



# DUAL INDUCTION LOG

Company MULL DRILLING COMPANY, INC.  
 Well #1-8 KSU - GOERING UNIT  
 Field WILDCAT  
 County FINNEY  
 State KANSAS

Company MULL DRILLING COMPANY, INC.  
 Well #1-8 KSU - GOERING UNIT  
 Field WILDCAT  
 County FINNEY State KANSAS

Location: API # : 15-055-22459-0000  
 777' FNL & 124' FWL  
 SEC 8 TWP 21S RGE 31W  
 Permanent Datum GROUND LEVEL Elevation 2893  
 Log Measured From KELLY BUSHING 5' A.G.L.  
 Drilling Measured From KELLY BUSHING  
 Other Services  
 CDL/CNL/PE  
 MEL/SONIC  
 Elevation  
 K.B. 2898  
 D.F. 2896  
 G.L. 2893

Date	8/24/17		
Run Number	ONE		
Depth Driller	4790		
Depth Logger	4788		
Bottom Logged Interval	4786		
Top Log Interval	00		
Casing Driller	8 5/8"@260'		
Casing Logger	260		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,200 PPM	
Density / Viscosity	9.3/48		
pH / Fluid Loss	9.5/9.2		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.900@80F		
Rmf @ Meas. Temp	.675@80F		
Rmc @ Meas. Temp	1.08@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.585@123F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	4:15 A.M.		
Maximum Recorded Temperature	123F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

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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, KANSAS (785) 628-6395  
 DIRECTIONS  
 SCOTT CITY, KS., 18S. ON HWY 83 TO "MEAD RD.", 7E. TO "SIXTEEN MILE RD.", 1 1/2N., E. INTO THEN  
 BACK SOUTH ALONG FENCE



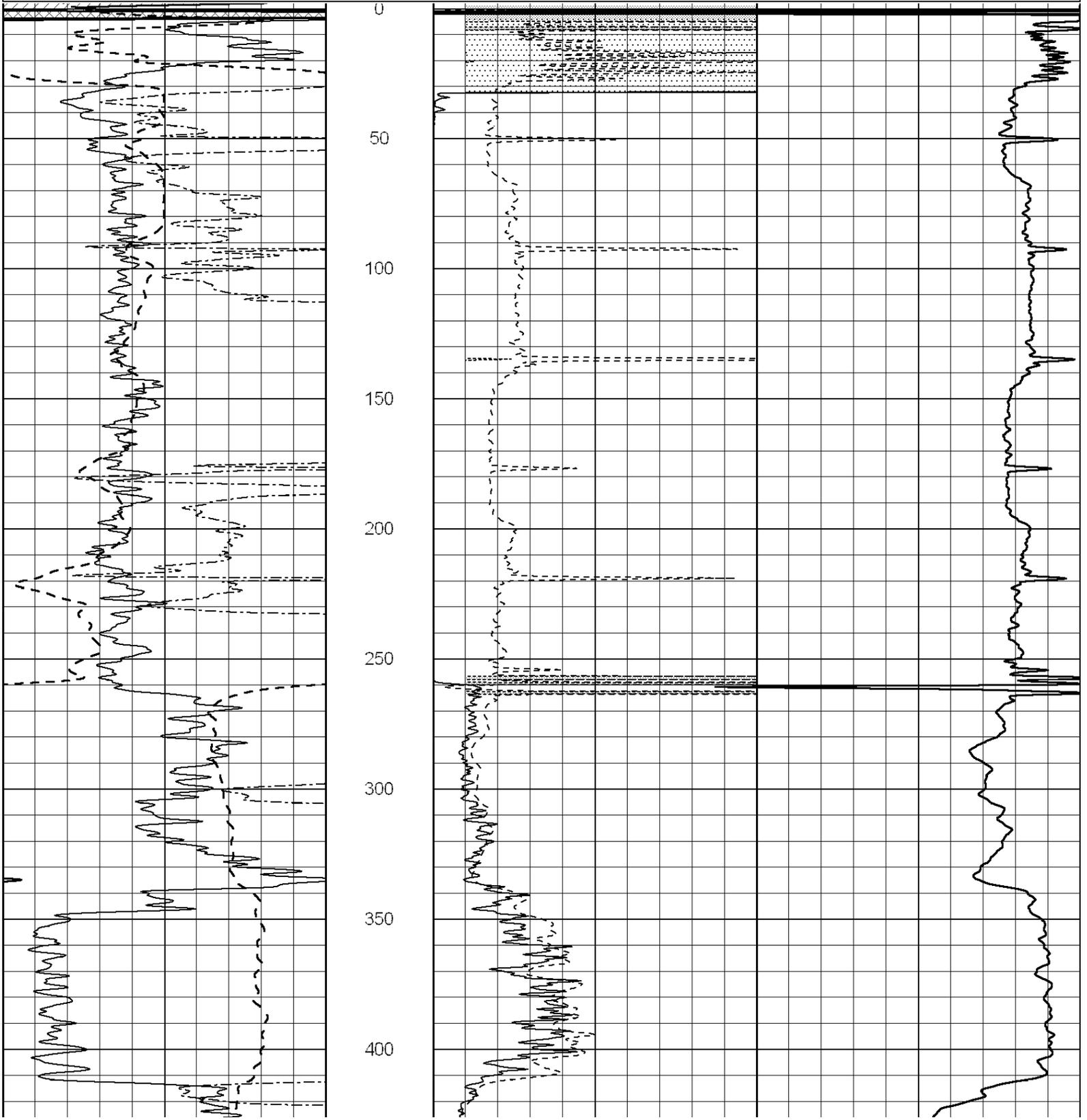
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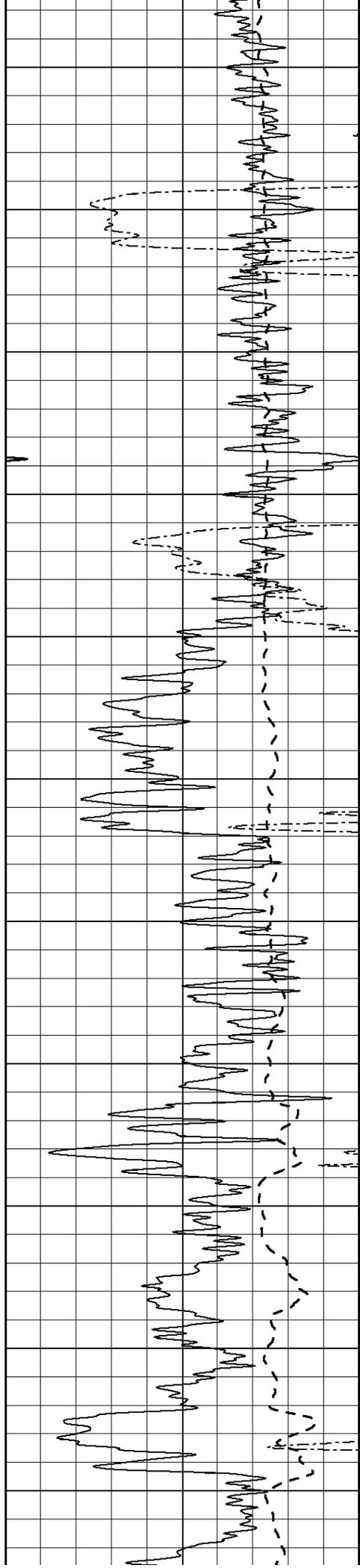
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 Dataset Pathname: pass3.8  
 Presentation Format: dil2  
 Dataset Creation: Thu Aug 24 05:40:31 2017  
 Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

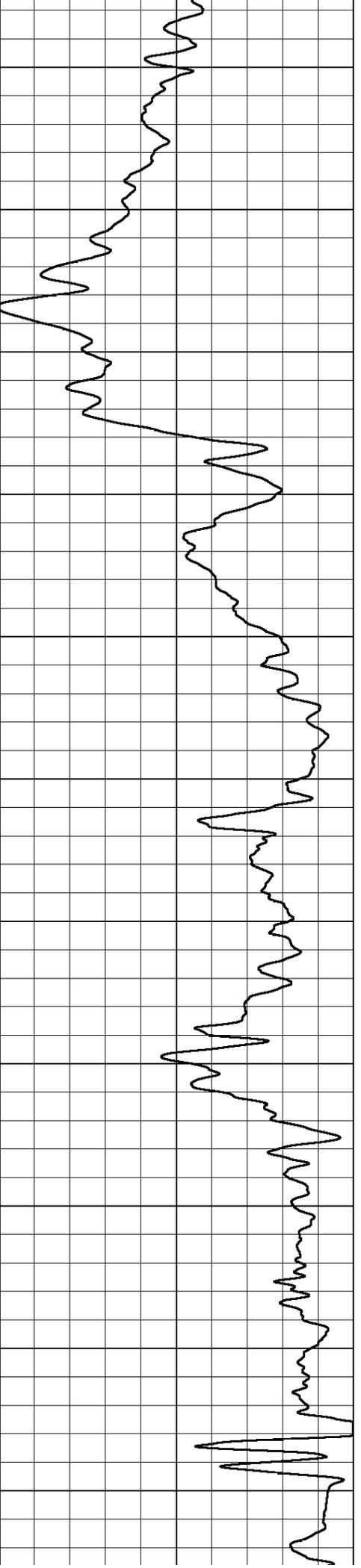
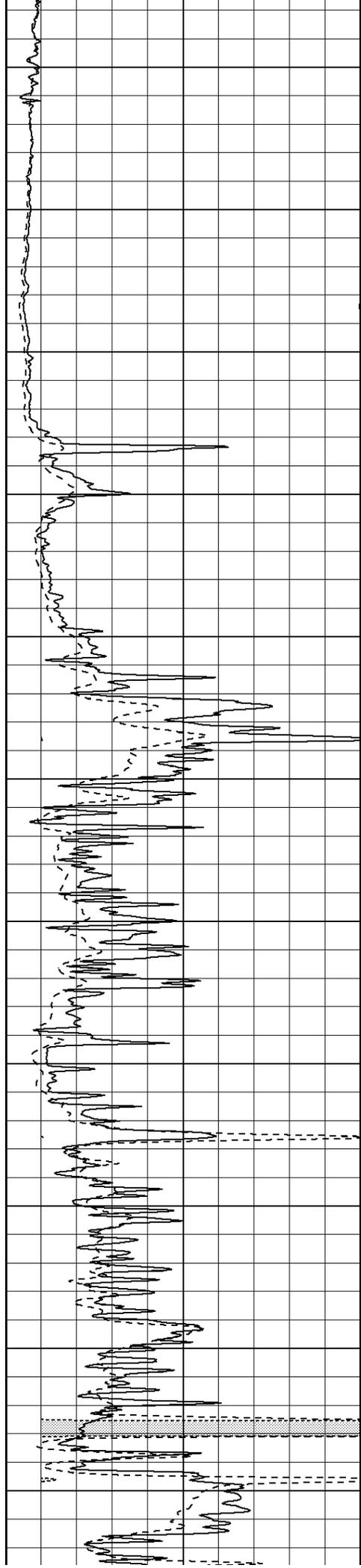
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	0

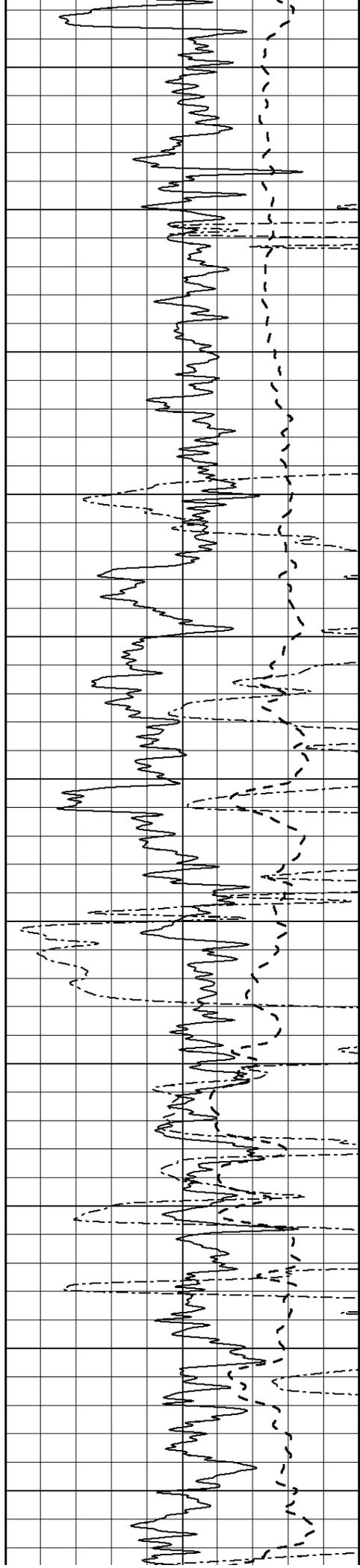
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





