



RADIAL CEMENT BOND LOG

Company ANTERO Well SEAGRAVE 1H Field RABBIT EARS County TYLER State WEST VIRGINIA	Country USA	Company ANTERO Well SEAGRAVE 1H Field RABBIT EARS County TYLER State WEST VIRGINIA Country USA Location: API #: 47-095-02697-0000
		Other Services GR CCL TEMP
		Elevation
SEC TWP RGE		
Permanent Datum	GL	Elevation 25'
Log Measured From	KB	
Drilling Measured From	KB	

Date	8-NOV-2020
Run Number	ONE
Depth Driller	22,947'
Depth Logger	6974'
Bottom Logged Interval	6964'
Top Log Interval	SURFACE
Open Hole Size	8.50"
Type Fluid	FRESH WATER
Density / Viscosity	8.4#
Max. Recorded Temp.	144°F
Estimated Cement Top	
Time Well Ready	4:45
Time Logger on Bottom	5:30
Equipment Number	TK-127 / P2,G1
Location	CHARLEROI, PA
Recorded By	D.JOSEPHIK
Witnessed By	JERRAKO EVANS

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	17 1/2"	N/A	105'	391'
Prot. String				
Production String	5 1/2"	23#	SURFACE	22,947'
Liner				

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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.

LOG CORRELATED TO MARKER JOINT @ 5,767'-5778'

100%FREE PIPE=71.9mv
 100%BOND=3.4mv


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Environmental Protection

Comments

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00

			CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.75	2.75	35.00
HeadVolt	16.86					
Temp	14.02					
			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	11.78					
WVFS7	11.78					
WVFS6	11.78					
WVFS5	11.78					
WVFS4	11.78					
WVFS3	11.78					
WVFS2	11.78					
WVFS1	11.78					
WVF3FT	11.78					
WVF5FT	10.78					
WVFCAL	7.53					
HEADVOLT	7.53					
			CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.75	2.75	35.00
CCL	3.88					
			GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
GR	2.54					

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Dataset: antero_seagrave_1h_nov_8_2020_cbl.db: Rabbit/seagrve_1h/rcbl/pass15
 Total length: 20.67 ft
 Total weight: 222.00 lb
 O.D.: 2.75 in

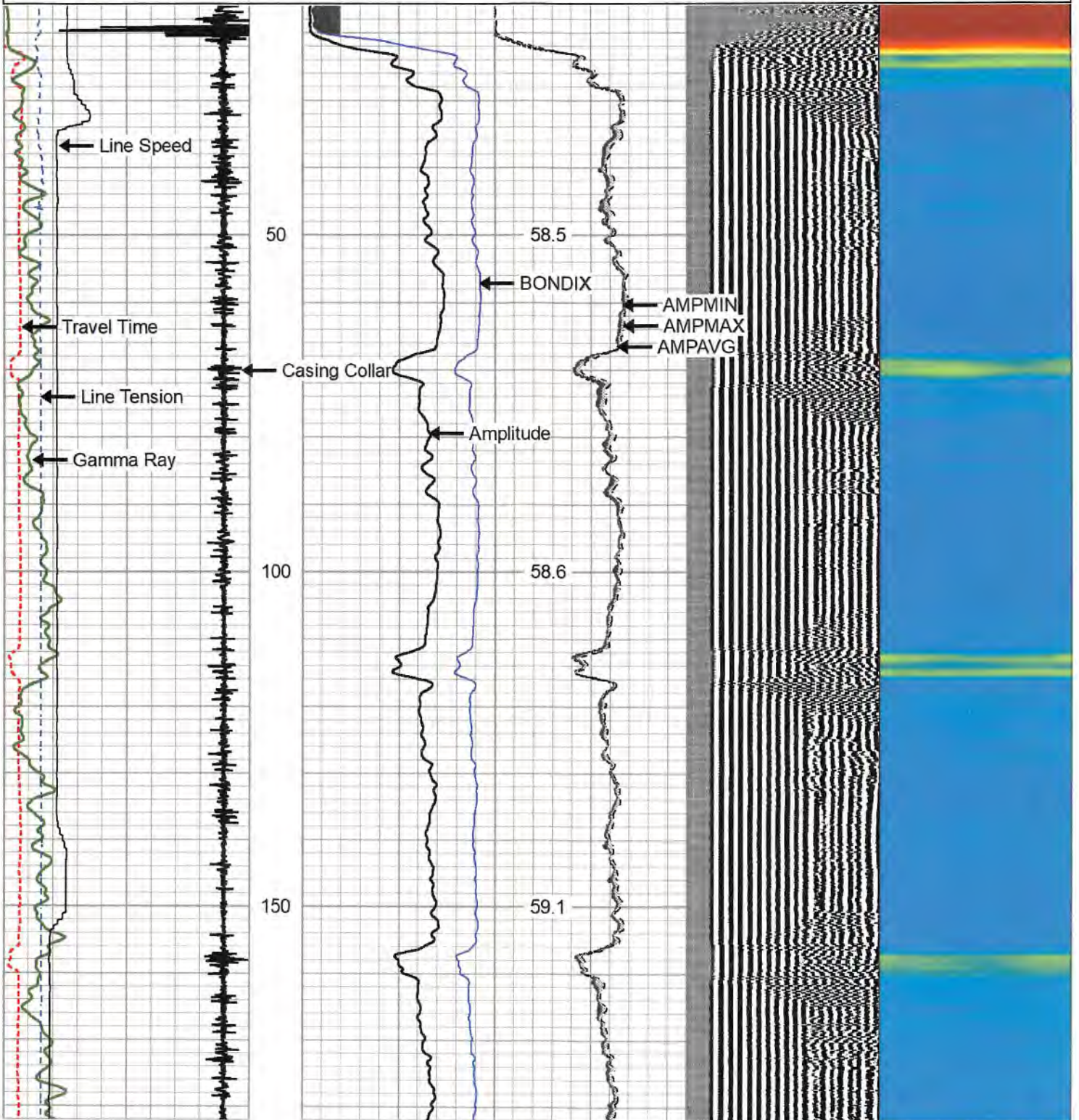


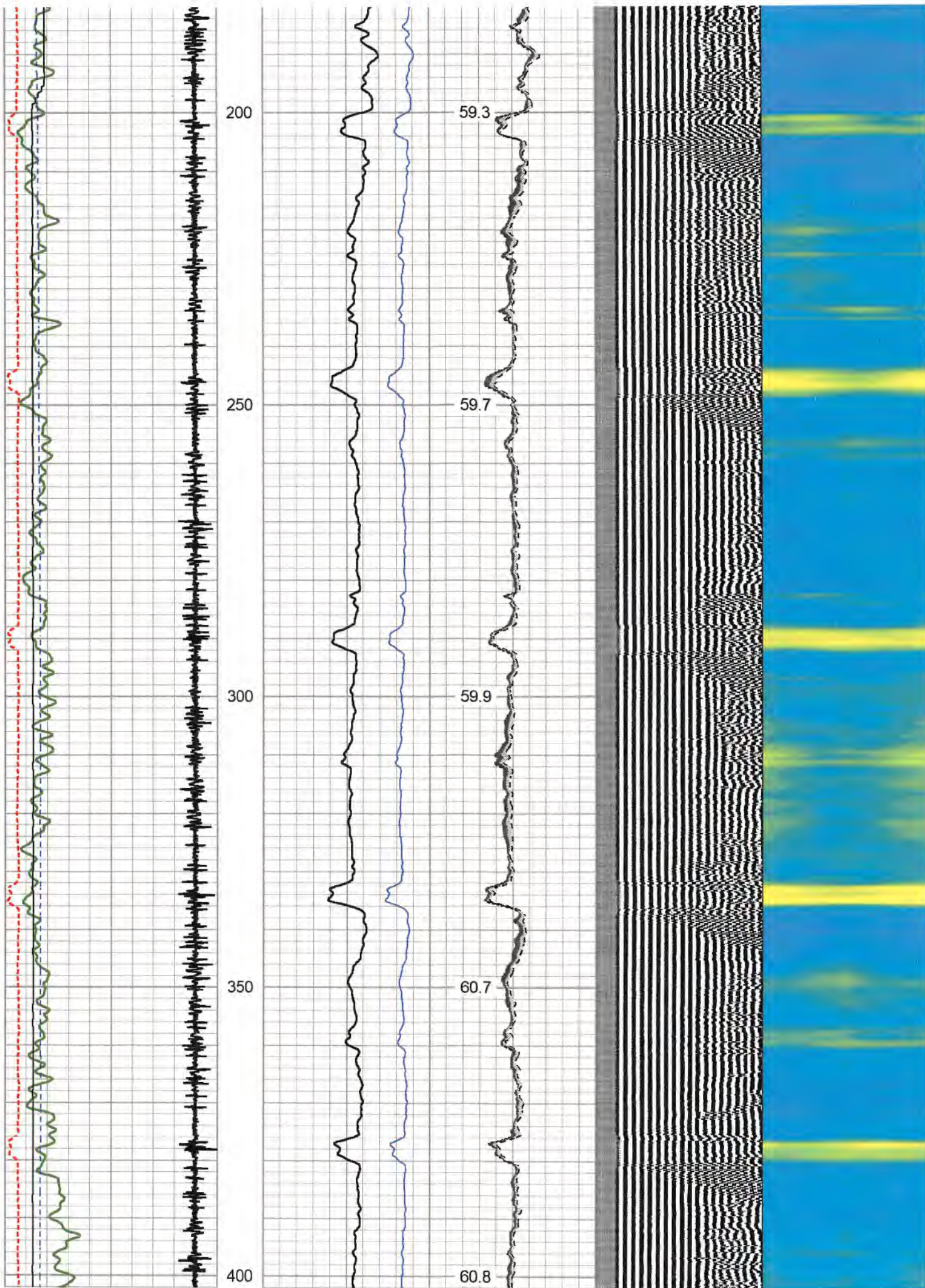
MAIN LOG

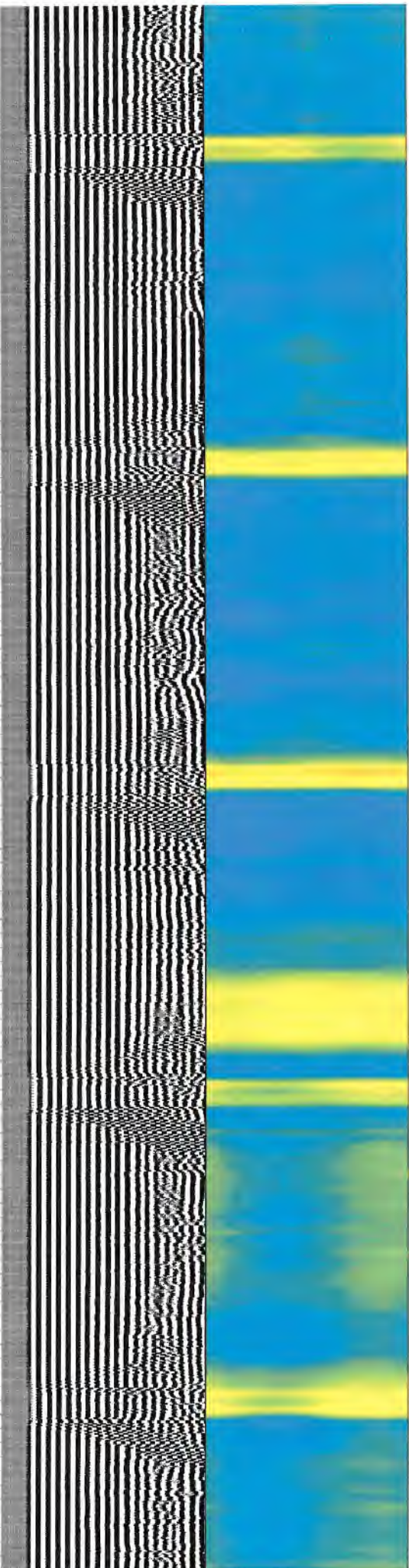
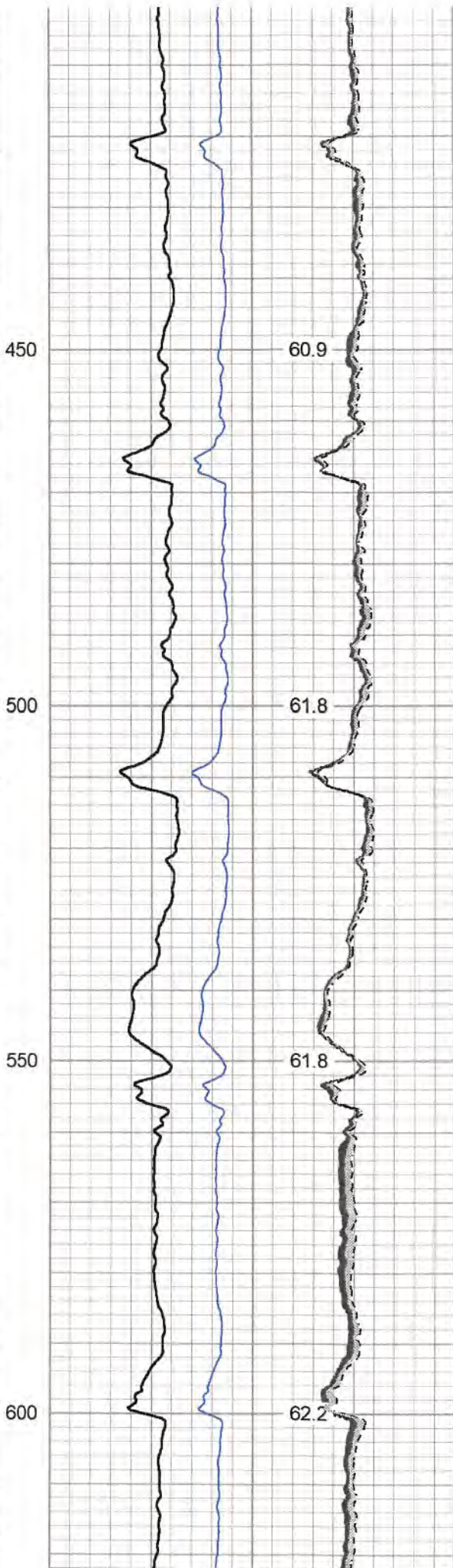
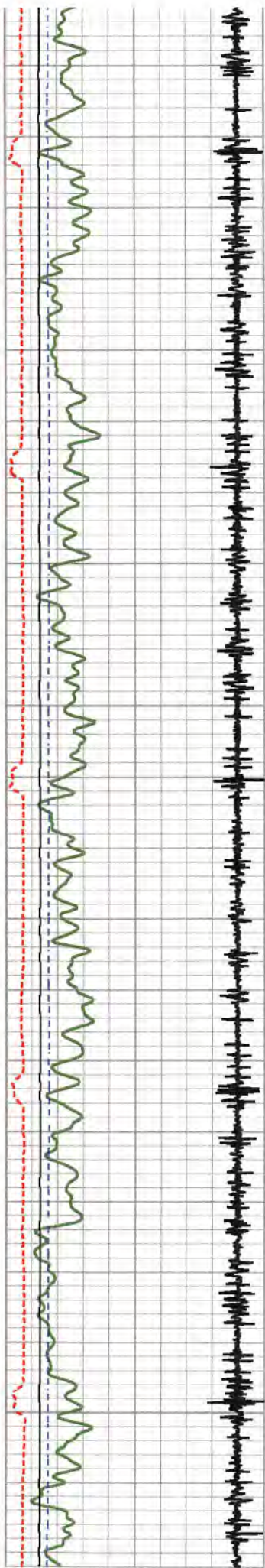
1500 psi

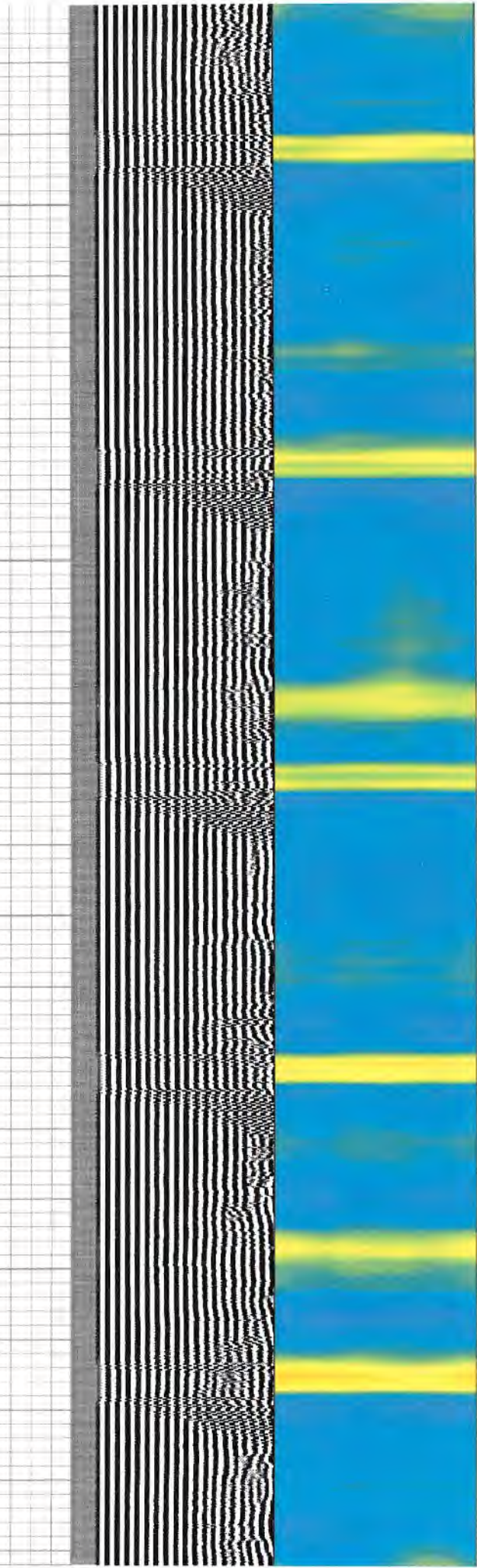
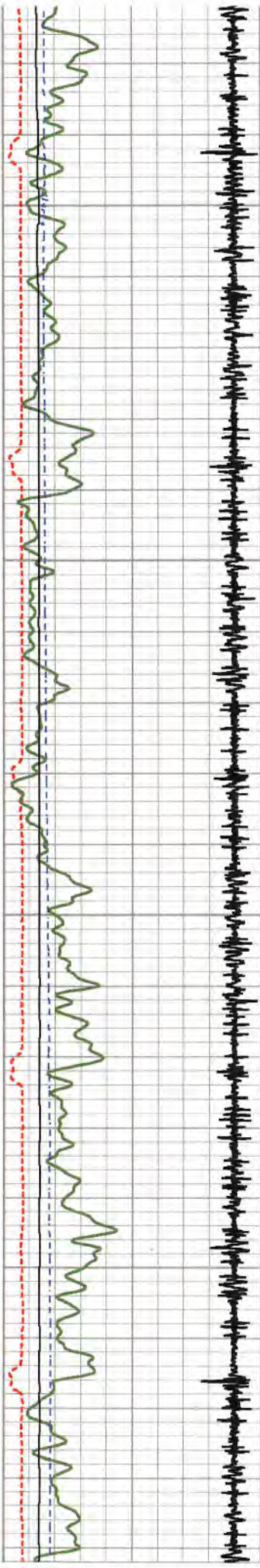
Database File antero_seagrave_1h_nov_8_2020_cbl.db
 Dataset Pathname Rabbit/seagrve_1h/rcbl/pass15
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Sun Nov 08 09:19:13 2020
 Charted by Depth in Feet scaled 1:240

