



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

Company Antero Resources
Well Weekly West Sandy 1H
Field Marcellus
County Ritchie State WV

Company Antero Resources
Well Weekly West Sandy 1H
Field Marcellus
County Ritchie
State WV

4708510417

Location: API #: Other Services
SEC TWP RGE
Permanent Datum Ground Level Elevation 30'
Log Measured From Kelly Bushing 30' A.P.D.
Drilling Measured From Kelly Bushing

Elevation
K.B. N/A
D.F. N/A
G.L. N/A

Date	30-Mar-2022		
Run Number	ONE		
Depth Driller	21,015'		
Depth Logger	7,248'		
Bottom Logged Interval	7,258'		RECEIVED
Top Log Interval	SURFACE		Office of Oil and Gas
Open Hole Size	8.50"		
Type Fluid	FRESH WATER		MAR 21 2023
Density / Viscosity	8.4#		
Max. Recorded Temp.	142 Deg. F.		
Estimated Cement Top	4,500'		WV Department of Environmental Protection
Time Well Ready	9:30		
Time Logger on Bottom	10:00		
Equipment Number	TK-104		
Location	CHARLEROI, PA		
Recorded By	Matt McNally		
Witnessed By	Ryan Rivera		

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To
Casing Record		Size		Wgt/Ft		Top	Bottom
Surface String							
Prot. String							
Production String		5 1/2"		20#		Surface	21,015'
Liner							

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 @ 6,038'-6,049'
Depth Correction + 65'

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

Thank You for Choosing Nine Energy Service.Charleroi, PA

RECEIVED
Office of Oil and Gas
MAR 31 2023
WV Department of
Environmental Protection

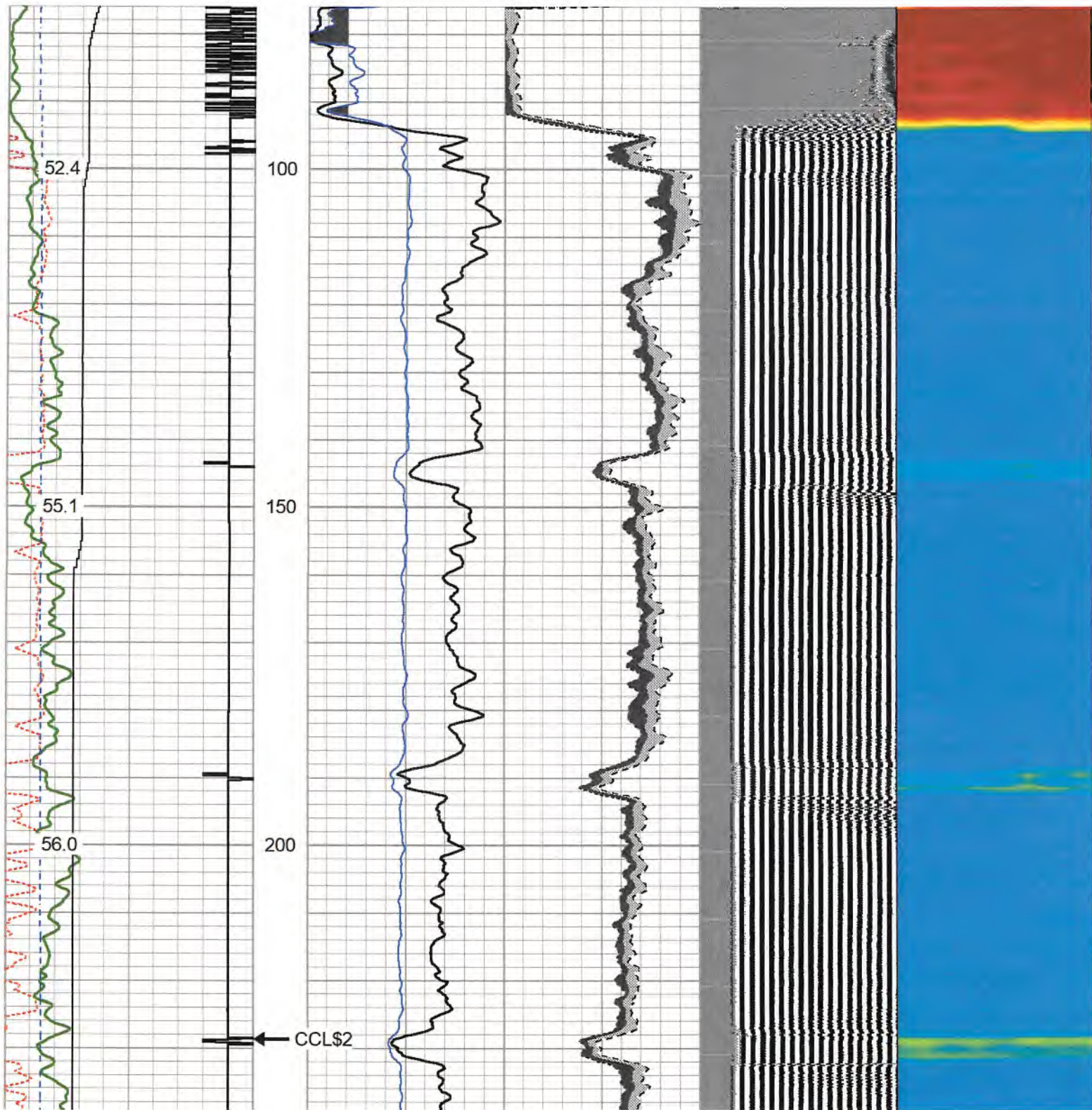


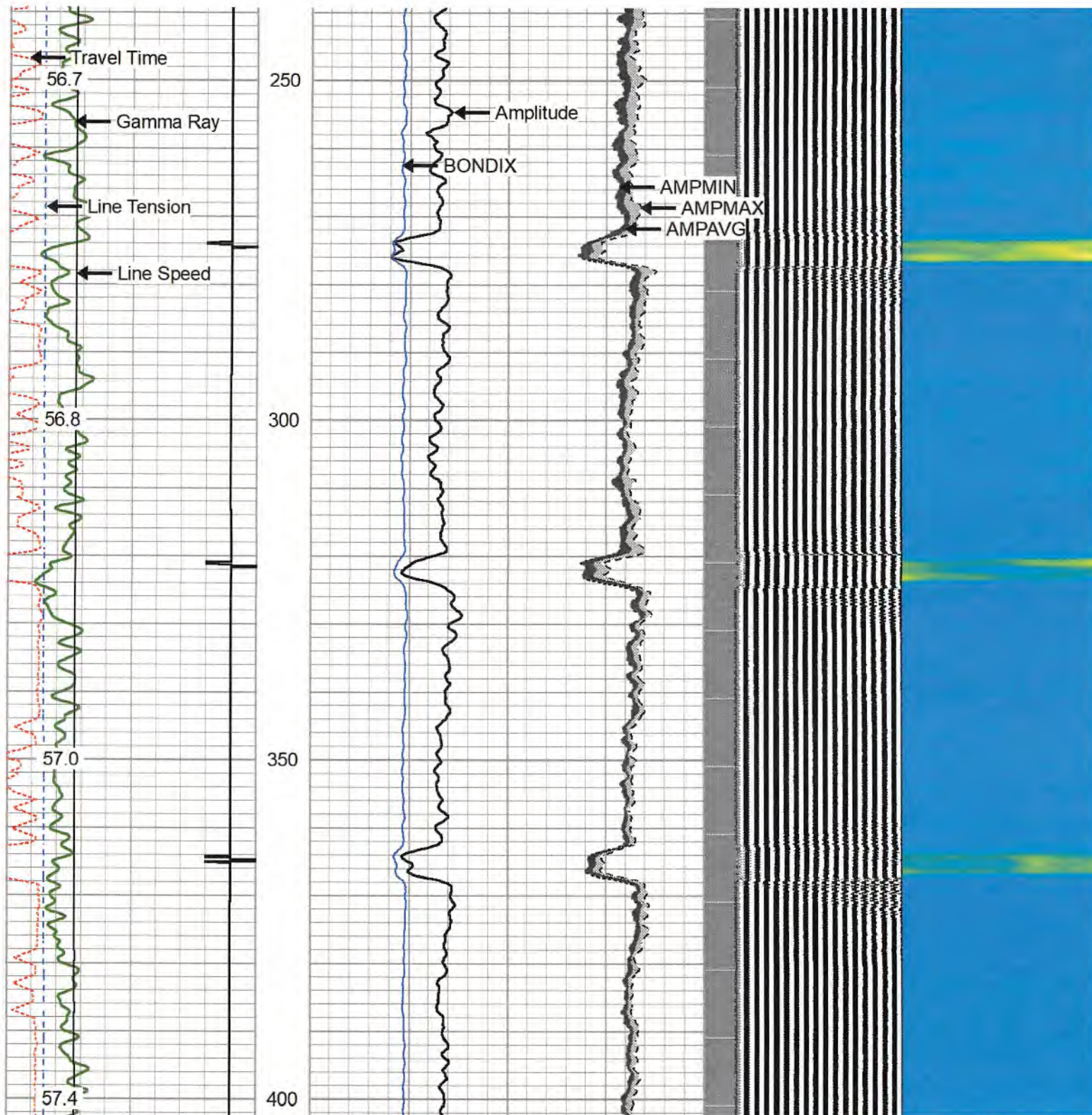
Main Pass 1,500 PSI

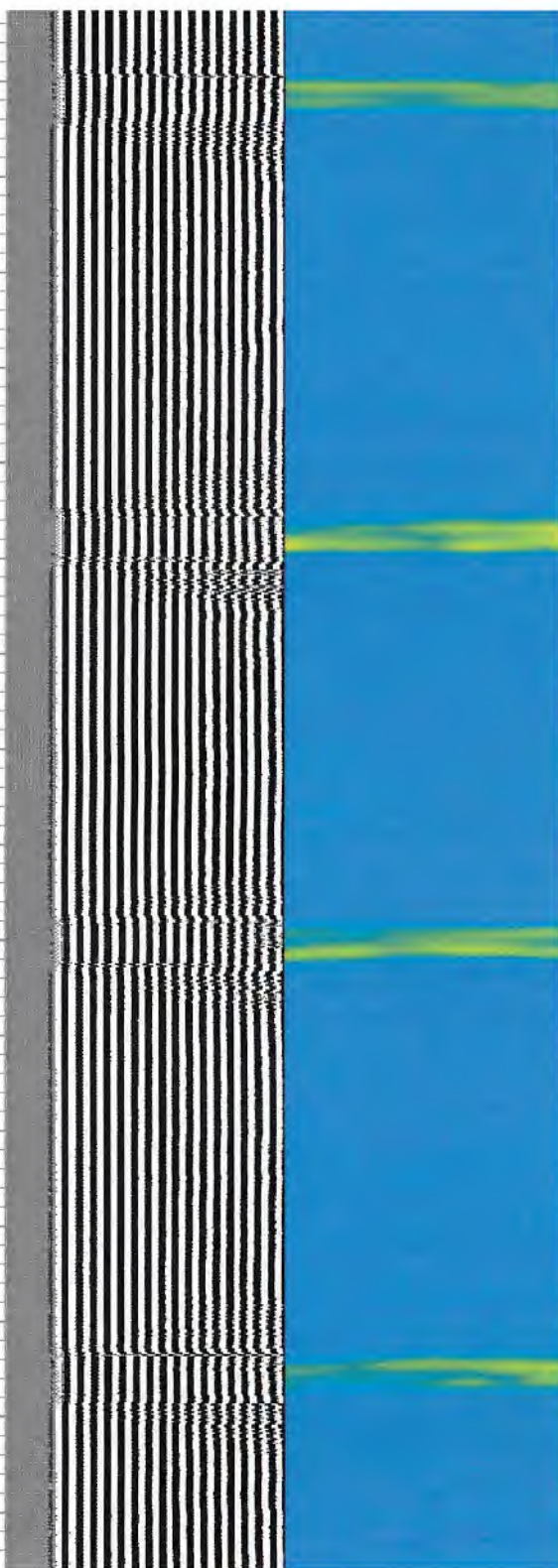
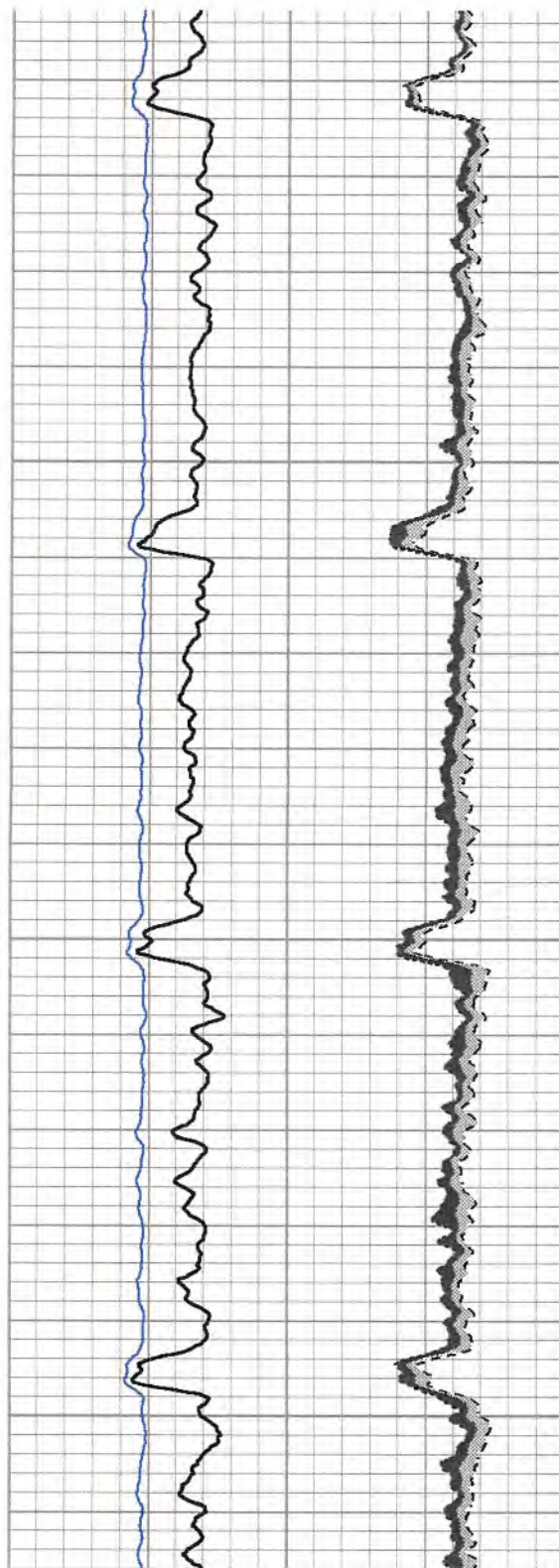
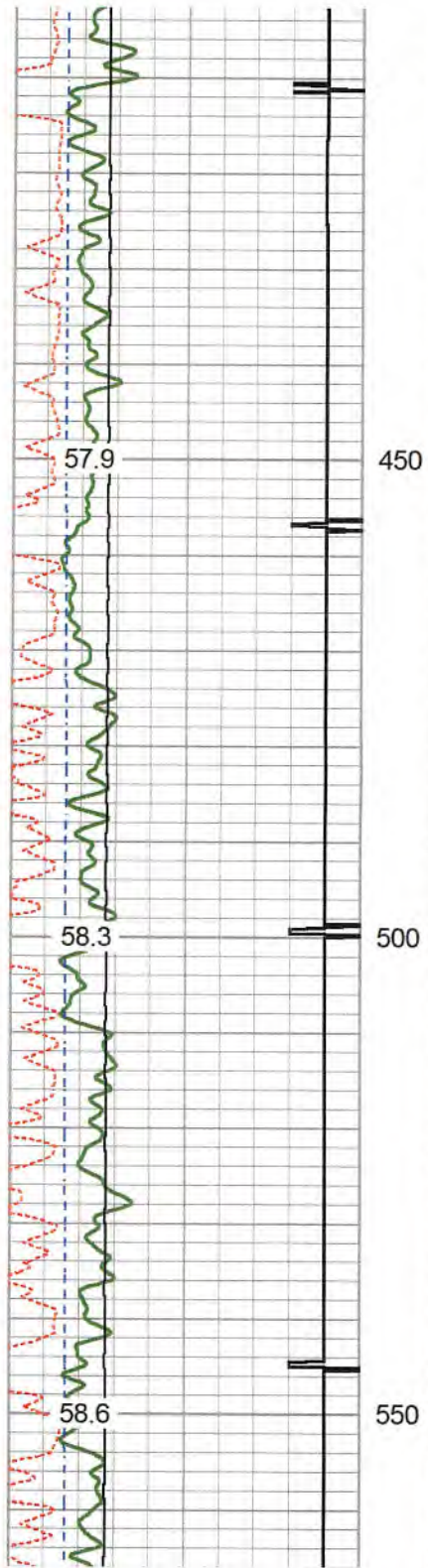
Database File wwest\antero_weekly_west_sandy_1h_rcbl_.db
Dataset Pathname sandy1h/run1/pass13.5
Presentation Format probe3
Dataset Creation Mon Apr 04 11:25:17 2022
Charted by Depth in Feet scaled 1:240

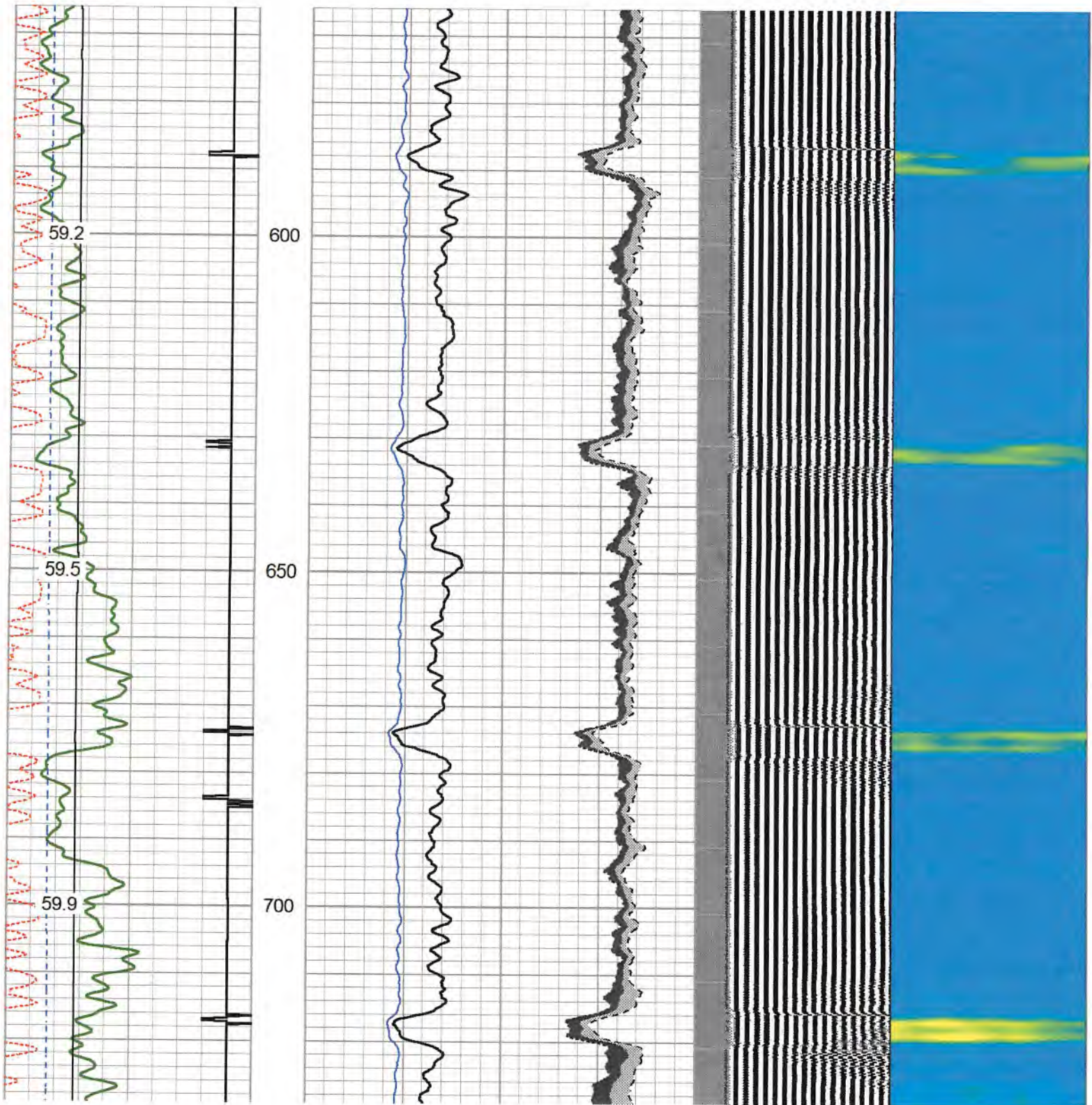
264	Travel Time (usec)	164	0	Amplitude (mV)	100	0	AMP	MIN	150	Variable Density	1	Cement Map	8
0	Gamma Ray (GAPI)	150	1	BONDIX	0	0	AMP	MAX	150	200 (usec)	1200		
	Line Speed					0	AMP	AVG	150				
-200	(ft/min)	200											
0	Line Tension (lb)	2000											
9	CCL\$2	-1											
GCT_Temp	(degF)												

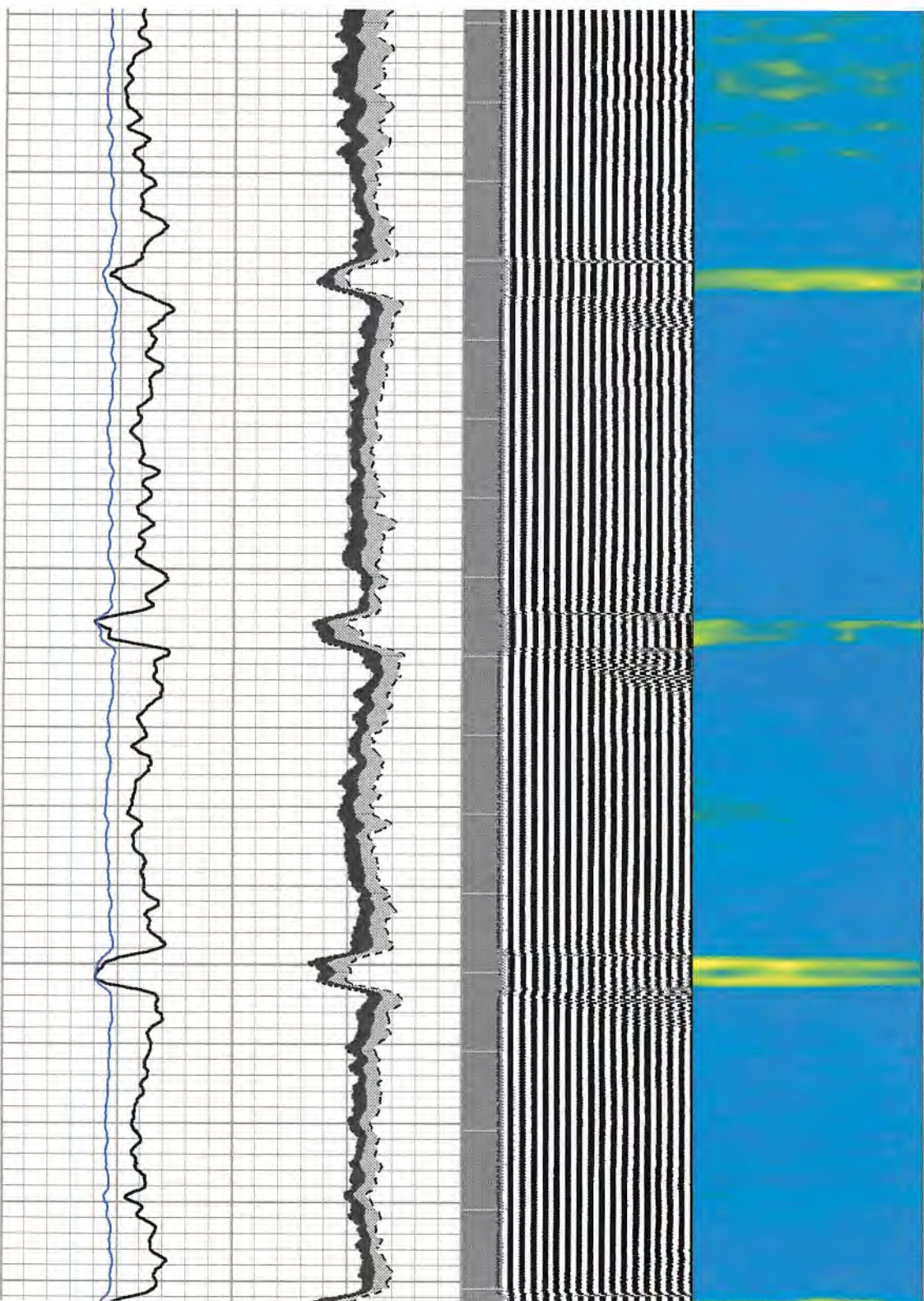
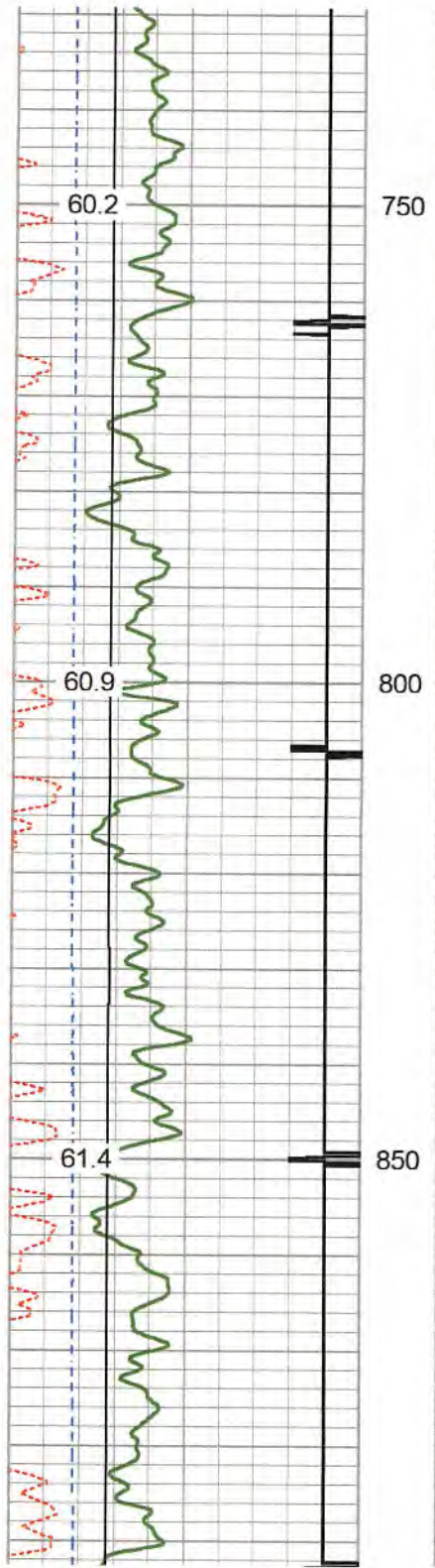


