



**SUPERIOR  
Hays,  
Kansas**

**DUAL  
INDUCTION  
LOG**

Company	RITCHIE EXPLORATION, INC.	
Well	PHILLIPS-HESS #1	
Field	GOVE	
County	GOVE	State KANSAS
Location:	660 FNL & 2410 FWL	API # : 15-063-21786
	SEC 20 TWP 13S RGE 31W	Other Services CDL/CNL
Permanent Datum	GROUND LEVEL	Elevation 2915
Log Measured From	KELLY BUSHING 10' A.G.L.	K.B. 2925 D.F. 2923 G.L. 2915
Drilling Measured From	KELLY BUSHING	

Date	7/12/09	
Run Number	ONE	
Depth Driller	4625	
Depth Logger	4624	
Bottom Logged Interval	4622	
Top Log Interval	0	
Casing Driller	8 5/8" @ 227'	
Casing Logger	225'	
Bit Size	7 7/8	
Type Fluid In Hole	CHEMICAL MUD	
Density / Viscosity	9.3 / 53	CHLORIDES 6,000
pH / Fluid Loss	10.0 / 9.2	
Source of Sample	FLOWLINE	
Rm @ Meas. Temp	0.65 @ 107F	
Rmf @ Meas. Temp	0.49 @ 107F	
Rmc @ Meas. Temp	0.78 @ 107F	
Source of Rmf / Rmc	CAL/CAL	
Rm @ BHT	0.57 @ 121F	
Time Circulation Stopped	2 HOURS	
Time Logger on Bottom	2:30 P.M	
Maximum Recorded Temperature	121F	
Equipment Number	680	
Location	HAYS, KS	
Recorded By	DAN GOTTSCHALK	
Witnessed By	STEVE CARL	

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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 SUPERIOR WELL SERVICES  
HAYS, KS. 785-628-6395**

**DIRECTIONS: OAKLEY - 11 SOUTH TO GOVE RD. - 3 EAST - 3 SOUTH - EAST & SOUTH INTO**

Database File: 003123ddn.db  
 Dataset Pathname: pass4.3  
 Presentation Format: \_dil2  
 Dataset Creation: Sun Jul 12 16:10:33 2009

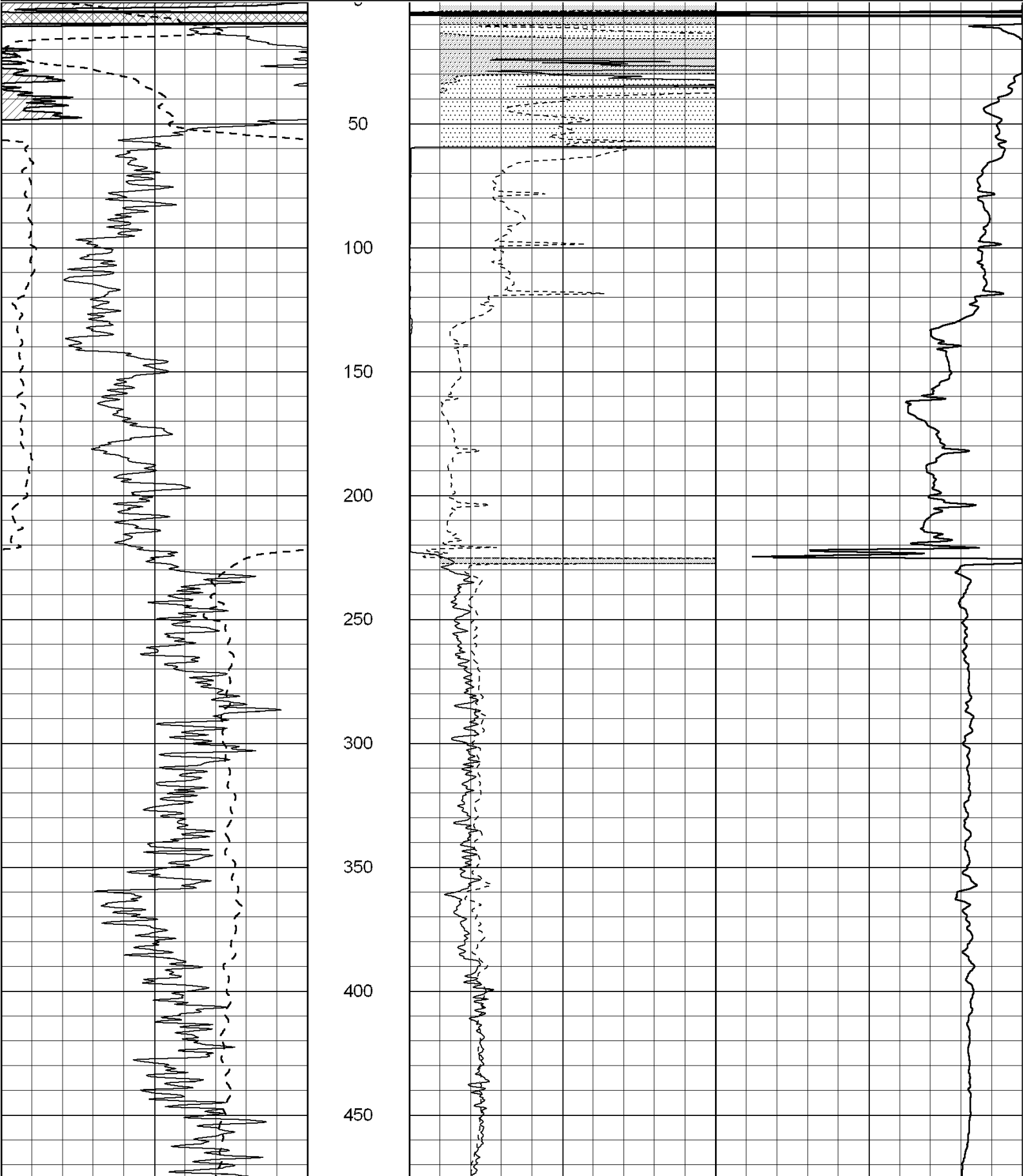
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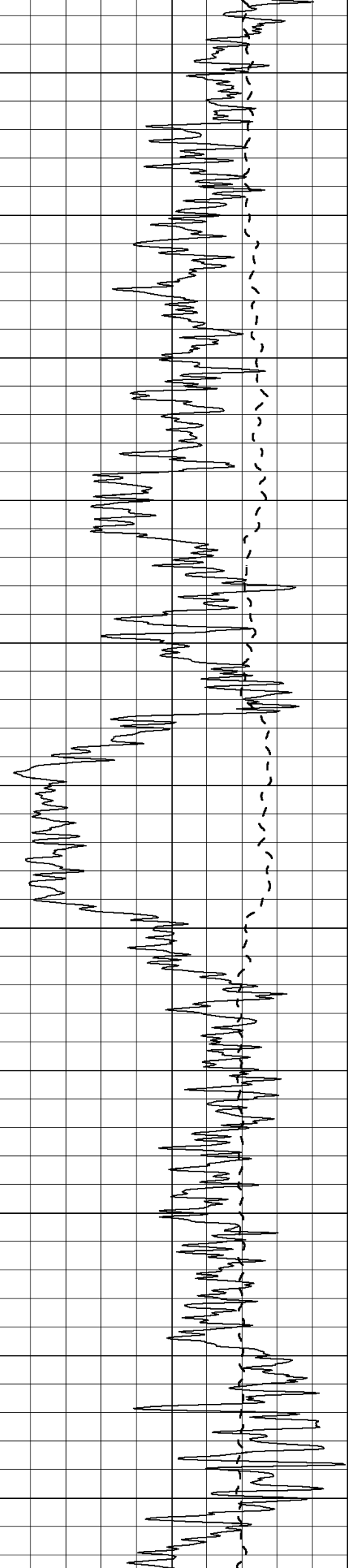
Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50

1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





500

550

600

650

700

750

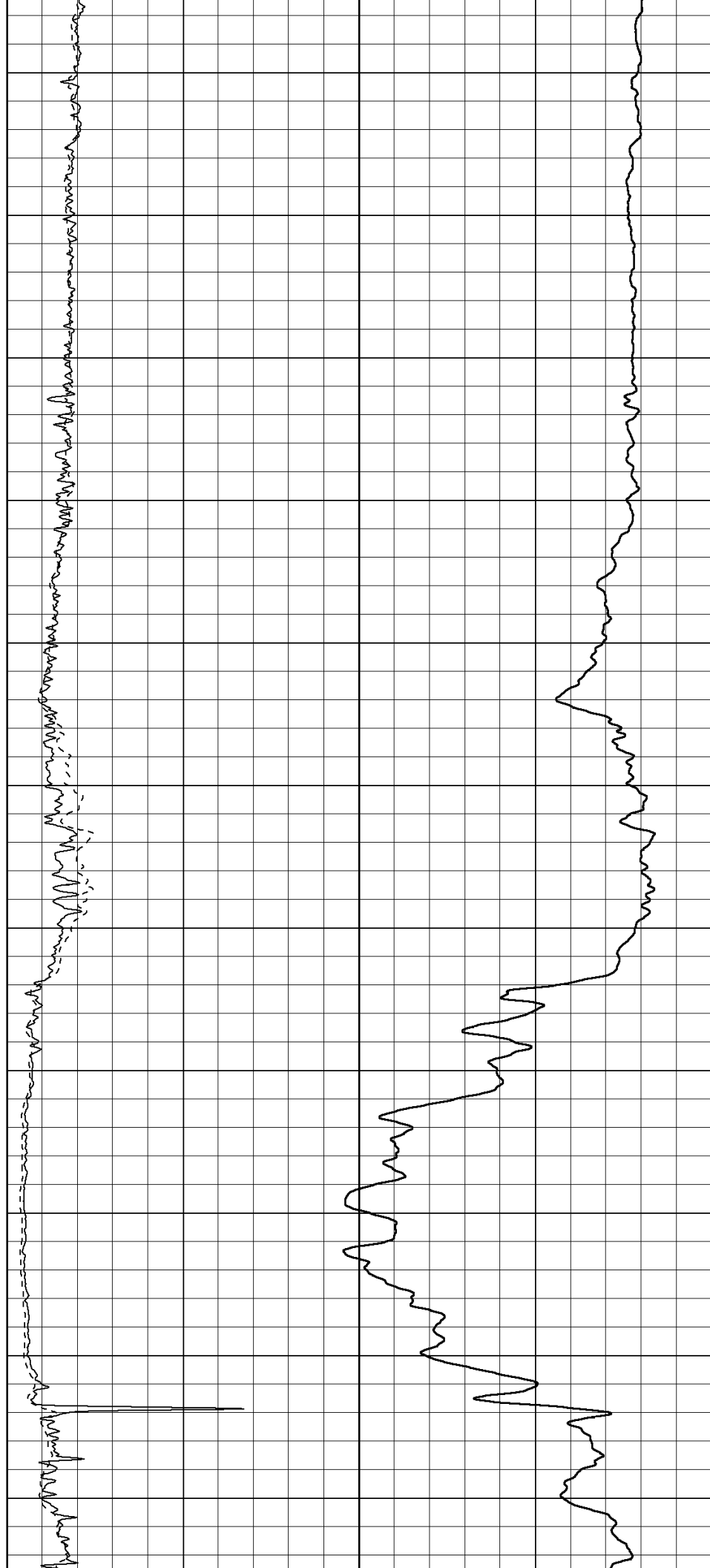
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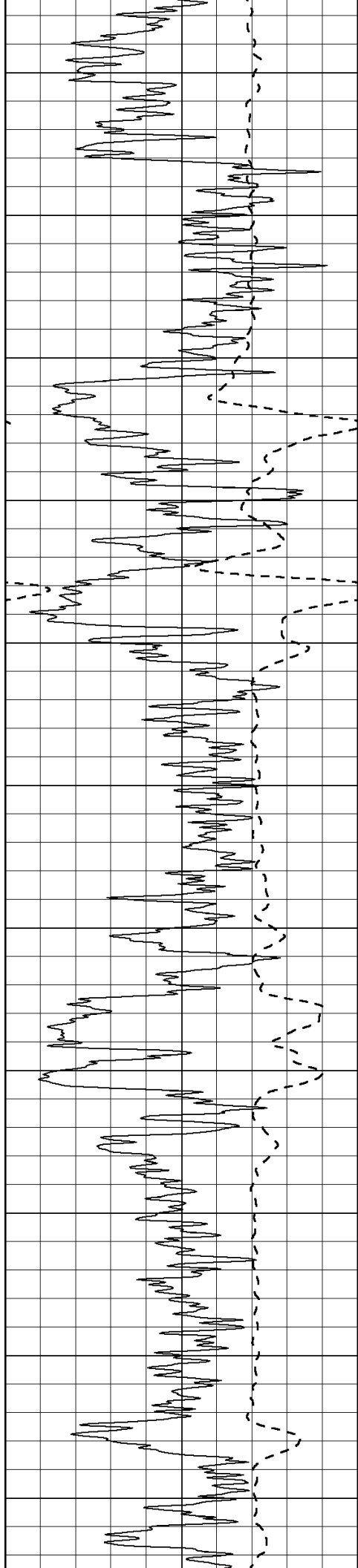
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900

