



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL INDUCTION
LOG**

Company WOOLSEY OPERATING CO. LLC.
Well STERNBERGER "B" #3
Field STRANATHAN
County BARBER
State KANSAS

Company WOOLSEY OPERATING COMPANY, LLC.
Well STERNBERGER "B" #3
Field STRANATHAN
County BARBER State KANSAS

Location: API # : 15-007-24217-0000
2310' FSL & 2310' FWL
NE - NE - SW
SEC 12 TWP 35S RGE 12W
Permanent Datum GROUND LEVEL Elevation 1349
Log Measured From KELLY BUSHING 12' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL/PE
Elevation
K.B. 1361
D.F. 1359
G.L. 1349

Date	9/26/14
Run Number	ONE
Depth Driller	5410
Depth Logger	5411
Bottom Logged Interval	5409
Top Log Interval	00
Casing Driller	13 3/8" @ 219'
Casing Logger	214
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.0/53
pH / Fluid Loss	9.5/9.6
Source of Sample	FLOWLINE
Rim @ Meas. Temp	.700 @ 70F
Rmf @ Meas. Temp	.525 @ 70F
Rmc @ Meas. Temp	.840 @ 70F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	.380 @ 129F
Time Circulation Stopped	3 HOURS
Time Logger on Bottom	10:15 P.M.
Maximum Recorded Temperature	129F
Equipment Number	4854
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	BILL KLAVER

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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 USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
HARDTNER, KS., E. ON HWY 281 TO (BLACK & GREEN TANKS ON N. SIDE), S. INTO CATTLE GUARD.
FOLLOW TRAIL S. & E. & N. 3/4 MILE



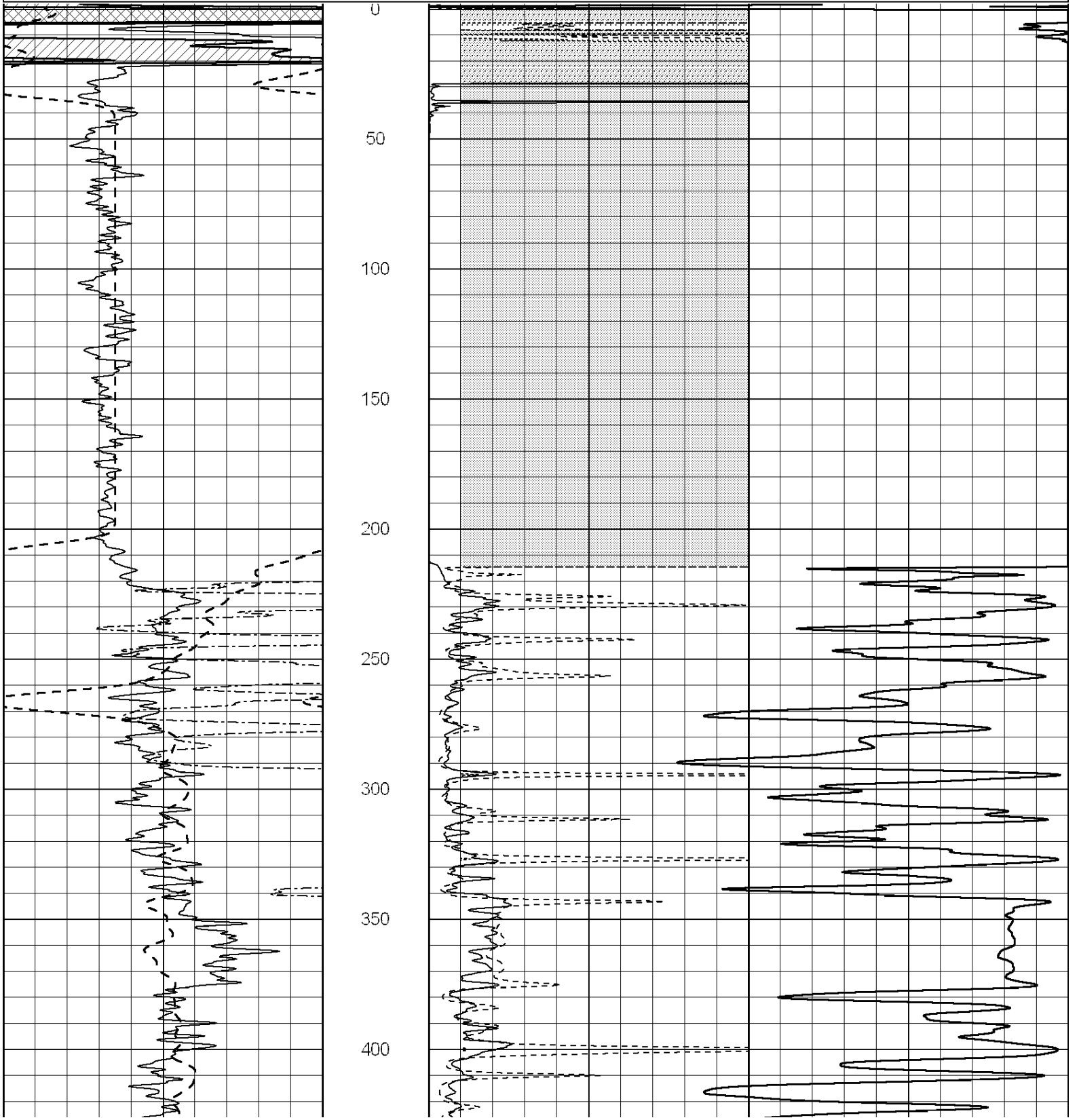
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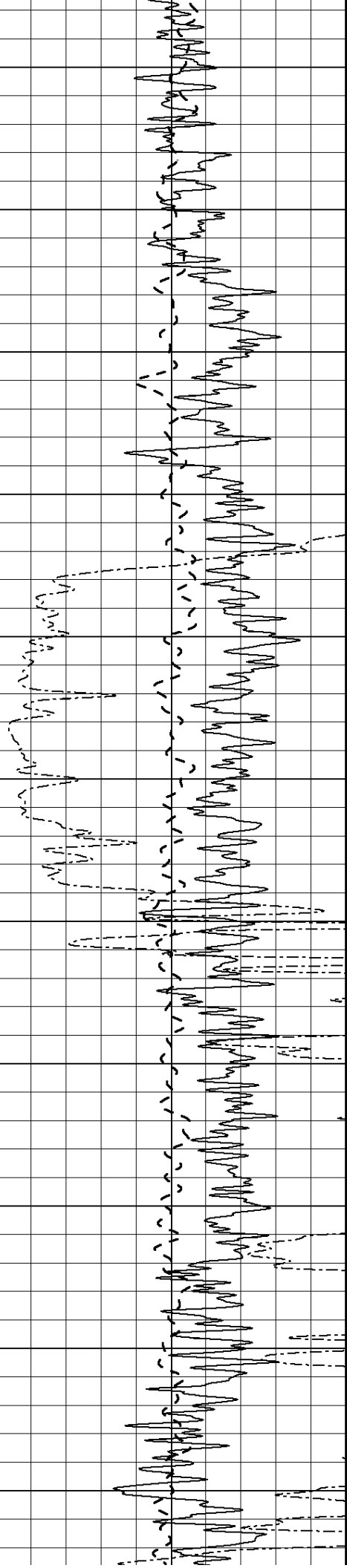
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 Dataset Pathname: pass3.11
 Presentation Format: dil2
 Dataset Creation: Sat Sep 27 01:48:00 2014
 Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	0

50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





450

500

550

600

650

700

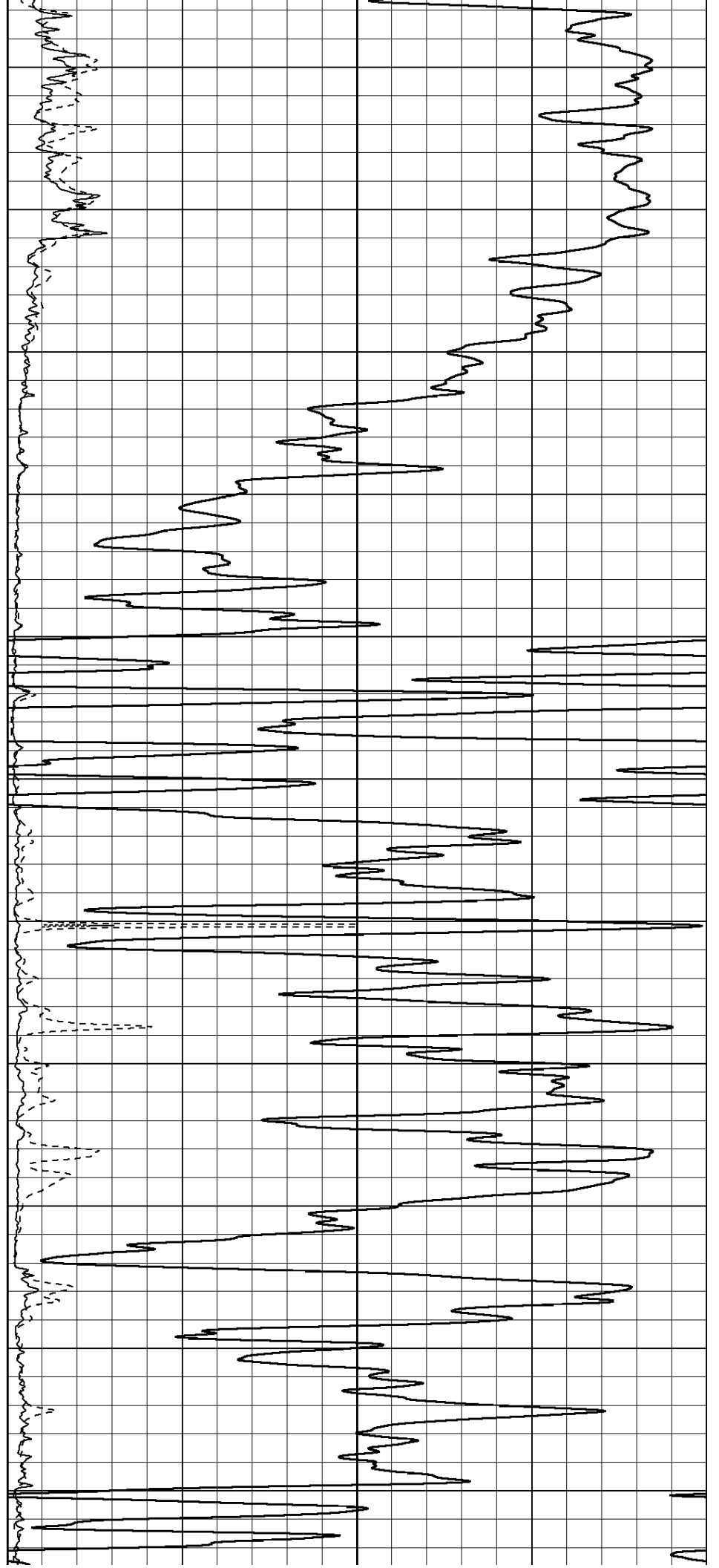
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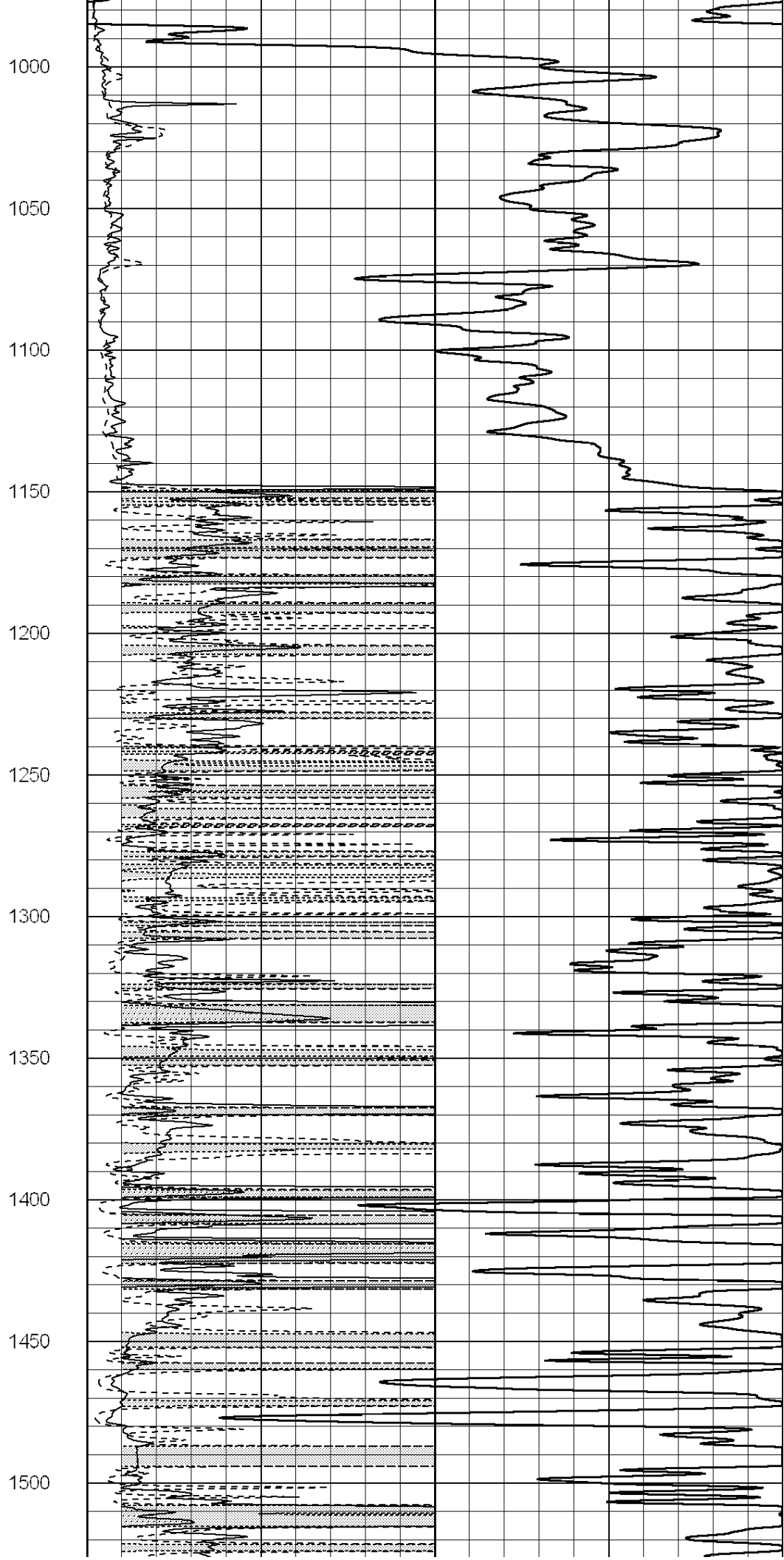
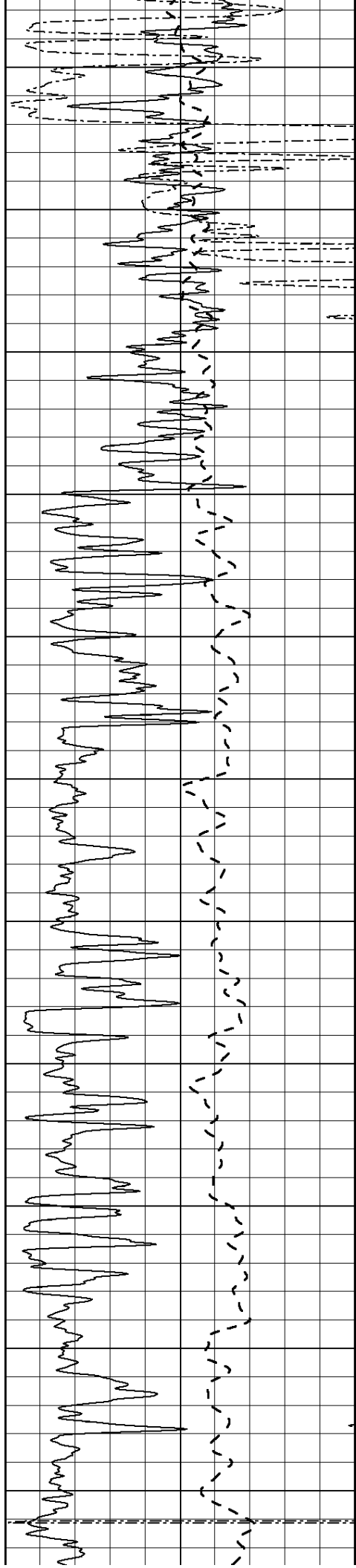
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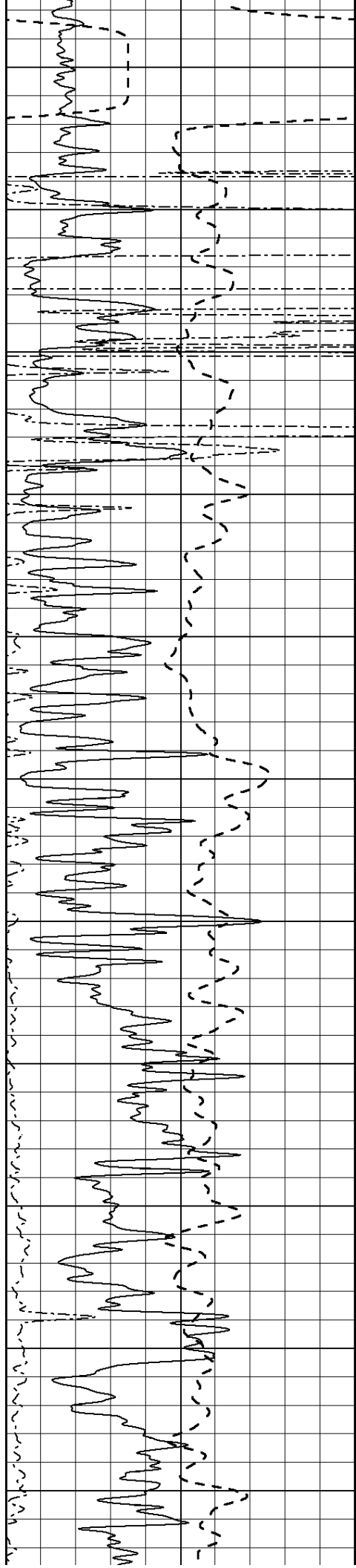
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900

