



PIONEER
Pioneer Energy Services

**DUAL IND / DUAL COMP
POROSITY LOG**

Company **EXTRACTION OIL AND GAS LLC**
Well **HOULIHAN 4-64 22A #21-1**
Field **WILDCAT**
County **ARAPAHOE**
State **COLORADO**

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Location: API #: 05-005-07279-00

1774' FNL & 1005' FEL

SEC 22 TWP 4S RGE 64W

Permanent Datum **GROUND LEVEL** Elevation **5705'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 5730'
D.F. N/A
G.L. 5705'

NONE

Date 10/22/2017

Run Number ONE

Depth Driller 17547'

Depth Logger 7150'

Bottom Logged Interval 7142'

Top Log Interval 2050'

Casing Driller 8.625" @ 2050'

Casing Logger 2050'

Bit Size 7.875"

Type Fluid in Hole OIL BASED

Salinity, ppm CL N/A

Density / Viscosity N/A

pH / Fluid Loss N/A

Source of Sample FLOWLINE

Rm @ Meas. Temp N/A @ N/A

Rmf @ Meas. Temp N/A @ N/A

Rmc @ Meas. Temp N/A @ N/A

Source of Rmf / Rmc CHARTS

Rm @ BHT N/A @ N/A

Operating Rig Time 2 1/2 HOURS

Max Rec. Temp. F N/A

Equipment Number 108

Location HAYS

Recorded By T. MARTIN

Witnessed By LARRY SIEGEL

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

NO FOCUS TOOL DUE TO OIL BASED MUD

Log Measured From: KELLY BUSHING

25 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES

www.pioneerenergy.com

785-625-3858

Your Pioneer Energy Services Crew

This Log Record Was Witnessed By

Engineer: T. MARTIN

Operator:

Operator:

Operator:

Primary Witness: LARRY SIEGEL

Secondary Witness:

Secondary Witness:

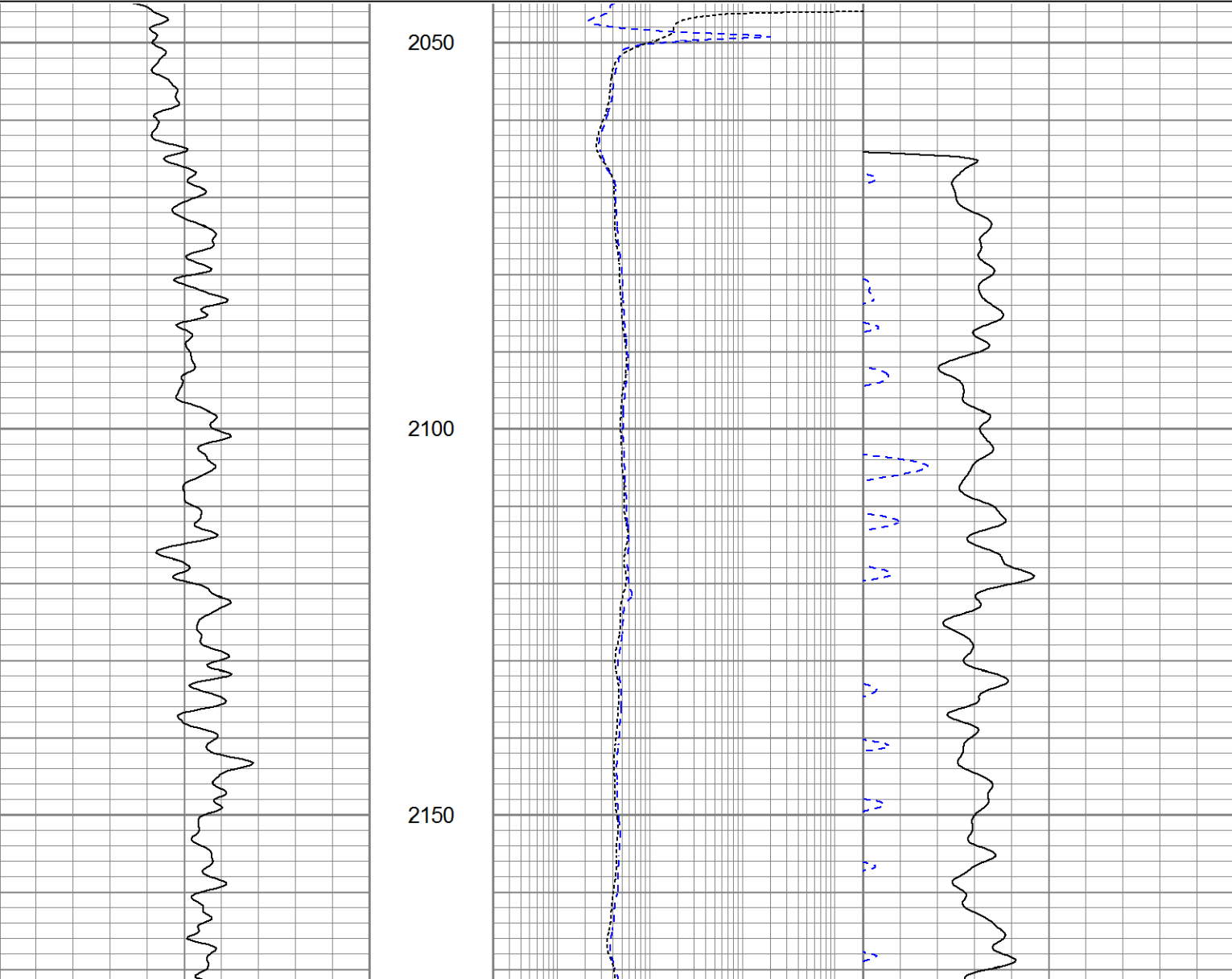
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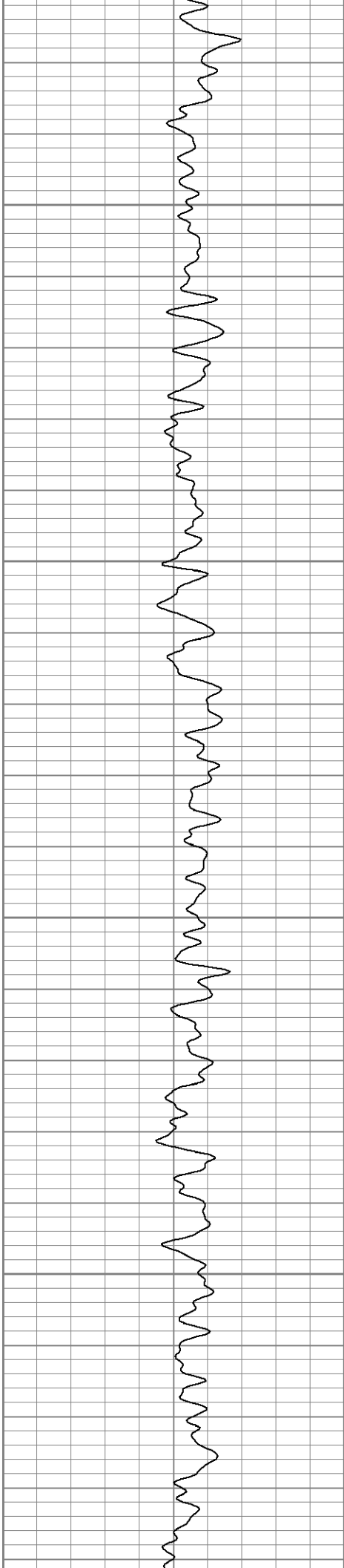
Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	0	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	0	40		7150

Database File extraction_houlihan 4-64-22a.db
Dataset Pathname stack/pass2.1
Presentation Format split
Dataset Creation Sun Oct 22 02:20:08 2017
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	200	MEDIUM INDUCTION	30	DENSITY POROSITY (pu)	0
			0.2 (Ohm-m) 2000	30	NEUTRON POROSITY (pu)	0
			DEEP INDUCTION			
			0.2 (Ohm-m) 2000			



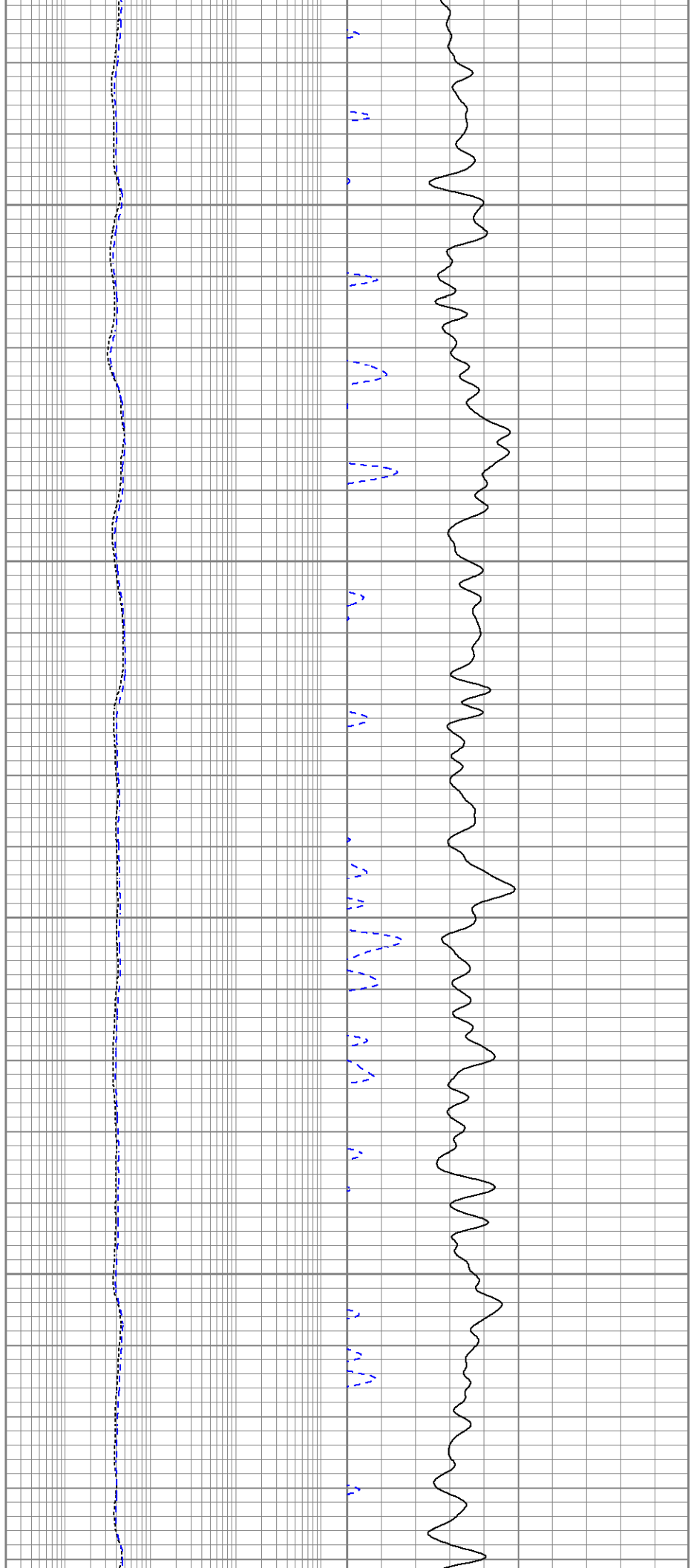


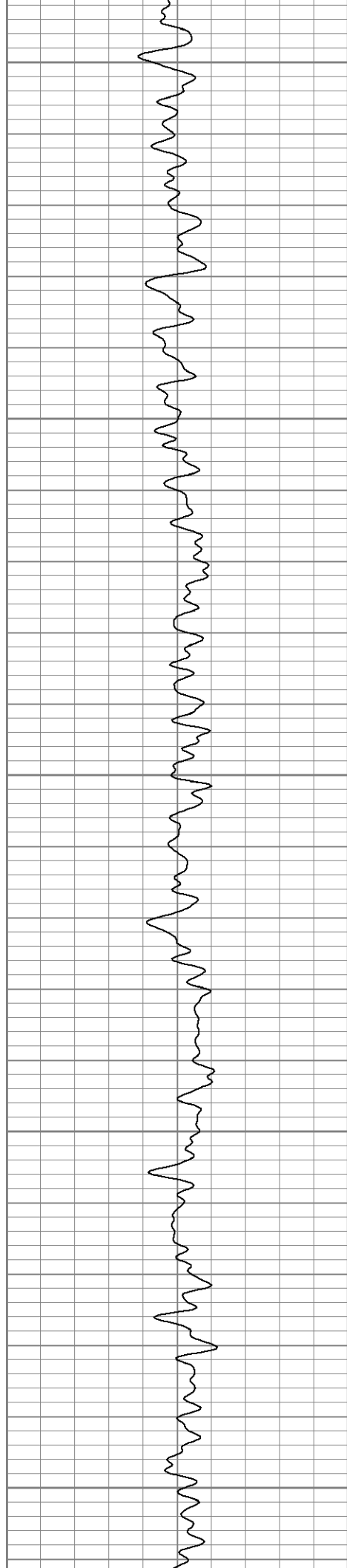
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2250

