



**NABORS**

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL INDUCTION  
LOG**

Company	MULL DRILLING COMPANY, INC.		
Well	TALLMAN FARMS "B" #1-30		
Field	WILDCAT		
County	CHEYENNE	State	COLORADO
Location:	API # : 05-017-07743-00		Other Services CDL/CNL/PE MEL/SONIC
1660' FNL & 1107' FWL			
Permanent Datum	GROUND LEVEL	Elevation	4287
Log Measured From	KELLY BUSHING 11' A.G.L.		
Drilling Measured From	KELLY BUSHING		
SEC 30 TWP 16S RGE 44W			
Date	6/30/13		
Run Number	ONE		
Depth Driller	5560		
Depth Logger	5558		
Bottom Logged Interval	5556		
Top Log Interval	00		
Casing Driller	8 5/8"@315'		
Casing Logger	312		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5,400 PPM	
Density / Viscosity	9.3/63		
pH / Fluid Loss	10.0/8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.600@90F		
Rmf @ Meas. Temp	.450@90F		
Rmc @ Meas. Temp	.720@90F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.415@130F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	11:00 A.M.		
Maximum Recorded Temperature	130F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	PHIL ASKEY		

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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 "NABORS" HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
CHEYENNE WELLS, CO. 13S. ON HWY 385 TO "RD. C", 4 W., S. INTO @TANK

Database File:

011179pe.db

Dataset Pathname:

pass3.8

Presentation Format:

dil2

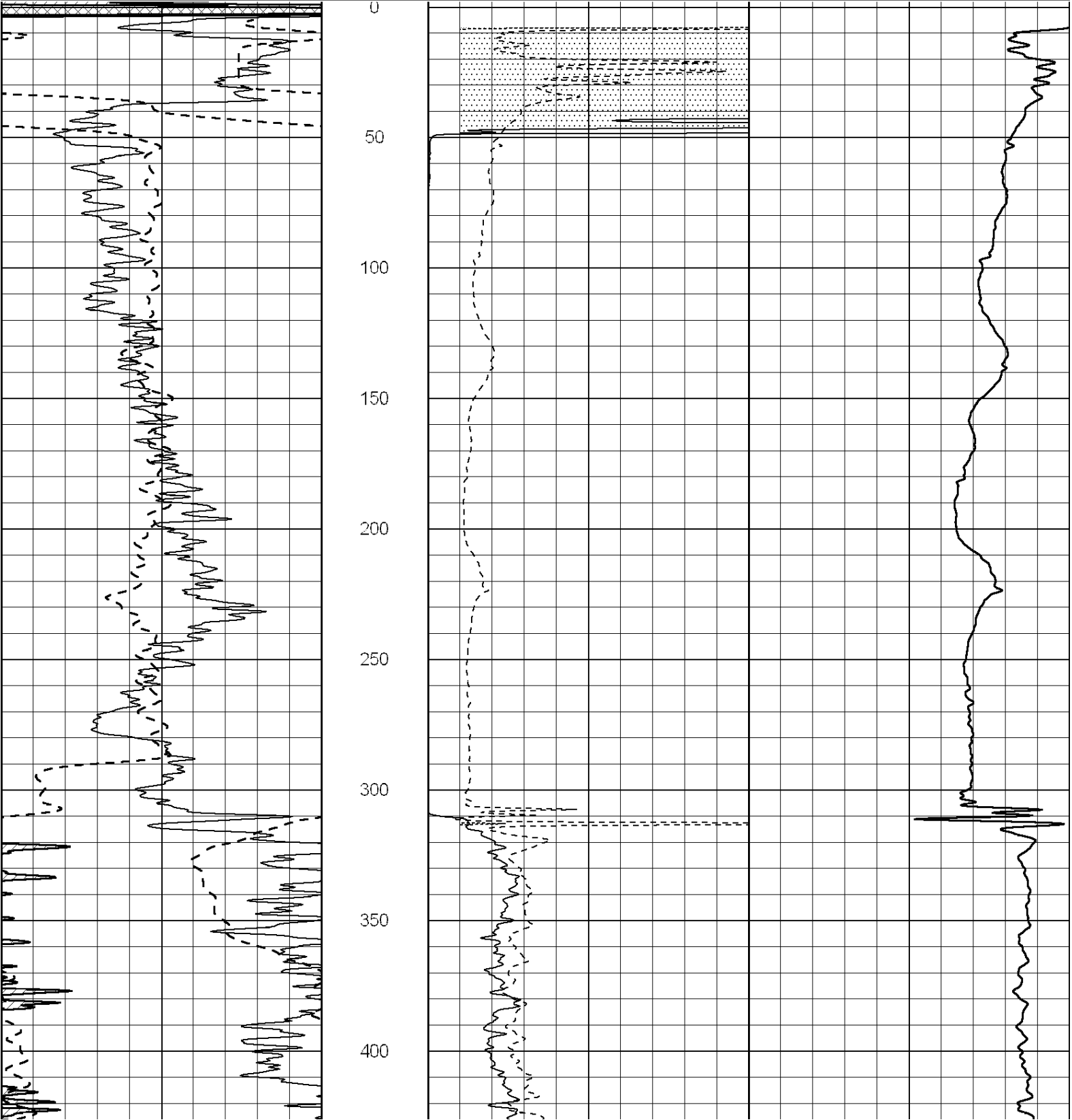
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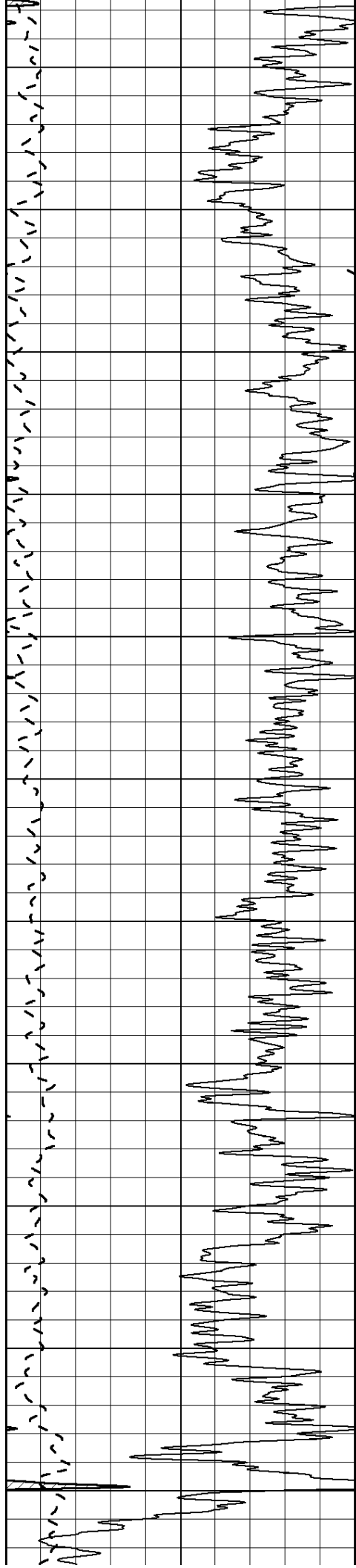
Sun Jun 30 12:53:36 2013 by Calc SOC 120430

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





450

500

550

600

650

700

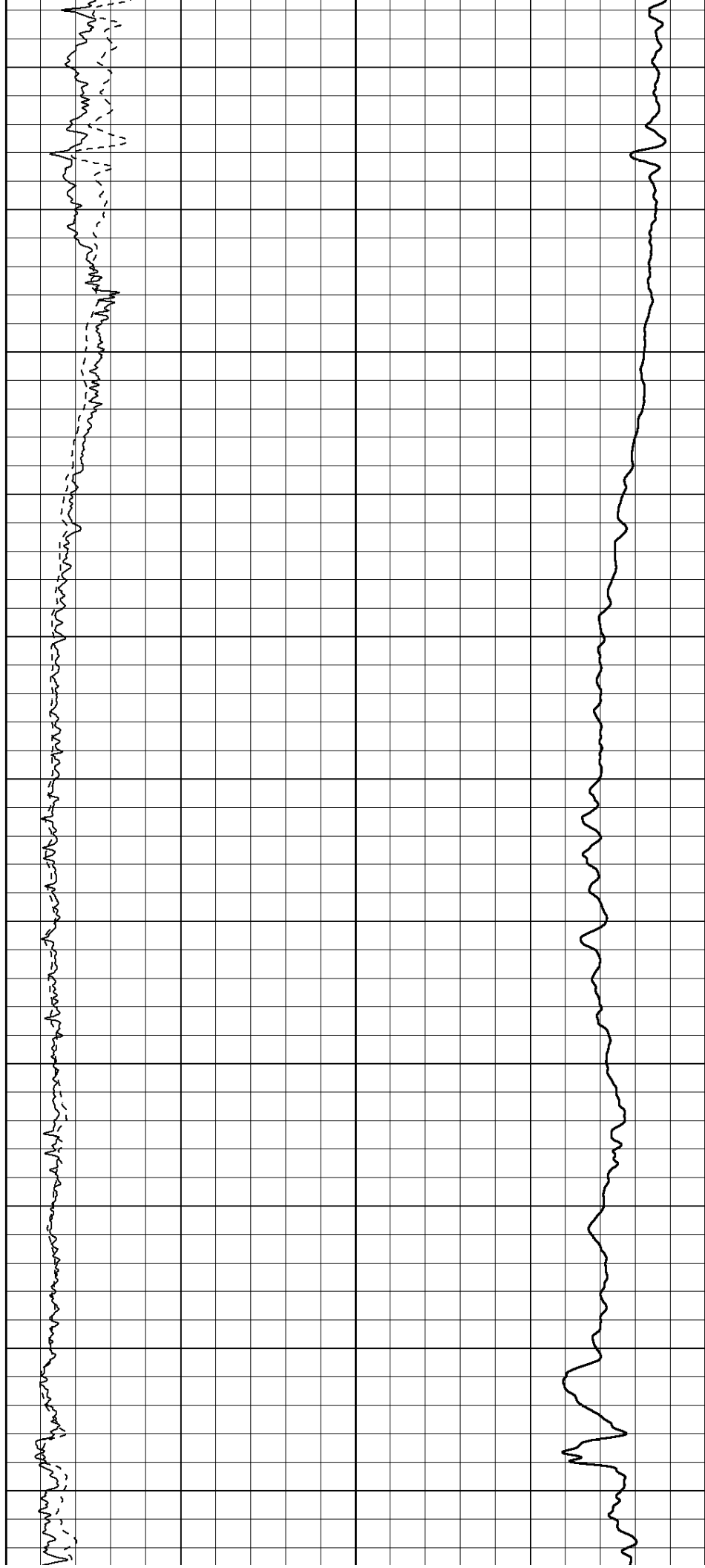
750

800

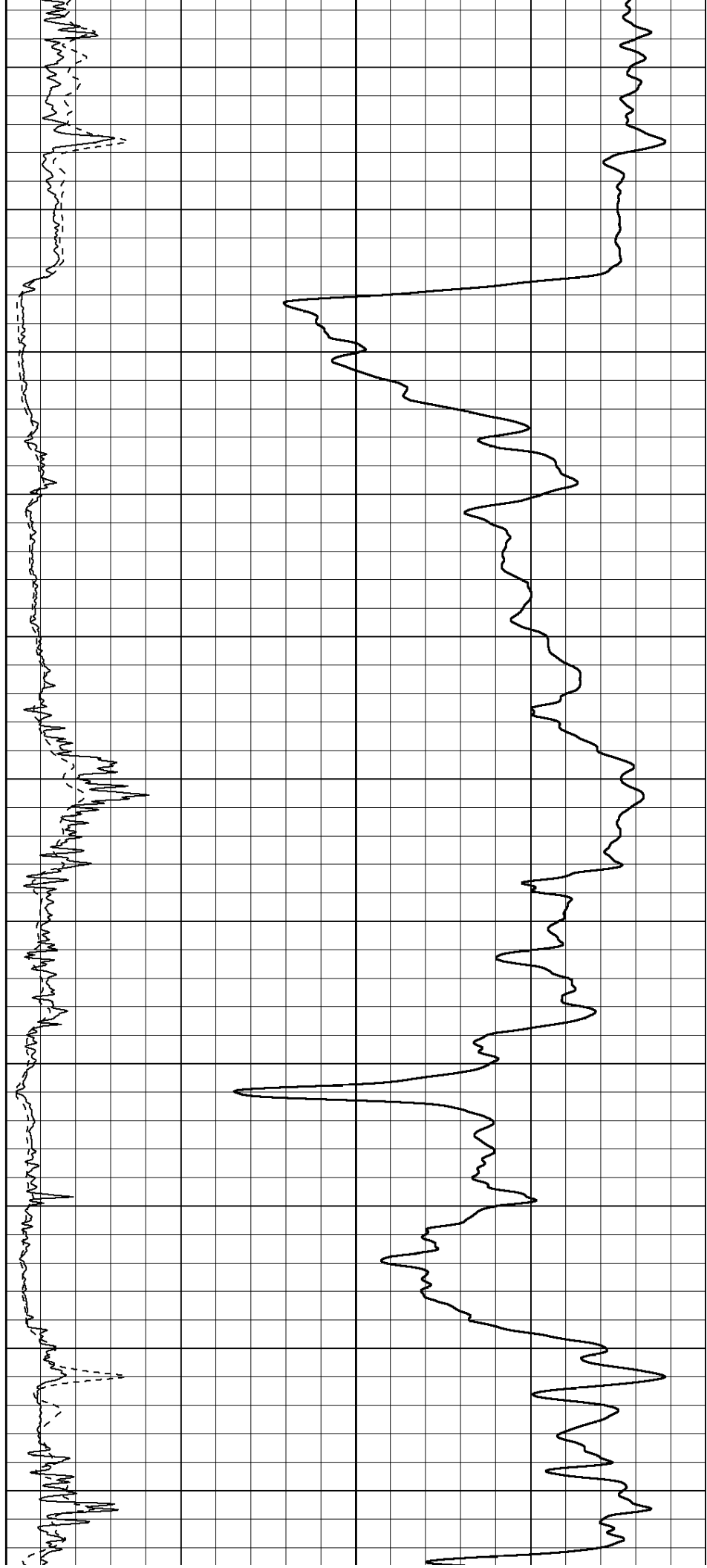
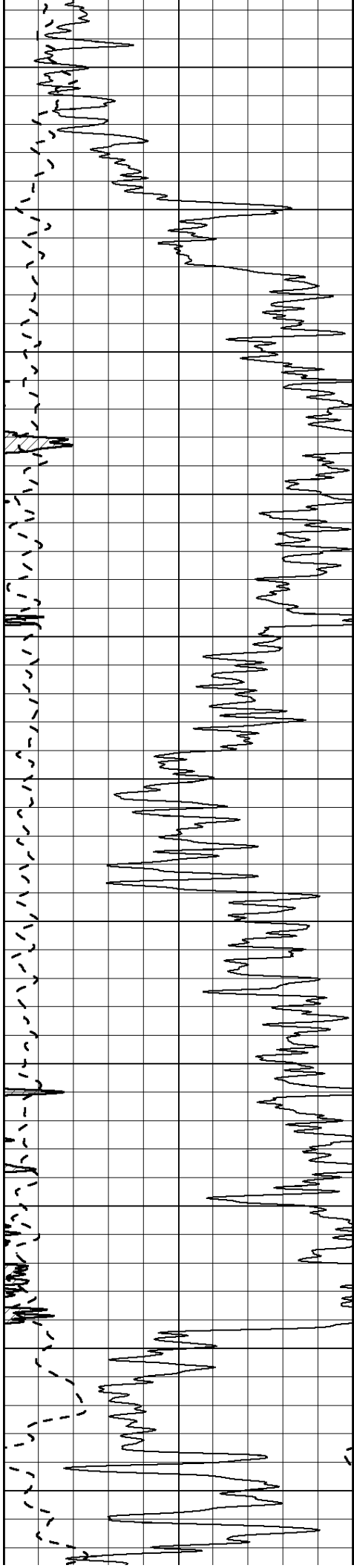
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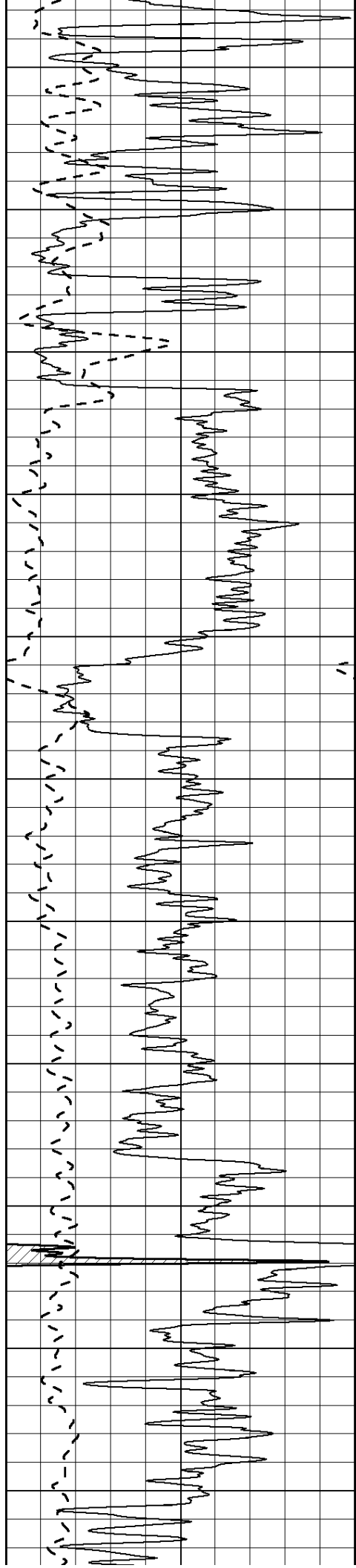
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950



