



DUAL INDUCTION LOG

Company	L.D. DRILLING, INC.	Company	L.D. DRILLING, INC.
Well	REGIER #2-7	Well	REGIER #2-7
Field	N/A	Field	N/A
County	RENO	County	RENO
State	KANSAS	State	KANSAS
Location:	API # : 15-155-21746-00-00 1650' FSL & 3573' FEL	Other Services CDL/CNL	
Permanent Datum	SEC 7 TWP 22S RGE 4W	Elevation	
Log Measured From	GROUND LEVEL	K.B. 1511'	
Drilling Measured From	KELLY BUSHING 5' A.G.L. KELLY BUSHING	D.F. 1509'	
		G.L. 1506'	
Date	09/10/17		
Run Number	ONE		
Depth Driller	4040		
Depth Logger	4043		
Bottom Logged Interval	4041		
Top Log Interval	00		
Casing Driller	13 3/8" @ 136		
Casing Logger	136		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9100 PPM	
Density / Viscosity	9.4/54		
pH / Fluid Loss	9.0/12.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.70@74		
Rmt @ Meas. Temp	.53@74		
Rmc @ Meas. Temp	.84@74		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.44@116		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	116F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	ARDEN RATZLAFF		

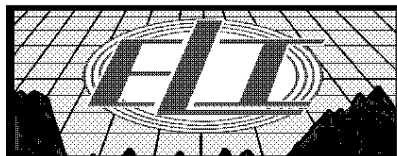
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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

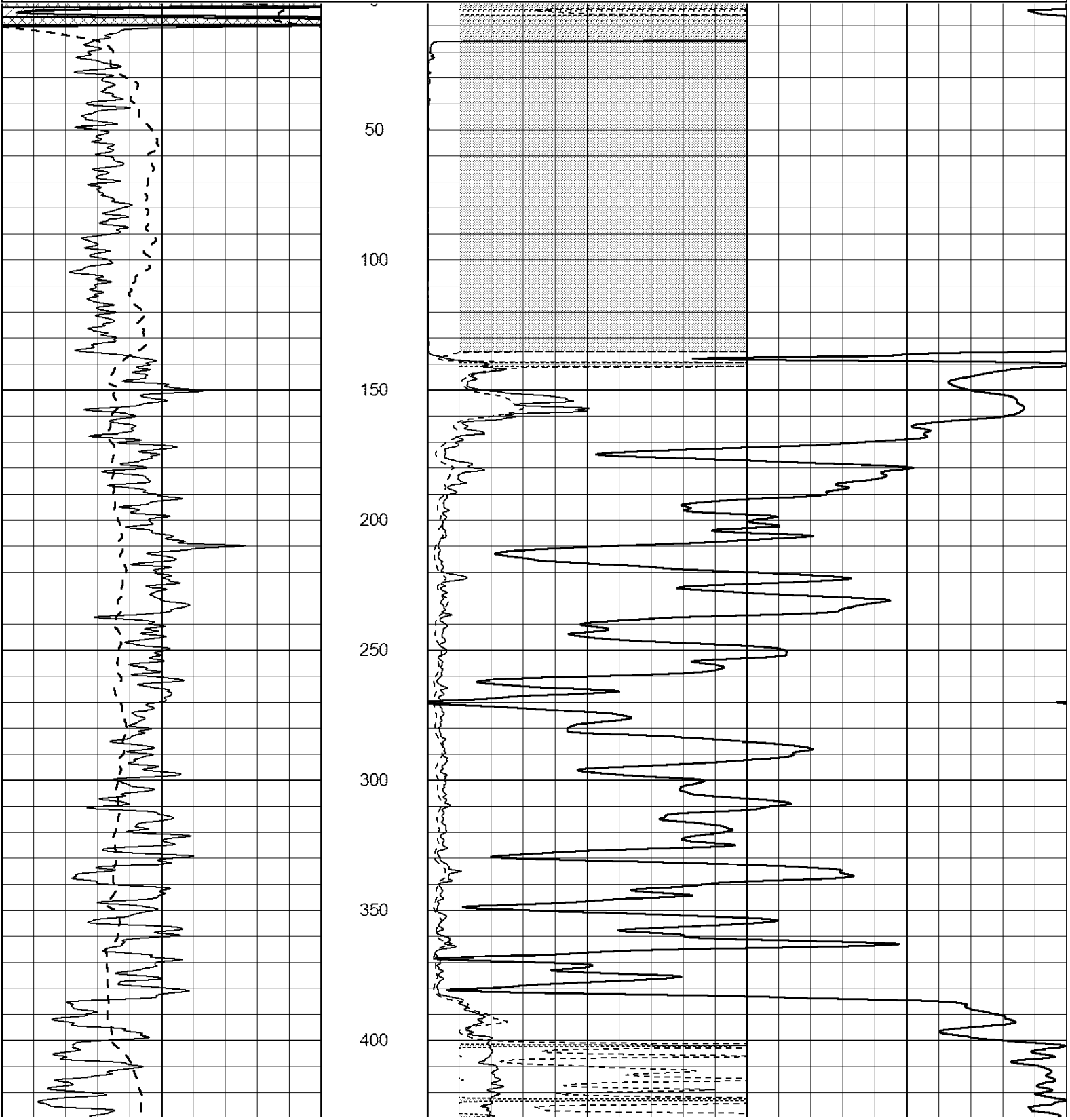
DIRECTIONS
BUHLER 82 RD. 1 1/2 WEST, NORTH INTO.

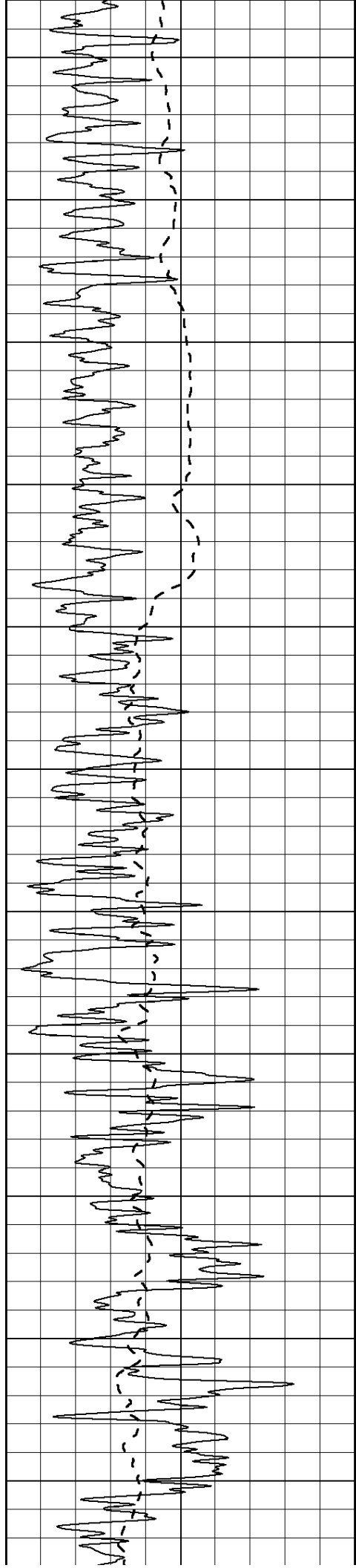


MAIN PASS

Database File: 1819ddn.db
Dataset Pathname: pass3DIL
Presentation Format: _dil2
Dataset Creation: Sun Sep 10 13:21:17 2017 by Calc Open-Cased 090629
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)	0
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500





