



**DUAL  
INDUCTION  
LOG**

Company INDIAN OIL CO., INC.  
Well # C 3 BELL  
Field JEM  
County BARBER  
State KANSAS

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Well # C 3 BELL  
Field JEM  
County BARBER  
State KANSAS

Location: API # : 15-007-24352-0000  
1400' FSL & 3300' FEL  
SEC 5 TWP 30S RGE 13W  
Permanent Datum GROUND LEVEL Elevation 1931  
Log Measured From KELLY BUSHING 12' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services CDL/CNL/ML SON  
Elevation K.B. 1943  
D.F. 1941  
G.L. 1931

Date	06/21/19
Run Number	ONE
Depth Driller	4840
Depth Logger	4843
Bottom Logged Interval	4842
Top Log Interval	00
Casing Driller	13 3/8" @ 265
Casing Logger	265
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.4/52
pH / Fluid Loss	10.0/10.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.3 @ 70F
Rmt @ Meas. Temp	.23 @ 70F
Rmc @ Meas. Temp	.36 @ 70F
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.17 @ 123F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	123F
Equipment Number	1523
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	AARON YOUNG

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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  
SOUTH OF SAWYER 3 TO FALCON RD.  
WEST 4 1/2 MILES



**MAIN PASS**

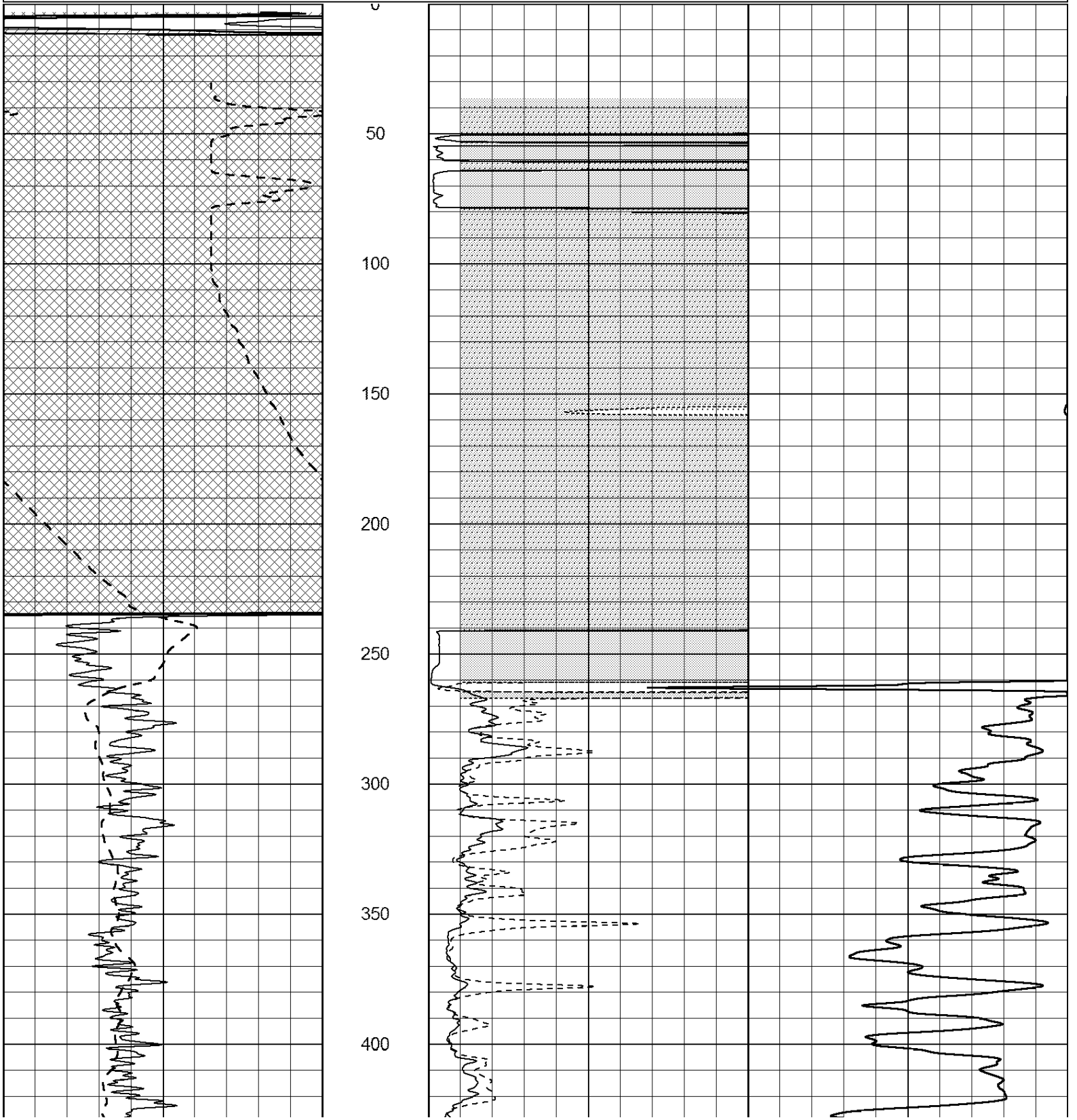
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 Dataset Pathname: pass3.1  
 Presentation Format: \_dil2  
 Dataset Creation: Fri Jun 21 09:47:59 2019 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:600

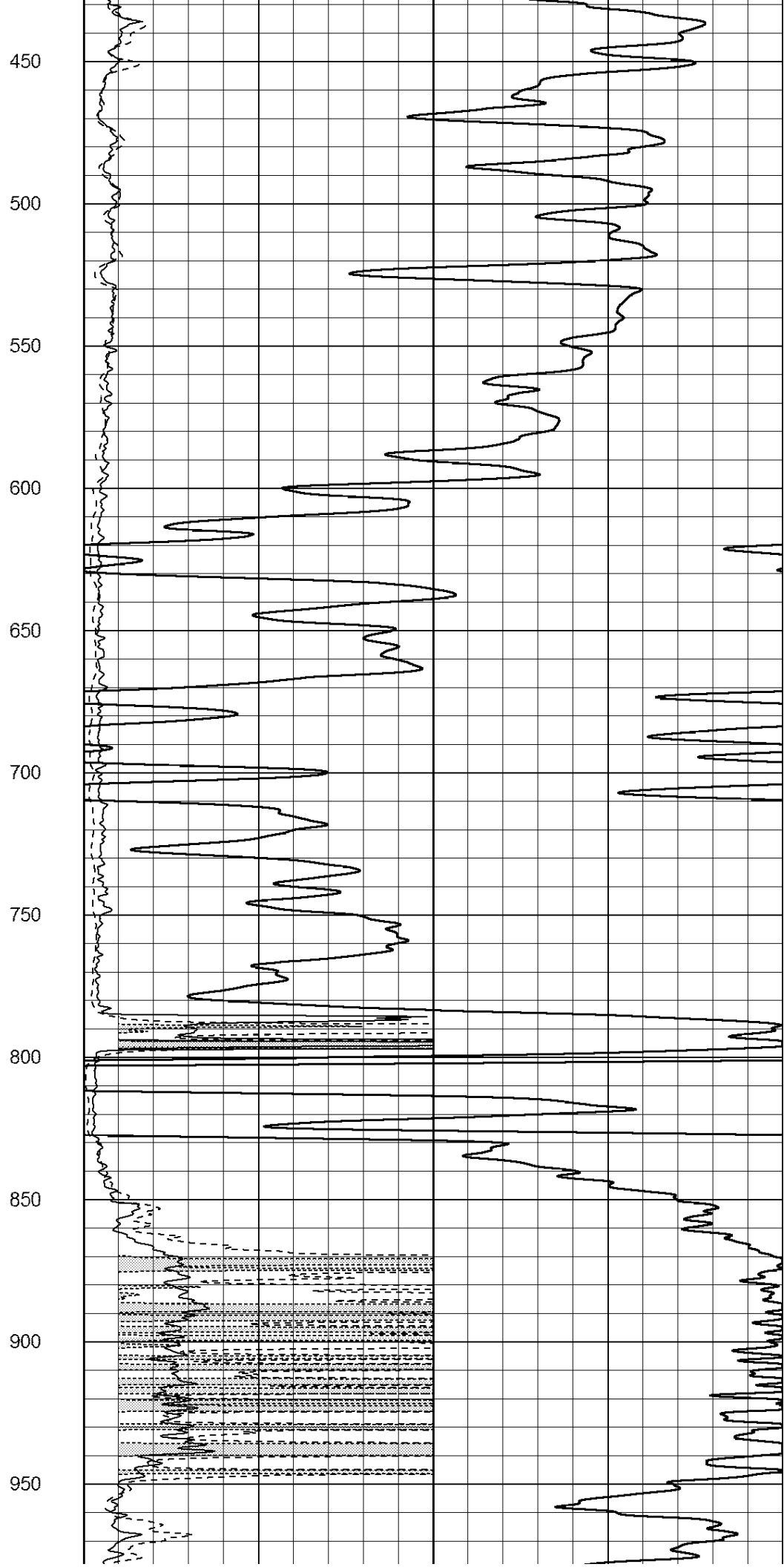
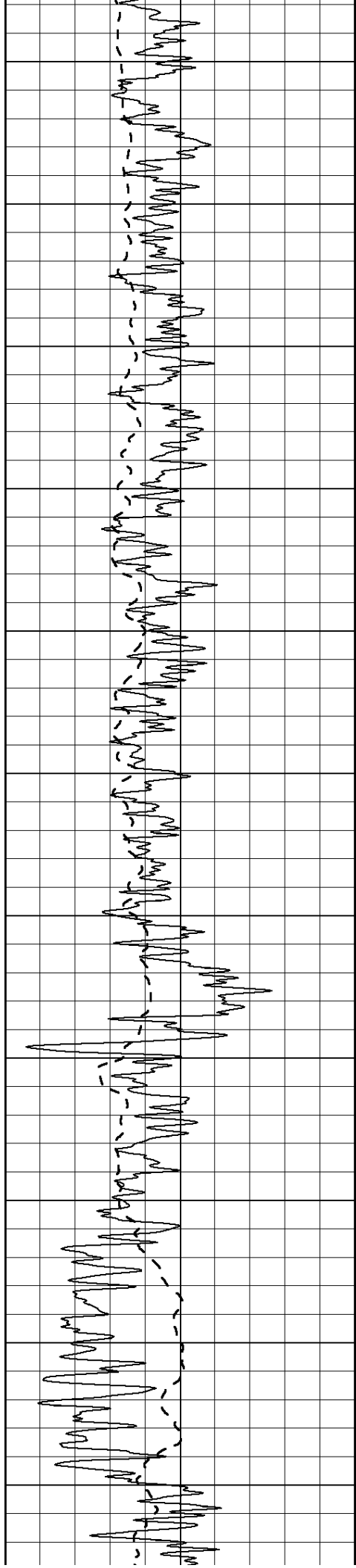
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 -100 SP (mV) 100

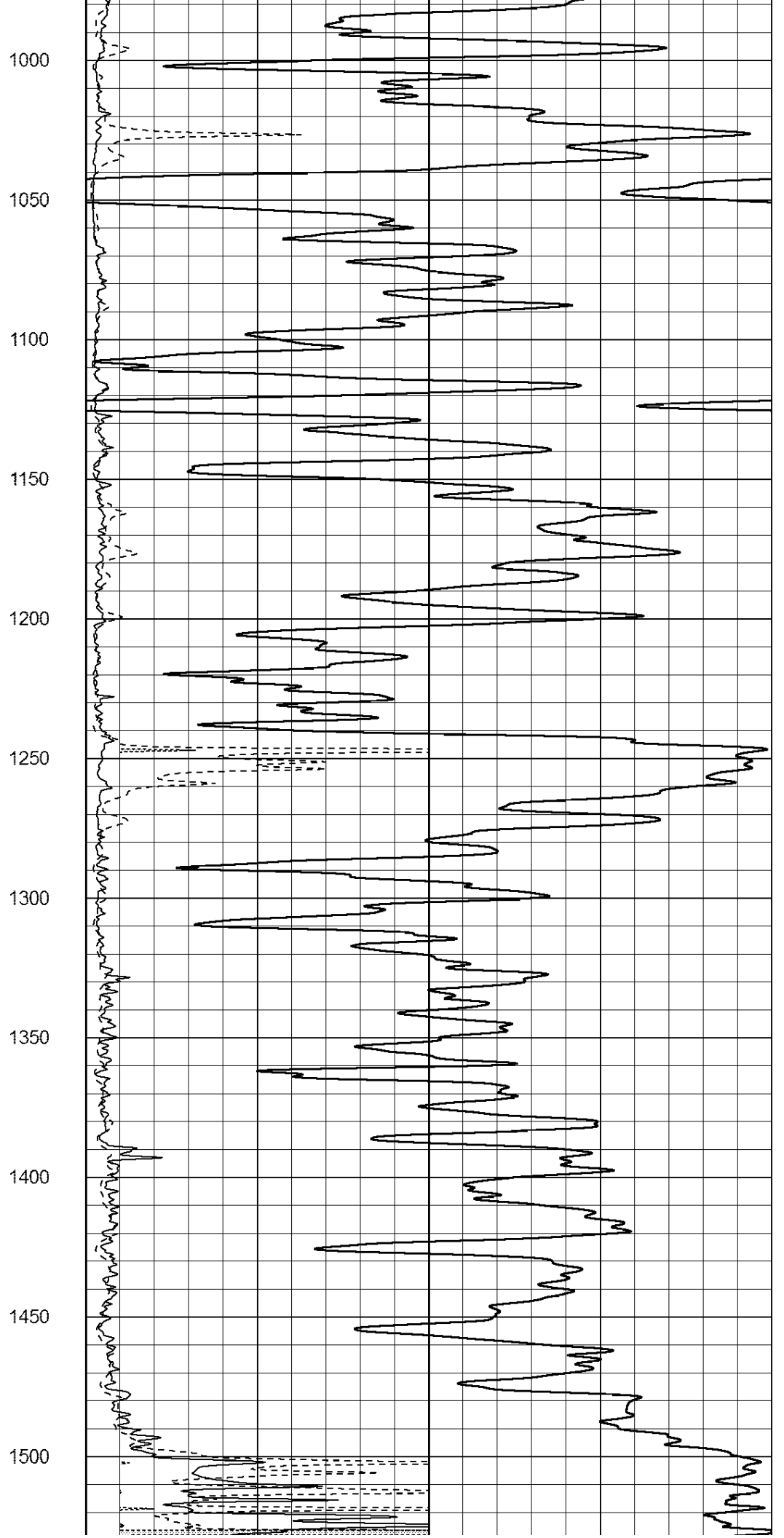
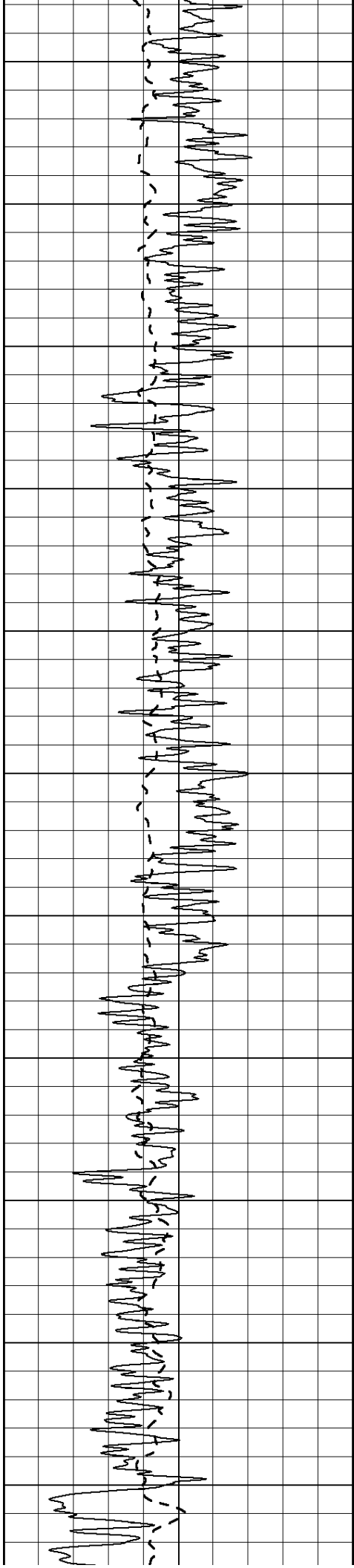
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 0 RILD (Ohm-m) 50

