



DUAL INDUCTION LOG

Company	WOOLSEY OPERATING CO. LLC.	Company	WOOLSEY OPERATING COMPANY, LLC.
Well	BIRKENBAUGH #2	Well	BIRKENBAUGH #2
Field	SETTLE	Field	SETTLE
County	KINGMAN	County	KINGMAN
State	KANSAS	State	KANSAS
Location:	2350' FSL & 1975' FWL N/2 - NE - SW SEC 16 TWP 29S RGE 7W	API # : 15-095-22338-0000	Other Services CDL/CNL/PE
Permanent Datum	GROUND LEVEL	Elevation	1602
Log Measured From	KELLY BUSHING 8' A.G.L.	K.B. 1610 D.F. 1608 G.L. 1602	
Drilling Measured From	KELLY BUSHING		
Date	3/19/21		
Run Number	ONE		
Depth Driller	4588		
Depth Logger	4588		
Bottom Logged Interval	4586		
Top Log Interval	00		
Casing Driller	8 5/8"@256'		
Casing Logger	256		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7.000 PPM	
Density / Viscosity	9.4/47		
pH / Fluid Loss	9.5/9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.700@90F		
Rmf @ Meas. Temp	.525@90F		
Rmc @ Meas. Temp	.840@90F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.521@121F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	10:30 P.M.		
Maximum Recorded Temperature	121F		
Equipment Number	922339		
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.

15-095-22338-0000

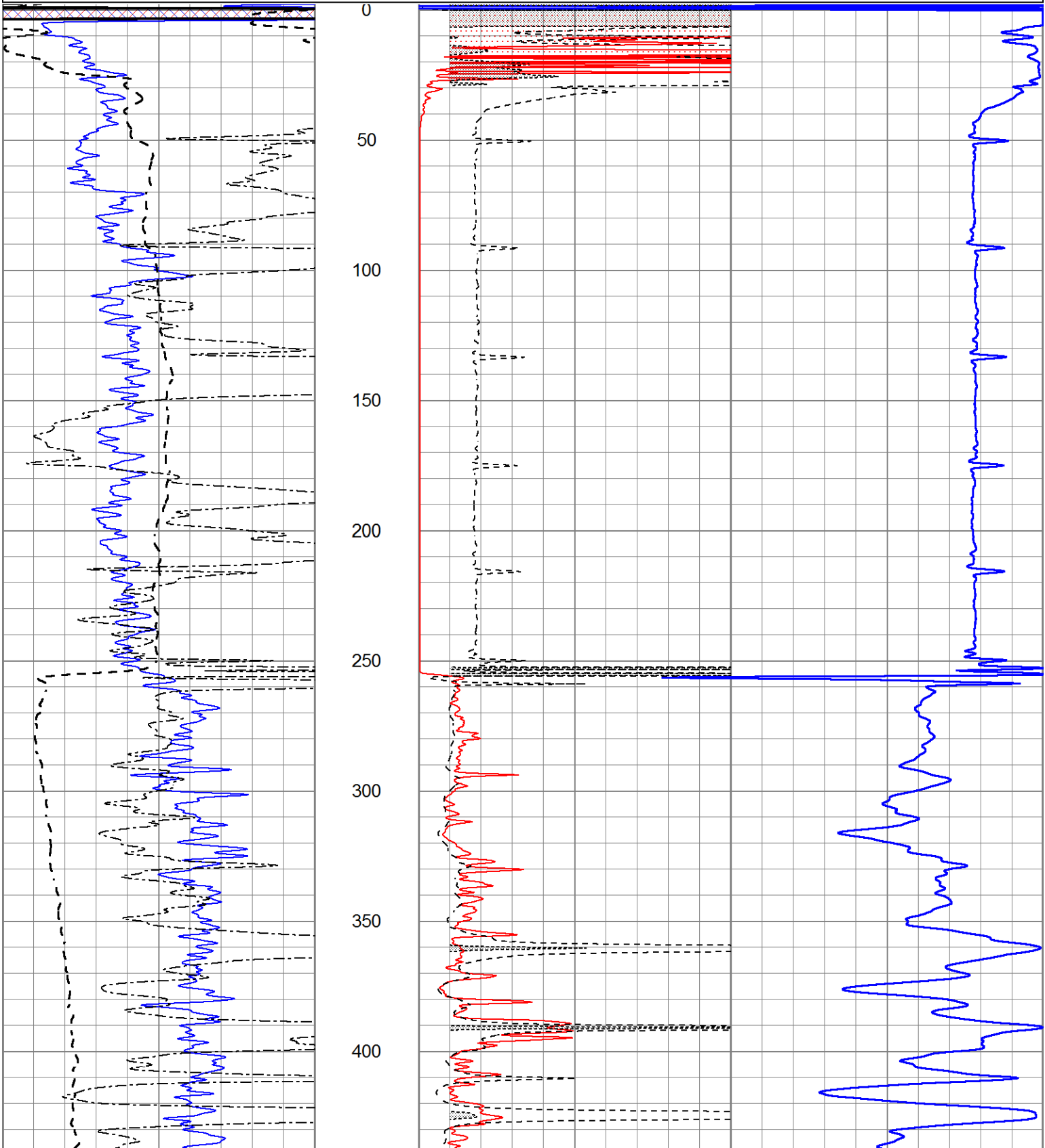
Comments

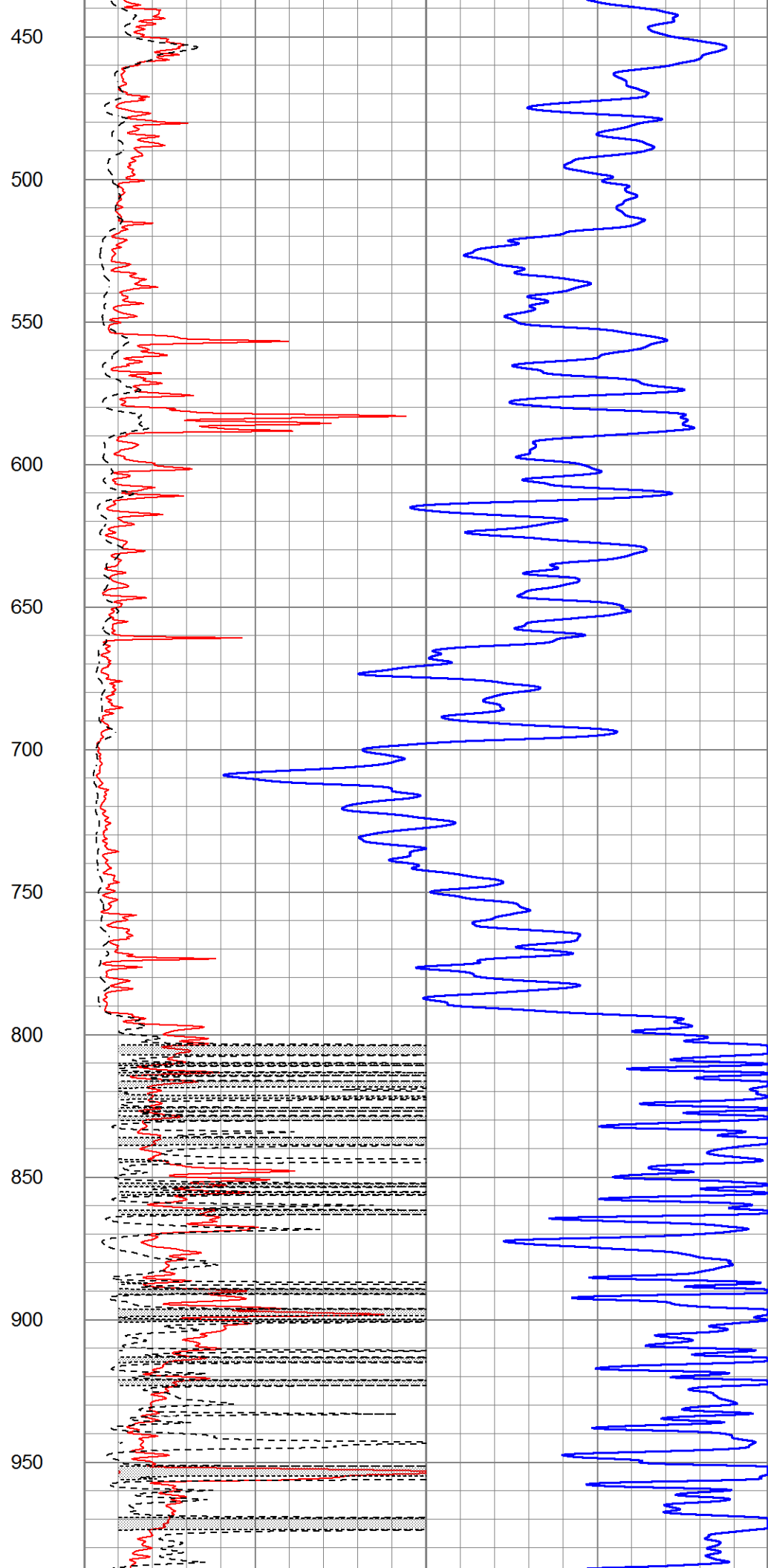
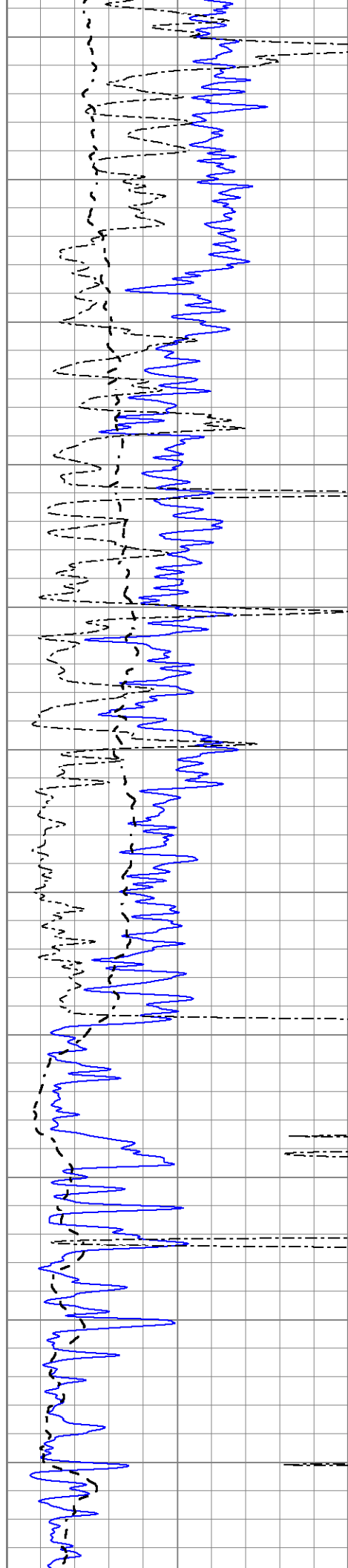
THANK YOU FOR USING E.L.I. WIRELINE SERVICES HAYS, KANSAS (785)628-6395
DIRECTIONS
KINGMAN, KS. 9S. ON HWY 14 TO "90TH ST.", 1/2W., N. INTO

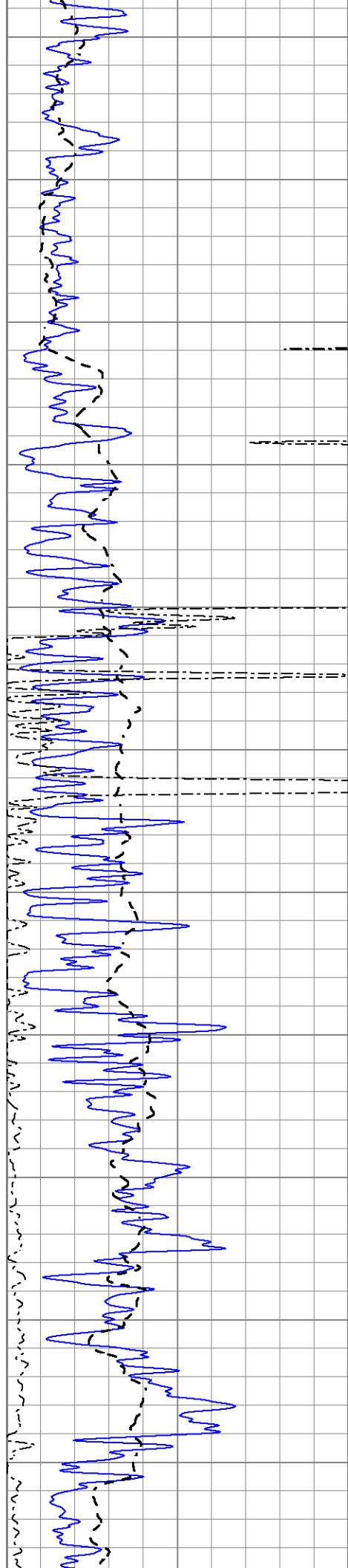


MAIN SECTION

0	Gamma Ray (GAPI)	150	1000	CILD (mmho/m)	0
-100	SP (mV)	100	0	RLL3 (Ohm-m)	50
0	RWA (Ohm-m)	1	0	RILD (Ohm-m)	50
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500







1000

1050

1100

1150

1200

1250

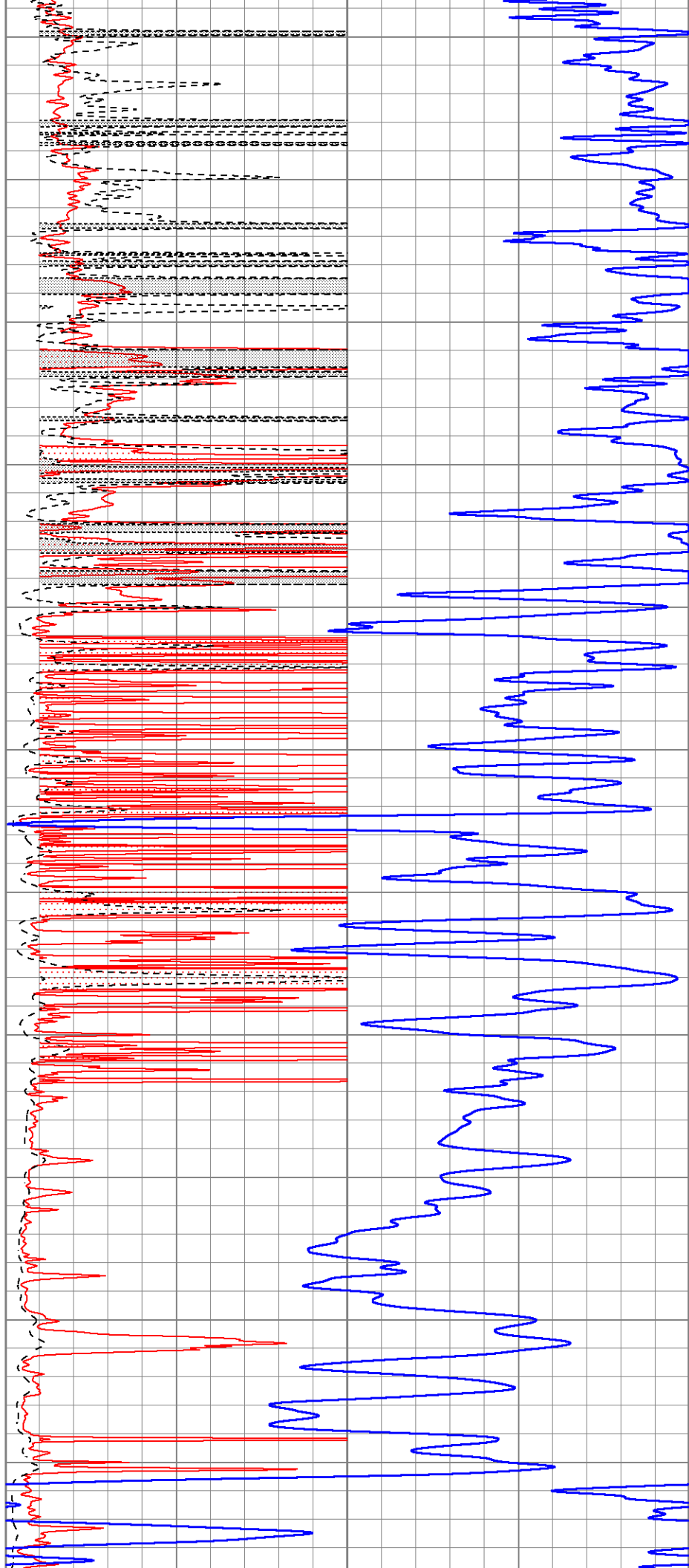
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1350

