

# CEMENT BOND LOG GAMMA RAY CCL V D L

Company Noble Energy INC.  
Well SHABLE G17-23D  
Field Wattenberg  
County Weld State Colorado

Location: SHL: 689' FSL & 1991' FEL SW SE  
LAT: 40.307050  
LONG: -104.684640  
SEC 17 TWP 4N RGE 65W  
Permanent Datum GL Elevation 4759  
Log Measured From KB 14'  
Drilling Measured From KB  
Other Services  
K.B. 4773  
D.F. 4773  
G.L. 4759

Date February 21, 2012

Run Number	One	
Depth Driller	7510	
Depth Logger	7442	
Bottom Logged Interval	7441	
Top Log Interval	1150	
Casing Size	4 1/2"	
Type Fluid	Water	
Max. Recorded Temp.	235 deg F	
Estimated Cement Top	1940	
Time Well Ready	Crane	
Time Logger On Bottom	PM	
Unit Number	4367	4515
Tool Size / ID Number	2.75 Probe 101010	2.75 Probe 110802
Location	Platteville, CO	
Recorded By	K. Monaghan	
Witnessed By	J. Brnak	

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record		Size		Wgt/Ft		Top	Bottom
Surface String		8 5/8"		24 lb/ft J-55		Surface	692
Prot. String							
Production String		4 1/2"		11.6 lb/ft M-80		Surface	7500
Liner							

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

## Comments

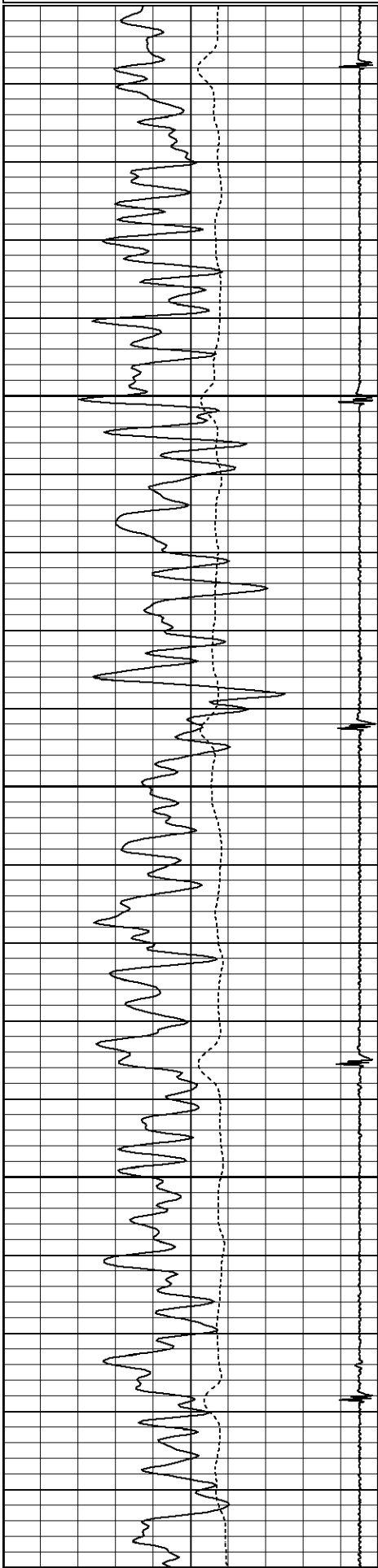
Thank you For Choosing Superior Well Services!!!  
API# 05-123-34800-0000  
Correlated to HES's  
Spectral Density / Dual Spaced Neutron / Array Compensated / True Resistivity Log  
Dated: January 25, 2012  
Directions: 44 & 39, E 7/10, N Into  
(Second Well From South on 4 Well Pad)

Database File: cblshable g17-23d.db  
Dataset Pathname: pass3  
Presentation Format: noble en  
Dataset Creation: Tue Feb 21 13:20:03 2012 by Log SCH 111116  
Charted by: Depth in Feet scaled 1:240

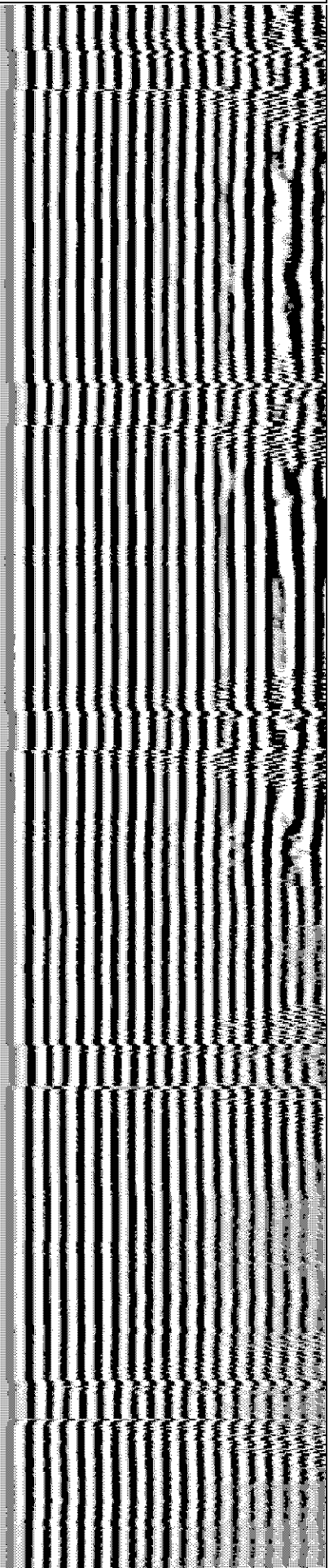
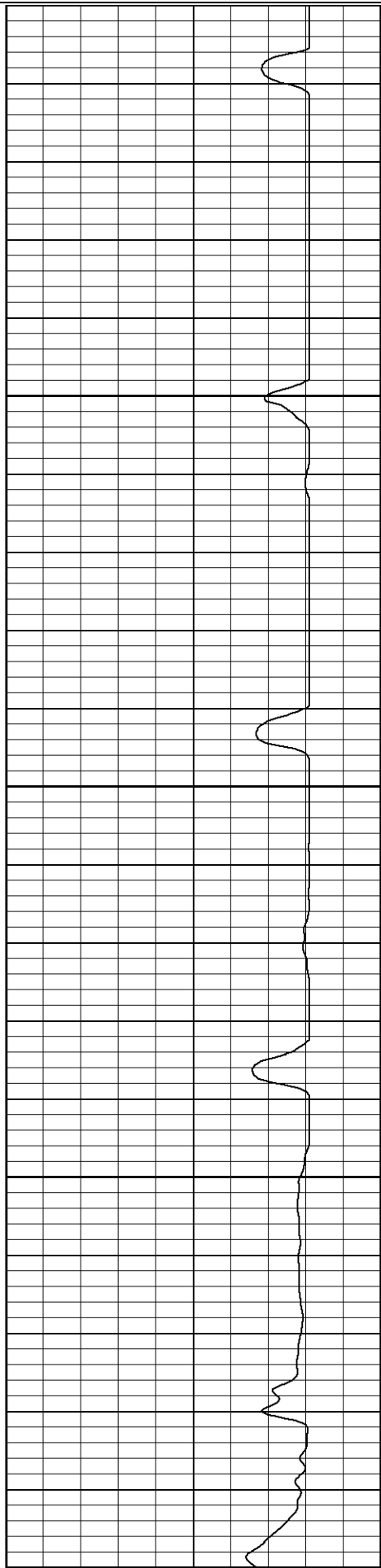
80	CCL	-4
30	Gamma Ray (GAPI)	130
340	TT3 (usec)	240

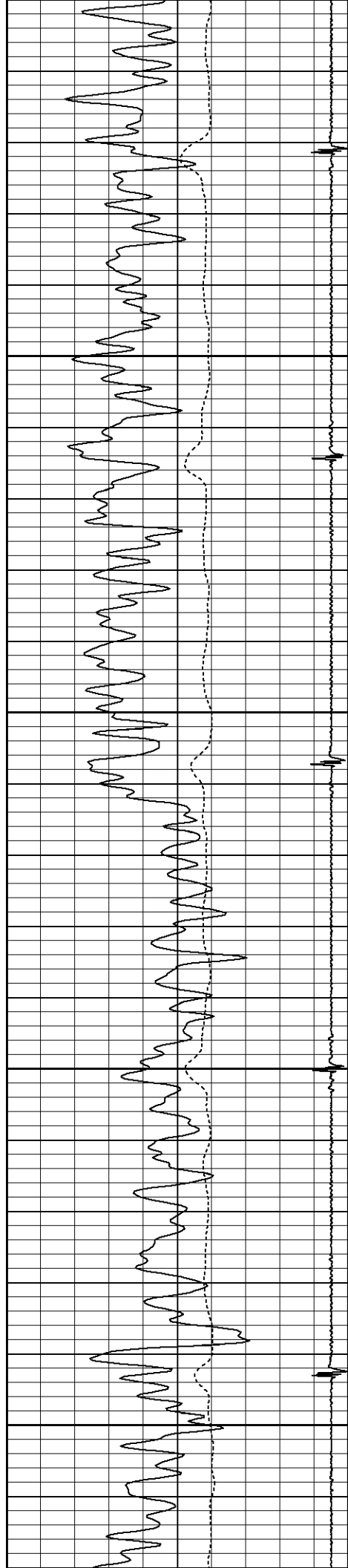
0	Amplified Amplitude (mV)	30	200
0	Amplitude (mV)	100	

Variable Density	1200
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1150  
1200  
1250  
1300  
1350





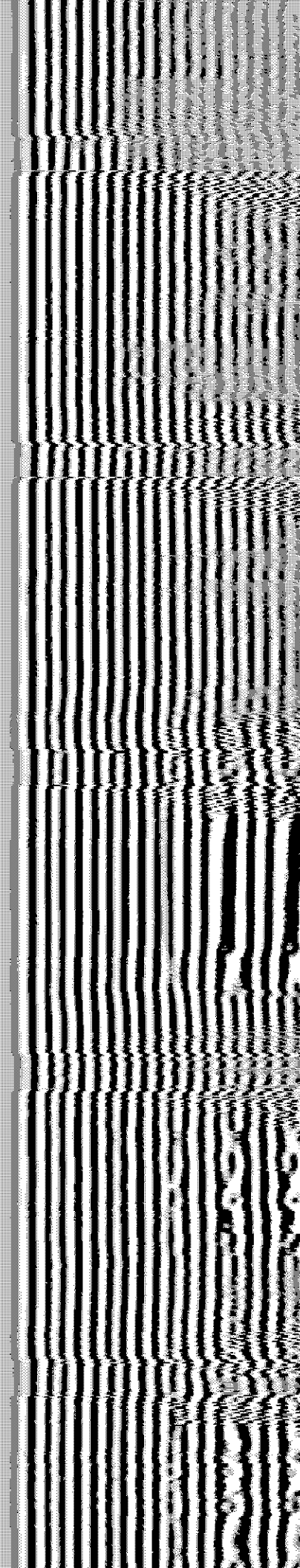
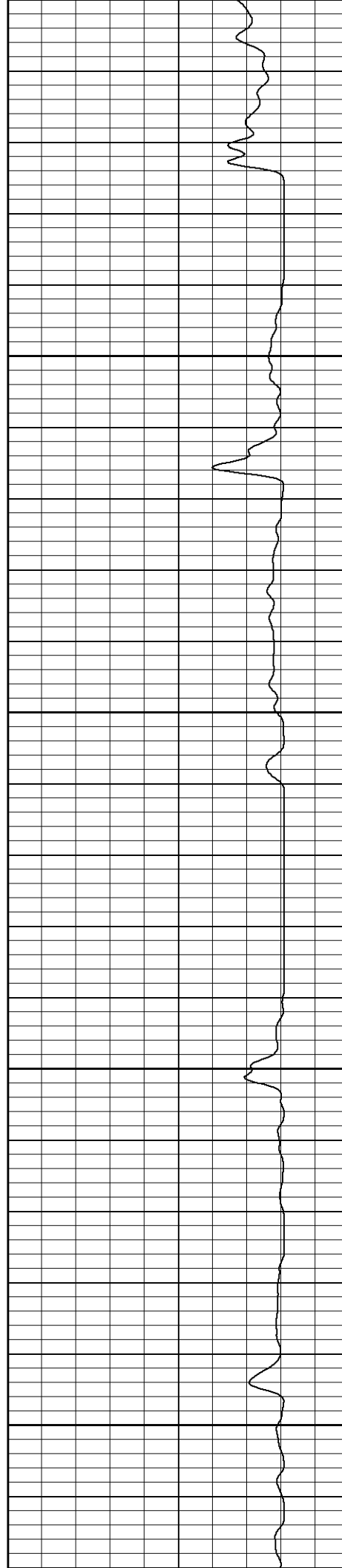
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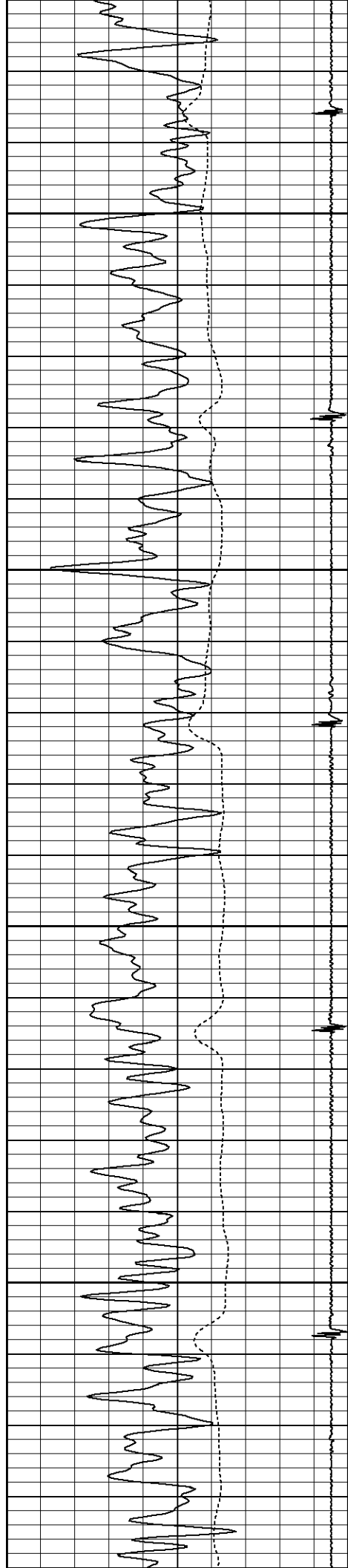
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1450

1500

1550



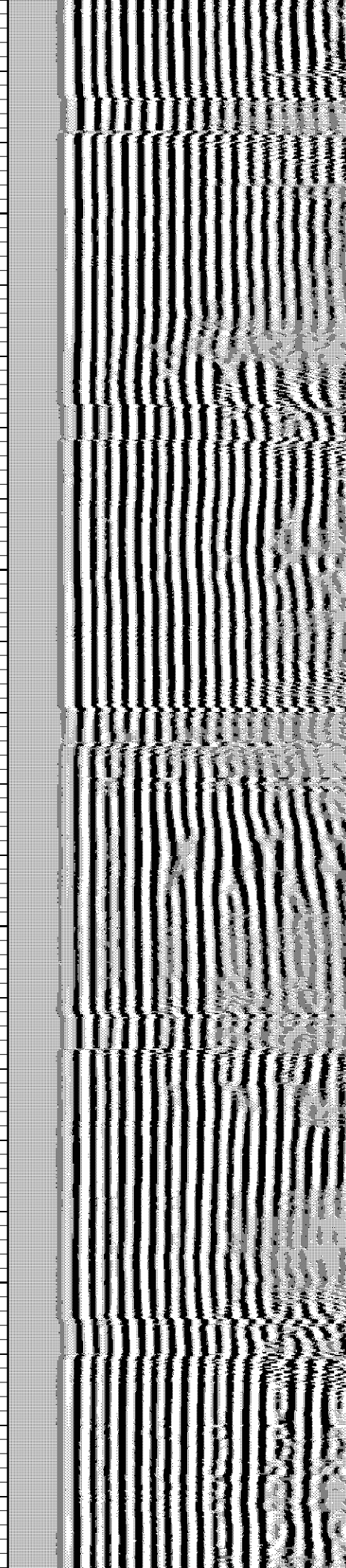
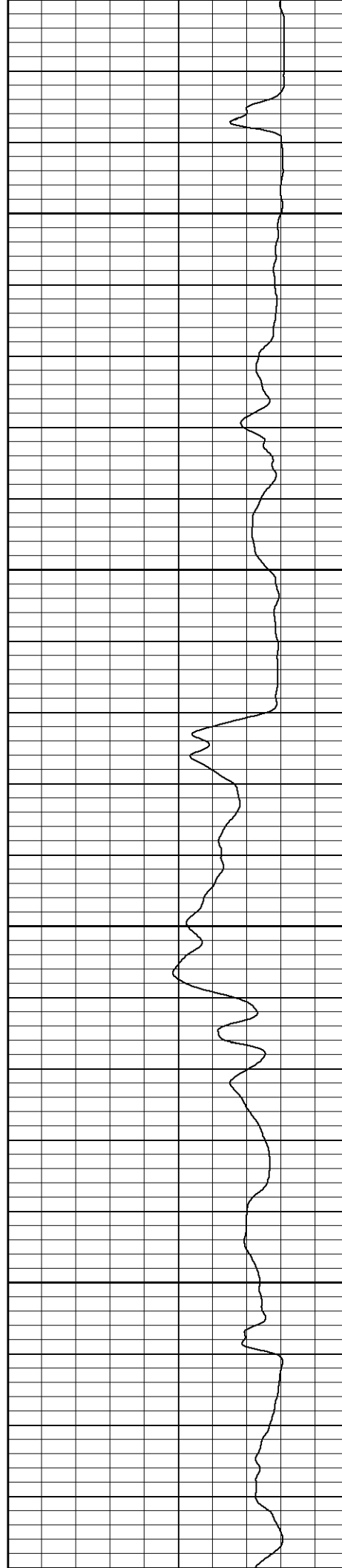


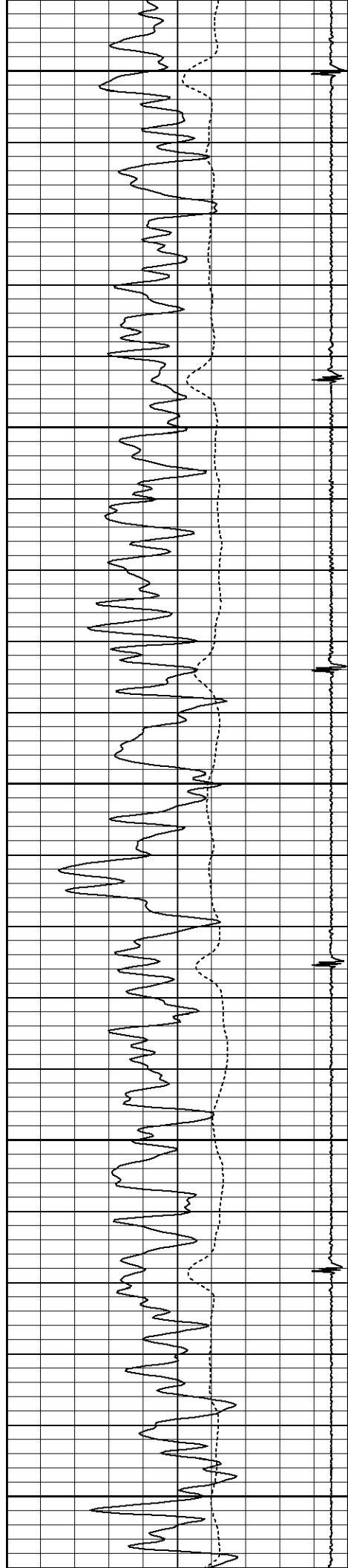
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1650

