



**RADIAL CEMENT BOND LOG  
VARIABLE DENSITY LOG  
GAMMA/CCLTEMP**

Company ANTERO RESOURCES  
Well PETER 3H  
Field SOUTH CANTON  
County DODDRIDGE  
State WV

Company ANTERO RESOURCES  
Well PETER 3H  
Field SOUTH CANTON  
County DODDRIDGE State WV

Location: API #: 47-017-06935  
SEC TWP RGE  
Permanent Datum GROUND LEVEL Elevation 1334'  
Log Measured From KELLY BUSHING 30'  
Drilling Measured From KELLY BUSHING  
Other Services  
Elevation  
K.B. 1,364'  
D.F. 1,364'  
G.L. 1,334'

Date JANUARY 11, 2023

Run Number	ONE
Depth Driller	15,449'
Depth Logger	7,683'
Bottom Logged Interval	7,683'
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	6,060'
Time Well Ready	23:35
Time Logger on Bottom	00:10
Equipment Number	116
Location	CHARLEROI, PA
Recorded By	M.MCNALLY
Witnessed By	RYAN RIVERA

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record							
Conductor String							
Surface String							
Intermediate String		13.375"					
Intermediate String		9.625"					
Production String		5.5"					

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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 -13'  
MARKER JOINT 6,473'-6,483'  
MAIN PASS LOGGED WITH 1500 PSI  
REPEAT PASS LOGGED WITH 0 PSI

THANK YOU FOR USING NINE ENERGY SERVICES

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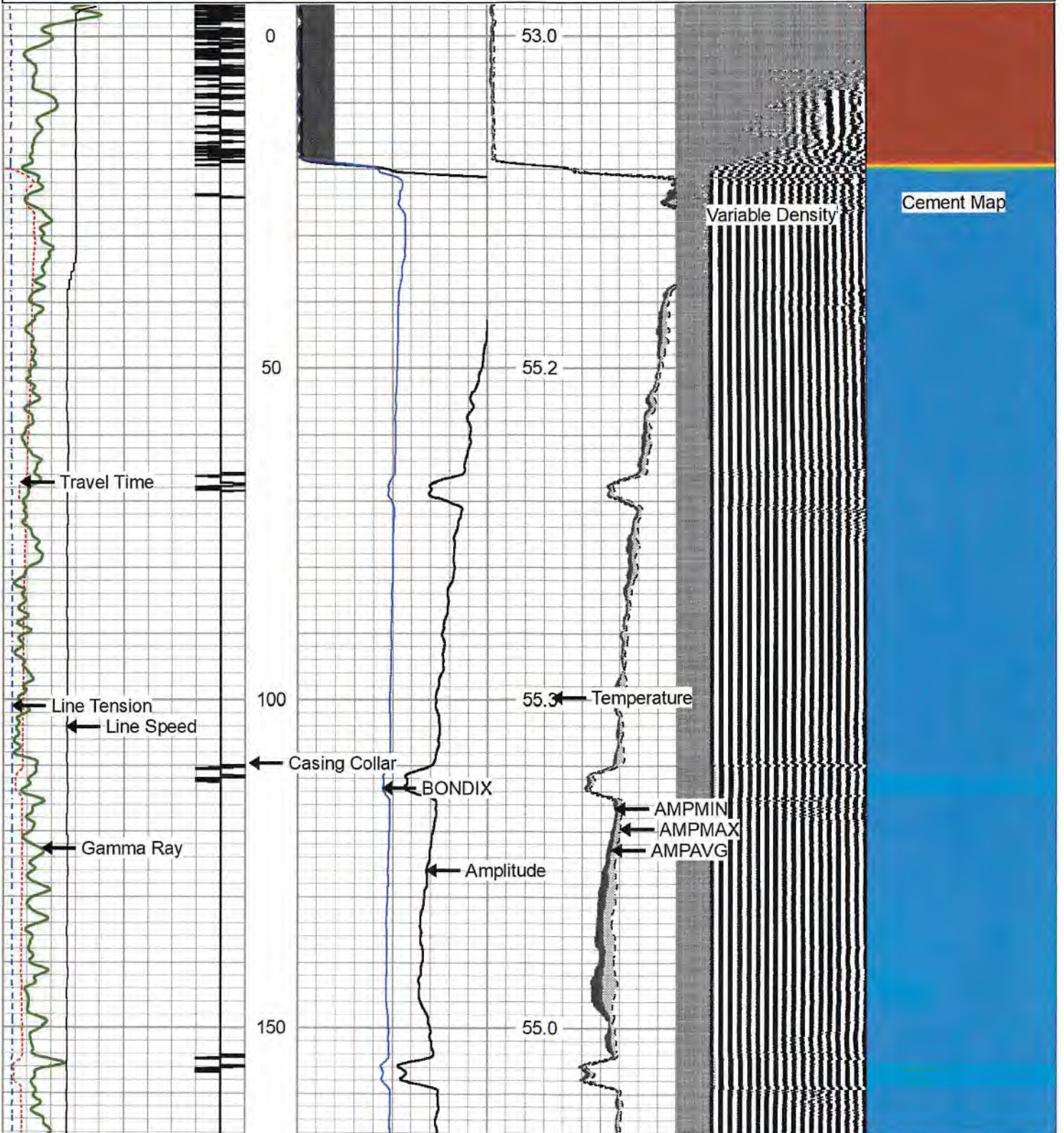


**MAIN PASS 1,500 PSI**

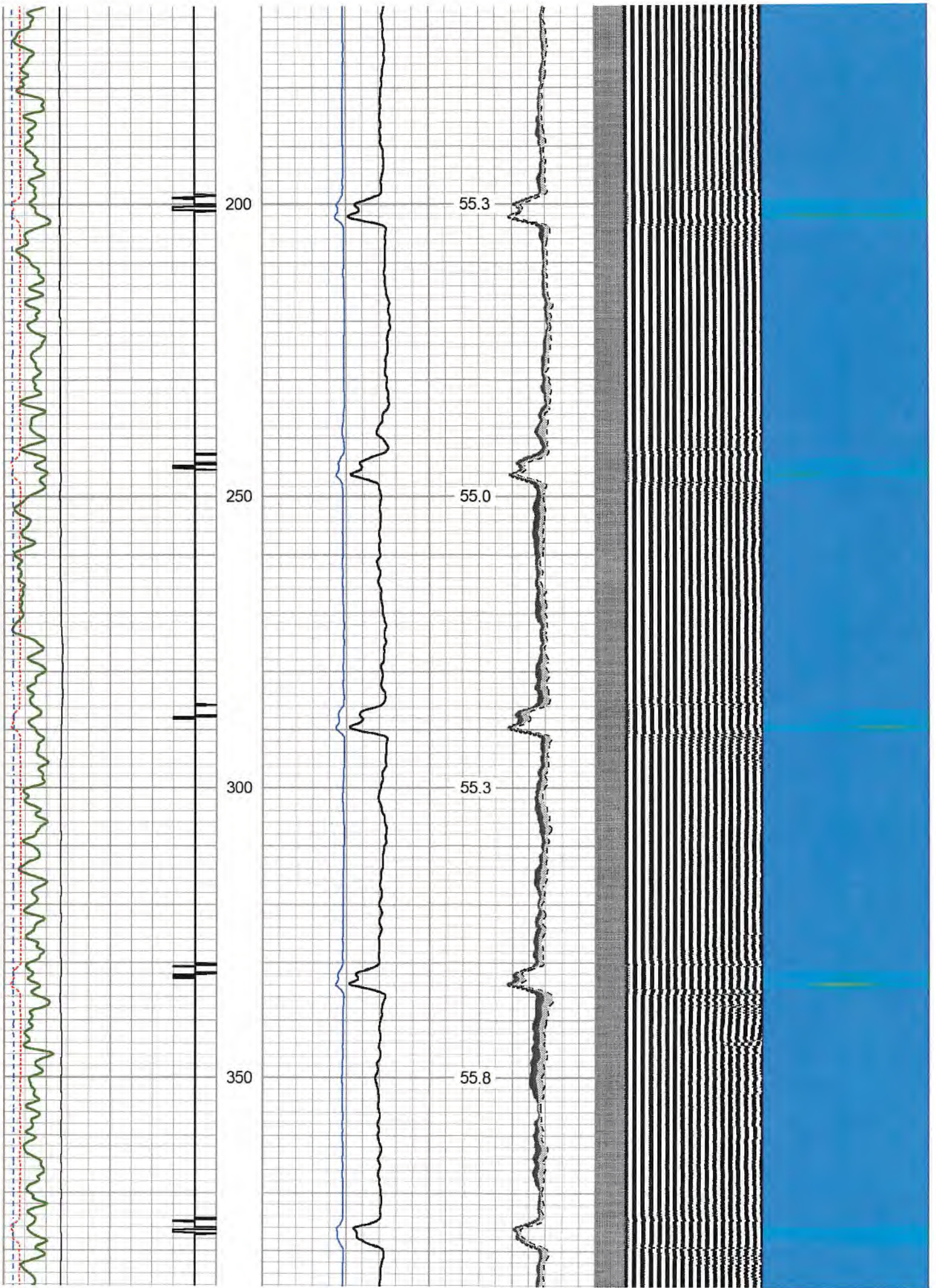


Database File antero\_peter\_3h\_rcbl\_11\_jan\_2023.db  
 Dataset Pathname peter3h/run1/pass7  
 Presentation Format rcbl 2  
 Dataset Creation Thu Jan 12 00:09:21 2023  
 Charted by Depth in Feet scaled 1:240

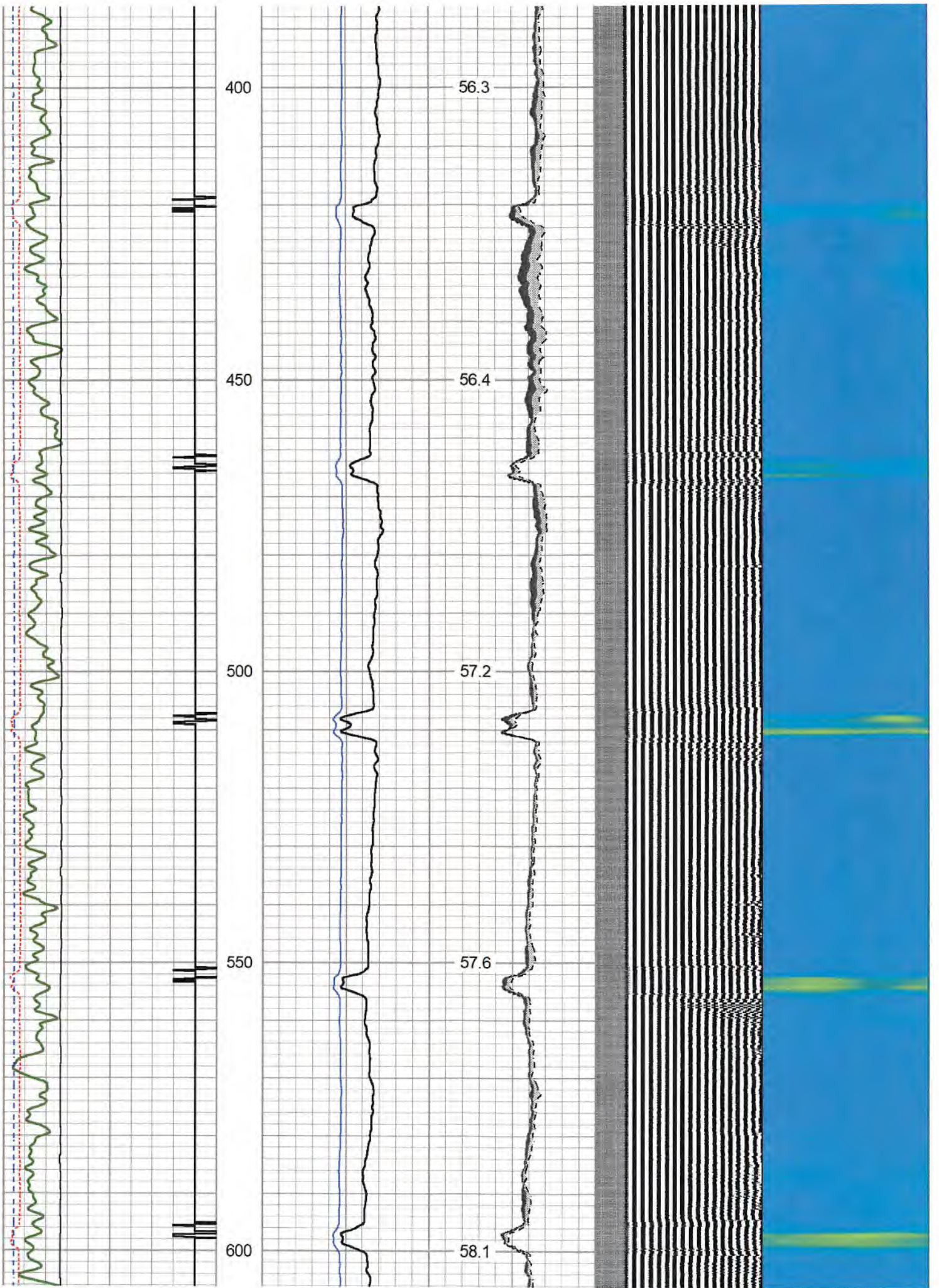
270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										