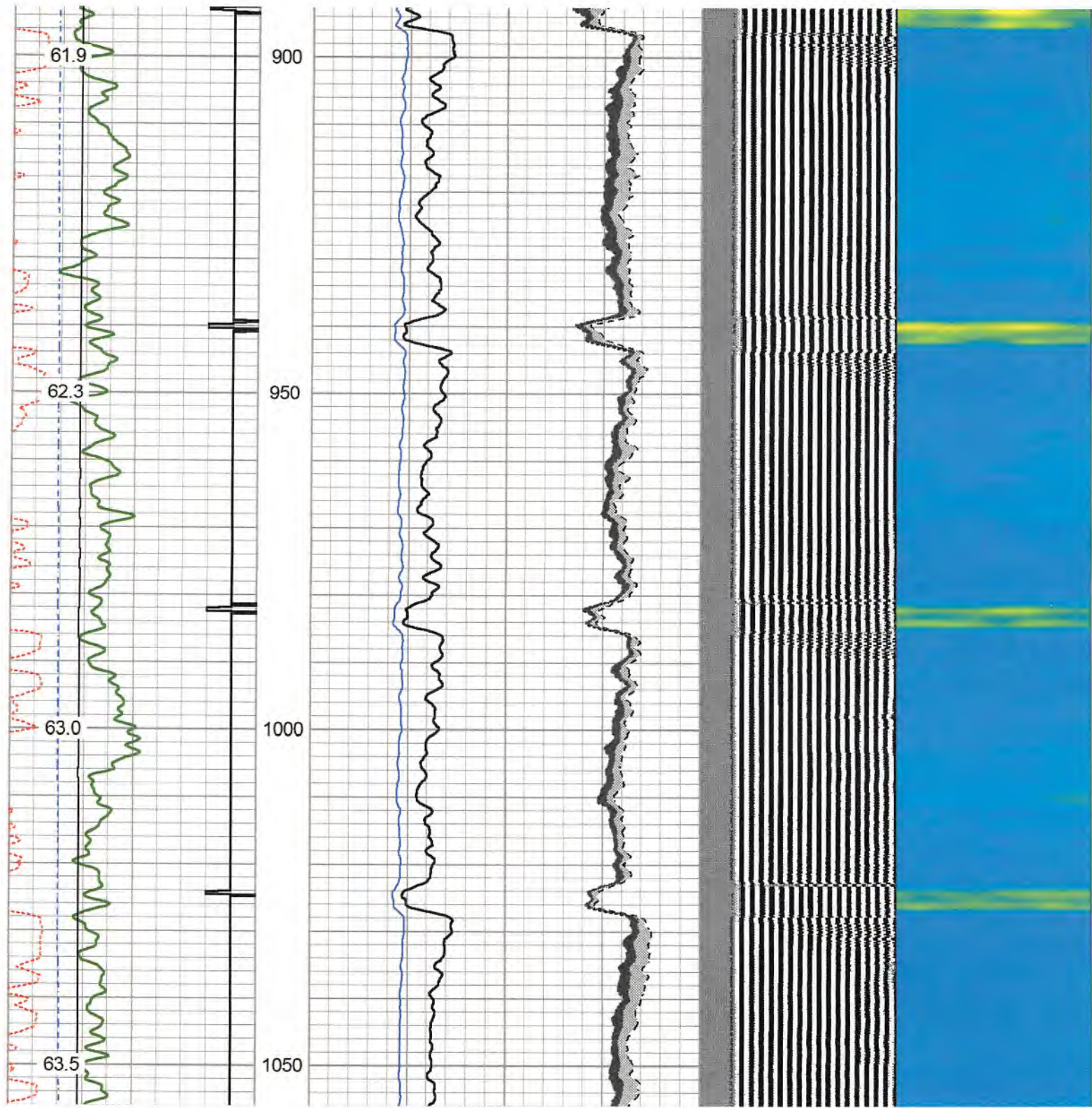


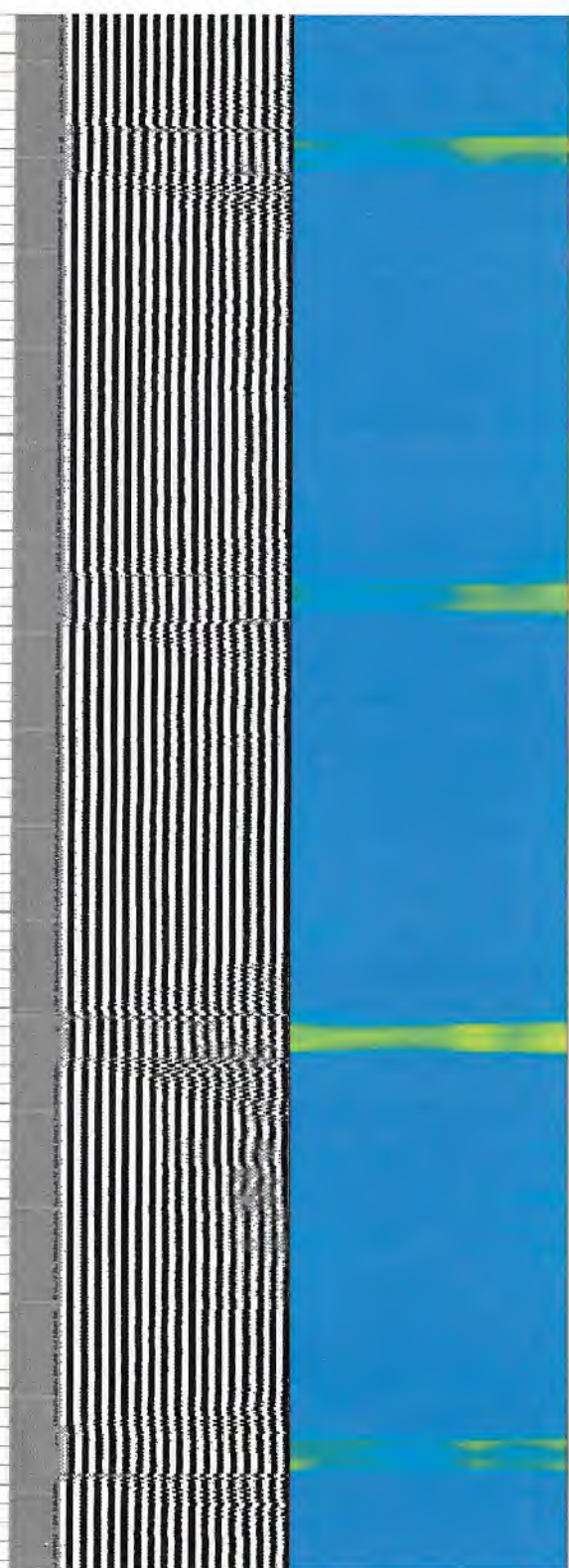
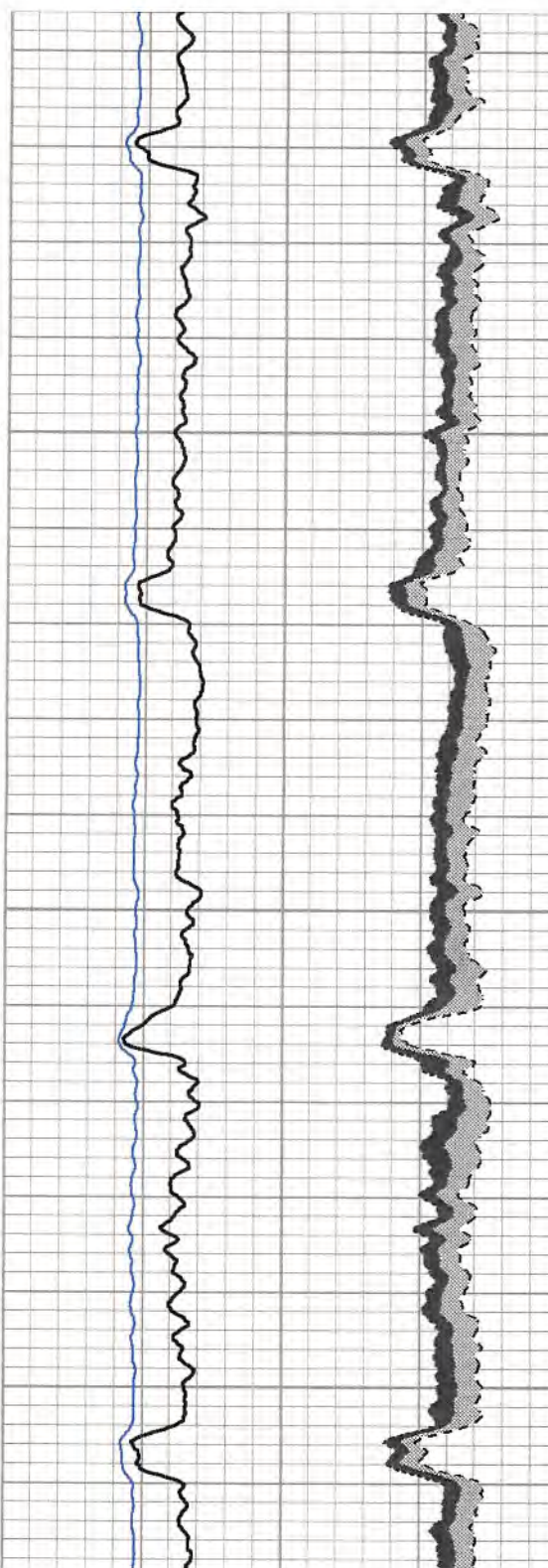
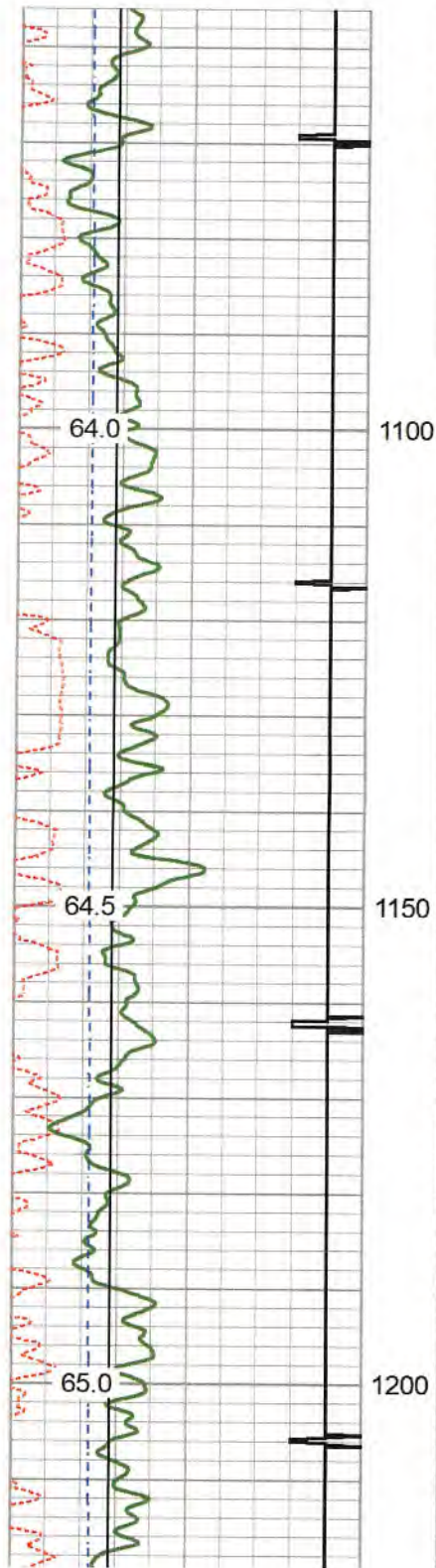


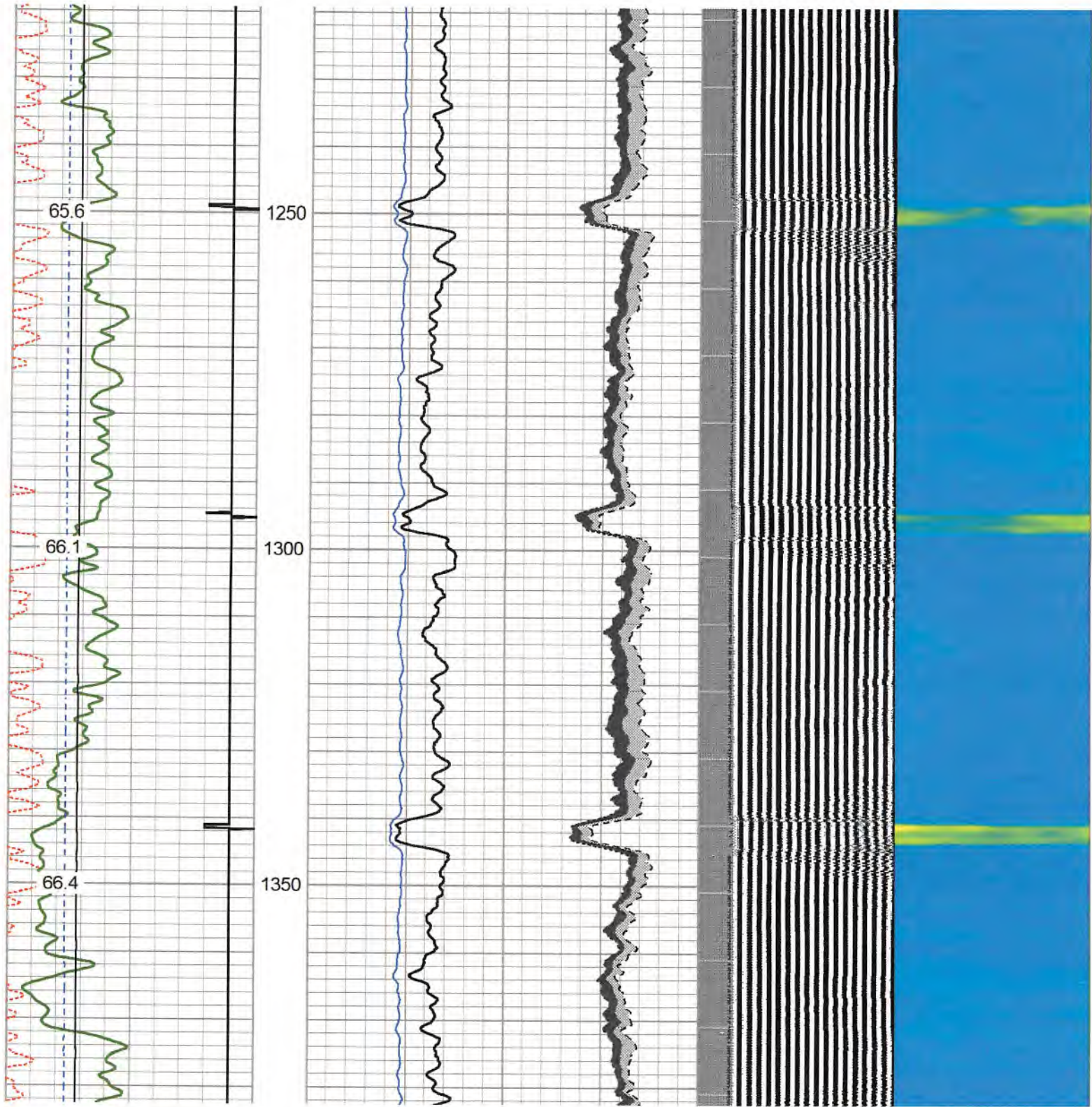


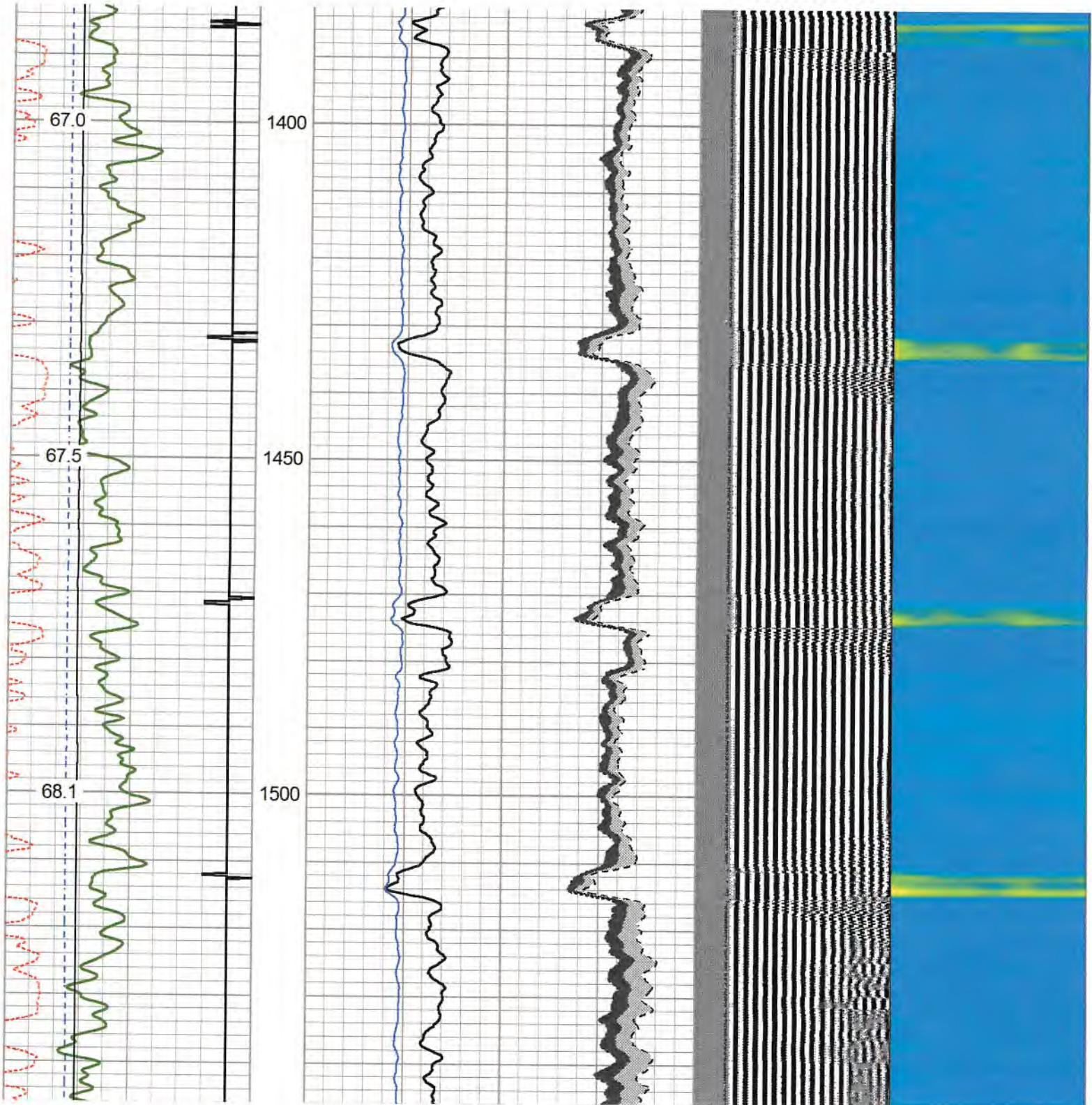


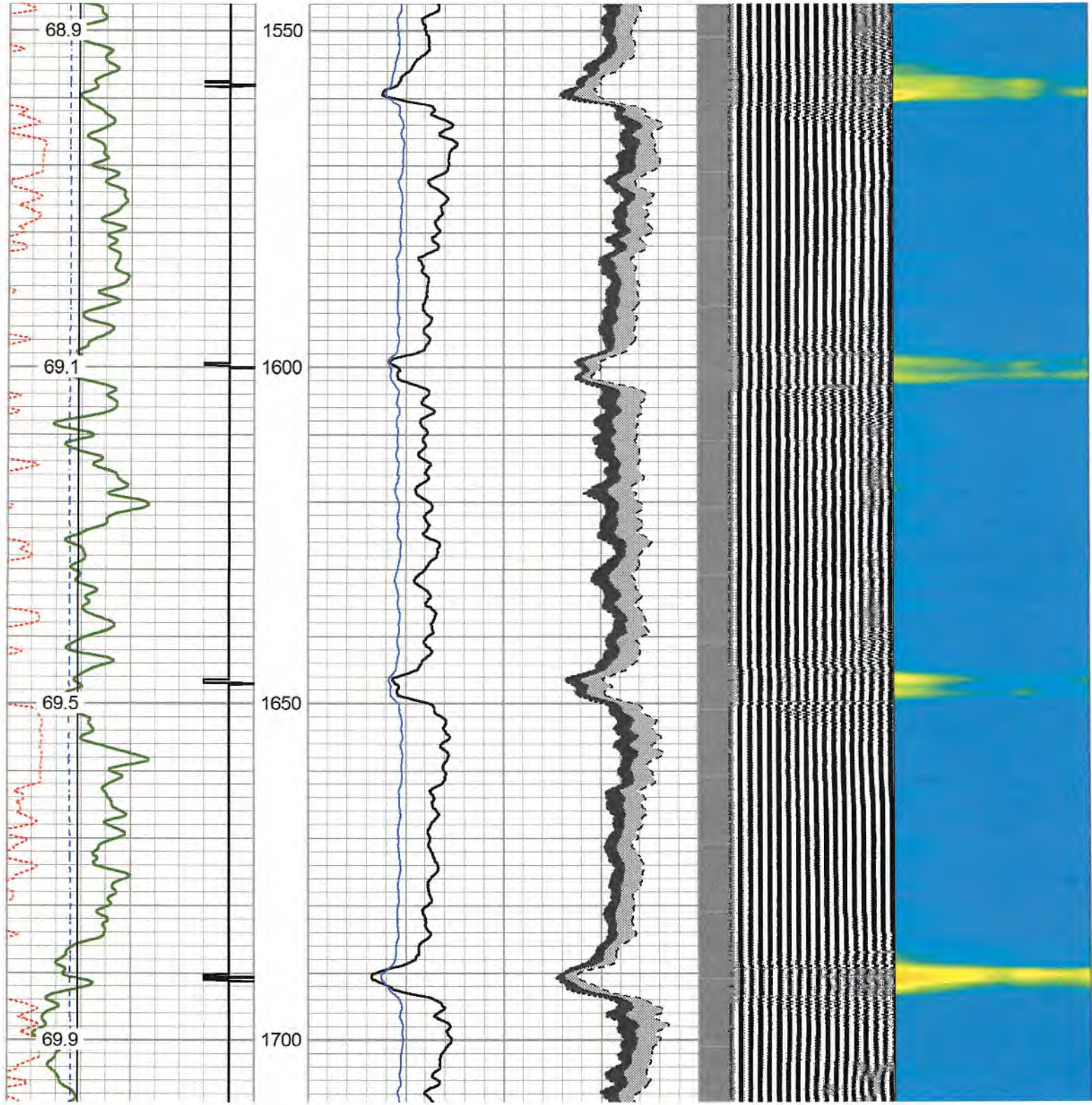


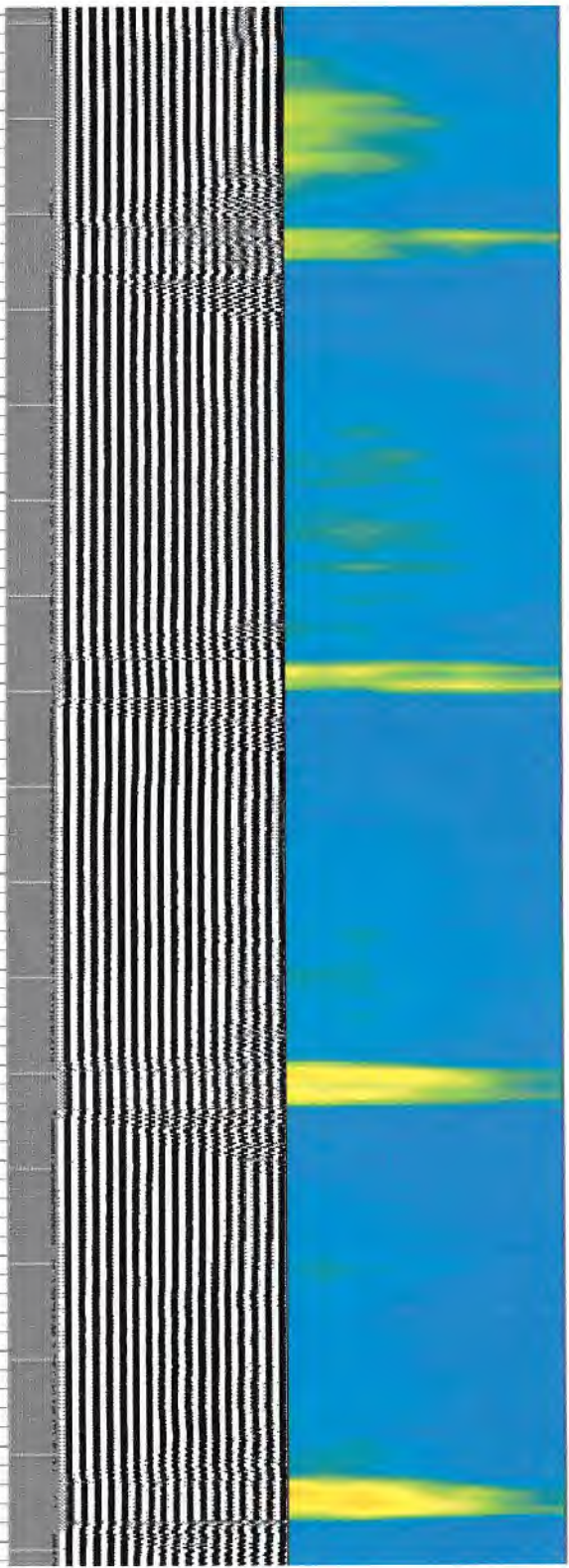
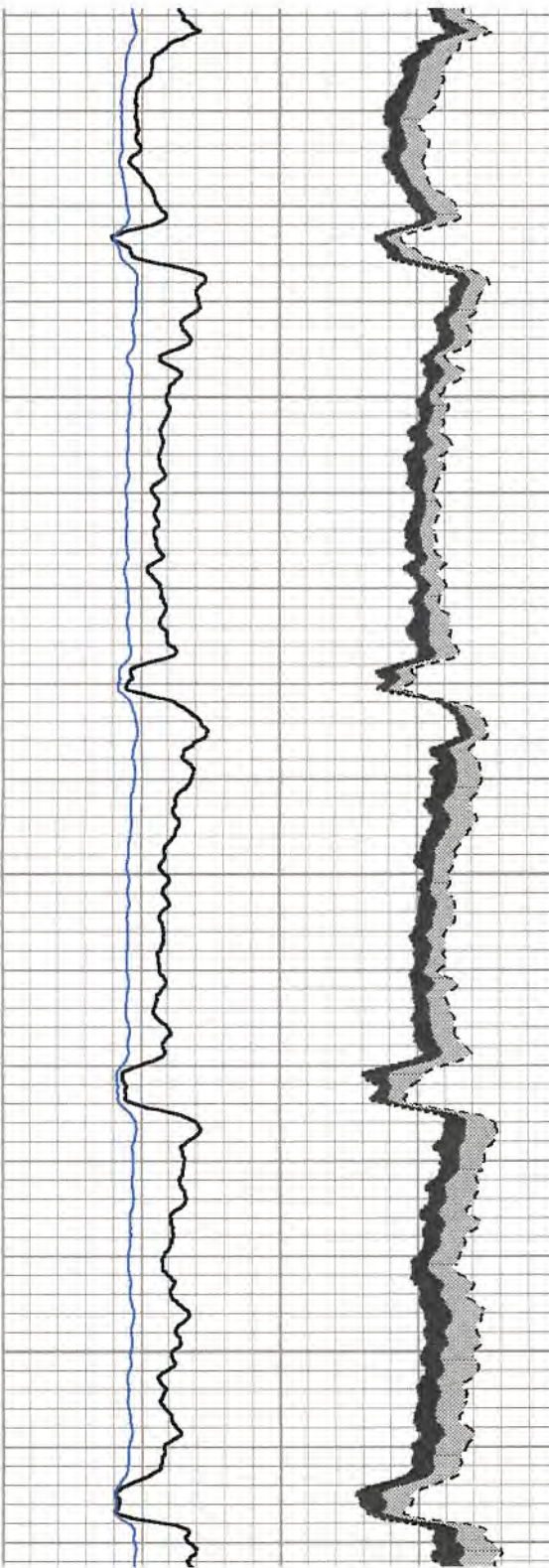
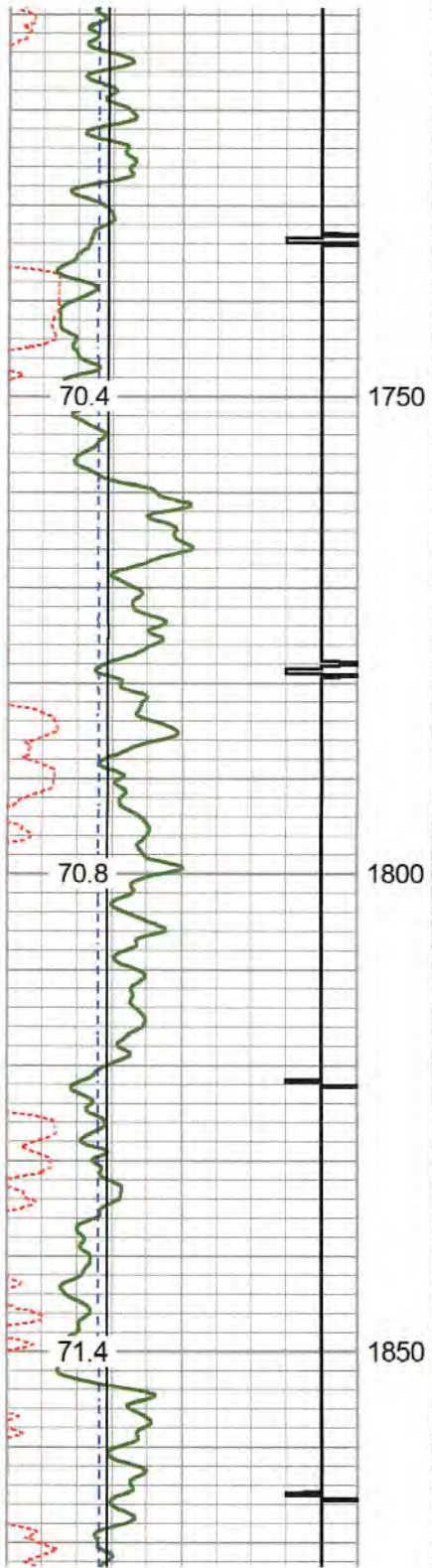