950

1000





1050

1100

1150

1200

1250

1300

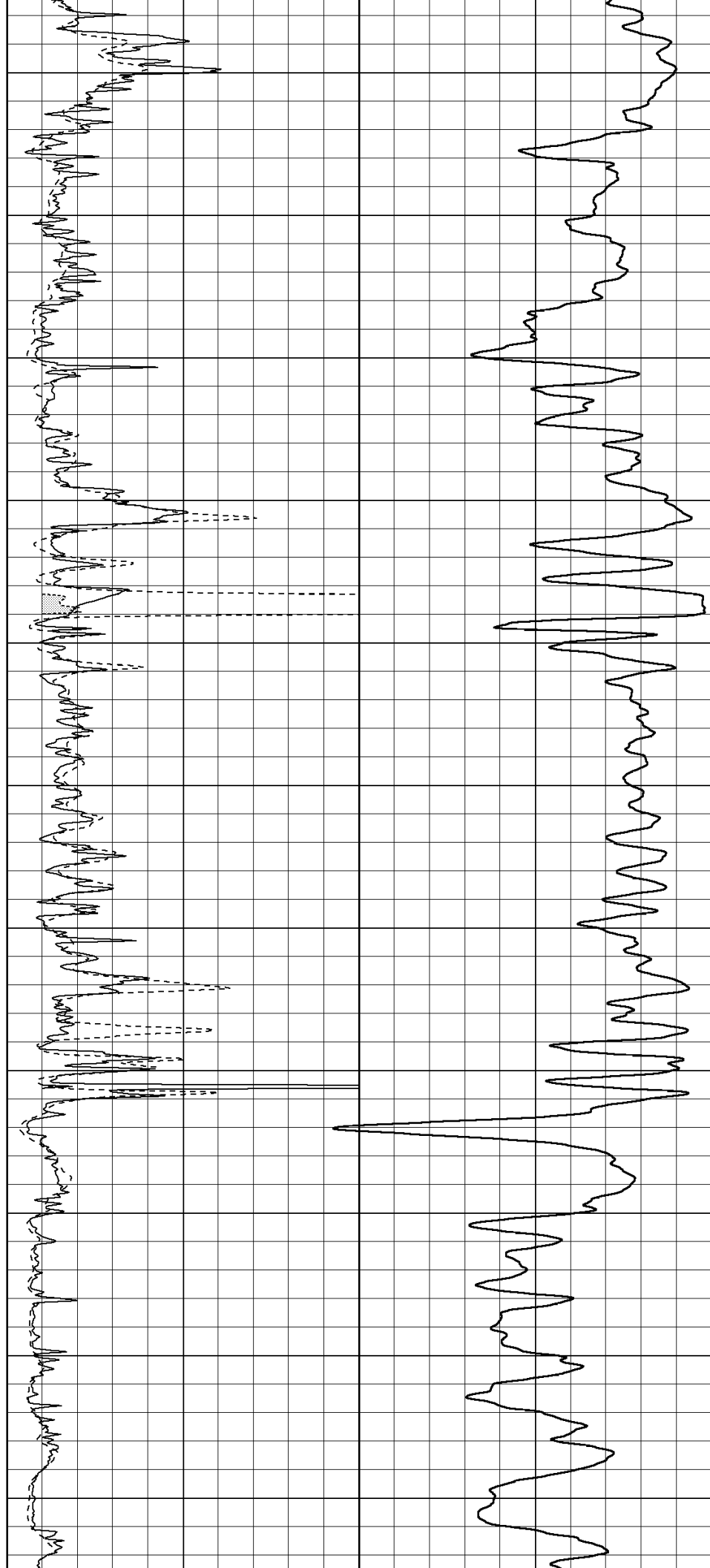
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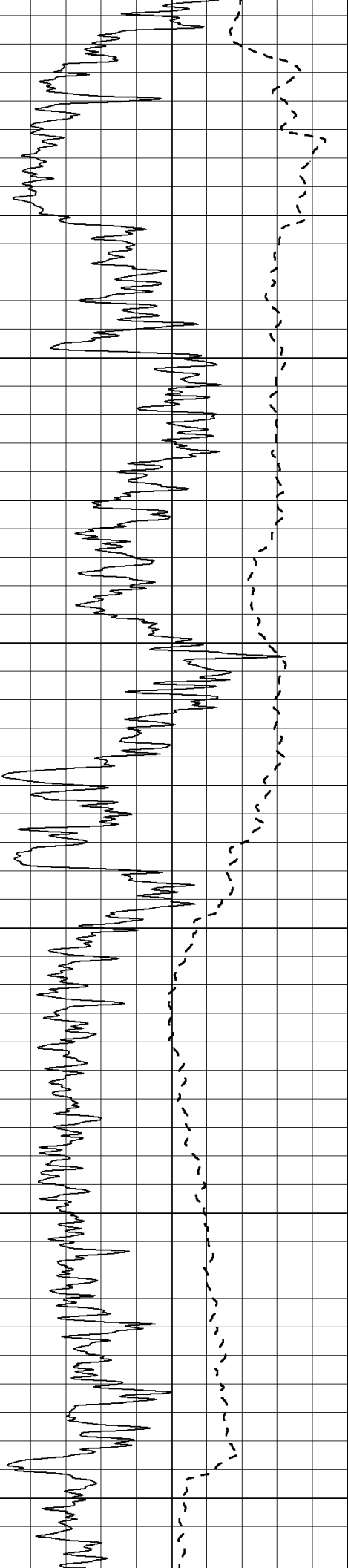
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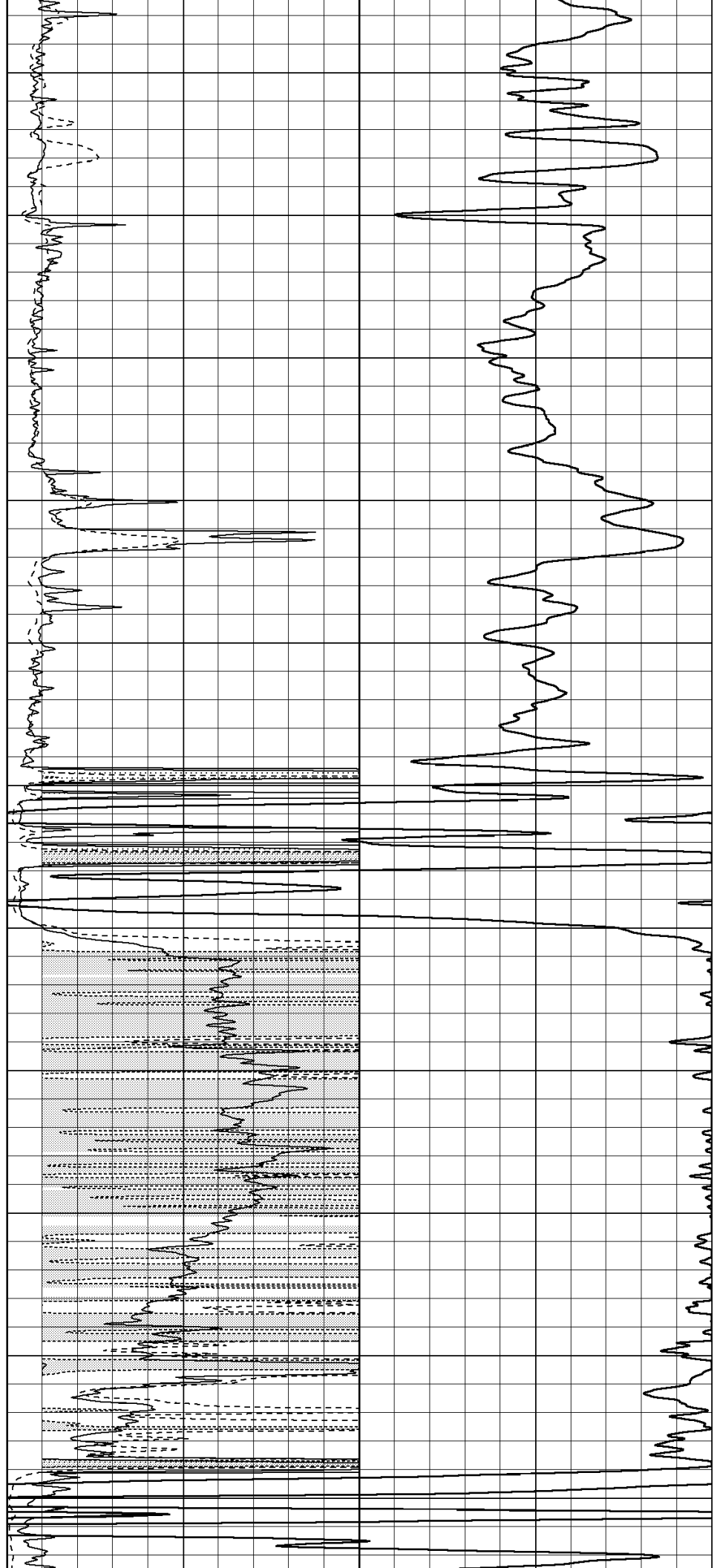
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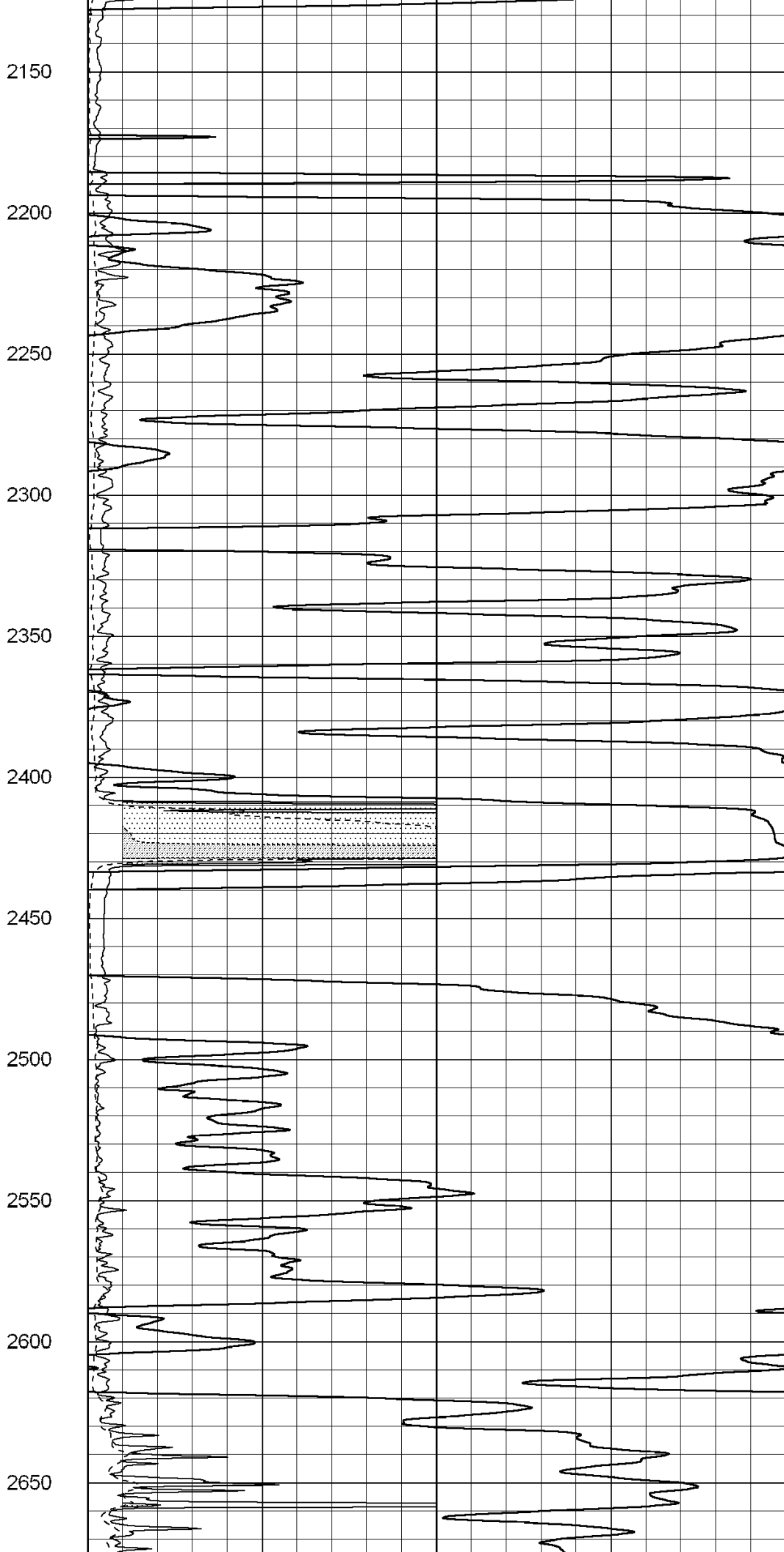
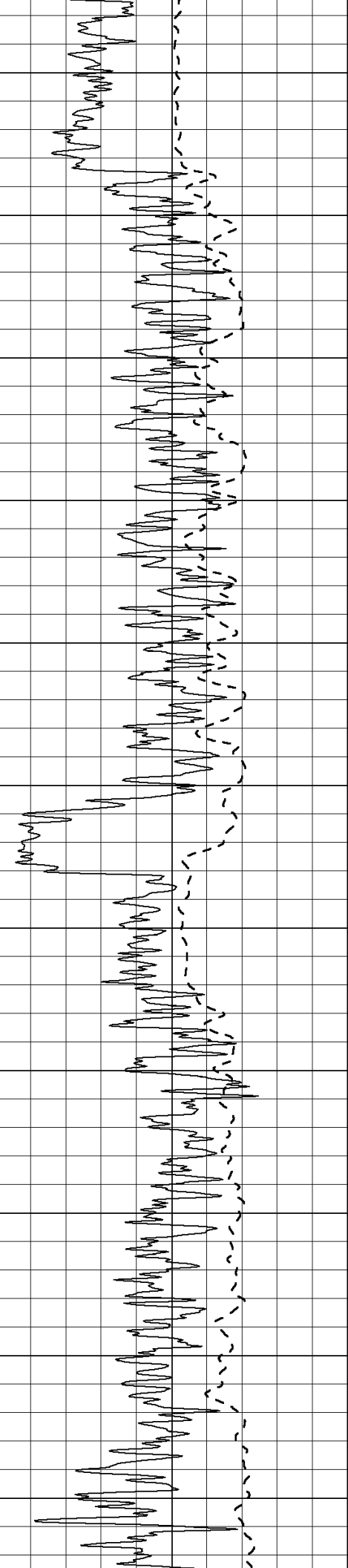
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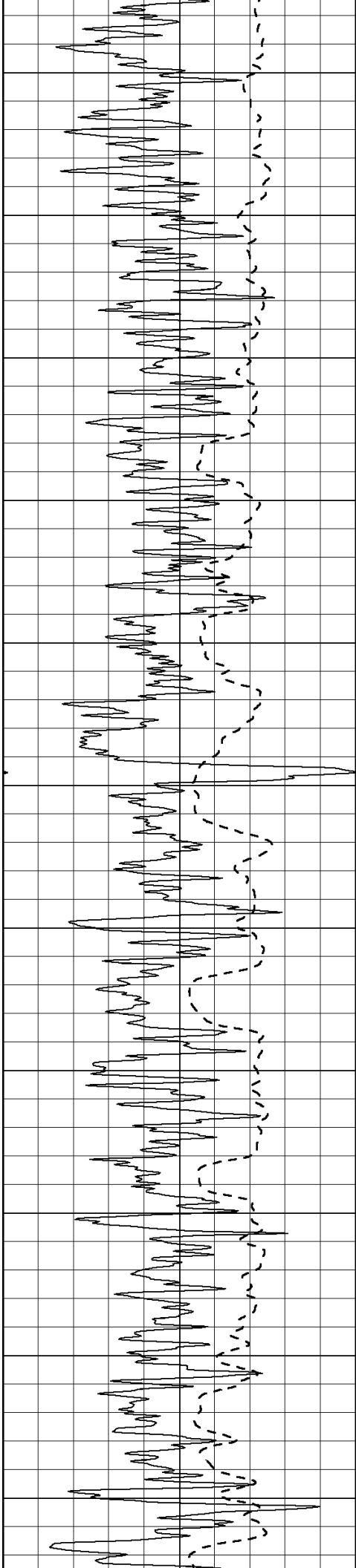