450

500

550

600

650

700

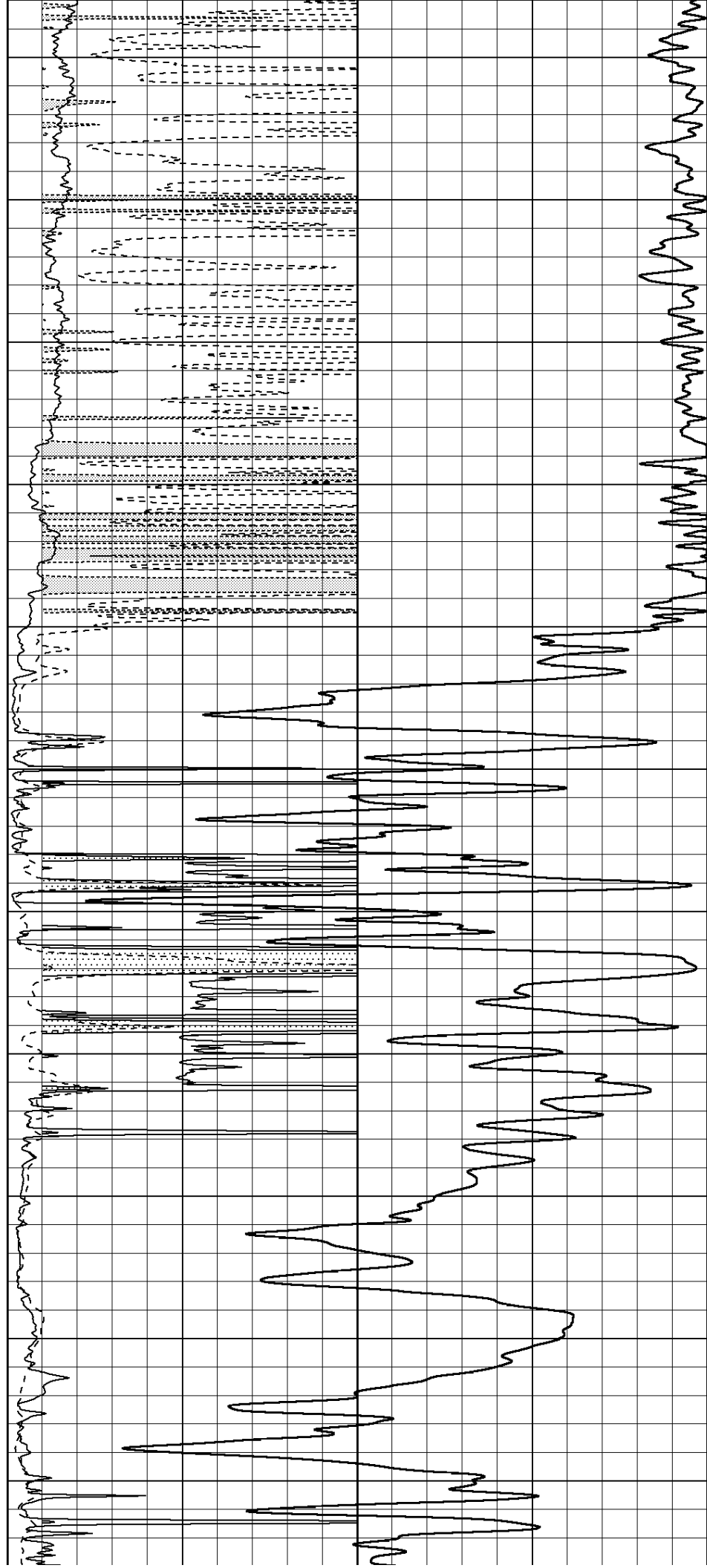
750

800

850

900

950



1000

1050

1100

1150

1200

1250

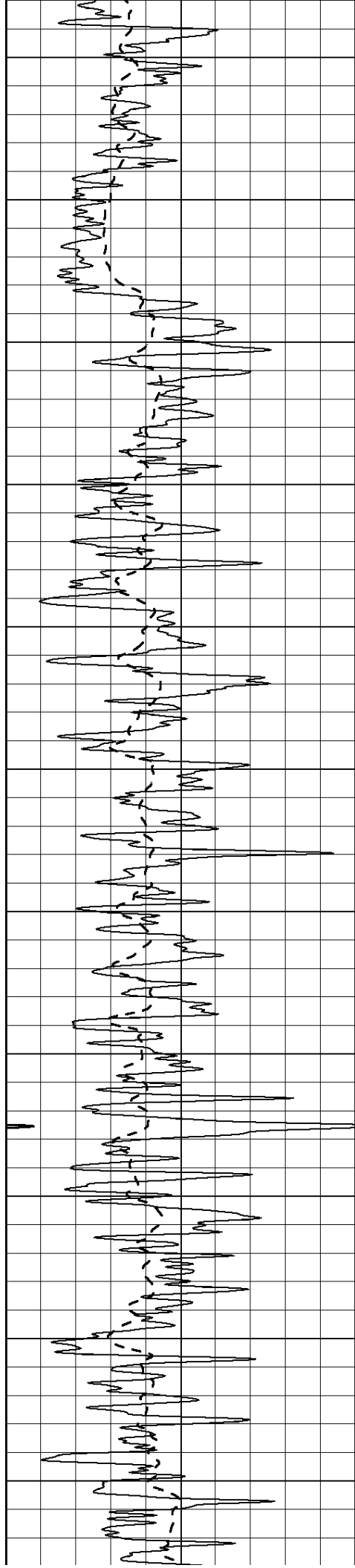
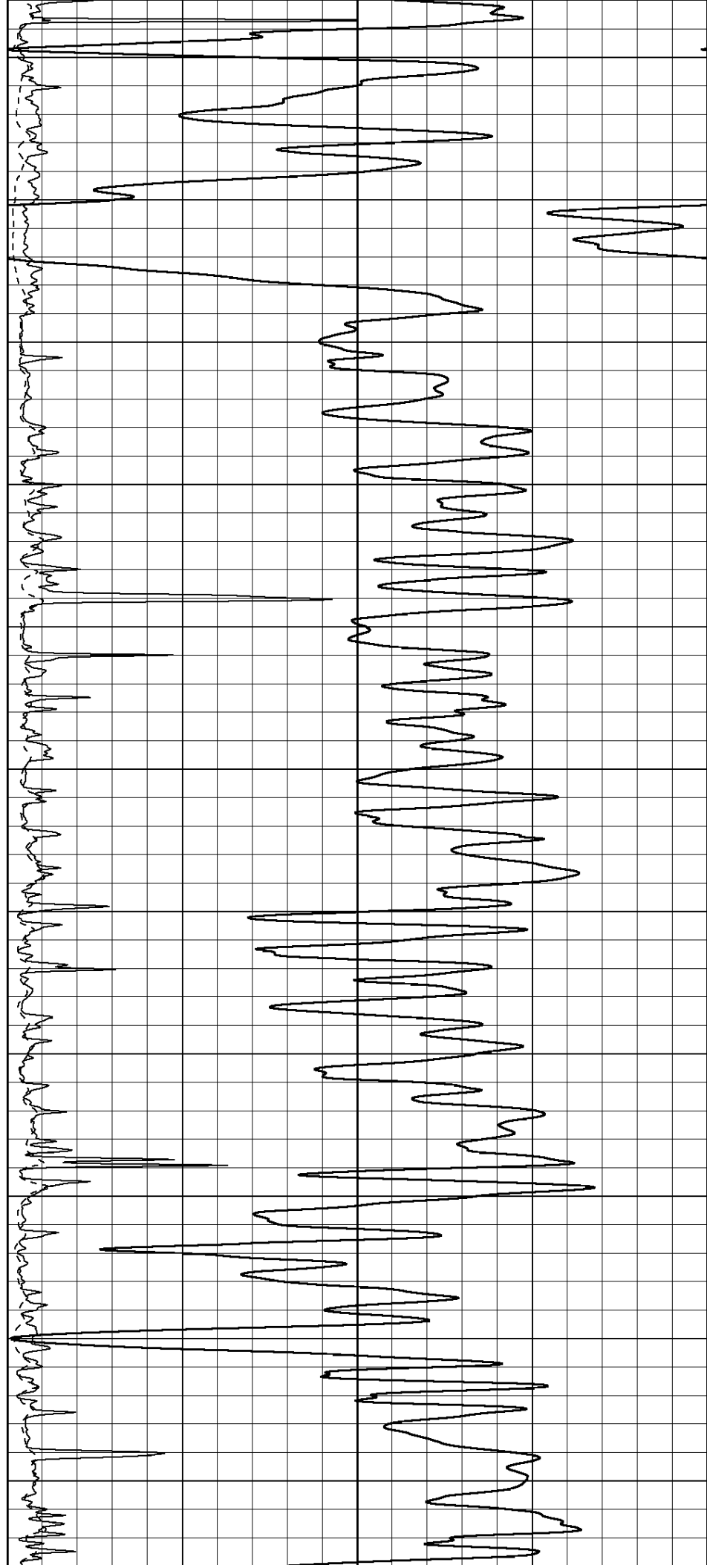
1300

1350

1400

1450

1500



1550

1600

1650

1700

1750

1800

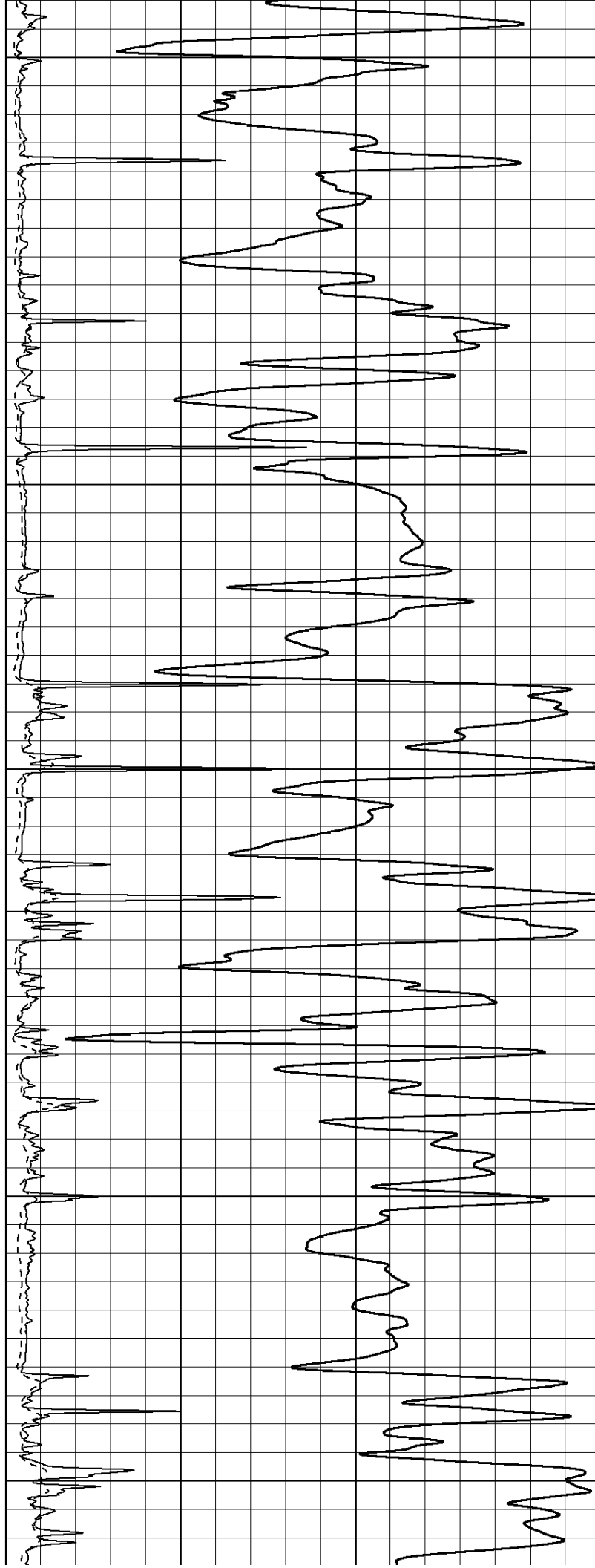
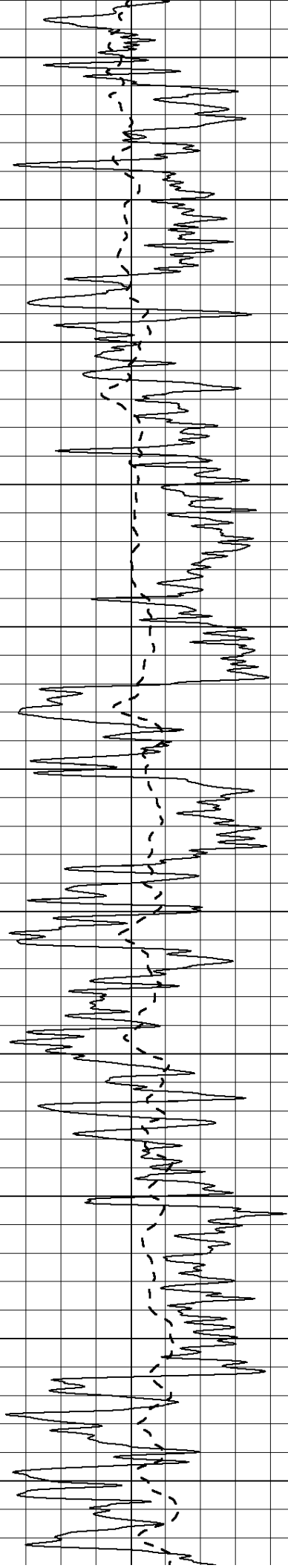
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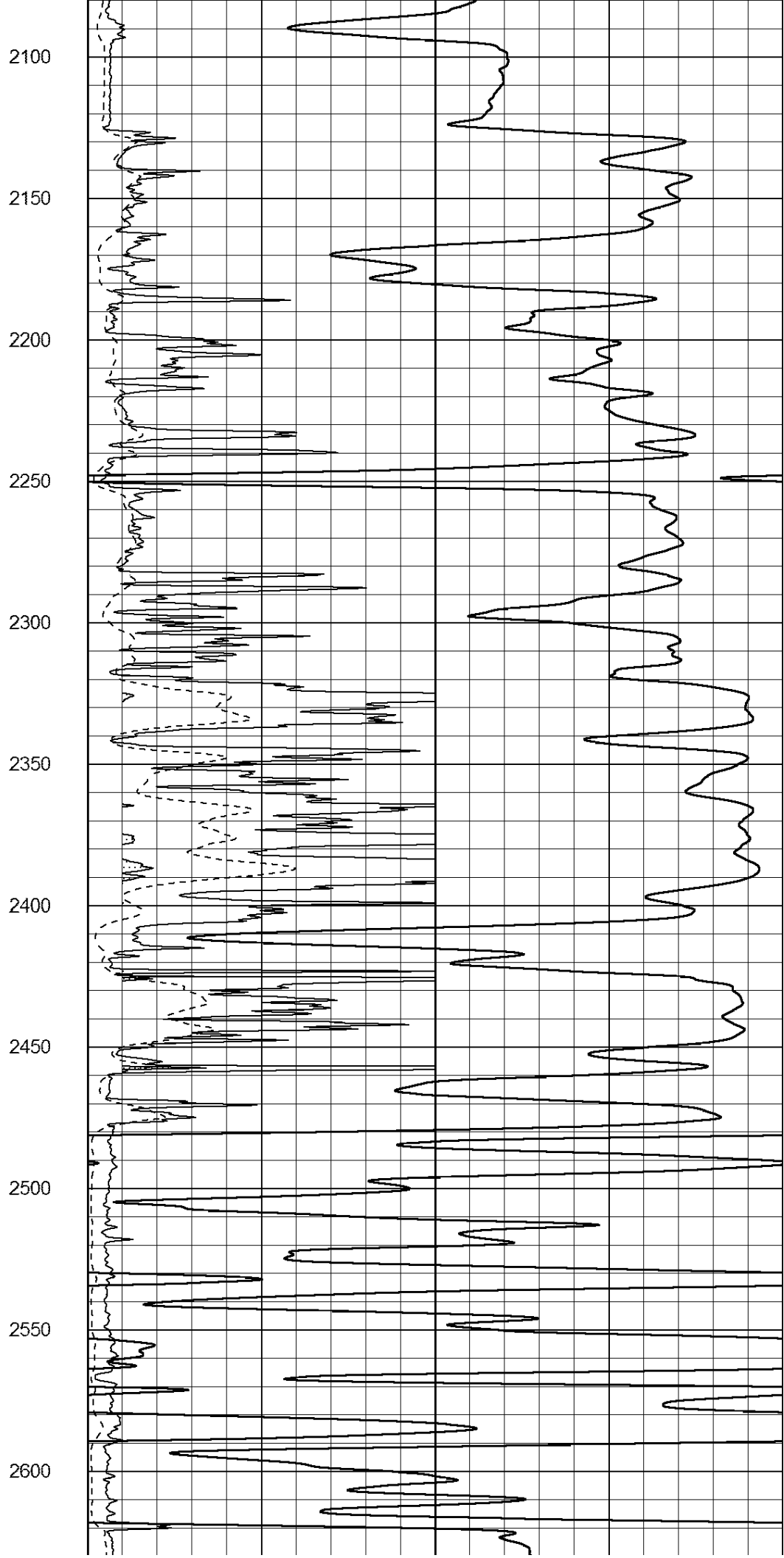
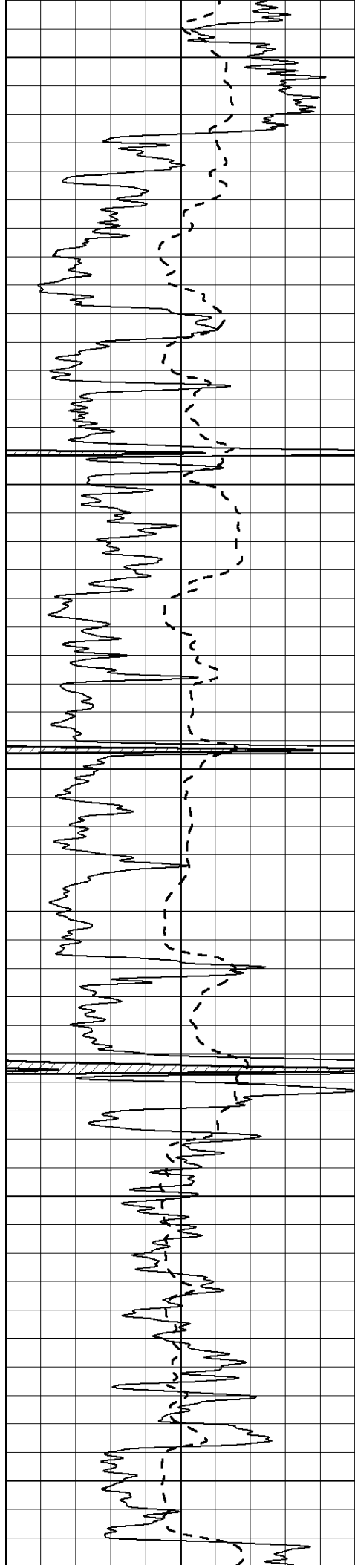
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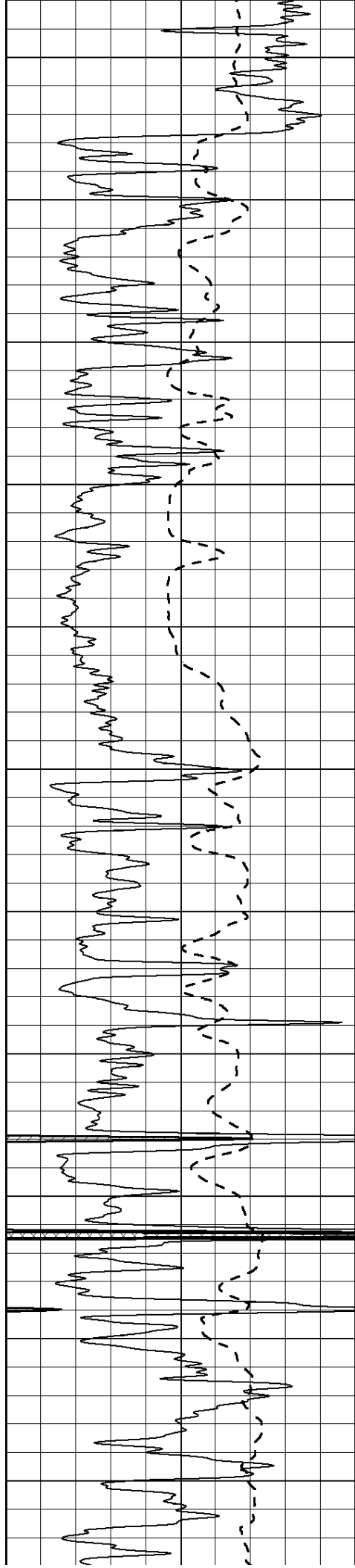
1950

