



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

Company Antero Resources

Well OXFD 13 AHS

Field N/A

County Doddridge State West Virginia

Location: API #: 47-017-06456

Other Services

SEC TWP RGE

Elevation

Permanent Datum

Ground Level

Elevation

Log Measured From Kelly Bushing 30 ft.

Drilling Measured From Kelly Bushing

K.B.

D.F.

G.L.

11-Feb-2020

One

N/A

7,160 Ft.

7,160 Ft.

Surface

N/A

Water

N/A

152 Deg. F.

2,790 ft.

09:00

17:02

143

Marietta, Ohio

Tom Weese

Jay

Jay

Jay

Jay

Jay

Jay

Jay

Jay

Company	Antero Resources	Well	OXFD 13 AHS	Field	N/A	County	Doddridge	State	West Virginia
Location:	API #: 47-017-06456				Other Services				
SEC	TWP	RGE	Elevation						
Permanent Datum	Ground Level	Elevation							
Log Measured From	Kelly Bushing 30 ft.								
Drilling Measured From	Kelly Bushing								
Date	11-Feb-2020								
Run Number	One								
Depth Driller	N/A								
Depth Logger	7,160 Ft.								
Bottom Logged Interval	7,160 Ft.								
Top Log Interval	Surface								
Open Hole Size	N/A								
Type Fluid	Water								
Density / Viscosity	N/A								
Max. Recorded Temp.	152 Deg. F.								
Estimated Cement Top	2,790 ft.								
Time Well Ready	09:00								
Time Logger on Bottom	17:02								
Equipment Number	143								
Location	Marietta, Ohio								
Recorded By	Tom Weese								
Witnessed By	Jay								
Borehole Record		Tubing Record							
Run Number	Bit	From	To	Size	Weight	From	To		
Casing Record	Size	Wgt/Ft		Top	Bottom				
Surface String				Surface	N/A				
Prot. String									
Production String	5 1/2 in.	20 lbs.		Surface	N/A				
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.

Comments

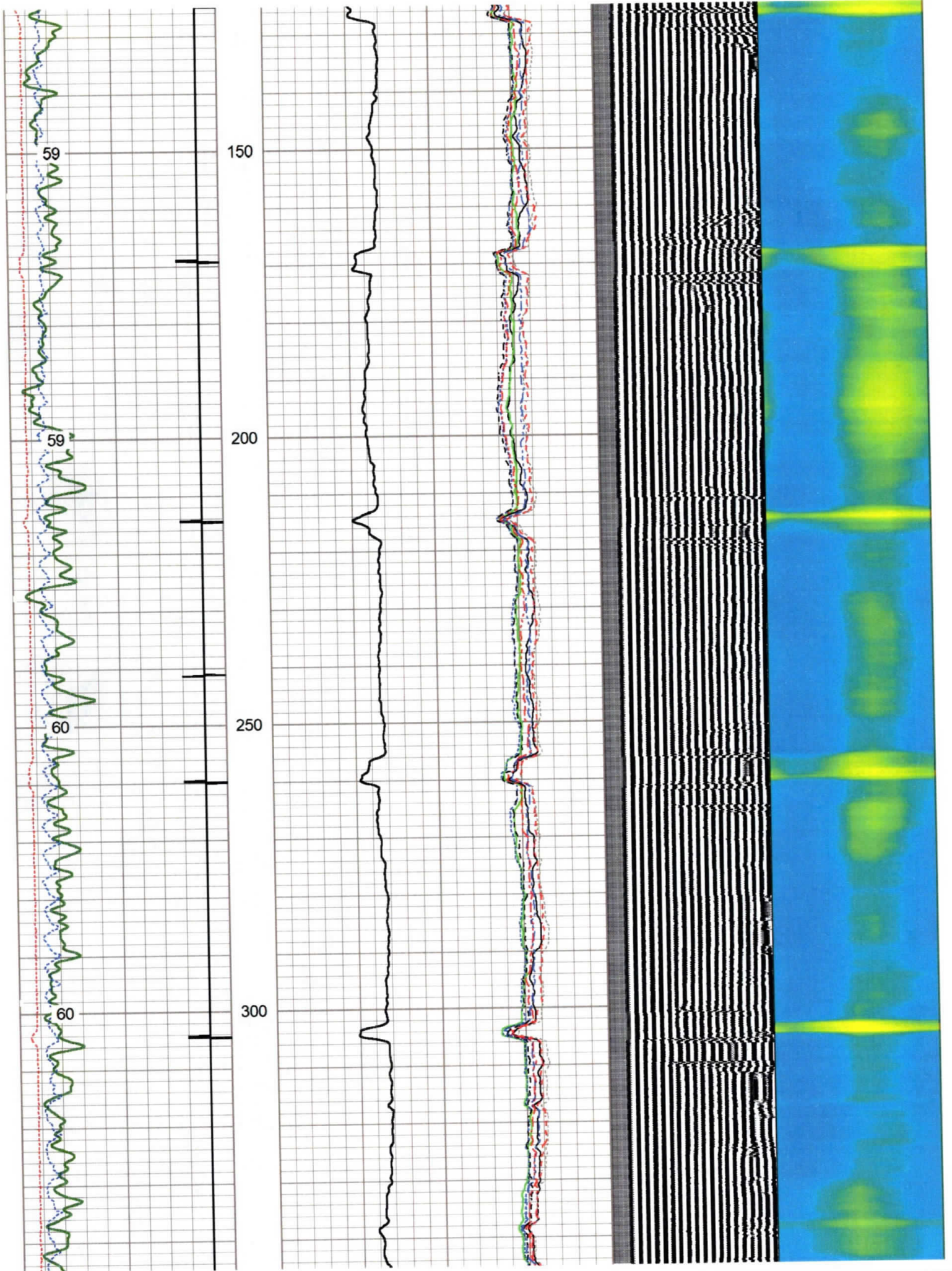
Primary Log on Well
No Marker Joint Found
Main Pass 1,500 PSI
Repeat Pass 0 PSI

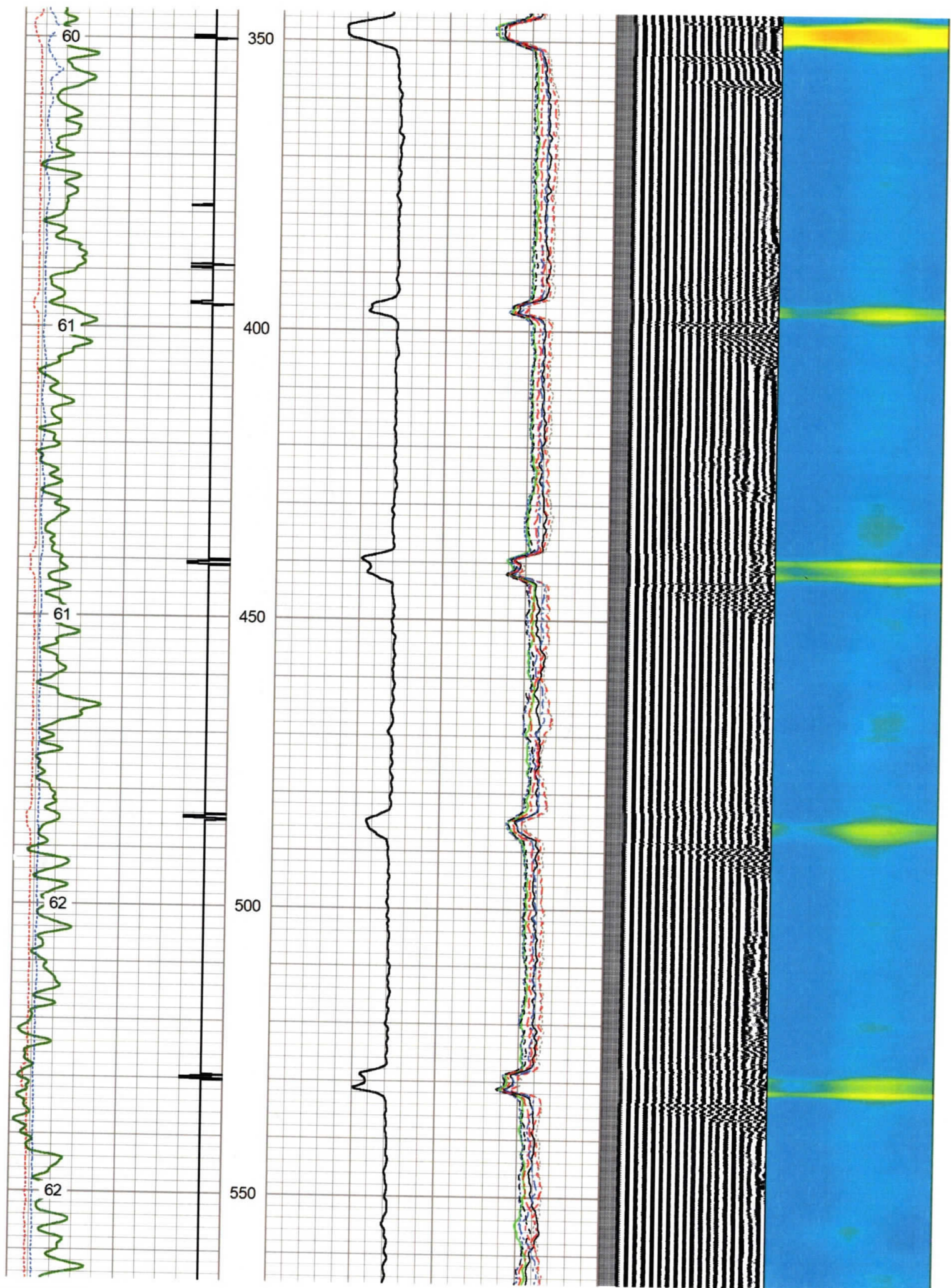
RECEIVED
Office of Oil and Gas
AUG 10 2020
WV Department of
Environmental Protection

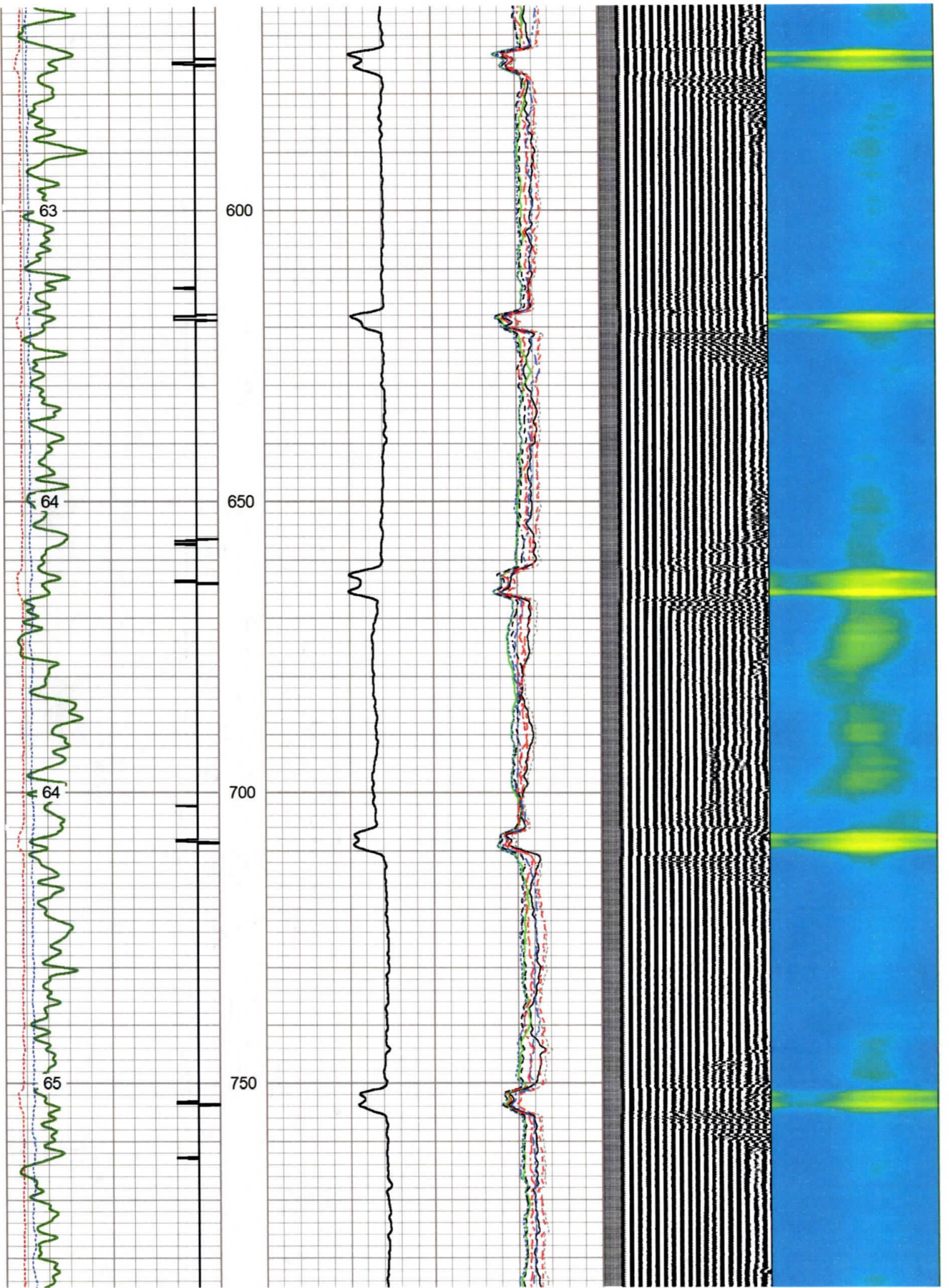
Thank You For Choosing Nine Energy Service Wireline. Marietta, Ohio