1000  
1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500





1550

1600

1650

1700

1750

1800

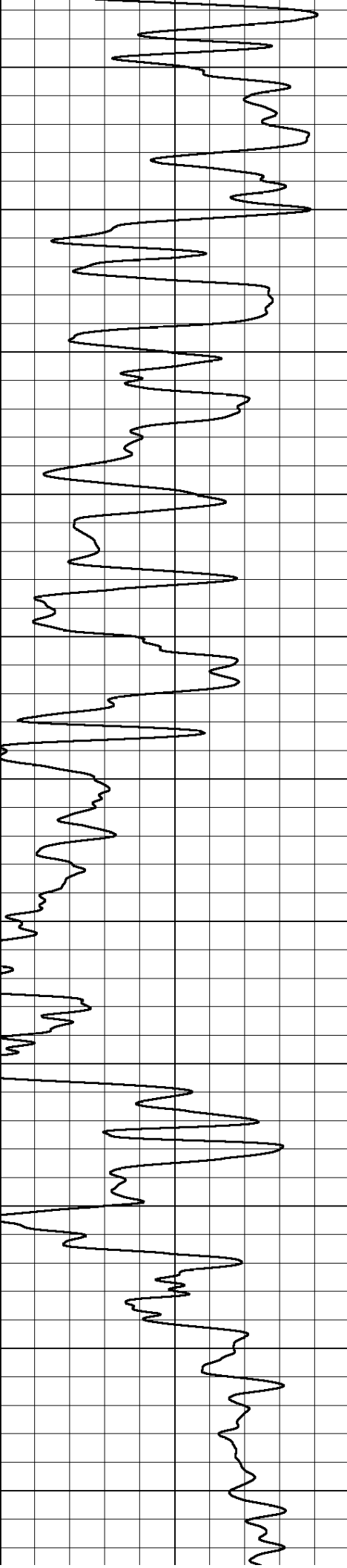
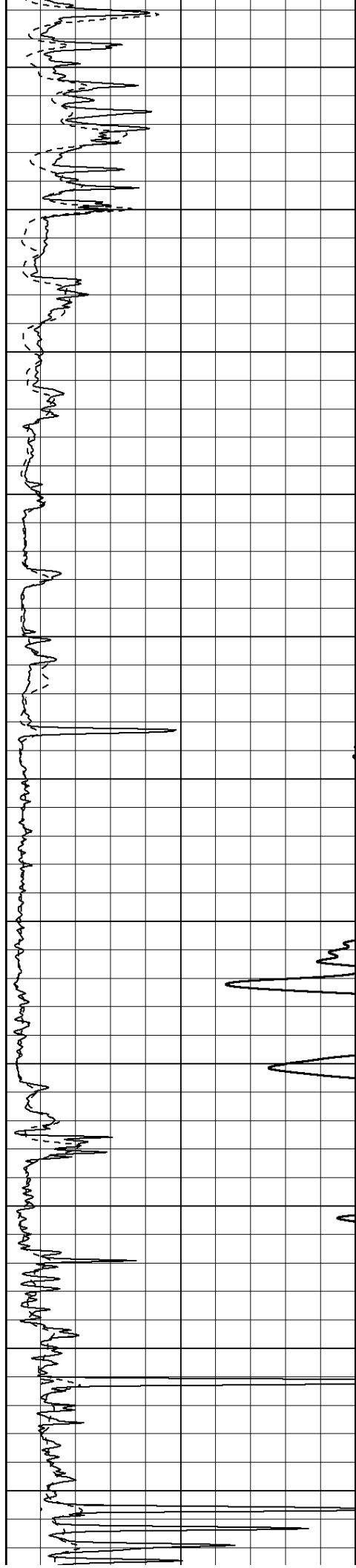
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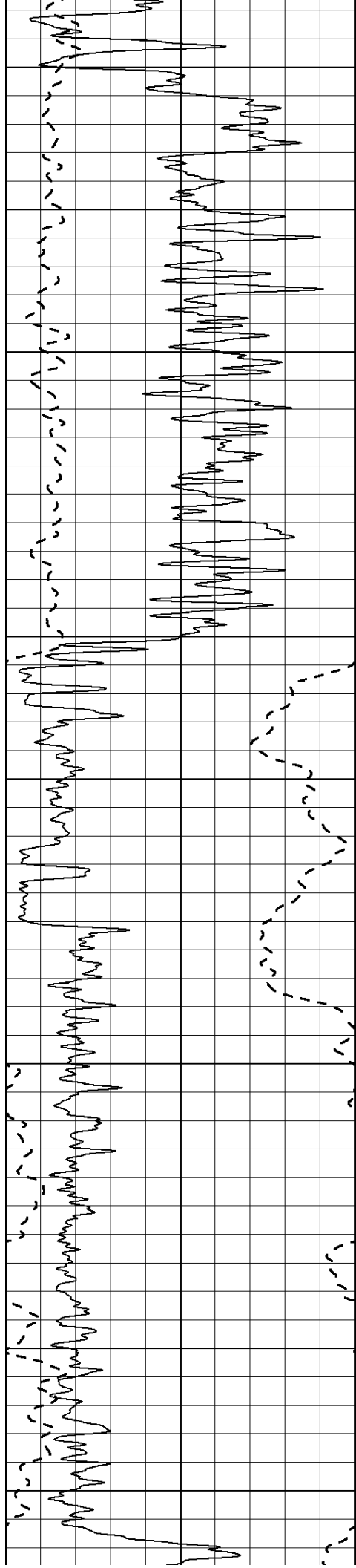
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1950

2000

2050





2100

2150

2200

2250

2300

2350

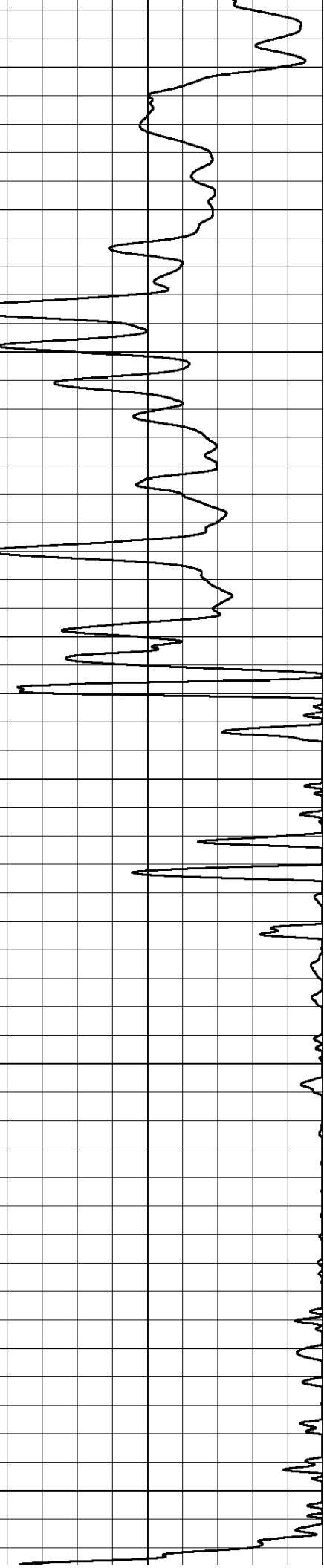
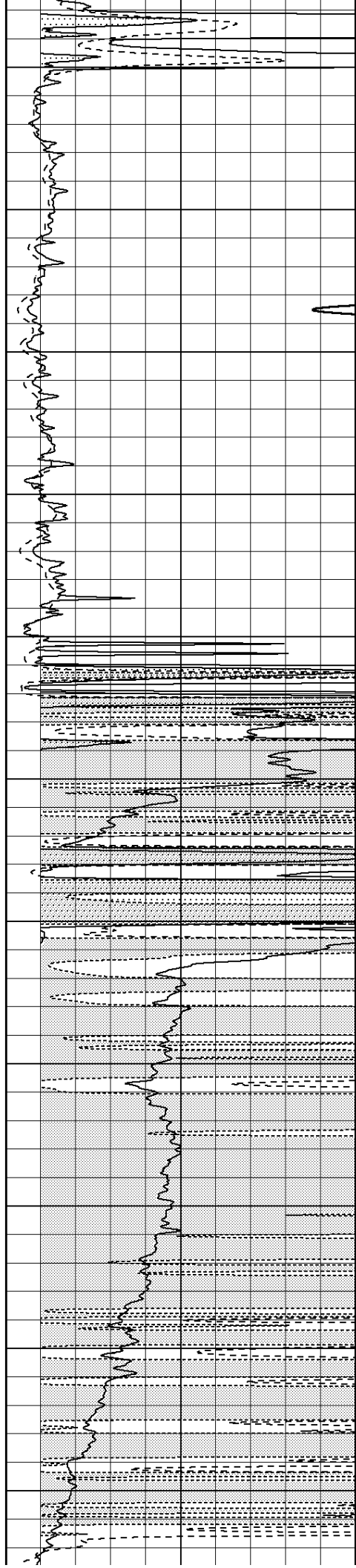
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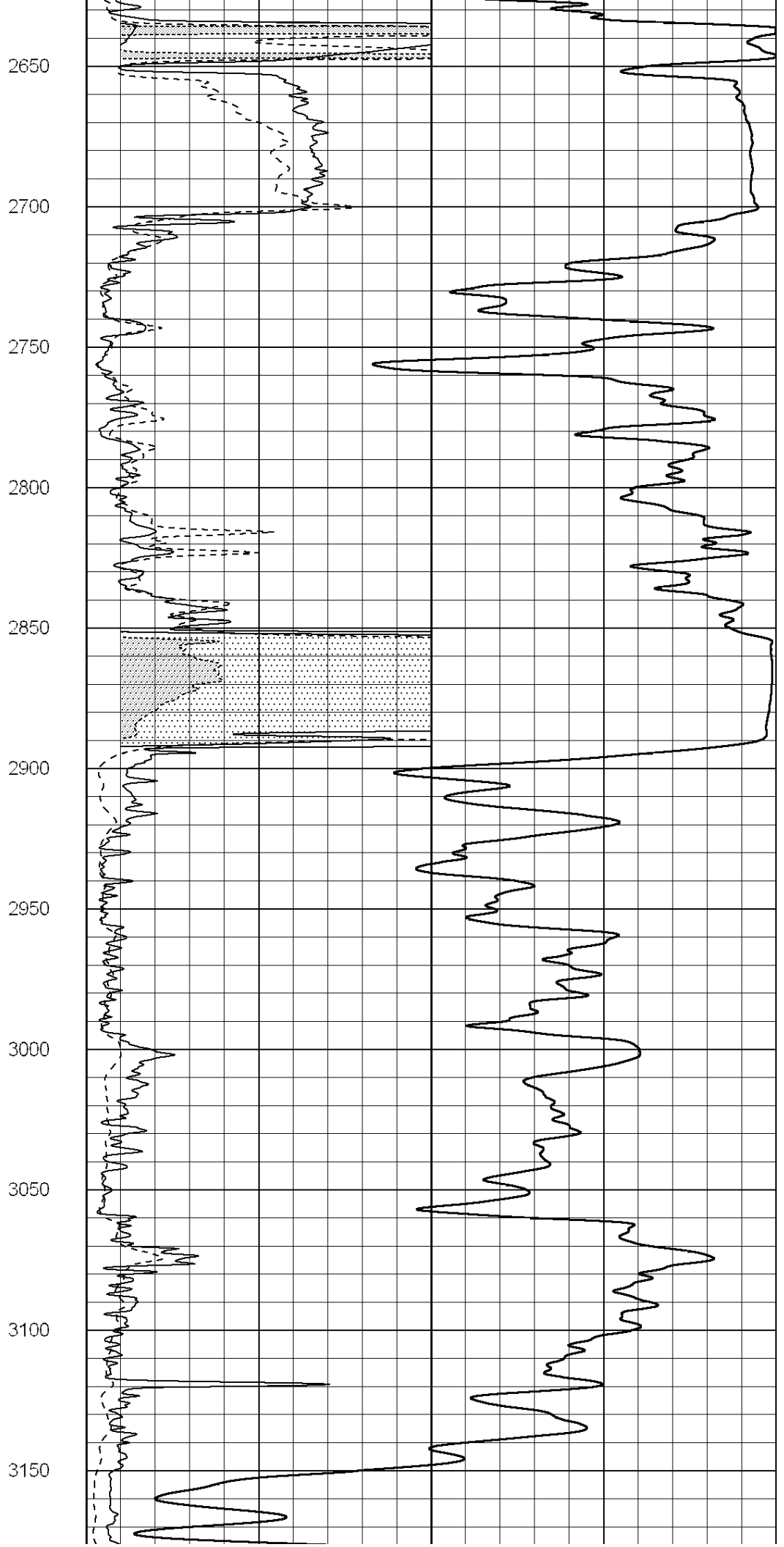
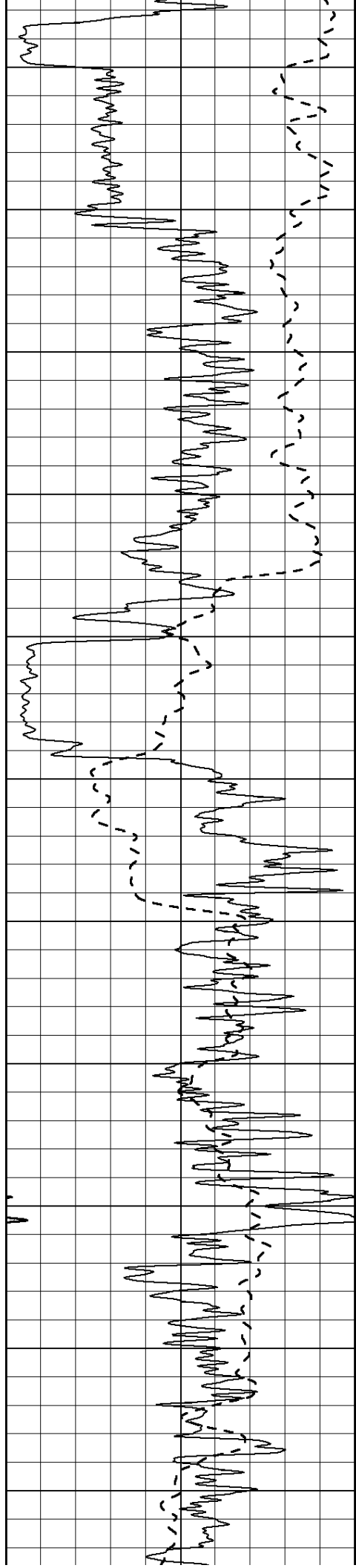
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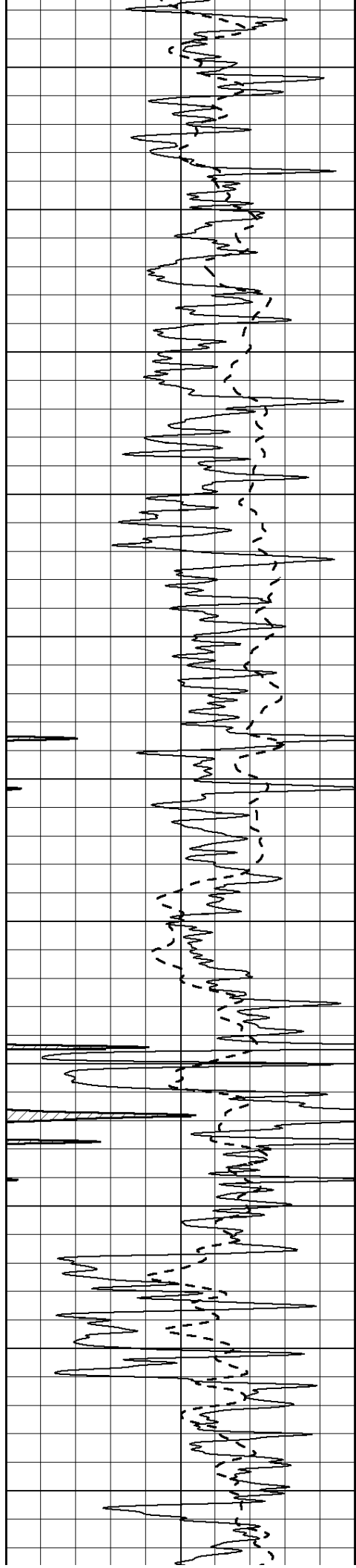
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2550

