

DUAL INDUCTION LOG

Company	LYNN PACKARD			
Well	PACKARD #1-15			
Field	MINGONA			
County	BARBER			
State	KANSAS			
Location:	API # : 15-007-24331-00-00			
Permanent Datum	800' FSL & 1650' FWL			
Log Measured From	GROUND LEVEL Elevation 1661'			
Drilling Measured From	KELLY BUSHING 12' A.G.L. KELLY BUSHING			
SEC 15	TWP 31S	RGE 13W	Other Services CDL/CNL/MEL	Elevation K.B. 1673 D.F. 1671 G.L. 1661
Date	07/02/18			
Run Number	ONE			
Depth Driller	4716			
Depth Logger	4717			
Bottom Logged Interval	4716			
Top Log Interval	00			
Casing Driller	8 5/8" @ 224			
Casing Logger	224			
Bit Size	7 7/8"			
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3000 PPM		
Density / Viscosity	9.5/60			
pH / Fluid Loss	11.5/9.6			
Source of Sample	FLOWLINE			
Rm @ Meas. Temp	.70@88			
Rmt @ Meas. Temp	.53@88			
Rmc @ Meas. Temp	1.20@88			
Source of Rmt / Rmc	MEASURED			
Rm @ BHT	.50@122			
Time Circulation Stopped	2 HOURS			
Time Logger on Bottom	///			
Maximum Recorded Temperature	122F			
Equipment Number	4010			
Location	HAYS, KANSAS			
Recorded By	GUS PFANENSTIEL			
Witnessed By	ROGER MARTIN	LYNN PACKARD		

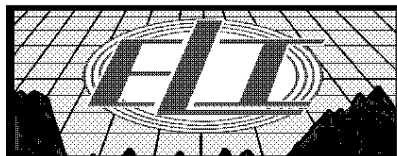
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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 ELI WIRELINE, HAYS, KS. (785) 628-6395

DIRECTIONS
MEDICINE LODGE WEST ON SUN CITY RD. 9 MILES
NORTH INTO.

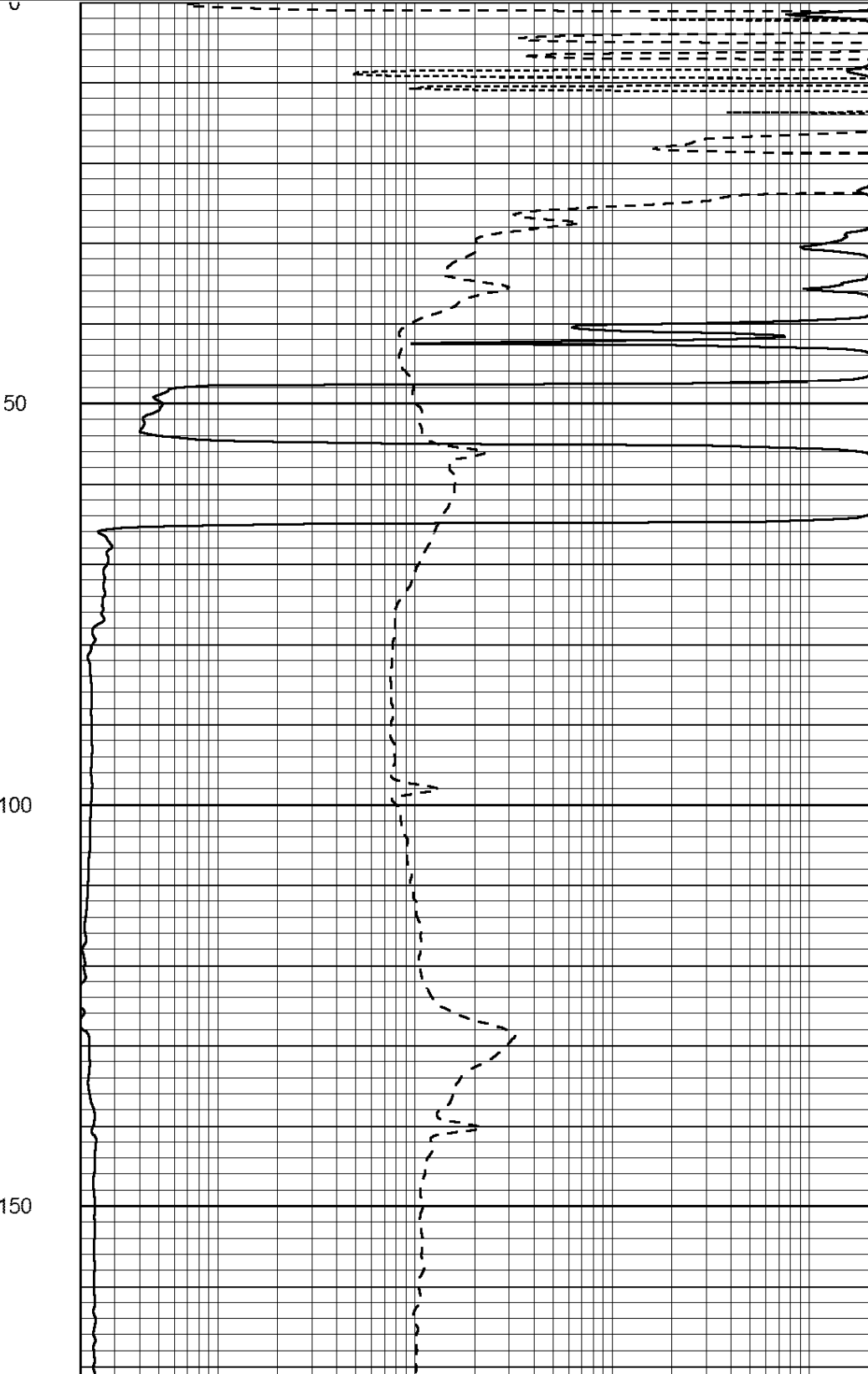
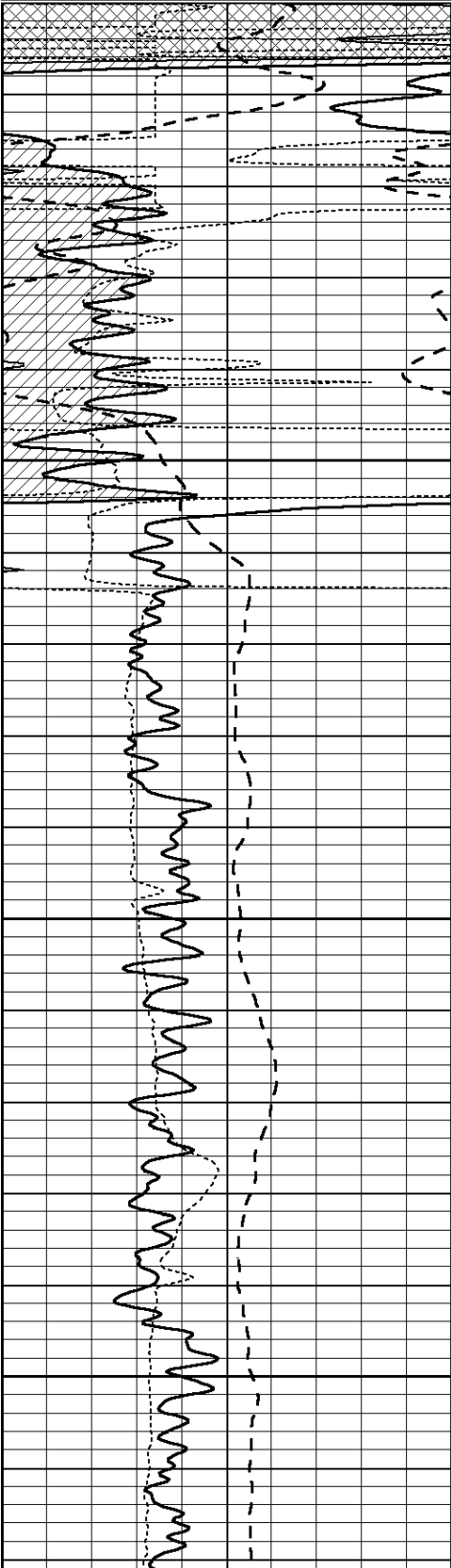


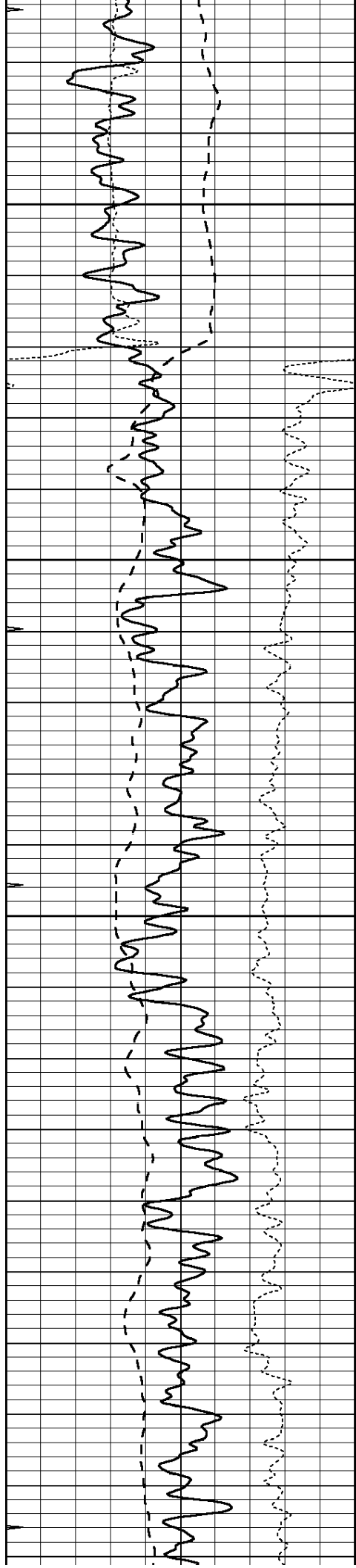
MAIN PASS

Database File: 2688ddn.db
Dataset Pathname: pass4.1
Presentation Format: _dil
Dataset Creation: Mon Jul 02 20:48:23 2018
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



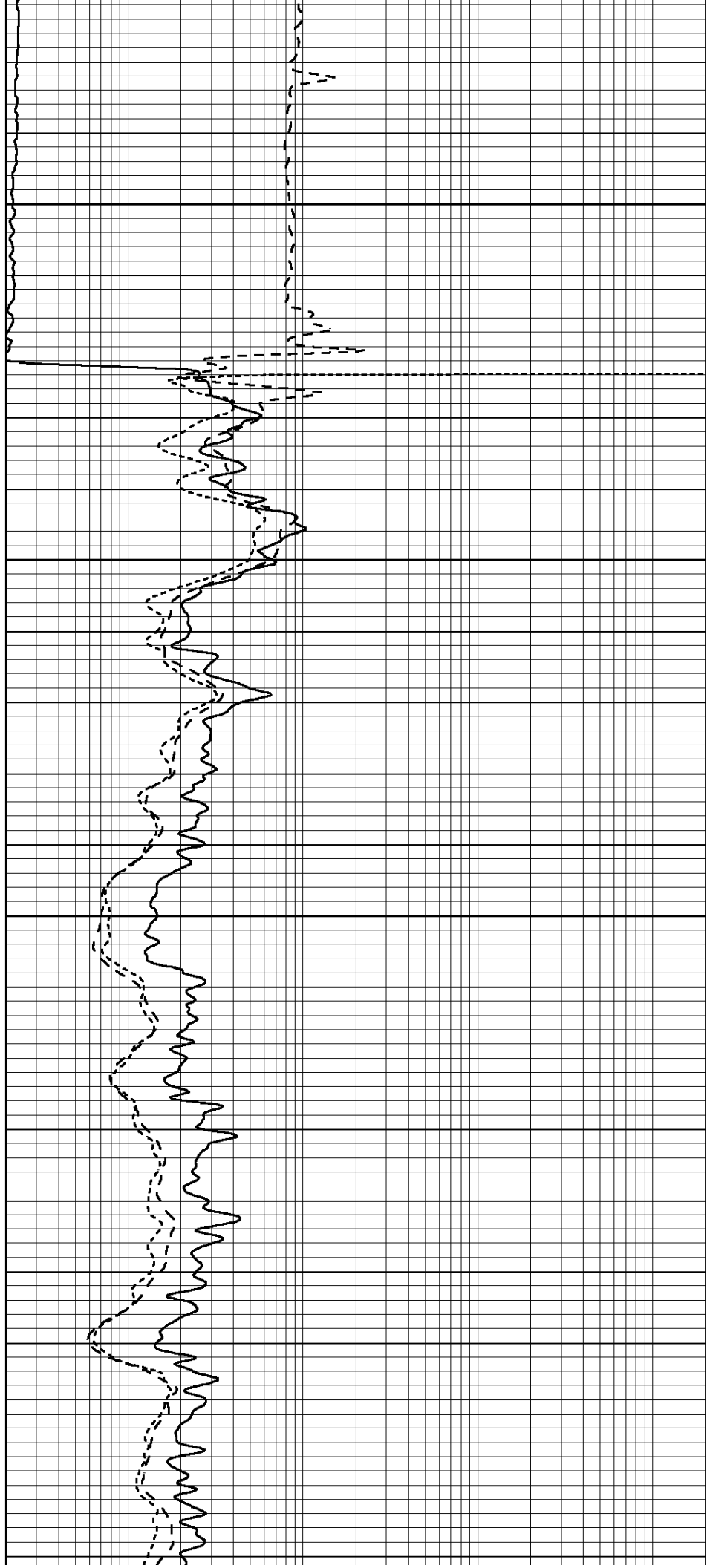


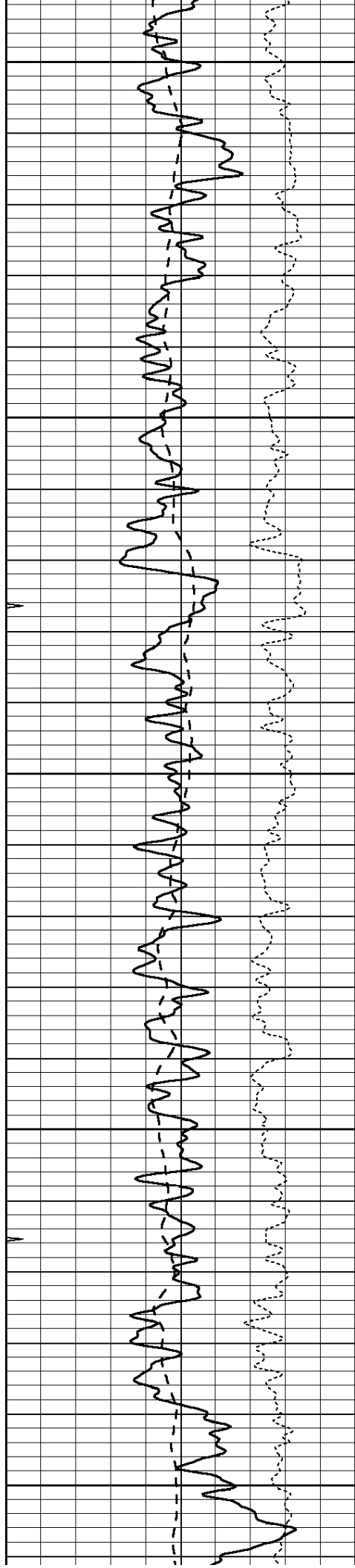
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250

