



RADIAL ANALYSIS BOND LOG

Baker Atlas

File No:	Company	WILLIAMS PRODUCTION COMPANY	
CH045471	Well	FEDERAL RGU 13-24-198	
API No:	Field	Sulphur Creek	
05103116130000	County	Rio Blanco	State
			COLORADO
24 1S 98W	Location	Other Services	
RGU 13-24-198 Pad	SHL: 1751' FSL 1076' FWL (NMSW)	RPM	
FRONTIER 10	BHL: 2287' FSL 632' FWL (NMSW)		
	SEC 24 TWP 1S RGE 98W		
Permanent Datum	GL	Elevation	6540 ft
Log Measured From	KB	22 ft	Above P. D.
Drill Measured From	KELLY BUSHING		
		KB	6562 ft
		DF	6561 ft
		GL	6540 ft

Date	17 NOV 2011	
Run	ONE	
Service Order	575362	
Depth Driller	12727 ft	
Depth Logger	12682 ft	
Bottom Logged Interval	12672 ft	
Top Logged Interval	22 ft	
Time Started	1600	
Time Finished	2200	
Operator Rig Time	6 HOURS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	NA	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	45 fpm	
Maximum Recorded Temperature	278 degF	
Reference Log	BAKER HUGHES OH LOG	
Reference Log Date	26 OCT 2011	
Equipment No.	4214	GRAND JCT
Recorded By	JACOB STALEY	
Witnessed By	Dale Cowen	

- FOLD HERE

In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Borehole Record		
Bit Size	From	To
13.5 In	0 ft	3855 ft
7.875 In	0 ft	12727 ft

Casing Record				
Size	Weight	Grade	From	To
9.825 In			0 ft	3855 ft
4.5 In			0 ft	12727 ft

Remarks
ALL DATA ON THIS LOG WAS DEPTH SHIFTED TO MATCH THE GR OFF THE BAKER HUGHES OH LOG DATED 26 OCT 2011
LOGGED WITH 0 PSI AT WELLHEAD
THE AMOUNT OF LINEAR SHIFT WAS 12 FT
BHT = 278 DEG F

SJ = 7722'-7744'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1426XA	10163028	CENTRALIZED
1	1	CCL/GR	2459XA	10417456	CENTRALIZED

PRIMARY PRESENTATION
0 PSI

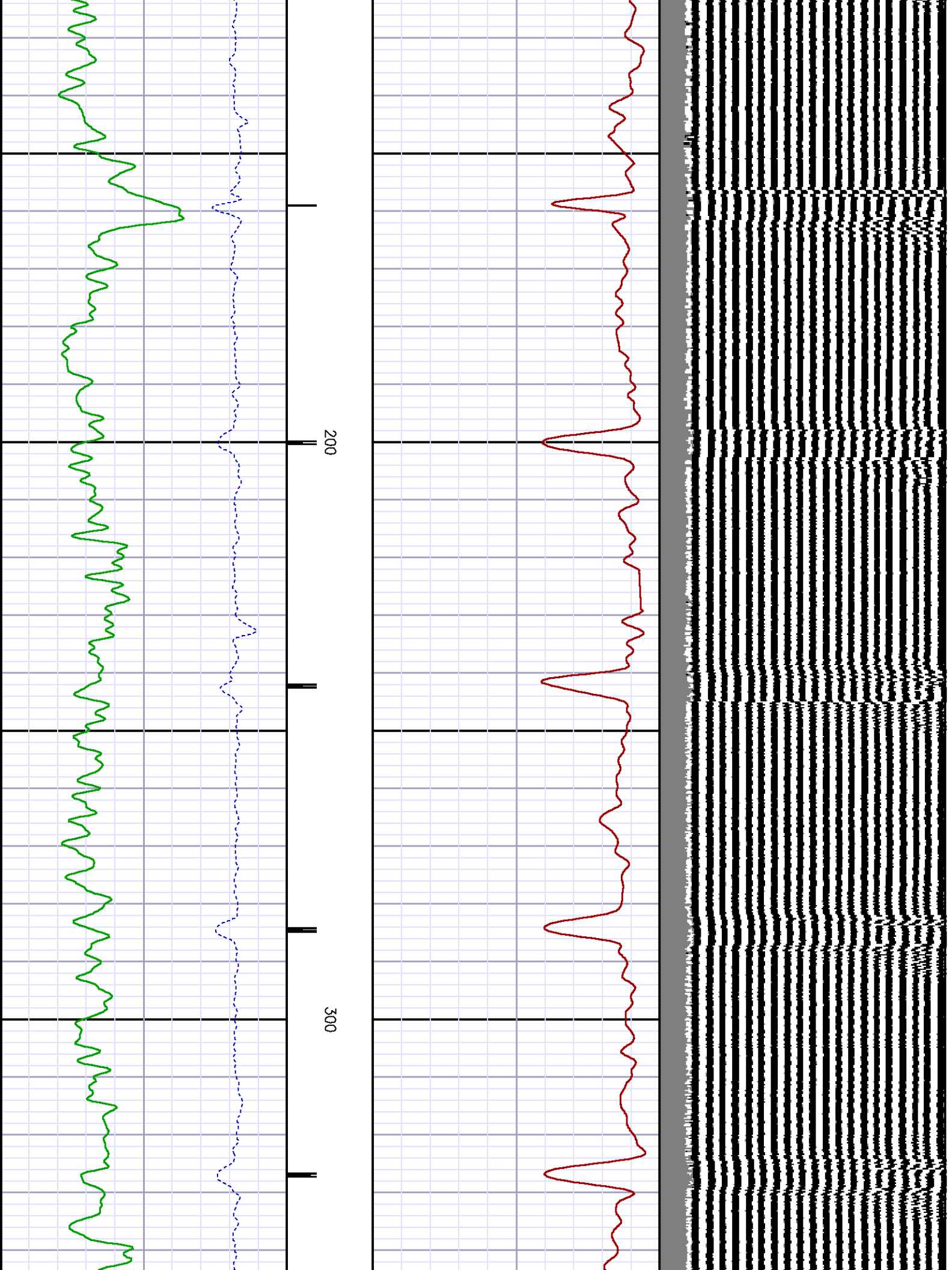
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	304.887	usec	17.280	12729.000
RAL	Amp Gate Start Near	198.031	usec	17.280	12729.000
RAL	Amp Gate Start Radial	199.125	usec	17.280	12729.000
RAL	Amp Gate Width Far	25.000	usec	17.280	12729.000
RAL	Amp Gate Width Near	24.999	usec	17.280	12729.000
RAL	Amp Gate Width Radial	24.999	usec	17.280	12729.000
RAL	casing od	4.500	inches	17.280	12729.000
RAL	casing wt	11.600	lbm/ft	17.280	12729.000
RAL	FB Start Far	291.900	usec	17.280	12729.000
RAL	FB Start Near	175.391	usec	17.280	12729.000
RAL	FB Start Radial	175.391	usec	17.280	12729.000
RAL	FB Thresh Far	10.000	mv	17.280	12729.000
RAL	FB Thresh Near	4.000	mv	17.280	12729.000
RAL	FB Thresh Radial	4.000	mv	17.280	12729.000
RAL	Fluid Travel Time	200.000	usec/ft	17.280	12727.062

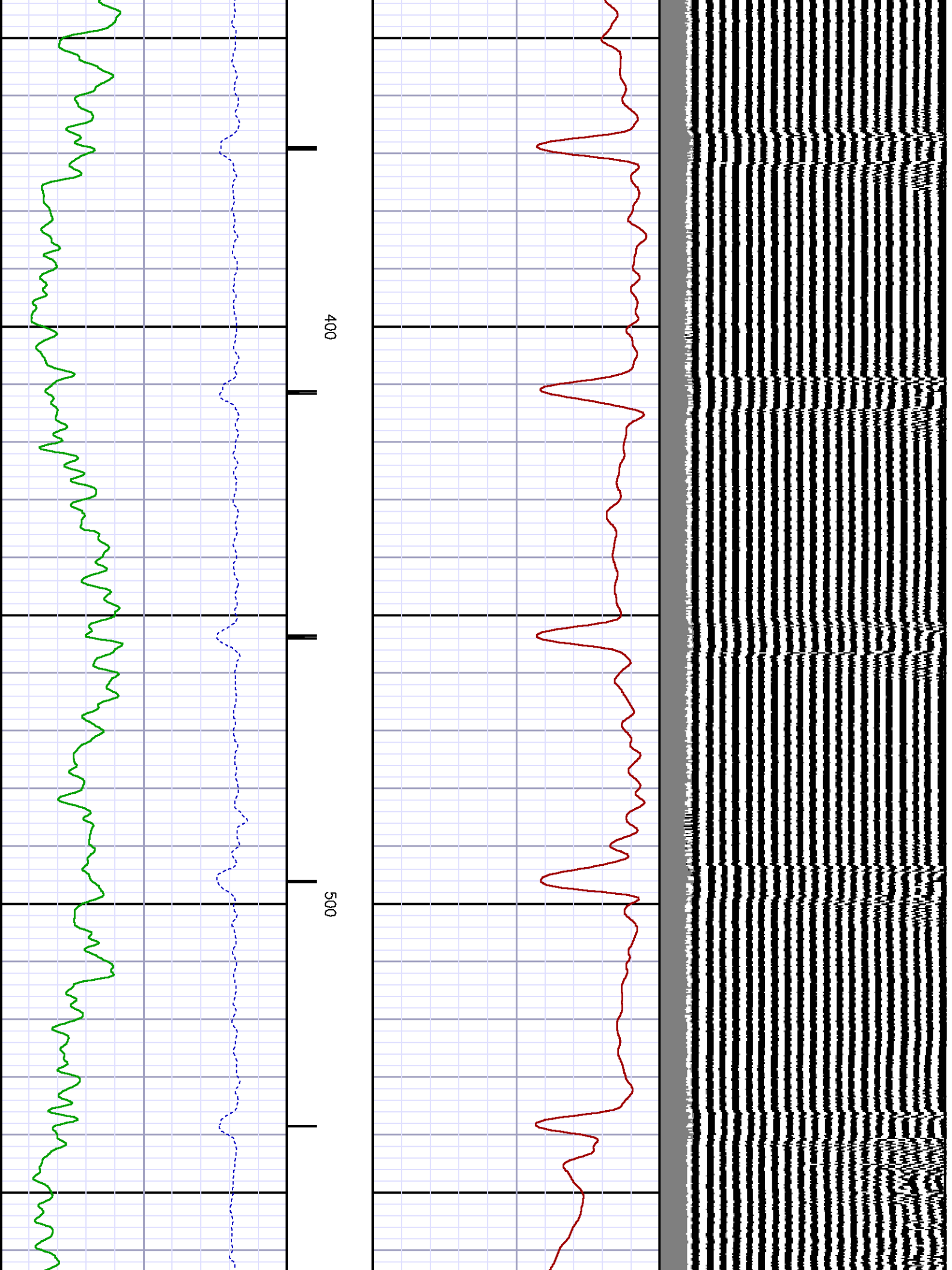
DEPTH OFFSETS

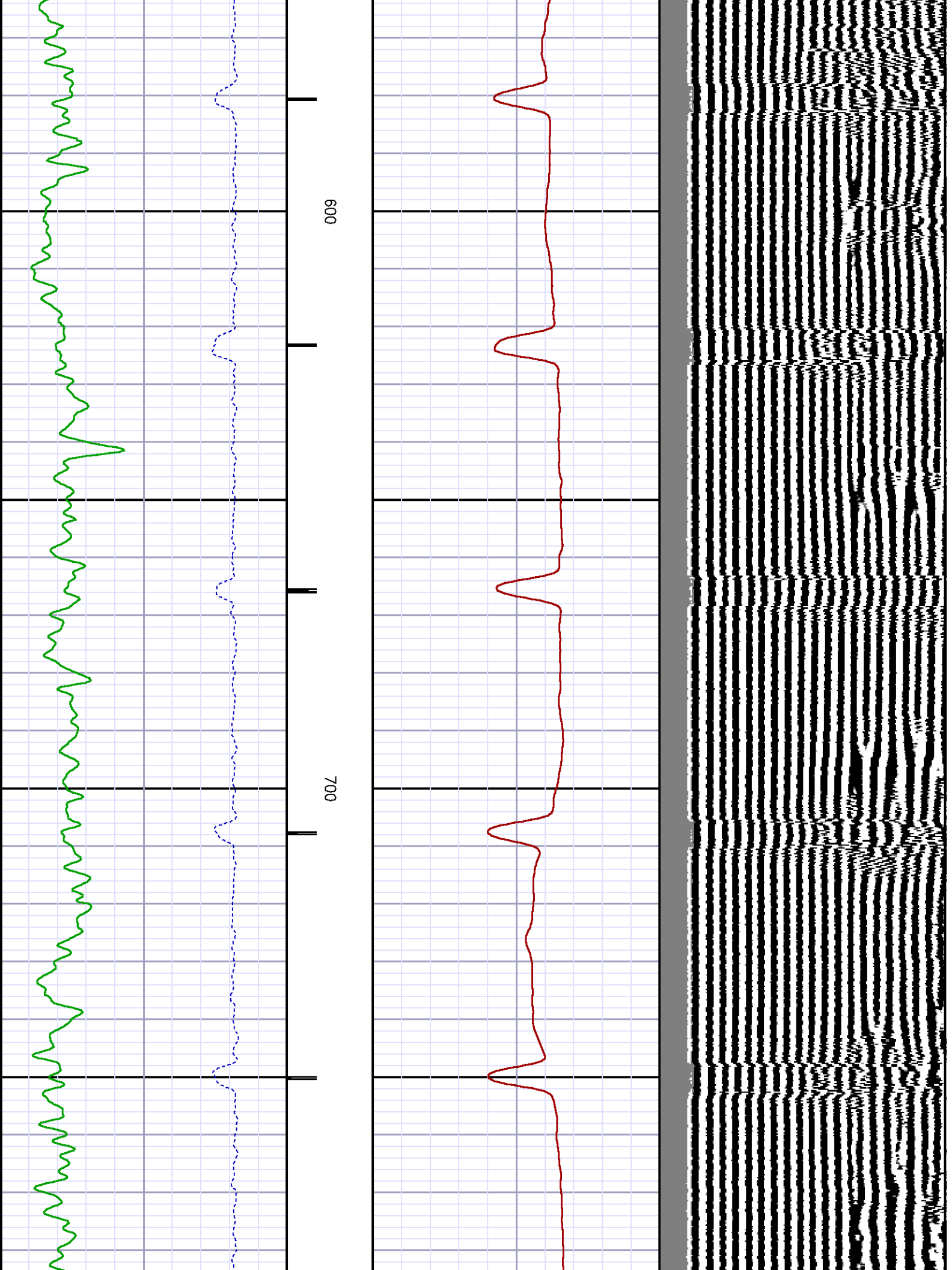
DEPTH OFFSETS

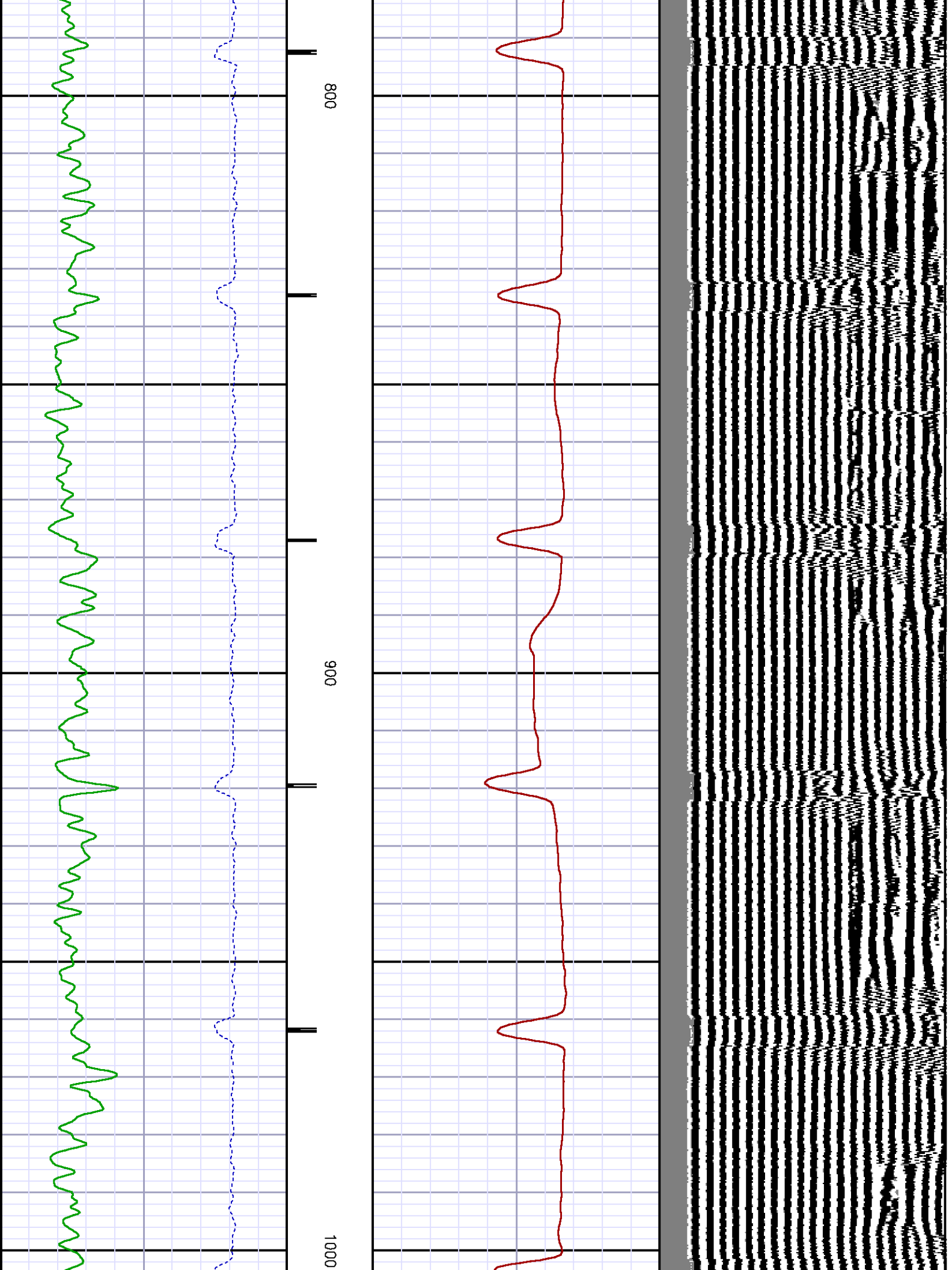
(for Acquired Curves)

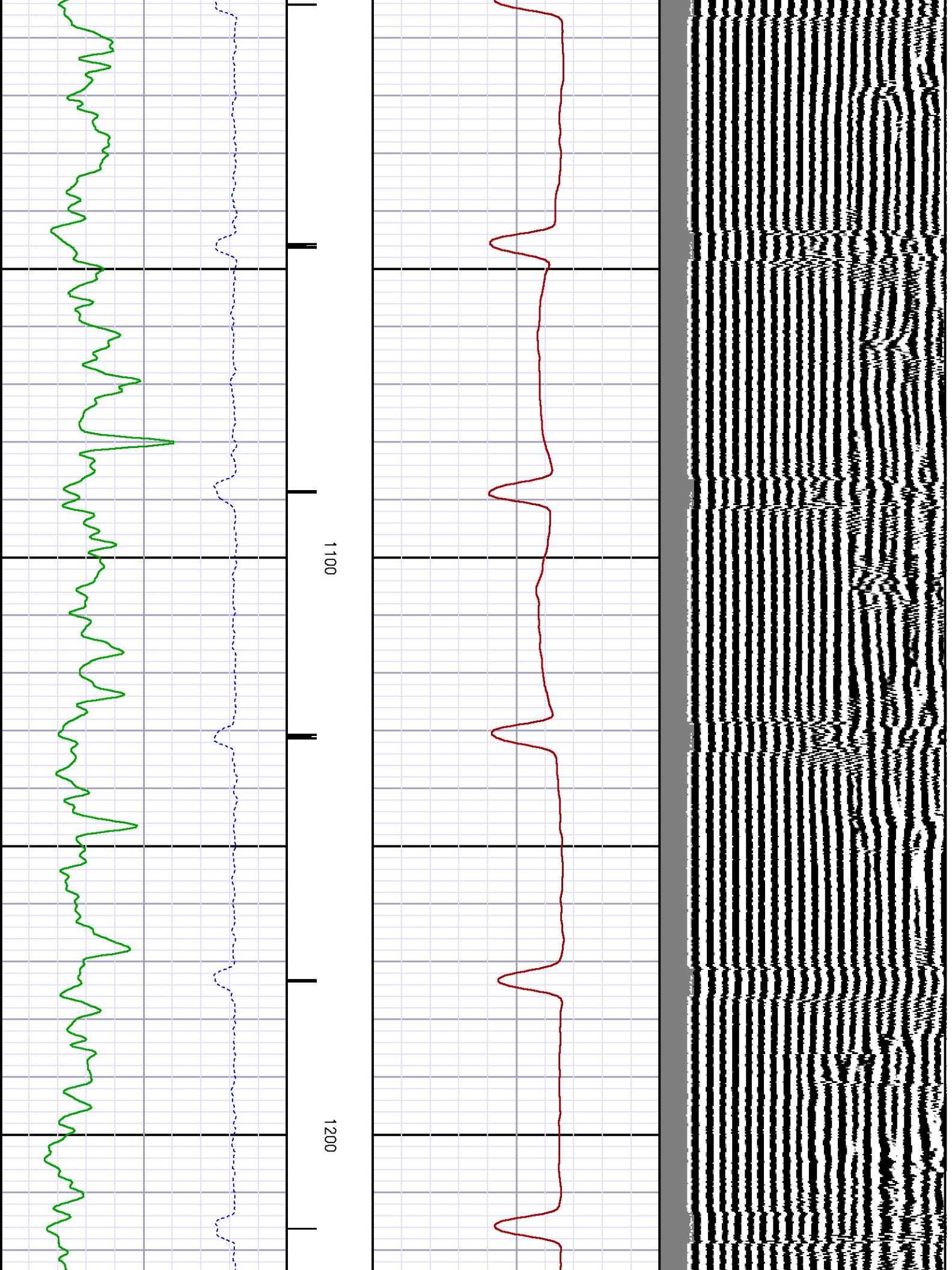
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1100K1	10.775	1211 1175 1214 1172 1177 1174

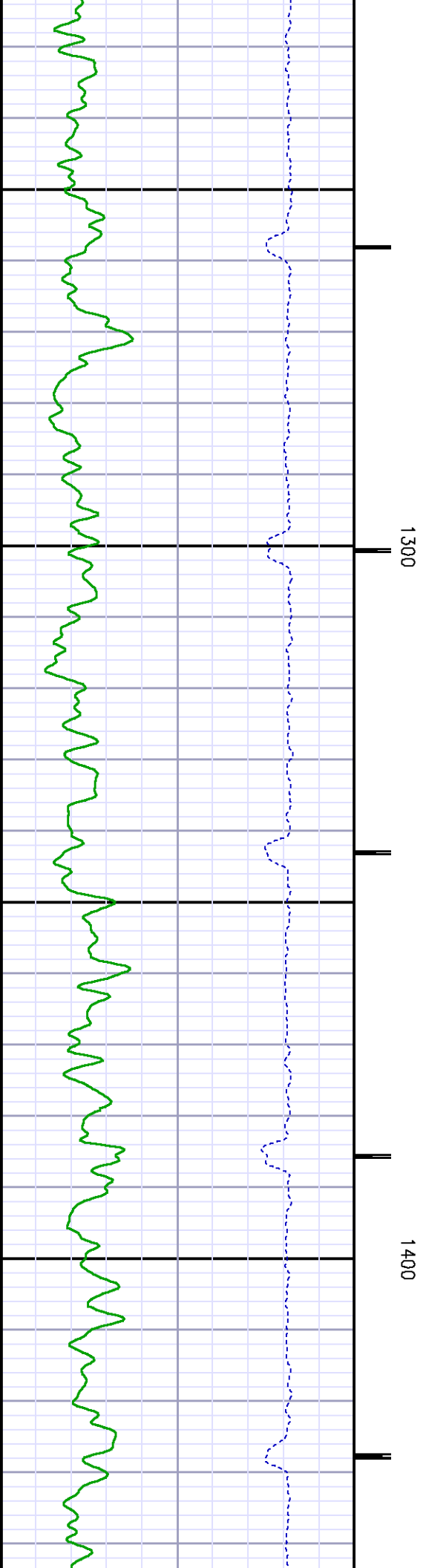
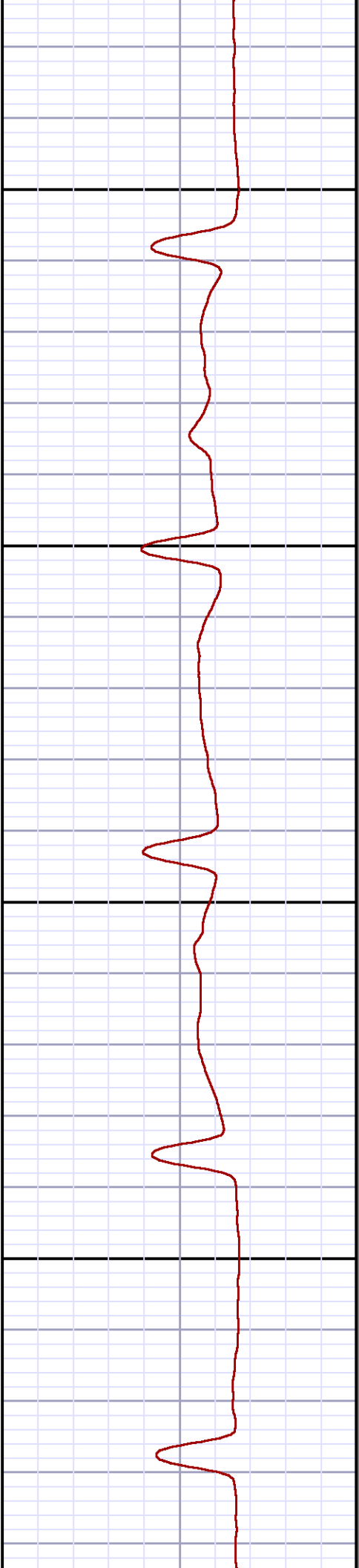
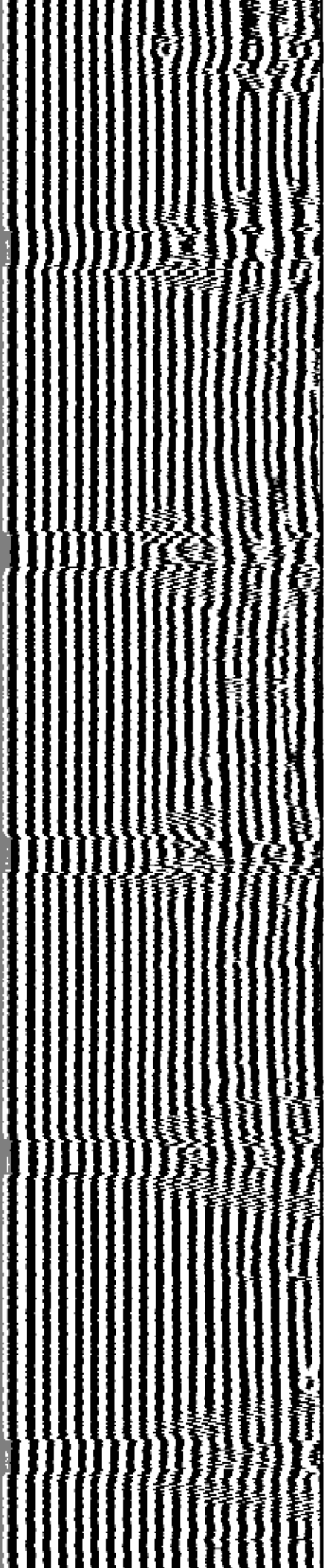


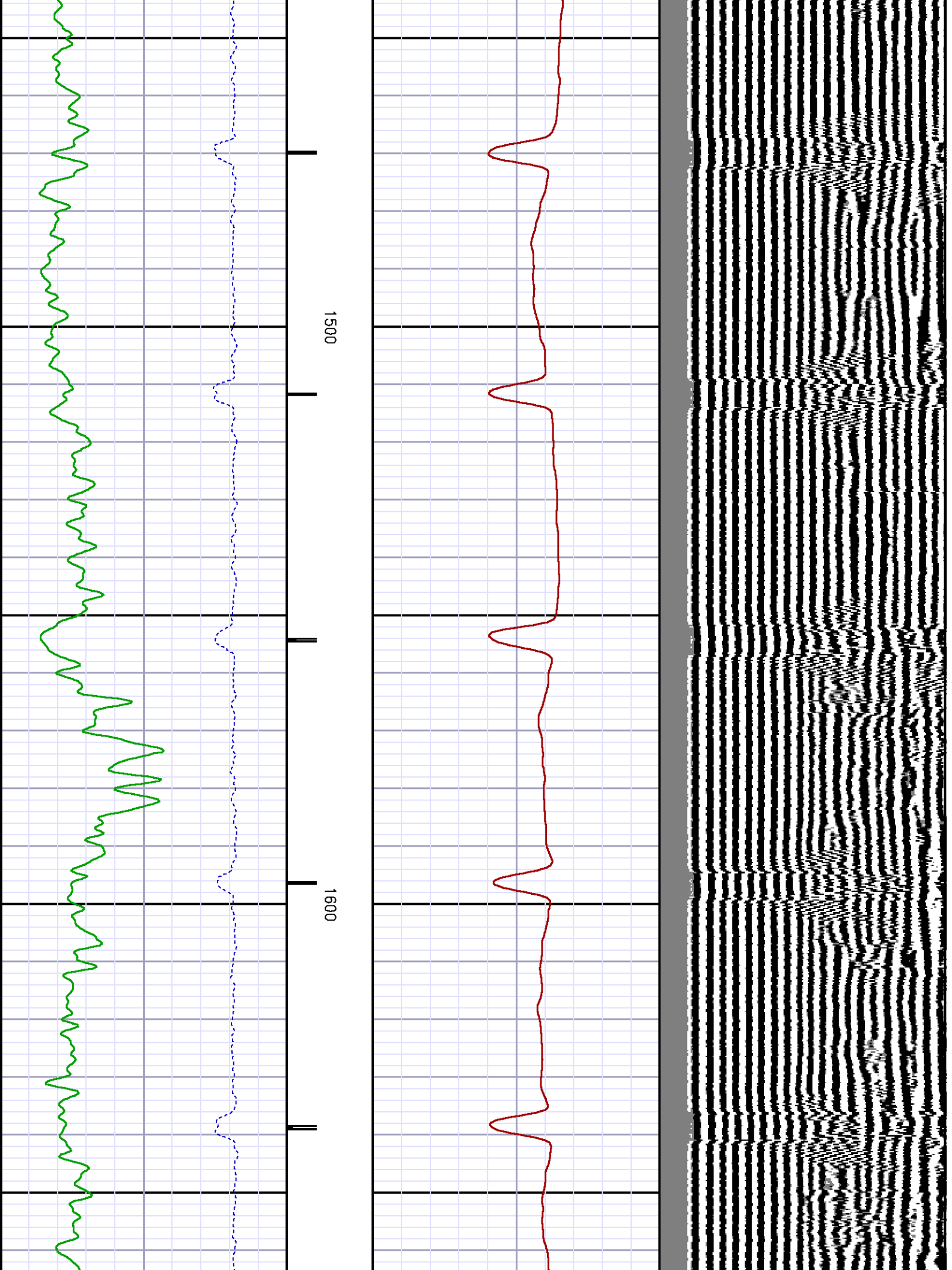


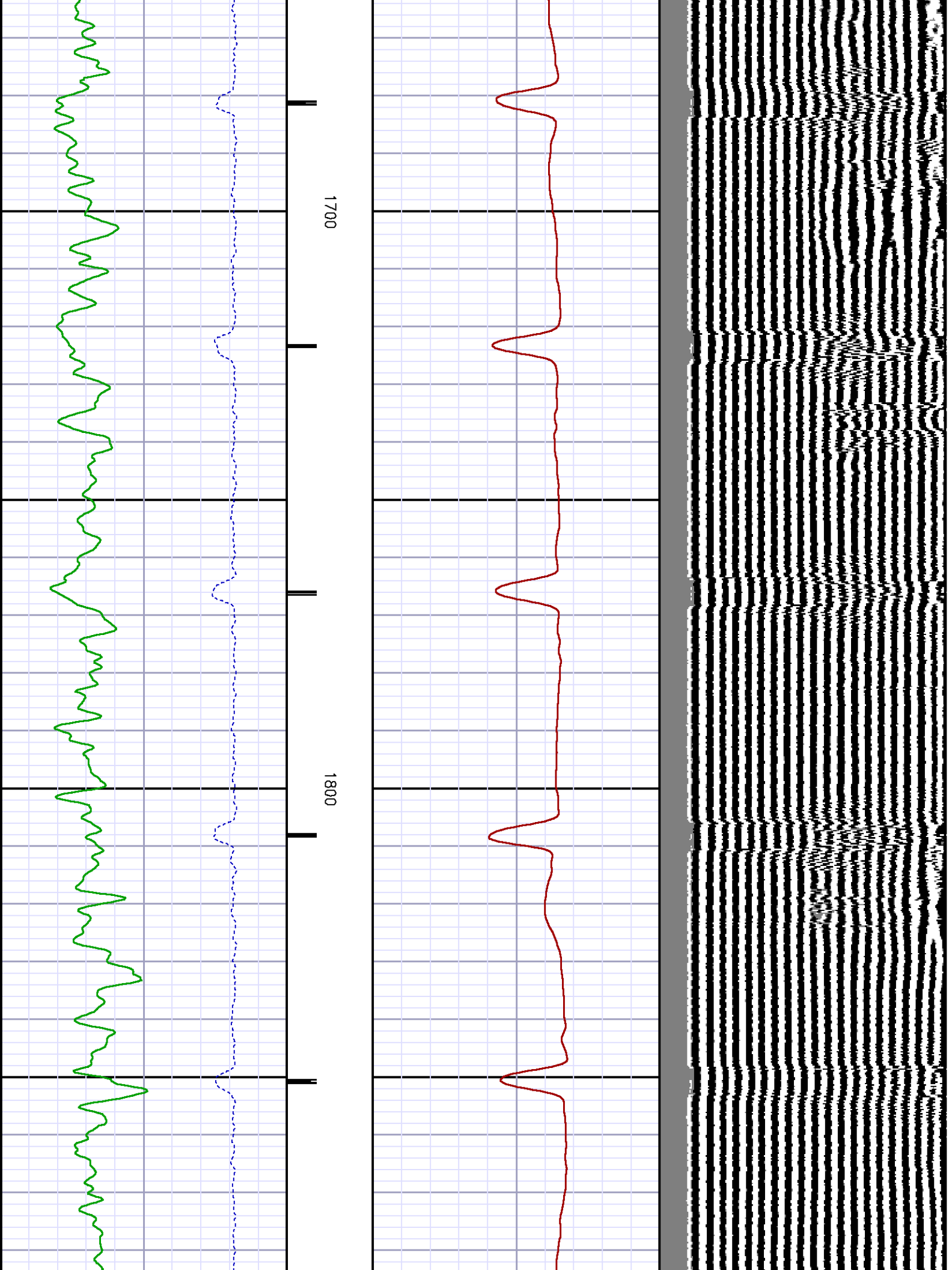


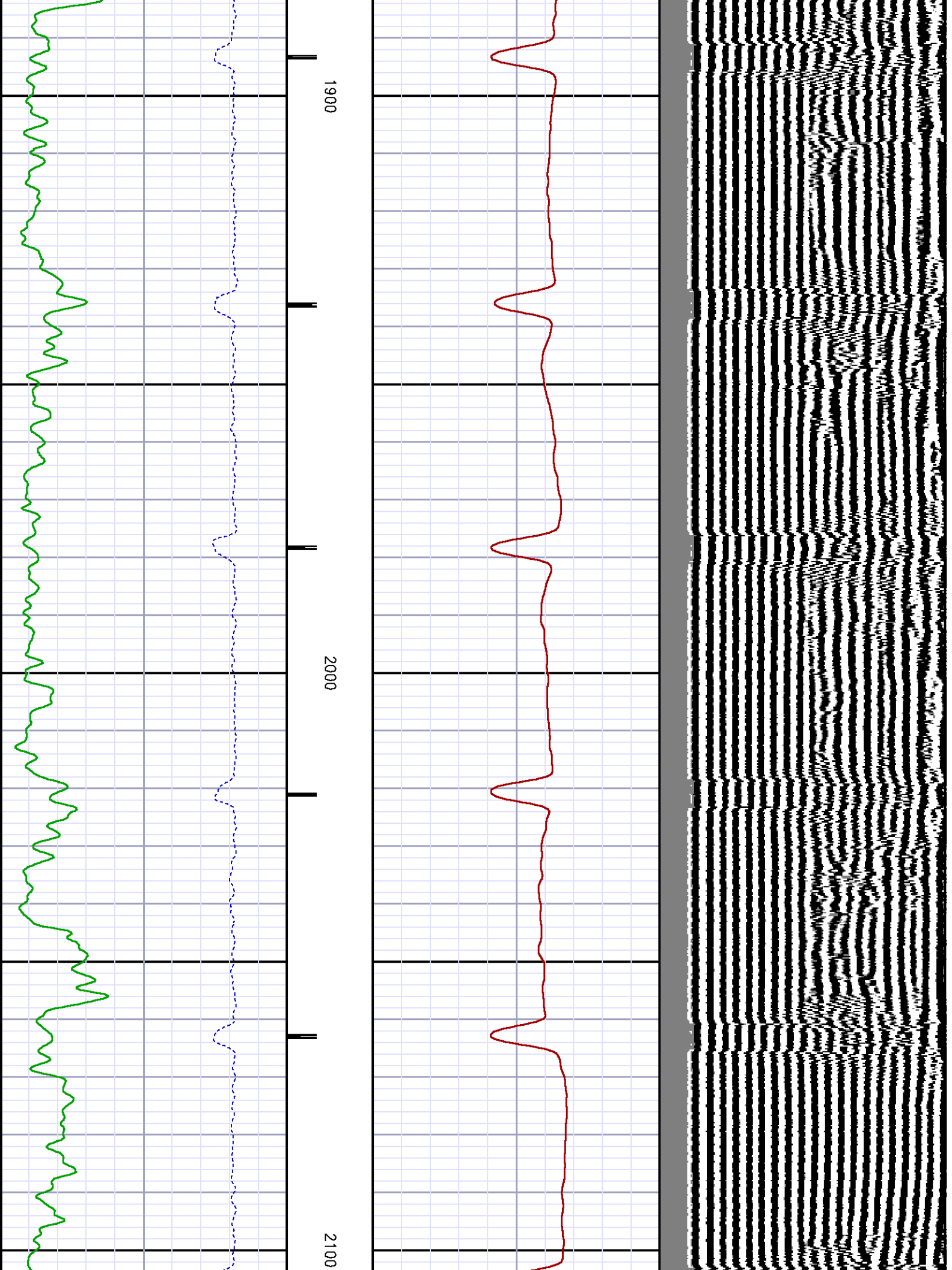


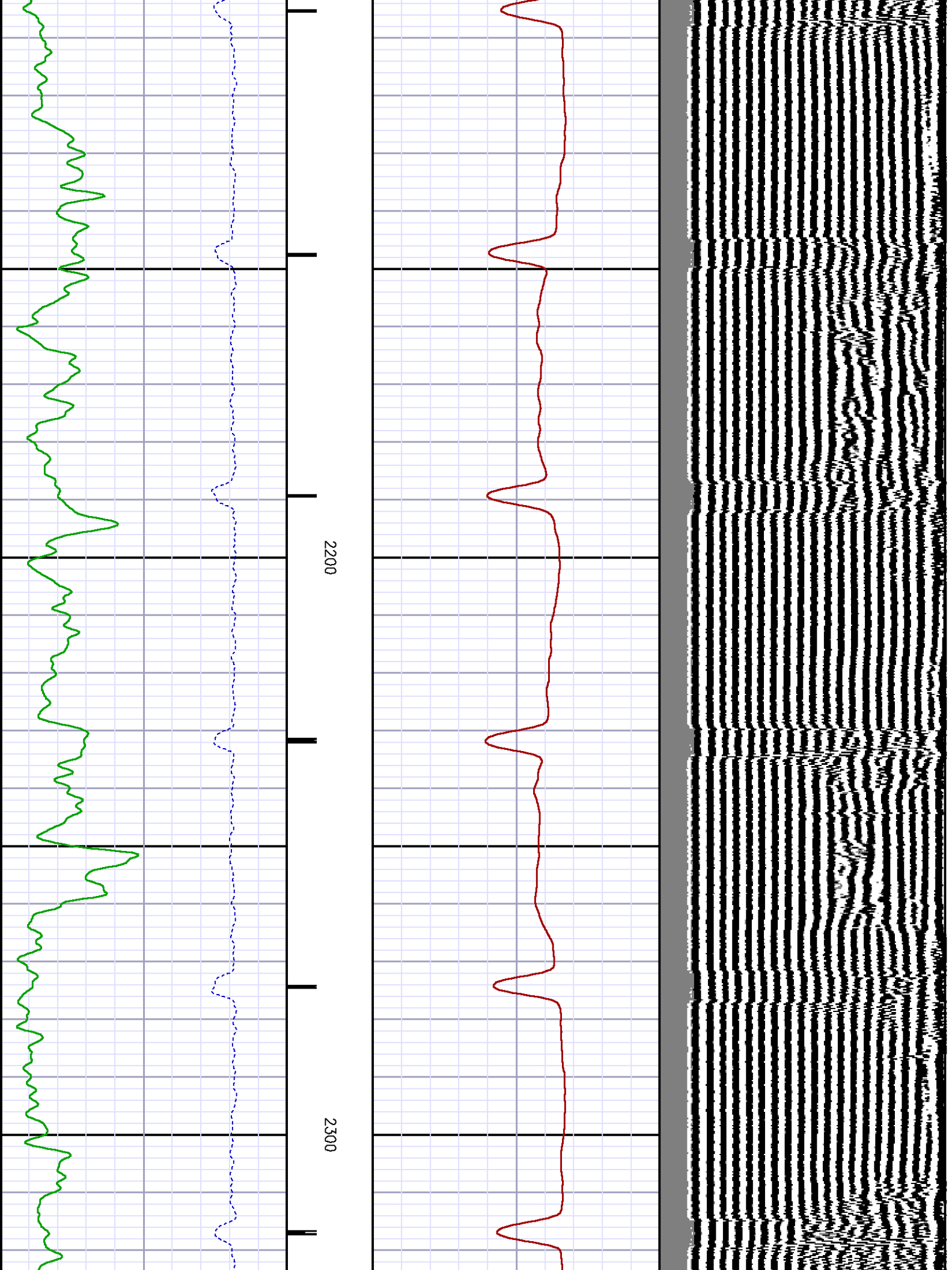


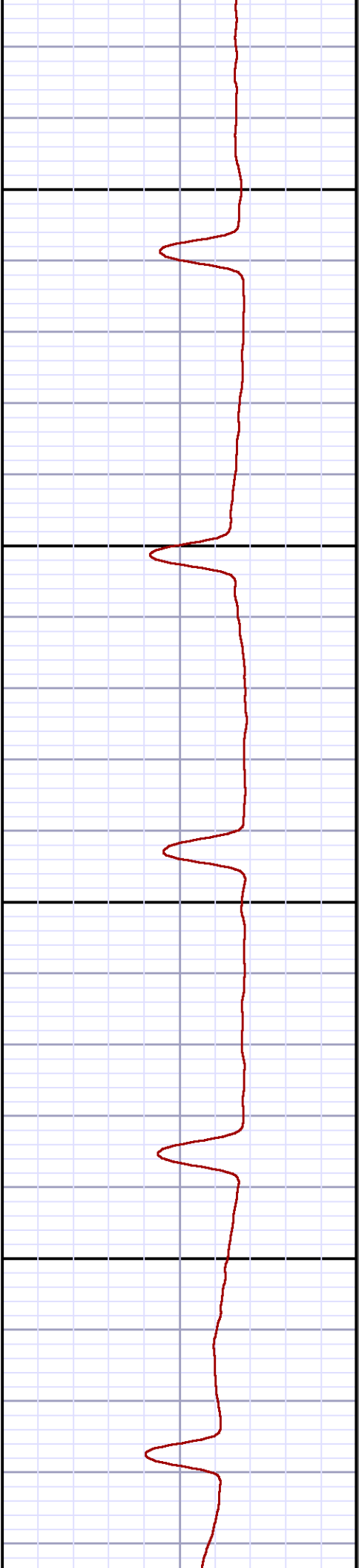
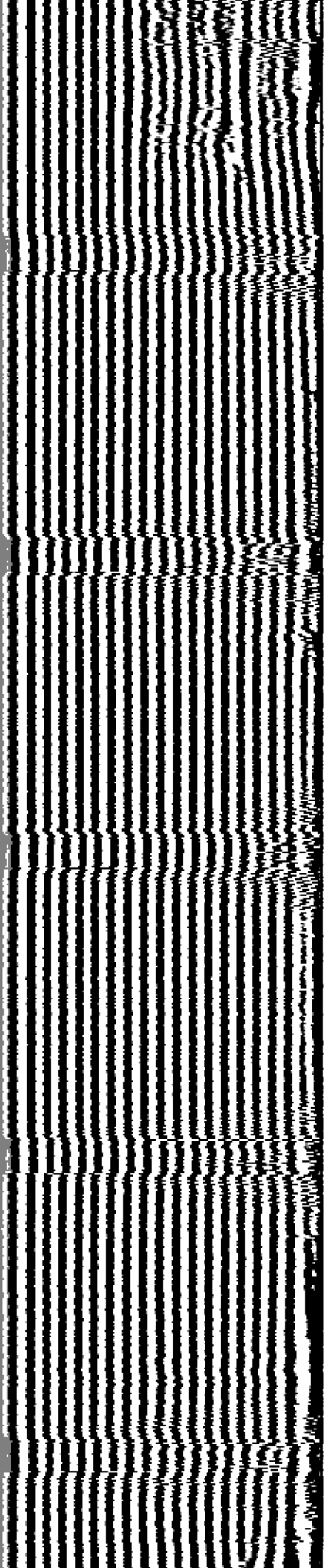


