



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

Company Antero Resources Well Journeyman Ryland 1H Field Utica County Wetzel State WV	Company Antero Resources		Well Journeyman Ryland 1H		Field Utica		County Wetzel		State WV	
	Location:				API #: 4710303456		Other Services			
					N 39.549741					
					W 80.750520					
	SEC		TWP		RGE		Elevation			
Permanent Datum				Ground Level		Elevation				
Log Measured From				Kelly Bushing 30' A.P.D.		K.B.				
Drilling Measured From				Kelly Bushing		D.F.				
						G.L.				

Date	07-May-2022
Run Number	One
Depth Driller	
Depth Logger	7,360'
Bottom Logged Interval	7,370'
Top Log Interval	Surface
Open Hole Size	
Type Fluid	Water
Density / Viscosity	
Max. Recorded Temp.	145 Deg.F.
Estimated Cement Top	4,846'
Time Well Ready	7:30
Time Logger on Bottom	7:58
Equipment Number	104 (P2)(G1)
Location	Charleroi, PA
Recorded By	Matt McNally
Witnessed By	Keith

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Conductor String				
Surface String				
Intermediate String				
Intermediate String				
Production String	5 1/2"	20#	Surface	

<<< Fold Here >>>

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

Primary Log on Well

Log Correlated to Kelly Bushing 30' Above Ground Level  
Marker Joint at 6,058'-6,068'

100 % Free Pipe= 71.9 mv  
100 % Cement =2.2mv

Thank You For Choosing Nine Energy Service. Charleroi, PA



Main Pass 1,500 PSI

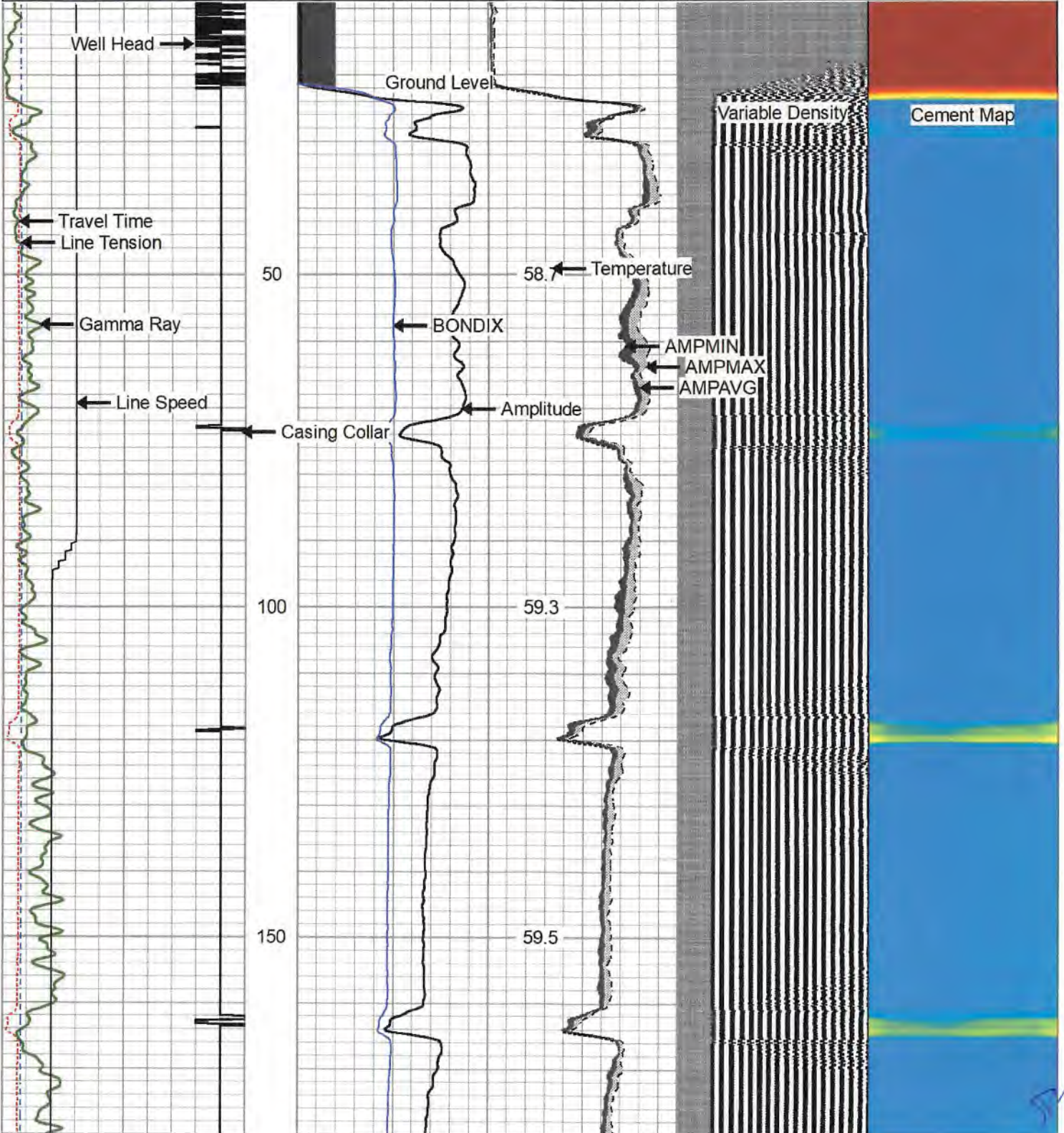
Handwritten mark

Database File c:\users\warrion\desktop\antero journeyman rcbls 7-may-22\antero ryland 1h rcbl 08 may 2022\antero\_ryla  
 Dataset Pathname ryland\_1h/run1/pass4  
 Presentation Format rcbl-bond index 1020  
 Dataset Creation Sun May 08 07:54:21 2022  
 Charted by Depth in Feet scaled 1:240

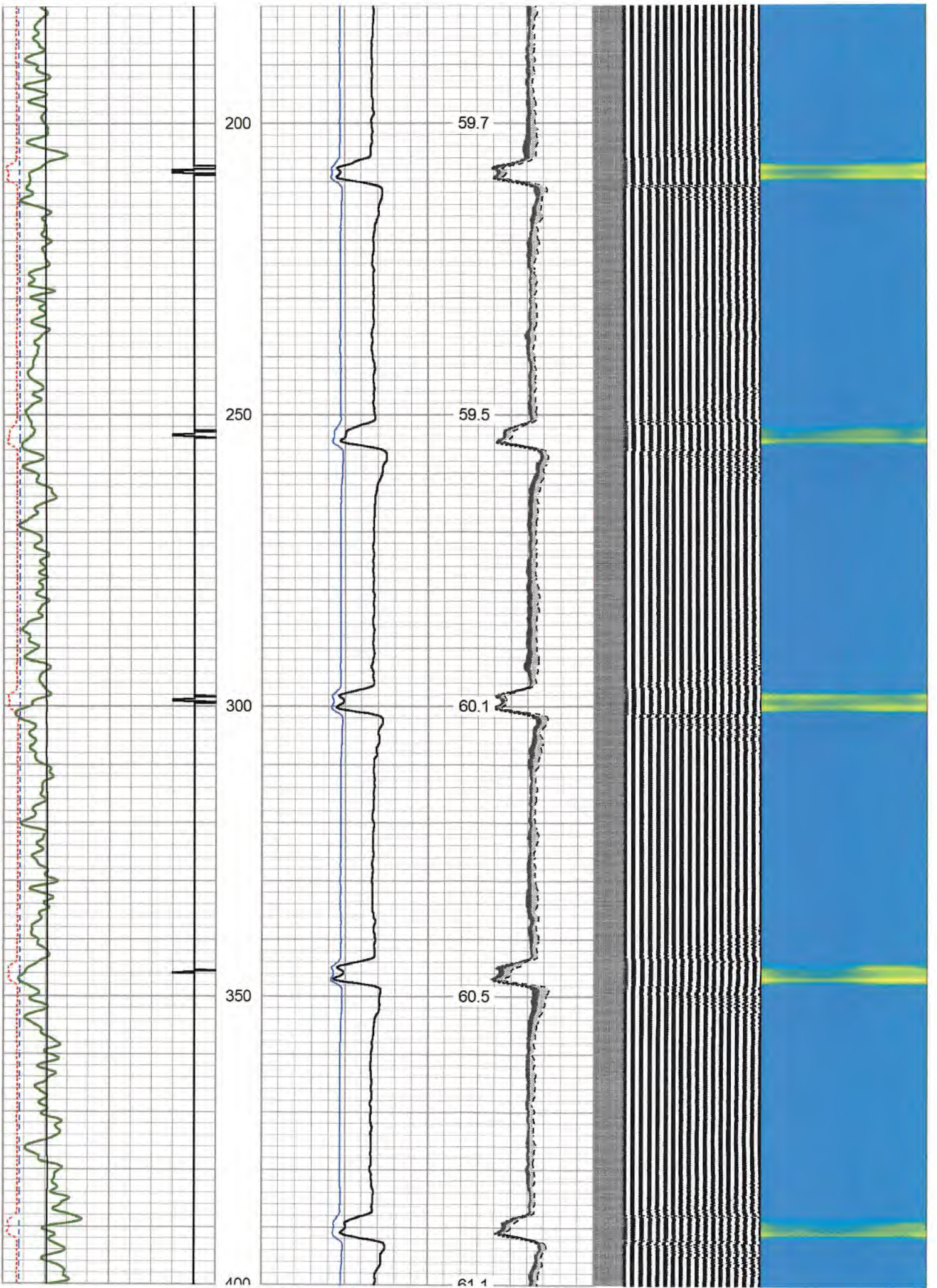
270	Travel Time (usec)	160
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-200	(ft/min)	200
0	Line Tension (lb)	3000

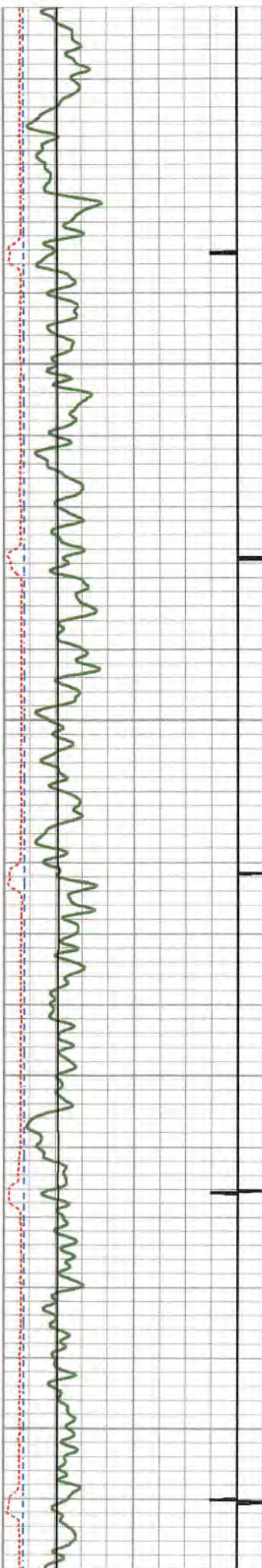
0	Amplitude (mV)	100	-5	AMP	MIN	150
1	BONDIX	0	-5	AMP	MAX	150
			-5	AMP	AVG	150
TEMP						
(degF)						

Variable Density 1 Cement Map 8  
 200 (usec) 1200

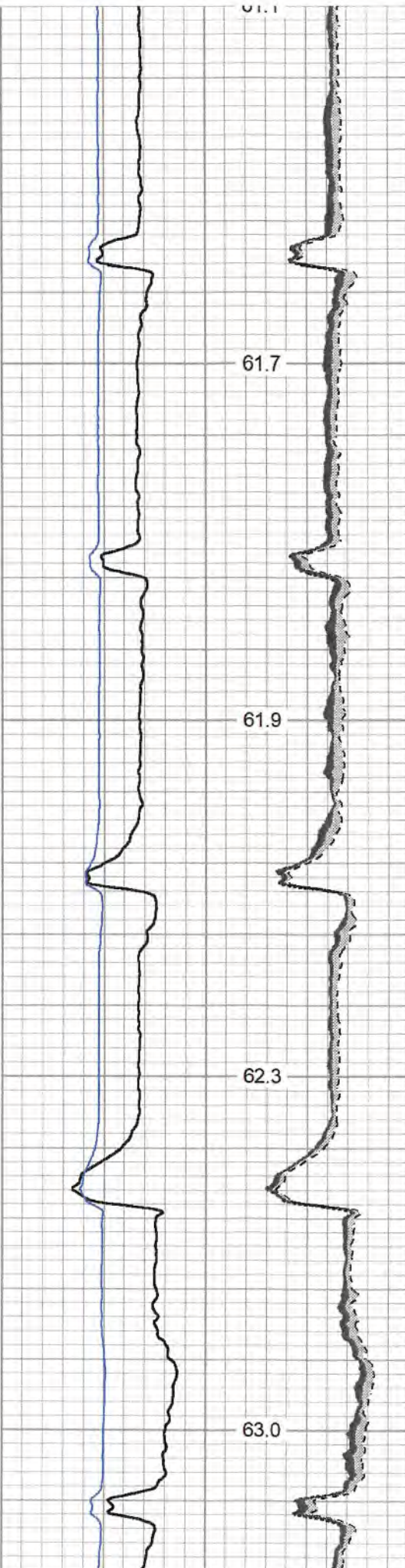


*Handwritten signature*

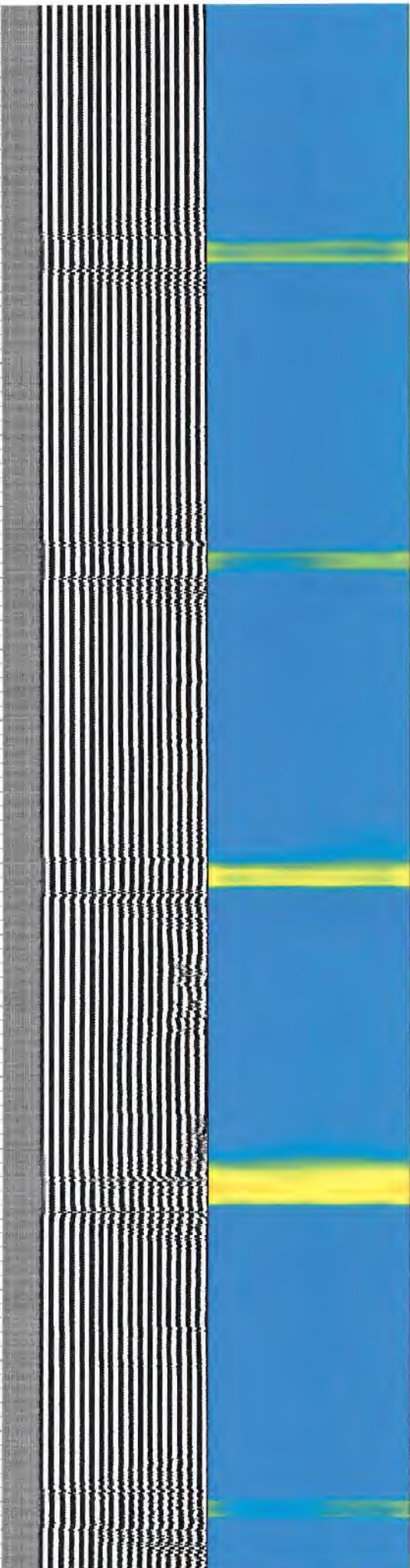


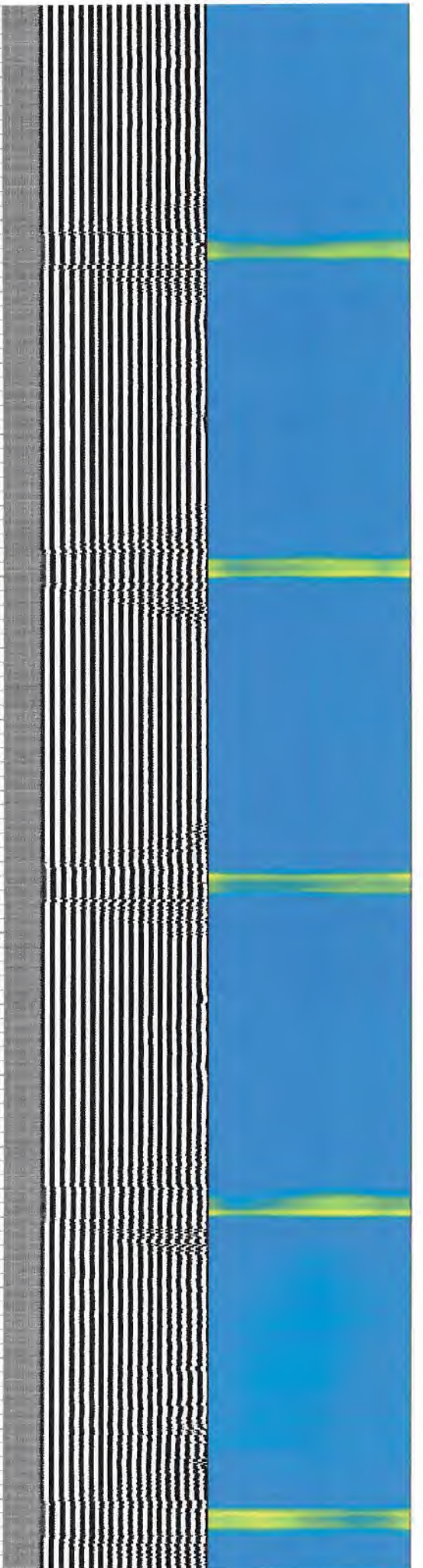
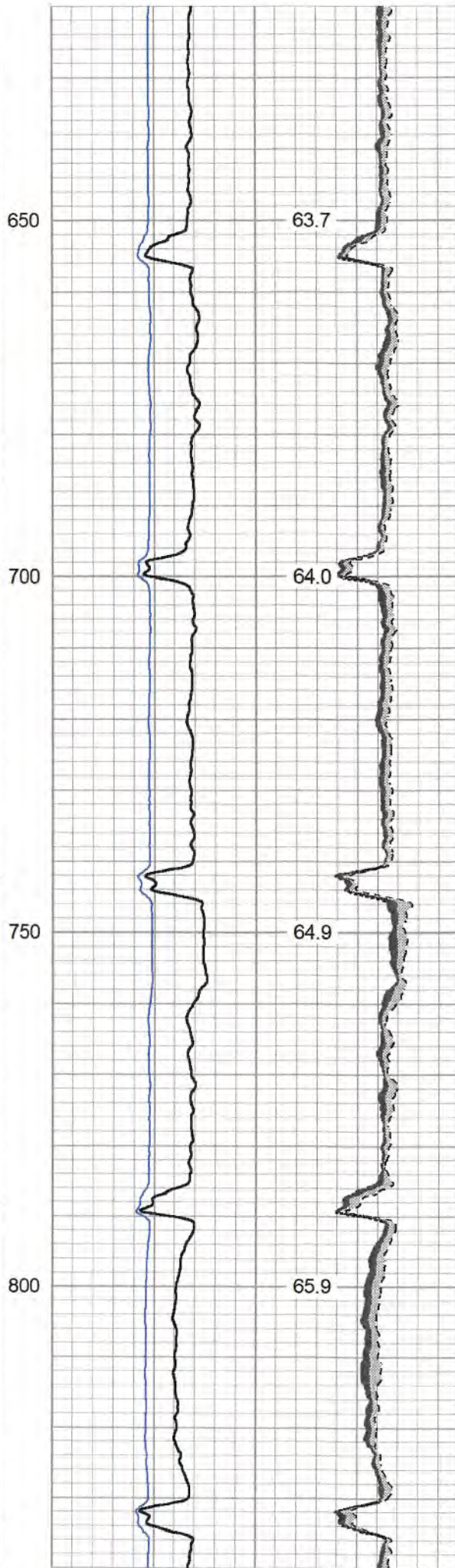
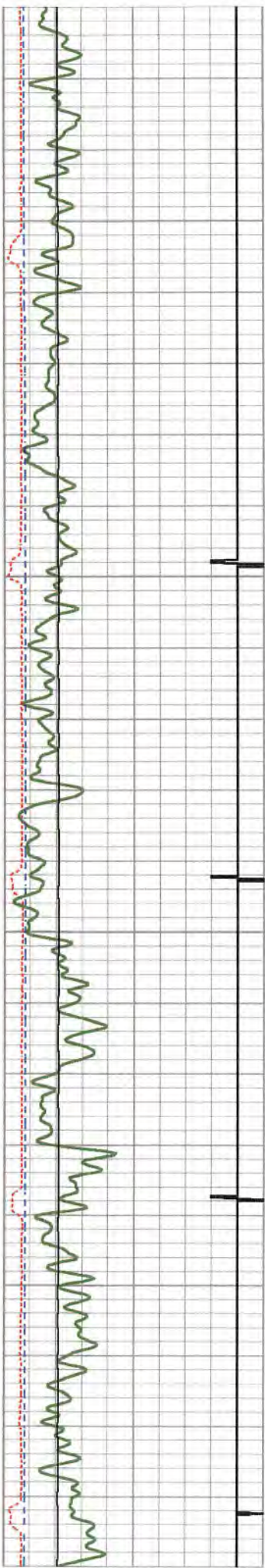