1400

1450

1500



1550

1600

1650

1700

1750

1800

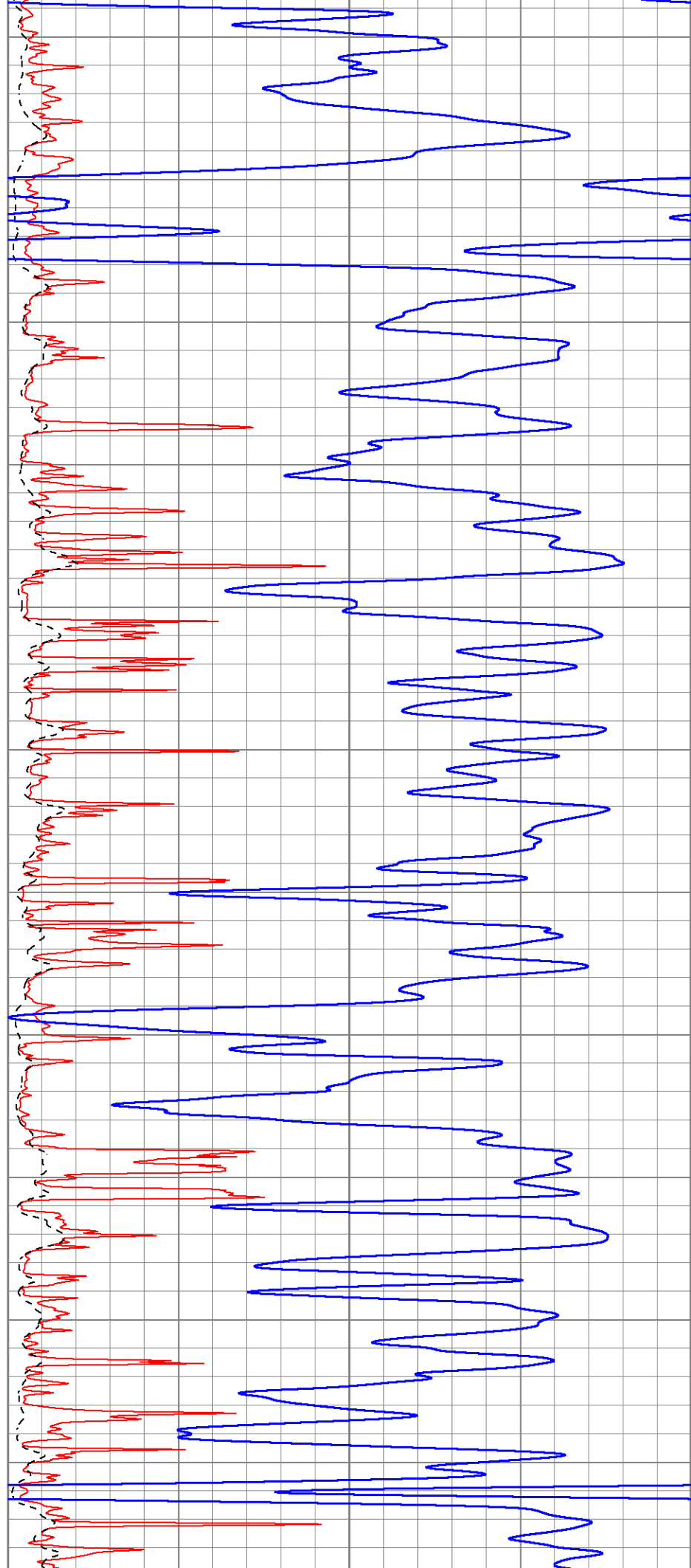
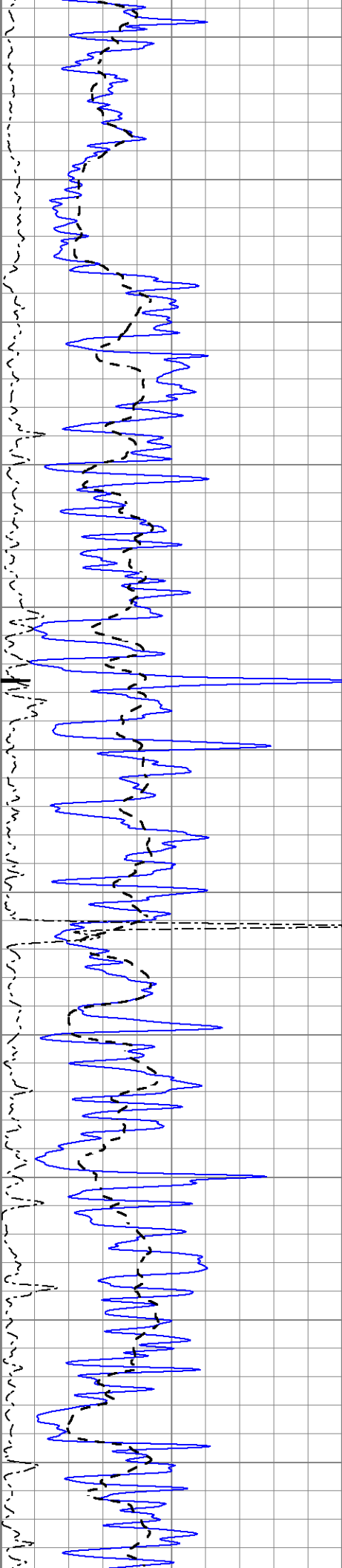
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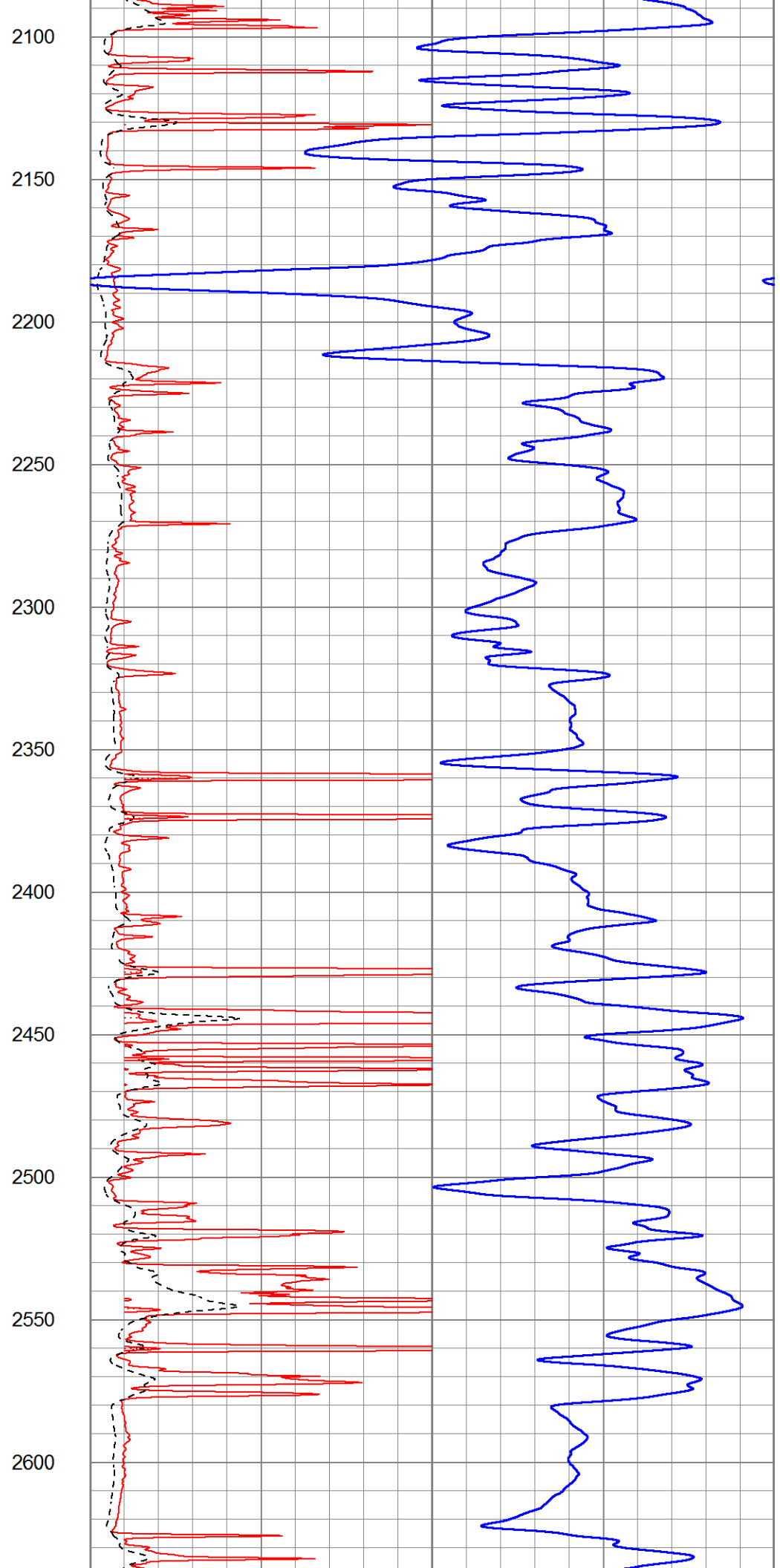
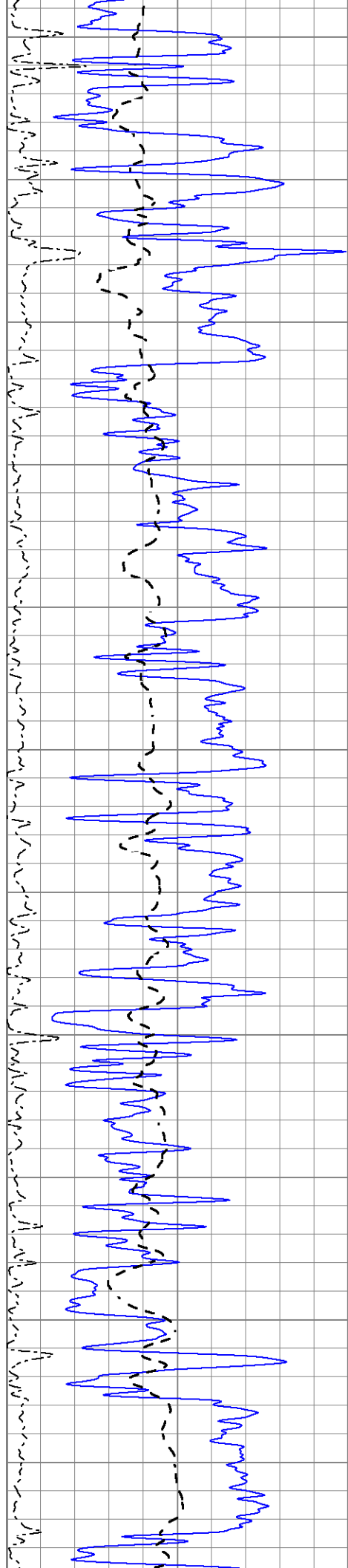
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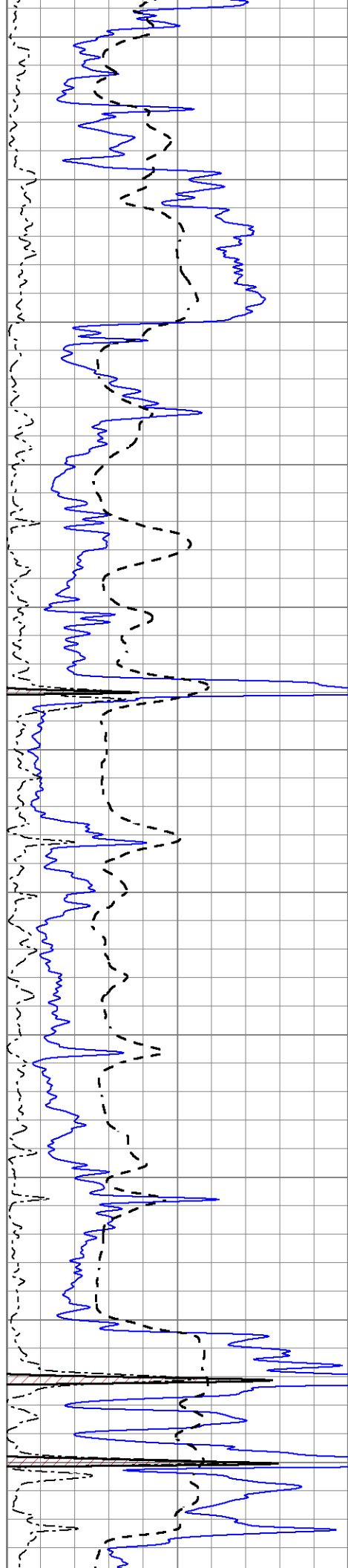
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2000

2050







2650

2700

2750

2800

2850

2900

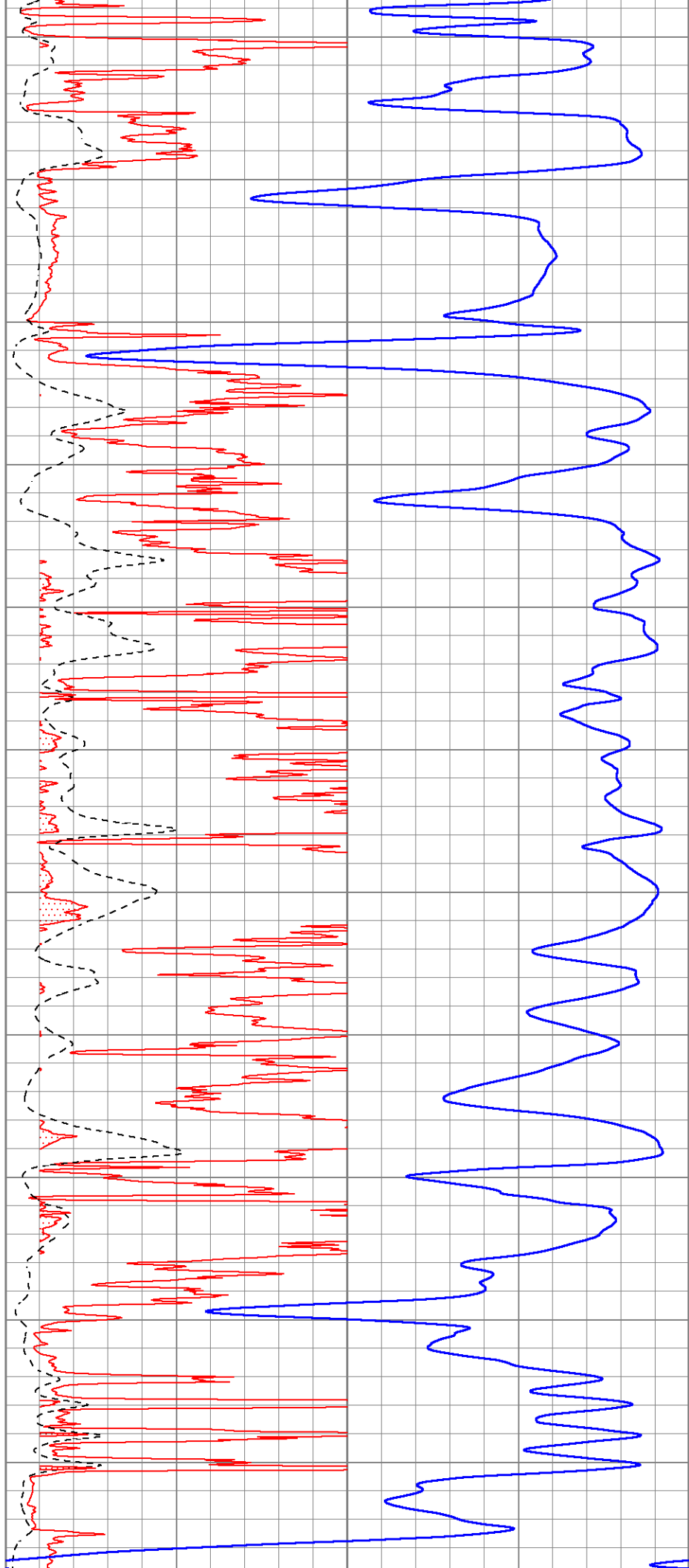
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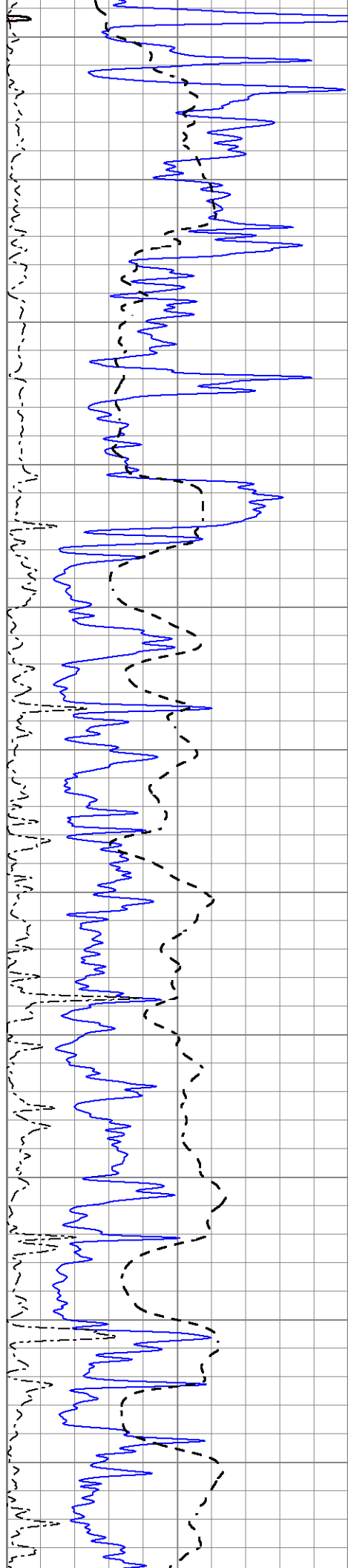
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3100