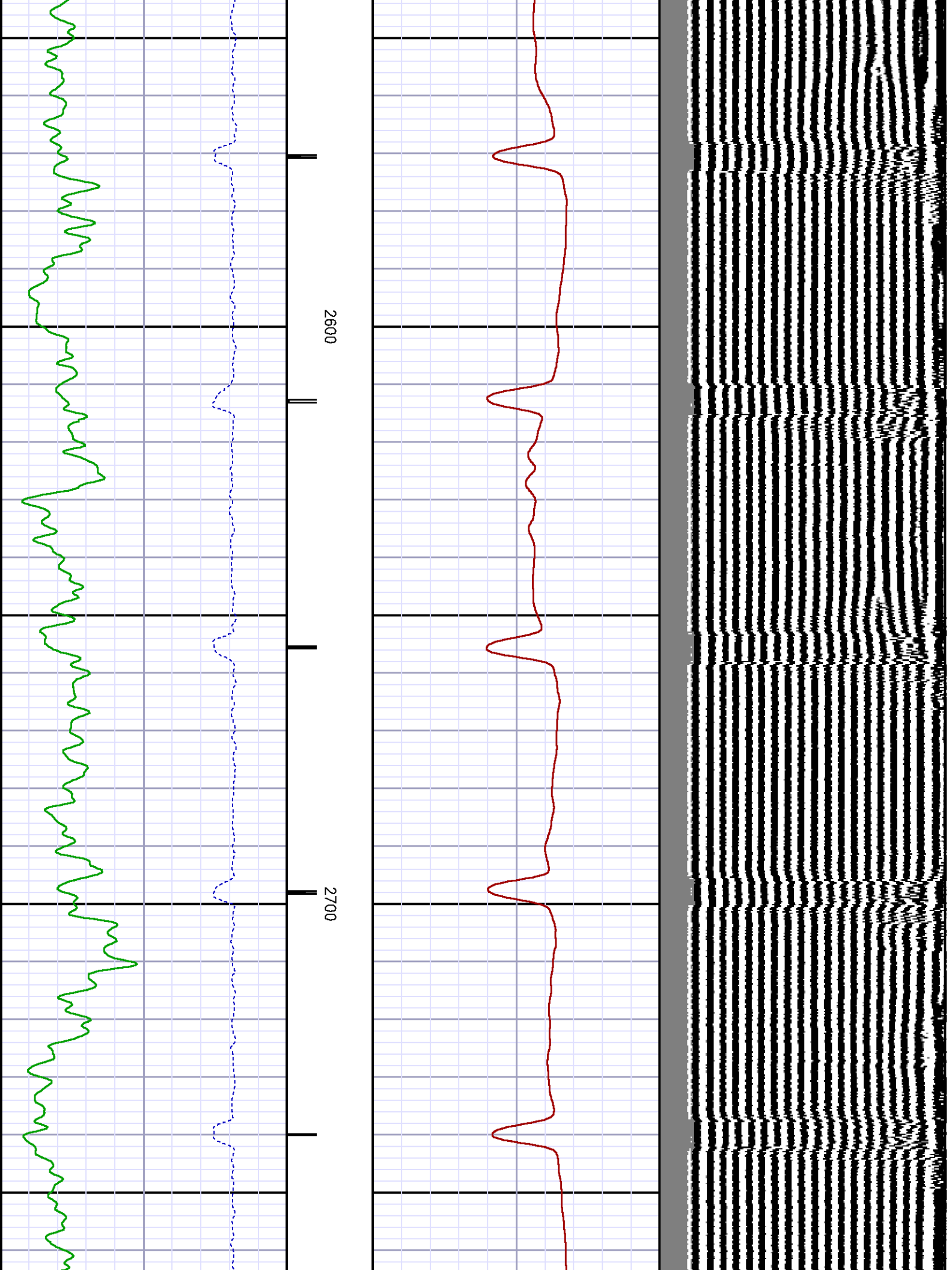


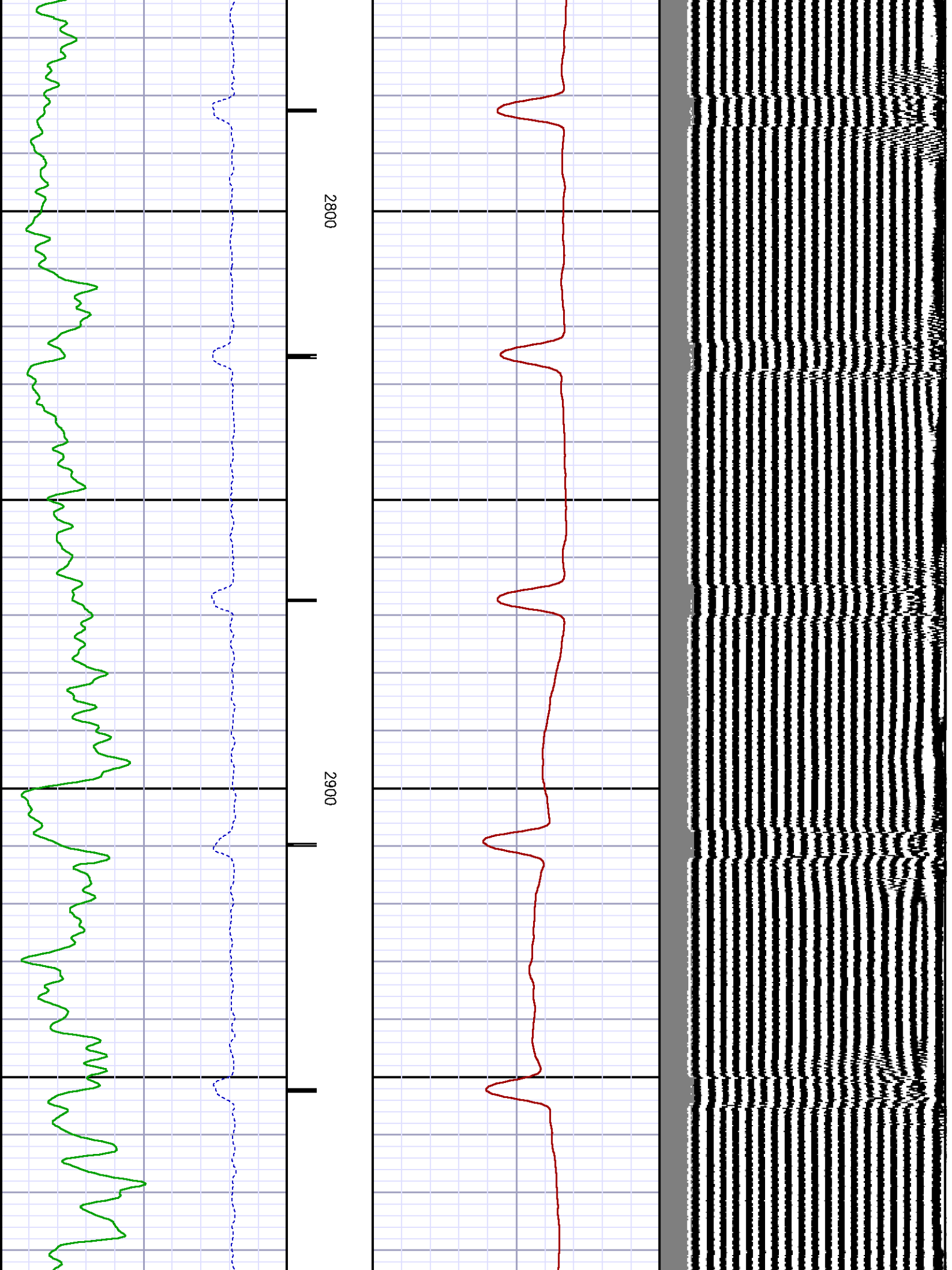


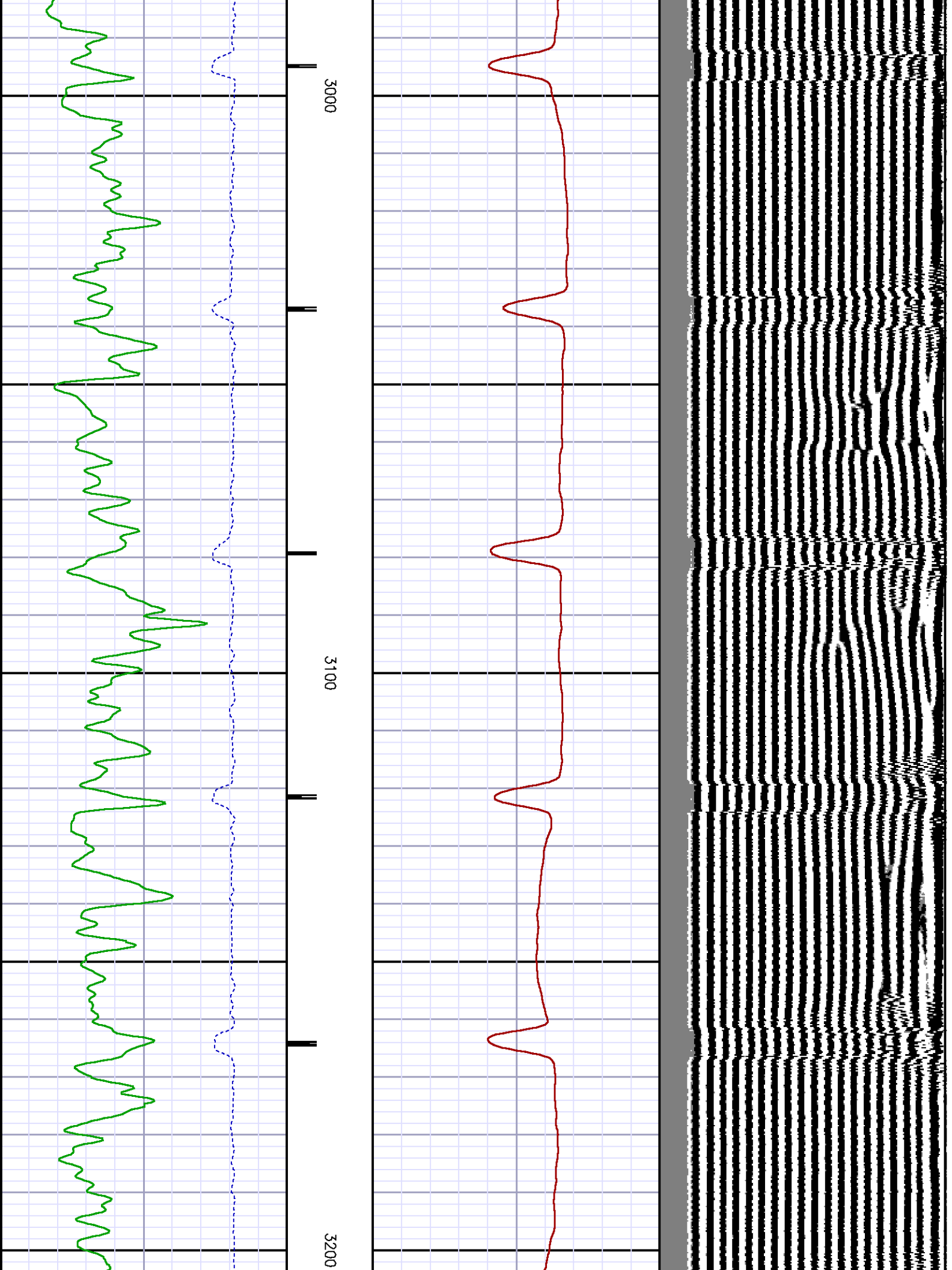


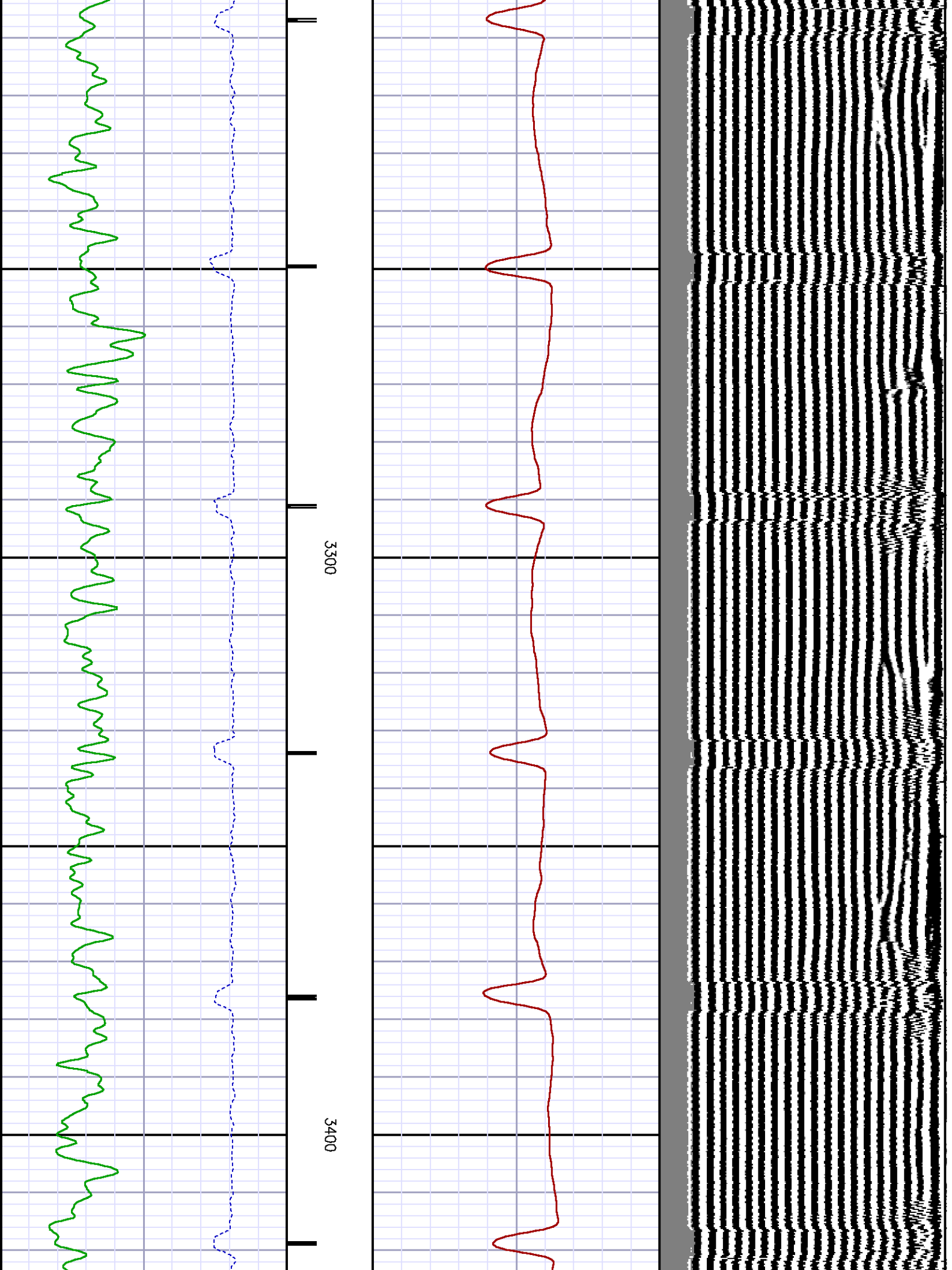


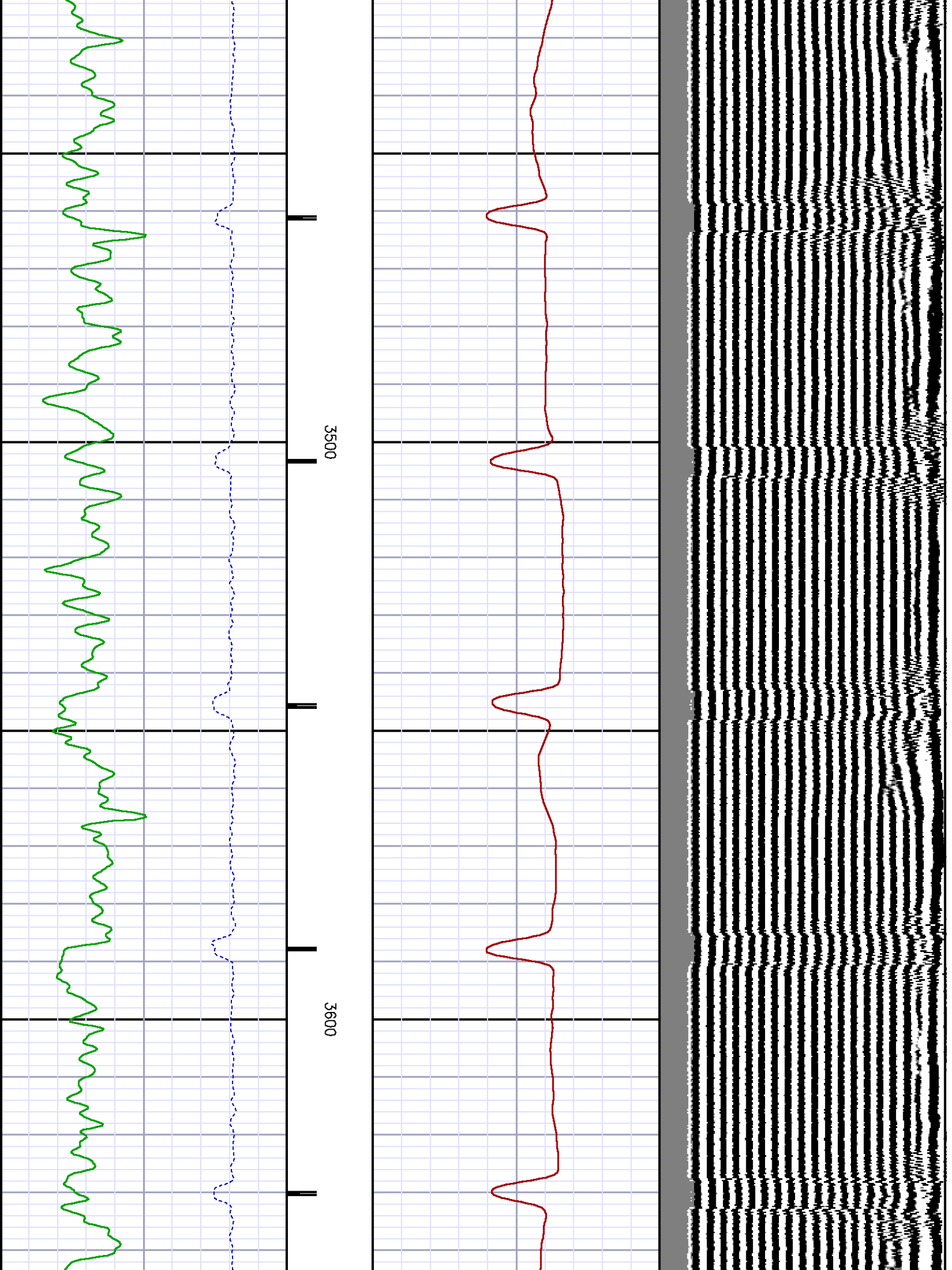


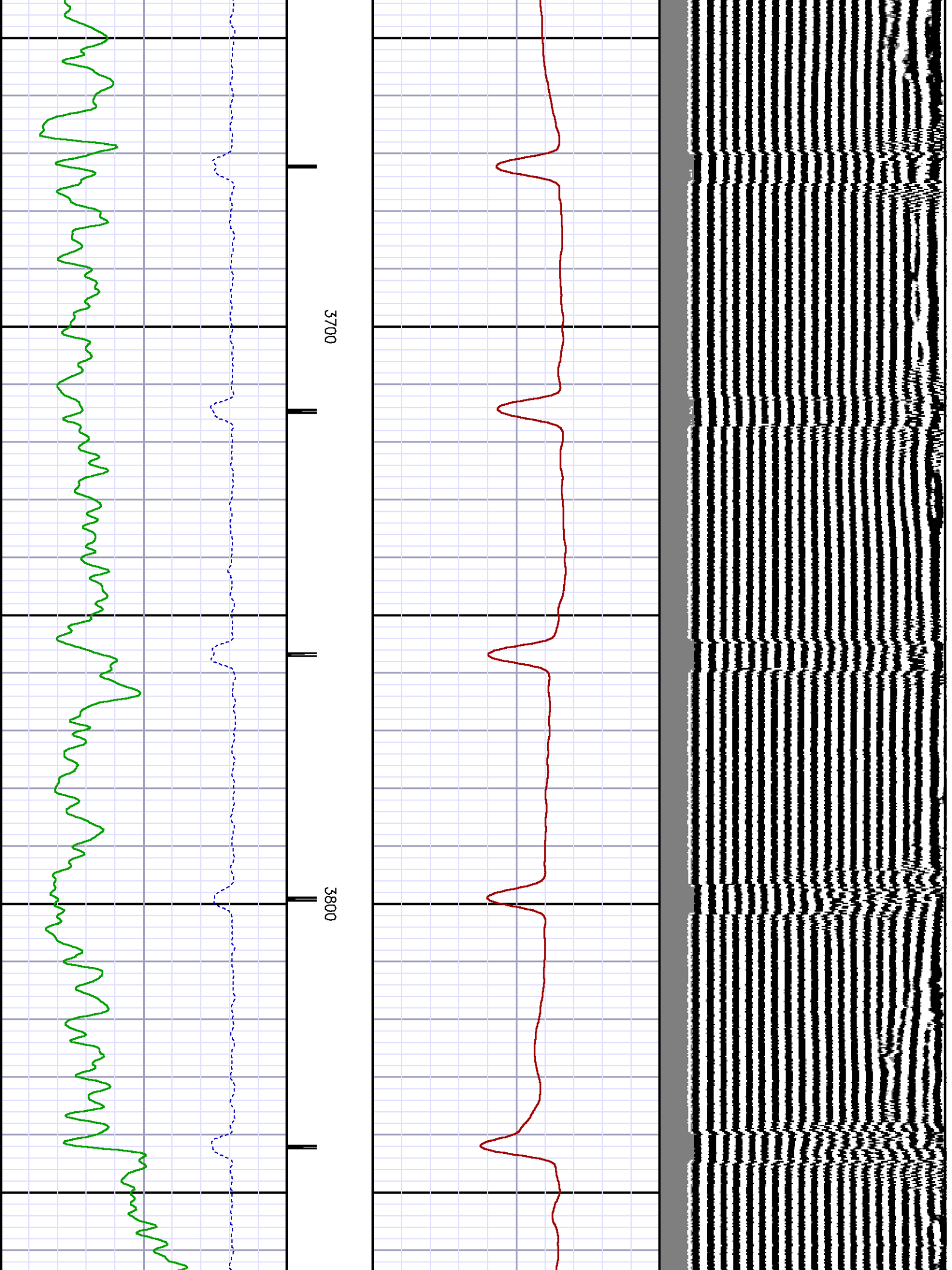


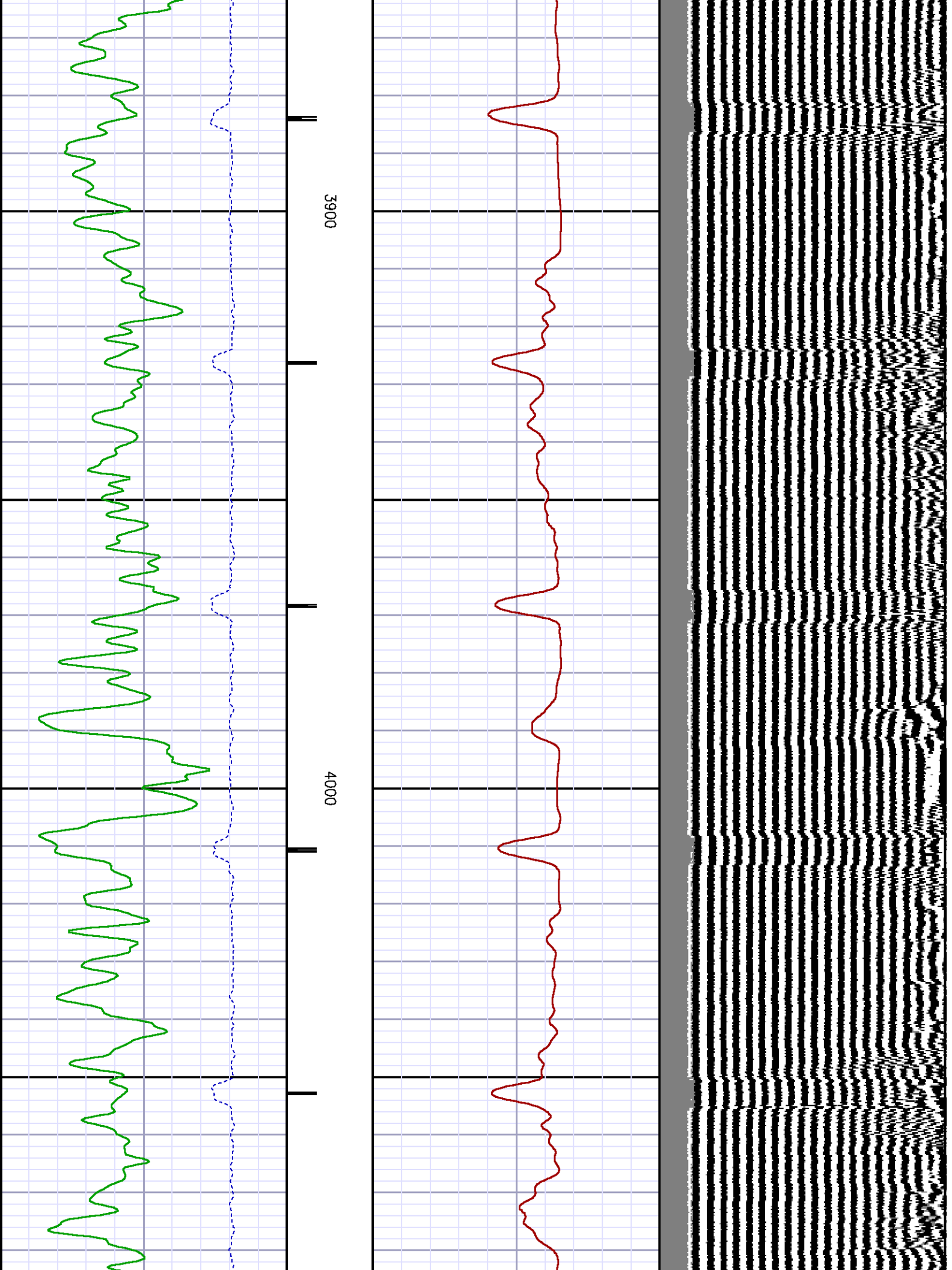


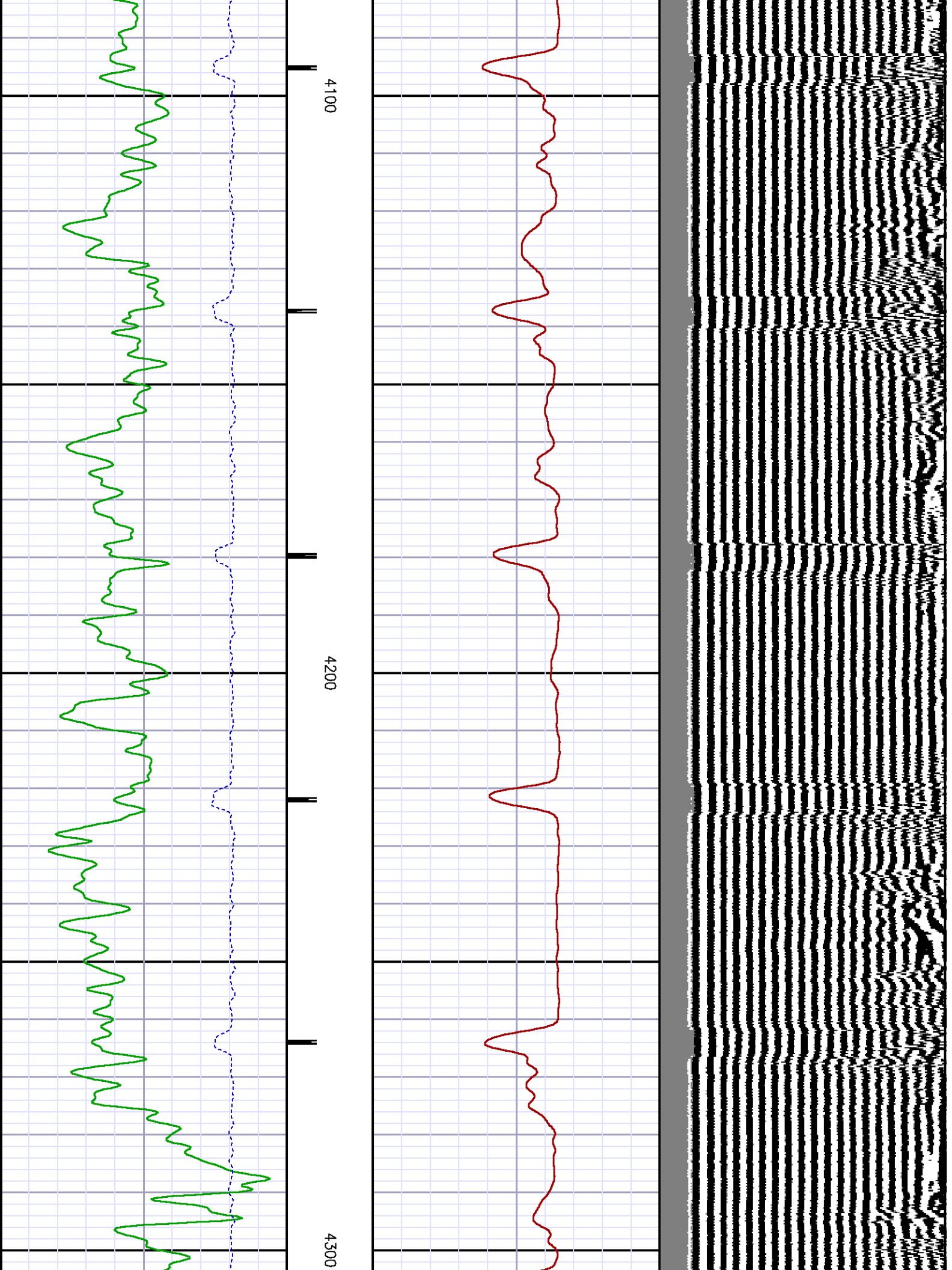


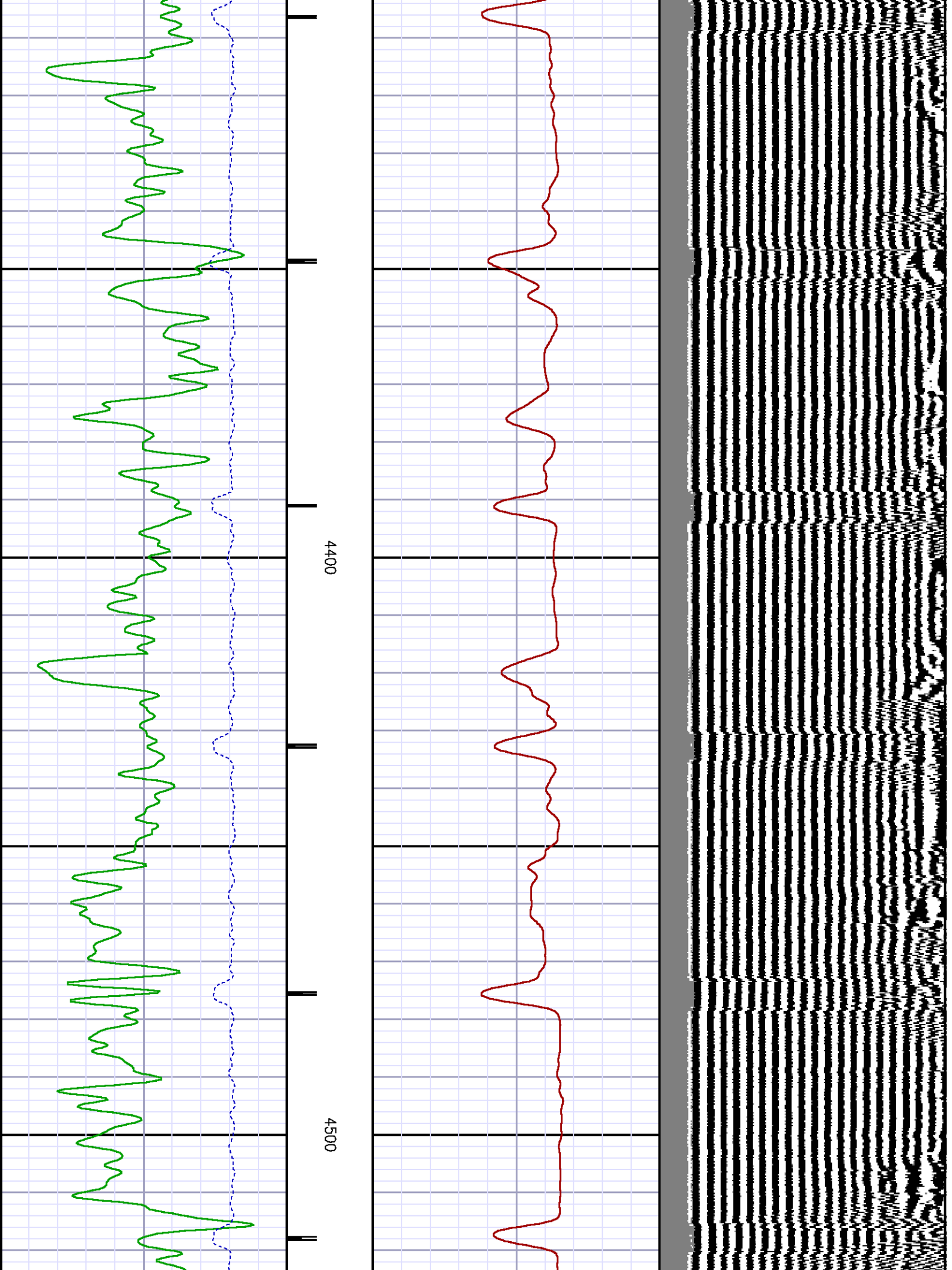


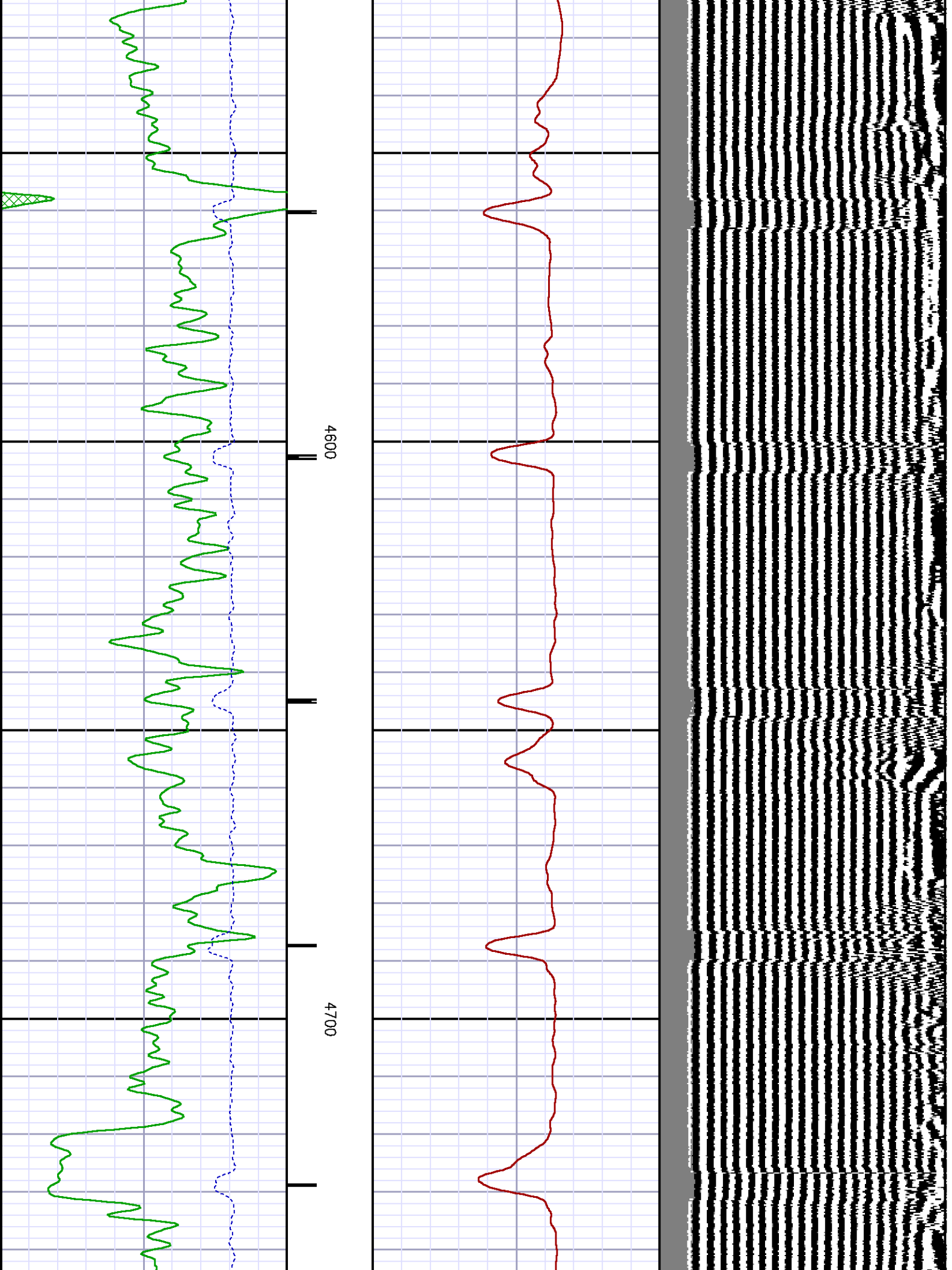


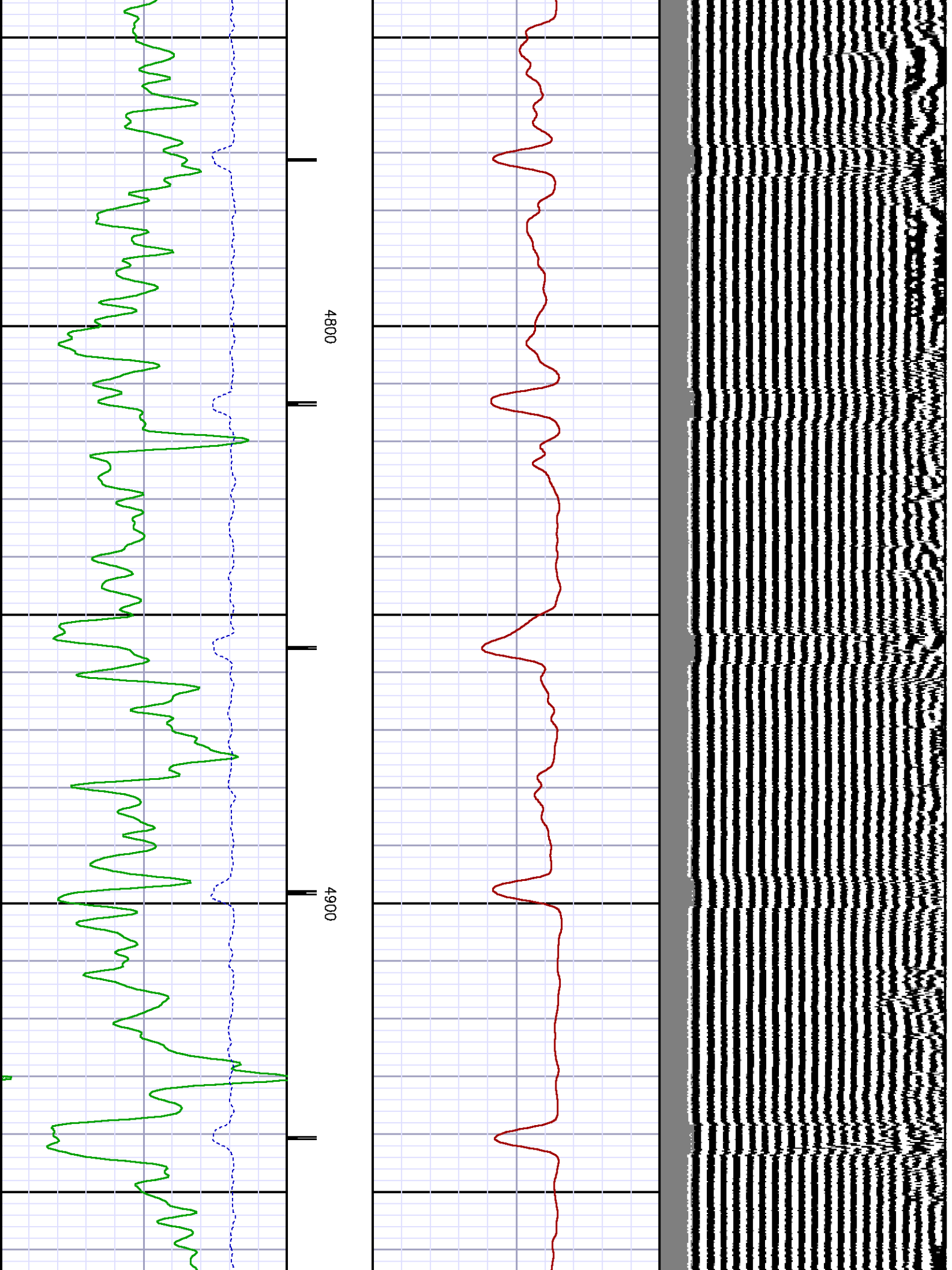


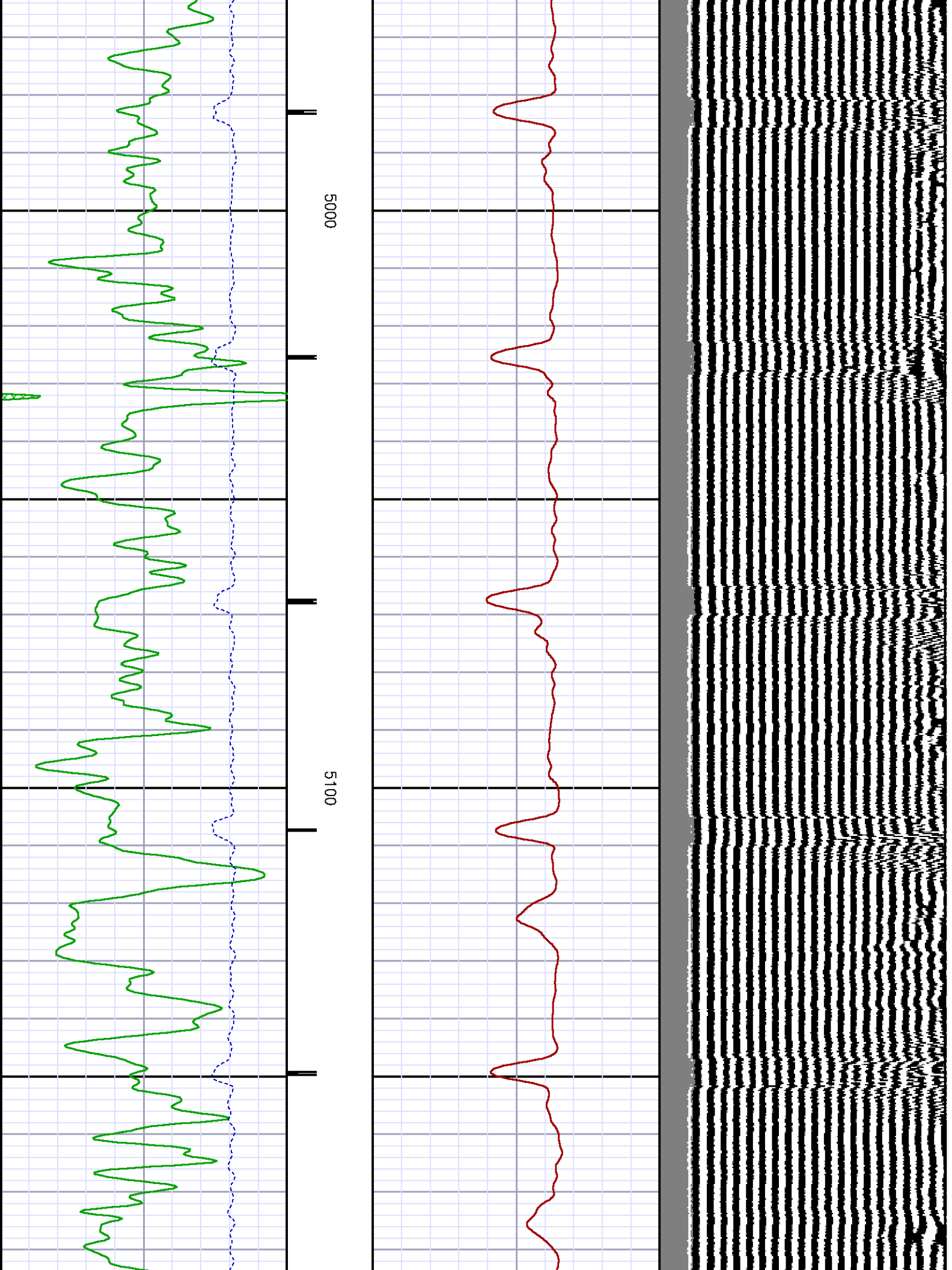


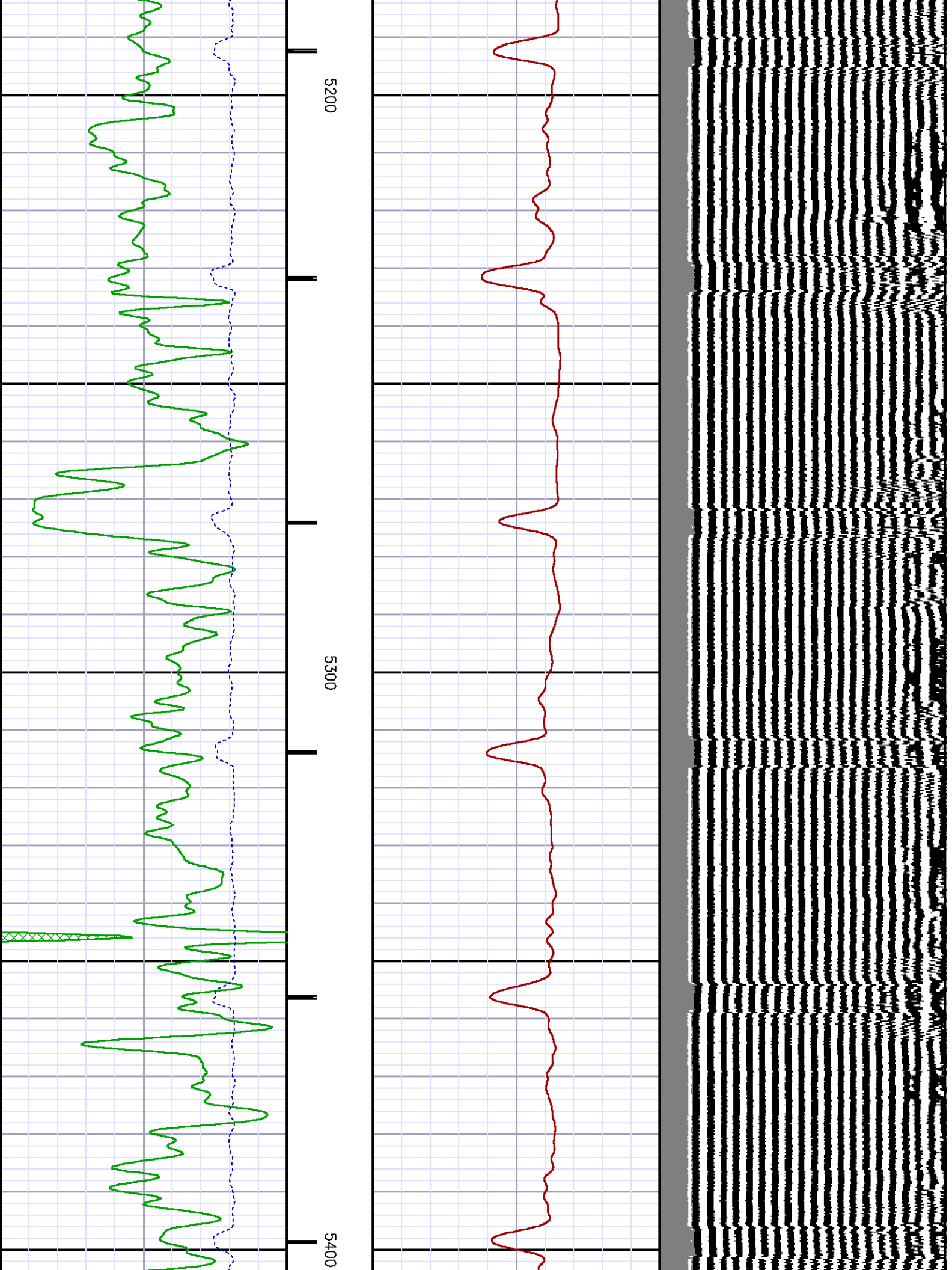


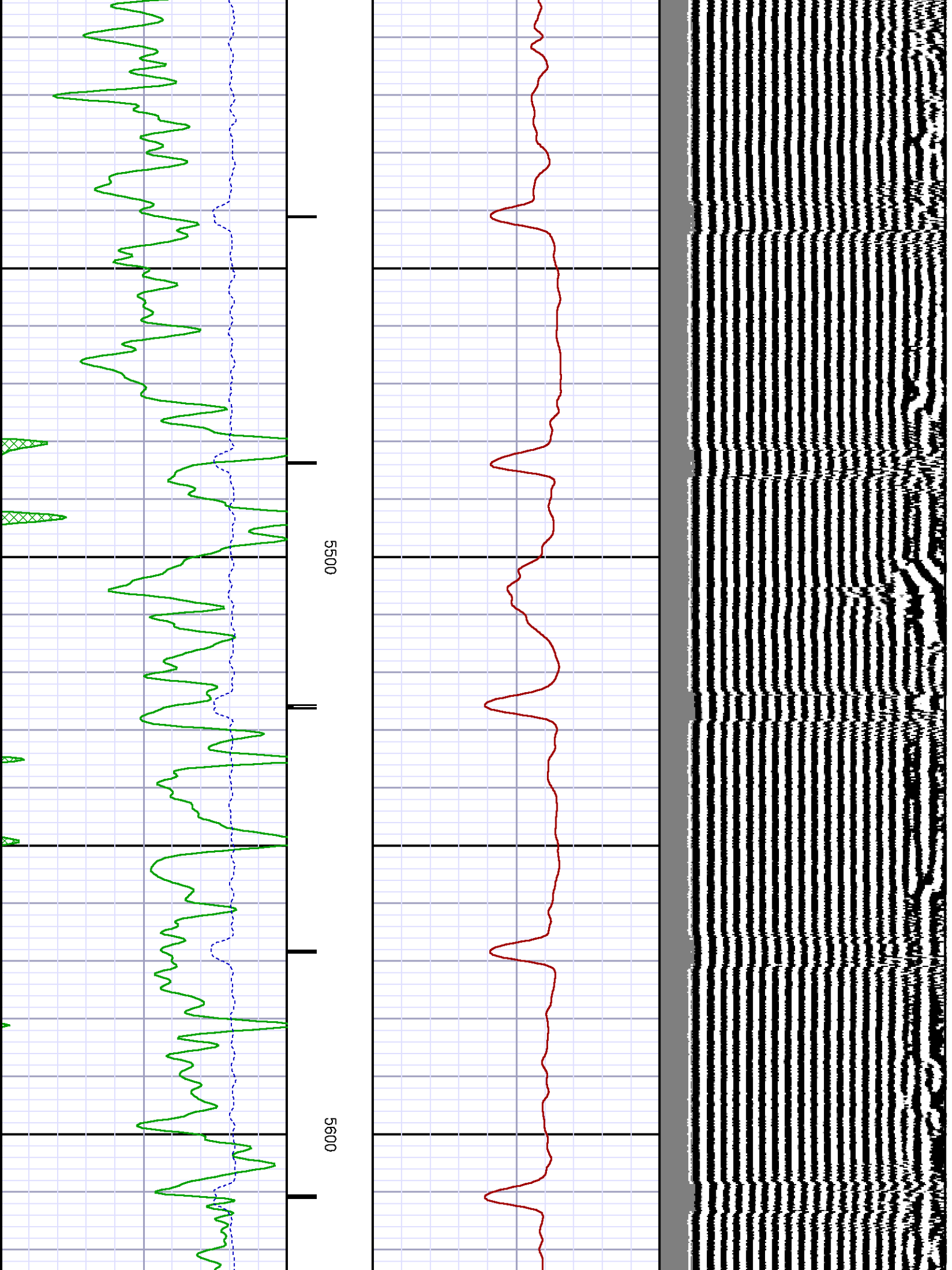


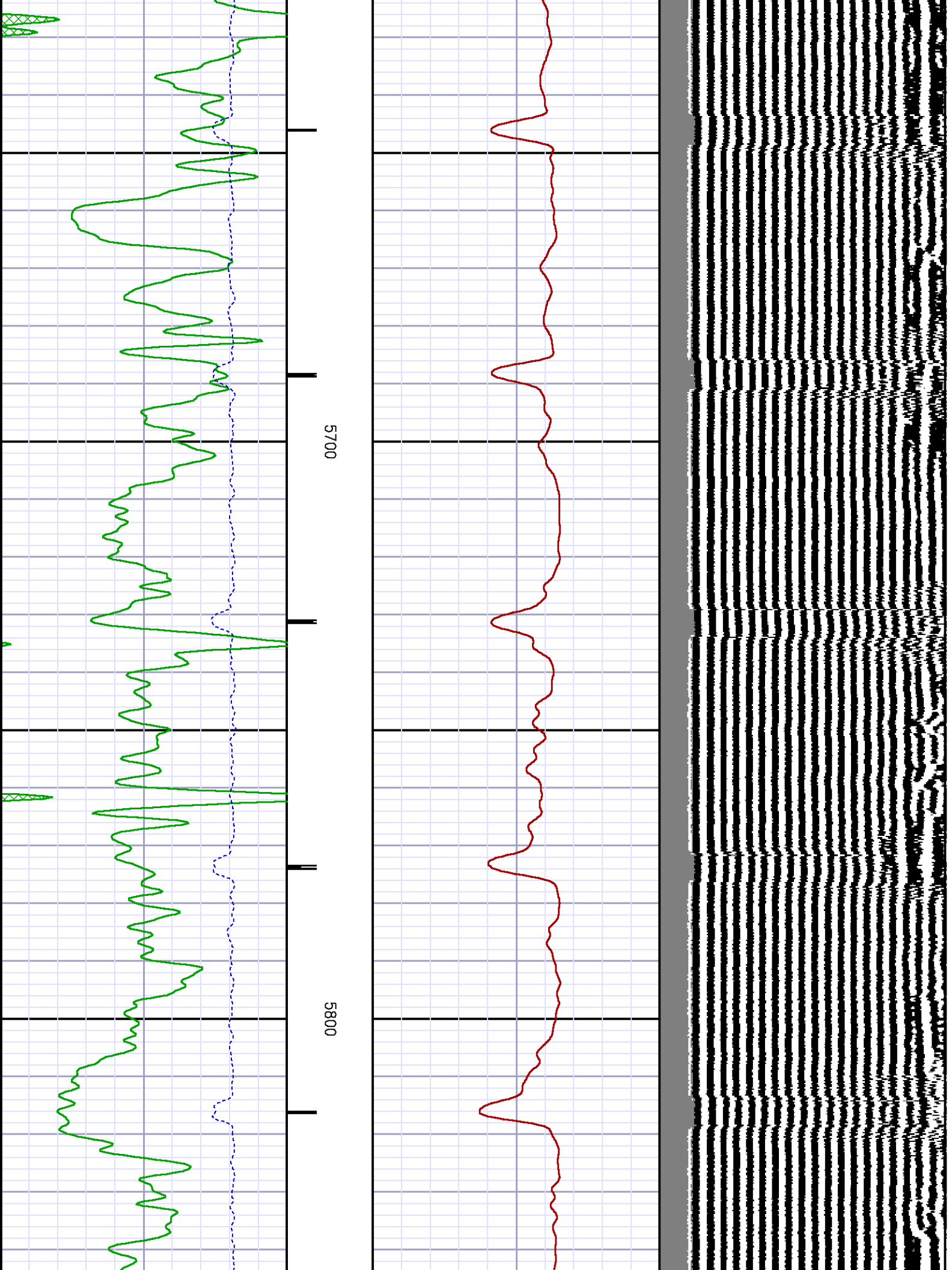


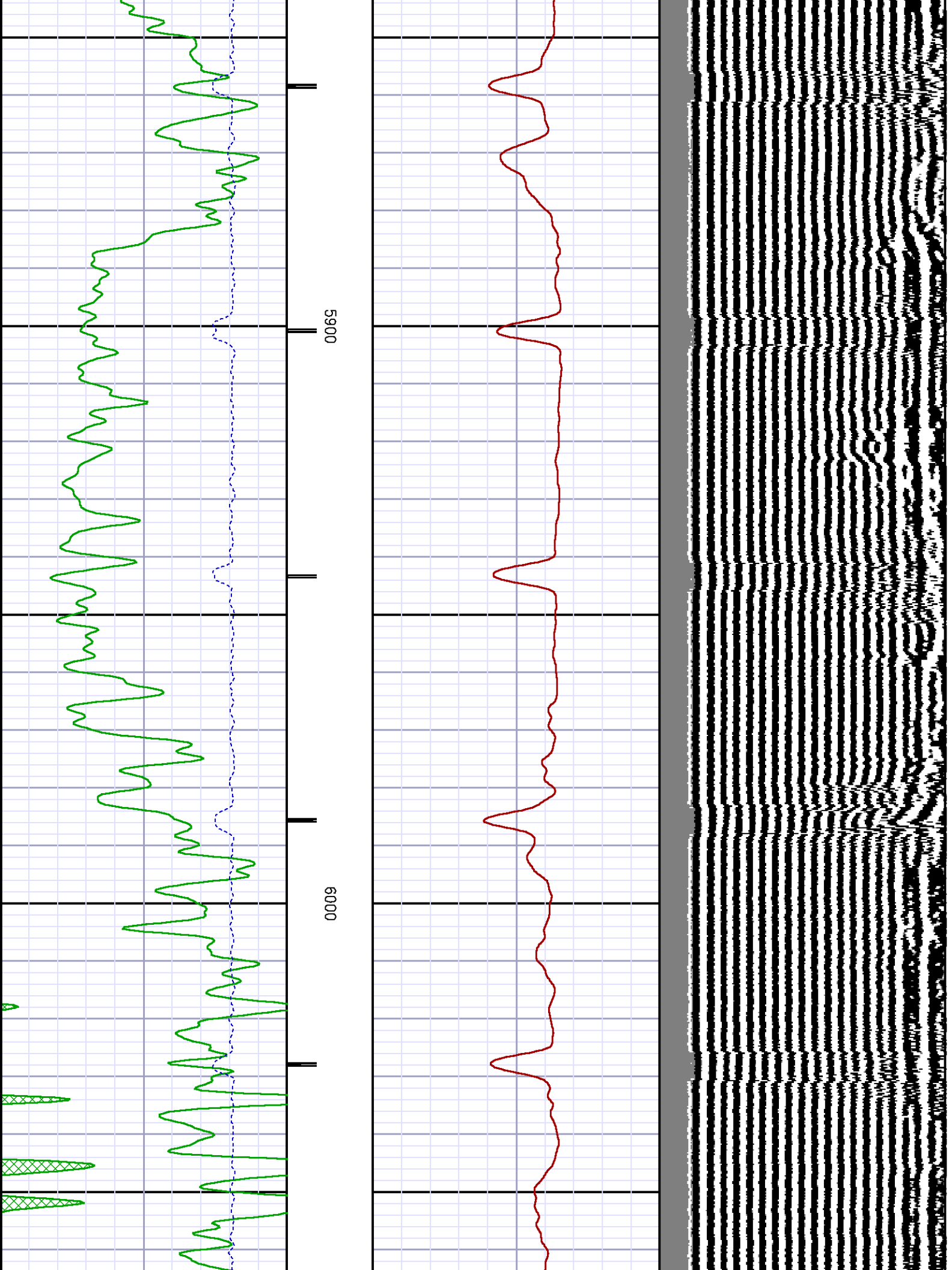


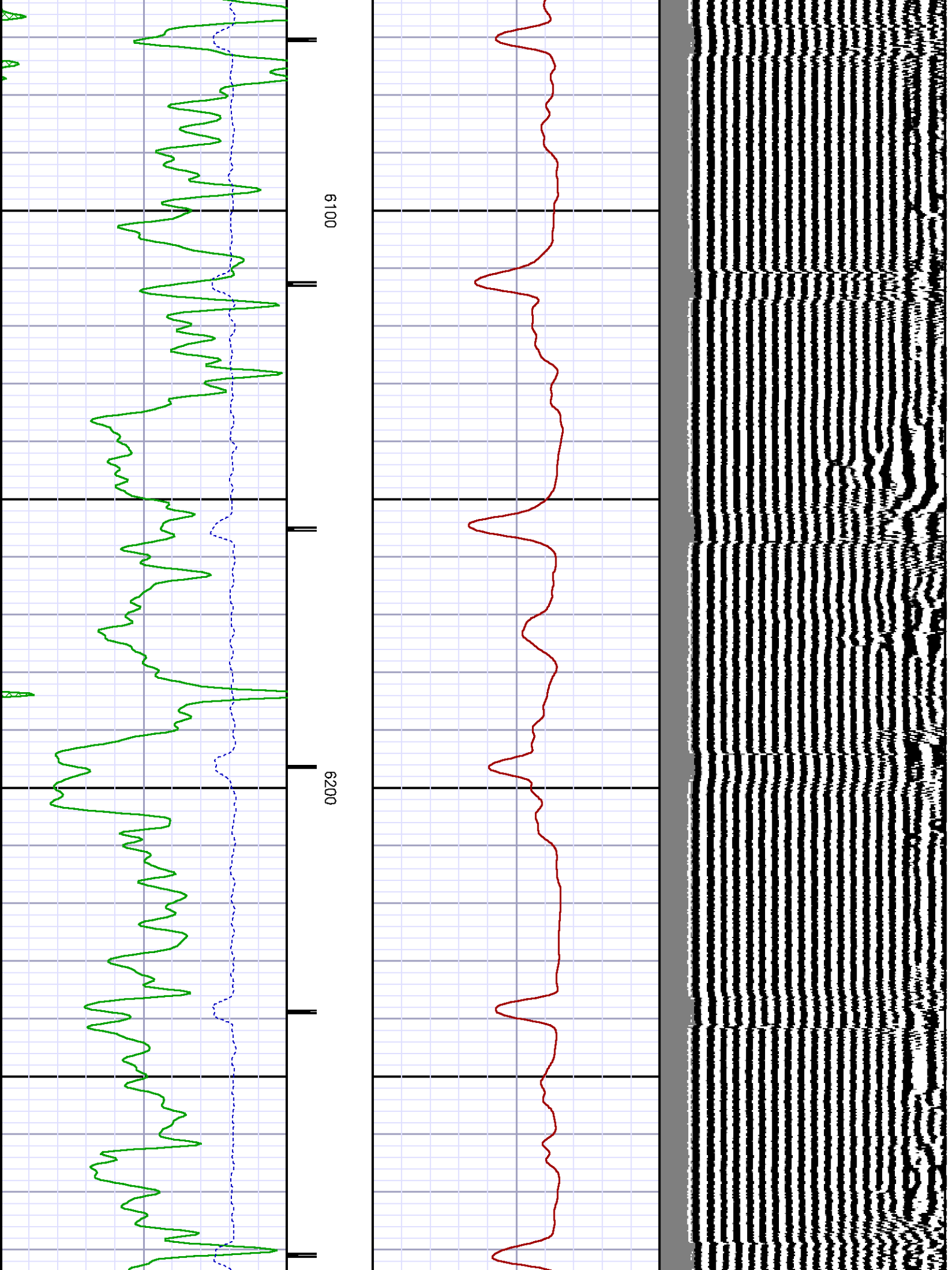


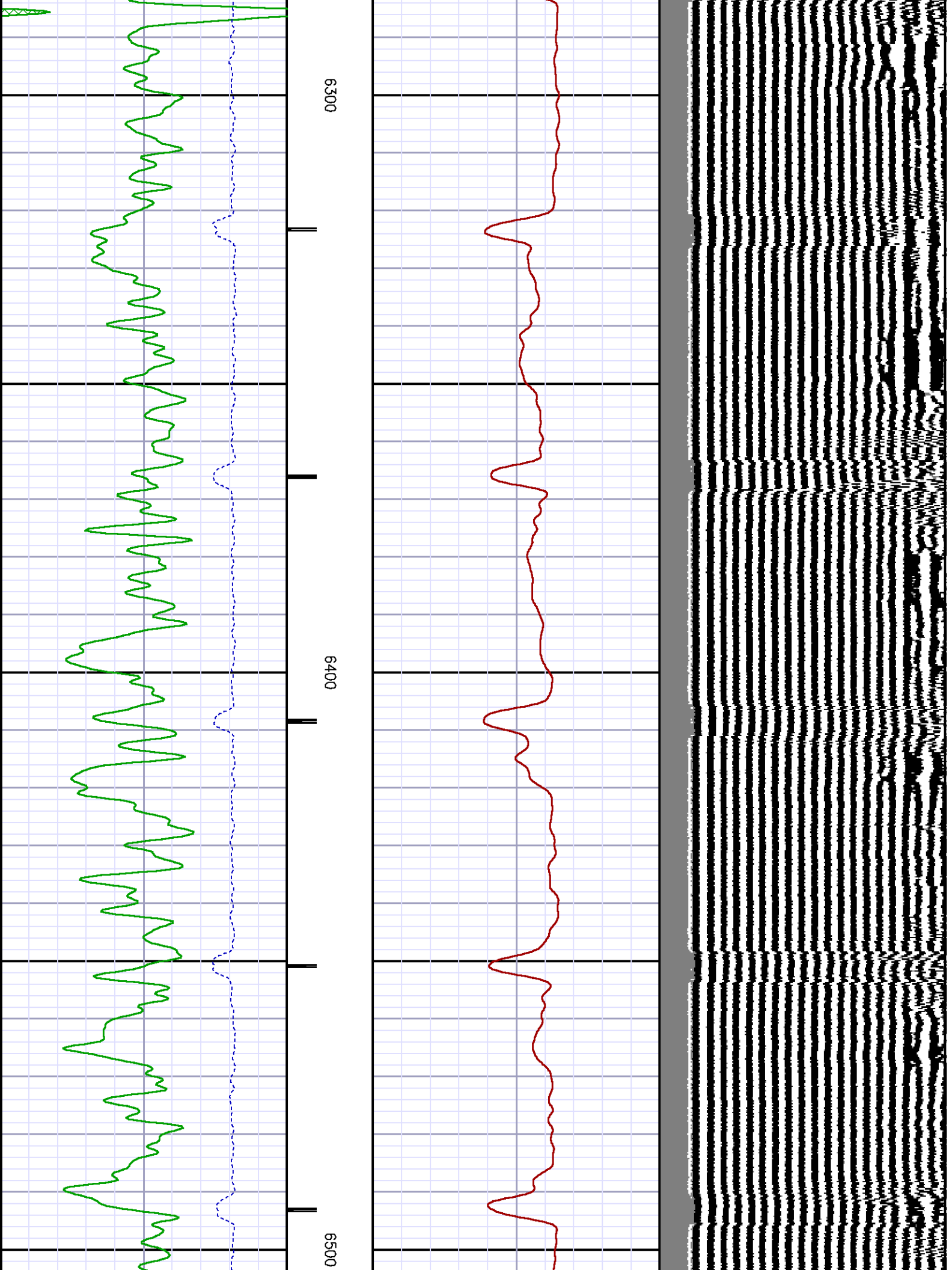


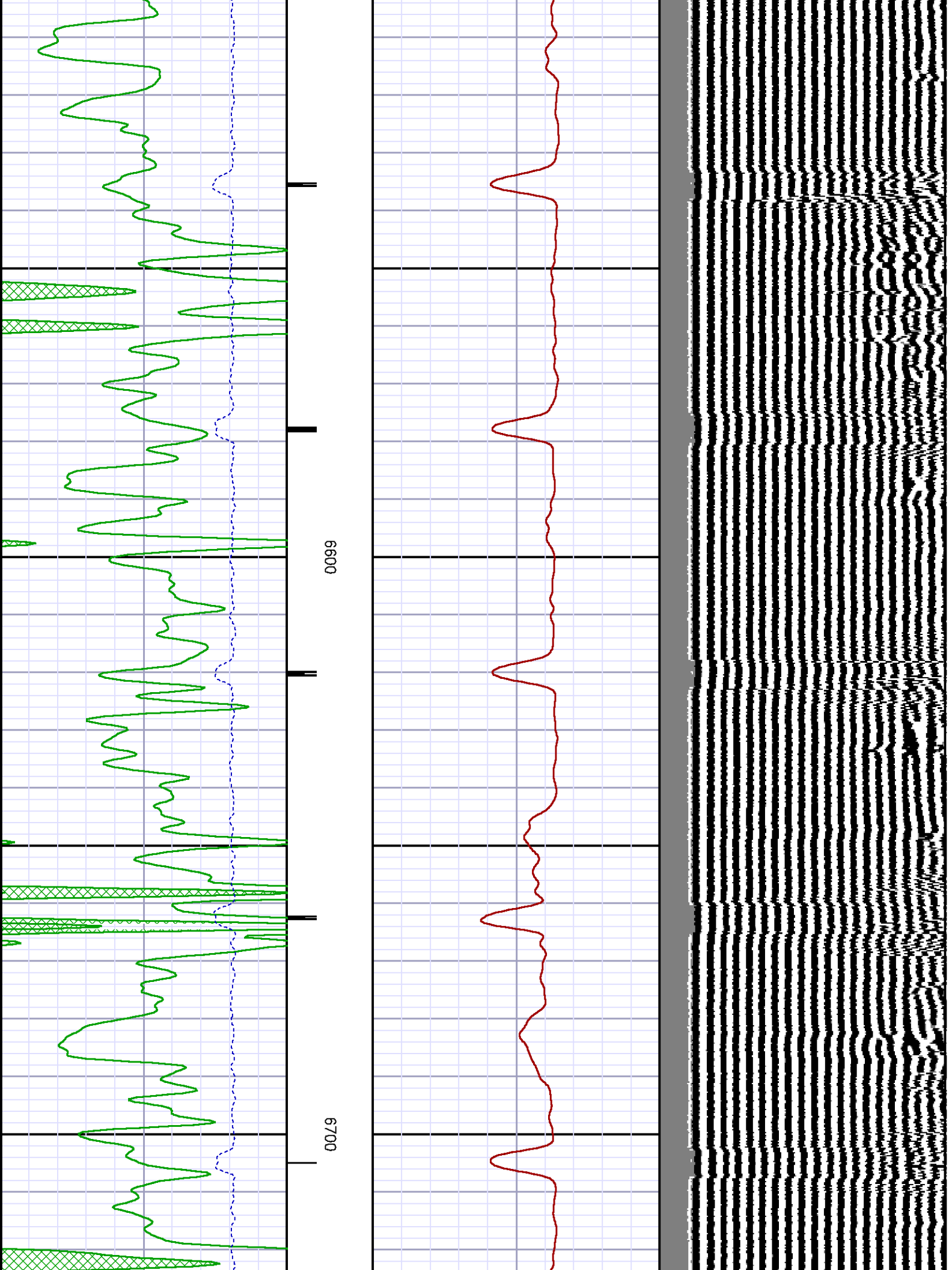


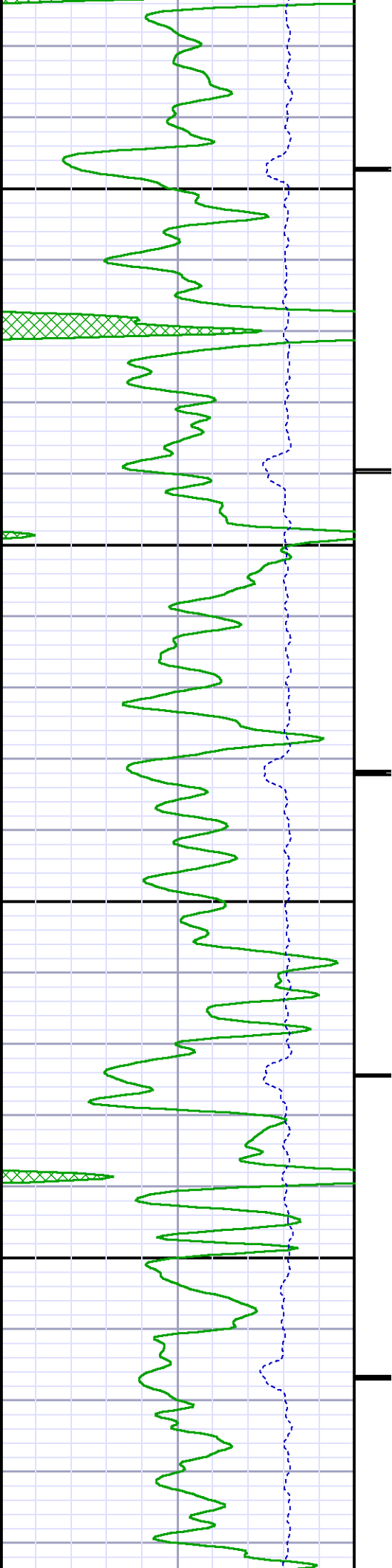






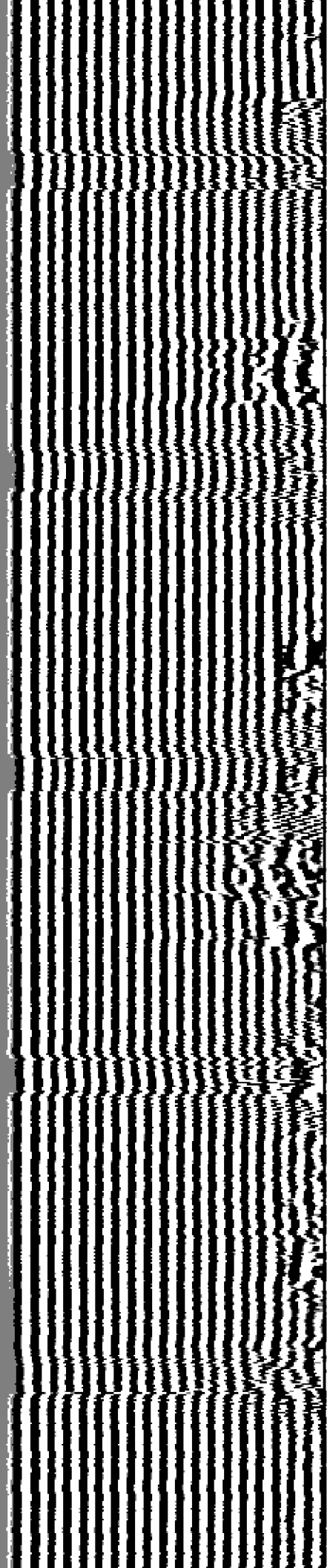
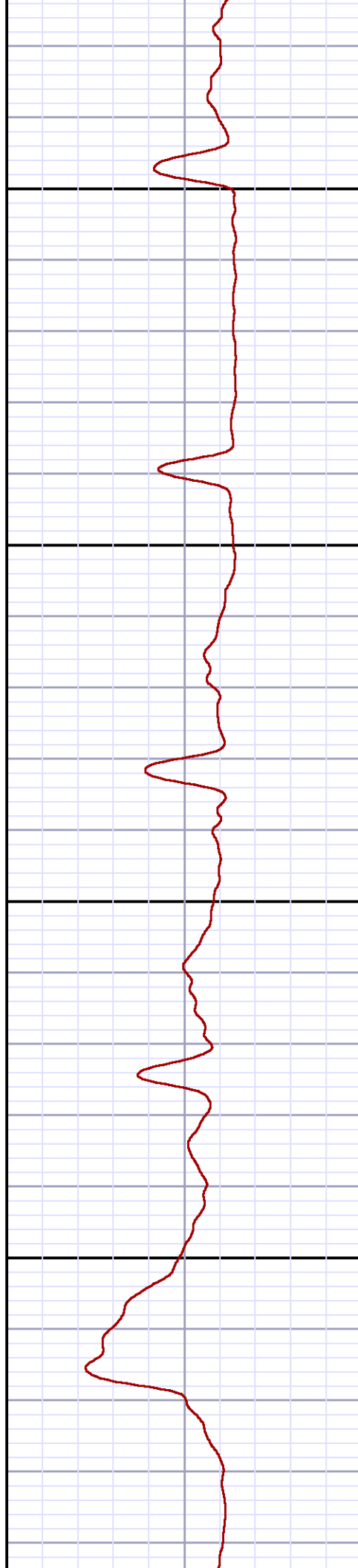