450  
500  
550  
600  
650  
700  
750  
800  
850  
900  
950





1000

1050

1100

1150

1200

1250

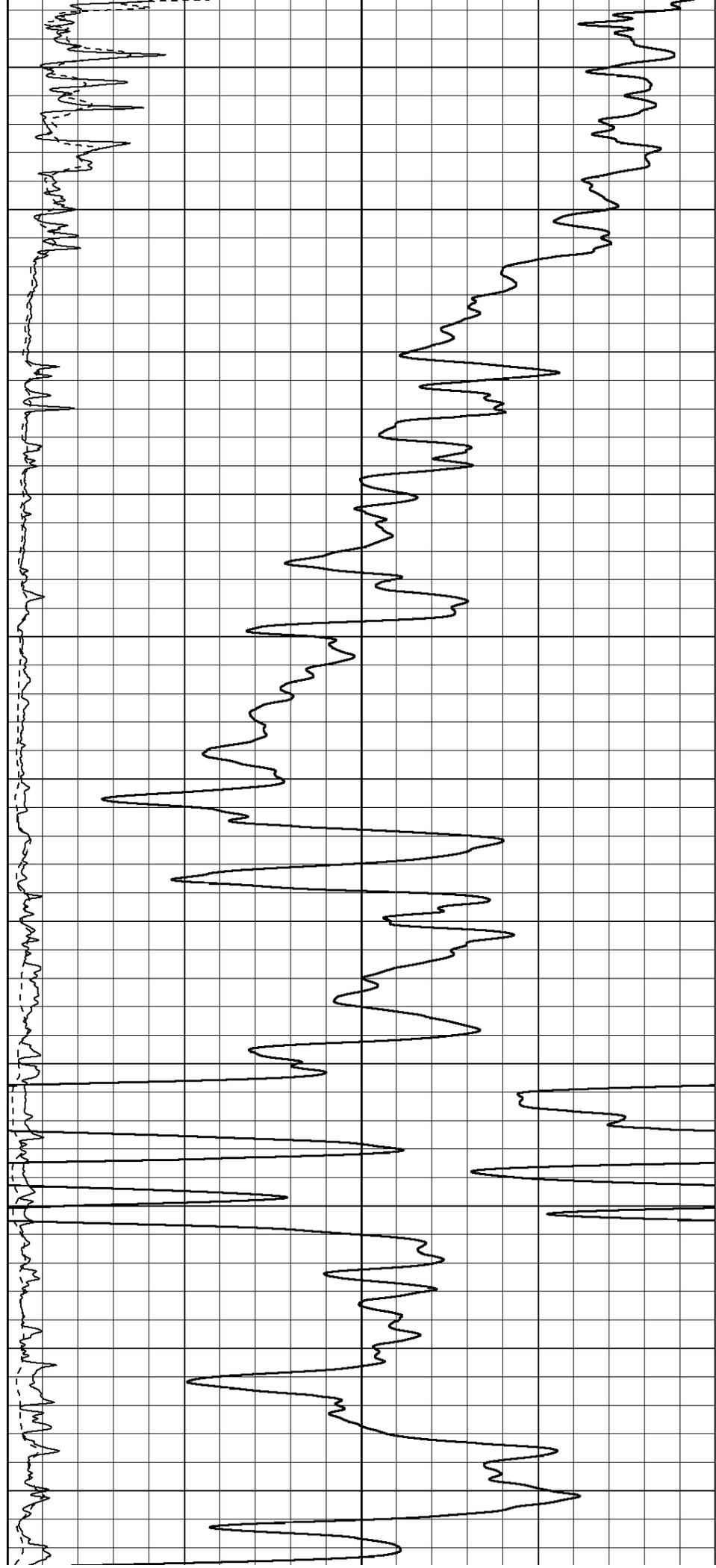
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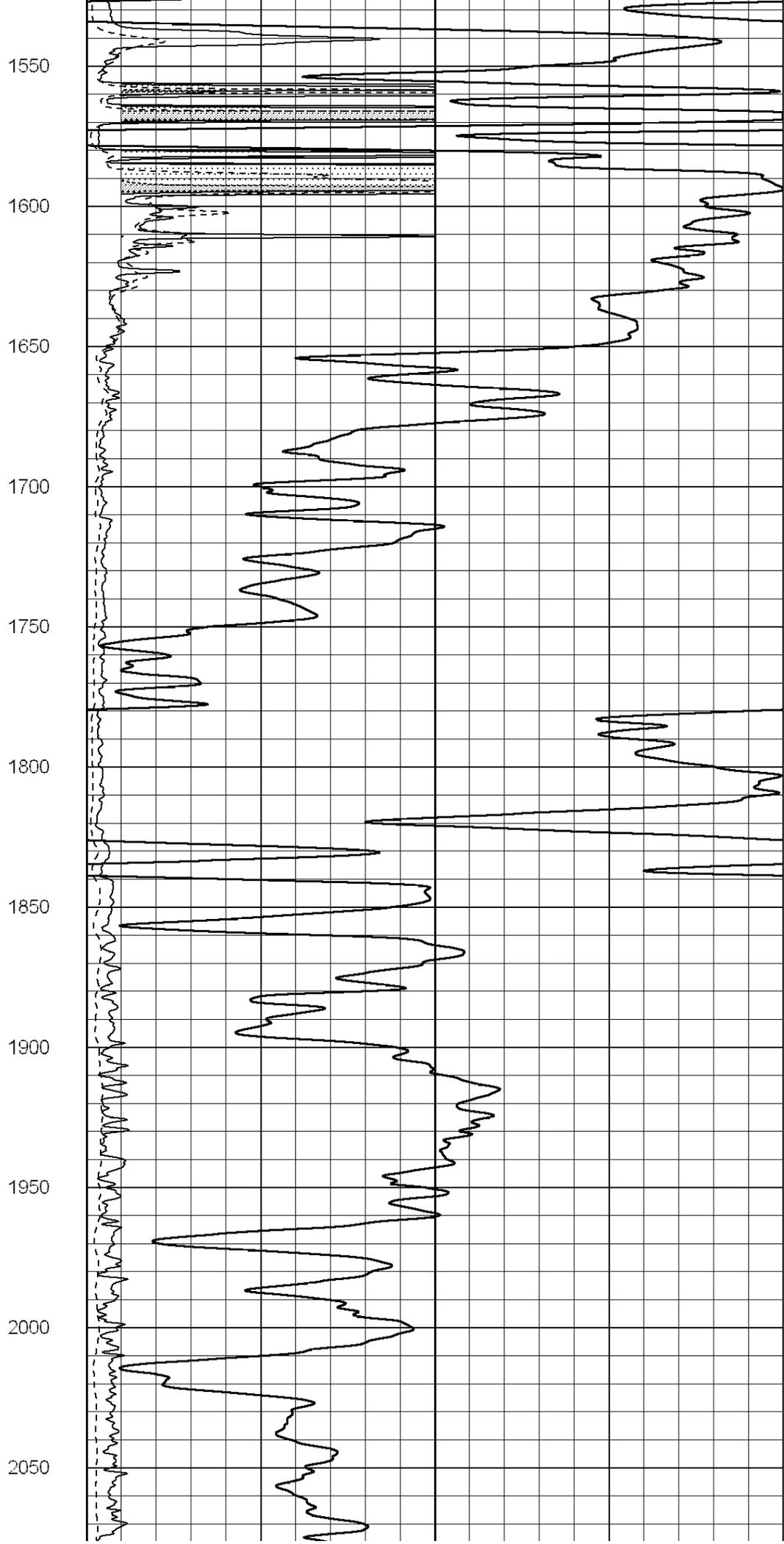
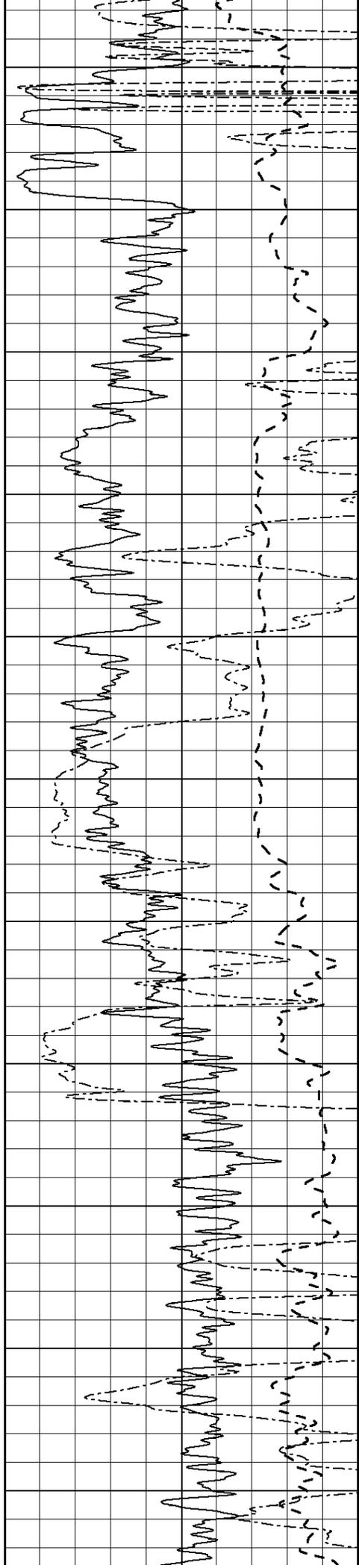
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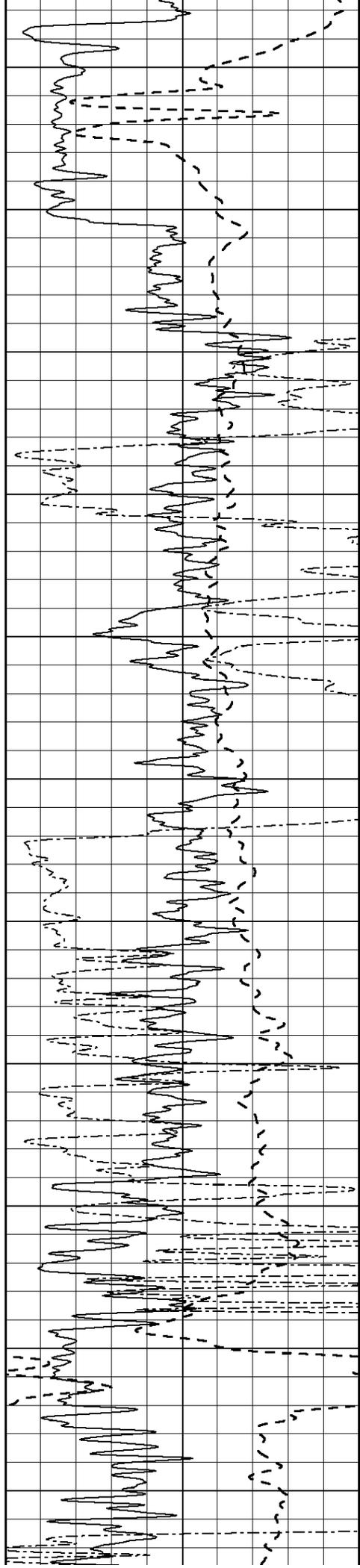
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1450

