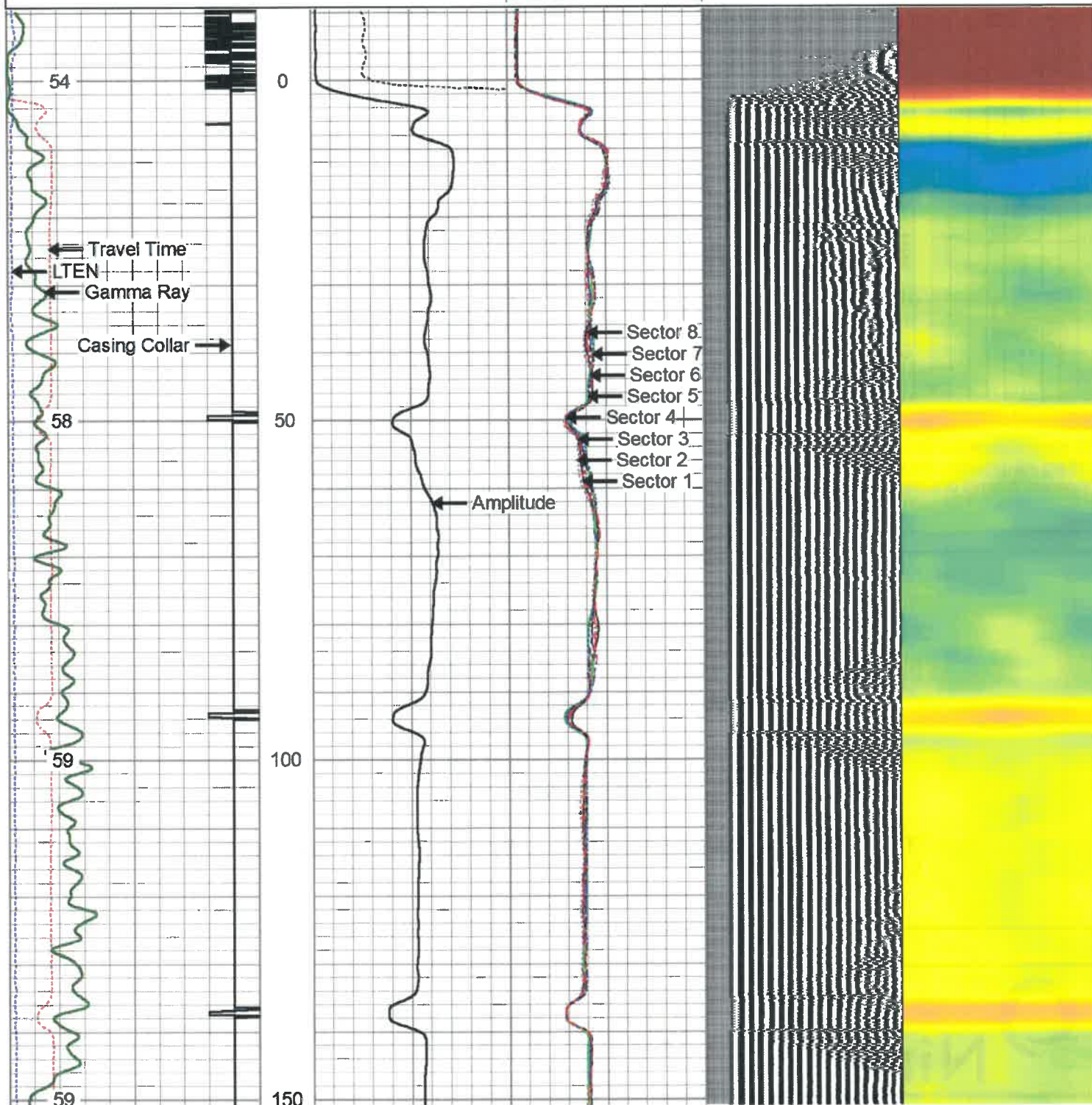
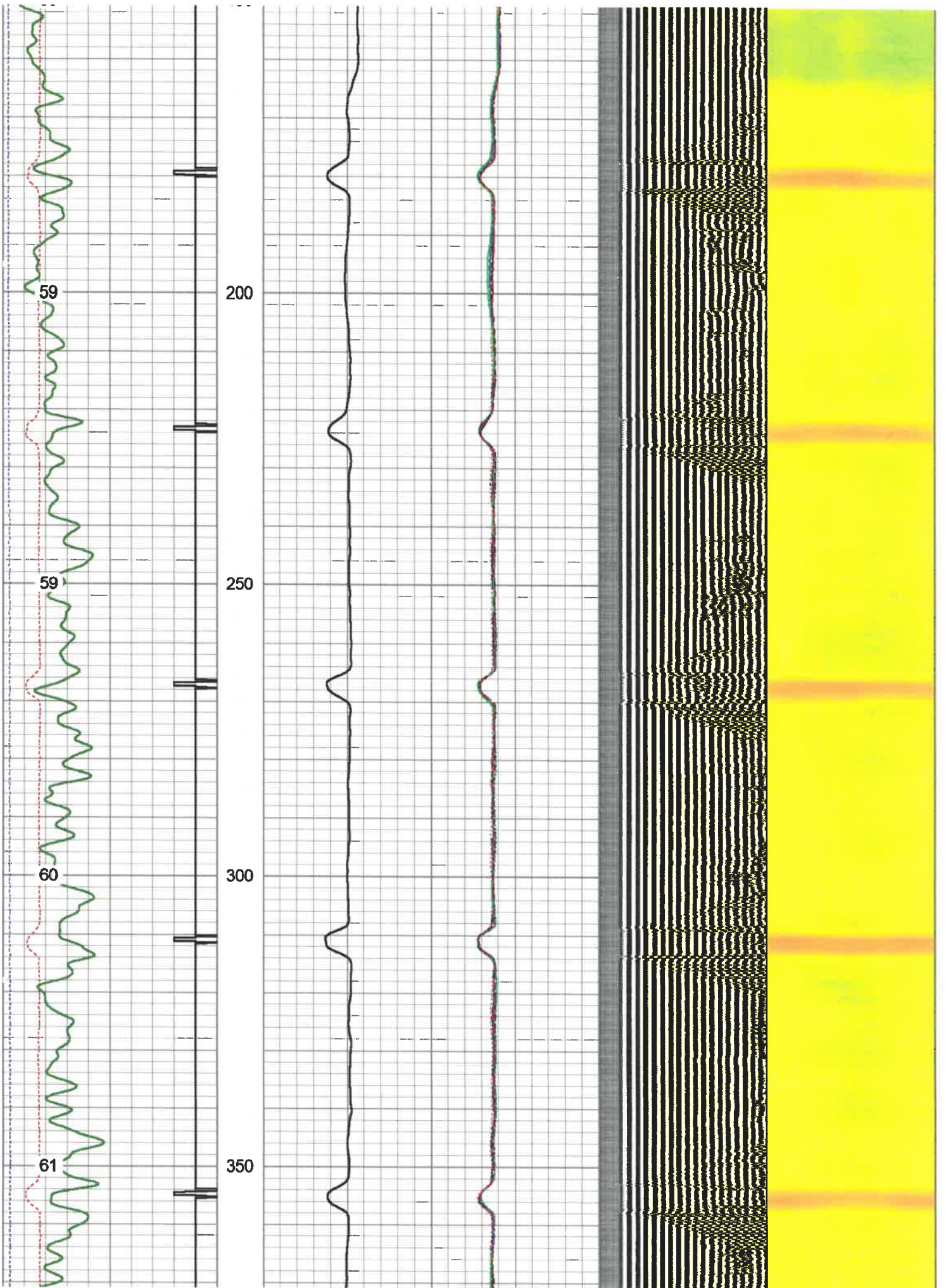


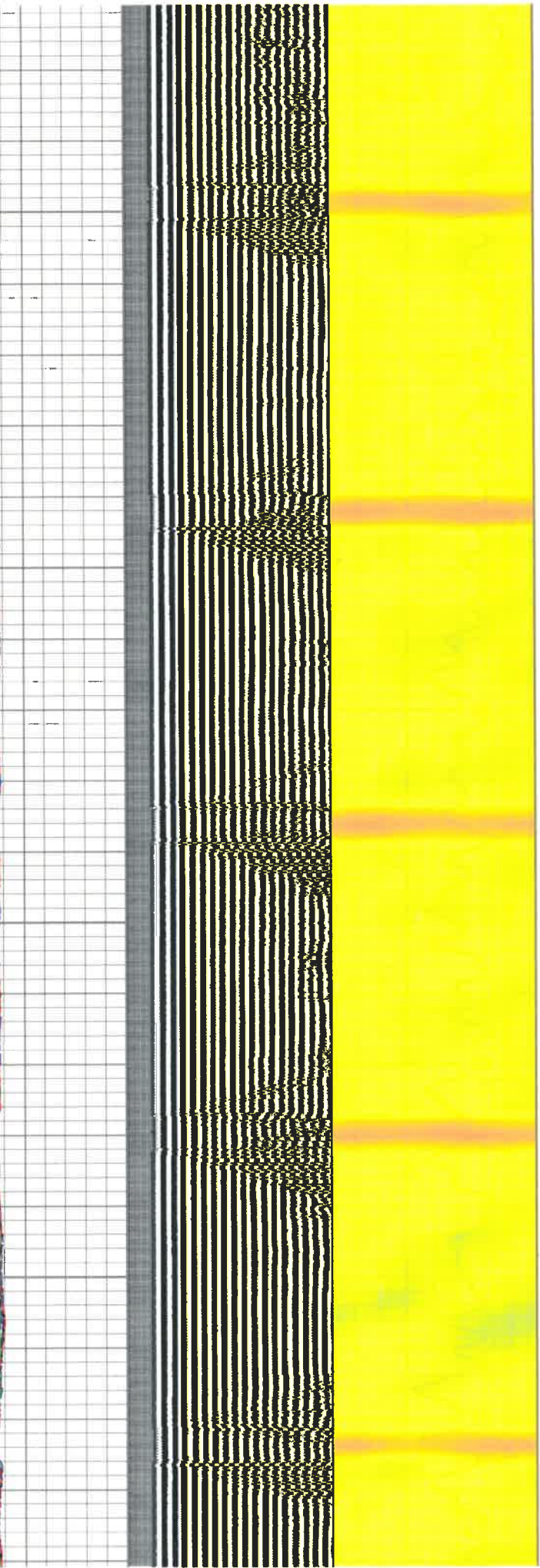
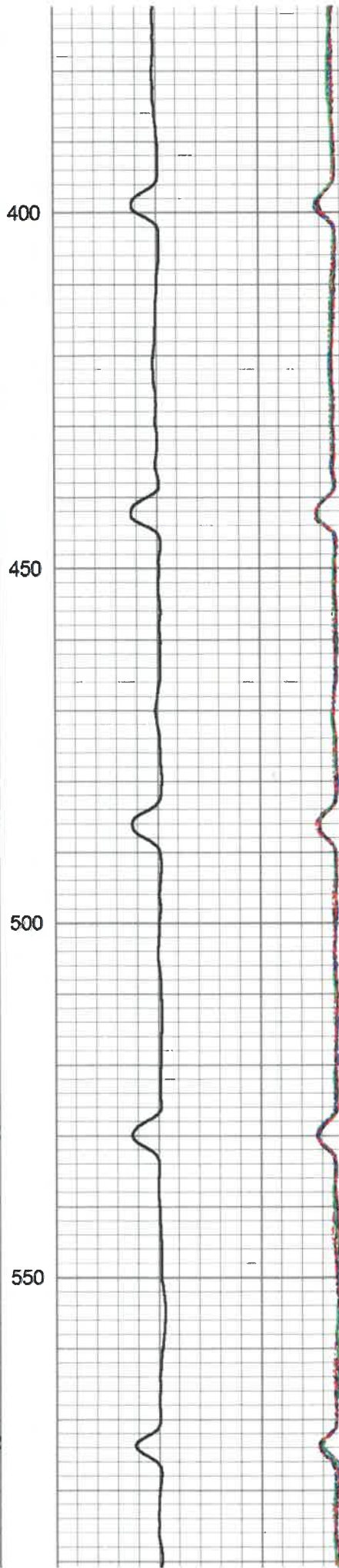
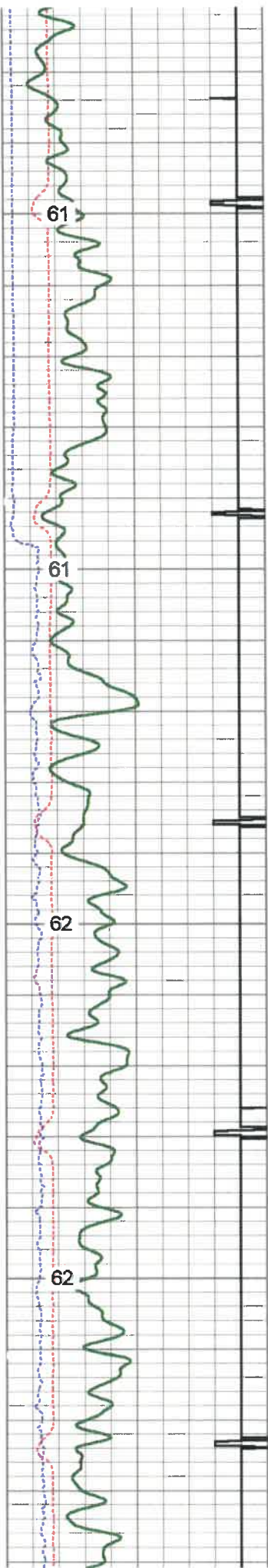


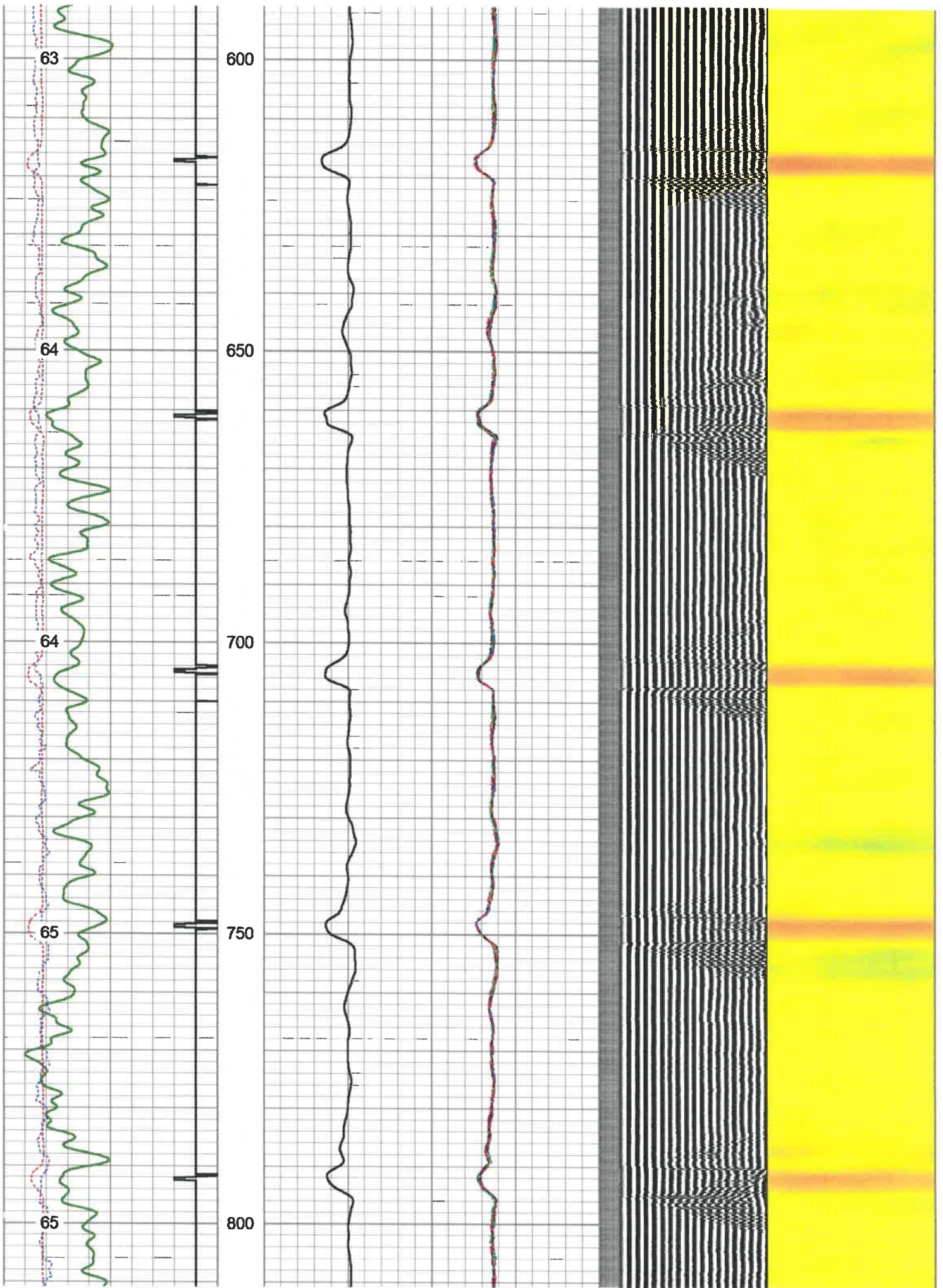
Database File c:\users\thomas.weese\desktop\bond logs\antero\colorado east\antero\_colorado\_east\_avalanche\_2h\_rcbl  
 Dataset Pathname Marcellus/Avalanche\_2H/RCBL\_1/pass4  
 Presentation Format scbl03  
 Dataset Creation Sun Mar 15 07:32:25 2020  
 Charted by Depth in Feet scaled 1:240

265	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	Sector 1	150	Variable Density	1	Cement Map	8
Casing Collar			Amplified Amplitude		-5	Sector 2	150	200	(usec)	1200		
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	Sector 3	150				
0	LTEN (lb)	2500			-5	Sector 4	150					
Temp (degF)				-5	Sector 5	150						
				-5	Sector 6	150						
				-5	Sector 7	150						
				-5	Sector 8	150						