1700

1750





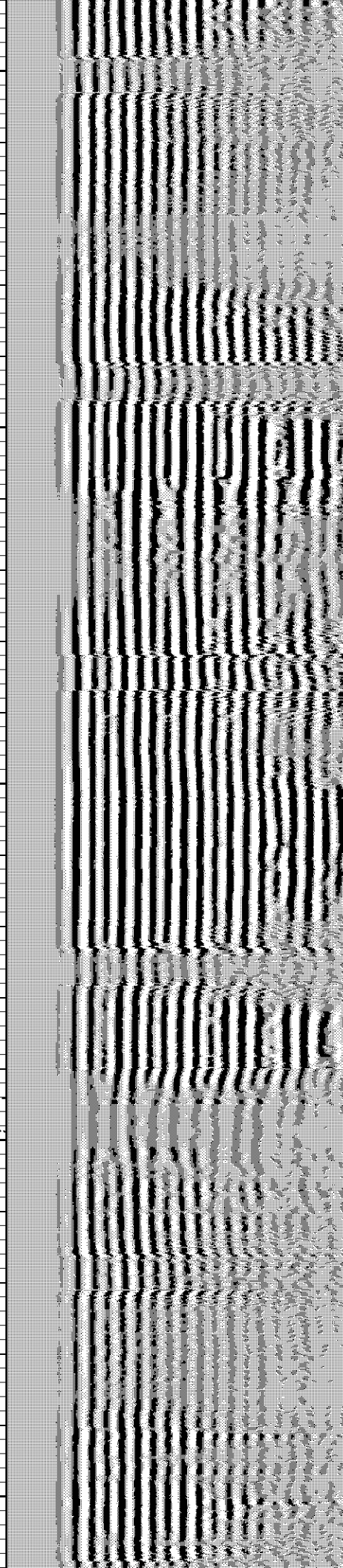
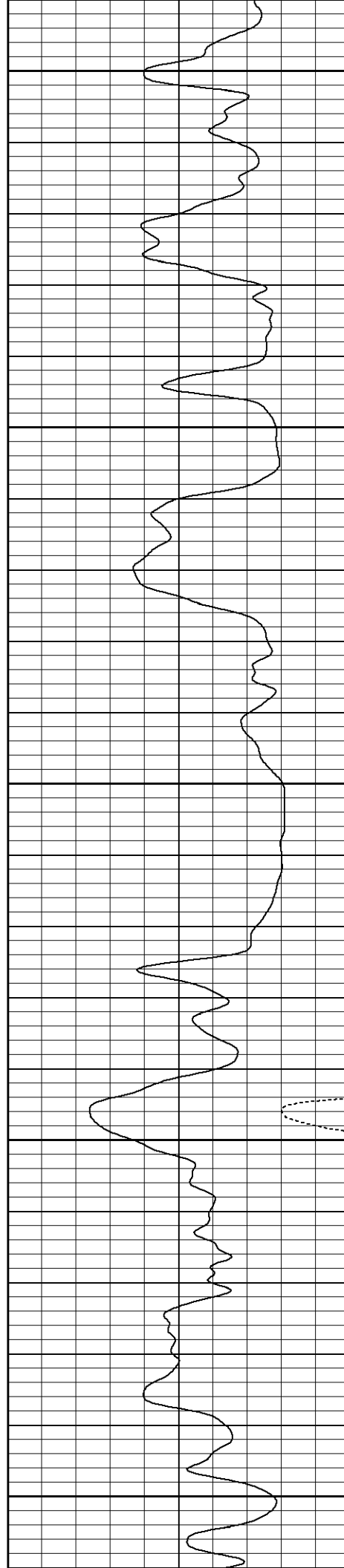
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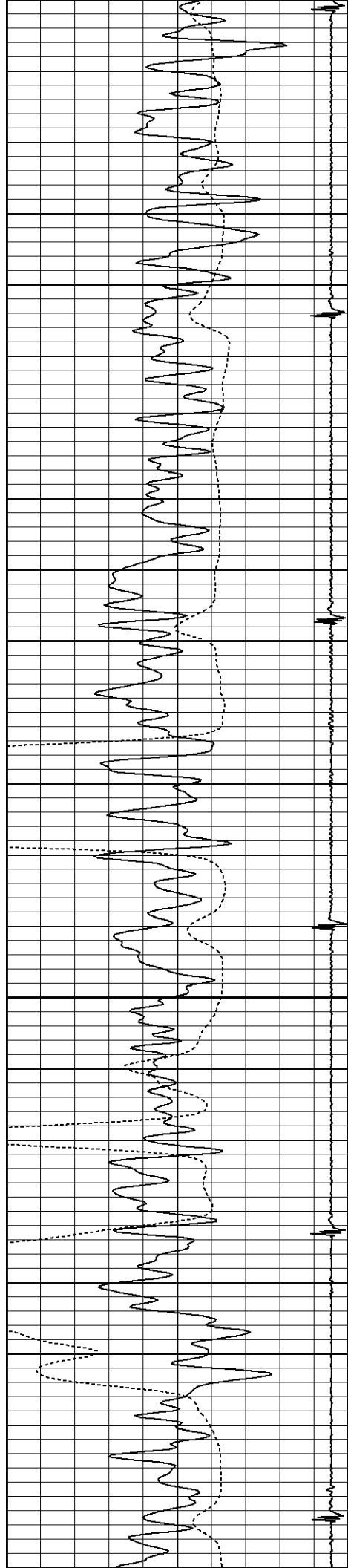
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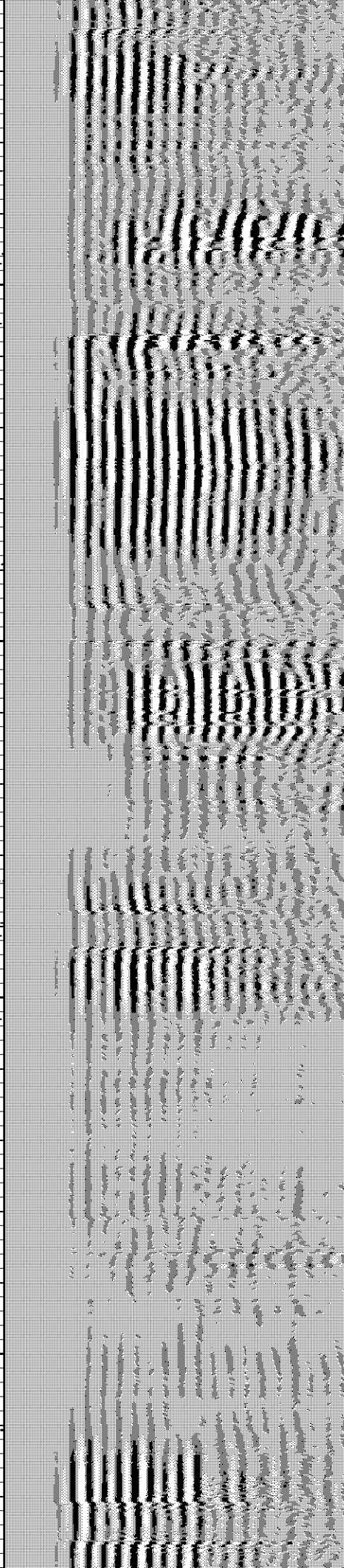
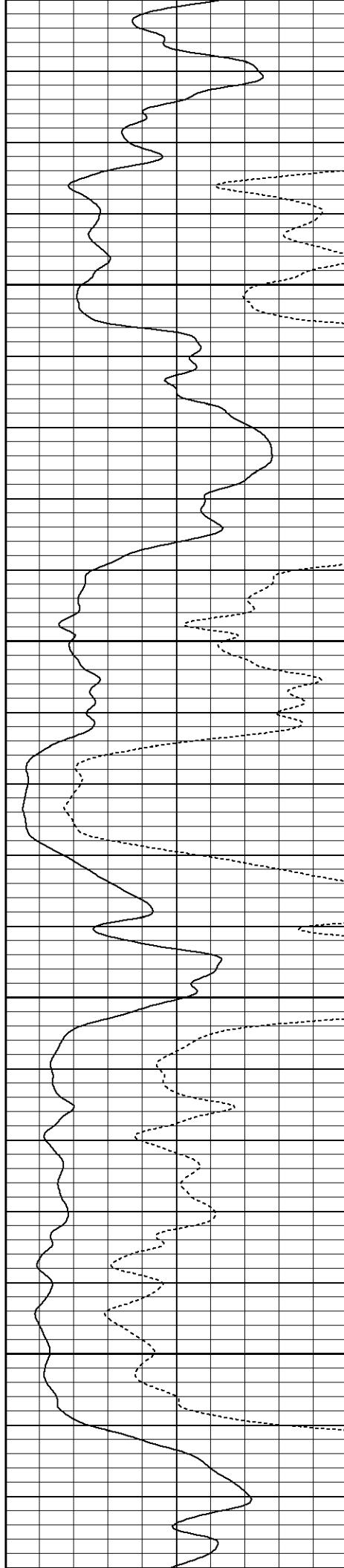


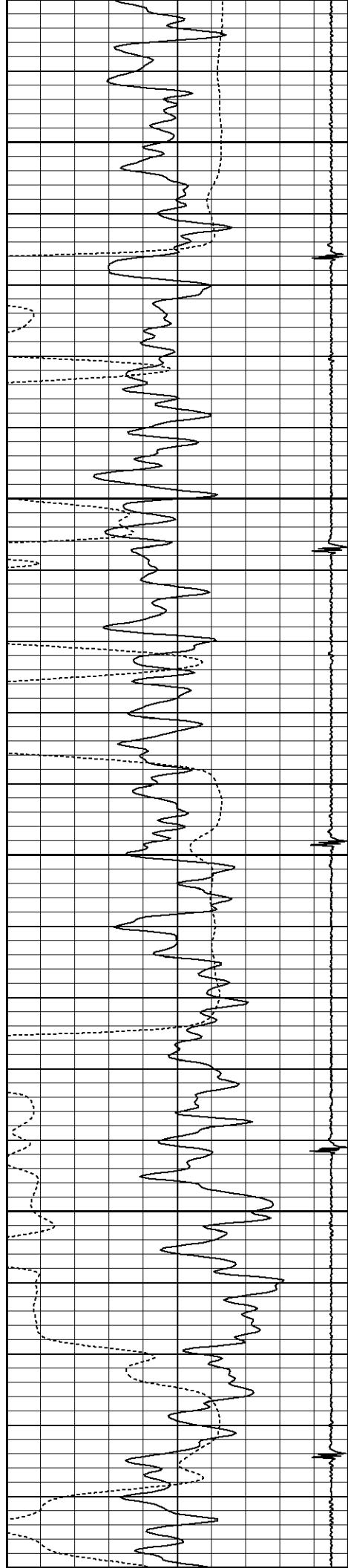
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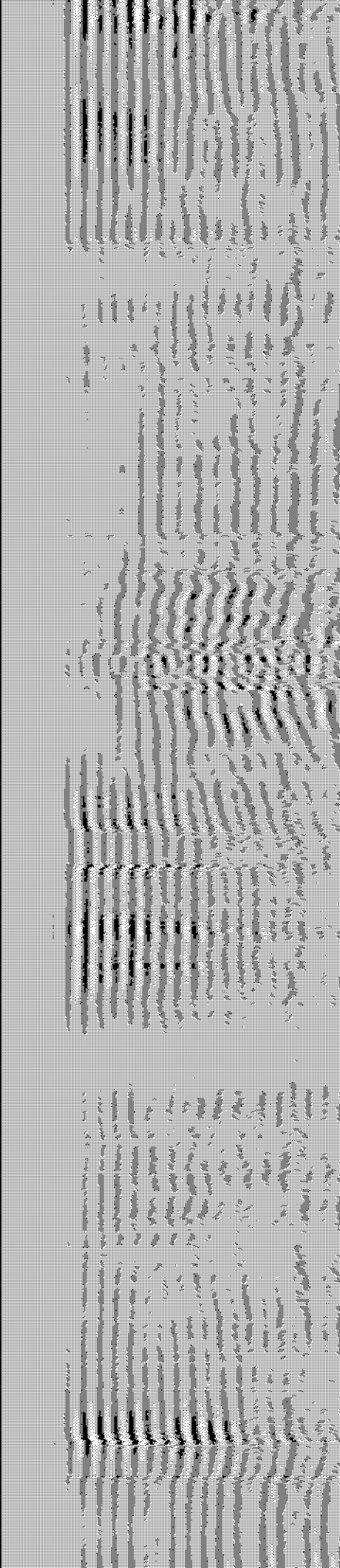
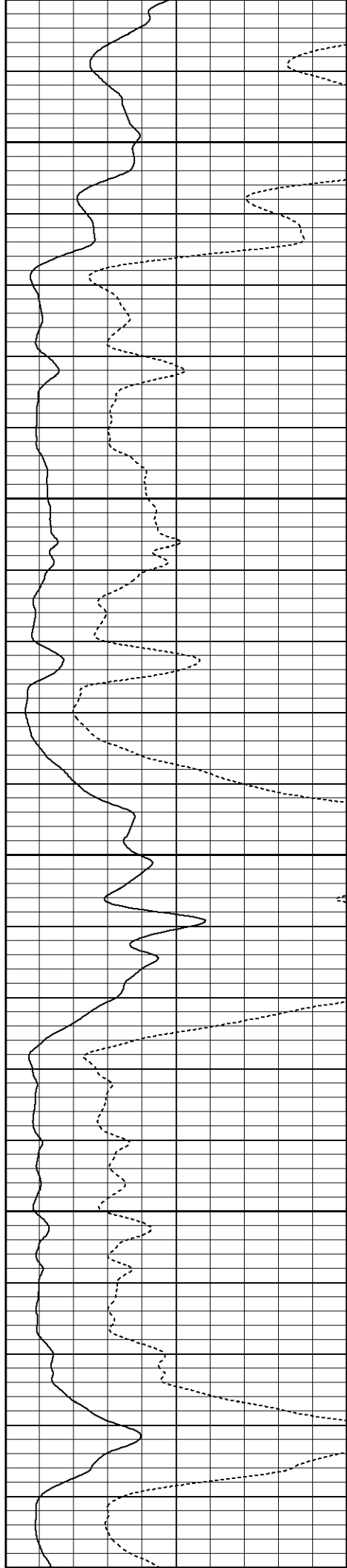
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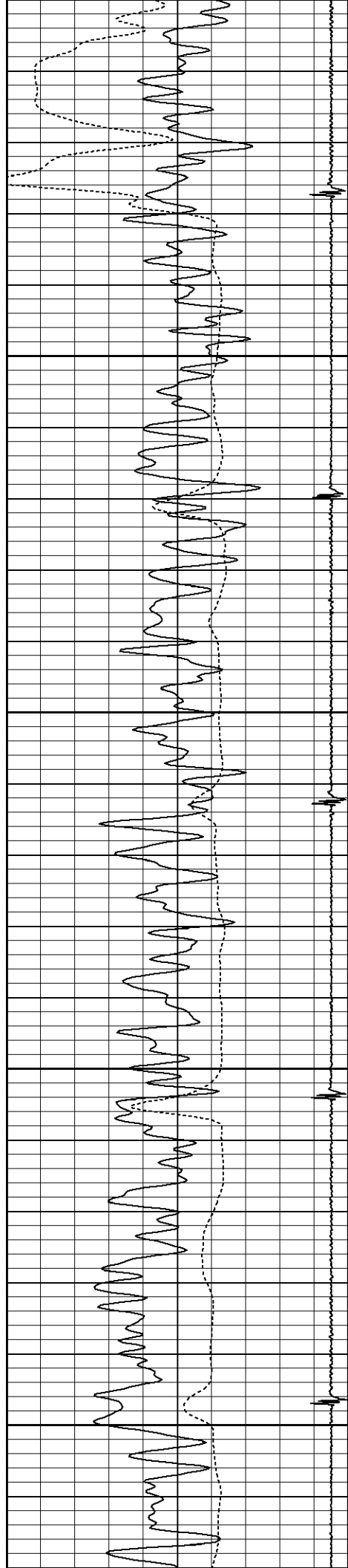
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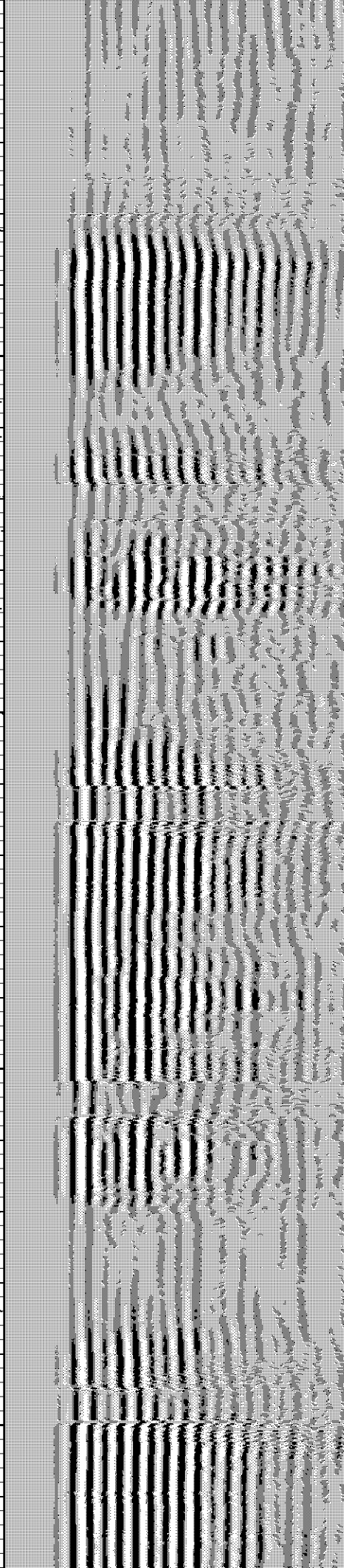
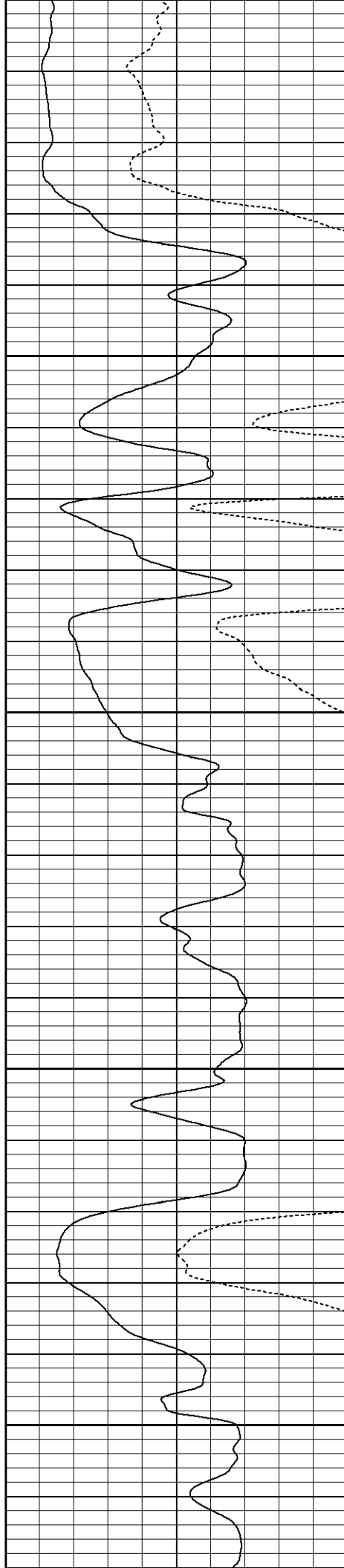
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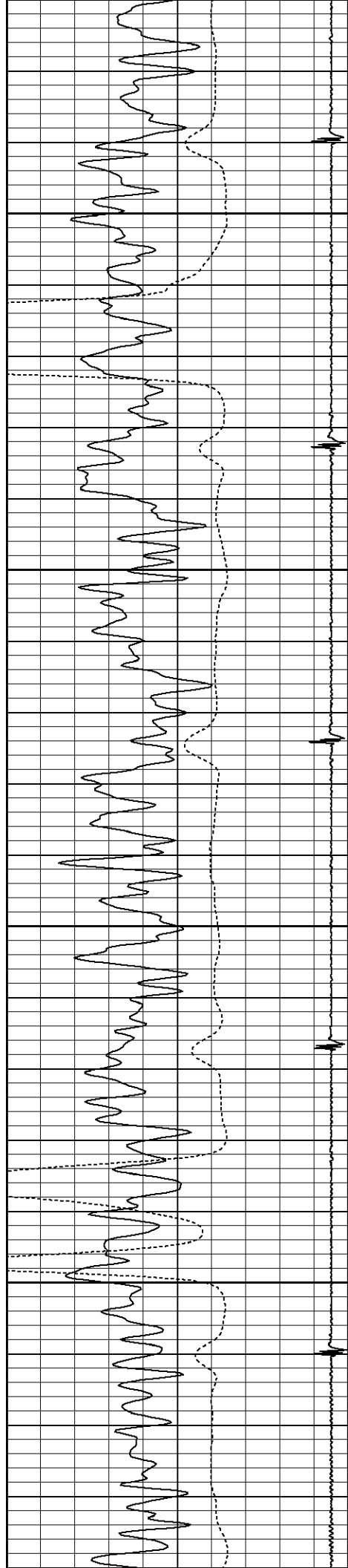
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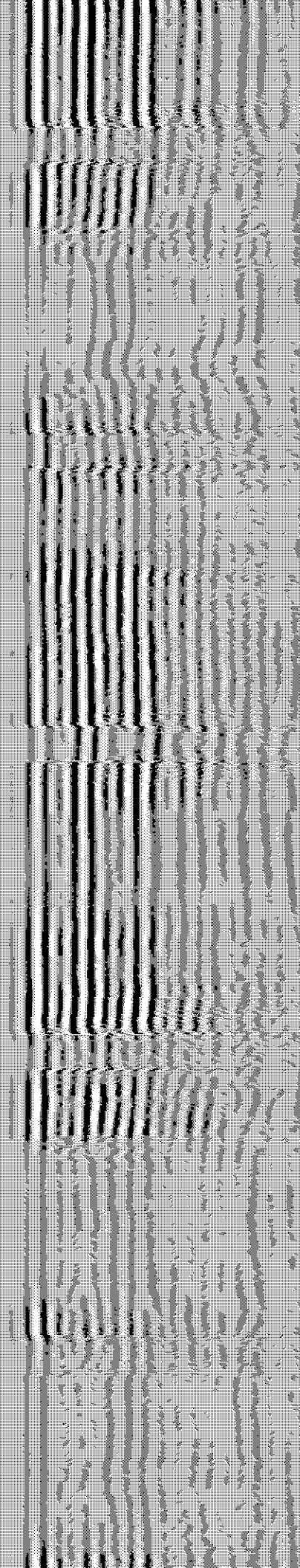
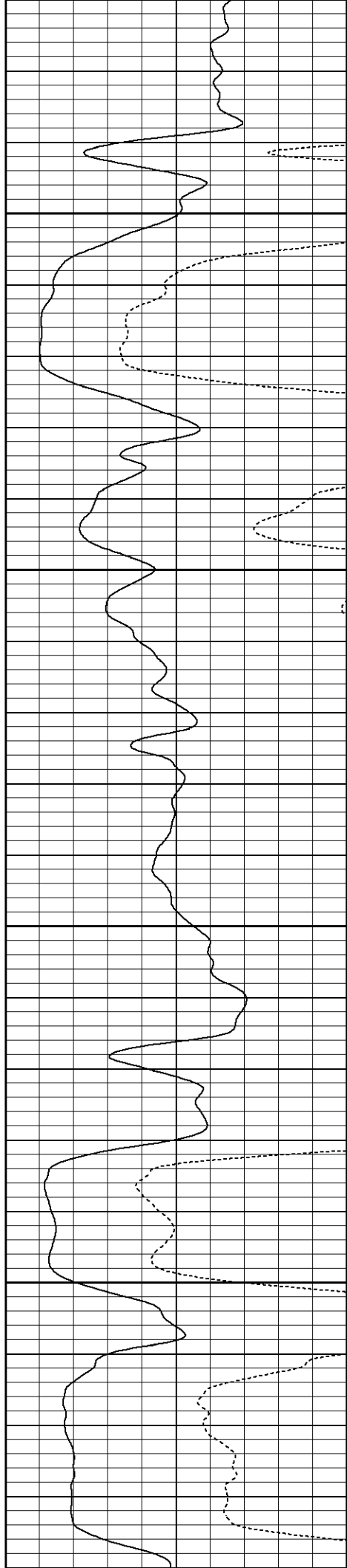


