



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		WOOLSEY OPERATING CO. LLC.		Company		WOOLSEY OPERATING COMPANY, LLC.	
Well		CUNDIFF A-1		Well		CUNDIFF A-1	
Field		HARDTNER		Field		HARDTNER	
County		BARBER		County		BARBER	
State		KANSAS		State		KANSAS	
Location:		API # : 15-007-240555-0000		Other Services		CDL/CNL/PE	
Permanent Datum		GROUND LEVEL		Elevation		1501	
Log Measured From		KELLY BUSHING 12' A.G.L.		K.B. 1513		D.F. 1511	
Drilling Measured From		KELLY BUSHING		G.L. 1501			
SEC 25 TWP 34S RGE 13W		1025' FNL & 2170' FEL					
Date	9/4/13						
Run Number	ONE						
Depth Driller	5525						
Depth Logger	5525						
Bottom Logged Interval	5523						
Top Log Interval	00						
Casing Driller	13 3/8" @ 223'						
Casing Logger	225						
Bit Size	7 7/8"						
Type Fluid in Hole	CHEMICAL MUD			CHLORIDES 5,000 PPM			
Density / Viscosity	9.1/53						
pH / Fluid Loss	10.0/9.2						
Source of Sample	FLOWLINE						
Rim @ Meas. Temp	.650 @ 100F						
Rmf @ Meas. Temp	.488 @ 100F						
Rmc @ Meas. Temp	.780 @ 100F						
Source of Rmf / Rmc	MEASUREMENT						
Rim @ BHT	.500 @ 130F						
Time Circulation Stopped	3 HOURS						
Time Logger on Bottom	2:30 P.M.						
Maximum Recorded Temperature	130F						
Equipment Number	4854						
Location	HAYS, KANSAS						
Recorded By	JEFF LUEBBERS						
Witnessed By	BILL KLAVER						

<<< Fold Here >>>

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 USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS

MEDICINE LODGE, KS., 2.6 W. ON HWY 160 TO "GYP HILL RD.", 16S. TO "RATTLESNAKE RD., .6 MILE.
E. & S. TO LEASE RD. E. INTO



NABORS

**COMPLETION
& PRODUCTION**

MAIN SECTION

Database File:

011665pe.db

Dataset Pathname:

pass3.7

Presentation Format:

dil2

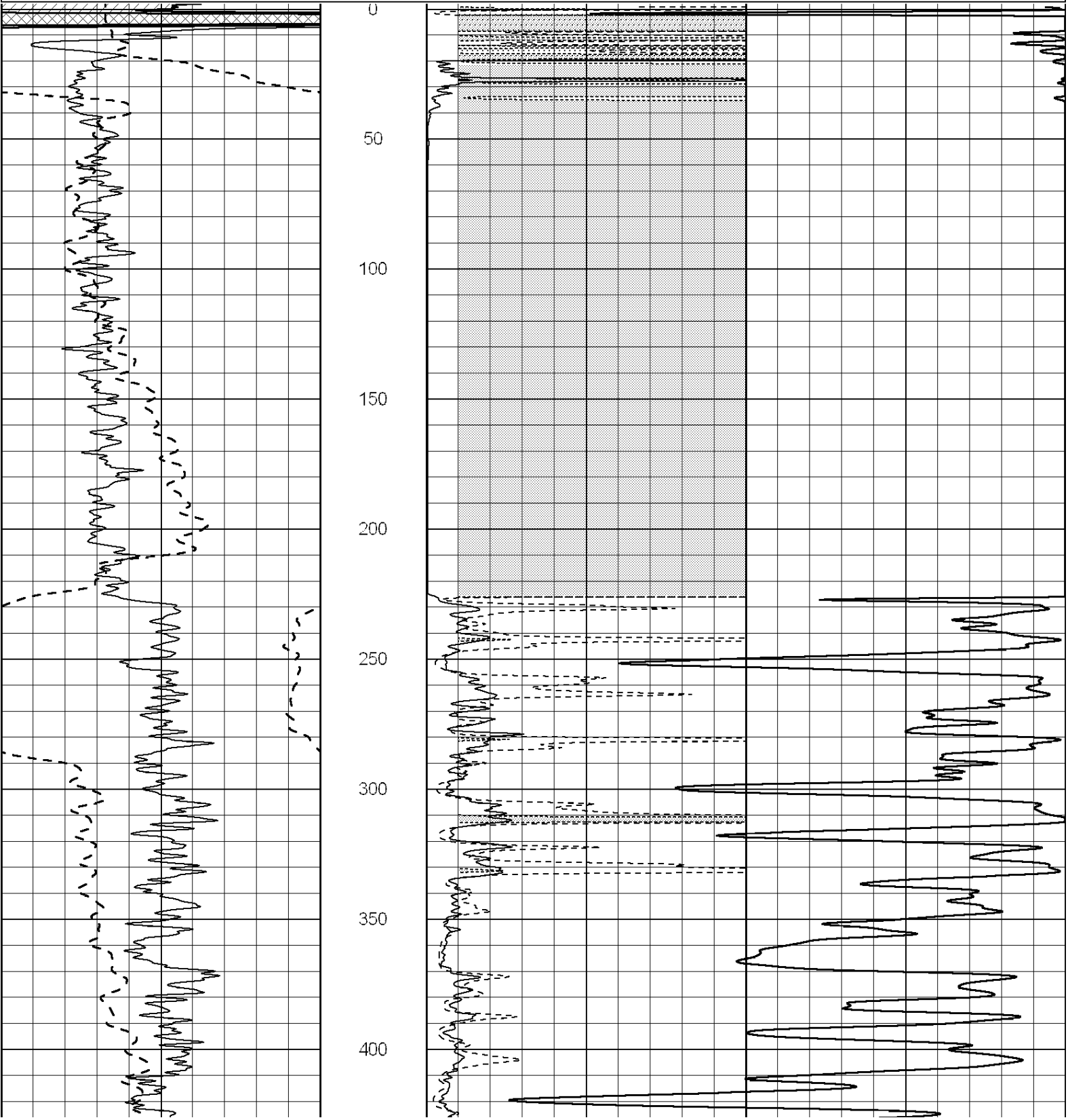
Dataset Creation:

Wed Sep 04 17:13:50 2013 by Calc SOC 120430

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
-----			1000			CILD (mmho/m)
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	



450

500

550

600

650

700

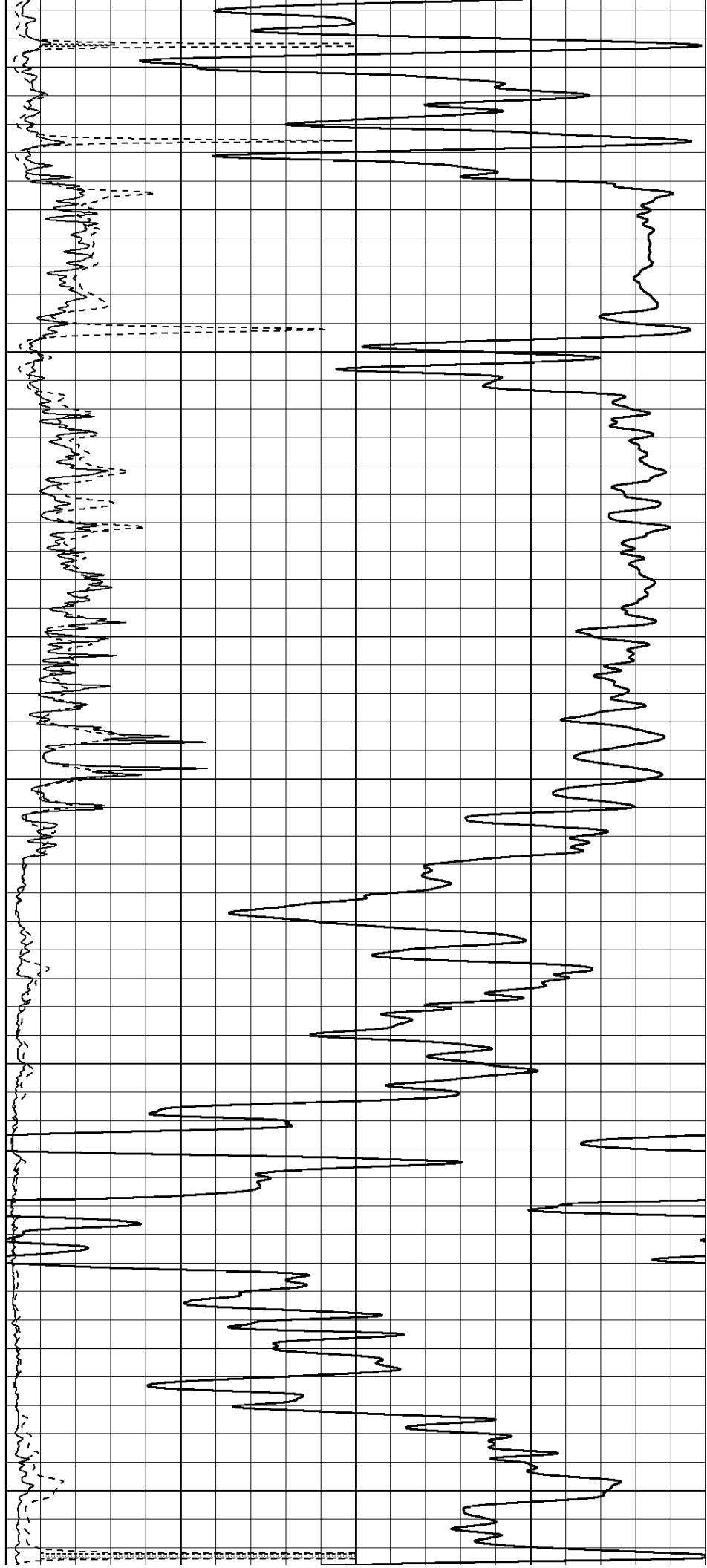
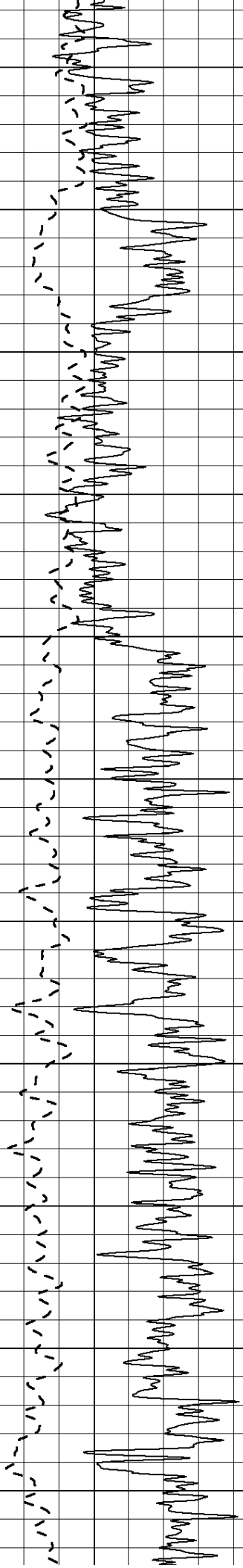
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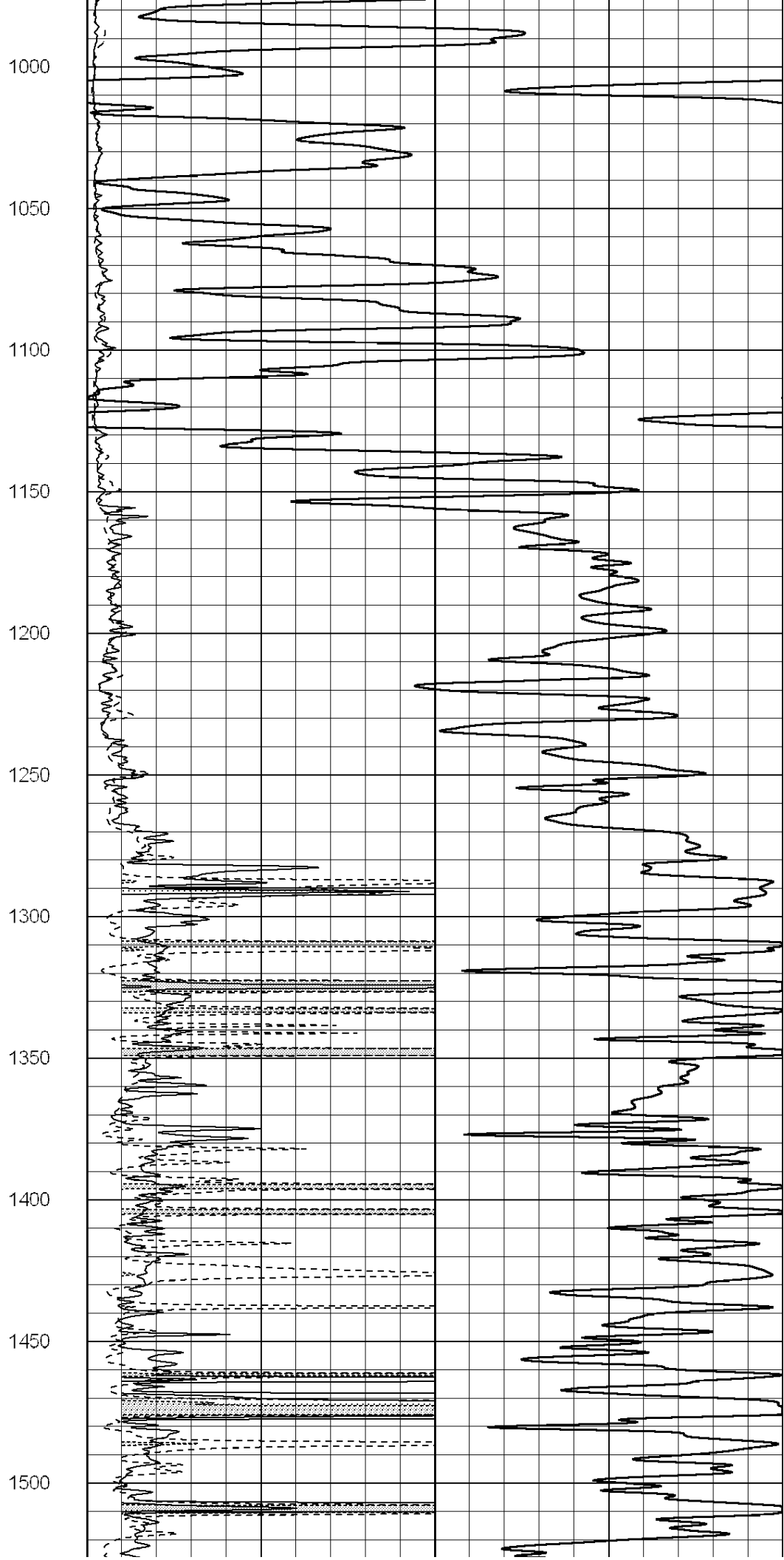
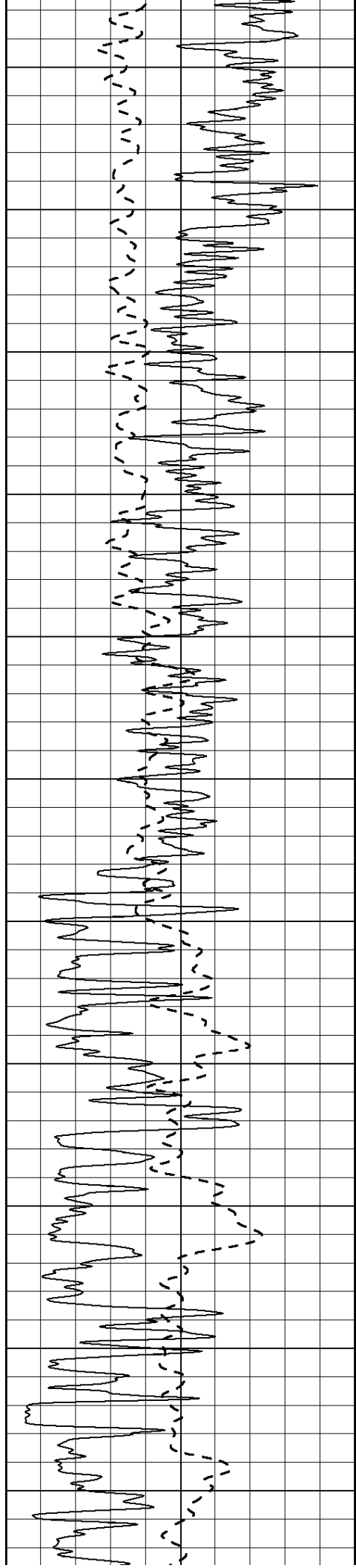
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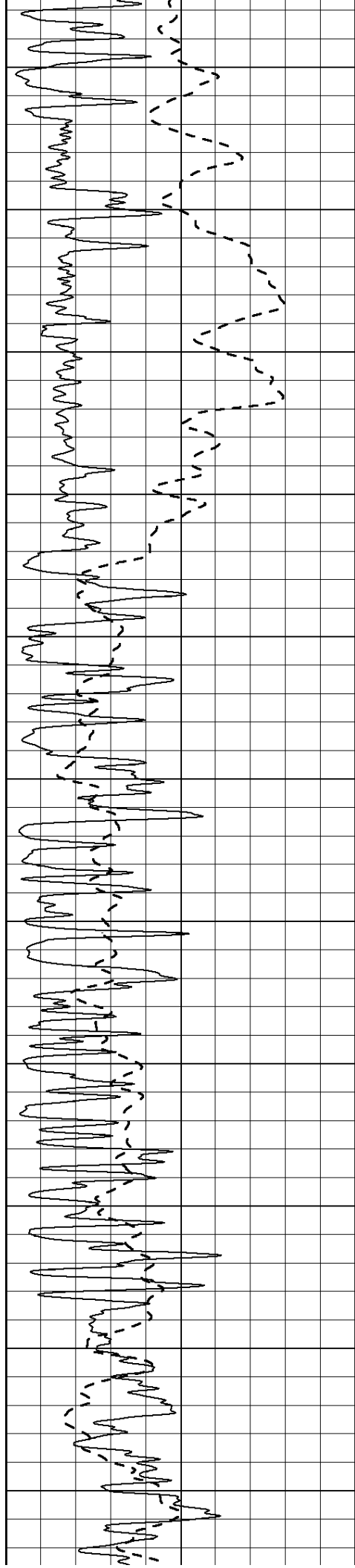
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900