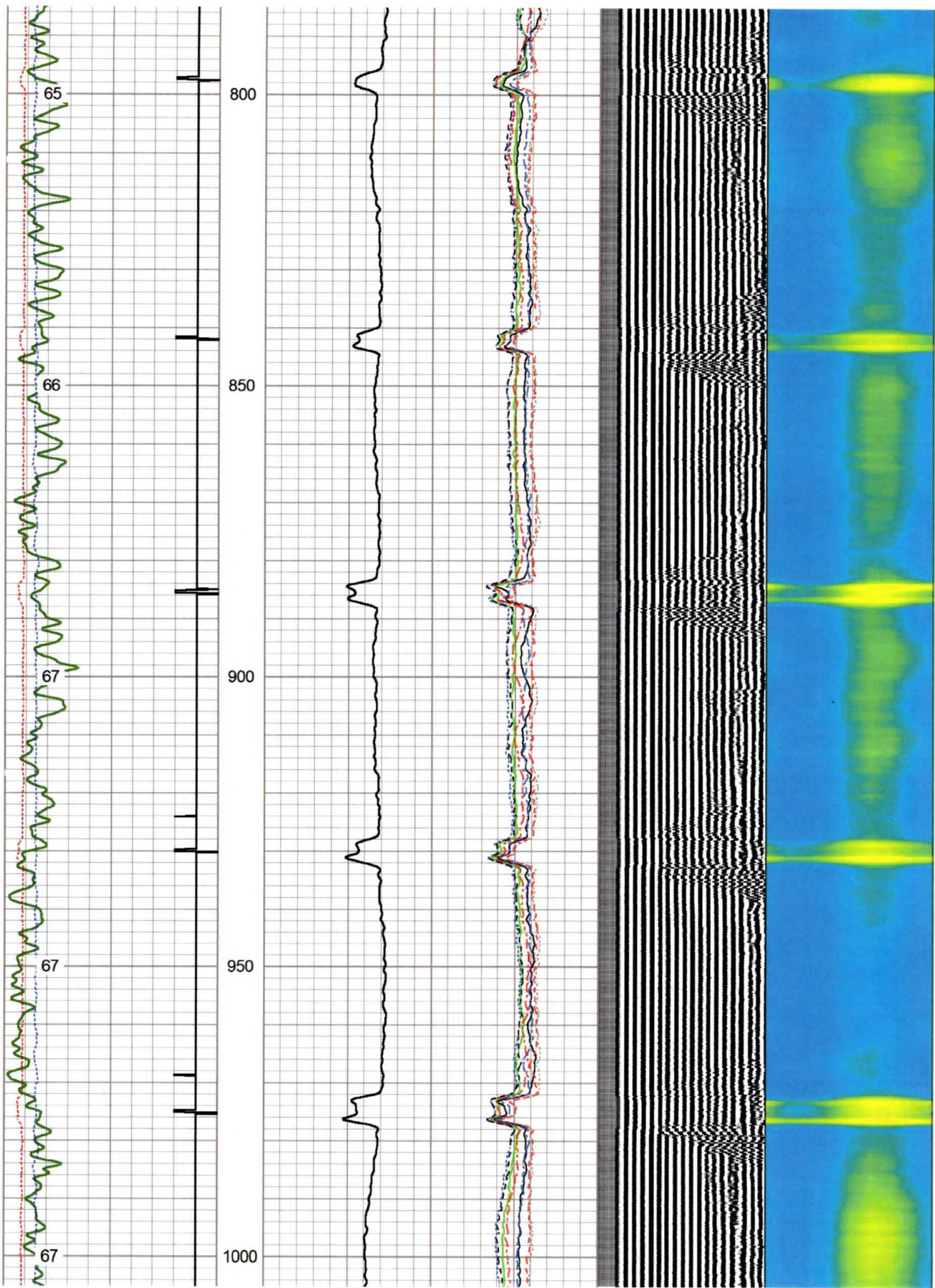


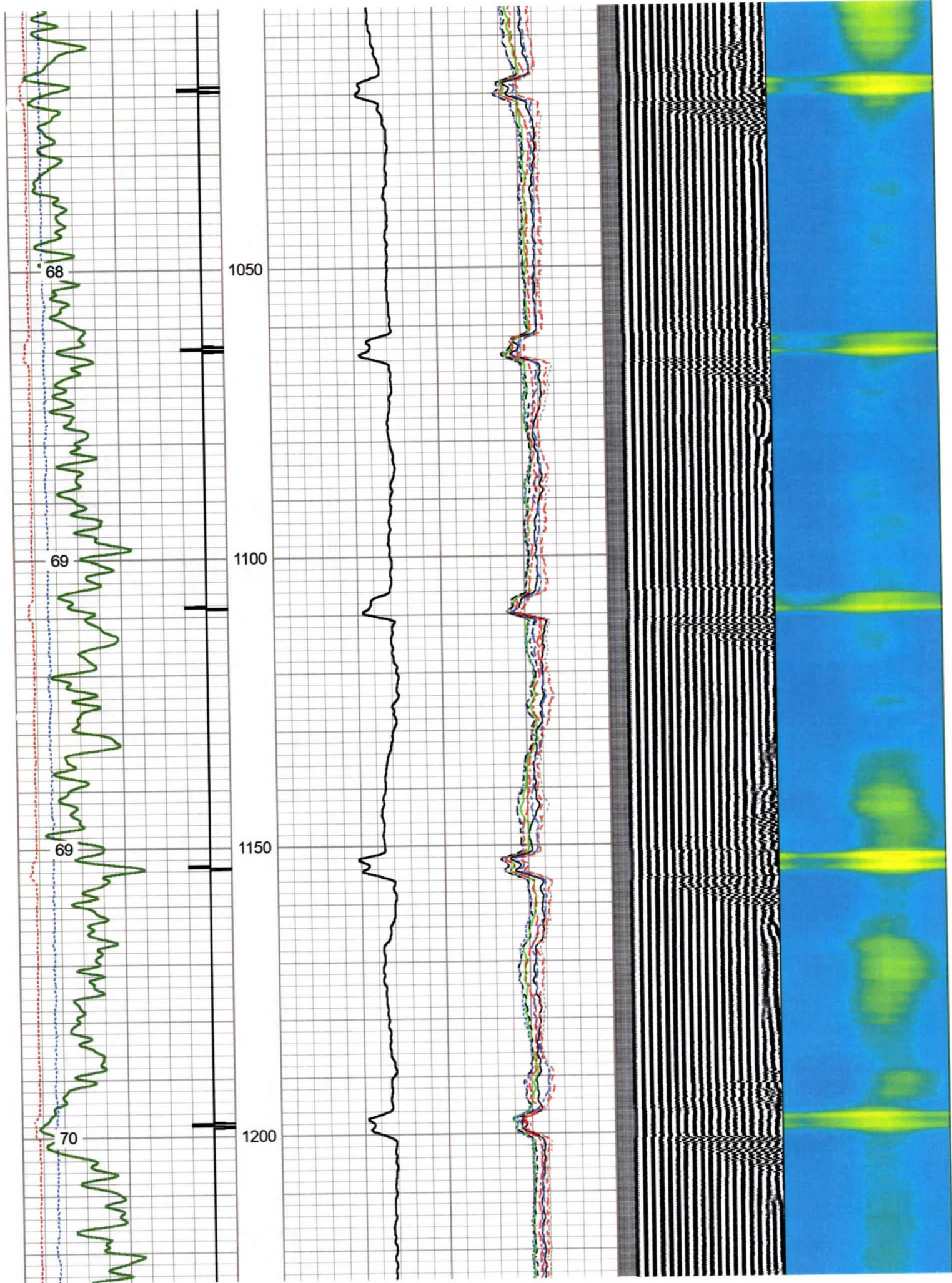
Main Pass 1,500 PSI

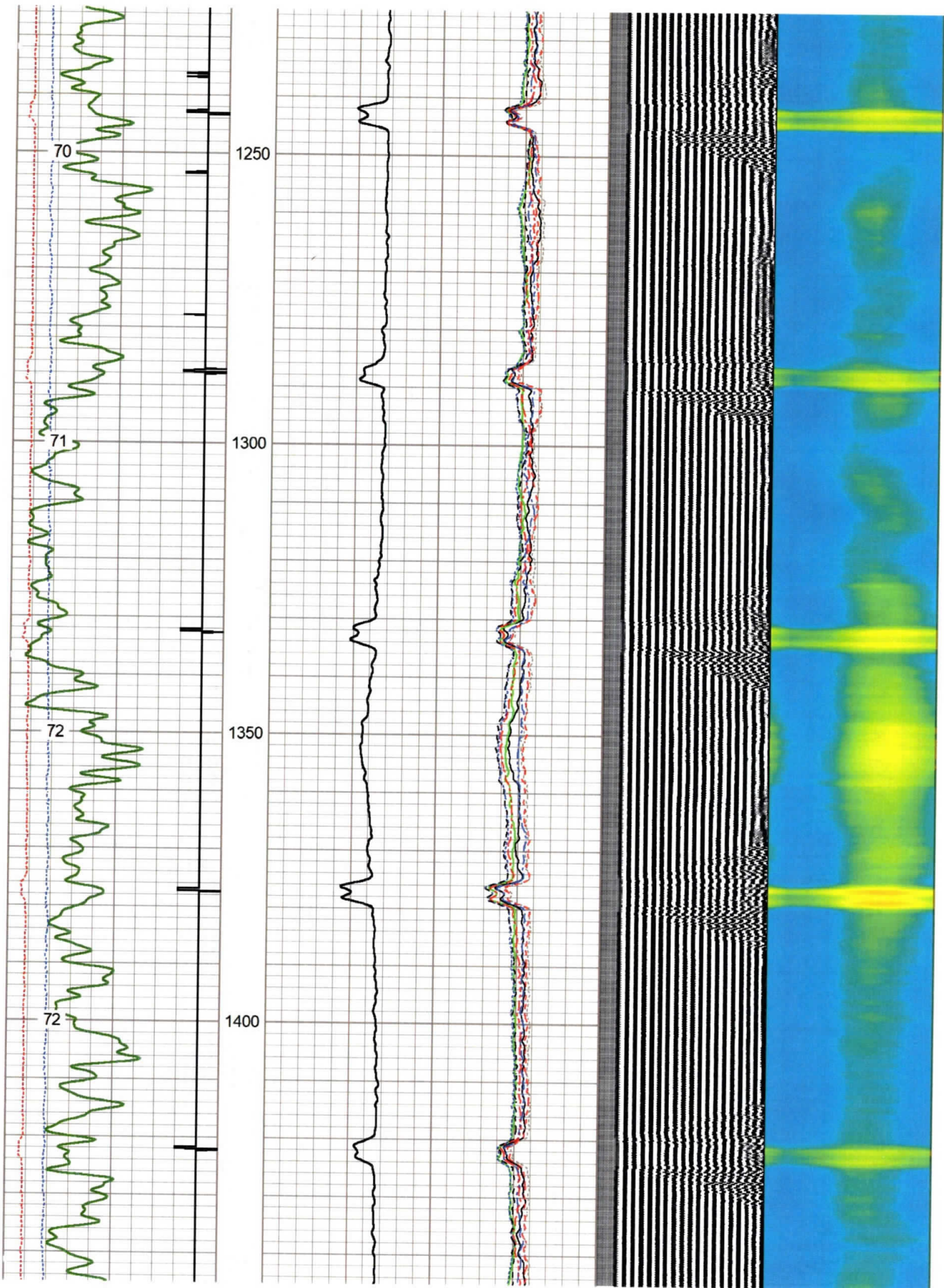


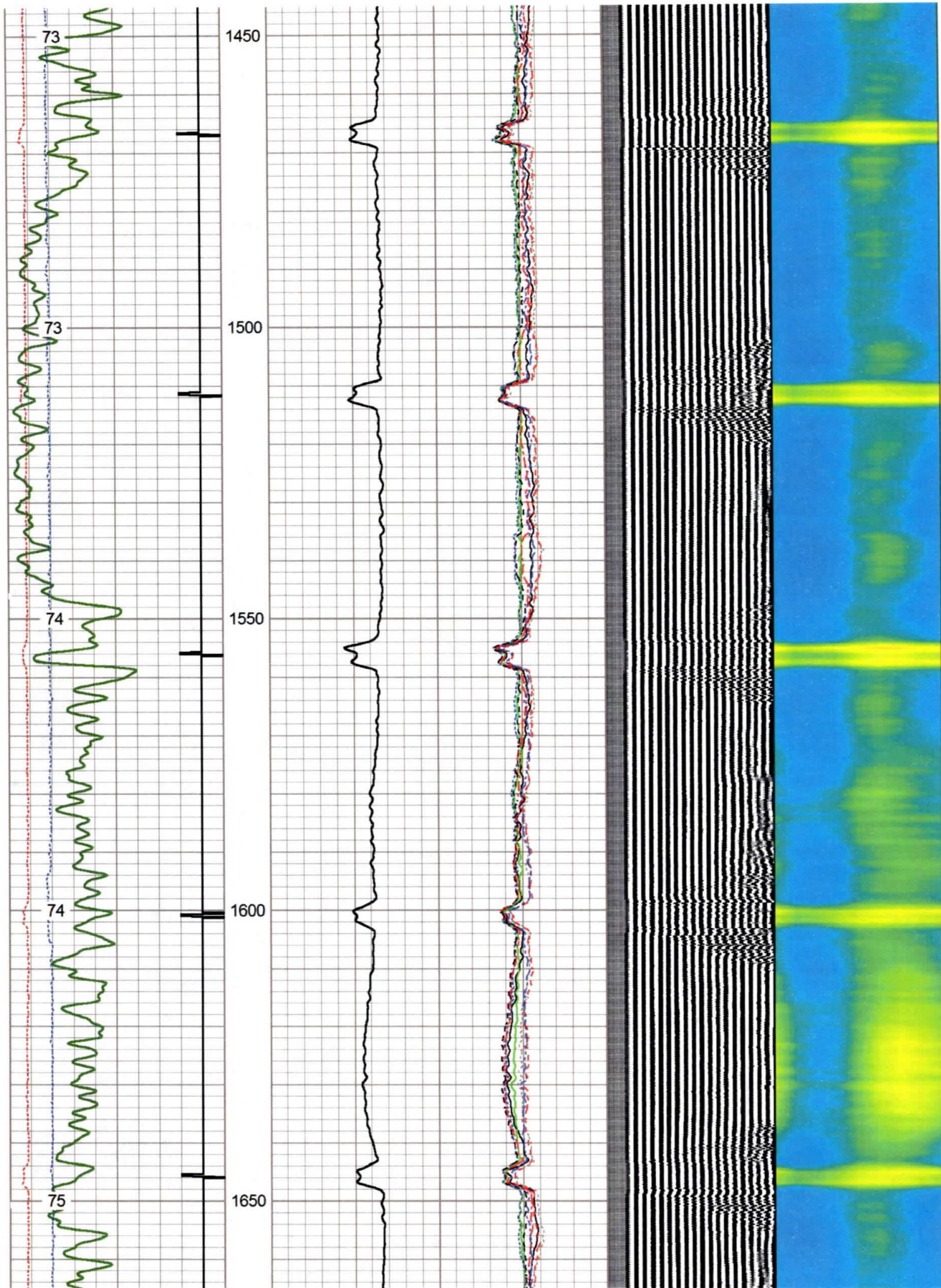


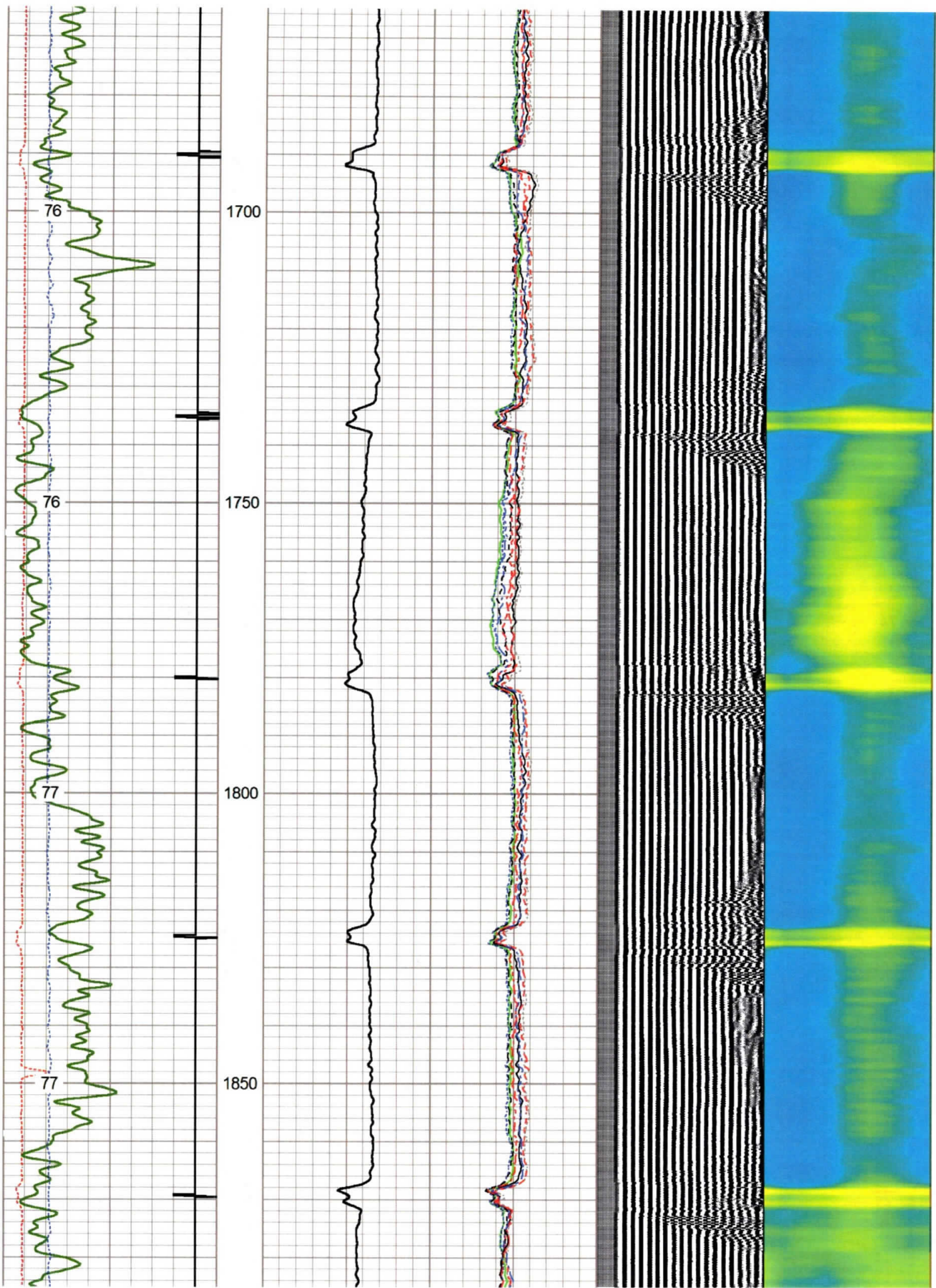