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1550

1600

1650

1700

1750

1800

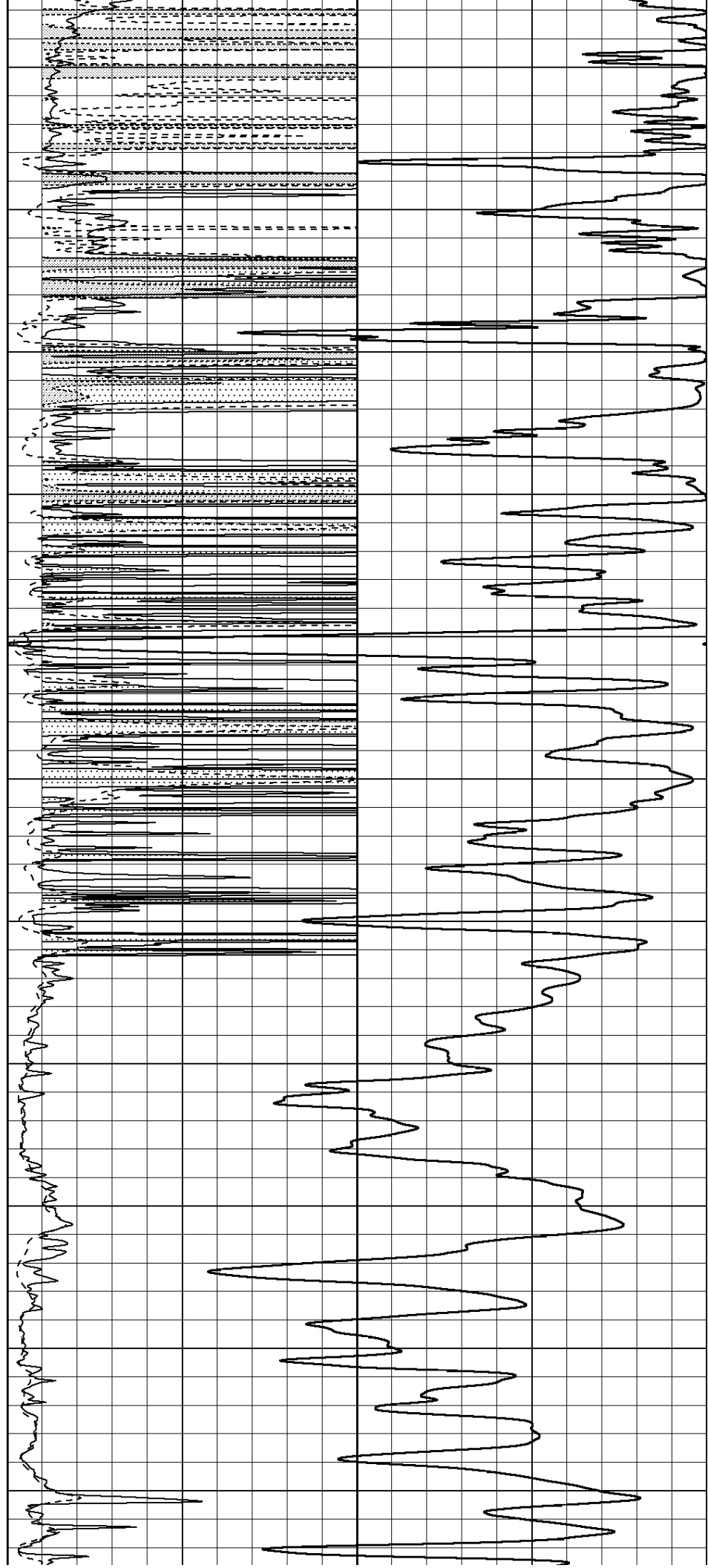
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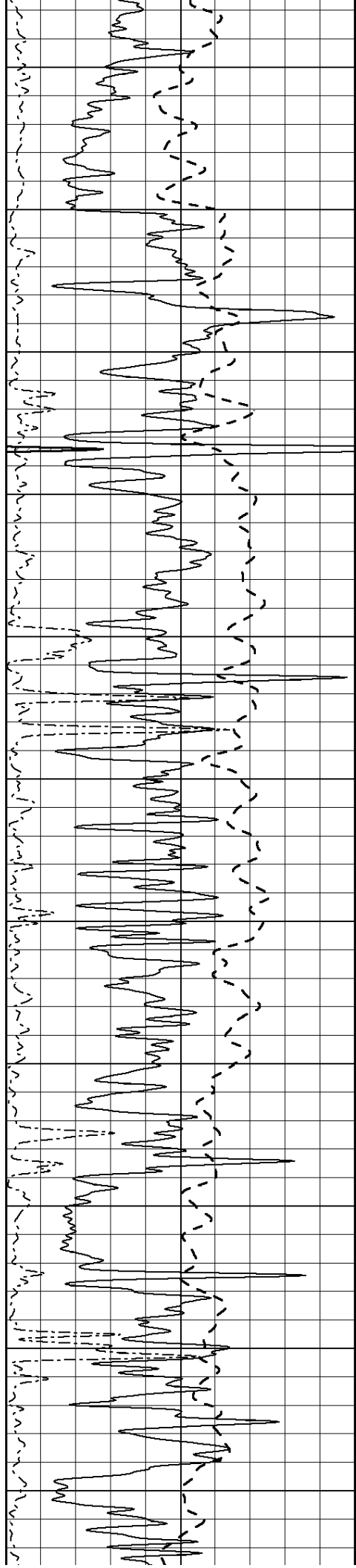
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1950

2000

2050





2100

2150

2200

2250

2300

2350

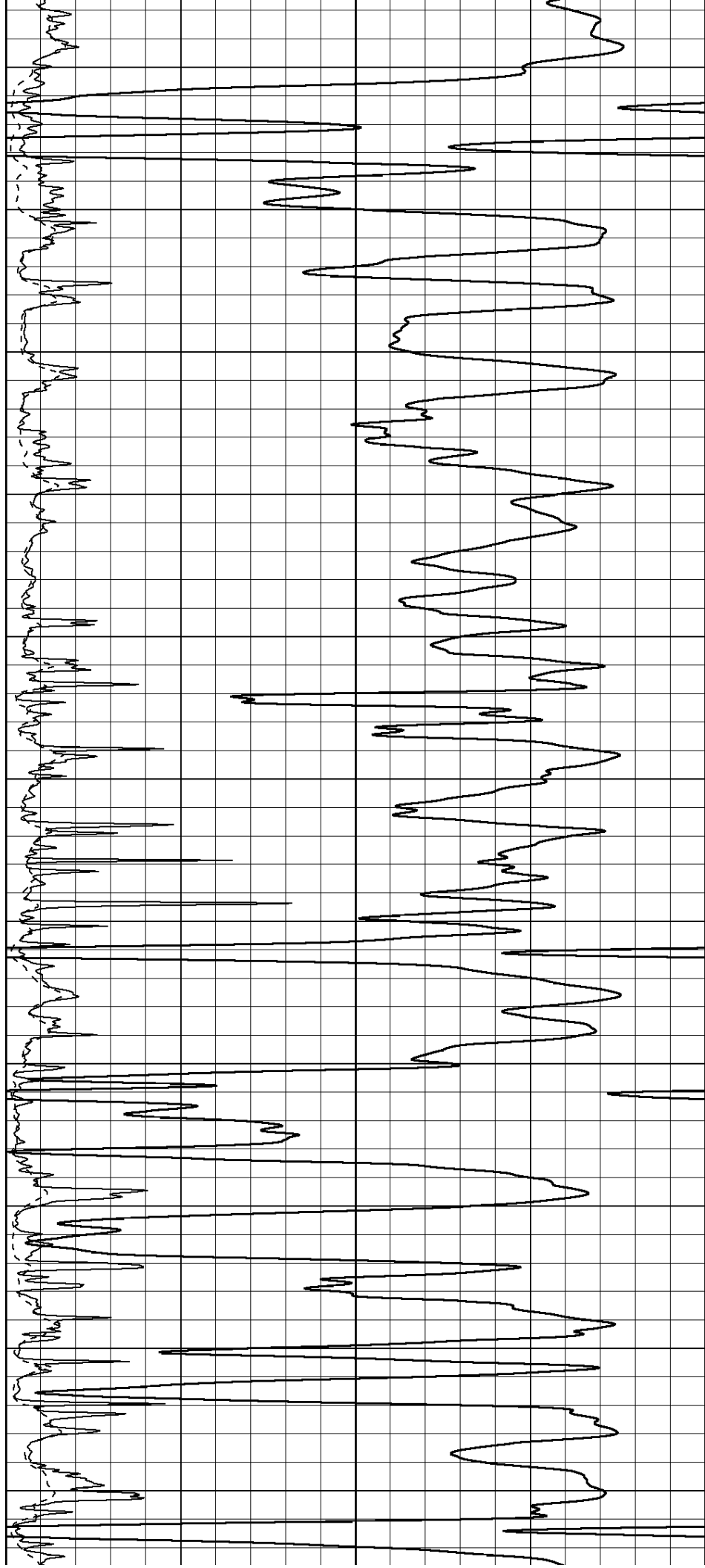
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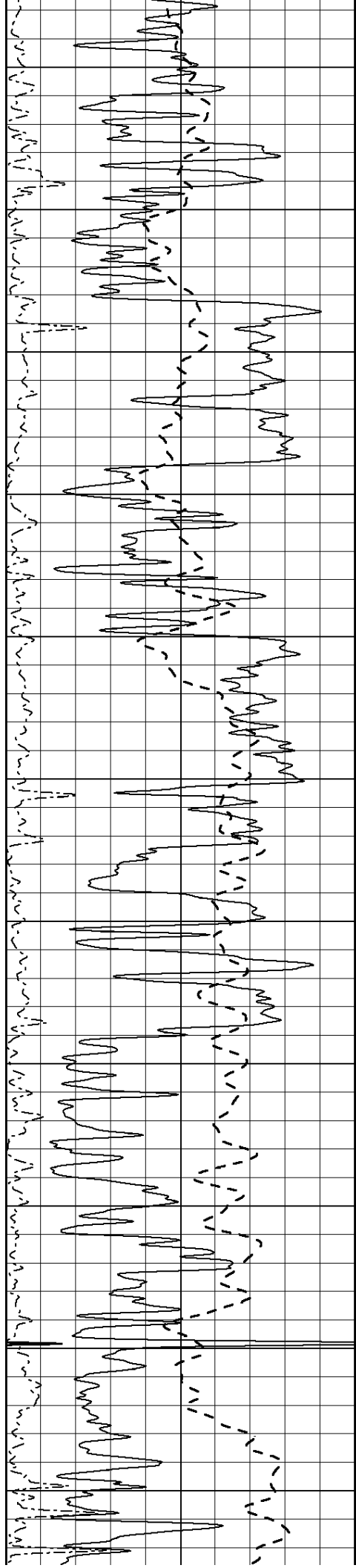
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2500

2550

2600





2650

2700

2750

2800

2850

2900

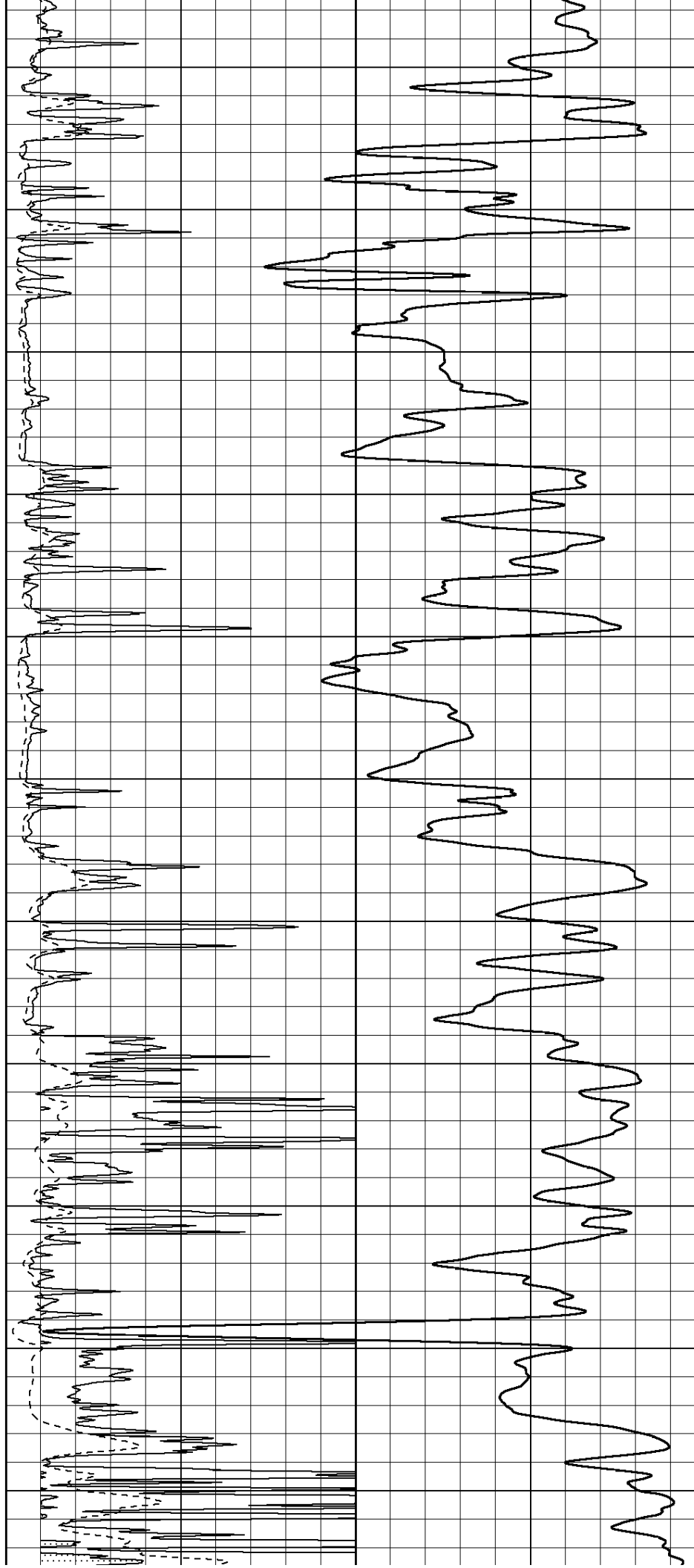
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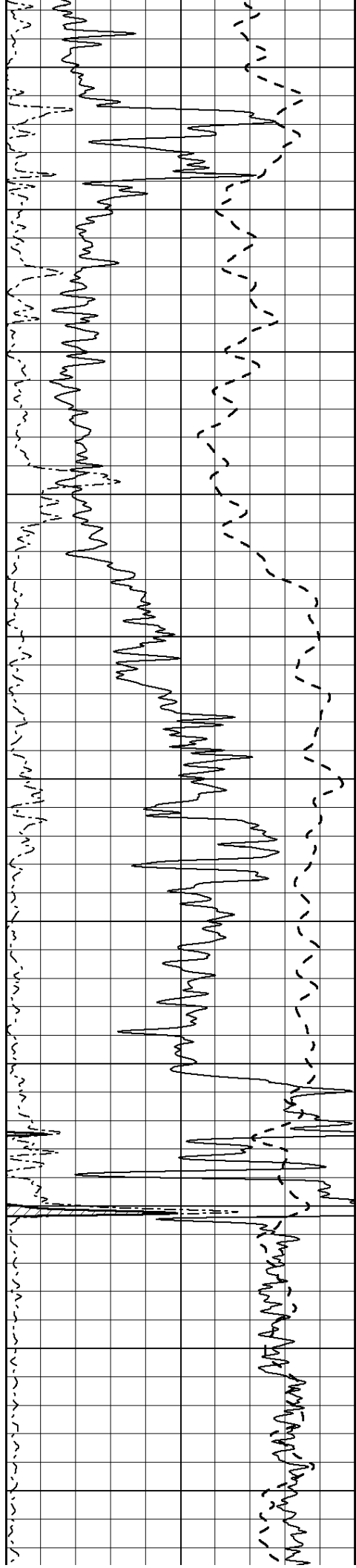
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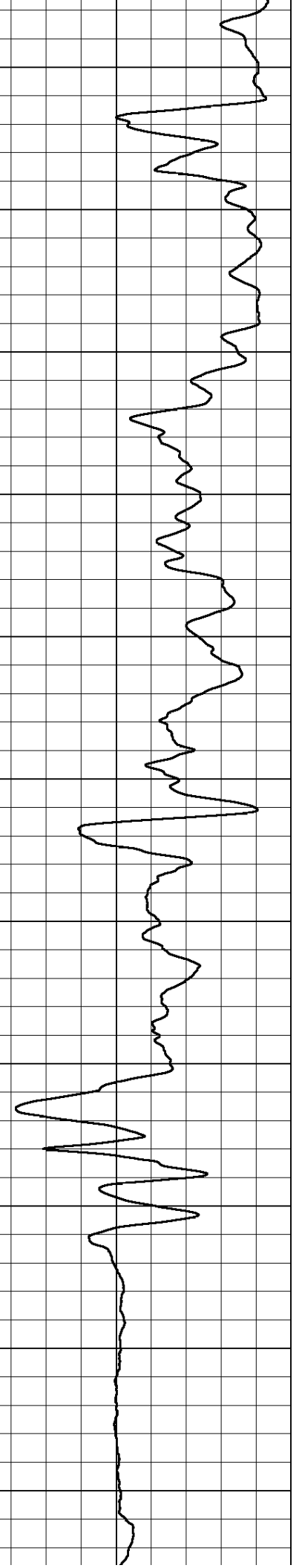
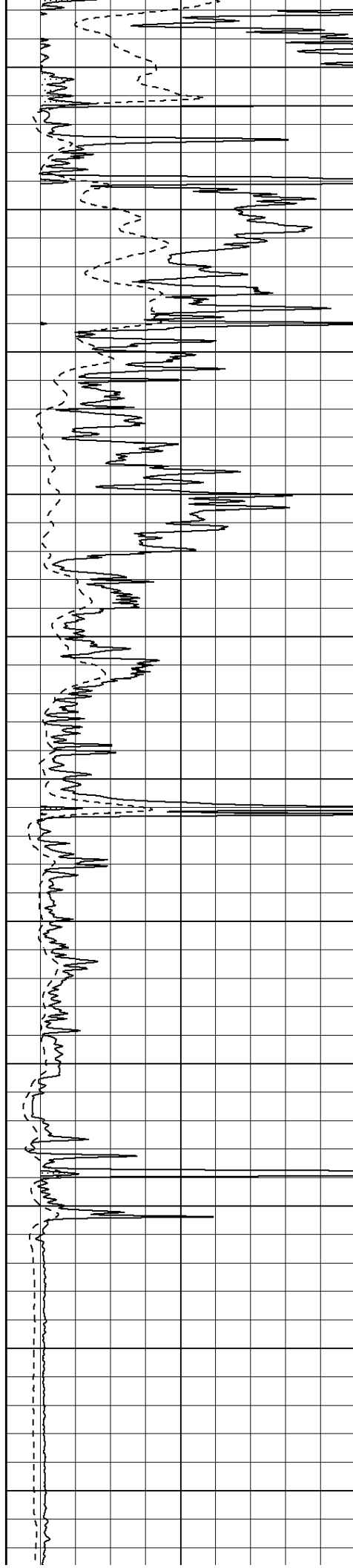
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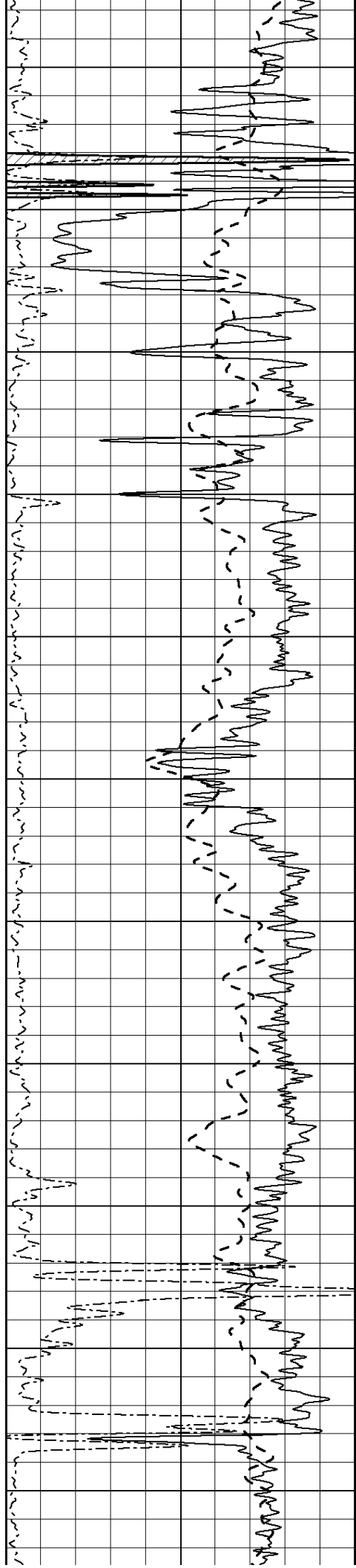
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3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700