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1550

1600

1650

1700

1750

1800

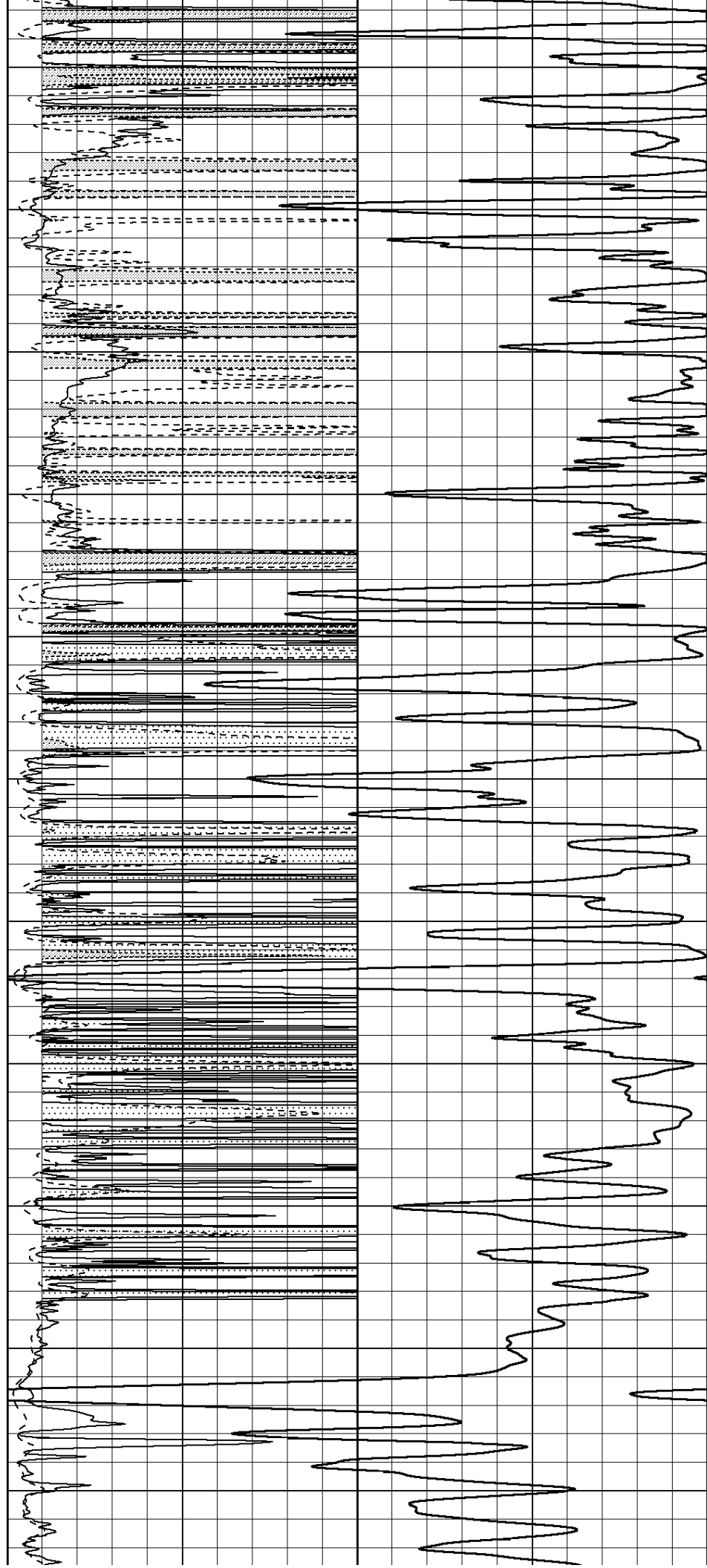
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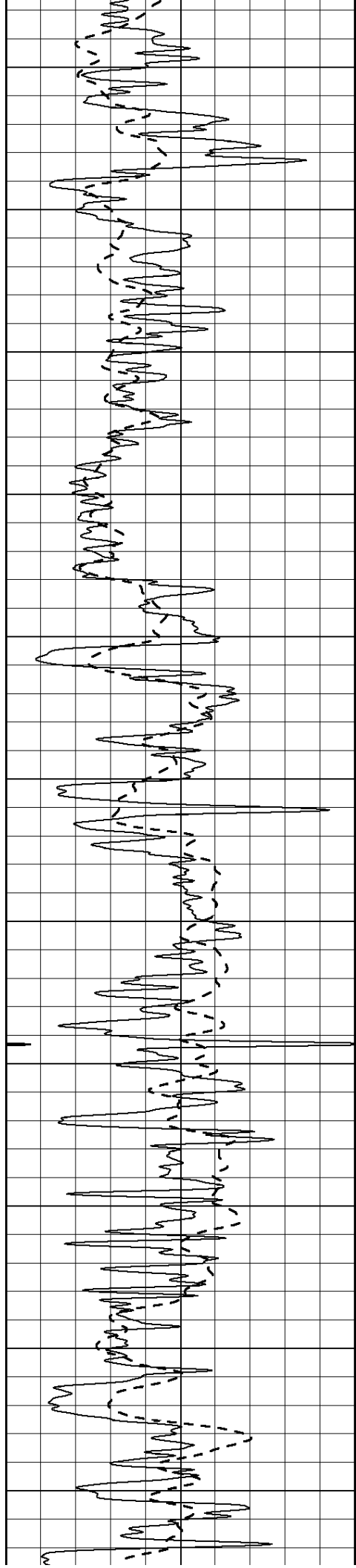
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2100

2150

2200

2250

2300

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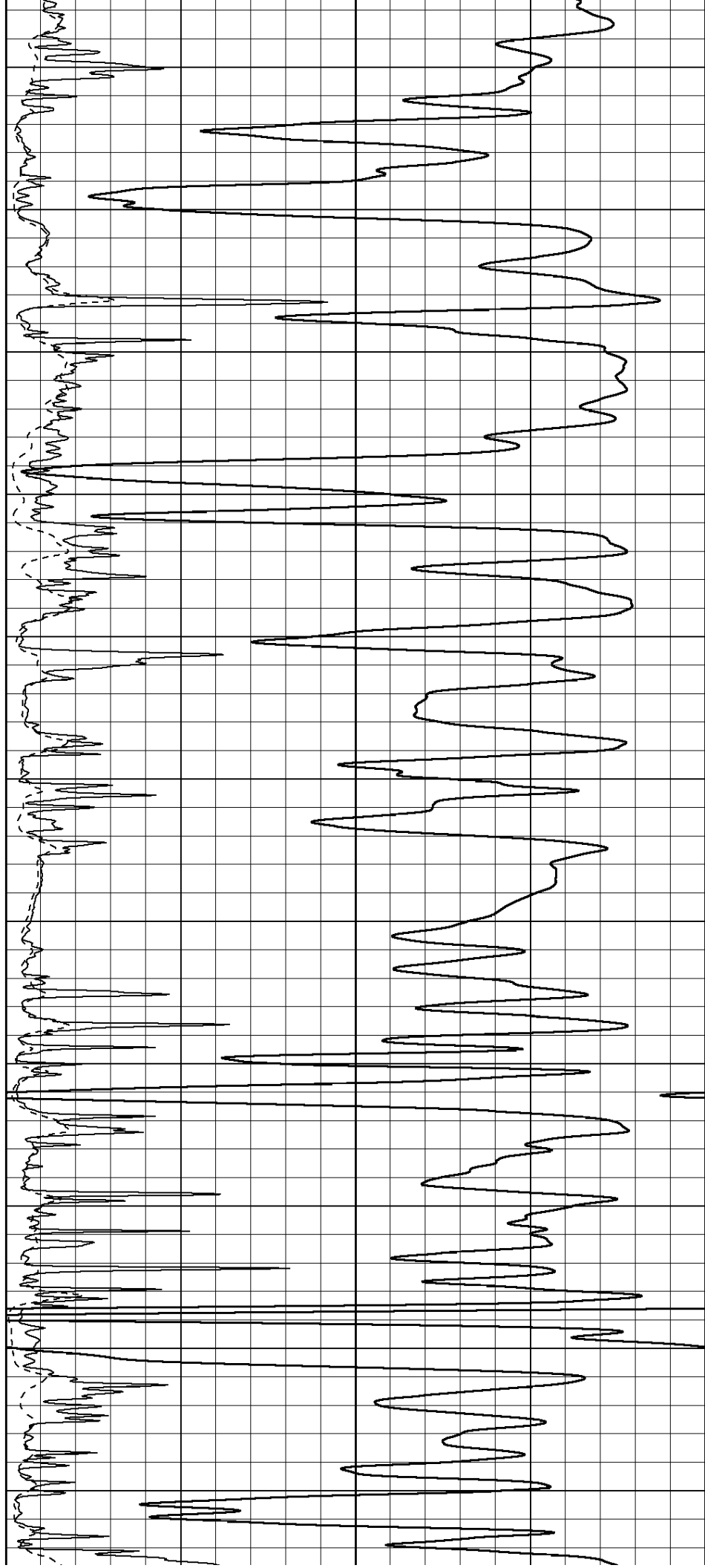
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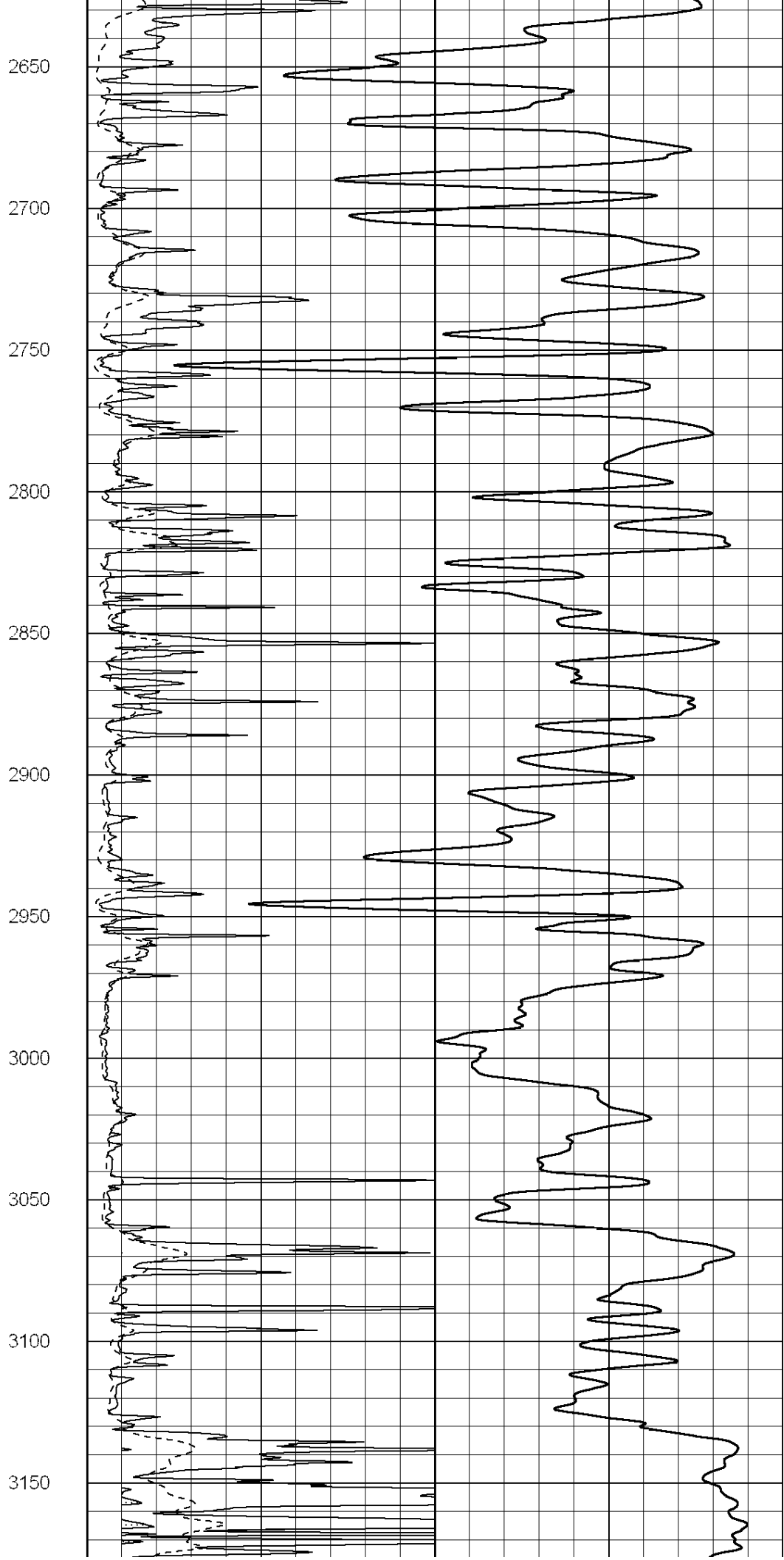
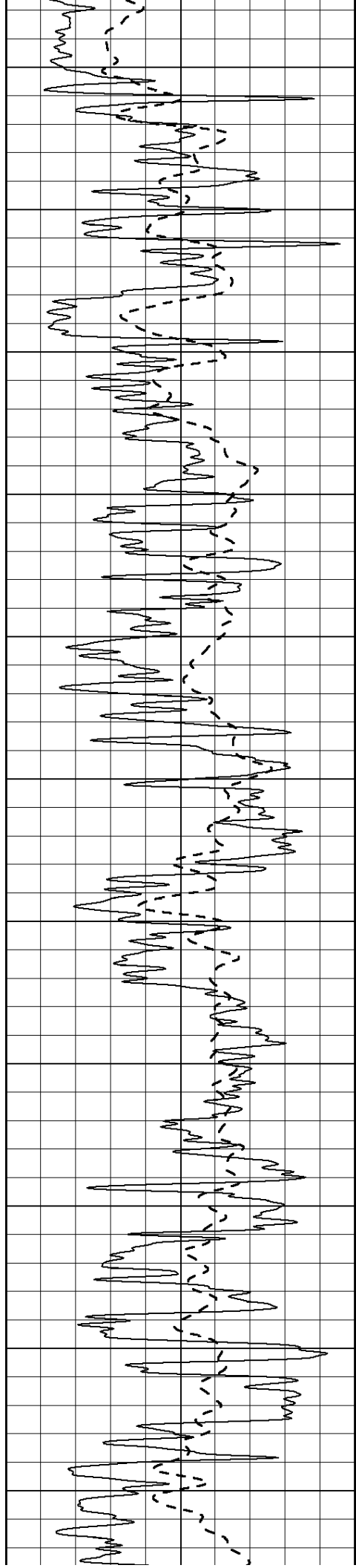
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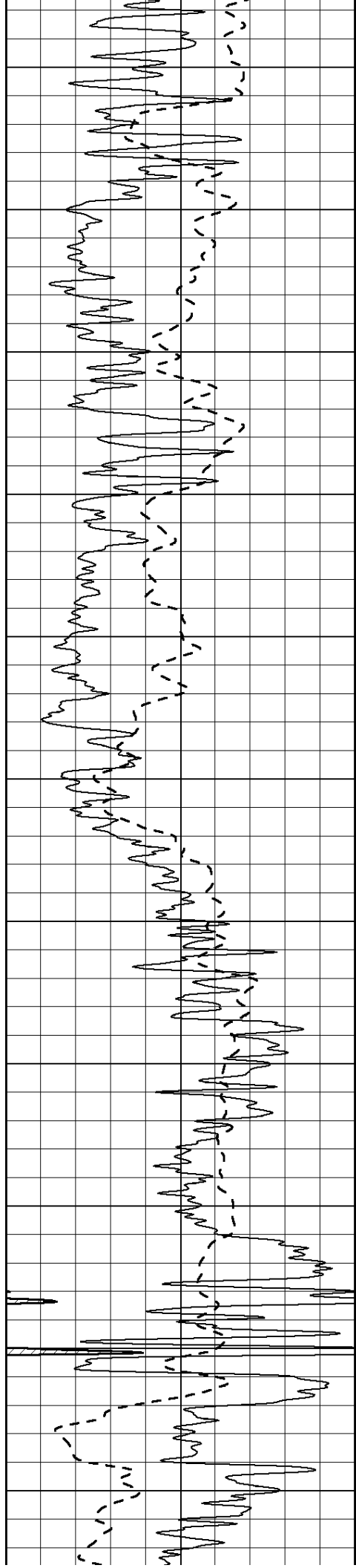
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3200

