



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company RITCHIE EXPLORATION, INC.  
Well BAKER 31CD UNIT #1  
Field WILDCAT  
County LOGAN  
State KANSAS

Company RITCHIE EXPLORATION, INC.  
Well BAKER 31CD UNIT #1  
Field WILDCAT  
County LOGAN State KANSAS

Location: 335' FSL & 2580' FWL  
API # : 15-109-21294-0000  
SEC 31 TWP 15S RGE 34W  
Permanent Datum GROUND LEVEL Elevation 3049  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
Other Services  
CDL/CNL  
MEL  
K.B. 3054  
D.F. 3052  
G.L. 3049

Date	6/6/14
Run Number	ONE
Depth Driller	4780
Depth Logger	4783
Bottom Logged Interval	4781
Top Log Interval	0
Casing Driller	8 5/8" @ 219
Casing Logger	217
Bit Size	7 7/8
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/60
pH / Fluid Loss	10.5/10.8
Source of Sample	FLOWLINE
Rin @ Meas. Temp	0.50 @ 84F
Rmf @ Meas. Temp	0.38 @ 84F
Rmc @ Meas. Temp	0.60 @ 84F
Source of Rmf / Rmc	MEASURED
Rin @ BHT	0.34 @ 123F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	123F
Equipment Number	680
Location	HAYS, KS.
Recorded By	JEFF GRONEMEG
Witnessed By	MAKLIN ARMSTRONG

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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 COMPLETION & PRODUCTION SVCS. (785) 628-6395**

**DIRECTIONS:**

OAKLEY, KS - SOUTH TO HWY 95 - WEST & SOUTH TO RD 270 (PENCE RD)  
WEST 11 MILES TO SCOTTWICHITA COUNTY LINE - 4 MILES SOUTH TO JUST ACROSS BRIDGE  
WEST INTO ON SOUTH SIDE OF TANK BATTERY - SOUTH AND EAST AFTER  
PUMPING UNIT

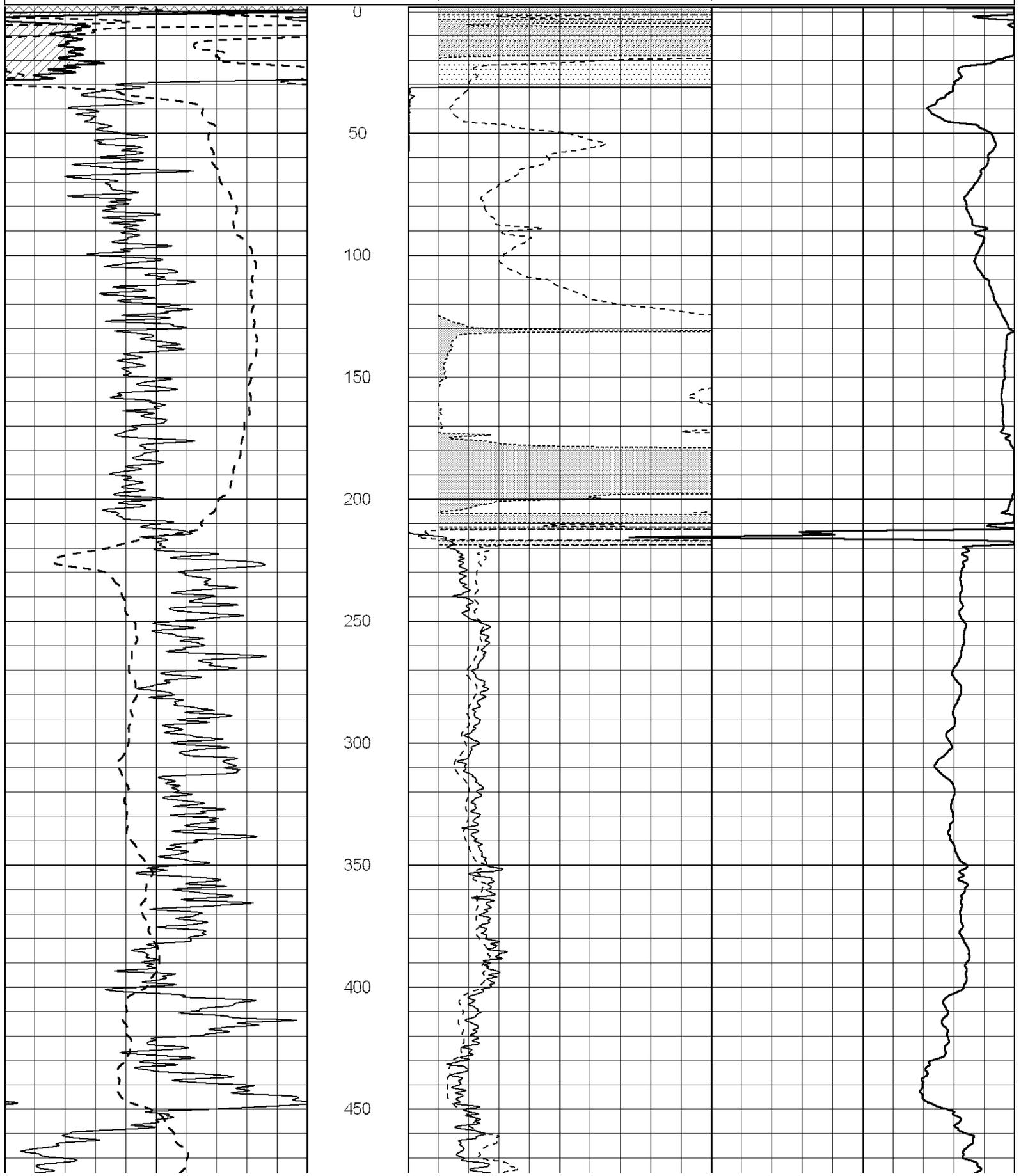
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Dataset Creation: Fri Jun 06 15:35:18 2014 by Calc Open-Cased 090629  
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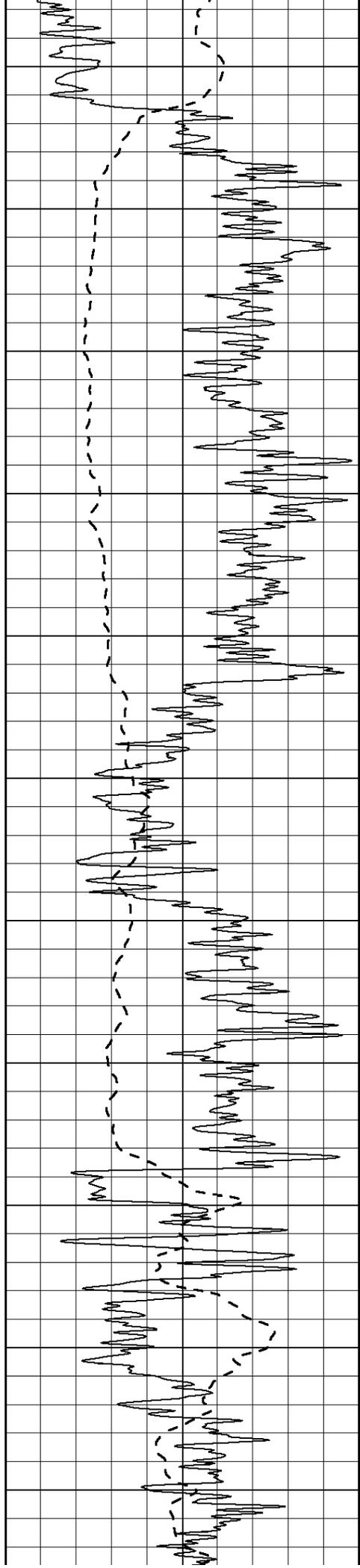
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-100	SP (mV)	100