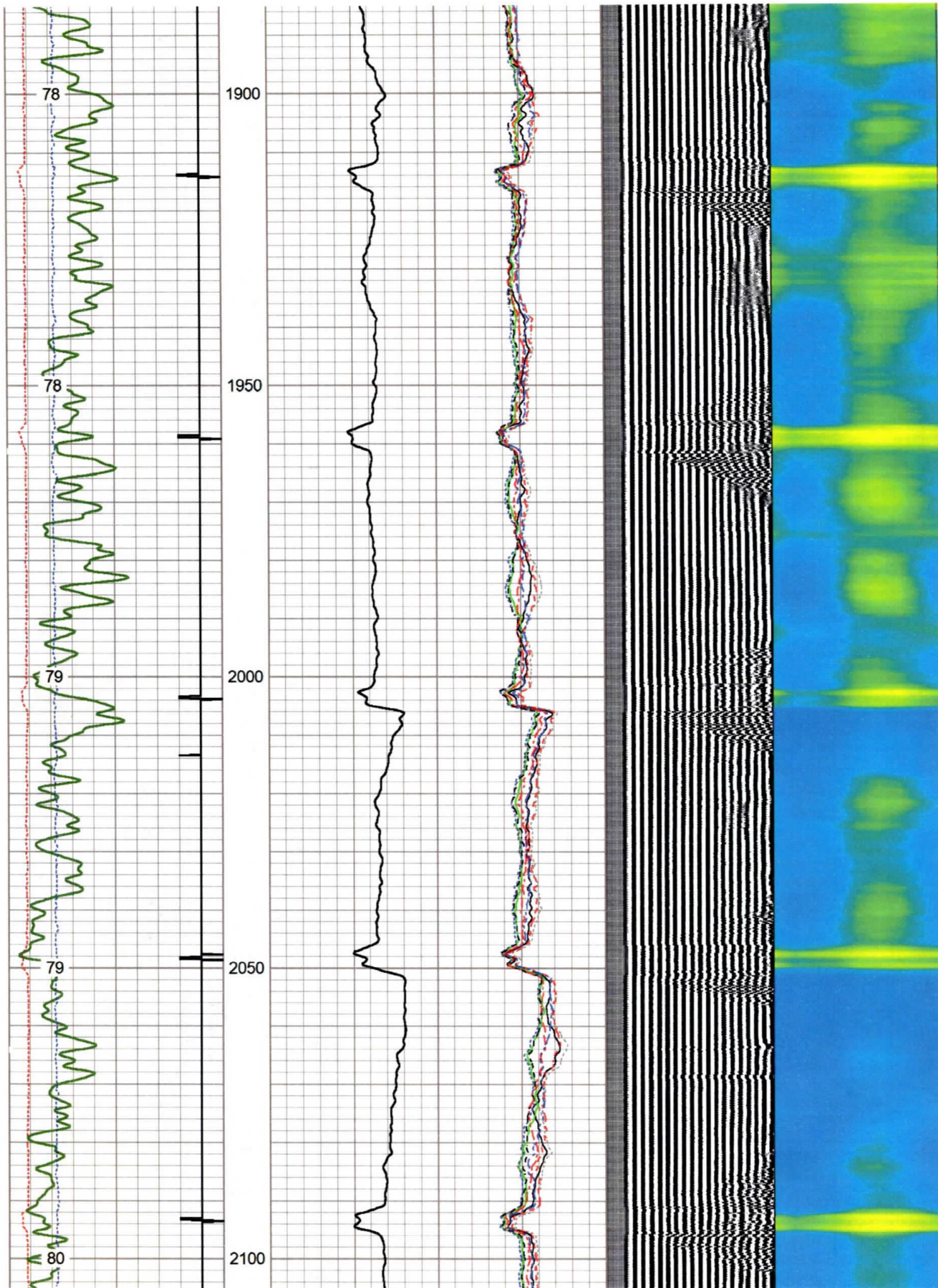


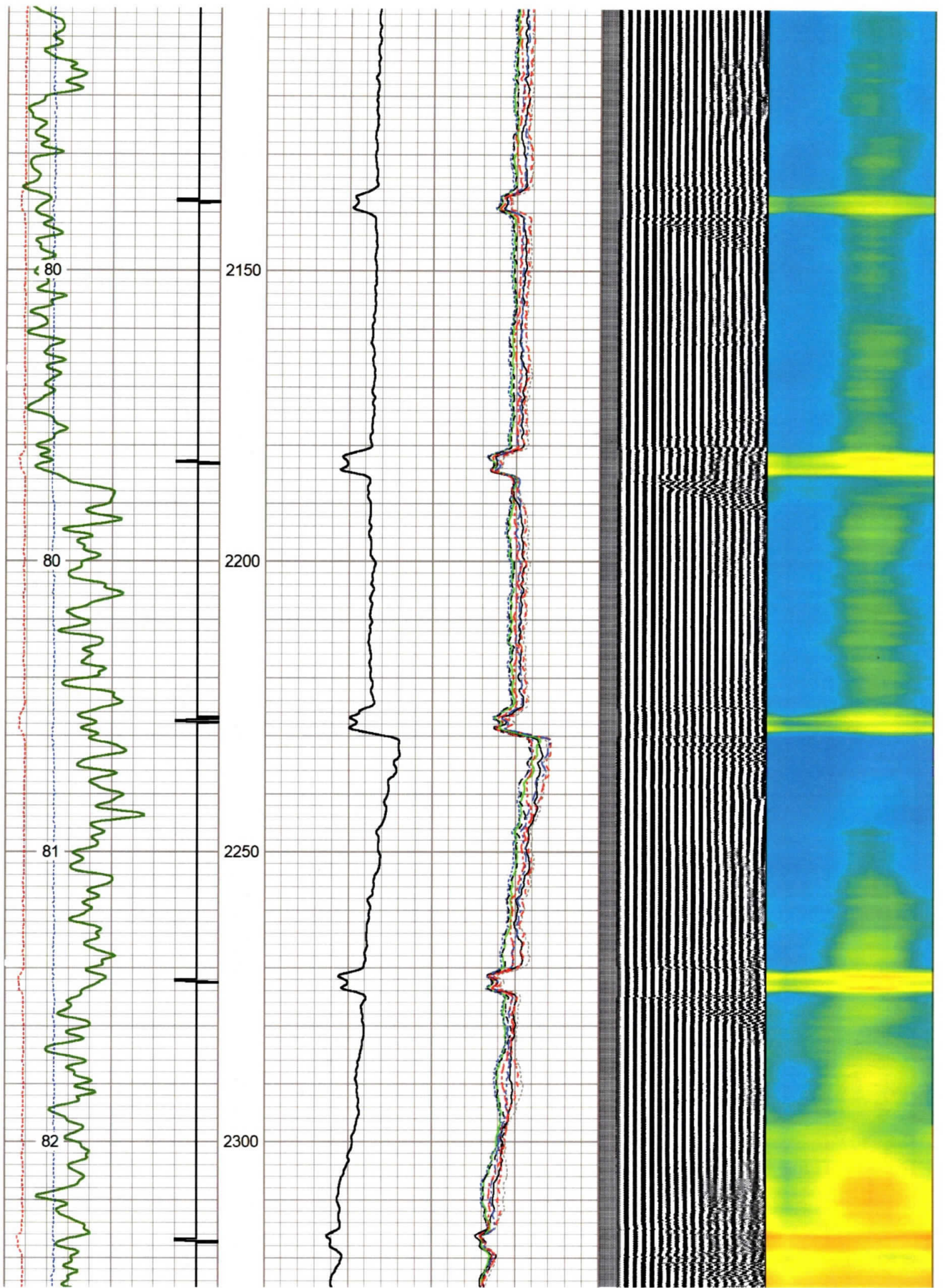


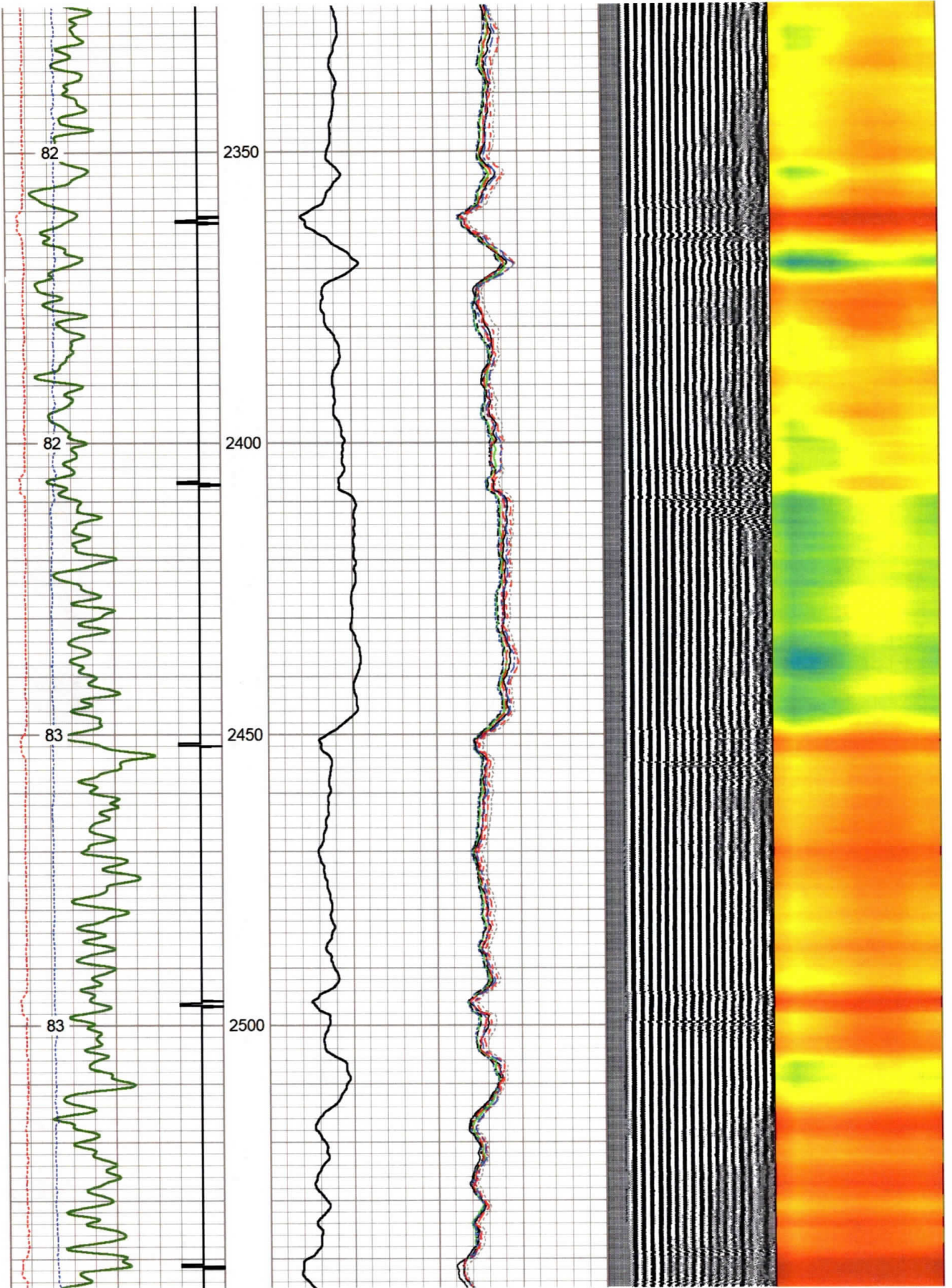


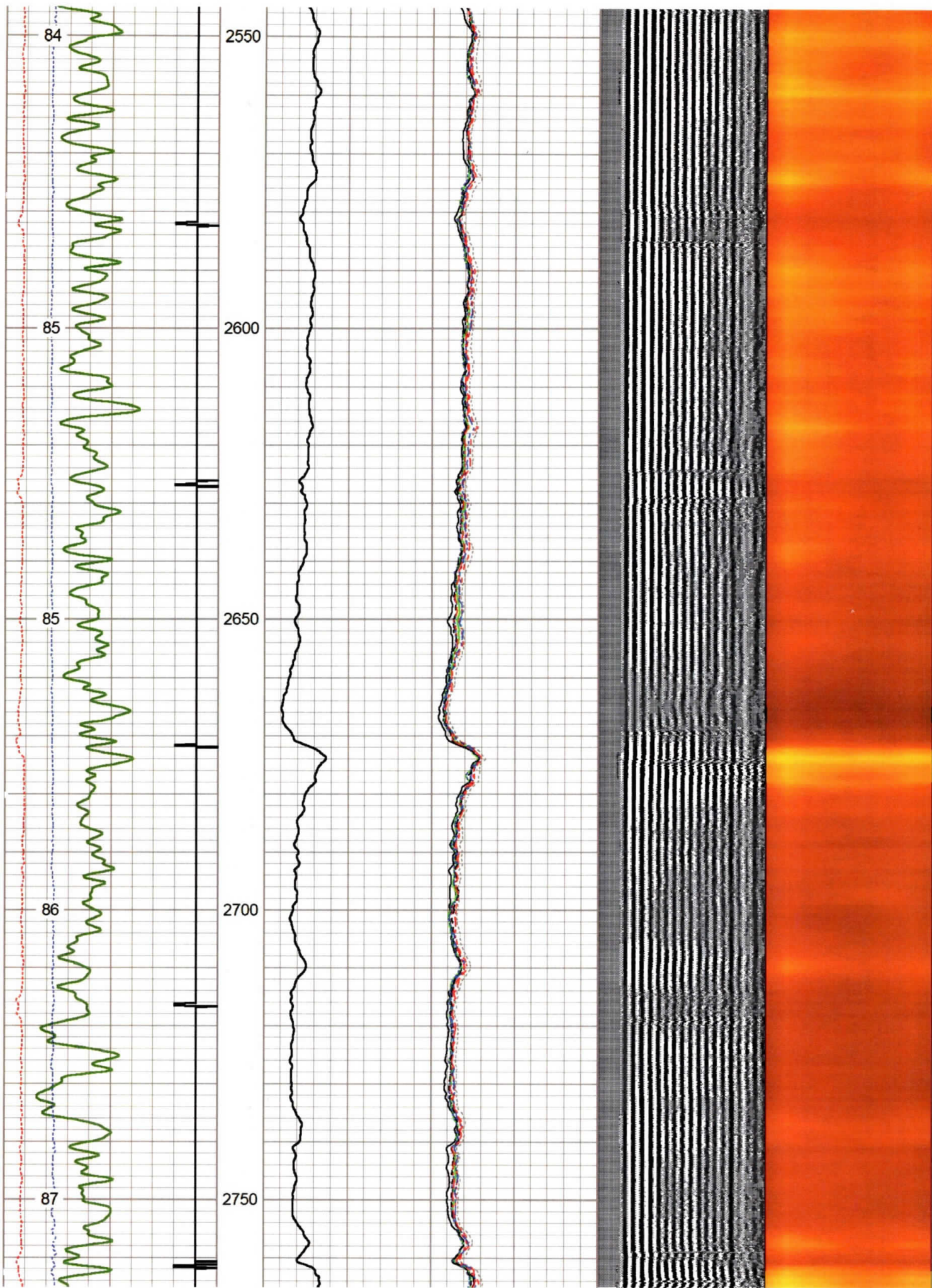


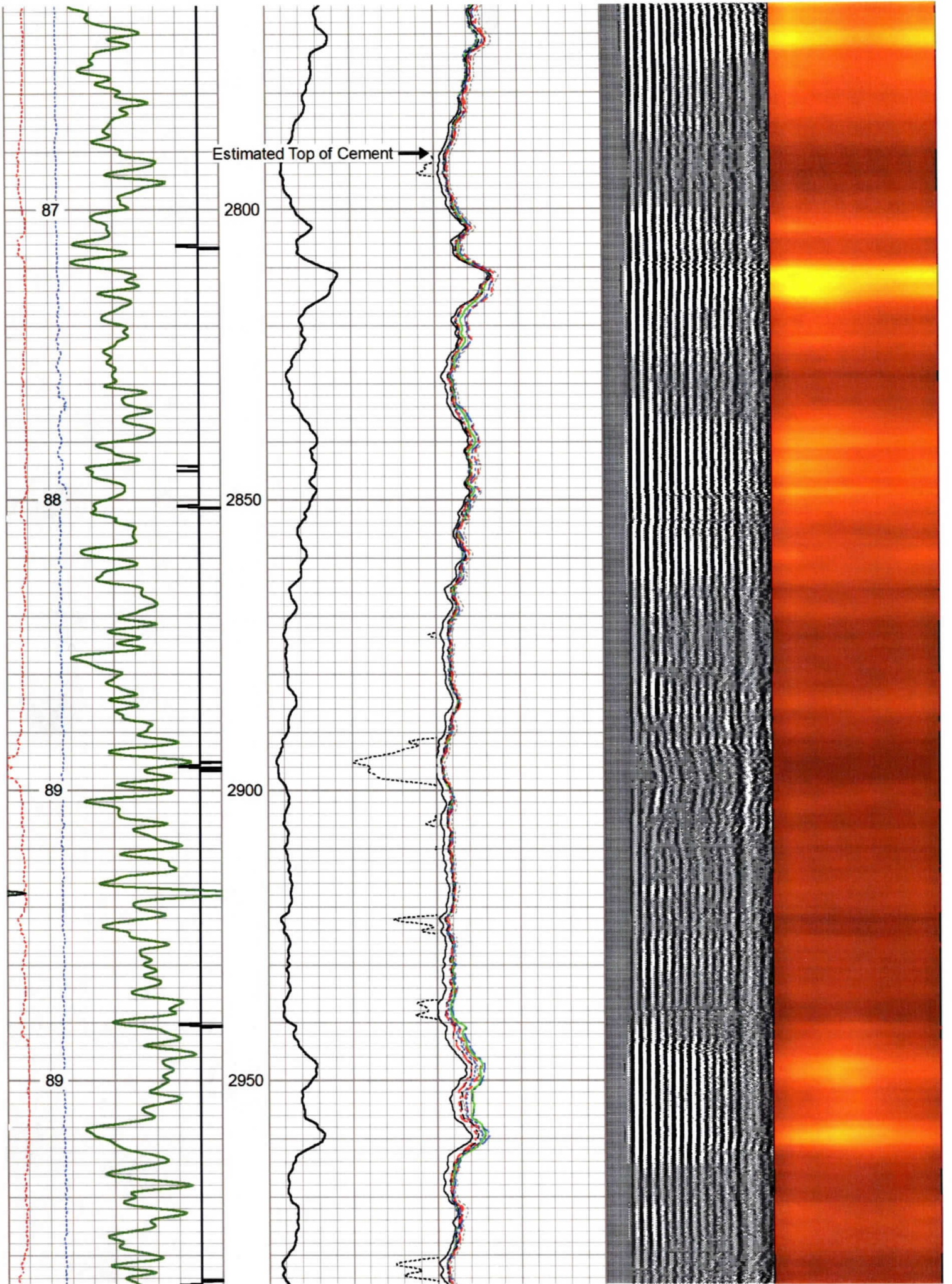