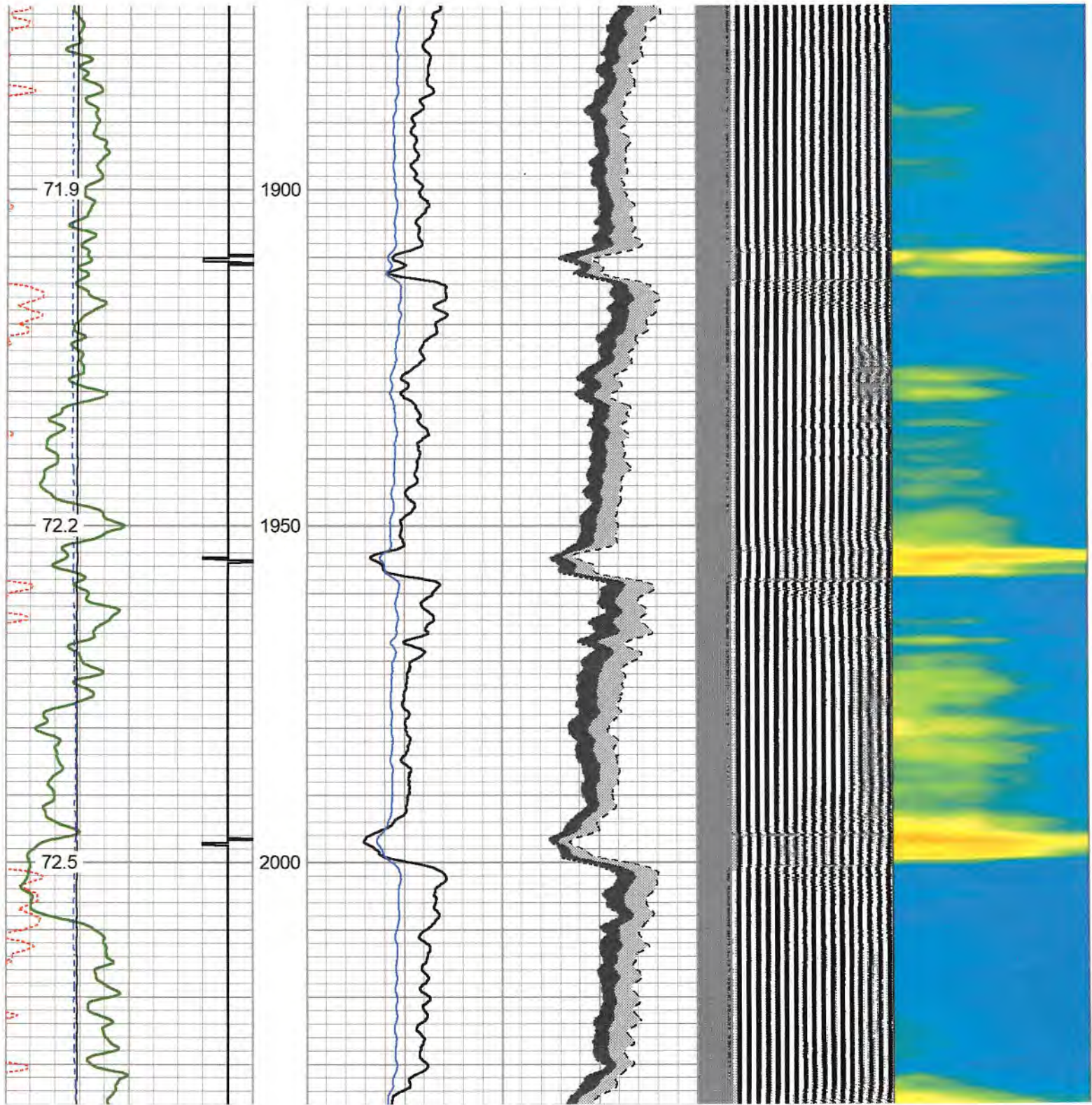


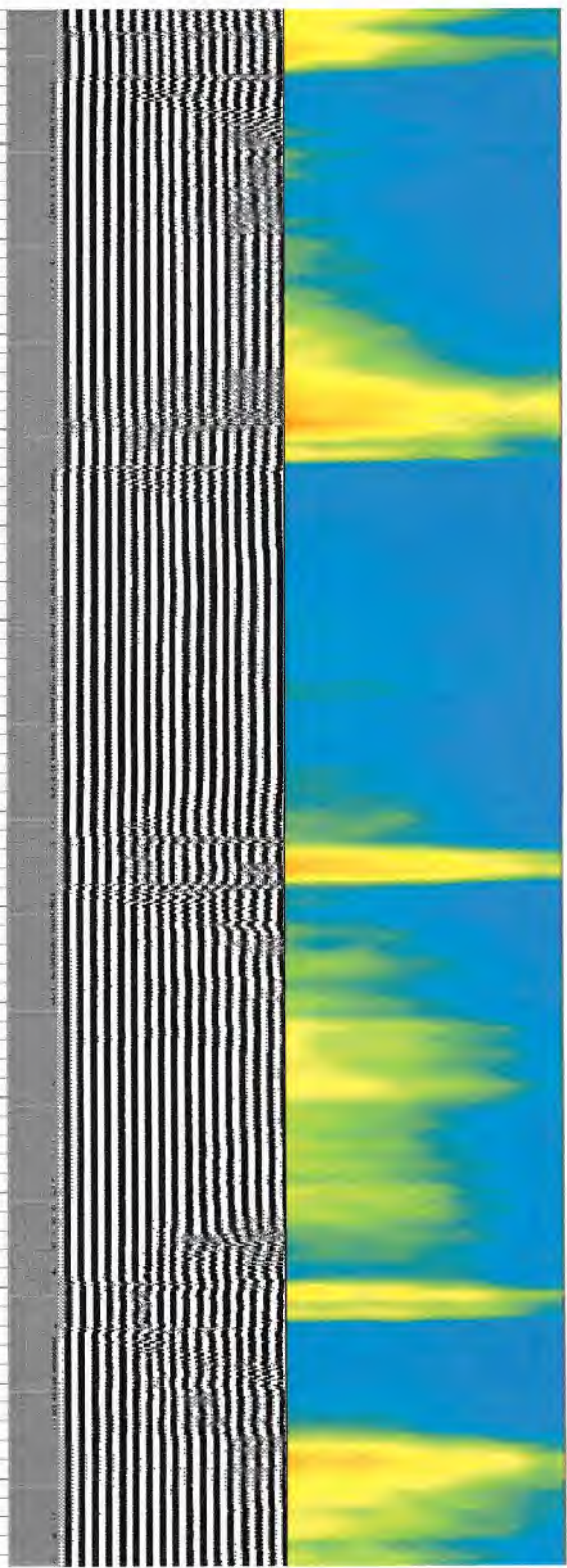
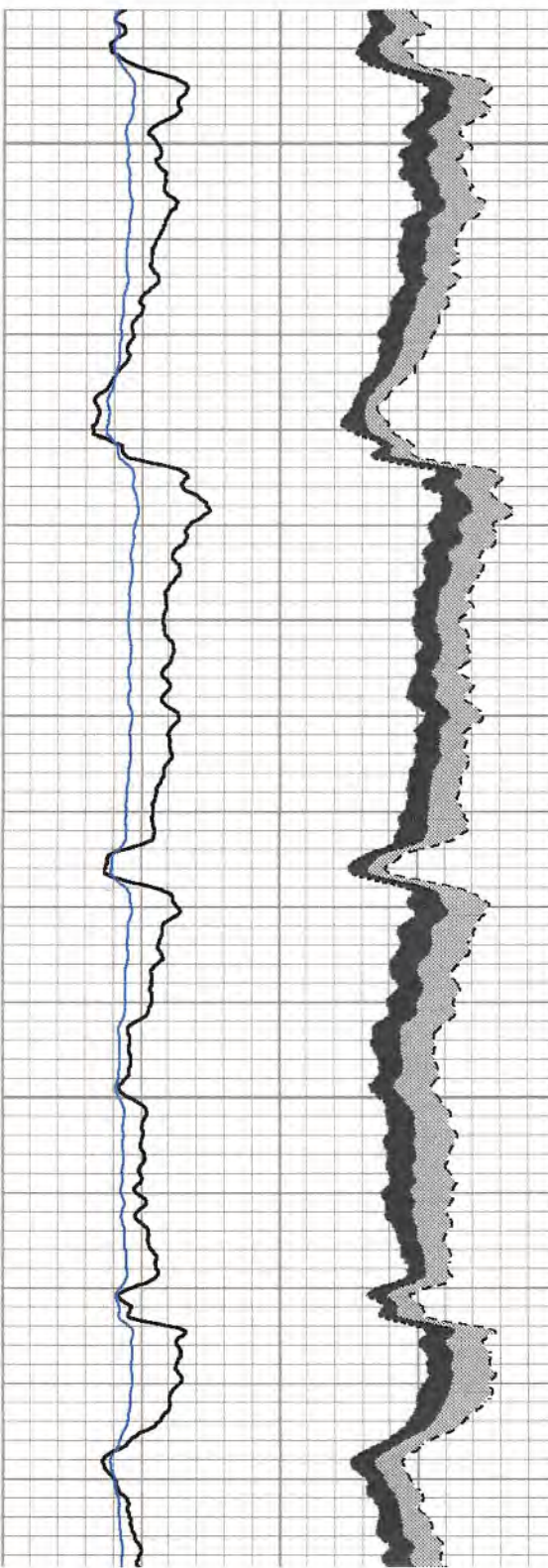
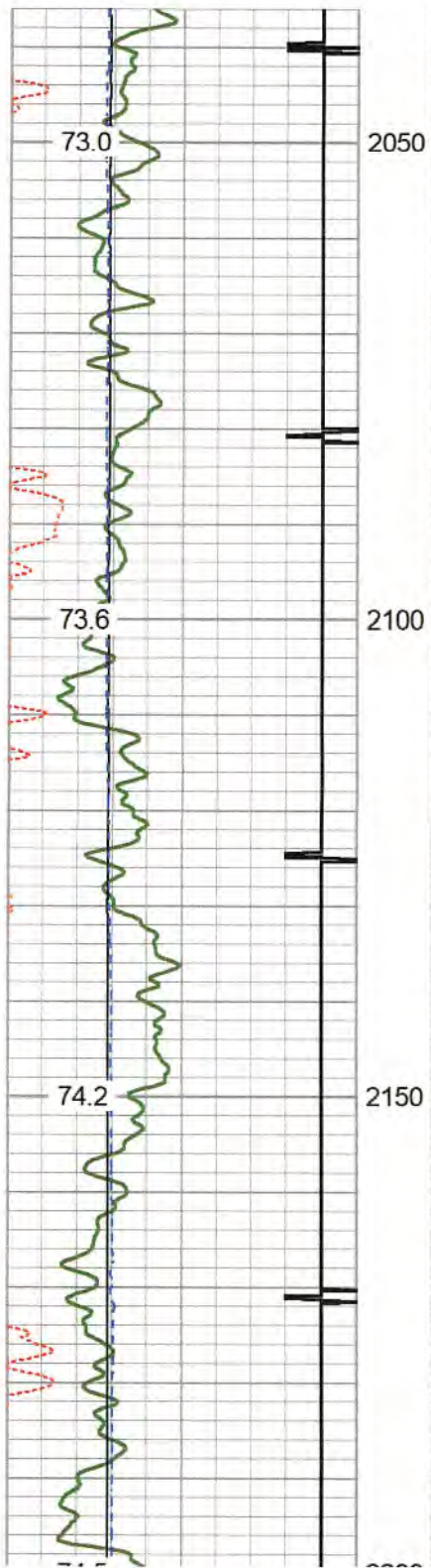


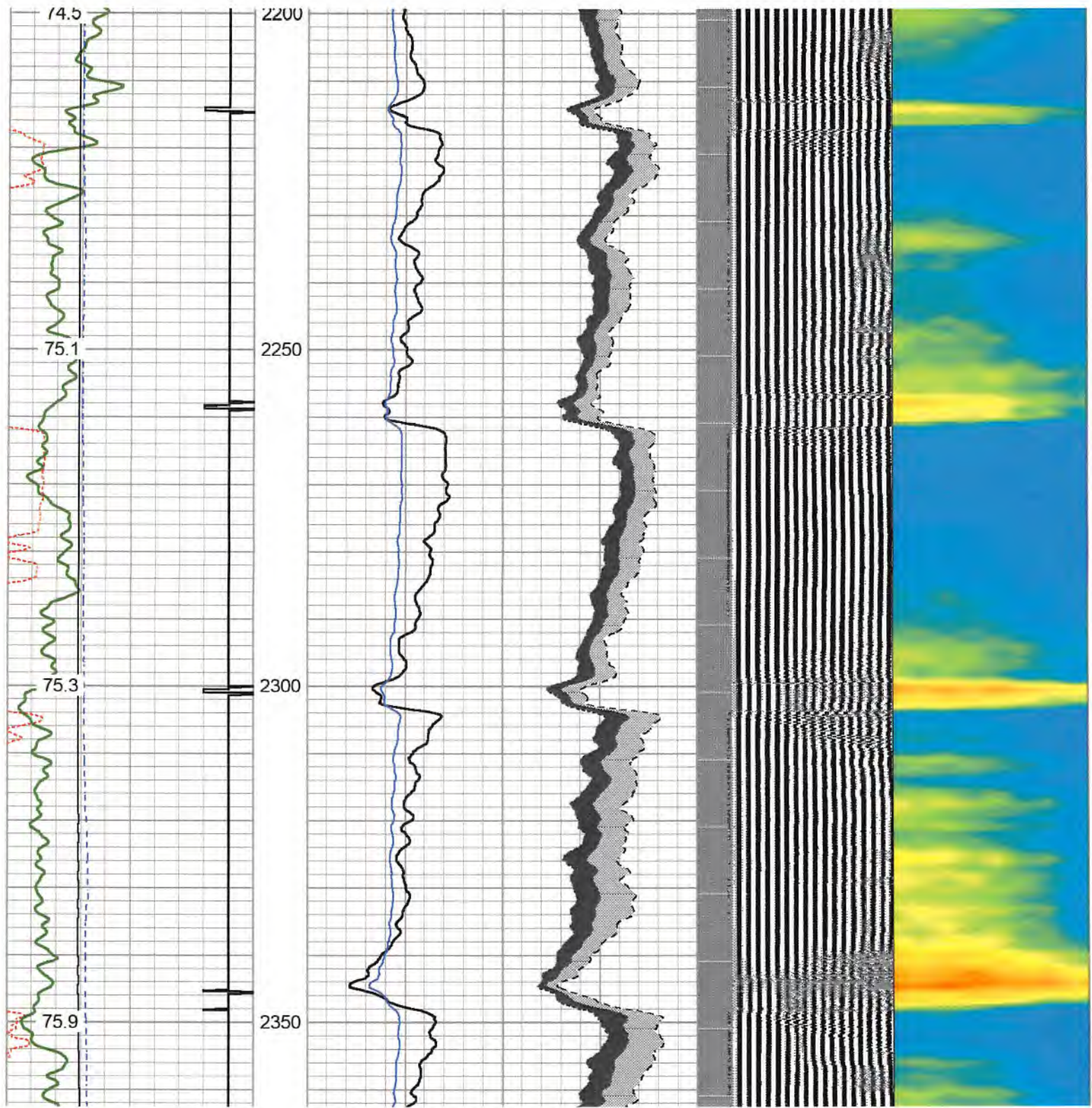


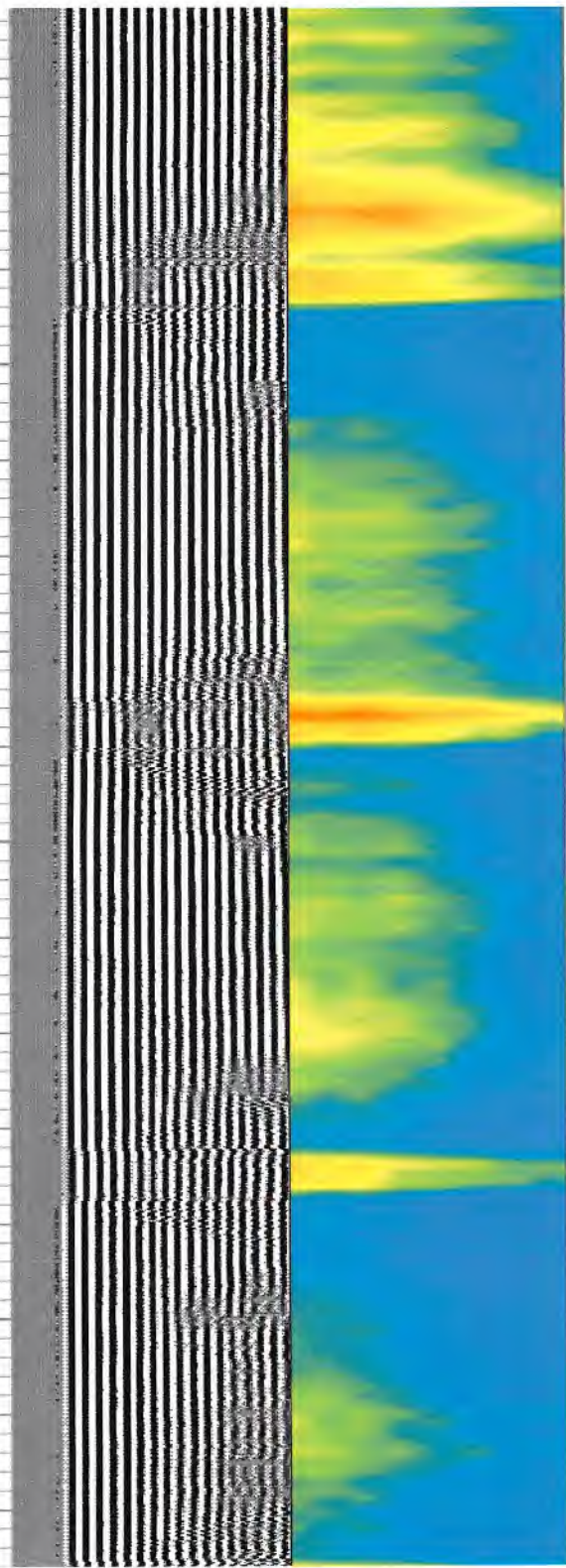
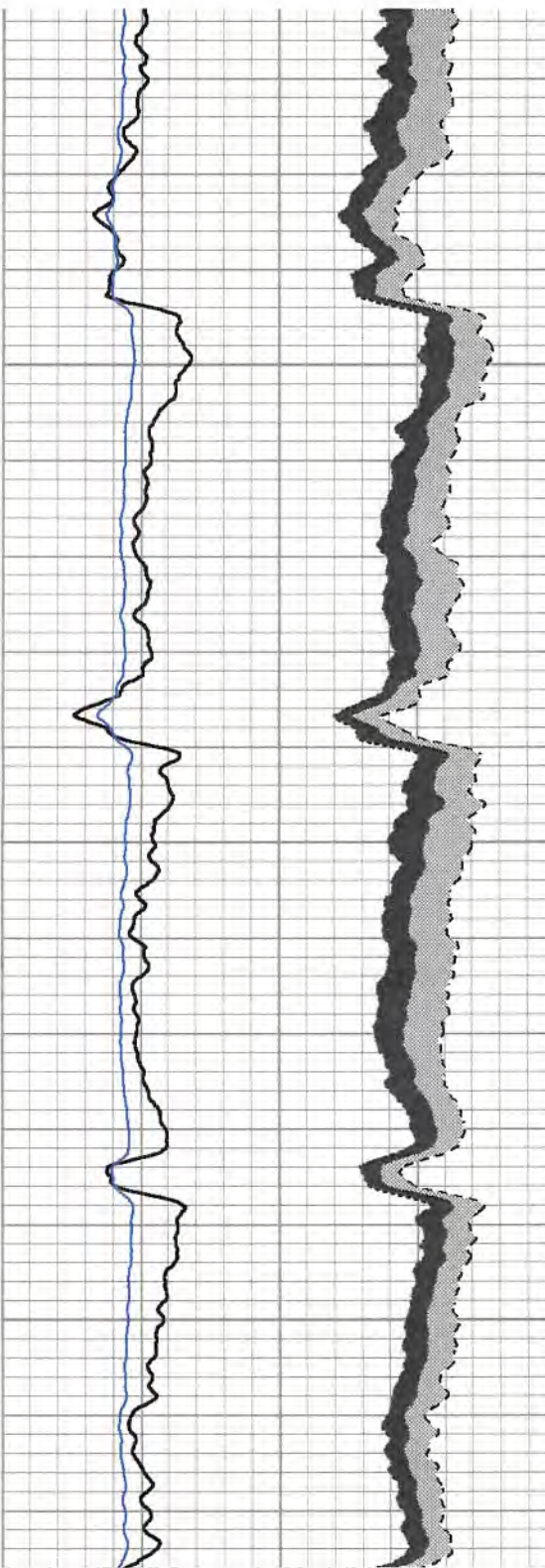
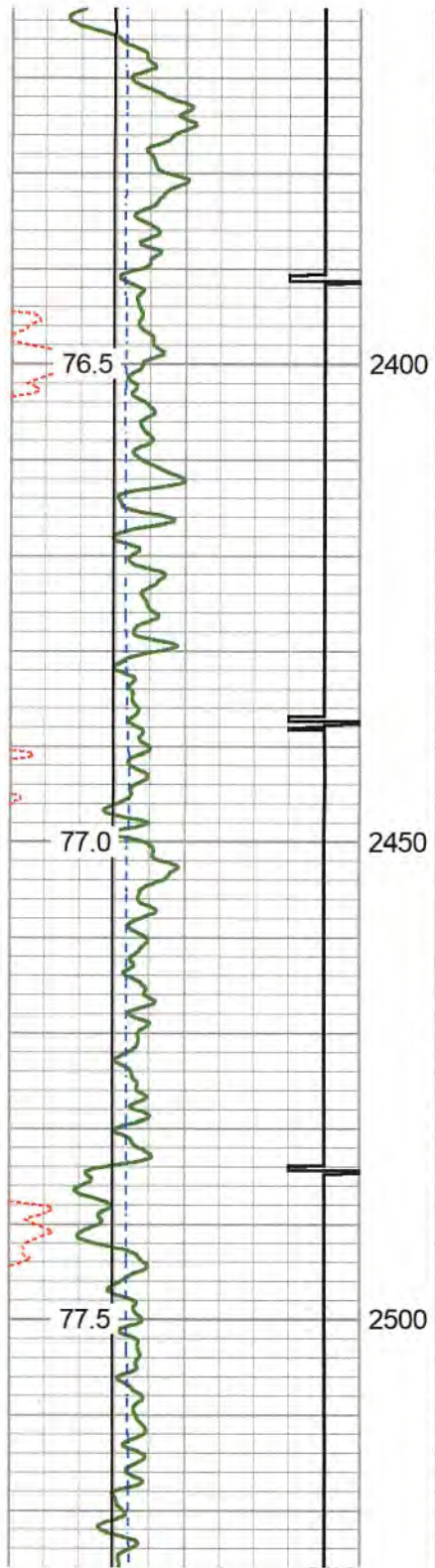


