



# RADIAL ANALYSIS BOND LOG

Baker Atlas

File No: CH090683	Company Well Field County	WPX ENERGY CHEVRON GM 311-21 GRAND VALLEY GARFIELD	State COLORADO
API No: 05045223530000	Location SHL: 2019' FNL & 702' FEL (SEC 20) BHL: 645' FNL & 891' FWL (SEC 21) CYCLONE 17		
21 6S 96W GM 442-20 PAD CYCLONE 17	SEC 21 TWP 6S RGE 96W	Other Services RPM KB 5596 ft DF GL 5575 ft	
Permanent Datum Log Measured From Drill Measured From	GL KB KELLY BUSING	Elevation 21 ft Above P. D.	

Date	09/OCT/14	
Run	ONE	
Service Order	US090683J	
Depth Driller	7263 ft	
Depth Logger	7220 ft	
Bottom Logged Interval	7210 ft	
Top Logged Interval	21 ft	
Time Started	0800	
Time Finished	1100	
Operator Rig Time	3 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	58 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	65 fpm	
Maximum Recorded Temperature	241 degF	
Reference Log	BAKER HUGHES OPEN HOLE	
Reference Log Date	29/AUG/14	
Equipment No.	44271	GRAND JCT
Recorded By	FLOYD RENEAU	
Witnessed By	COLLEAPLEGATE	

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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	21 ft	1031 ft
8.75 in	1031 ft	7263 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			21 ft	1031 ft
4.5 in	11.6 lbm/ft	I-80	21 ft	7263 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes HDIL/ZDL/CN/GR open hole log dated 9/29/2014 at the clients request.
The amount of linear shift is 1.5 feet.
The depth matching process creates potential for collar lengths to vary from those recorded on other cased hole wireline units without a Gamma Ray reference.
Logged with zero PSI at wellhead.

BHT = 241°F

SJ = 3877'-3898'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1426XA	10404539	CENT
1	1	GR/CCL	2459XA	10218503	CENT

PRIMARY PRESENTATION

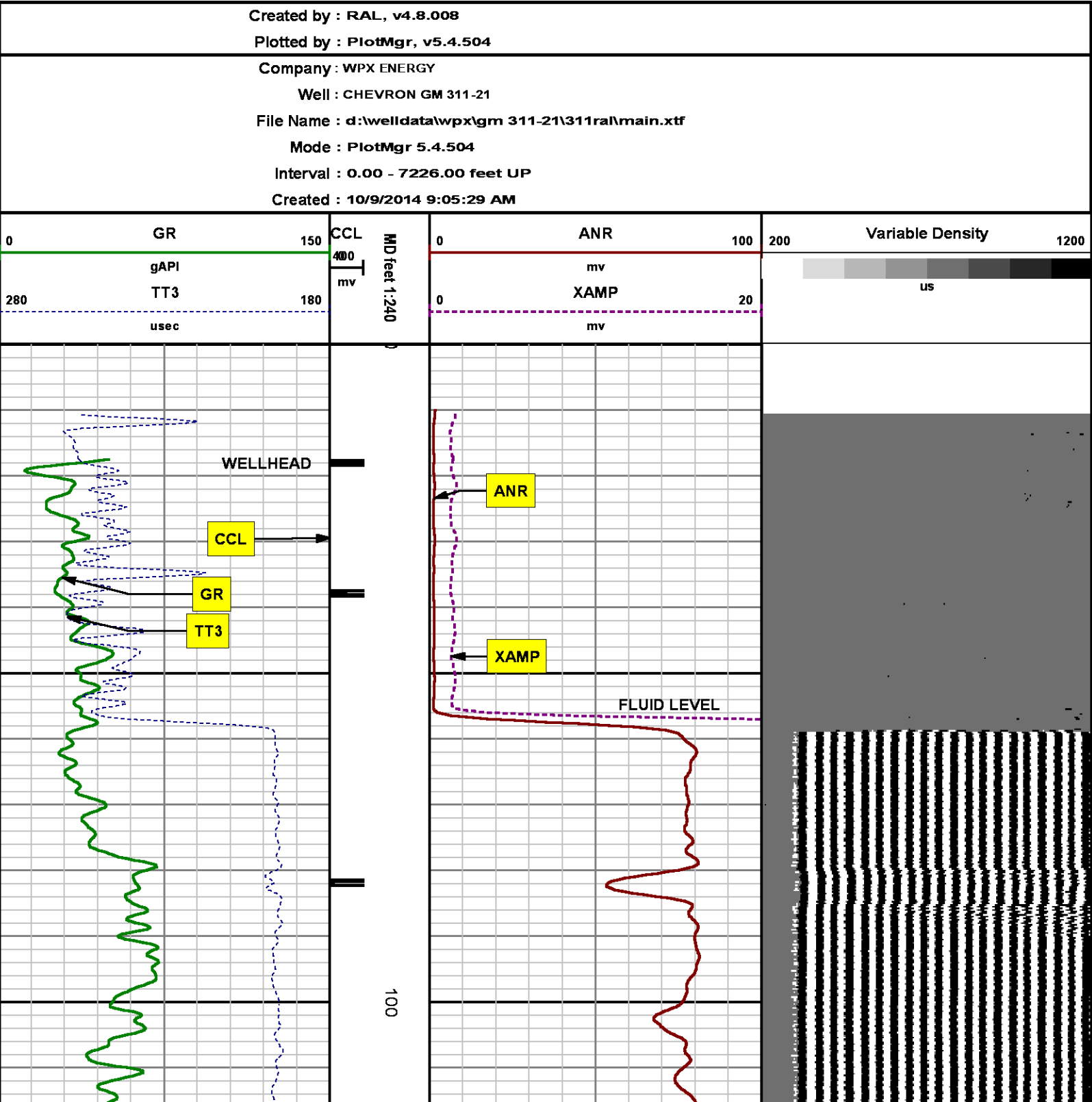
0 PSI

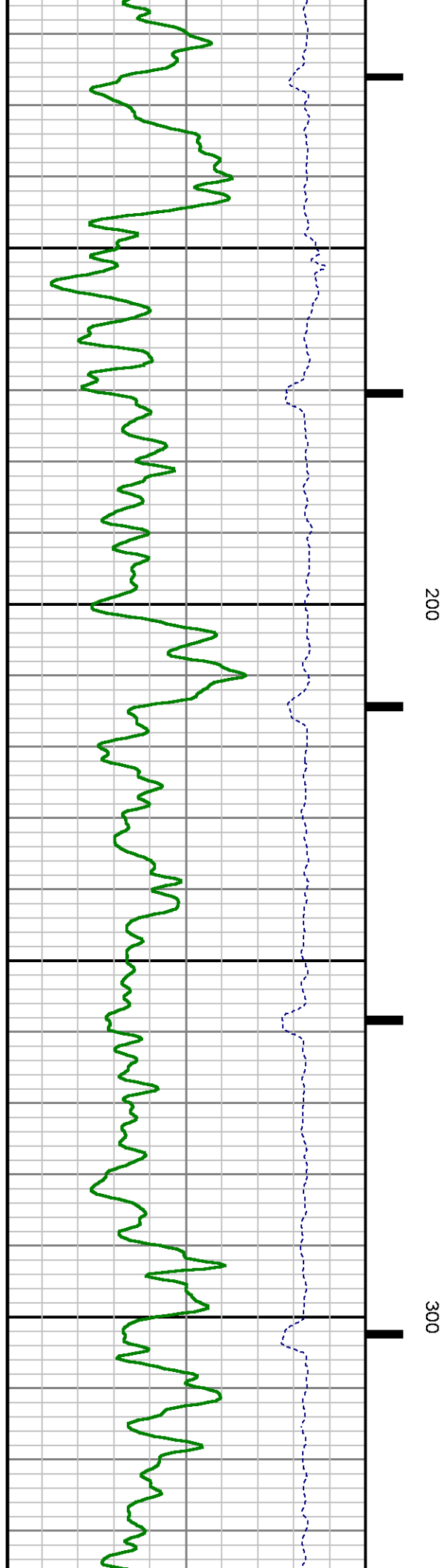
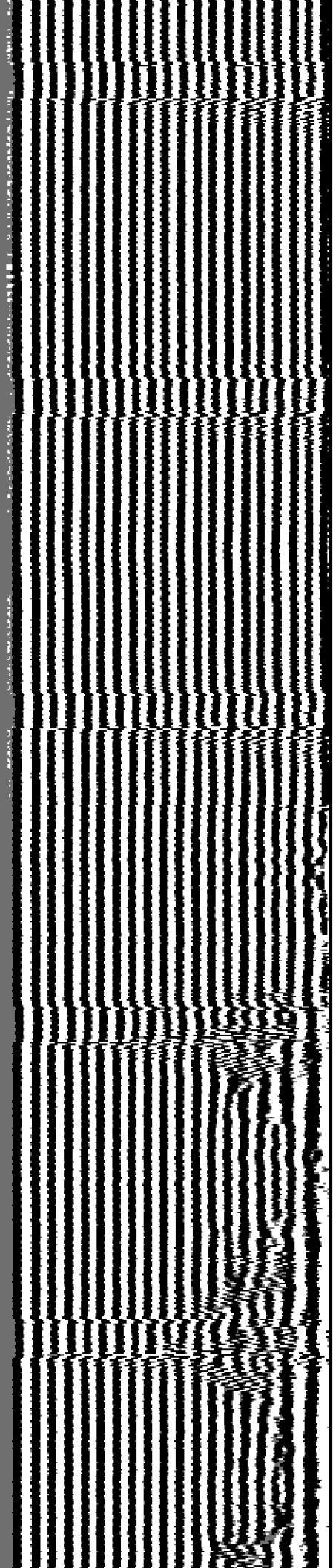
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	305.000	usec	27.043	7222.000
RAL	Amp Gate Start Near	195.000	usec	27.043	7222.000
RAL	Amp Gate Start Radial	195.000	usec	27.043	7222.000
RAL	Amp Gate Width Far	25.000	usec	27.043	7222.000
RAL	Amp Gate Width Near	25.000	usec	27.043	7222.000
RAL	Amp Gate Width Radial	25.000	usec	27.043	7222.000
RAL	casing od	4.500	inches	27.043	7222.000
RAL	casing wt	11.600	lbm/ft	27.043	7222.000
RAL	FB Start Far	291.900	usec	27.043	7222.000
RAL	FB Start Near	180.000	usec	27.043	7222.000
RAL	FB Start Radial	180.000	usec	27.043	7222.000
RAL	FB Thresh Far	10.000	mv	27.043	7222.000
RAL	FB Thresh Near	4.000	mv	27.043	7222.000
RAL	FB Thresh Radial	4.000	mv	27.043	7222.000
RAL	Fluid Travel Time	200.000	usec/ft	27.043	7222.000

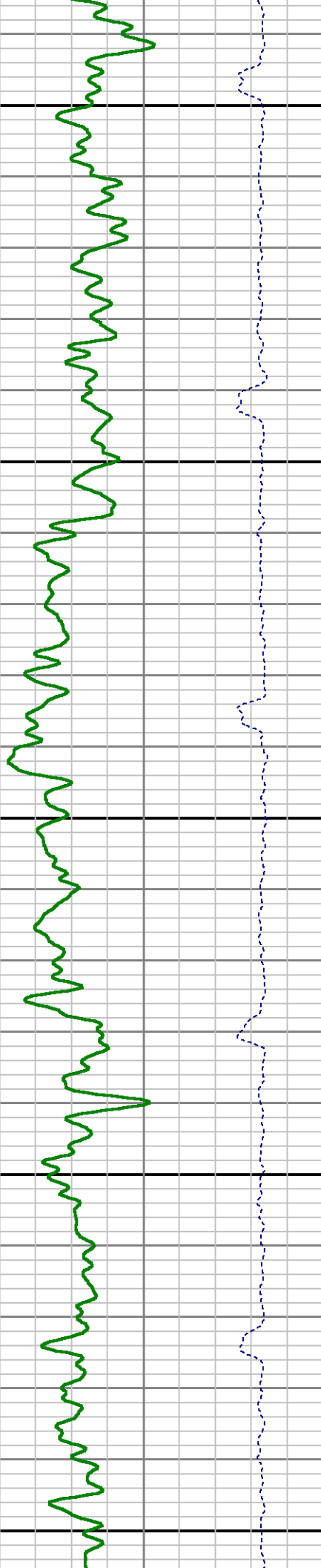
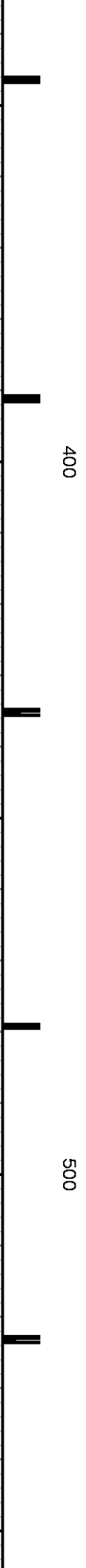
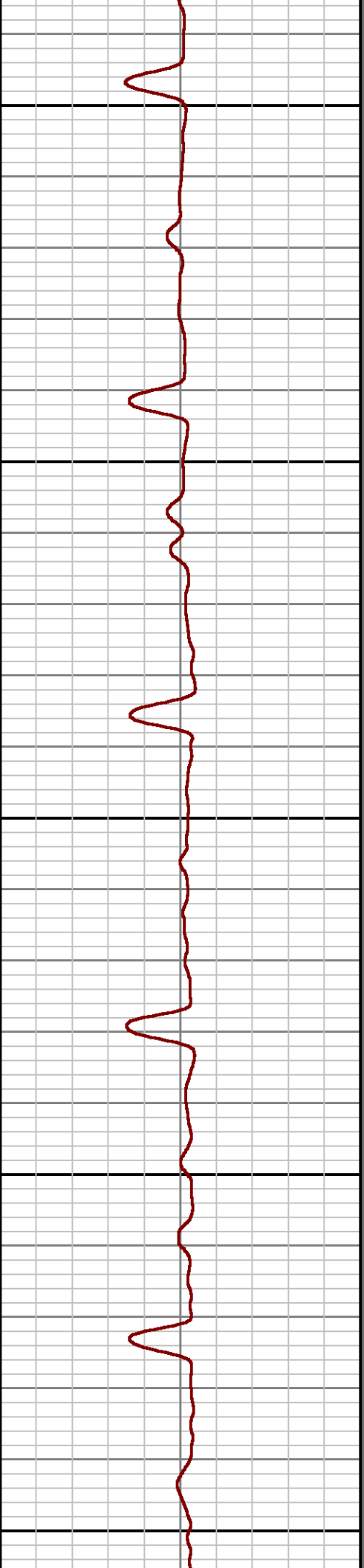
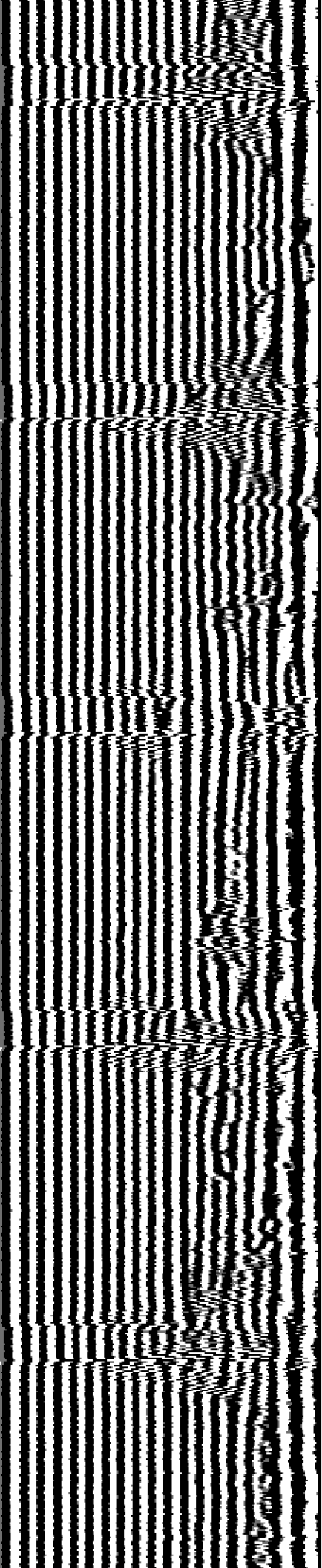
DEPTH OFFSETS

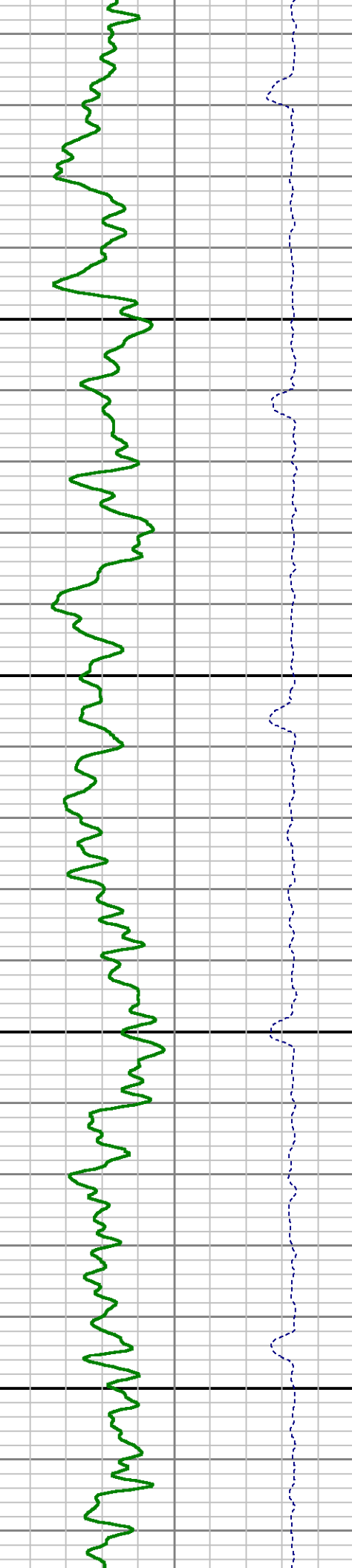
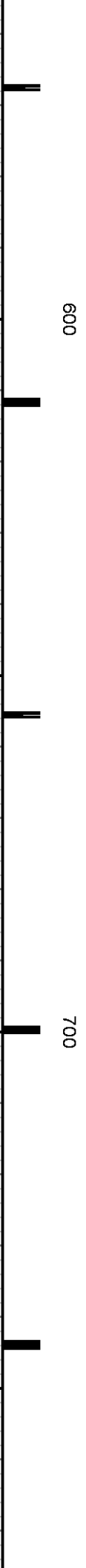
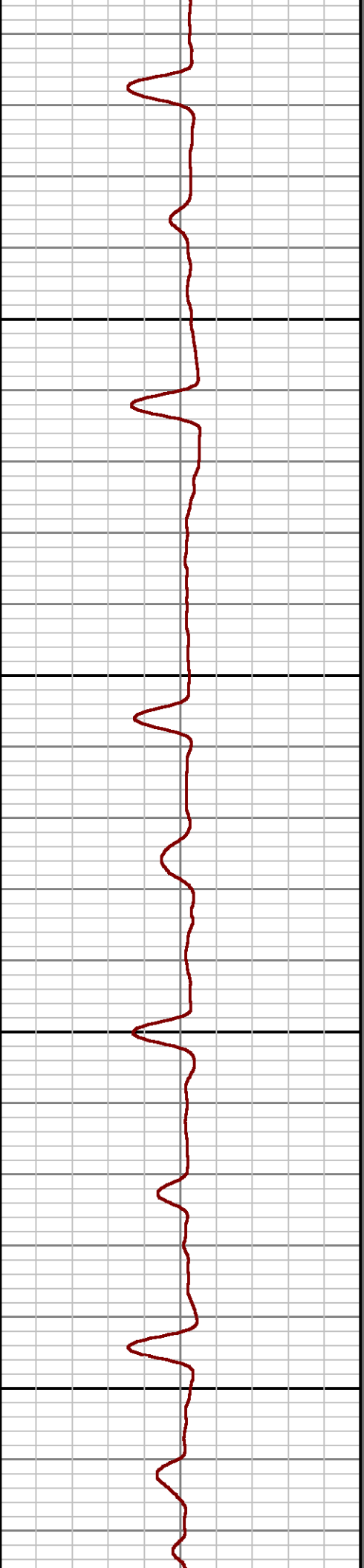
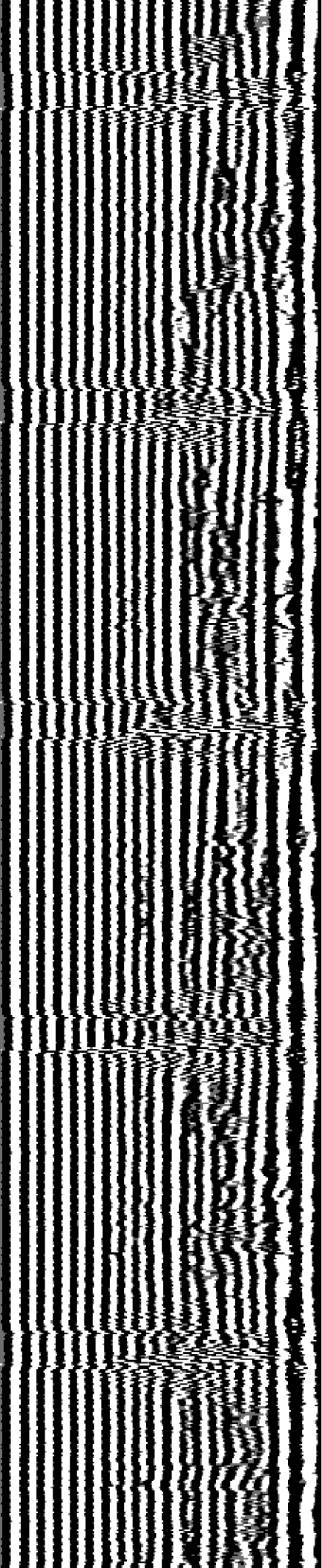
(for Acquired Curves)

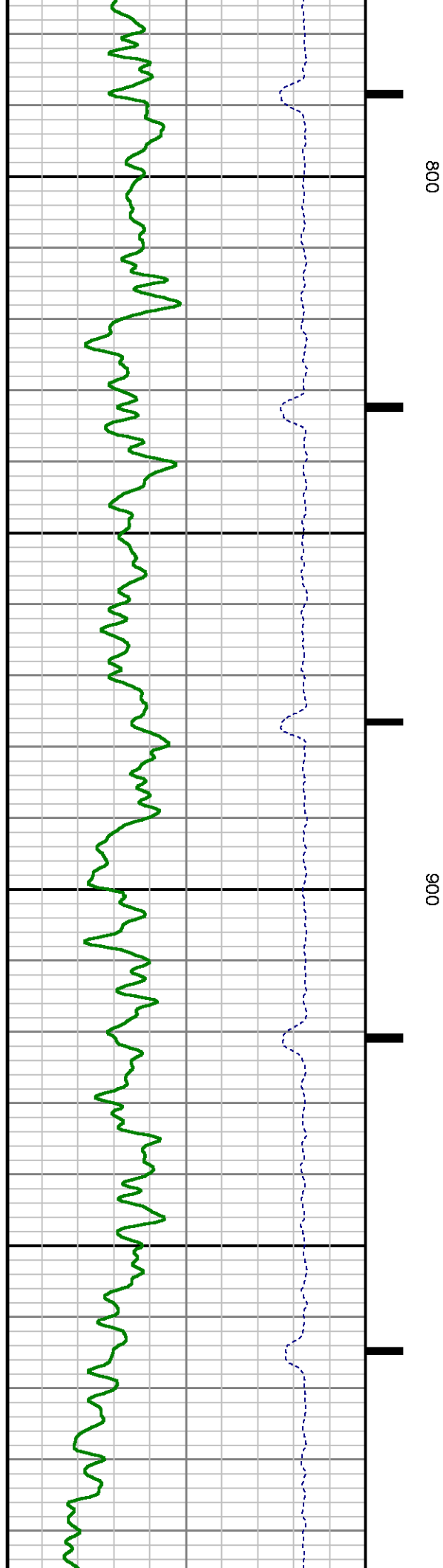
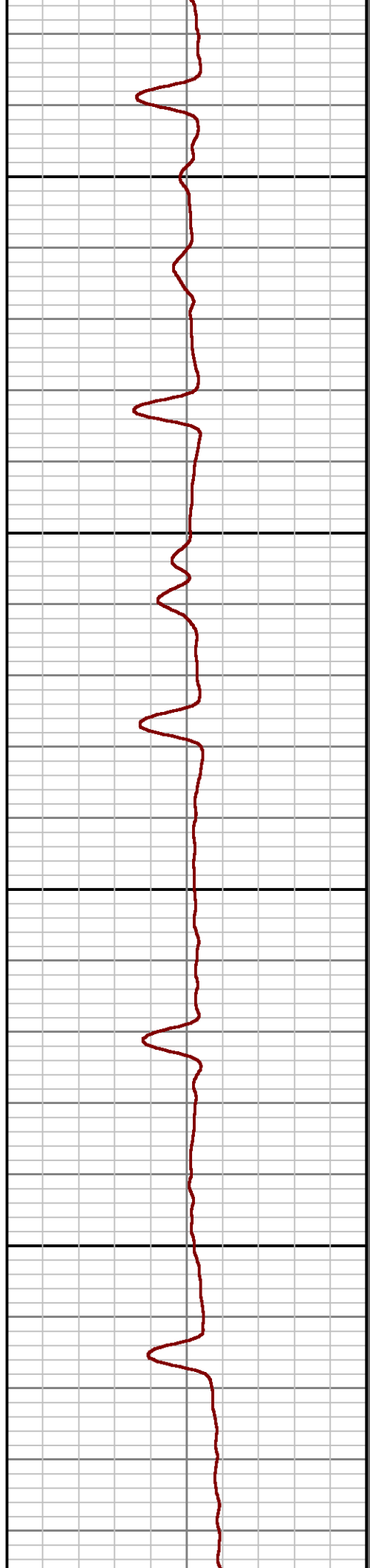
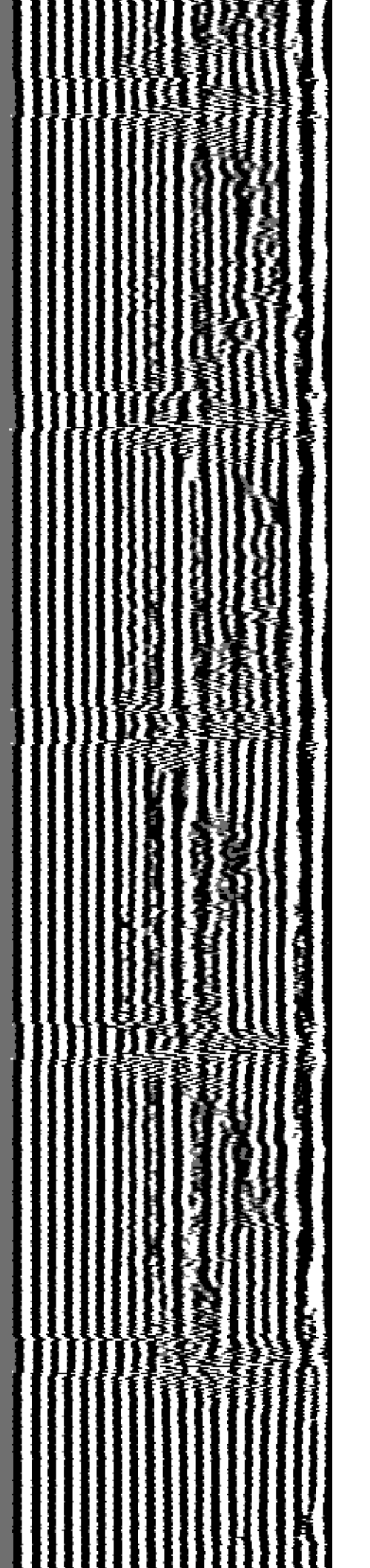
SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-12.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-11.360	AFAR	SIG	TT5			
2459XA	-7.250	CCL					
2459XA	-5.390	GR					
2459XA	0.000	NEU					



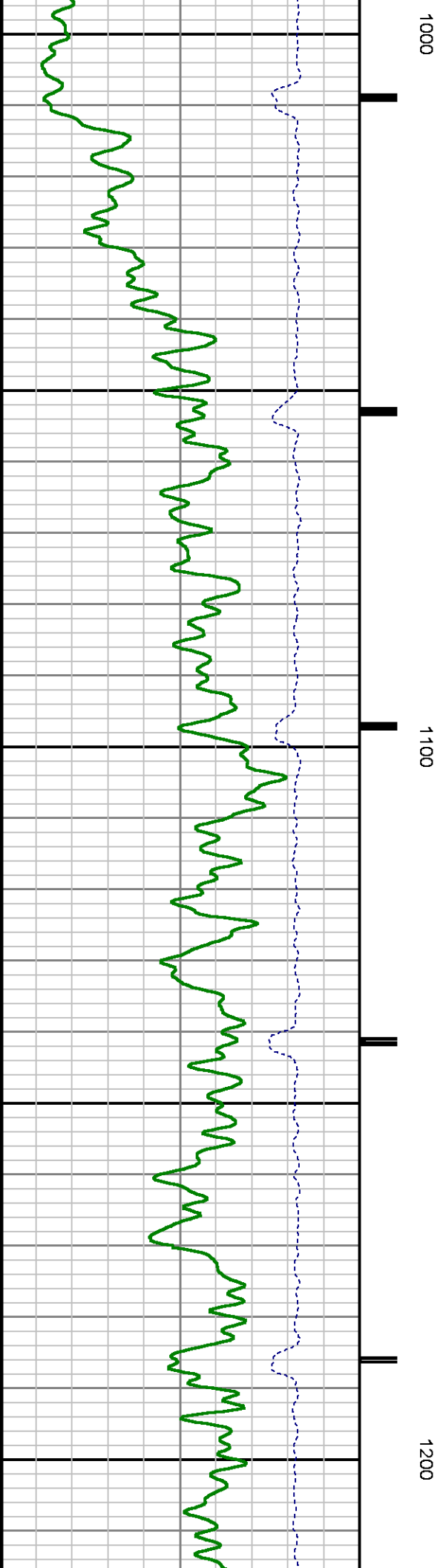
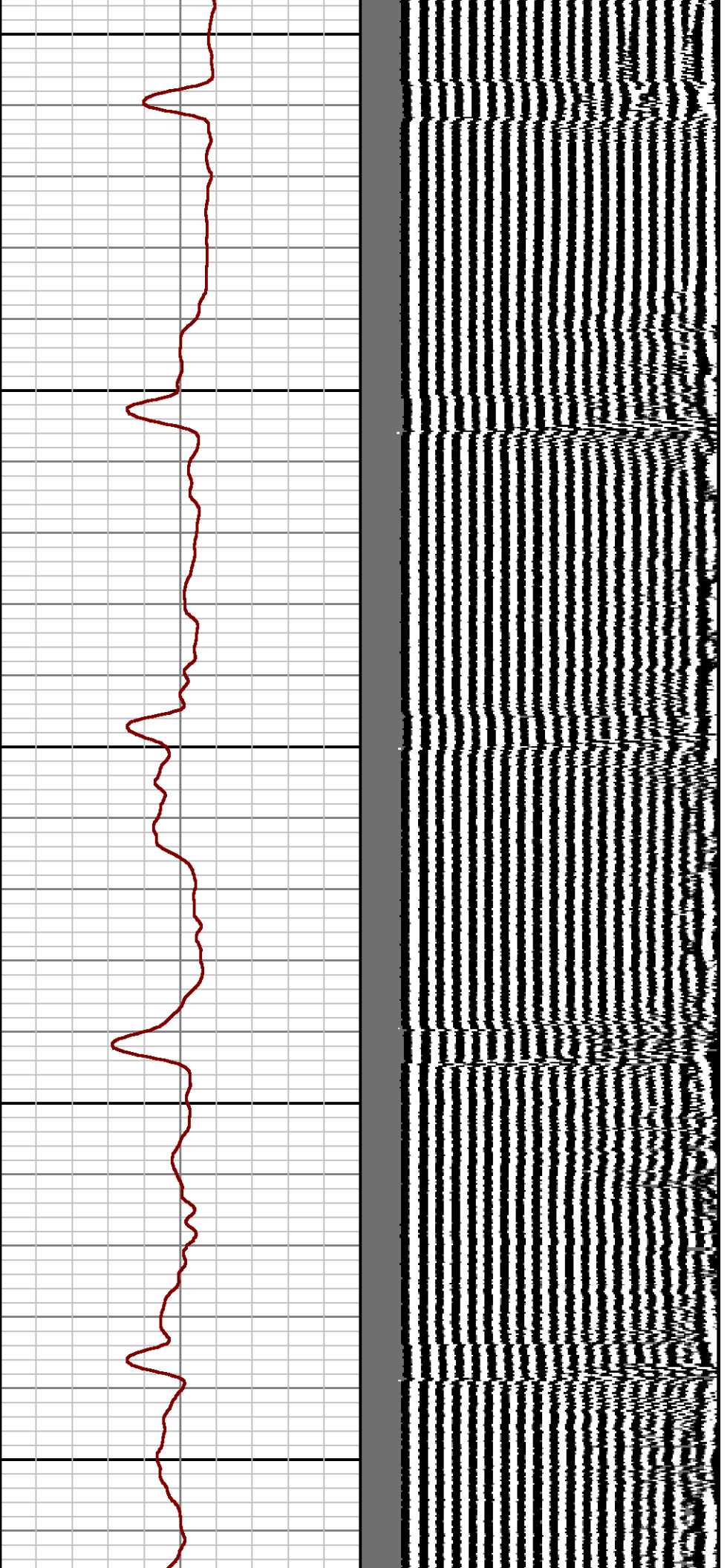




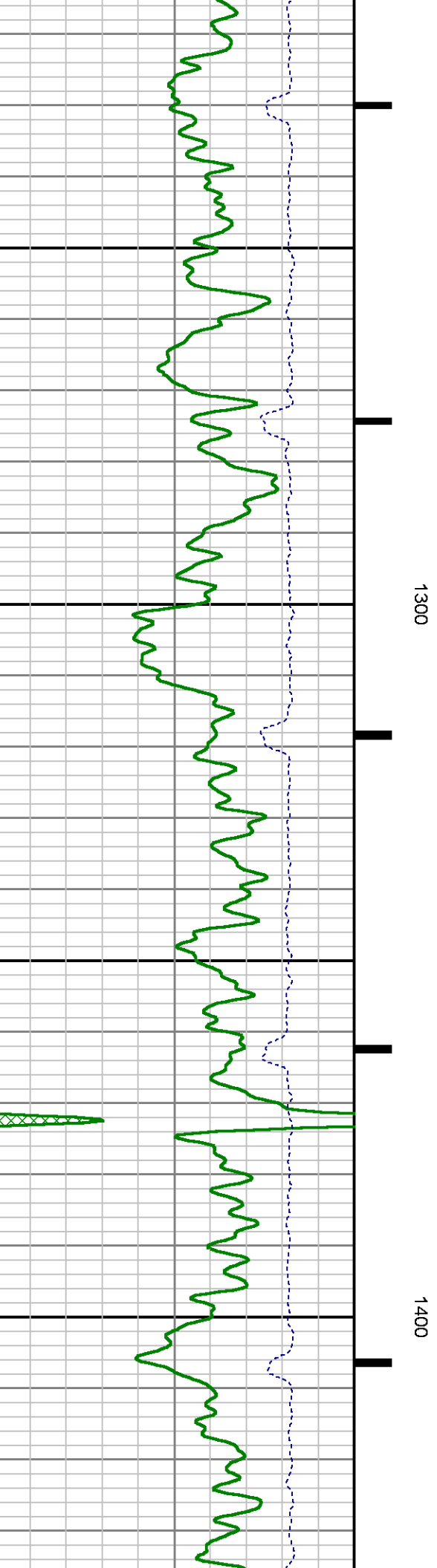
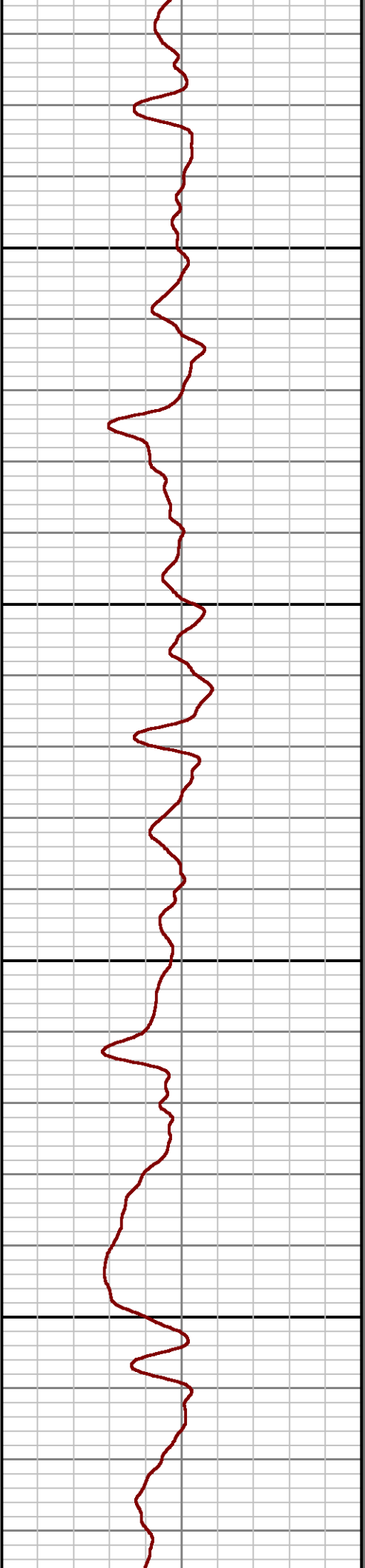
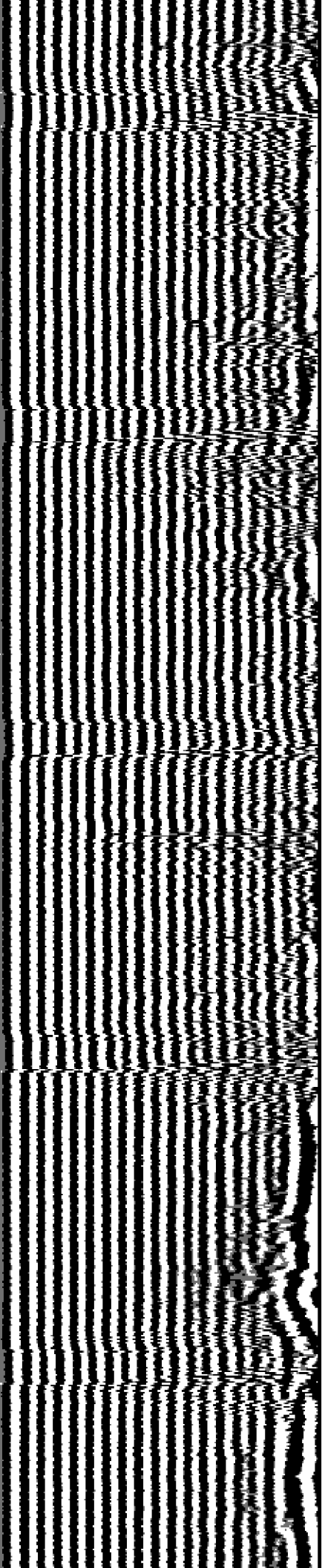


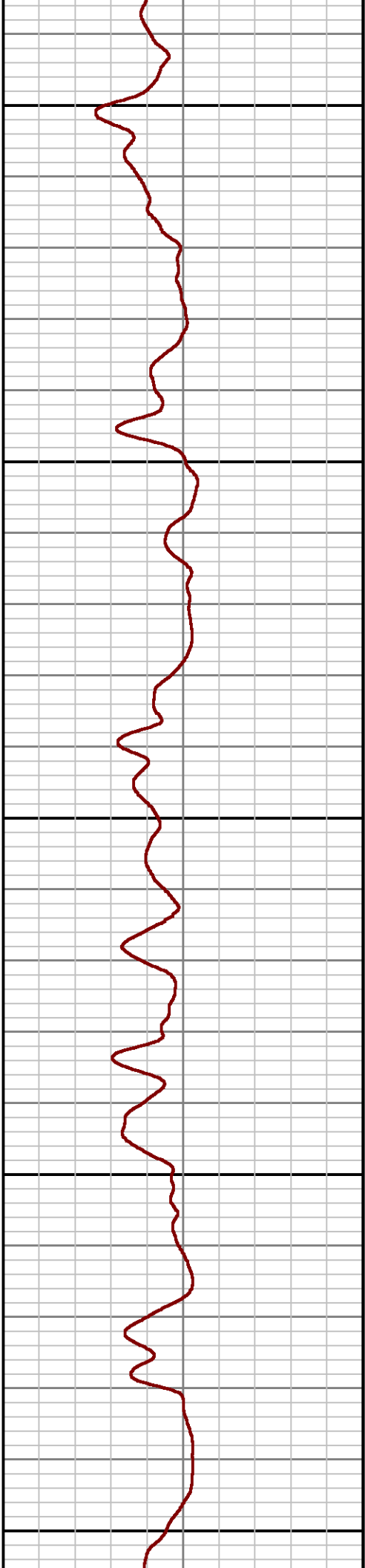
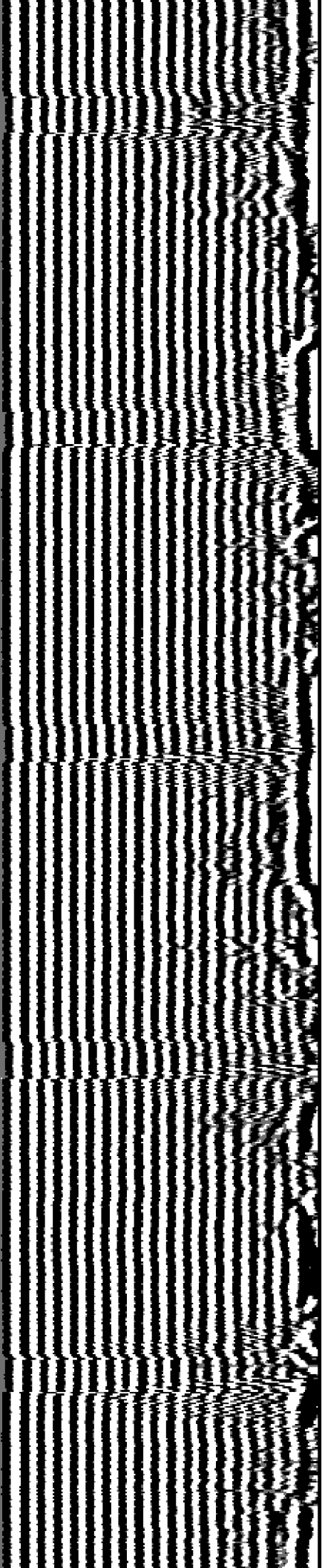






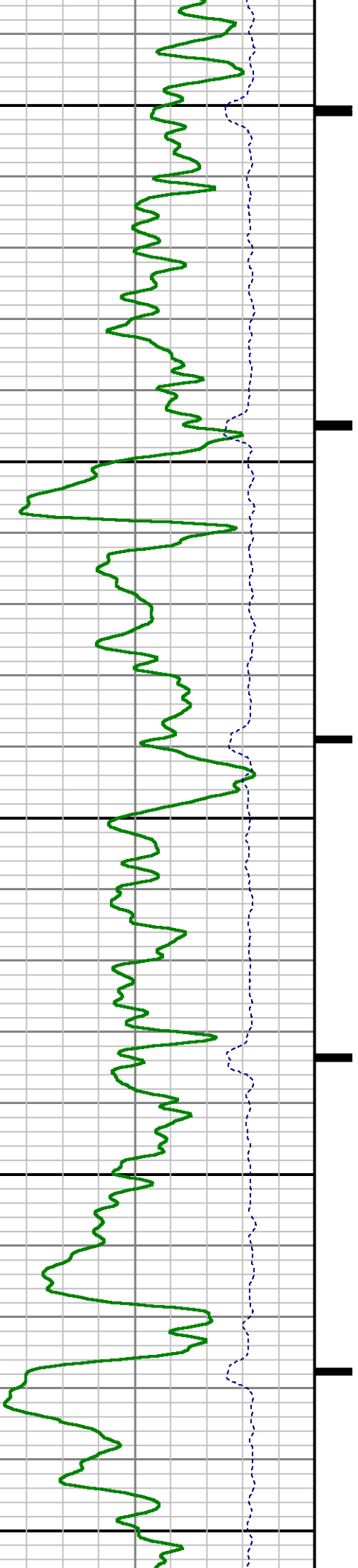


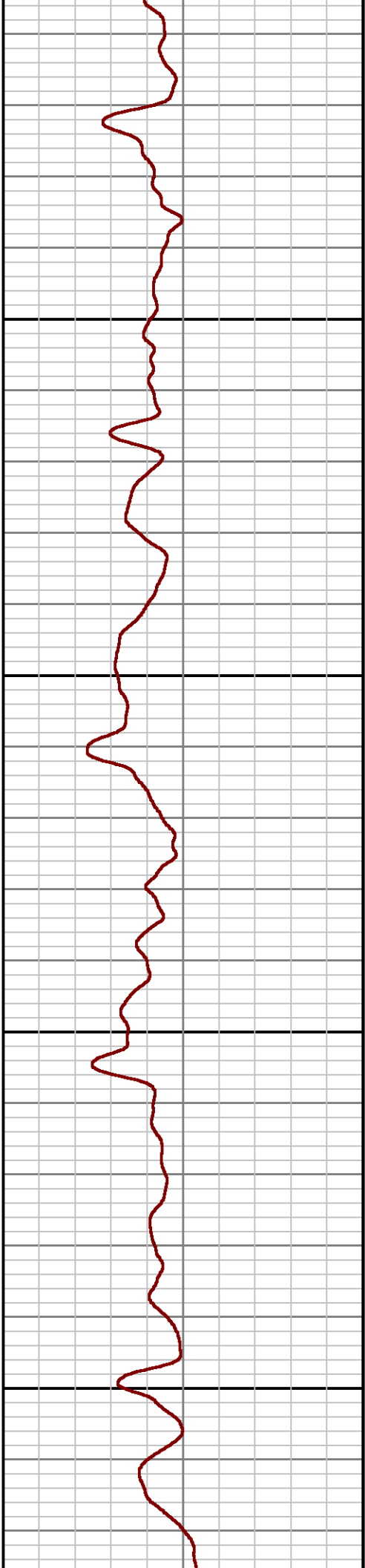
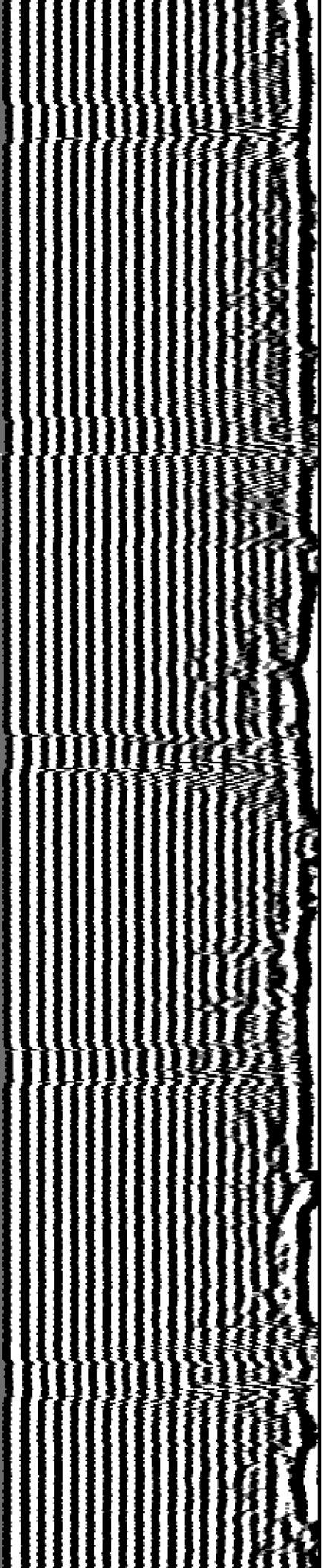




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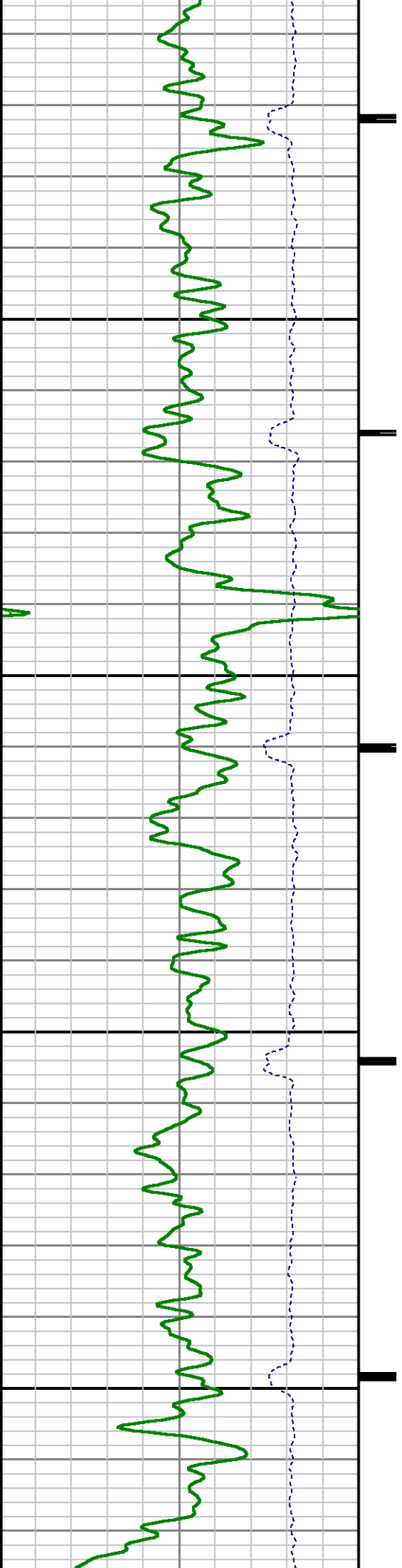
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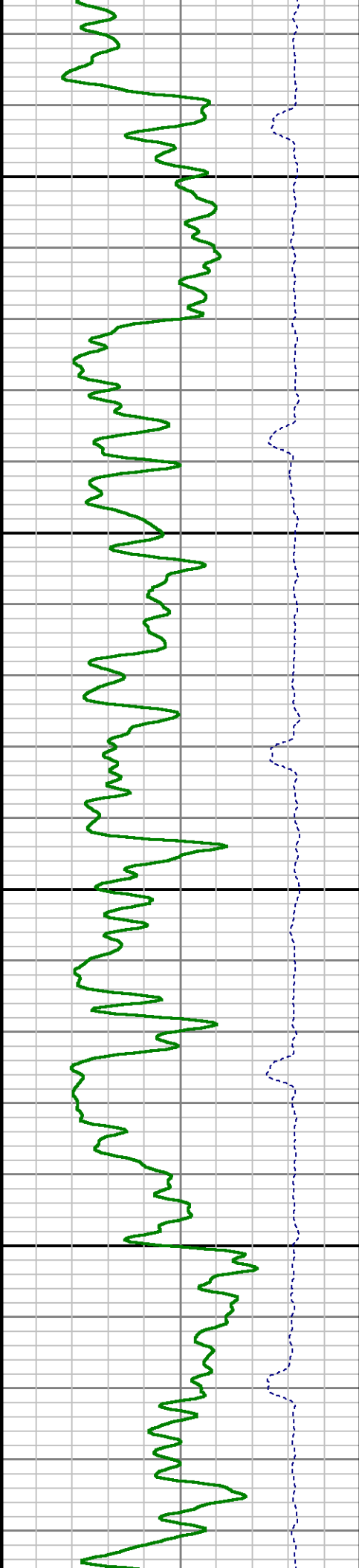
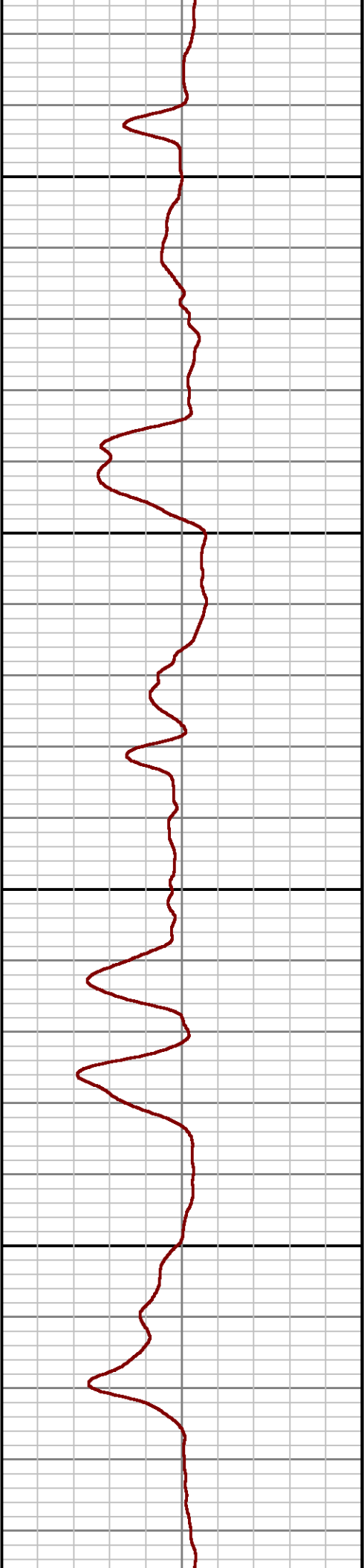
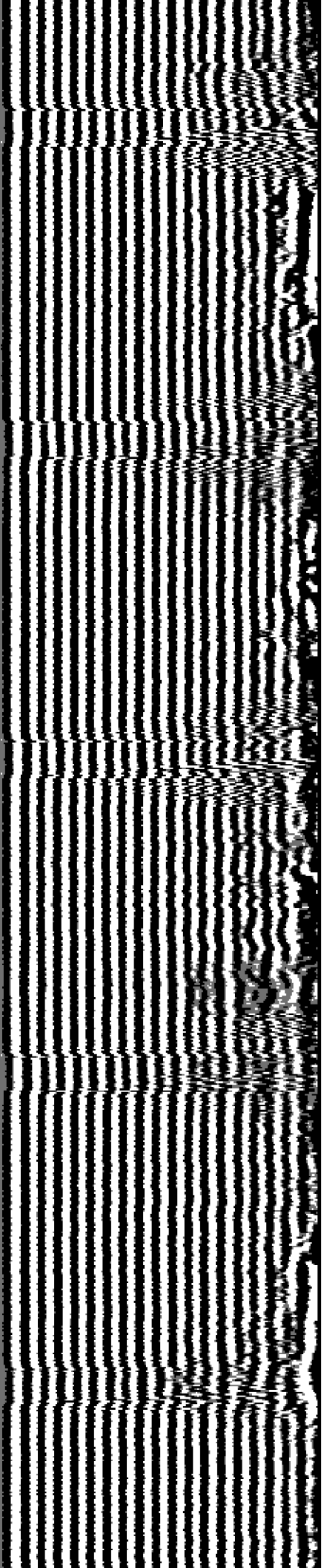


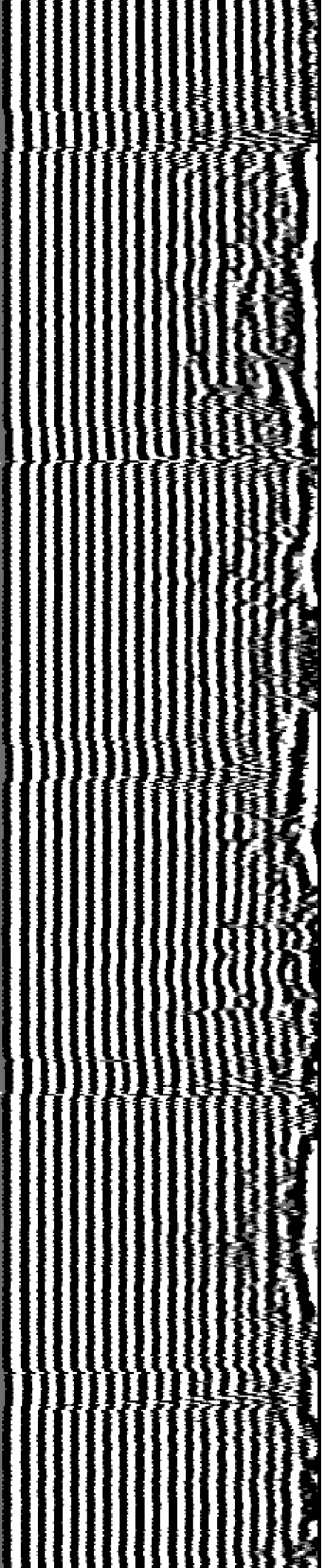


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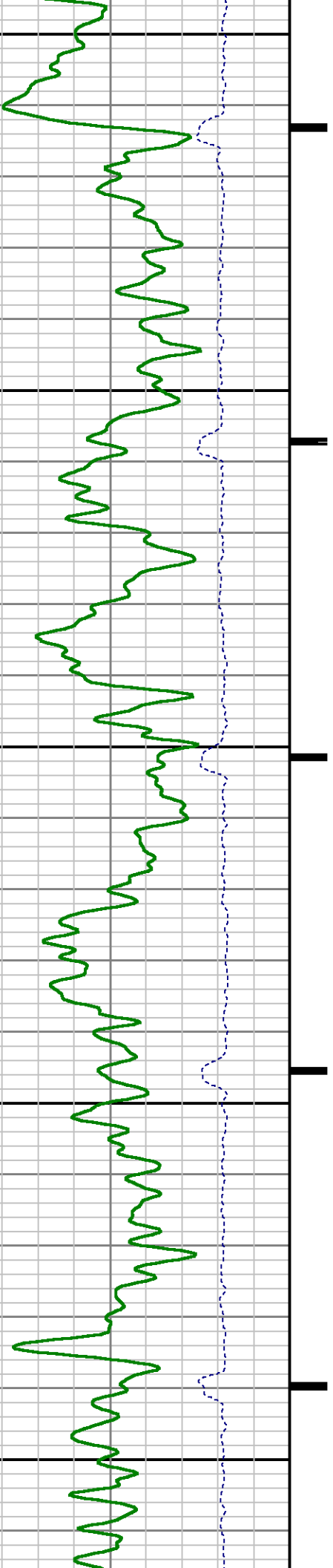




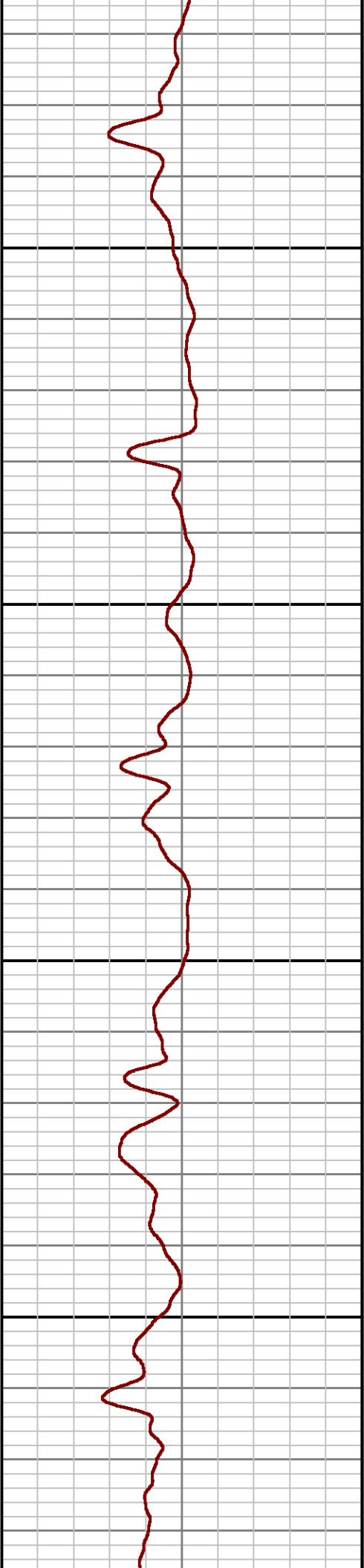
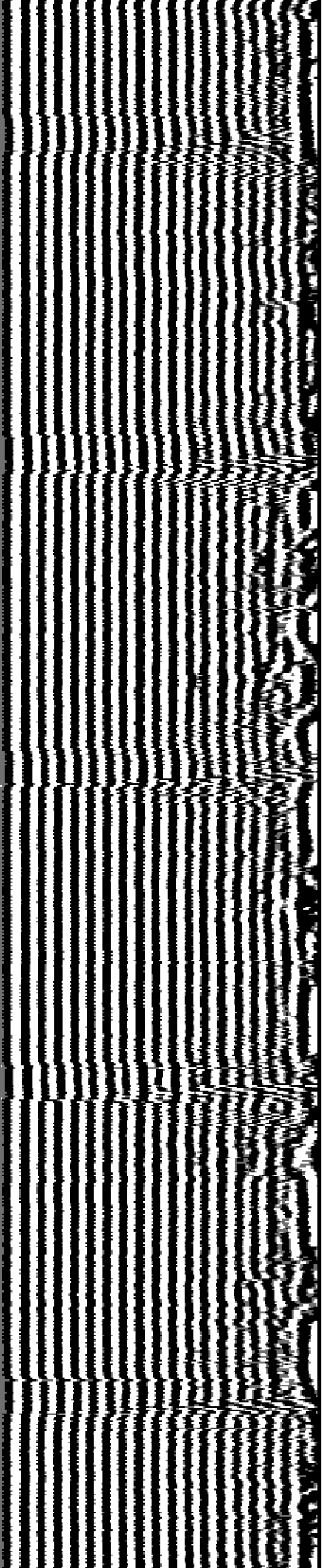
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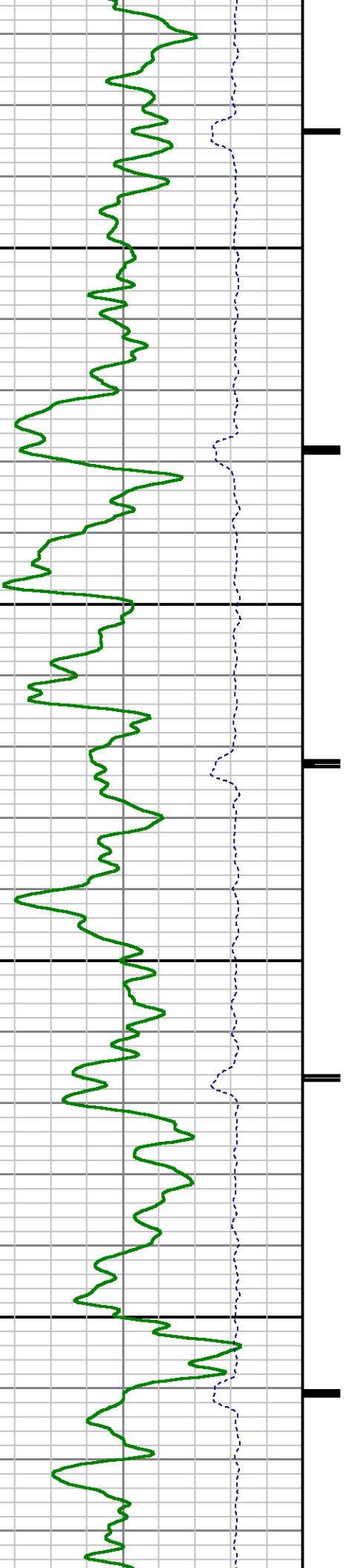


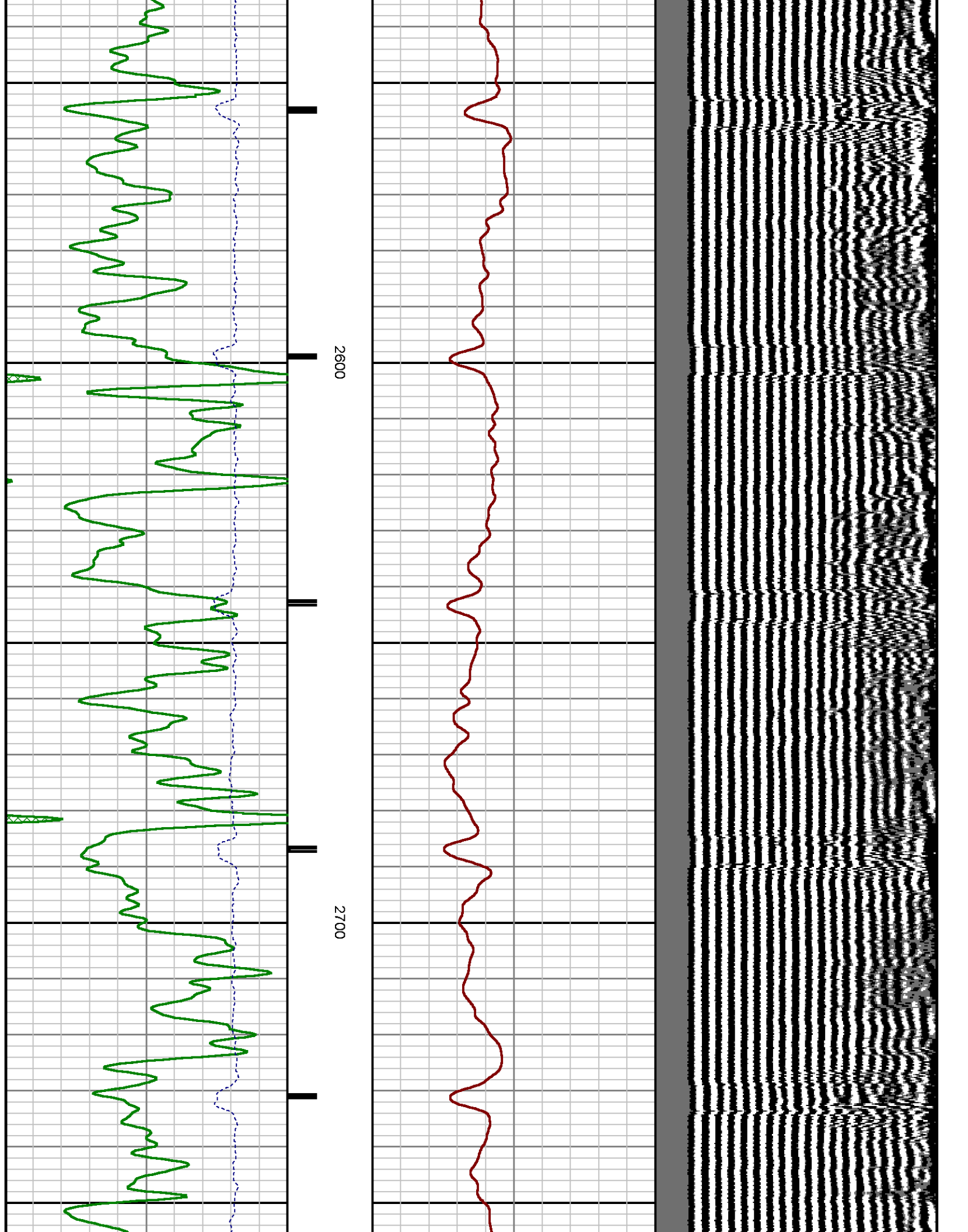




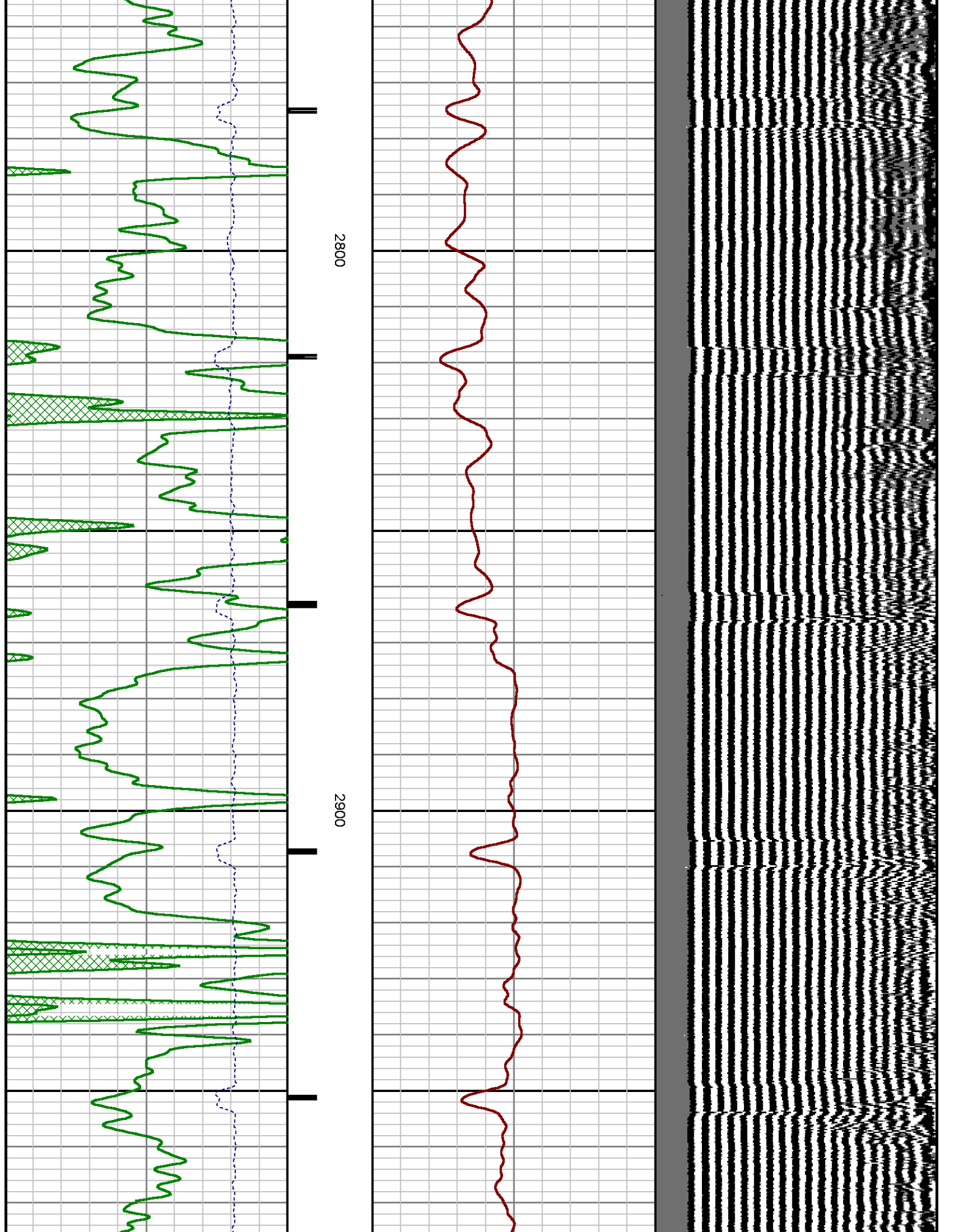
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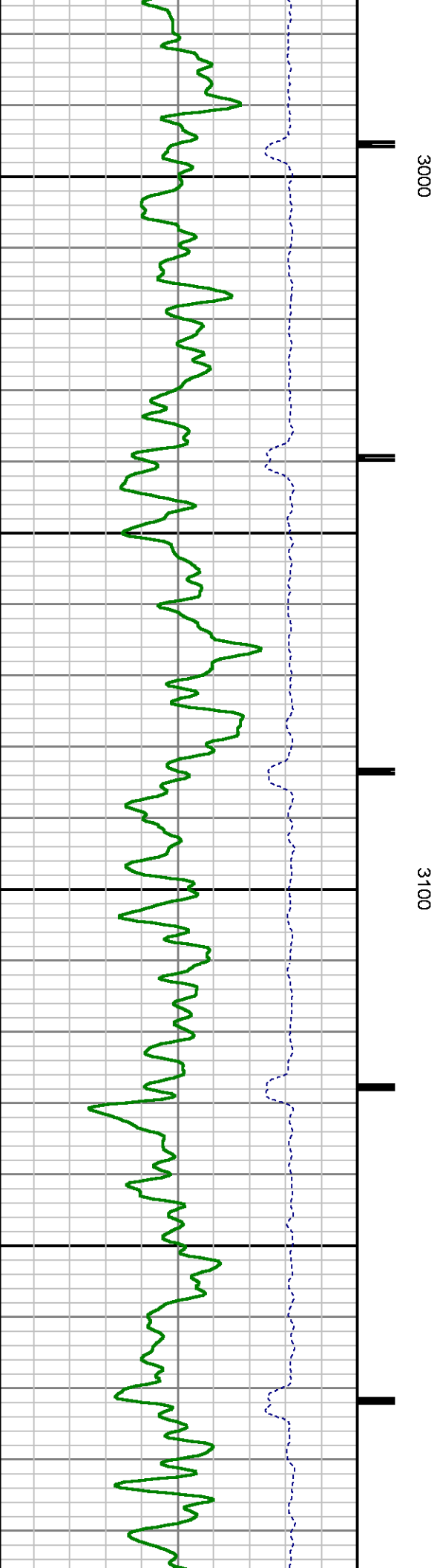
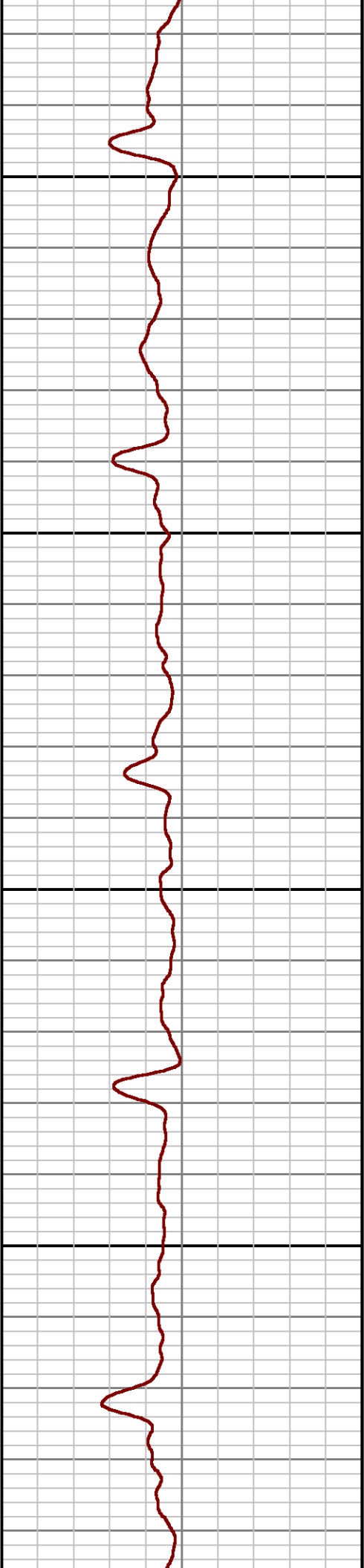
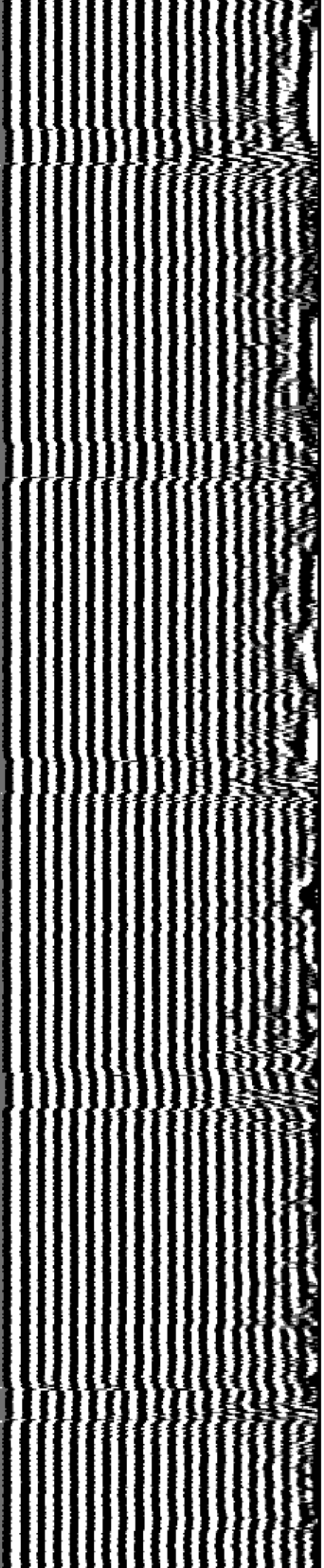
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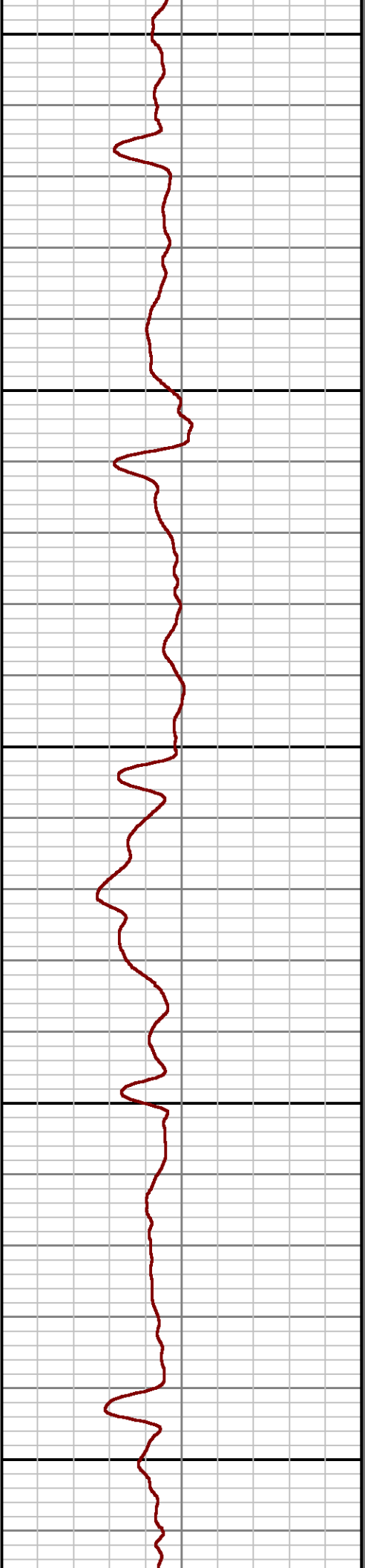
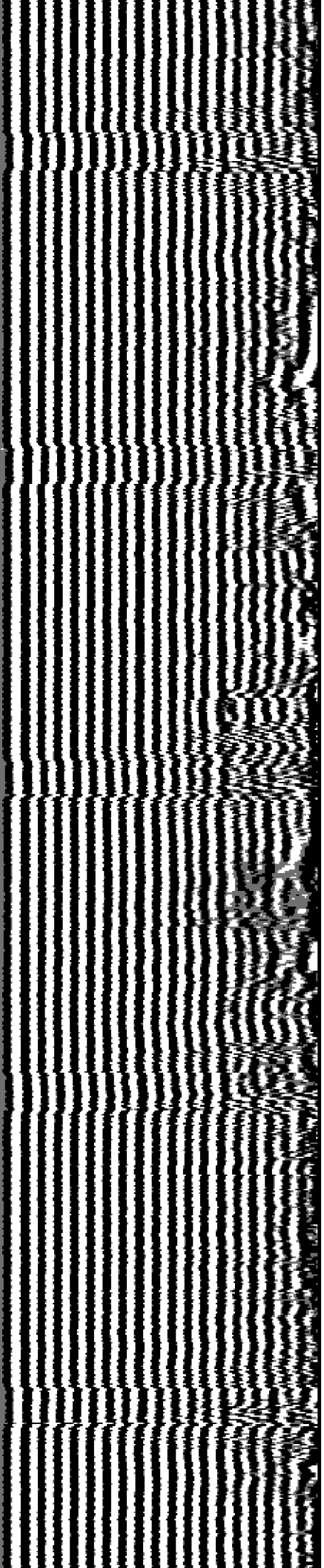








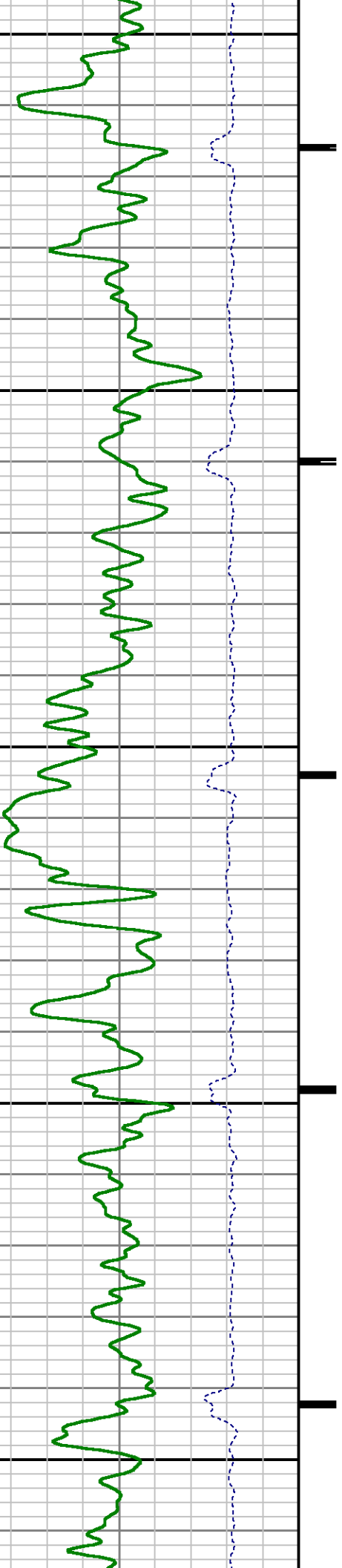


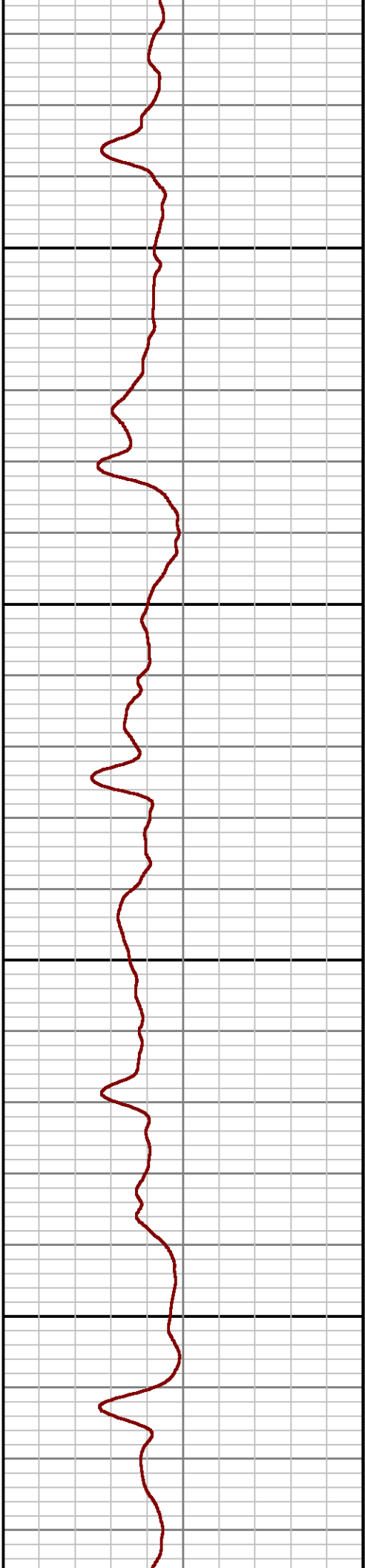
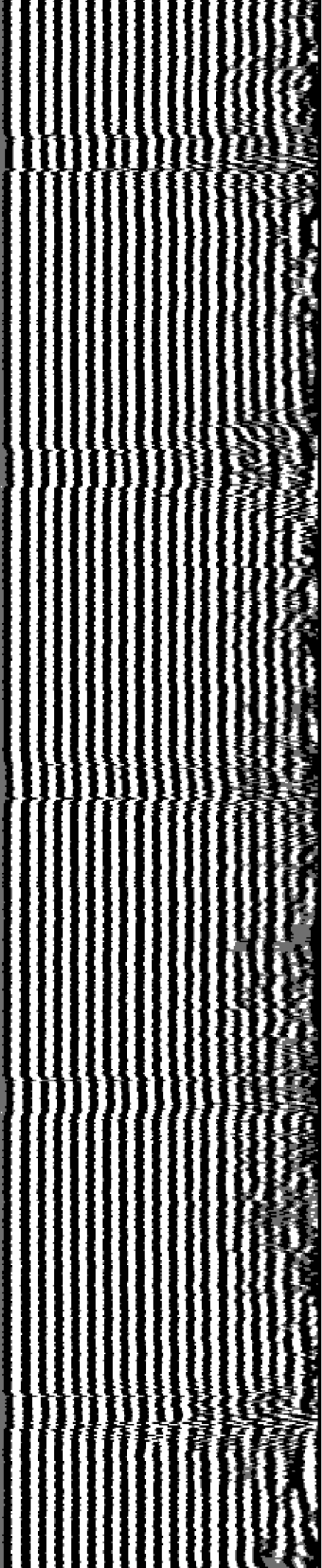


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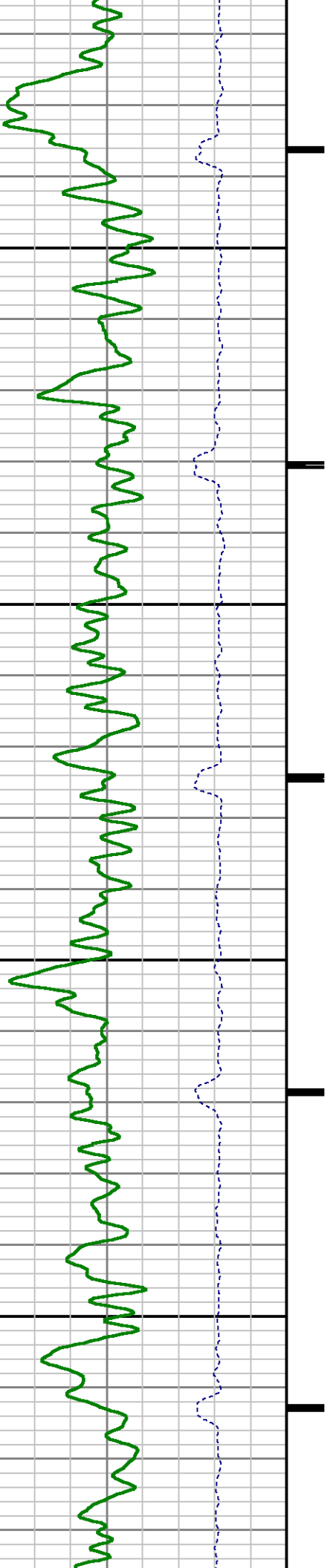
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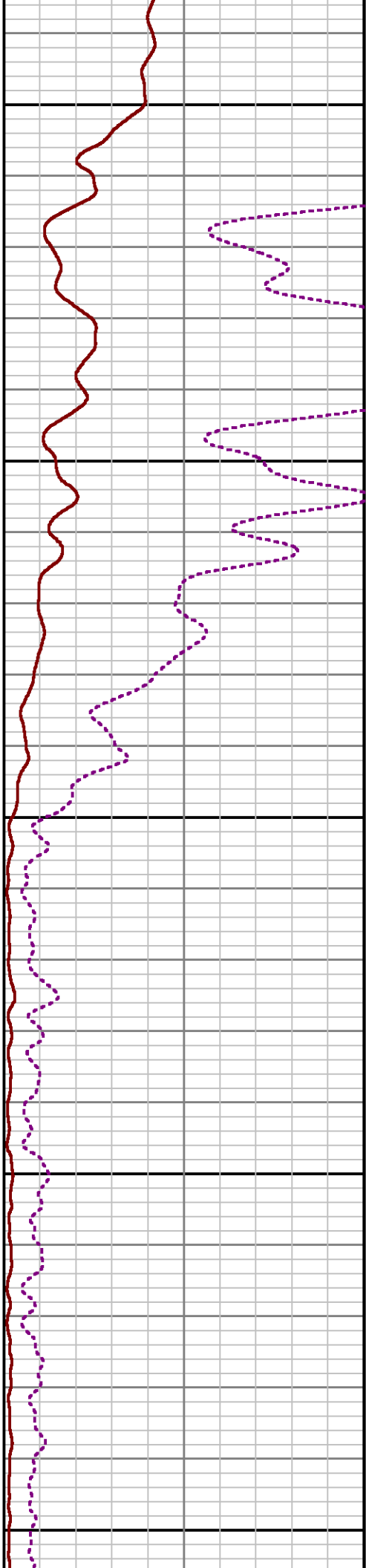
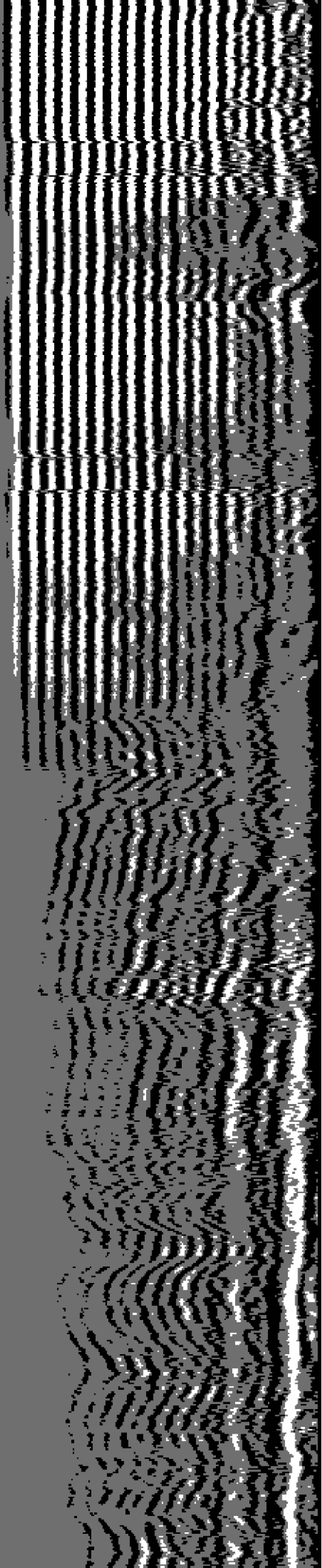




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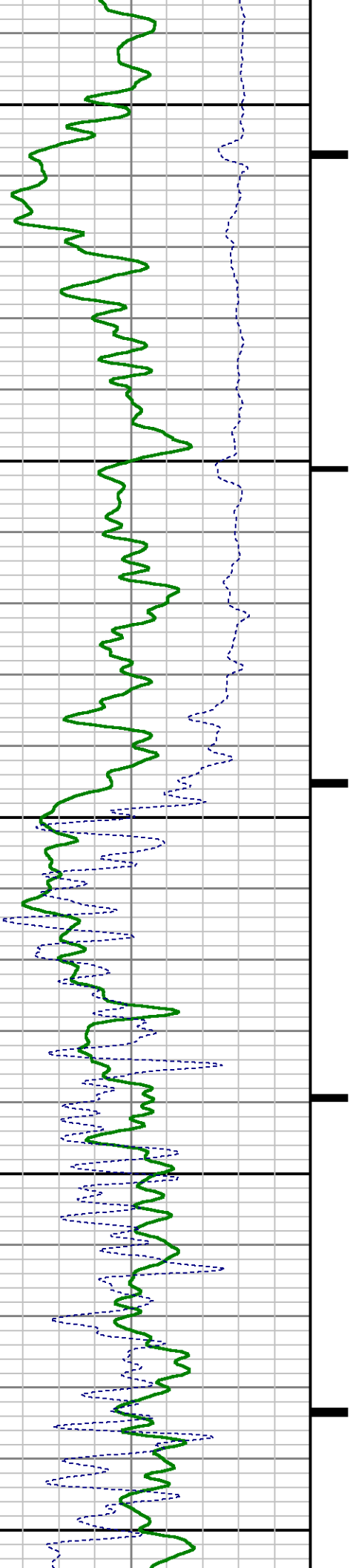
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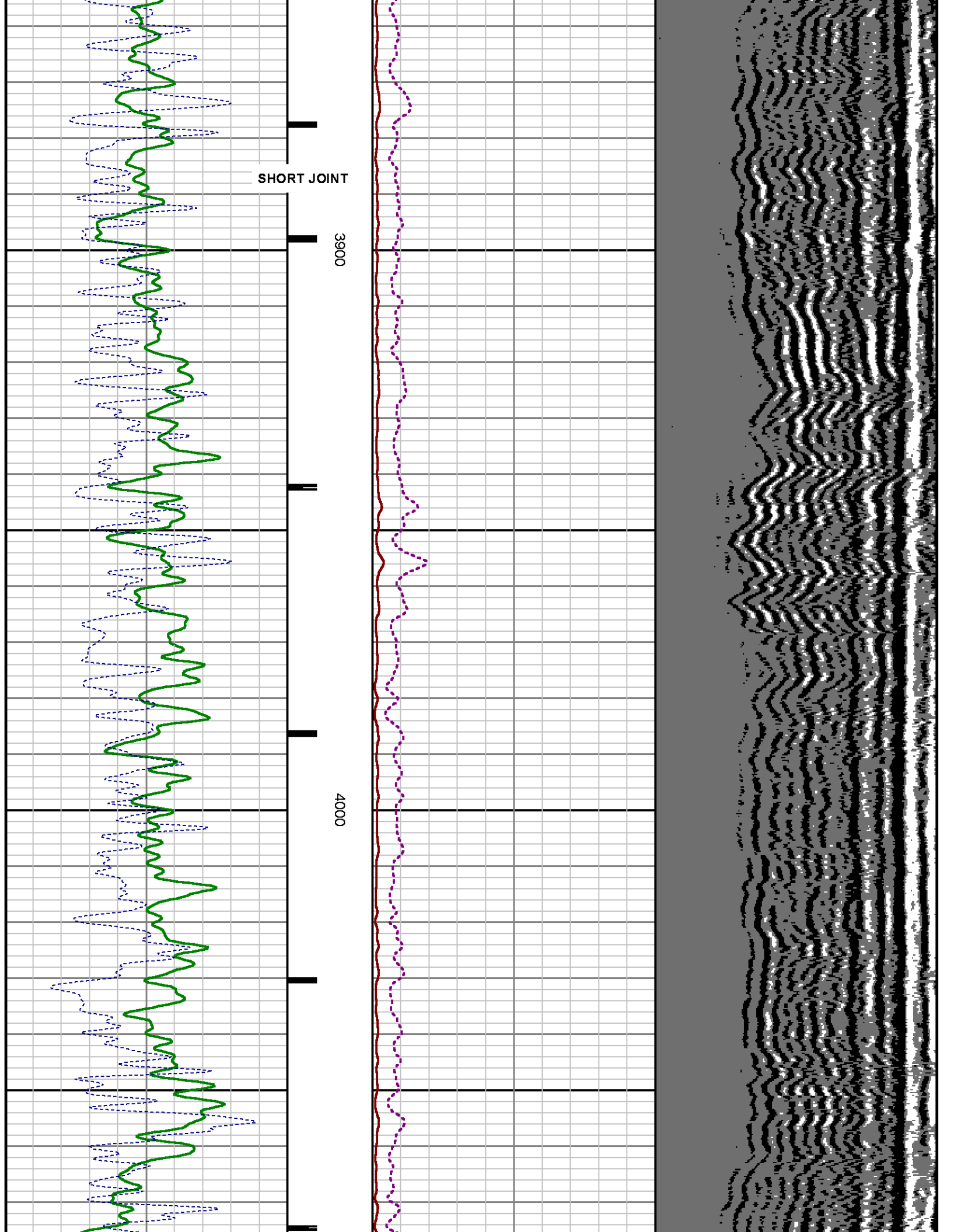


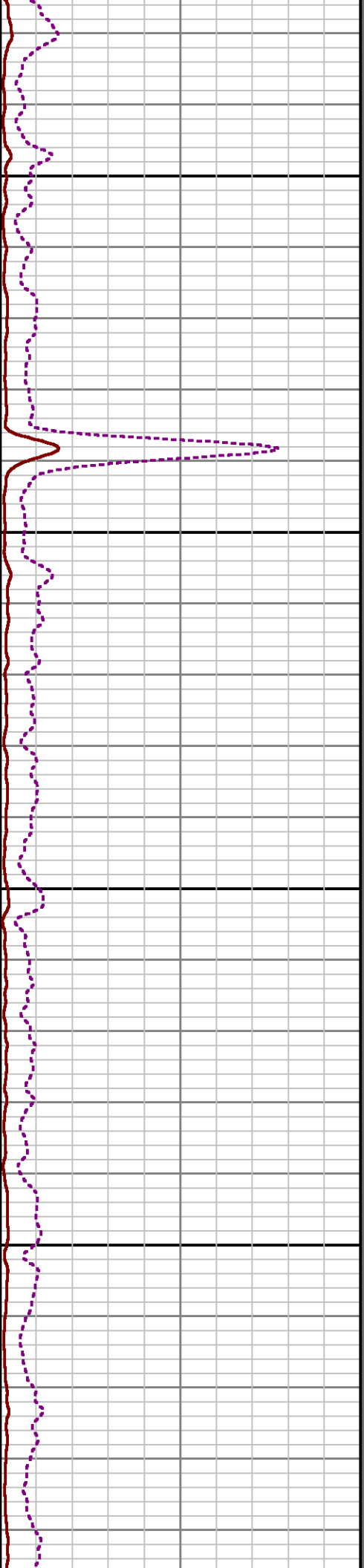
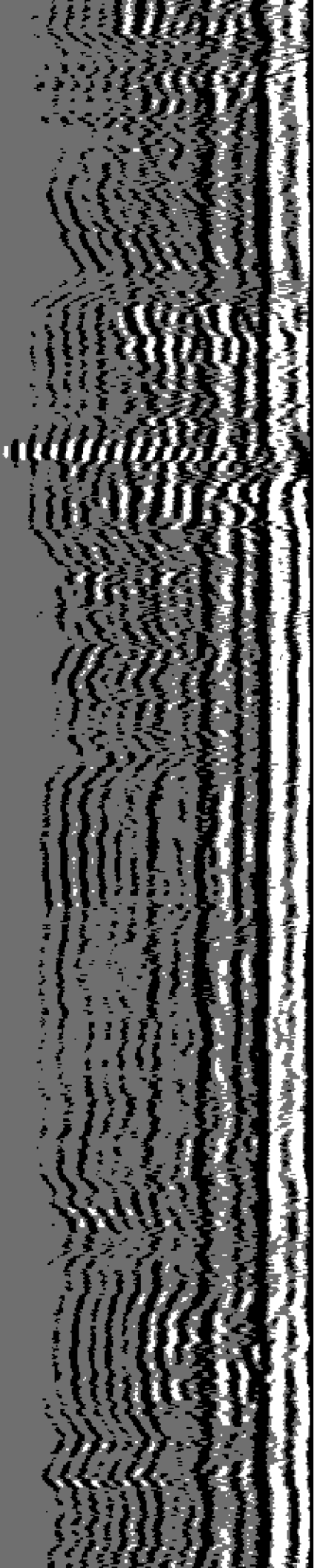
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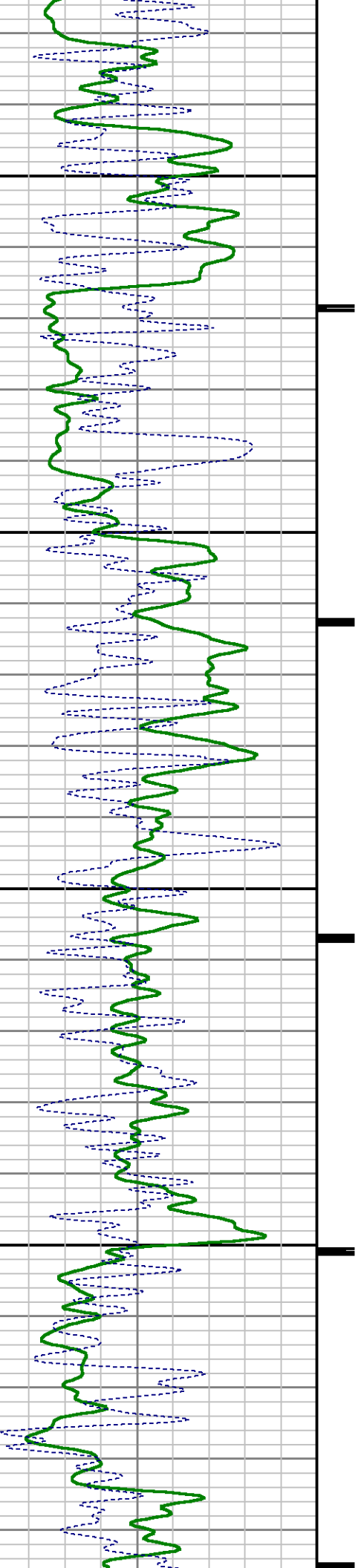




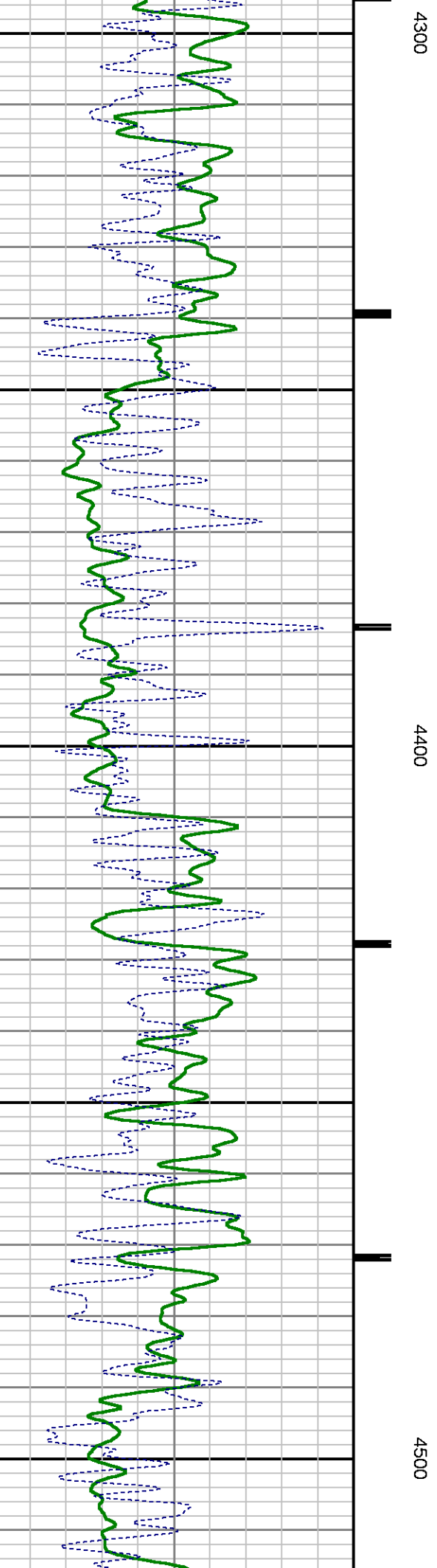
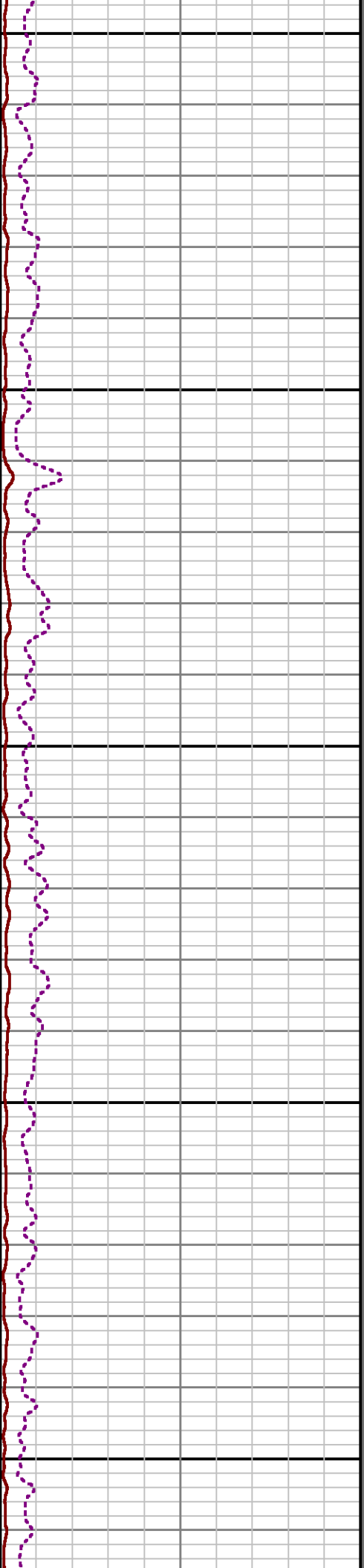
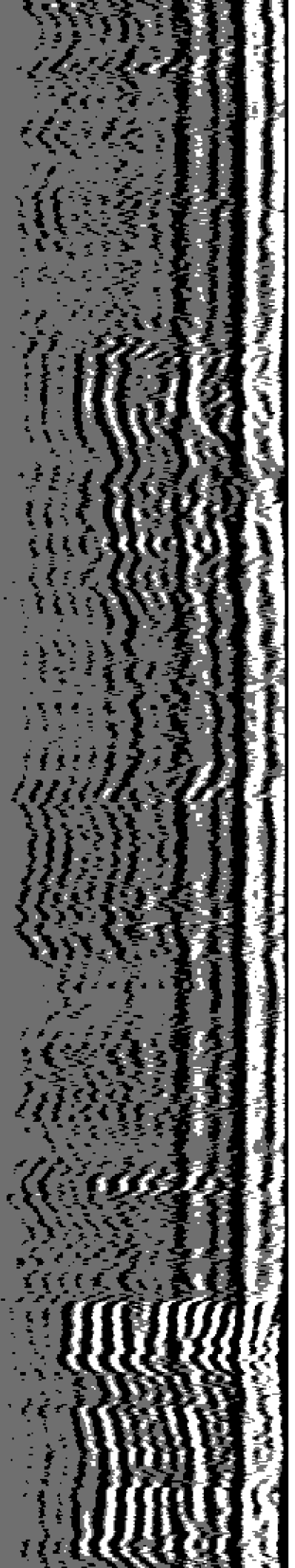


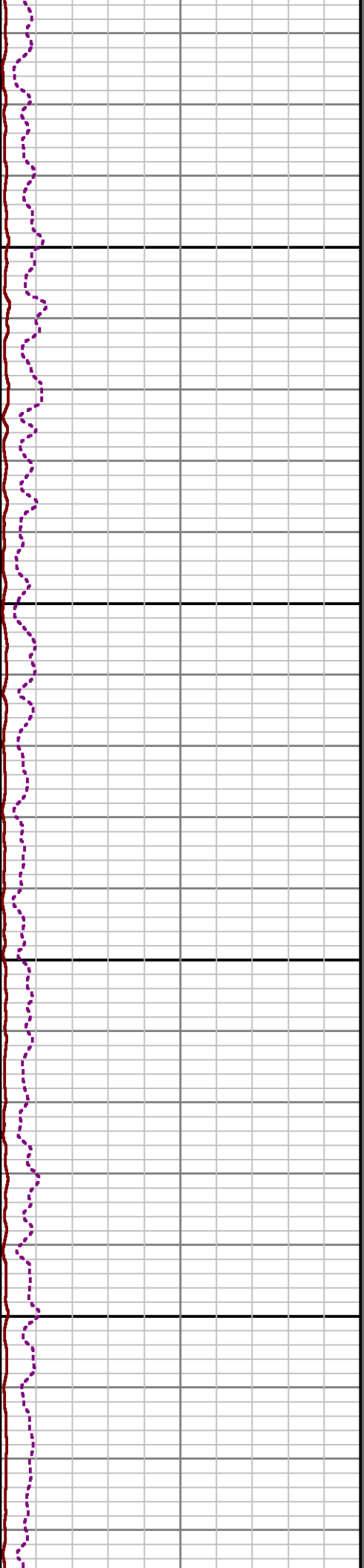
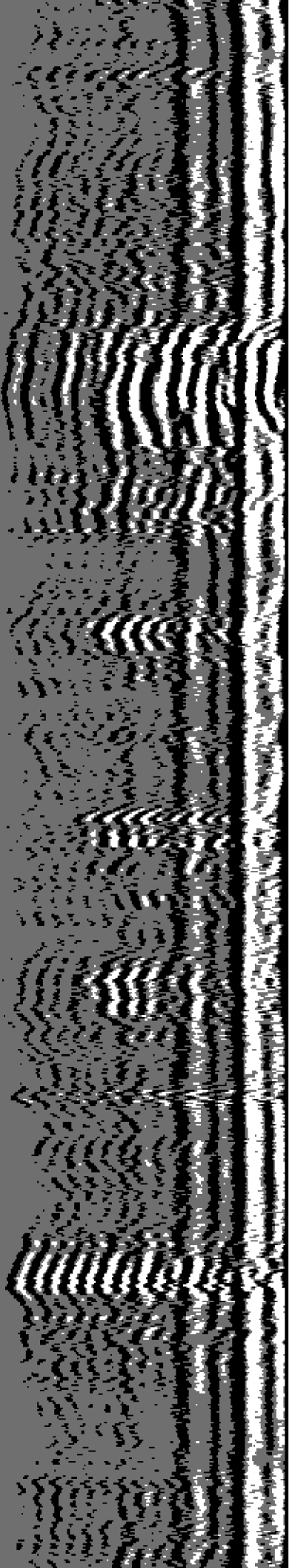
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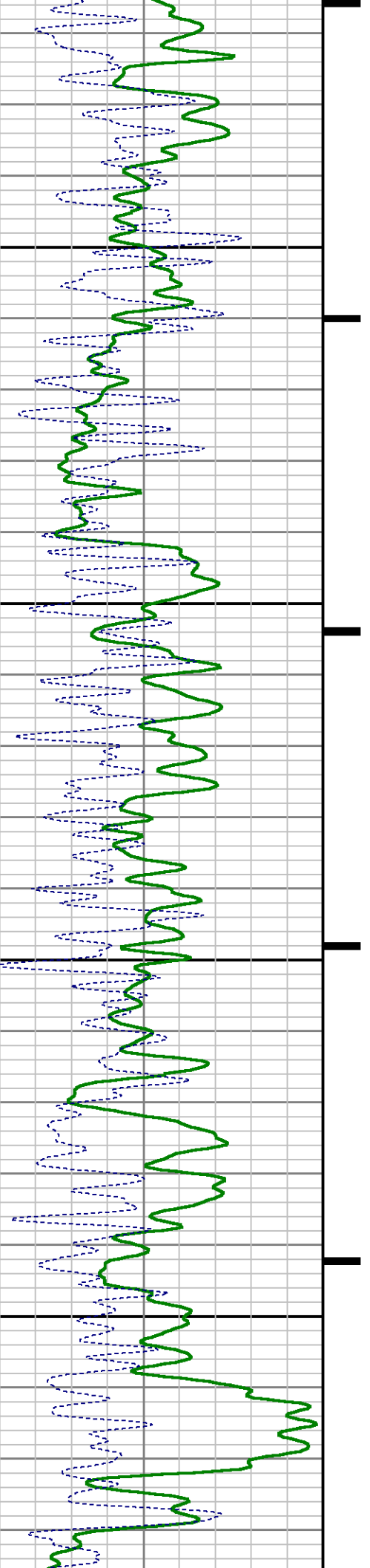


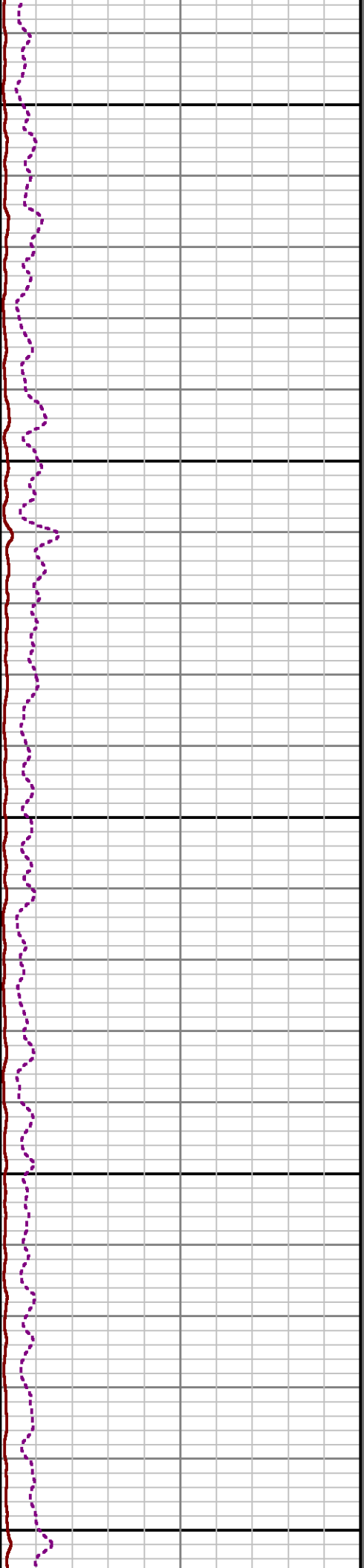
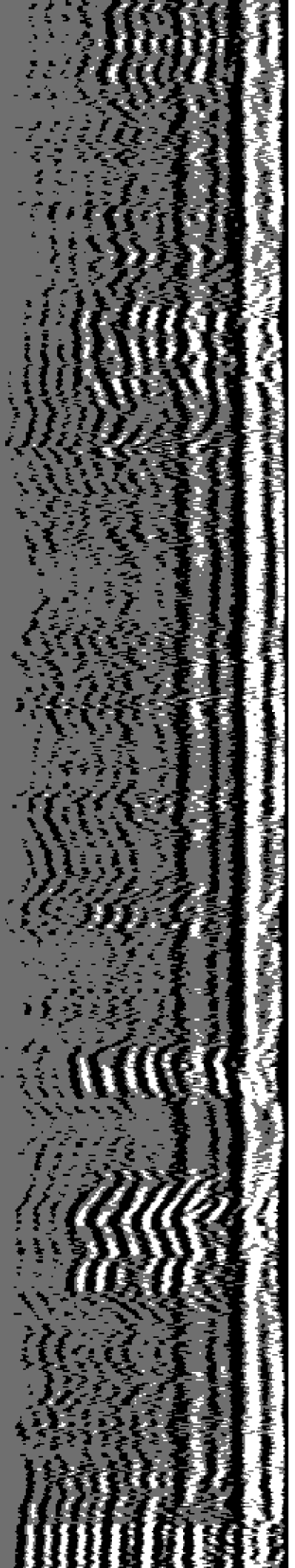




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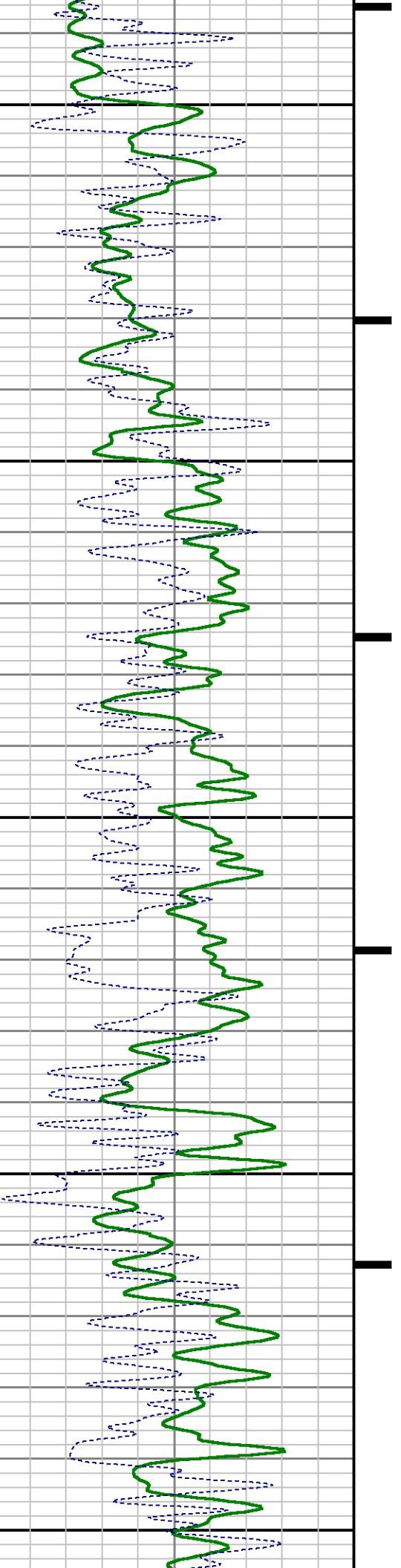
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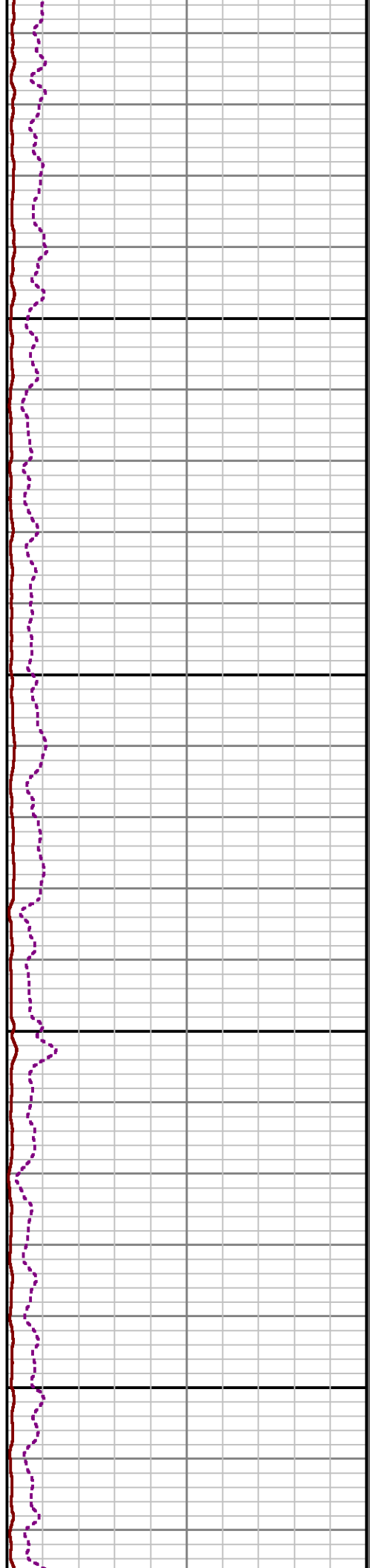
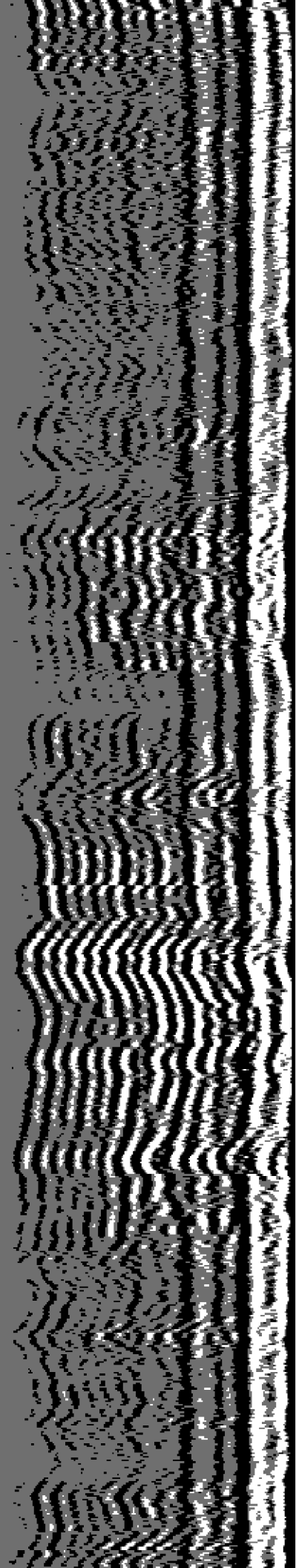




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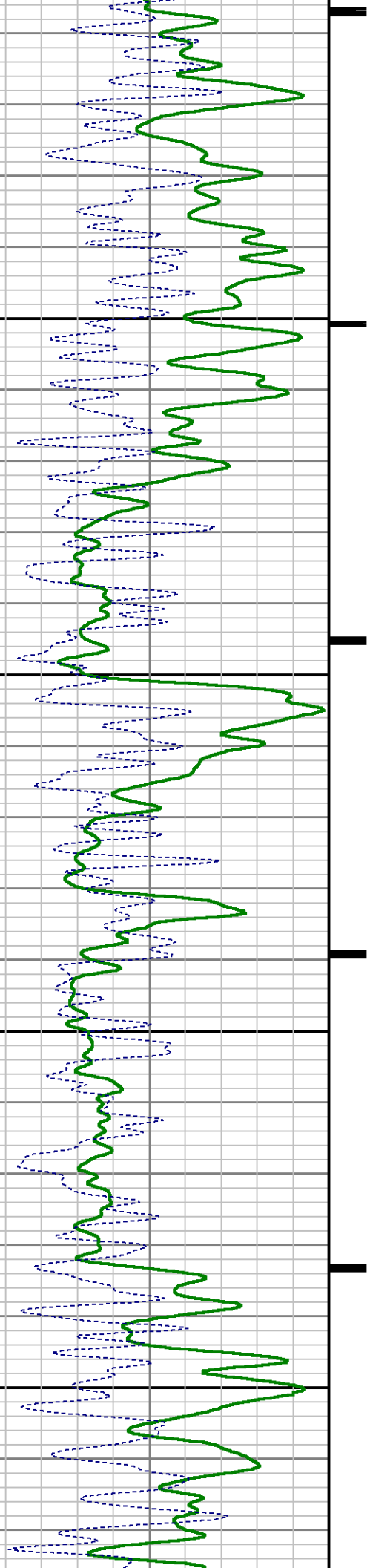
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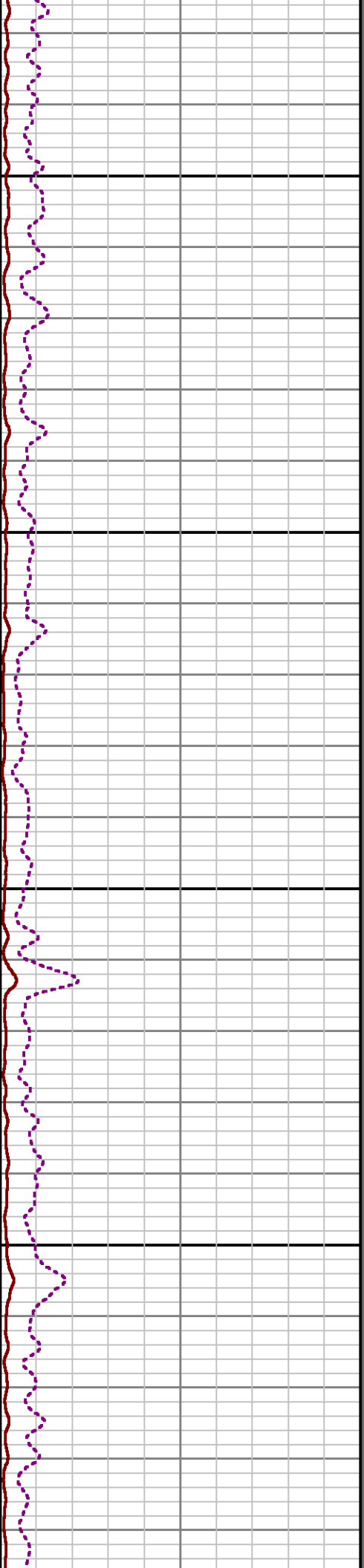
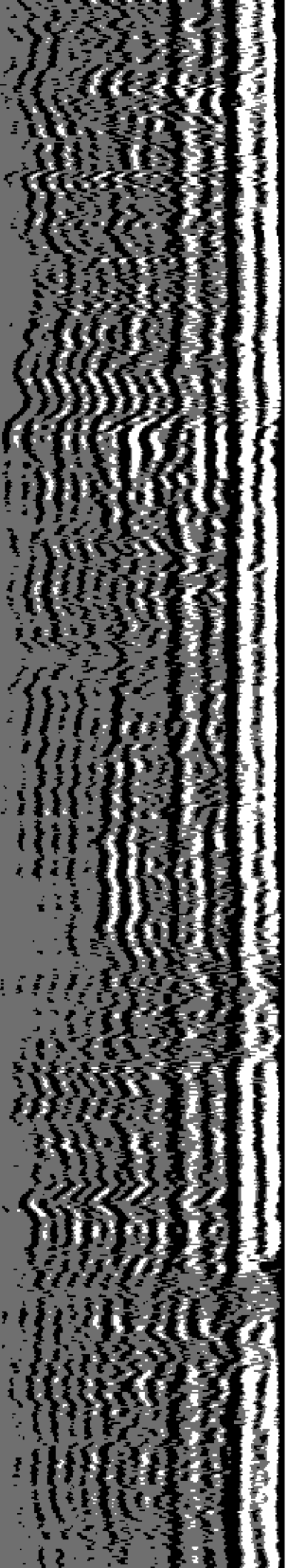




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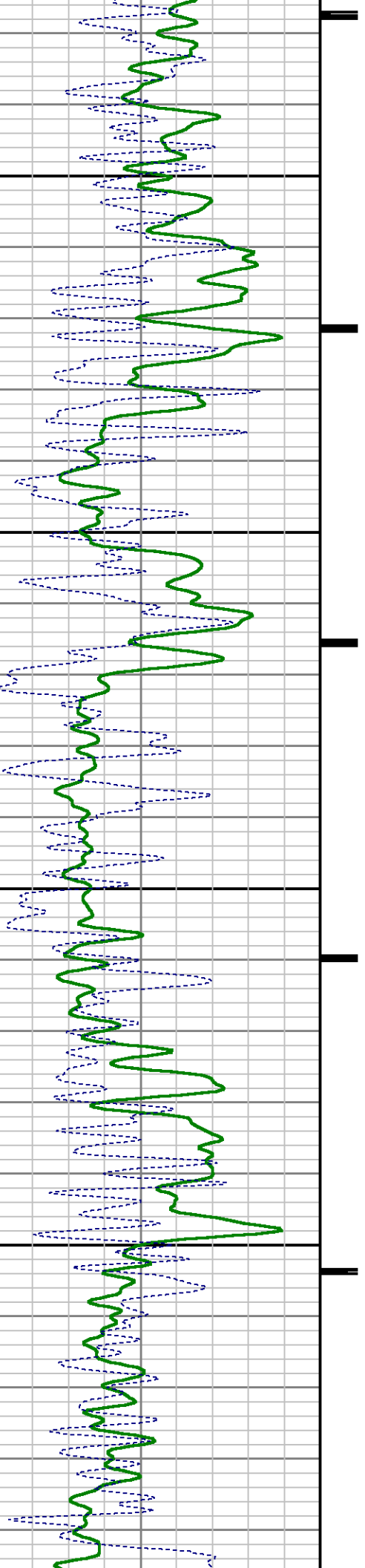
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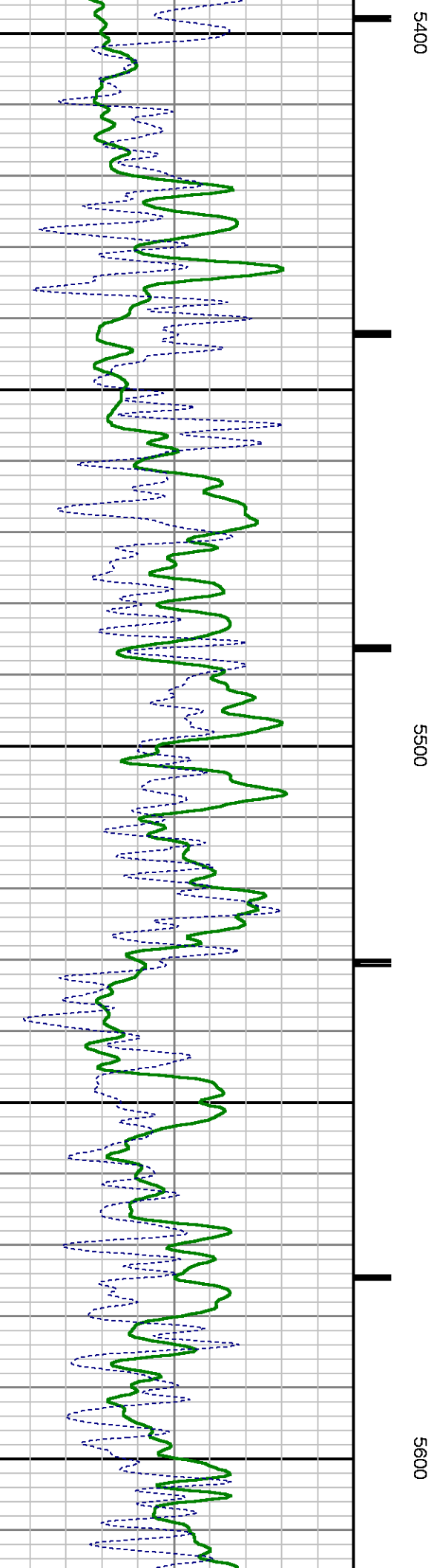
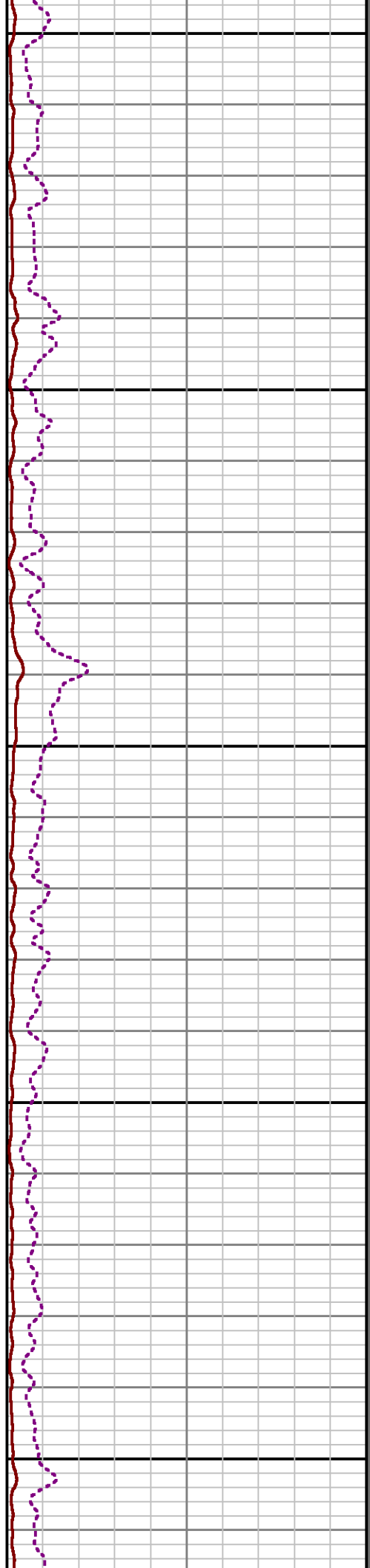
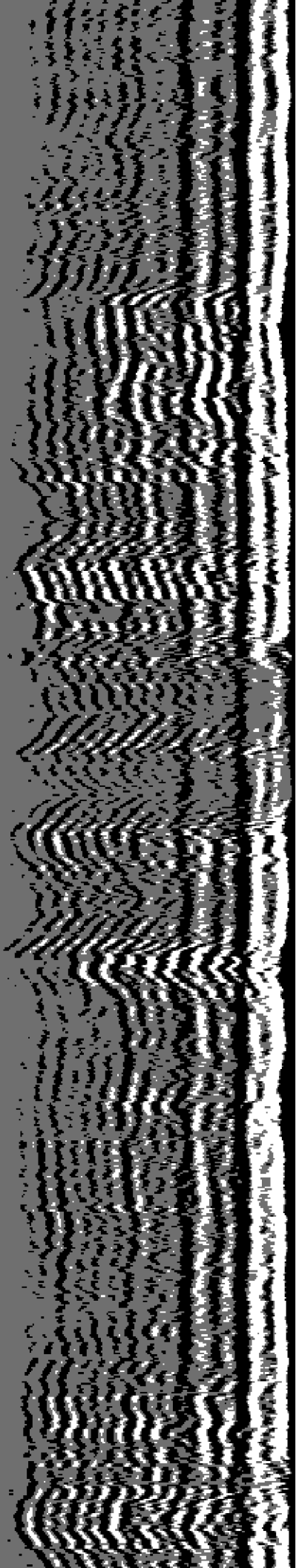




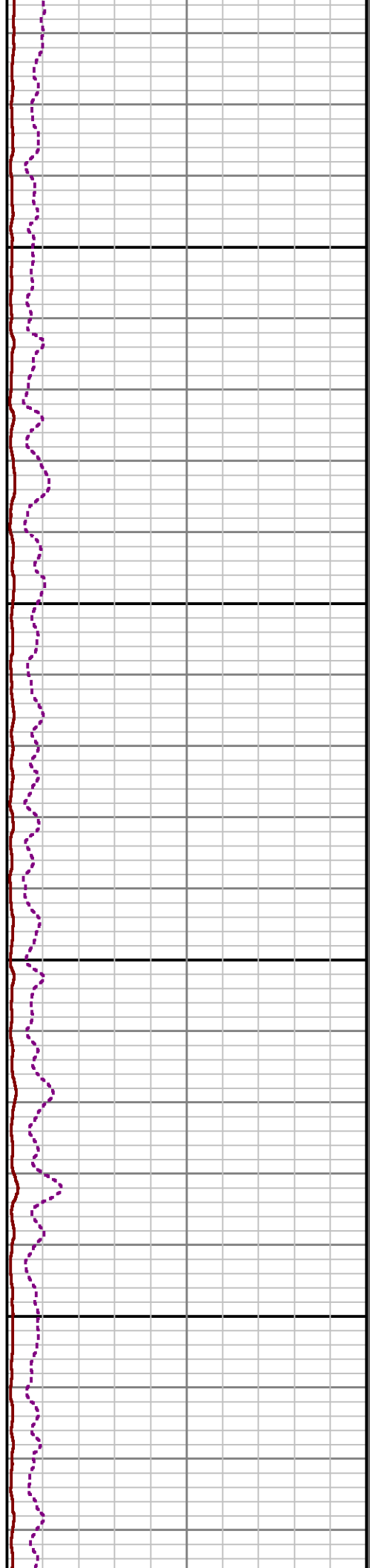
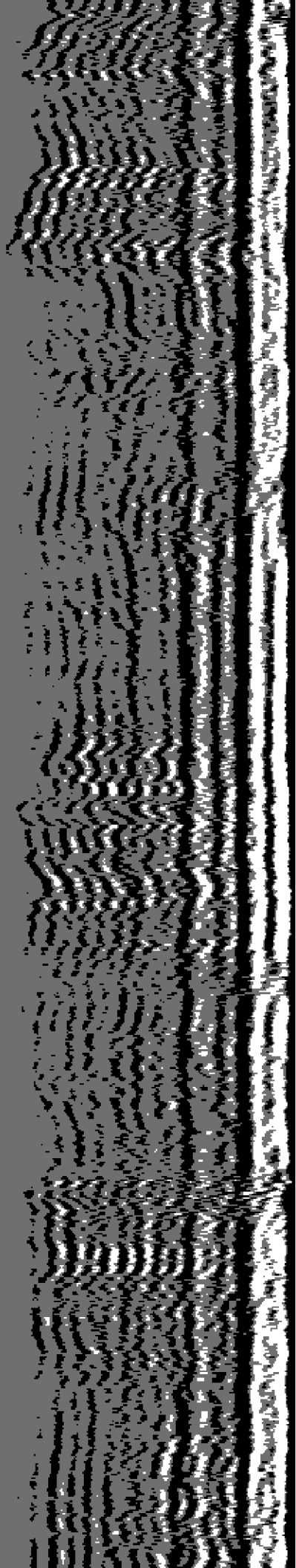
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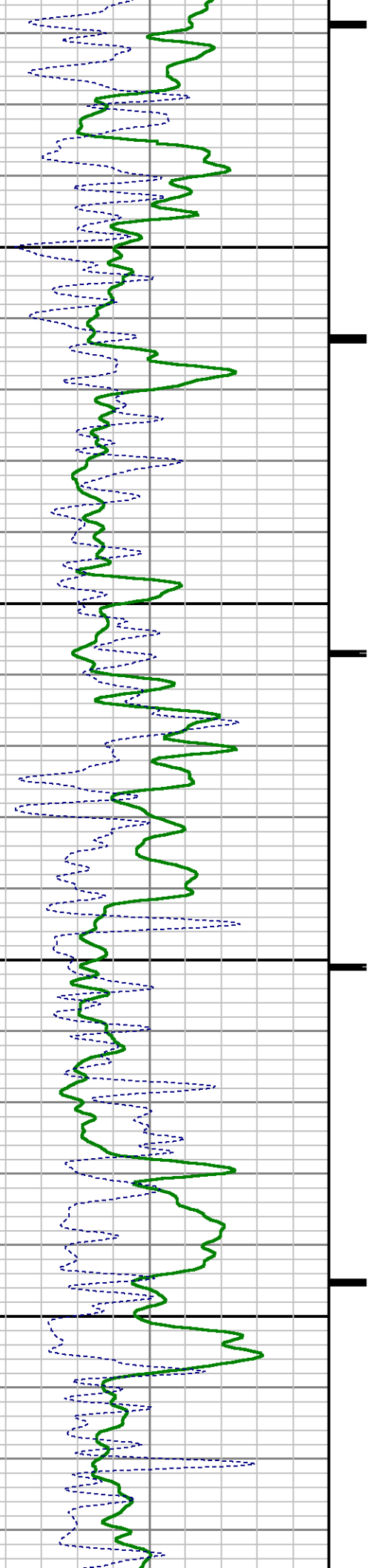




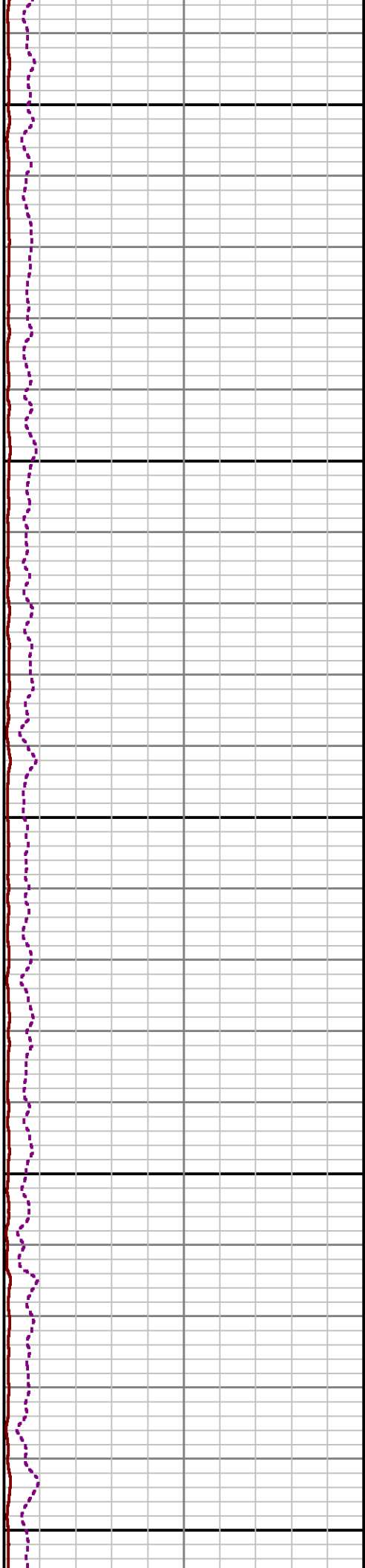
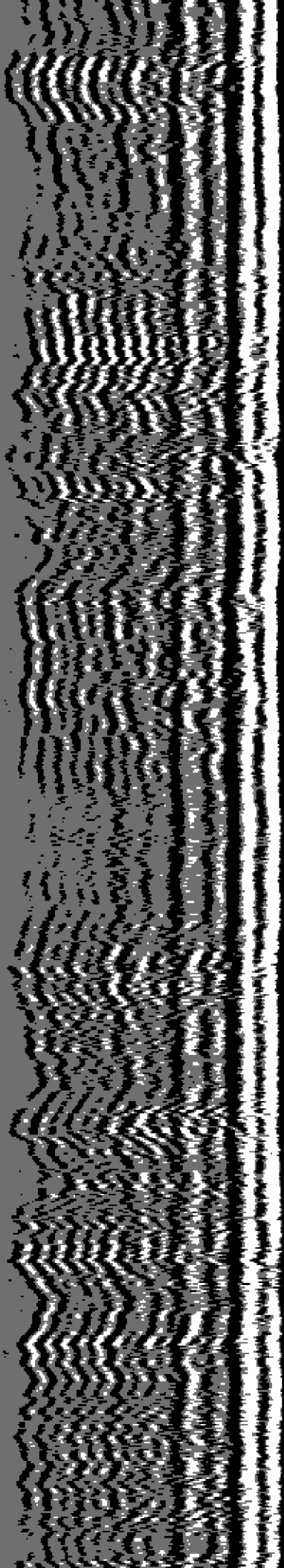


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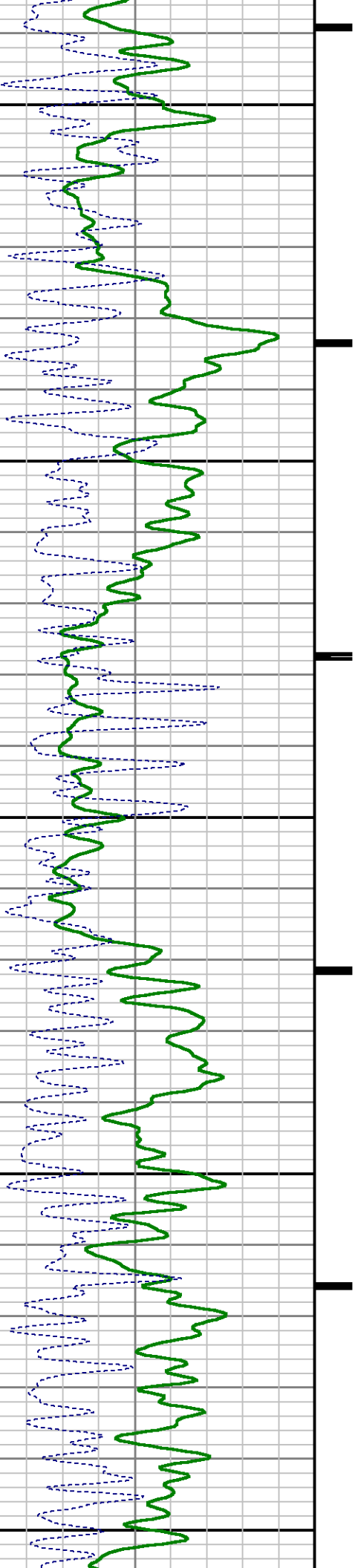


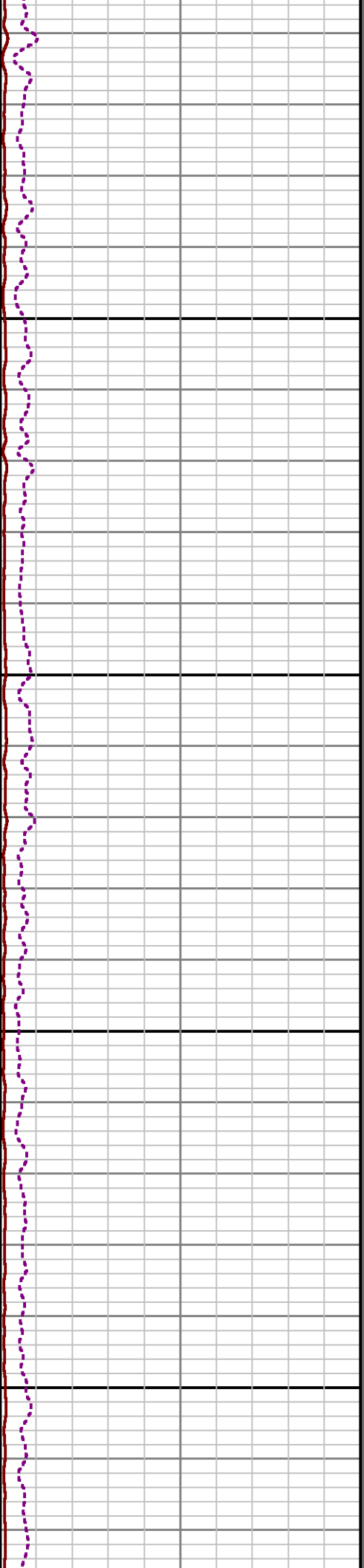
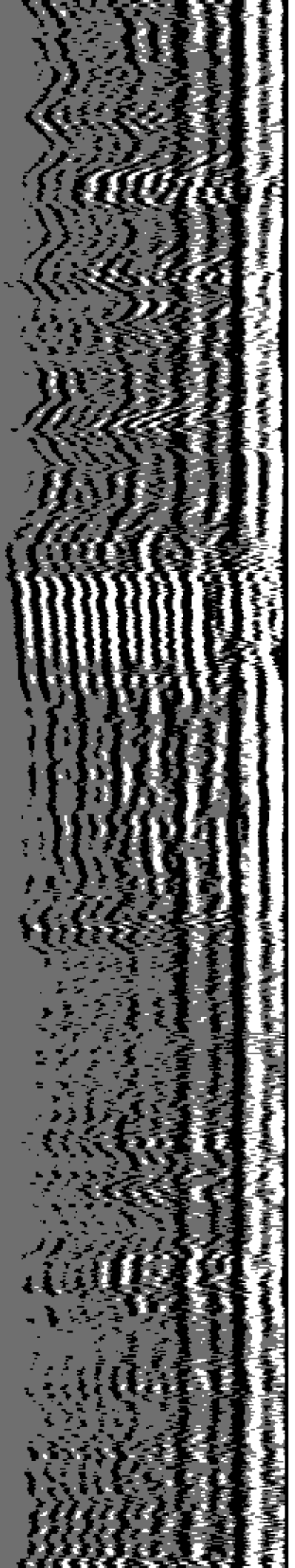




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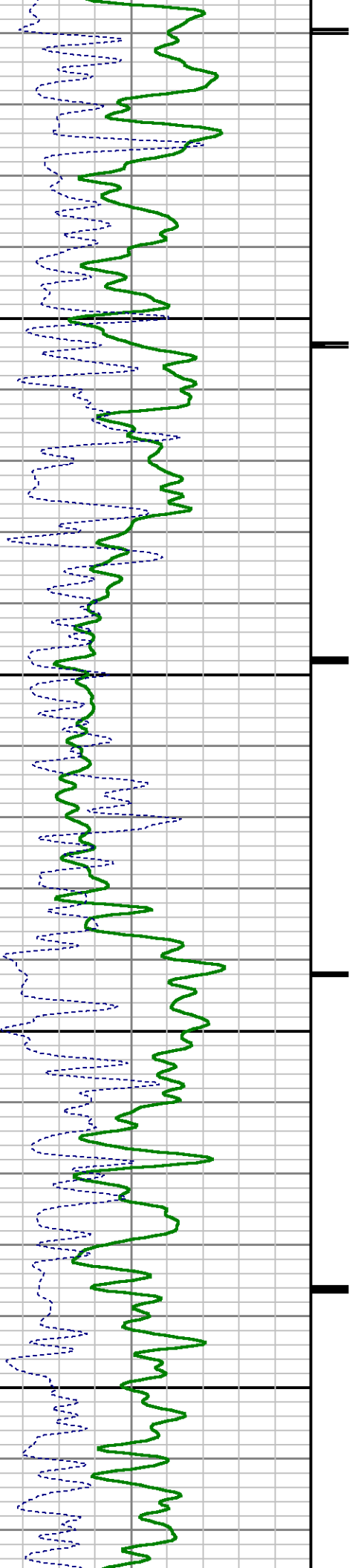
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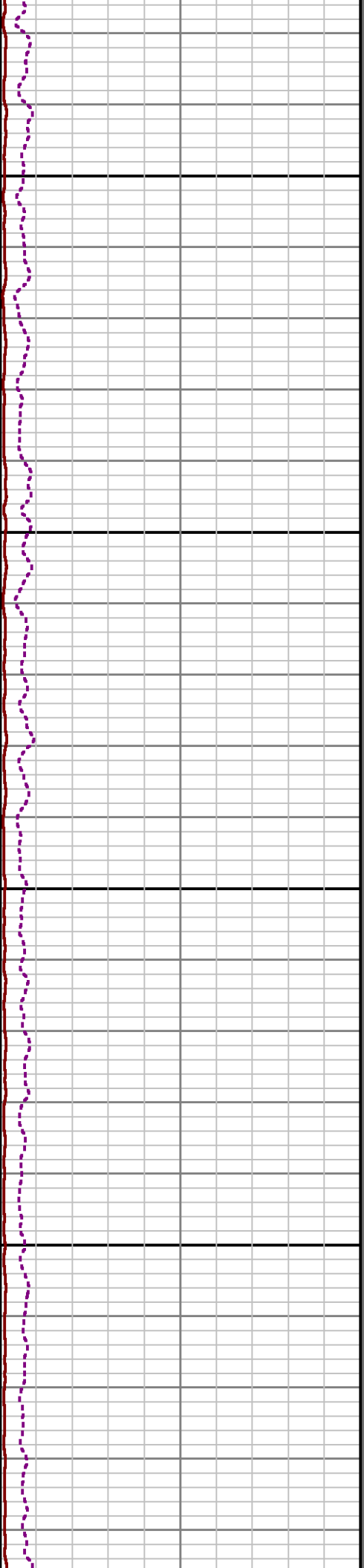
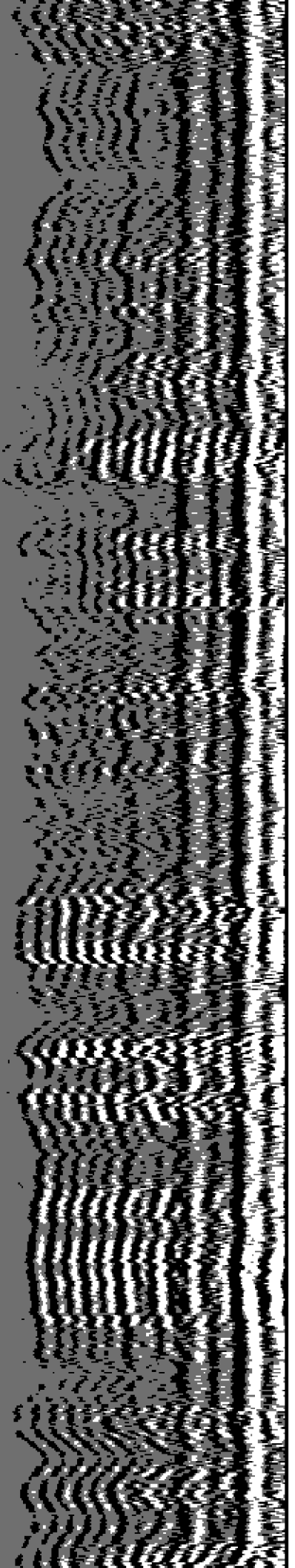




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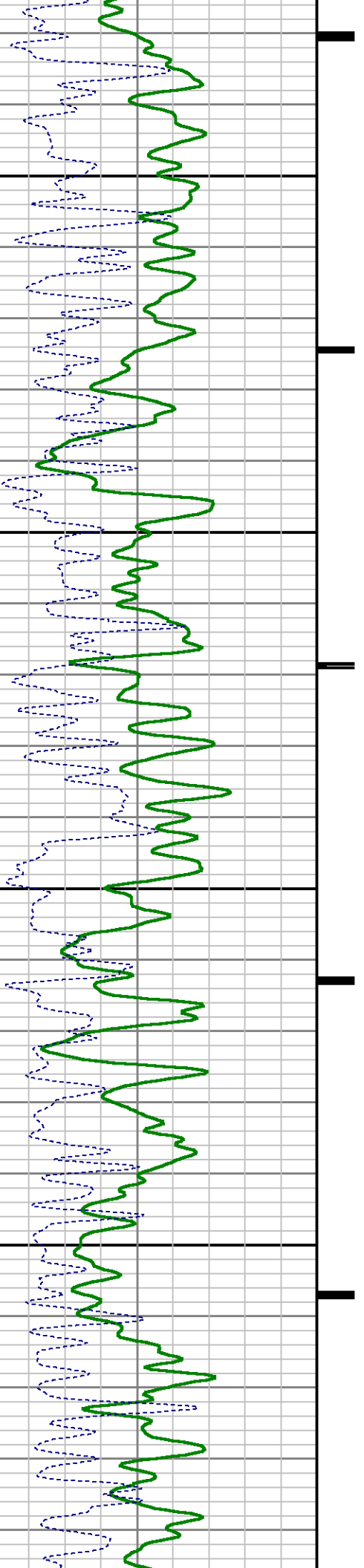
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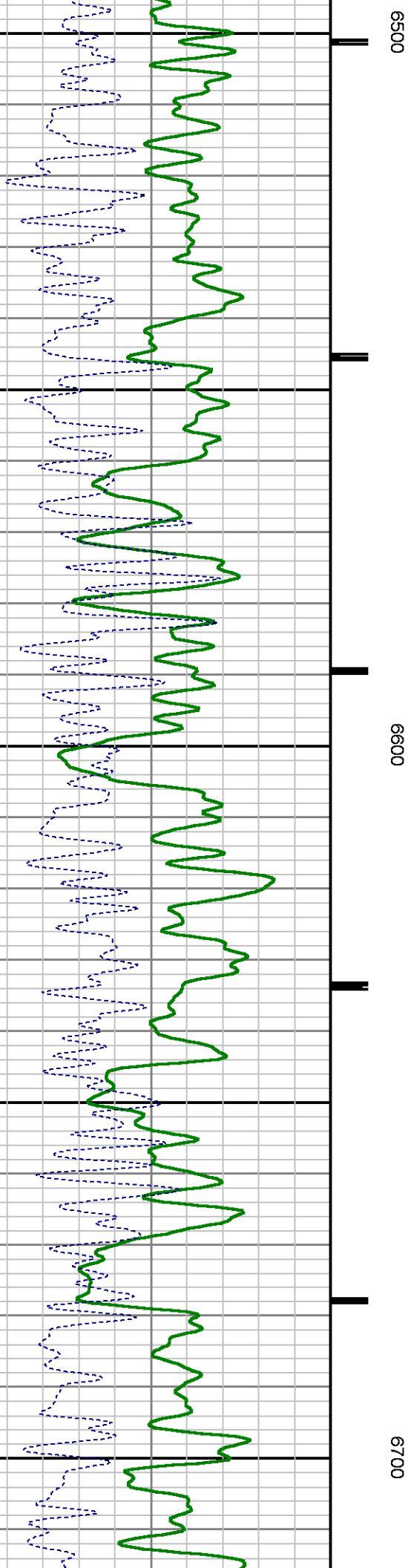
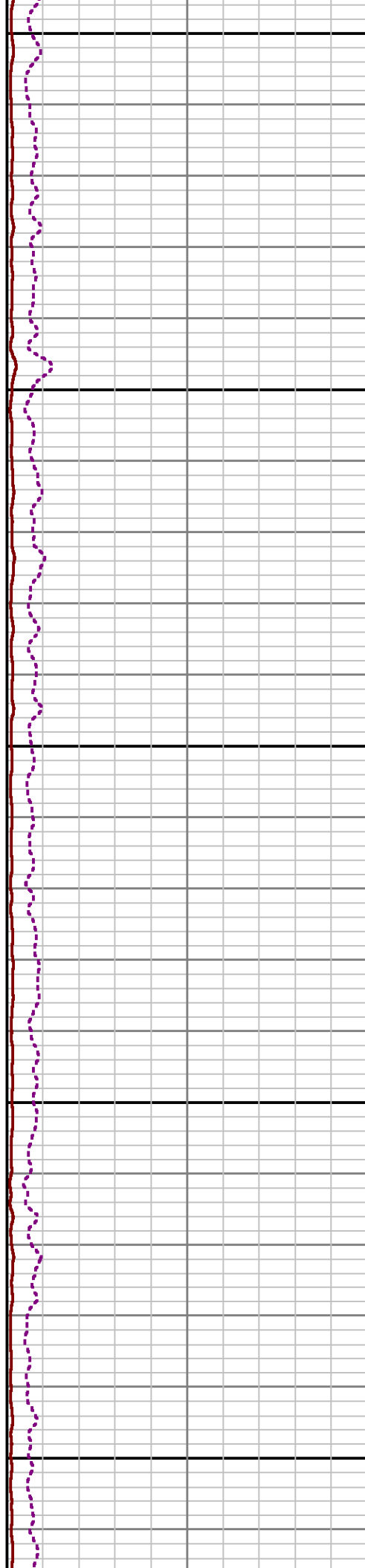
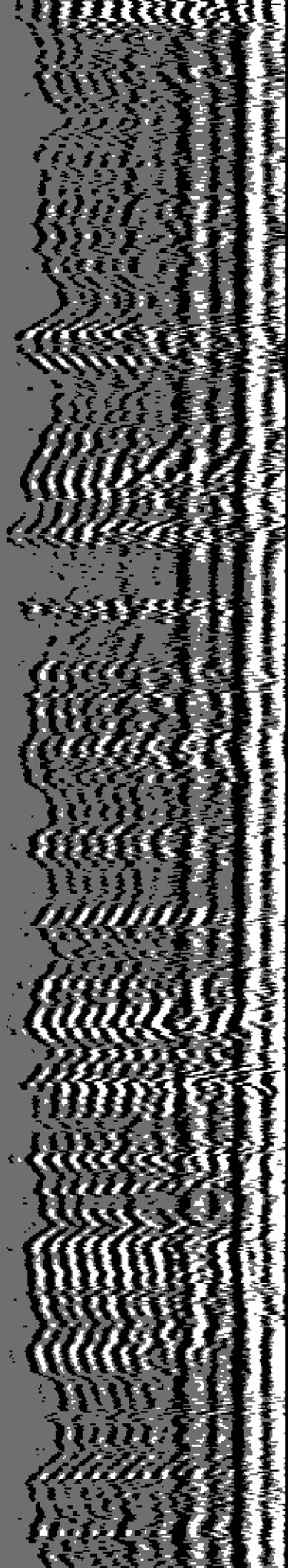


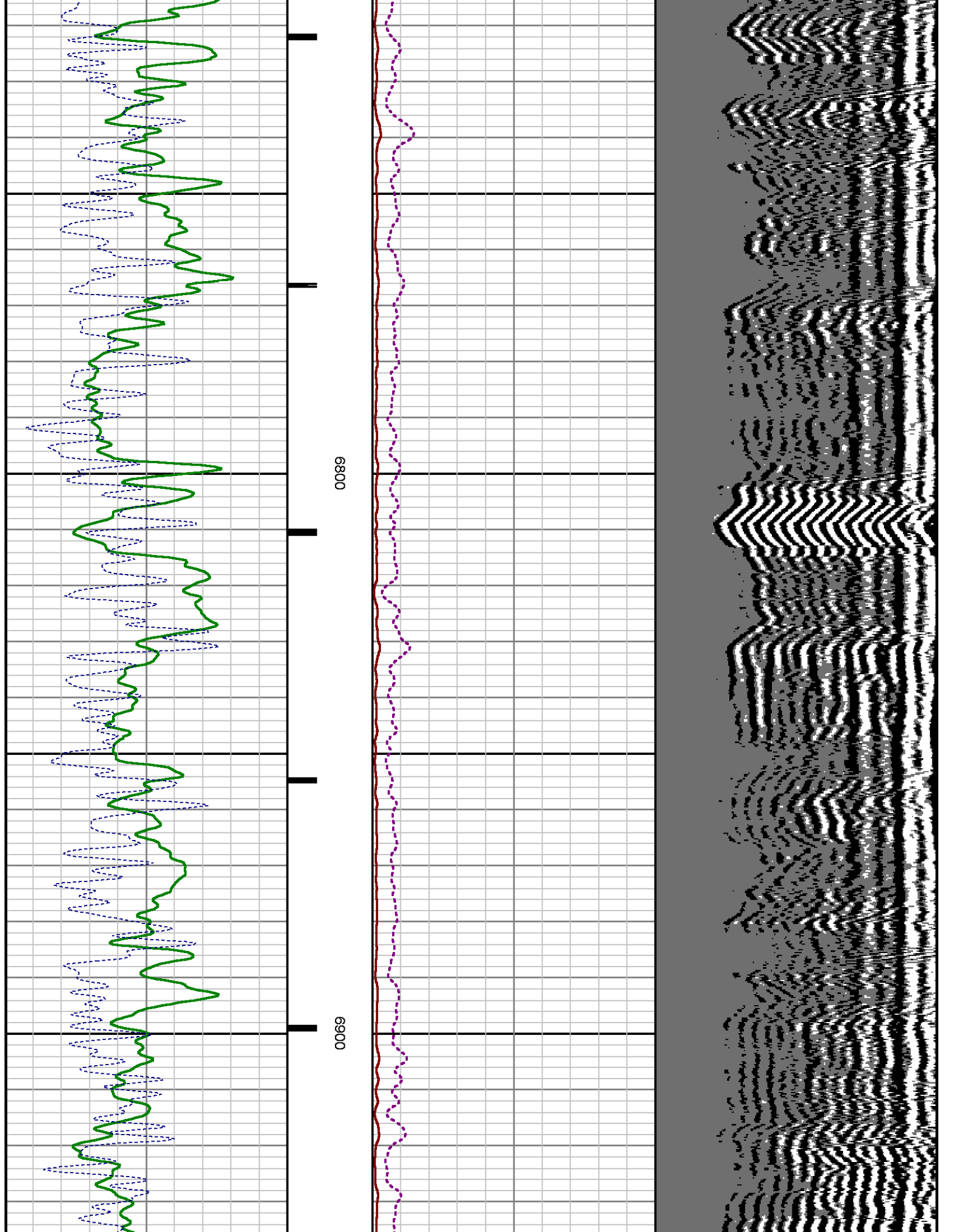


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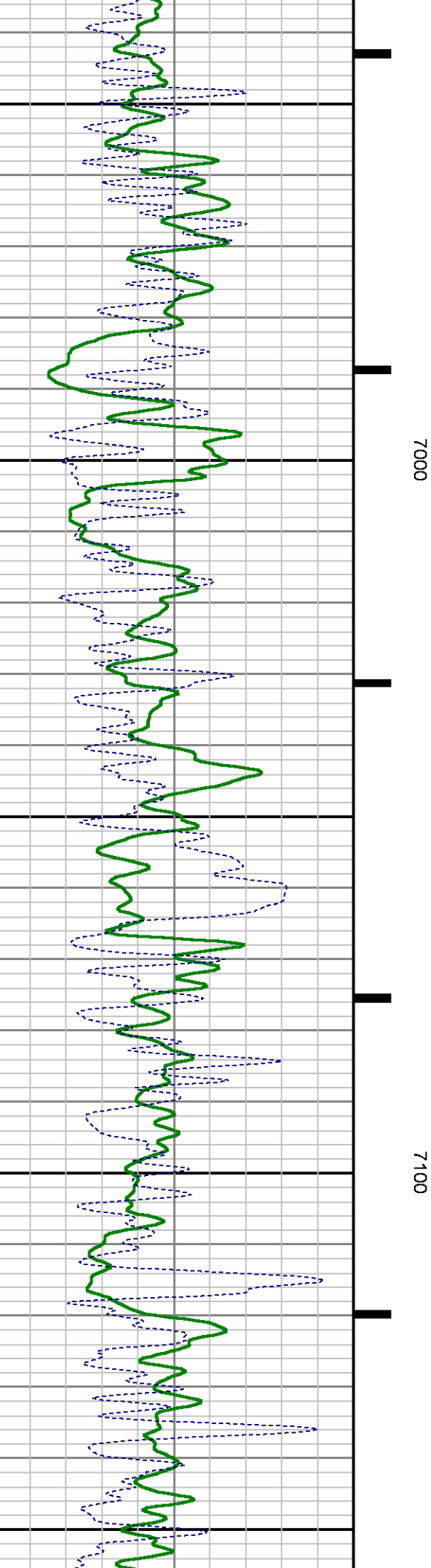
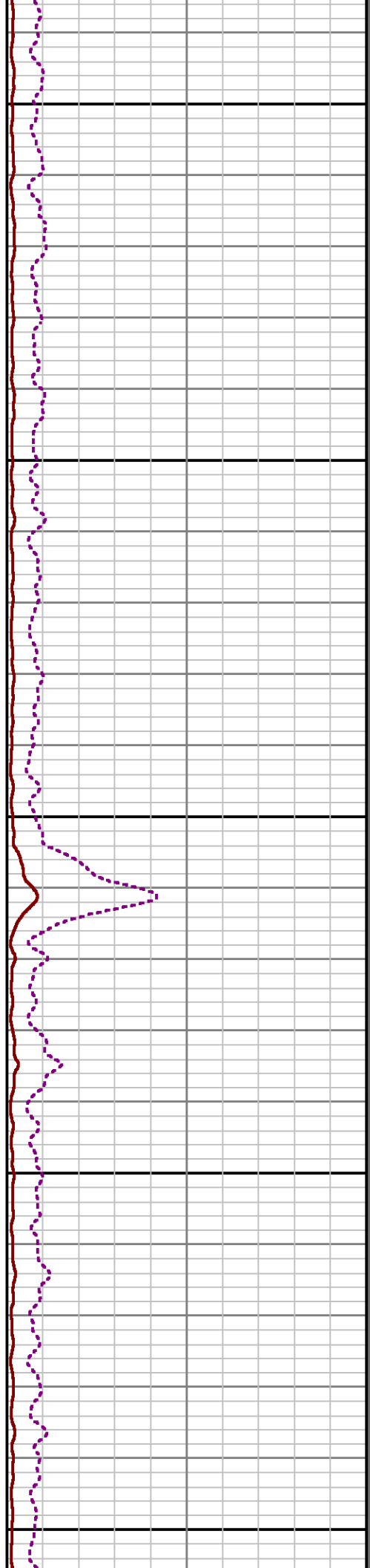
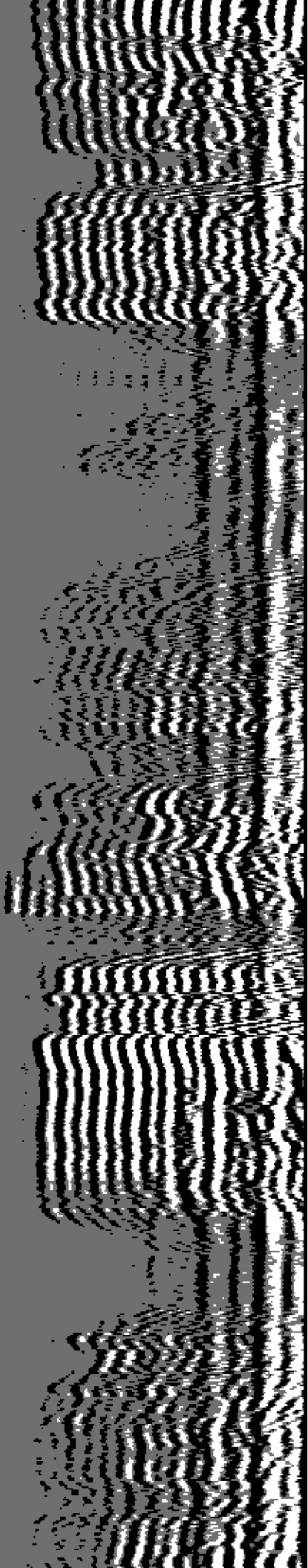
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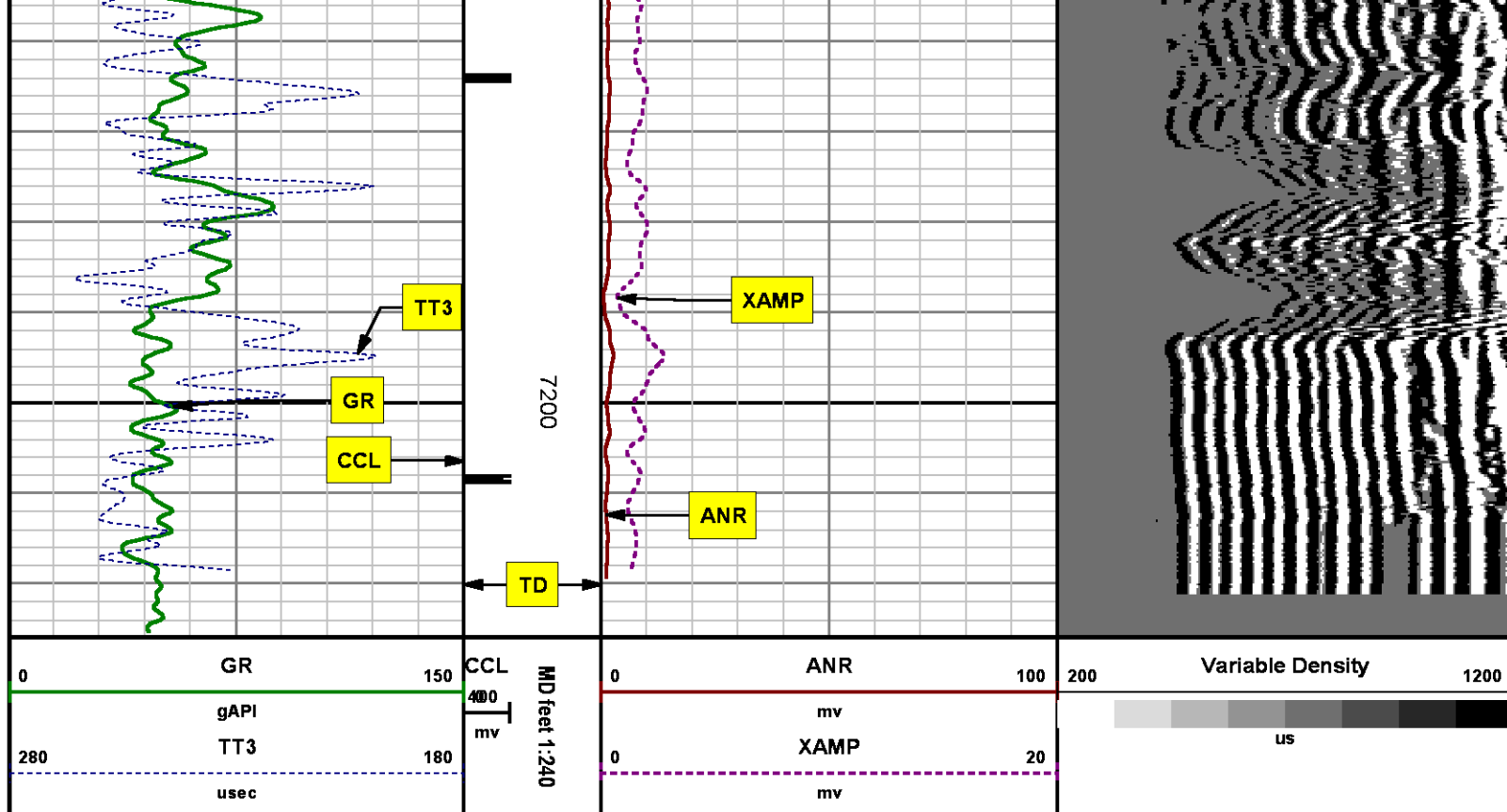












## SECONDARY PRESENTATION 0 PSI

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	305.000	u sec	27.043	7222.000
RAL	Amp Gate Start Near	195.000	u sec	27.043	7222.000
RAL	Amp Gate Start Radial	195.000	u sec	27.043	7222.000
RAL	Amp Gate Width Far	25.000	u sec	27.043	7222.000
RAL	Amp Gate Width Near	25.000	u sec	27.043	7222.000
RAL	Amp Gate Width Radial	25.000	u sec	27.043	7222.000
RAL	casing od	4.500	inches	27.043	7222.000
RAL	casing wt	11.600	lbm/ft	27.043	7222.000
RAL	FB Start Far	291.900	u sec	27.043	7222.000
RAL	FB Start Near	180.000	u sec	27.043	7222.000
RAL	FB Start Radial	180.000	u sec	27.043	7222.000
RAL	FB Thresh Far	10.000	mv	27.043	7222.000
RAL	FB Thresh Near	4.000	mv	27.043	7222.000



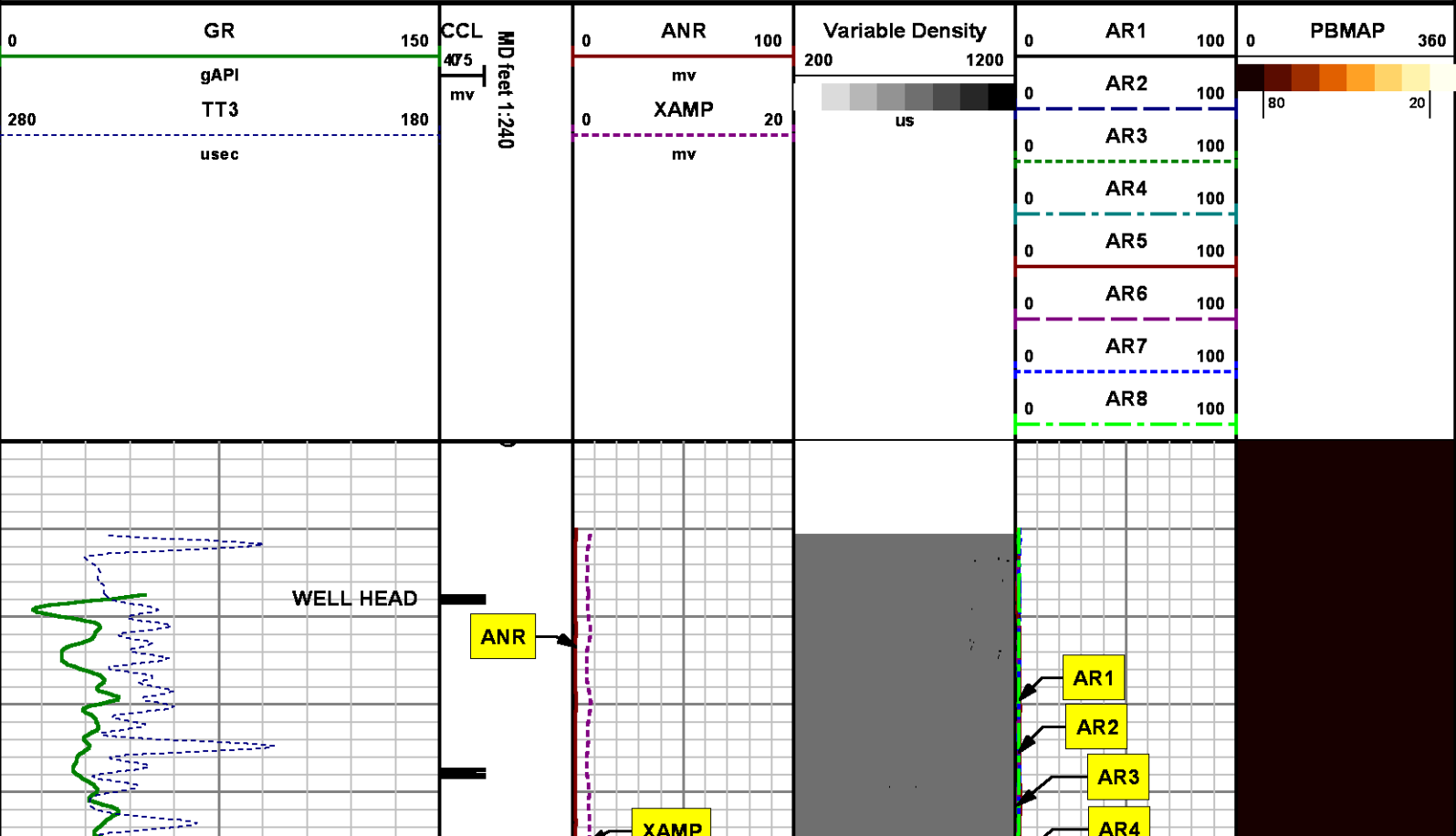
RAL	FB Thresh Radial	4.000	mv	27.043	7222.000
RAL	Fluid Travel Time	200.000	usec/ft	27.043	7222.000

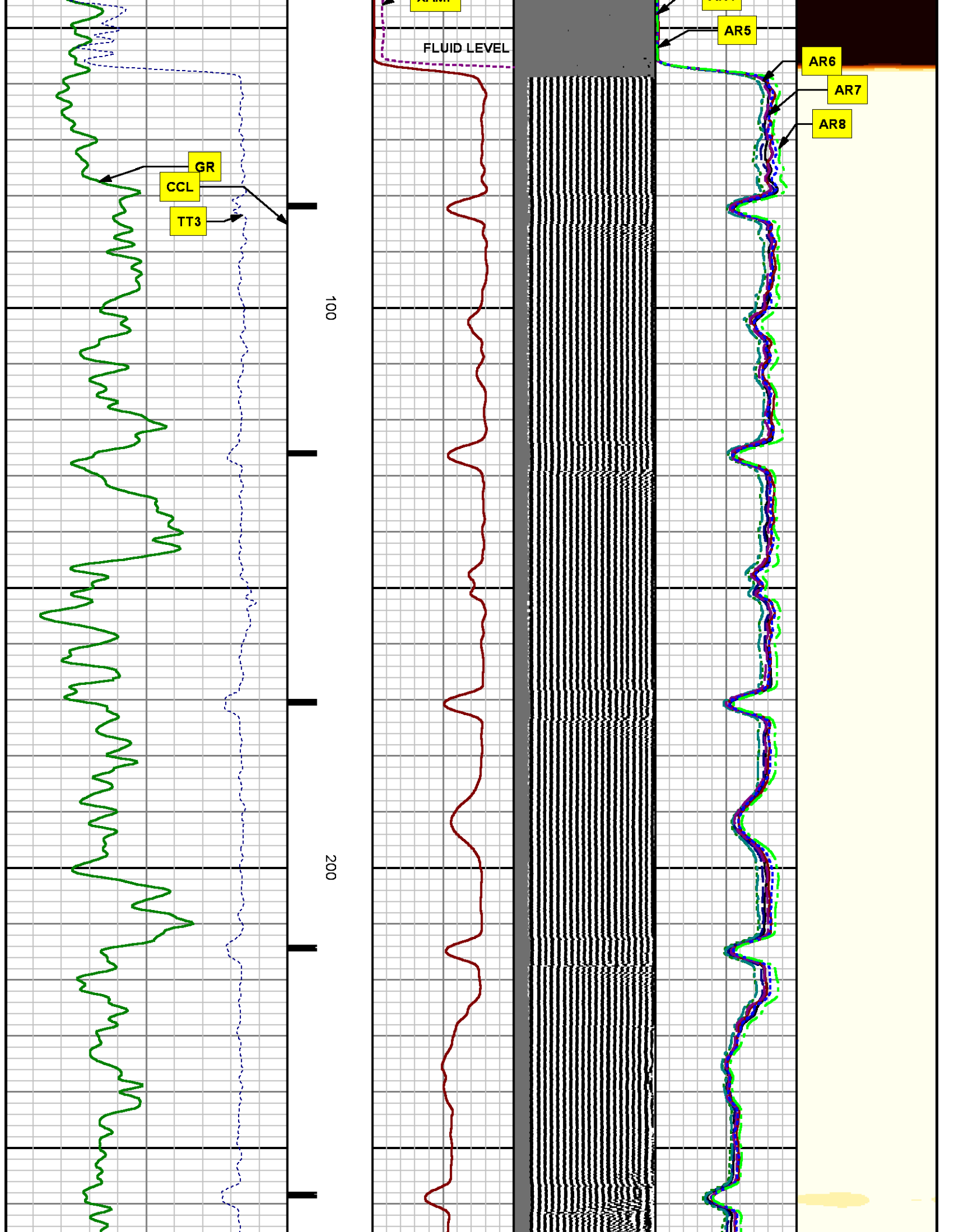
# DEPTH OFFSETS

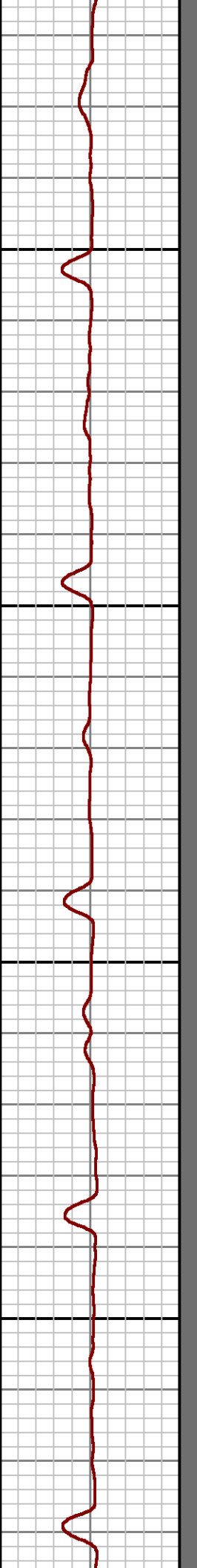
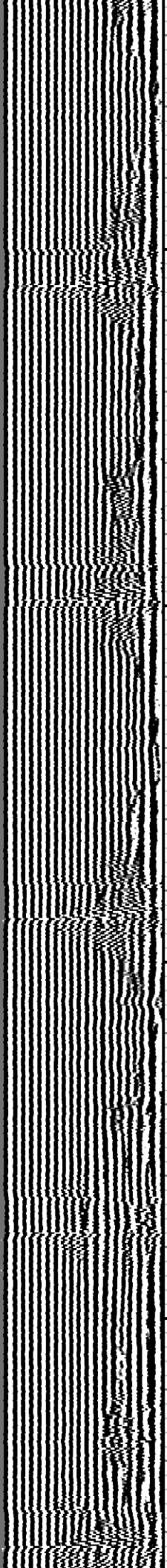
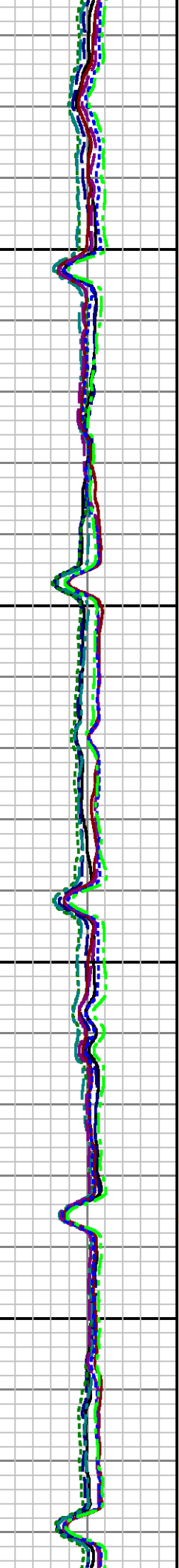
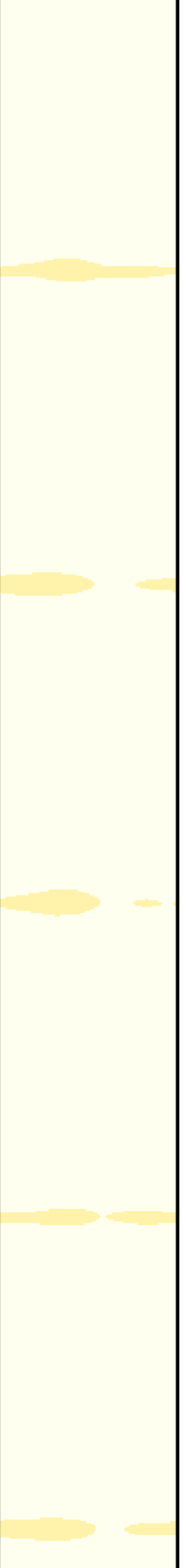
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-12.360	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	-11.360	AFAR	SIG	TT5			
2459XA	-7.250	CCL					
2459XA	-5.390	GR					
2459XA	0.000	NEU					

Created by : RAL, v4.8.008  
Plotted by : PlotMgr, v5.4.504  
Company : WPX ENERGY  
Well : CHEVRON GM 311-21  
File Name : d:\welldata\wpx\gm 311-21\311ra\main.xtf  
Mode : PlotMgr 5.4.504  
Interval : 0.00 - 7224.00 feet UP  
Created : 10/9/2014 9:05:29 AM

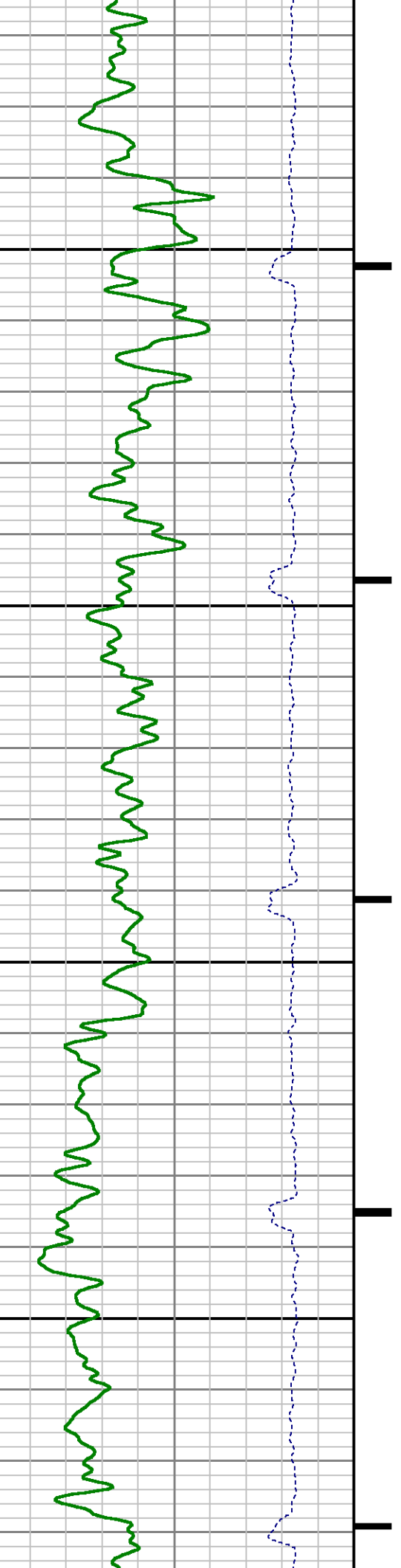


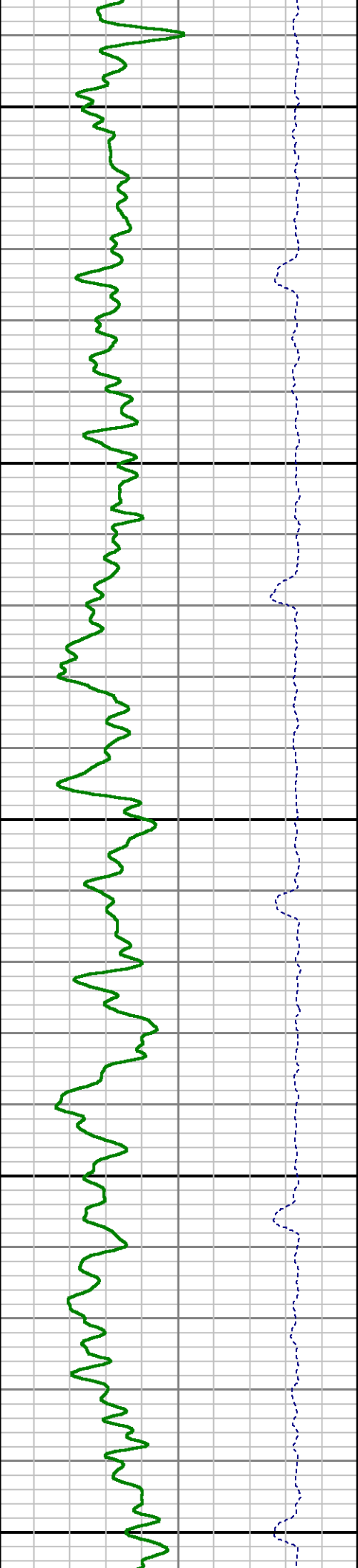
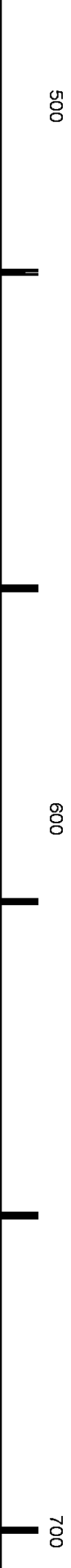
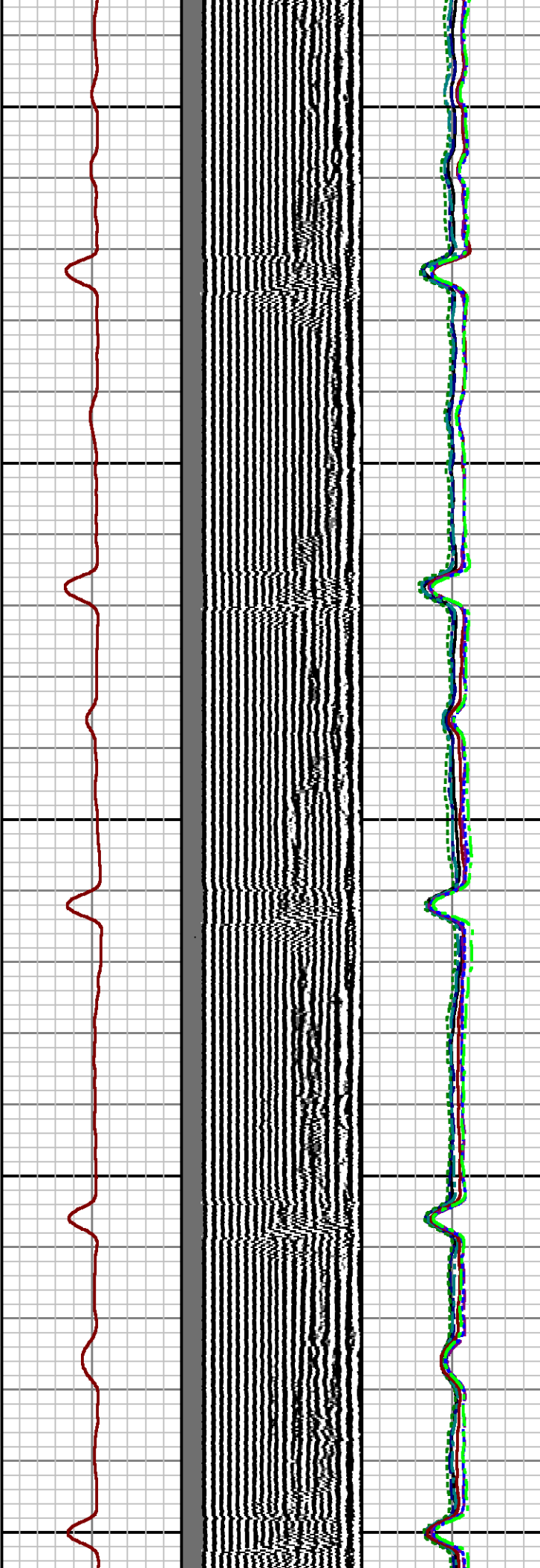
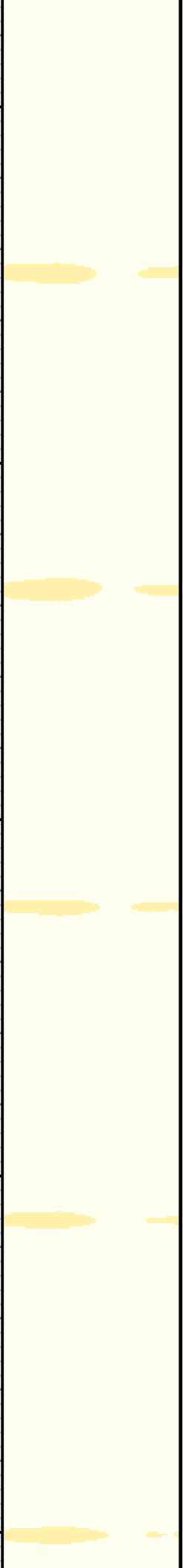


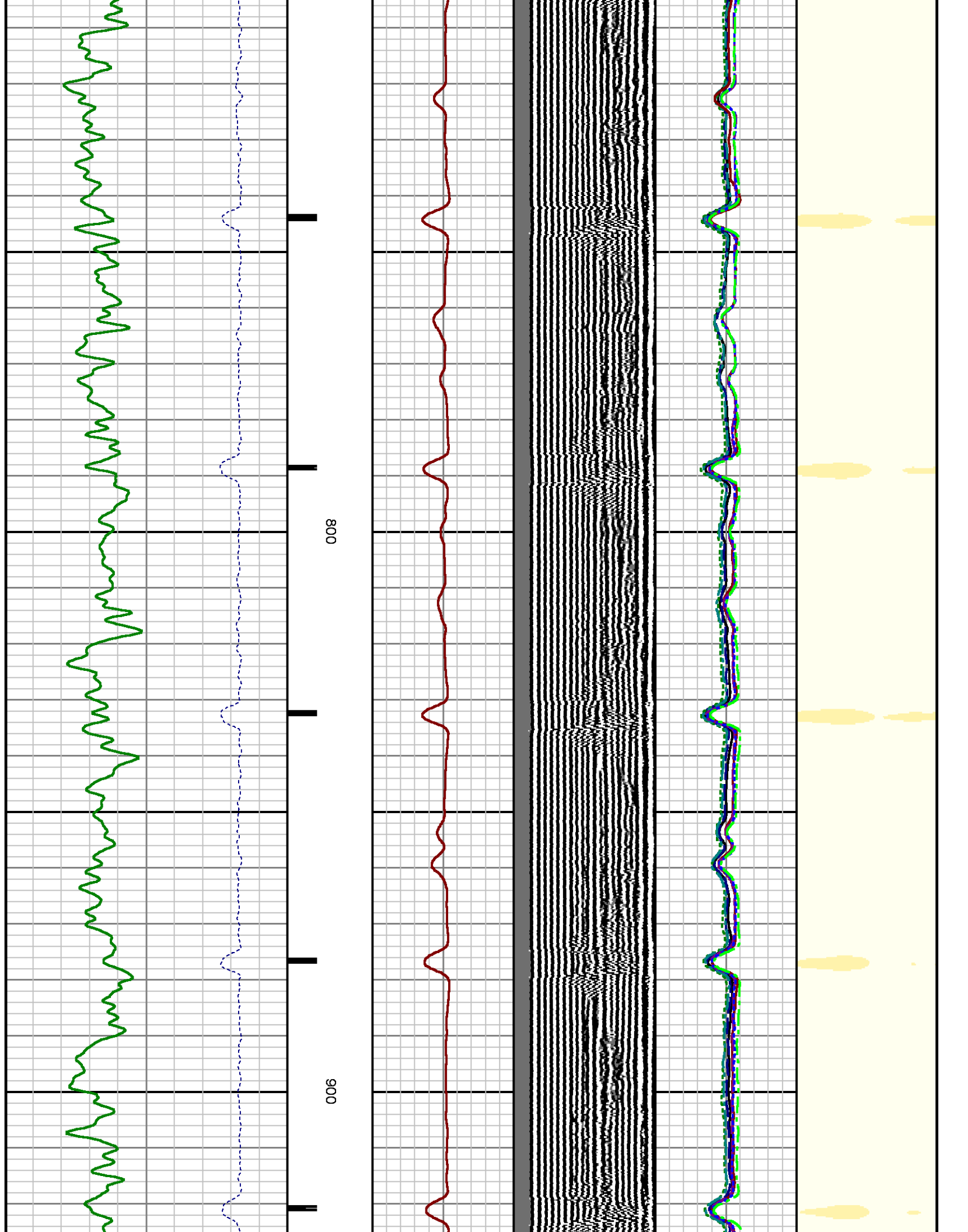


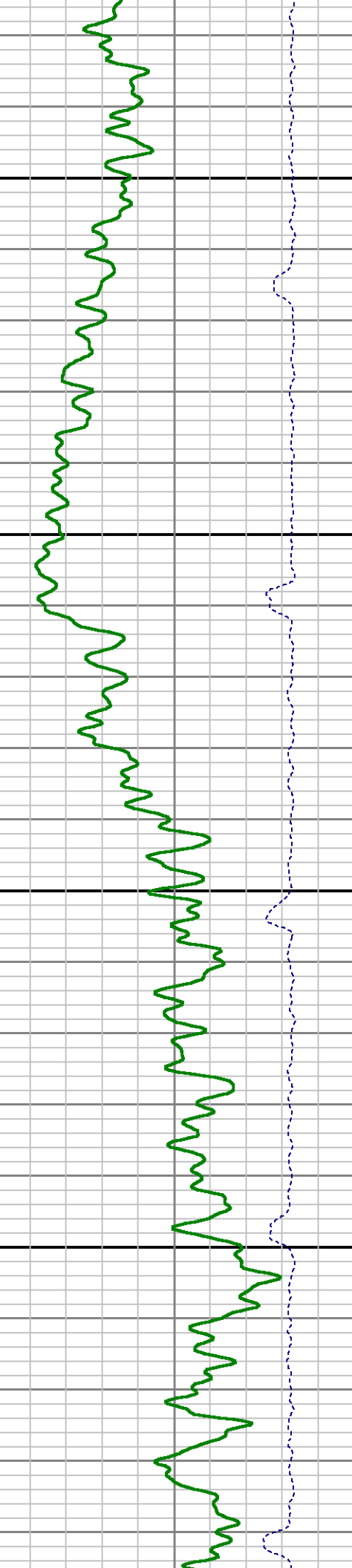
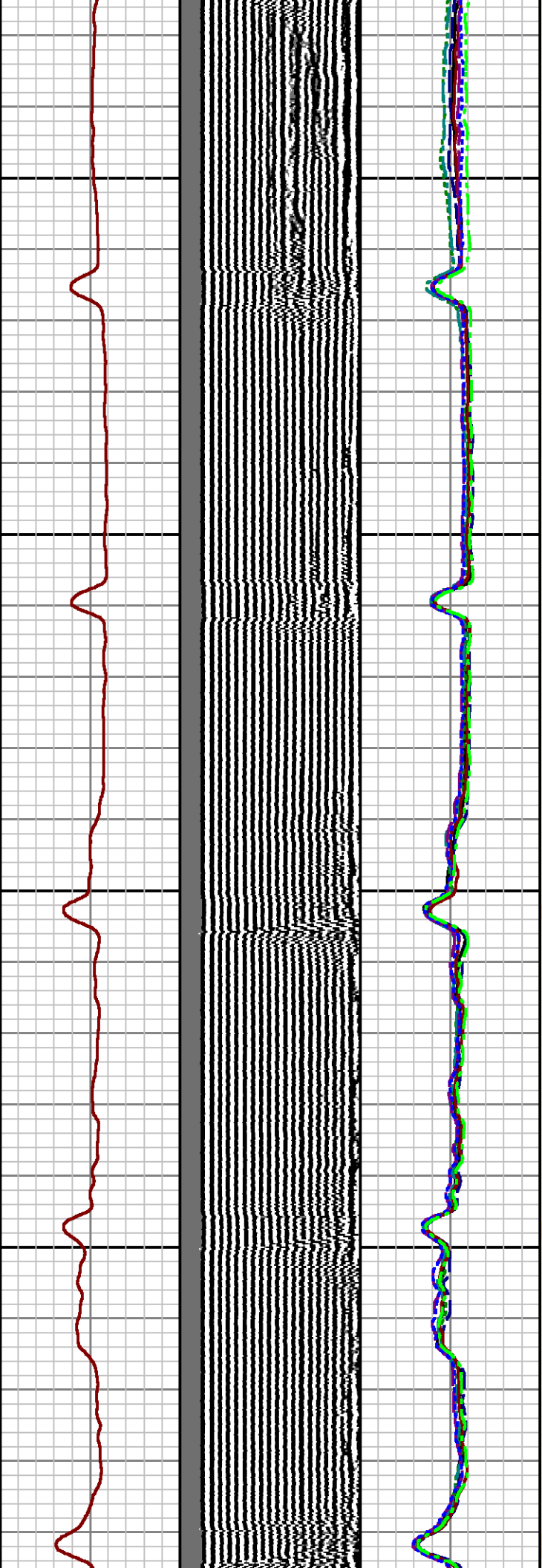
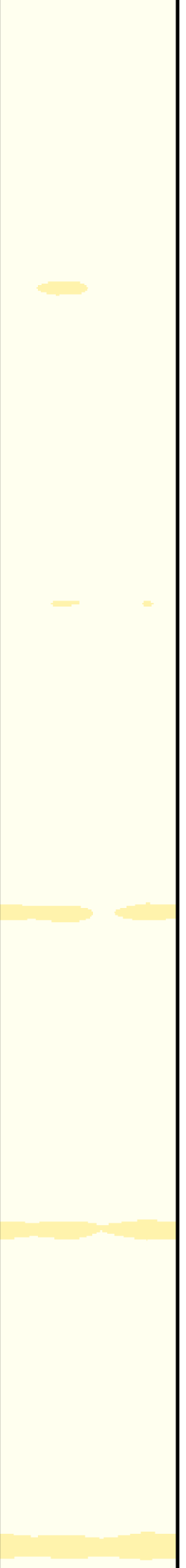
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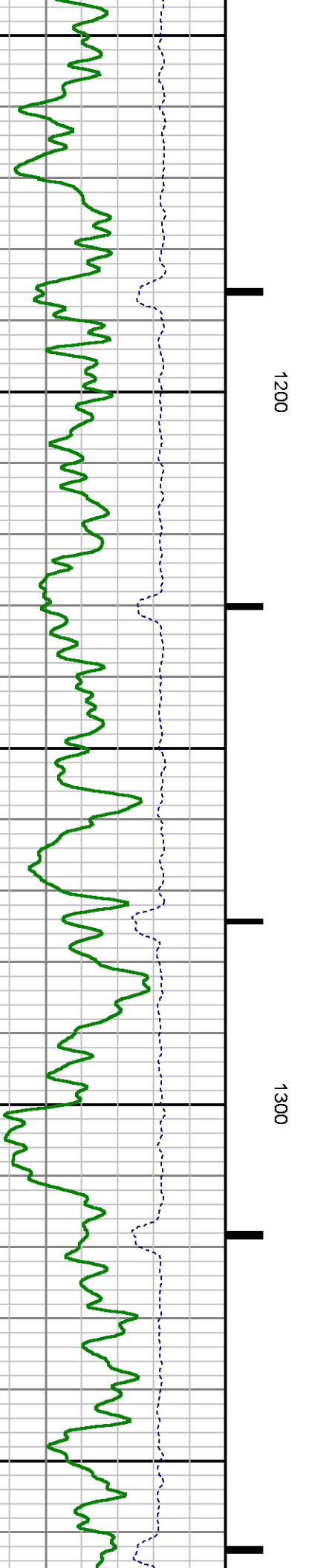
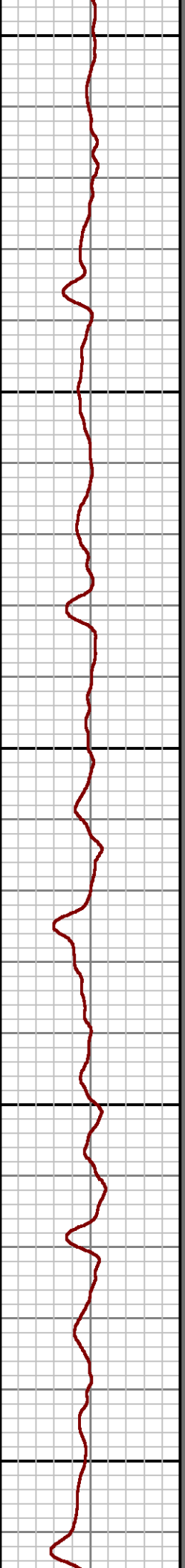
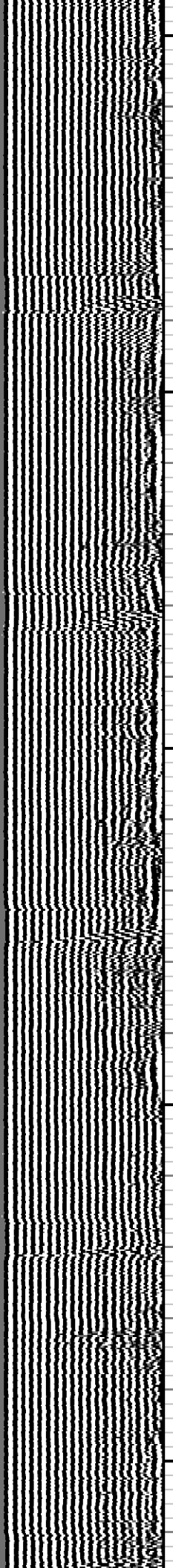
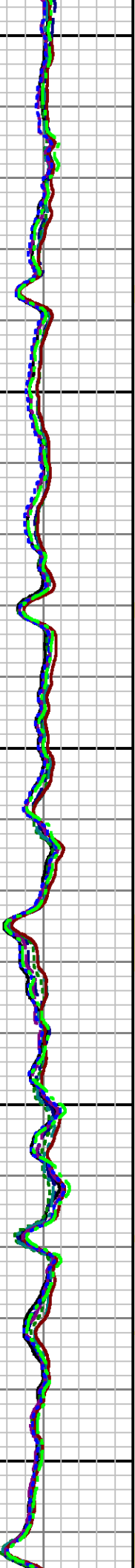
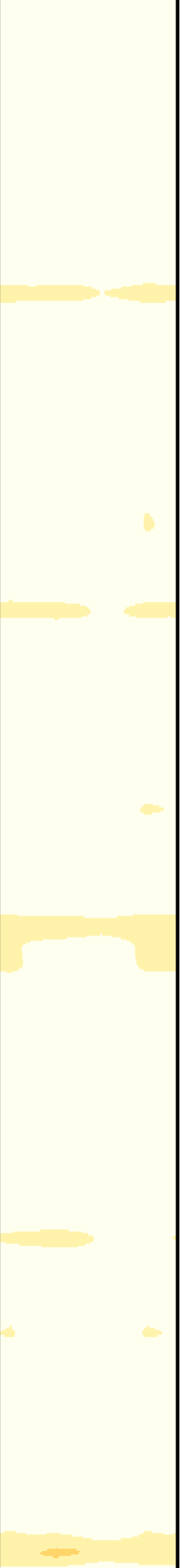


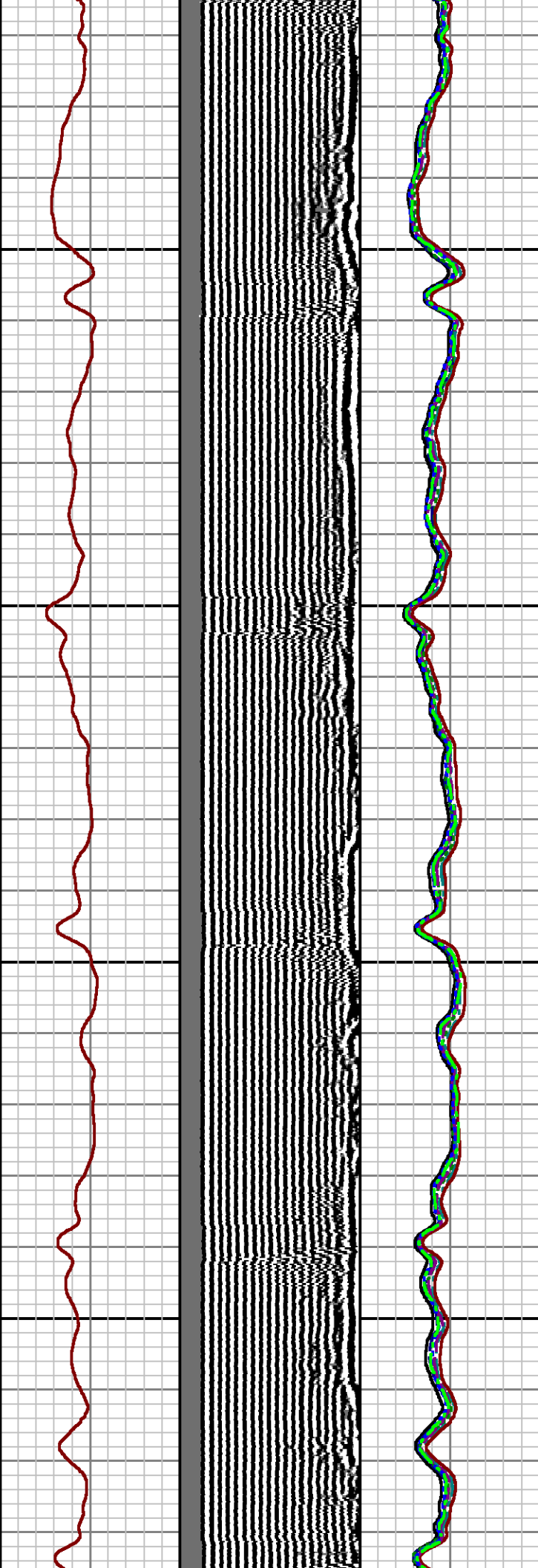
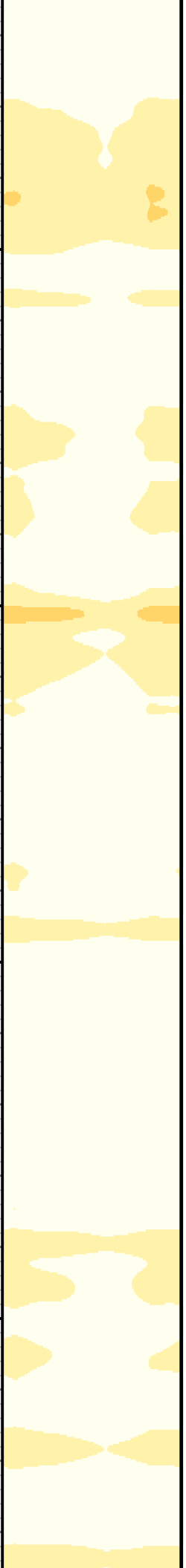






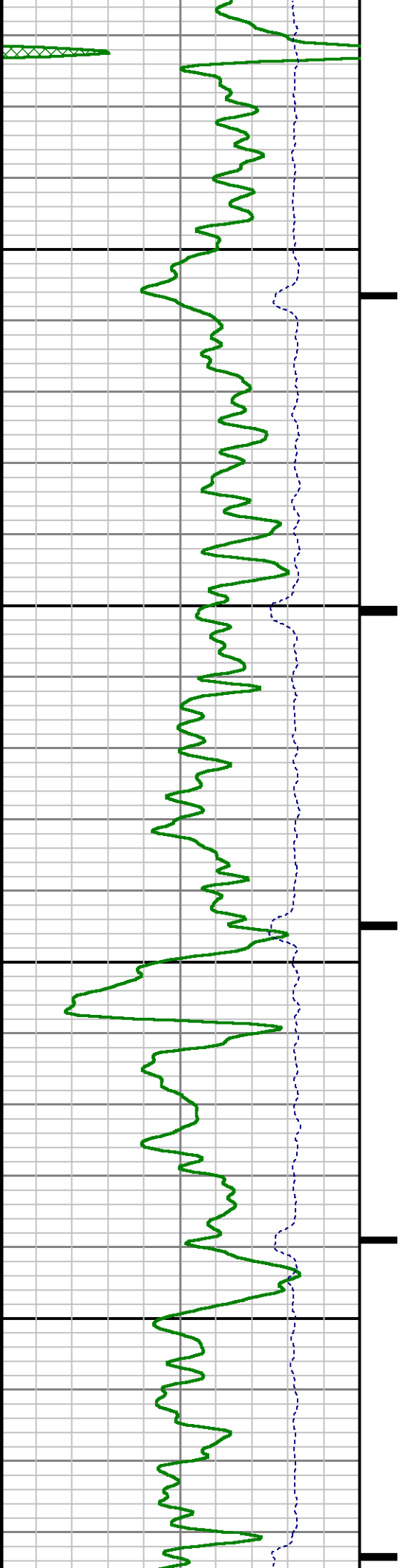


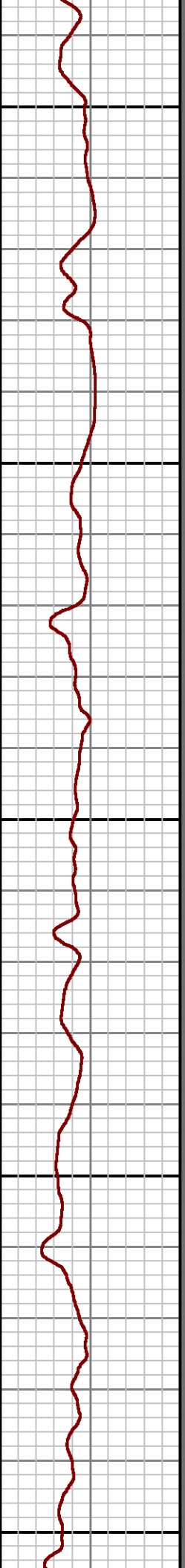
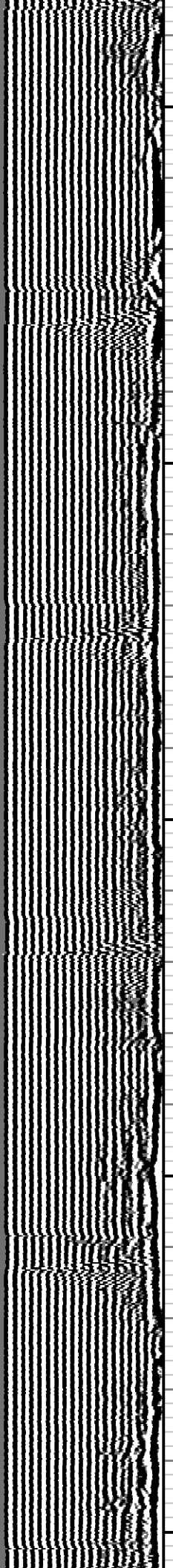
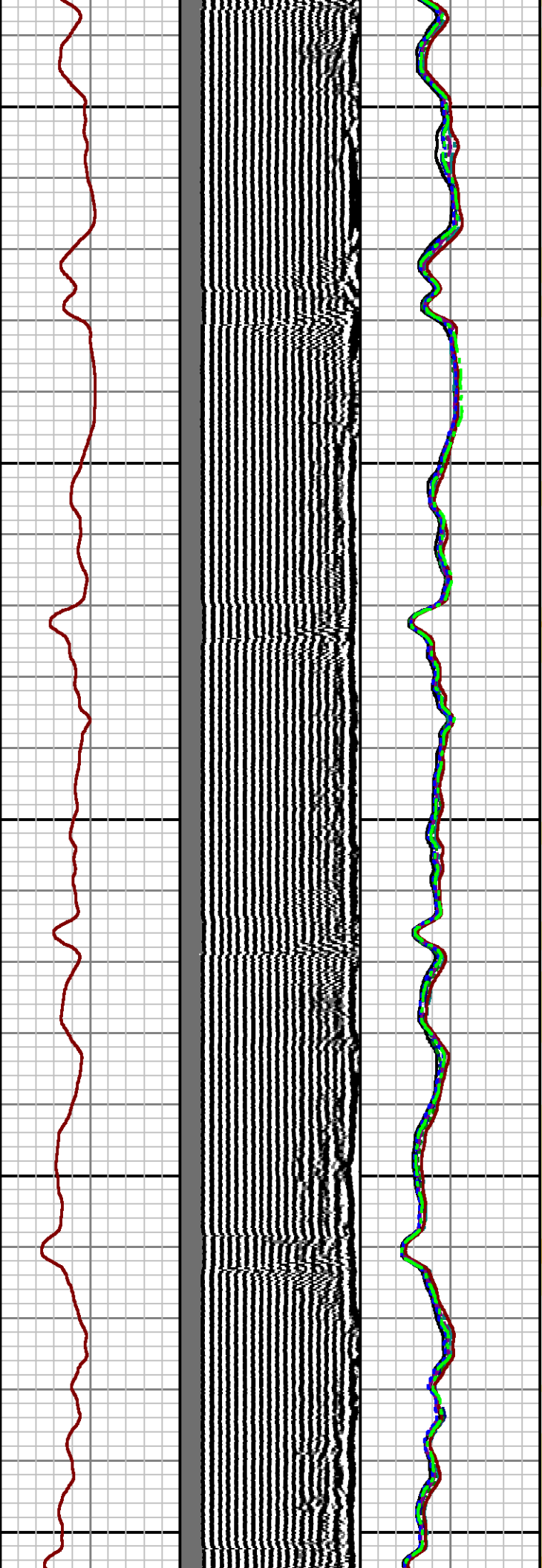
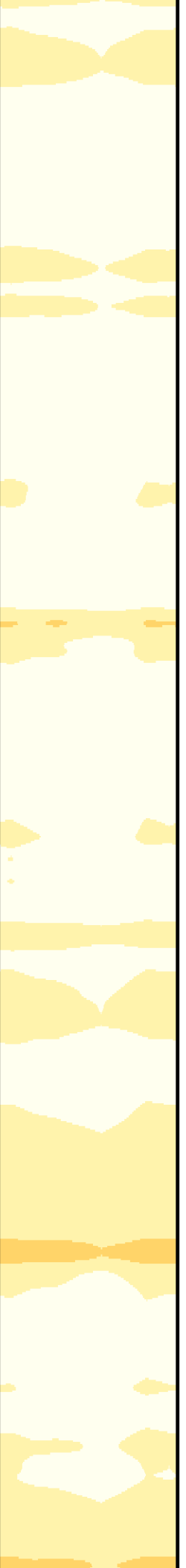




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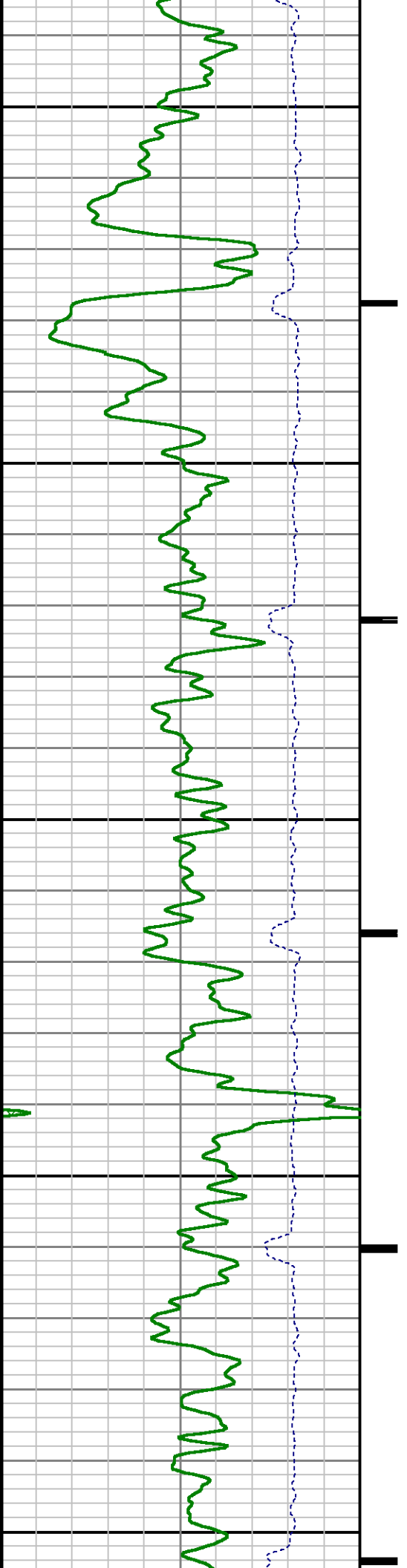


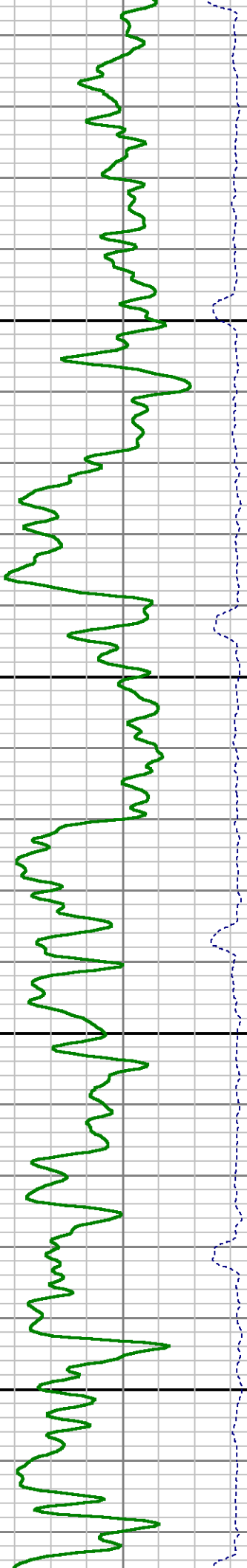
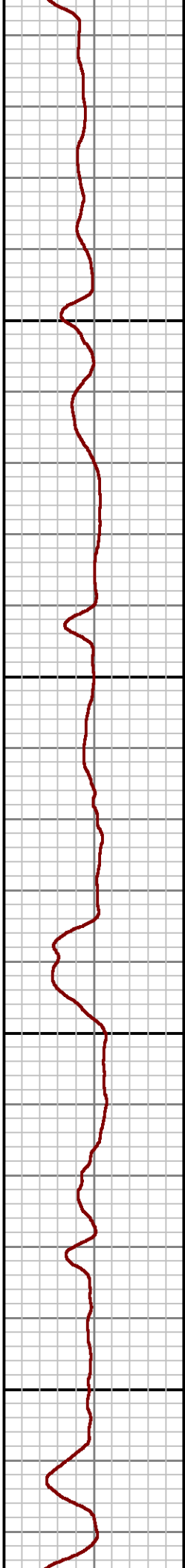
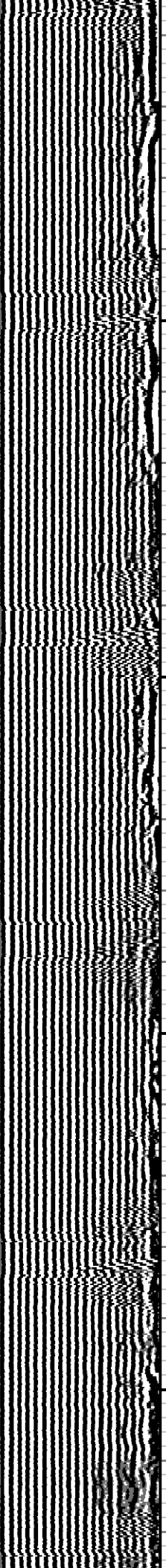
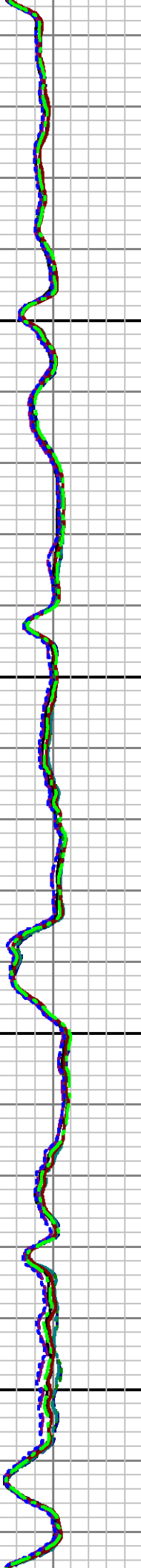
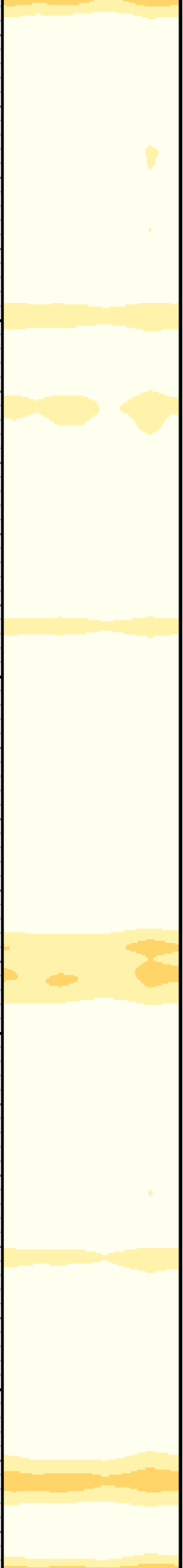


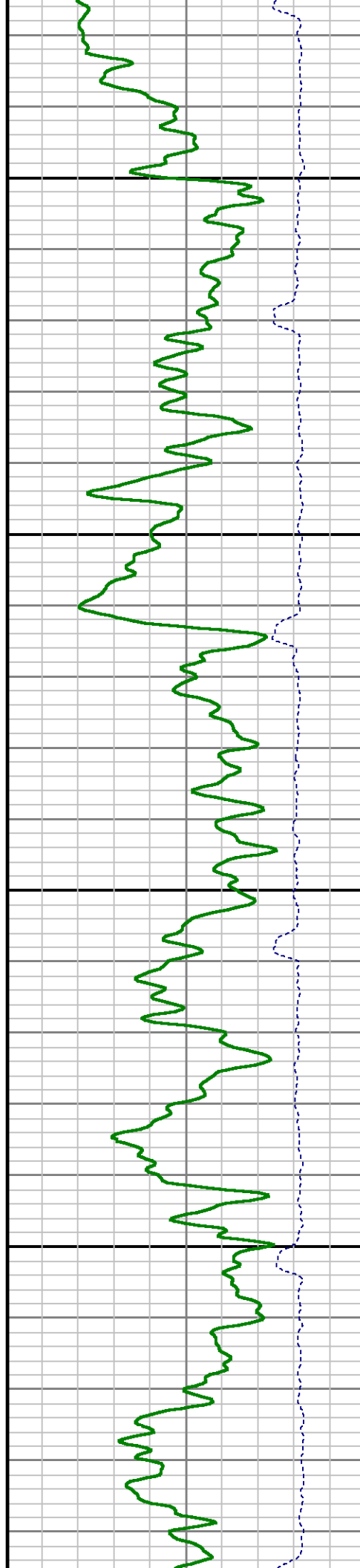
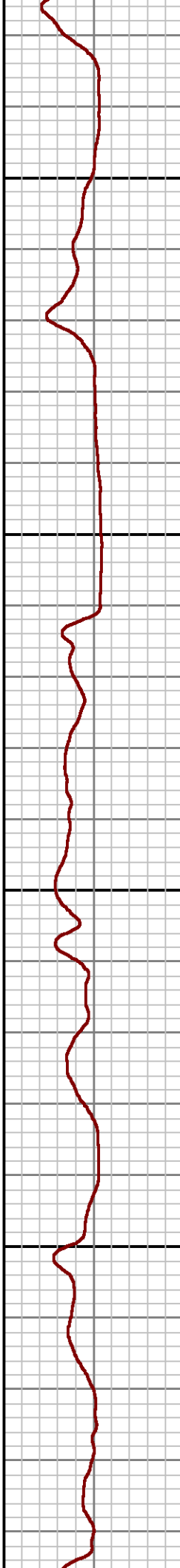
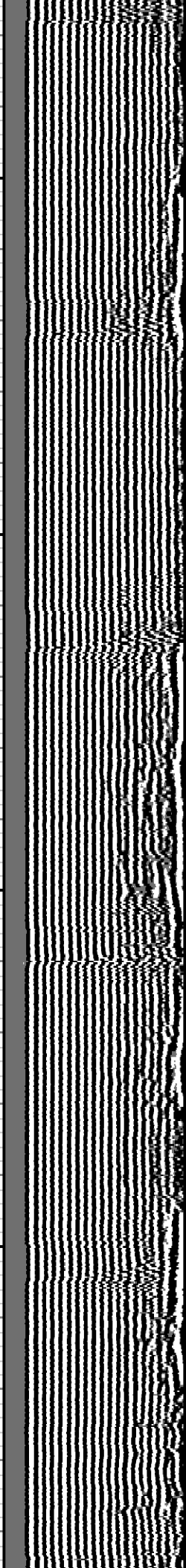
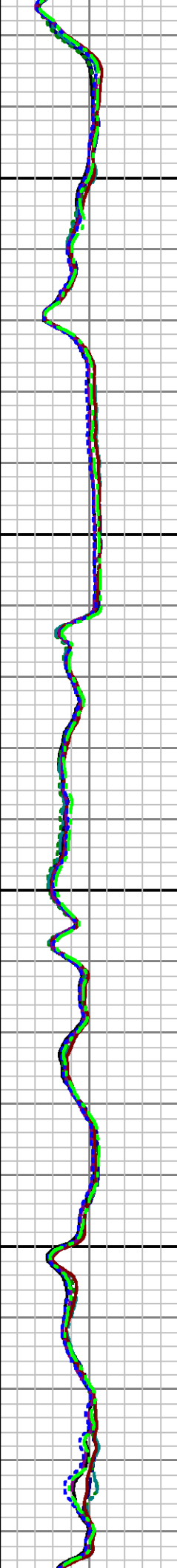
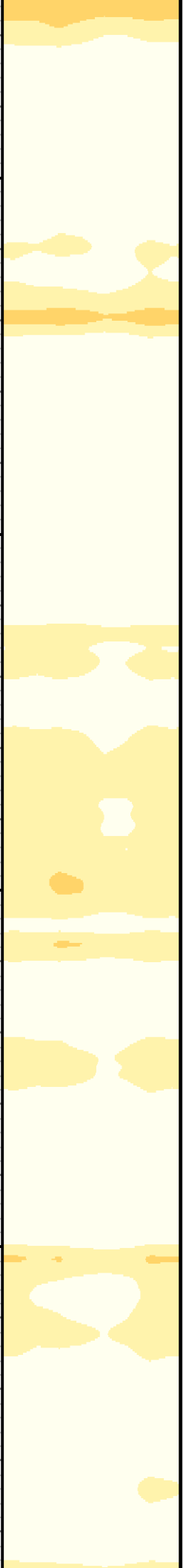
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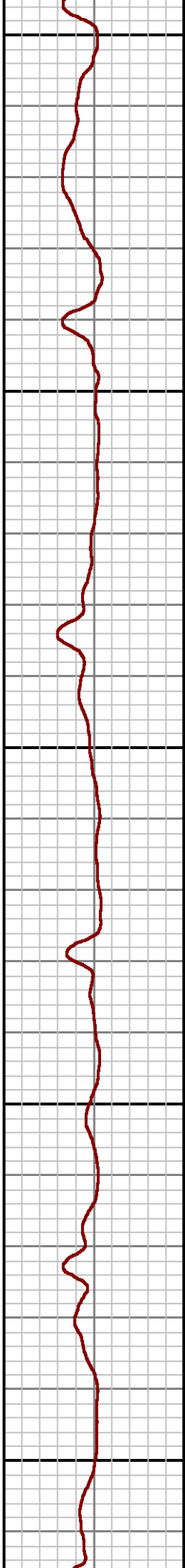
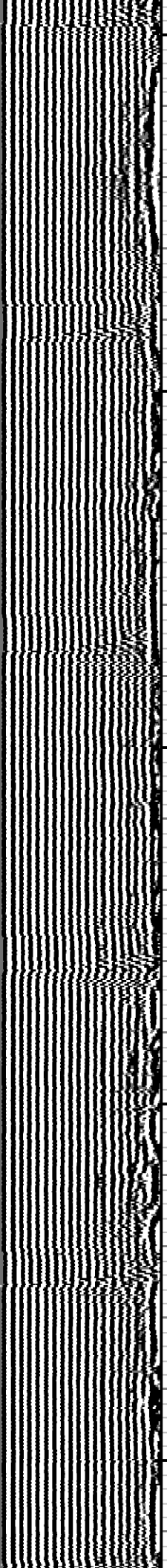
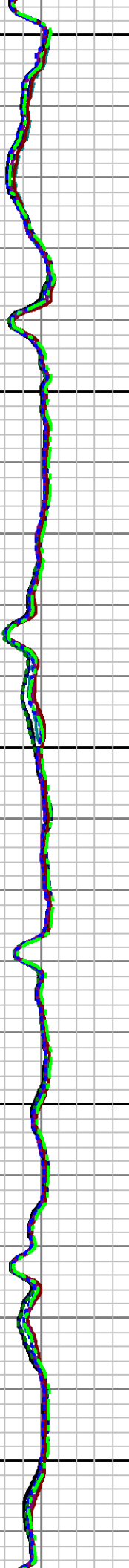
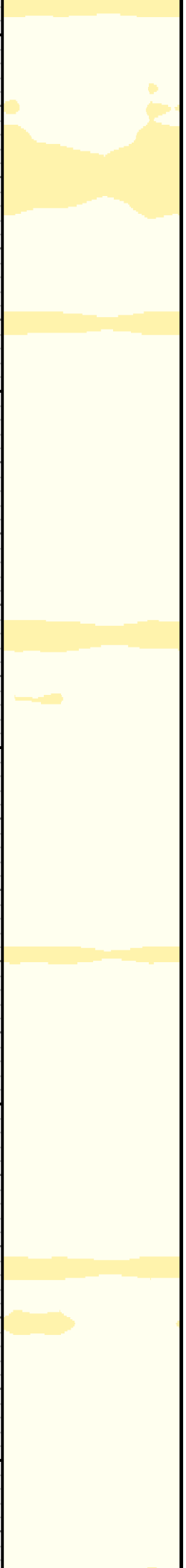
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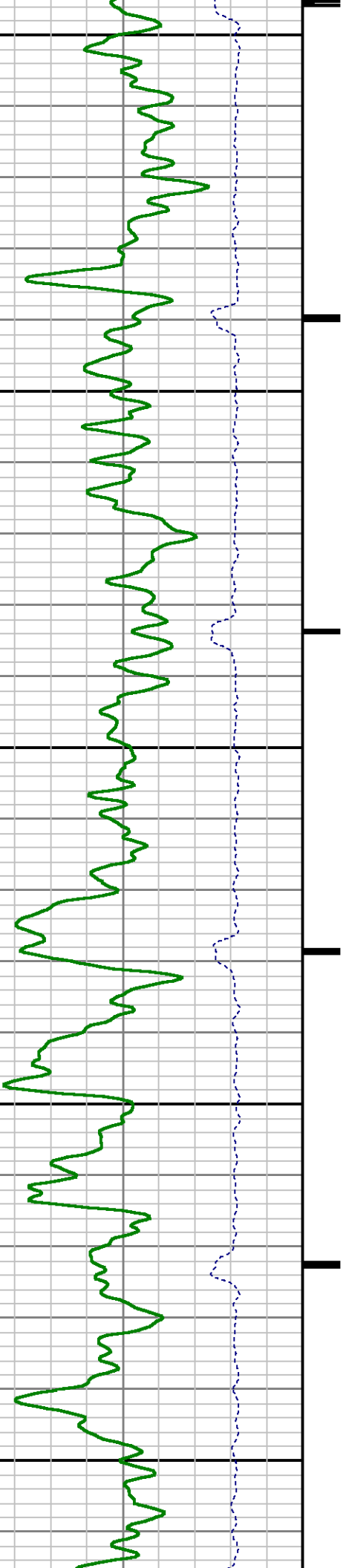




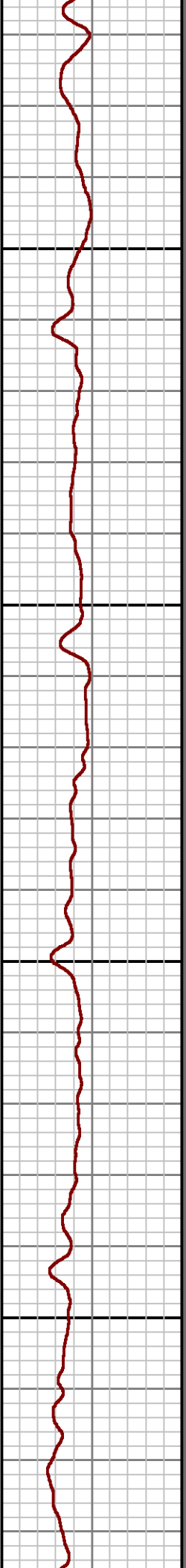
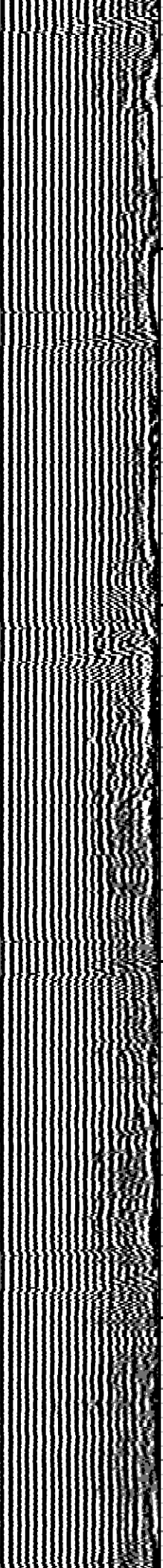
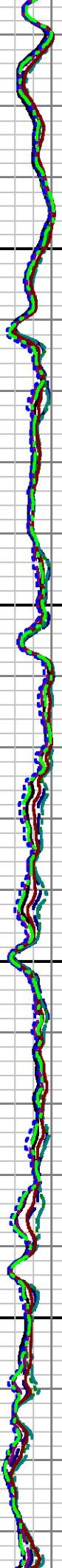
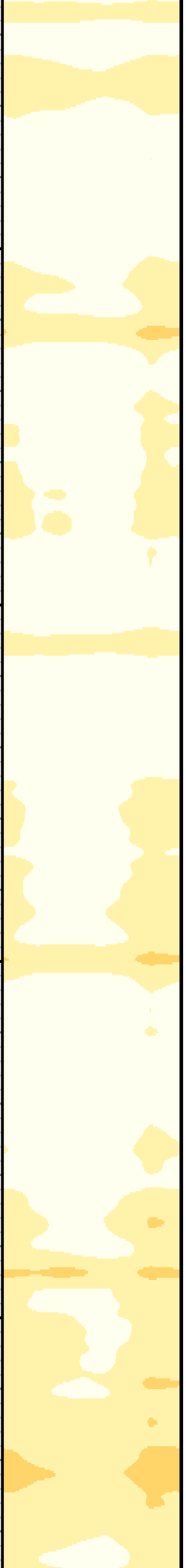


2300

2400

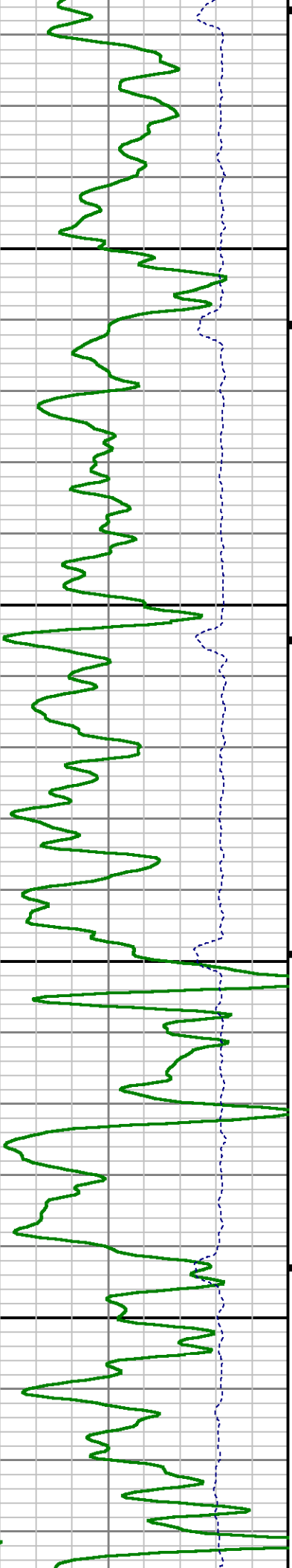


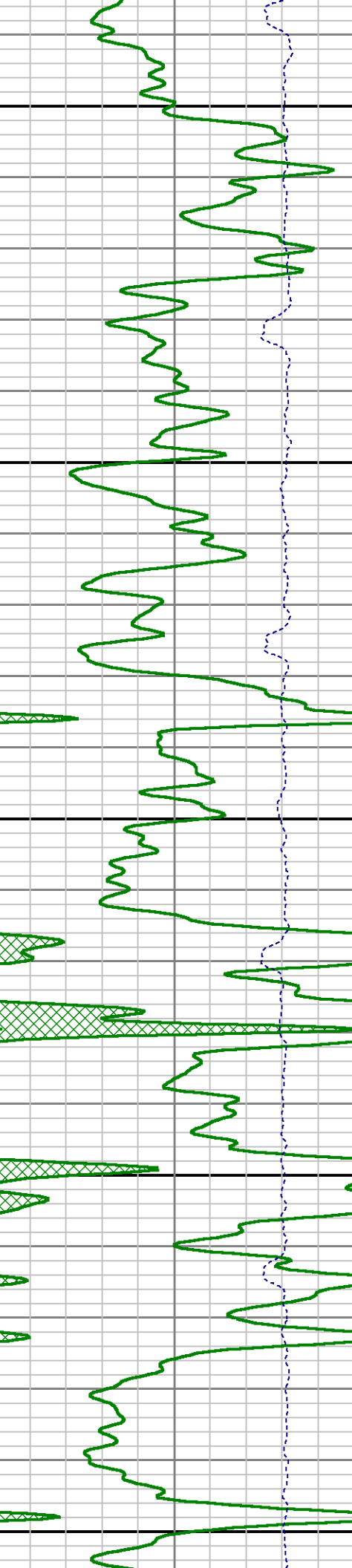
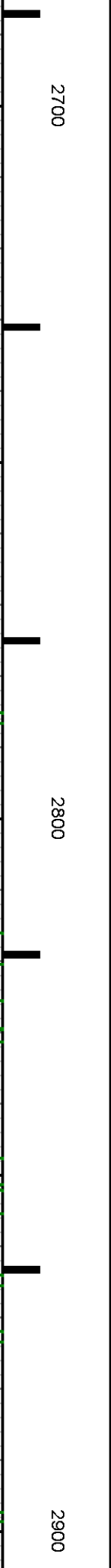
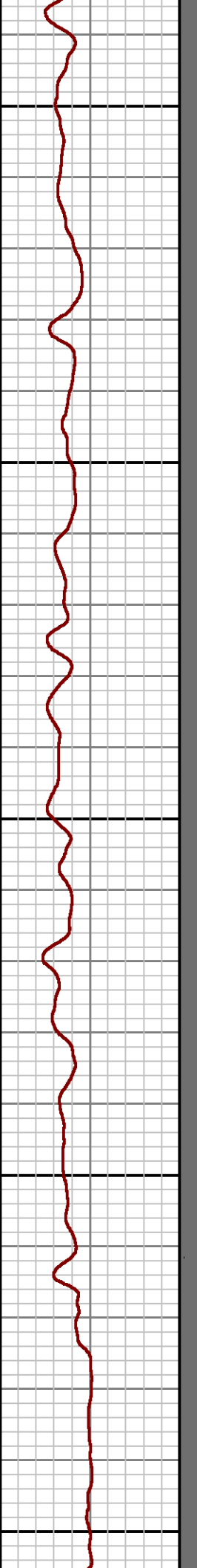
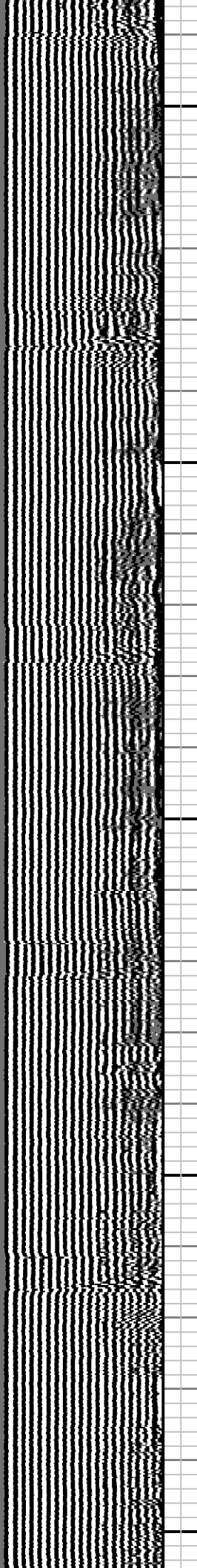
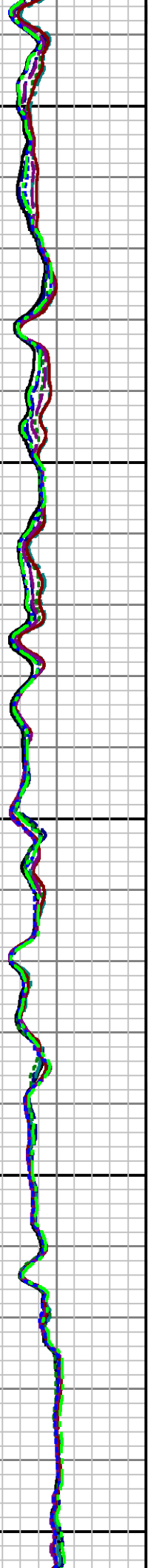
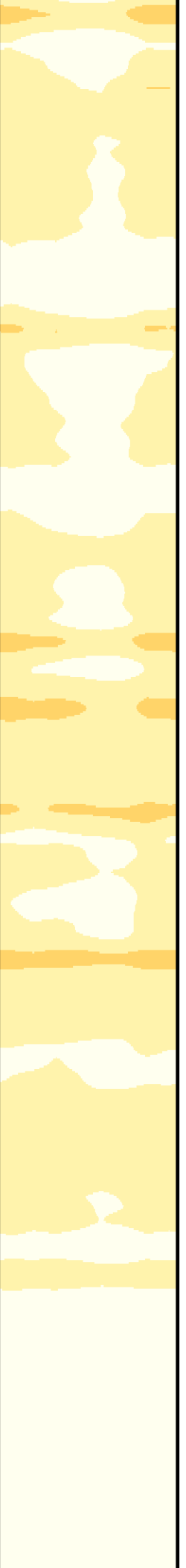


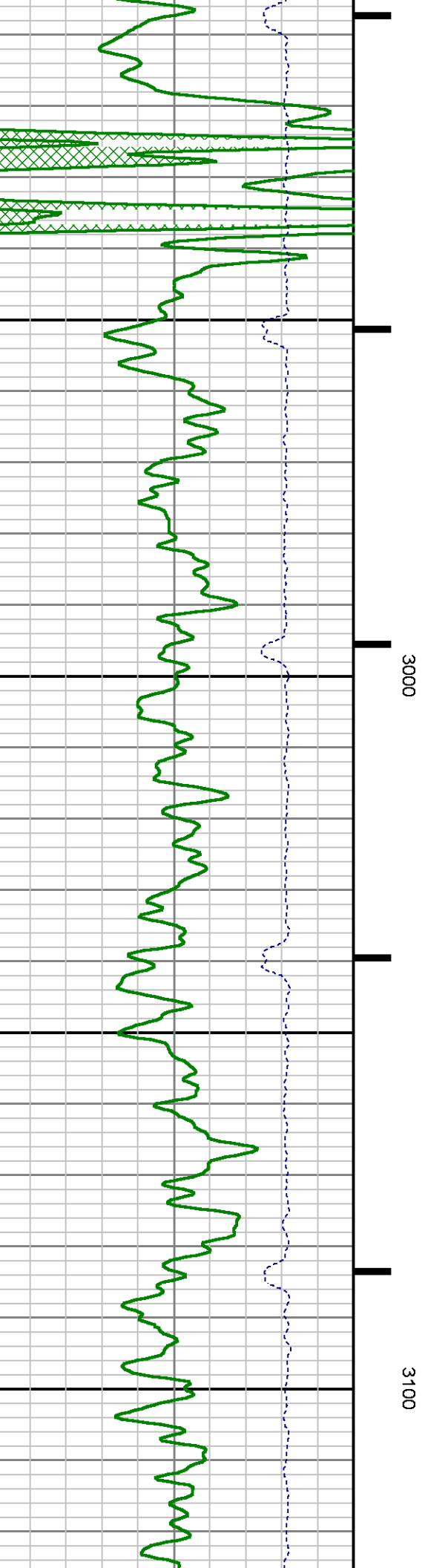
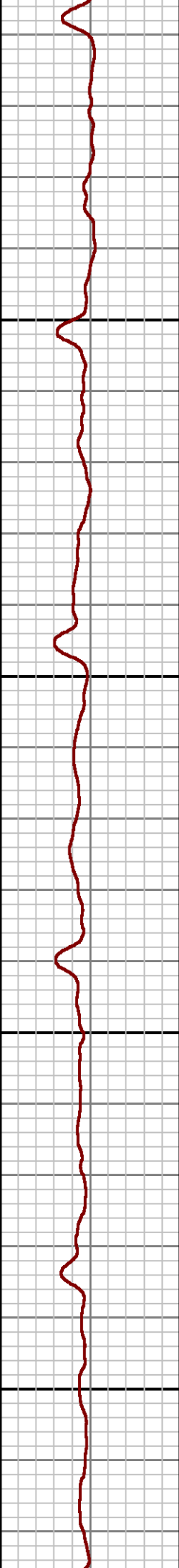
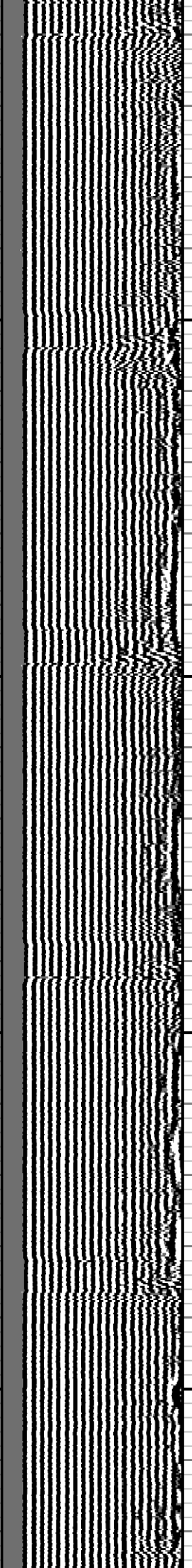
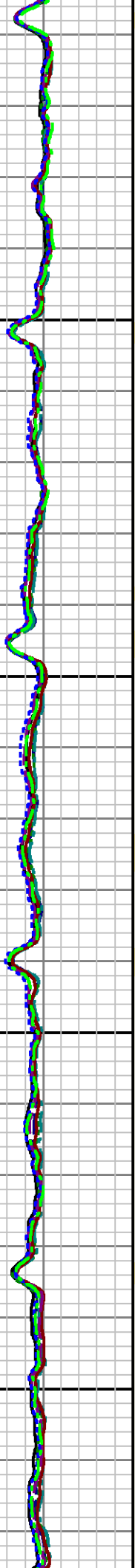
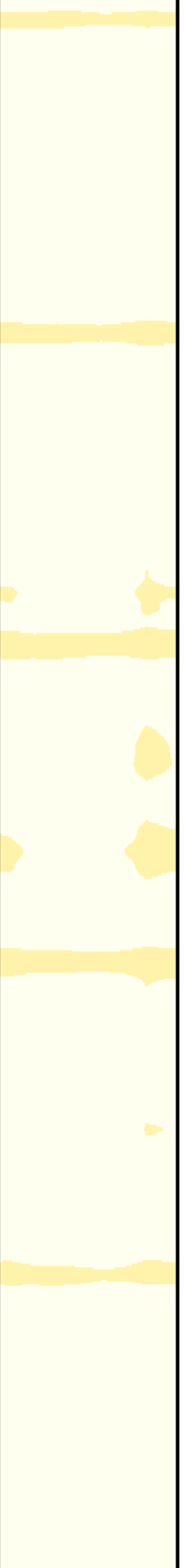


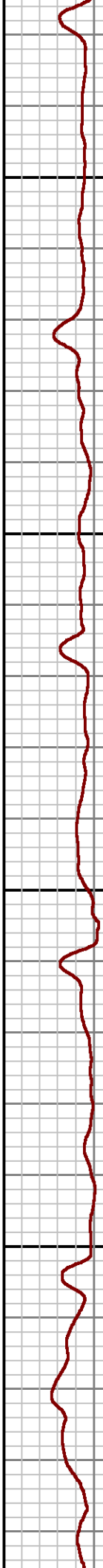
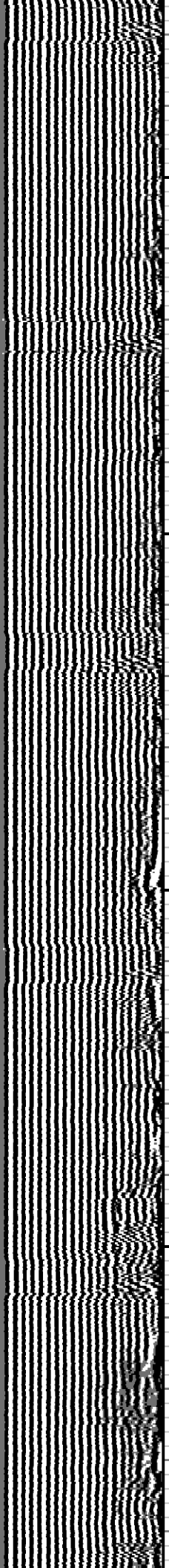
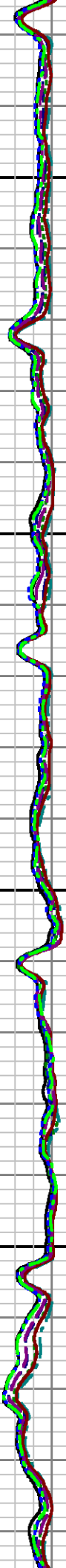
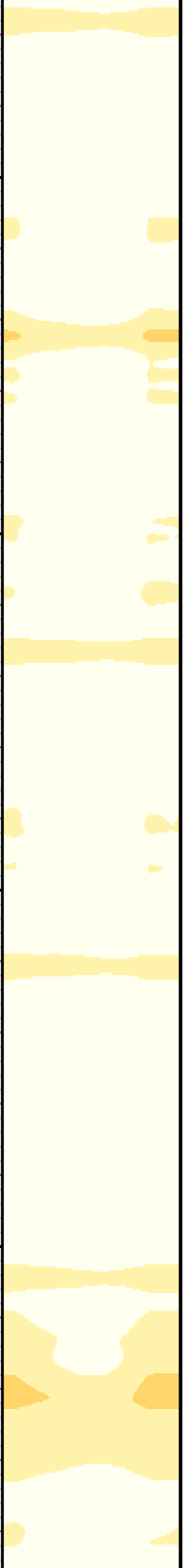
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2600



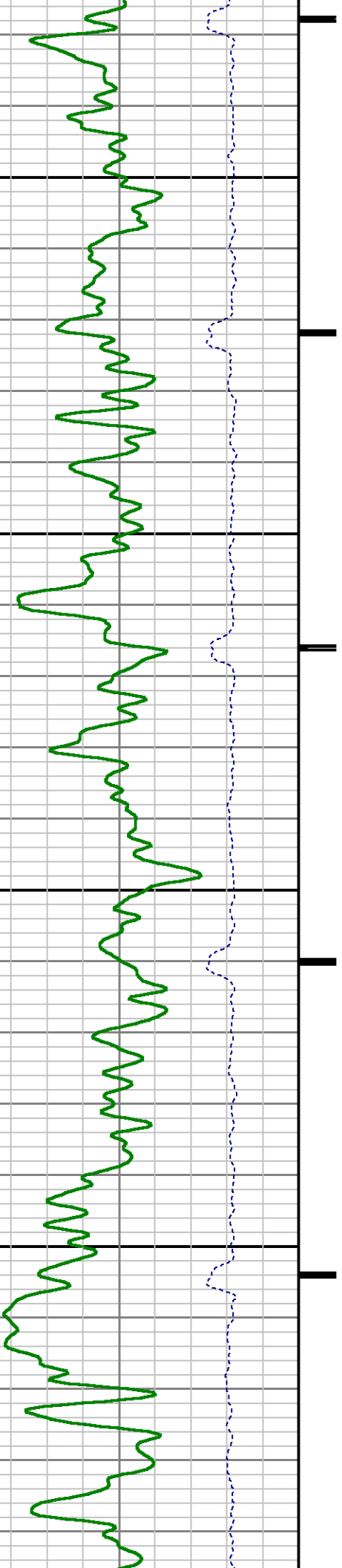


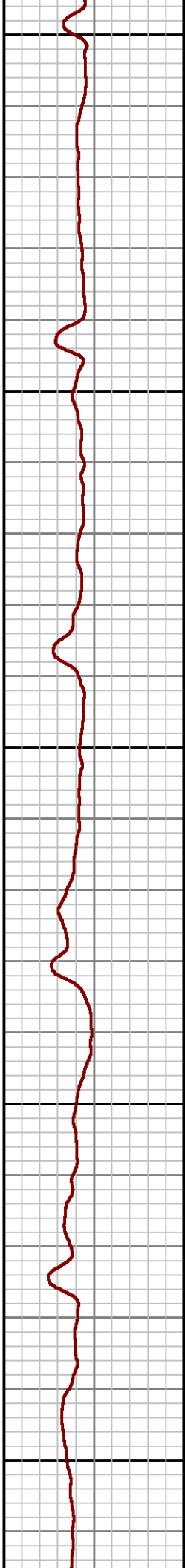
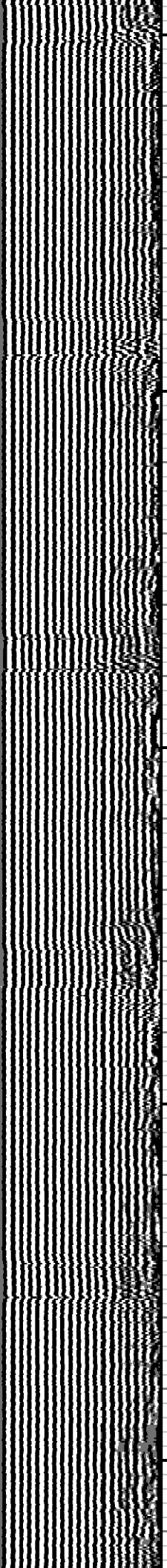
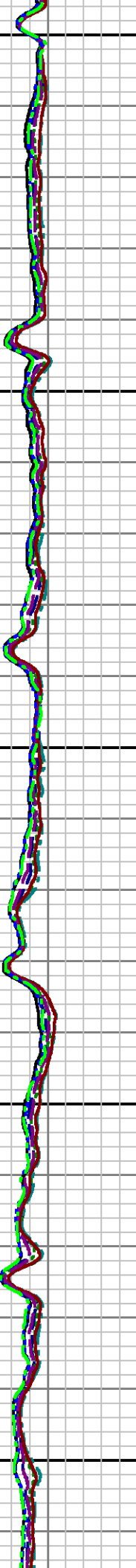
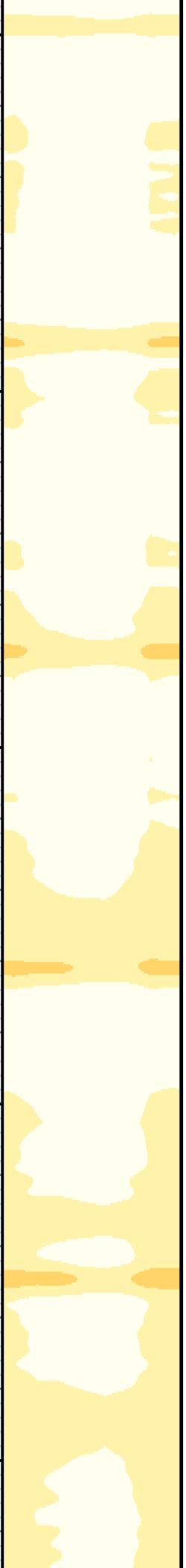




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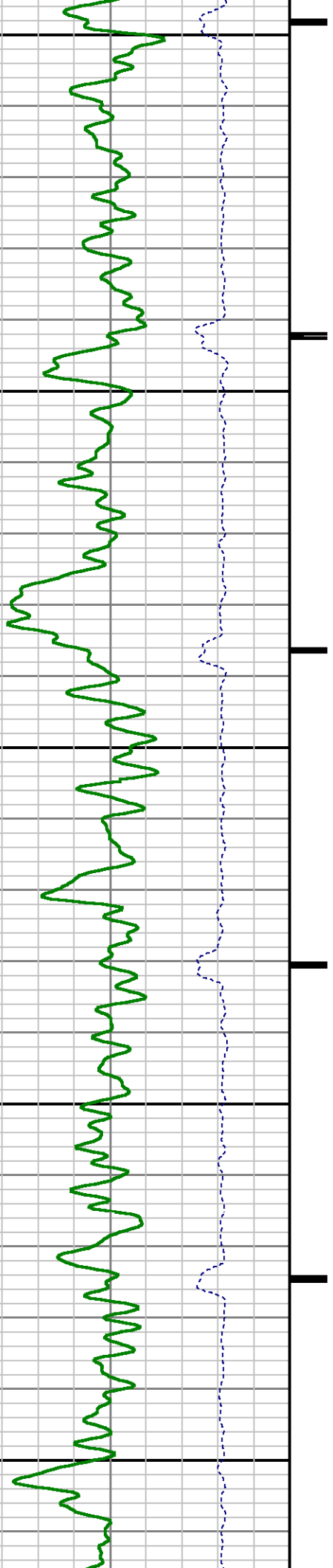
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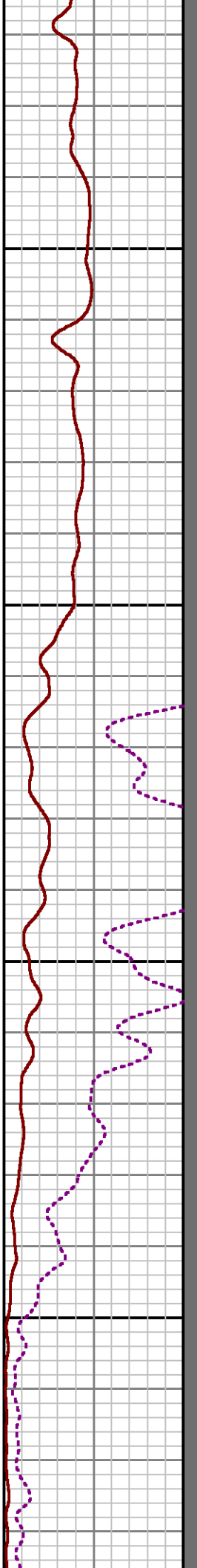
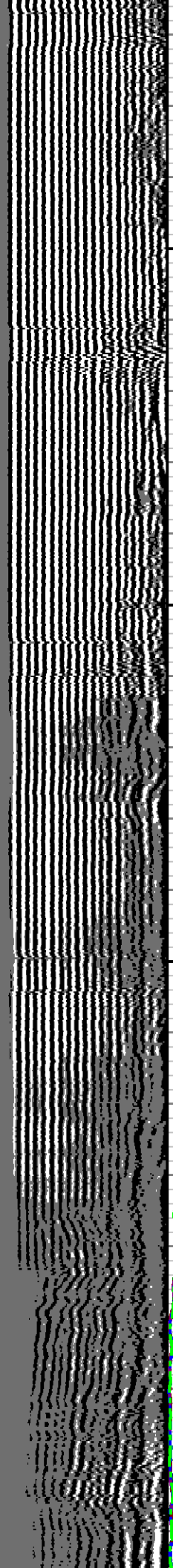
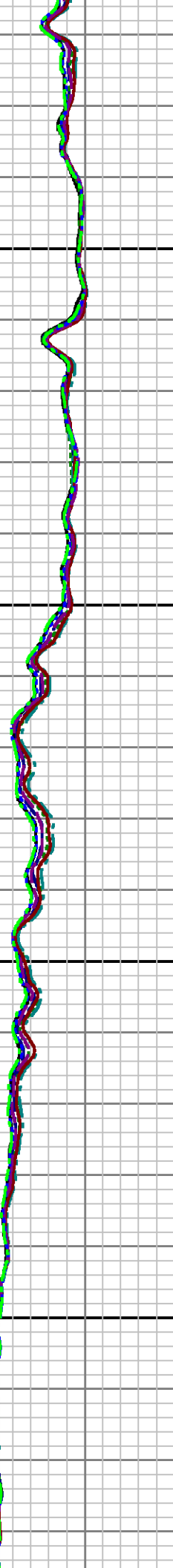
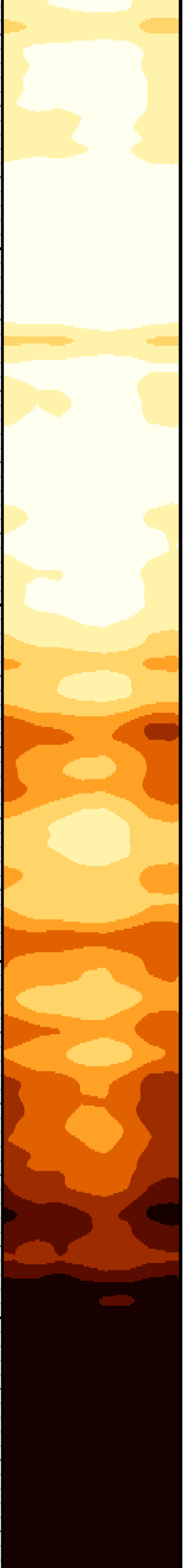


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3500

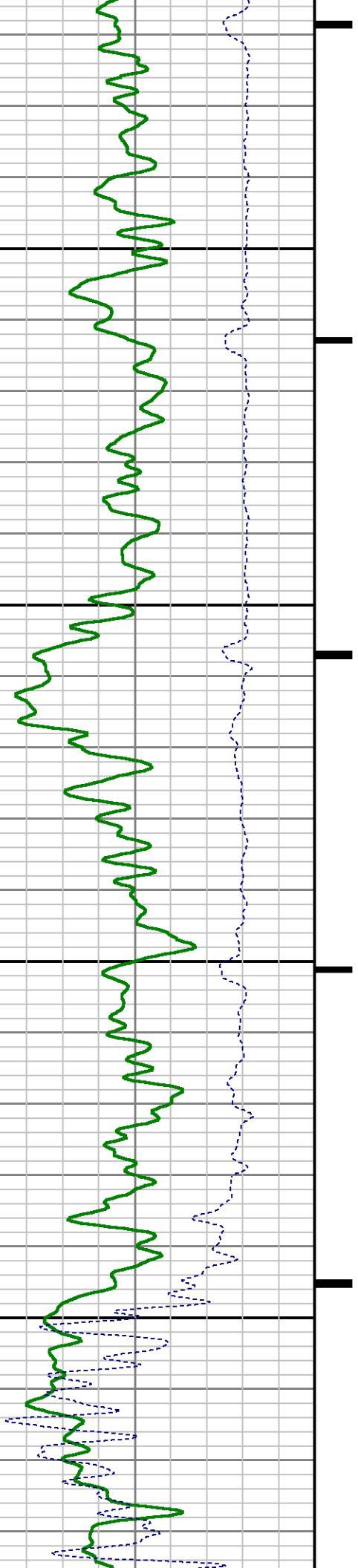




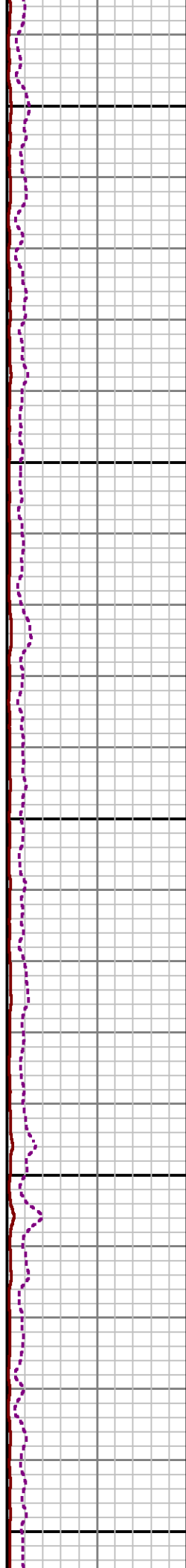
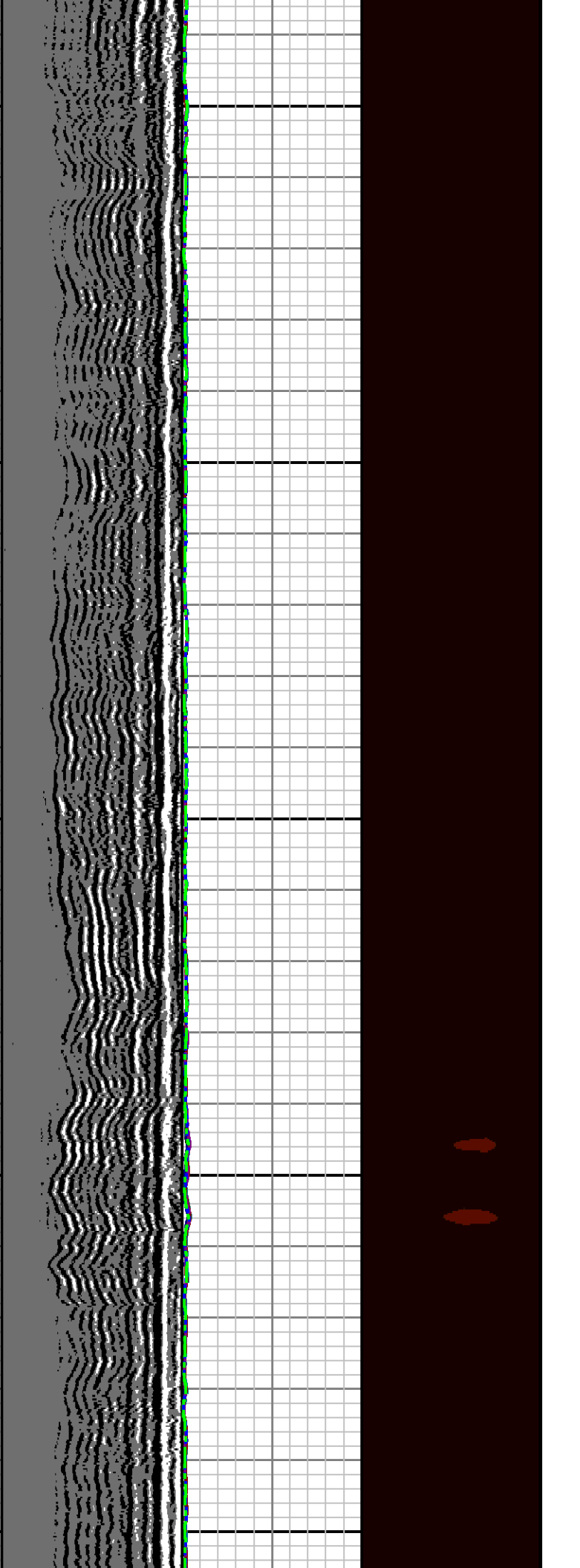


3600

3700



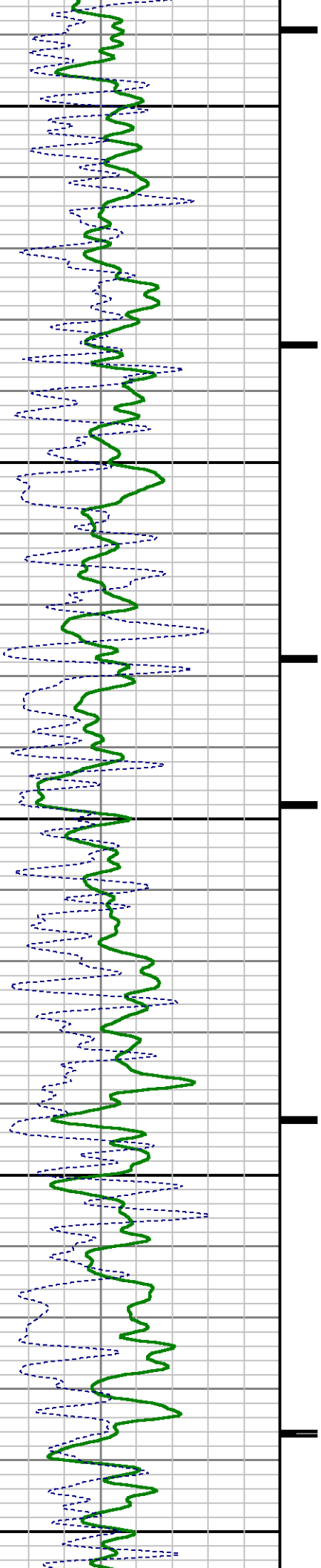


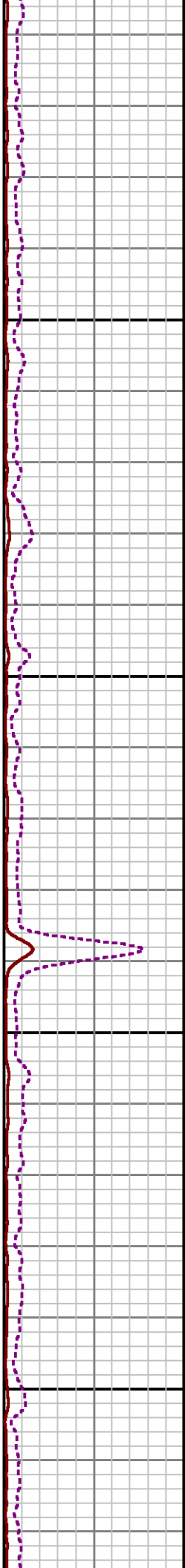
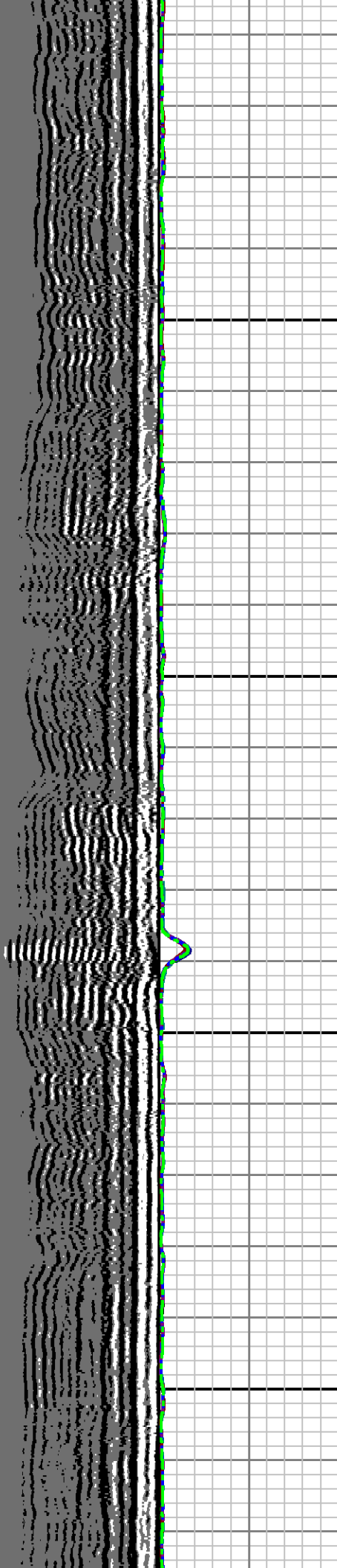


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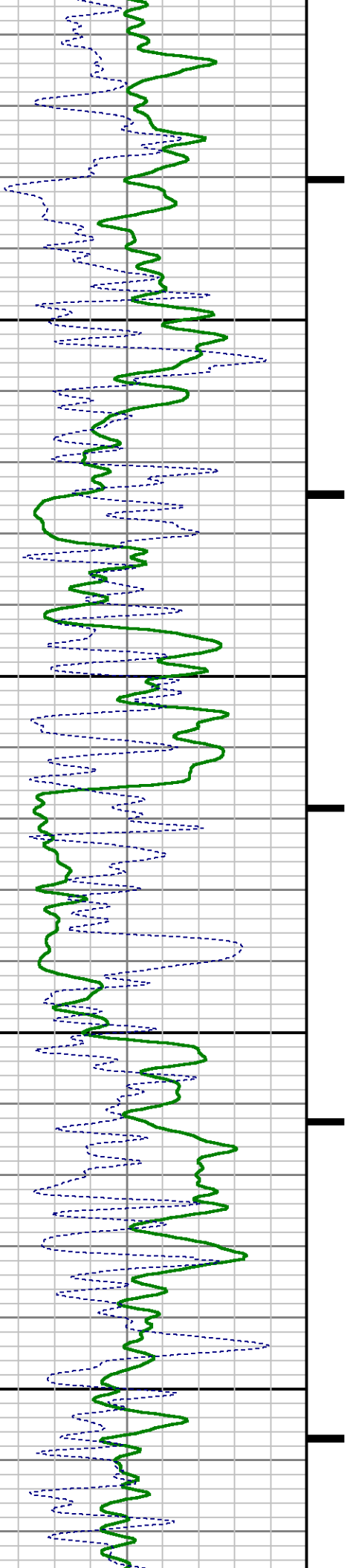
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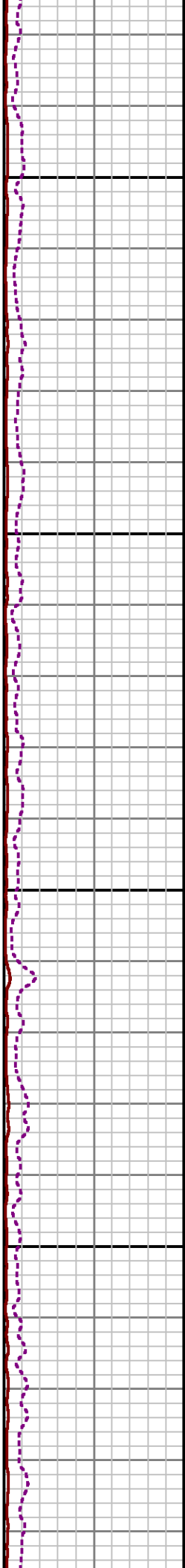
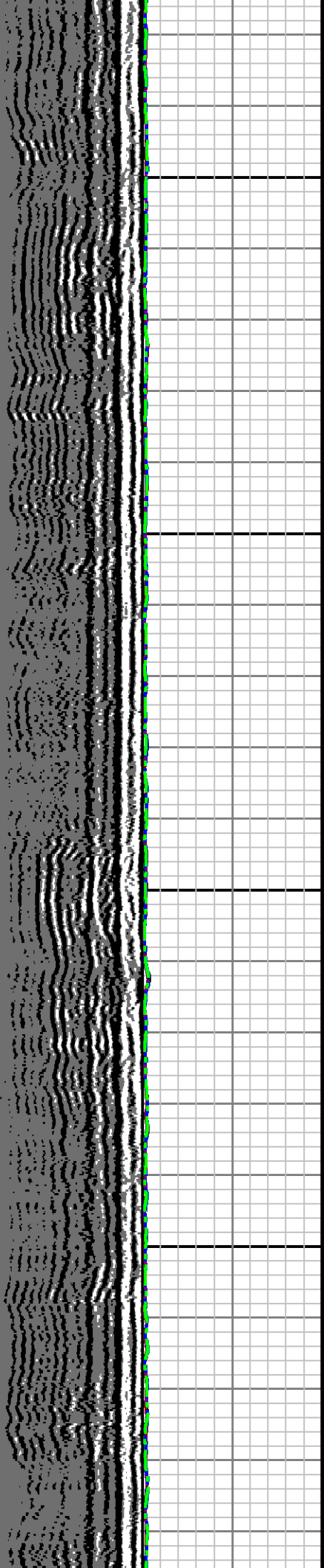




4100

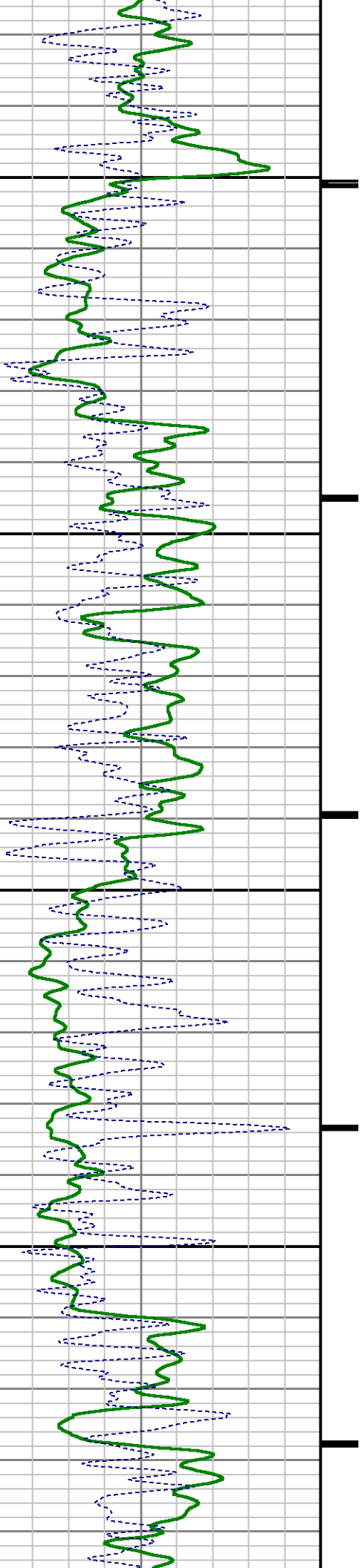
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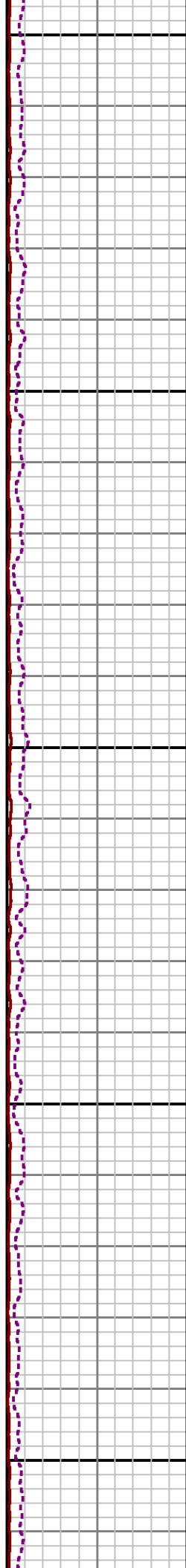
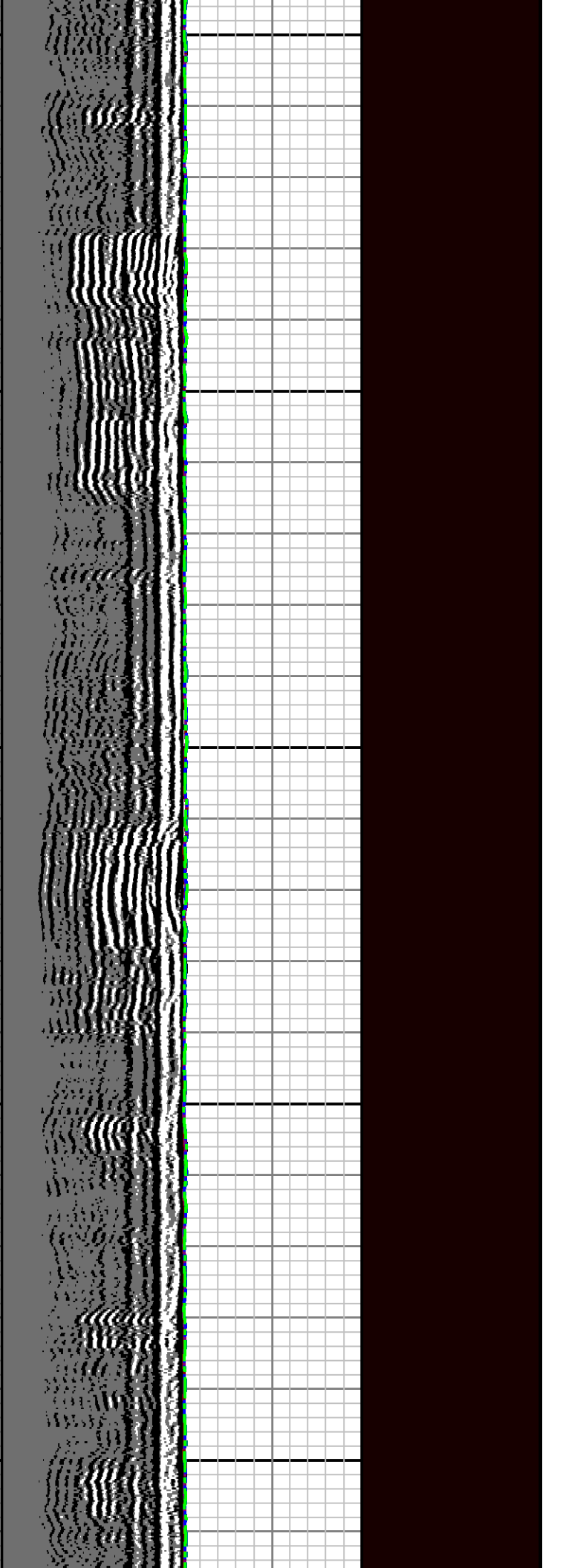




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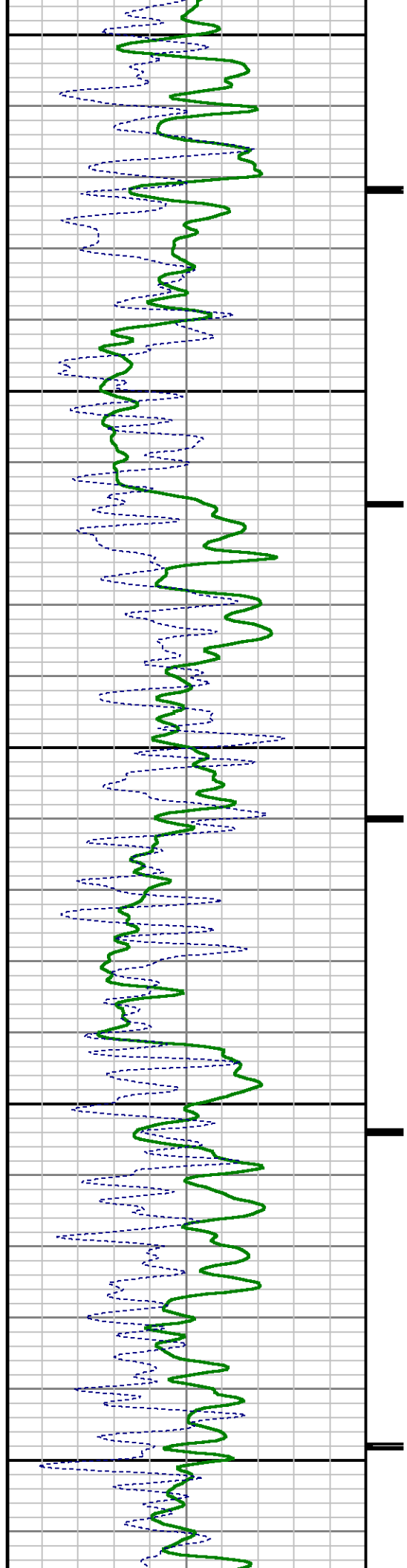
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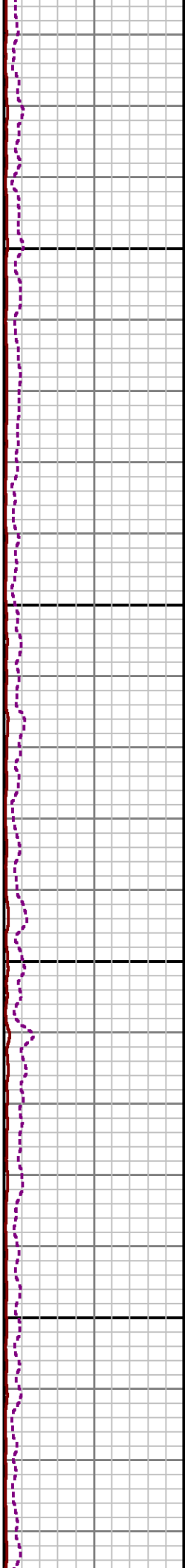
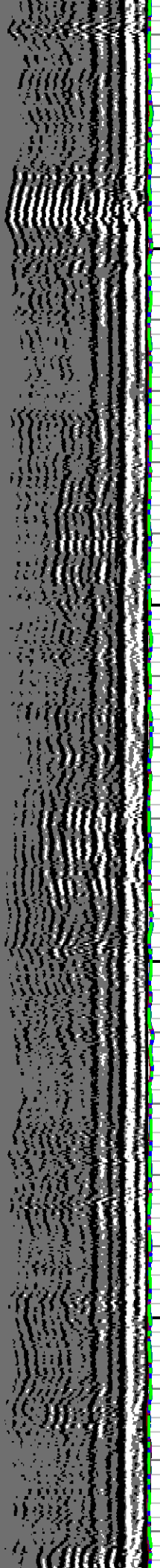




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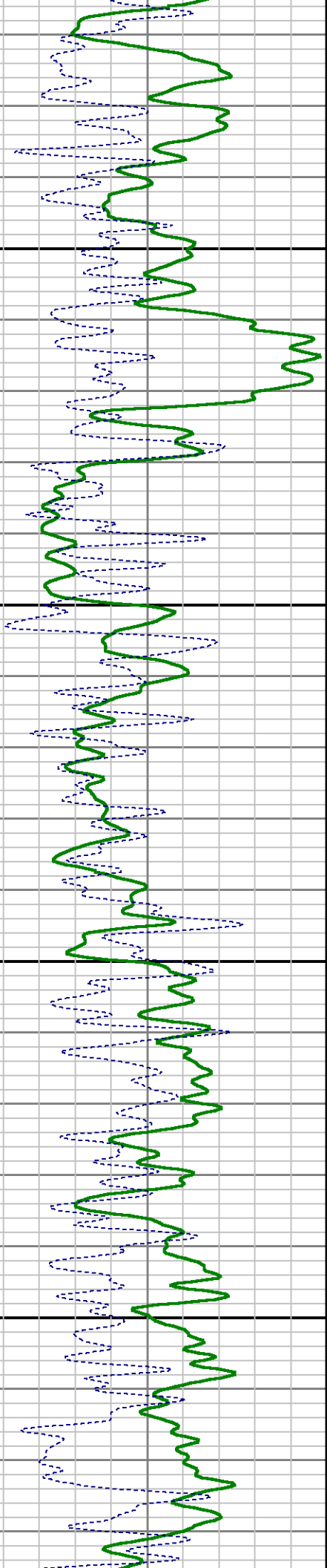
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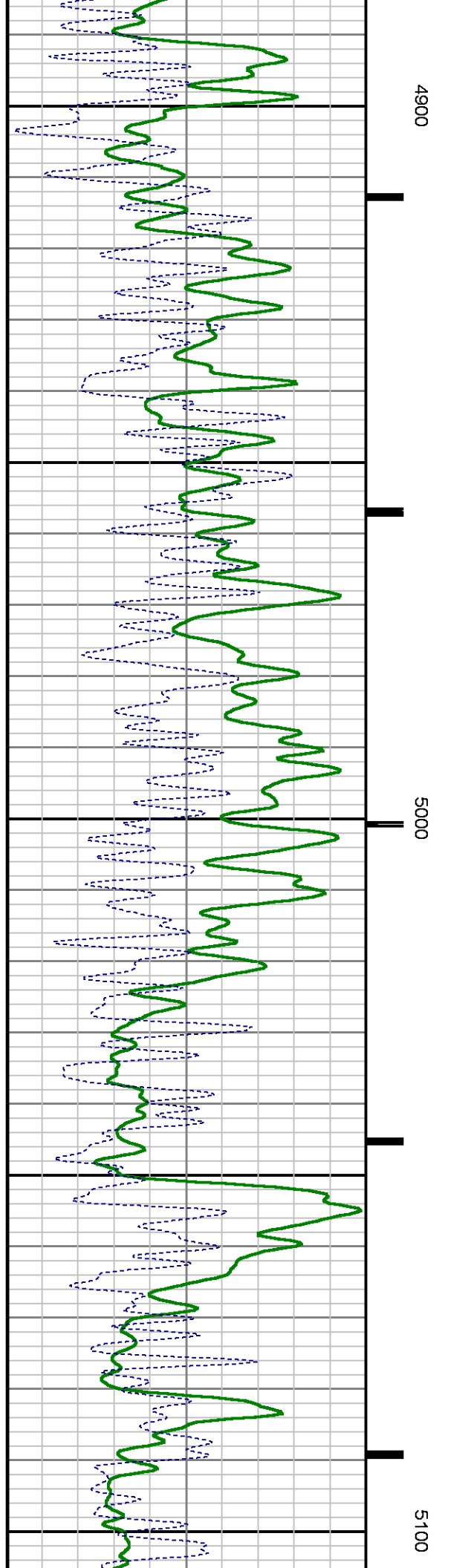
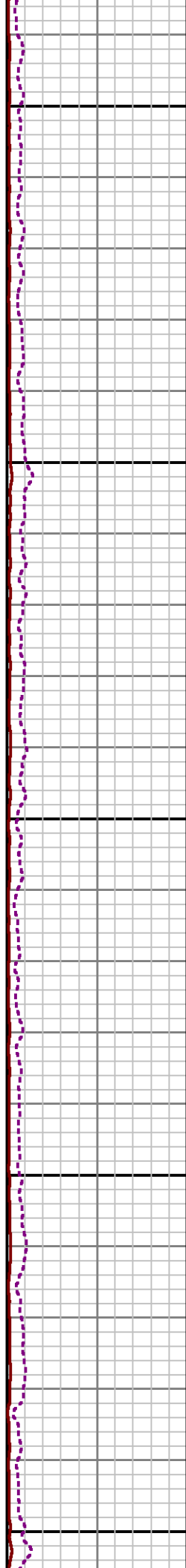
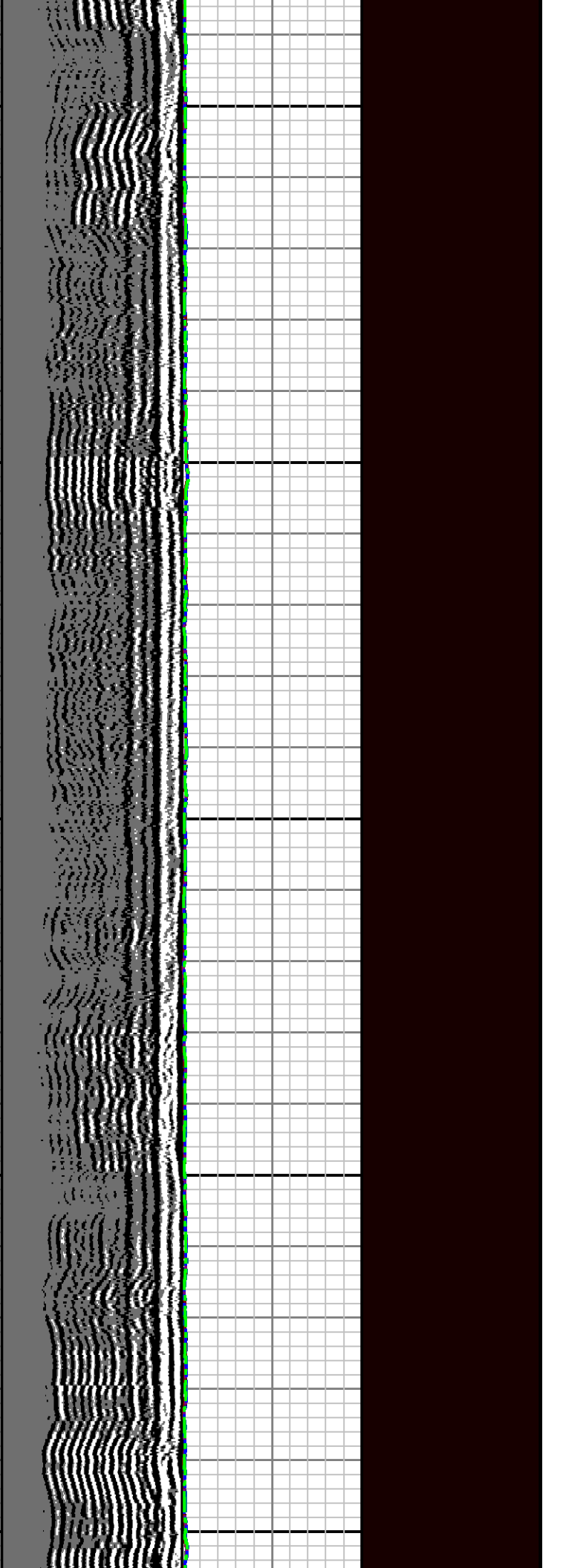




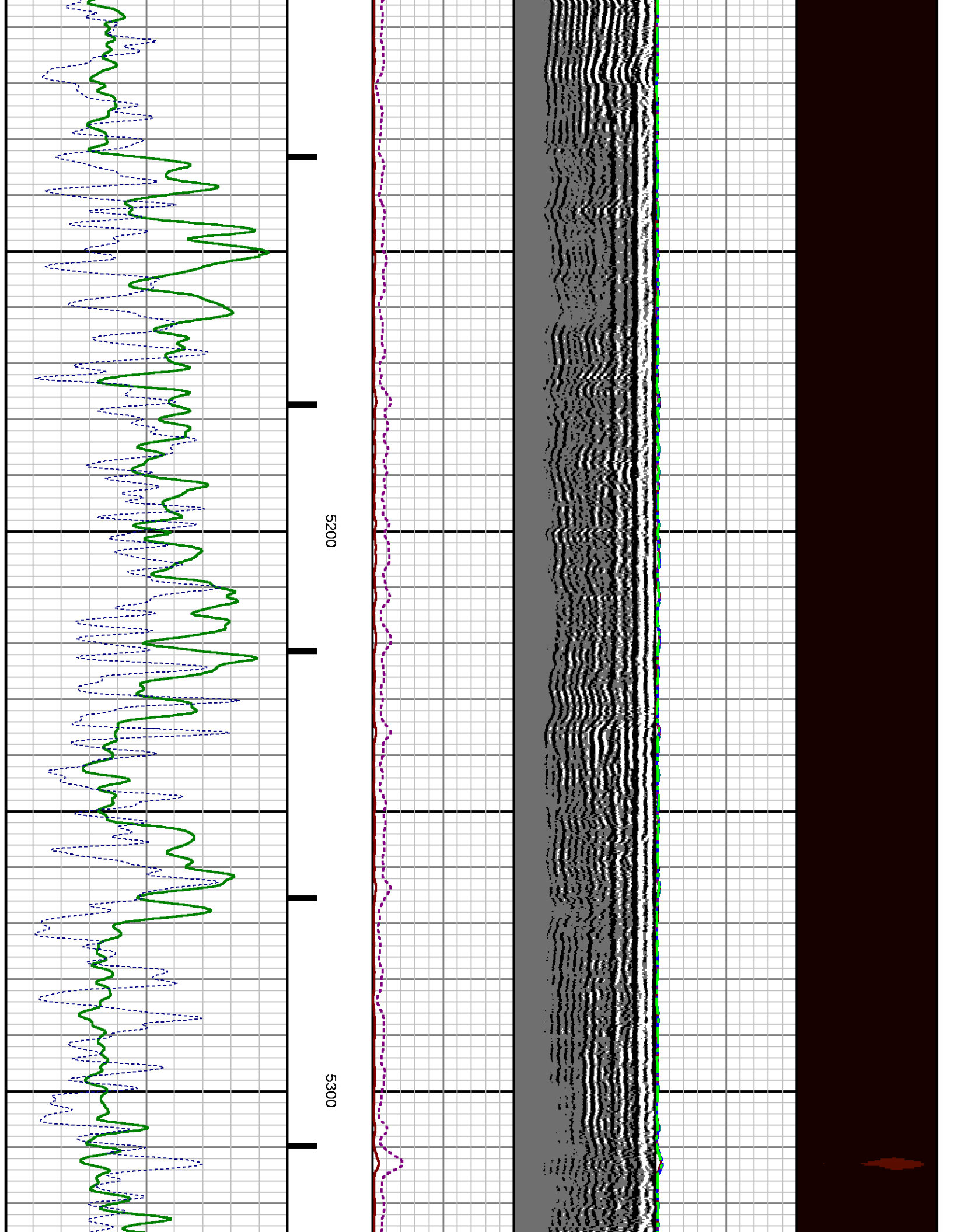
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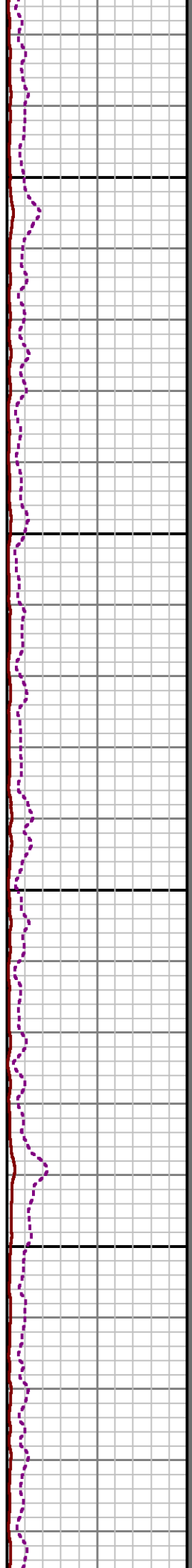
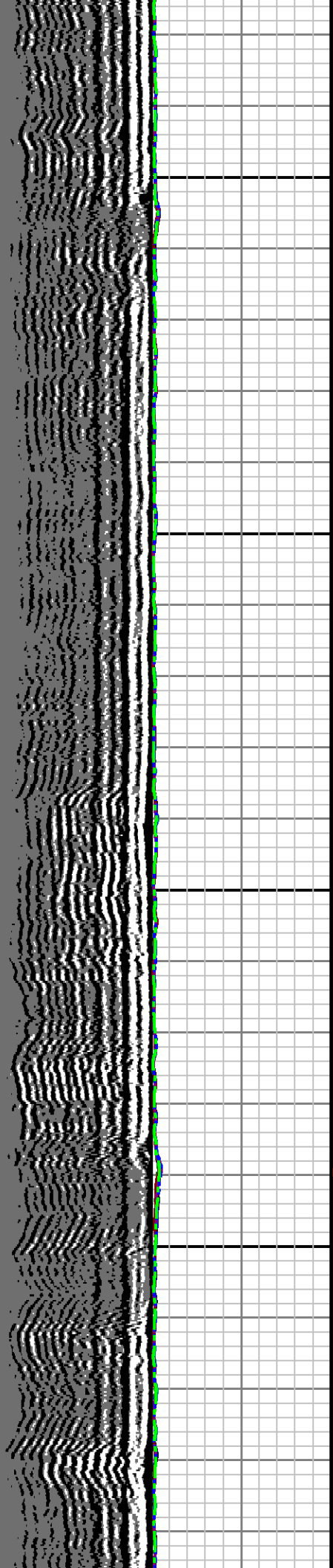
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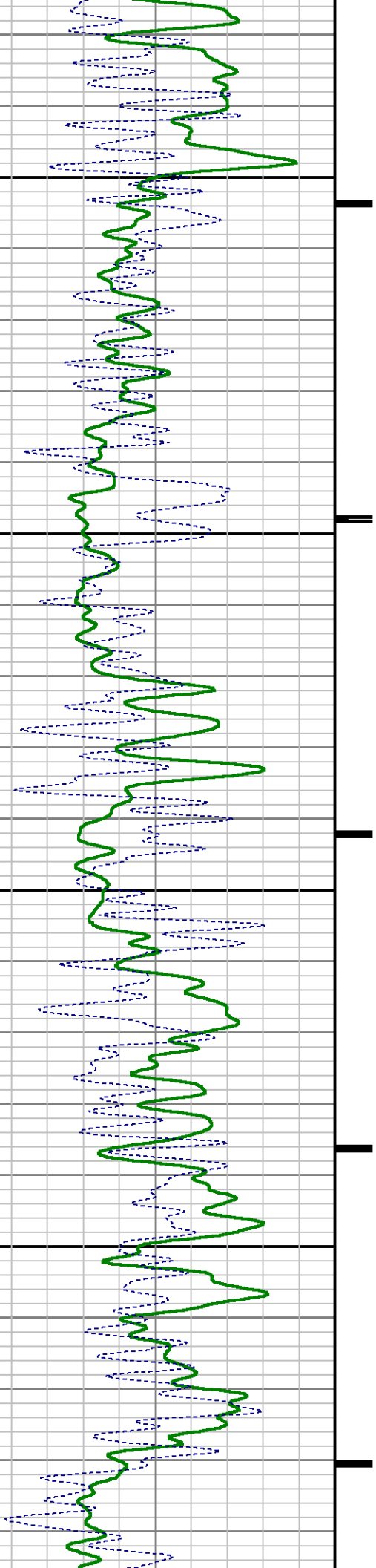


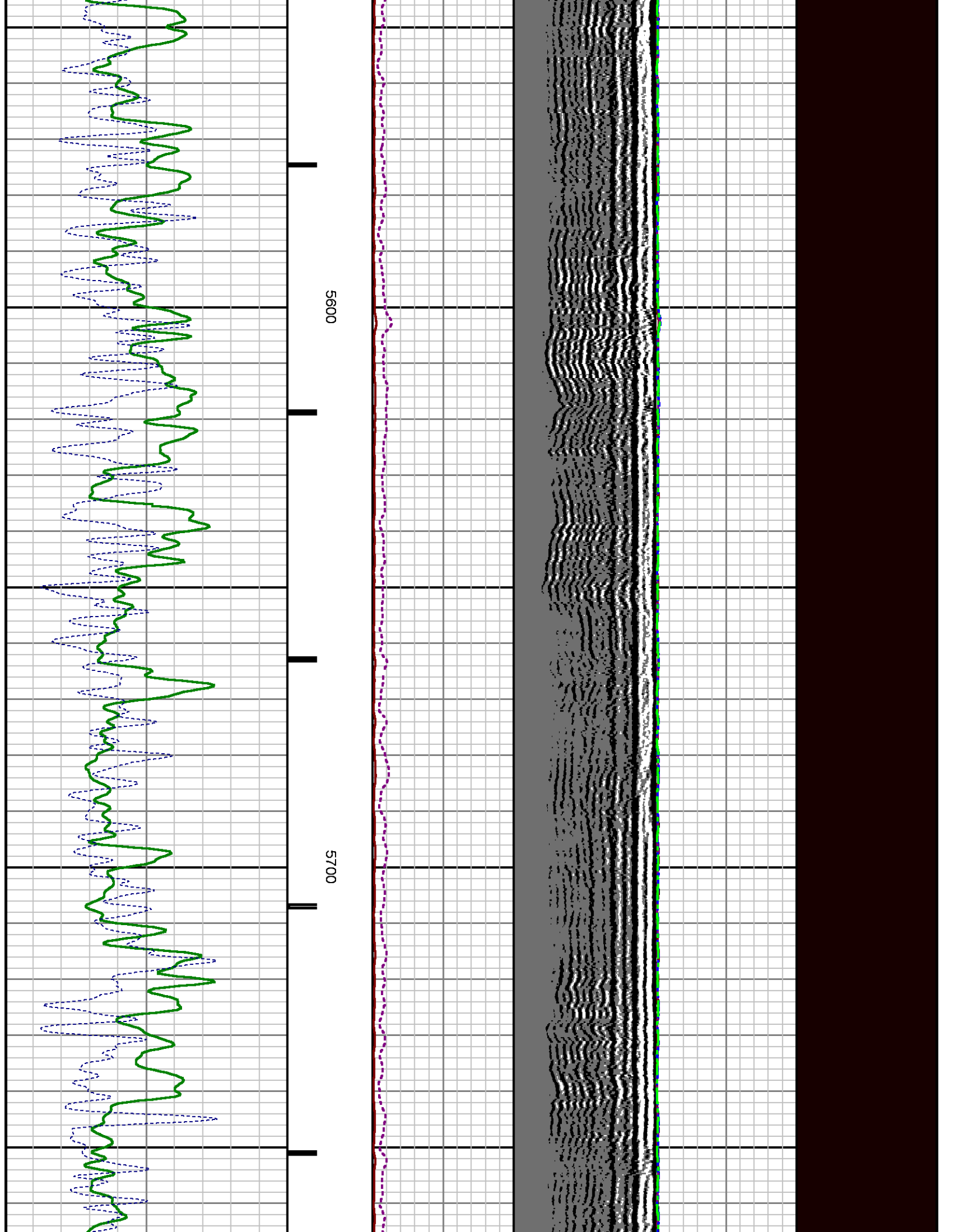


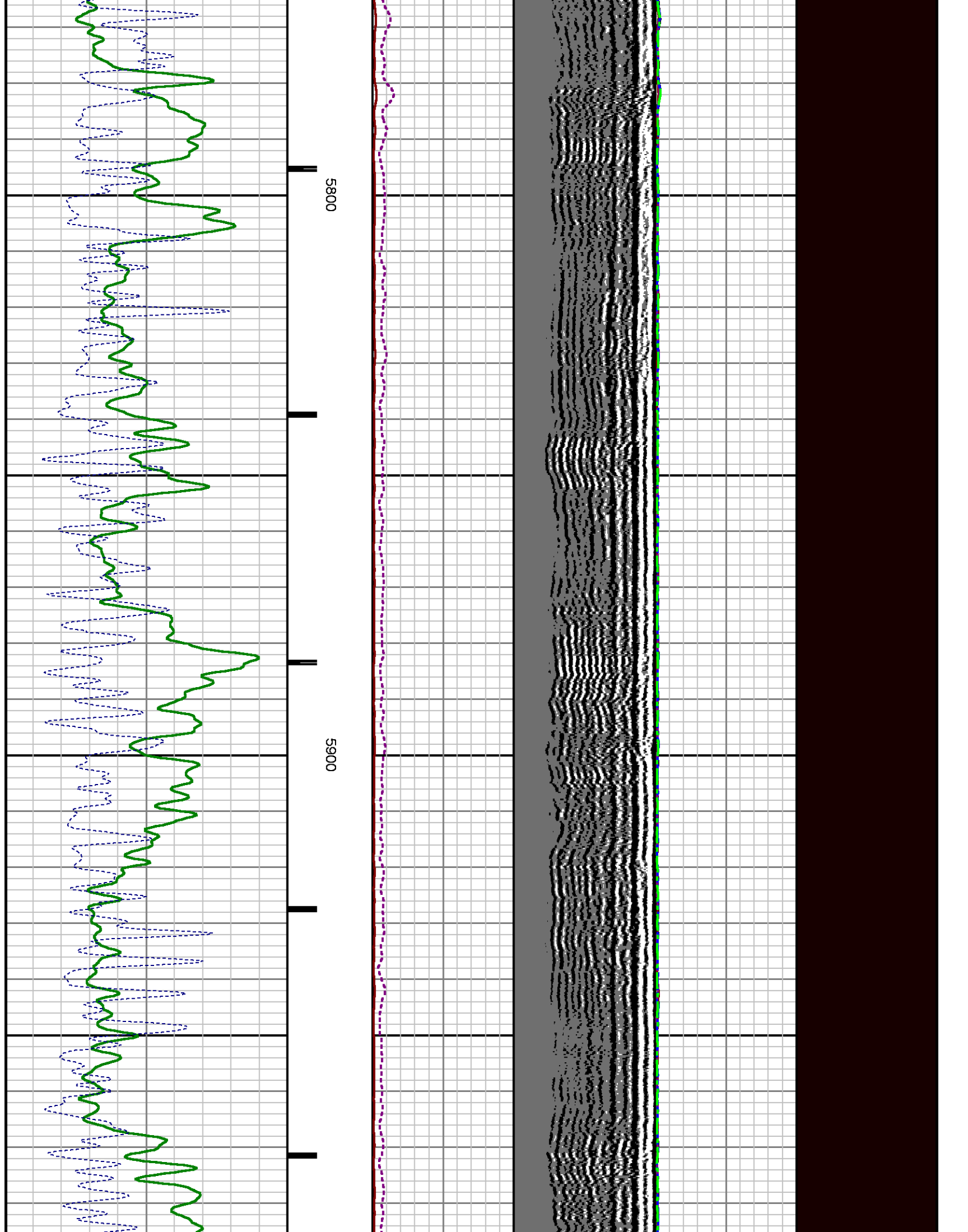


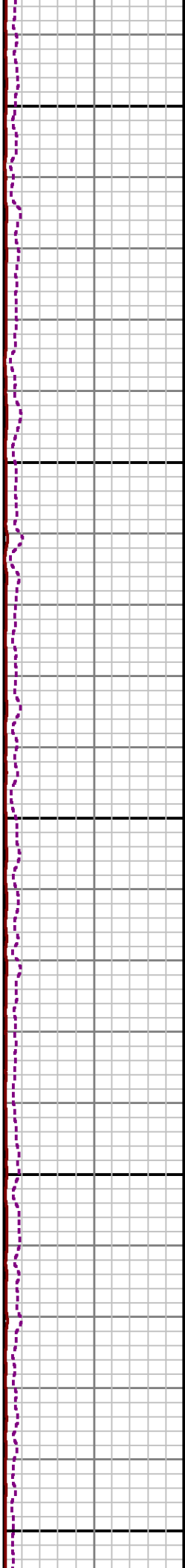
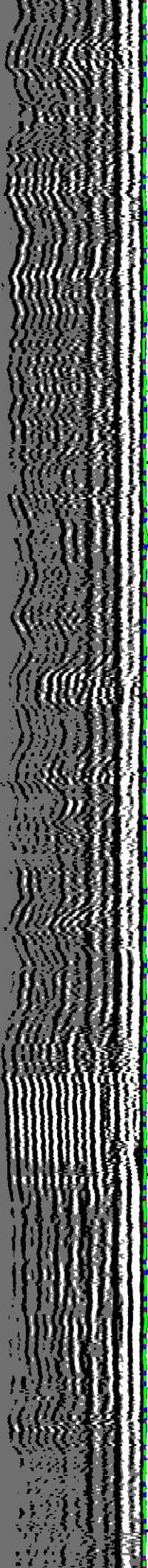
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5500





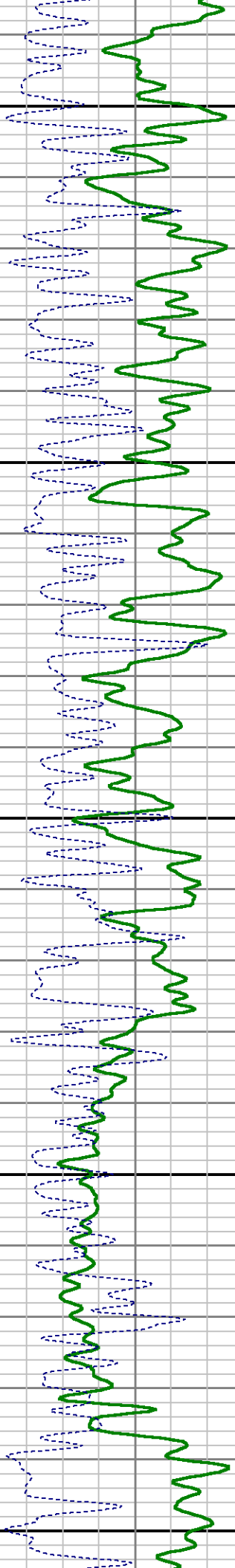


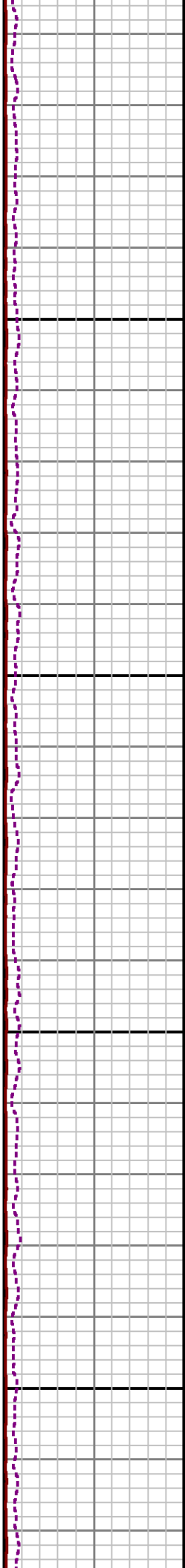
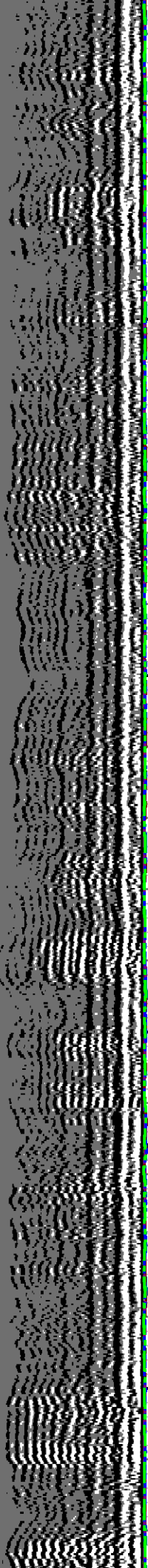


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6100

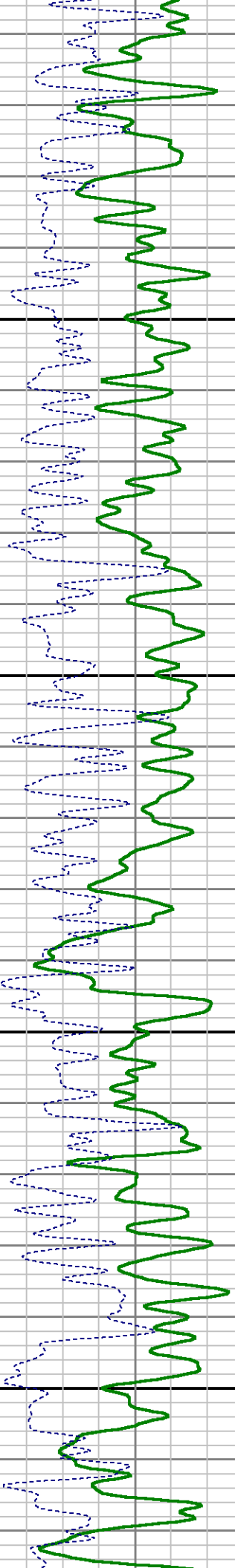
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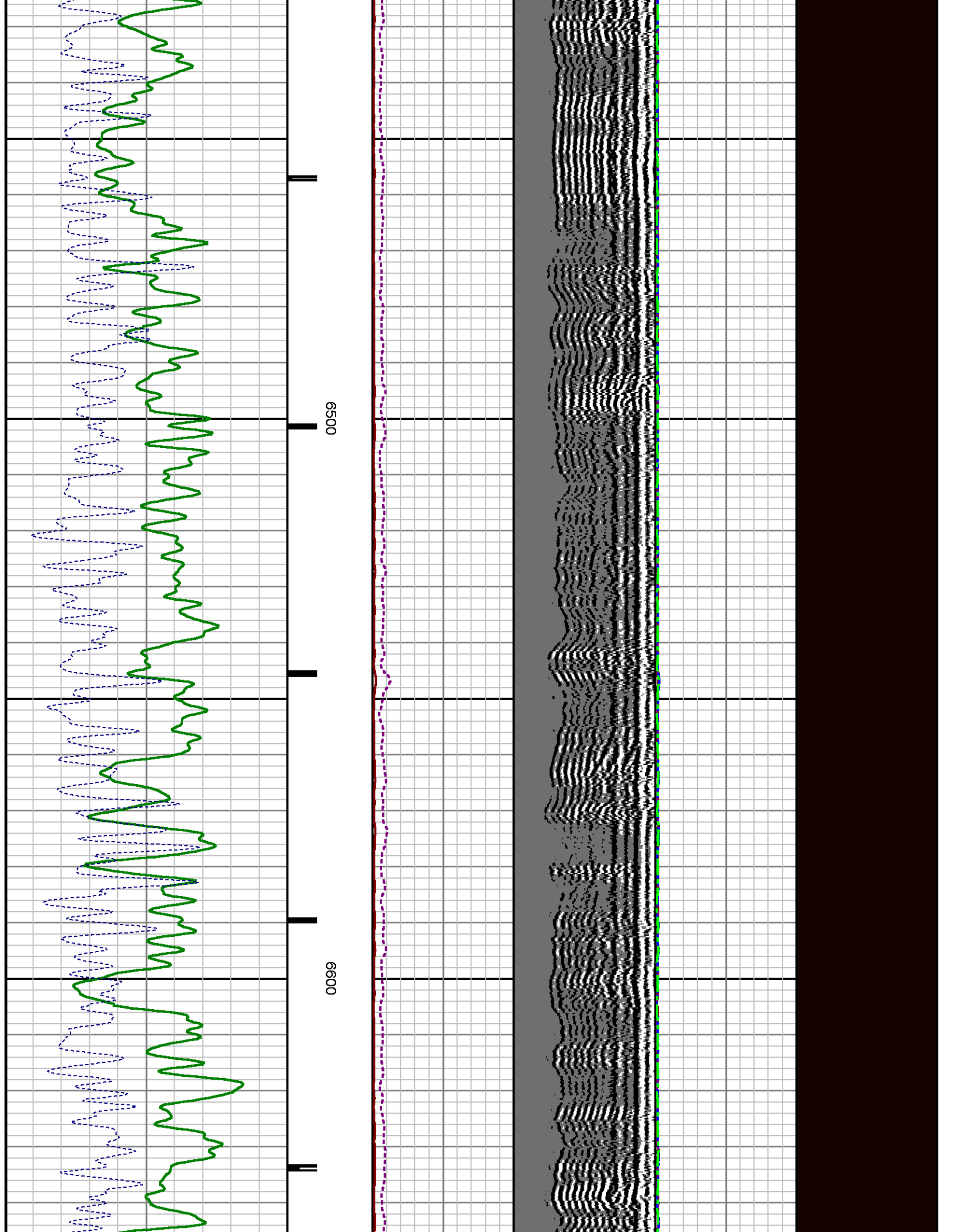


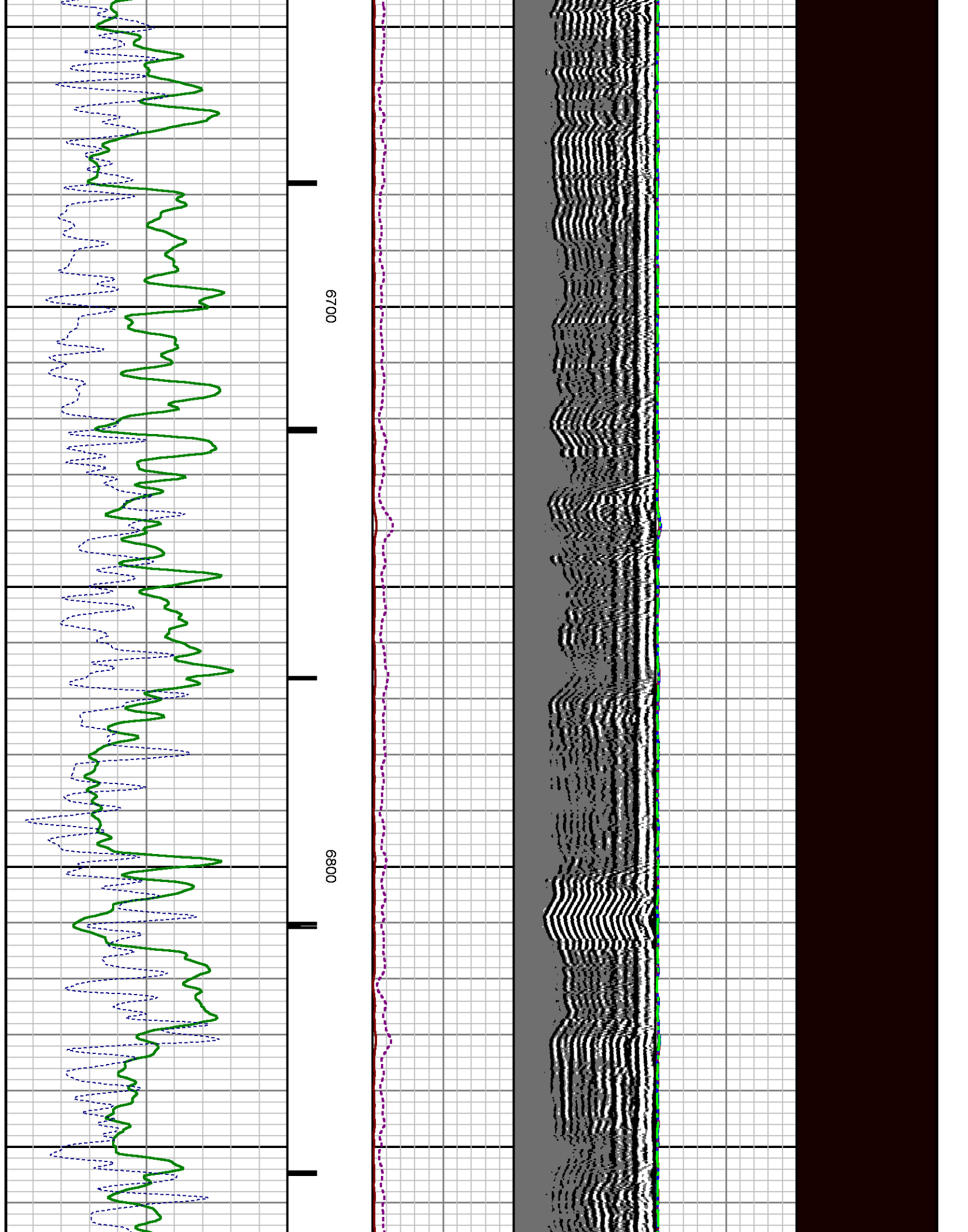
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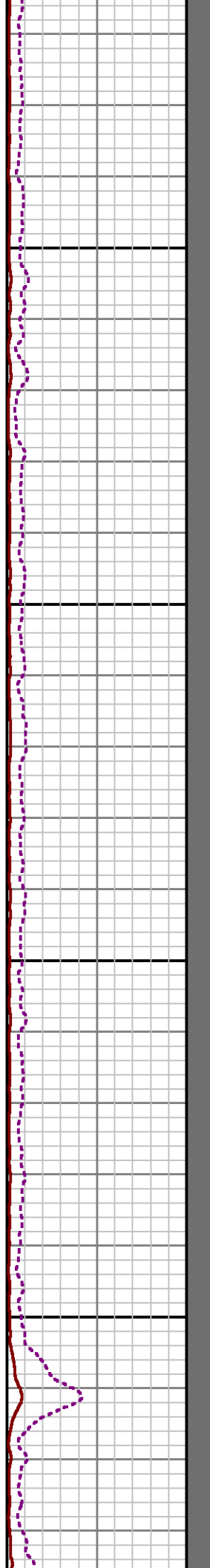
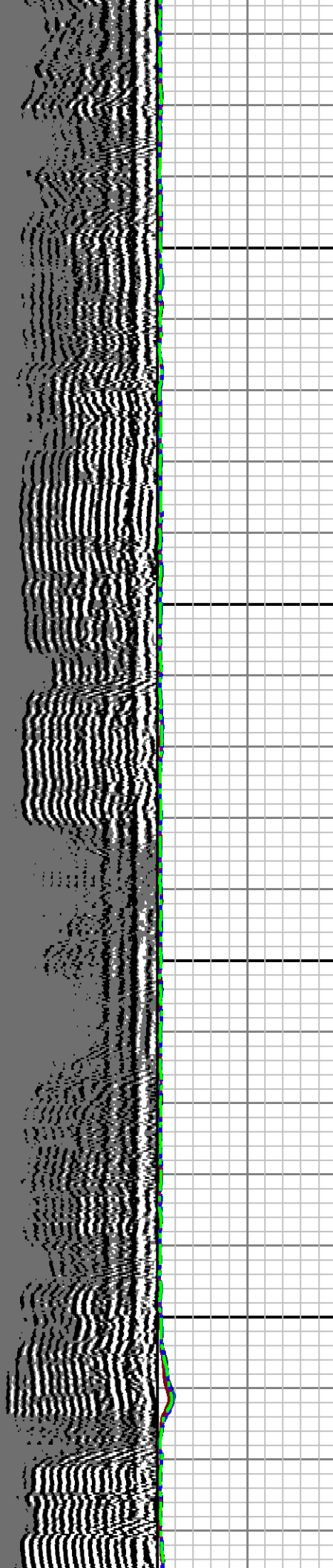
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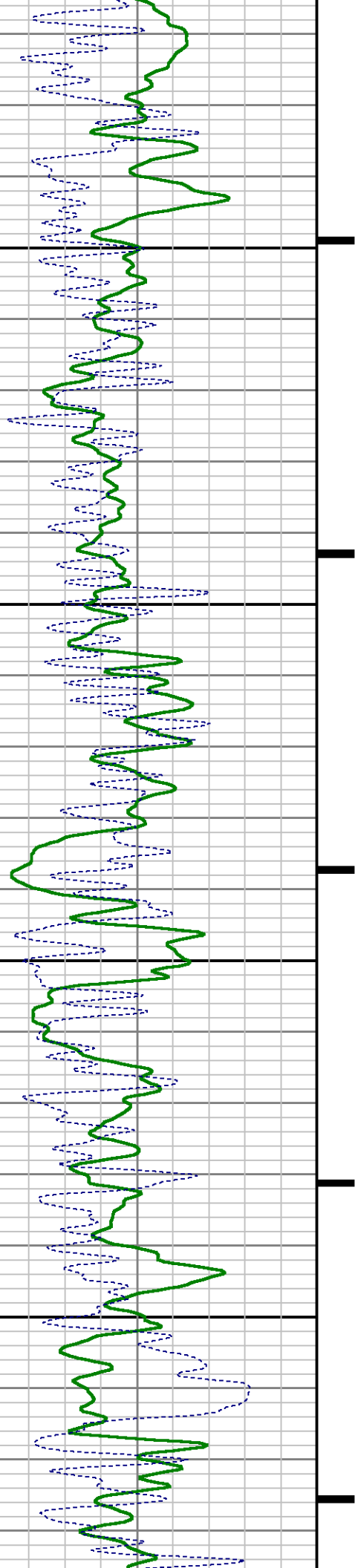


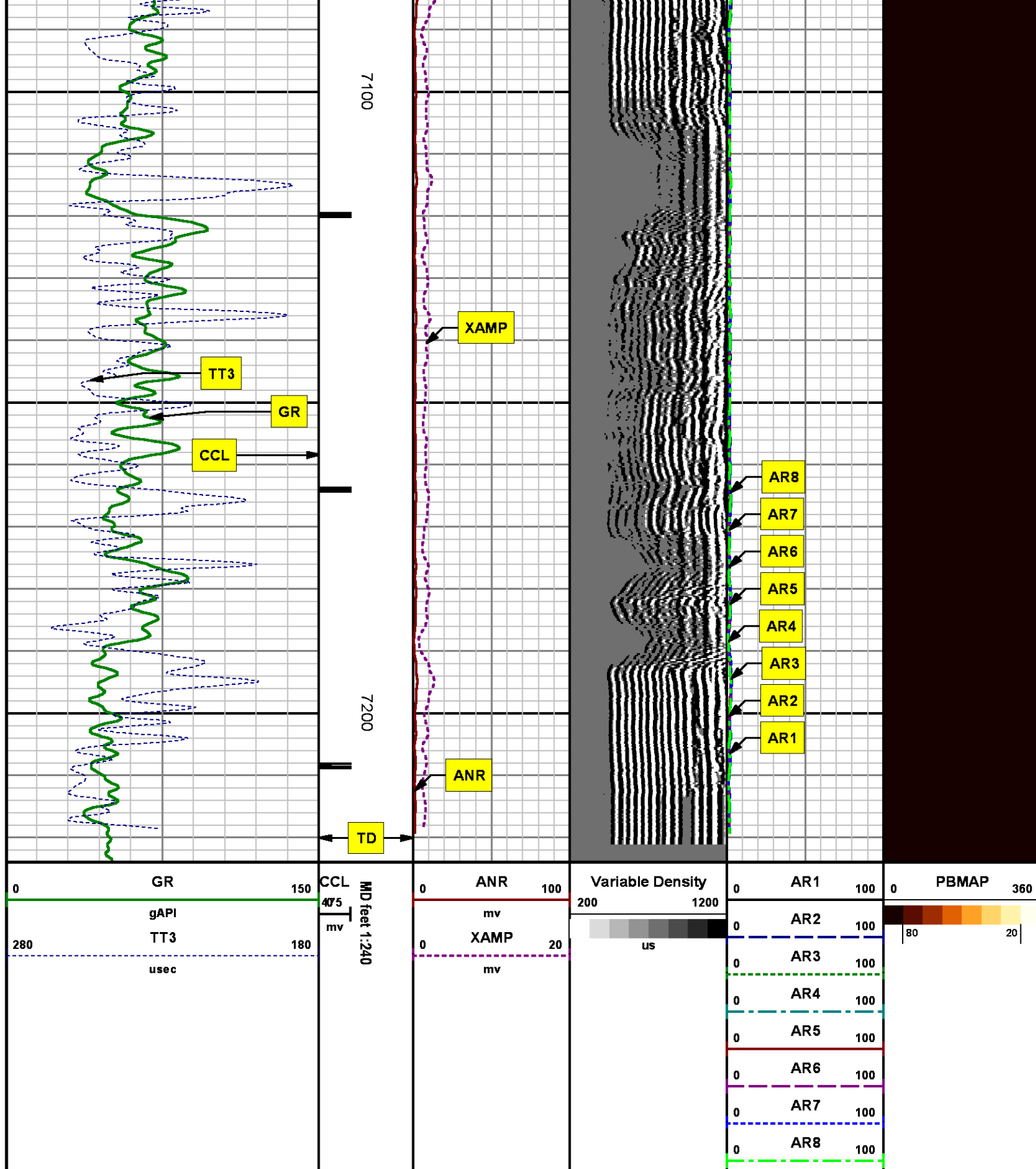




6900

7000





REPEAT SECTION

0 PSI

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	305.000	usec	6909.130	7232.380
RAL	Amp Gate Start Near	195.000	usec	6909.130	7232.380
RAL	Amp Gate Start Radial	195.000	usec	6909.130	7232.380
RAL	Amp Gate Width Far	25.000	usec	6909.130	7232.380
RAL	Amp Gate Width Near	25.000	usec	6909.130	7232.380
RAL	Amp Gate Width Radial	25.000	usec	6909.130	7232.380
RAL	casing od	4.500	inches	6909.130	7232.380
RAL	casing wt	11.600	lbm/ft	6909.130	7232.380
RAL	FB Start Far	291.900	usec	6909.130	7232.380
RAL	FB Start Near	180.000	usec	6909.130	7232.380
RAL	FB Start Radial	180.000	usec	6909.130	7232.380
RAL	FB Thresh Far	10.000	mv	6909.130	7232.380
RAL	FB Thresh Near	4.000	mv	6909.130	7232.380
RAL	FB Thresh Radial	4.000	mv	6909.130	7232.380
RAL	Fluid Travel Time	200.000	usec/ft	6909.130	7232.017

## DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-12.360	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	-11.360	AFAR	SIG	TT5			
2459XA	-7.250	CCL					
2459XA	-5.390	GR					
2459XA	0.000	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

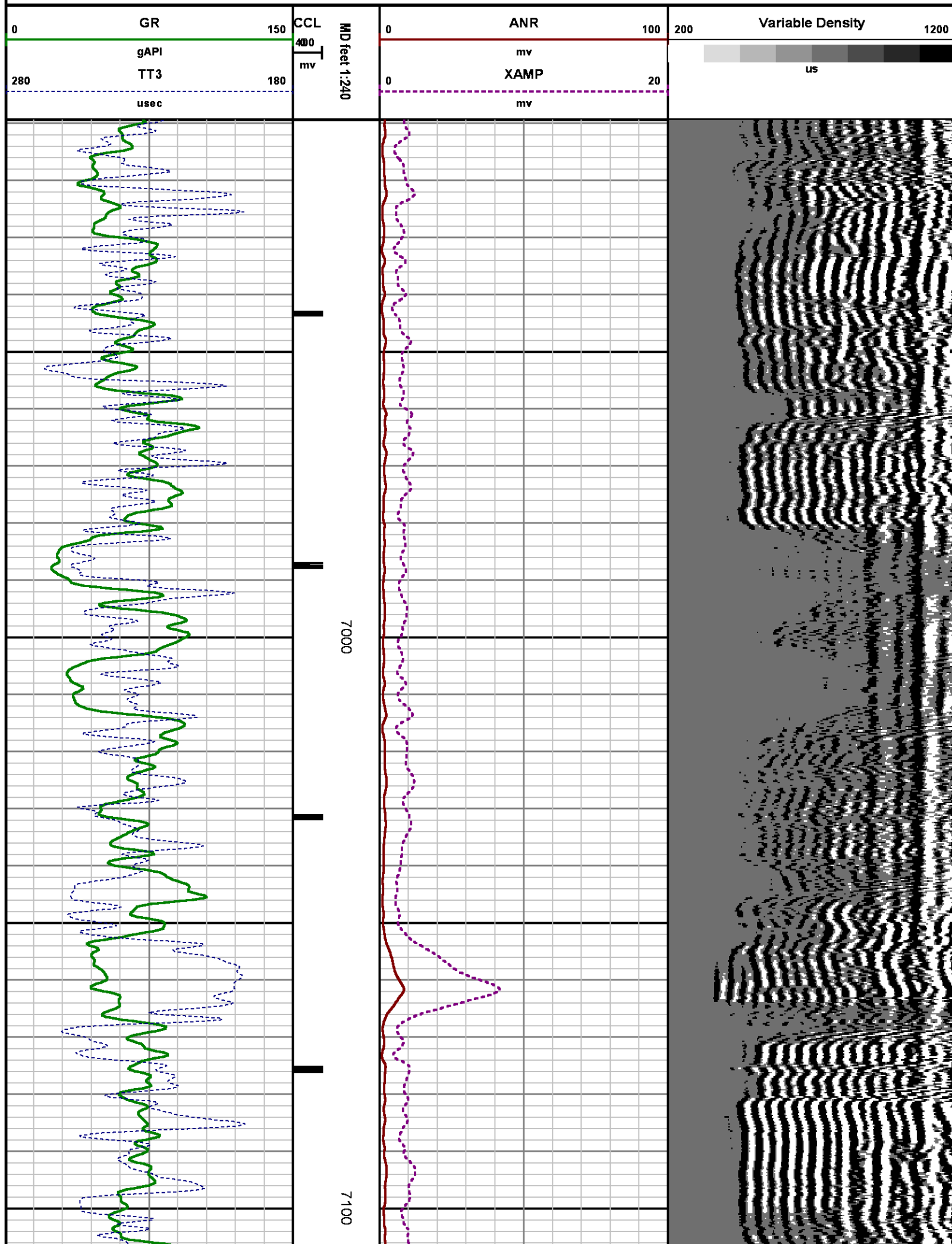
Company : WPX ENERGY

Well : CHEVRON GM 311-21

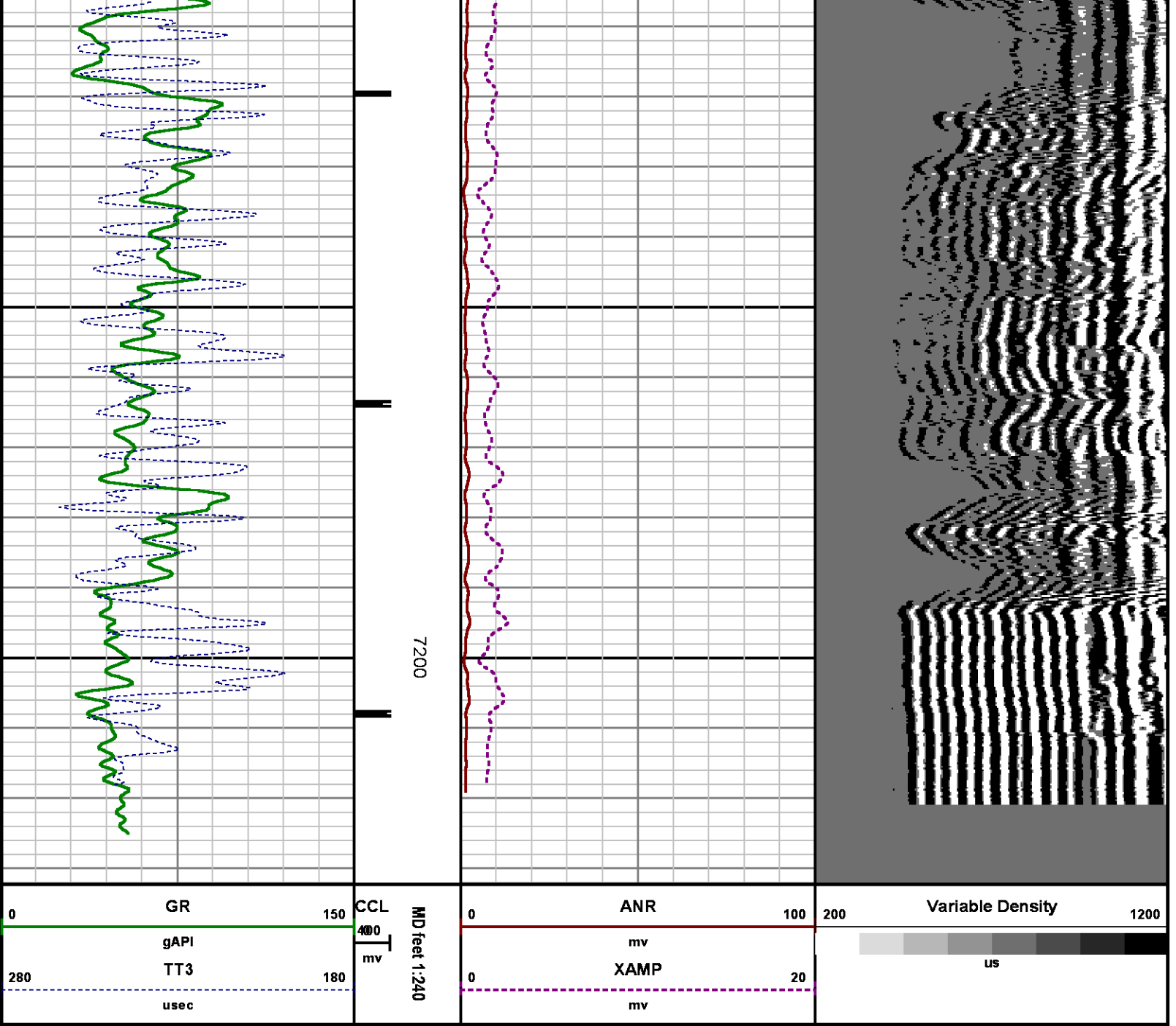
File Name : d:\welldata\wpx\gm 311-21\311ral\repeat.xtf

Mode : PlotMgr 5.4.504

Interval : 6909.38 - 7232.38 feet UP







# CALIBRATION SUMMARY

RALSHP

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	217	216	30	166	25	-0.405	100.00	0.26
3 Ft. Receiver	217	216	30	155	25	-0.013	100.00	0.26
5 Ft. Receiver	324	325	30	226	25	0.497	150.00	0.29
Radial #1	217	216	30	143	25	0.573	100.00	0.26
Radial #2	218	216	30	143	25	0.428	100.00	0.26
Radial #3	217	216	30	143	25	0.212	100.00	0.27
Radial #4	217	216	30	143	25	-0.258	100.00	0.26
Radial #5	216	216	30	143	25	-0.087	100.00	0.26
Radial #6	216	216	30	143	25	0.074	100.00	0.26
Radial #7	216	216	30	143	25	0.300	100.00	0.26
Radial #8	218	216	30	143	25	-0.015	100.00	0.26

# RALFLD

Wellsite Calibration: C:\case\calver\RALFLD\539OCT08\_fid.cal

## WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Oct 08 09:13:57 2014 TOOL SERIES: 1426XA ASSET: 539 SEQ: OCT08

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	-0.230	0.000	1.00	100.000
3 Ft. Receiver	195	25	-5.077			
5 Ft. Receiver	305	25	-8.724			
Radial #1	195	25	-6.832			
Radial #2	195	25	-6.567			
Radial #3	195	25	-6.207			
Radial #4	195	25	-6.793			
Radial #5	195	25	-10.673			
Radial #6	195	25	-6.701			
Radial #7	195	25	-7.058			
Radial #8	195	25	-7.160			

# GAMMA RAY

Calibration File: C:\case\calver\GR\503O8.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Oct 08 09:03:02 2014

TOOL SERIES:

2459XA

ASSET:

503

SEQ: 08

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K

WA612

110.22

393.29

0.654

72.04

257.04

185.00

Verification File:

C:\case\calver\GR\50308.VP

## PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Wed Oct 08 09:04:12 2014

TOOL SERIES:

2459XA

ASSET:

503

SEQ: 08

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K

WA612

101.07

384.62

0.654

66.05

251.37

185.32

## TOOL DIAGRAM

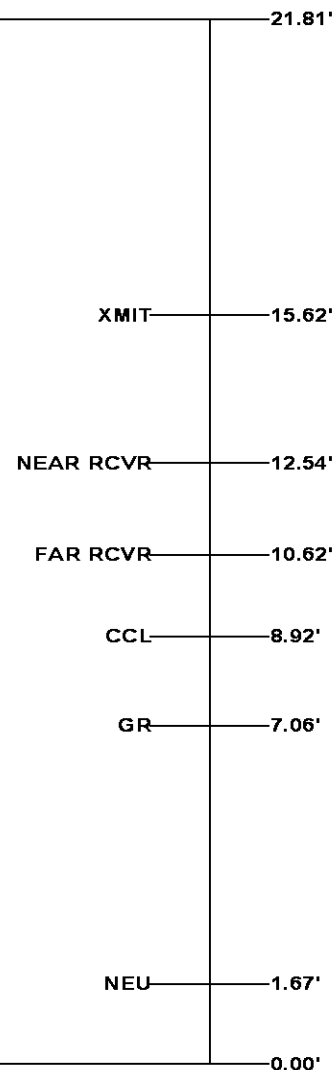
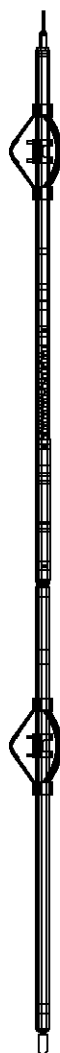
## OTA SHORT CABLE HEAD

## 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



Total Length: 21.81'

Total Weight: Not Available

Total Weight: Not Available  
Max Diameter: 0' 2.75"



Baker Atlas

CASE

Company

WPX ENERGY

Well

CHEVRON GM 311-21

Field

GRAND VALLEY

County

GARFIELD

State

COLORADO

Location

SHL: 2019' FNL & 702' FEL (SEC 20)

BHL: 645' FNL & 691' FWL (SEC 21)

SEC

21

TWP

6S

RGE

96W

Elevations

KB 5596 ft

DF

GL 5575 ft

File No:

CH090683

API No:

05045223530000

21 6S 96W

GM 442-20 PAD

CYCLONE 17