3150





3200

3250

3300

3350

3400

3450

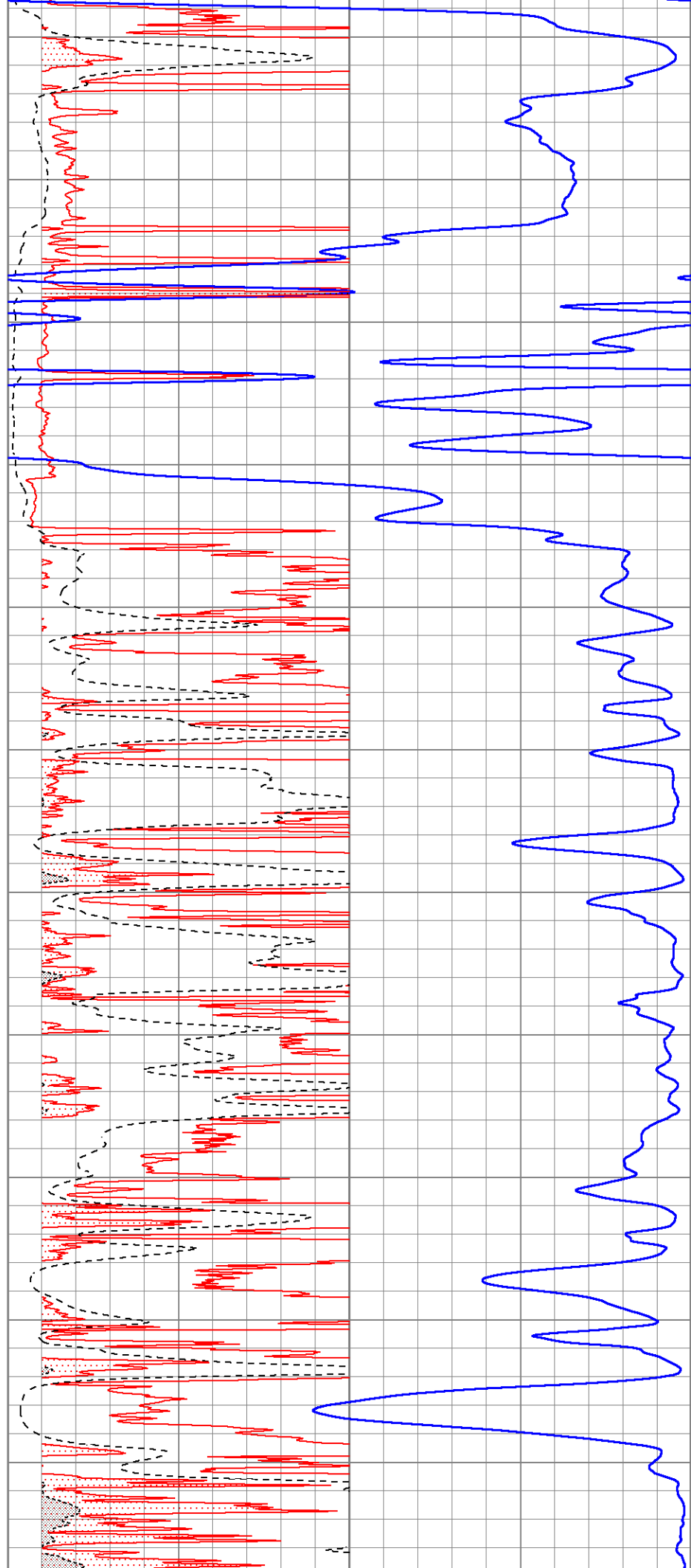
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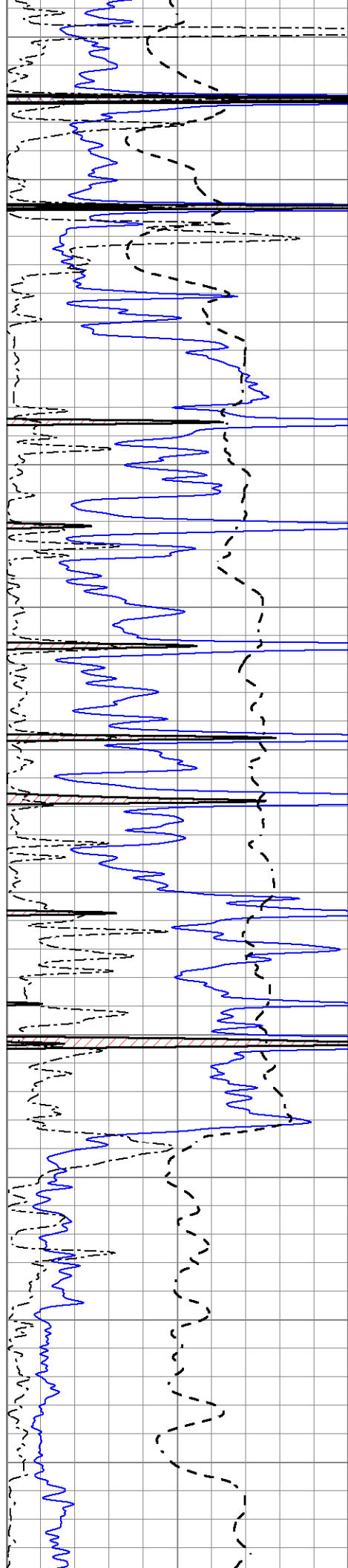
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3650

3700





3750

3800

3850

3900

3950

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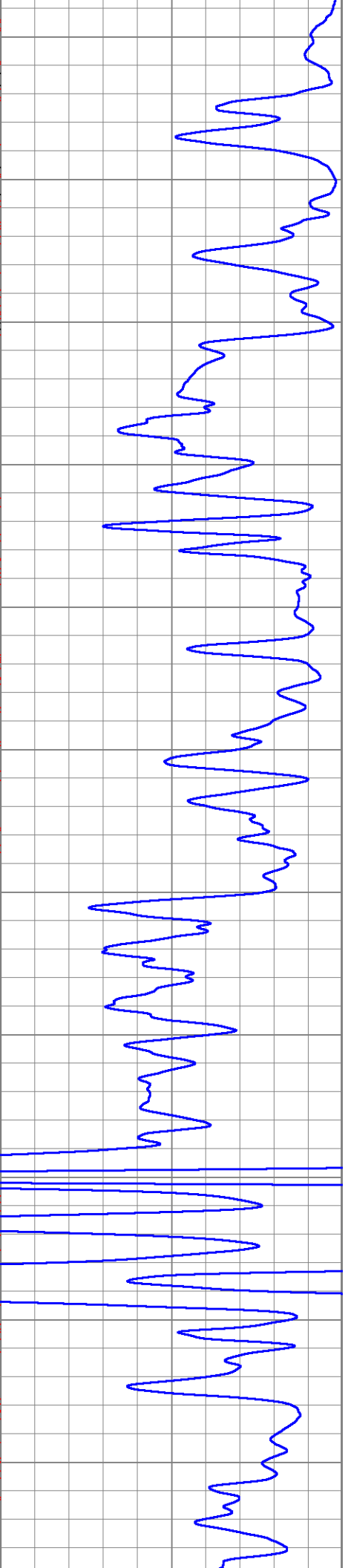
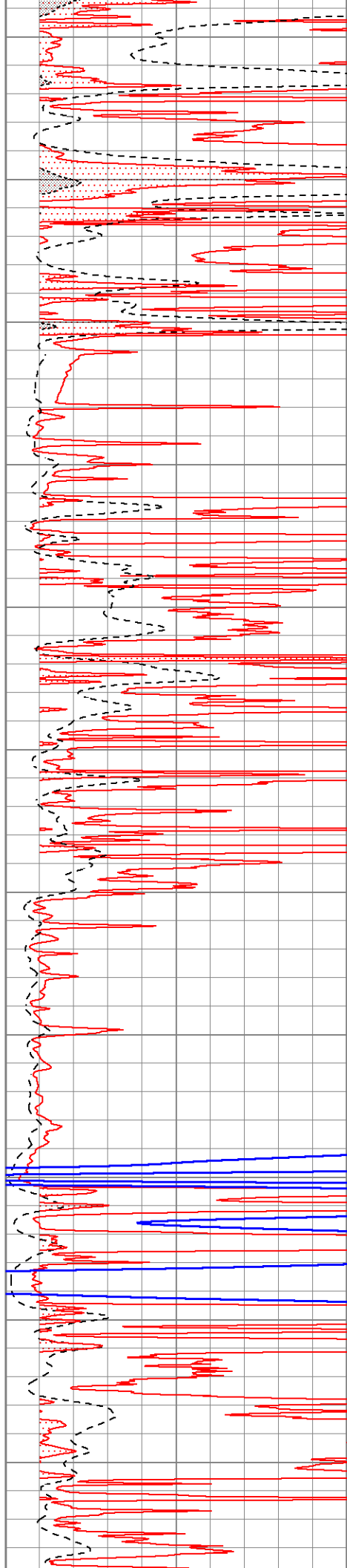
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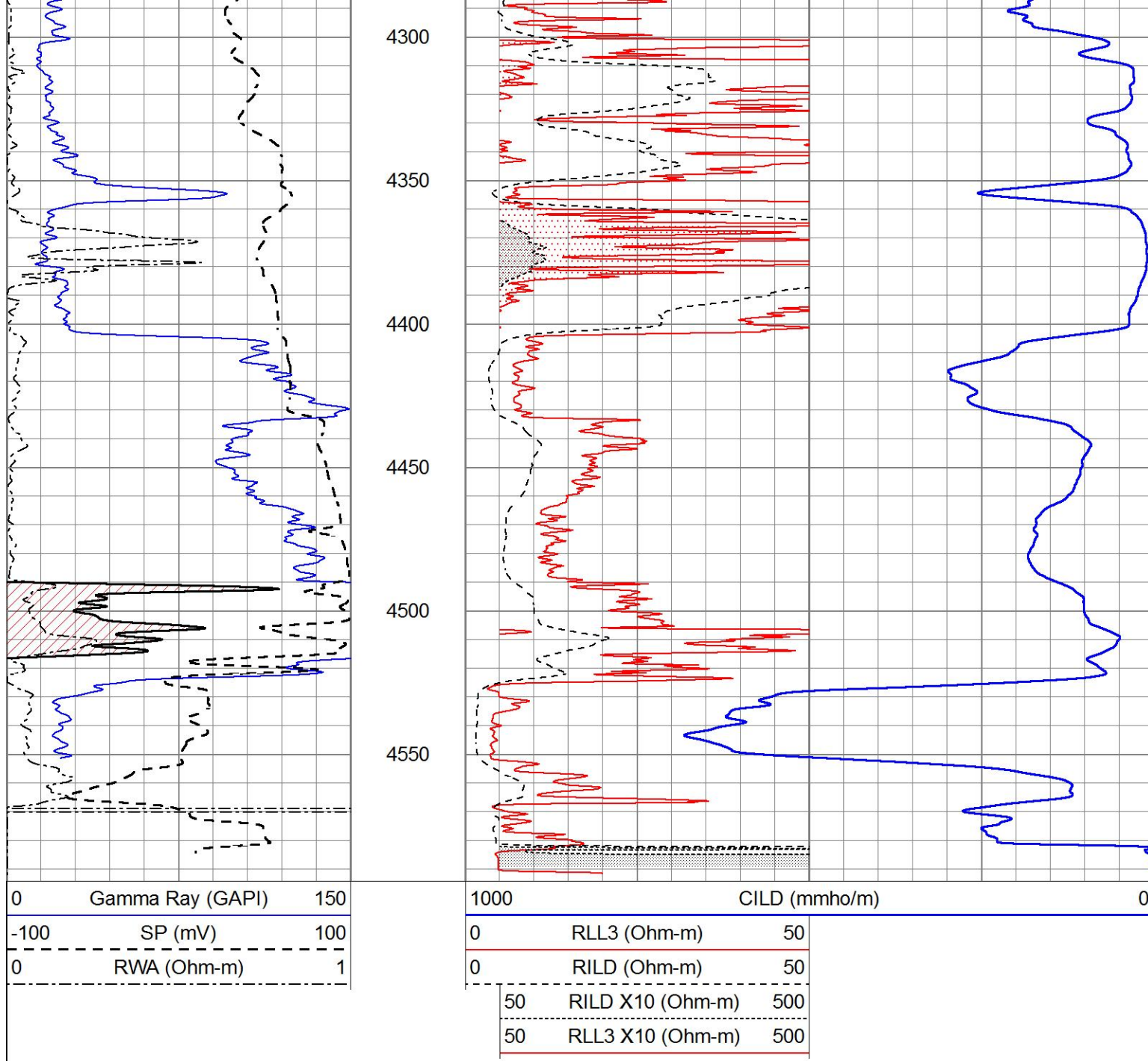
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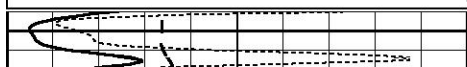




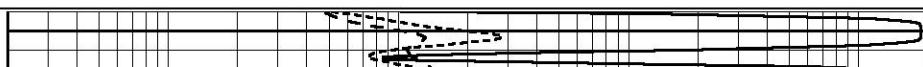
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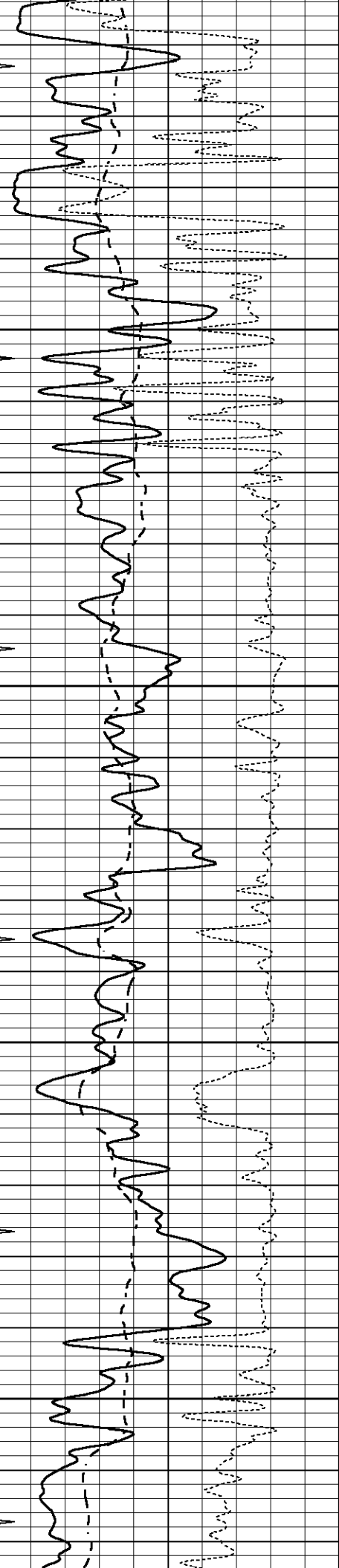
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 Dataset Pathname pass3.2D
 Presentation Format _dil
 Dataset Creation Sat Mar 20 00:43:20 2021
 Charted by Depth in Feet scaled 1:240