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3350

3400

3450

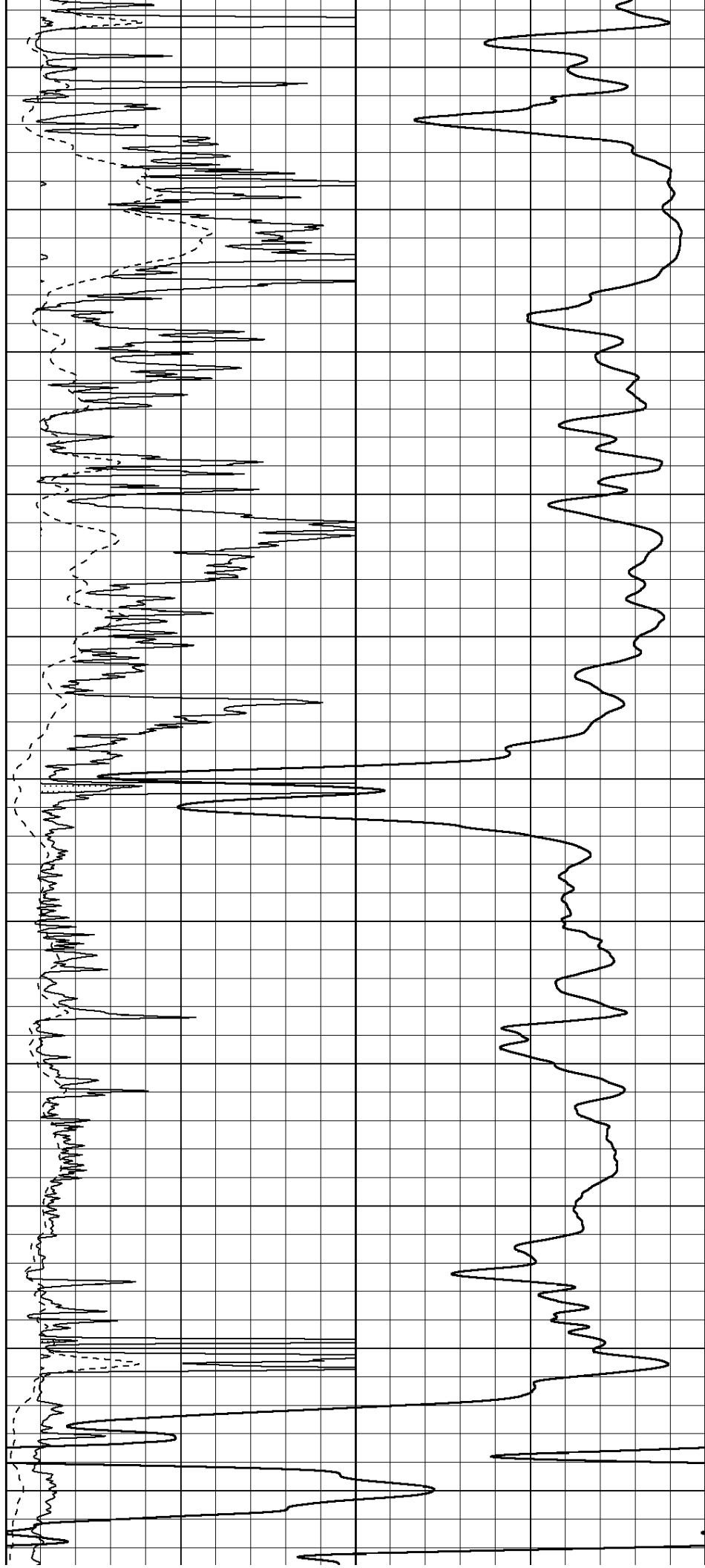
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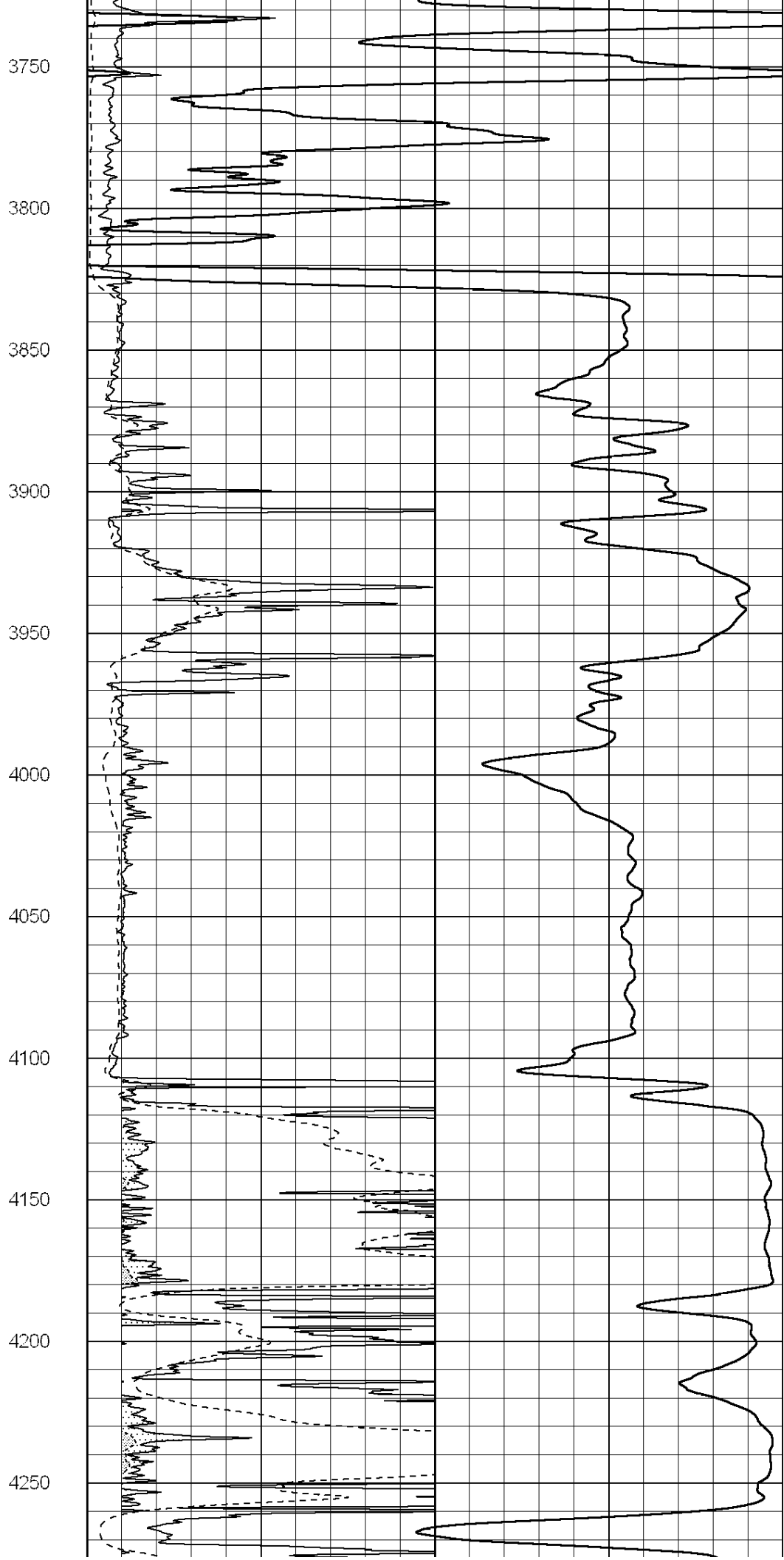
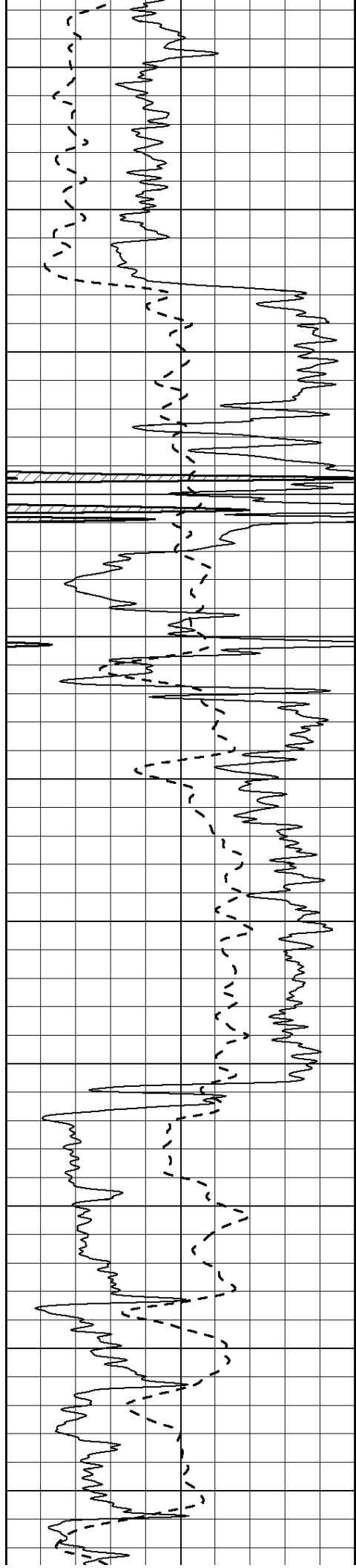
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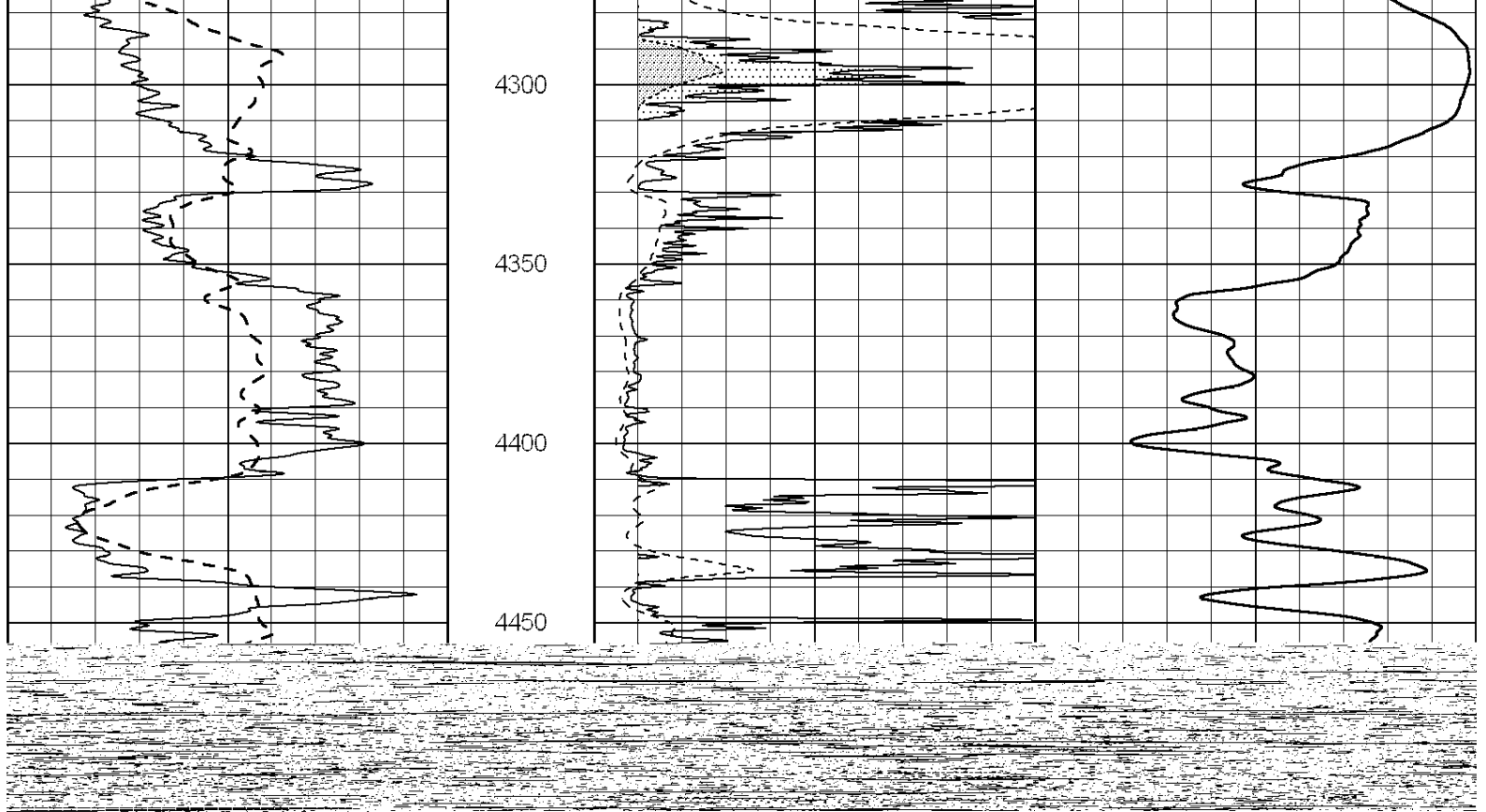
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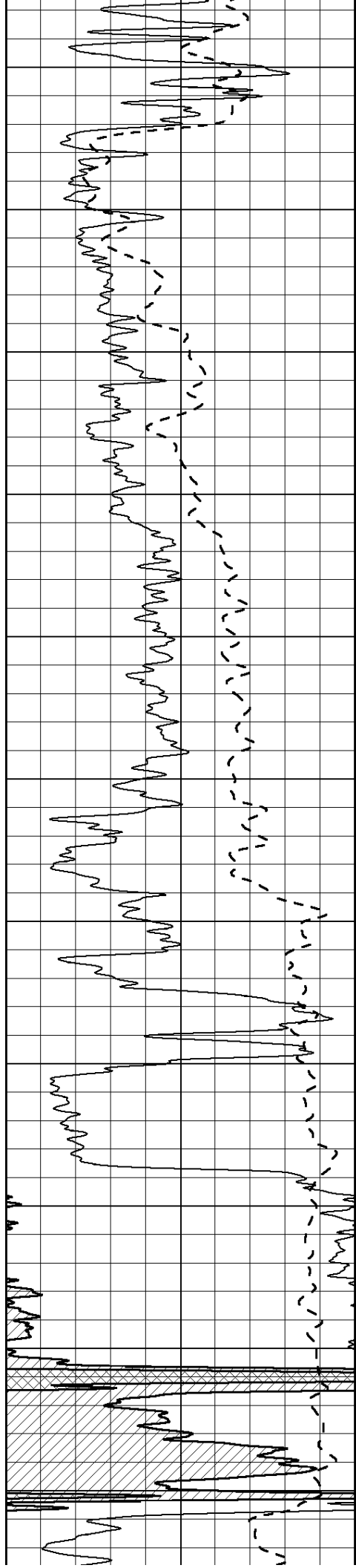
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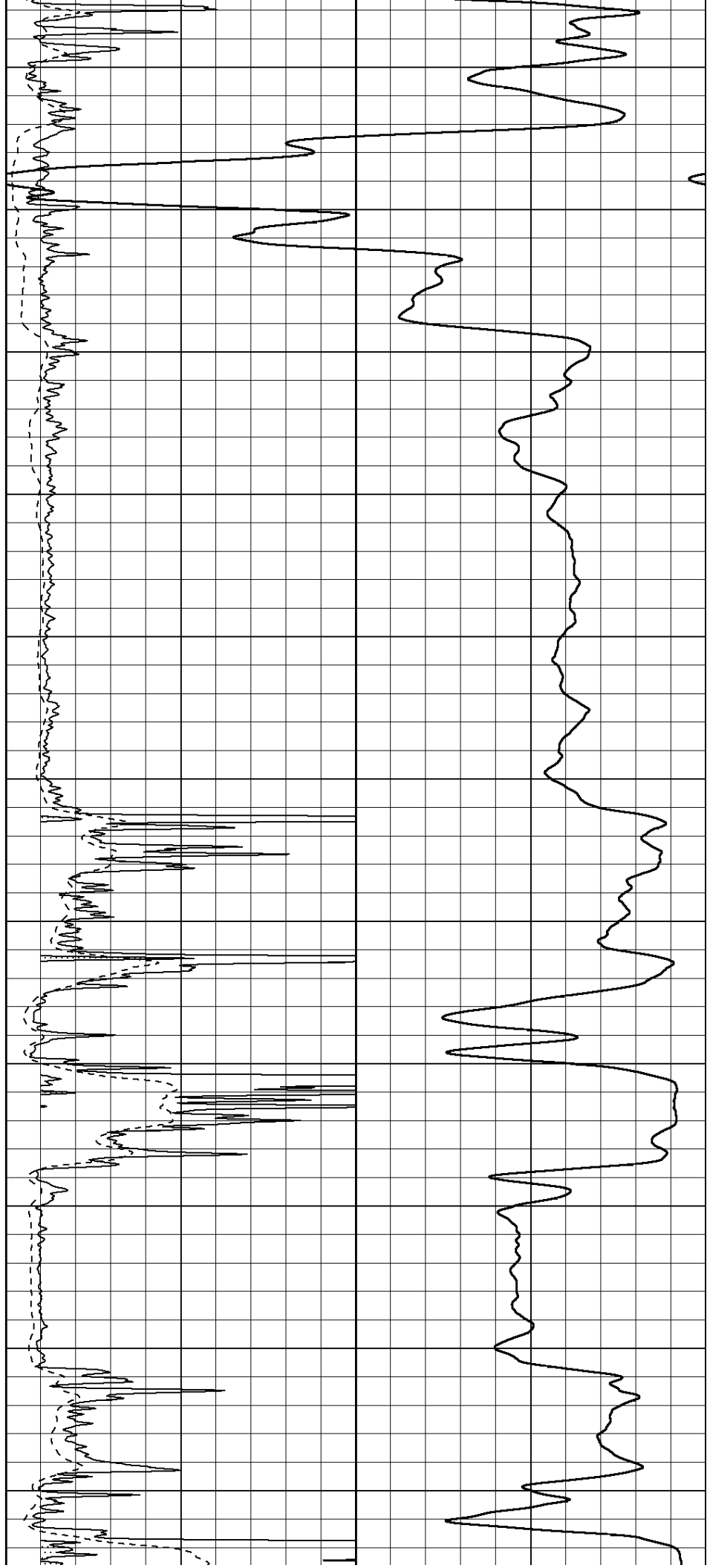


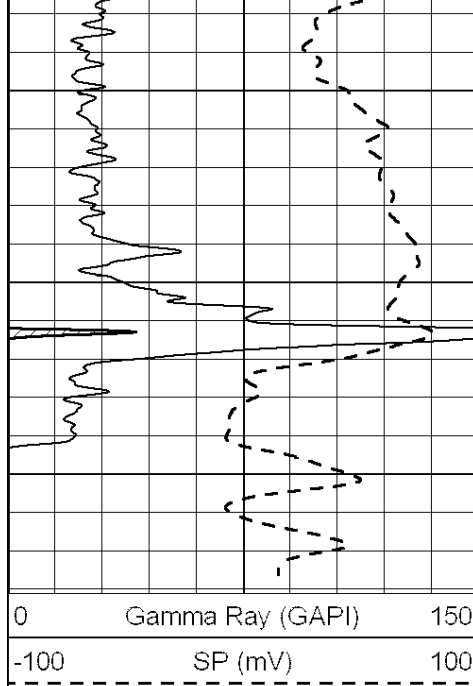




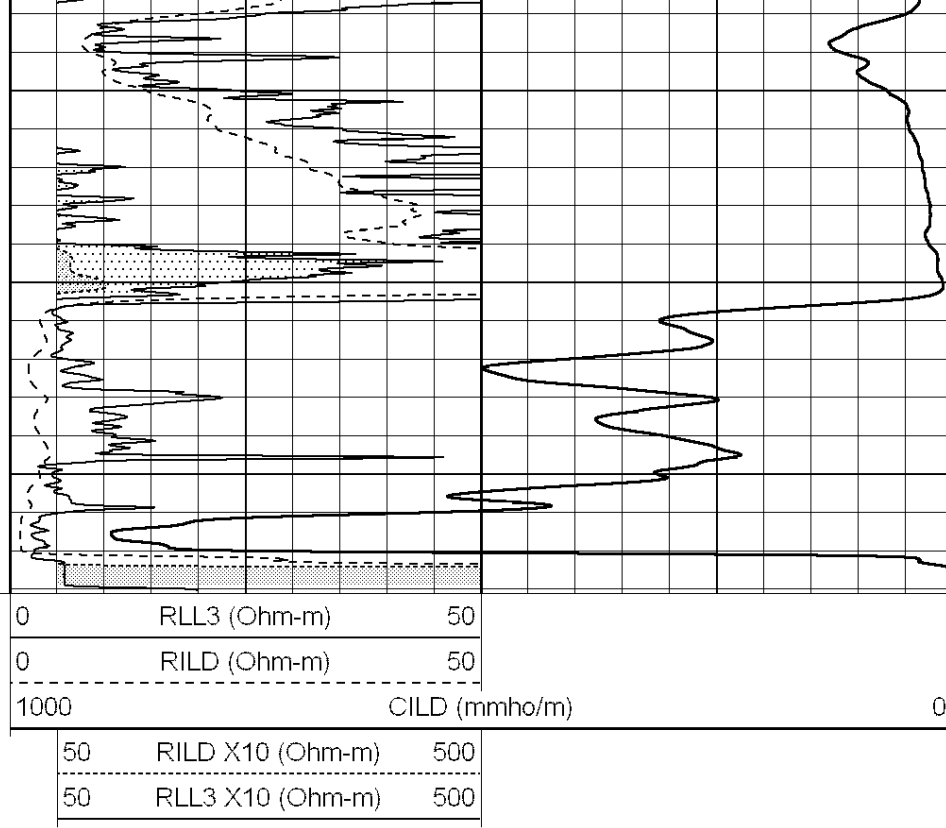


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5150
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5250
5300
5350



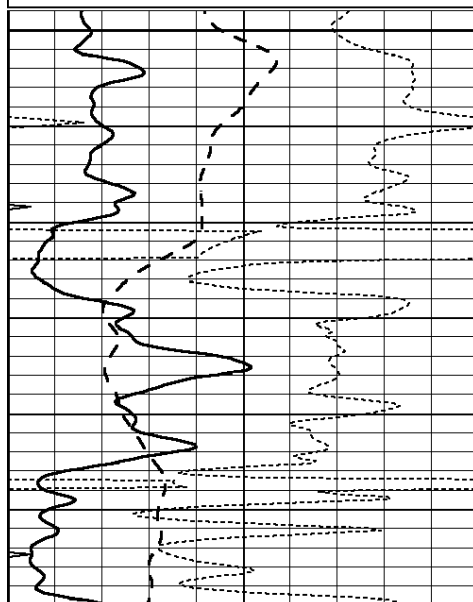
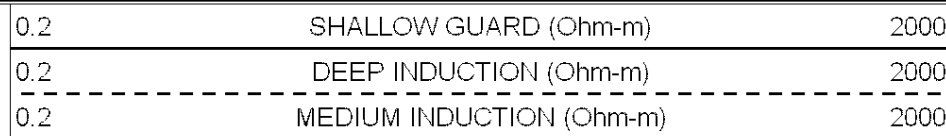
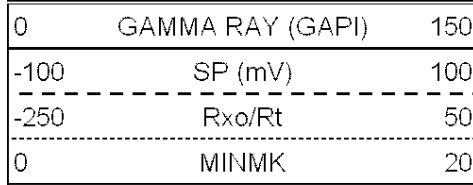


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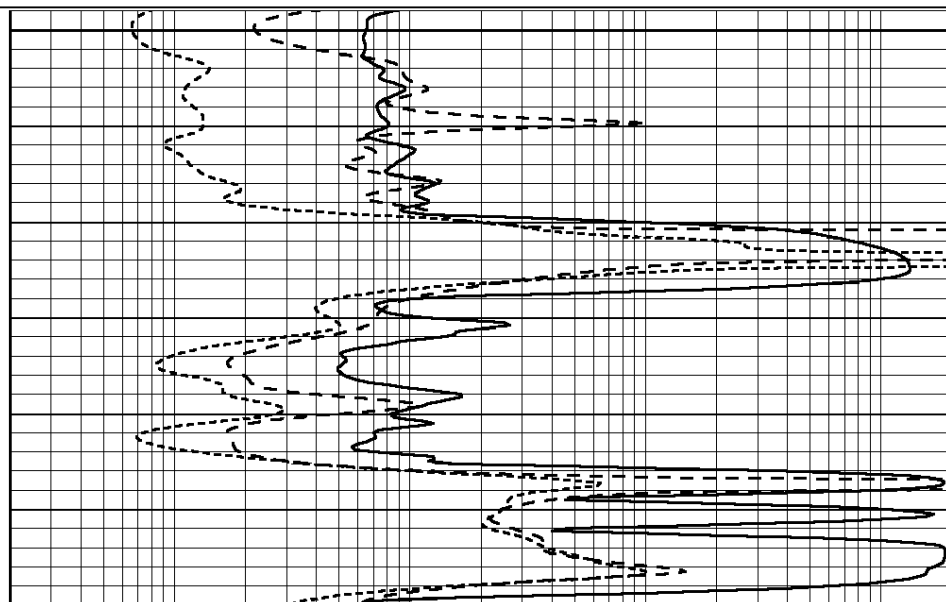


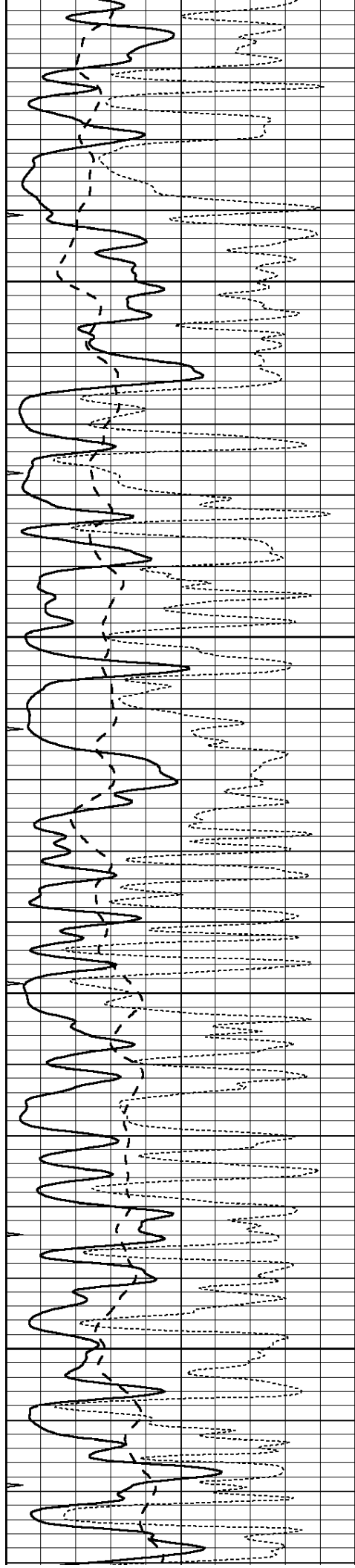
MAIN SECTION

Database File: 011665pe.db
Dataset Pathname: pass3.7
Presentation Format: _dil
Dataset Creation: Wed Sep 04 17:13:50 2013 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240