1500







2100

2150

2200

2250

2300

2350

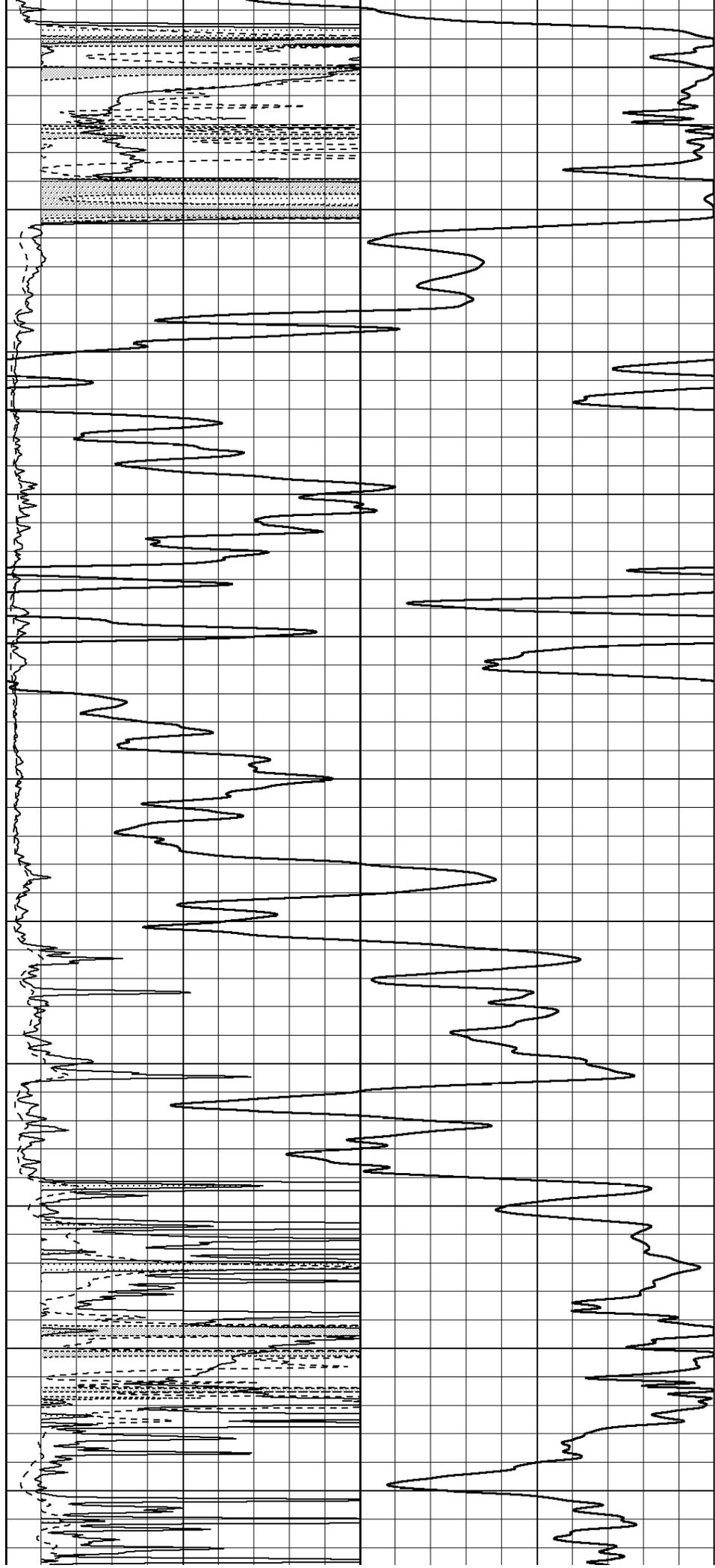
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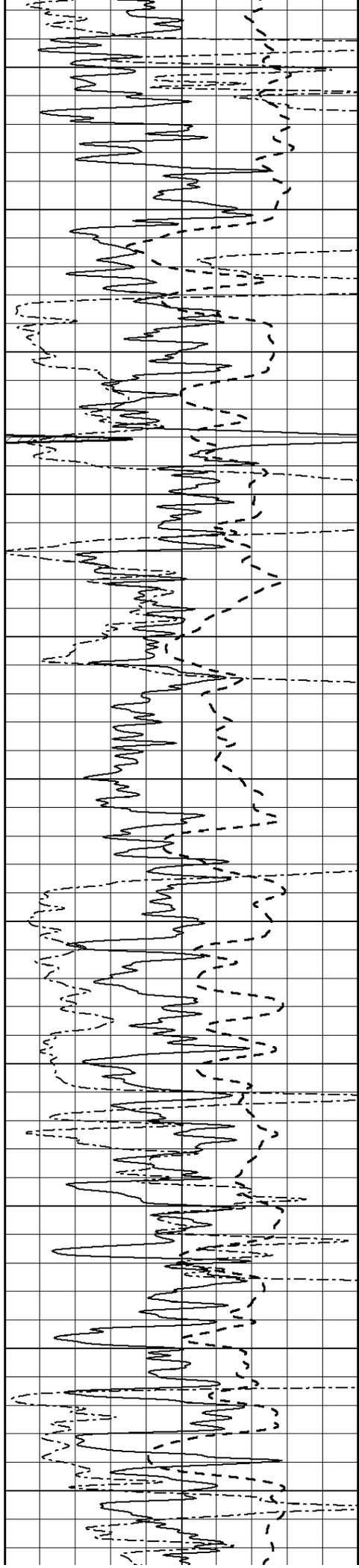
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2500

2550

2600





2650

2700

2750

2800

2850

2900

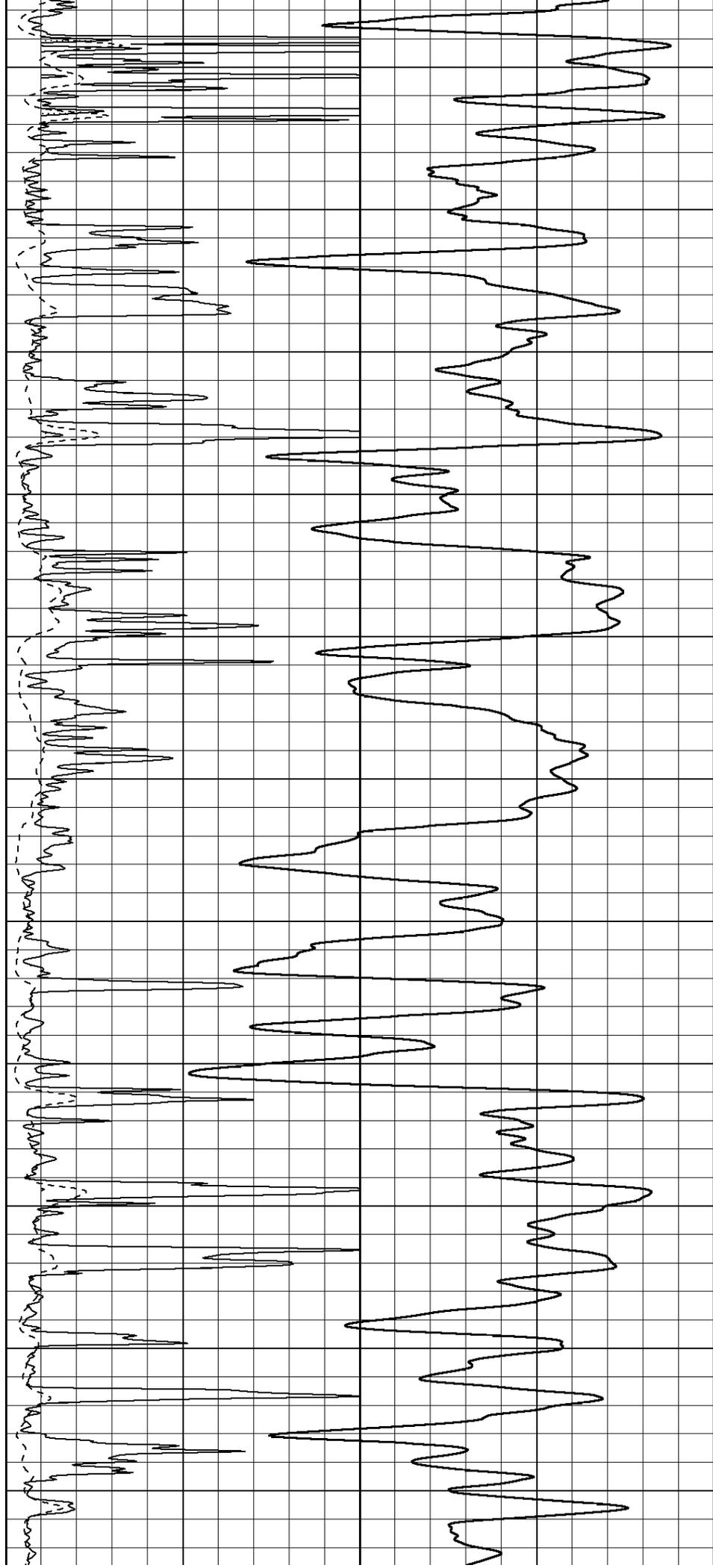
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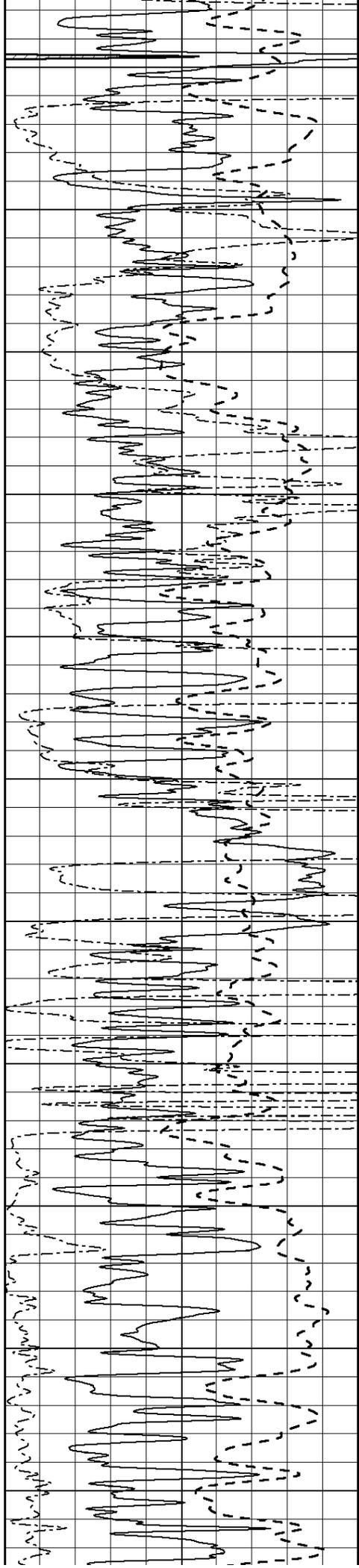
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3050

3100

3150





3200

3250

3300

3350

3400

3450

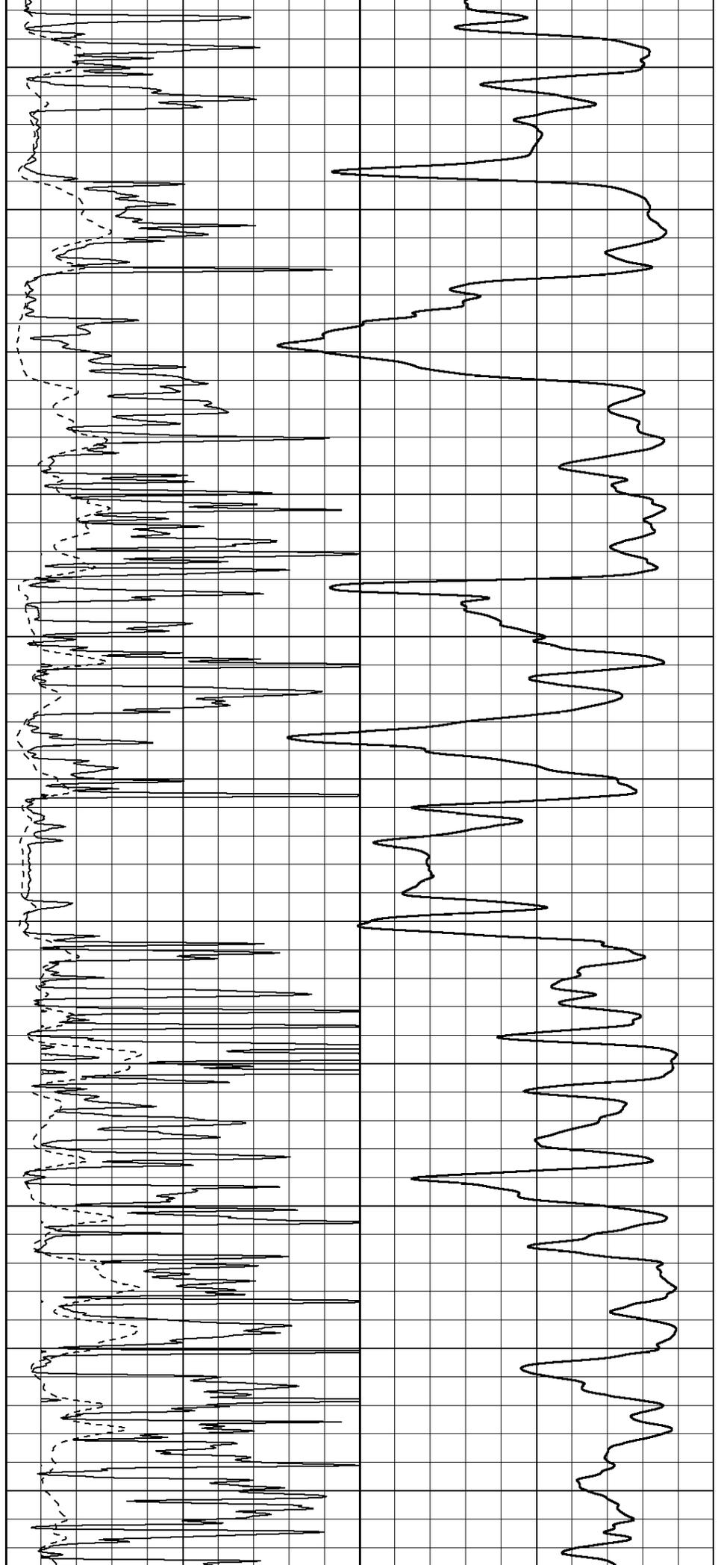
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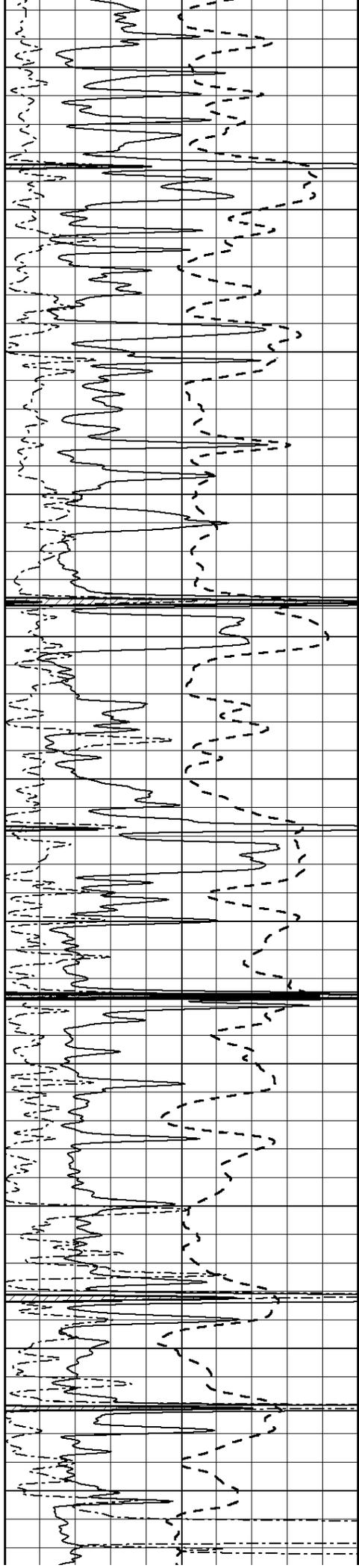
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3600

