



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company WOOLSEY OPERATING COMPANY, LLC
Well STERNBERGER B #2
Field STRANATHAN
County BARBER
State KANSAS

Company WOOLSEY OPERATING COMPANY, LLC
Well STERNBERGER B #2
Field STRANATHAN
County BARBER State KANSAS

Location: API # : 15-007-24218-00-00
500' FSL & 2210' FWL
NW - SE - SE - SW
SEC 12 TWP 35S RGE 12W
Permanent Datum GROUND LEVEL Elevation 1352
Log Measured From KELLY BUSHING 12' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL/PE
Elevation
K.B. 1364
D.F. 1362
G.L. 1352

Date	9/14/14		
Run Number	ONE		
Depth Driller	5356		
Depth Logger	5356		
Bottom Logged Interval	5354		
Top Log Interval	00		
Casing Driller	13 3/8" @ 217'		
Casing Logger	210'		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,000 PPM	
Density / Viscosity	9.0/46		
pH / Fluid Loss	9.5/10.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.30 @ 85F		
Rmt @ Meas. Temp	.23 @ 85F		
Rmc @ Meas. Temp	.36 @ 85F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.12 @ 128F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	128F		
Equipment Number	4010		
Location	HAYS, KS.		
Recorded By	IAN MABB		
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.

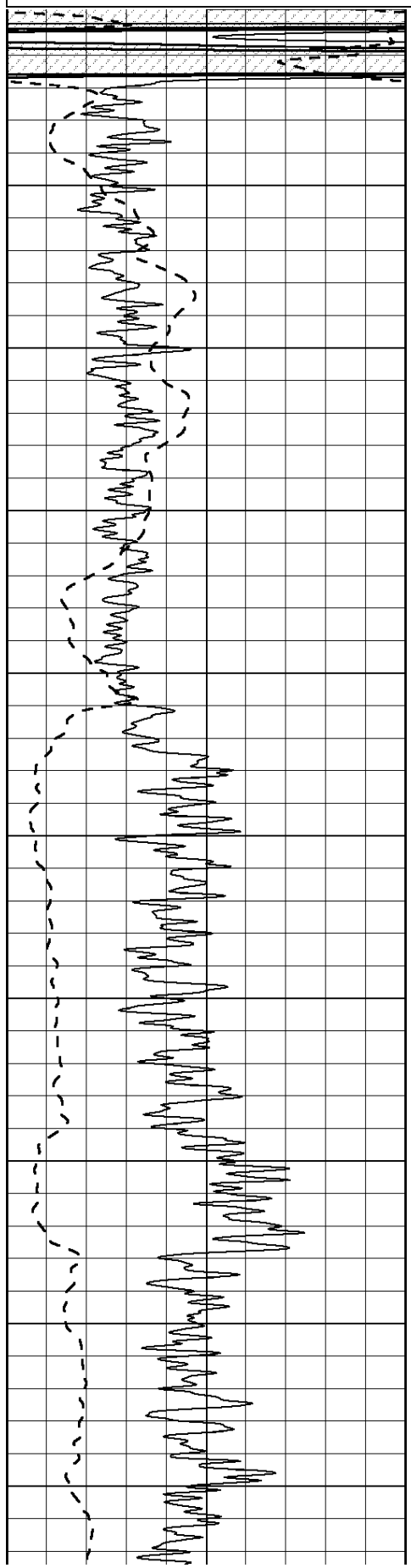
Comments

NABORS COMPLETION & PRODUCTION SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: HARTNER, KS. - 3 MILES EAST - SOUTH INTO

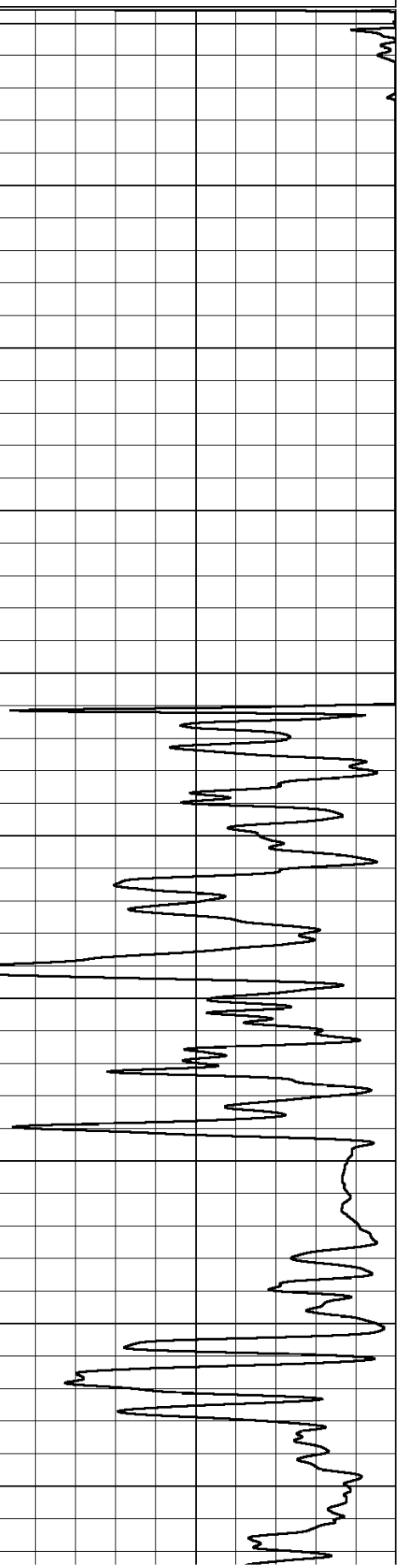
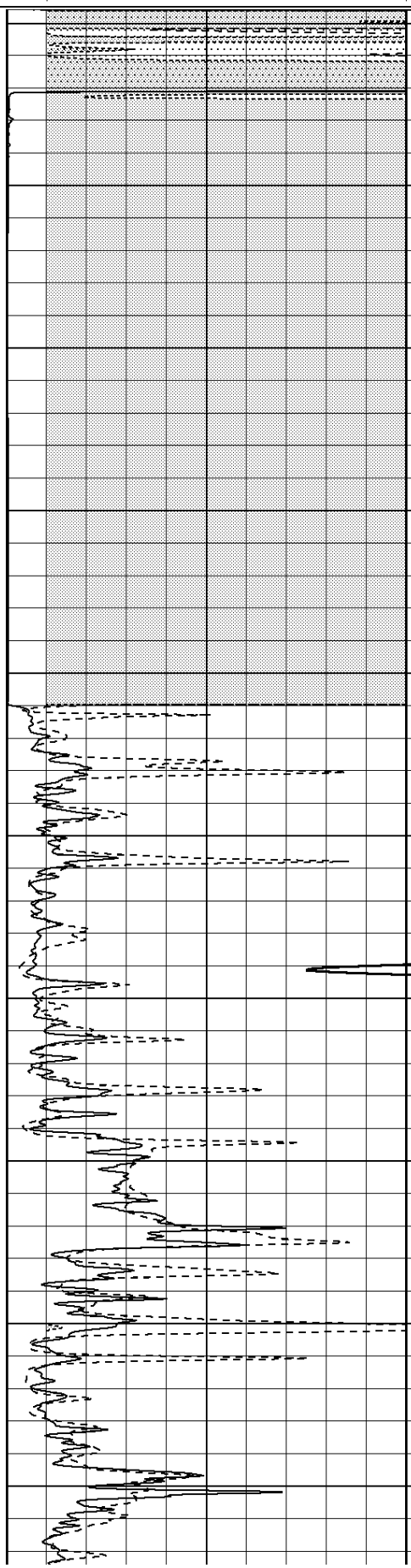
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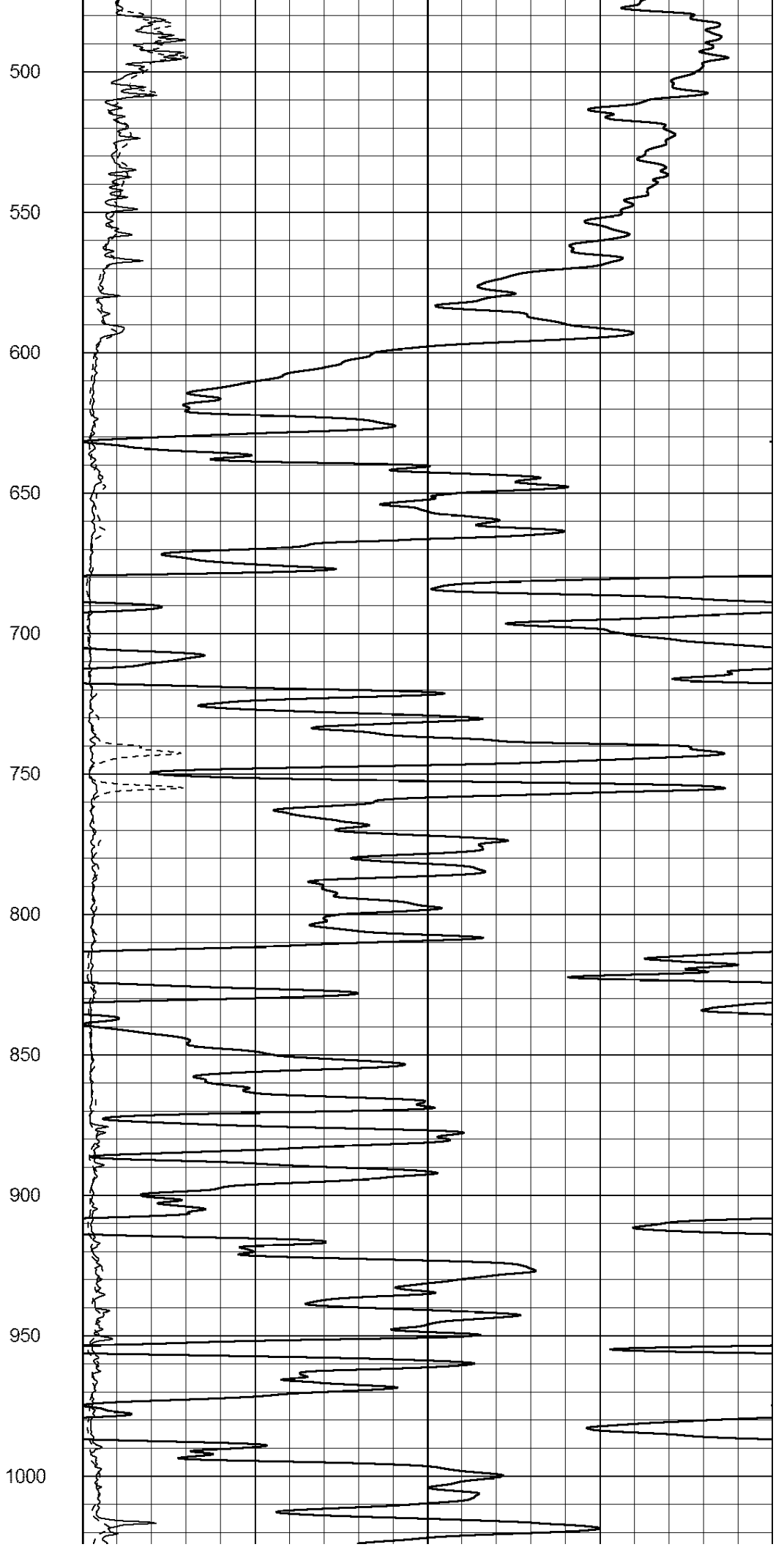
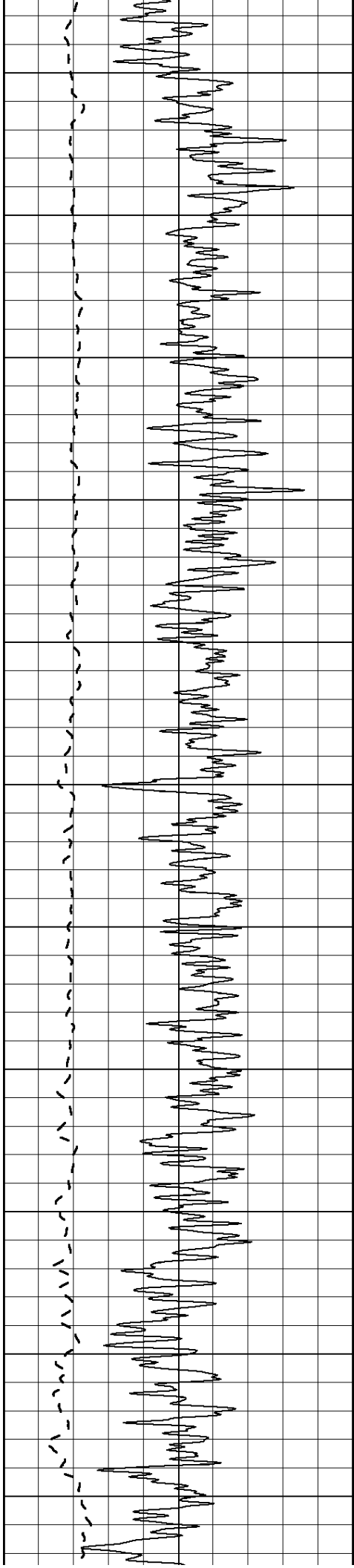
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0	RILD (Ohm-m)	50
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50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

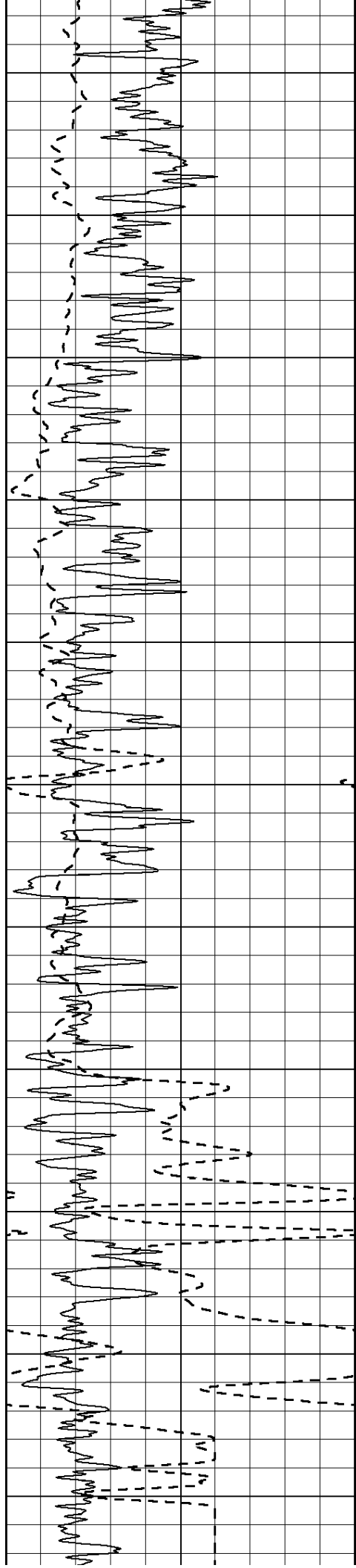
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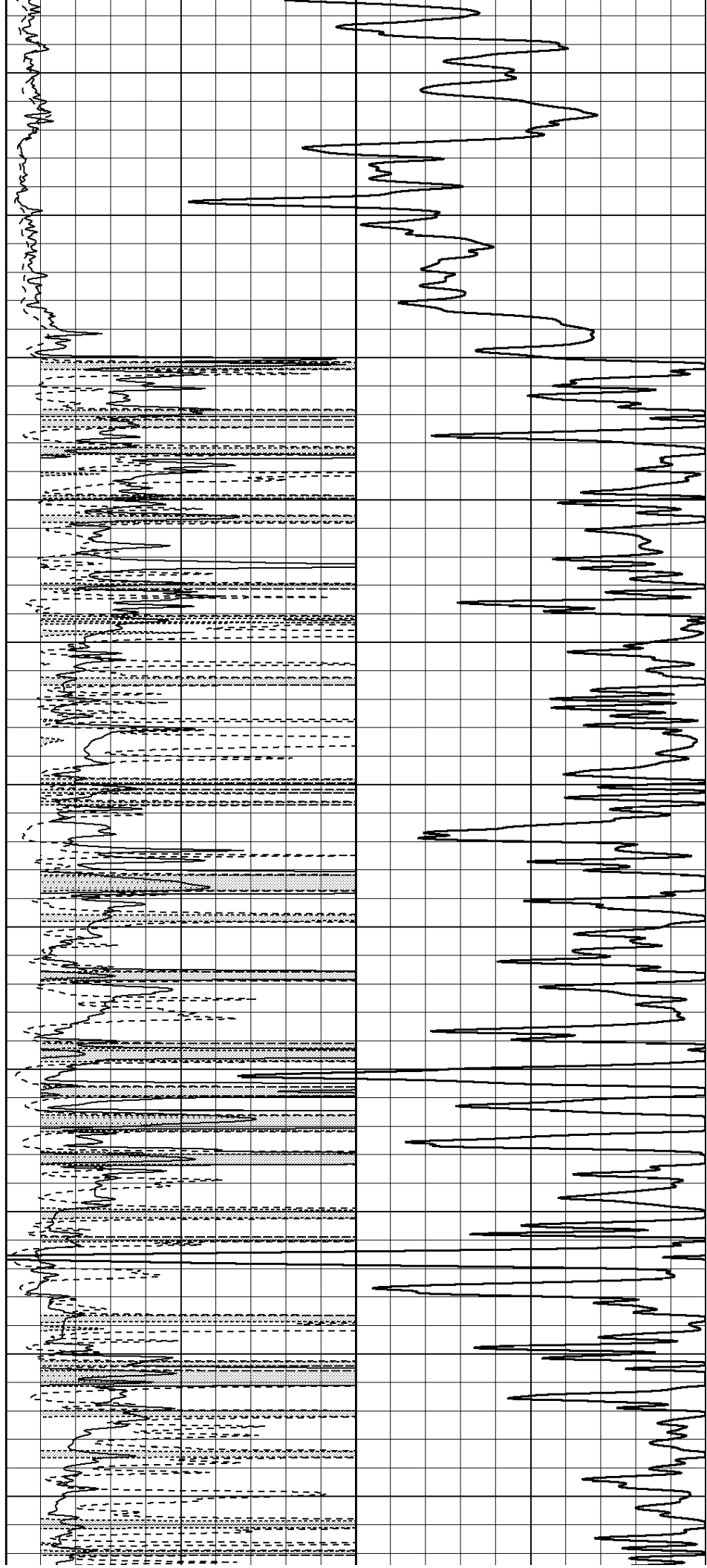
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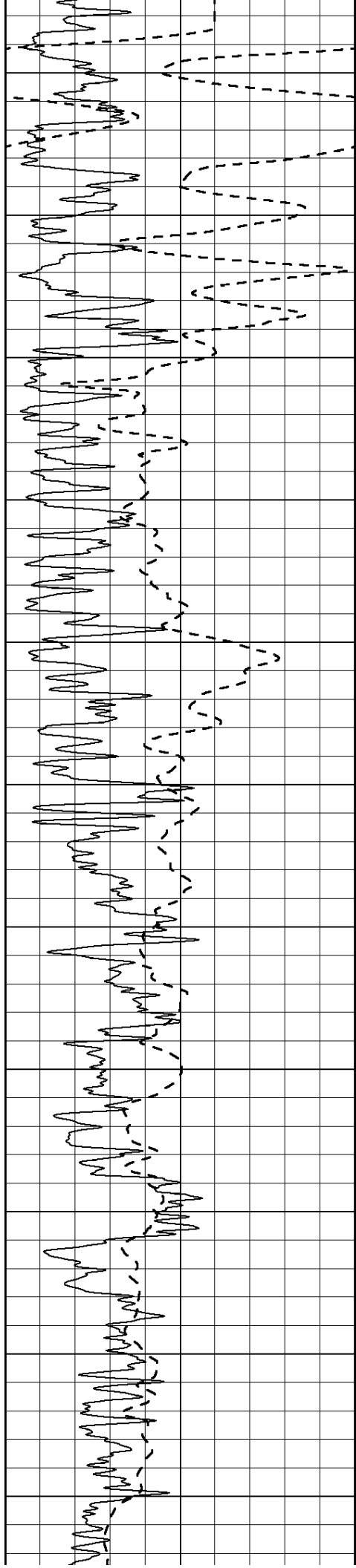