300

350





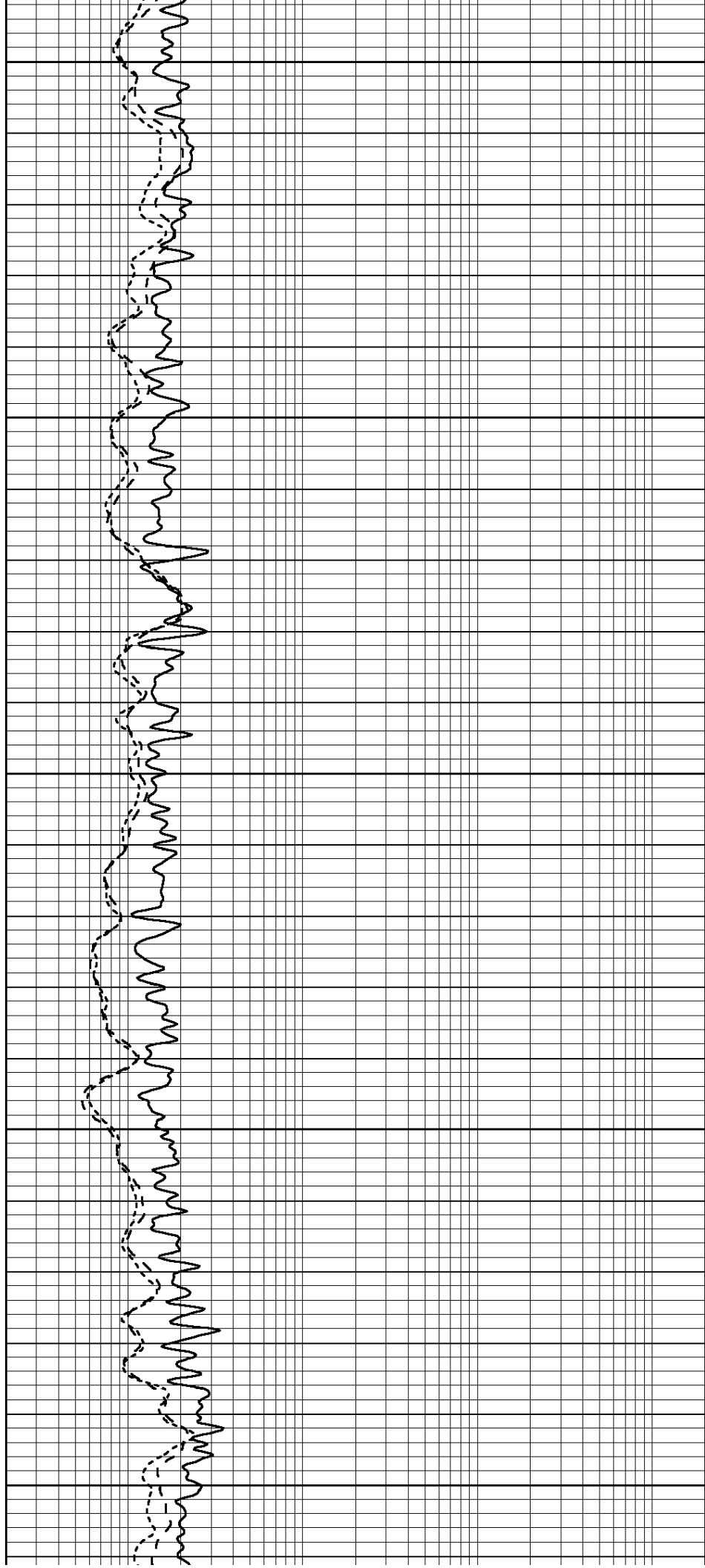
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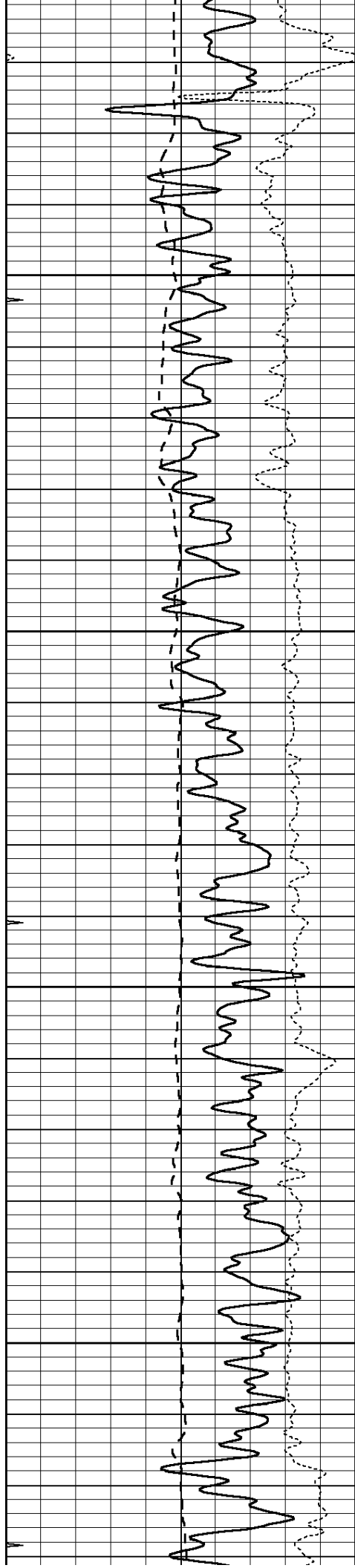
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500

550

600



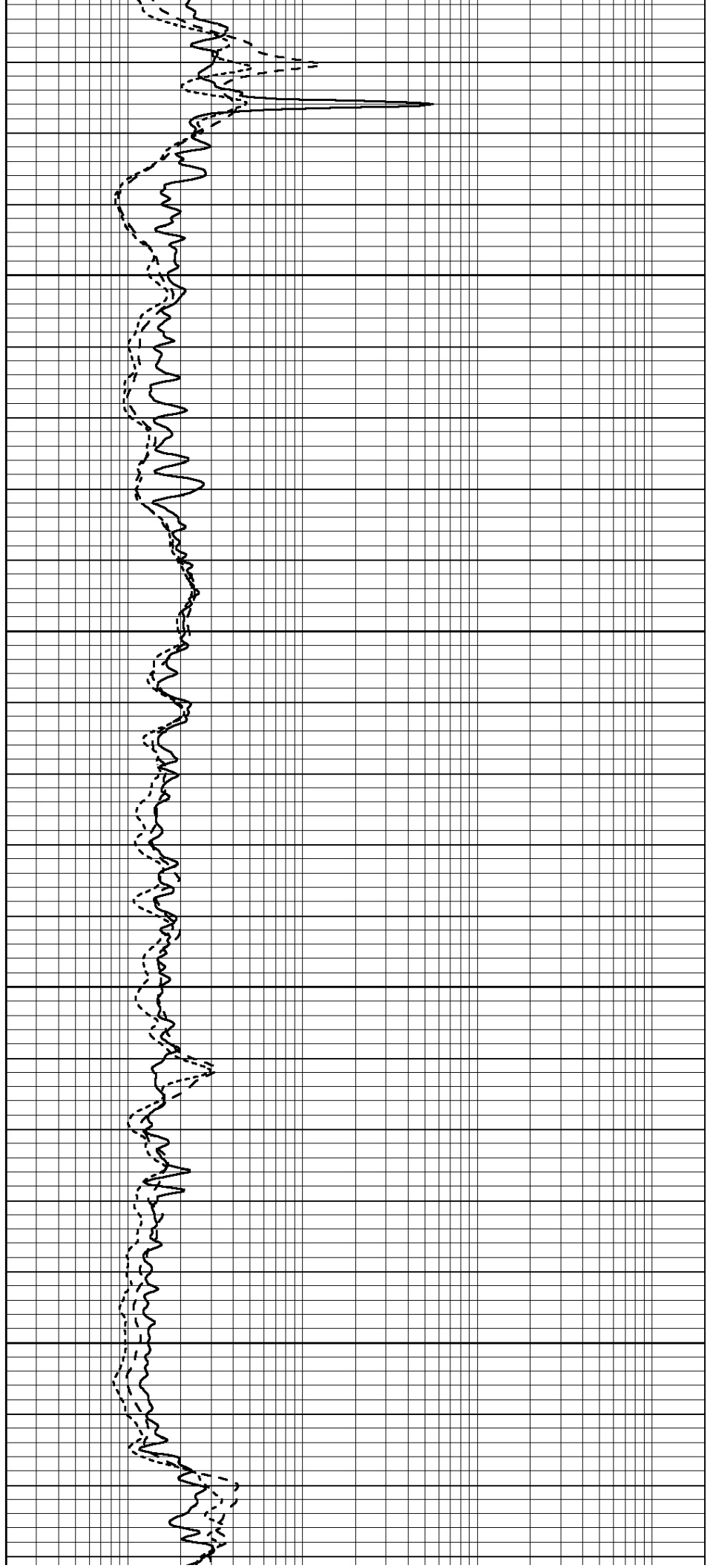


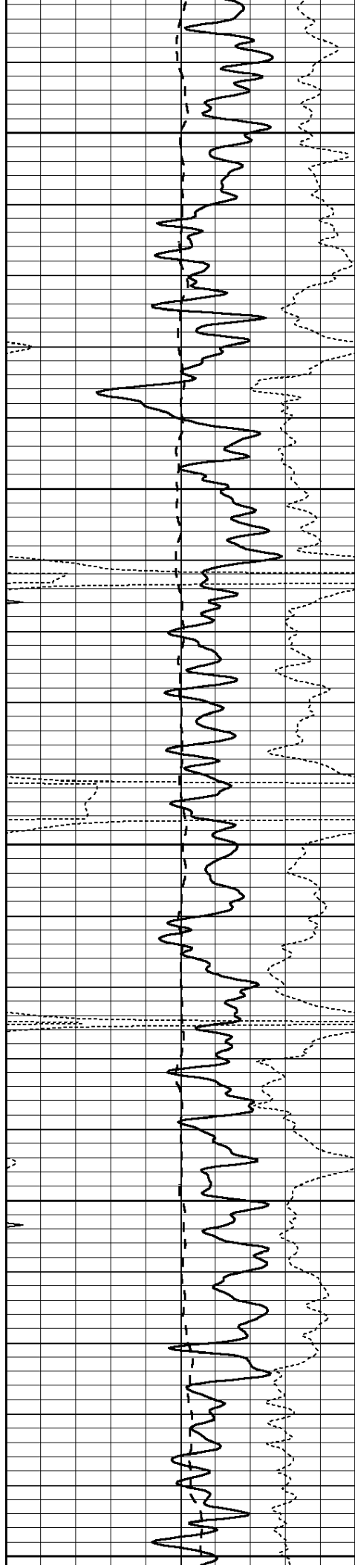
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700

750

800





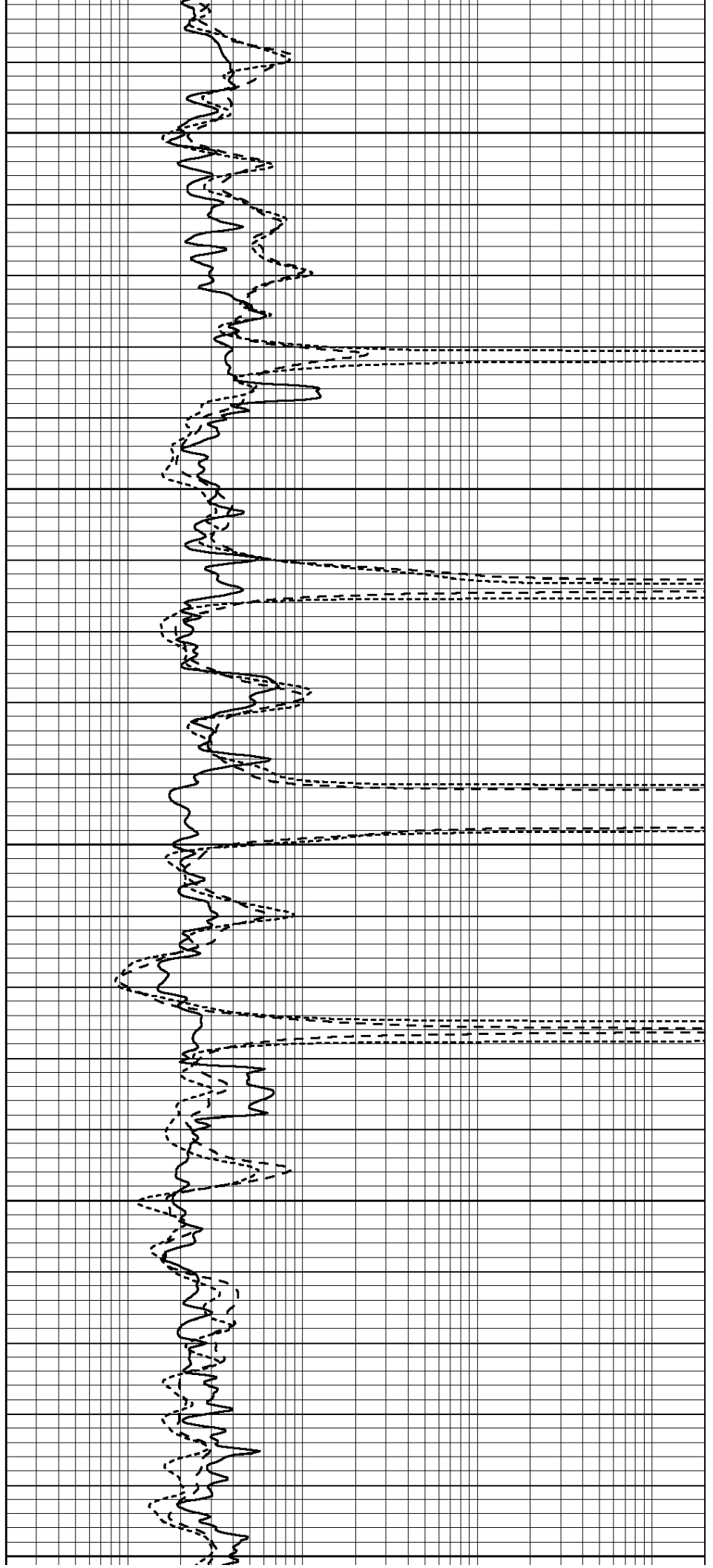
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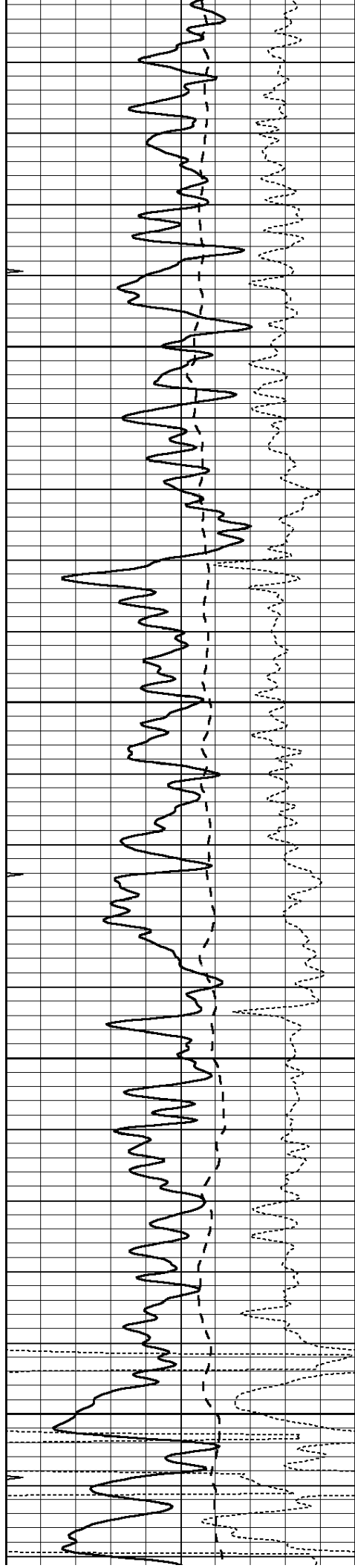
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1000

1050



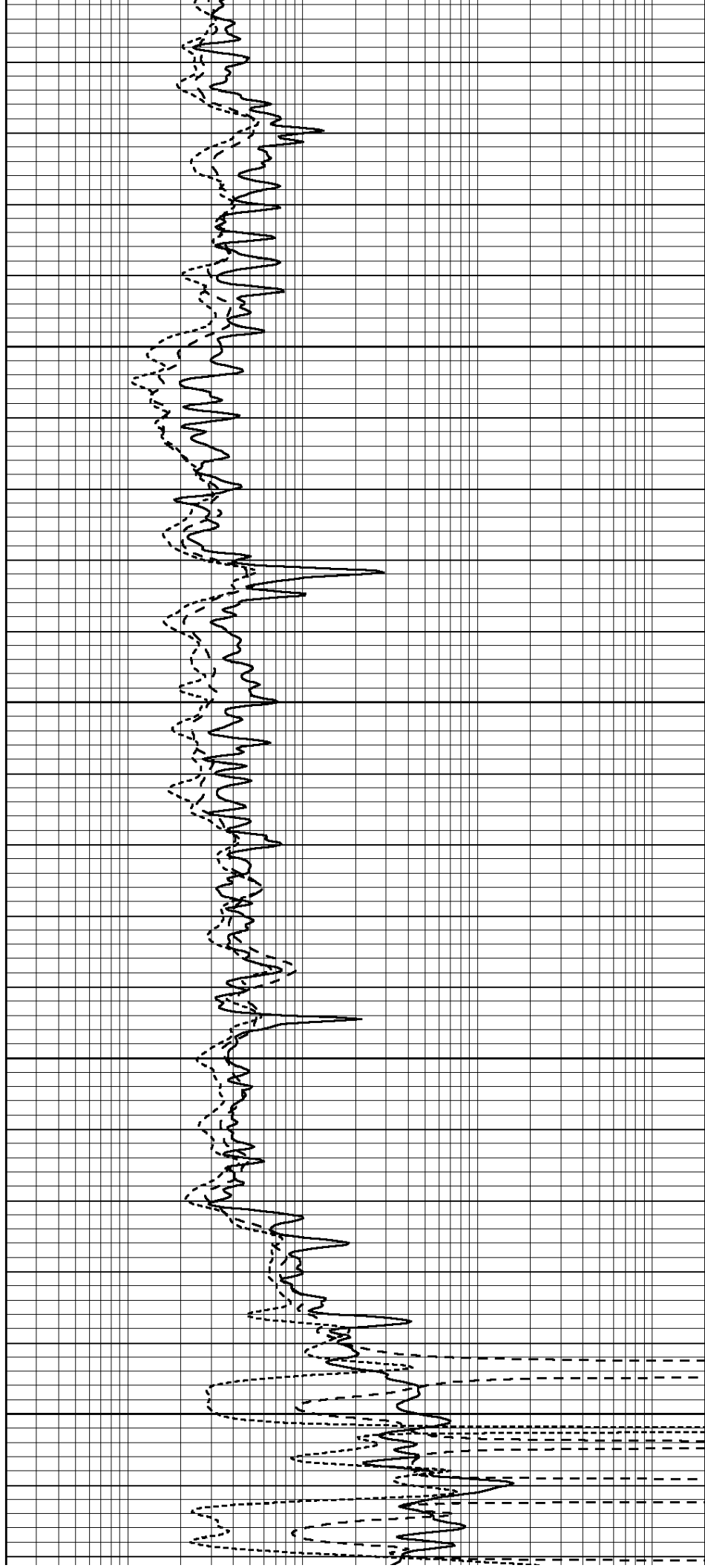


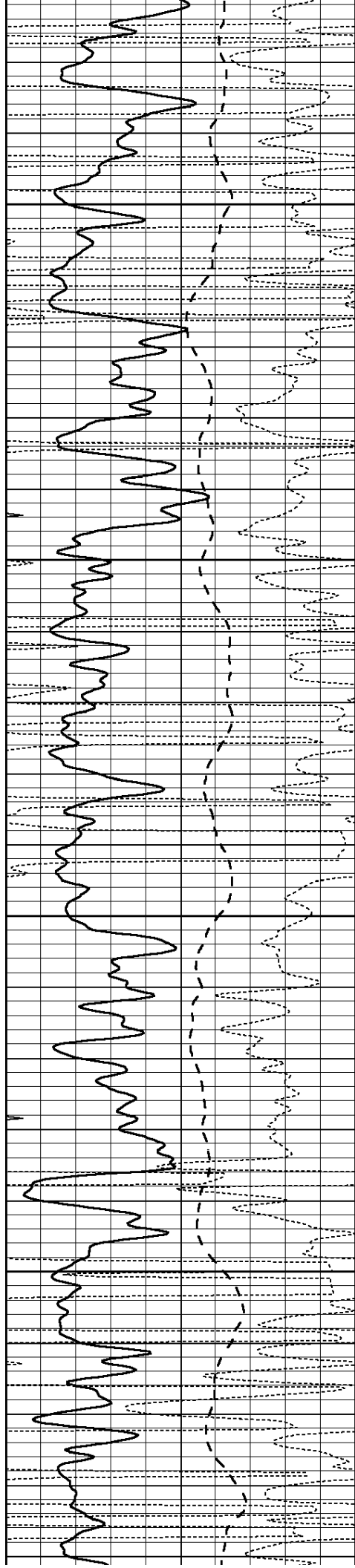
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1150