3750

3800

3850

3900

3950

4000

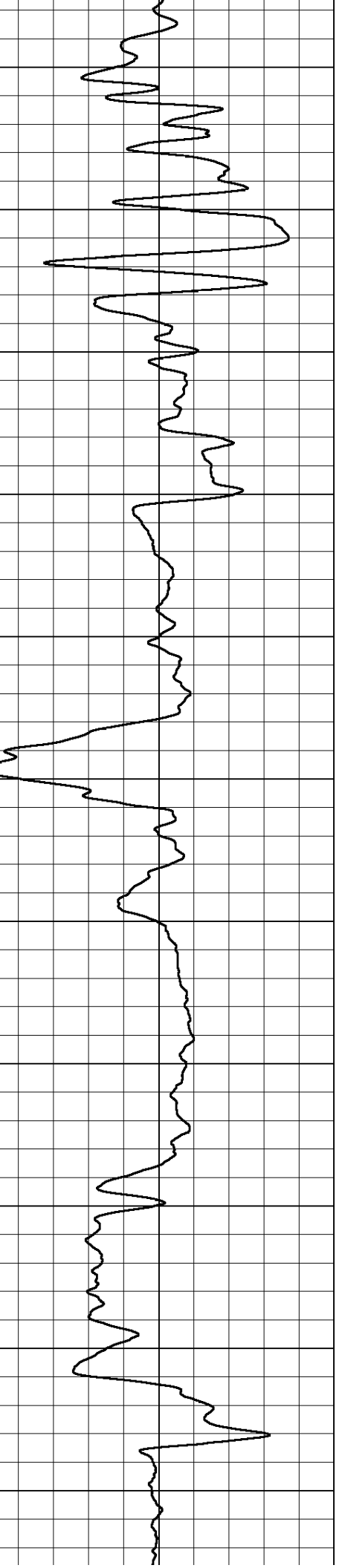
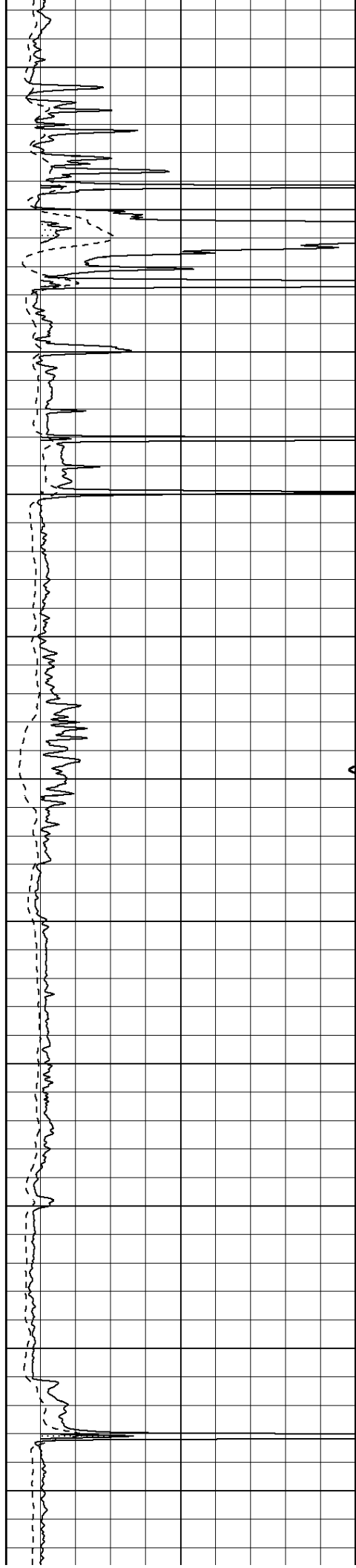
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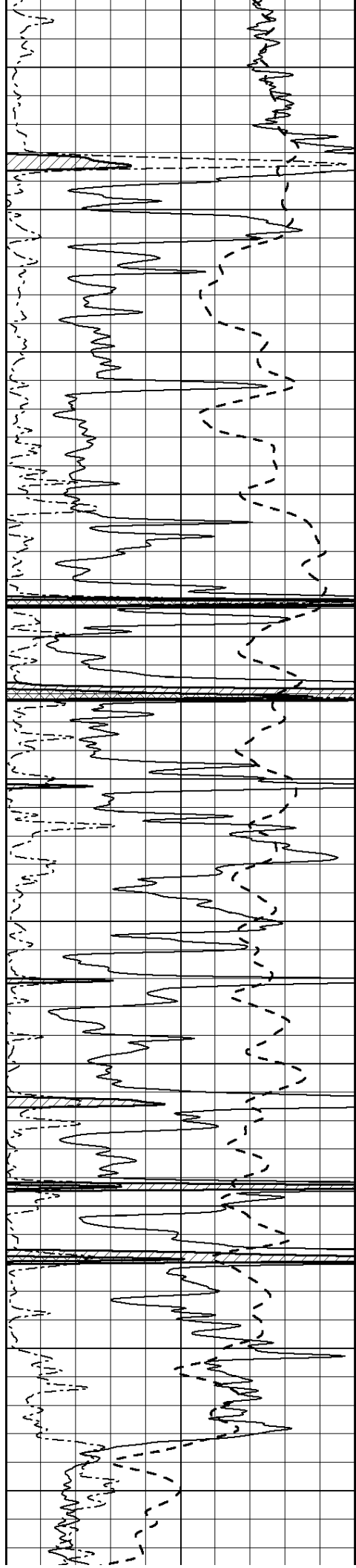
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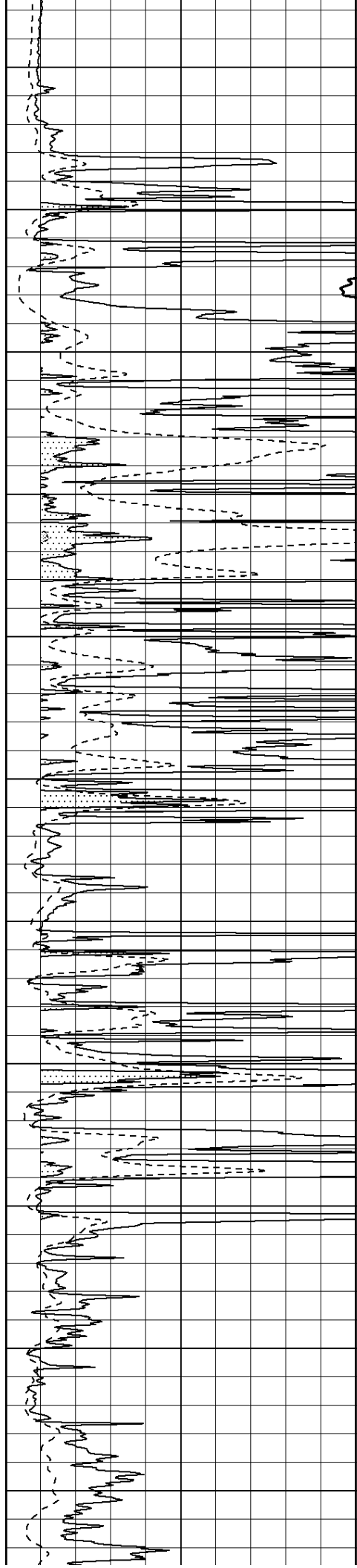
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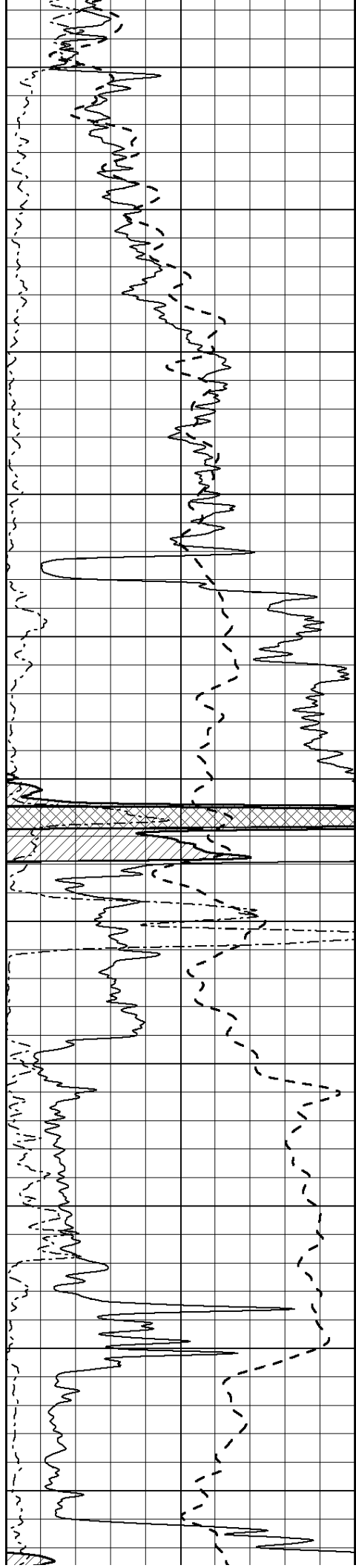
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4850

4900

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5000

5050

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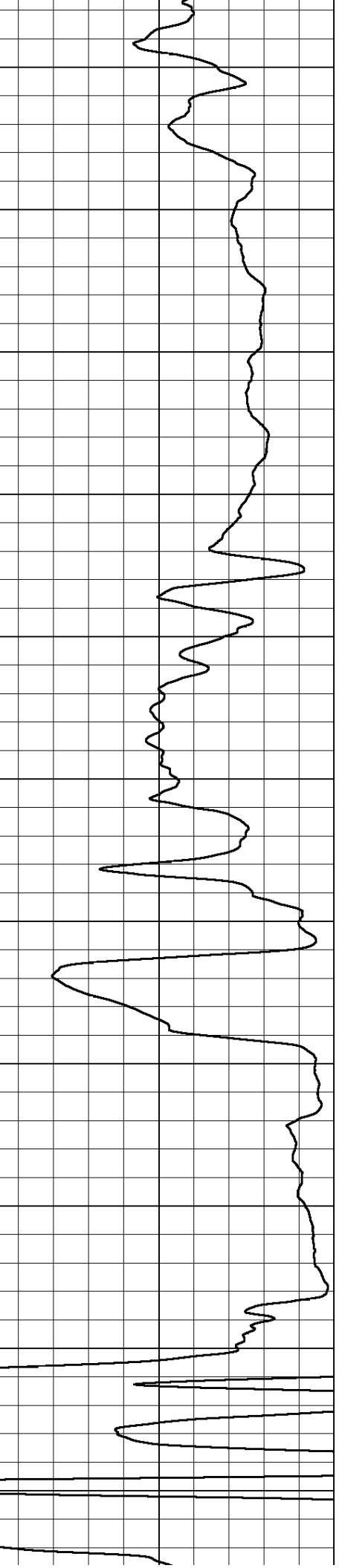
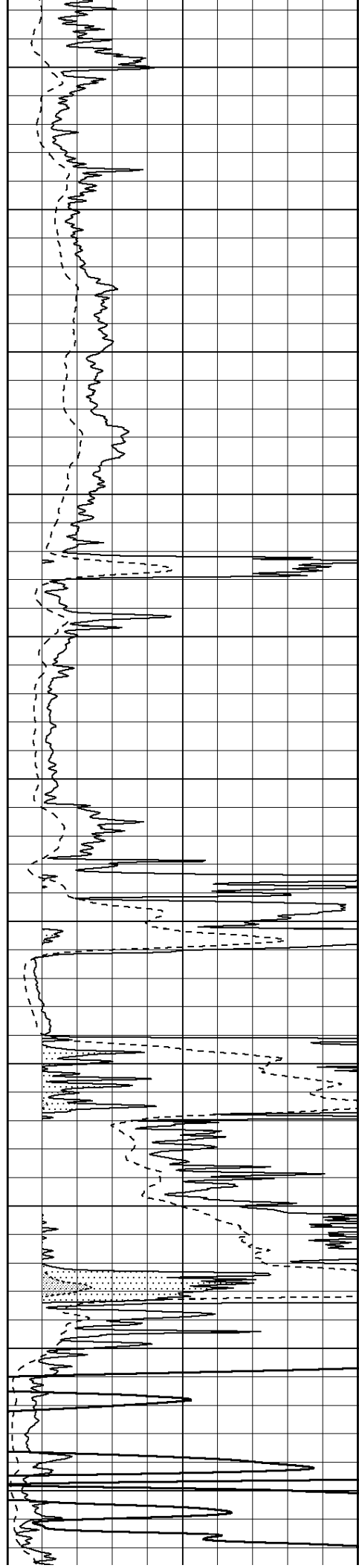
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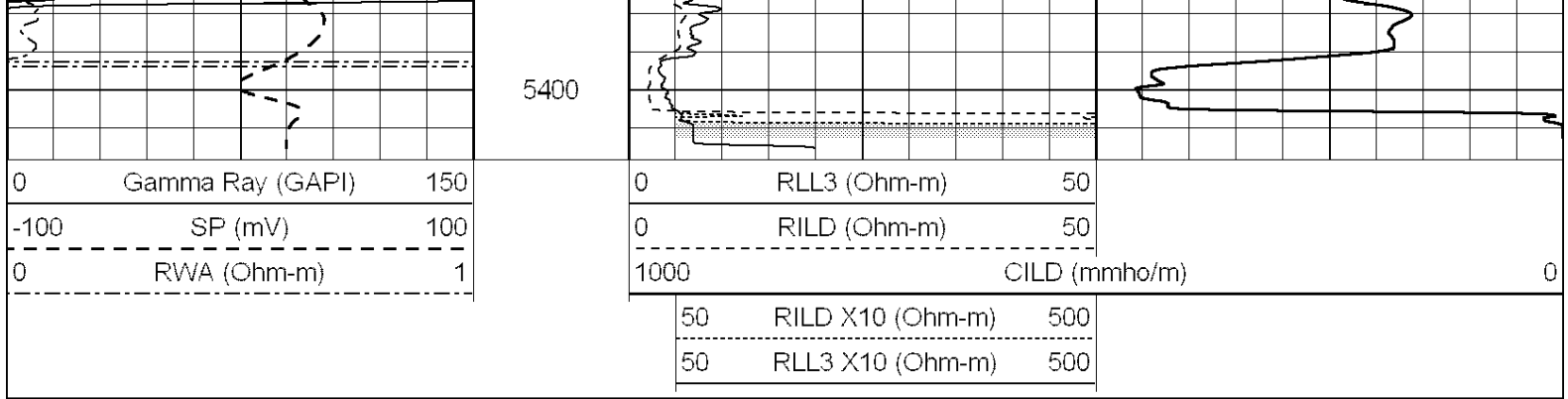
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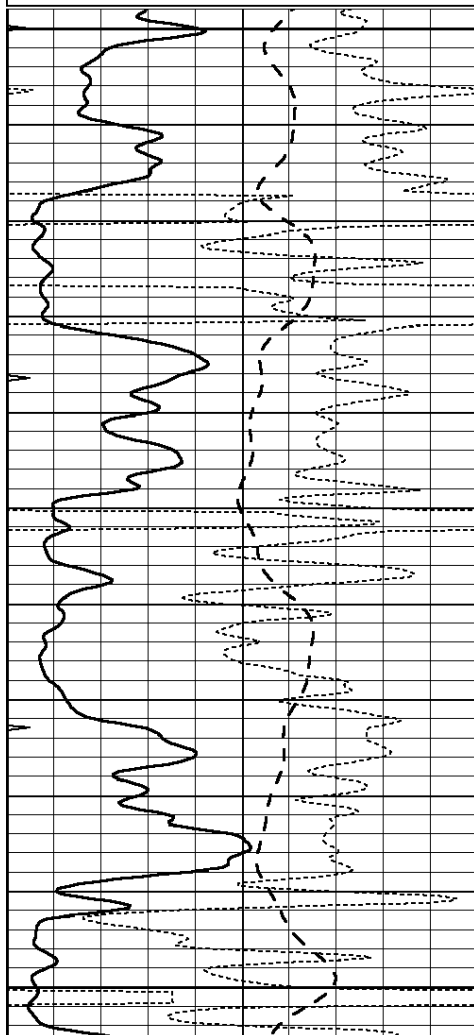
**COMPLETION
& PRODUCTION
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MAIN SECTION

Database File: 25886pe.db
 Dataset Pathname: pass3.11
 Presentation Format: _dil
 Dataset Creation: Sat Sep 27 01:48:00 2014
 Charted by: Depth in Feet scaled 1:240

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

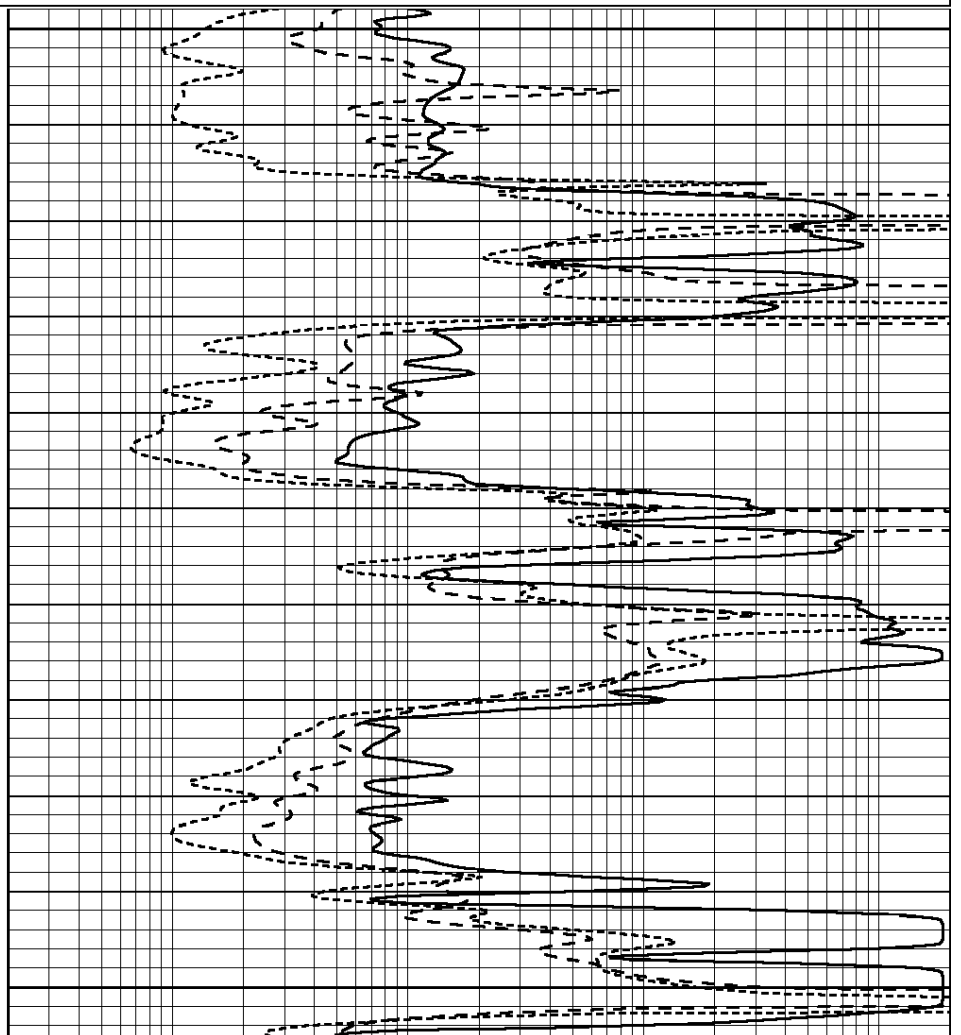
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0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