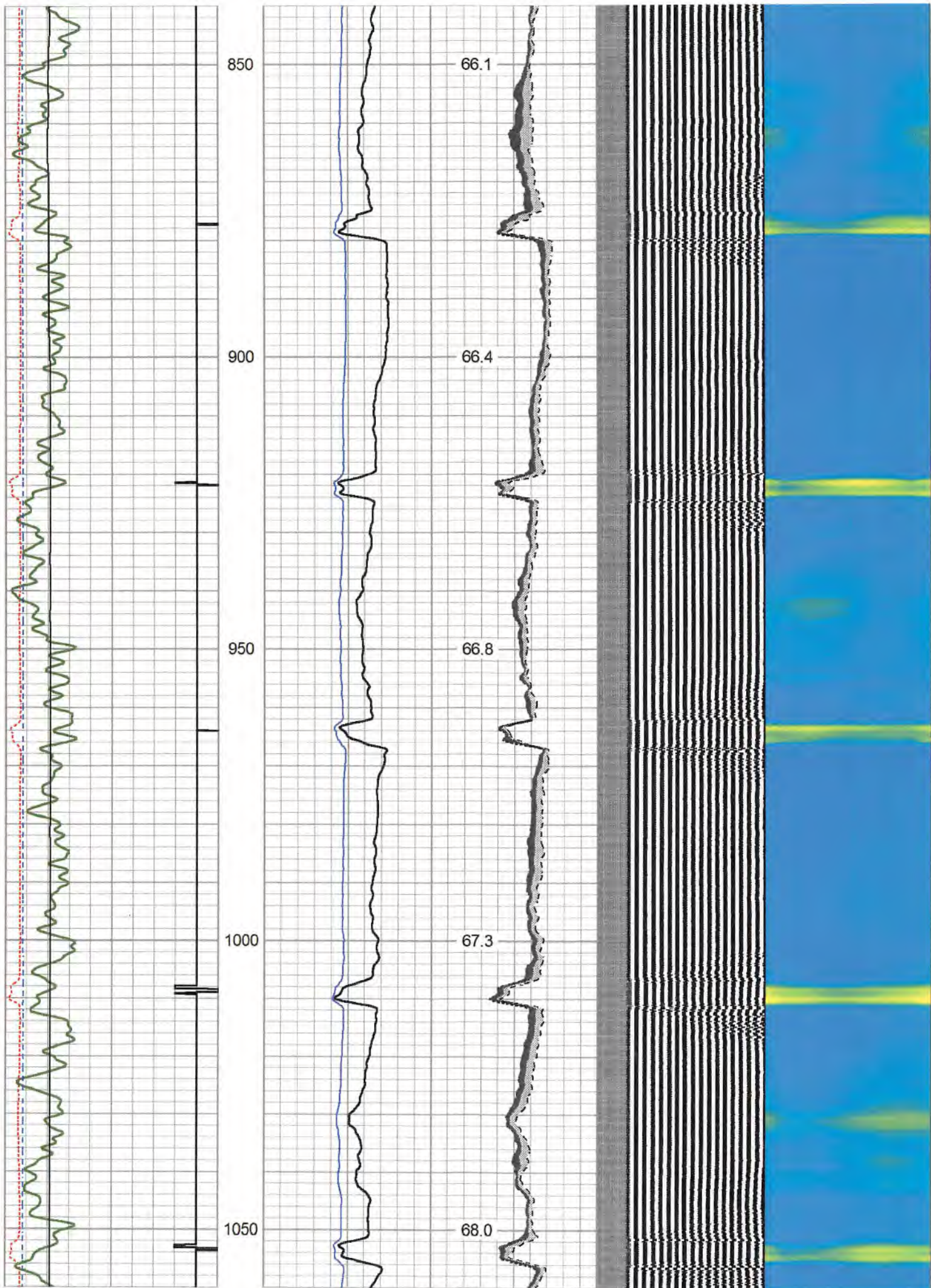
400  
450  
500  
550  
600

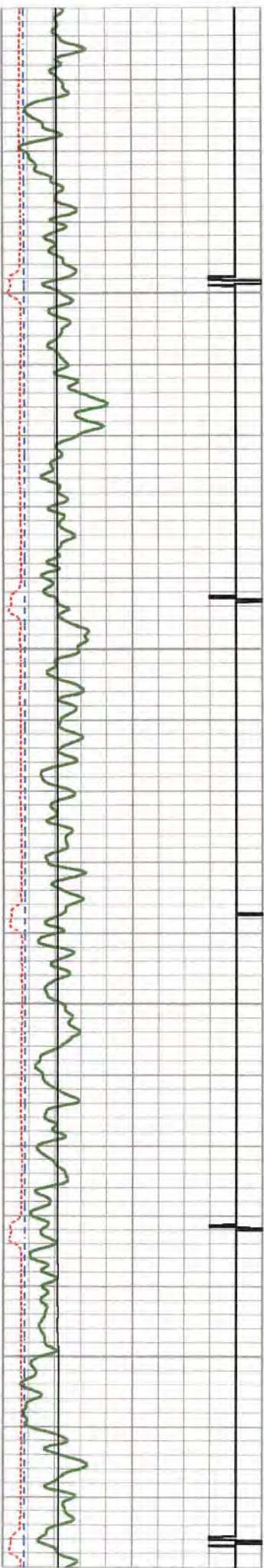


61.1  
61.7  
61.9  
62.3  
63.0







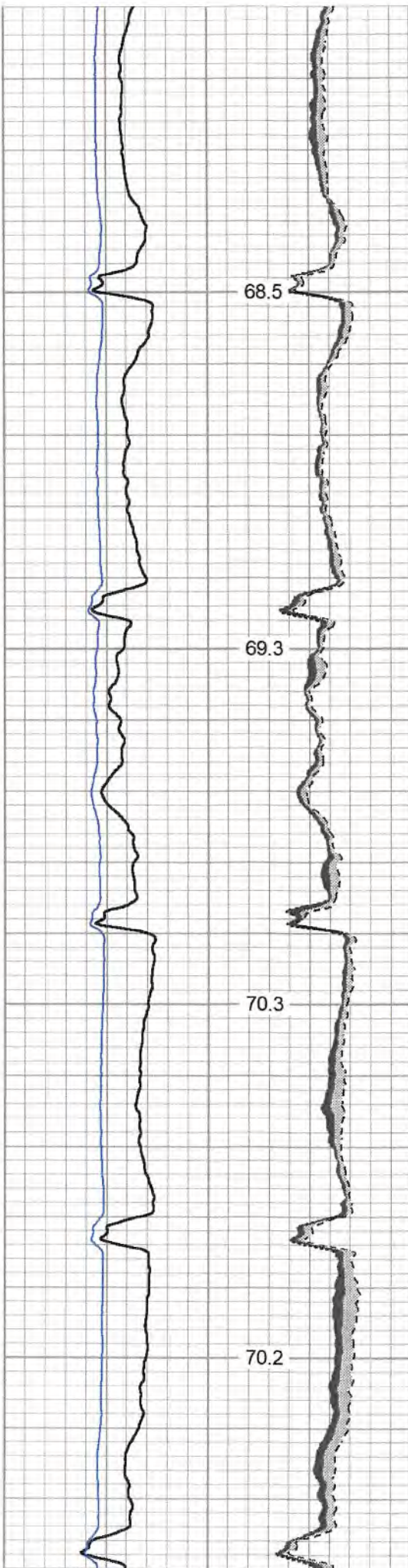


1100

1150

1200

1250

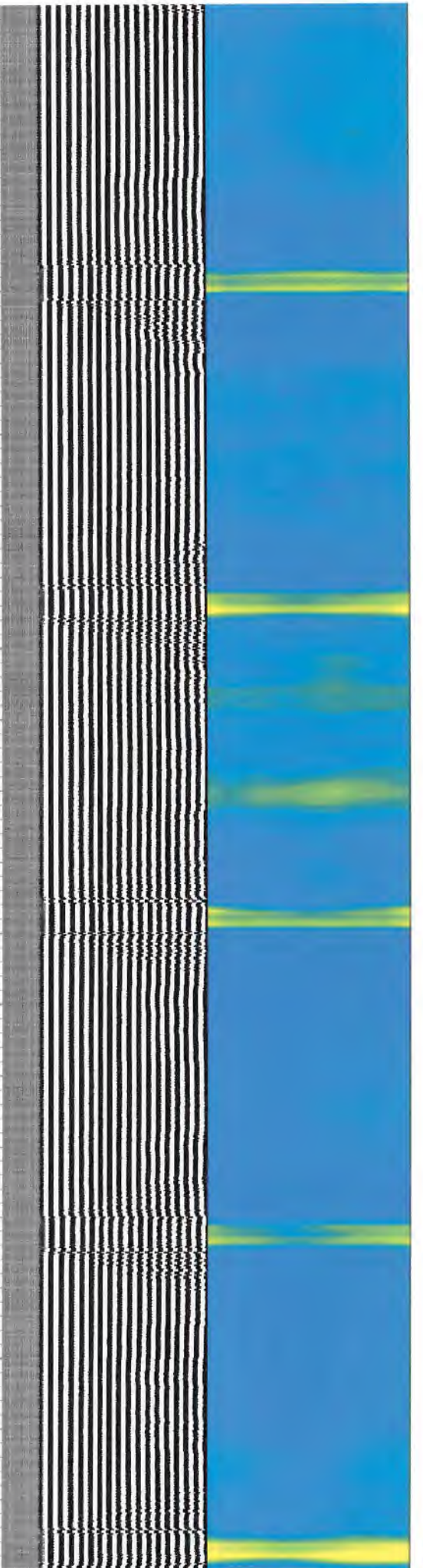


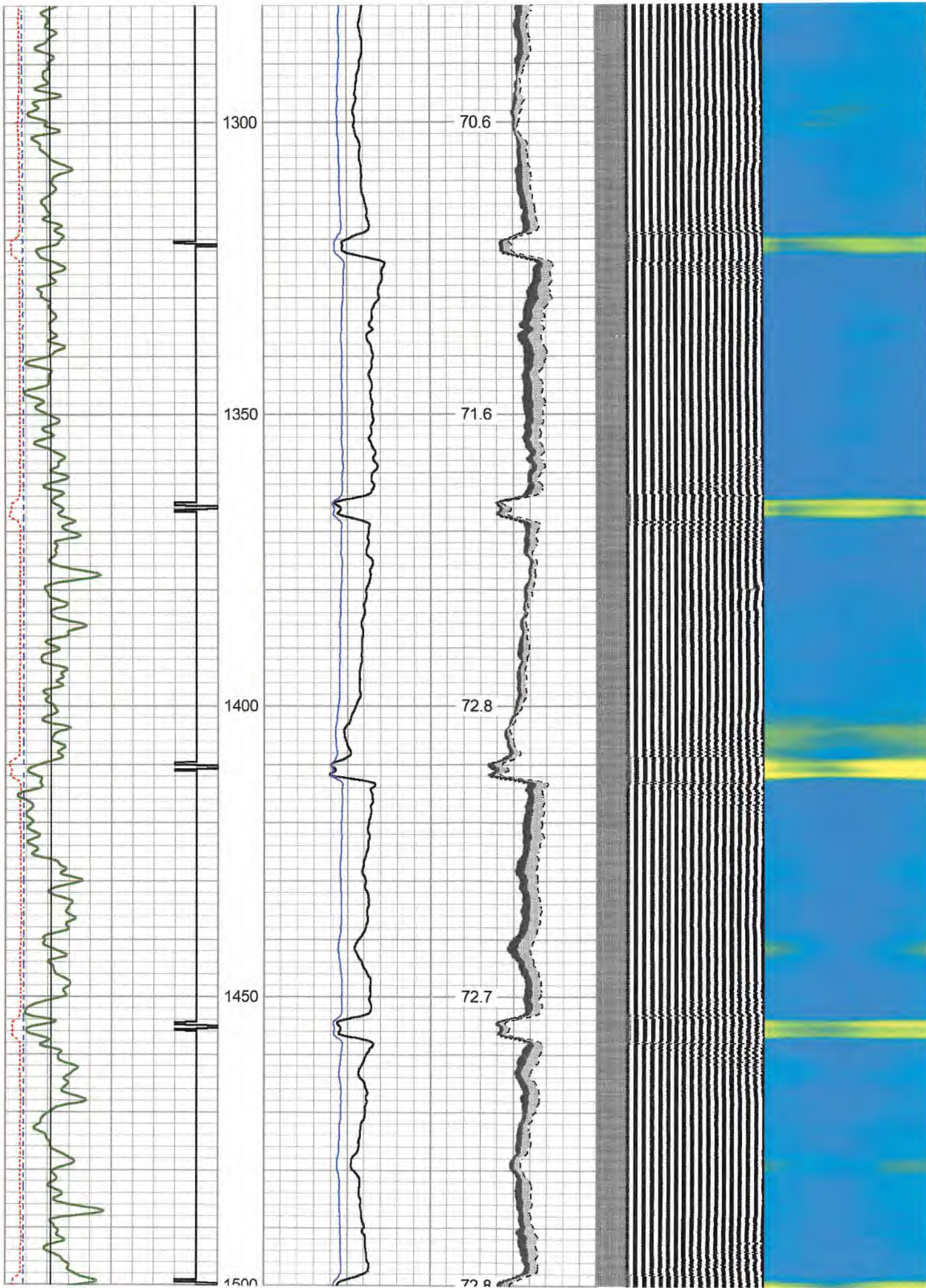
68.5