3650

3700





3750

3800

3850

3900

3950

4000

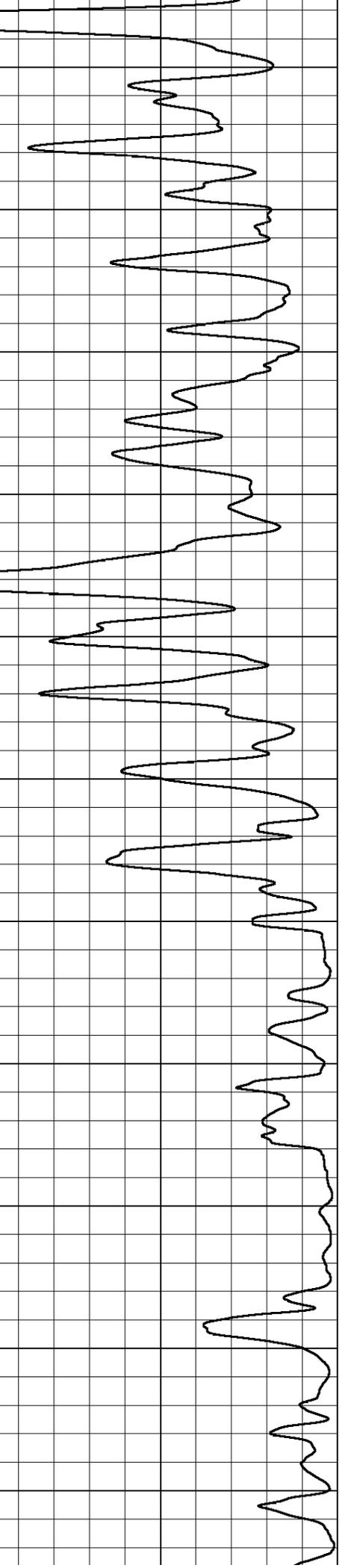
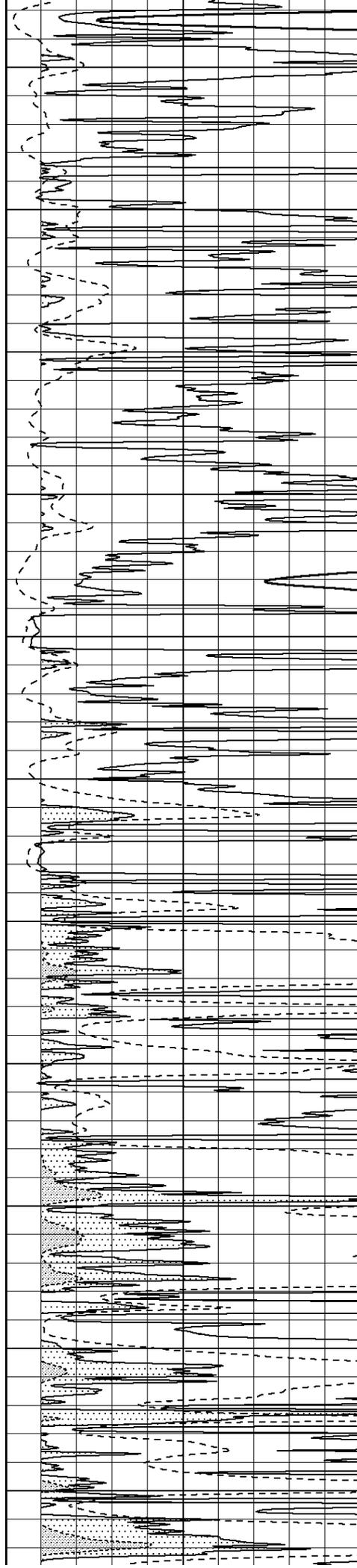
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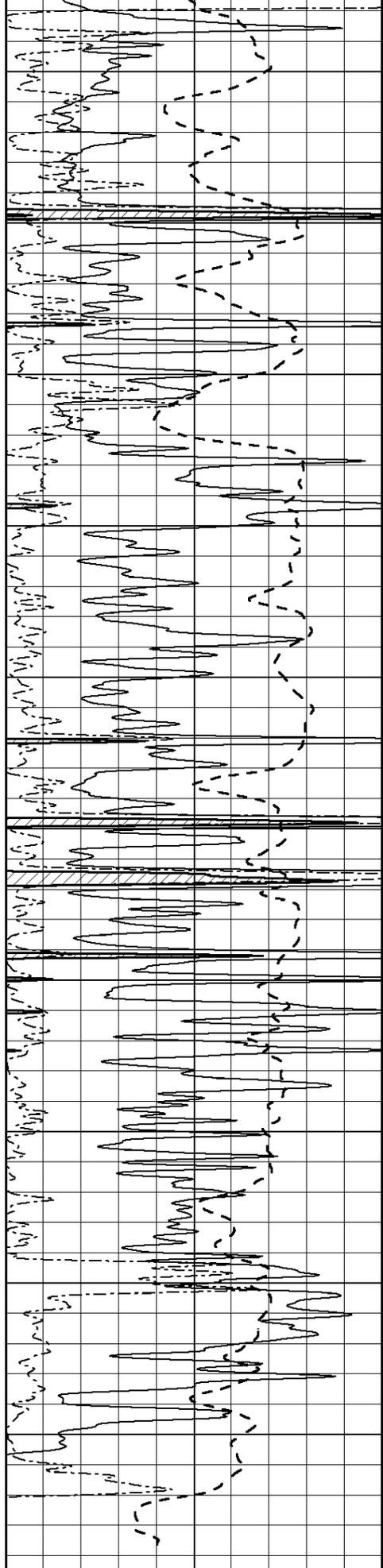
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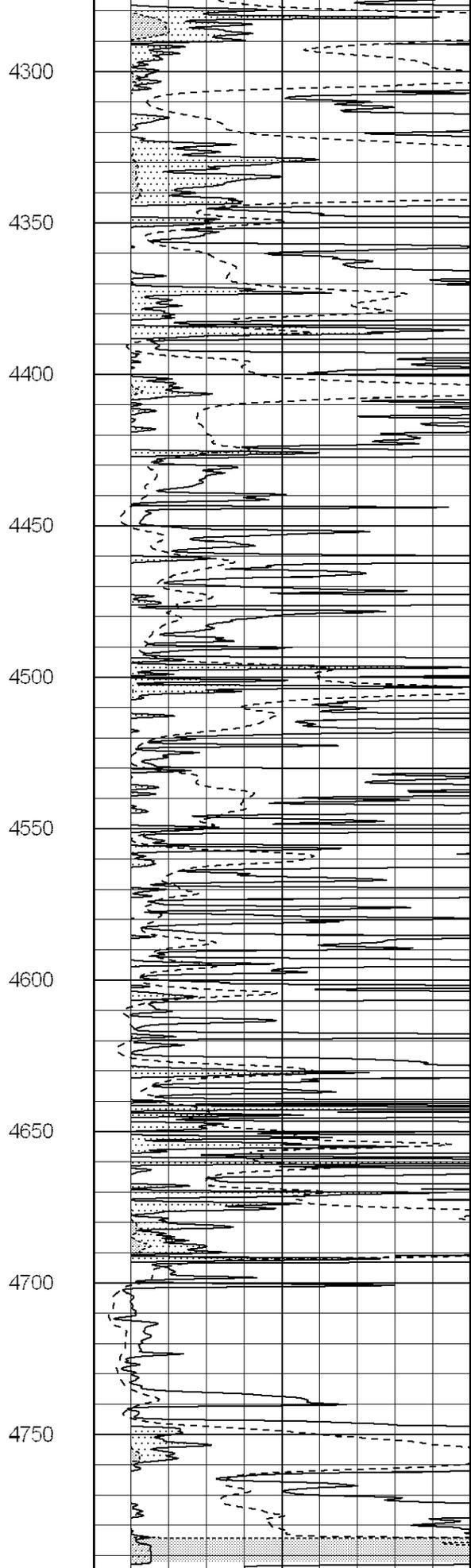
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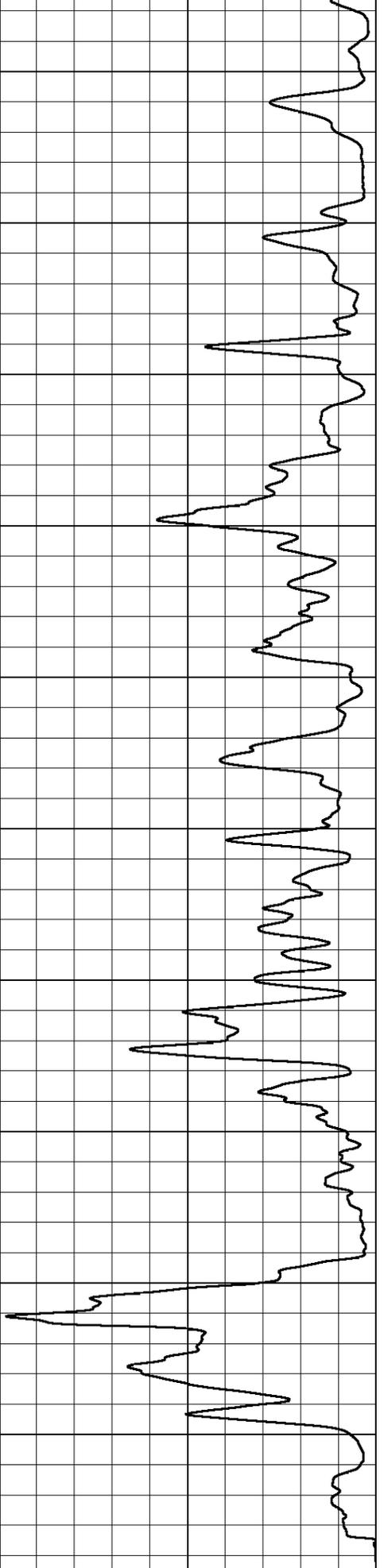




0 Gamma Ray (GAPI) 150  
 -100 SP (mV) 100  
 0 PWA (Ohm-m) 1



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

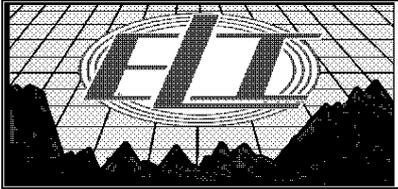


0

RWA (Ohm-ft)

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

CIED (mimo/m)