2300

2350





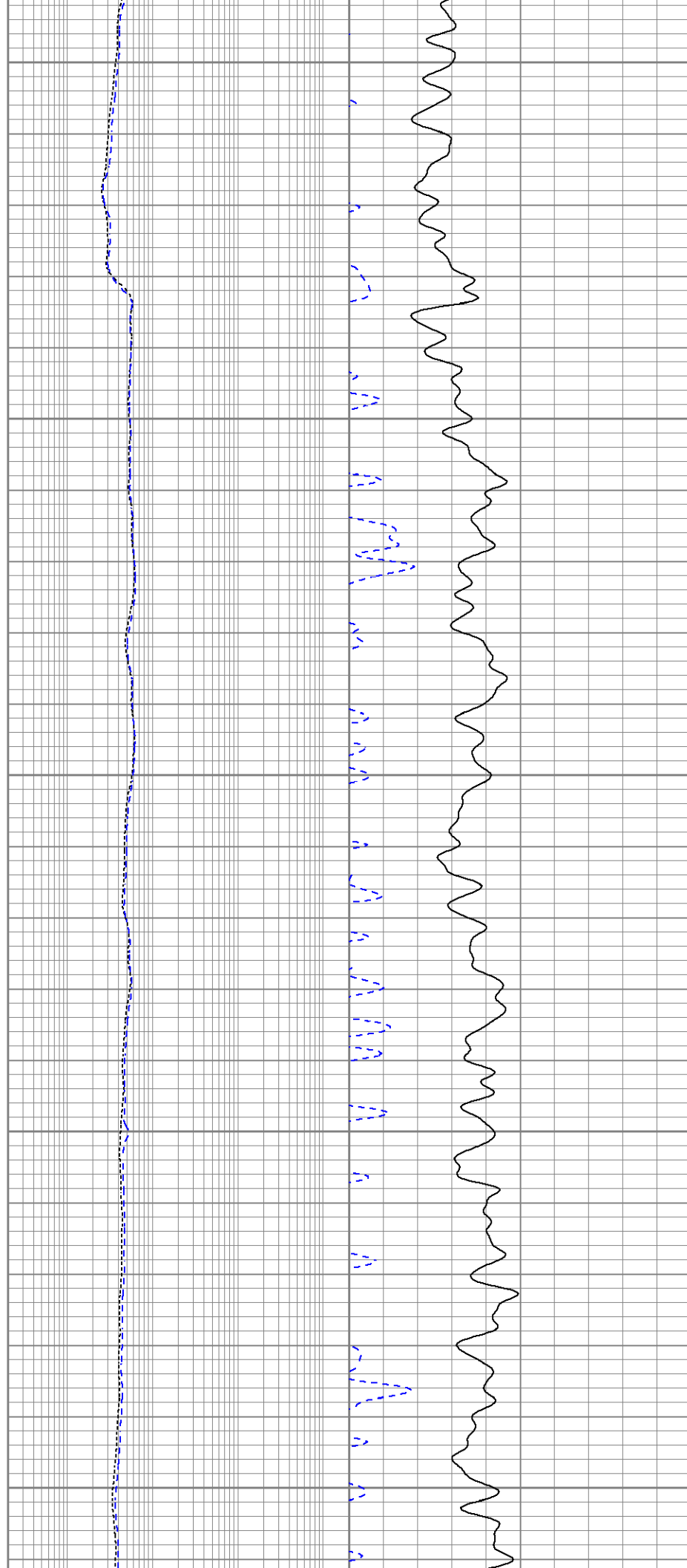
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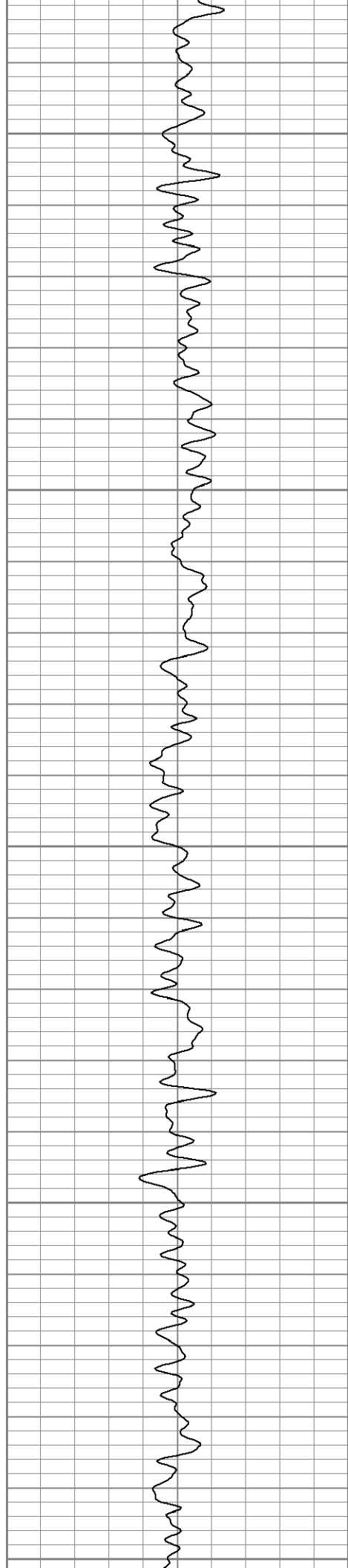
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2550

2600





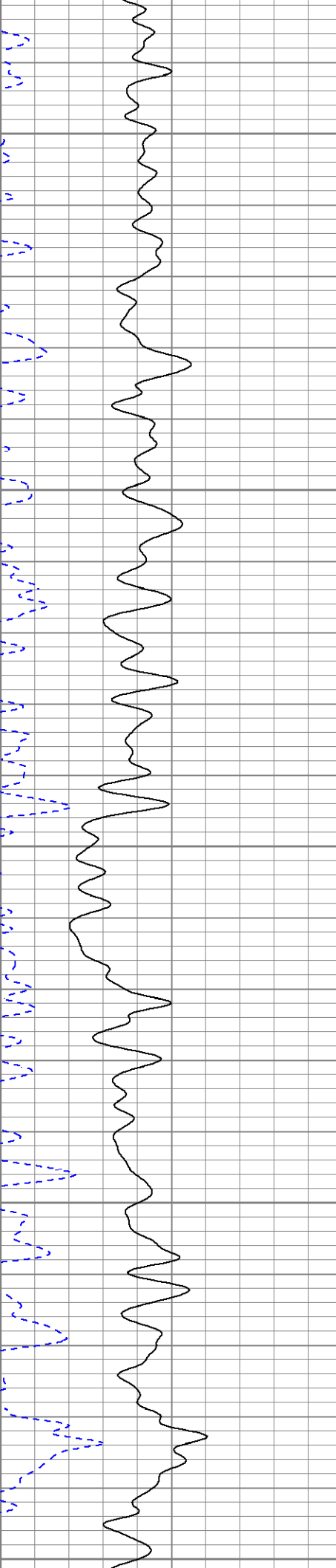
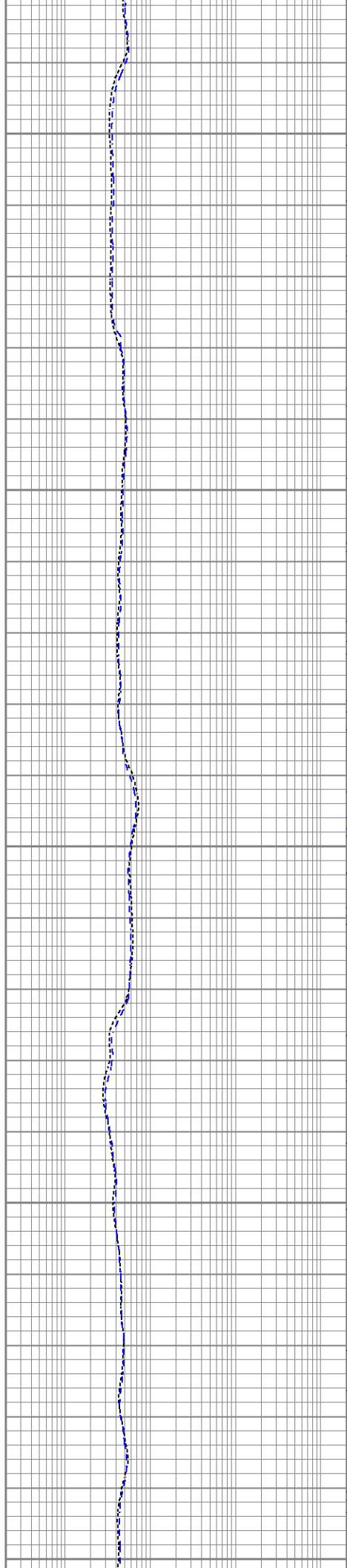
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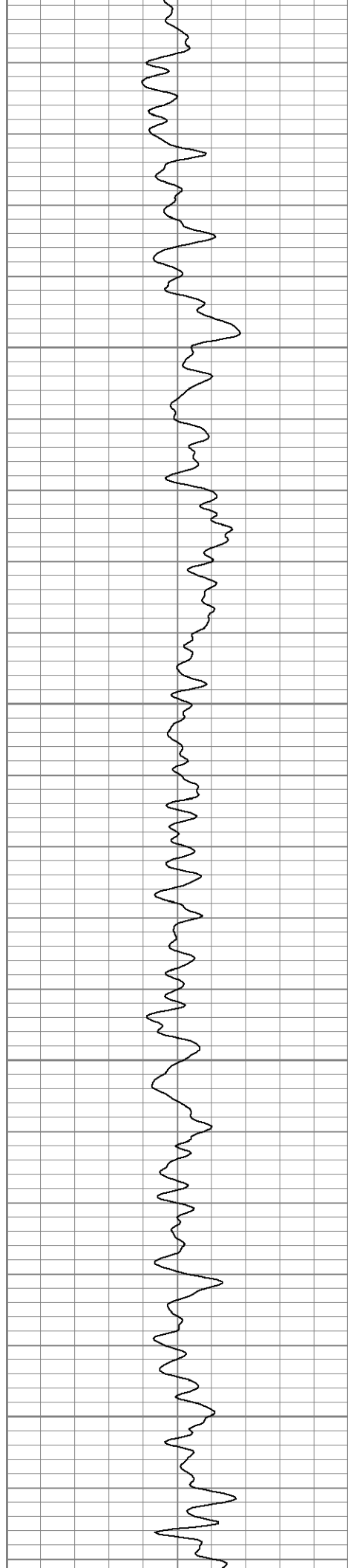
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3050



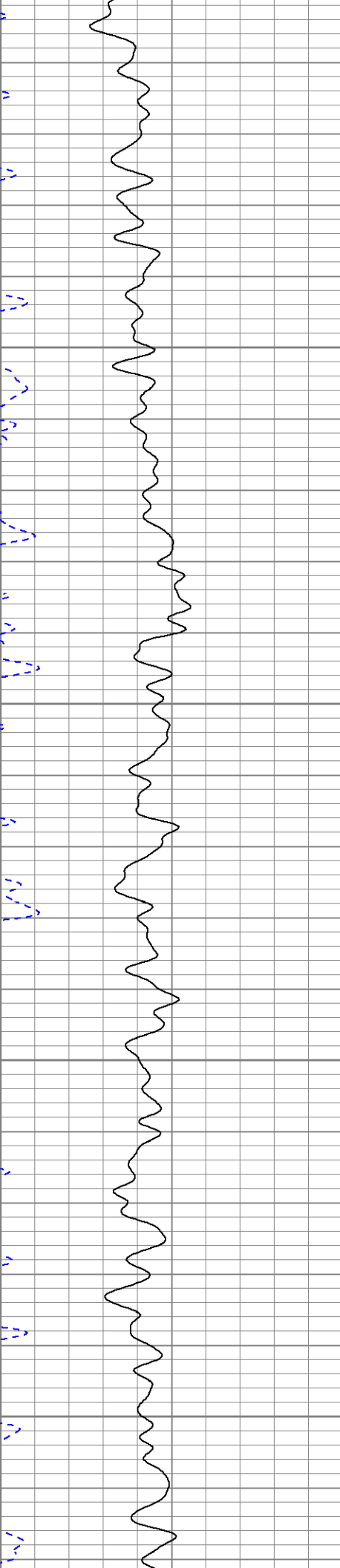
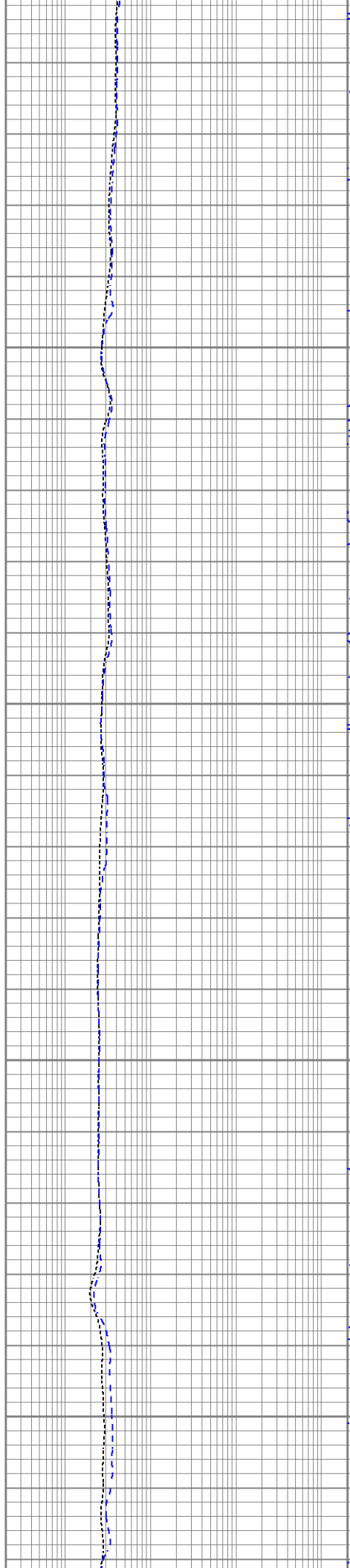