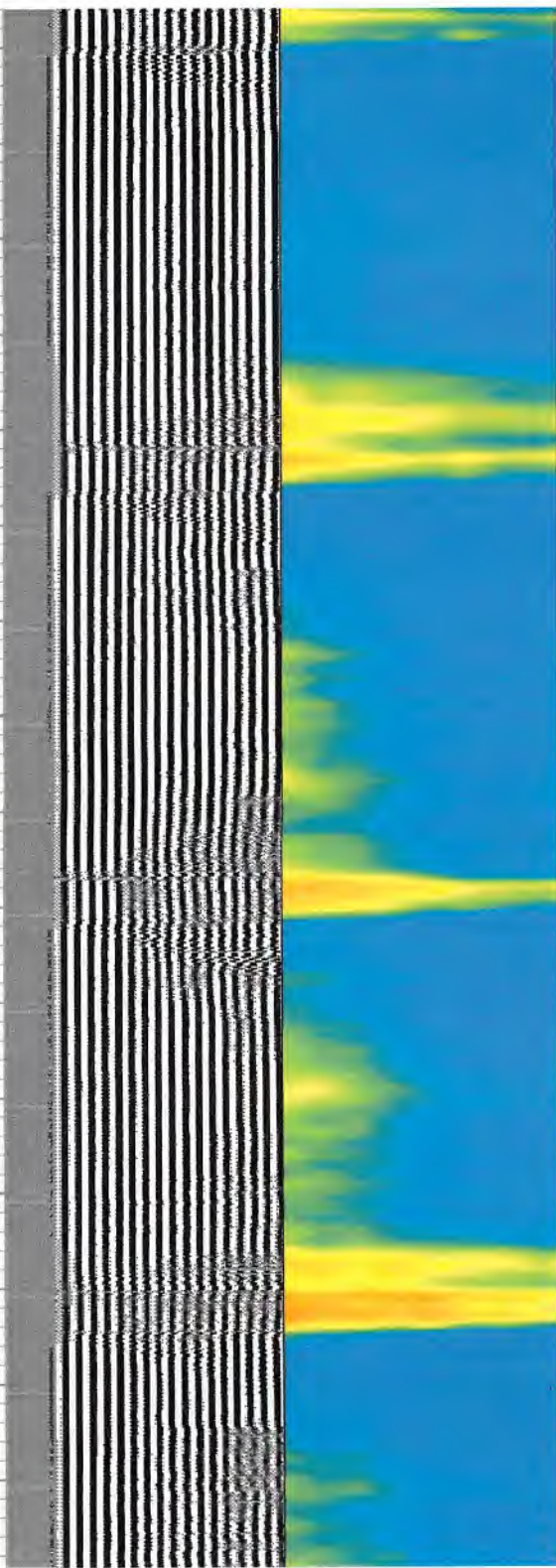
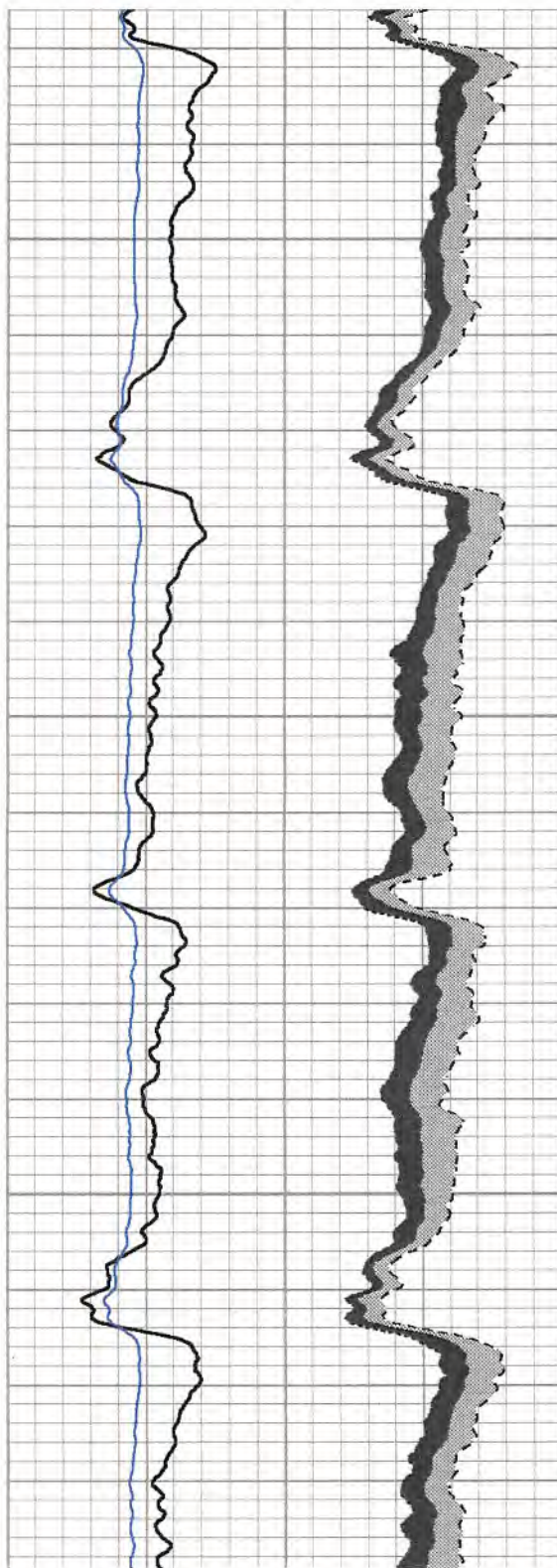
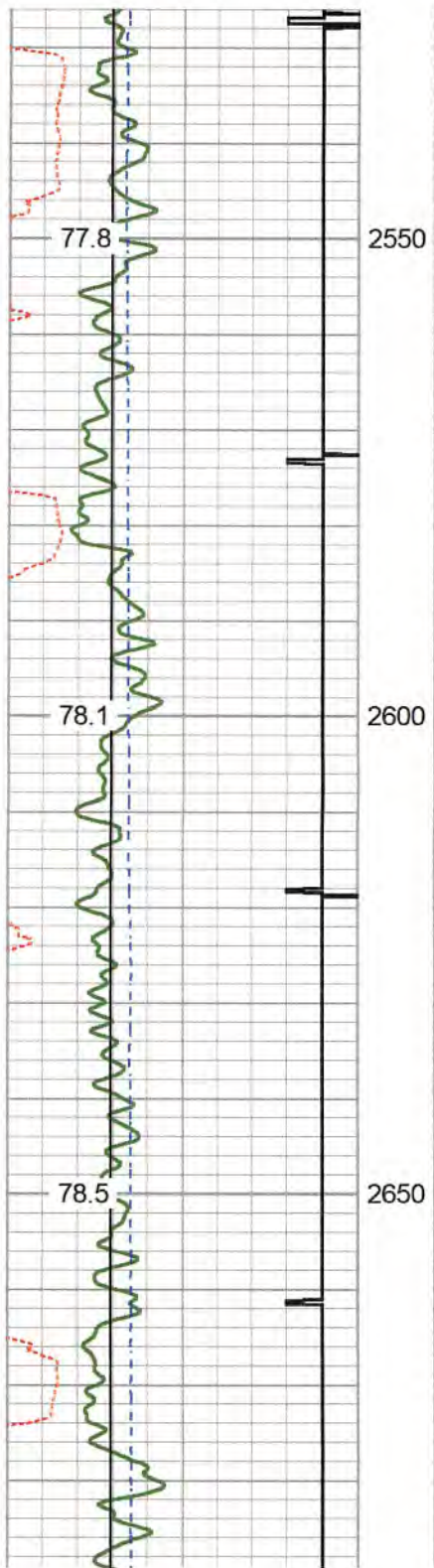


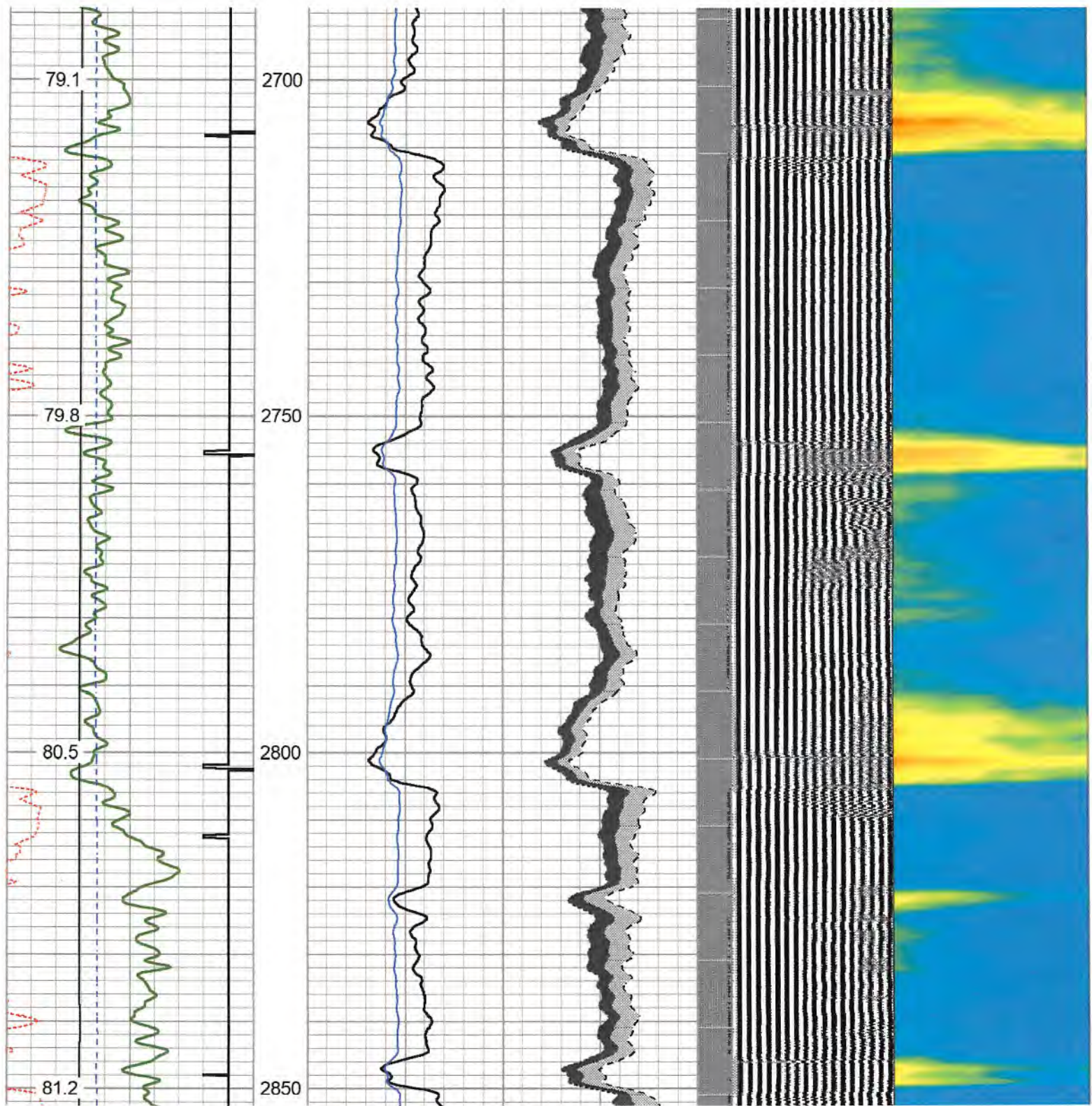


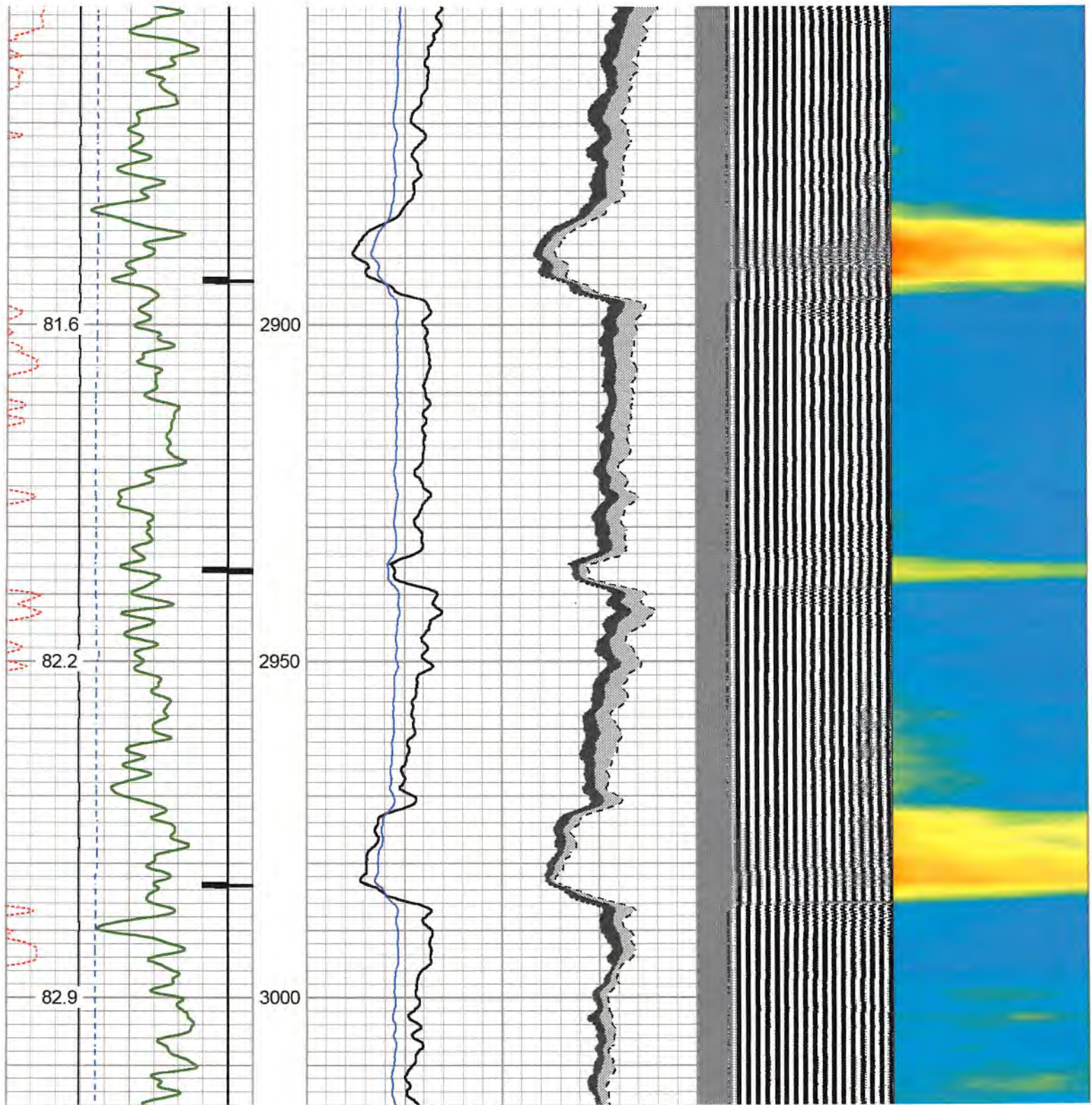


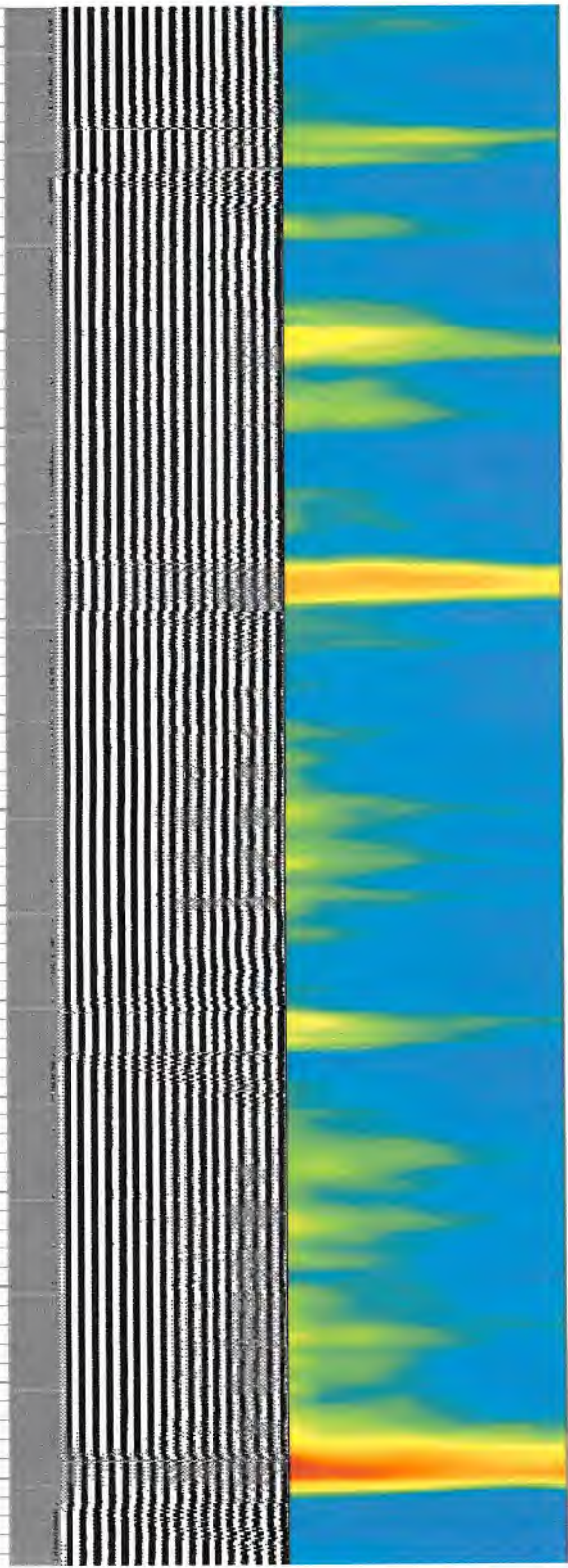
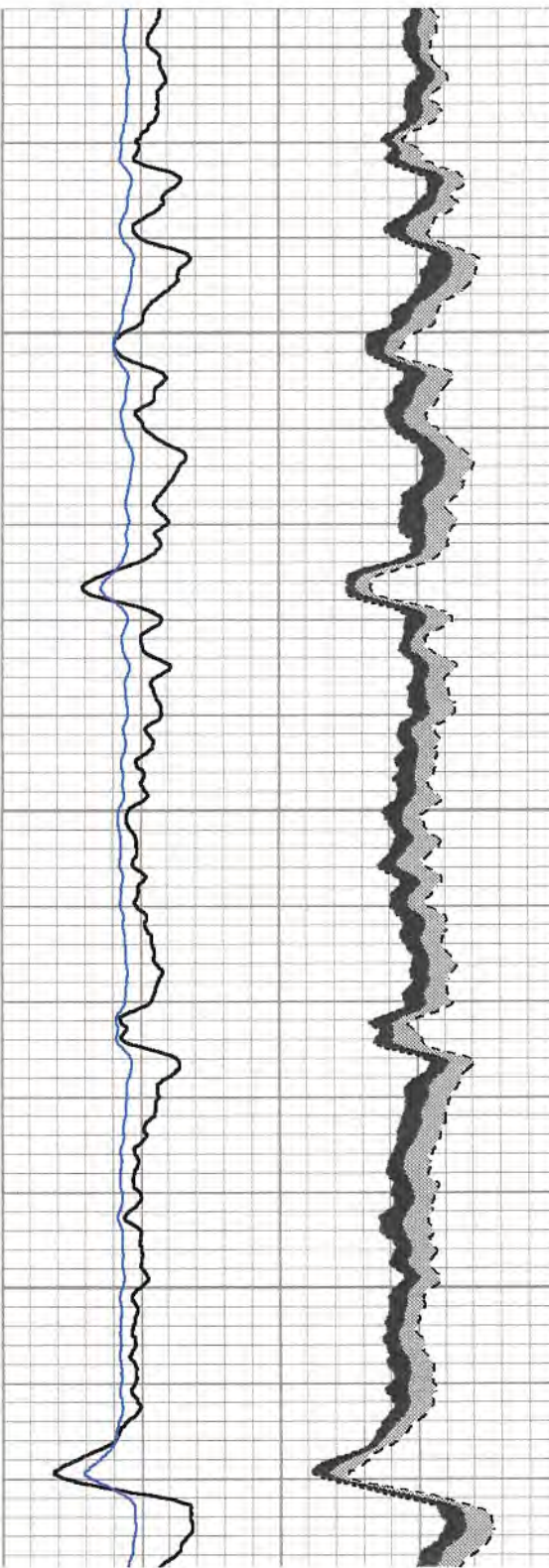
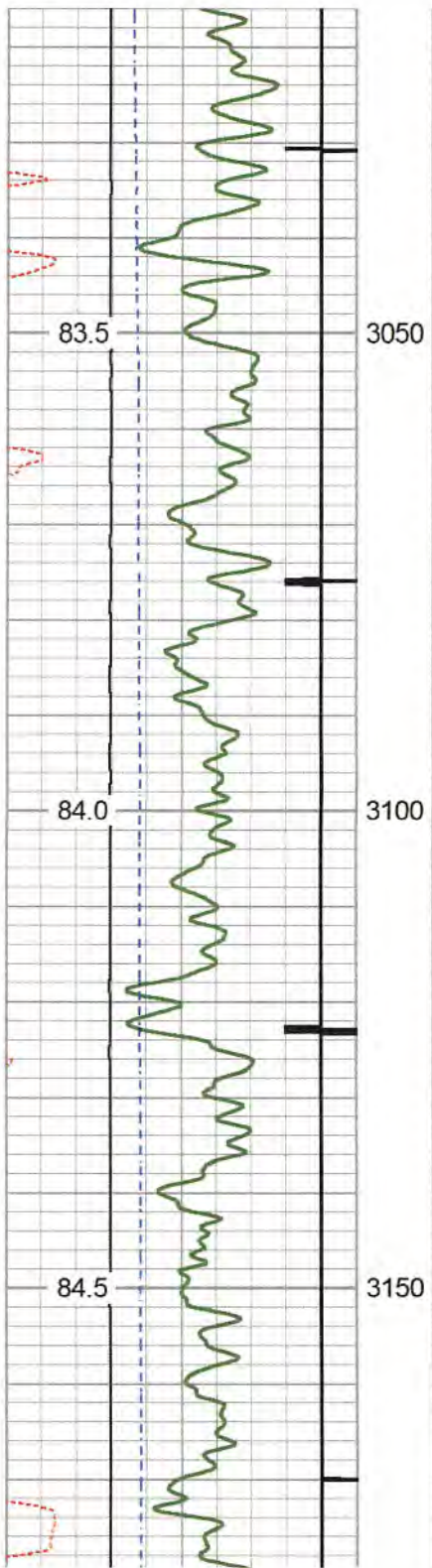