2600







3200

3250

3300

3350

3400

3450

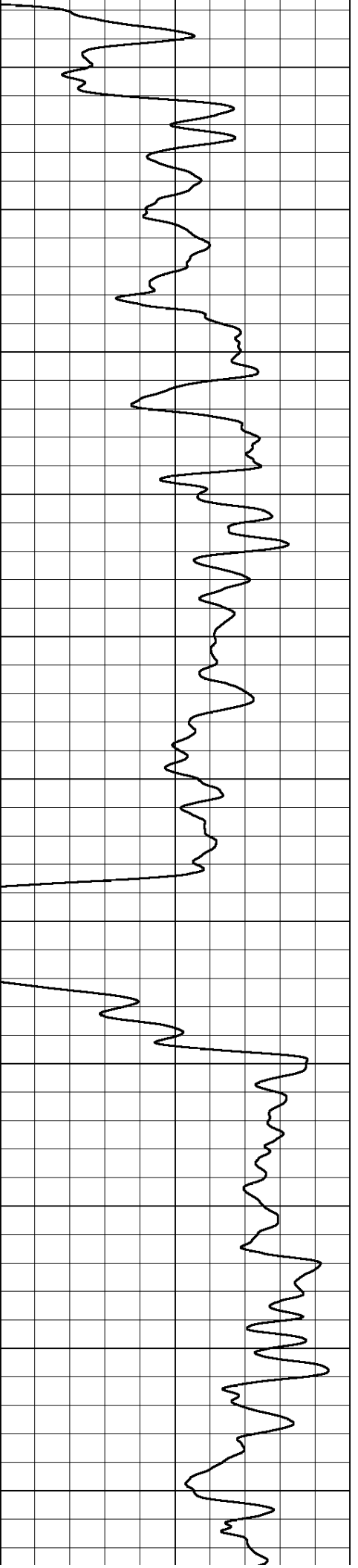
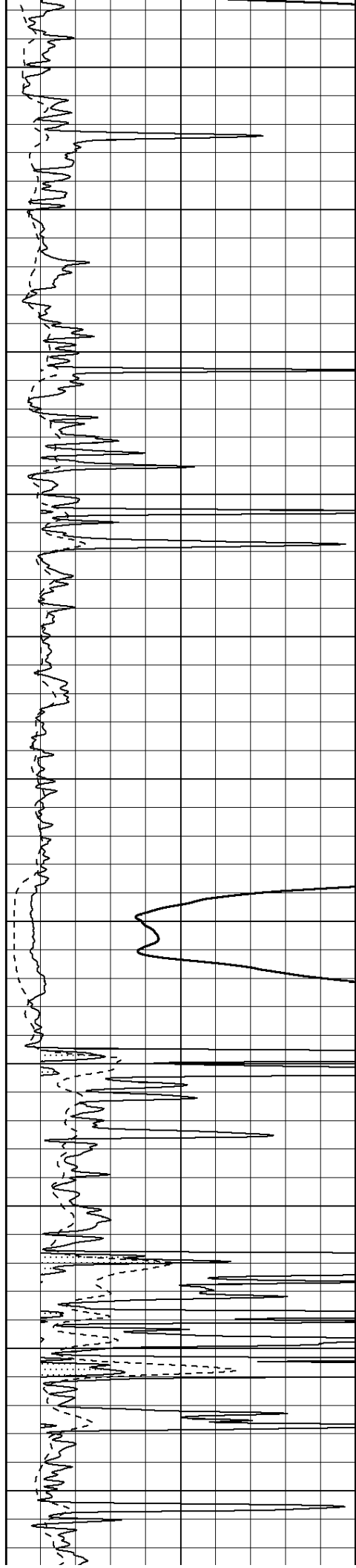
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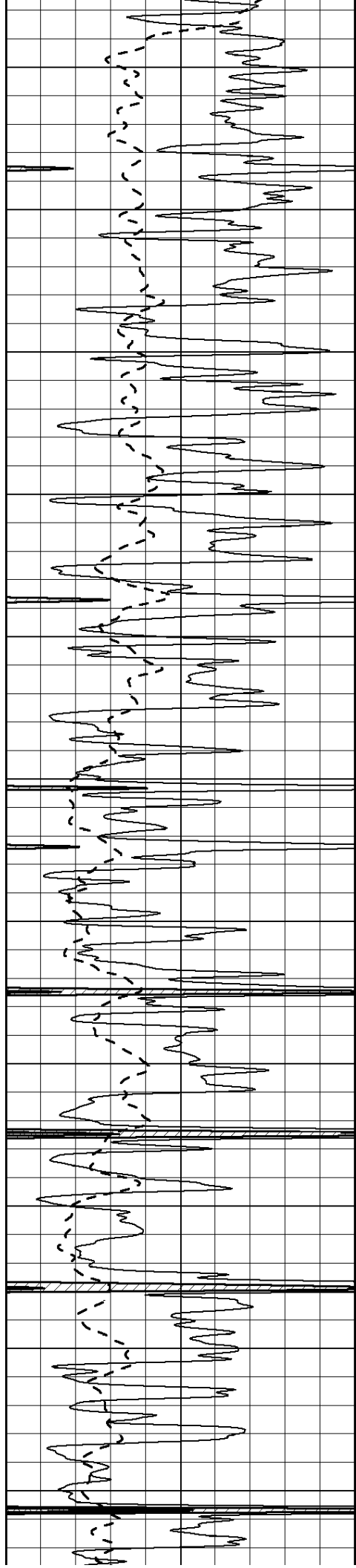
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3650

3700







3750

3800

3850

3900

3950

4000

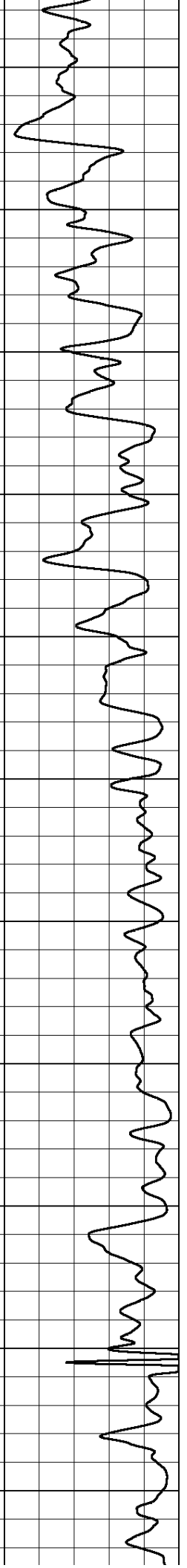
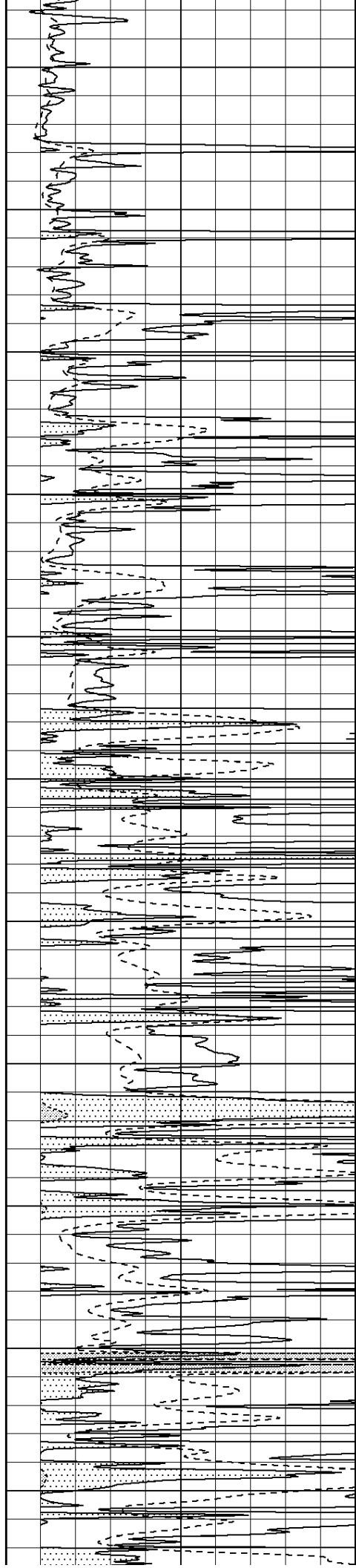
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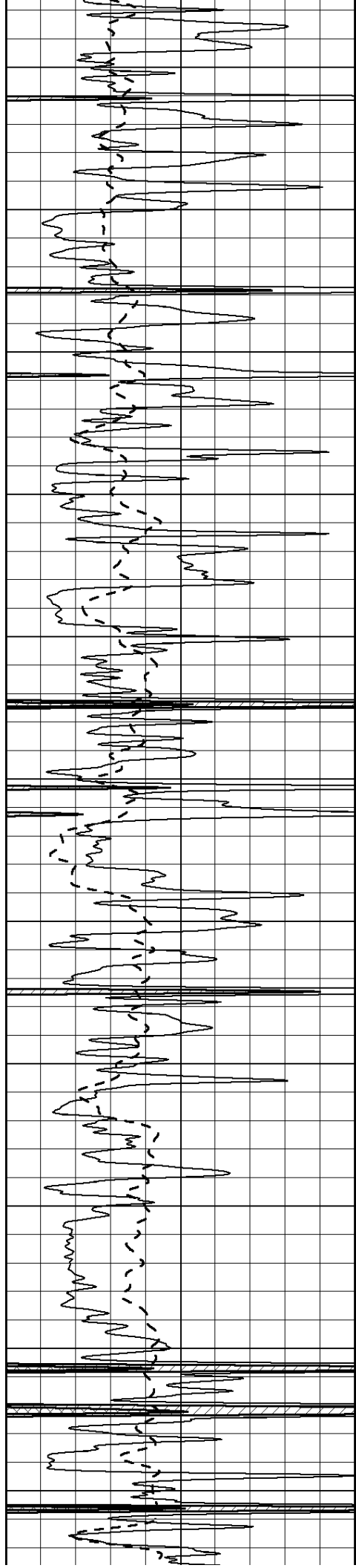
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4150