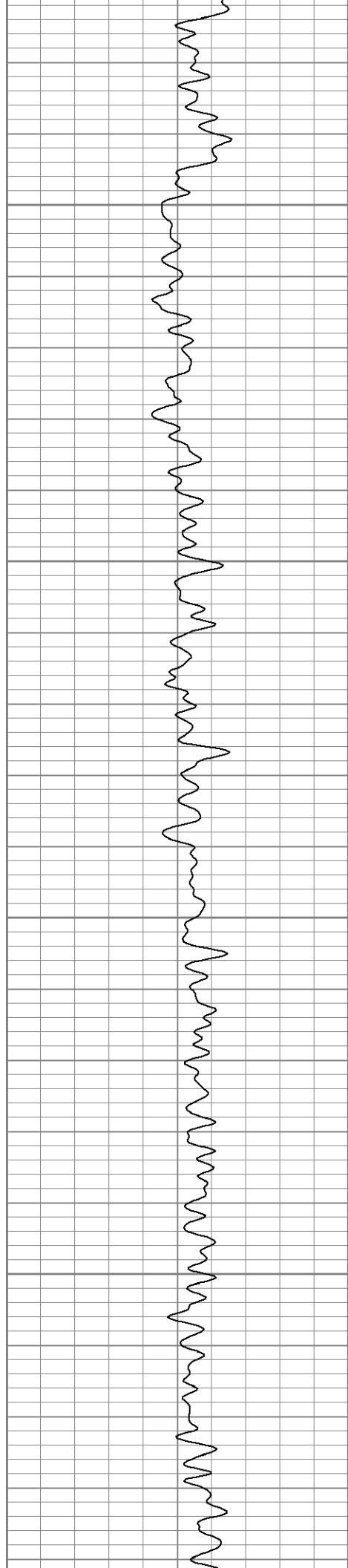
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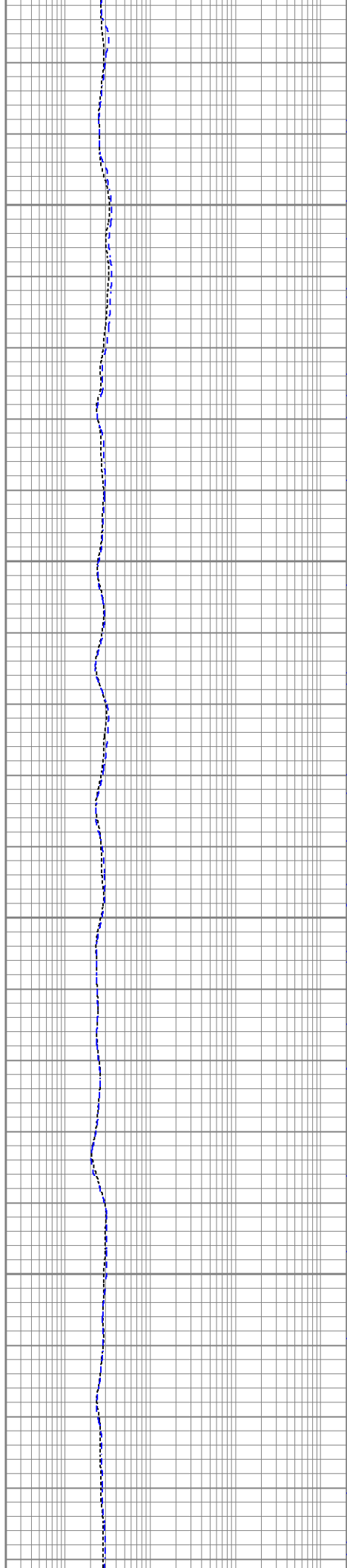


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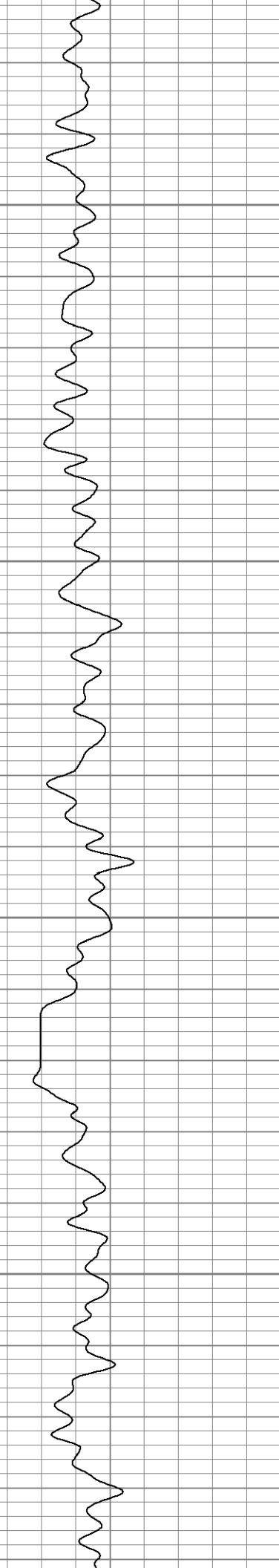
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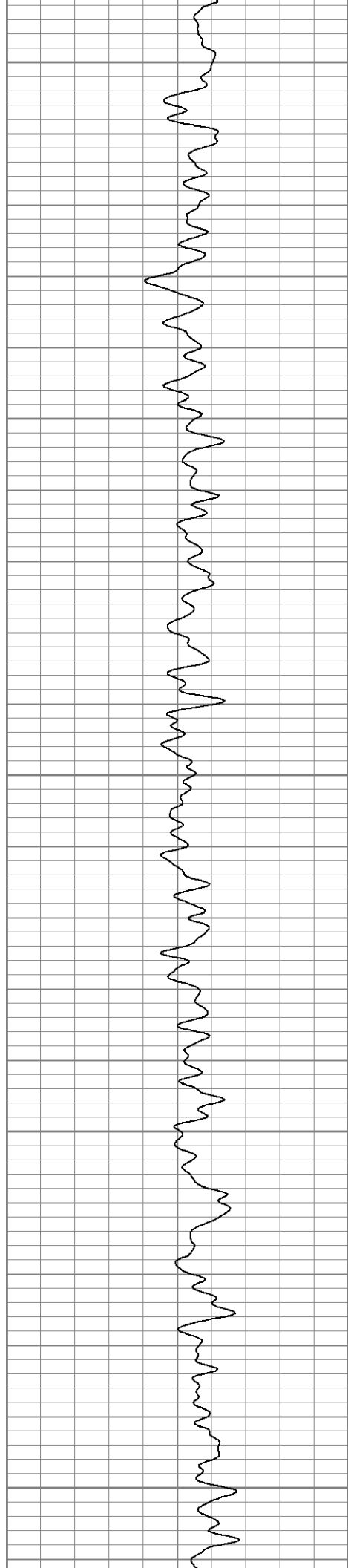
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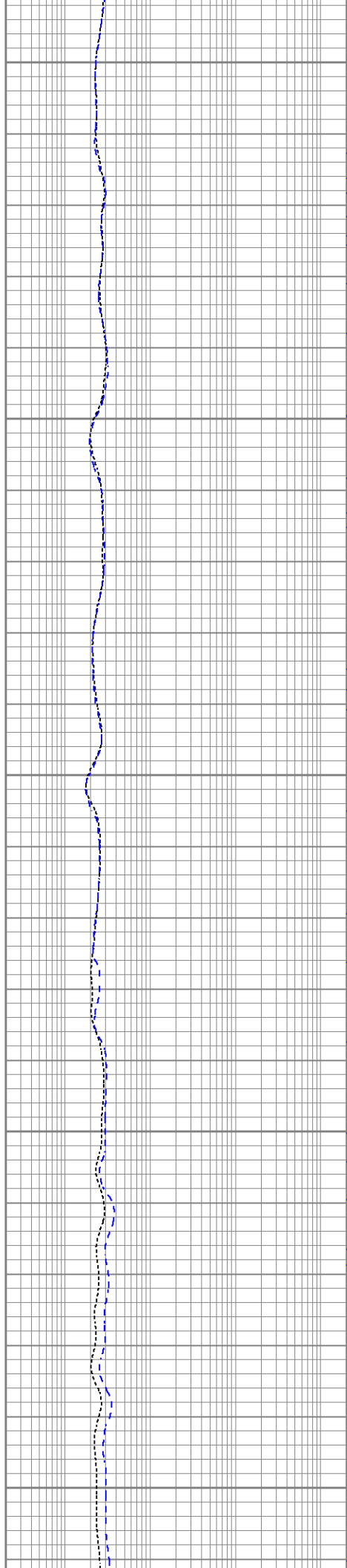
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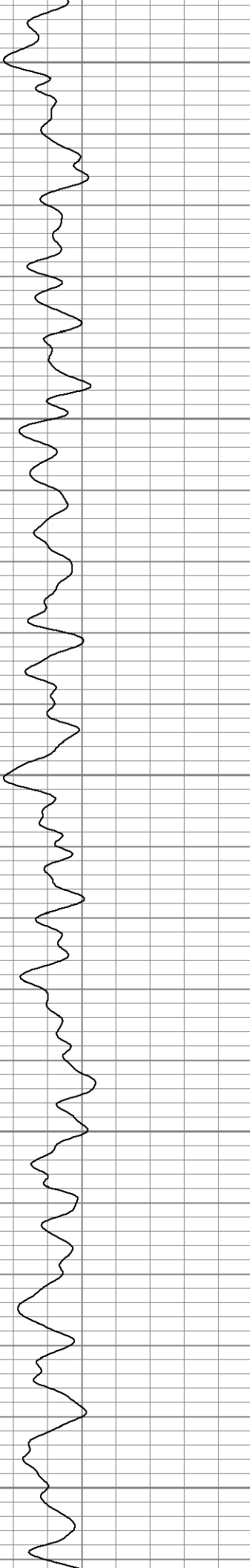
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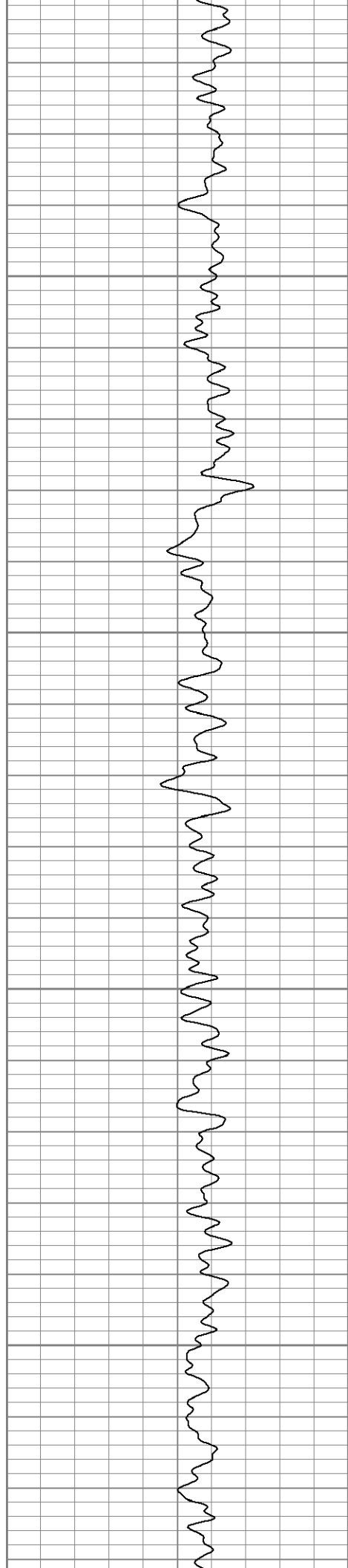
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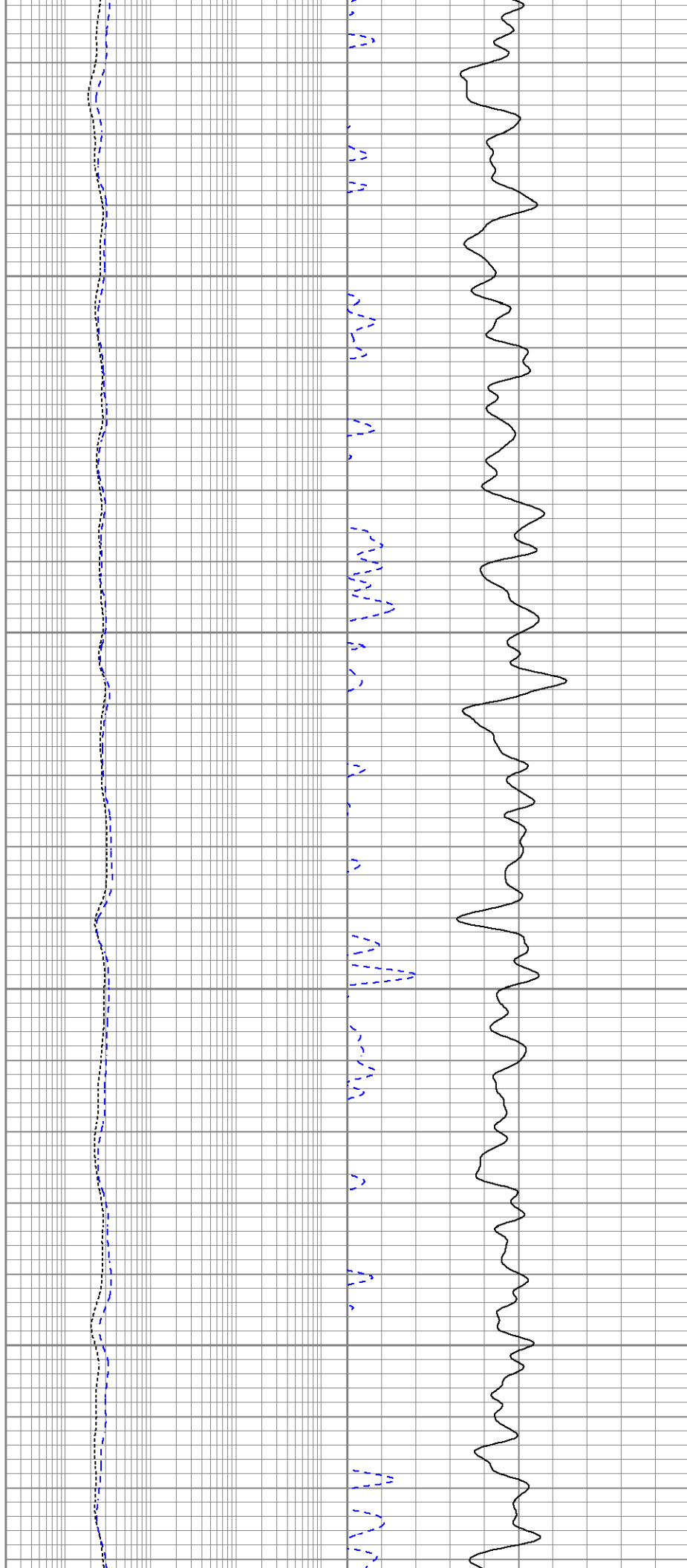