2000

2050







2650

2700

2750

2800

2850

2900

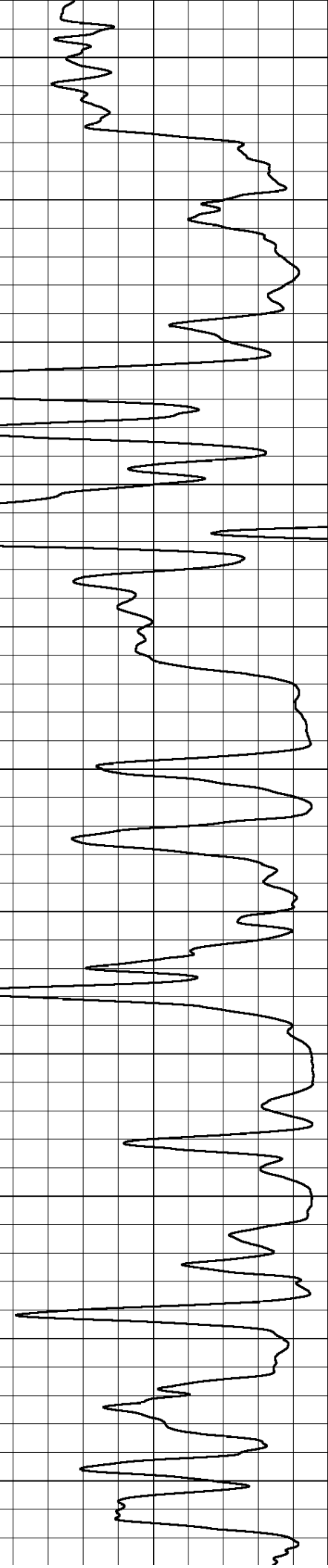
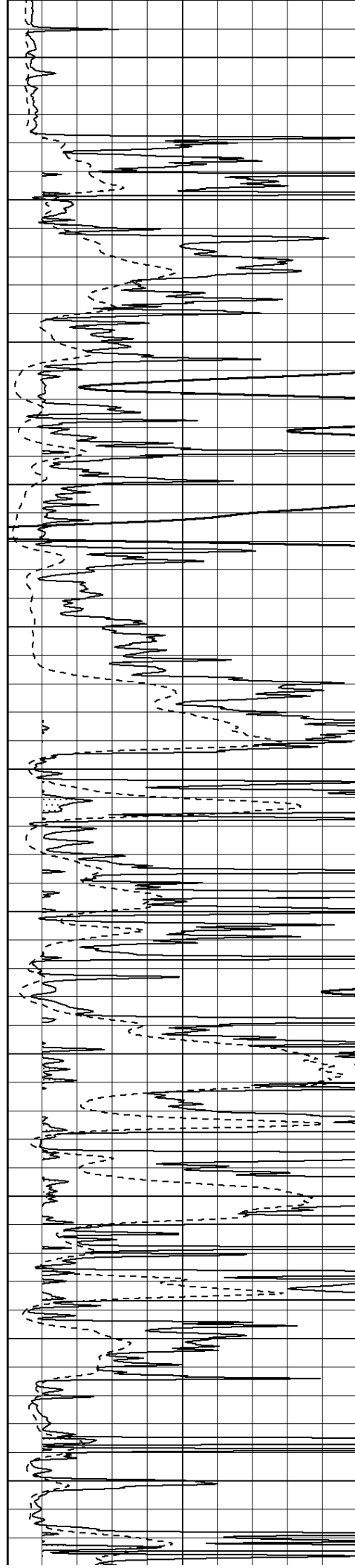
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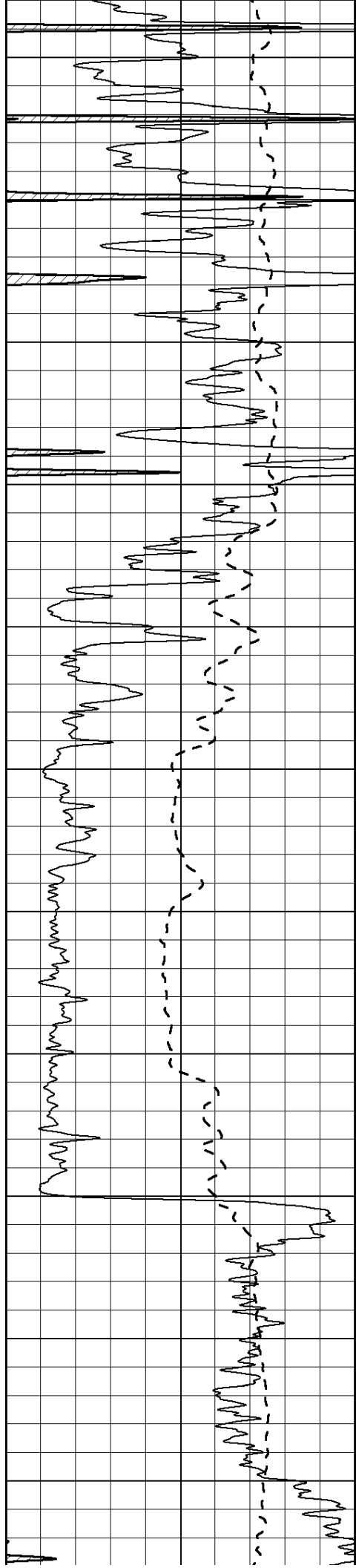
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3050