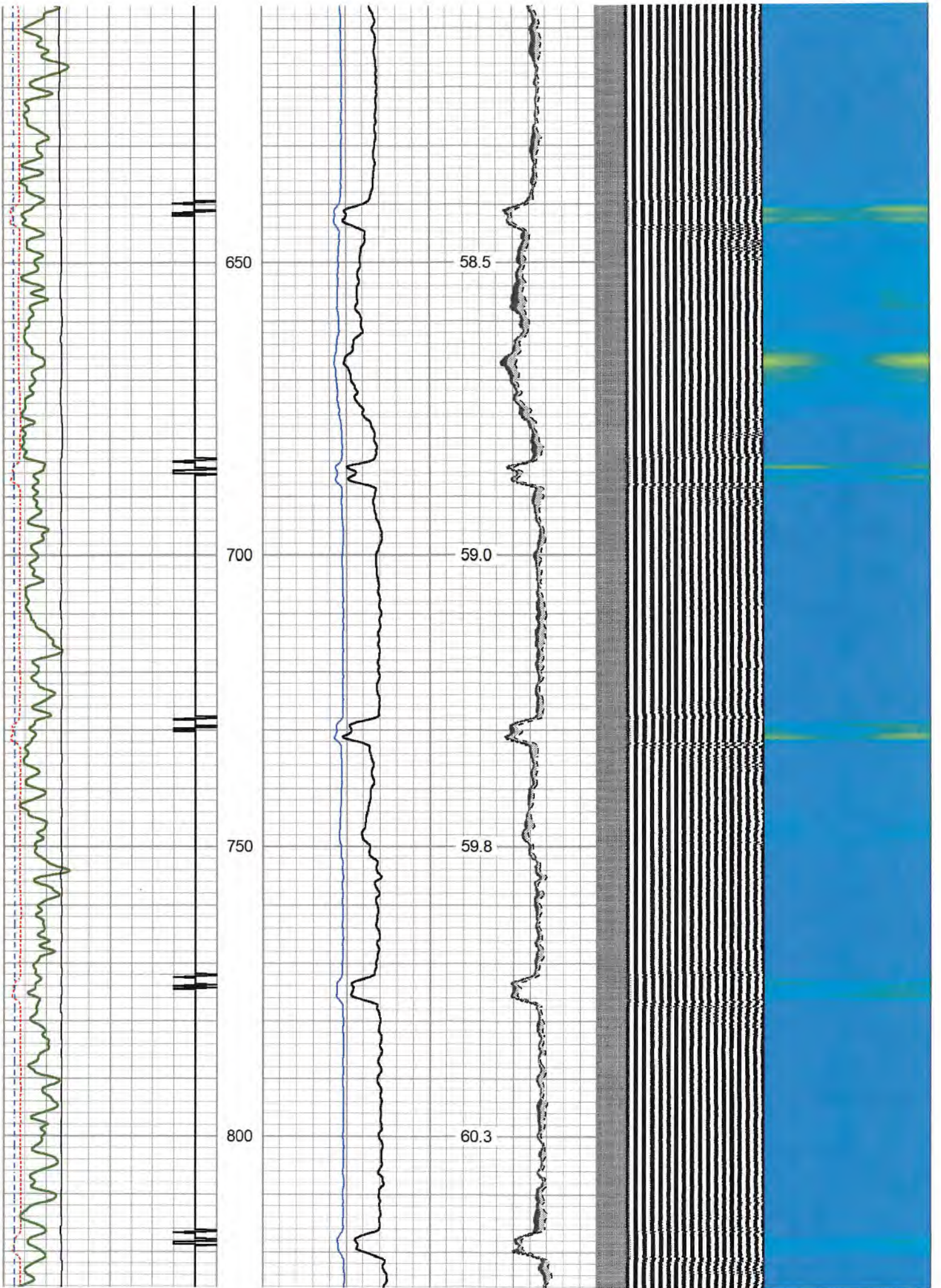




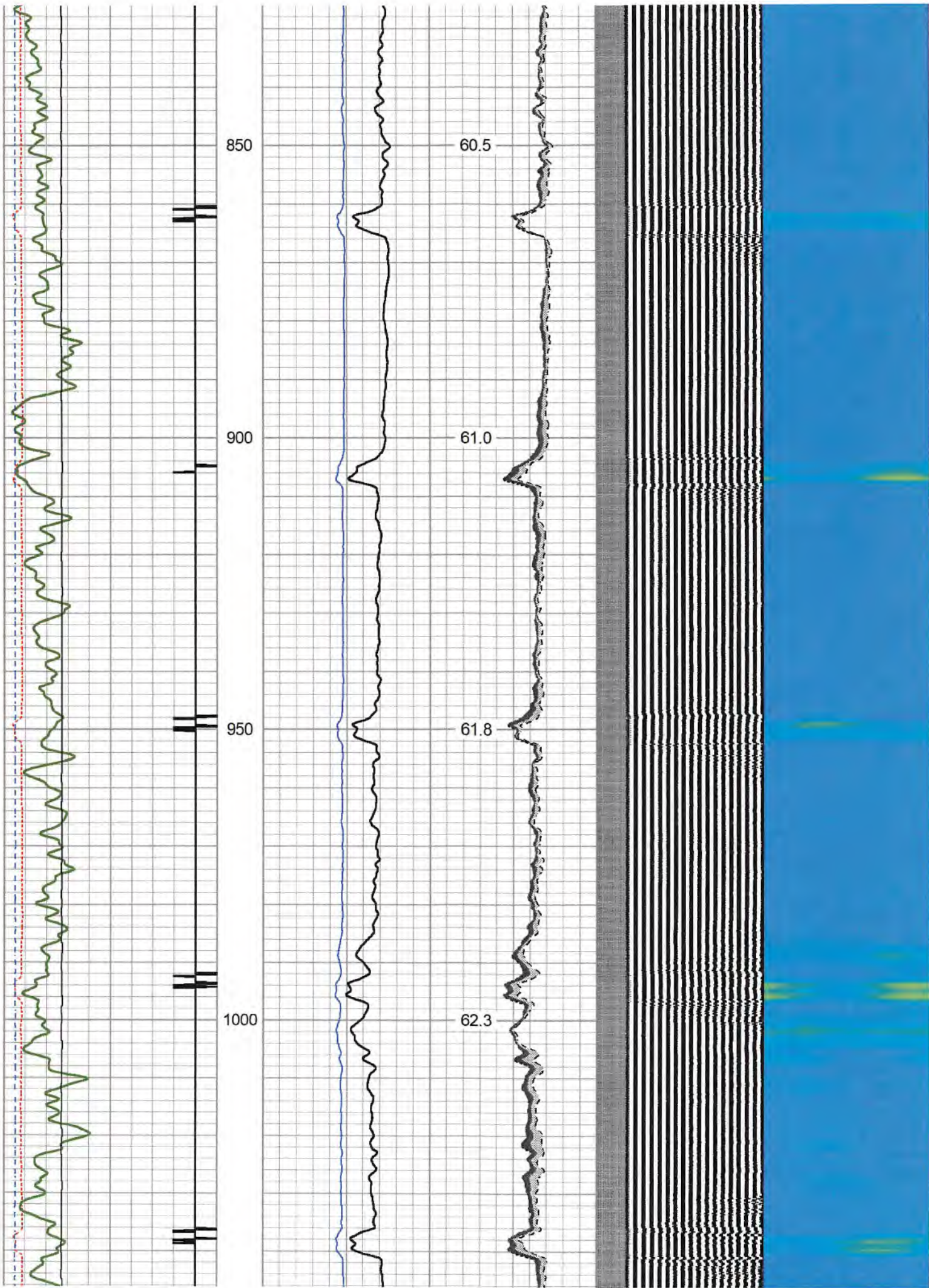




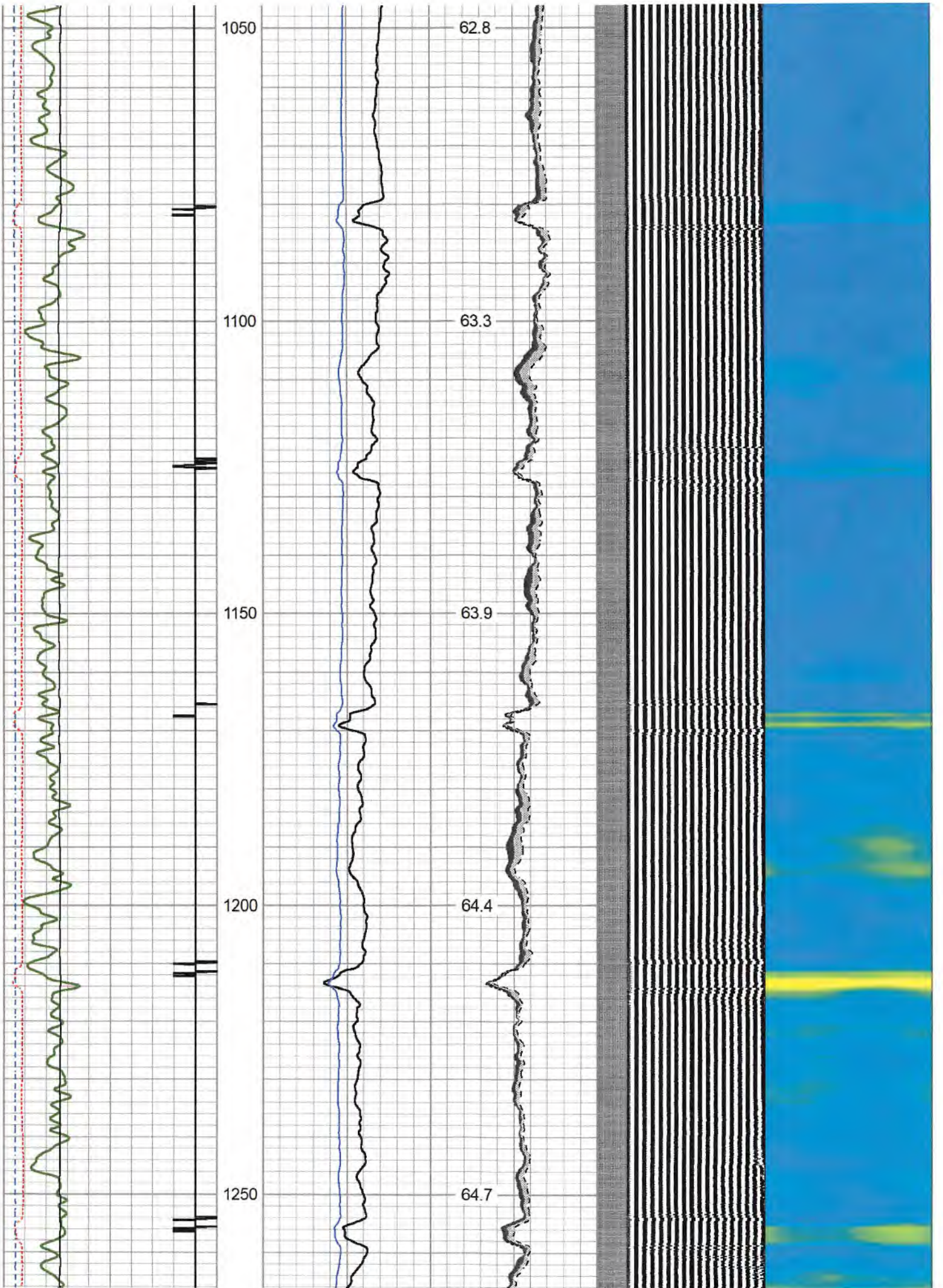




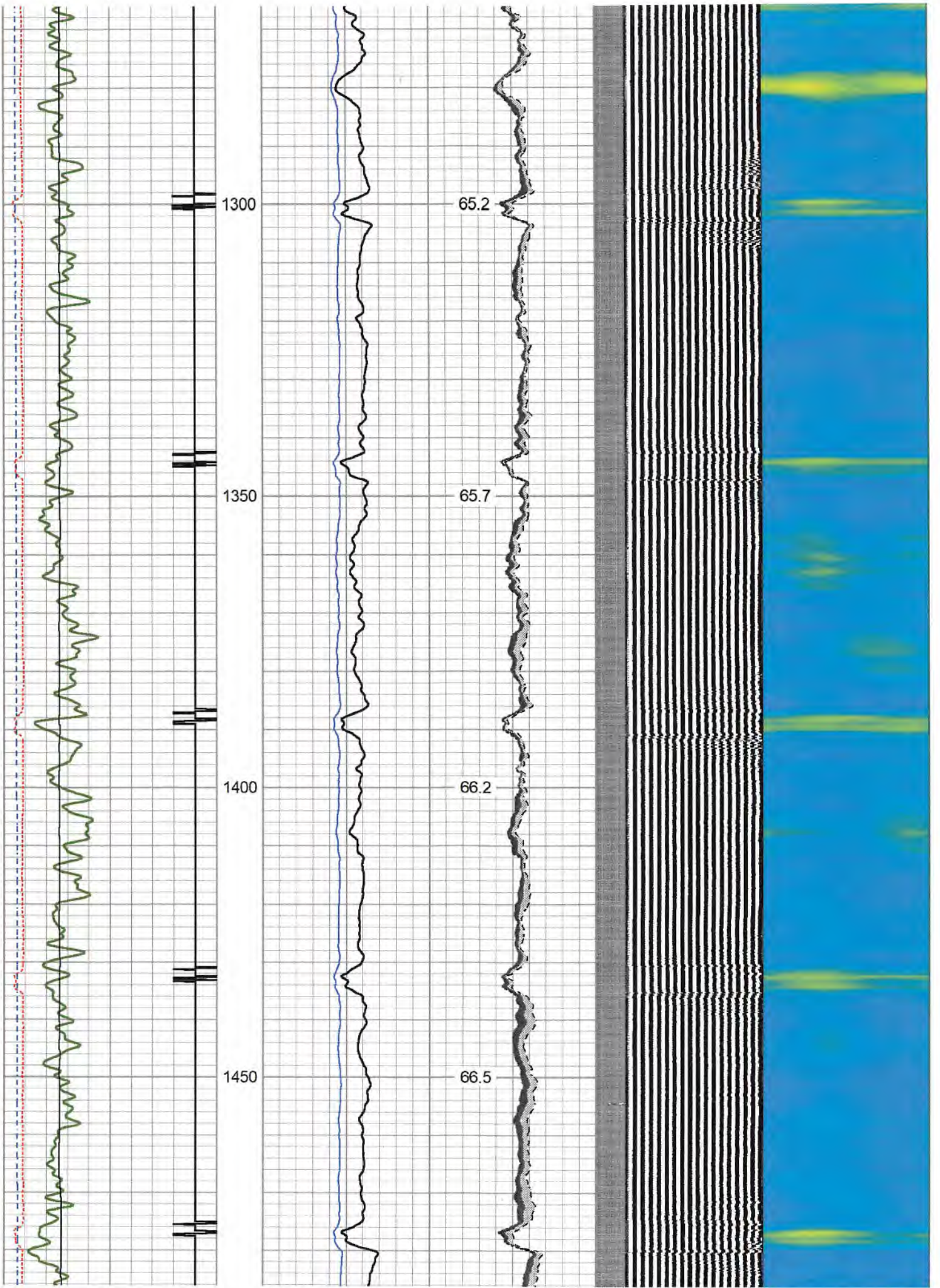




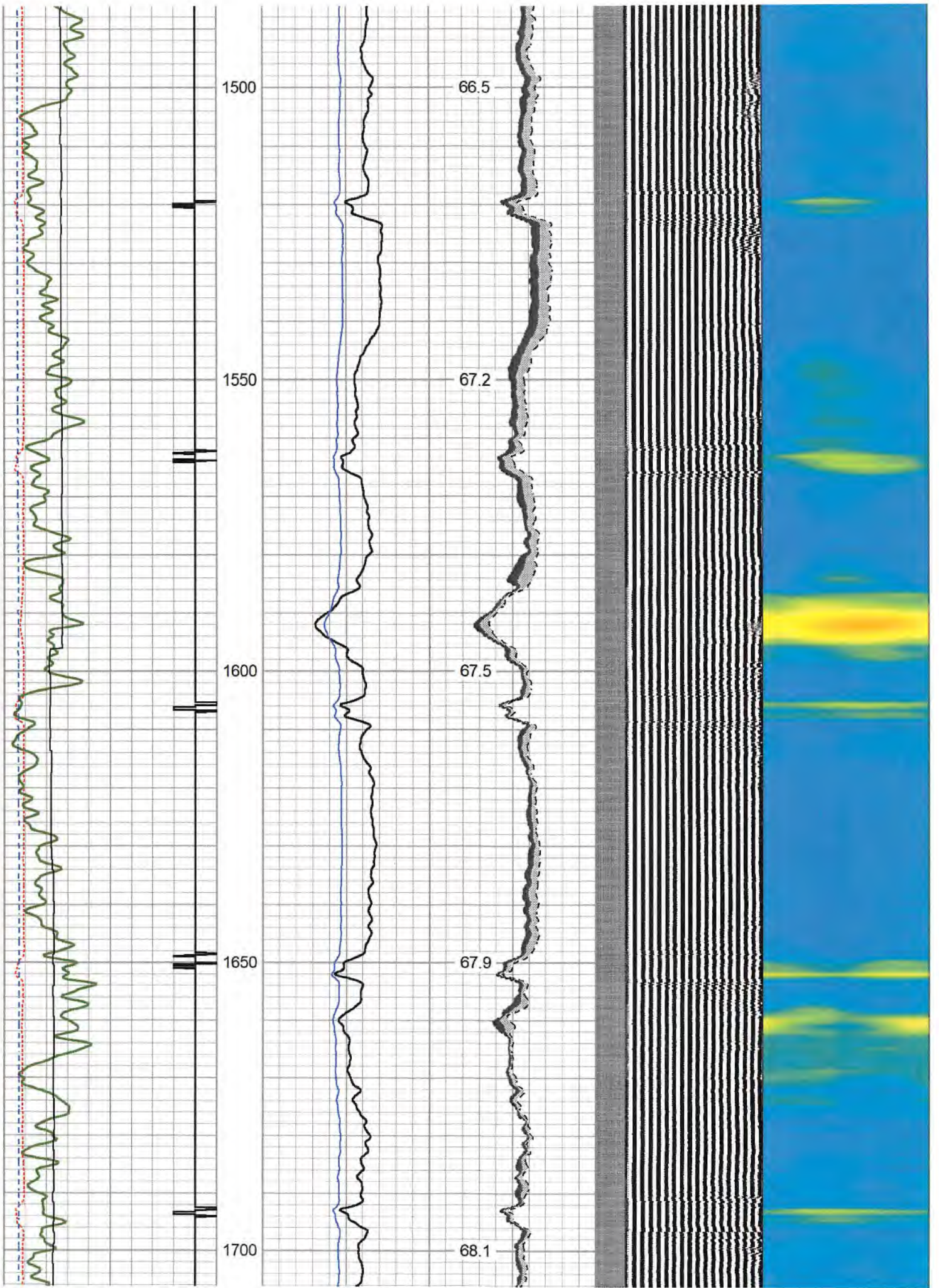




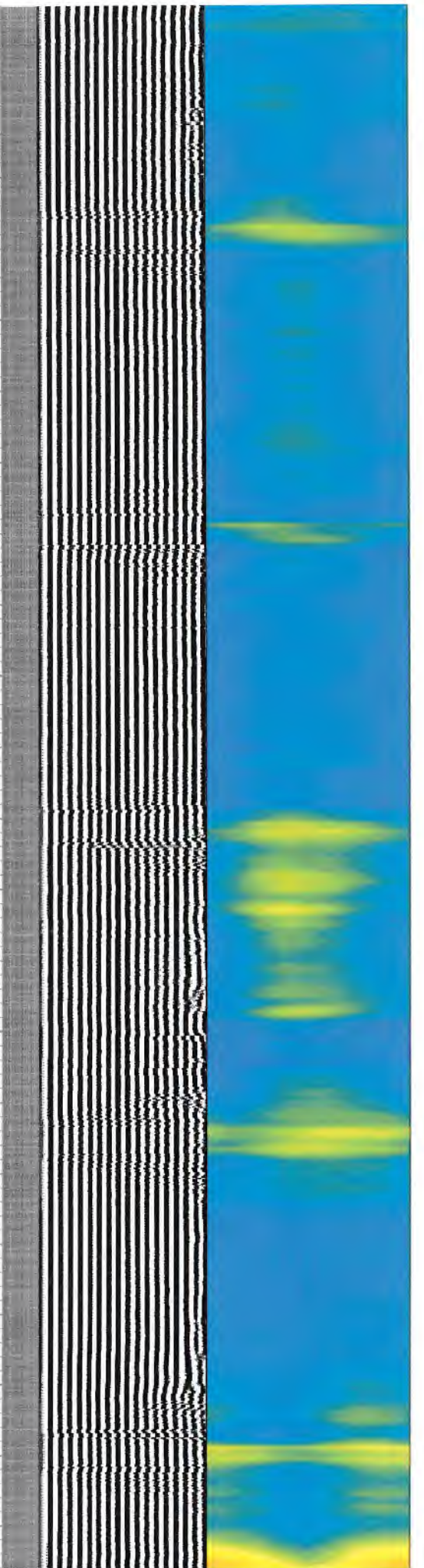
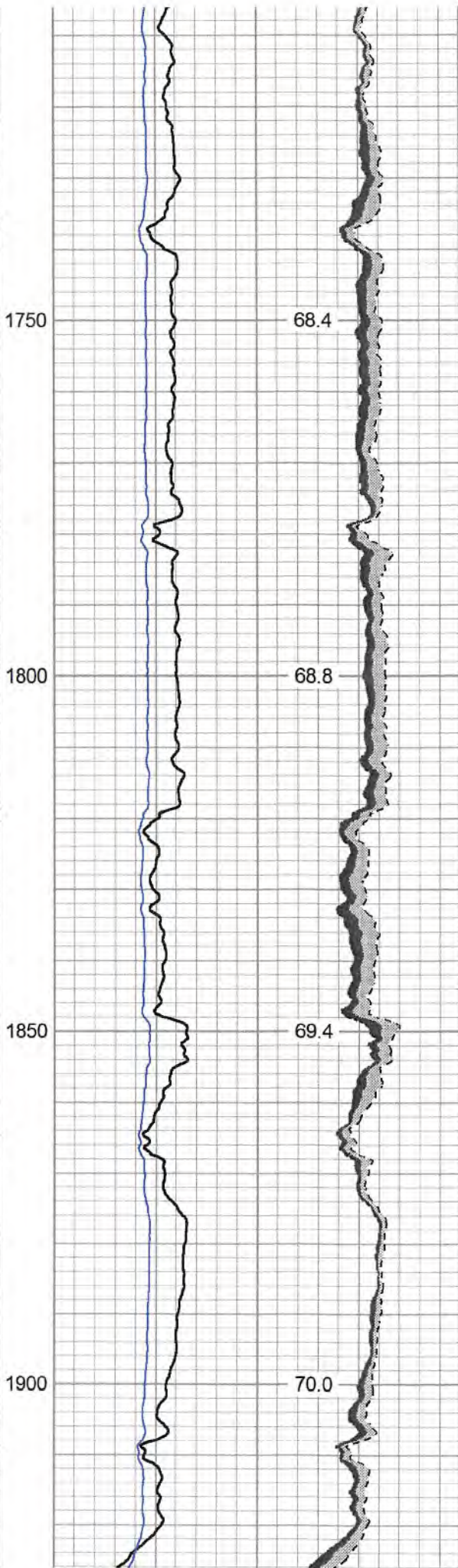
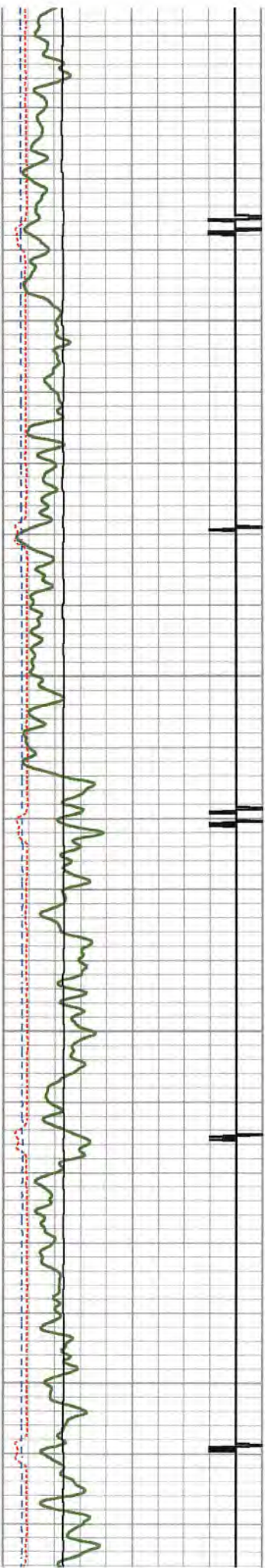