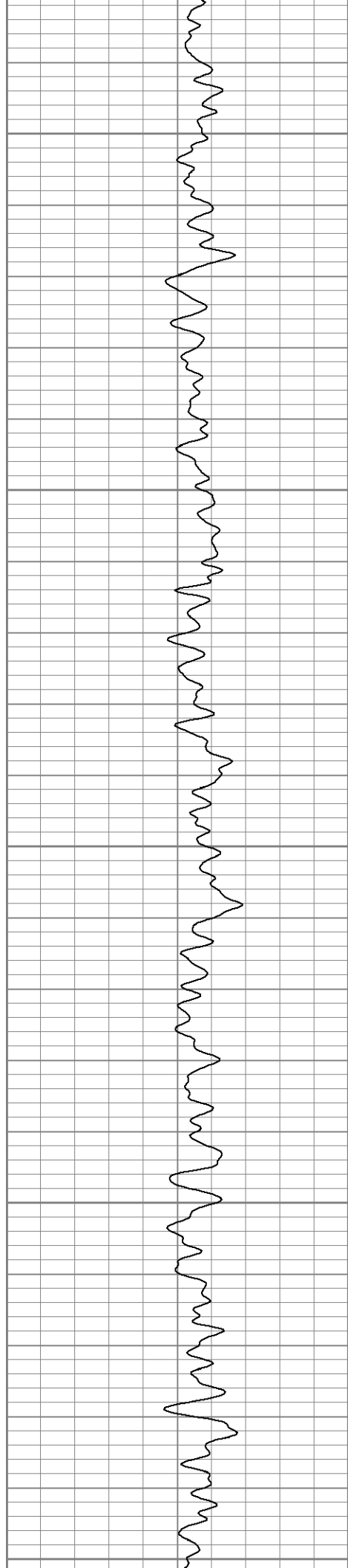
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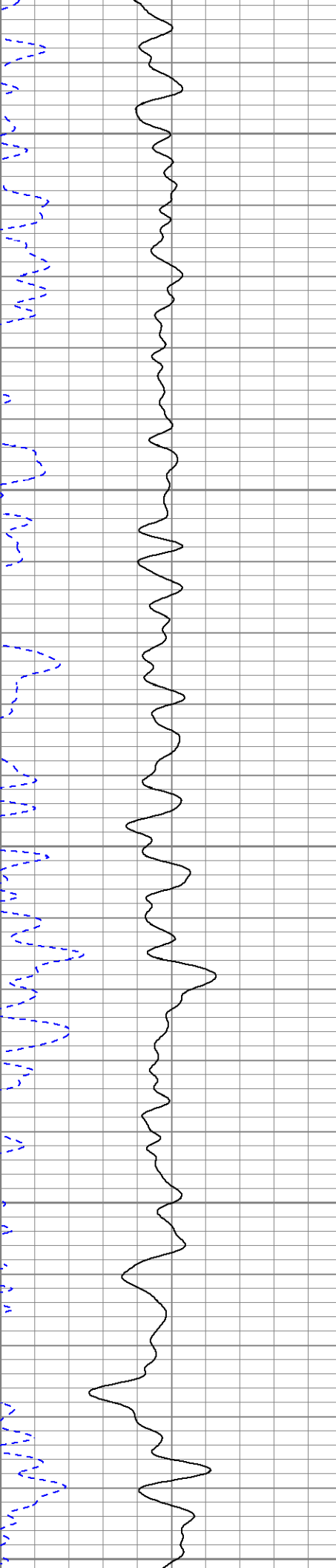
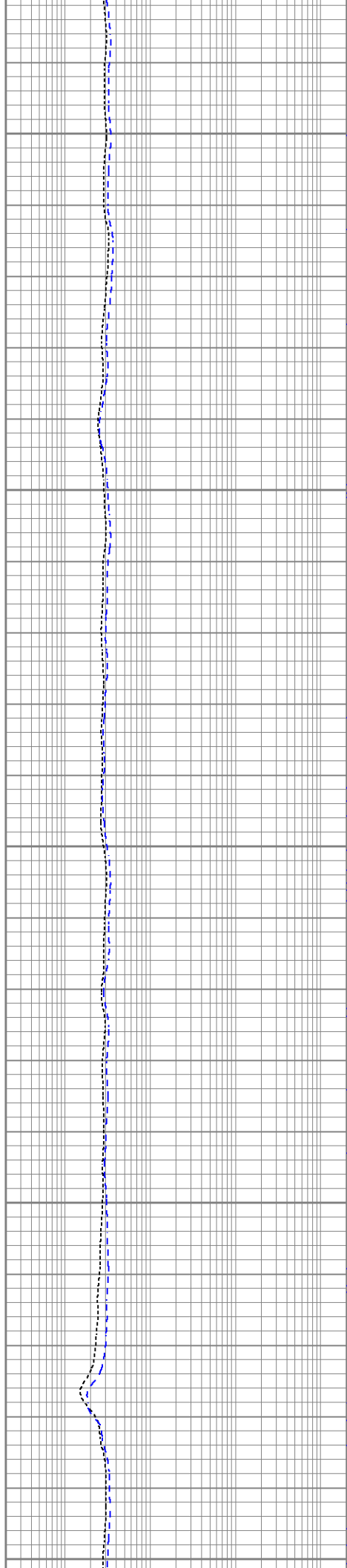
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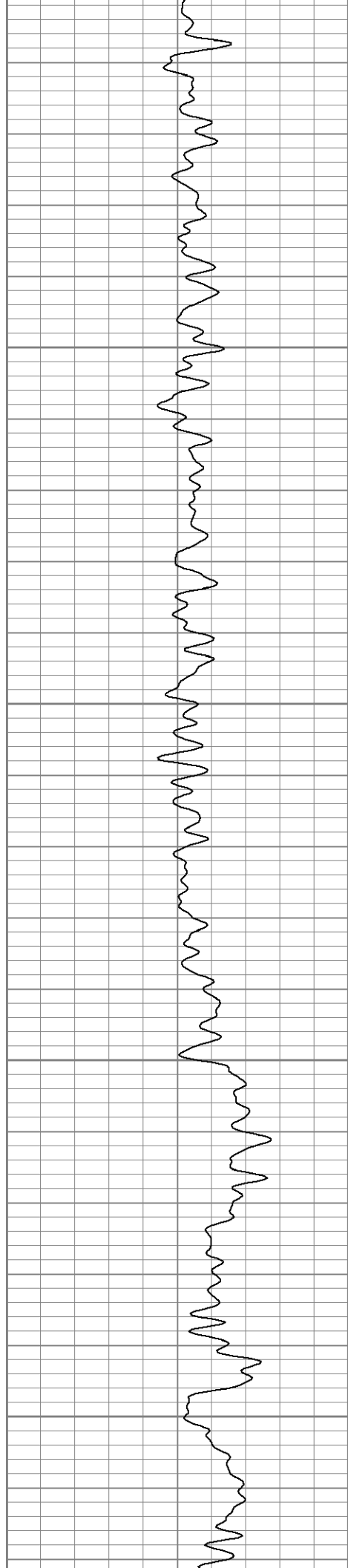
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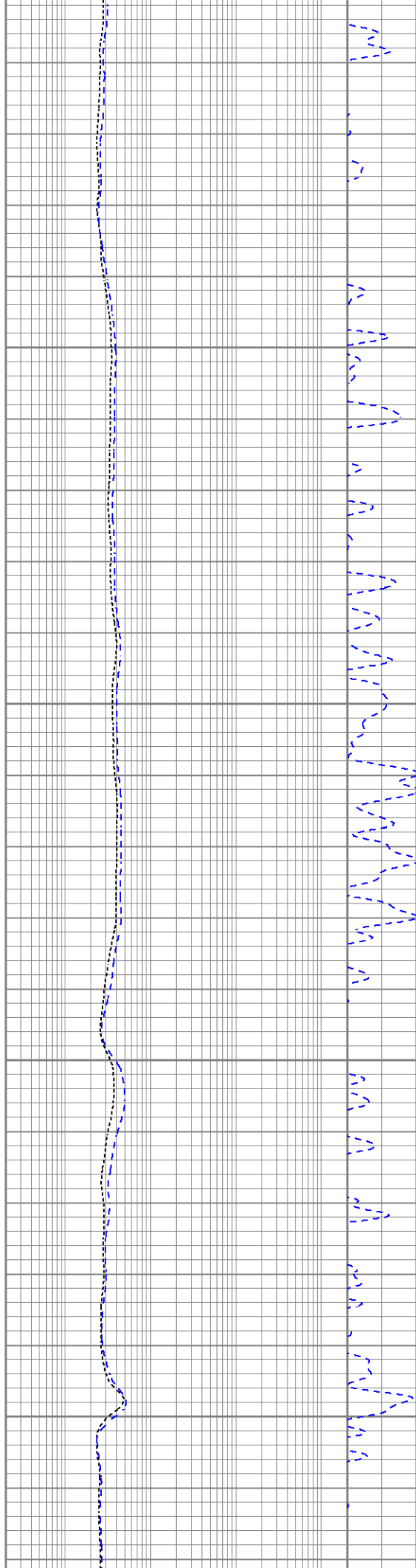


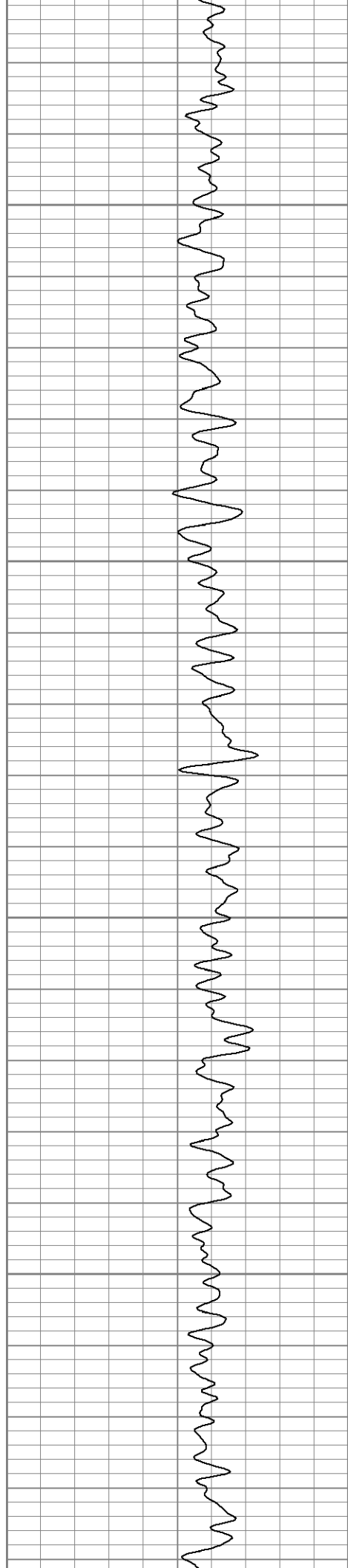
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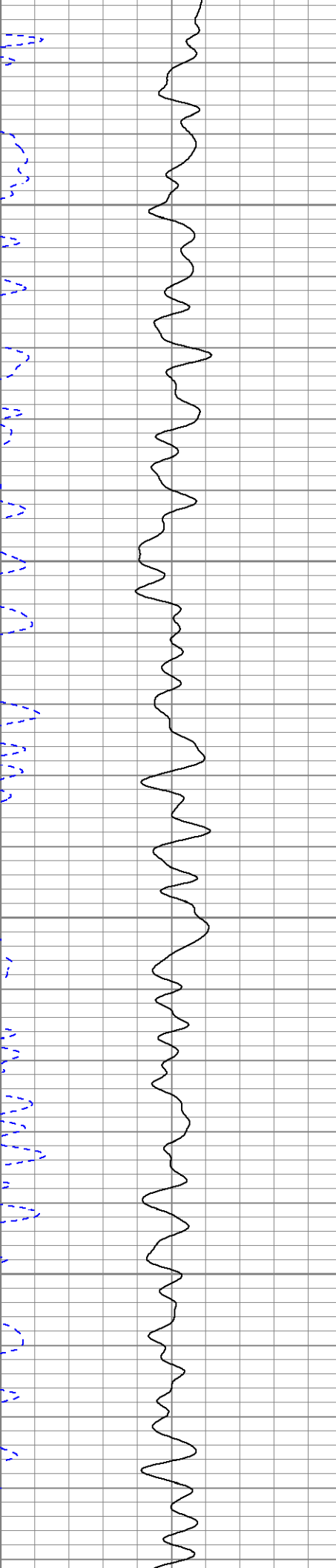
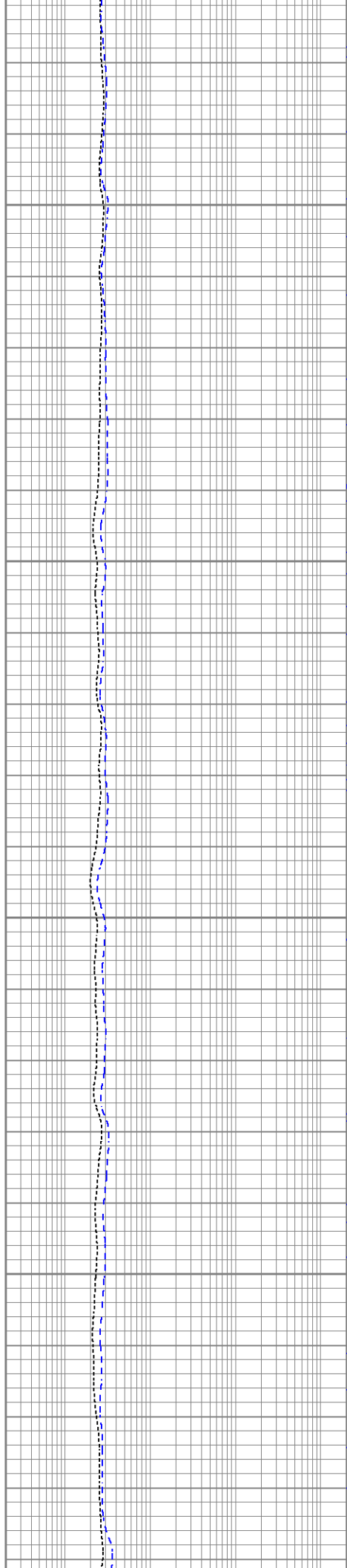