69.3

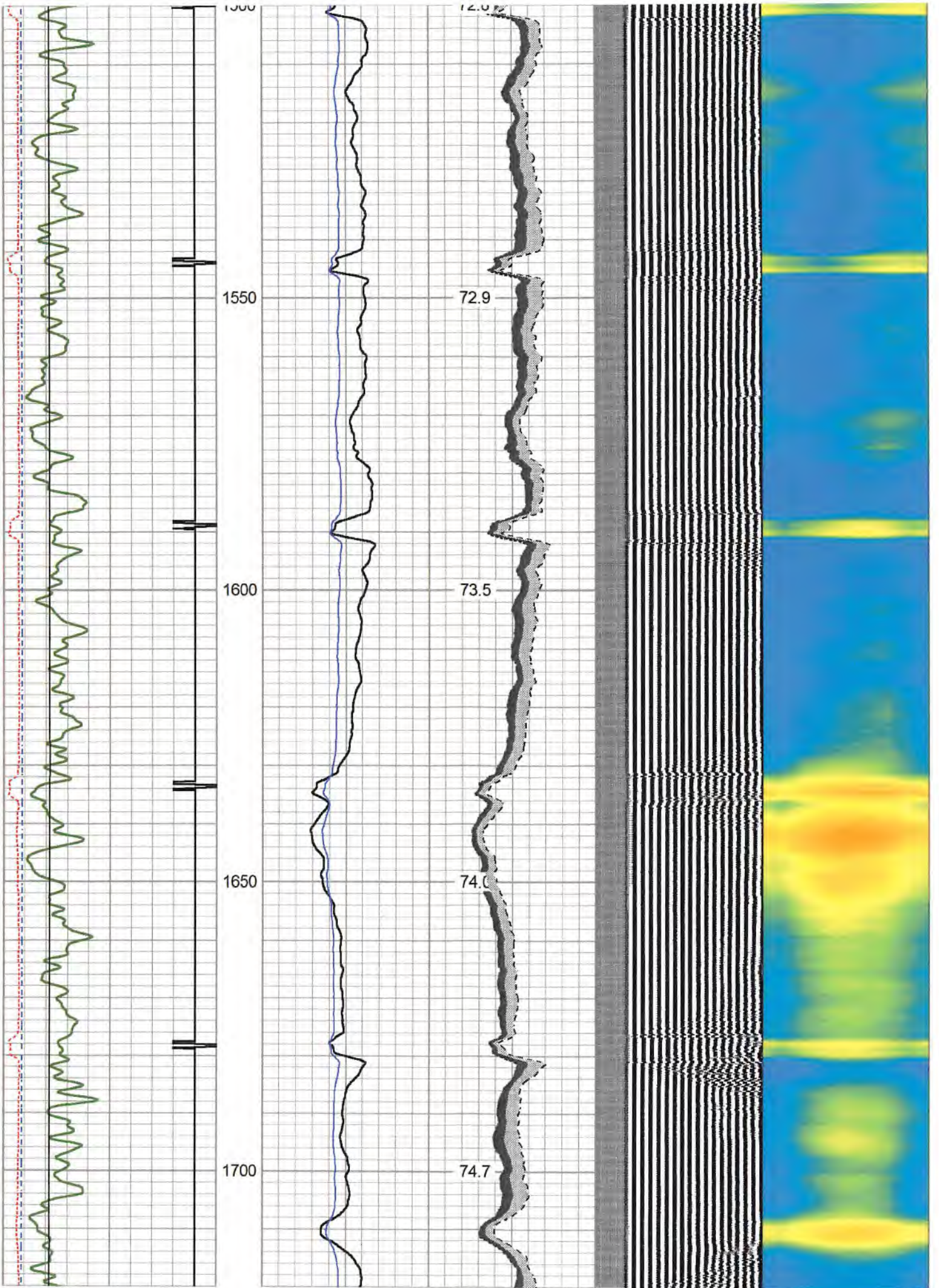
70.3

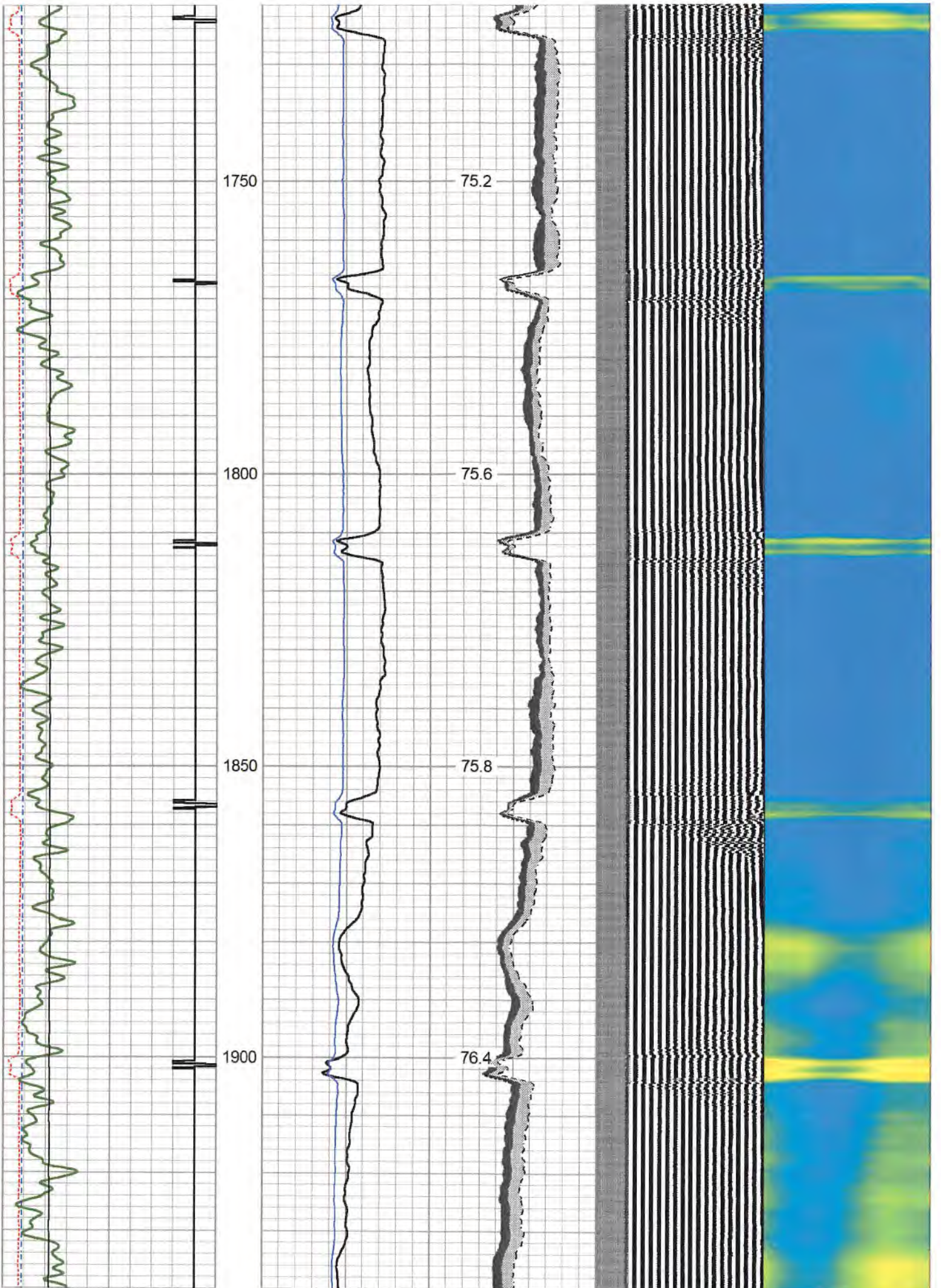
70.2

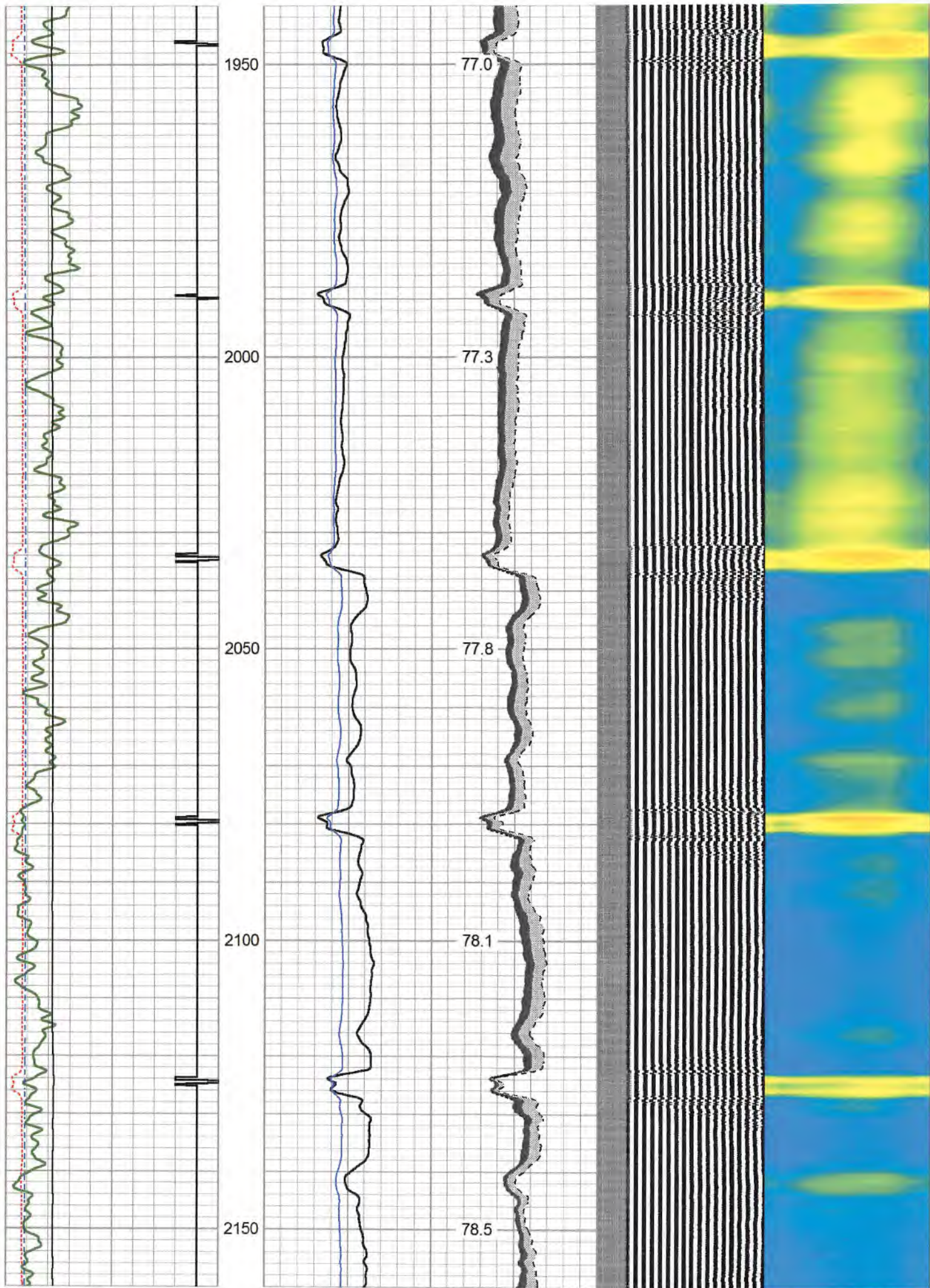


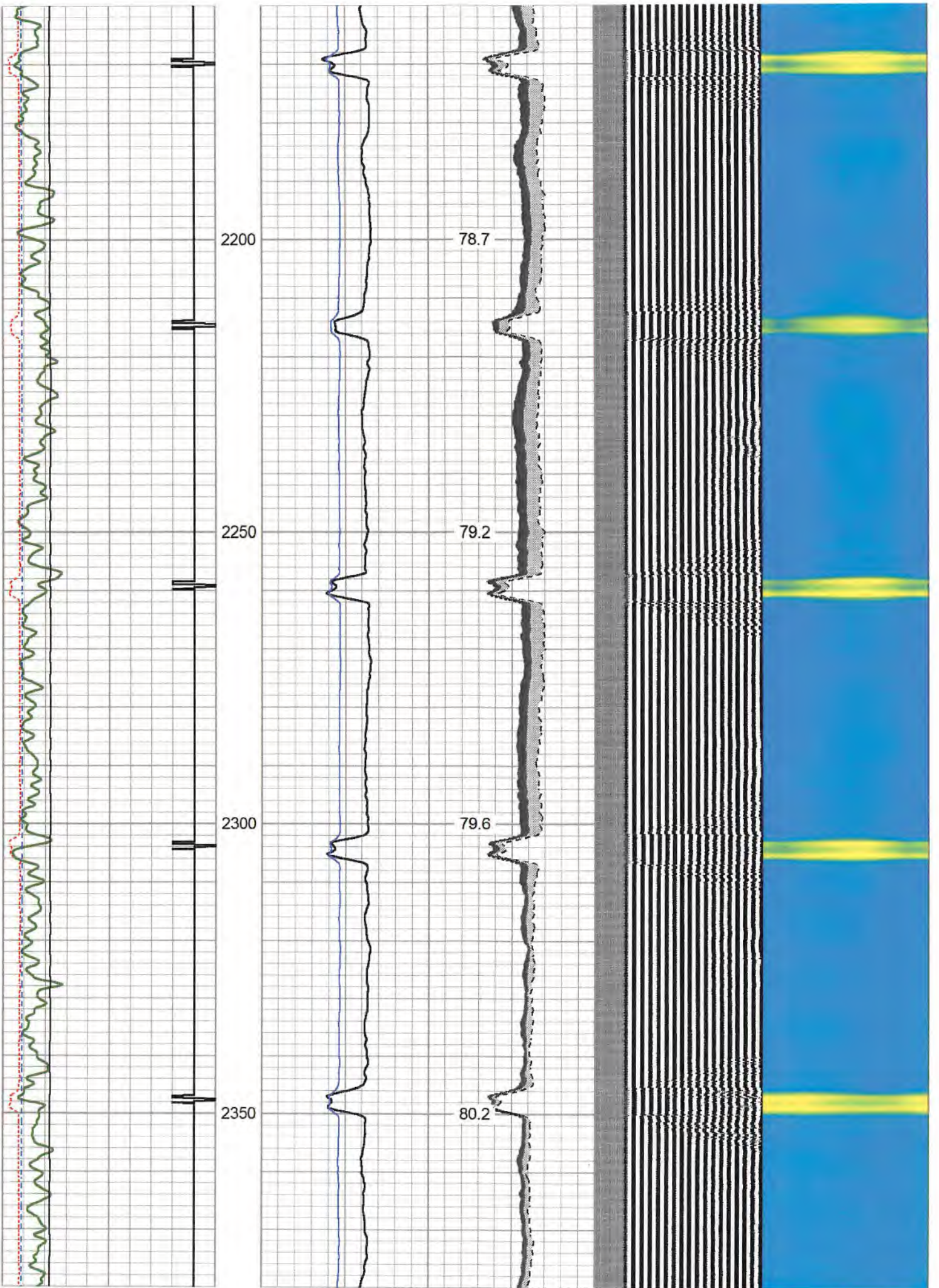


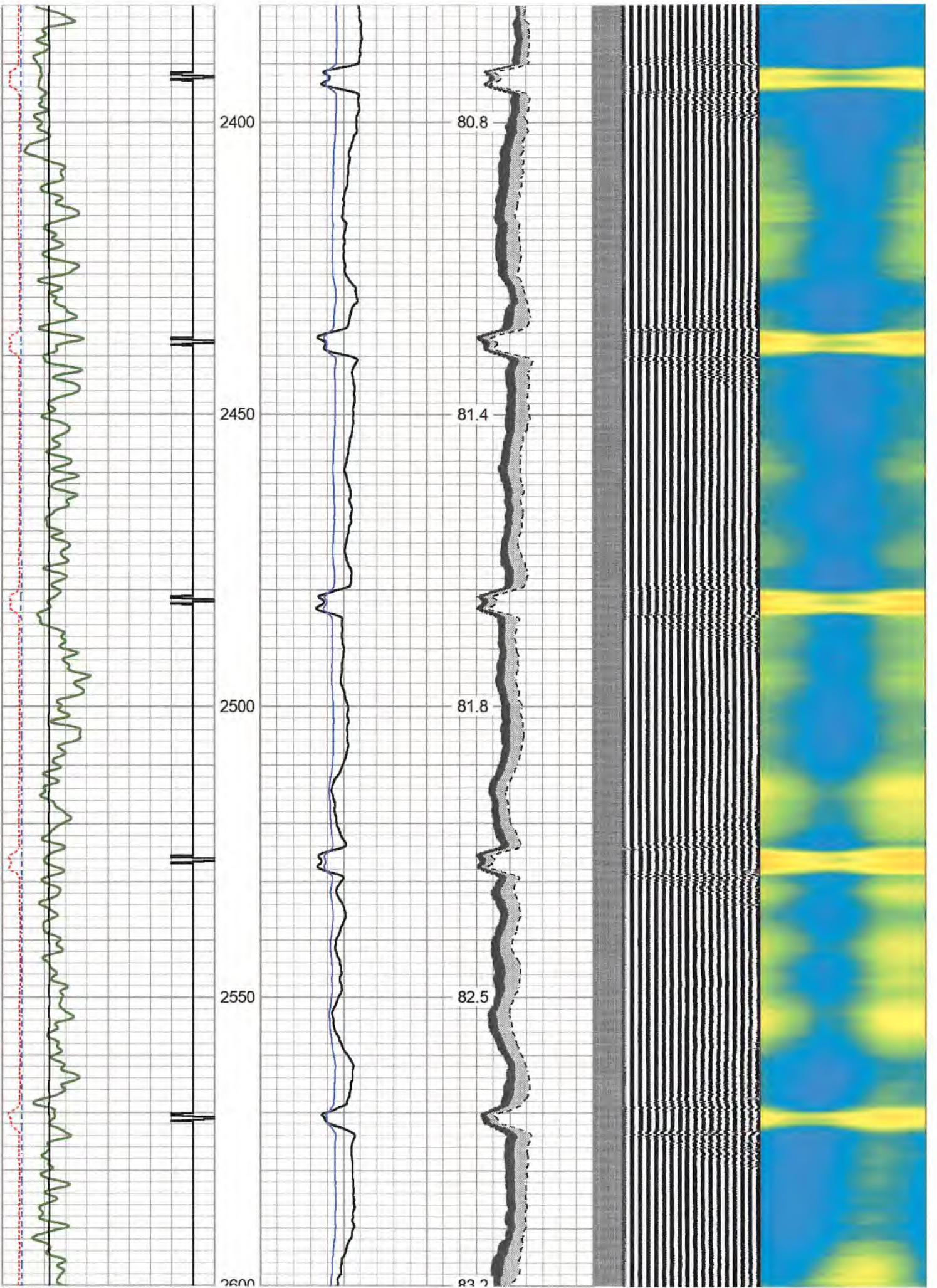


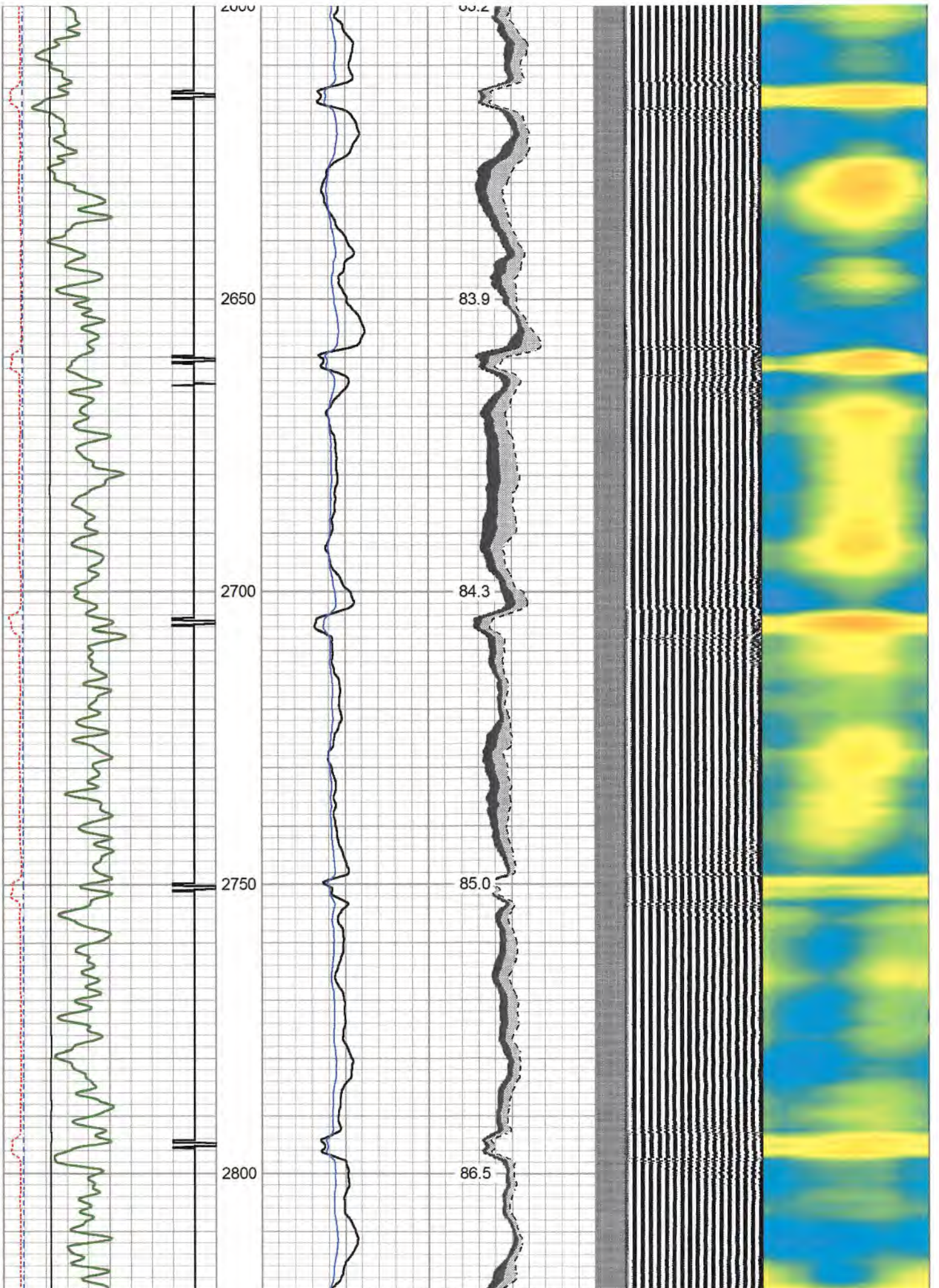


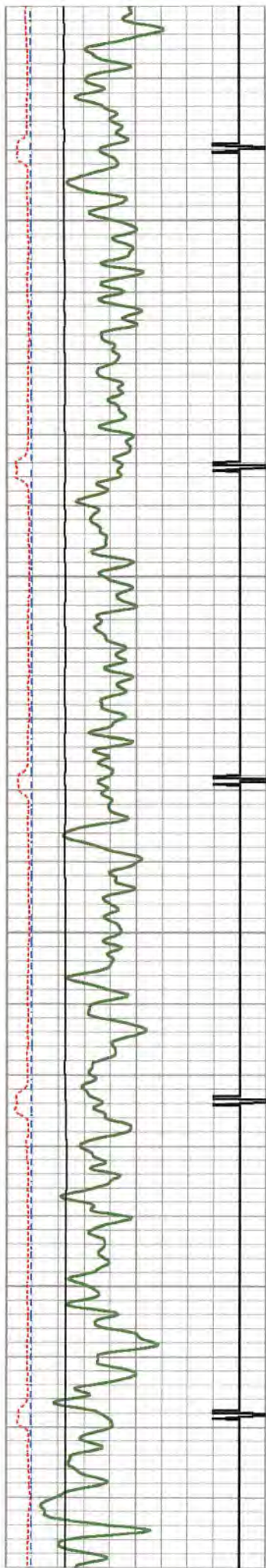