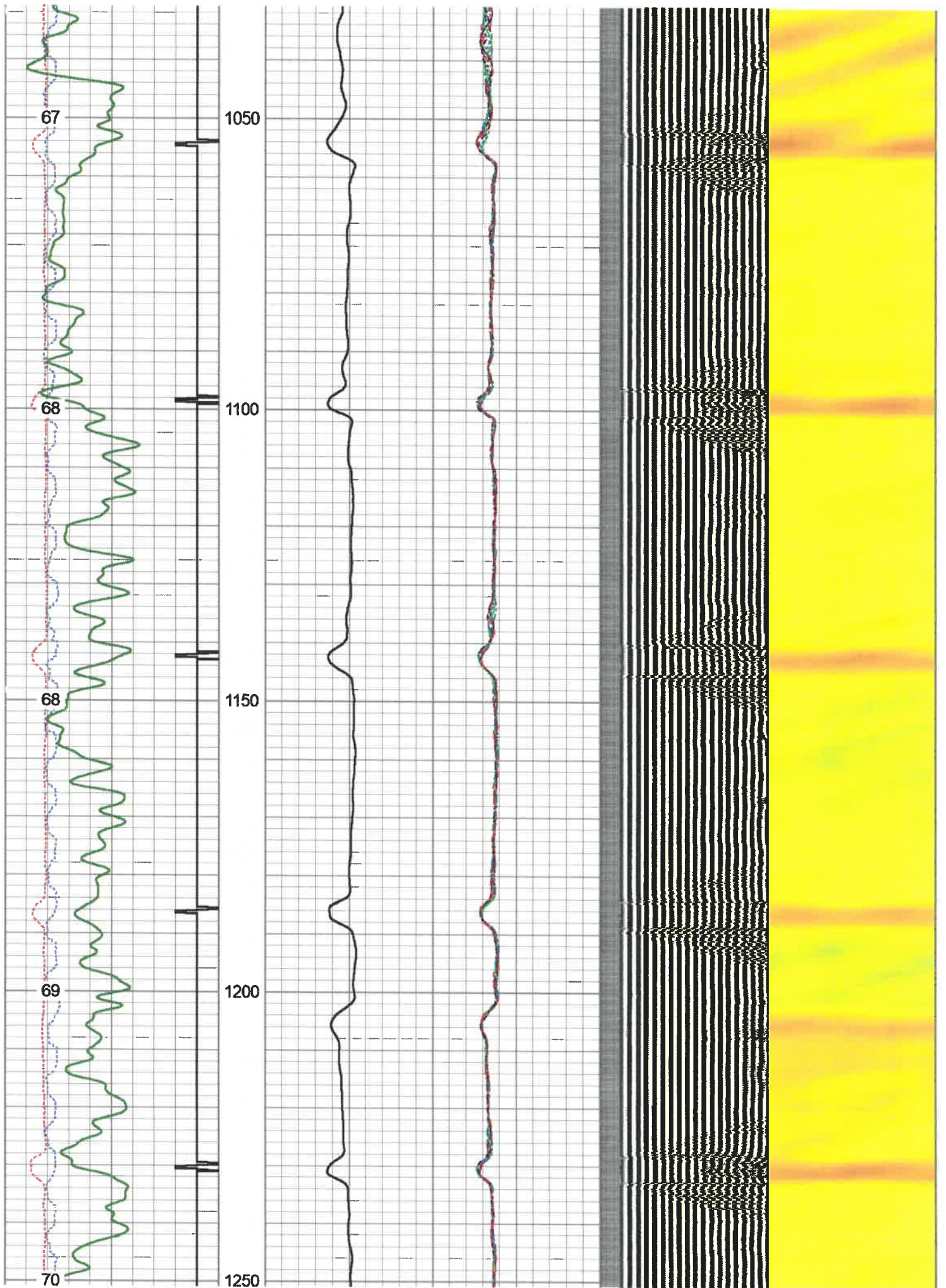


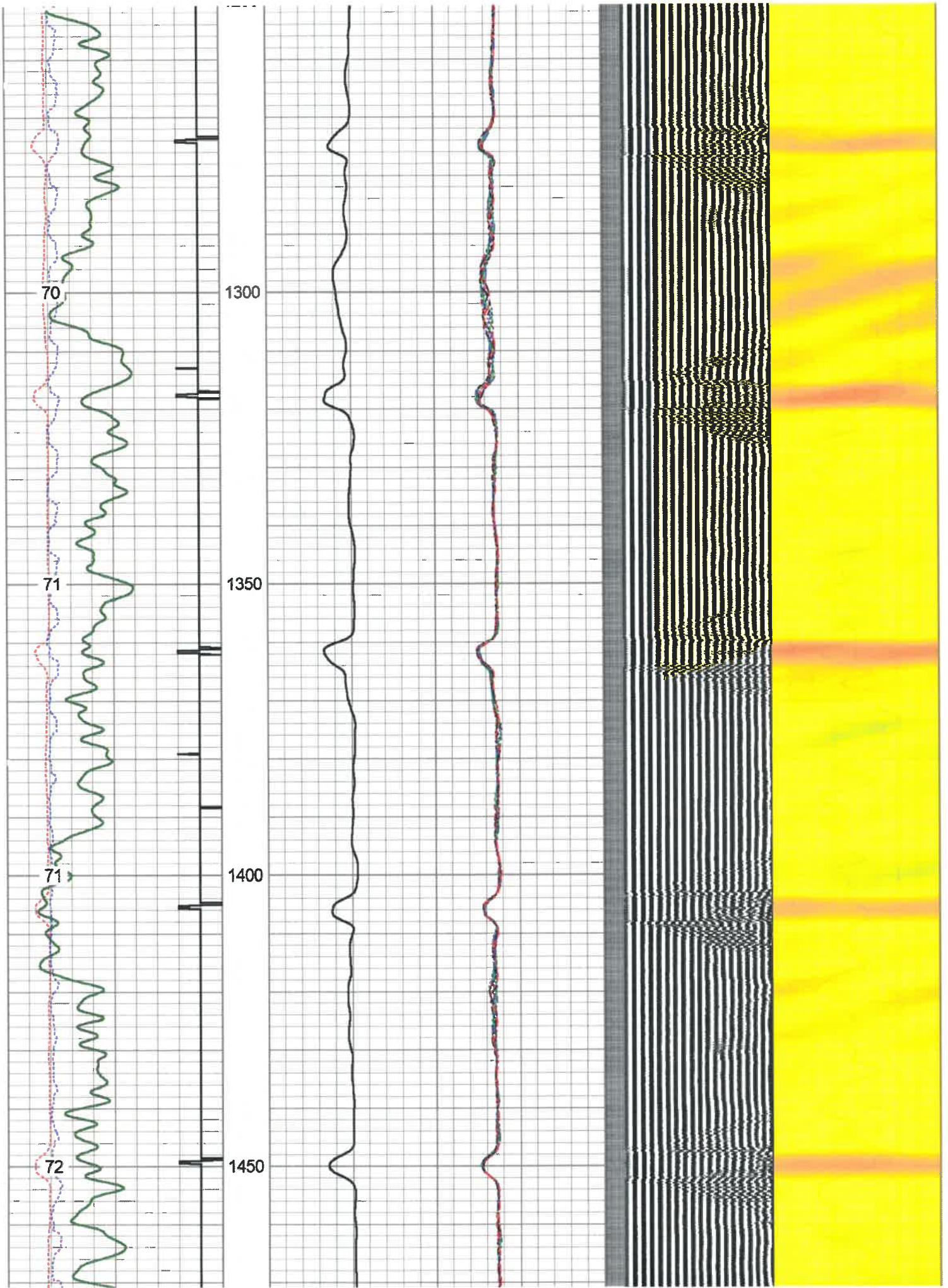




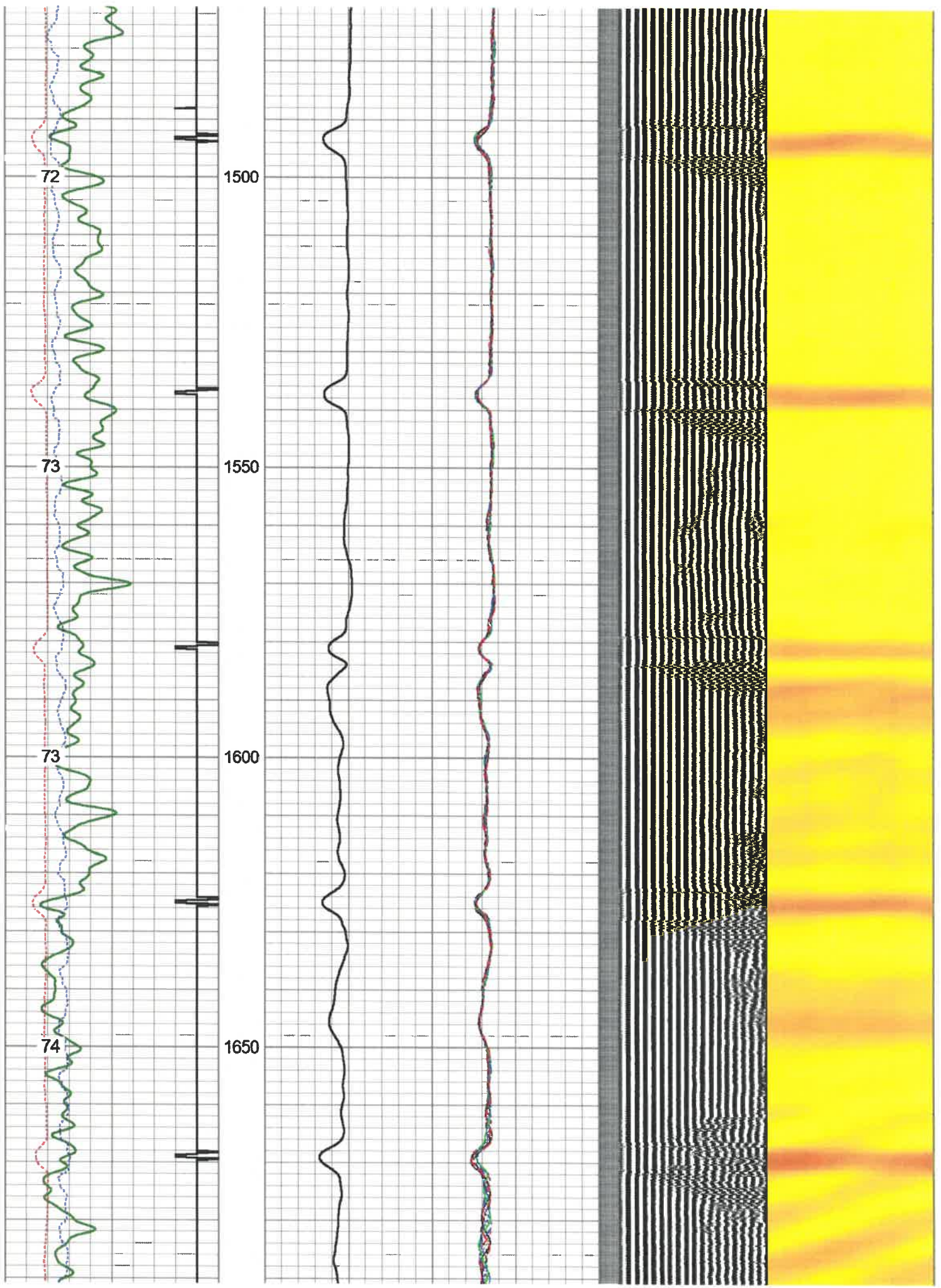


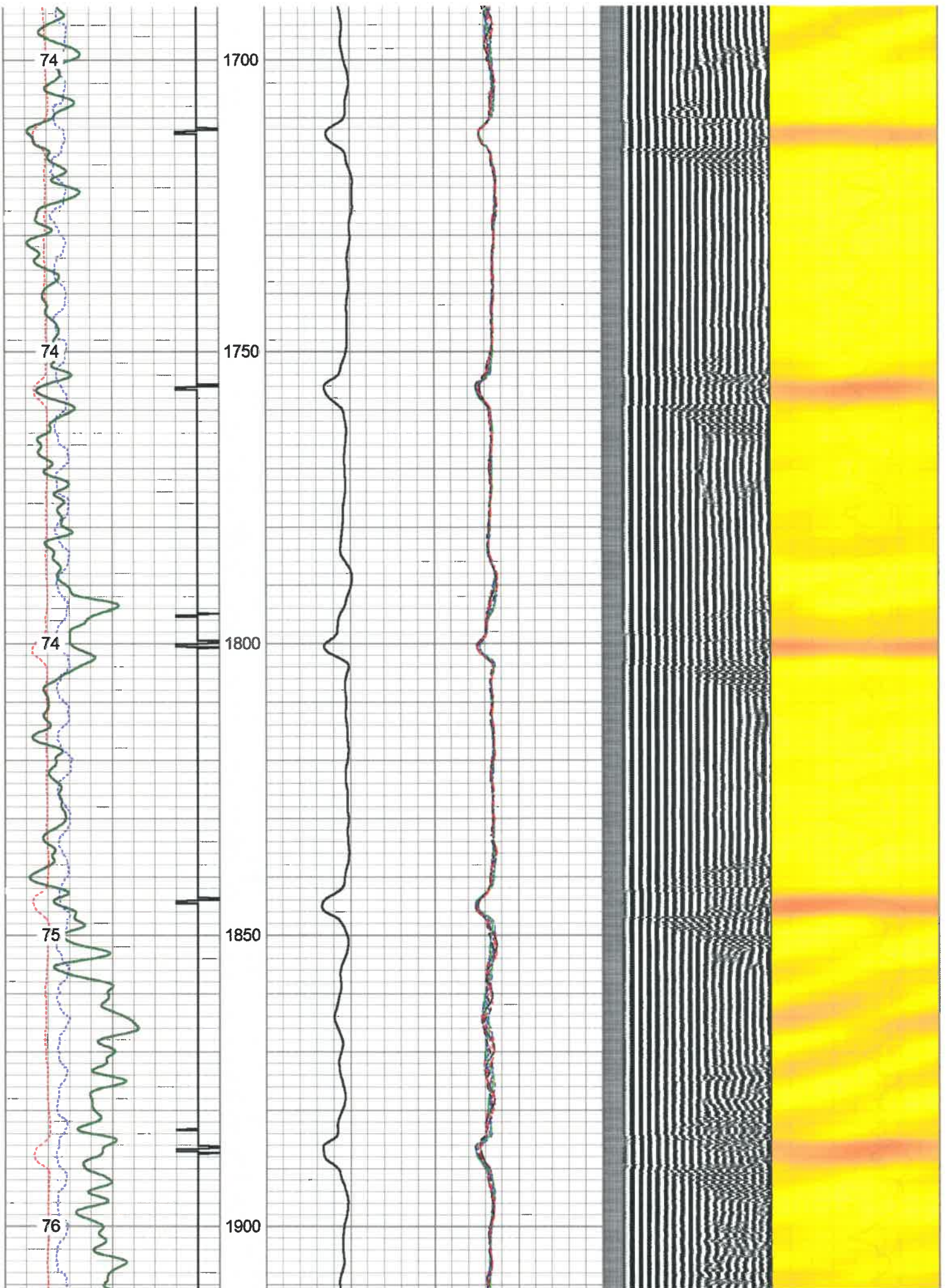


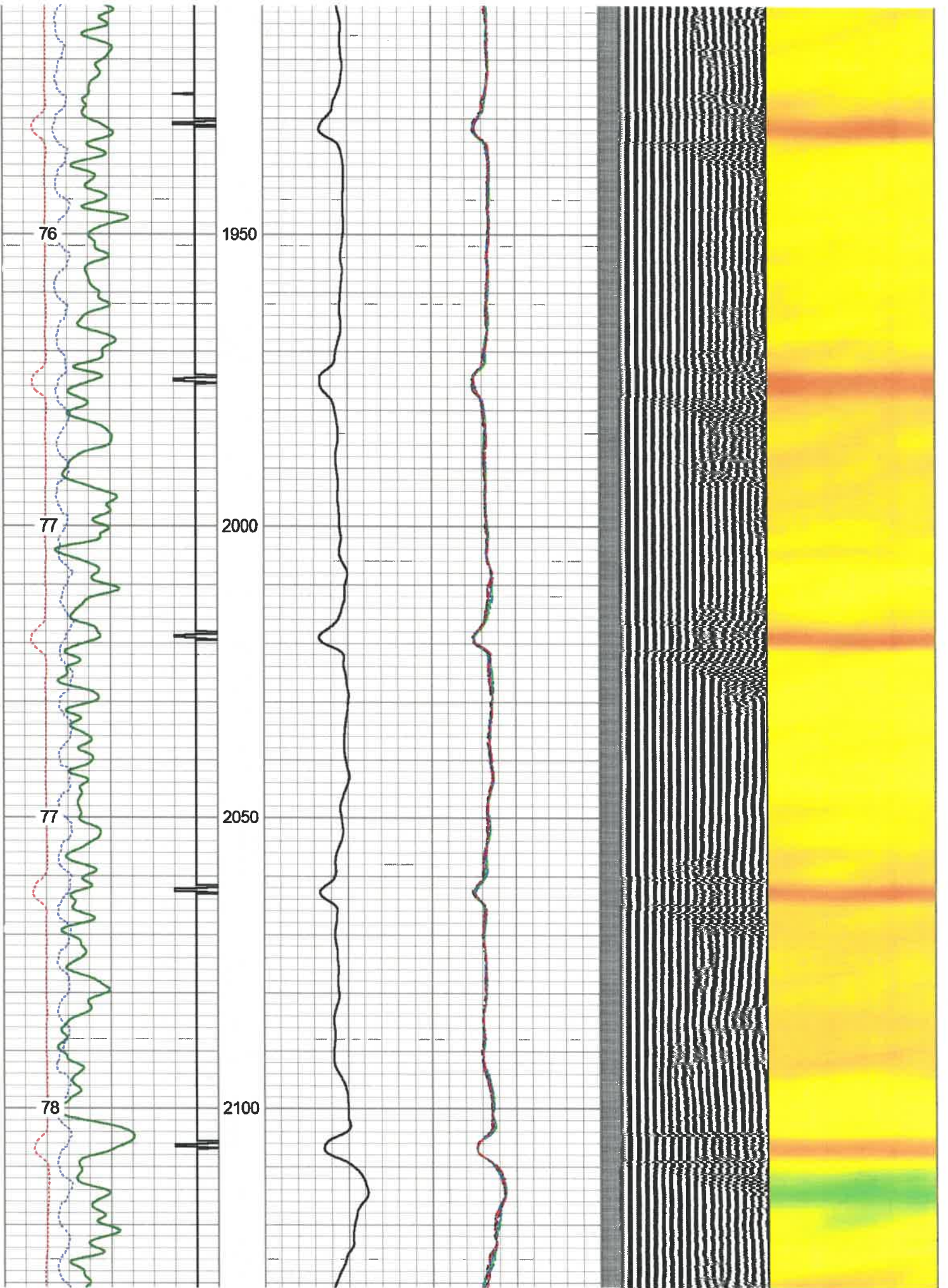