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1750



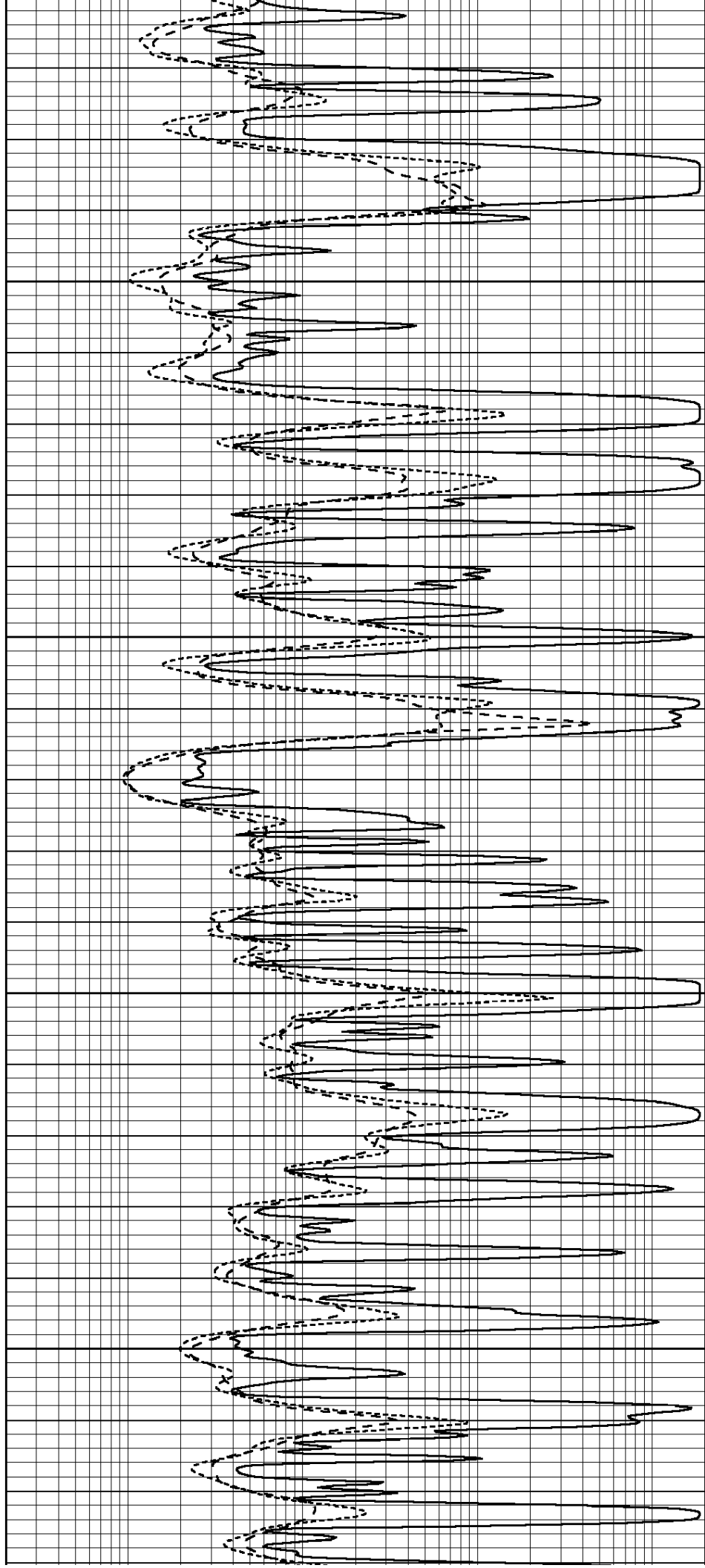


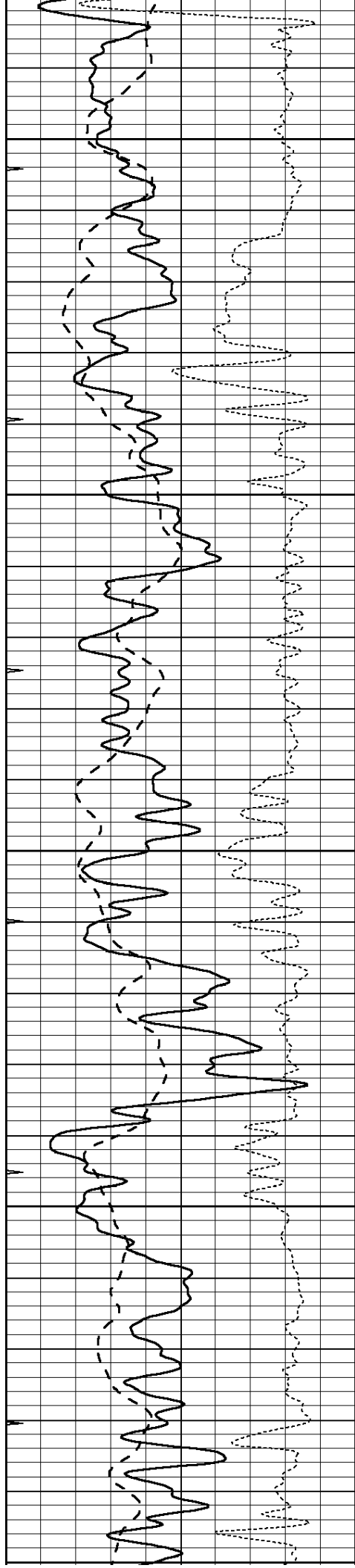
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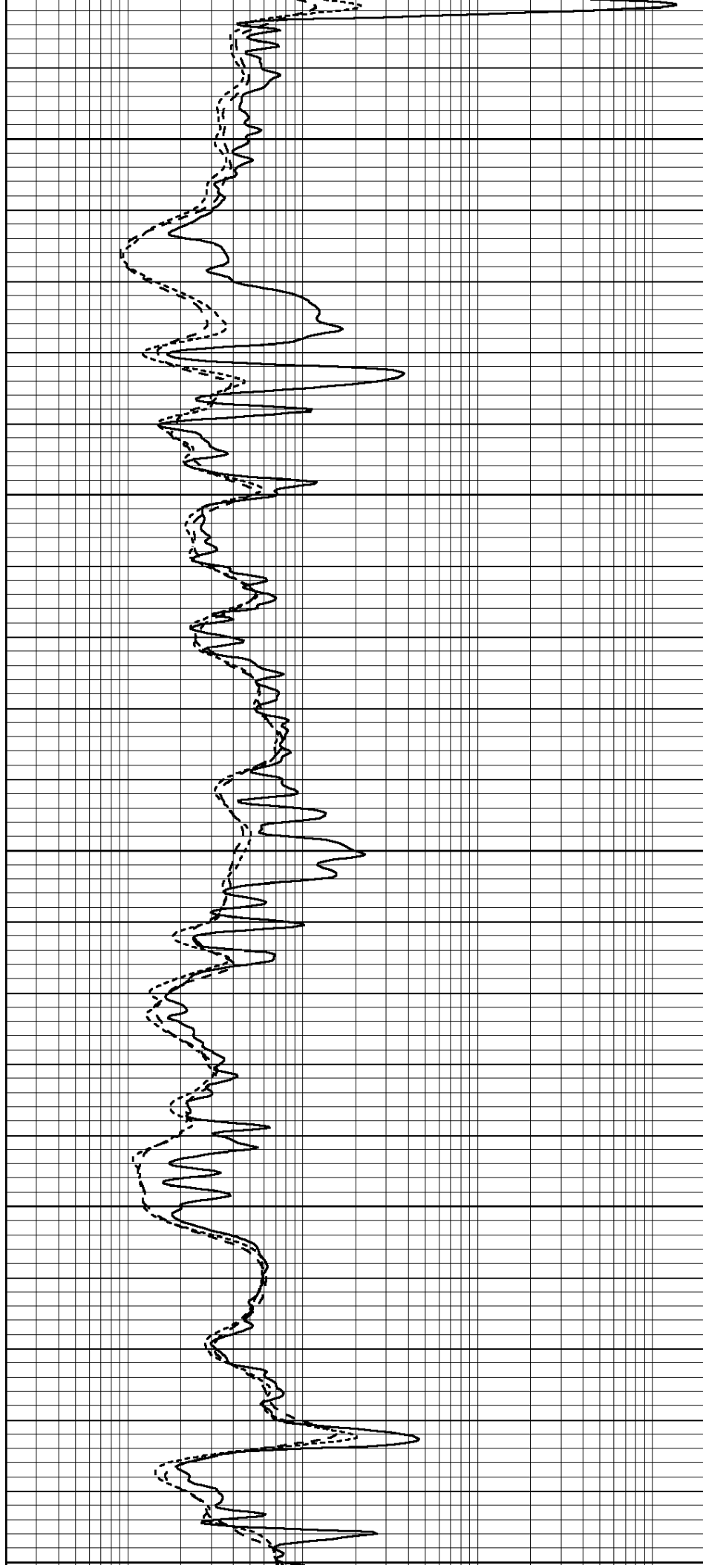
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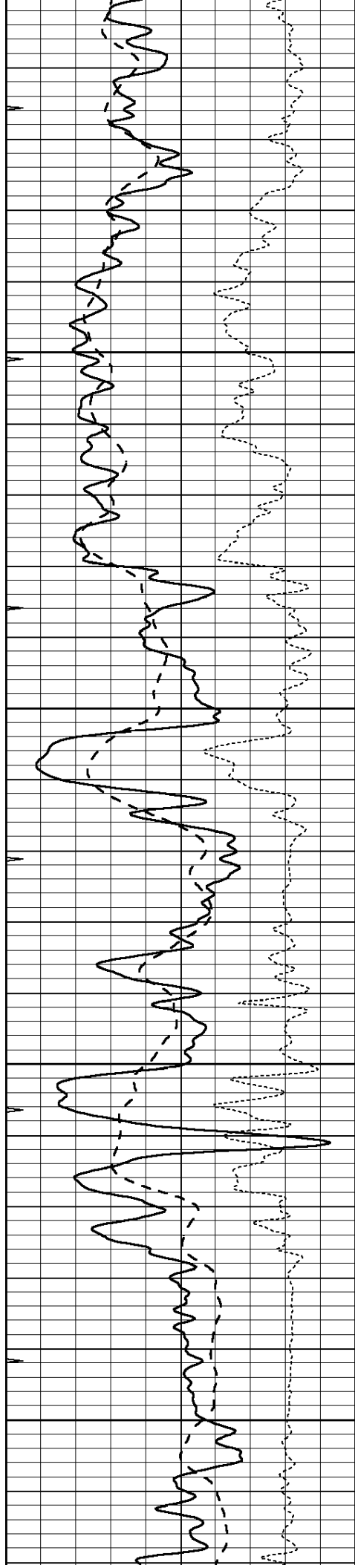
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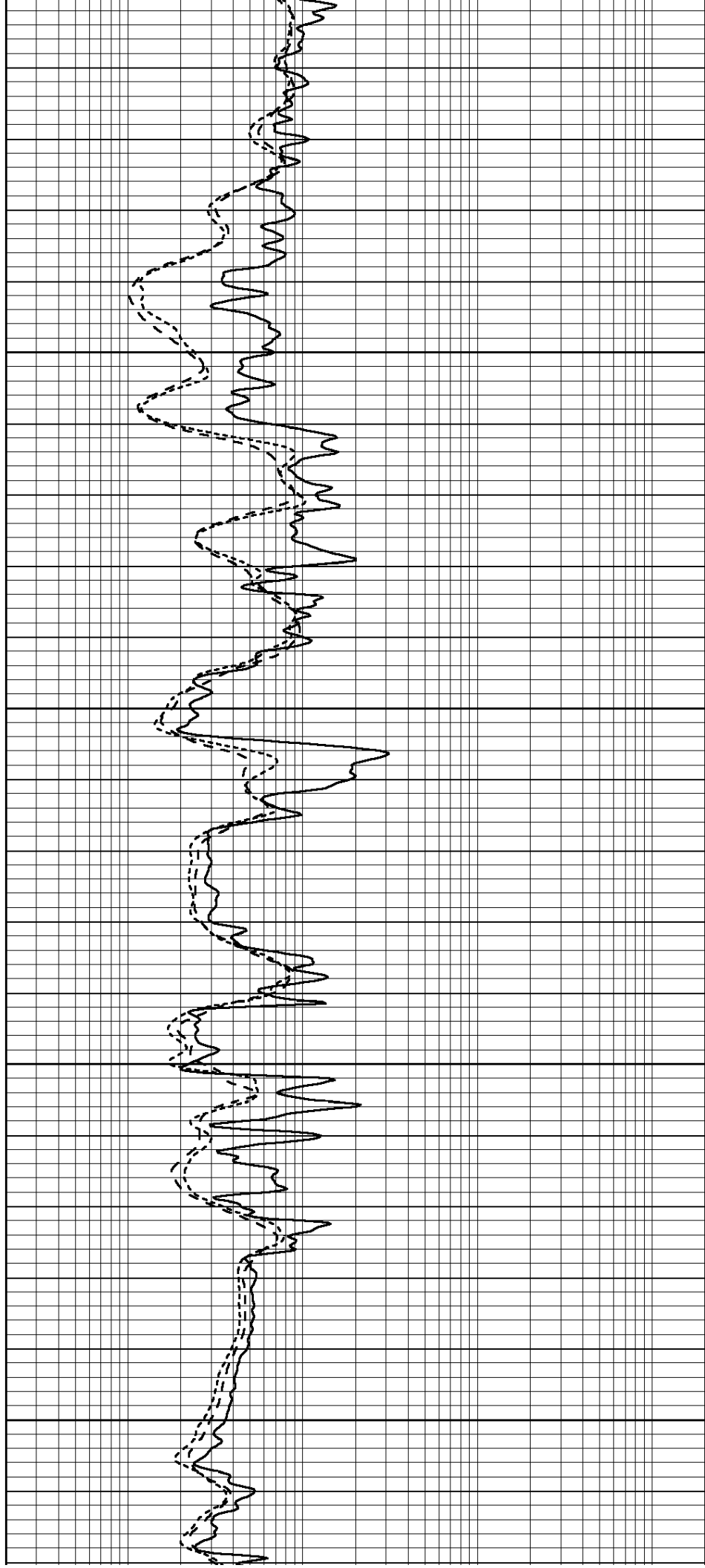
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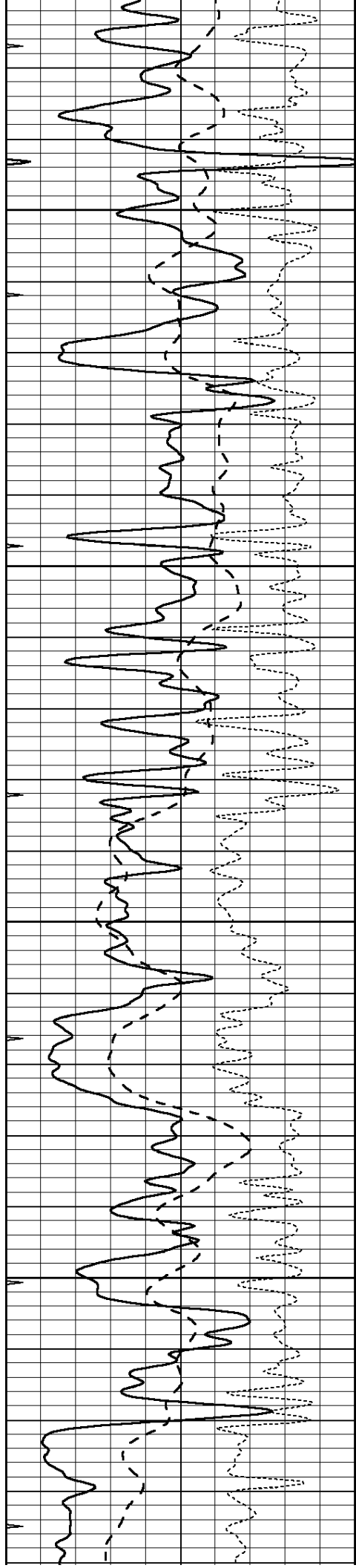
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2400