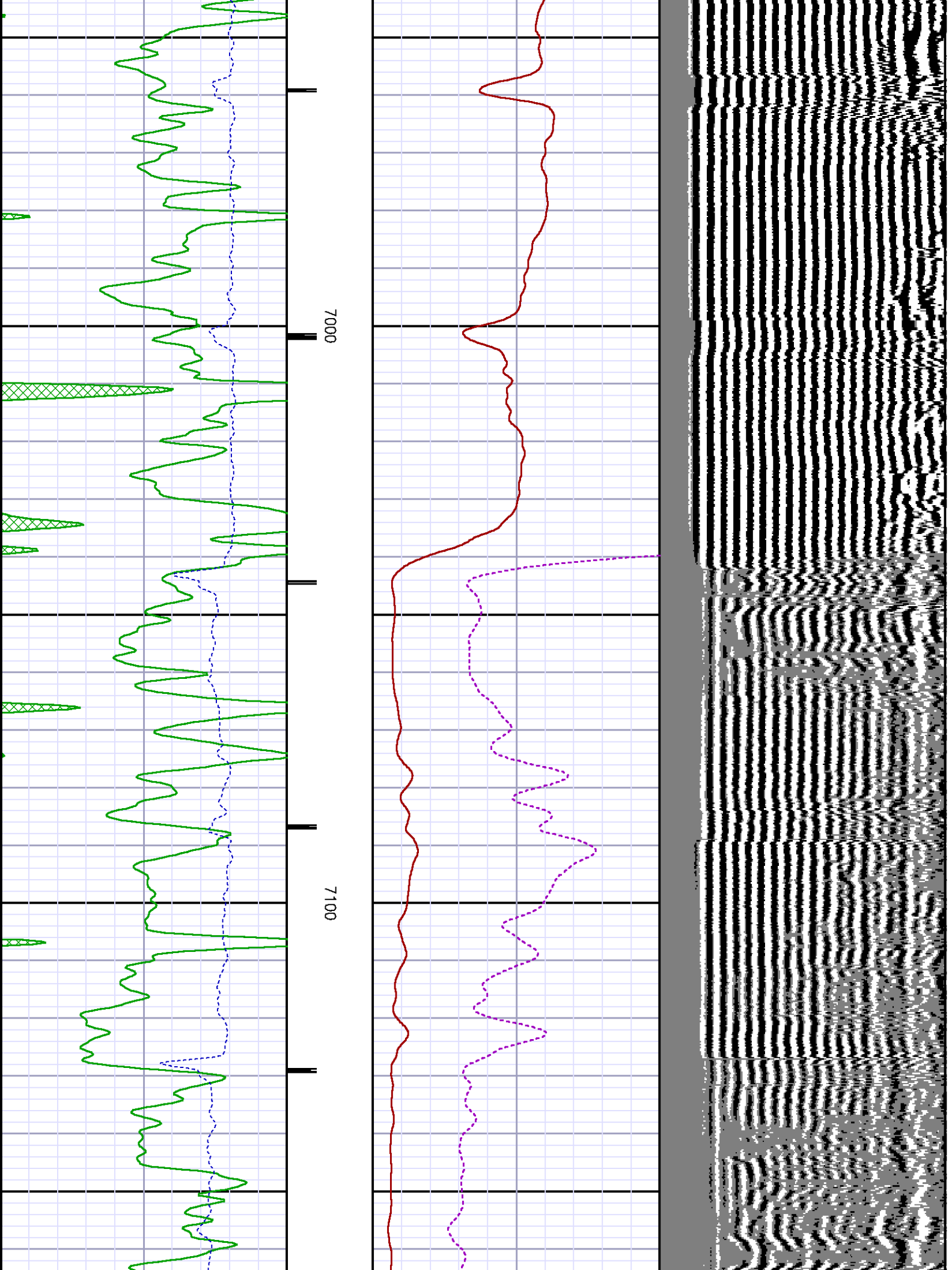


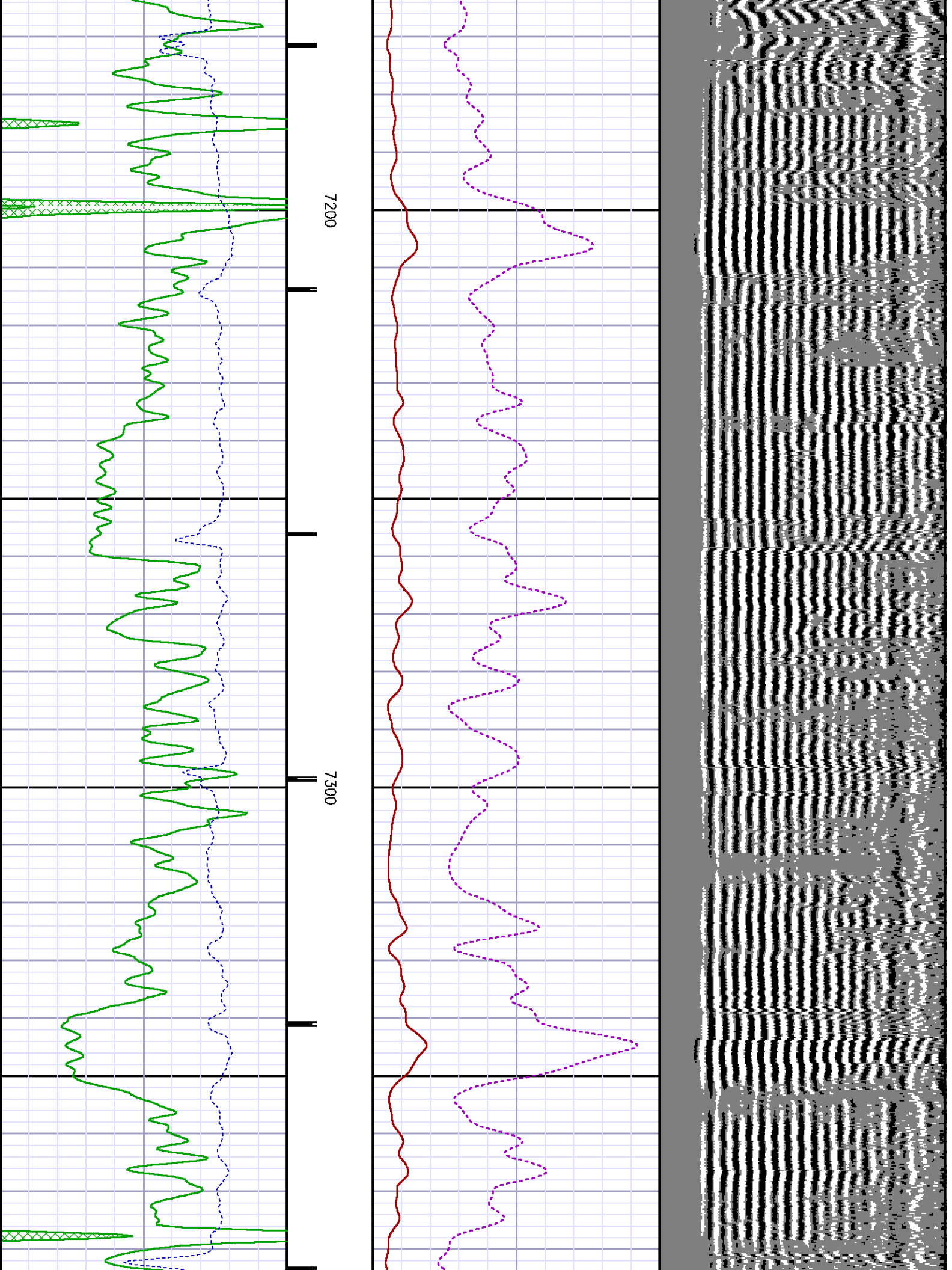


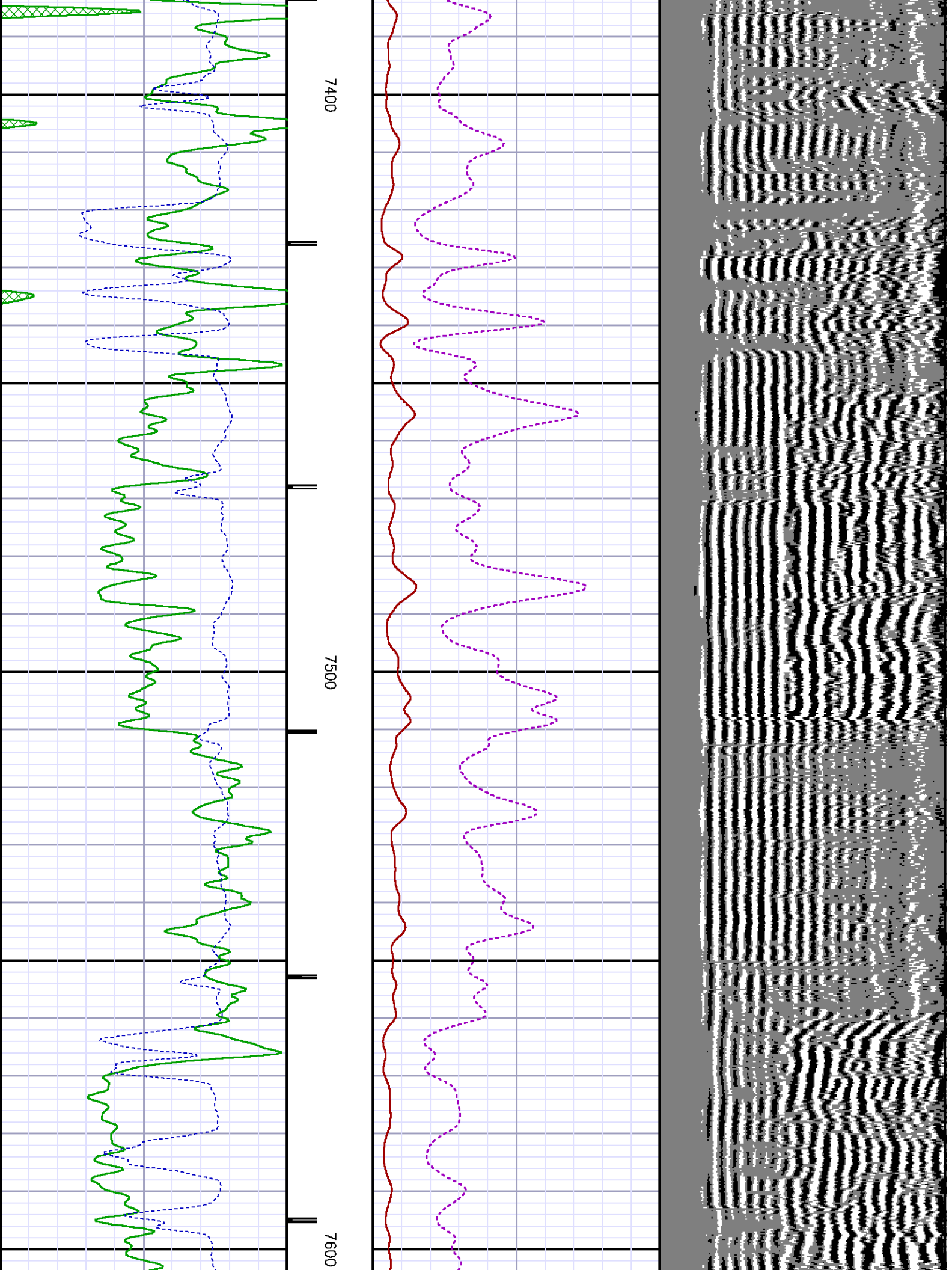
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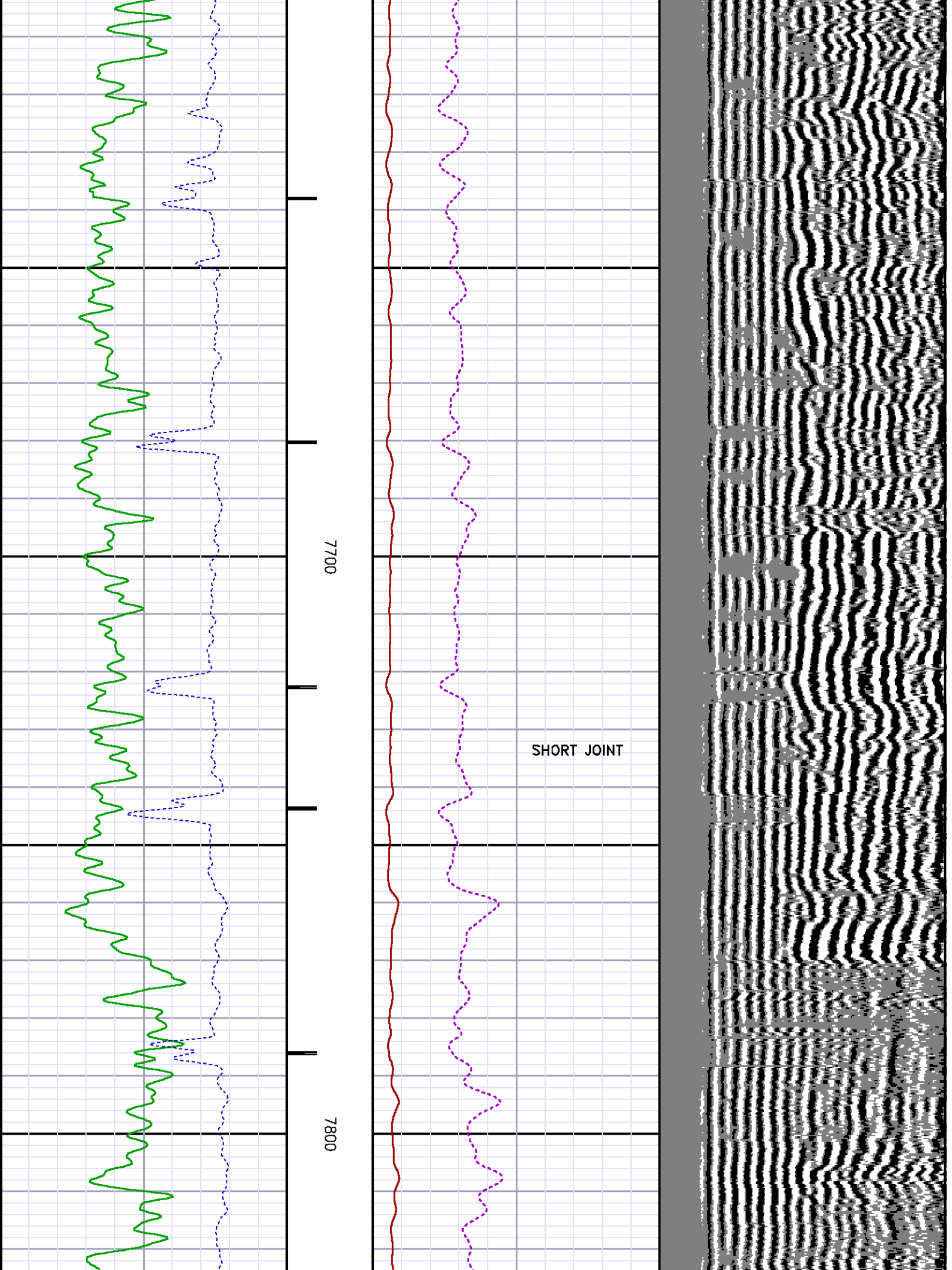
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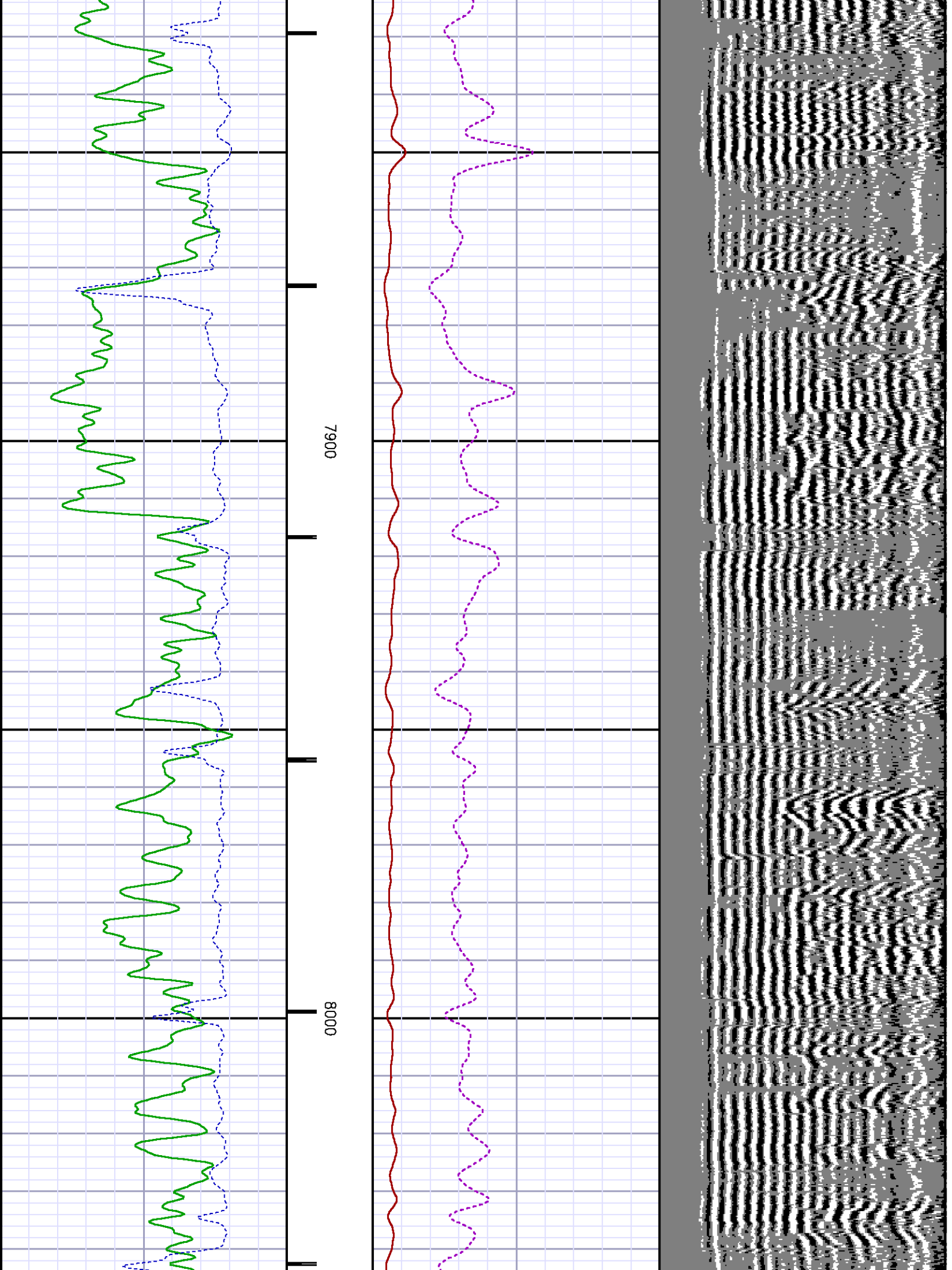


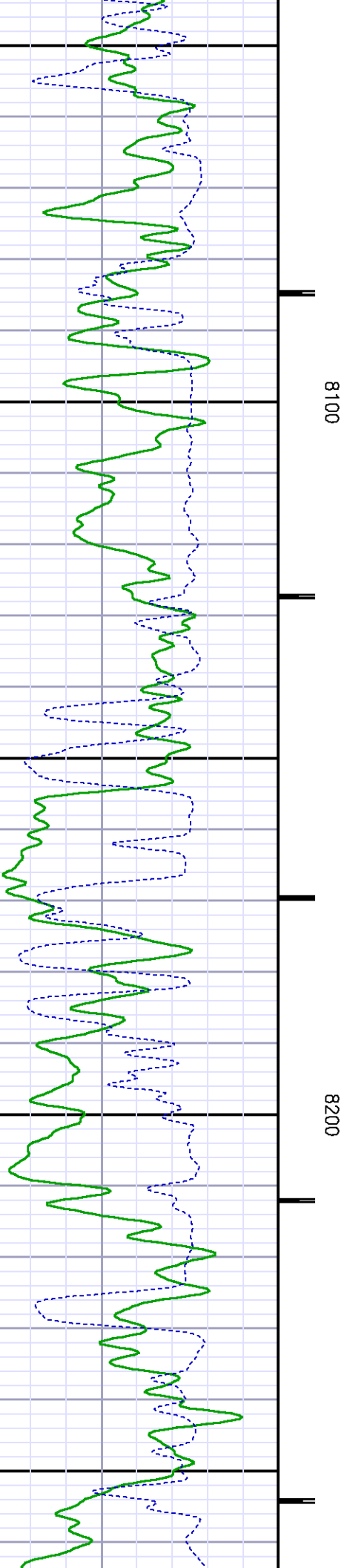
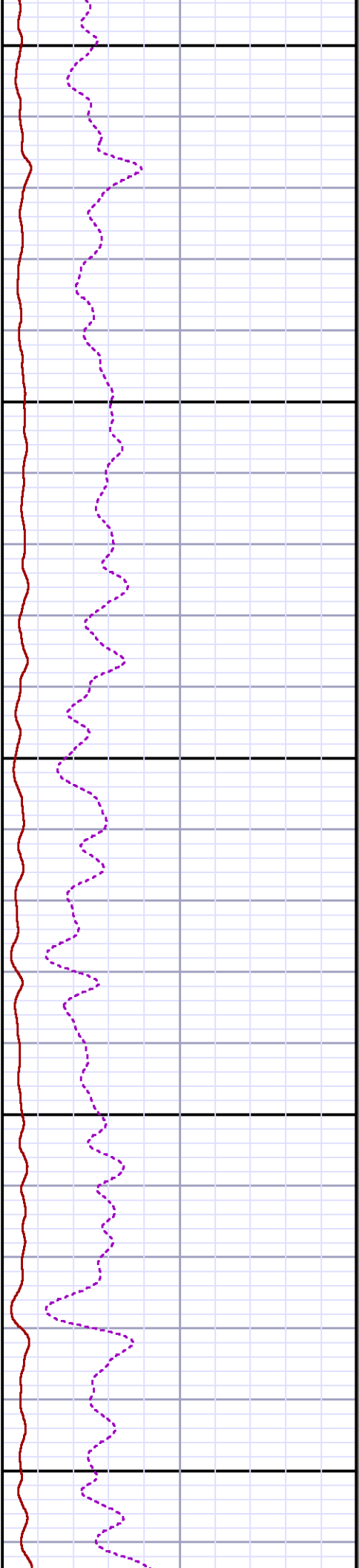
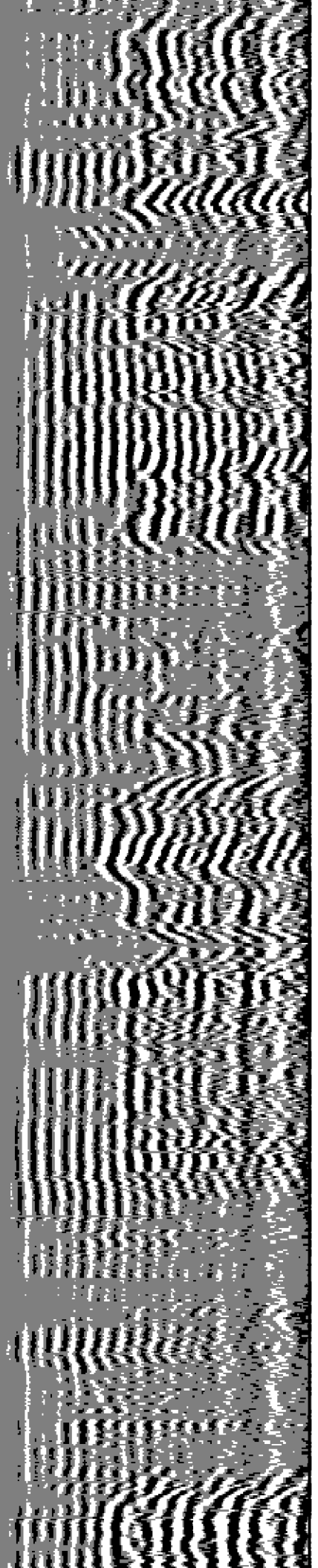