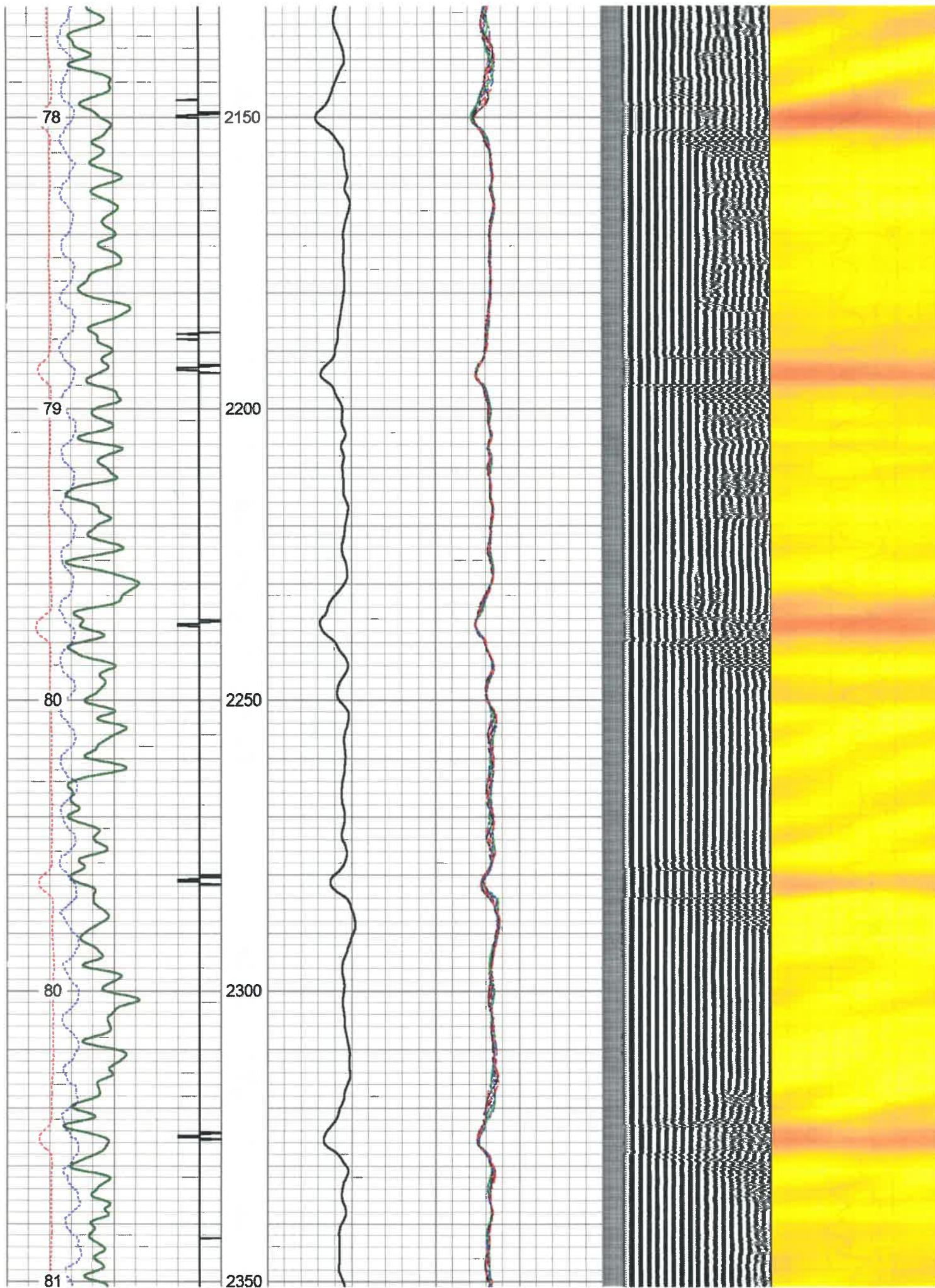


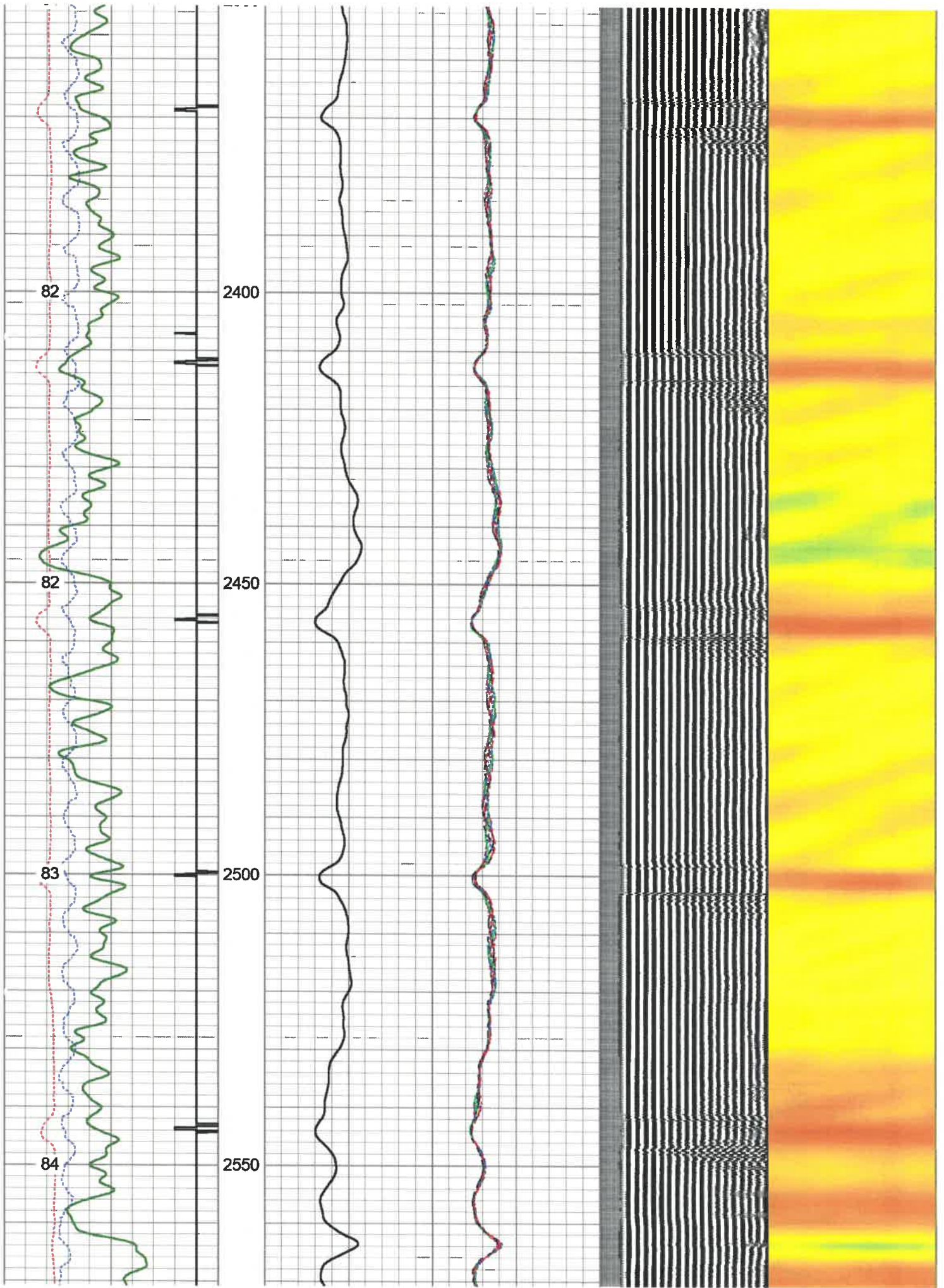


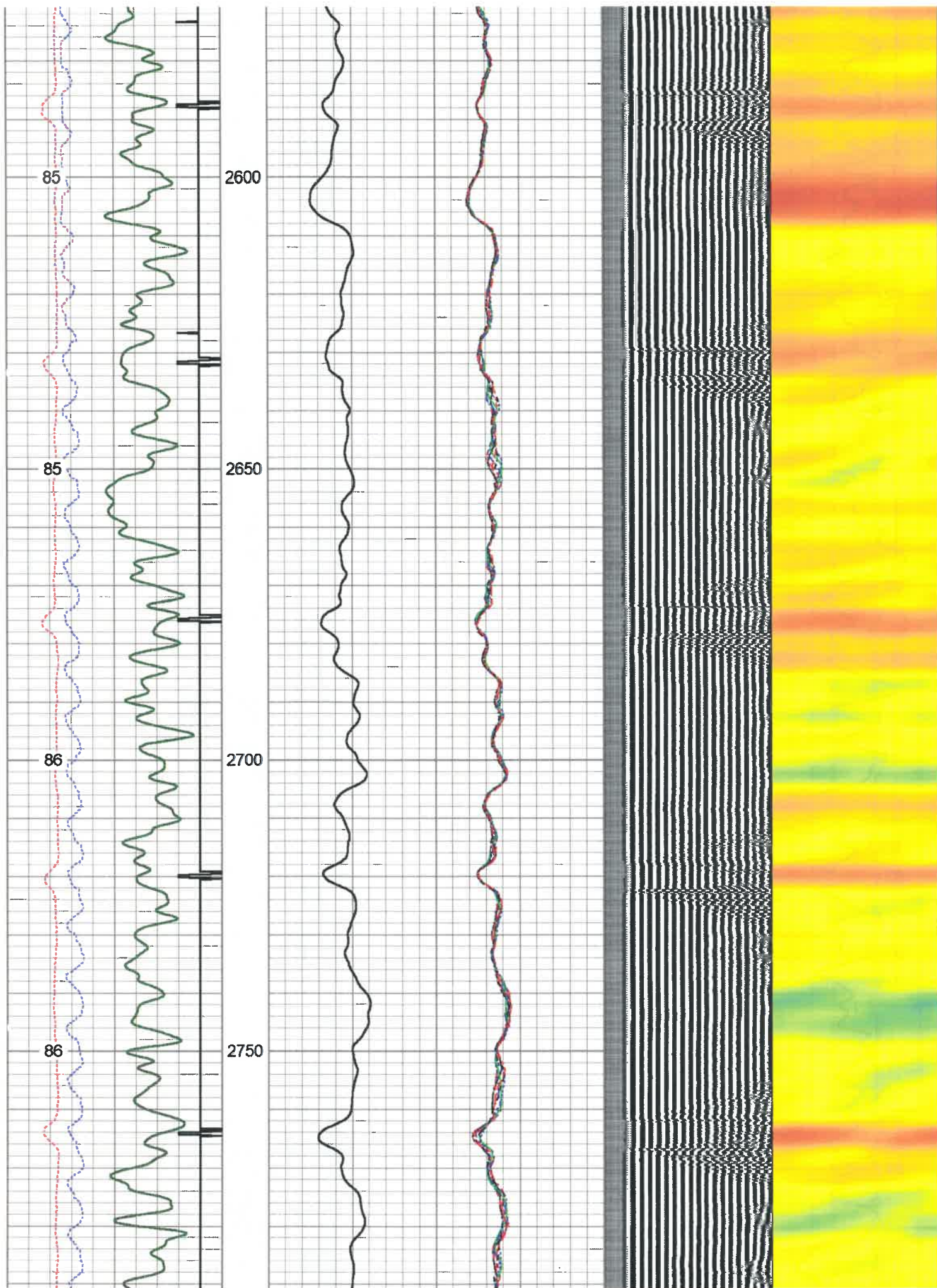


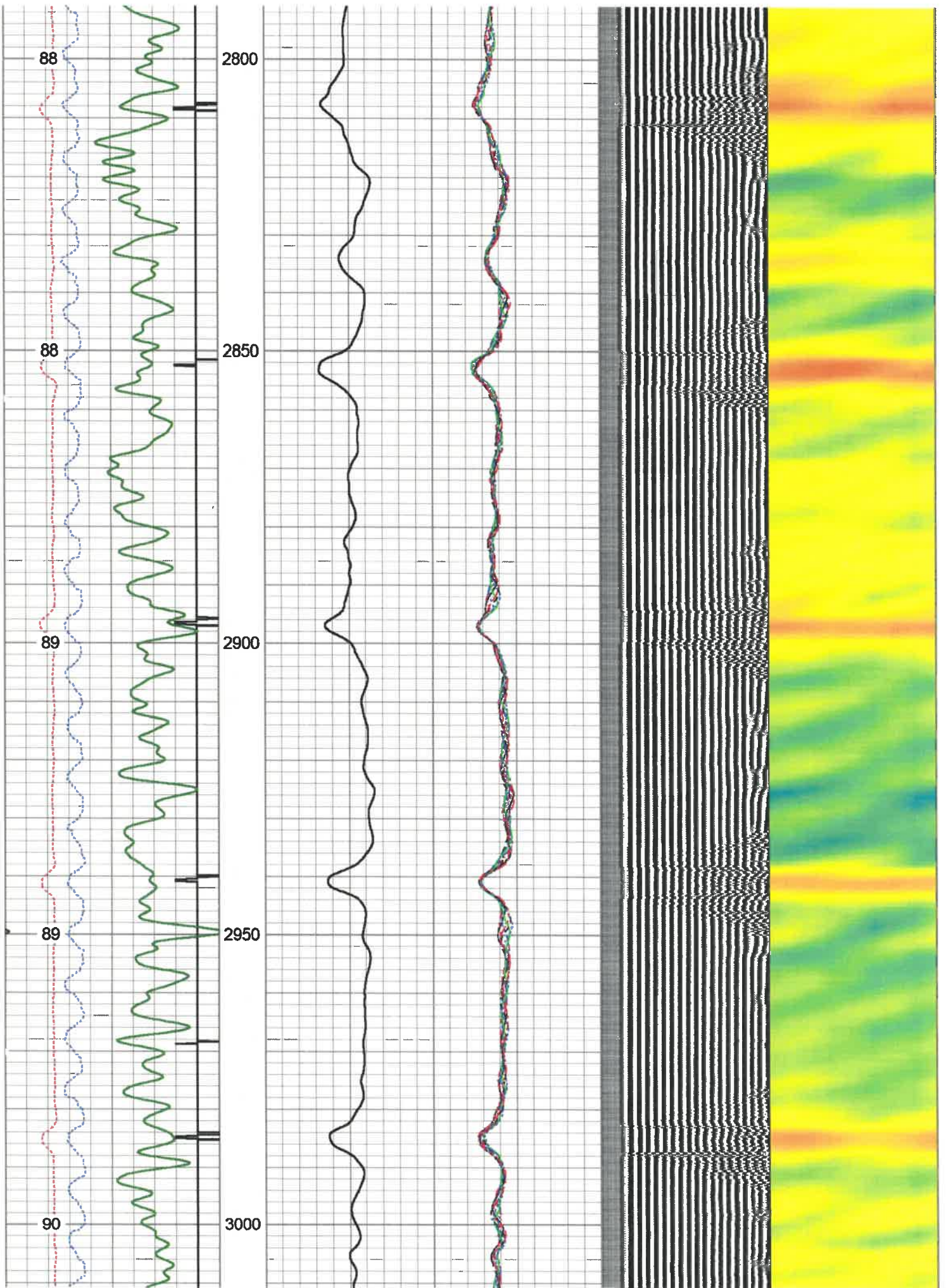


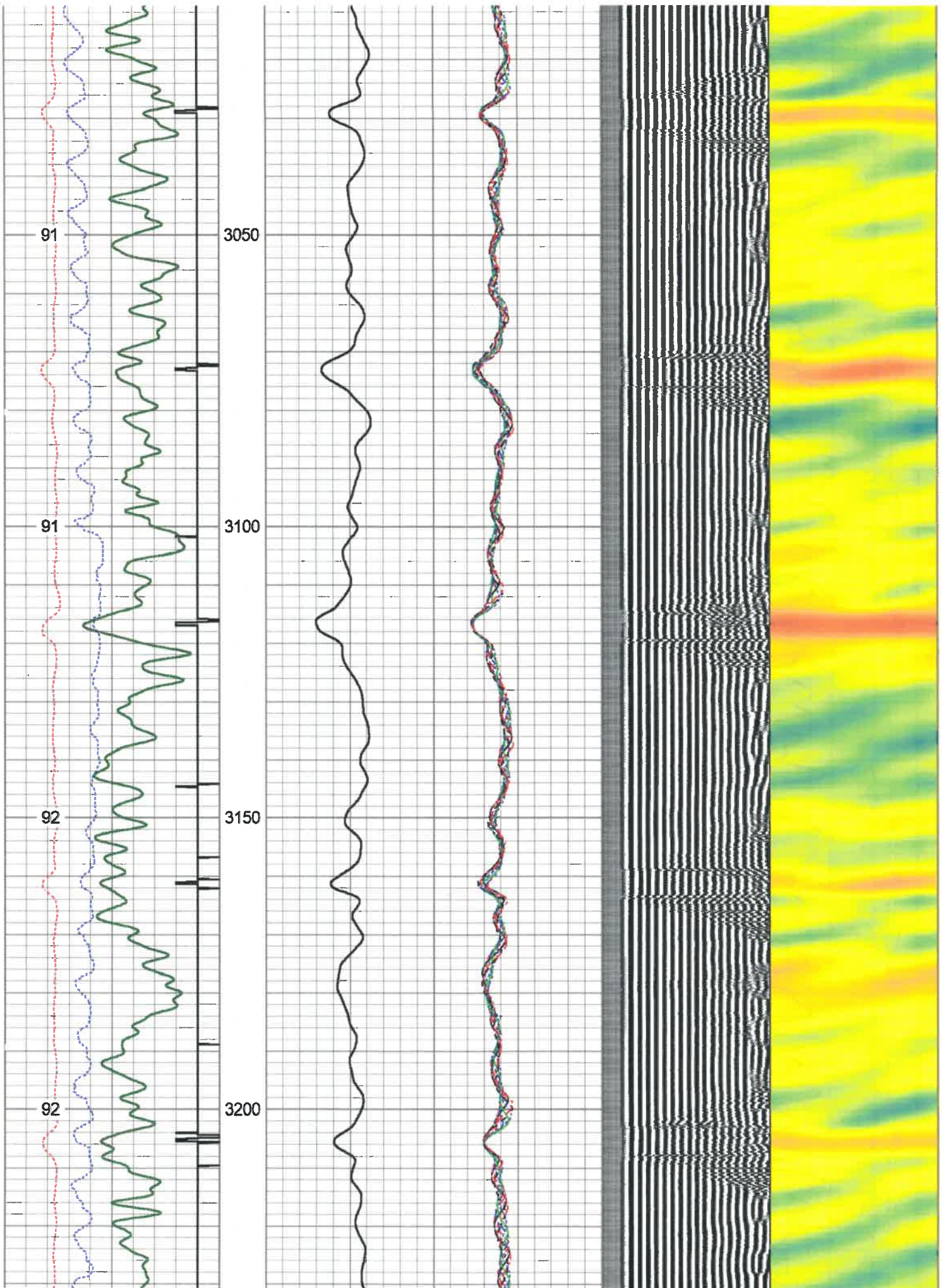