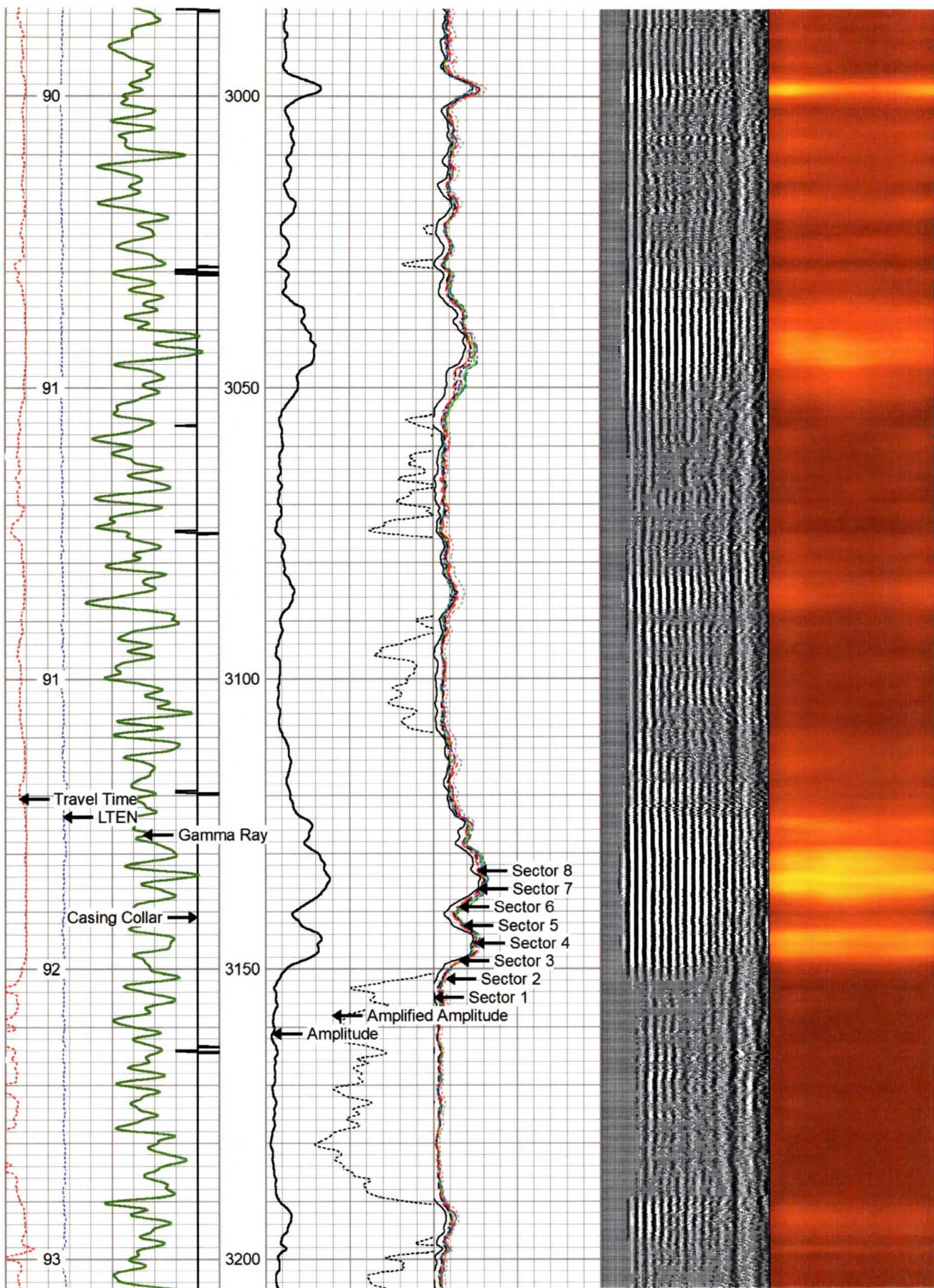


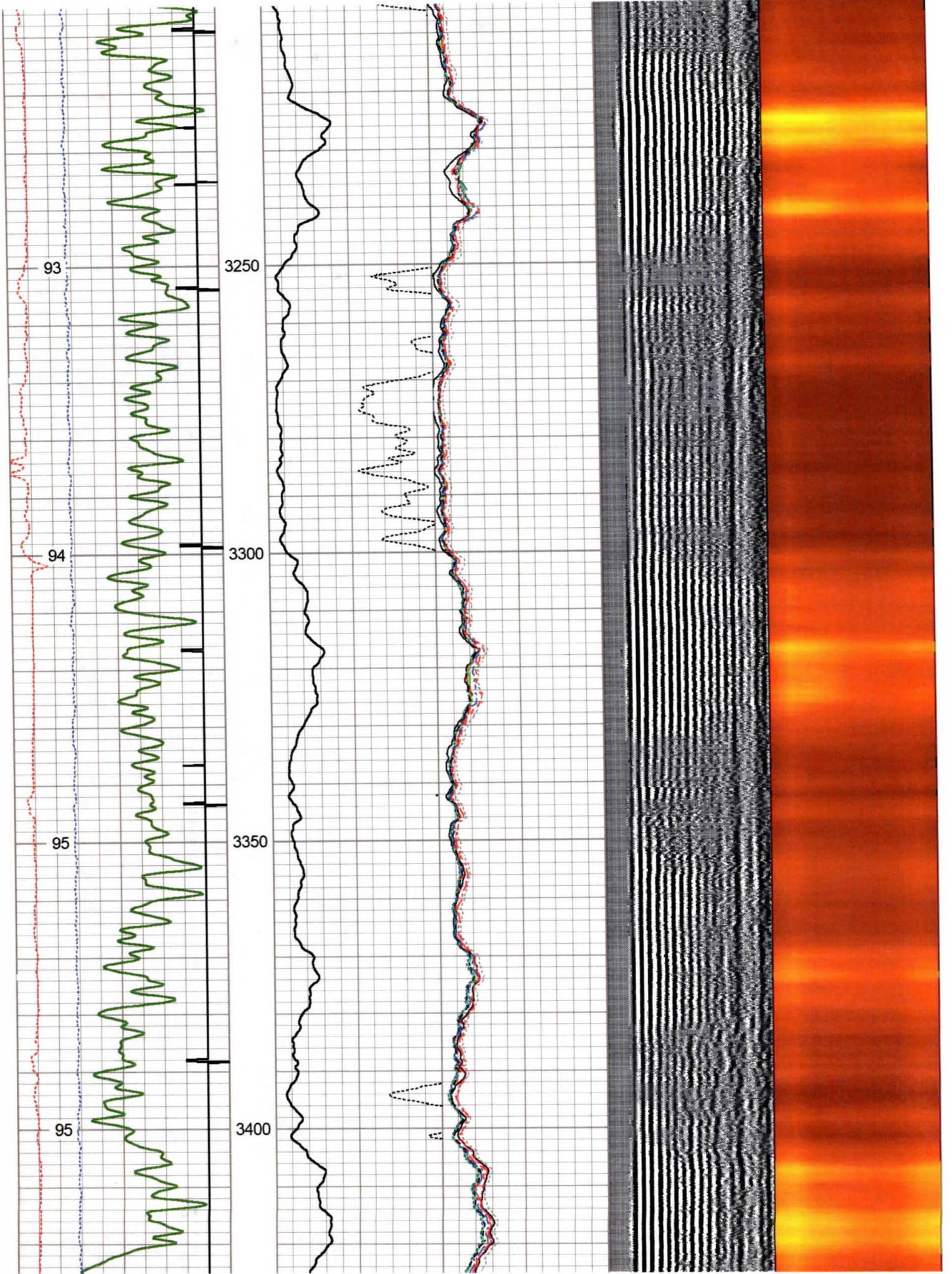


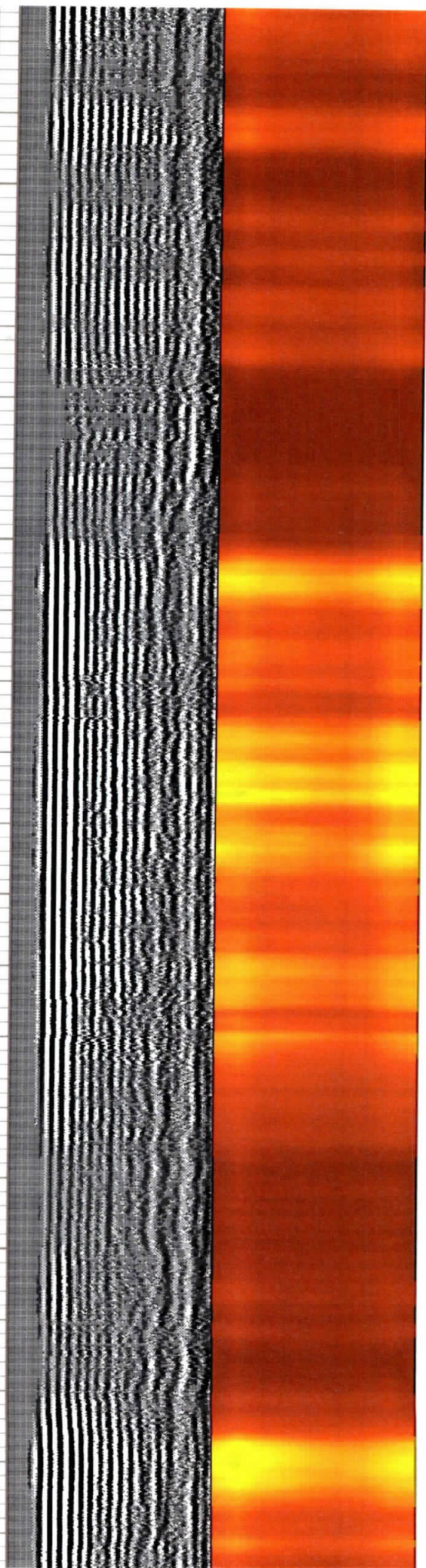
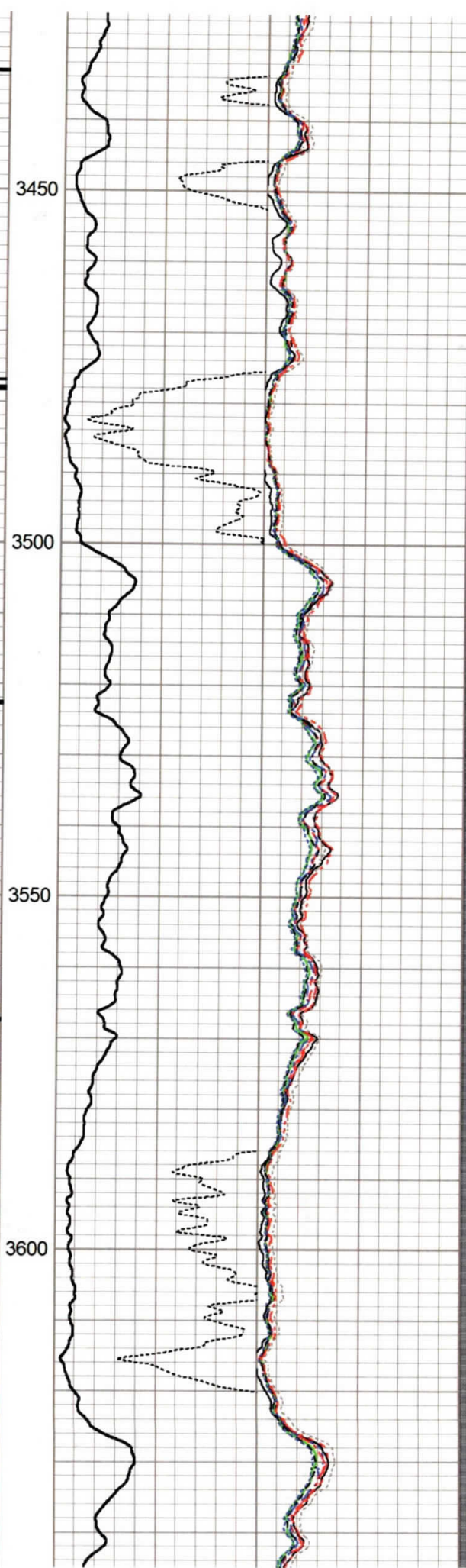
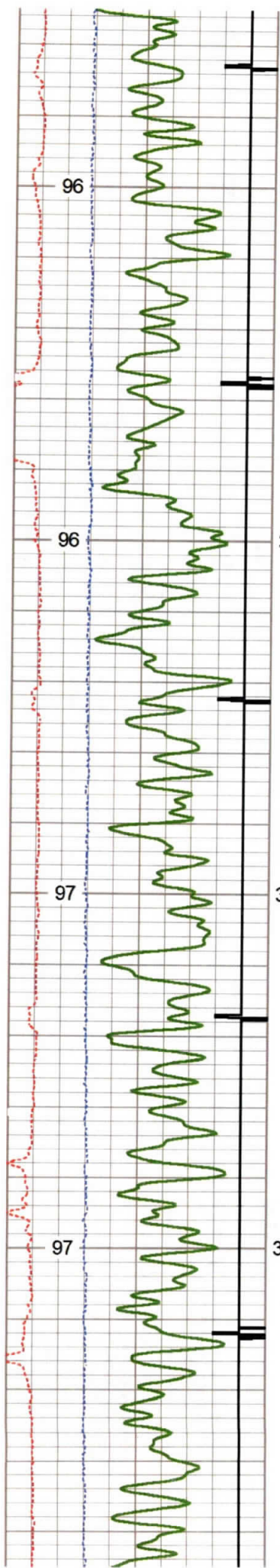