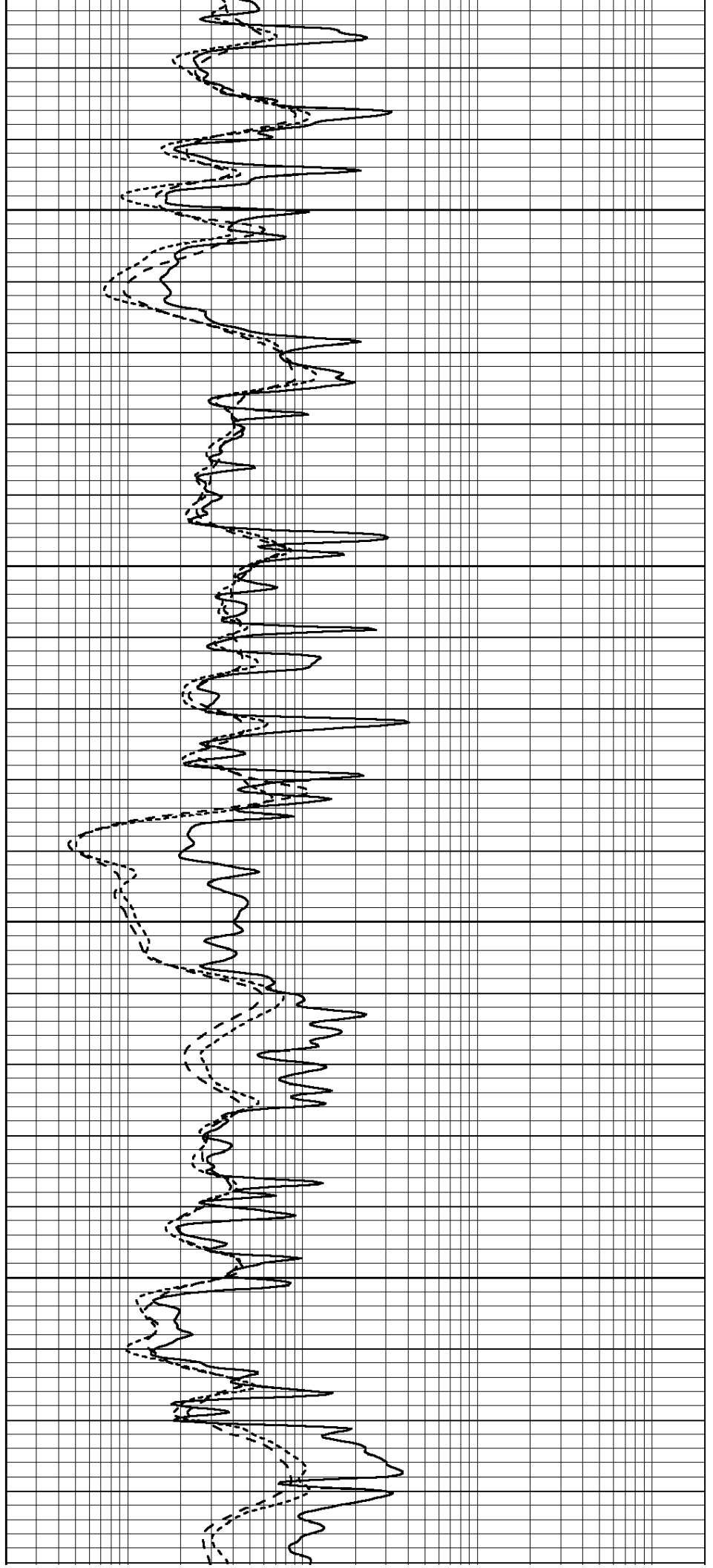


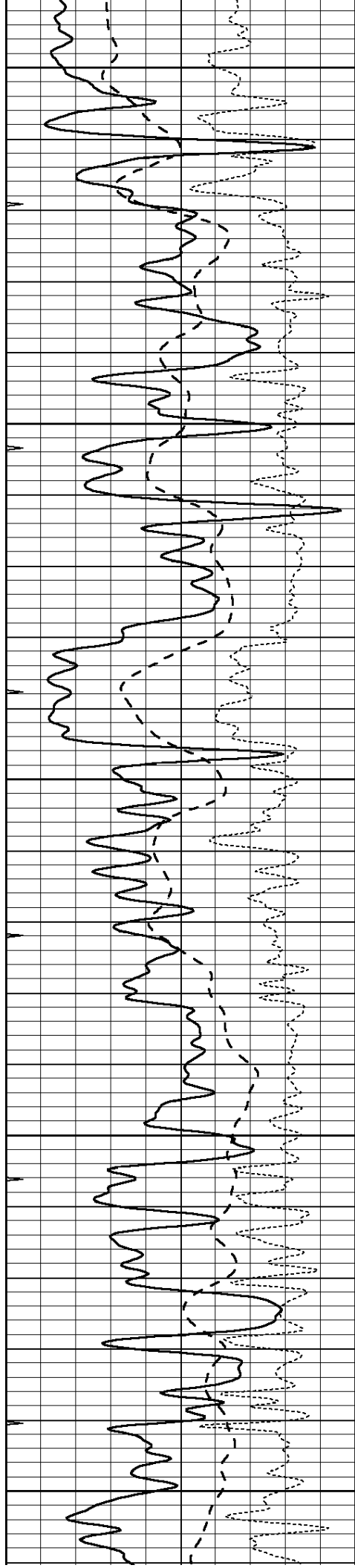
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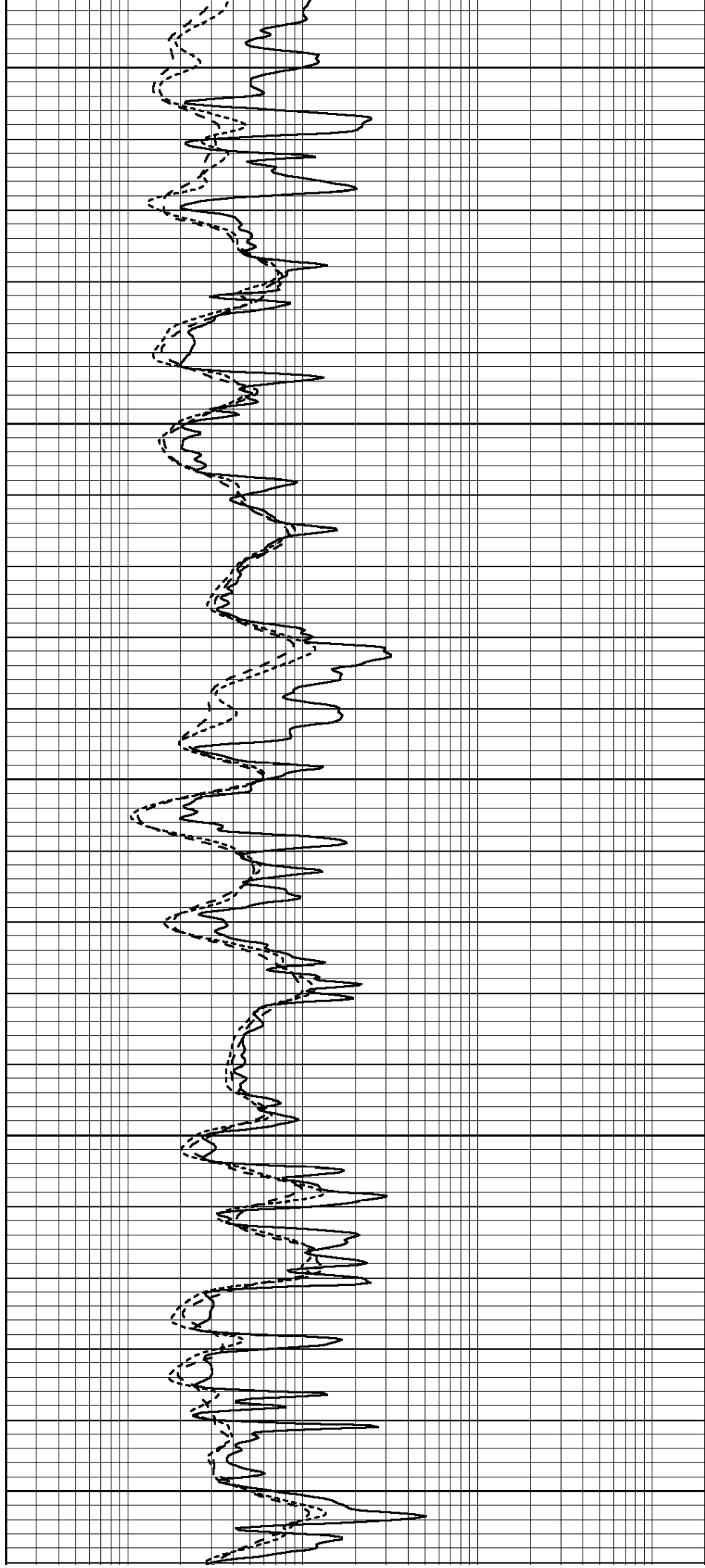
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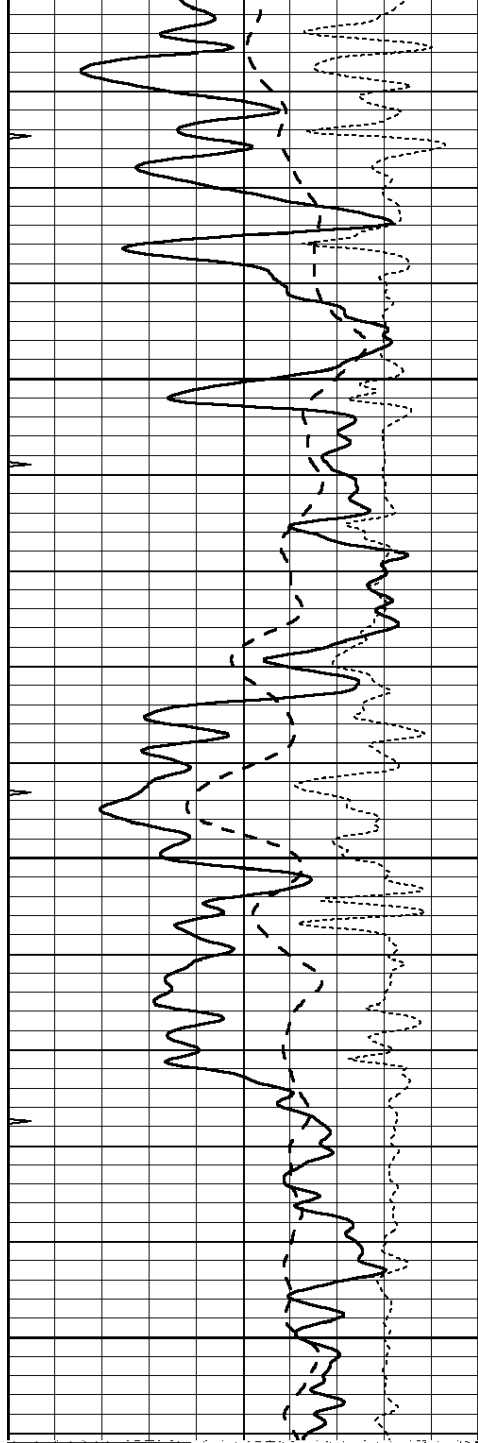
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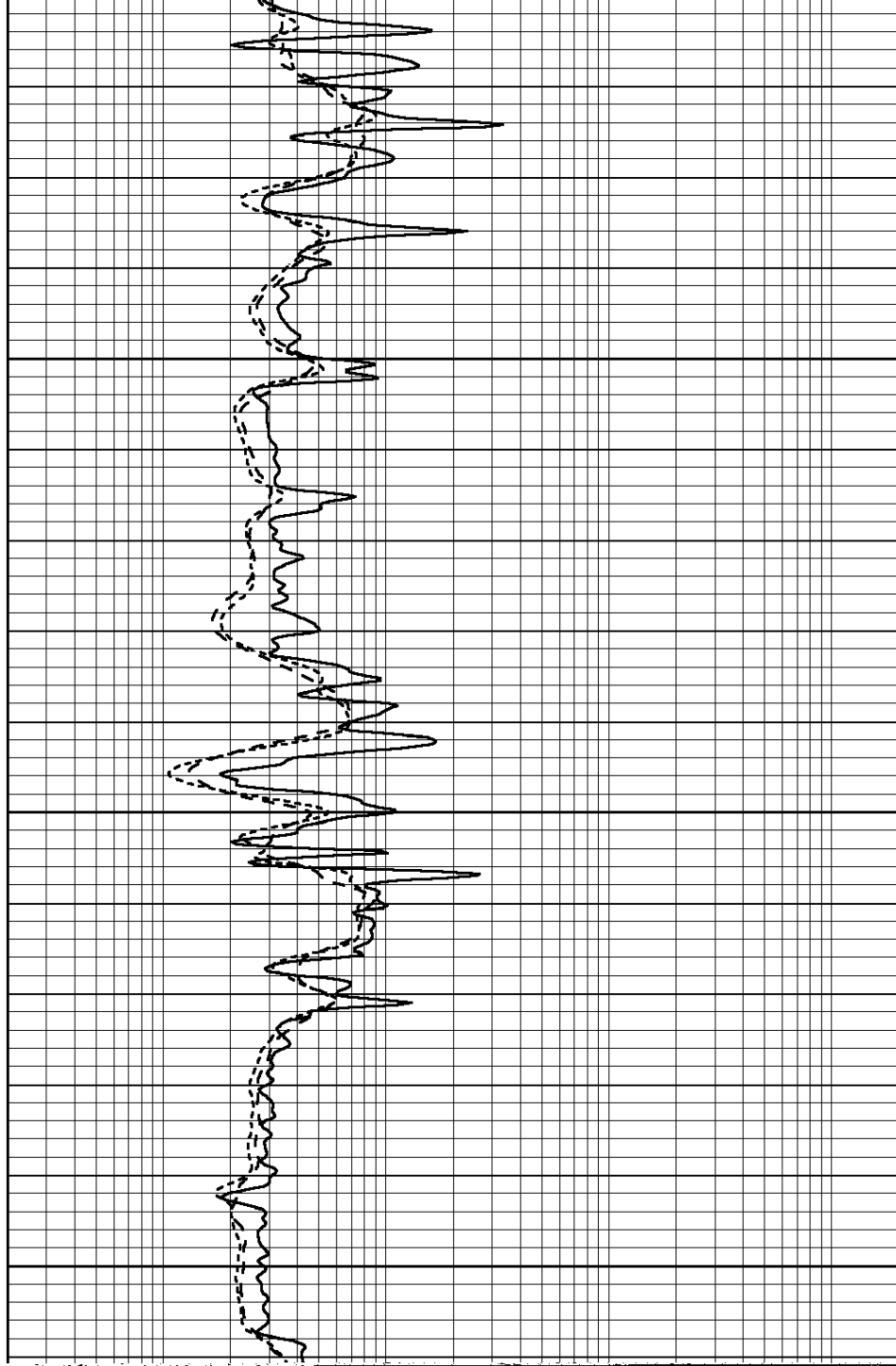


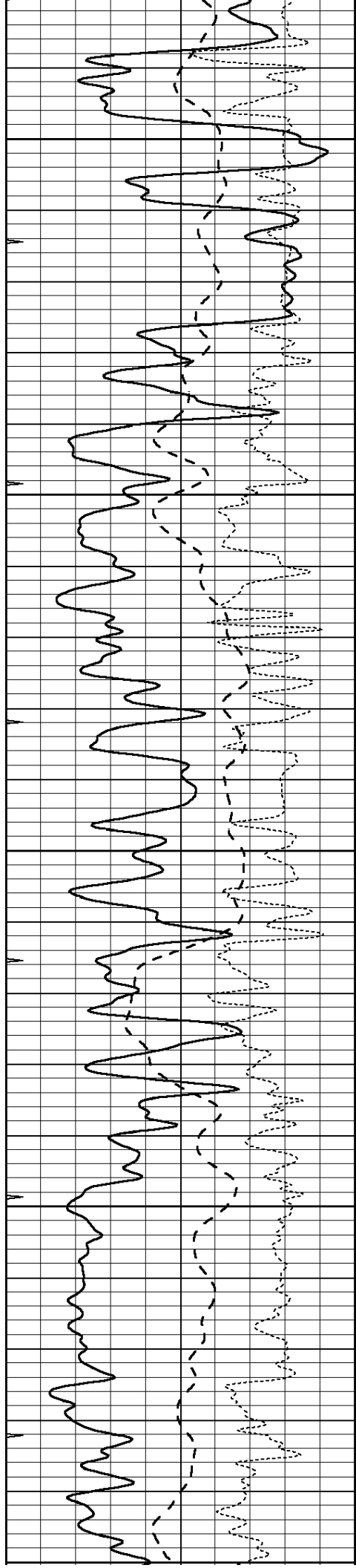


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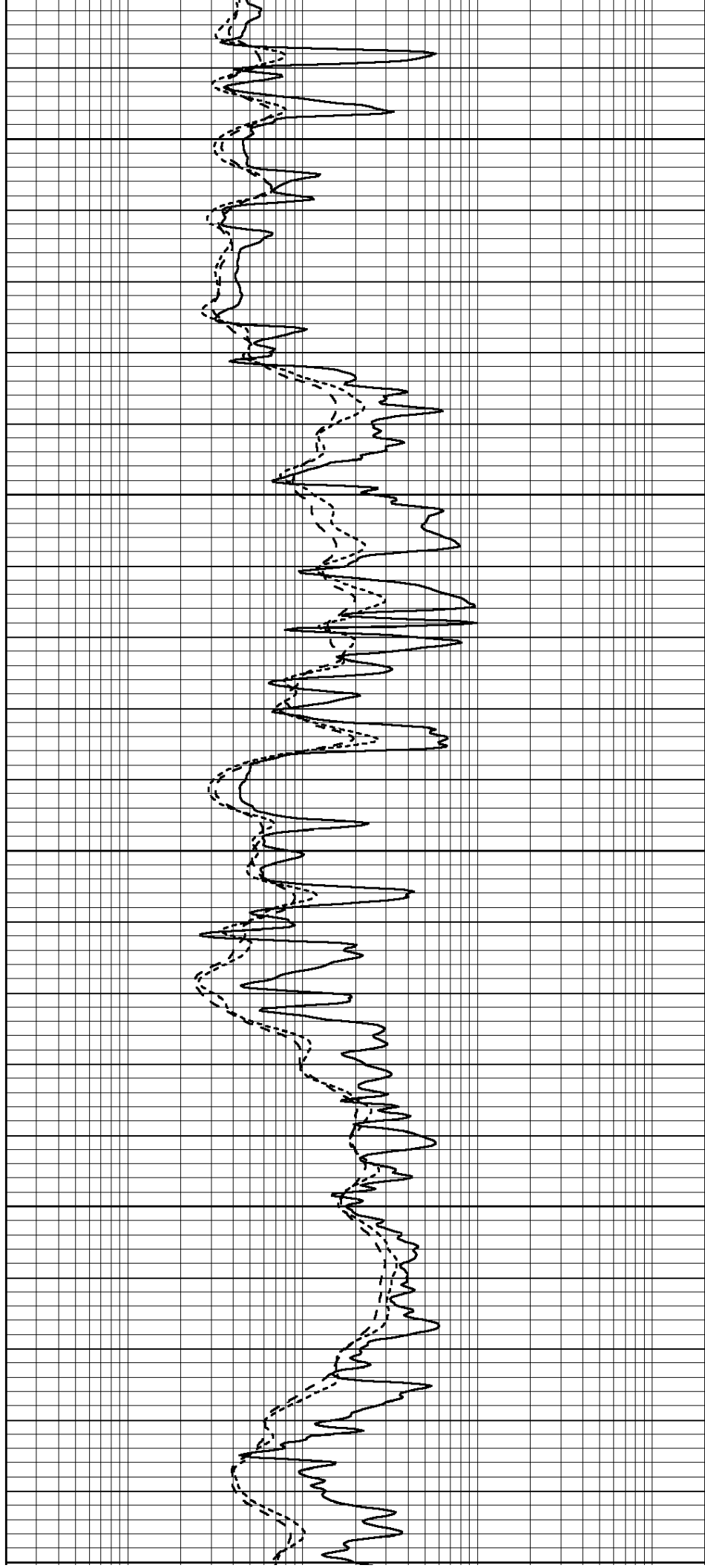
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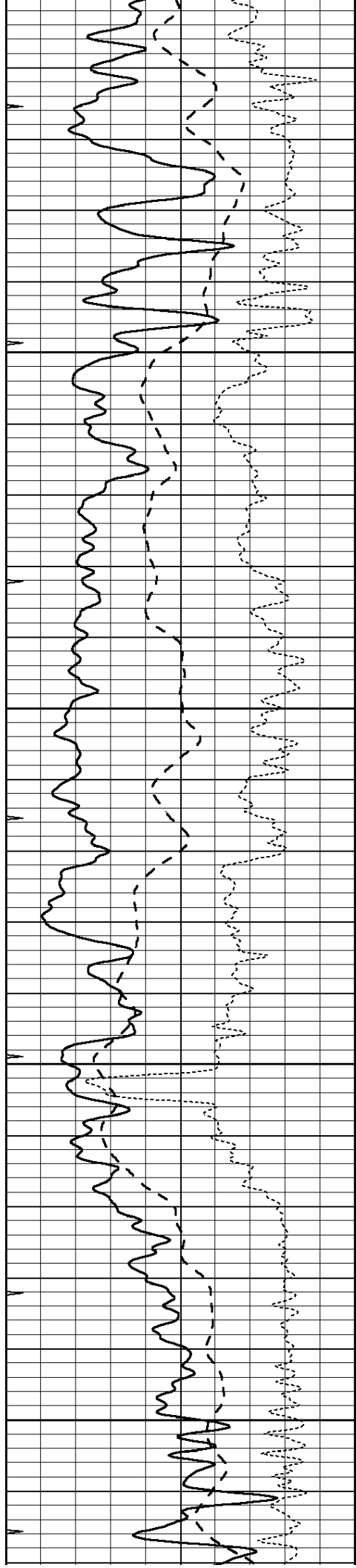
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3300