1200

1250



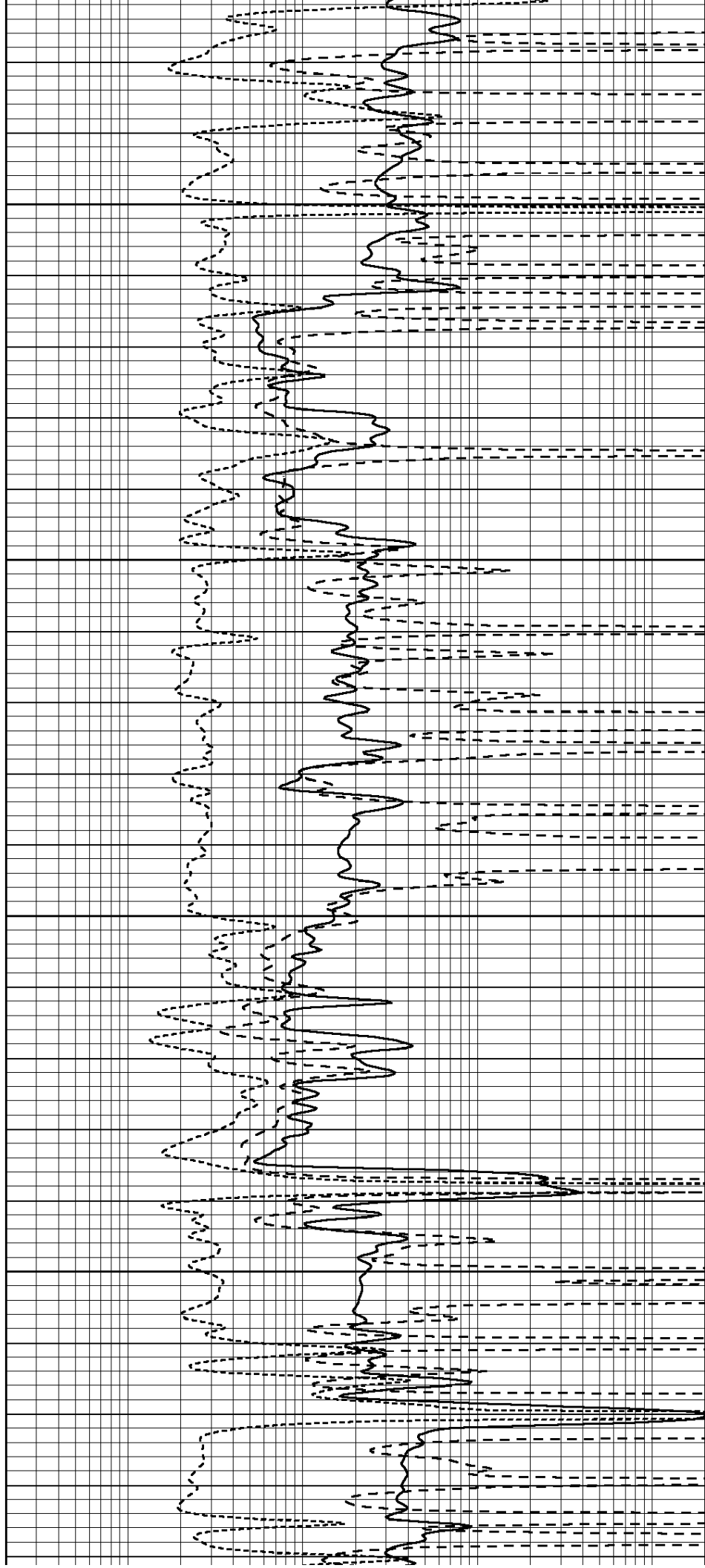


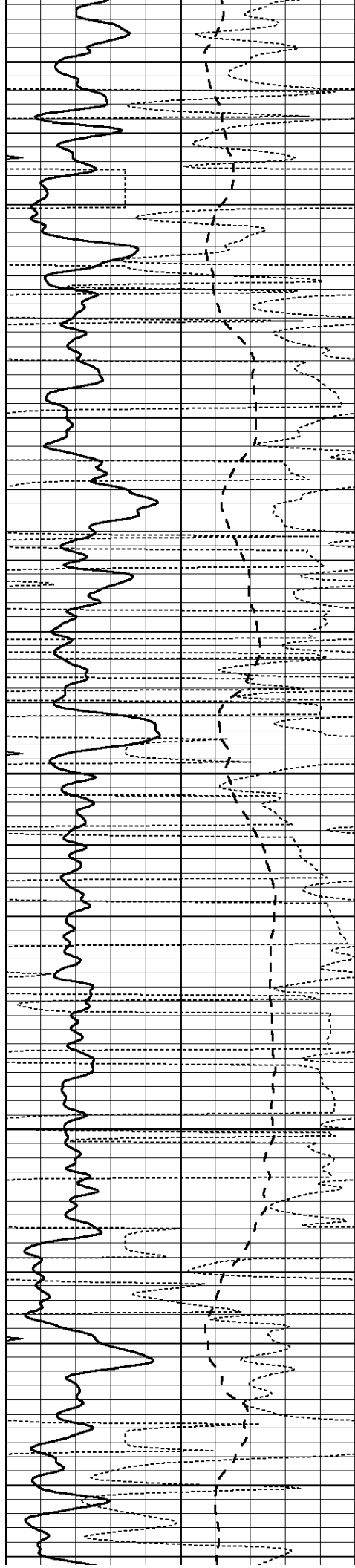
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1450





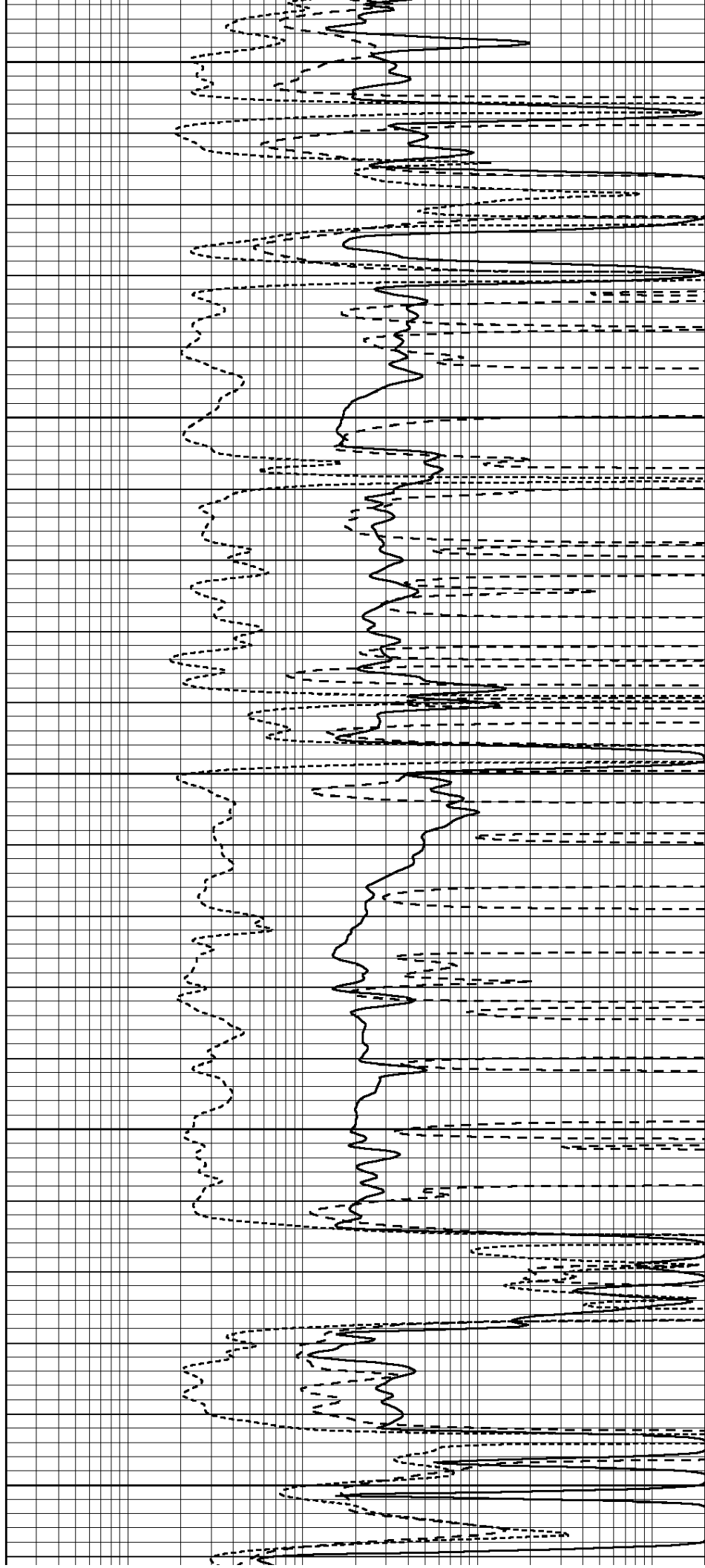
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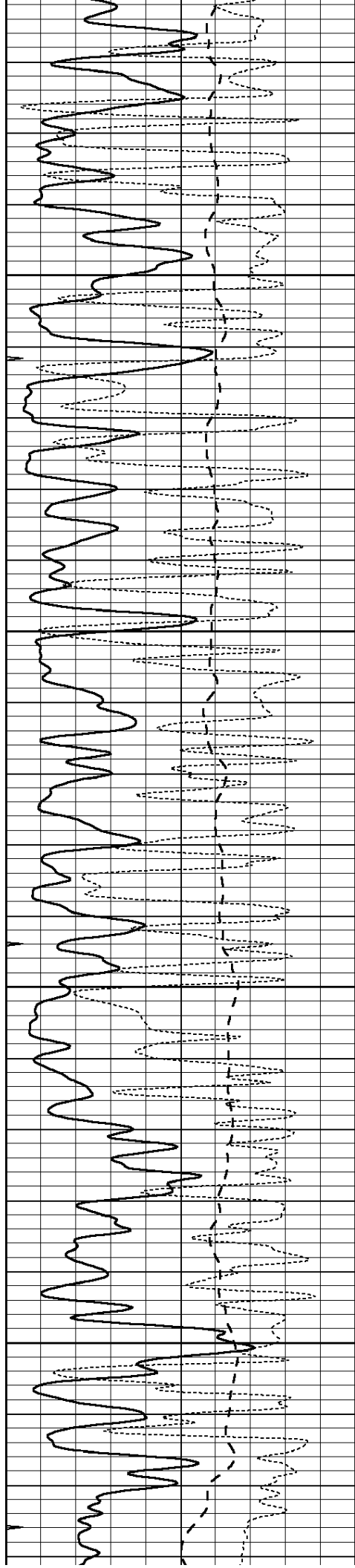
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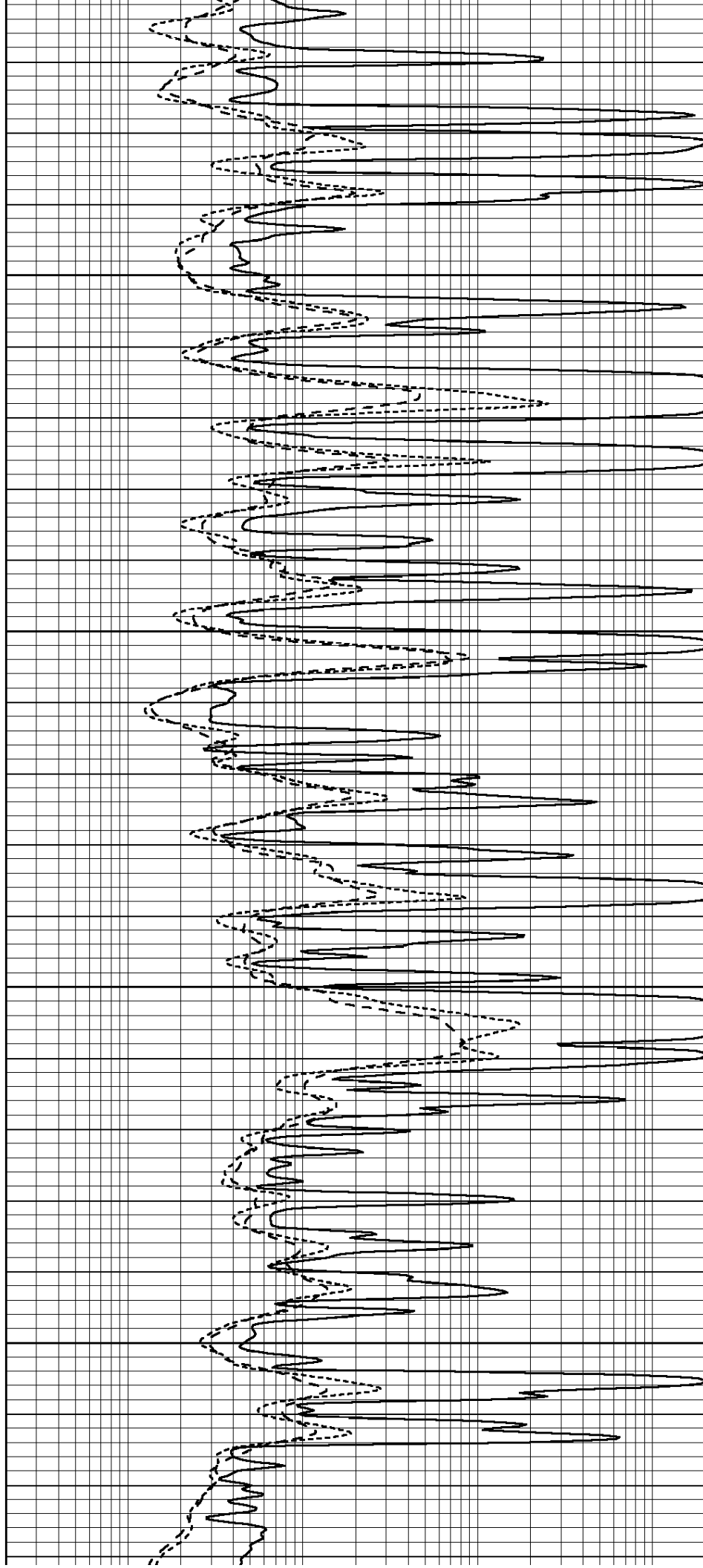