1750

1800

1850

1900

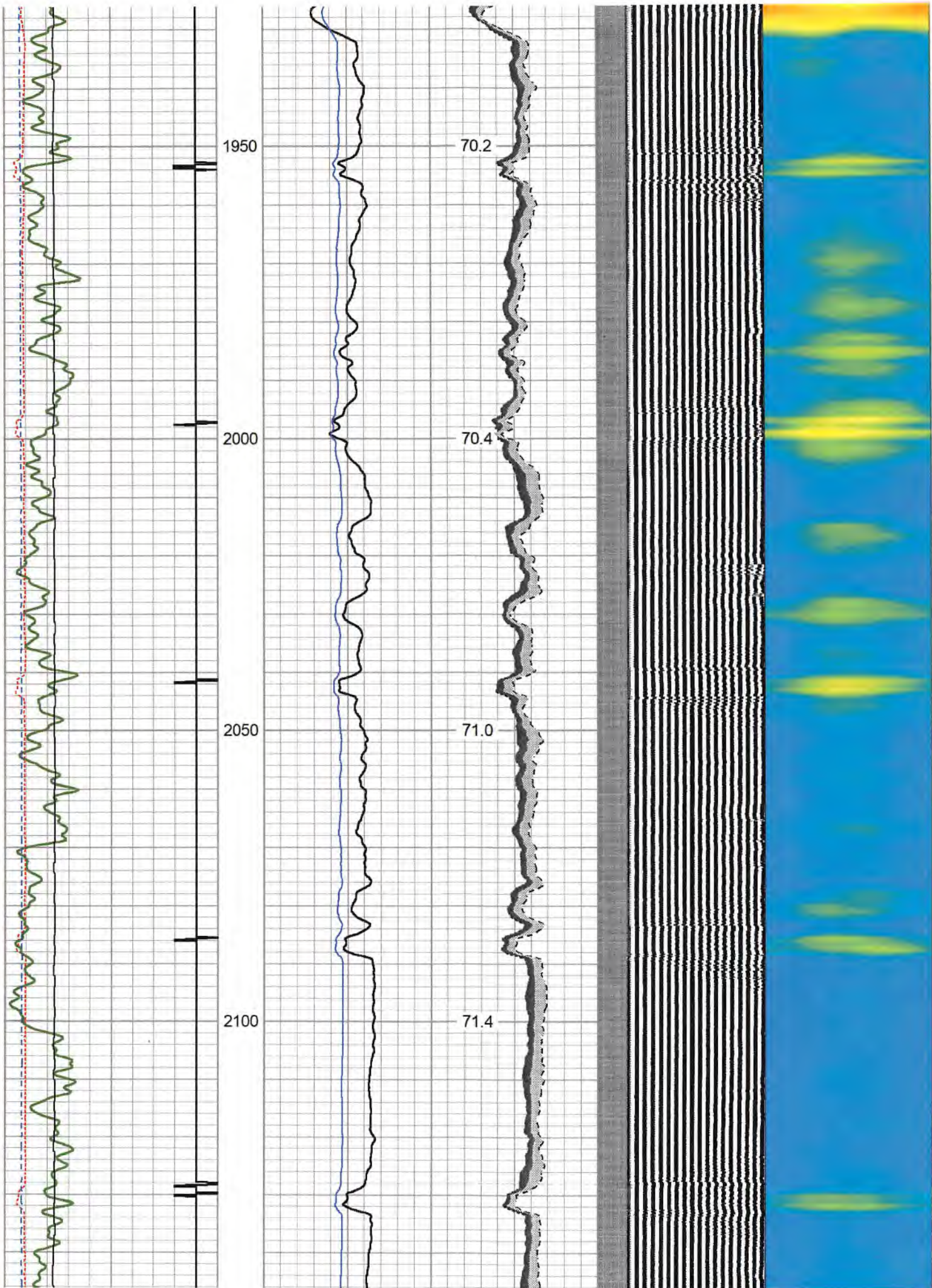
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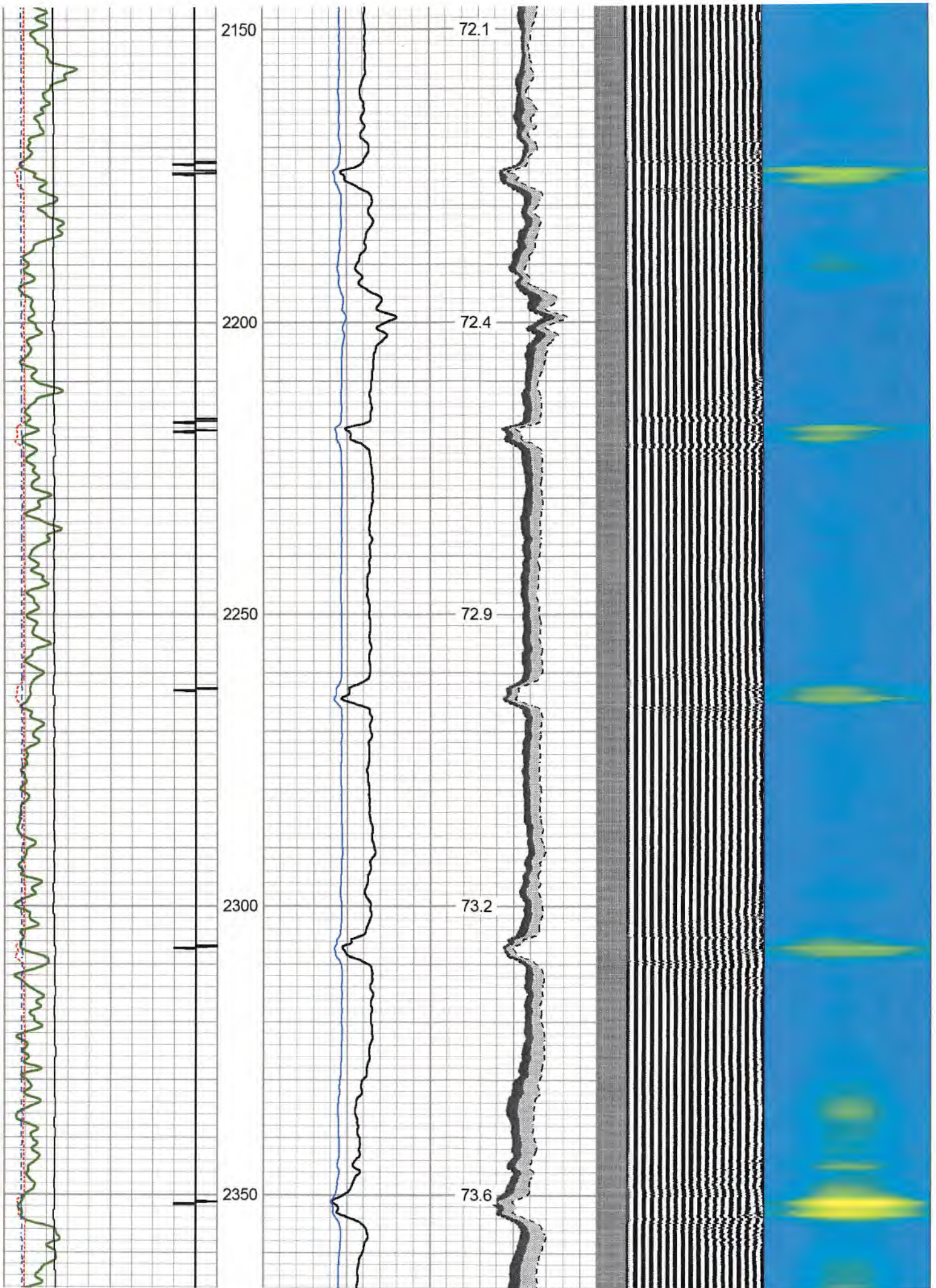
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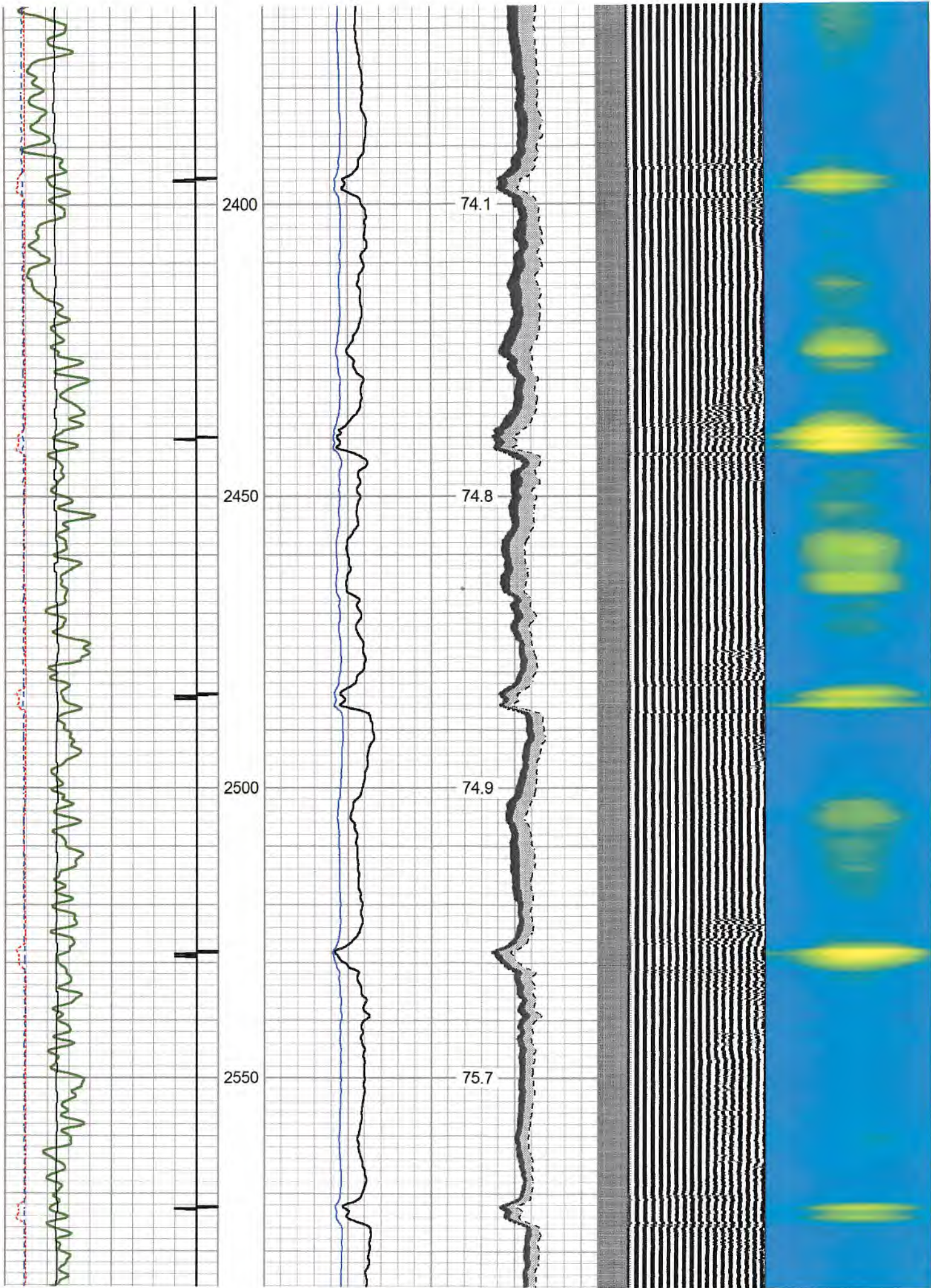




