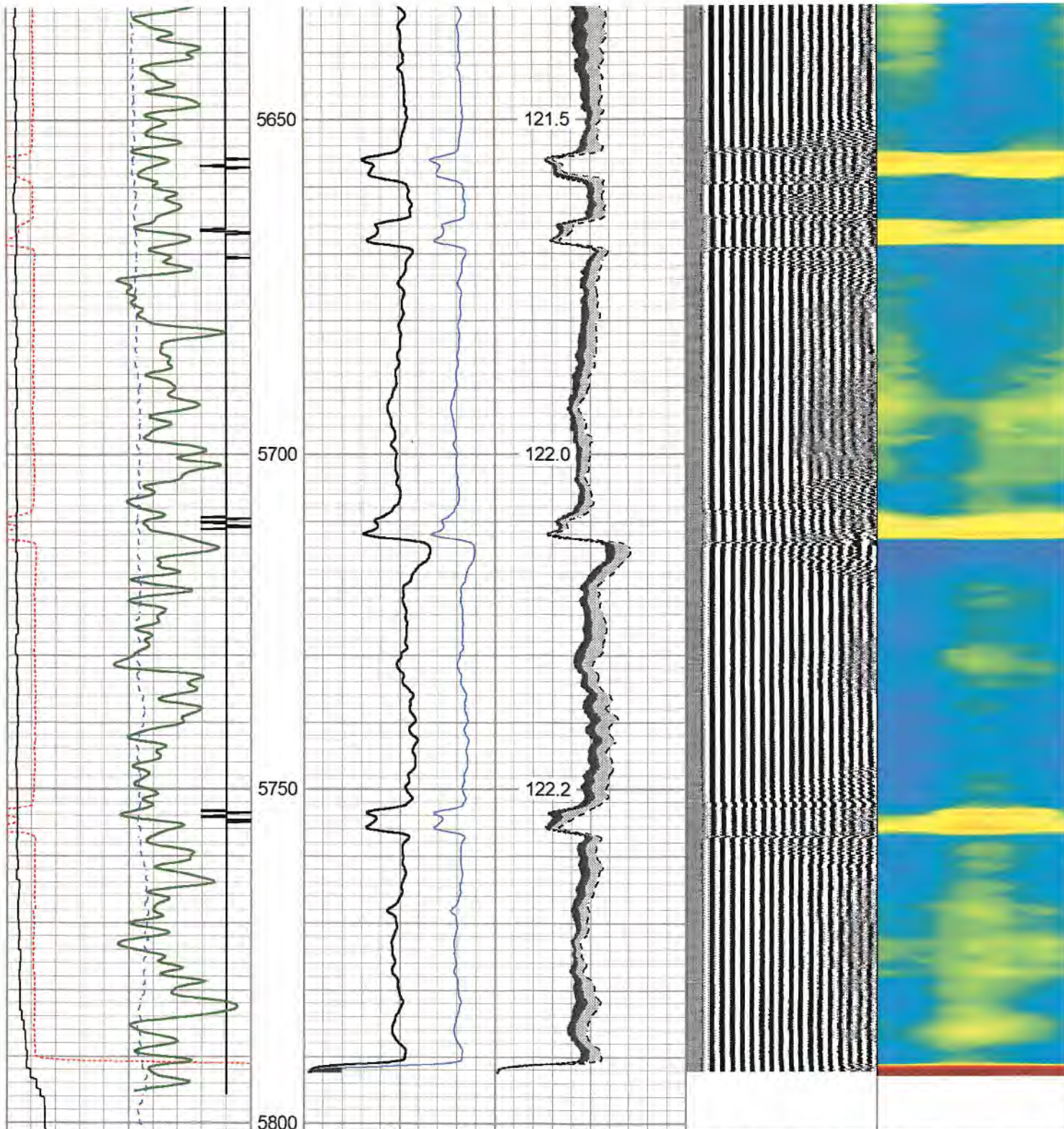
134.4

135.3

136.0







268	Travel Time (usec)	168
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-100	(ft/min)	100
0	Line Tension (lb)	2000