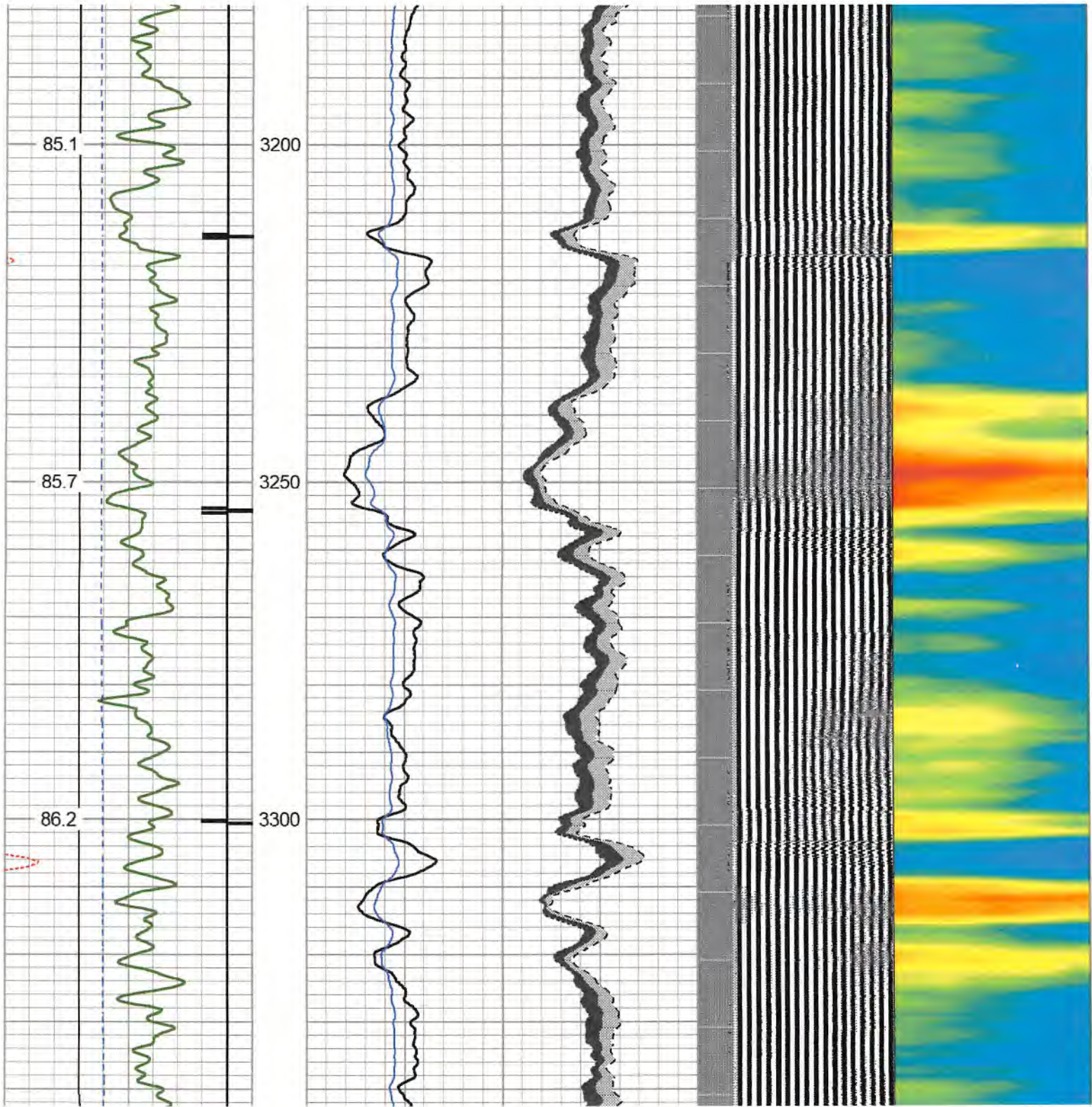


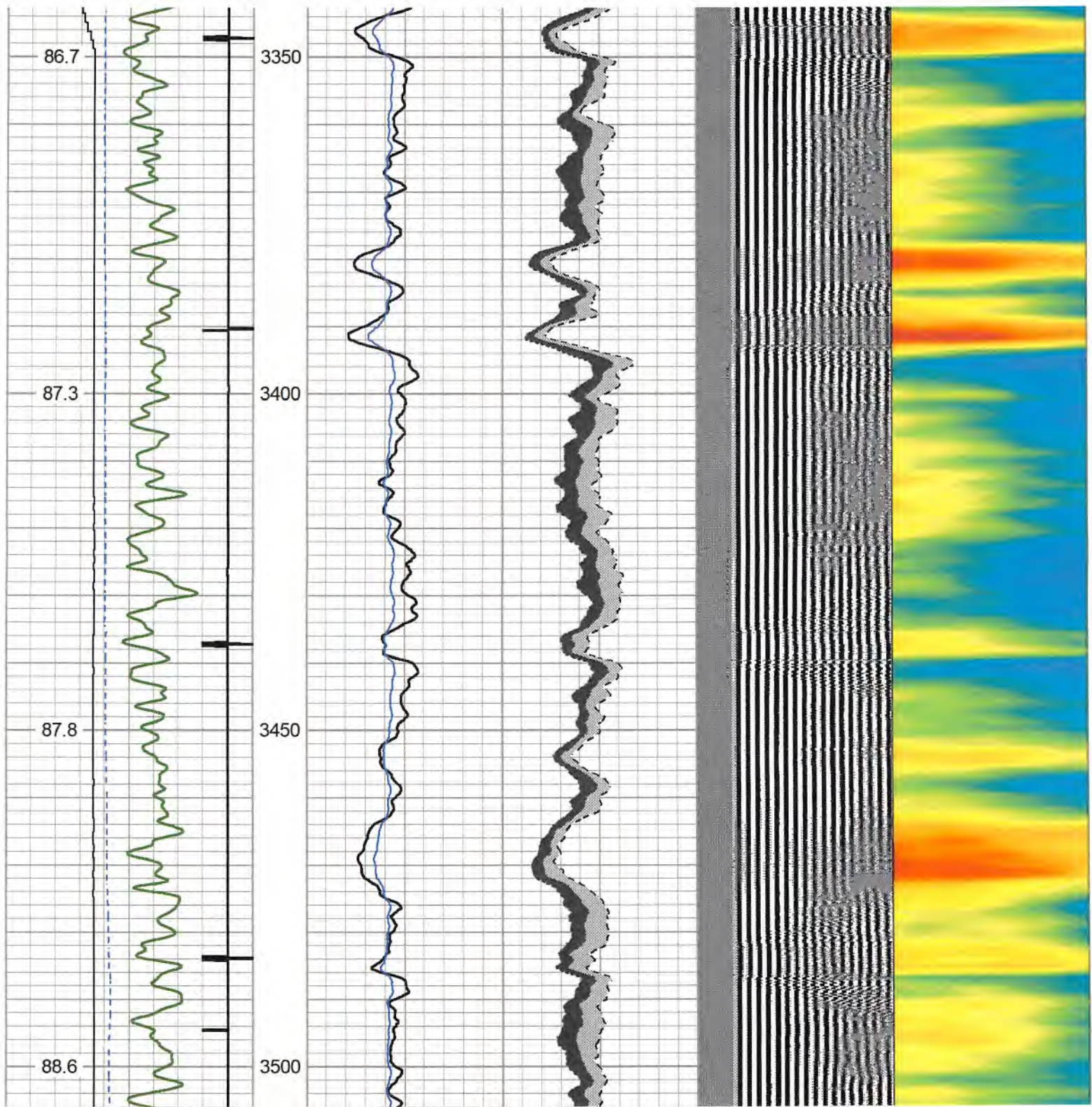


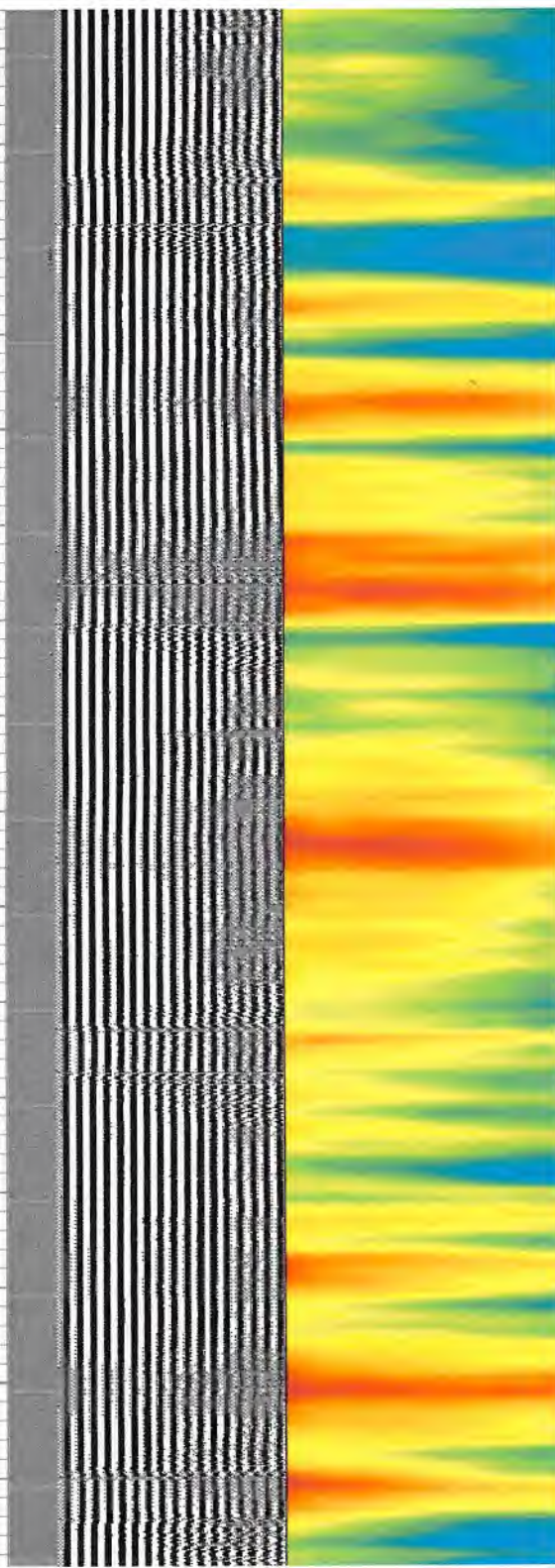
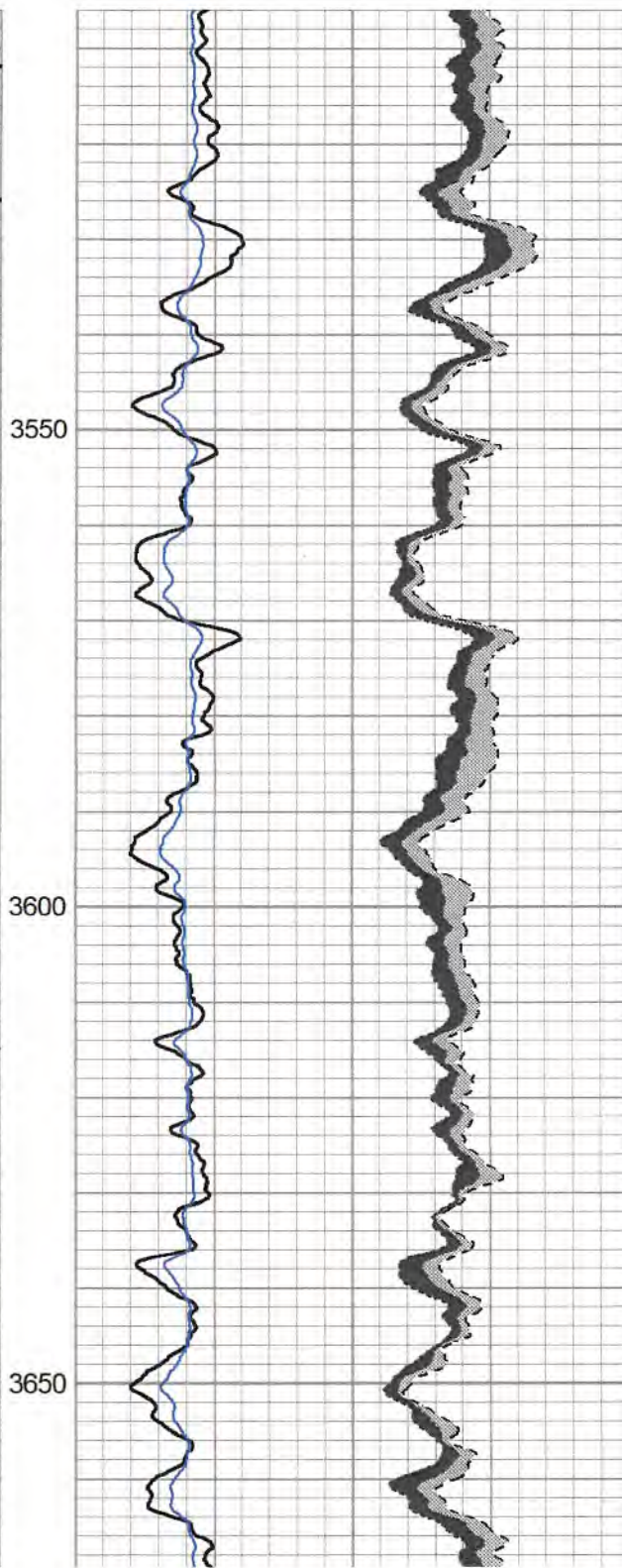
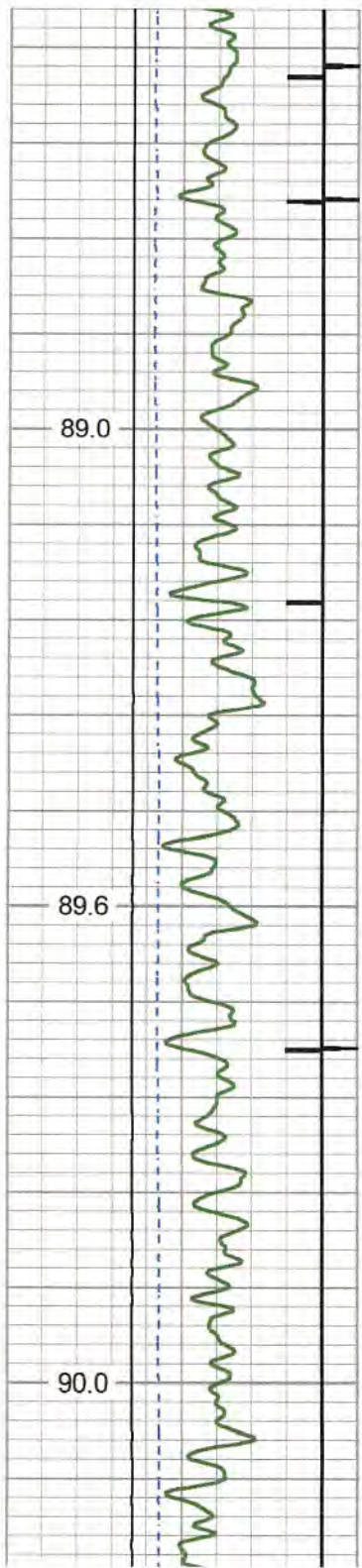


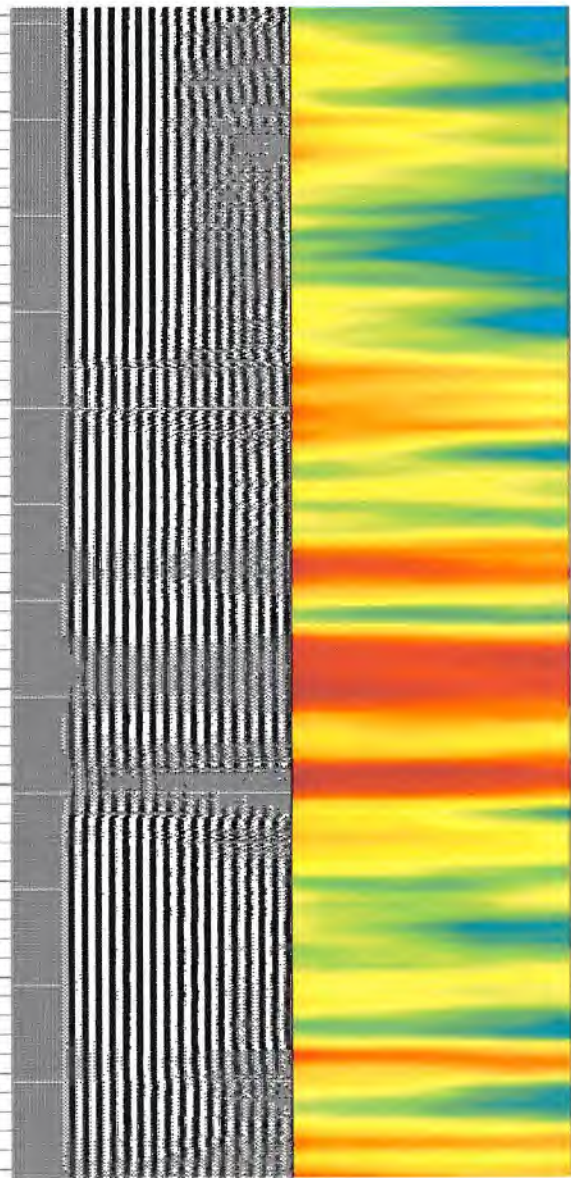
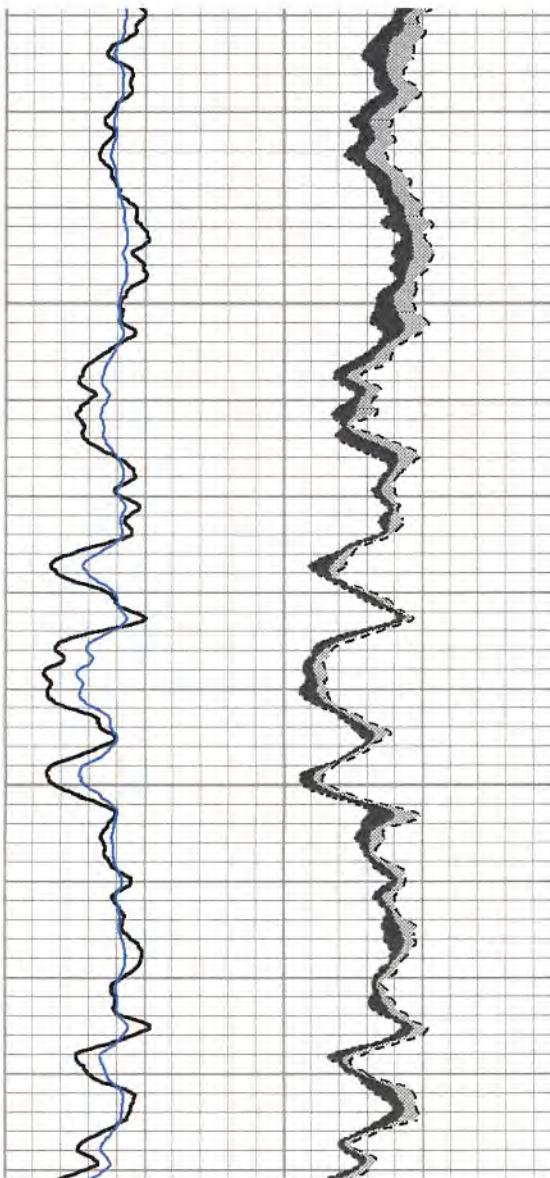
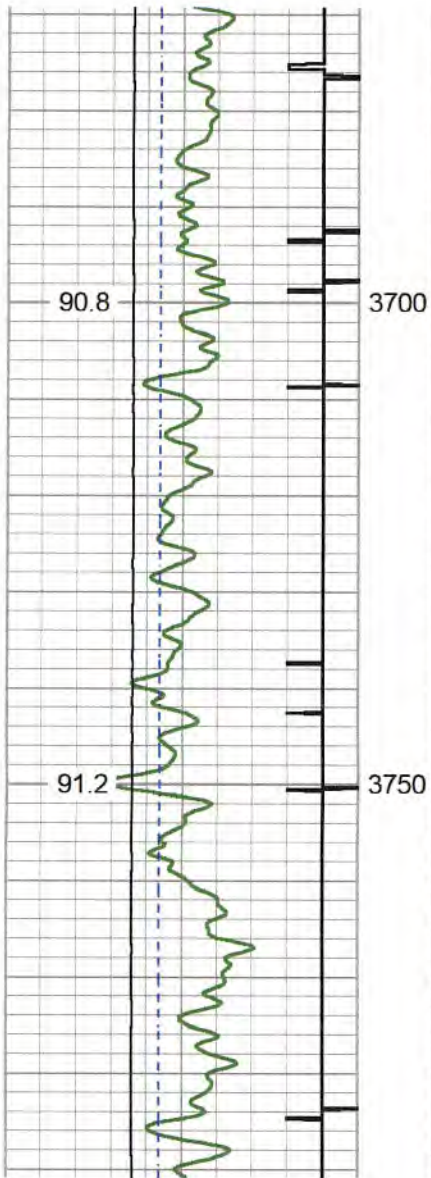


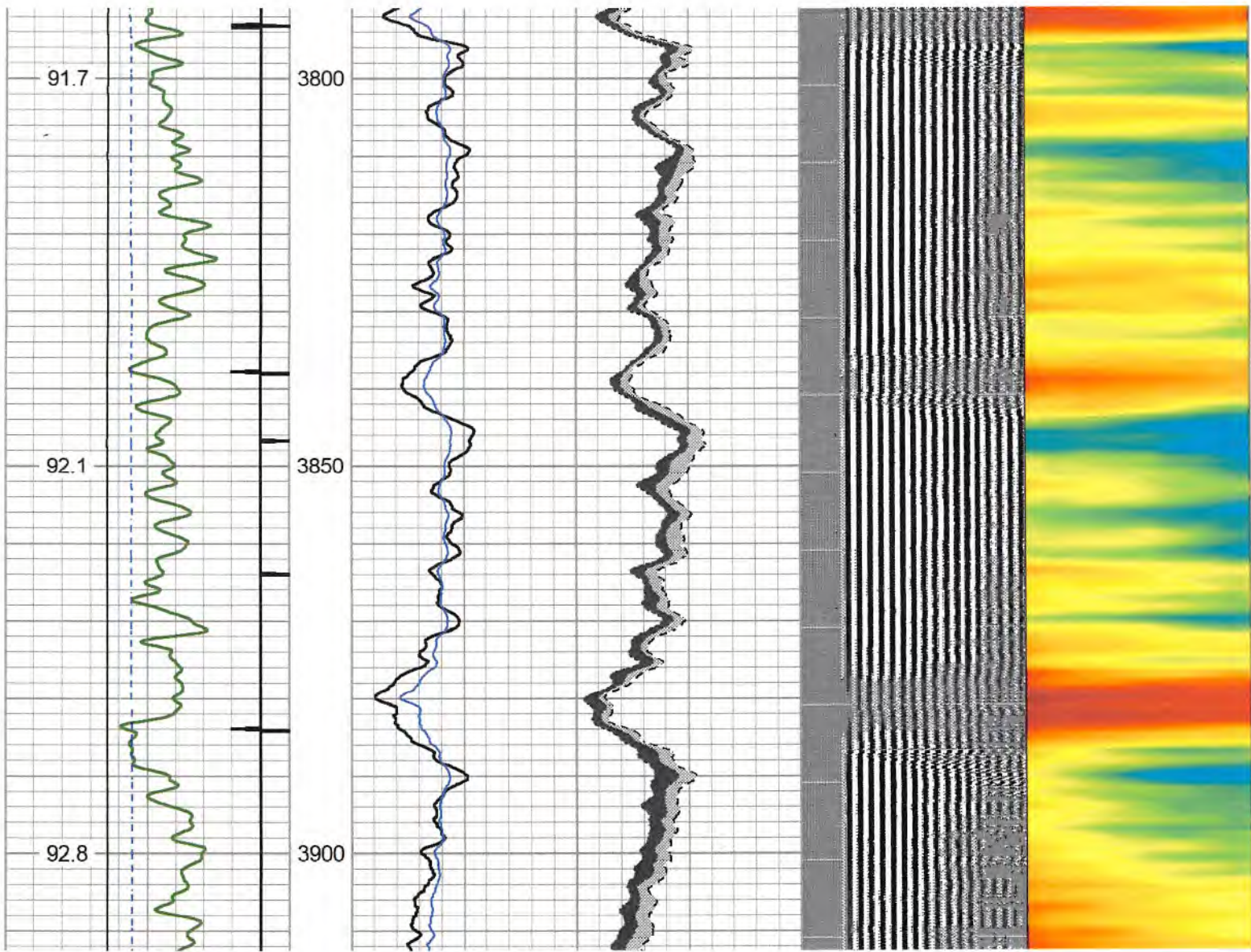


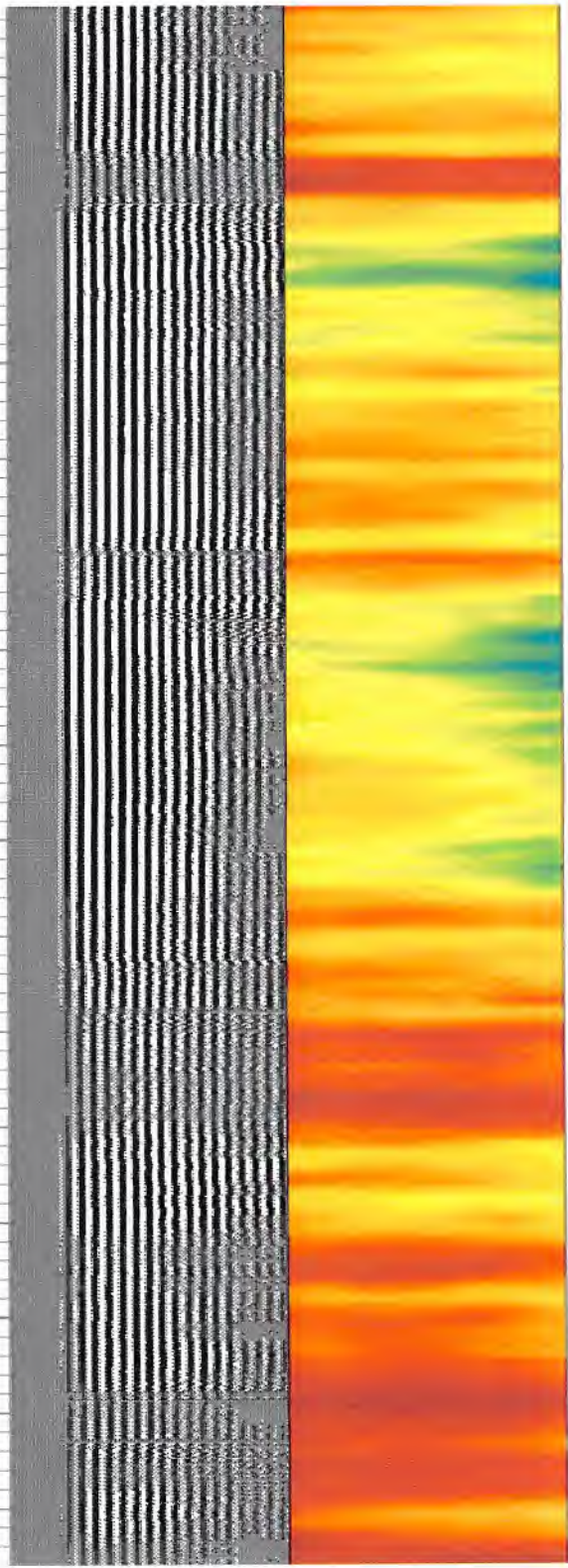
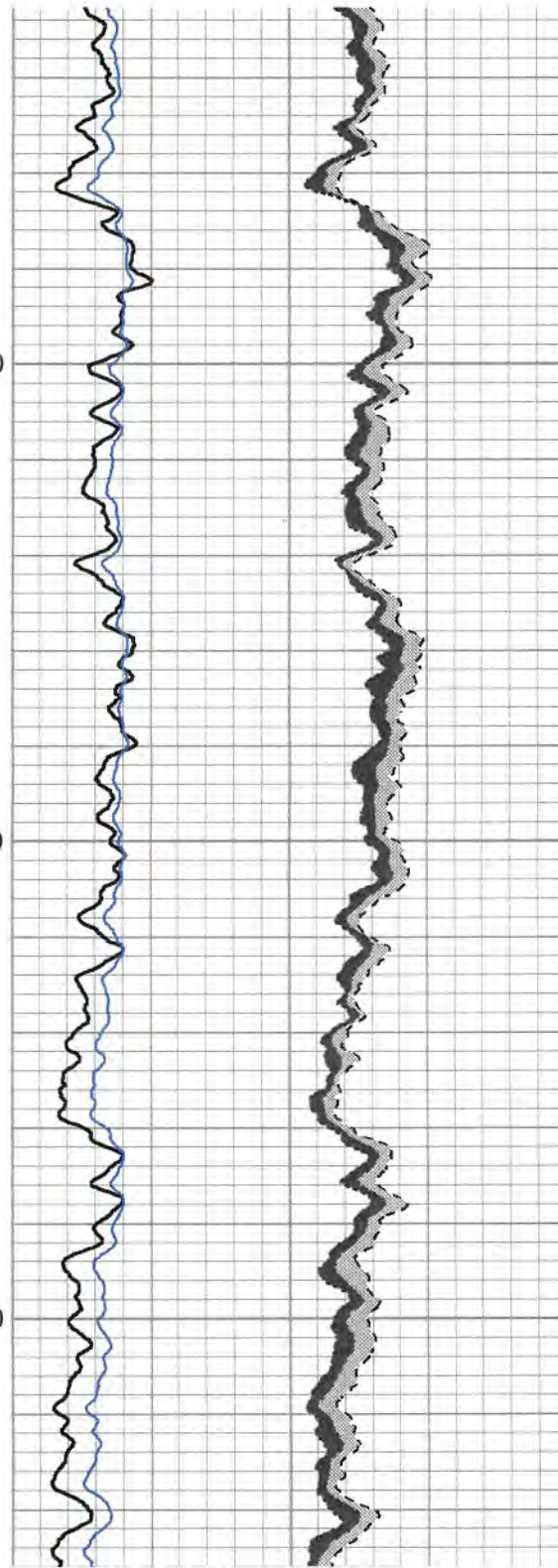
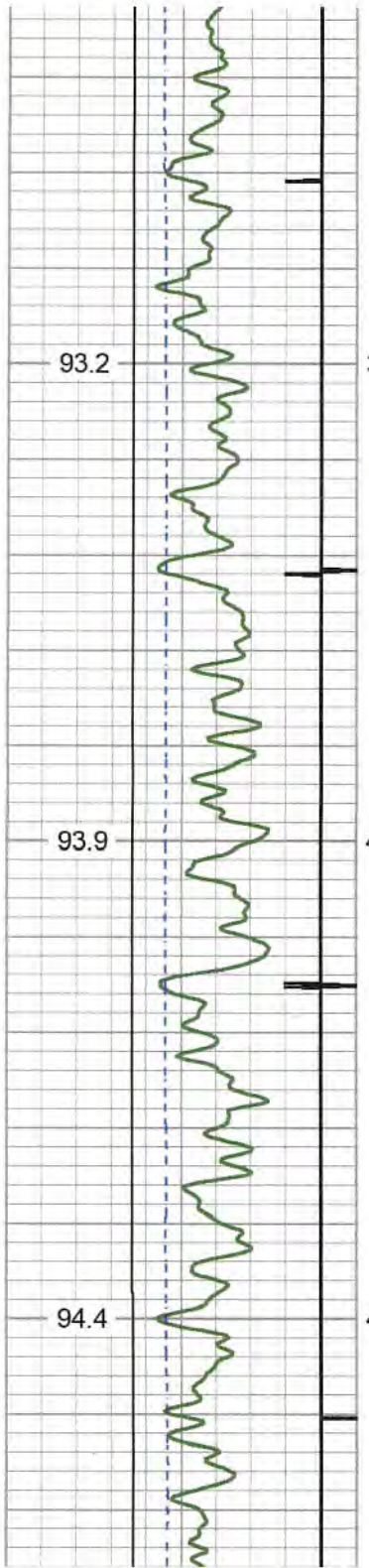