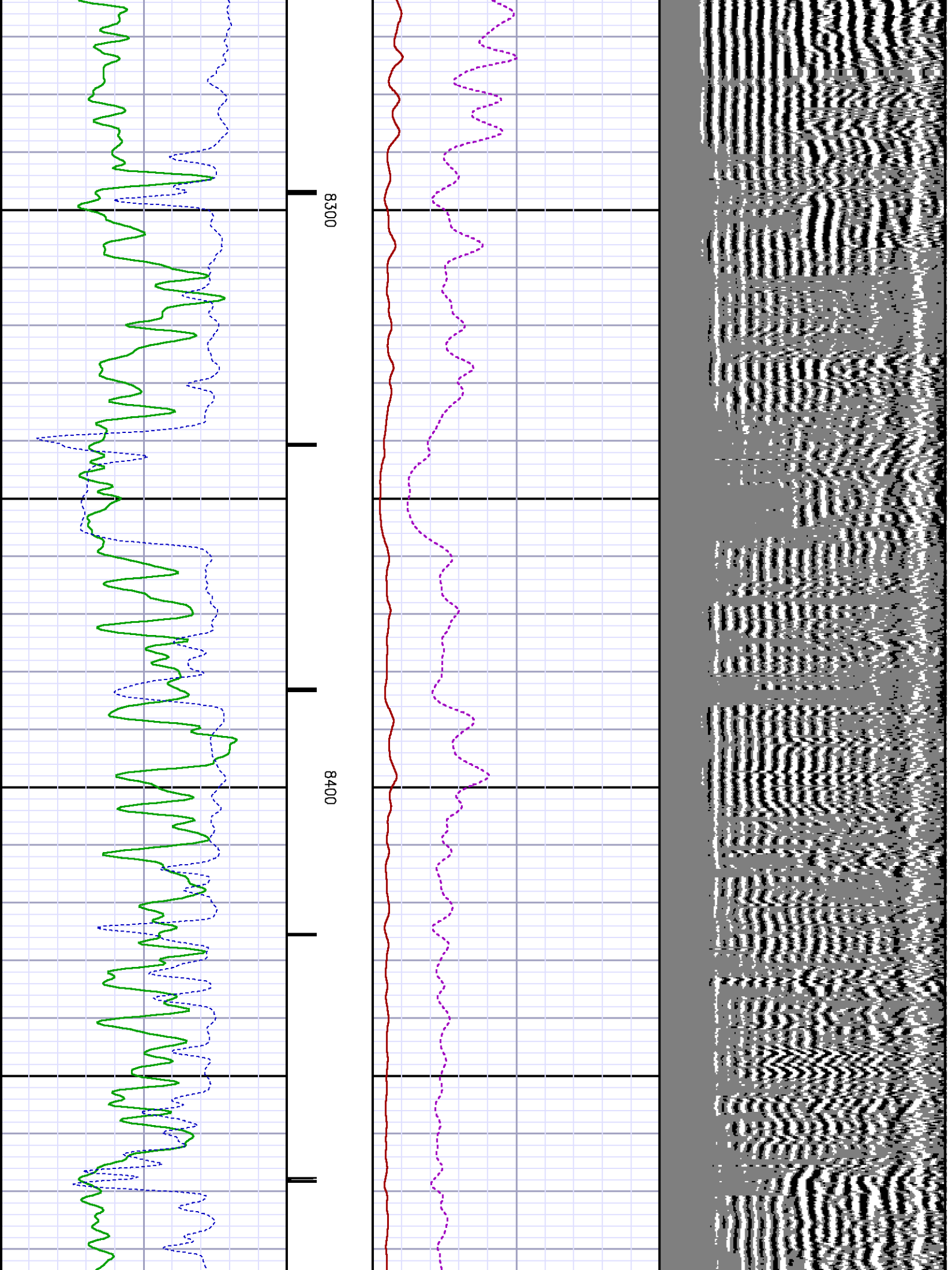


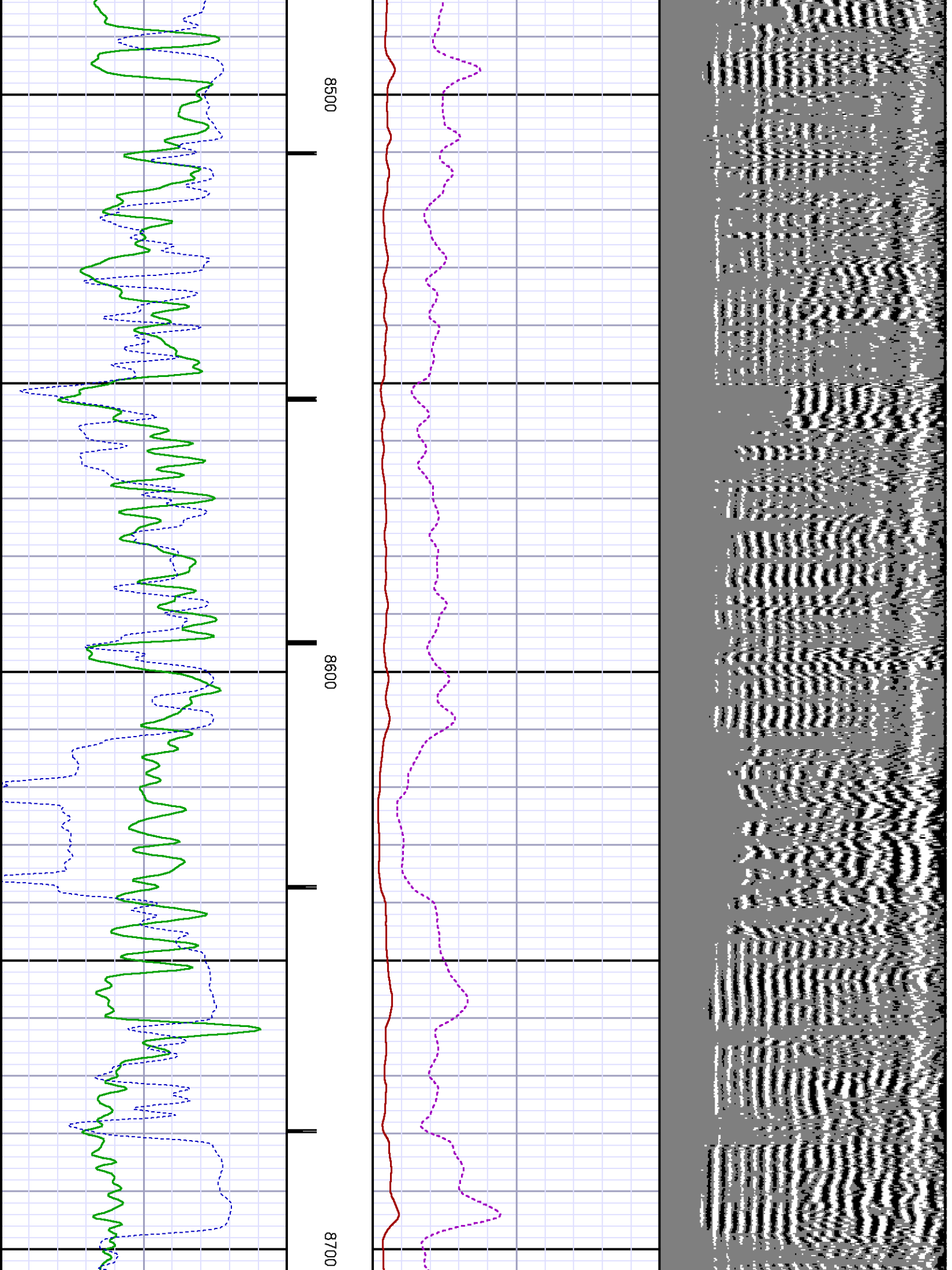


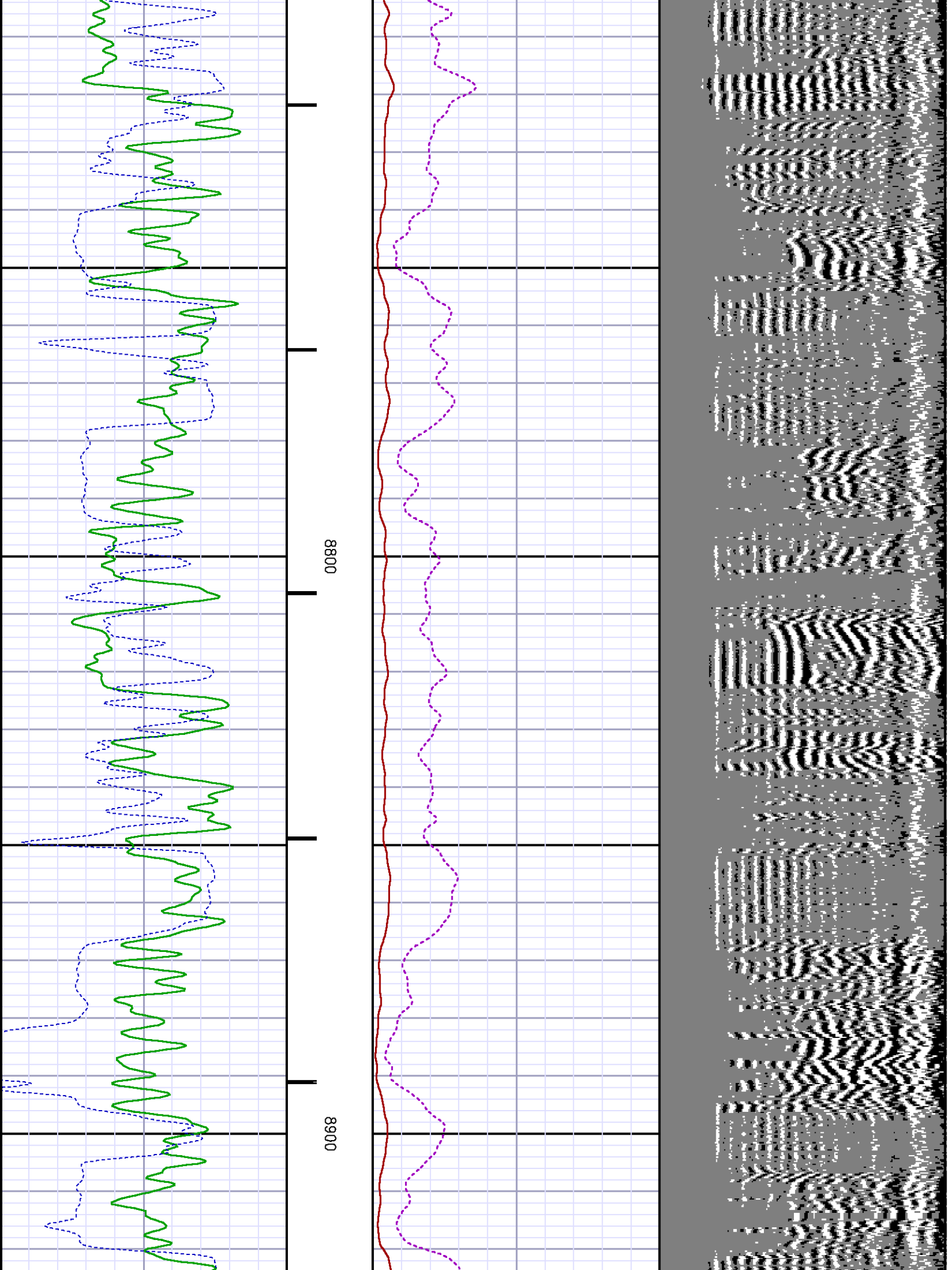


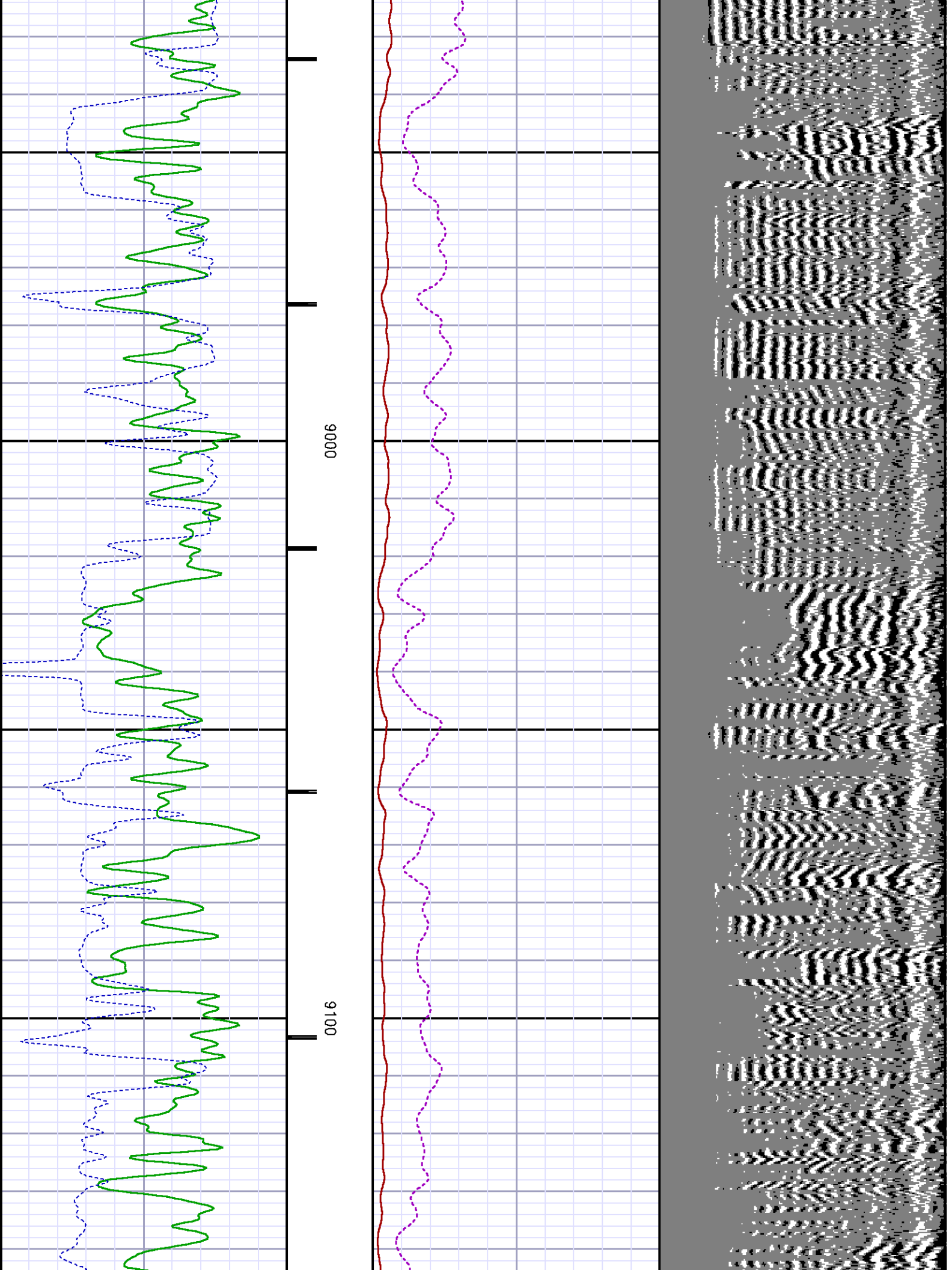


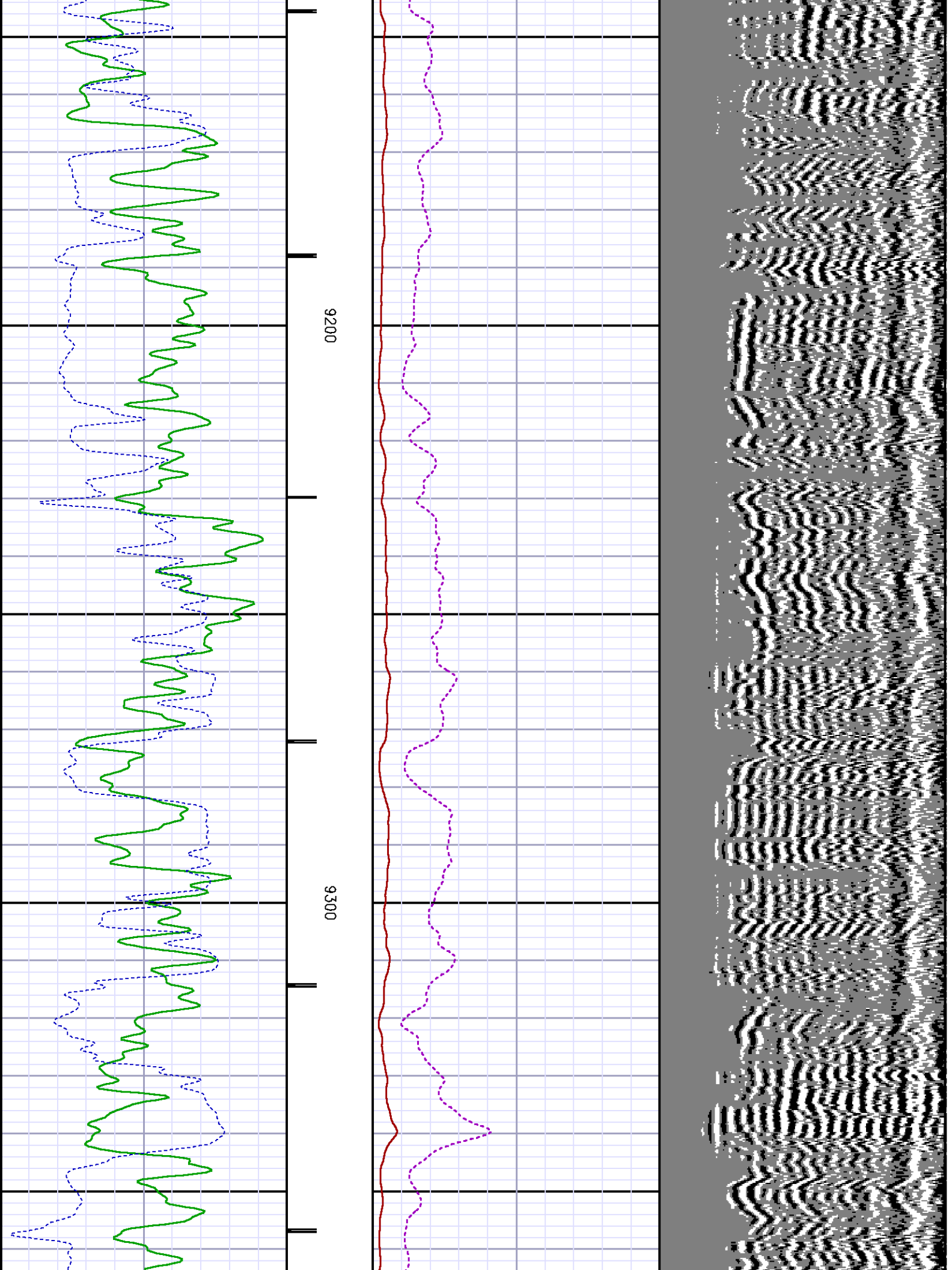


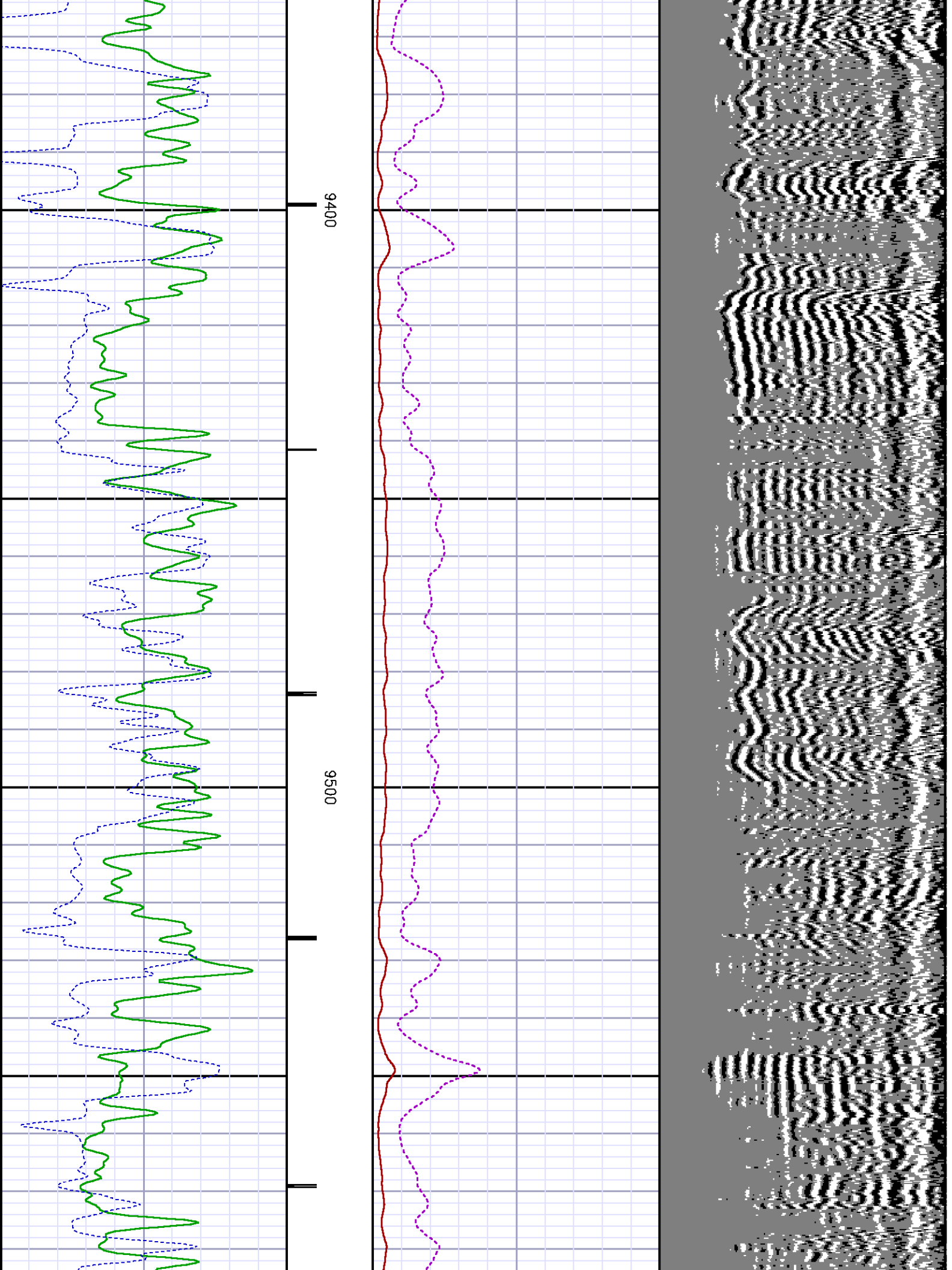


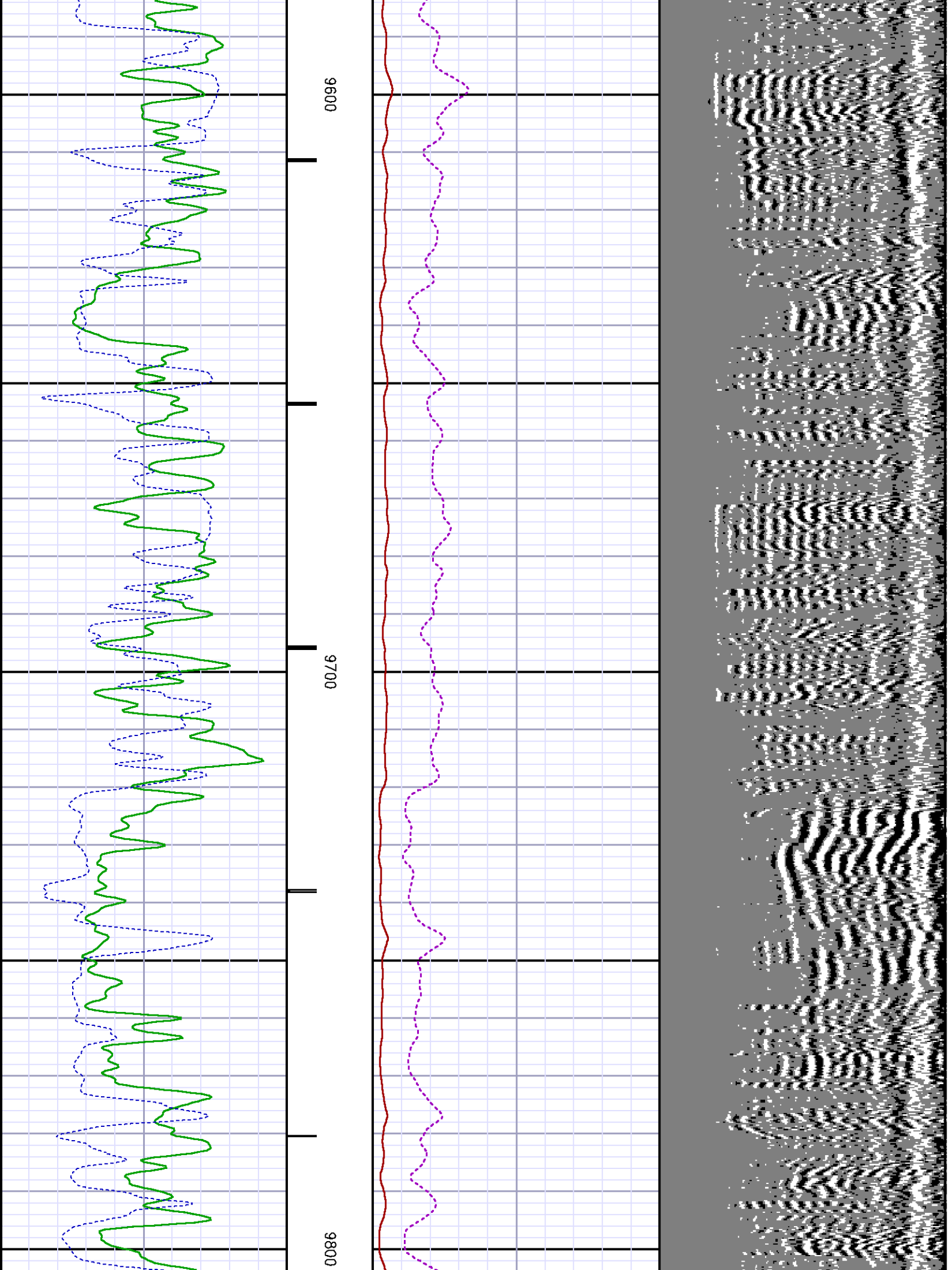


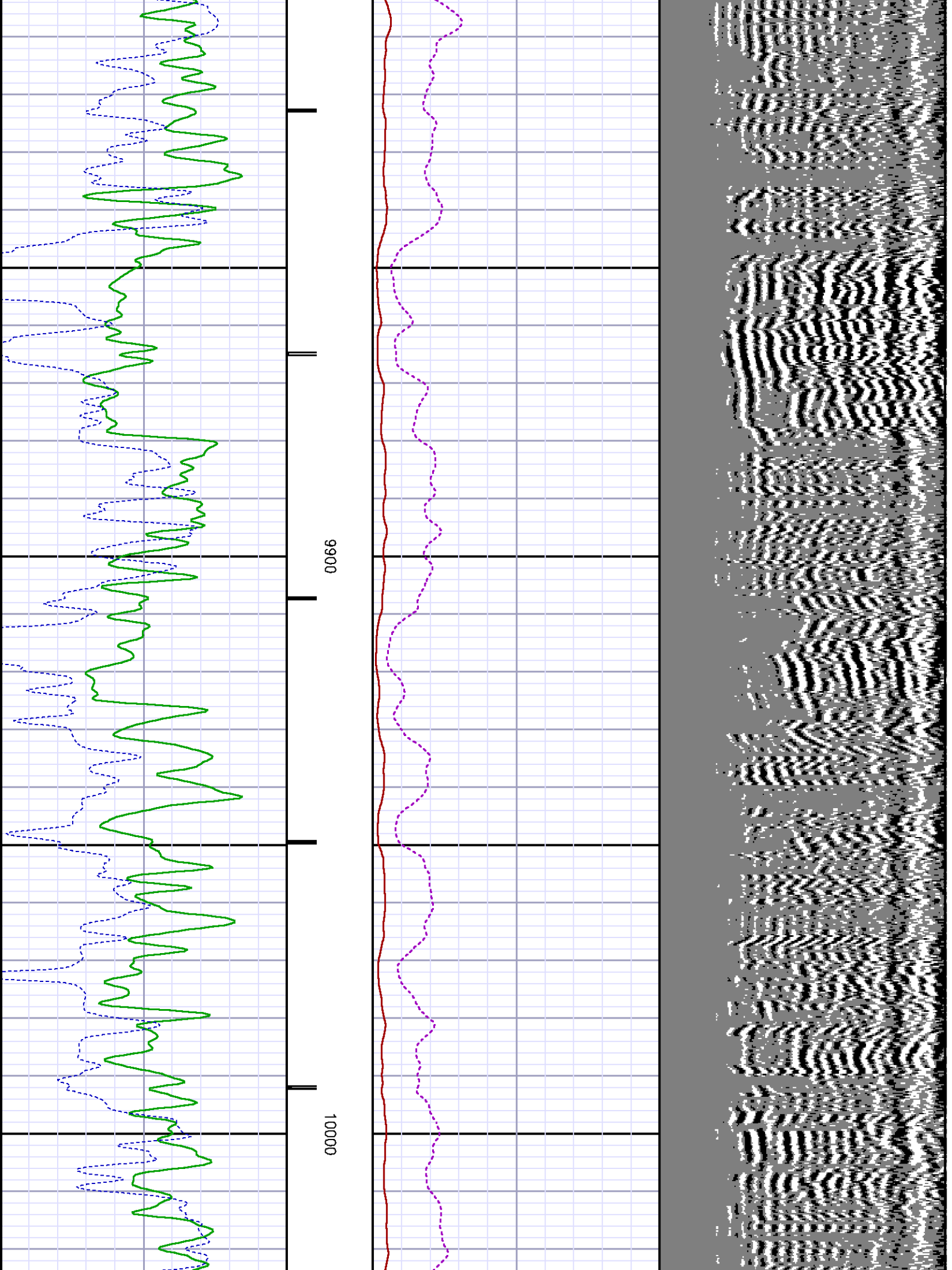


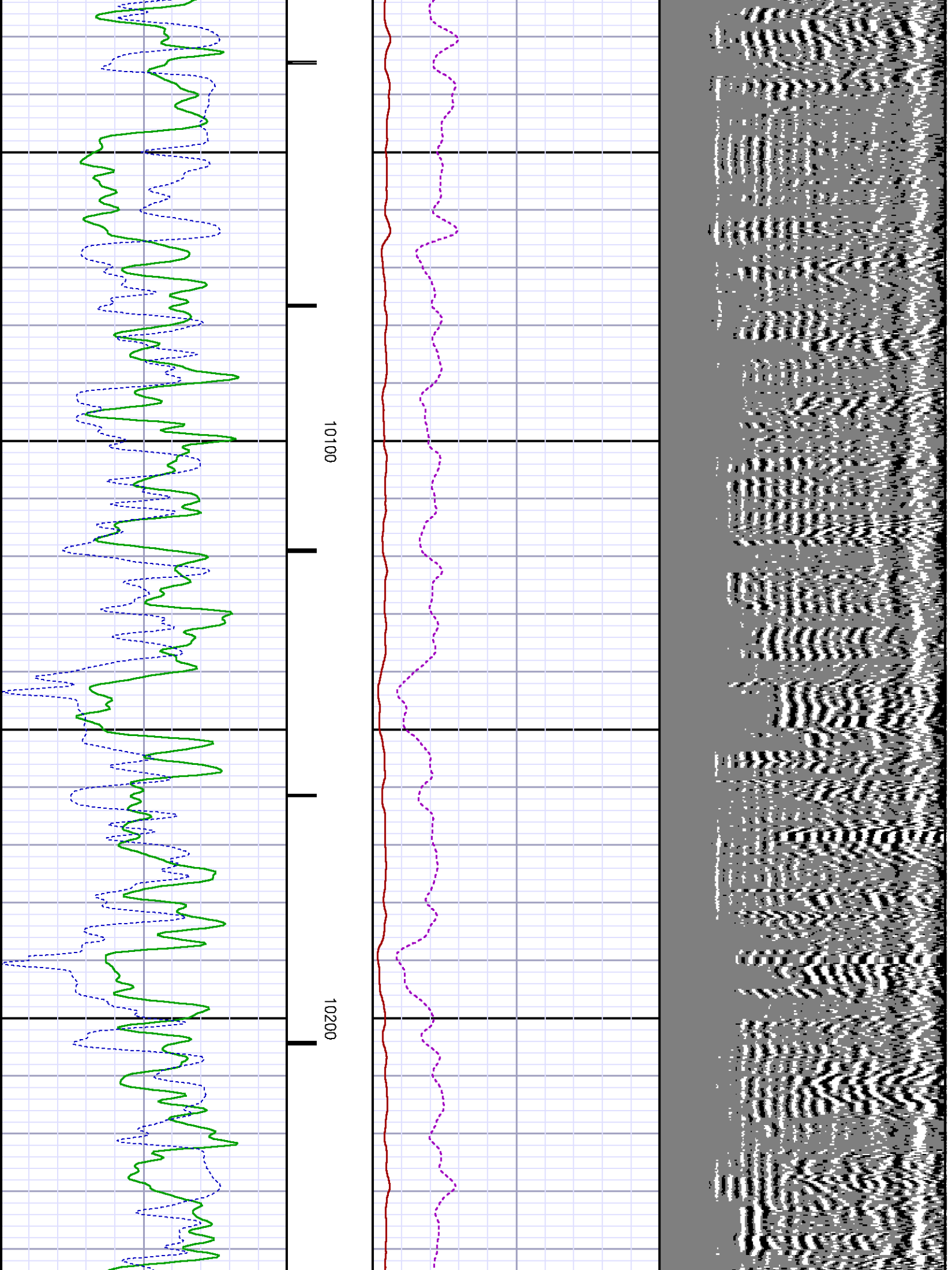


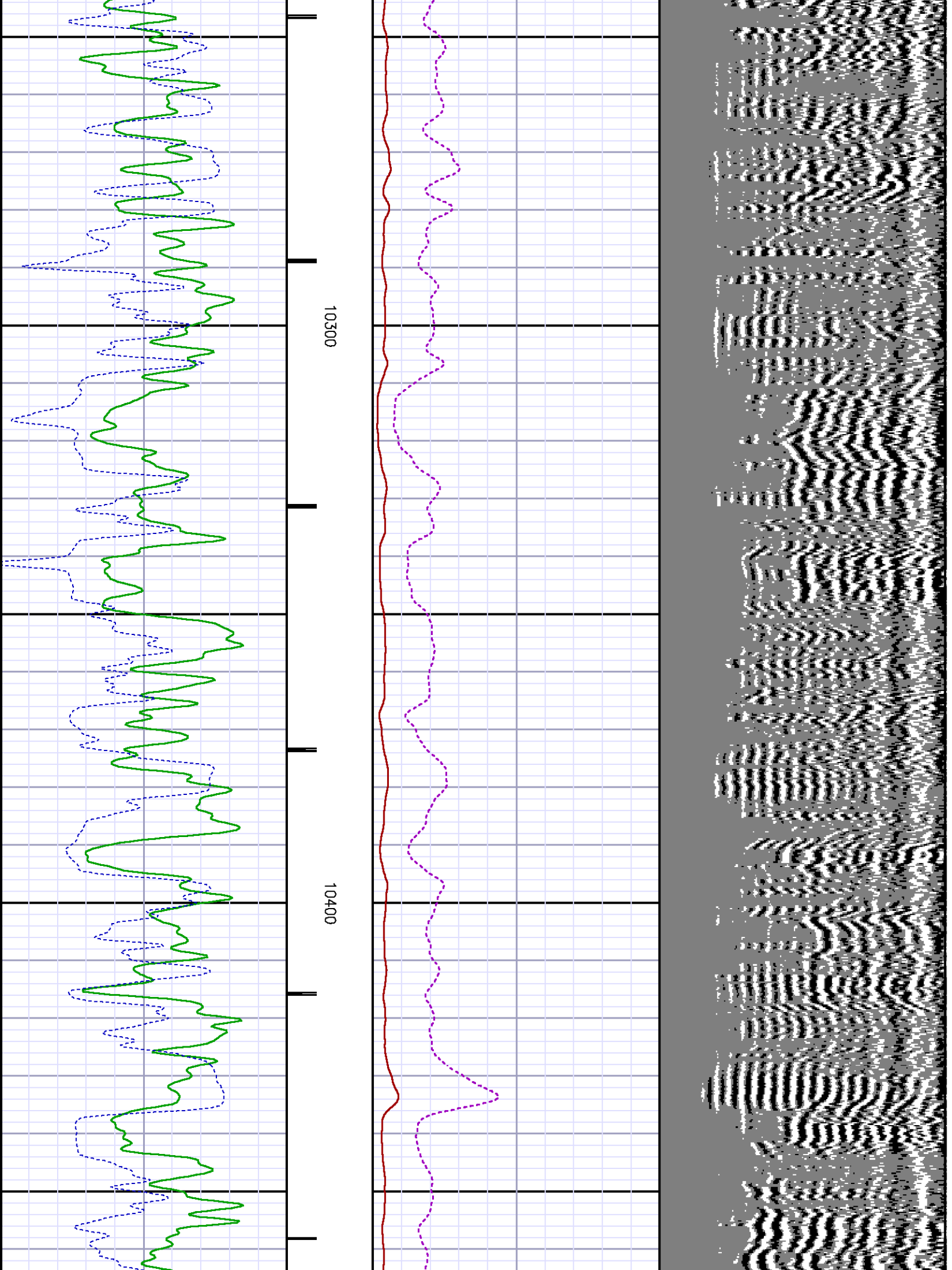


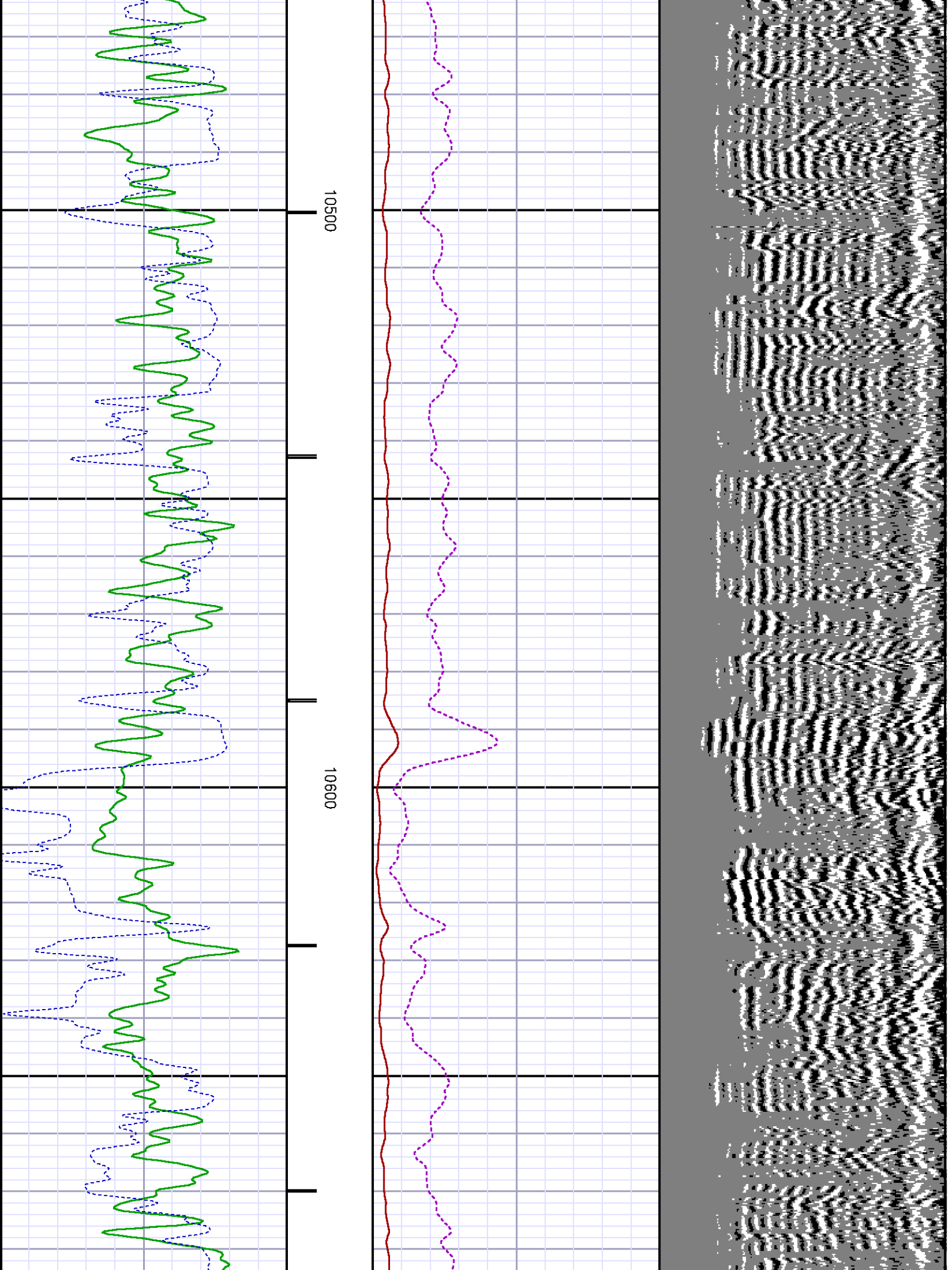


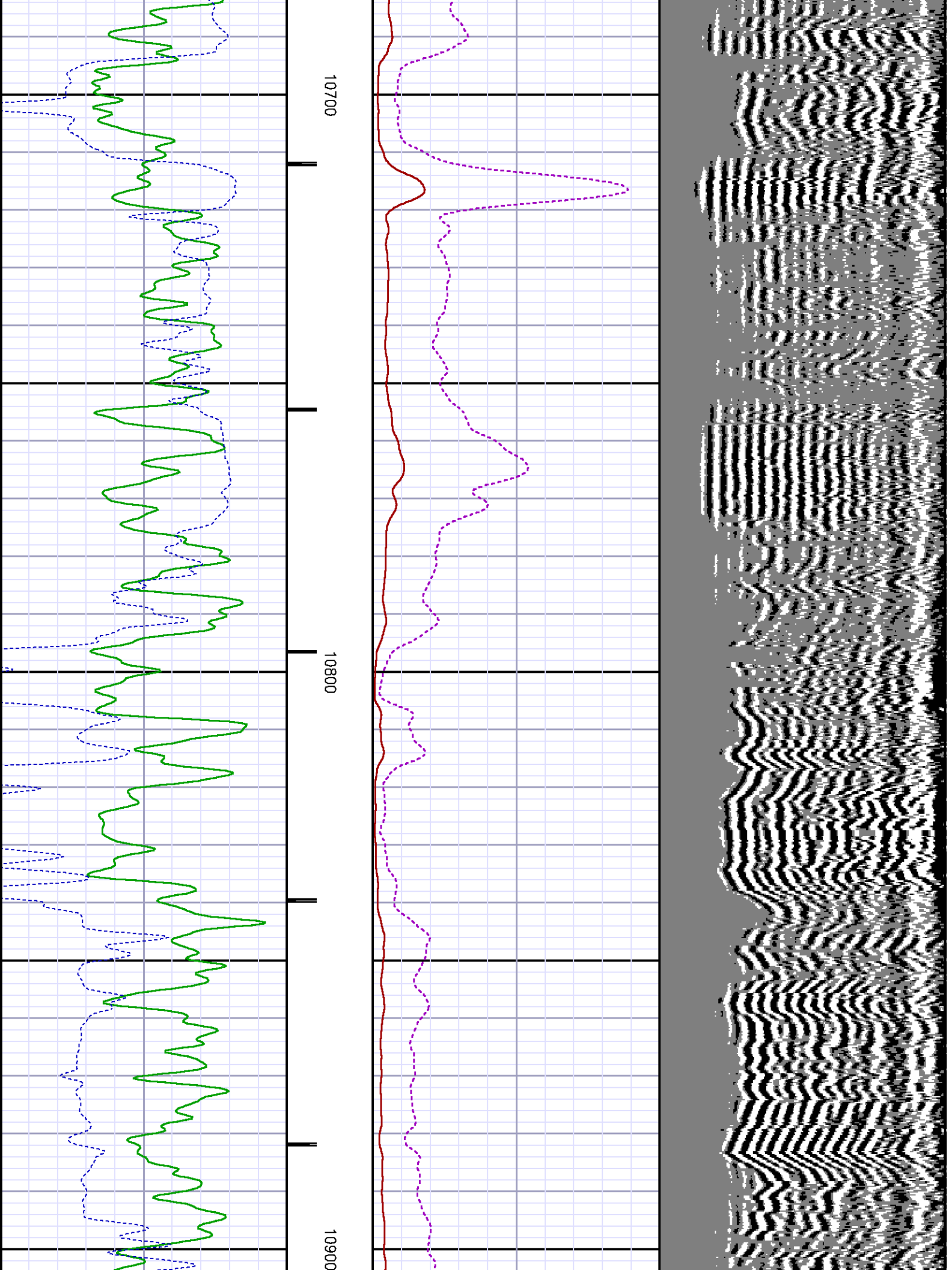


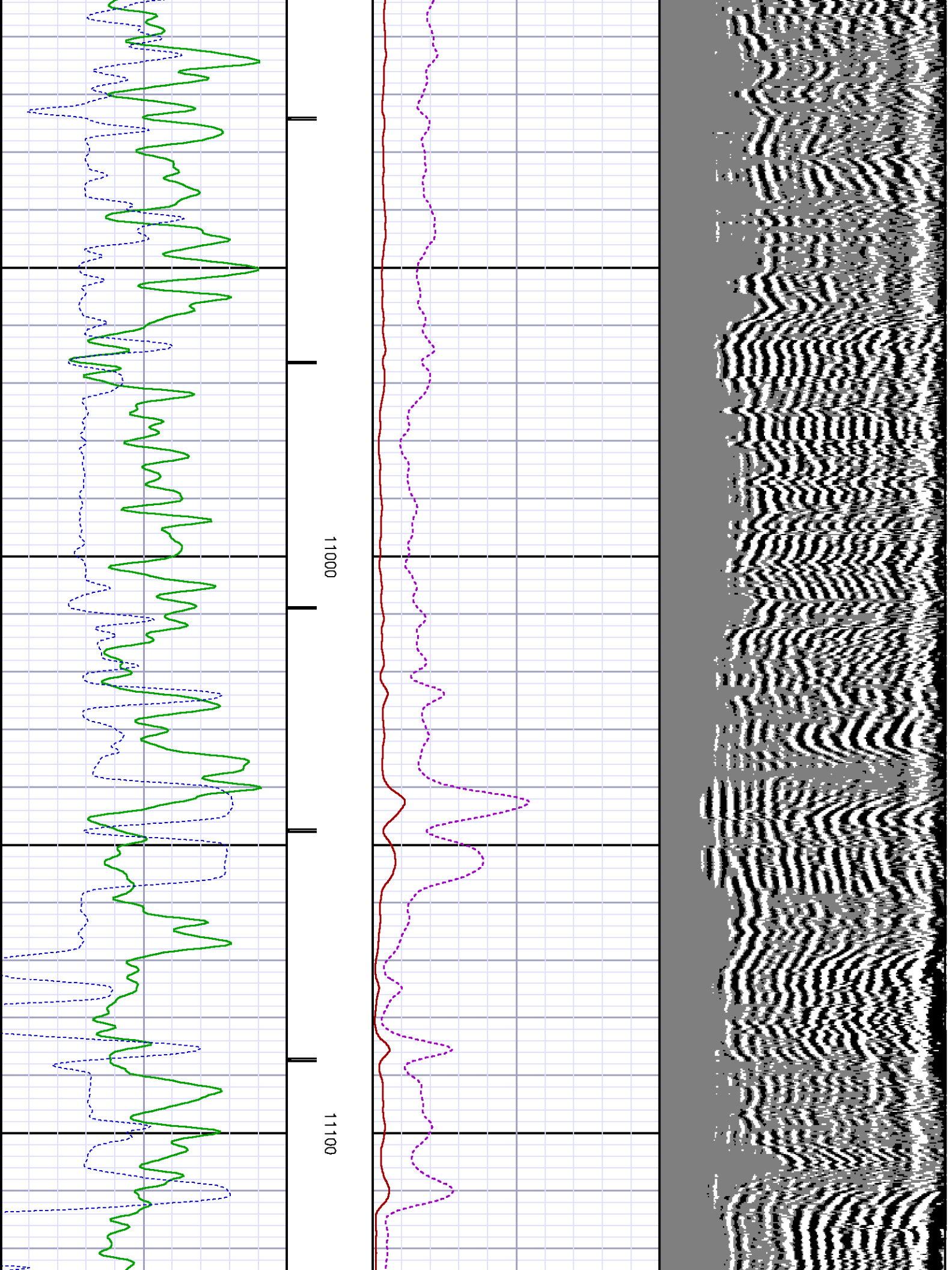


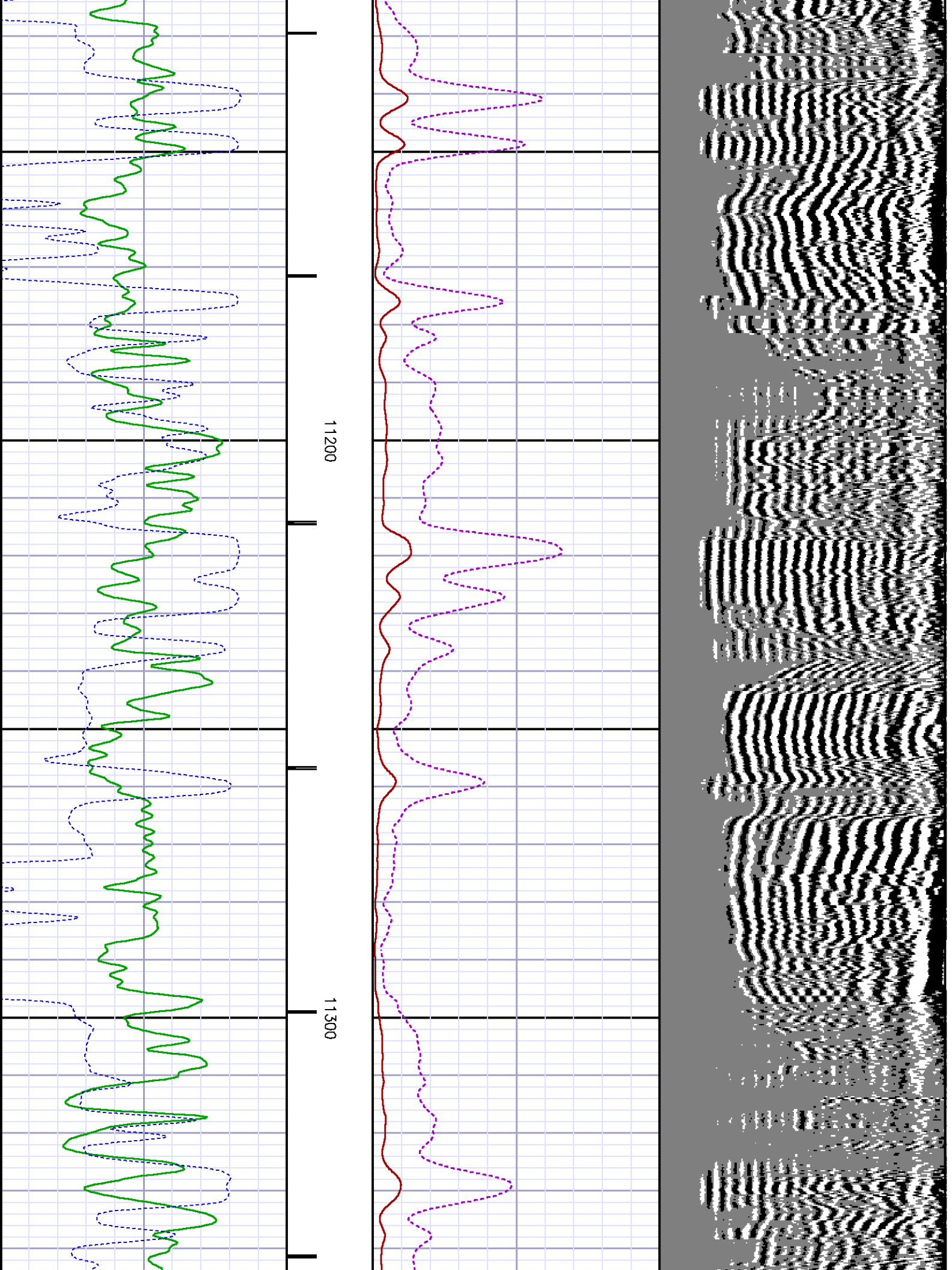


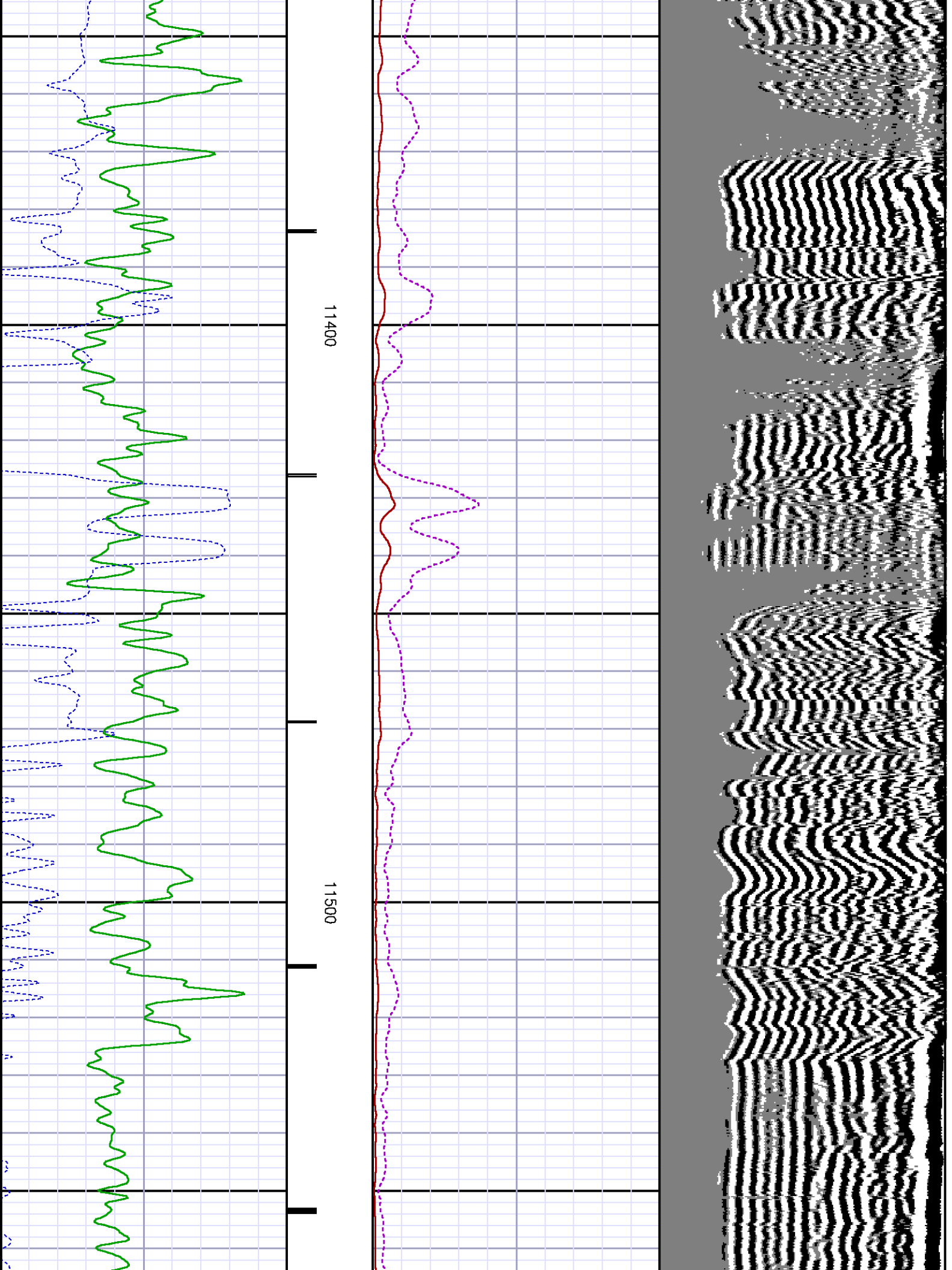


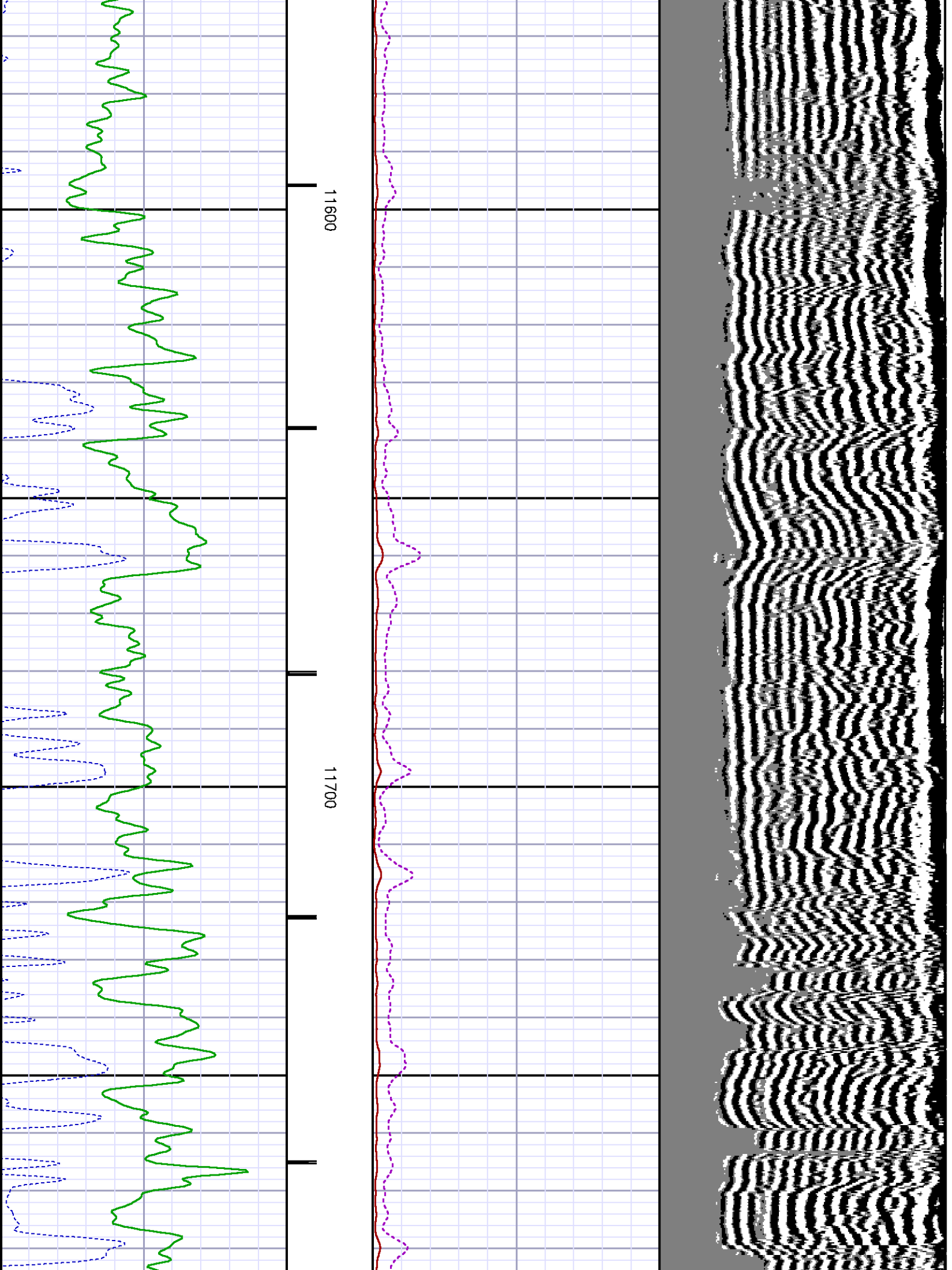


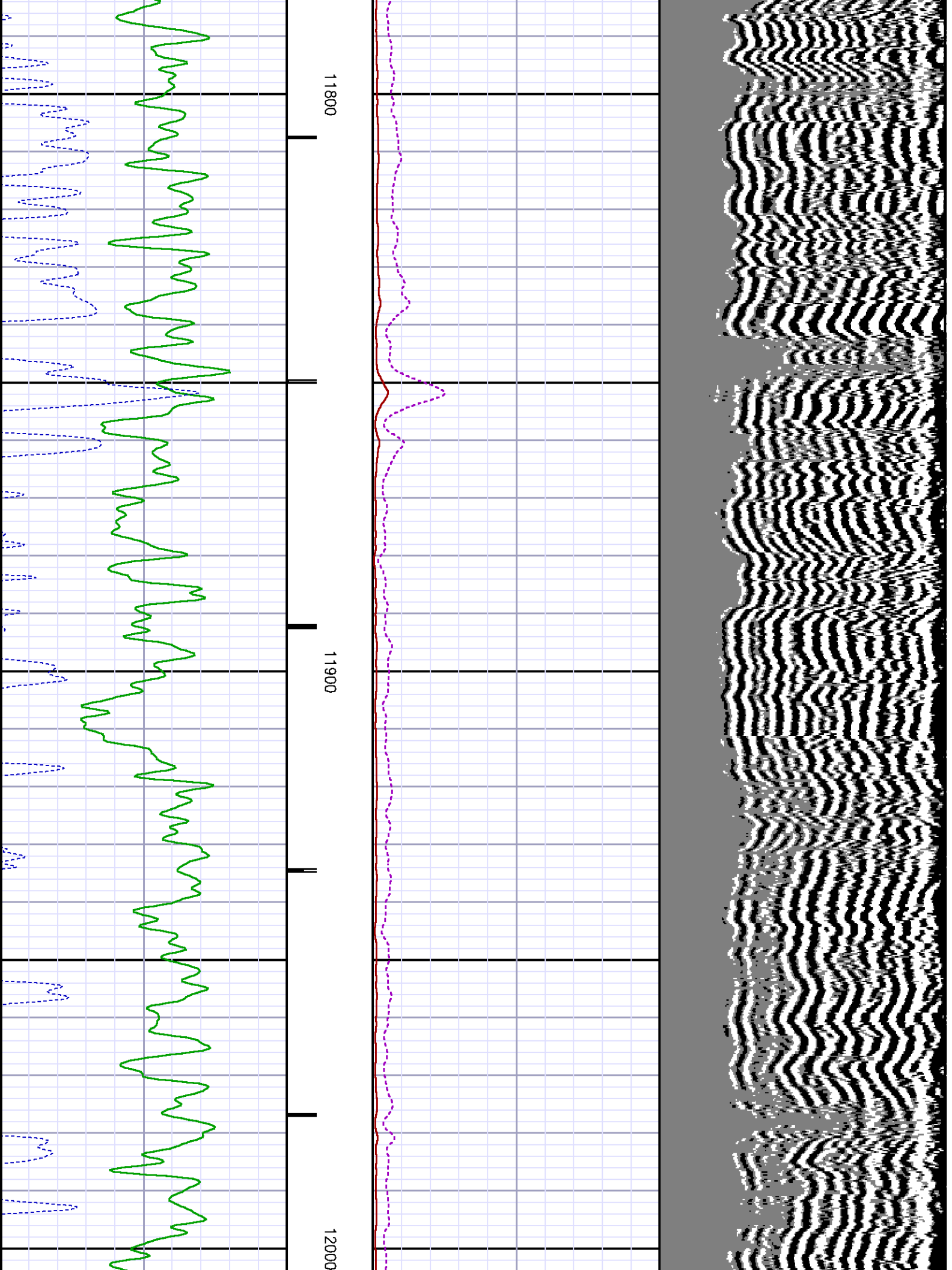


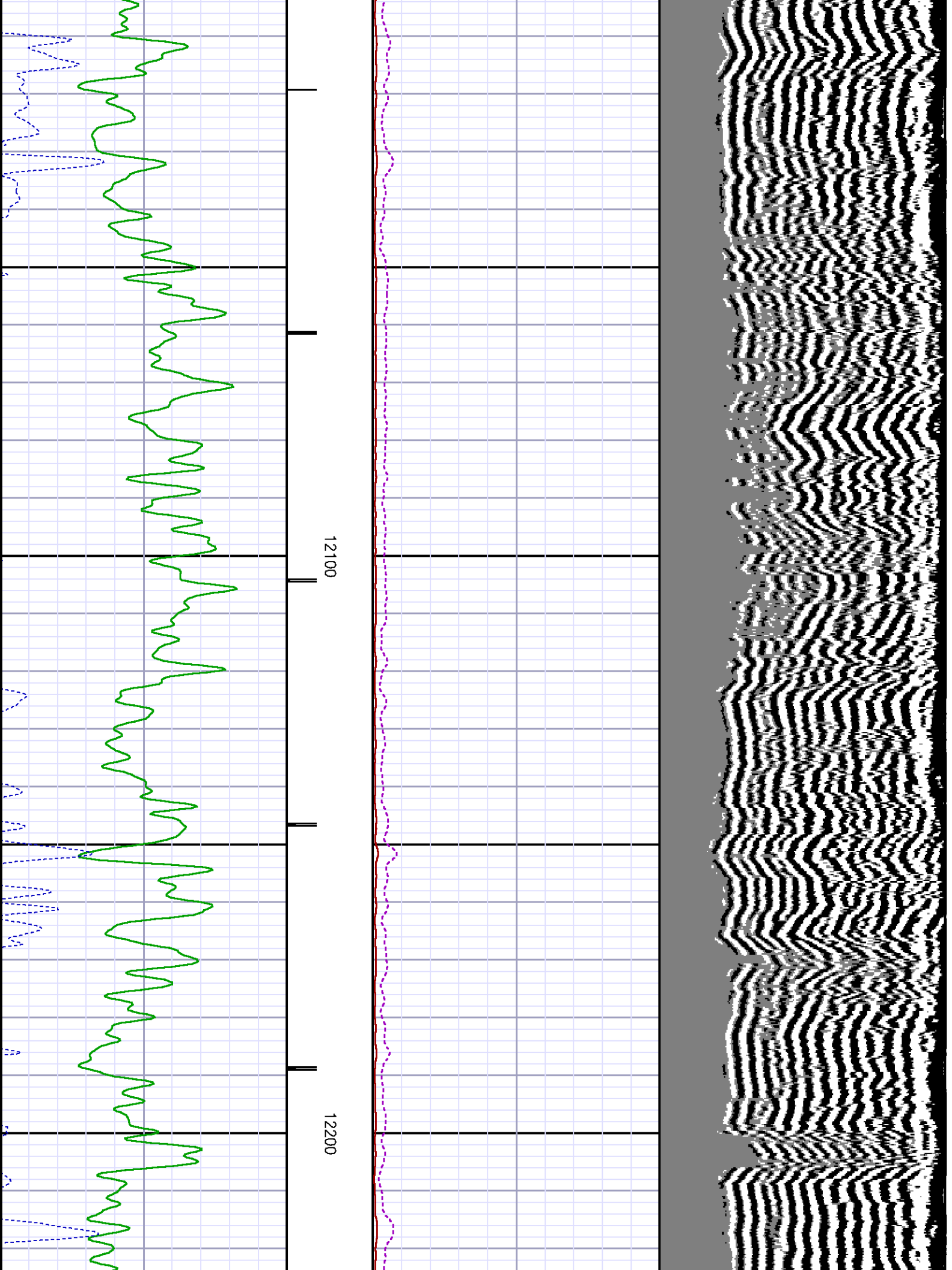


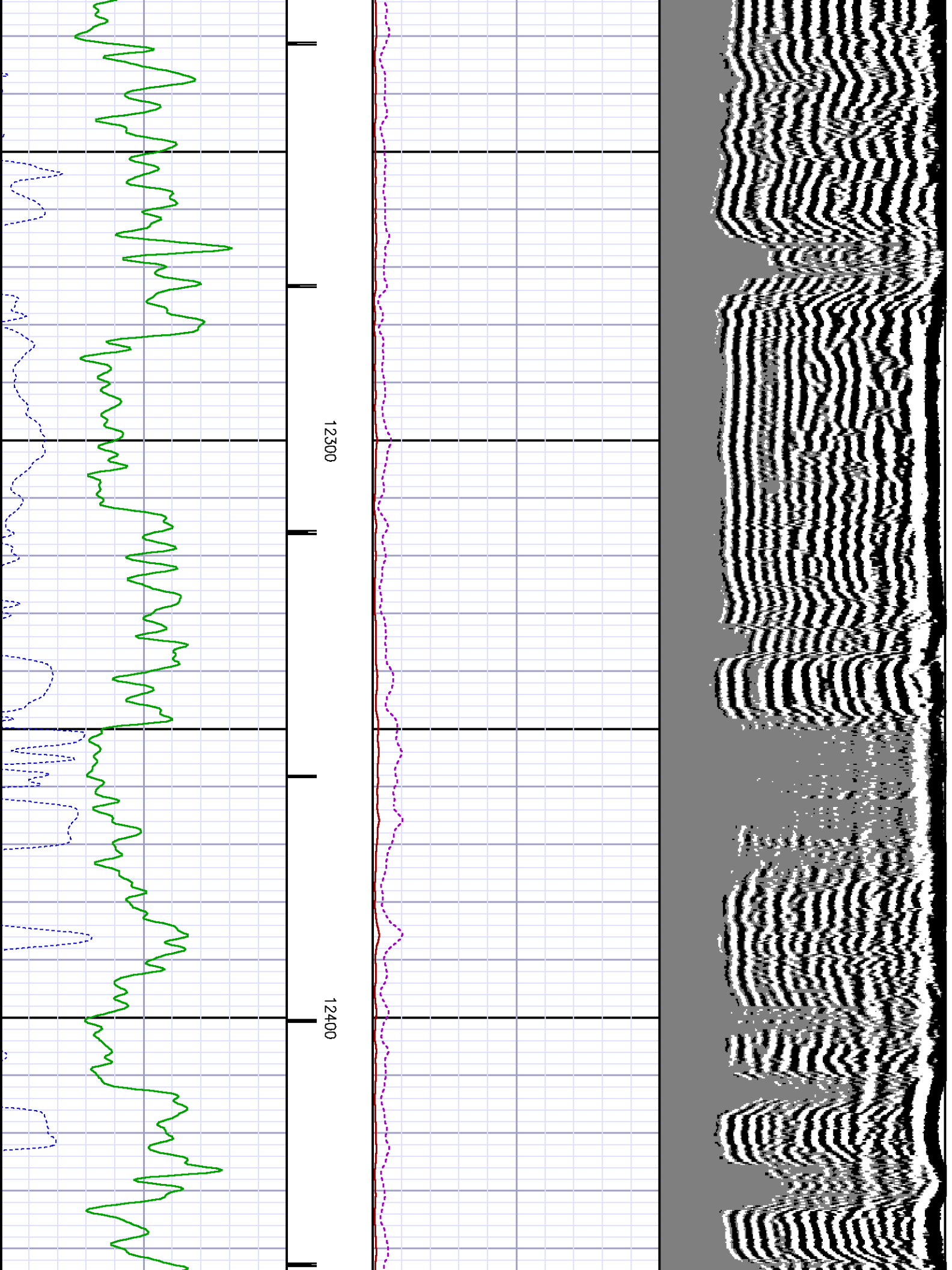


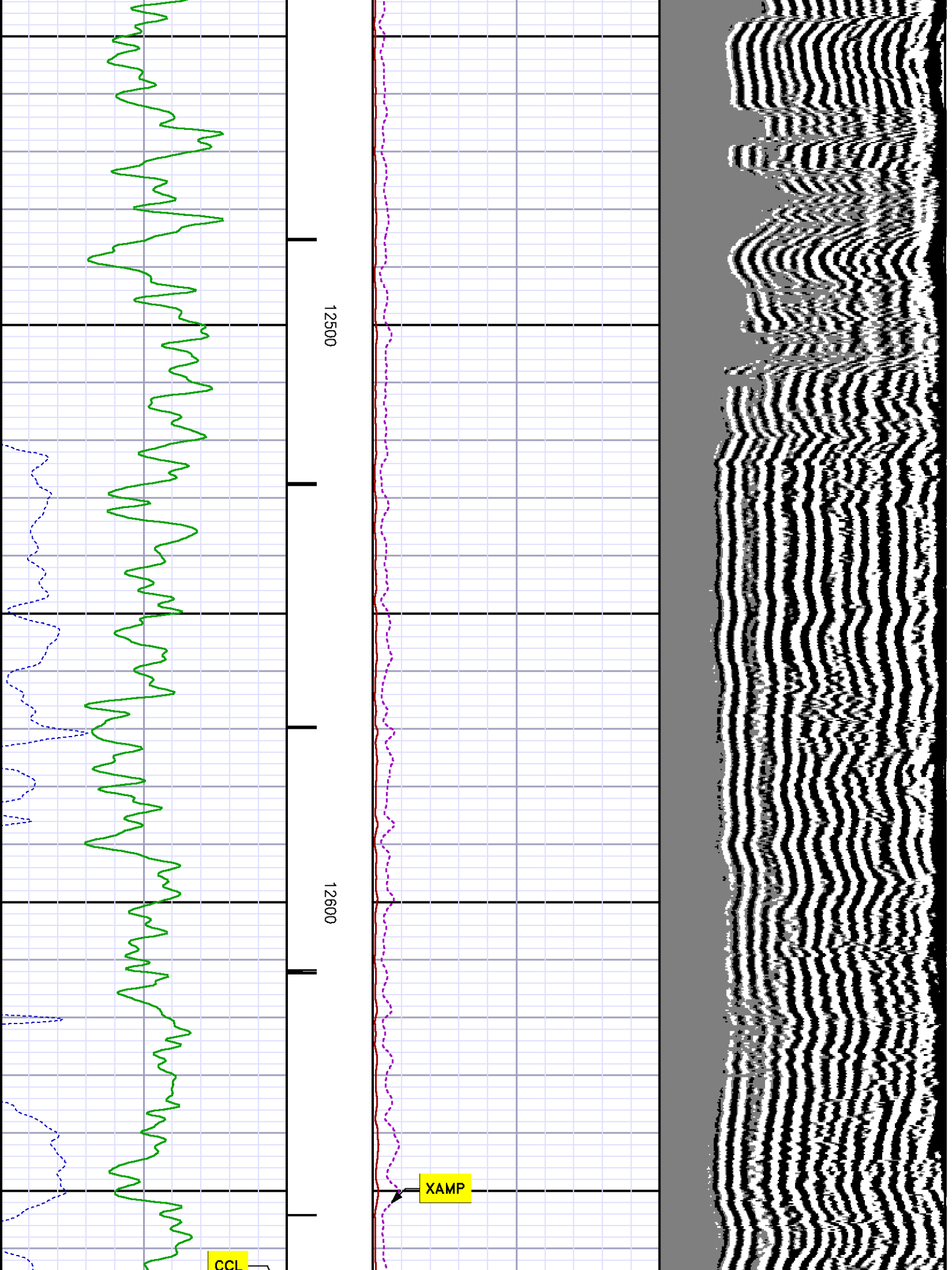


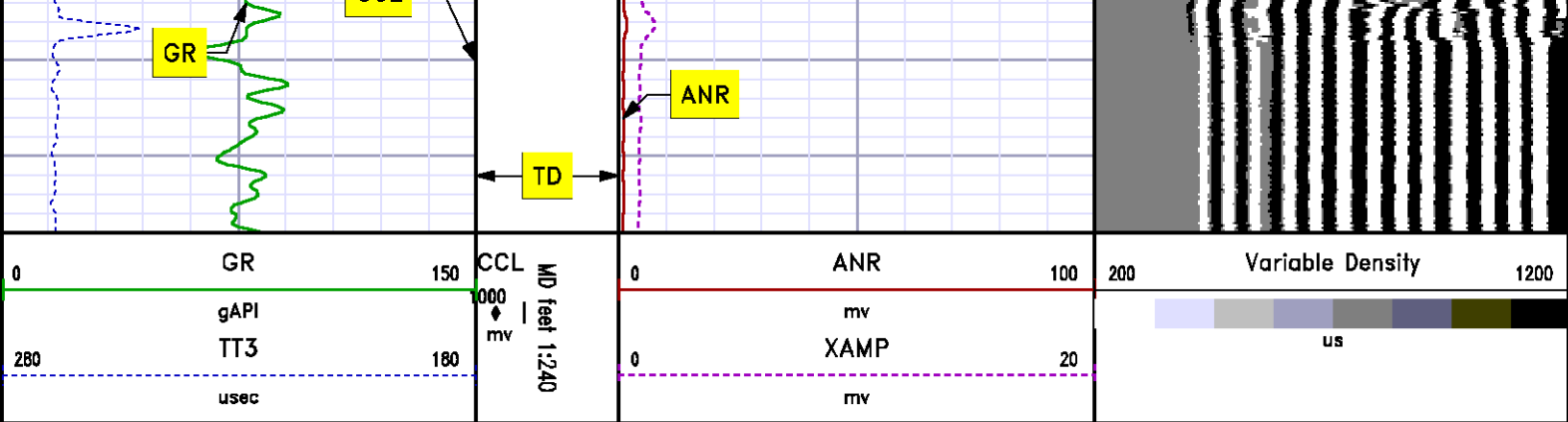












SECONDARY PRESENTATION

0 PSI

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	304.887	u sec	17.280	12729.000
RAL	Amp Gate Start Near	198.031	u sec	17.280	12729.000
RAL	Amp Gate Start Radial	199.125	u sec	17.280	12729.000
RAL	Amp Gate Width Far	25.000	u sec	17.280	12729.000
RAL	Amp Gate Width Near	24.999	u sec	17.280	12729.000
RAL	Amp Gate Width Radial	24.999	u sec	17.280	12729.000
RAL	casing od	4.500	inches	17.280	12729.000
RAL	casing wt	11.600	lbm/ft	17.280	12729.000
RAL	FB Start Far	291.900	u sec	17.280	12729.000
RAL	FB Start Near	175.391	u sec	17.280	12729.000
RAL	FB Start Radial	175.391	u sec	17.280	12729.000
RAL	FB Thresh Far	10.000	mv	17.280	12729.000
RAL	FB Thresh Near	4.000	mv	17.280	12729.000
RAL	FB Thresh Radial	4.000	mv	17.280	12729.000
RAL	Fluid Travel Time	200.000	u sec/ft	17.280	12727.062

DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
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1426XA	-16.750	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-15.750	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.490	GR					
2459XA	-4.090	NEU					

Created by : RAL, v4.8.008
Plotted by : PlotMgr, v5.4.504
Company : WILLIAMS PRODUCTION COMPANY
Well : FEDERAL RGU 13-24-198
File Name : d:\welldata\williams\federal rgu 13-24-198\cbl13\main.xtf
Mode : PlotMgr 5.4.504
Interval : 0.00 - 12688.00 feet UP
Created : 11/17/2011 4:47:56 PM

0	GR	150	CCL	MD feet 1:240	0	ANR	100	Variable Density	0	AR1	100	0	PBMAP	360
	gAPI		600			mv		200		0	AR2	100		
280	TT3	180	mv		0	XAMP	20			0	AR3	100	80	20
	usec					mv		1200		0	AR4	100		
								us		0	AR5	100		
										0	AR6	100		
										0	AR7	100		
										0	AR8	100		

WELLHEAD

ANR

GR

CCL

XAMP

FLUID LEVEL

AR1

AR2

AR3

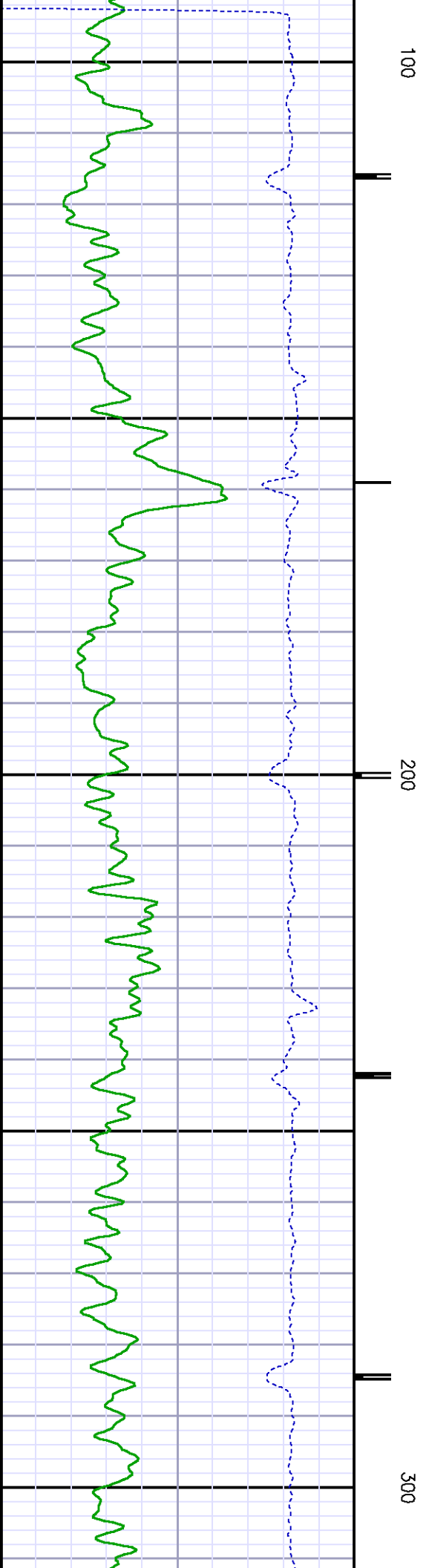
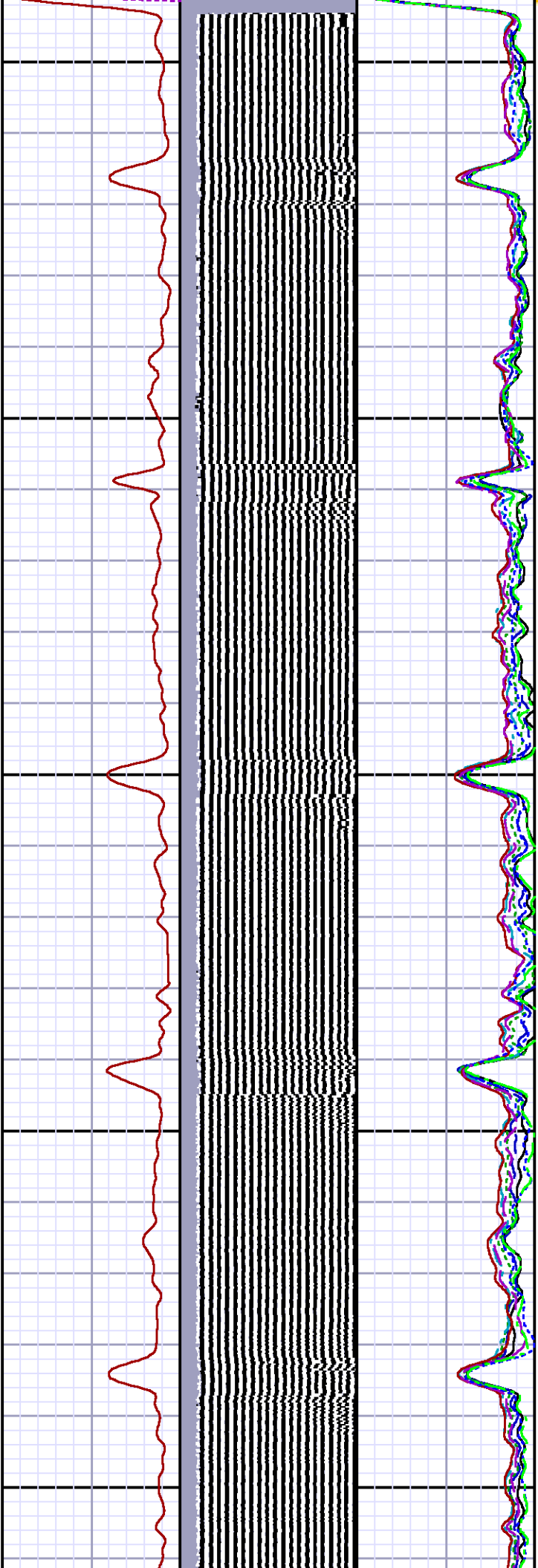
AR4