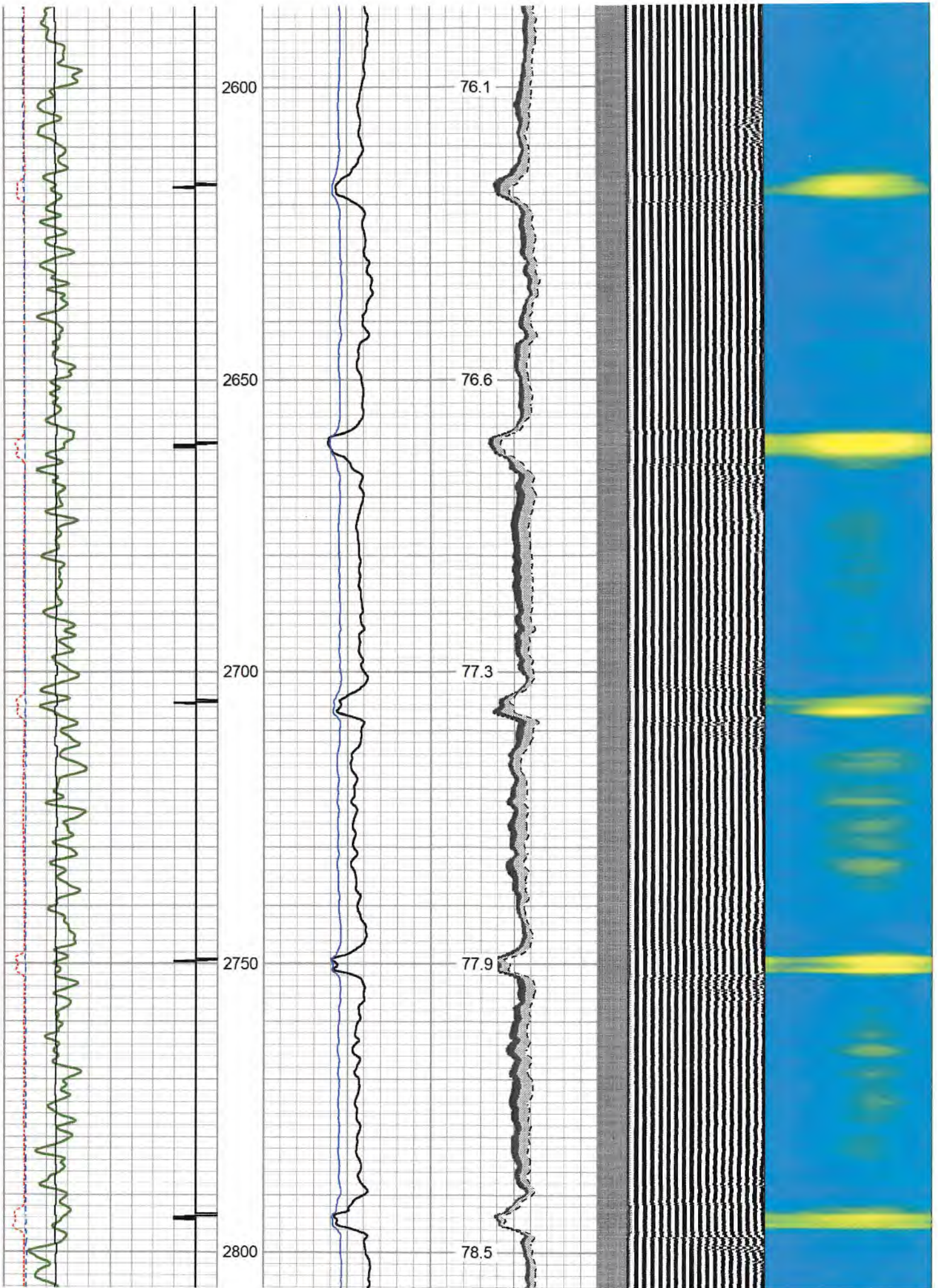




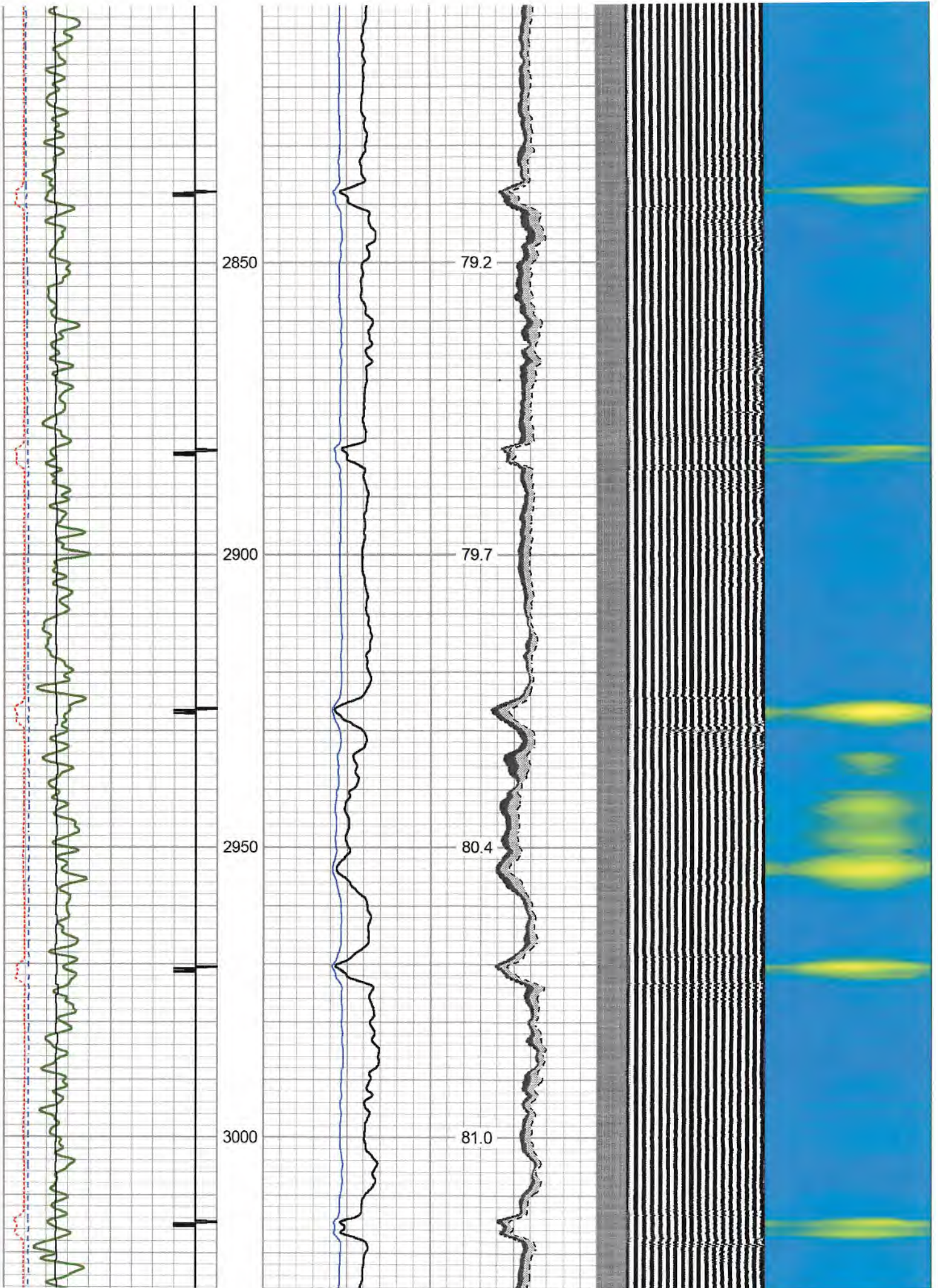




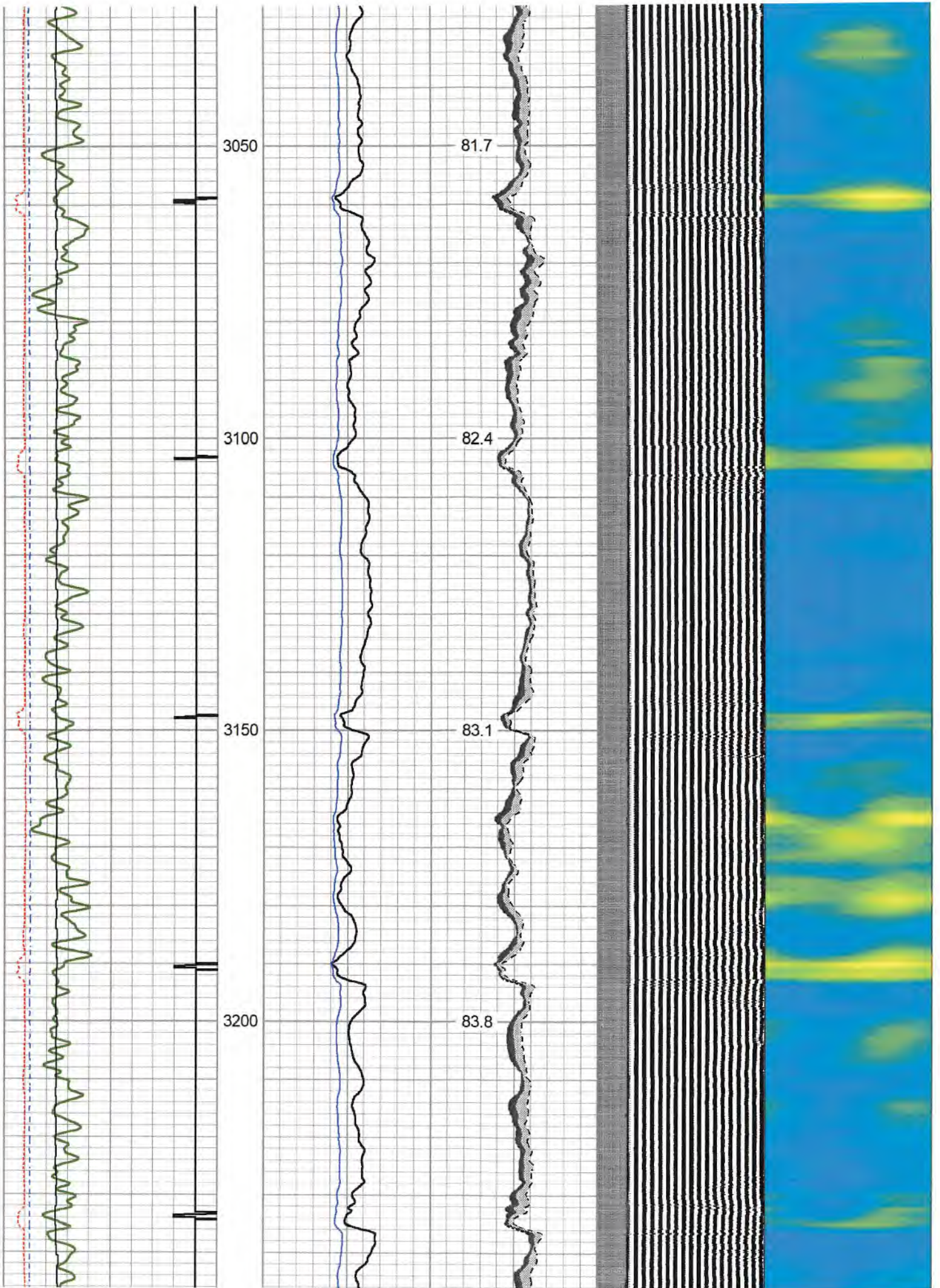




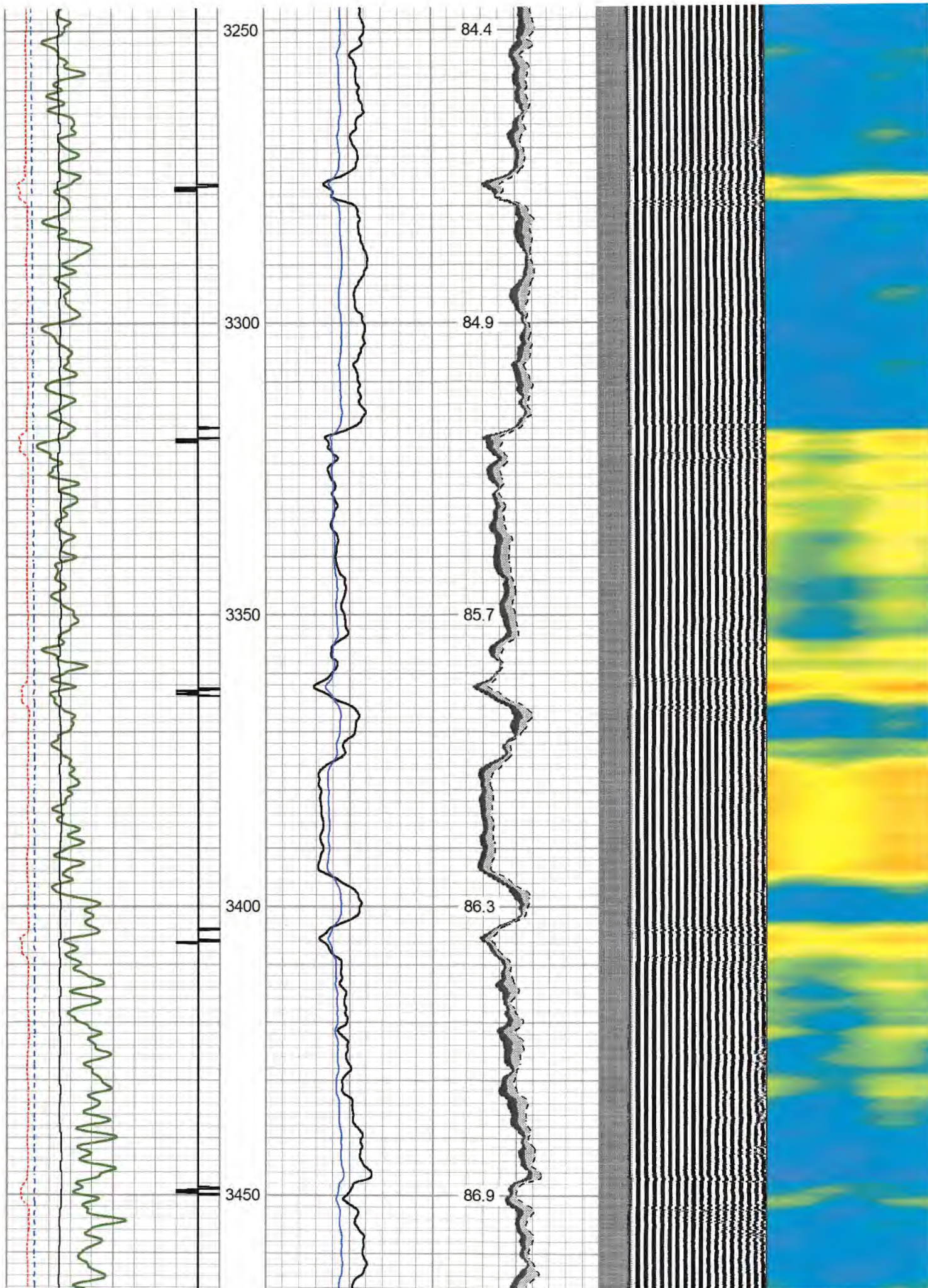




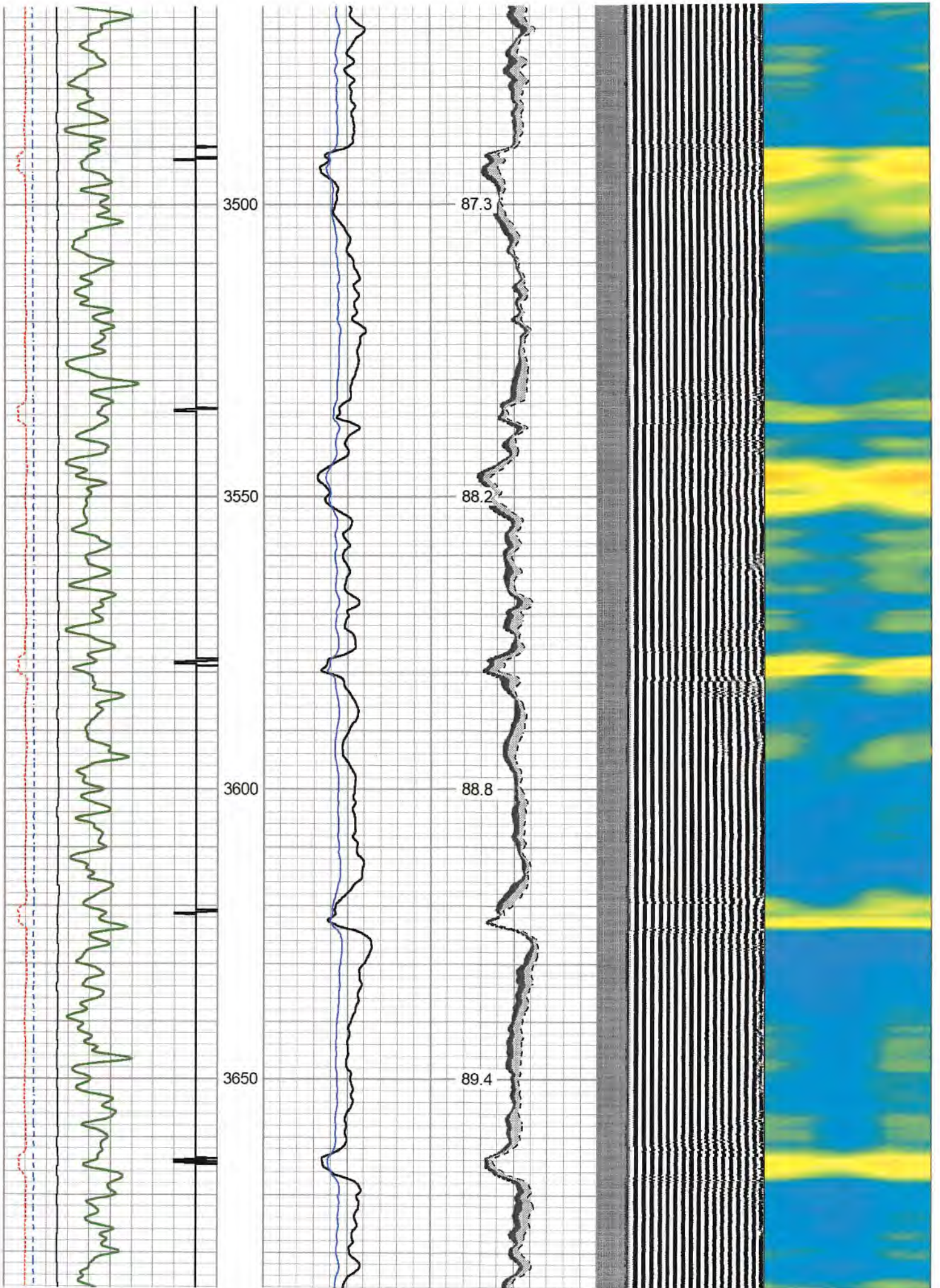




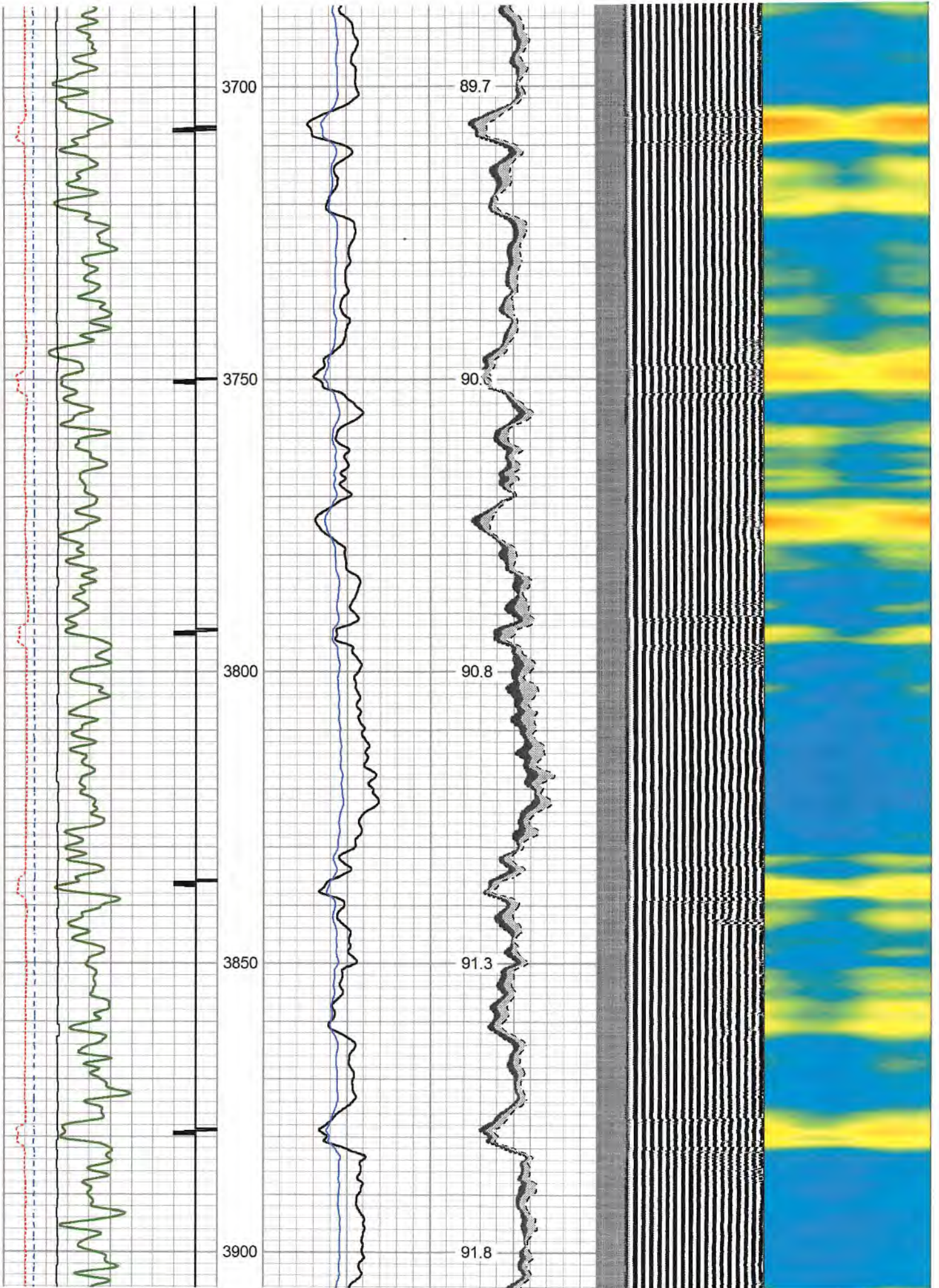




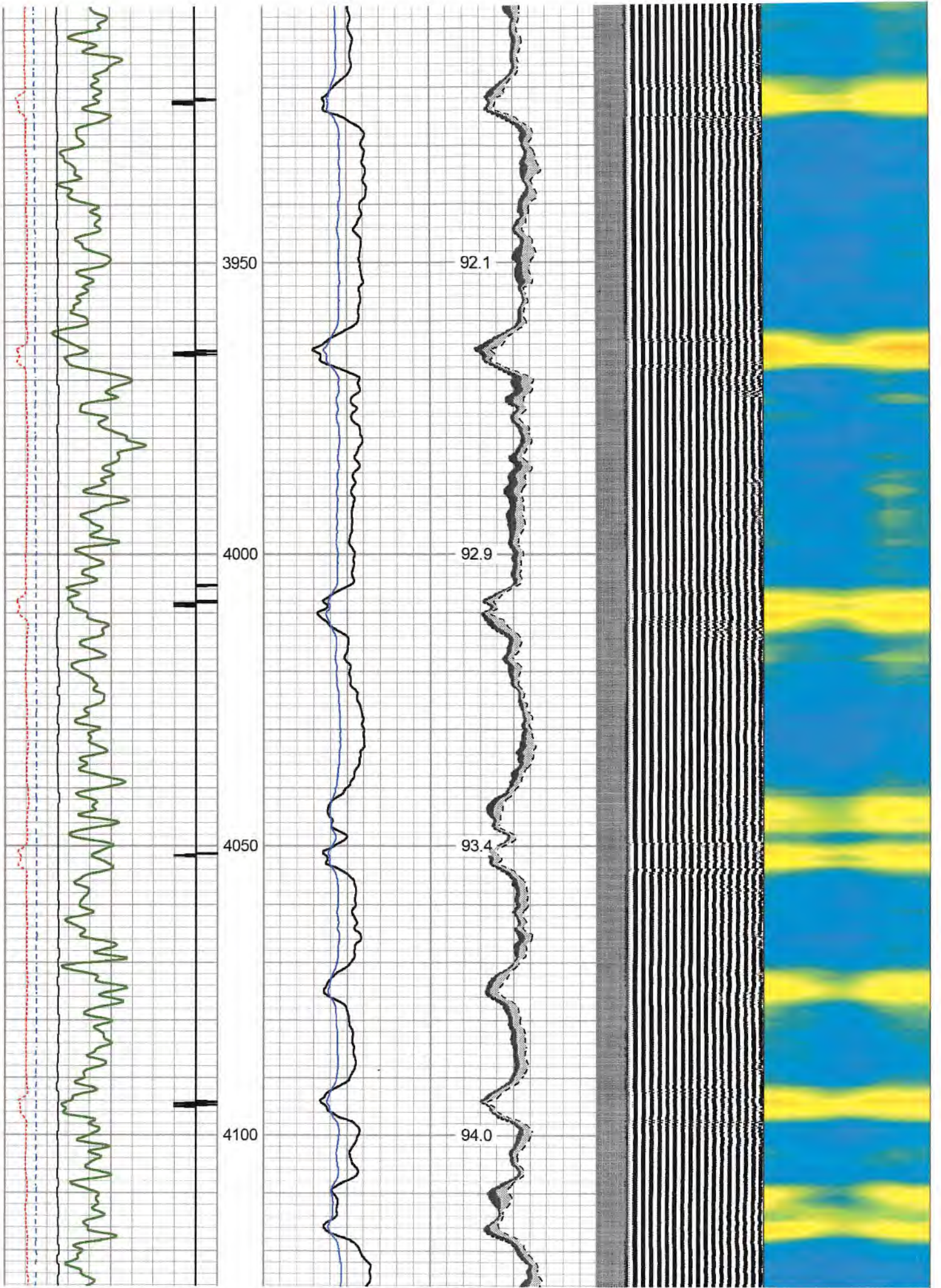