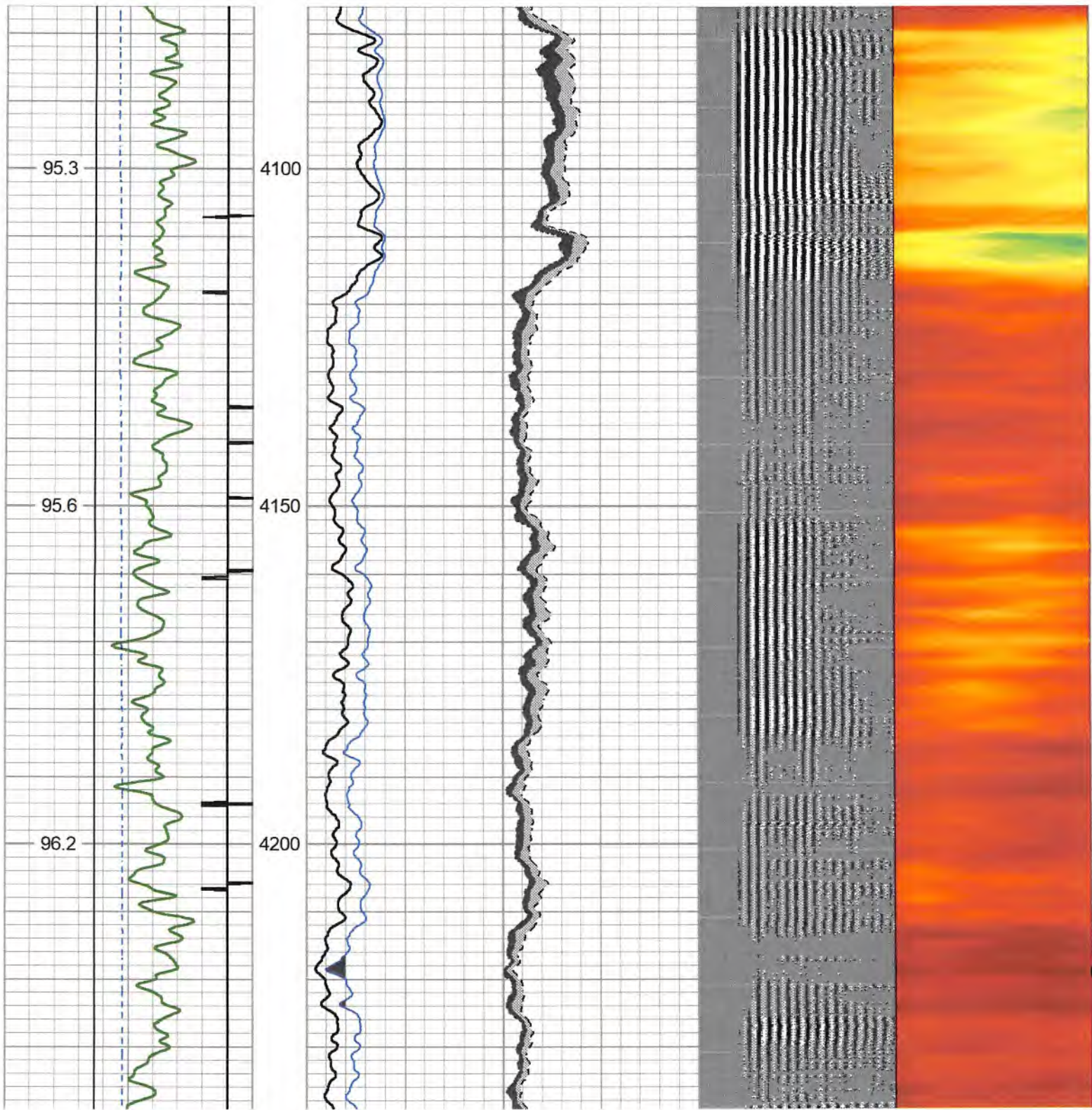


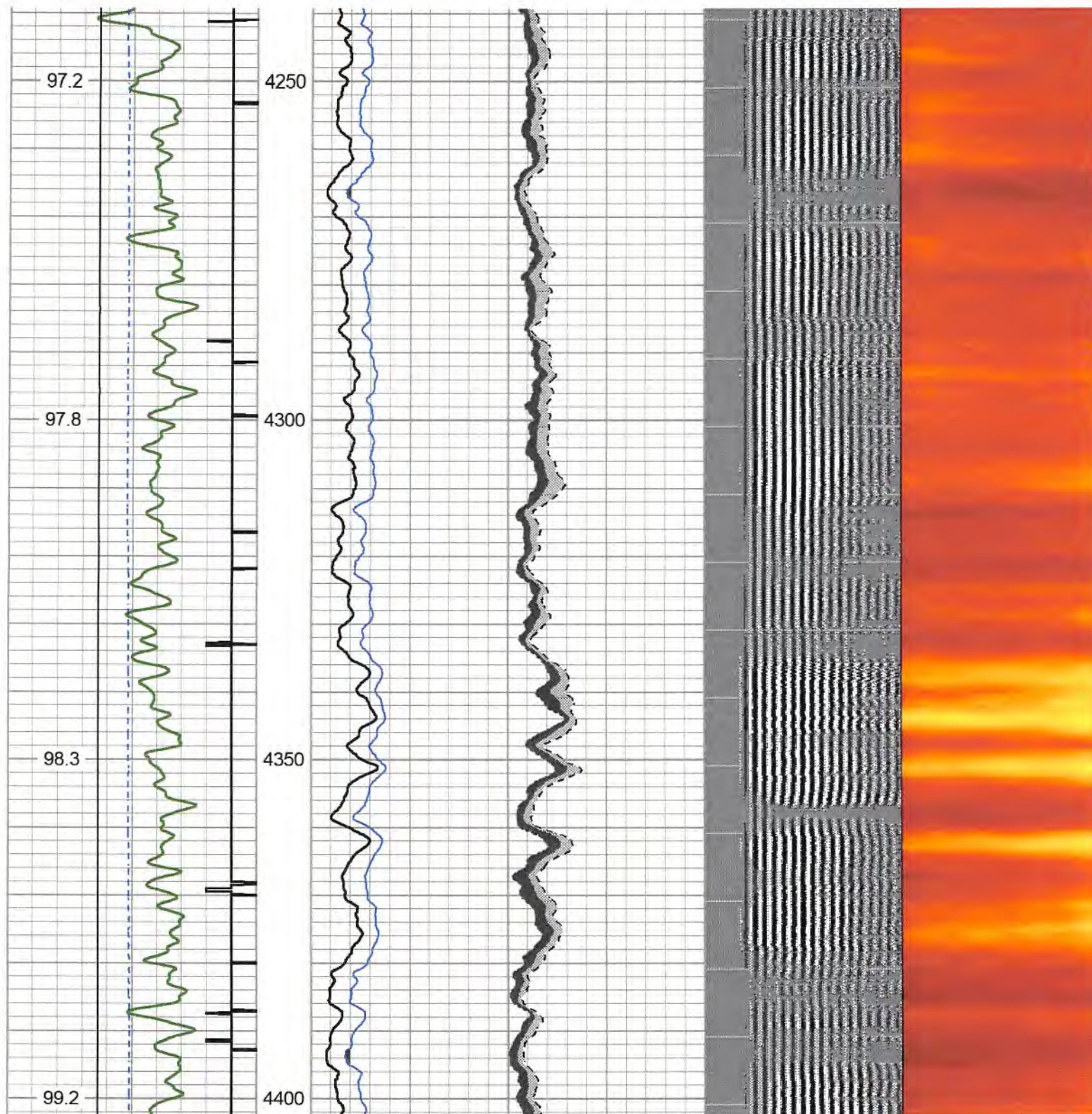


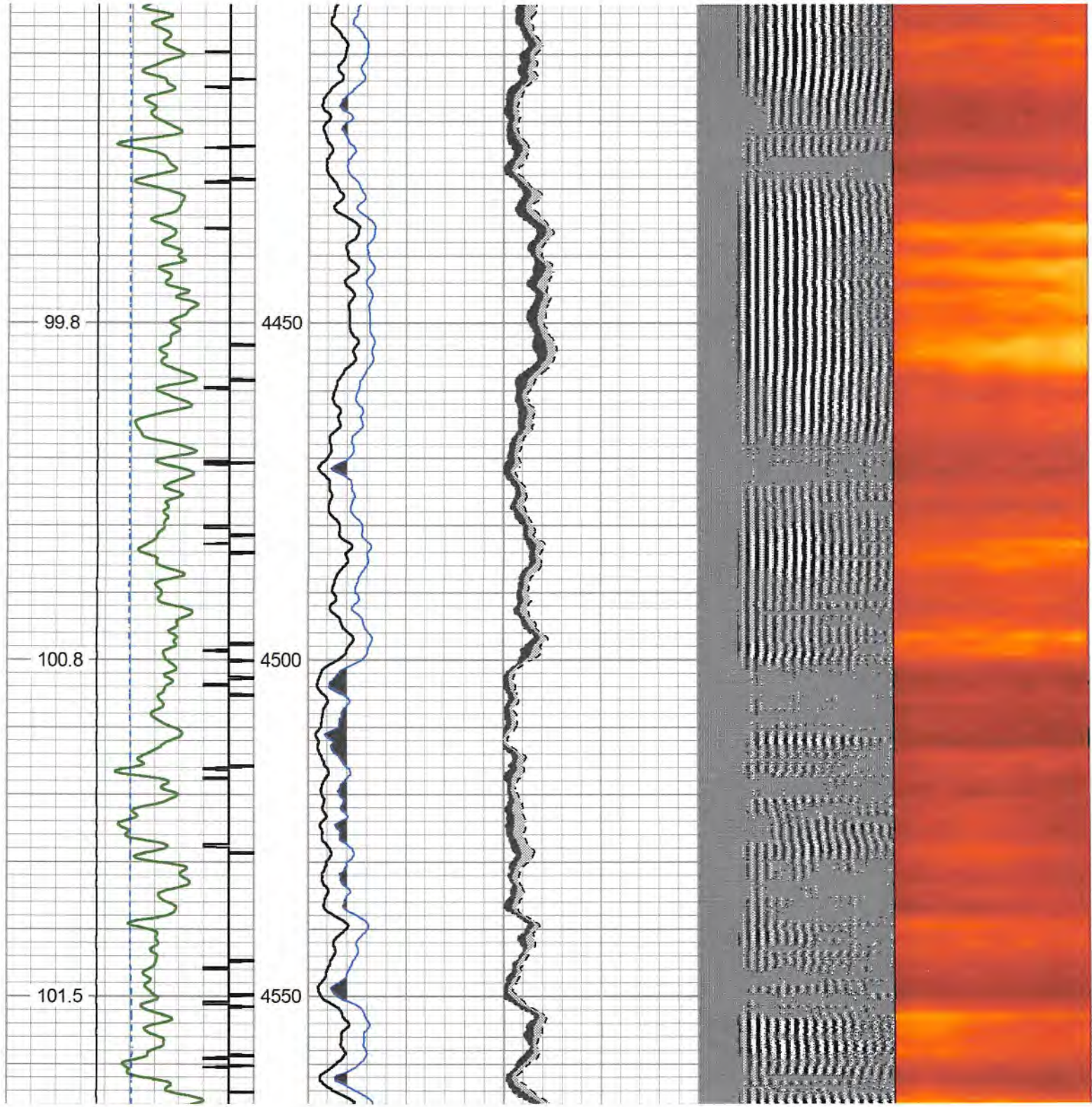


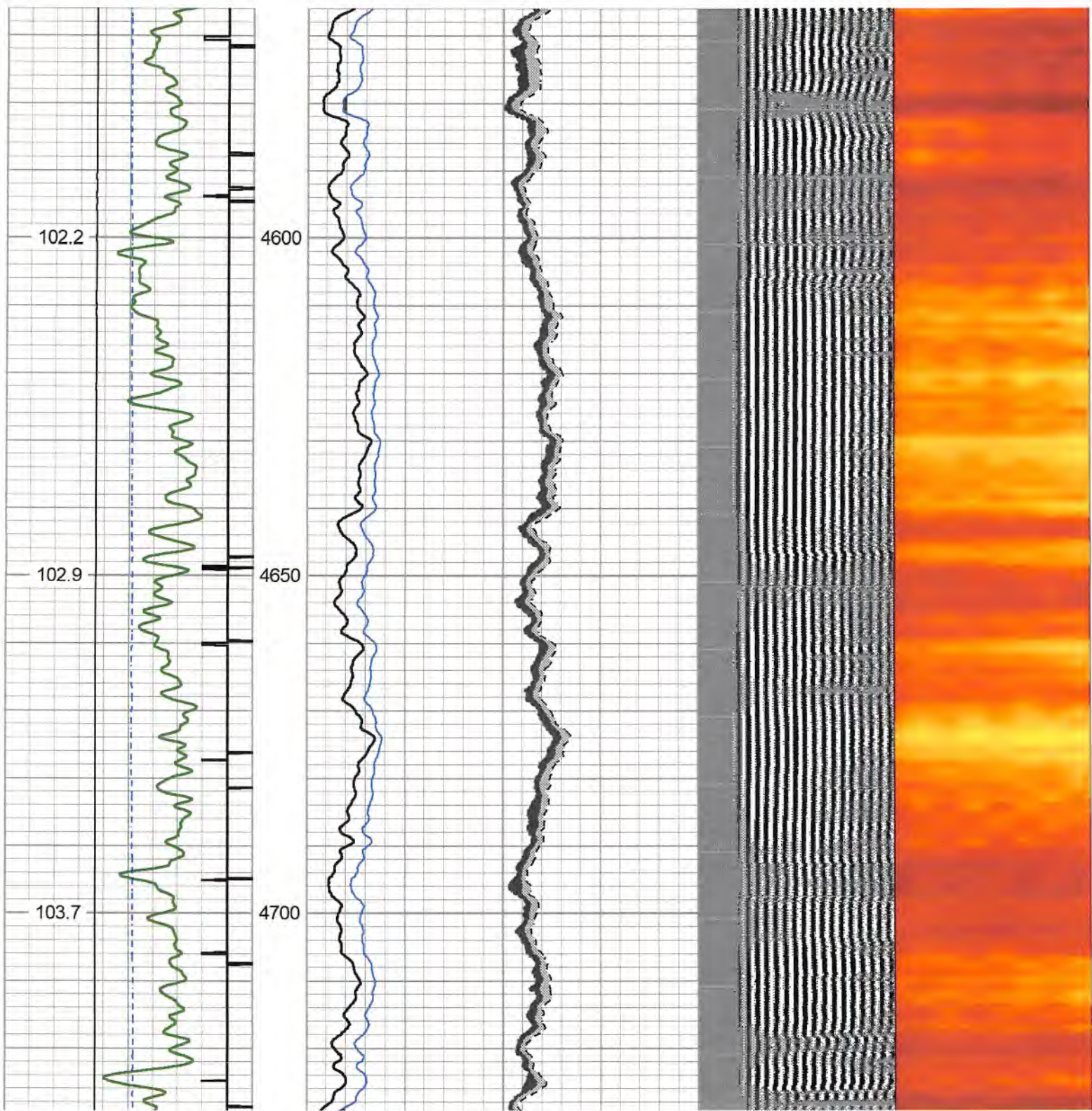


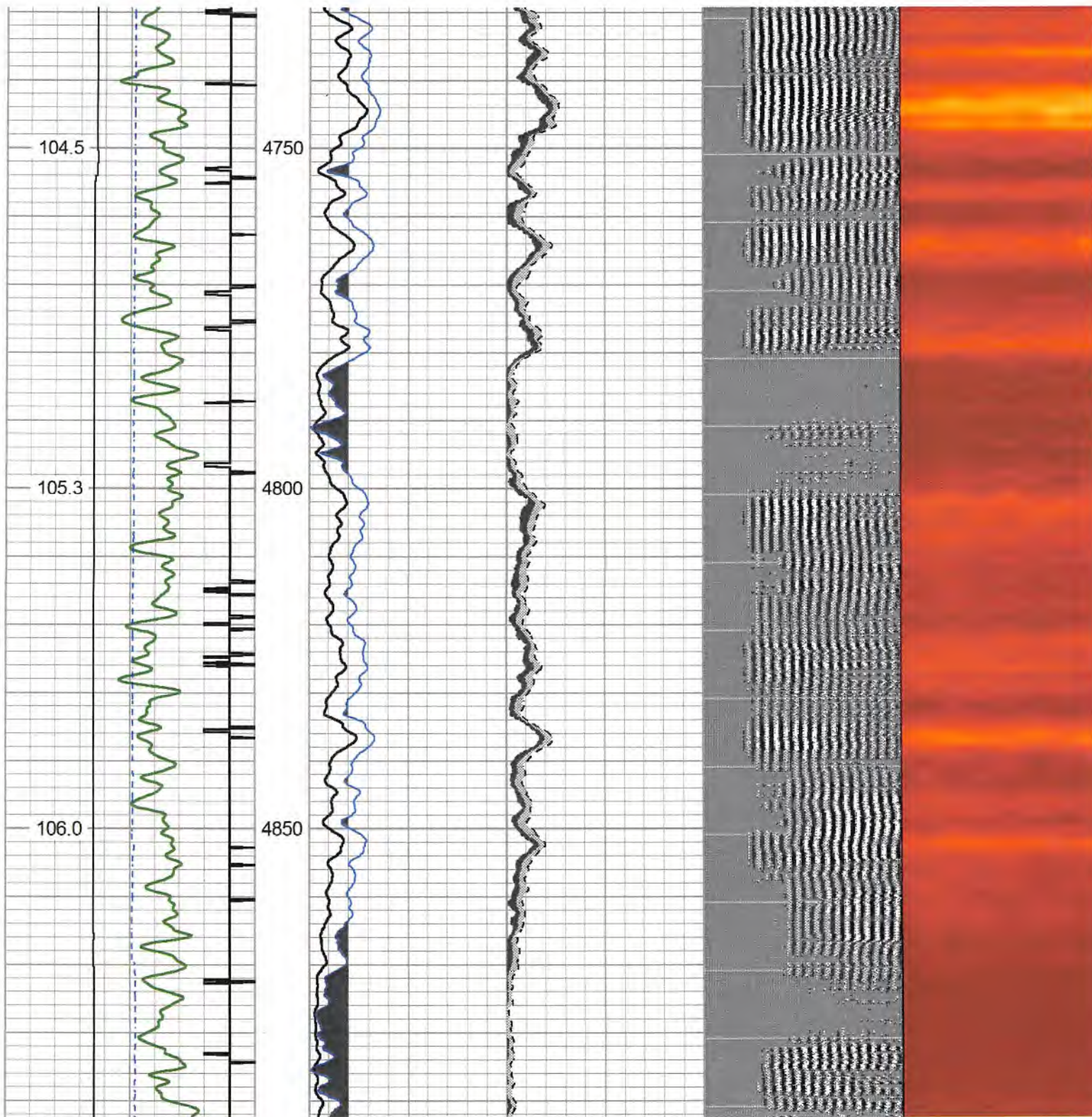


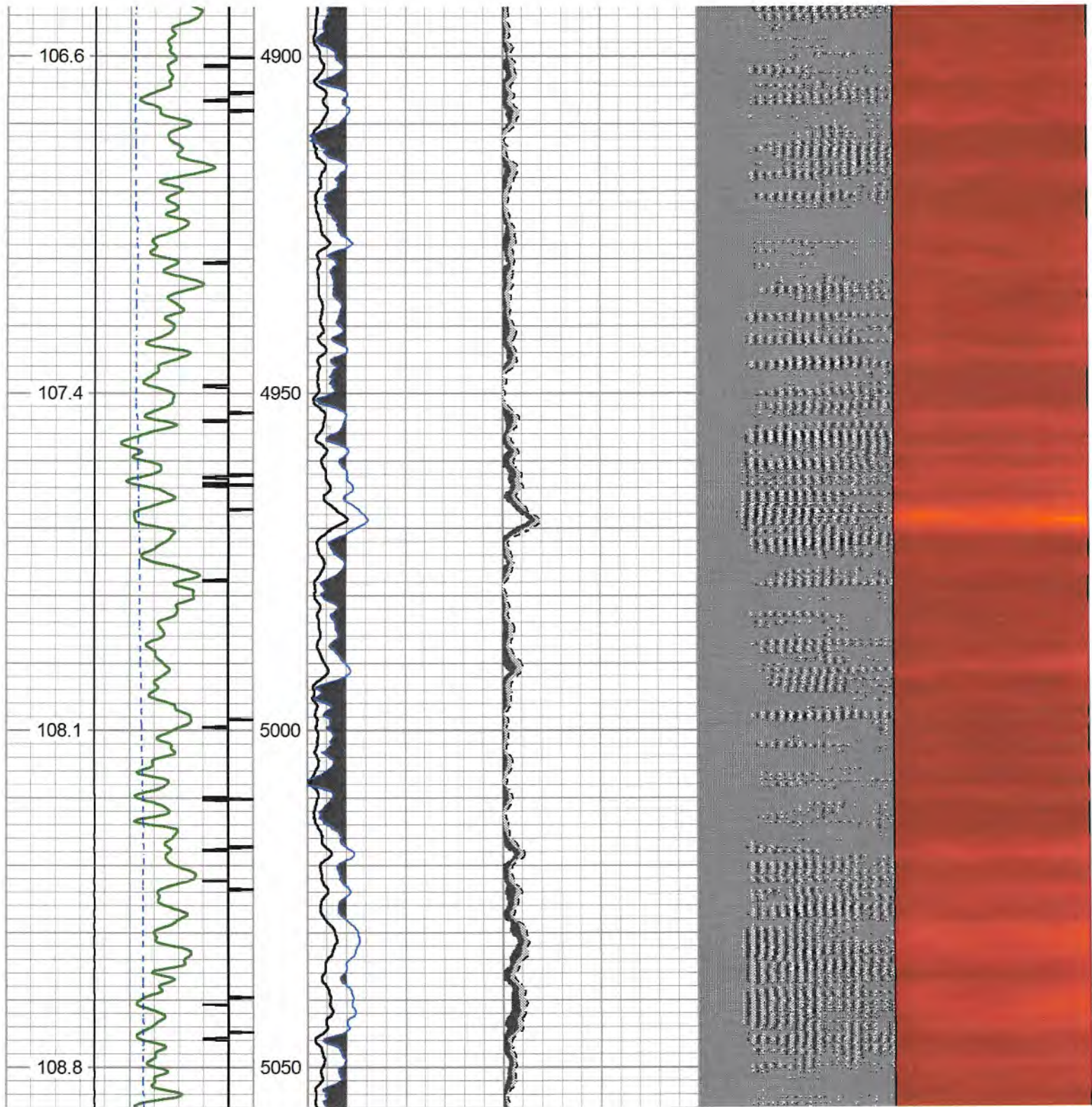


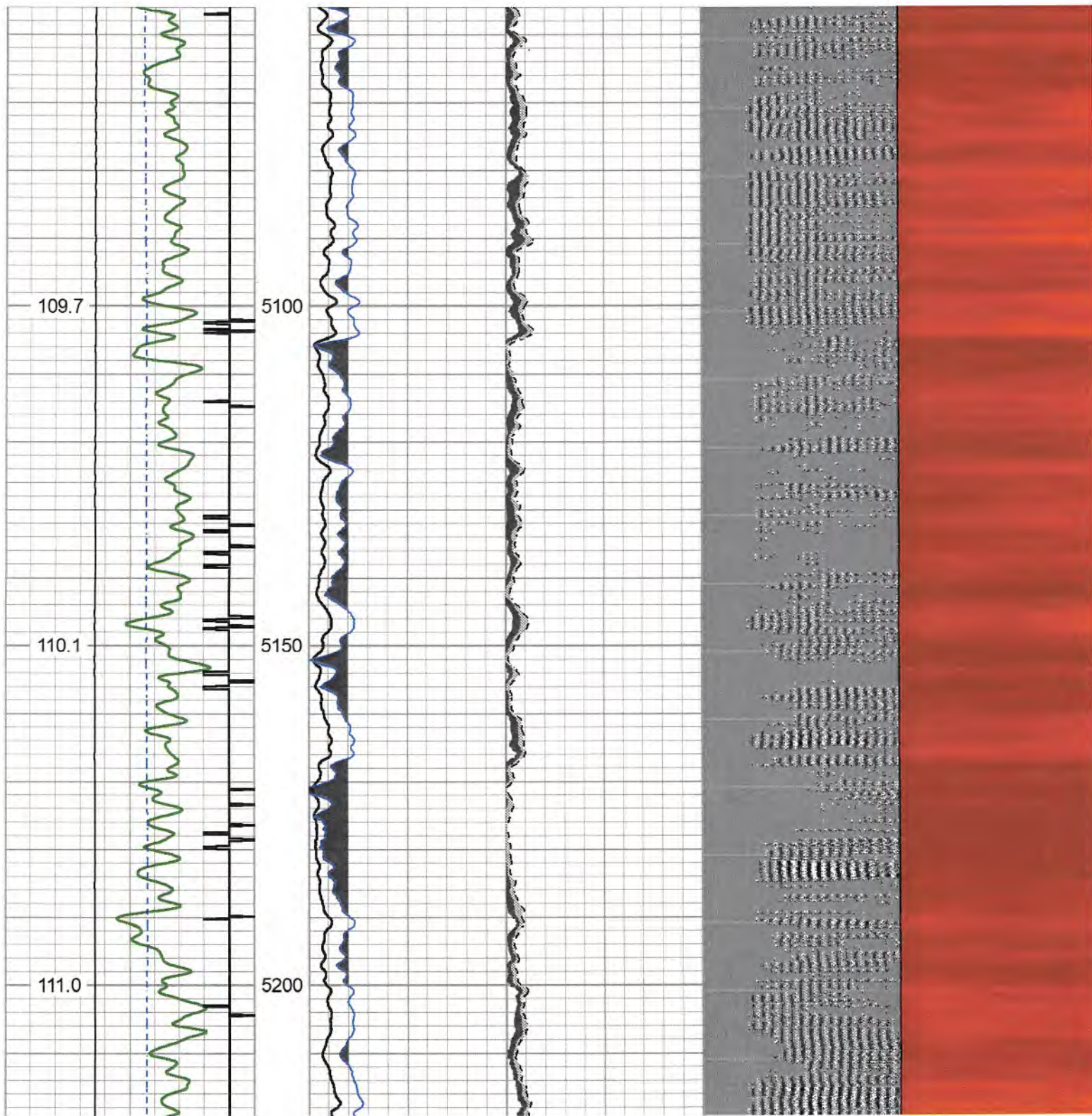


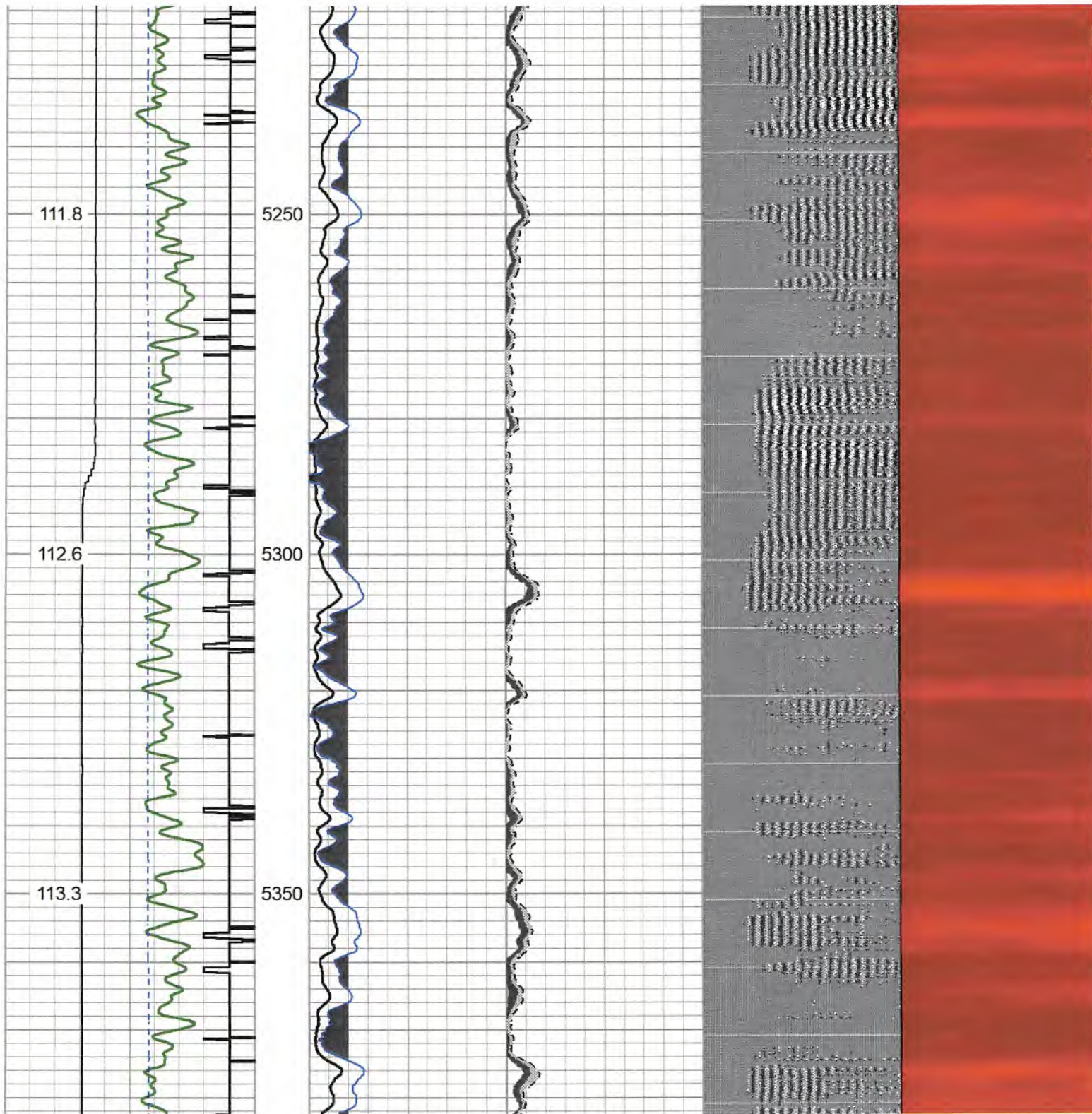


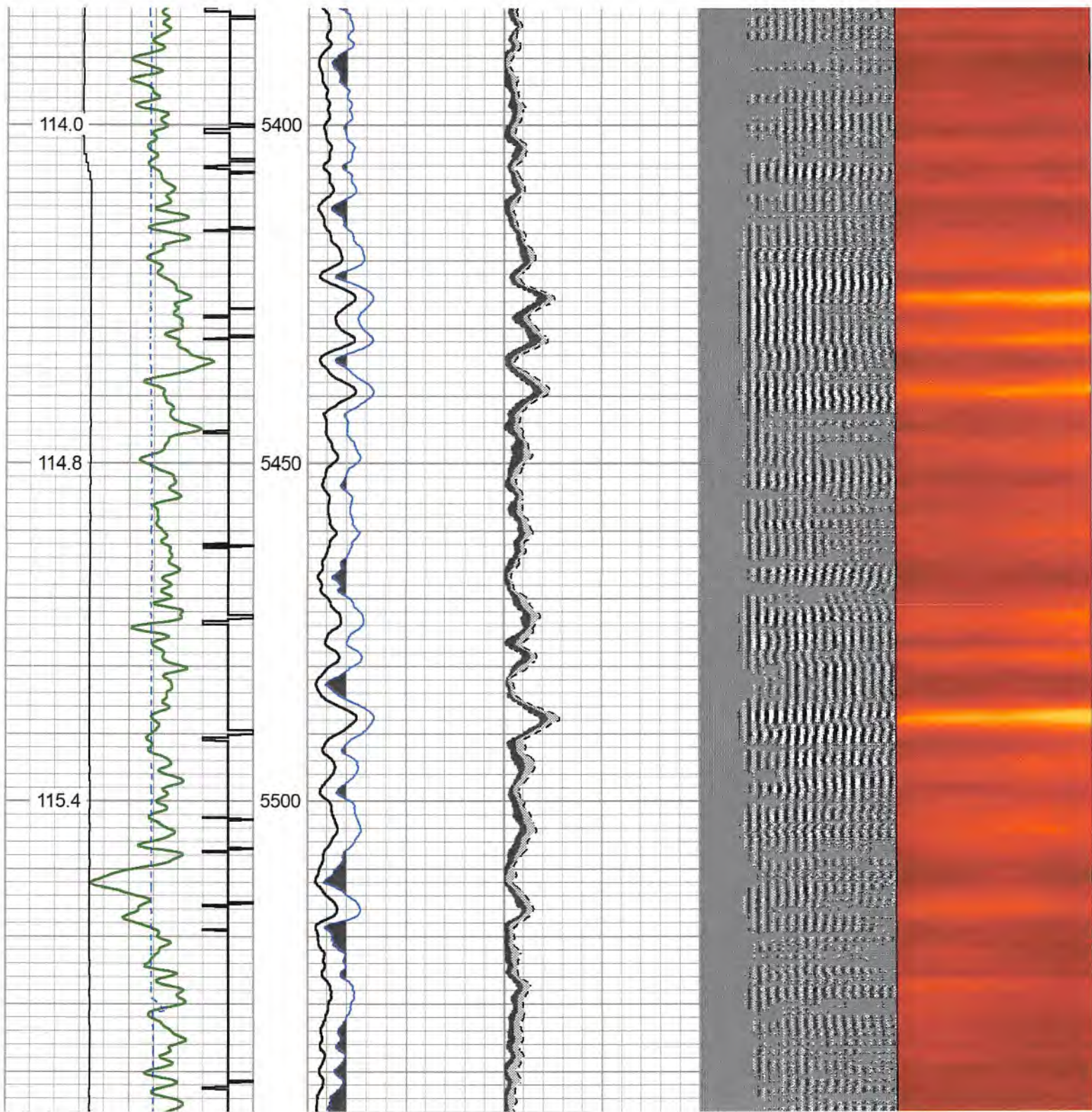


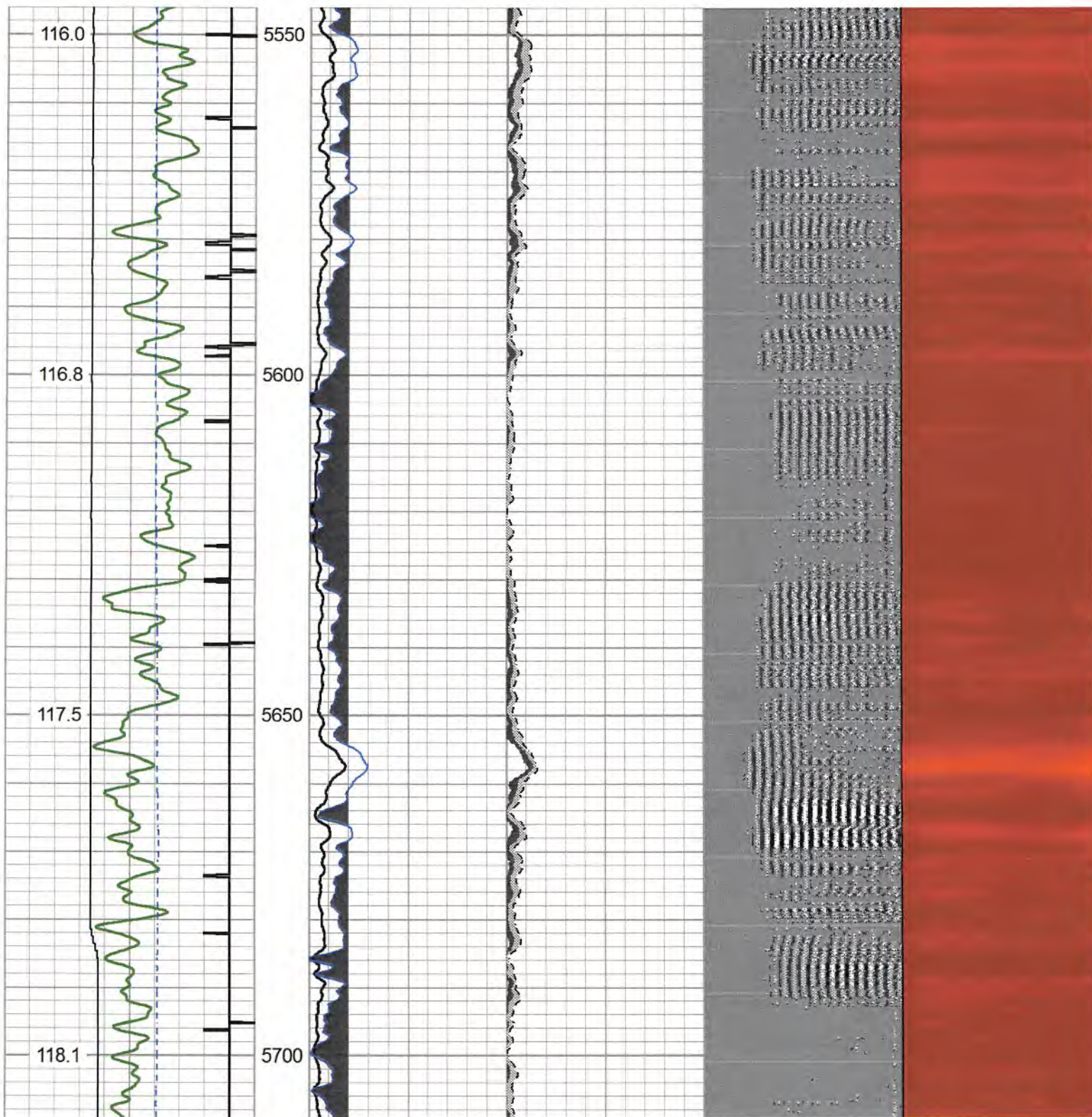


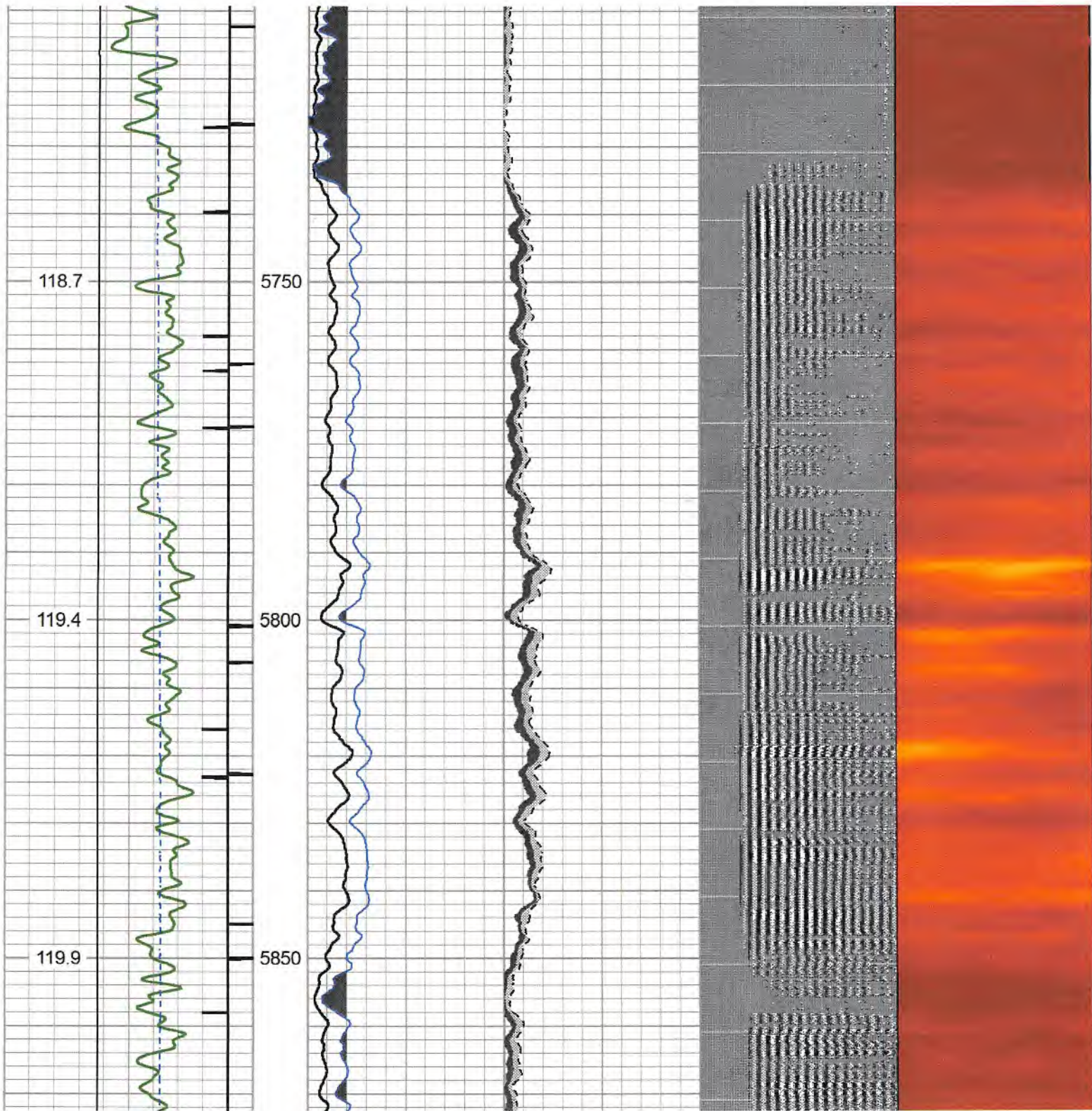


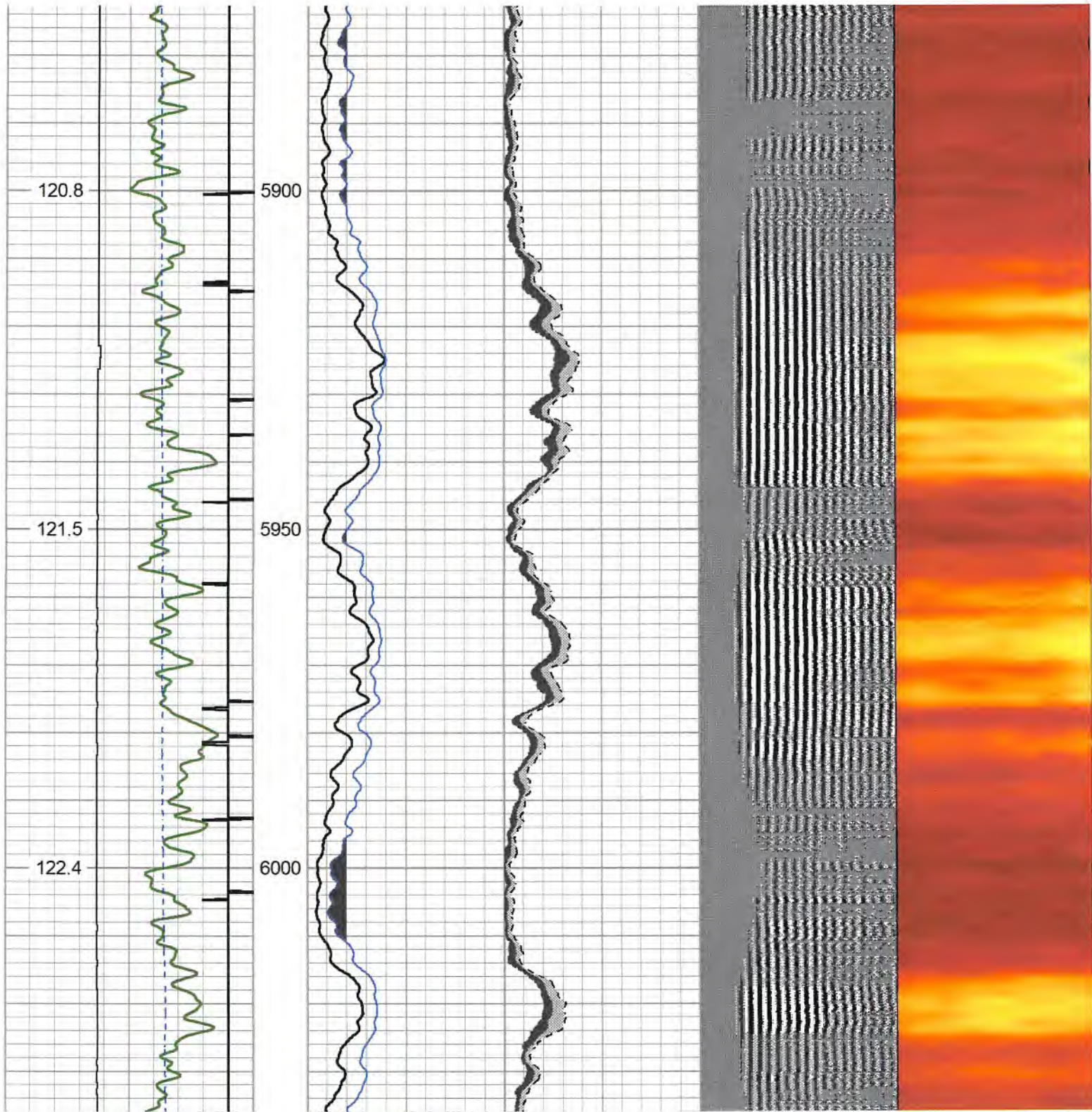


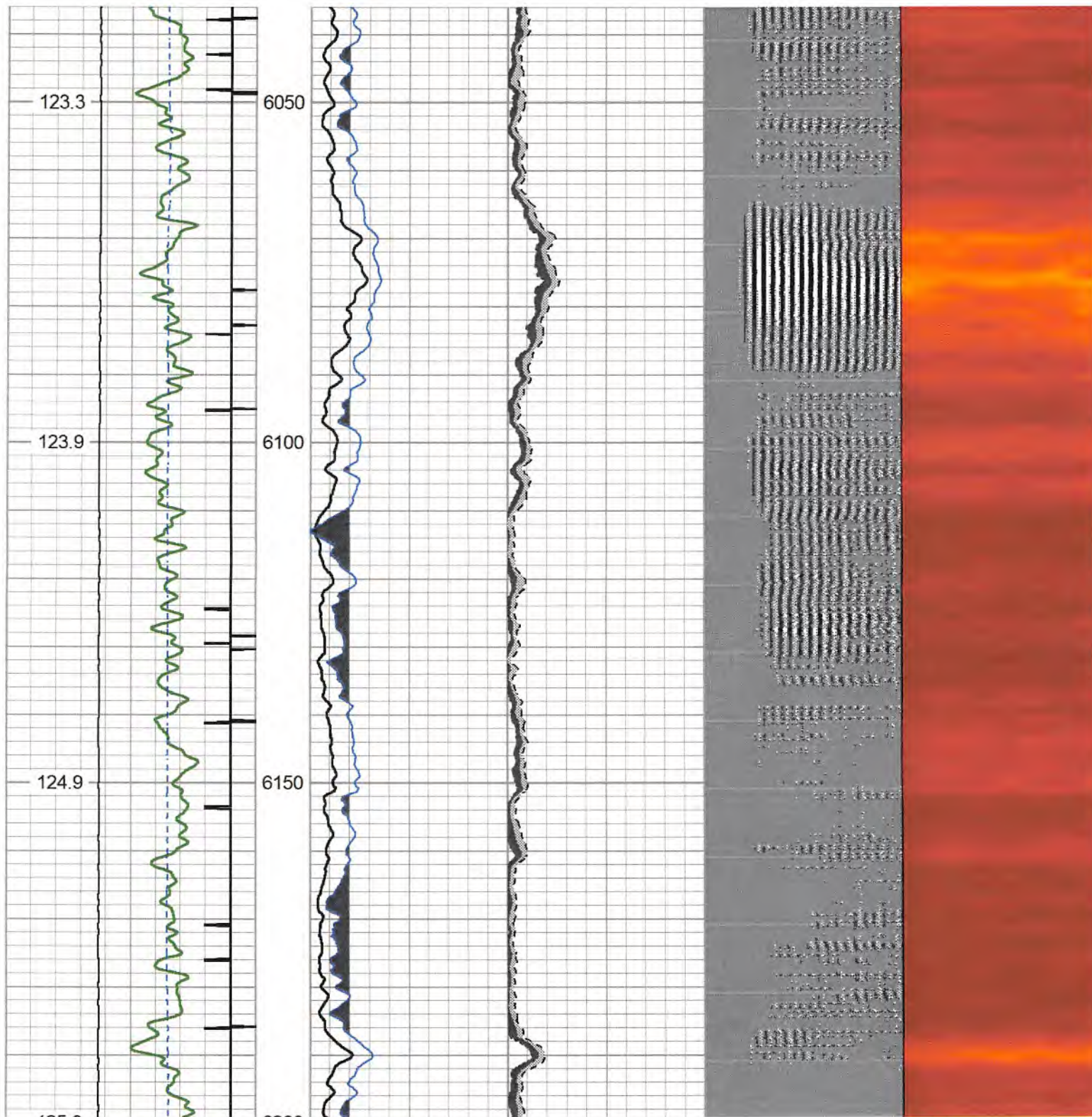


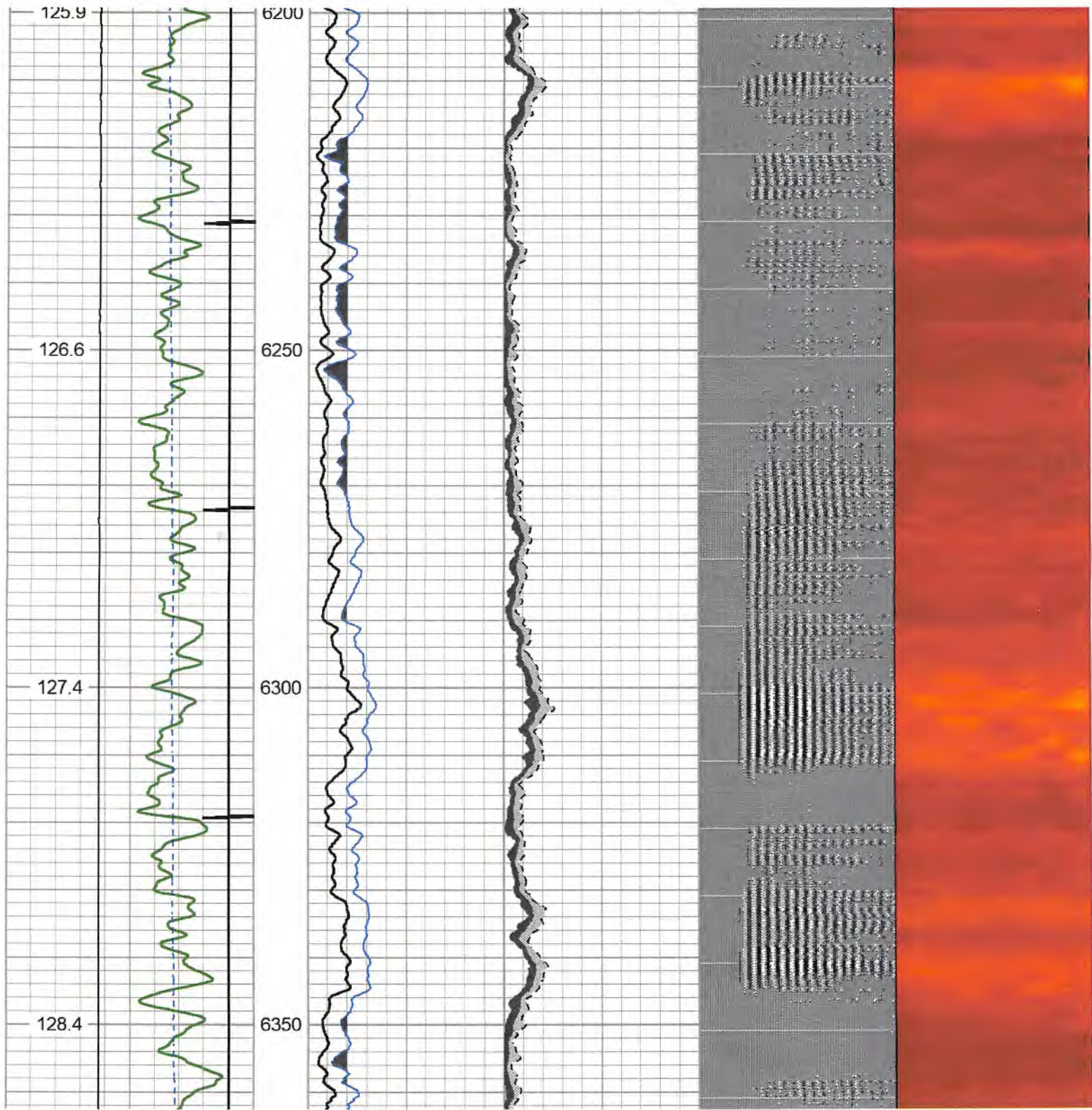


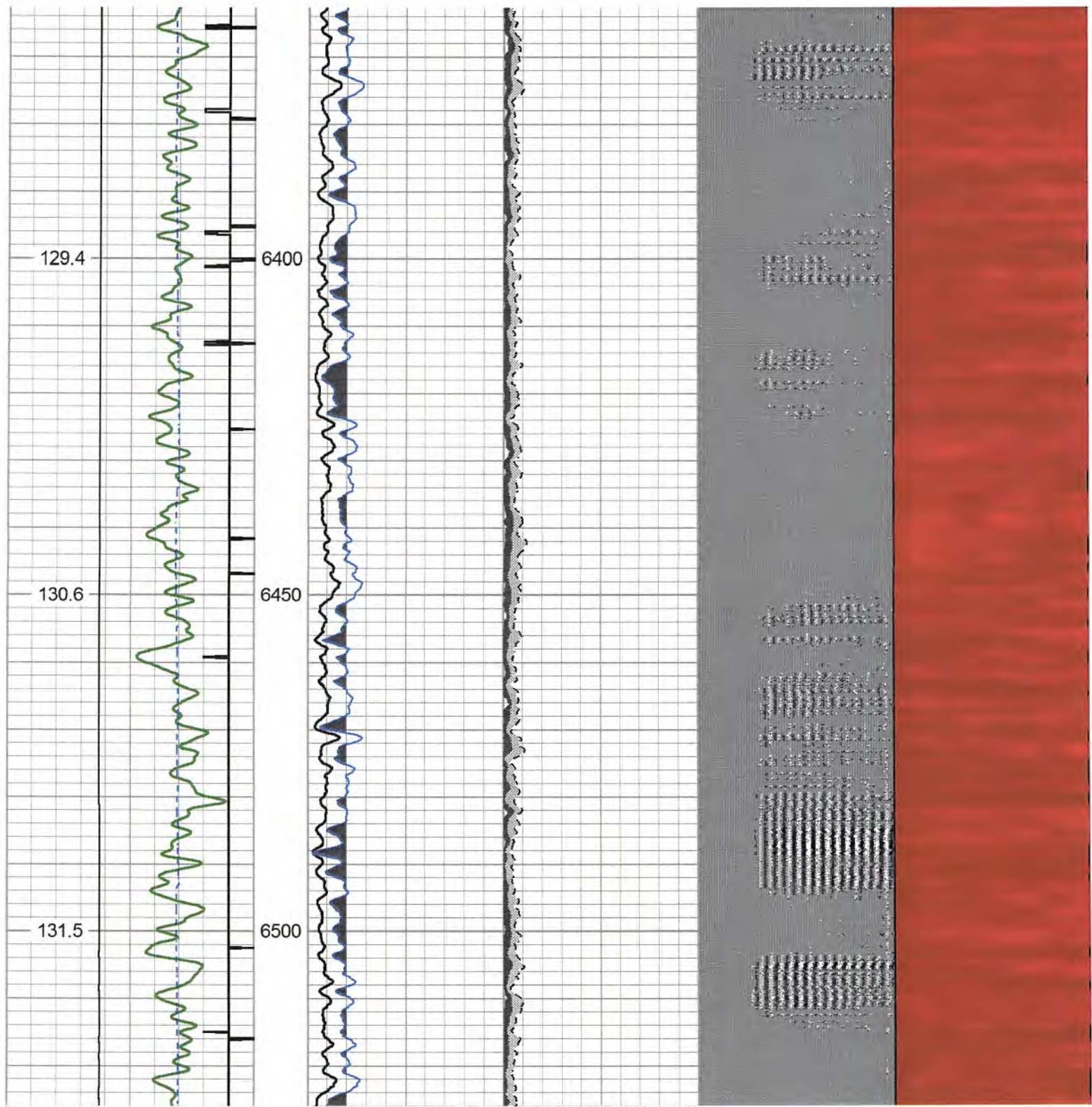


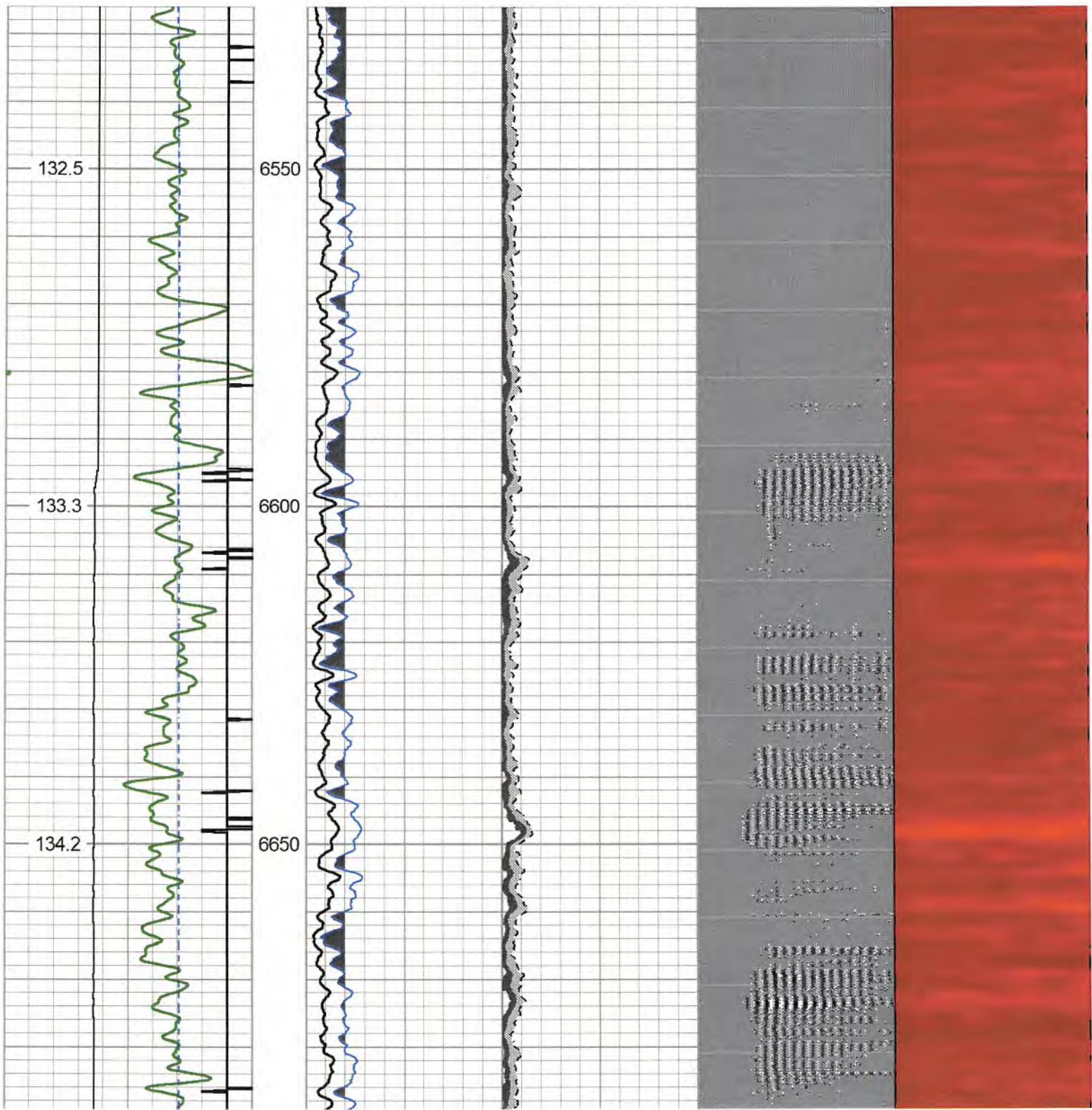


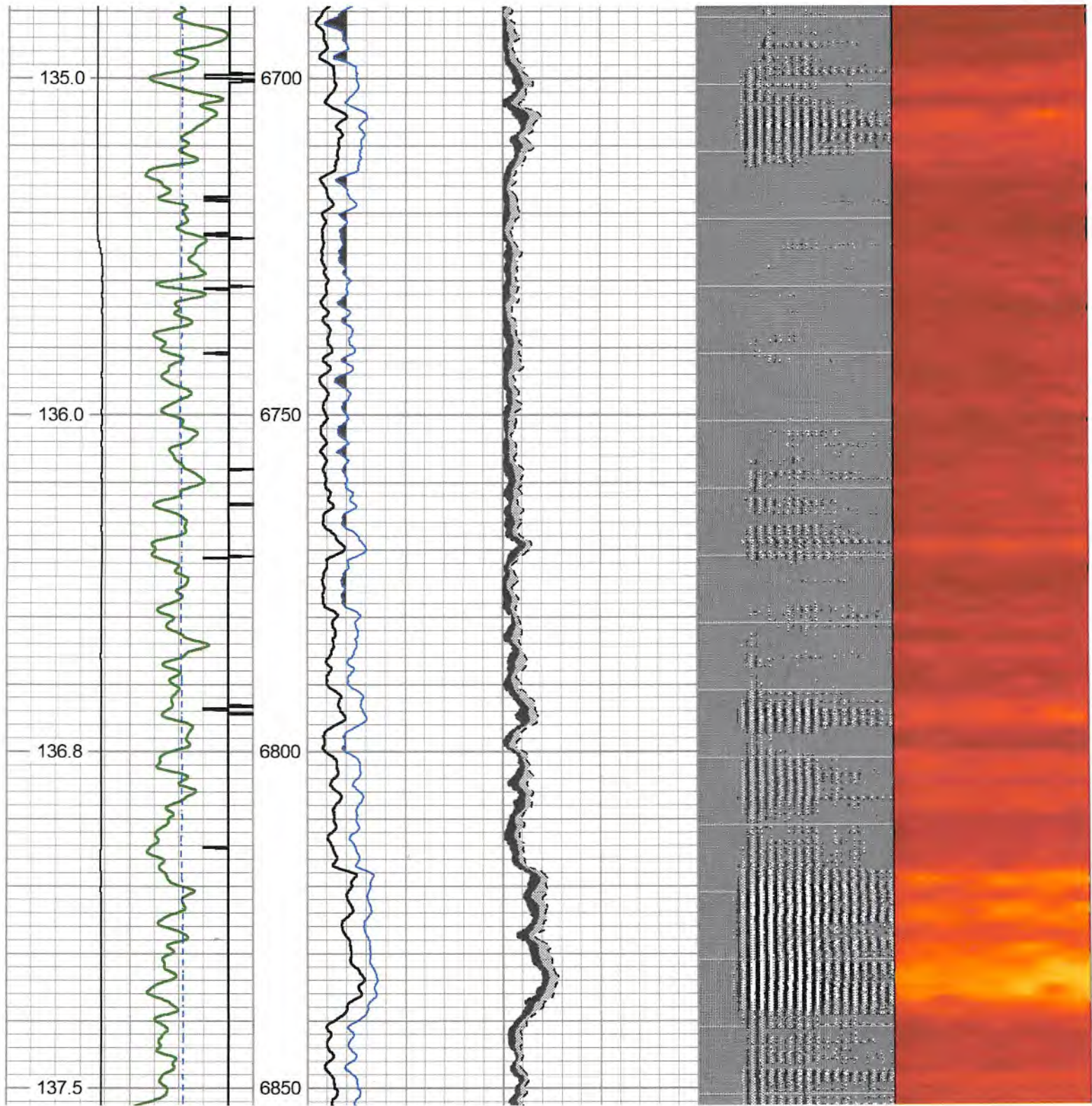


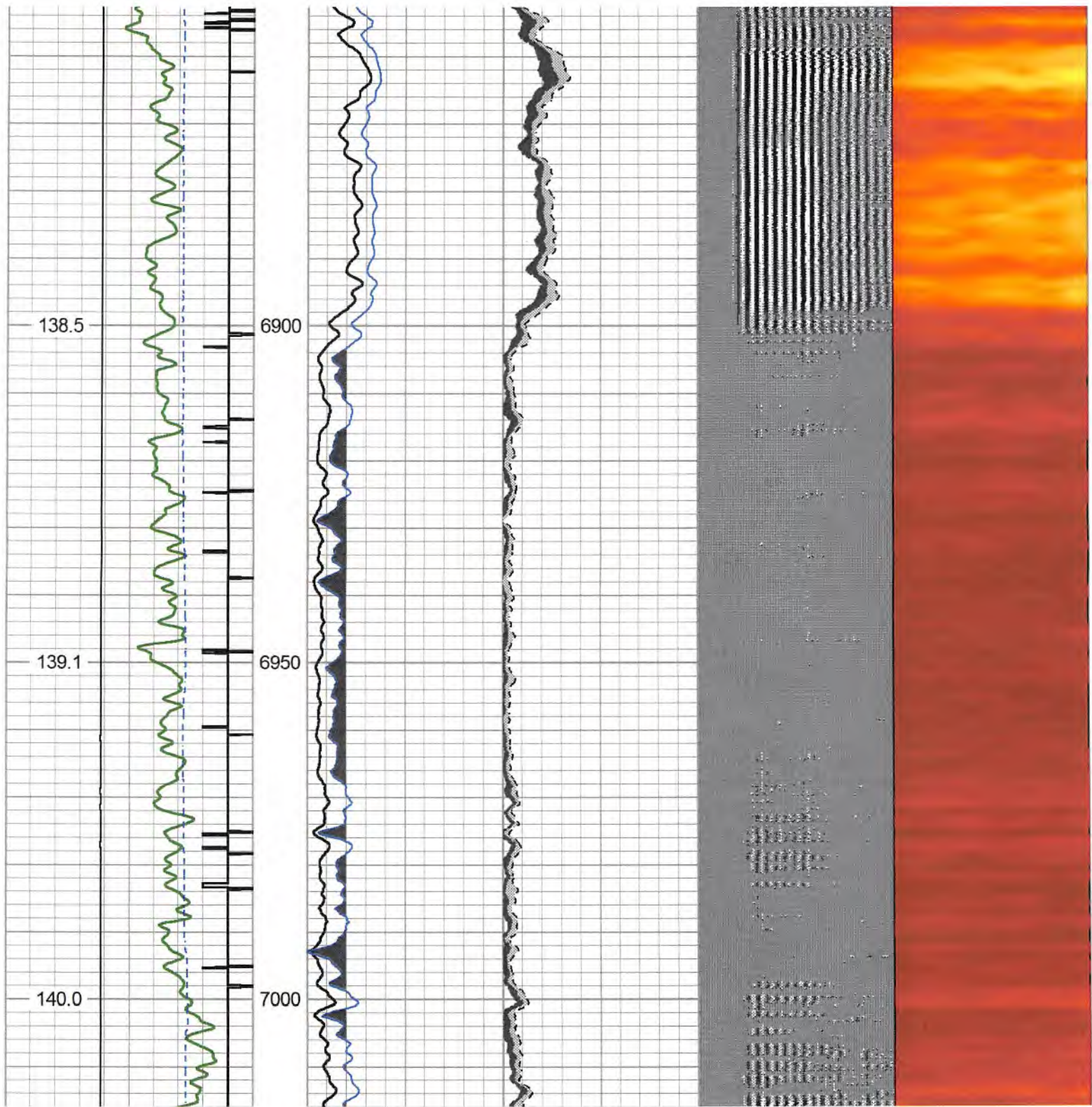


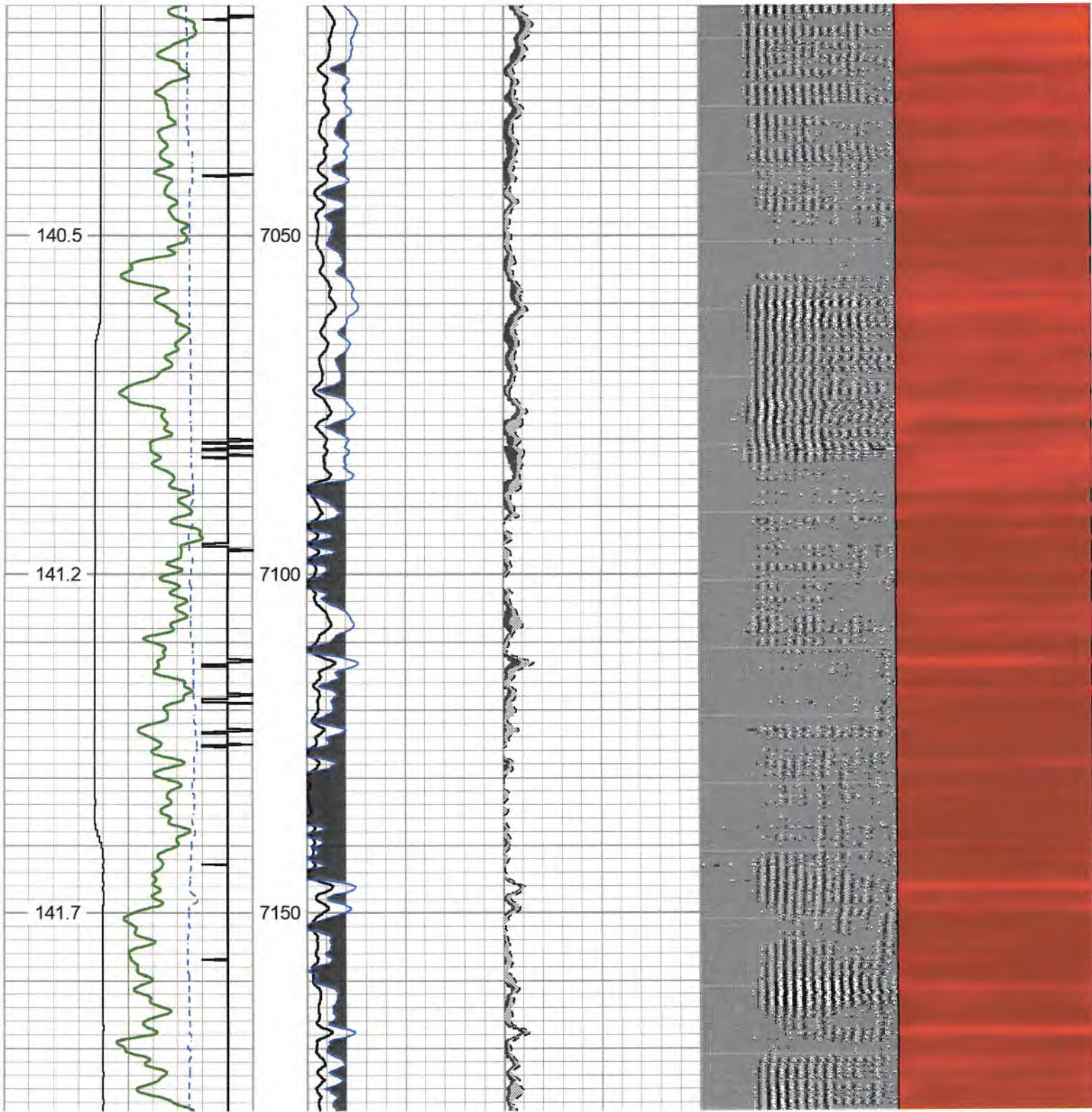


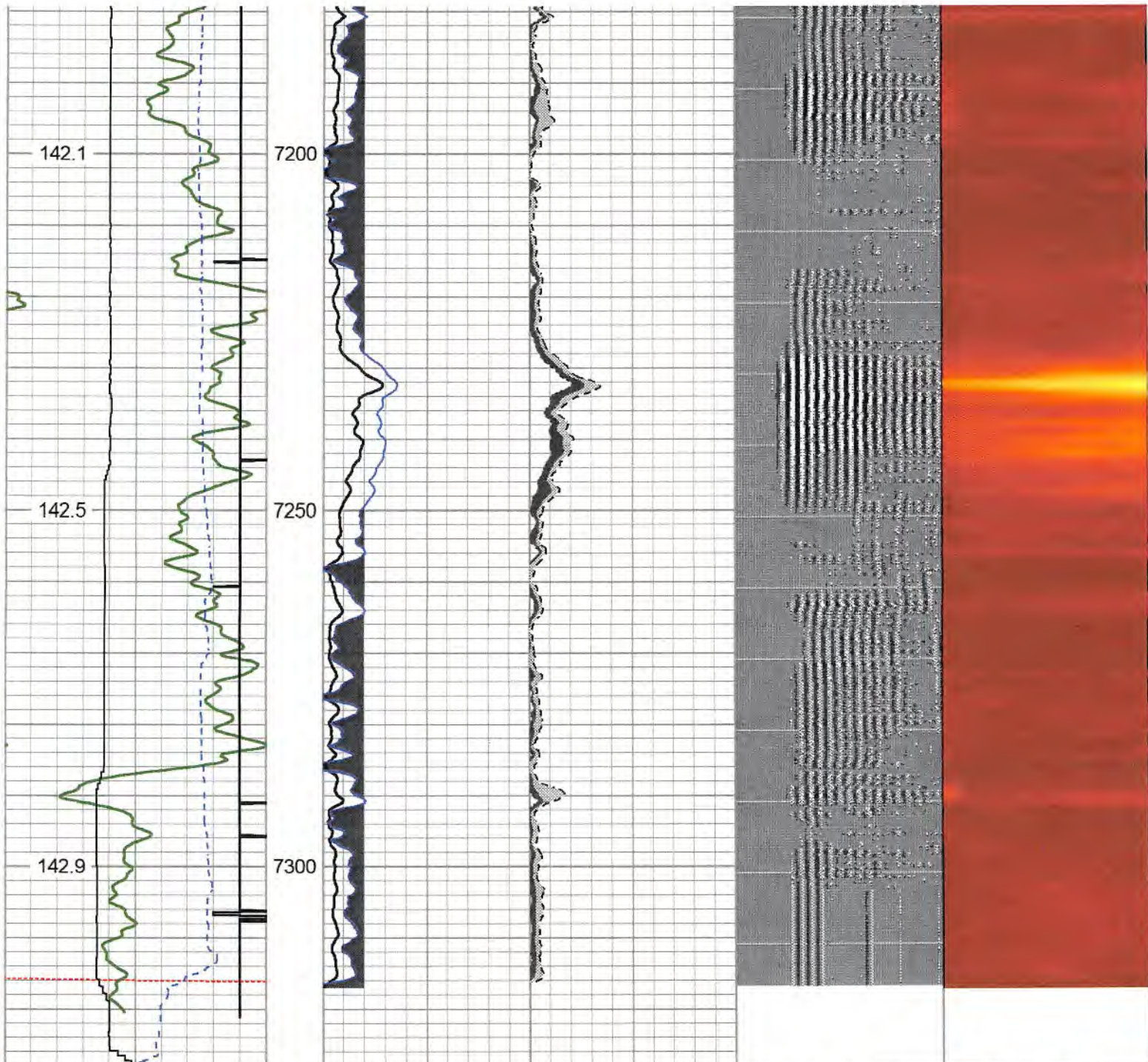




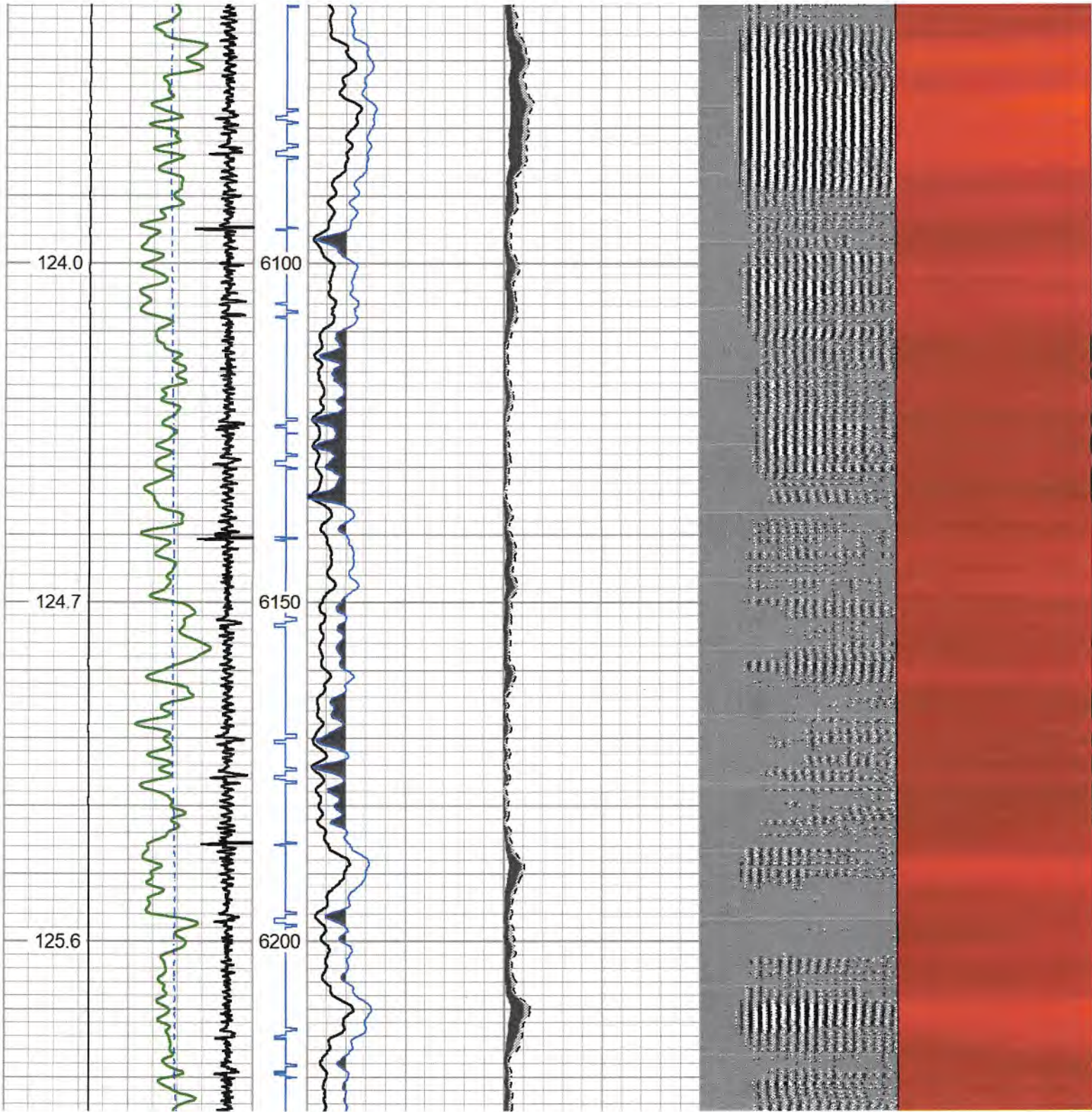


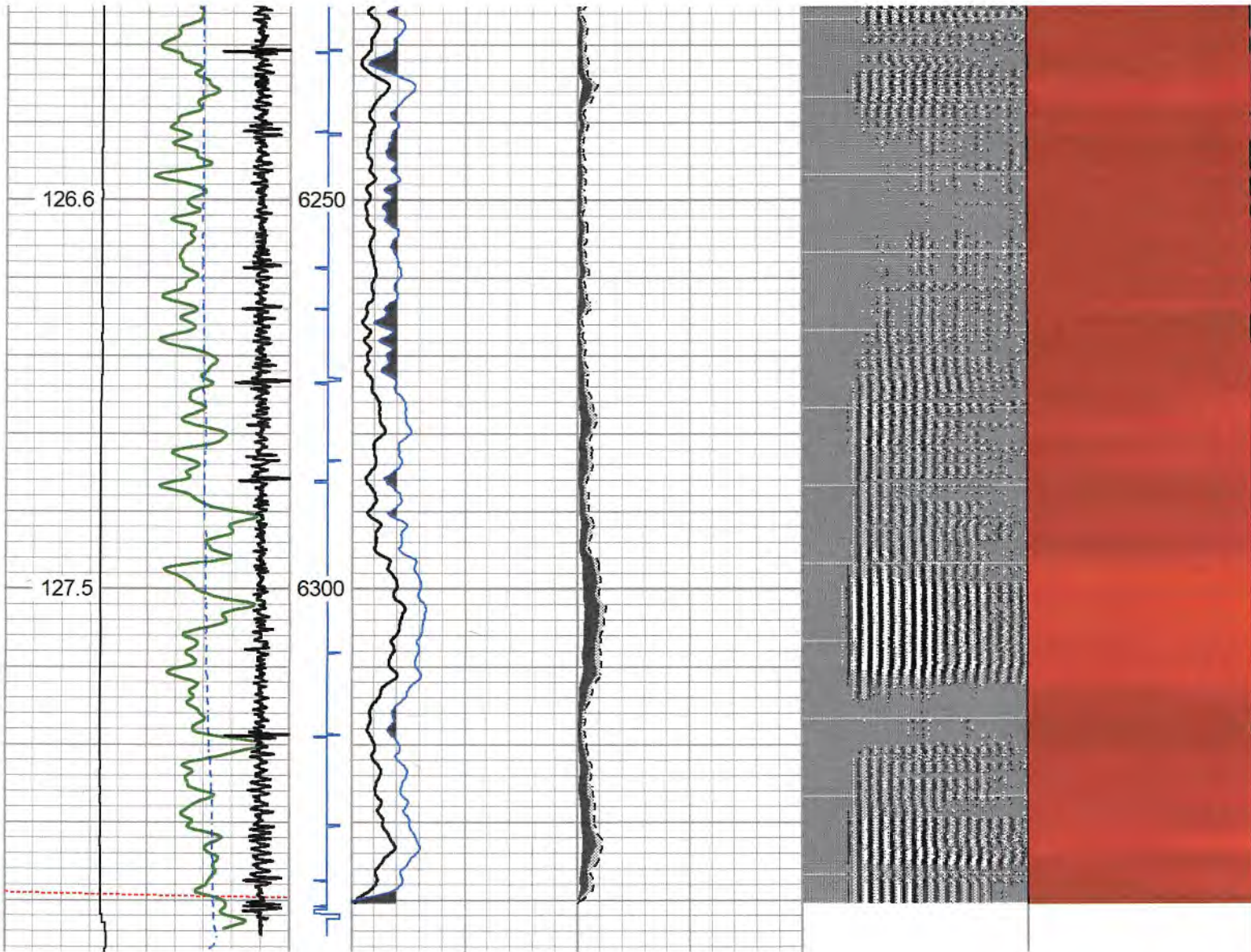






264	Travel Time (usec)	164	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
0	Gamma Ray (GAPI)	150	1	BONDIX	0	0	AMPMAX	150	200 (usec)	1200		
	Line Speed					0	AMPAVG	150				





6350													
264	Travel Time (usec)	144	CCL\$2	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
0	Gamma Ray (GAPI)	150	3	-2	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200
Line Speed													
-200	(ft/min)												
0	Line Tension (lb)												
9	CCL\$1												
GCT_Temp													
(degF)													

Log Variables

Database: C:\ProgramData\Warrior\Data\Wwest\antero_weekly_west_sandy_1h_rcbl_db
 Dataset: field/sandy1h/run1/pass13.2/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	142	5.5	0.361	20	71.9	2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
10.8	No	254	42	7300			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.