1600  
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2000  
2050  
2100







2700

2750

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2850

2900

2950

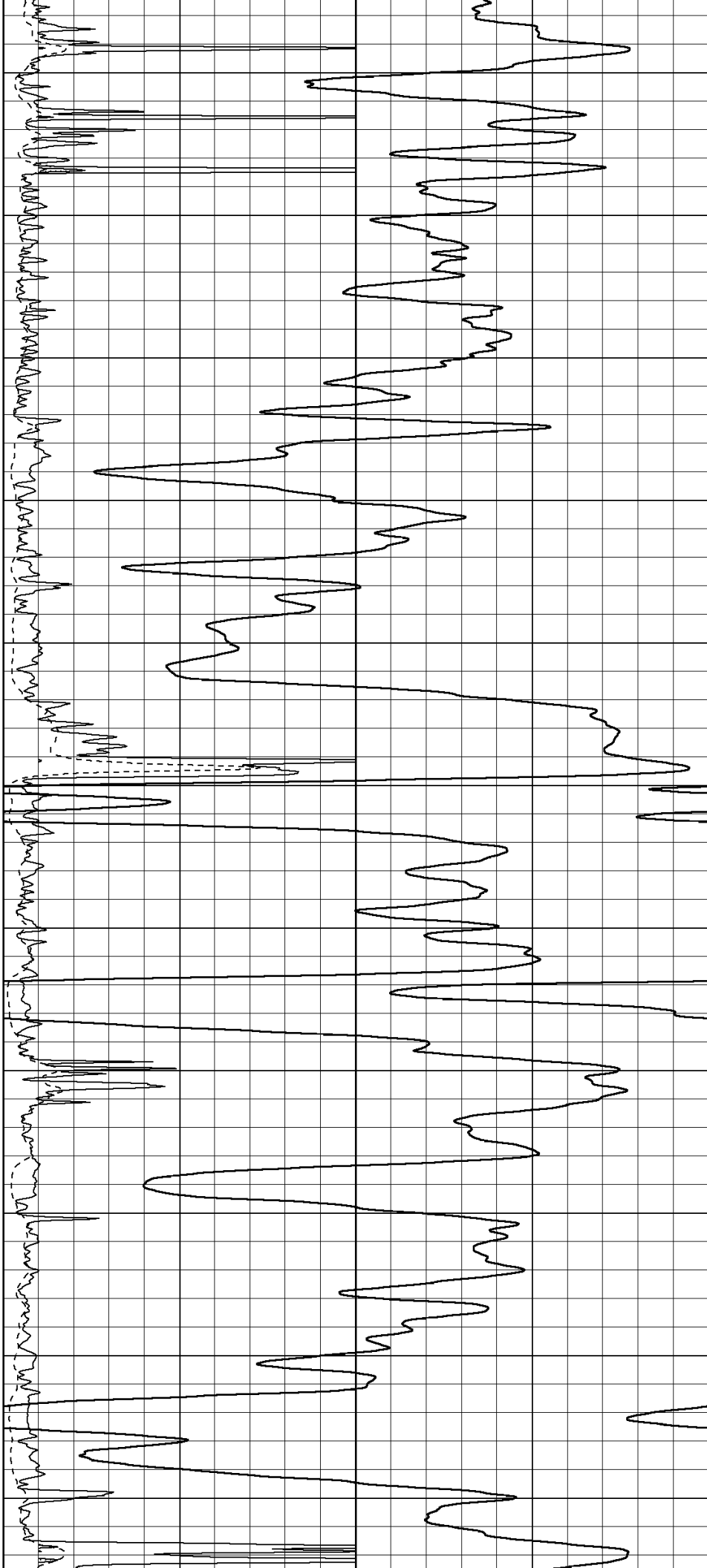
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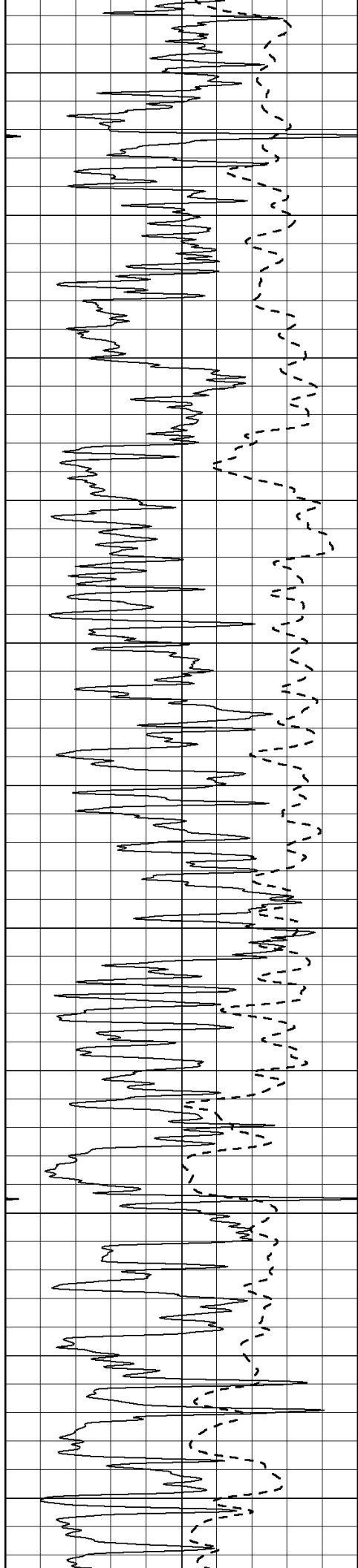
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3150