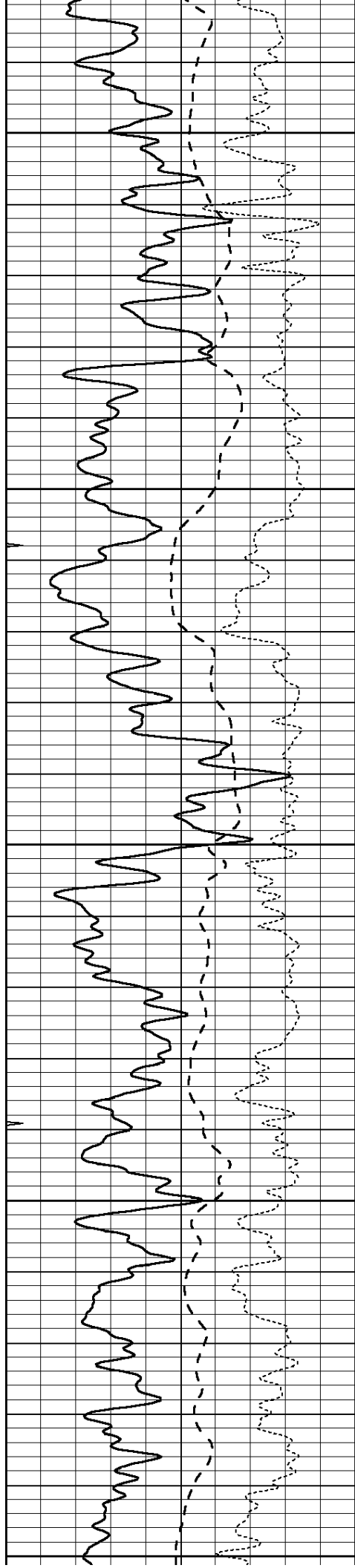
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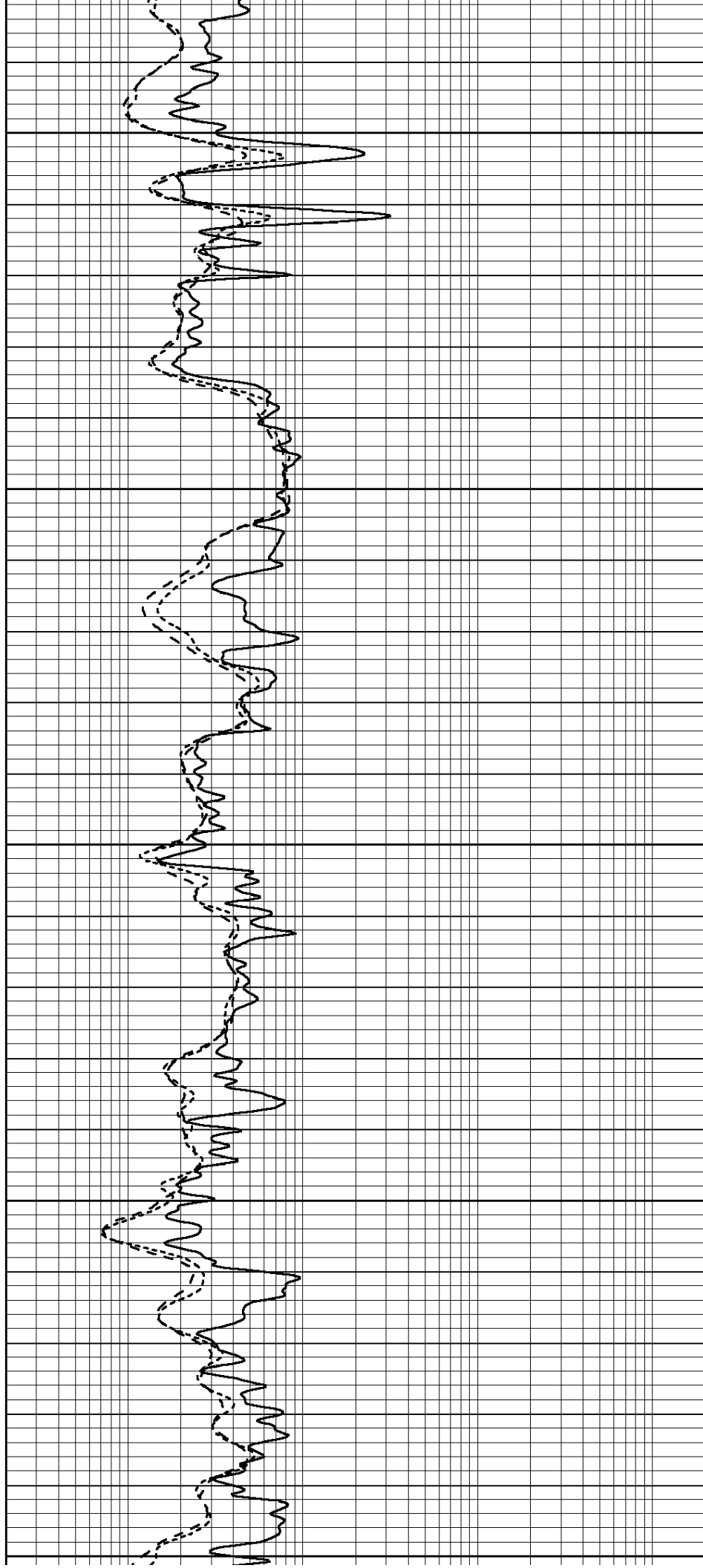
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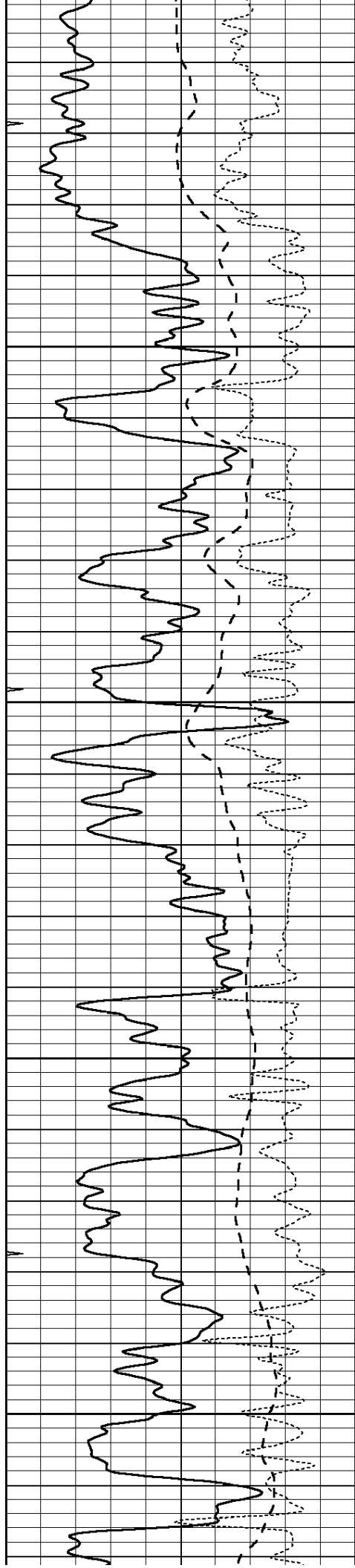
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2050

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2150



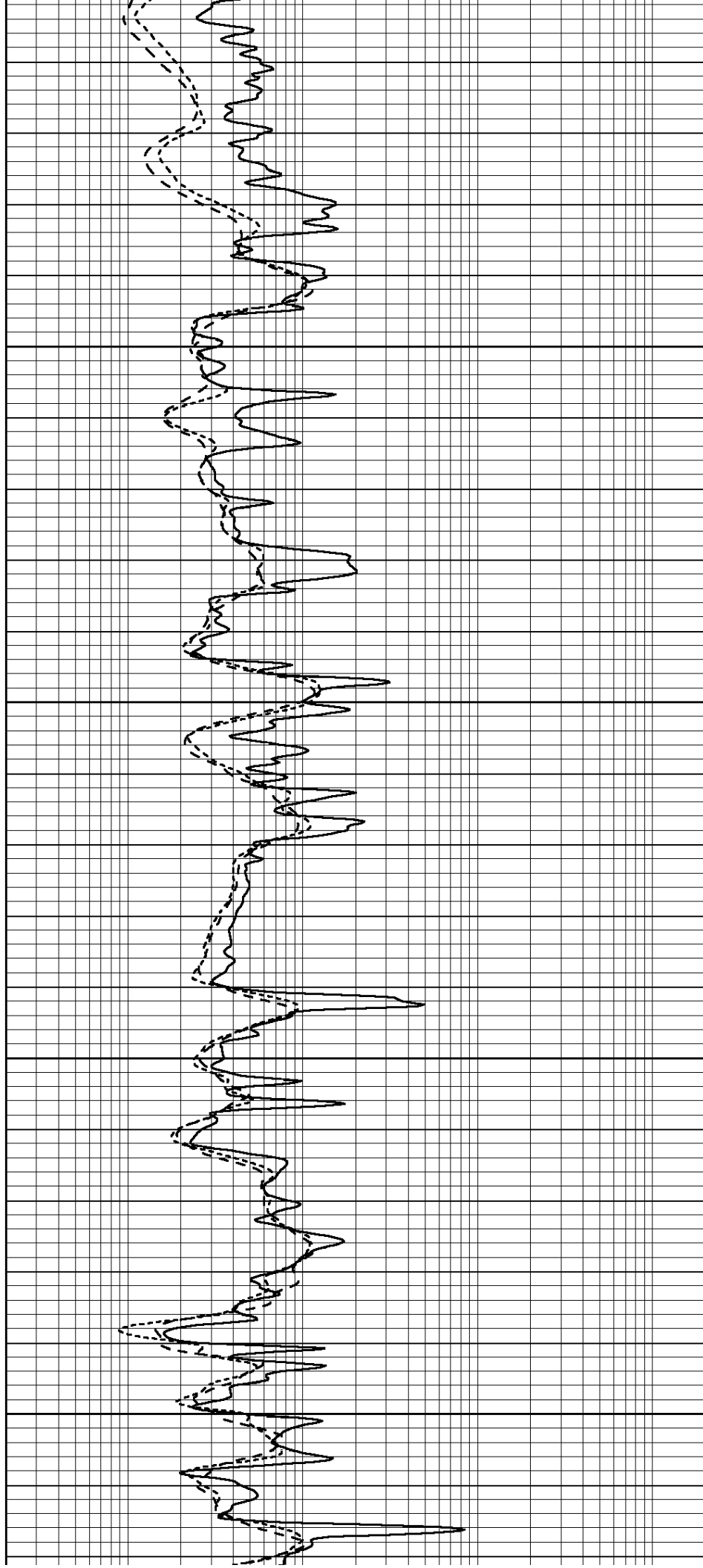


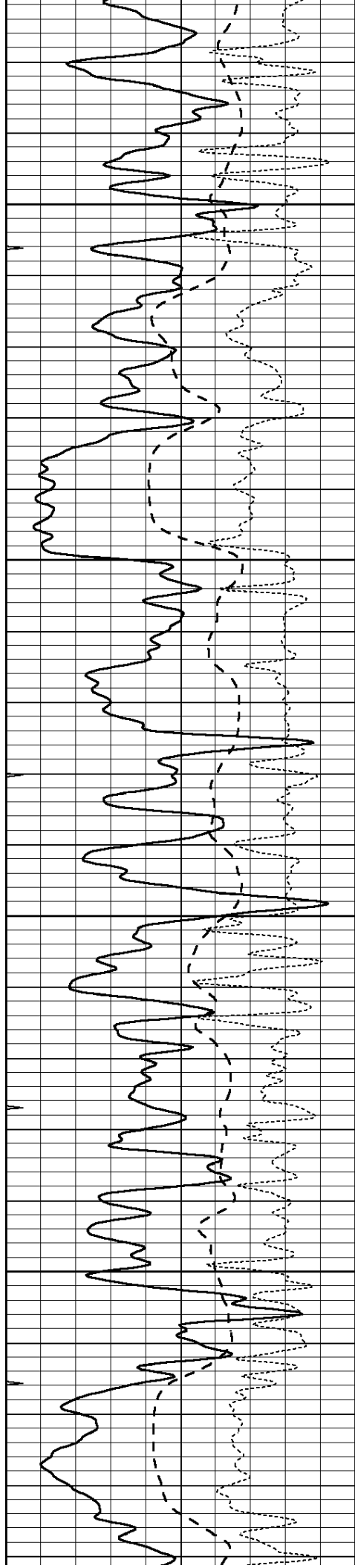
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2300

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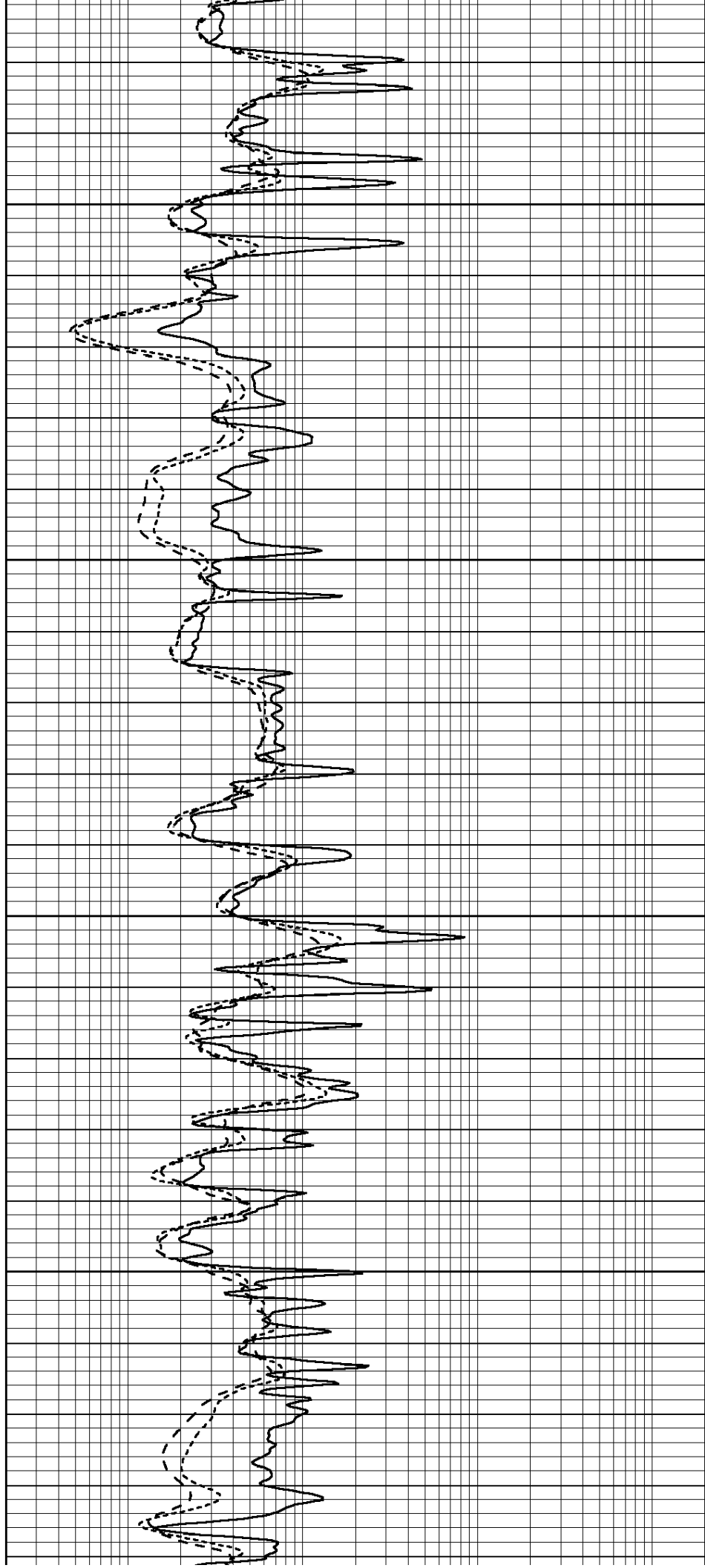


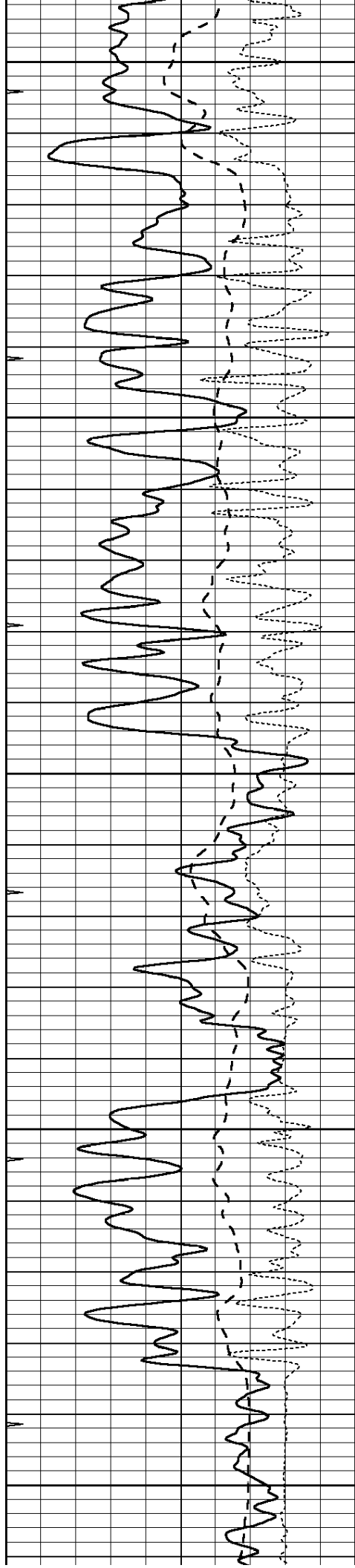
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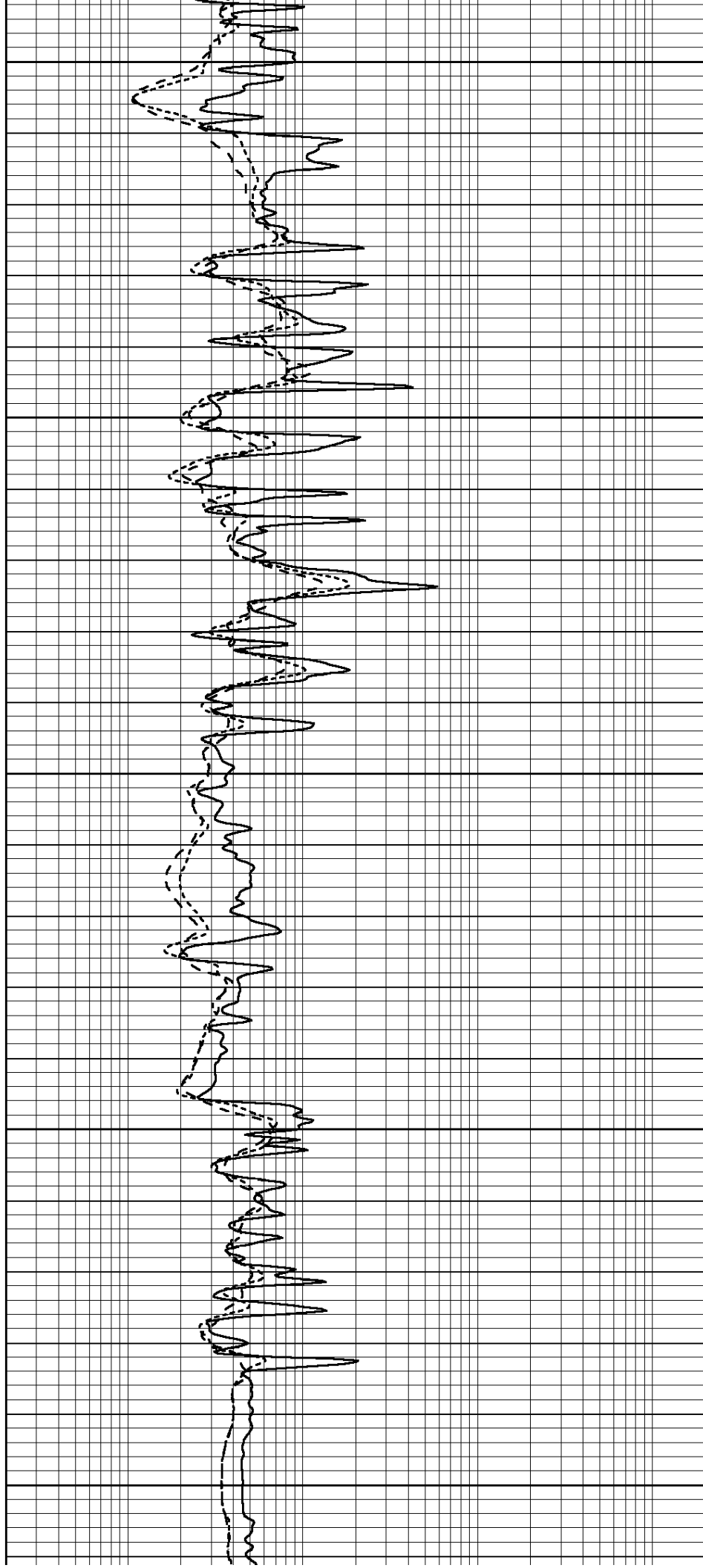
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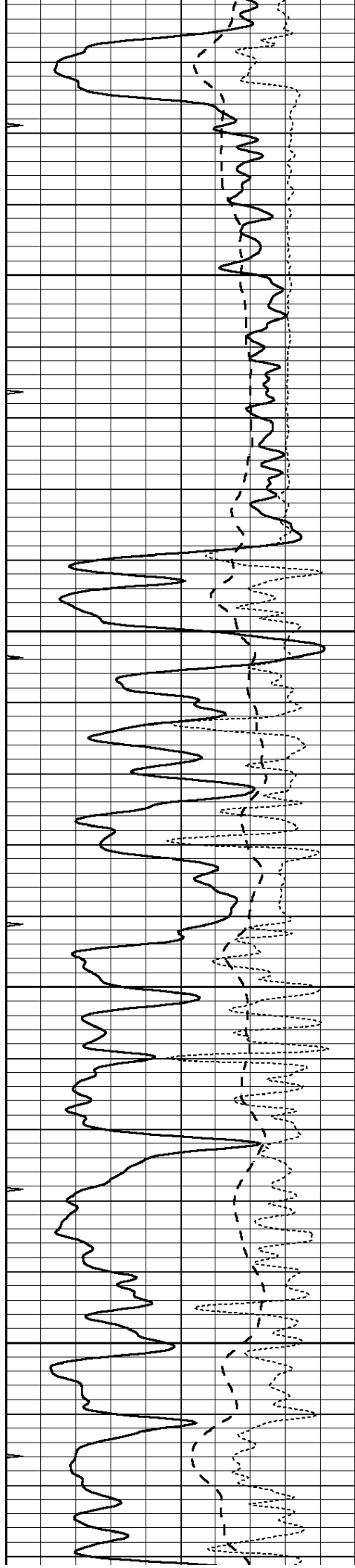
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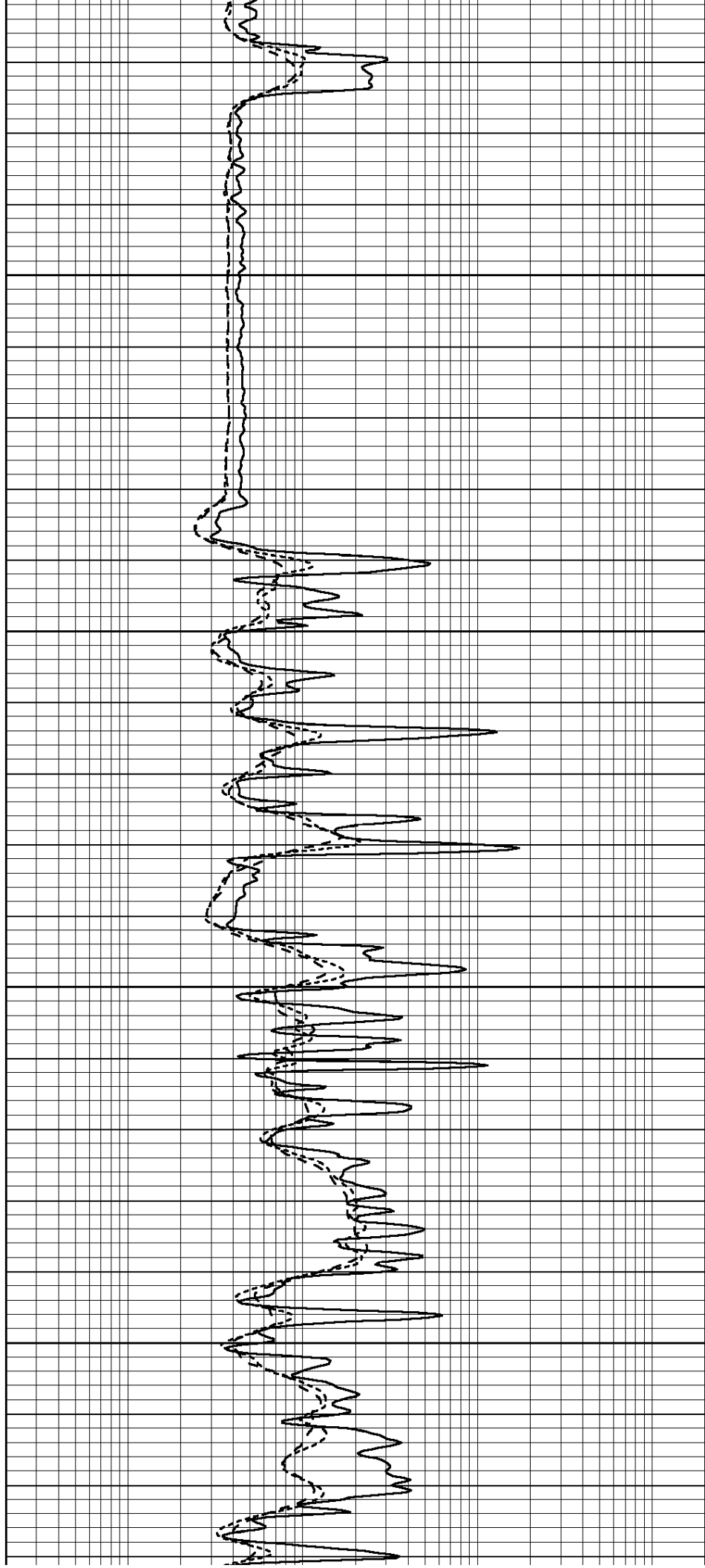


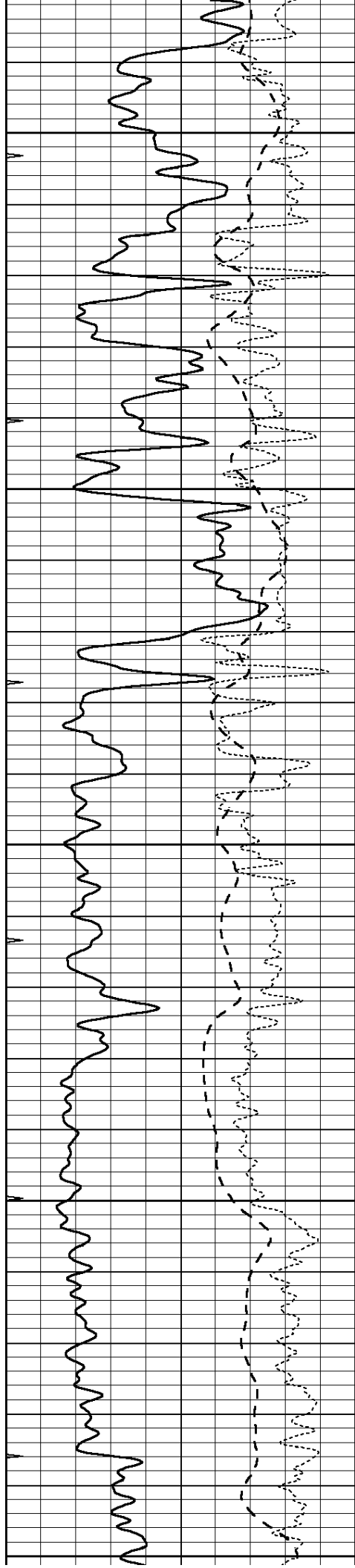
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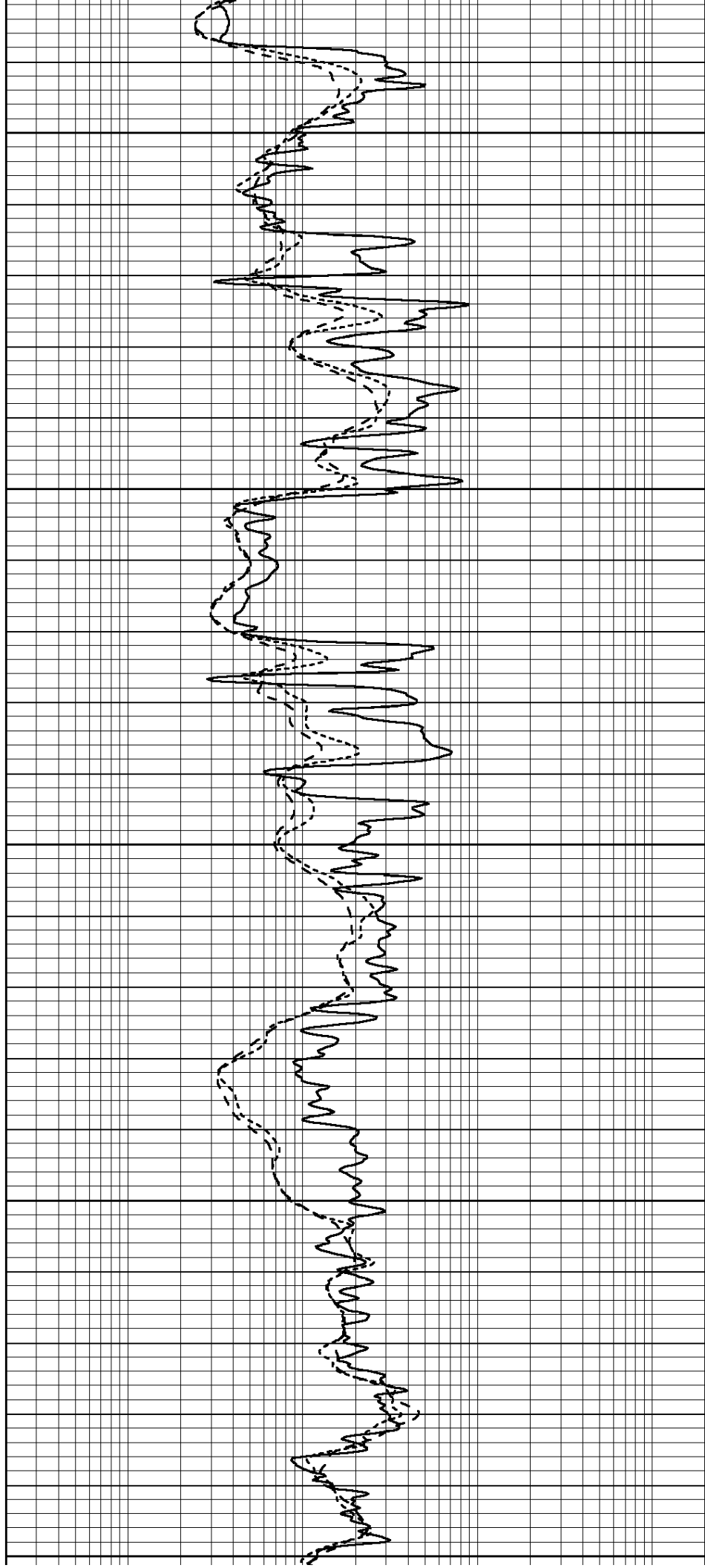
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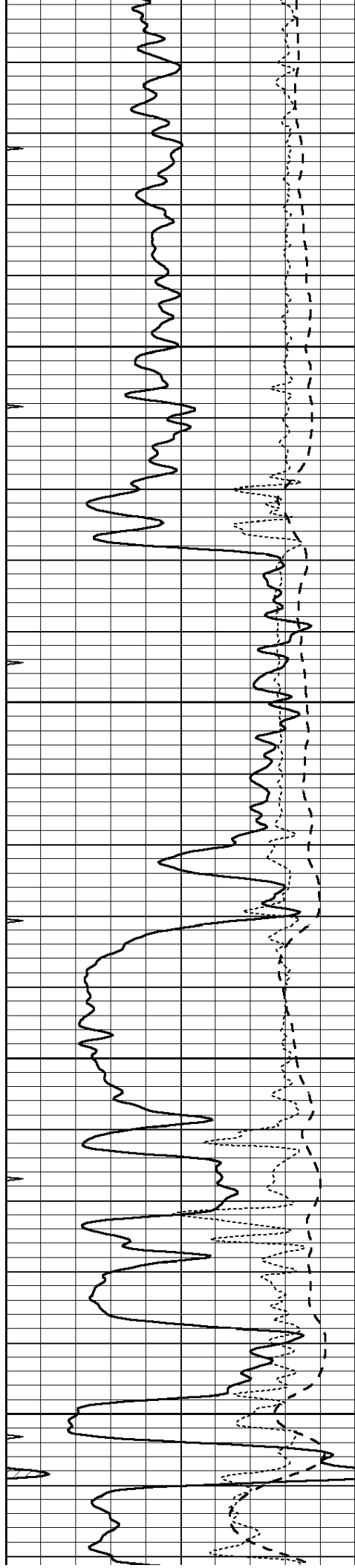
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3150

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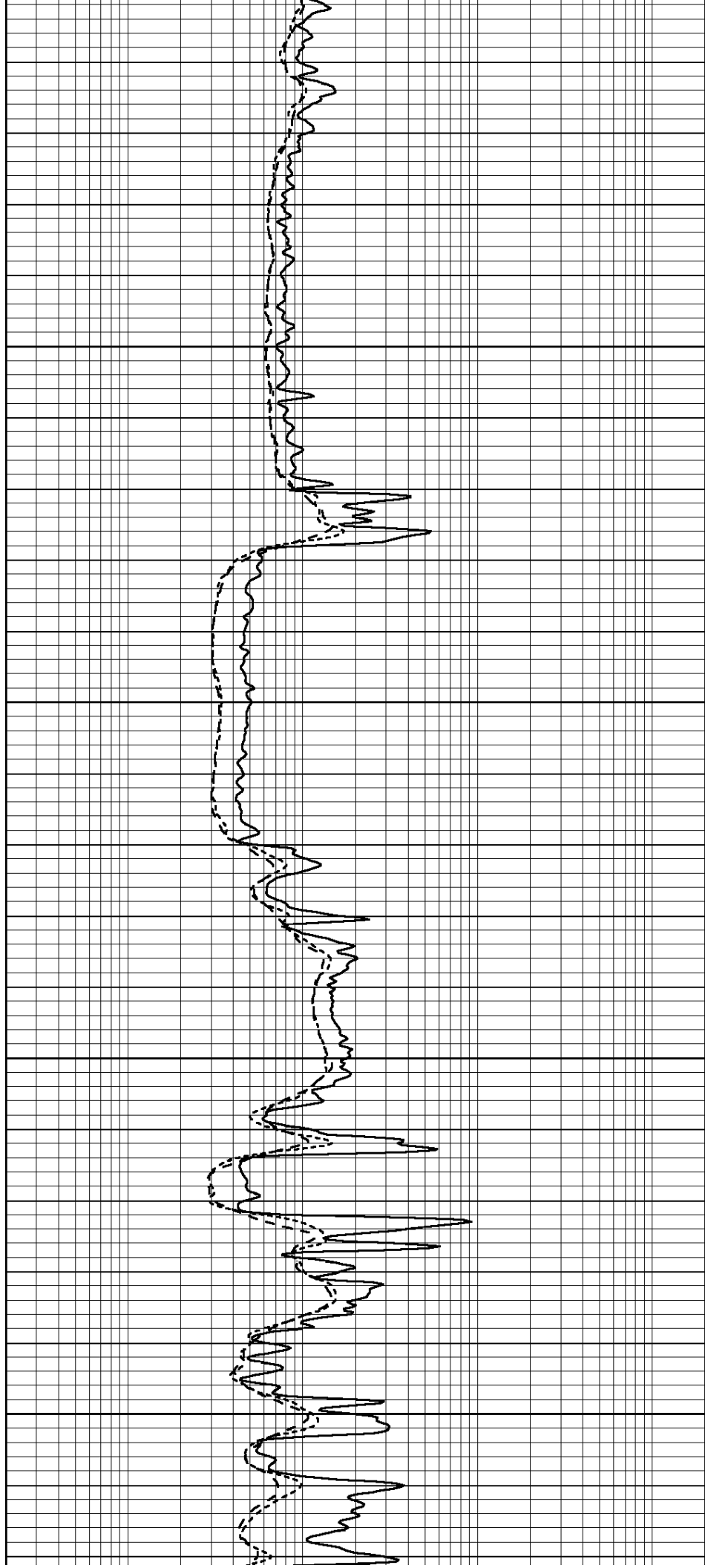


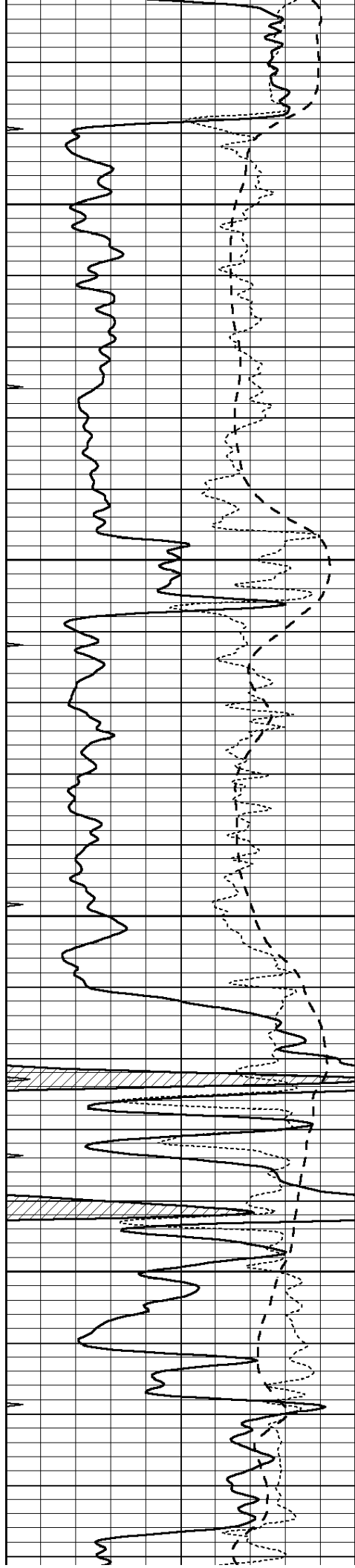
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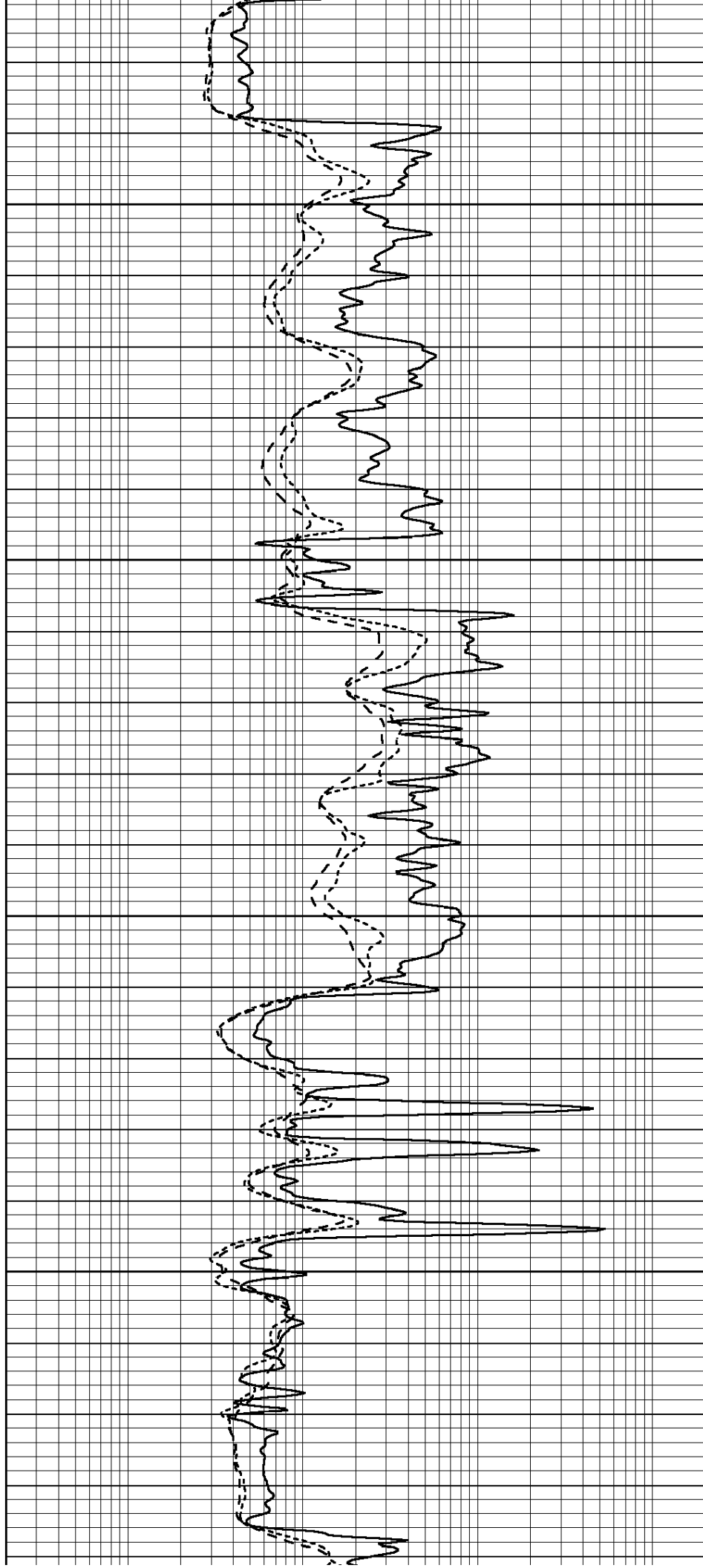


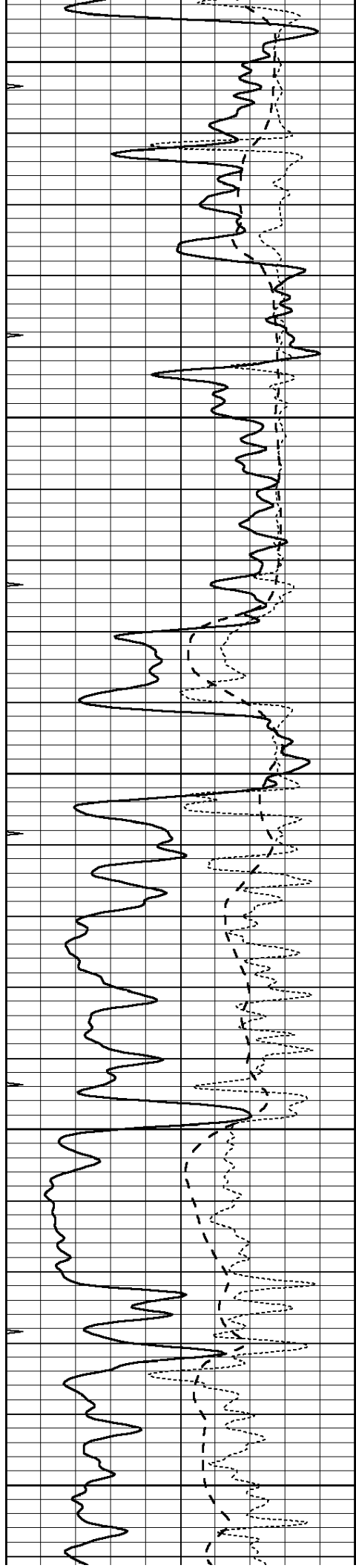
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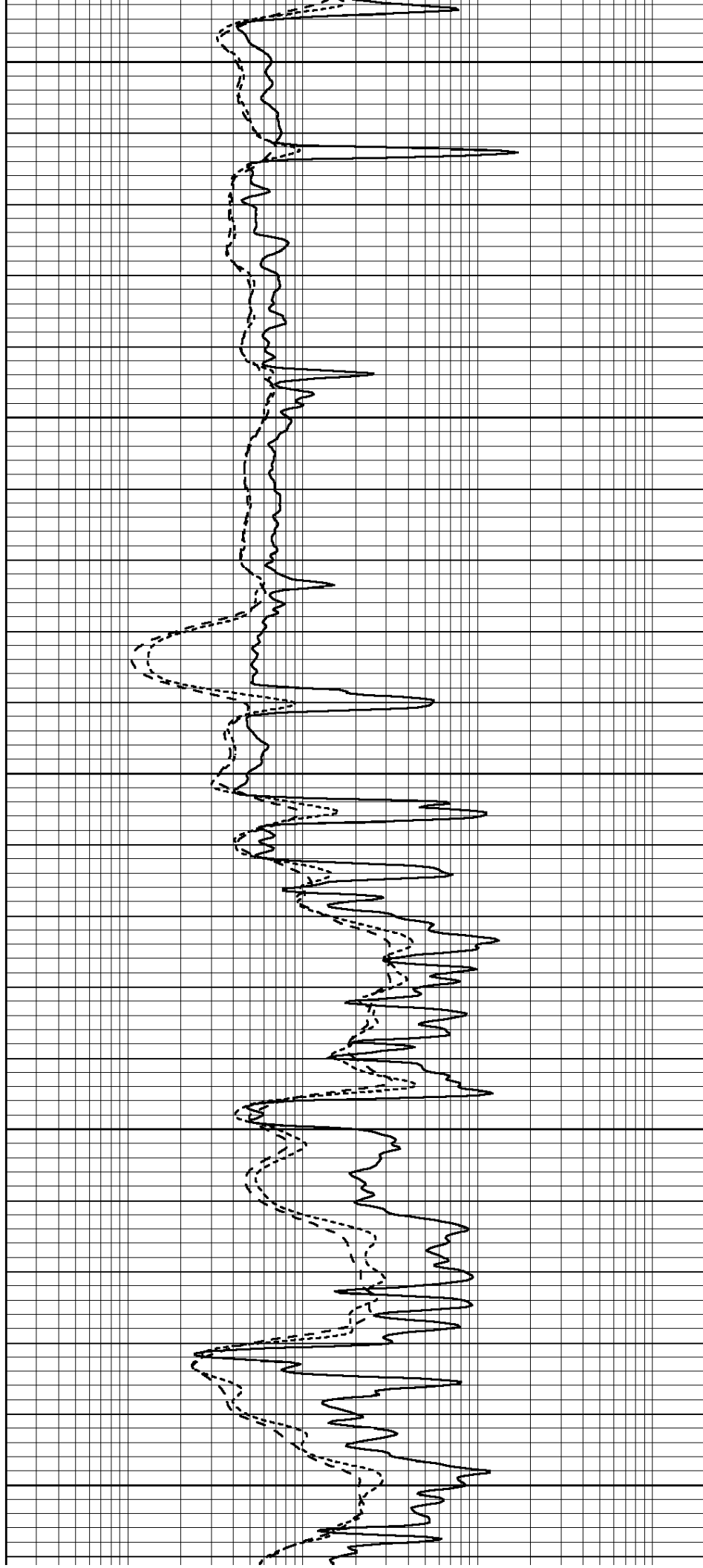
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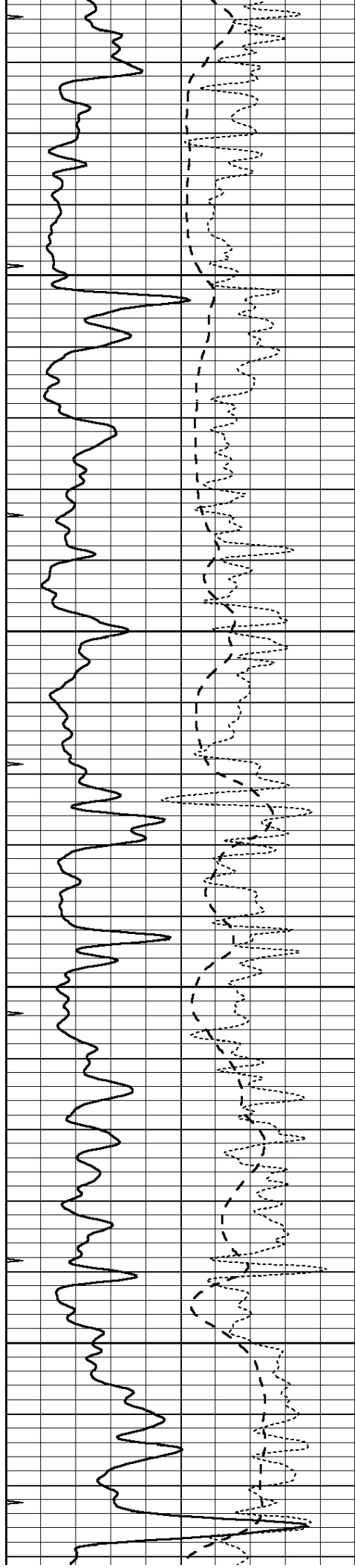
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3850

3900



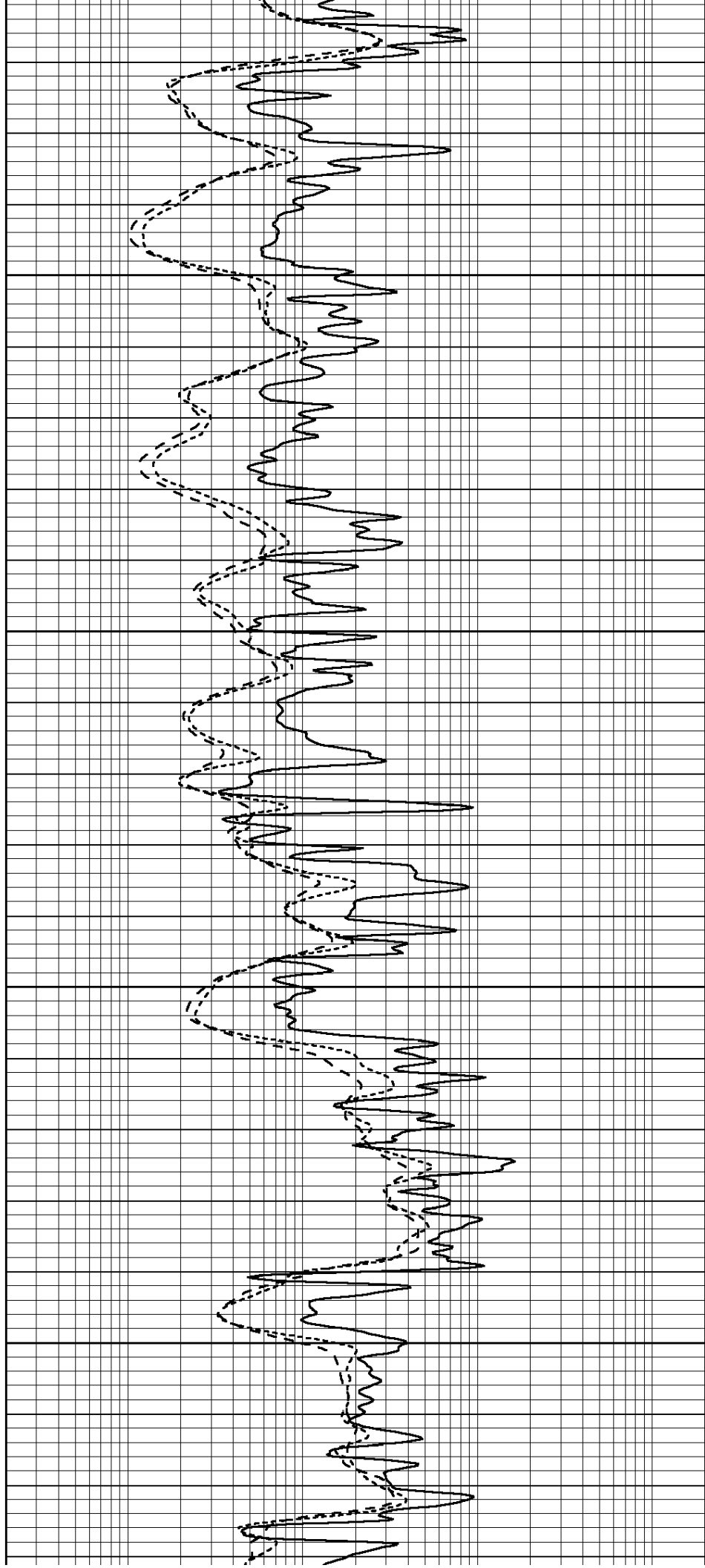


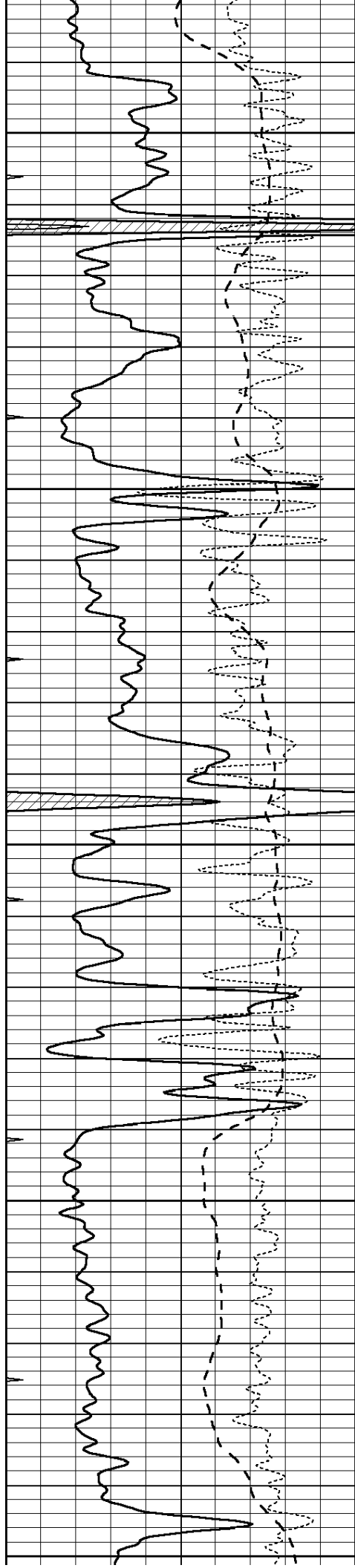
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4050

4100





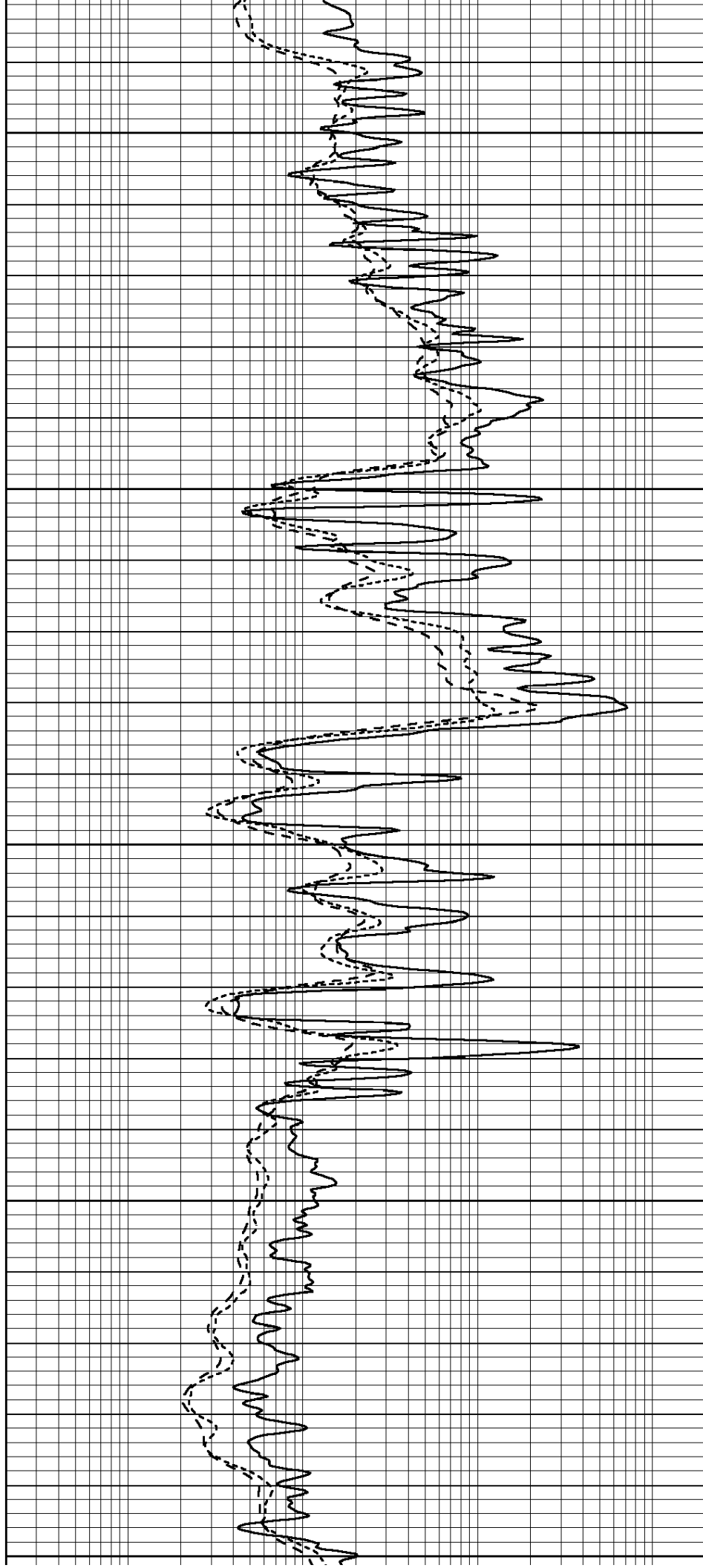
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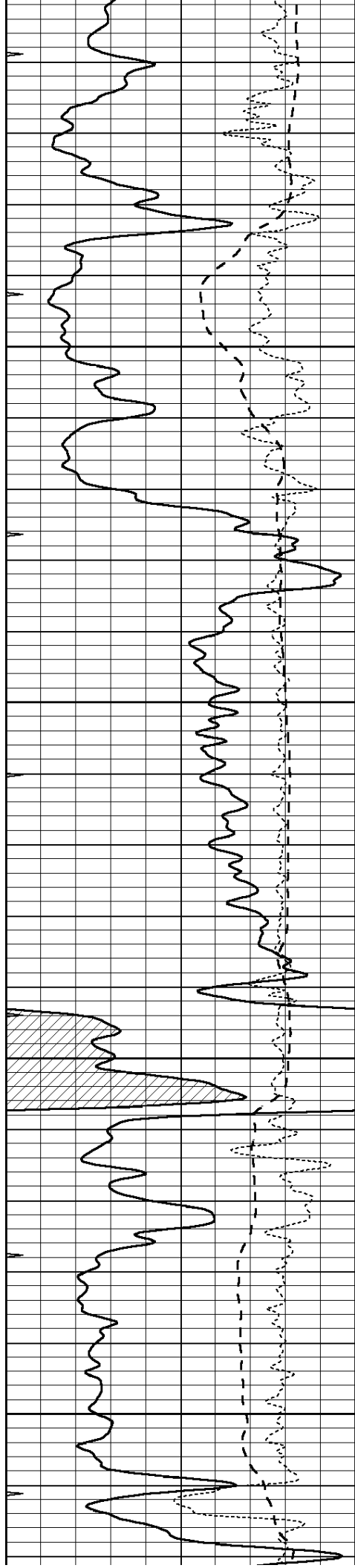
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4300

4350



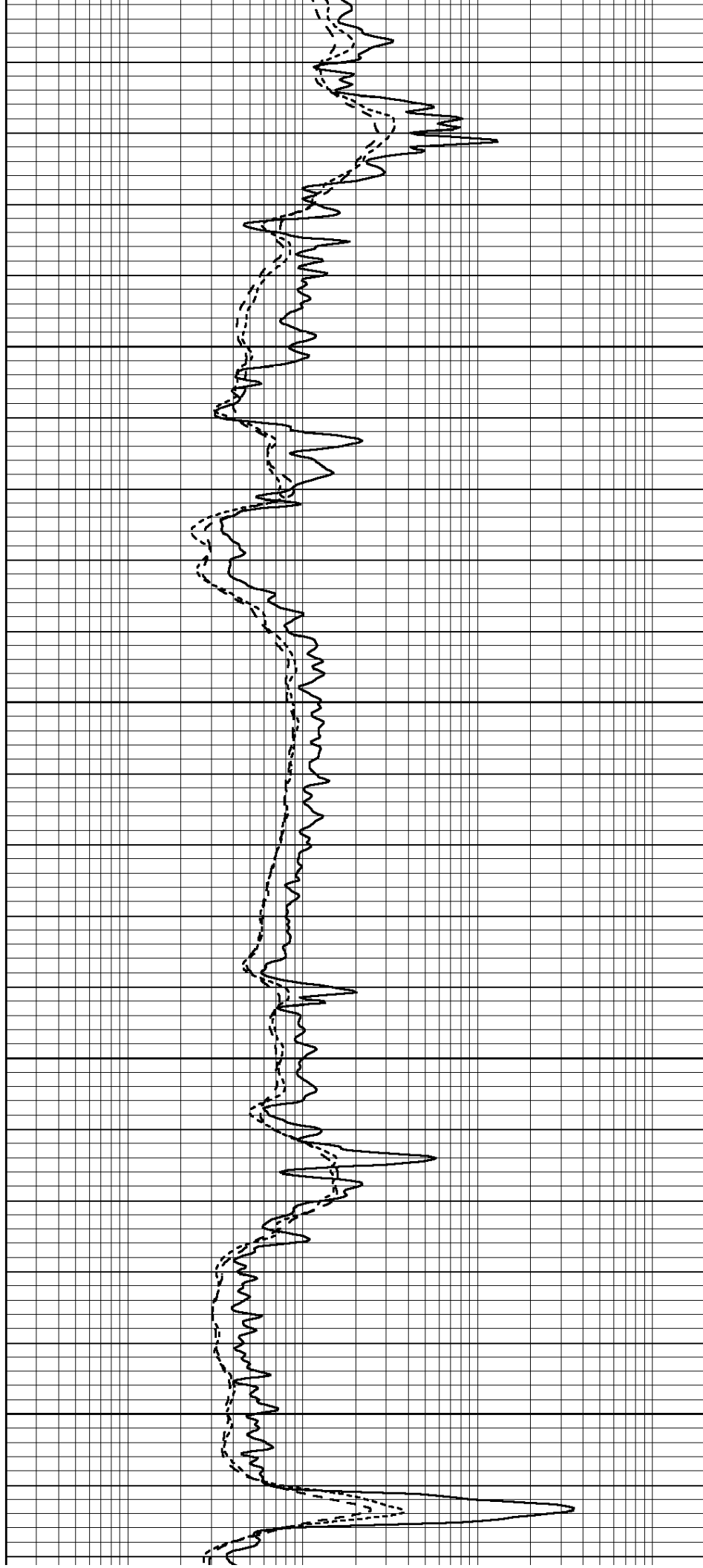


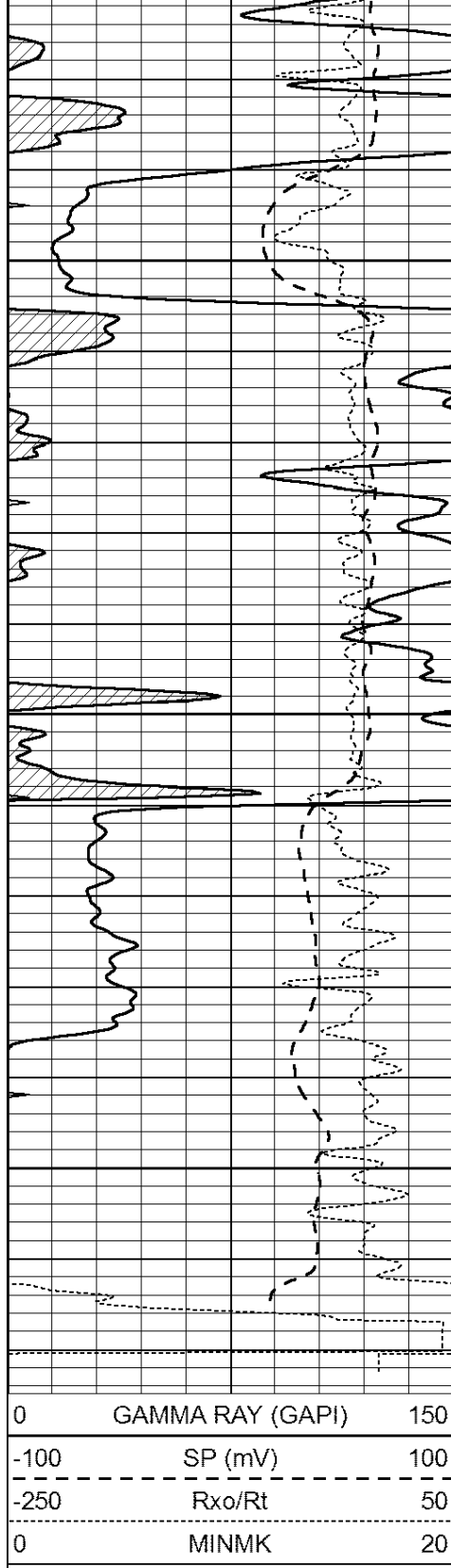
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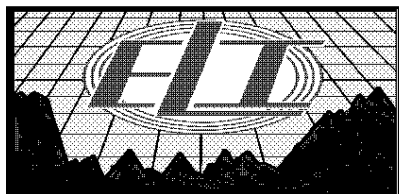
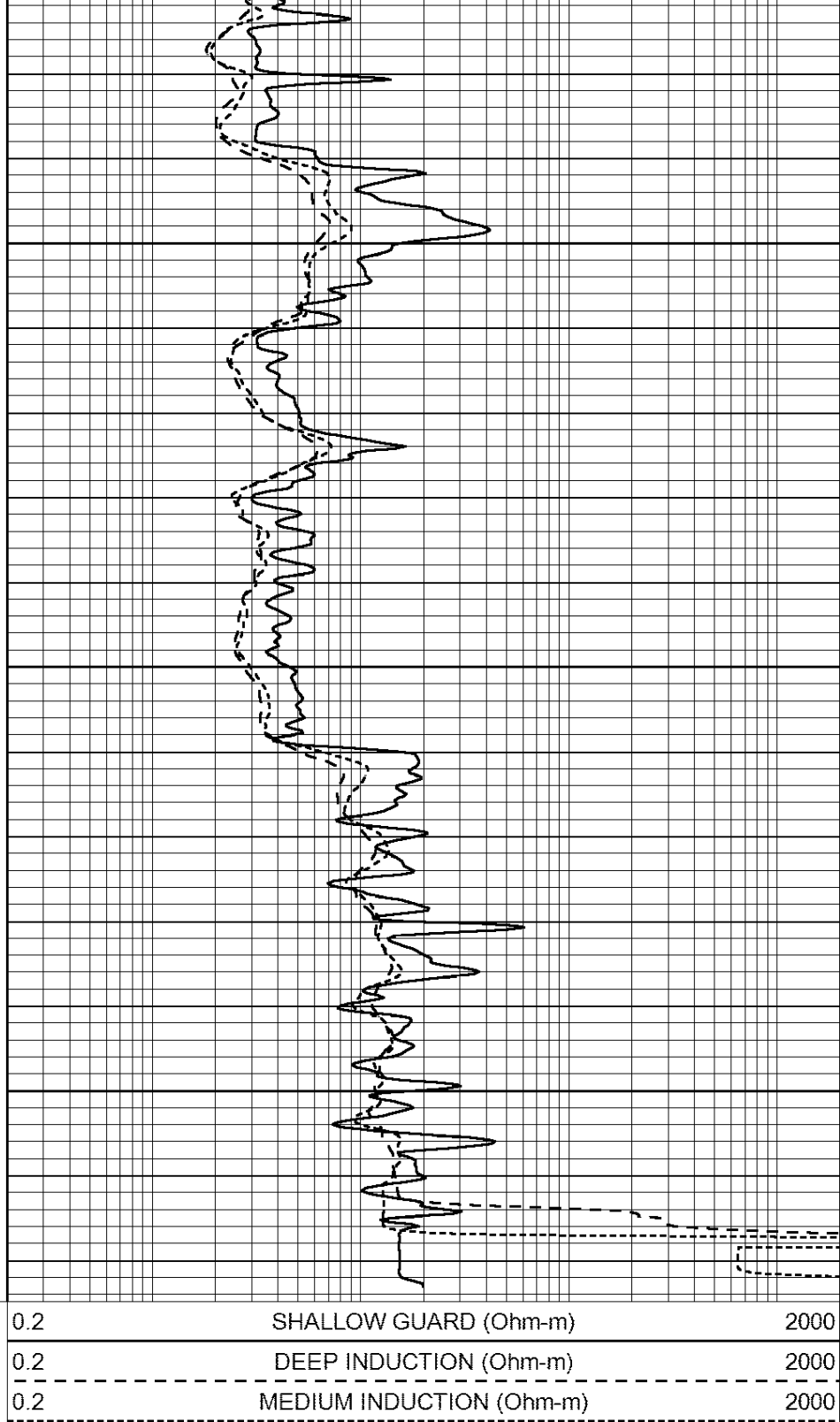