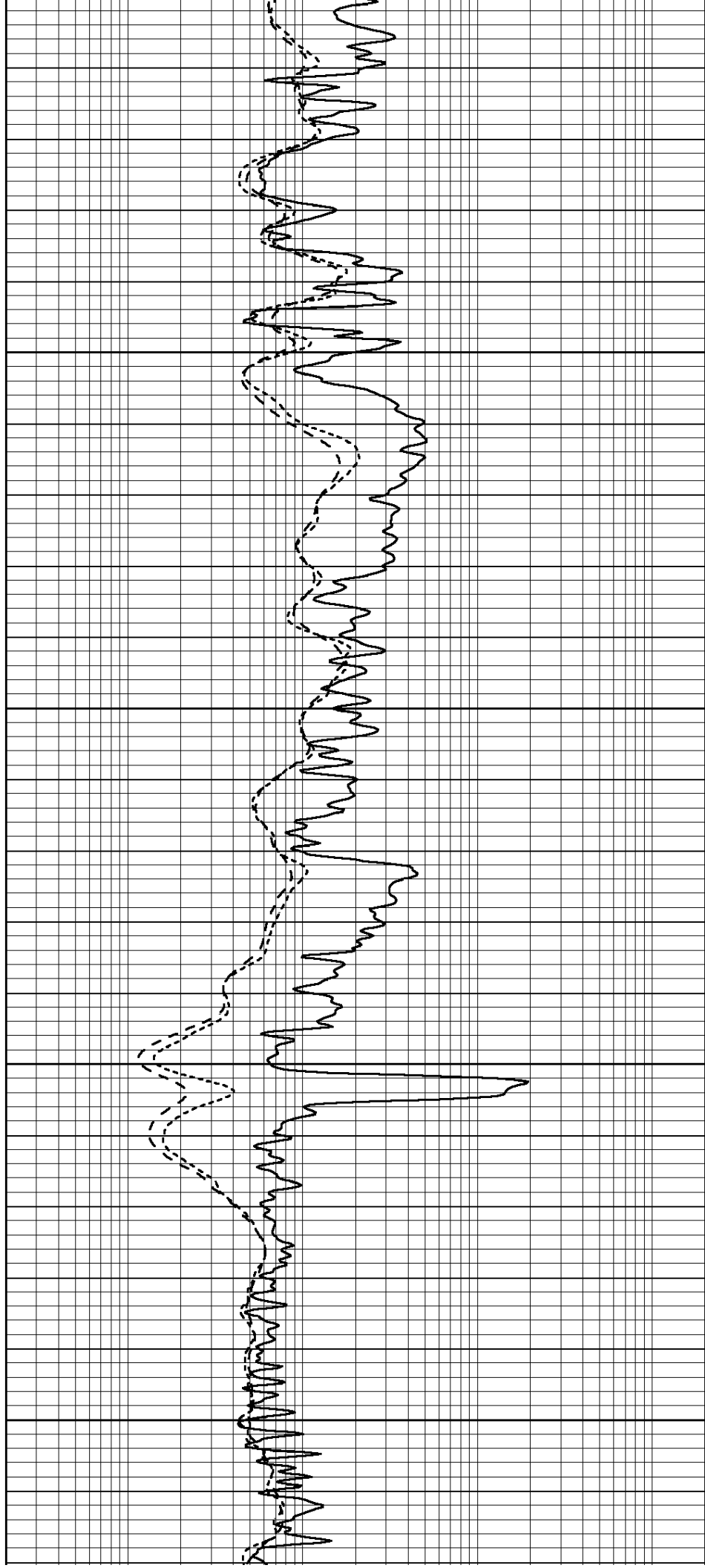
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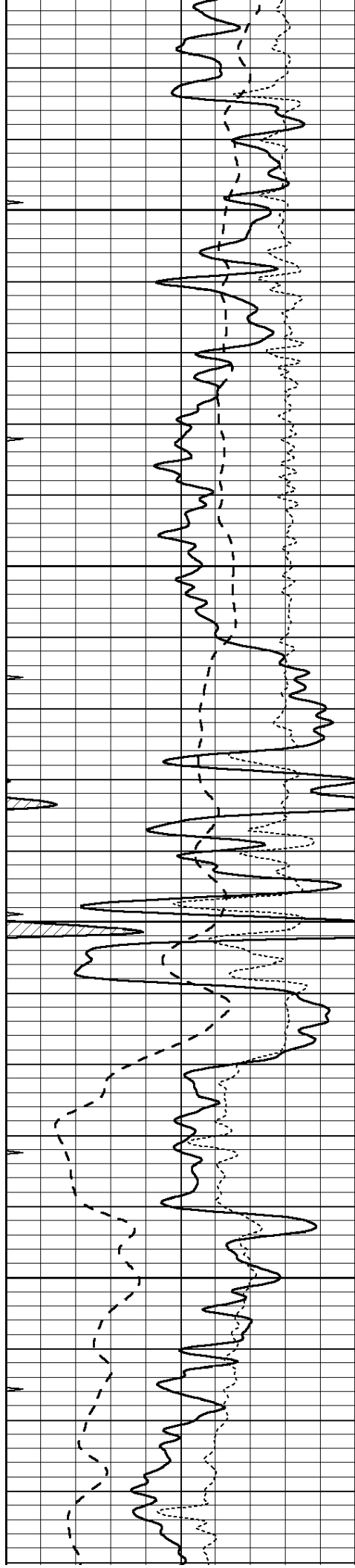
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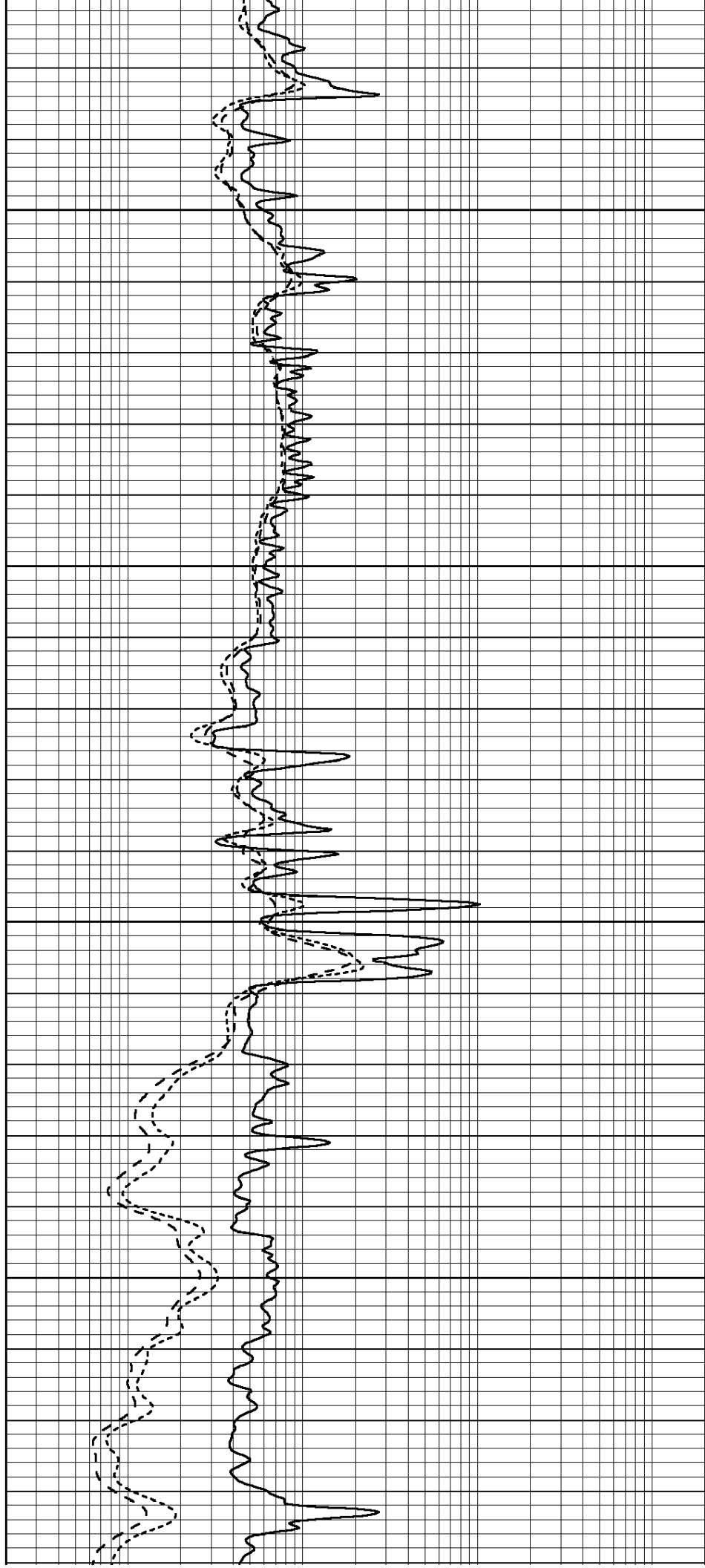


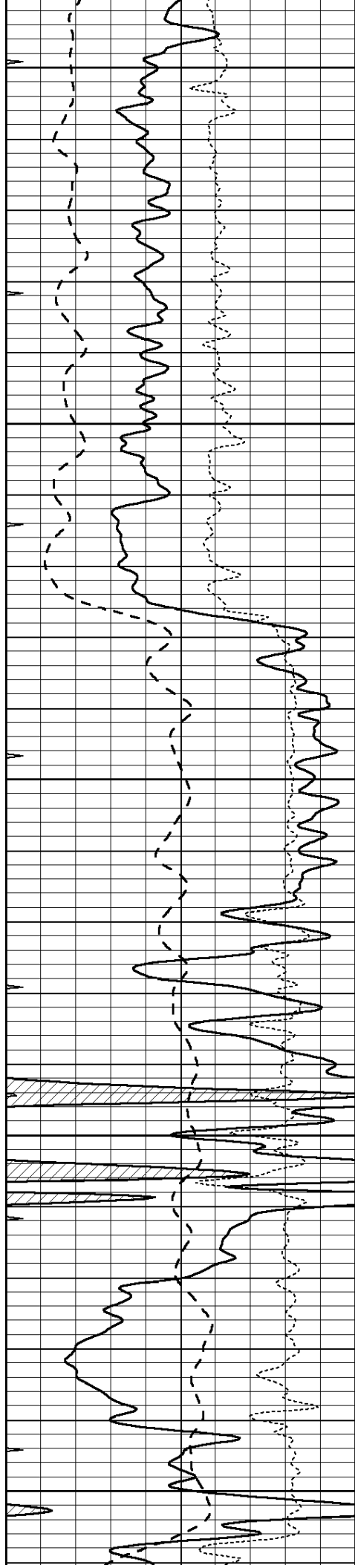
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3700





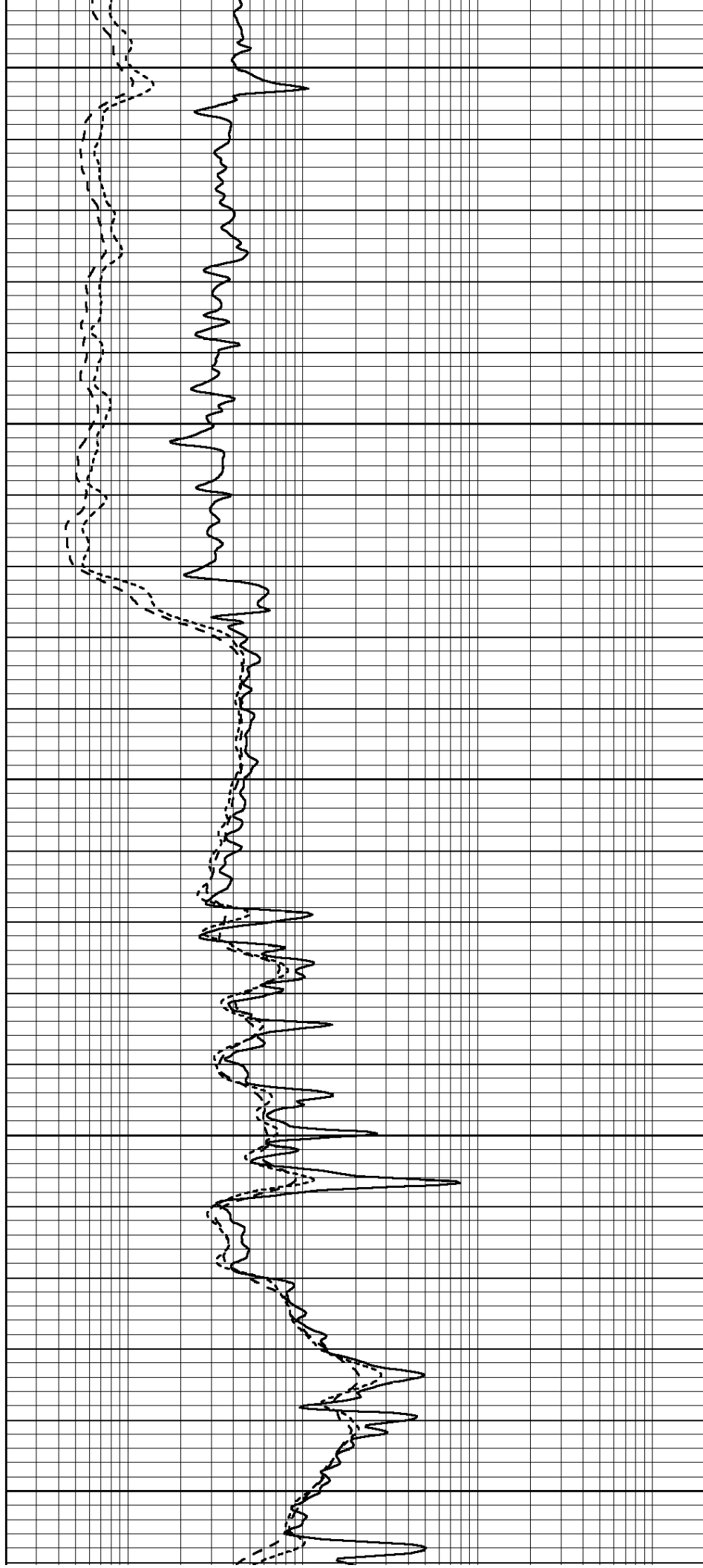
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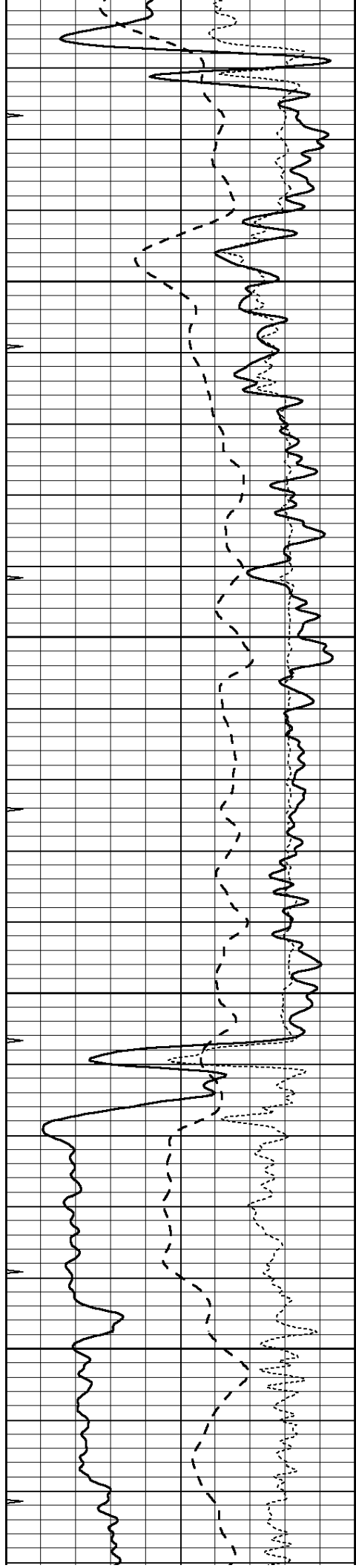
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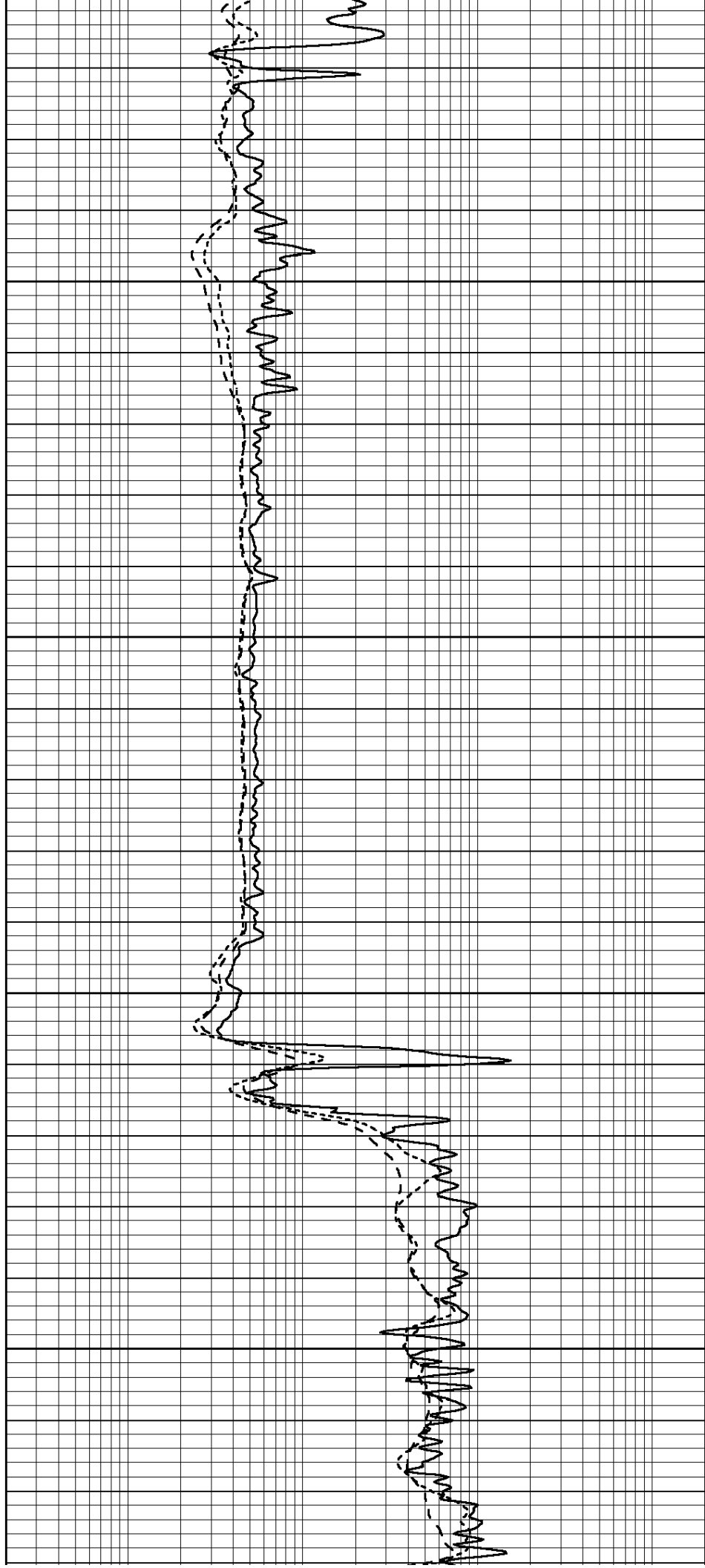


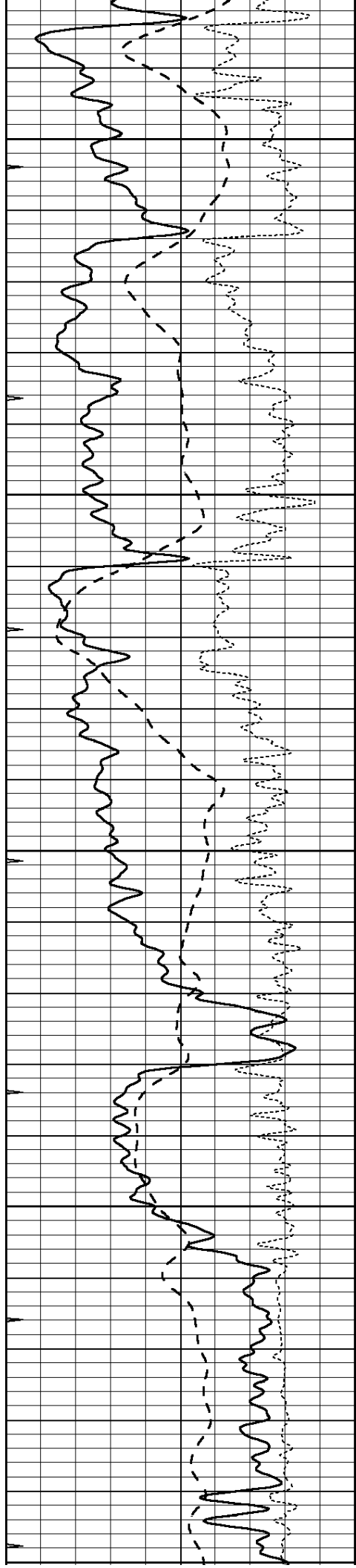
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4150