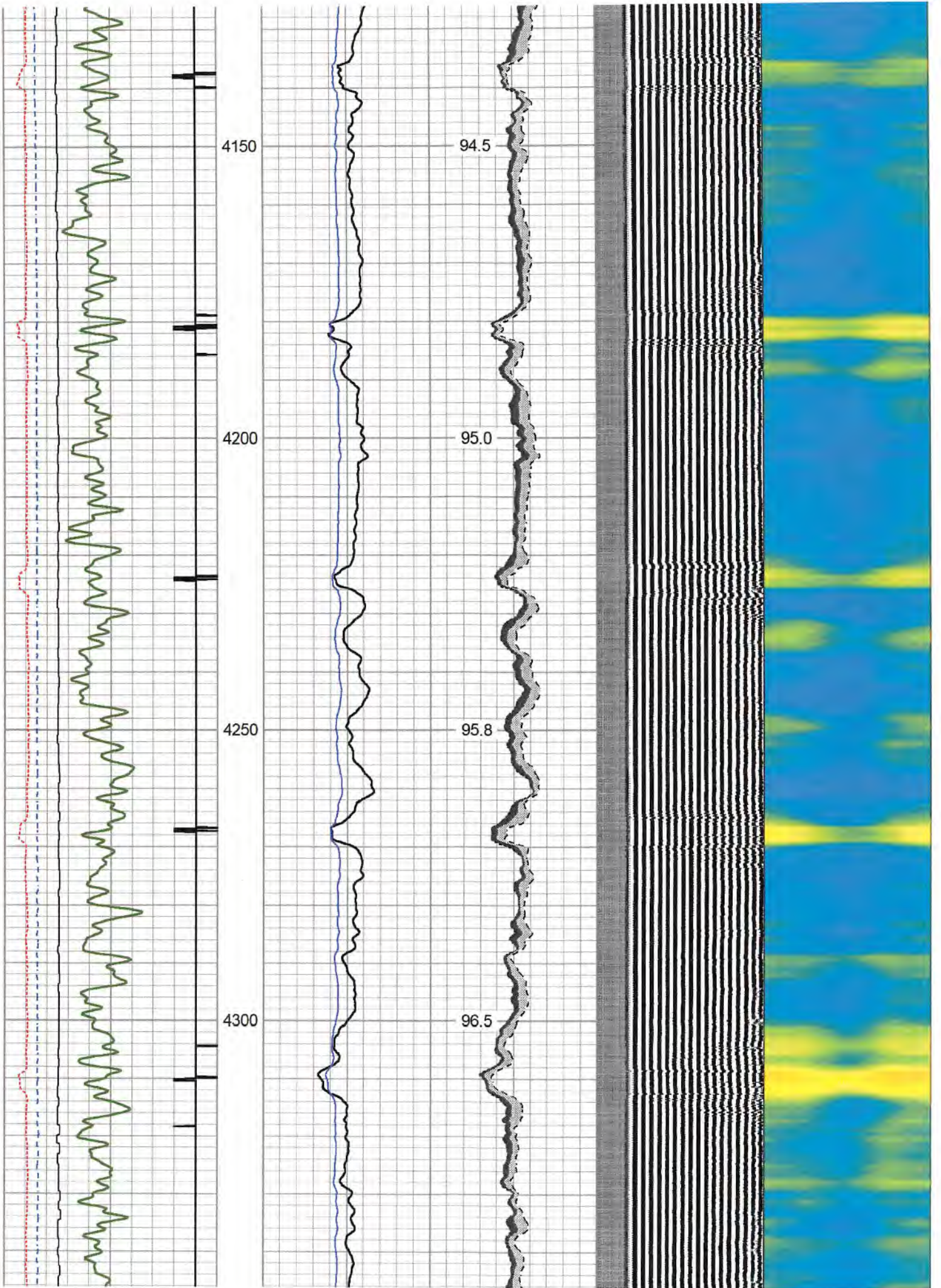




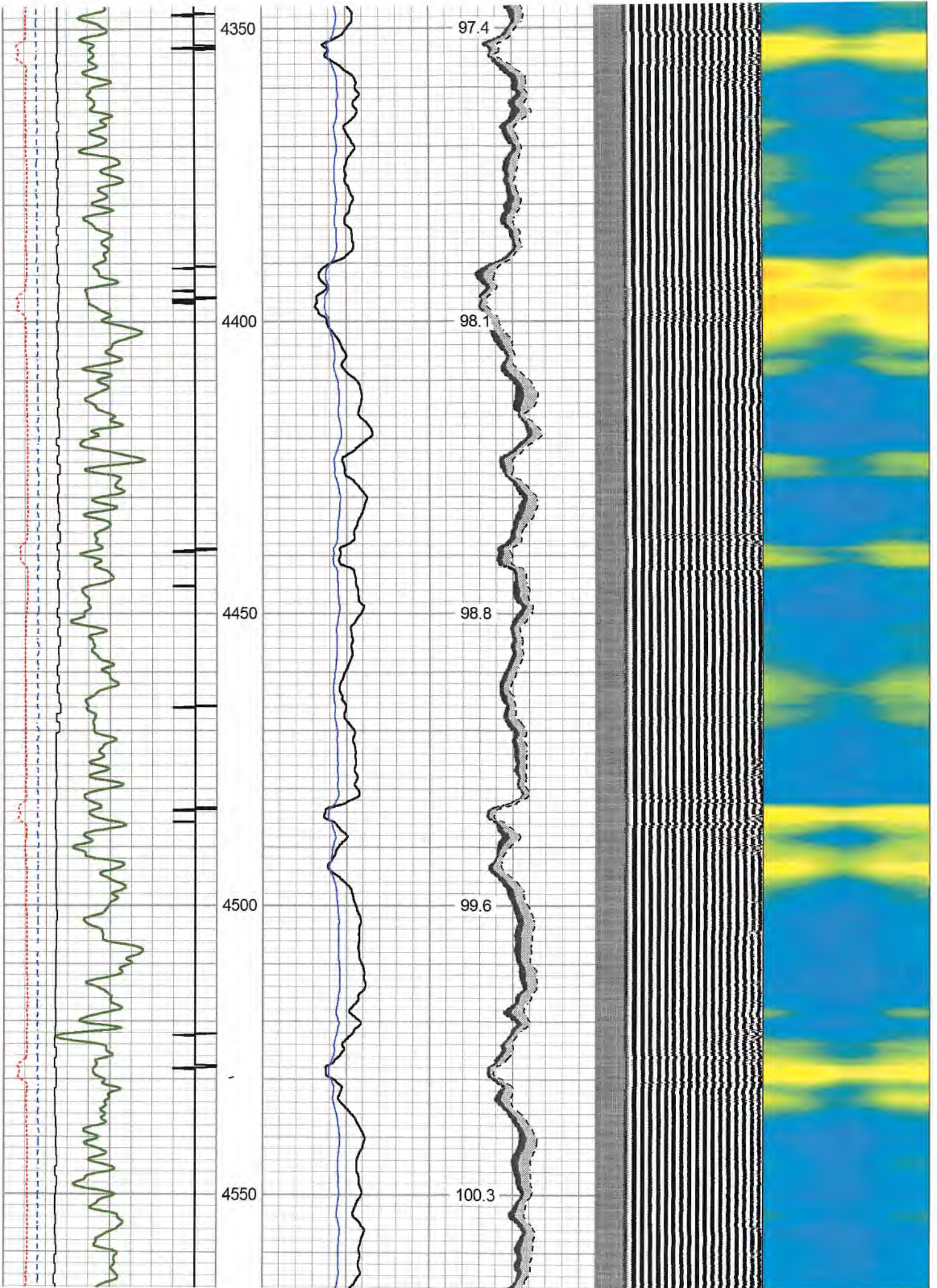




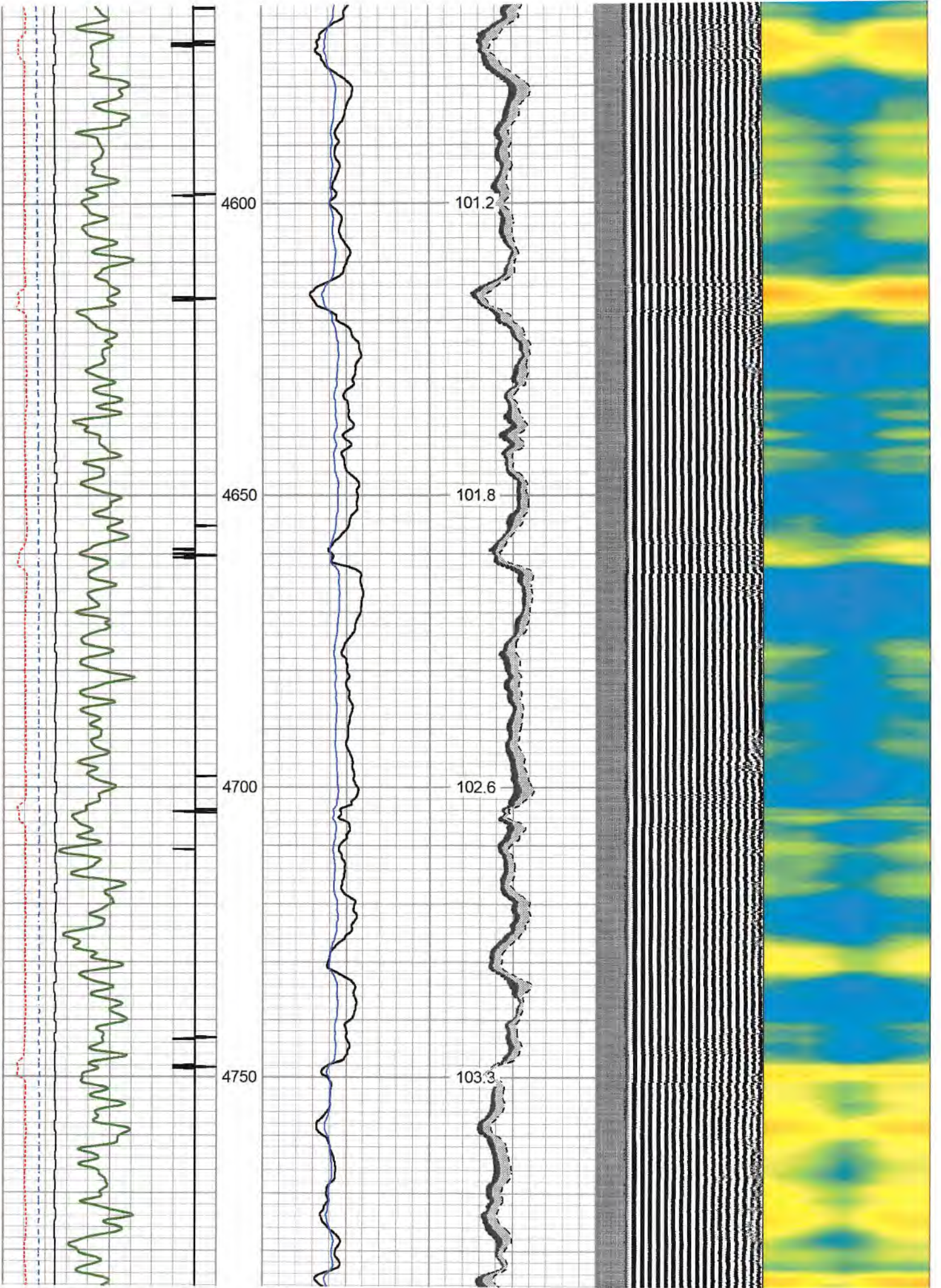




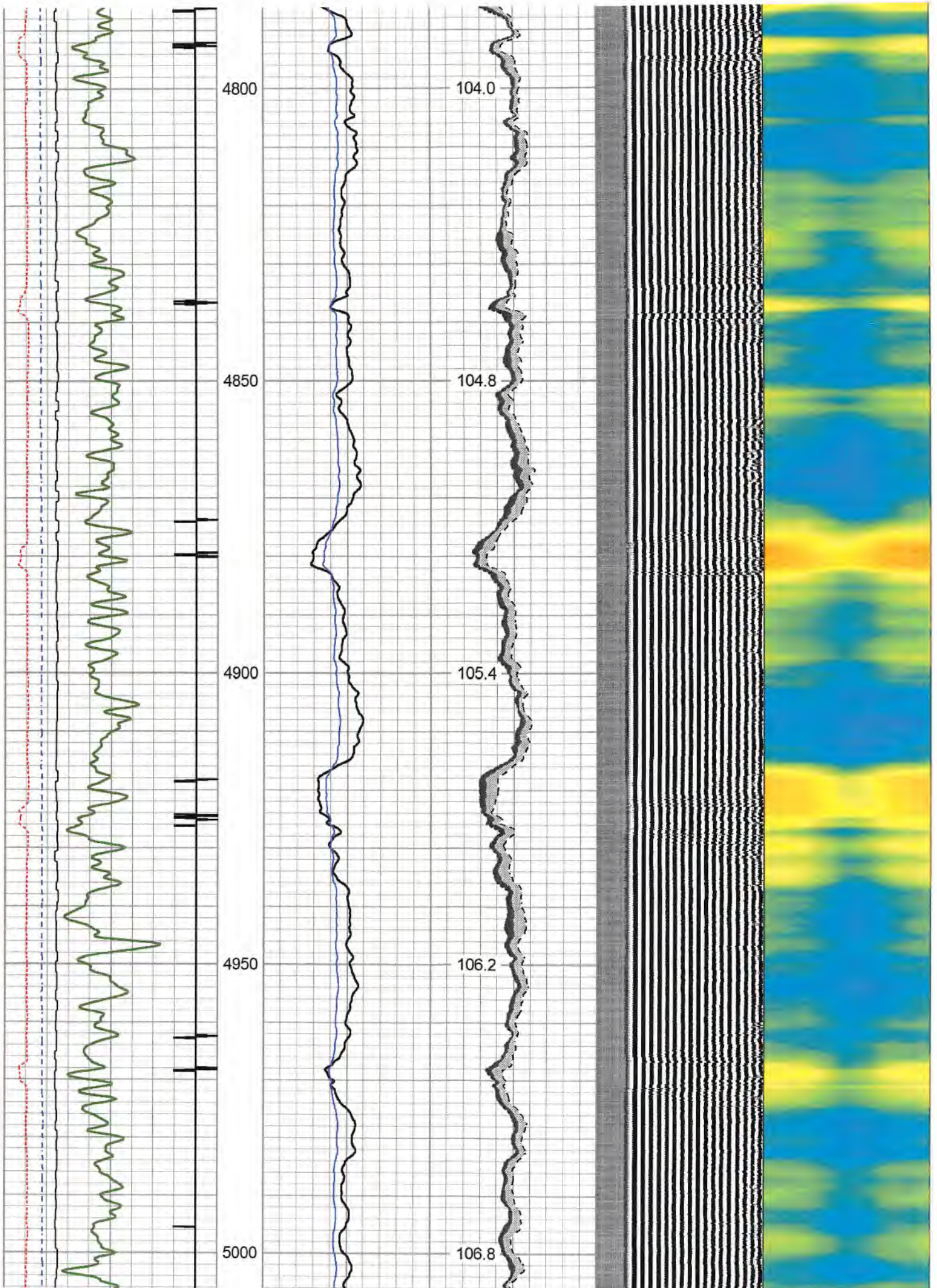




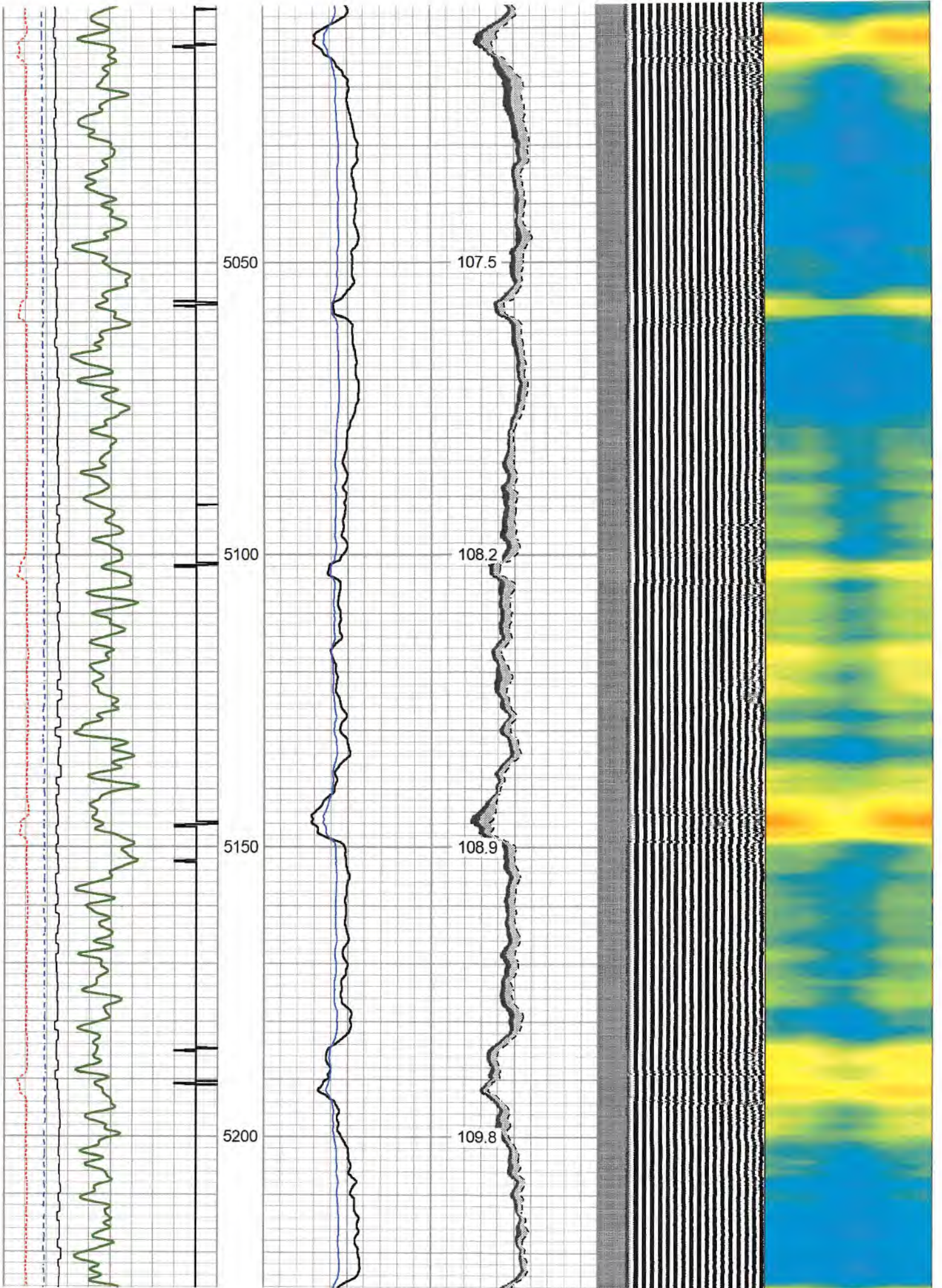




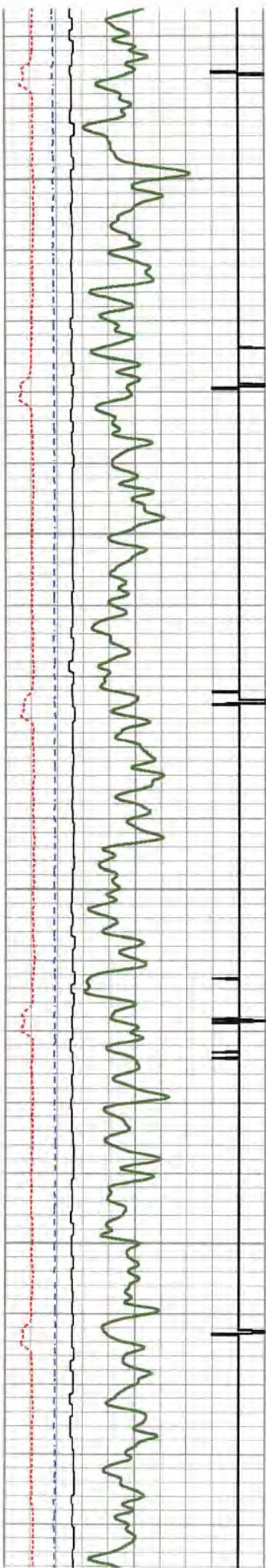










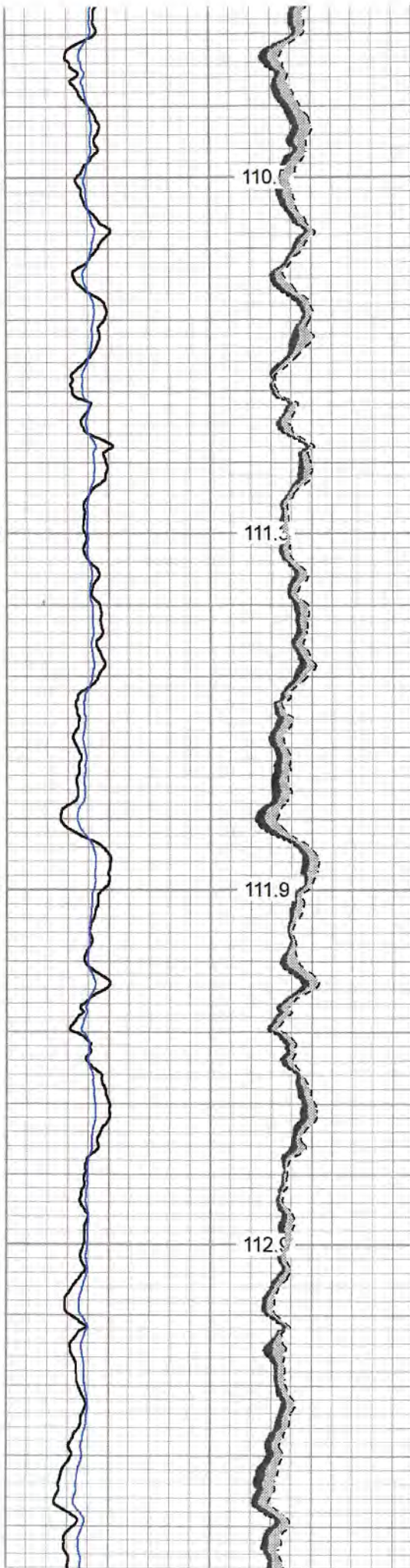


5250

5300

5350

5400