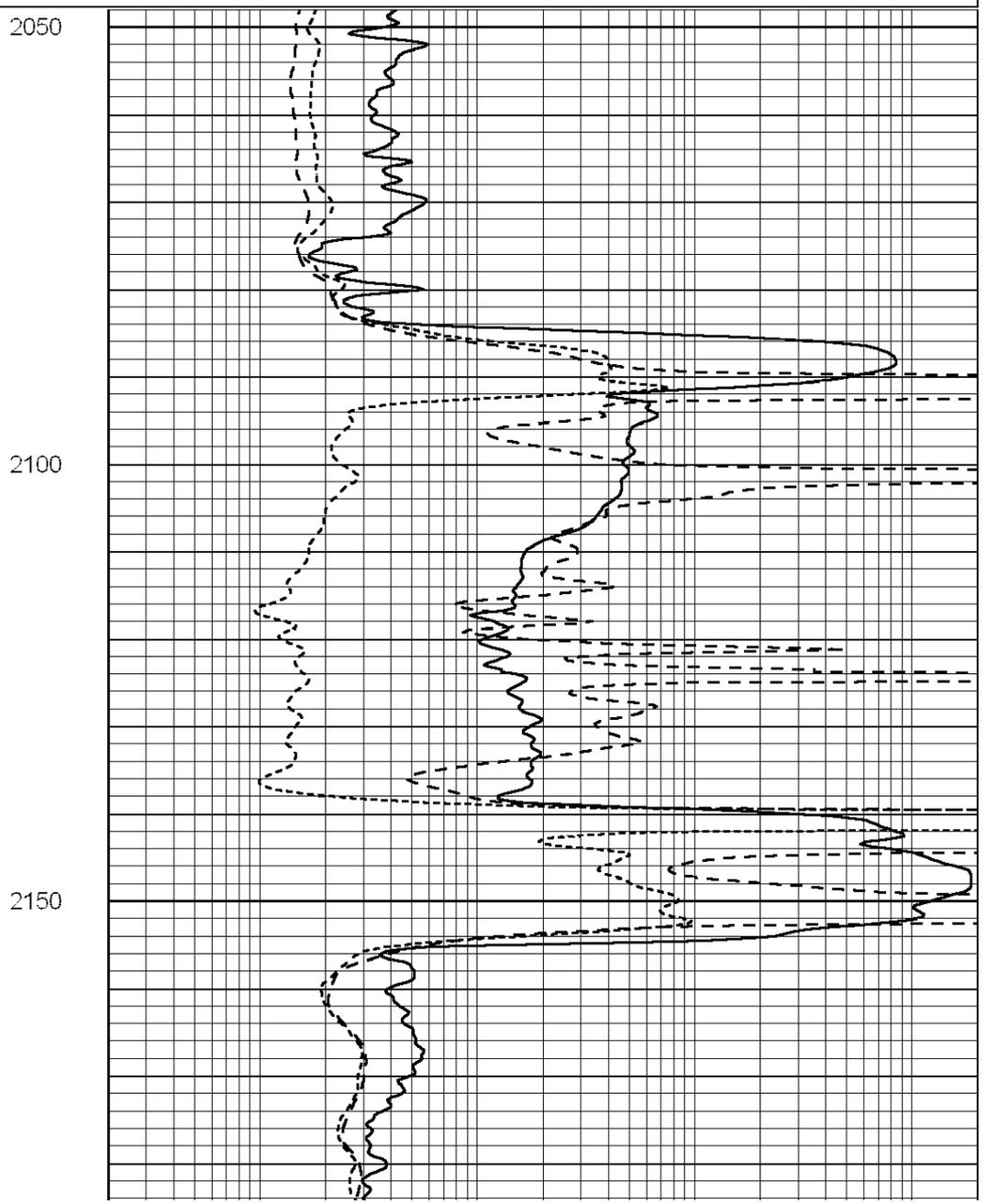
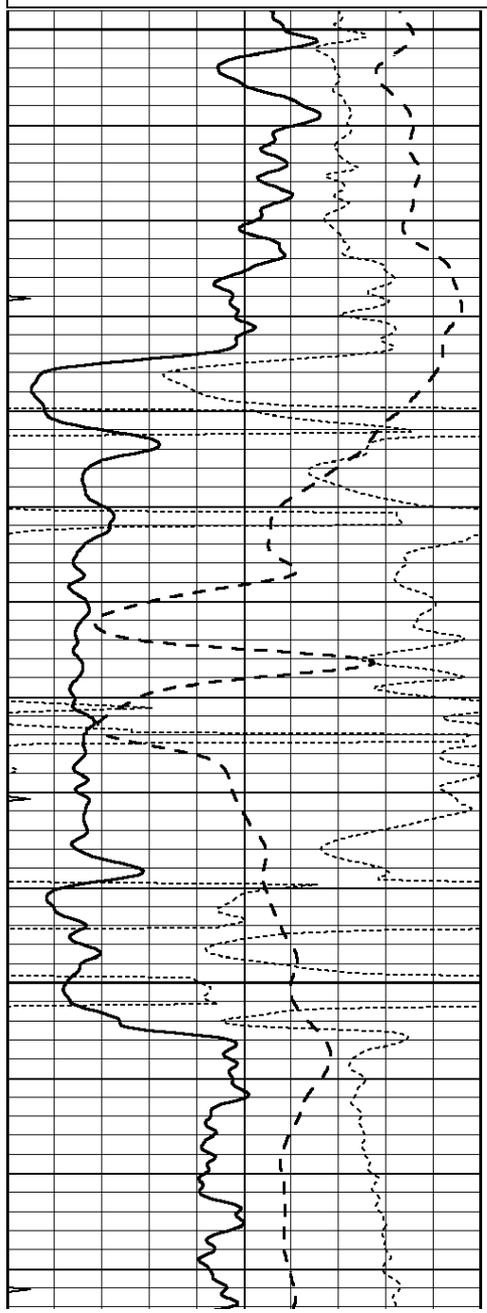


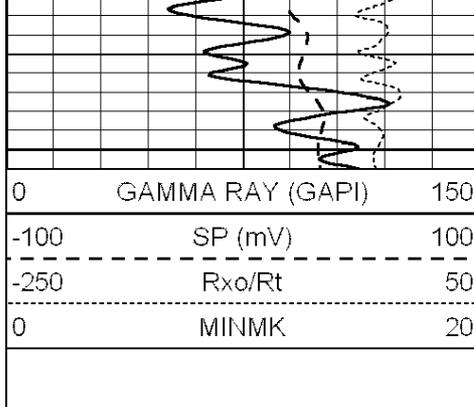
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 Dataset Creation: Thu Aug 24 05:40:53 2017  
 Charted by: Depth in Feet scaled 1:240

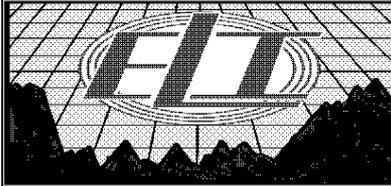
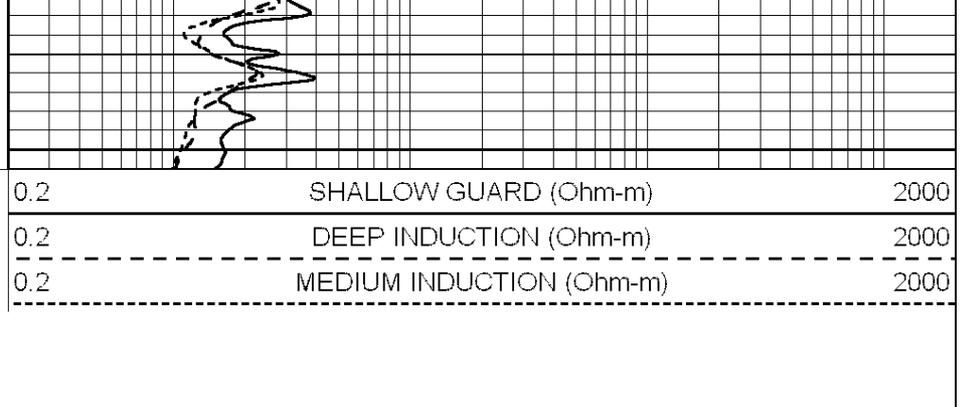
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



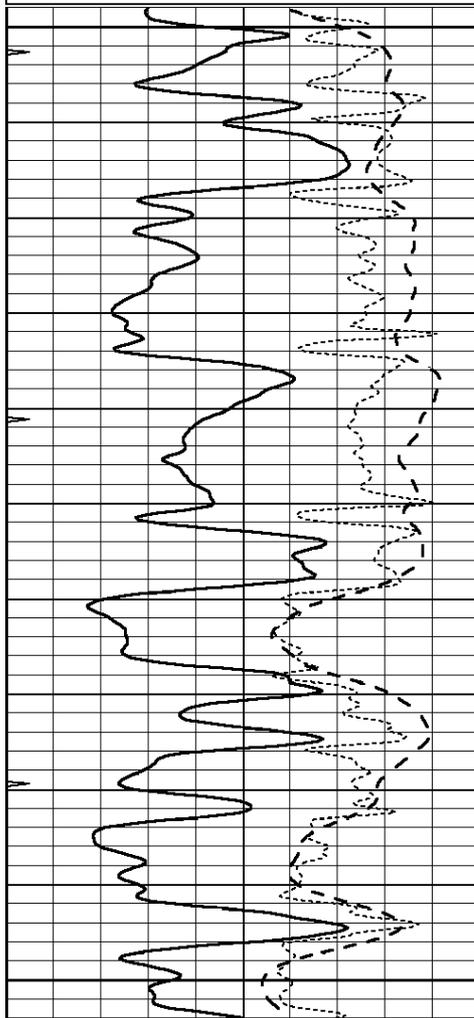
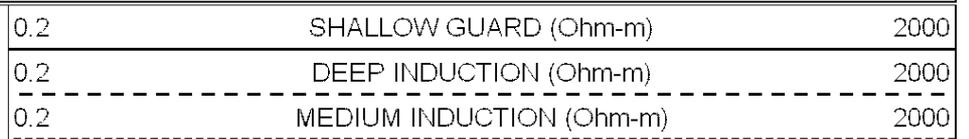
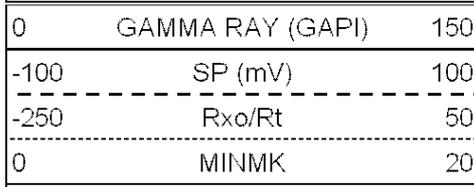


2200



# MAIN SECTION

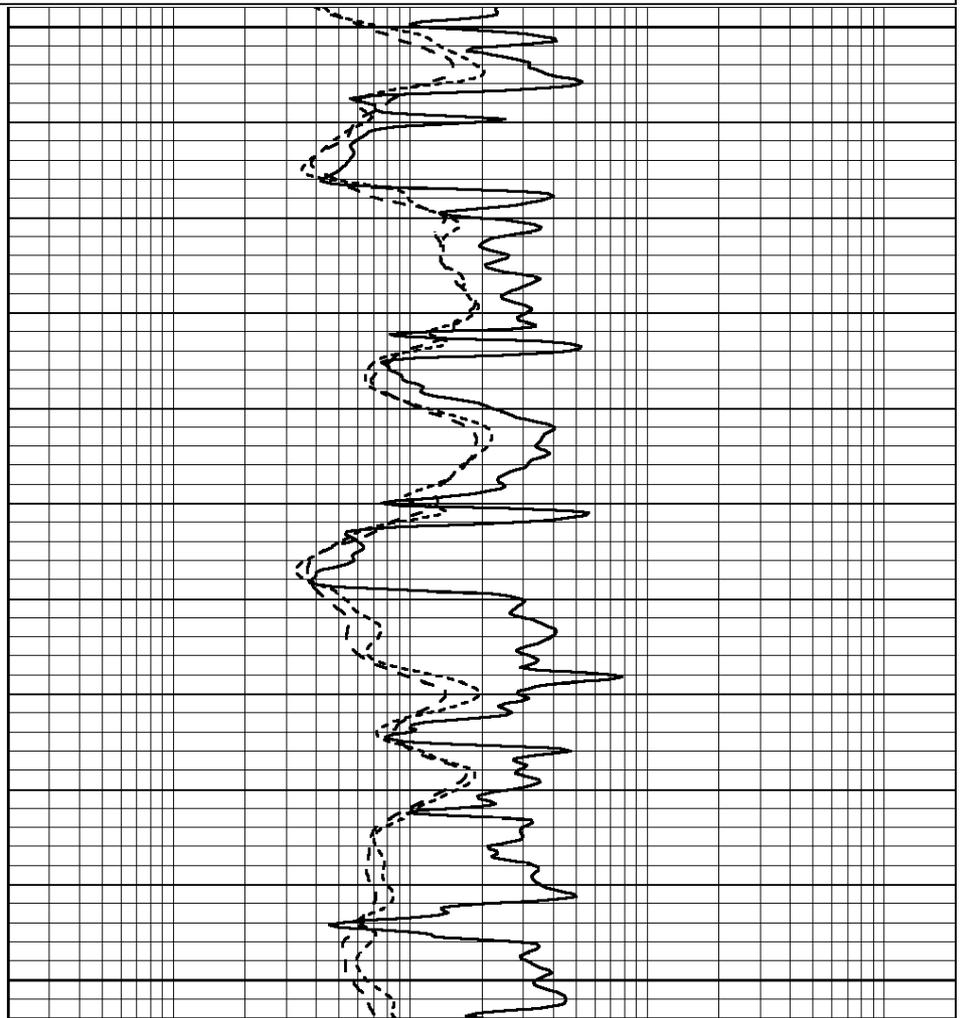
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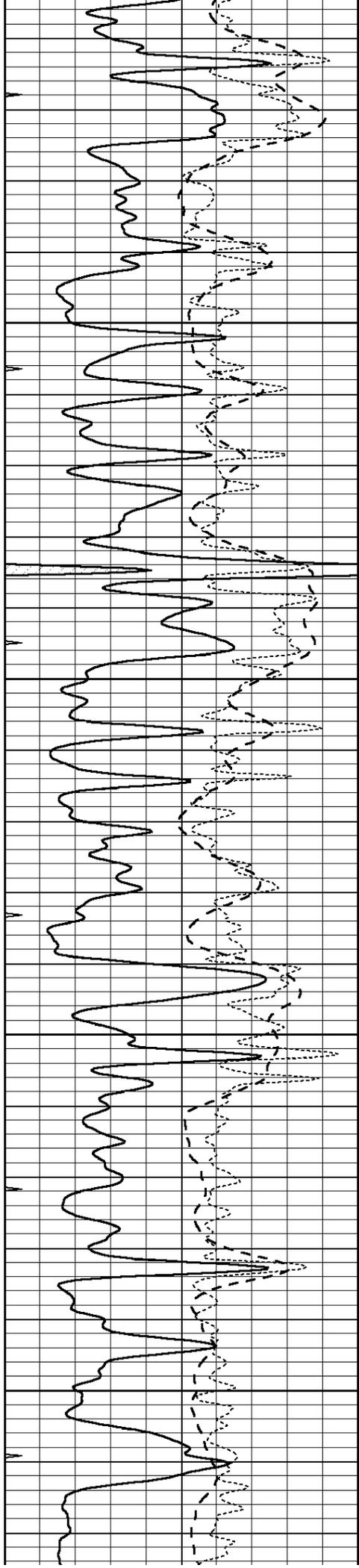