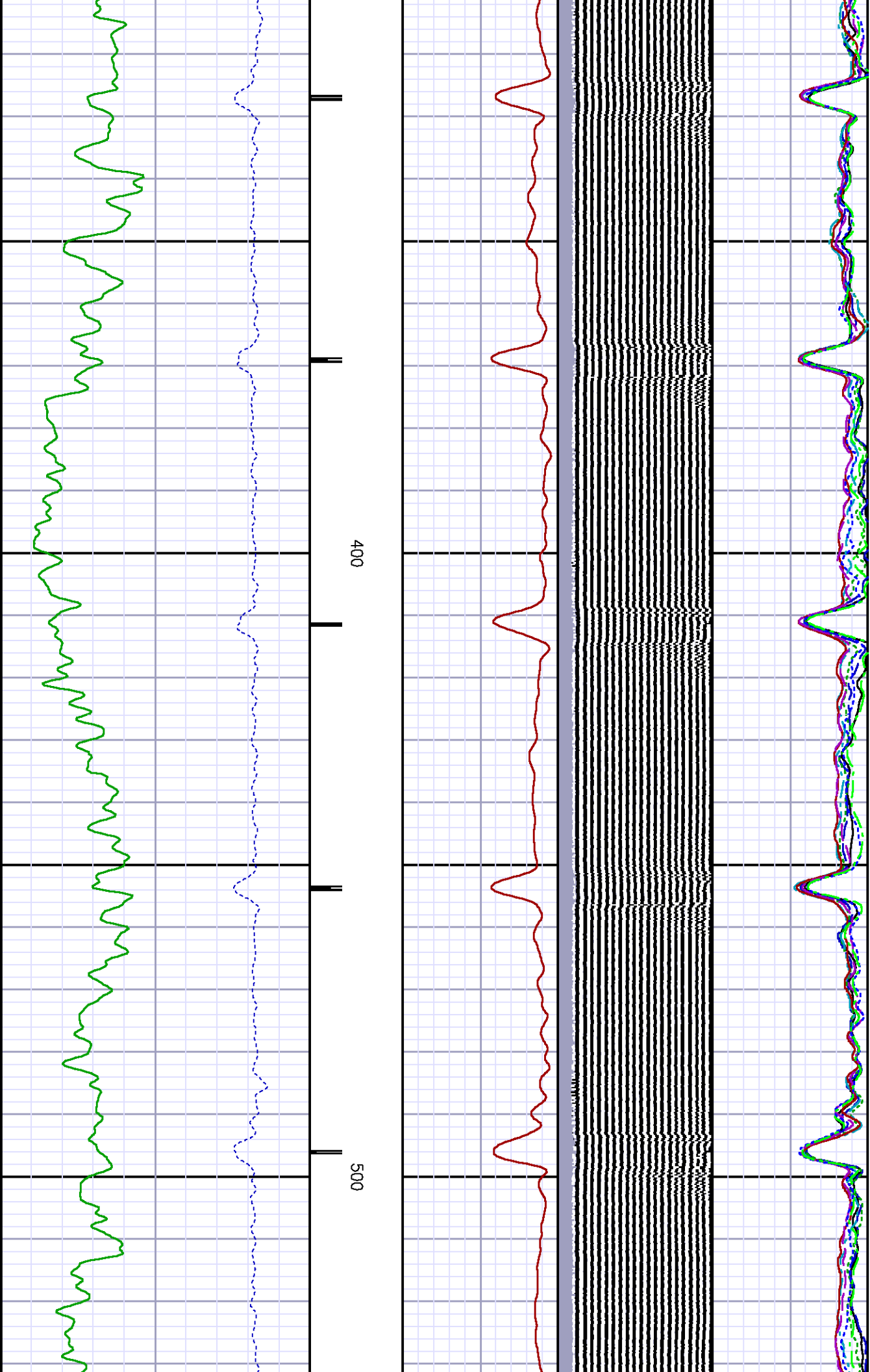
AR5

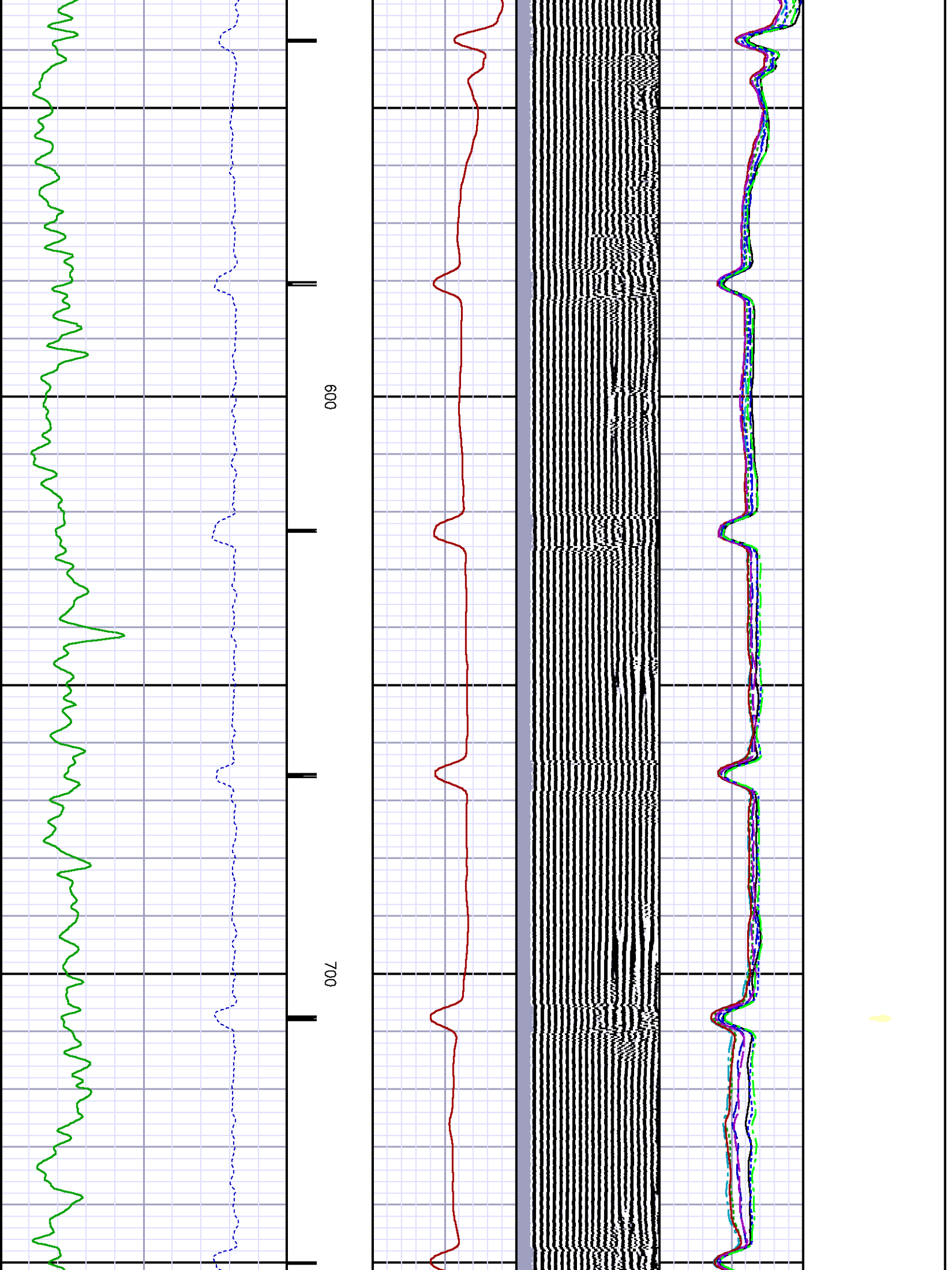
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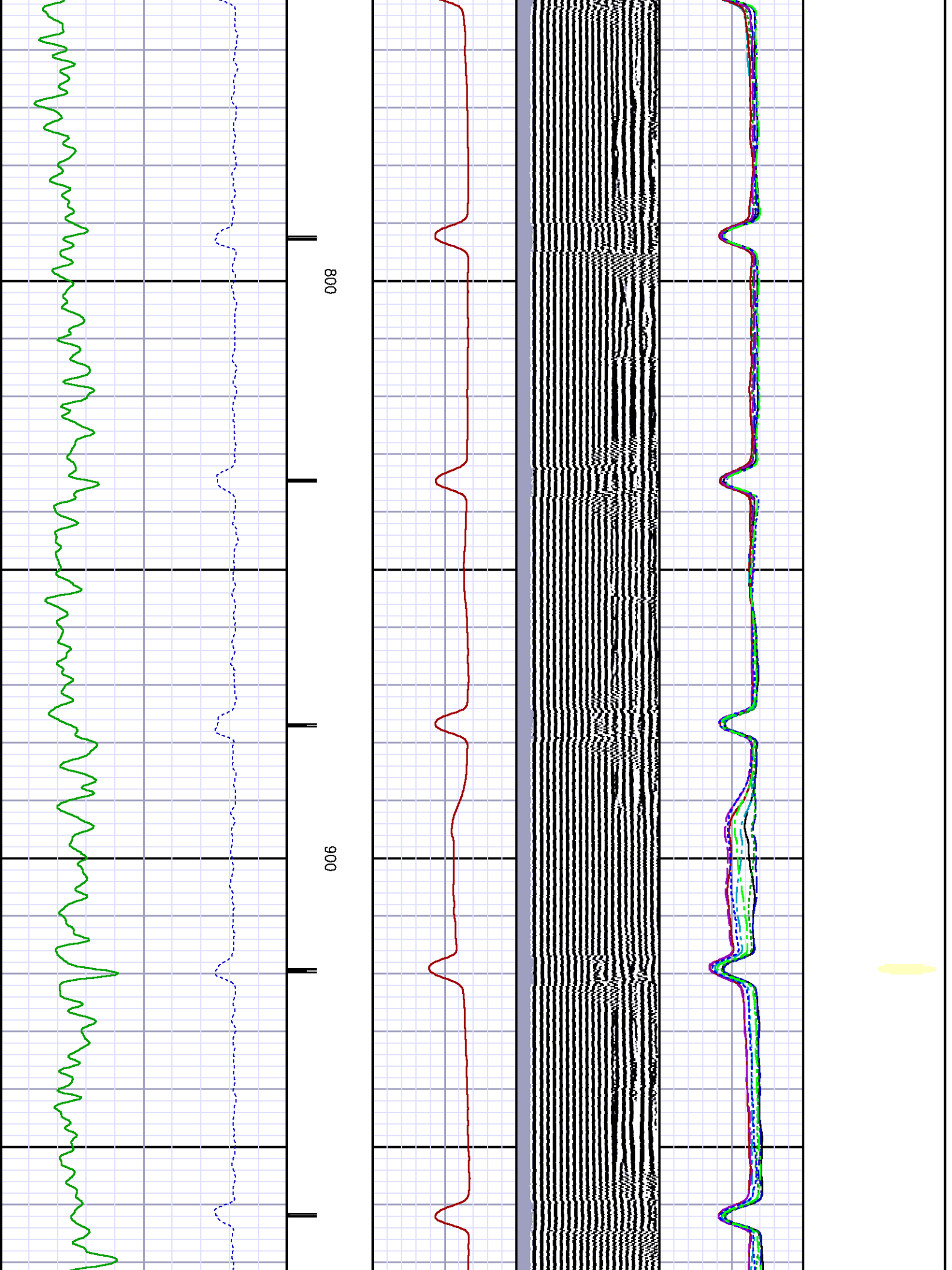
AR7