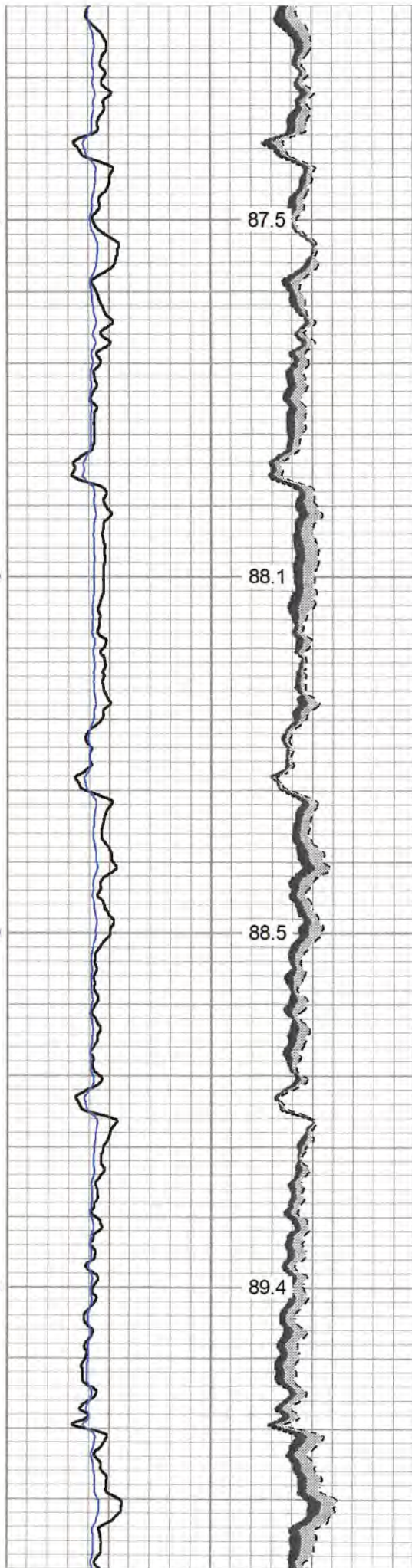


2850

2900

2950

3000

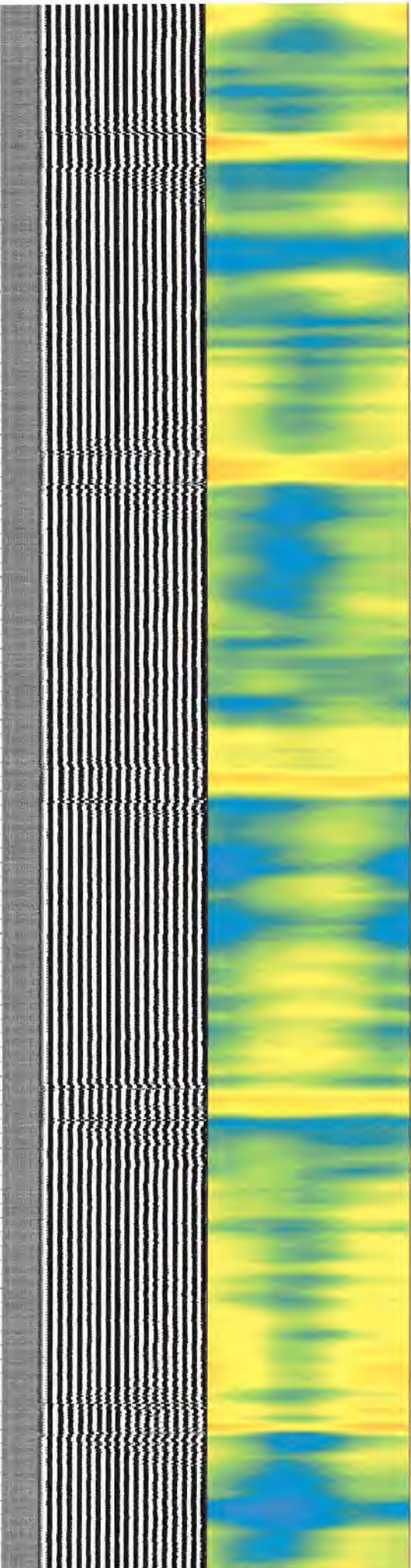


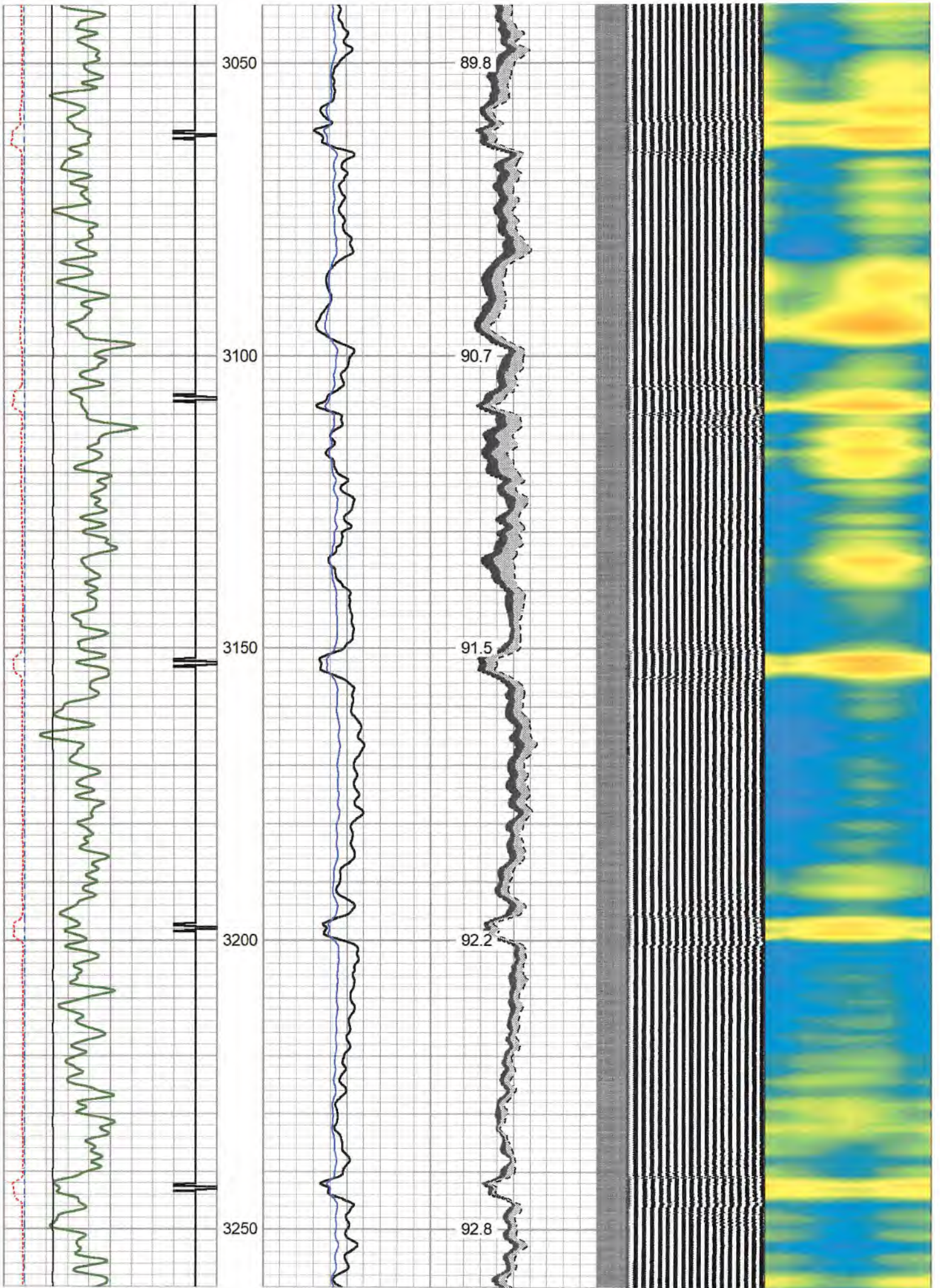
87.5

88.1

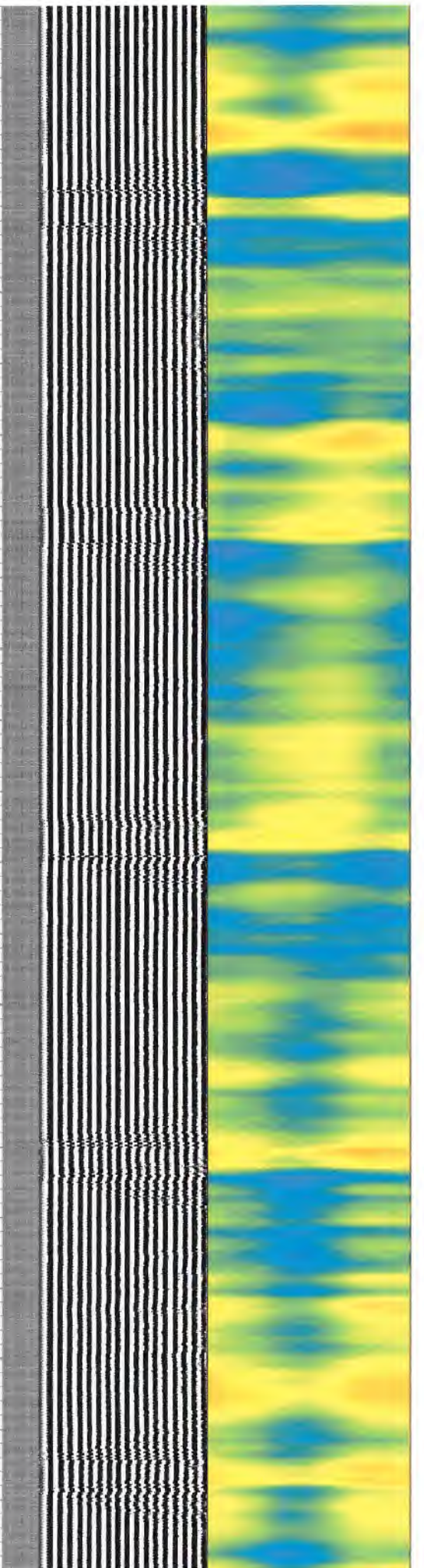
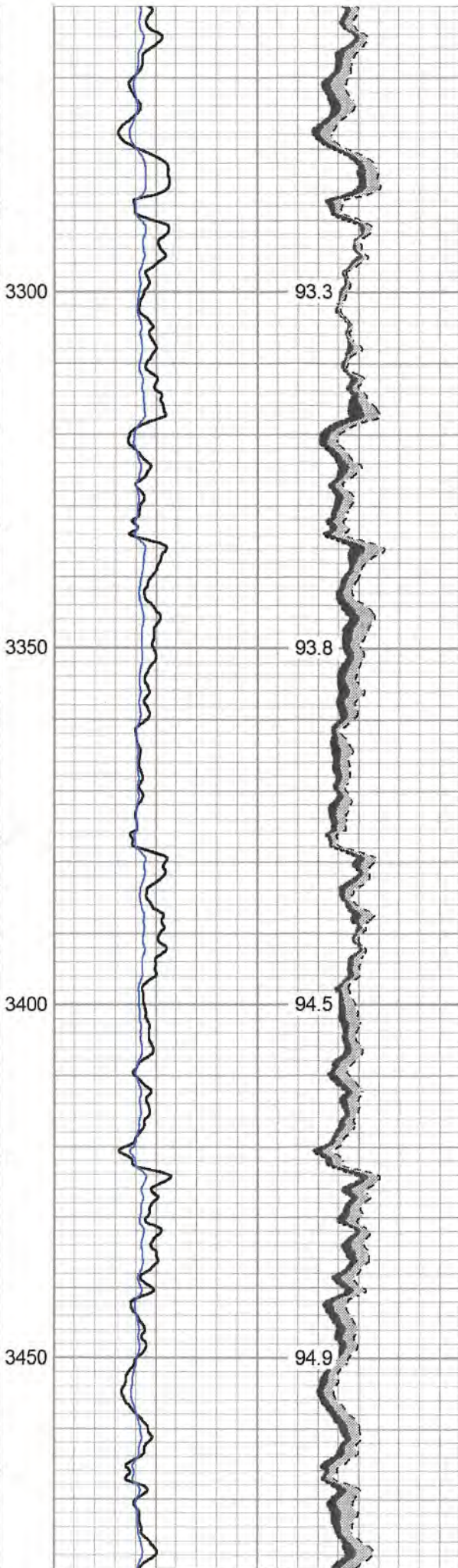
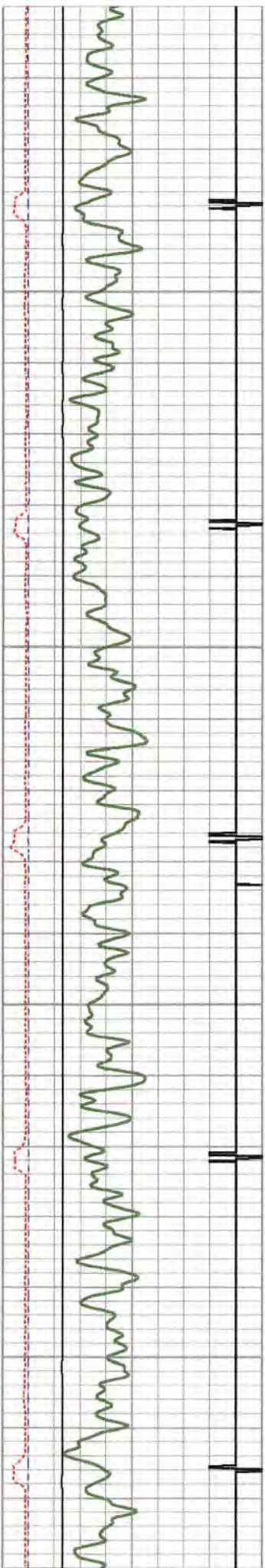
88.5