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			



1300



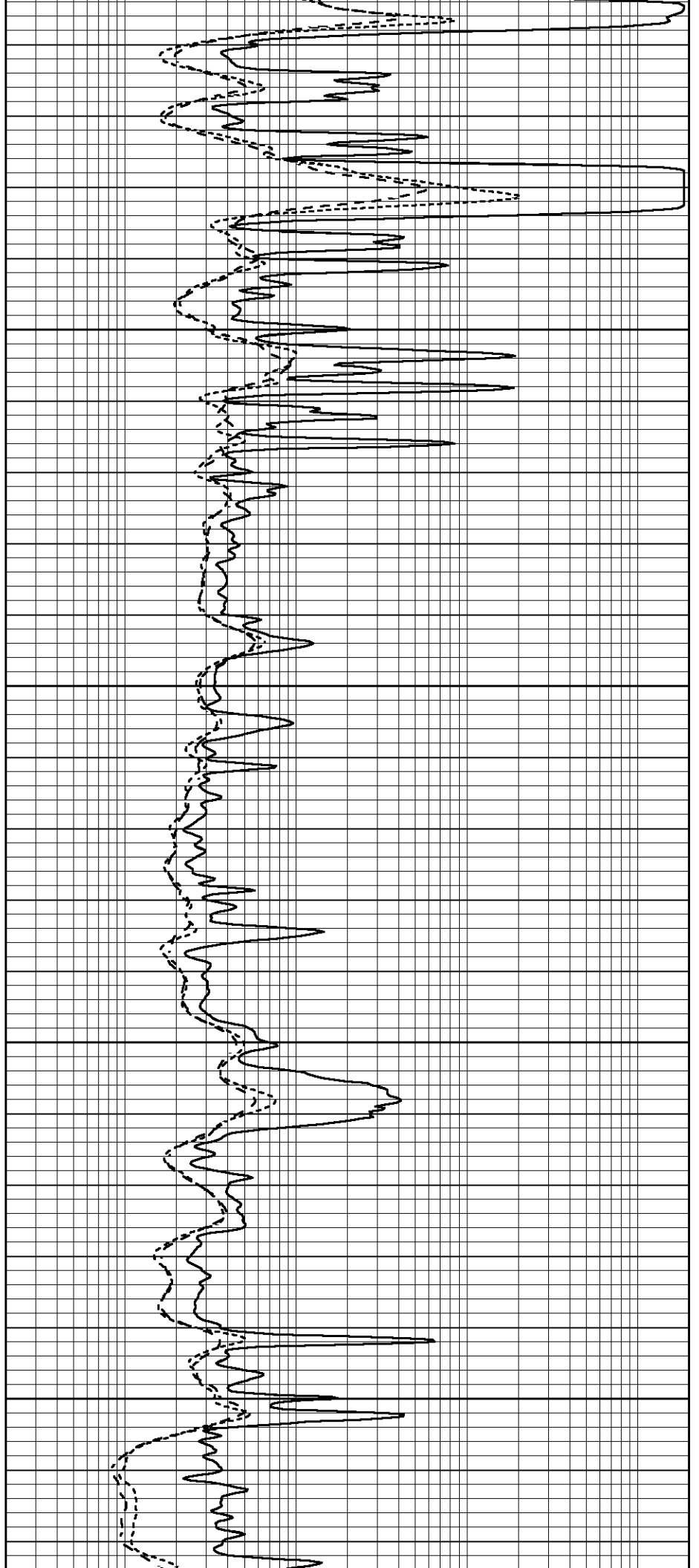


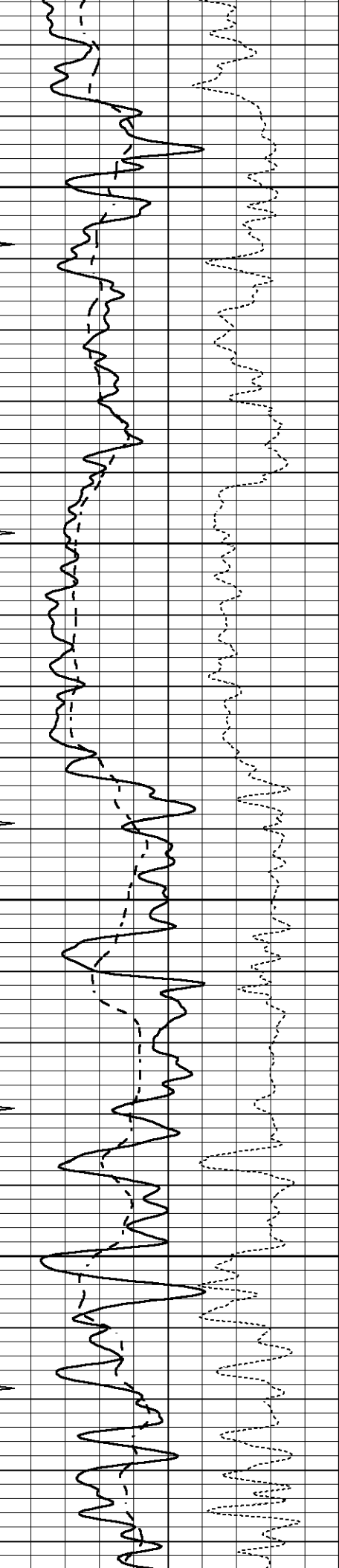
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1400

1450

1500



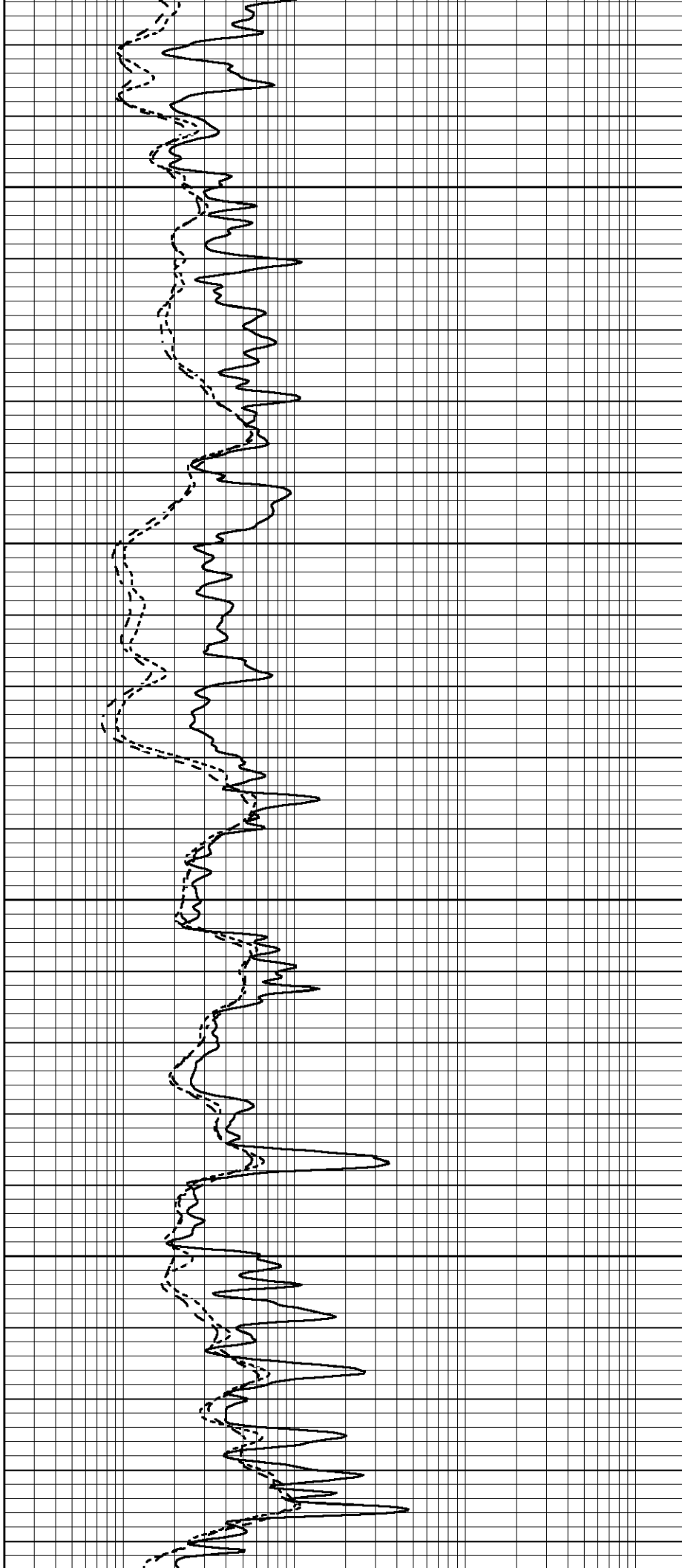


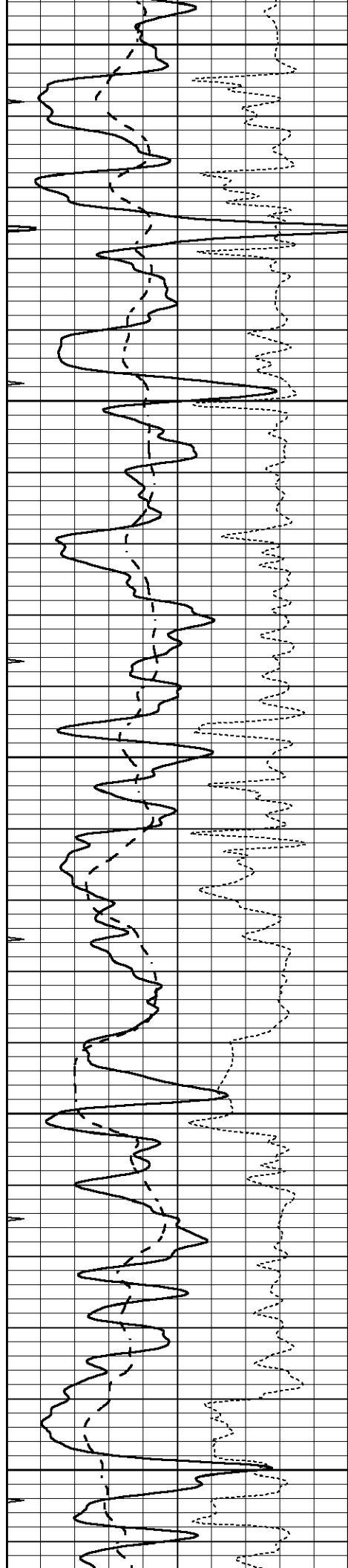
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1650

1700





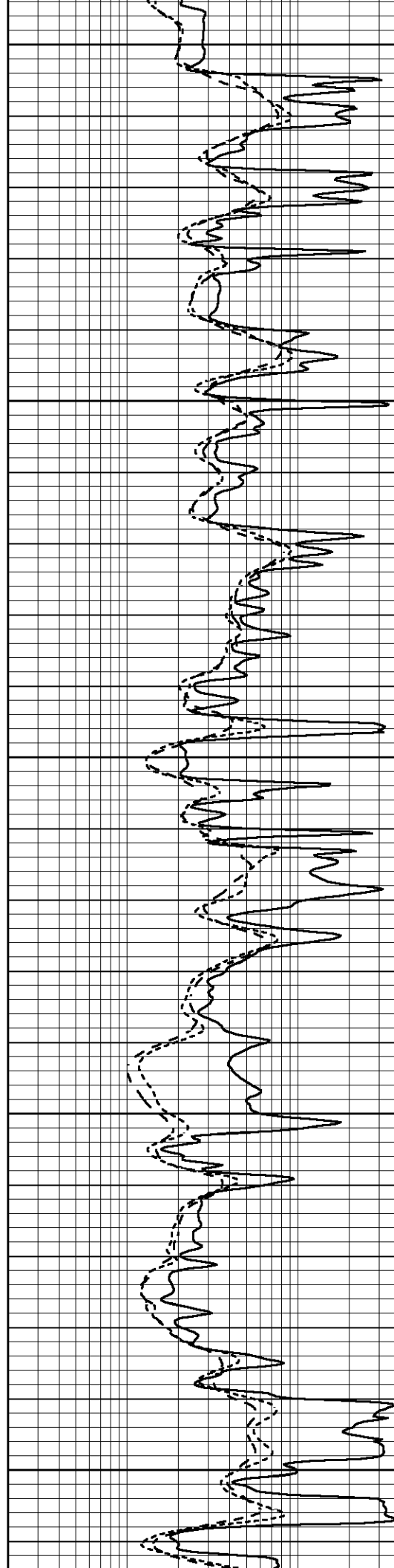
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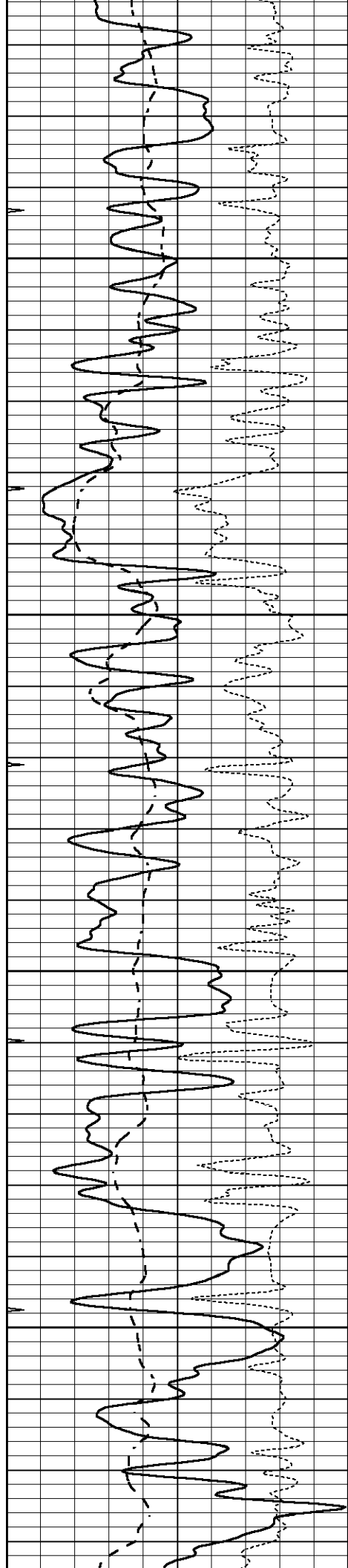
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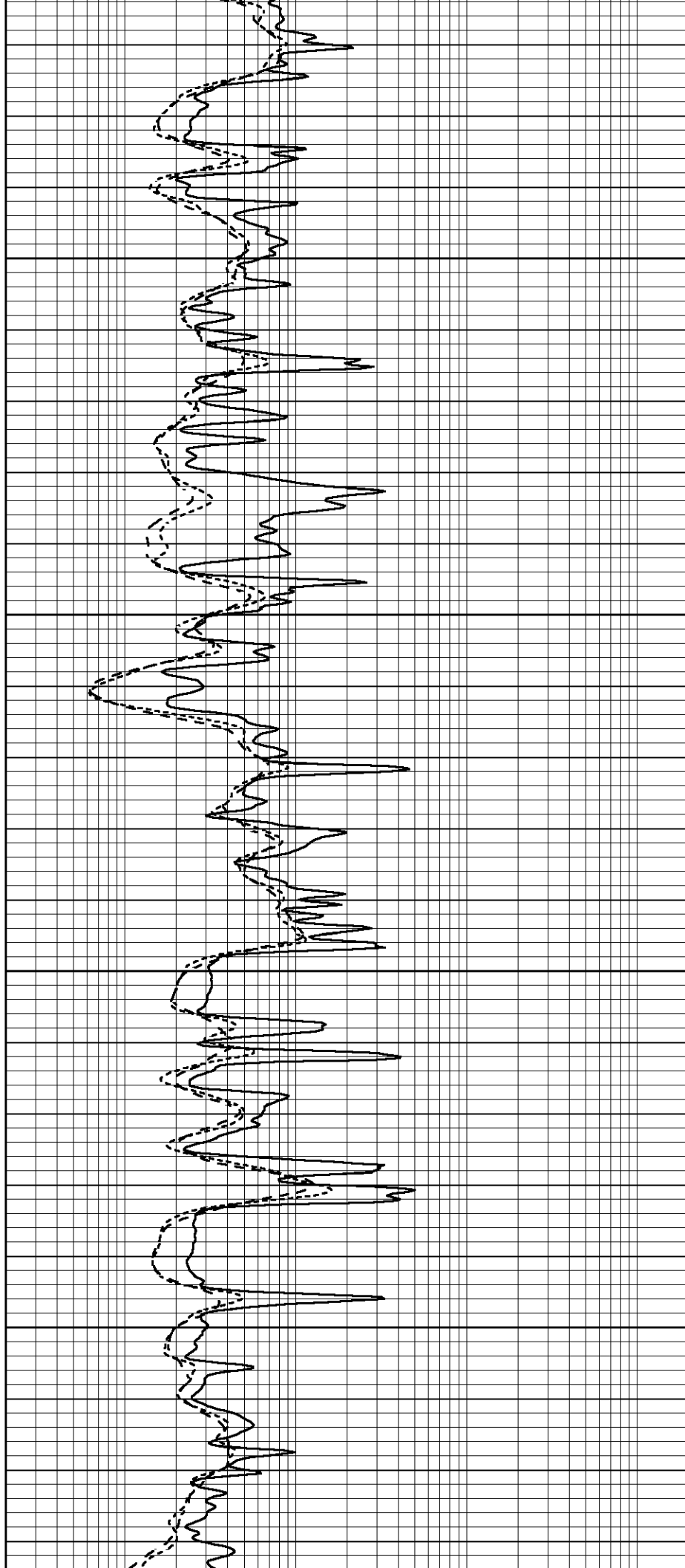