3600

3650

3700



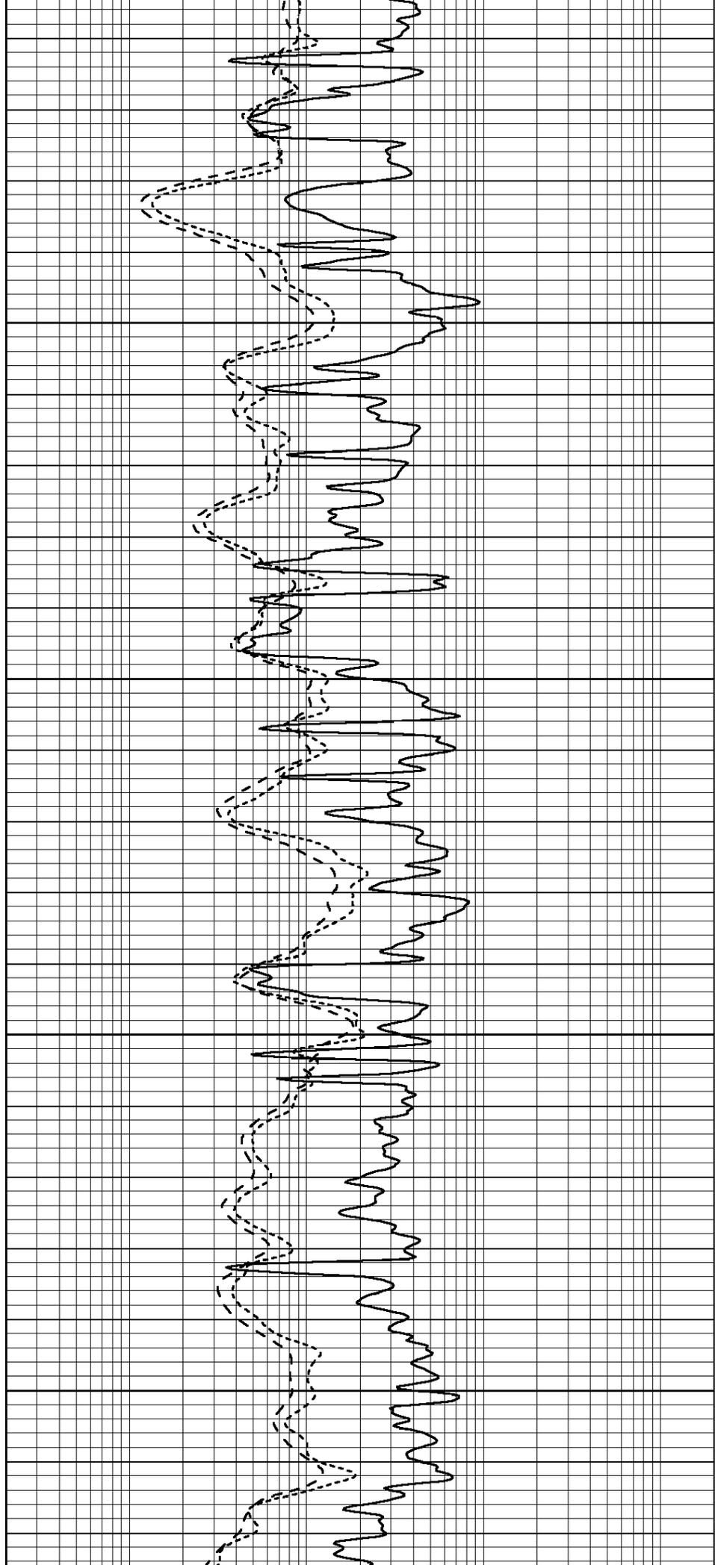


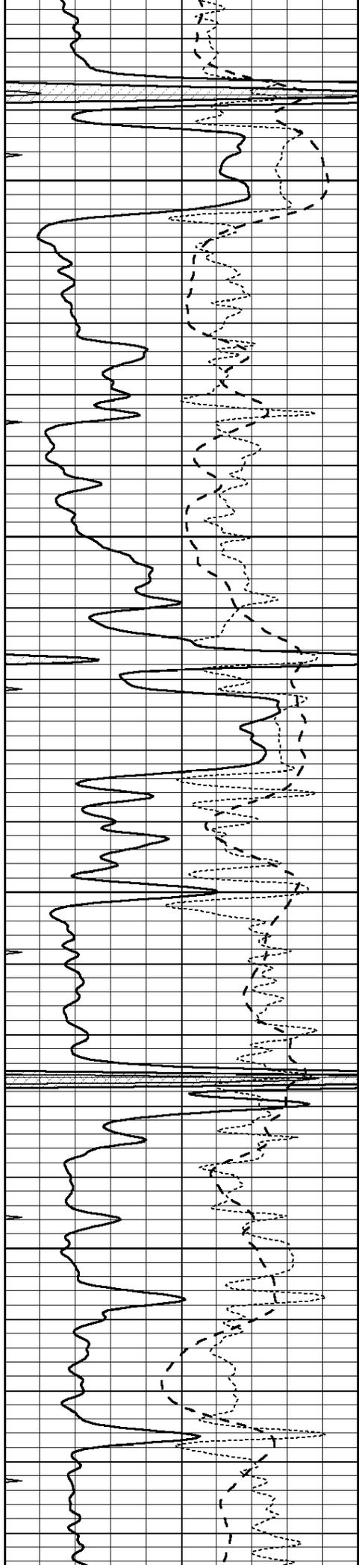
3750

3800

3850

3900



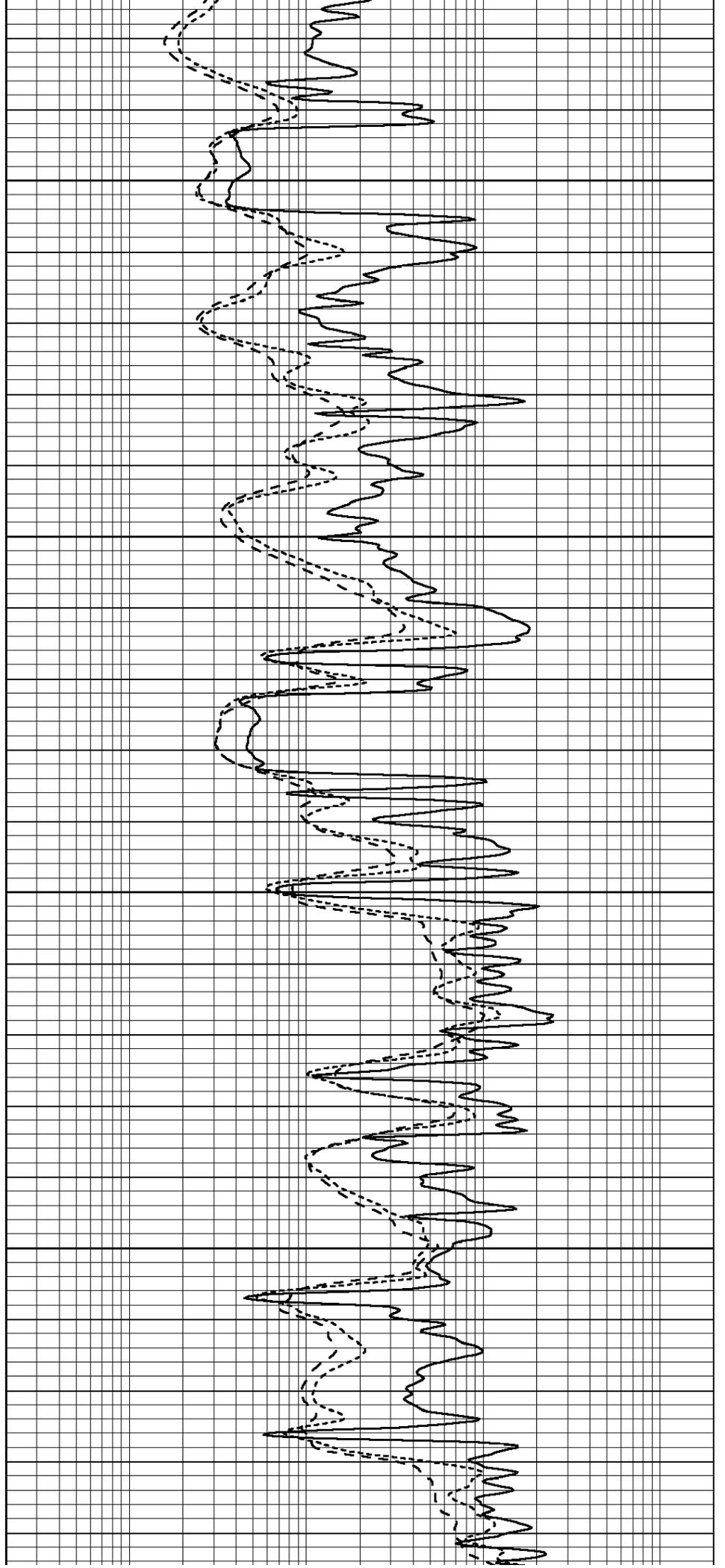


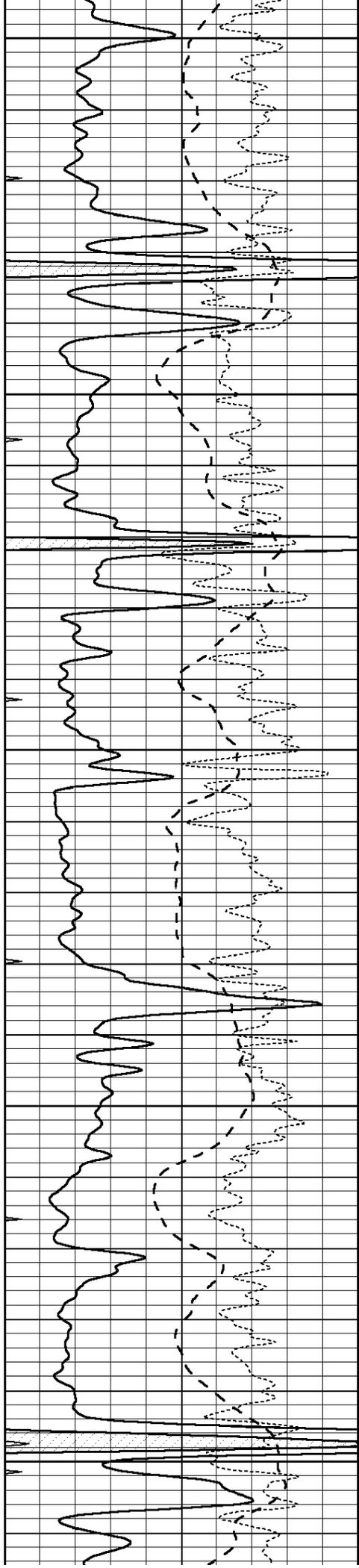
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4000