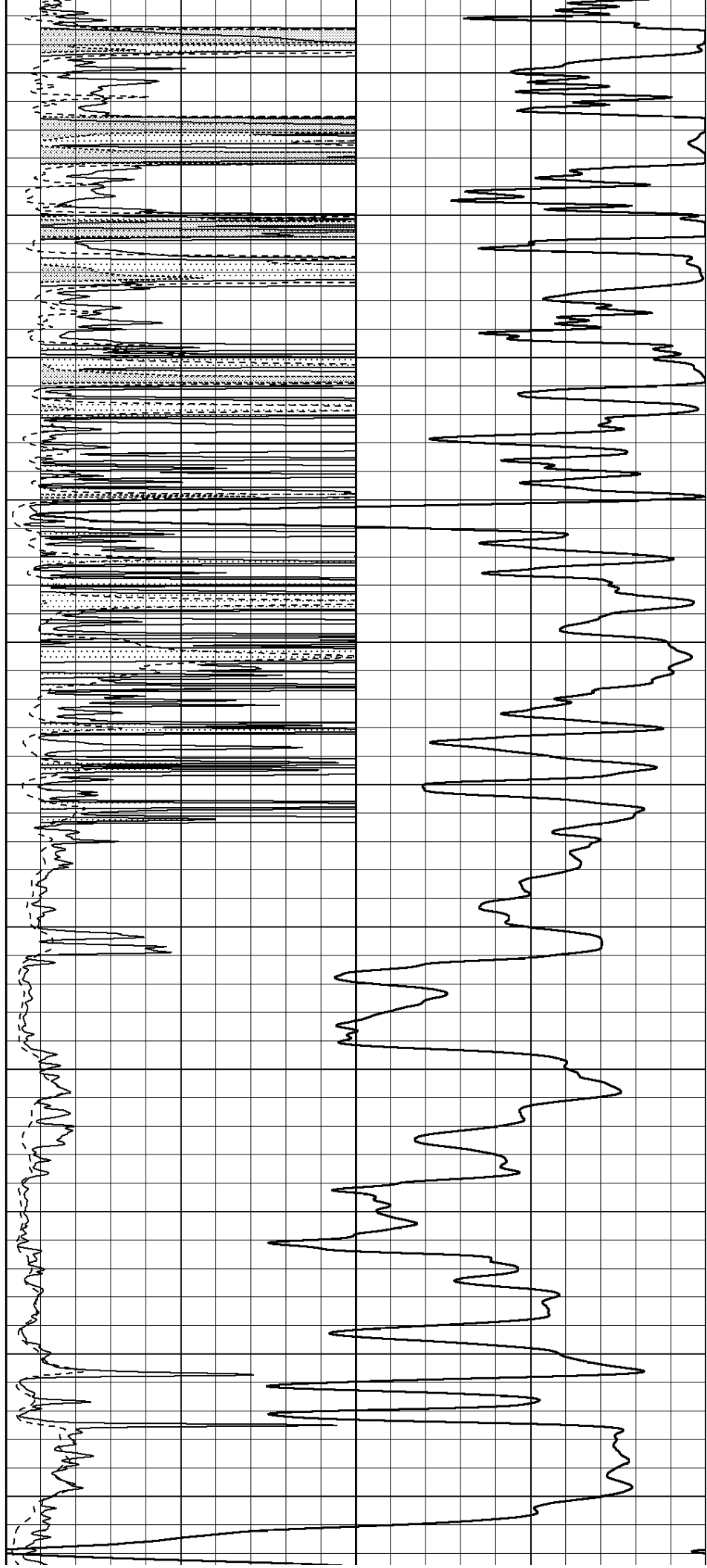


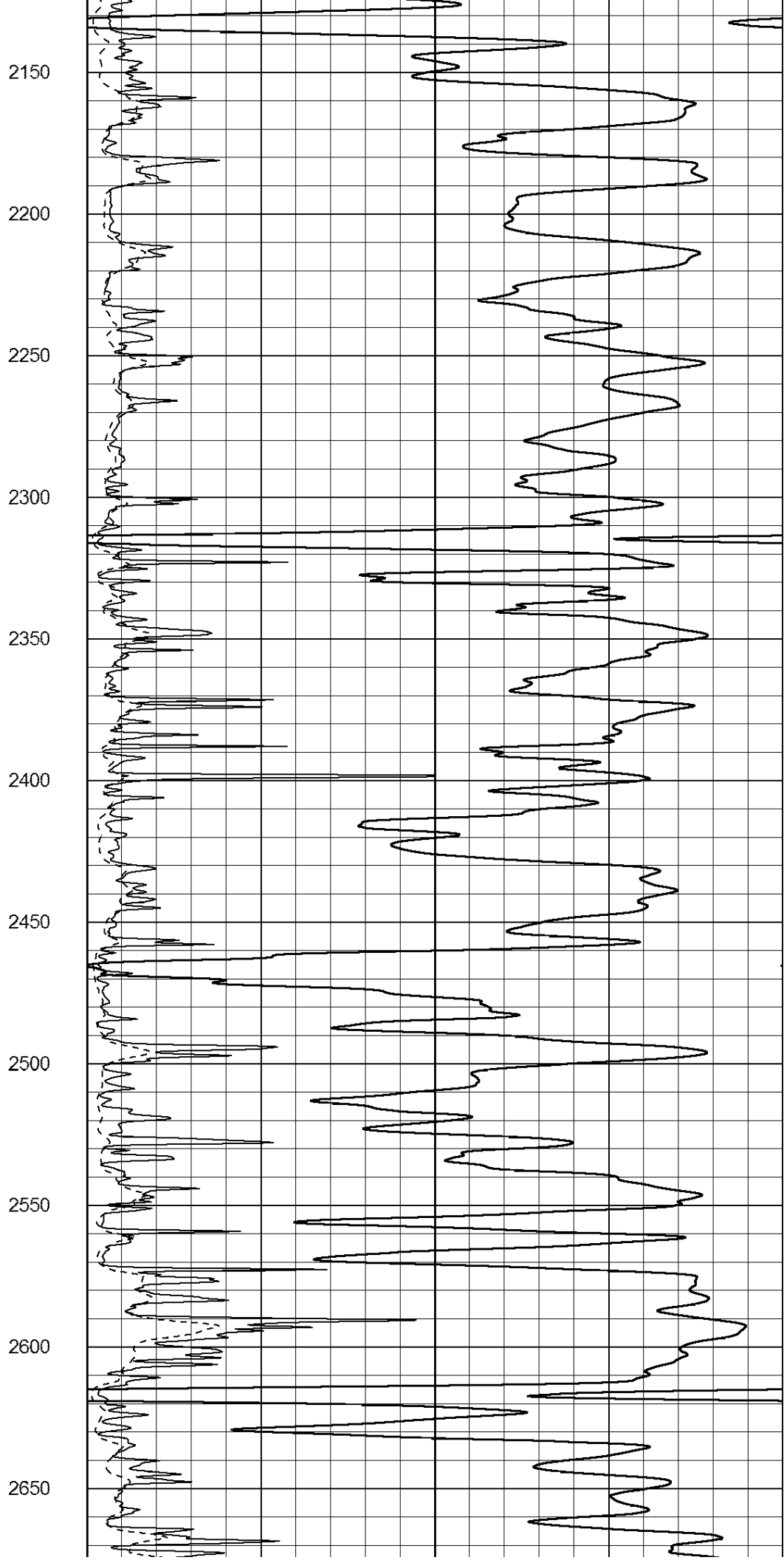
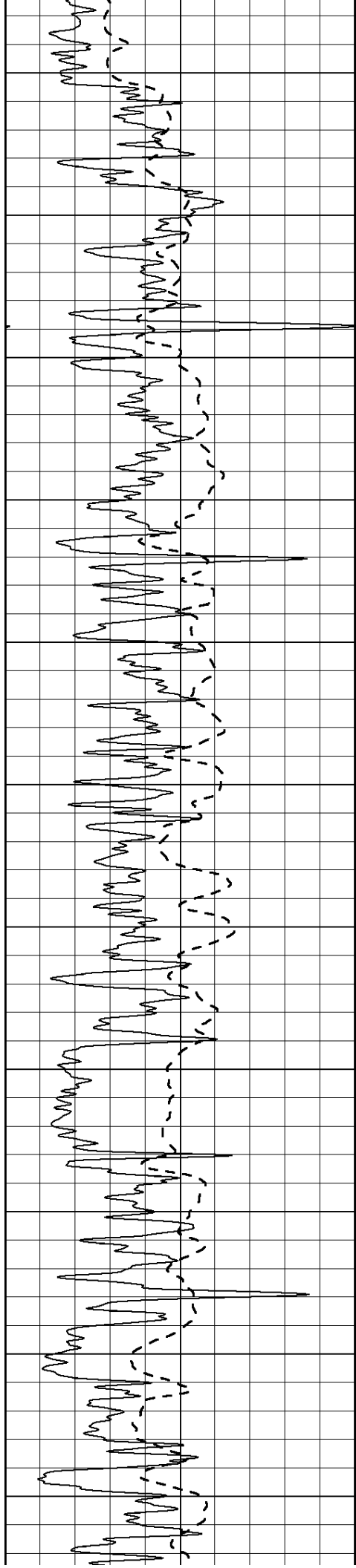
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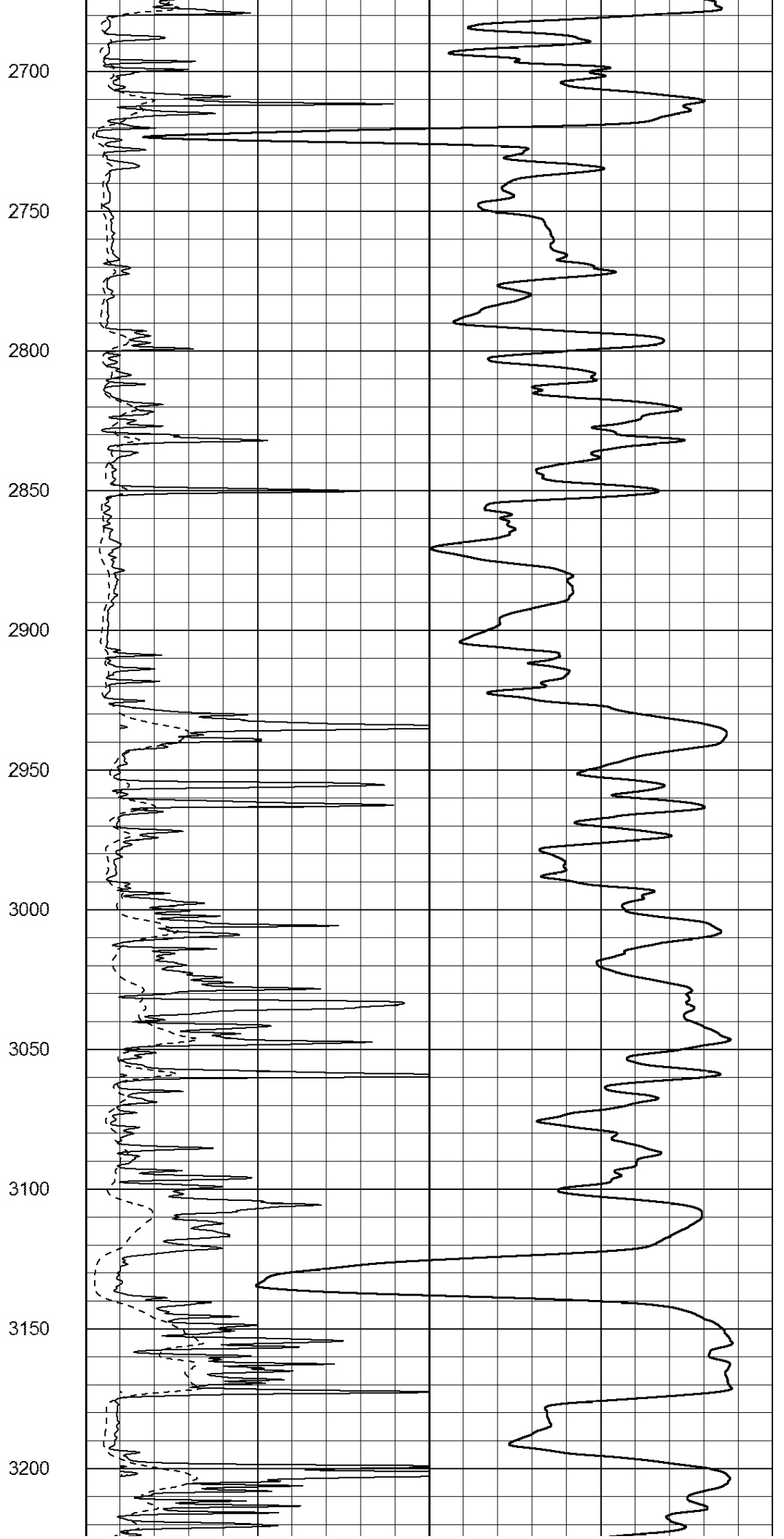
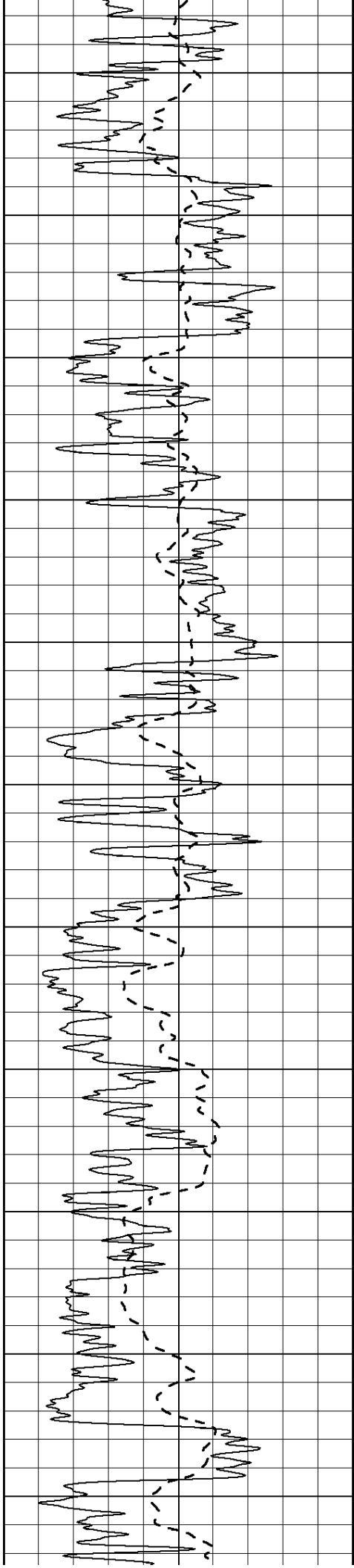


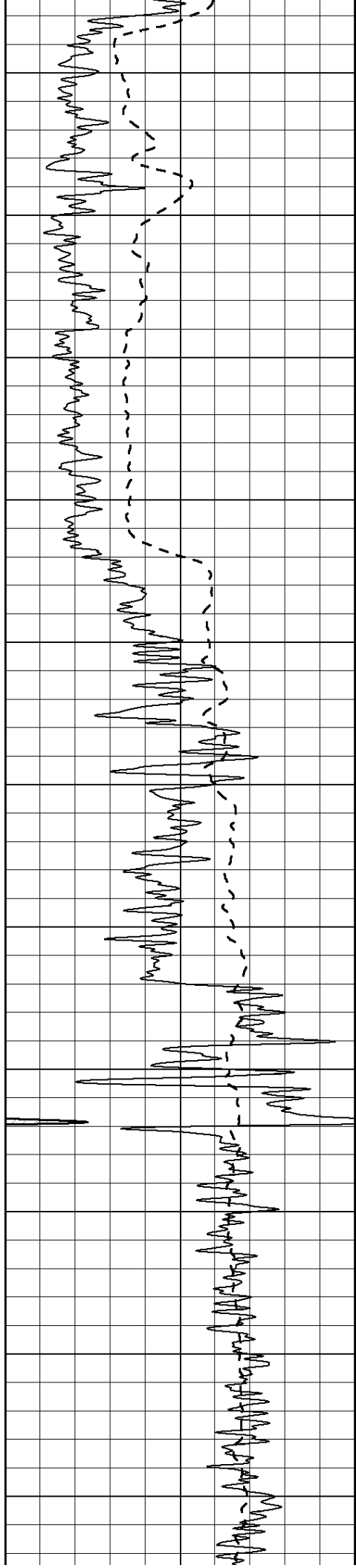


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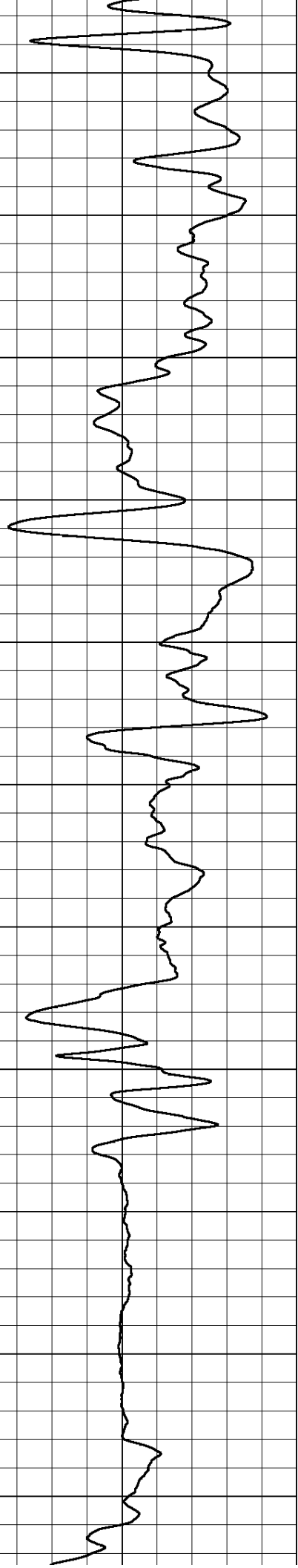
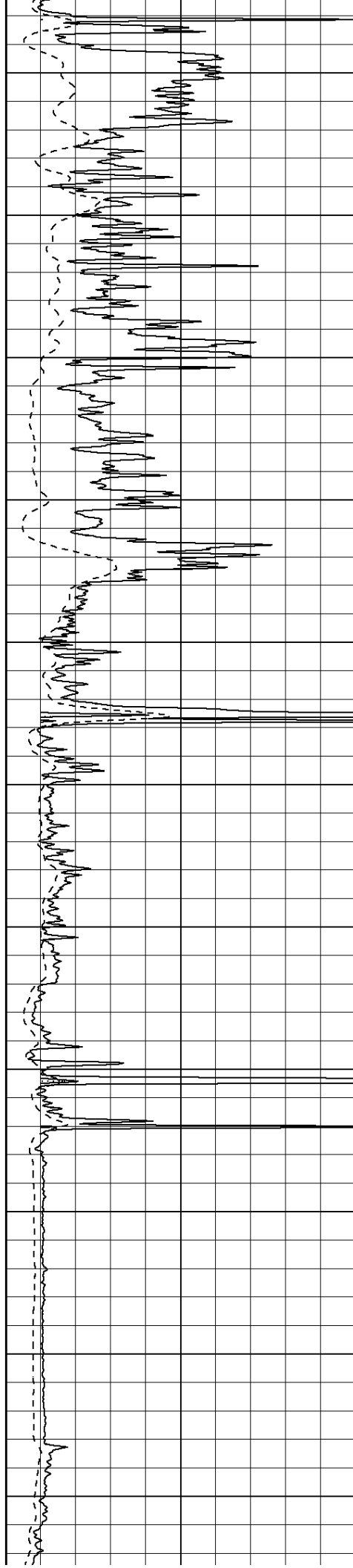