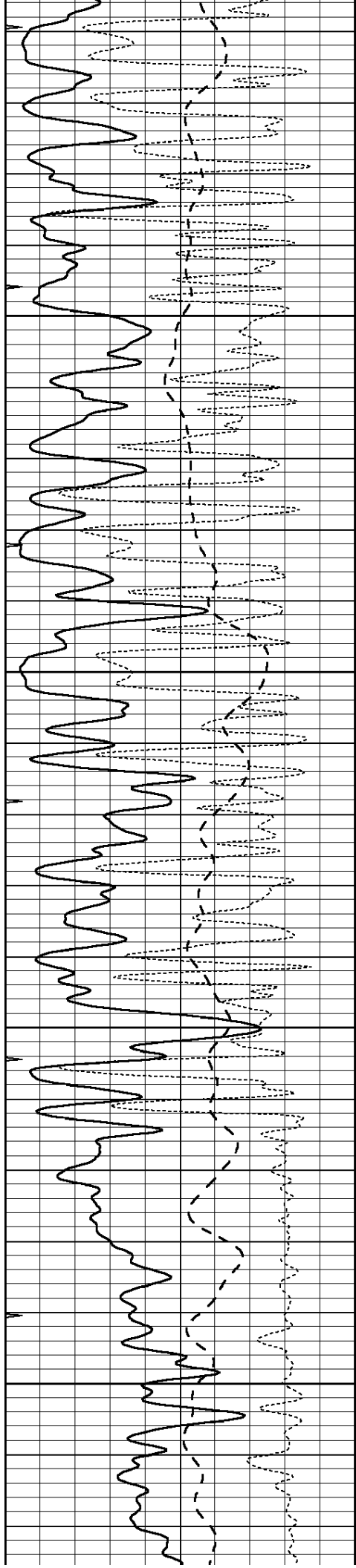


1600

1650

1700



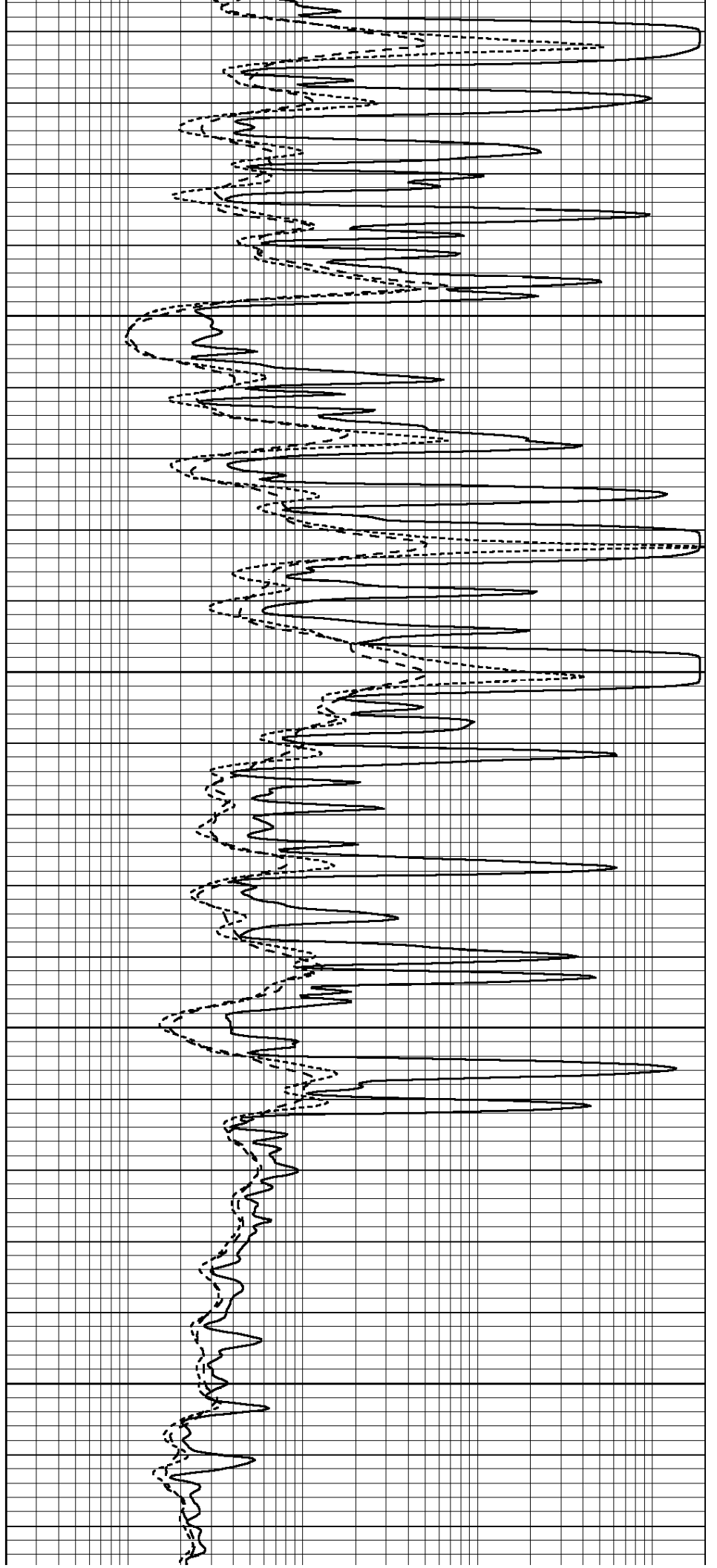


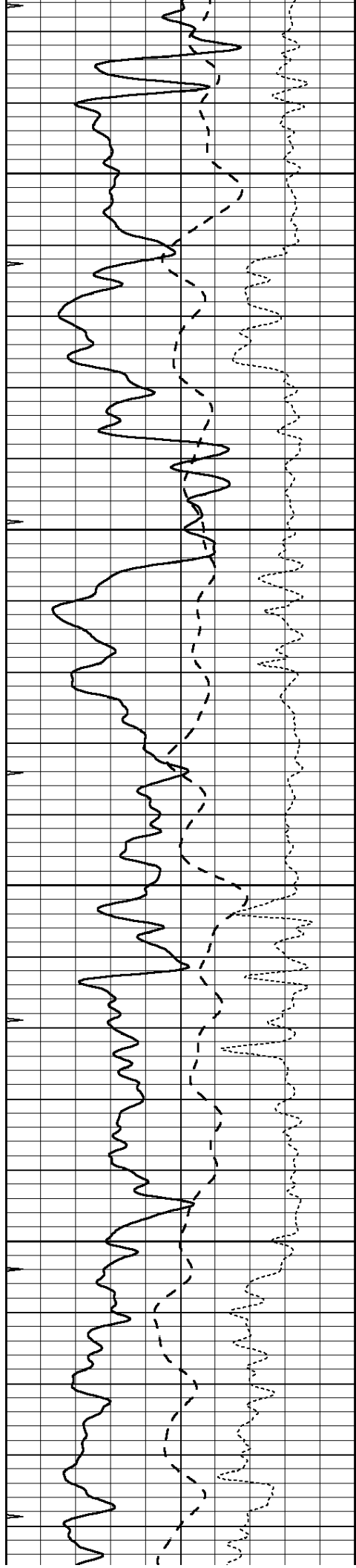
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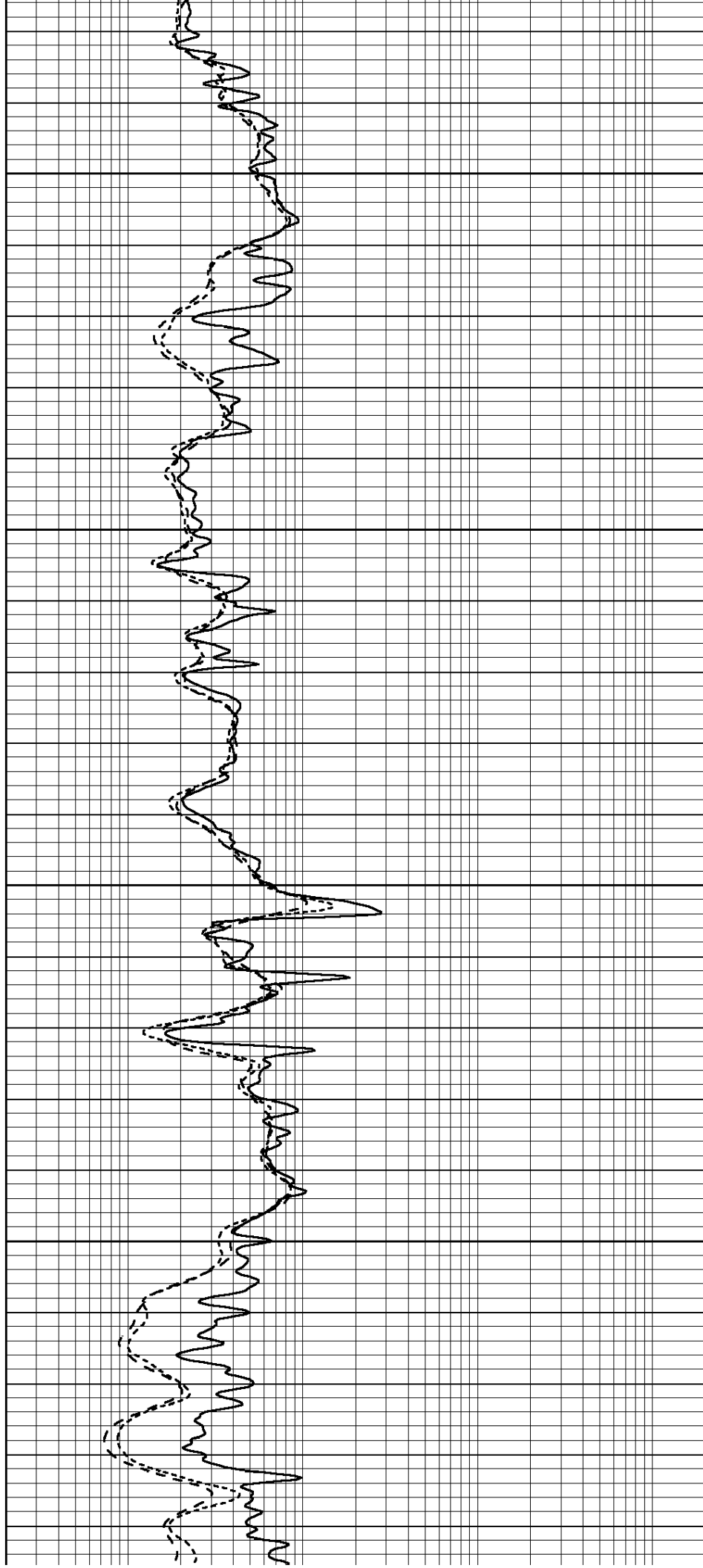


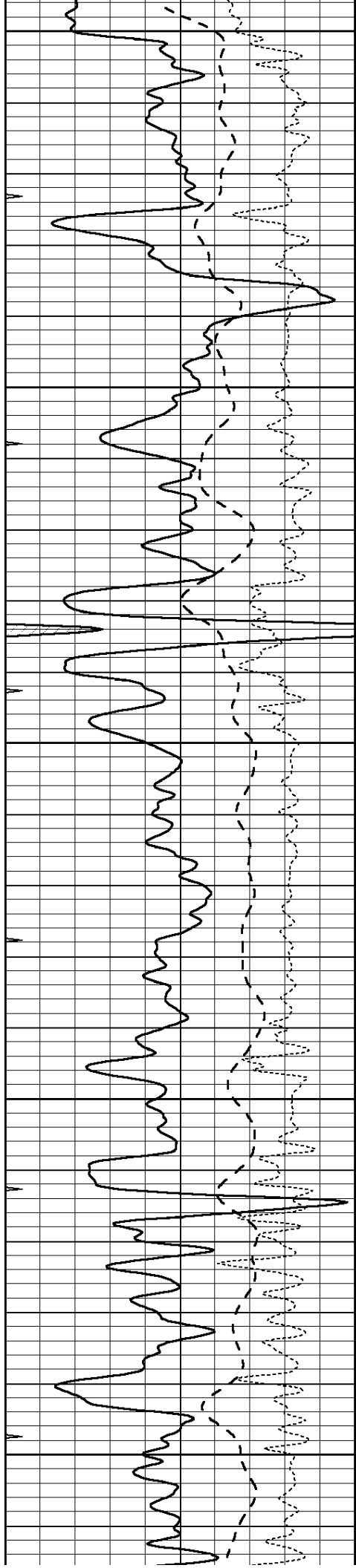
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2000

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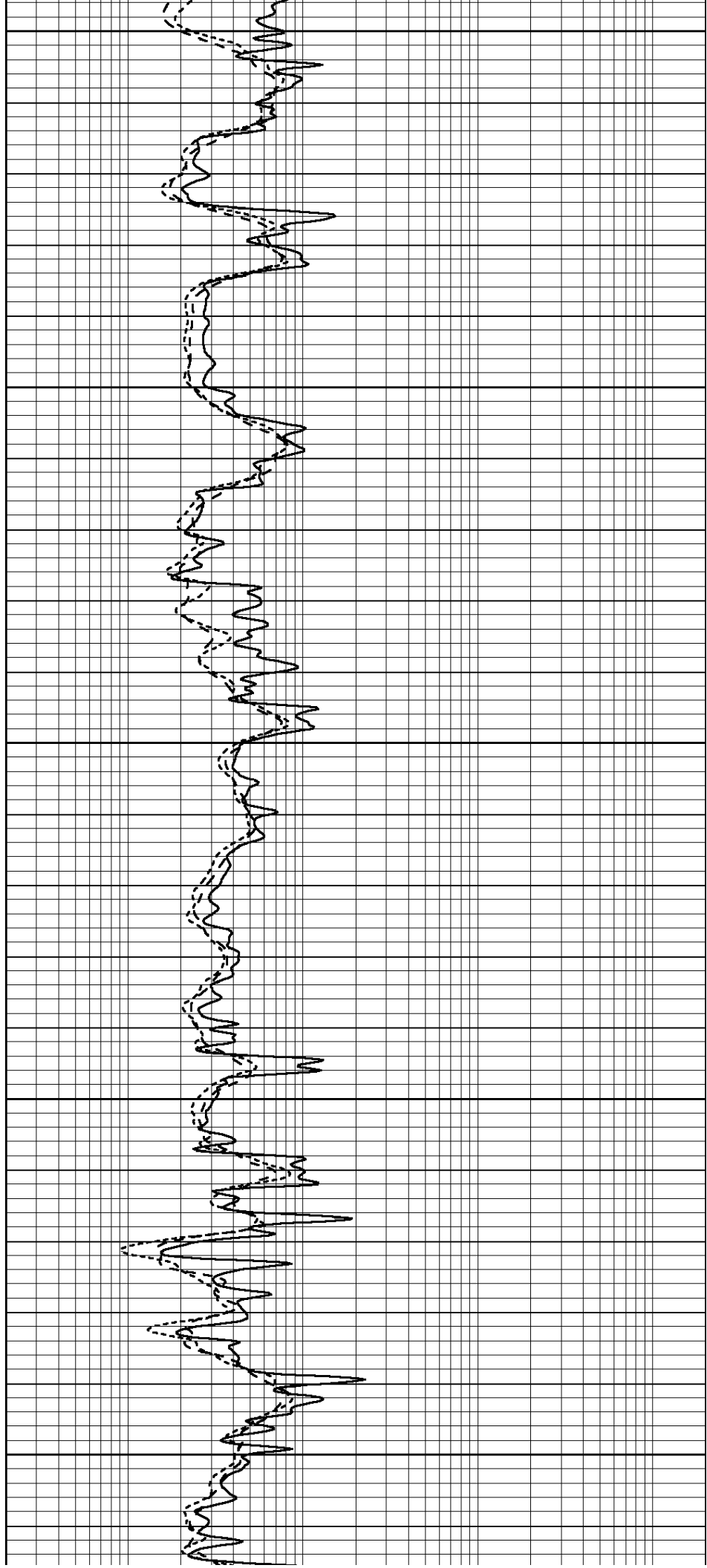
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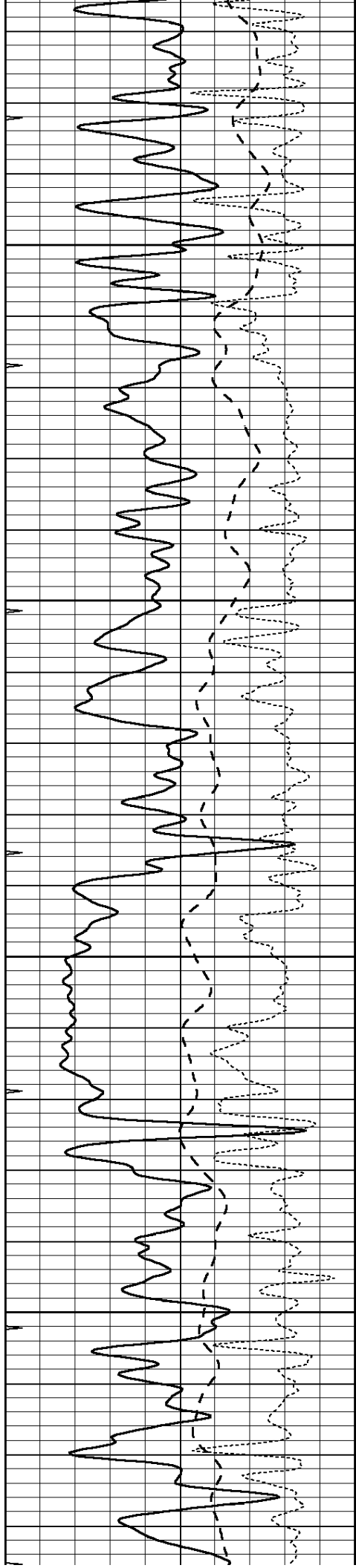
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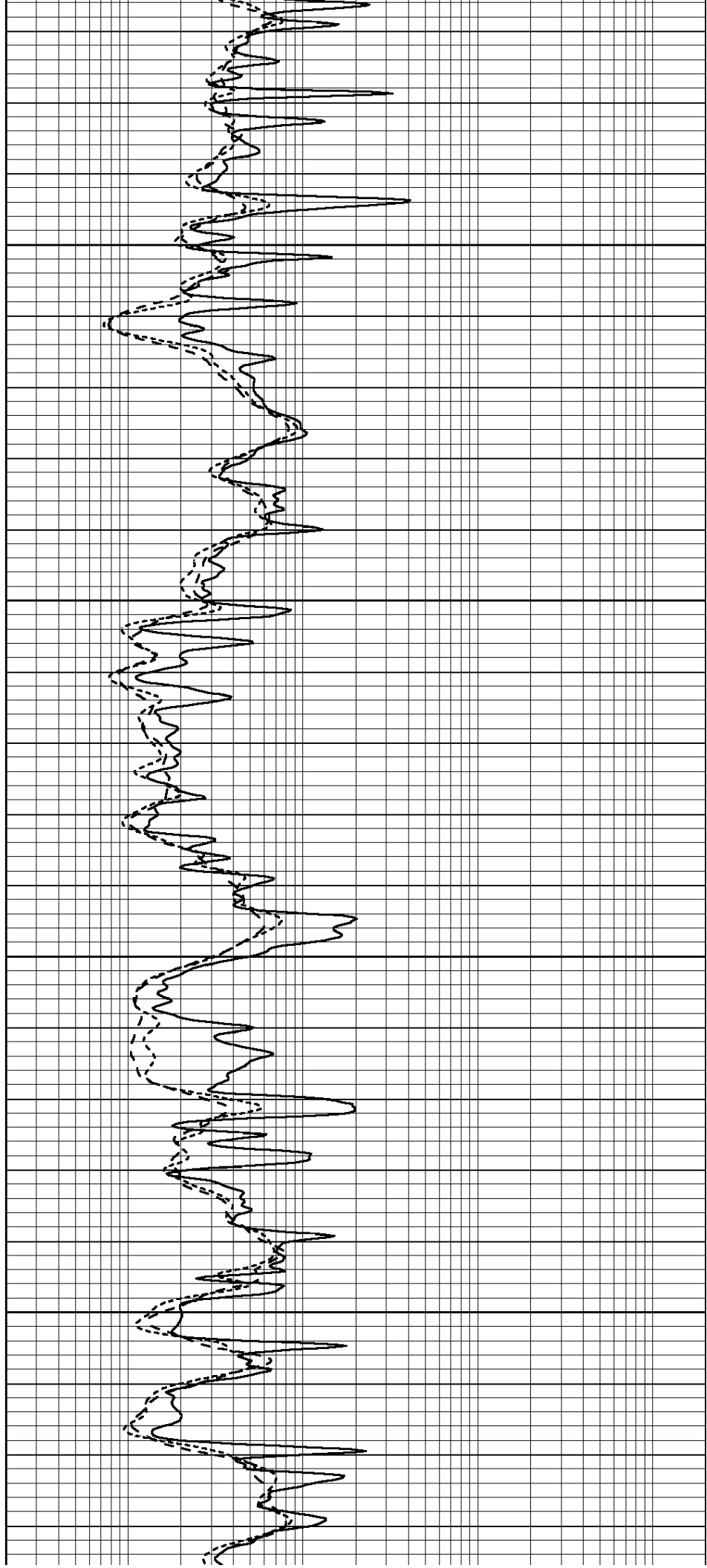