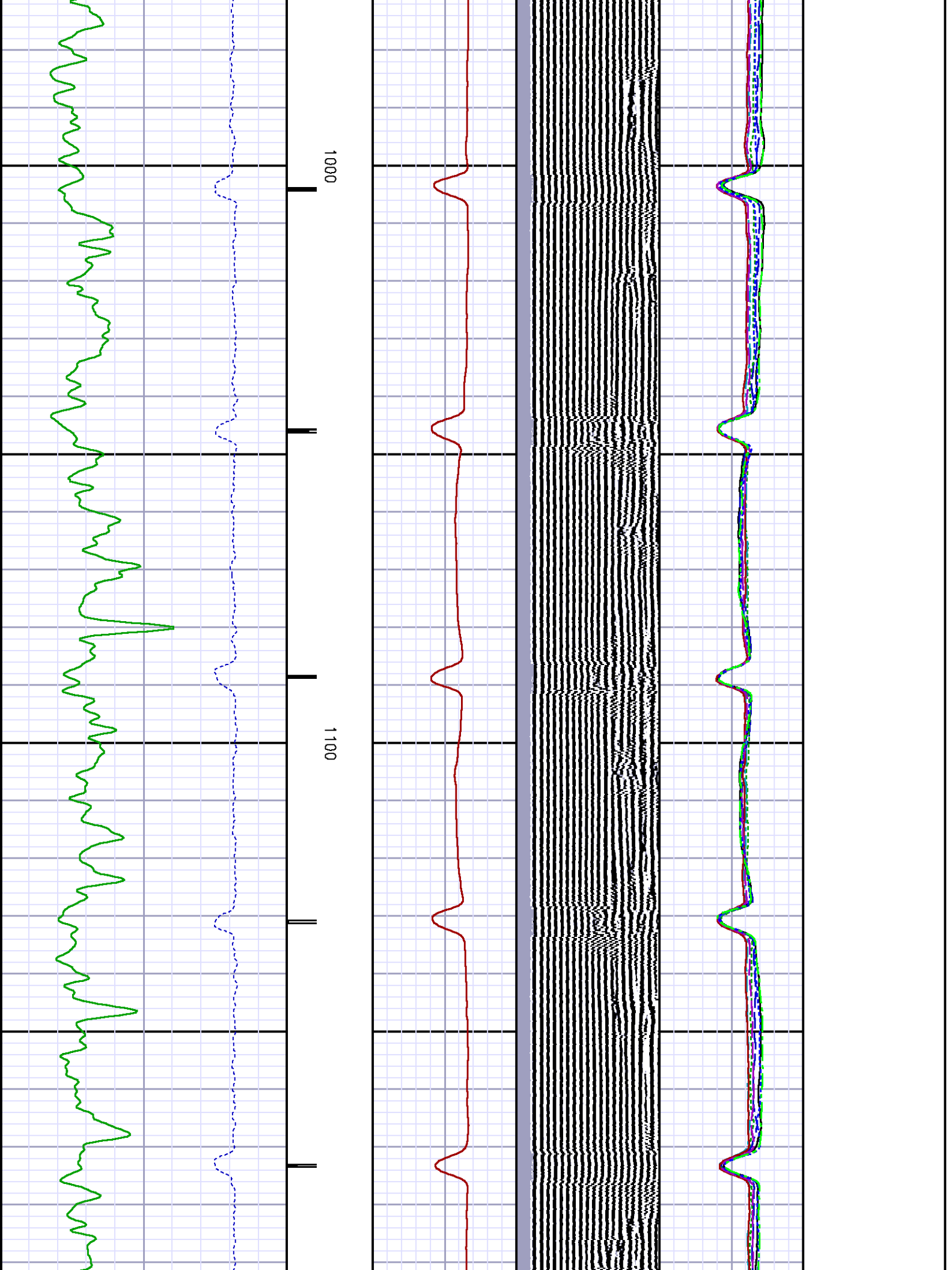
AR8

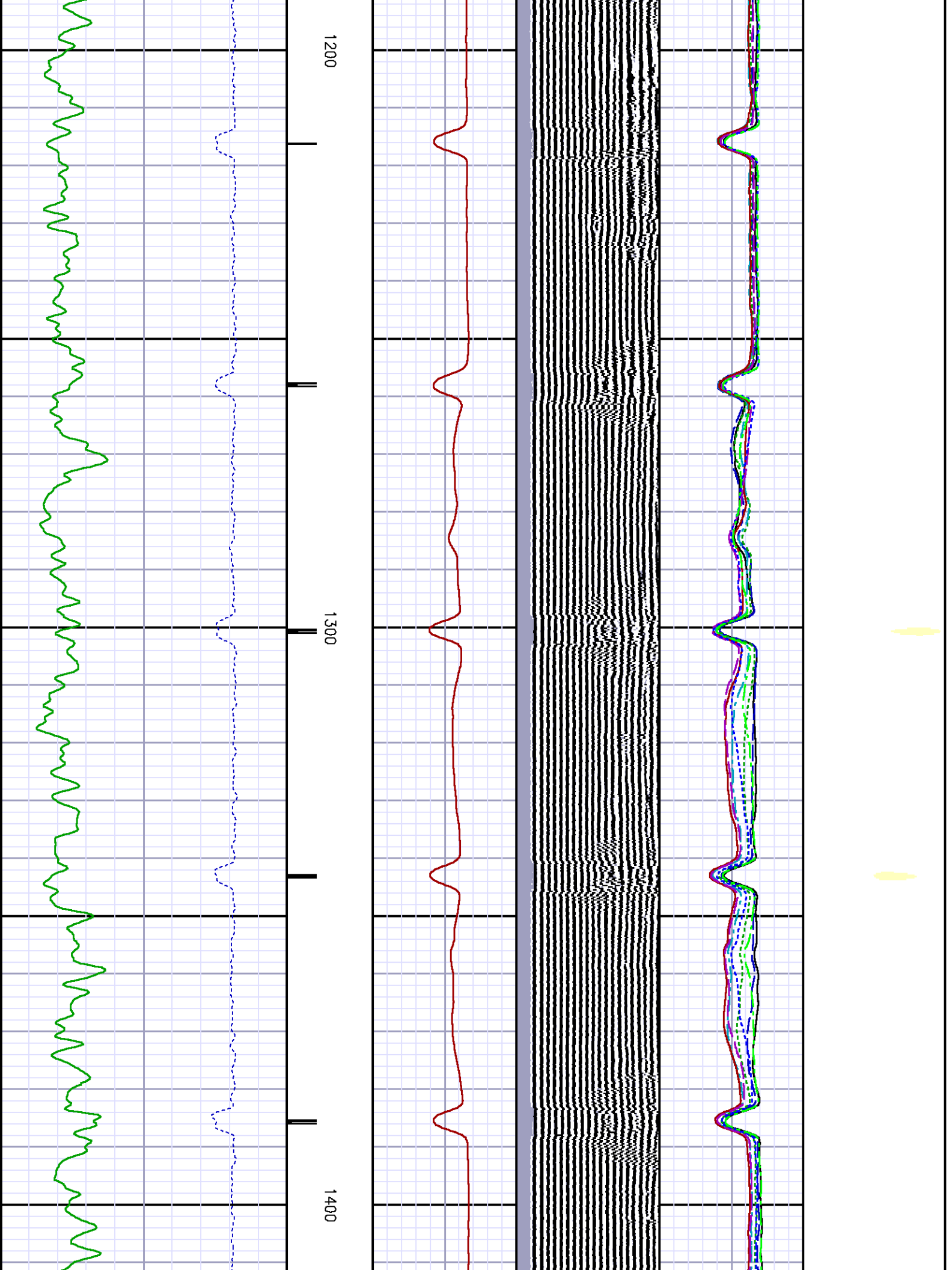


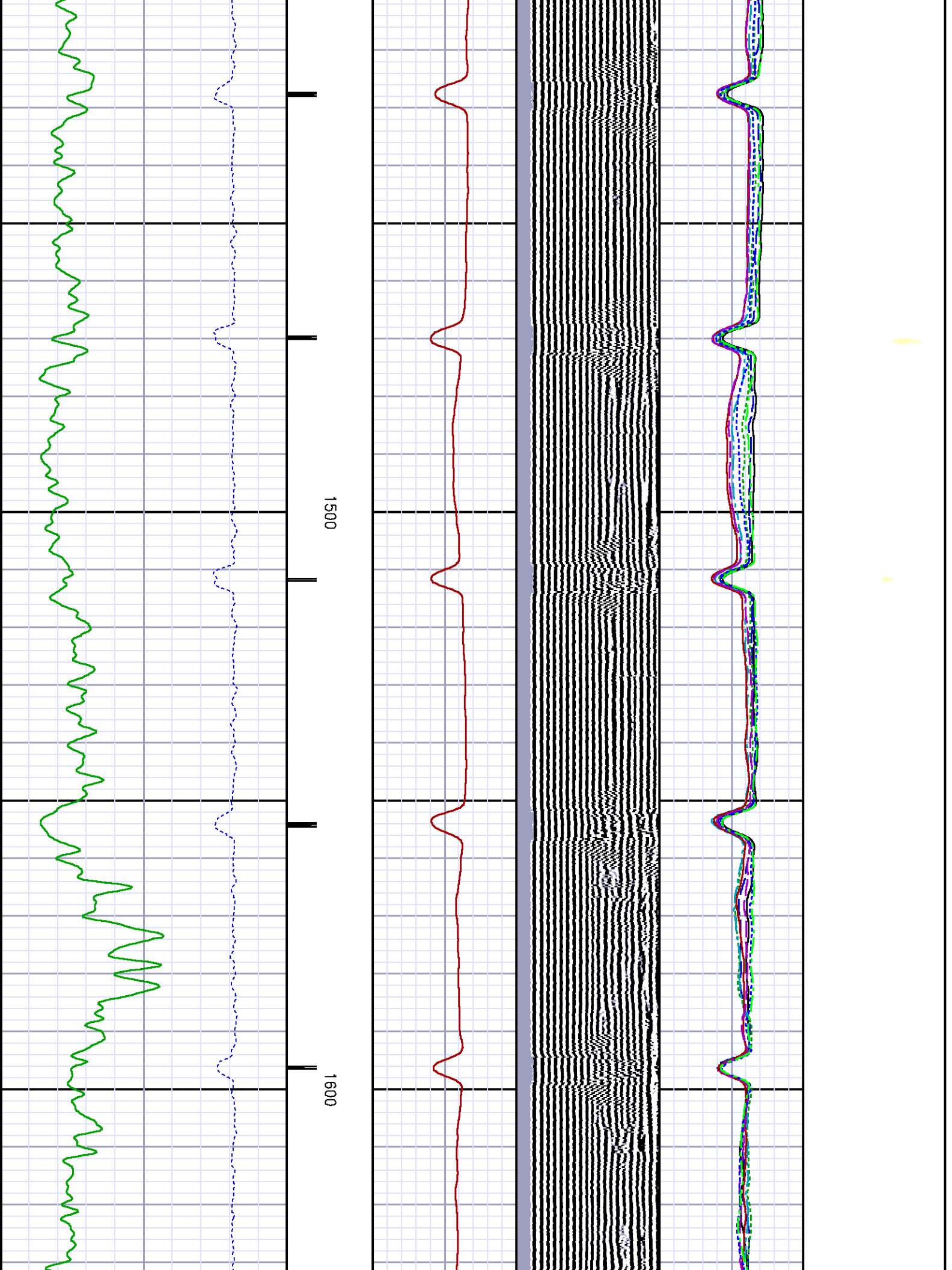


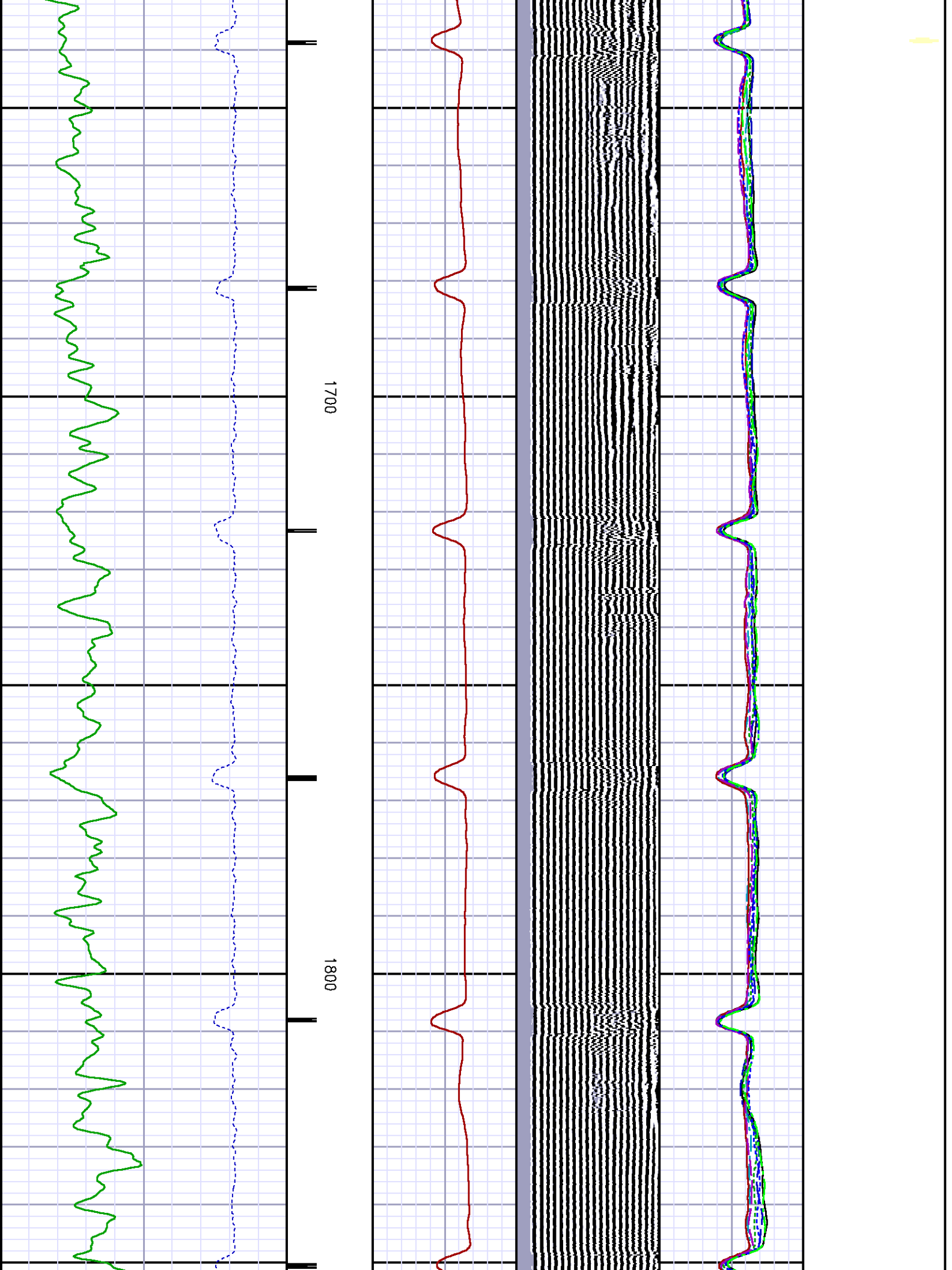


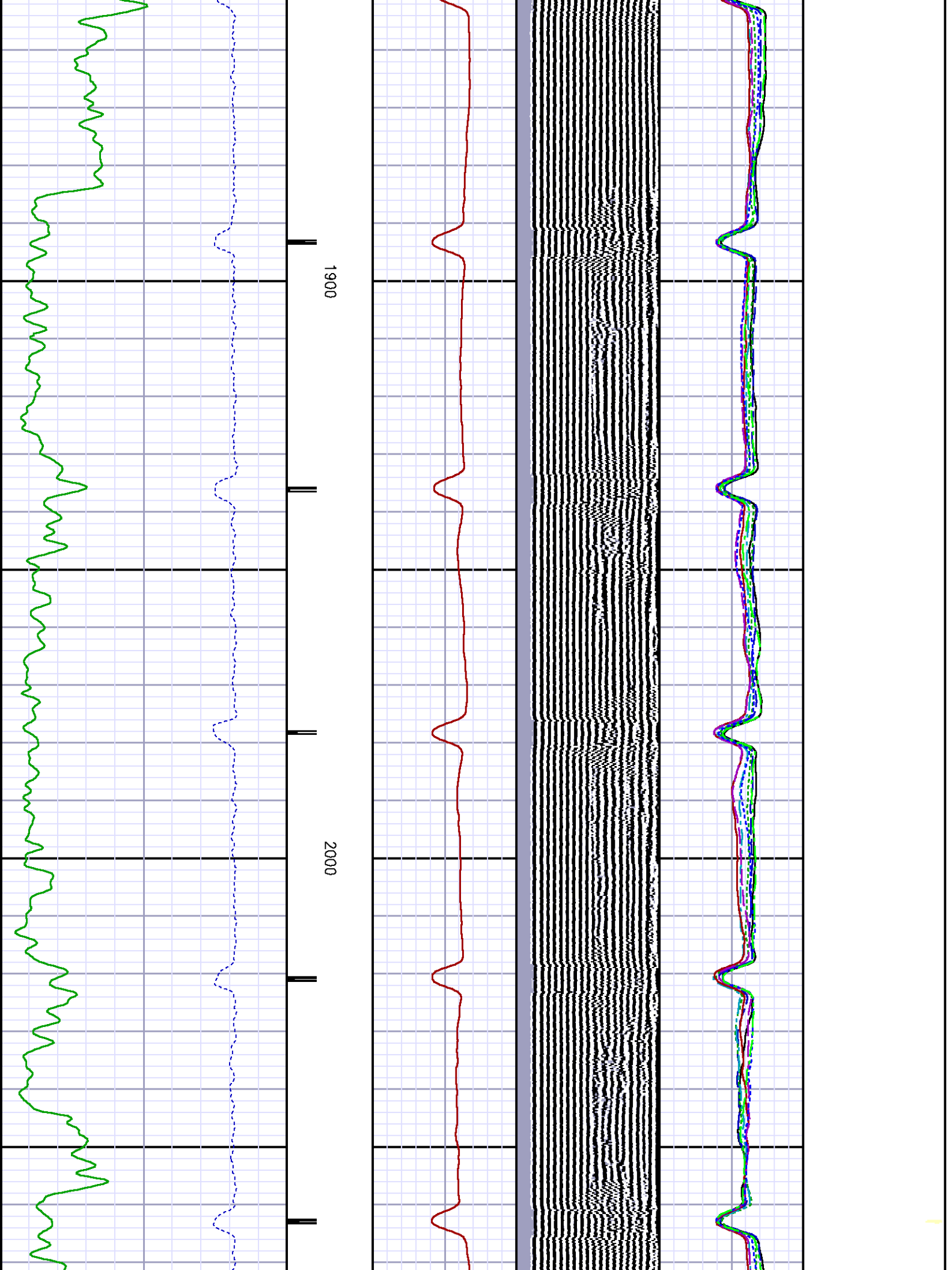


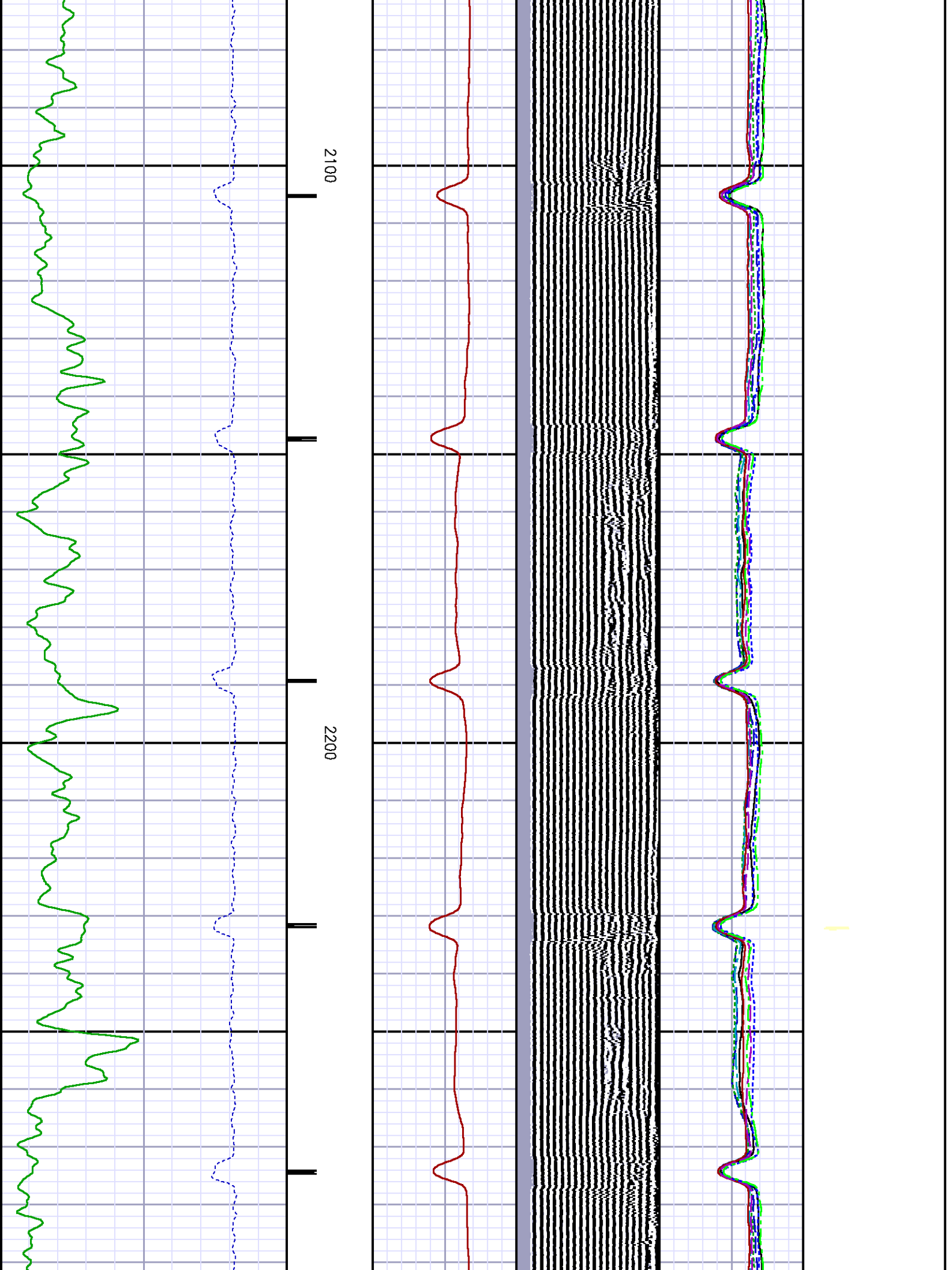


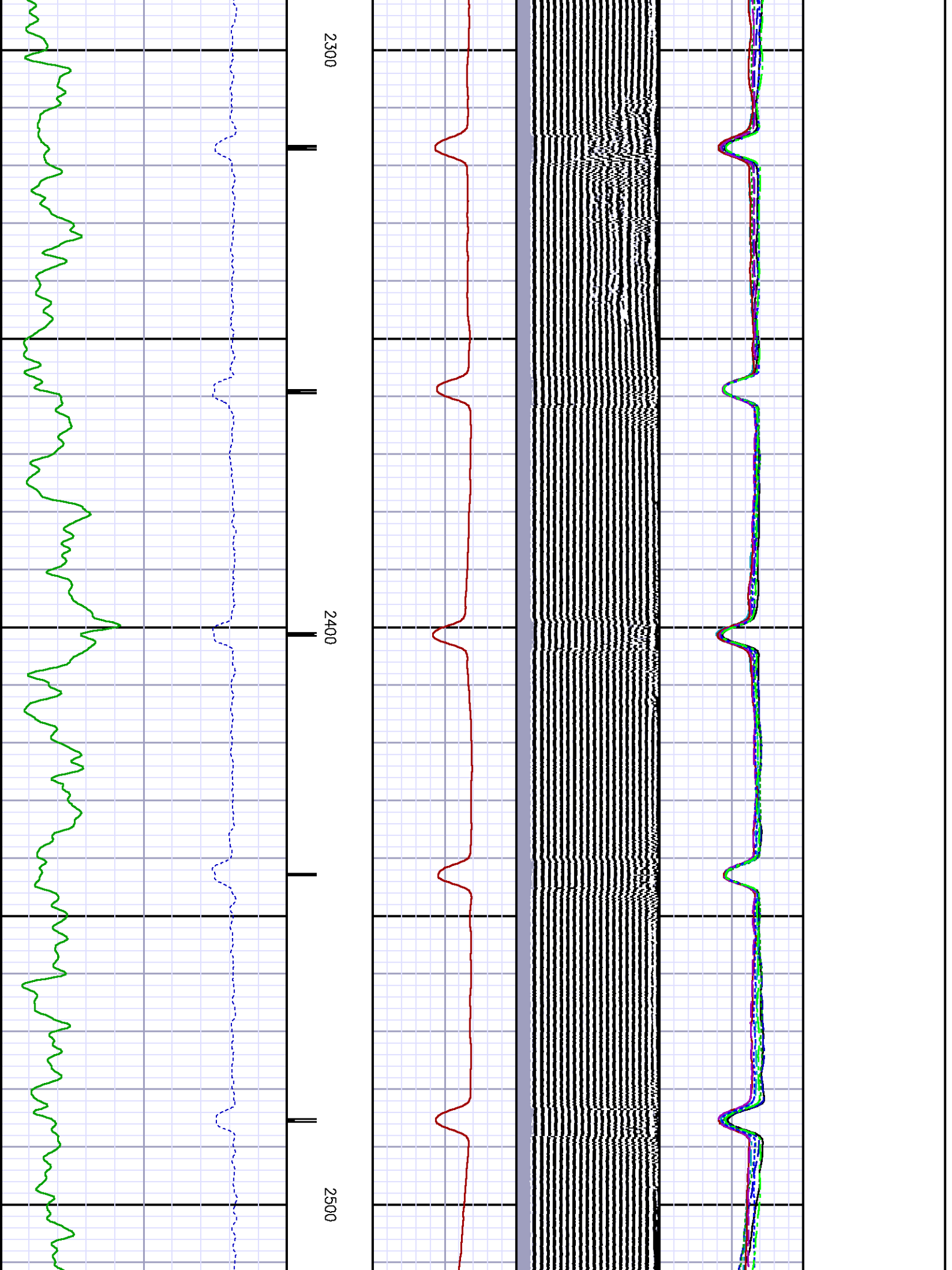


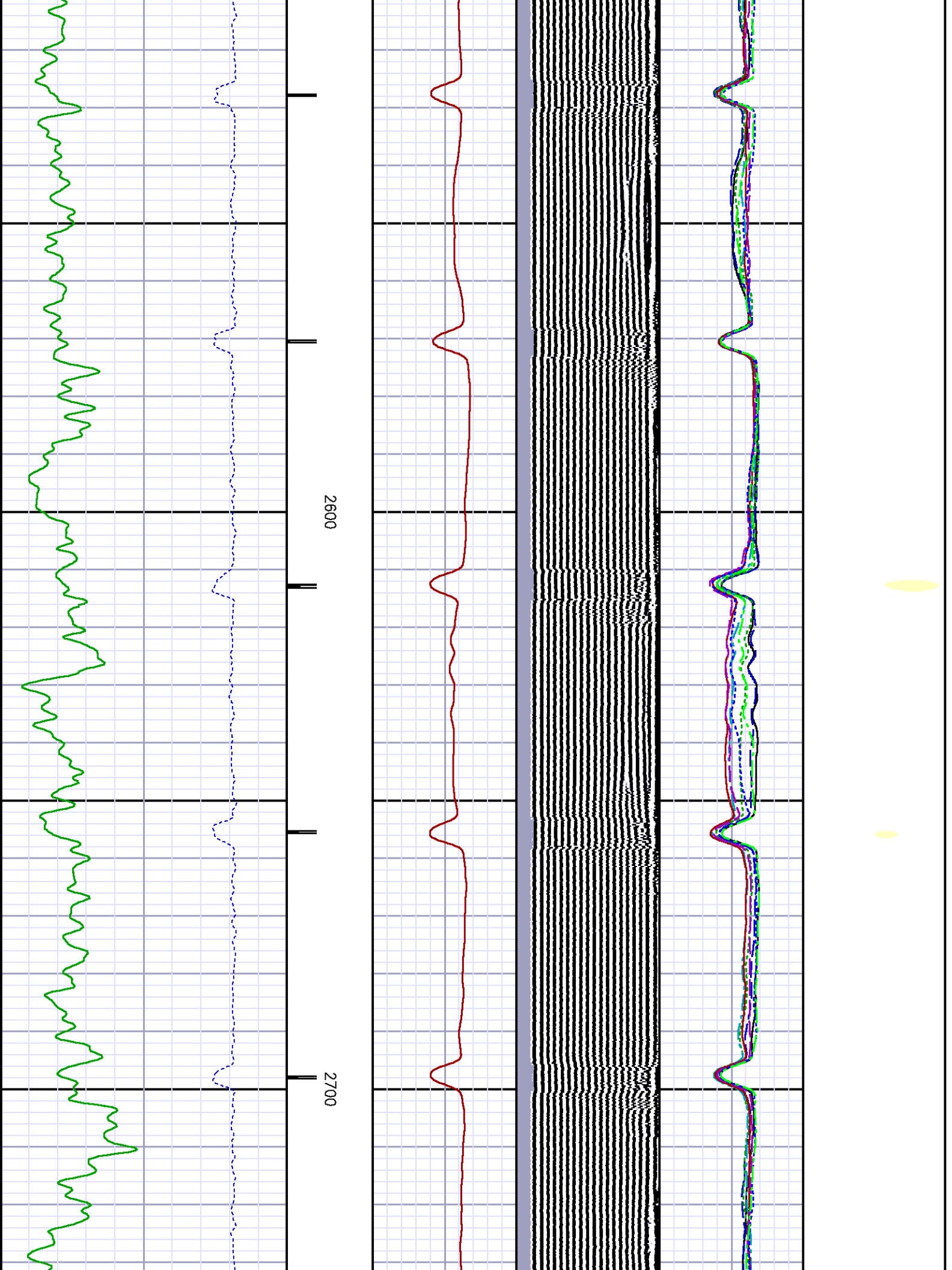


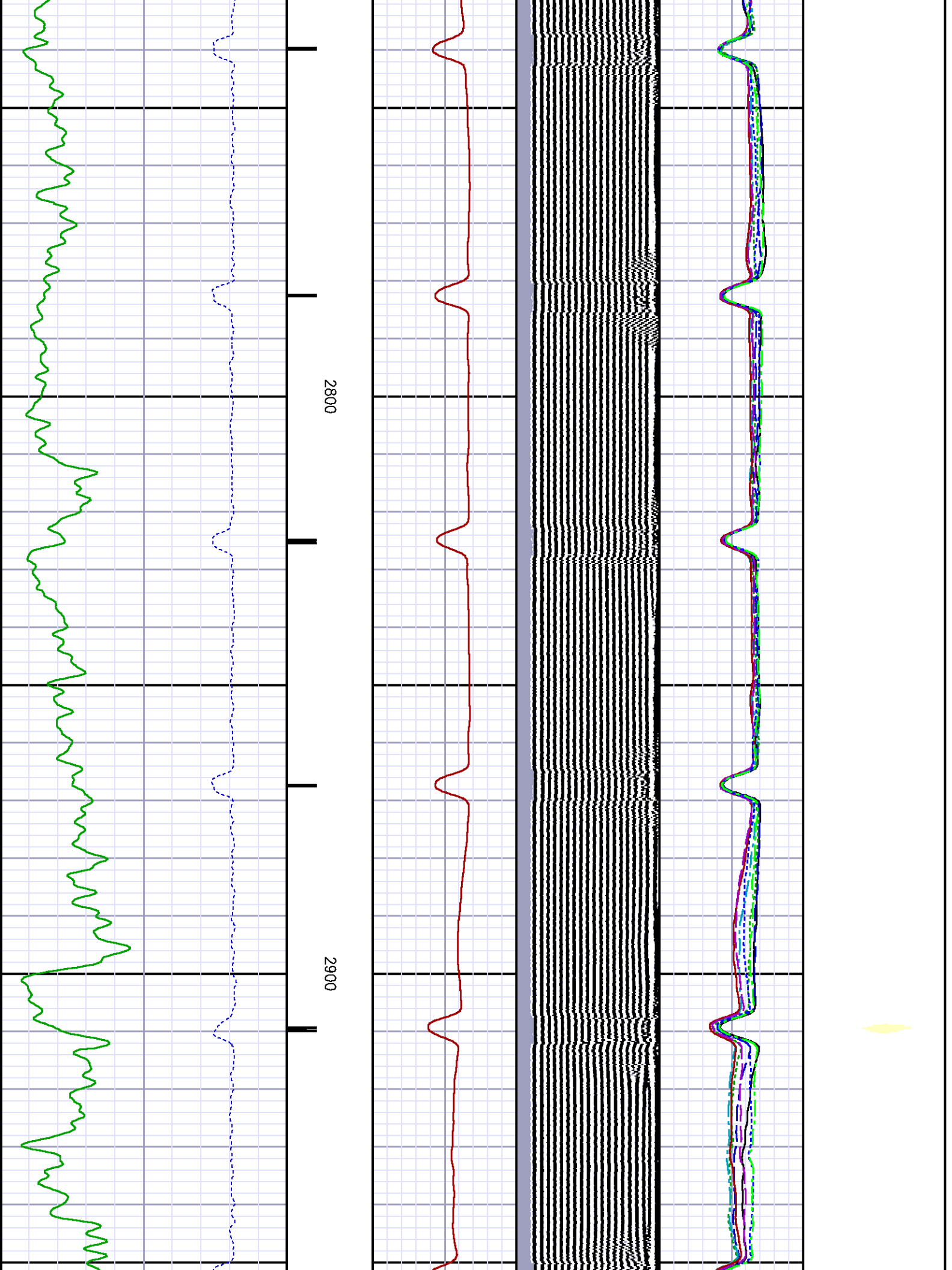


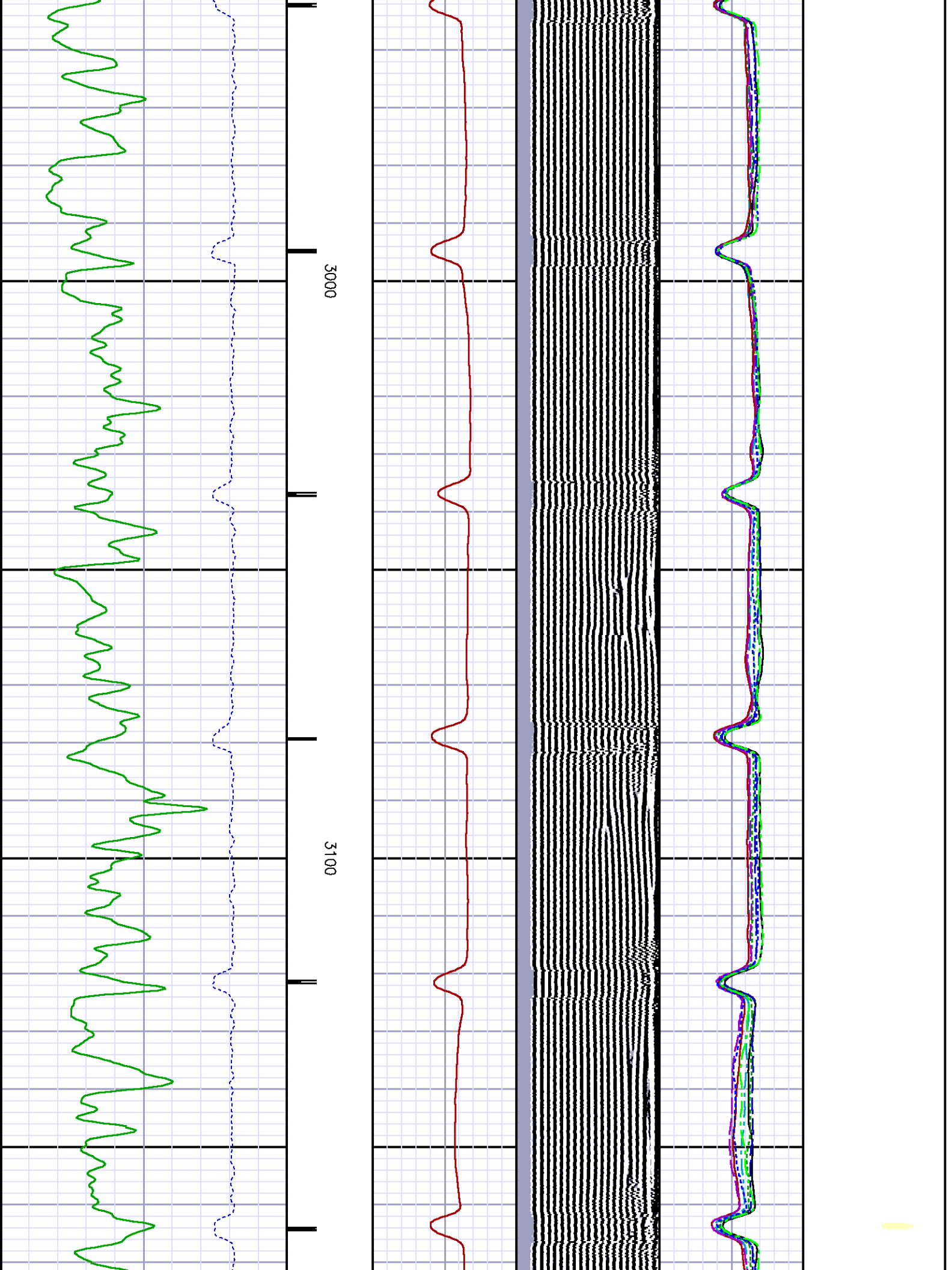


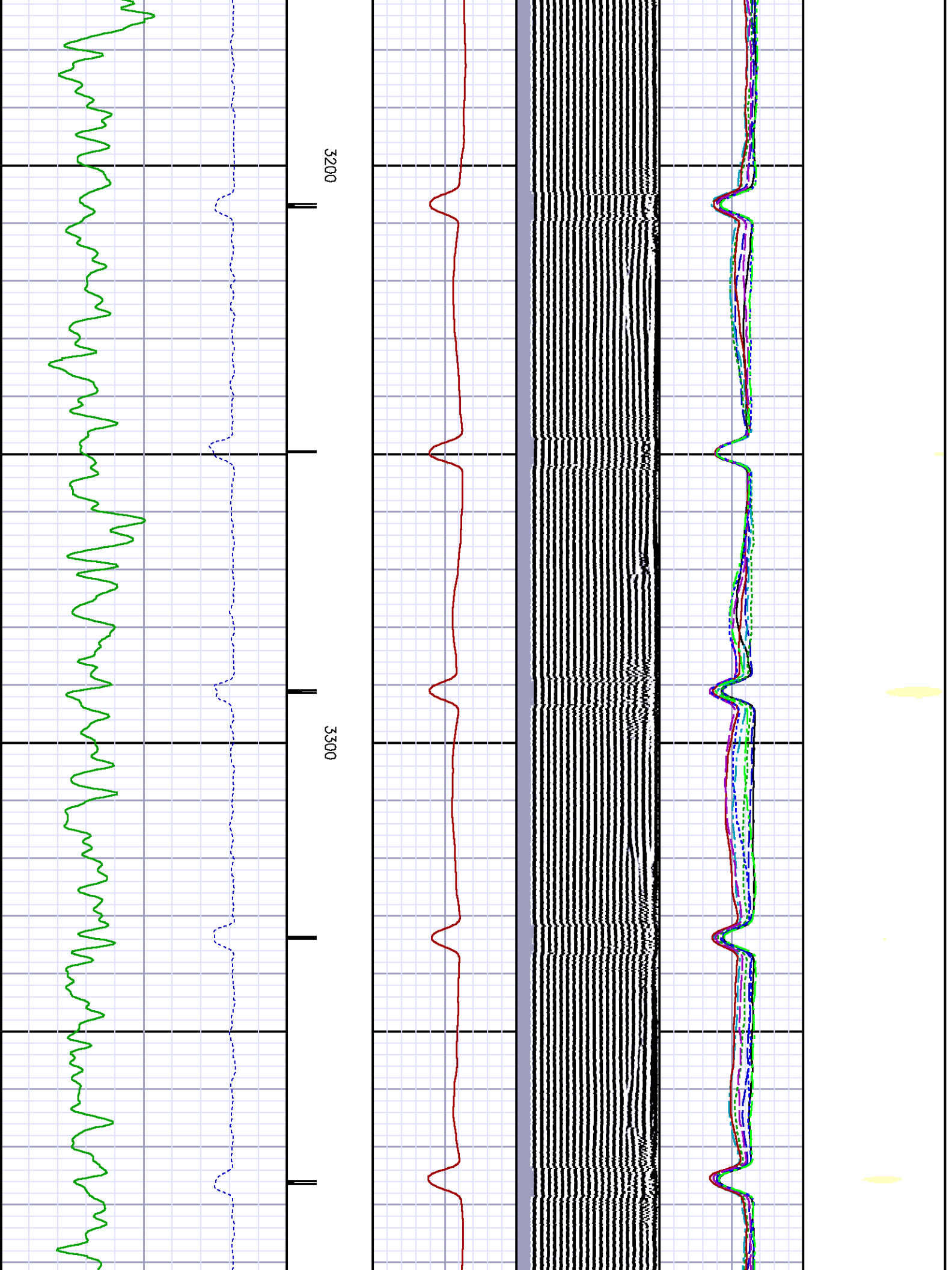


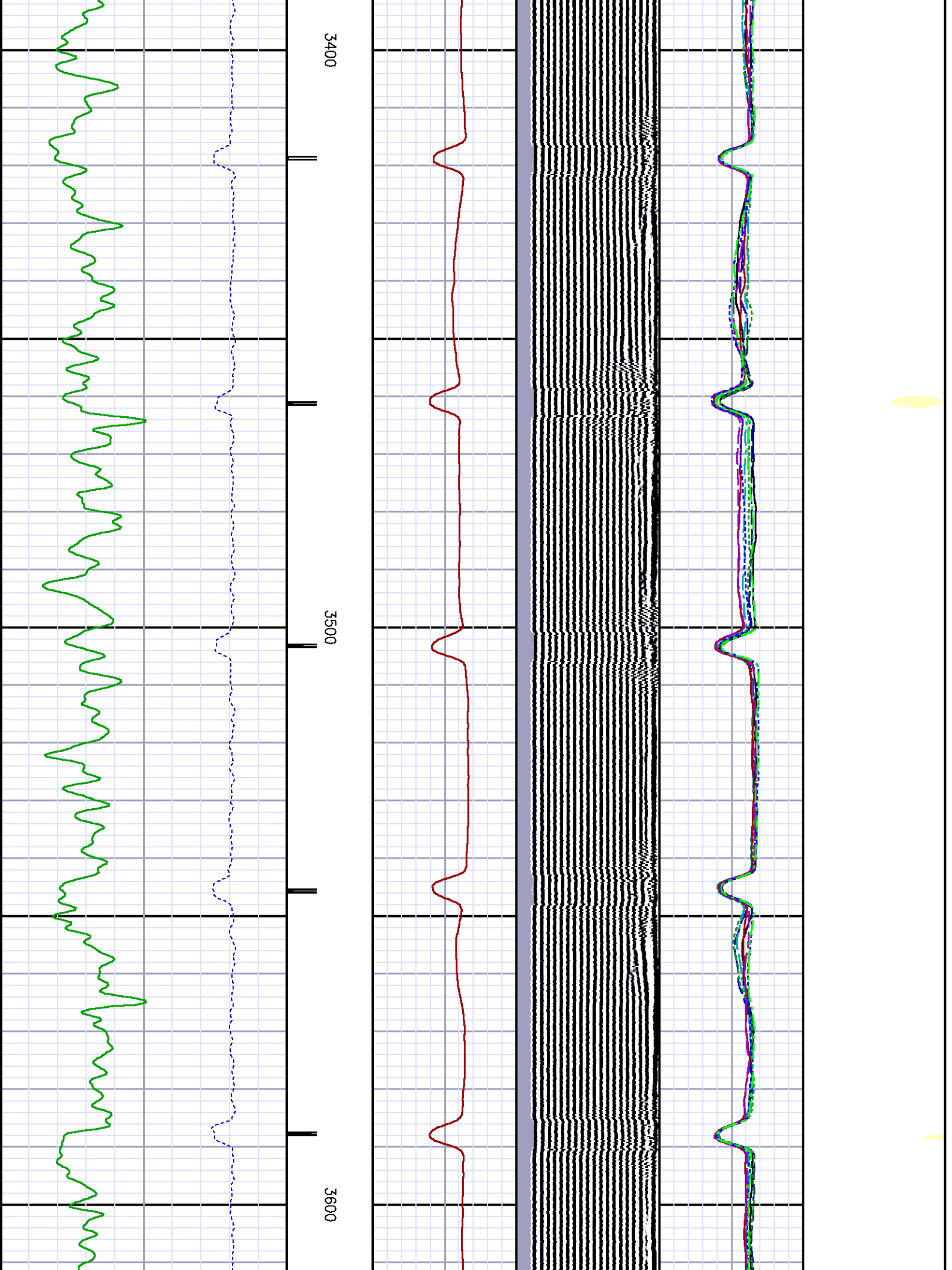


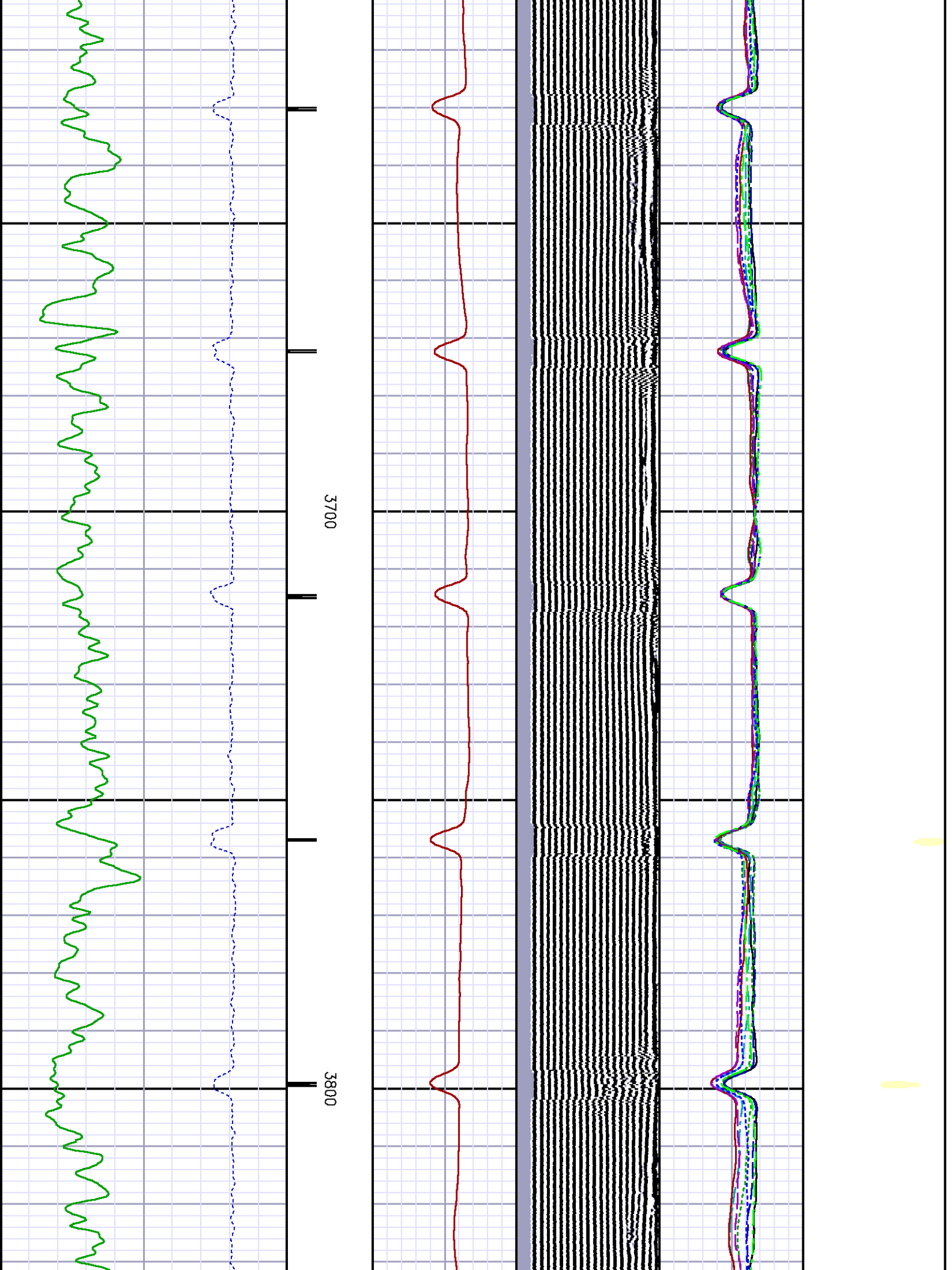


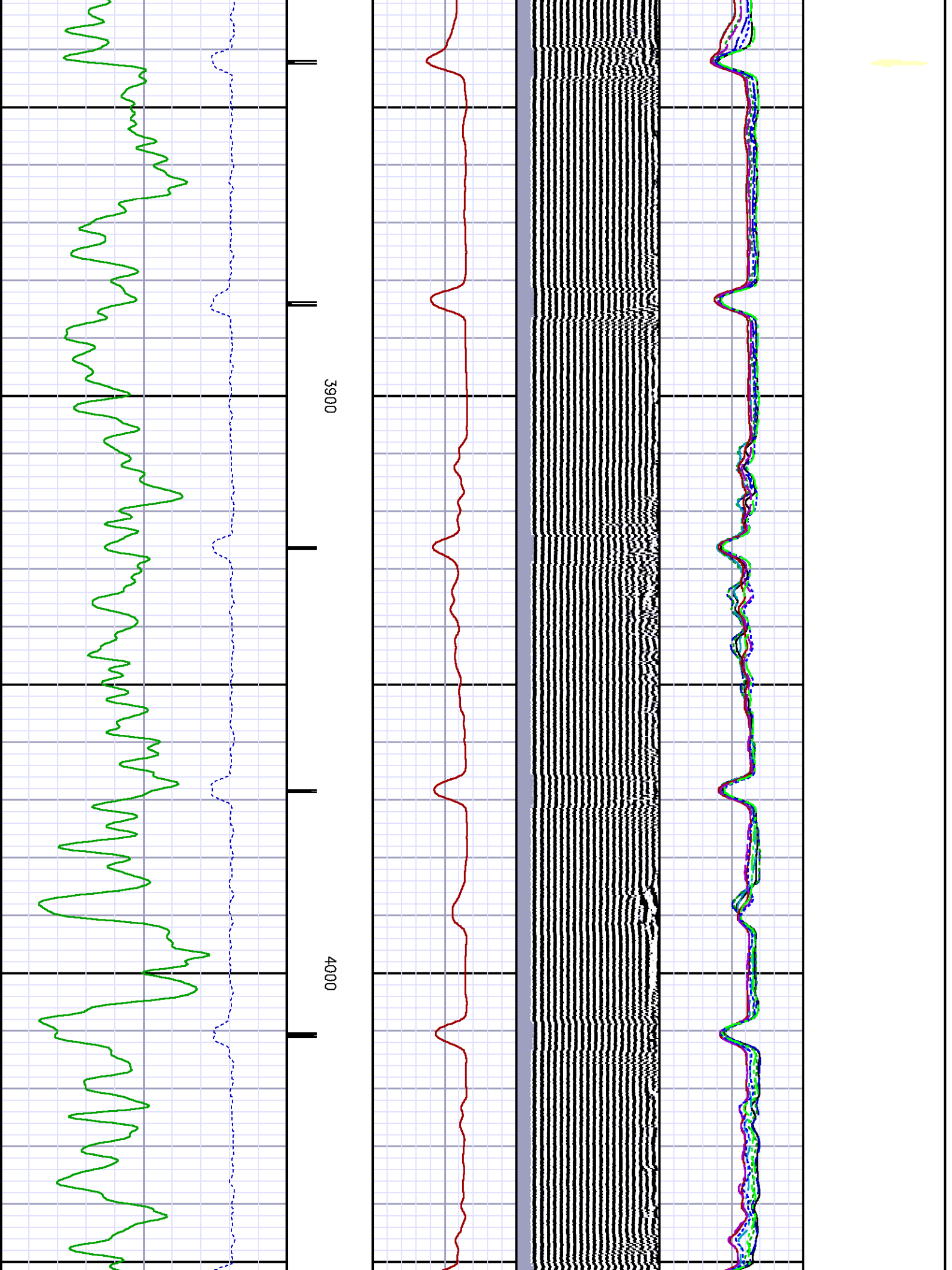


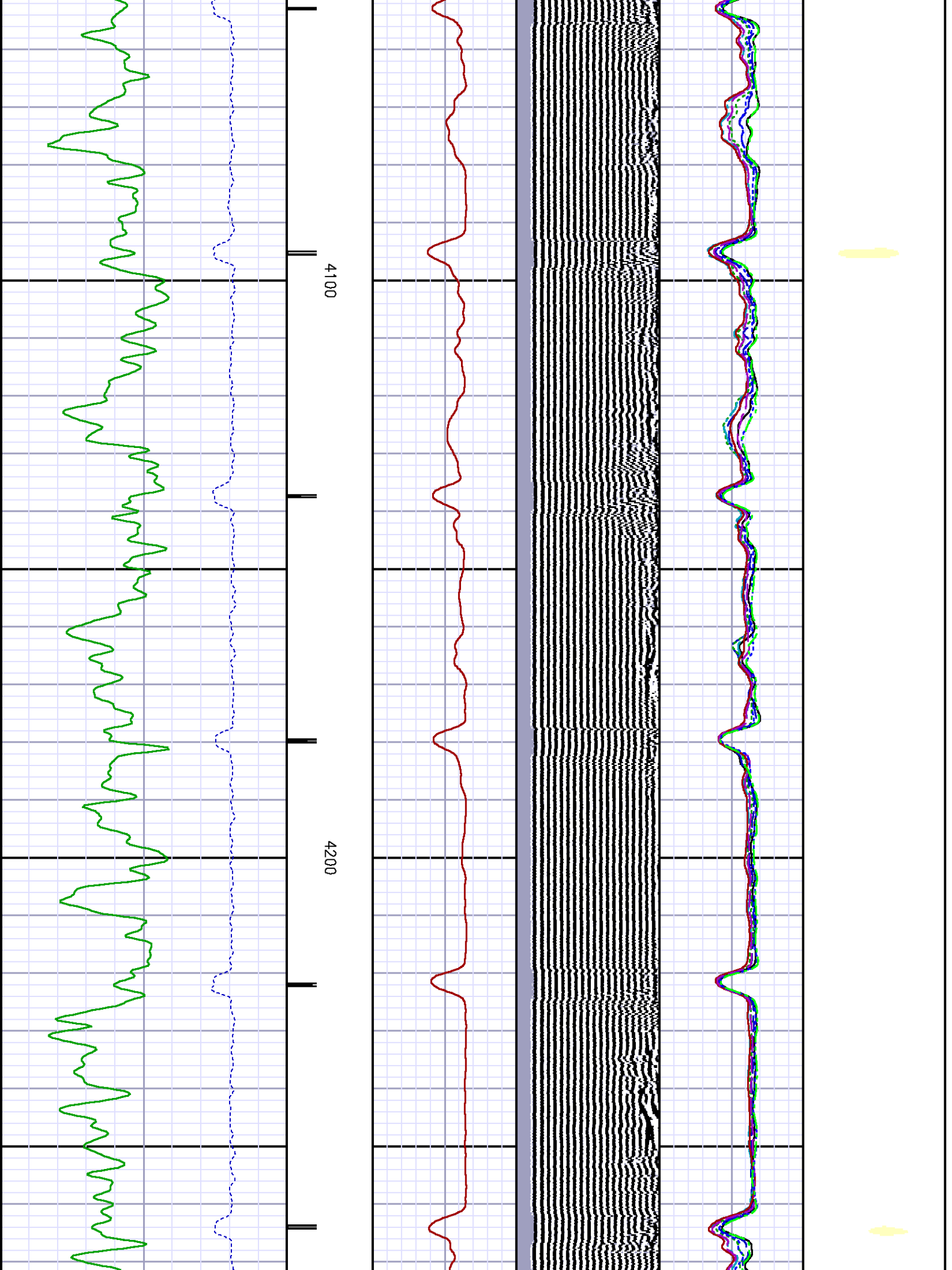


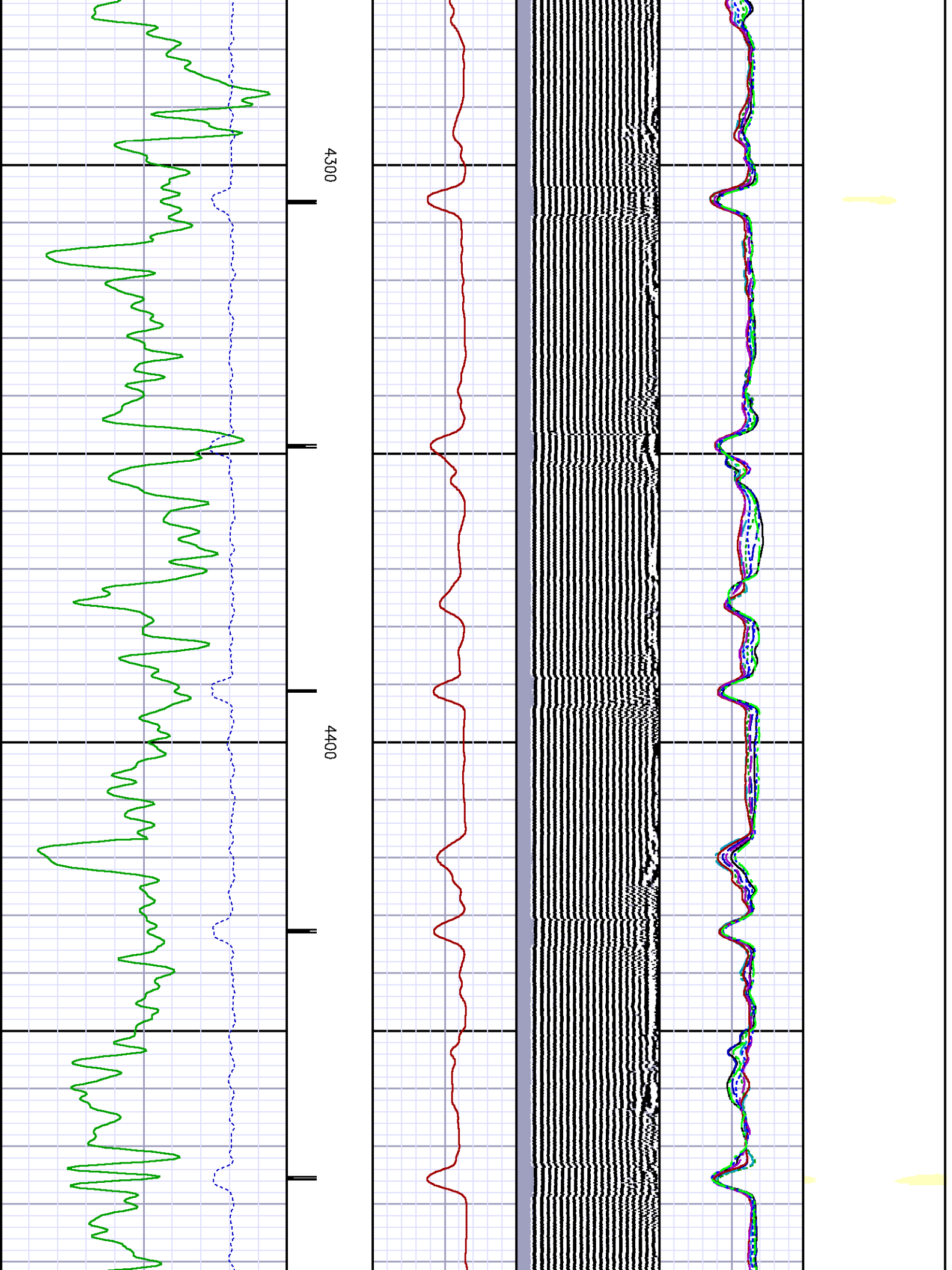


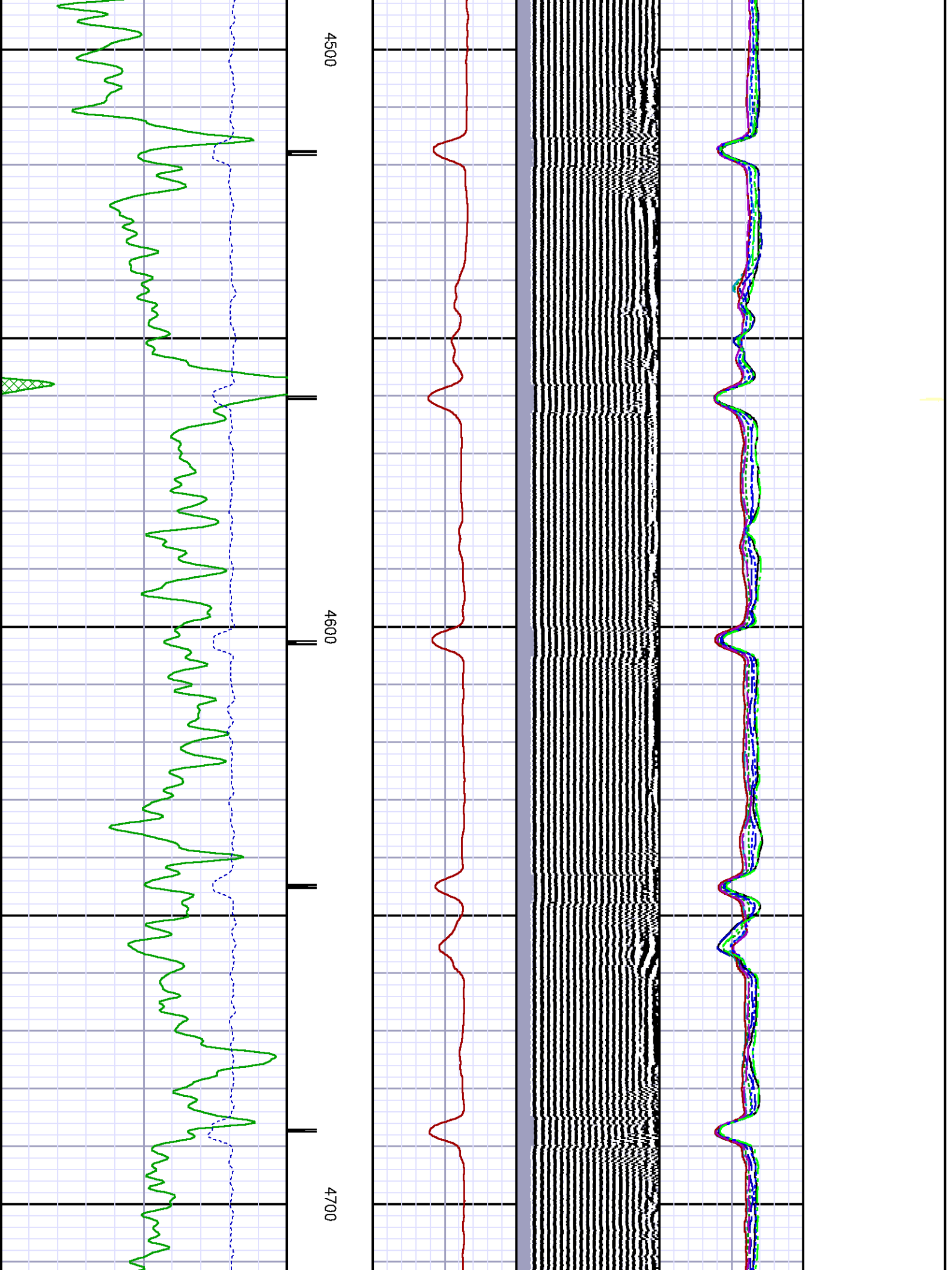


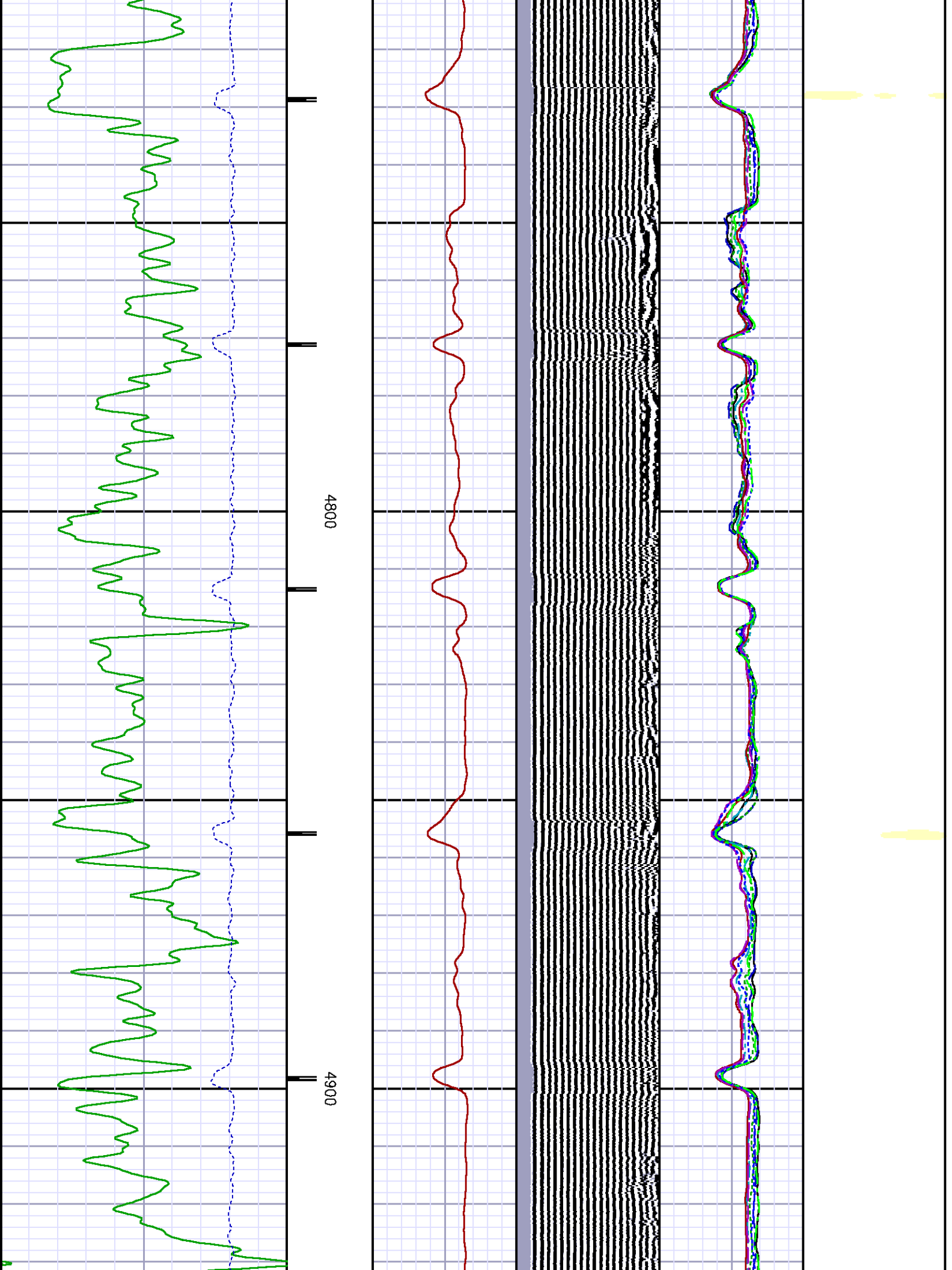


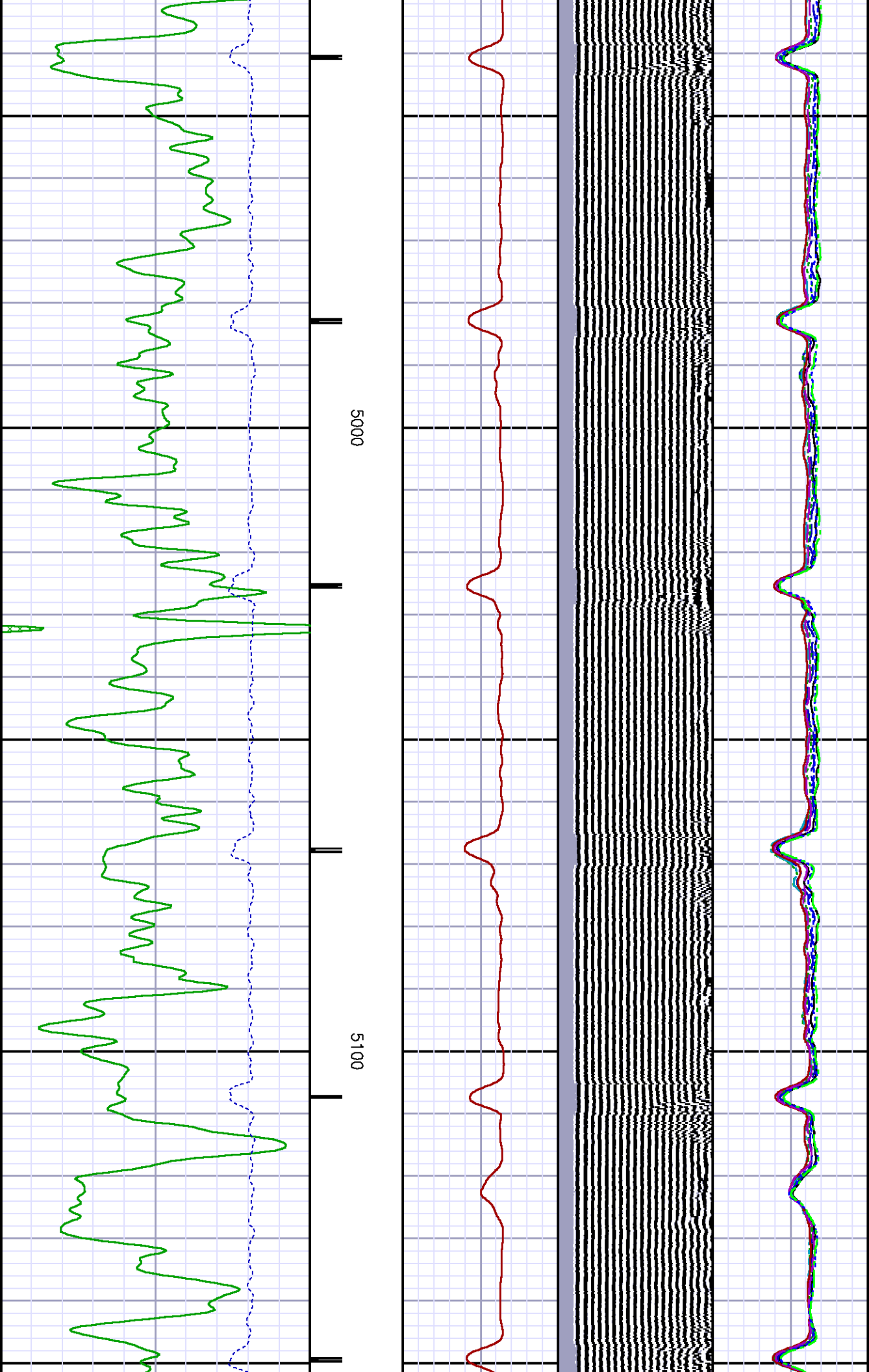


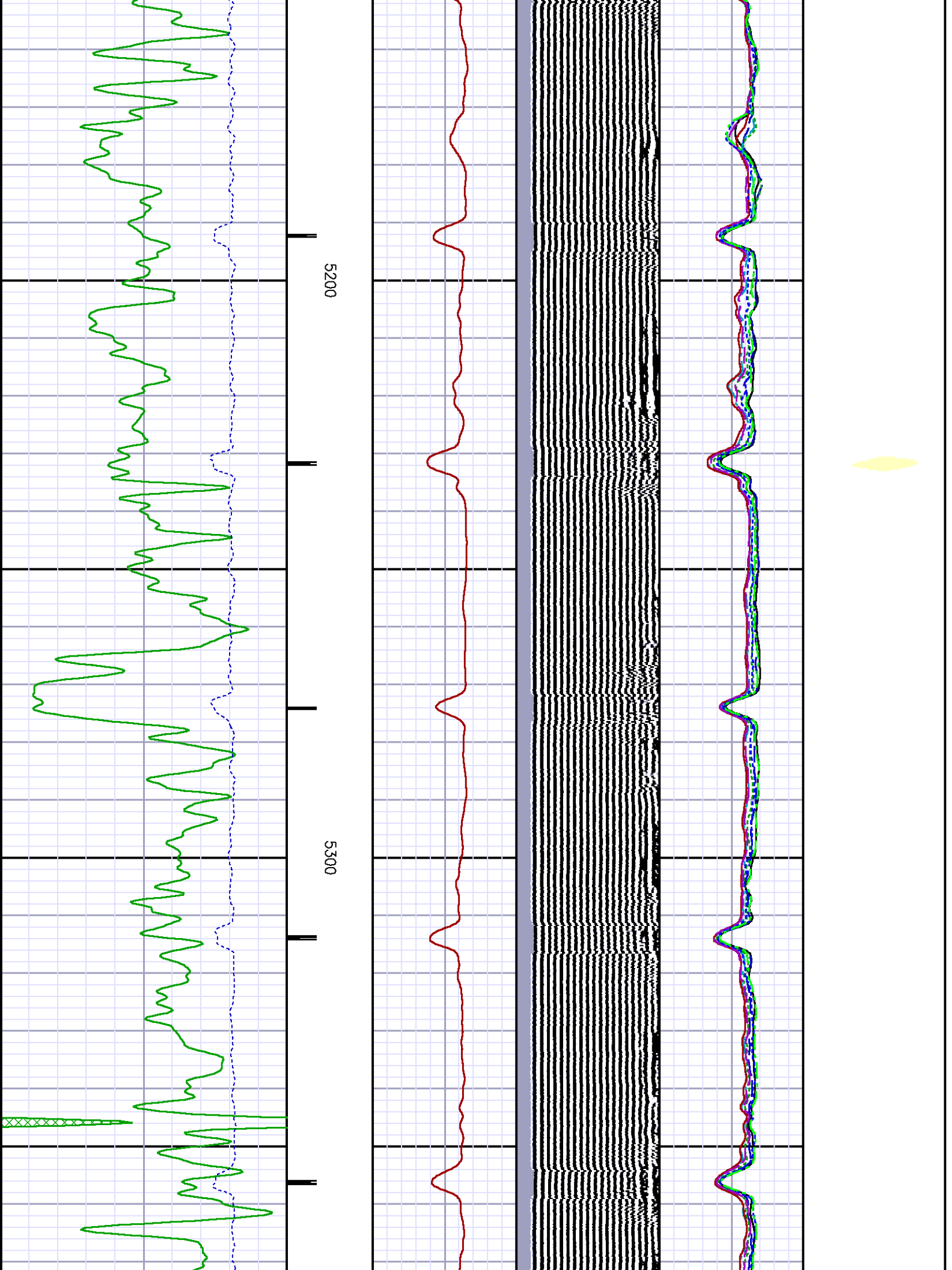


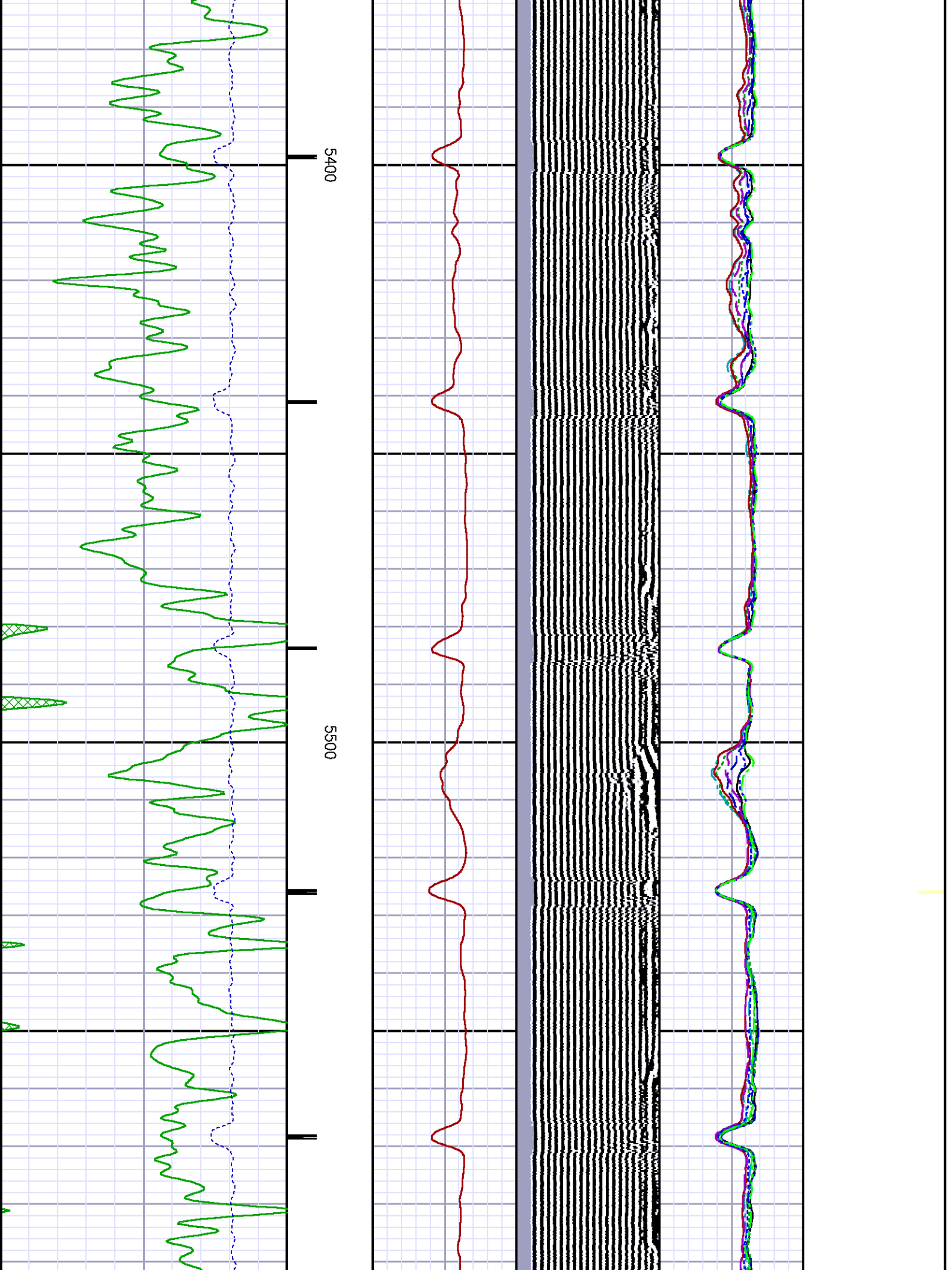


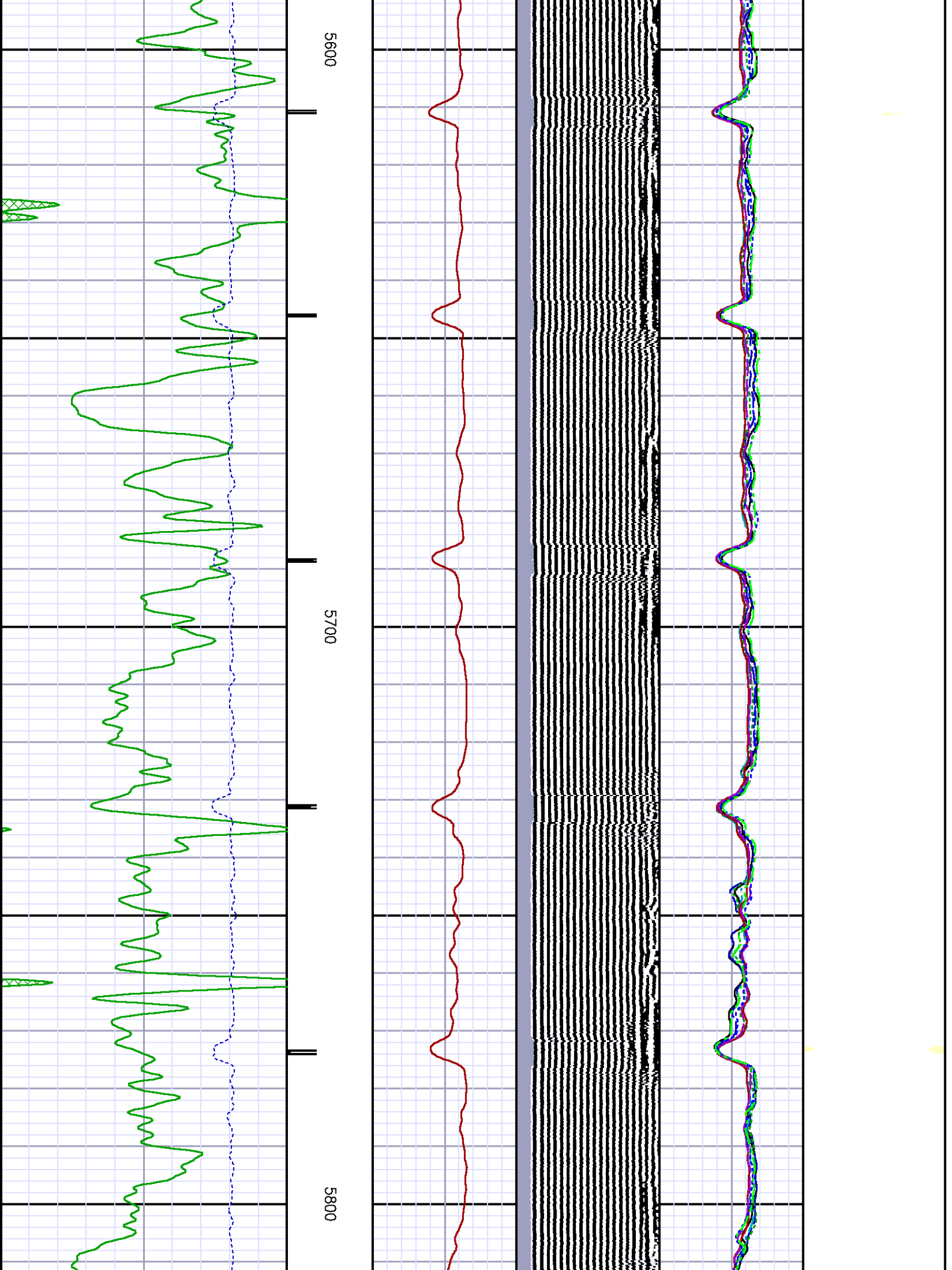


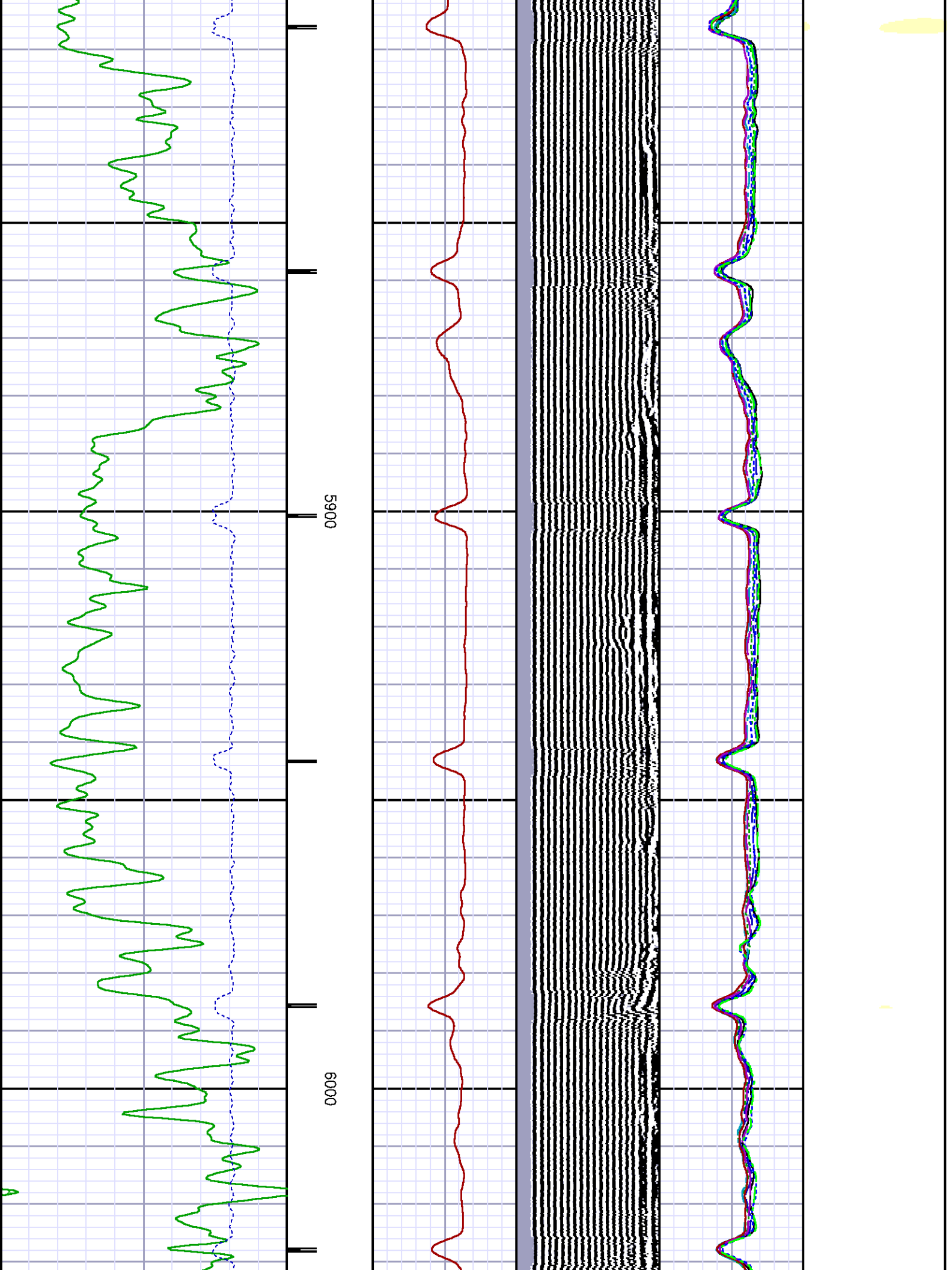


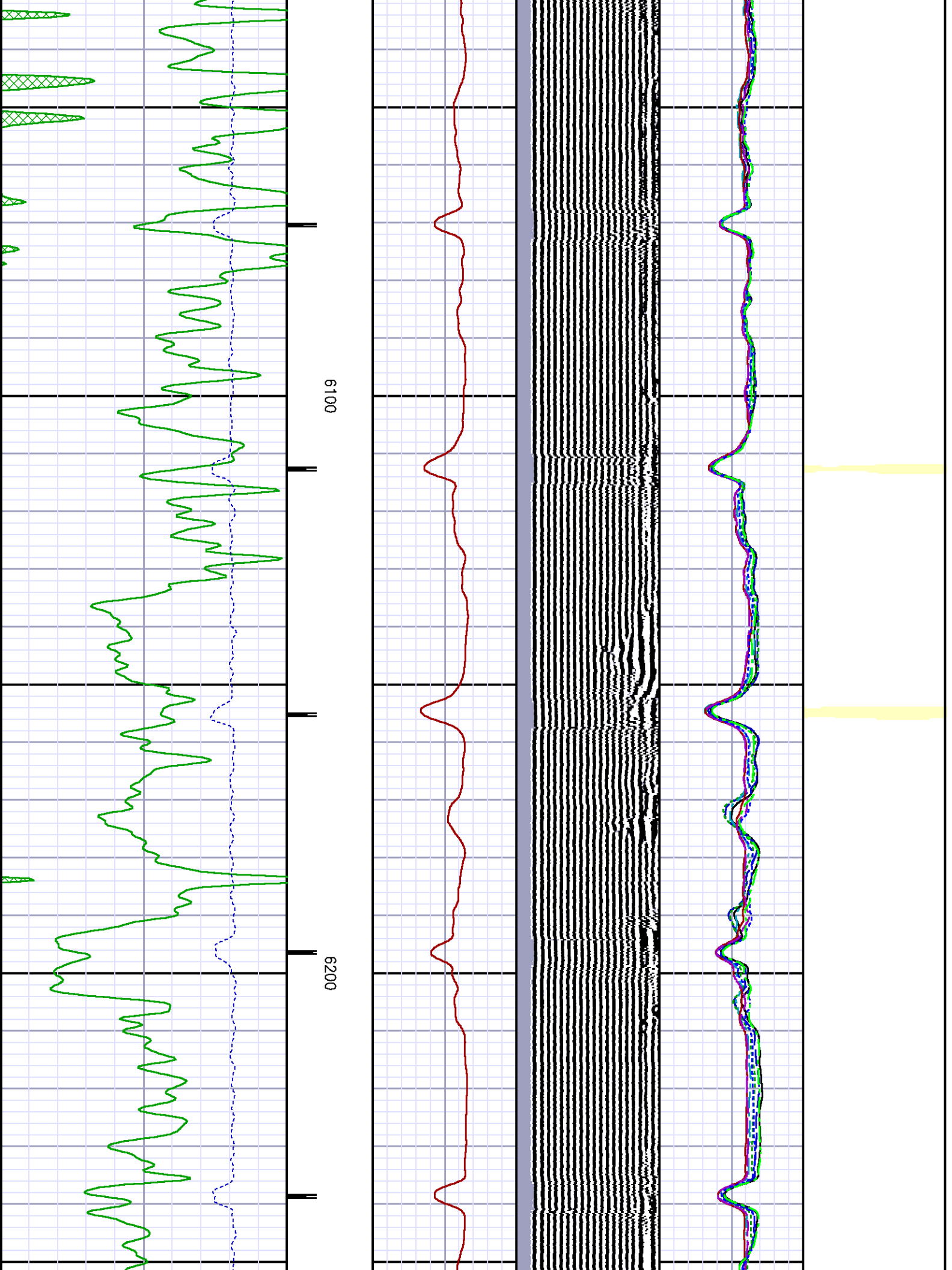


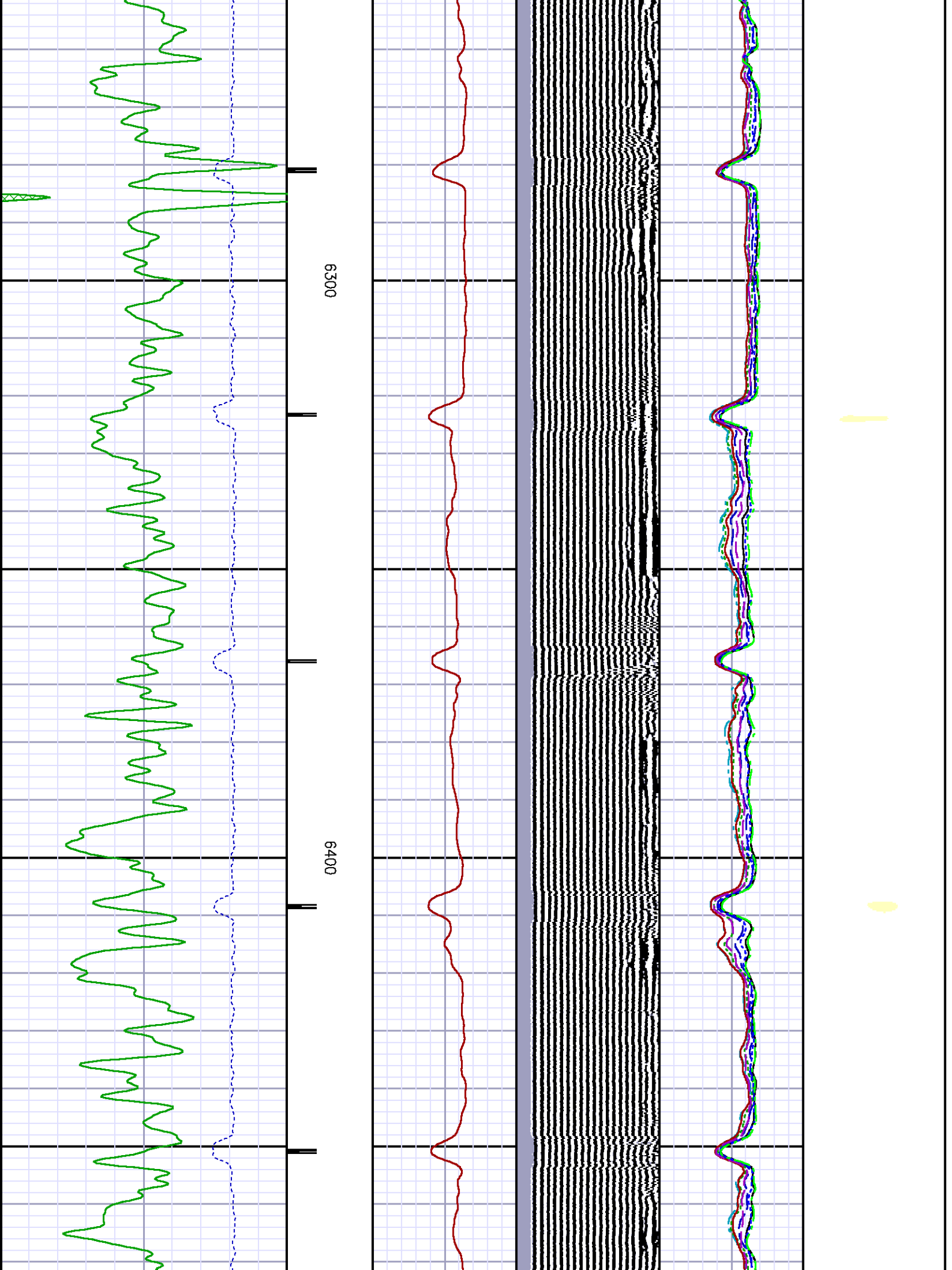


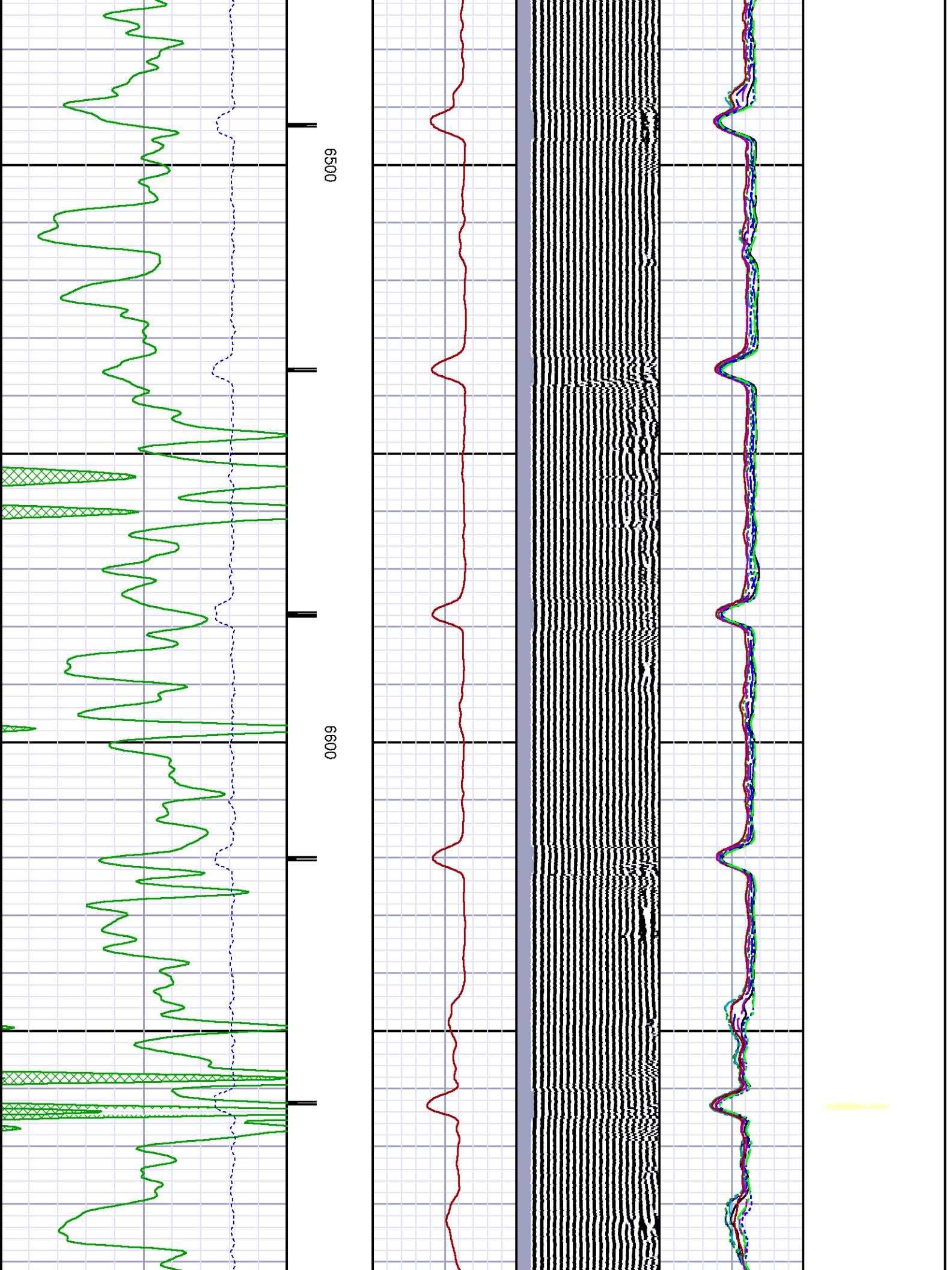


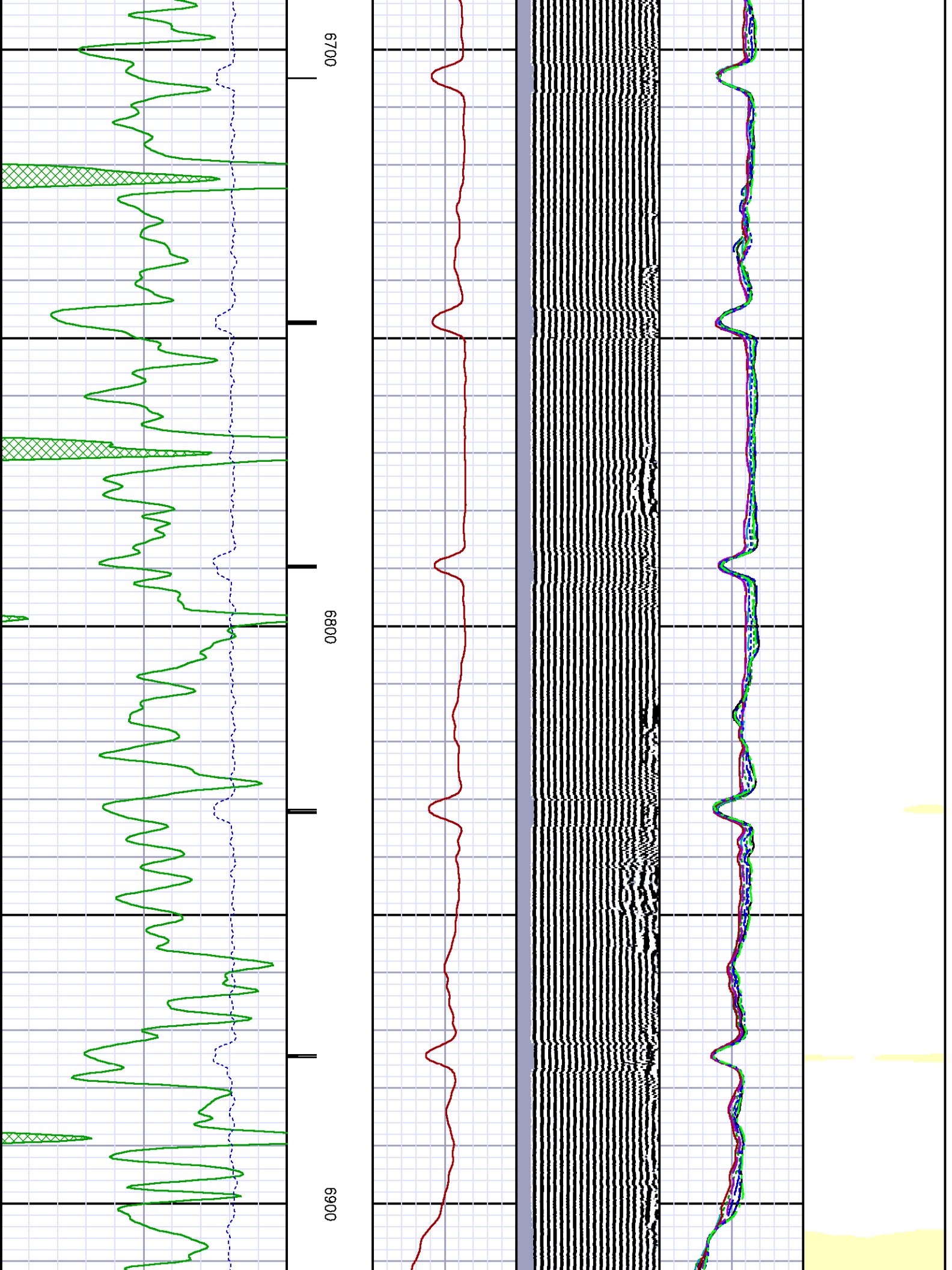


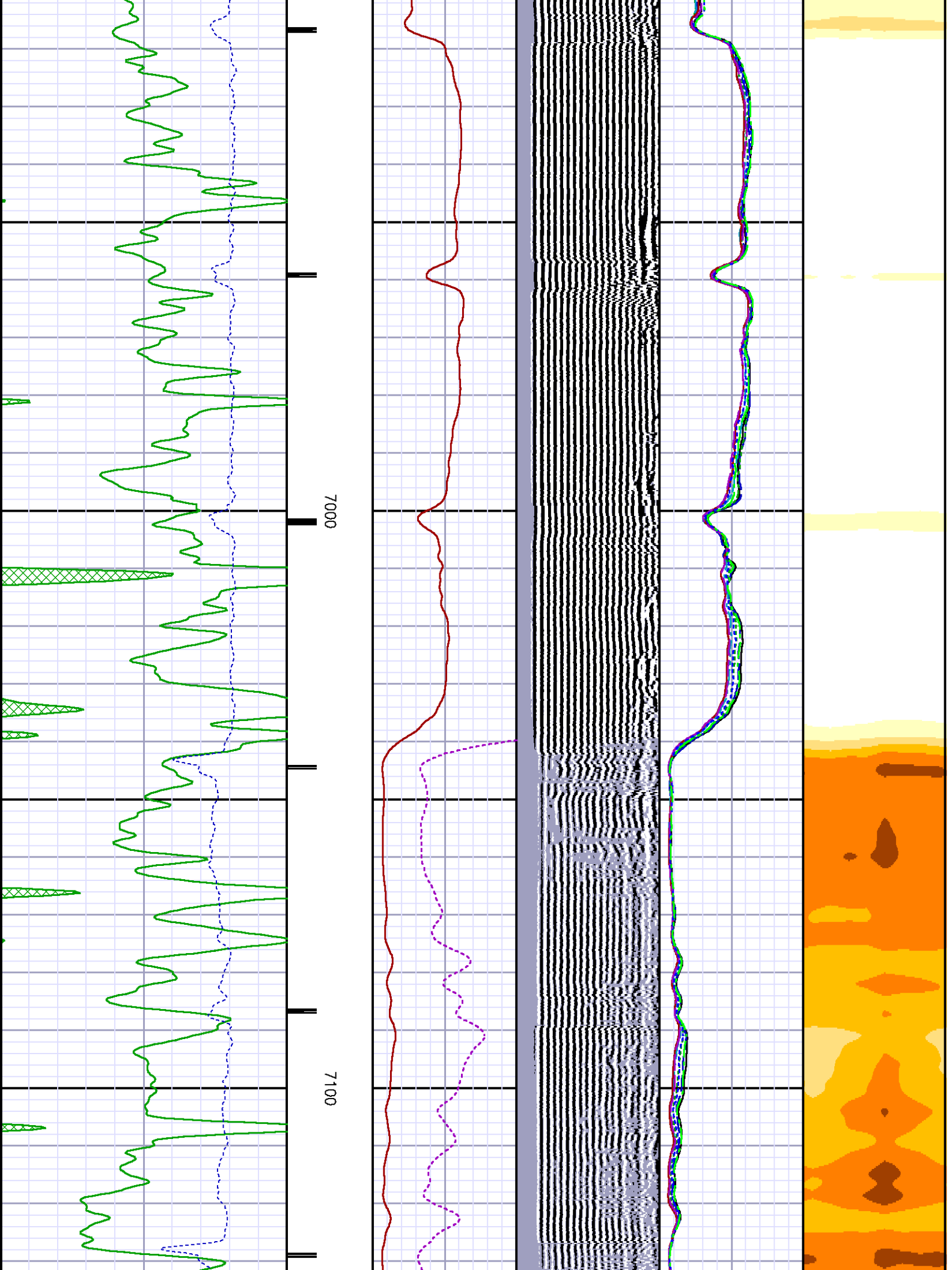


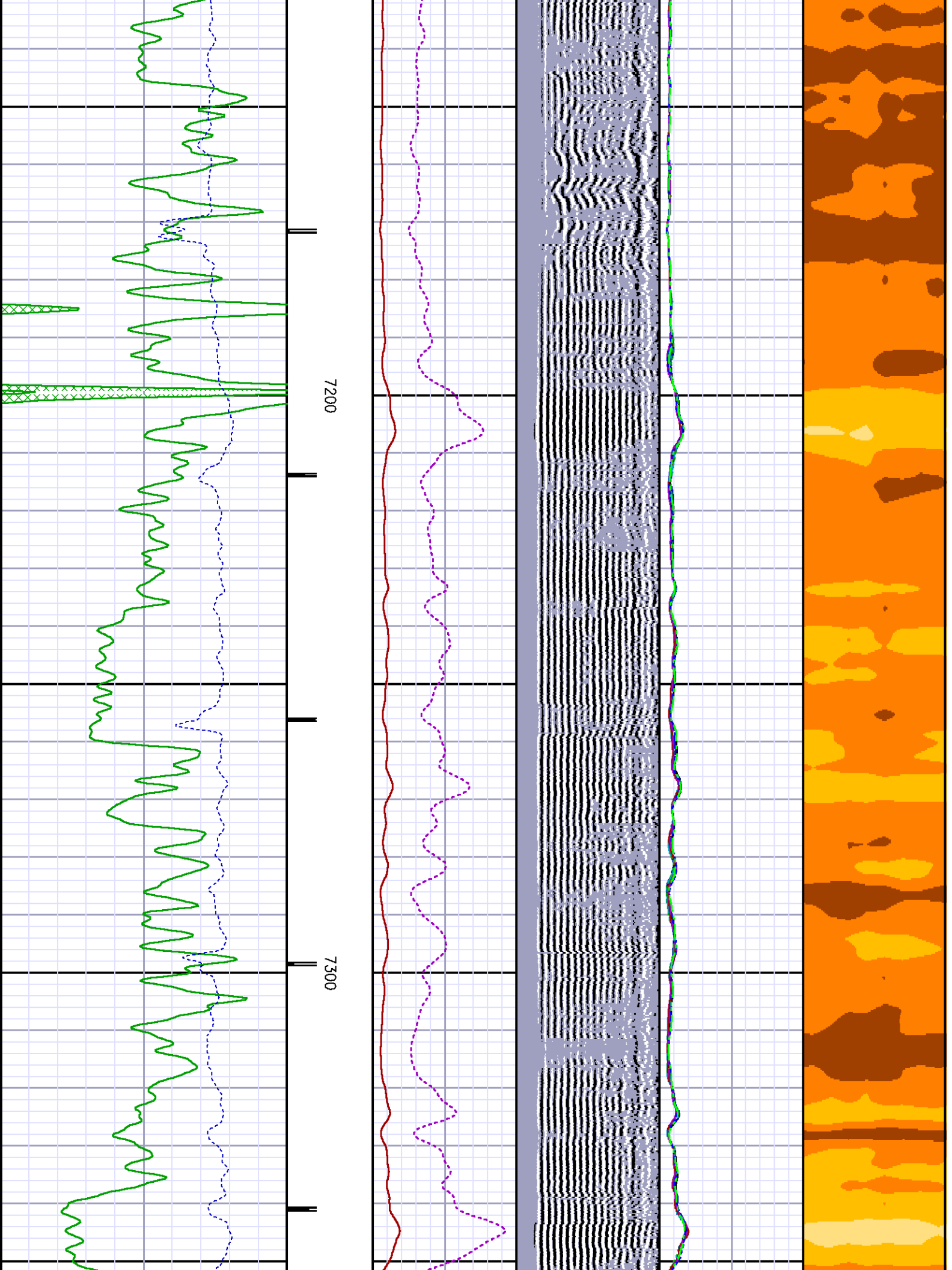


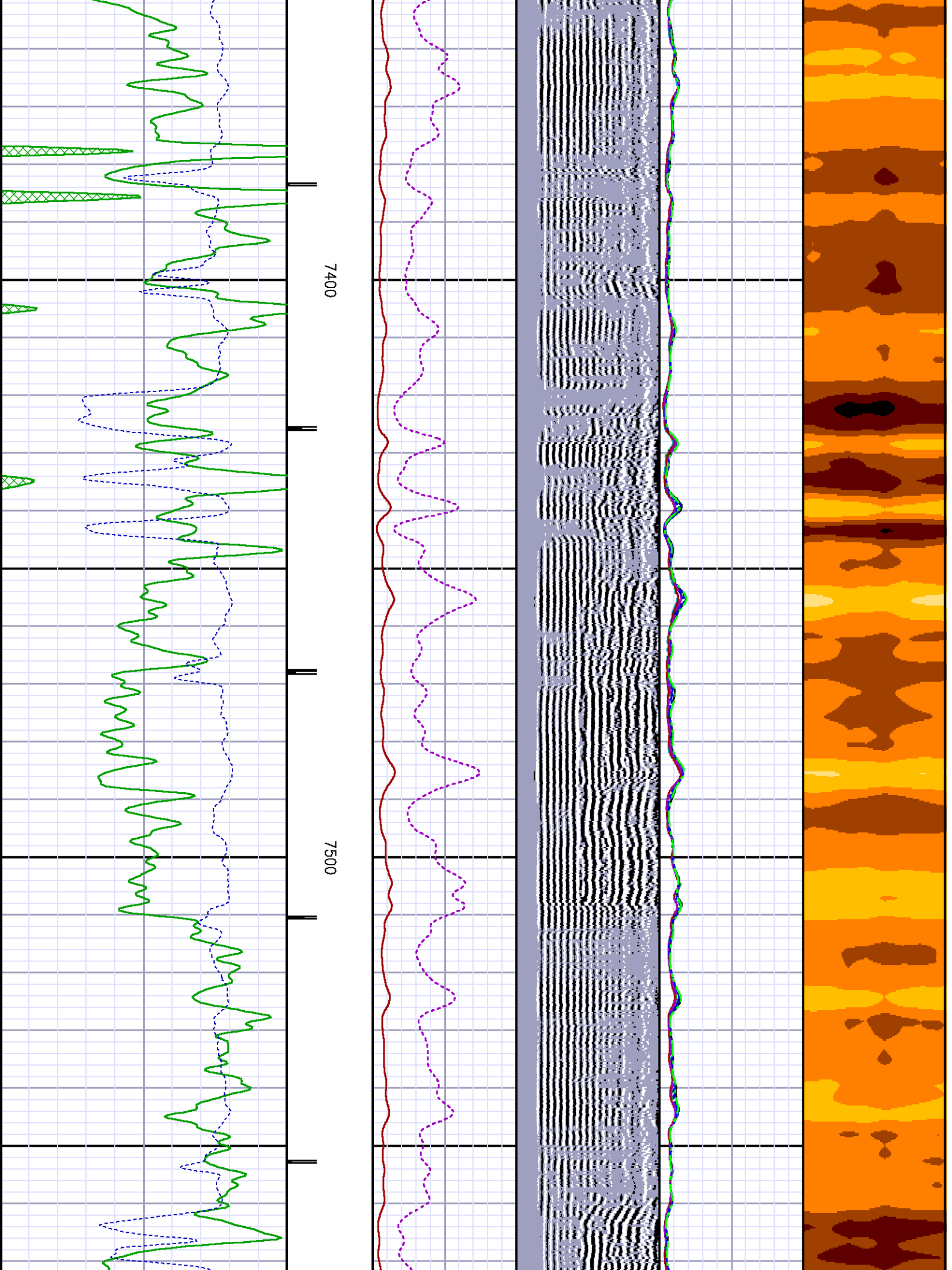


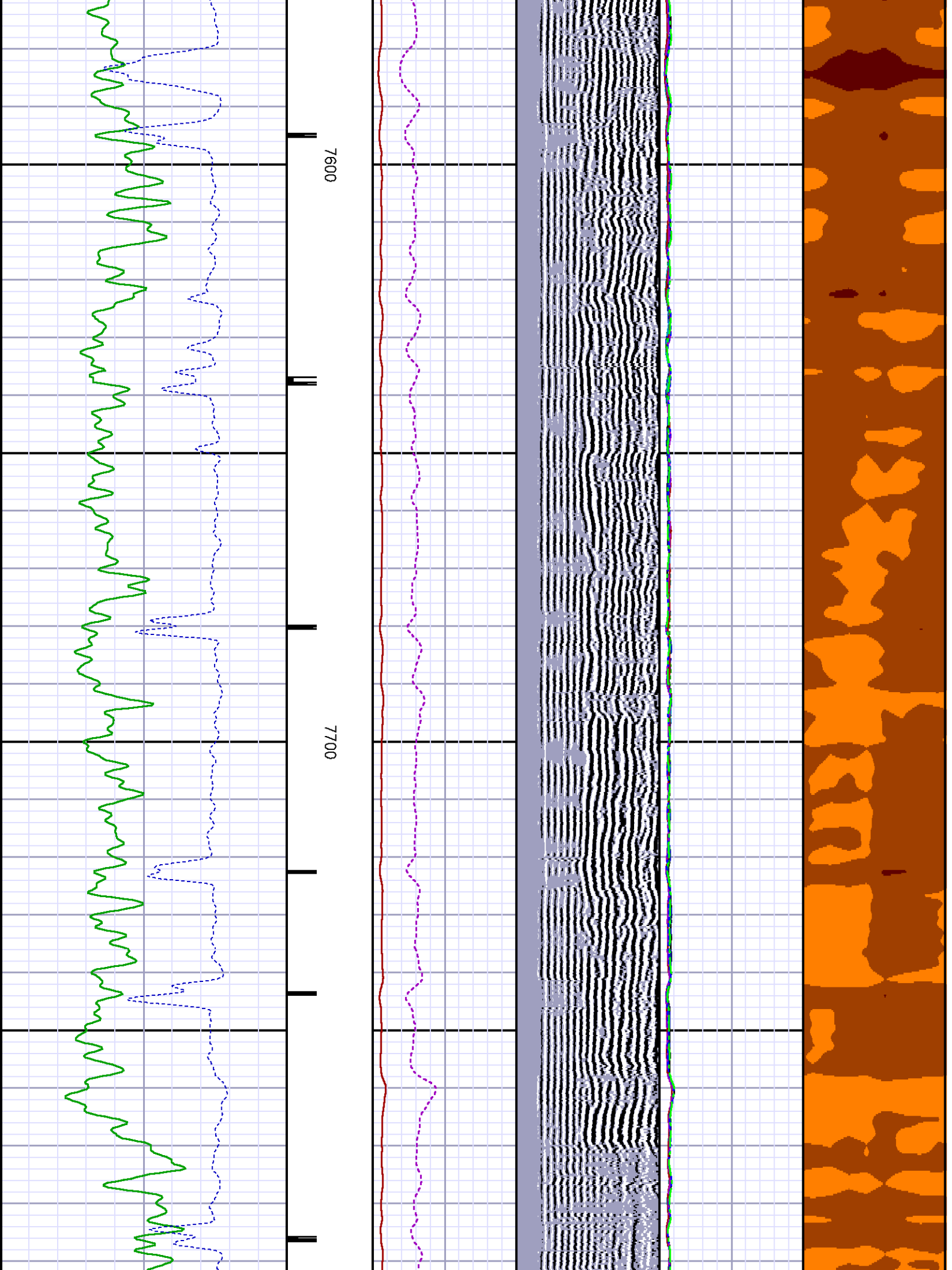


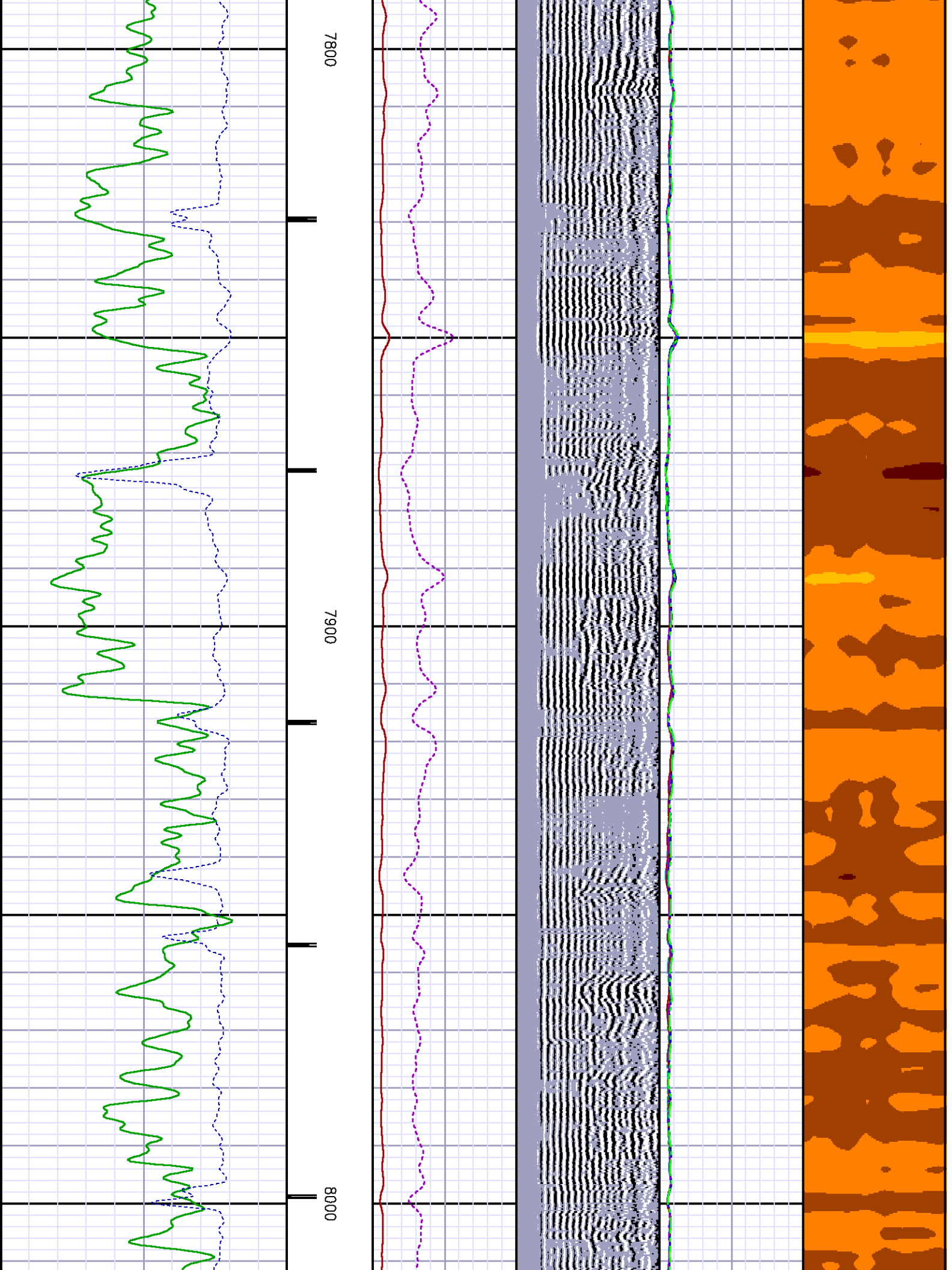


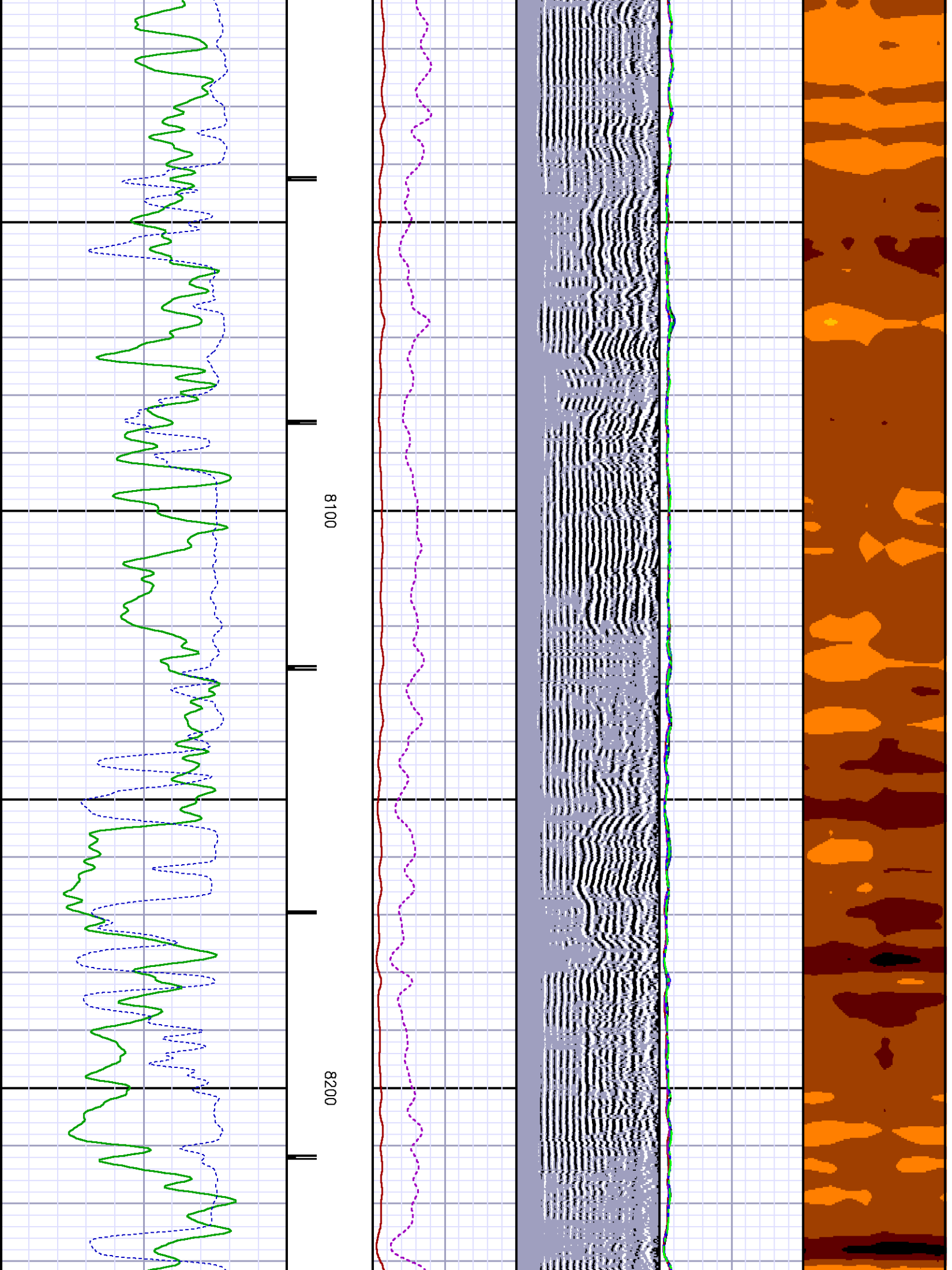


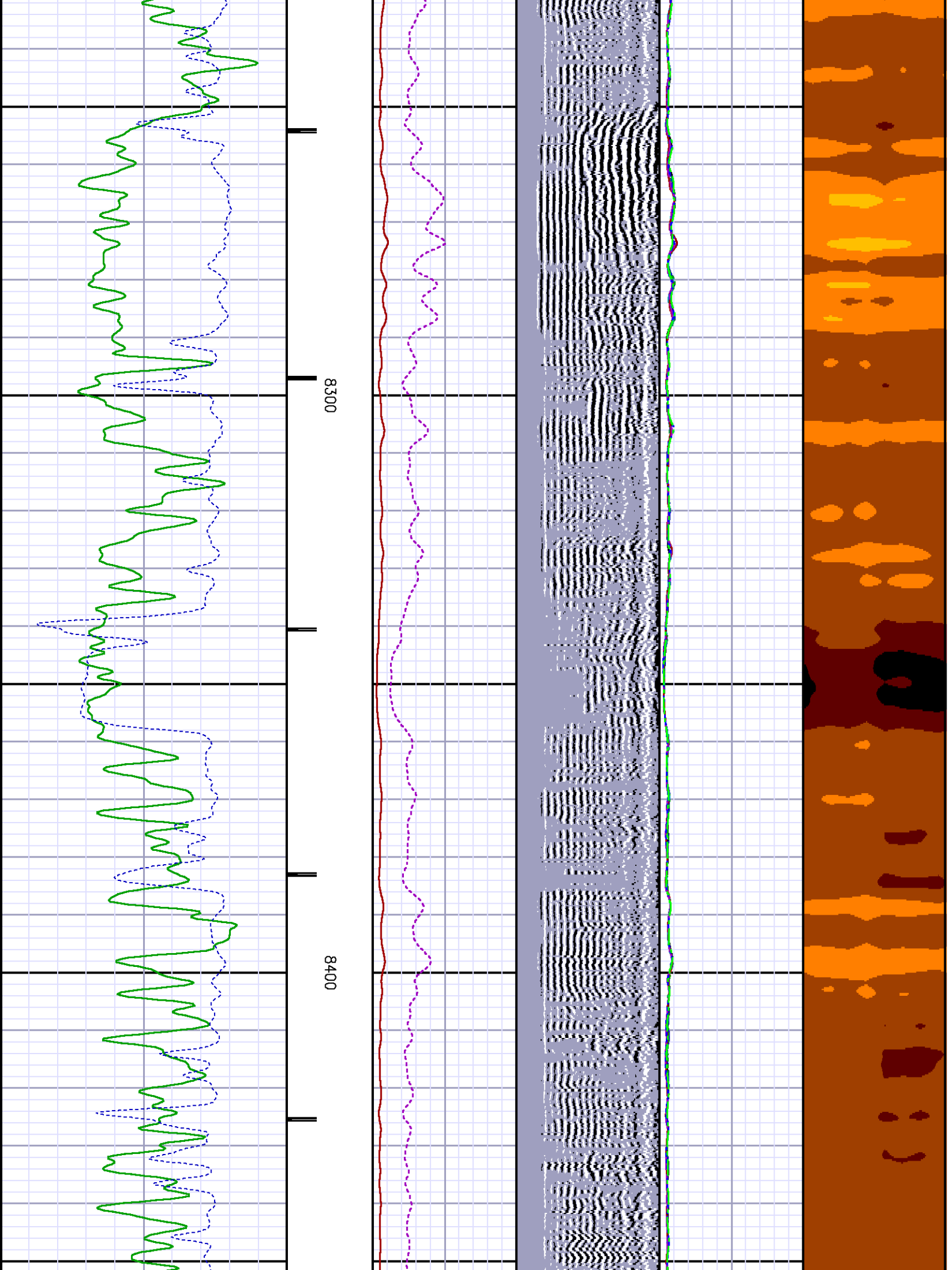


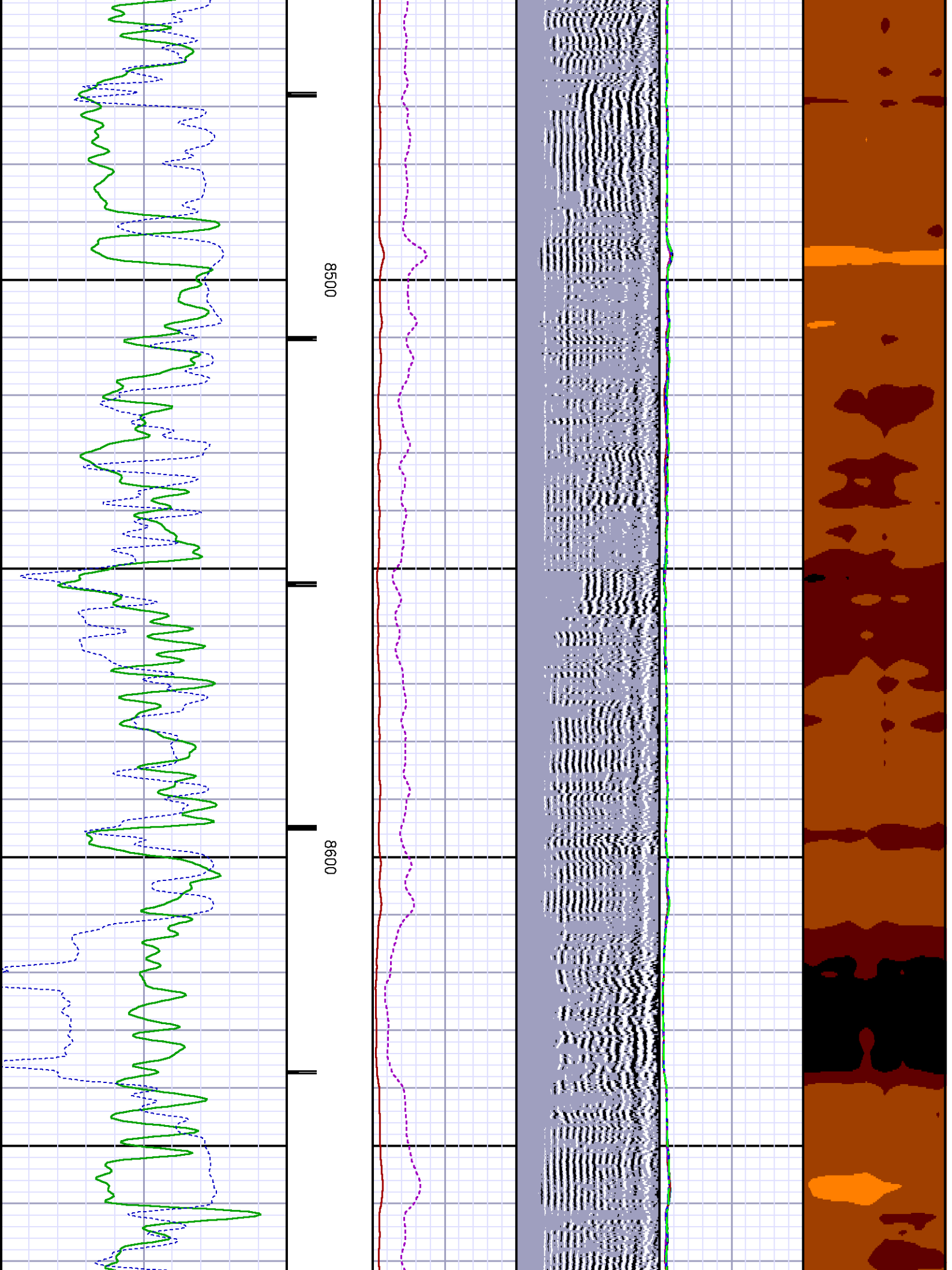


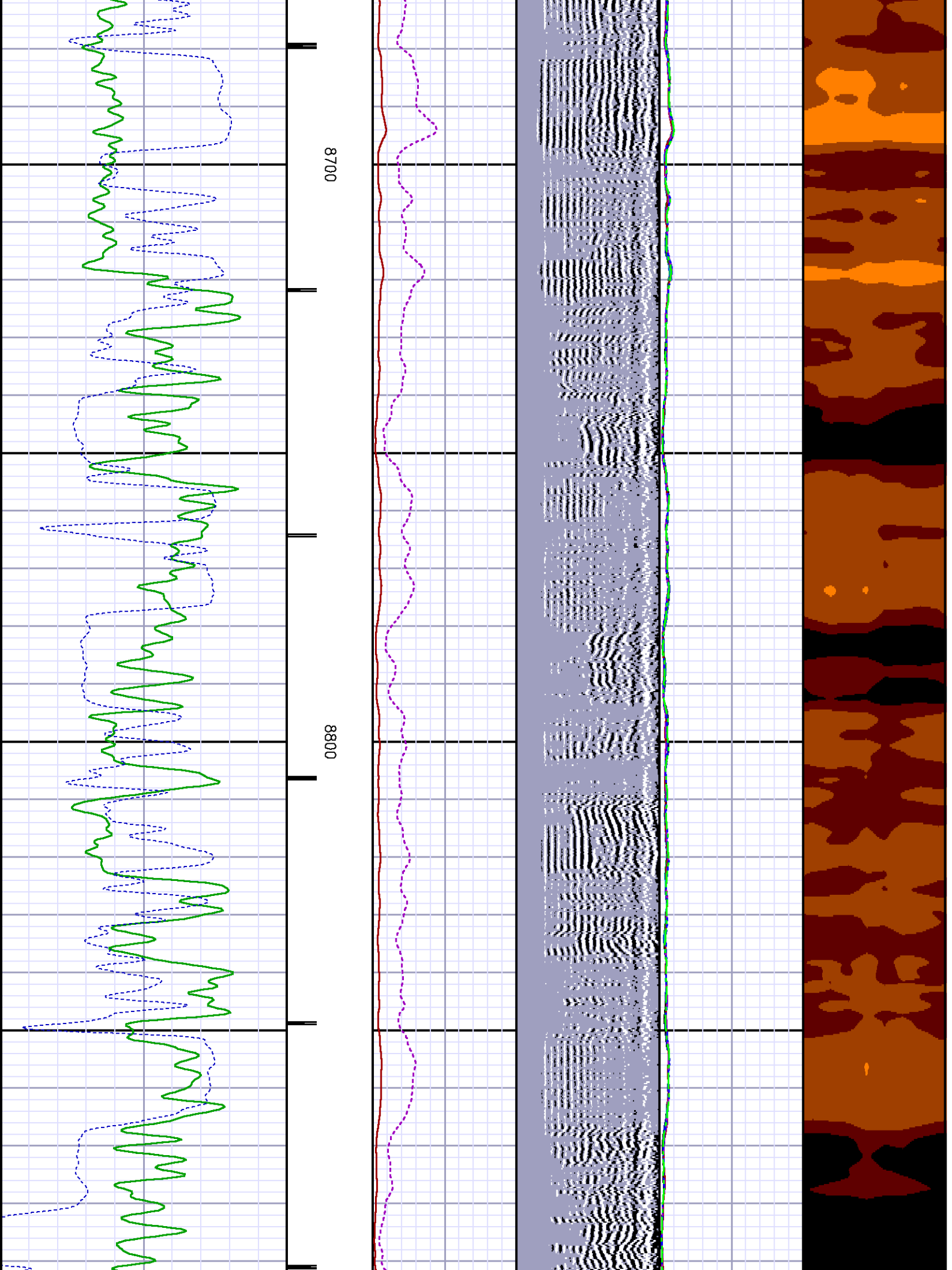


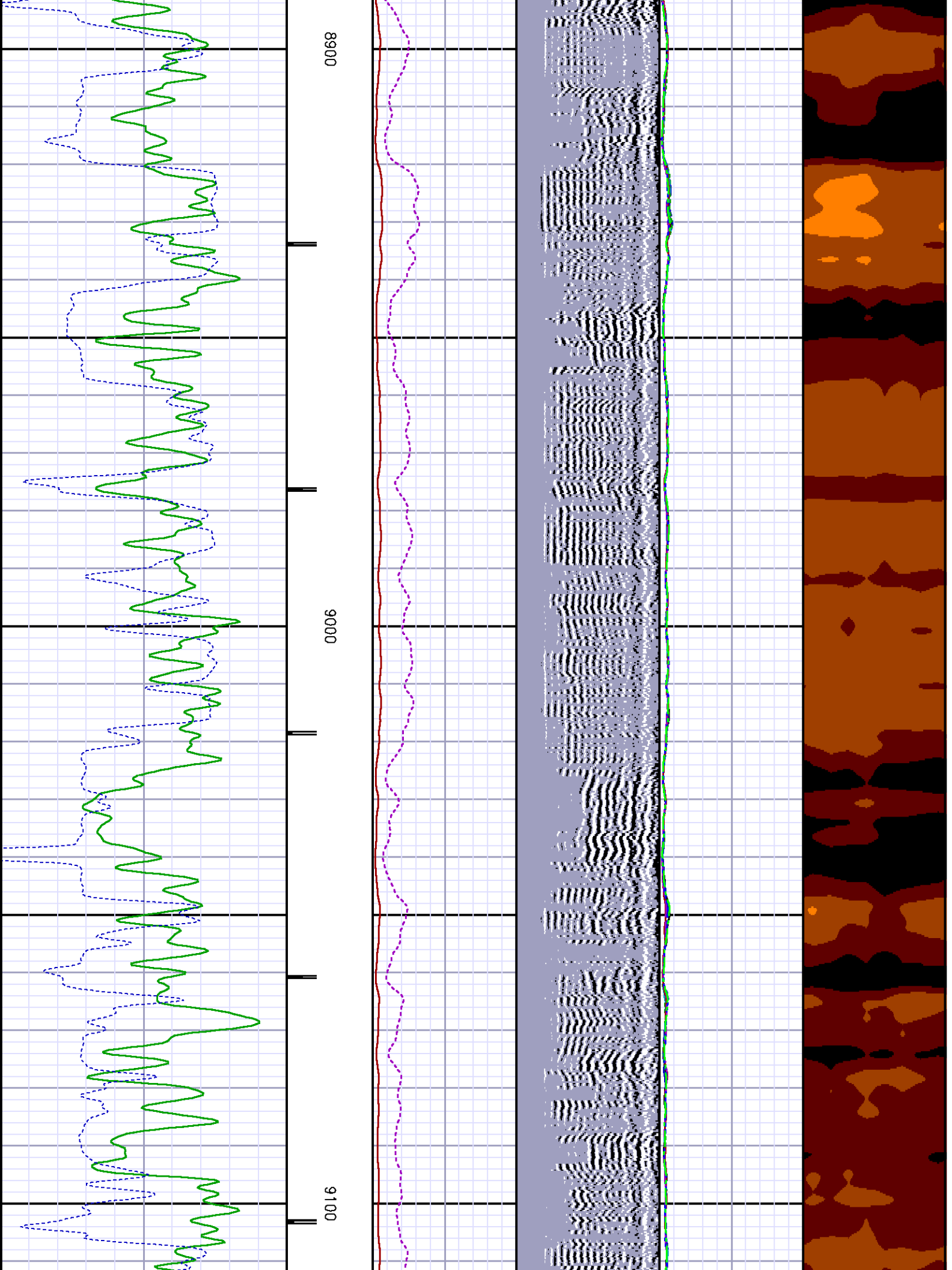


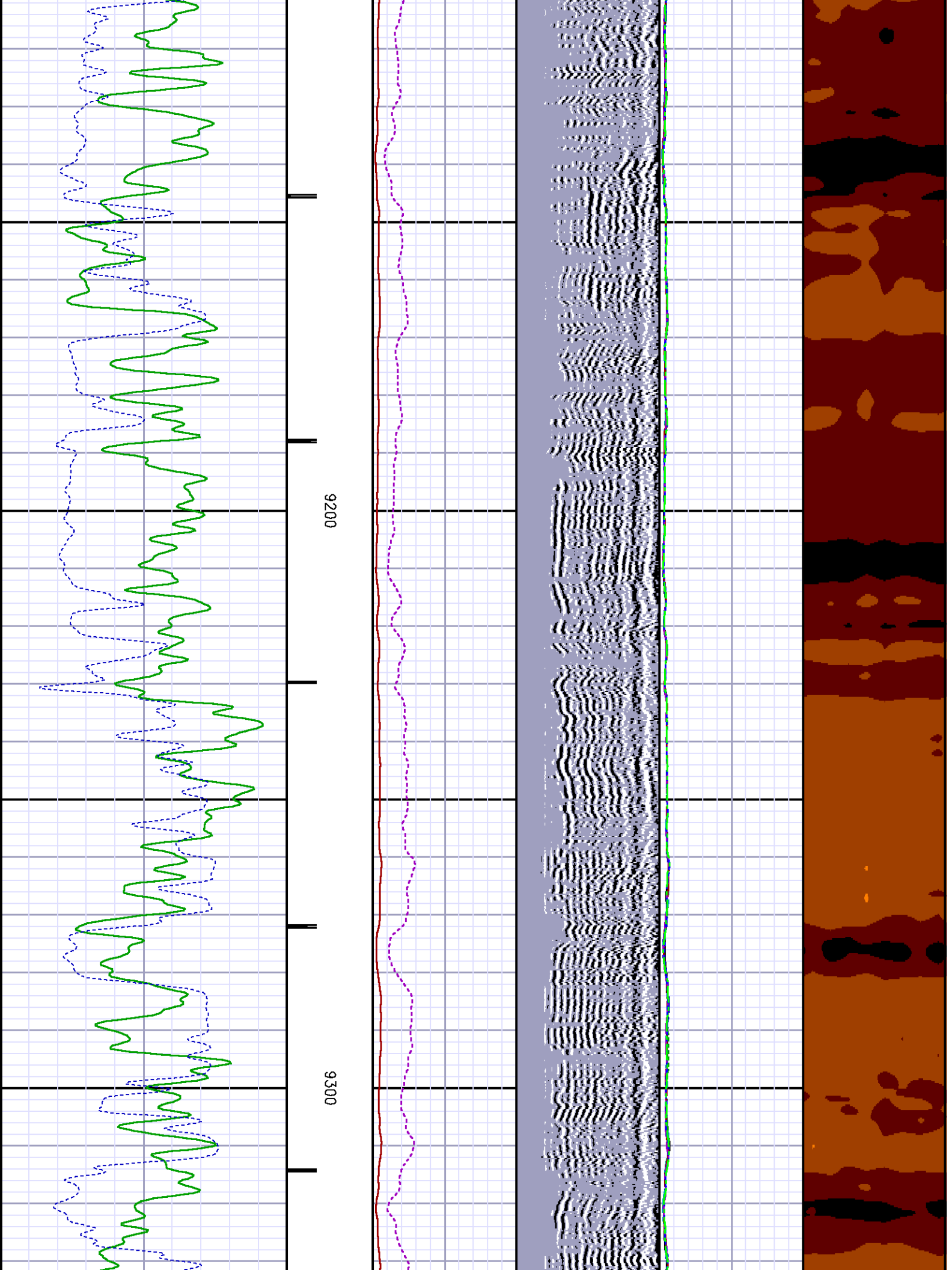


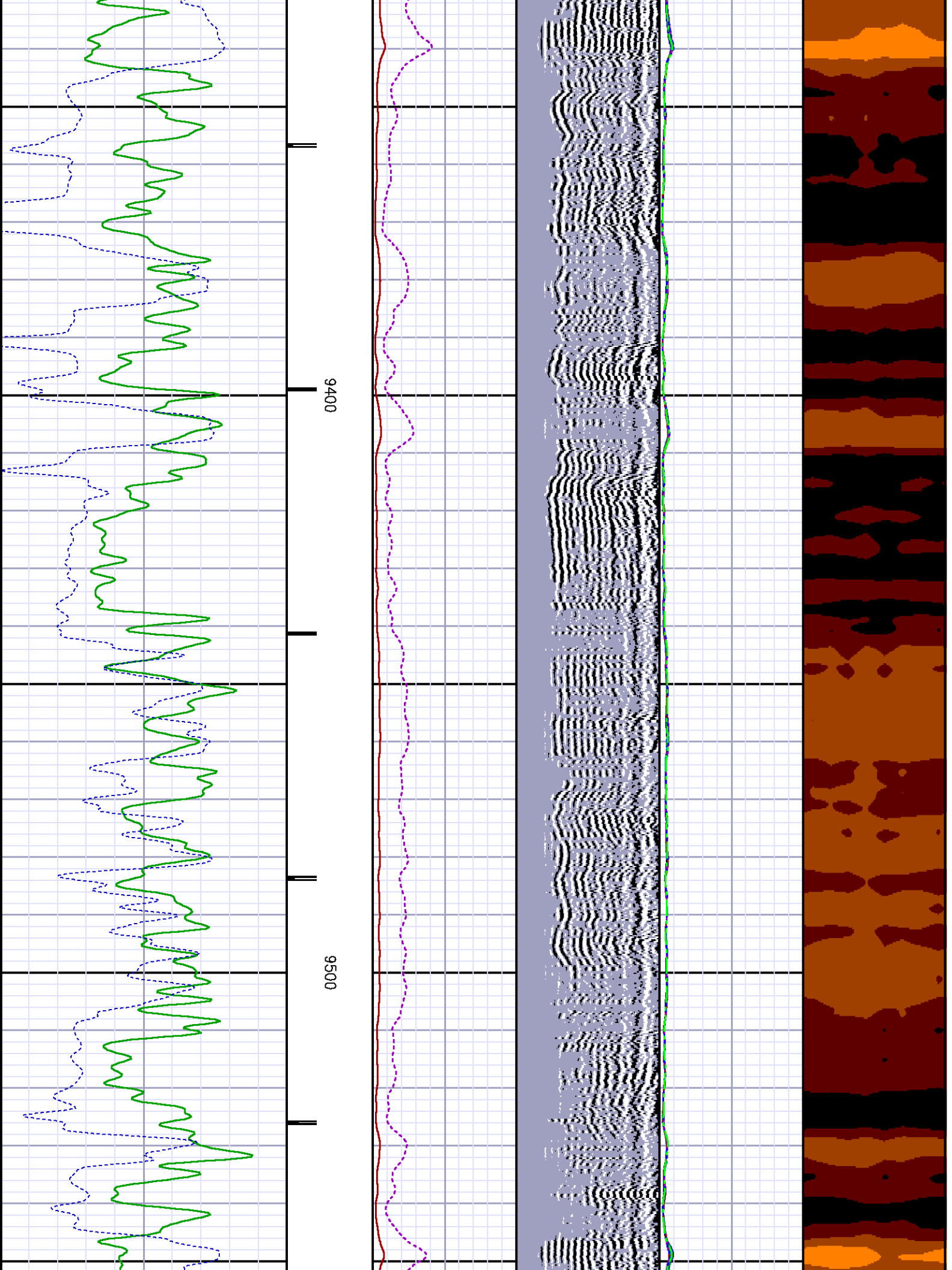


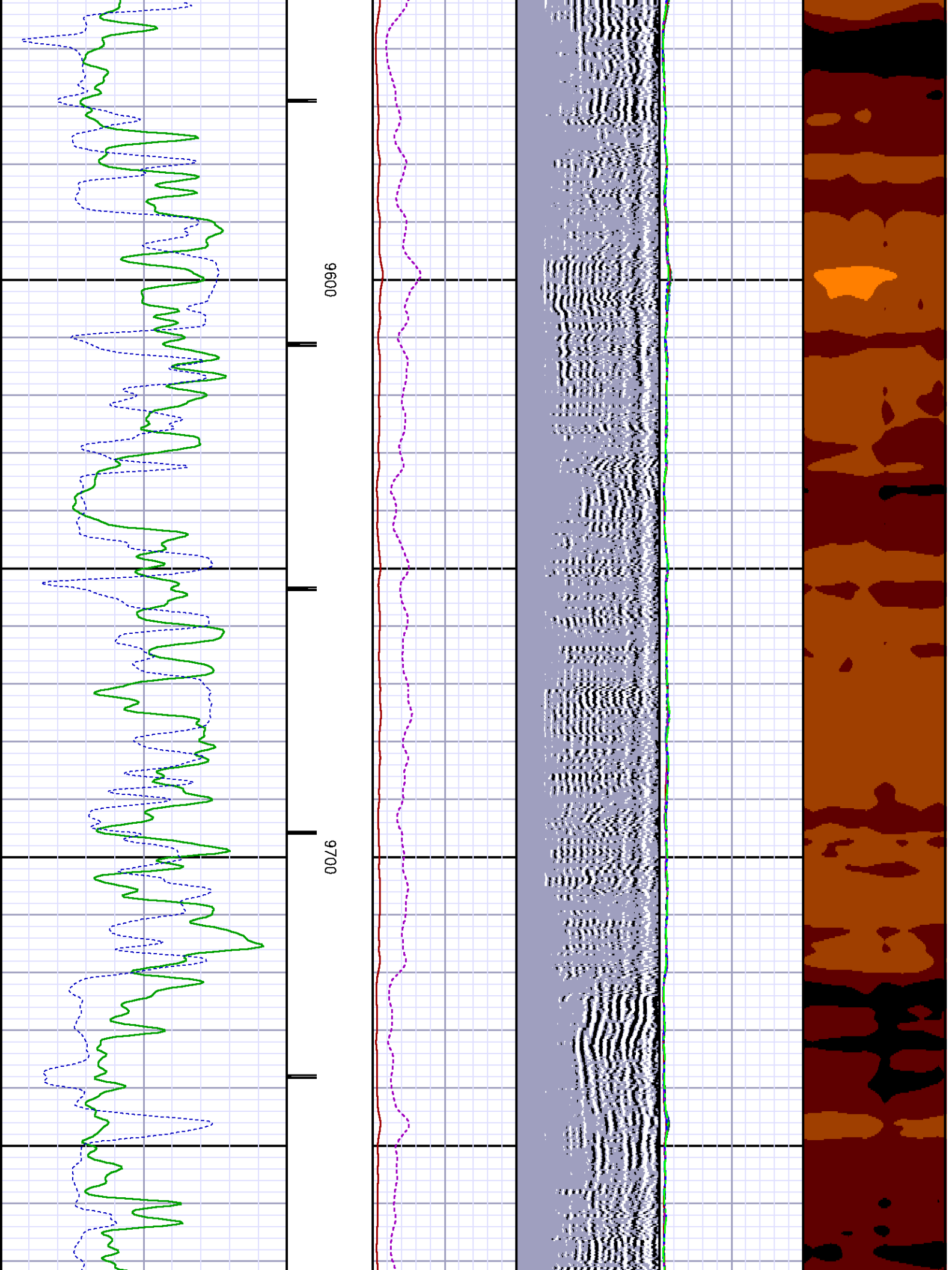


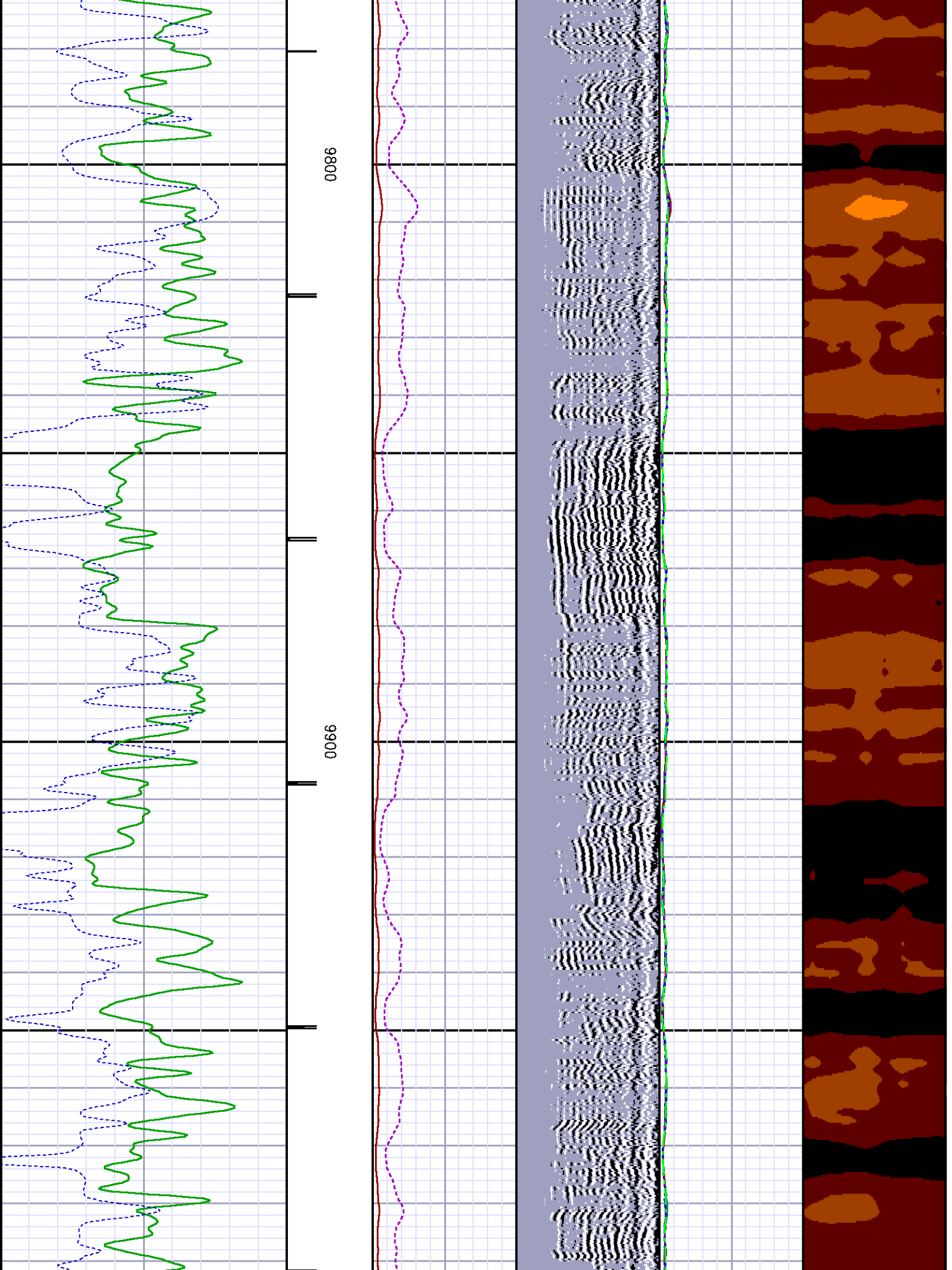


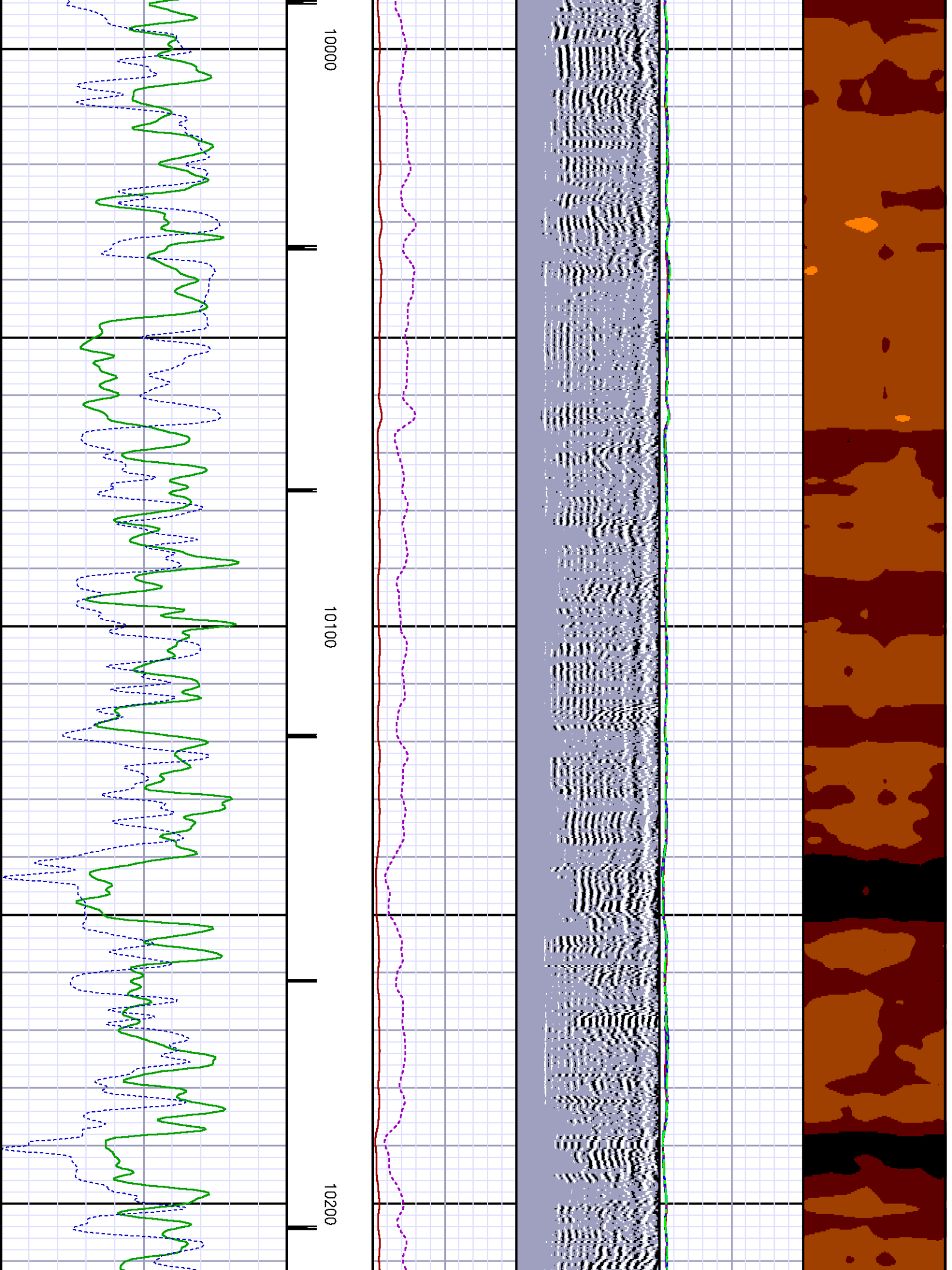


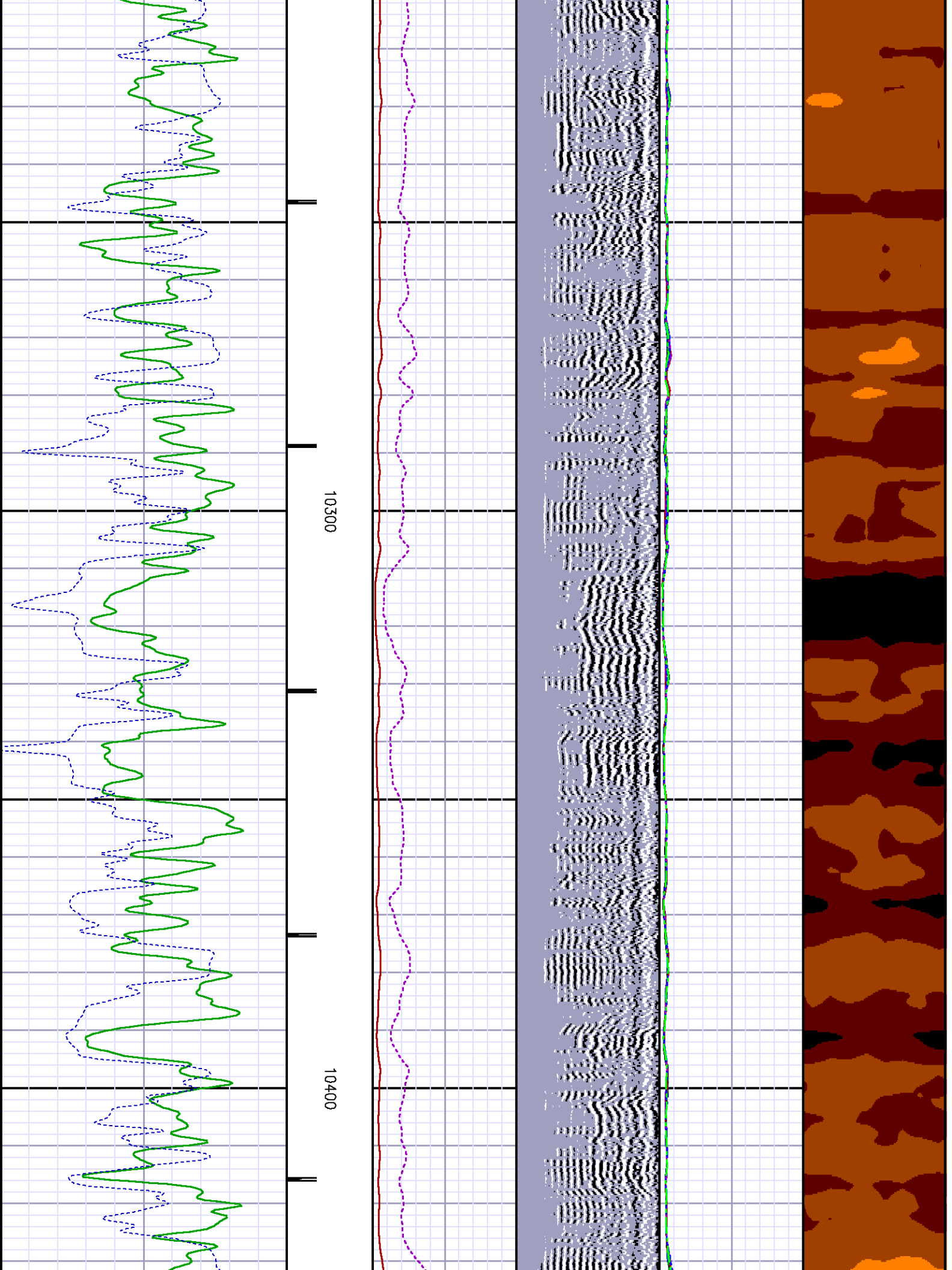


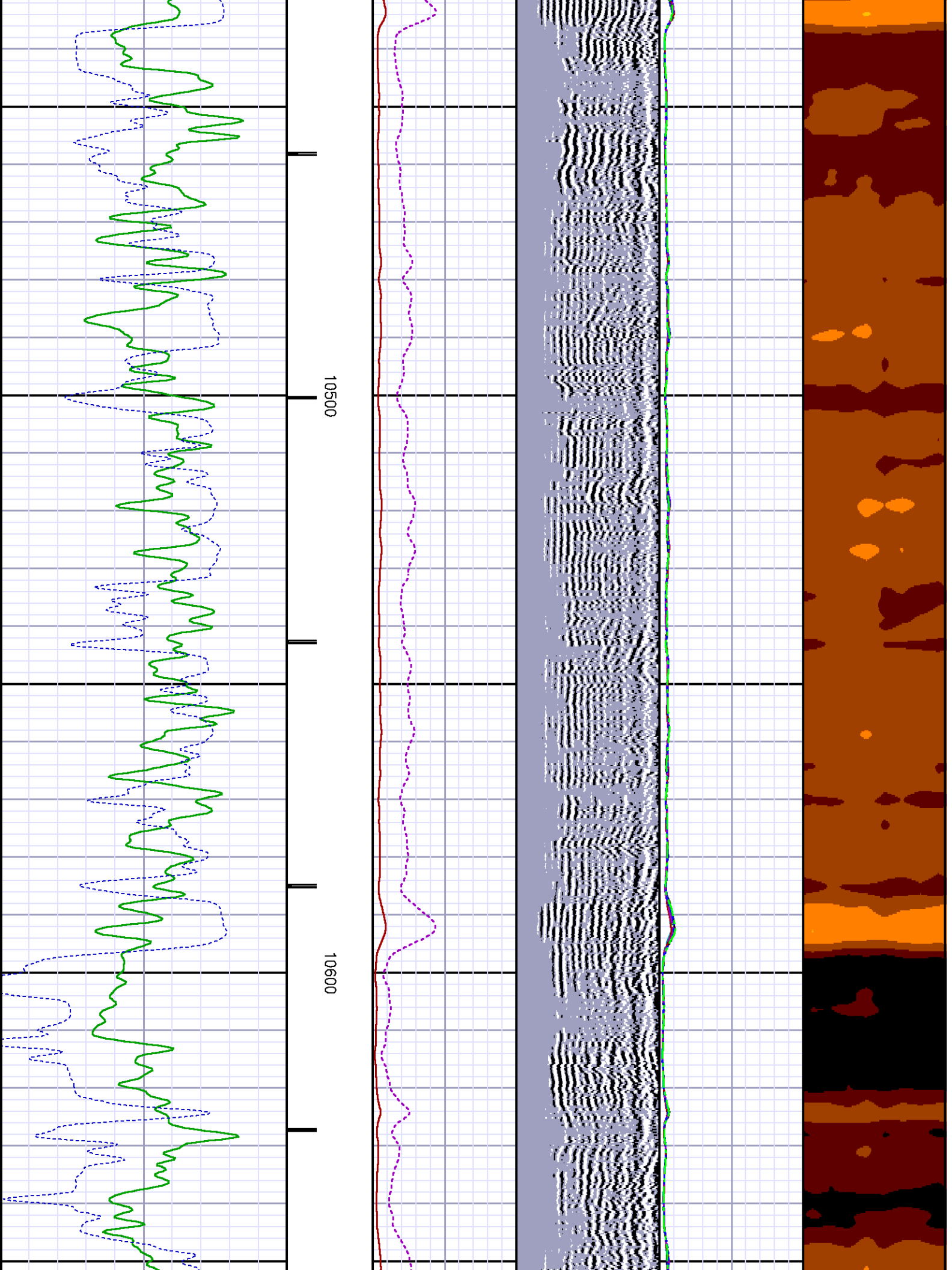


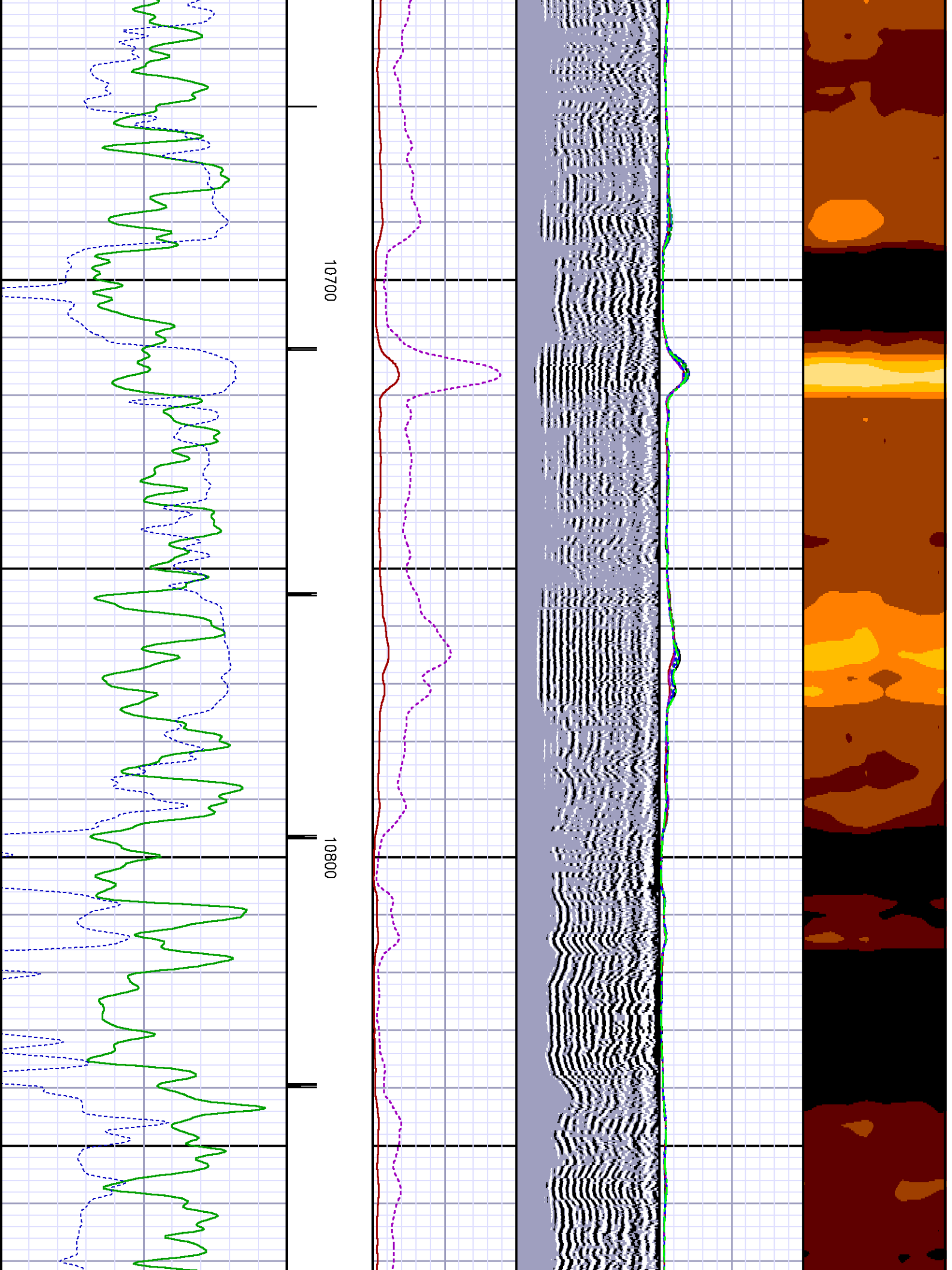


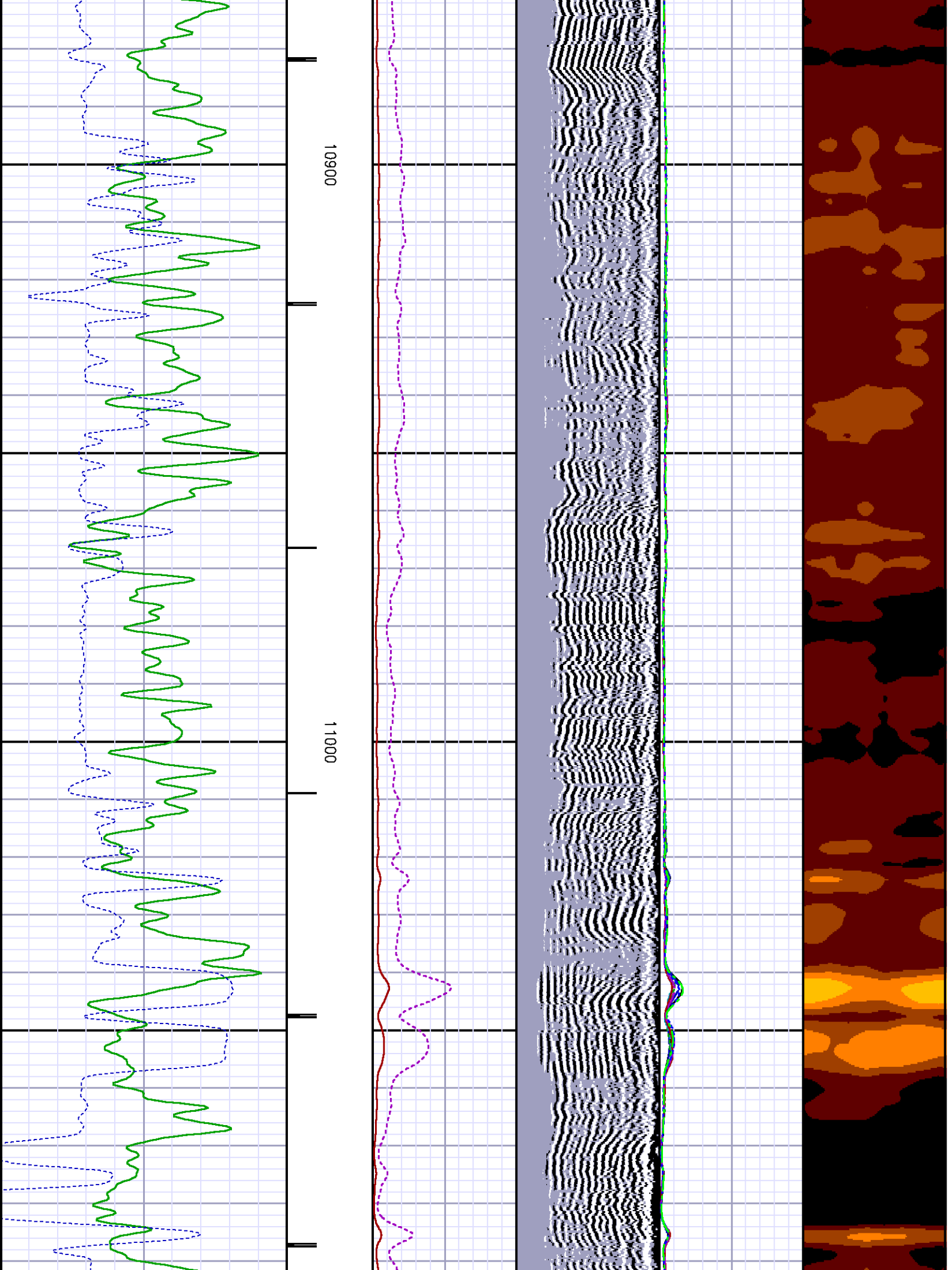


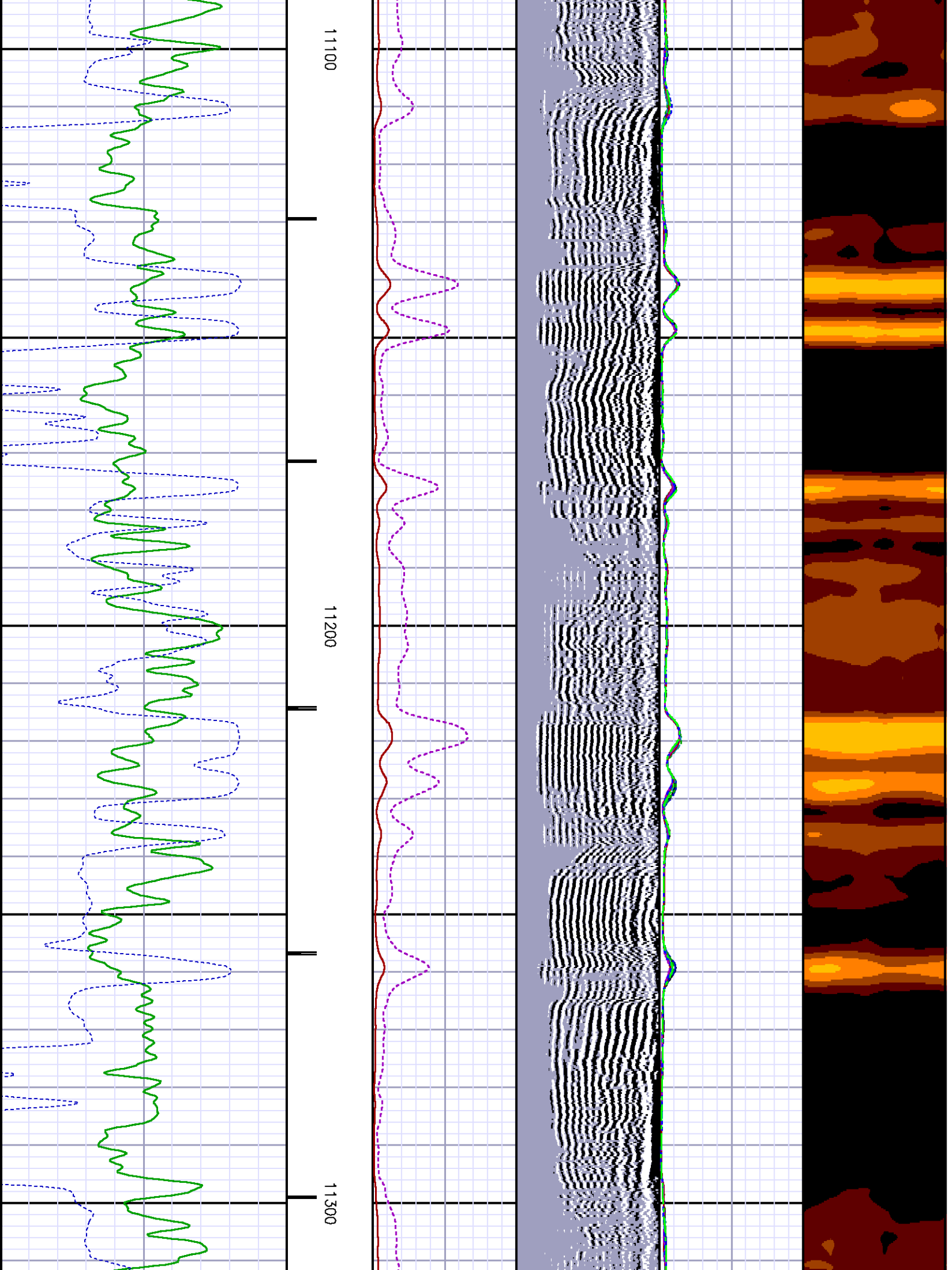


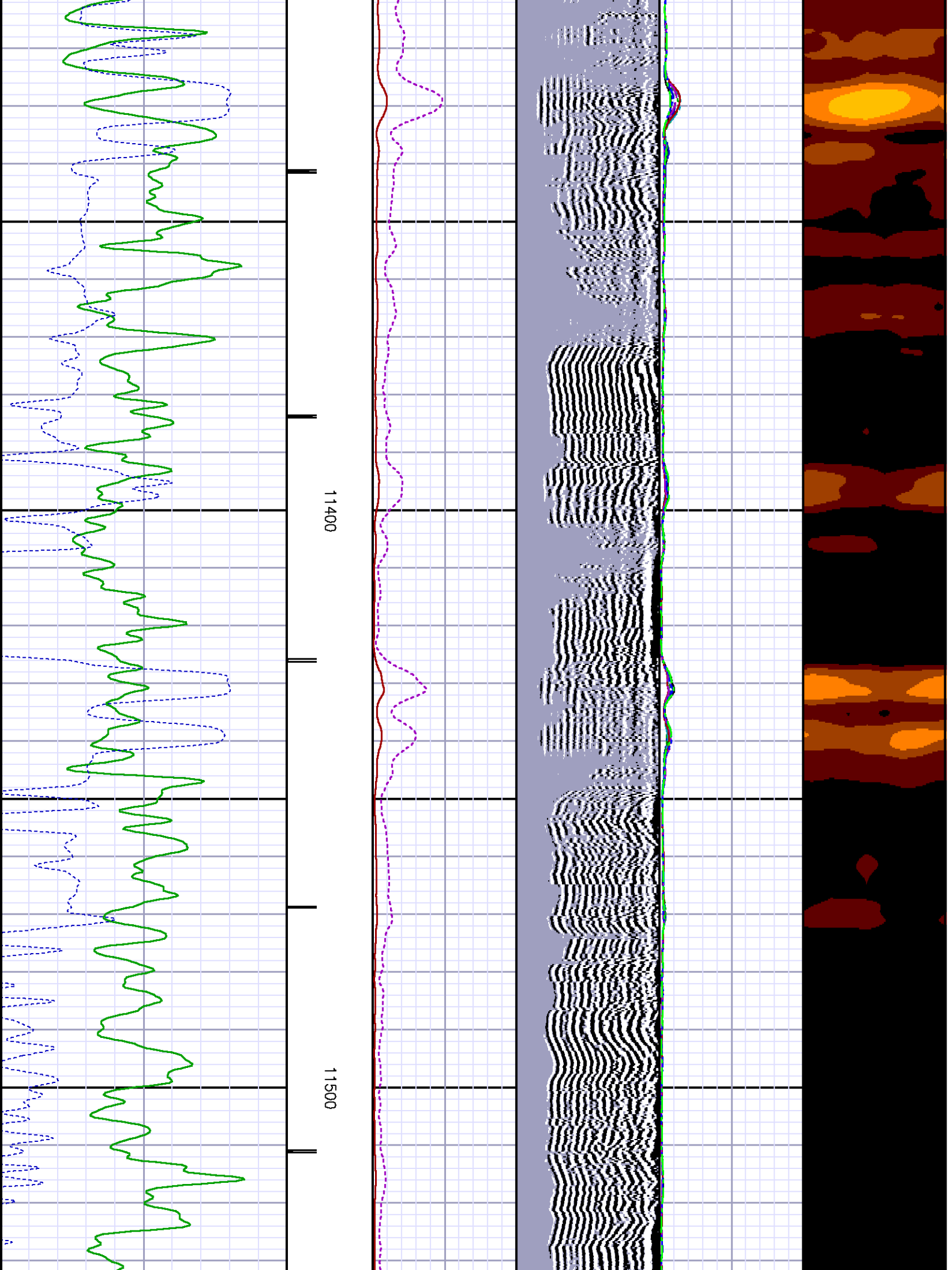


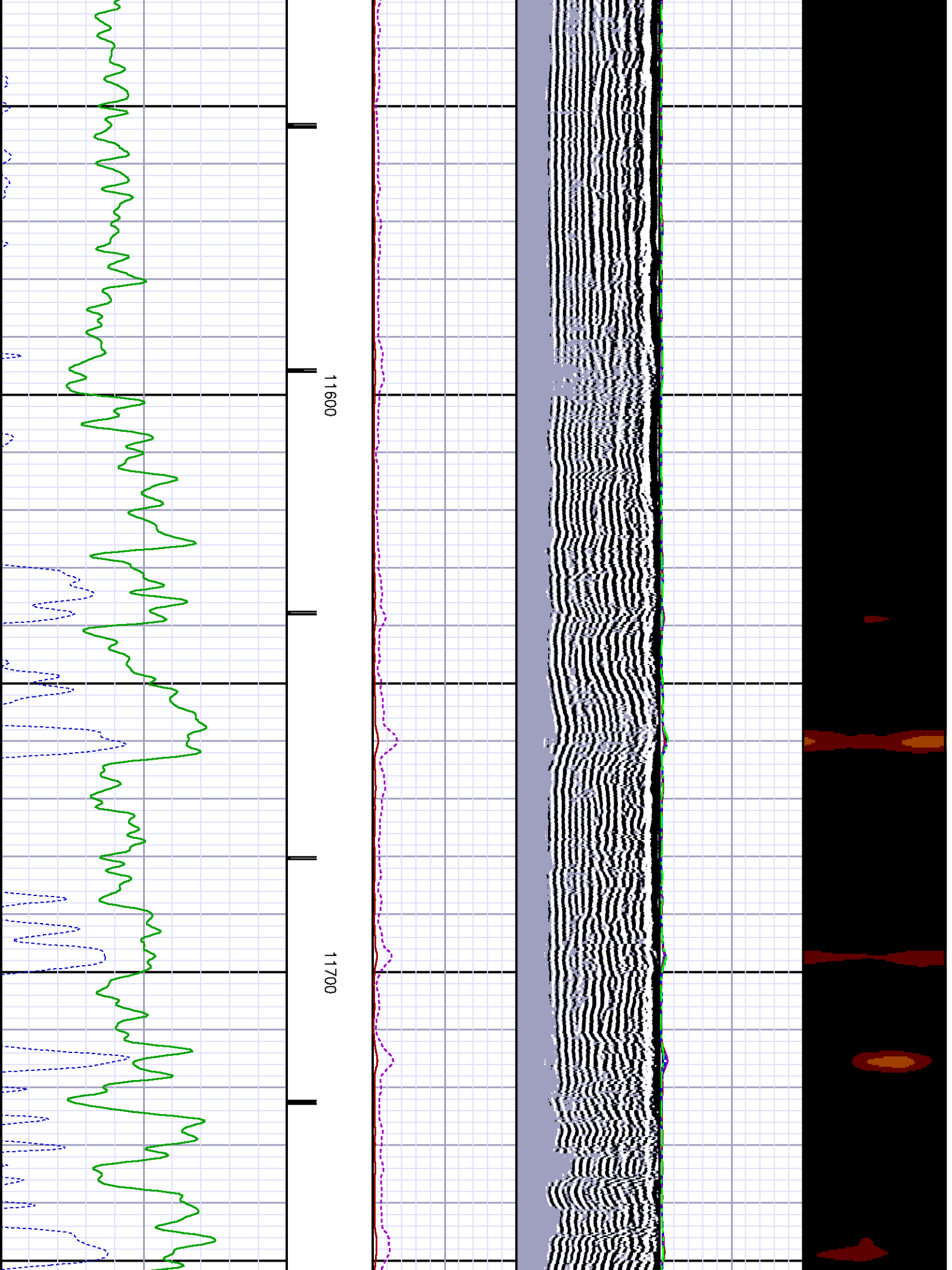


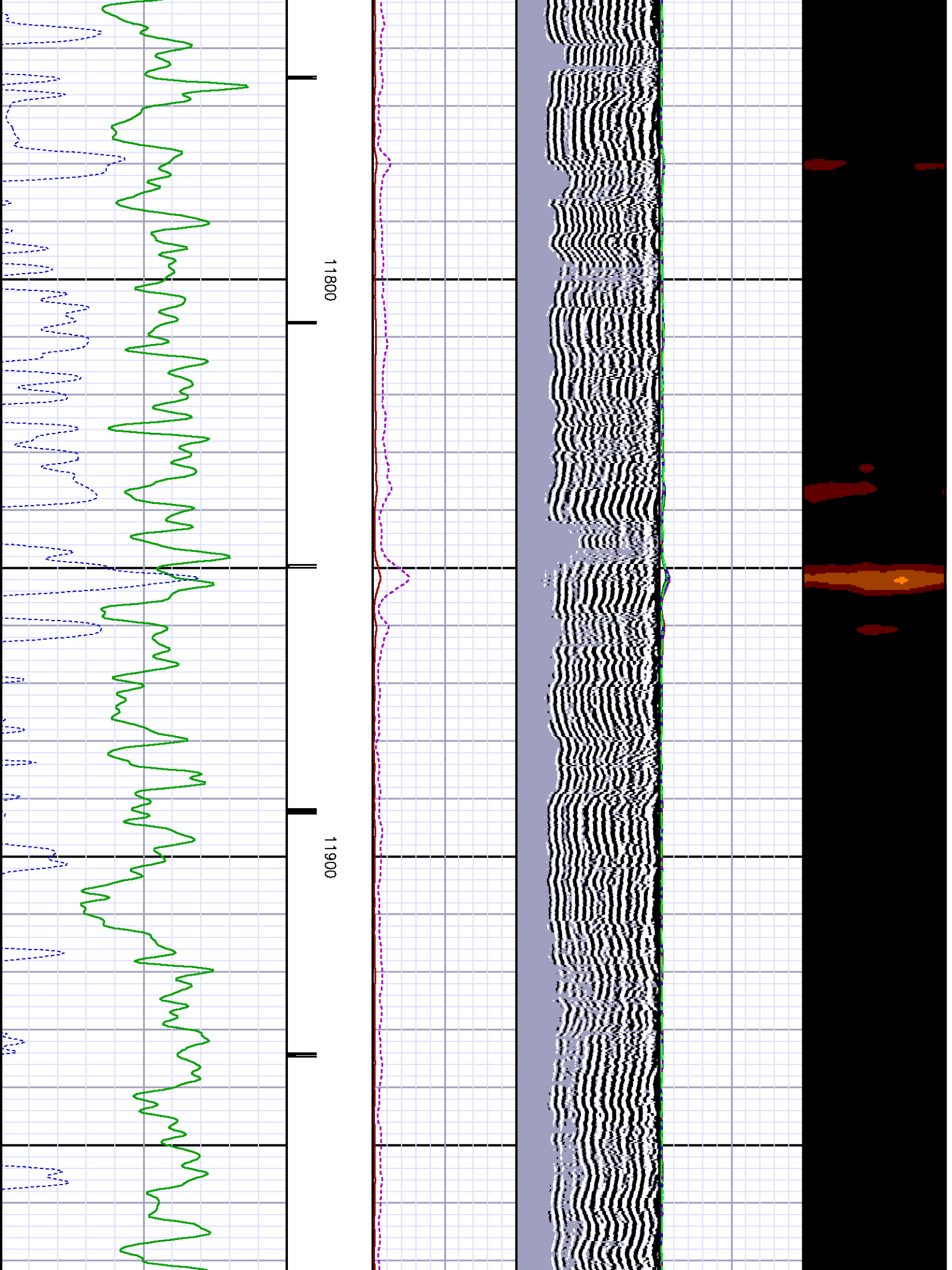


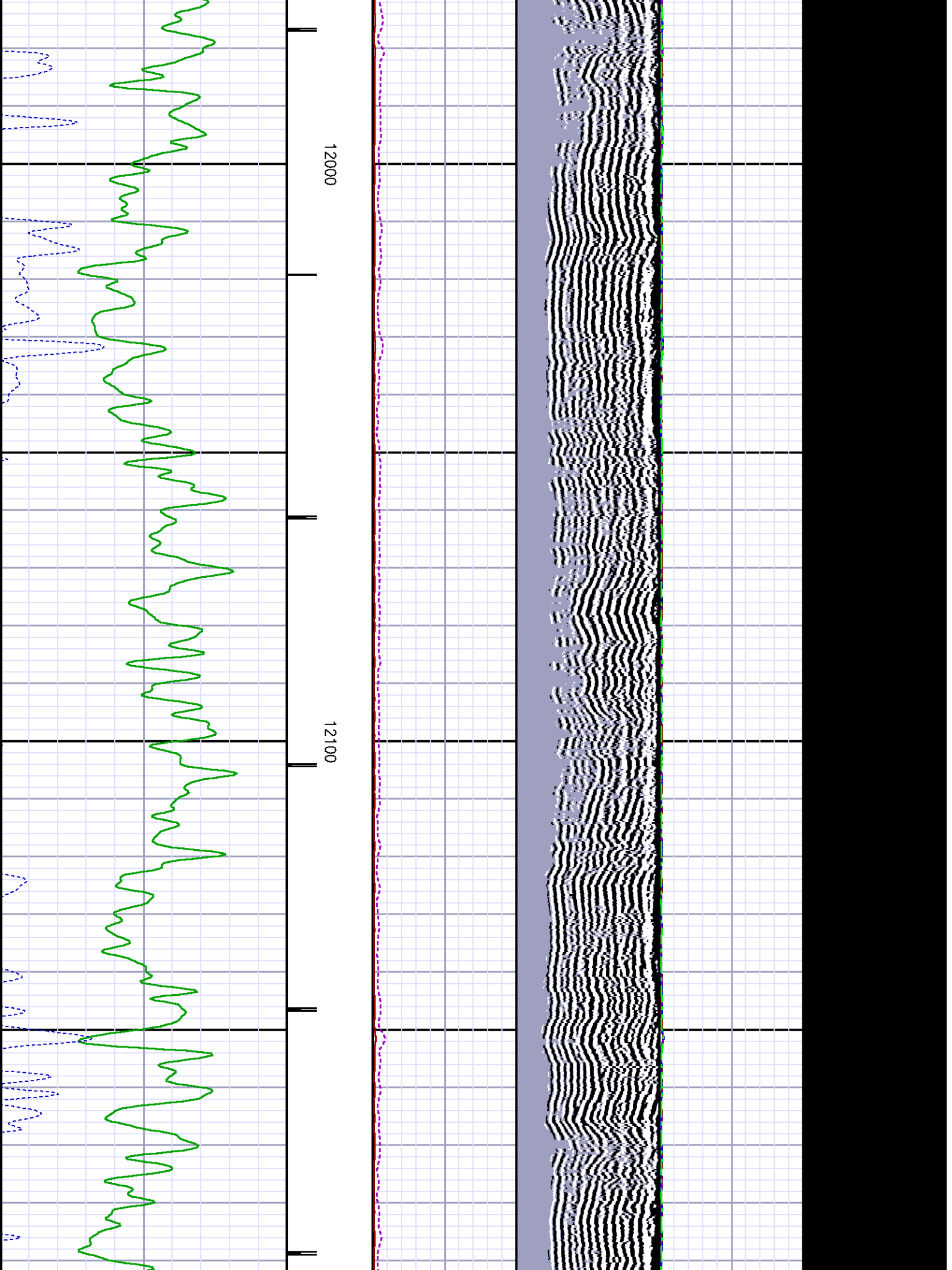


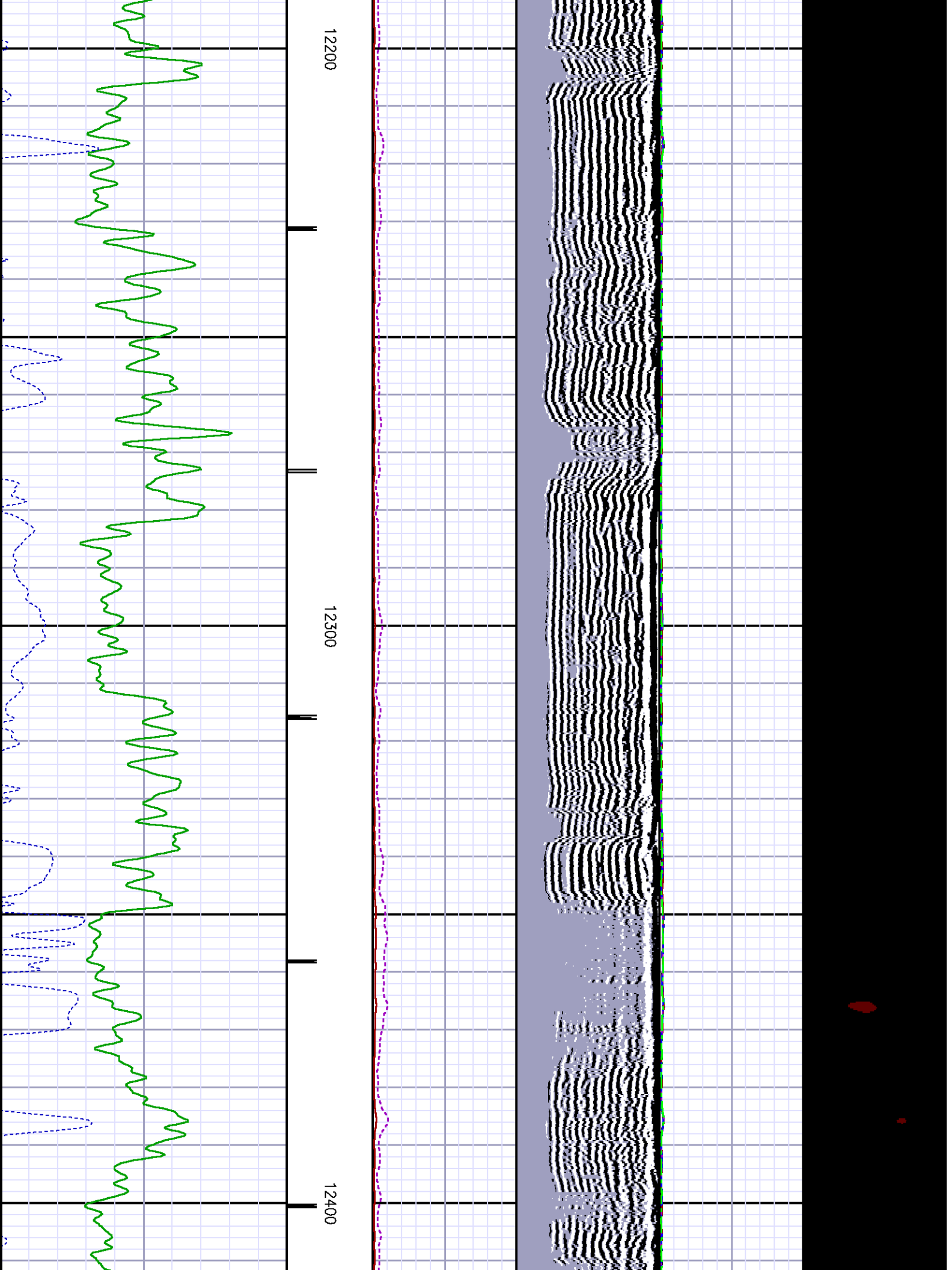


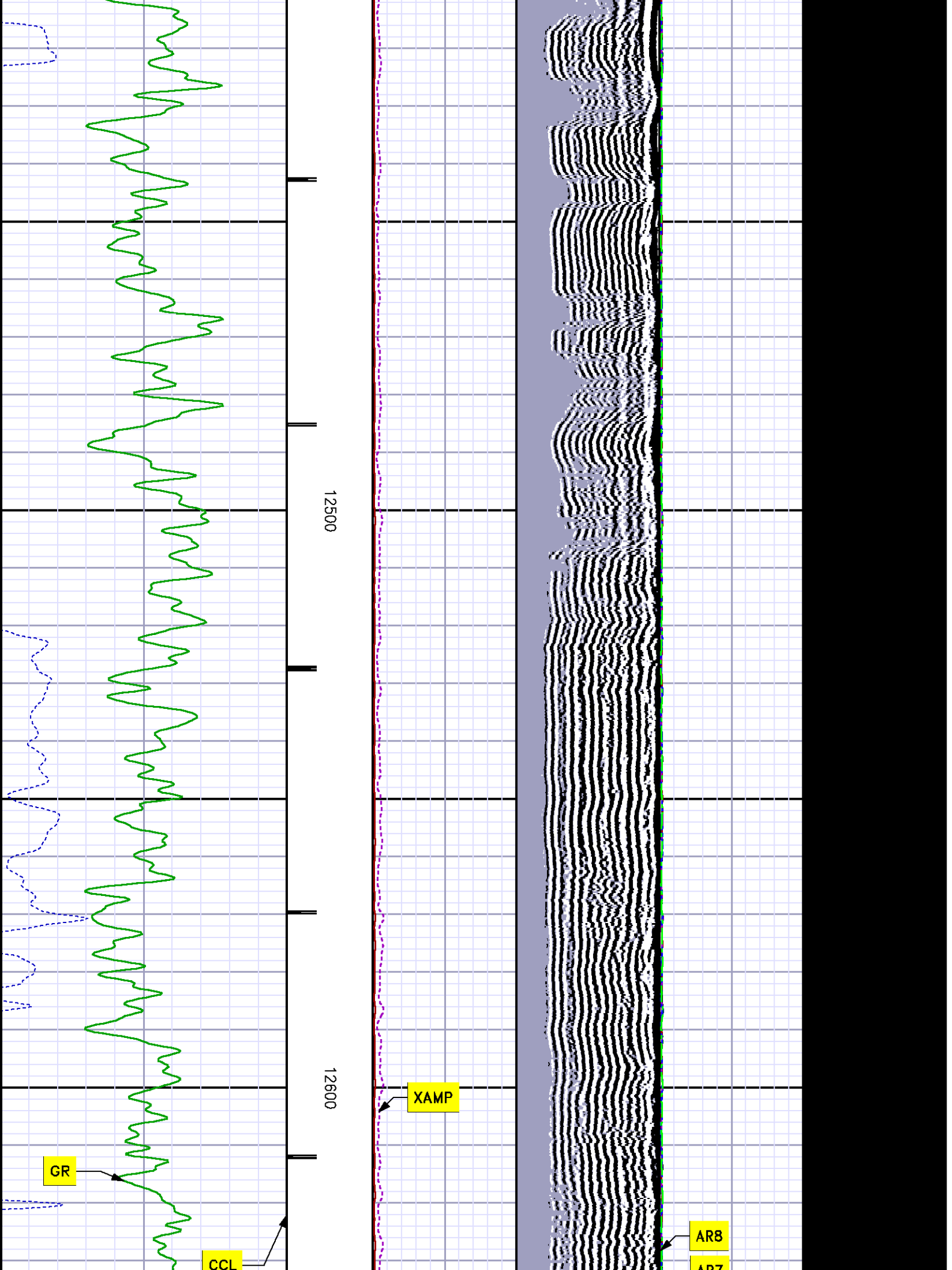


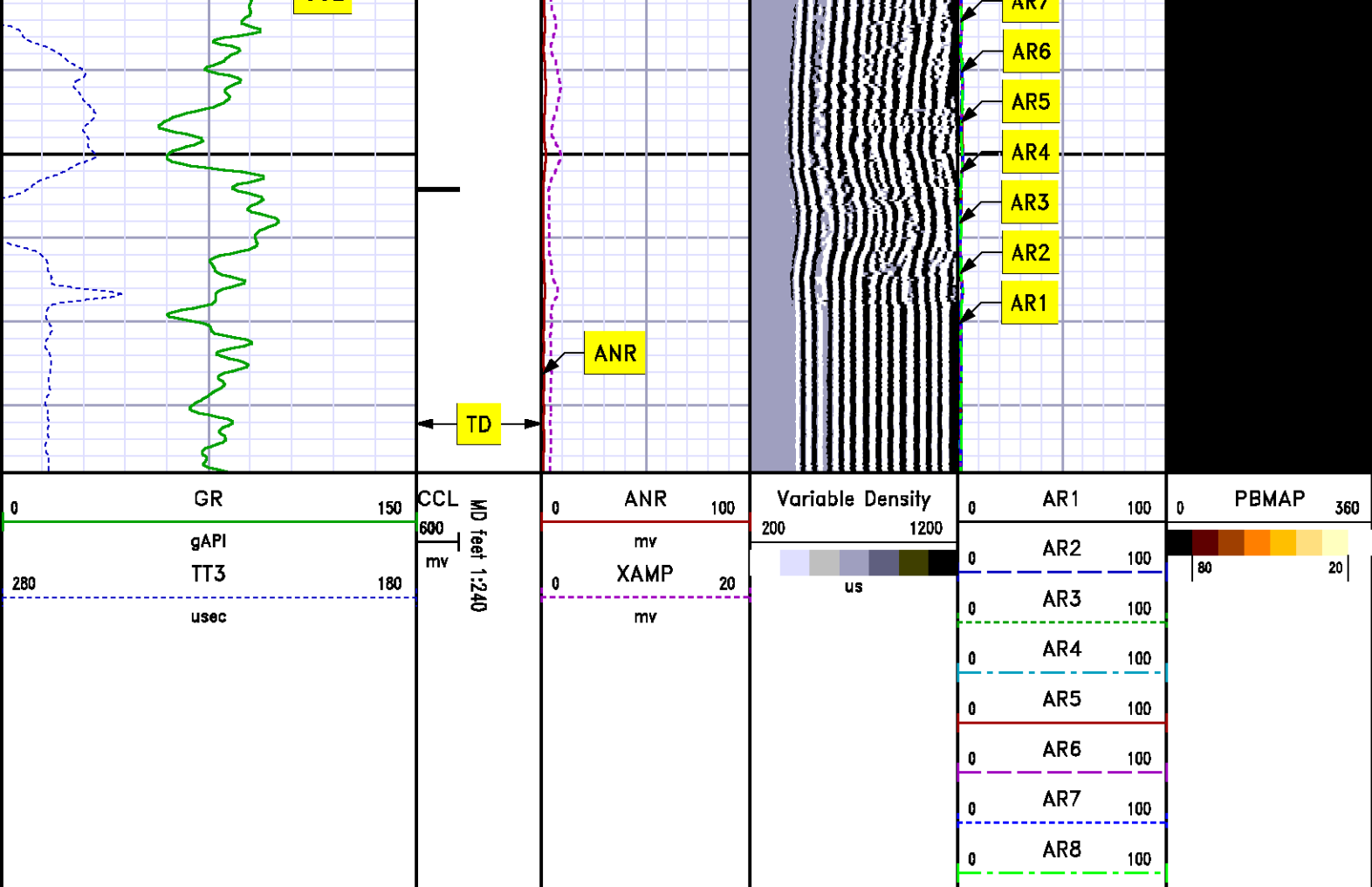












REPEAT SECTION
0 PSI

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	304.887	usec	12310.359	12711.609