3200





3250

3300

3350

3400

3450

3500

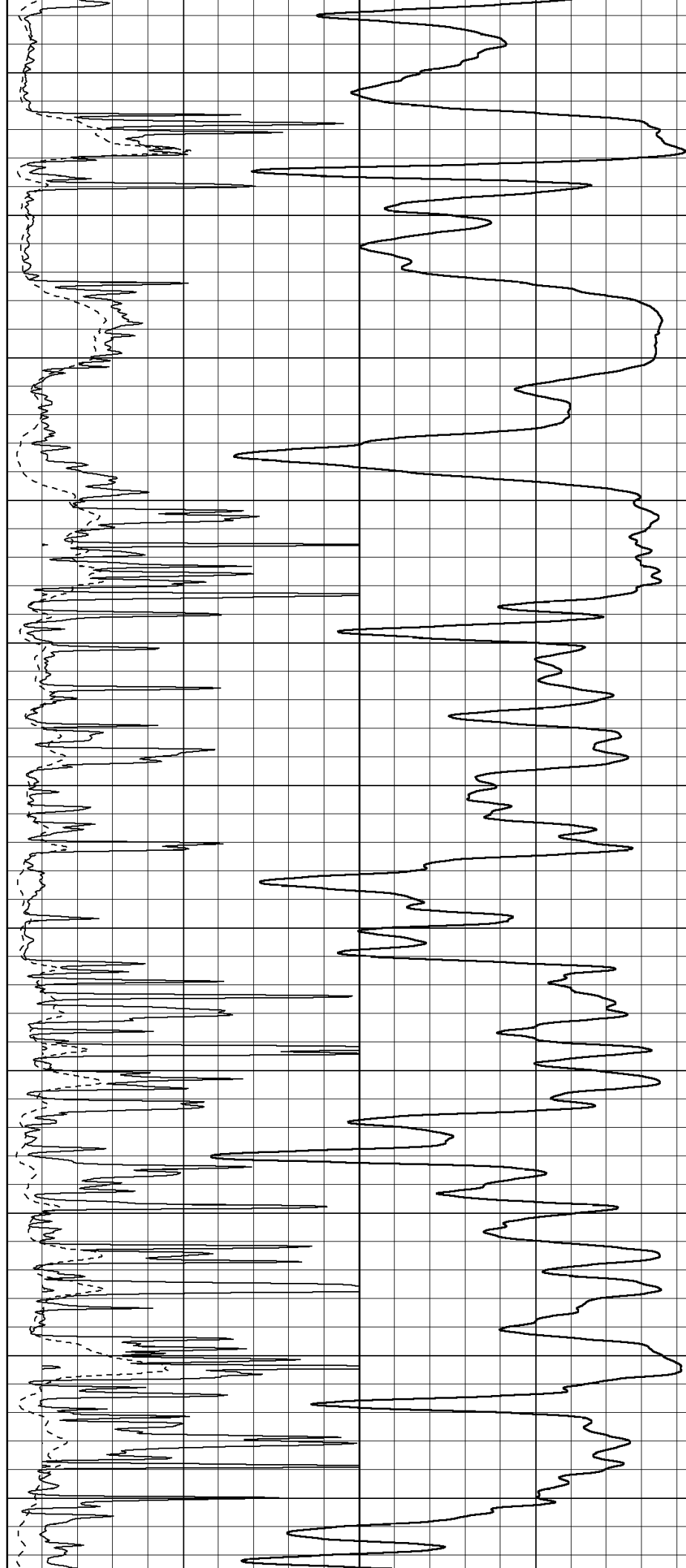
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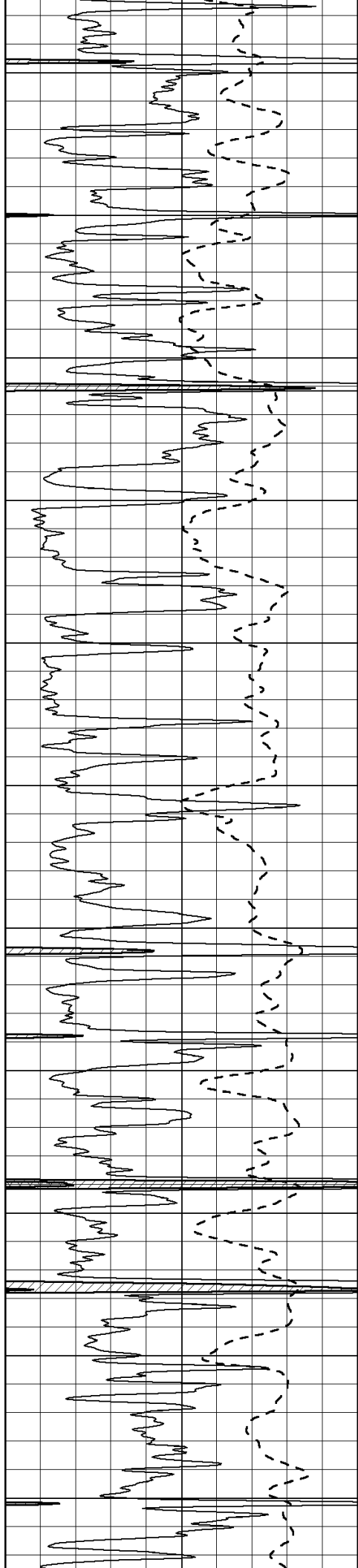
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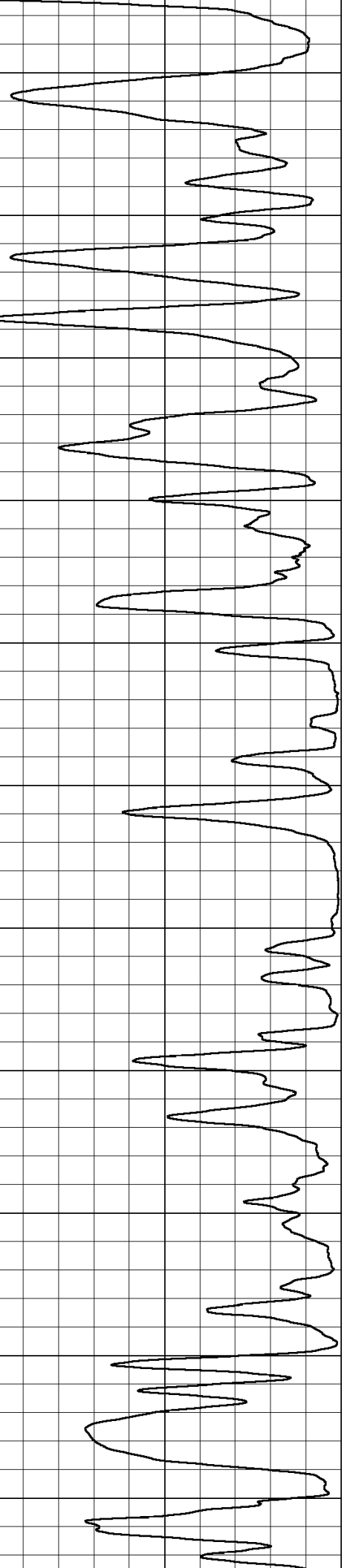
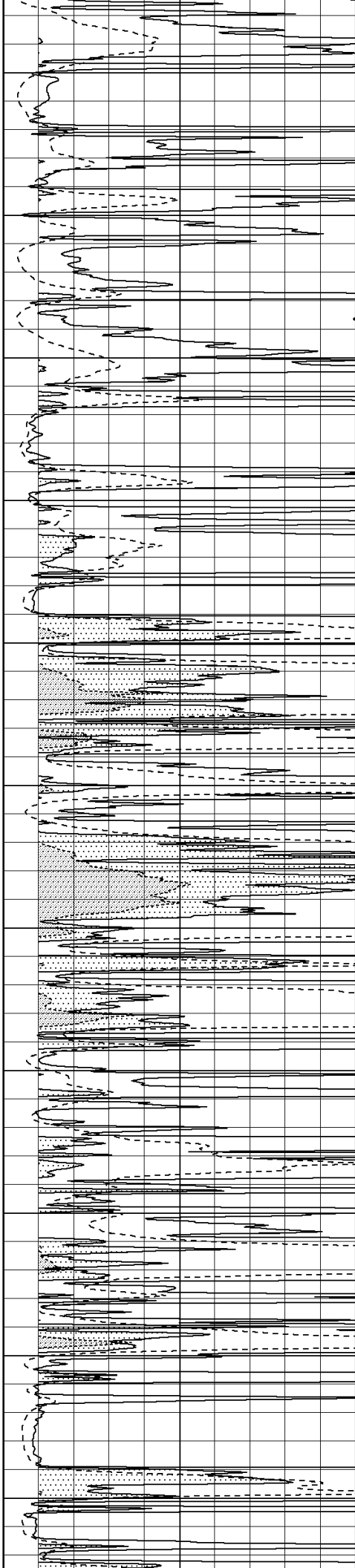
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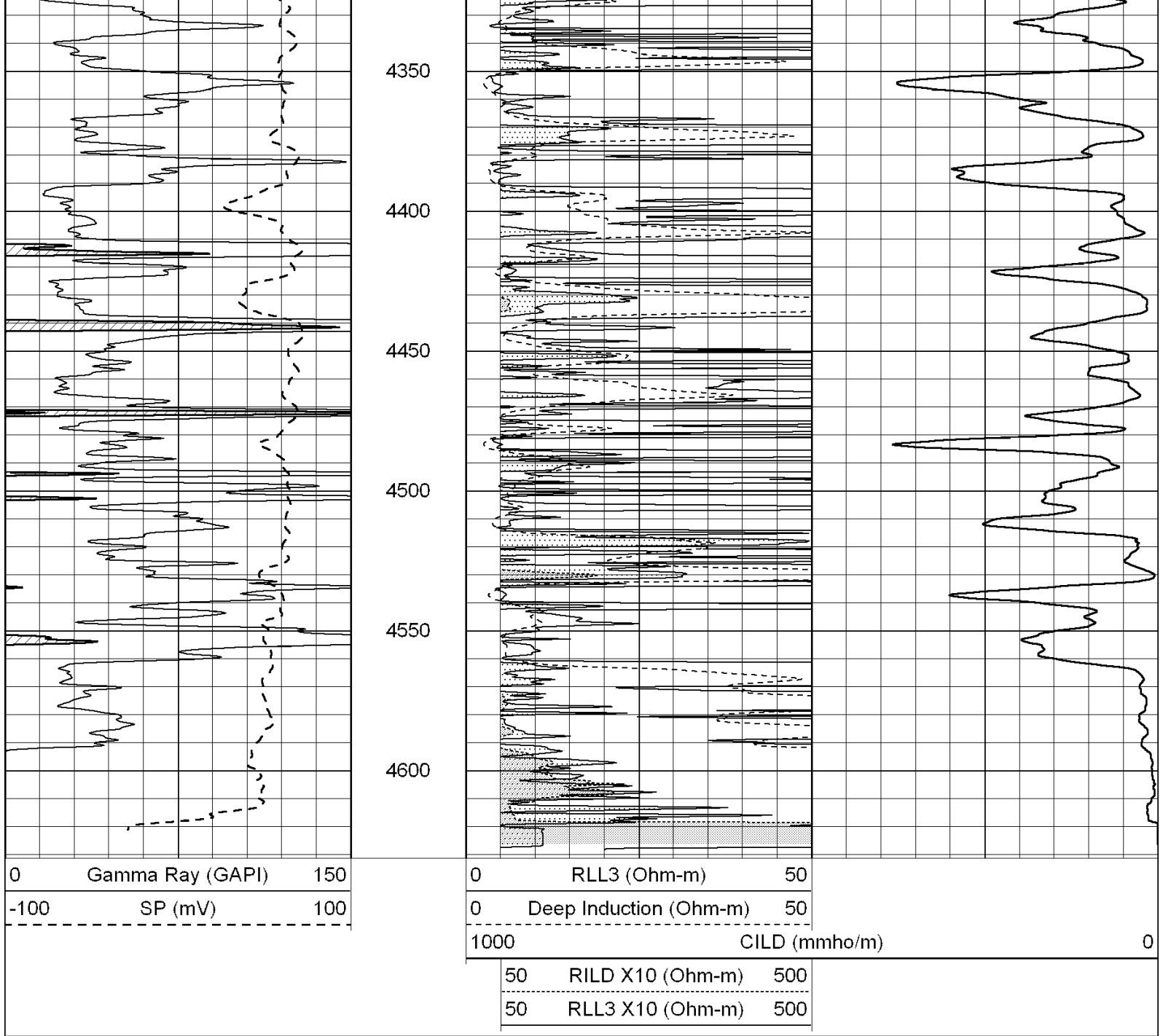
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3900  
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4050  
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4150  
4200  
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4300