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

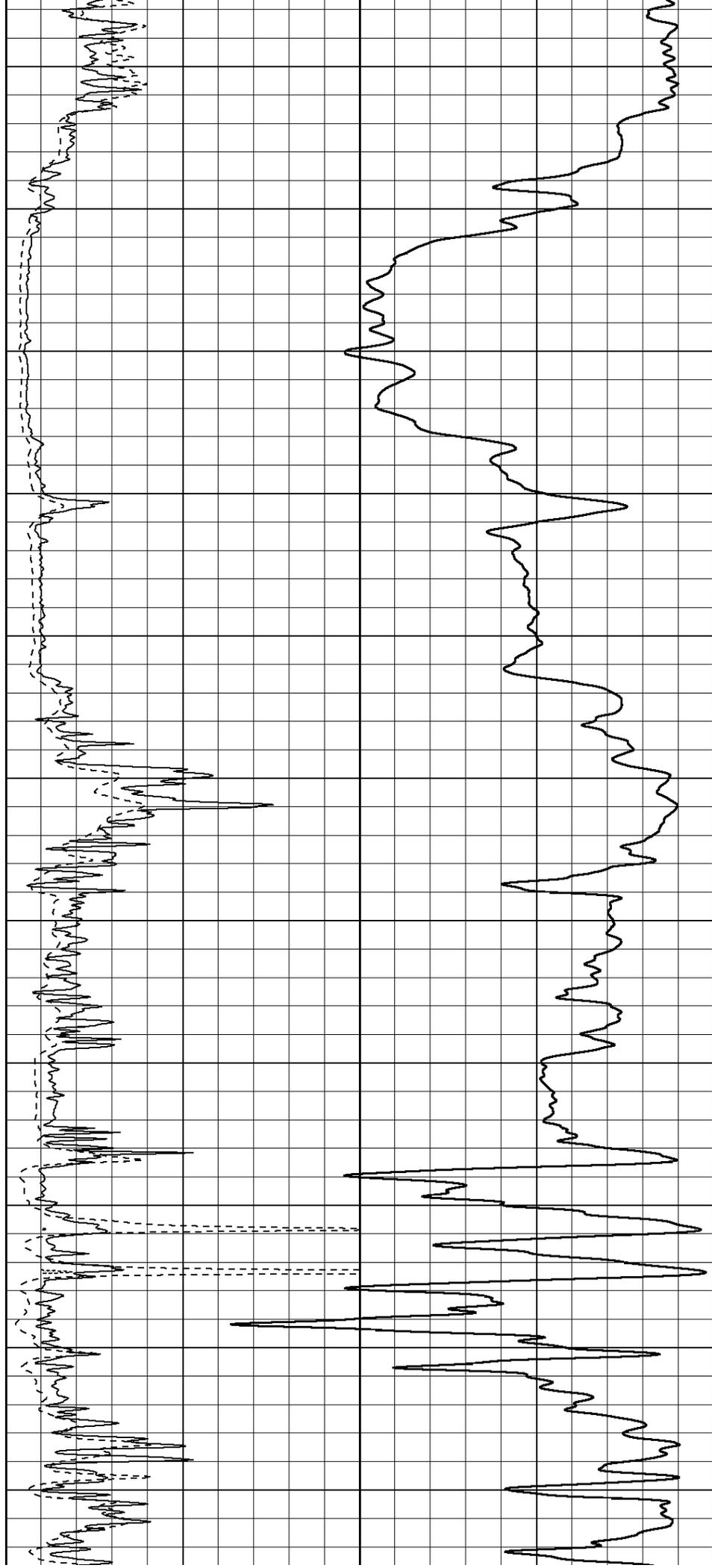
1000	CILD (mmho/m)	0
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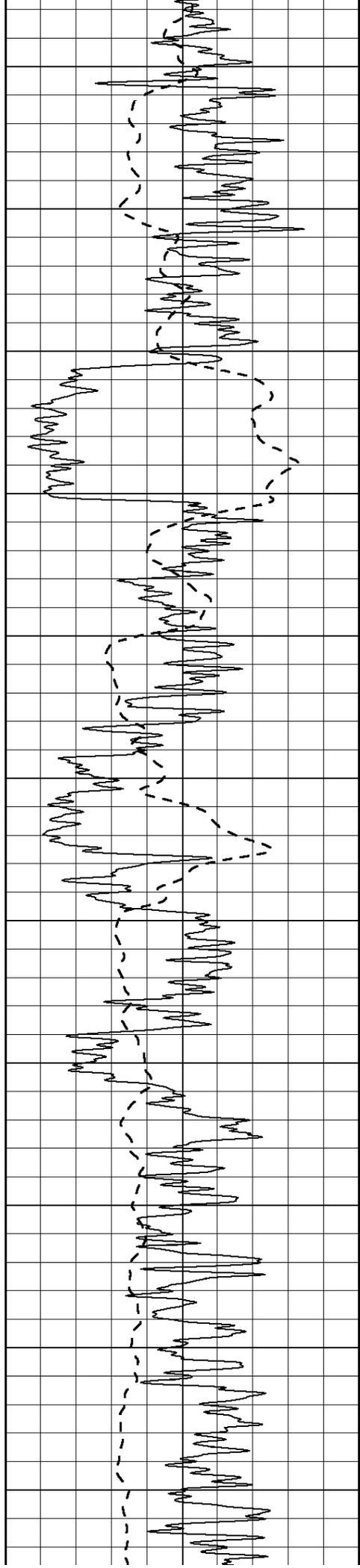
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