RAL	Amp Gate Start Near	198.031	usec	12310.359	12711.609
RAL	Amp Gate Start Radial	199.125	usec	12310.359	12711.609
RAL	Amp Gate Width Far	25.000	usec	12310.359	12711.609
RAL	Amp Gate Width Near	24.999	usec	12310.359	12711.609
RAL	Amp Gate Width Radial	24.999	usec	12310.359	12711.609
RAL	casing od	4.500	inches	12310.359	12711.609
RAL	casing wt	11.600	lbm/ft	12310.359	12711.609
RAL	FB Start Far	291.900	usec	12310.359	12711.609

RAL	FB Start Near	175.391	usec	12310.359	12711.609
RAL	FB Start Radial	175.391	usec	12310.359	12711.609
RAL	FB Thresh Far	10.000	mv	12310.359	12711.609
RAL	FB Thresh Near	4.000	mv	12310.359	12711.609
RAL	FB Thresh Radial	4.000	mv	12310.359	12711.609
RAL	Fluid Travel Time	200.000	usec/ft	12310.359	12711.483

DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES							
1426XA	-16.750	ACAL	ANR	AR1	AR2	AR3	AR4		
		AR5	AR6	AR7	AR8	CHV	FPR2		
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3		
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP		
1426XA	-15.750	AFAR	SIG	TT5					
2459XA	-11.340	CCL							
2459XA	-9.490	GR							
2459XA	-4.090	NEU							

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

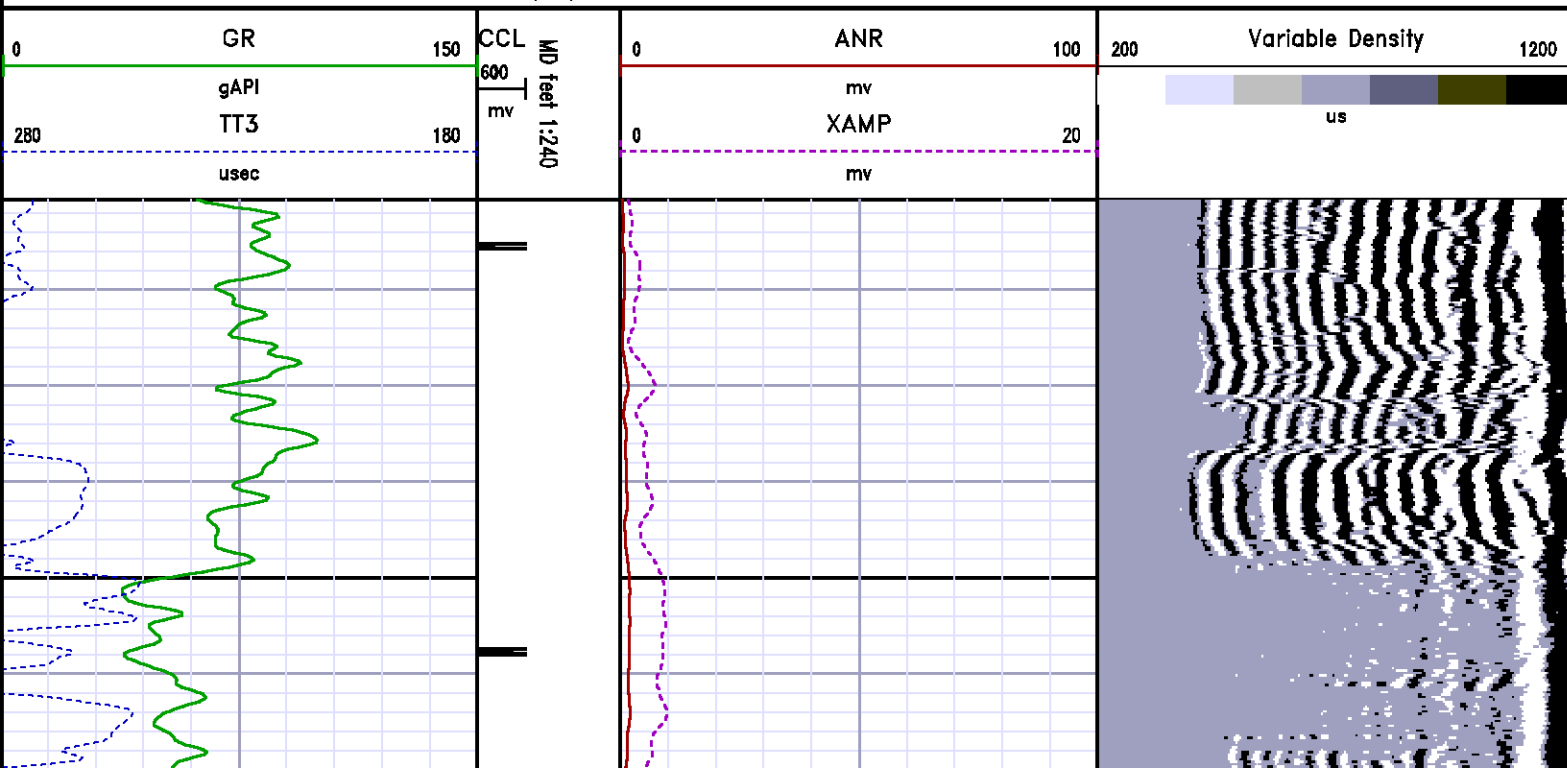
Well : FEDERAL RGU 13-24-198

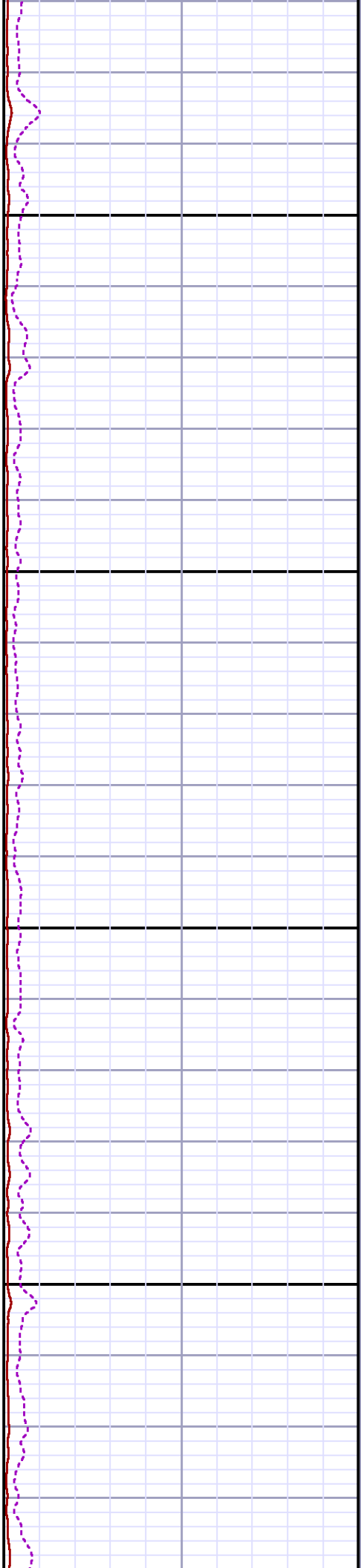
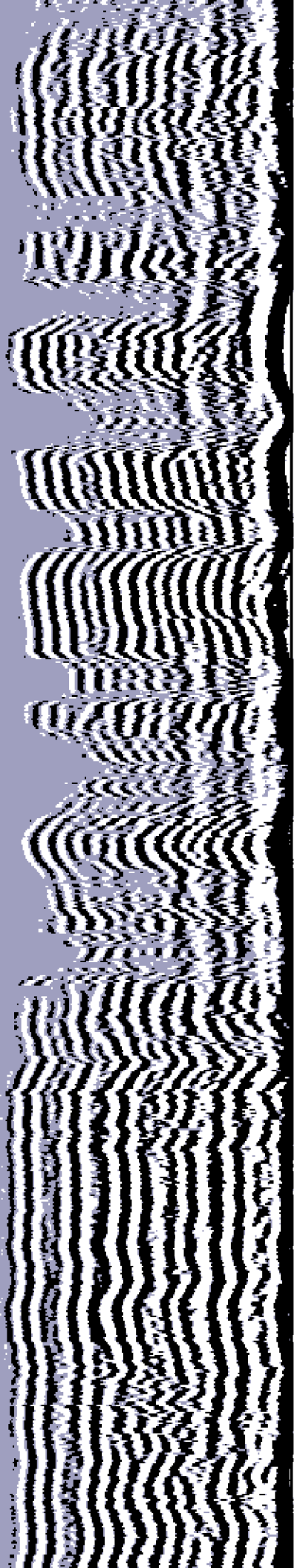
File Name : D:\WELLDATA\WILLIAMS\Federal RGU 13-24-198\cb113\REPEAT.XTF

Mode : PlotMgr 5.4.504

Interval : 12310.61 - 12711.61 feet UP

Created : 11/17/2011 4:36:27 PM

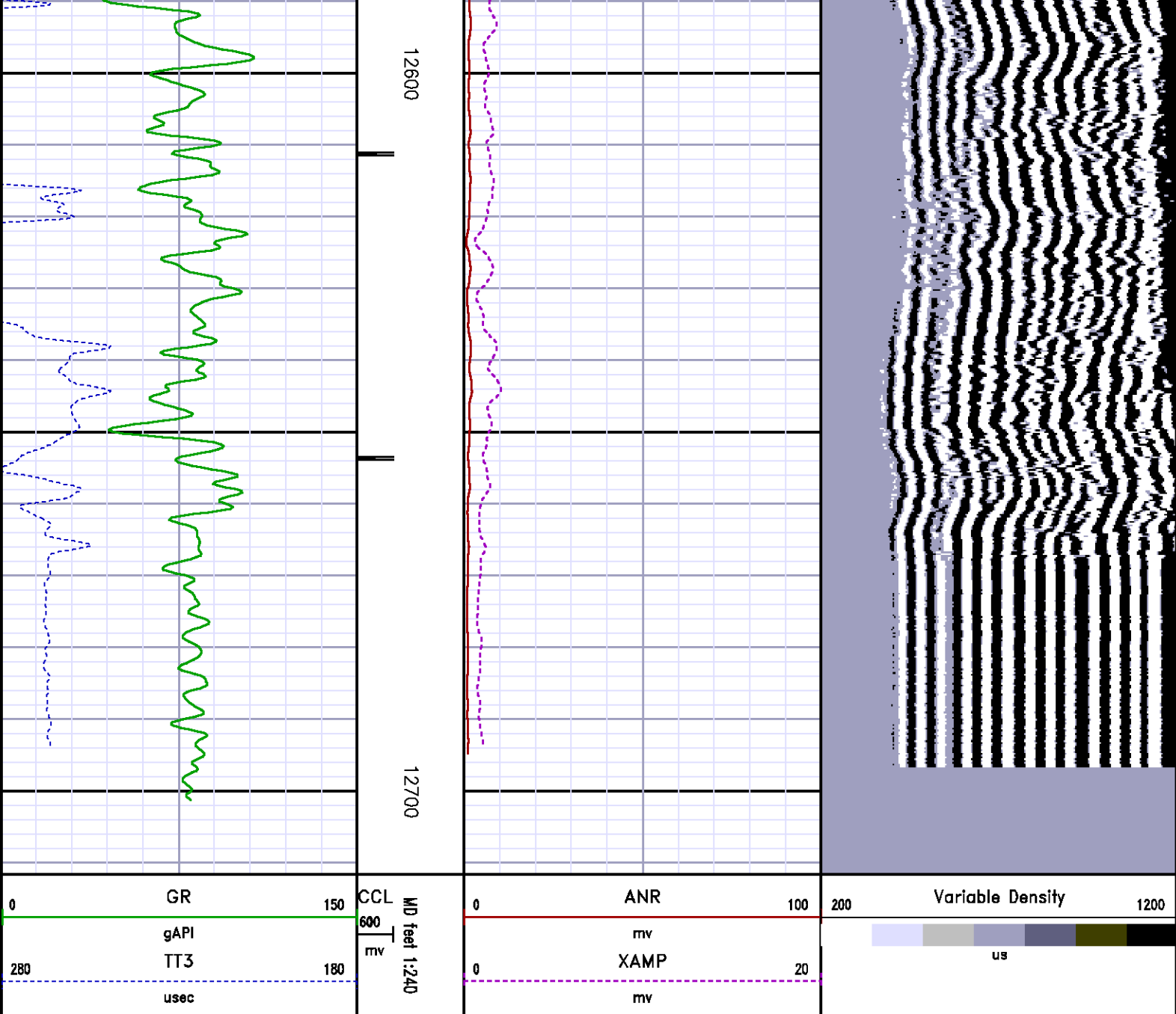




12400

12500





CALIBRATION SUMMARY

RALSHP

Shop Calibration: C:\case\calver\RALSHP\028N9_shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Nov 09 11:46:26 2011

TOOL SERIES: 1426XA

ASSET:

028

SEQ: N9

Tool Delay [usec]	-56.00	Tank OD In	5.50	Tank Wt lbm/ft	15.50	Tank ID In	4.95
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RECEIVER	Travel Time [usec]	Amp. Gate Start [usec]	Amp. Gate Width [usec]	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Amp Ref. [mV]	Shop Factor
CAL Pulse	216	216	25	166	25	-0.200	100.00	0.19
3 Ft. Receiver	217	216	25	166	25	0.081	100.00	0.19
5 Ft. Receiver	326	326	25	282	25	-6.836	150.00	0.20
Radial #1	216	216	25	166	25	-0.375	100.00	0.19
Radial #2	216	216	25	166	25	-0.392	100.00	0.19
Radial #3	217	216	25	166	25	-0.247	100.00	0.19
Radial #4	217	216	25	166	25	-0.161	100.00	0.19