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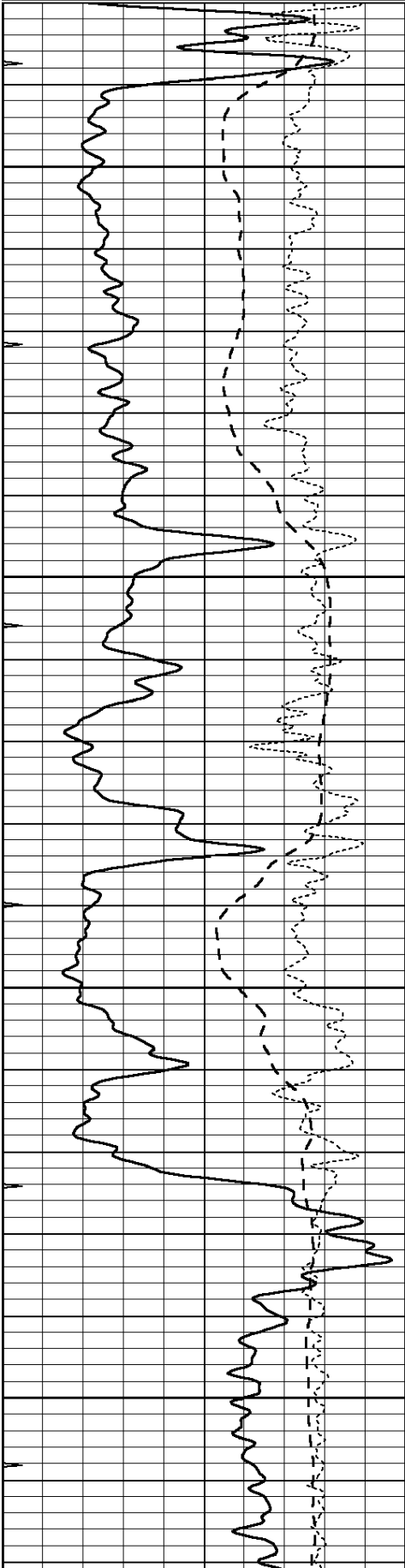


REPEAT SECTION

Database File: 2688ddn.db
 Dataset Pathname: pass20
 Presentation Format: _dil
 Dataset Creation: Mon Jul 02 17:22:44 2018 by Calc Open-Cased 090629
 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

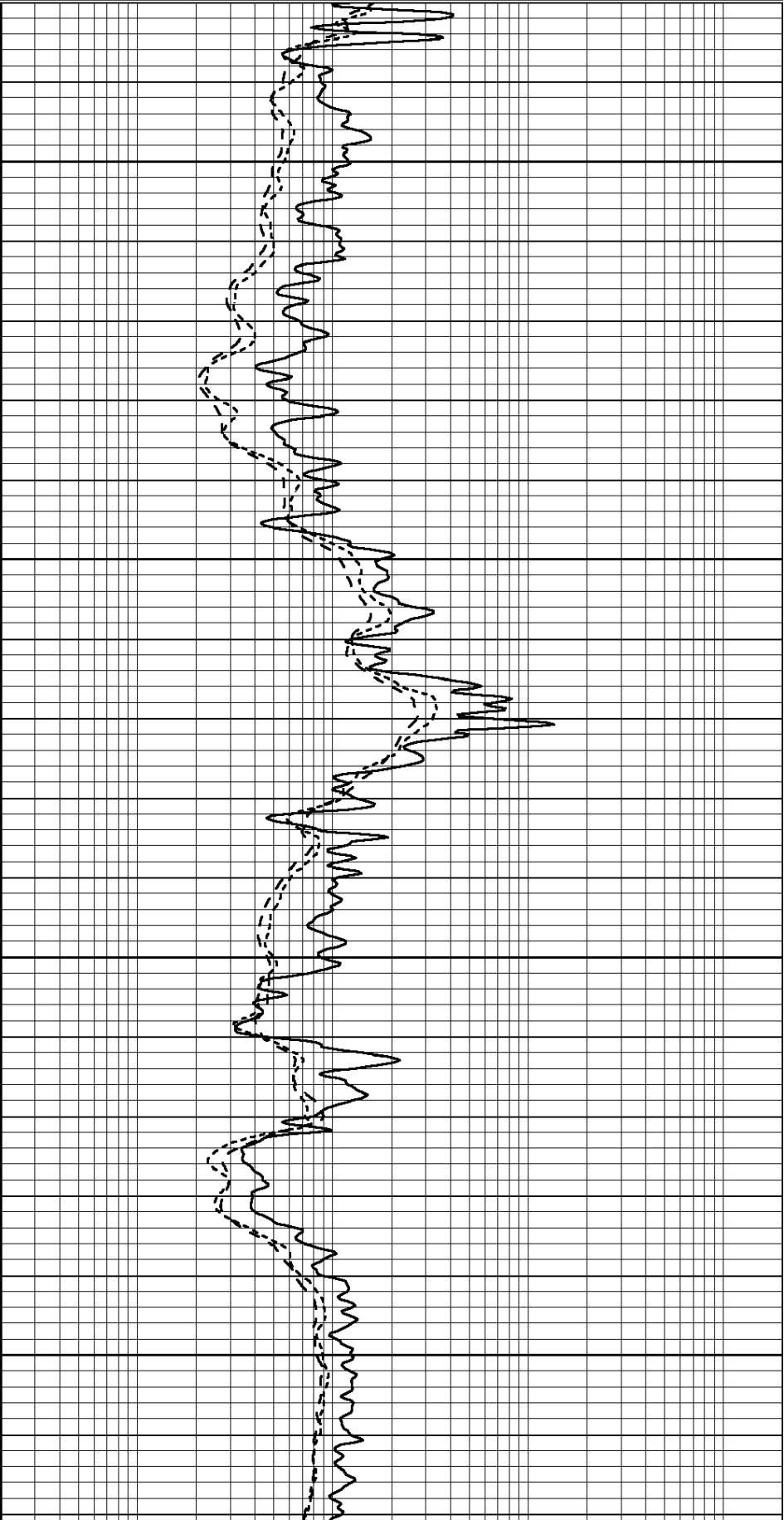


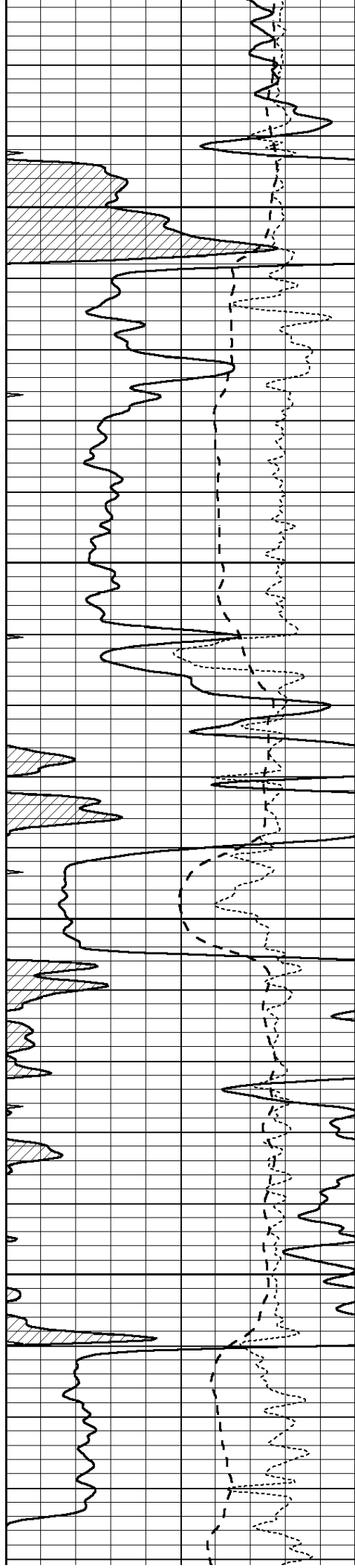
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4450



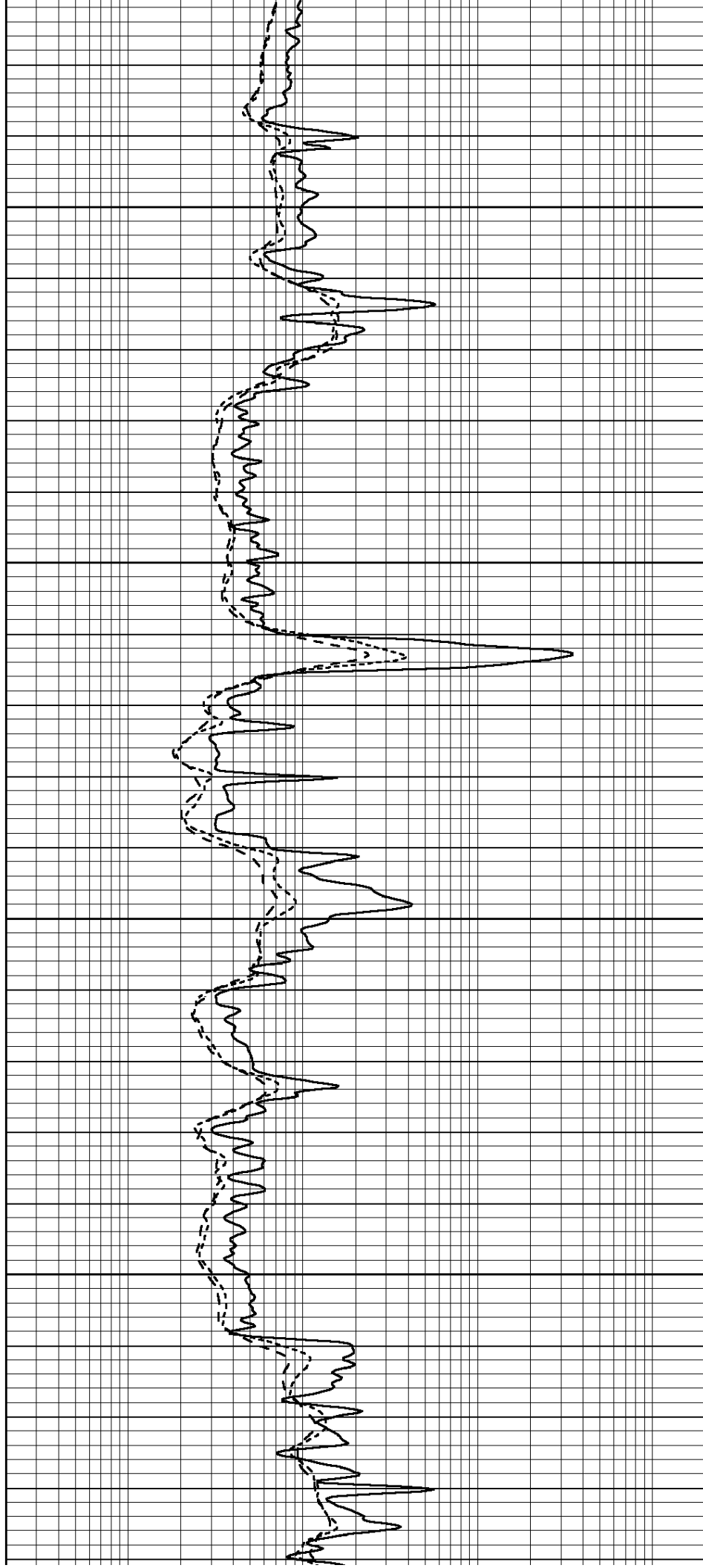


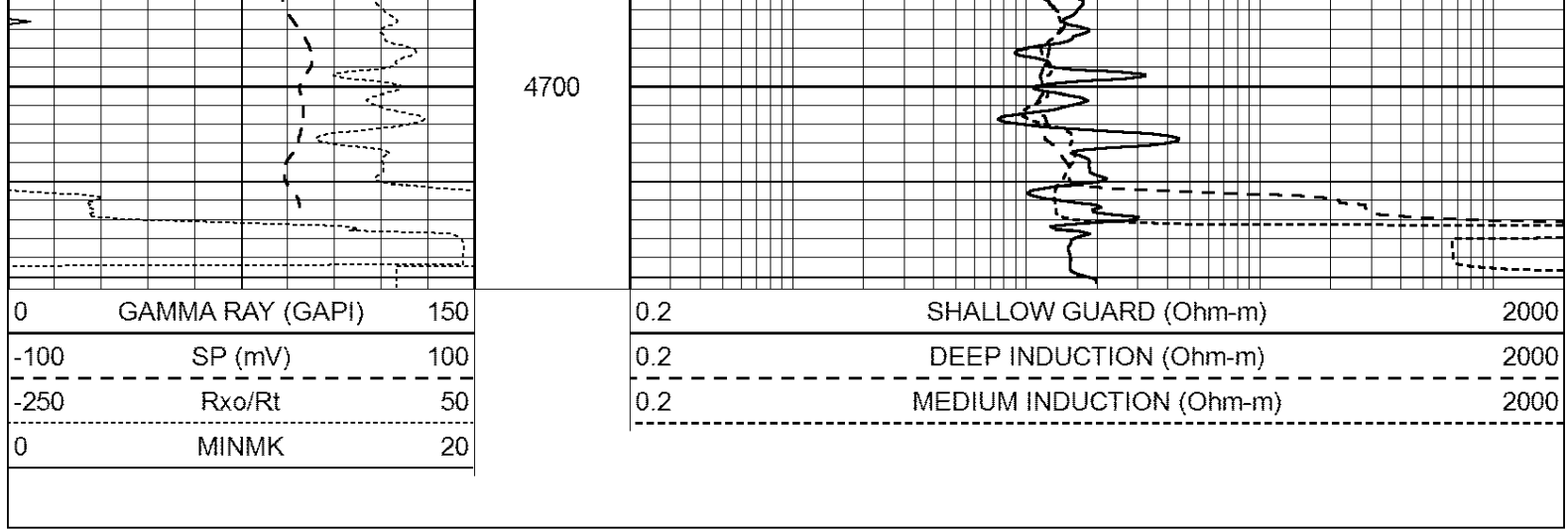
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4550

4600

4650





Calibration Report

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Database File:      pe2.db
Dataset Pathname:  pass2
Dataset Creation:   Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629
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Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
Surface Cal Performed: Mon Aug 21 11:58:18 2017
Downhole Cal Performed: Mon Aug 21 11:58:21 2017
After Survey Verification Performed: Mon Aug 21 11:58:23 2017

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	mmho-m		

After Survey Verification

Readings			Targets			Results		
	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: 002 Model: PRB

	Background	Magnesium	Aluminum	Sandstone	
Window 1	833.6	7394.2	2287.3	8111.8	cps
Window 2	768.9	6322.3	1995.6	6800.0	cps
Window 3	621.5	3261.9	1186.4	3380.9	cps
Window 4	184.2	185.7	184.9	184.8	cps
Long Space	0.0	5553.4	1226.6	6031.1	cps
Short Space	1.2	1307.5	903.9	1387.7	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 46.3	Rib Slope	: 1.045	Density/Spine Ratio	: 0.566
Spine Angle	: 76.3	Spine Slope	: 4.090	Spine Intercept	: -20.7

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: 6I
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	1.00 cps	1.00 cps	1.0000
Long Space	1.00 cps	1.00 cps	1.0000

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	

3)	Short Space Long Space	cps cps	pu	
POST-SURVEY VERIFICATION				
	Detector	Readings	Measured	Target
1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu
Gamma Ray Calibration Report				
	Serial Number: Tool Model: Performed:	GR6 OPEN Mon Aug 21 11:59:01 2017		
	Calibrator Value:	150.0	GAPI	
	Background Reading: Calibrator Reading:	0.0 276.0	cps cps	
	Sensitivity:	0.5500	GAPI/cps	