4200

4250





4300

4350

4400

4450

4500

4550

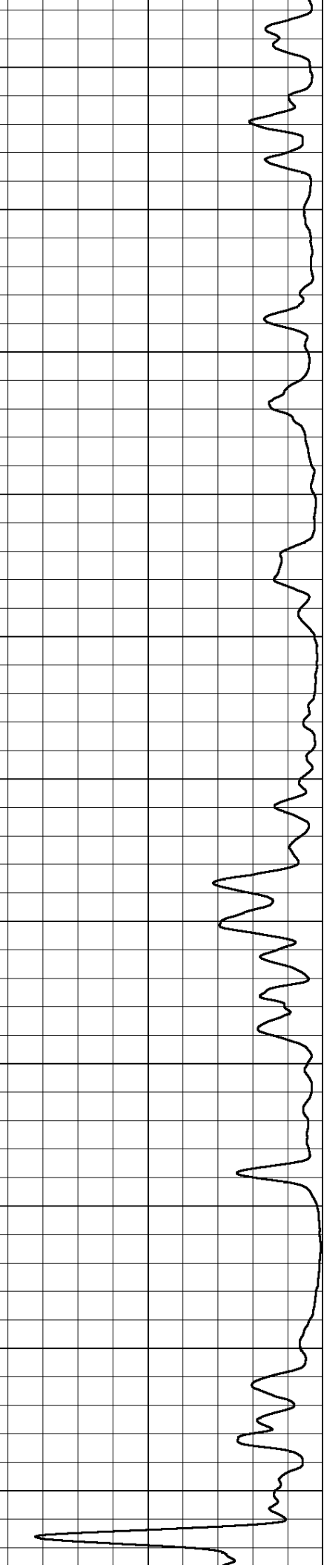
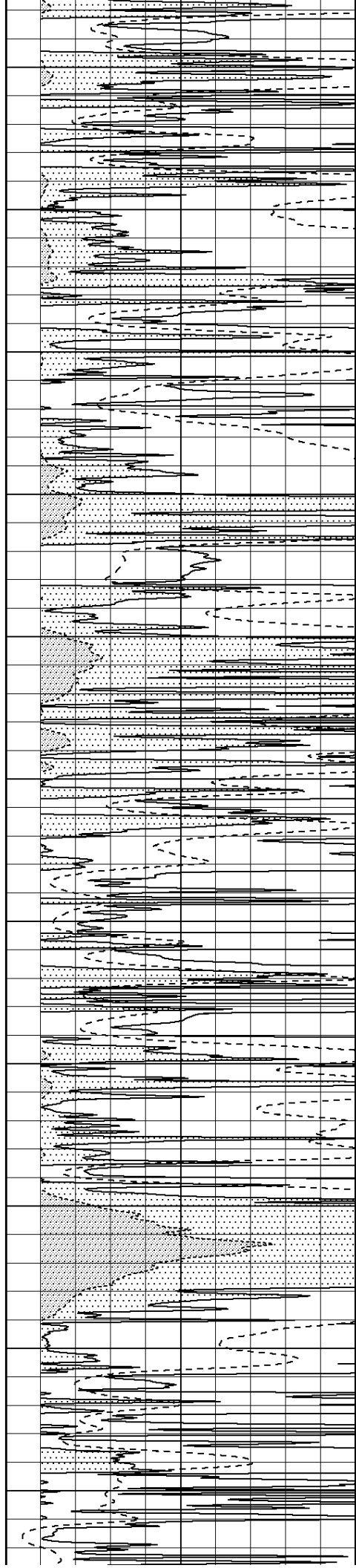
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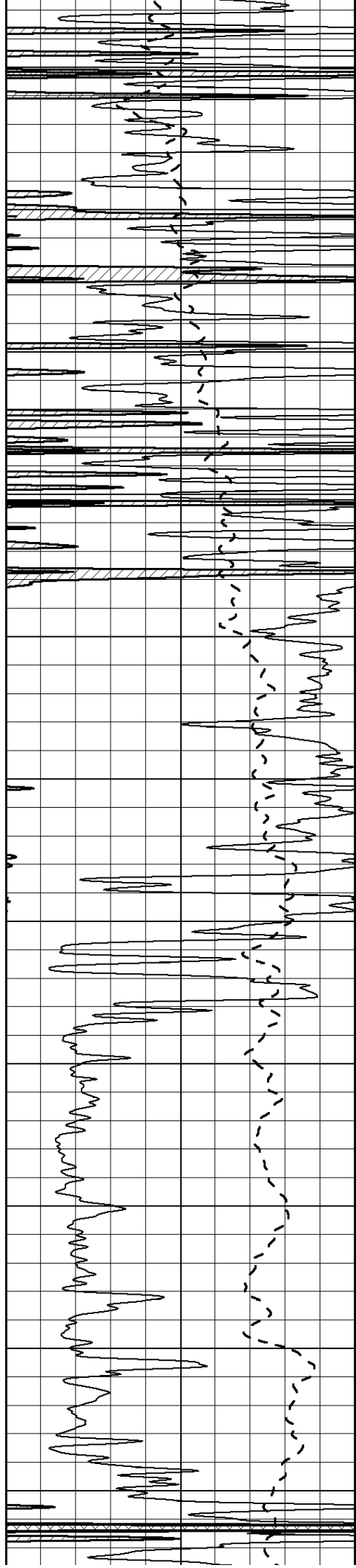
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4700

4750

4800





4850

4900

4950

5000

5050

5100

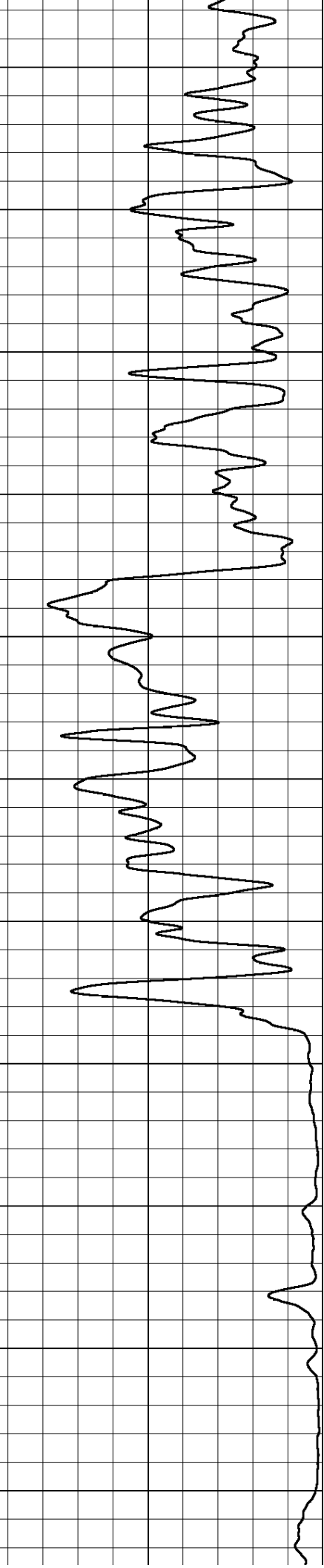
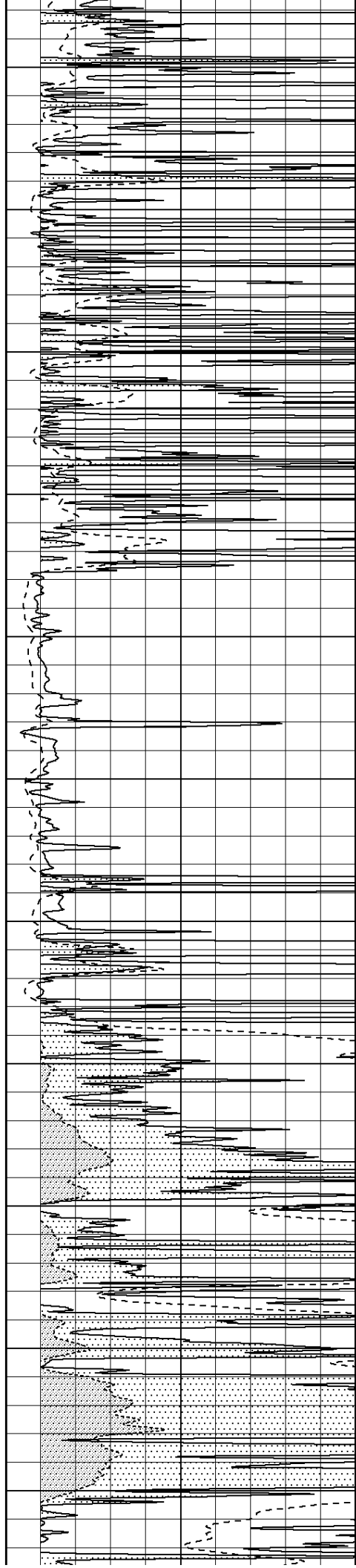
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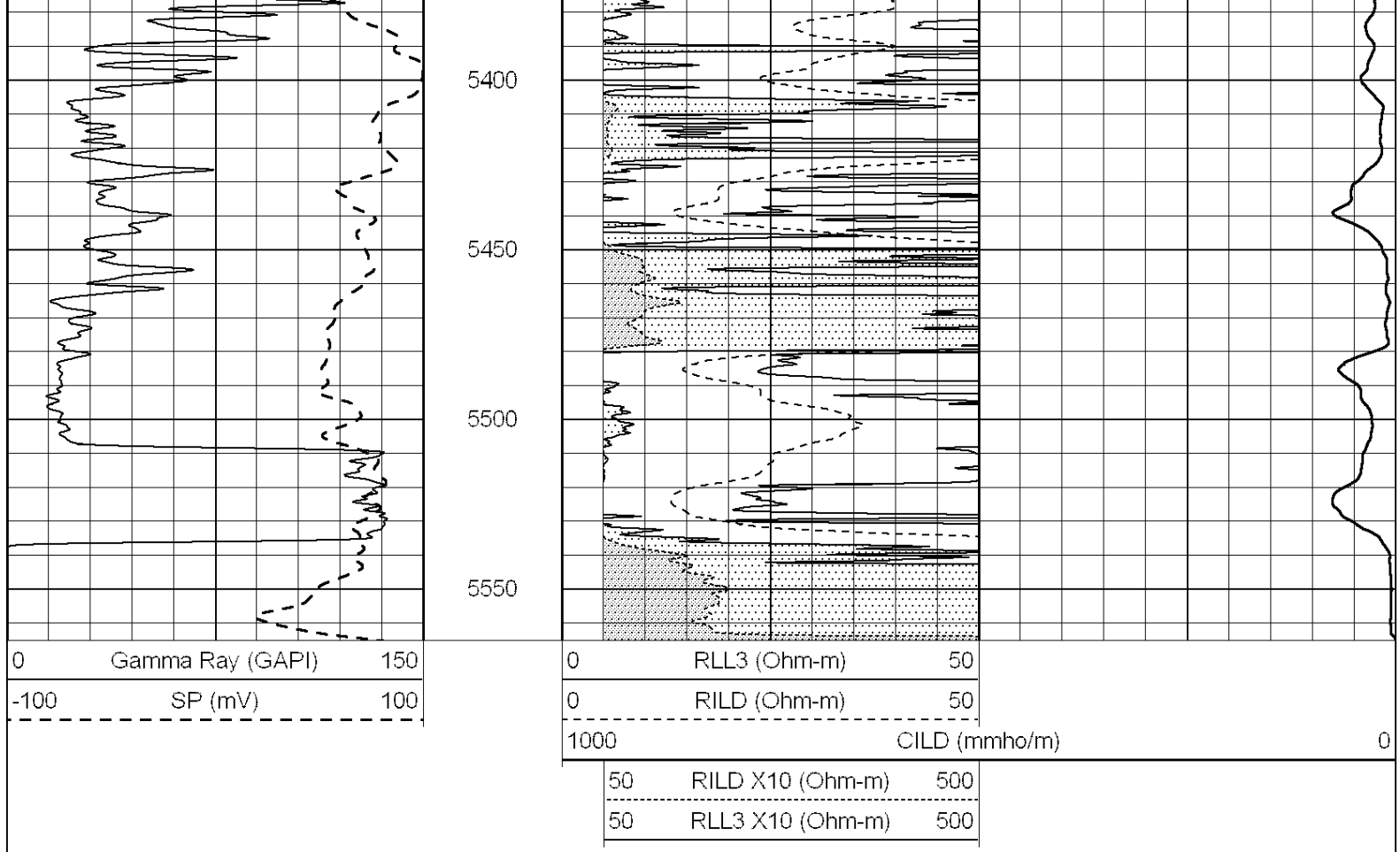
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5250

5300

5350





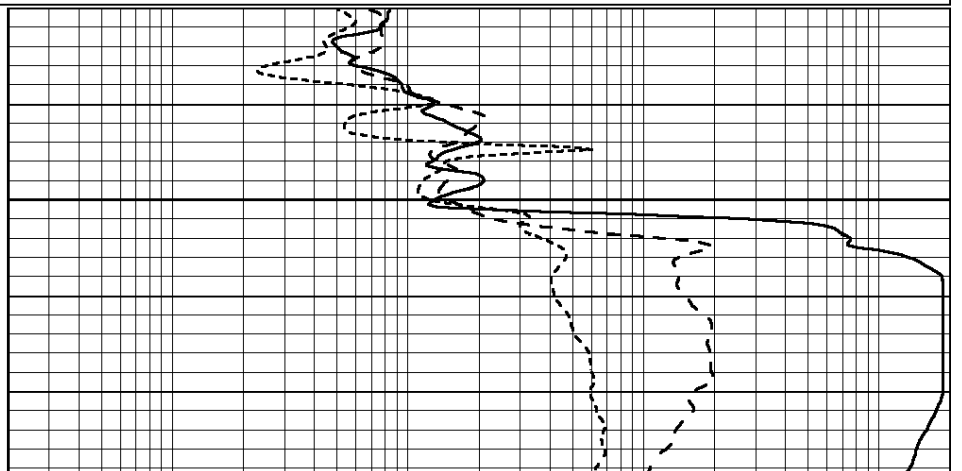
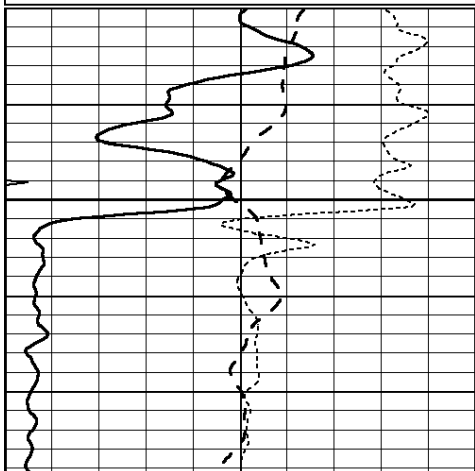
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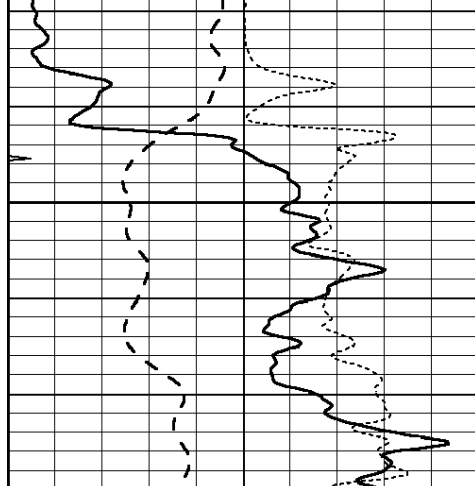
# ANHYDRITE

Database File: 011179pe.db  
Dataset Pathname: pass3.9  
Presentation Format: \_dil  
Dataset Creation: Sun Jun 30 12:54:22 2013 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:240