3100

3150





3200

3250

3300

3350

3400

3450

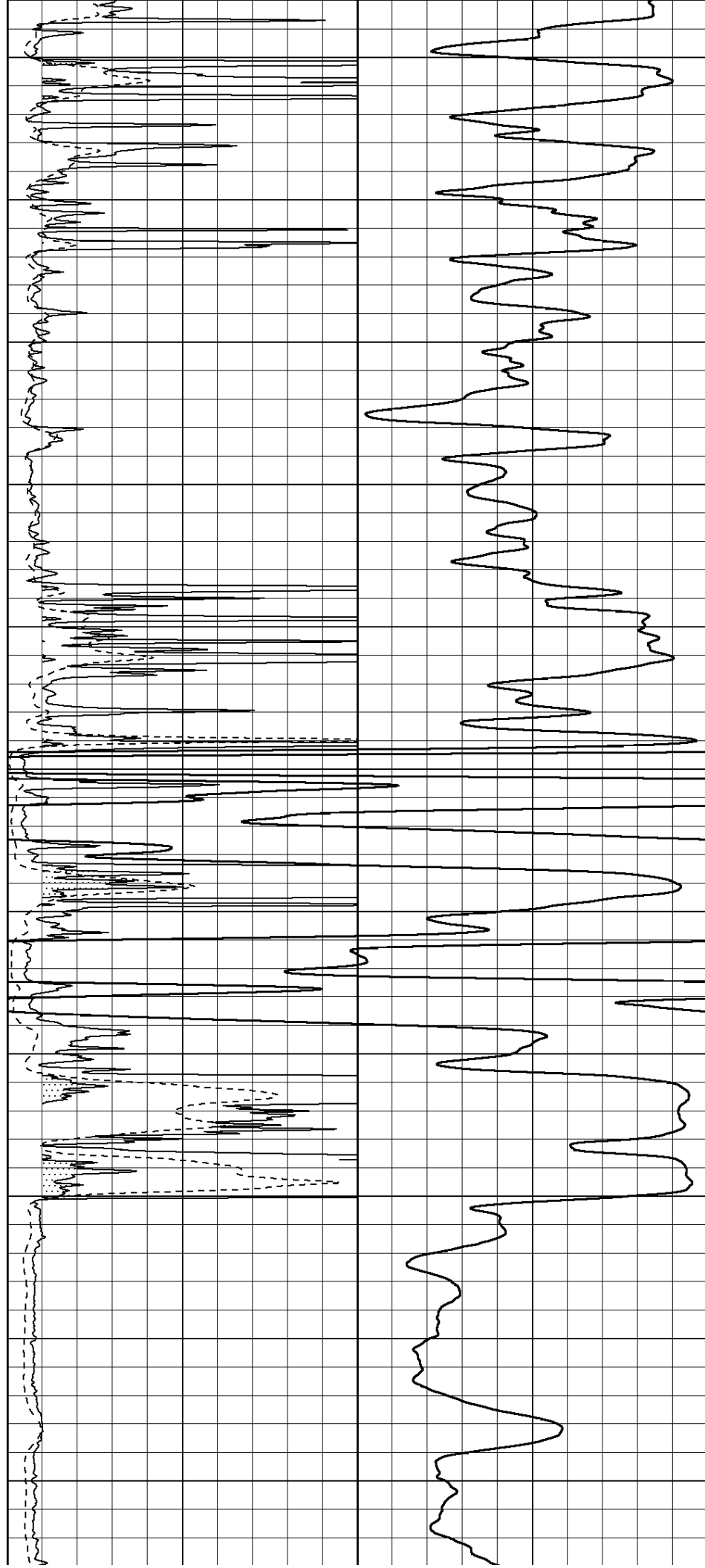
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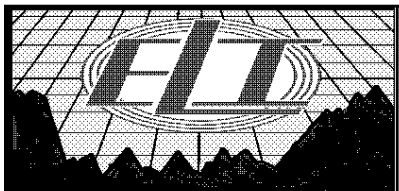
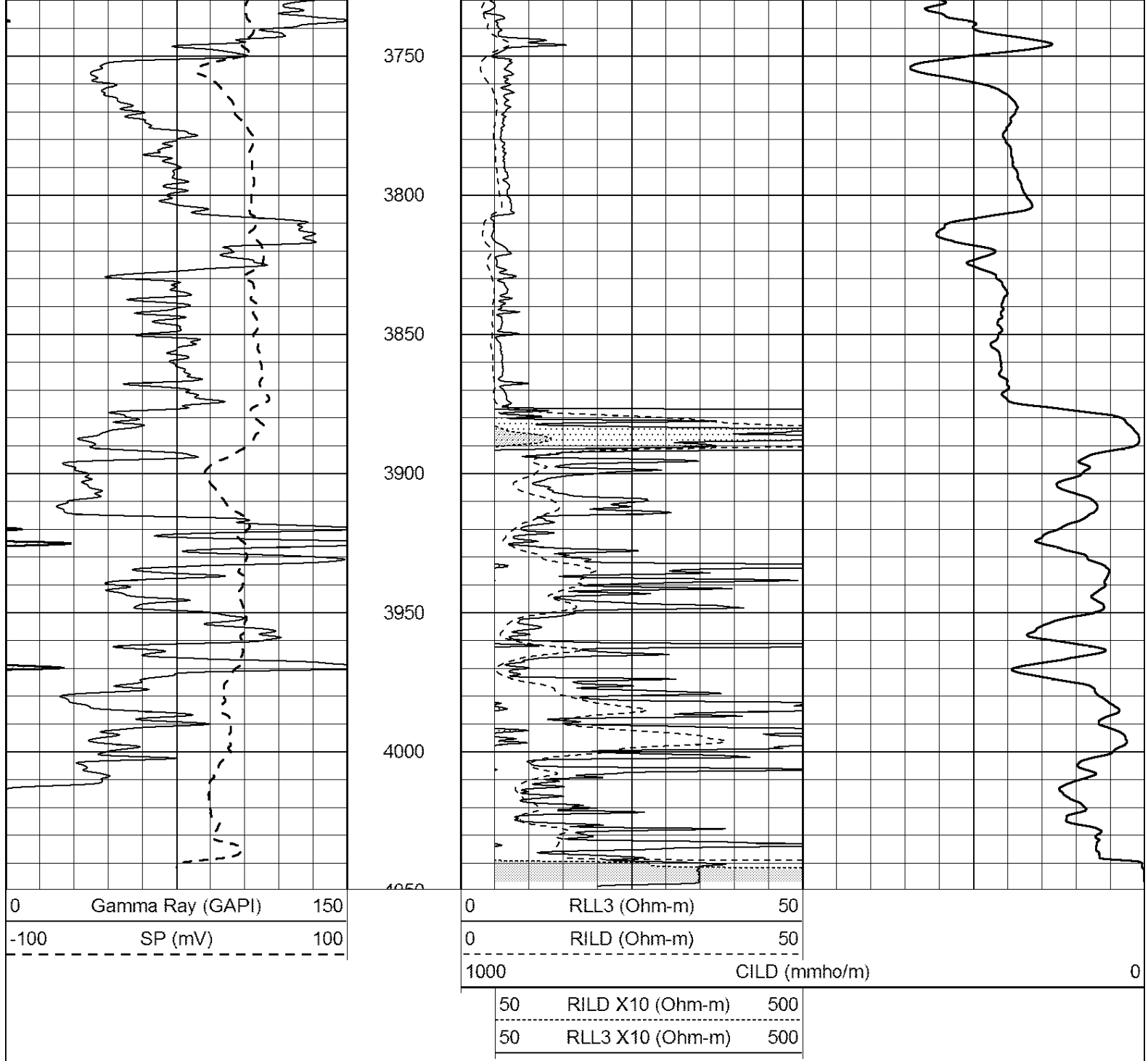
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3700

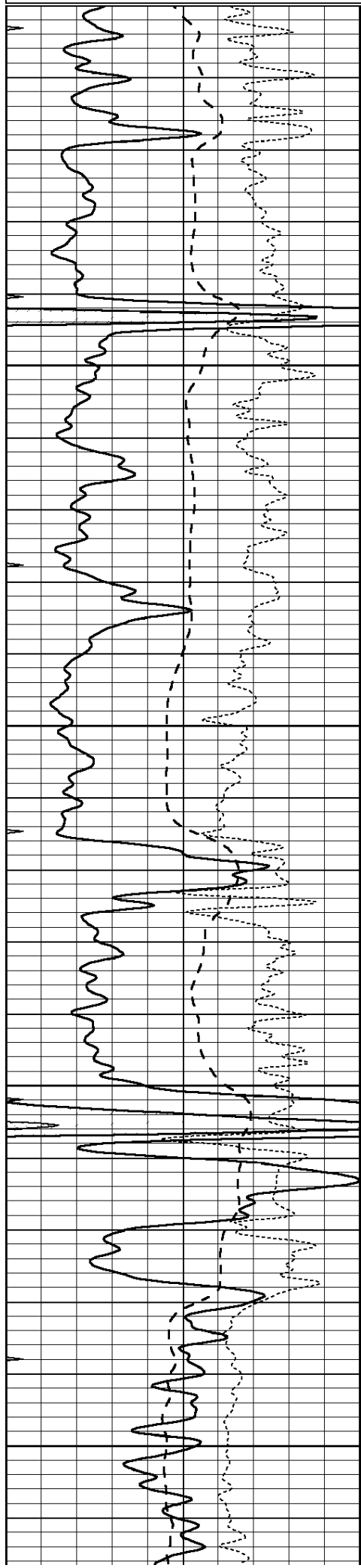




MAIN PASS

Database File: 1819ddn.db
 Dataset Pathname: pass3DIL
 Presentation Format: _dil
 Dataset Creation: Sun Sep 10 13:21:17 2017 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			



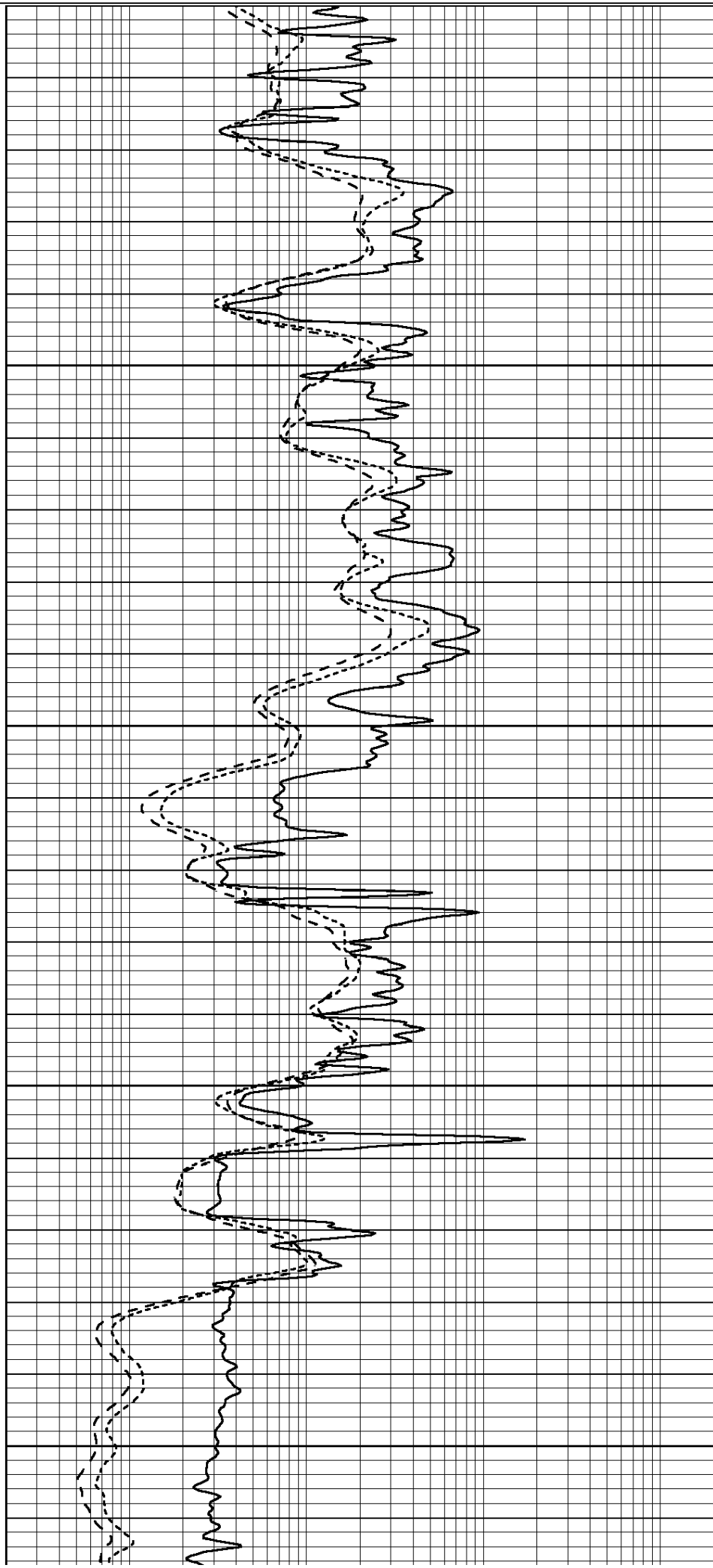
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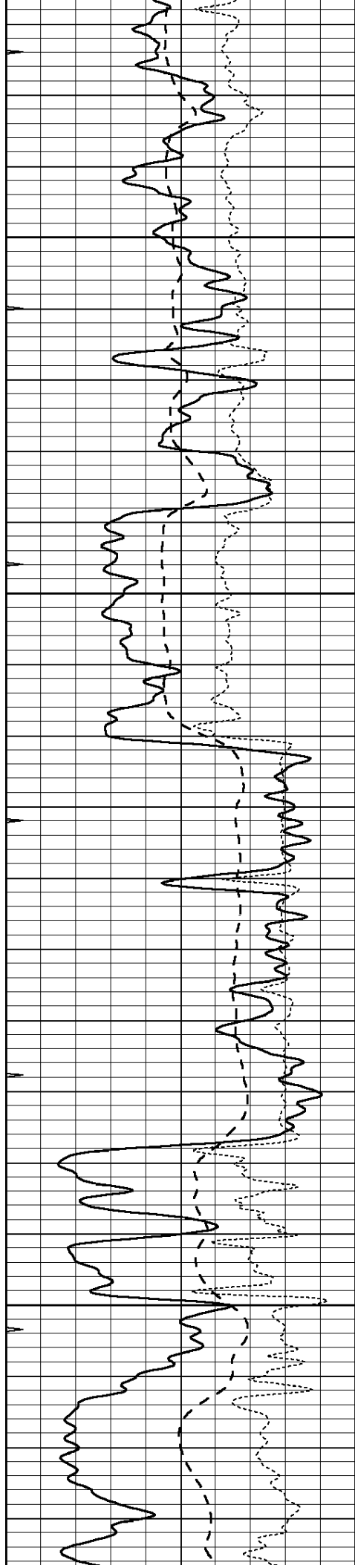
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2400