MINAMPL : Minimum Amplitude
 MINATTN : Minimum Attenuation
 PERFS : Perforation Flag
 PPT : Predicted Pipe Time

CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Calibration Report

Database File C:\ProgramData\Warrior\Data\Wwest\lantero_weekly_west_sandy_1h_rcbl_db
Dataset Pathname sandy1h/run1/pass13.3
Dataset Creation Wed Mar 30 18:26:03 2022

Gamma Ray Calibration Report

Serial Number: test
Tool Model: GCT275-0000
Performed: Thu Sep 02 12:25:51 2021

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.7000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: test
Tool Model: RADII-351A

Calibration Casing Diameter: 5.500 in
Calibration Depth: 1001.342 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.004	0.195	2.200	71.921	351.264	3.521
CAL	0.967	0.955	2.200	71.921	-5666.310	5483.830
5'	-0.010	0.144	2.200	71.921	453.153	6.581
S1	-0.002	0.261	0.000	100.000	380.385	0.892
S2	-0.005	0.195	0.000	100.000	498.419	2.677
S3	-0.005	0.192	0.000	100.000	508.439	2.334
S4	-0.004	0.189	0.000	100.000	520.327	1.855
S5	-0.004	0.199	0.000	100.000	493.968	1.930
S6	-0.013	0.197	0.000	100.000	476.501	5.956
S7	-0.004	0.196	0.000	100.000	499.024	2.096
S8	-0.003	0.201	0.000	100.000	490.537	1.533

S9	-0.004	0.195	0.000	100.000	503.937	1.870
S10	-0.003	0.213	0.000	100.000	462.199	1.332
S11	-0.002	0.383	0.000	100.000	259.669	0.431
S12	-0.006	0.265	0.000	100.000	370.211	2.043
S13	-0.007	0.207	0.000	100.000	468.541	3.111
S14	-0.008	0.192	0.000	100.000	500.855	4.084
S15	-0.010	0.234	0.000	100.000	408.457	4.288
S16	-0.008	0.299	0.000	100.000	325.751	2.640

Wellsite Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.967	0.955	1.000	0.000

Air Zero Calibration, performed Tue Mar 29 12:17:13 2022:

	Raw (v)	Calibrated (mv)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
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