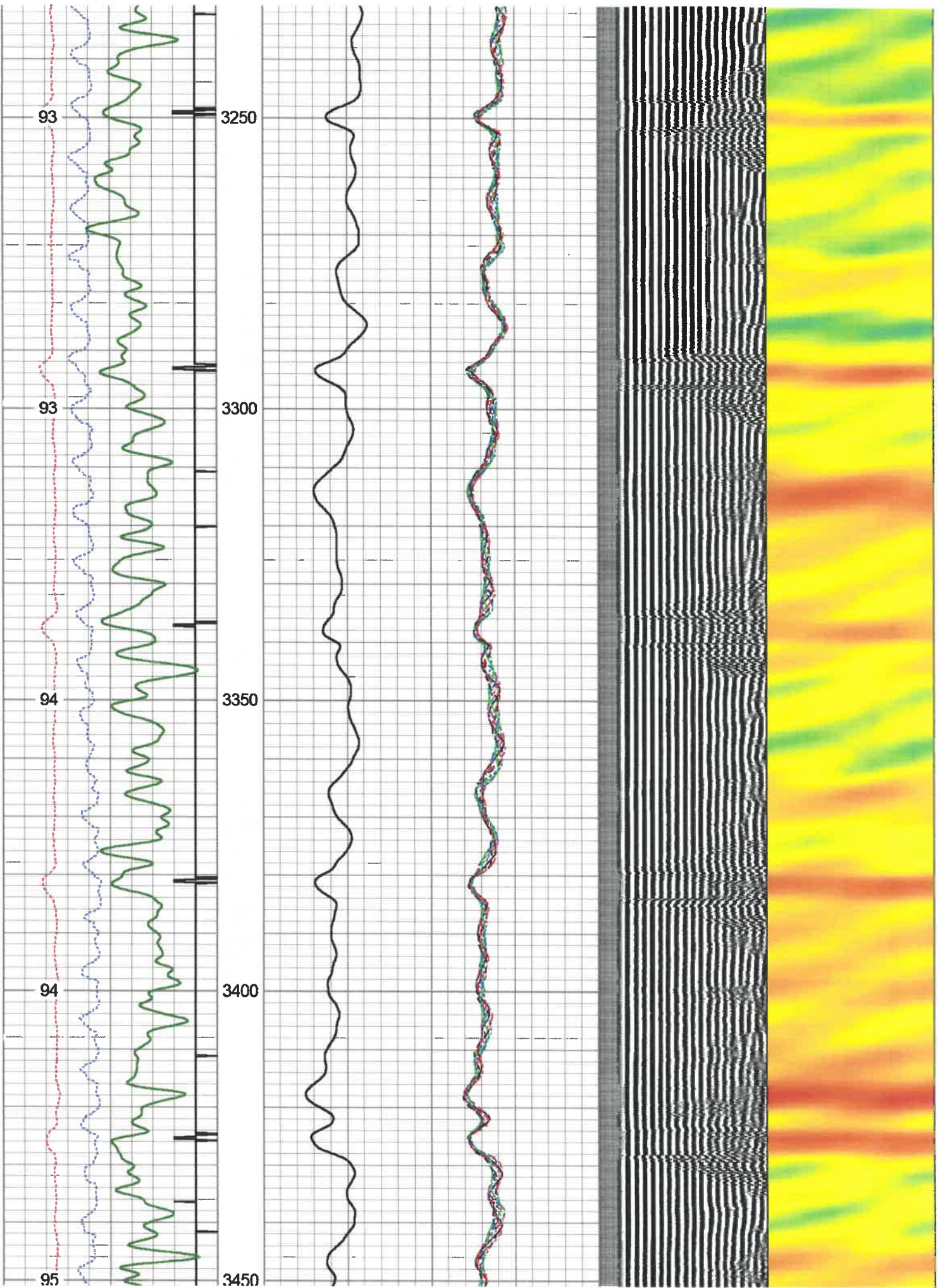


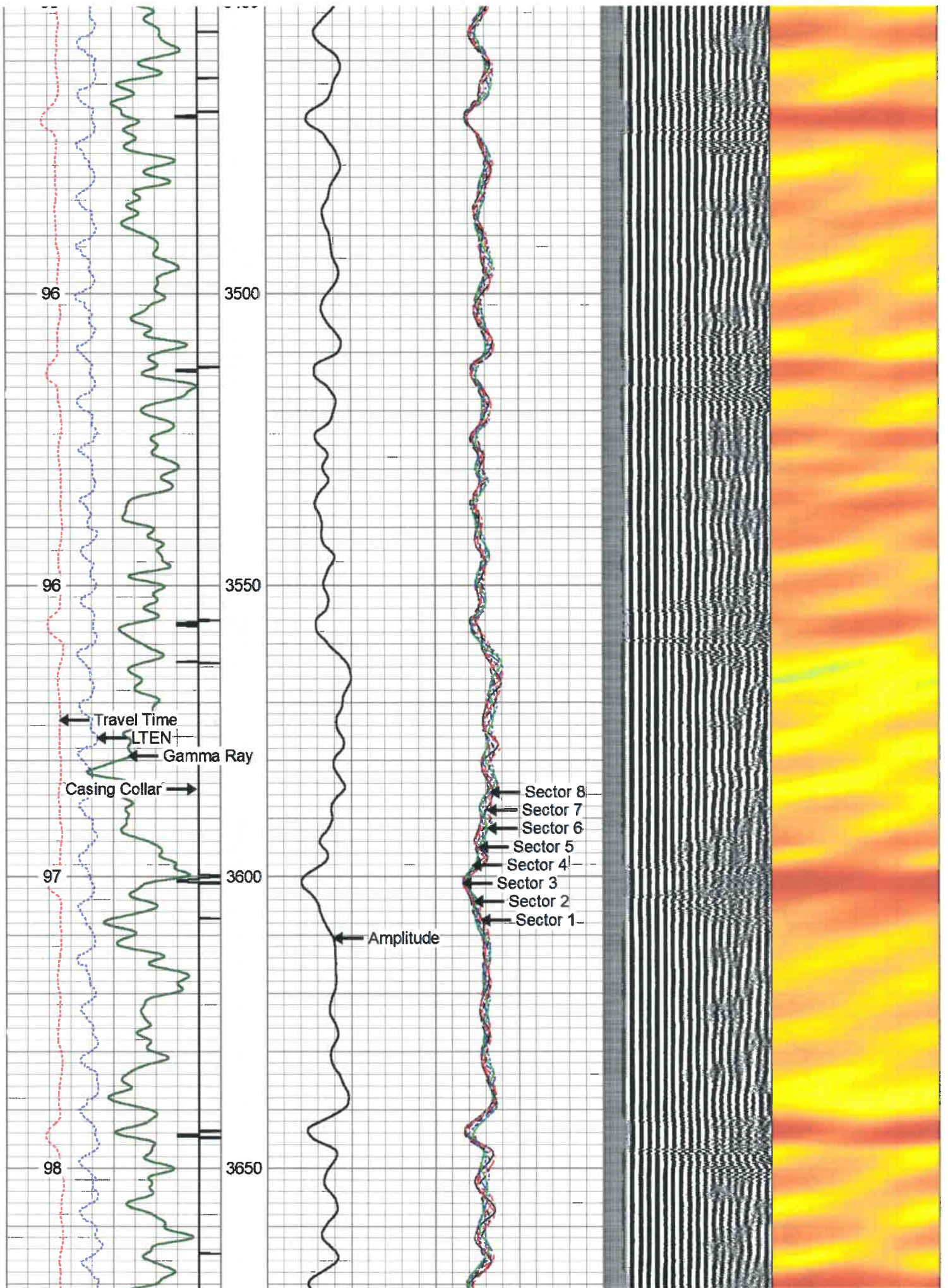


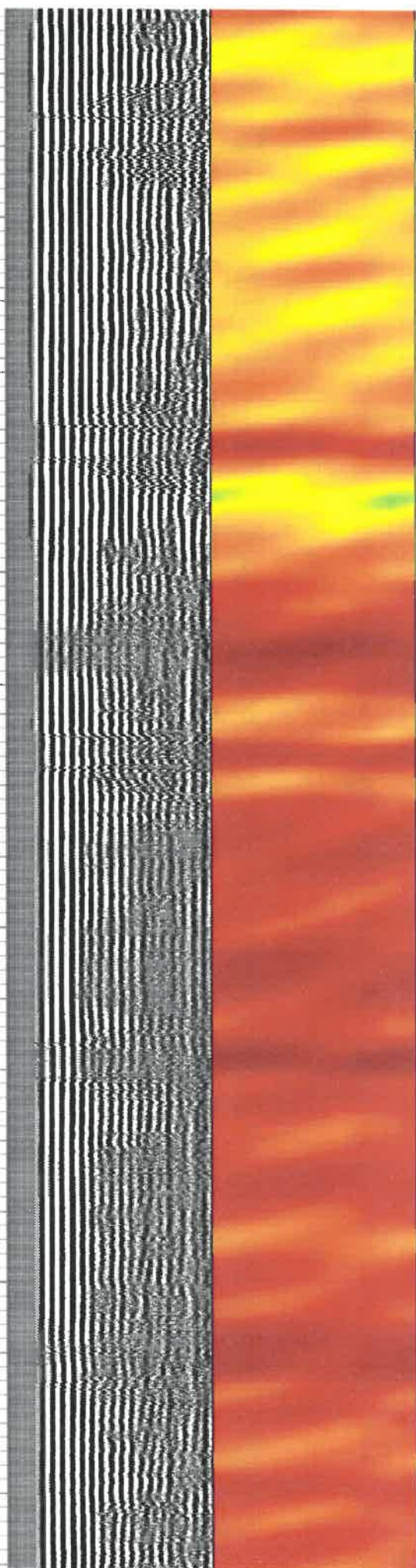
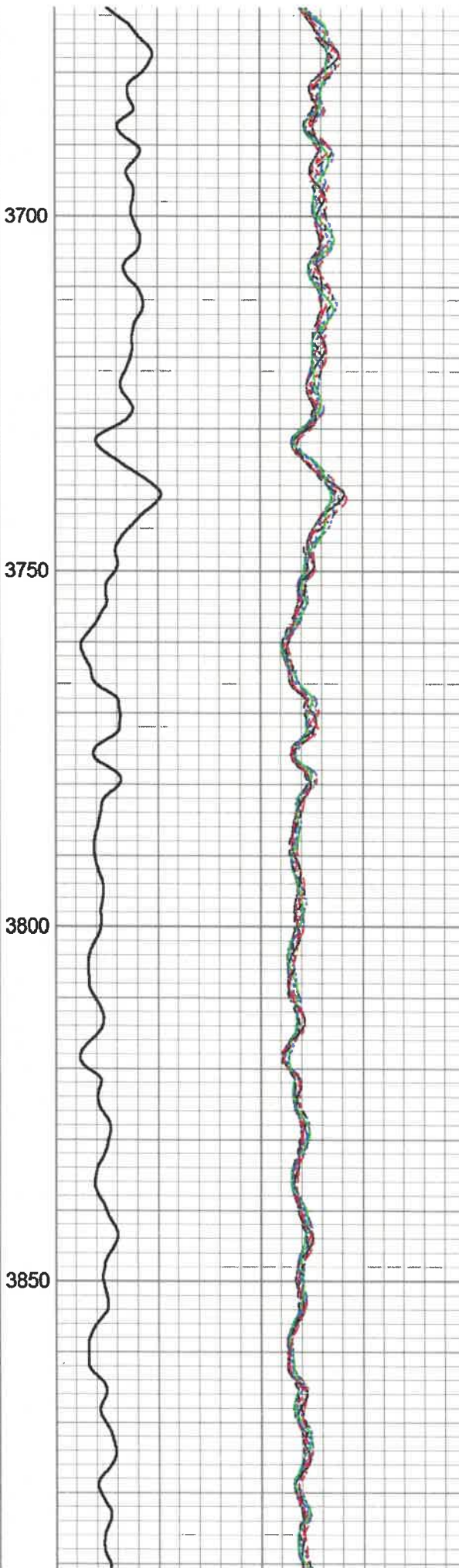
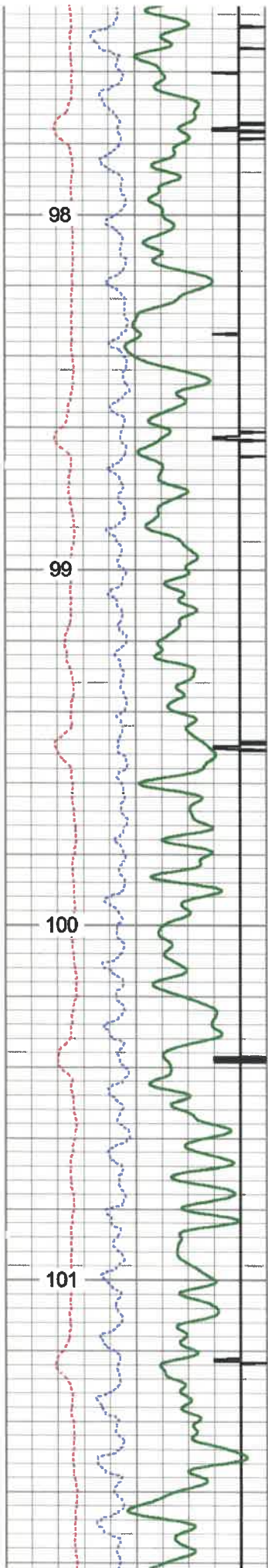