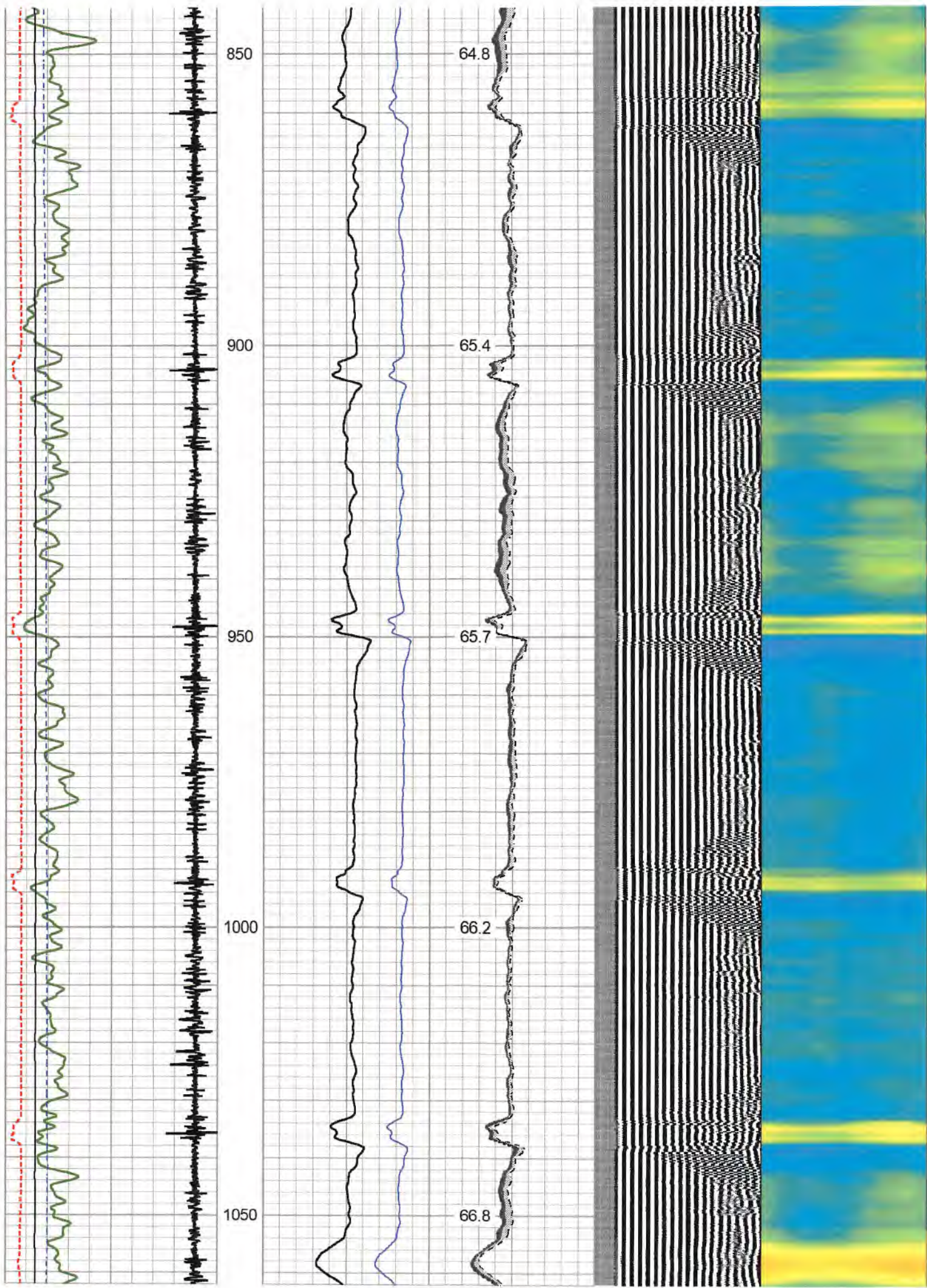
265	Travel Time (usec)	165	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150	0			0	AMPAVG	150				
	Line Speed						TEMP					
-100	(ft/min)	100					(degF)					
0	Line Tension (lb)	2000										

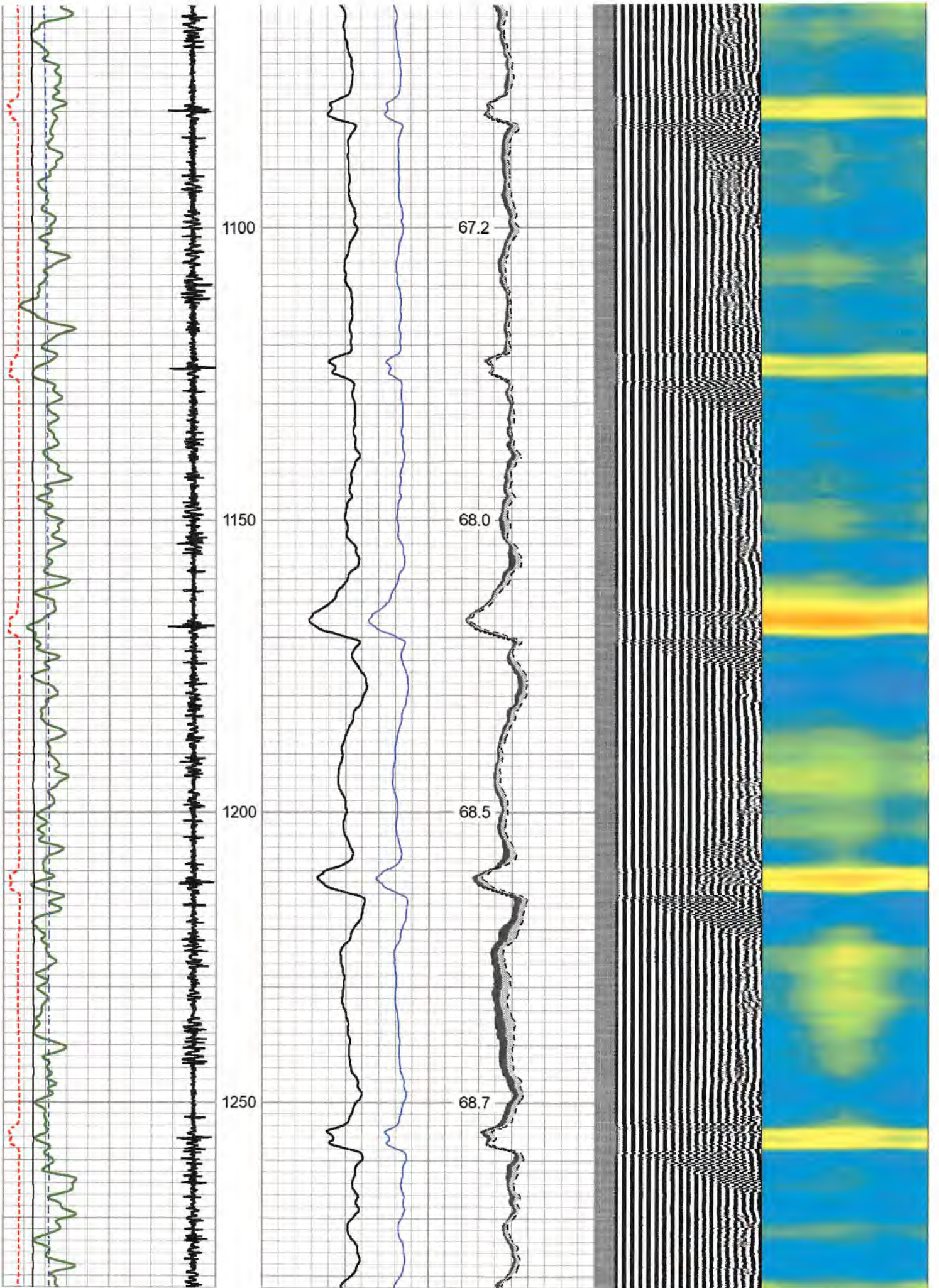


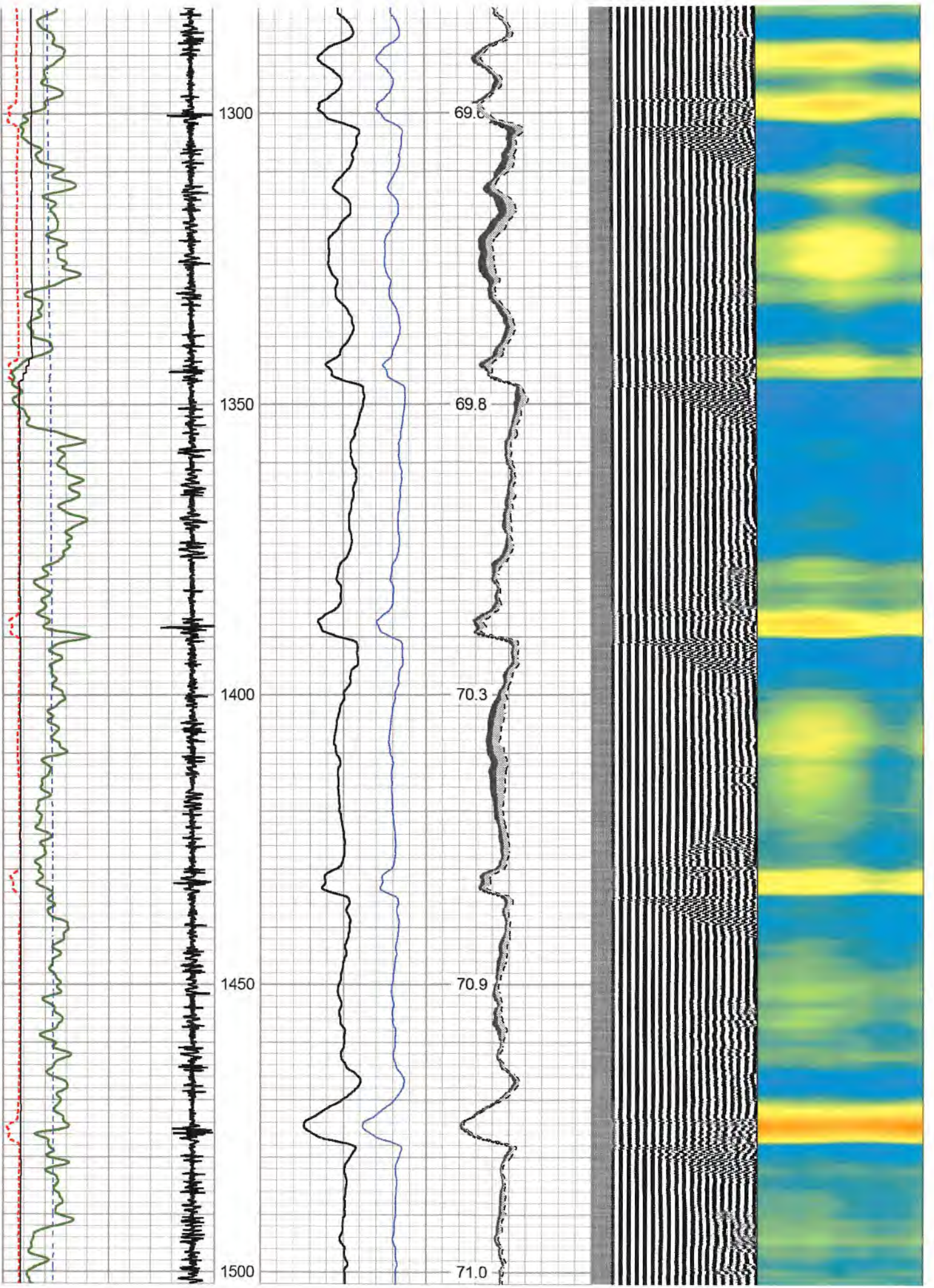


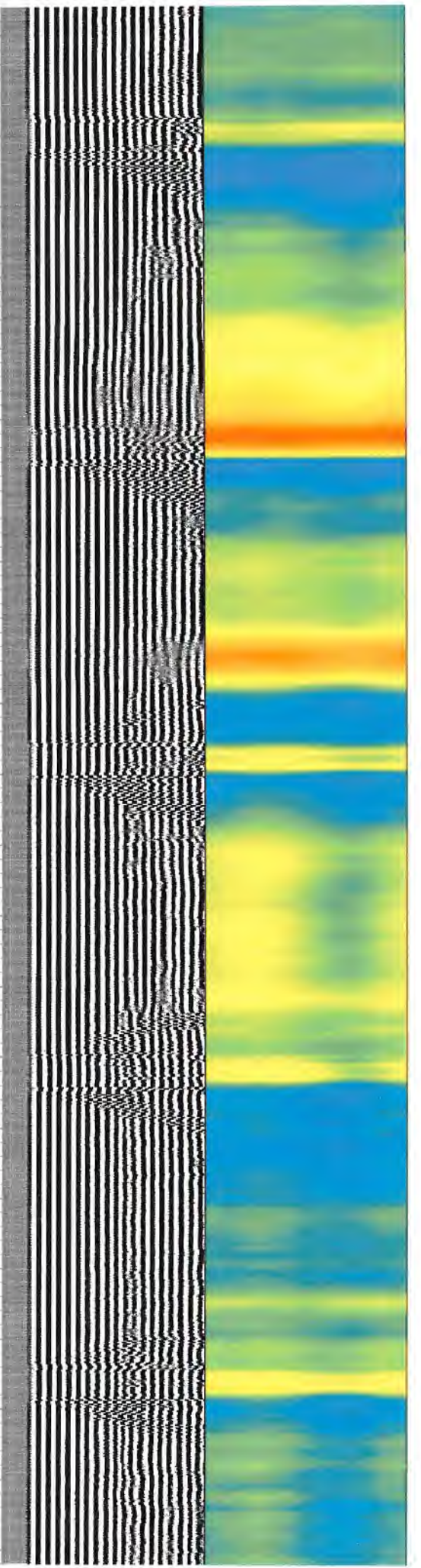
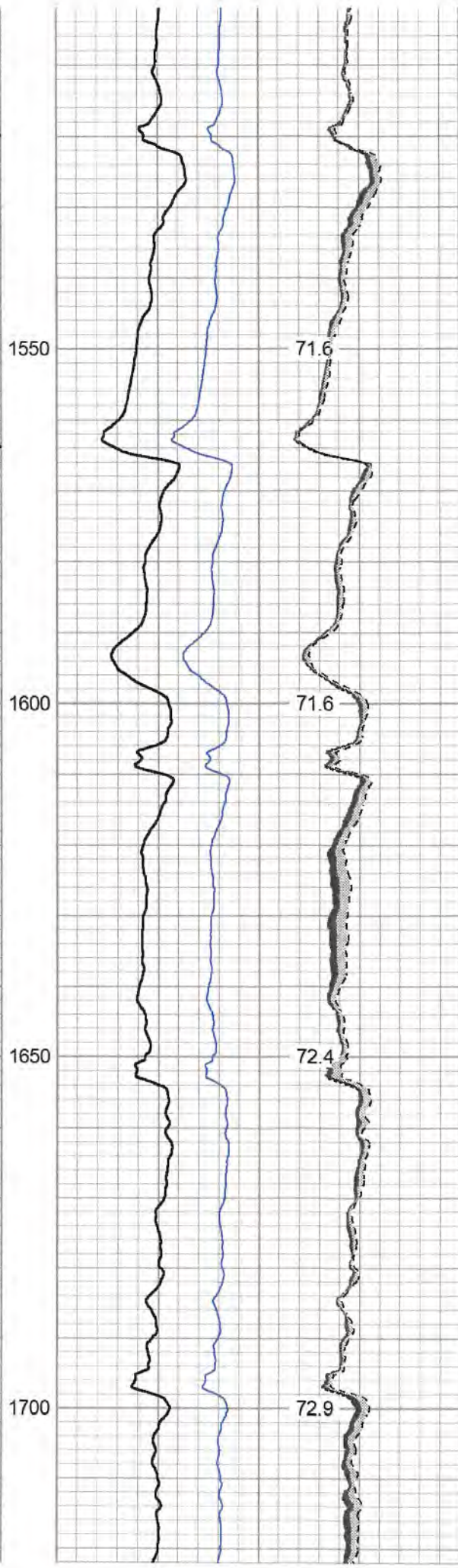
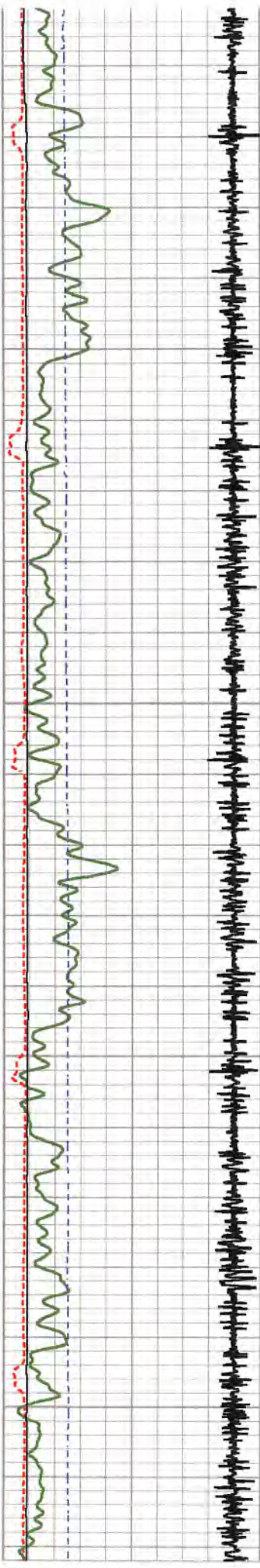


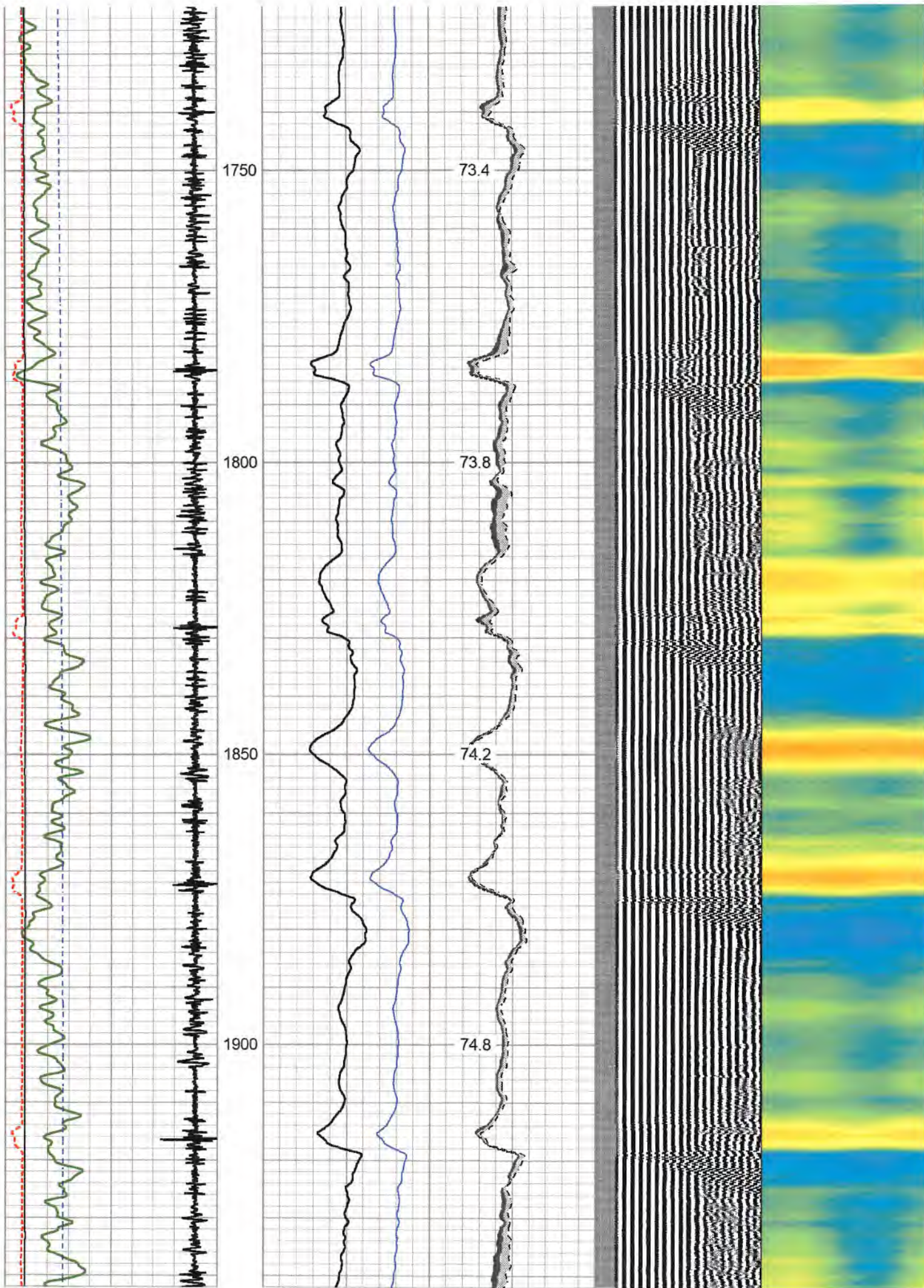


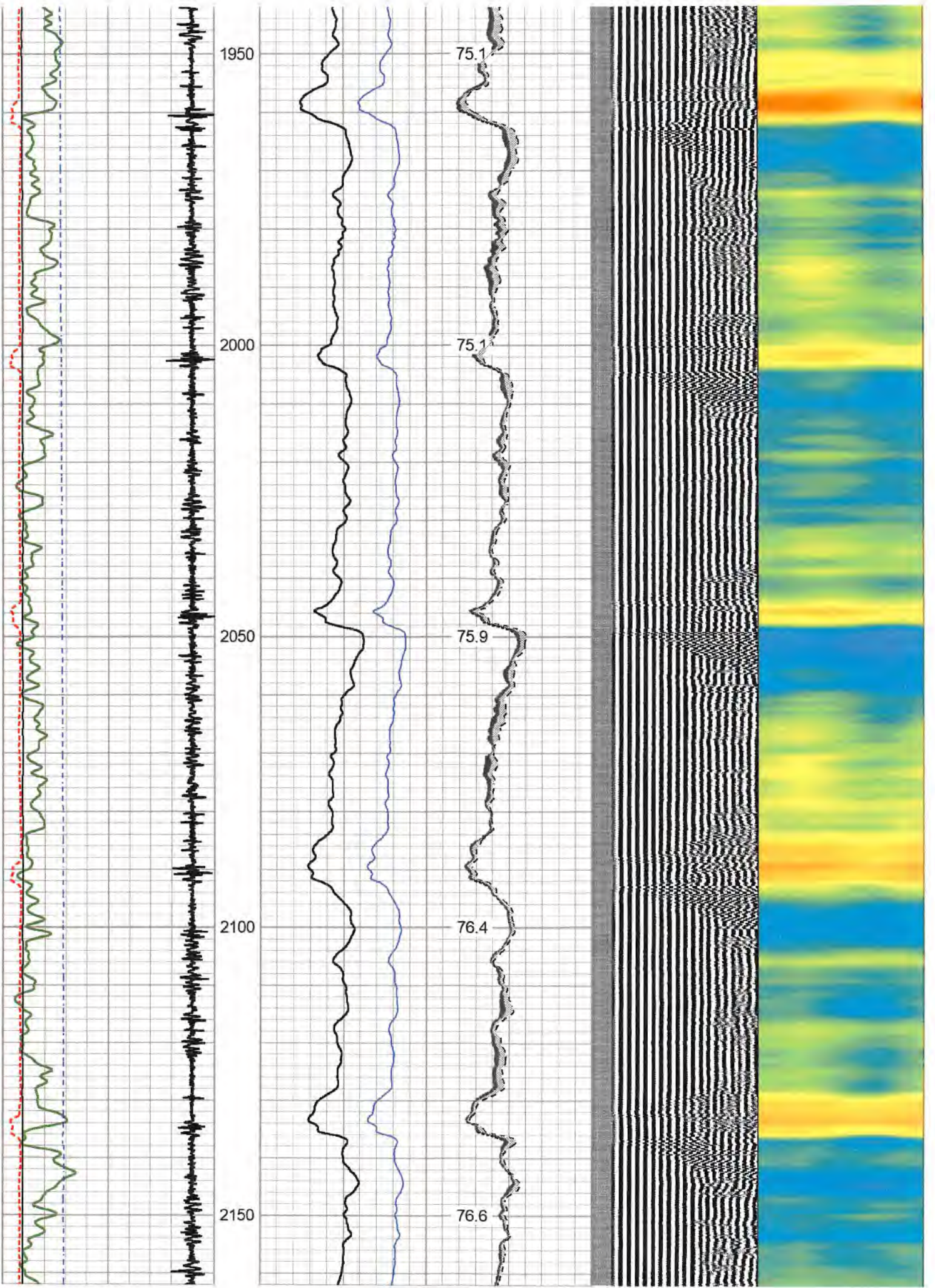


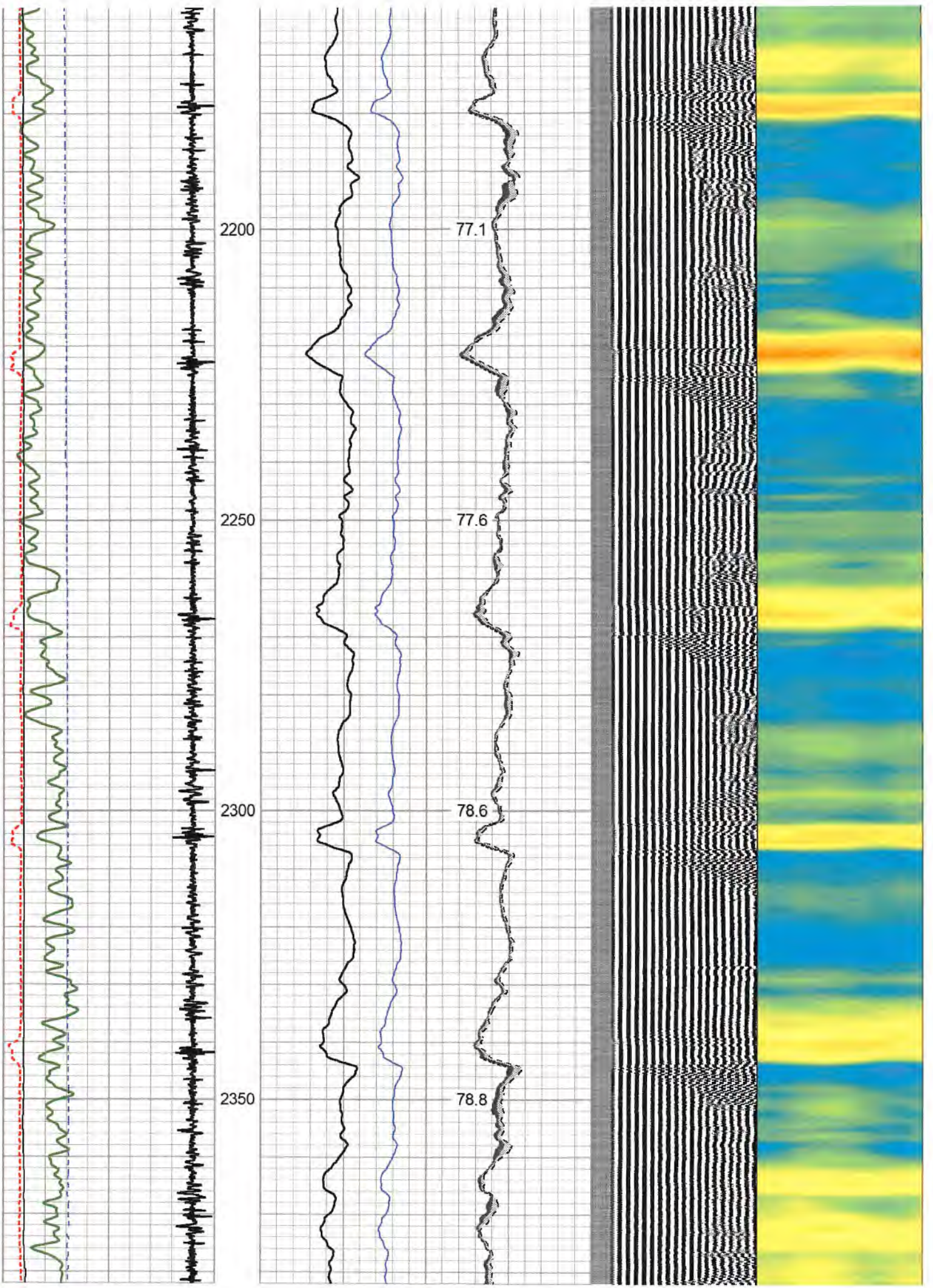


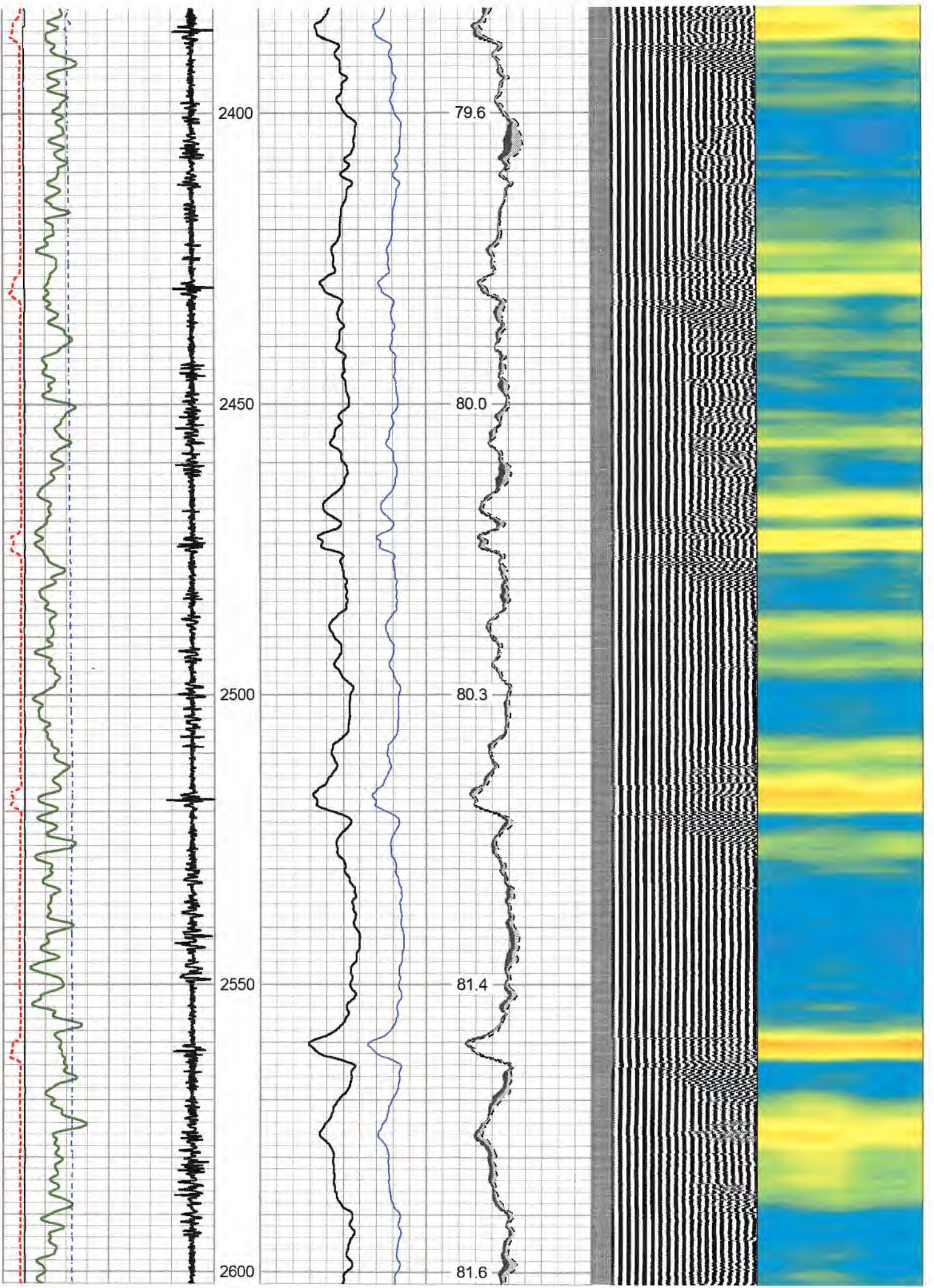


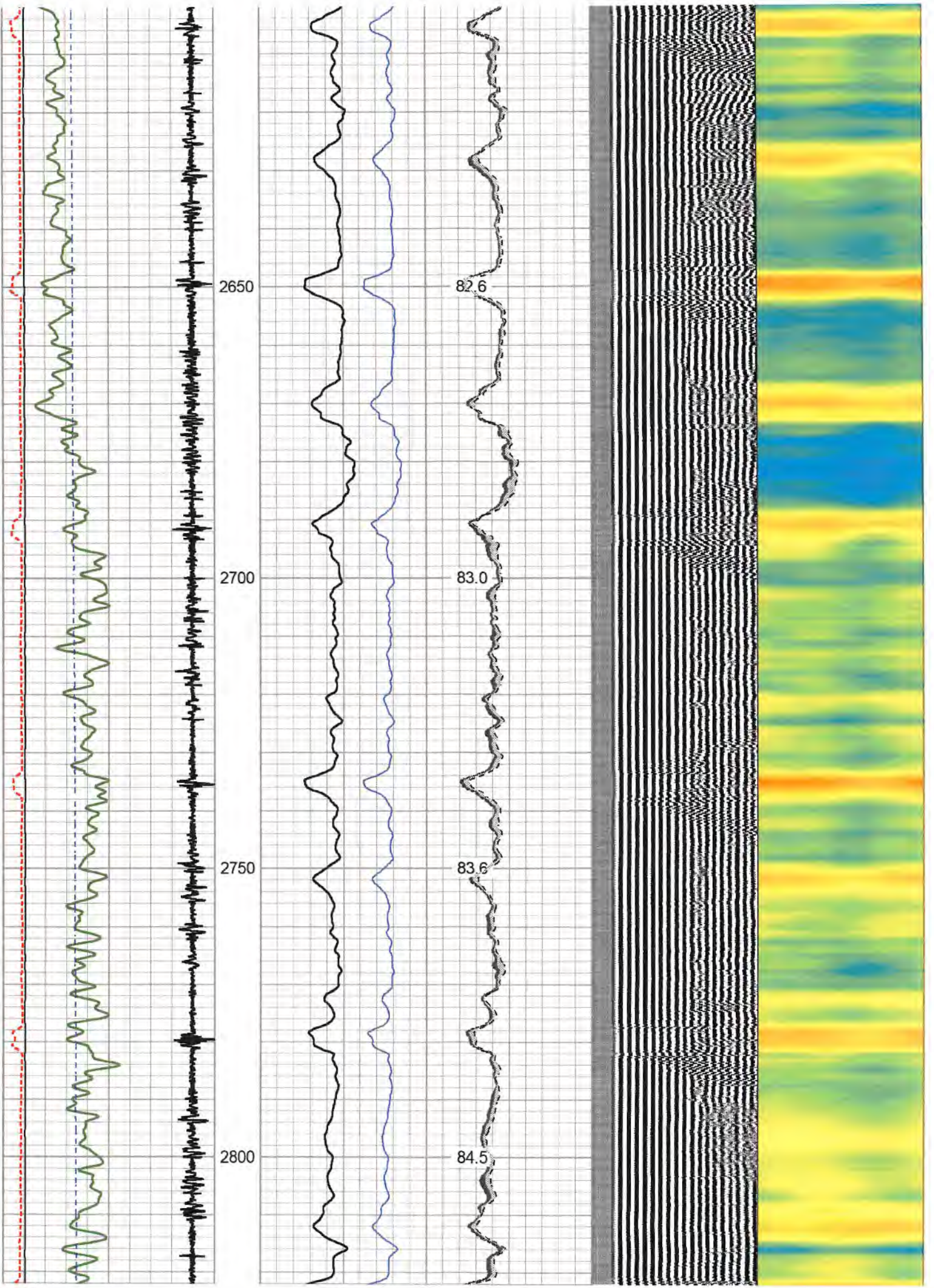


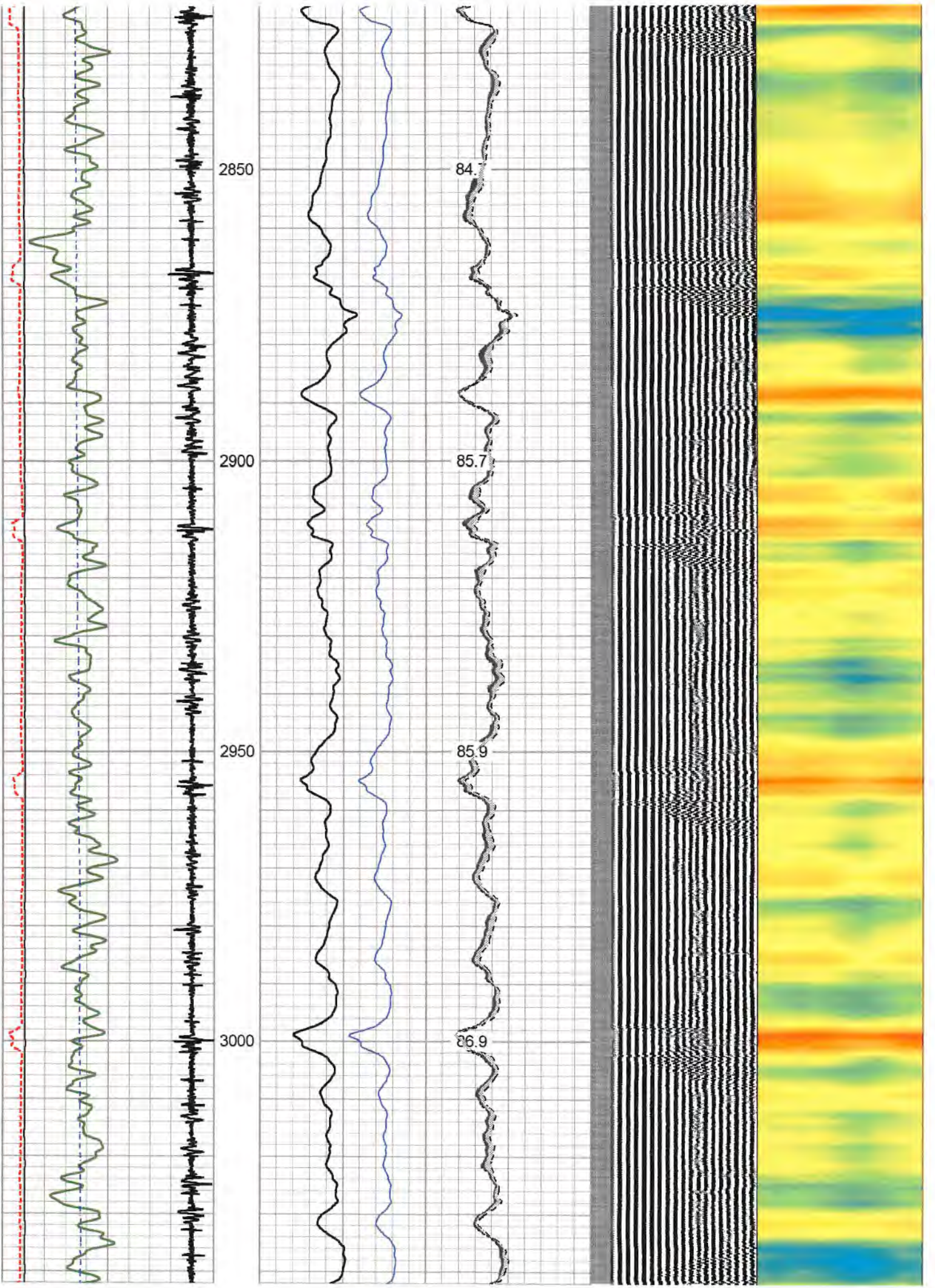


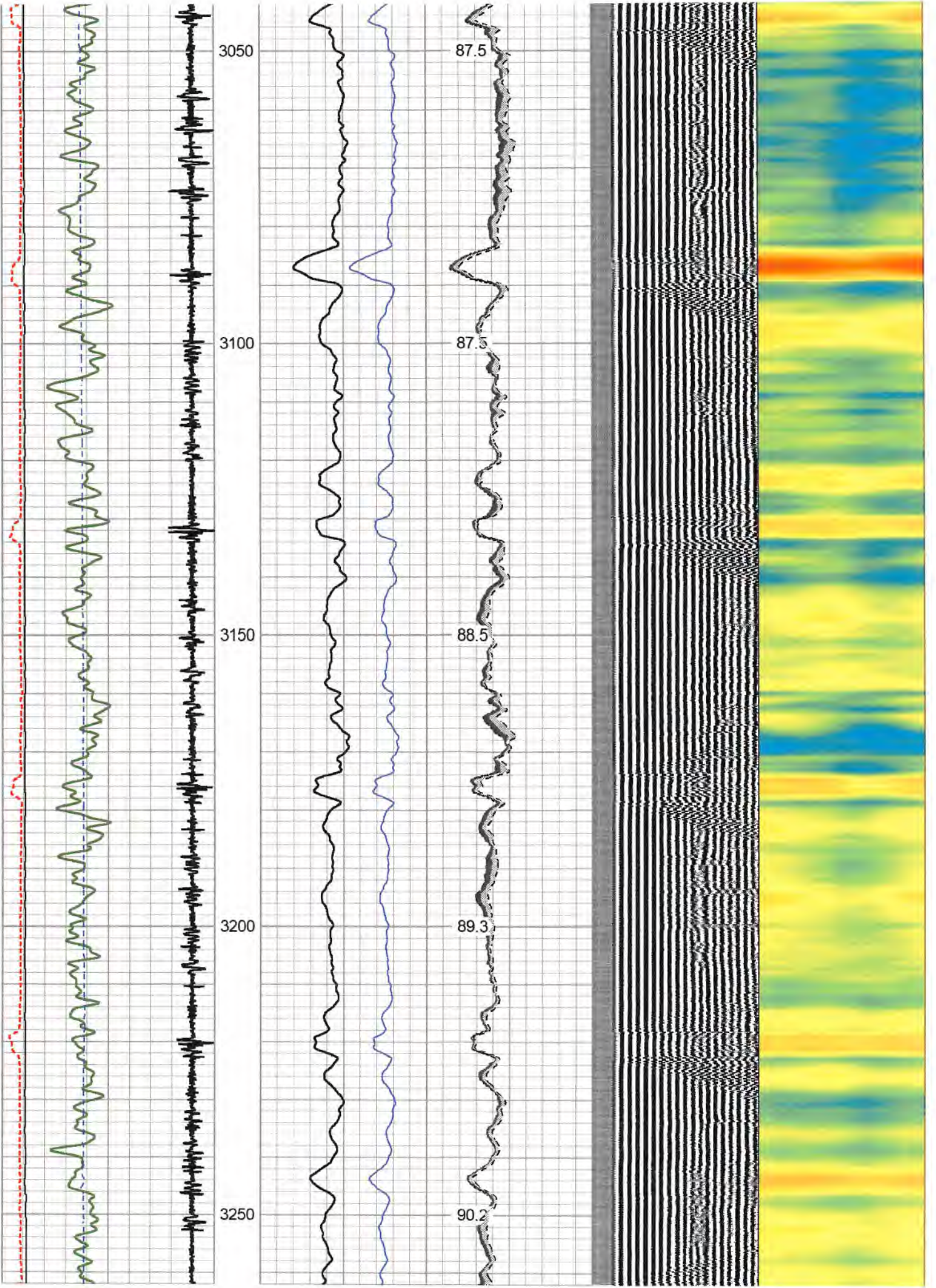


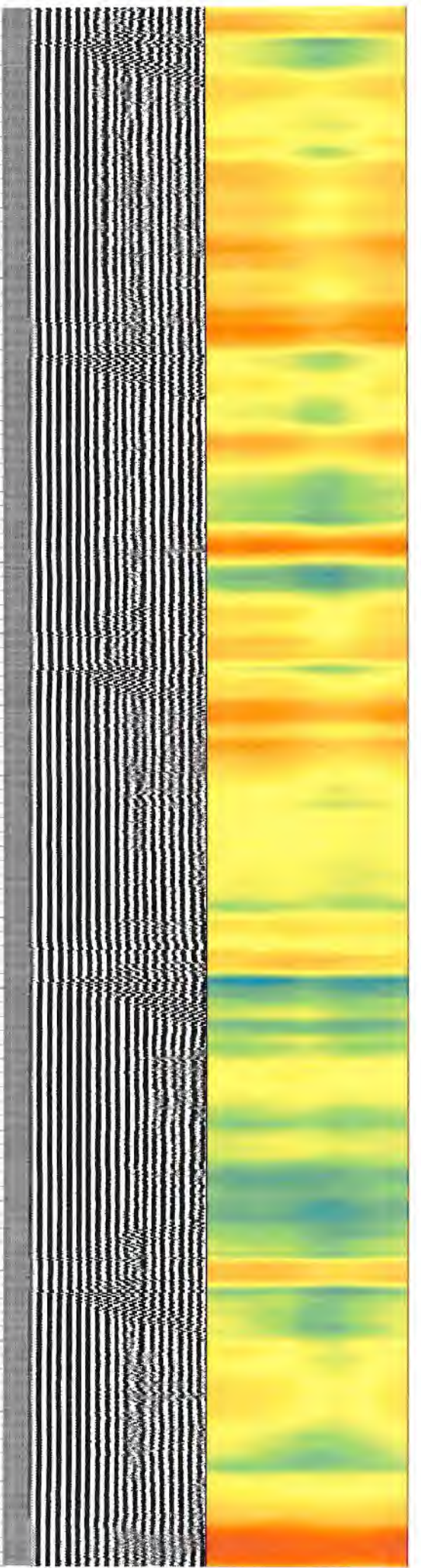
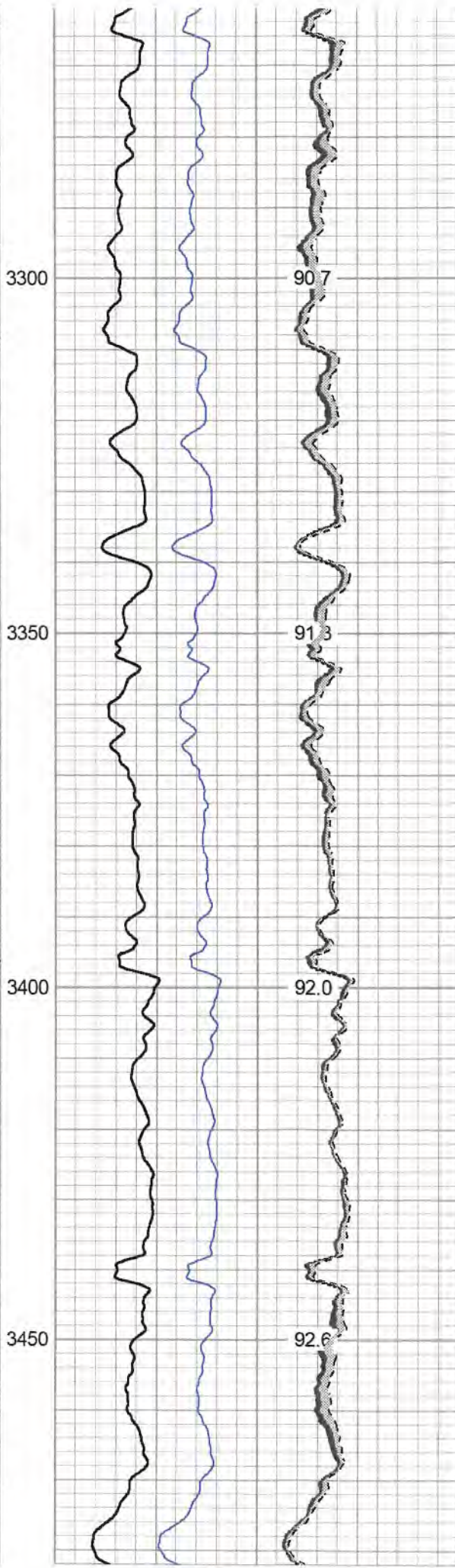
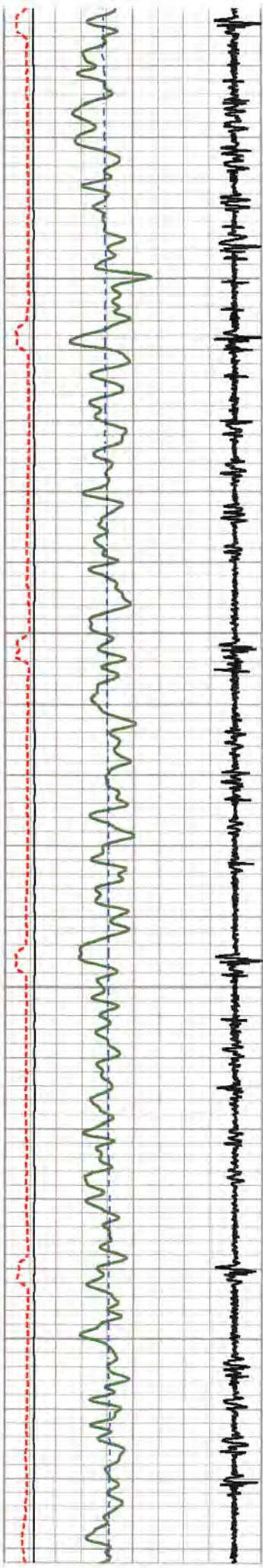


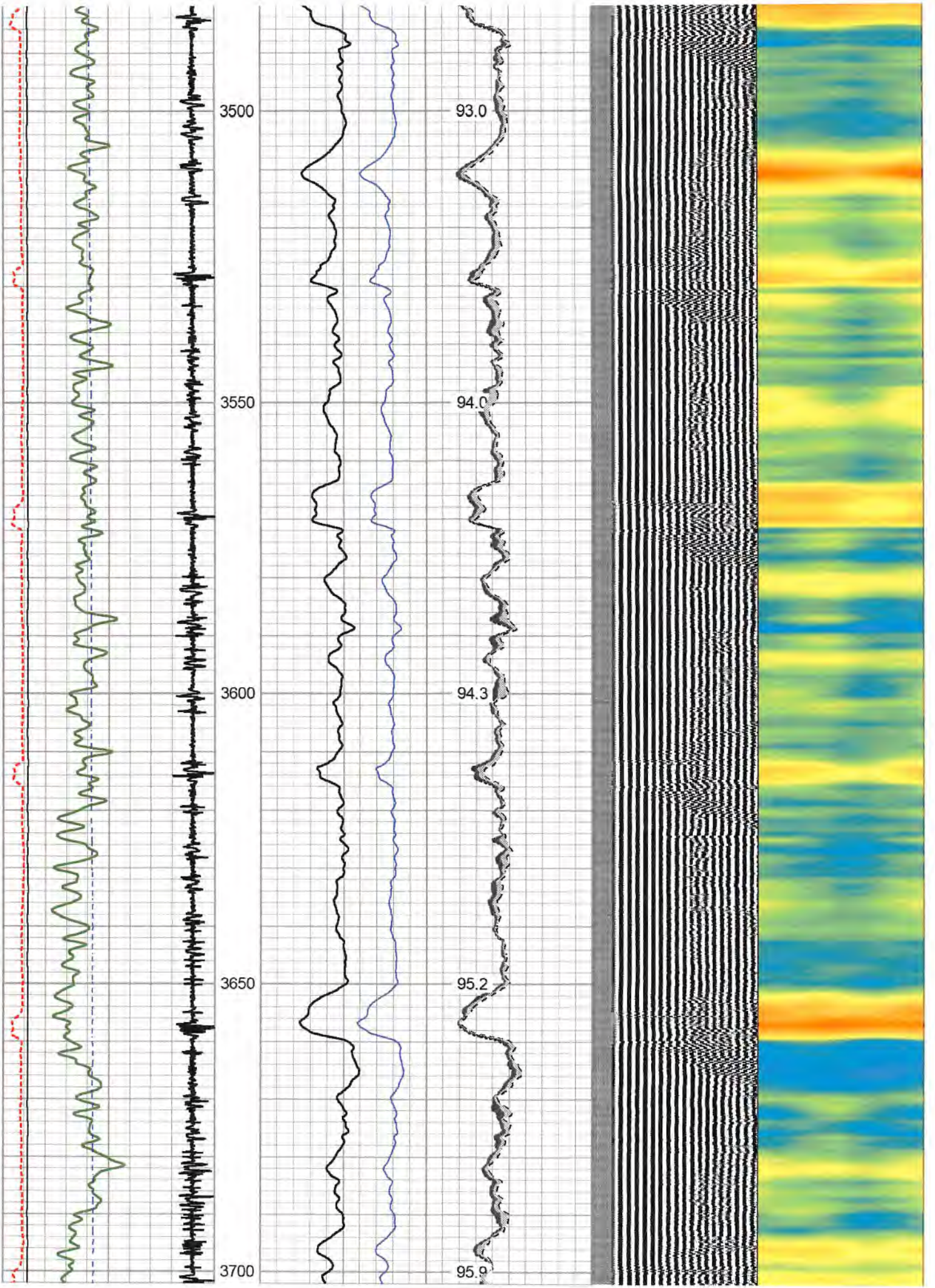


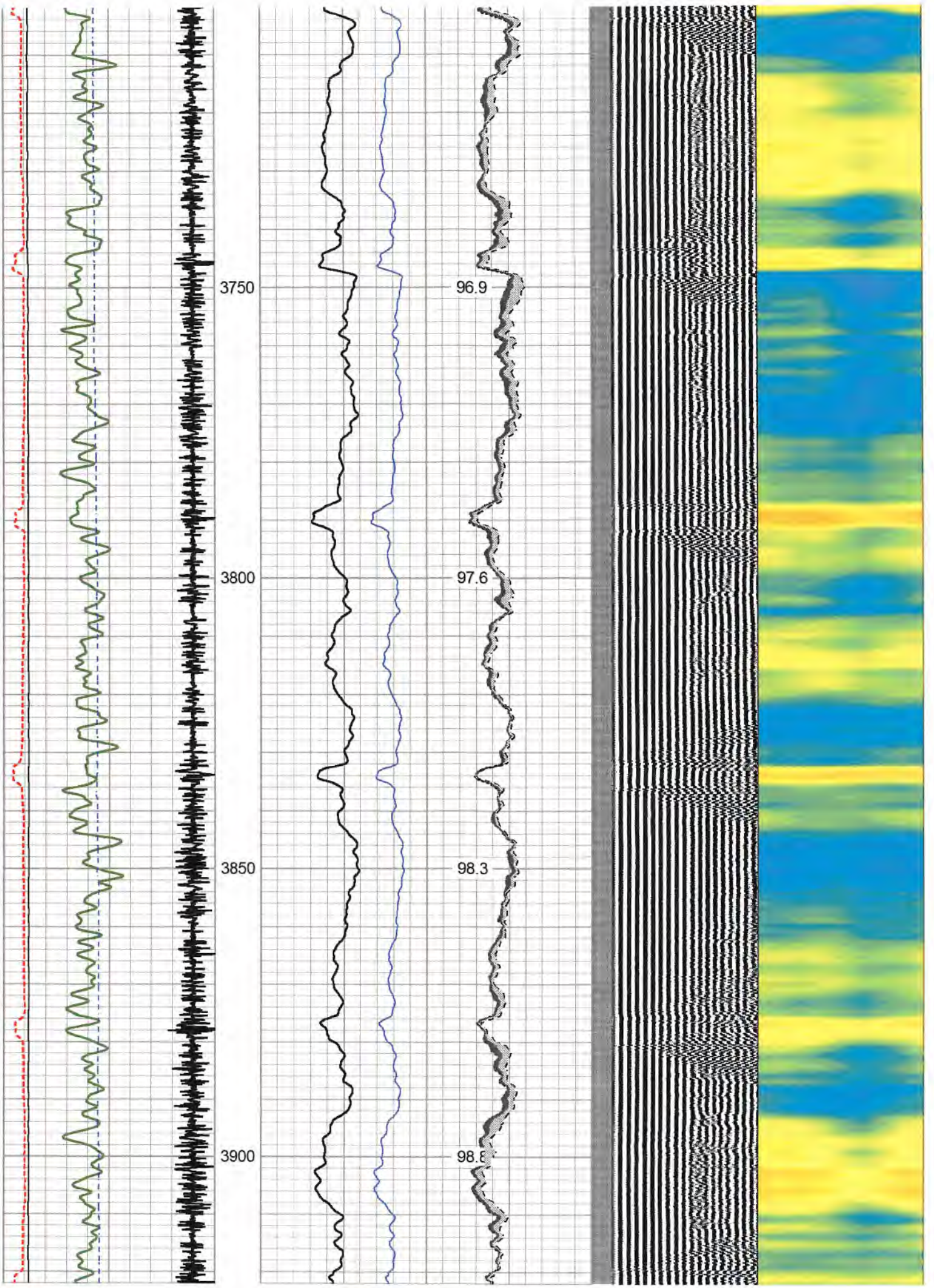


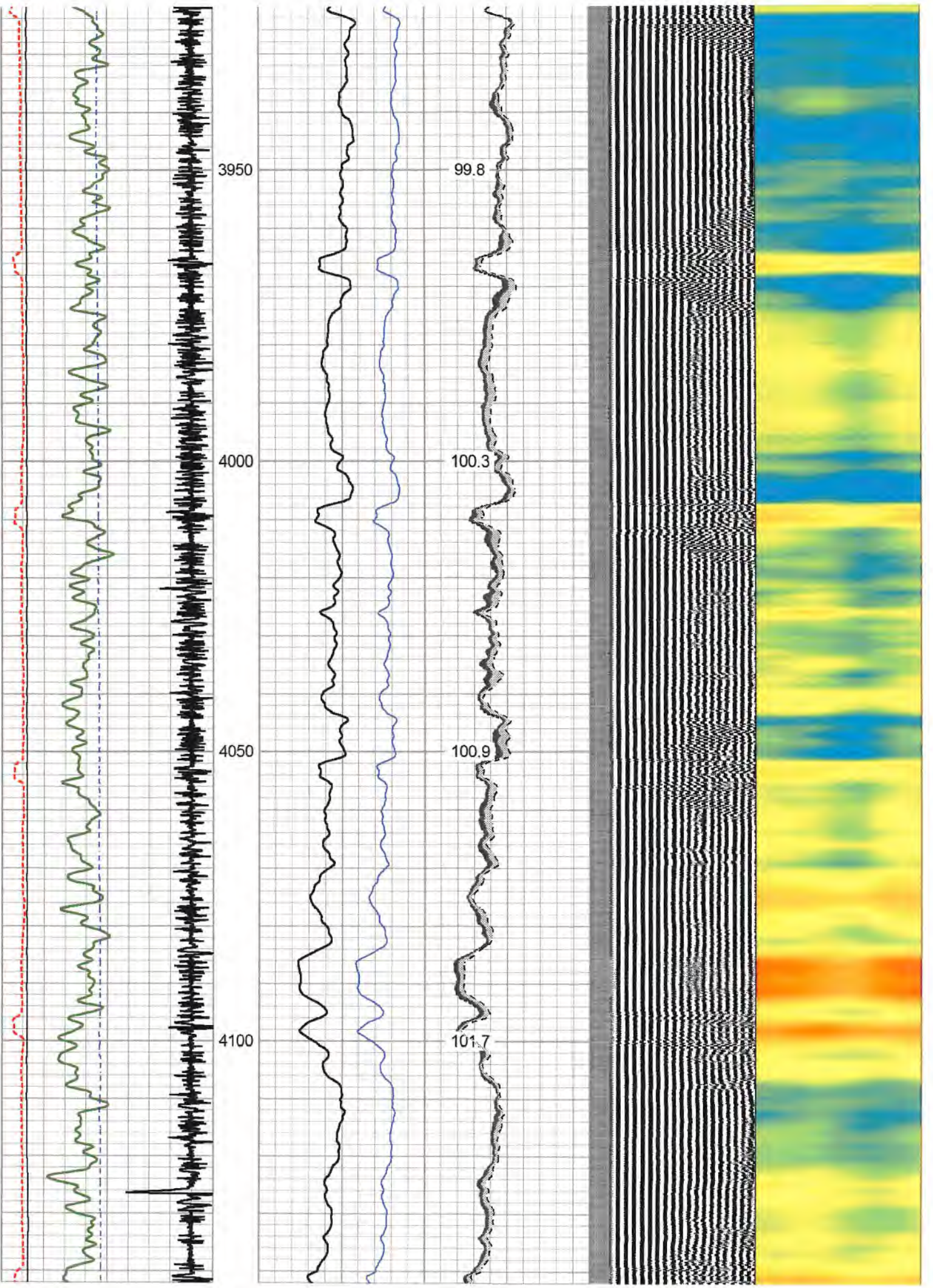


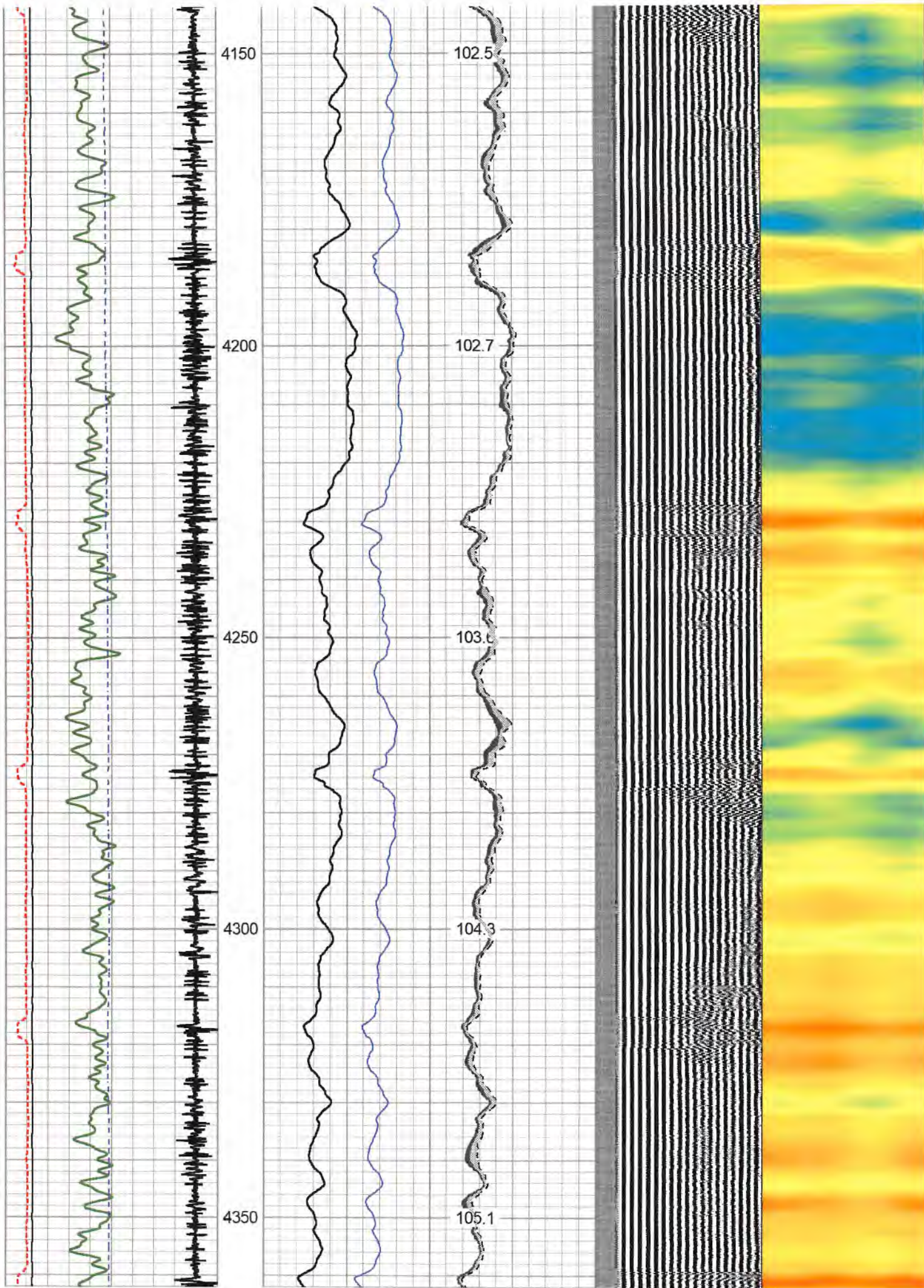


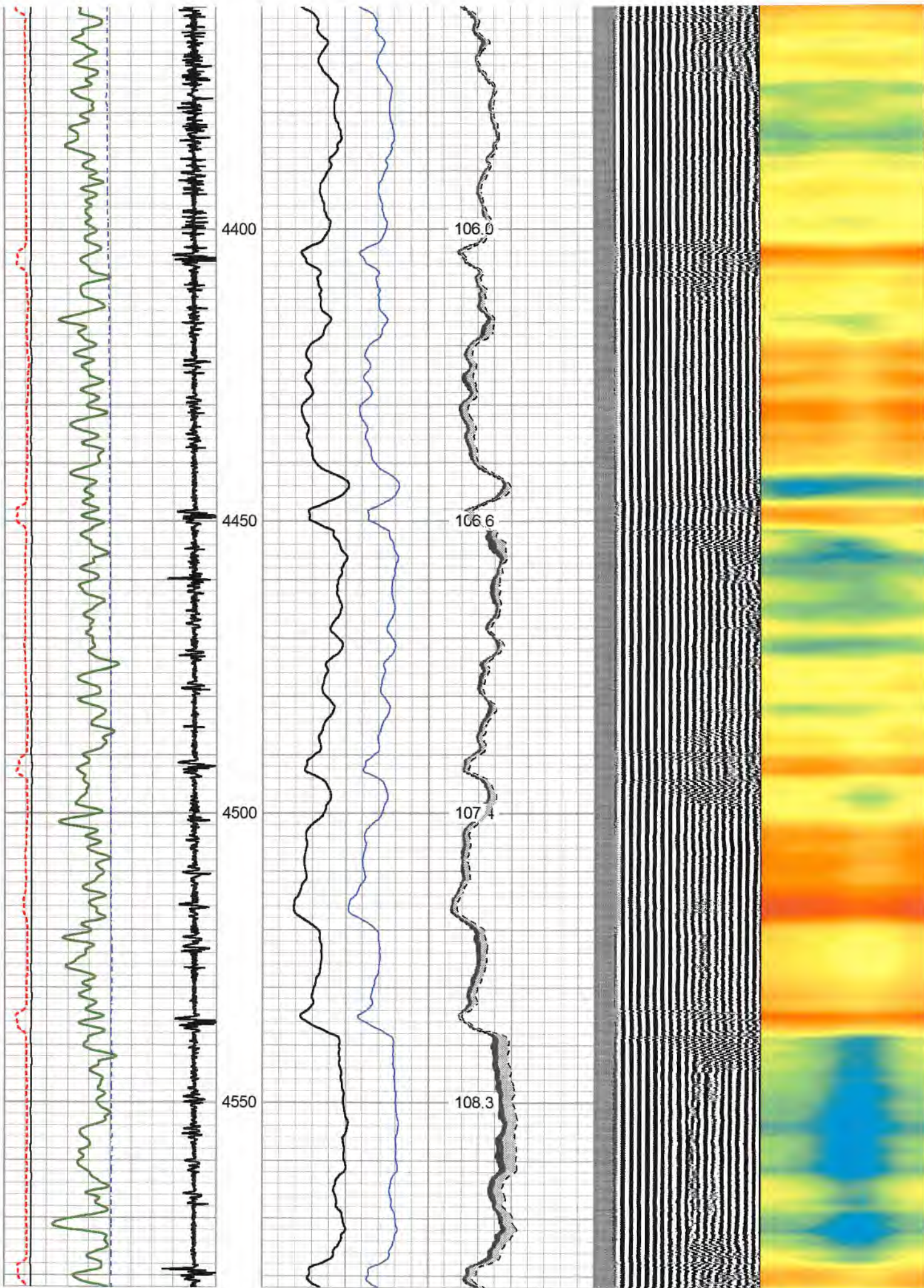


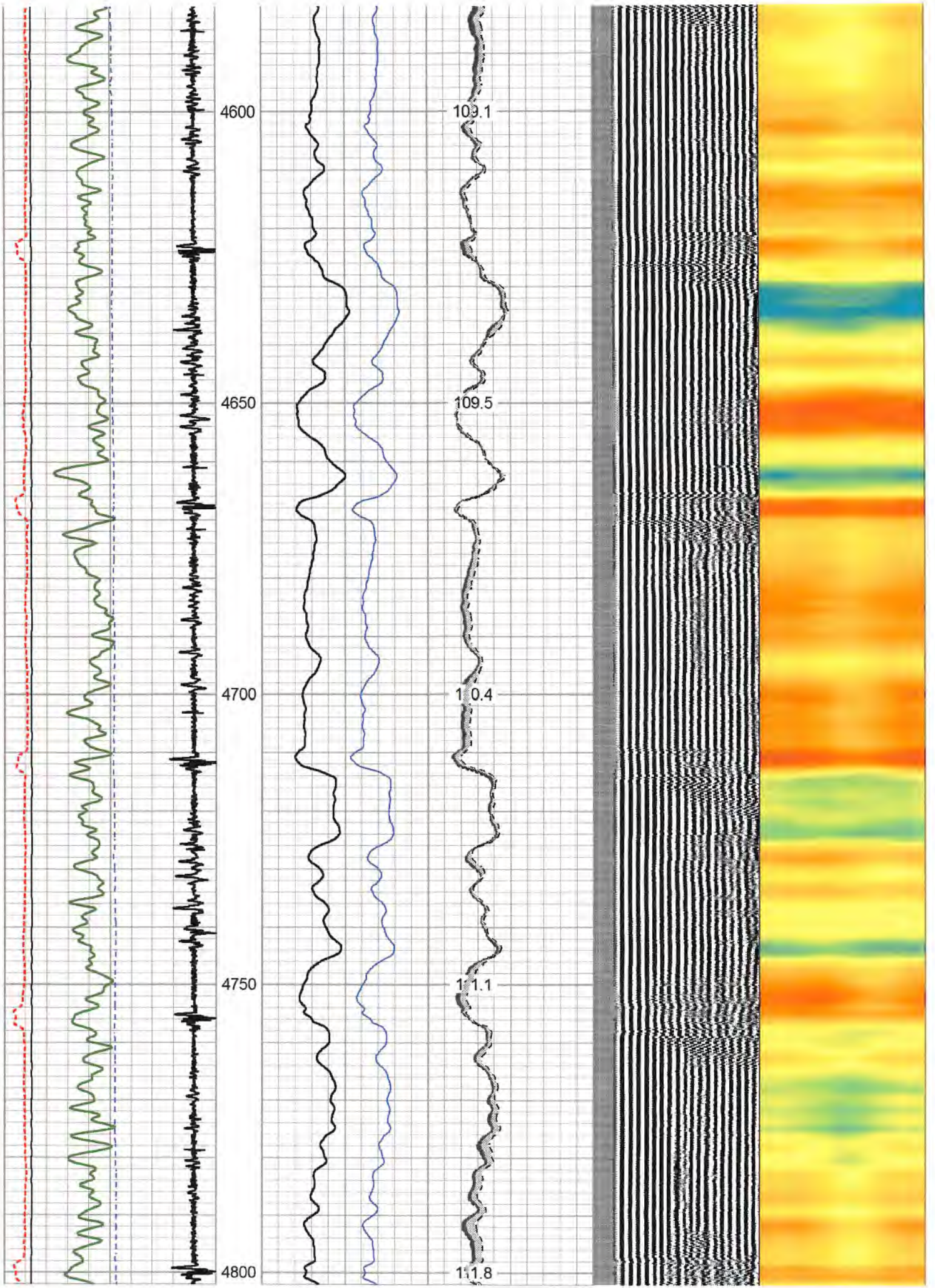


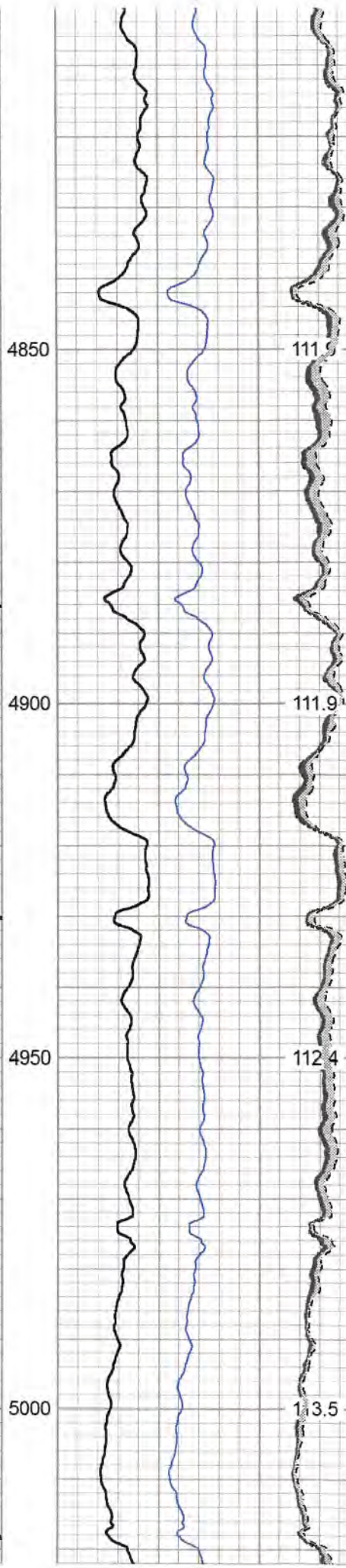
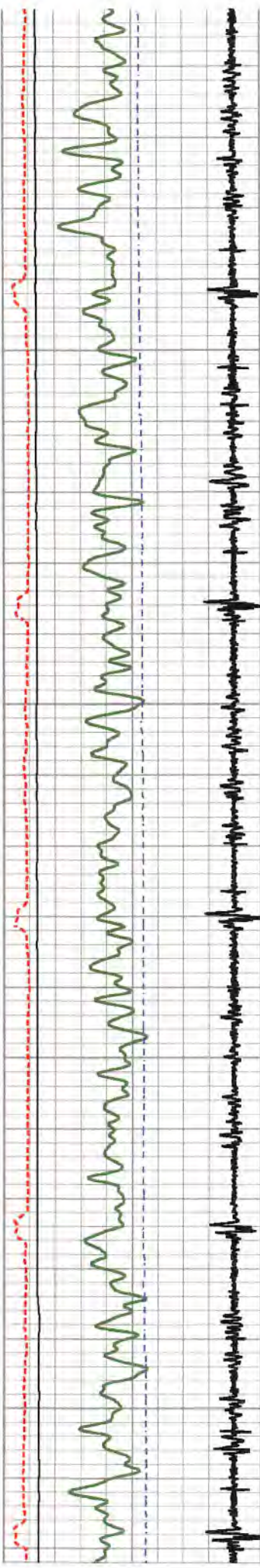




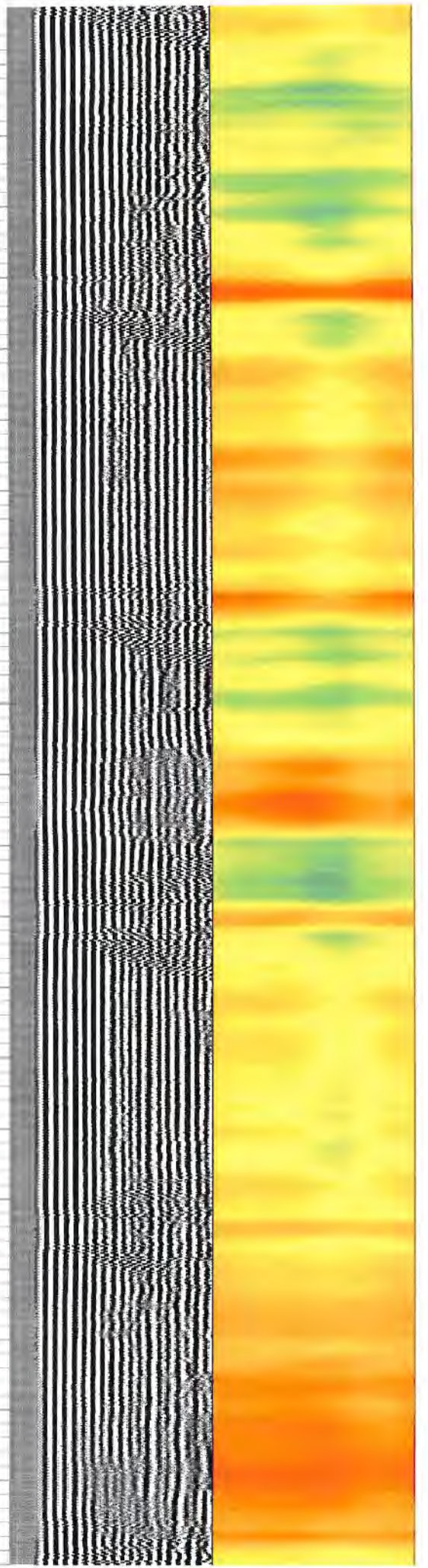


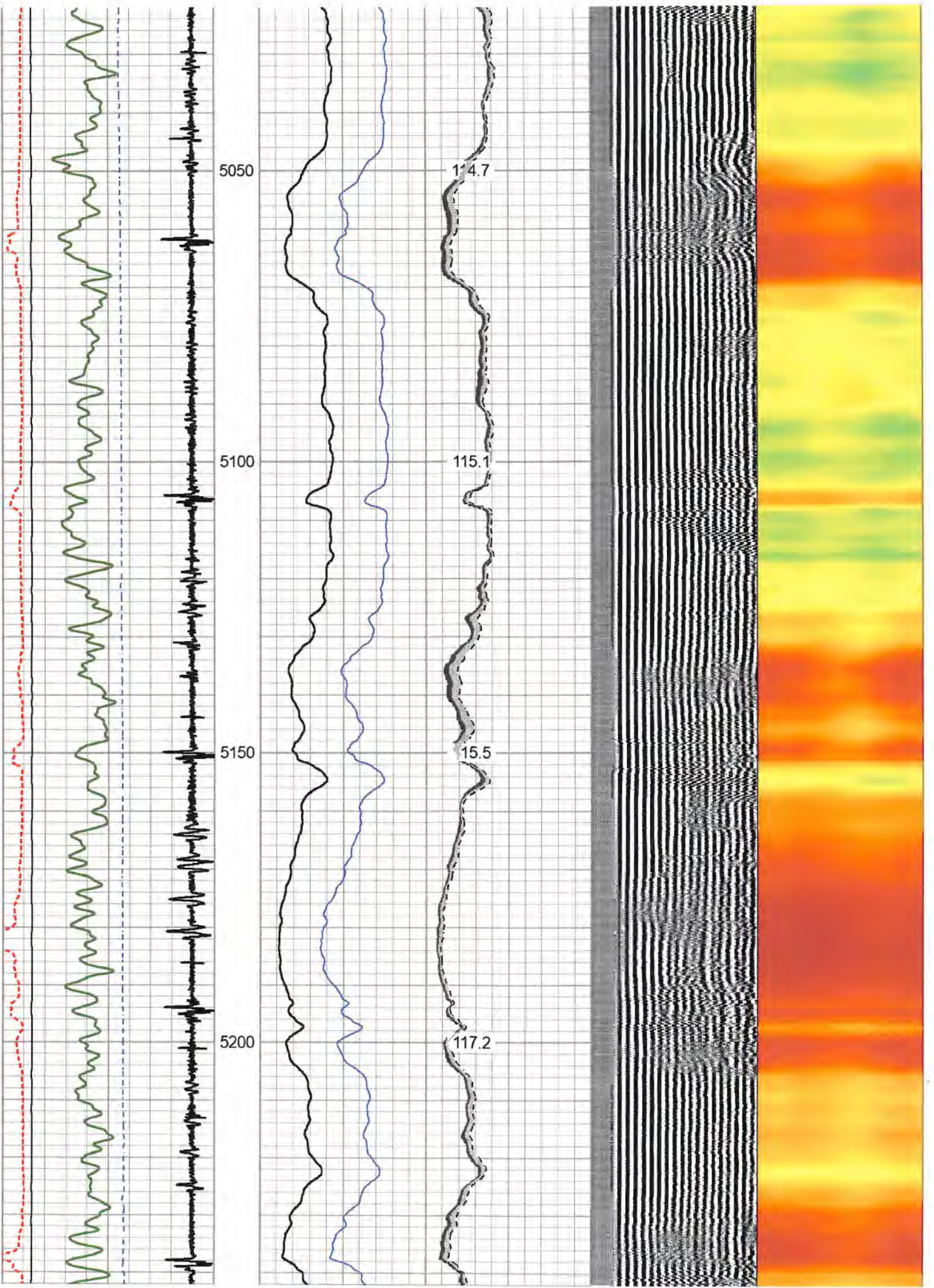


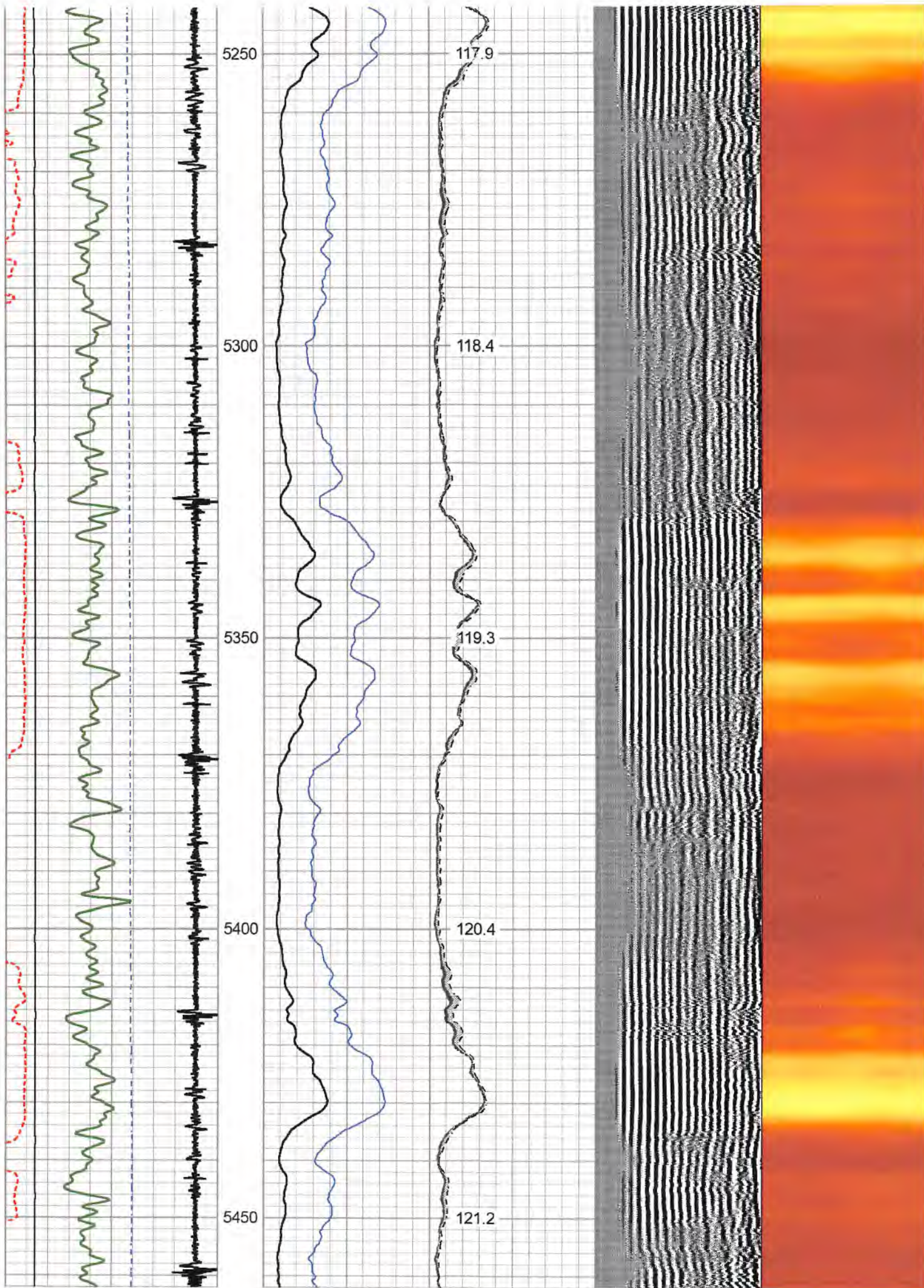


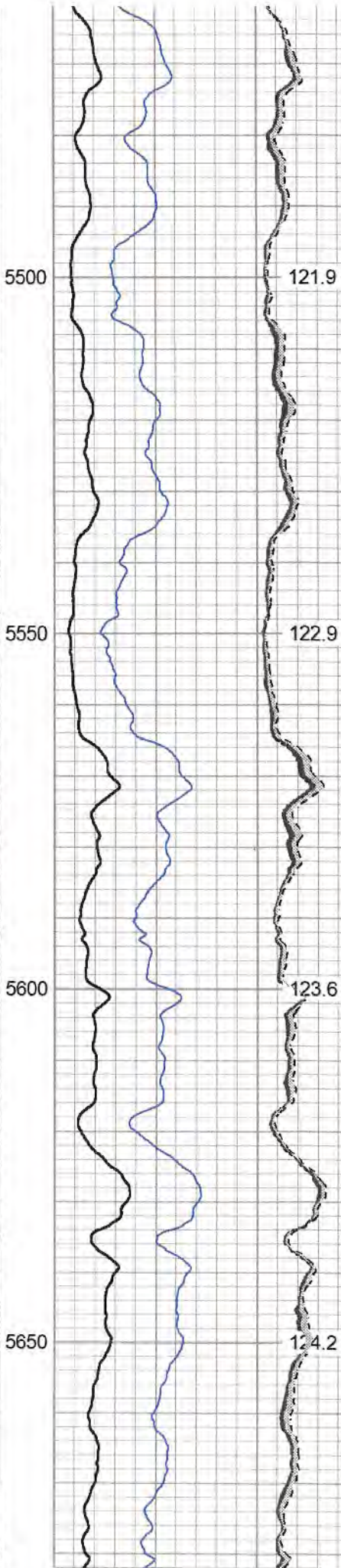
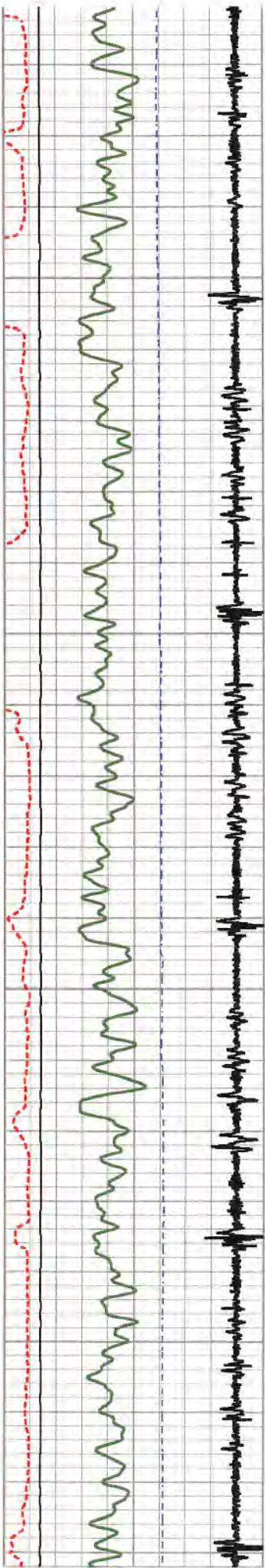


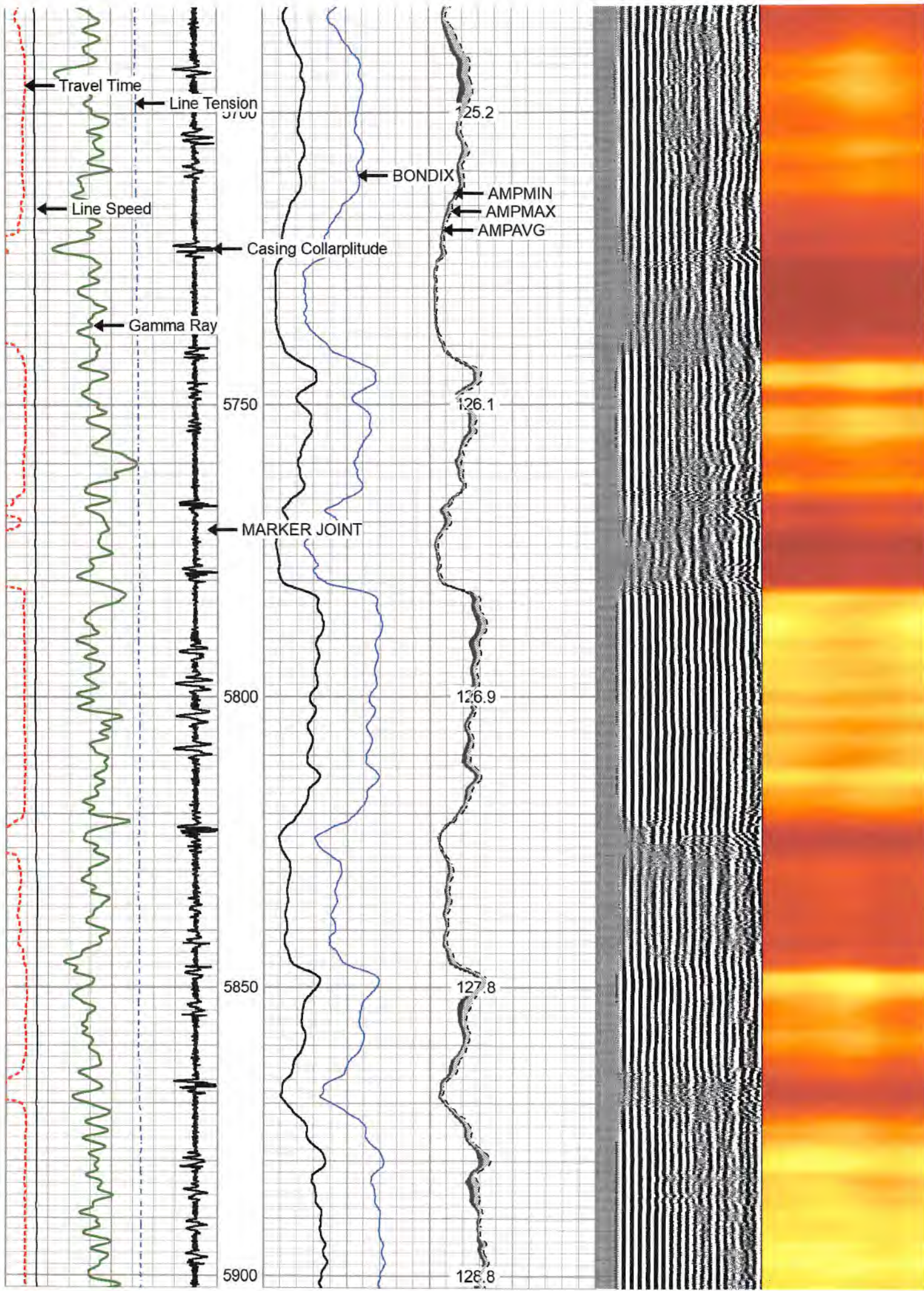
111.5
111.9
112.4
113.5

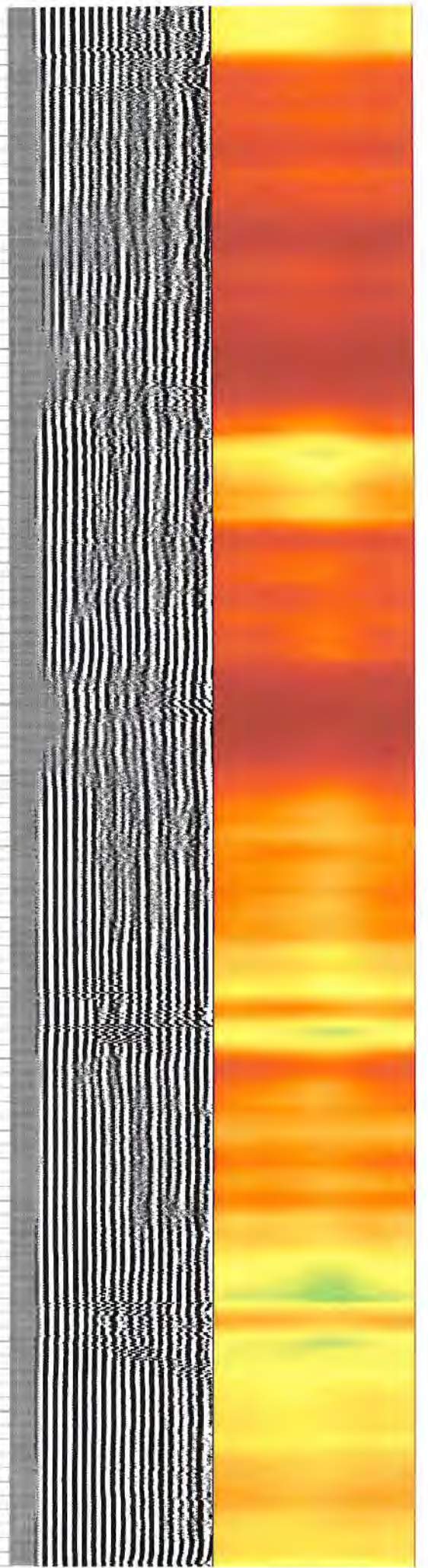
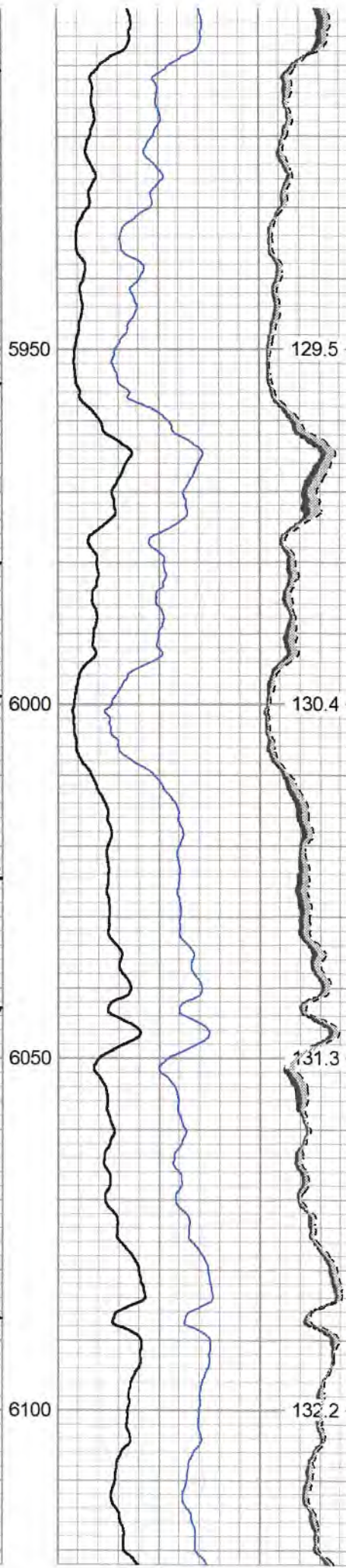
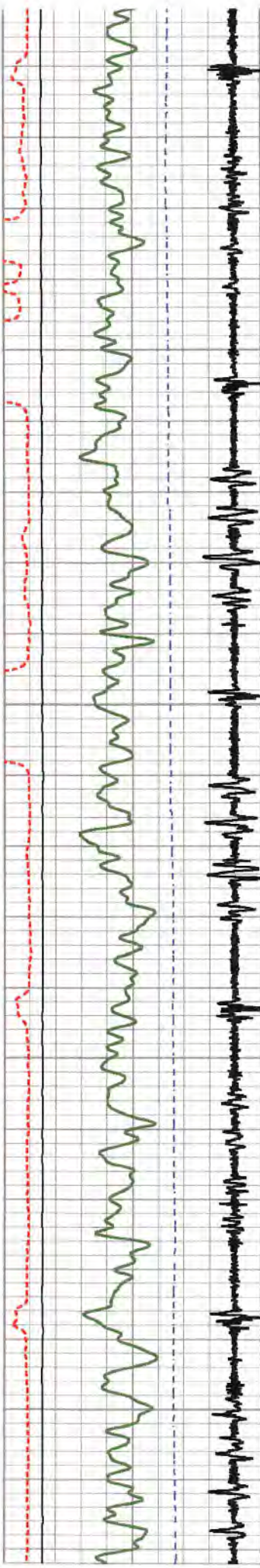


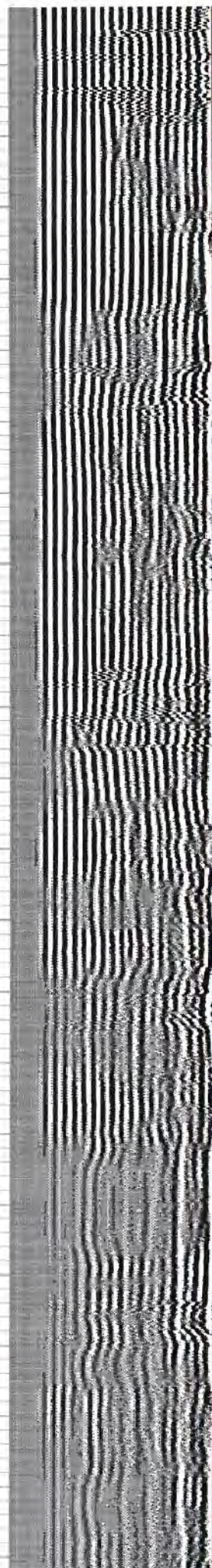
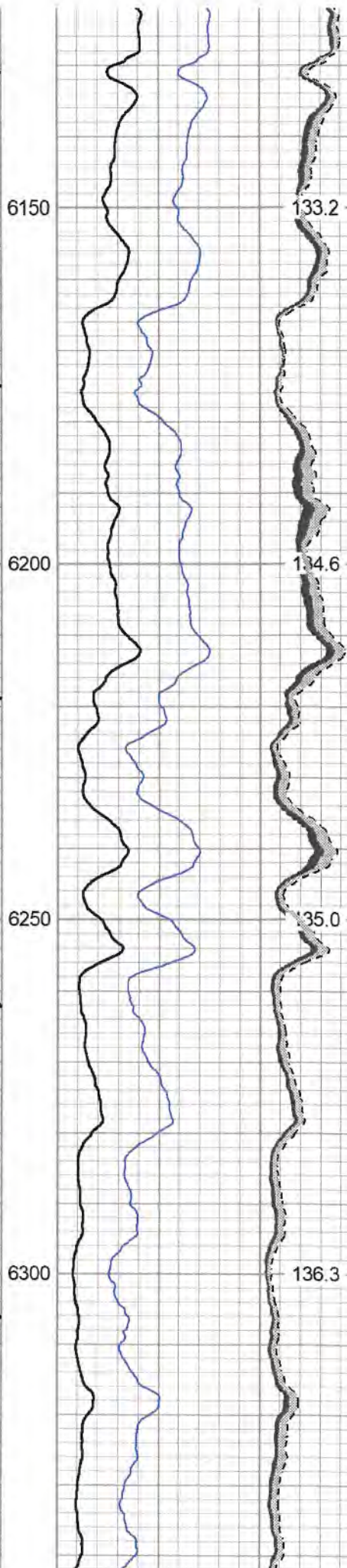
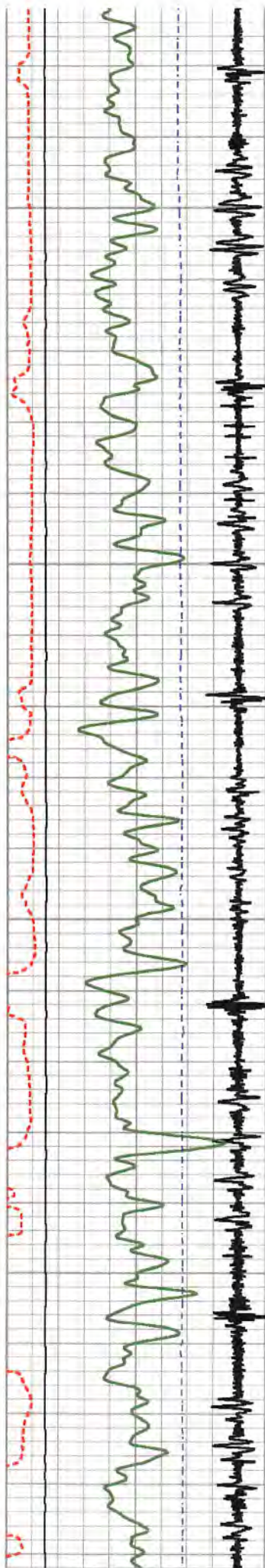


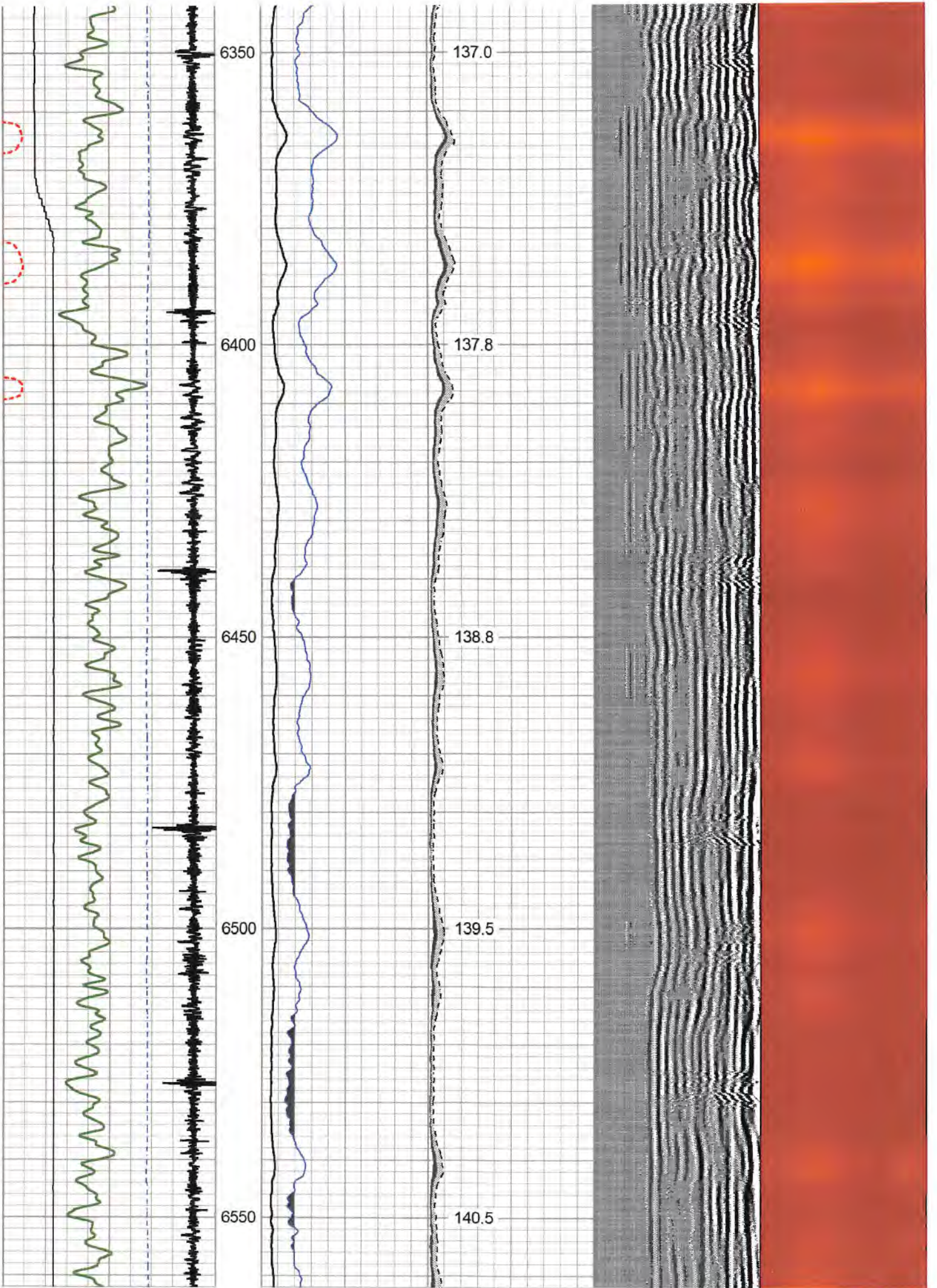


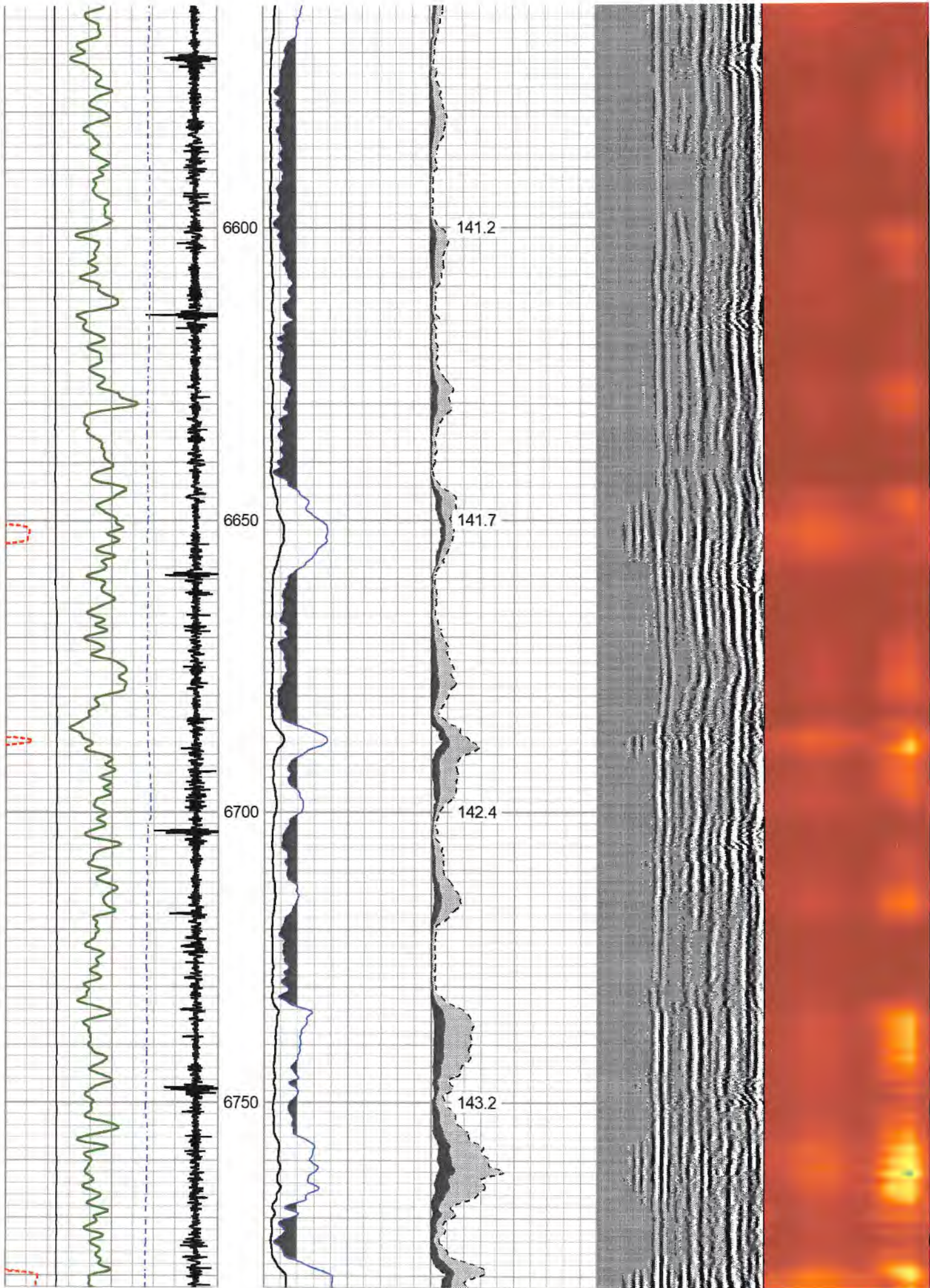


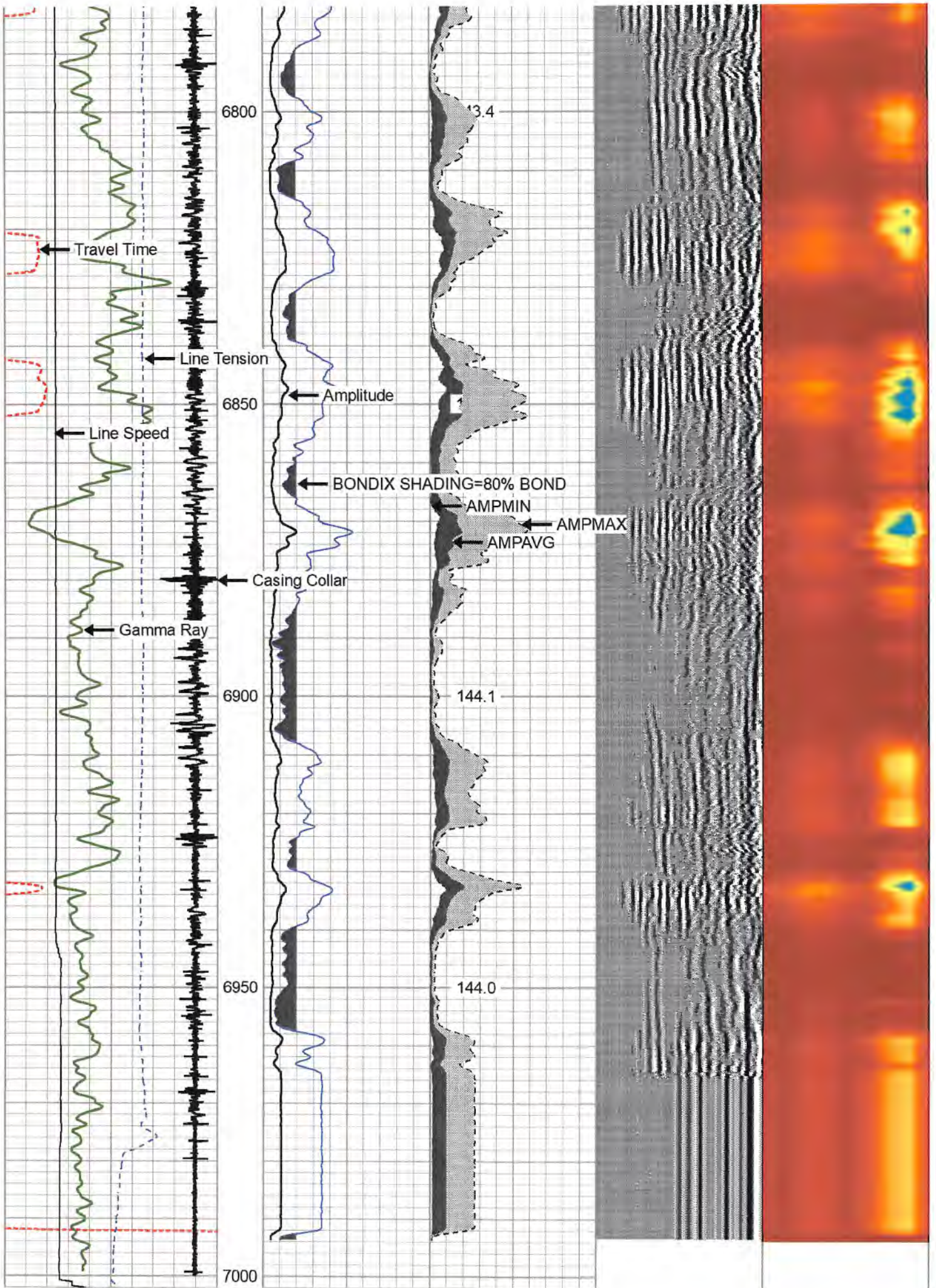













265	Travel Time (usec)	165	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150	0			0	AMPAVG	150				
	Line Speed						TEMP					
-100	(ft/min)	100					(degF)					
0	Line Tension (lb)	2000										

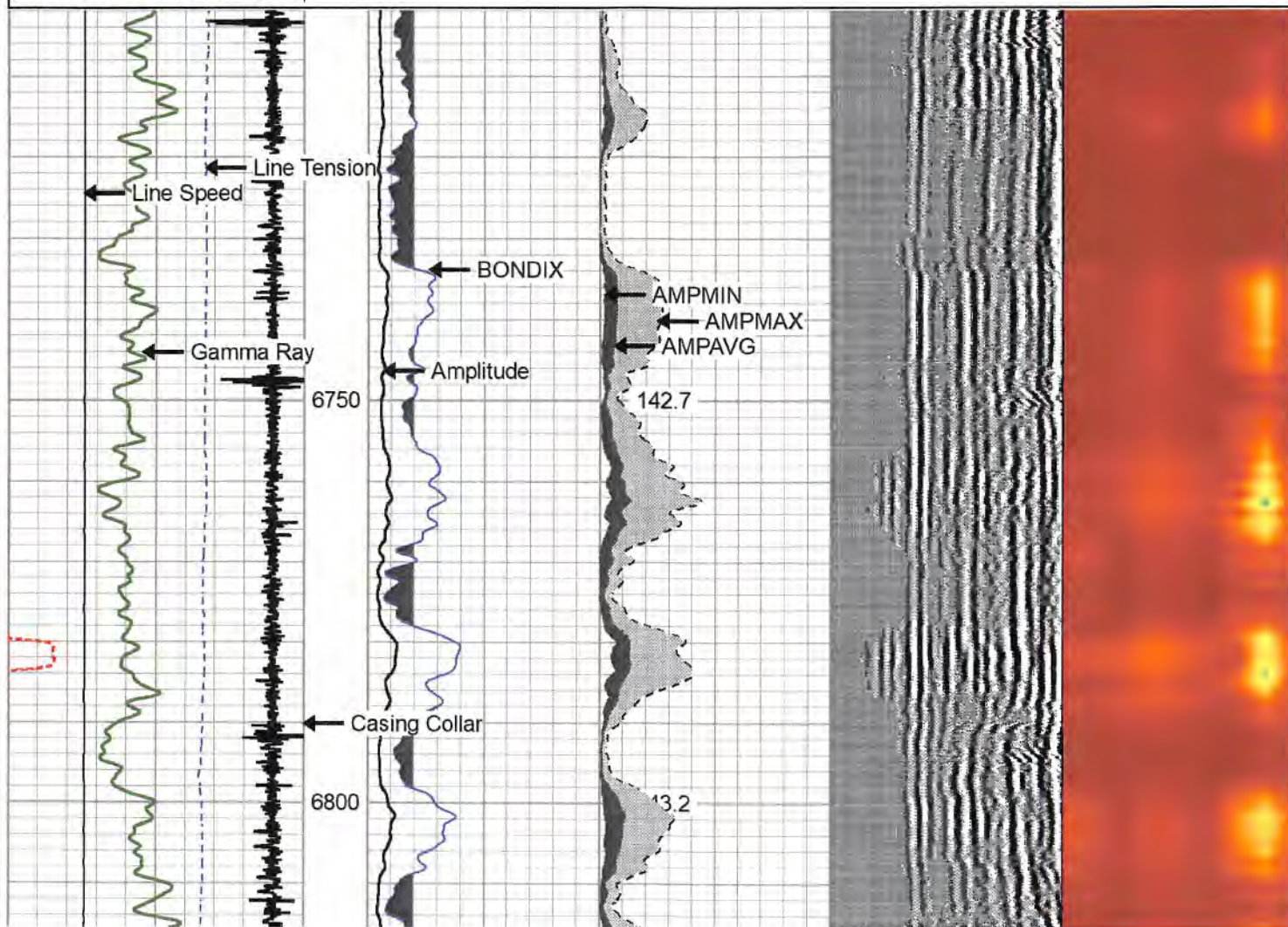


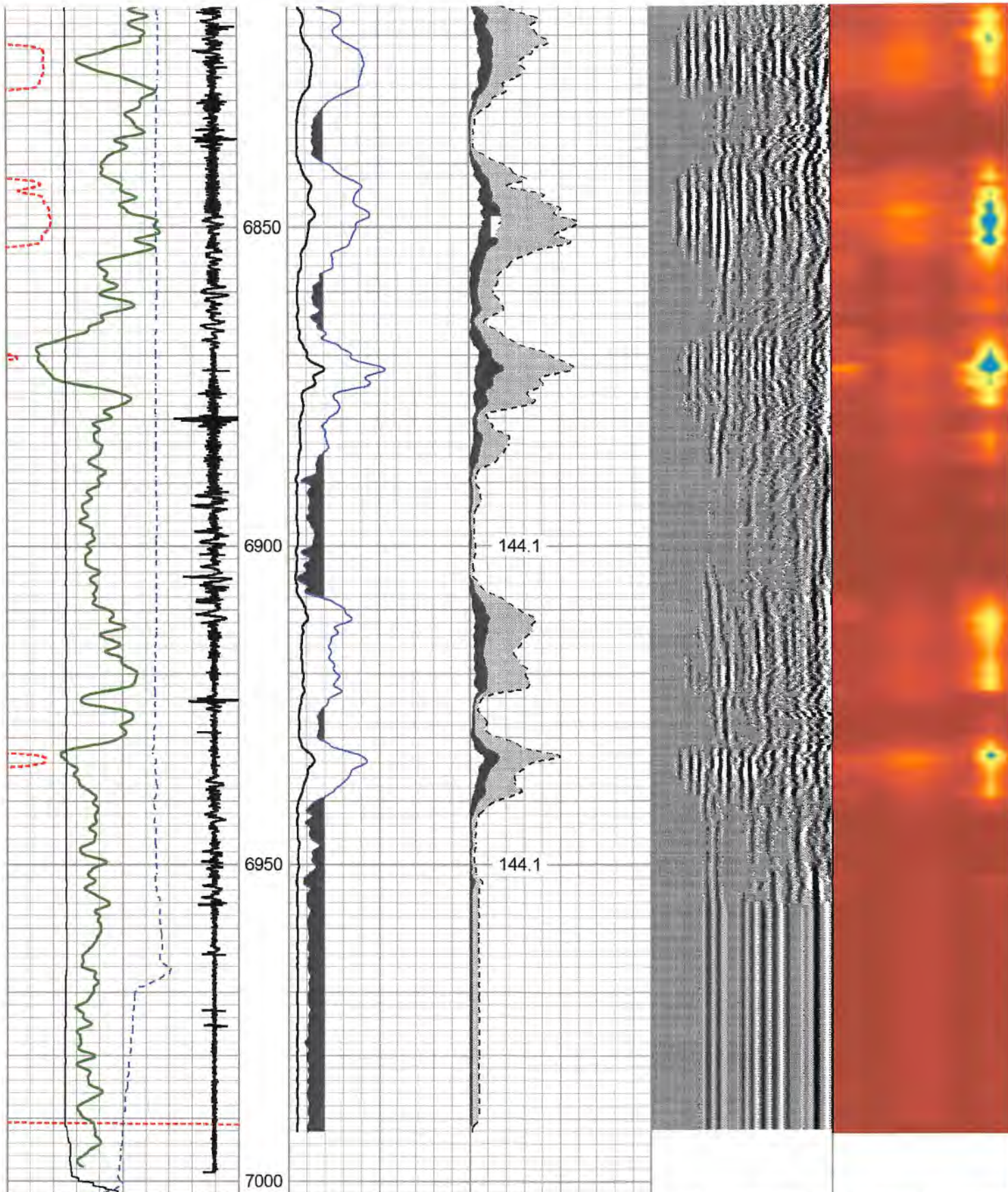
REPEAT LOG

1500 psi

Database File antero_seagrave_1h_nov_8_2020_cbl.db
 Dataset Pathname Rabbit/seagrve_1h/rcbl/pass13
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Sun Nov 08 09:10:25 2020
 Charted by Depth in Feet scaled 1:240

265	Travel Time (usec)	165	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			0	AMPAVG	150				
	Line Speed						TEMP					
-100	(ft/min)	100					(degF)					
0	Line Tension (lb)	2000										





265	Travel Time (usec)	165
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-100	(ft/min)	100
0	Line Tension (lb)	2000

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

Variable Density	1	Cement Map	8
200	(usec)	1200	



Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_seagrave_1h_nov_8_2020_cbl.db
 Dataset Rabbit/seagrve_1h/rcbl/pass15/_vars_

Top - Bottom

BHTEMP_Src TEMP	BOREID in 8.5	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 23	MAXAMPL mV 71.9	MINAMPL mV 3.4
MINATTN db/ft 0.8	PERFS No	PPT usec 260	SRFTEMP degF 0	TDEPTH ft 0			

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_seagrave_1h_nov_8_2020_cbl.db
 Dataset Pathname Rabbit/seagrve_1h/rcbl/pass13
 Dataset Creation Sun Nov 08 09:10:25 2020

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun Nov 08 08:44:32 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

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Serial Number: FW1312-32
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 108.808 ft

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Master Calibration, performed Sun Nov 08 07:49:51 2020:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.021	1.036	3.400	71.921	64.848	4.756
CAL	-0.021	1.517				
5'	-0.021	0.900	3.400	71.921	74.424	4.953
SUM						
S1	-0.021	1.018	0.000	100.000	96.256	1.994
S2	-0.021	1.017	0.000	100.000	96.326	2.014
S3	-0.021	1.019	0.000	100.000	96.145	2.008
S4	-0.021	1.056	0.000	100.000	92.905	1.931
S5	-0.021	1.087	0.000	100.000	90.301	1.879

S6	-0.021	1.120	0.000	100.000	87.686	1.824
S7	-0.021	1.116	0.000	100.000	87.979	1.825
S8	-0.021	1.090	0.000	100.000	90.033	1.867

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	-0.021	1.517	1.000	0.000

Air Zero Calibration, performed Sat Nov 07 10:29:21 2020:

	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

	Company	ANTERO		
	Well	SEAGRAVE 1H		
	Field	RABBIT EARS		
	County	TYLER		
	State	WEST VIRGINIA	Country	USA

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Environmental Protection