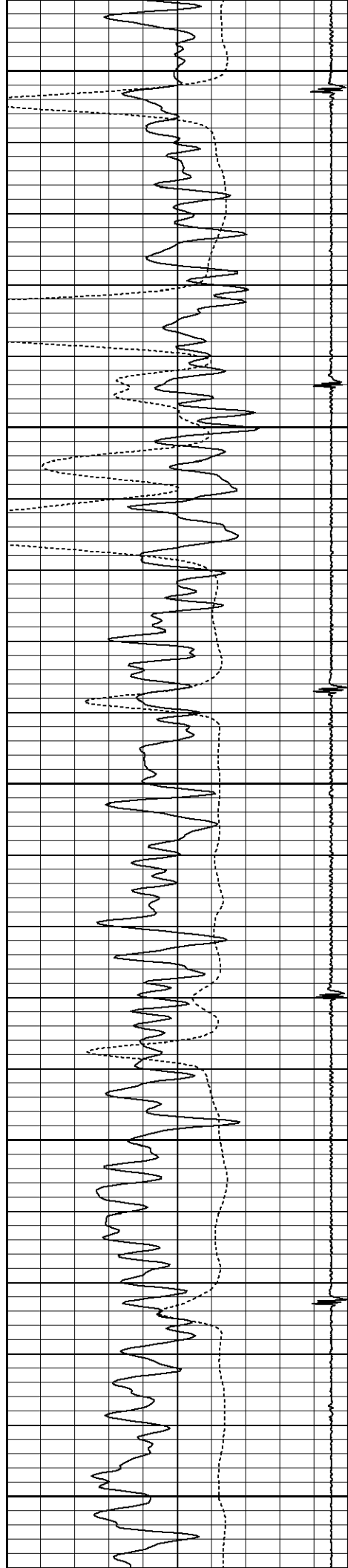
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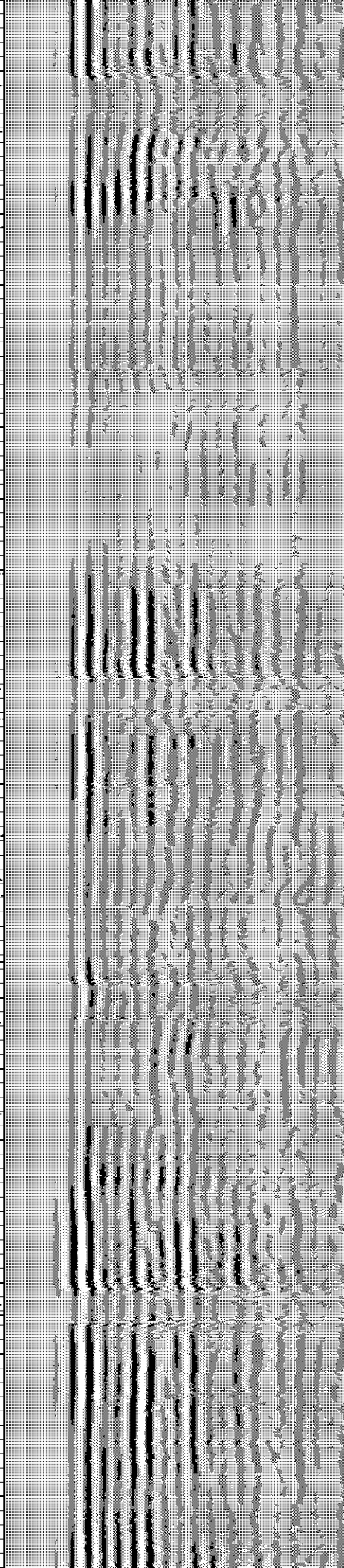
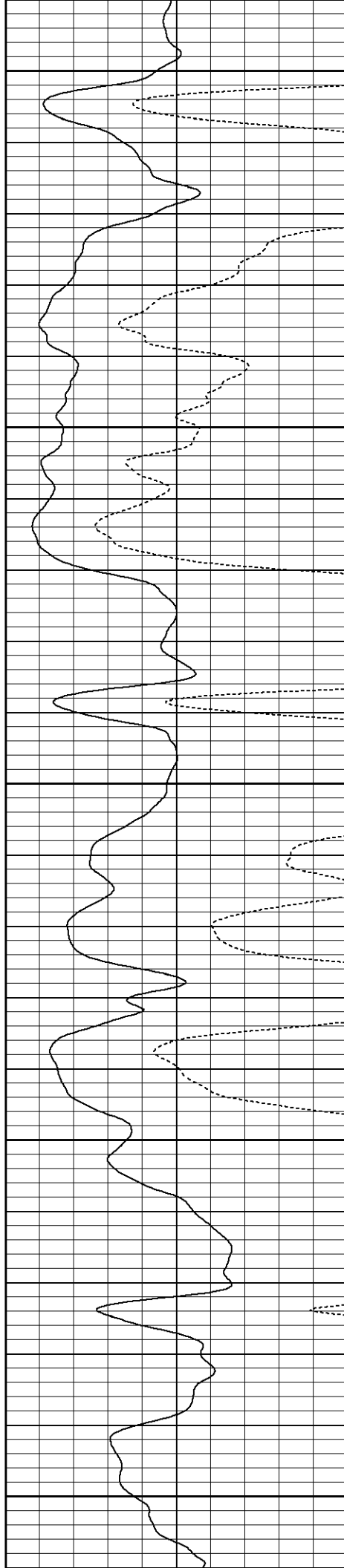
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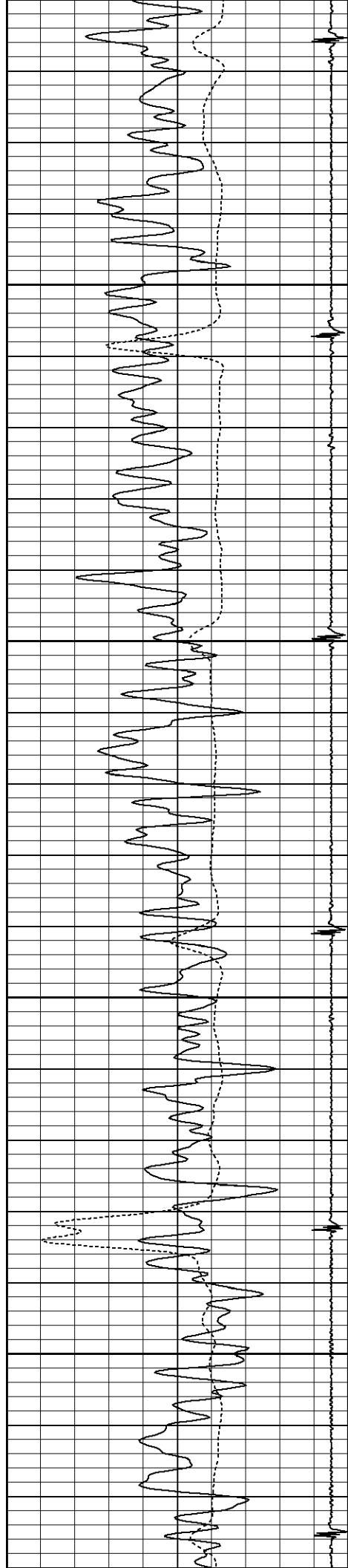
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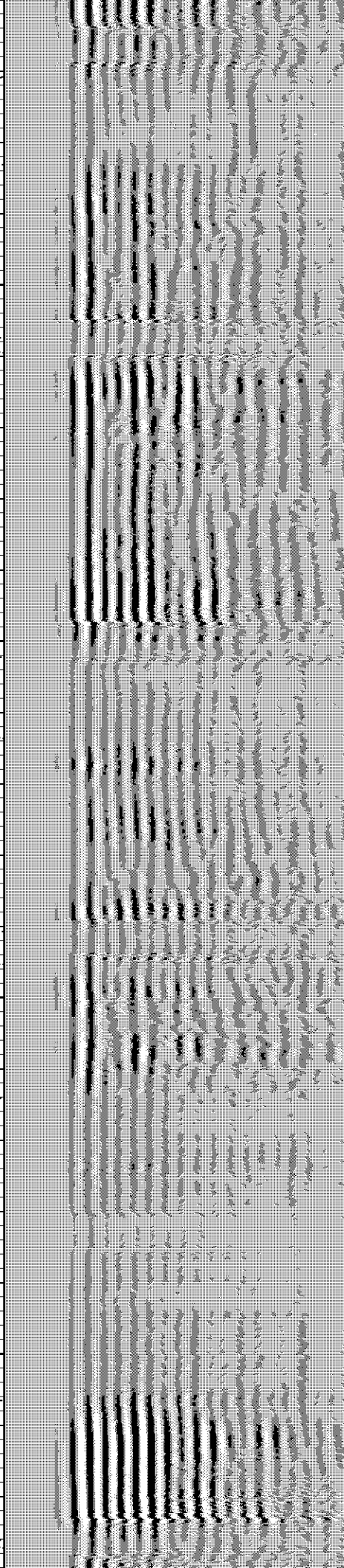
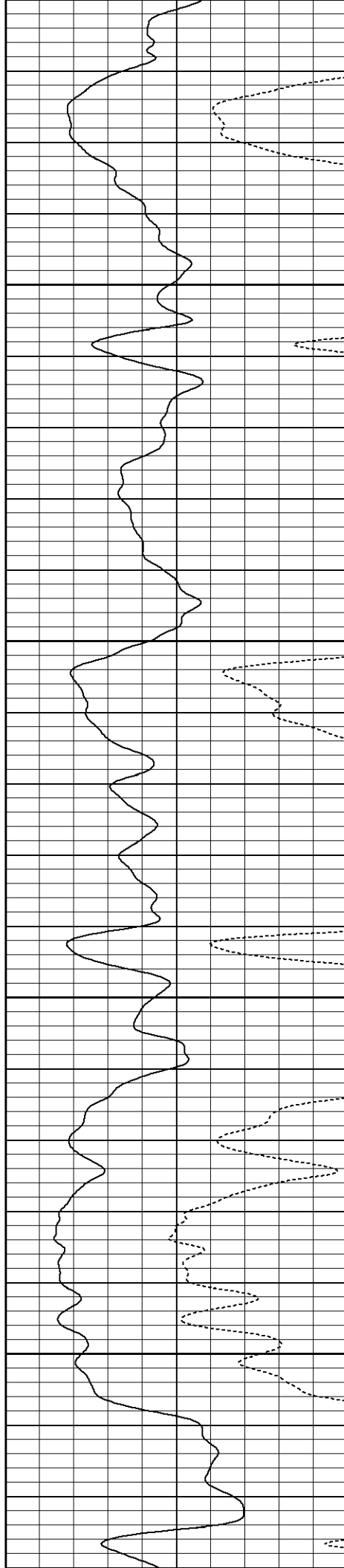