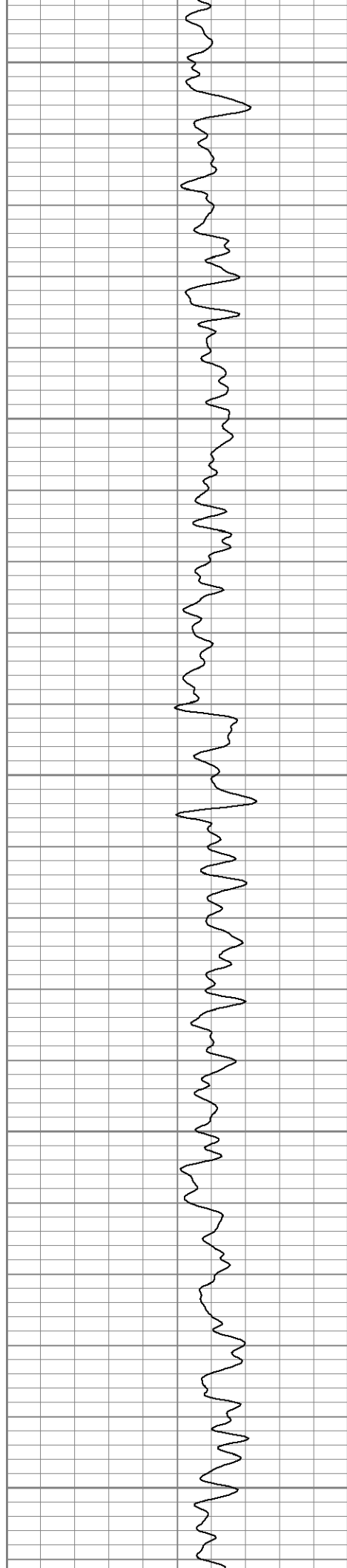
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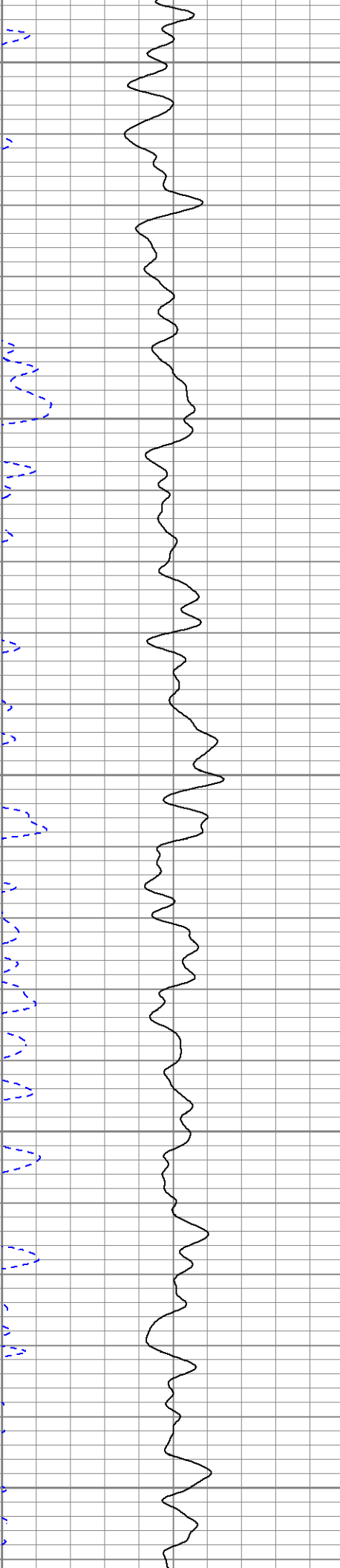
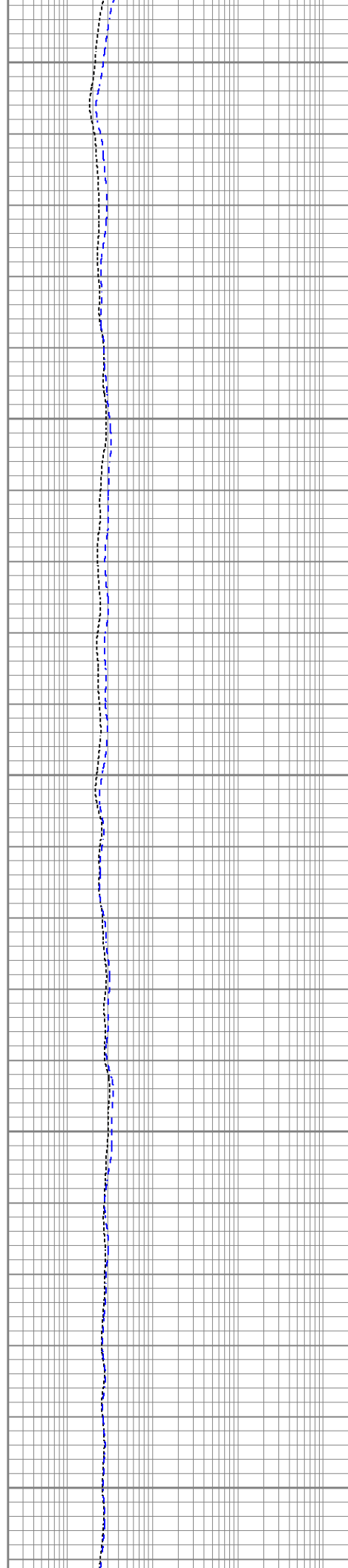
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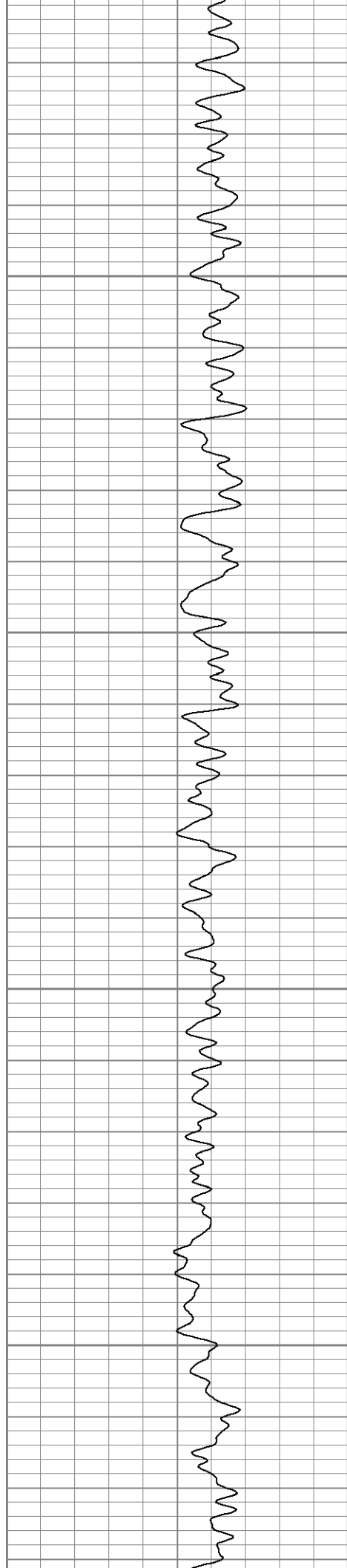
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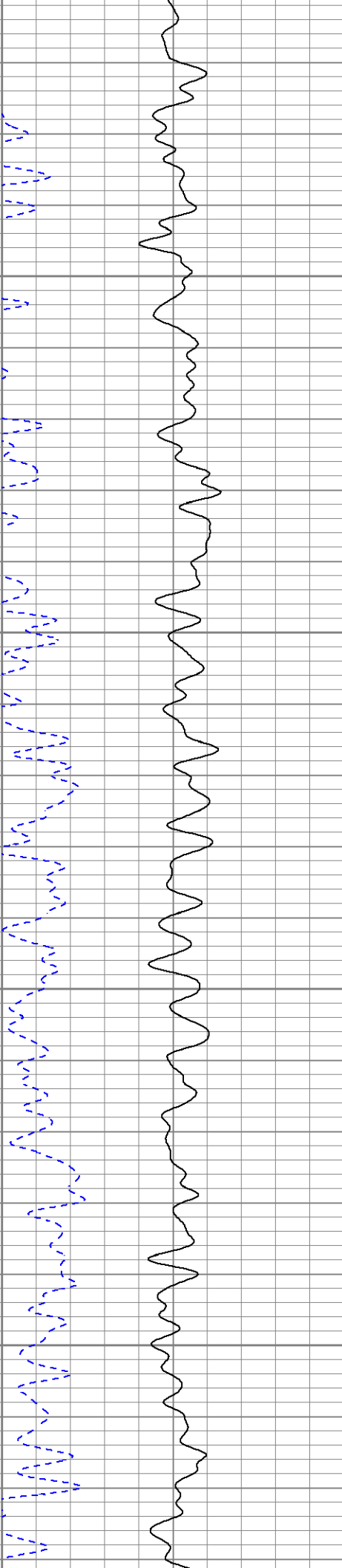
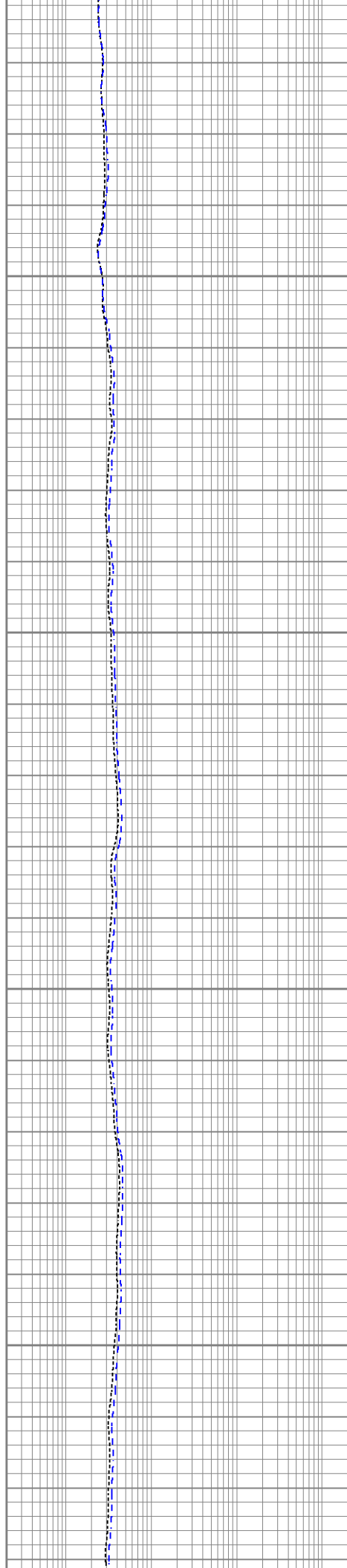


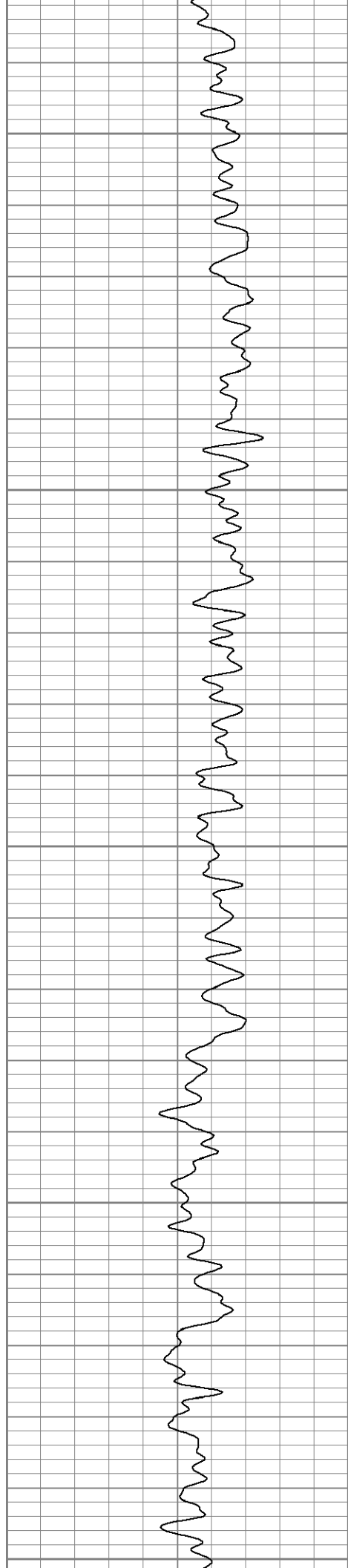
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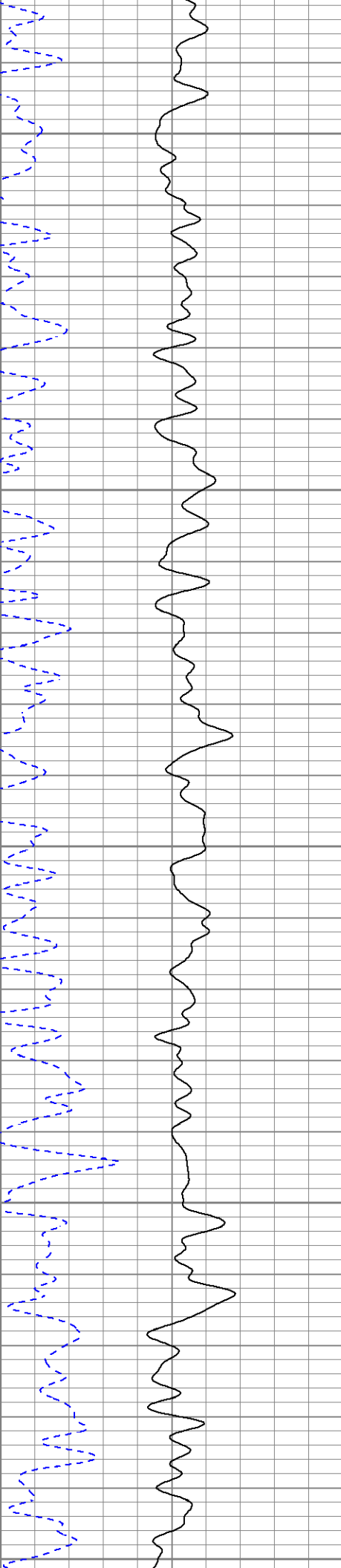
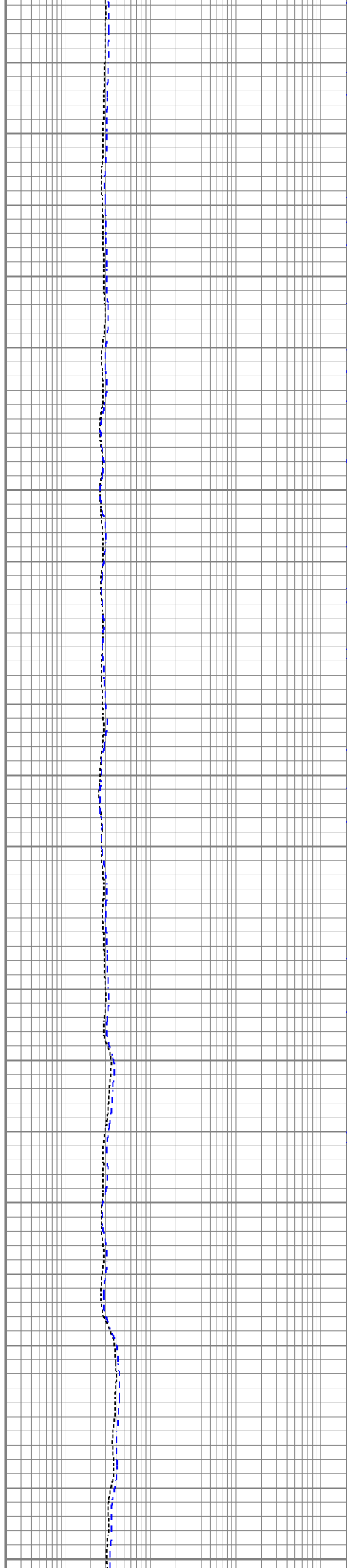
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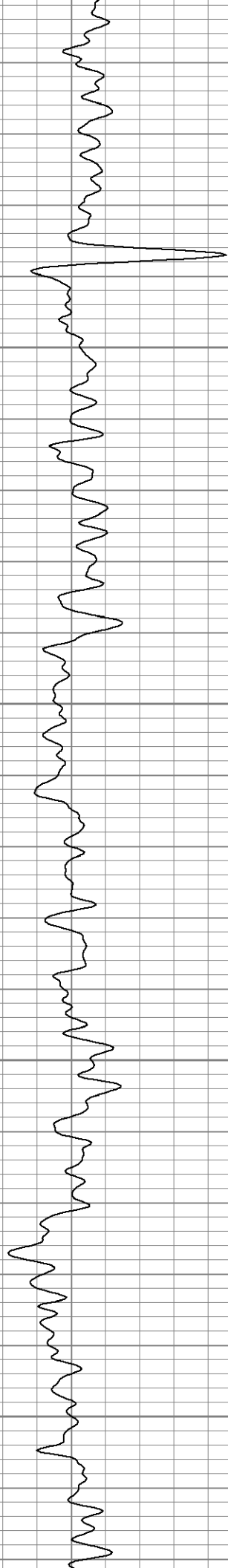
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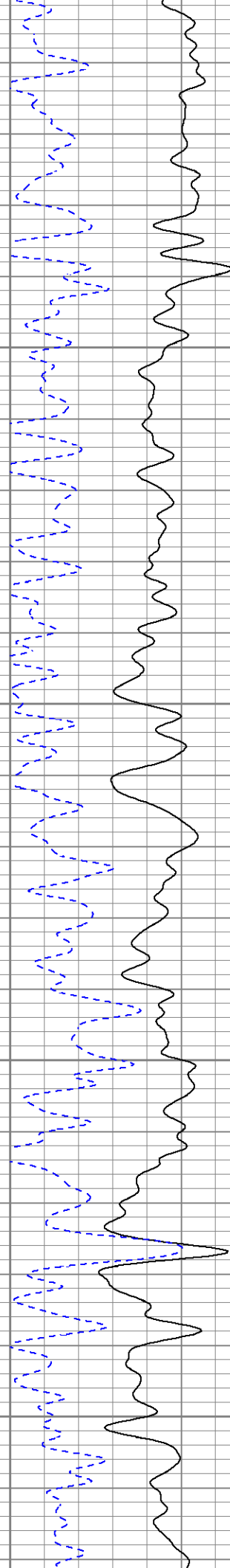
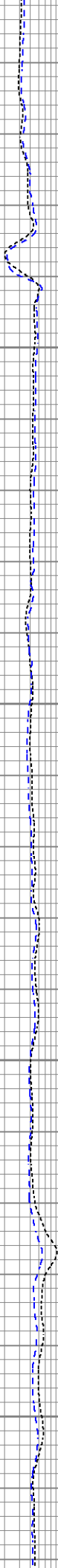