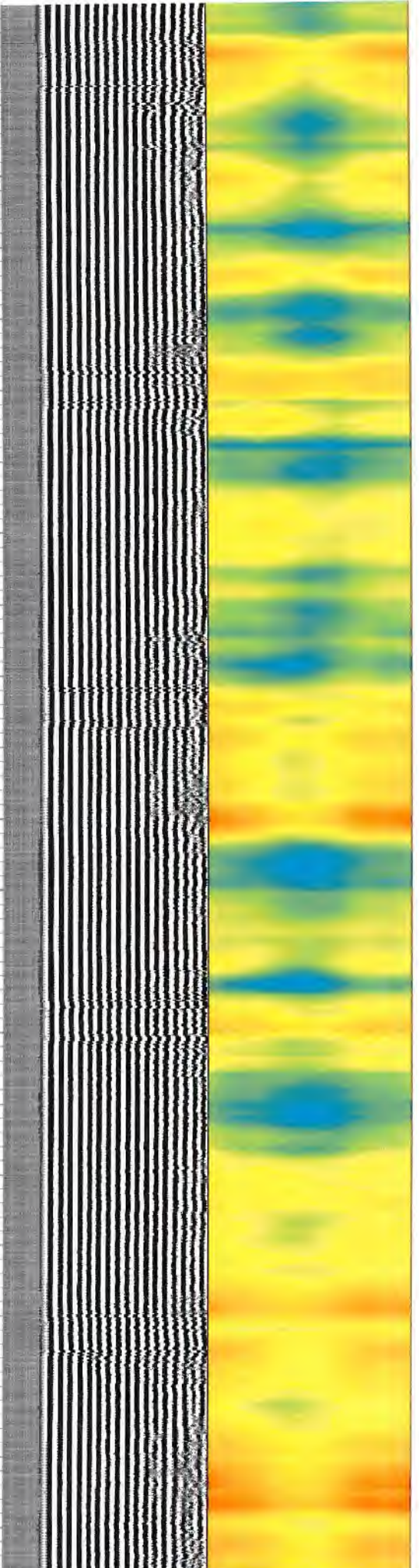


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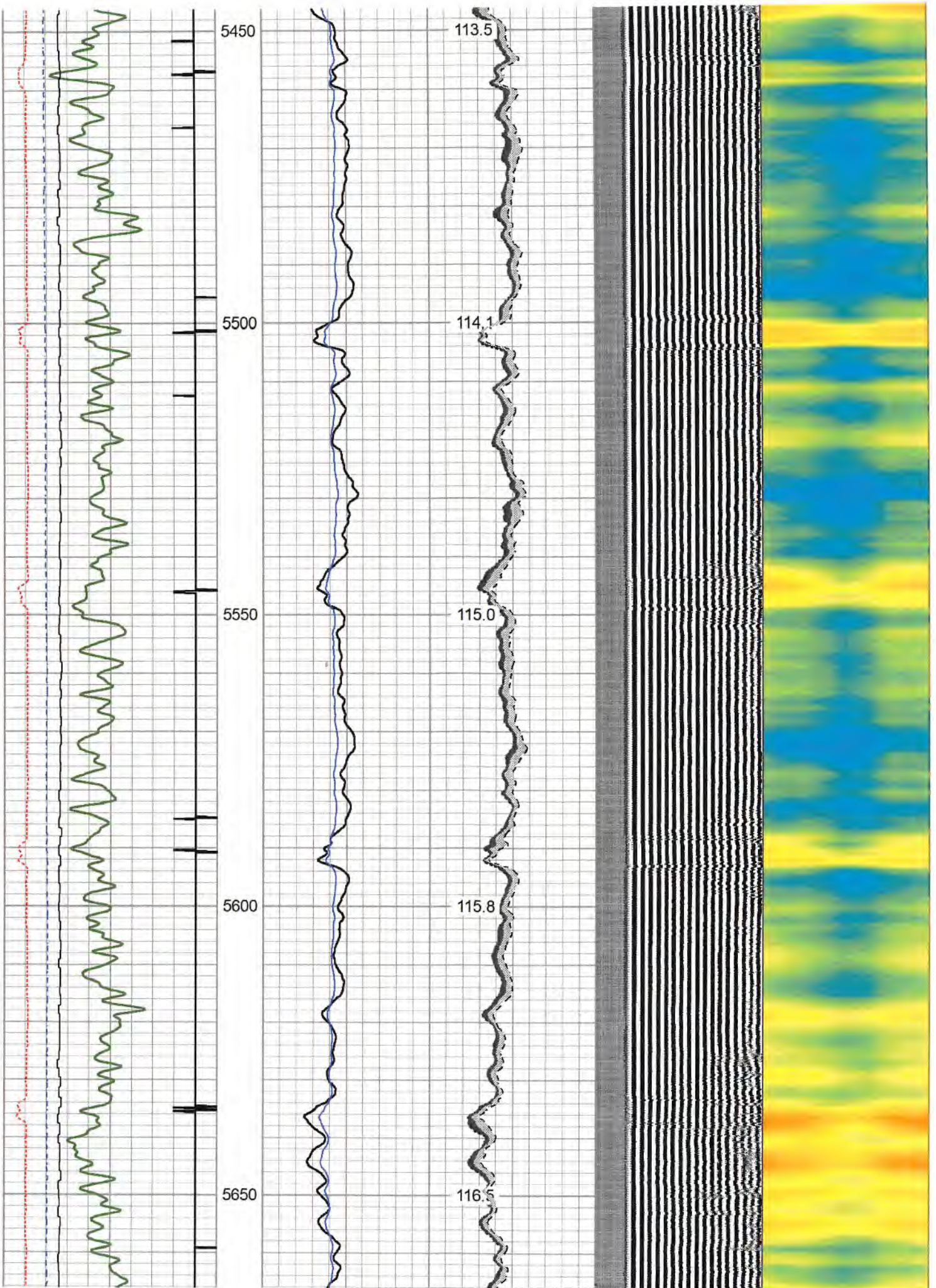
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111.9

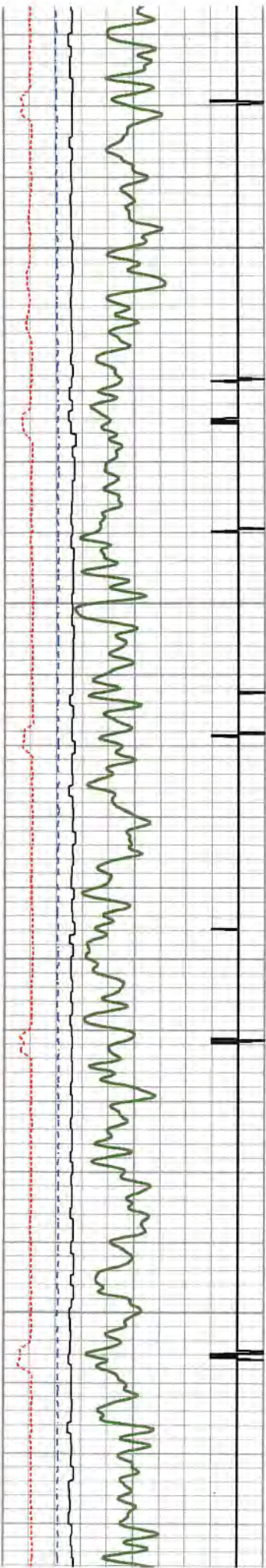
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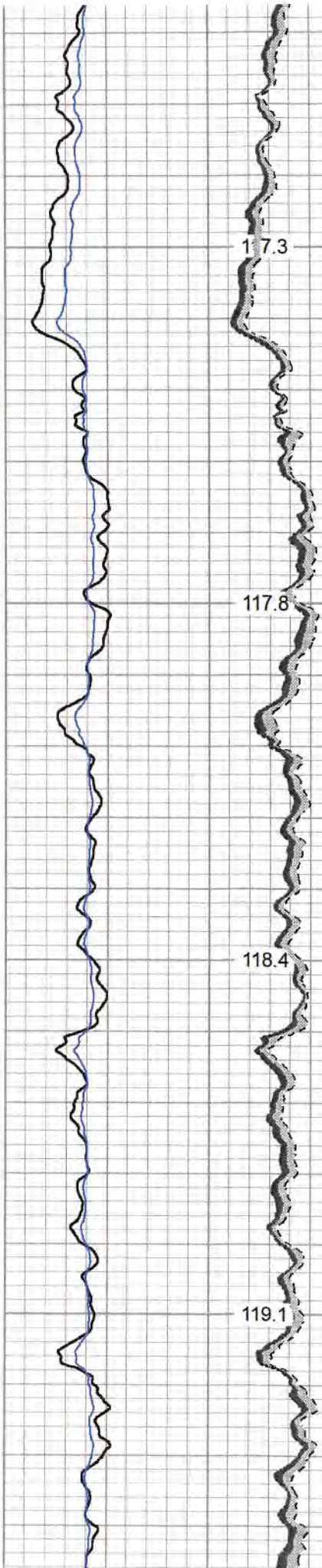