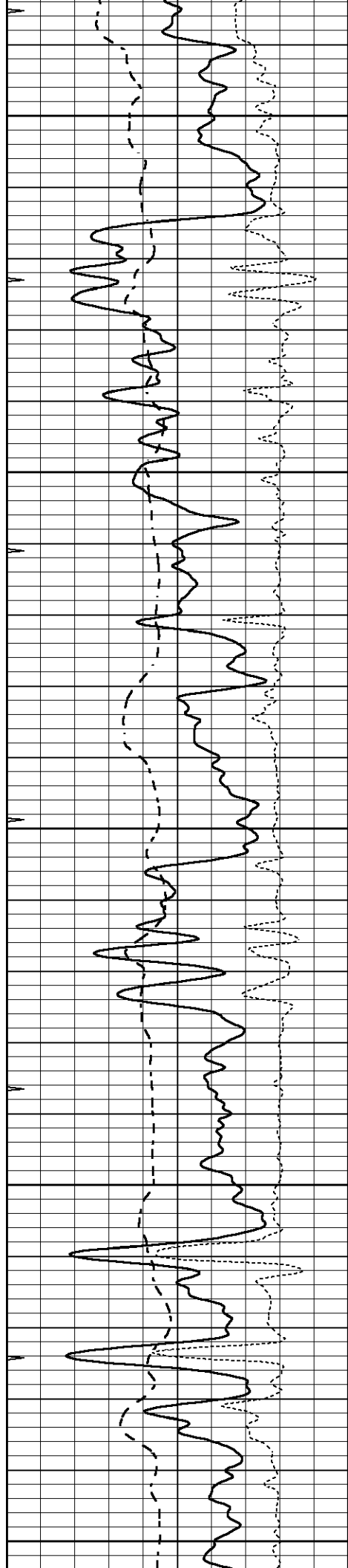
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2150





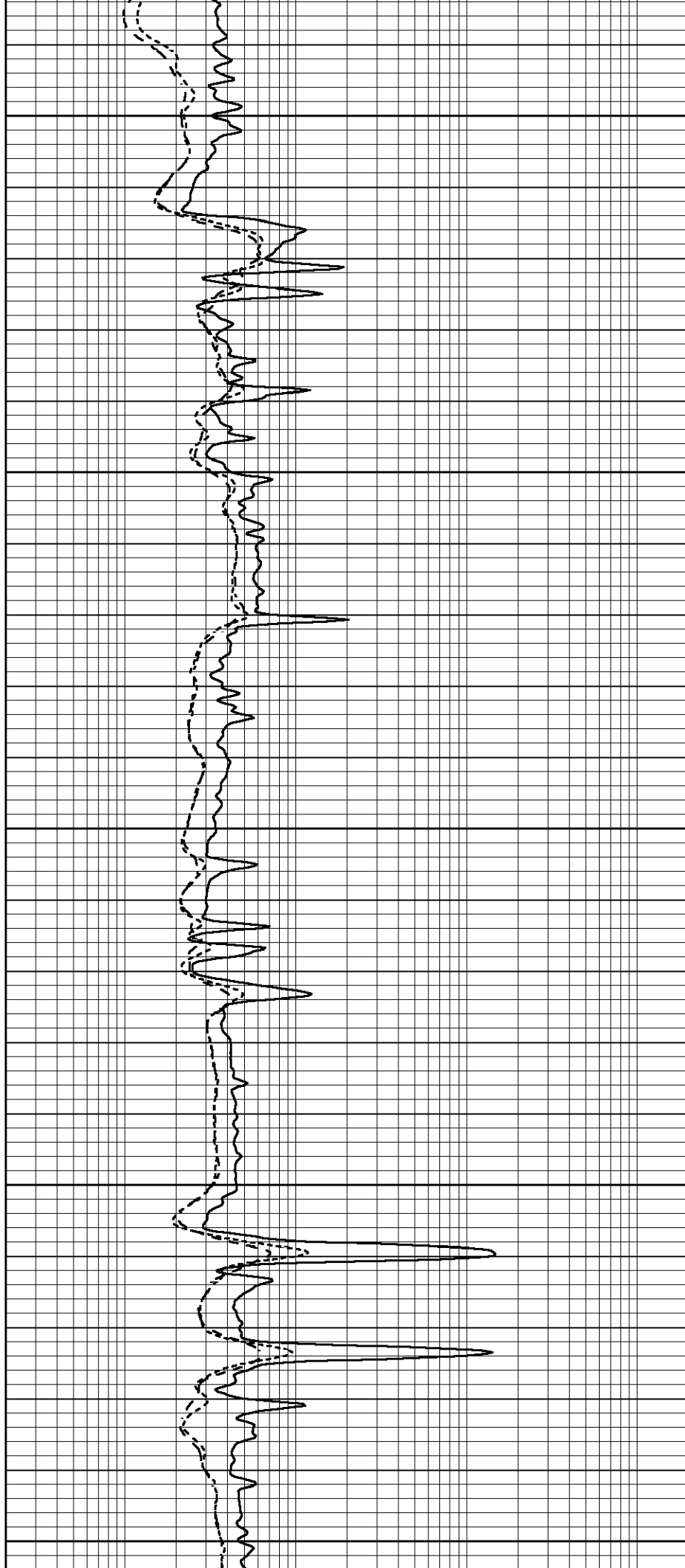
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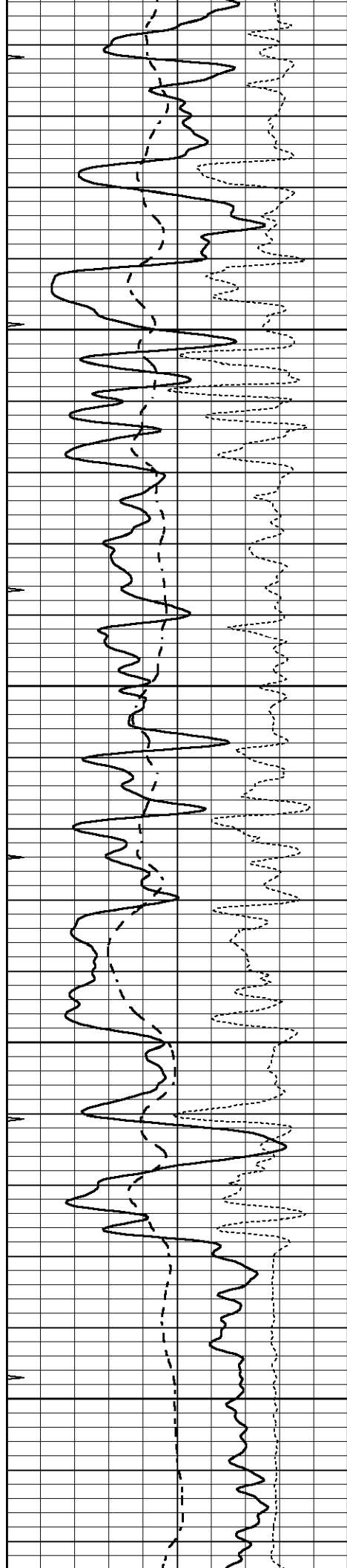
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2300