500  
550  
600  
650  
700  
750  
800  
850  
900  
950  
1000





1050

1100

1150

1200

1250

1300

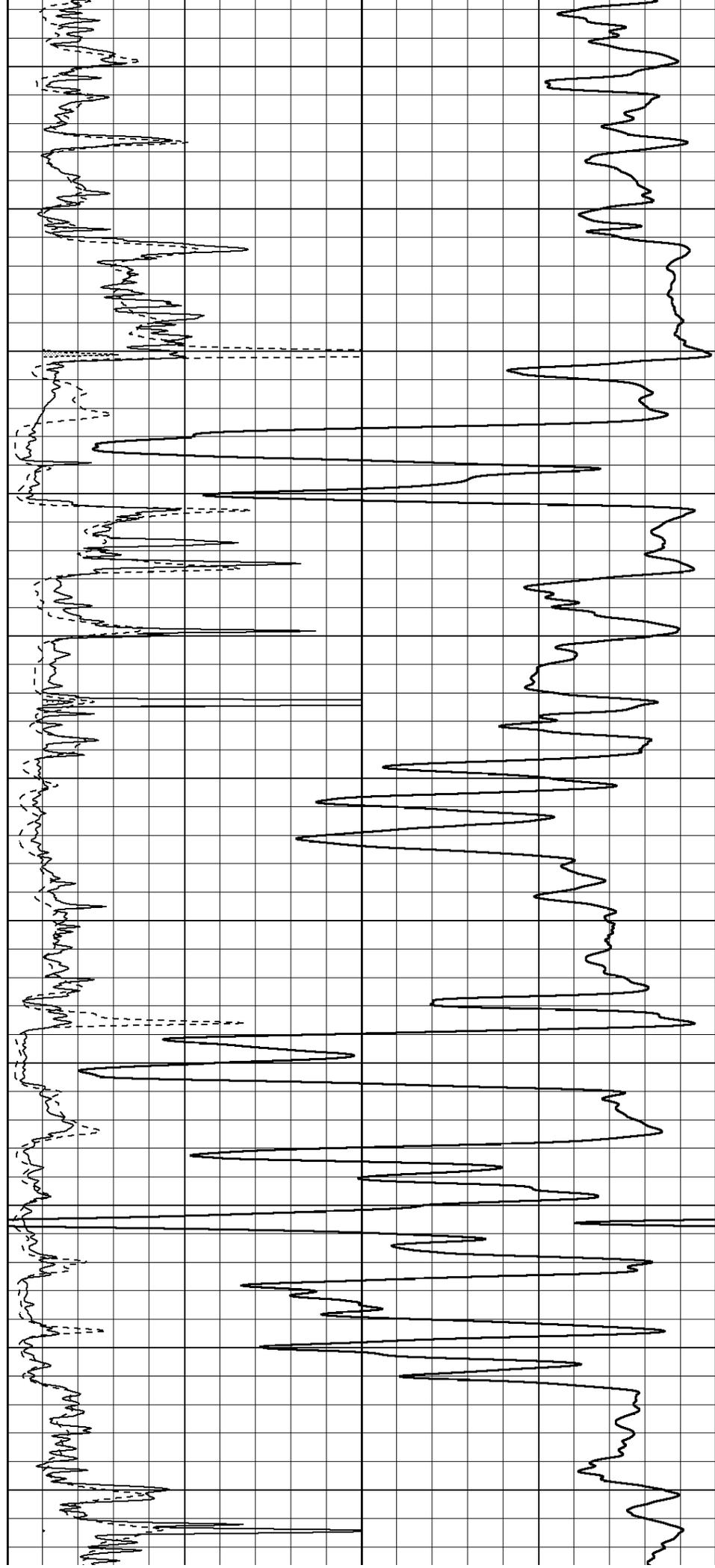
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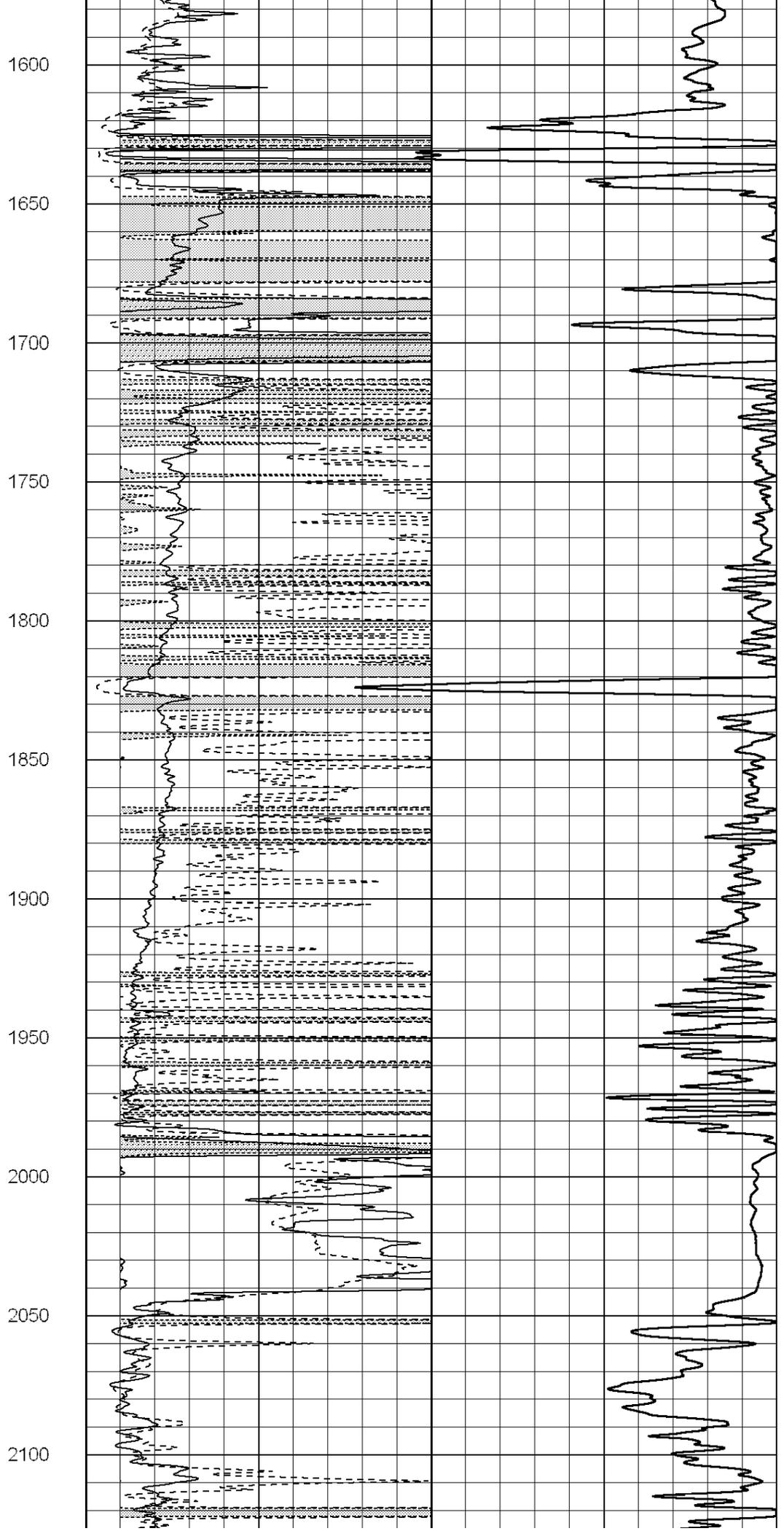