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

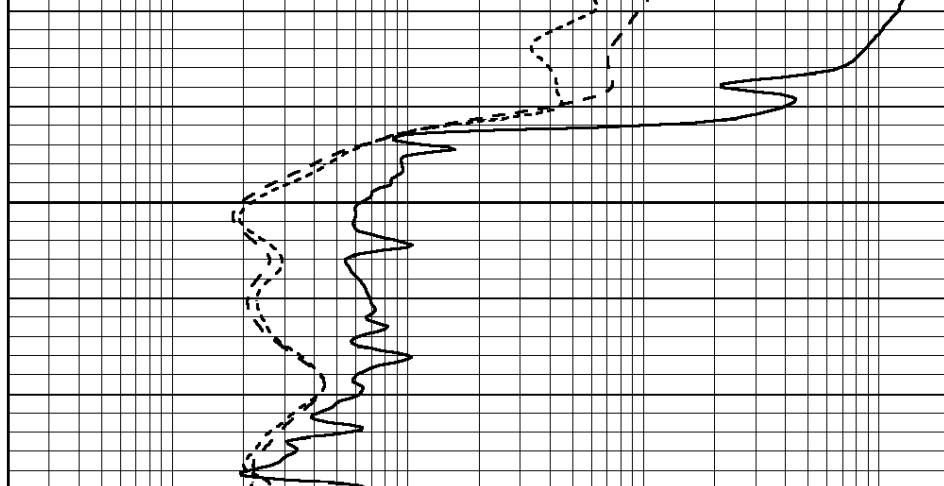
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





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

2900



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

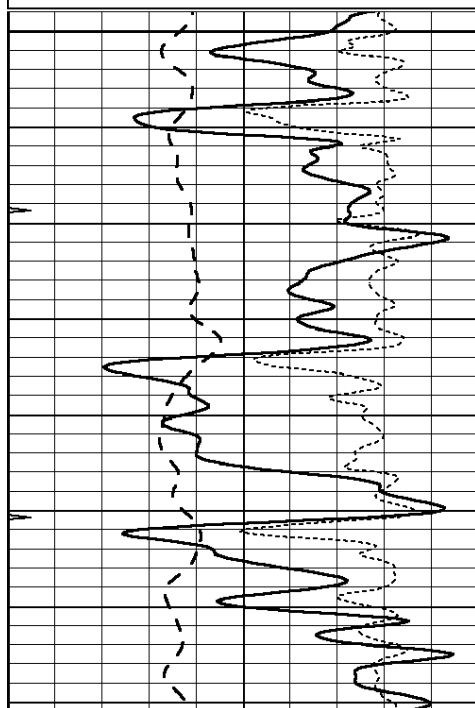


# MAIN SECTION

Database File: 011179pe.db  
Dataset Pathname: pass3.8  
Presentation Format: \_dil  
Dataset Creation: Sun Jun 30 12:53:36 2013 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:240

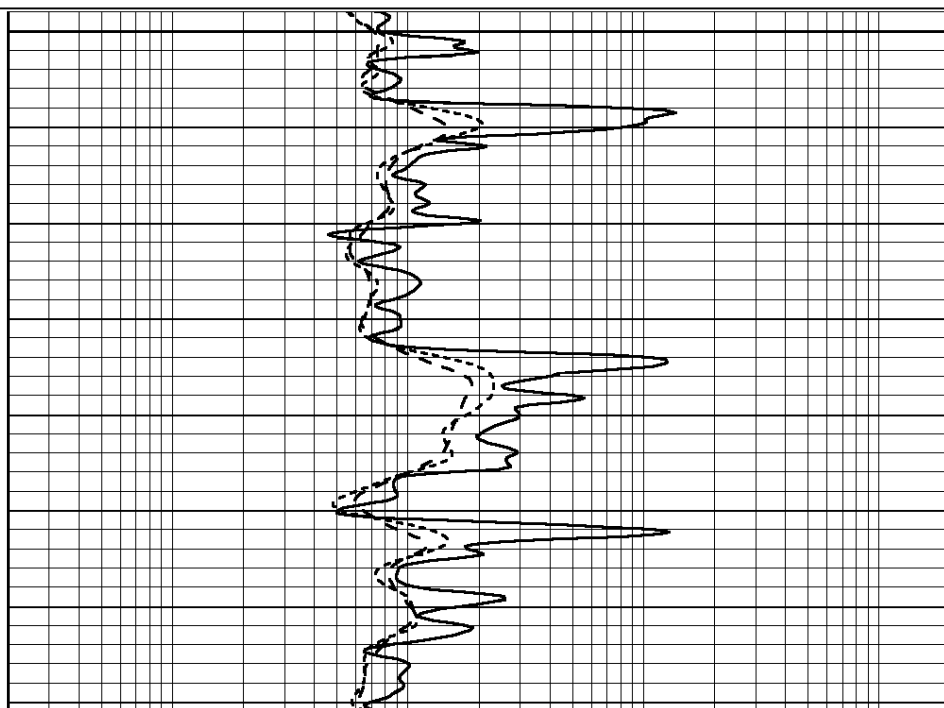
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

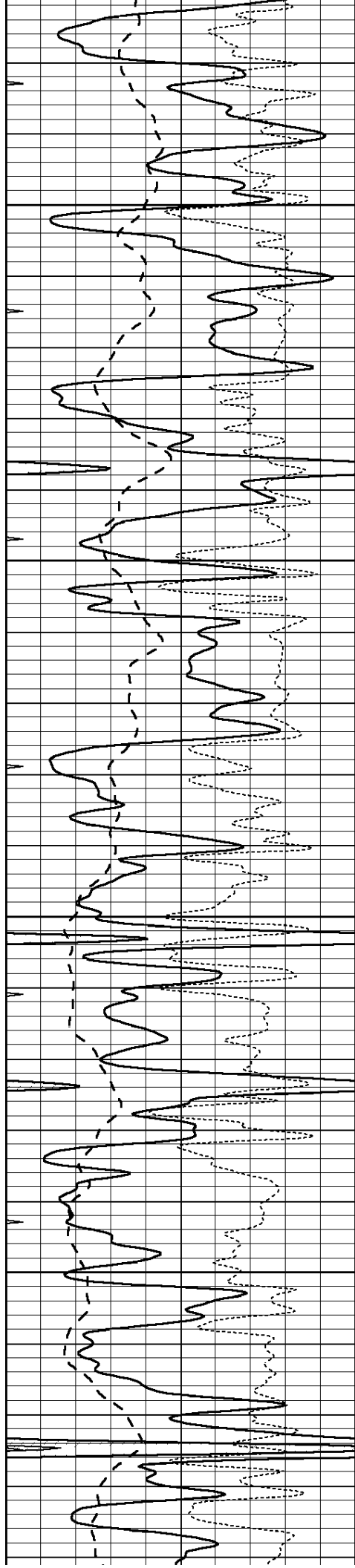
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3800

3850



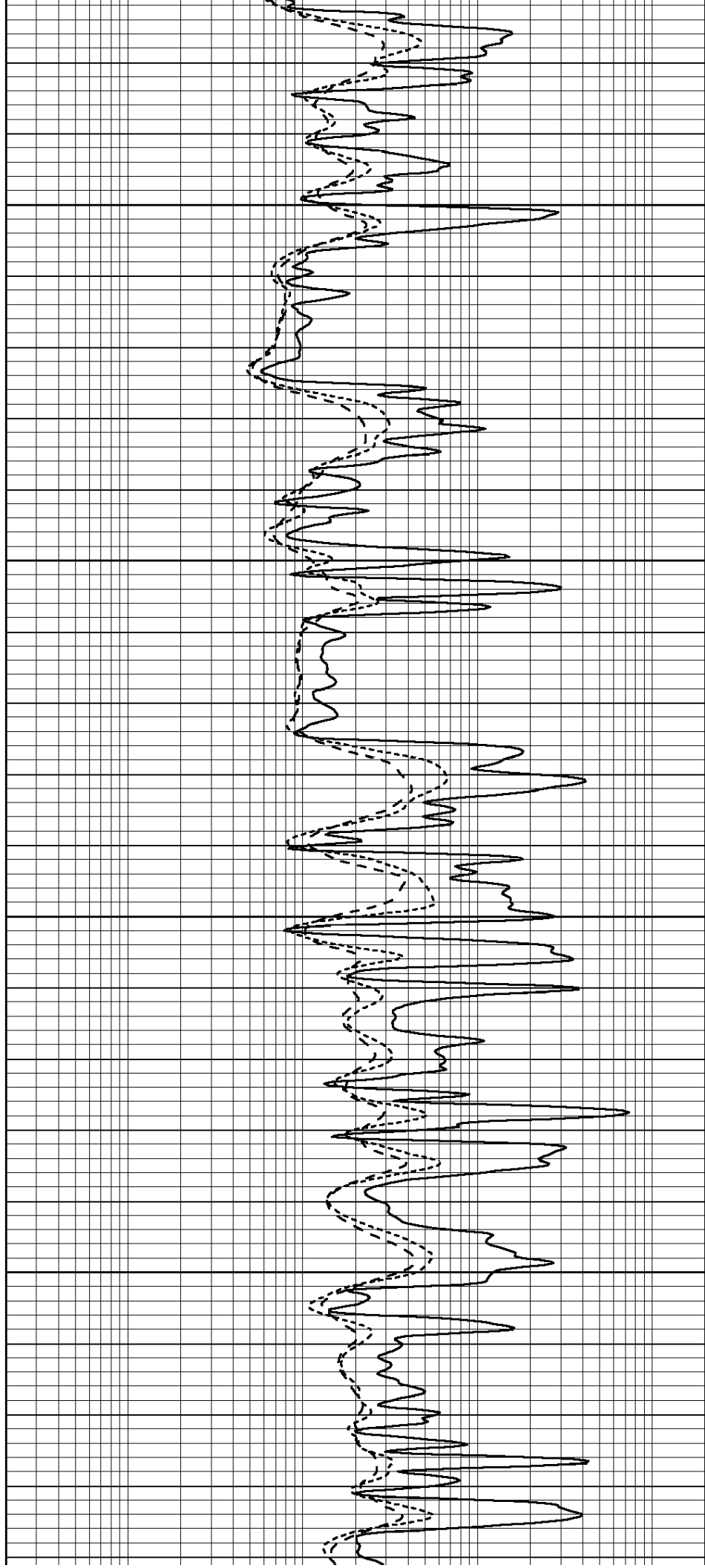


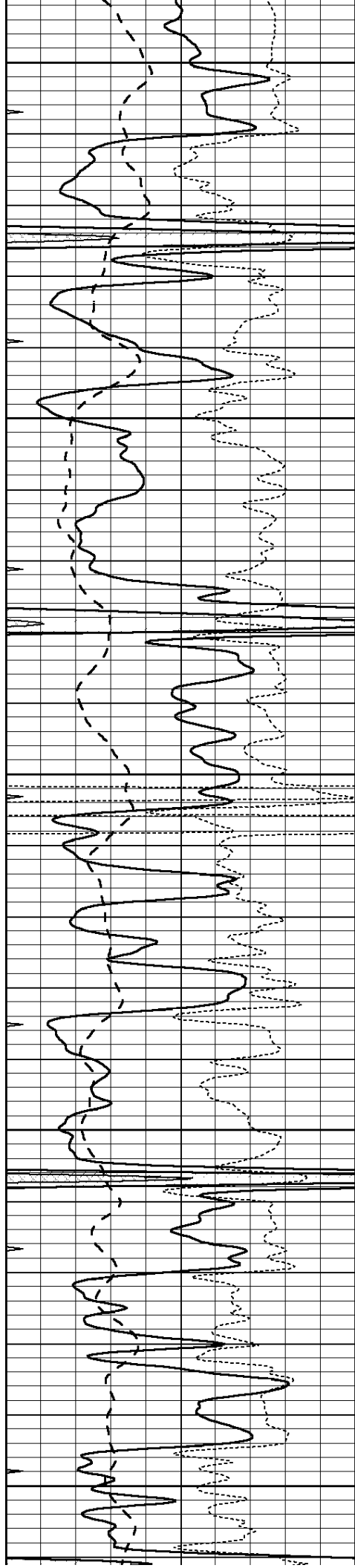
3900

3950

4000

4050





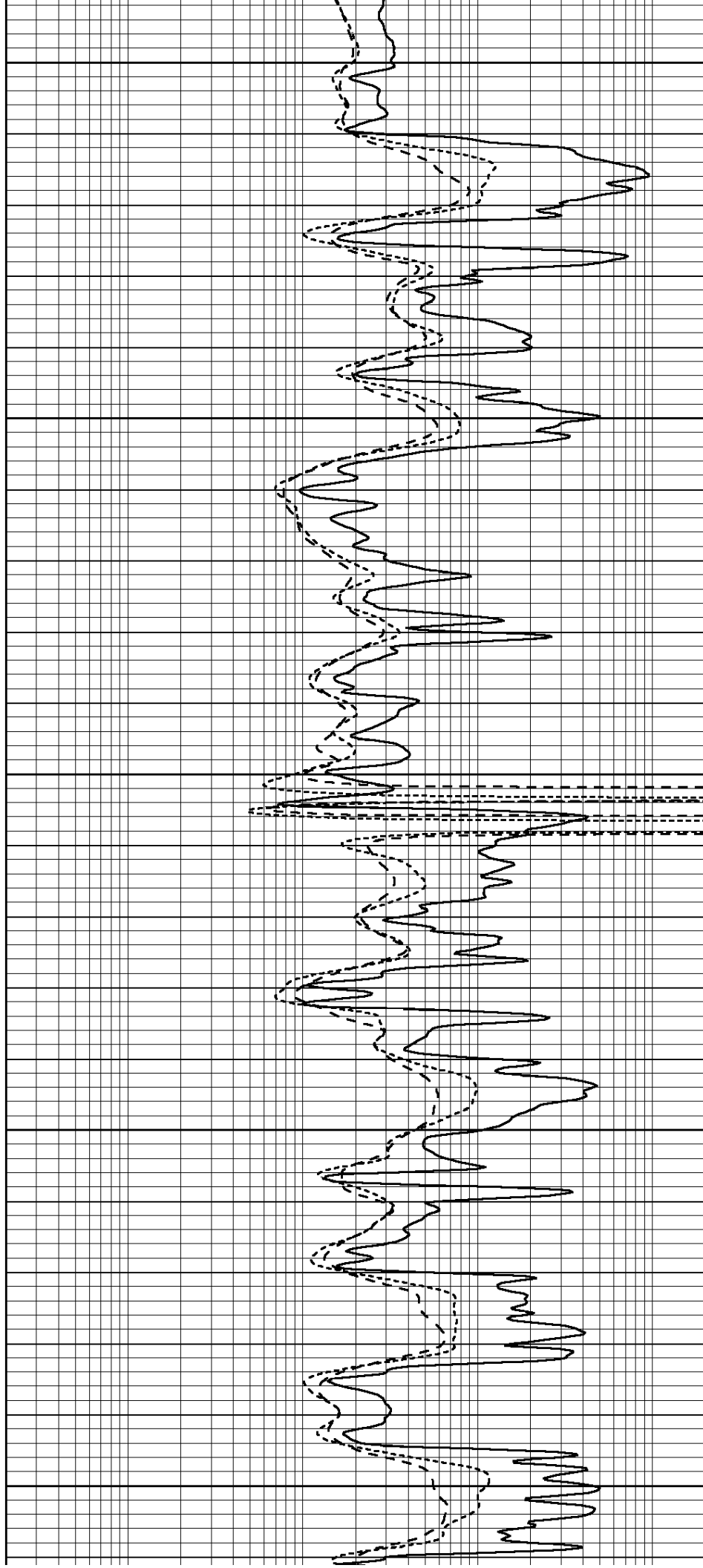
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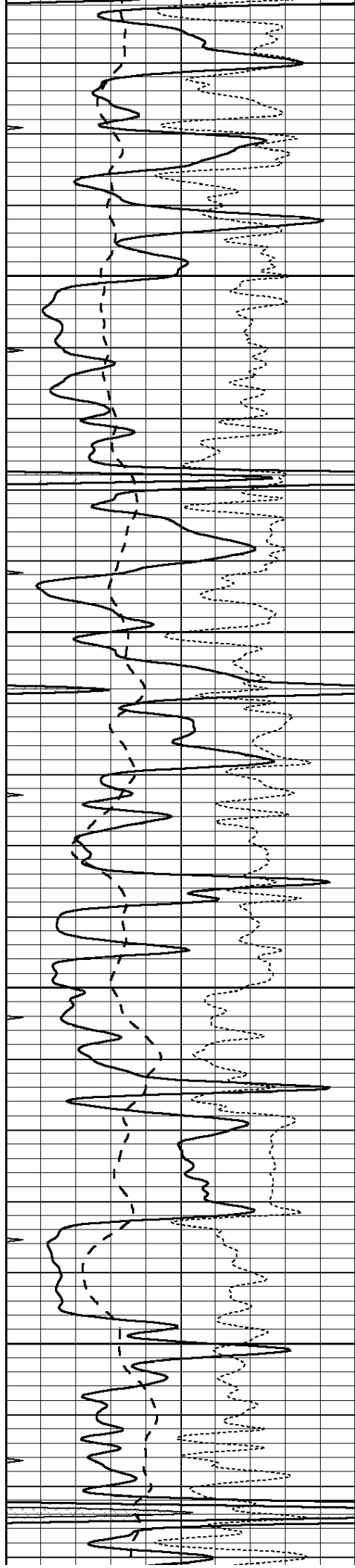
4150

4200

4250

4300



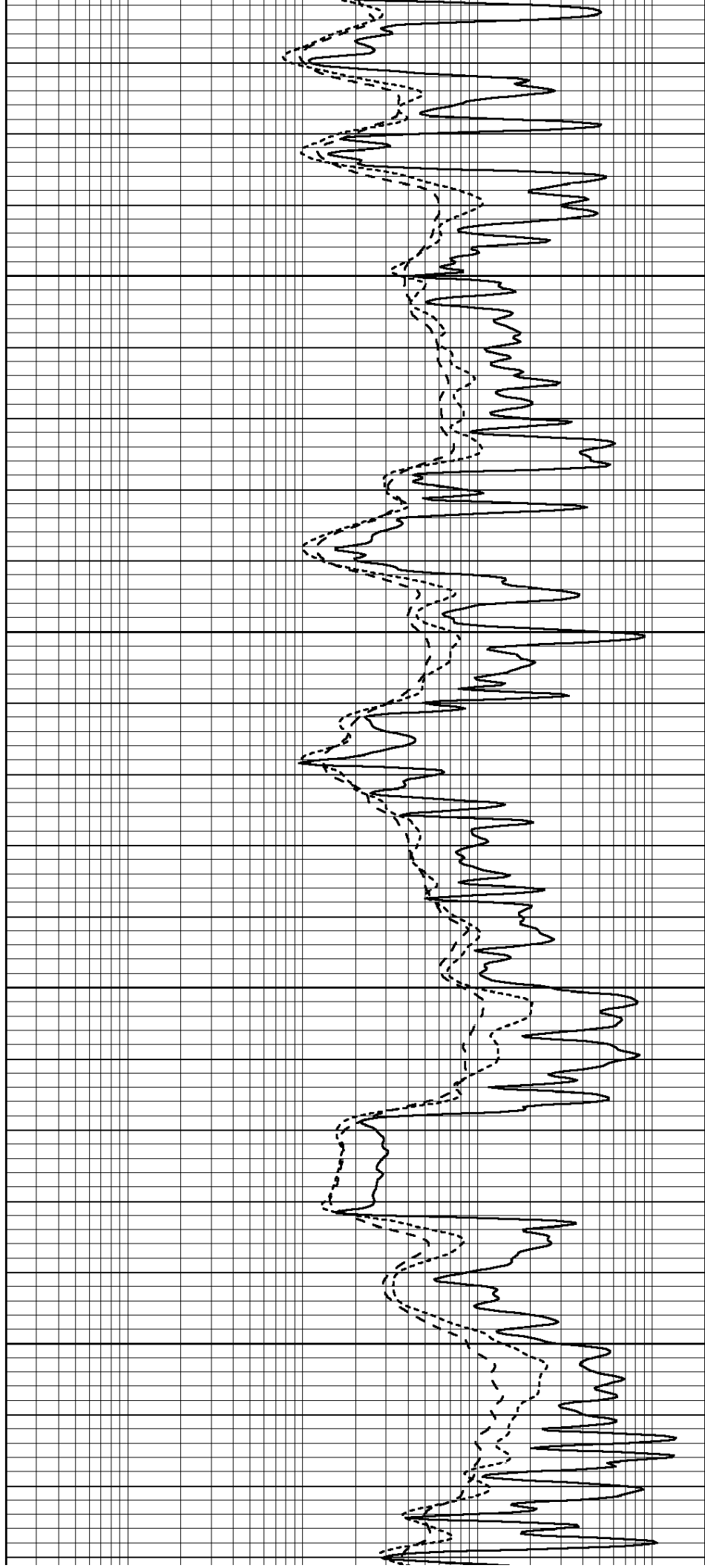


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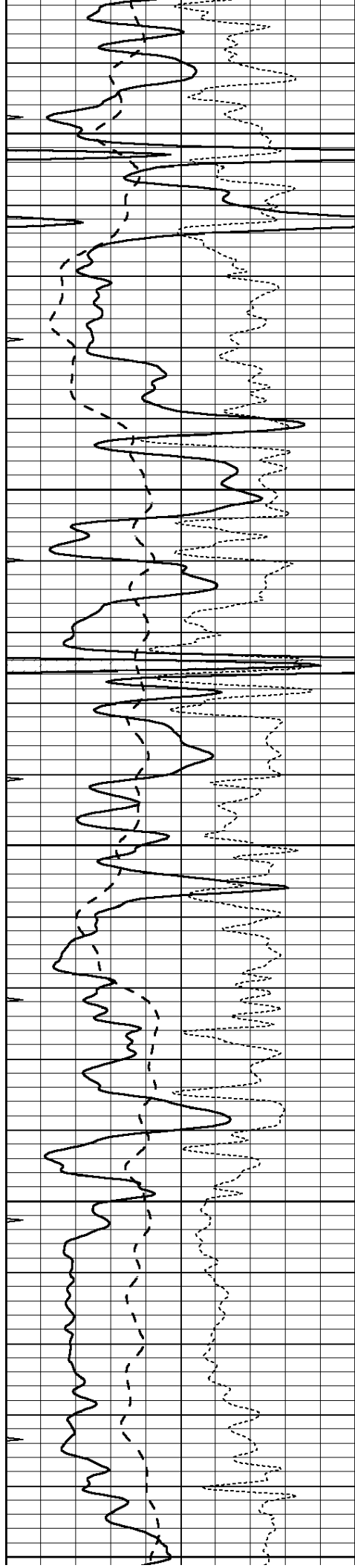
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4450

4500







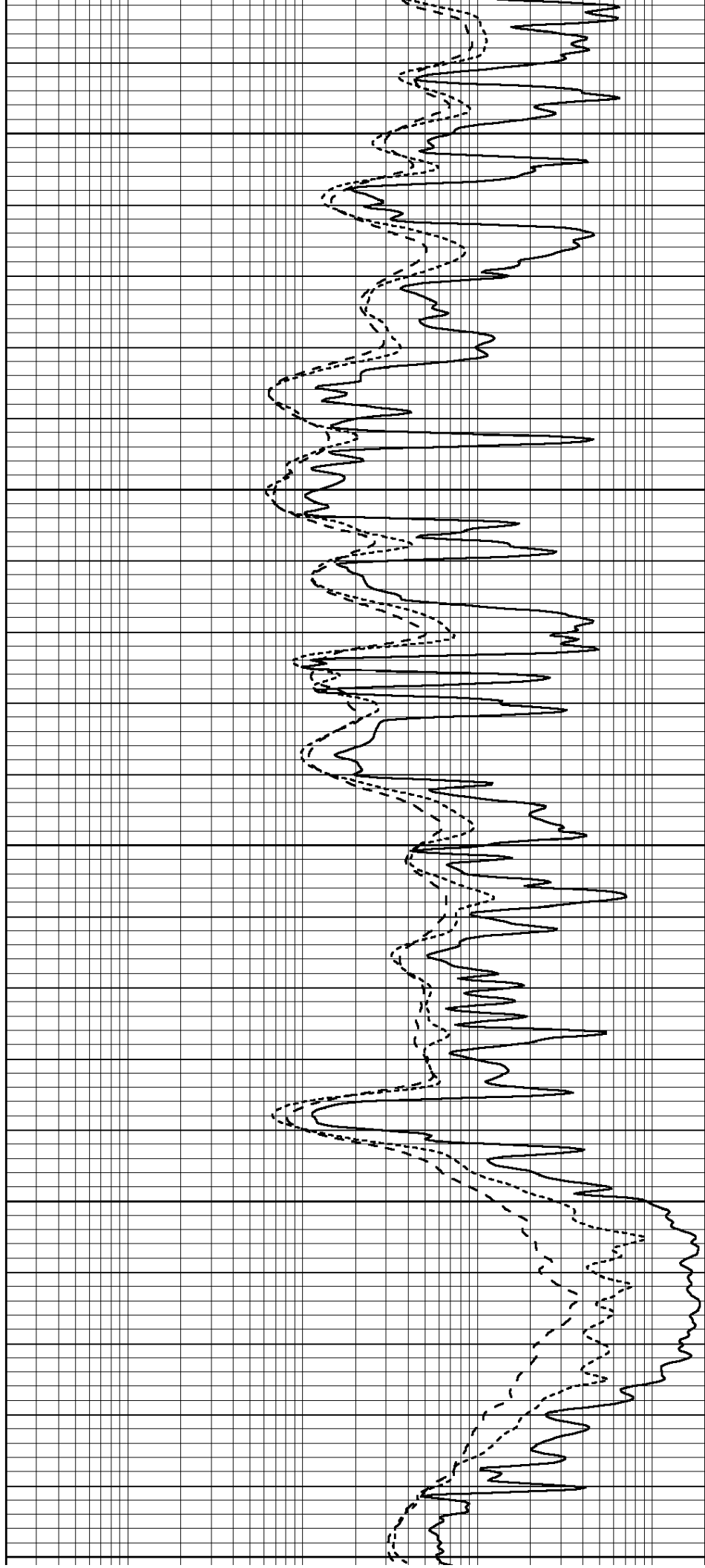
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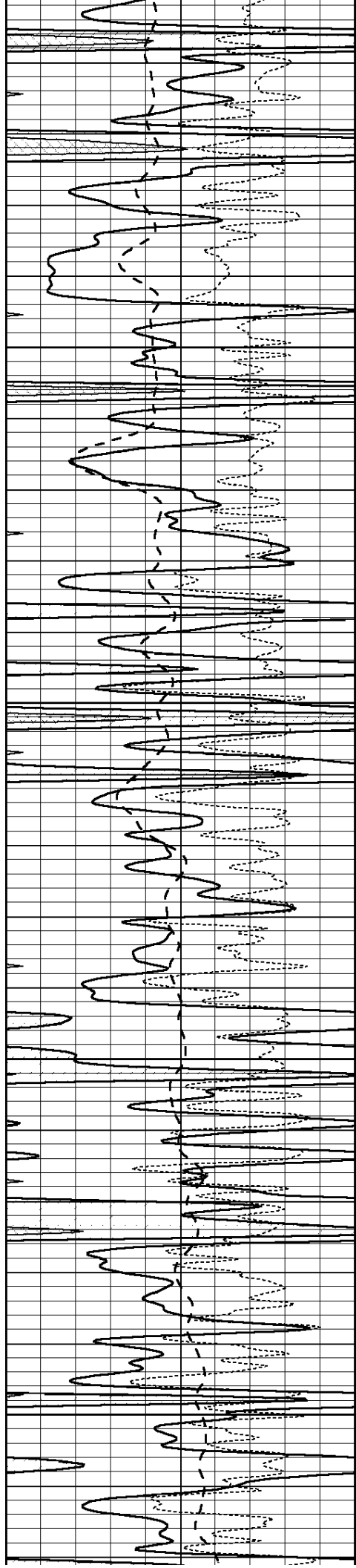
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4650

4700

4750



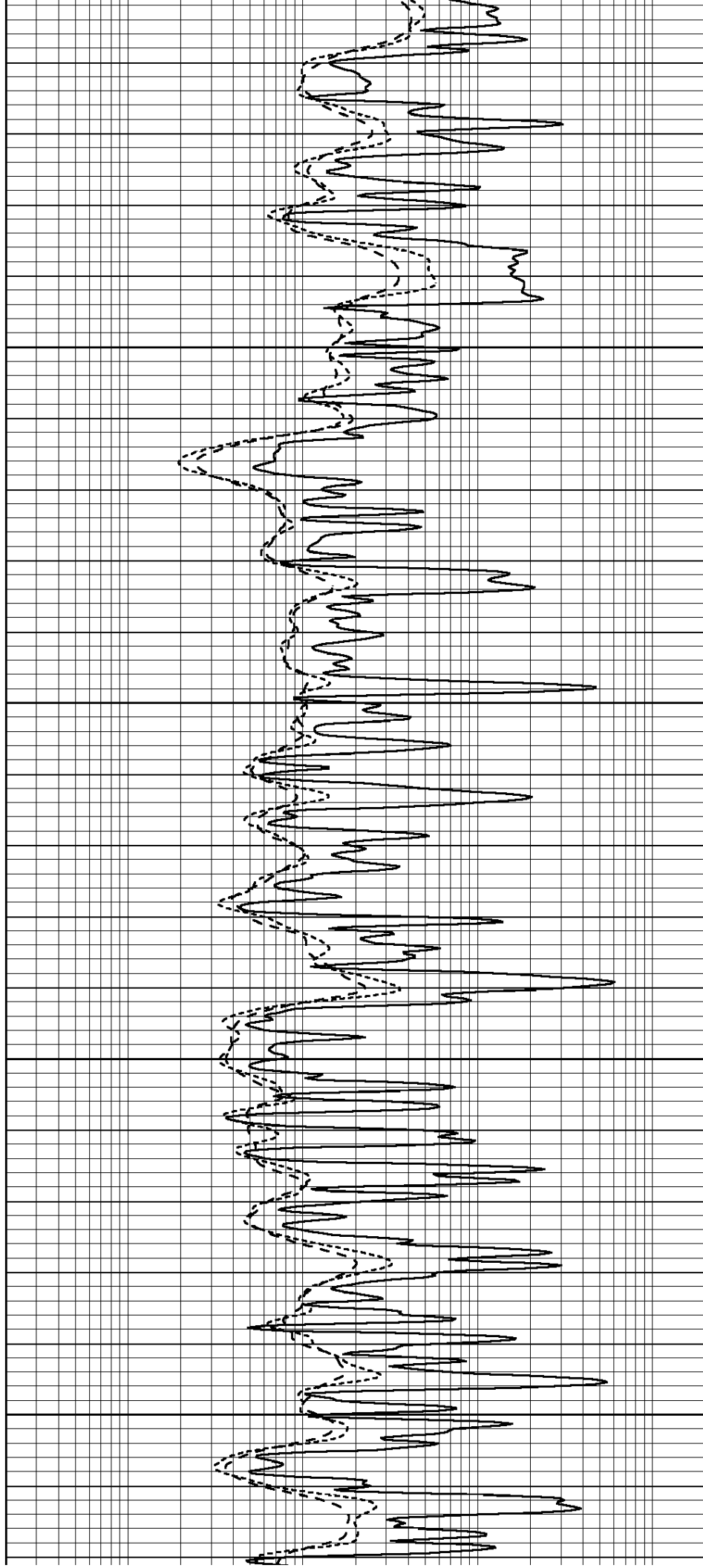


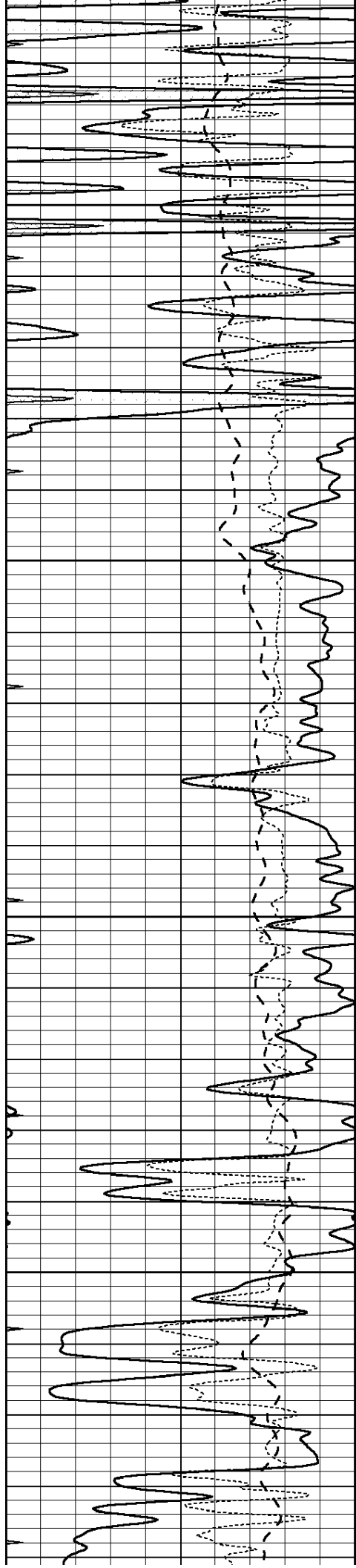
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4850

4900

4950



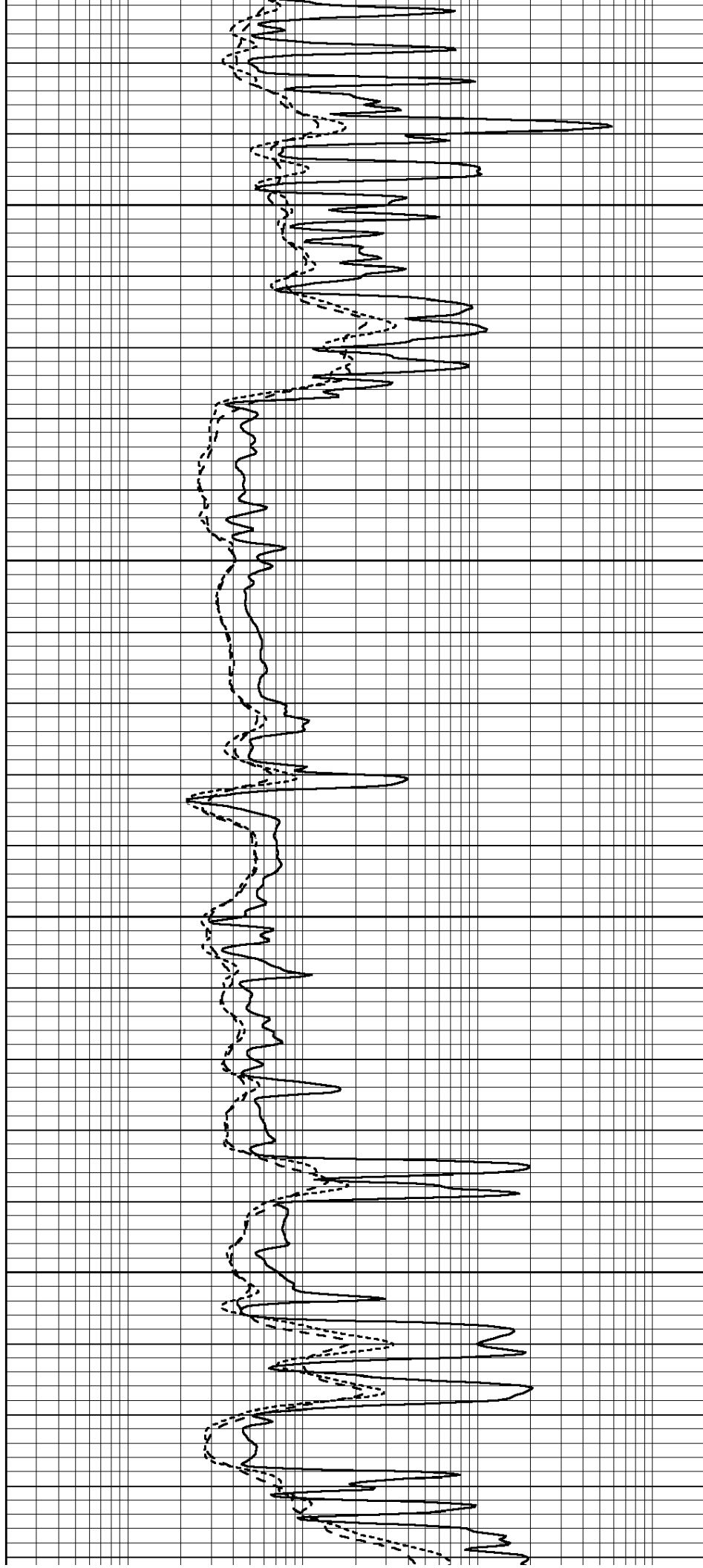


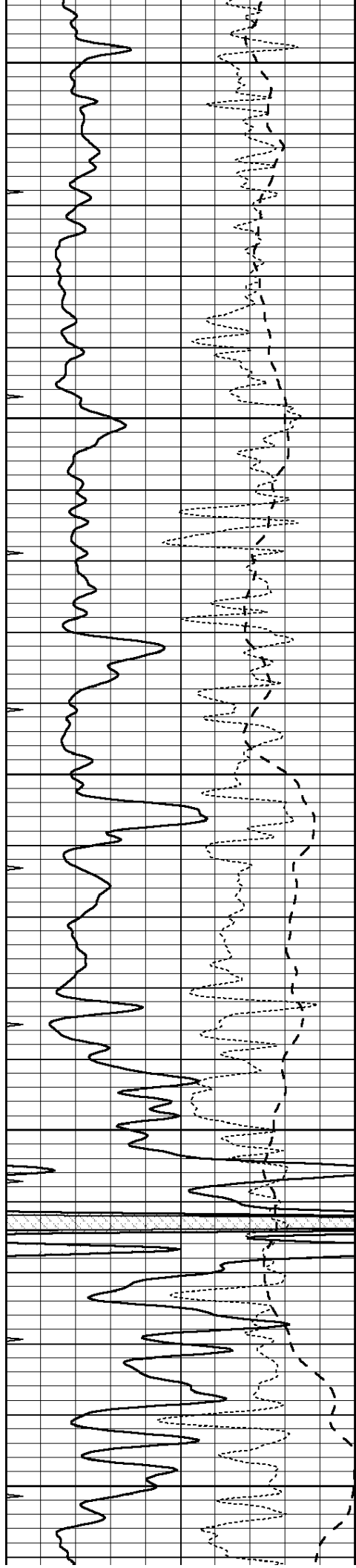
5000

5050

5100

5150





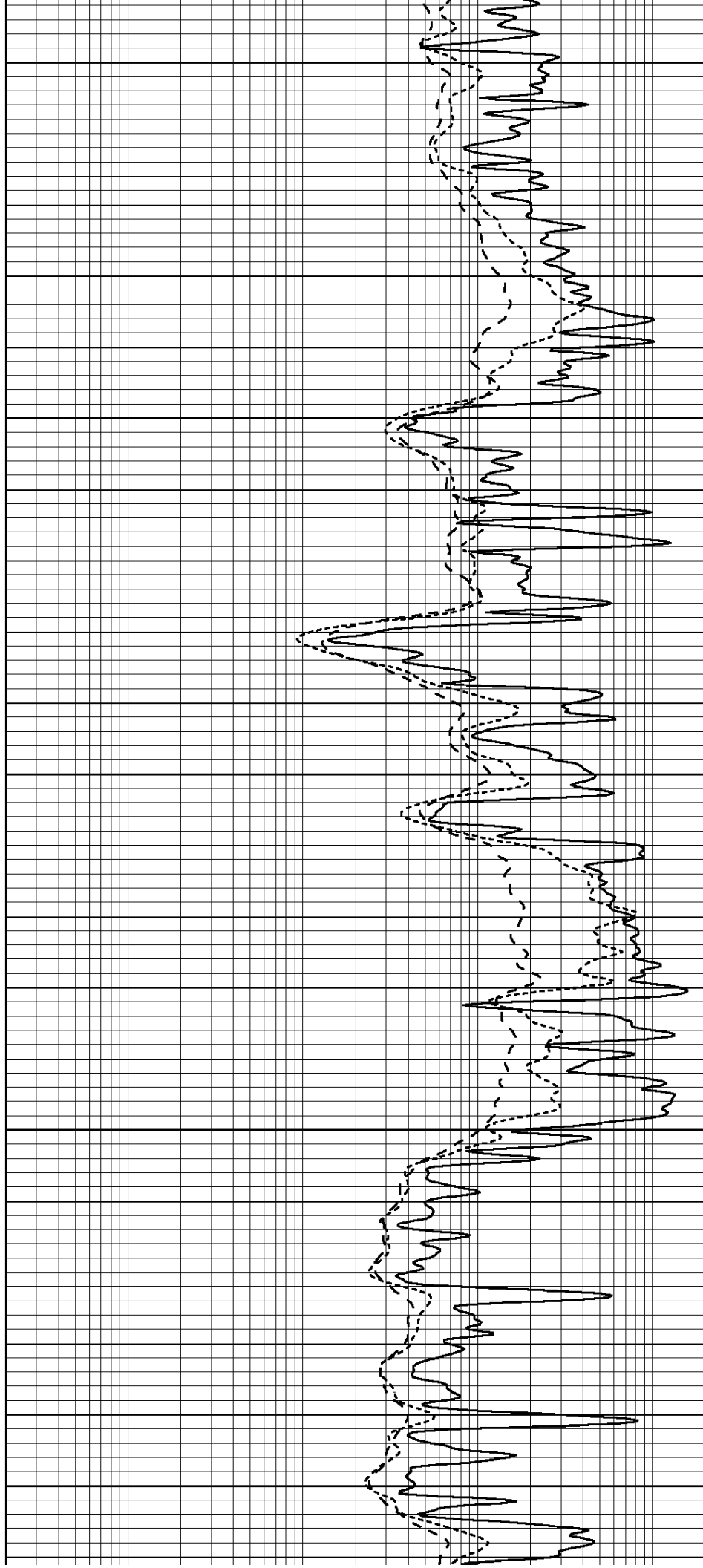
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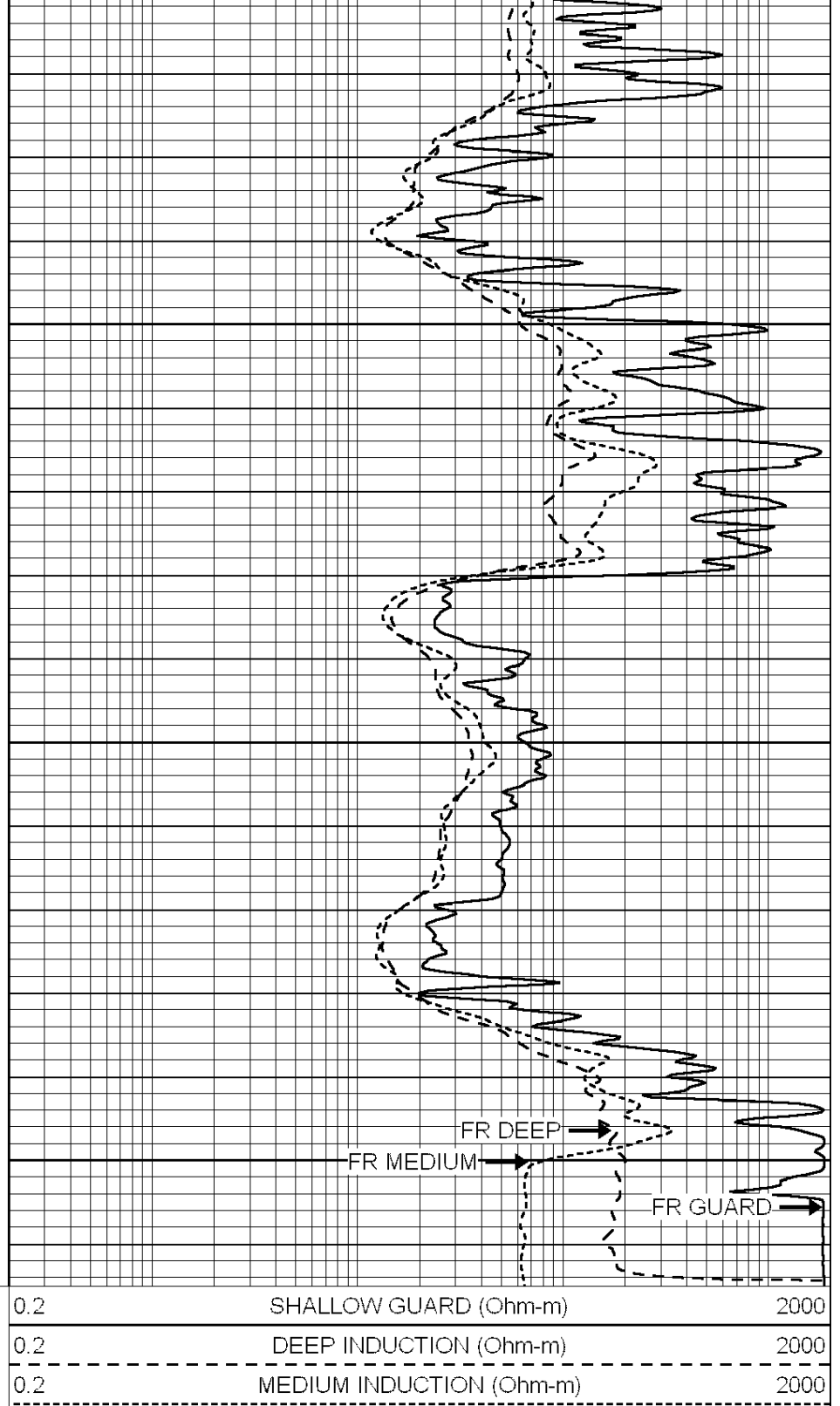
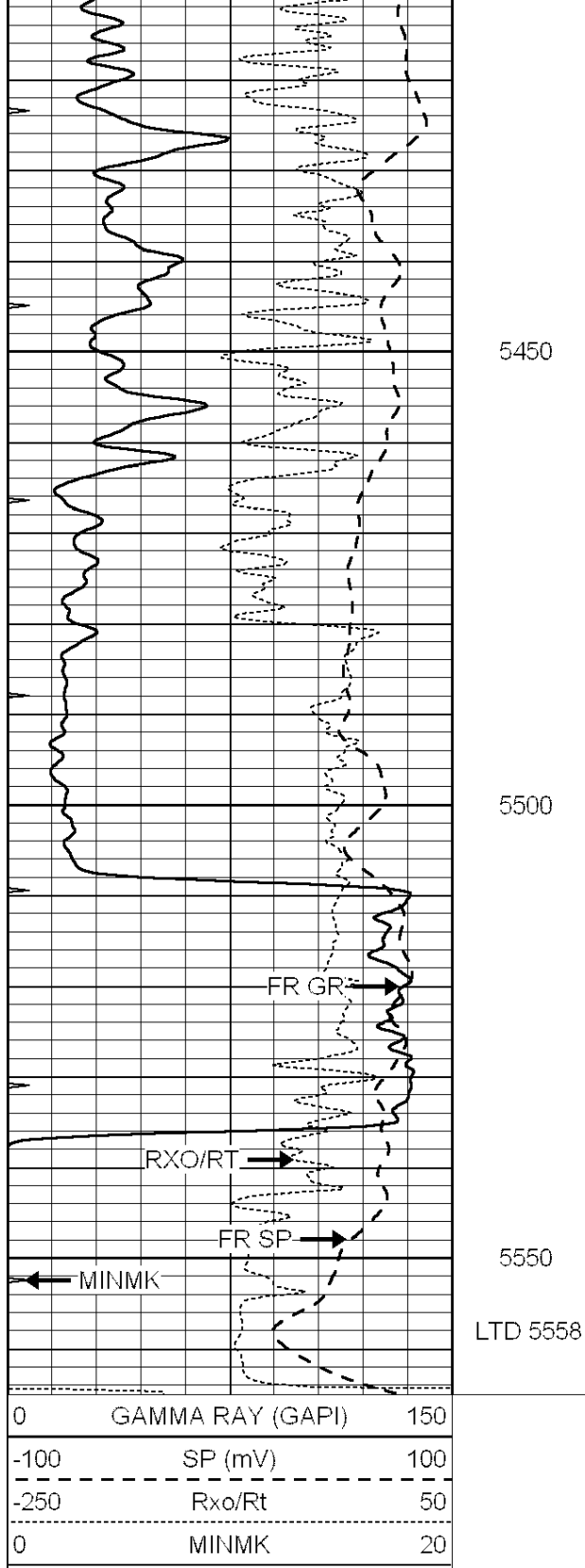
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5300