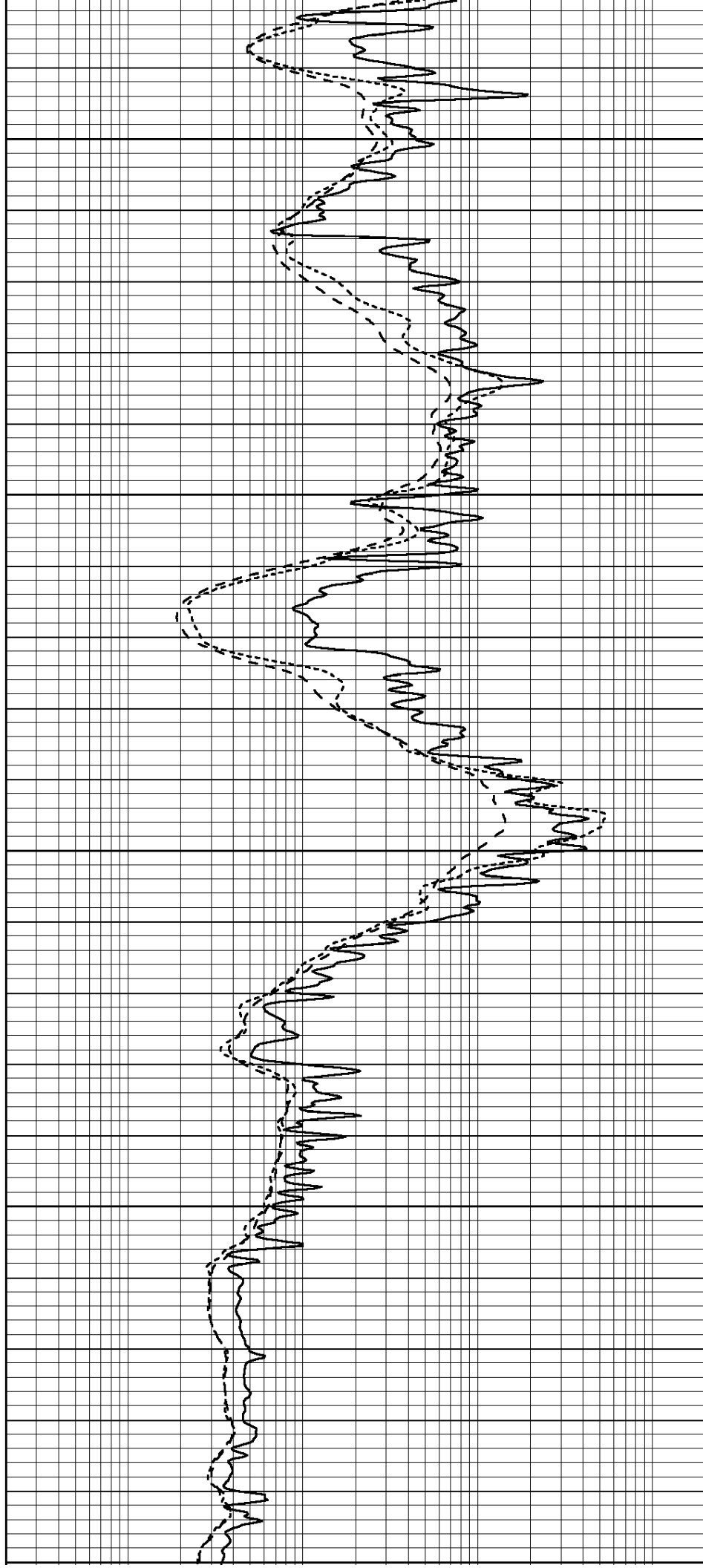
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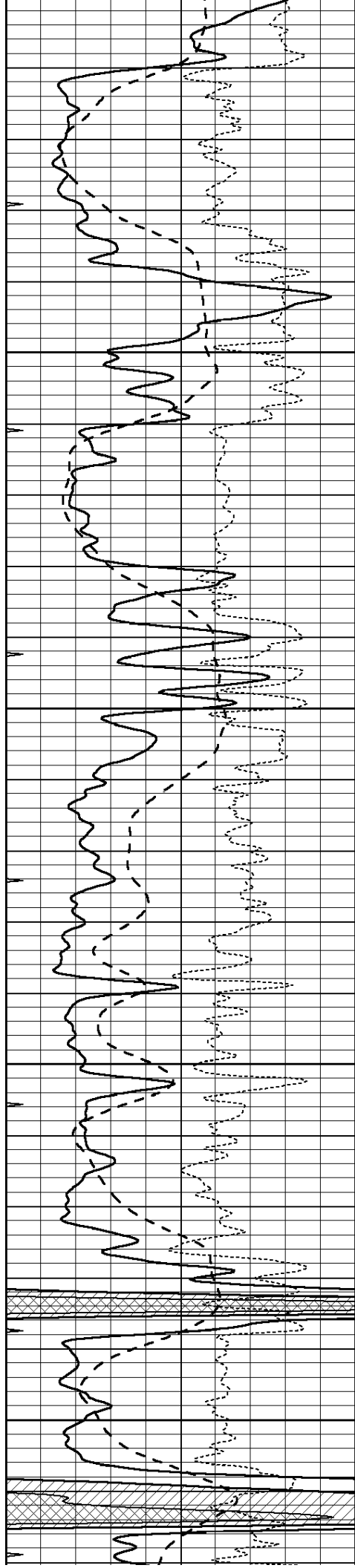
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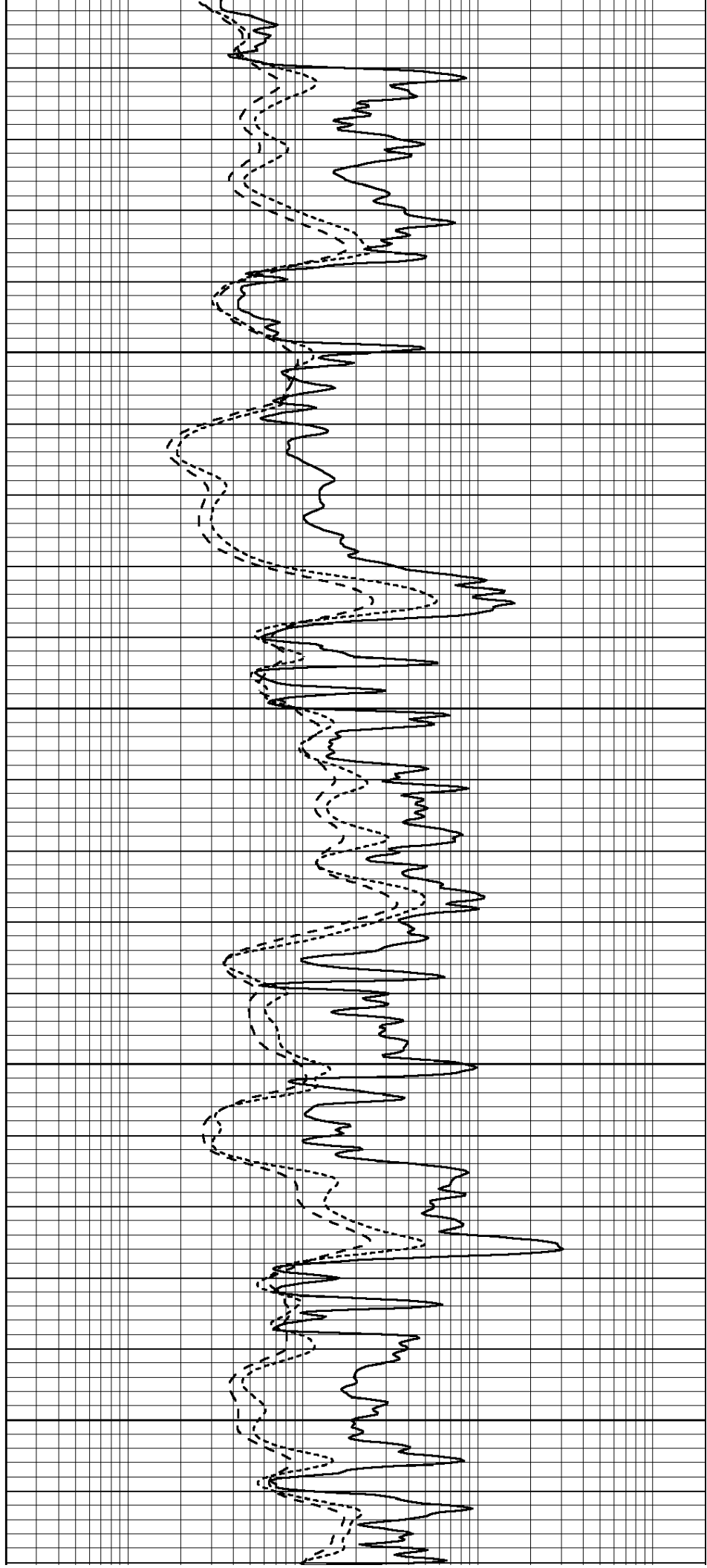
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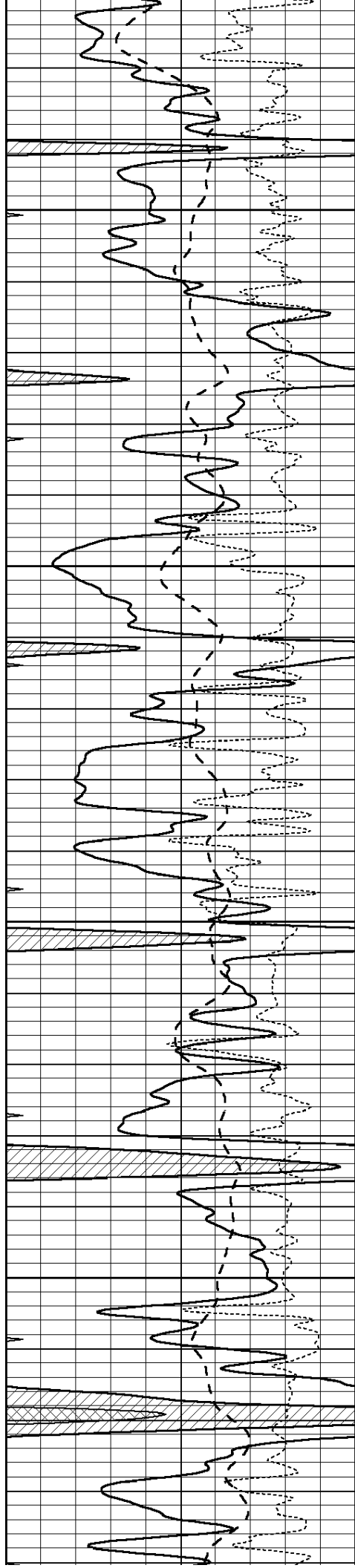
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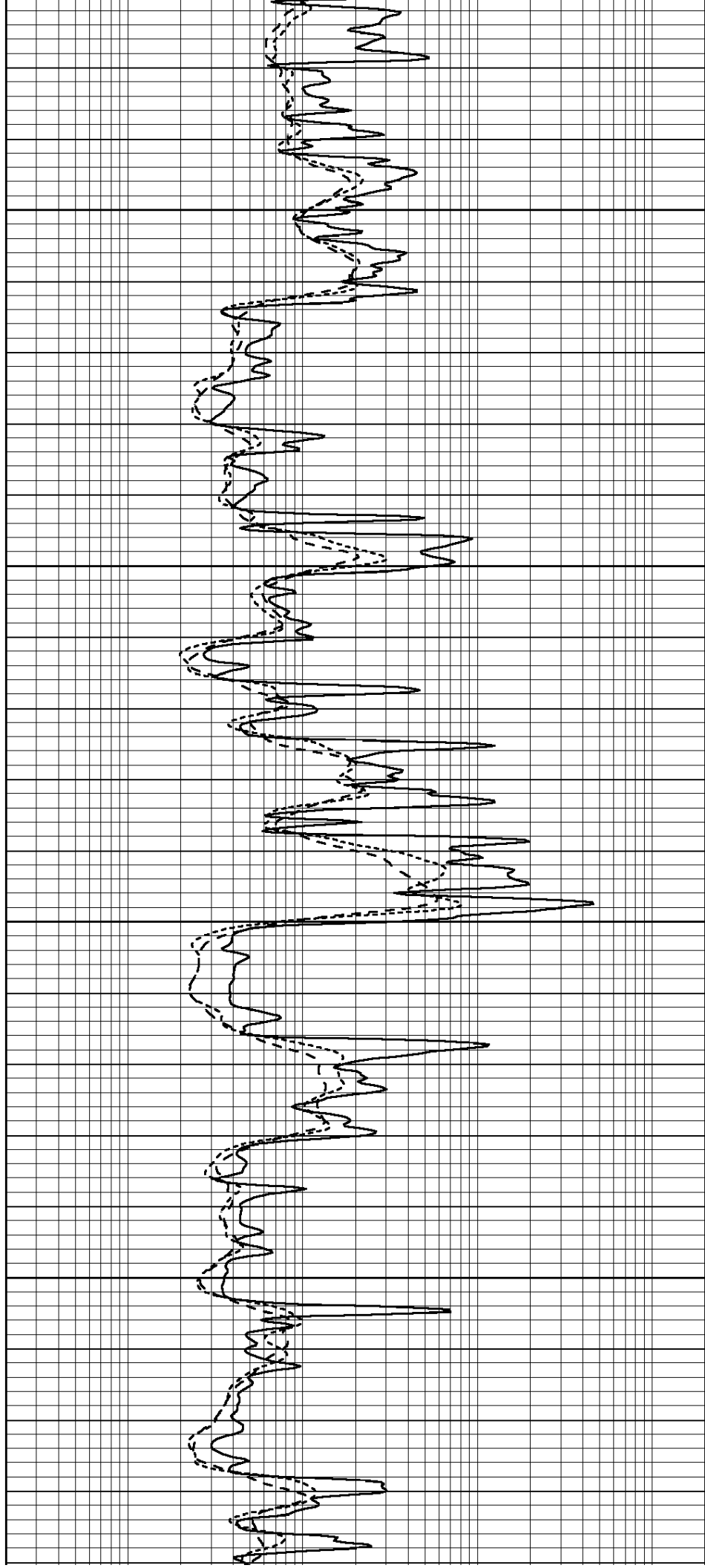


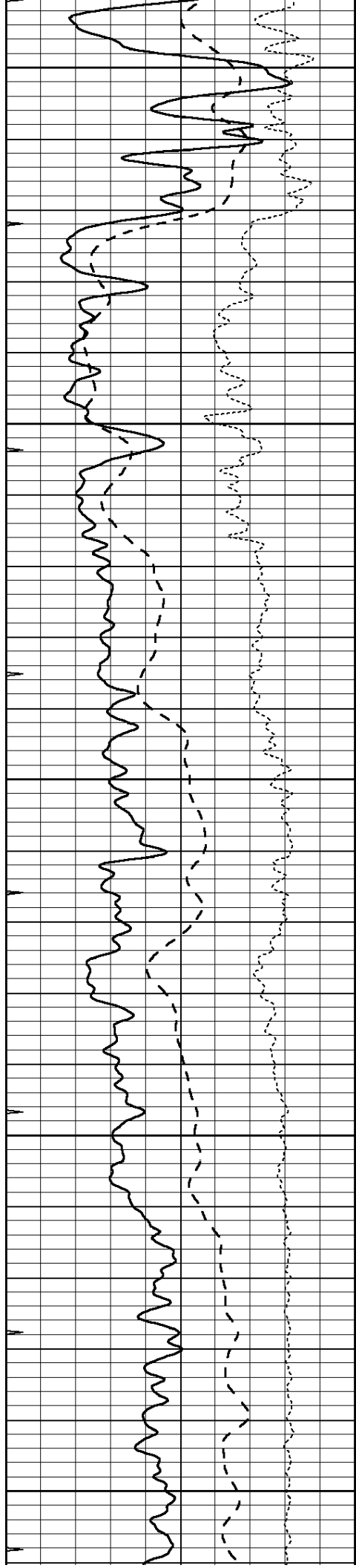
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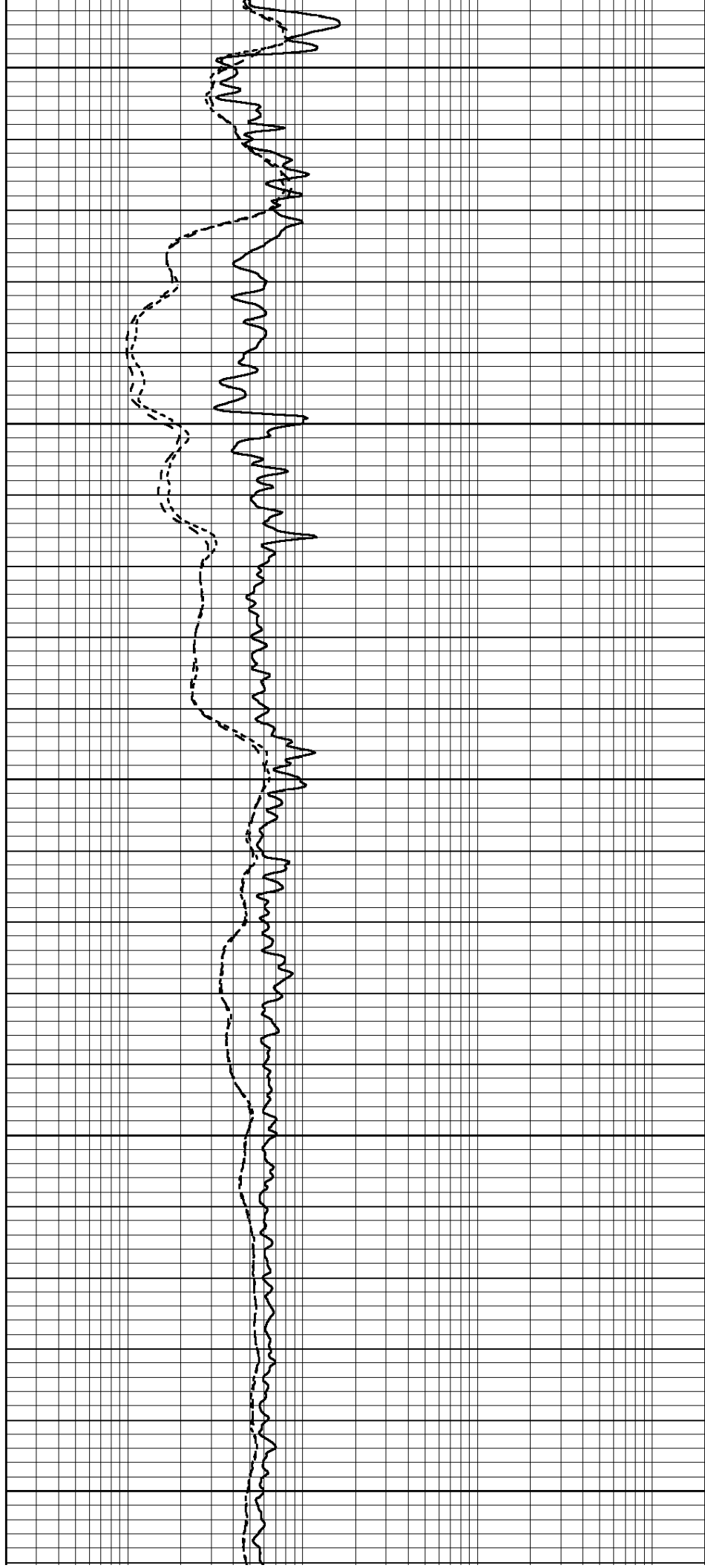
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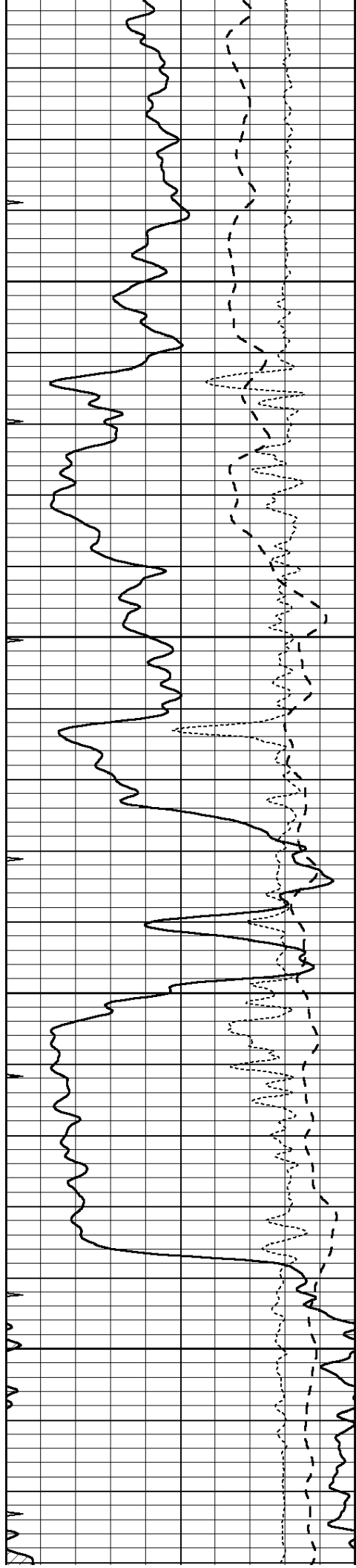
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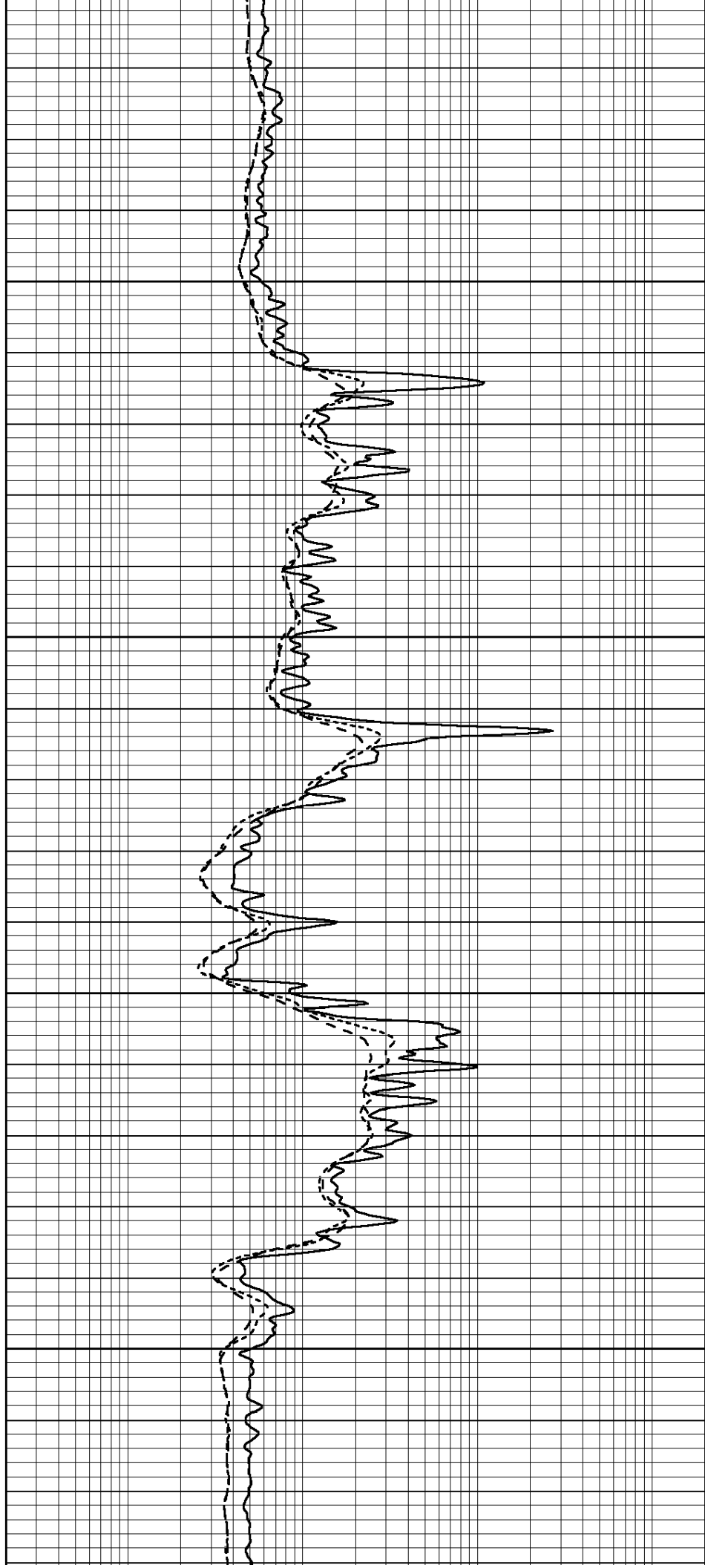