4050

4100





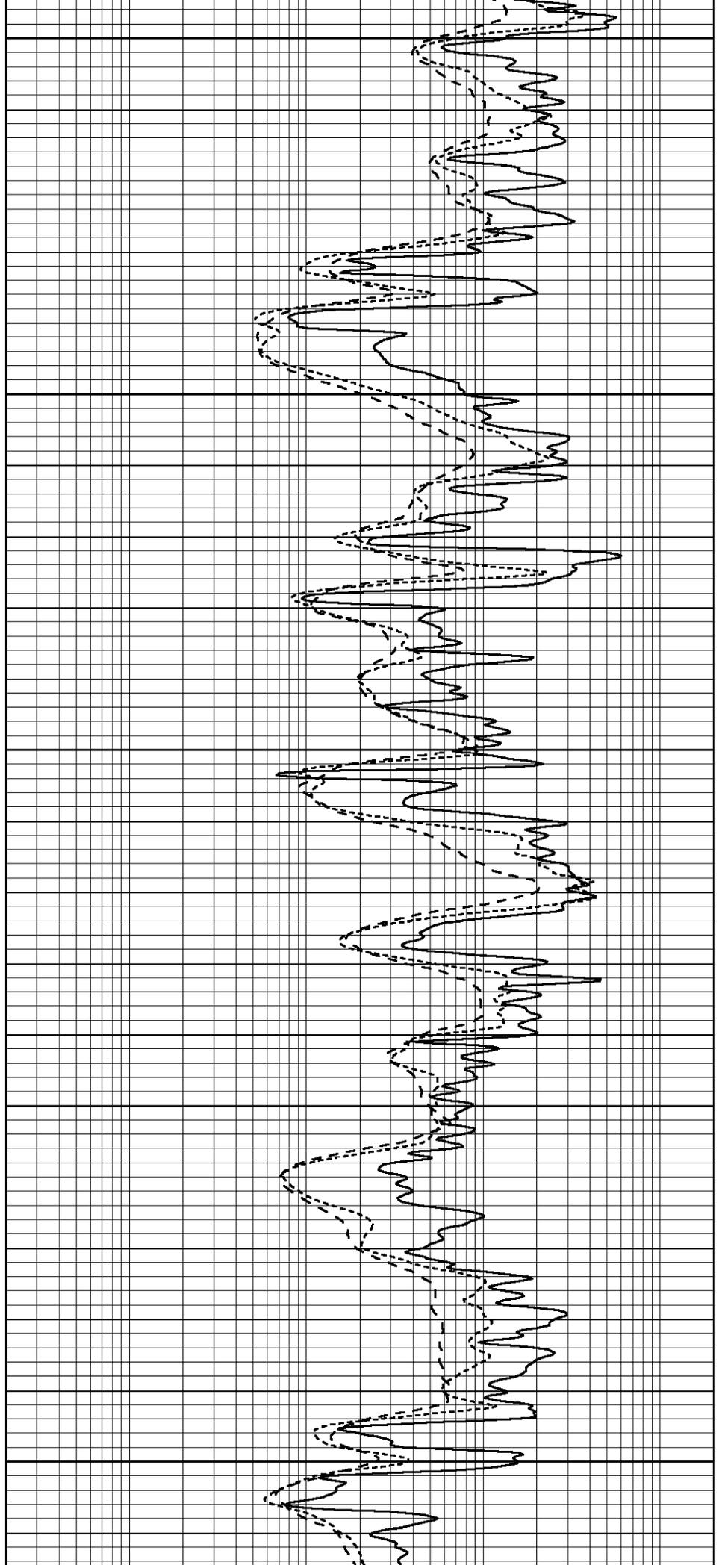
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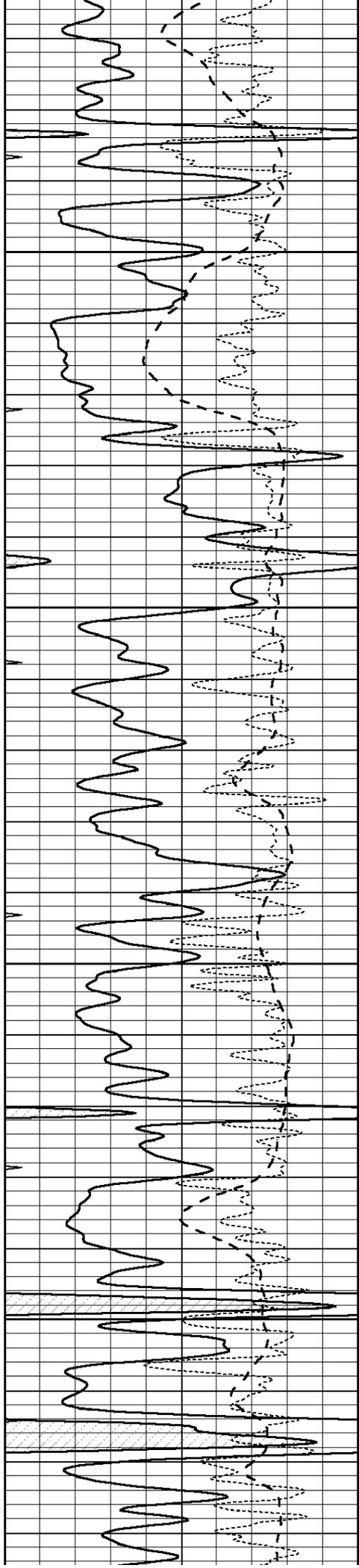
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4250

4300

4350



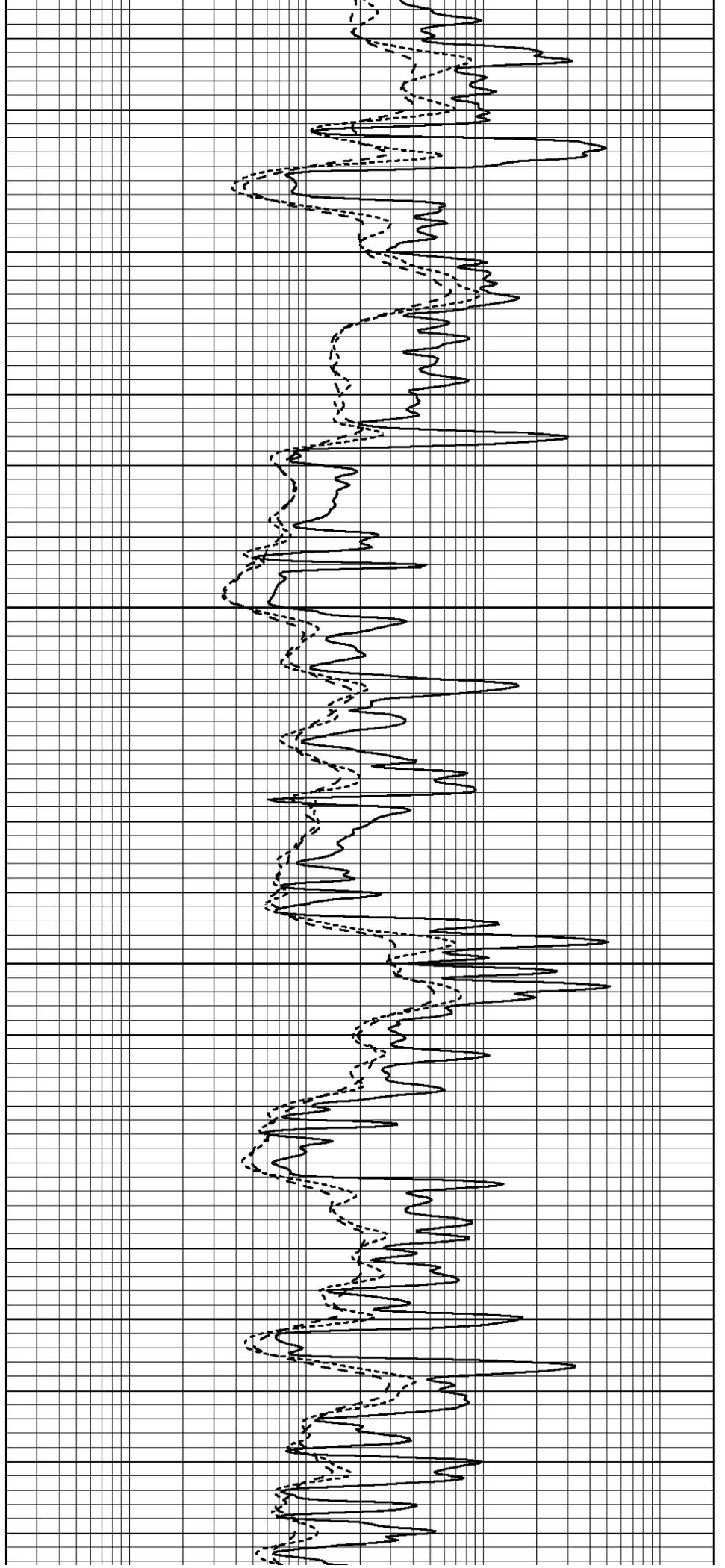


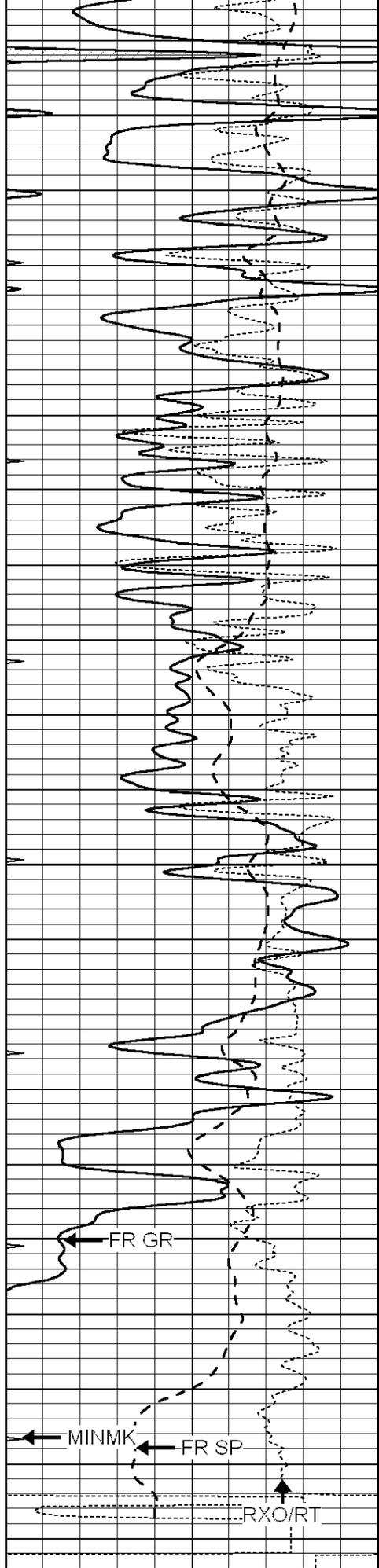
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4450