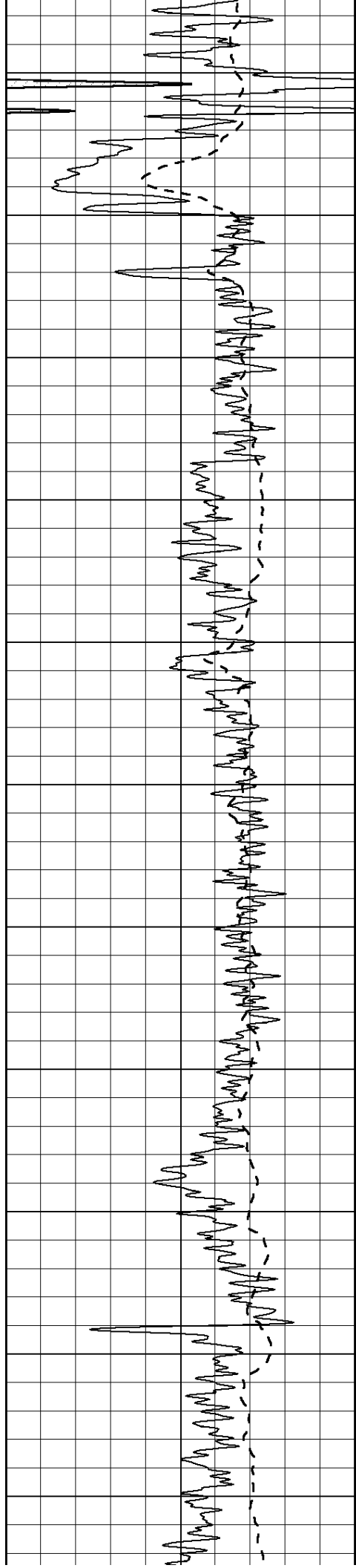




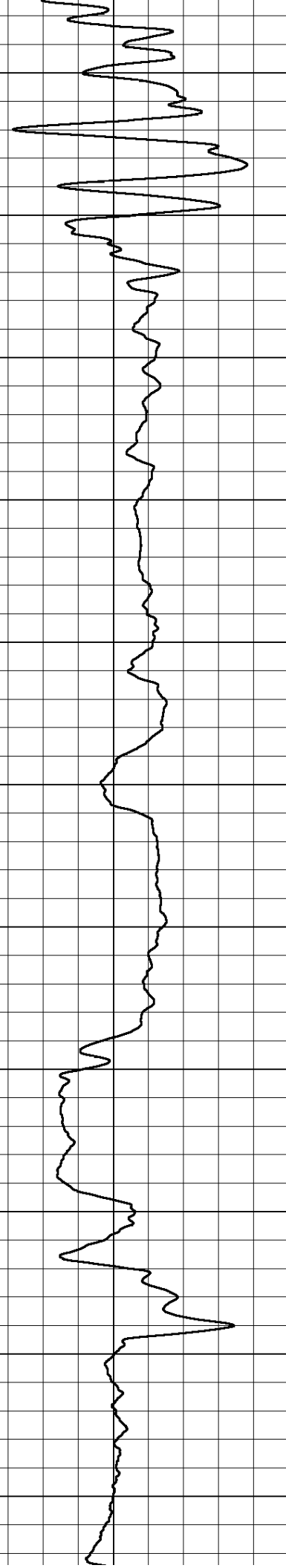
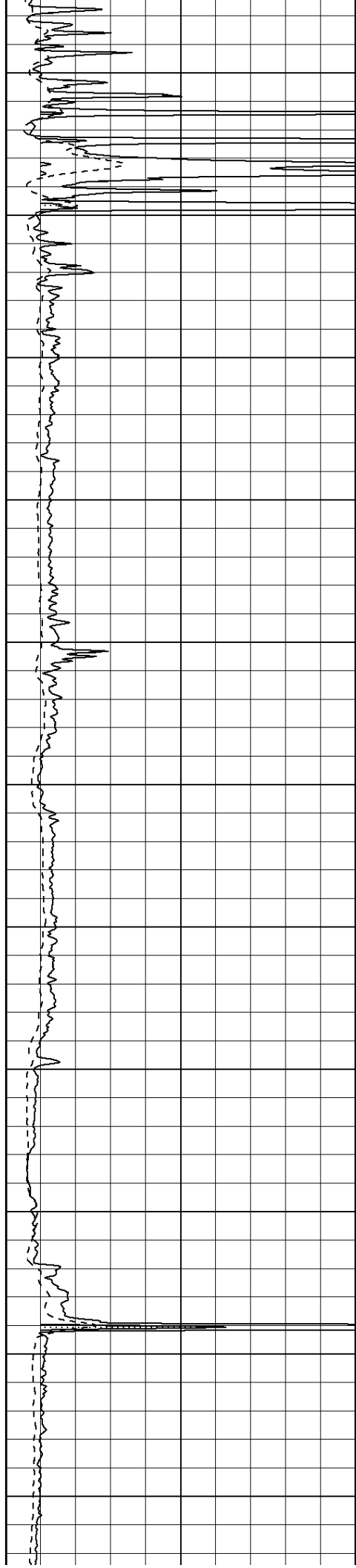


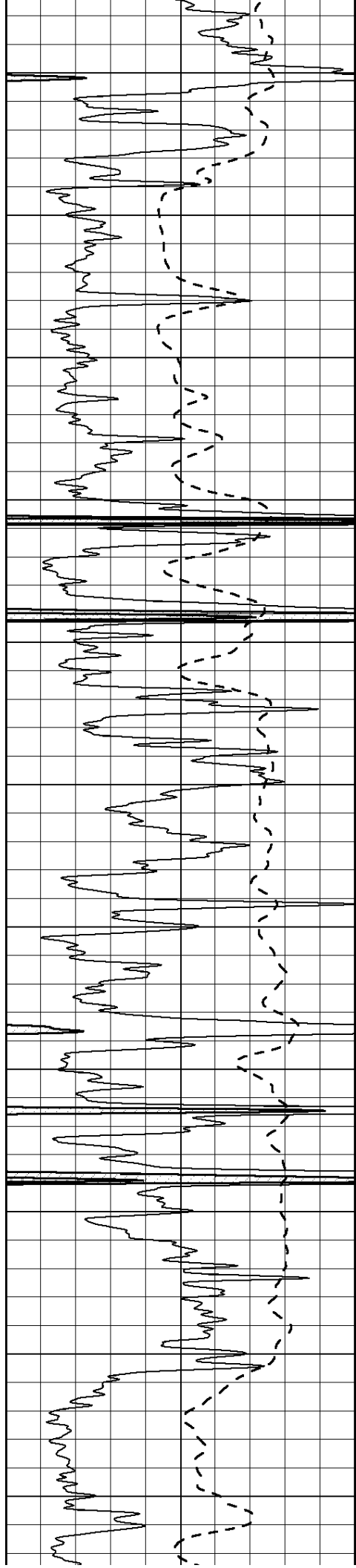
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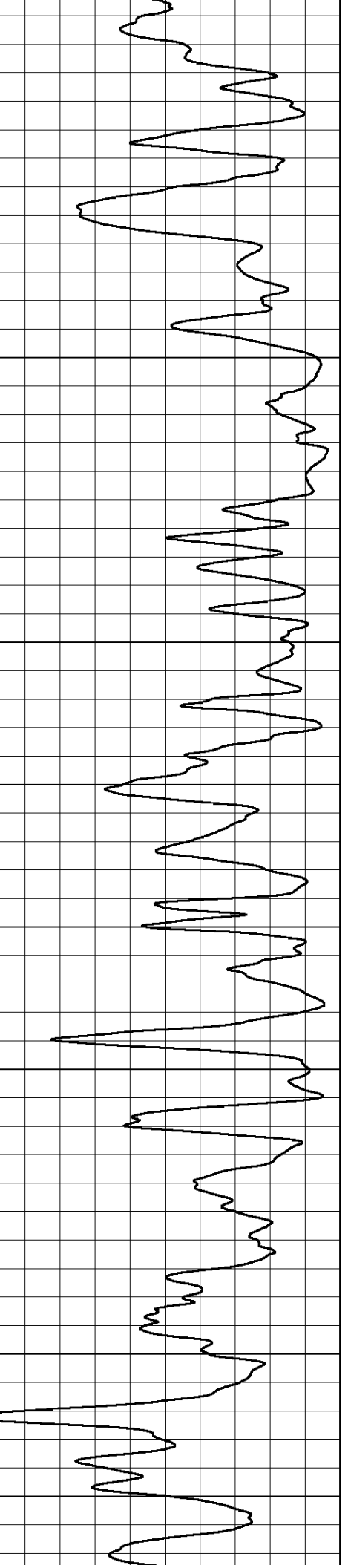
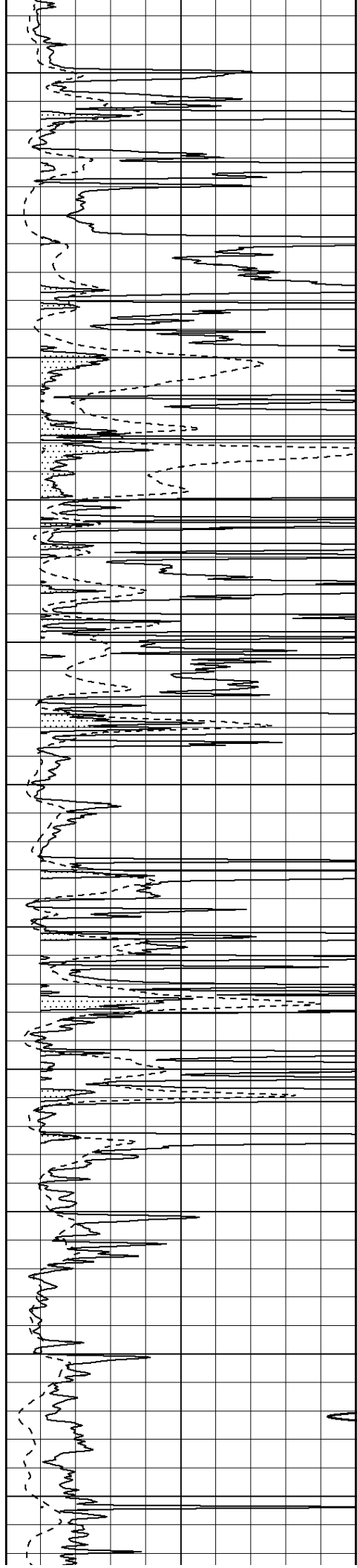


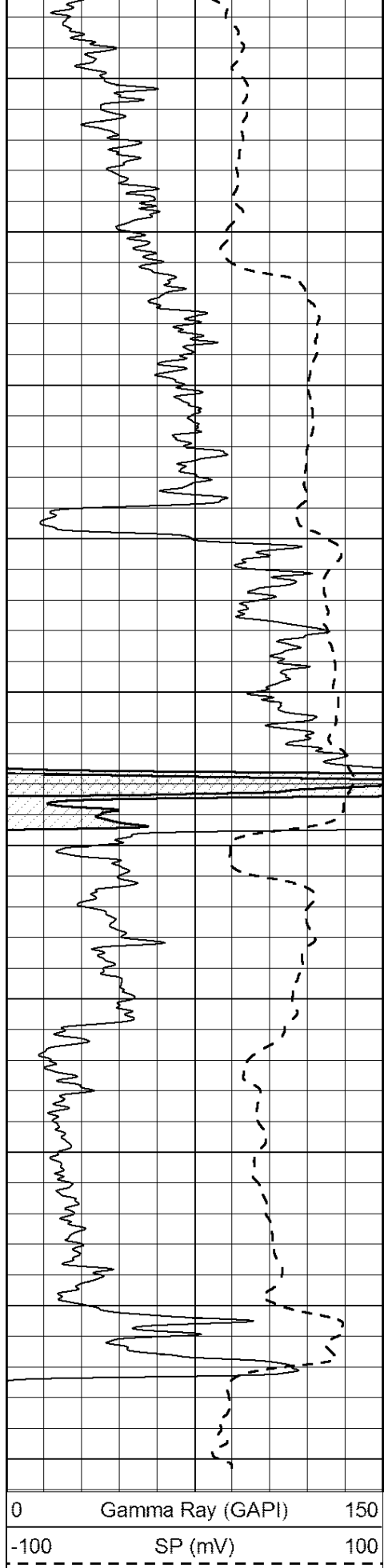
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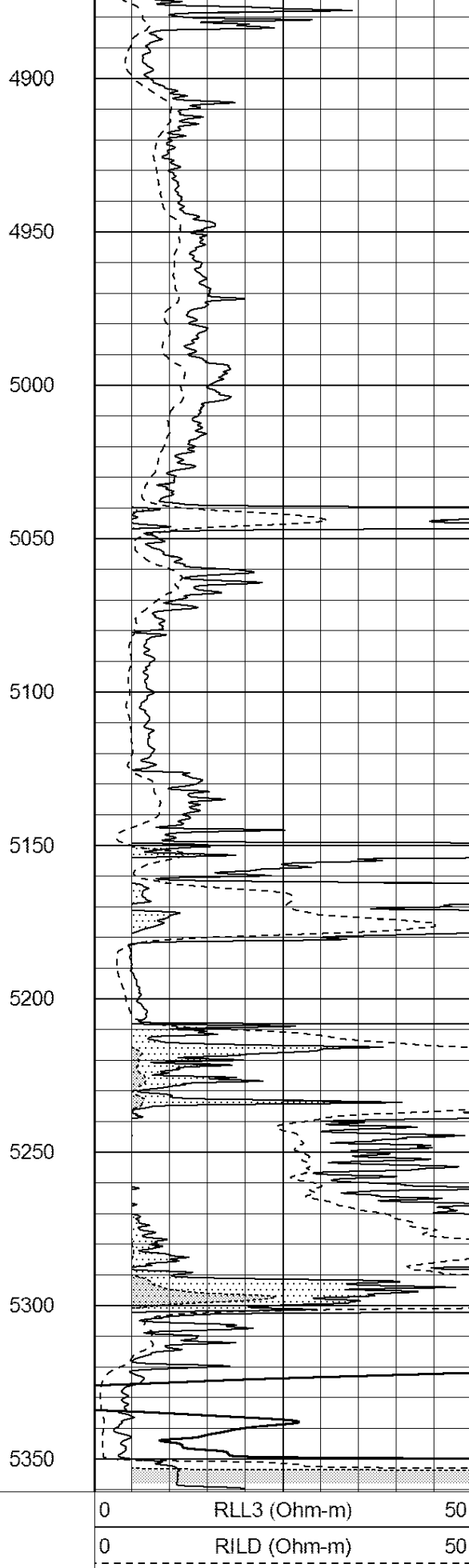


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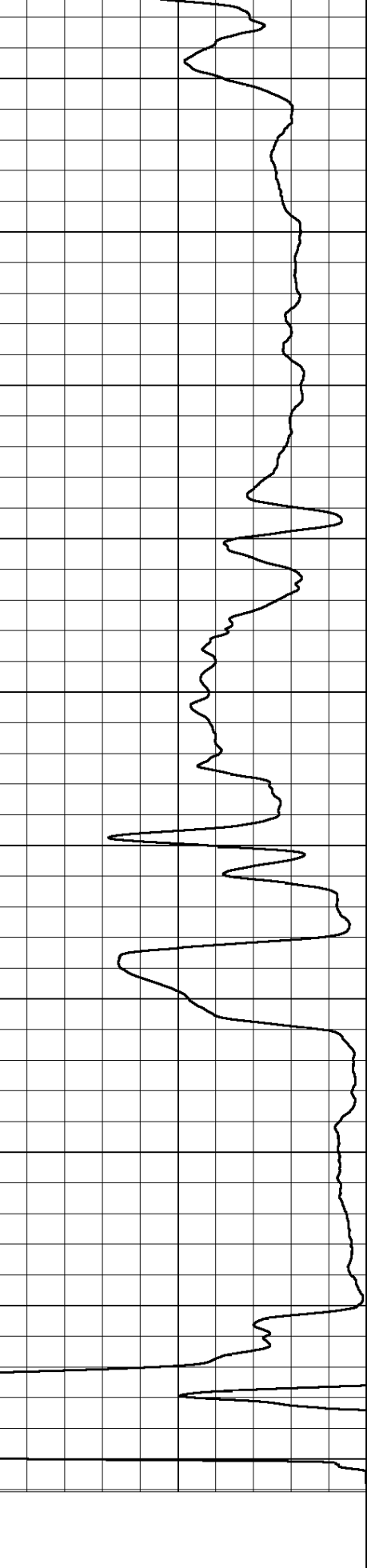