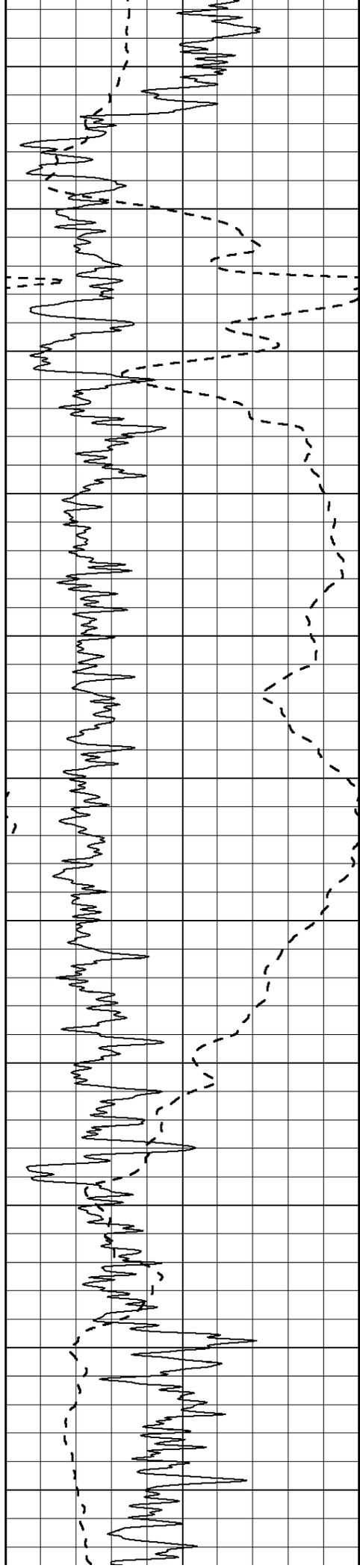
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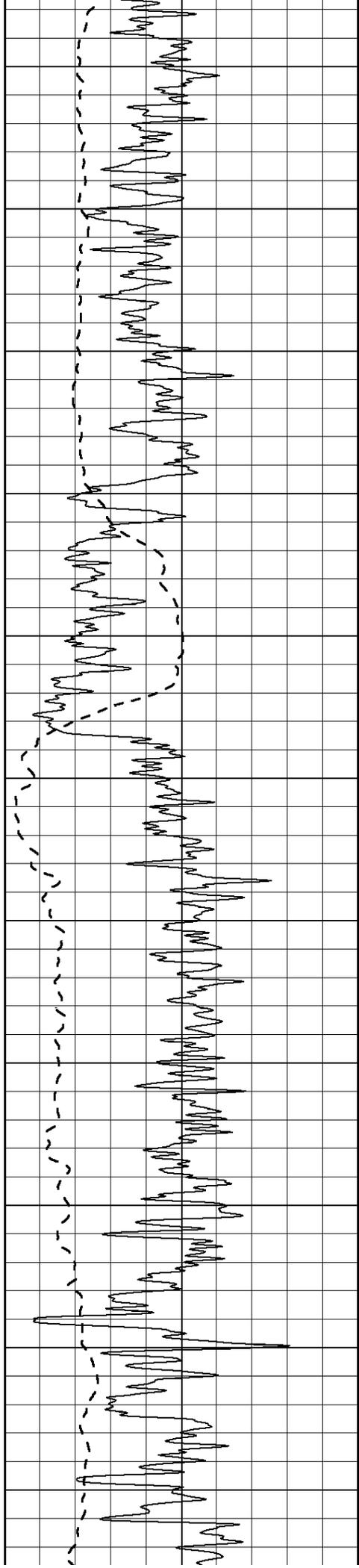
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1500