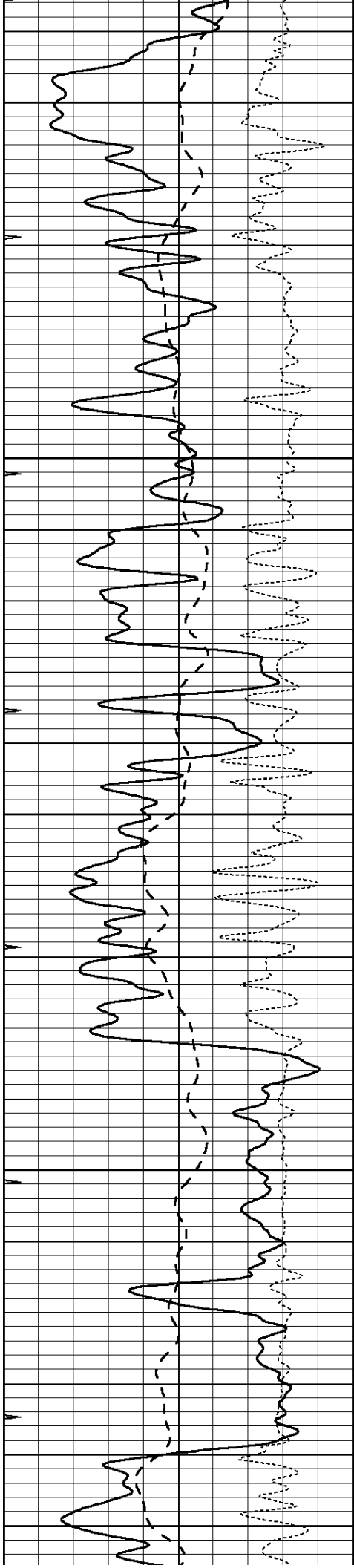
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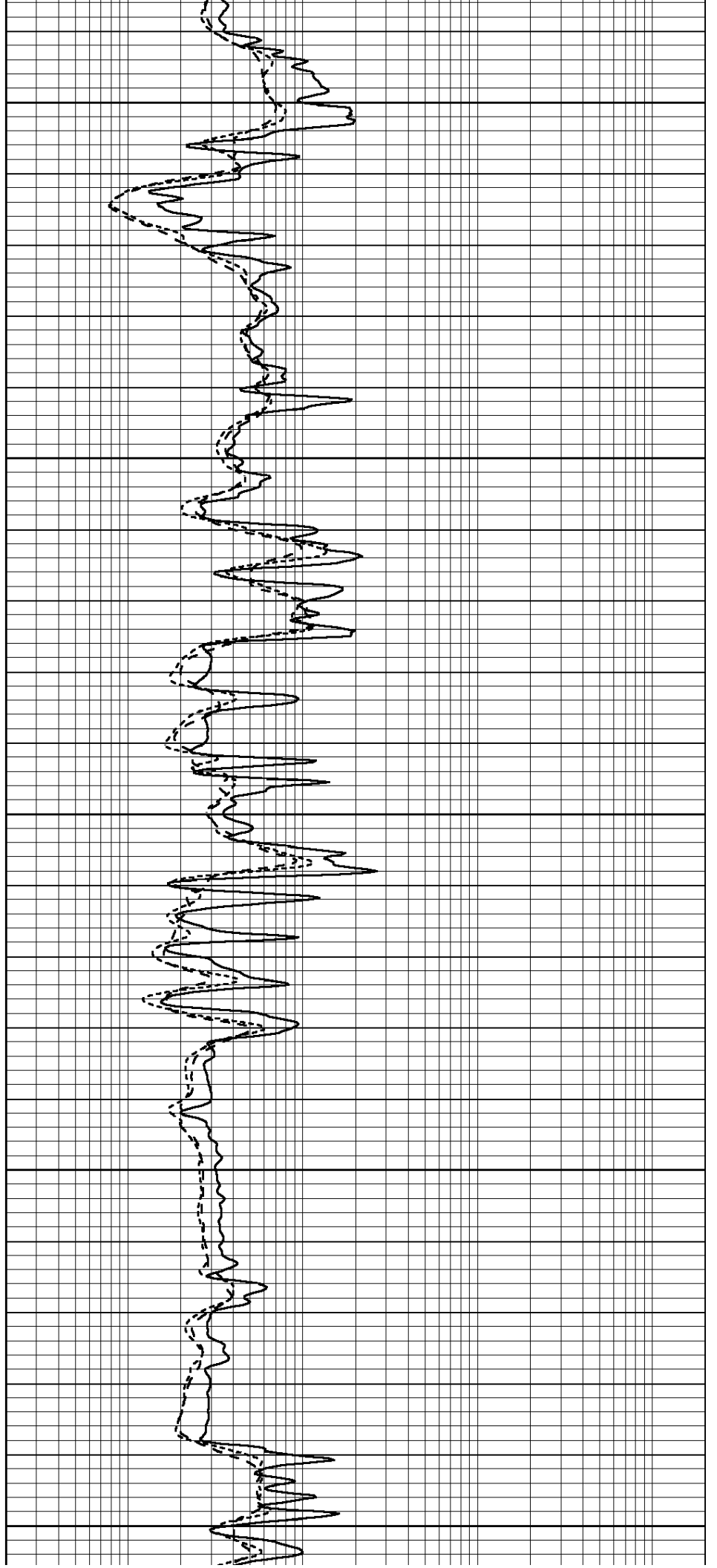
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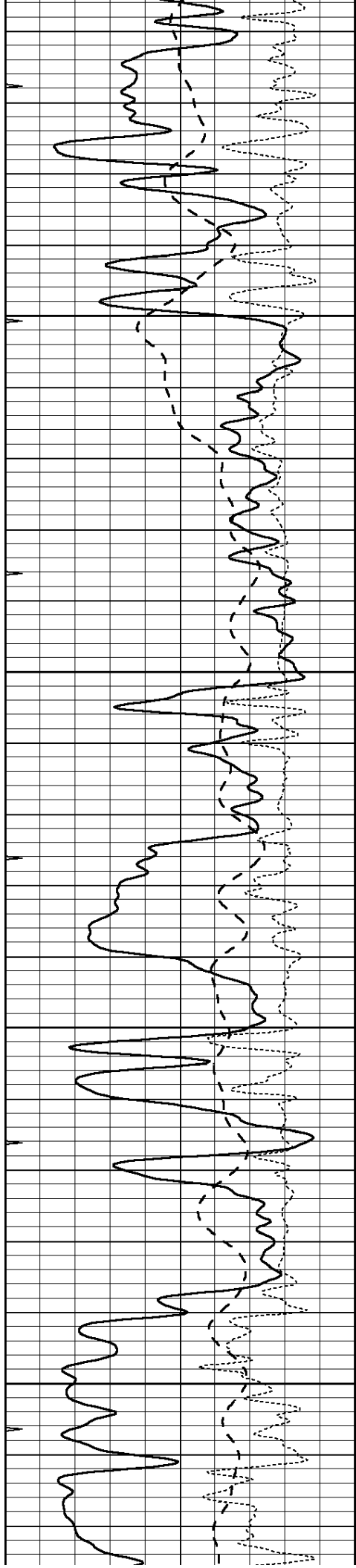
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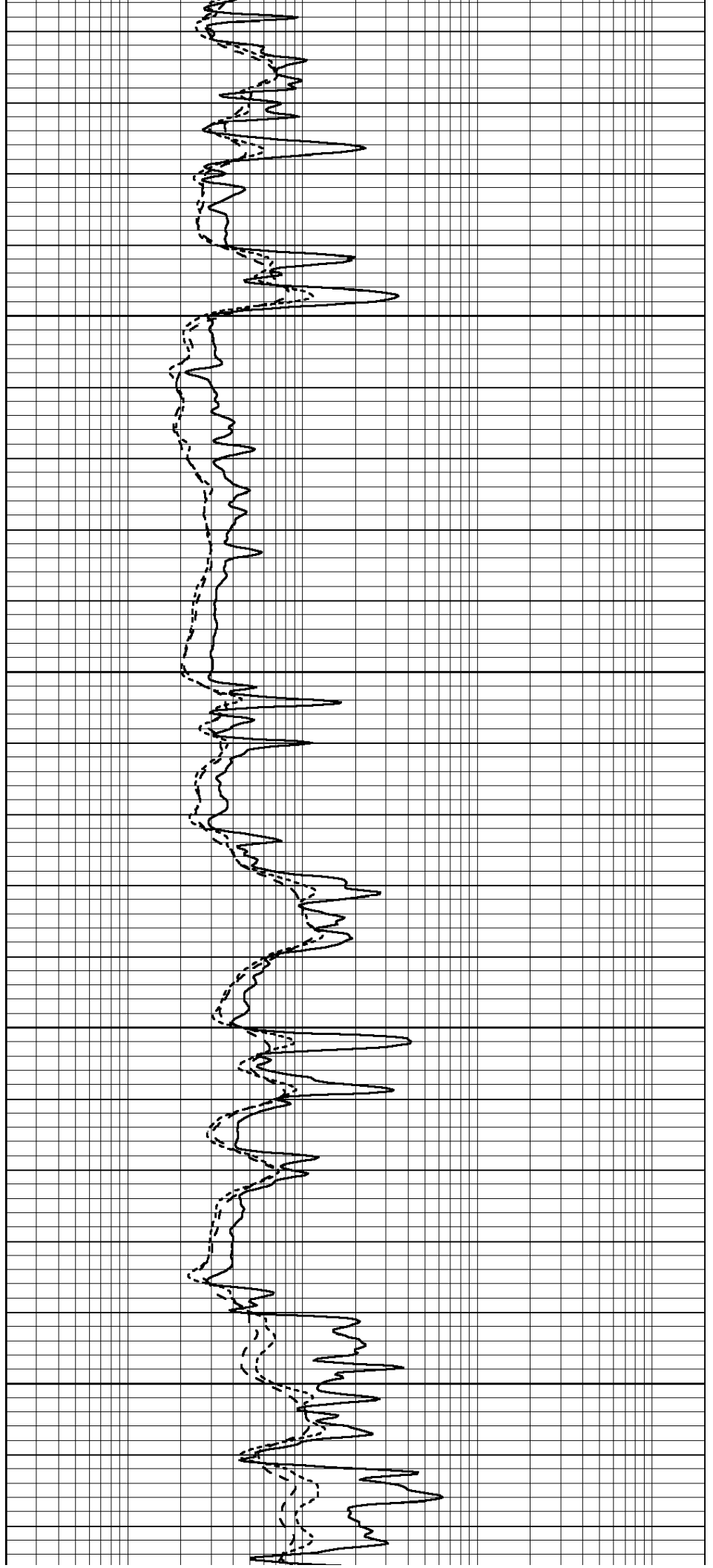


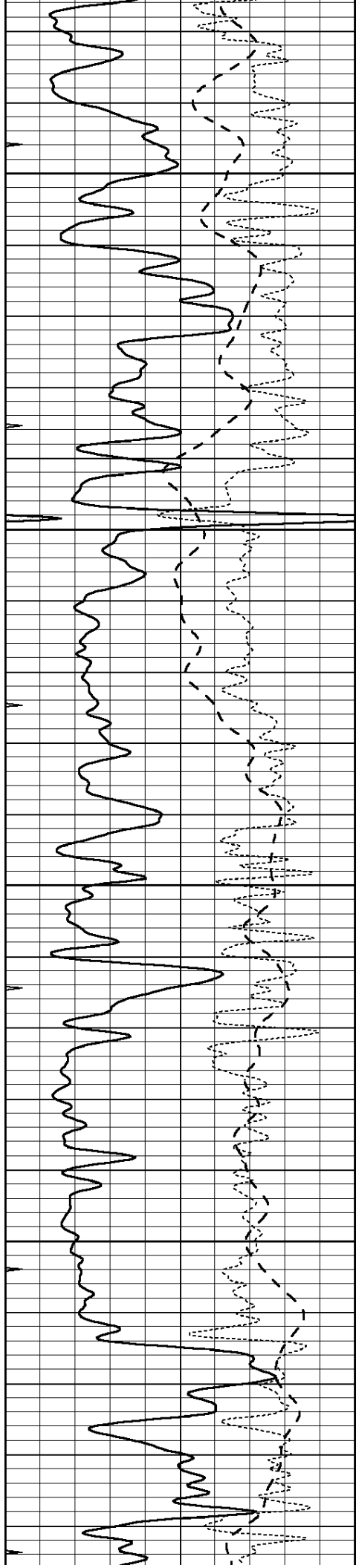
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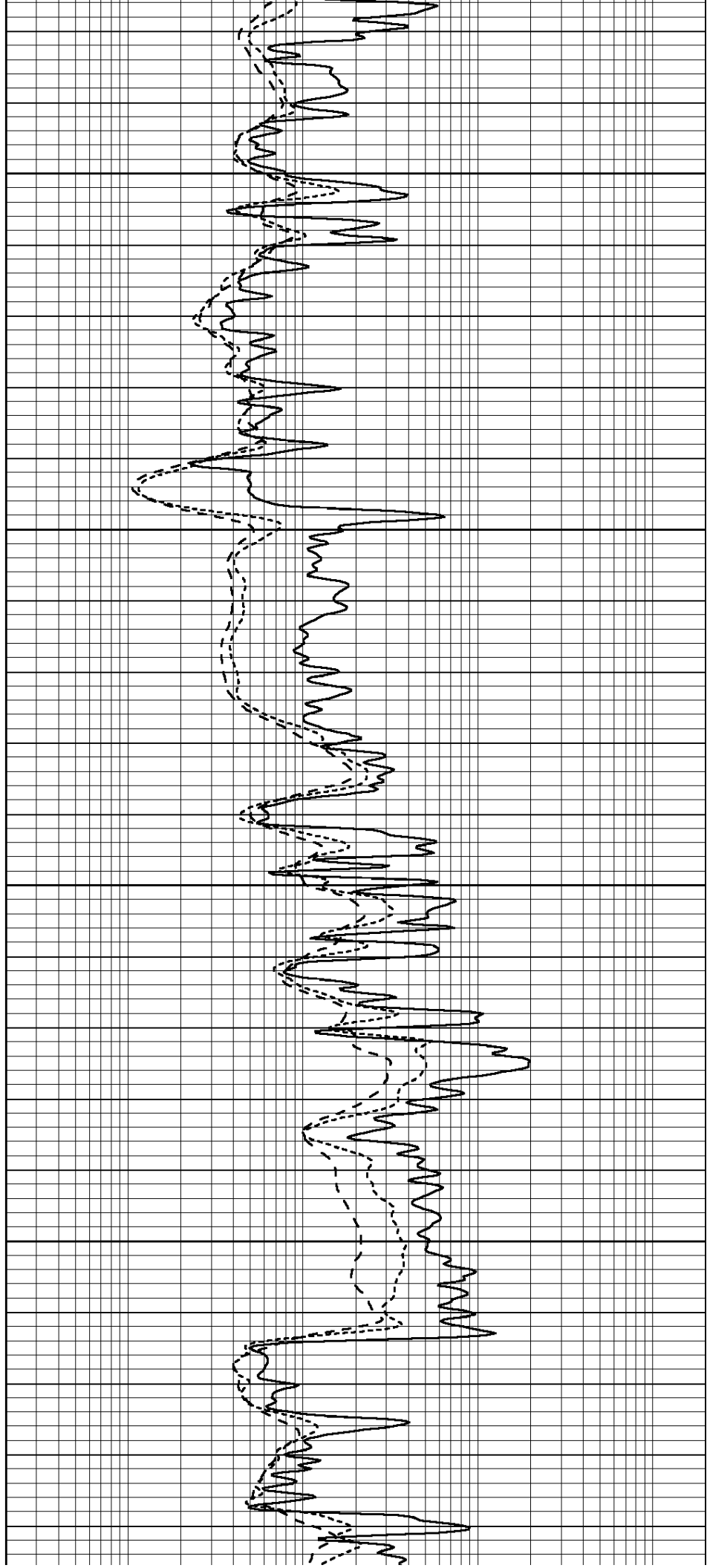