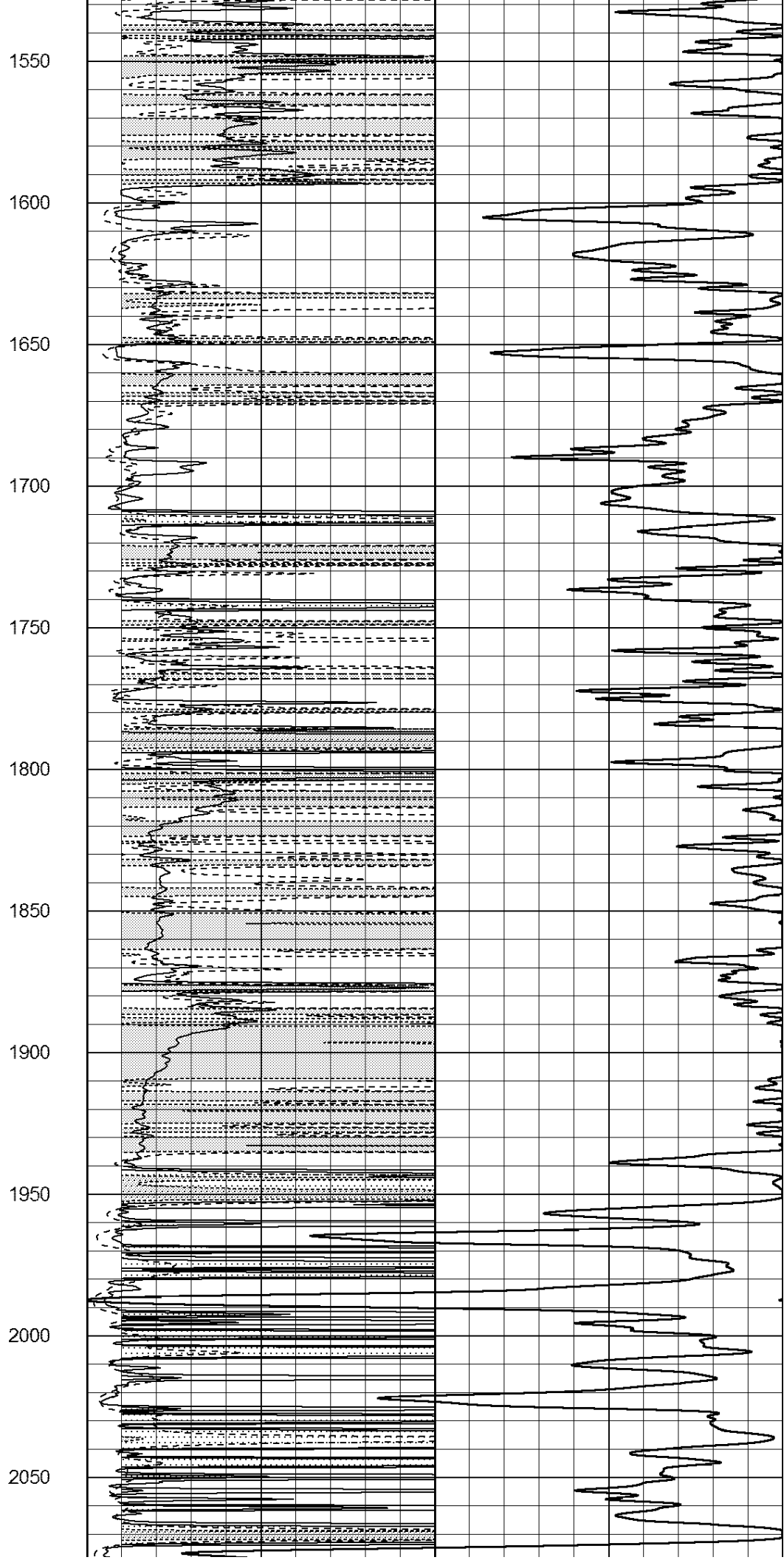
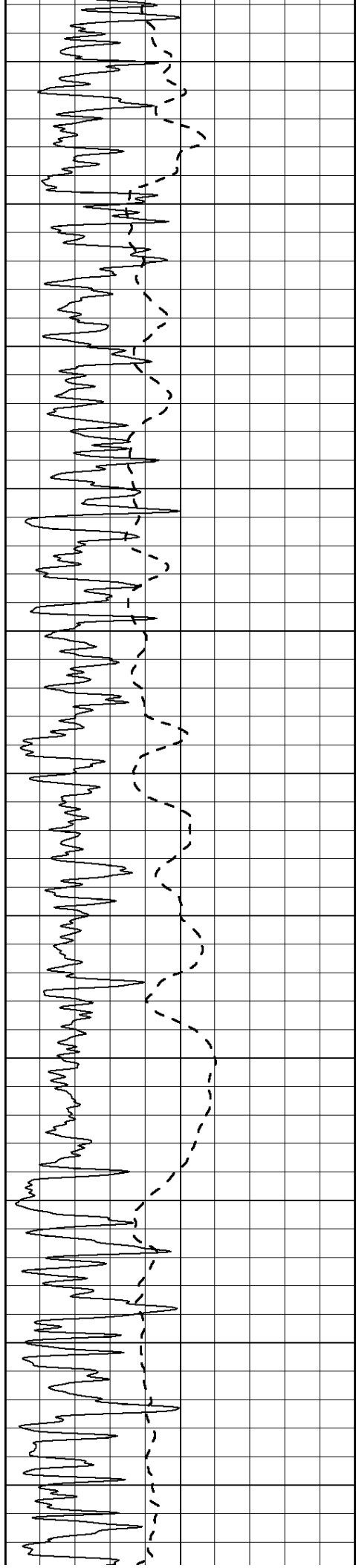
1000 CILD (mmho/m) 0

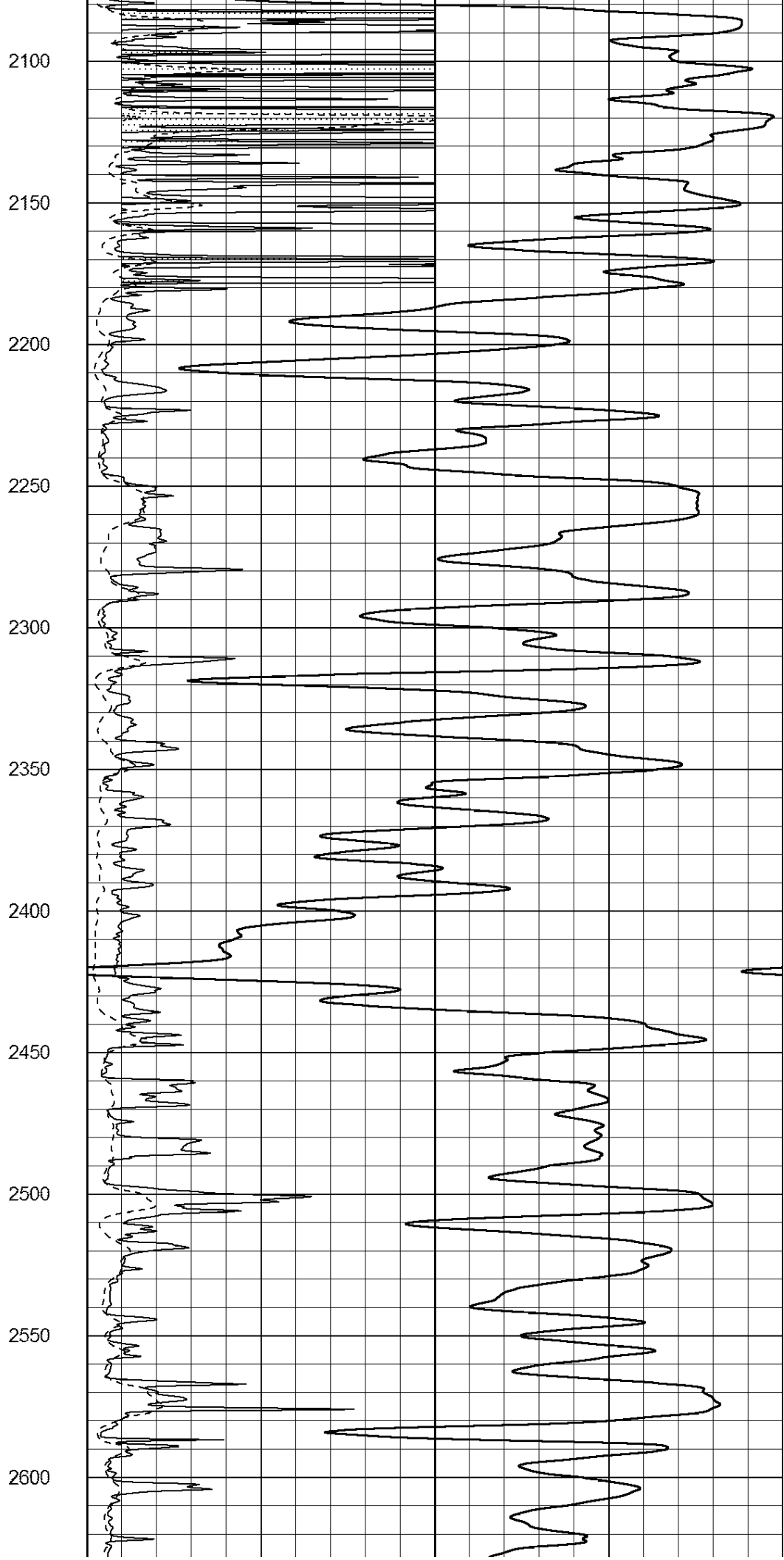
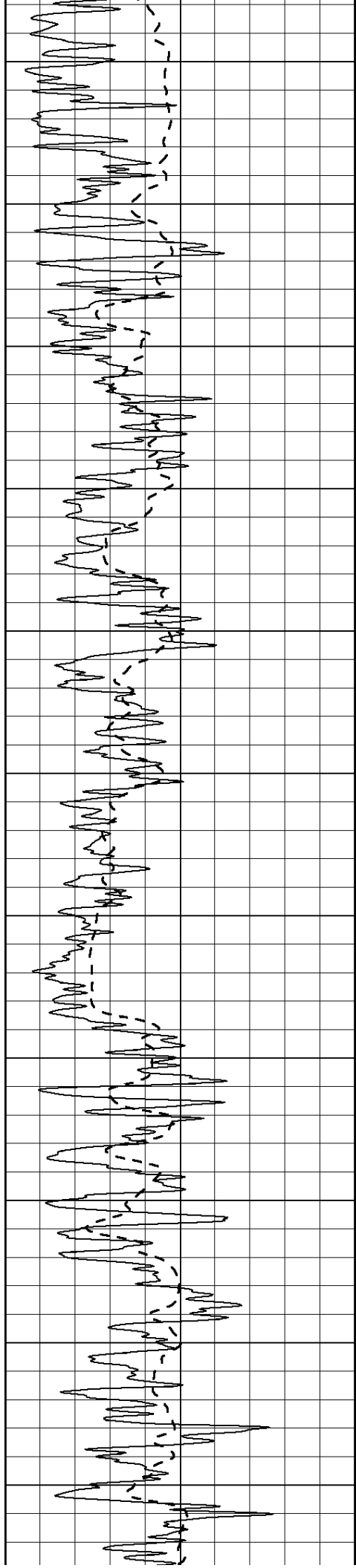
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 50 RLL3 X10 (Ohm-m) 500