2450

2500



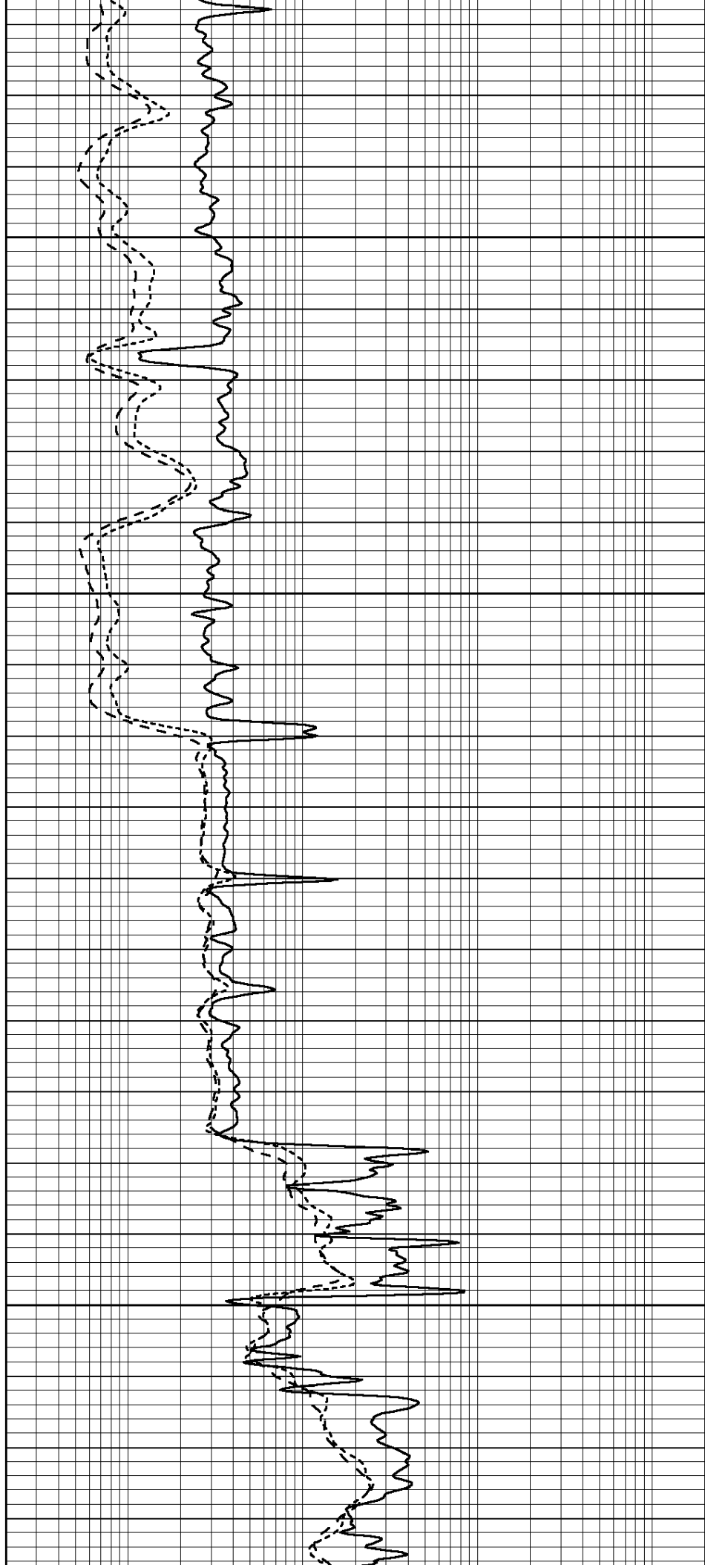


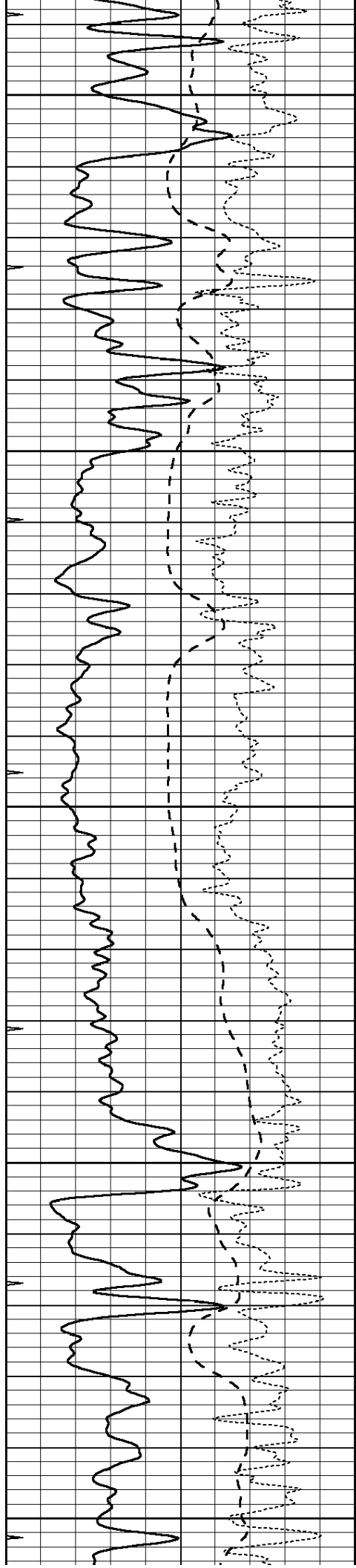
2550

2600

2650

2700





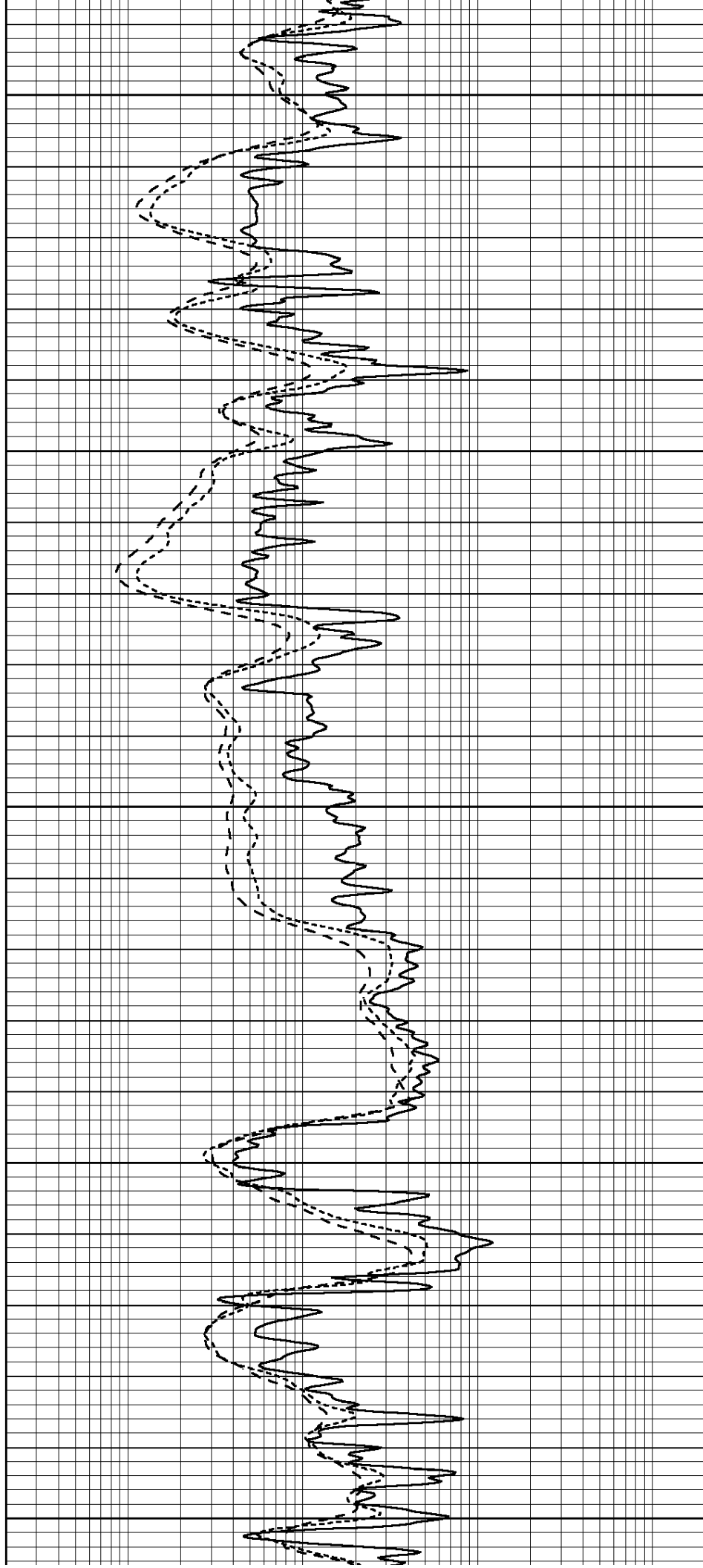
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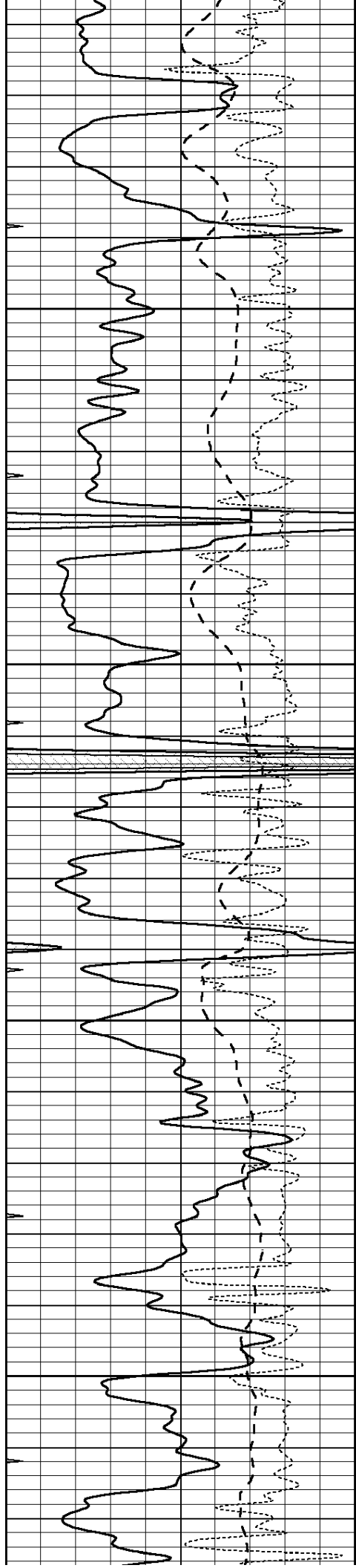
2800