1550







2150

2200

2250

2300

2350

2400

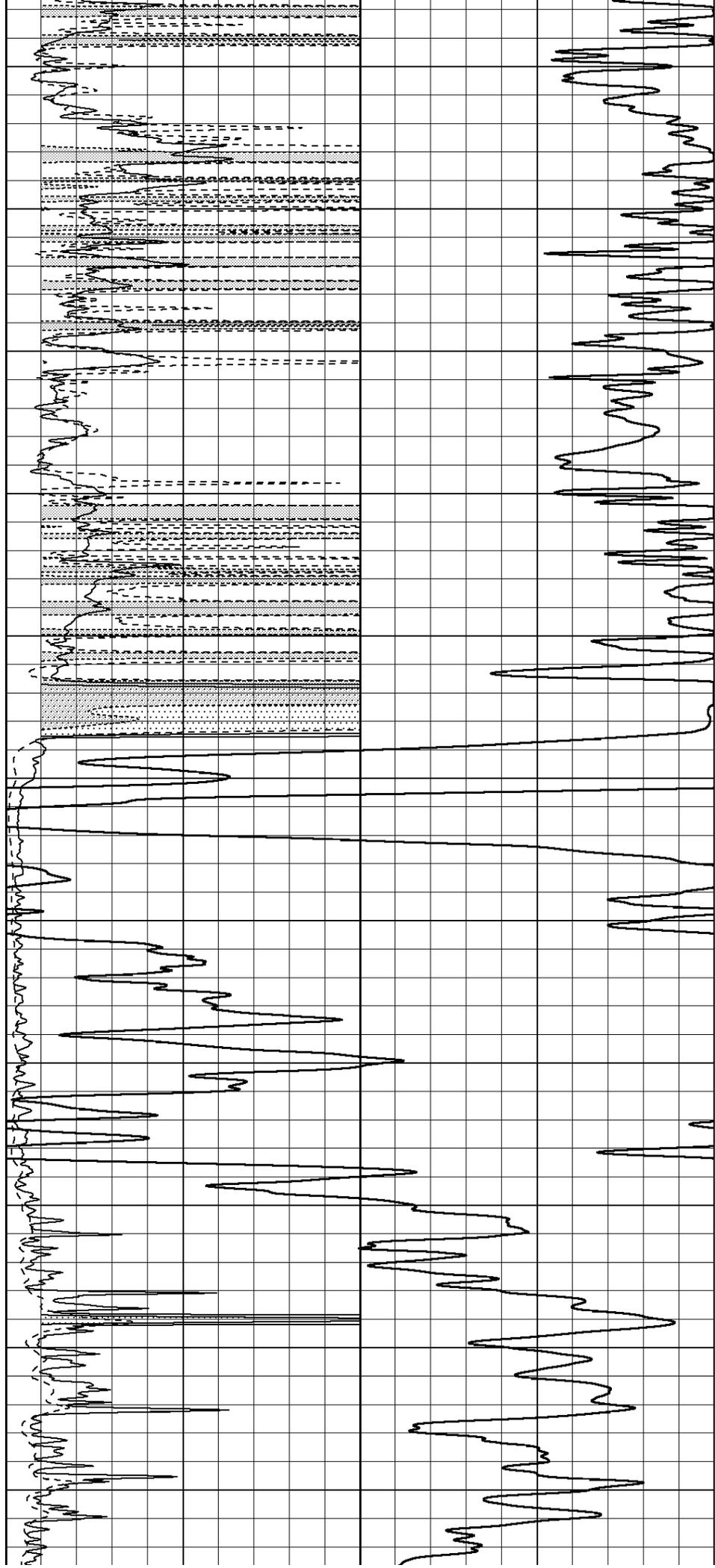
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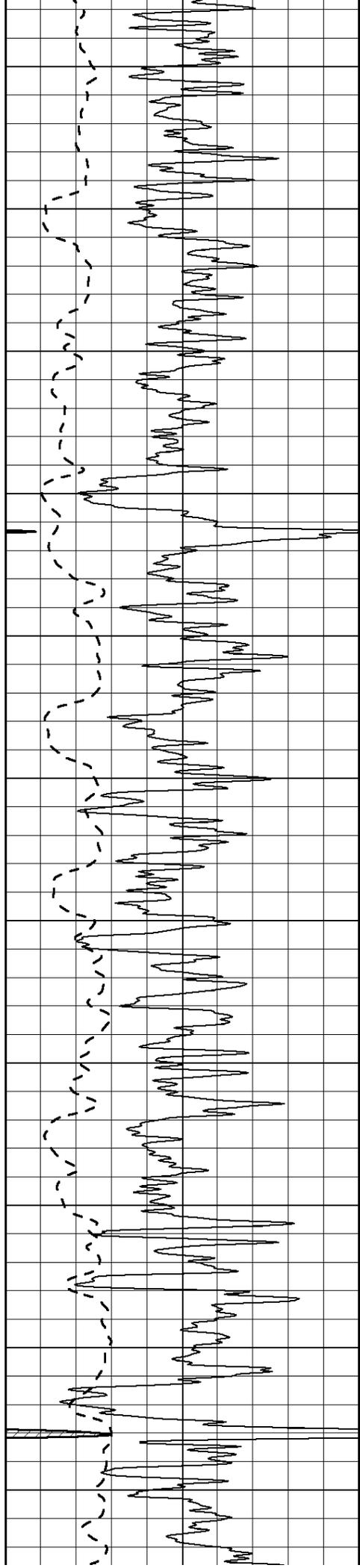
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2600

2650





2700

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2800

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2900

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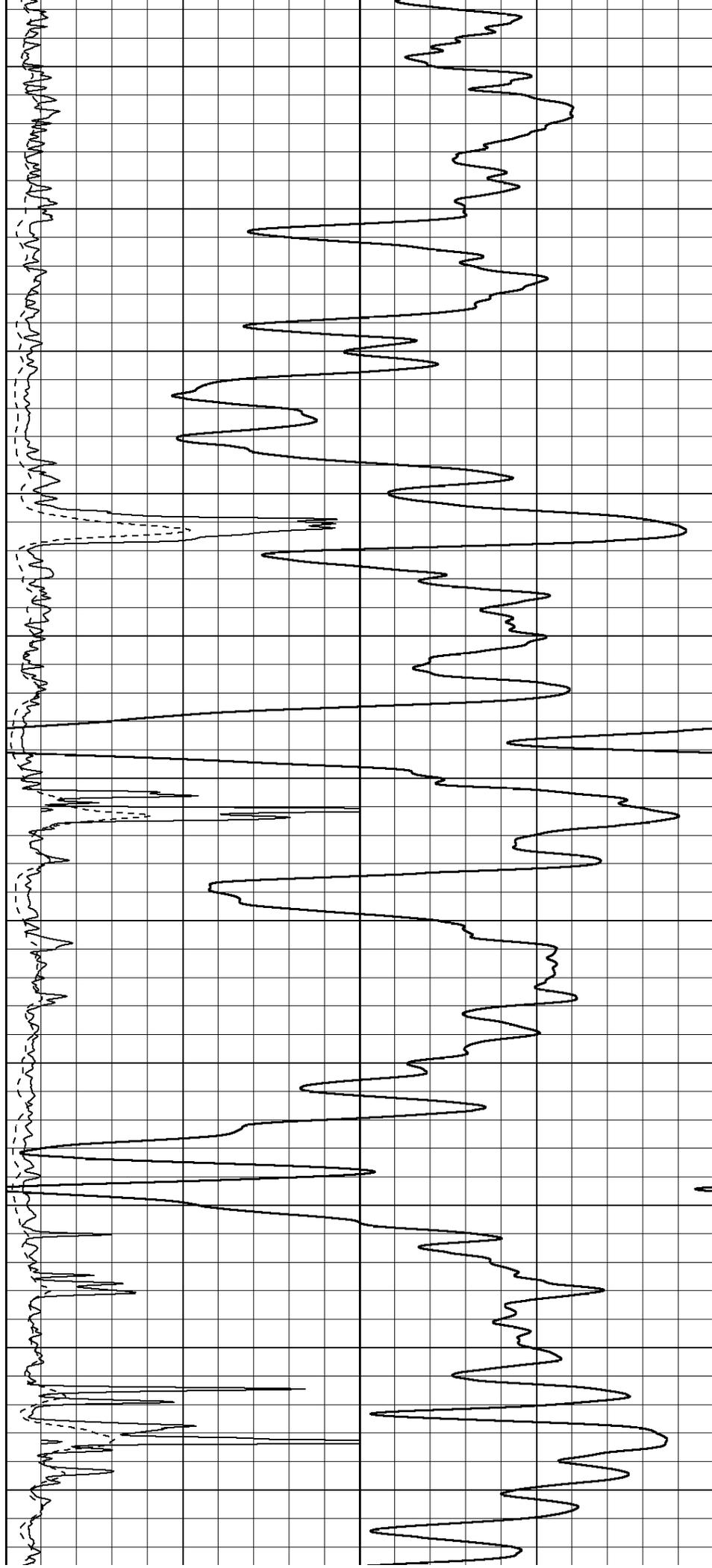
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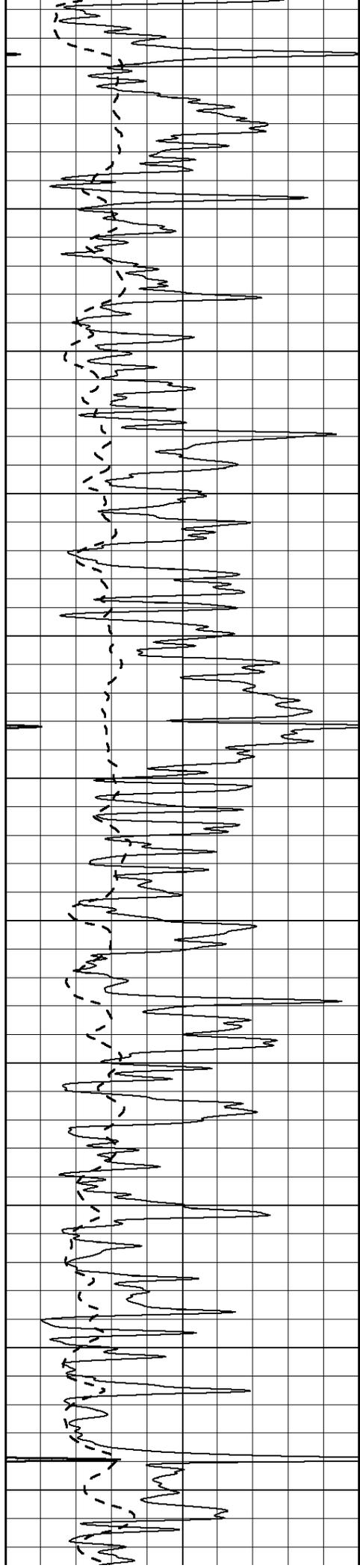
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3150