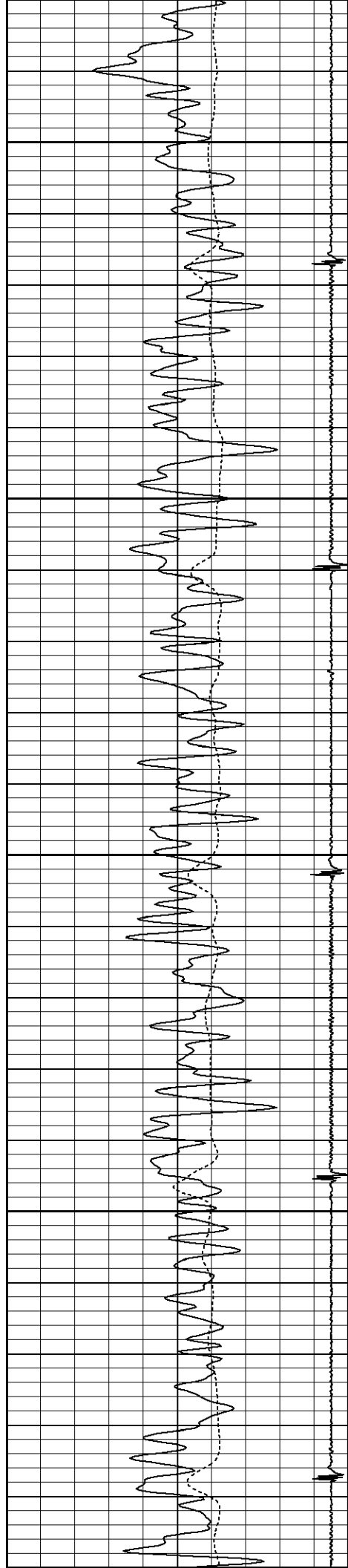
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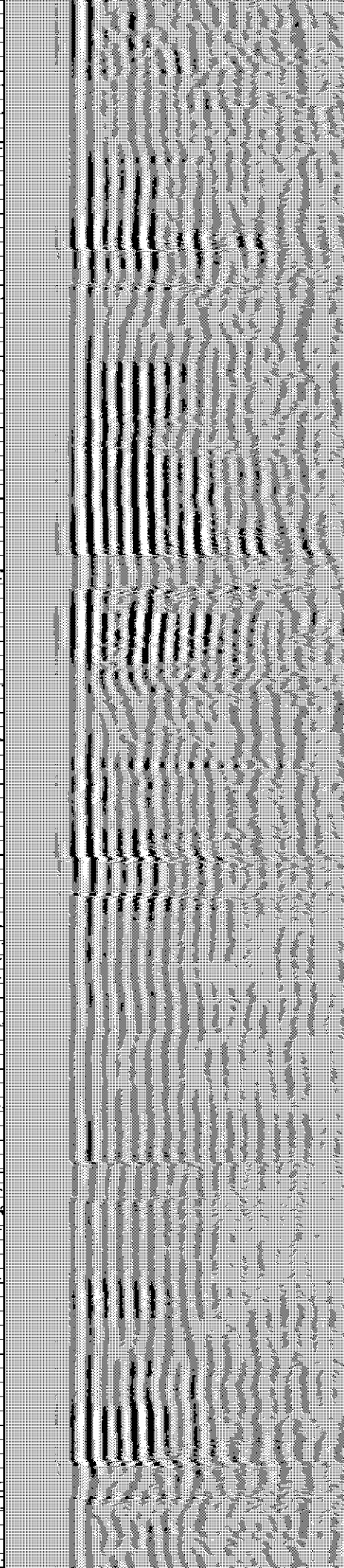
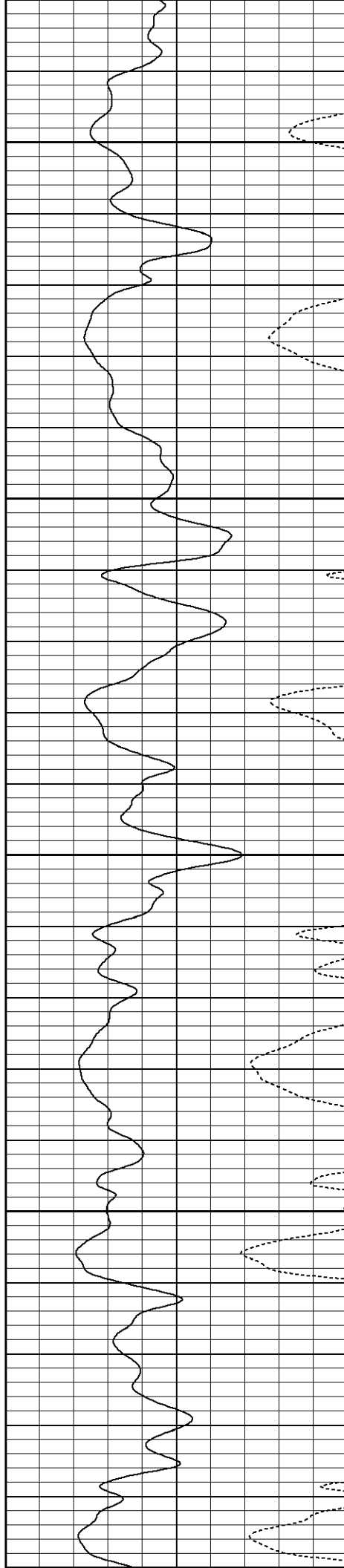
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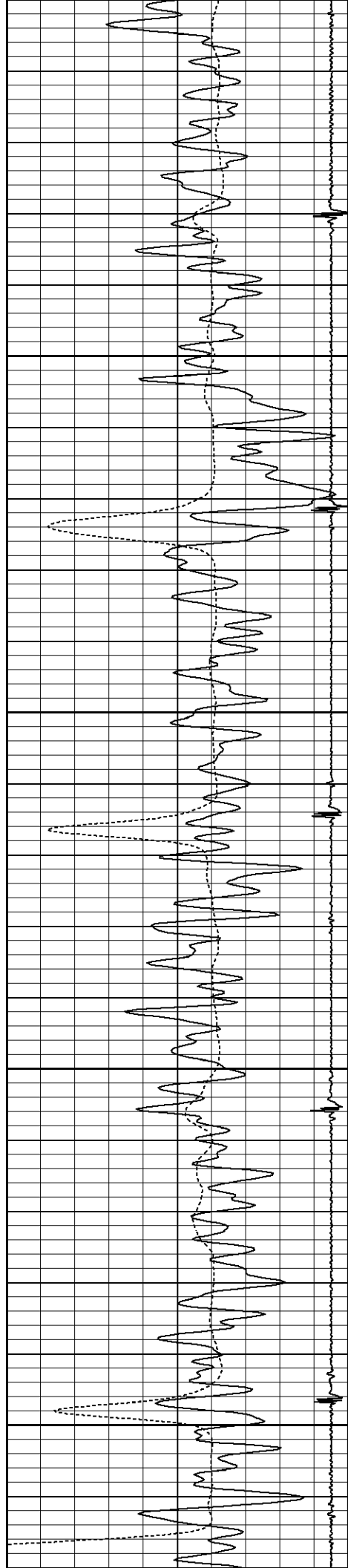
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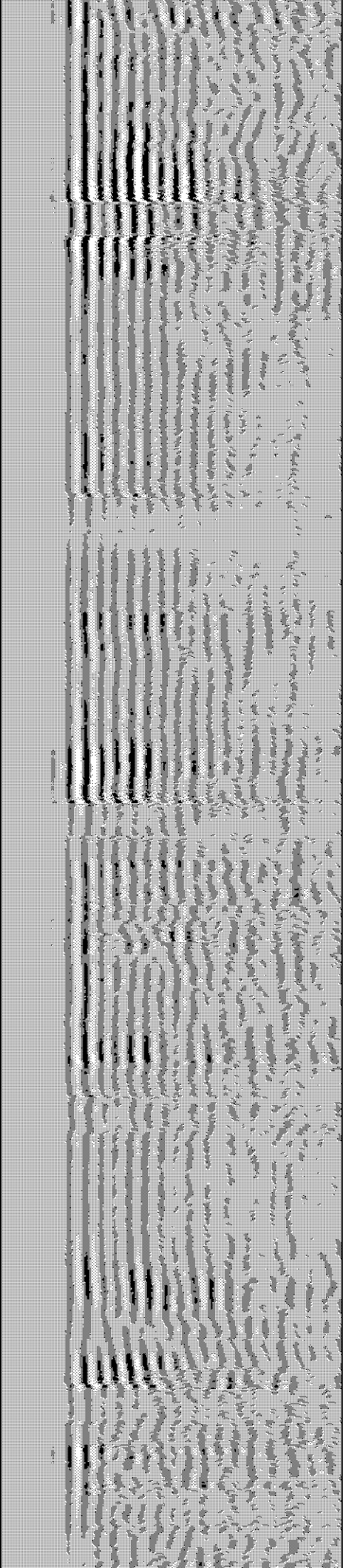
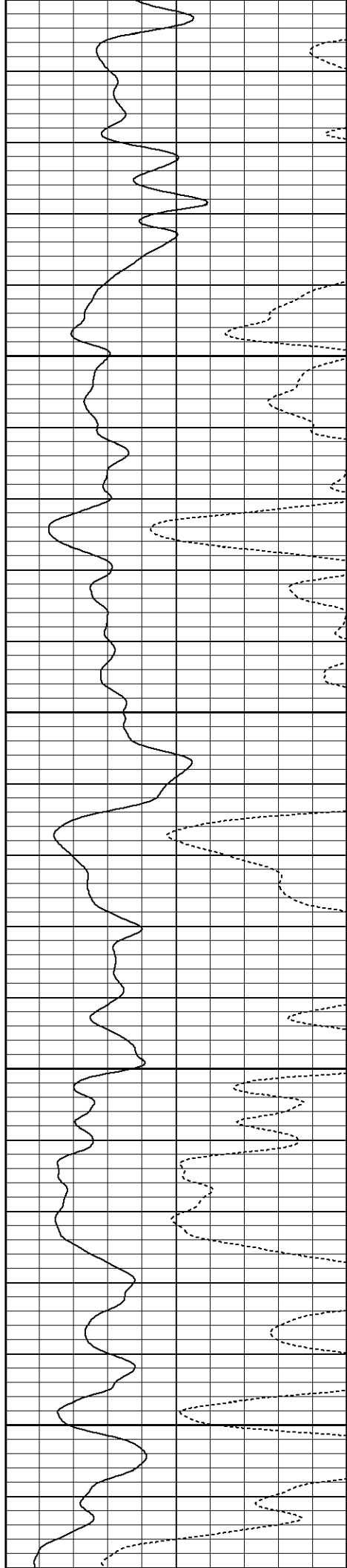
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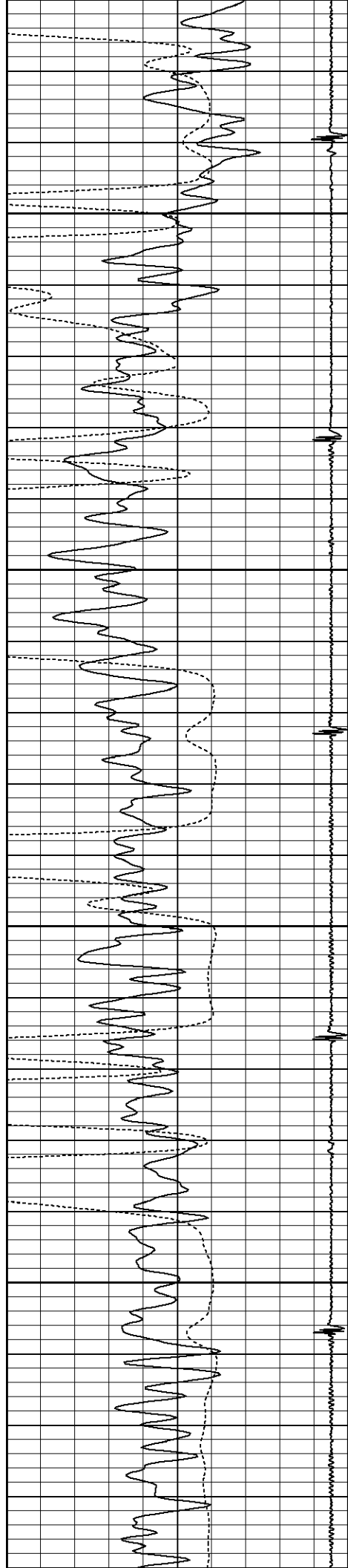
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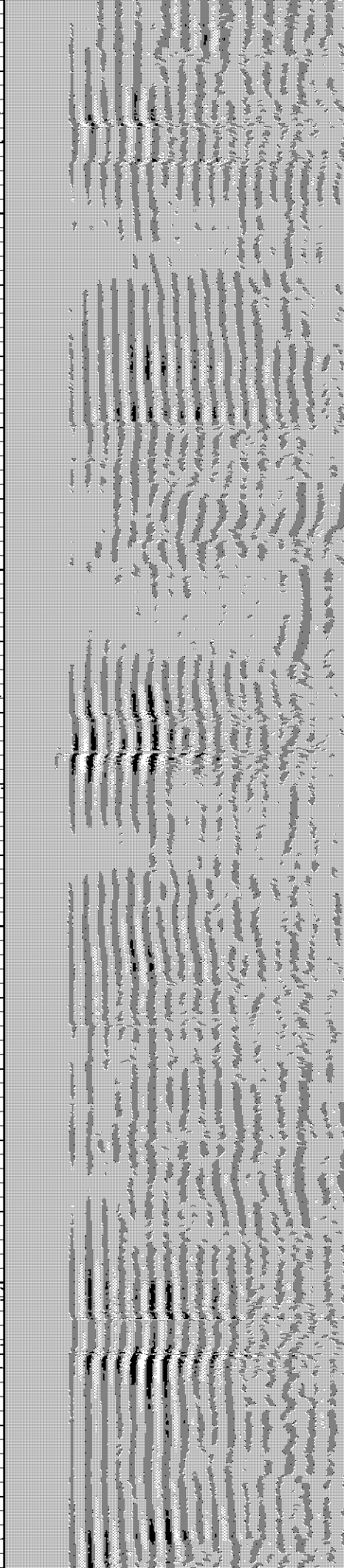
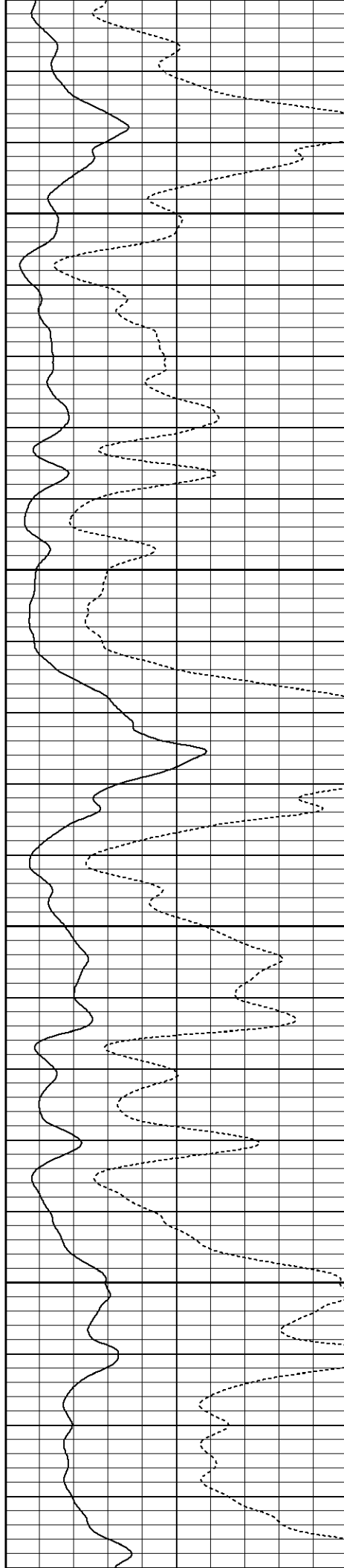


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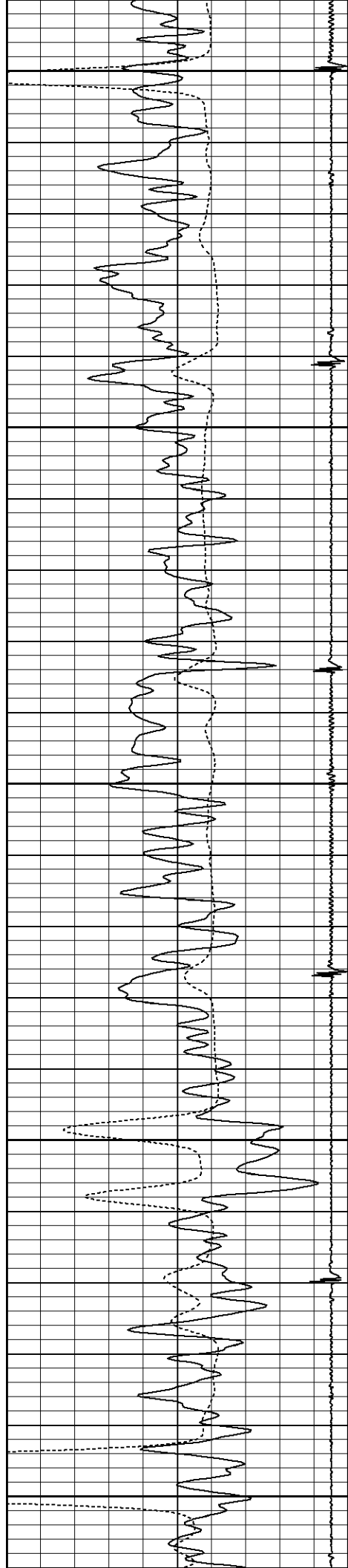
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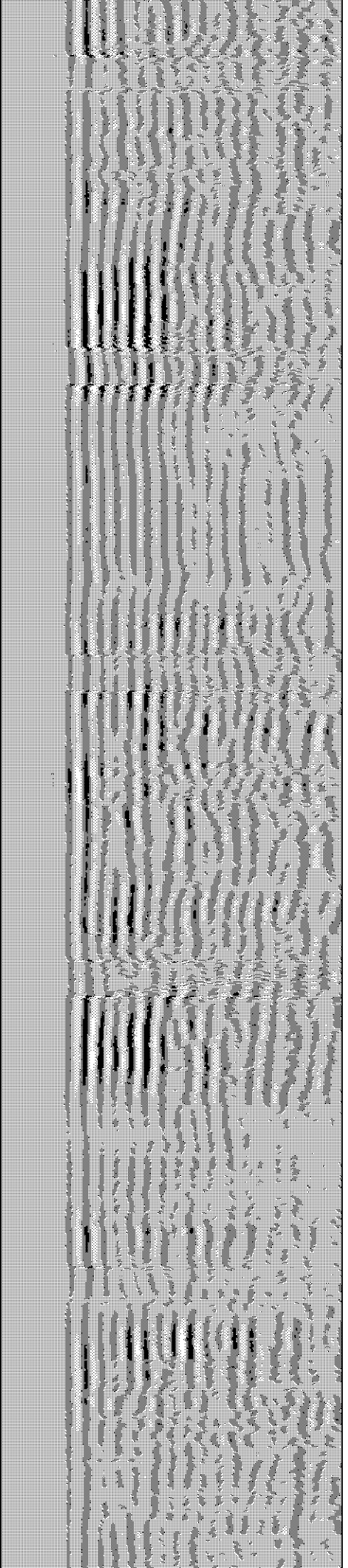
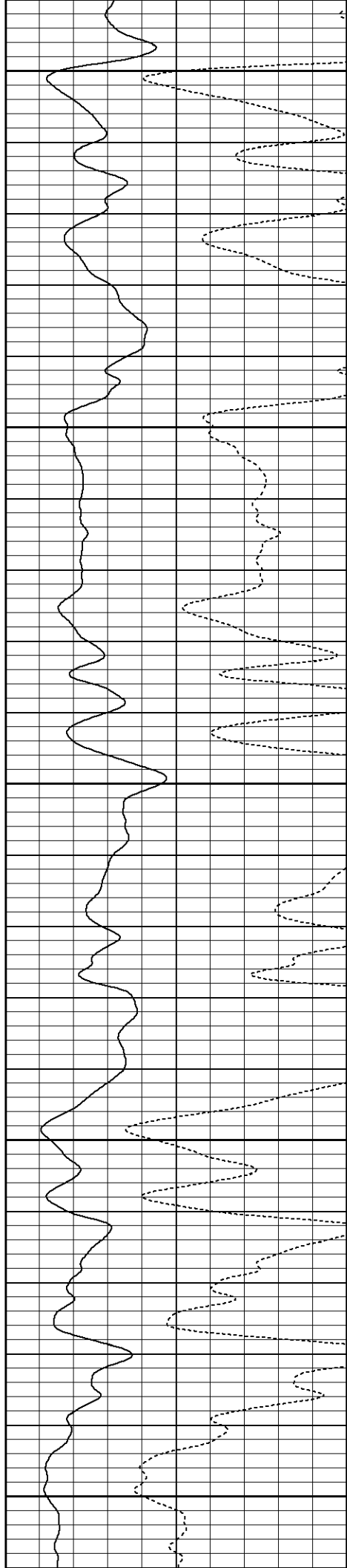
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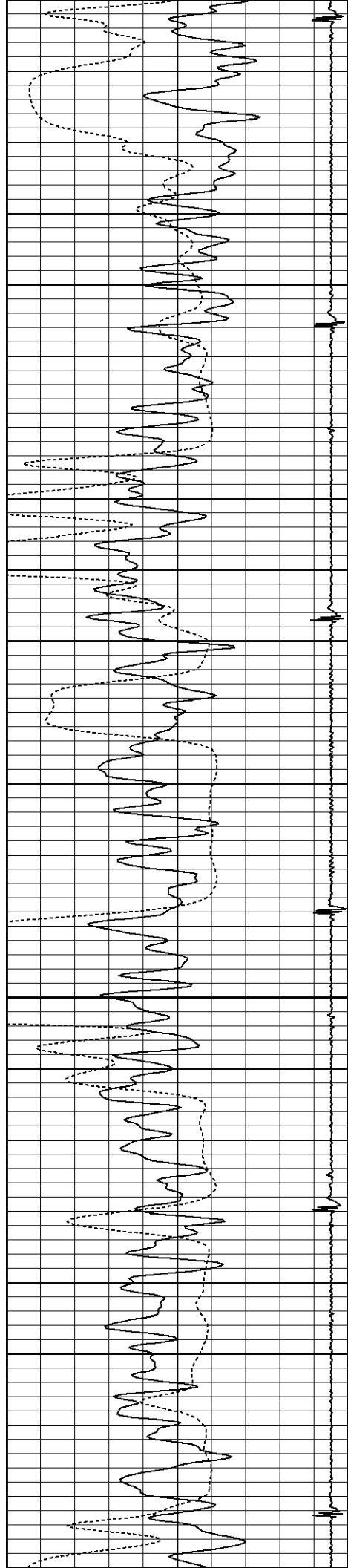
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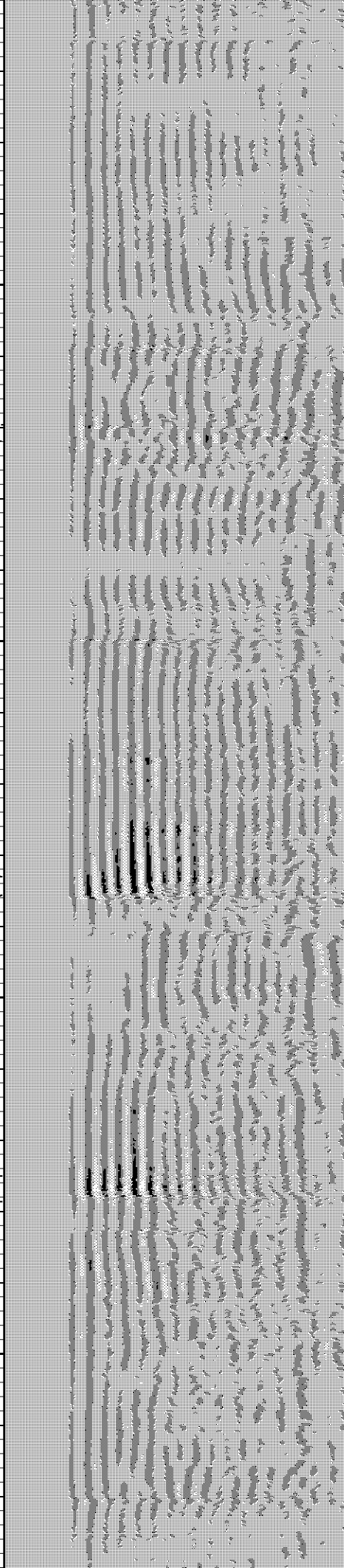
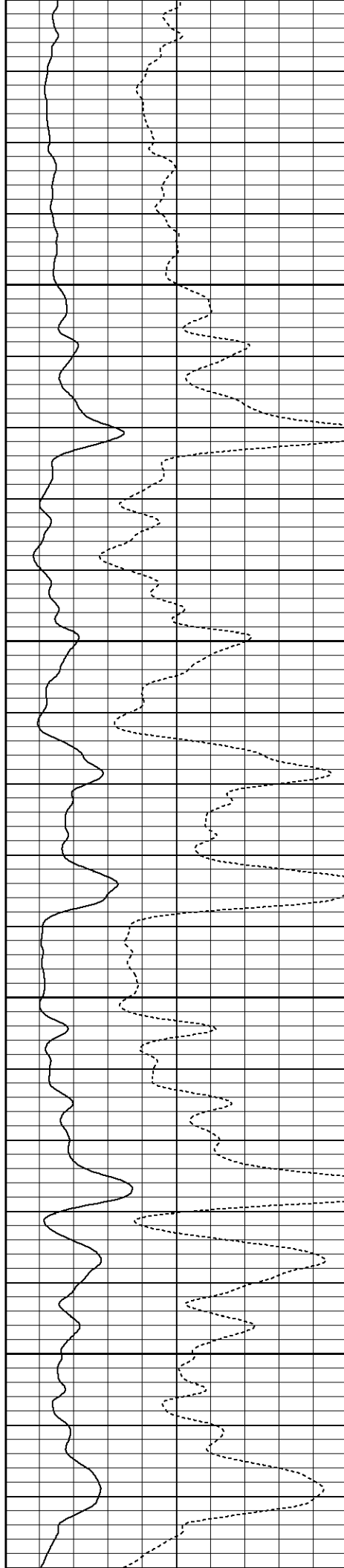