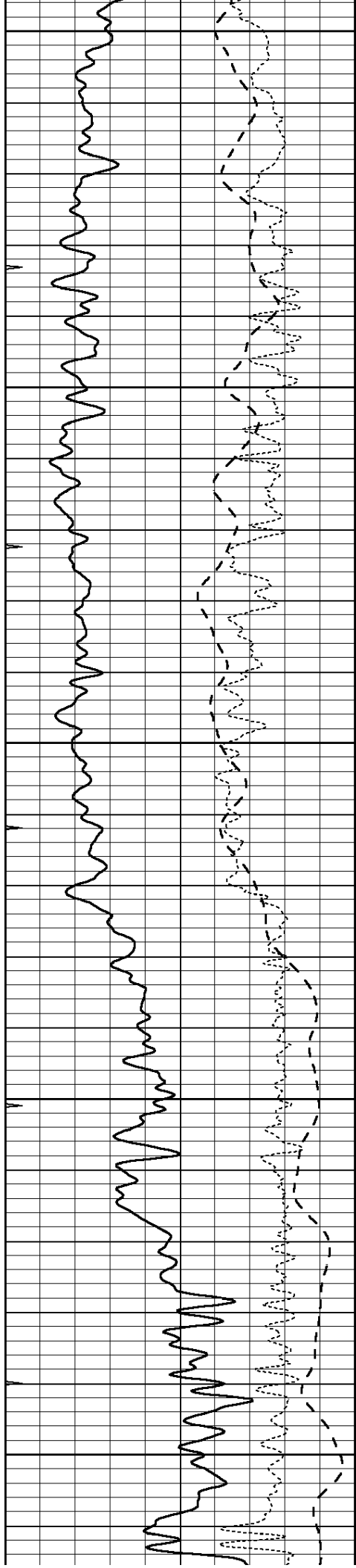
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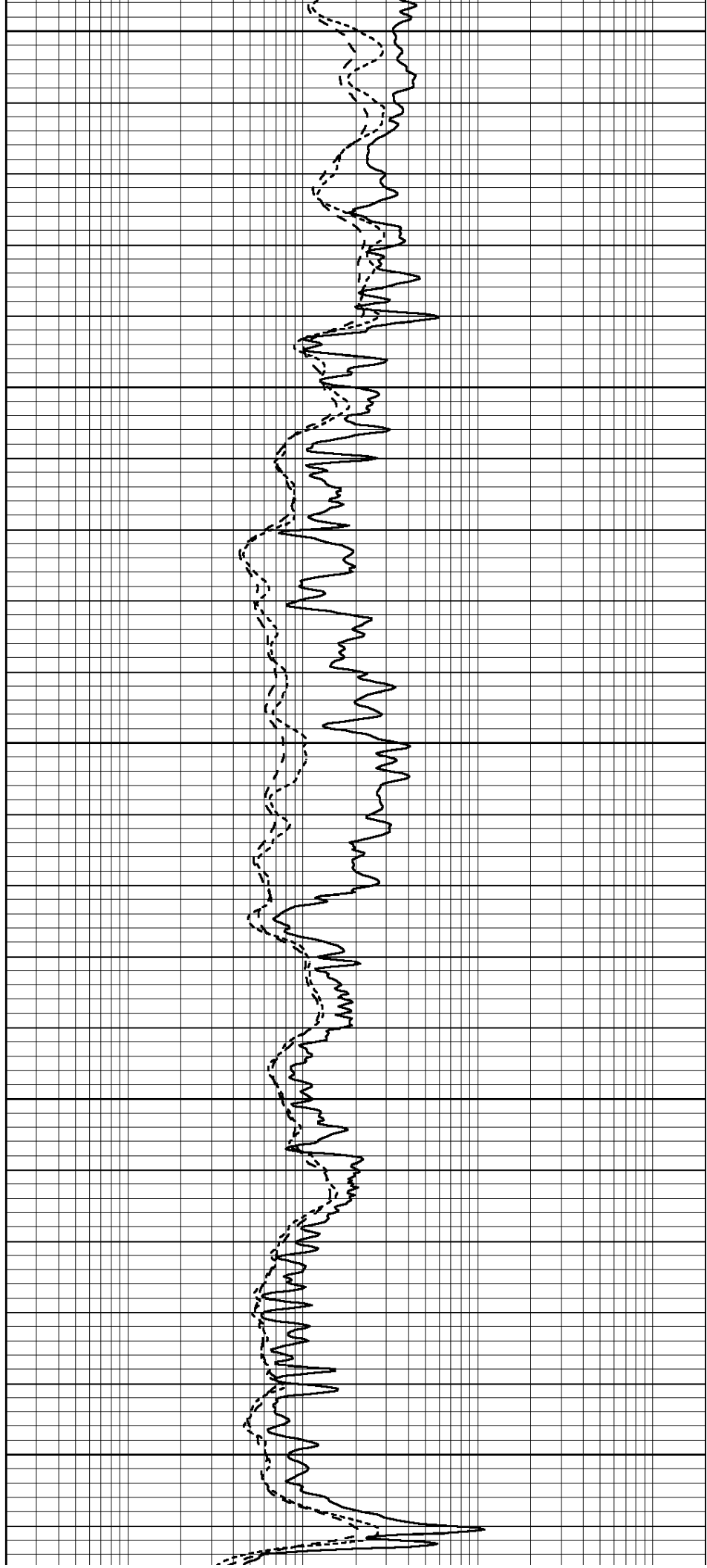
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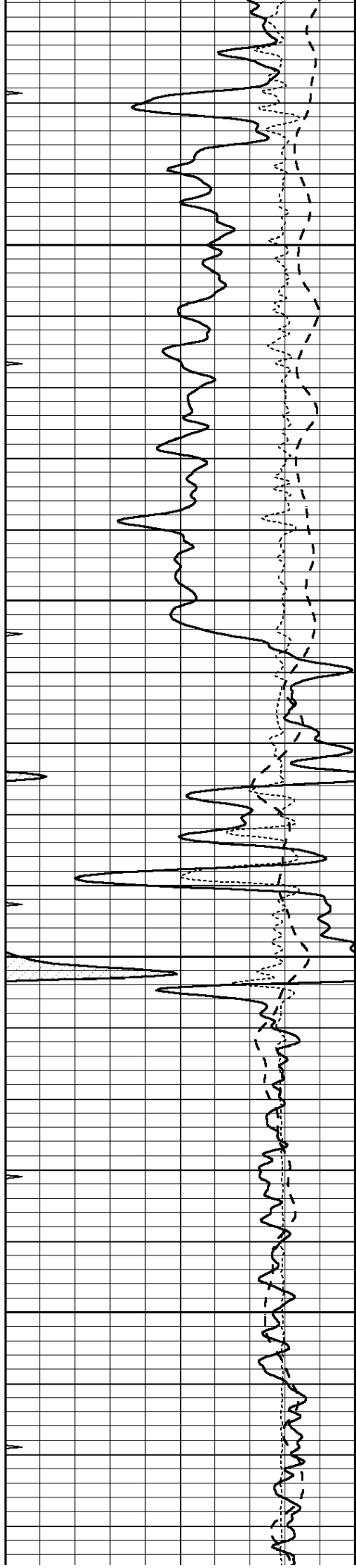
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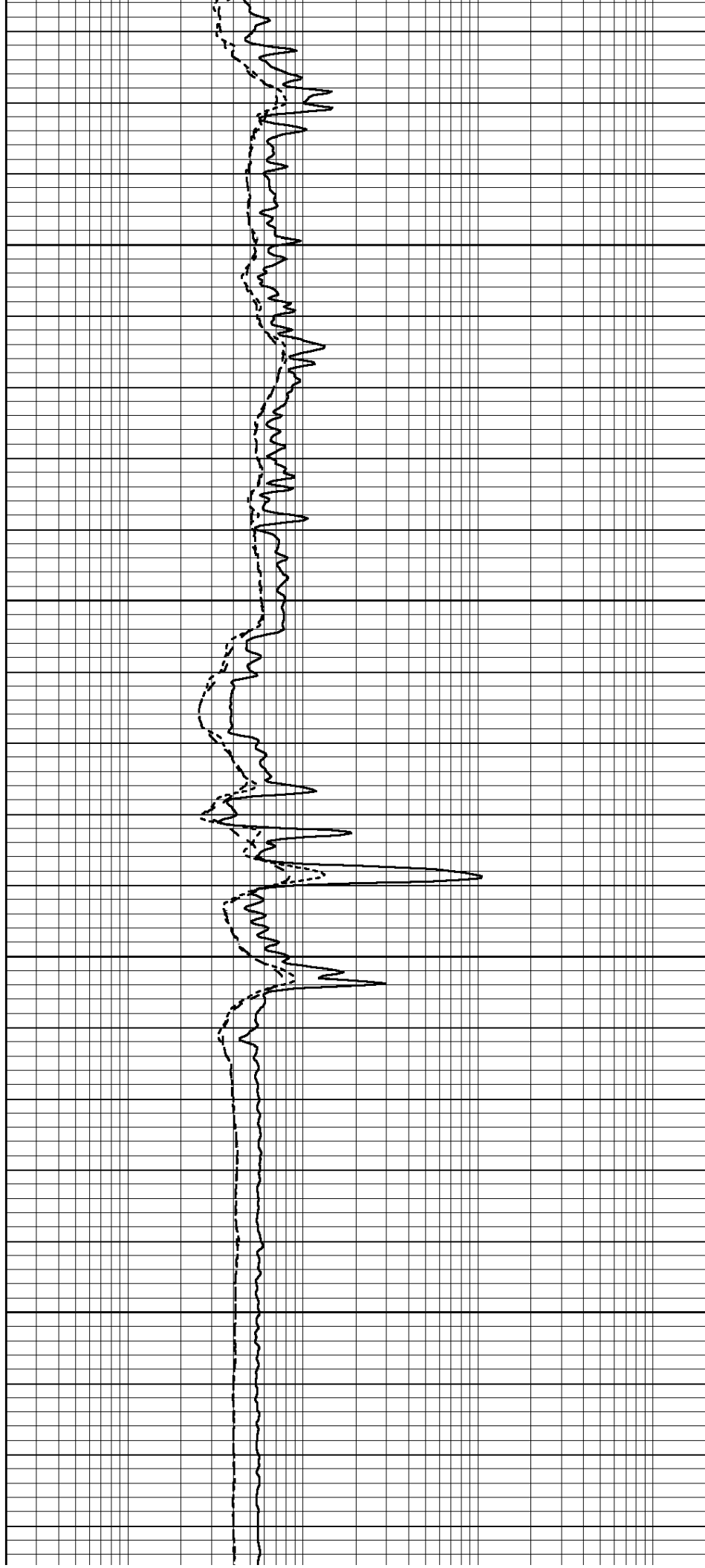


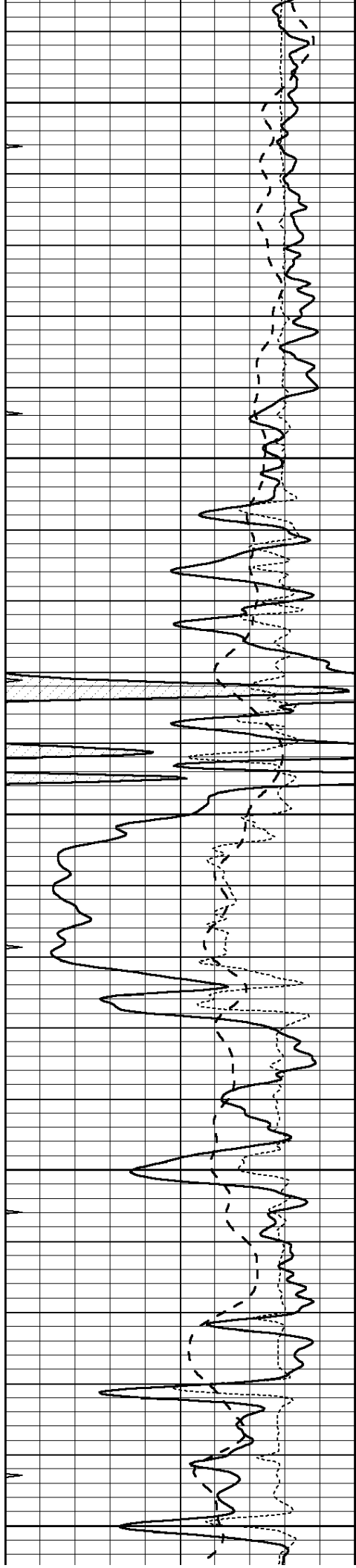
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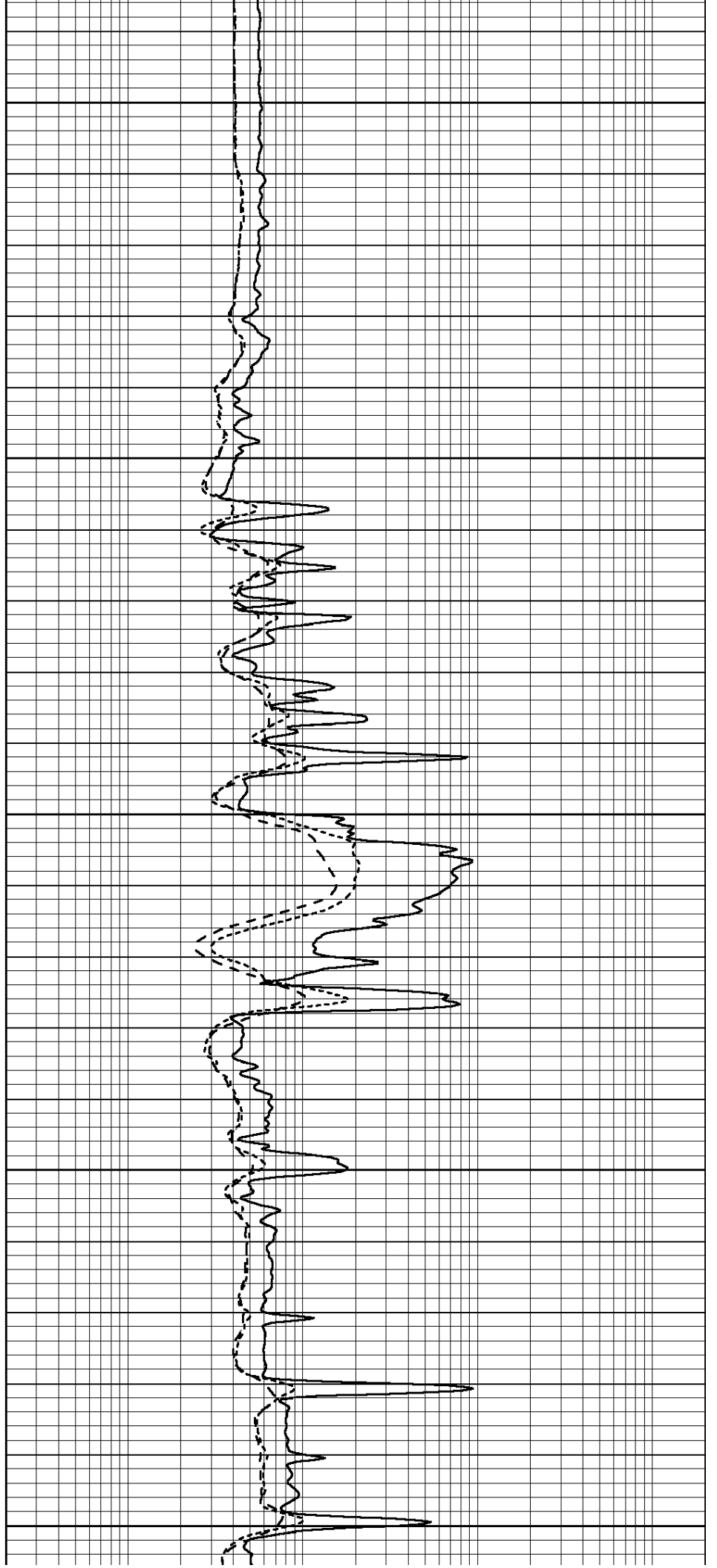
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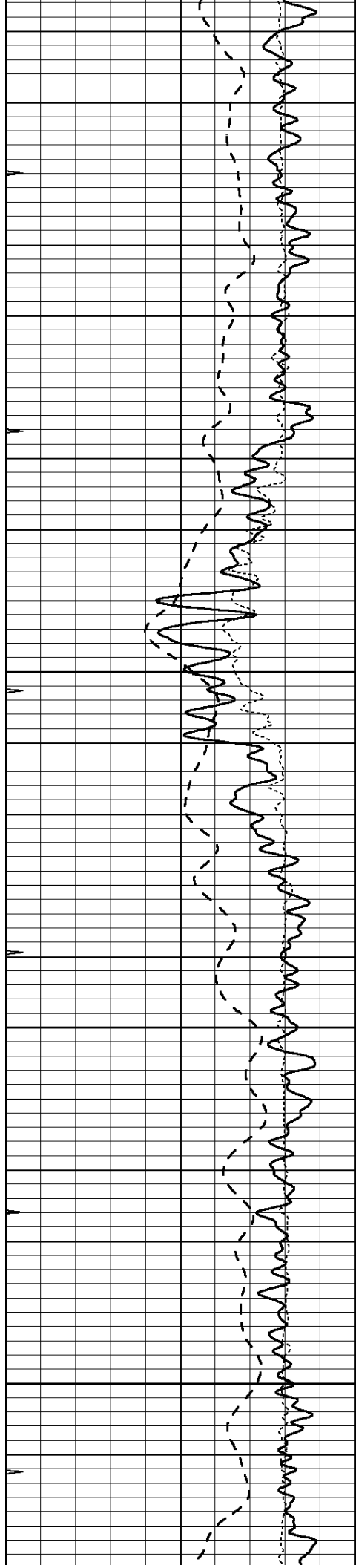
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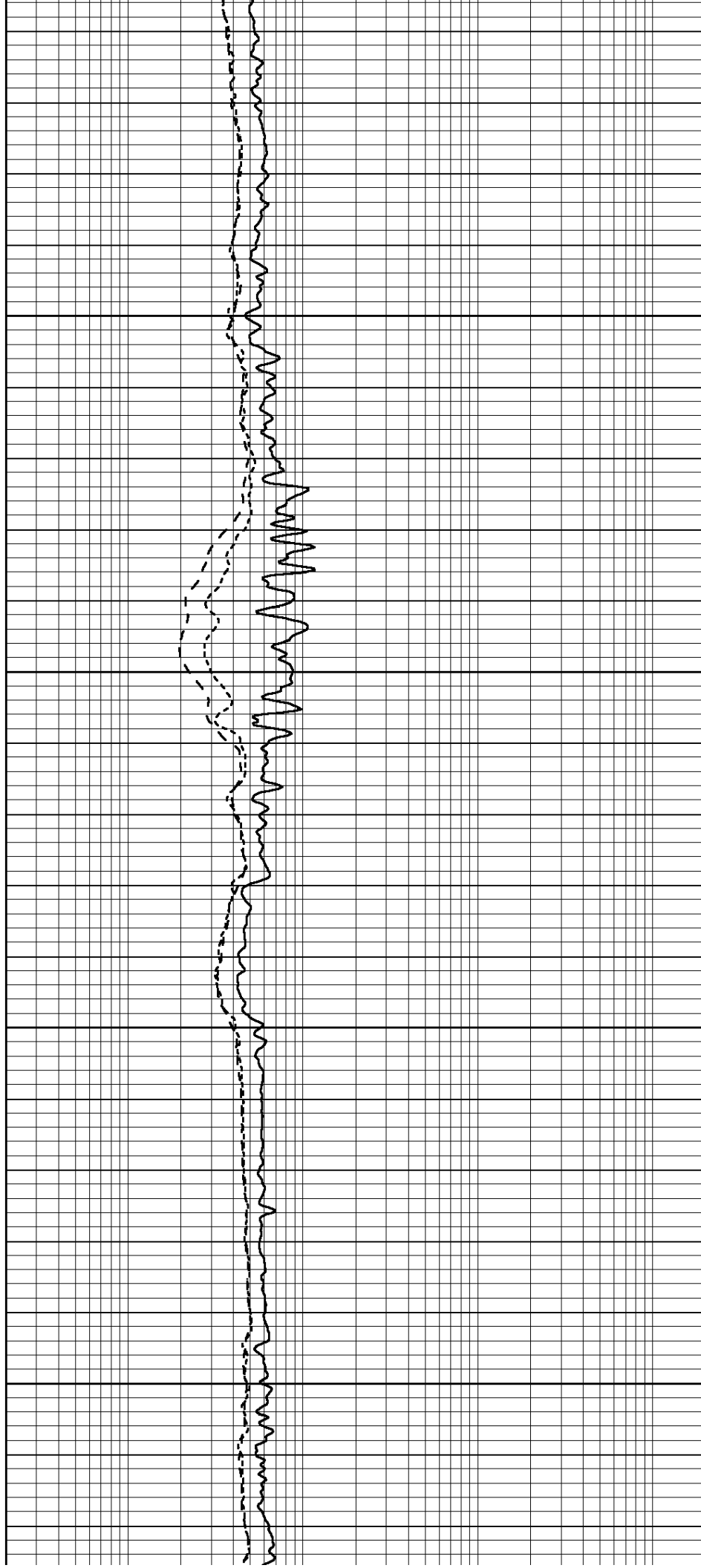


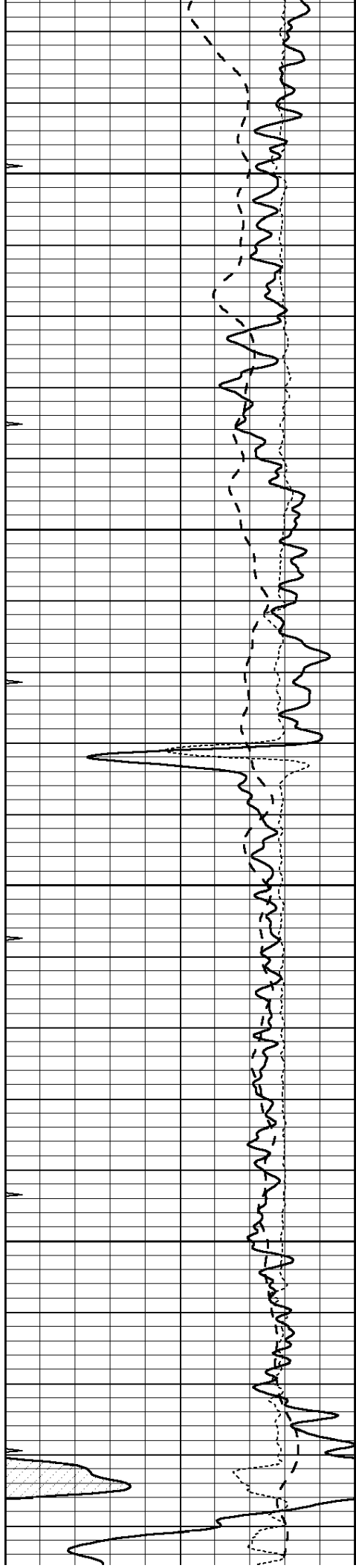
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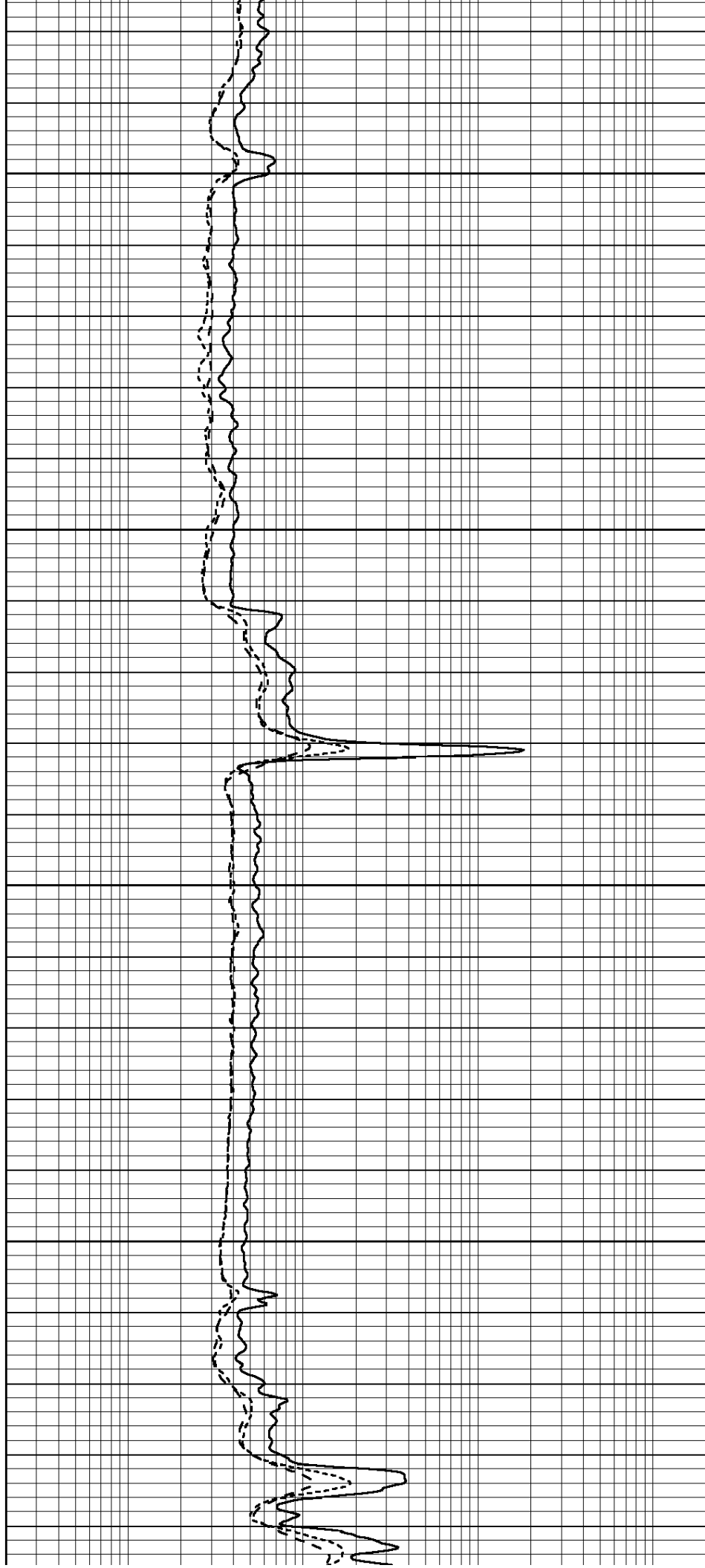