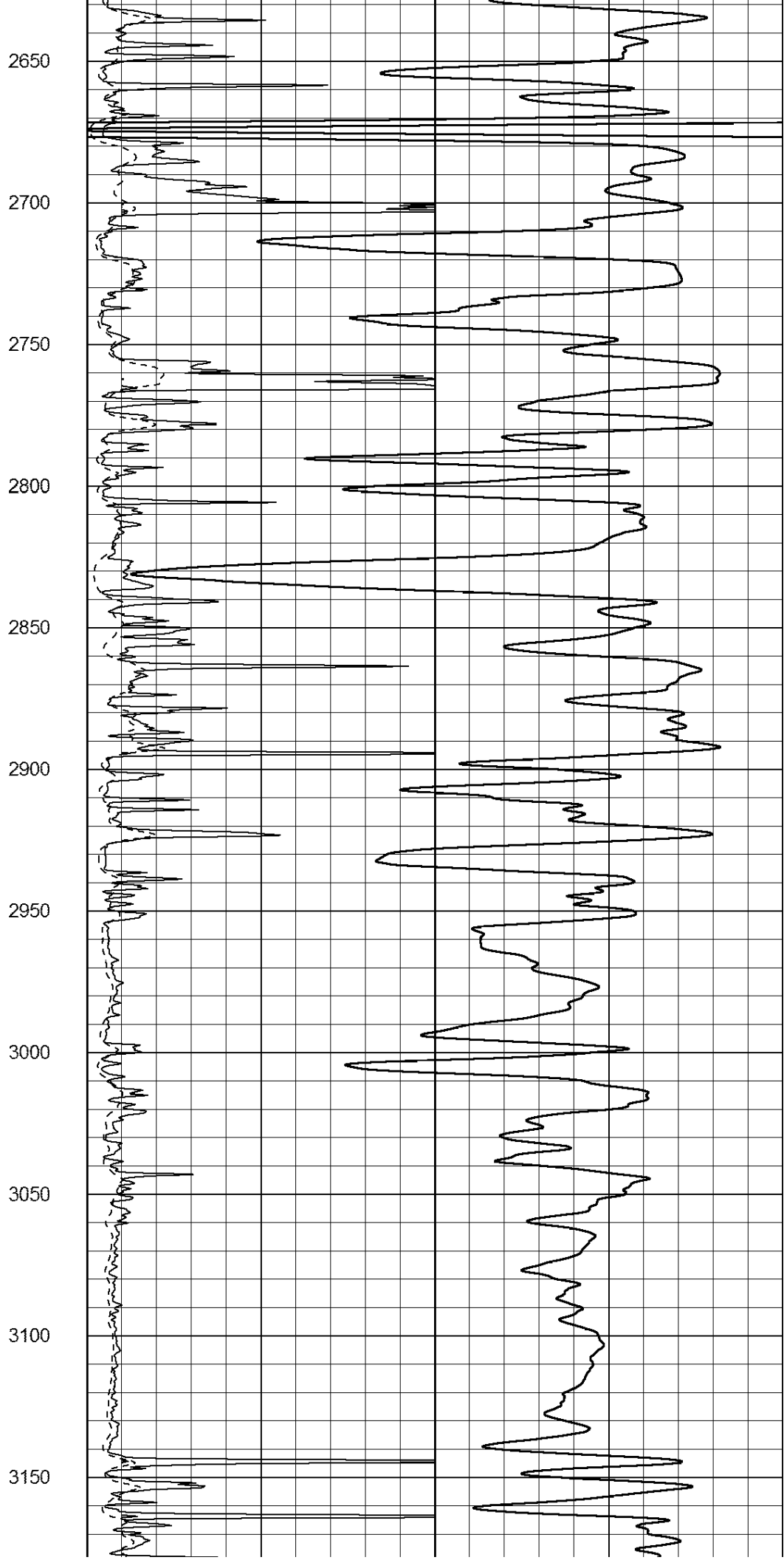
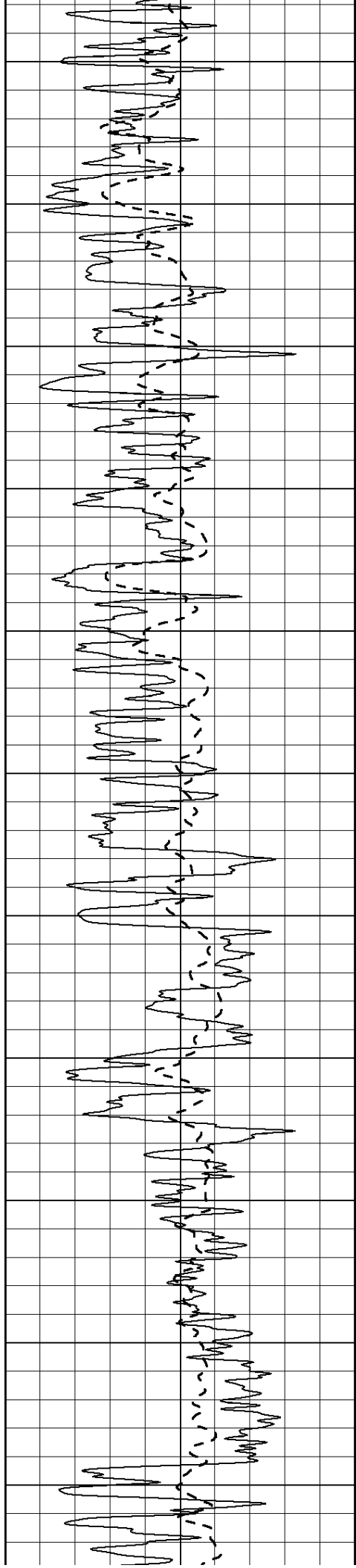


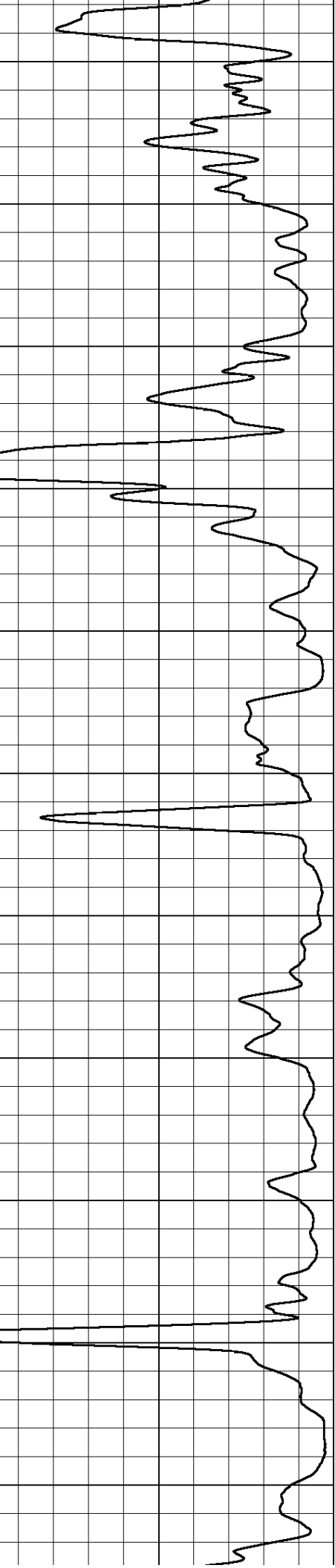
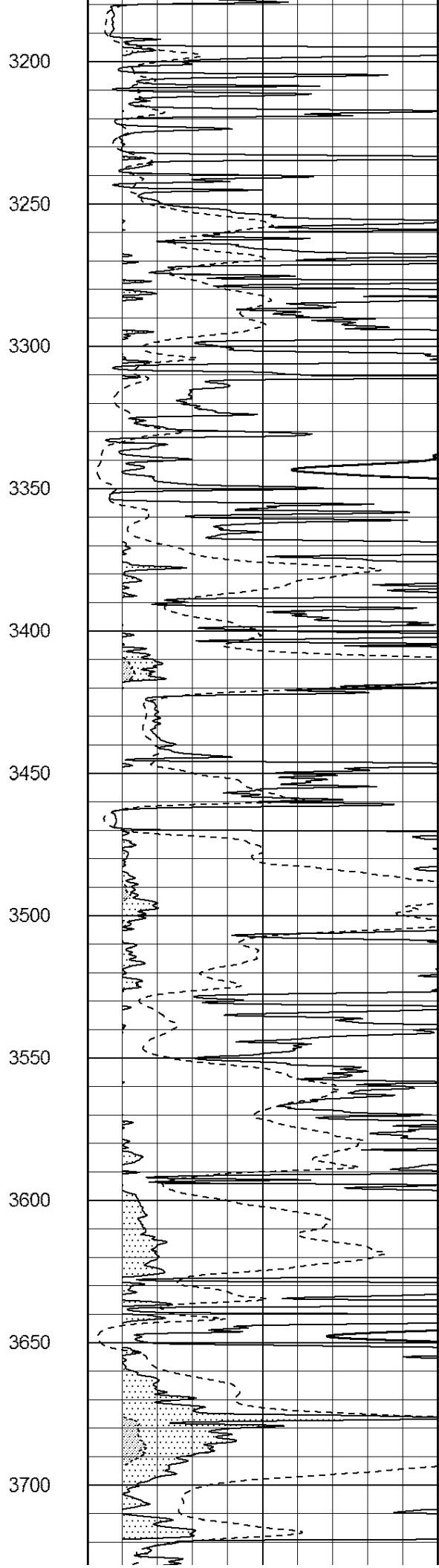
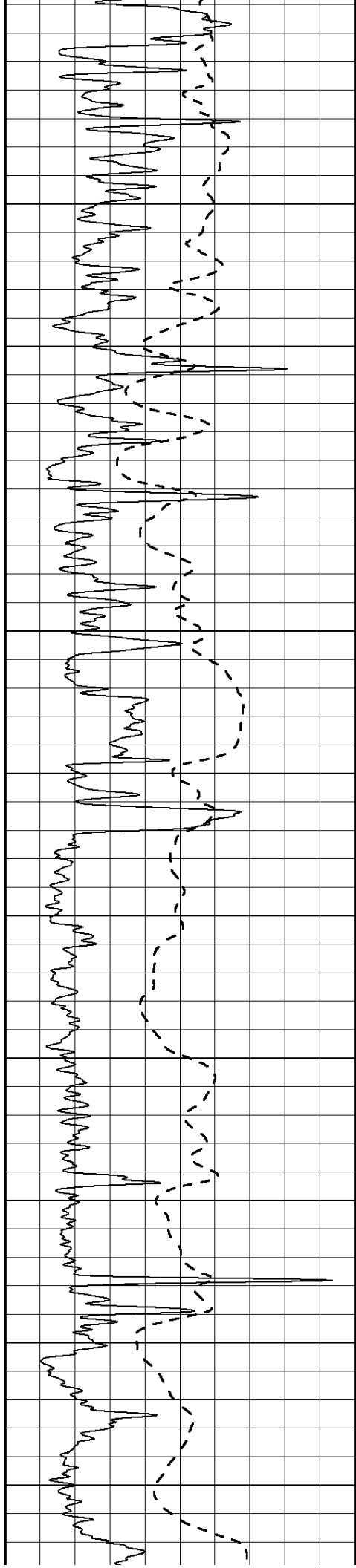


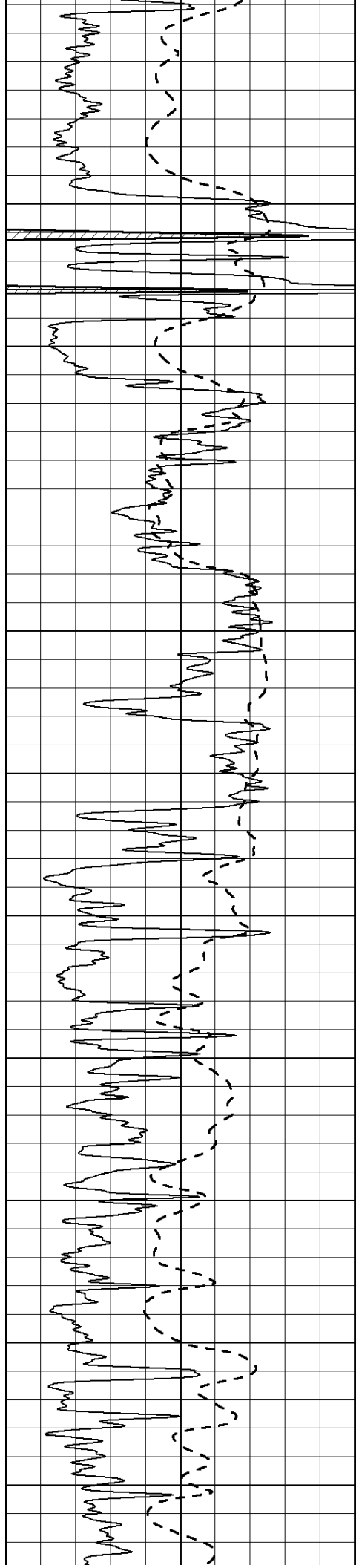












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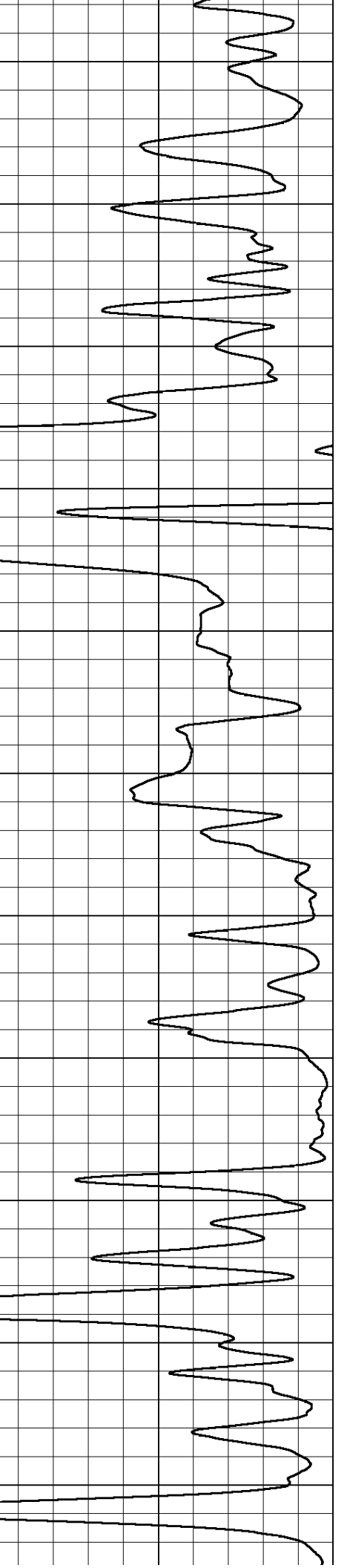
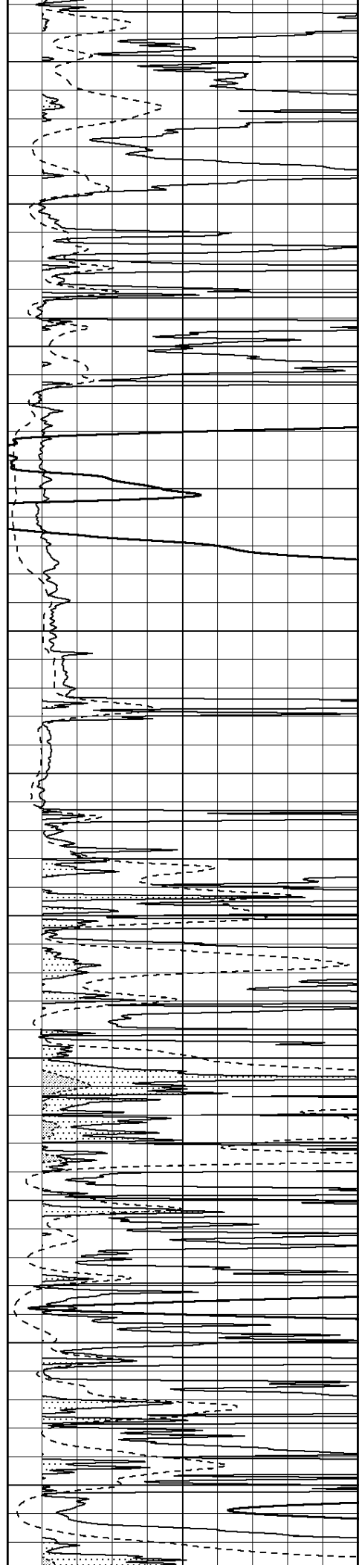
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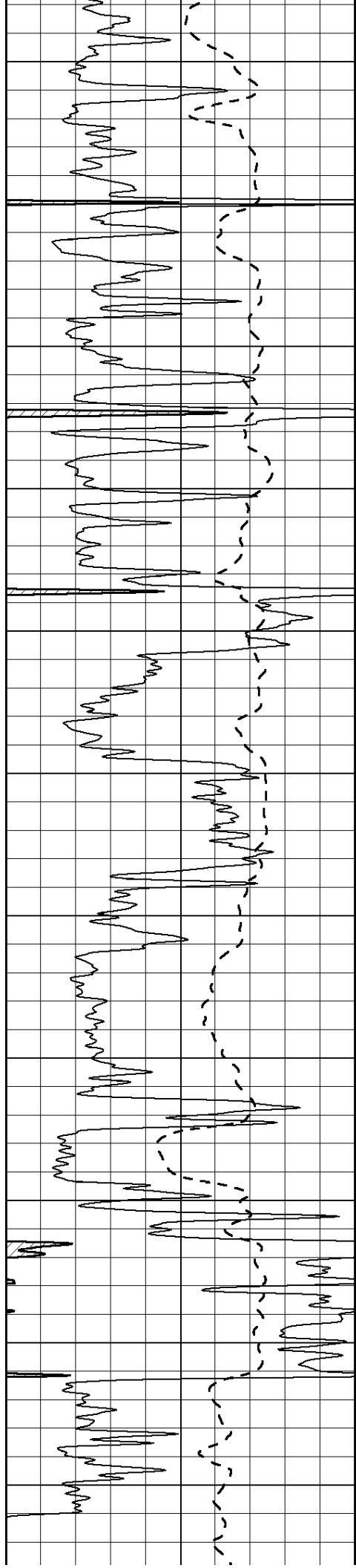
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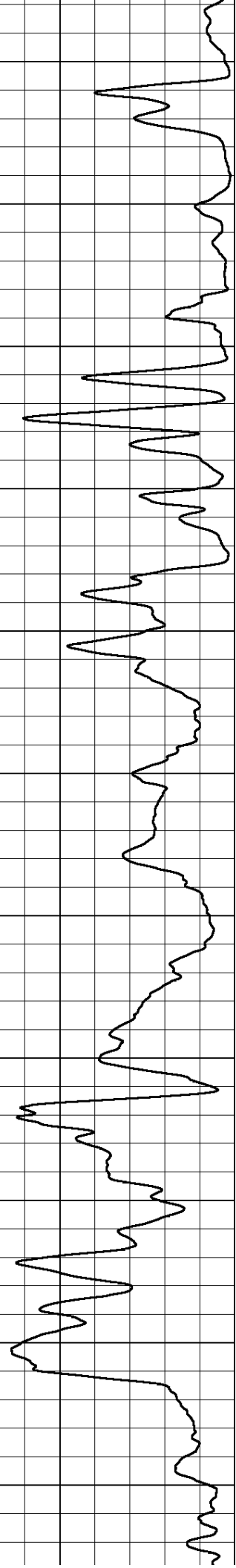
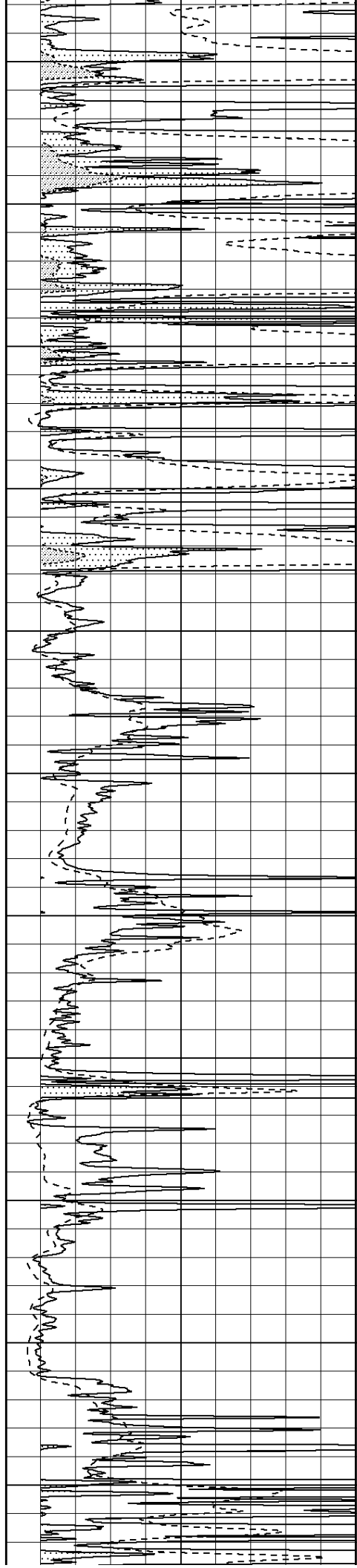
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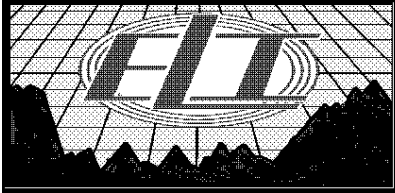
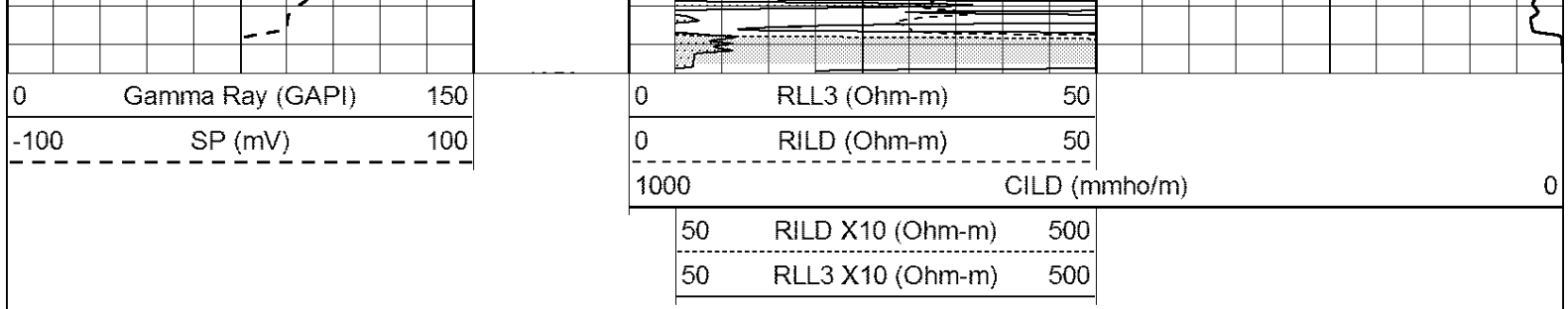
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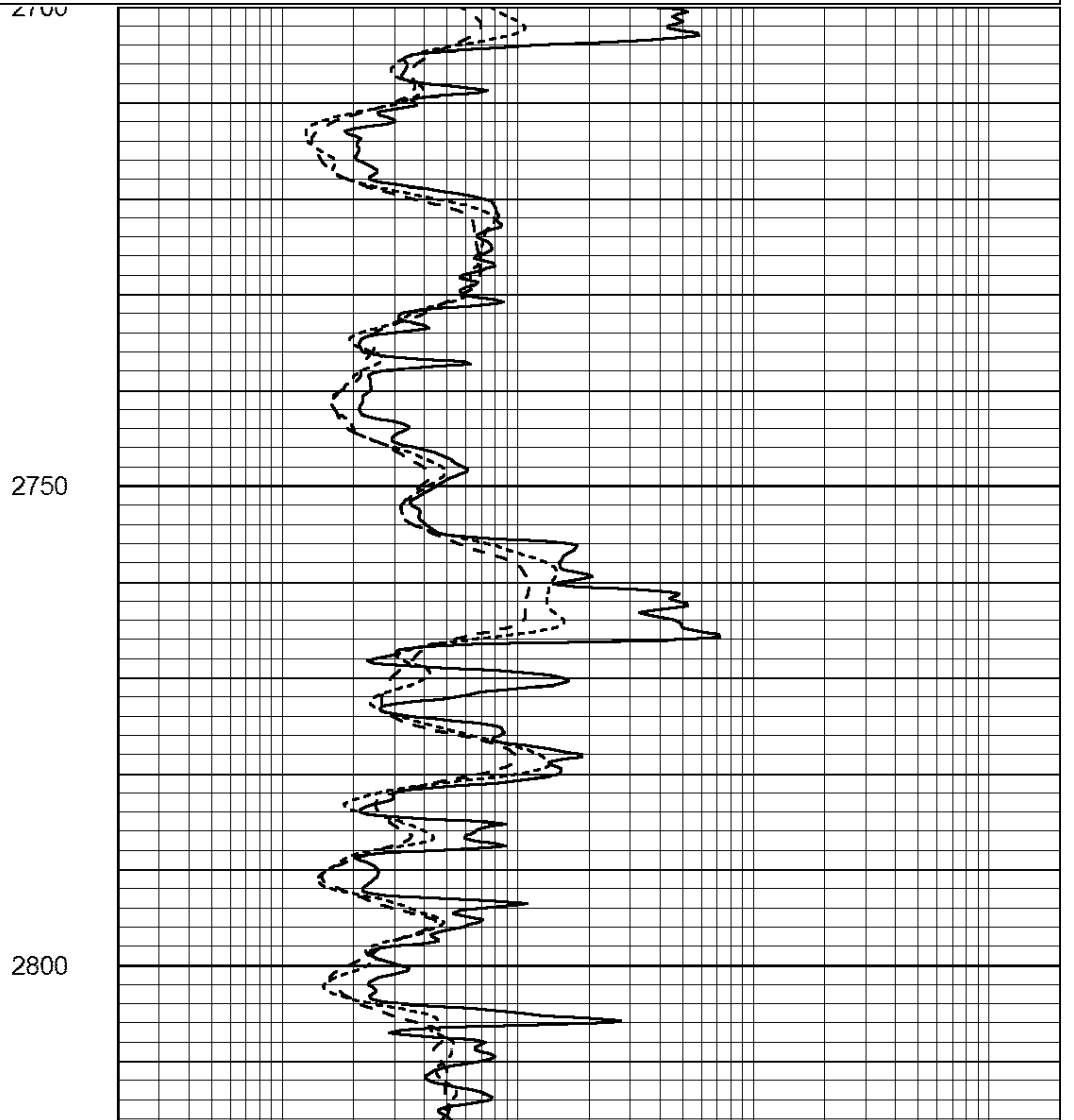
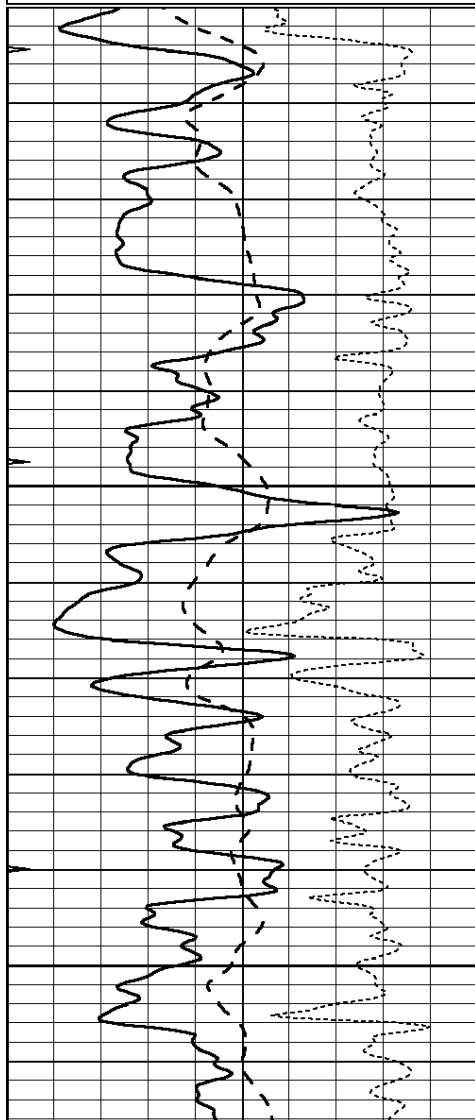


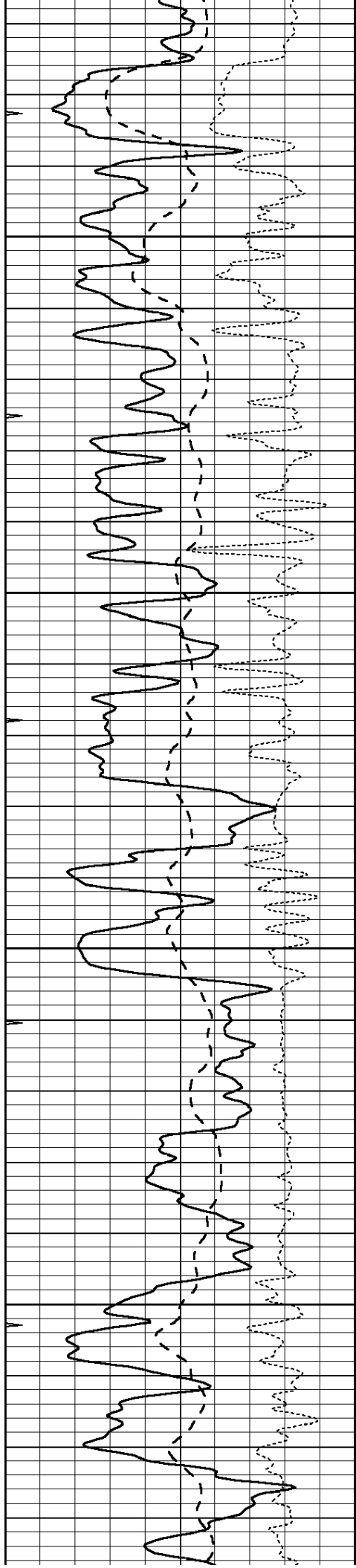


# MAIN PASS

Database File: 3692pe.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jun 21 09:47:59 2019 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



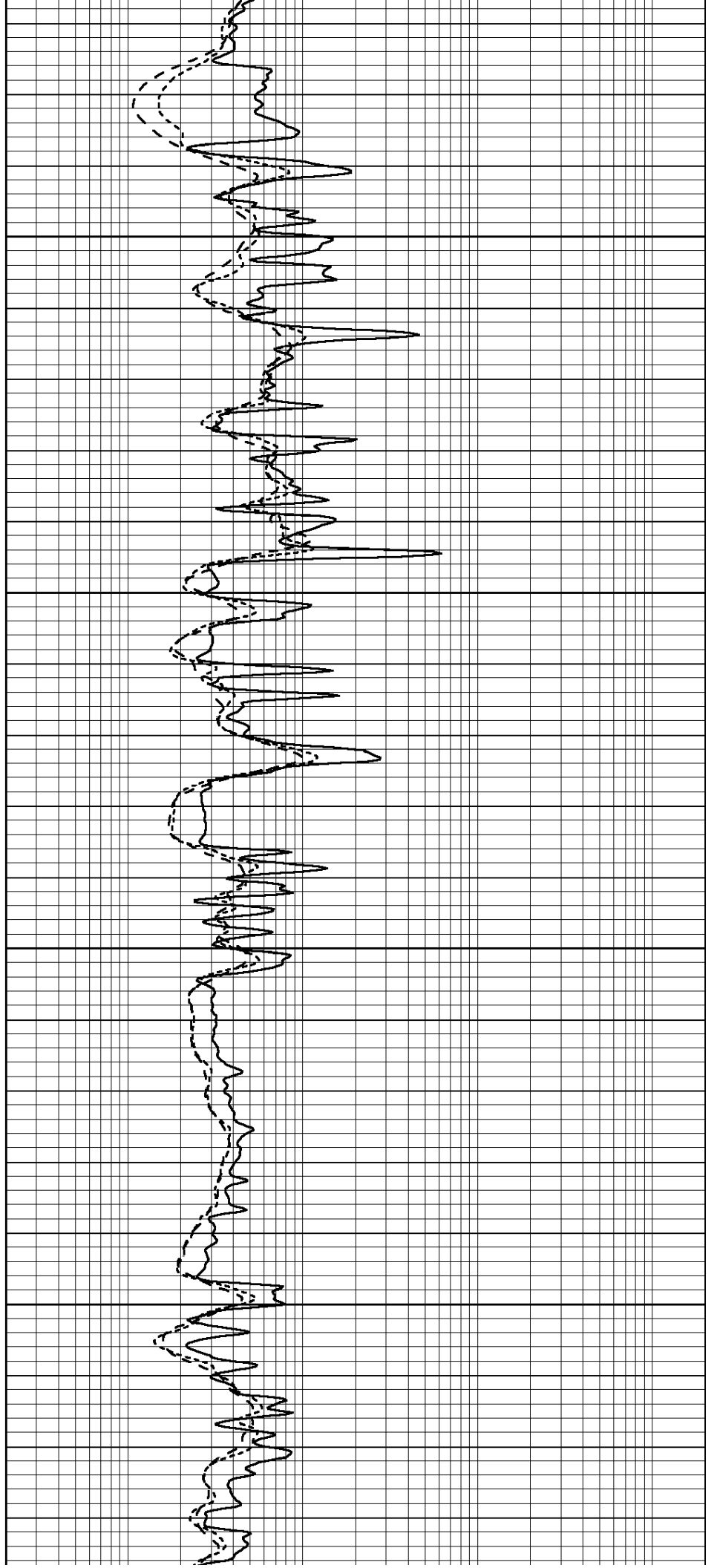


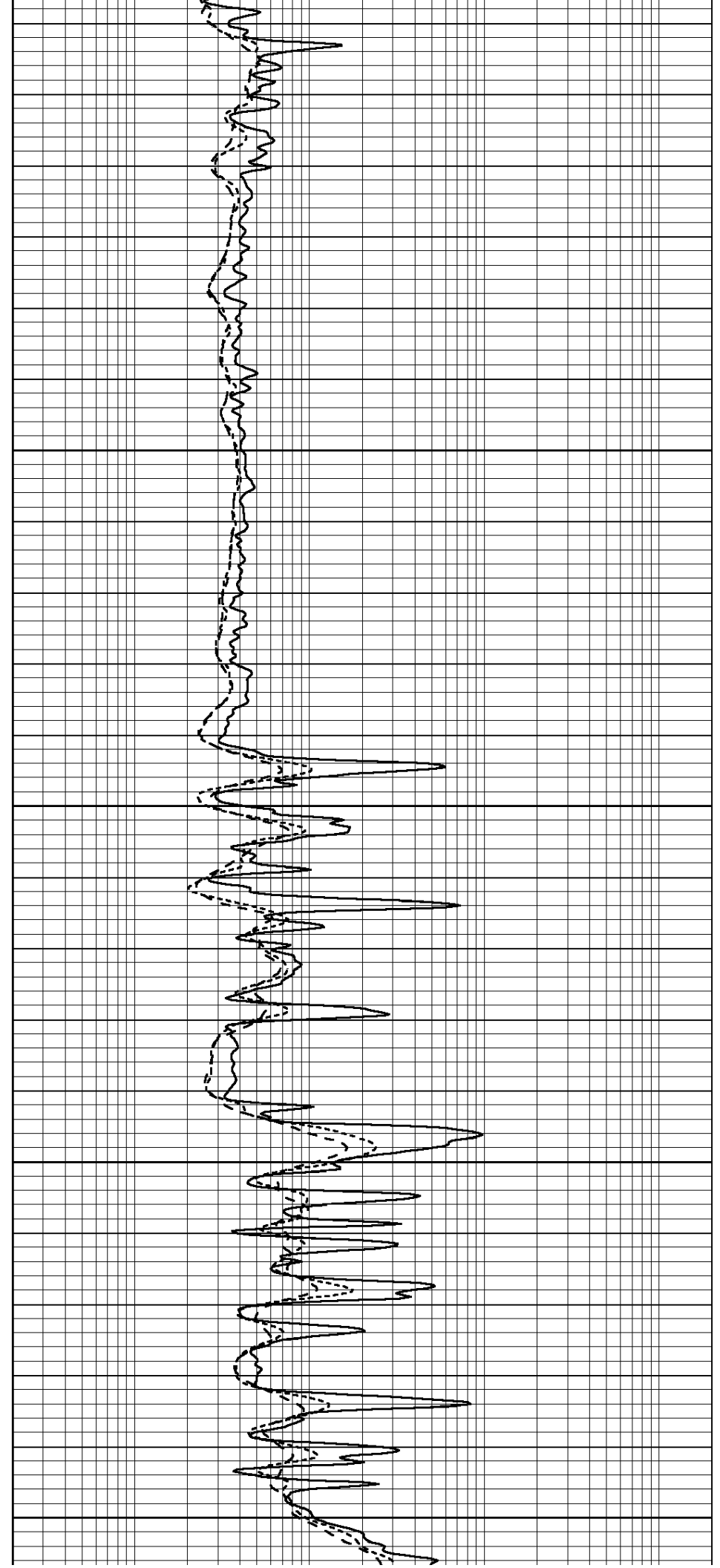
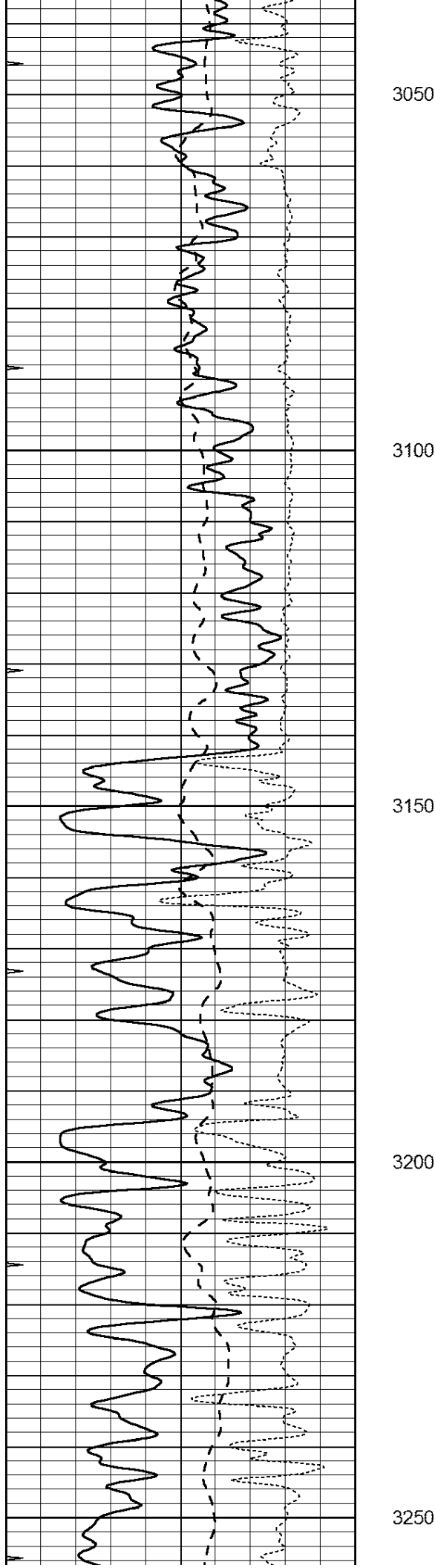
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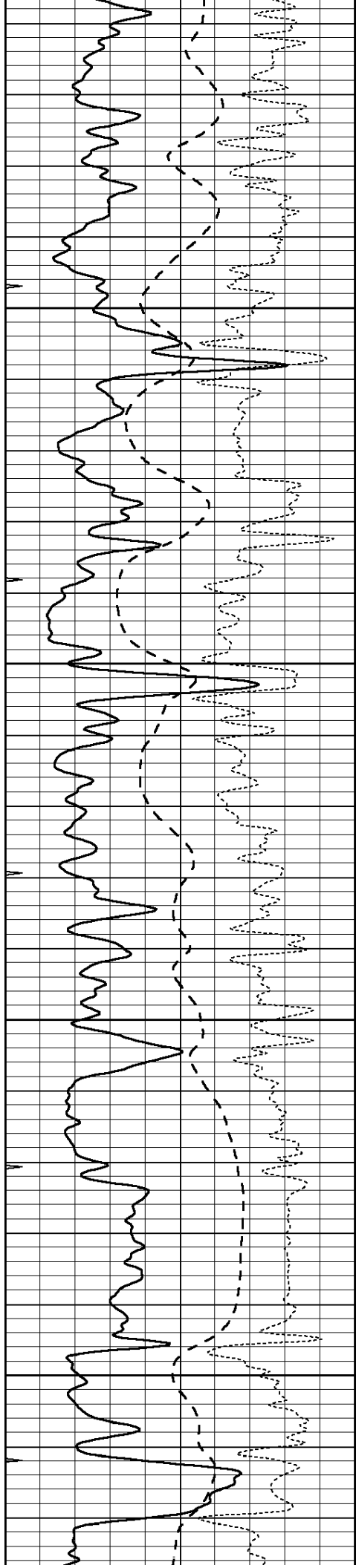
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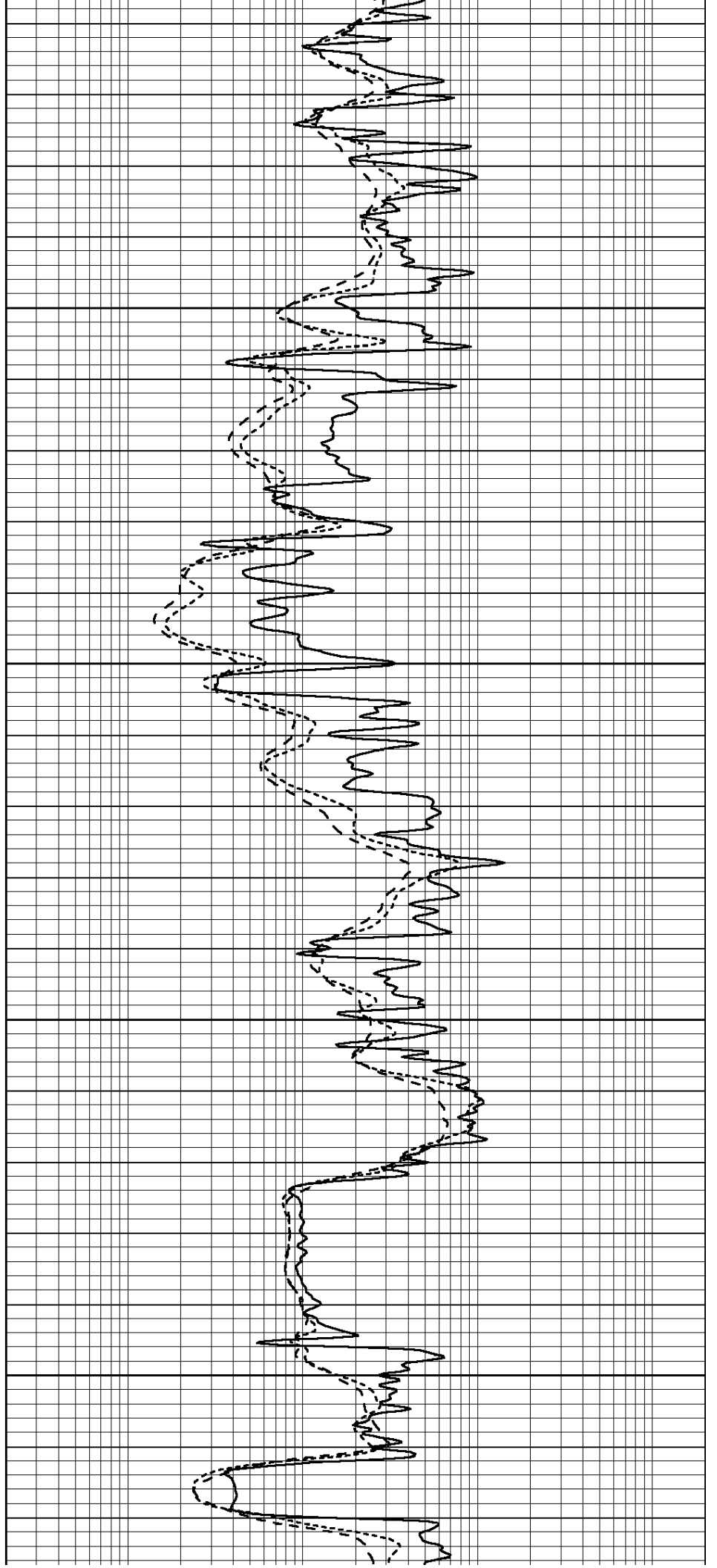


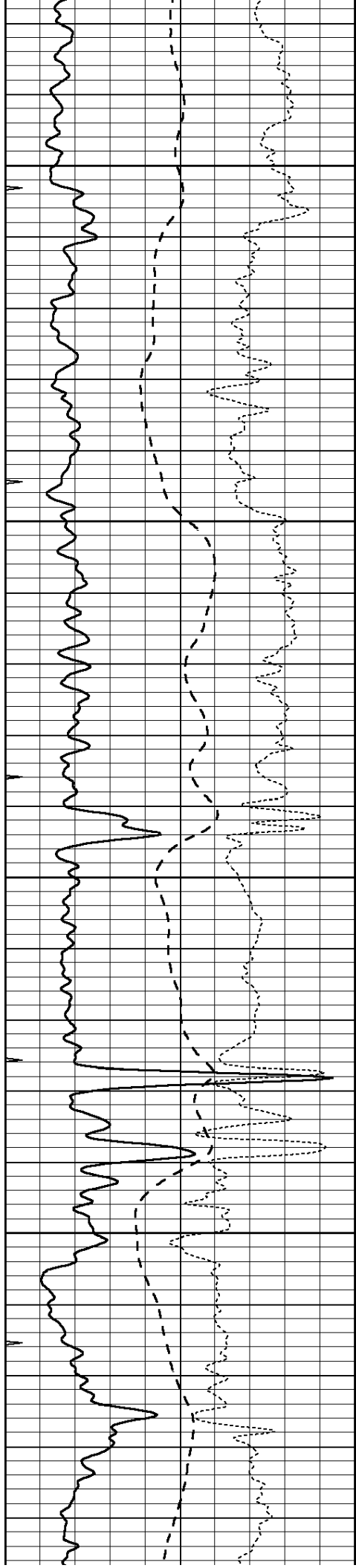
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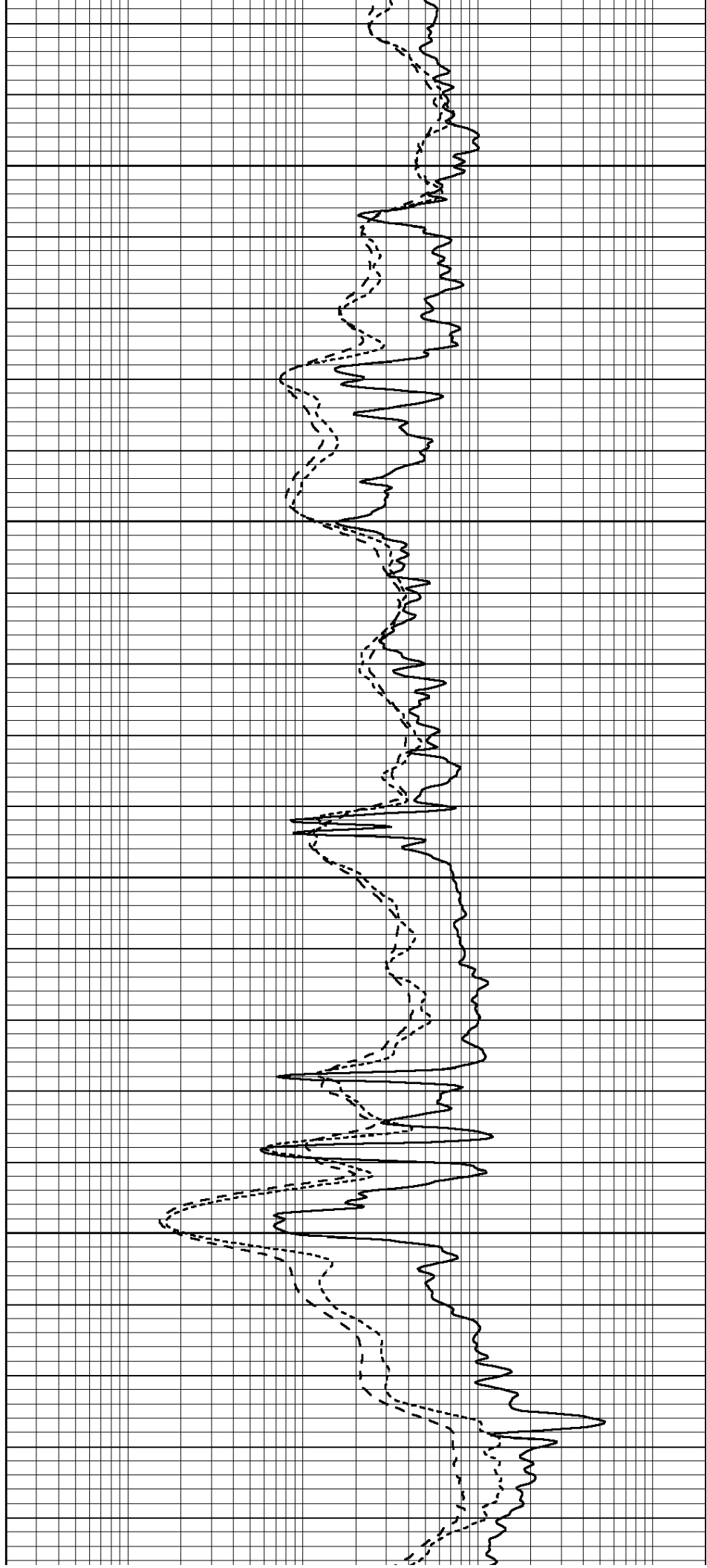


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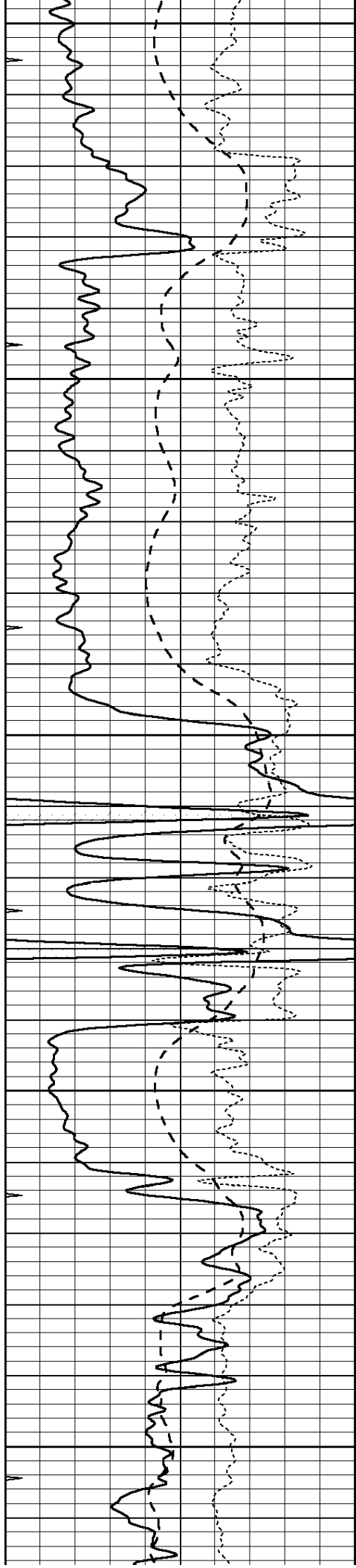


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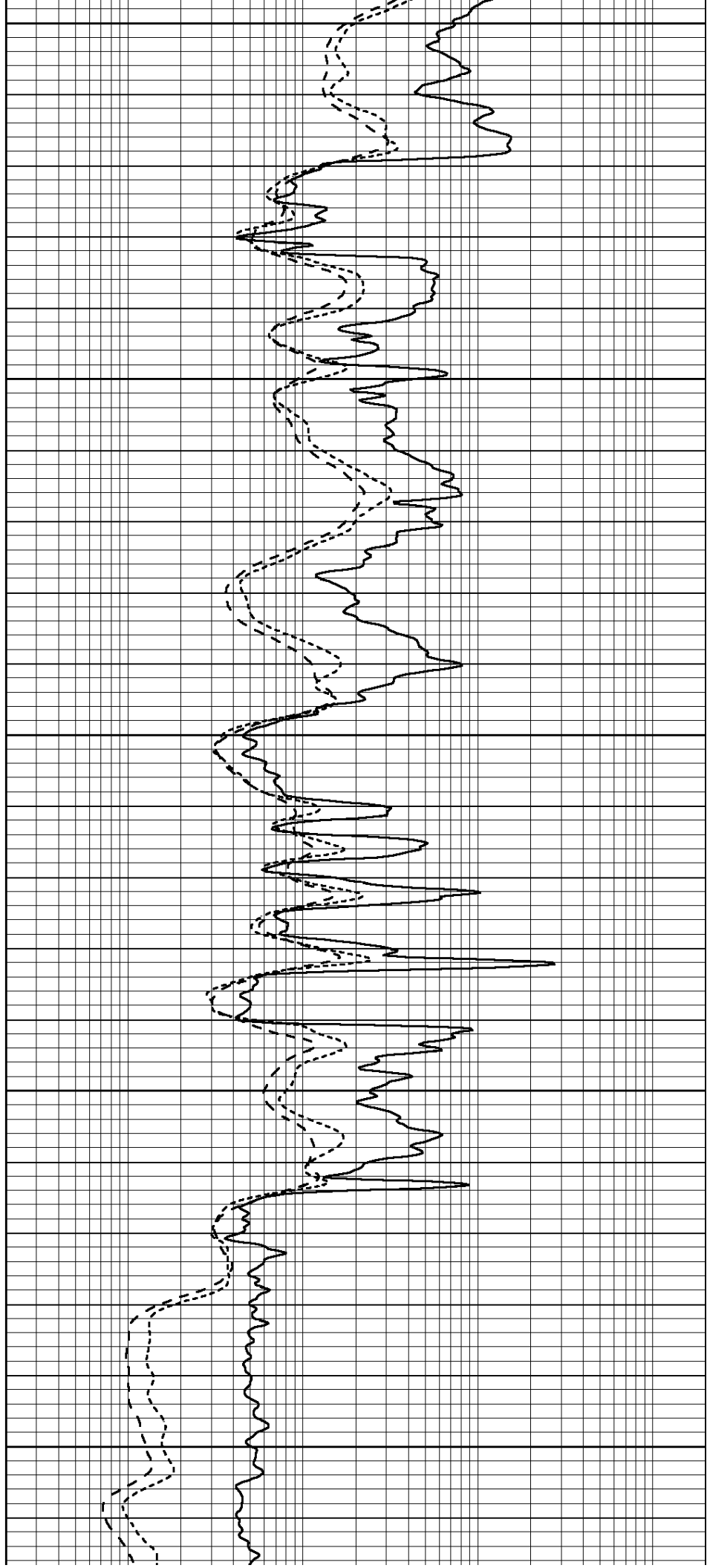
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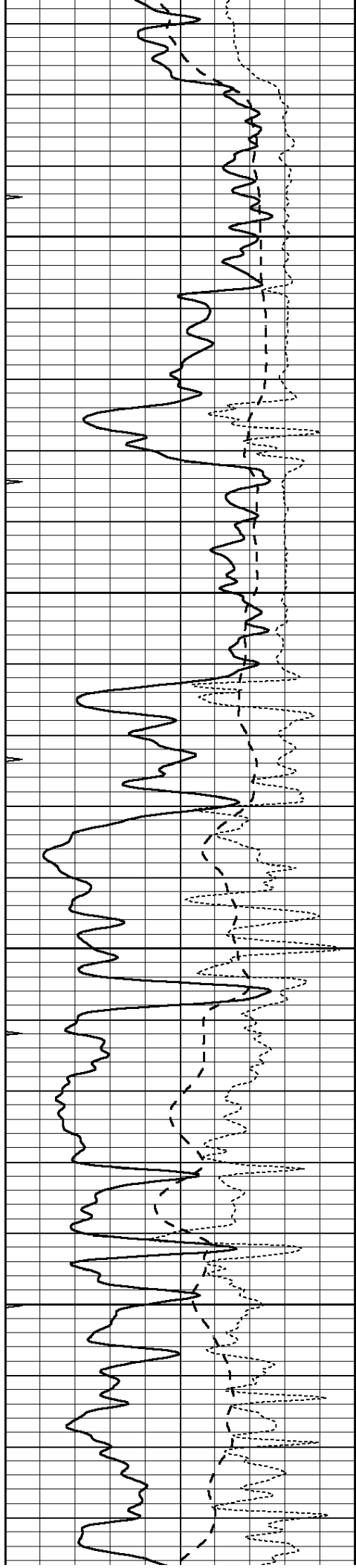
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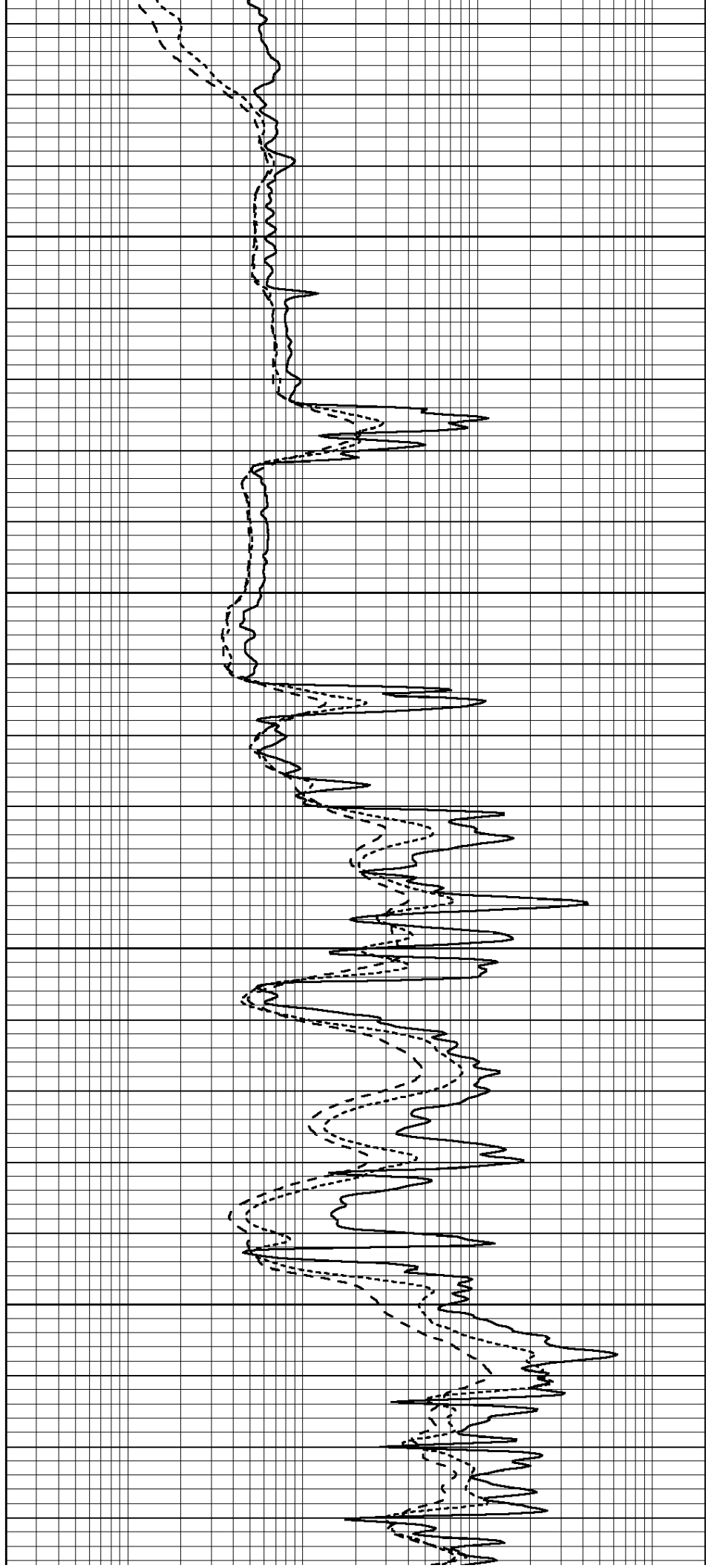