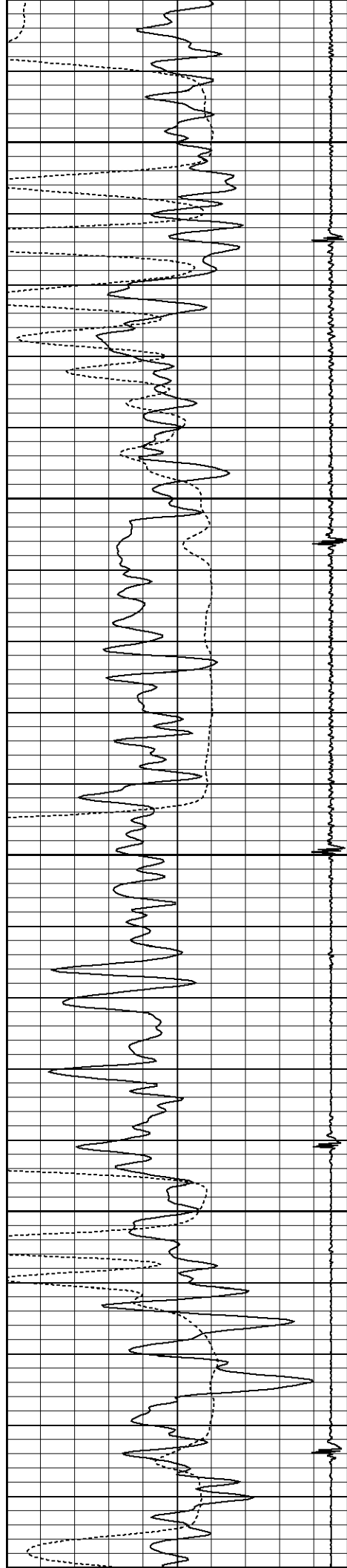
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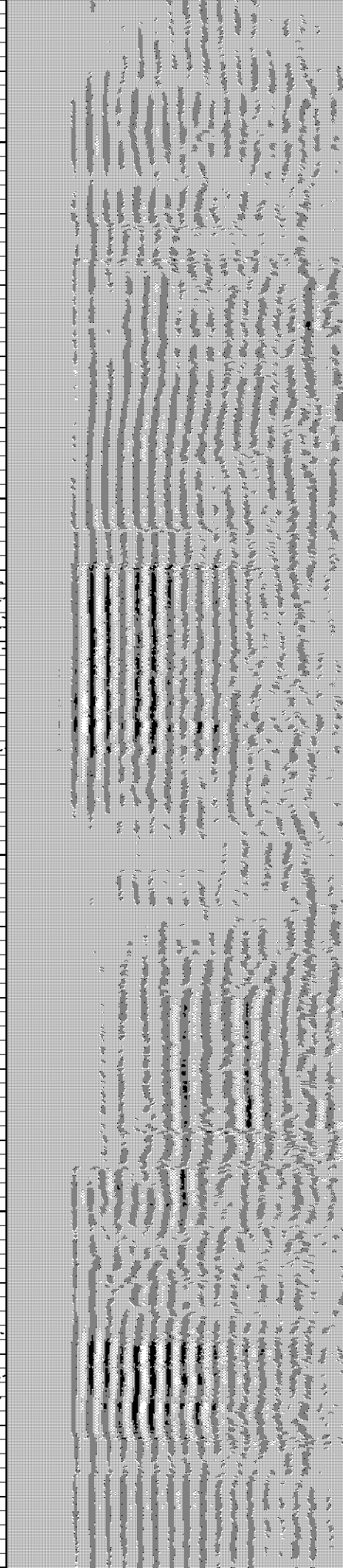
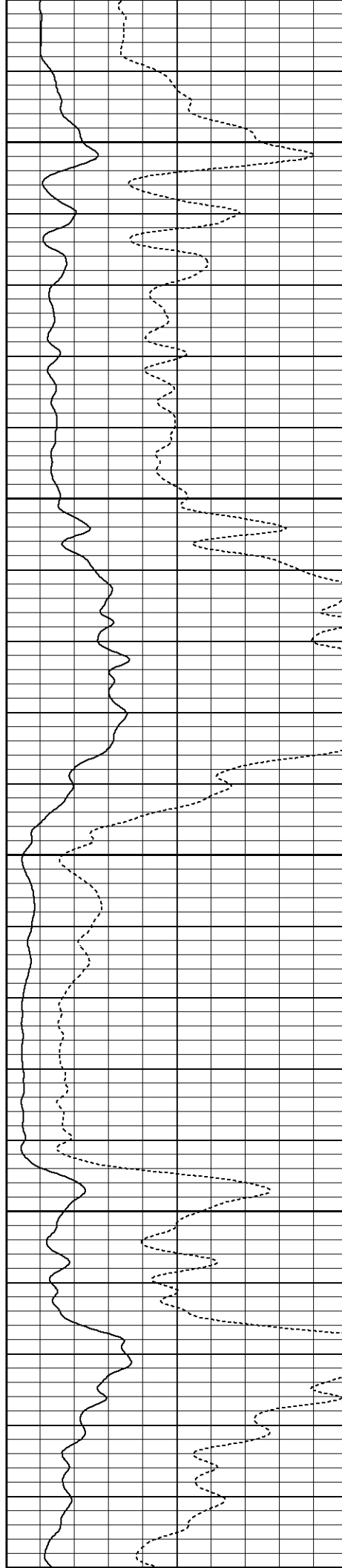
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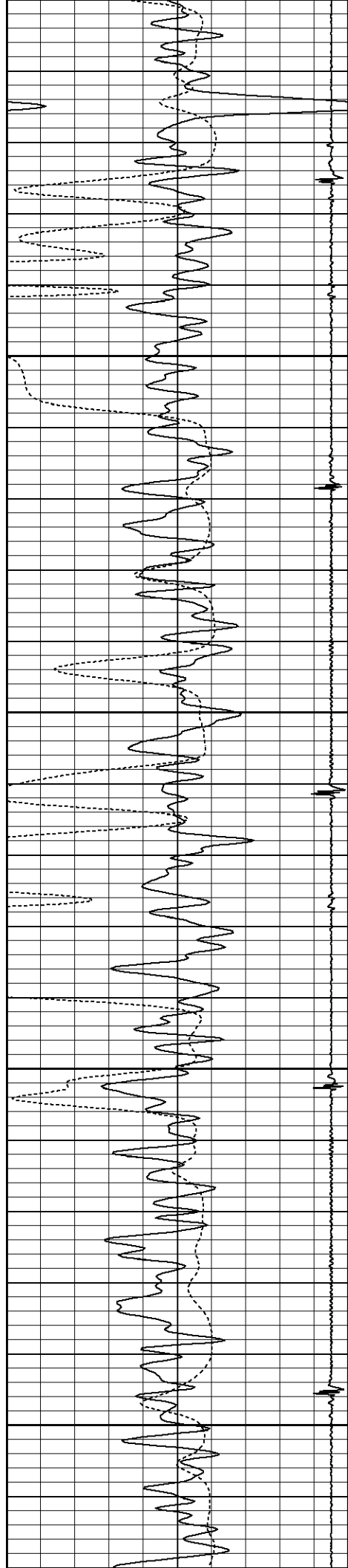
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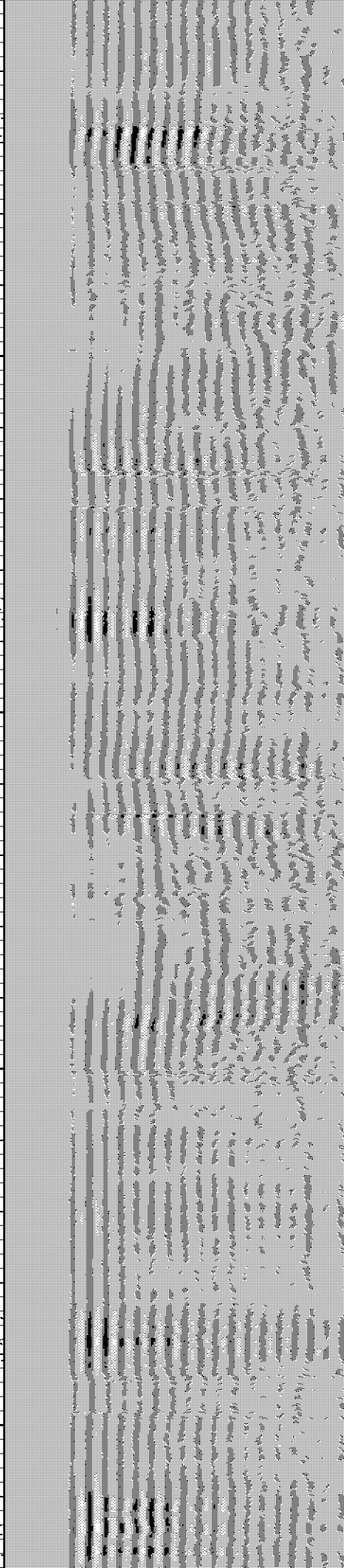
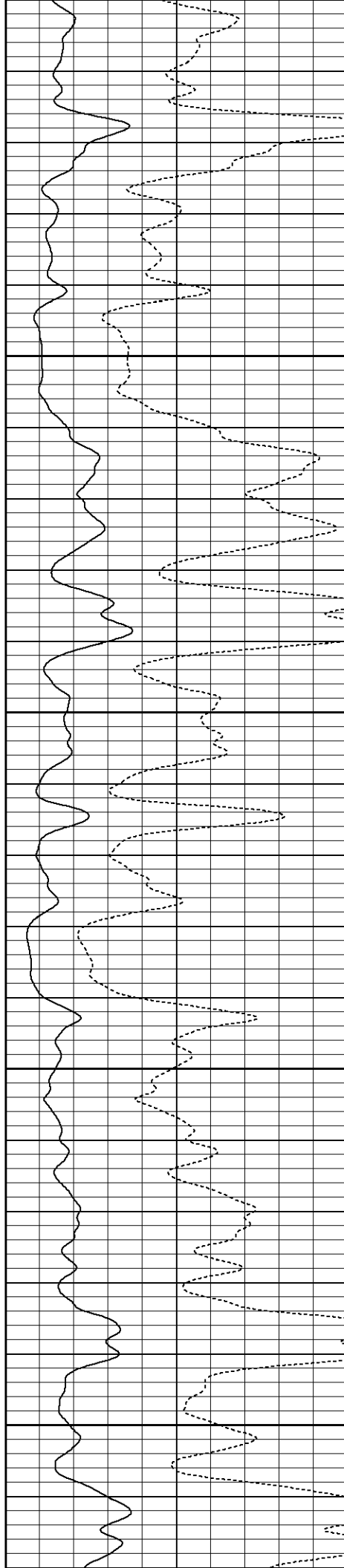
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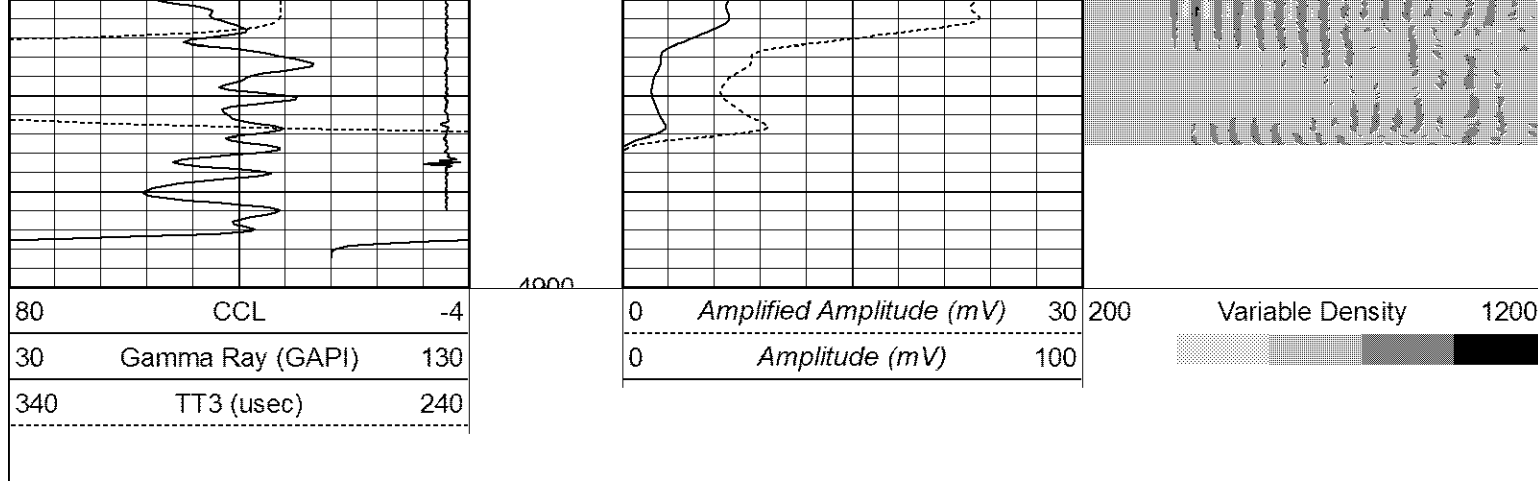
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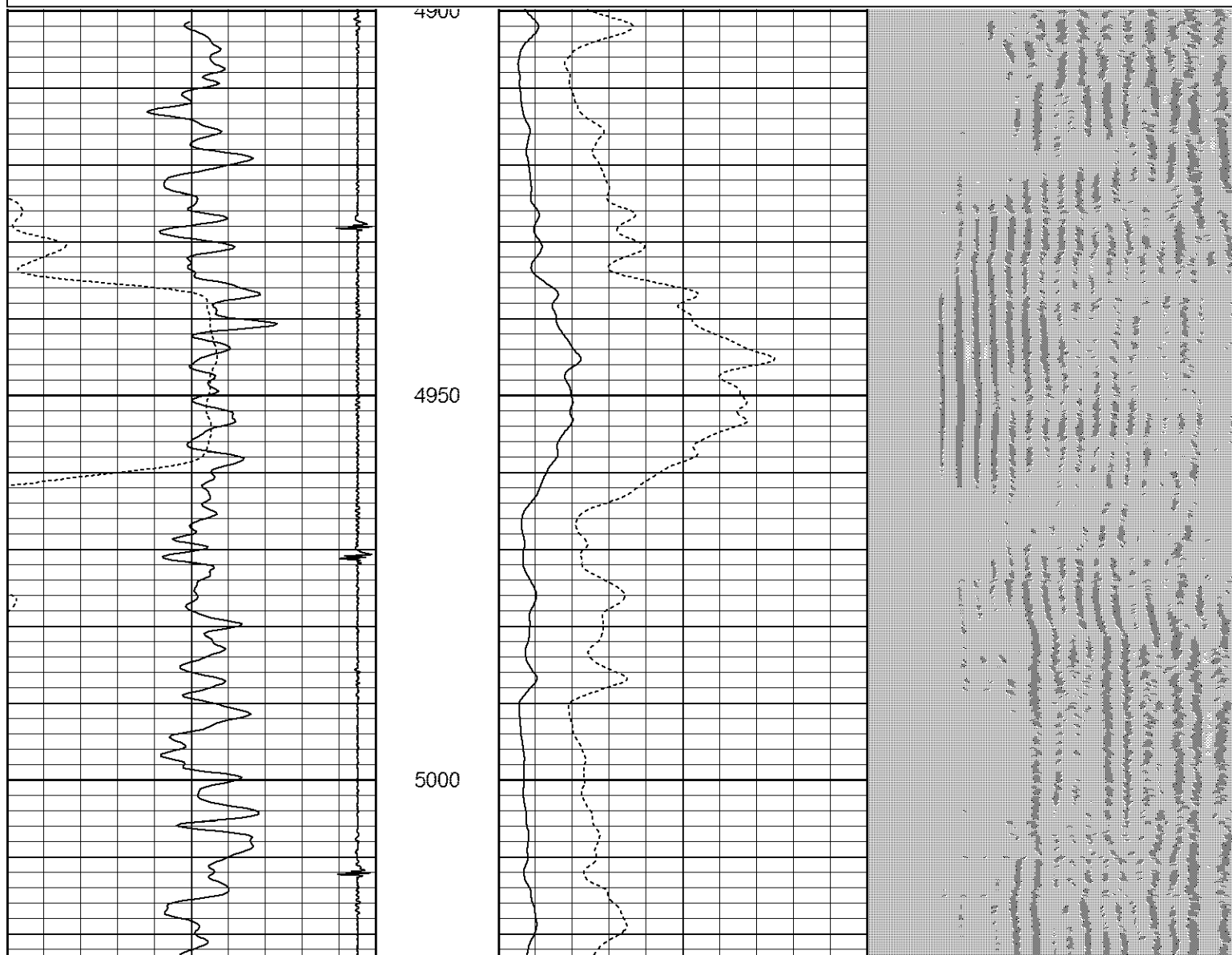
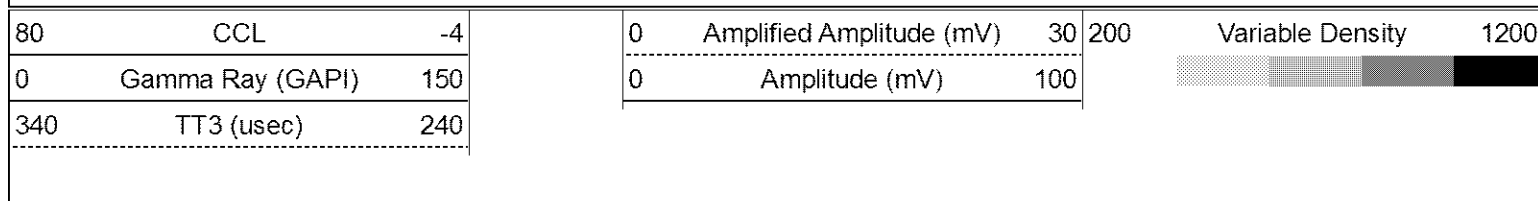
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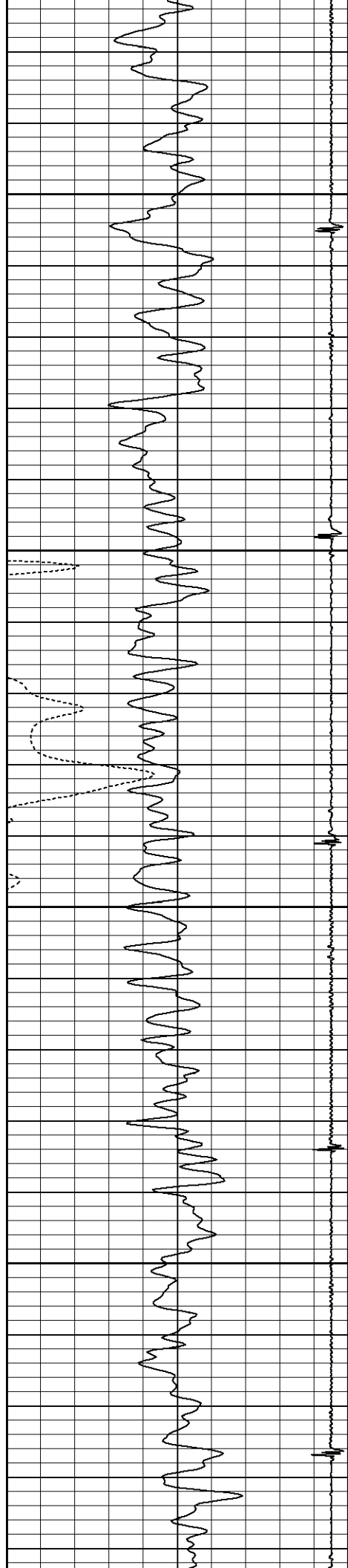
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Database File: cblshable g17-23d.db  
 Dataset Pathname: pass2  
 Presentation Format: noble en  
 Dataset Creation: Tue Feb 21 12:58:57 2012 by Log SCH 111116  
 Charted by: Depth in Feet scaled 1:240