Radial #5	218	216	25	166	25	-0.142	100.00	0.19
Radial #6	217	216	25	166	25	0.214	100.00	0.19
Radial #7	216	216	25	166	25	-0.508	100.00	0.19
Radial #8	217	216	25	166	25	0.403	100.00	0.19

RALFLD

Wellsite Calibration: C:\case\calver\RALFLD\028N9 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Nov 09 11:48:06 2011 TOOL SERIES: 1426XA ASSET: 028 SEQ: N9

Tool Delay [usec]	-56.00	Casing OD In	4.50	Casing Wt lbm/ft	11.60	Casing ID In	4.00
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RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	166	25	-0.046	0.000	1.00	100.000
3 Ft. Receiver	200	30	0.506			
5 Ft. Receiver	317	30	0.873			
Radial #1	200	30	0.364			
Radial #2	200	30	0.363			
Radial #3	200	30	0.054			
Radial #4	200	30	0.214			
Radial #5	200	30	0.133			
Radial #6	200	30	0.254			
Radial #7	200	30	0.156			
Radial #8	200	30	0.273			

GAMMA RAY

Calibration File: C:\case\calver\GR\456N0.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Nov 09 14:32:40 2011 TOOL SERIES: 2459XA ASSET: 456 SEQ: NO

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K BA-905	82.84	354.93	0.680	56.33	241.33	185.00

Verification File:	C:\case\calver\GR\456NO.VP
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PRIMARY LOG VERIFICATION						
DATE/TIME PERFORMED:	Wed Nov 09 14:34:55 2011	TOOL SERIES:	2459XA	ASSET:	456	SEQ: NO
Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K BA-905	84.53	345.78	0.680	57.48	235.10	177.63

TOOL DIAGRAM

OTA SHORT CABLE HEAD

PROBE 2 3/4 DUAL RECEIVER RADII

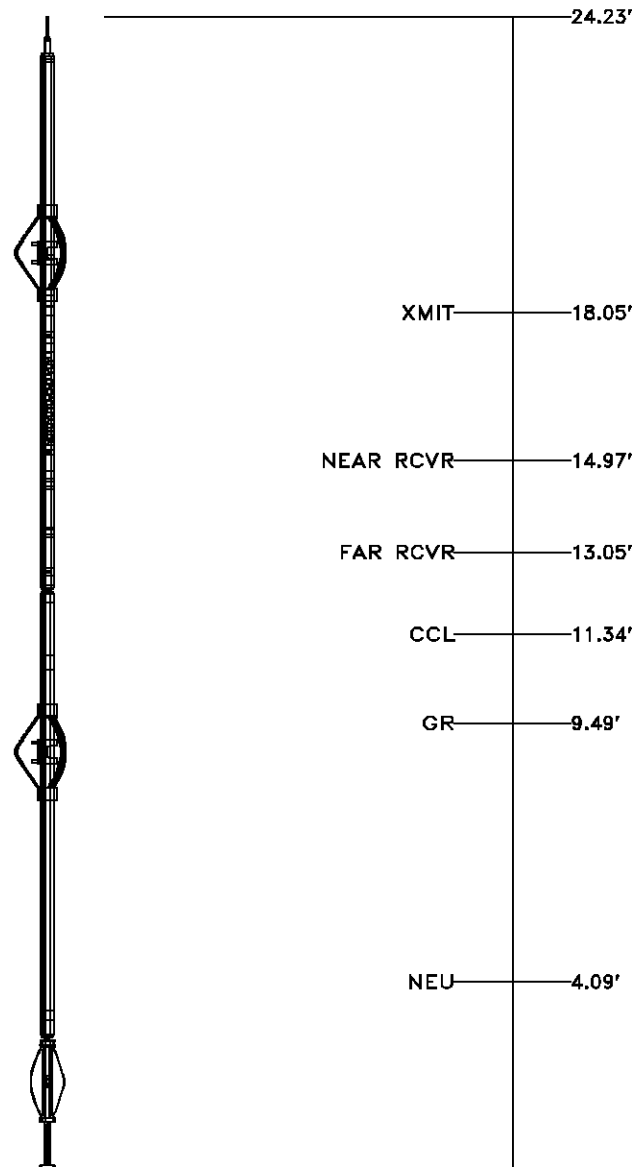
Series 1426XA
 Mnemonic PROB
 Diameter 2.75"
 Length 11.17'
 Measure Point 0.75' FAR RCVR
 Measure Point 2.67' NEAR RCVR
 Measure Point 5.75' XMIT
 Temp Rating 350.00 °F
 Press Rating 18000.00 PSI

Probe GR/CCL/NEU

Series 2459XA
 Mnemonic PROB
 Diameter 2.75"
 Length 9.42'
 Measure Point 1.21' NEU
 Measure Point 6.60' GR
 Measure Point 8.46' CCL

CENTRALIZER

Series RALCENT
 Mnemonic CENT
 Diameter 3.12"
 Weight 20.00 lb



Total Length: 24.23'
Total Weight: Not Available
Max Diameter: 0' 3.12"



Baker Atlas



Company	WILLIAMS PRODUCTION COMPANY		
Well	FEDERAL RGU 13-24-198		
Field	Sulphur Creek		
County	Rio Blanco	State	COLORADO

File No:
CH045471
API No:
05103116130000

Location			
SHL: 1751' FSL 1076' FWL (N1/4SW)			
BHL: 2287' FSL 632' FWL (N1/4SW)			
SEC	24	TWP	1S
		RGE	98W

Elevations	
KB	6562 ft
DF	6561 ft
GL	6540 ft

24 1S 98W
RGU 13-24-198 Pad
FRONTIER 10