4500

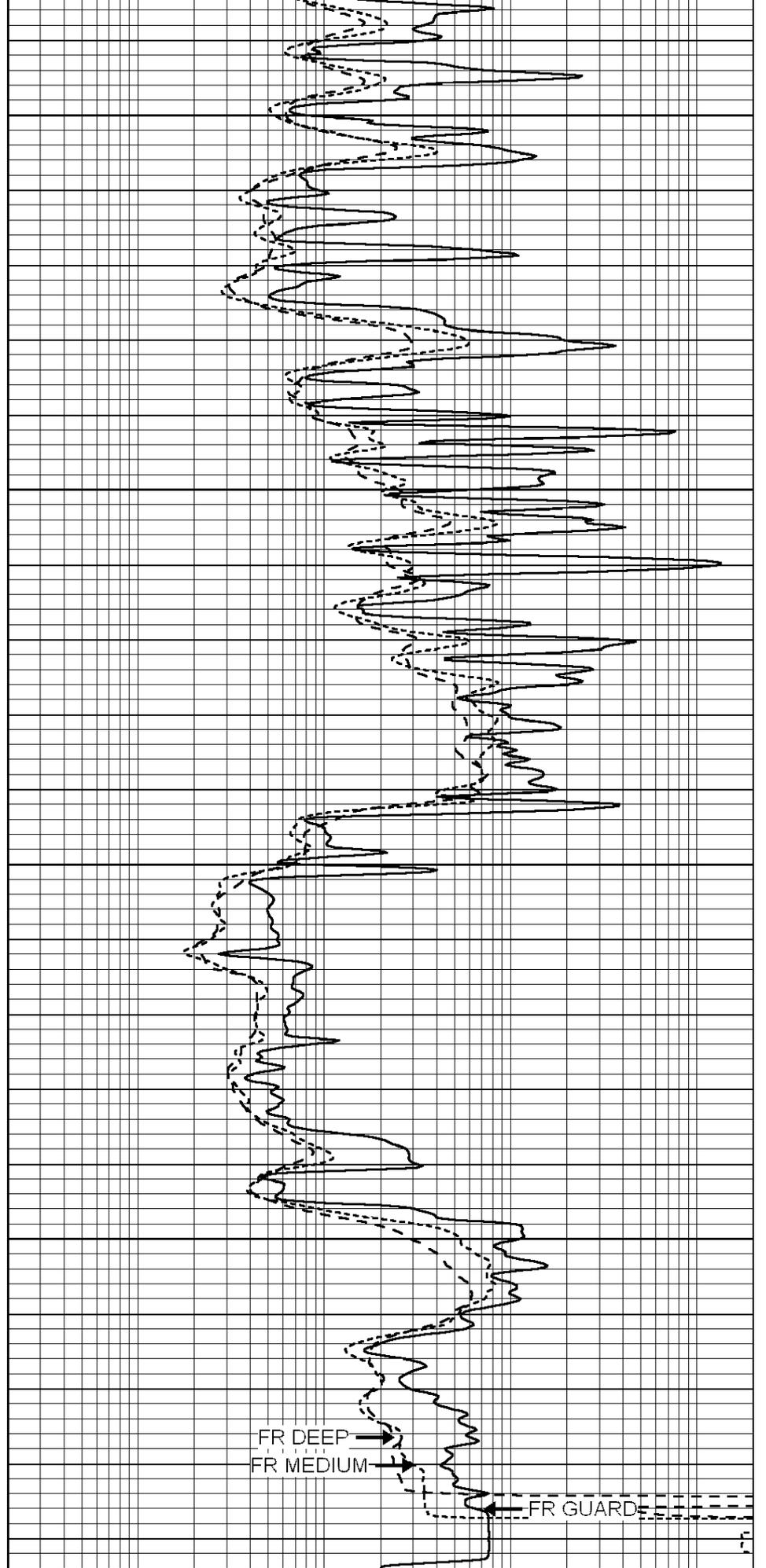
4550





4600  
4650  
4700  
4750  
LTD 4788

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

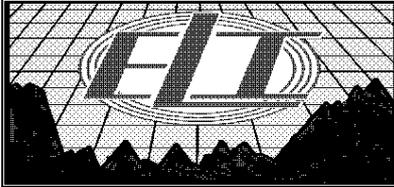


FR DEEP  
FR MEDIUM  
FR GUARD

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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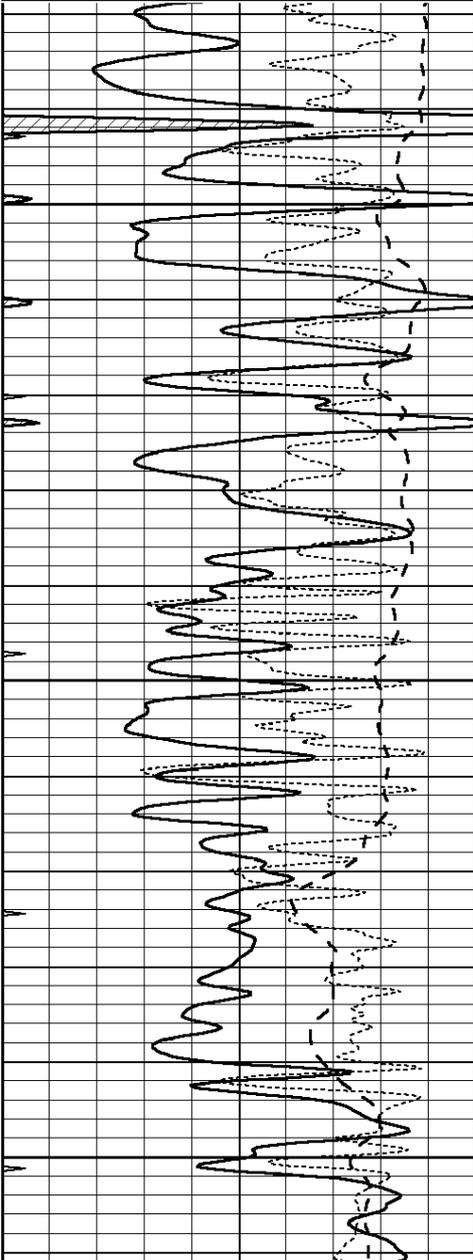


# REPEAT SECTION

Database File: 1597pe.db  
 Dataset Pathname: pass2.2  
 Presentation Format: \_dil  
 Dataset Creation: Thu Aug 24 05:37:42 2017 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240

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

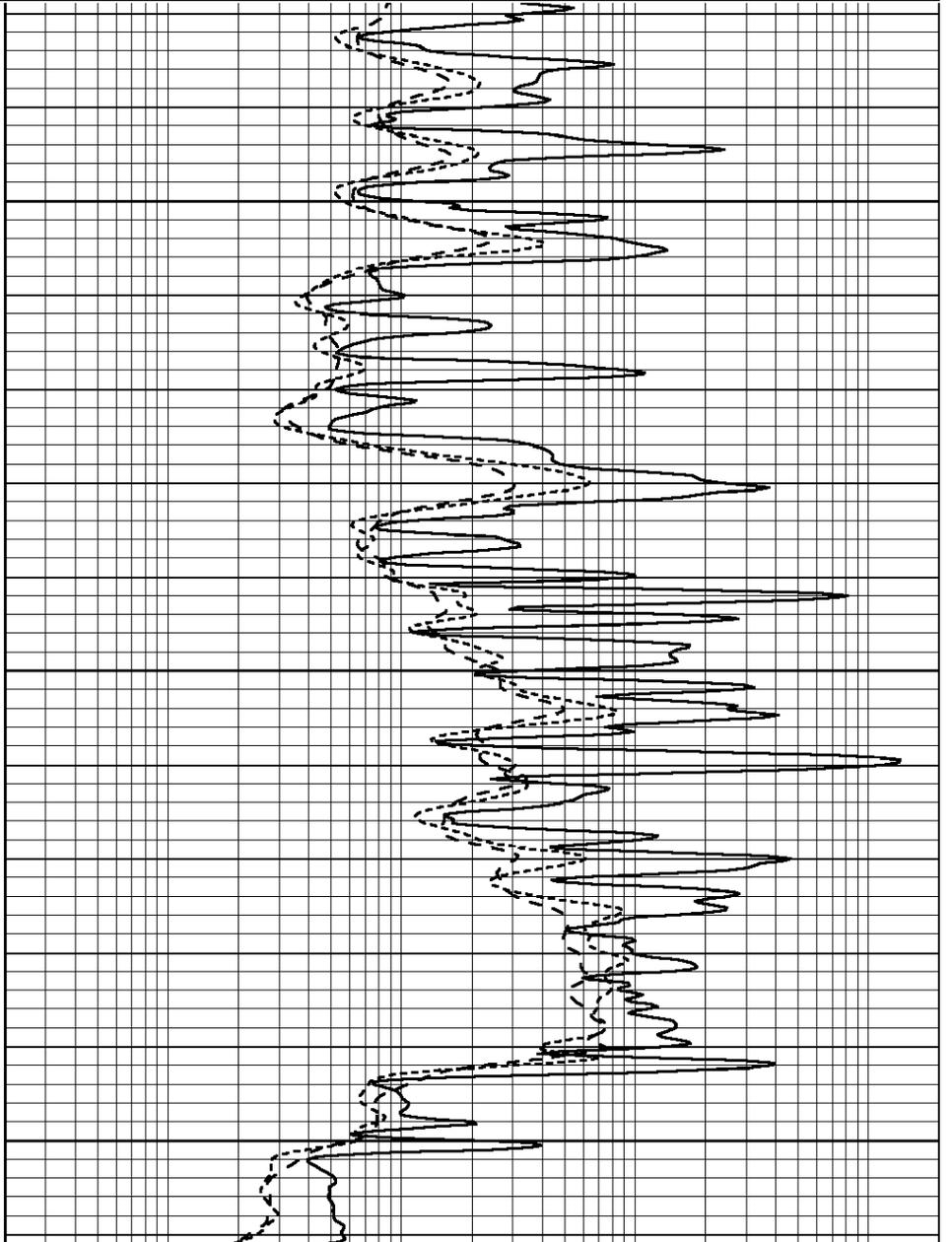
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

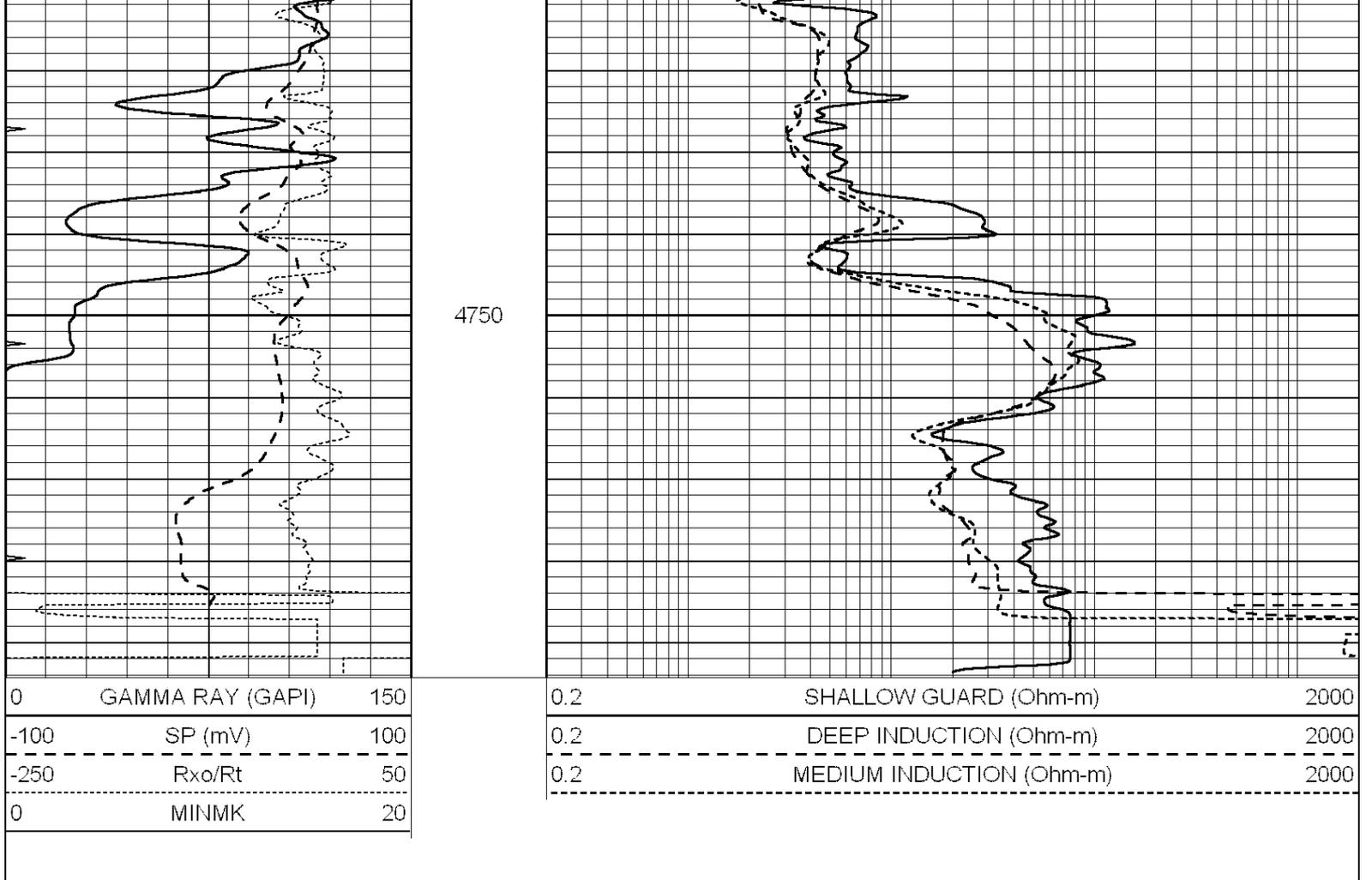


4600

4650

4700





### Calibration Report

Database File: pe2.db  
 Dataset Pathname: pass2  
 Dataset Creation: Mon Aug 21 11:29:56 2017 by Log SOC 120430

### Litho Density Calibration Report

Serial: 002      Model: PRB

#### Master Calibration

Performed Mon Aug 21 11:27:42 2017

	Background	Magnesium	Aluminum	Sandstone	
Window 1	837.1	10632.5	2945.1	12110.1	cps
Window 2	772.0	9117.4	2570.1	10197.3	cps
Window 3	631.7	4669.0	1481.9	5042.9	cps
Window 4	187.0	187.5	185.9	189.9	cps
Long Space	0.0	8345.4	1798.1	9425.3	cps
Short Space	1.1	1927.9	1285.9	2050.2	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.558
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept	: -19.6

#### 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	

### Gamma Ray Calibration Report

Serial Number:	070558	
Tool Model:	OPEN_GR	
Performed:	Wed May 31 00:09:32 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps