



Radial Cement Bond  
Variable Density Log  
W/Gamma Ray/CCL/Temp

RECEIVED  
Office of Oil and Gas  
MAR 28 2023  
WV Department of  
Environmental Protection

Company ANTERO  
Well Margery Specter 1H  
Field RABBIT EARS  
County TYLER 4709502705  
State WEST VIRGINIA Country USA

Company ANTERO  
Well Margery Specter 1H  
Field RABBIT EARS  
County TYLER  
State WEST VIRGINIA Country USA  
Location: API #: 47-095-~~02706~~-0000  
Other Services  
SEC TWP RGE Elevation 25'  
Permanent Datum GL KB  
Log Measured From KB  
Drilling Measured From KB  
Elevation K.B. N/A  
D.F. N/A  
G.L. N/A

Date	09-Jan-2021	
Run Number	ONE	
Depth Driller	18,580'	
Depth Logger	6,910'	
Bottom Logged Interval	6,977'	
Top Log Interval	SURFACE	
Open Hole Size	8.50"	
Type Fluid	FRESH WATER	
Density / Viscosity	8.4#	
Max. Recorded Temp.	150 Deg. F.	
Estimated Cement Top	5,374'	
Time Well Ready	7:30	
Time Logger on Bottom	8:20	
Equipment Number	TK-104 / P1, G2	
Location	CHARLEROI, PA	
Recorded By	Matt McNally	
Witnessed By	Ryan Rivera	
Run Number	Borehole Record	
	Bit	From To
Casing Record	Tubing Record	
	Size	Weight From To
Surface String	5 1/2"	20# SURFACE
Production String		
Liner		18,580'

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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 @ 5,752' -5,761'  
Depth Correction -19'

100%FREE PIPE=71.9mv  
100%BOND=2.2mv

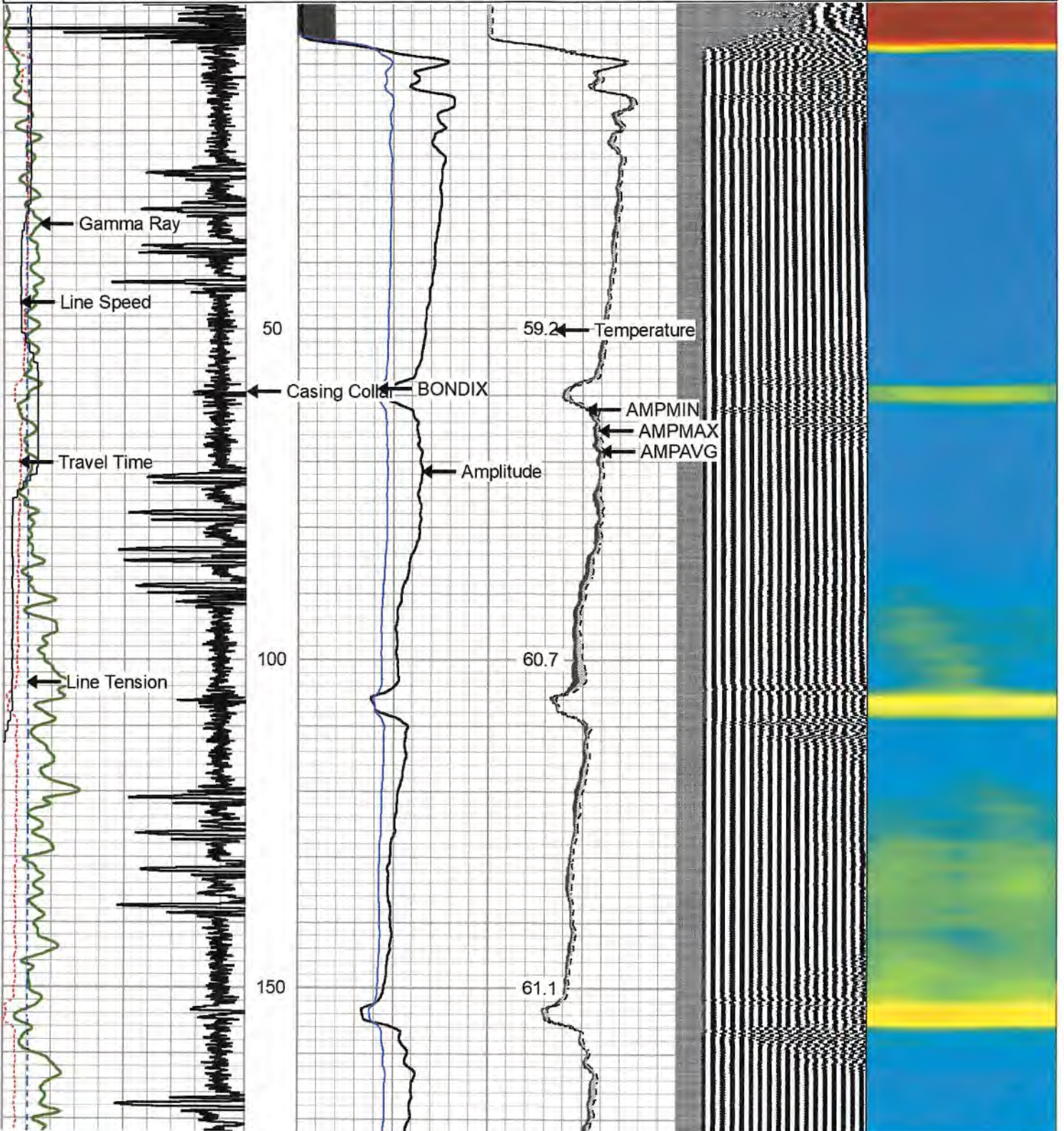
Thank You for Choosing Nine Energy Service.Charleroi, PA

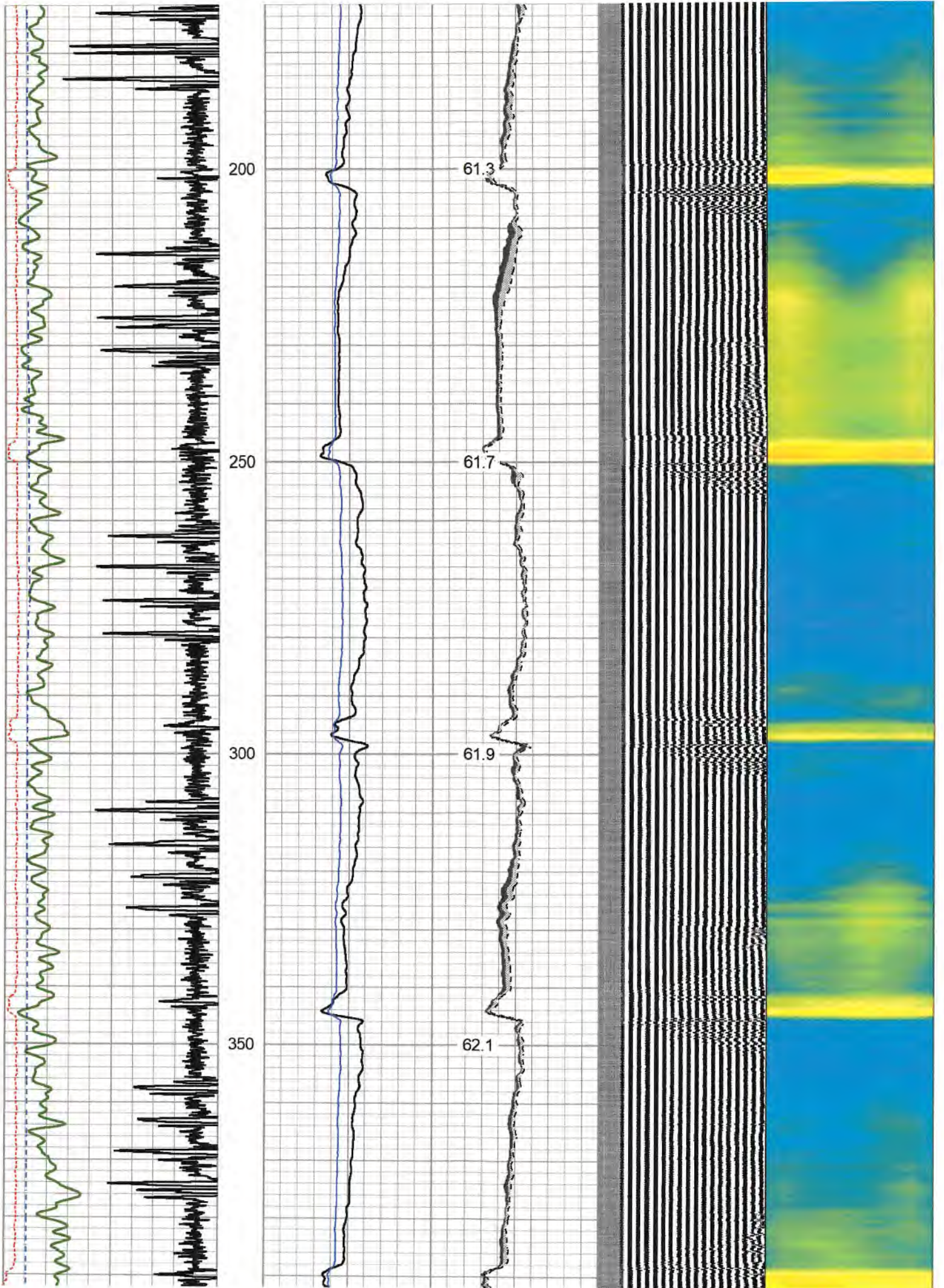


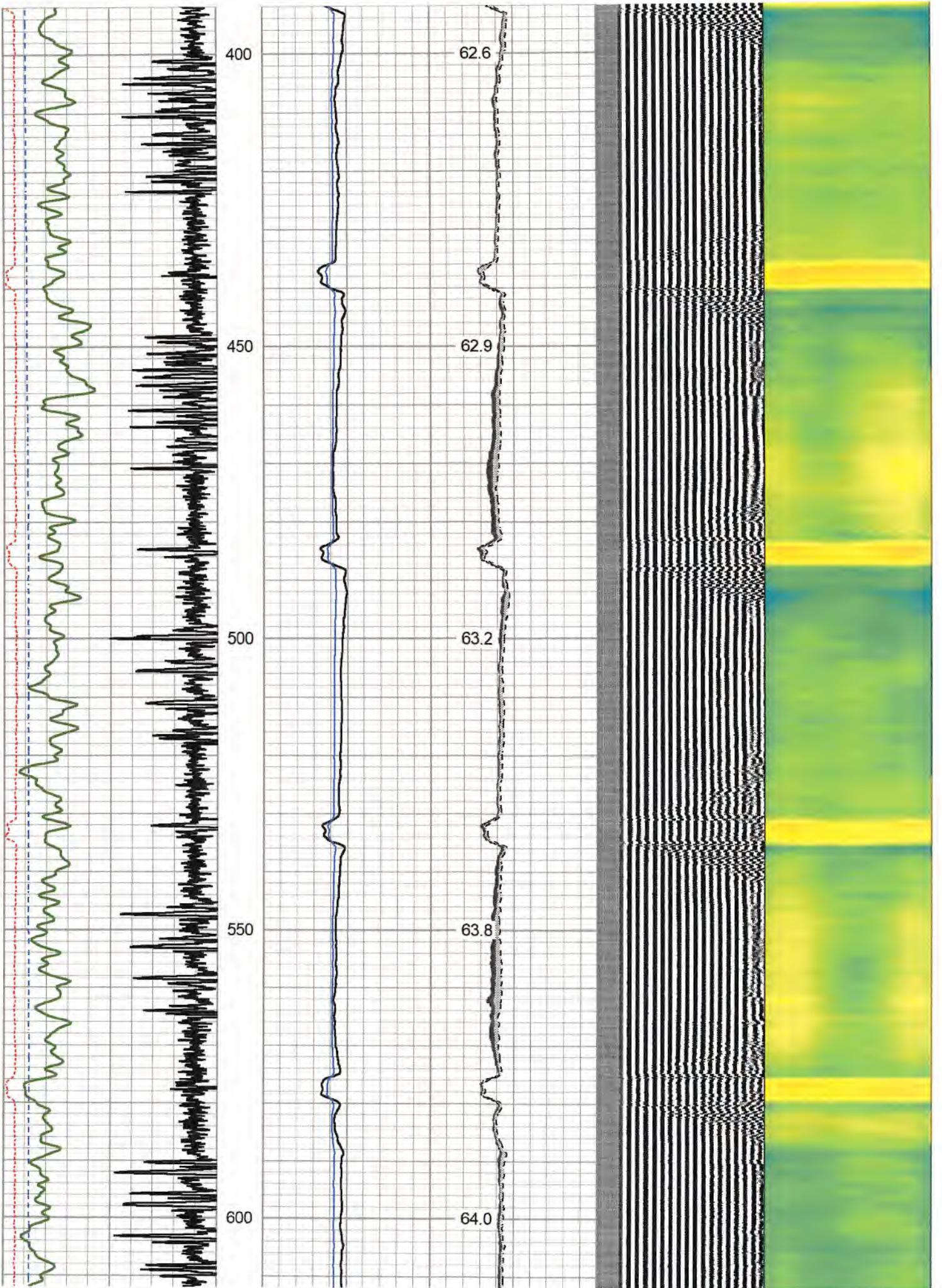
Main Pass 1,500 PSI

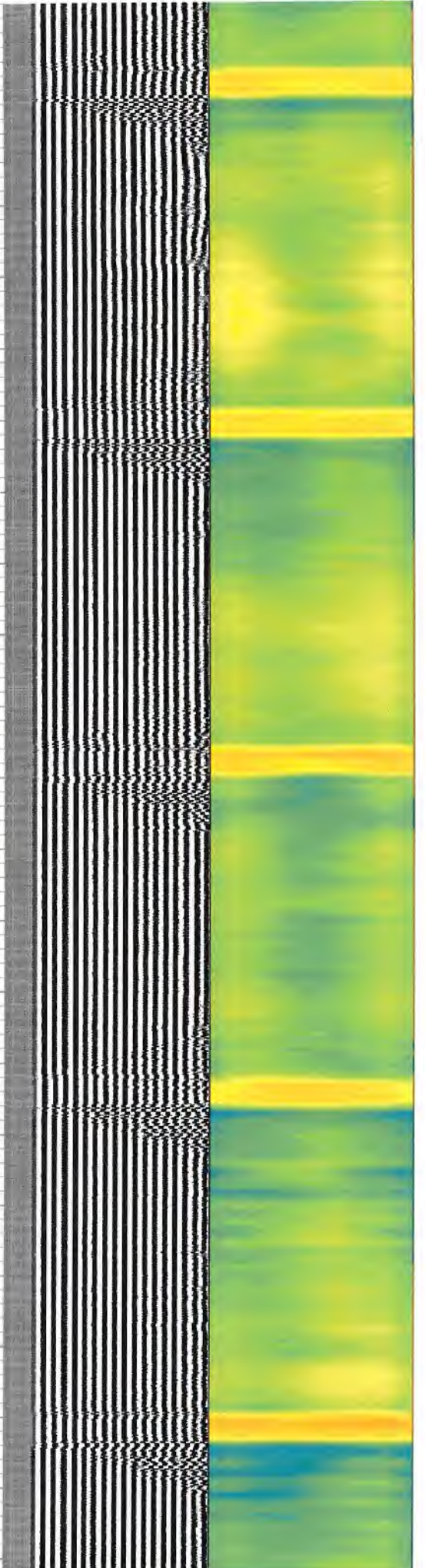
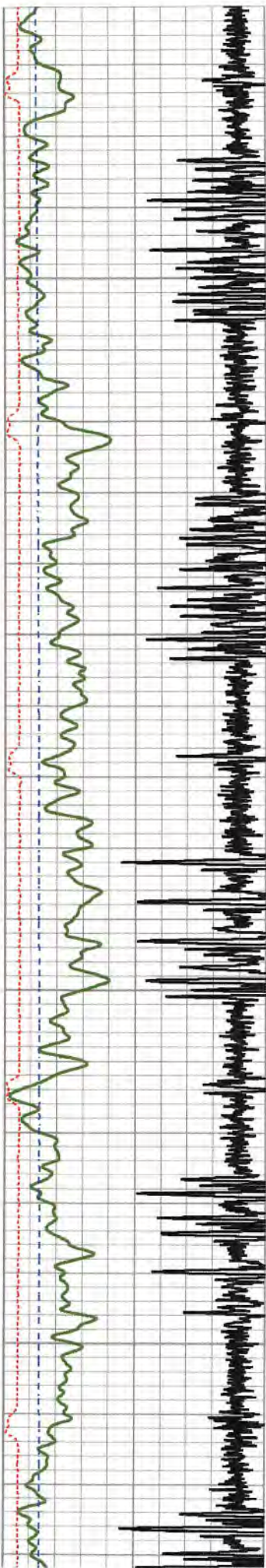
Database File antero\_margery\_specter\_1h\_rcbl\_09\_jan\_2021.db  
 Dataset Pathname rabbit\_ears/specter\_1h/run1/pass5  
 Presentation Format rcbl-bond index for antero 1020  
 Dataset Creation Sat Jan 09 08:00:15 2021  
 Charted by Depth in Feet scaled 1:240

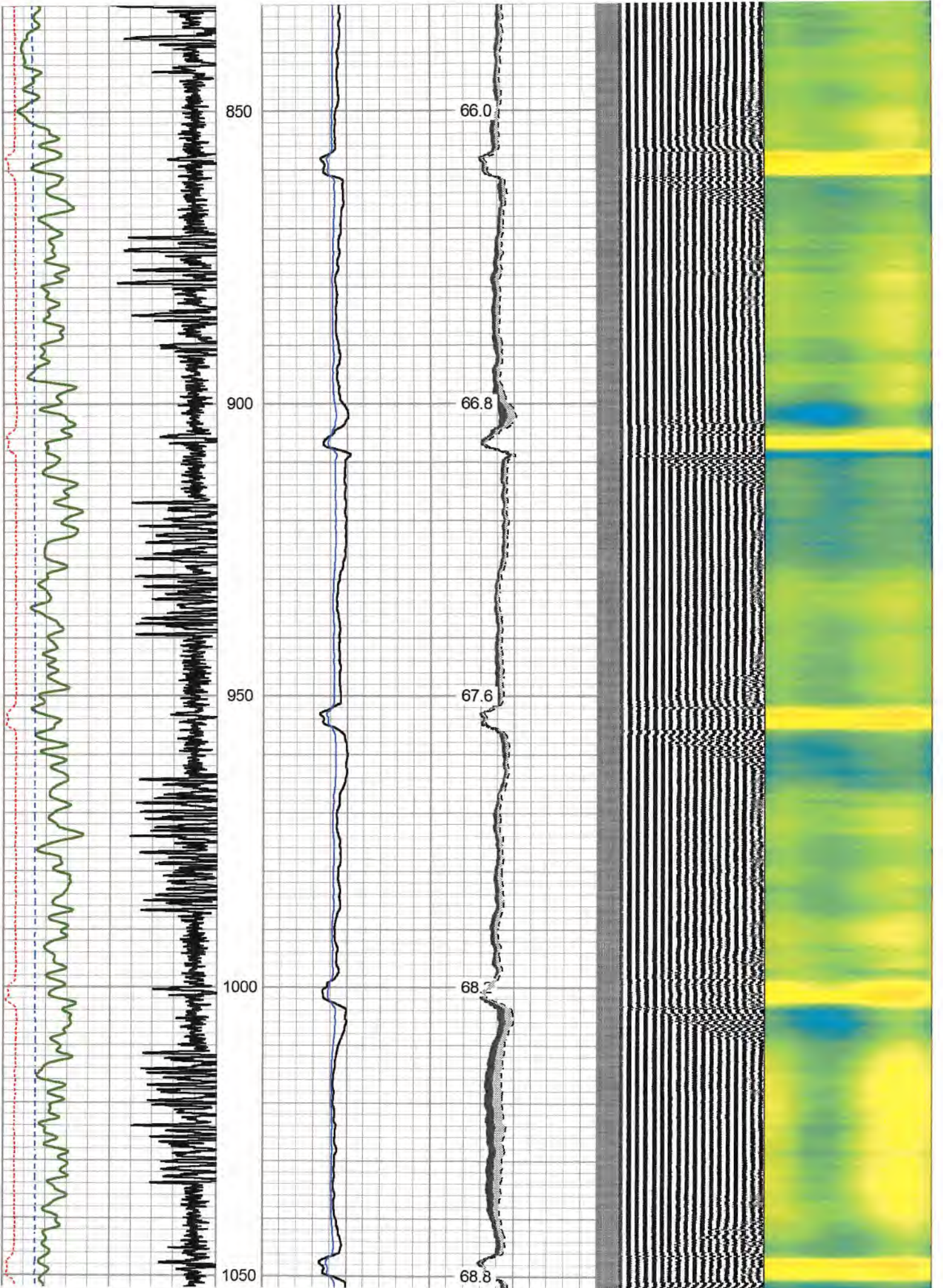
270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				0	AMPAVG	150				
	Line Speed						TEMP					
-100	(ft/min)	100					(degF)					
0	Line Tension (lb)	2000										

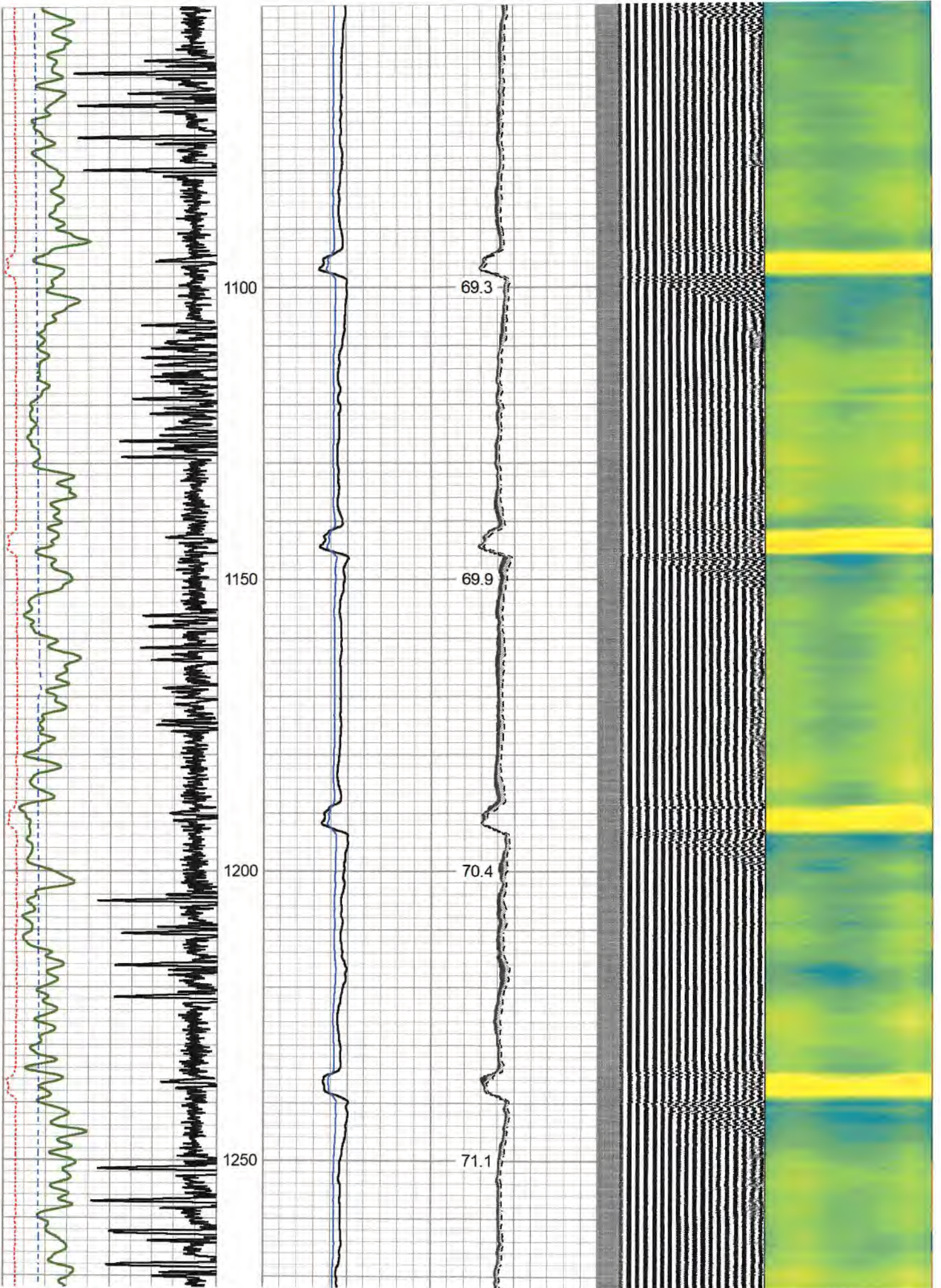


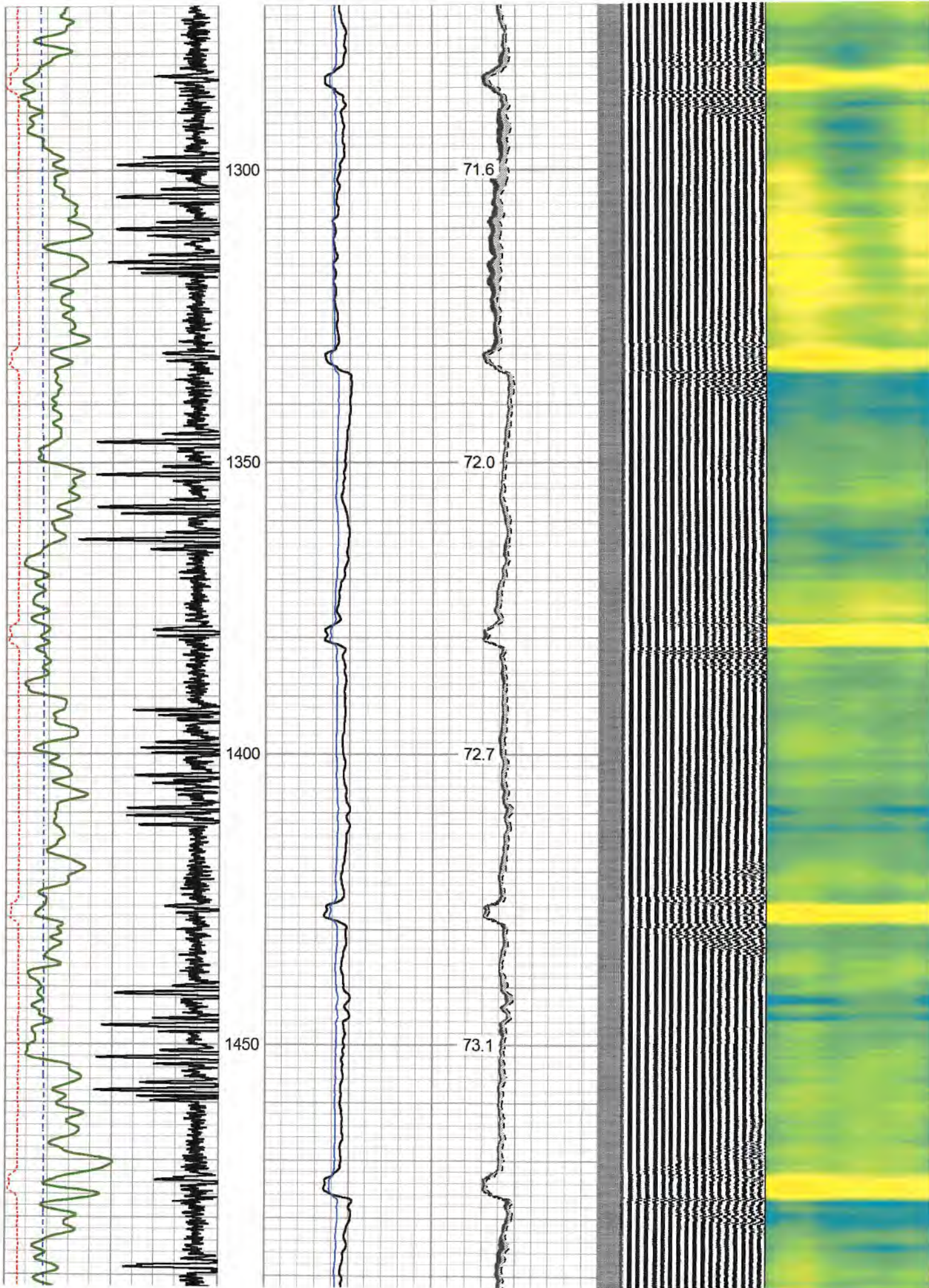




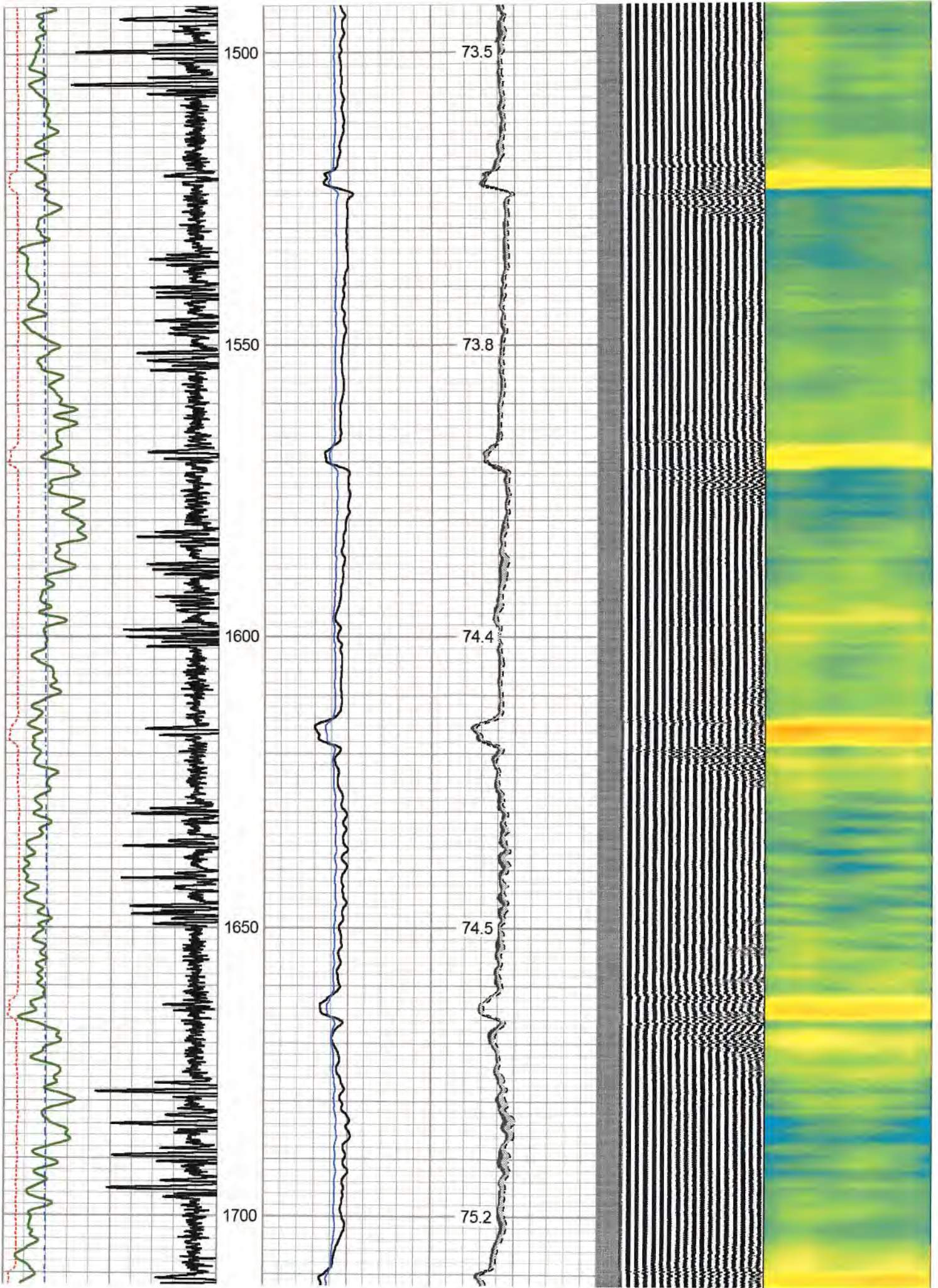


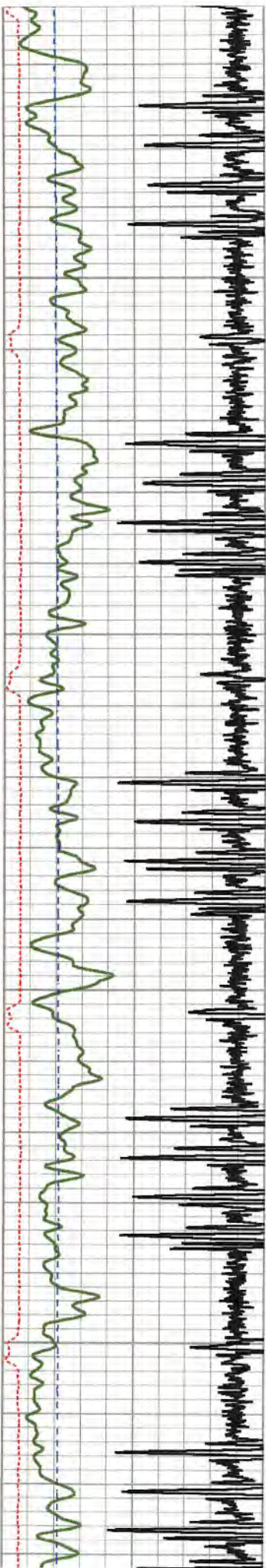










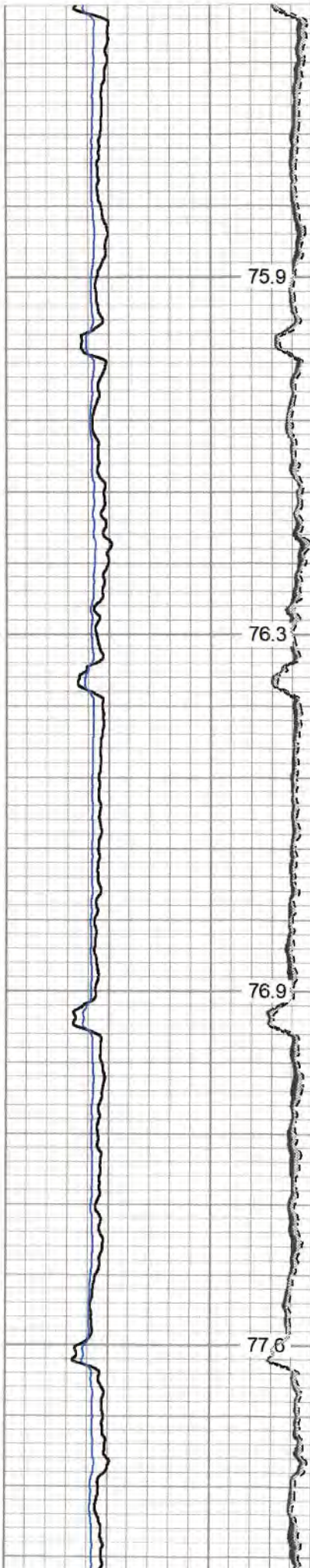


1750

1800

1850

1900

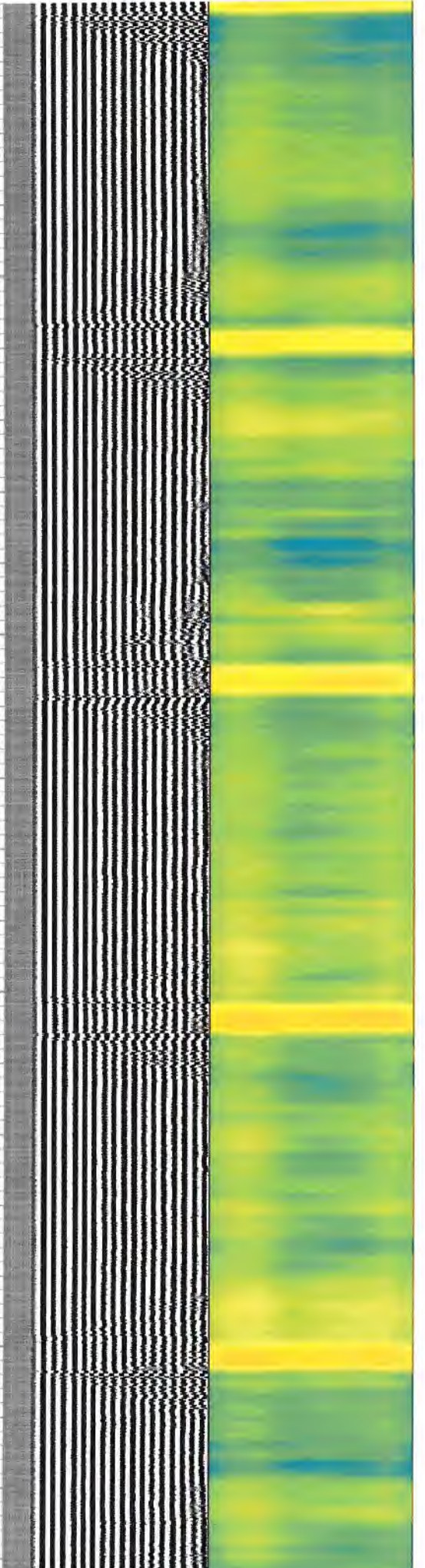


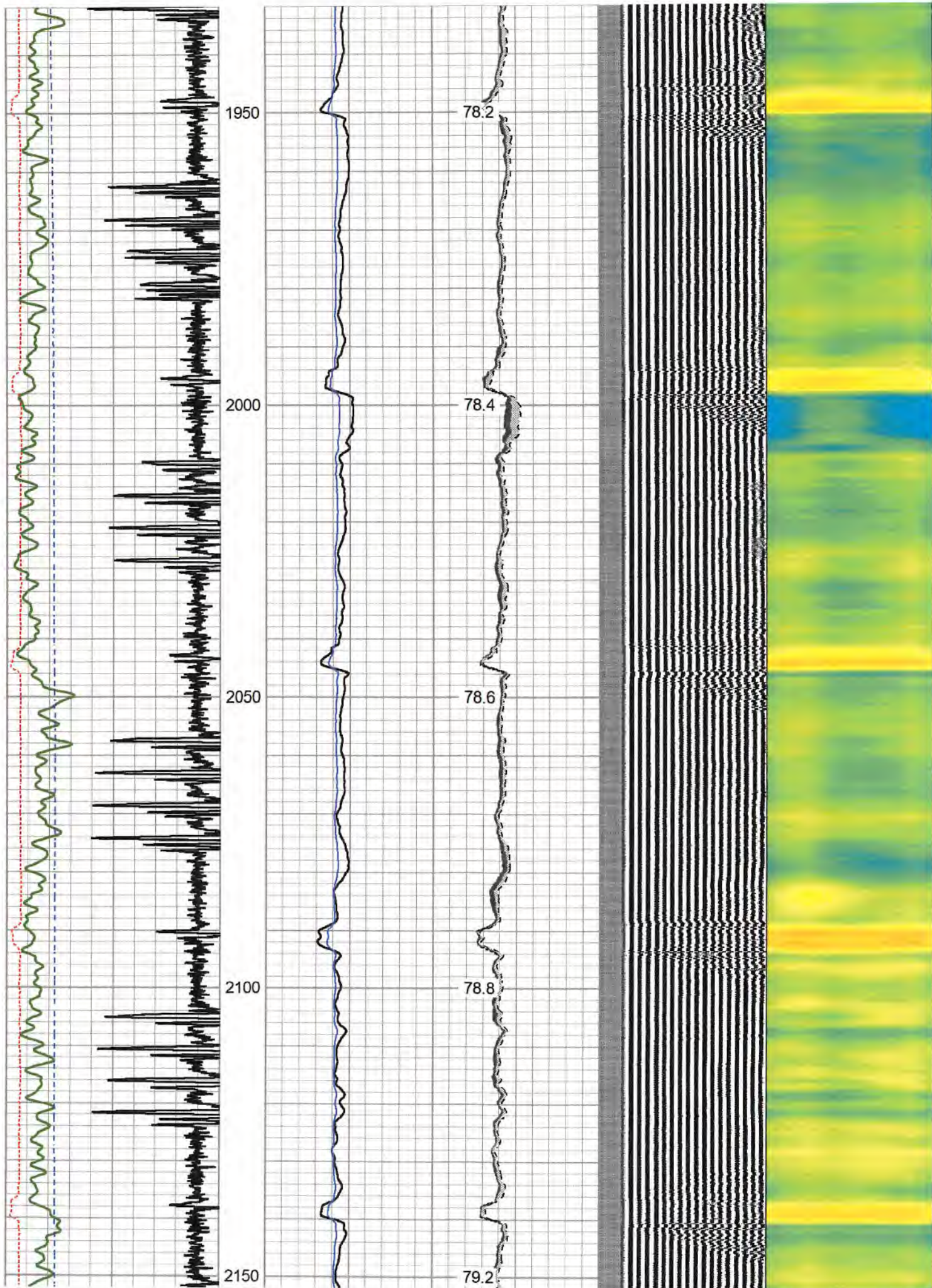
75.9

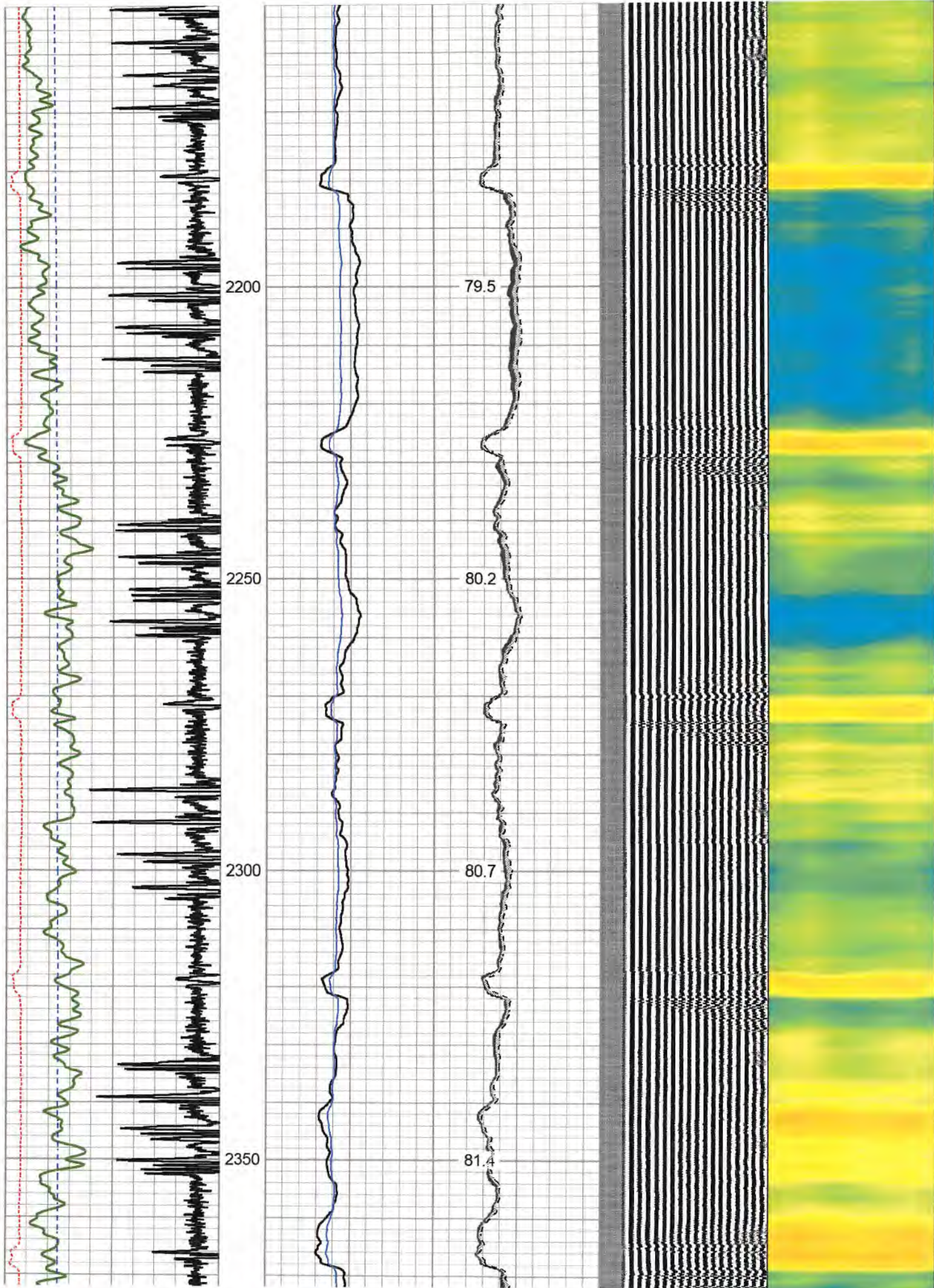
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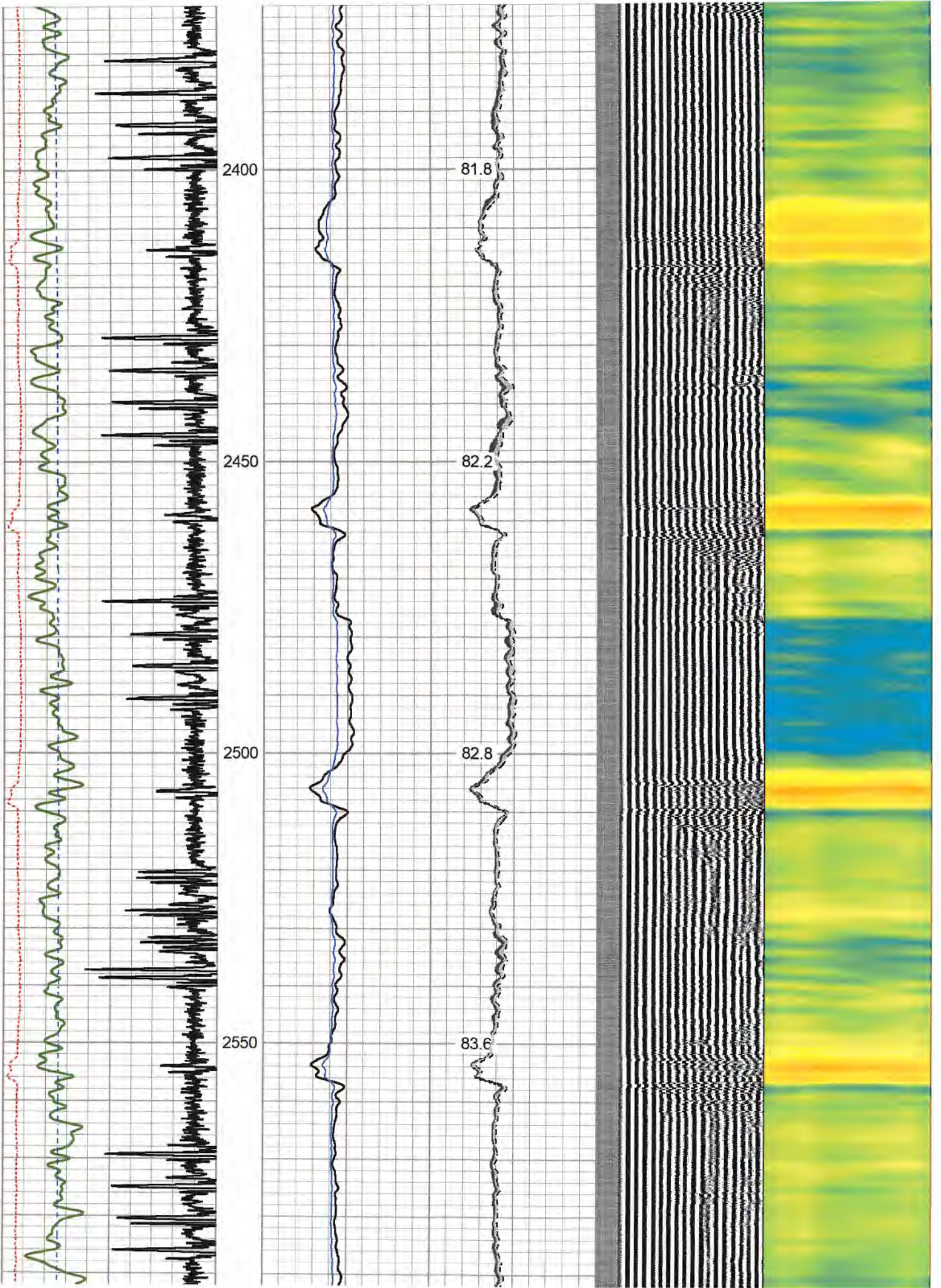
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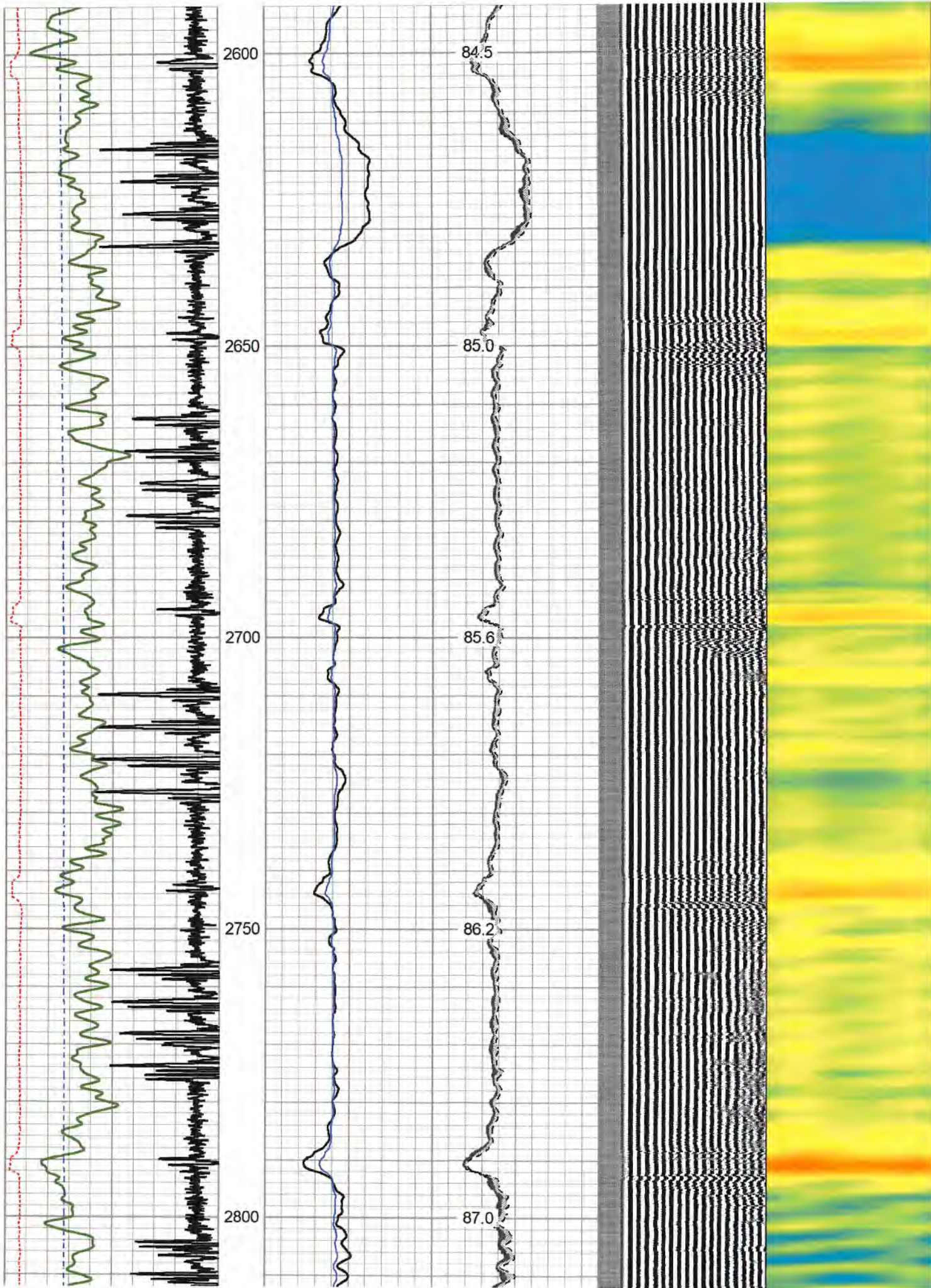
77.6

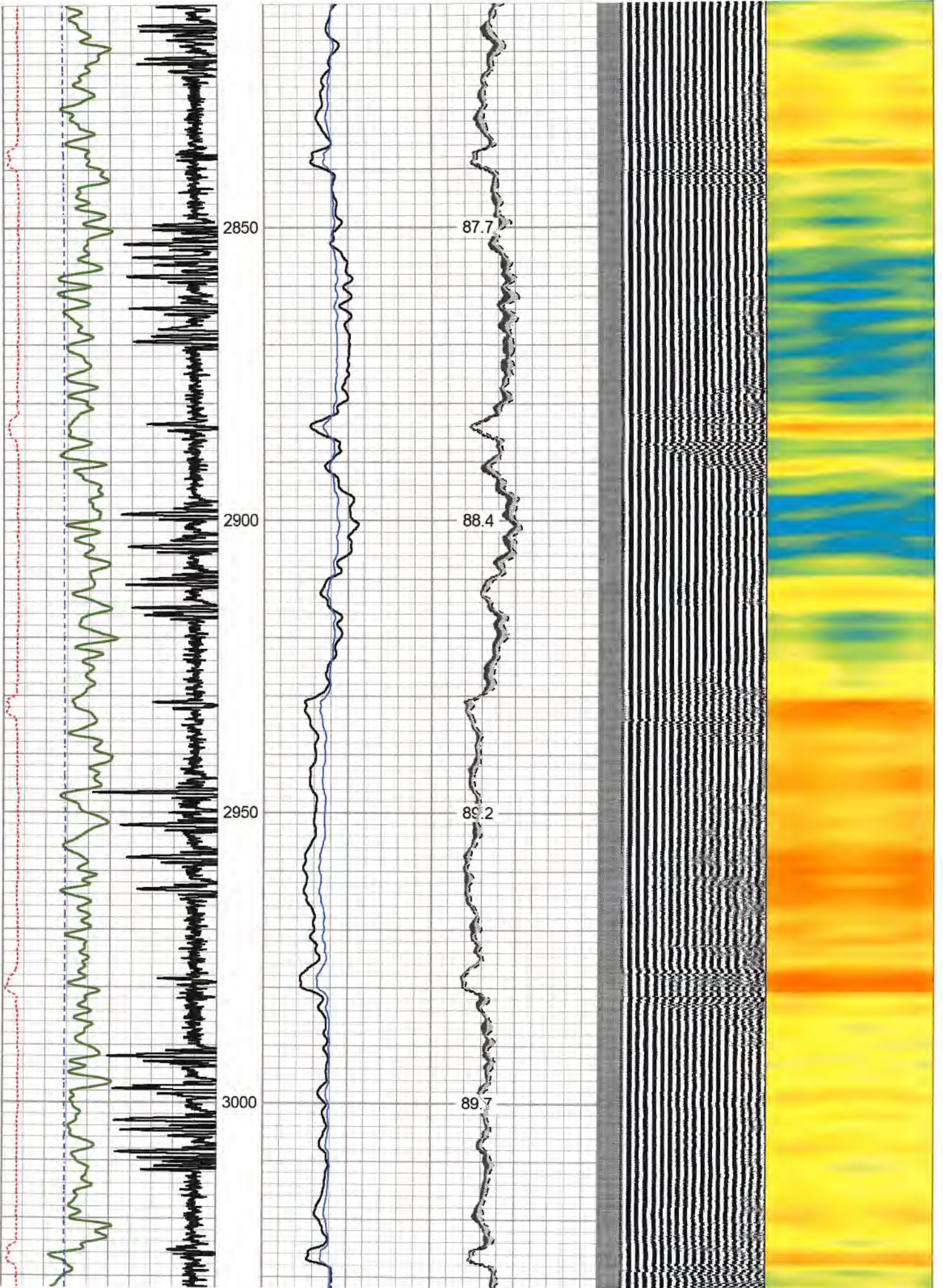


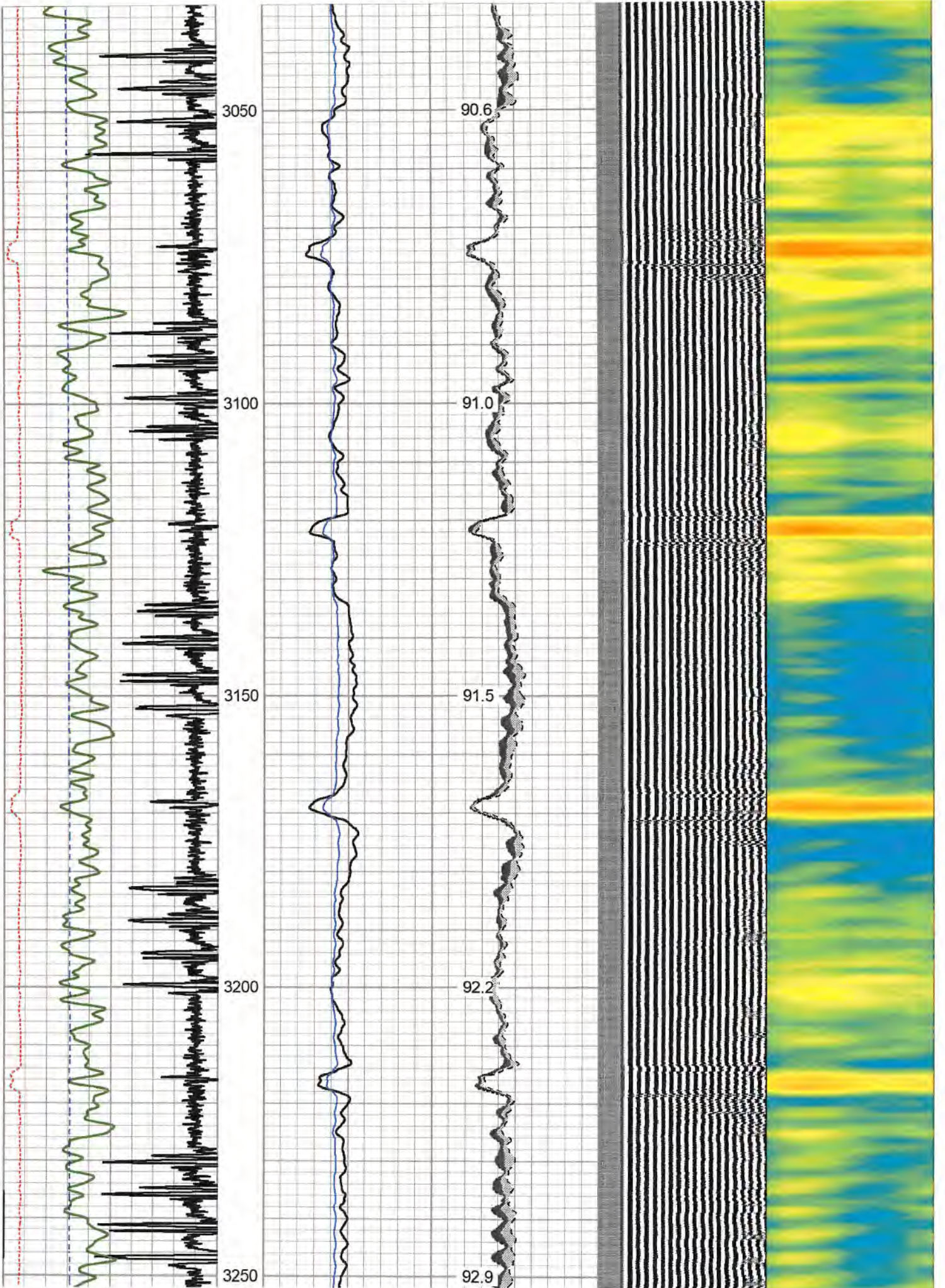




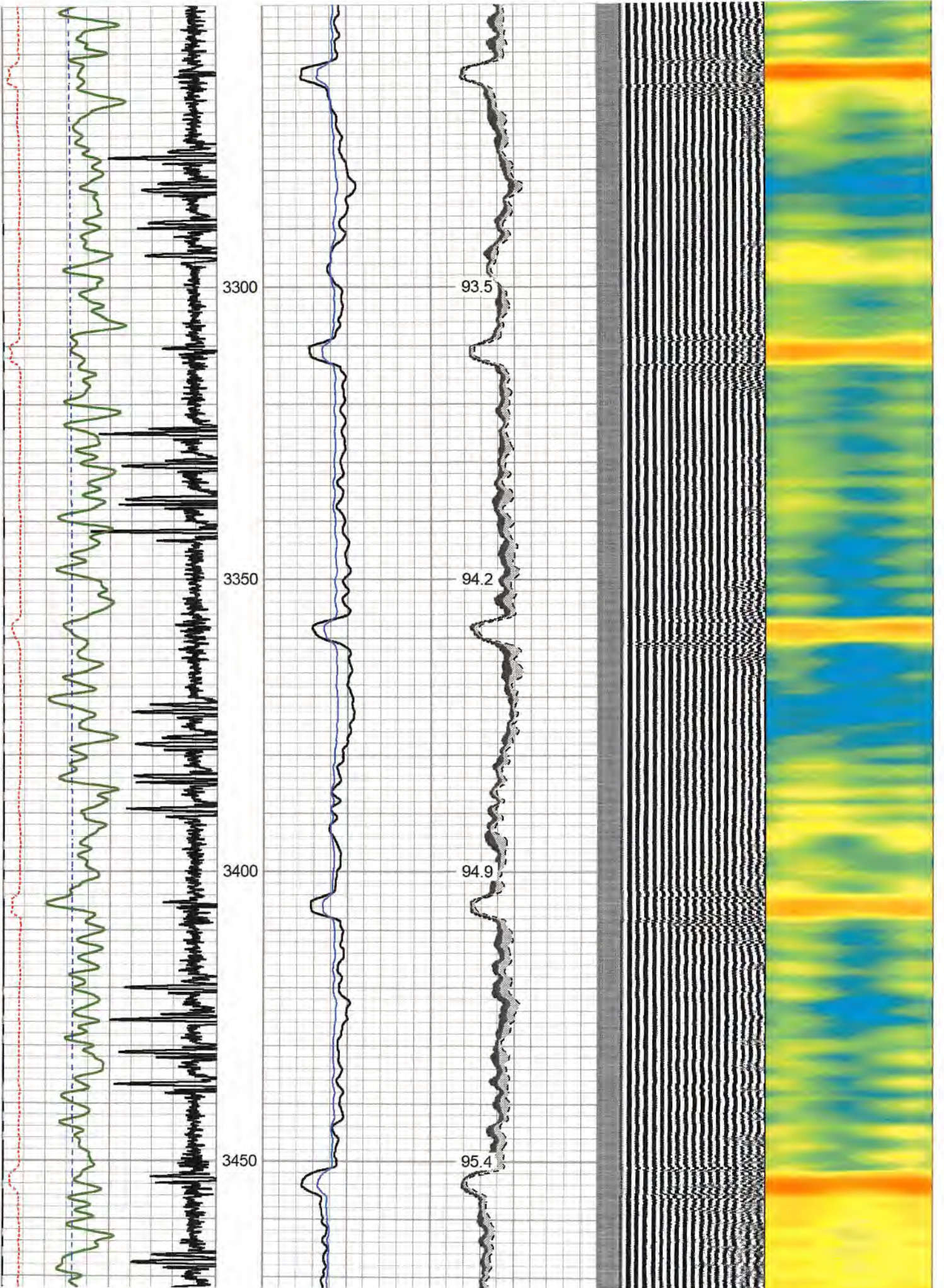


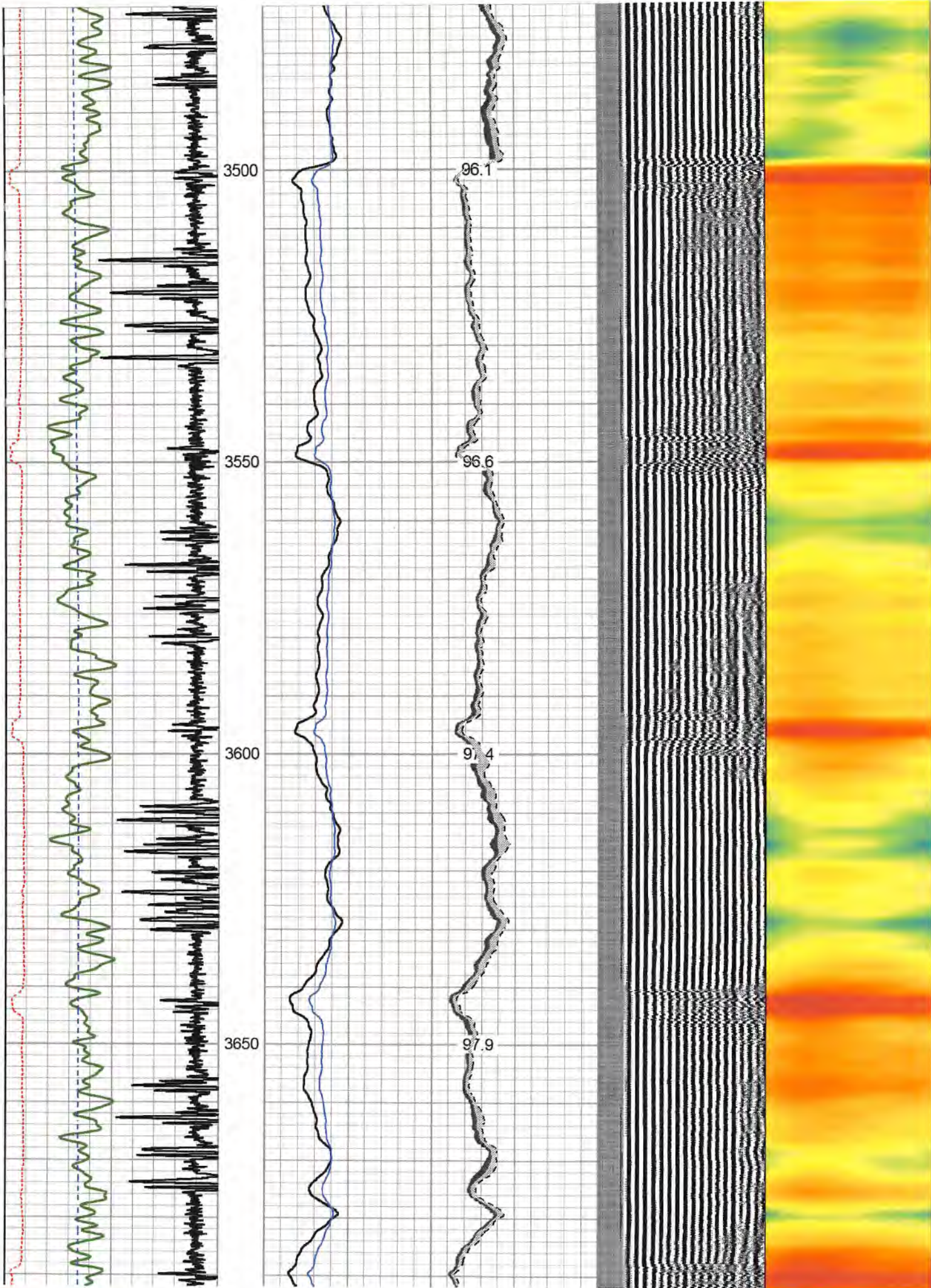


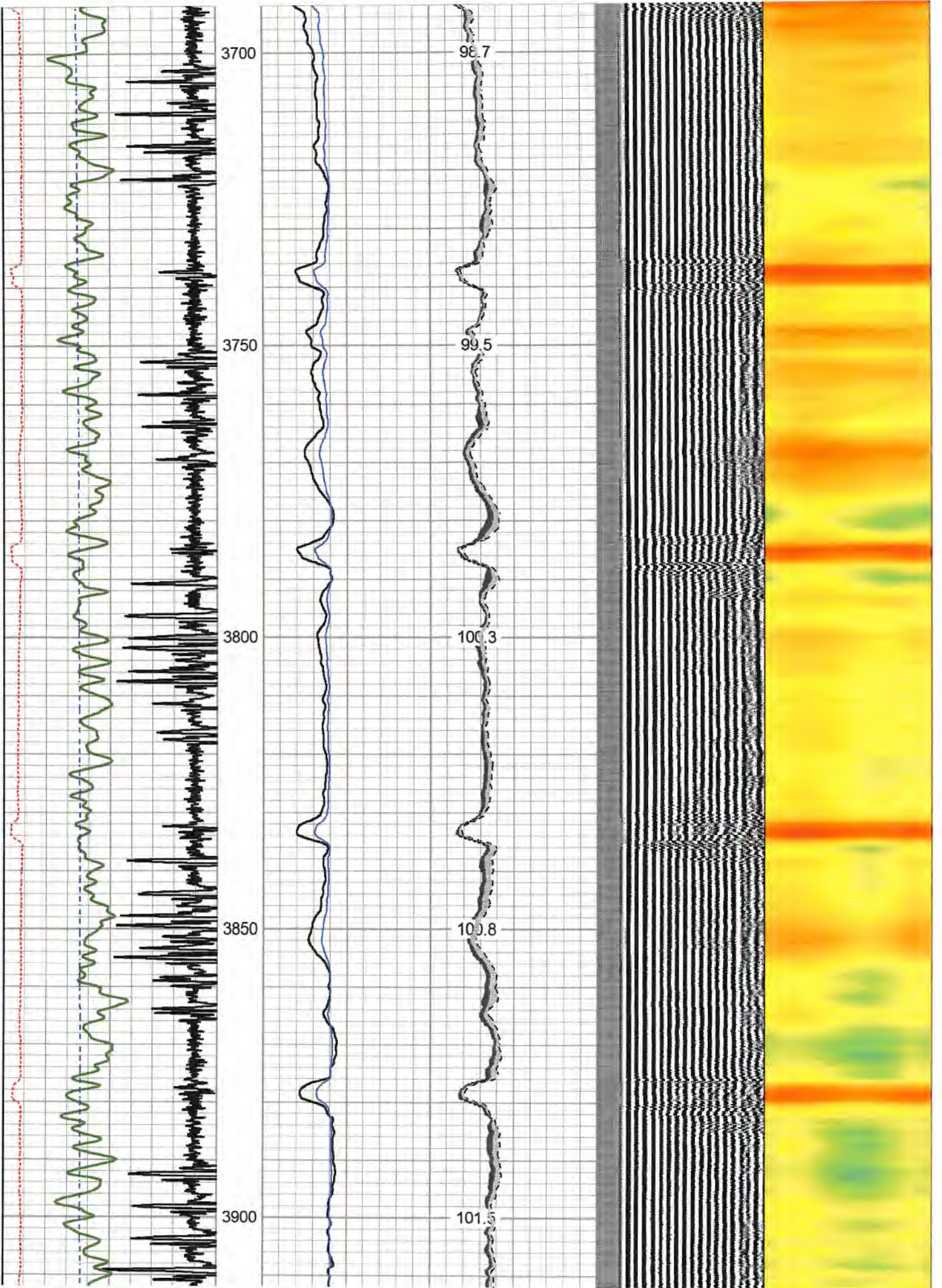


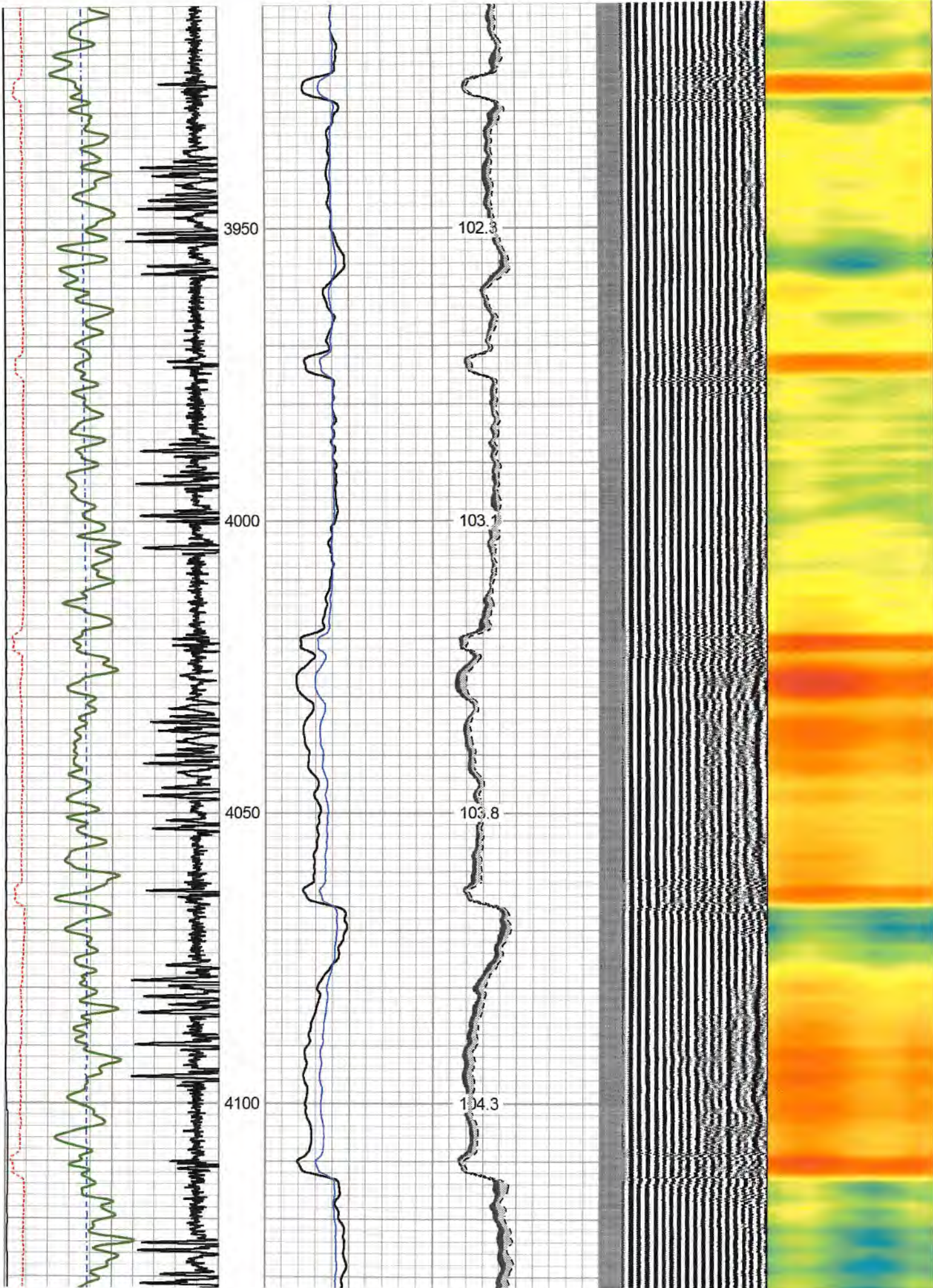


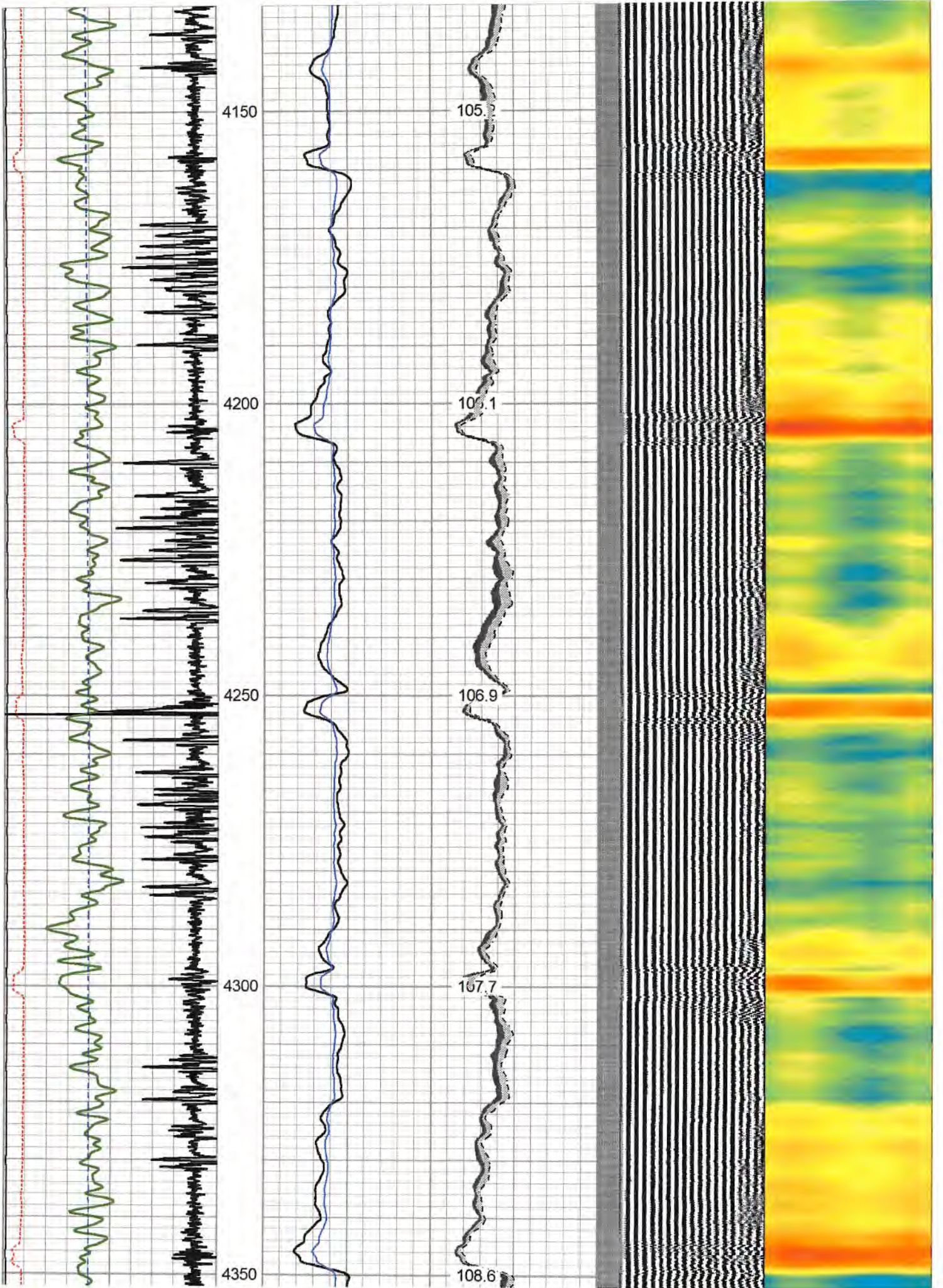


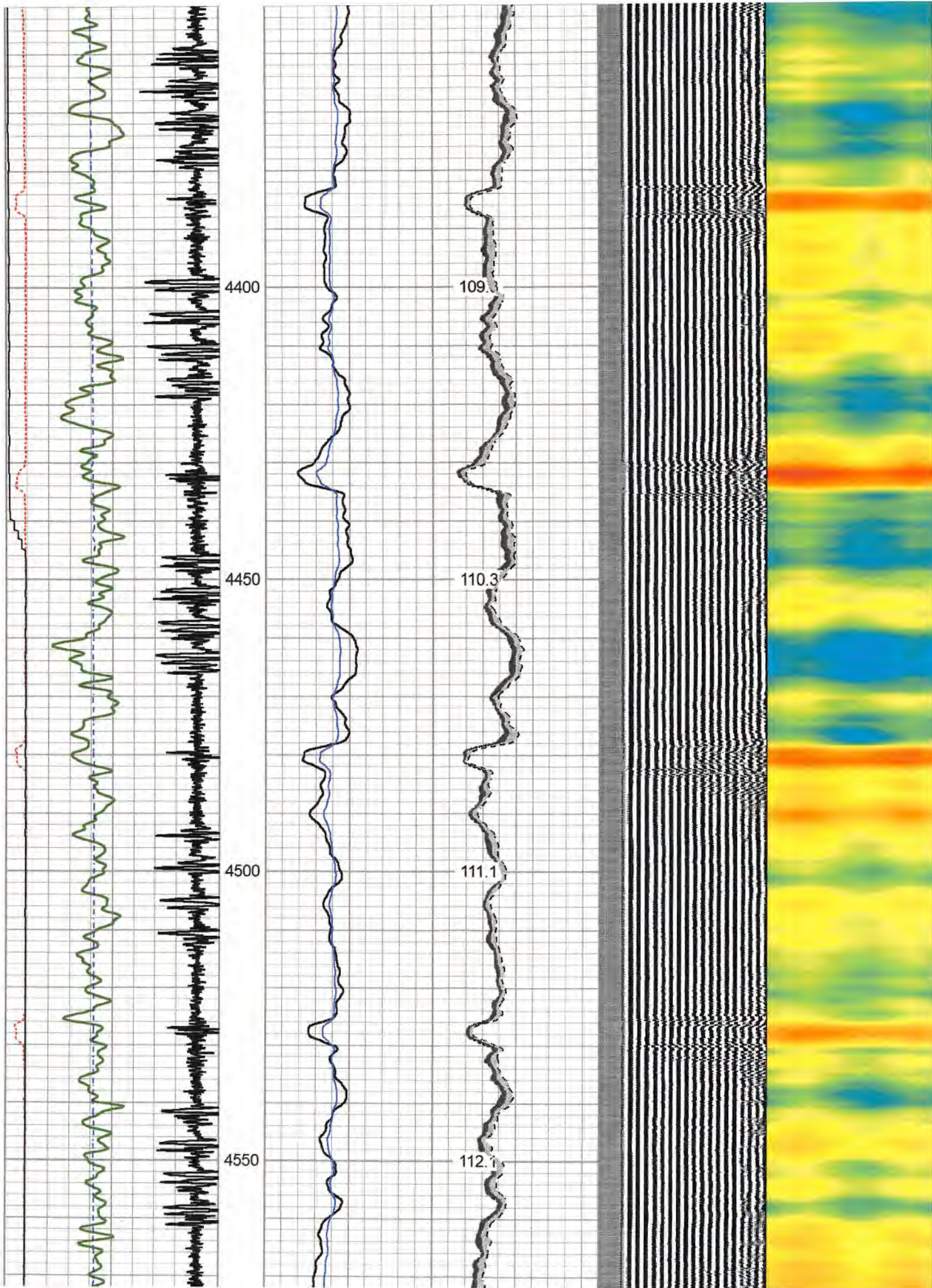


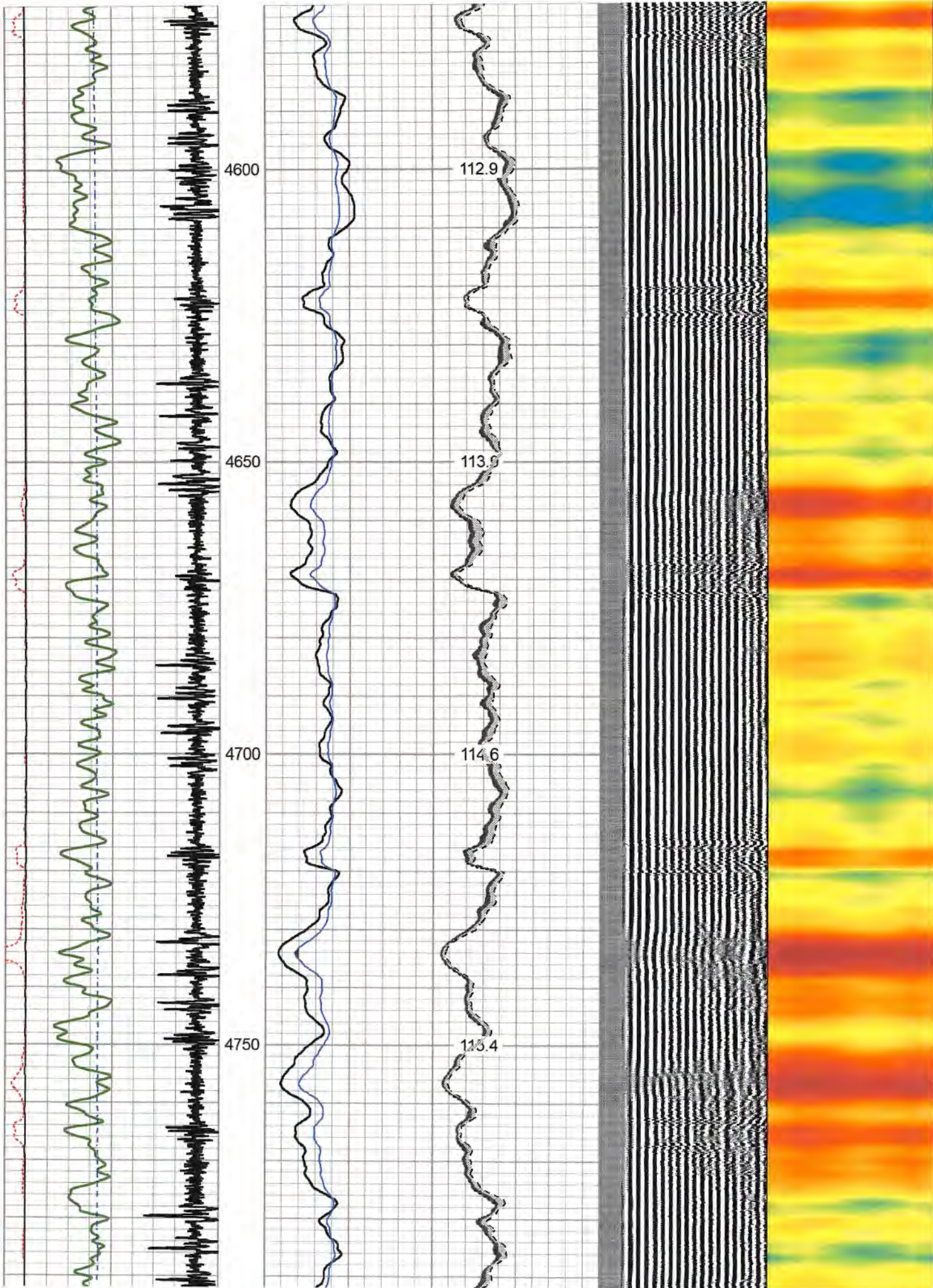


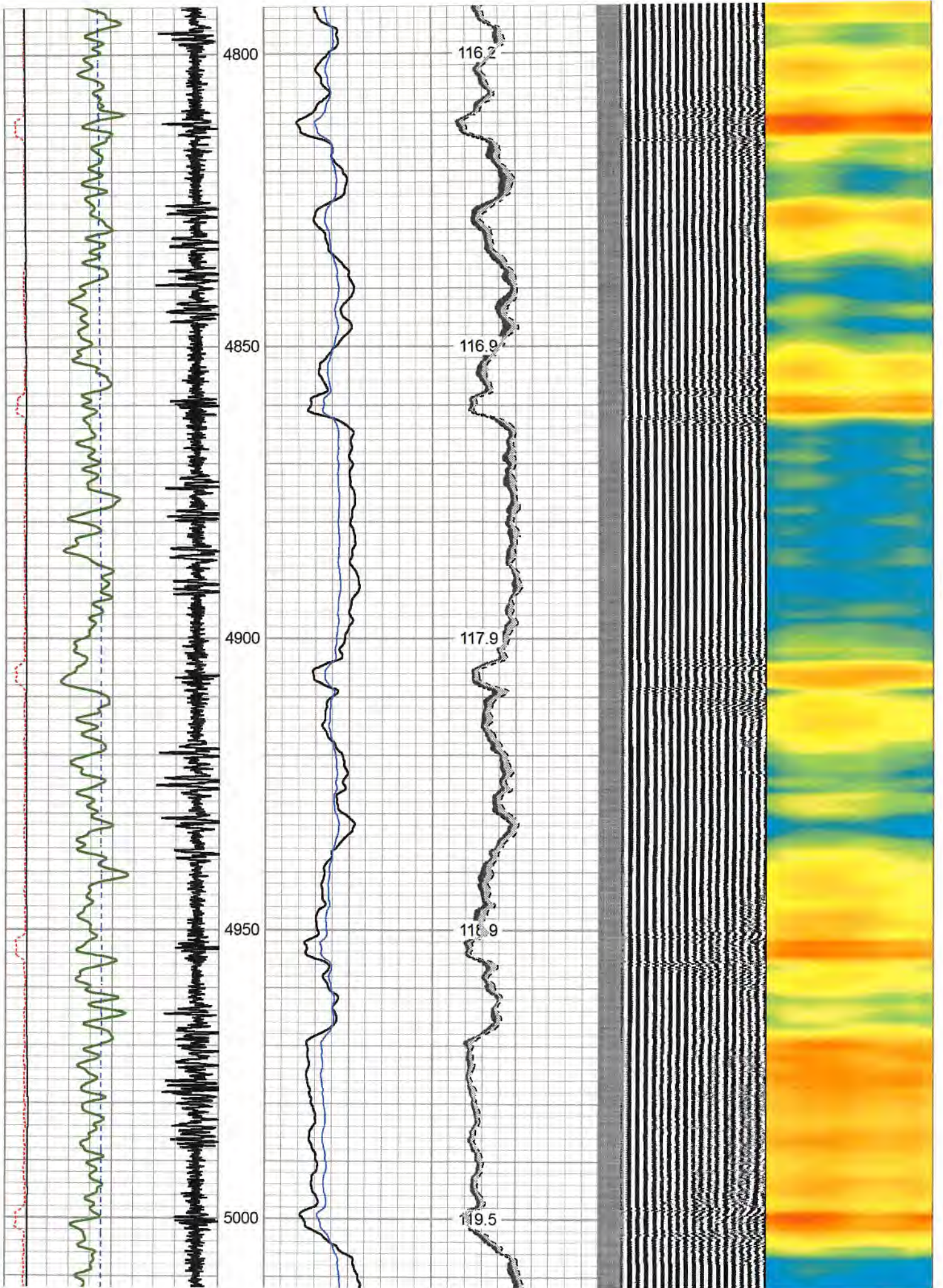




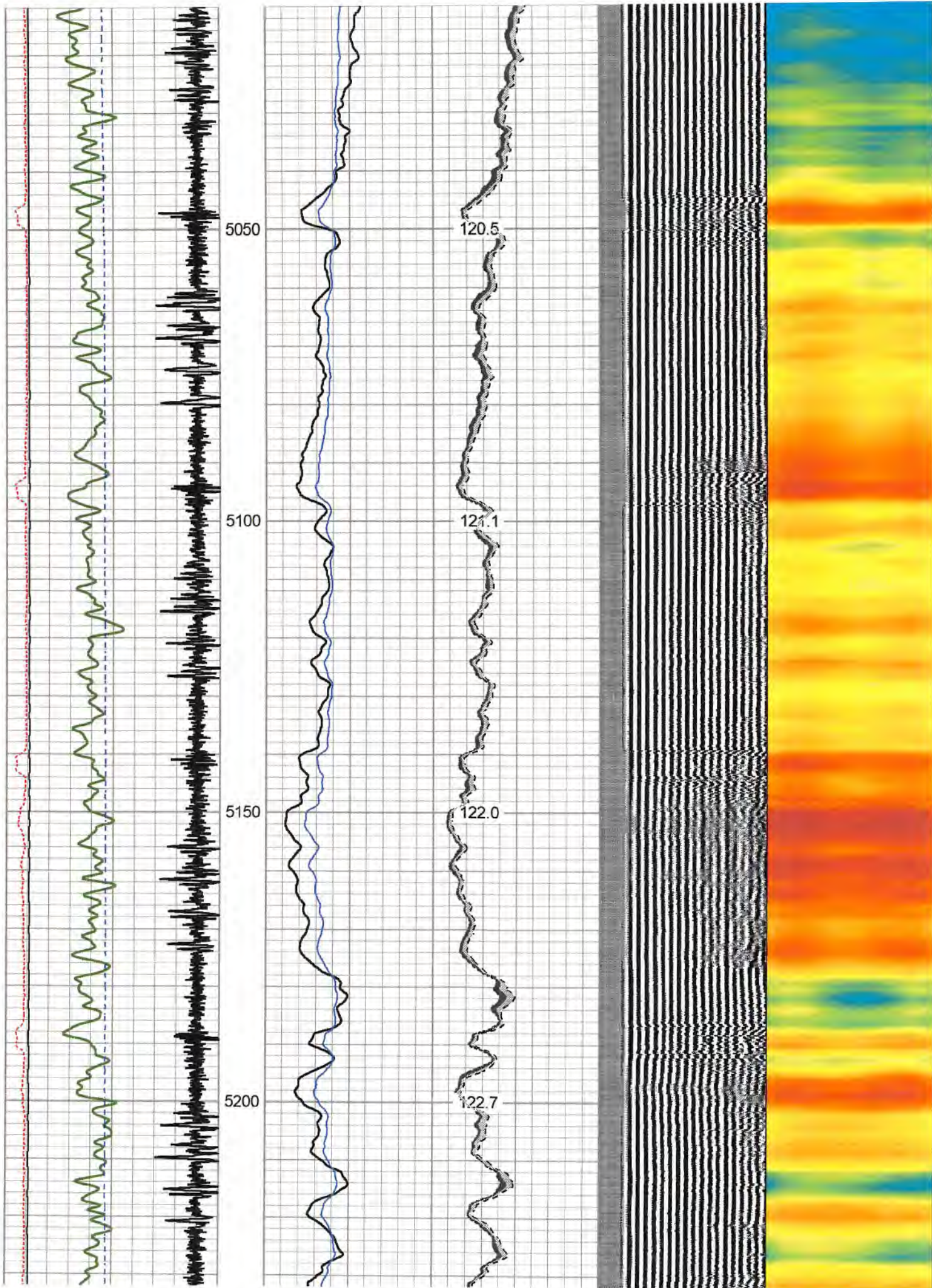


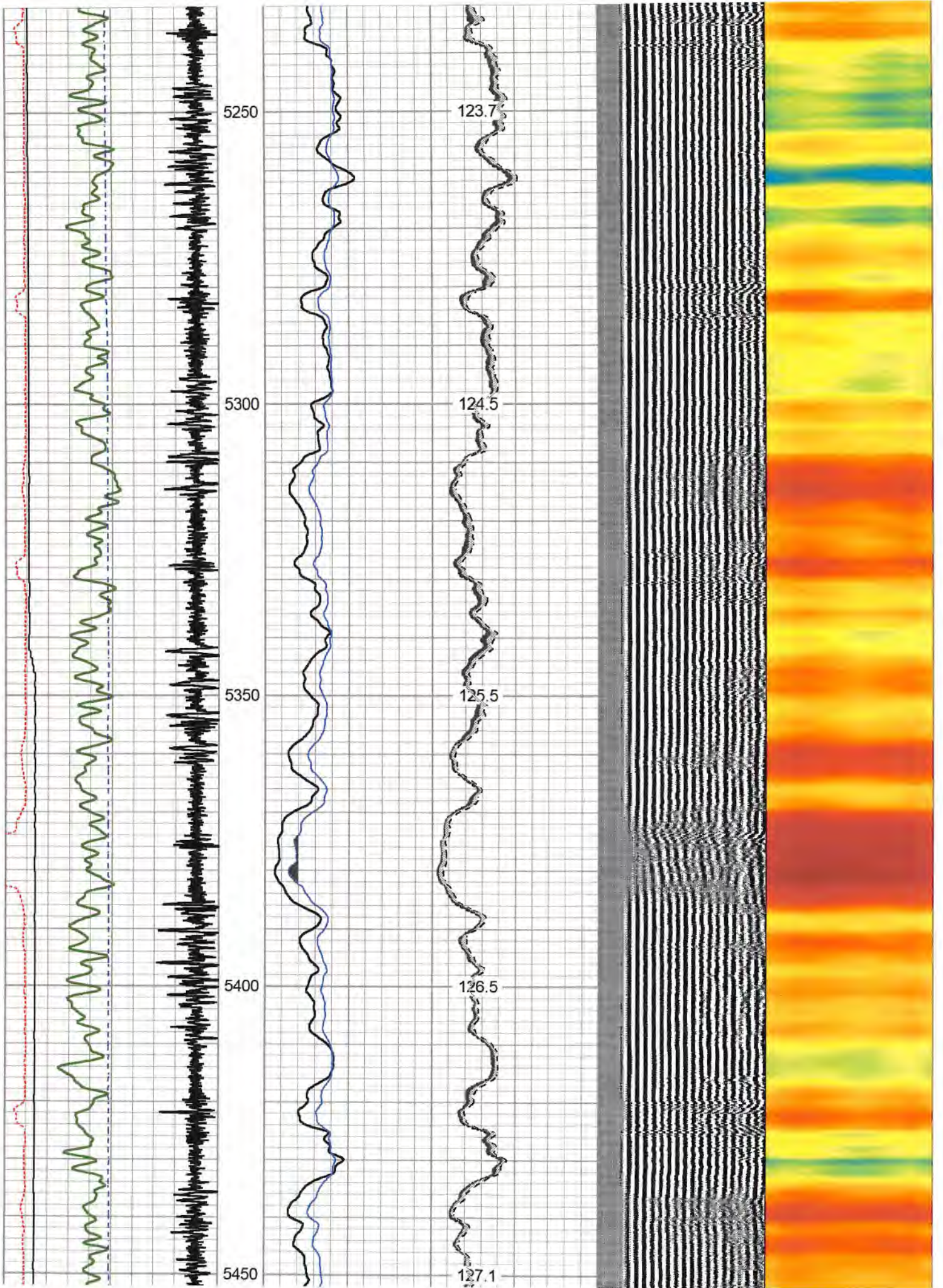


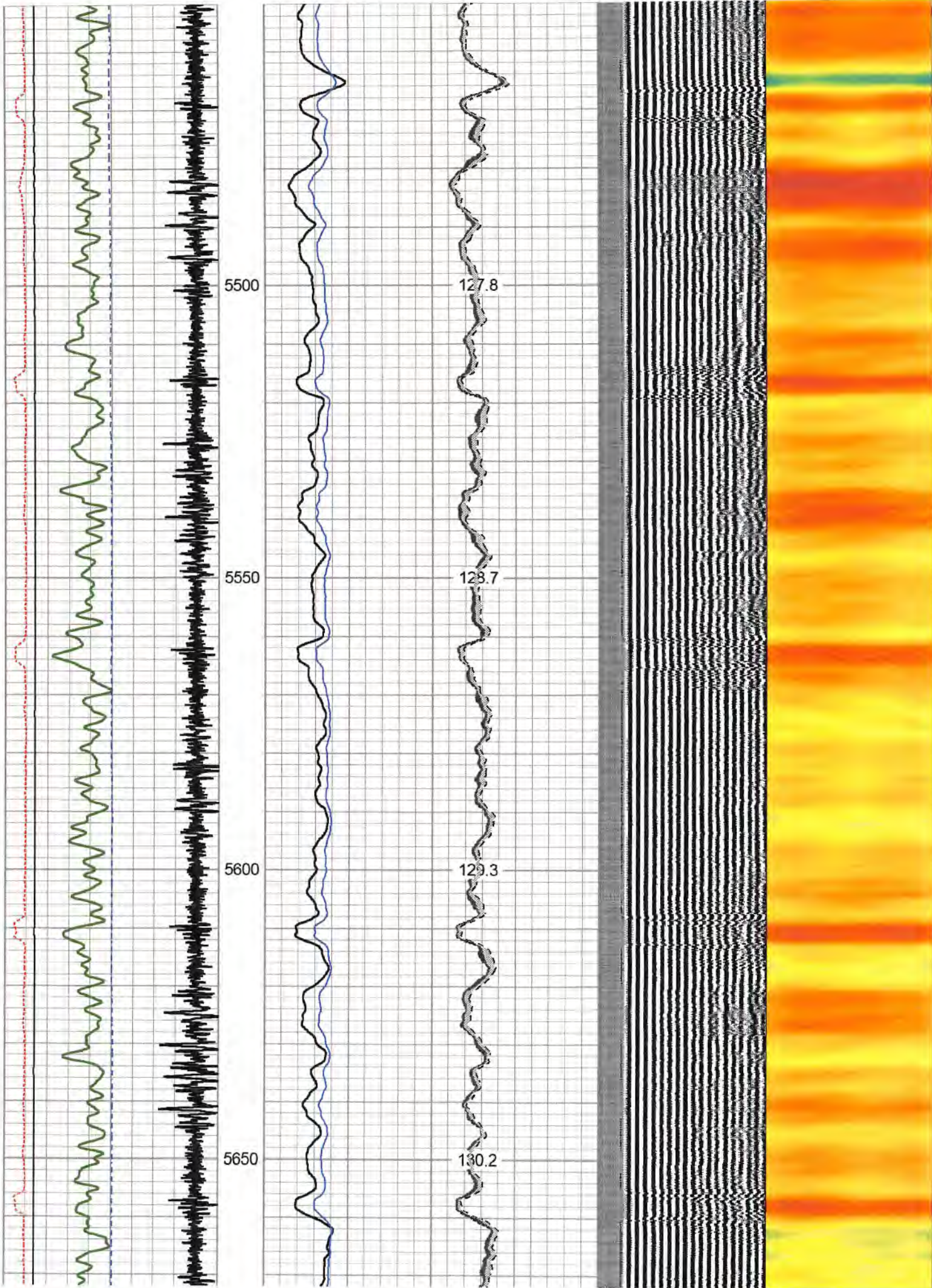


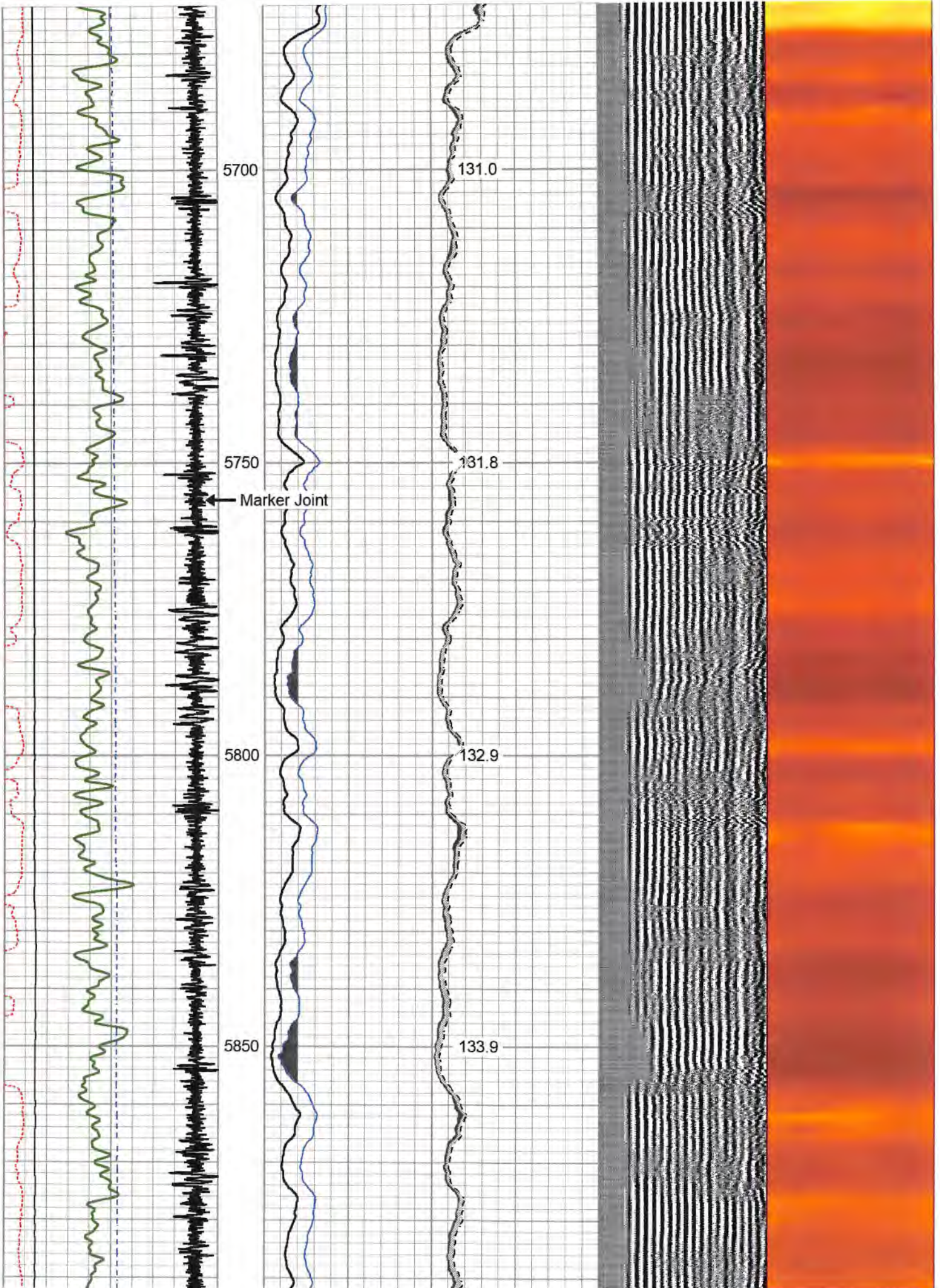


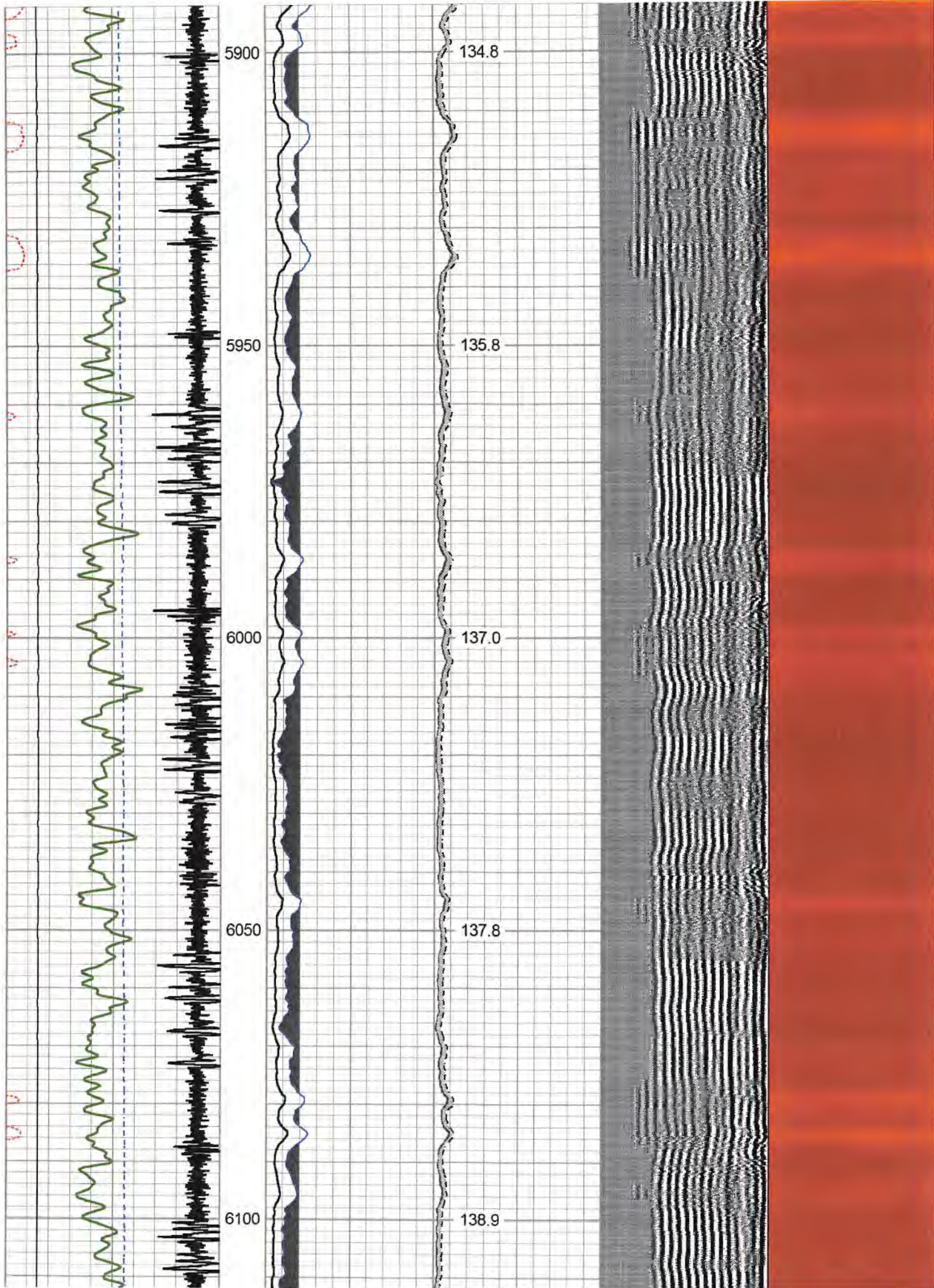


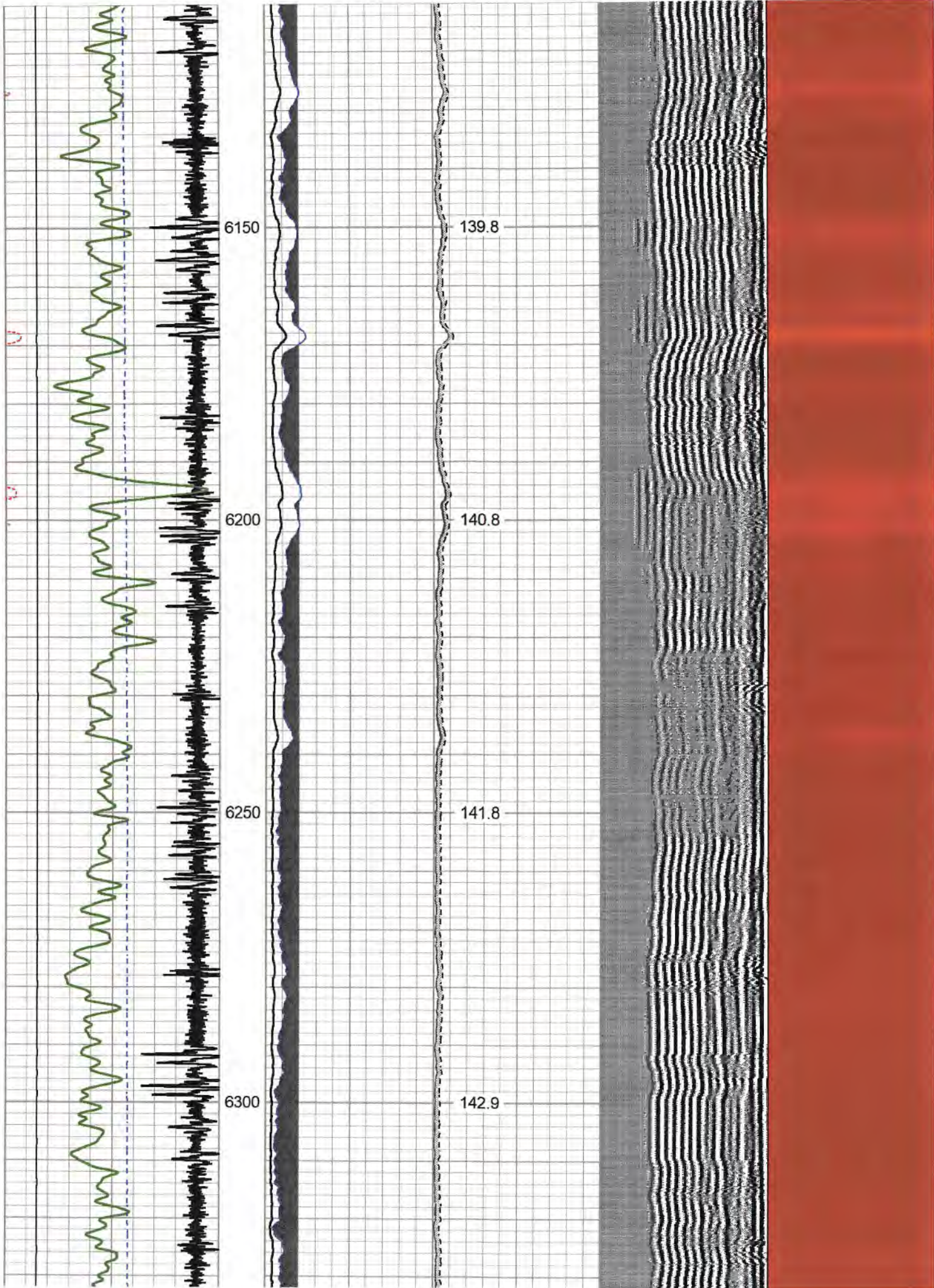


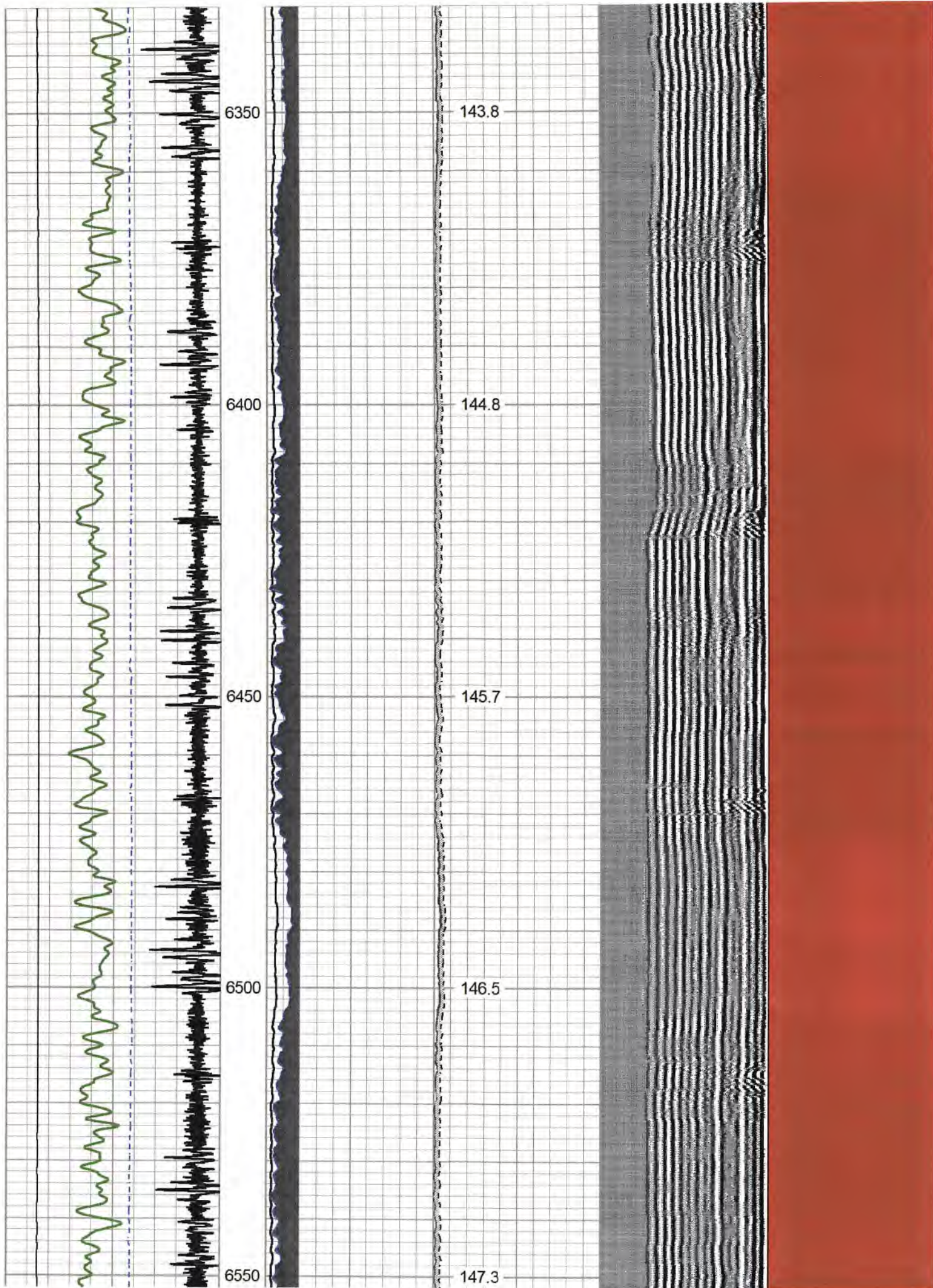


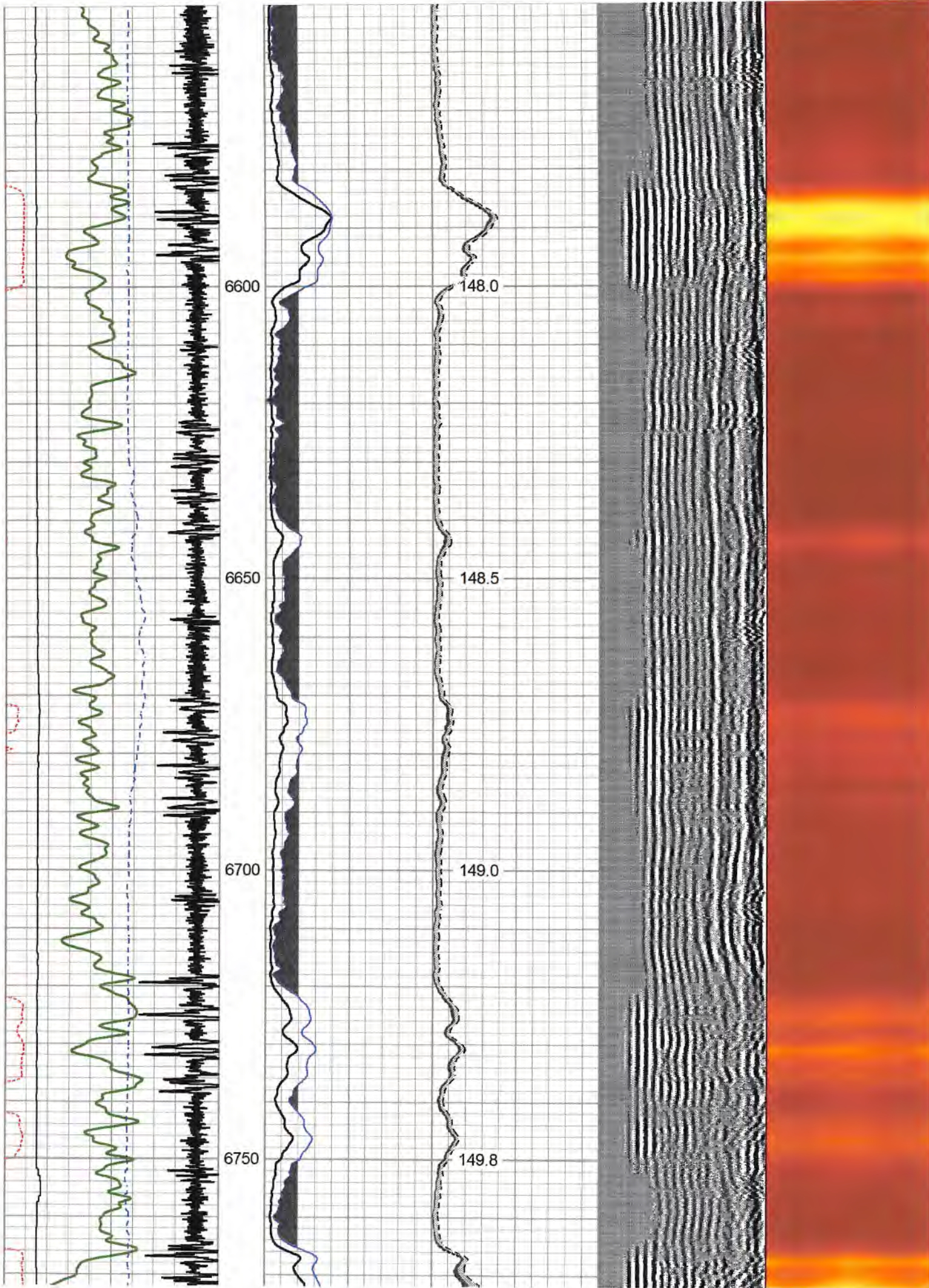




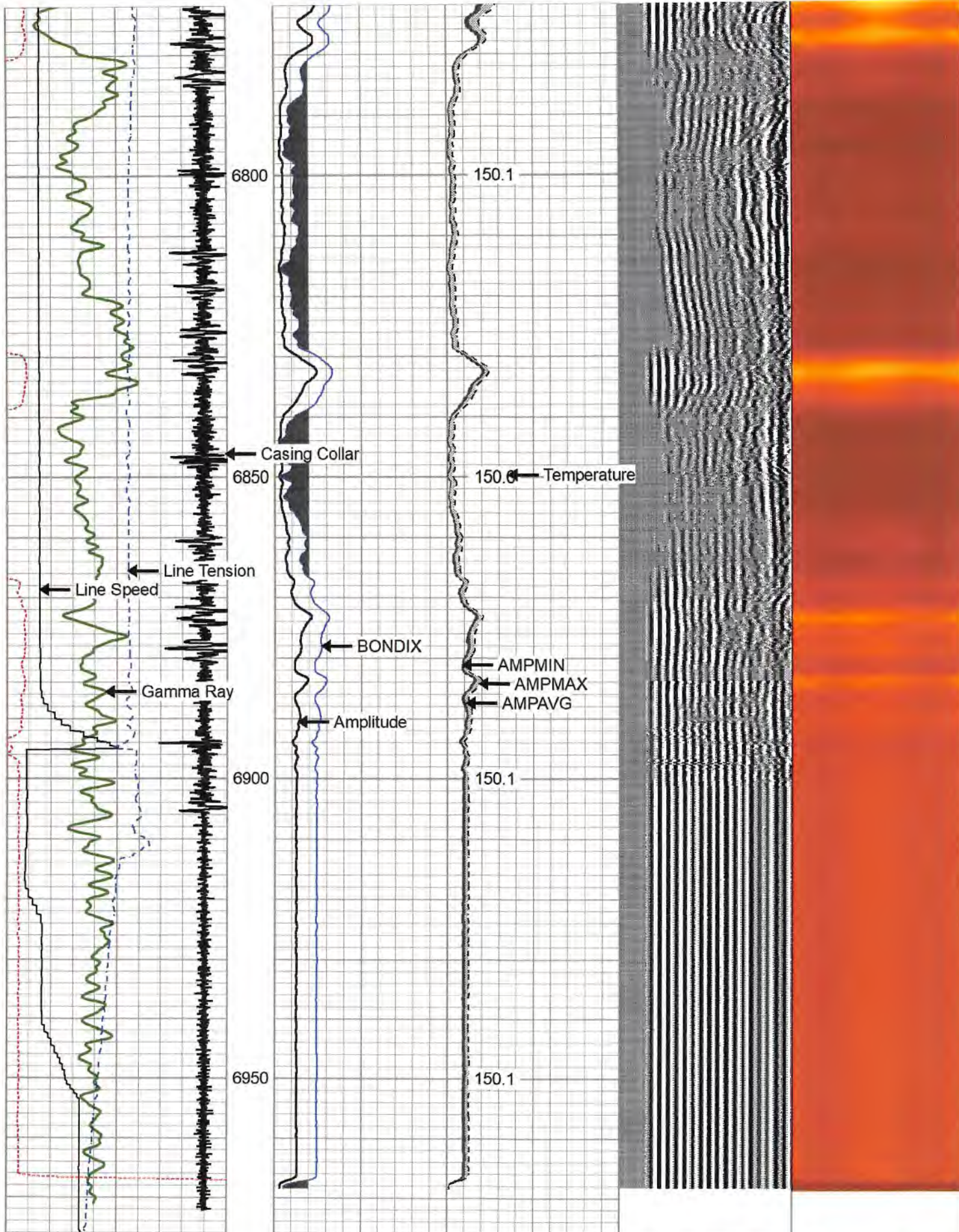








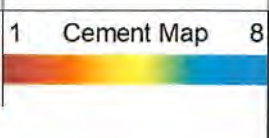




270	Travel Time (usec)	160
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150


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

Variable Density	1	Cement Map	8
200 (usec)	1200		




Line Speed		
-100	(ft/min)	100
0	Line Tension (lb)	2000

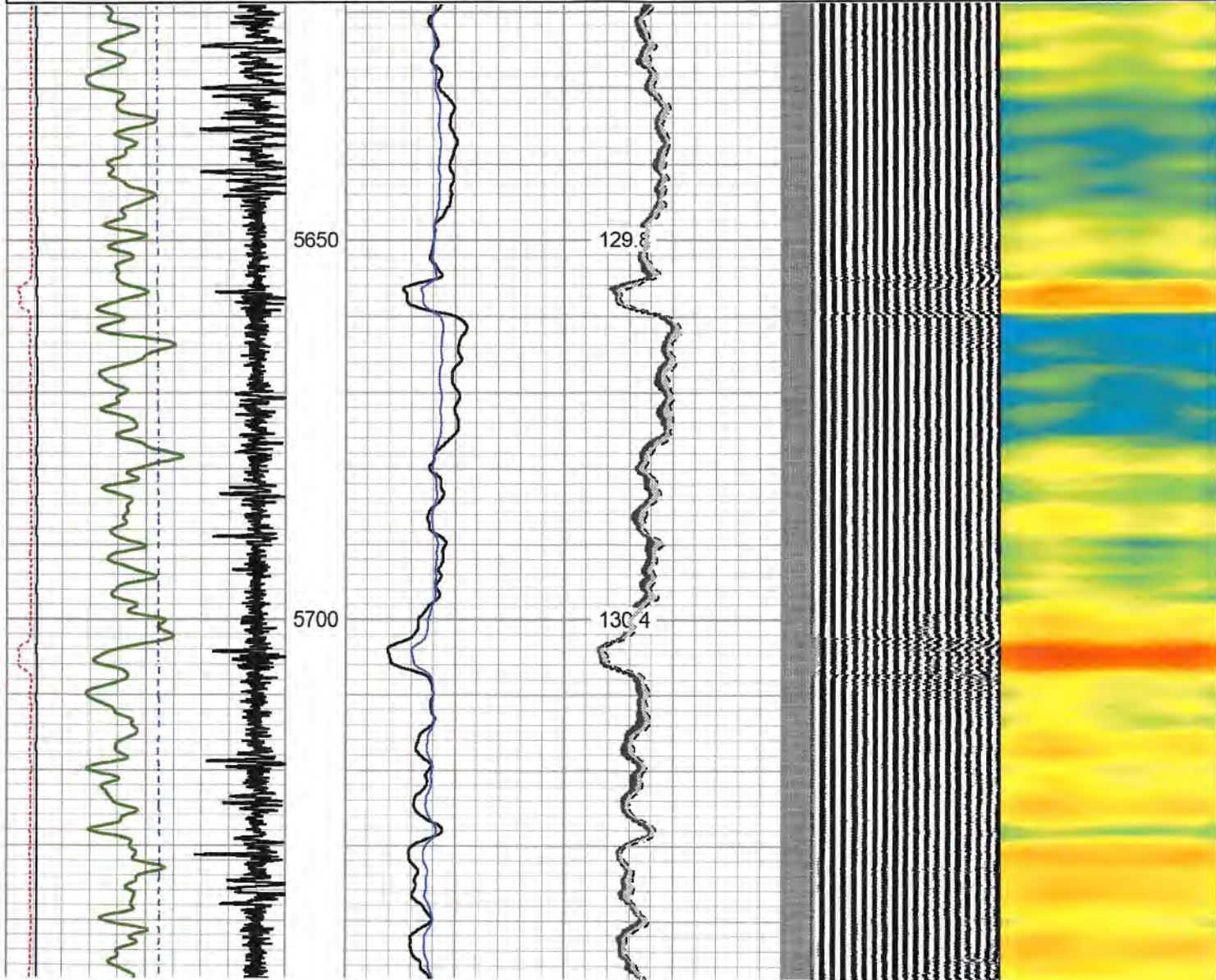
TEMP
(degF)

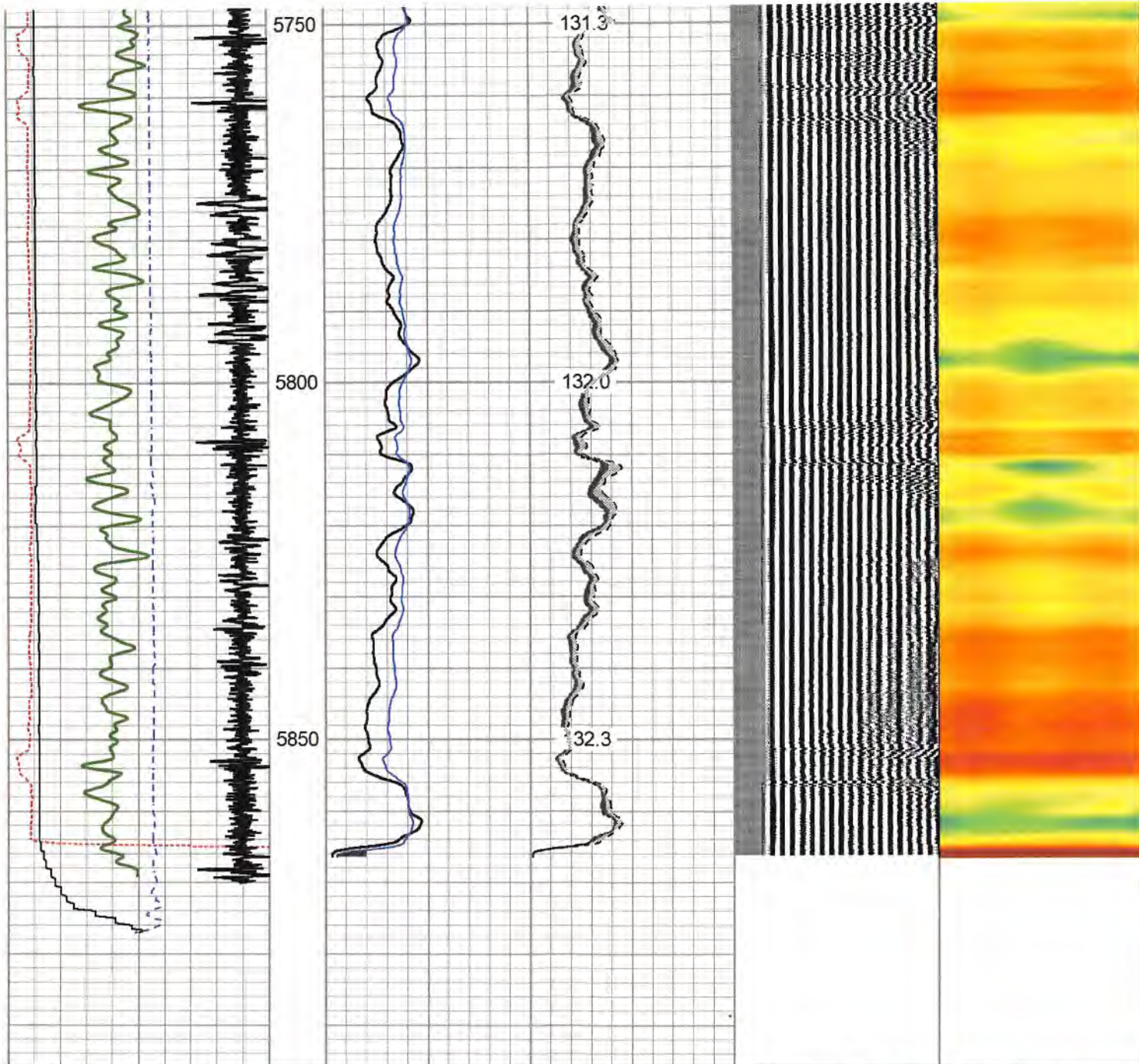


# Repeat Pass 0 PSI

Database File antero\_margery\_specter\_1h\_rcbl\_09\_jan\_2021.db  
 Dataset Pathname rabbit\_ears/specter\_1h/run1/pass3  
 Presentation Format rcbl-bond index for antero 1020  
 Dataset Creation Sat Jan 09 07:51:18 2021  
 Charted by Depth in Feet scaled 1:240

270 Travel Time (usec) 160	0 Amplitude (mV) 100	0 AMPMIN 150	Variable Density	1 Cement Map 8
9 Casing Collar -1	1 BONDIX 0	0 AMPMAX 150	200 (usec) 1200	
0 Gamma Ray (GAPI) 150		0 AMPAVG 150		
Line Speed		TEMP		
-100 (ft/min) 100		(degF)		
0 Line Tension (lb) 2000				





270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150	0	AMPAVG	150							