2350

2400



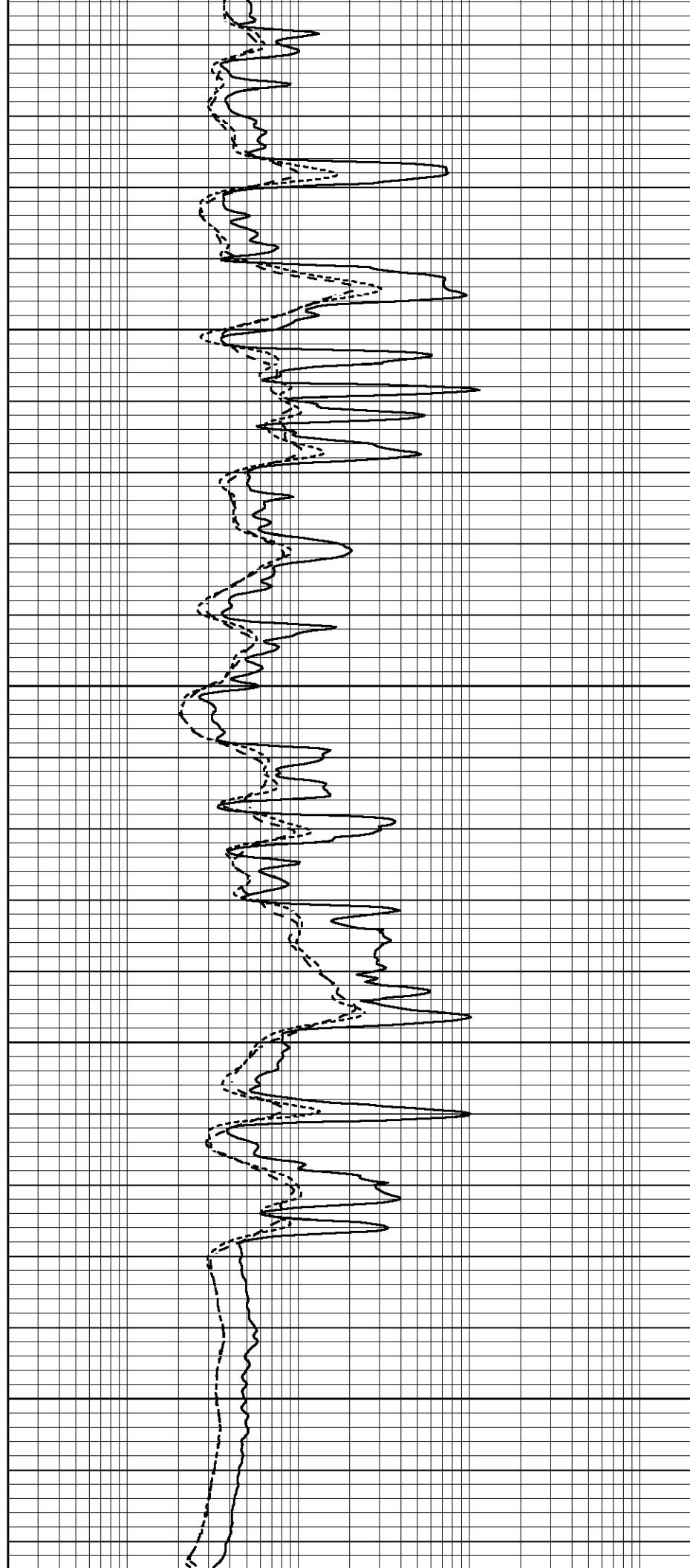


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2550

2600



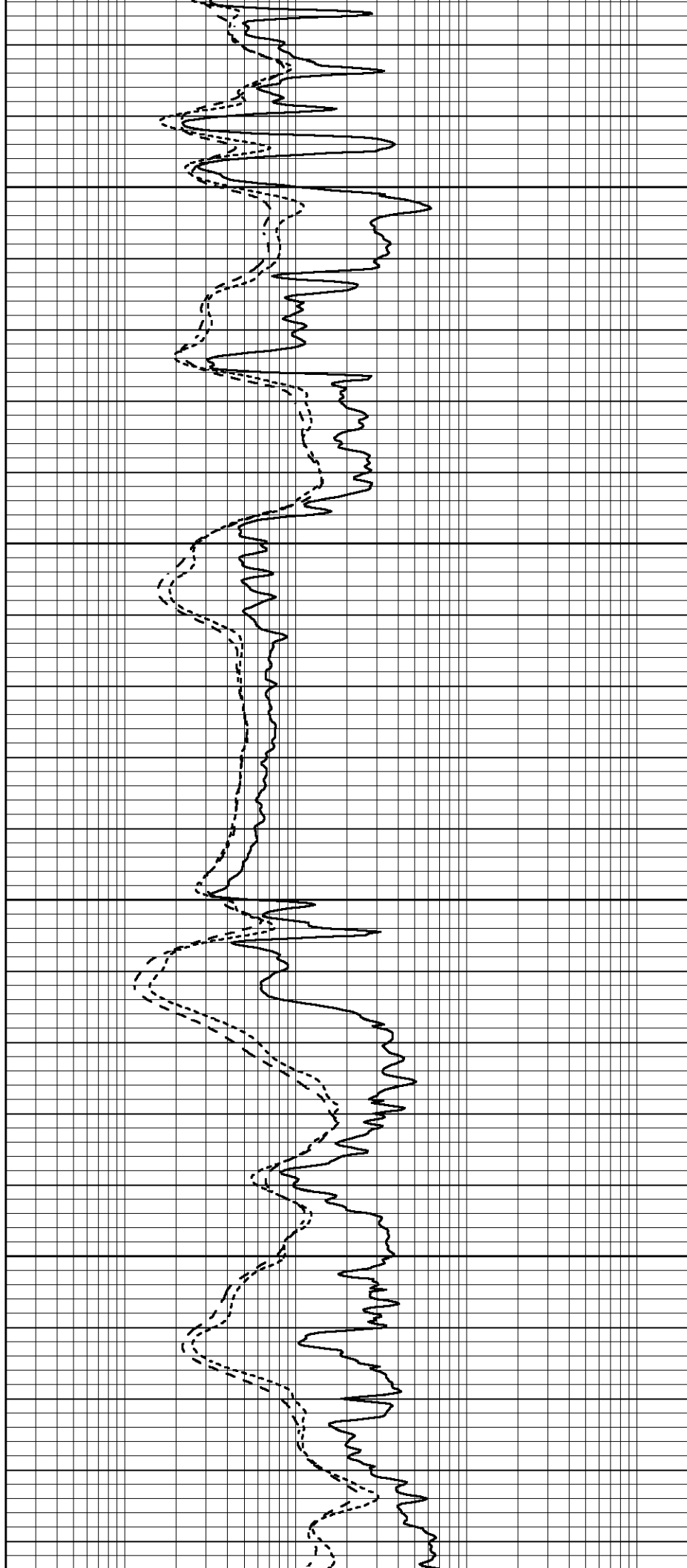


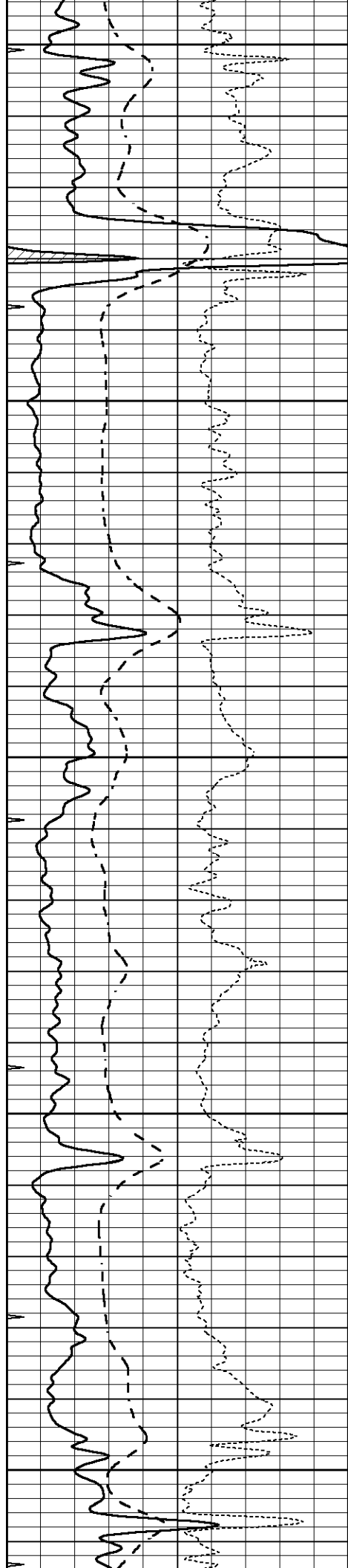
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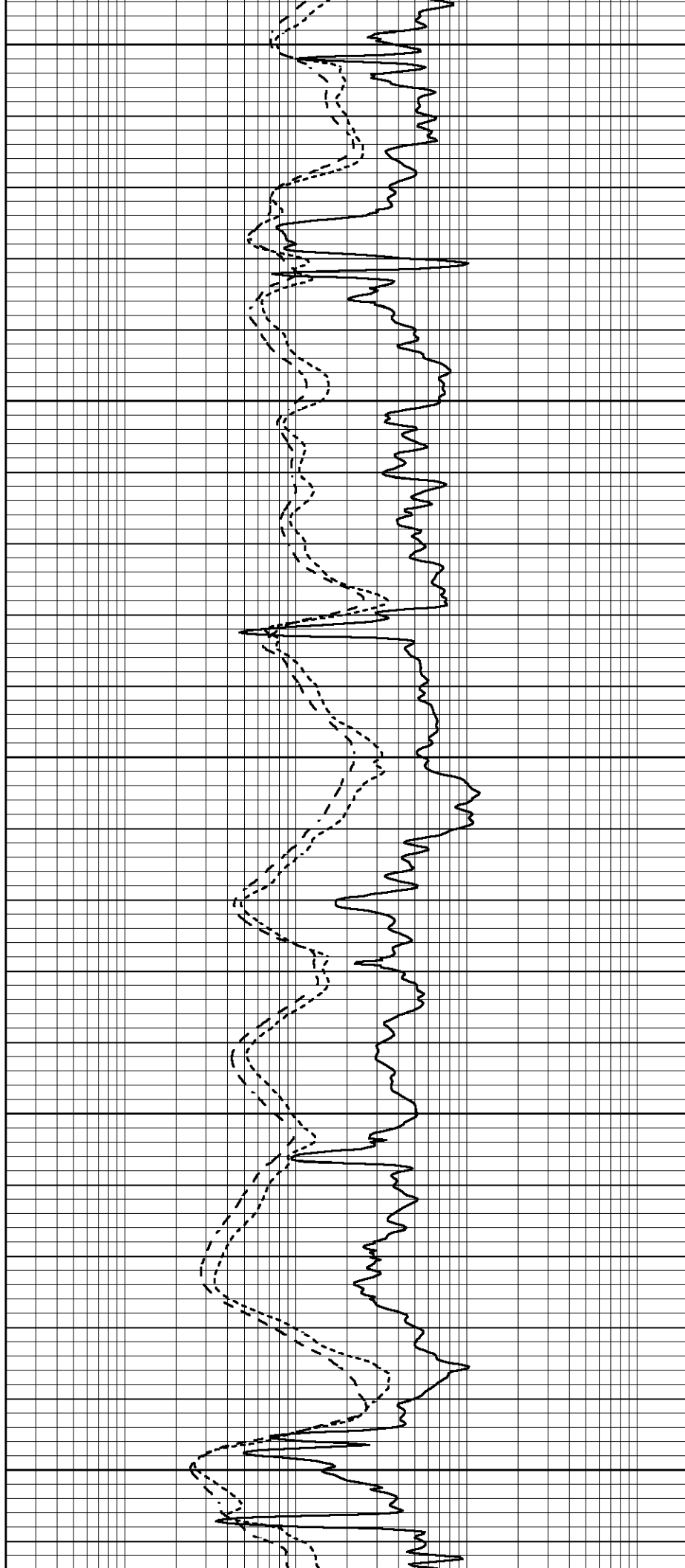
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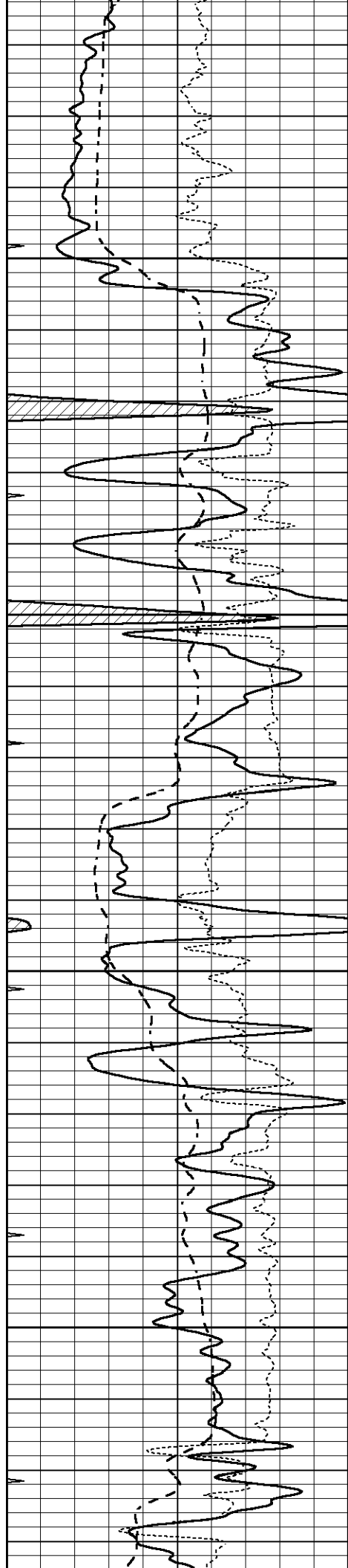
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3050



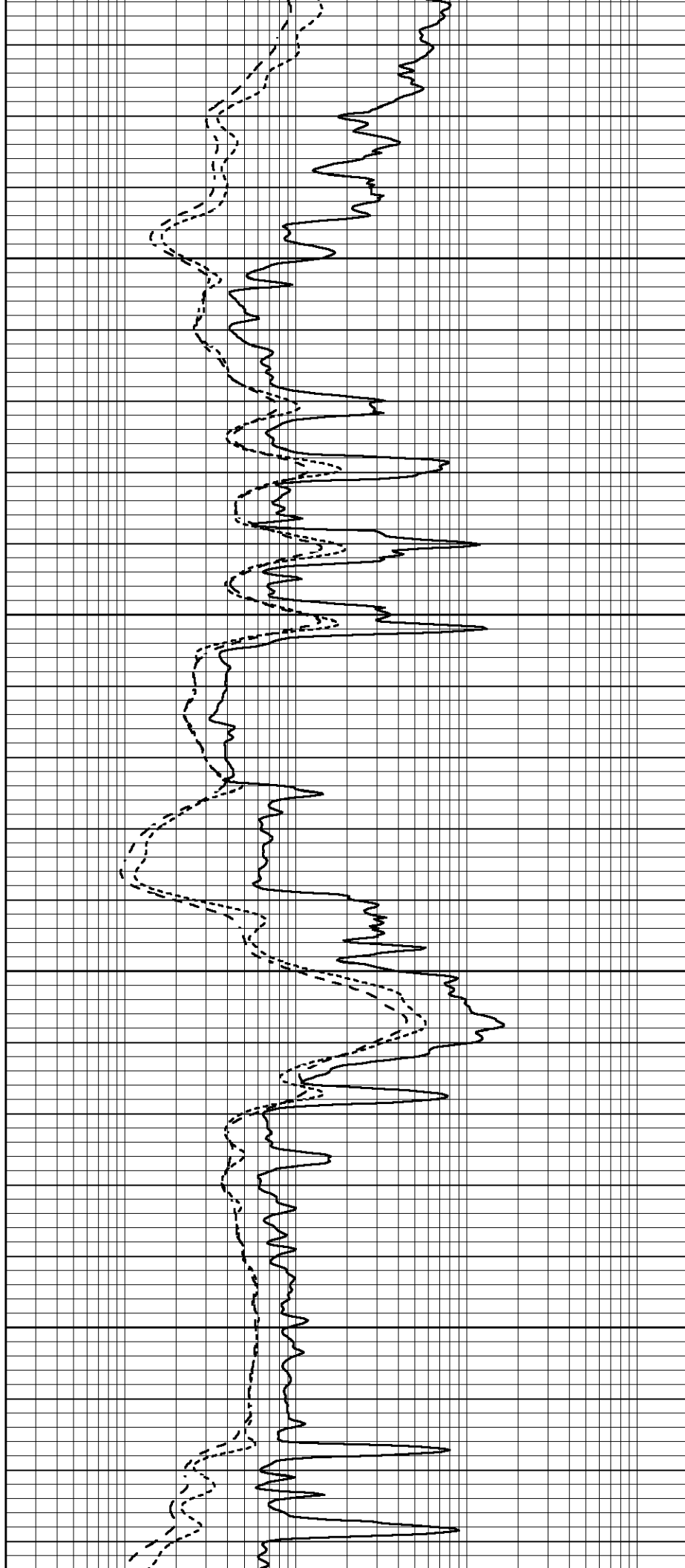


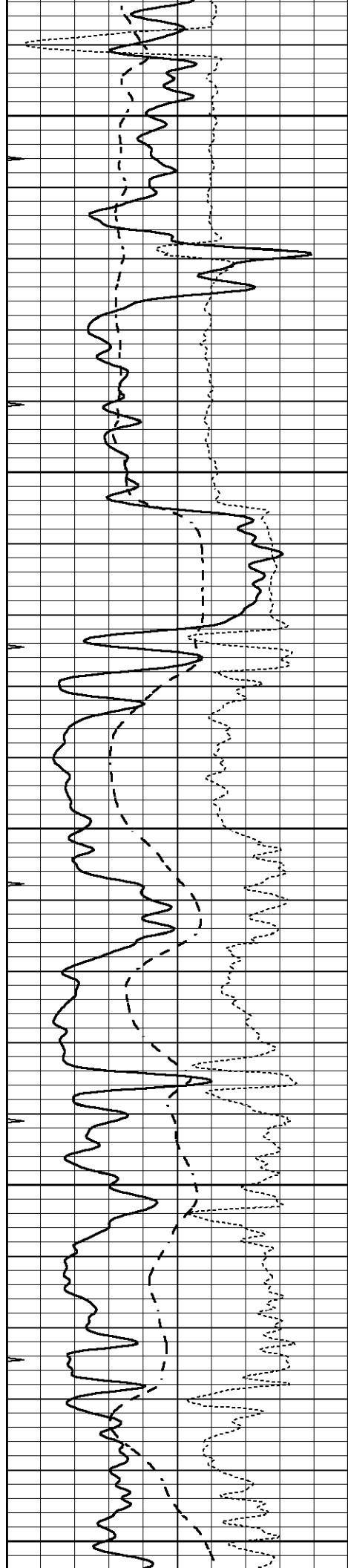
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3150

3200

3250





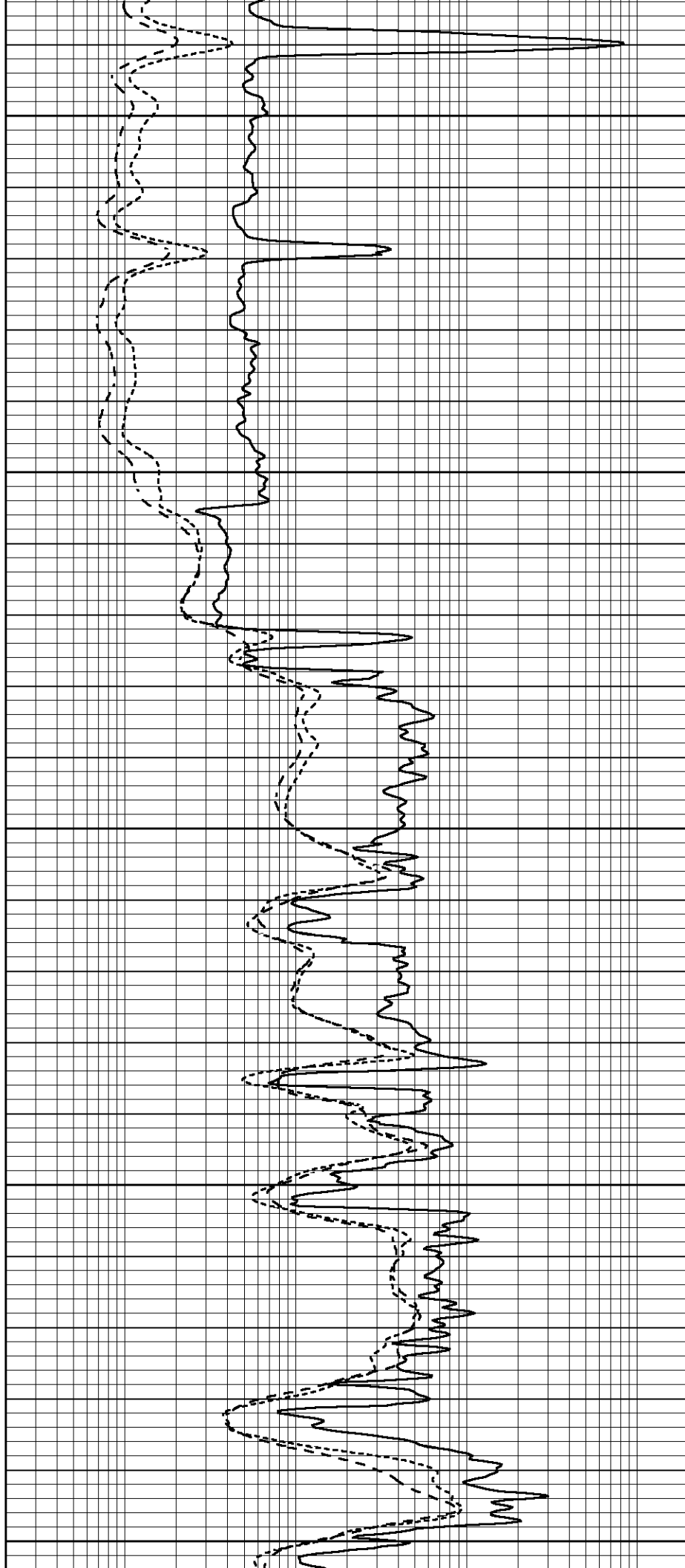
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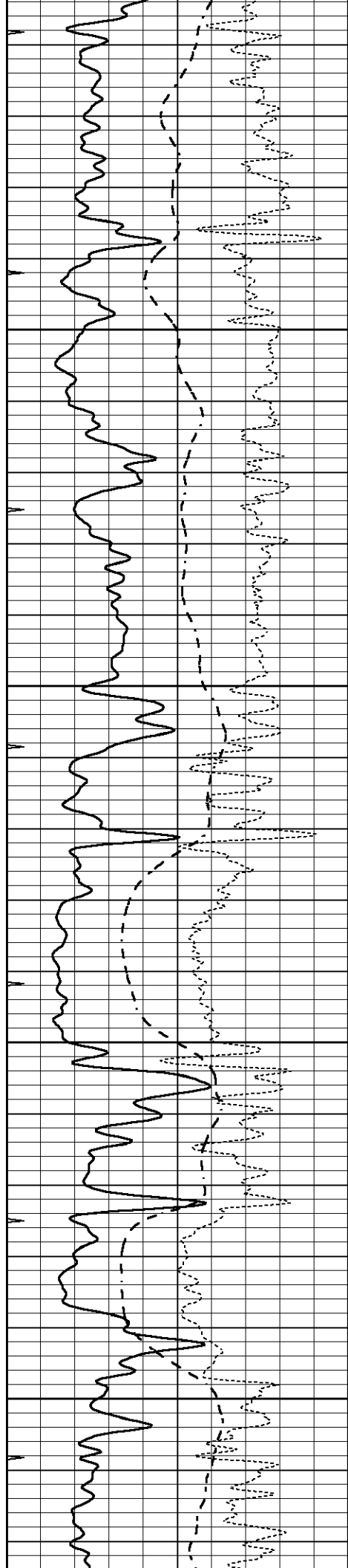
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3500



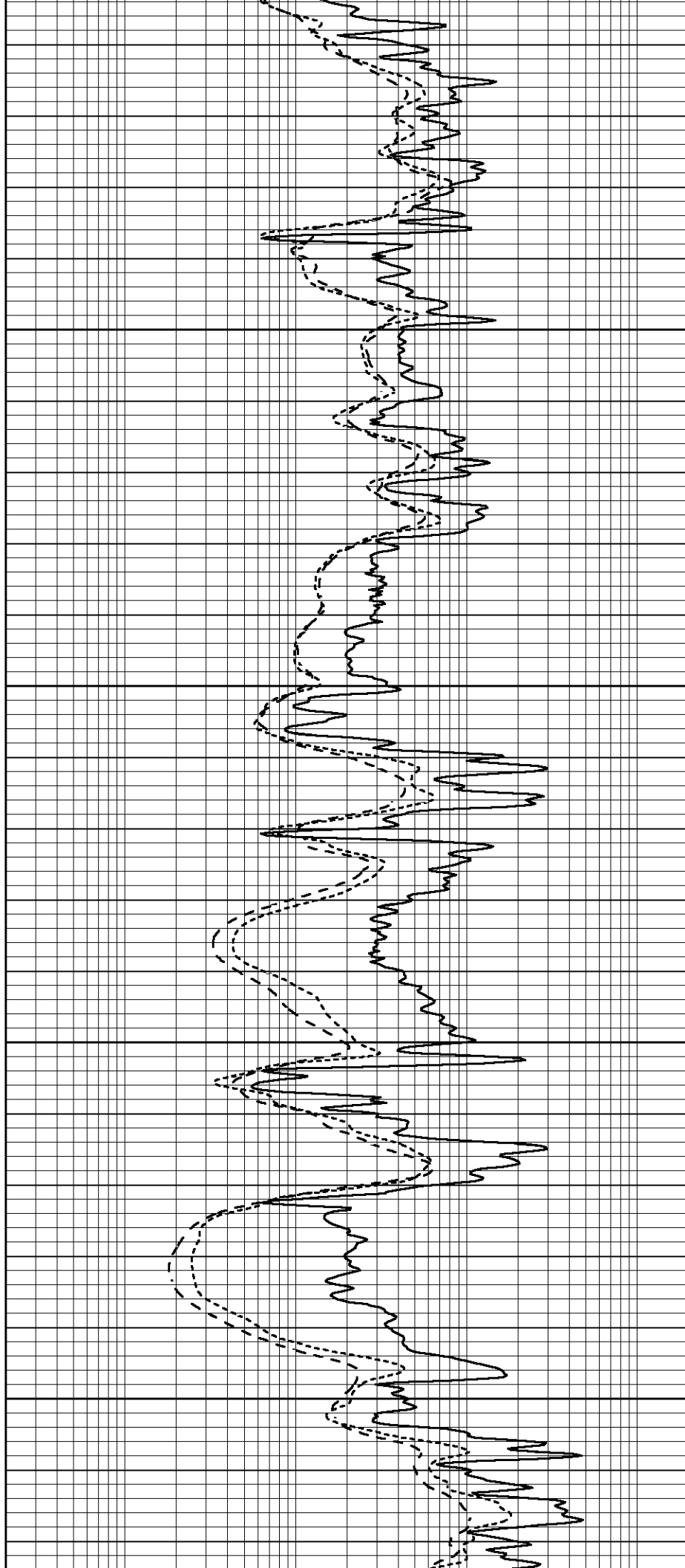


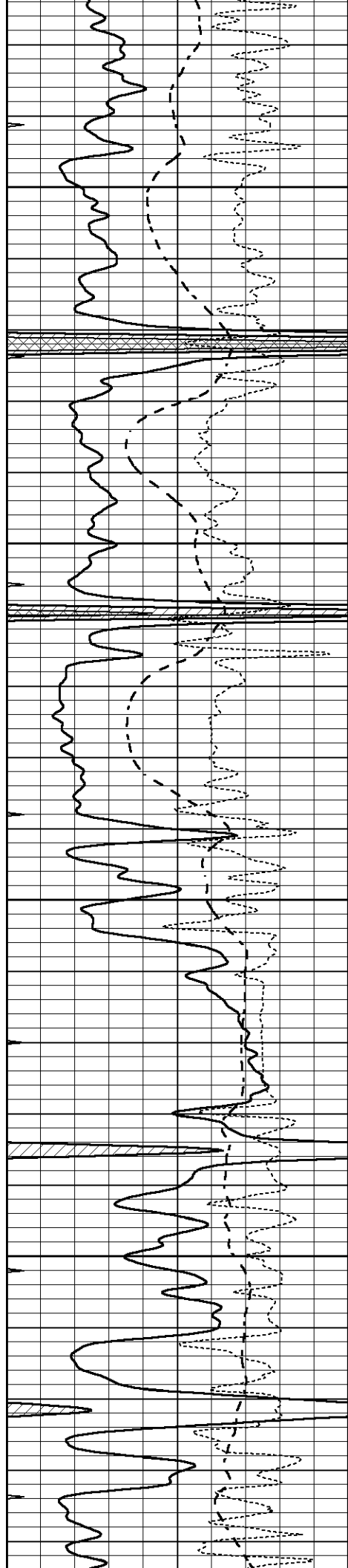
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3600

3650

3700



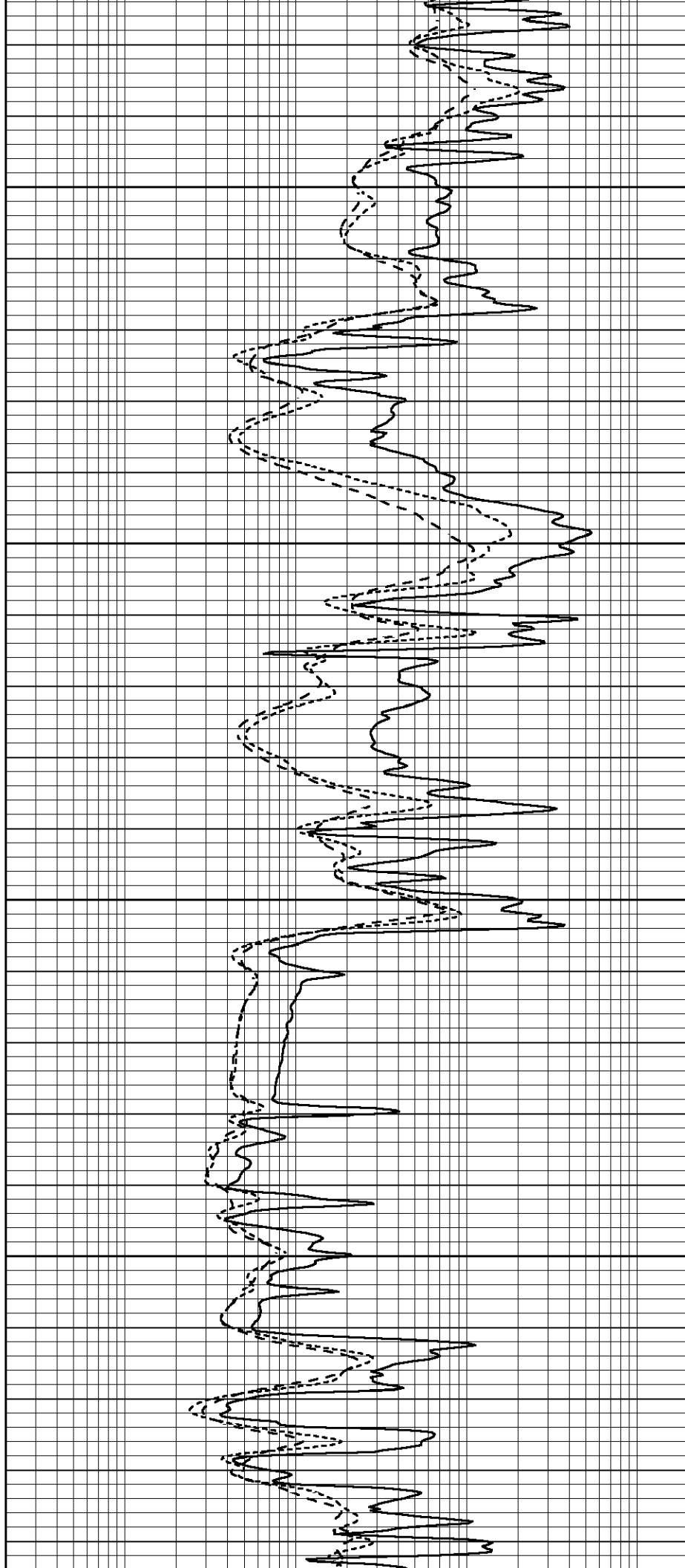


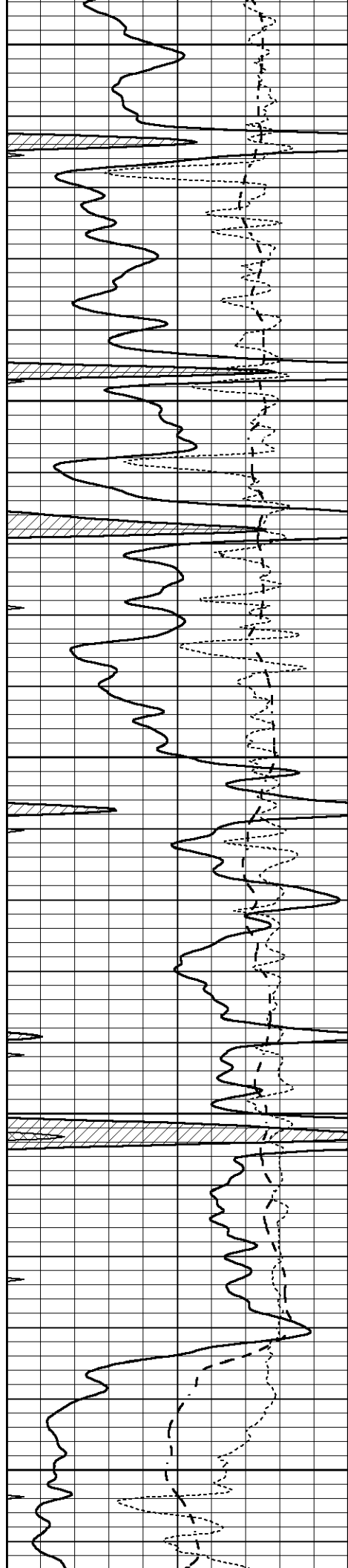
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3900





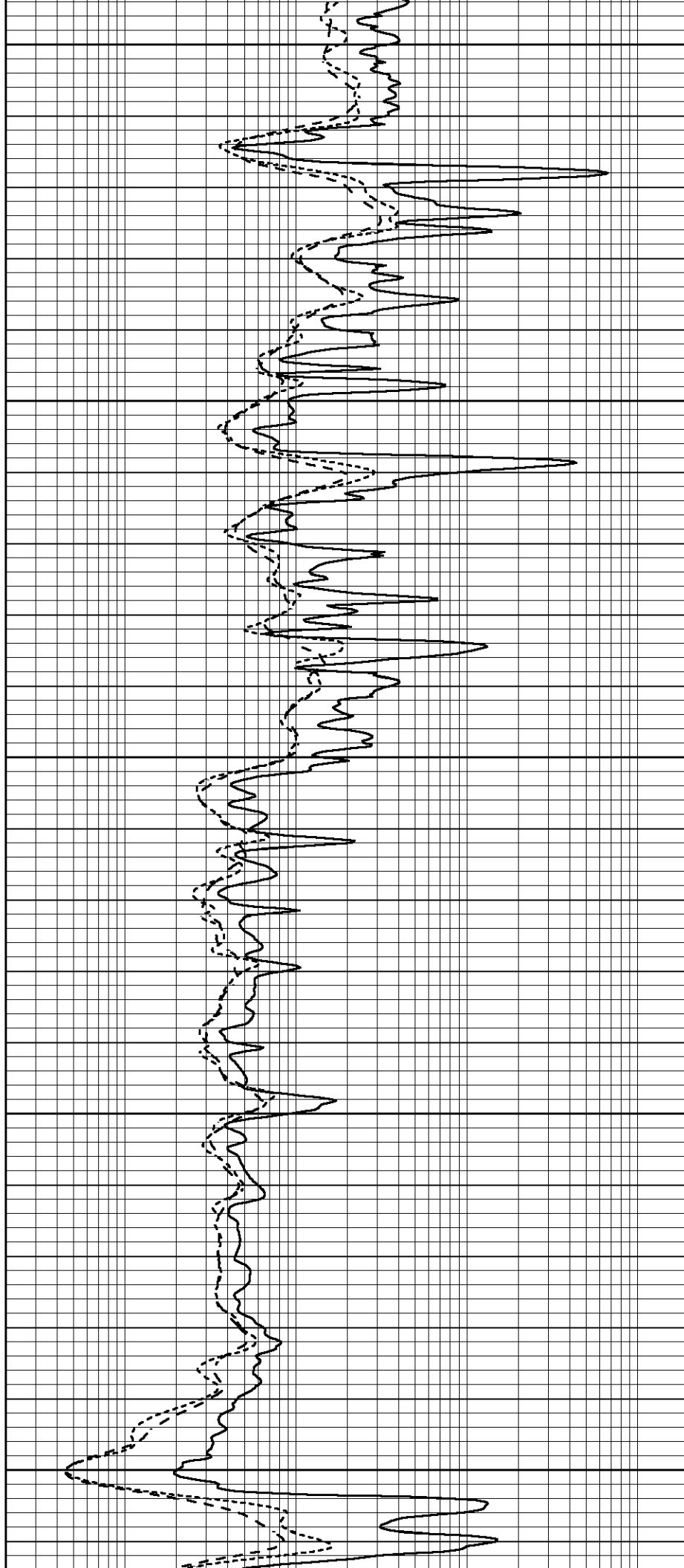
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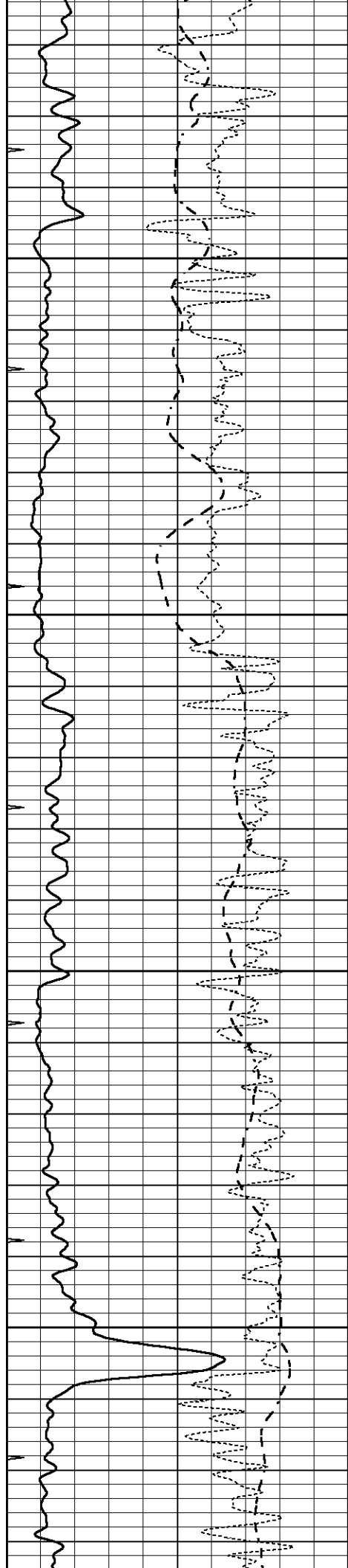
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4100

4150



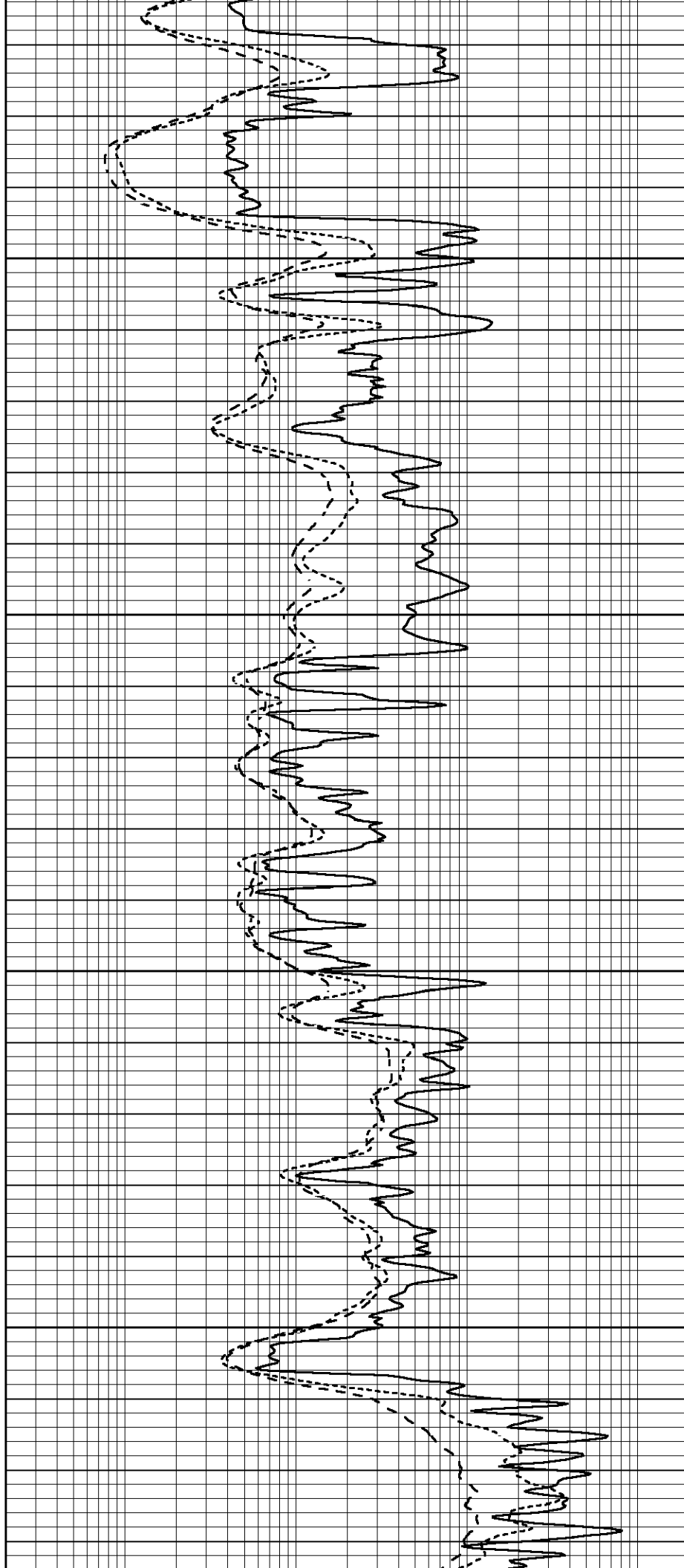


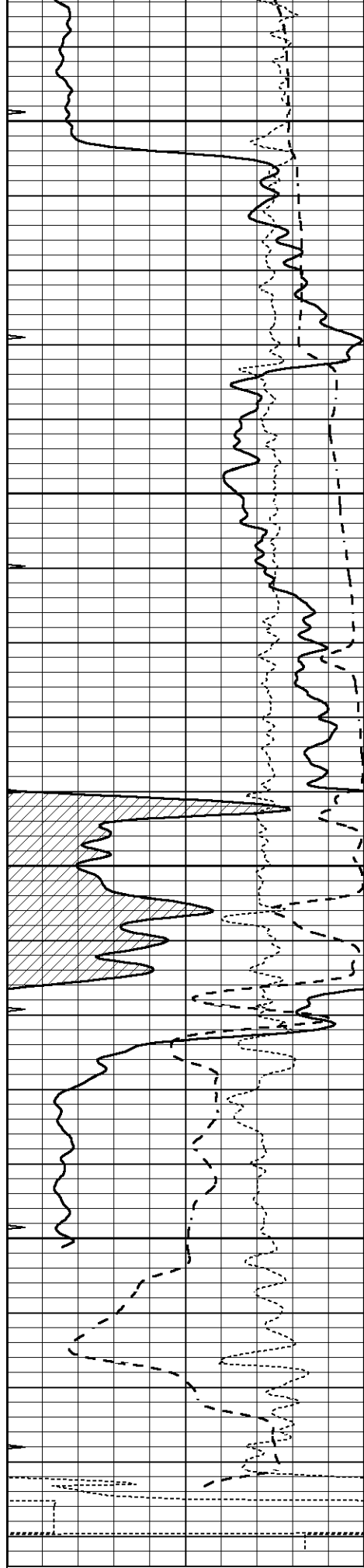
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4300

4350





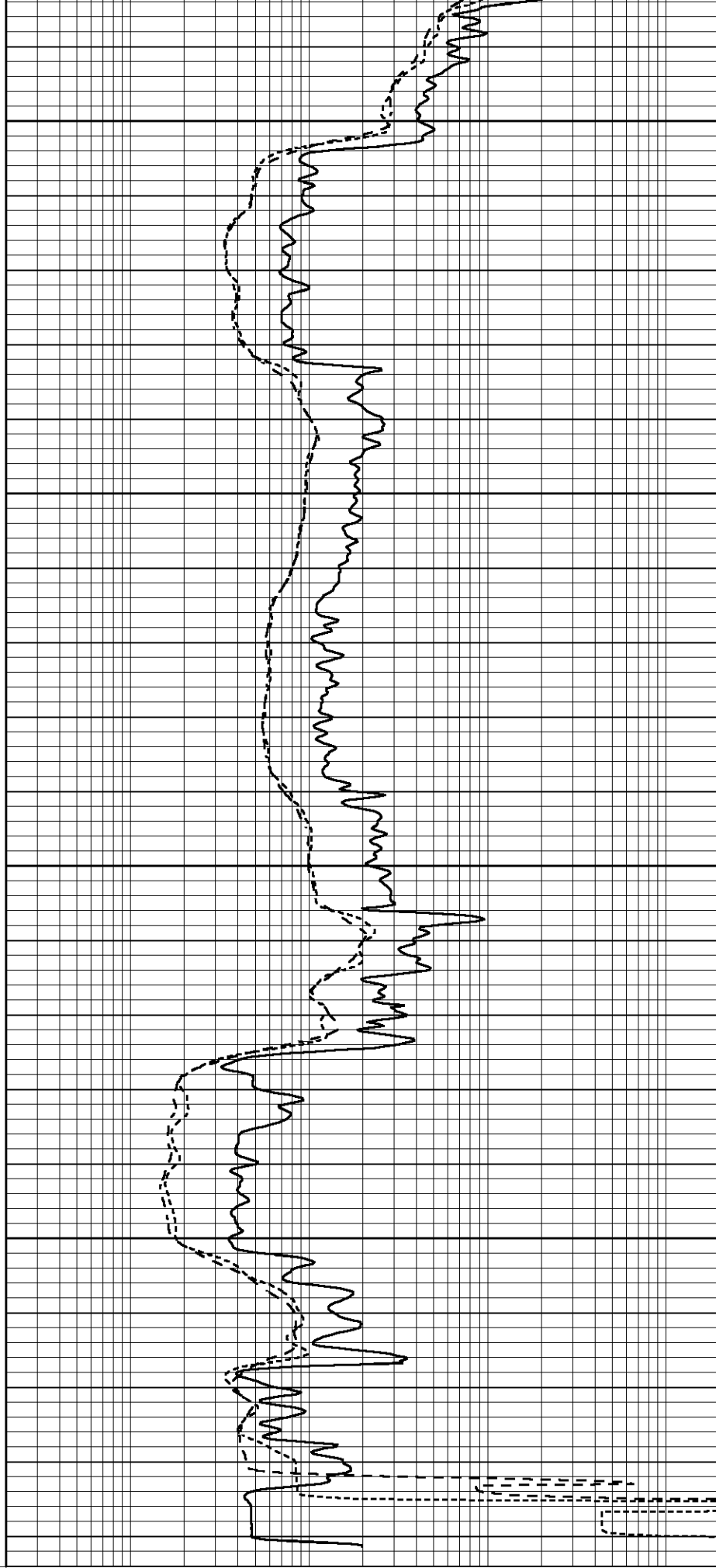
4400

4450

4500

4550

0 GAMMA RAY (GAPI) 150
-100 SP (mV) 100



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

-250	Rxo/Rt	50
0	MINMK	20

0.2	MEDIUM INDUCTION (Ohm-m)	2000
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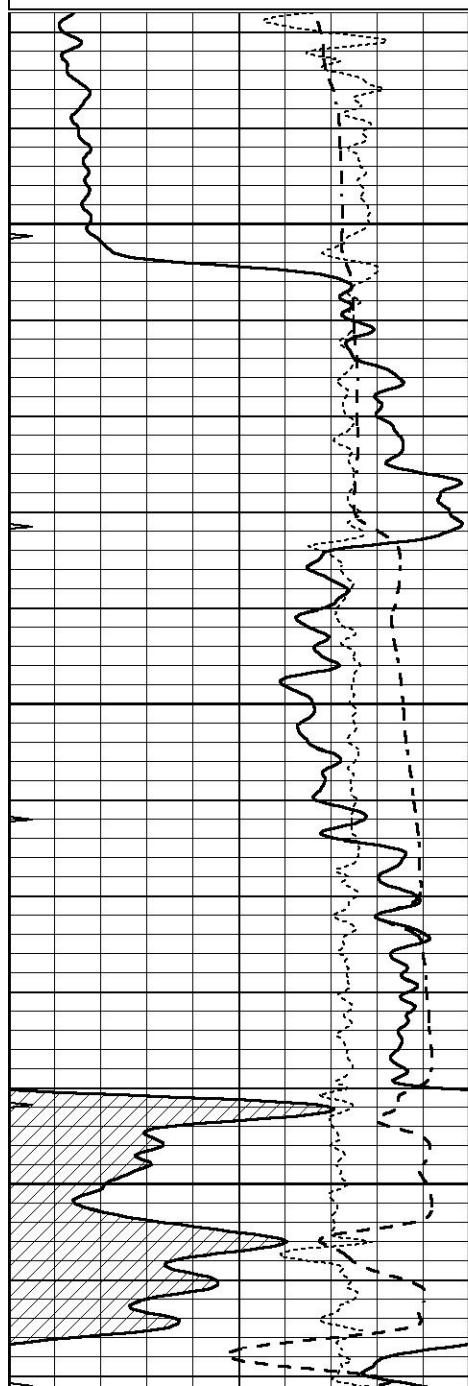


REPEAT SECTION

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 Dataset Pathname pass2.2R
 Presentation Format _dil
 Dataset Creation Sat Mar 20 00:57:15 2021
 Charted by Depth in Feet scaled 1:240

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

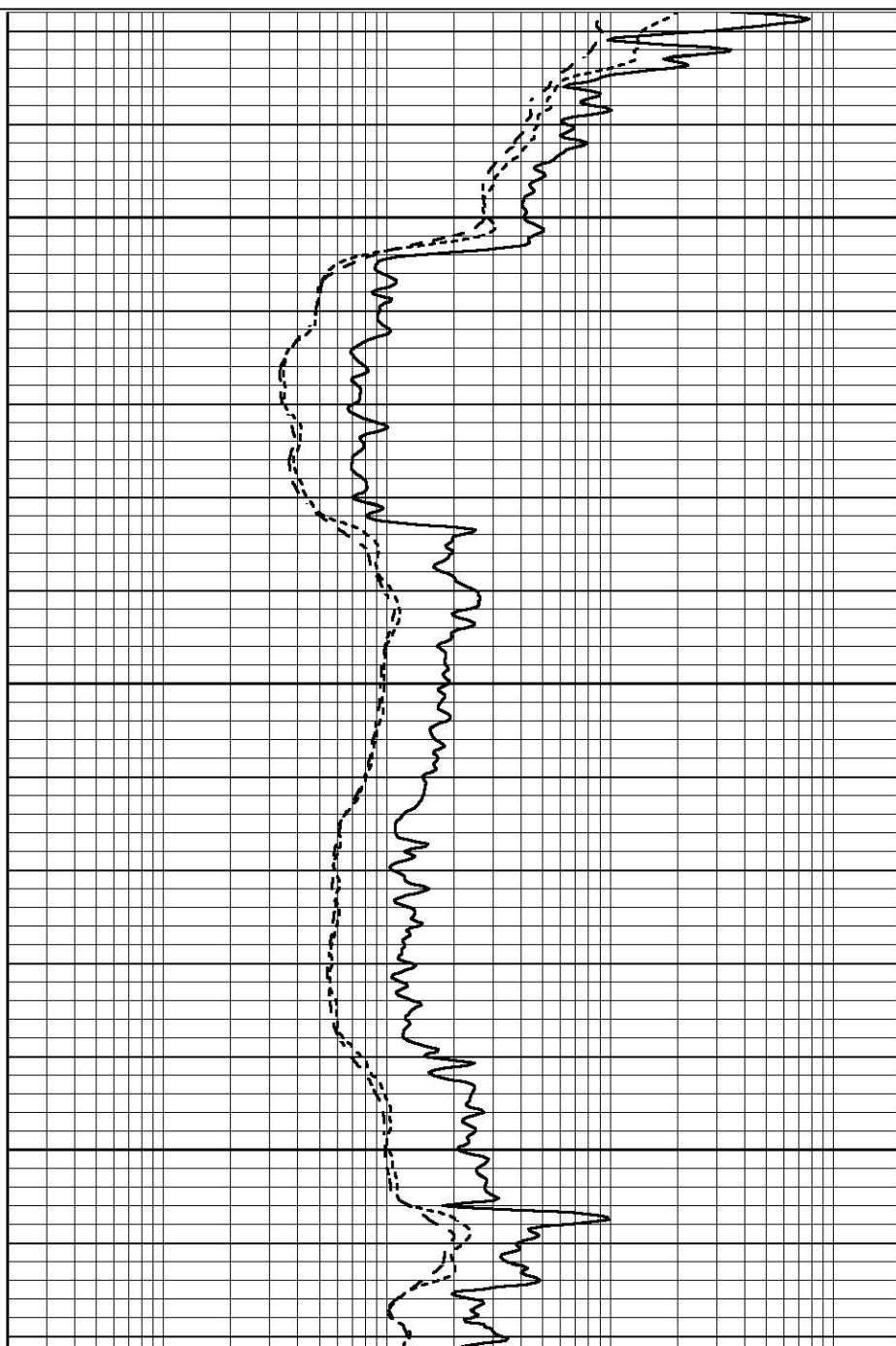
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

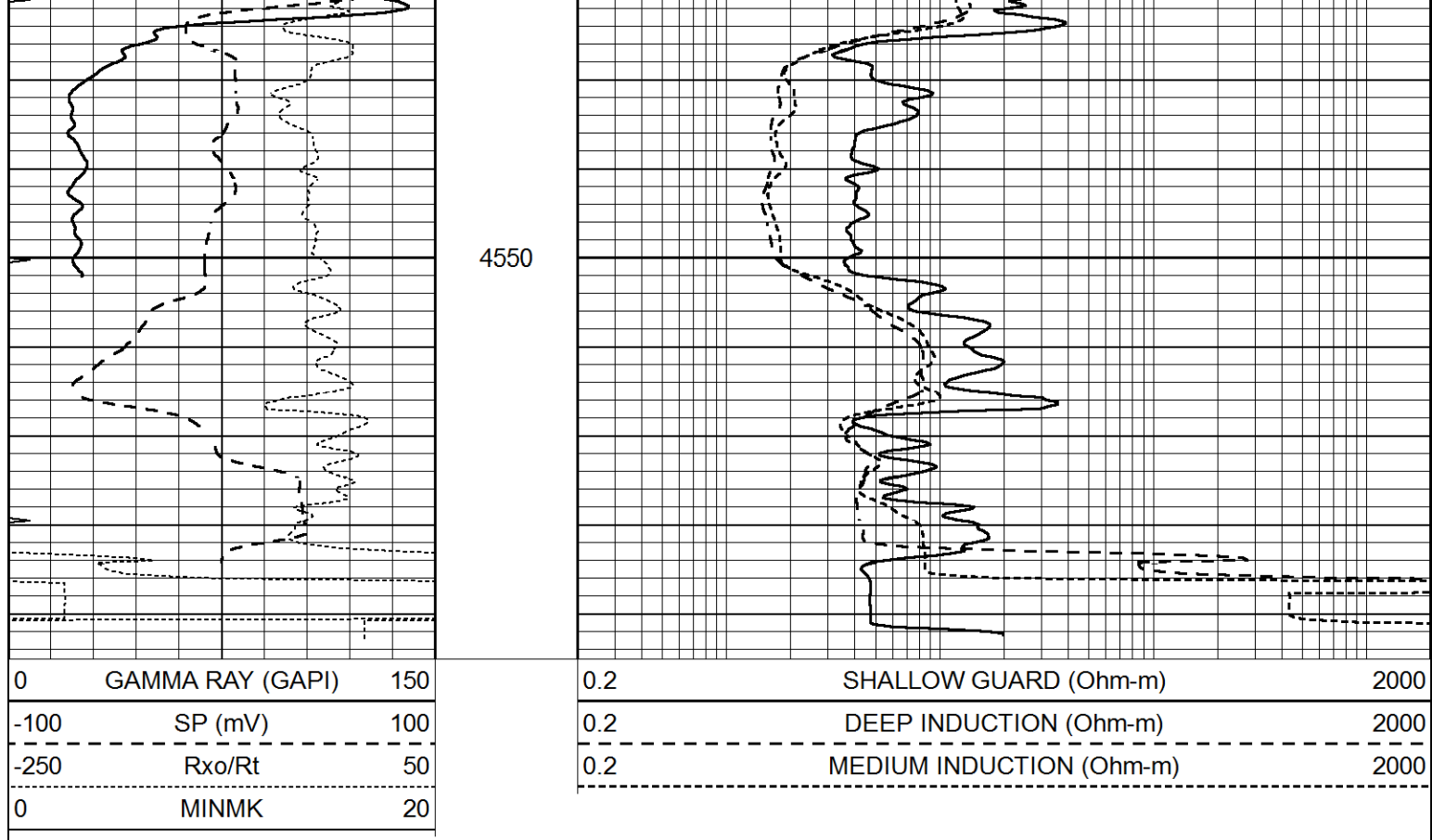


4400

4450

4500





Calibration Report									
Database File	5262pe.db								
Dataset Pathname	pass3.2D								
Dataset Creation	Sat Mar 20 00:43:20 2021								
Dual Induction Calibration Report									
Serial-Model:					PROBE7-DILG				
Surface Cal Performed:					Fri Mar 19 23:51:41 2021				
Downhole Cal Performed:					Thu Mar 12 11:45:10 2020				
After Survey Verification Performed:					Thu Mar 12 11:45:00 2020				
Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	630.000	-10.000	
Medium	0.039	0.728	V	0.000	464.000	mmho/m	685.000	-55.000	
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		Zero	Cal		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	
	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		
		0.000	mmho-m		4000.000	mmho-m		

Litho Density Calibration Report								
Serial: 004			Model: PRB					

Master Calibration			Performed Thu Jan 28 13:15:53 2021					
	Background	Magnesium		Aluminum		Aluminum+Fe		
Window 1	1182.9	9855.6		3179.6		2818.8		cps
Window 2	1073.6	8204.9		2708.2		2458.3		cps
Window 3	887.9	4656.3		1694.9		1596.1		cps
Window 4	243.5	250.4		242.2		245.6		cps
Long Space	0.0	7131.3		1634.6		1384.6		cps
Short Space	1.6	1661.2		1115.7		935.2		cps
Rho		1.7100		2.5900		0.0000		g/cc
Pe		2.0000		2.7500		5.7900		
Rib Angle	: 44.9	Rib Slope	: 0.996	Density/Spine Ratio		: 0.577		
Spine Angle	: 74.9	Spine Slope	: 3.700	Spine Intercept		: -18.6		

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:			070808PMC					
Tool Model:			NABORS					

PRE-SURVEY VERIFICATION								
Detector	Readings		Measured	Target				

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
POST-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	070558		
Tool Model:	OPEN_GR		
Performed:	Wed Jul 03 10:25:53 2019		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3000	GAPI/cps	