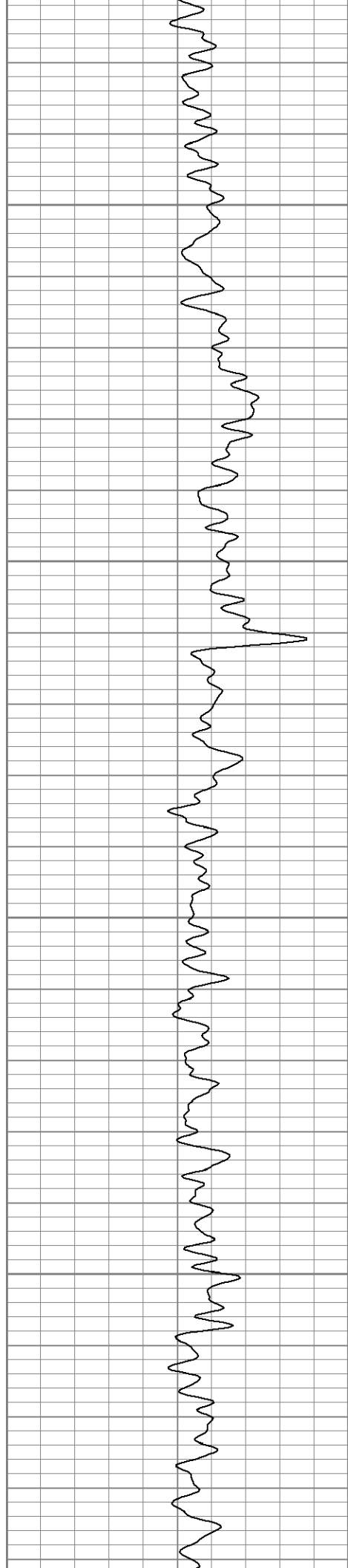
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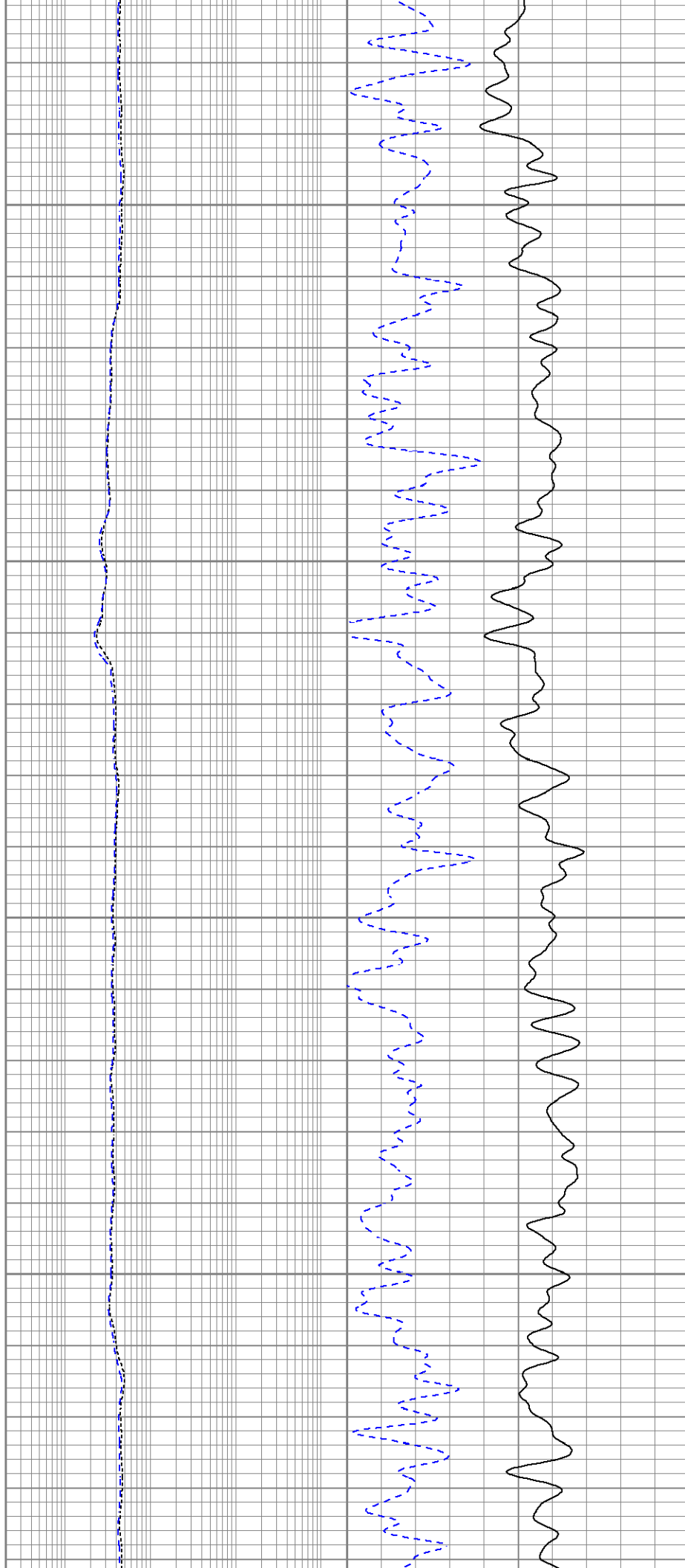


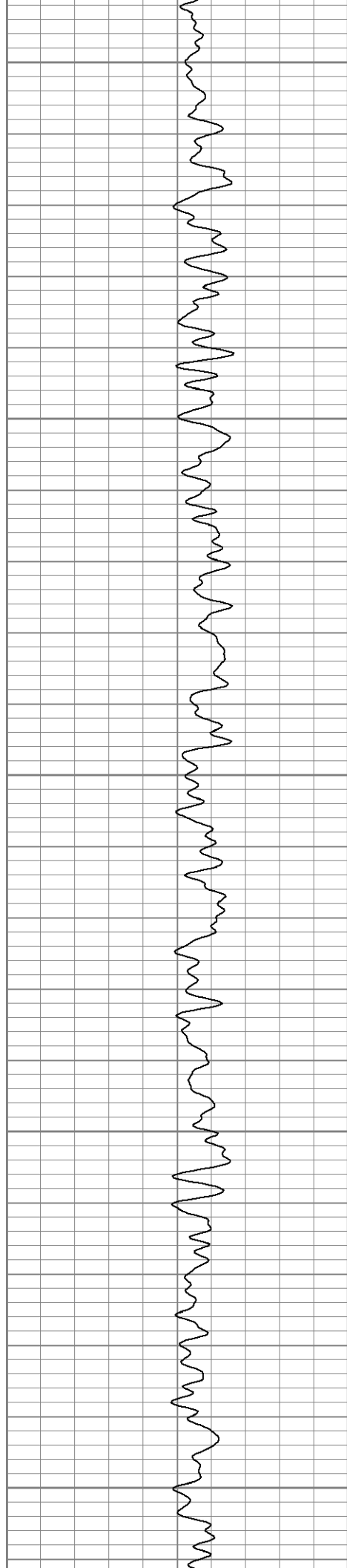
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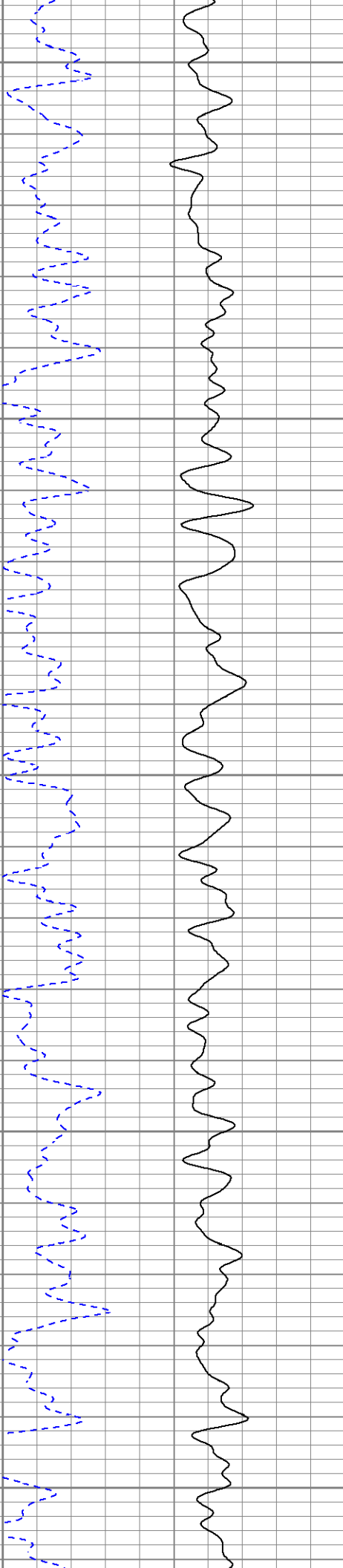
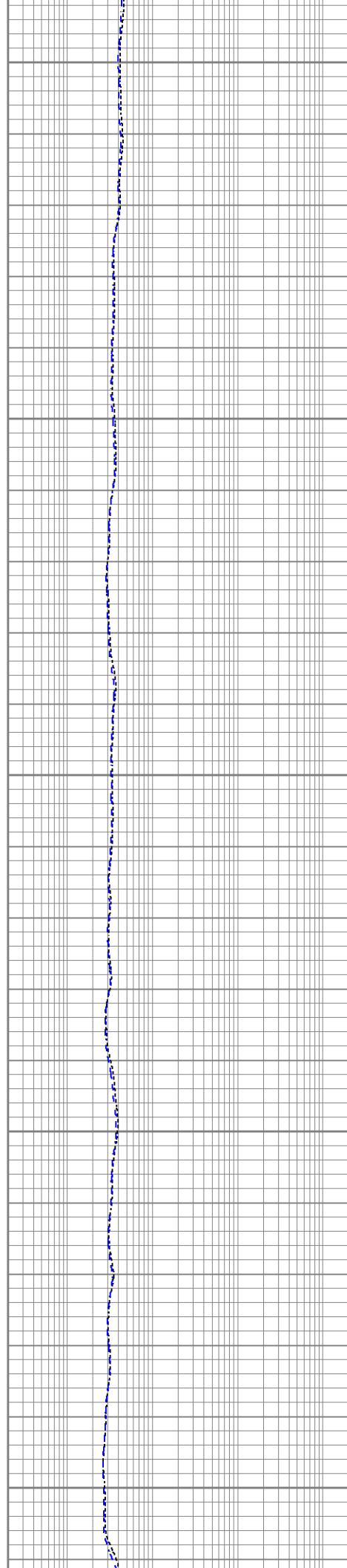
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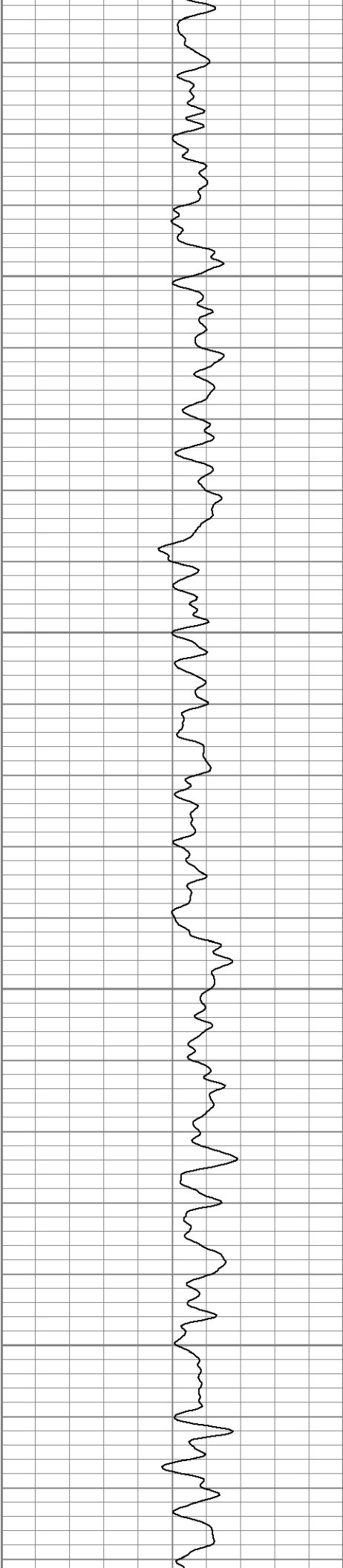
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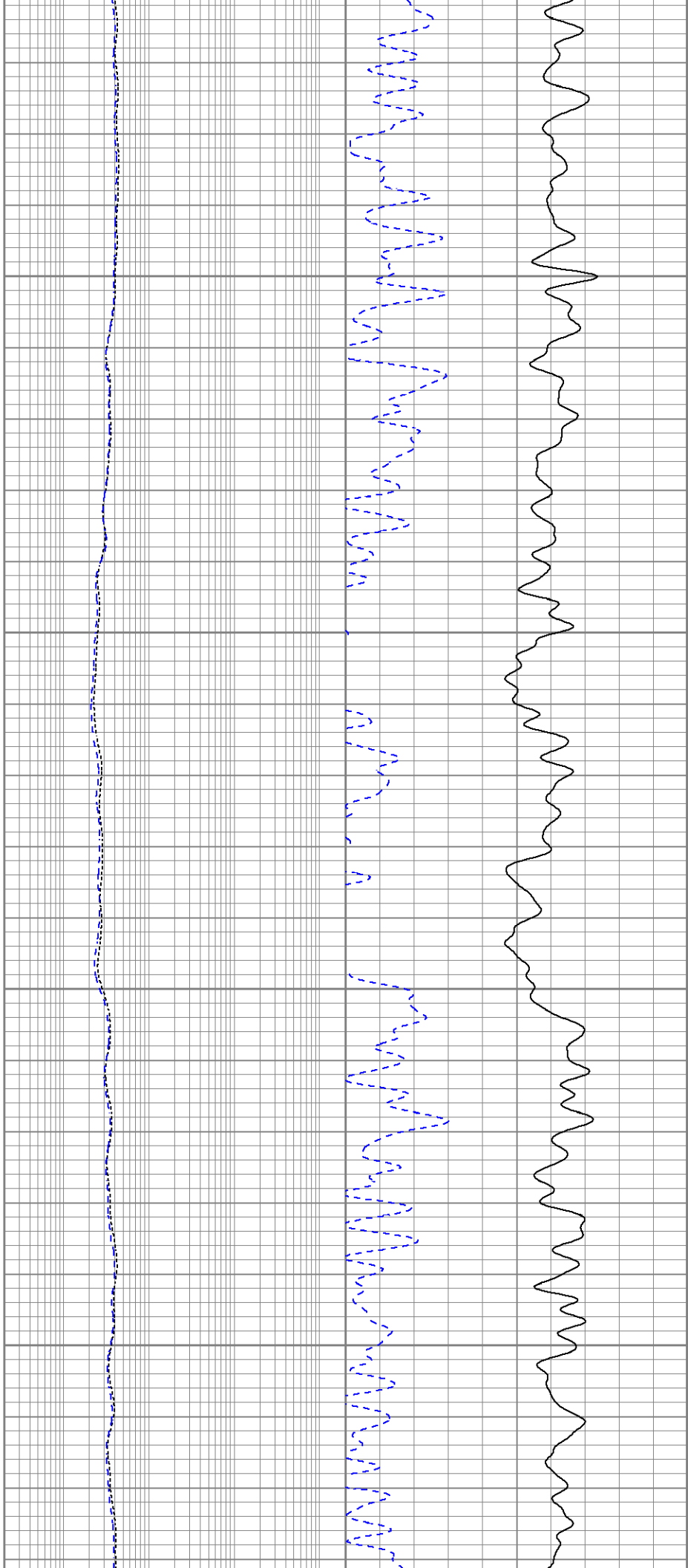


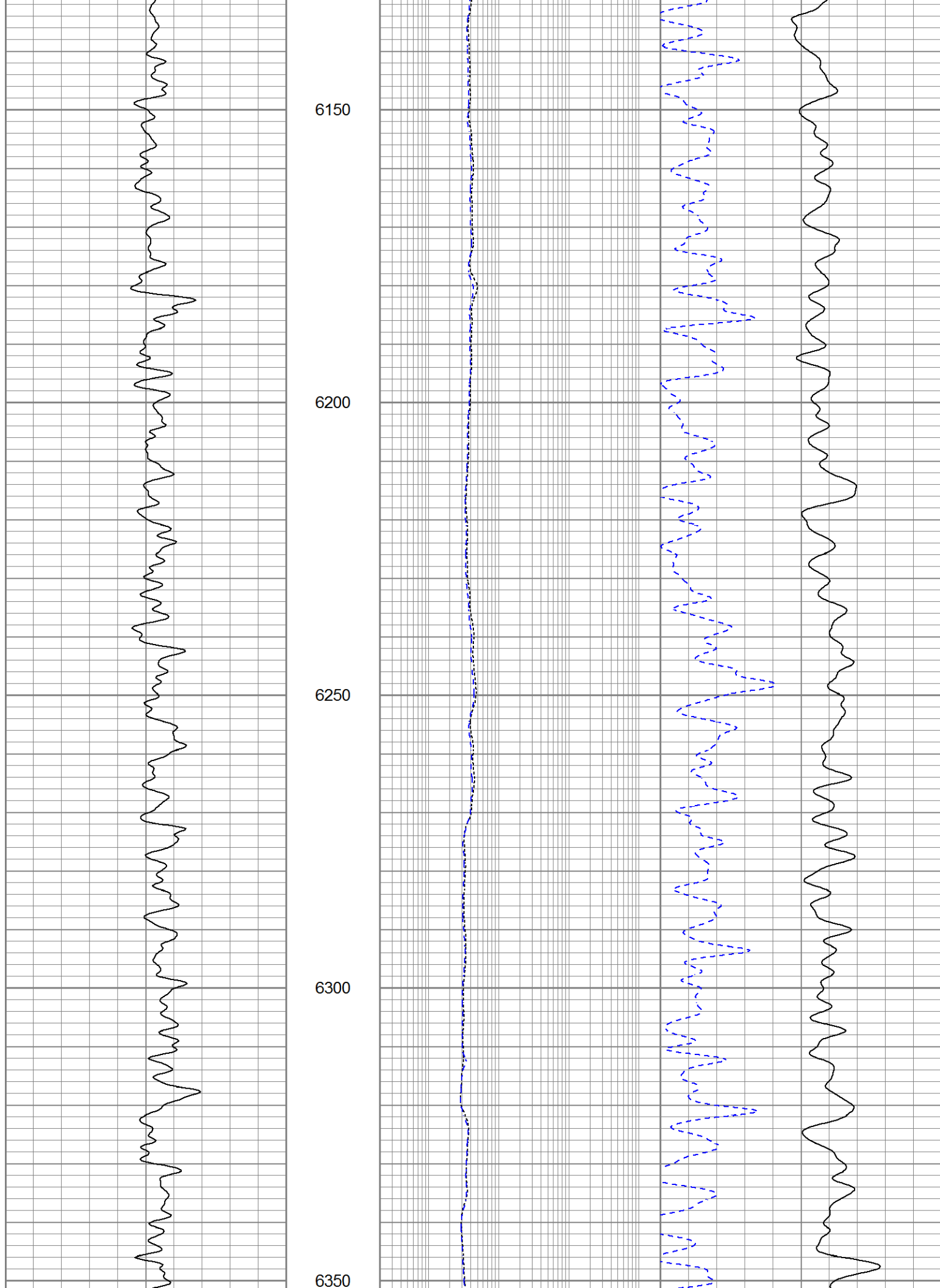
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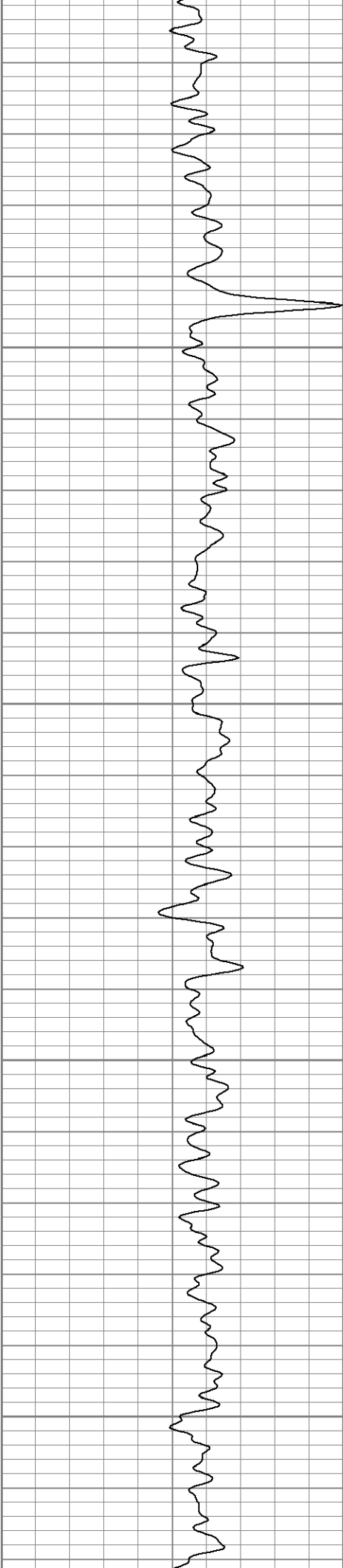
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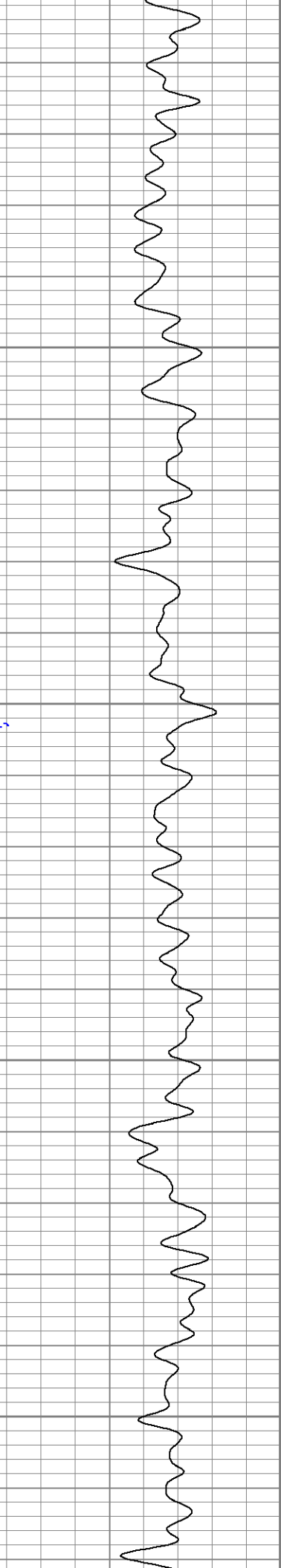
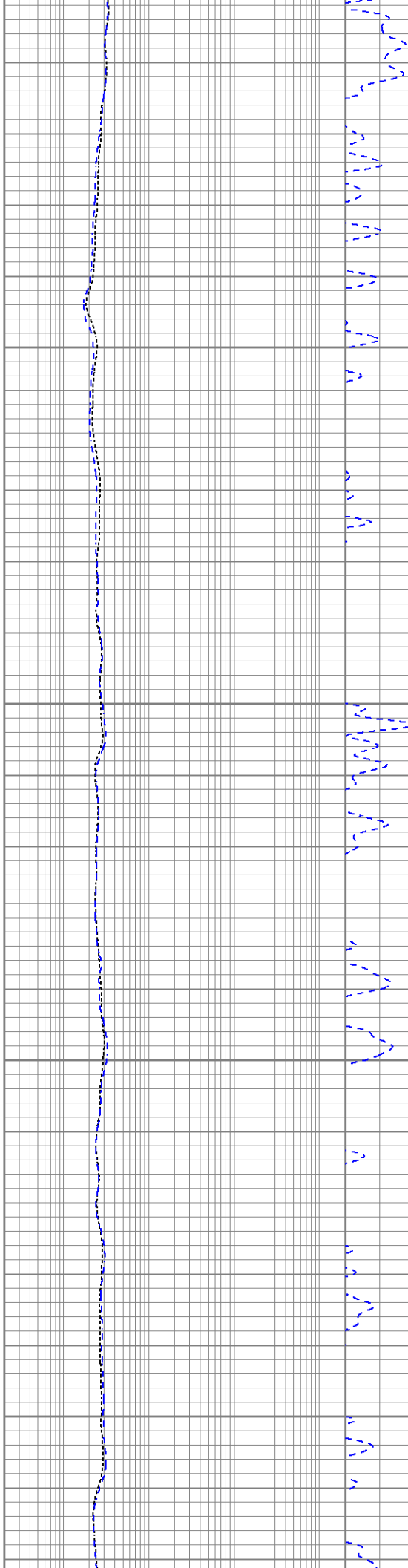


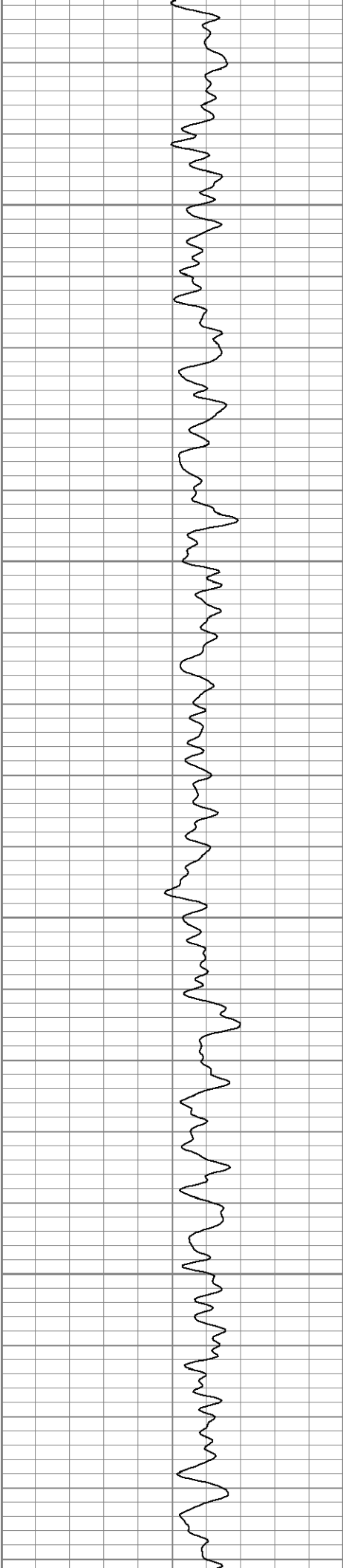
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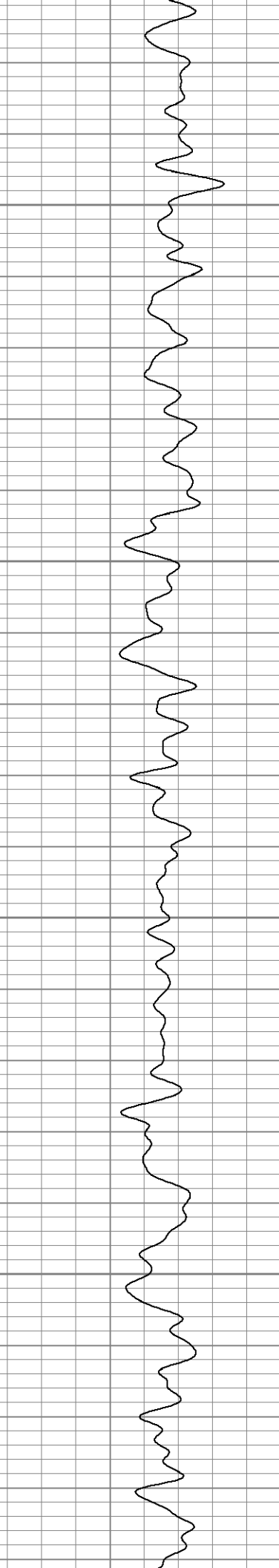
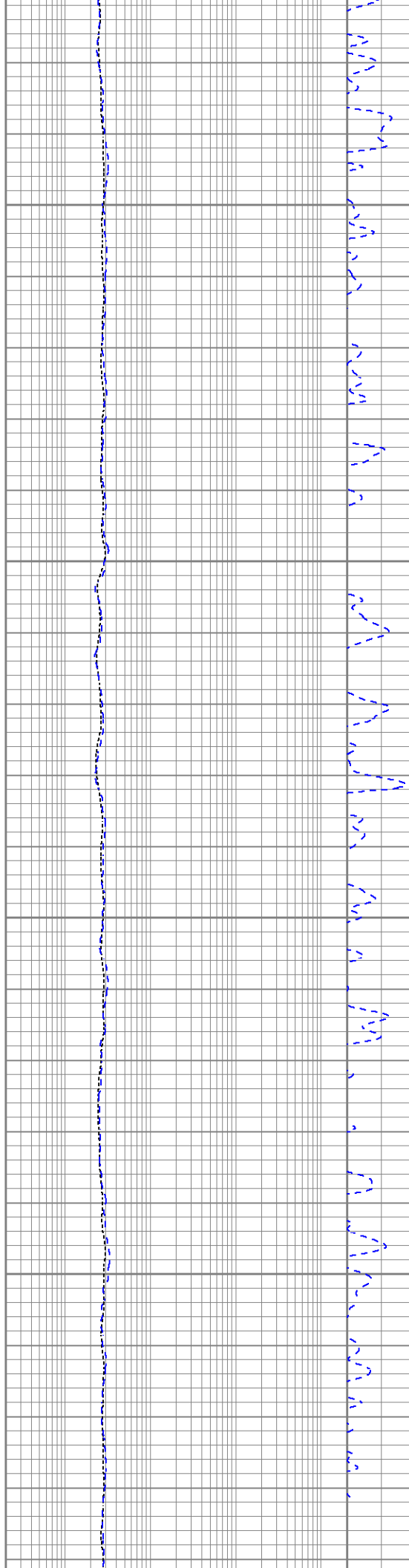


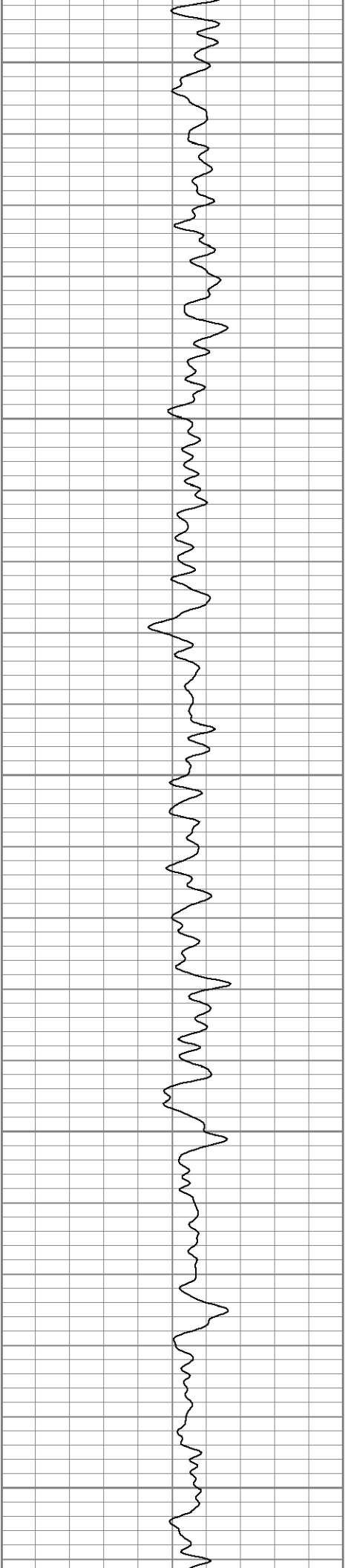
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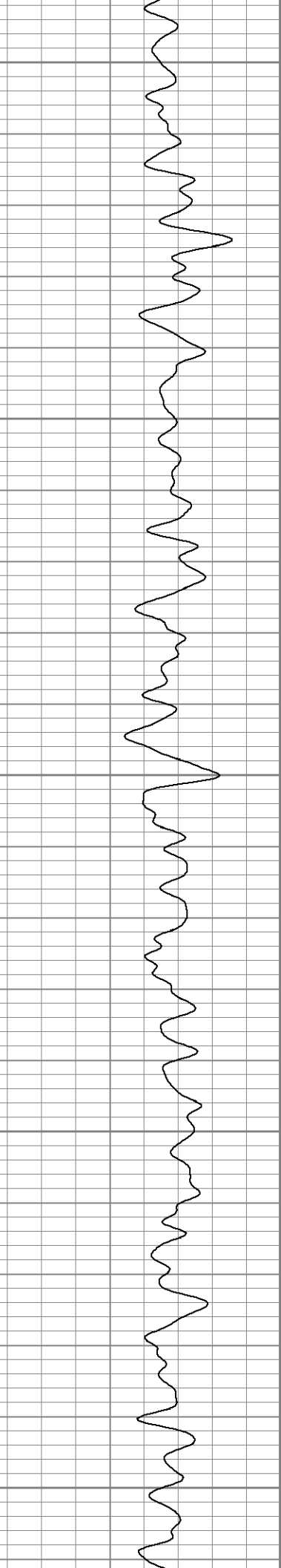
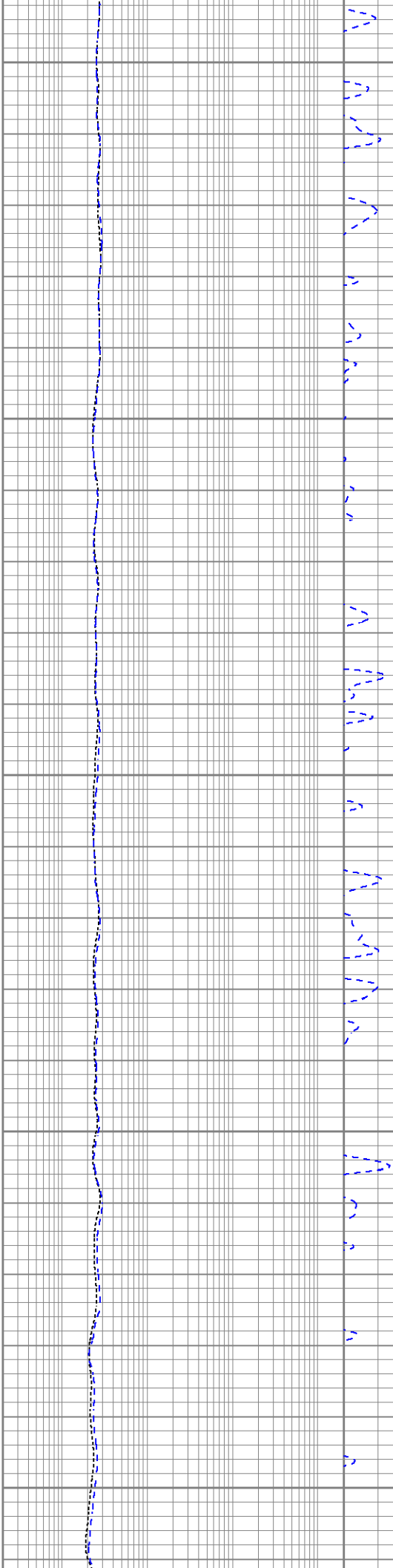
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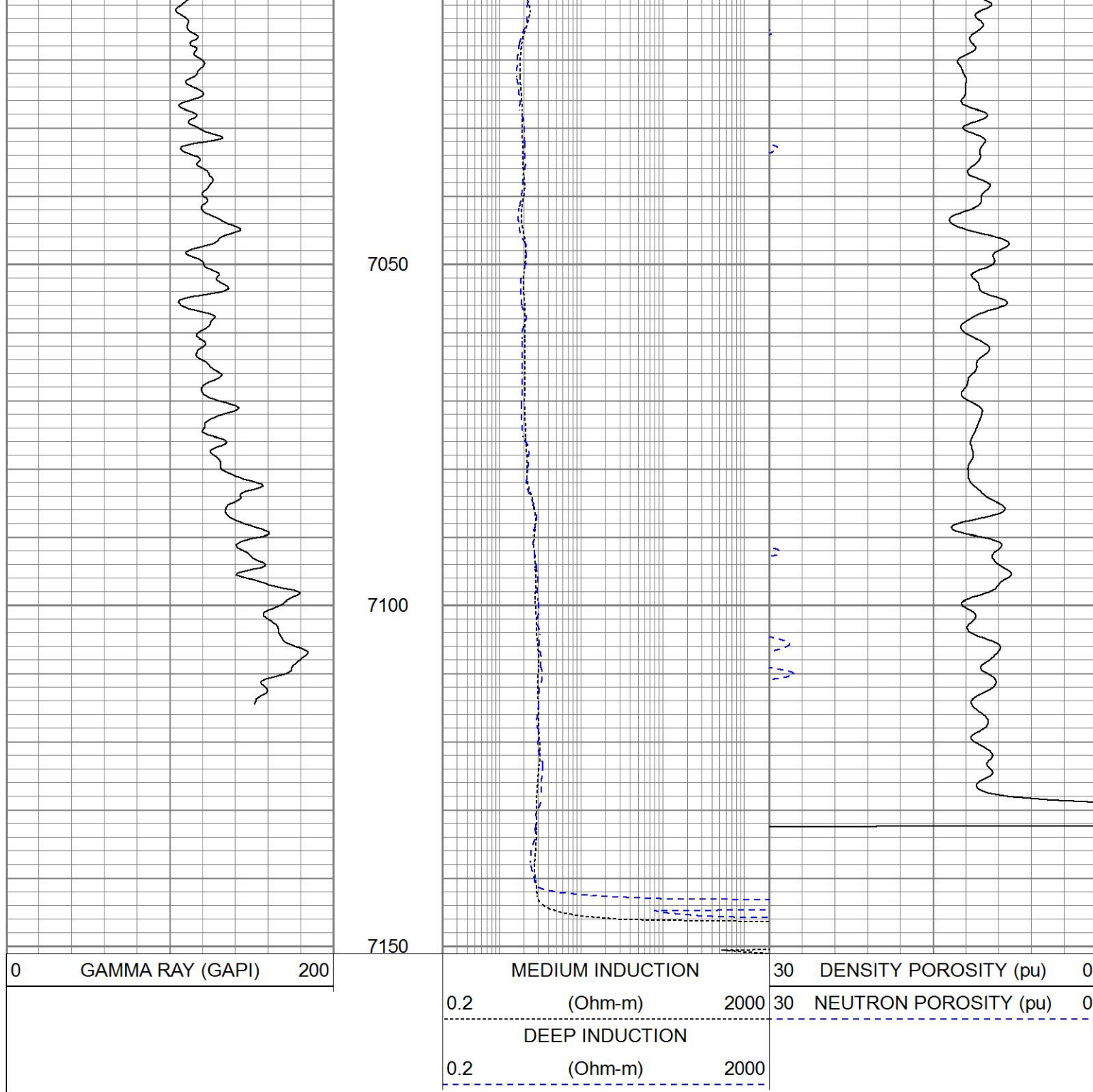
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