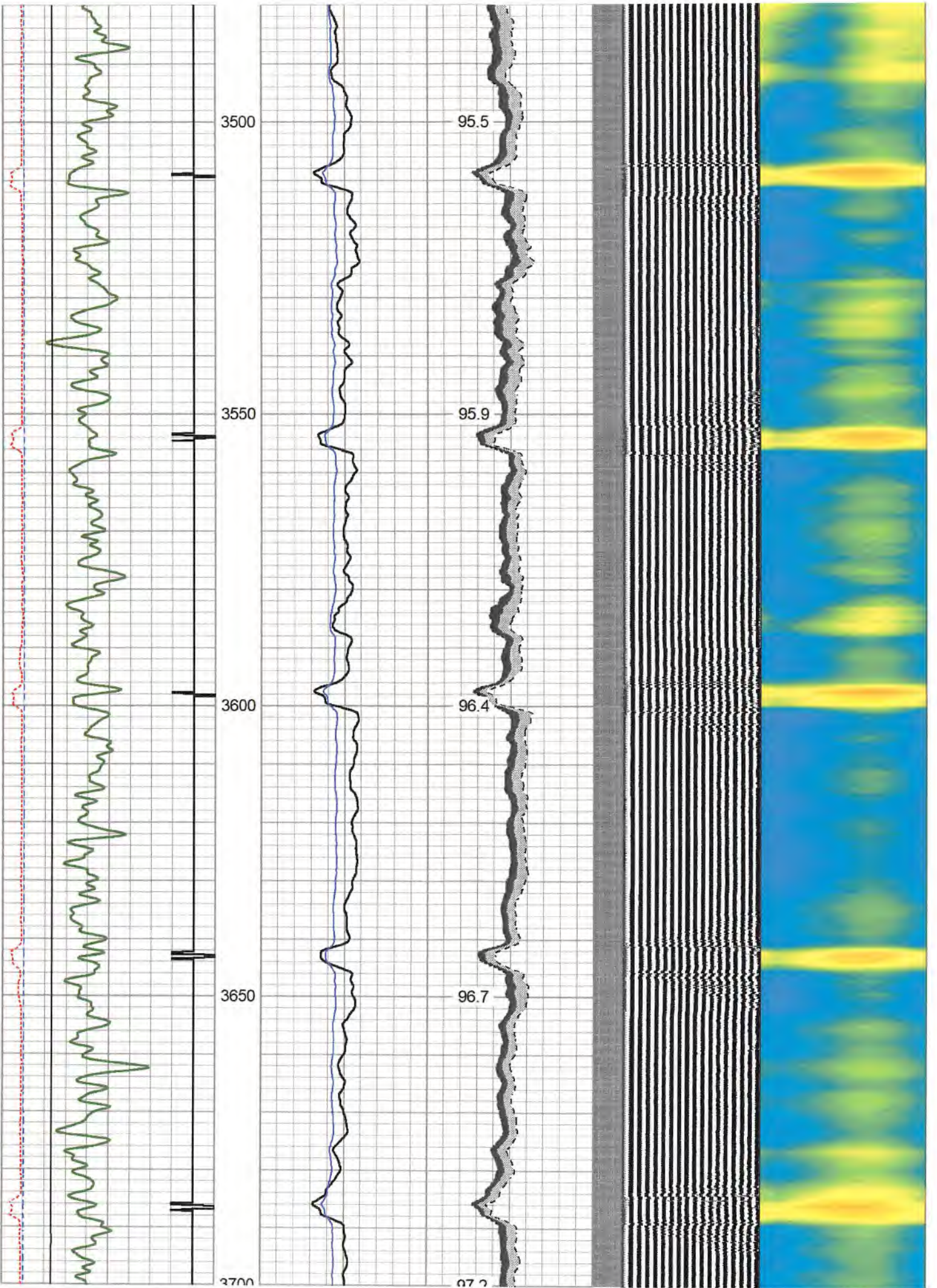
89.4

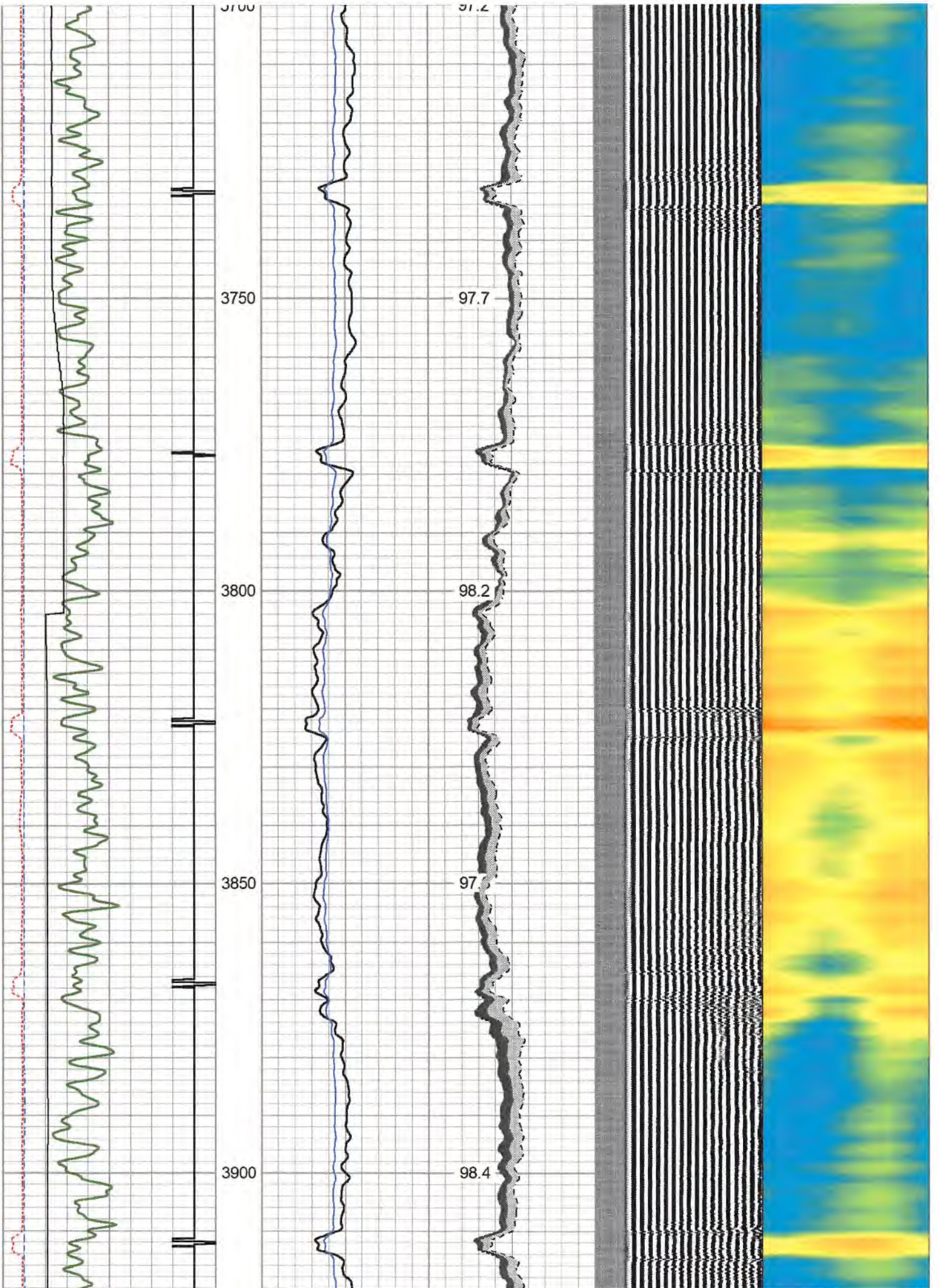


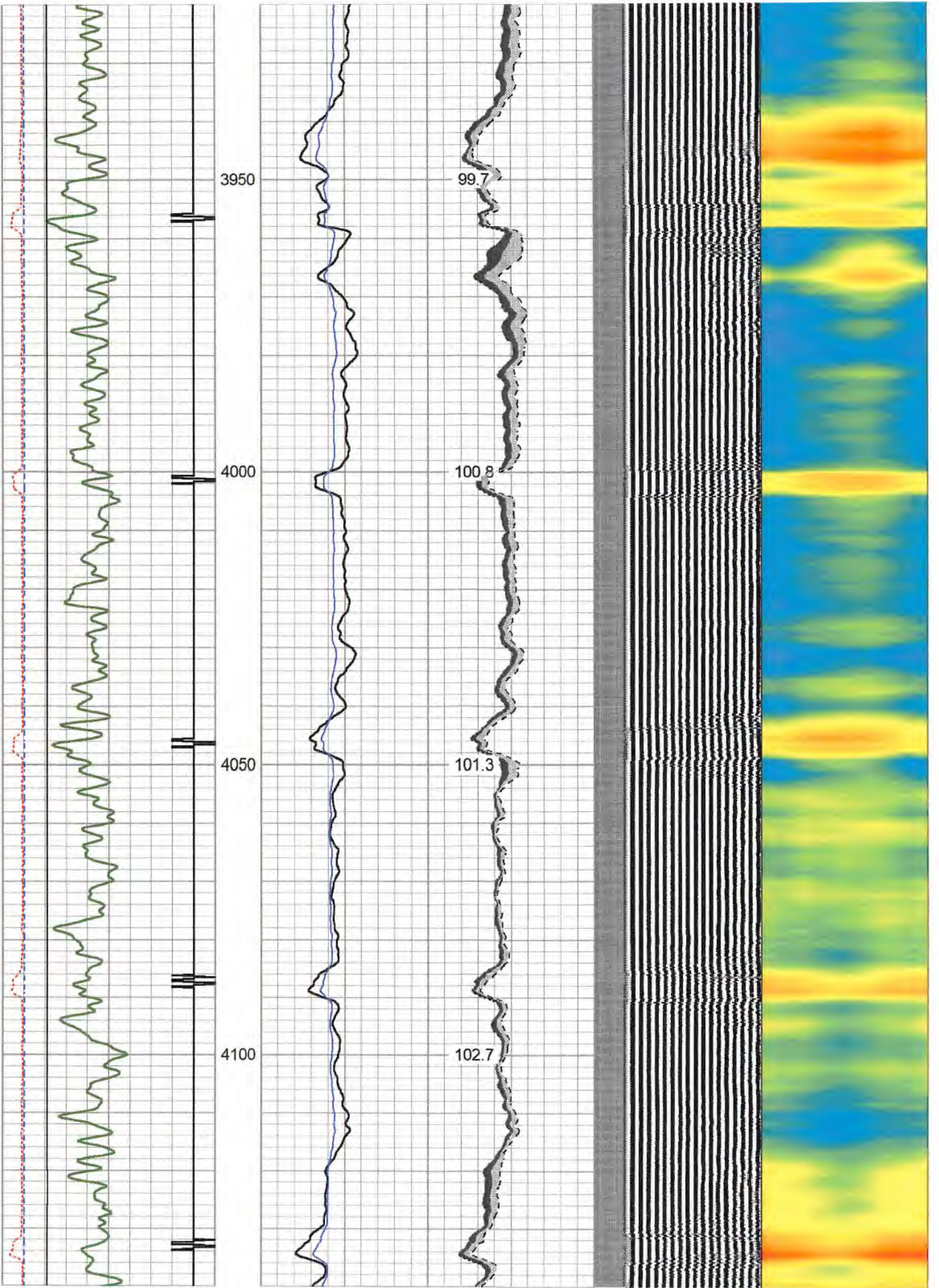


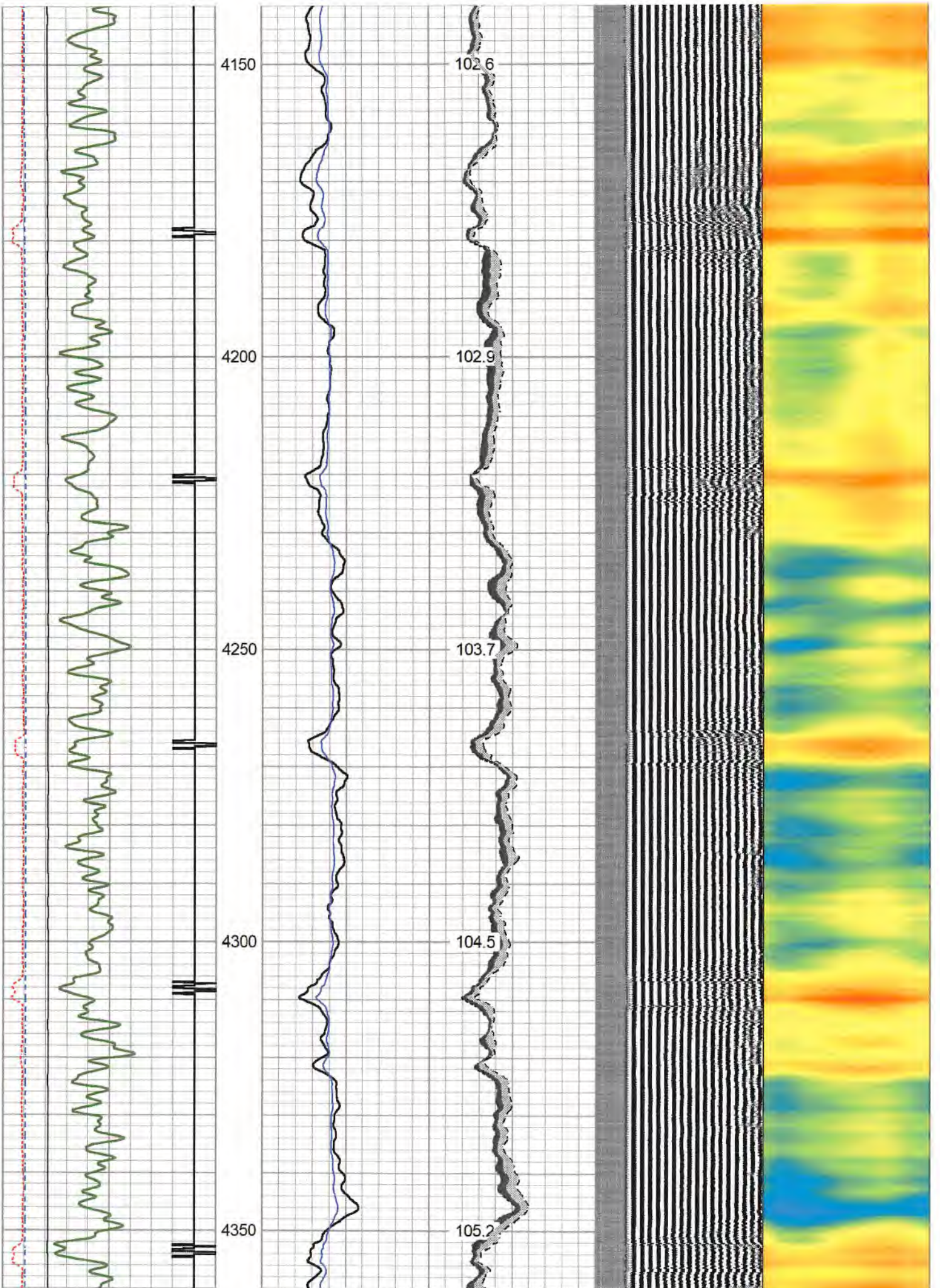


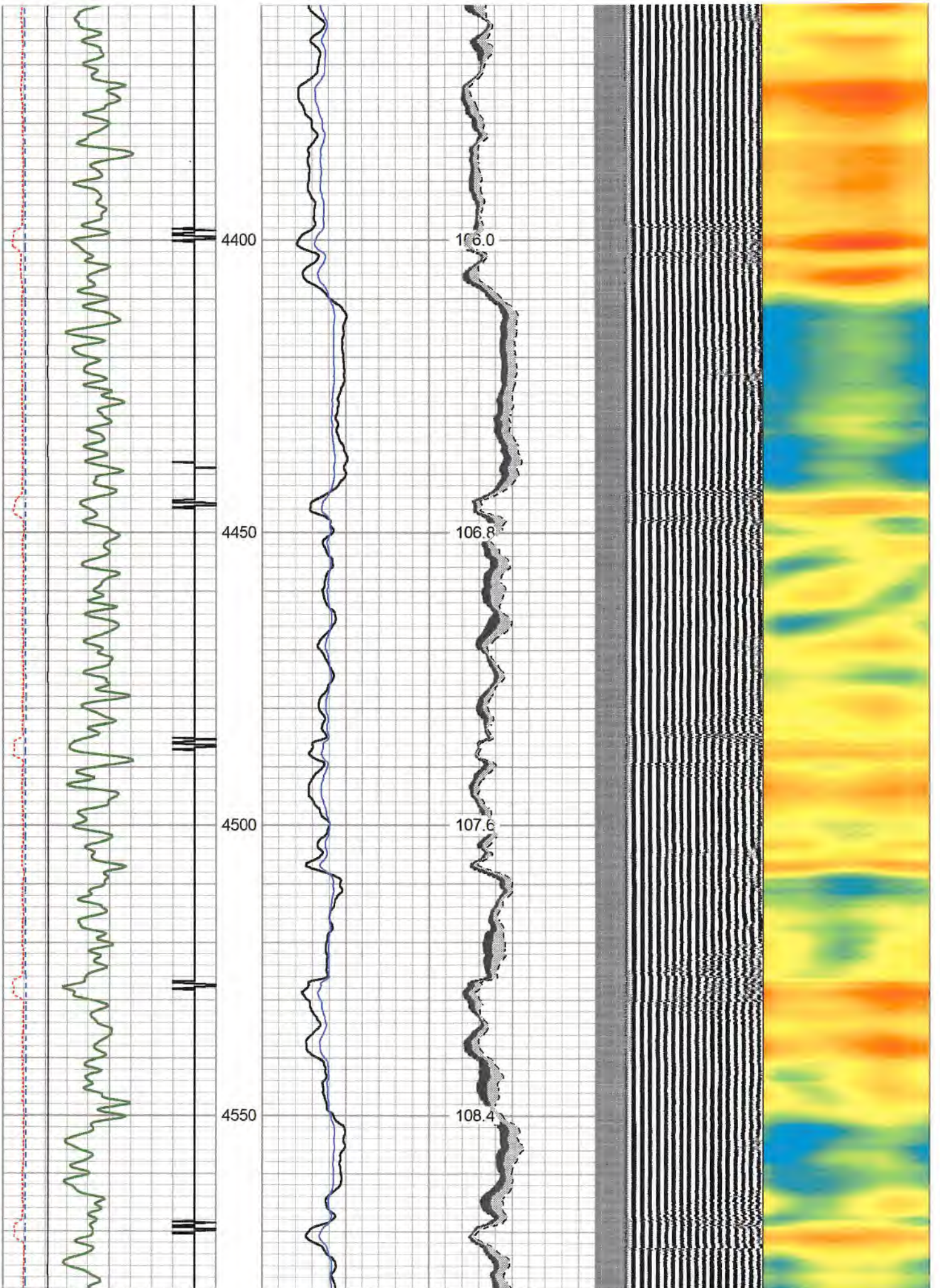


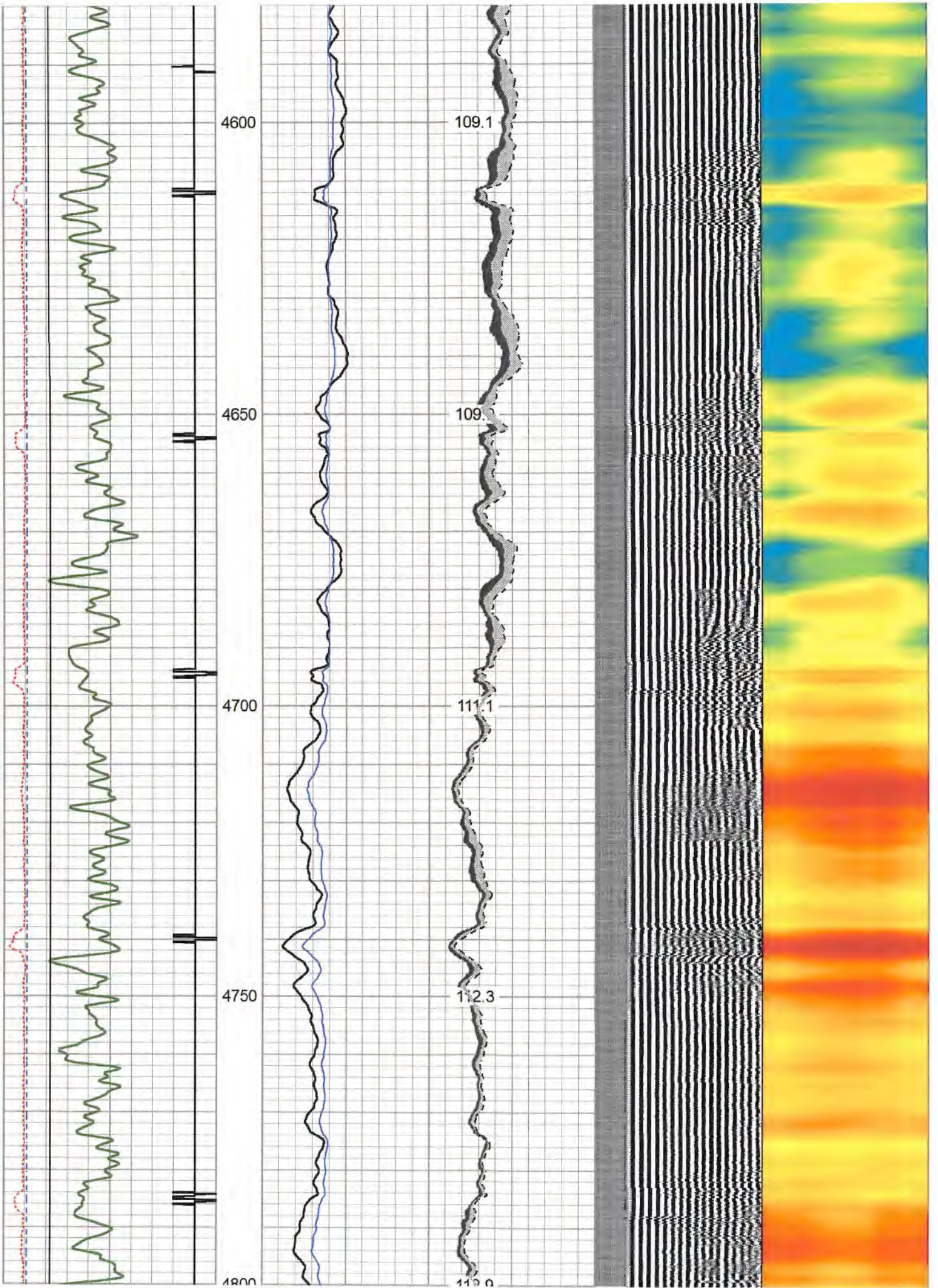


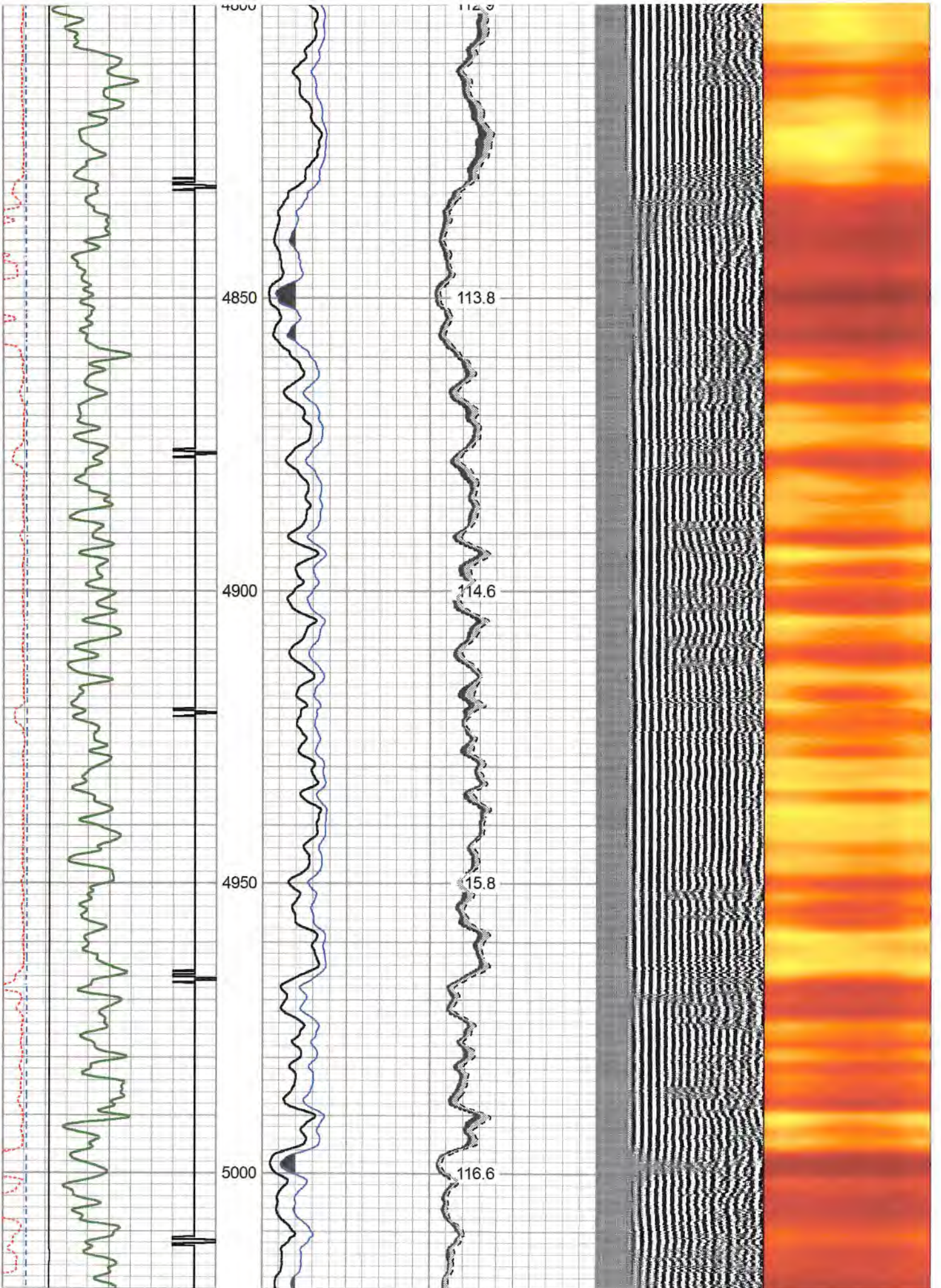




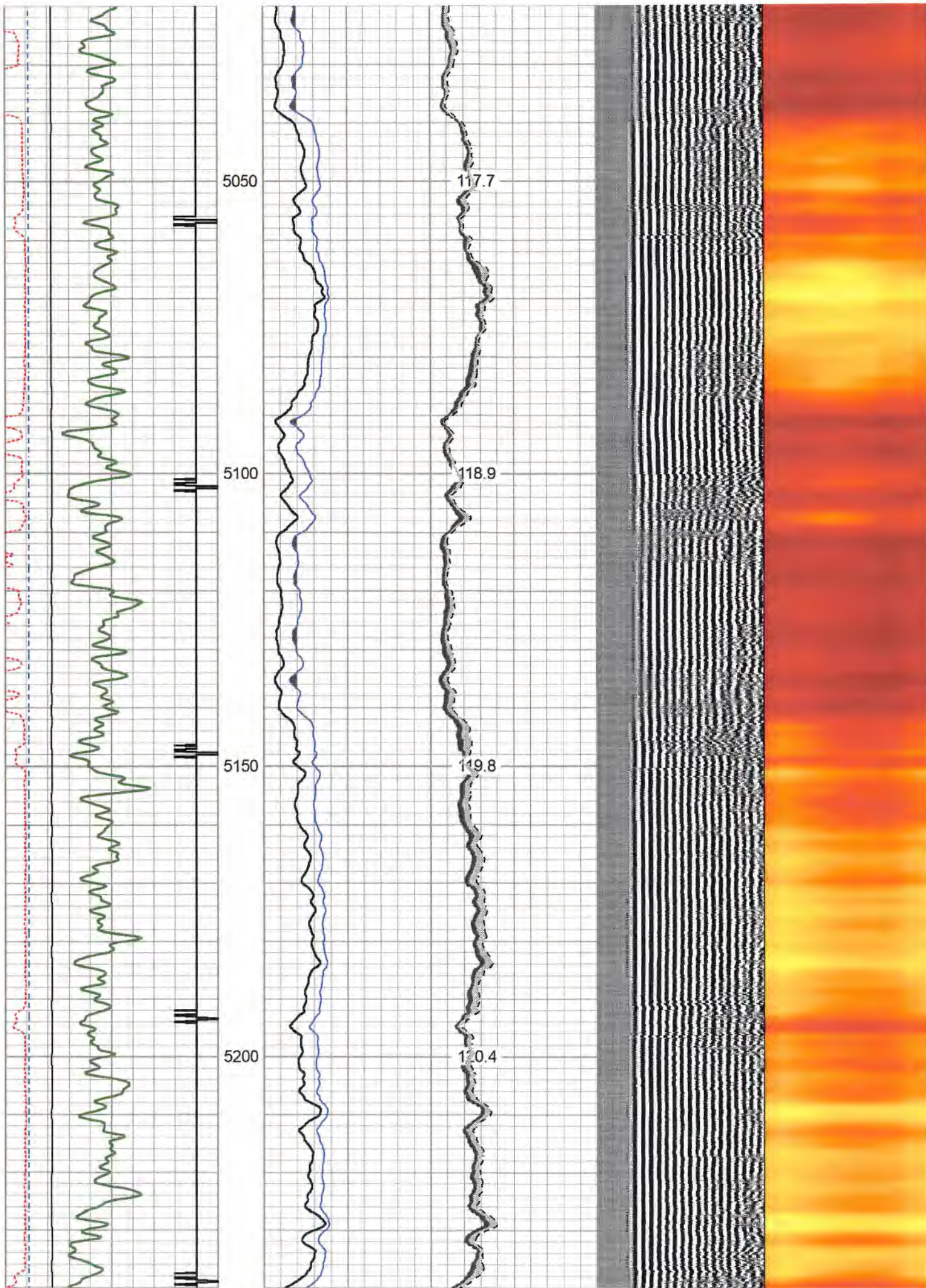


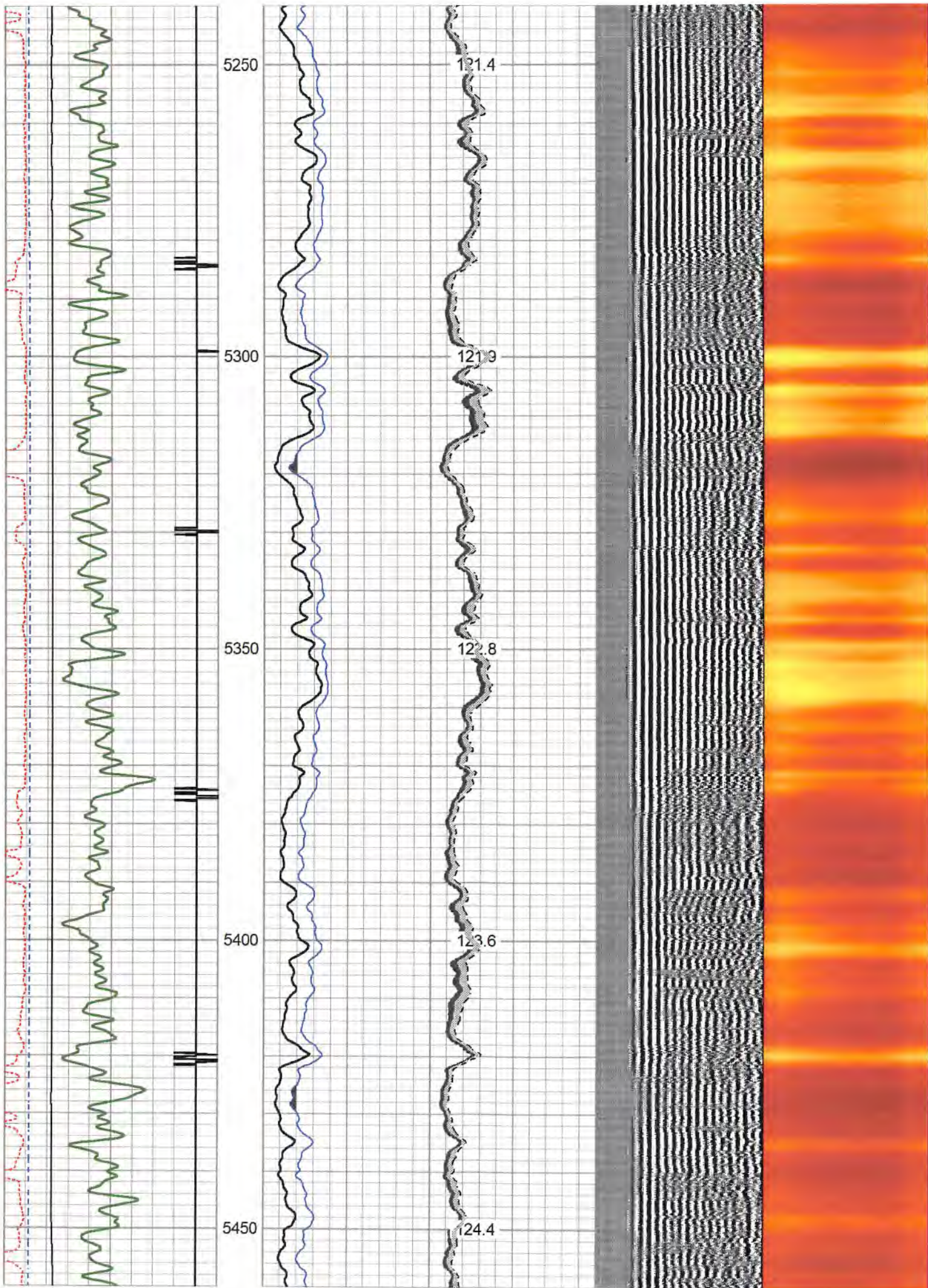


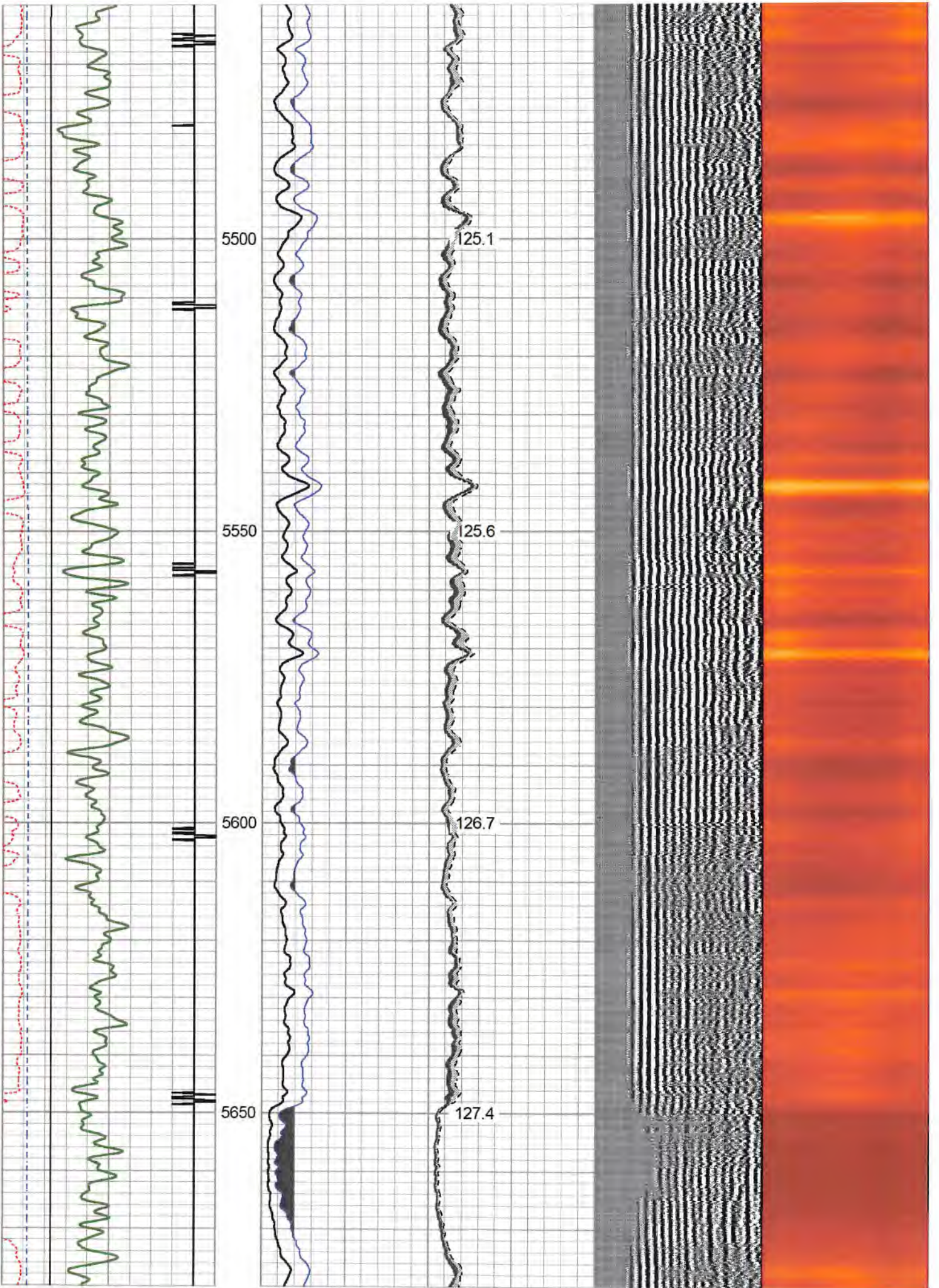


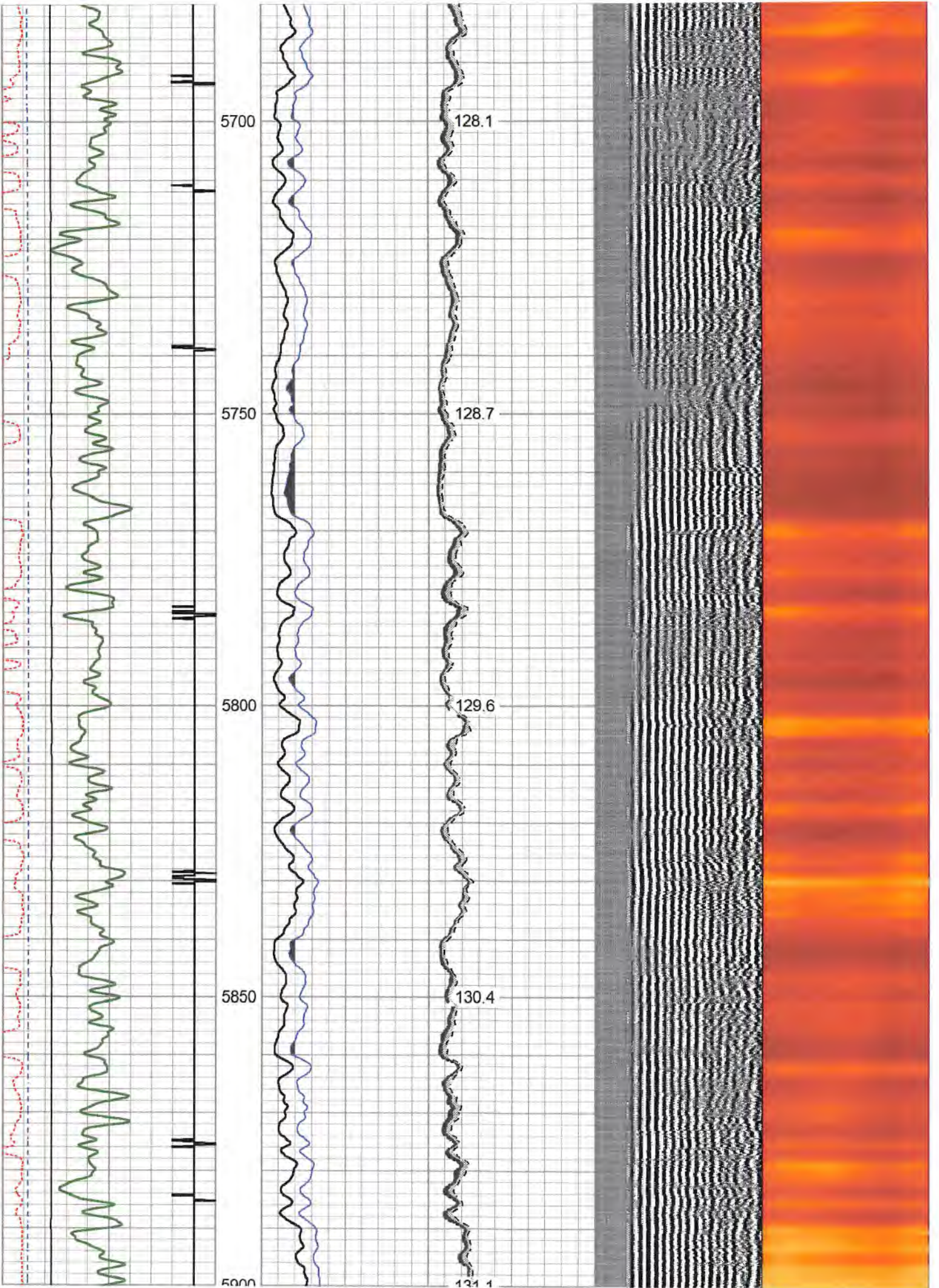


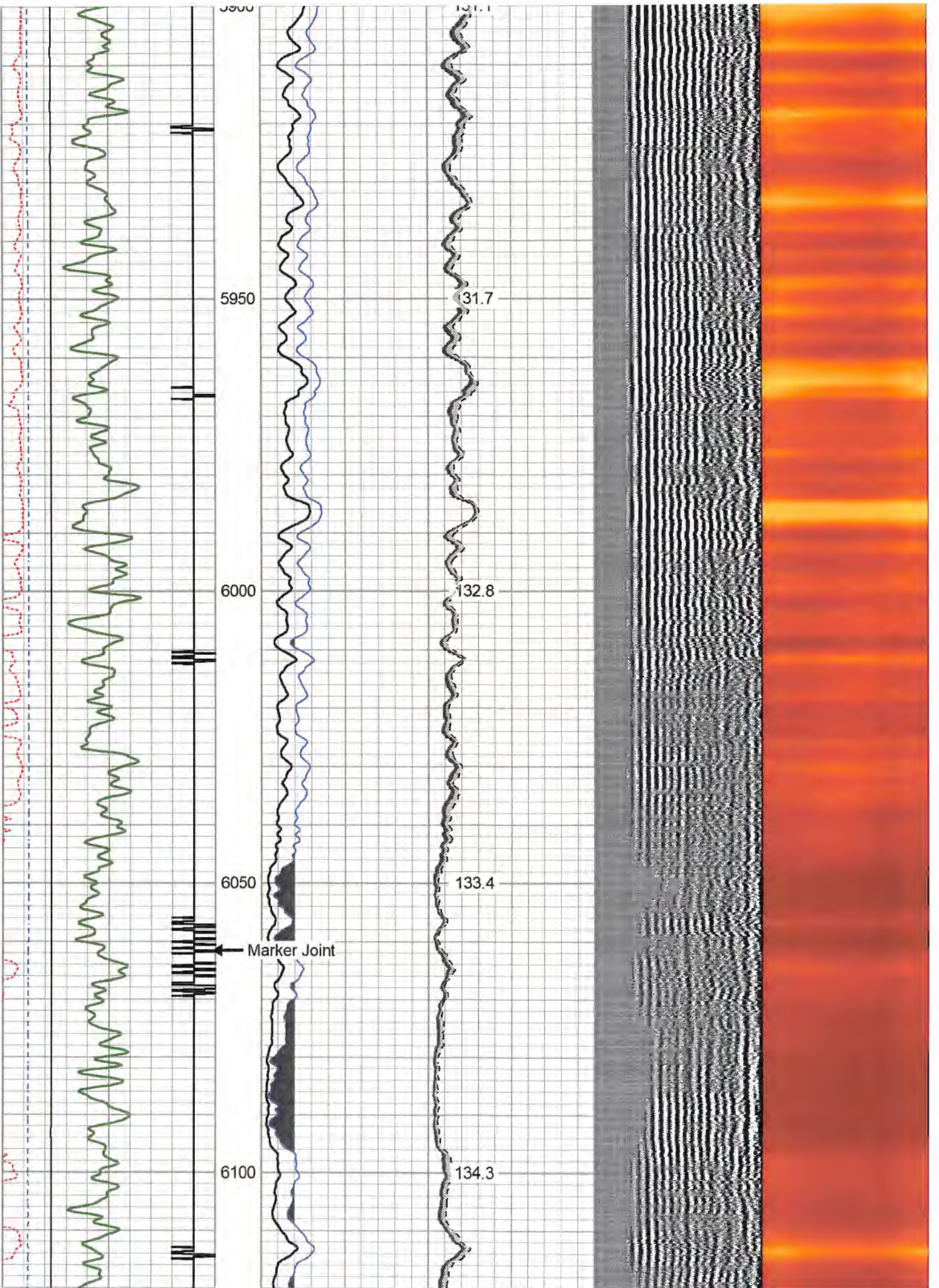


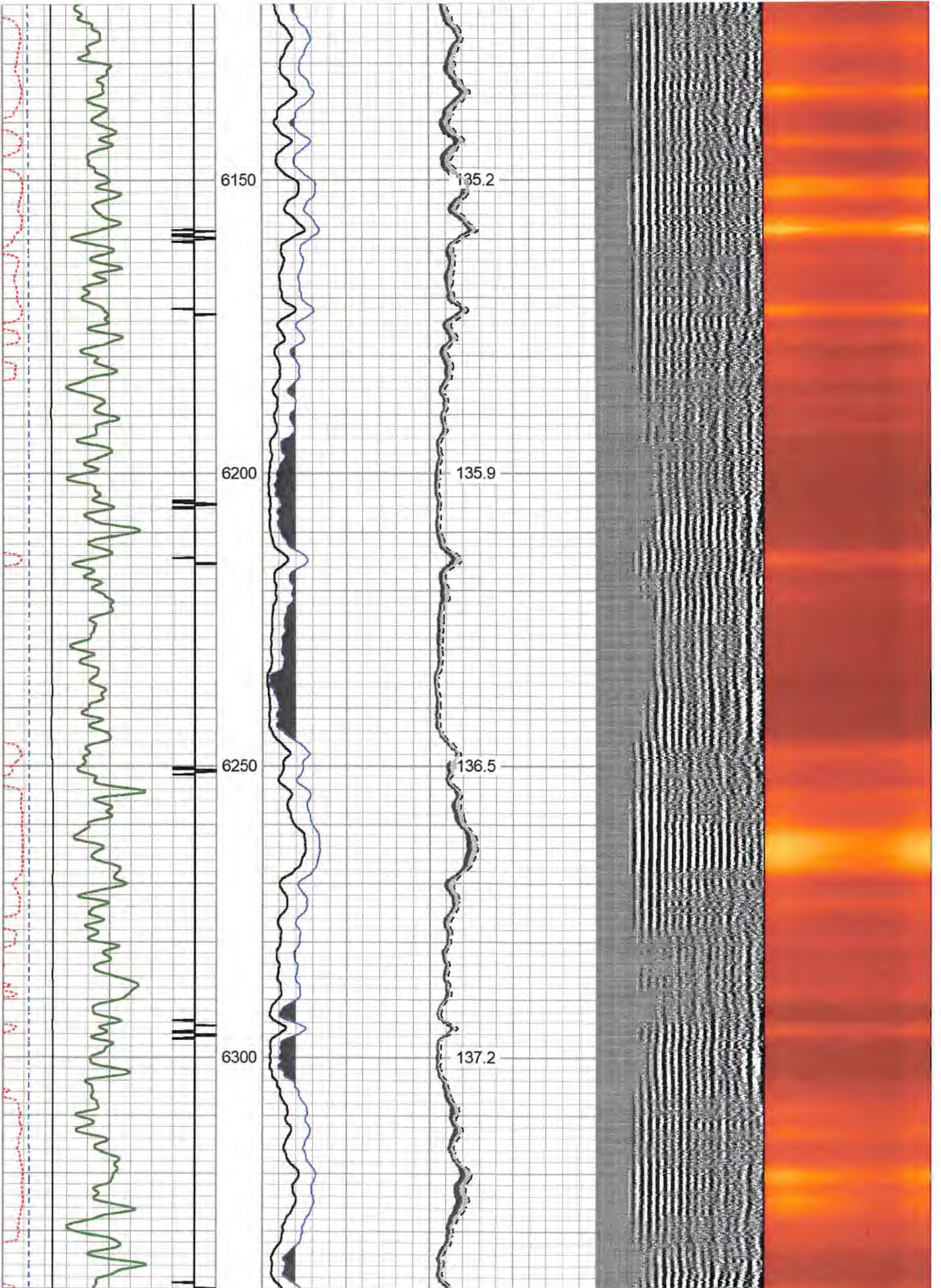


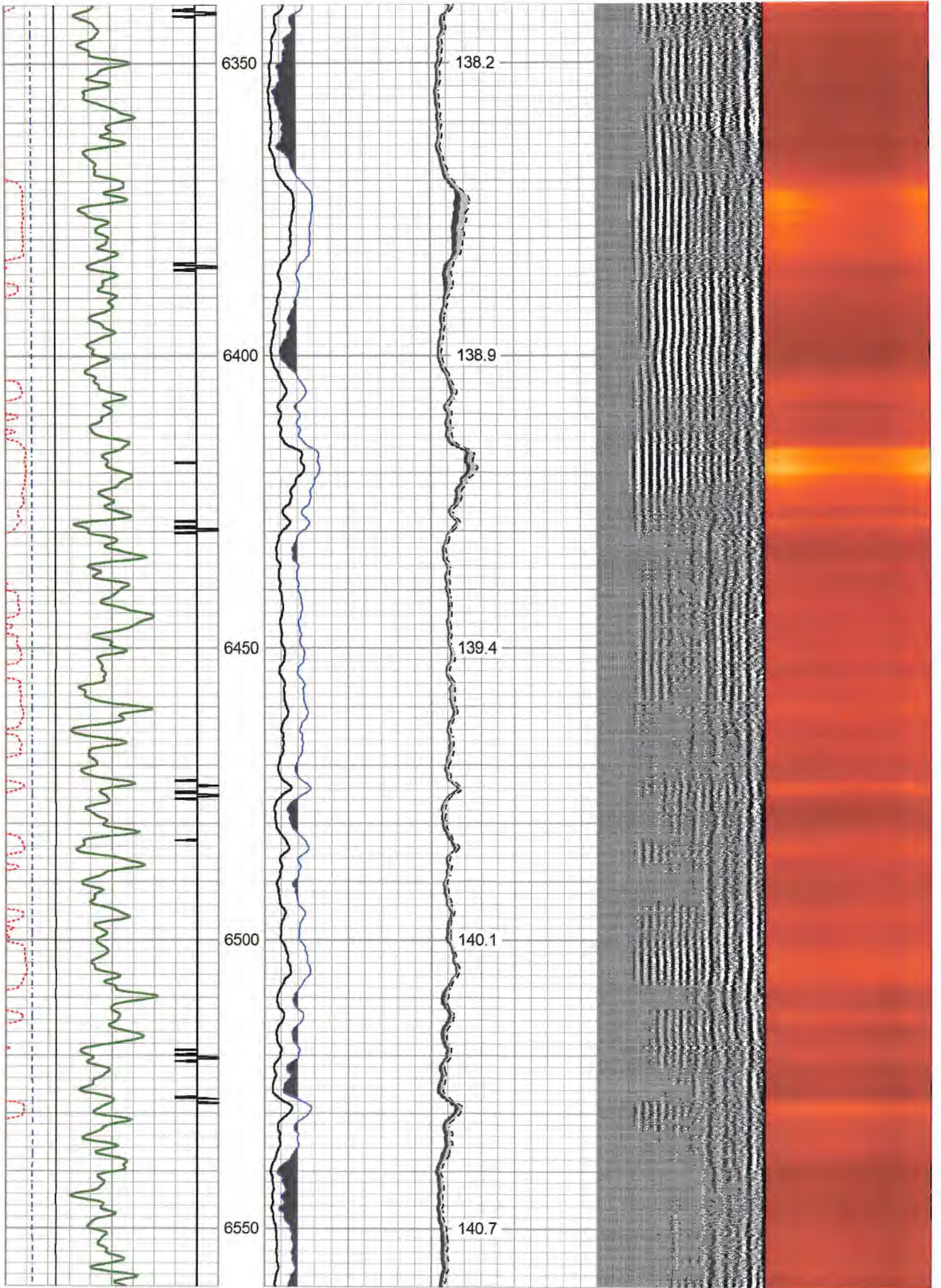


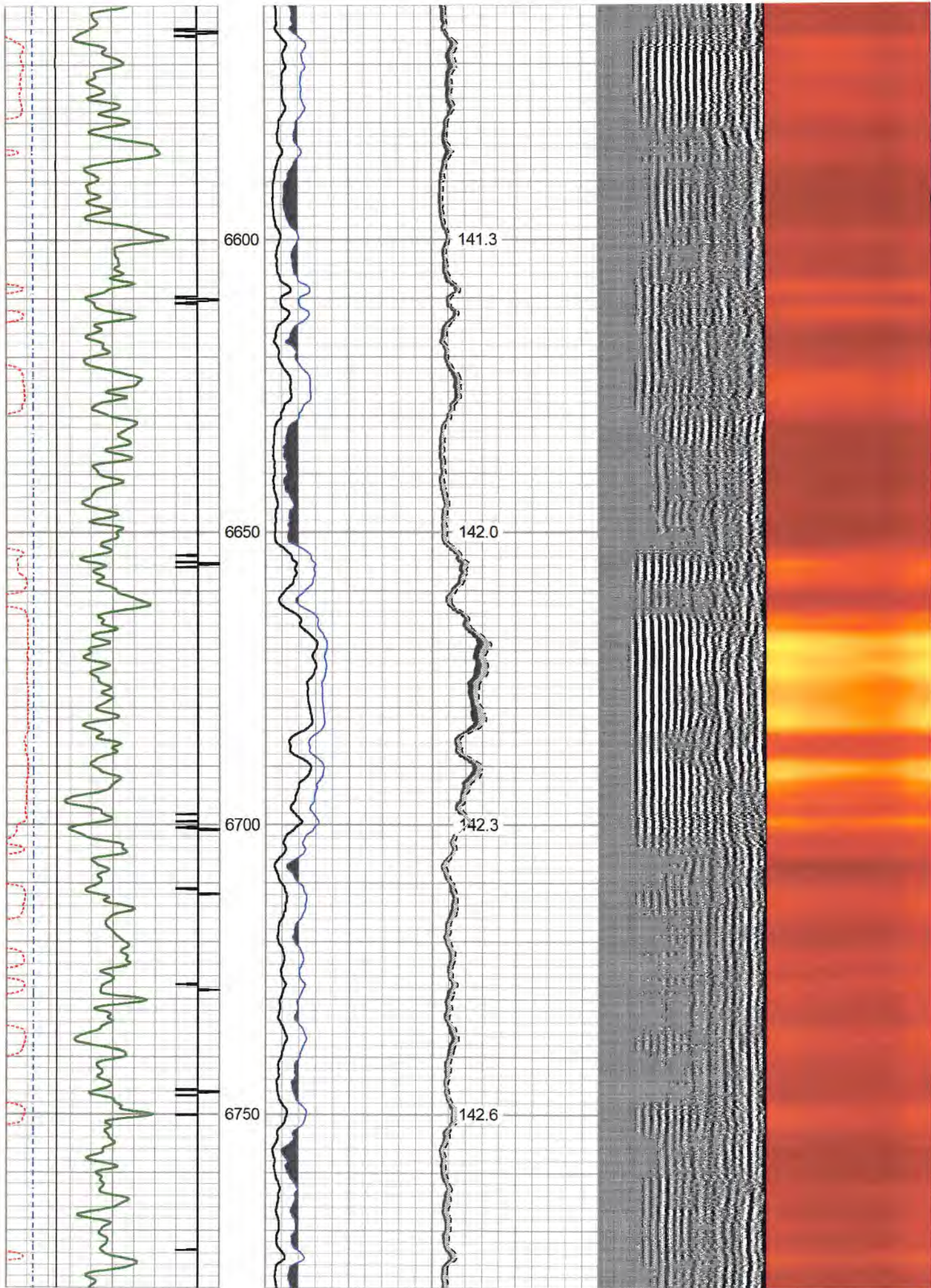




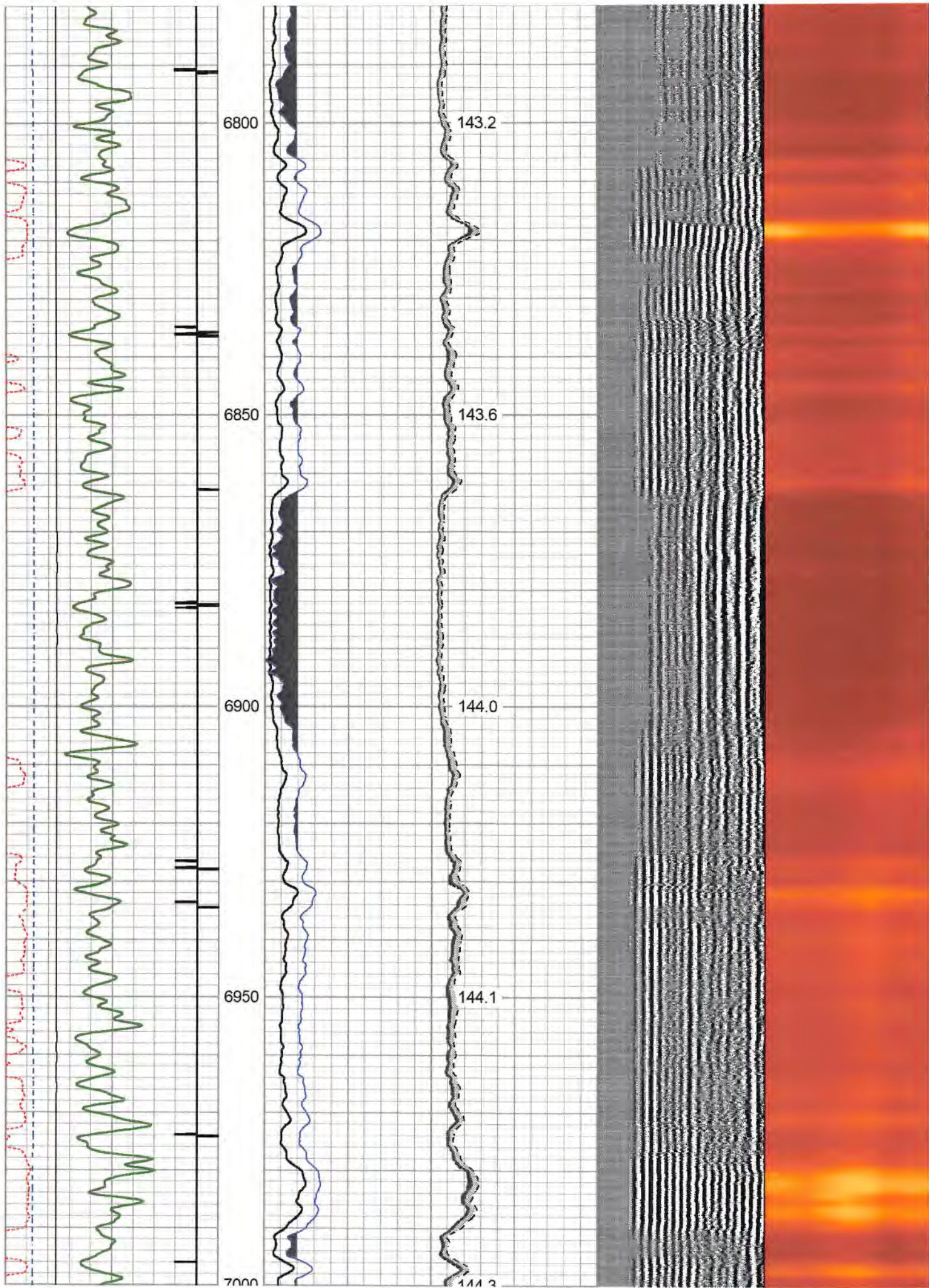


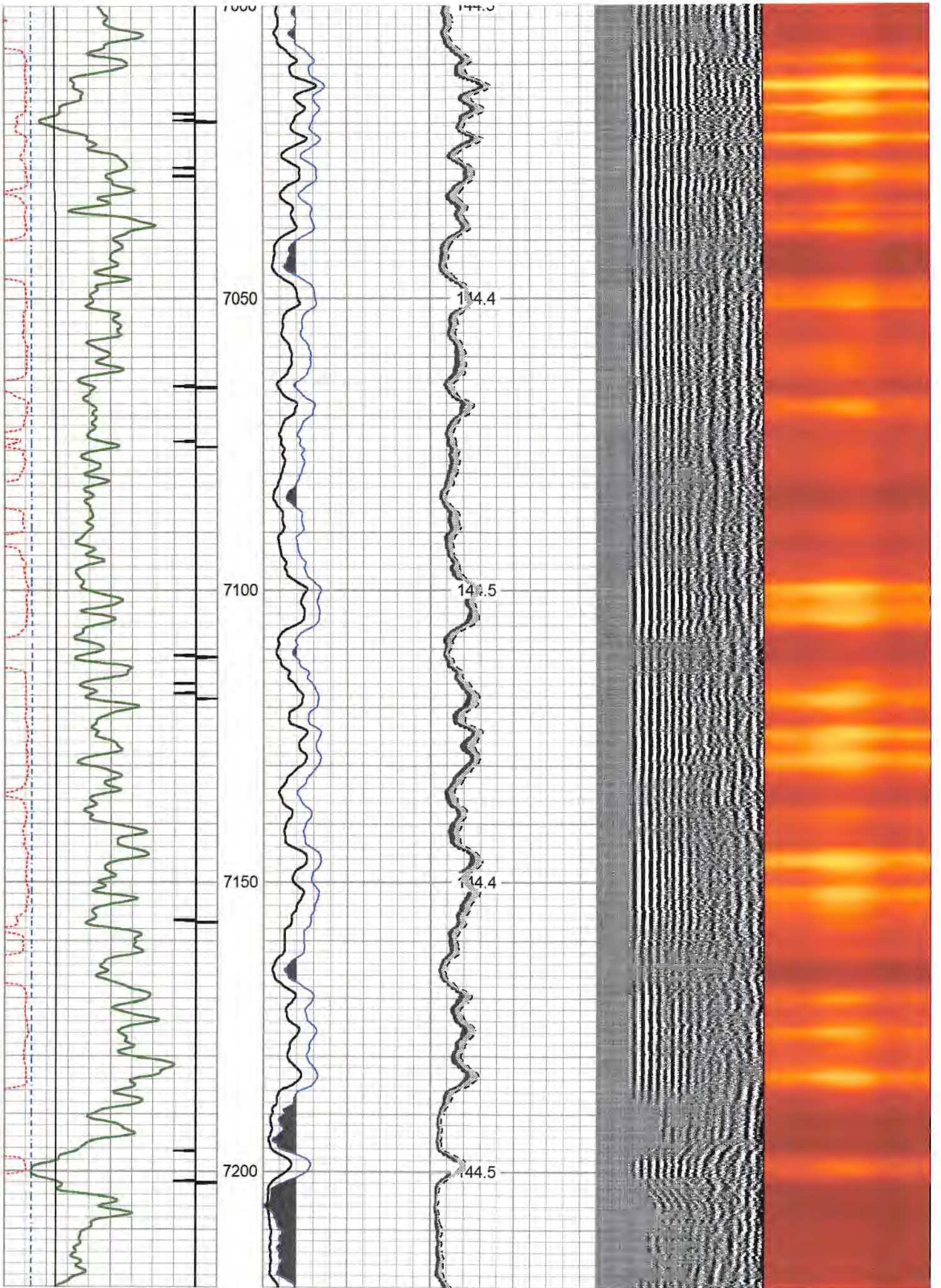


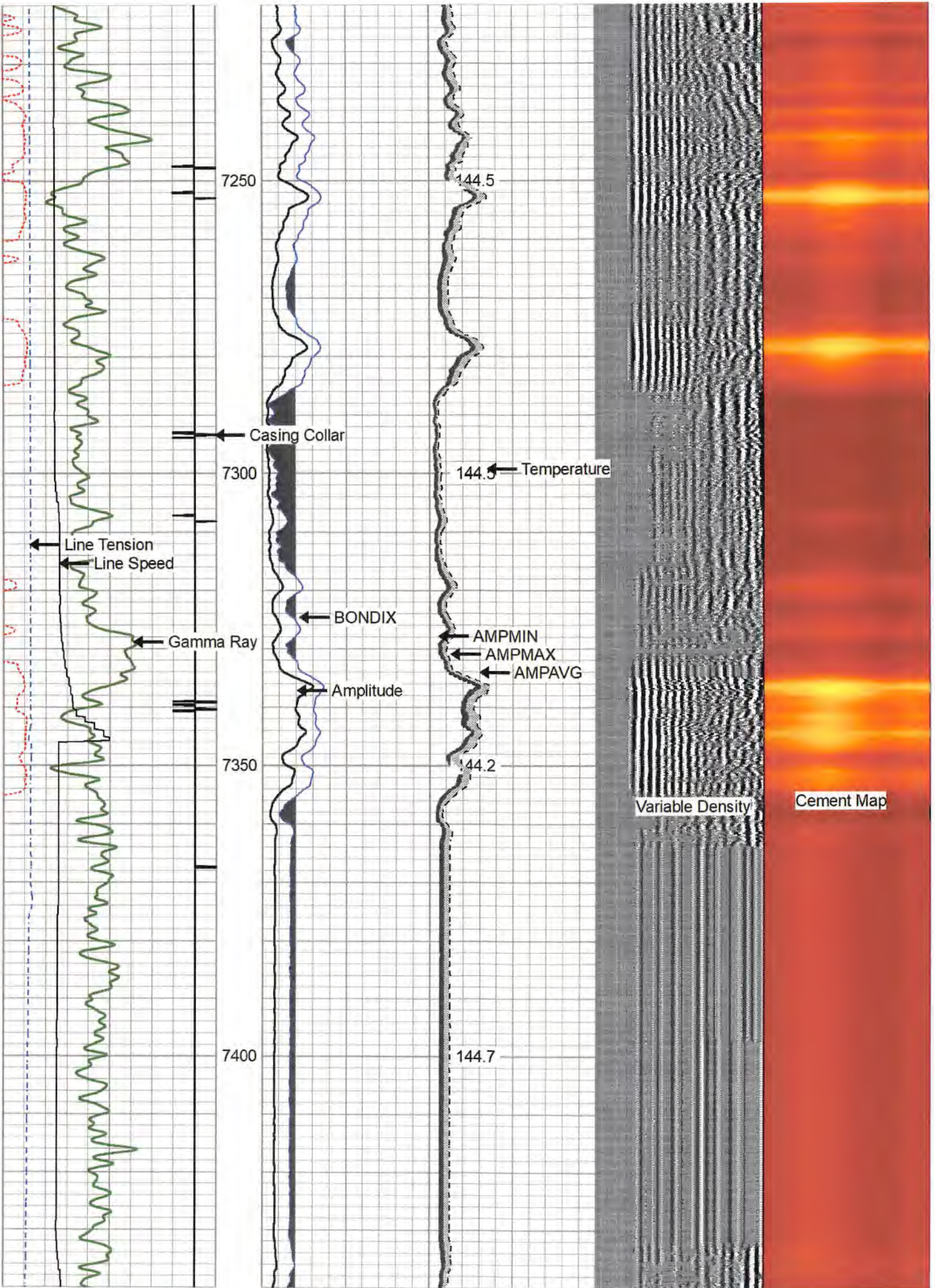


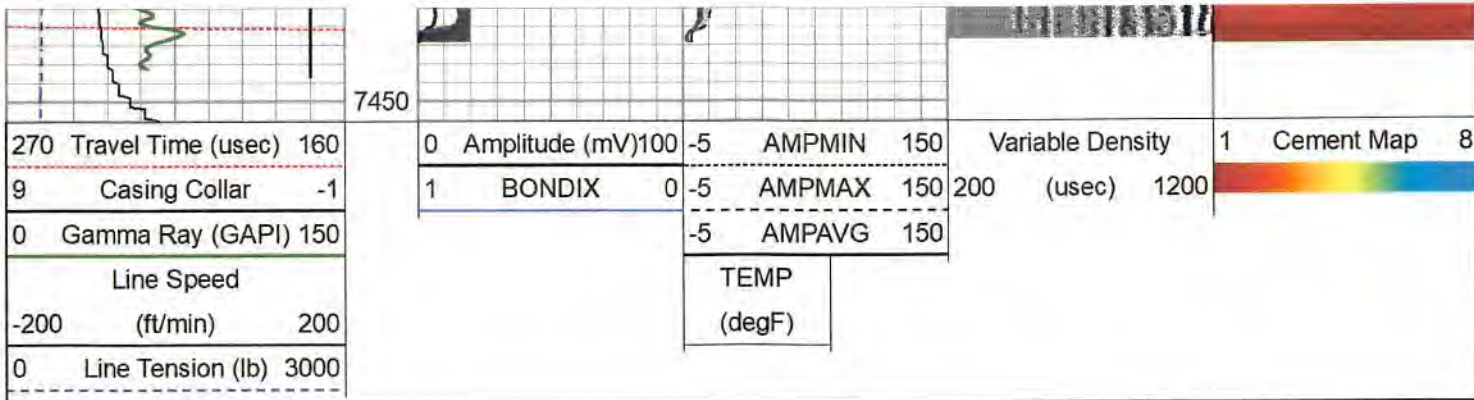






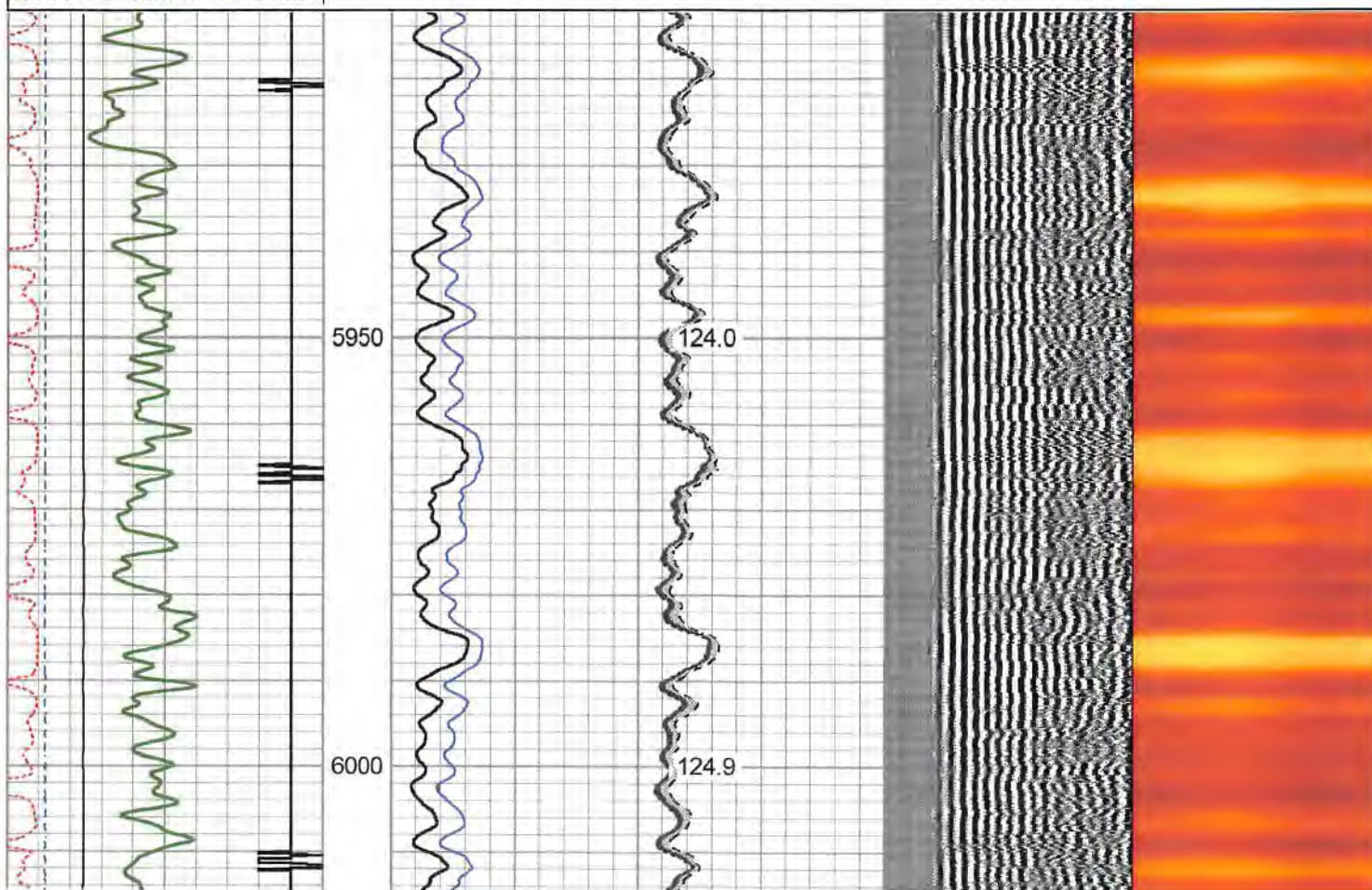
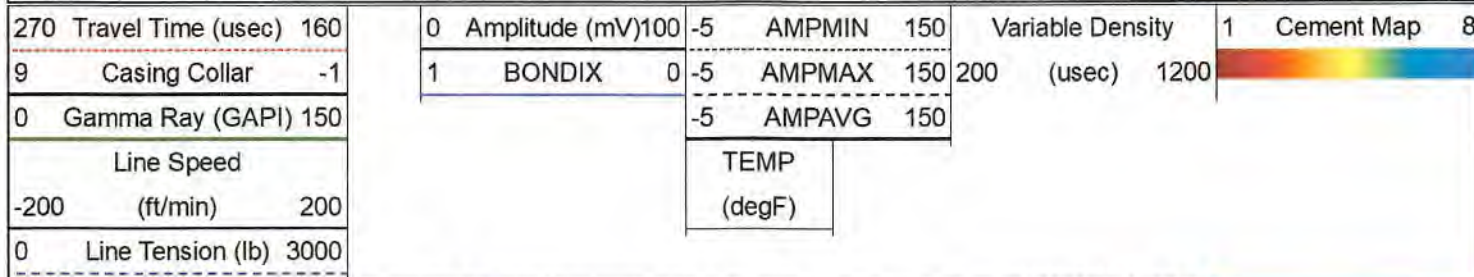


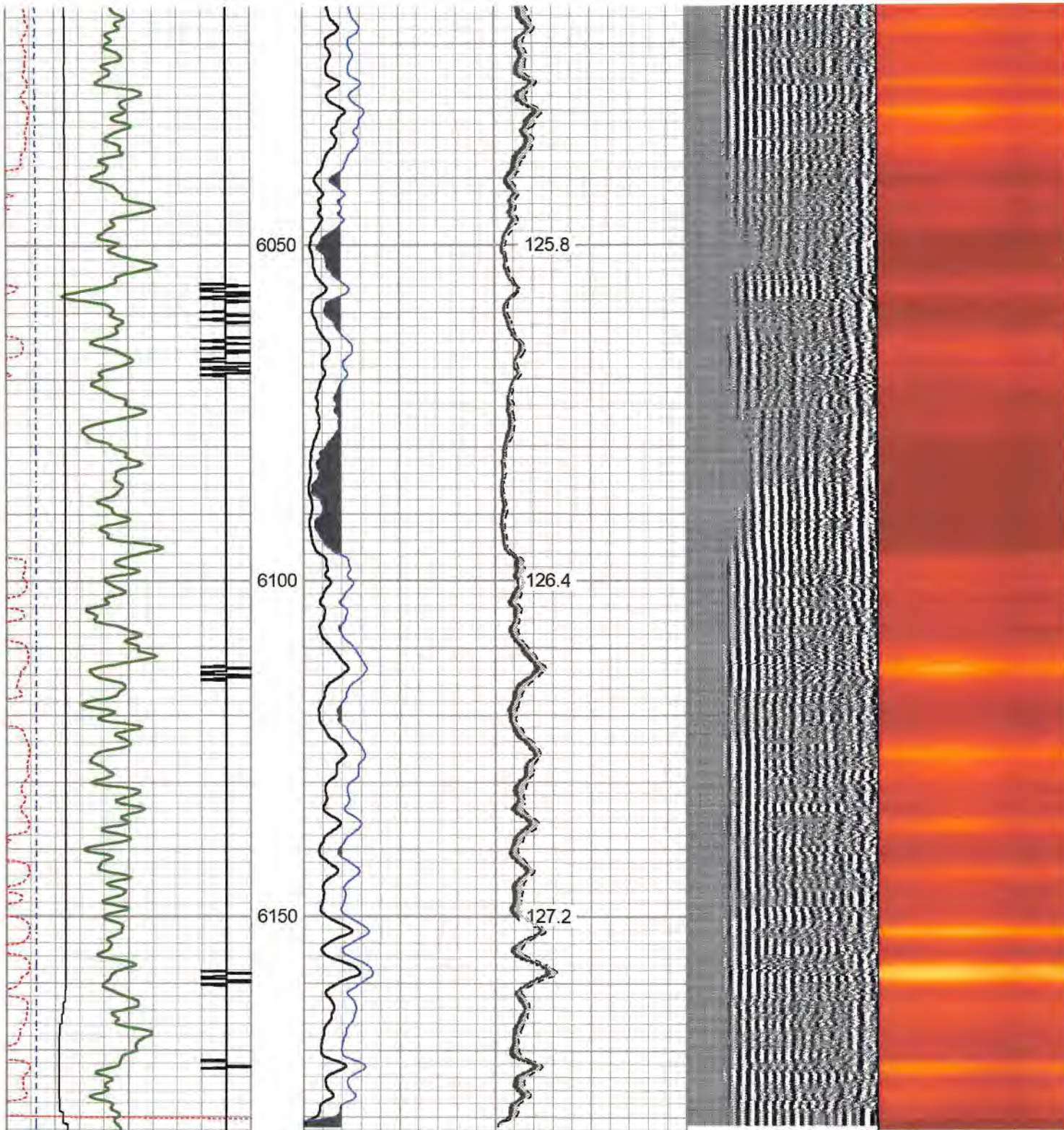





# Repeat Pass 0 PSI

Database File: c:\users\warrior\desktop\antero journeyman rcbls 7-may-22\antero ryland 1h rcbl 08 may 2022\antero\_ryla  
 Dataset Pathname: ryland\_1h/run1/pass2  
 Presentation Format: rcbl-bond index 1020  
 Dataset Creation: Sun May 08 07:46:05 2022  
 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)	3000										

# Log Variables

Database: C:\Users\Warrior\Desktop\Antero Journeyman rcbls 7-May-22\Antero Ryland 1H RCBL 0:  
 Dataset field/ryland 1h/run1/pass4/ vars

**Top - Bottom**

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 145	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 45	TDEPTH ft 7600			

**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 C:\Users\Warrior\Desktop\Antero Journeyman rcbls 7-May-22\Antero Ryland 1H RCBL 08 May 2022\antero  
 Dataset Pathname ryland\_1h/run1/pass4  