5350

5400





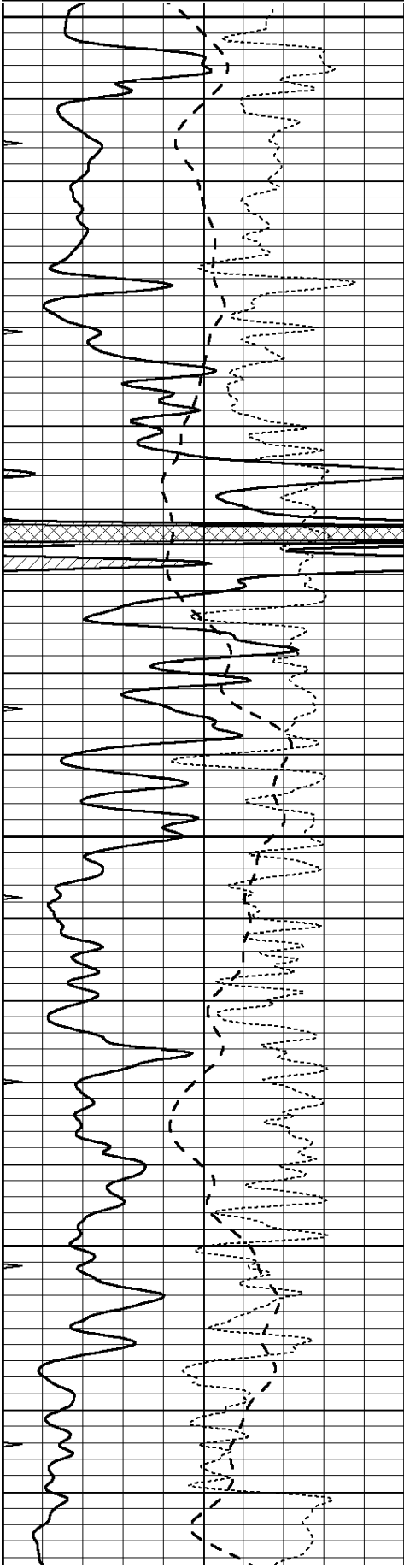
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## REPEAT SECTION

Database File: 011179pe.db  
Dataset Pathname: pass2.12  
Presentation Format: dil  
Dataset Creation: Sun Jun 30 12:23:02 2013  
Created 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

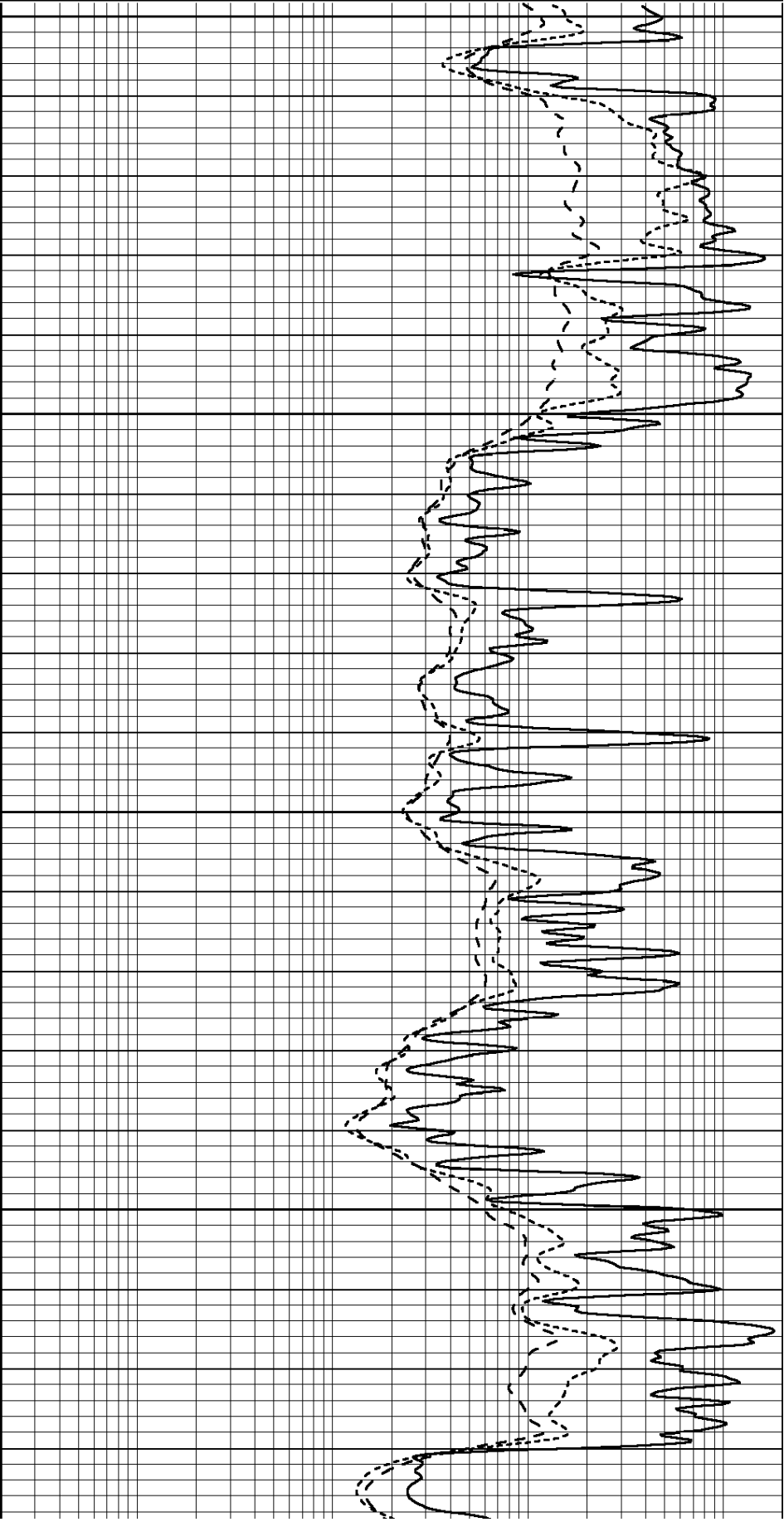


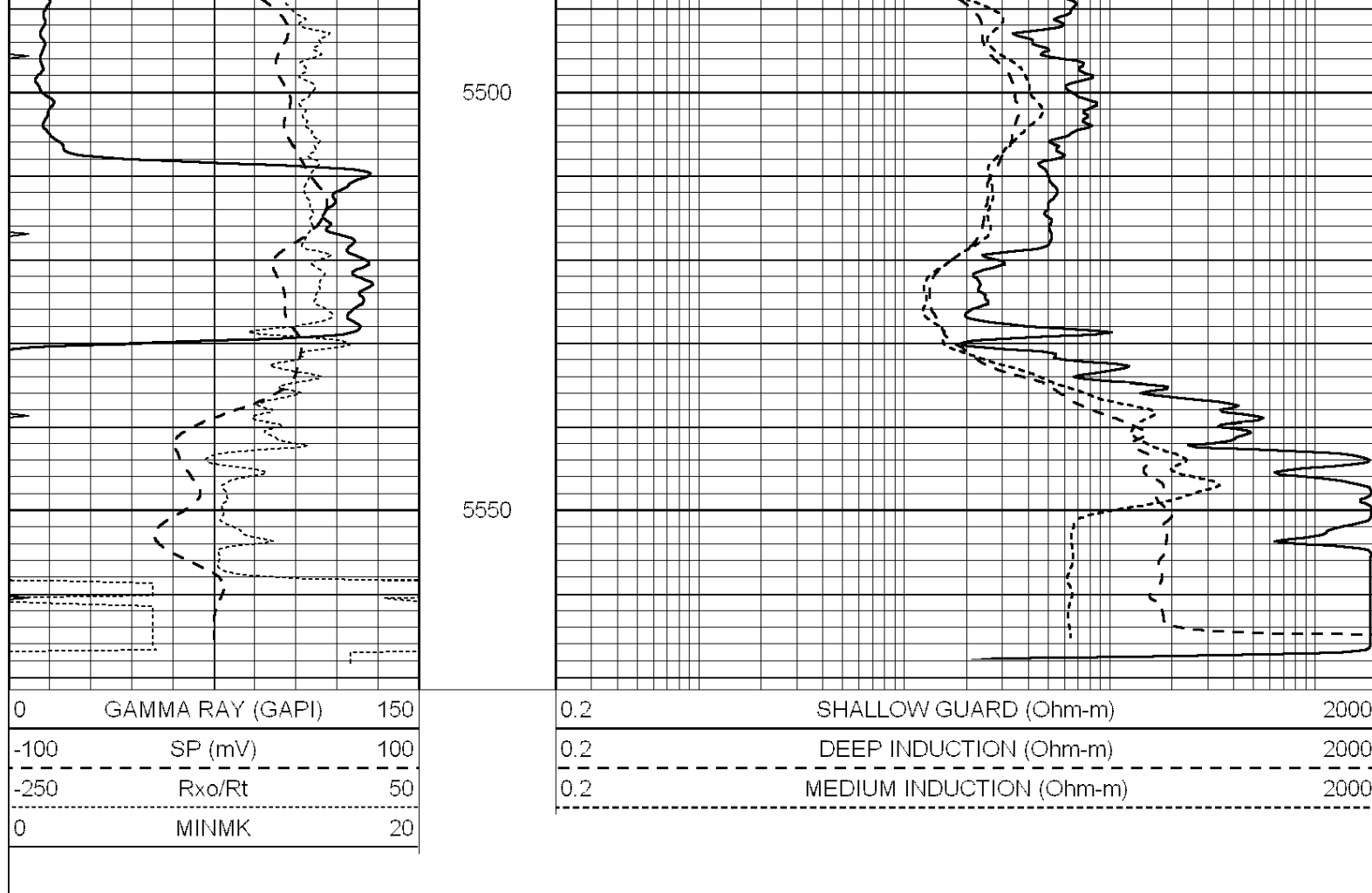
5300

5350

5400

5450





Calibration Report									
Database File:		011179pe.db							
Dataset Pathname:		pass3.8							
Dataset Creation:		Sun Jun 30 12:53:36 2013 by Calc SOC 120430							
Dual Induction Calibration Report									
Serial-Model:		PROBE9-DILG							
Surface Cal Performed:		Wed Jun 26 14:21:30 2013							
Downhole Cal Performed:		Mon Jul 28 12:02:56 2008							
After Survey Verification Performed:		Mon Jul 28 12:02:56 2008							
Surface Calibration									
		Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b	
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	-4.000	
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-11.000	
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		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report								
Serial: 004N      Model: PRB								

Master Calibration			Performed Mon Jun 03 09:36:56 2013					
	Background	Magnesium		Aluminum		Sandstone		
Window 1	1417.6	10391.4		3464.6		11537.5		cps
Window 2	1295.0	8959.7		3050.1		9816.4		cps
Window 3	1105.1	5464.2		2051.0		5838.8		cps
Window 4	315.0	317.7		312.9		319.8		cps
Long Space	0.0	7664.6		1755.0		8521.3		cps
Short Space	1.8	1582.4		1040.8		1699.4		cps
Rho		1.7100		2.5900		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 44.1	Rib Slope	: 0.970	Density/Spine Ratio			: 0.574	
Spine Angle	: 74.1	Spine Slope	: 3.519	Spine Intercept			: -17.0	

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:			070808					
Tool Model:			Probe					



PRE-SURVEY VERIFICATION			
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:	070559		
Tool Model:	OPEN_GR		
Performed:	Wed Jun 12 18:25:42 2013		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3500	GAPI/cps	