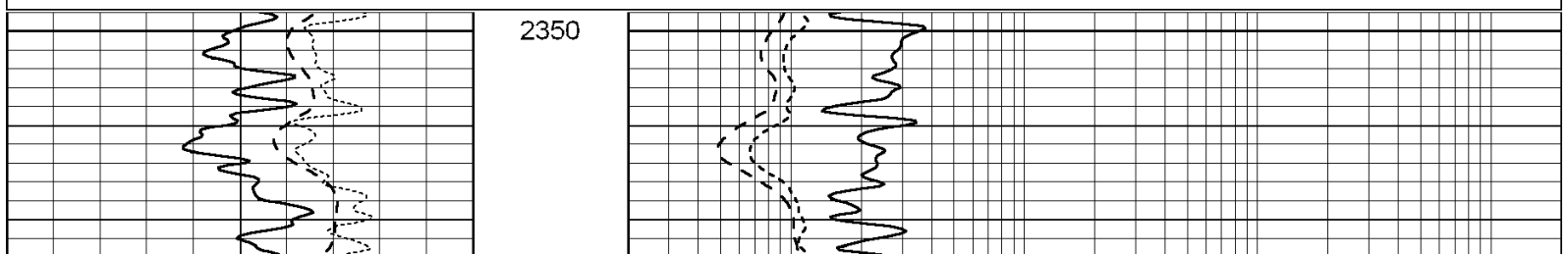
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Presentation Format:	_dil	
Dataset Creation:	Sun Jul 12 16:10:33 2009	
Charted by:	Depth in Feet scaled 1:240	

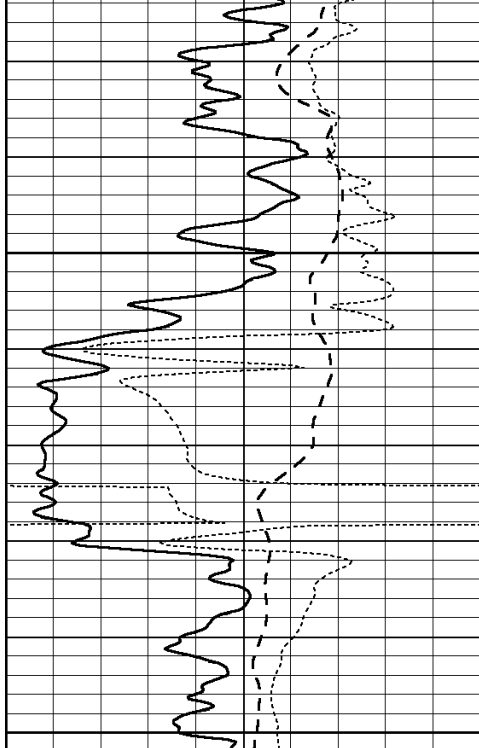
  

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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

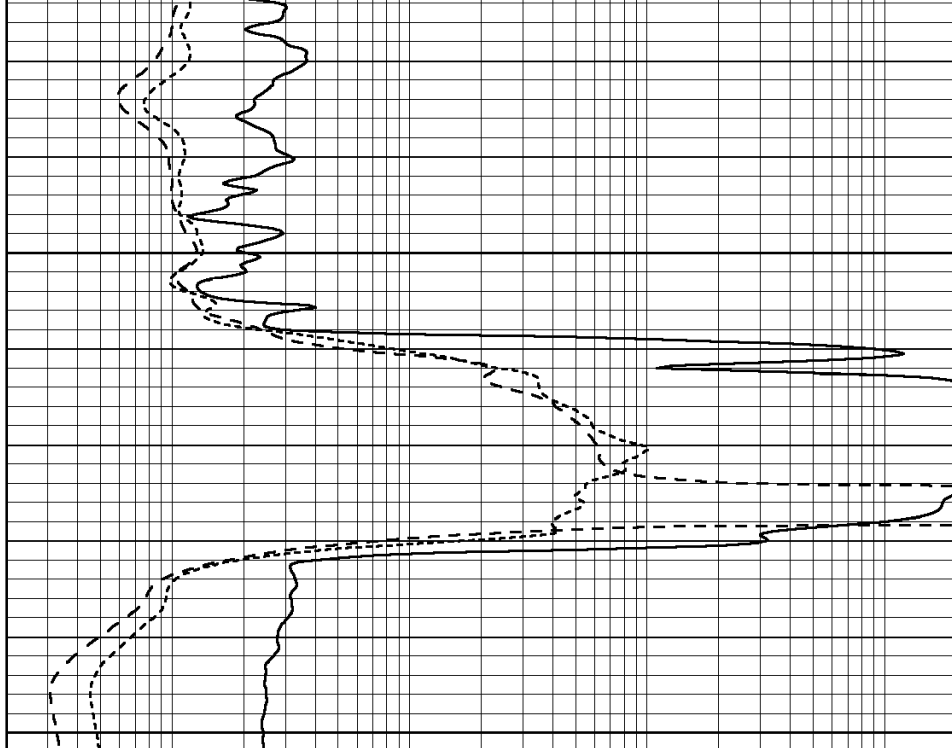




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-100	SP (mV)	100
-250	Rxo/Rt	50

2400

2450

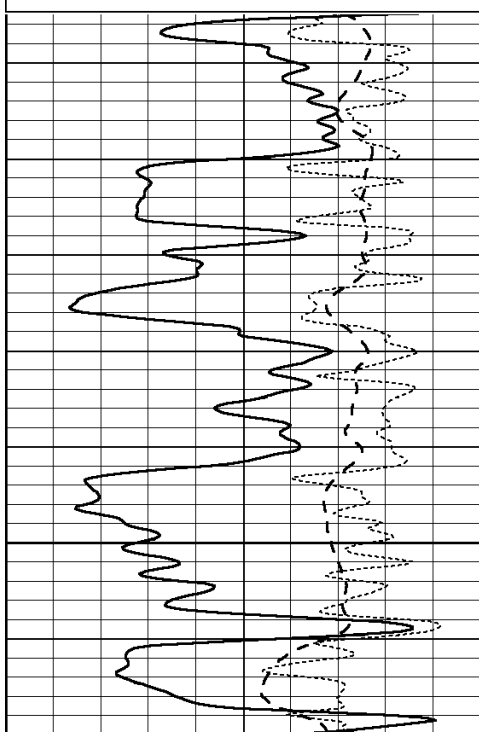


0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File: 003123ddn.db  
 Dataset Pathname: pass4.2  
 Presentation Format: \_dil  
 Dataset Creation: Sun Jul 12 16:03:24 2009 by Calc Open-Cased 090629  
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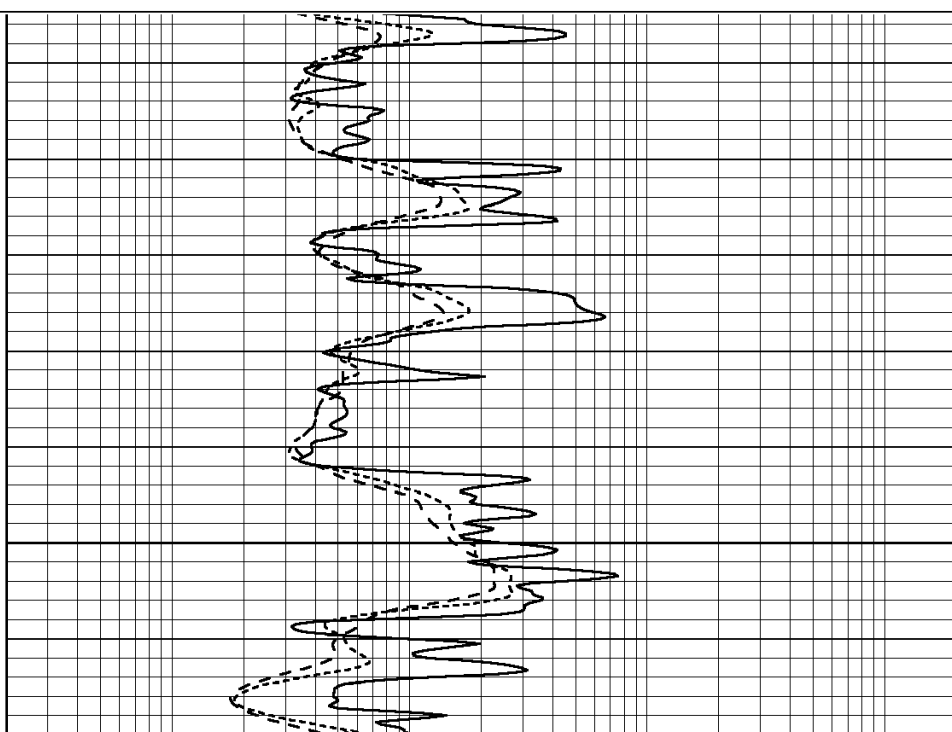
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