5700

5750

5800

5850

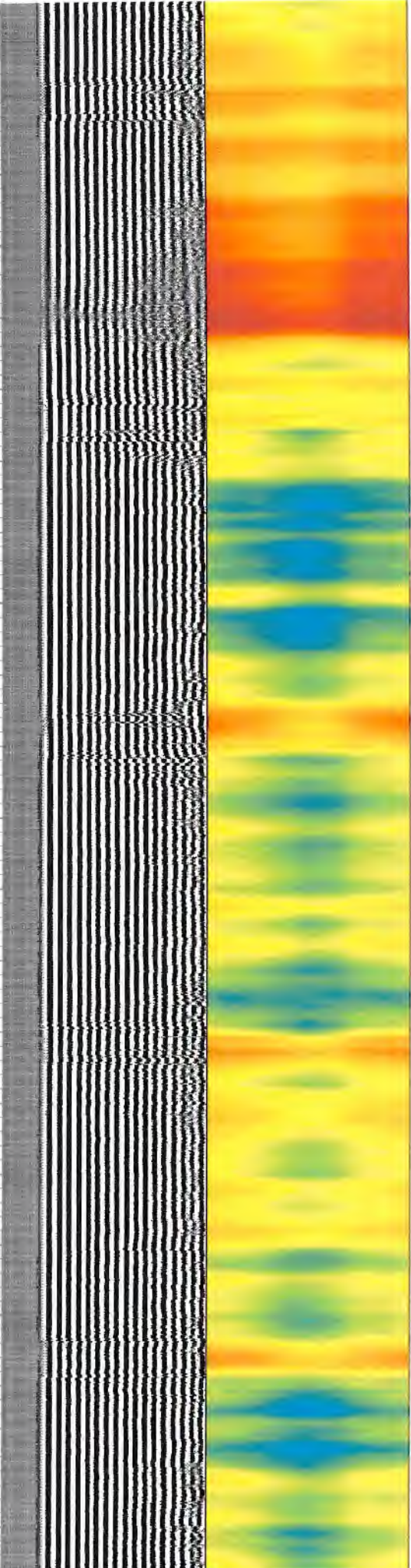


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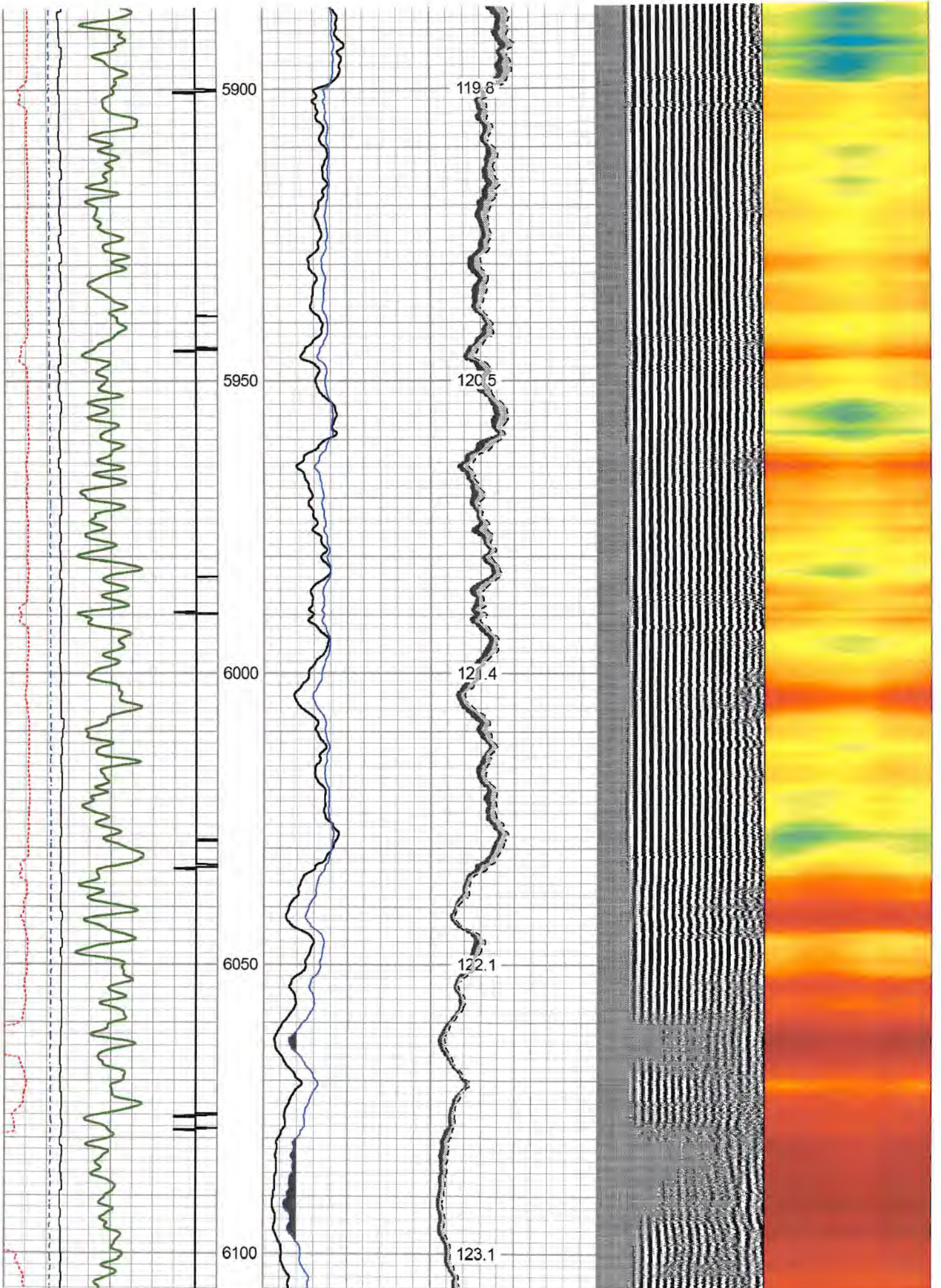
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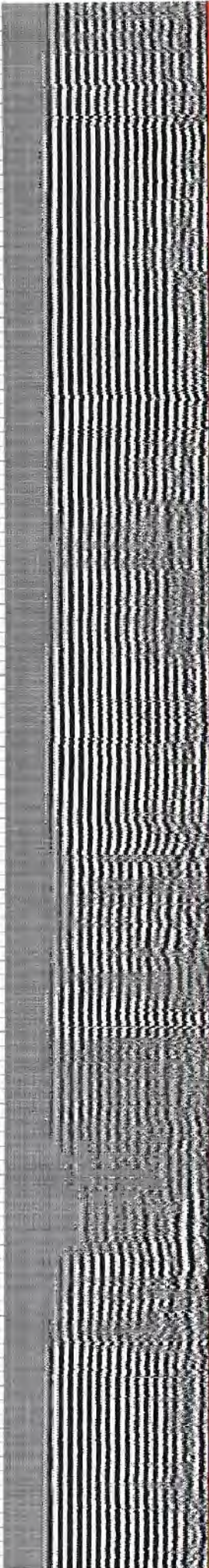
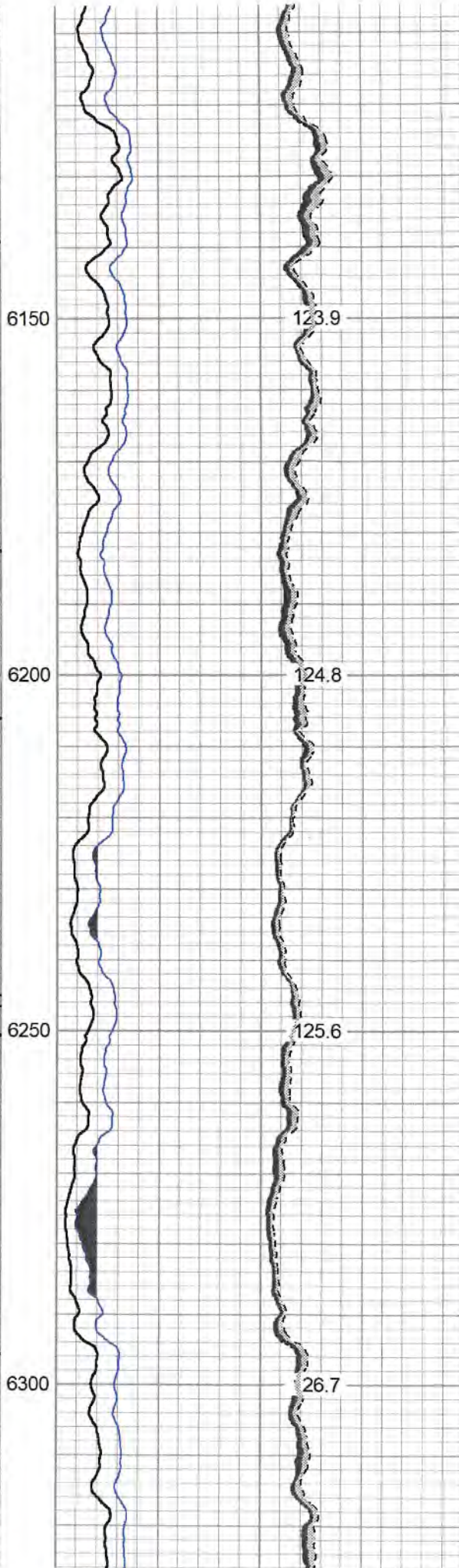
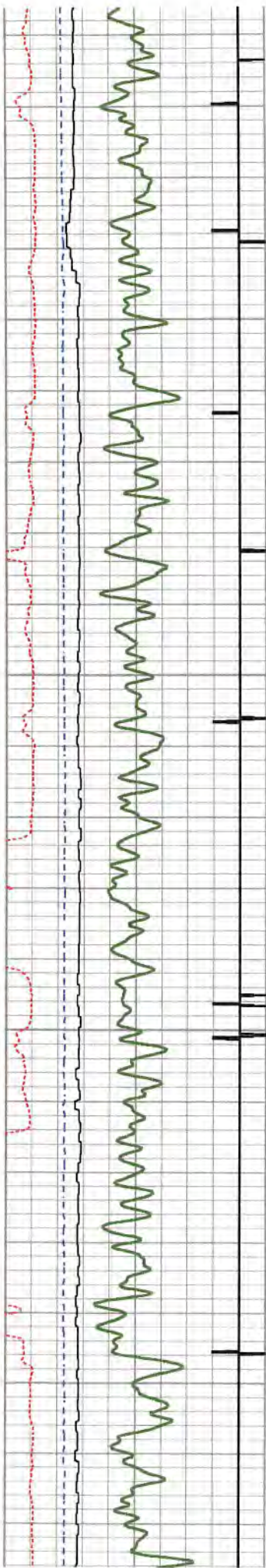
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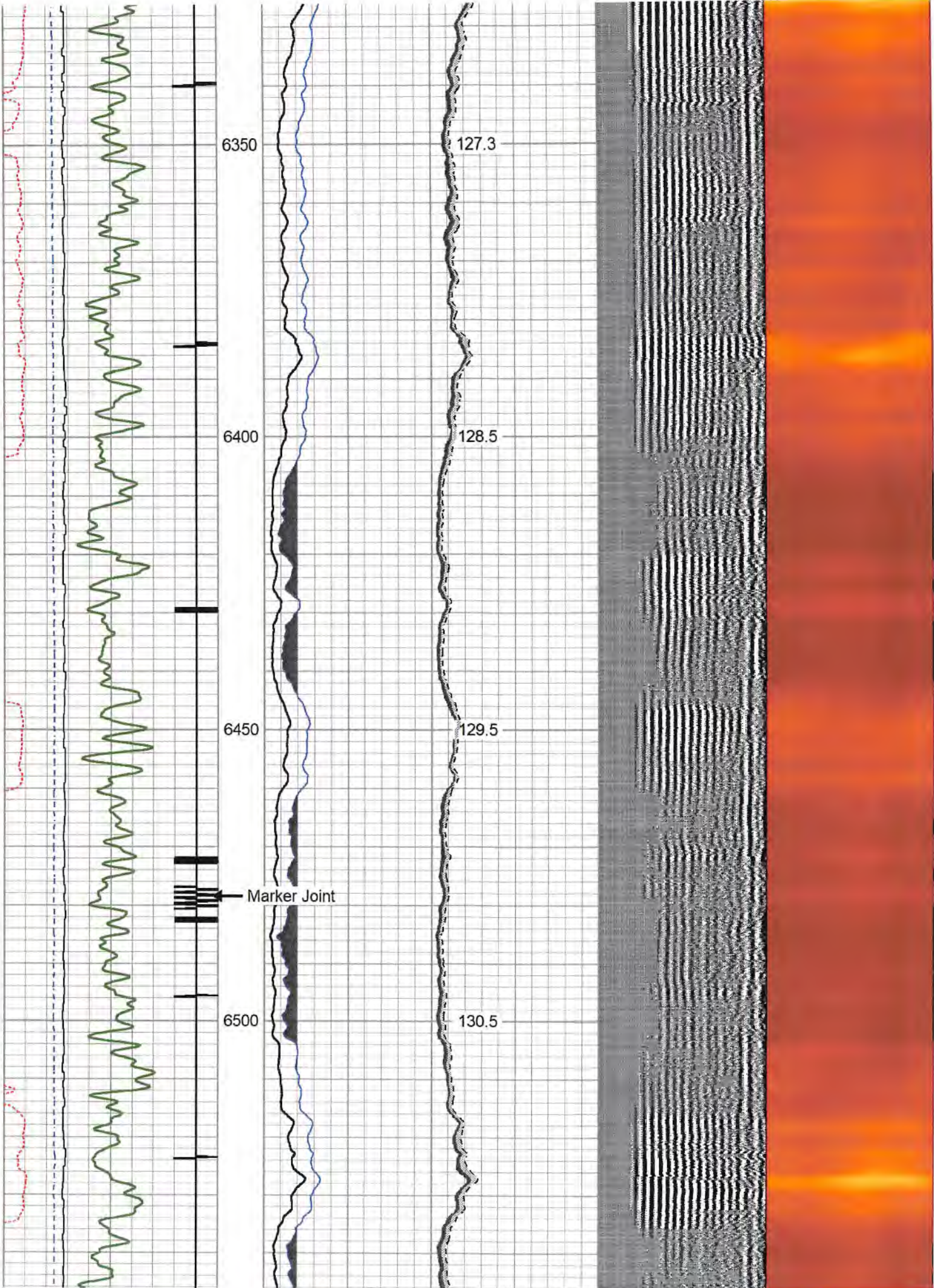
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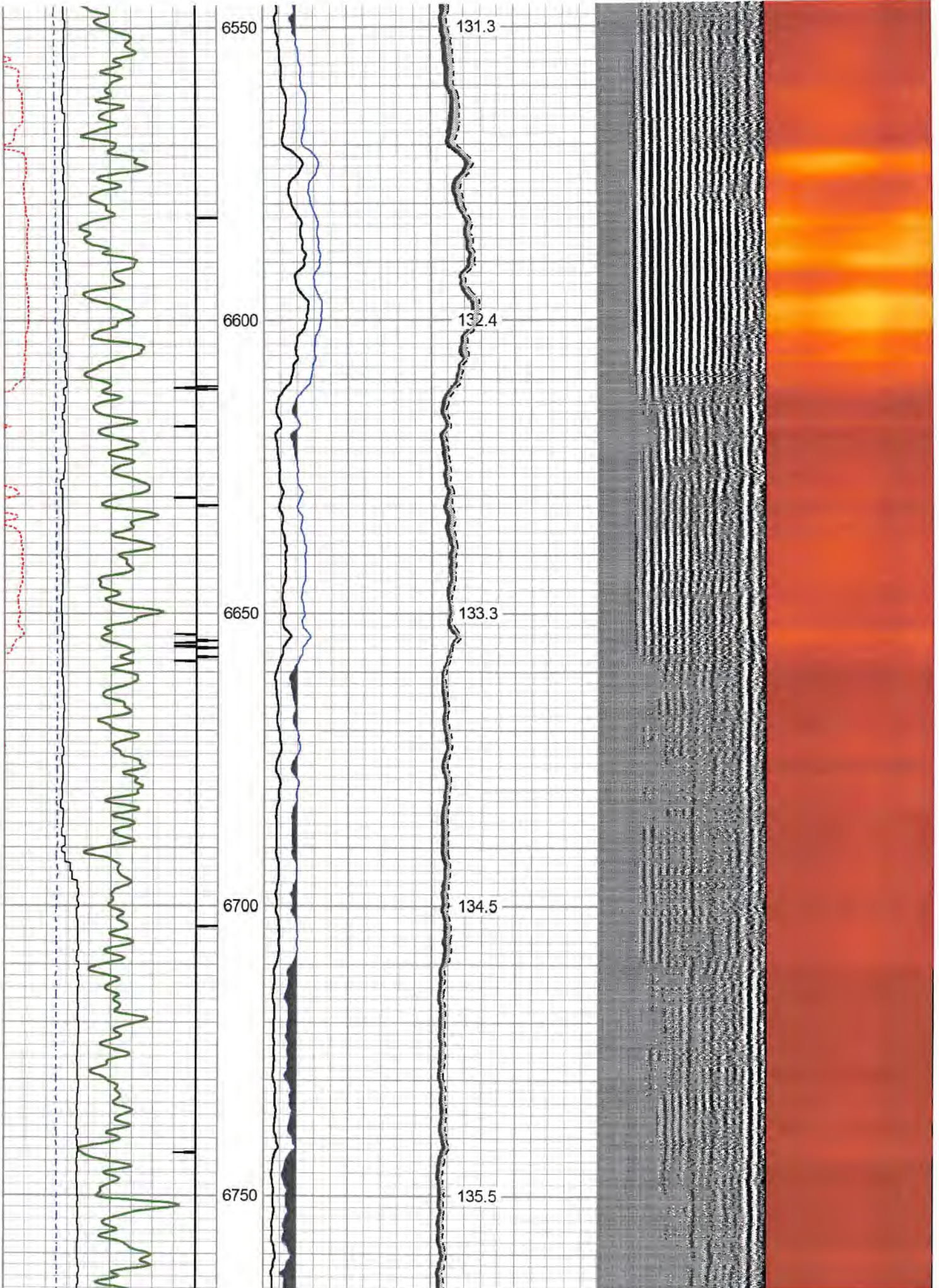
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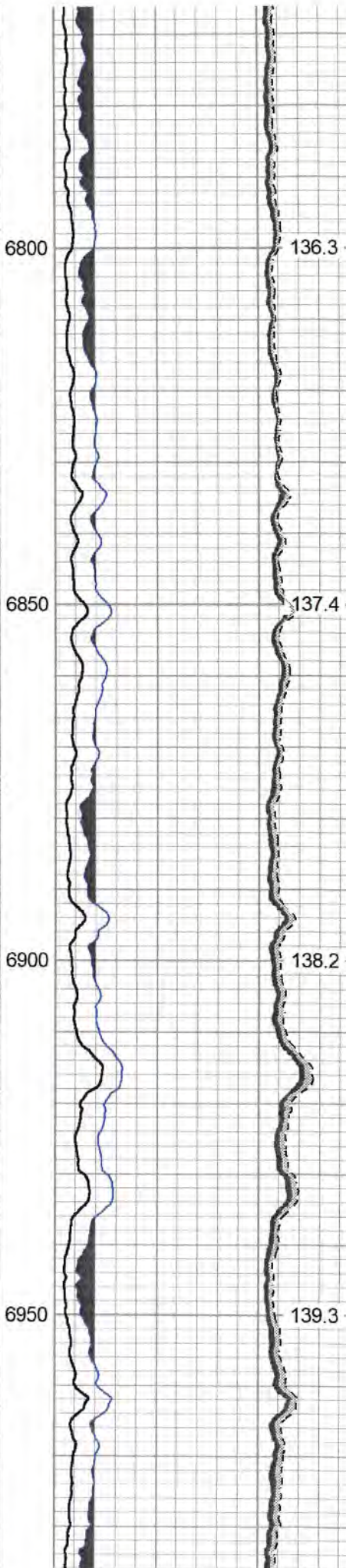
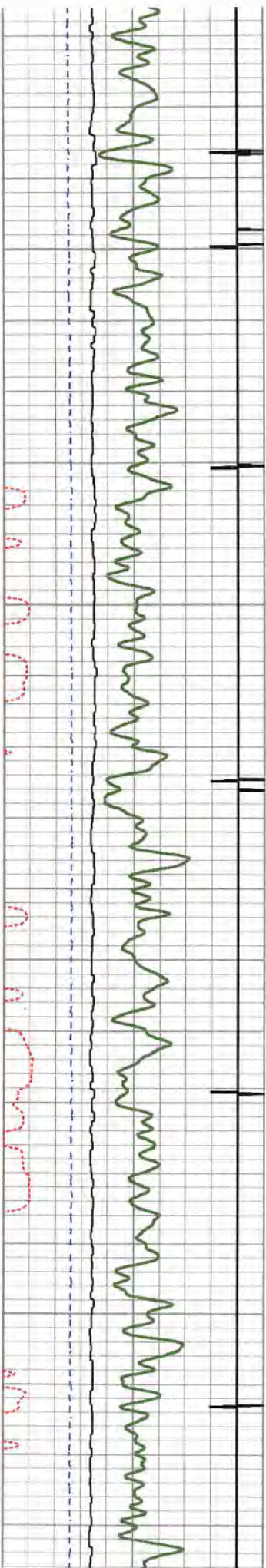