0	Gamma Ray (GAPI)	150
-100	SP (mV)	100



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

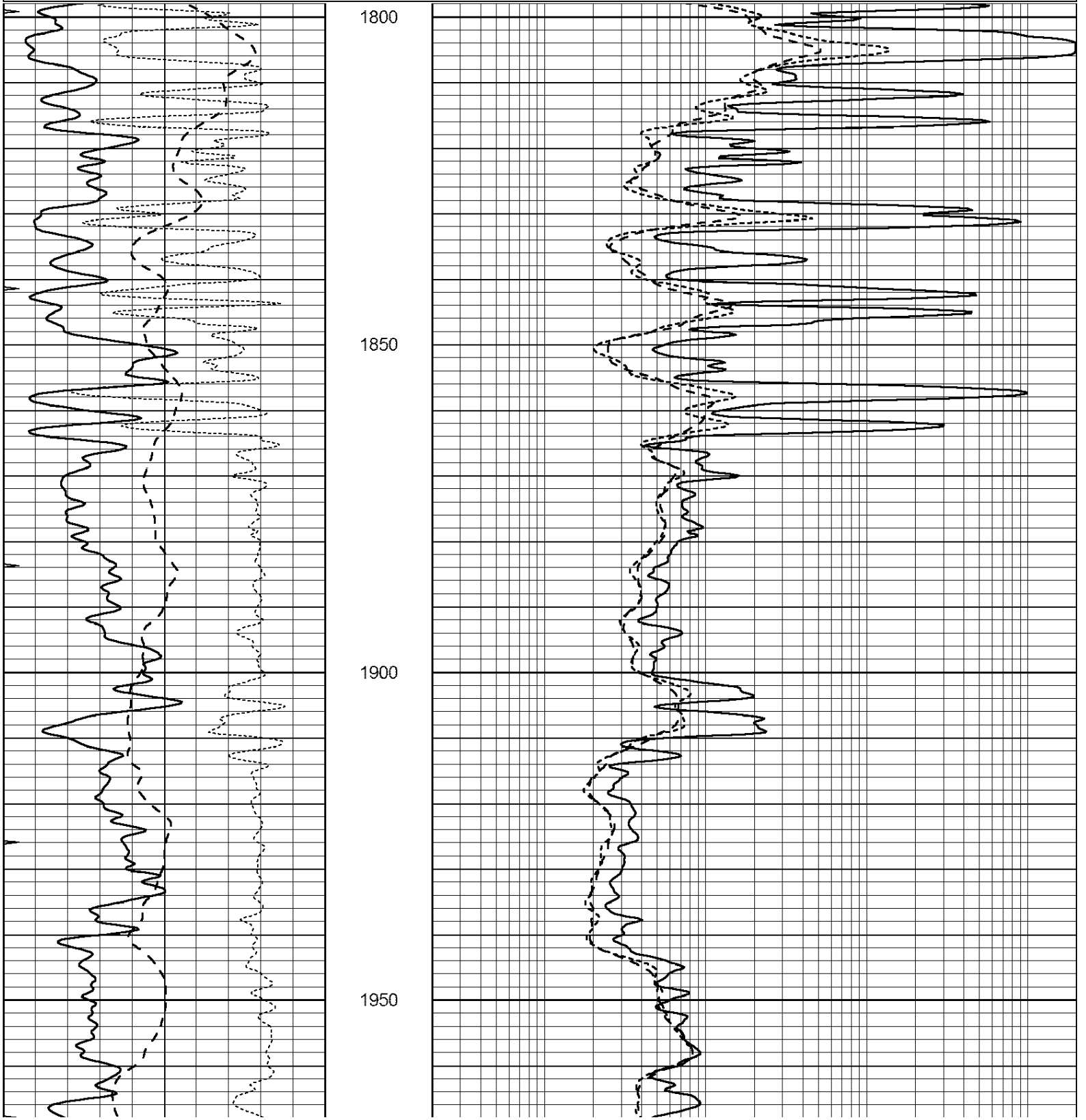


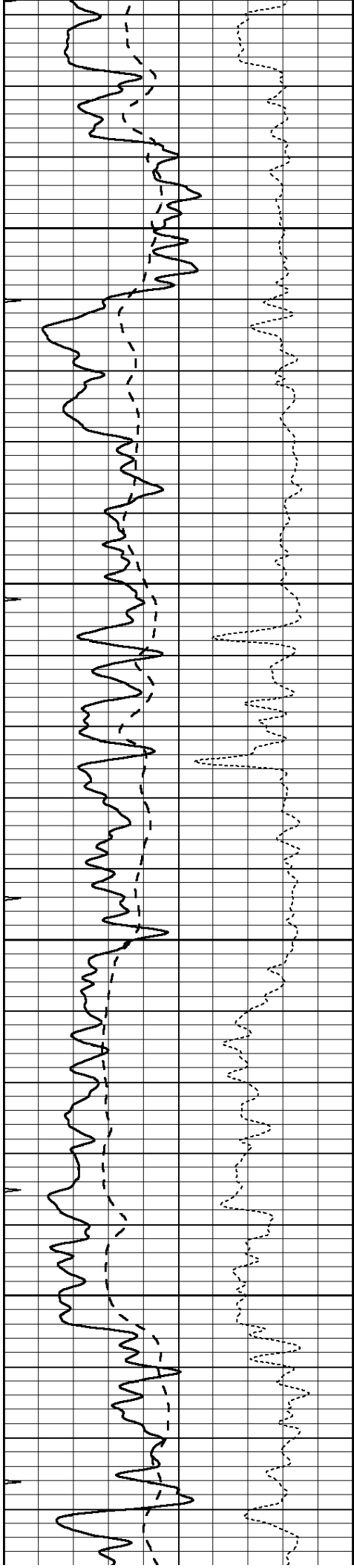
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50	RLL3 X10 (Ohm-m)	500

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 Presentation Format: _dil
 Dataset Creation: Sun Sep 14 12:19:45 2014 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



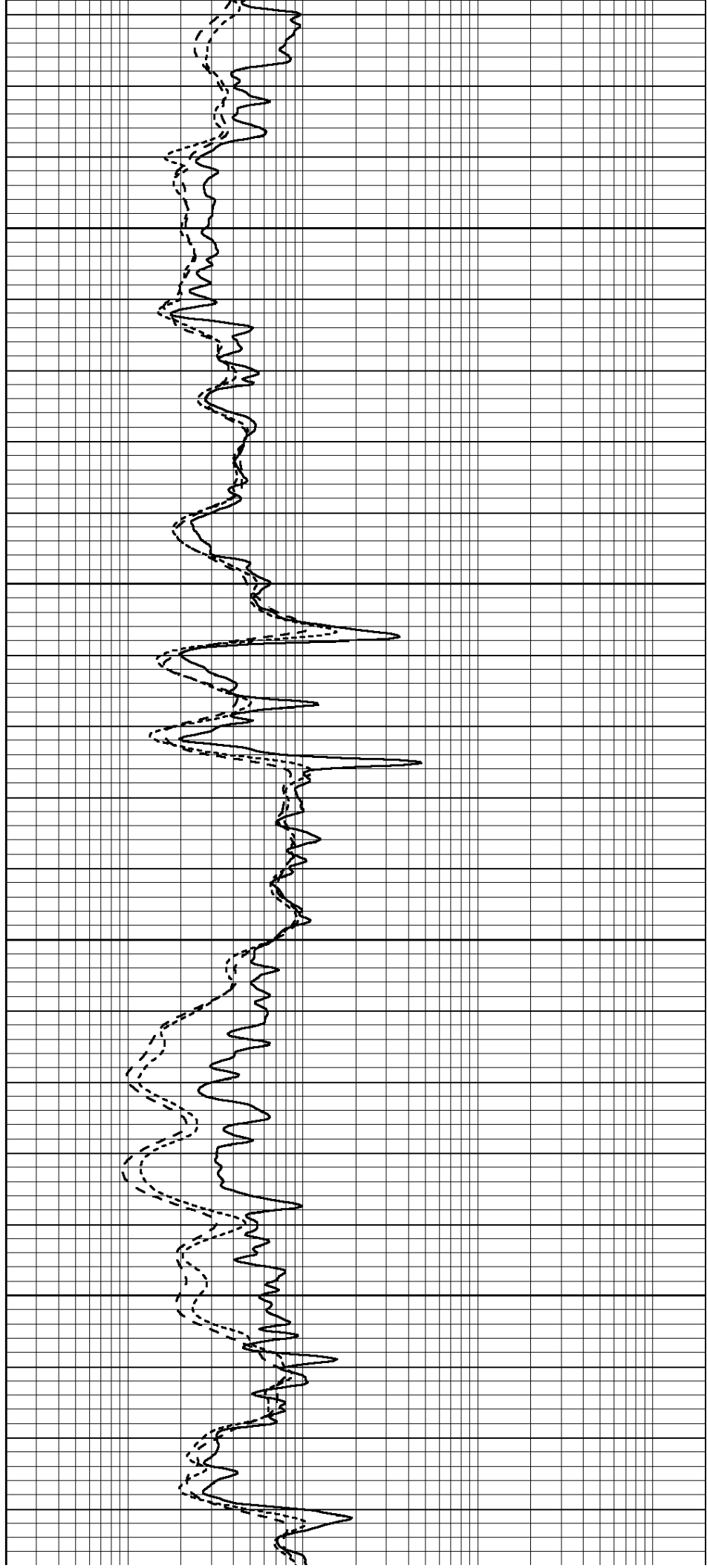


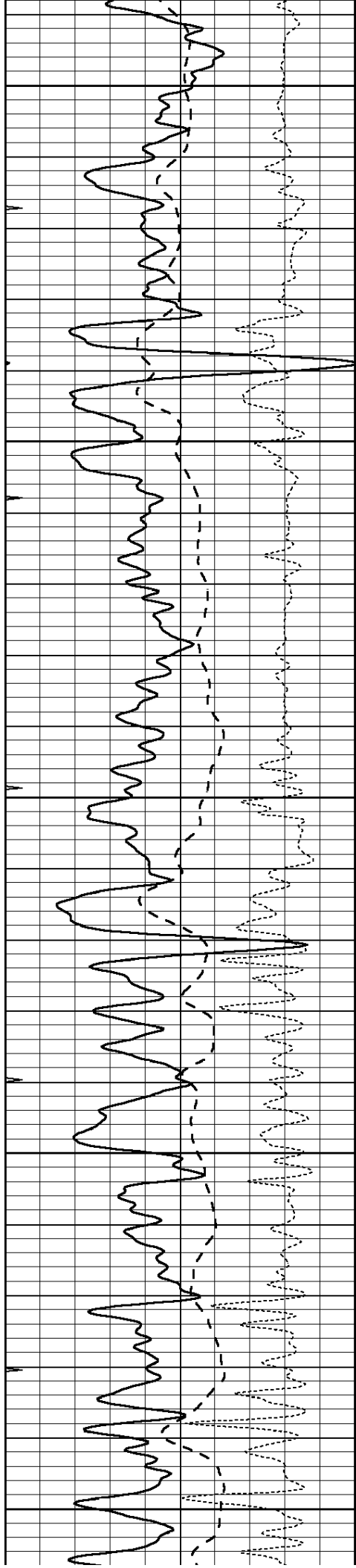
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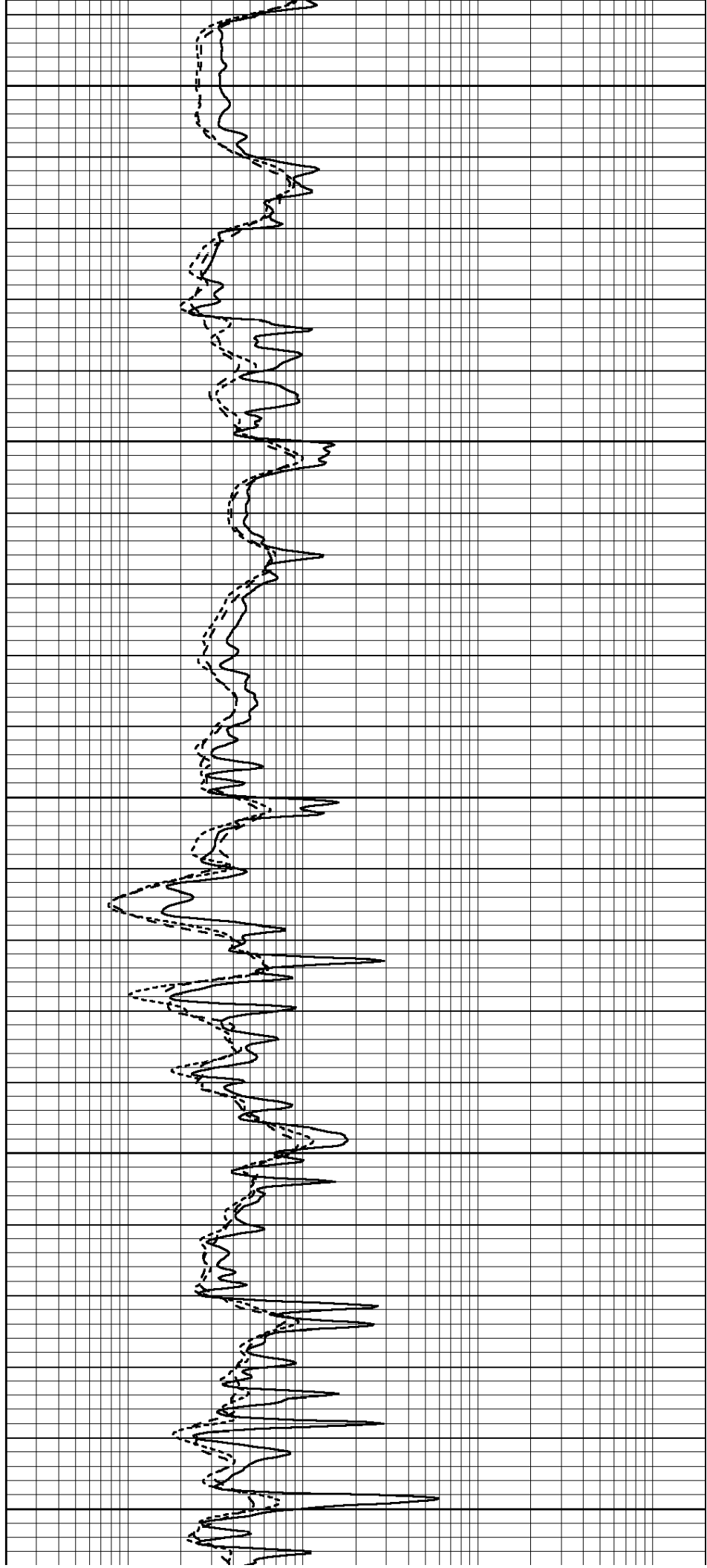
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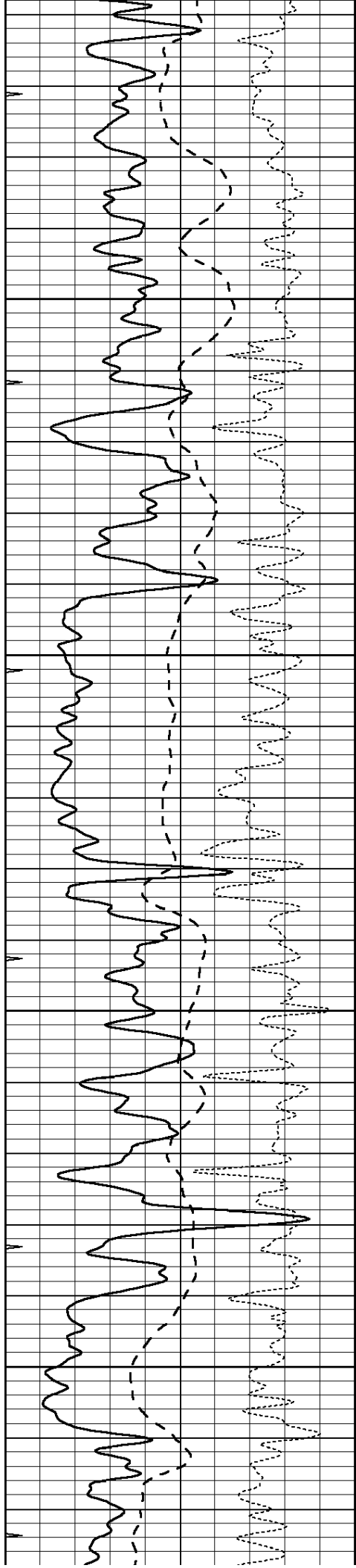
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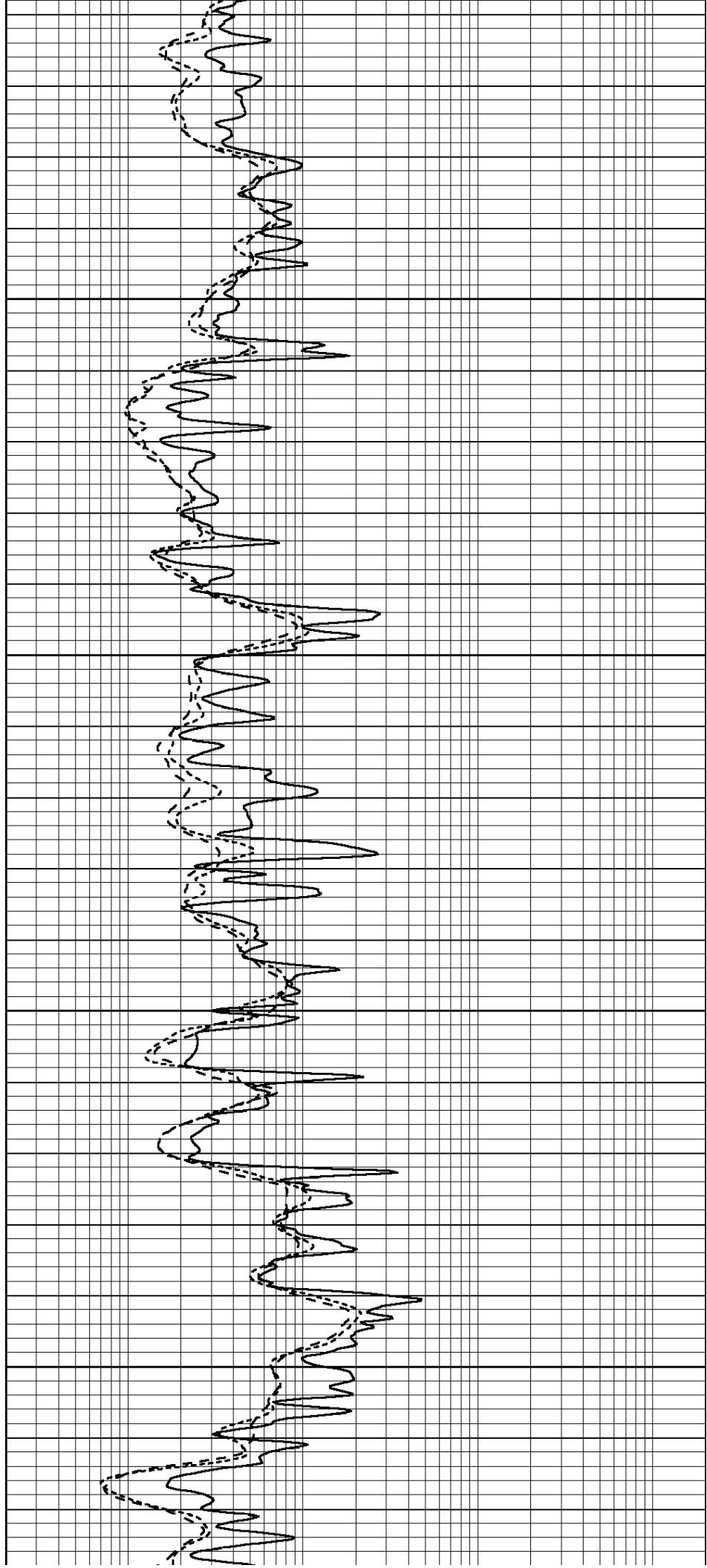


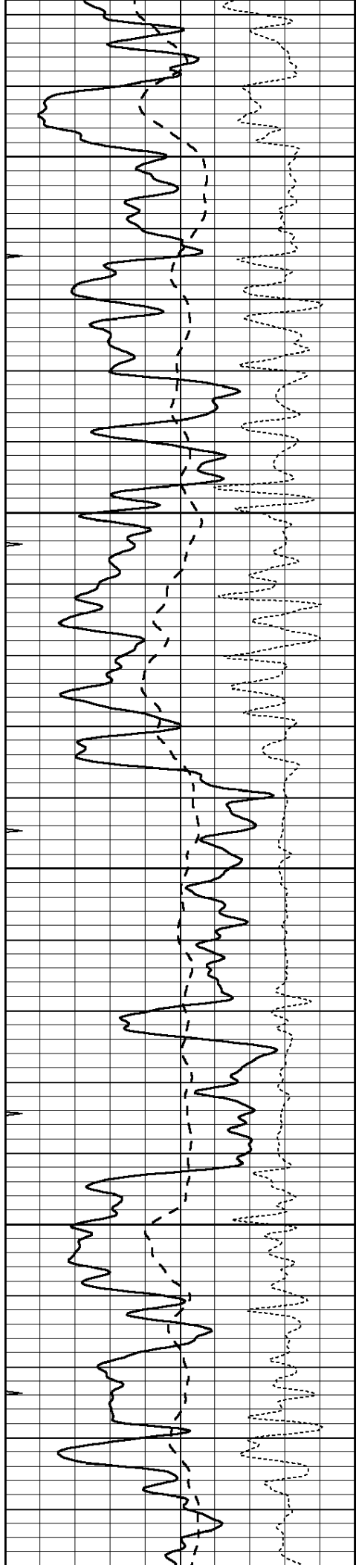
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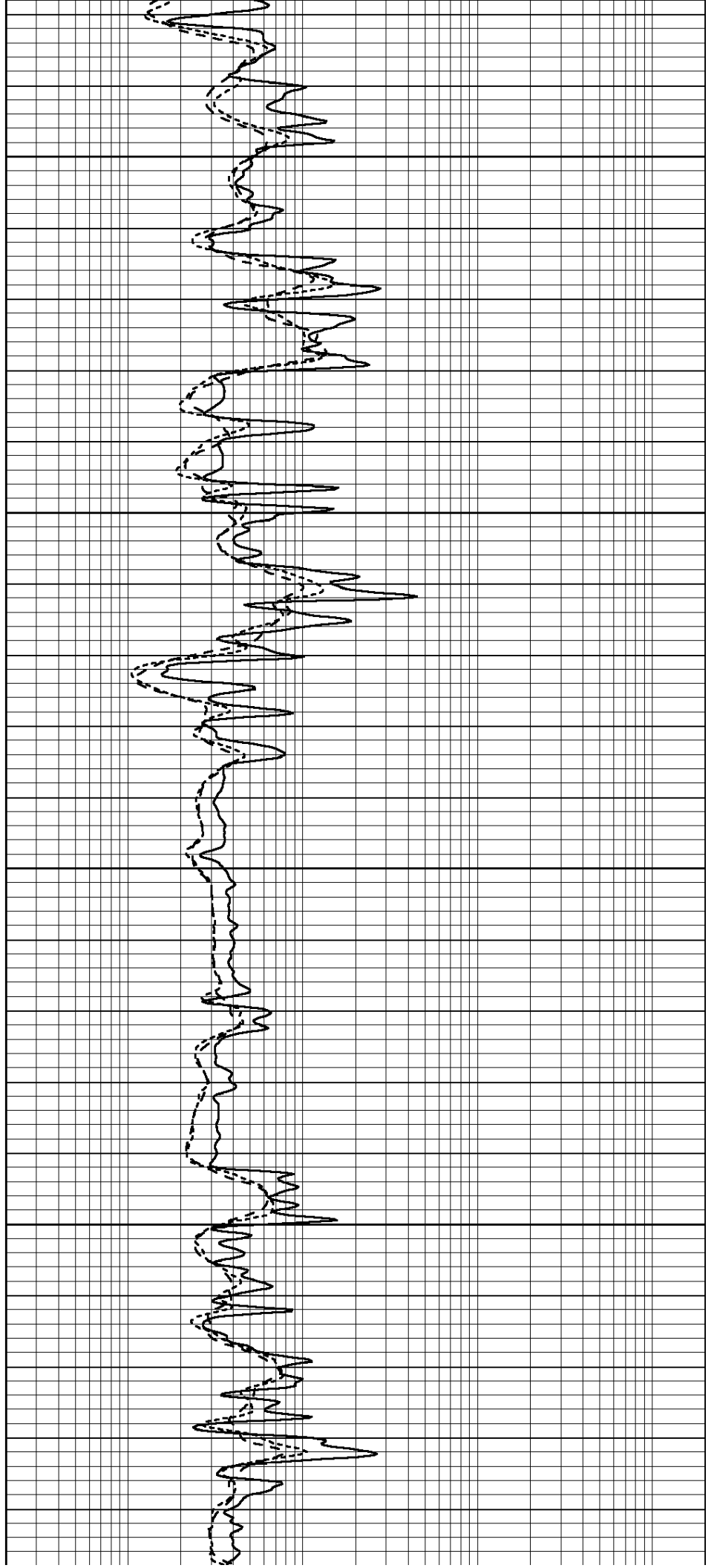


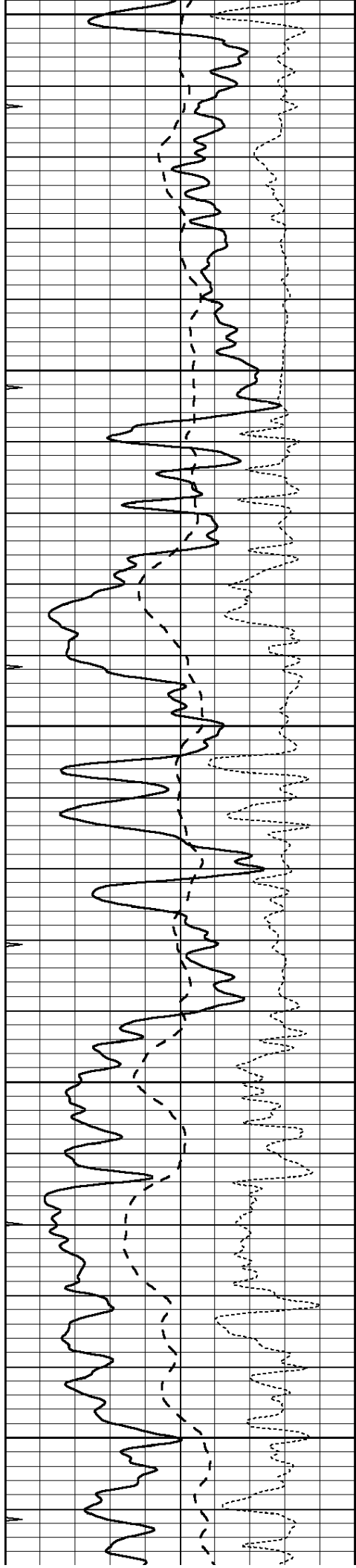
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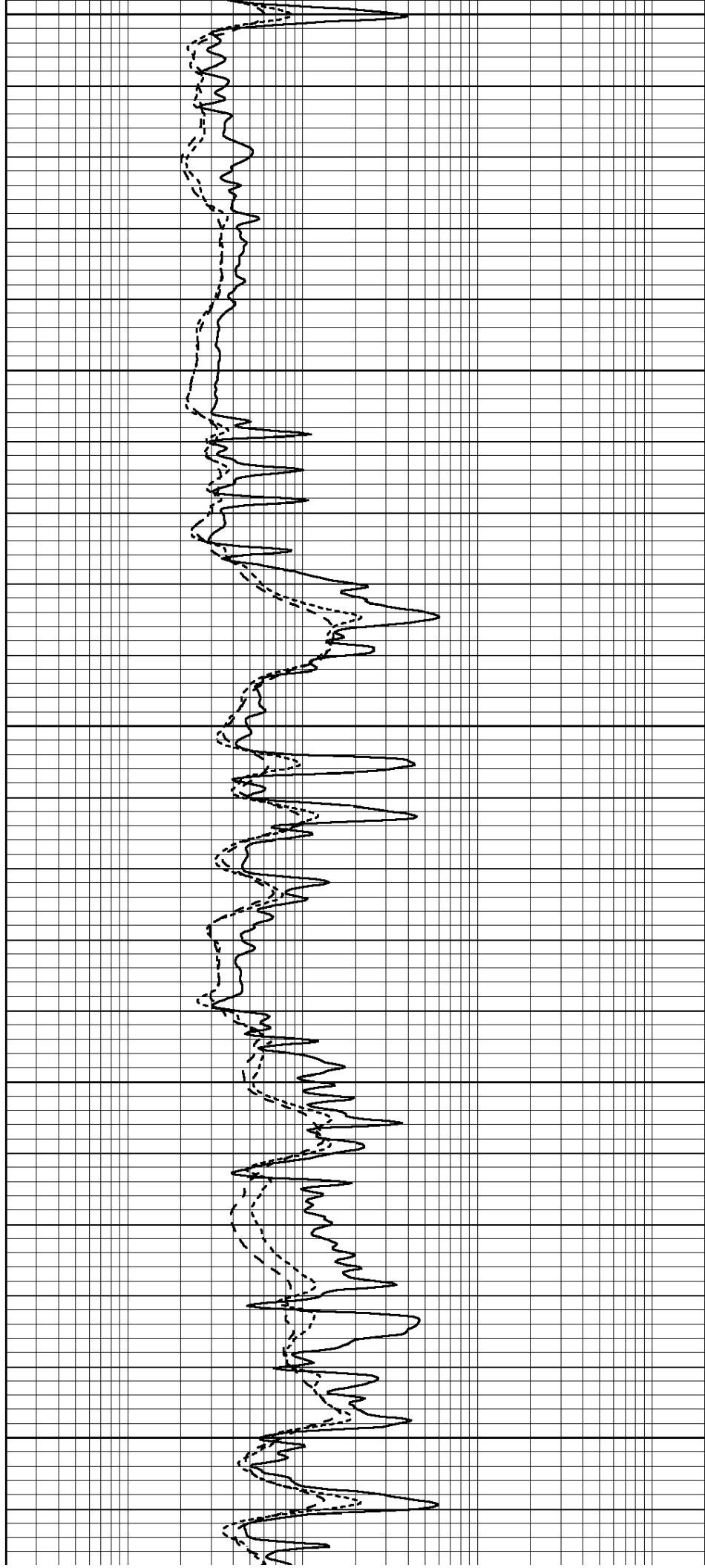
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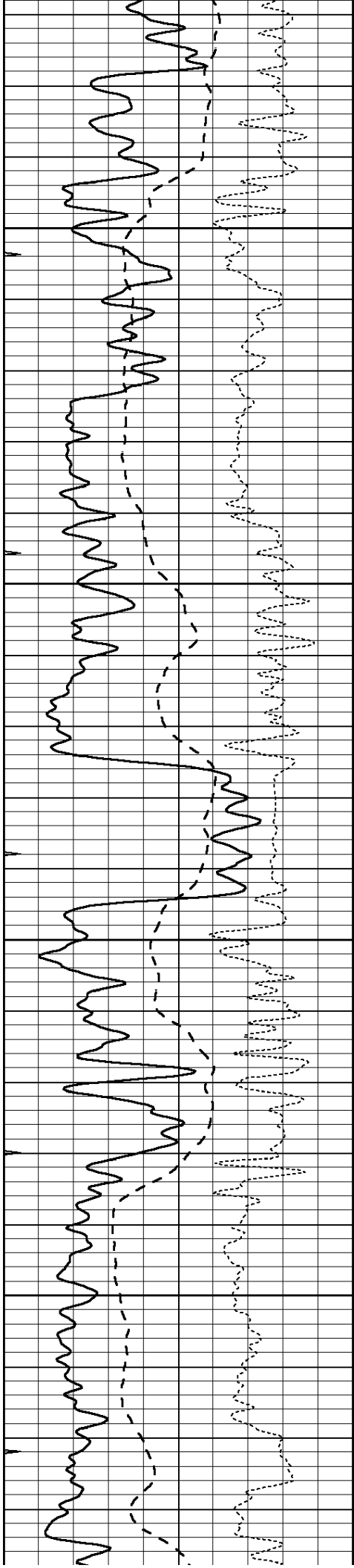
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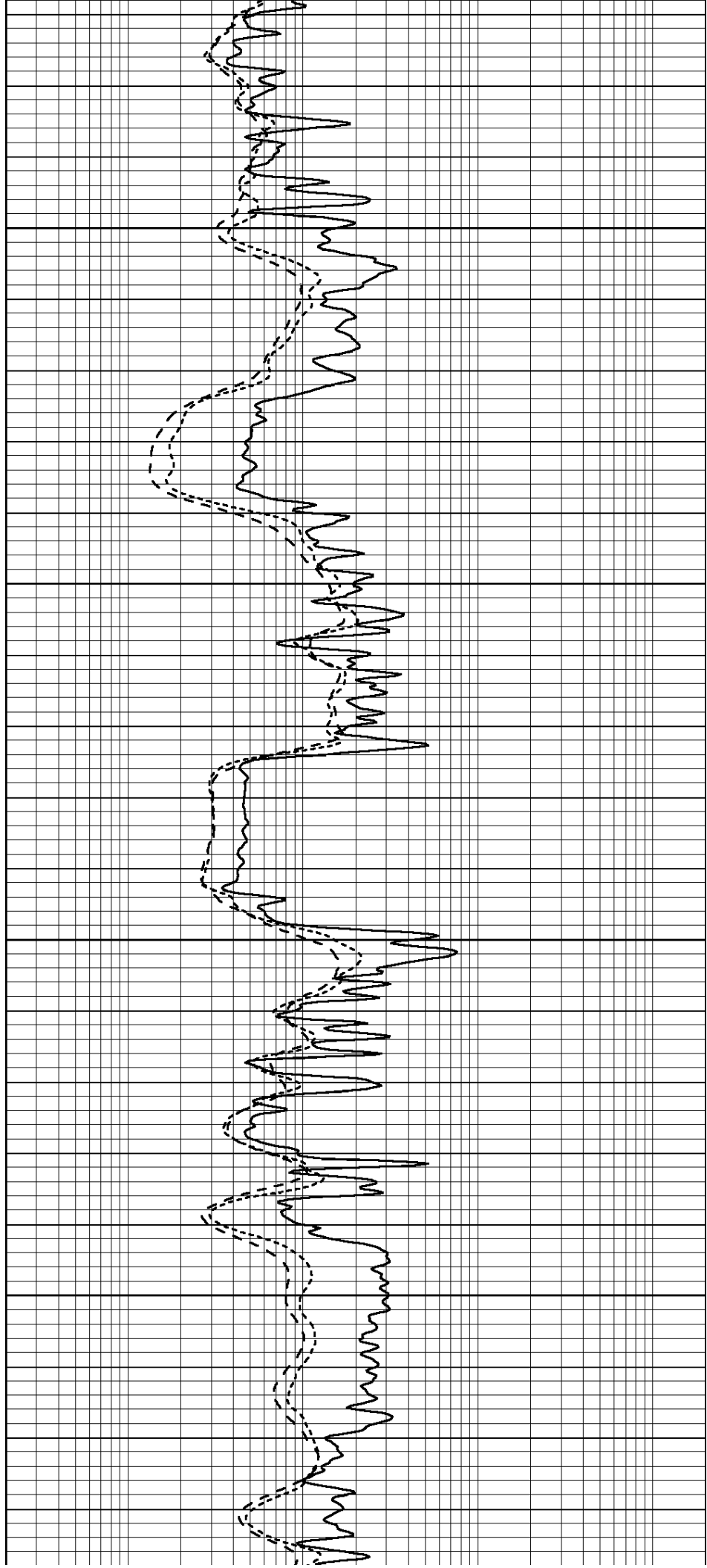