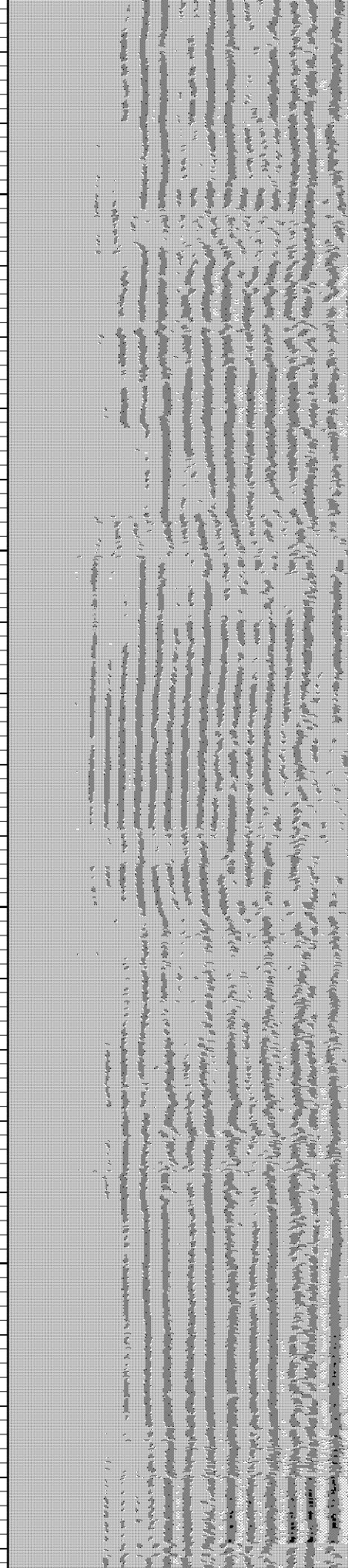
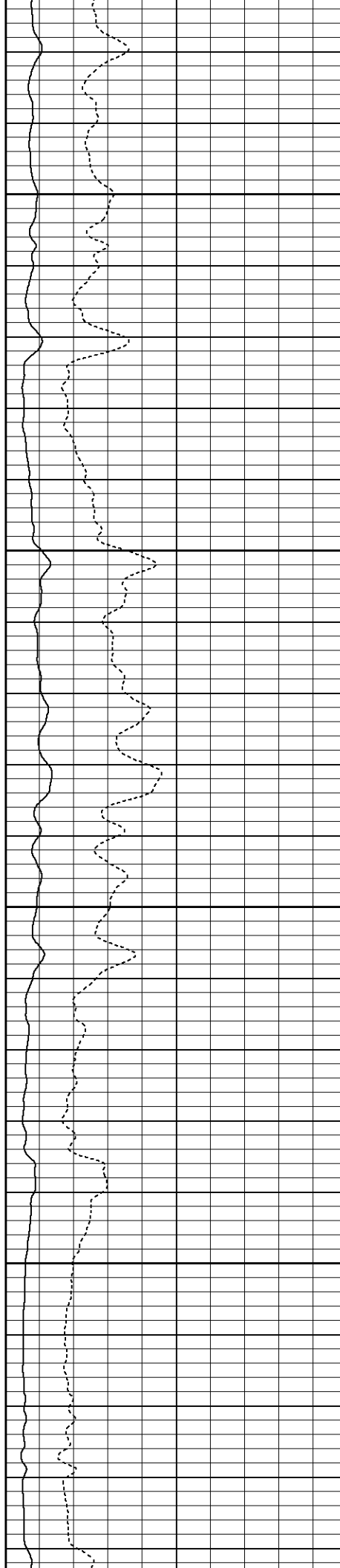


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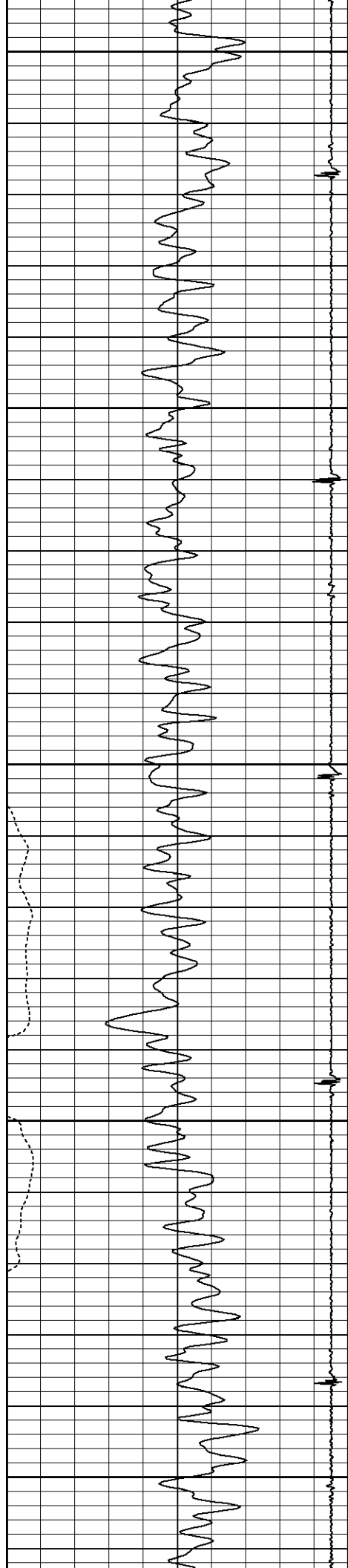
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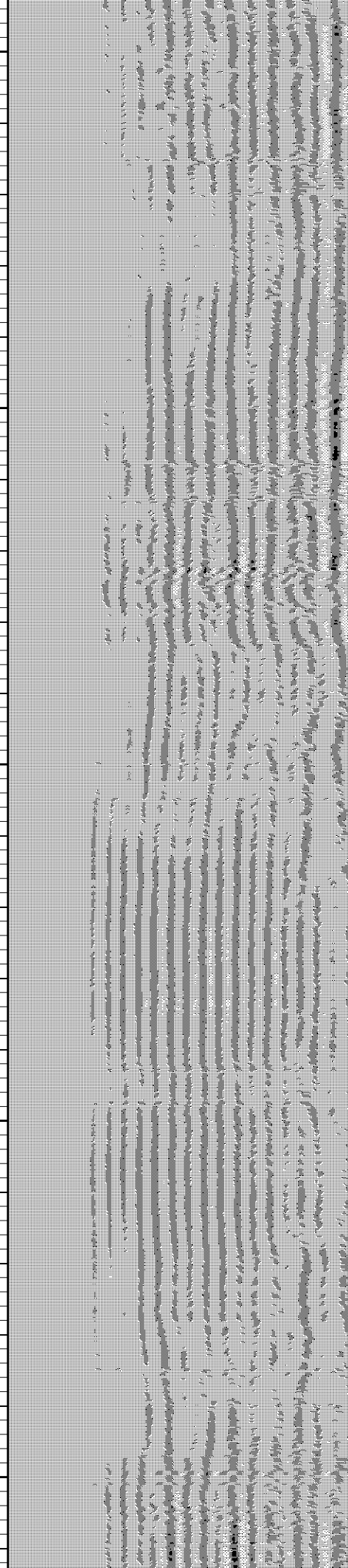
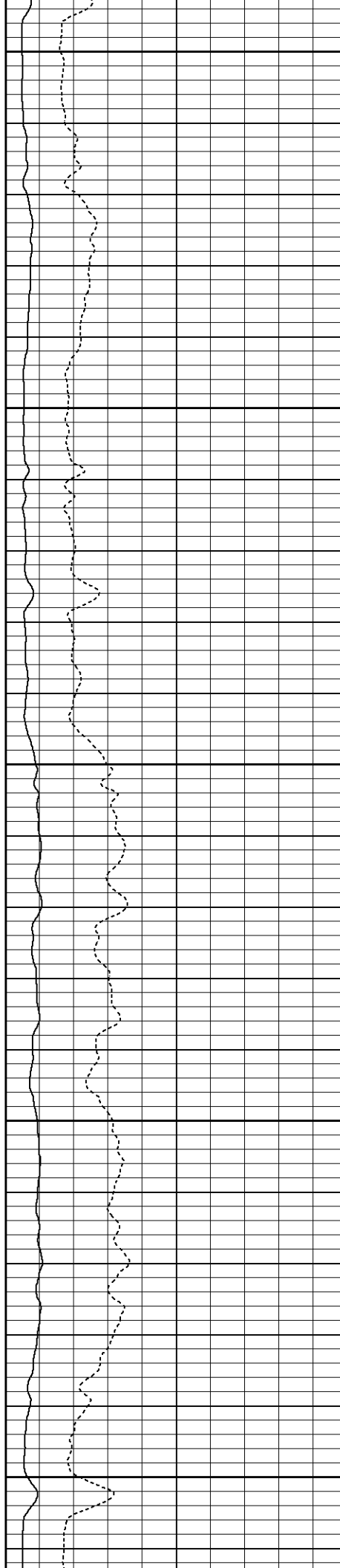
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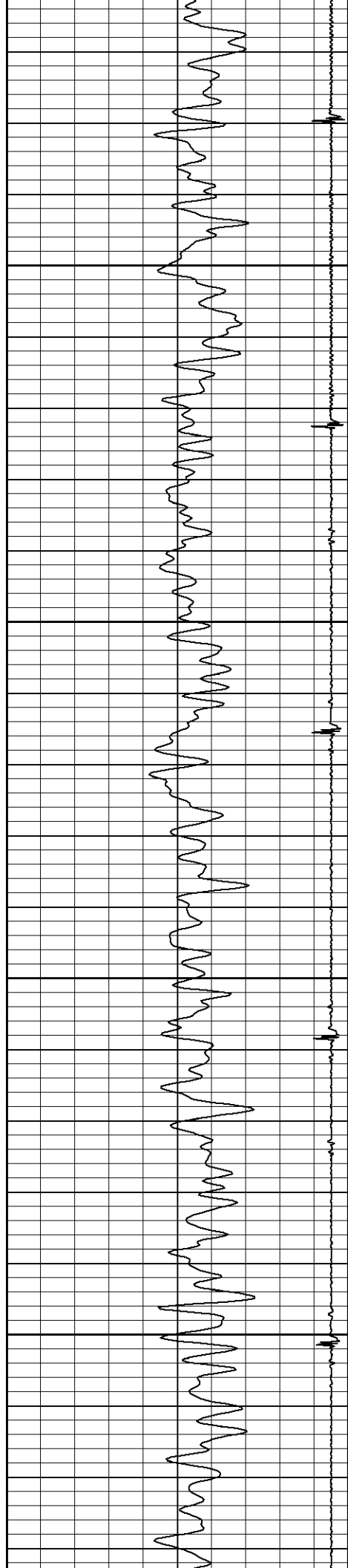
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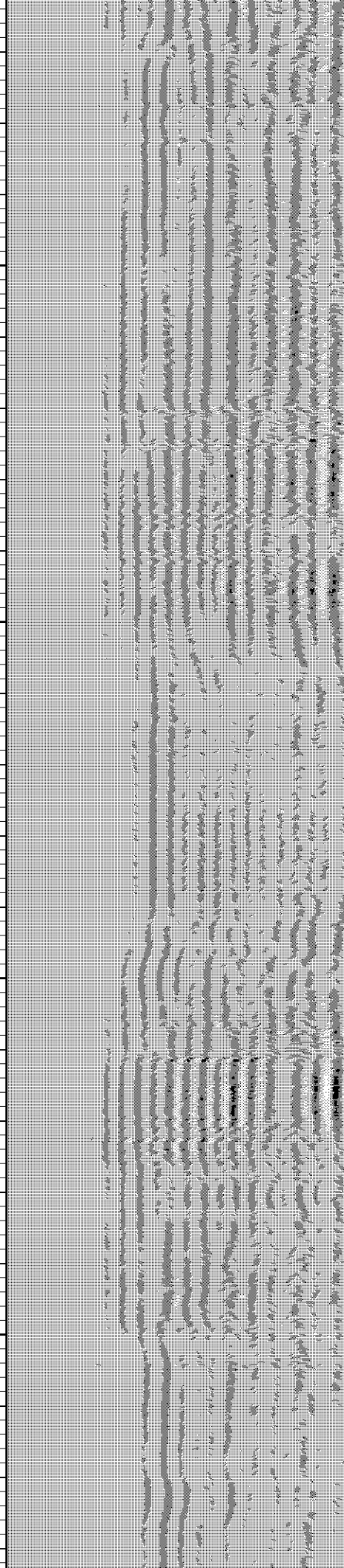
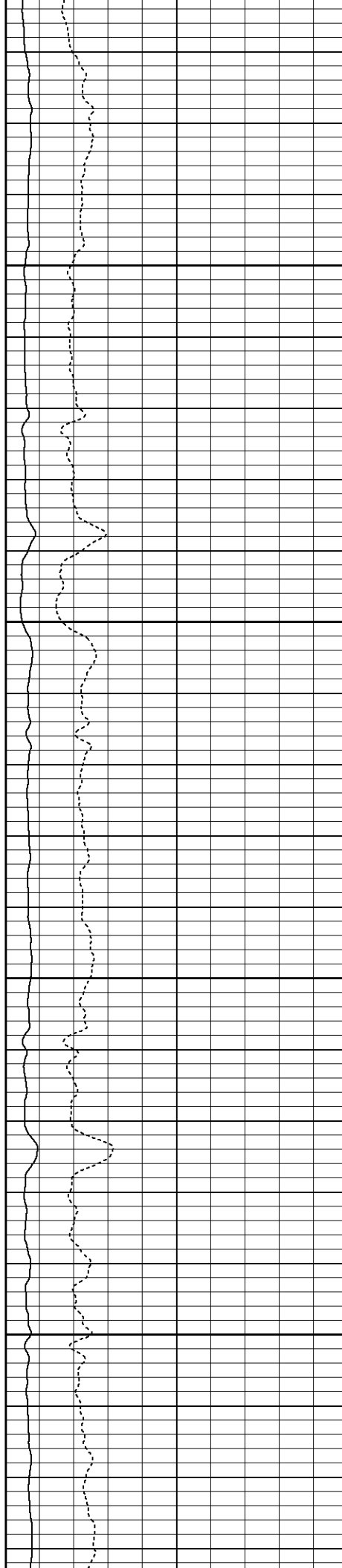


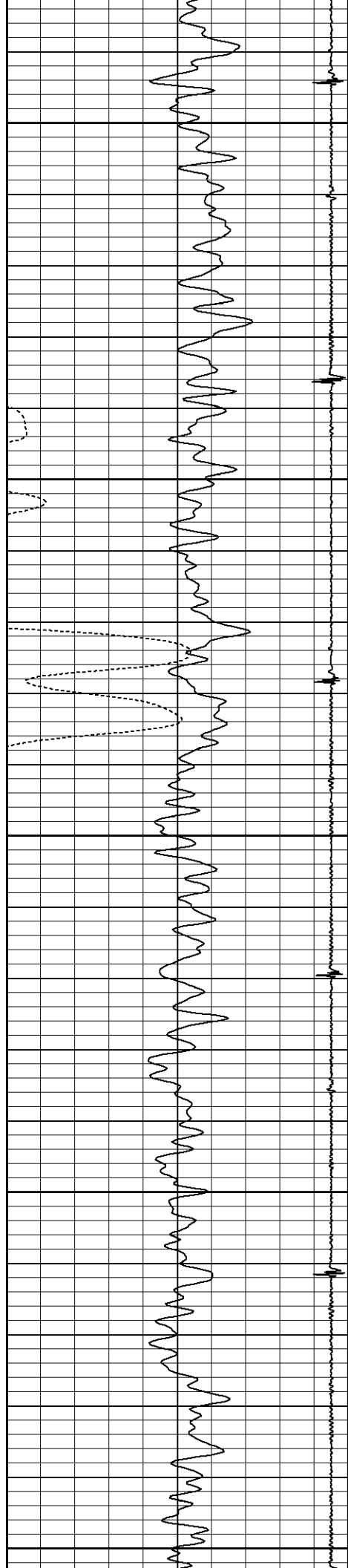
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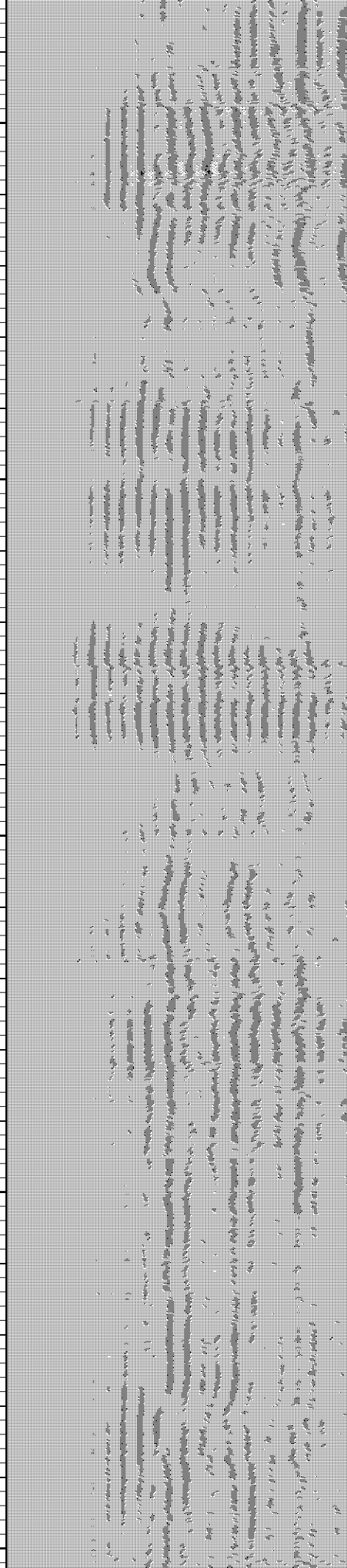
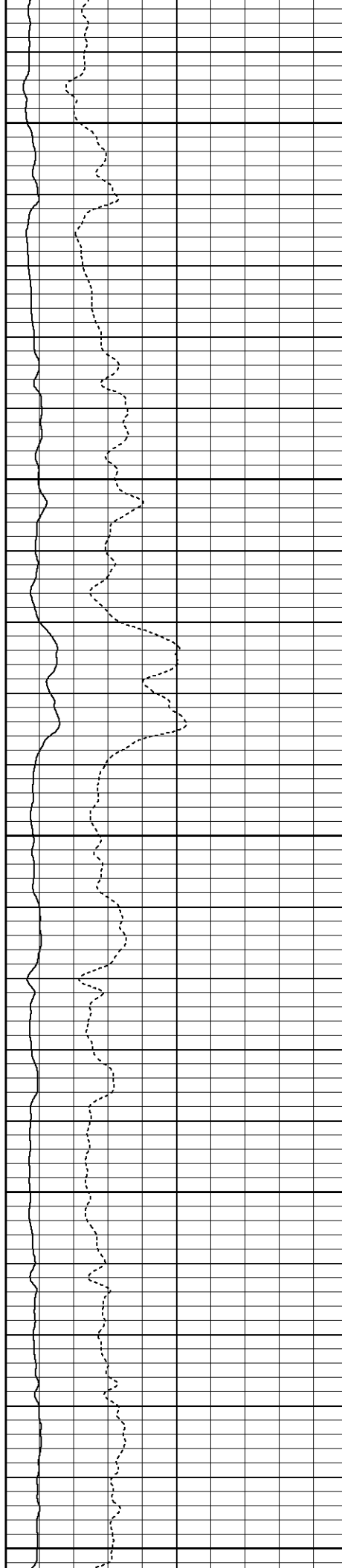
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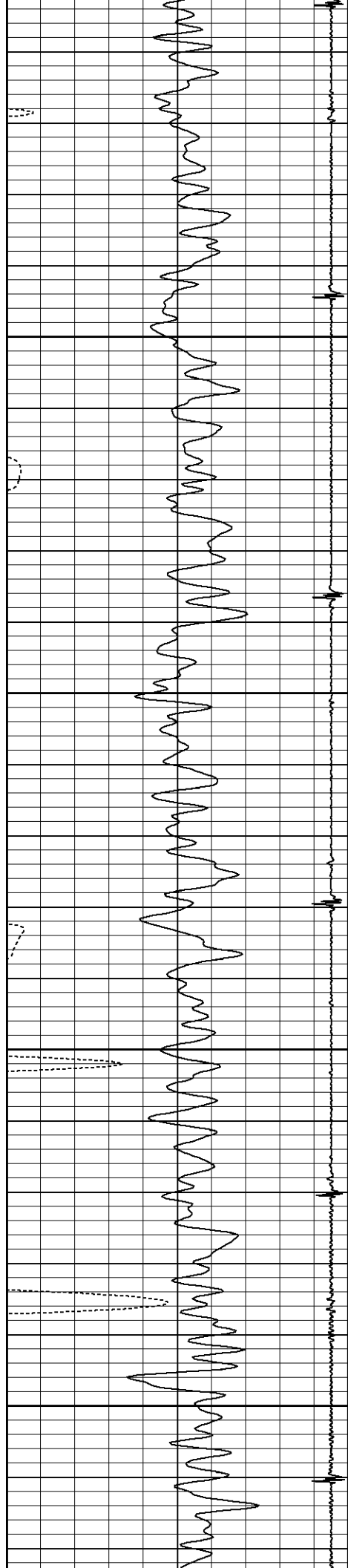
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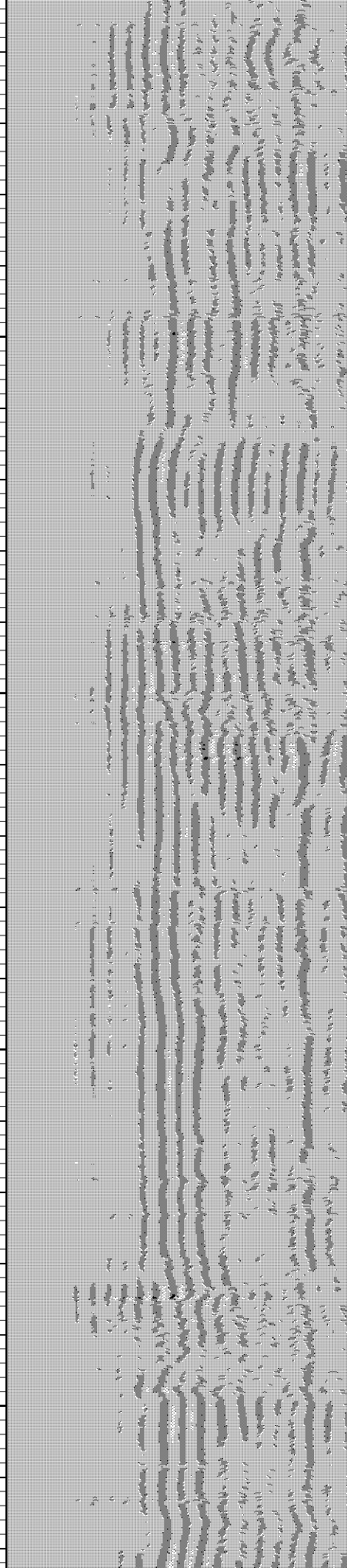
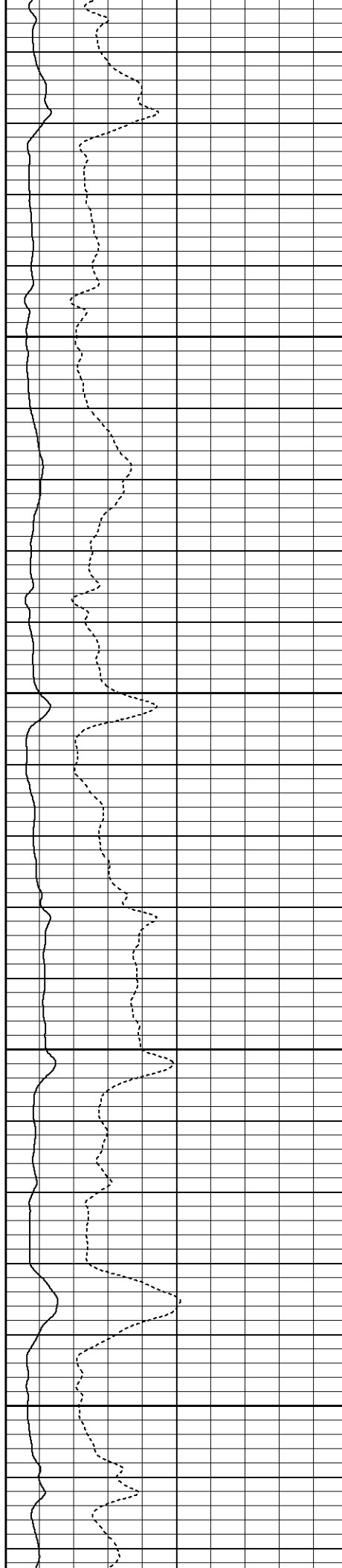


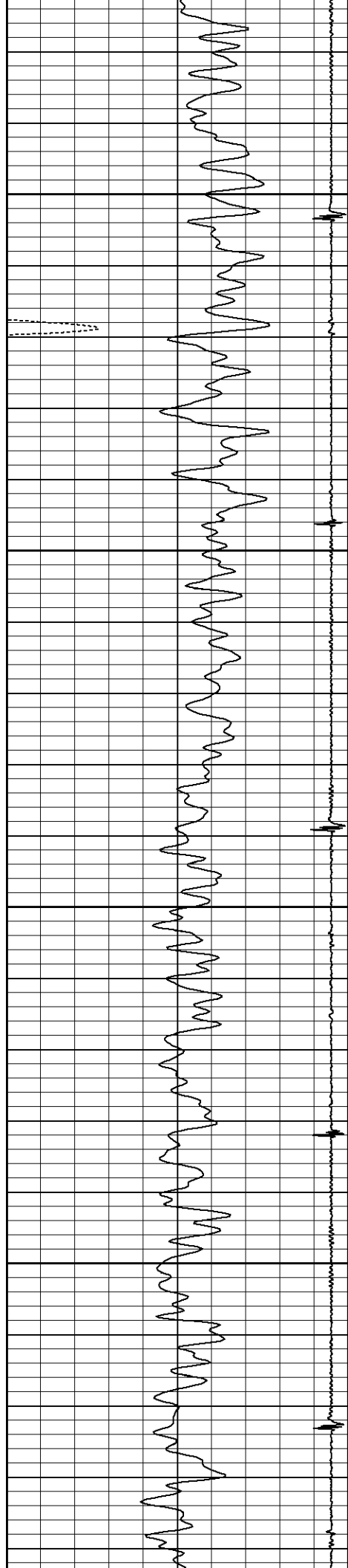
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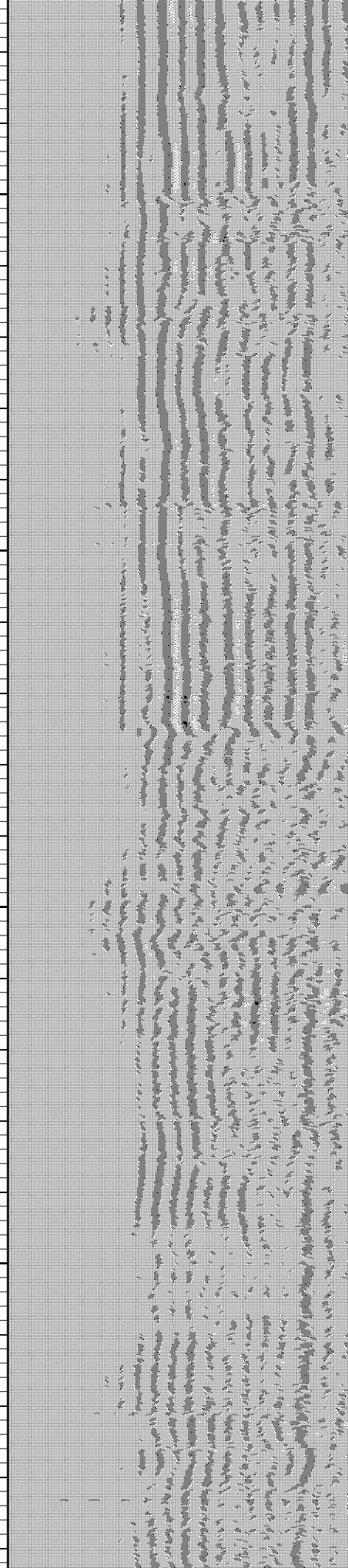
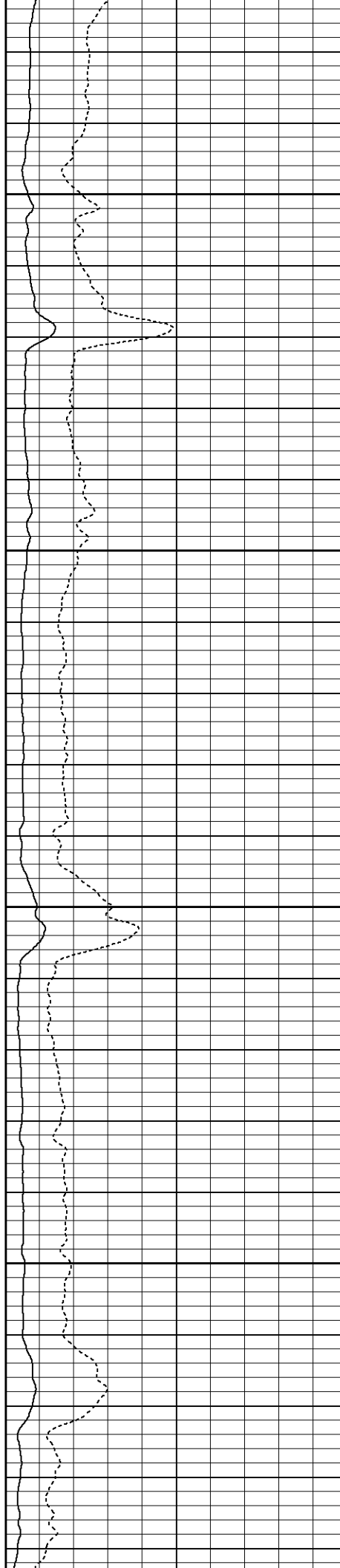


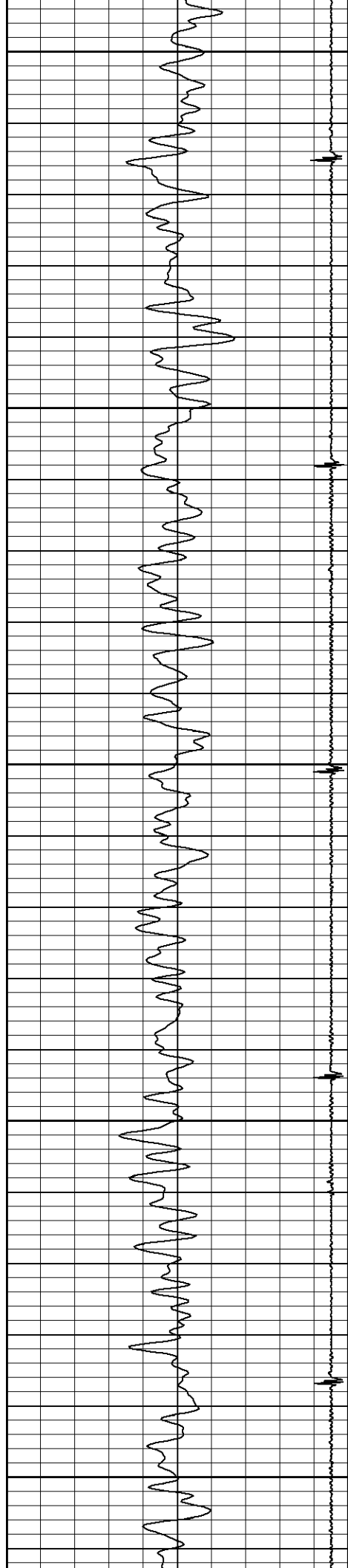
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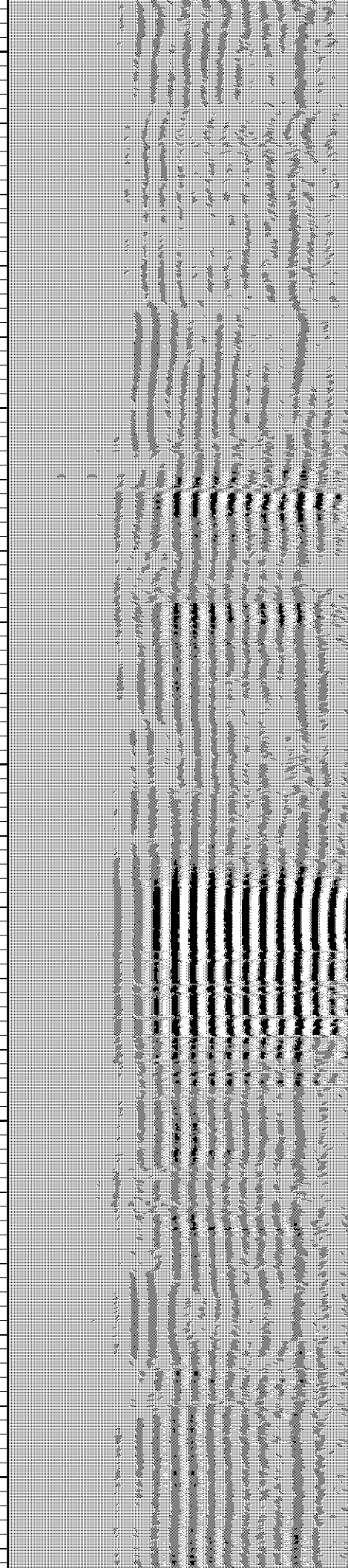
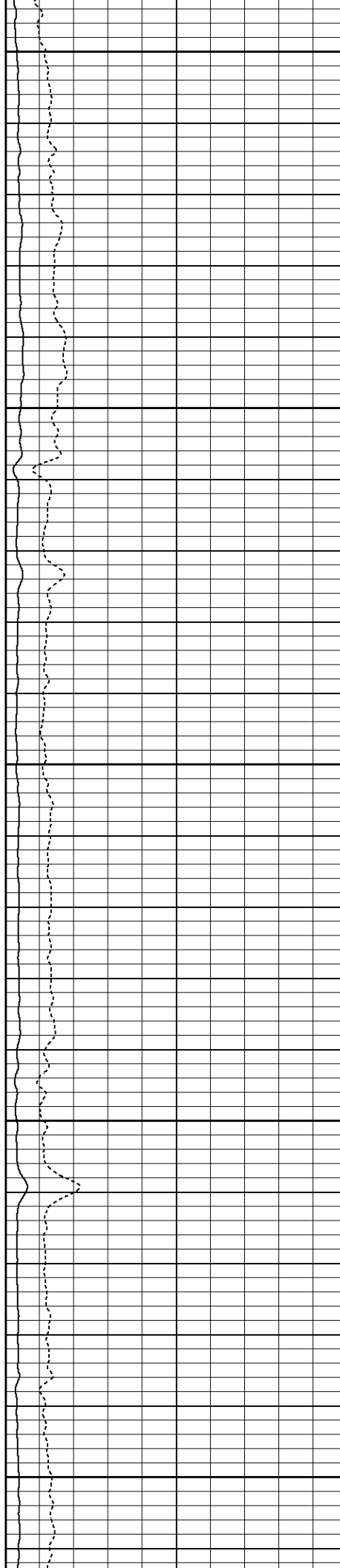
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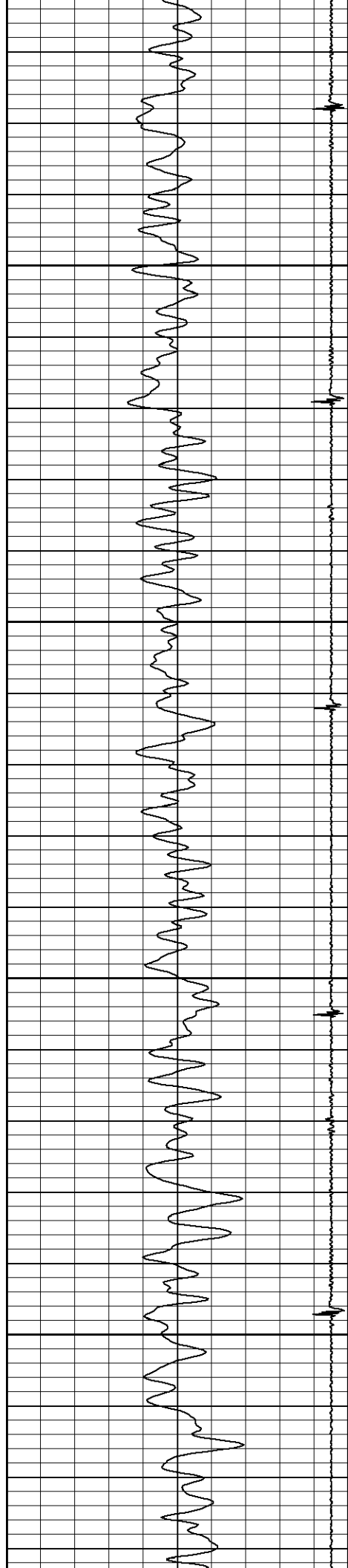
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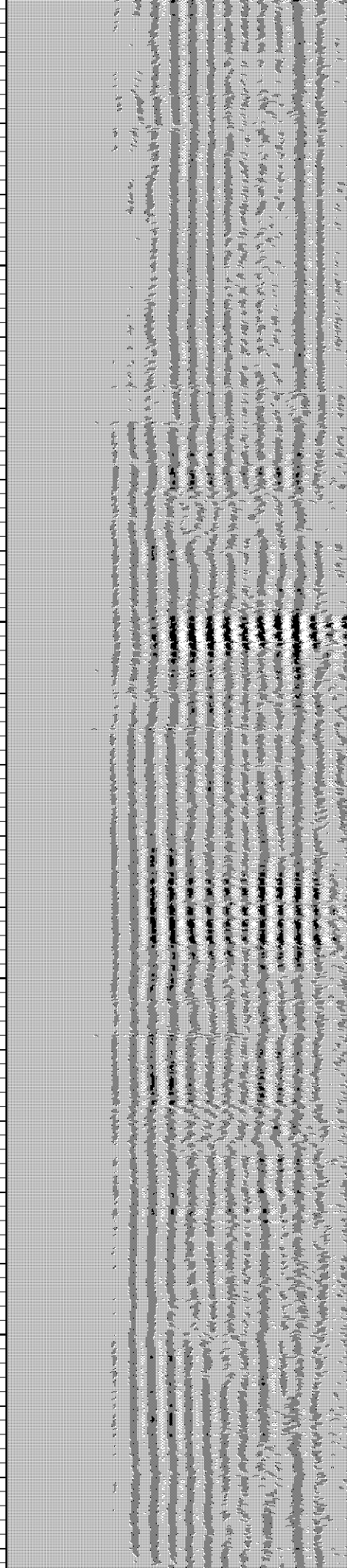
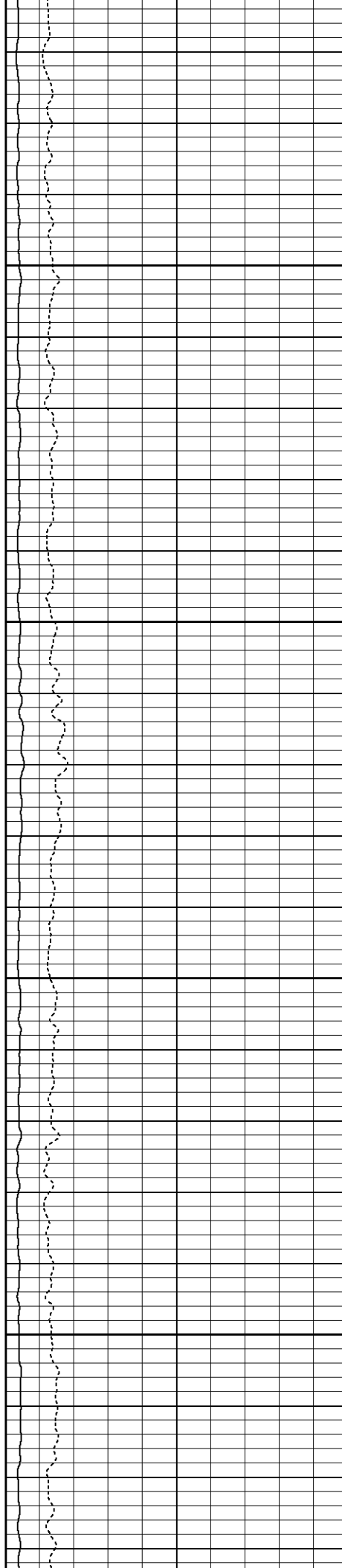


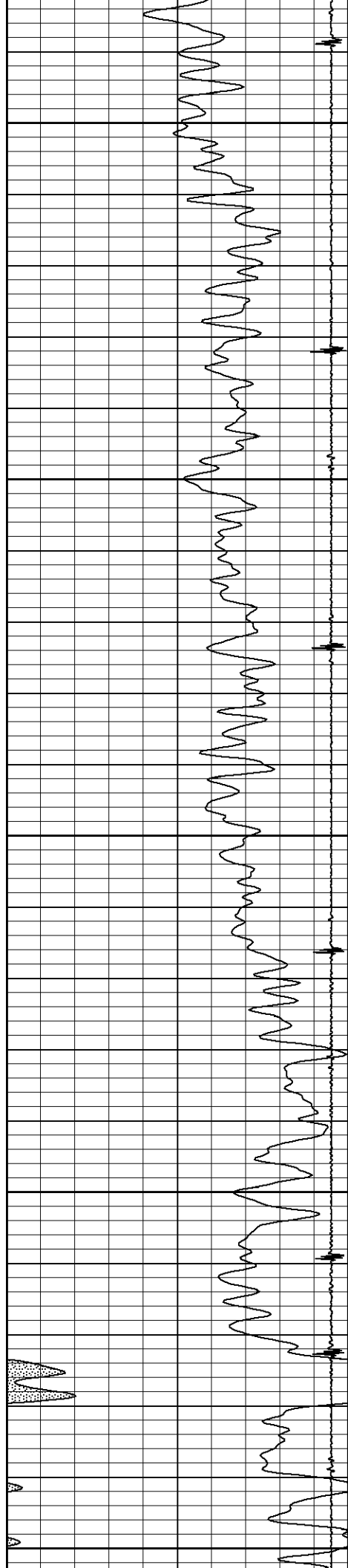
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6700

6750





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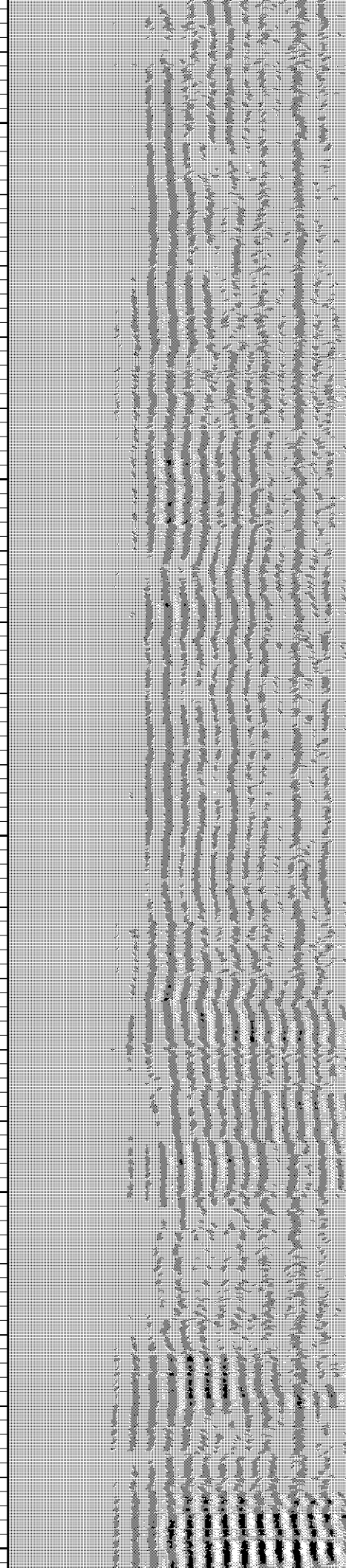
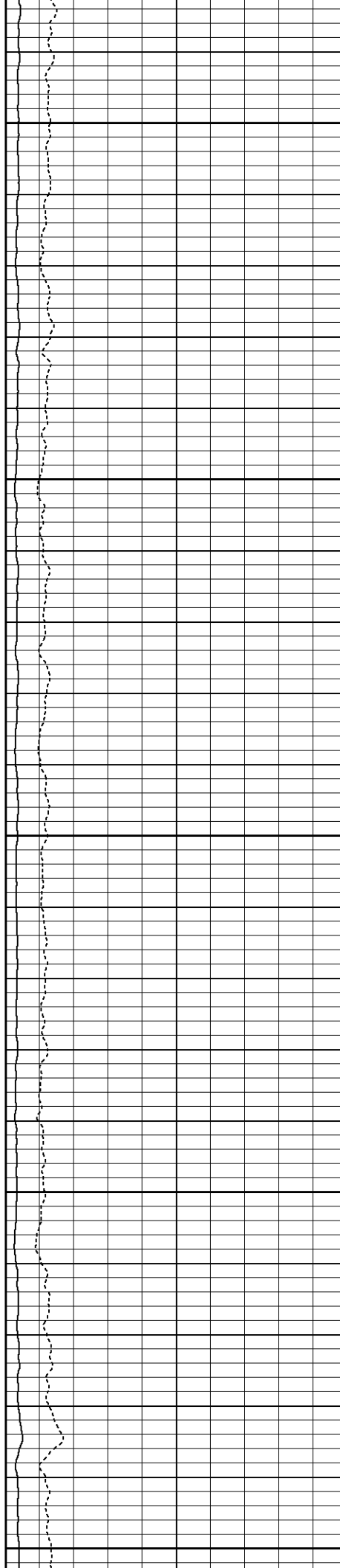
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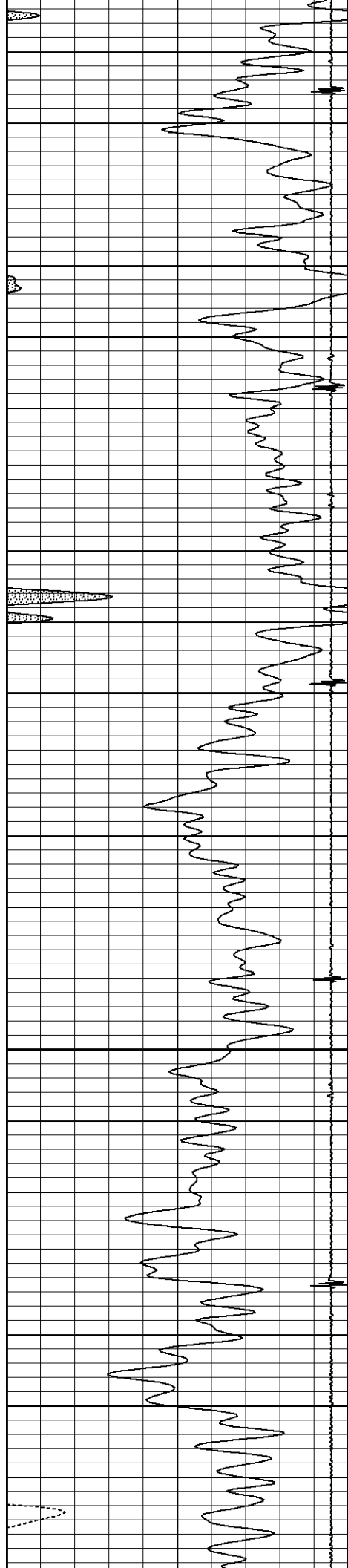
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6950

Flag Joint

7000



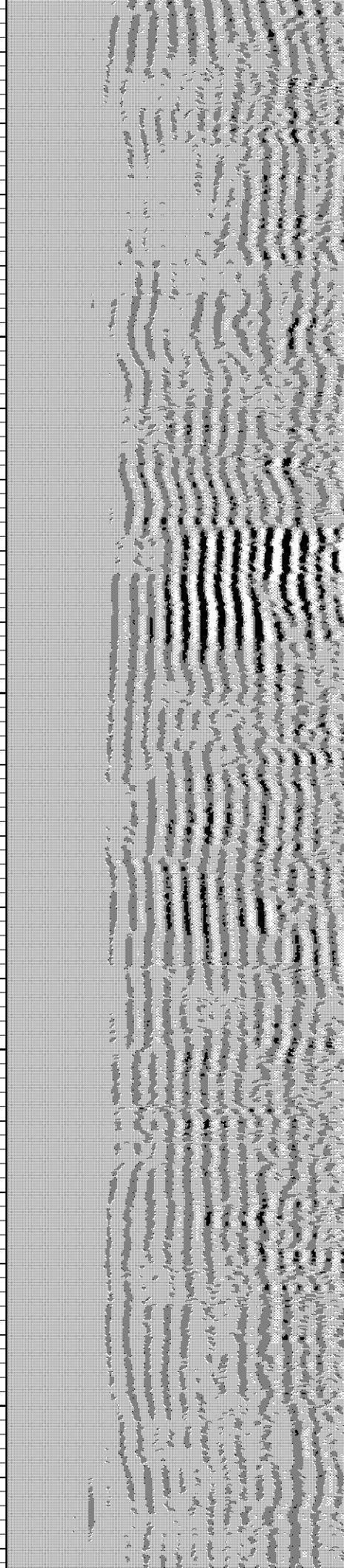
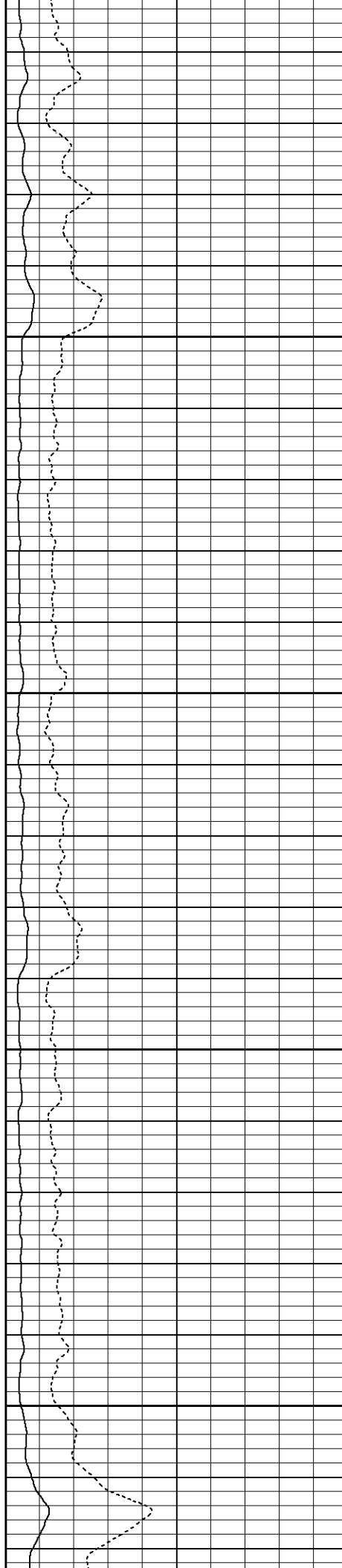


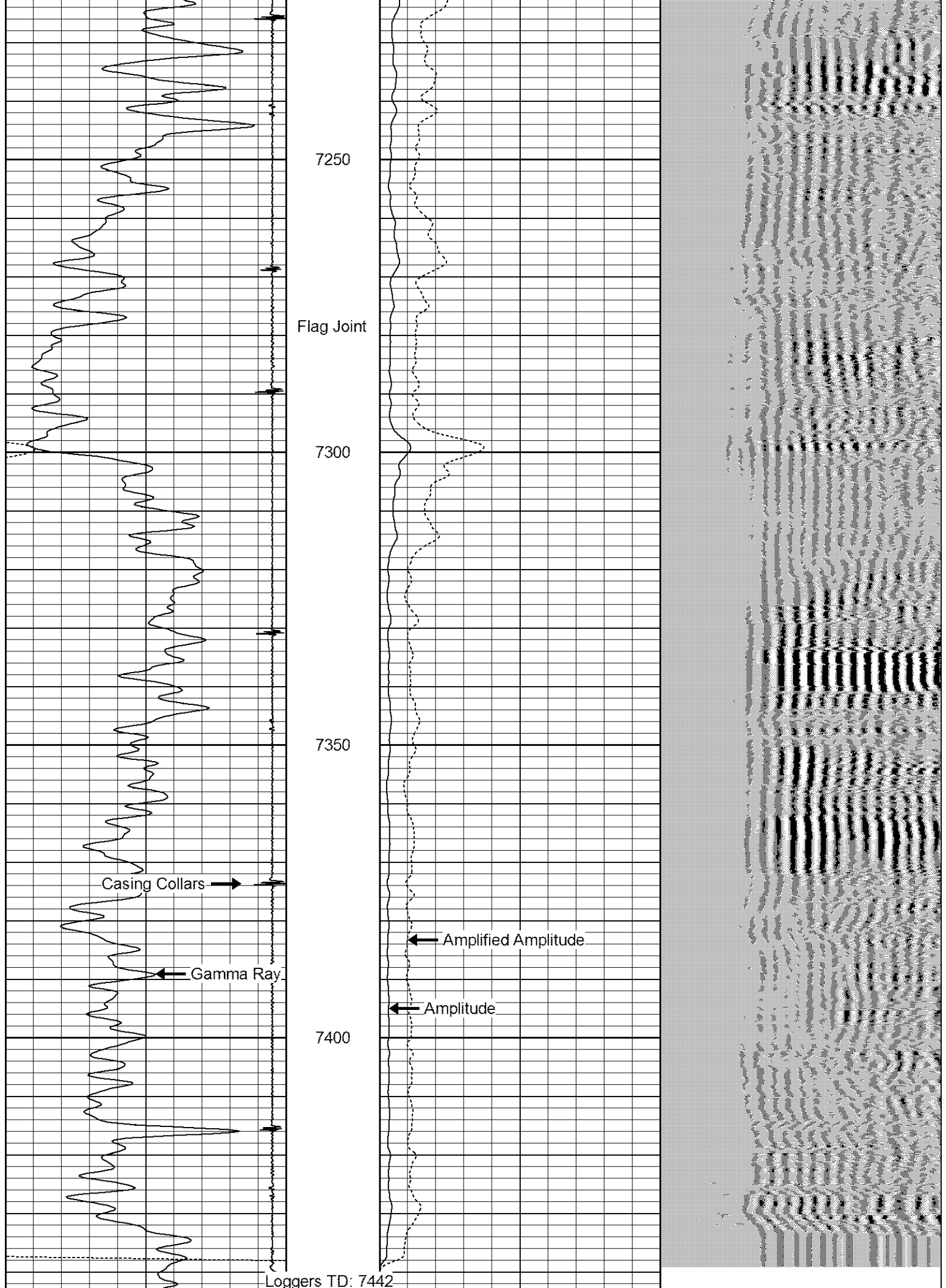
7050

7100

7150

7200





80	CCL	-4	0	Amplified Amplitude (mV)	30	200	Variable Density	1200
0	Gamma Ray (GAPI)	150	0	Amplitude (mV)	100			
340	TT3 (usec)	240						

### Calibration Report

Database File: cblshable g17-23d.db  
Dataset Pathname: pass3  
Dataset Creation: Tue Feb 21 13:20:03 2012 by Log SCH 111116

### Gamma Ray Calibration Report

Type / Serial: Probe275dig / 101010

#### SHOP CALIBRATION

Tue Feb 21 10:34:29 2012

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.6200			GAPI/cps

#### PRIMARY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

#### BEFORE SURVEY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

#### AFTER SURVEY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

### Cement Bond Log Calibration Report

Serial Number: 110802  
Tool Model: Probe275Digital  
Performed: Tue Feb 21 09:13:49 2012

Depth: 1604.49 ft  
Casing Diameter: 4.5 in

3' Spacing      5' Spacing

Signal Zero: 0.7      0      mV  
Calibrated Amplitude: 81.1961      81.1961      mV  
Reading at Signal Zero: 0.0205566      0.0176758      V  
Reading in Free Pipe: 2.49878      2.3958      V

Gain: 32.4814      34.1429  
Offset: 0.0322919      -0.603503