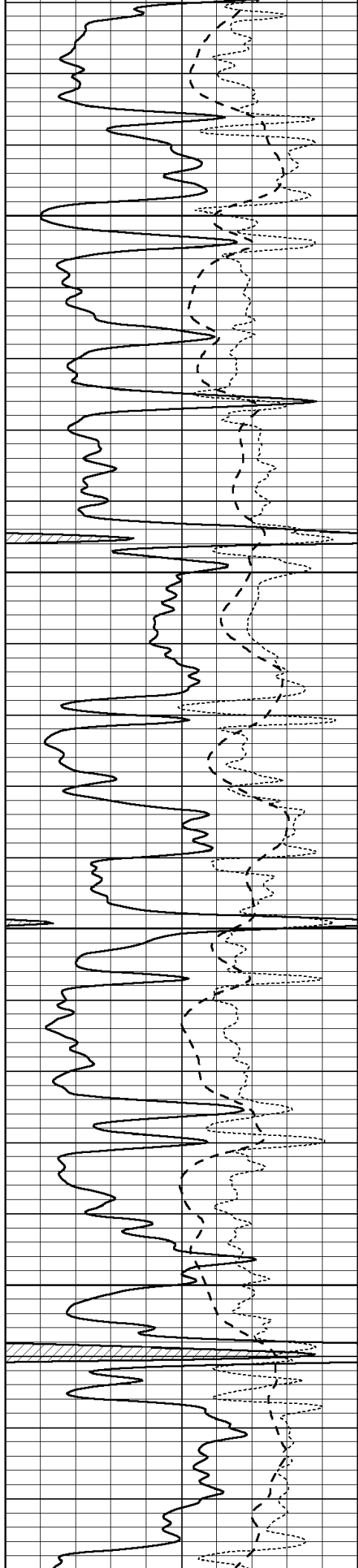
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



3650

3700



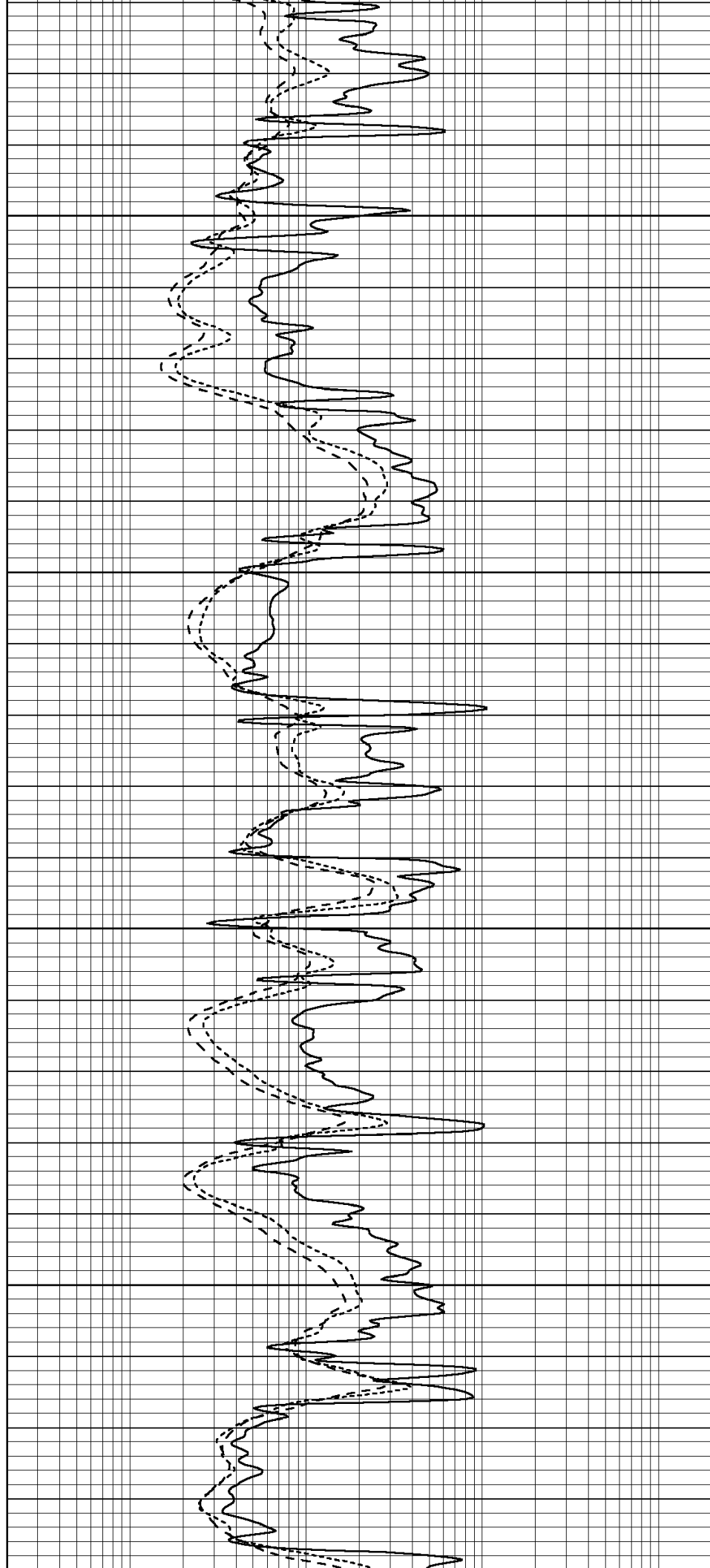


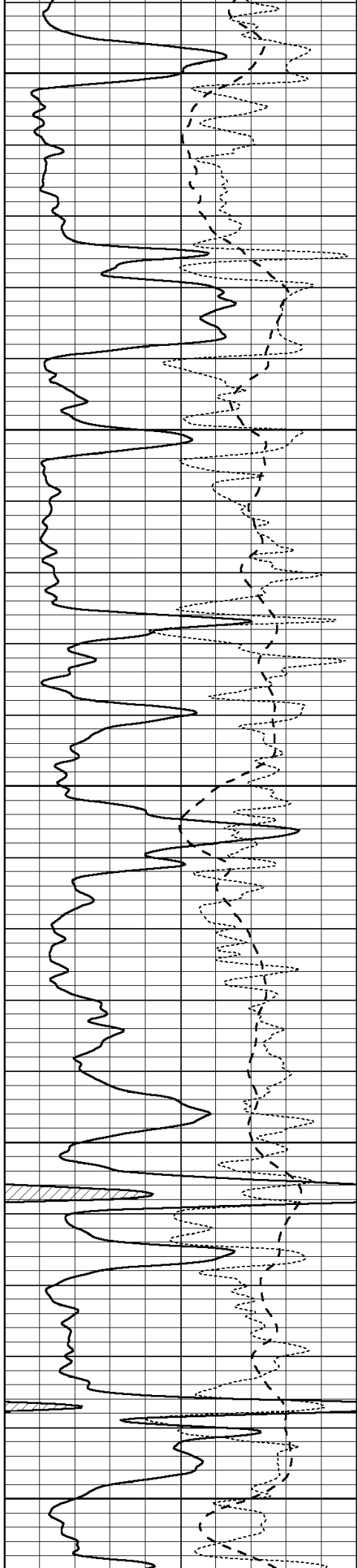
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3800

3850

3900





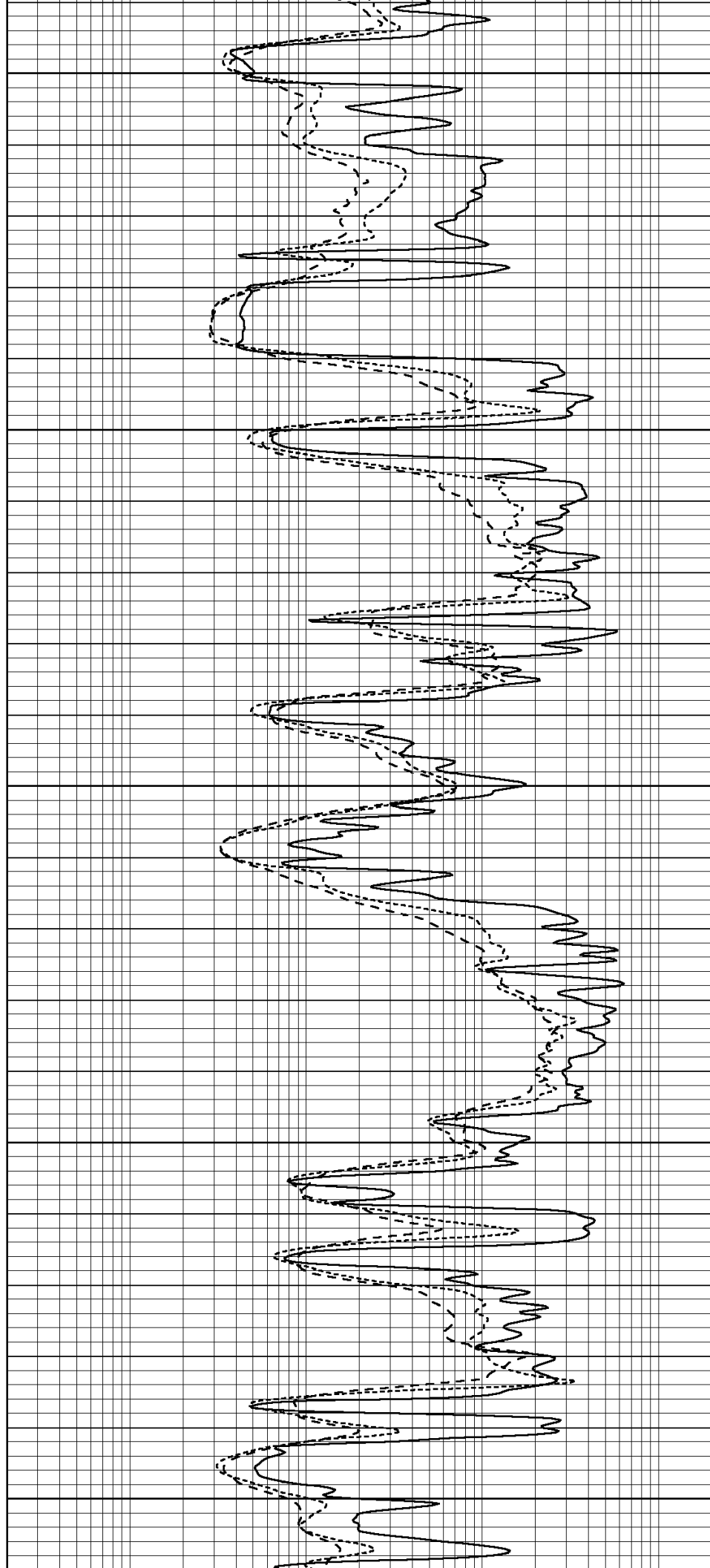
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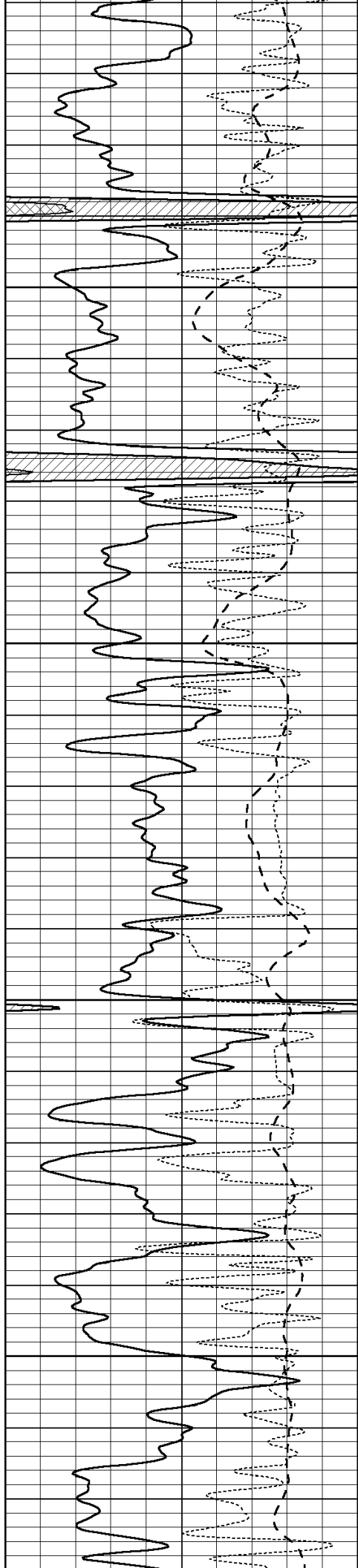
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4050

4100

4150



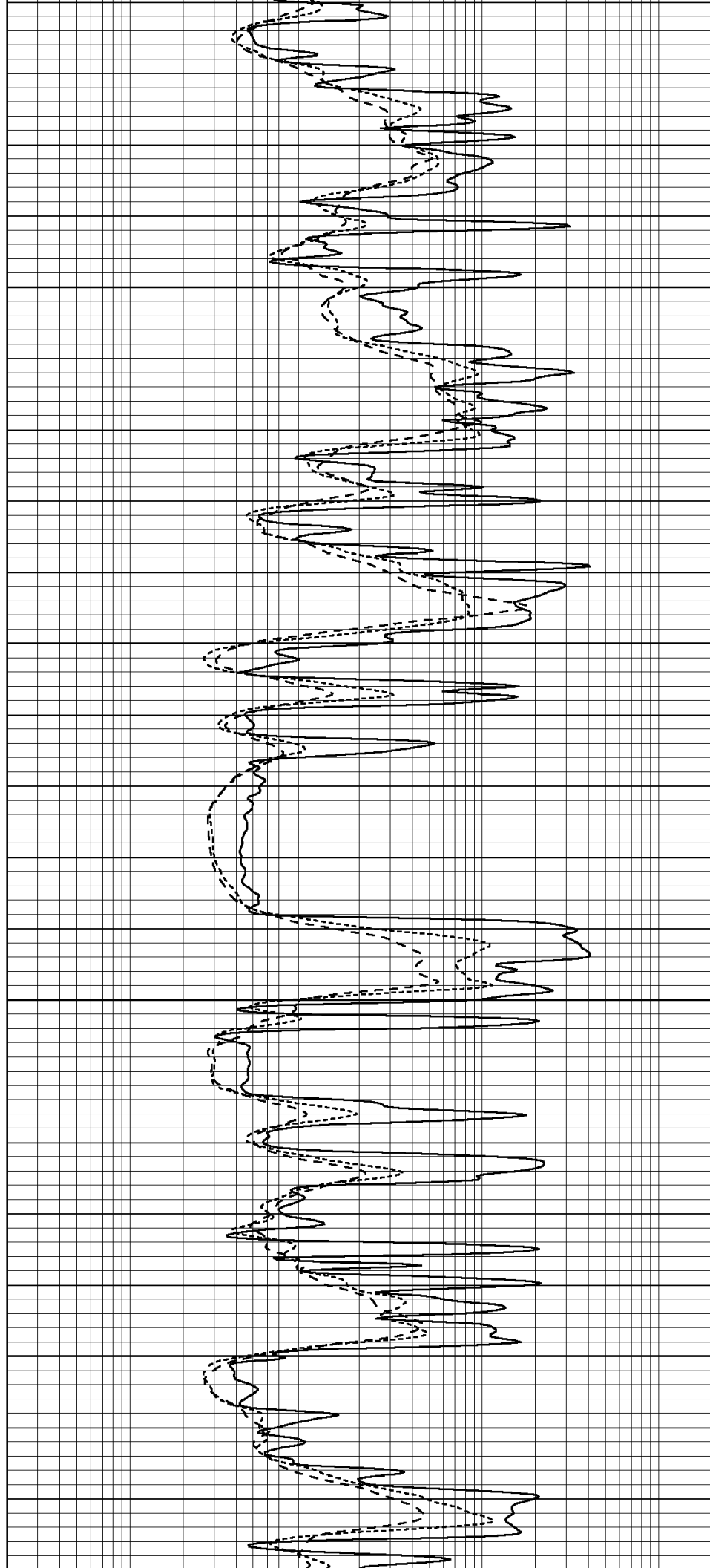


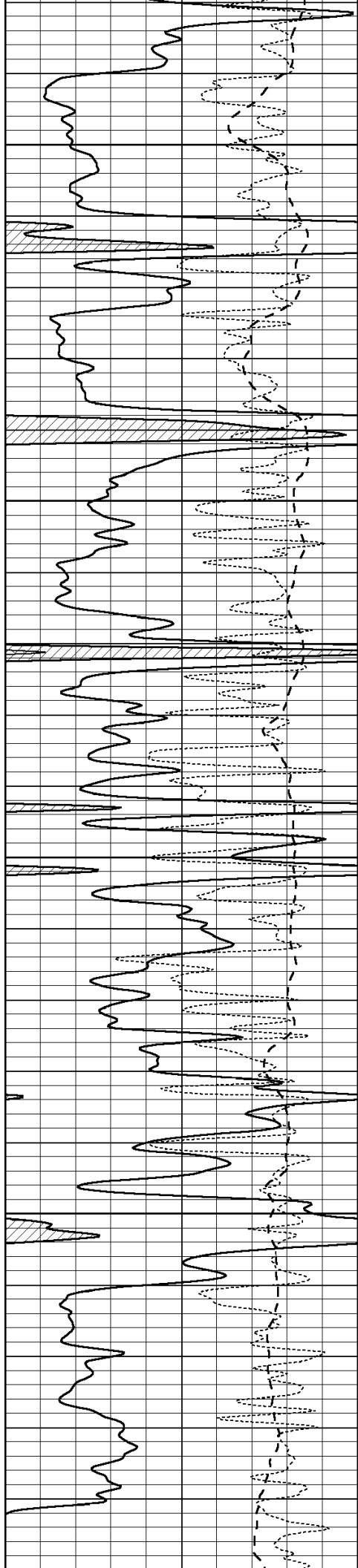
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4350





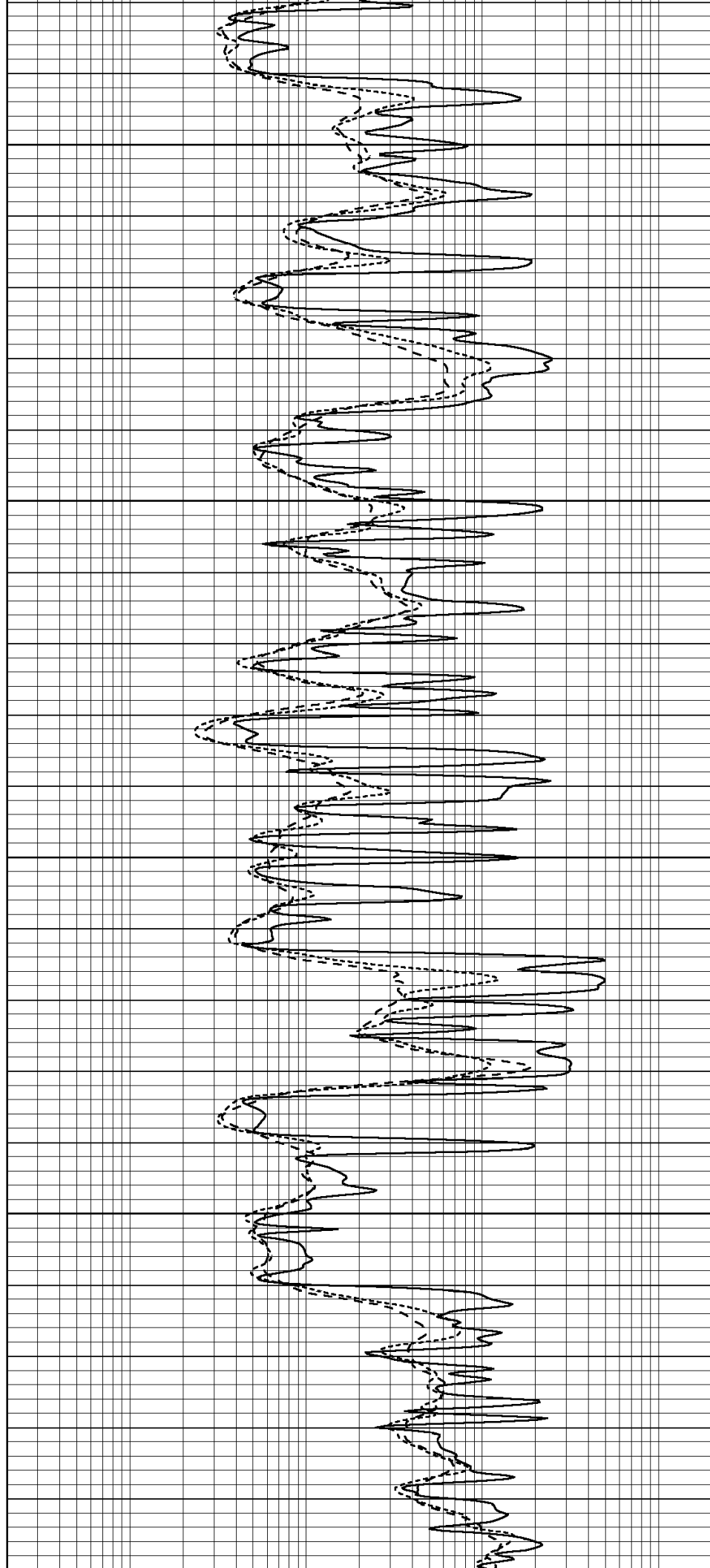
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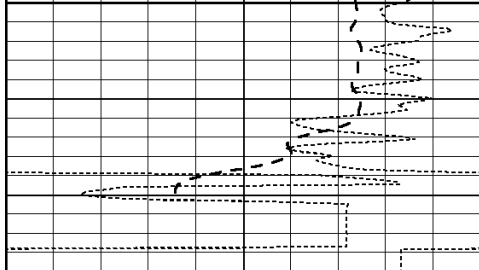
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4550

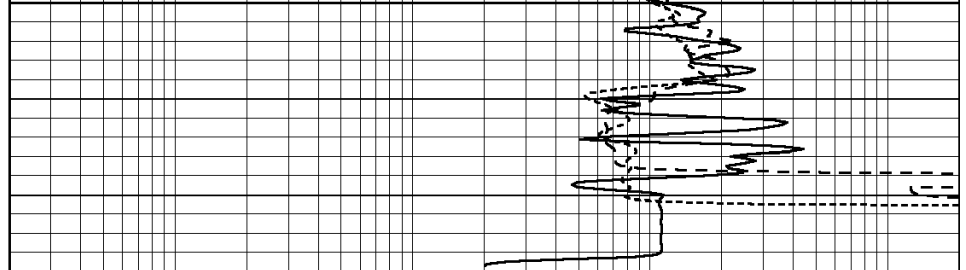
4600





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

4600



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



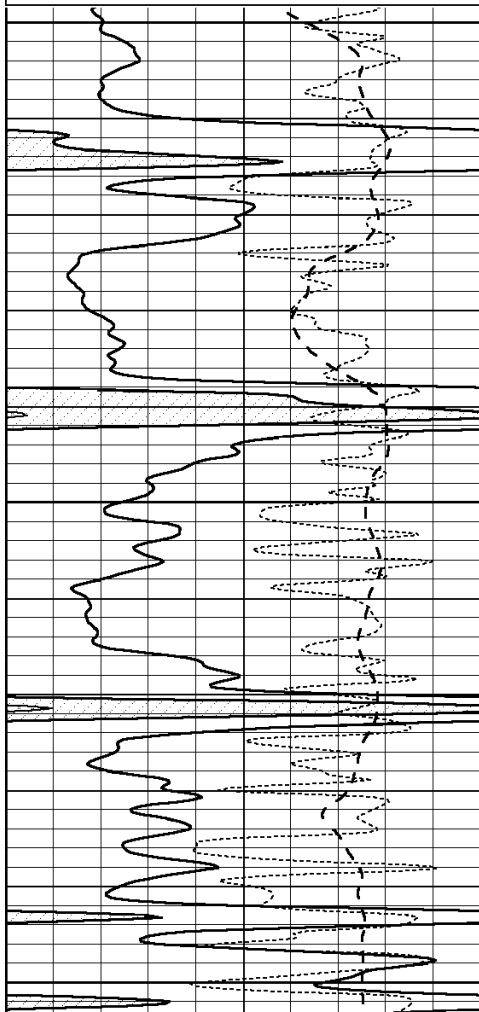
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 003123ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Sun Jul 12 15:31:42 2009 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

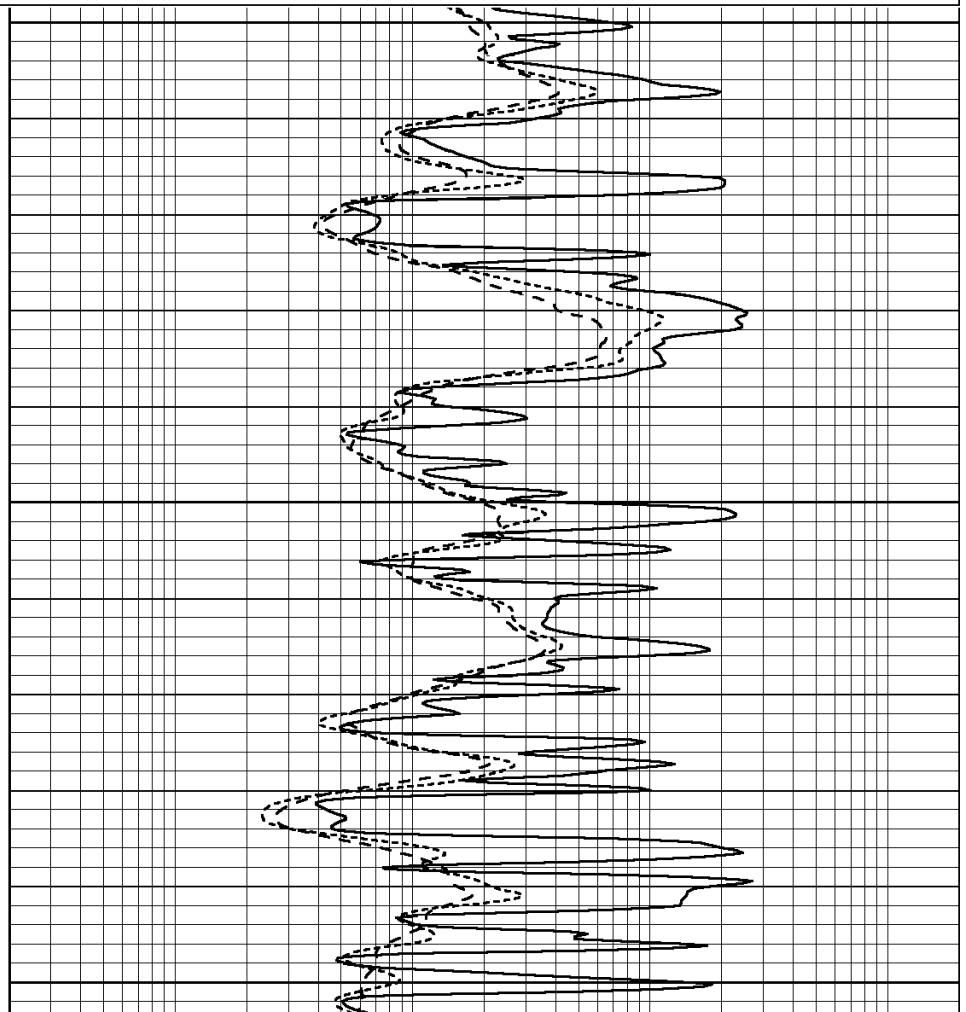
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

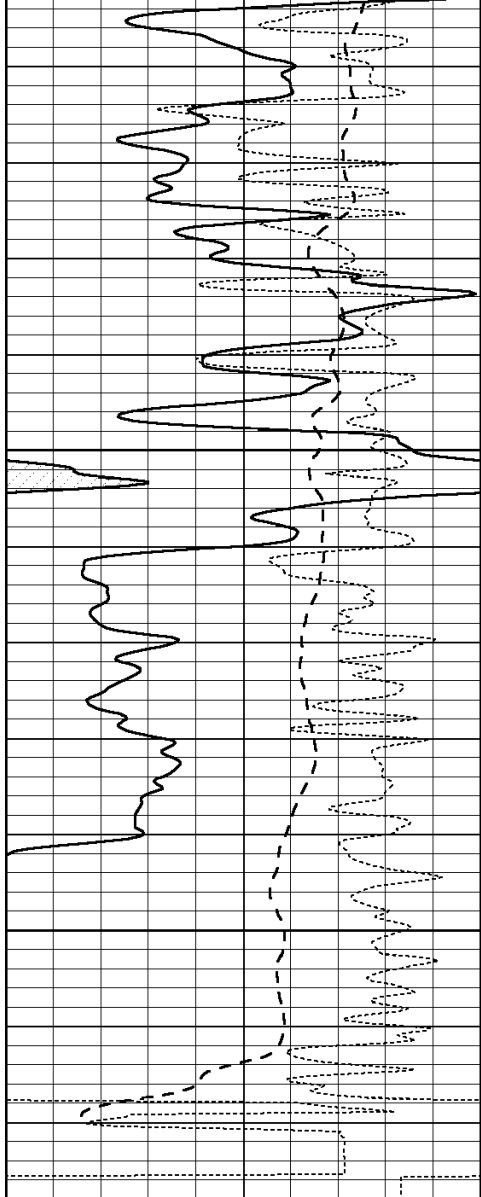


4400

4450

4500

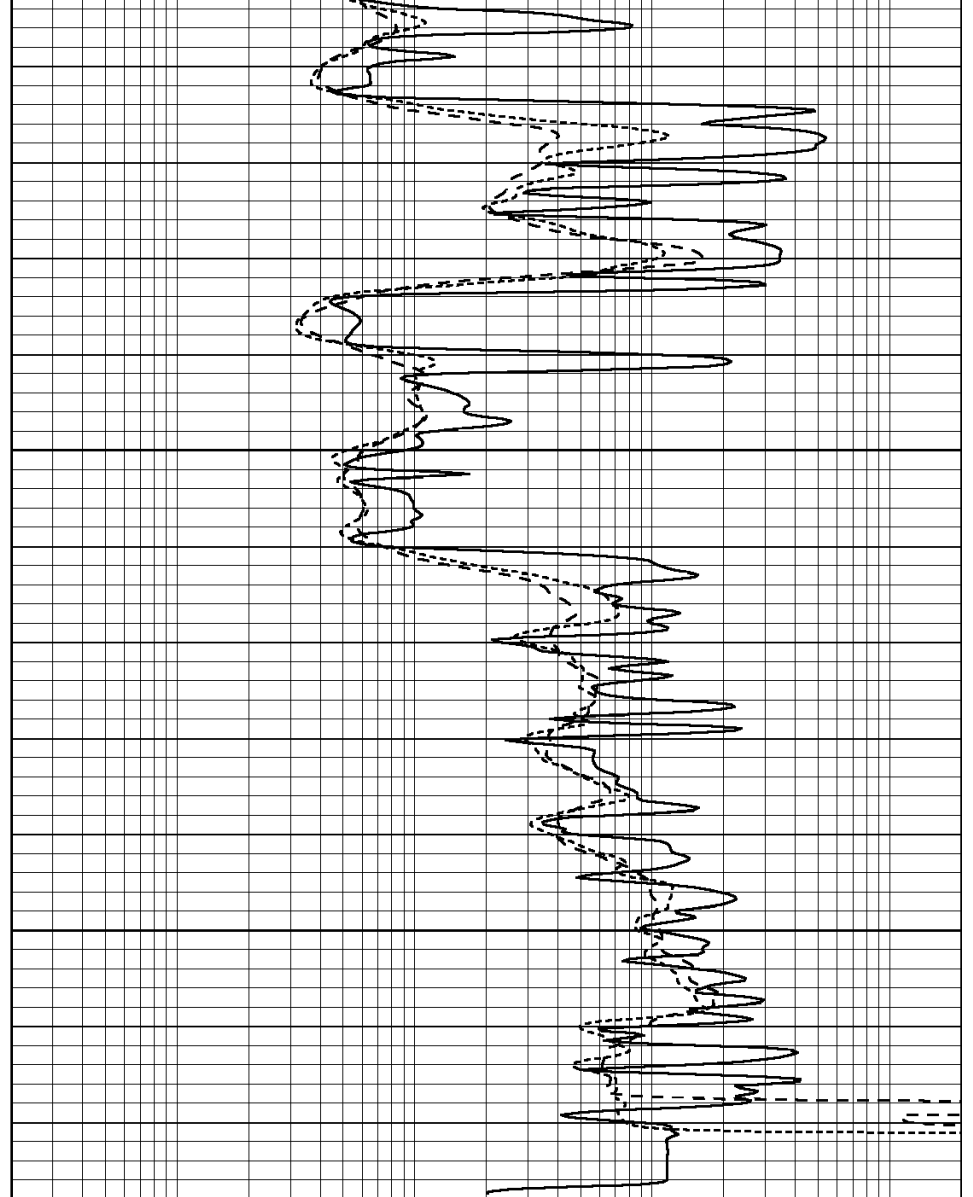




4550

4600

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



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

### Calibration Report

Database File: 003123ddn.db  
 Dataset Pathname: pass4.3  
 Dataset Creation: Sun Jul 12 16:10:33 2009

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Fri Aug 01 06:33:19 2008  
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008  
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
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		
		-6.500	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		

**Compensated Density Calibration Report**

Serial-Model:	GEAR4-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Fri Jan 16 10:06:35 2009

Master Calibration						
	Density		Far Detector	Near Detector		
Magnesium	1.710	g/cc	1358.55	649.93	cps	
Aluminum	2.580	g/cc	325.11	479.52	cps	
Spine Angle = 78.00			Density/Spine Ratio = 0.595			
	Size		Reading			
Small Ring	8.50	in	3.56	V		
Large Ring	14.00	in	6.65	V		

**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	

**Gamma Ray Calibration Report**

Serial Number:	GR6	
Tool Model:	OPEN	
Performed:	Thu Jul 09 09:06:42 2009	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps

Sensitivity:

0.6835

GAPI/cps