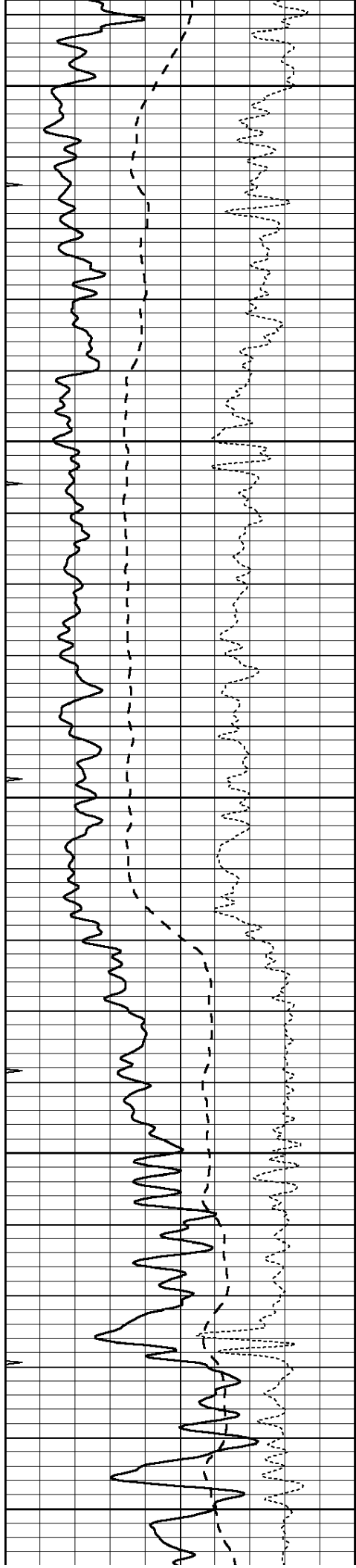
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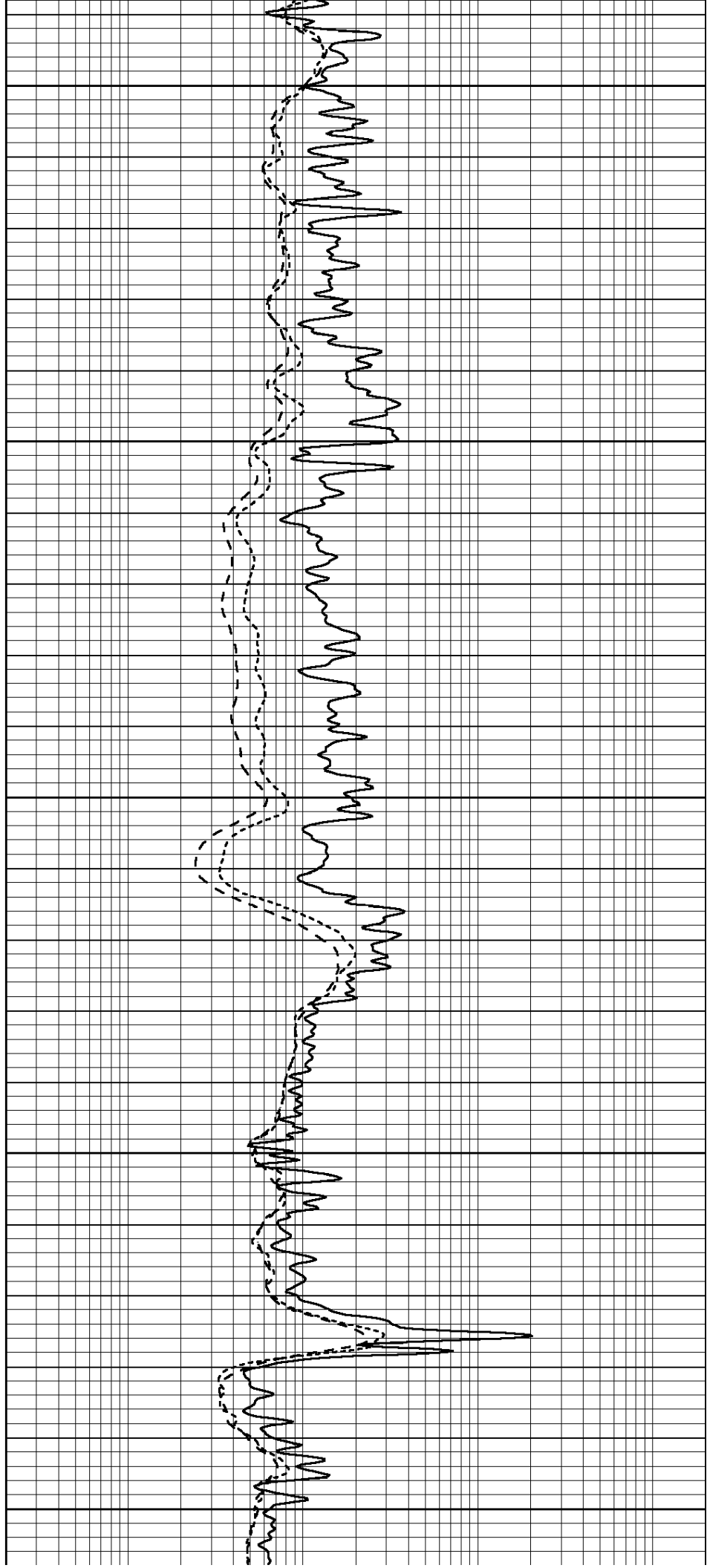
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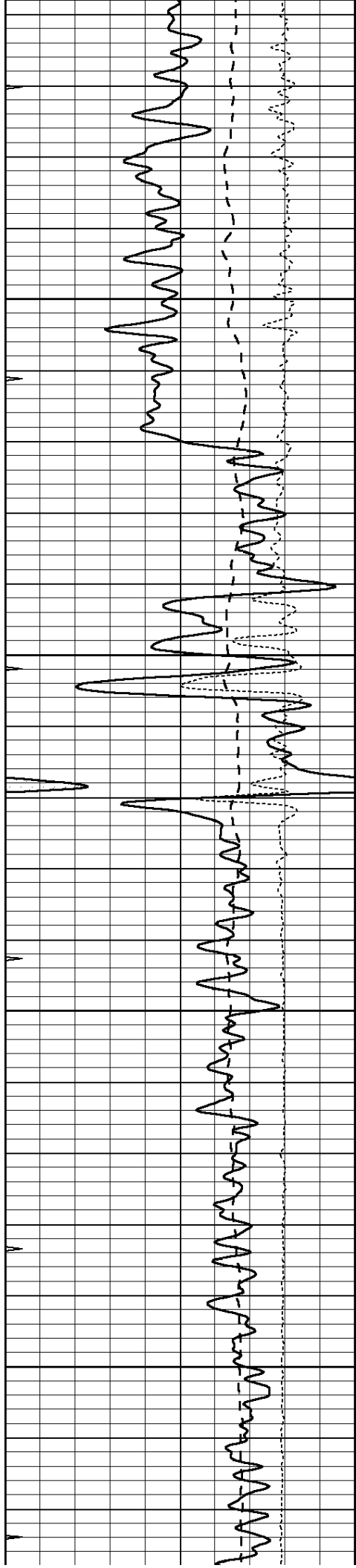
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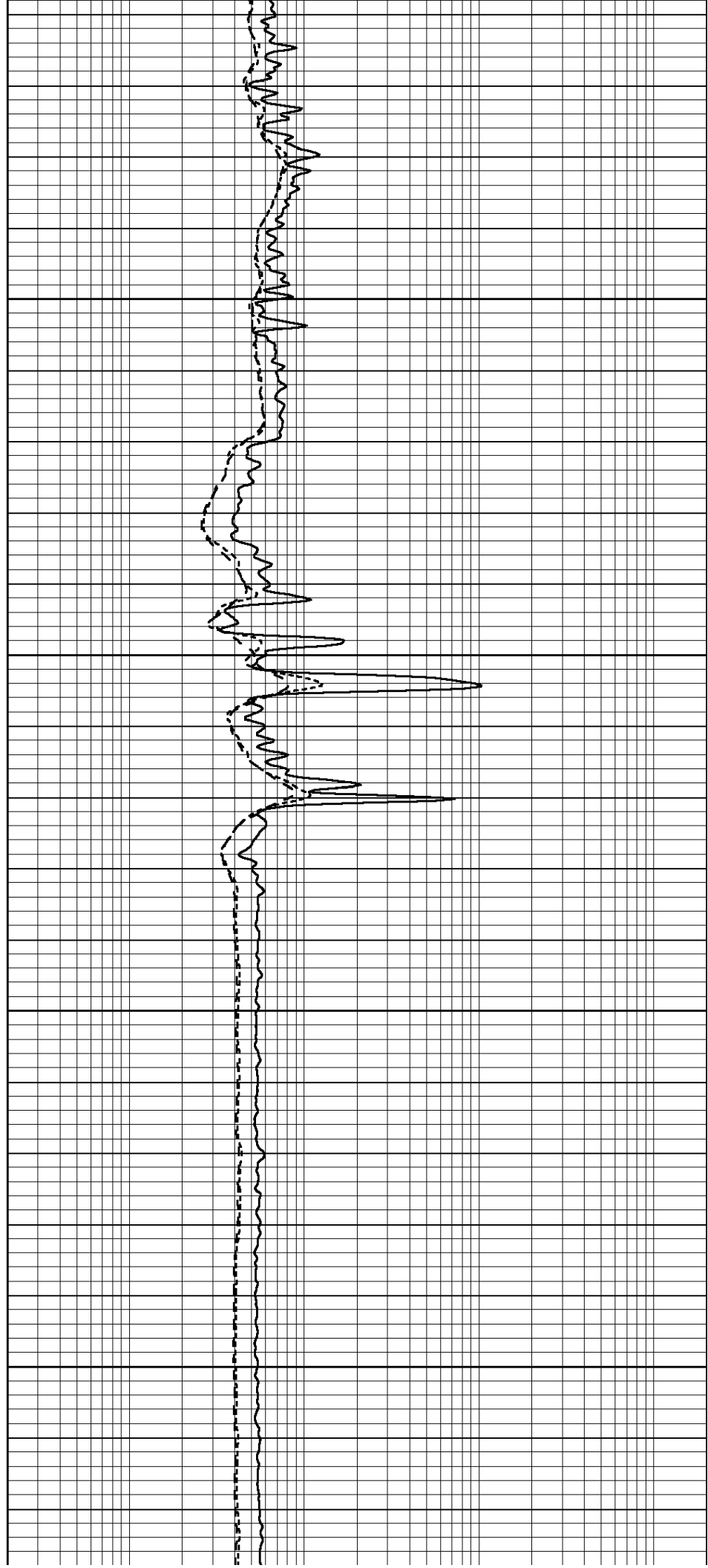


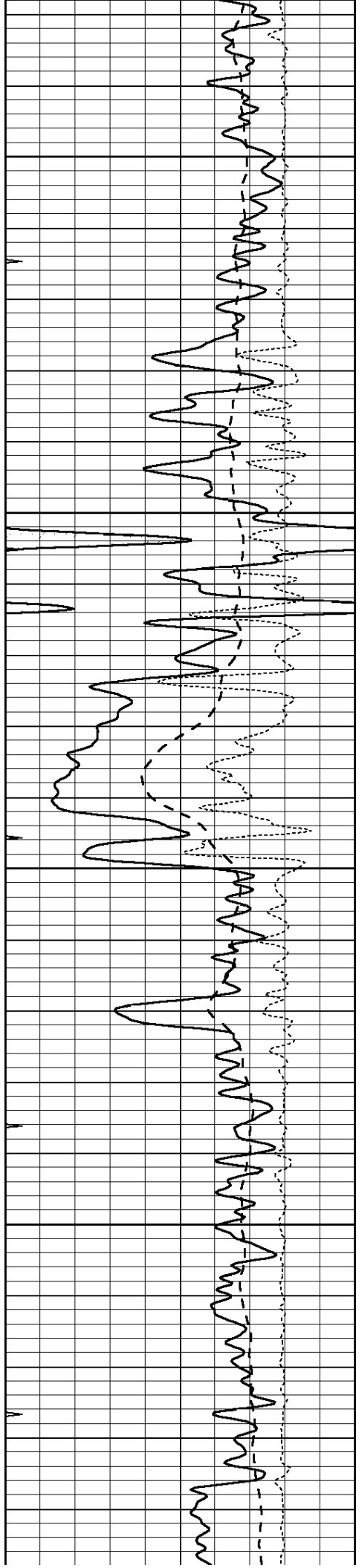
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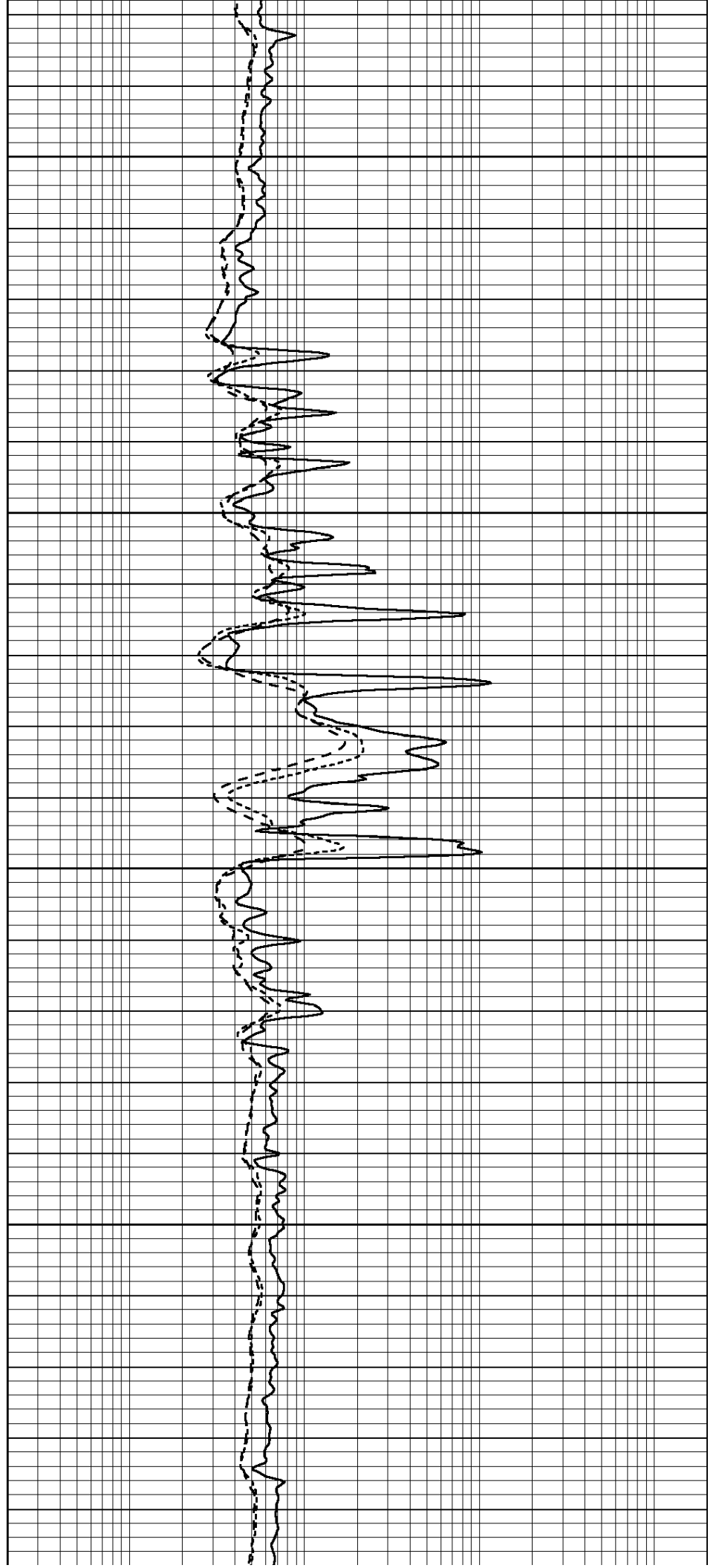


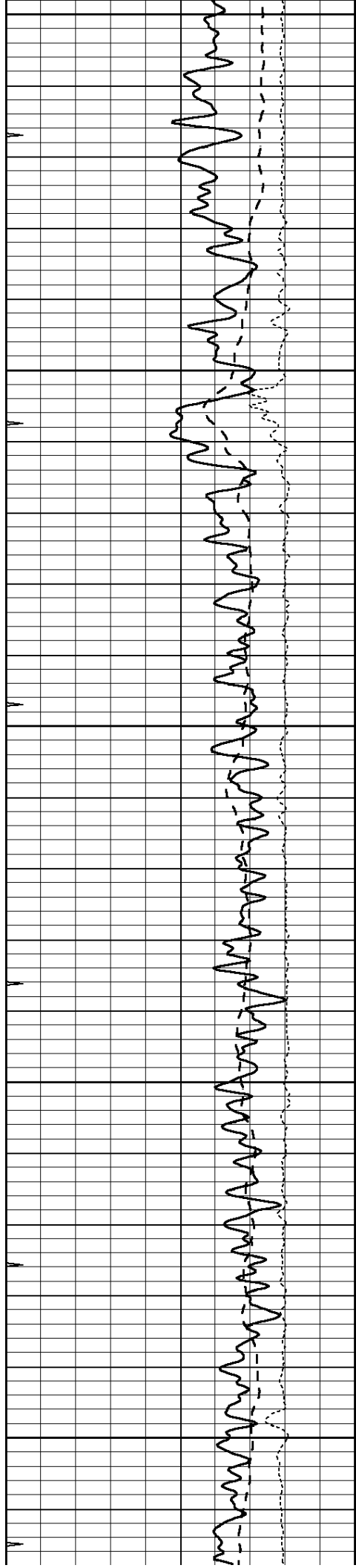
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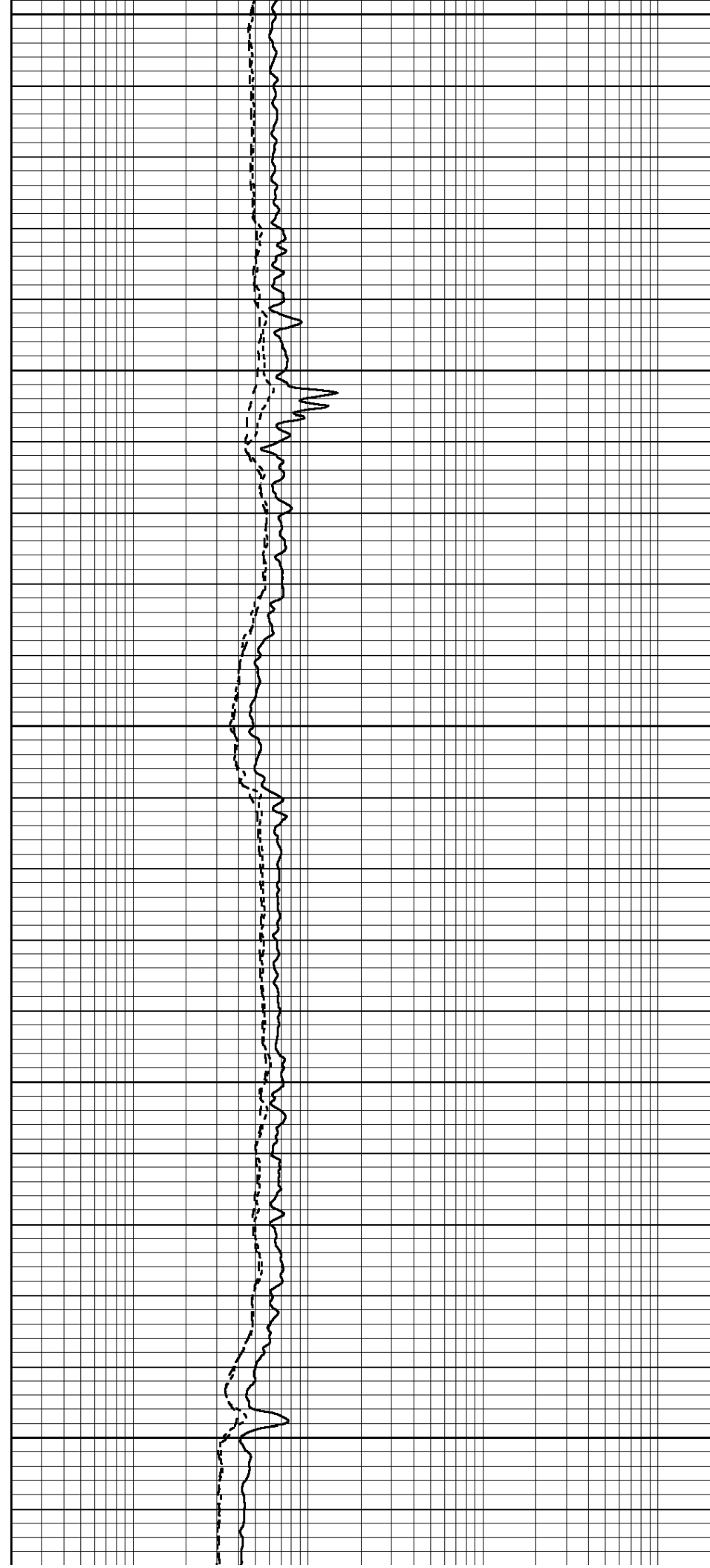
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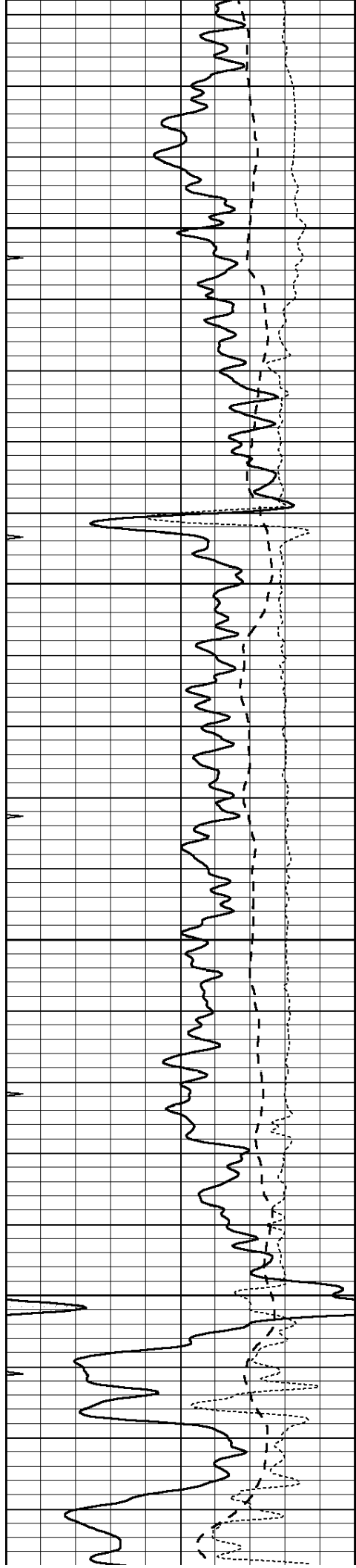
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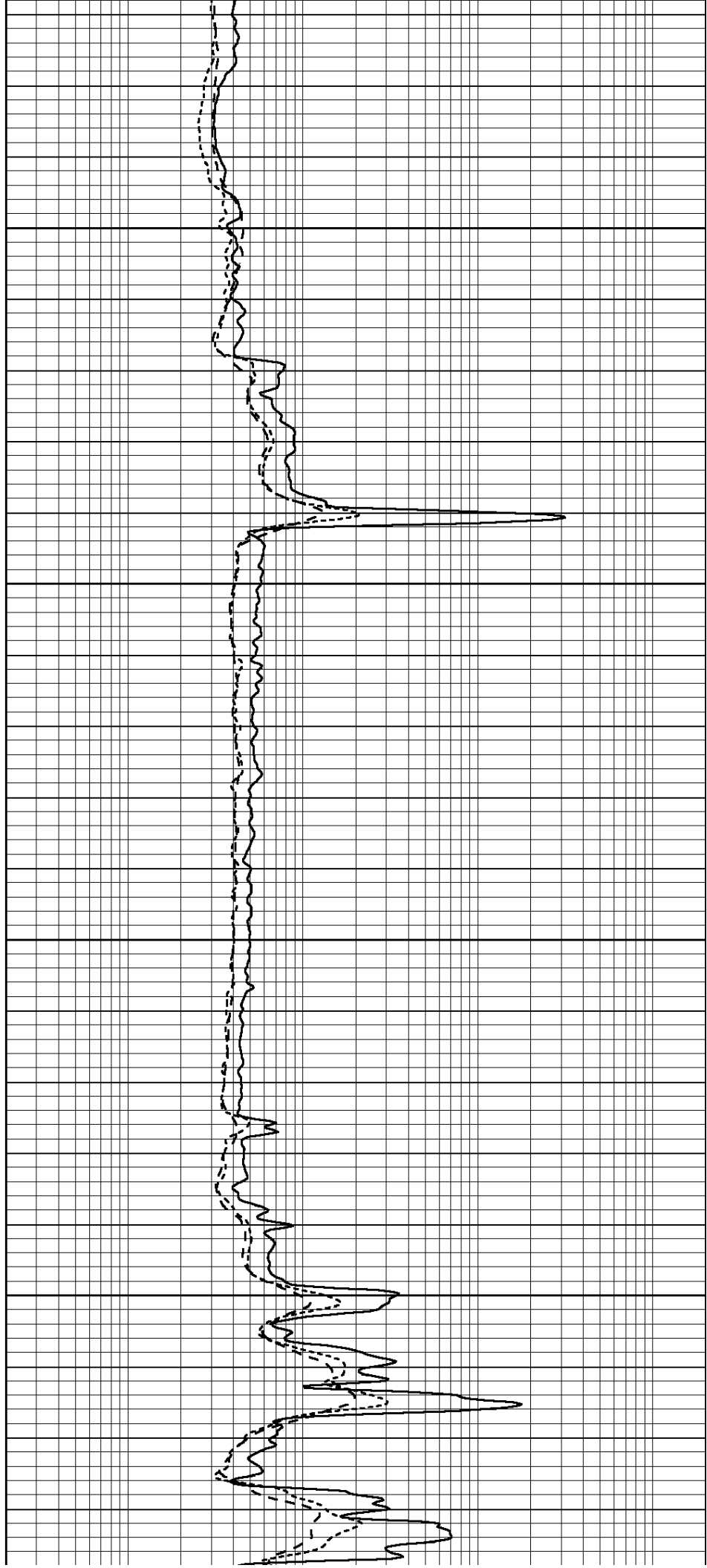


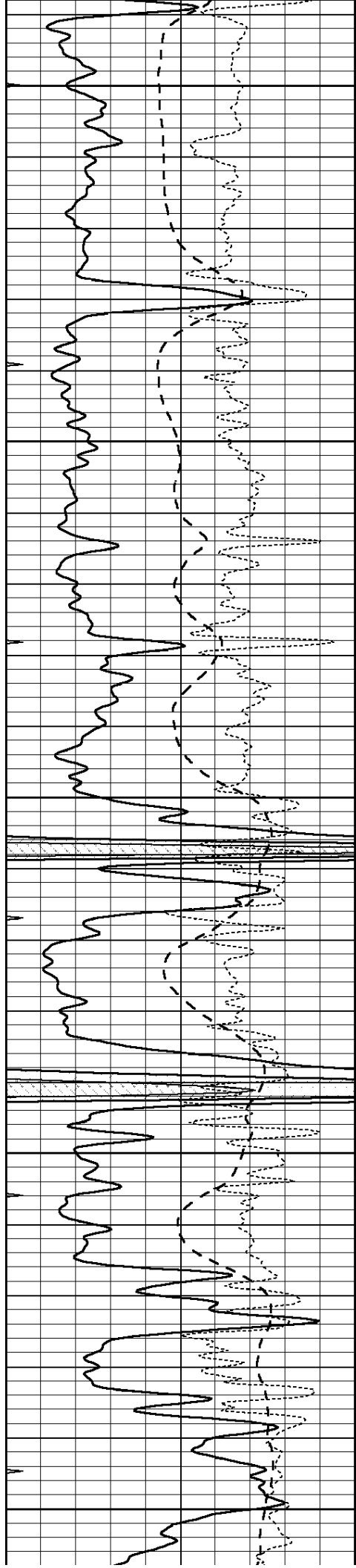
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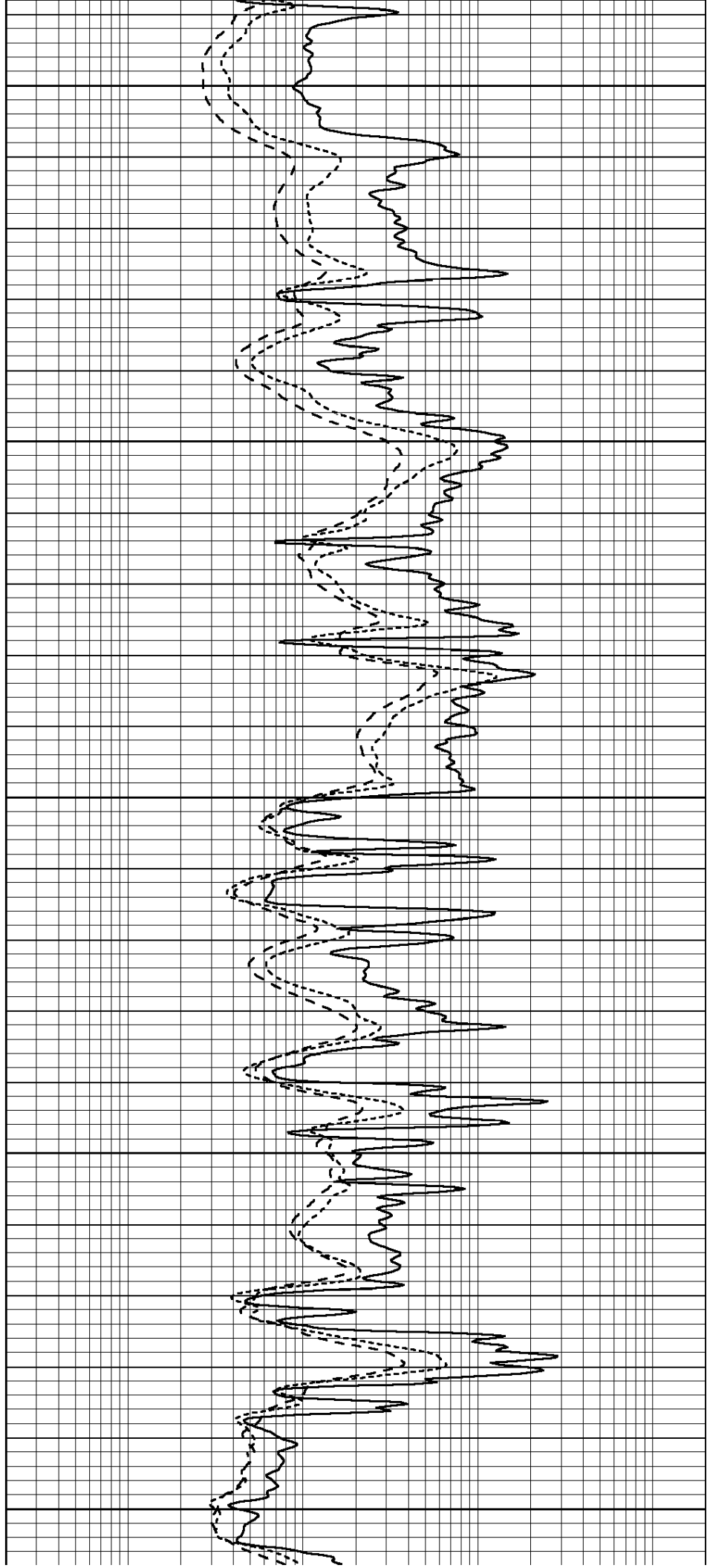
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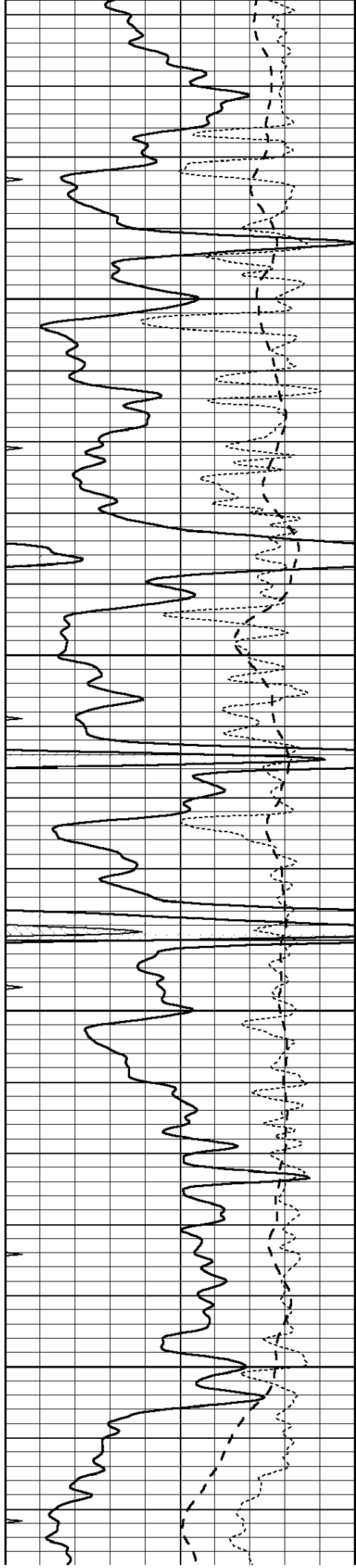
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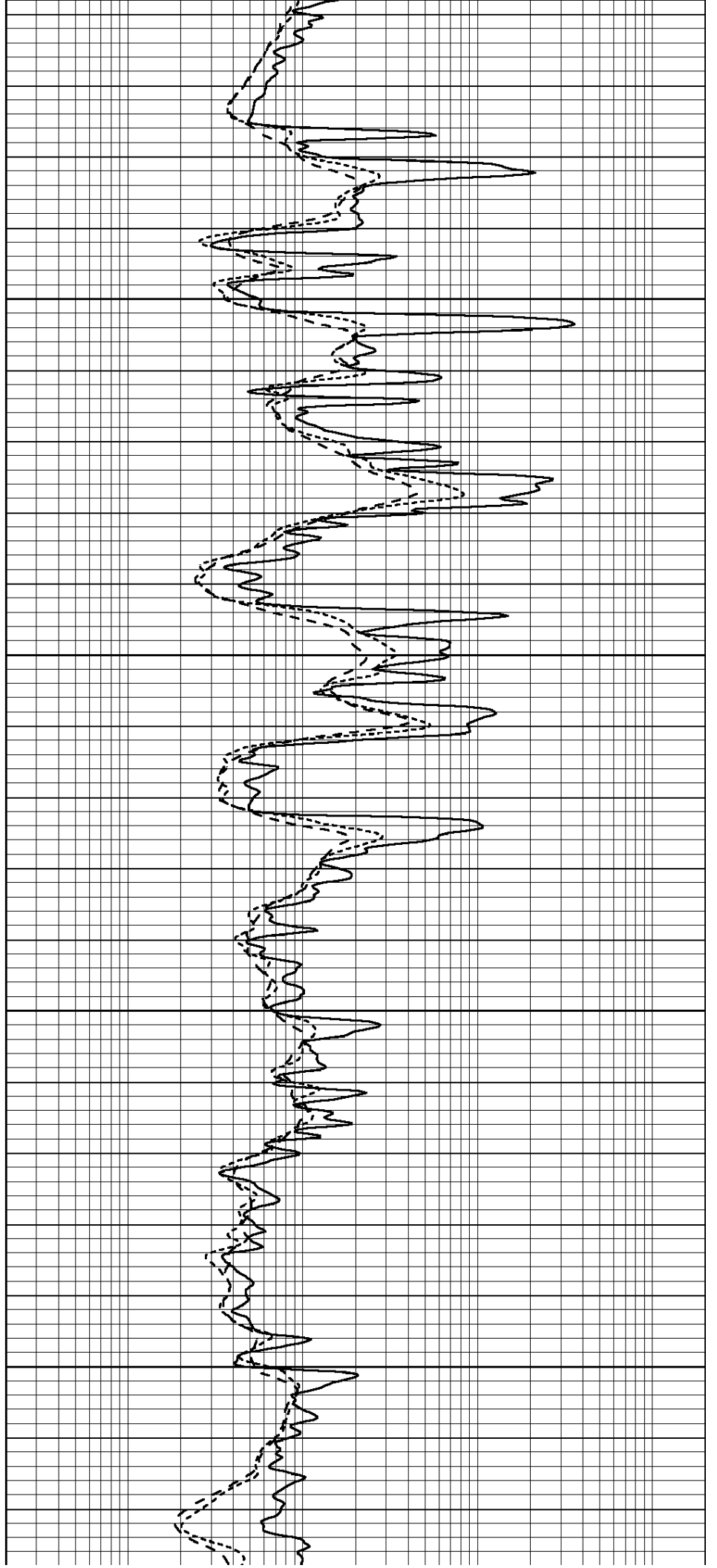


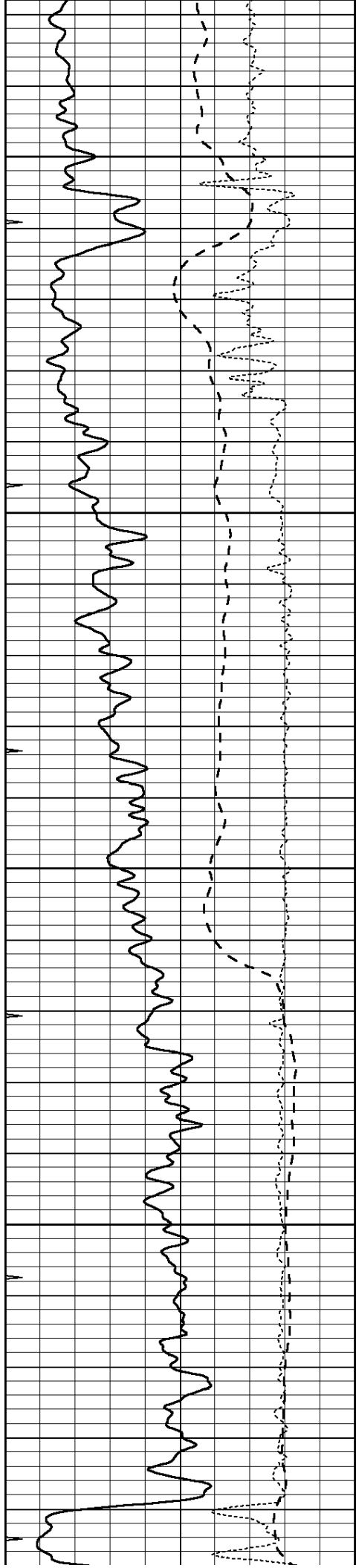
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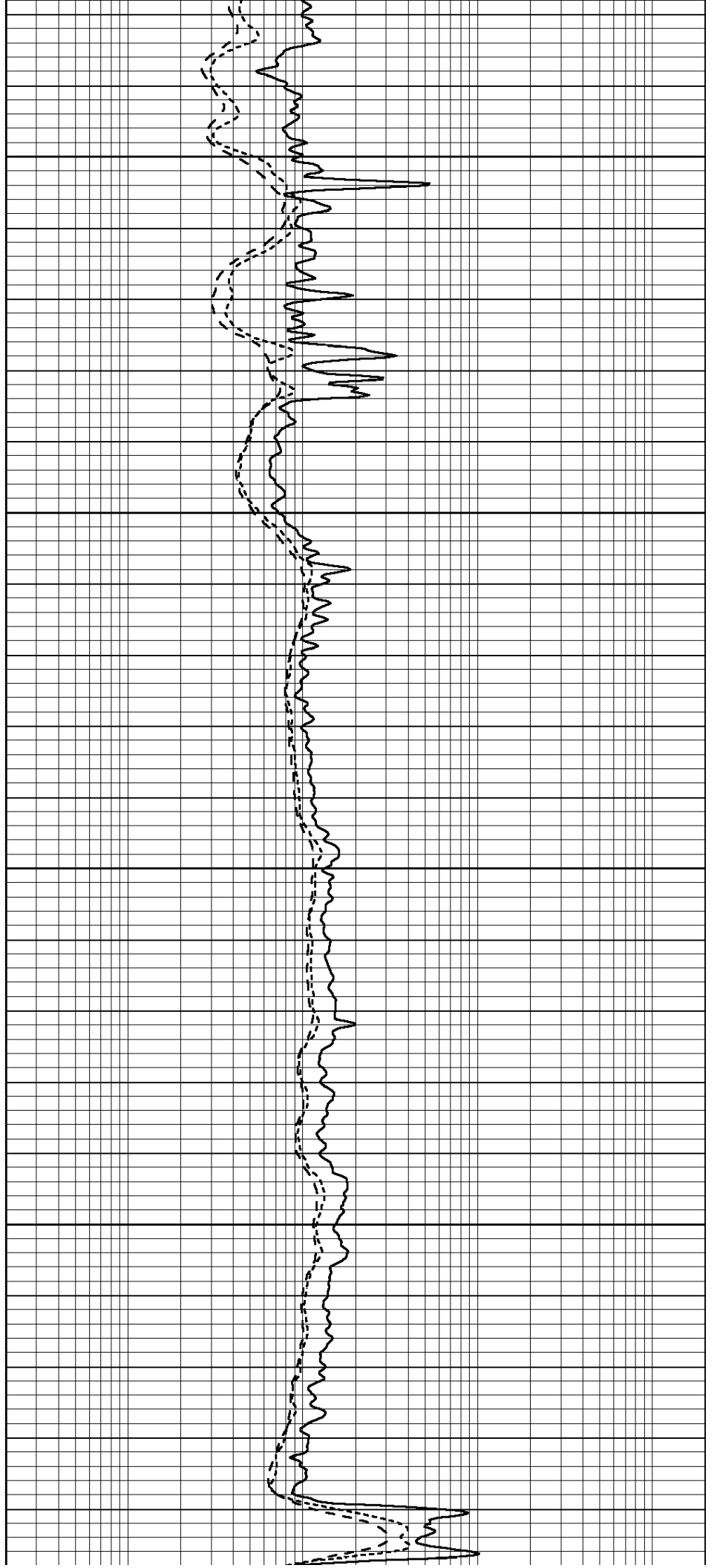