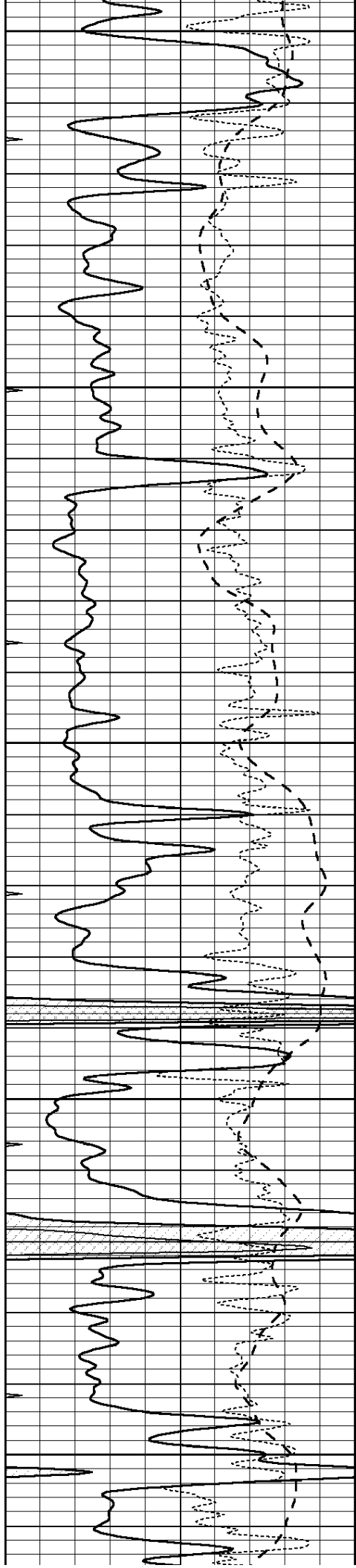
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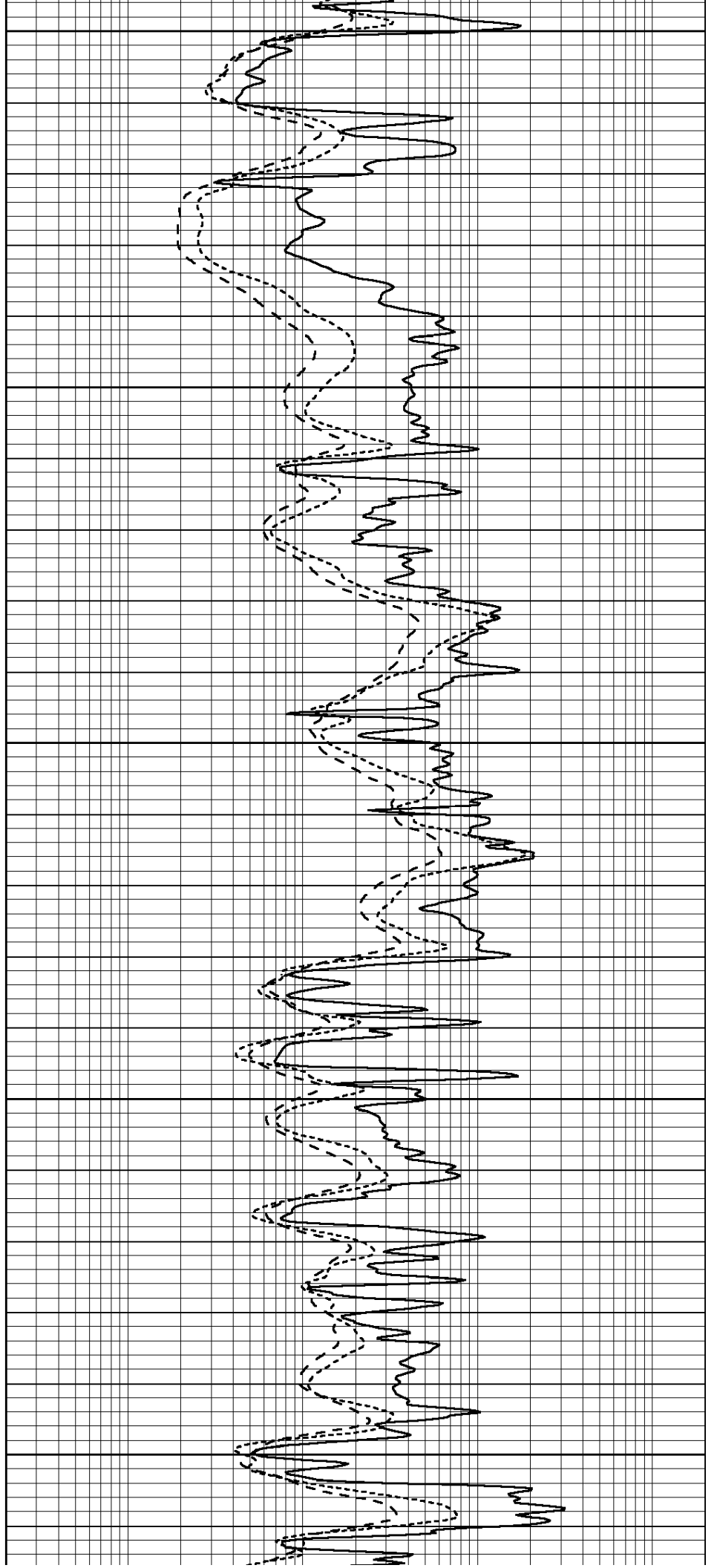
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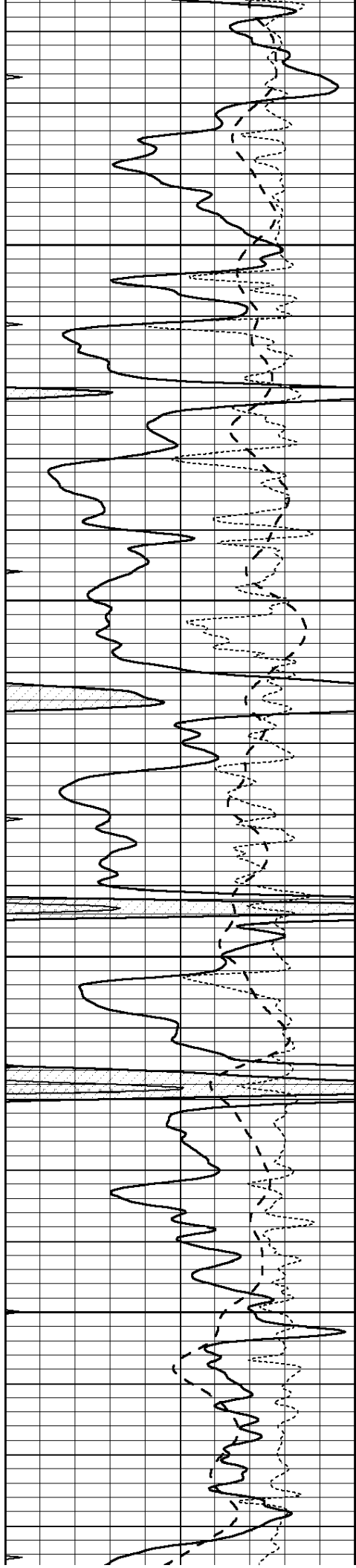
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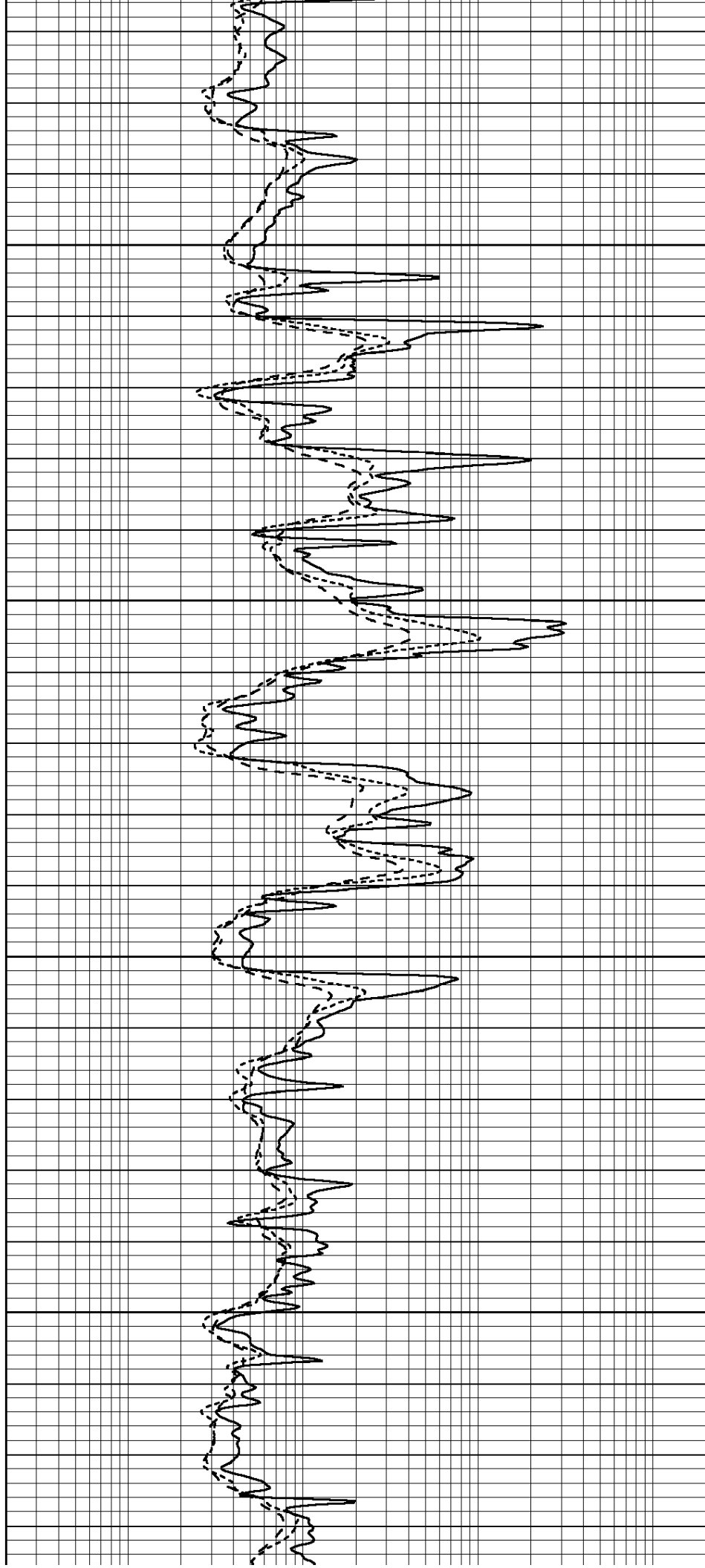


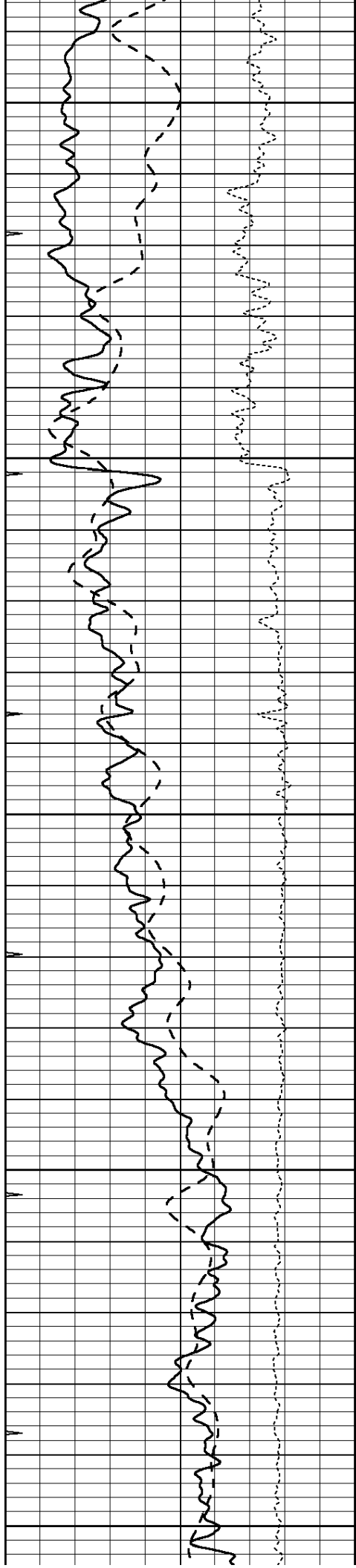
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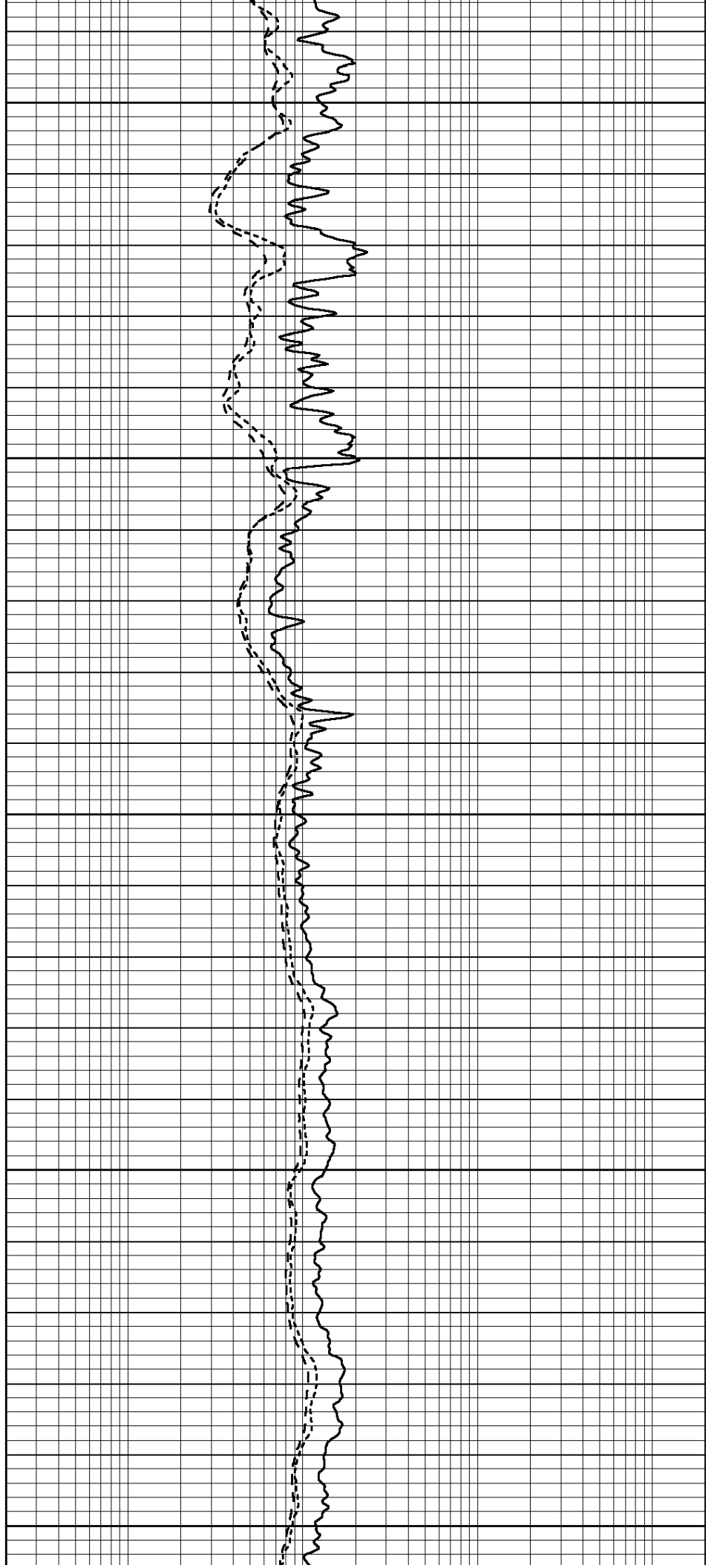
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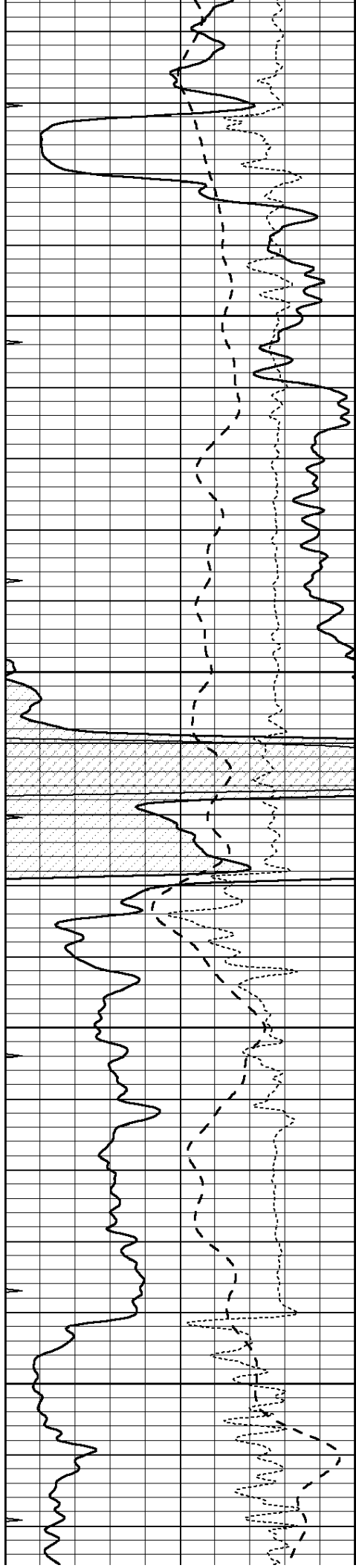
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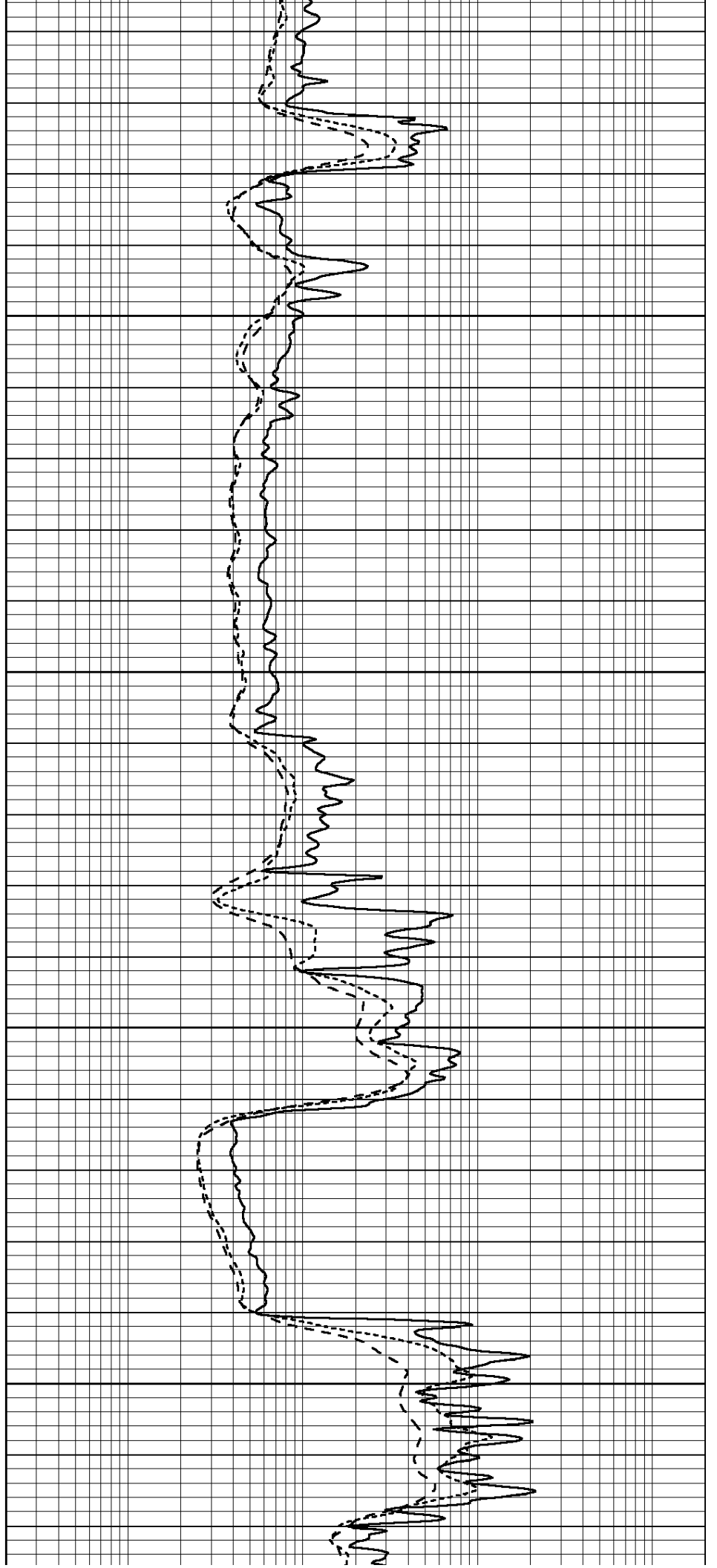