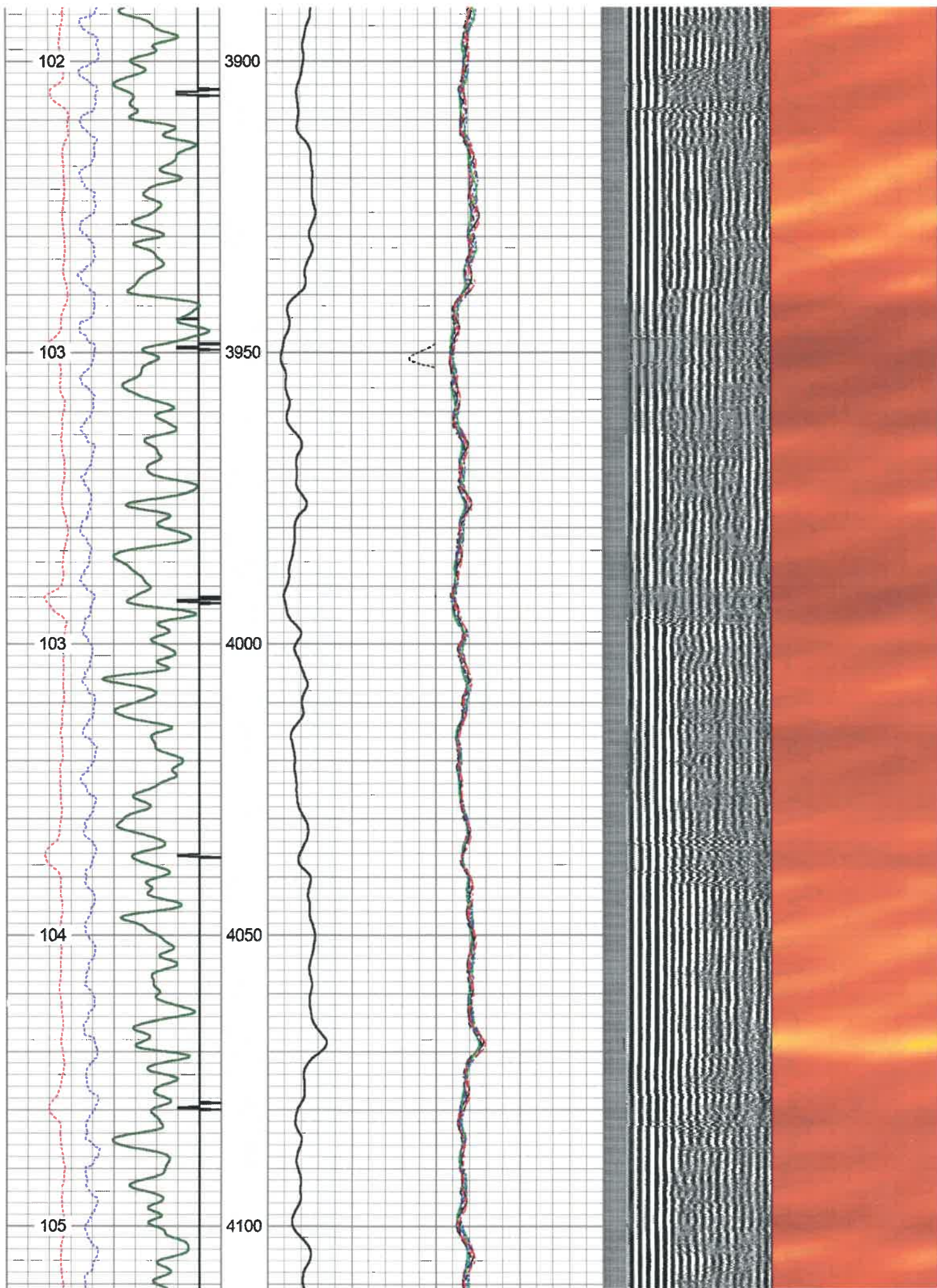


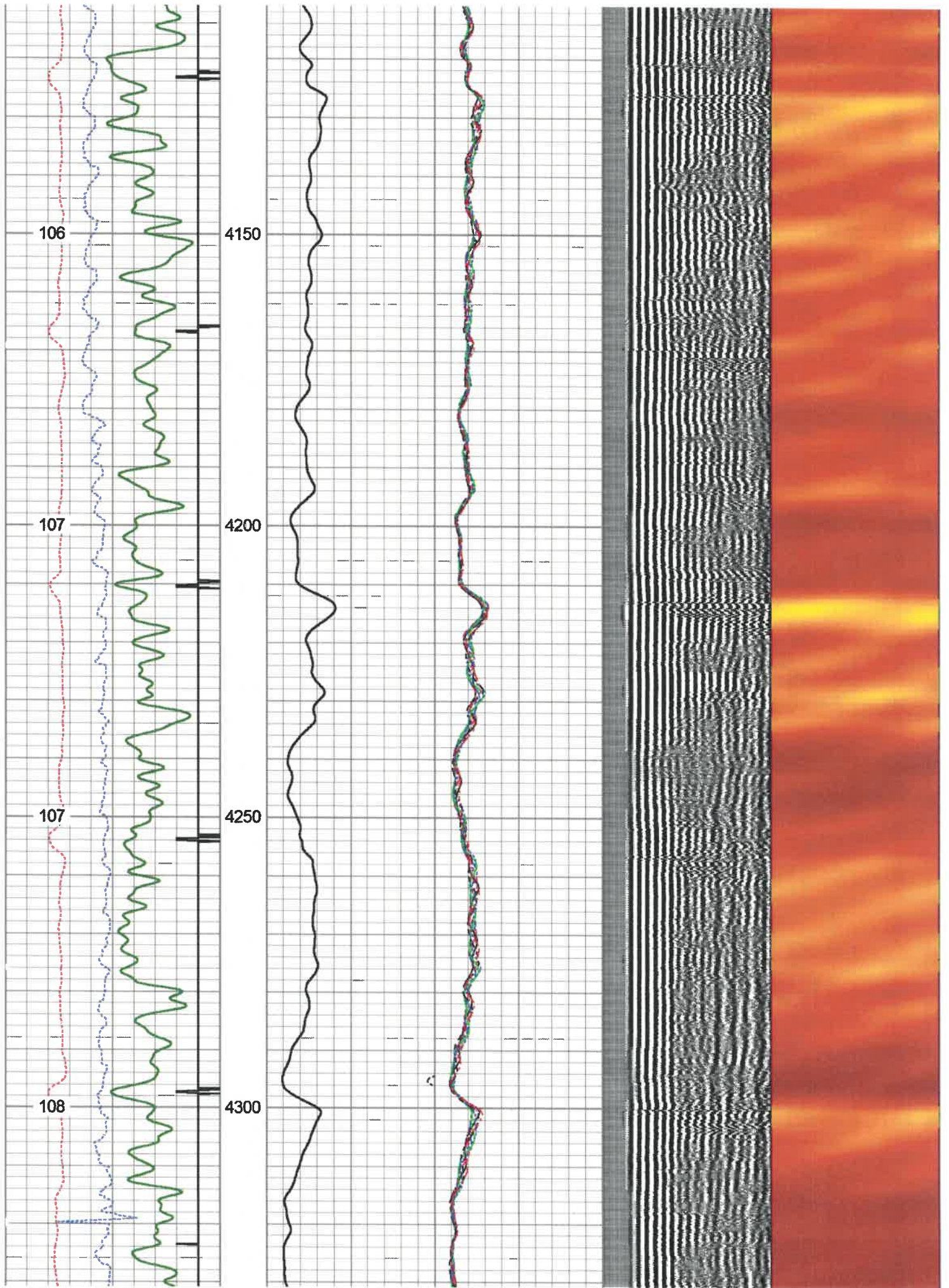


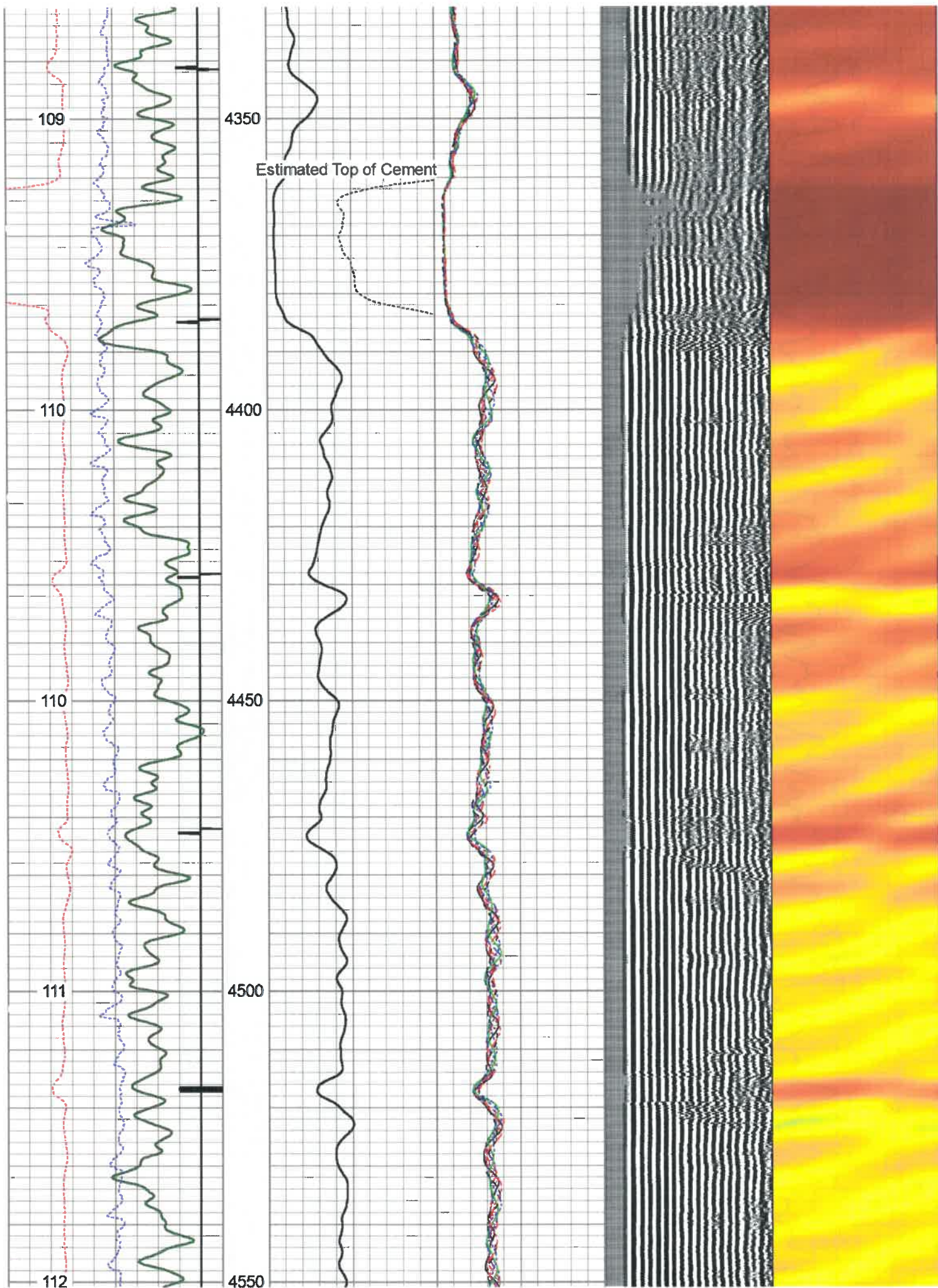


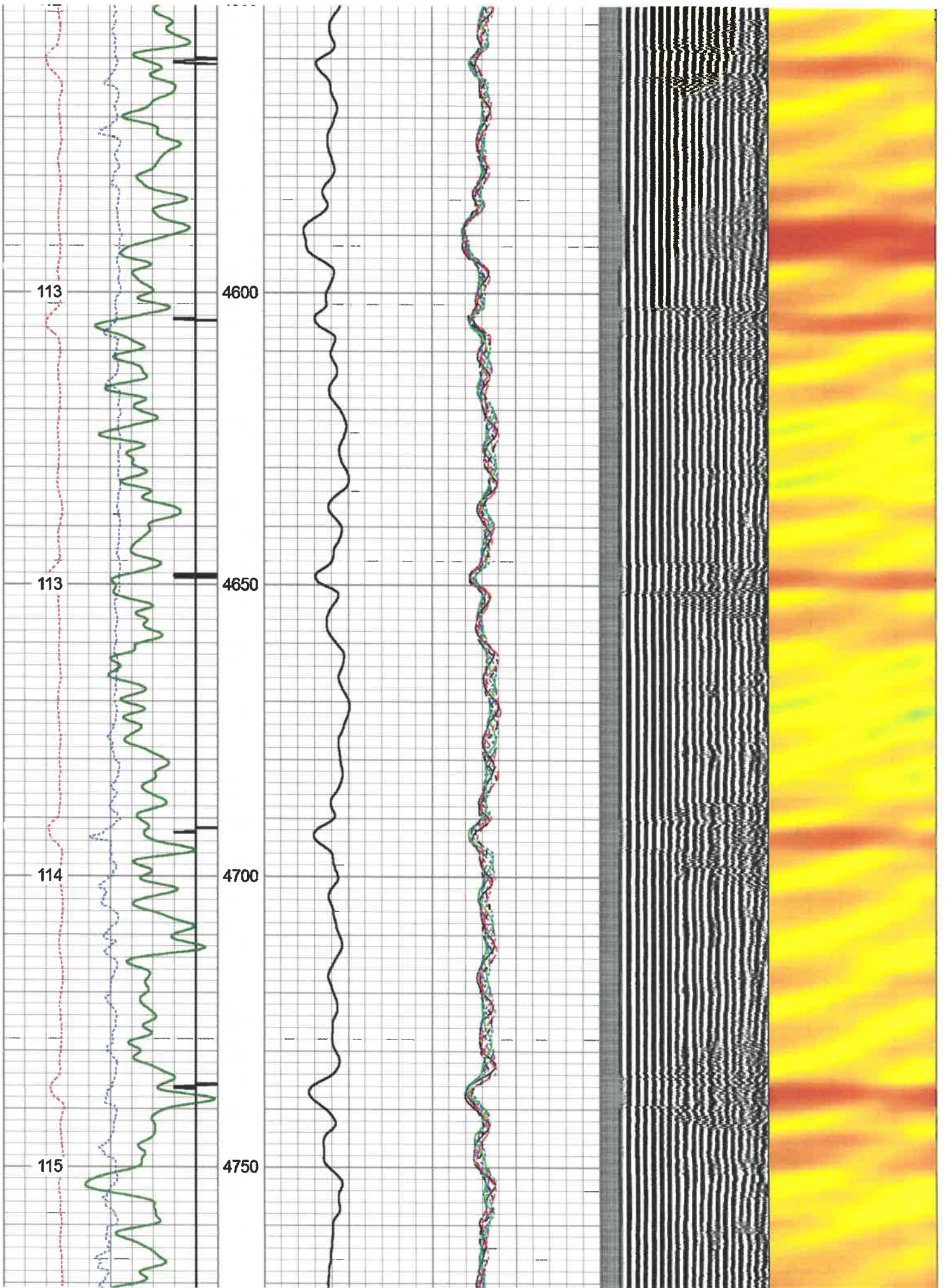


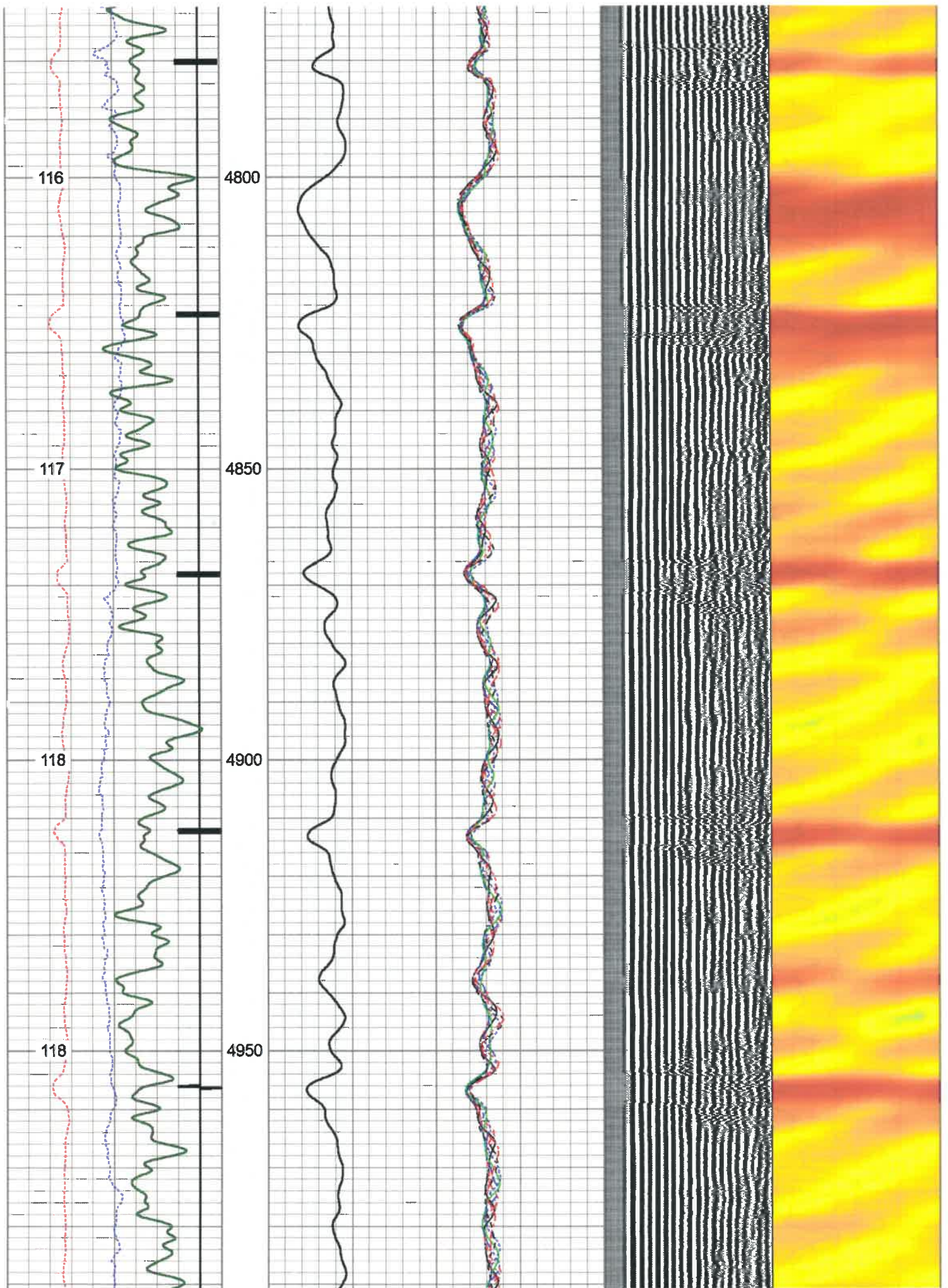




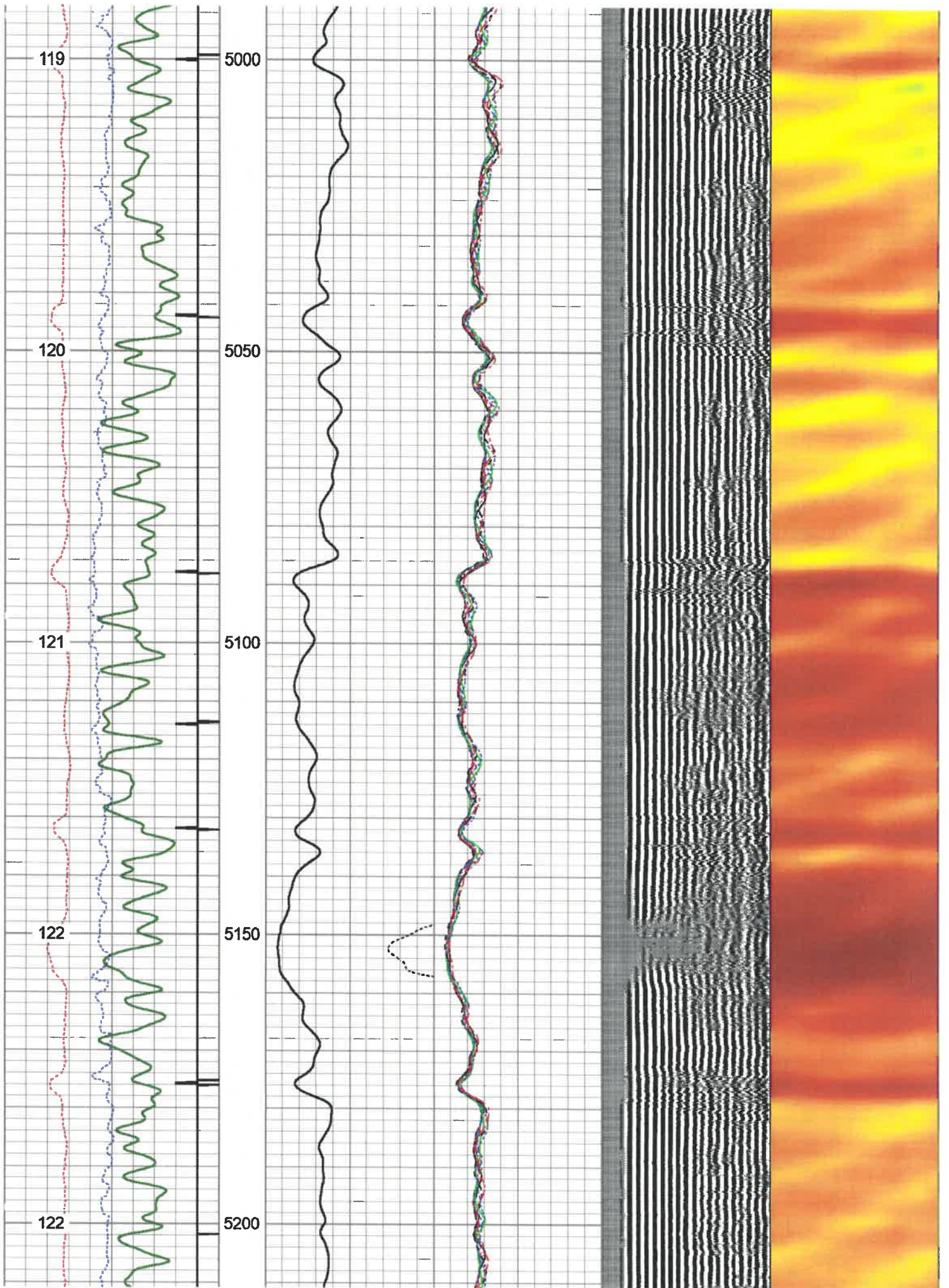


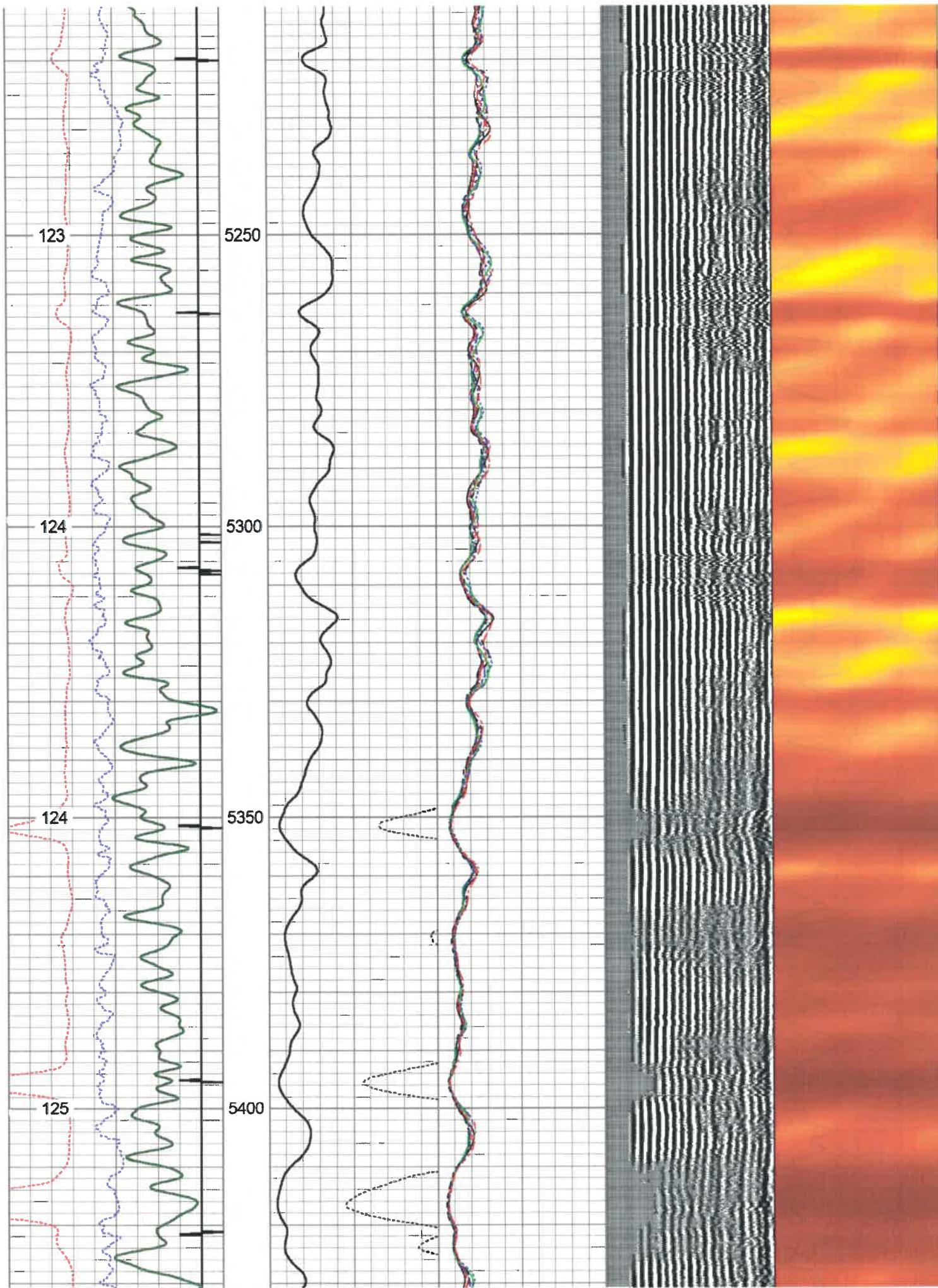


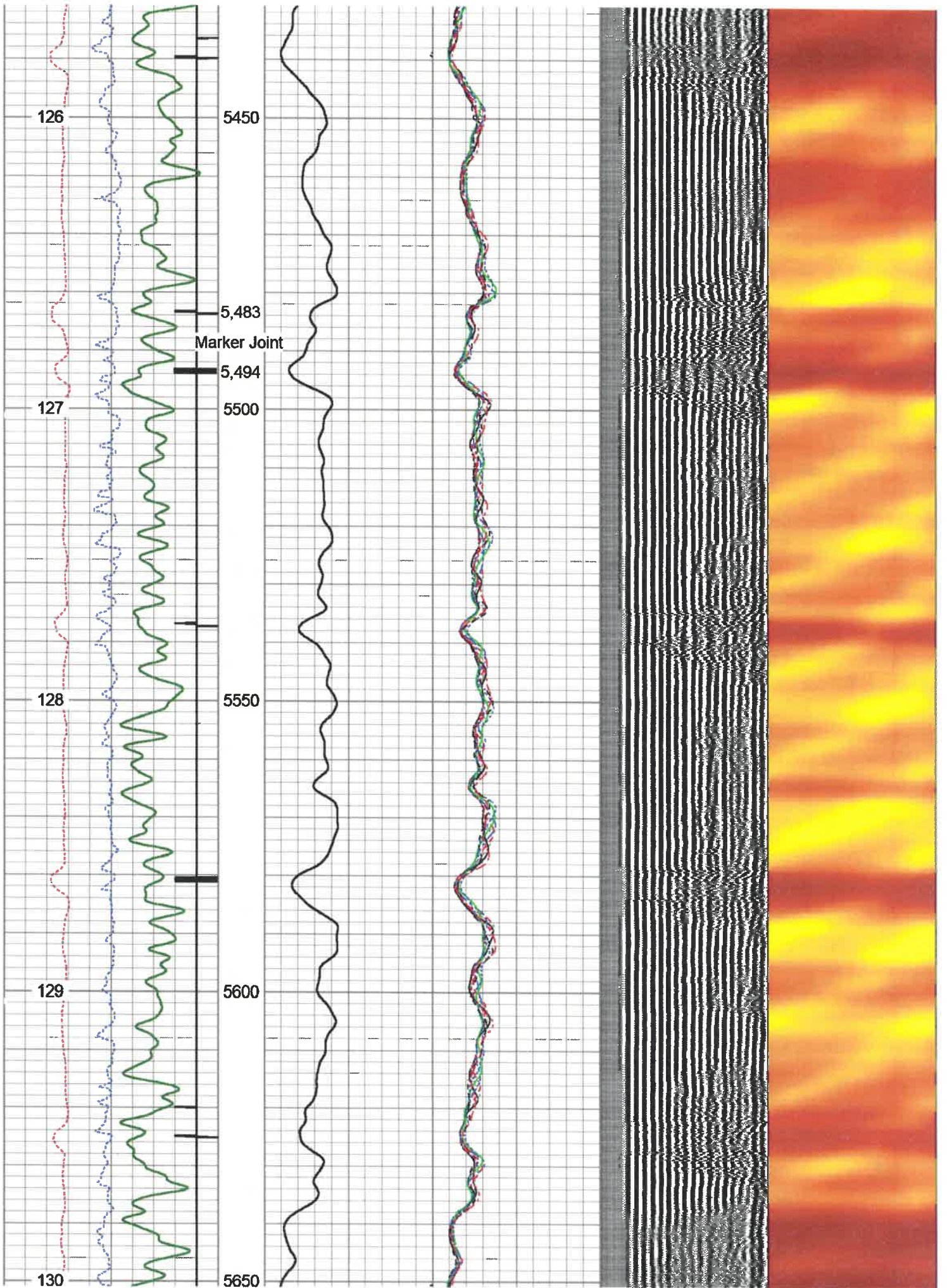


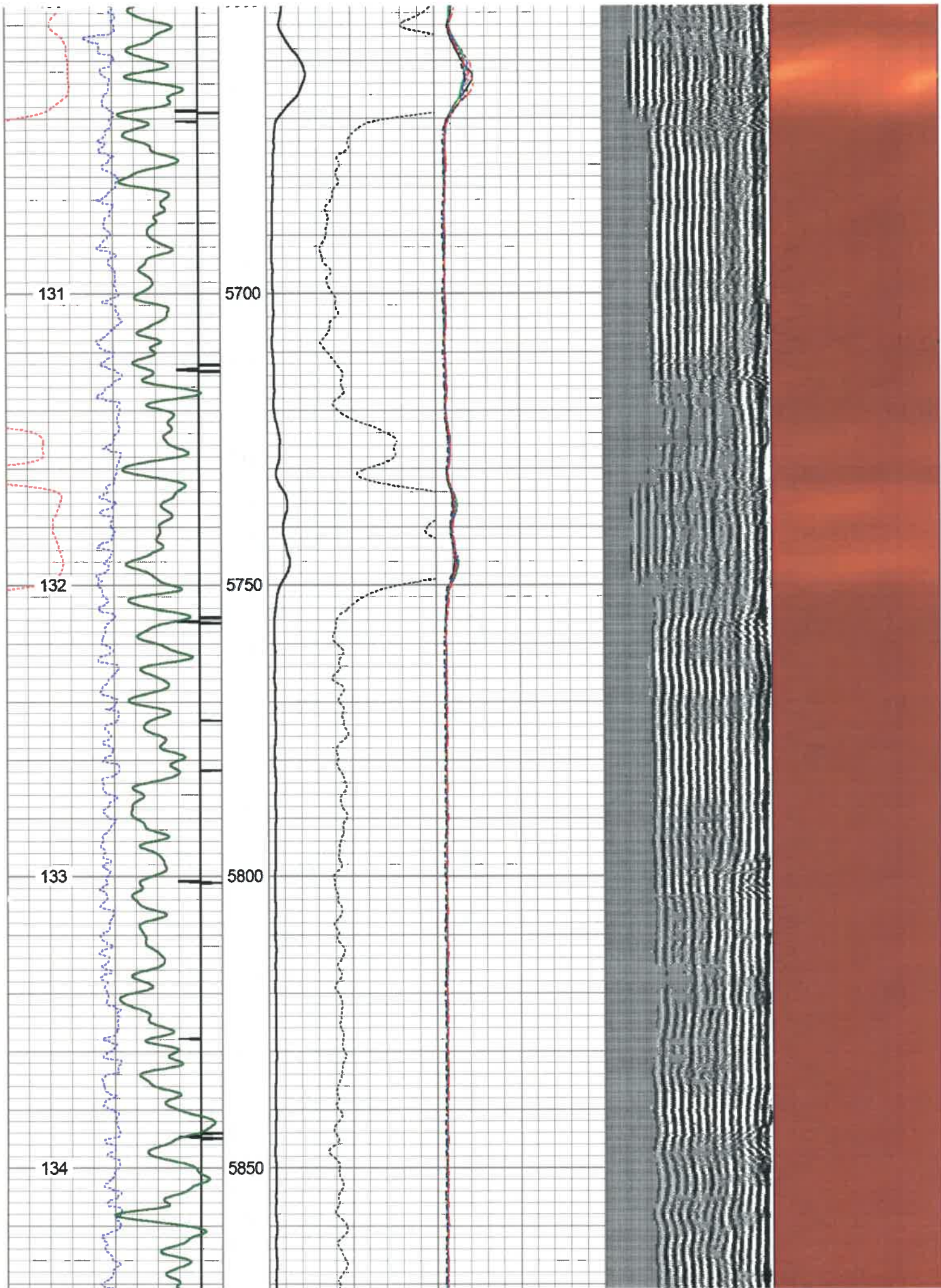


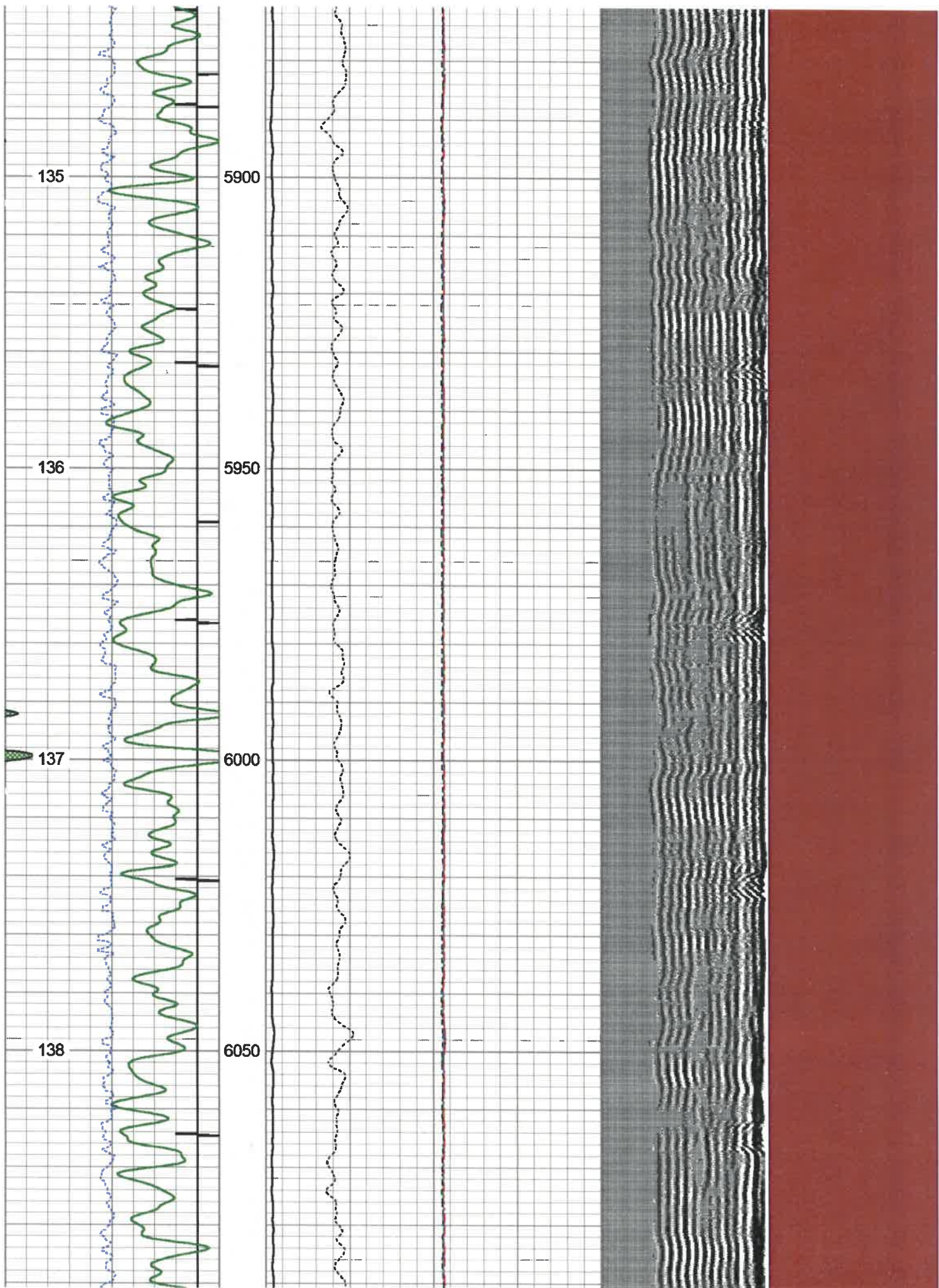


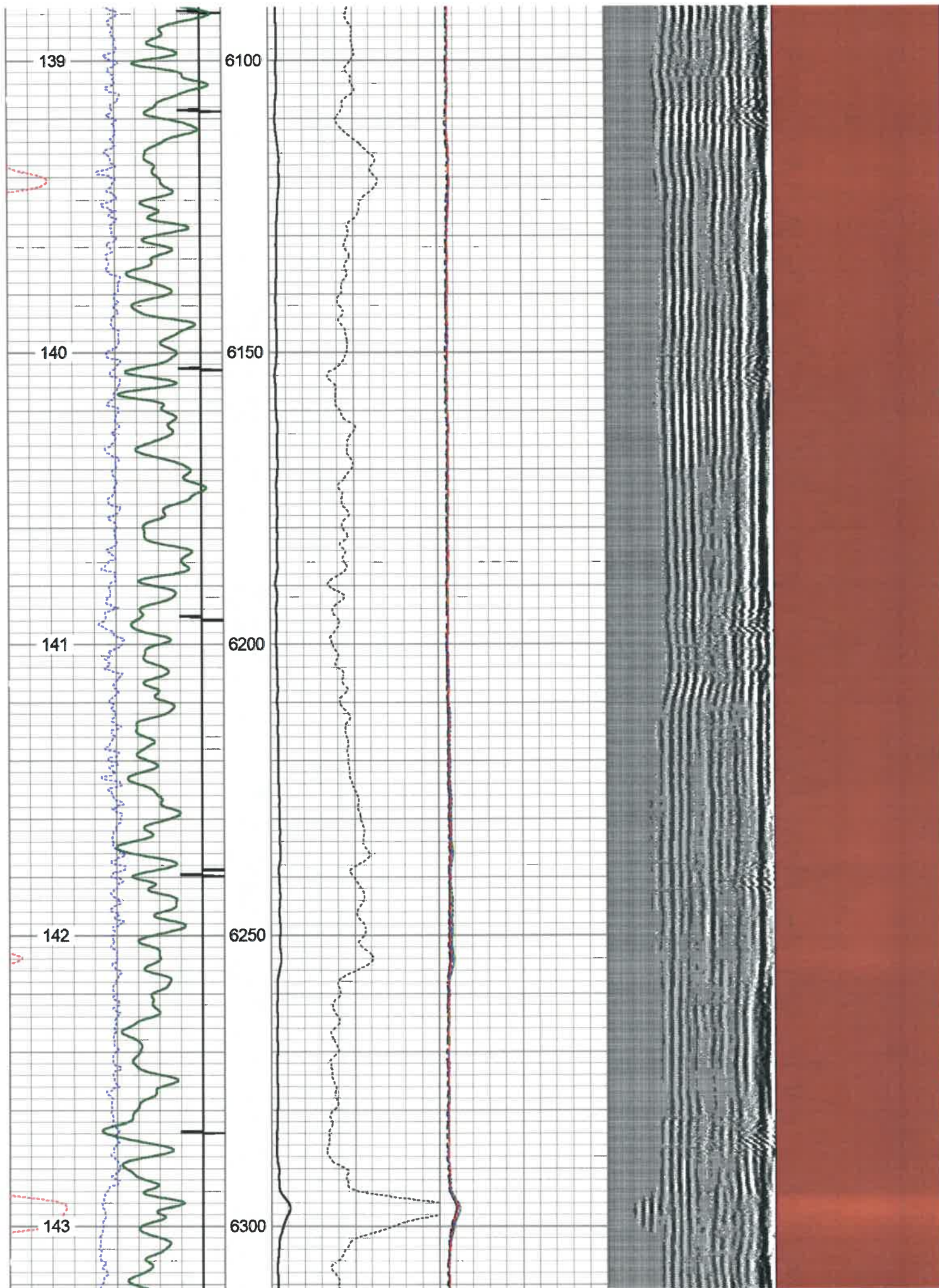


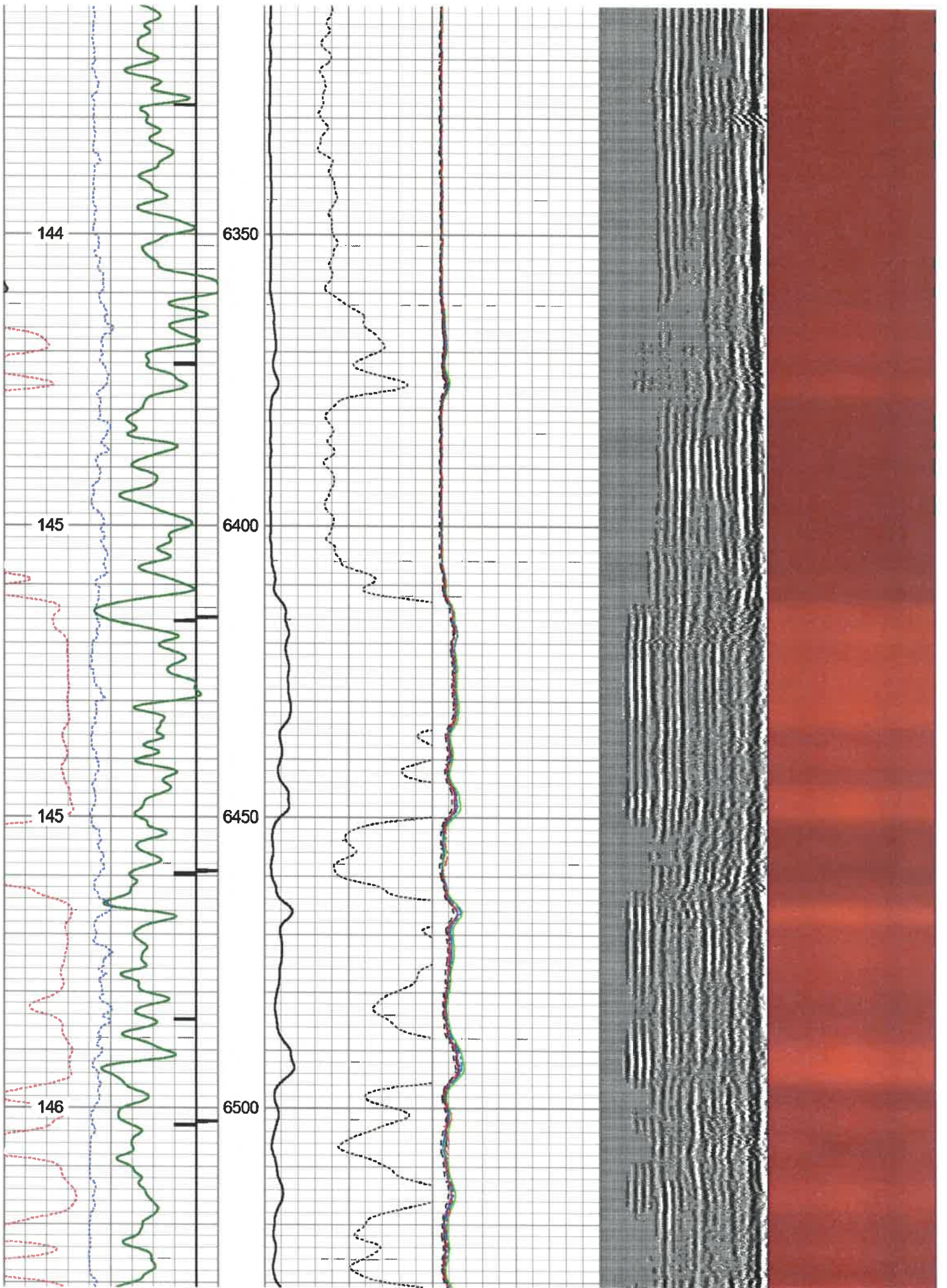


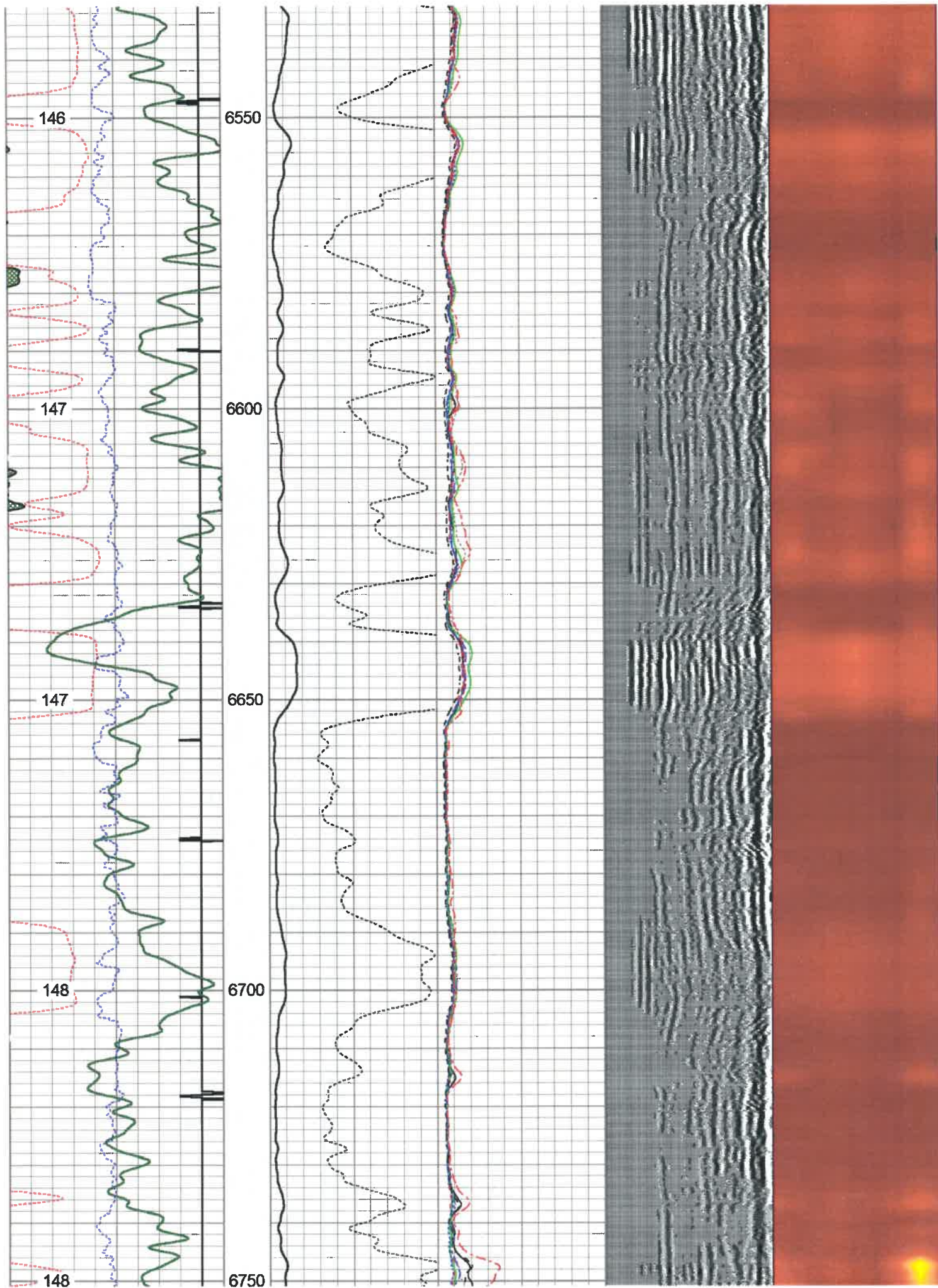




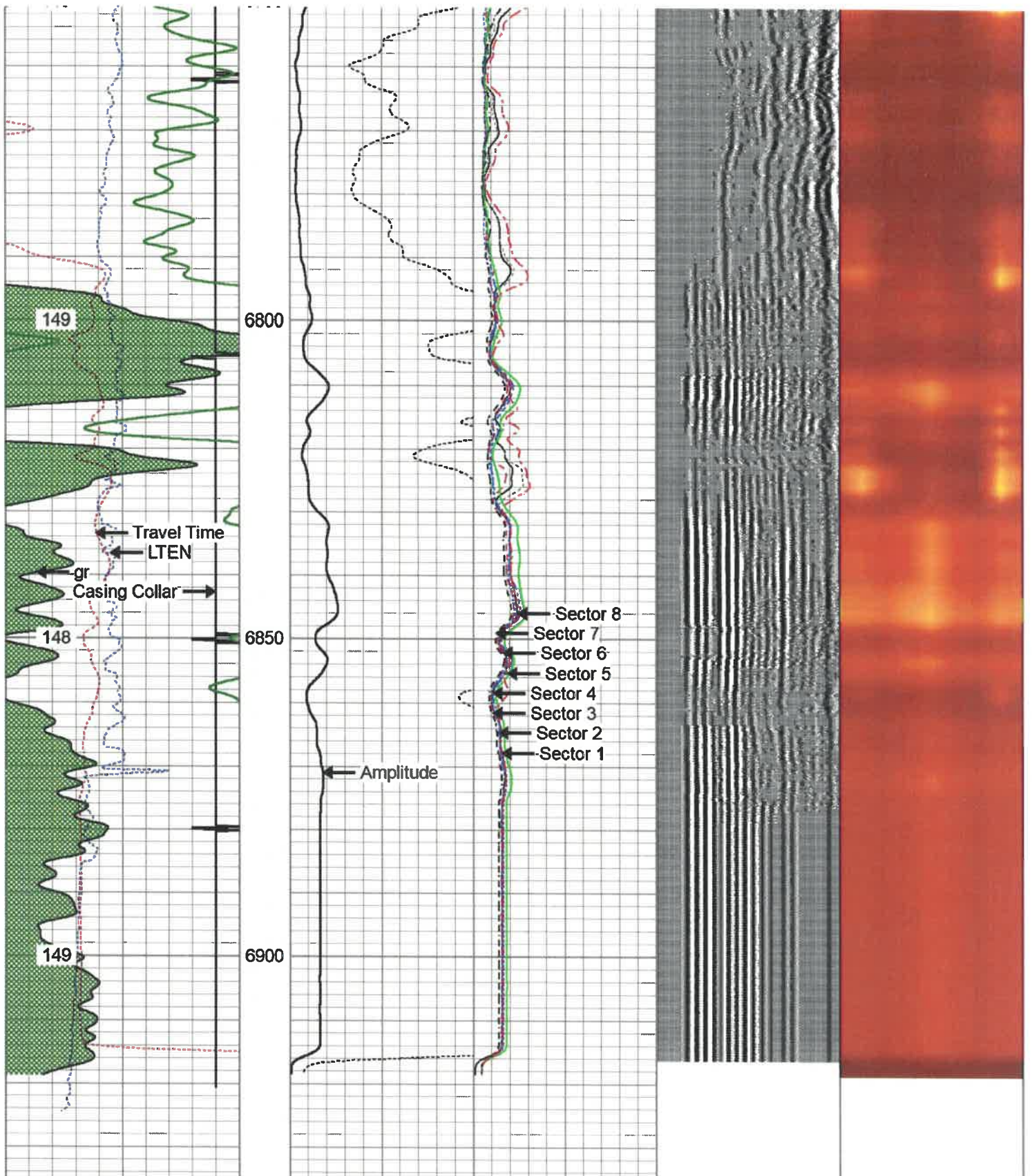






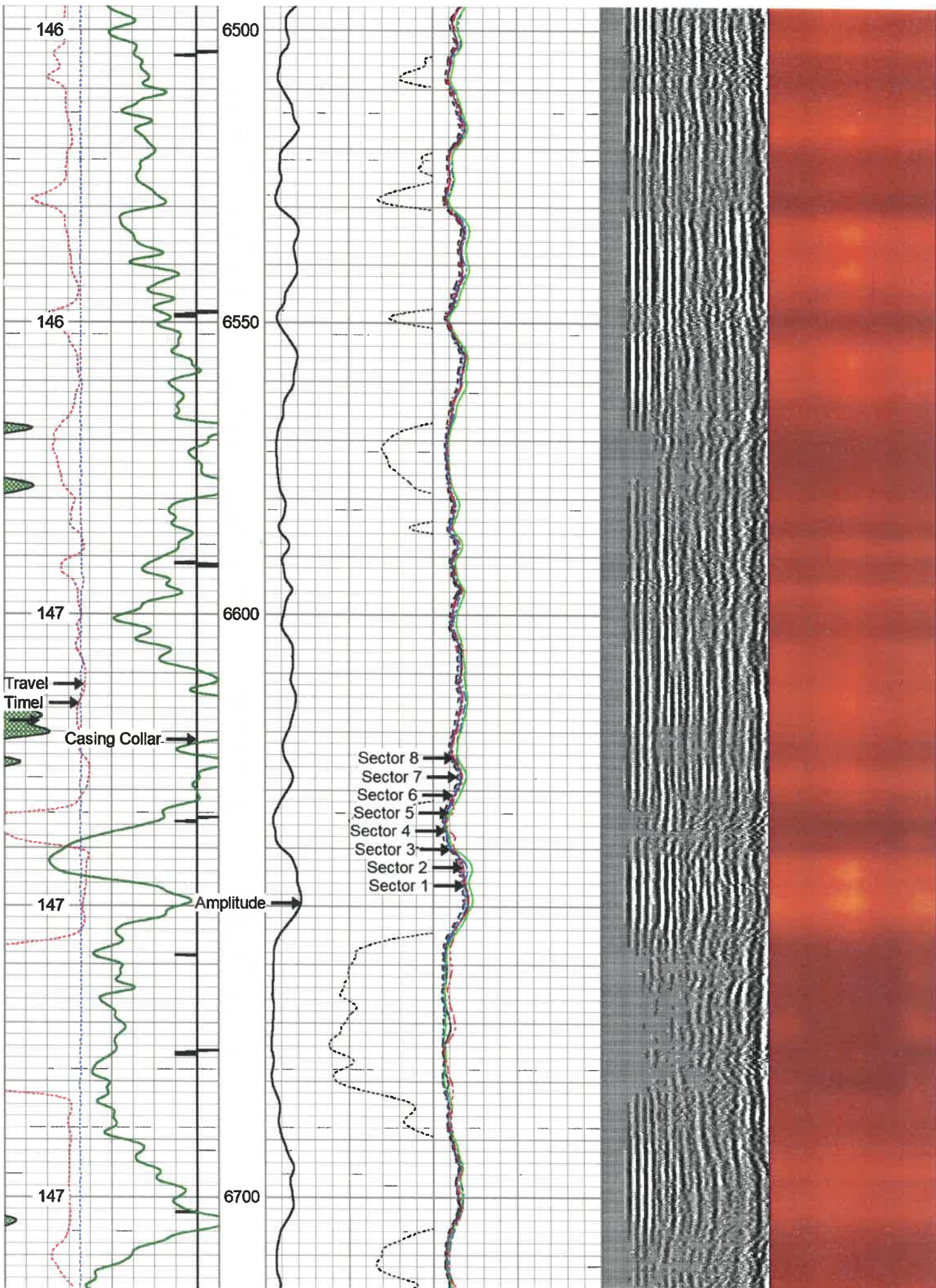


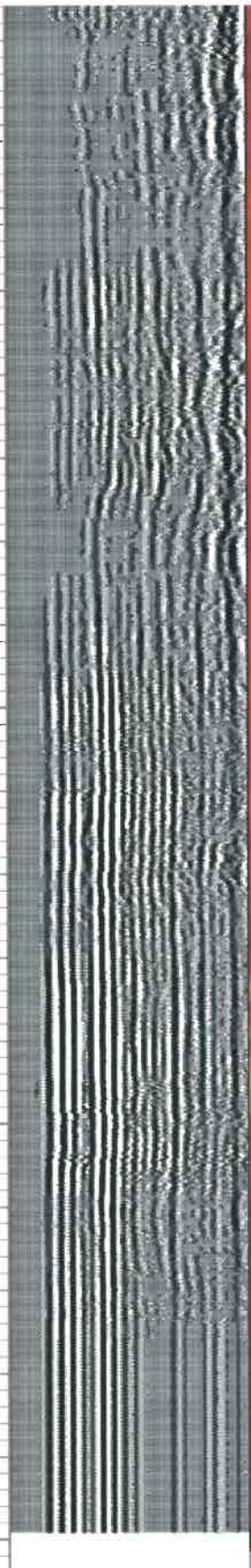
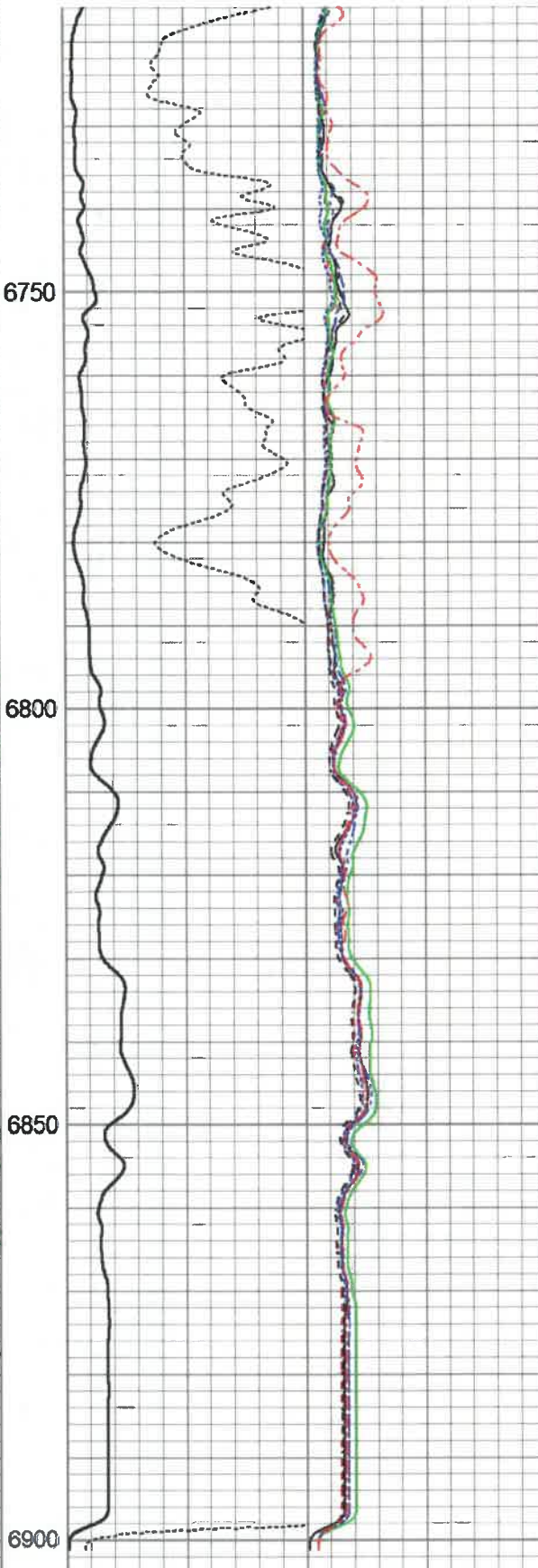
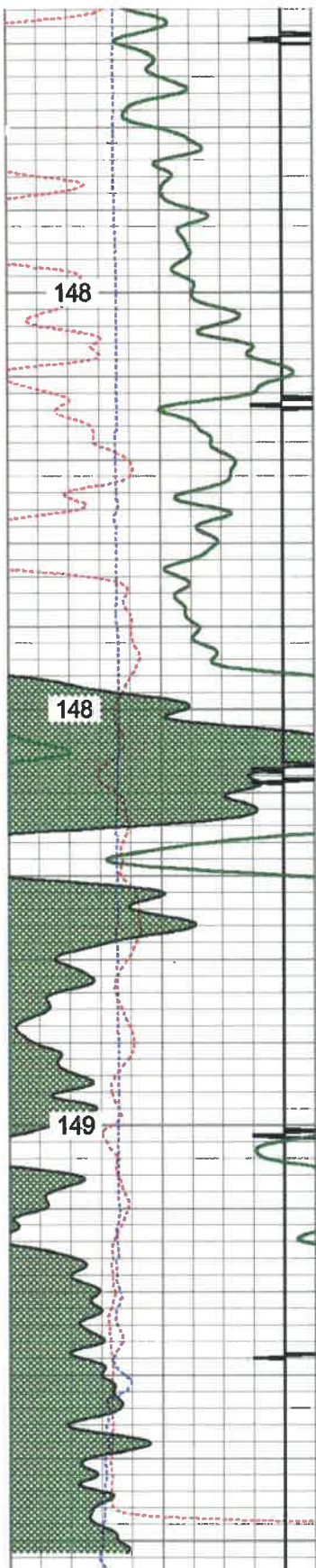




265	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	Sector 1	150	Variable Density	1	Cement Map	8
Casing Collar			0	Amplified Amplitude		-5	Sector 2	150	200	(usec)		
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	Sector 3	150				
0	LTEN (lb)	2500				-5	Sector 4	150				
Temp						-5	Sector 5	150				
(degF)						-5	Sector 6	150				
						-5	Sector 7	150				







265	Travel Time (usec)	200
Casing Collar		
0	Gamma Ray (GAPI)	150
0	LTEN (lb)	2500
Temp	(degF)	

0	Amplitude (mV)	100	-5	Sector 1	150
Amplified Amplitude					
0	(mV)	10	-5	Sector 2	150
-----					
			-5	Sector 3	150
-----					
			-5	Sector 4	150
-----					
			-5	Sector 5	150
-----					
			-5	Sector 6	150

Variable Density	1	Cement Map	8
200	(usec)	1200	

# Log Variables

Database: C:\Users\thomas.weese\Desktop\Bond Logs\Antero\Colorado East\antero\_colorado\_east\_avalanche\_3h\_rc  
 Dataset Marcellus/Avalanche\_3H/RCBL\_1/pass4/\_vars\_

## Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 148	CASEOD in 5.5	CASETHCK in 0.361	CASEWGHT lb/ft 20	MAXAMPL mV 71.921	MINAMPL mV 2.2
MINATTN db/ft 0.8	PERFS No	PPT usec 0	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 C:\Users\thomas.weese\Desktop\Bond Logs\Antero\Colorado East\antero\_colorado\_east\_avalanche\_3h\_rc  
 Dataset Pathname Marcellus/Avalanche\_3H/RCBL\_1/pass4  
 Dataset Creation Sat Mar 14 16:08:52 2020

## Gamma Ray Calibration Report

Serial Number: FW1211-86  
 Tool Model: Probe  
 Performed: Mon Feb 03 15:18:32 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: 50.633 ft

Master Calibration, performed Sat Mar 14 11:48:58 2020:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.015	0.828	2.200	71.921	105.801	0.913
CAL	1.019	1.026				
5'	0.005	0.815	2.200	71.921	106.112	1.744
SUM						
S1	0.068	0.871	2.200	71.921	106.820	-3.735
S2	0.002	0.811	2.200	71.921	106.173	2.037
S3	0.008	0.811	2.200	71.921	106.819	1.534
S4	0.006	0.803	2.200	71.921	107.448	1.674
S5	0.005	0.811	2.200	71.921	106.502	1.795
S6	0.005	0.820	2.200	71.921	105.573	1.747
S7	0.000	0.815	2.200	71.921	106.400	1.640

S7	0.006	0.814	2.200	71.921	106.281	1.647
S8	0.006	0.814	2.200	71.921	106.281	1.647

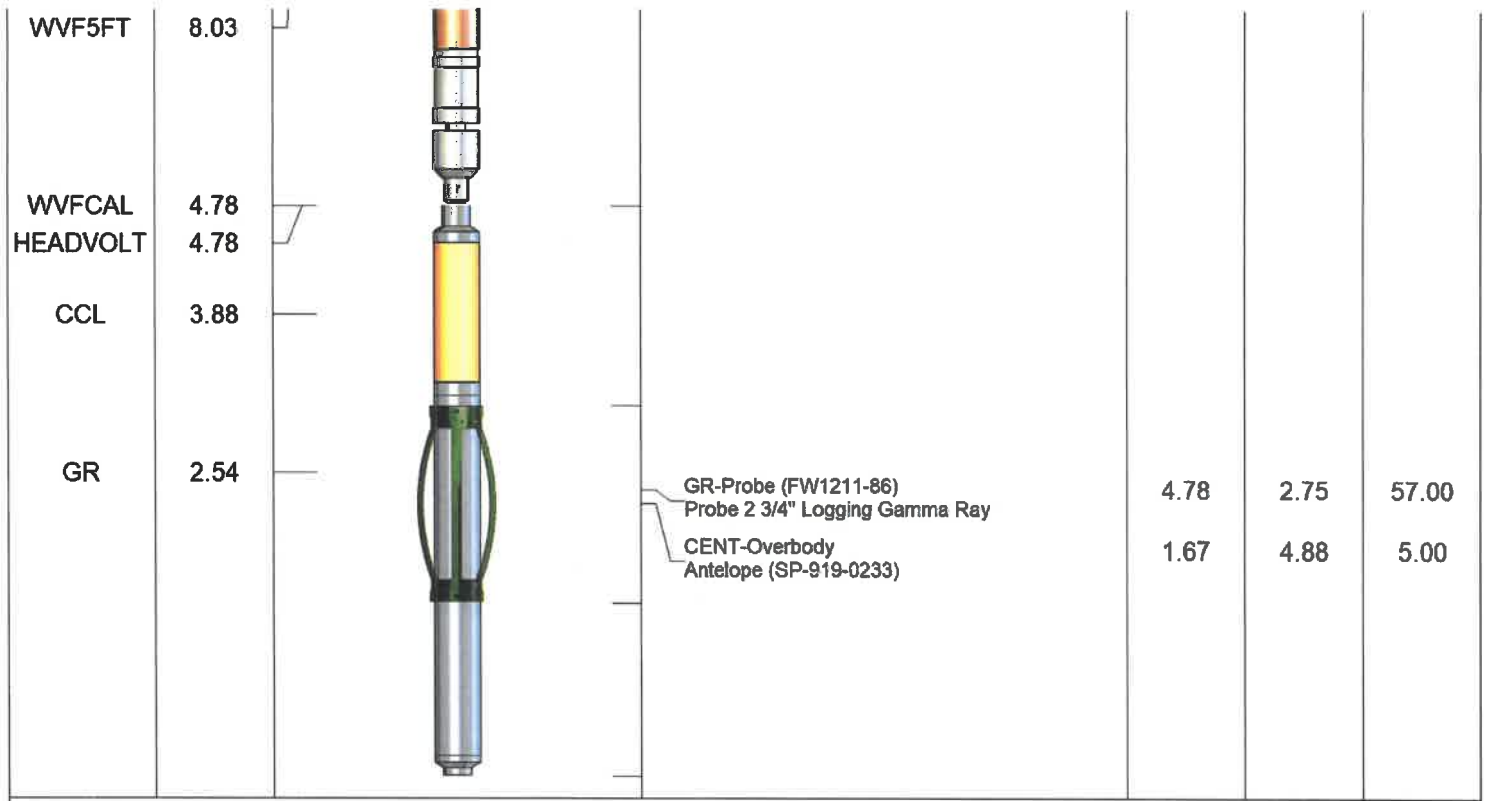
Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.019	1.026	1.000	0.000


Air Zero Calibration, performed Sat Mar 14 08:20:43 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)
HeadVolt	14.11		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
WVFS8	9.03		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	9.03					
WVFS6	9.03					
WVFS5	9.03					
WVFS4	9.03					
WVFS3	9.03					
WVFS2	9.03					
WVFS1	9.03					
WVFS3FT	9.03					



Dataset: antero\_colorado\_east\_avalanche\_3h\_rcbl\_nineenergy\_14\_mar\_2020.db: Marcellus/Avalanche\_3H/RCBL\_1/pass4  
 Total length: 15.17 ft  
 Total weight: 162.00 lb  
 O.D.: 4.88 in

	<b>Company</b>	Antero Resources
	<b>Well</b>	Avalanche Unit 3H
	<b>Field</b>	North Canton
	<b>County</b>	Tyler
	<b>State</b>	West Virginia





-5	Sector 7	150
-5	Sector 8	150

# Log Variables

Database: C:\Users\thomas.weese\Desktop\Bond Logs\Antero\Colorado East\antero\_colorado\_east  
 Dataset Marcellus/Avalanche\_2H/RCBL\_1/pass4/\_vars\_

## Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 148	CASEOD in 5.5	CASETHCK in 0.361	CASEWGHT lb/ft 20	MAXAMPL mV 71.921	MINAMPL mV 2.2
MINATTN db/ft 0.8	PERFS No	PPT usec 0	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 C:\Users\thomas.weese\Desktop\Bond Logs\Antero\Colorado East\antero\_colorado\_east\_avalanche\_2h\_rc  
 Dataset Pathname Marcellus/Avalanche\_2H/RCBL\_1/pass4  
 Dataset Creation Sun Mar 15 07:32:25 2020

## Gamma Ray Calibration Report

Serial Number: FW1211-86  
 Tool Model: Probe  
 Performed: Mon Feb 03 15:18:32 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: 14.583 ft

Master Calibration, performed Sun Mar 15 06:52:23 2020:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.017	0.831	2.200	71.921	105.629	0.746
CAL	1.030	1.032				
5'	0.006	0.818	2.200	71.921	105.869	1.672
SUM						

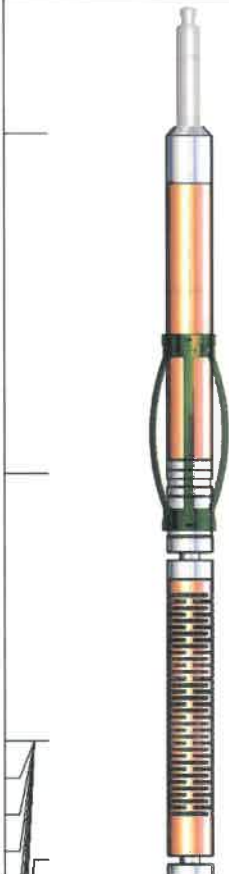
S1	0.008	0.875	2.200	71.921	105.476	-3.710
S2	0.001	0.814	2.200	71.921	105.692	2.136
S3	0.008	0.814	2.200	71.921	106.553	1.492
S4	0.006	0.808	2.200	71.921	106.952	1.639
S5	0.006	0.815	2.200	71.921	106.159	1.721
S6	0.006	0.823	2.200	71.921	105.408	1.670
S7	0.006	0.815	2.200	71.921	106.155	1.667
S8	0.007	0.818	2.200	71.921	105.973	1.591

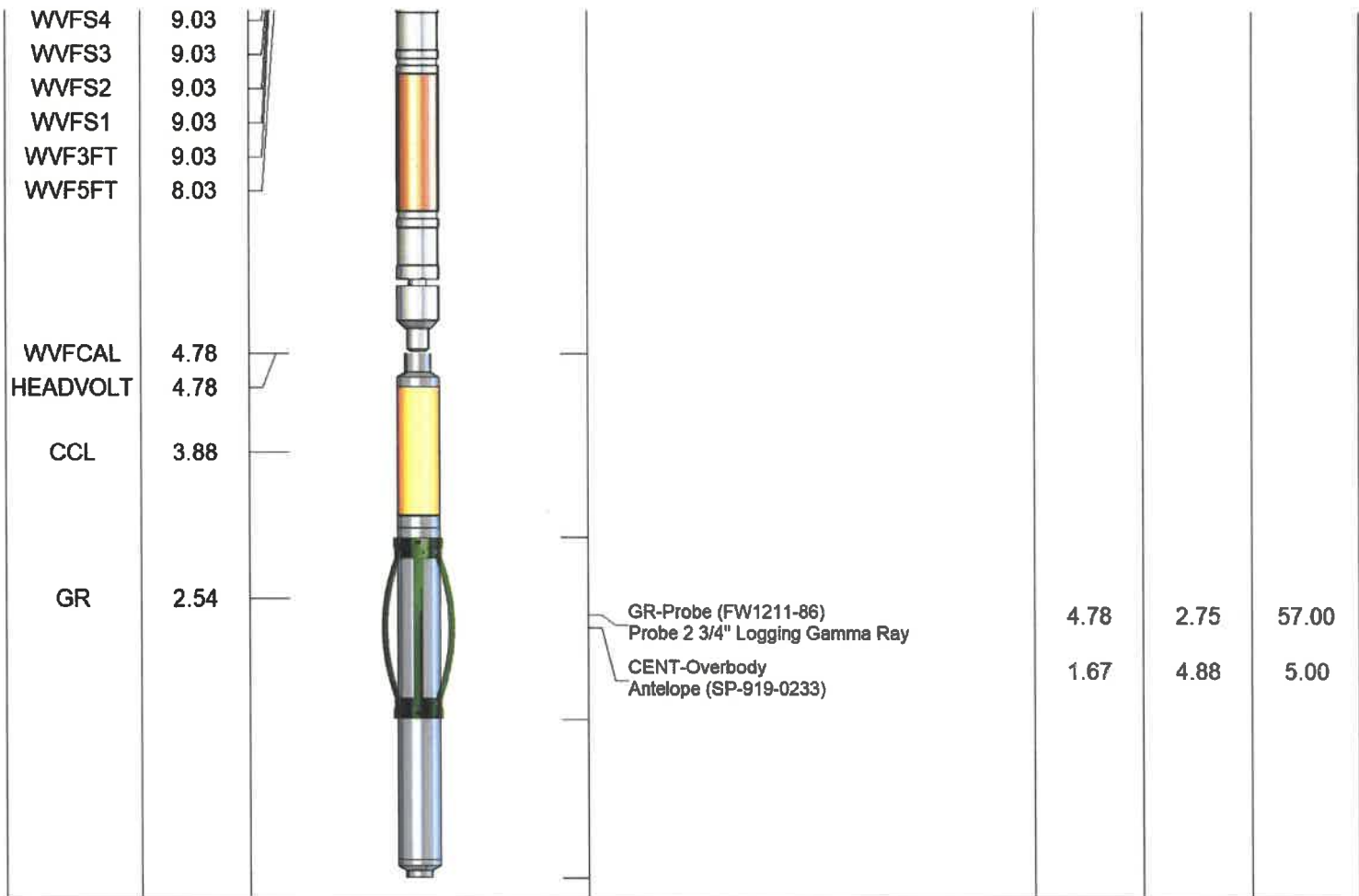
Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.030	1.032	1.000	0.000


Air Zero Calibration, performed Sun Mar 15 06:44:47 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)
HeadVolt	14.11		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
WVFS8	9.03		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	9.03					
WVFS6	9.03					
WVFS5	9.03					



Dataset: antero\_colorado\_east\_avalanche\_2h\_rcbl\_nineenergy\_15\_mar\_2020.db: Marcellus/Avalanche\_2H/RCBL\_1/pass4  
 Total length: 15.17 ft  
 Total weight: 162.00 lb  
 O.D.: 4.88 in

	<b>Company</b>	Antero Resources
	<b>Well</b>	Avalanche Unit 2H
	<b>Field</b>	North Canton
	<b>County</b>	Tyler
	<b>State</b>	West Virginia