3200





3250

3300

3350

3400

3450

3500

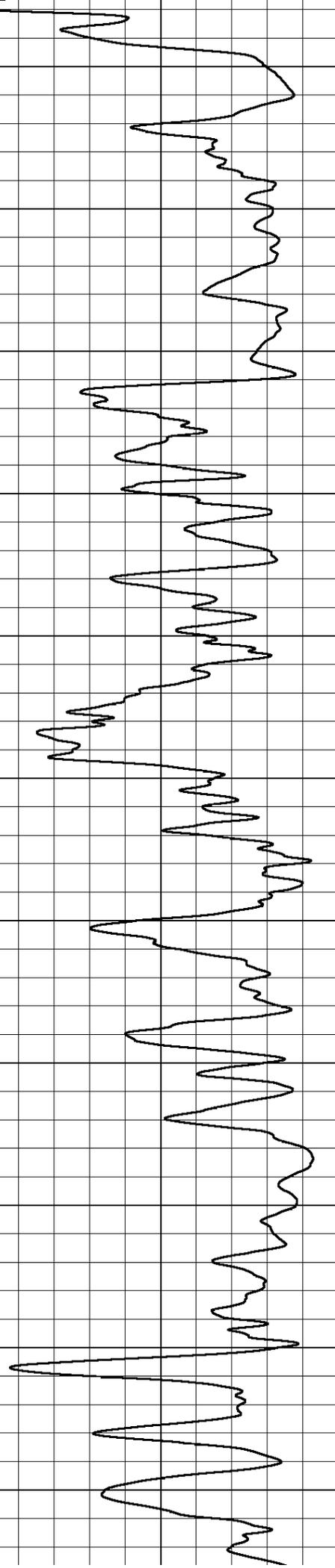
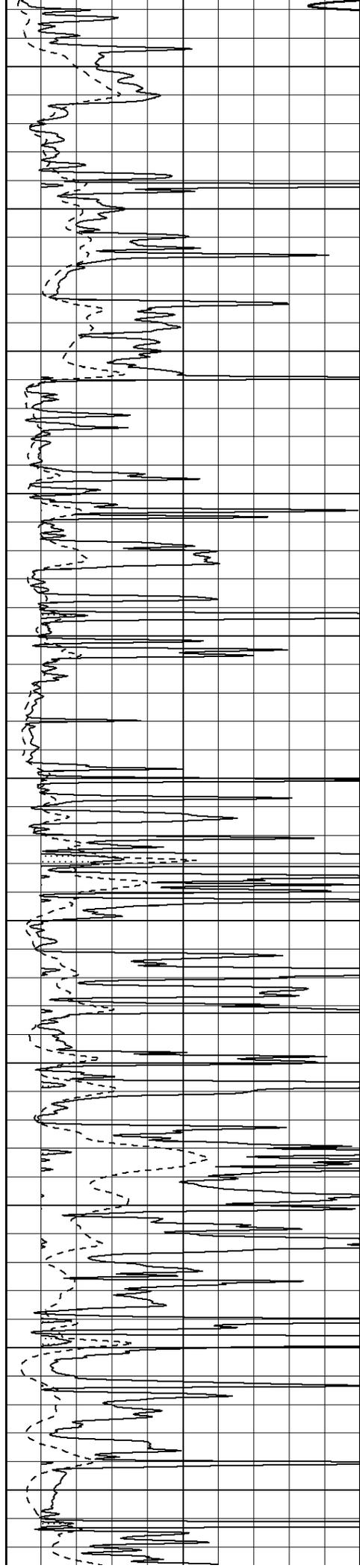
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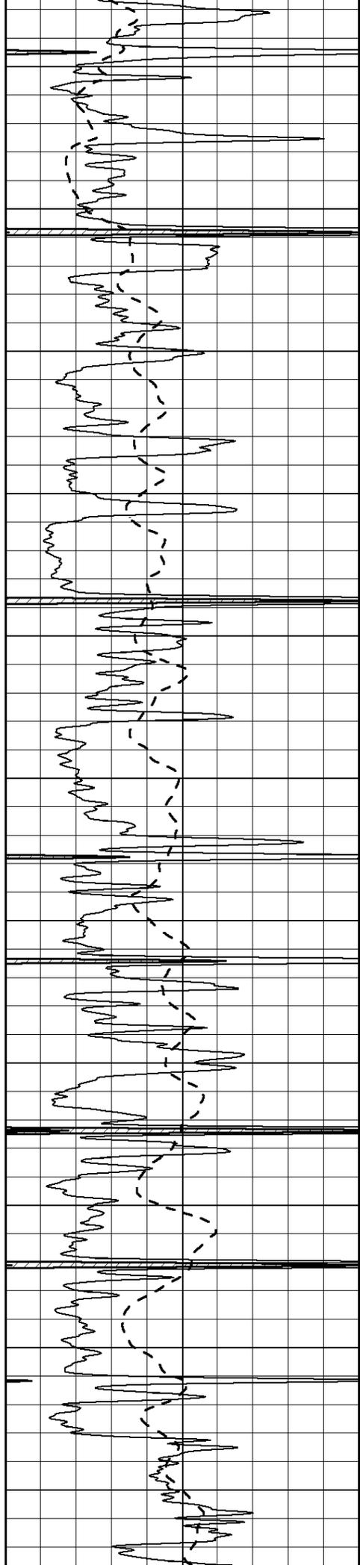