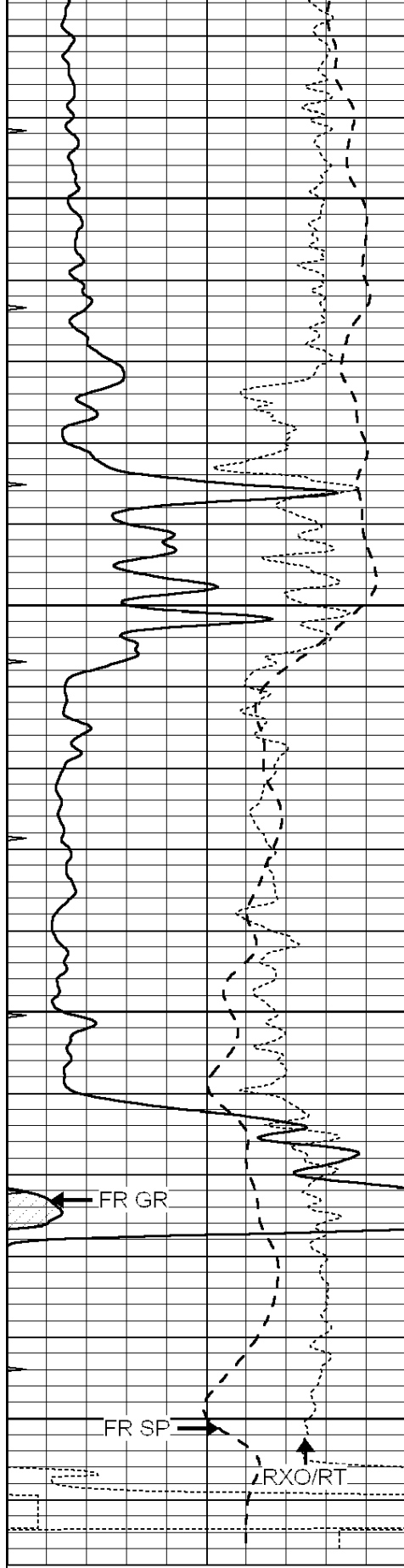
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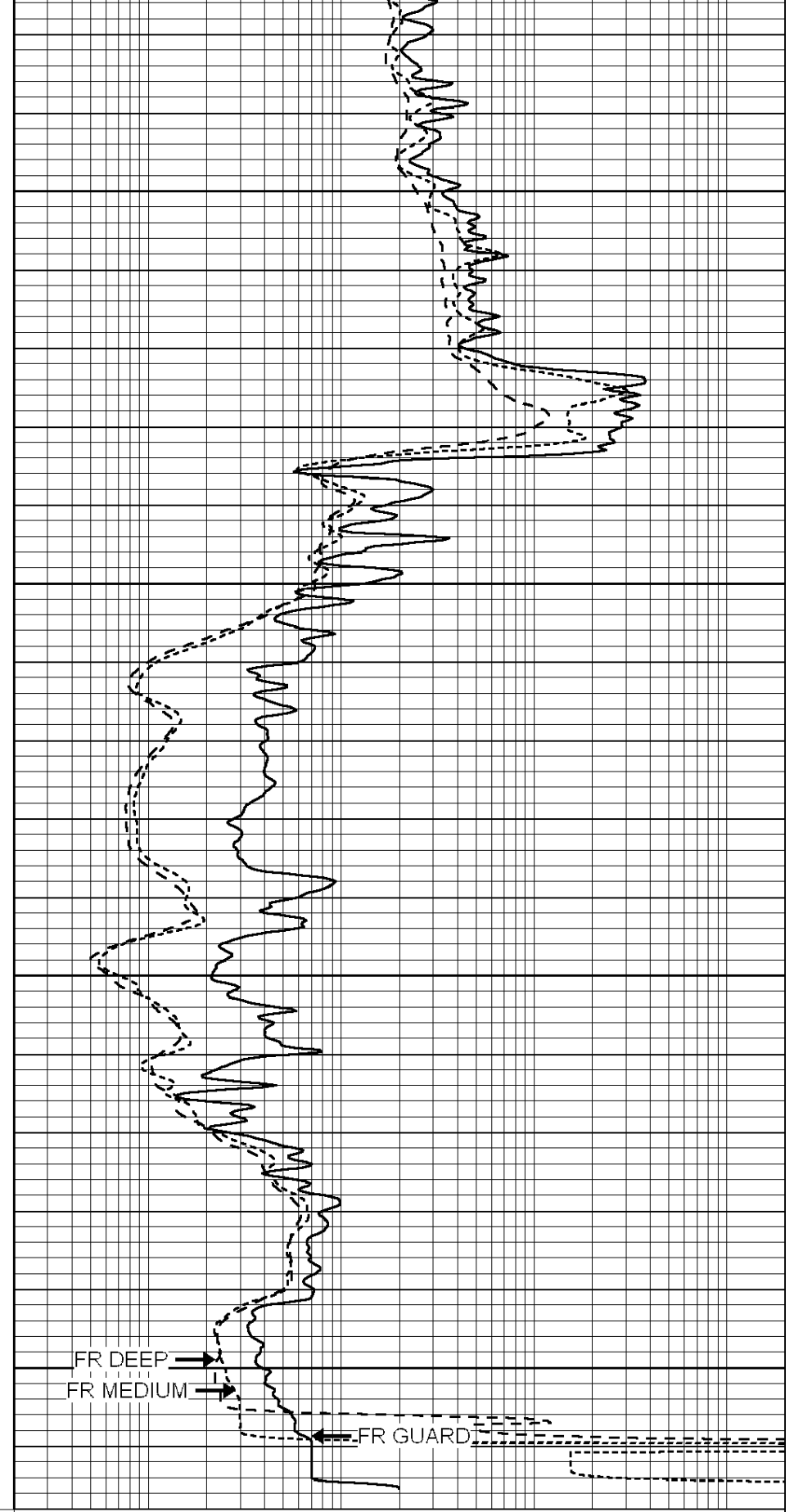
5200





5250
5300
5350
5400
LTD 5411

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



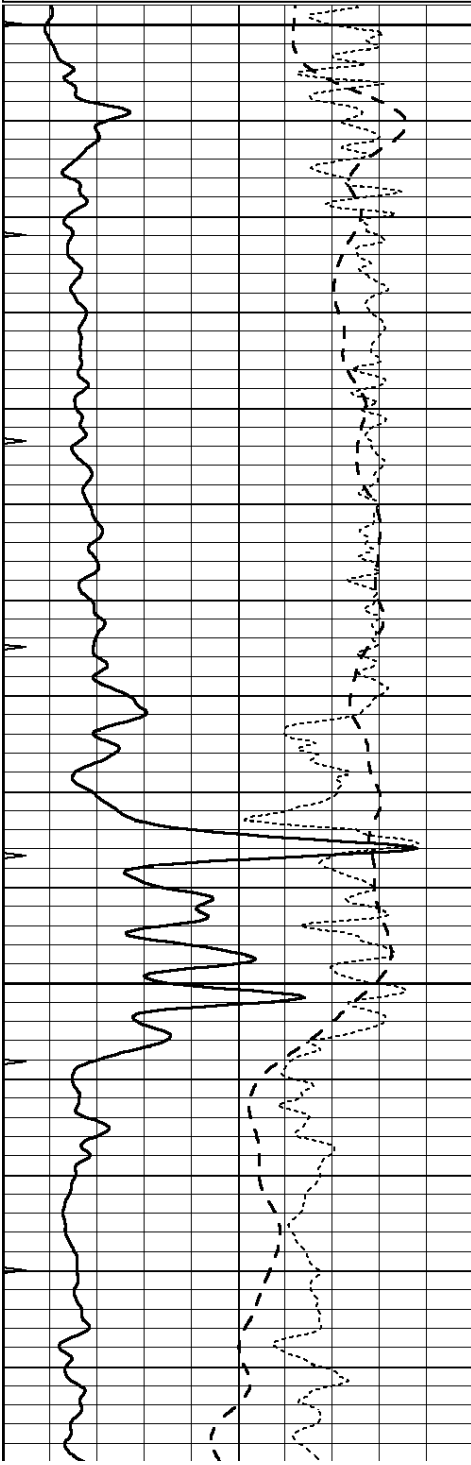
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

REPEAT SECTION

Database File: 25886pe.db
 Dataset Pathname: pass2.11
 Presentation Format: _dil
 Dataset Creation: Sat Sep 27 00:42:52 2014
 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

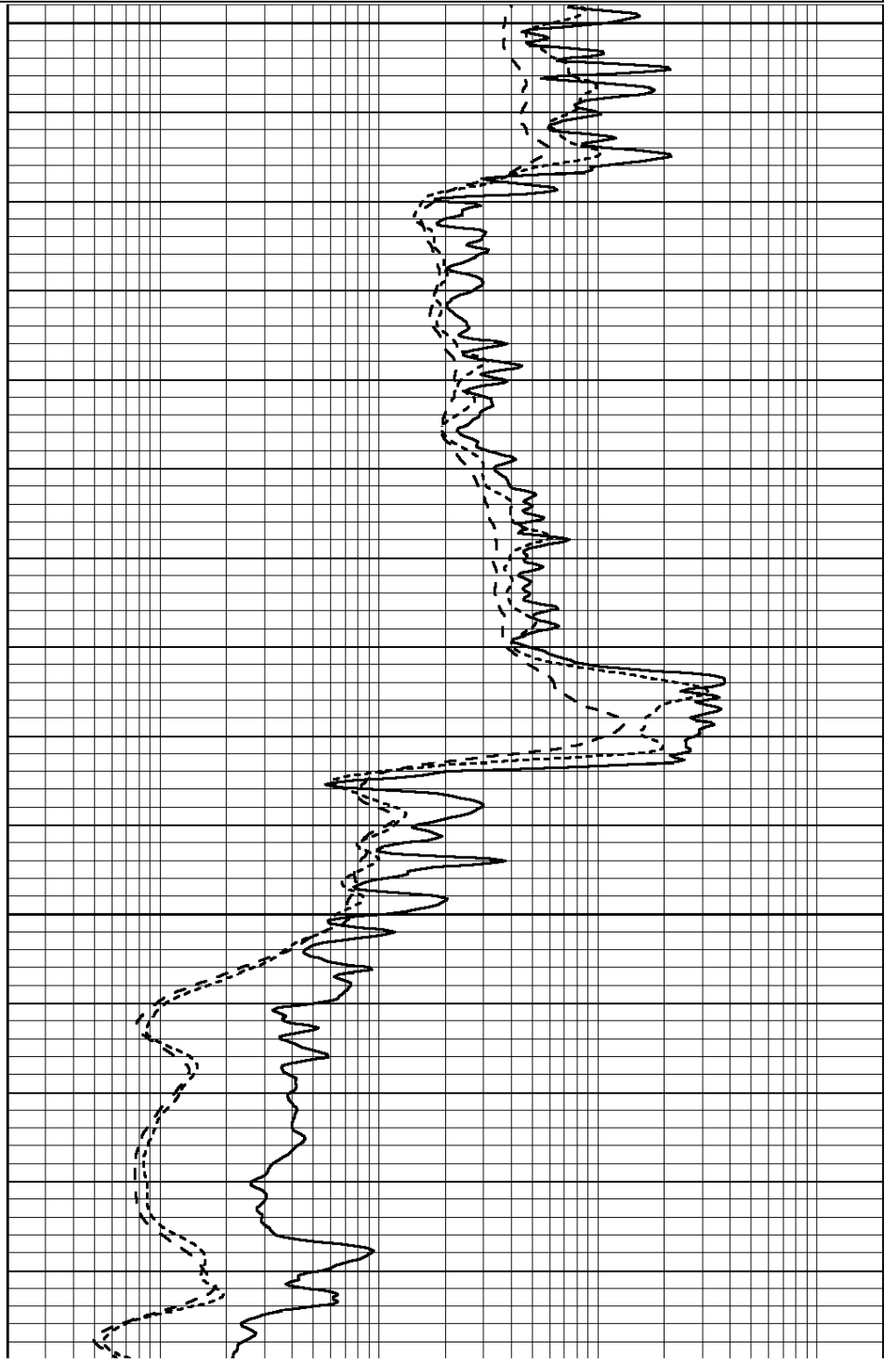


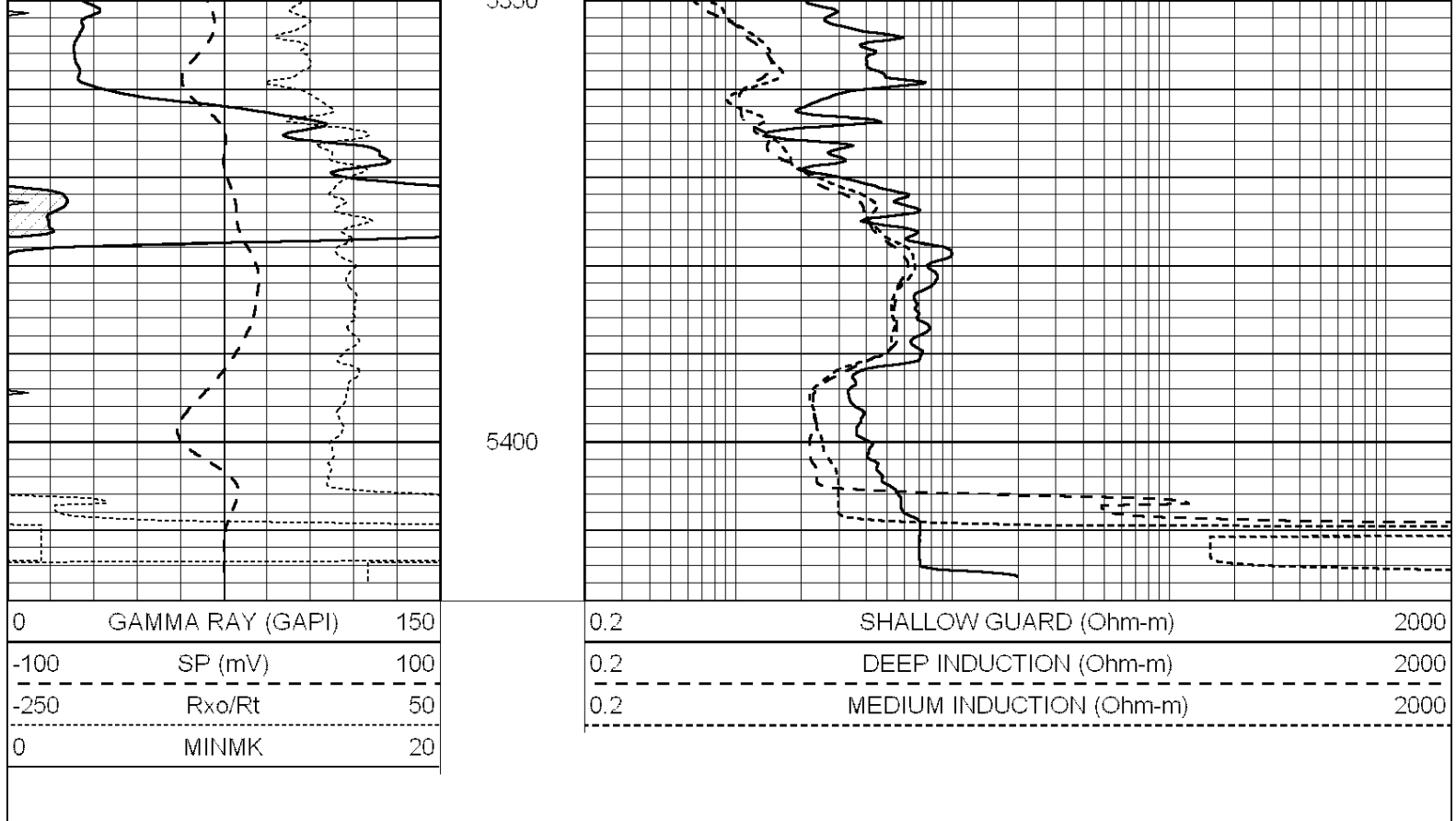
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5300

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Calibration Report

Database File: 25886pe.db
 Dataset Pathname: pass3.11
 Dataset Creation: Sat Sep 27 01:48:00 2014

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
 Surface Cal Performed: Fri Sep 26 22:43:29 2014
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-12.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	670.000	-25.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

Readings	Targets	Results
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	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report
Serial: 006 Model: PRB

Master Calibration

Performed Fri May 30 11:50:45 2014

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1256.6	9989.4	3203.9	10919.3	cps
Window 2	1137.0	8207.0	2724.6	8764.6	cps
Window 3	749.9	3977.2	1516.7	4097.1	cps
Window 4	144.0	317.0	303.6	310.9	cps
Long Space	0.0	7070.0	1587.6	7627.6	cps
Short Space	1.9	2571.4	1707.5	2736.8	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 44.7	Rib Slope	: 0.989	Density/Spine Ratio	: 0.568
Spine Angle	: 74.7	Spine Slope	: 3.648	Spine Intercept	: -19.8

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

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	

After Survey Verification

Performed Wed Dec 31 18:00:00 1969

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			

Short Space
Long Space

cps
cps

pu

pu

POST-SURVEY VERIFICATION

Detector

Readings

Measured

Target

Short Space
Long Space

cps
cps

pu

pu

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Mon Jun 30 21:53:39 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2800 GAPI/cps