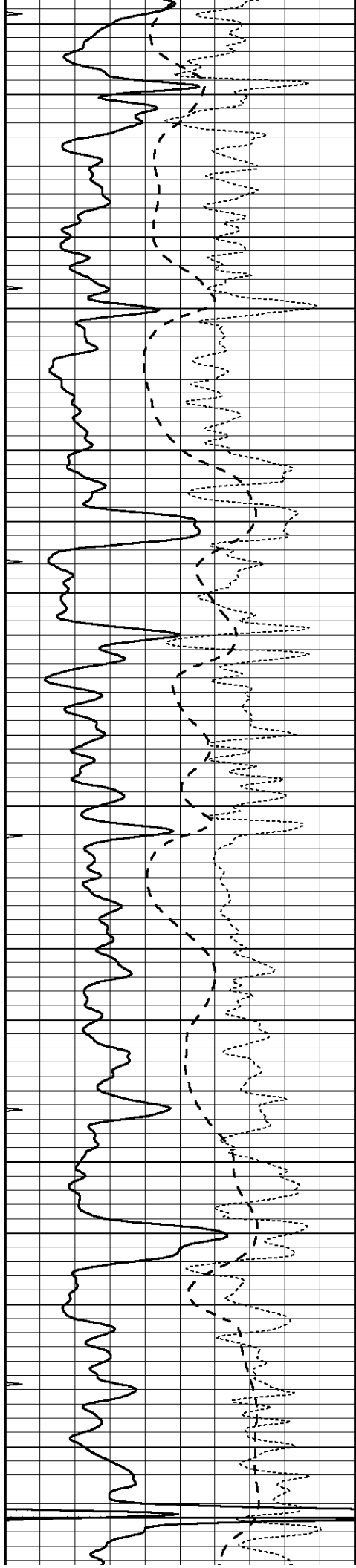
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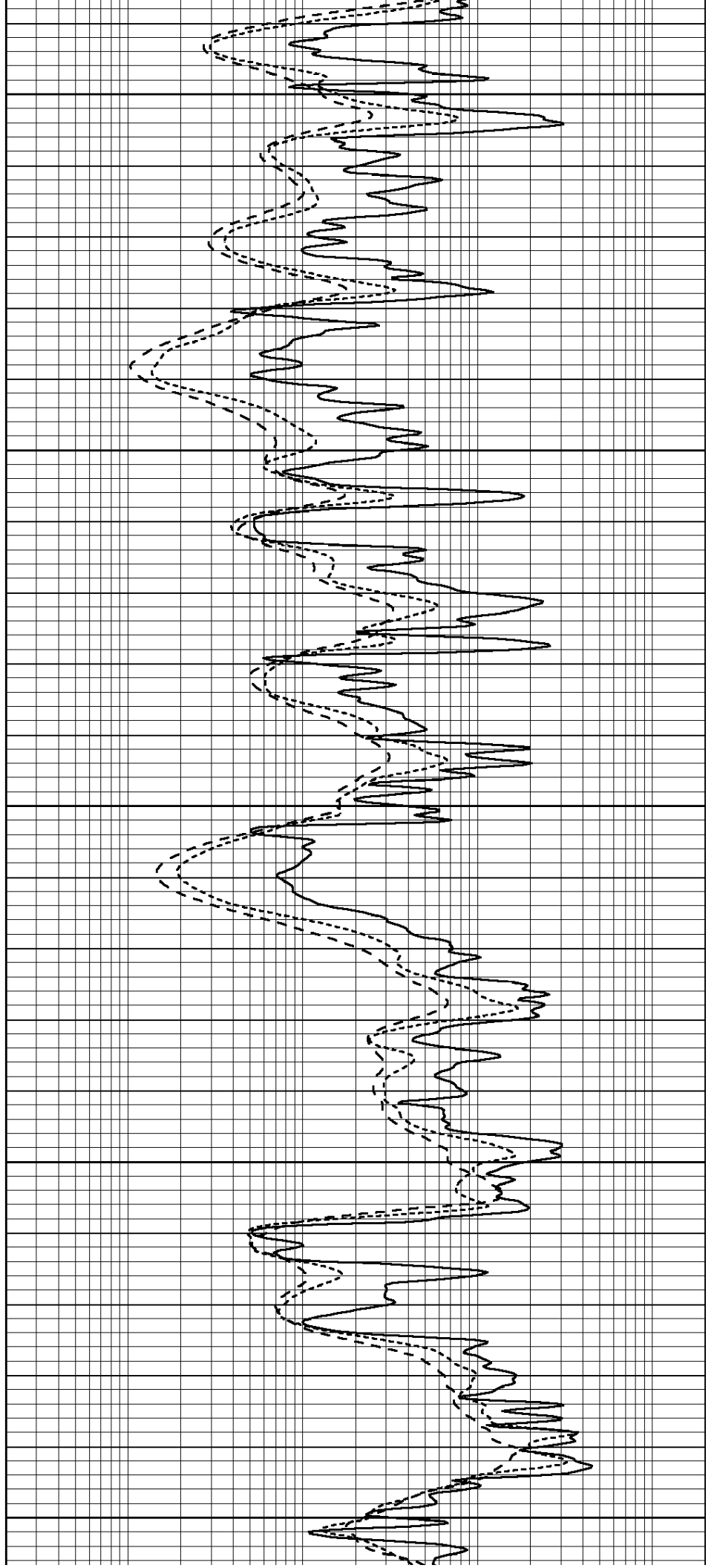
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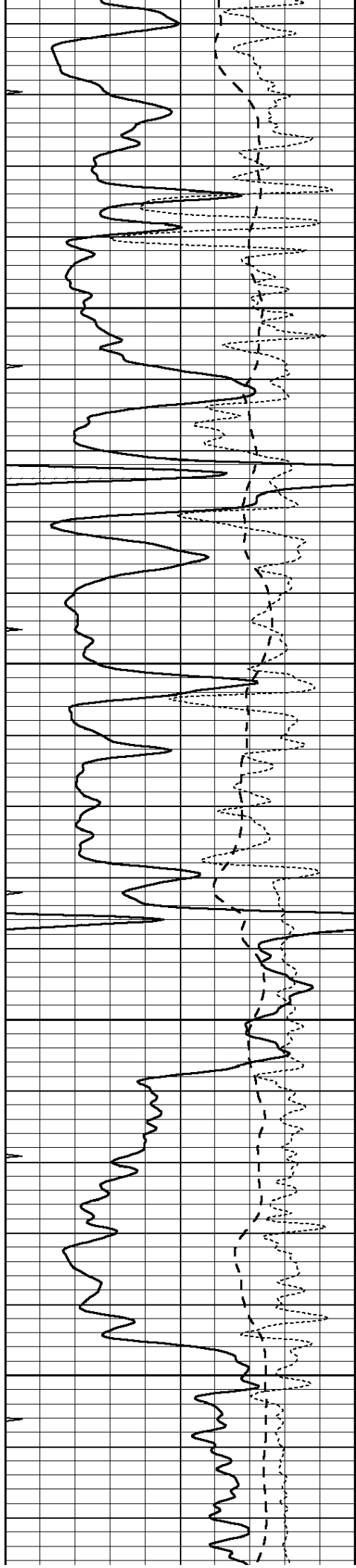
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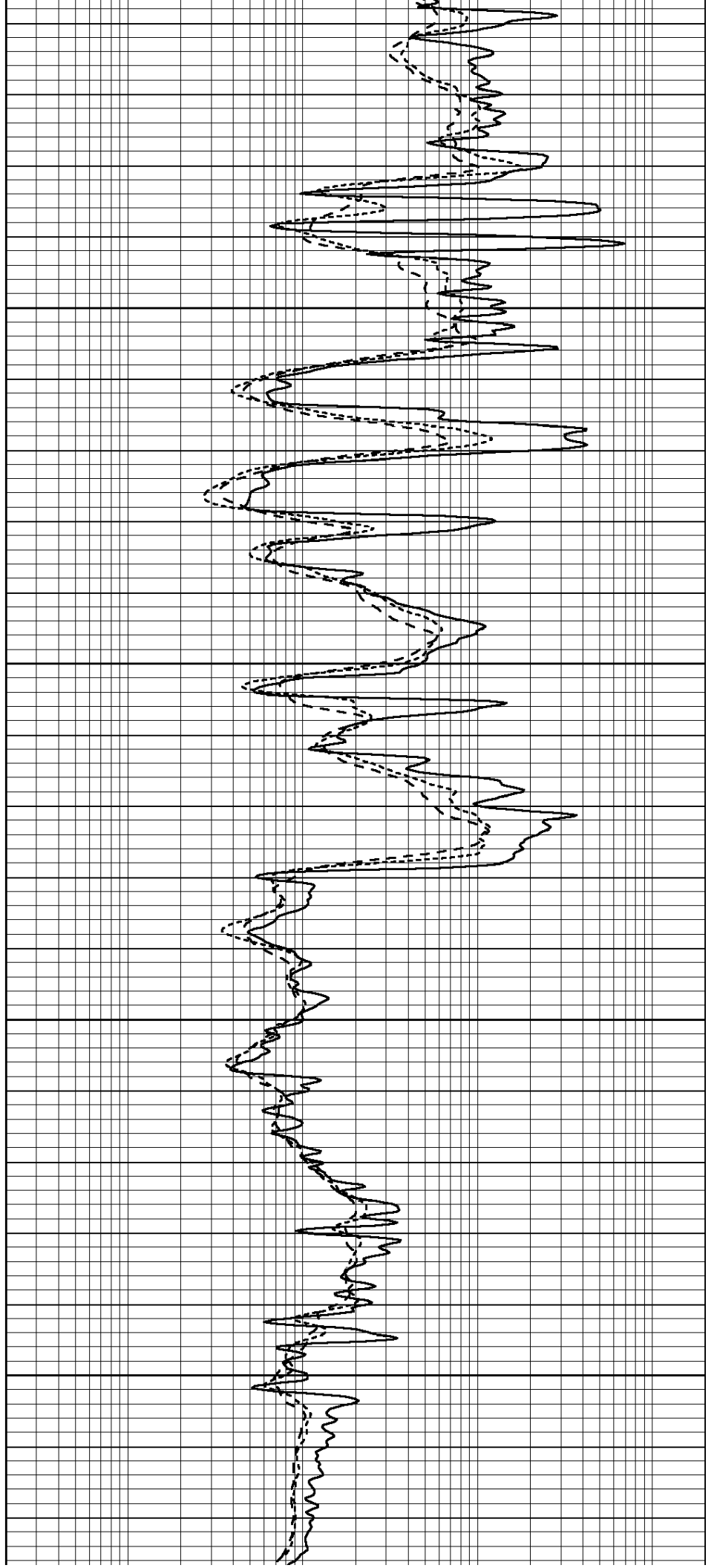