	Line Speed			TEMP								
-100	(ft/min)	100		(degF)								
0	Line Tension (lb)	2000										

## Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero\_margery\_specter\_1h\_rcbl\_09\_jan\_2021.db  
 Dataset rabbit\_ears/specter\_1h/run1/pass5/\_vars\_

### Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 150	in 5.5	in 0.361	lb/ft 20	mV 71.9	mV 2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			

10.8	No	261	30	6910
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**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\_margery\_specter\_1h\_rcbl\_09\_jan\_2021.db  
Dataset Pathname rabbit\_ears/specter\_1h/run1/pass5  
Dataset Creation Sat Jan 09 08:00:15 2021

**Gamma Ray Calibration Report**

Serial Number: FW1211-86  
Tool Model: Probe  
Performed: Mon Nov 30 11:58:15 2020

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: FW1312-32  
Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in  
Calibration Depth: 115.425 ft

Master Calibration, performed Fri Jan 08 10:39:23 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.015	0.996	2.200	71.921	68.939	3.242
CAL	0.081	0.845				
5'	-0.015	0.891	2.200	71.921	76.918	3.359
SUM						
S1	-0.015	1.036	0.000	100.000	95.159	1.415
S2	-0.014	1.056	0.000	100.000	93.488	1.266
S3	-0.011	1.052	0.000	100.000	94.049	1.050
S4	-0.012	1.015	0.000	100.000	97.391	1.164
S5	-0.013	0.991	0.000	100.000	99.647	1.249
S6	-0.013	0.962	0.000	100.000	102.594	1.297
S7	-0.015	0.941	0.000	100.000	104.564	1.570
S8	-0.013	0.971	0.000	100.000	101.663	1.335

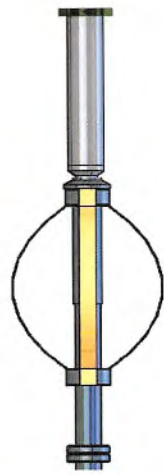
Internal Reference Calibration, performed Thu Sep 27 16:01:58 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.081	0.845	1.000	0.000

Air Zero Calibration, performed Fri Jan 08 09:44:33 2021:

	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	16.99		CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00
Temp	14.14		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
WVFS8	11.91		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	11.91					
WVFS6	11.91					
WVFS5	11.91					
WVFS4	11.91					
WVFS3	11.91					
WVFS2	11.91					
WVFS1	11.91					
WVF3FT	11.91					
WVF5FT	10.91					
WVFCAL	7.66					
HEADVOLT	7.66					
CCL	6.75					
GR	5.42	CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00	
		GR-Probe (FW1211-86)	4.78	2.75	57.00	



Probe 2 3/4" Logging Gamma Ray

CENT-Probe275  
2.75" Centralizer

2.88

2.75

20.00

Dataset: antero\_margery\_specter\_1h\_rcbl\_09\_jan\_2021.db: rabbit\_ears/specter\_1h/run1/pass5  
Total length: 18.05 ft  
Total weight: 182.00 lb  
O.D.: 4.88 in



Nine

Company ANTERO  
Well Margery Specter 1H  
Field RABBIT EARS  
County TYLER  
State WEST VIRGINIA

Country USA