2850

2900

2950



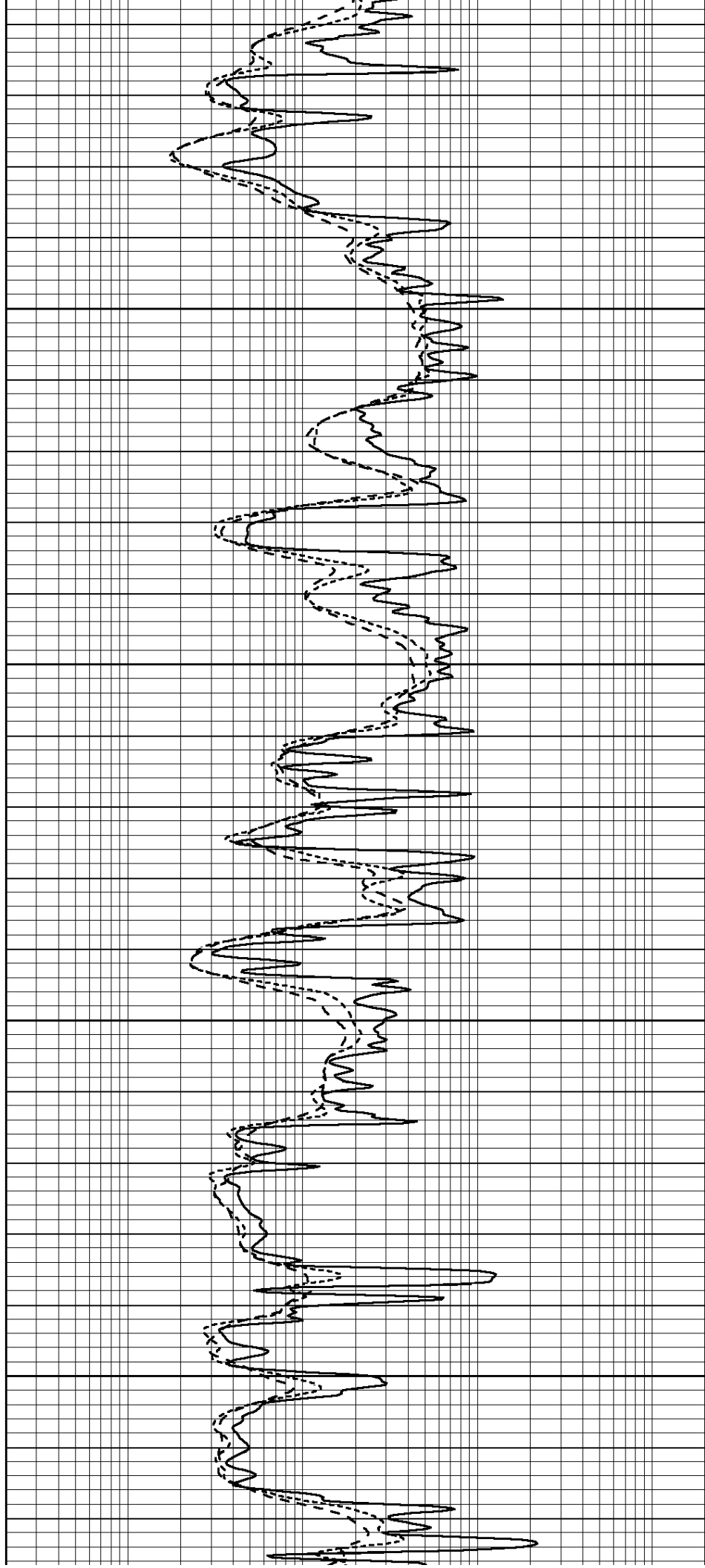


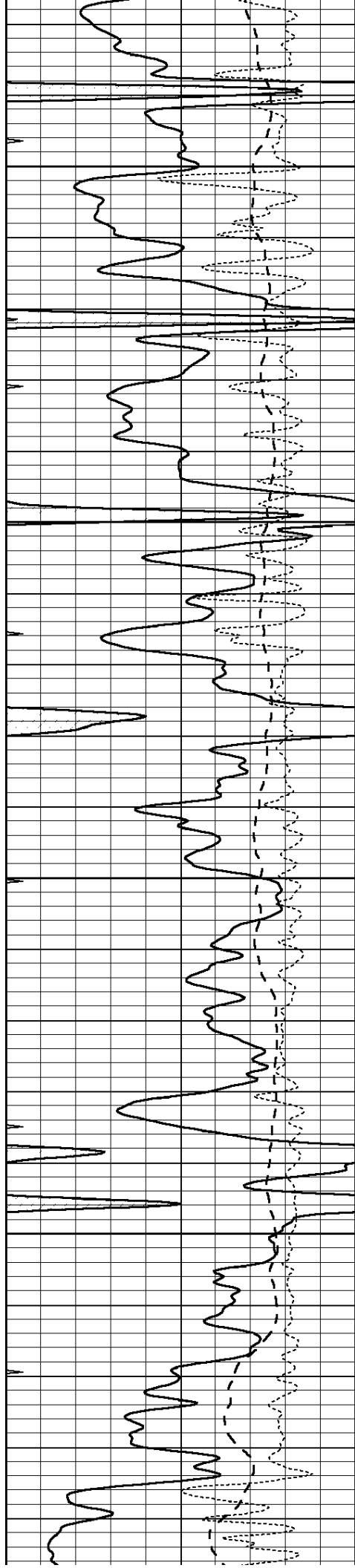
3000

3050

3100

3150



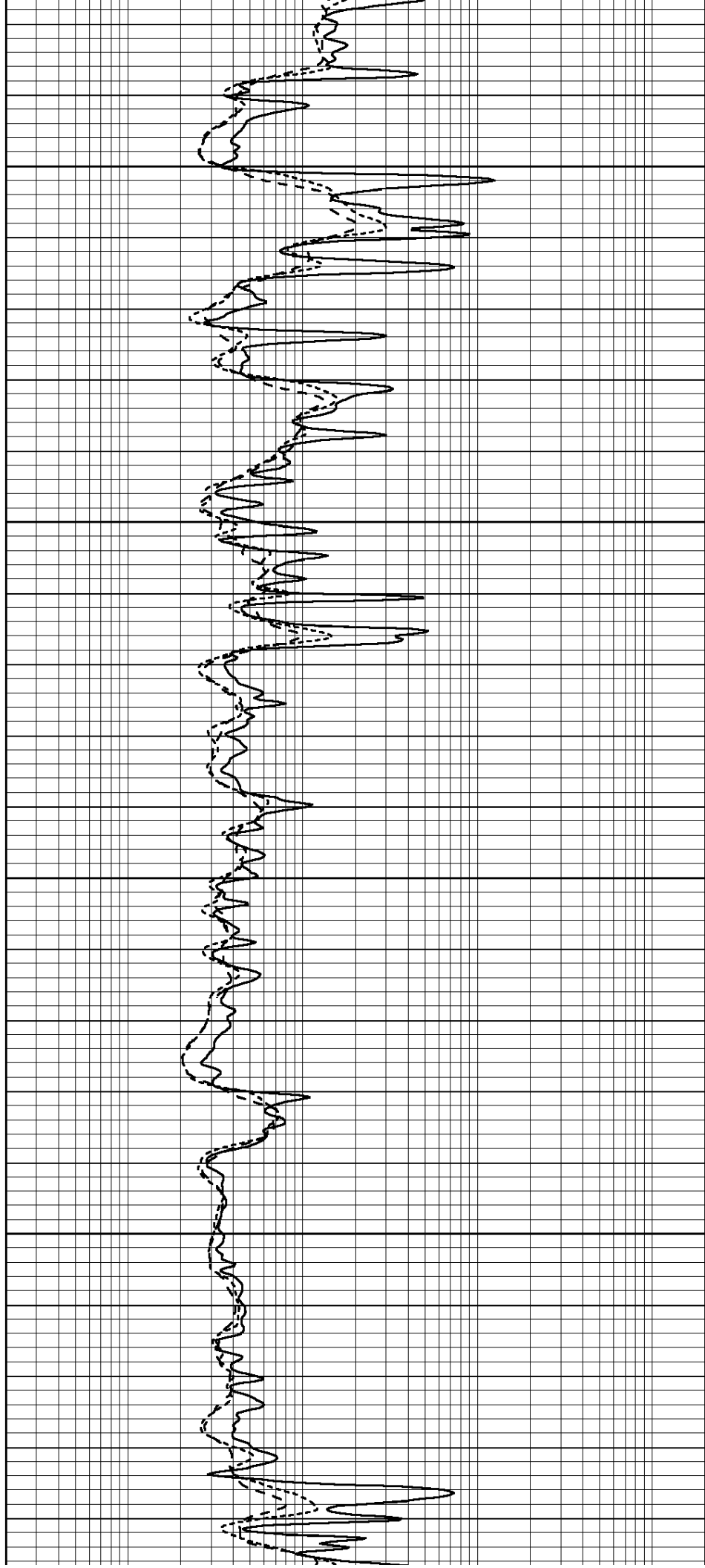


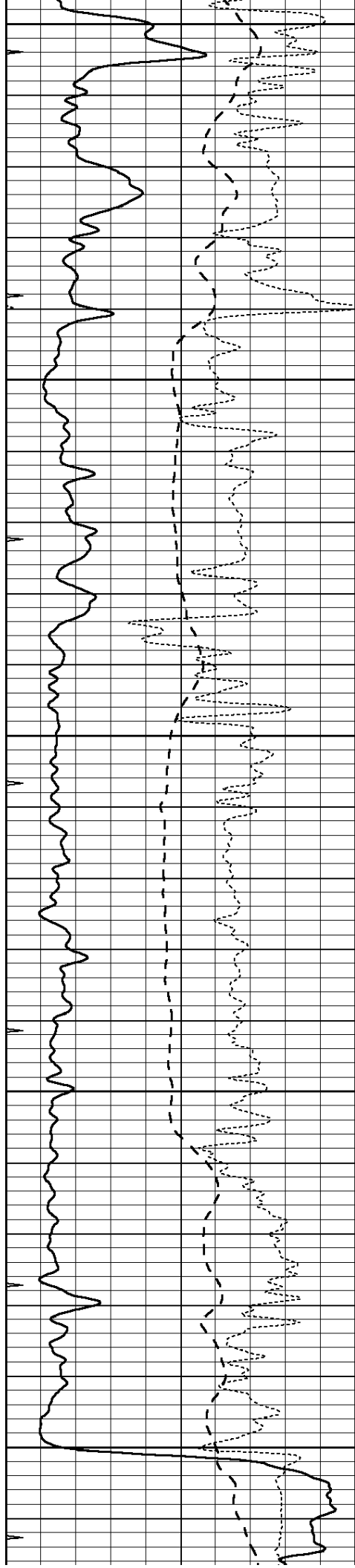
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3250