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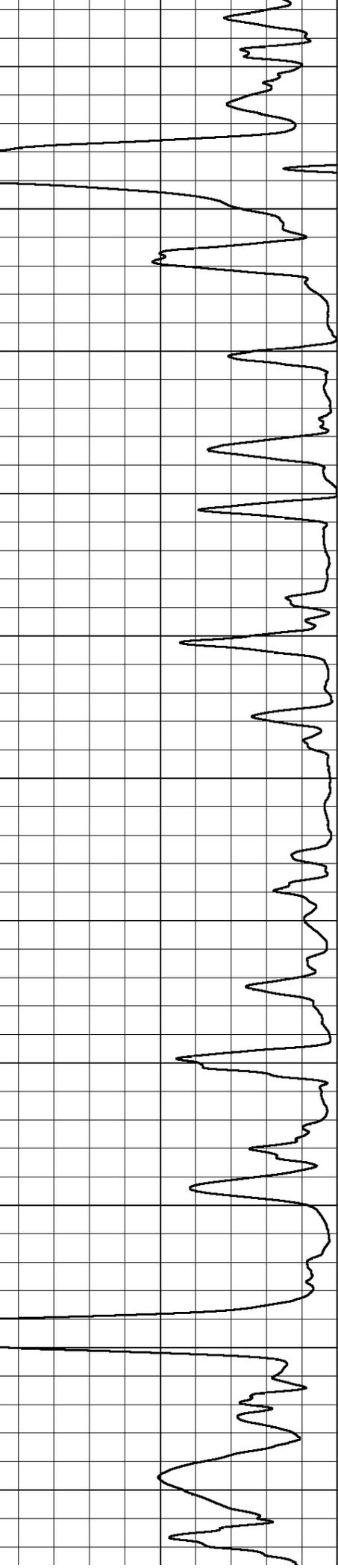
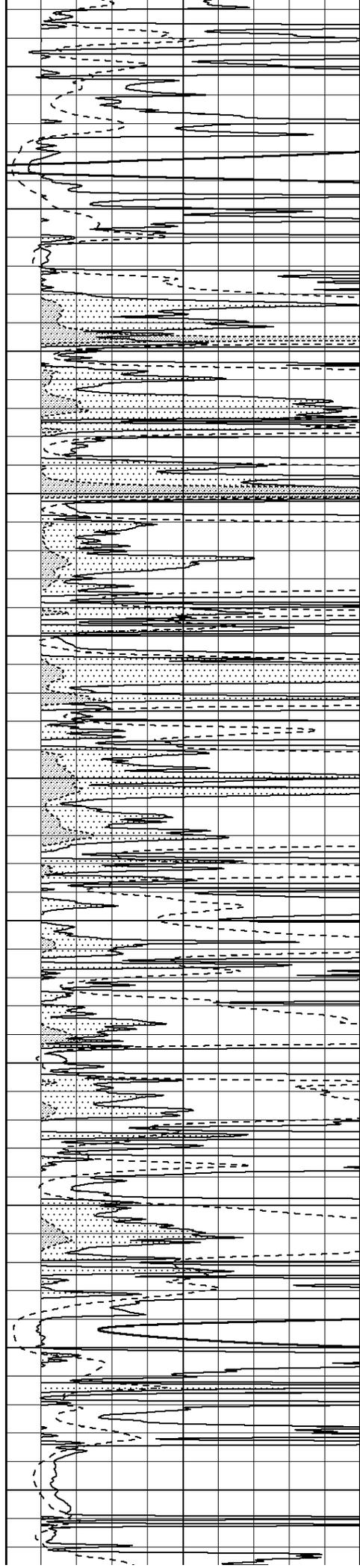
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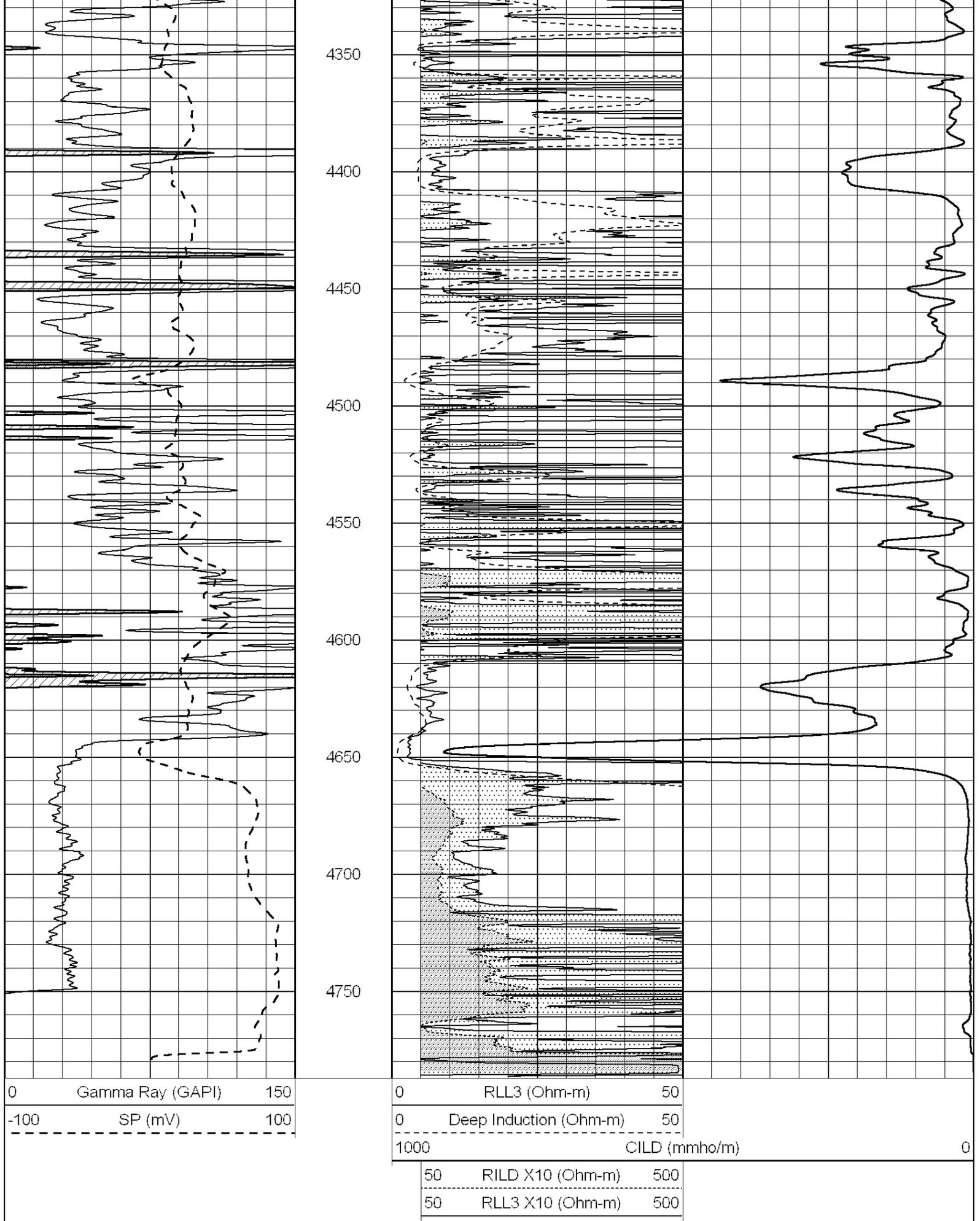
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