0	Amplitude (mV)	100	0	AMPMIN	150
1	BONDIX	0	0	AMPMAX	150
			0	AMPAVG	150
TEMP					
(degF)					

Variable Density	1	Cement Map	8
300 (usec)	1200		

Log Variables DatabaseC:\ProgramData\Warrior\Data\antero_trunk_2h_rcbl_02_april_2023.db
 Dataset field/well/run1/pass4/_vars_

Top - Bottom	

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	
TEMP	7.875	139	5.5	0	23	71.9	3.4	
MINATTN db/ft	PERFS	PPT usec	SRFTEMP degF	TDEPTH ft				
0.8	No	260	45	6793				

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_trunk_2h_rcbl_02_april_2023.db
 Dataset Pathname pass4
 Dataset Creation Sun Apr 02 14:43:57 2023

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun Apr 2 11:15:39 2023

 Calibrator Value: 1.0 GAPI

 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

 Sensitivity: 0.8000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T

 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 40.408 ft

Master Calibration, performed Sun Apr 2 13:39:57 2023:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.001	0.441	3.400	71.921	154.869	3.587
CAL	0.696	0.706				
5'	-0.005	0.457	3.400	71.921	148.597	4.082
SUM						
S1	-0.007	0.406	0.000	100.000	242.138	1.605
S2	-0.008	0.411	0.000	100.000	239.106	1.815
S3	-0.006	0.436	0.000	100.000	226.348	1.318
S4	-0.005	0.465	0.000	100.000	212.962	1.058
S5	-0.006	0.471	0.000	100.000	209.466	1.304
S6	-0.007	0.465	0.000	100.000	212.047	1.444
S7	-0.011	0.441	0.000	100.000	221.417	2.368
S8	-0.011	0.424	0.000	100.000	230.242	2.465

Internal Reference Calibration performed (Not Performed):

Internal Reference Calibration, performed (not performed).

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.696	0.706	1.000	0.000

Air Zero Calibration, performed Sun Apr 2 13:40:22 2023:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	-0.001		0.000		0.000	
5'	-0.006		0.000		0.001	
SUM						
S1	-0.007		0.000		0.000	
S2	-0.008		0.000		0.000	
S3	-0.006		0.000		0.000	
S4	-0.005		0.000		0.000	
S5	-0.006		0.000		-0.000	
S6	-0.006		0.000		-0.001	
S7	-0.011		0.000		0.000	
S8	-0.011		0.000		0.000	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Centralizer	32.54		CABLE_HEADS-TITAN_1_7/16	1.04	1.44	4.00
Centralizer	21.47					
CABLE_HEADS	18.07					
RBT	17.03					
HeadVolt	16.97					
Centralizer	16.13		Centralizer-2.75_Overbody	1.67	3.12	5.00
Temp	14.12		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	11.89					
WVFS7	11.89					
WVFS6	11.89					
WVFS5	11.89					
WVFS4	11.89					
WVFS3	11.89					
WVFS2	11.89					
WVFS1	11.89					
WVF3FT	11.89					
WVF5FT	10.89					
GR	7.64					
WVFCAL	7.64					
HEADVOLT	7.64					
CCL	6.73					

Centralizer	5.86					
GR	5.40		GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
			Centralizer-2.75_Overbody	1.67	3.12	5.00
Centralizer	2.86					
			Centralizer-Titan_2.75 Bowspring Centralizer	2.86	2.75	35.00
<p>Dataset: antero_trunk_2h_rcbl_02_april_2023.db: field/well/run1/pass4 Total length: 18.07 ft Total weight: 206.00 lb O.D.: 3.12 in</p>						

	Company	Antero Resources	
	Well	Trunk 2H	
	Field	Marcellus	
	County	Tyler	
	State	WV	
	Country	U.S.A.	