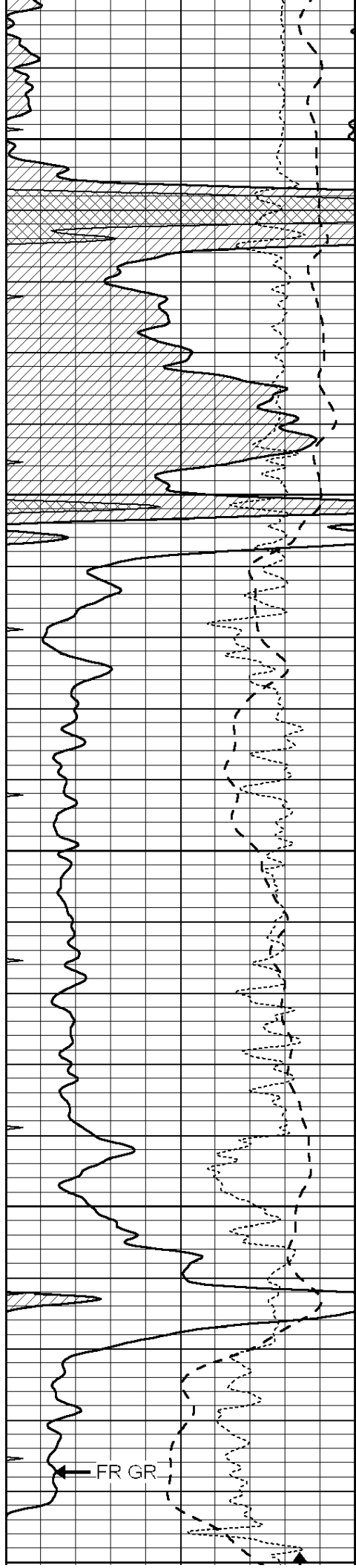
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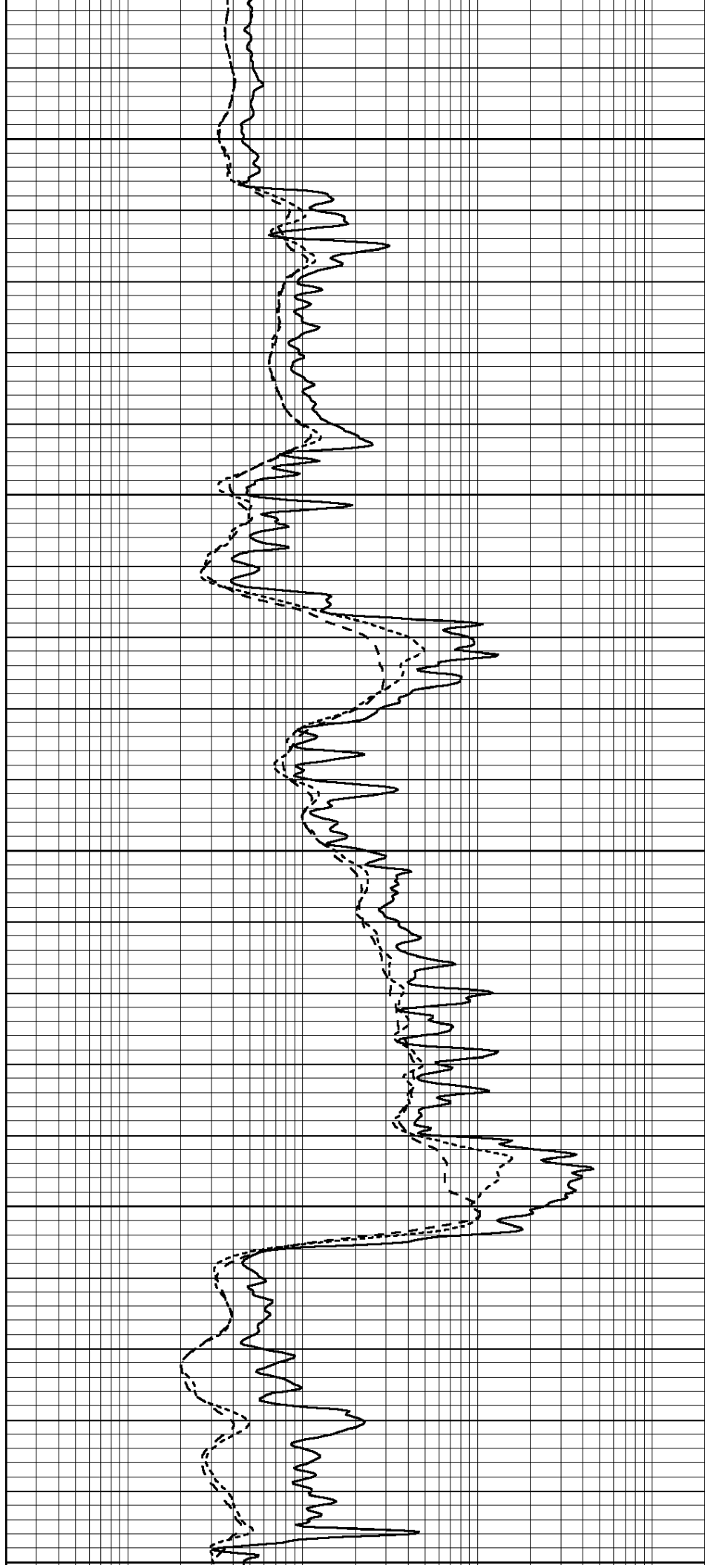
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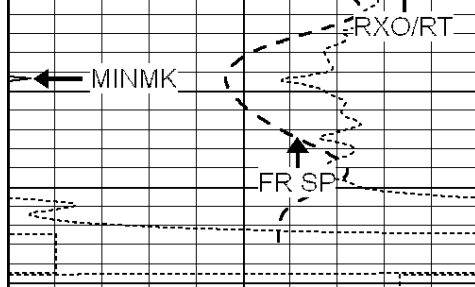
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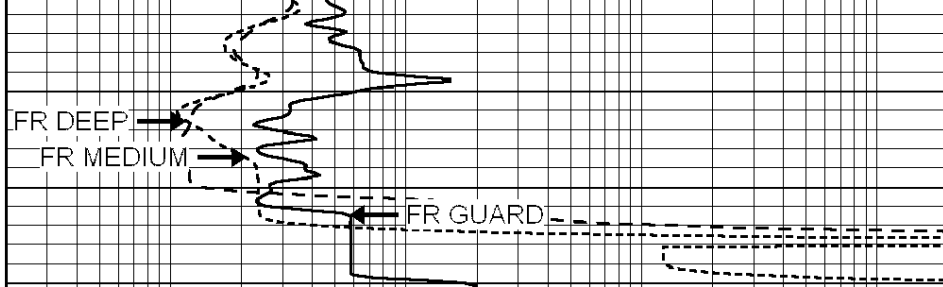
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LTD 5525

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

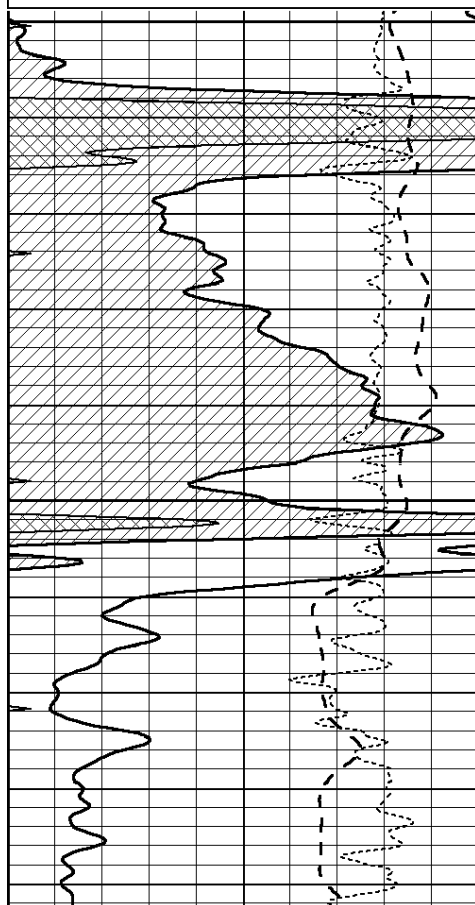


REPEAT SECTION

Database File: 011665pe.db
 Dataset Pathname: pass2.3
 Presentation Format: _dil
 Dataset Creation: Wed Sep 04 14:30:03 2013 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

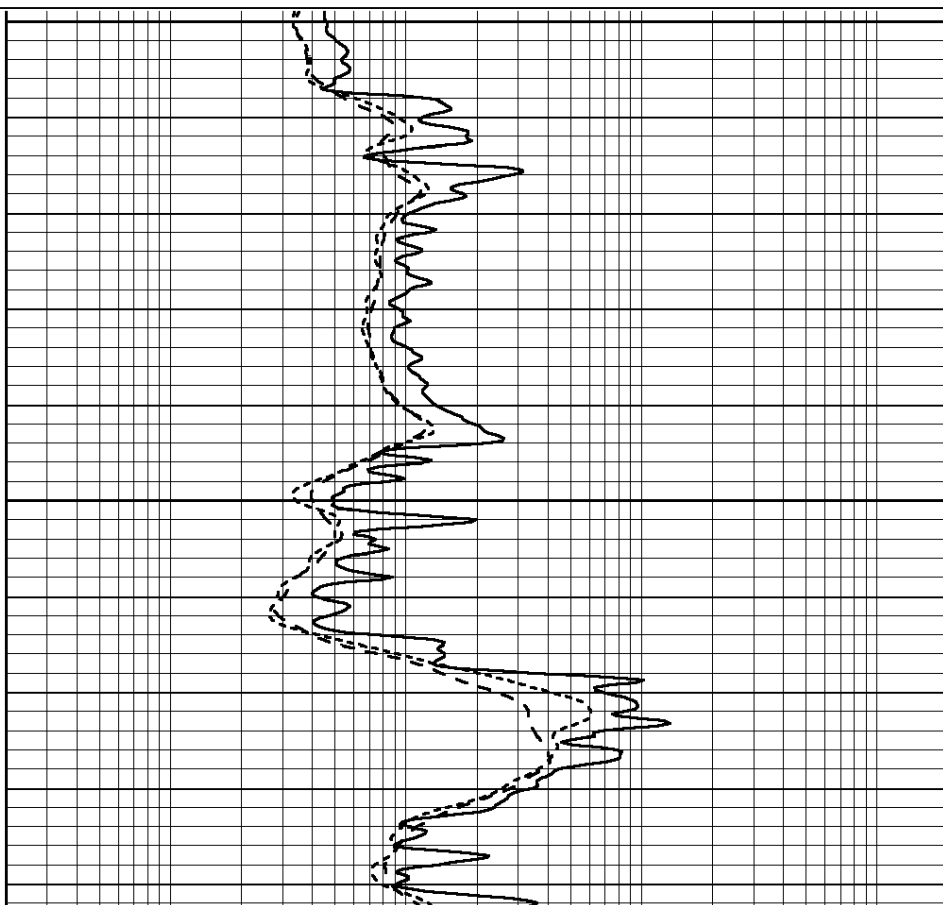
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

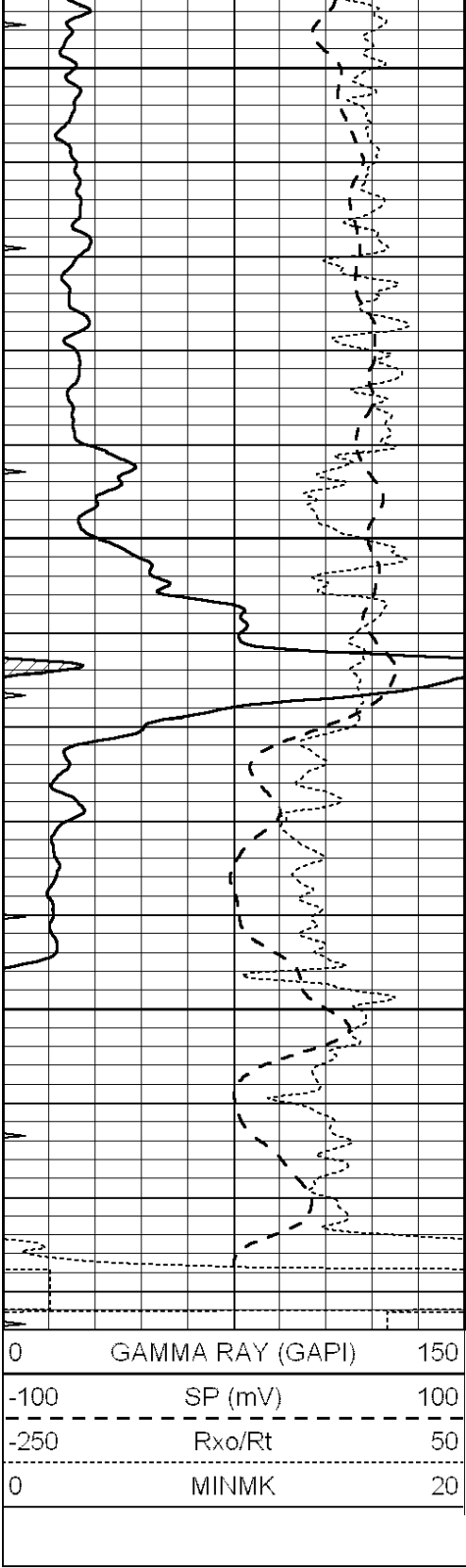
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



5300

5350

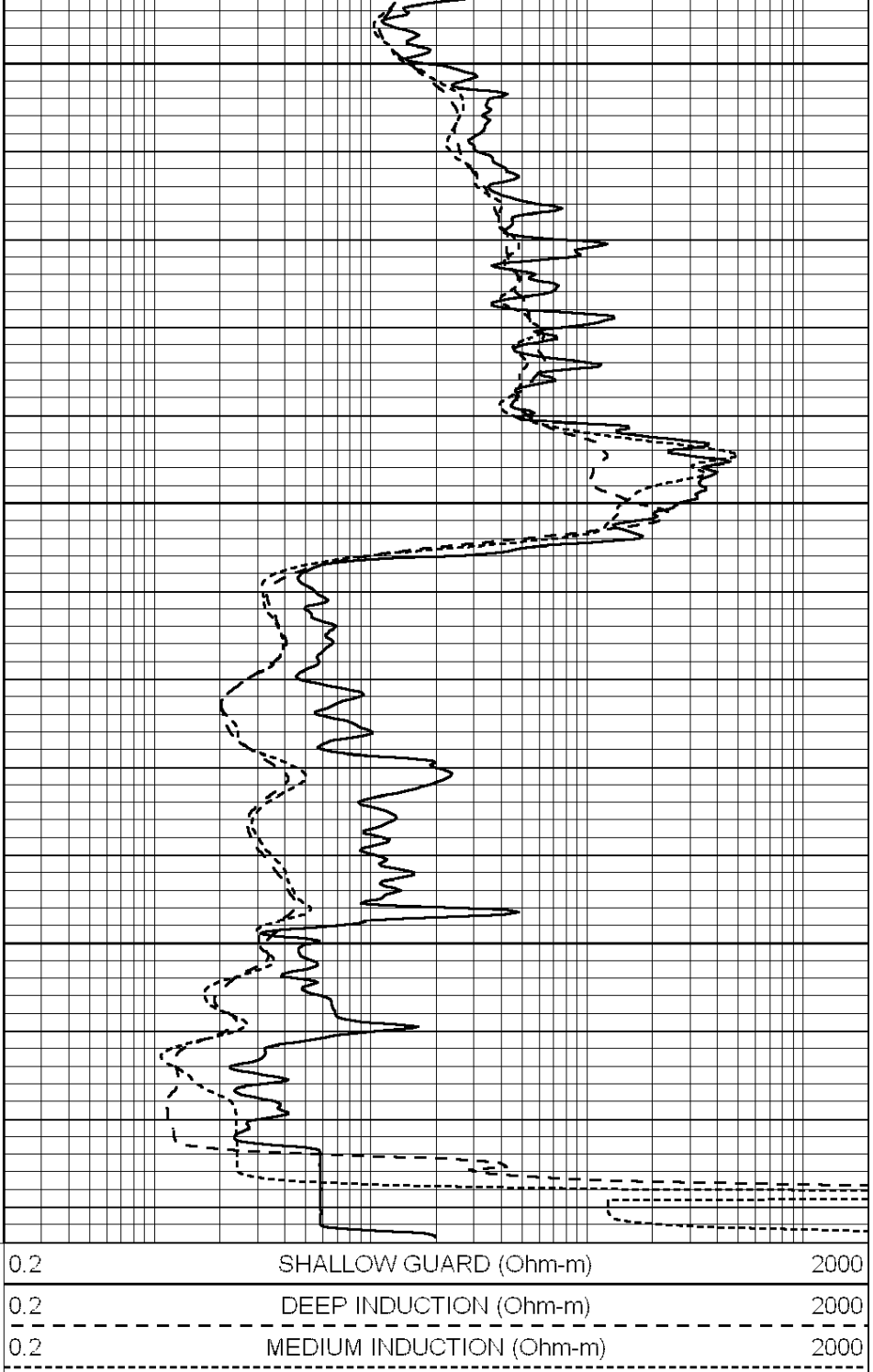




5400

5450

5500



Calibration Report

Database File: 011665pe.db
Dataset Pathname: pass3.7
Dataset Creation: Wed Sep 04 17:13:50 2013 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Tue Sep 03 13:51:22 2013
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

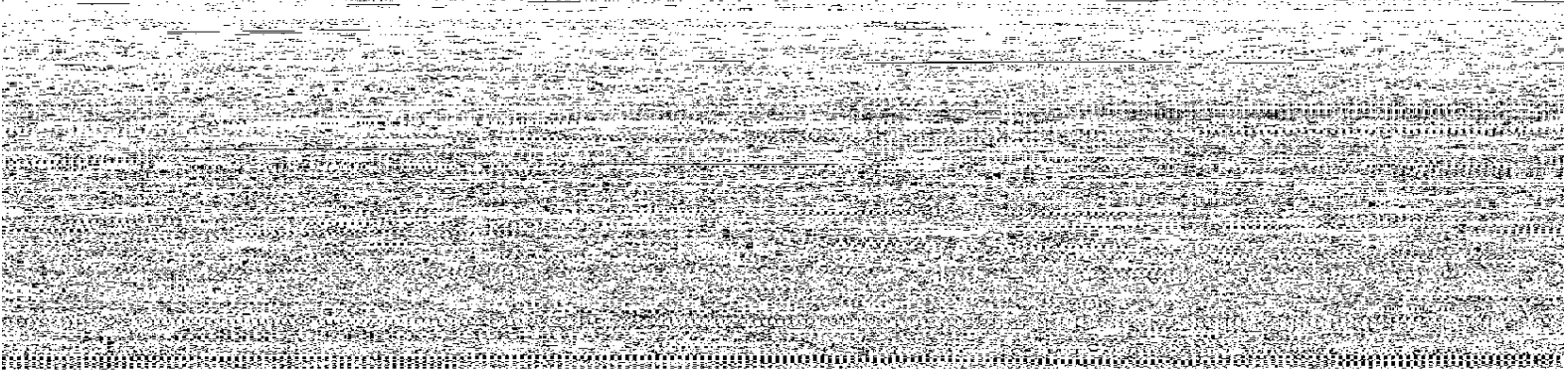
Surface Calibration

Readings

References

Results

Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	-3.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-11.000
Internal:	Zero	Set		Zero	Set			



Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	
Compensated Neutron Calibration Report					
		Serial Number:	070808		
		Tool Model:	Probe		
PRE-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
POST-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
Gamma Ray Calibration Report					
Serial Number:		070559			
Tool Model:		OPEN_GR			
Performed:		Wed Jun 12 18:25:42 2013			
Calibrator Value:		1.0	GAPI		
Background Reading:		0.0	cps		
Calibrator Reading:		1.0	cps		
Sensitivity:		0.3500	GAPI/cps		