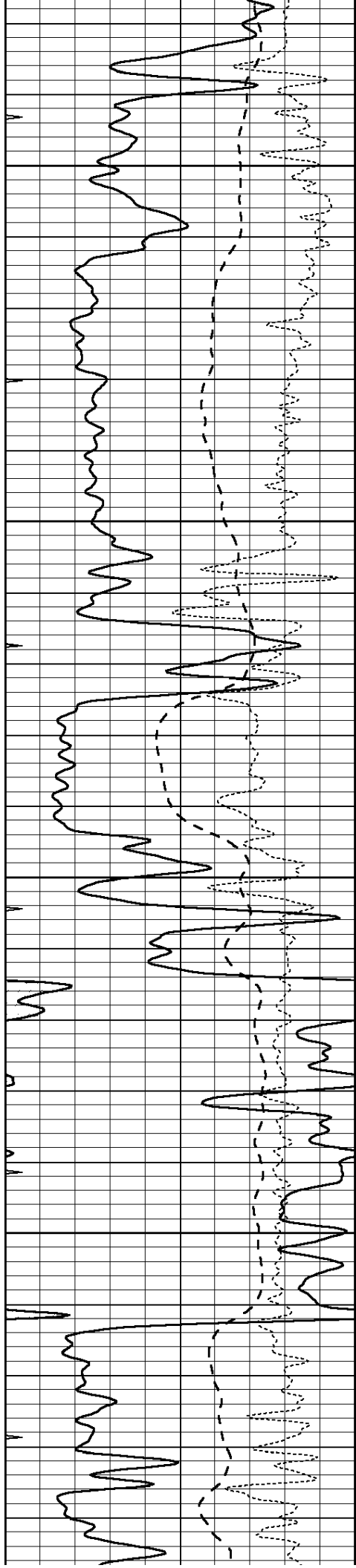
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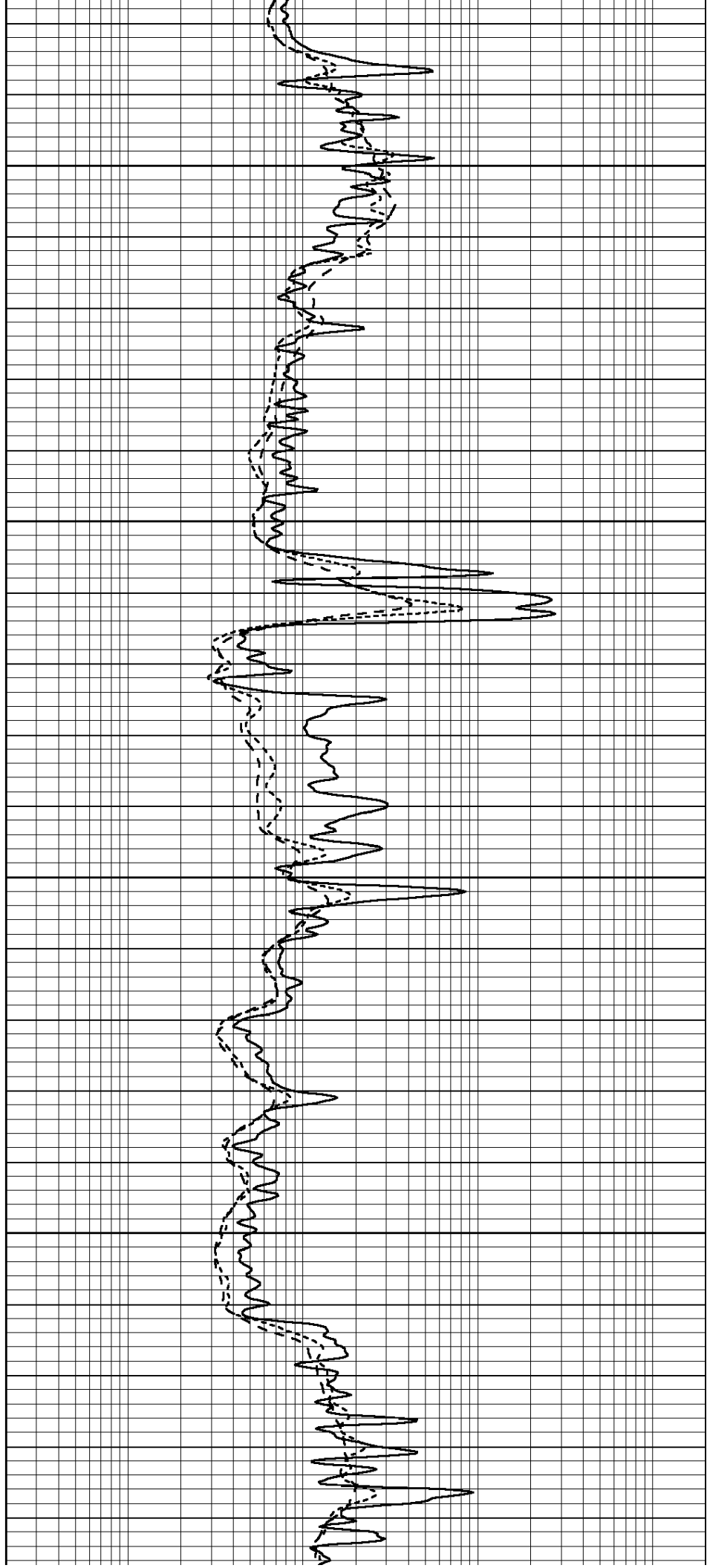


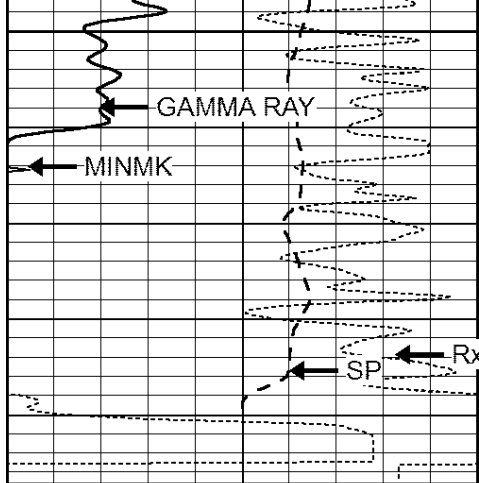
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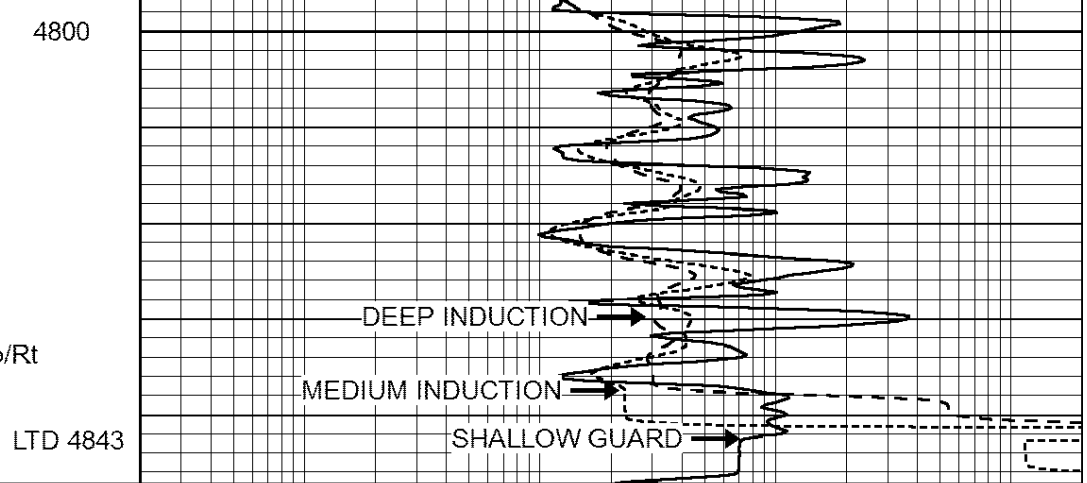
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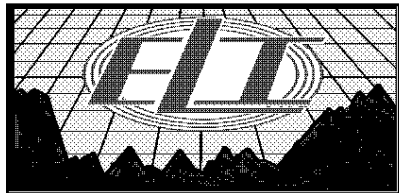




0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



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

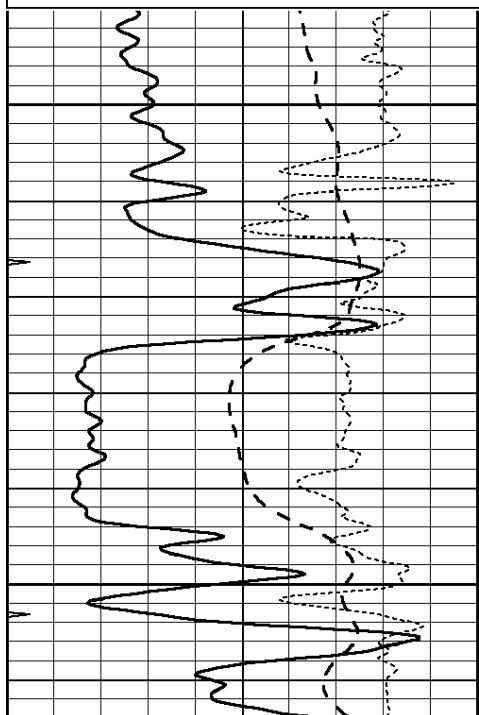


# REPEAT SECTION

Database File: 3692pe.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jun 21 08:50:15 2019 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

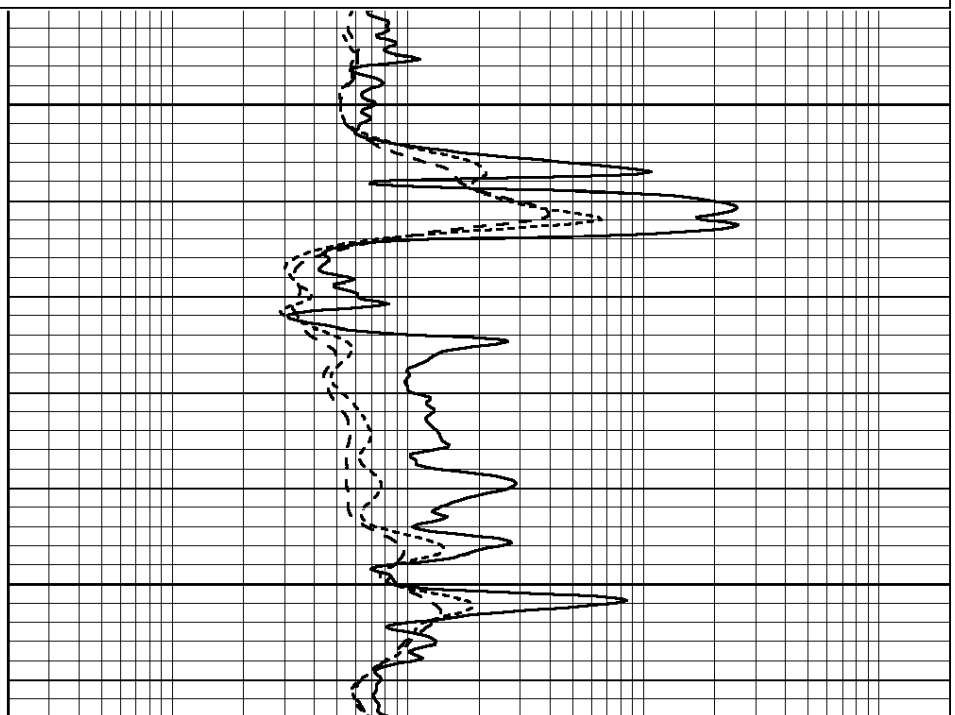
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

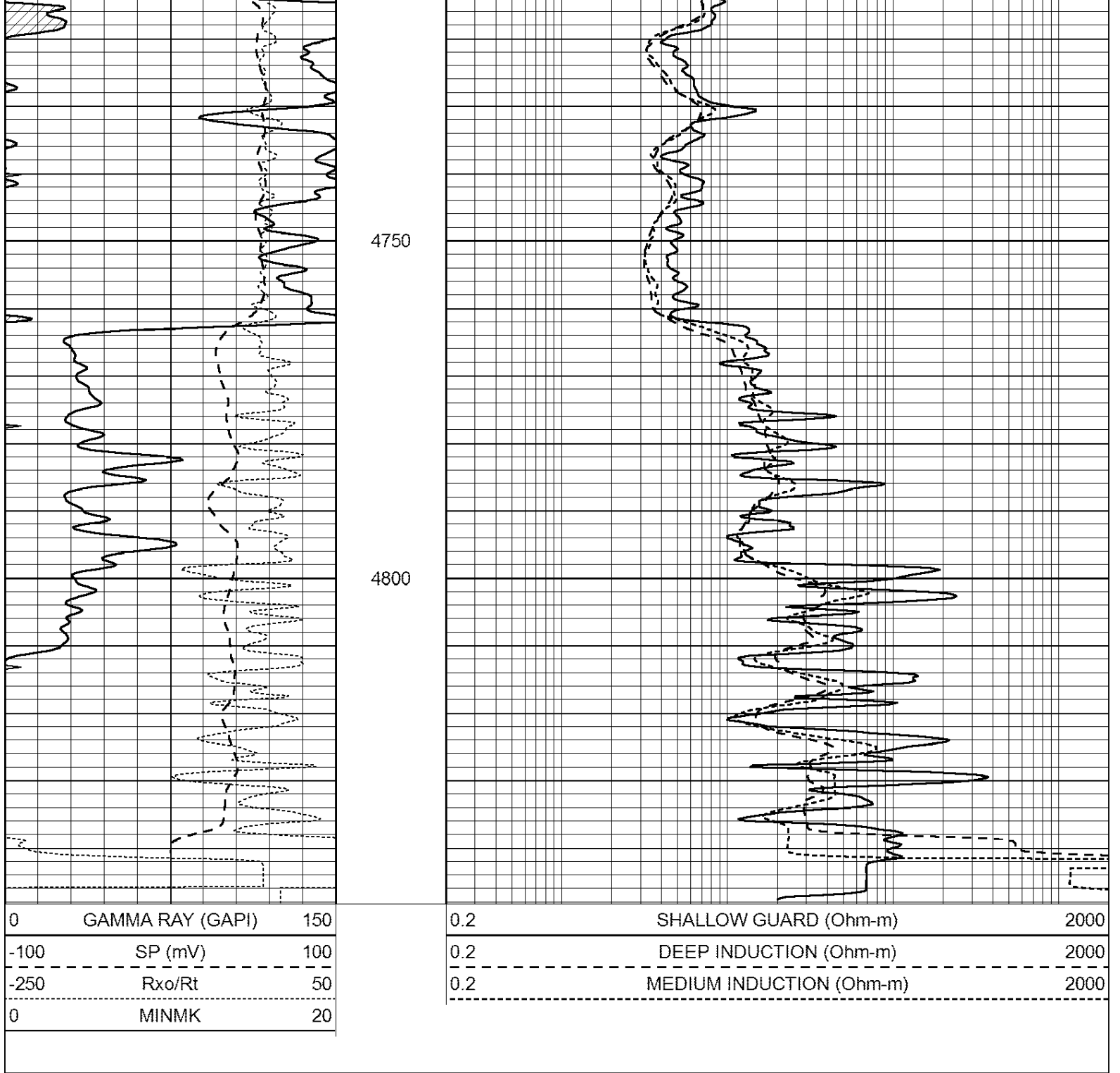
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4650

4700





### Calibration Report

Database File: 3692pe.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Fri Jun 21 08:50:15 2019 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Mon Sep 10 14:28:35 2018  
 Downhole Cal Performed: Mon Sep 10 14:28:38 2018  
 After Survey Verification Performed: Mon Sep 10 14:28:40 2018

### 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: 001N      Model: PRB

Master Calibration		Performed Fri Feb 22 10:21:38 2019						
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1650.2	7609.7	2906.5	8386.5				cps
Window 2	1538.2	6635.9	2614.4	7212.4				cps
Window 3	1257.0	3718.7	1765.8	3927.1				cps
Window 4	376.8	375.6	373.4	374.5				cps
Long Space	0.0	5097.7	1076.2	5674.2				cps
Short Space	2.8	1704.3	1106.3	1723.6				cps
Rho		1.7100	2.5900	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 44.5	Rib Slope	: 0.982	Density/Spine Ratio				: 0.545
Spine Angle	: 74.5	Spine Slope	: 3.599	Spine Intercept				: -18.2

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969						
	Background	Magnesium	Aluminum	Sandstone				
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						
	Background	Magnesium	Aluminum	Sandstone				
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: 61  
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	cps		
	Long Space	cps	pu	

**POST-SURVEY VERIFICATION**

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

Gamma Ray Calibration Report

Serial Number: GR6  
Tool Model: OPEN  
Performed: Mon Sep 10 14:29:23 2018

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 276.0 cps

Sensitivity: 0.5500 GAPI/cps