S9	0.000	0.000	0.000
S10	0.000	0.000	0.000
S11	0.000	0.000	0.000
S12	0.000	0.000	0.000
S13	0.000	0.000	0.000

Inclinometer Calibration Report

Performed:	Thu Jun 11 14:06:14 2020				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-901.00	927.00	-1.00	1.00	gee
Y Accelerometer					

X Accelerometer	-949.00	917.00	-1.00	1.00	gee
Z Accelerometer	-3.12	882.95	0.00	1.00	gee

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
mSec_Count	17.99		CABLE_HEADS-TITAN_1_7/16	1.04	1.44	4.00
RBT_Status	17.99					
Error_Ct	17.99					
RBT_HV	16.95		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
RBT_IntTemp	14.63					
RBT_ACCZ	12.22		RBT16-RADII-351A (test) Probe RADII 351-A	8.98	3.50	
RBT_ACCY	12.22					
RBT_ACCX	12.22					
WVFS16	12.22					
WVFS15	12.22					
WVFS14	12.22					
WVFS13	12.22					
WVFS12	12.22					
WVFS11	12.22					
WVFS10	12.22					
WVFS9	12.22					
WVFS8	12.22					
WVFS7	12.22					
WVFS6	12.22					
WVFS5	12.22					
WVFS4	12.22					
WVFS3	12.22					
WVFS2	12.22					

WVFS1	12.22		GC-GCT275-0000 (test) Probe 2.75" Gamma Ray - CCL w/ Temp	4.77	2.75	55.00
WVFCAL	12.22		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
WVF3FT	12.22					
WVF5FT	11.26					
GCT_HV	7.96					
WVFSYNC	7.96					
CCL\$2	7.00					
CCL\$1	7.00					
GCT_Temp	6.45					
GR	5.58					
GCT_IntTemp	4.86		CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.86	2.75	35.00
			Plug-FA108-0000 1.38" Bull Plug	0.33	1.38	1.00

Dataset: antero_weekly_west_sandy_1h_rcbl_db: field/sandy1h/run1/pass13.3
 Total length: 17.99 ft
 Total weight: 105.00 lb
 O.D.: 4.88 in

	Company	Antero Resources
	Well	Weekly West Sandy 1H
	Field	Marcellus
	County	Ritchie
	State	WV

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 Office of Oil and Gas
 MAR 31 2023
 WV Department of
 Environmental Protection