3300

3350





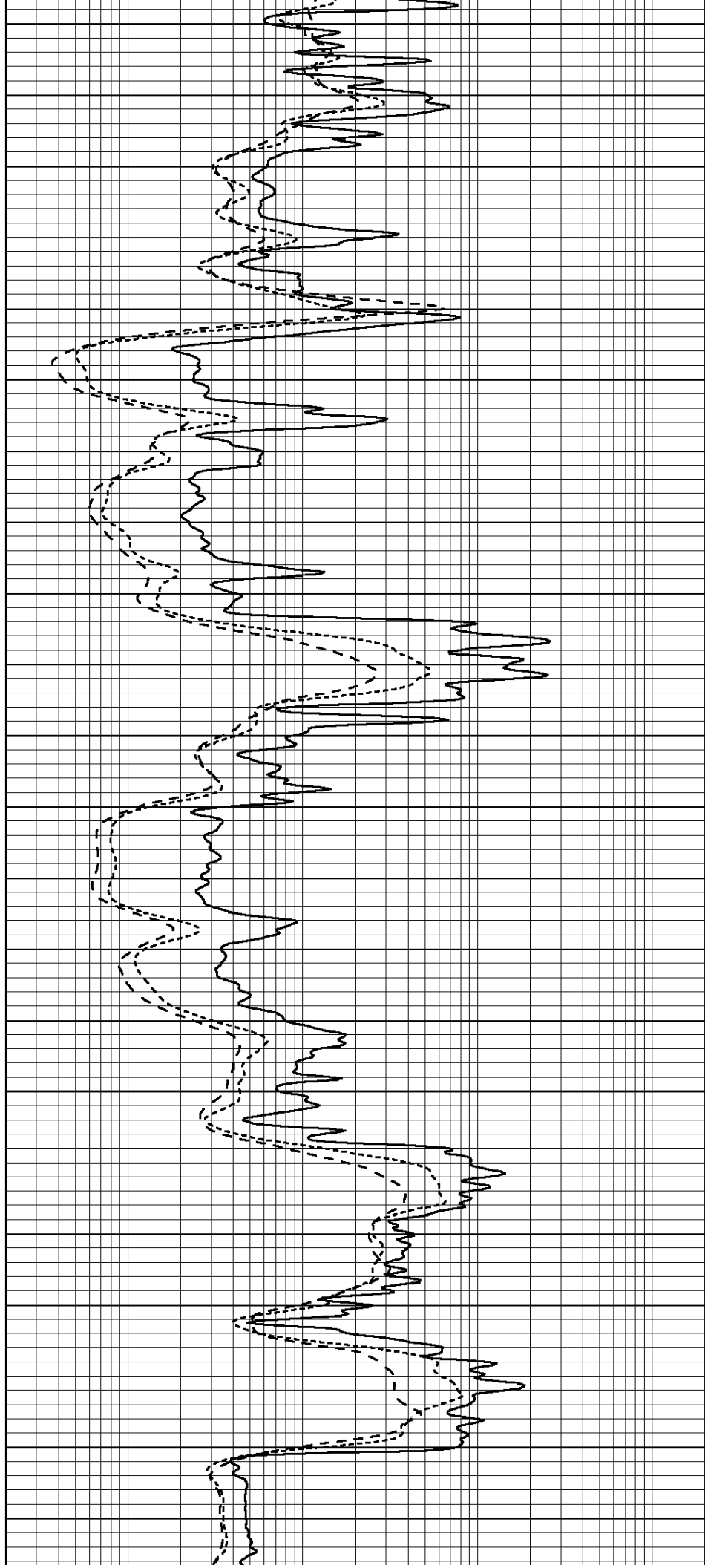
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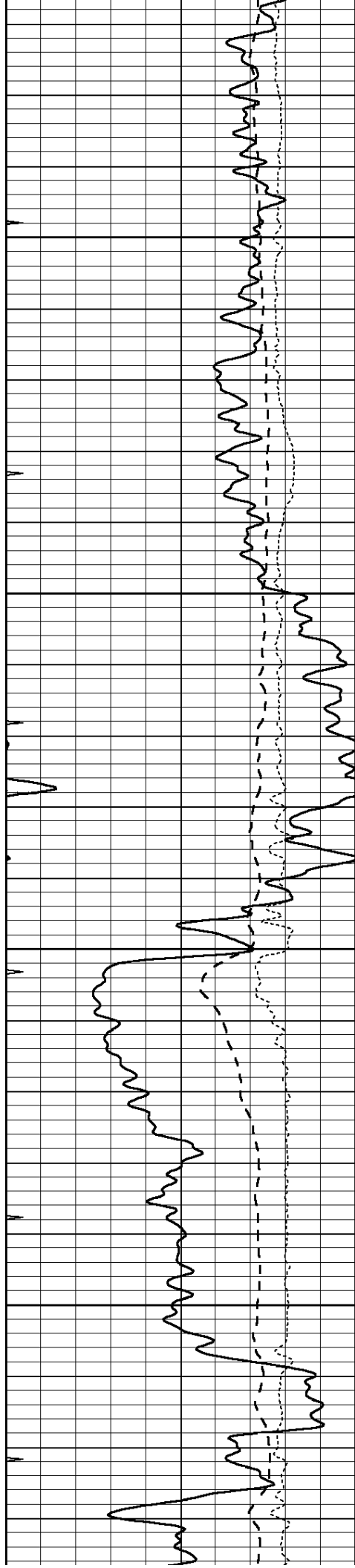
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3600



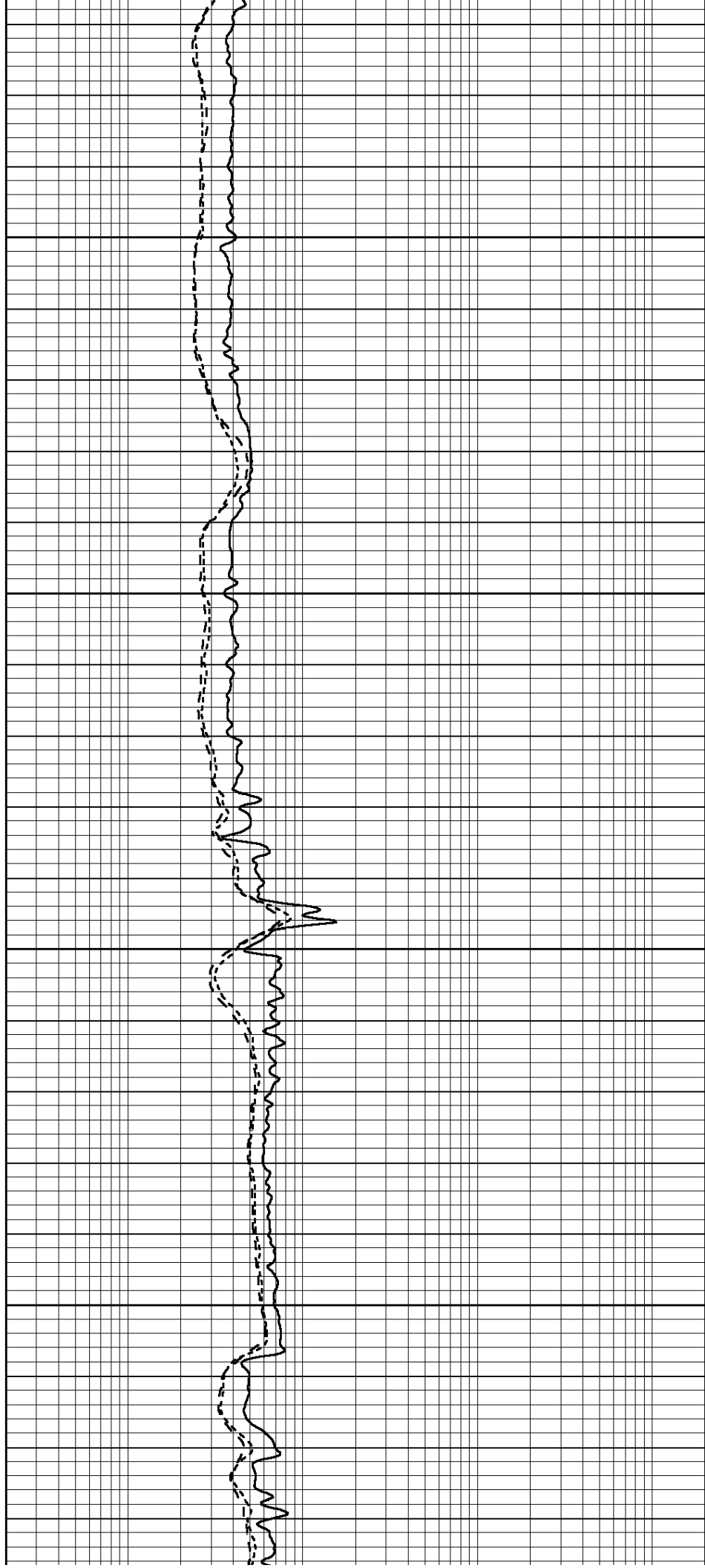


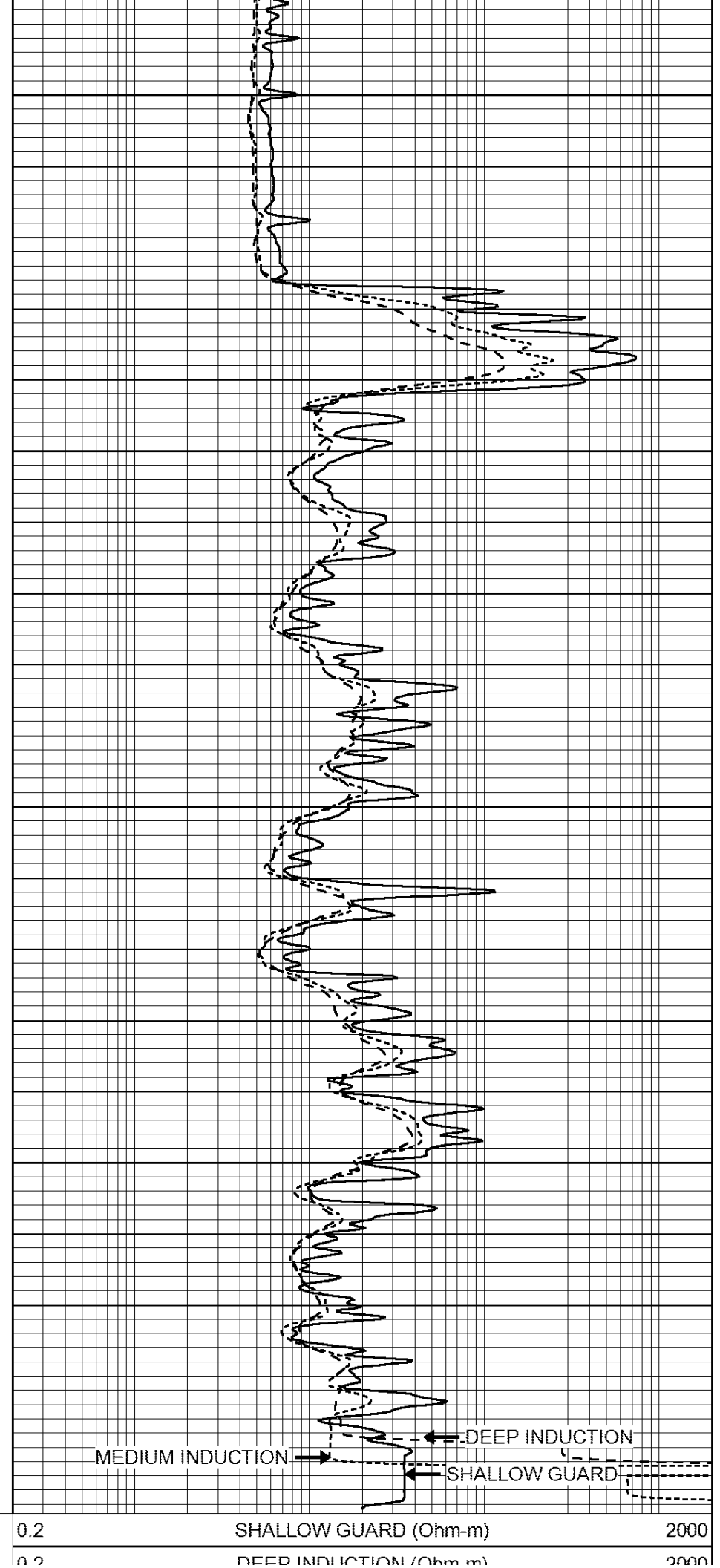
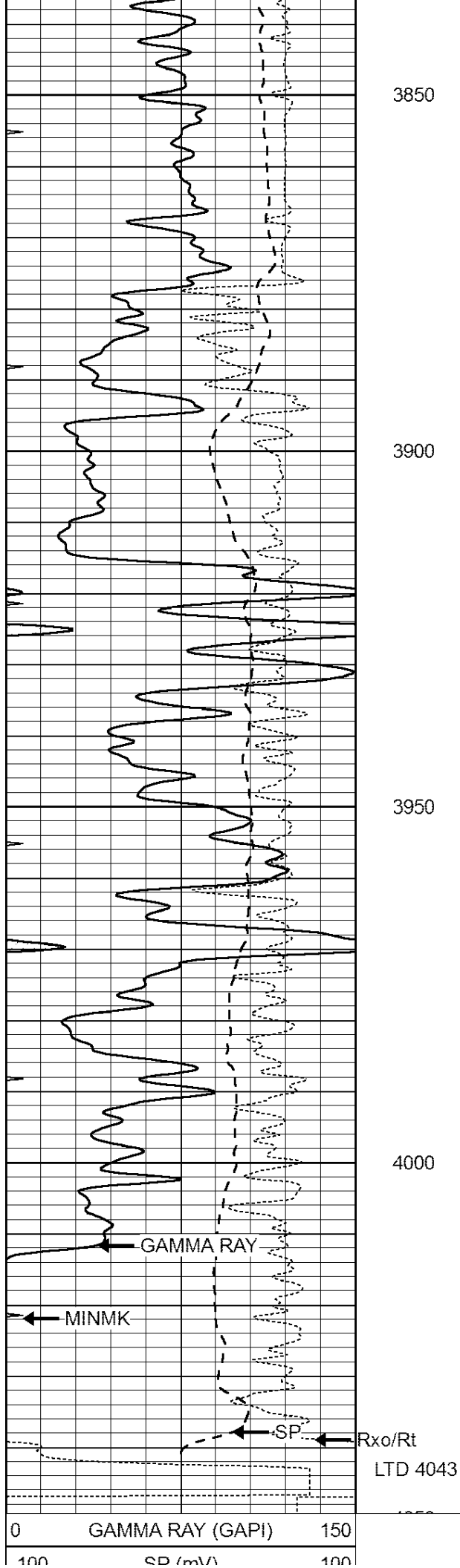
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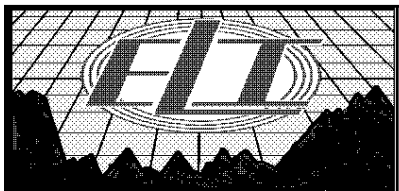
3800