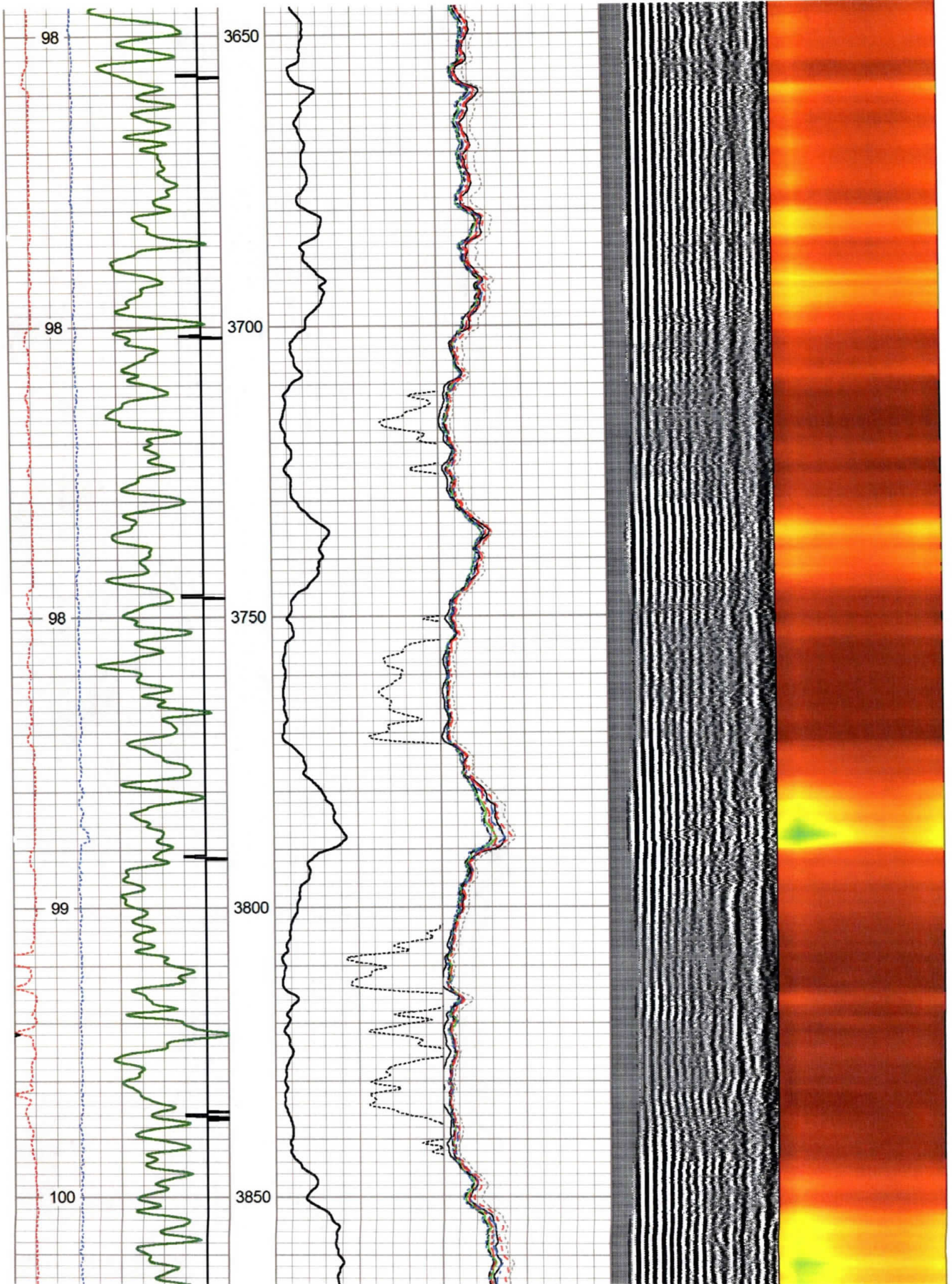


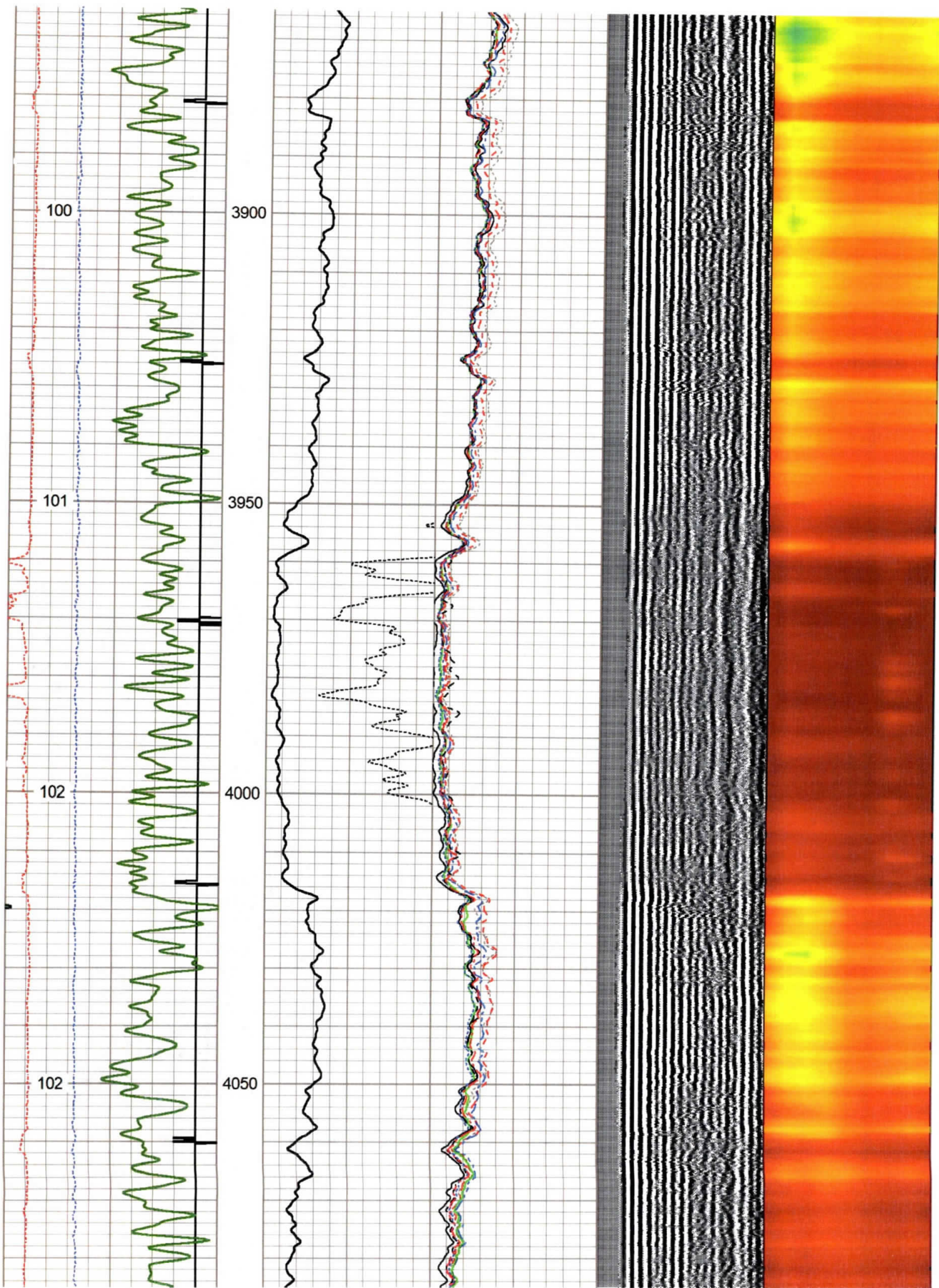


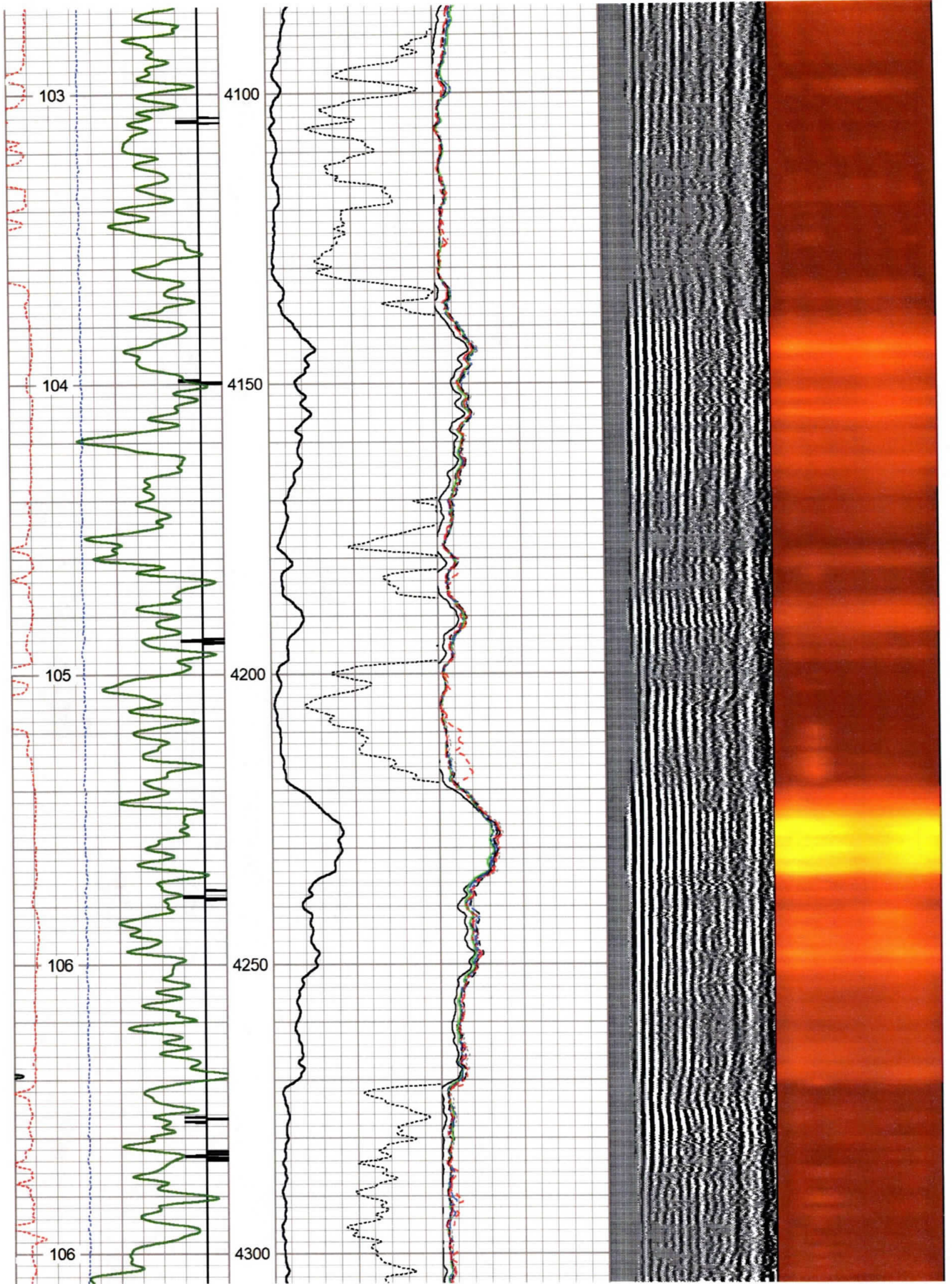


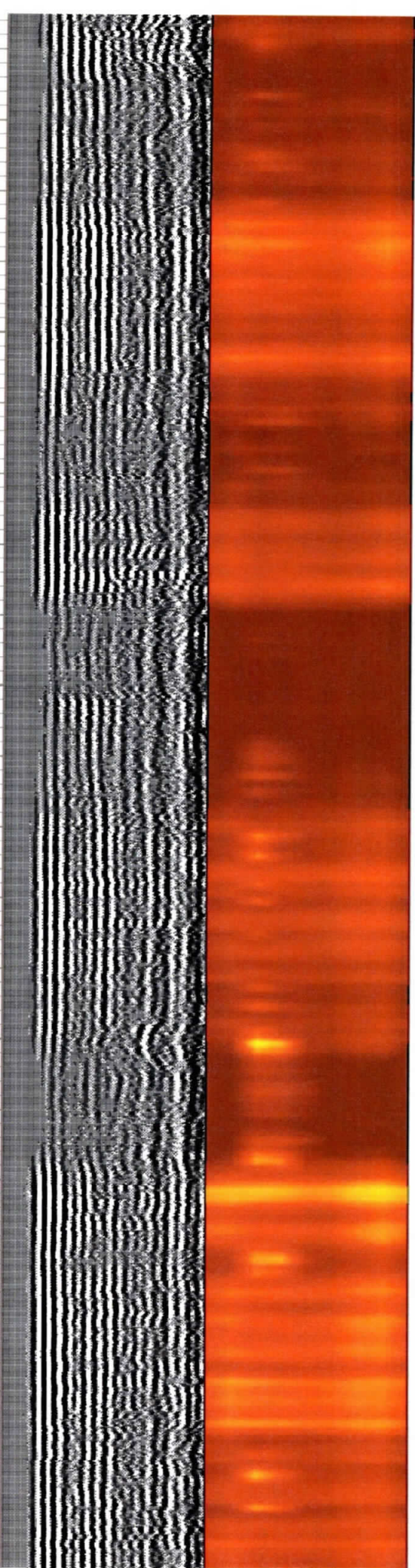
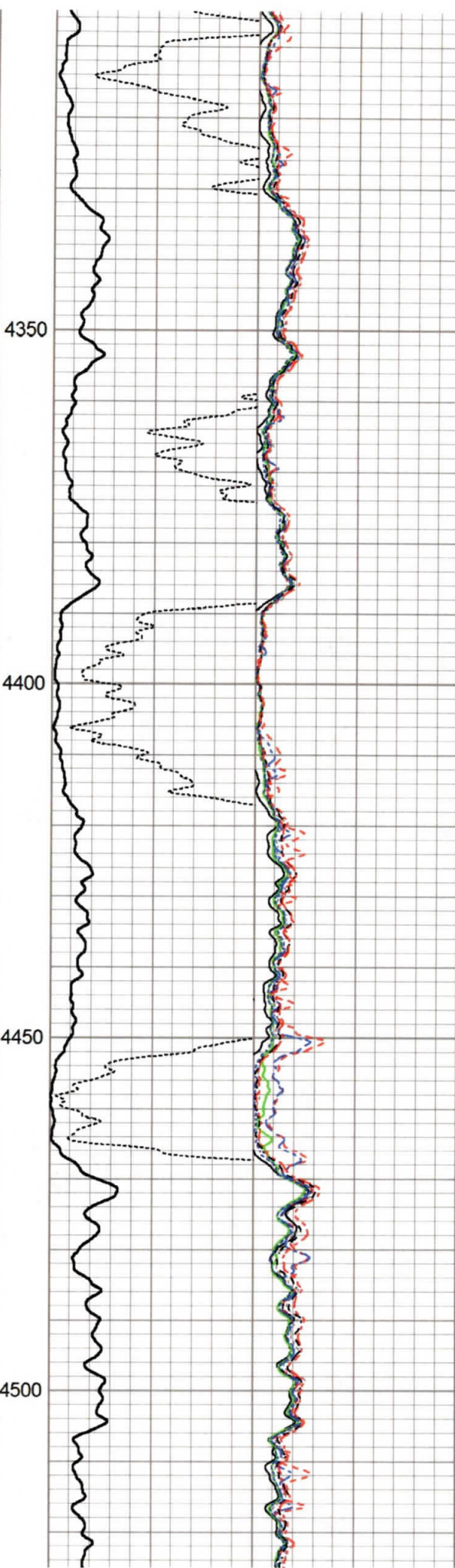
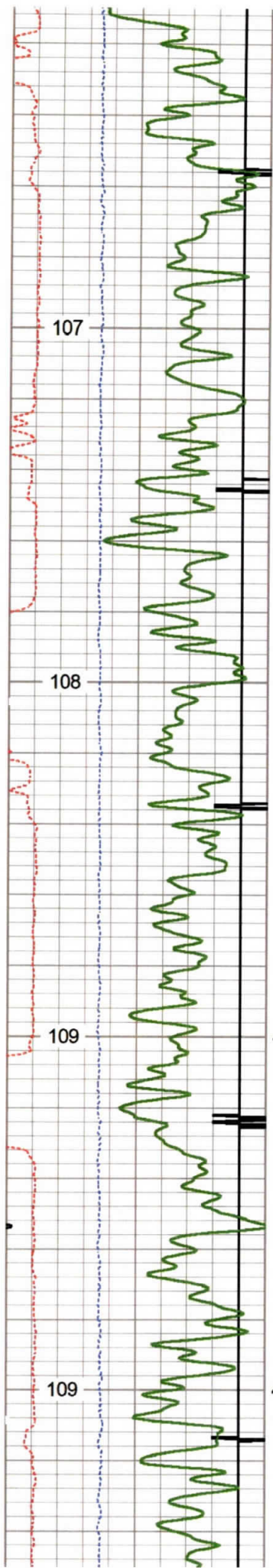


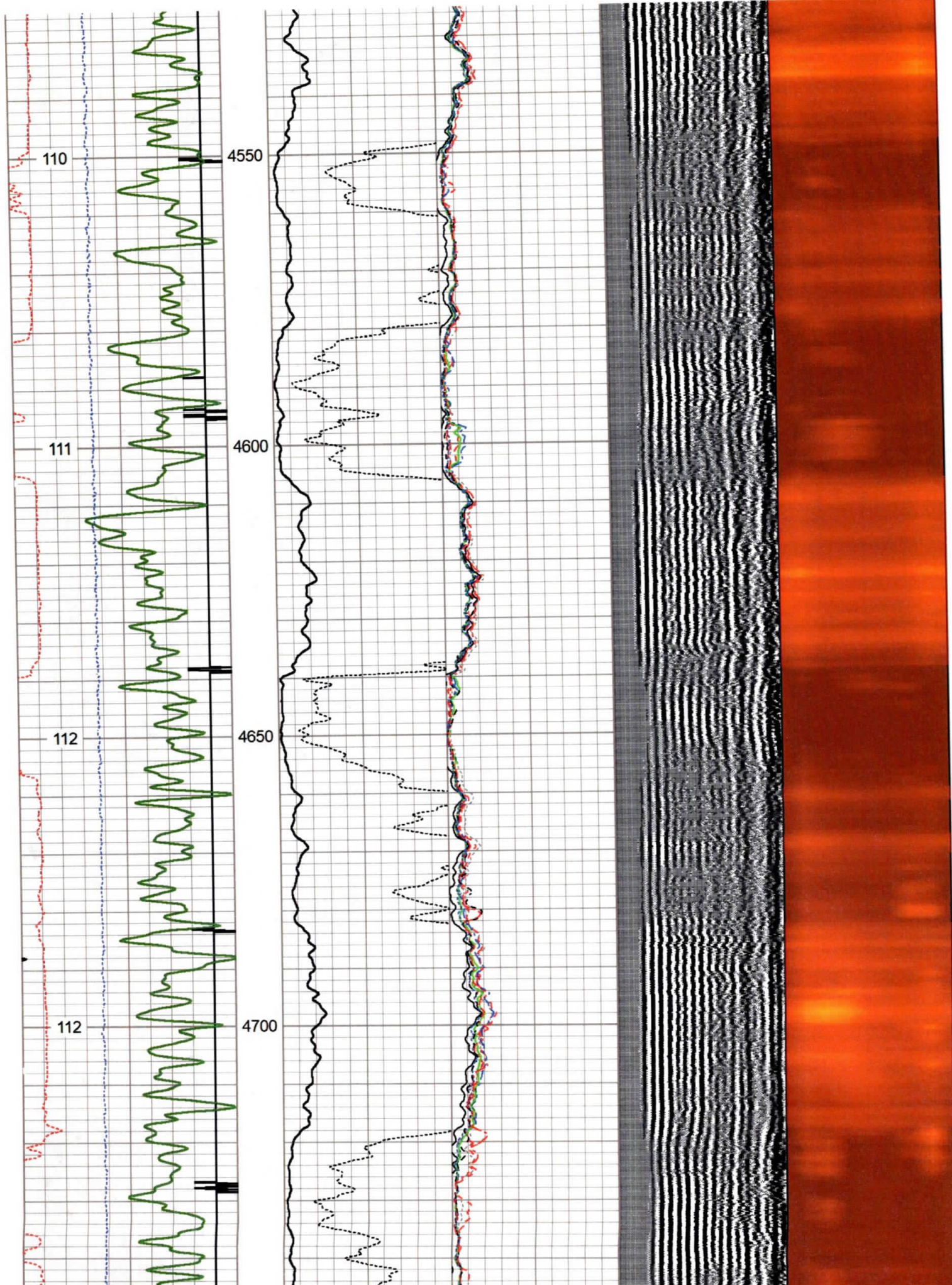


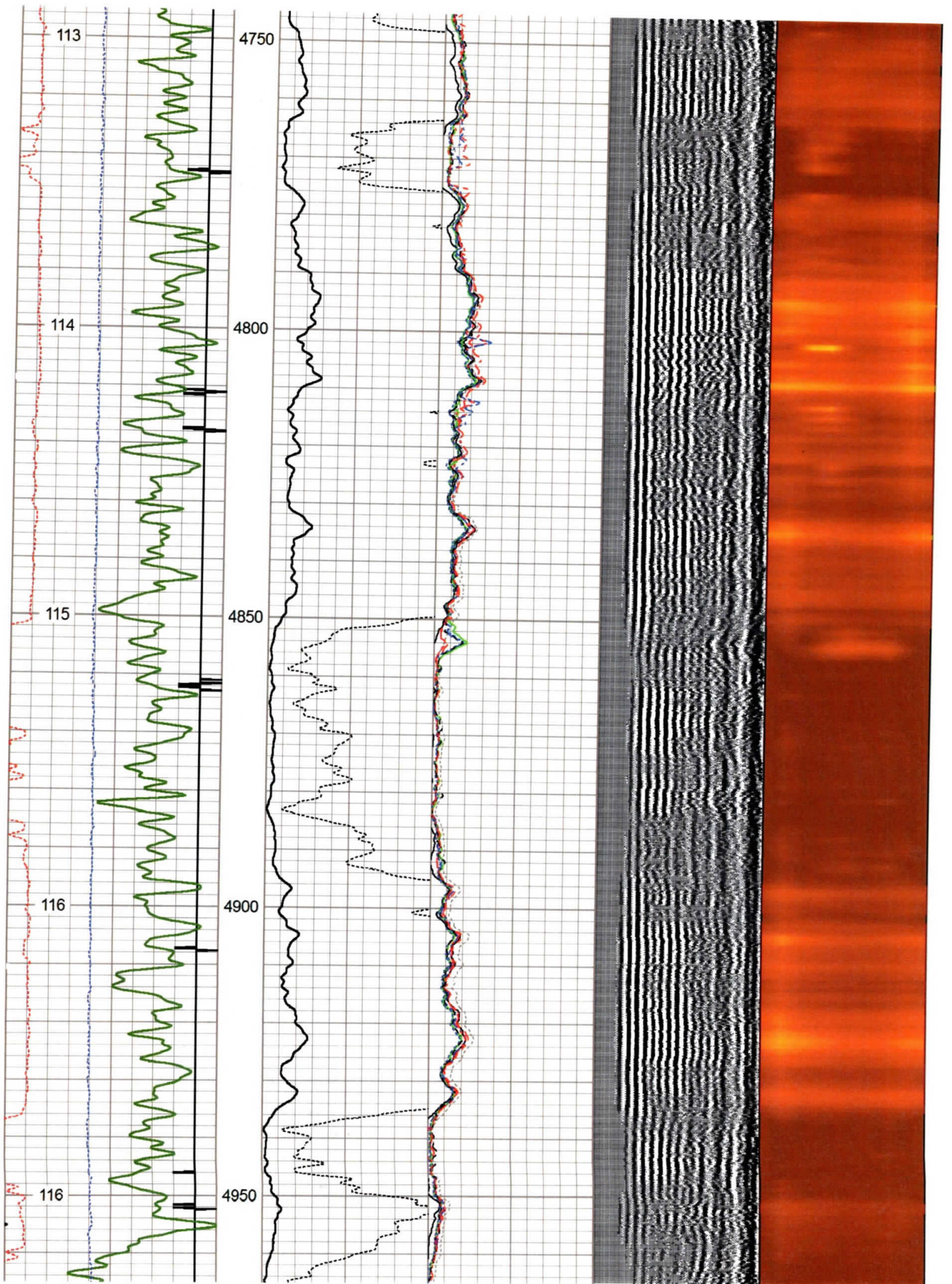


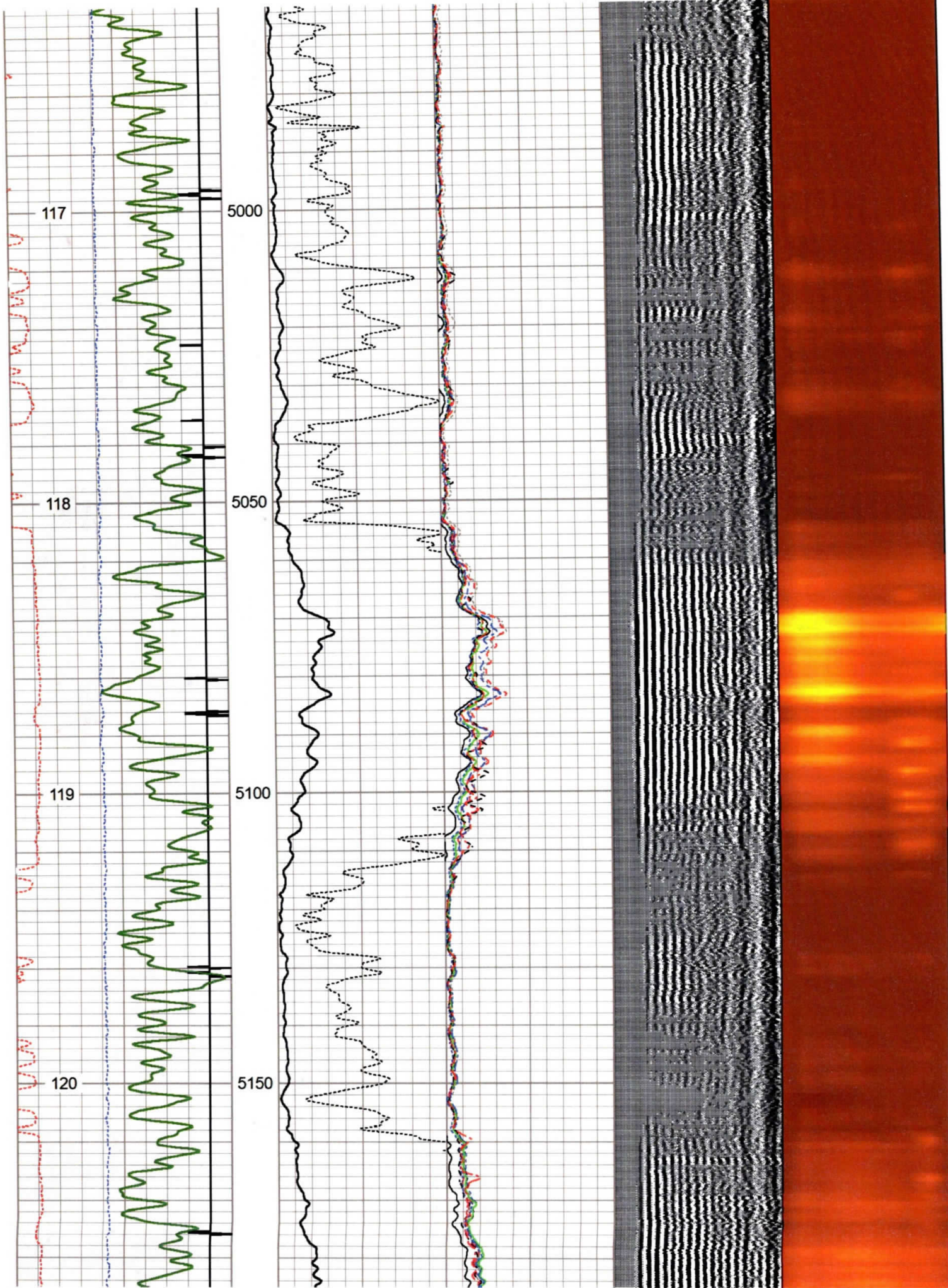


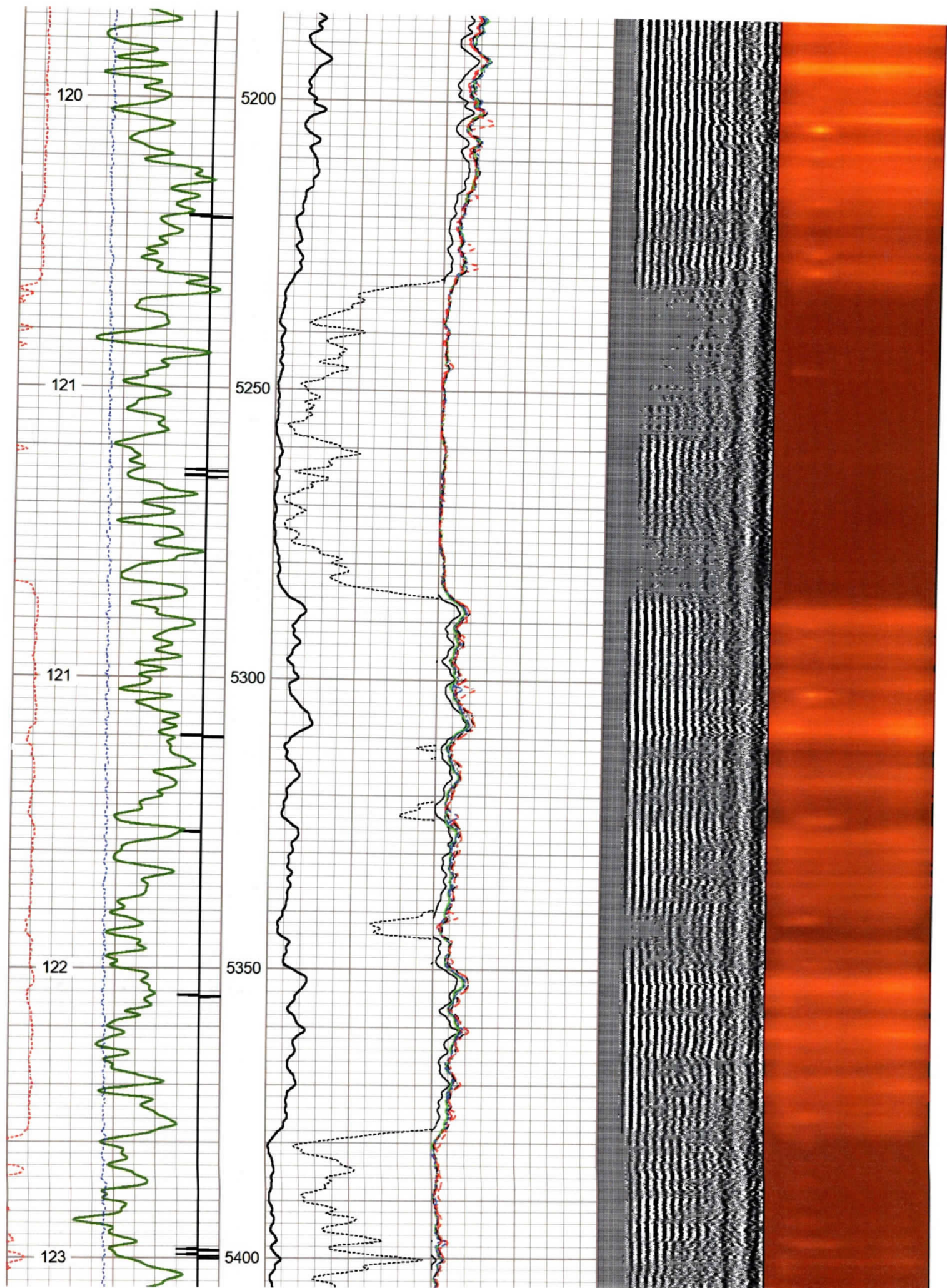


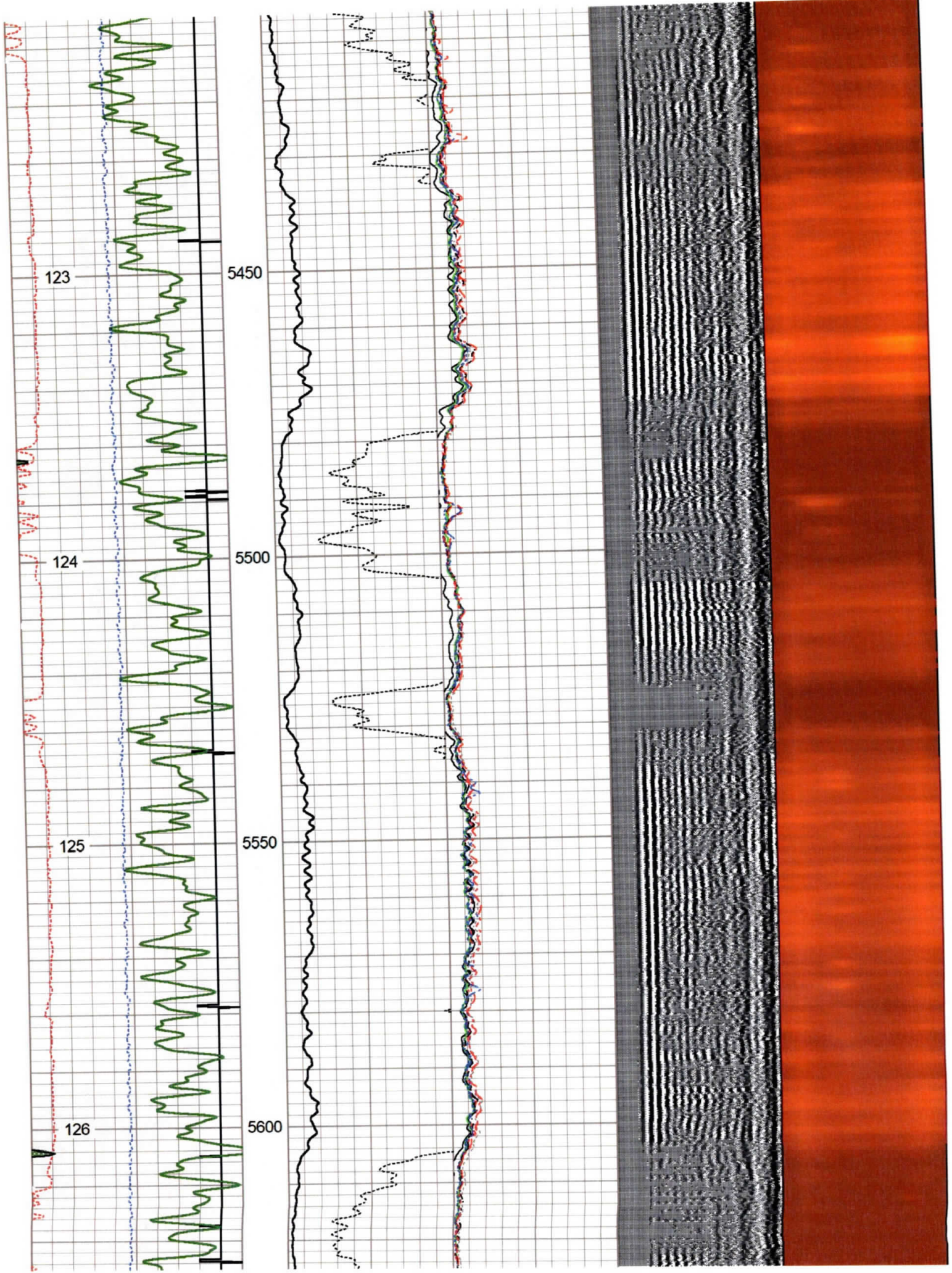


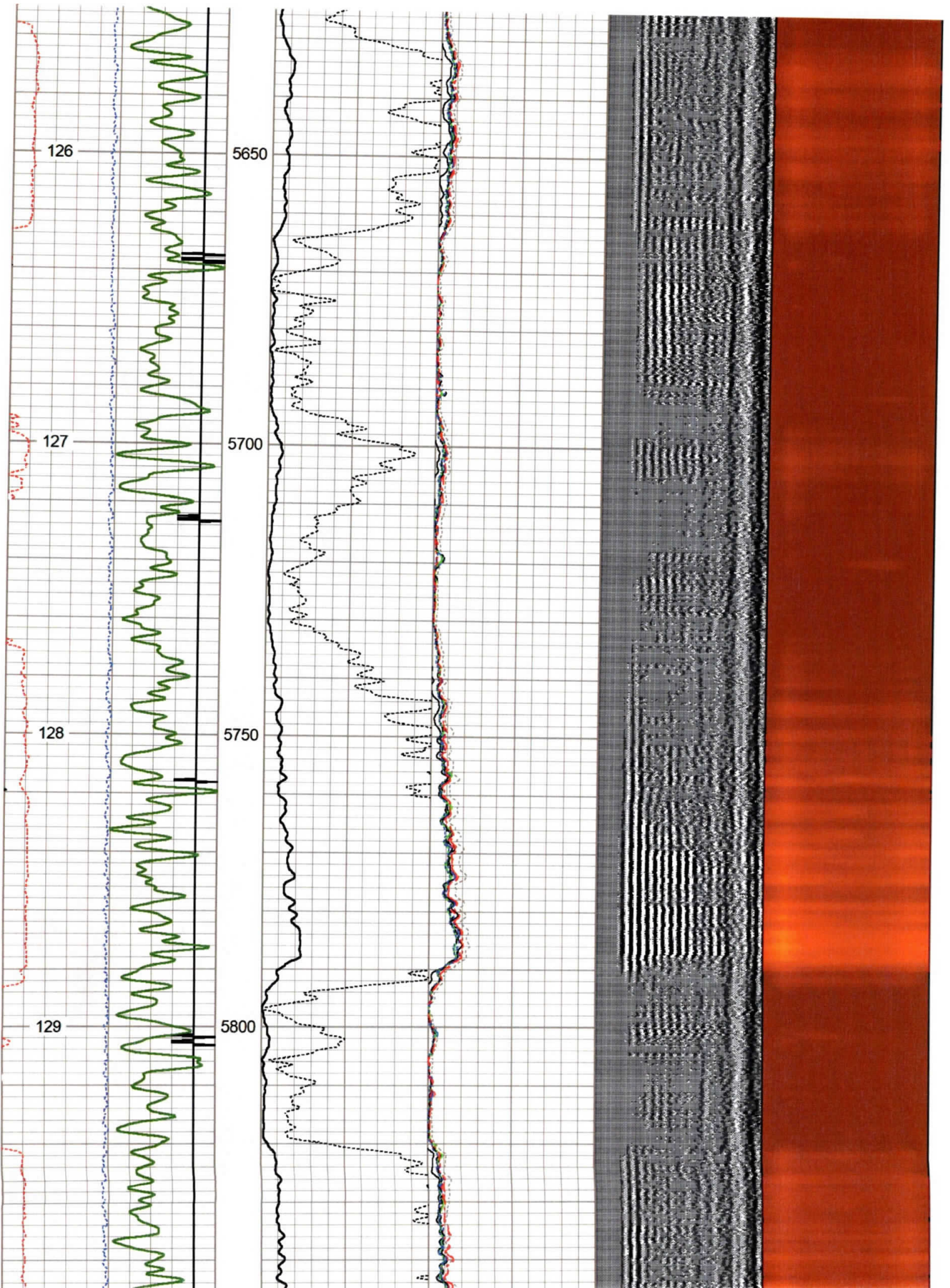


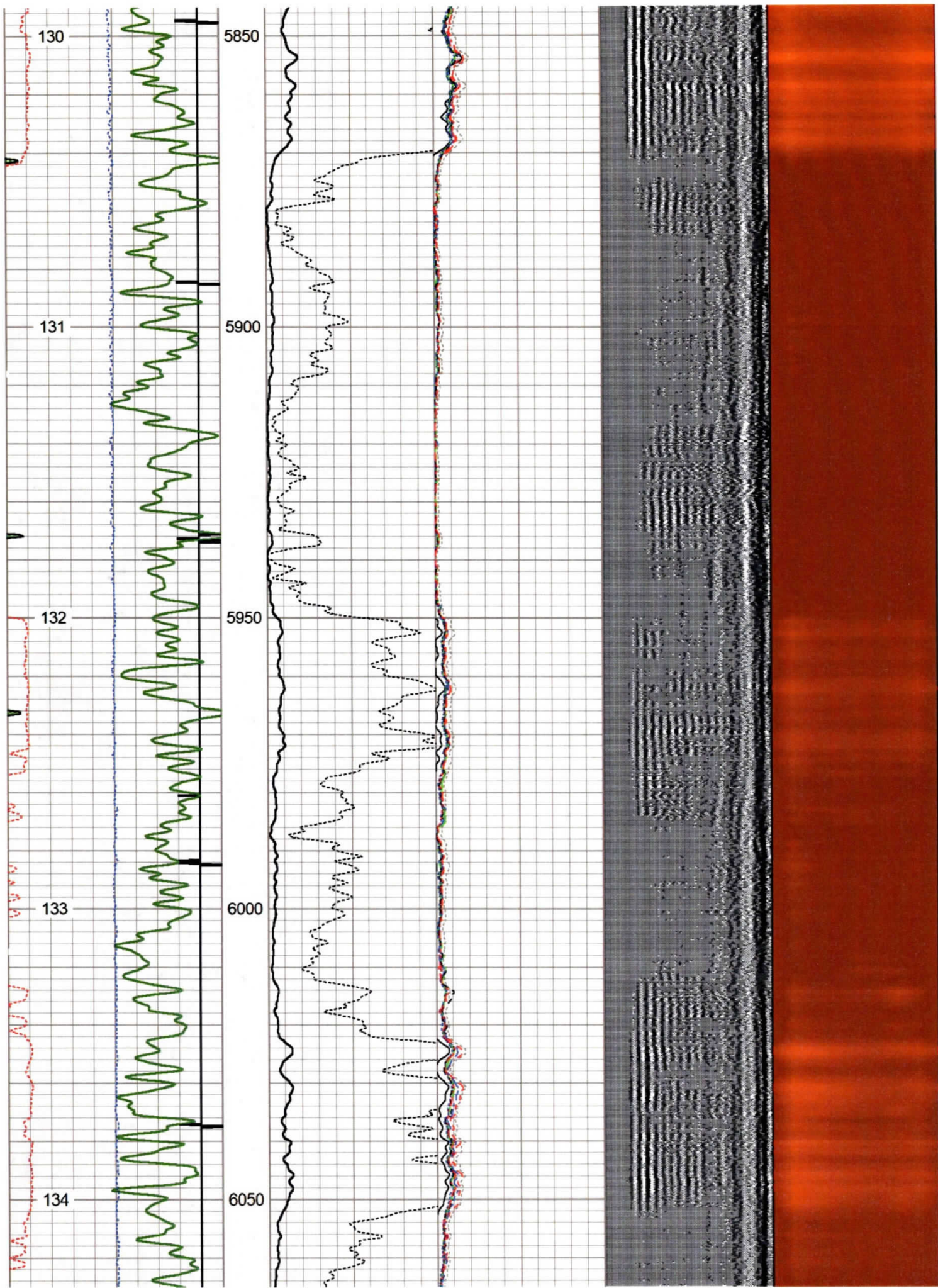


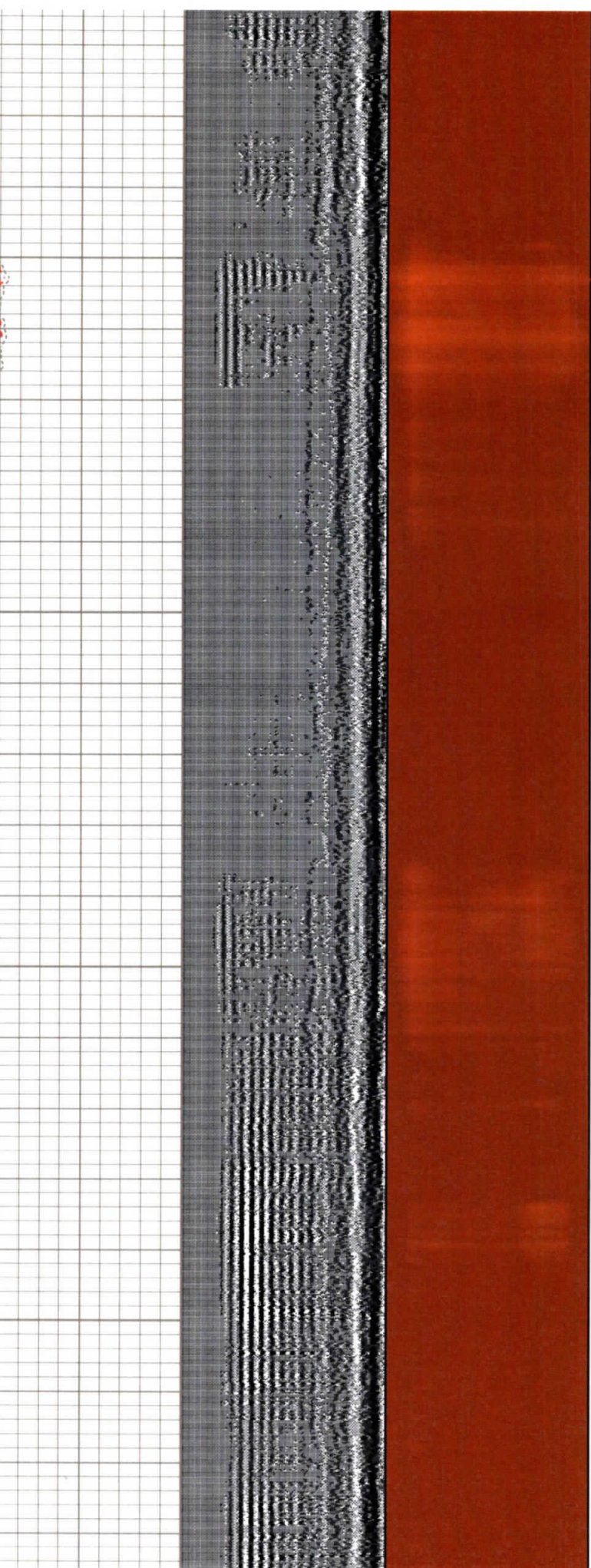
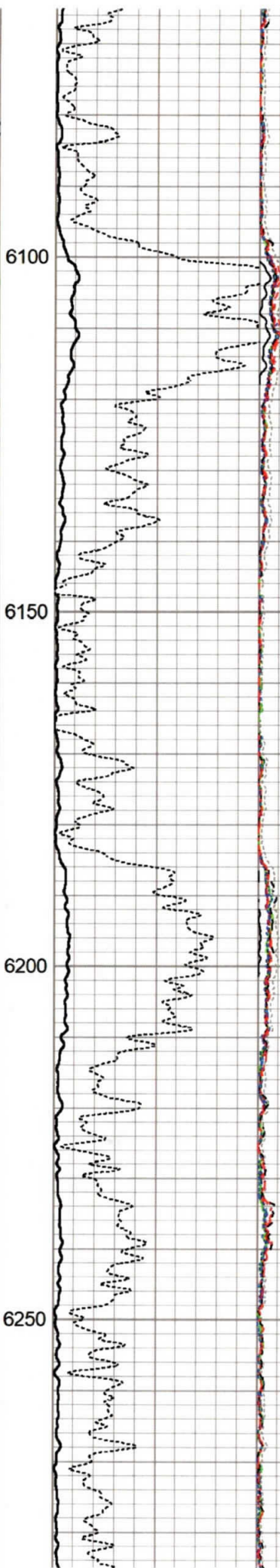
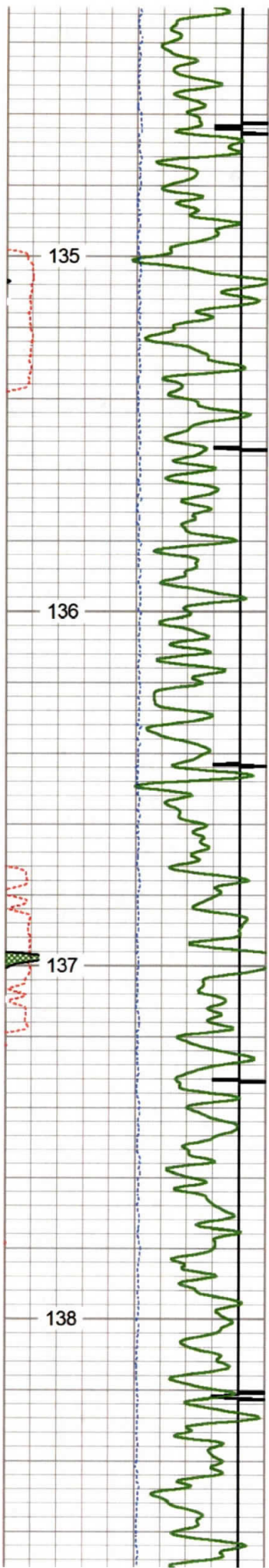