 Dataset Creation Sun May 08 07:54:21 2022

**Gamma Ray Calibration Report**

Serial Number: FW1211-86  
 Tool Model: Probe  
 Performed: Fri Apr 22 08:17:13 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: FW1312-32  
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 241.008 ft

Master Calibration, performed Sat May 07 16:53:54 2022:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.019	0.807	2.200	71.921	88.499	0.537
CAL	1.113	1.195				
5'	0.013	0.883	2.200	71.921	80.142	1.177
SUM						
S1	0.024	0.776	0.000	100.000	133.011	-3.210
S2	0.007	0.749	0.000	100.000	134.639	-0.883
S3	0.011	0.783	0.000	100.000	129.587	-1.451
S4	0.014	0.804	0.000	100.000	126.533	-1.767
S5	0.012	0.848	0.000	100.000	119.569	-1.381
S6	0.006	0.879	0.000	100.000	114.581	-0.729
S7	0.013	0.870	0.000	100.000	116.707	-1.563
S8	0.000	0.832	0.000	100.000	120.290	-0.037

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.113	1.195	1.000	0.000

Air Zero Calibration, performed Sat May 07 10:01:22 2022:

	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	18.05		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00	
RBT HeadVolt	17.03 16.97						
CENT	15.97		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00	
Temp	14.12						
WVFS8	11.89			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
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						
WVFCAI	7.64						

*SM*

Tool Joint	Length (ft)	Weight (lb)	OD (in)	Other
HEADVOLT	7.64			
CCL	6.73			
CENT	6.05			
GR	5.40			
		4.78	2.75	57.00
		1.67	4.88	5.00
CENT	2.86			
		2.86	2.75	35.00

Dataset: antero\_ryland\_1h\_robl\_08\_may2022.db: field/ryland\_1h/run1/pass4  
 Total length: 18.05 ft  
 Total weight: 193.00 lb  
 O.D.: 4.88 in

	Company	Antero Resources
	Well	Journeyman Ryland 1H
	Field	Utica
	County	Wetzel
	State	WV

*Handwritten signature*