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

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

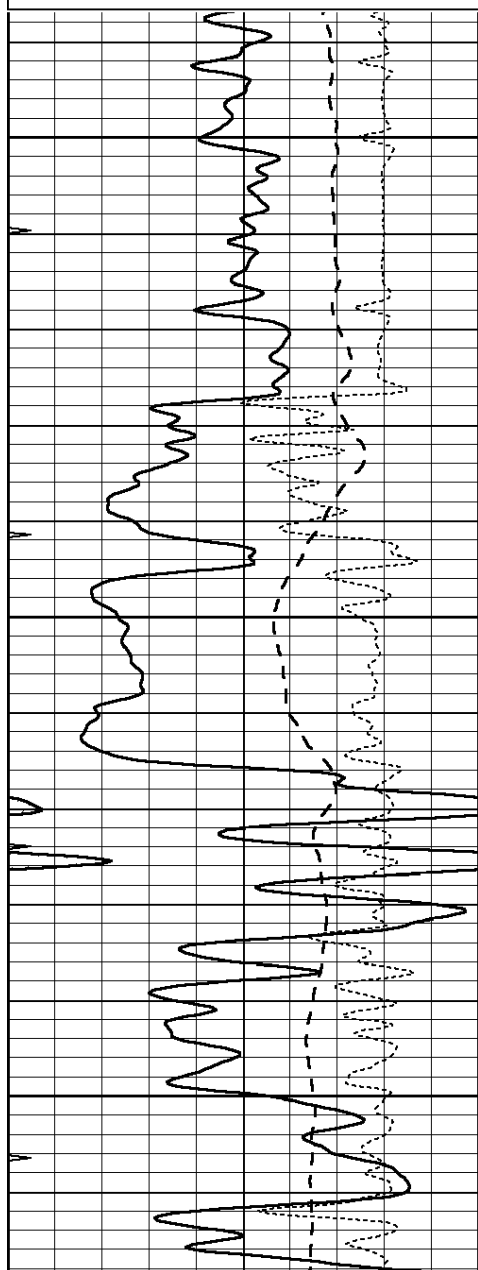


REPEAT SECTION

Database File: 1819ddn.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Sun Sep 10 12:33:37 2017 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

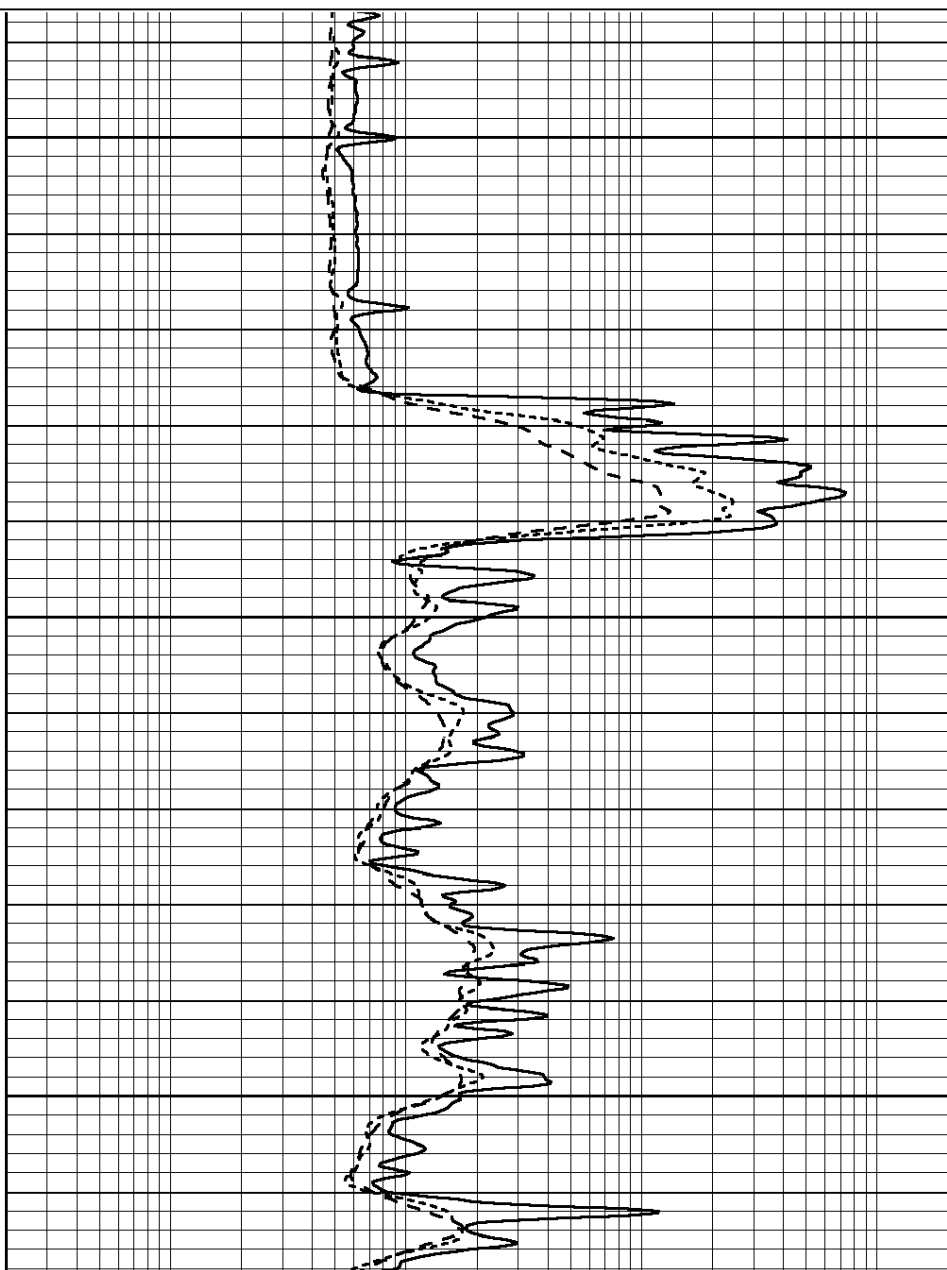
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

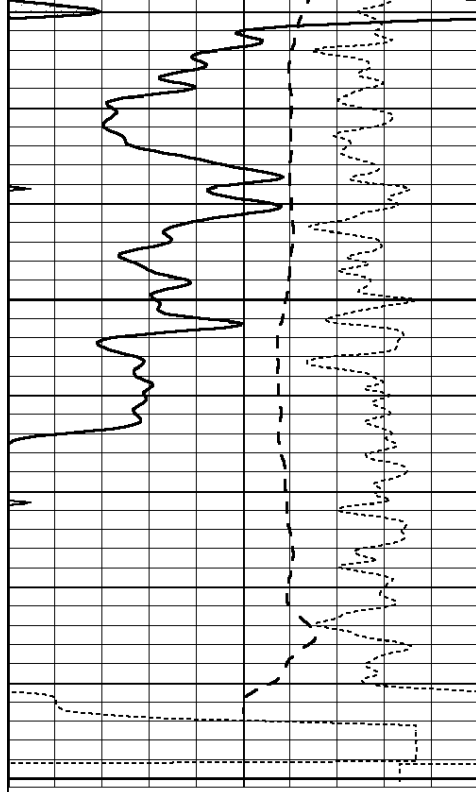


3850

3900

3950

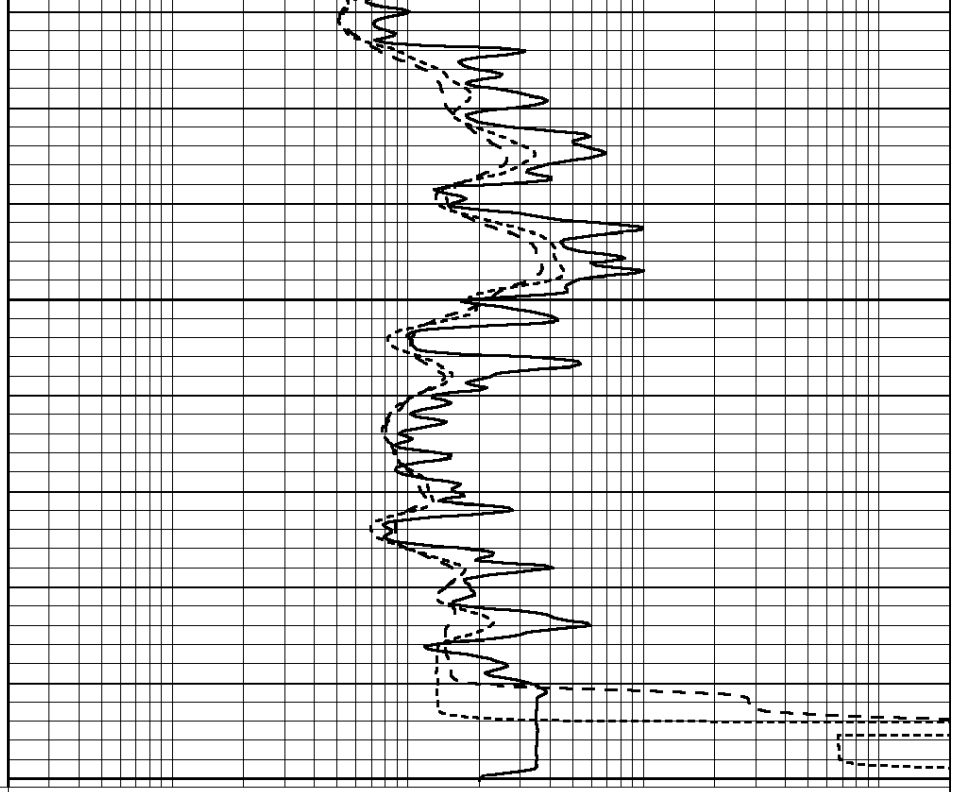




4000

4050

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

Calibration Report

Database File: 1819ddn.db
 Dataset Pathname: pass3DIL
 Dataset Creation: Sun Sep 10 13:21:17 2017 by Calc Open-Cased 090629

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		

		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	0.000	0.000
Medium		0.000	0.000	mmho/m	0.000	0.000	0.000	0.000
LL3			1.000	Ohm-m		1.000		
			0.000	Ohm-m		0.000		
			1.000	mmho-m		1.000		
Compensated Density Calibration Report								
	Serial-Model:				GEAR5-GEARHART			
	Source / Verifier:				/			
	Master Calibration Performed:				Wed Aug 16 15:20:33 2017			
	Before Survey Verification Performed:							
	After Survey Verification Performed:							
Master Calibration								
		Density			Far Detector		Near Detector	
Magnesium		1.710	g/cc		798.83		465.02	cps
Aluminum		2.570	g/cc		178.16		318.19	cps
		Spine Angle = 75.81			Density/Spine Ratio = 0.556			
		Size			Reading			
Small Ring		7.15	in		1.47	V		
Large Ring		14.00	in		3.01	V		
Before Survey Verification								
		Target			Measured			
			g/cc				g/cc	
			g/cc				g/cc	
			g/cc				g/cc	
After Survey Verification								
		Target			Measured			
			g/cc				g/cc	
			g/cc				g/cc	
			g/cc				g/cc	
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 Long Space	cps 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:		GR6		
Tool Model:		OPEN		
Performed:		Mon Aug 21 11:59:01 2017		
Calibrator Value:		150.0	GAPI	
Background Reading:		0.0	cps	
Calibrator Reading:		276.0	cps	
Sensitivity:		0.5500	GAPI/cps	