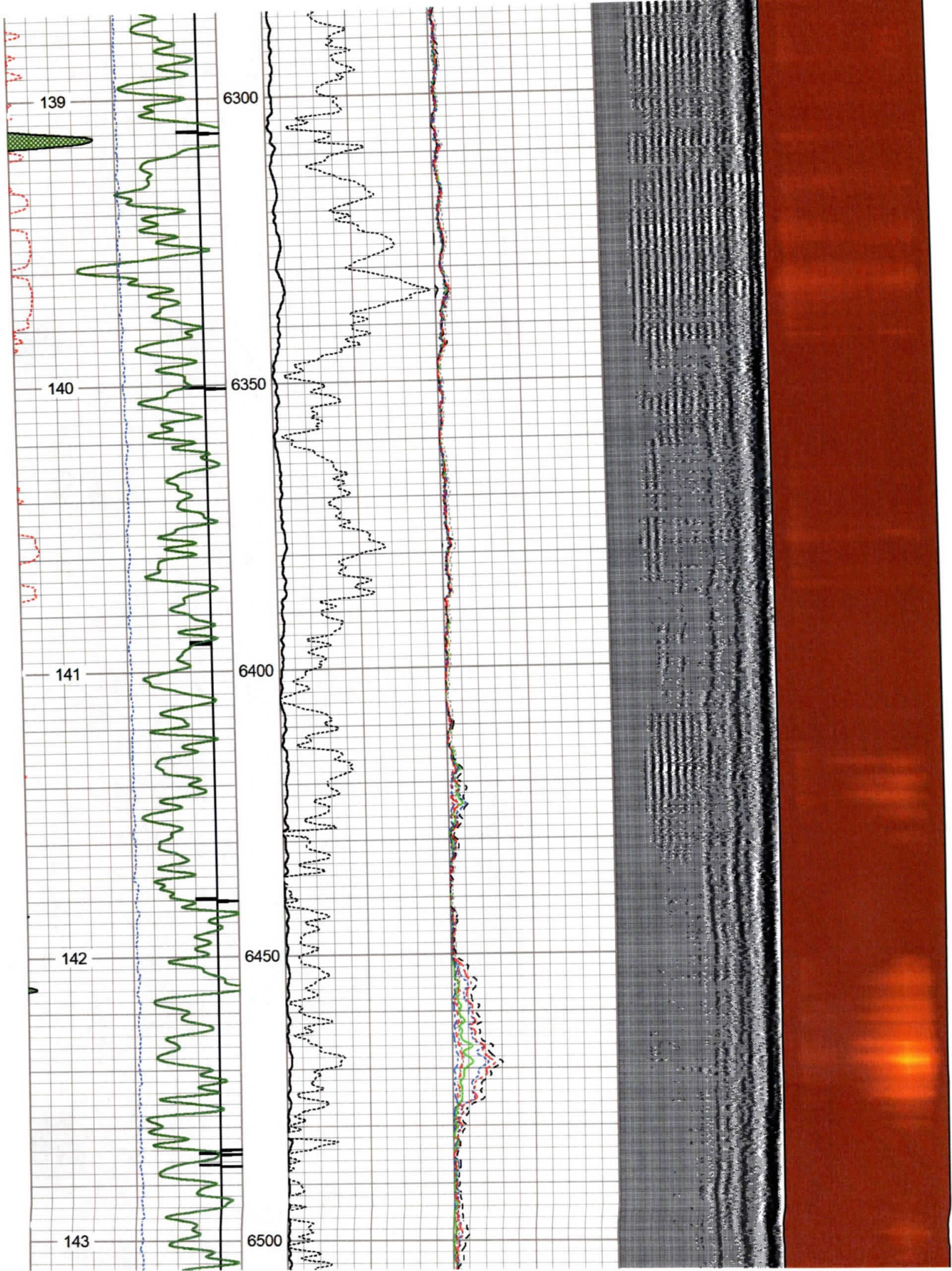


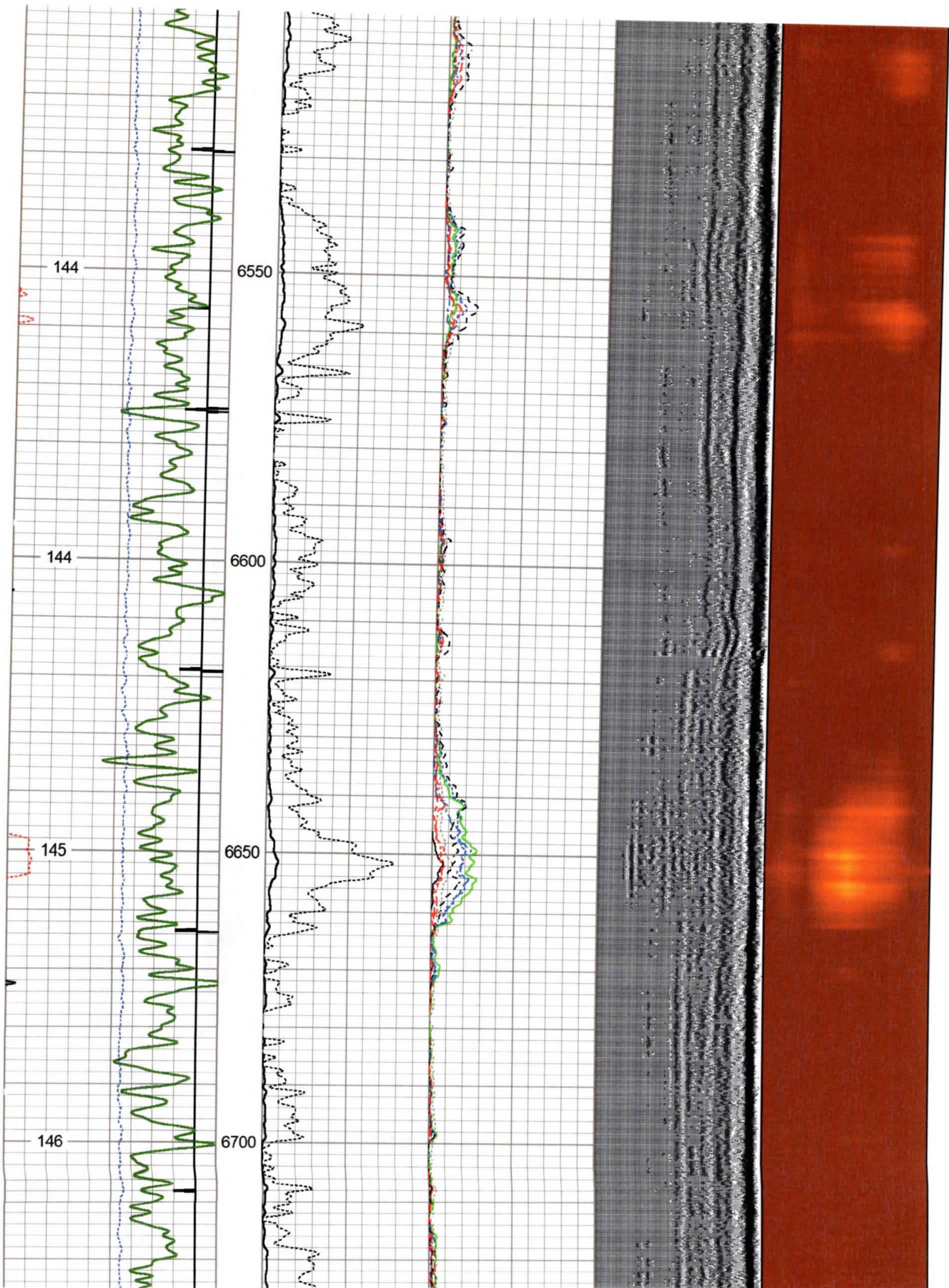


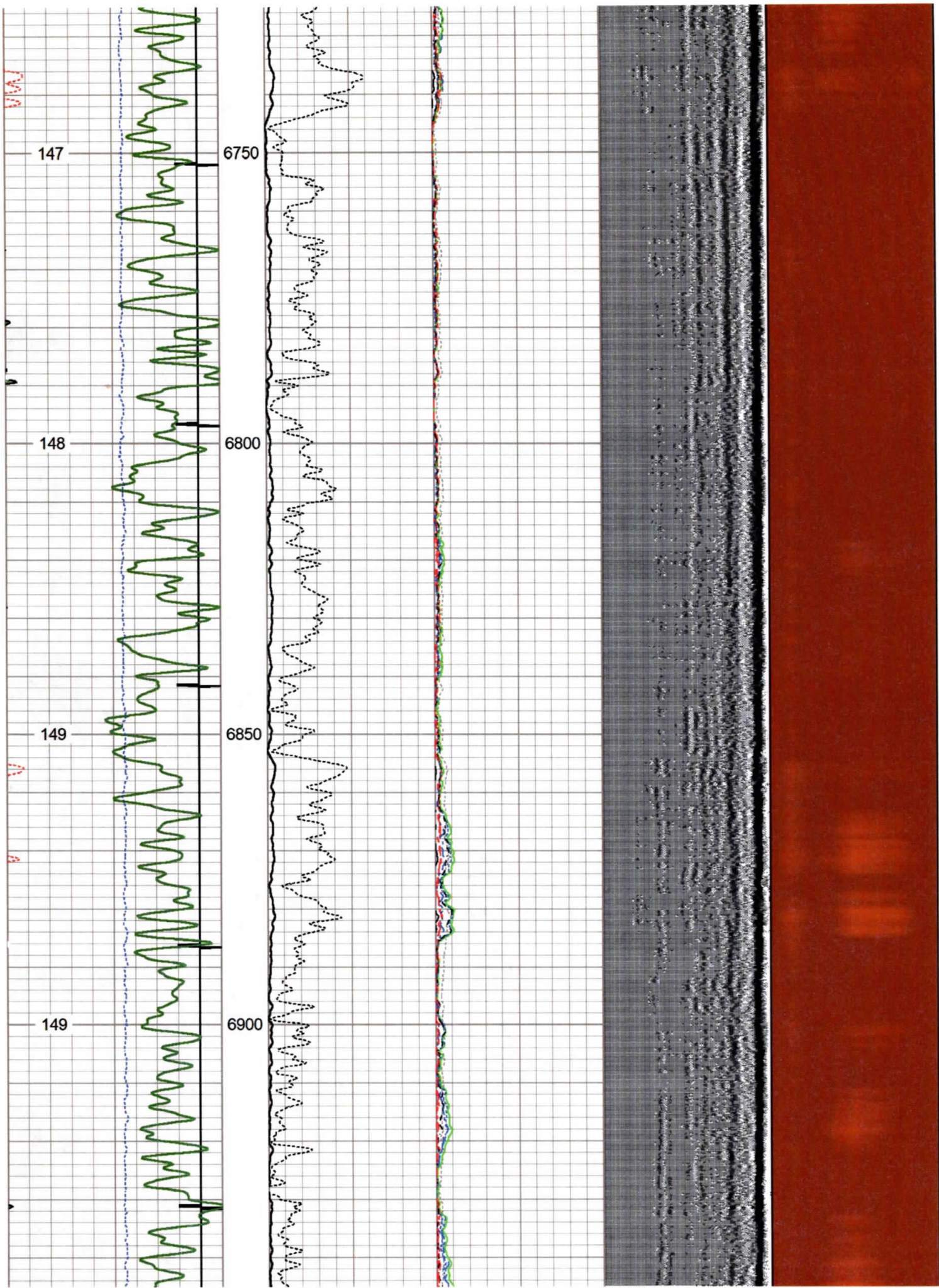


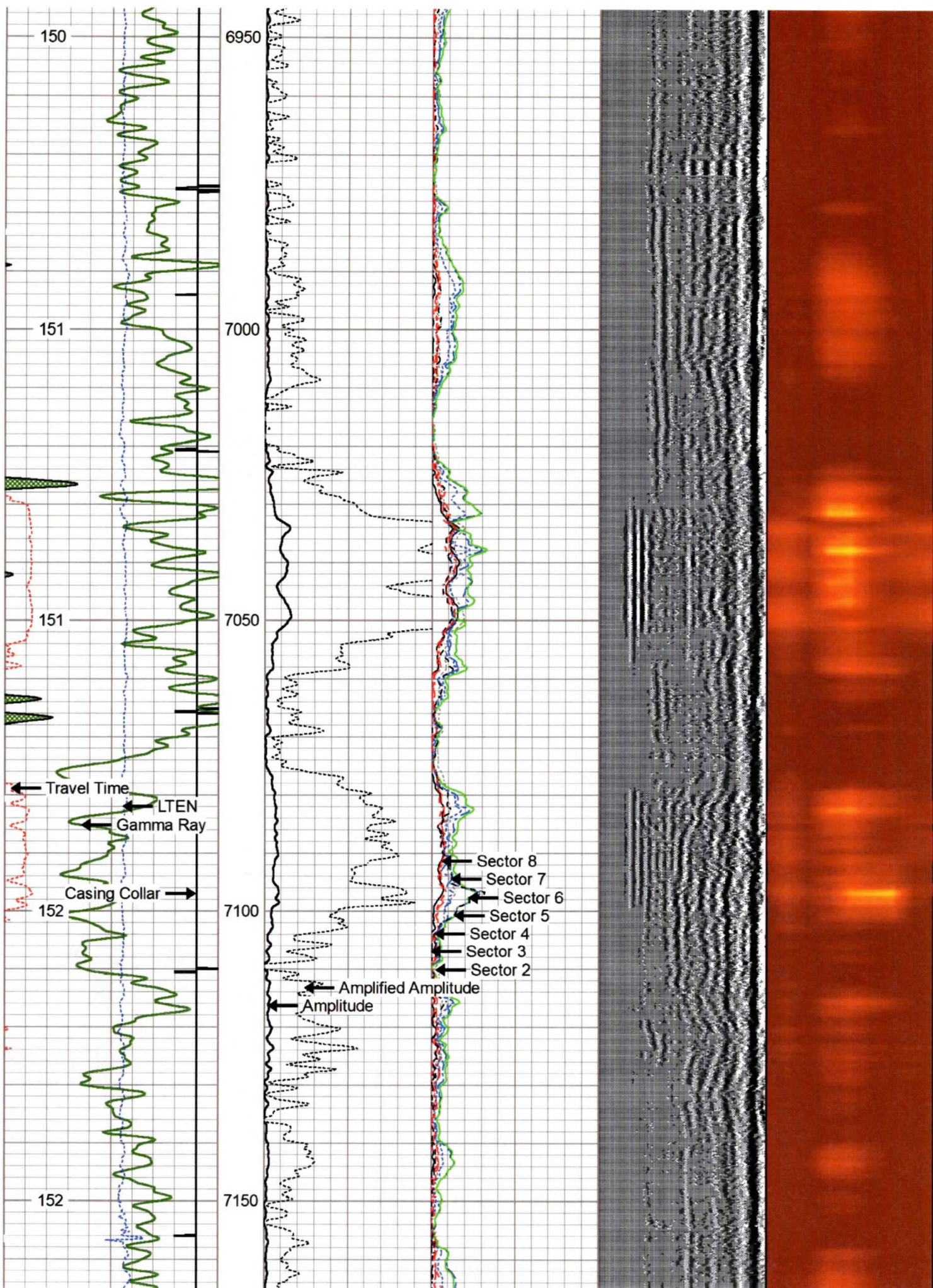


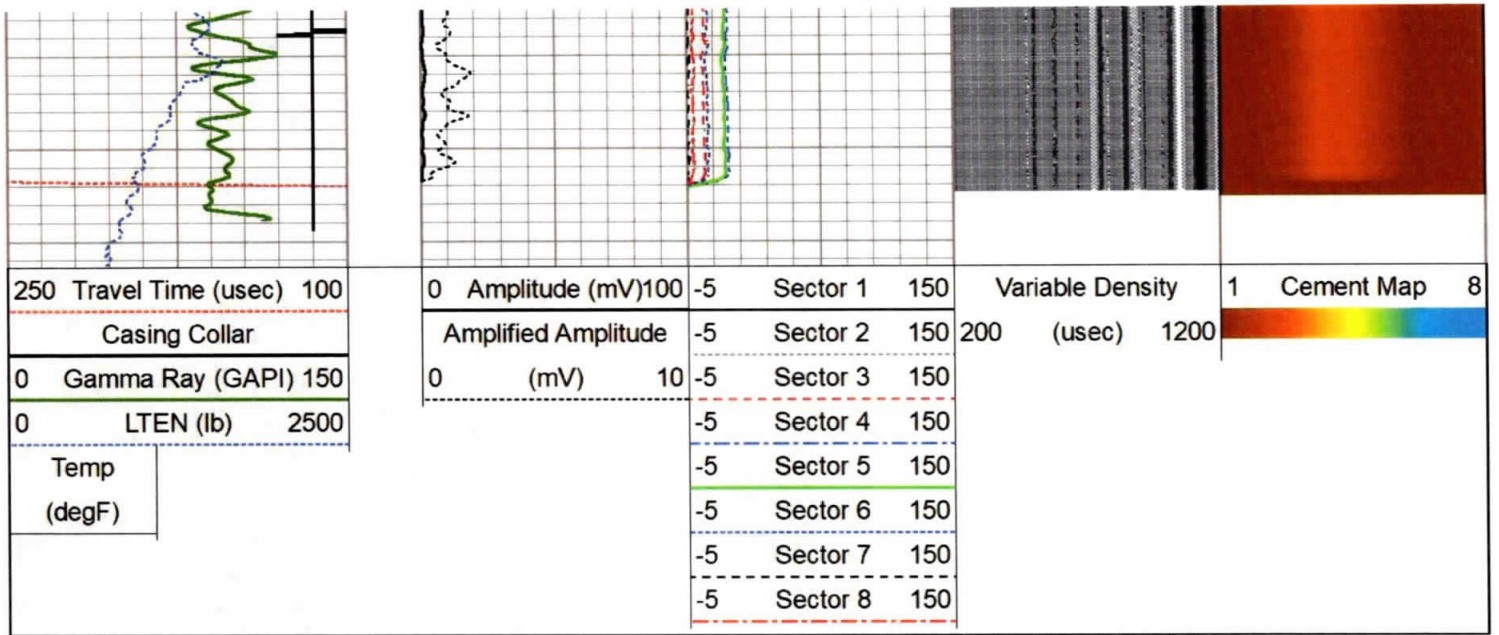






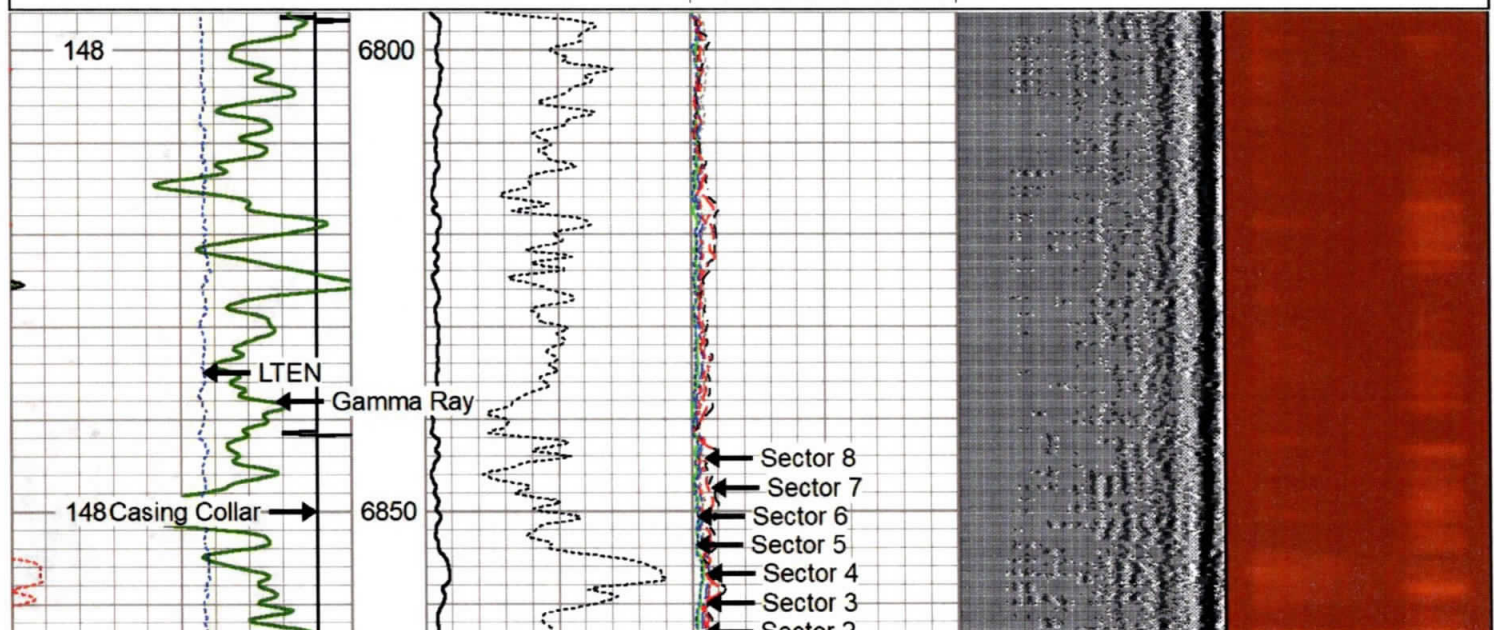
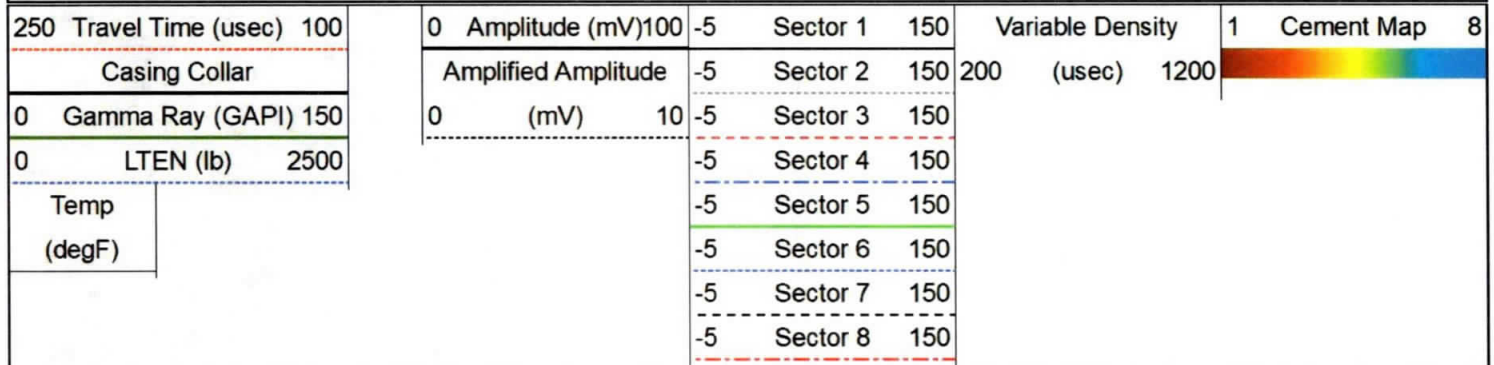


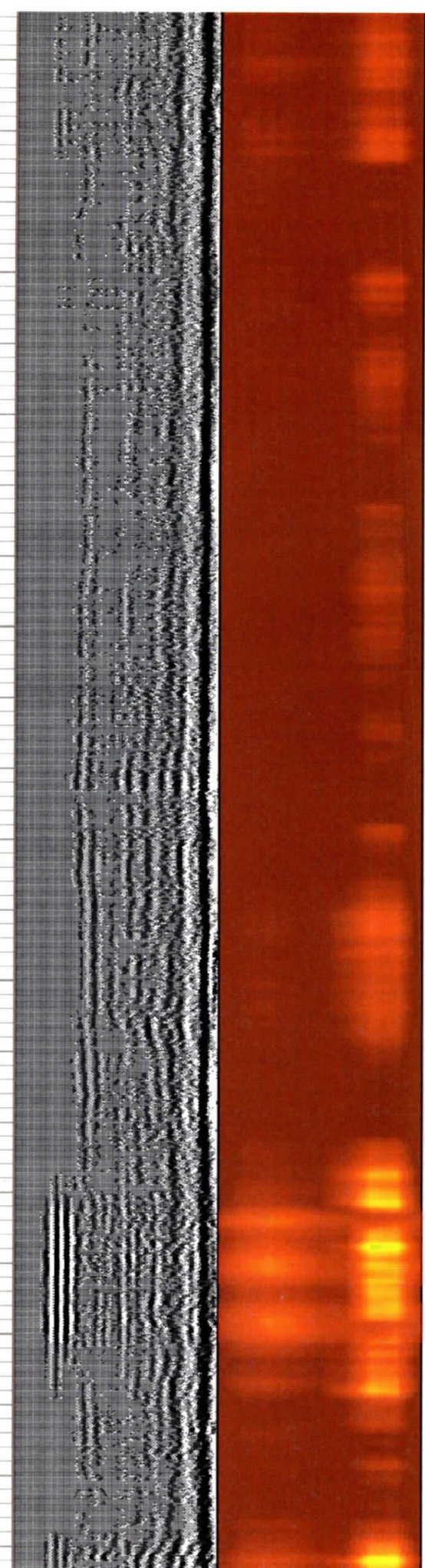
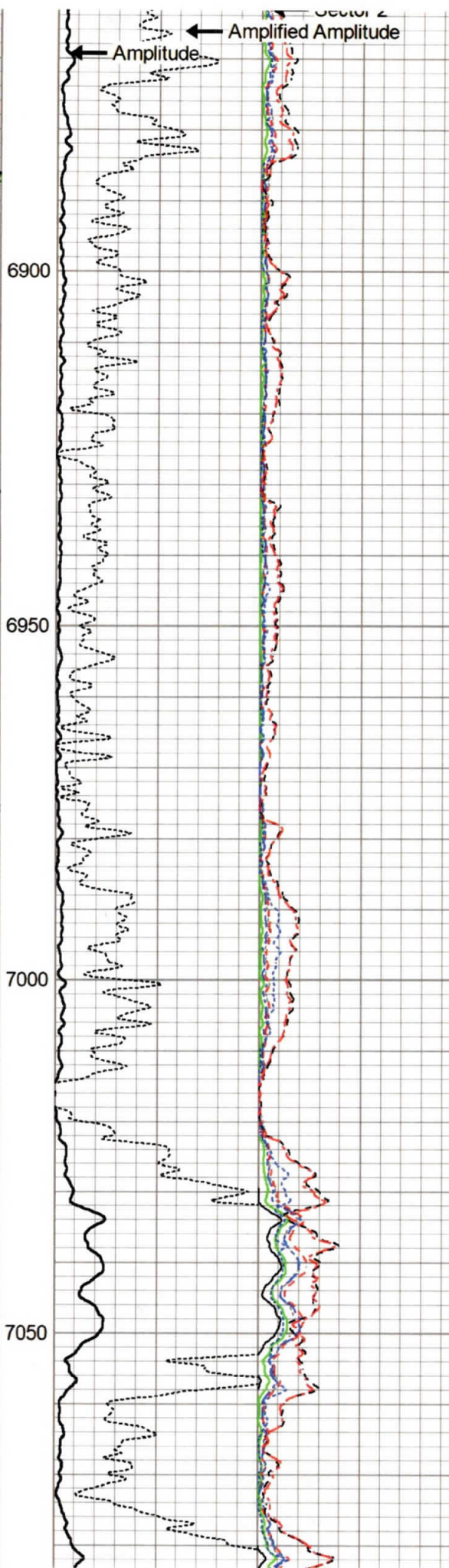
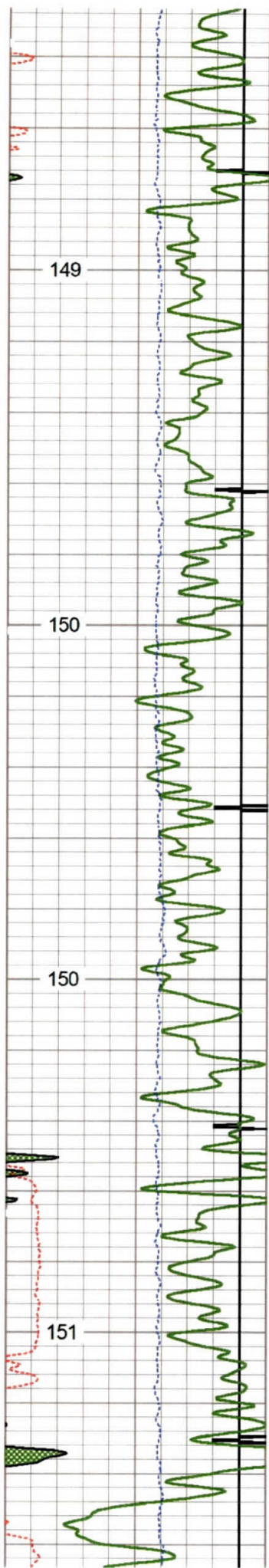


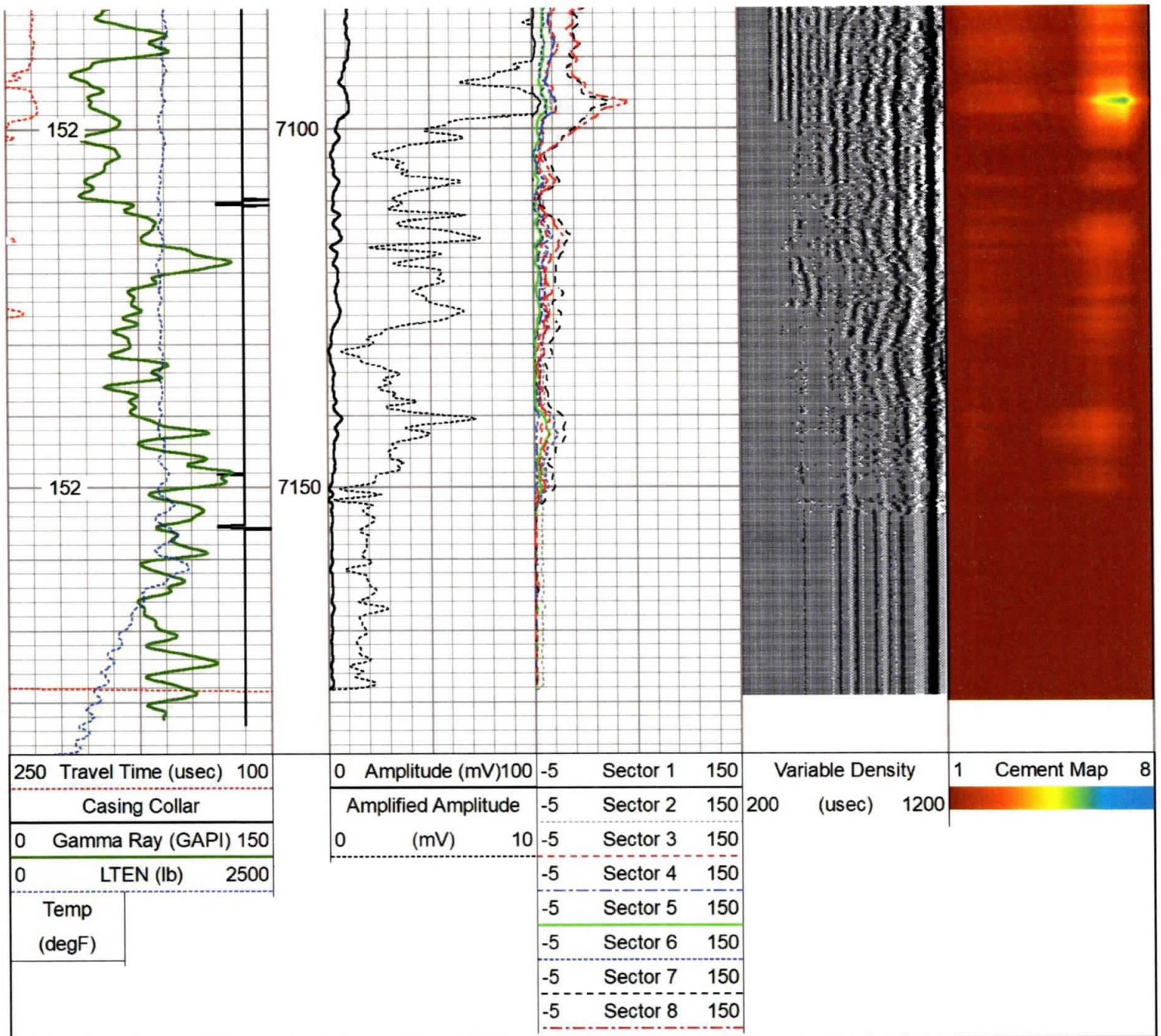


Repeat Pass 0 PSI

Database File antero_oxfd_13_ahs_rcbl_nineenergy_11_feb_2020.db
 Dataset Pathname Marcellus/OXFD_13_AHS/run1/Pass3
 Presentation Format scbl03
 Dataset Creation Tue Feb 11 17:02:27 2020
 Charted by Depth in Feet scaled 1:240







Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_oxfd_13_ahs_rcbl_nineenergy_11_feb_2020.db
 Dataset Marcellus/OXFD_13_AHS/run1/Pass5.1/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
TEMP	7.875	100	5.5	0	20	72	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH	RECEIVED		
db/ft	No	usec	degF	ft	Office of Oil and Gas		
0.8	No	0	0	0	AUG 10 2020		

Variable Description

WV Department of
Environmental Protection

BHTEMP_Src : BHTEMP Input Source Selector
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 CASEWGHT : Casina Weight

MINAMPL : Minimum Amplitude
 MINATTN : Minimum Attenuation
 PERFS : Perforation Flag
 PPT : Predicted Pipe Time
 SRFTEMP : Surface Temperature
 TDEPTH : Total Depth

Calibration Report

Database File antero_oxfd_13_ahs_rcbl_nineenergy_11_feb_2020.db
 Dataset Pathname Marcellus/OXFD_13_AHS/run1/Pass5.1
 Dataset Creation Wed Feb 12 06:21:49 2020

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Mon Feb 03 13:18:32 2014
 Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.8000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: -31.433 ft

Master Calibration, performed Tue Feb 11 16:56:27 2020:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.090	0.963	1.000	71.921	90.218	-3.310
CAL	0.090	1.006				
5'	0.090	1.044	1.000	71.921	74.379	-5.694
SUM						
S1	0.090	0.914	0.000	100.000	121.345	-10.921
S2	0.090	0.956	0.000	100.000	115.461	-10.392
S3	0.090	0.920	0.000	100.000	120.513	-10.846
S4	0.090	0.937	0.000	100.000	118.028	-10.623
S5	0.090	0.997	0.000	100.000	110.226	-9.920
S6	0.090	0.995	0.000	100.000	110.553	-9.950
S7	0.090	0.973	0.000	100.000	113.216	-10.189
S8	0.090	0.971	0.000	100.000	113.544	-10.219

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.090	1.006	1.000	0.000

Air Zero Calibration, performed Tue Feb 11 08:55:01 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

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
Temp	11.27		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	9.03					
WVFS7	9.03					
WVFS6	9.03					
WVFS5	9.03					
WVFS4	9.03					
WVFS3	9.03					
WVFS2	9.03					
WVFS1	9.03					
WVFCAL	9.03					
WVFCAL	8.03					
HeadVolt	4.78					
WVFCAL	4.78					
CCL	3.88					
GR	2.54					
			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

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Office of Oil and Gas
AUG 10 2020
WV Department of
Environmental Protection



Dataset:	antero_oxfd_13_ahs_rcbl_nineenergy_11_feb_2020.db: Marcellus/OXFD_13_AHS/run1/Pass5.1
Total length:	15.17 ft
Total weight:	162.00 lb
O.D.:	4.88 in



Nine

Company	Antero Resources
Well	OXFD 13 AHS
Field	N/A
County	Doddridge
State	West Virginia