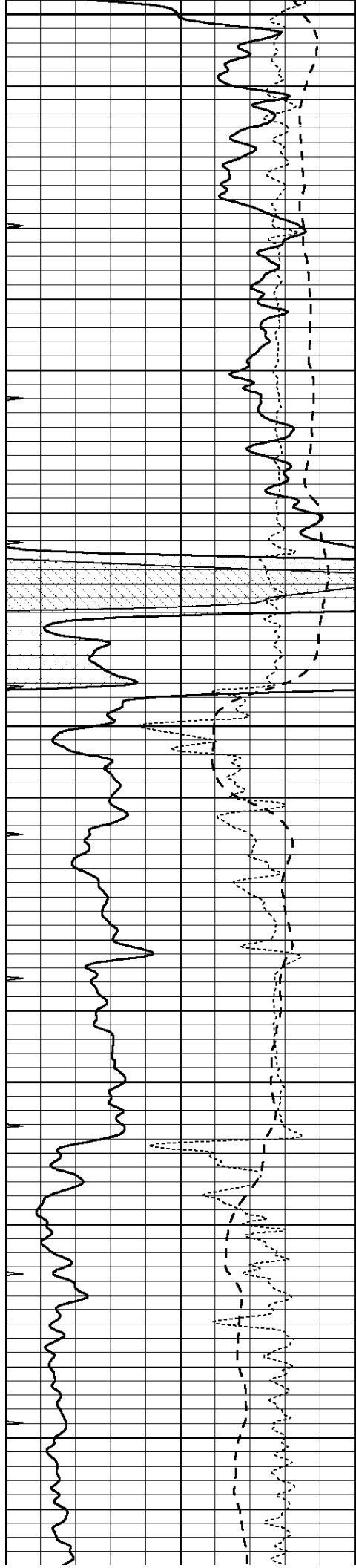
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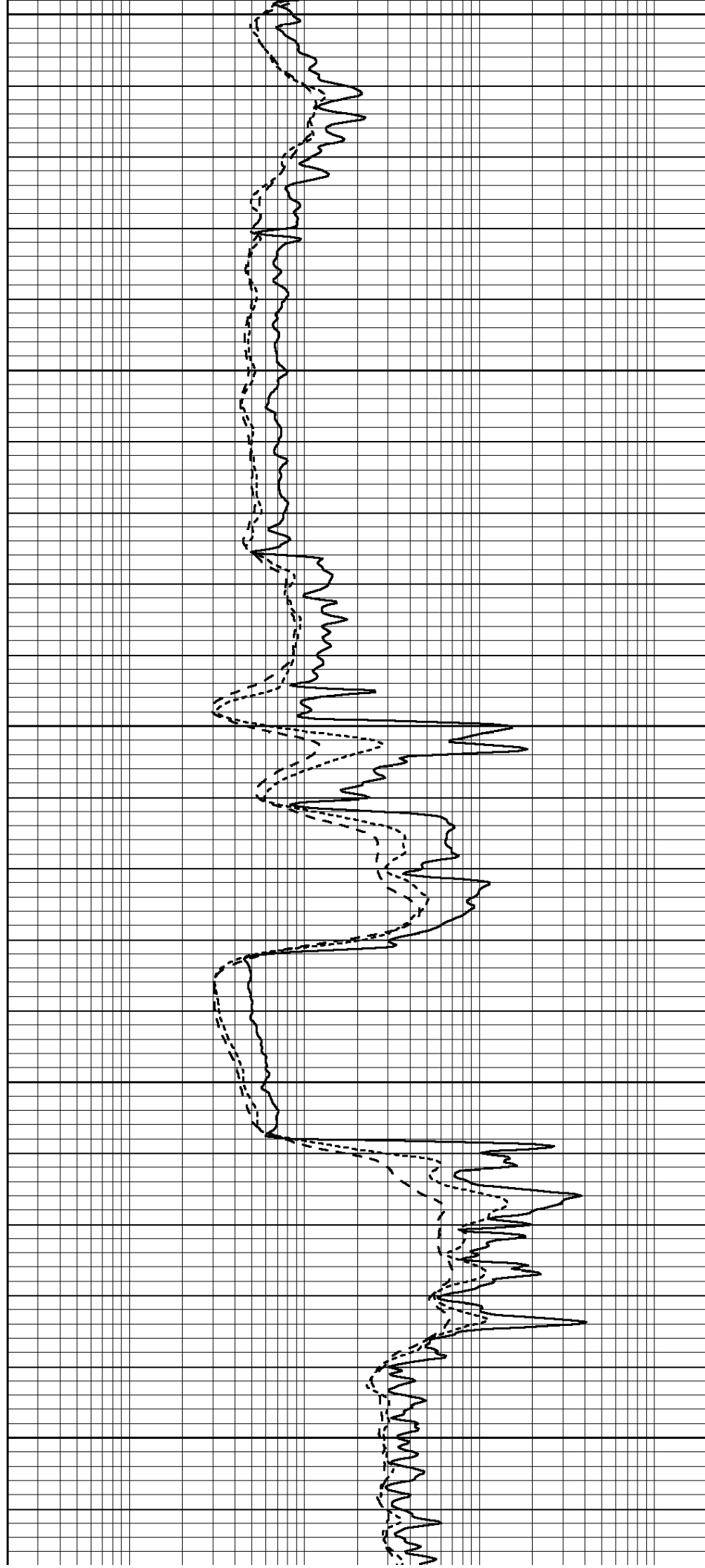
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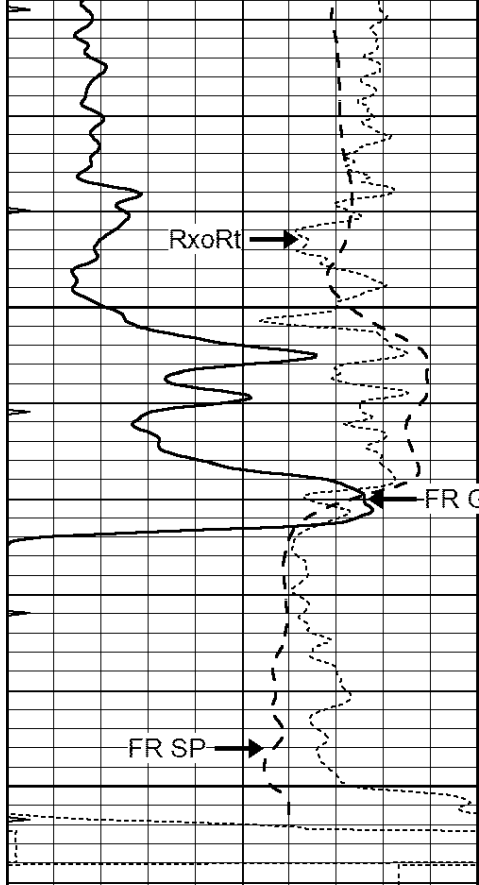
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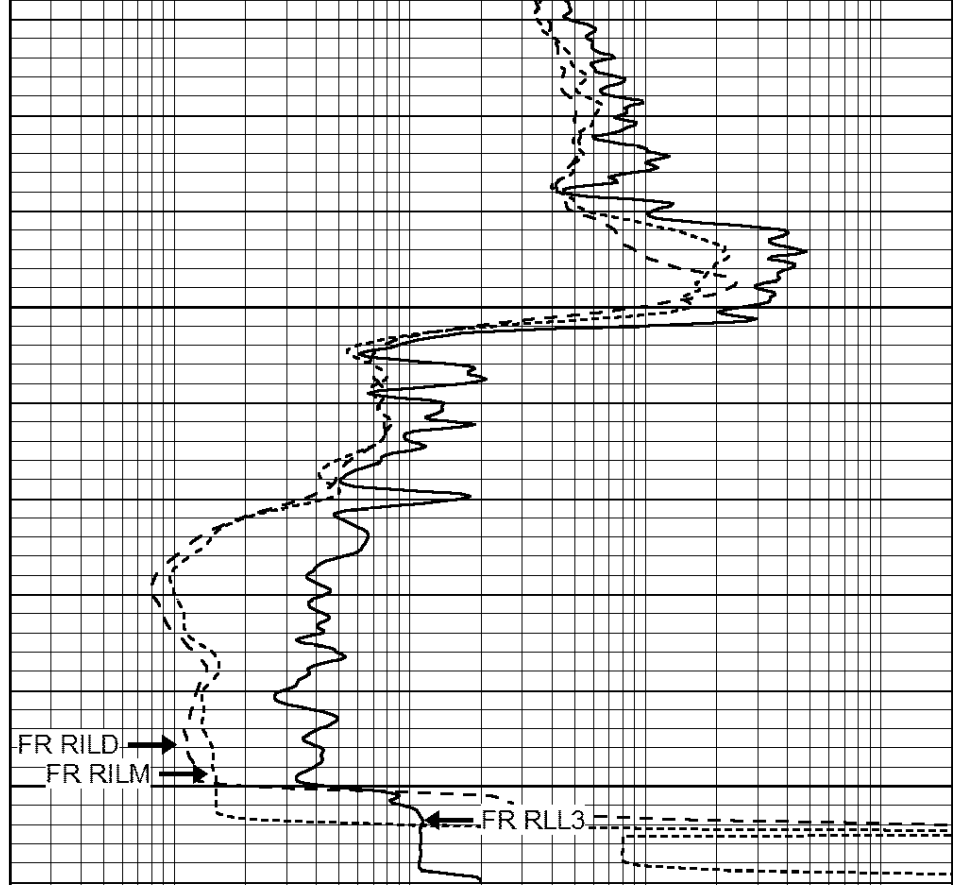


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LTD 5356

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

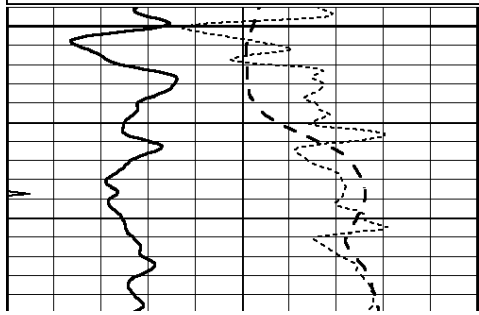


REPEAT SECTION

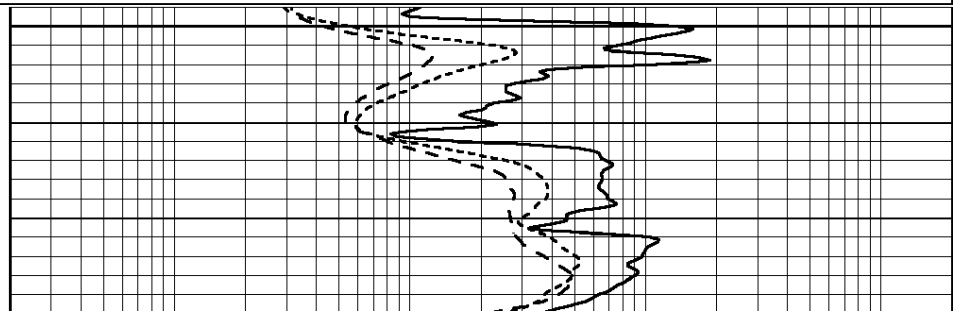
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 Charted by: Depth in Feet scaled 1:240

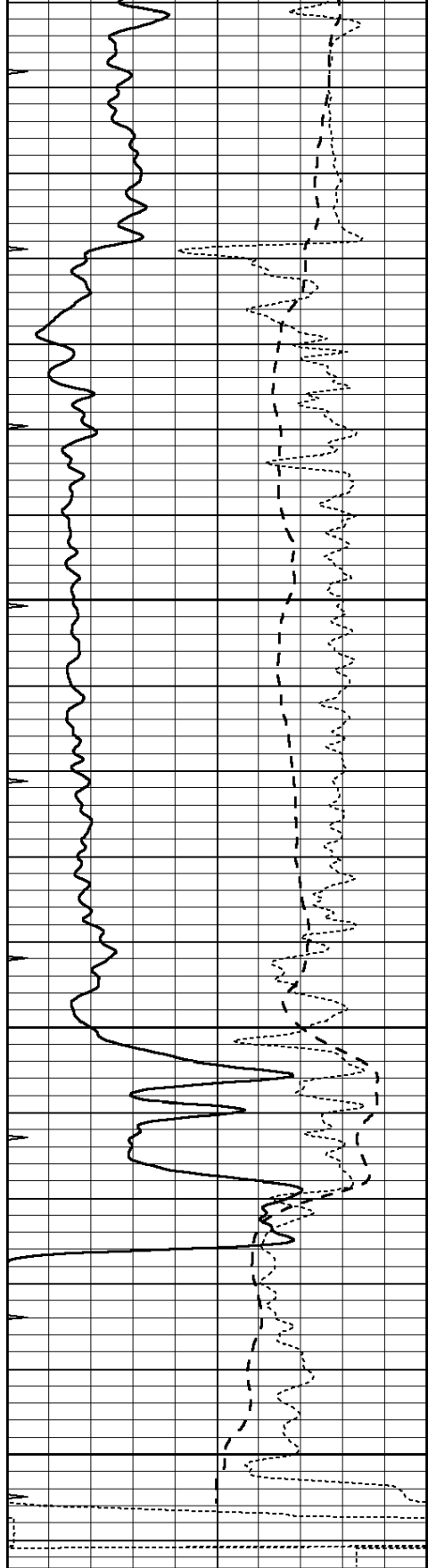
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



5150





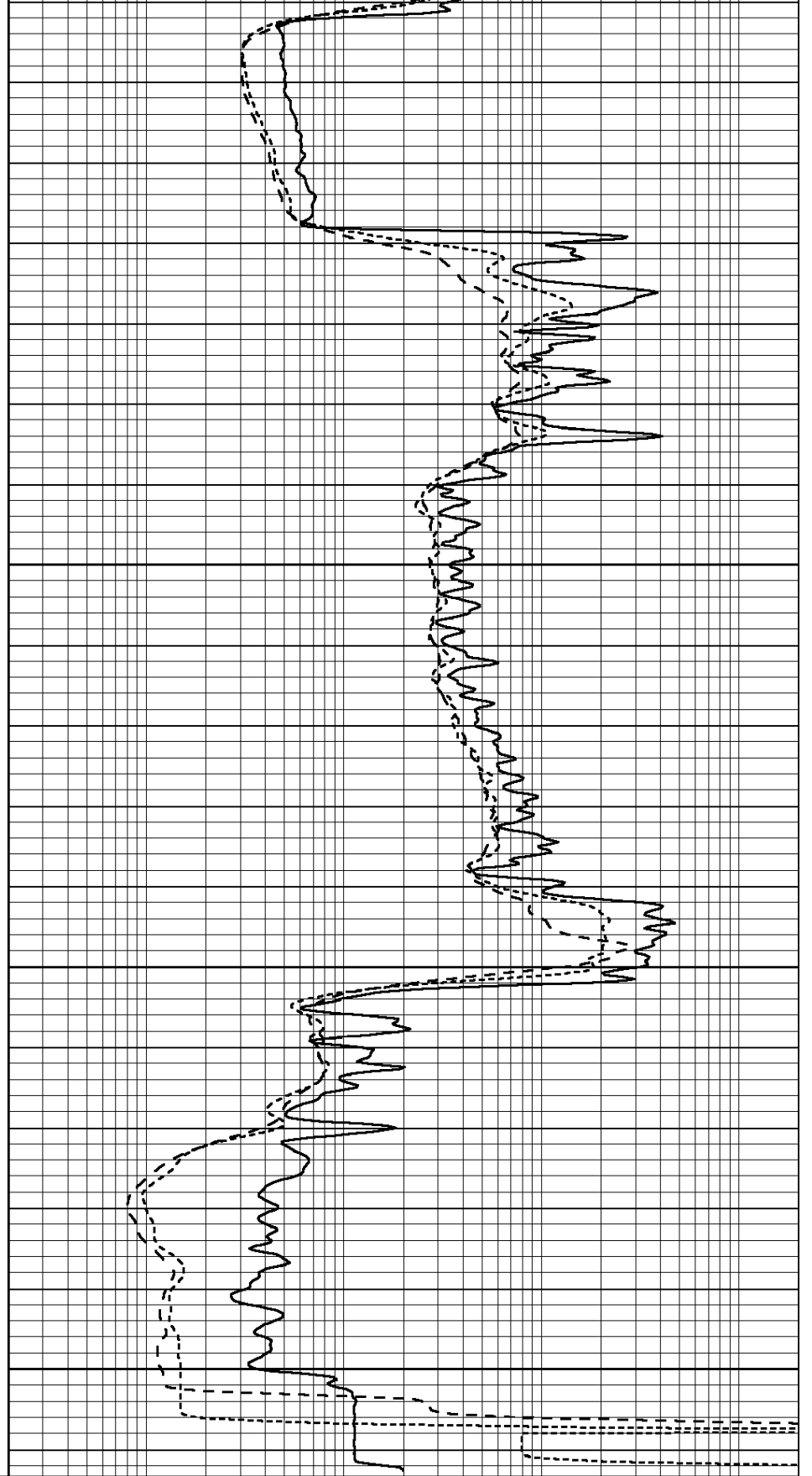
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

5200

5250

5300

5350



0.2	SHALLOW GUARD (Ohm-m)	2000
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0.2	DEEP INDUCTION (Ohm-m)	2000
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0.2	MEDIUM INDUCTION (Ohm-m)	2000
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Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Sun Aug 17 08:09:53 2014
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	-2.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-16.000
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

Master Calibration

Performed Wed Feb 26 14:40:29 2014

	Background	Magnesium	Aluminum	Sandstone	
Window 1	844.3	7247.0	2284.1	7908.3	cps
Window 2	800.5	6081.1	1985.0	6521.4	cps
Window 3	688.8	3783.7	1363.3	3972.6	cps
Window 4	191.6	192.1	191.7	191.4	cps
Long Space	0.0	5280.6	1184.5	5720.9	cps
Short Space	1.1	1287.1	882.6	1385.1	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.8	Rib Slope	: 1.030	Density/Spine Ratio	: 0.571
Spine Angle	: 75.8	Spine Slope	: 3.962	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: 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			pu	
	Long Space	cps		pu	pu	
2)	Short Space	cps			pu	
	Long Space	cps		pu	pu	
3)	Short Space	cps			pu	
	Long Space	cps		pu	pu	

POST-SURVEY VERIFICATION						
	Detector	Readings		Measured	Target	
1)	Short Space	cps			pu	
	Long Space	cps		pu	pu	
2)	Short Space	cps			pu	
	Long Space	cps		pu	pu	
3)	Short Space	cps			pu	
	Long Space	cps		pu	pu	

Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Sun Aug 17 15:23:09 2014

Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.7000	GAPI/cps