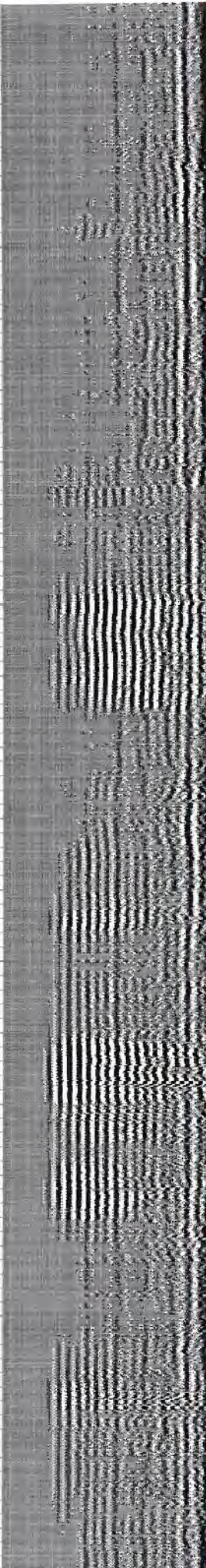




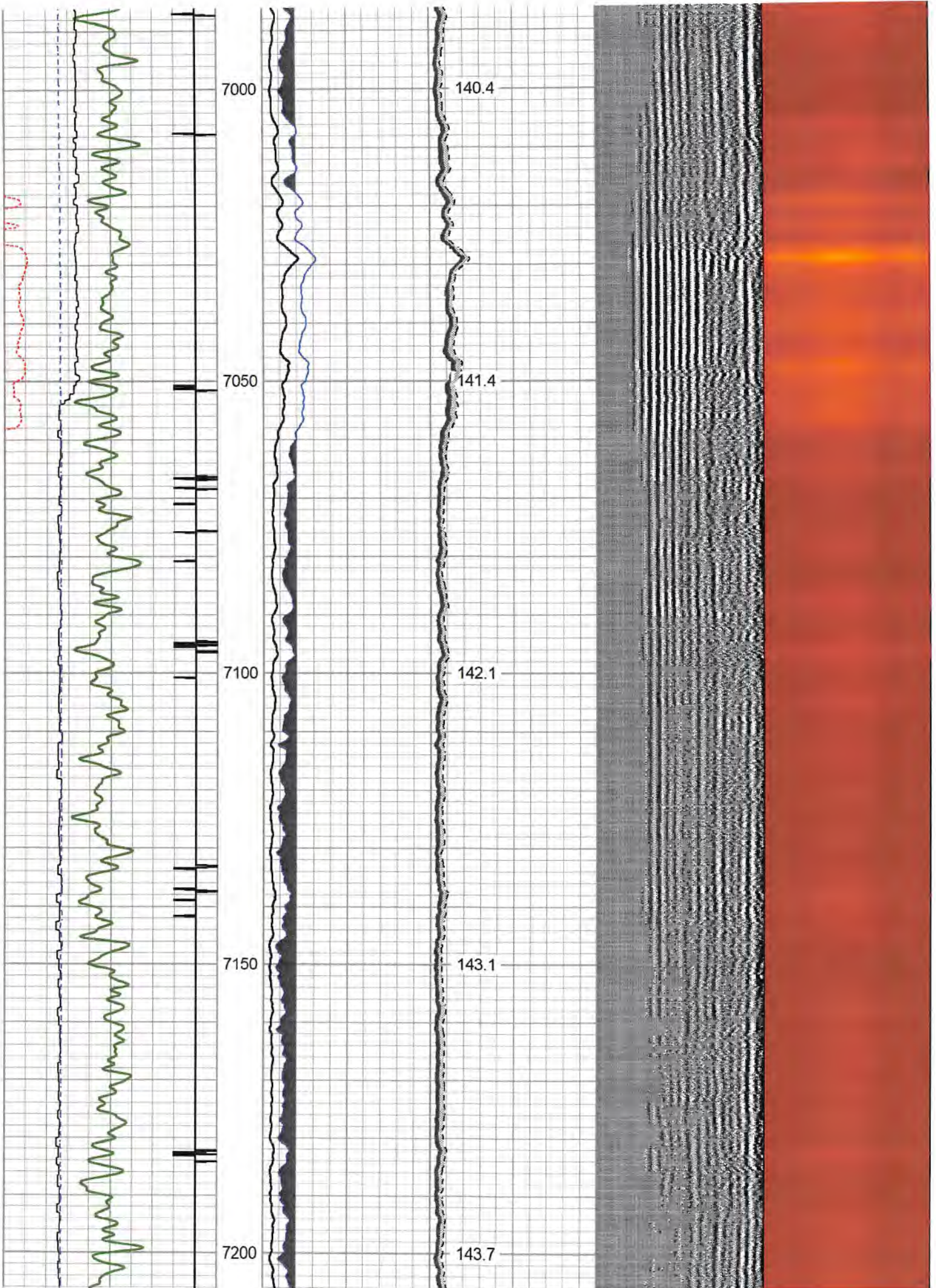




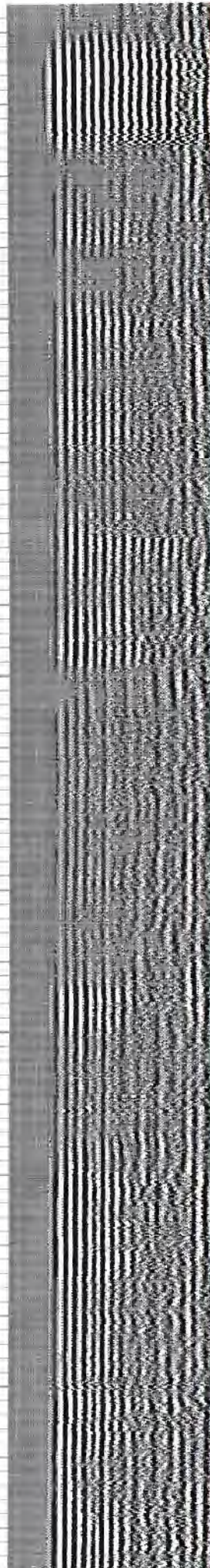
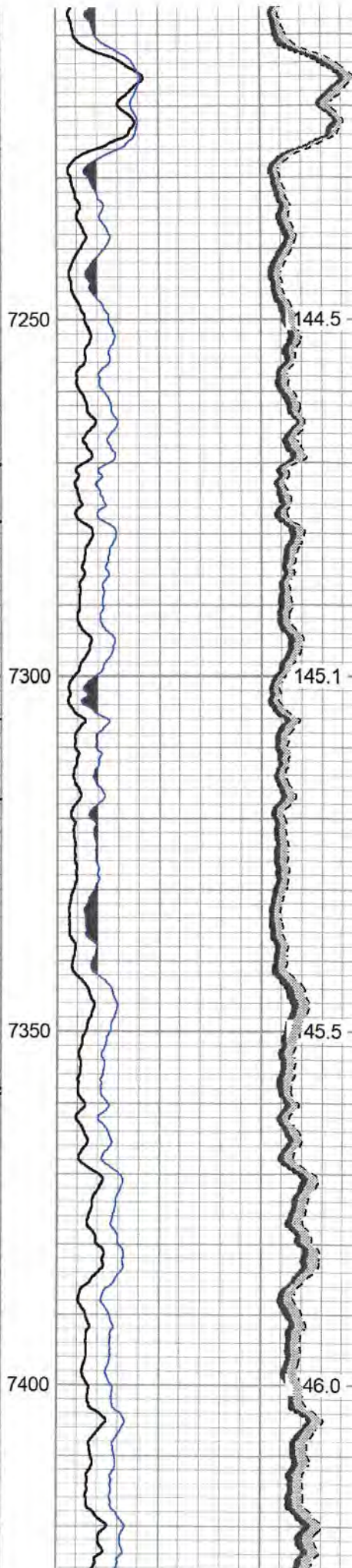
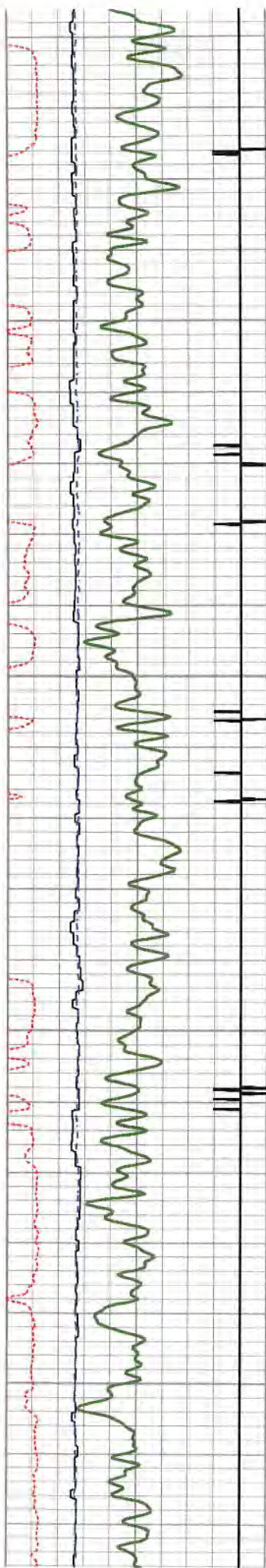
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137.4  
138.2  
139.3



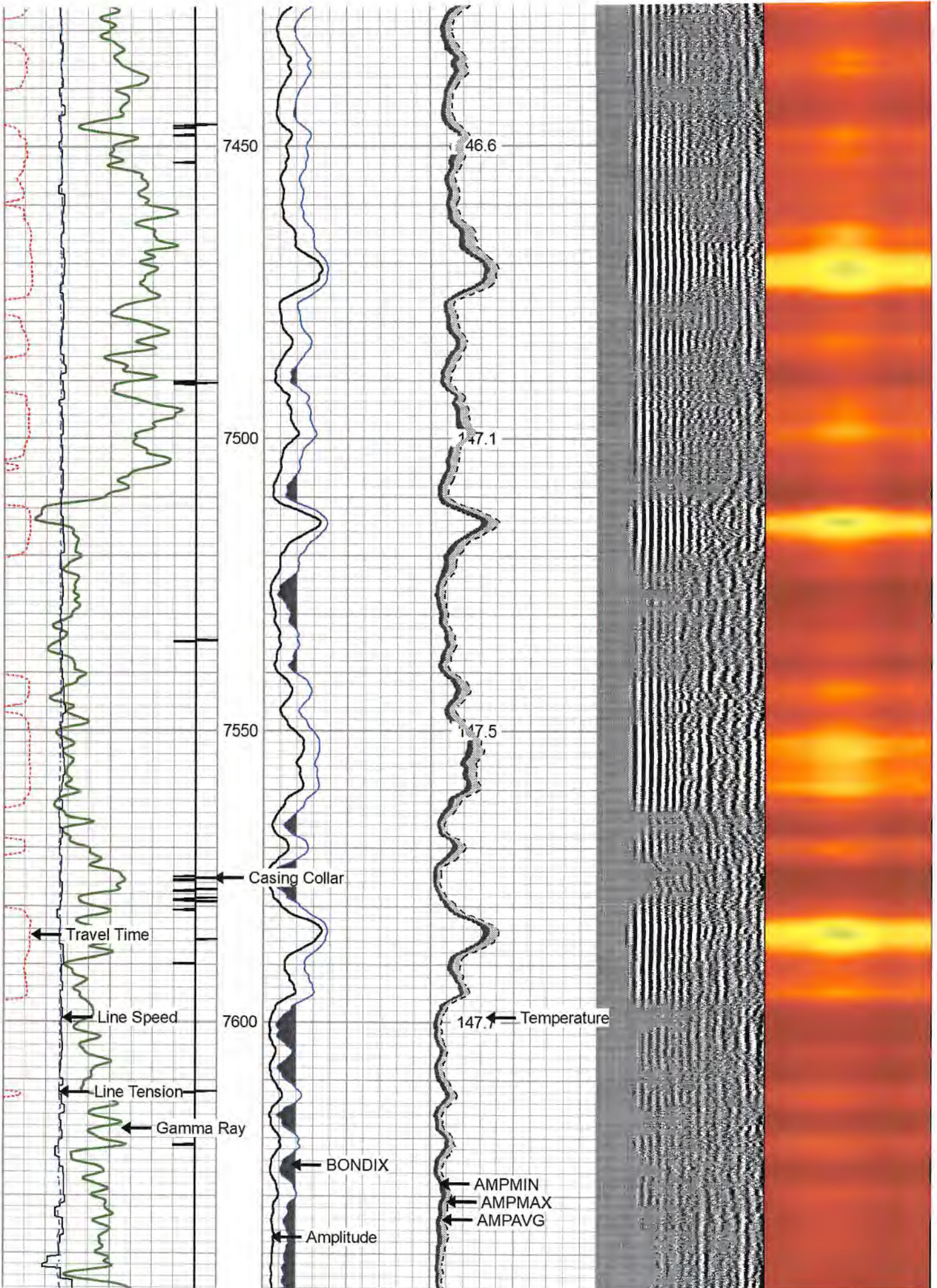








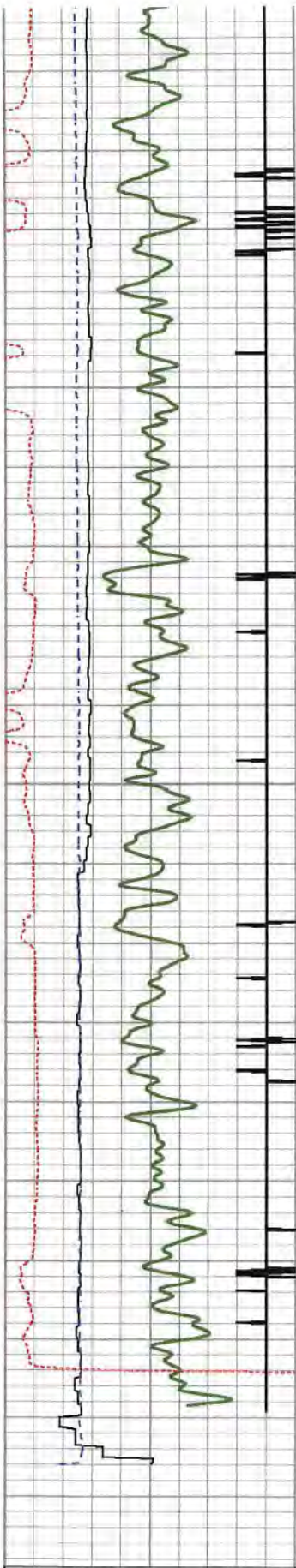




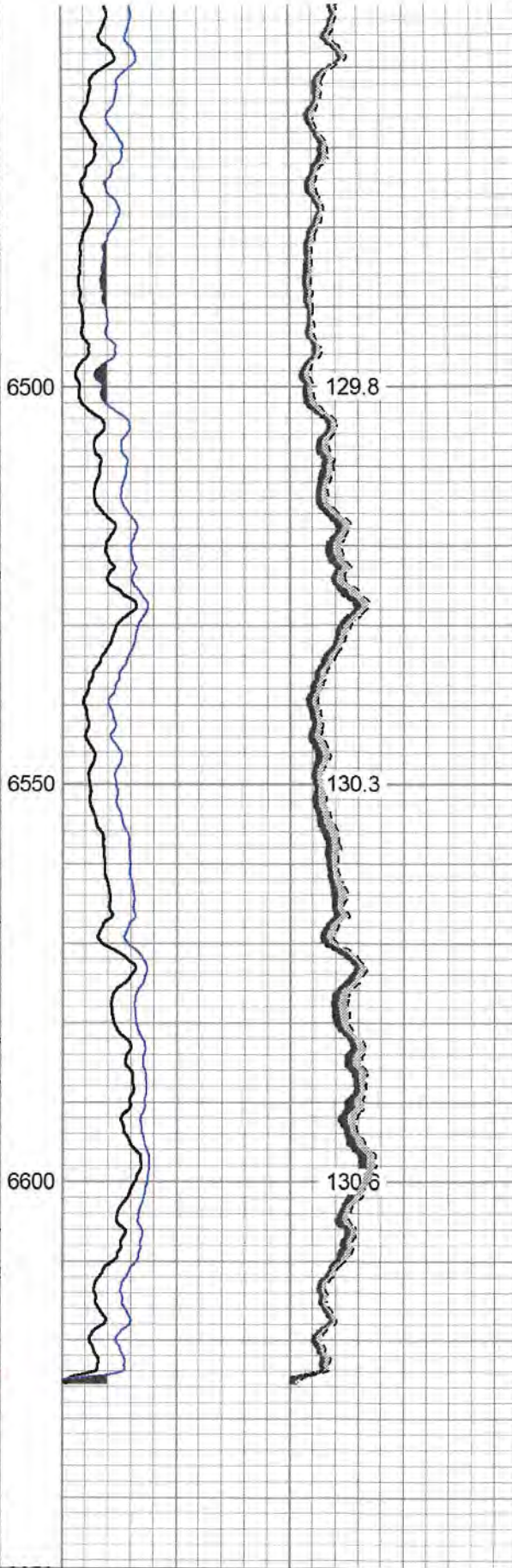




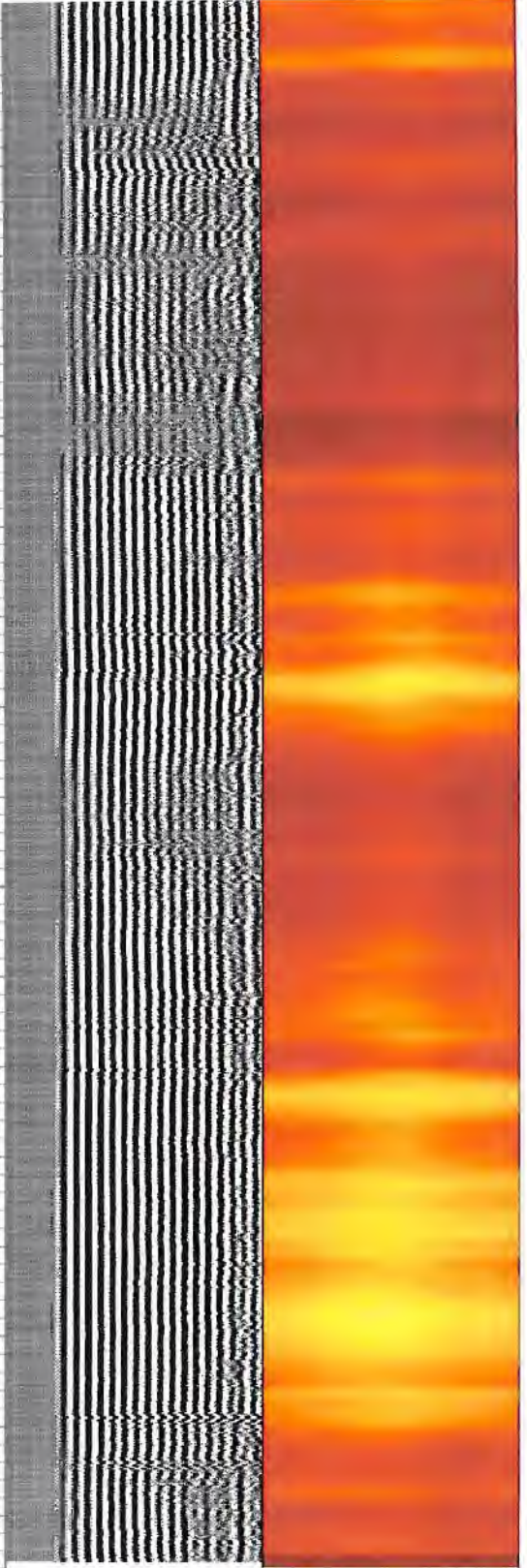




270	Travel Time (usec)	160
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-200	(ft/min)	200



0	Amplitude (mV)	100	-5	AMPMIN	150
1	BONDIX	0	-5	AMPMAX	150
			-5	AMPAVG	150
TEMP					
(degF)					



Variable Density	1	Cement Map	8
200	(usec)	1200	



# Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero\_peter\_3h\_rcbl\_11\_jan\_2023.db  
 Dataset field/peter3h/run1/pass7/\_vars\_

## Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 147	CASEOD in 5.5	CASETHCK in 0.361	CASEWGHT lb/ft 20	MAXAMPL mV 71.9	MINAMPL mV 2.2
MINATTN db/ft 10.8	PERFS No	PPT usec 261	SRFTEMP degF 48	TDEPTH ft 7683			

## Variable Description

BHTEMP_Src : BHTEMP Input Source Selector	MINAMPL : Minimum Amplitude
BOREID : Borehole I.D.	MINATTN : Minimum Attenuation
BOTTEMP : Bottom Hole Temperature	PERFS : Perforation Flag
CASEOD : Casing O.D.	PPT : Predicted Pipe Time
CASETHCK : Casing Thickness	SRFTEMP : Surface Temperature
CASEWGHT : Casing Weight	TDEPTH : Total Depth
MAXAMPL : Maximum Amplitude	

## Calibration Report

Database File antero\_peter\_3h\_rcbl\_11\_jan\_2023.db  
 Dataset Pathname peter3h/run1/pass7  
 Dataset Creation Thu Jan 12 00:09:21 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

## 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




S2	0.000	0.871	0.000	100.000	120.000	0.102
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)
HeadVolt	16.95		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
Temp	14.10		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
WVFS8	11.86		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	11.86					
WVFS6	11.86					
WVFS5	11.86					
WVFS4	11.86					
WVFS3	11.86					
WVFS2	11.86					
WVFS1	11.86					

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WVF3FT	11.86					
WVF5FT	10.86					
WVFCAL	7.61					
HEADVOLT	7.61					
CCL	6.71					
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\_3h\_rcbl\_11\_jan\_2023.db: field/peter3h/run1/pass7  
 Total length: 18.03 ft  
 Total weight: 182.00 lb  
 O.D.: 4.88 in

	Company	ANTERO RESOURCES
	Well	PETER 3H
	Field	SOUTH CANTON
	County	DODDRIDGE
	State	WV

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JUN 2 2023

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Environmental Protection