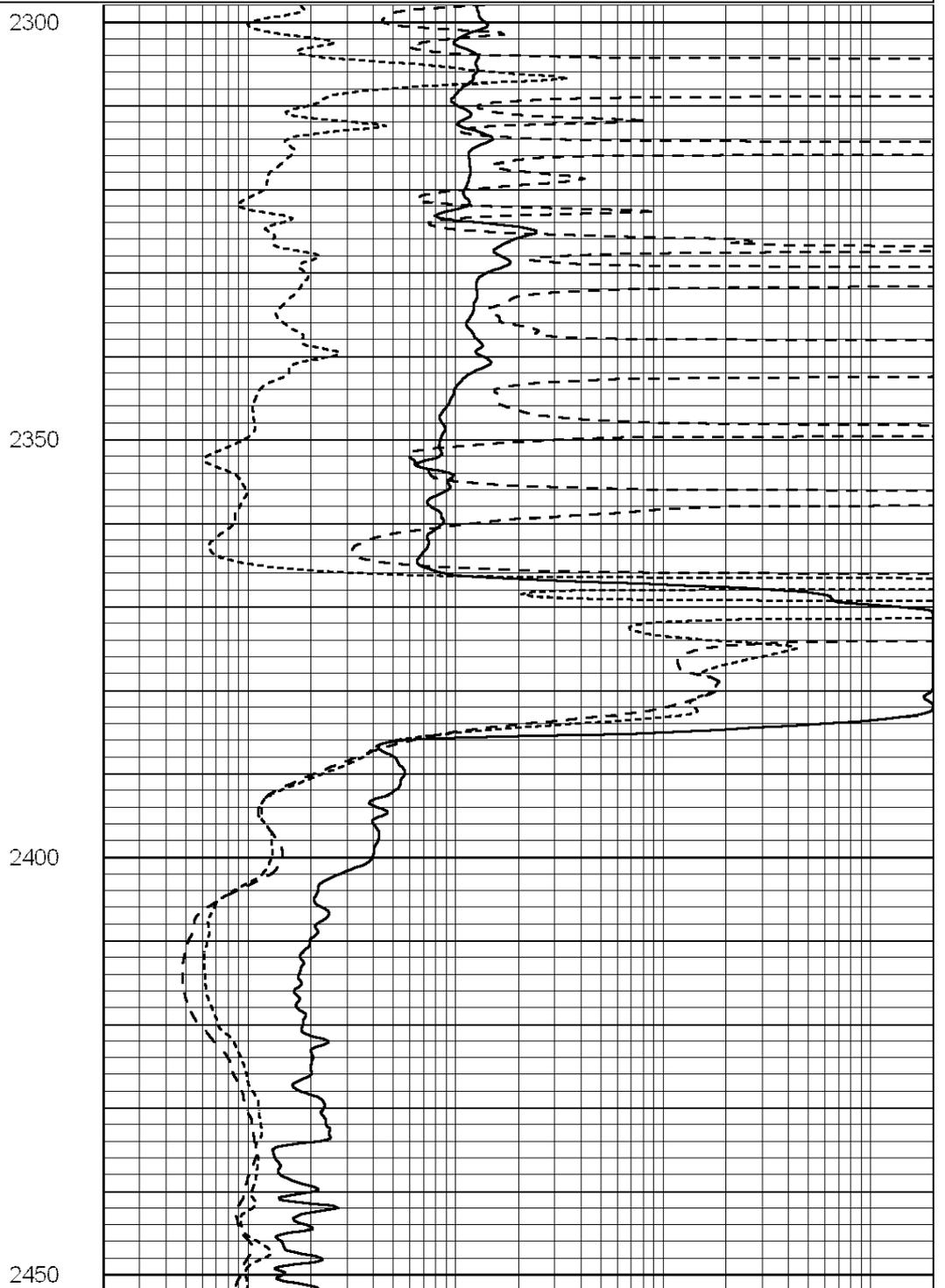
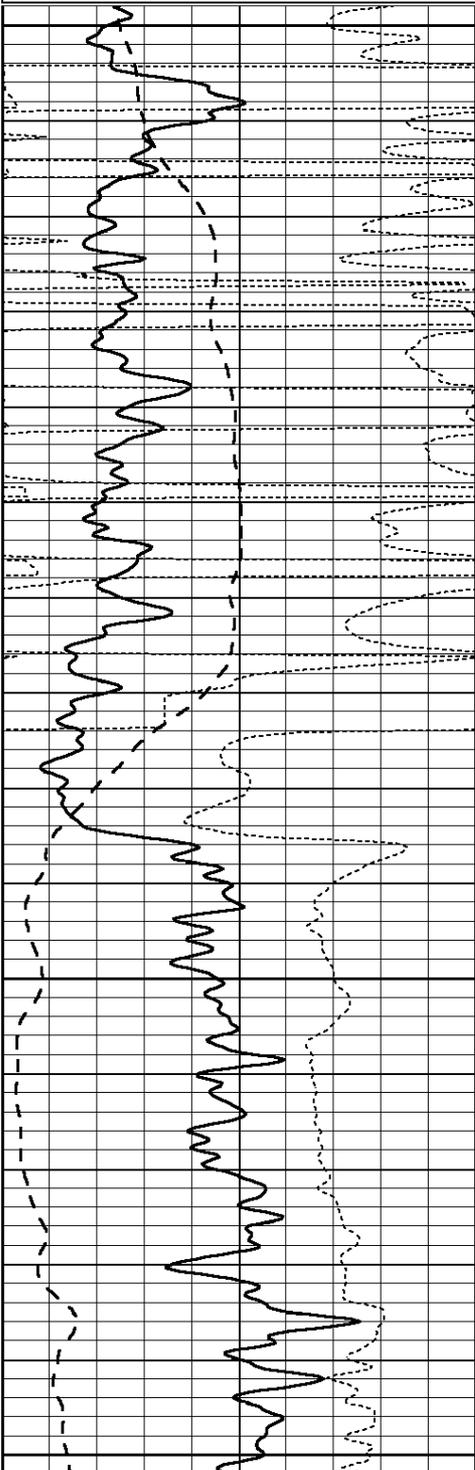




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 Charted by: Depth in Feet scaled 1:240

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



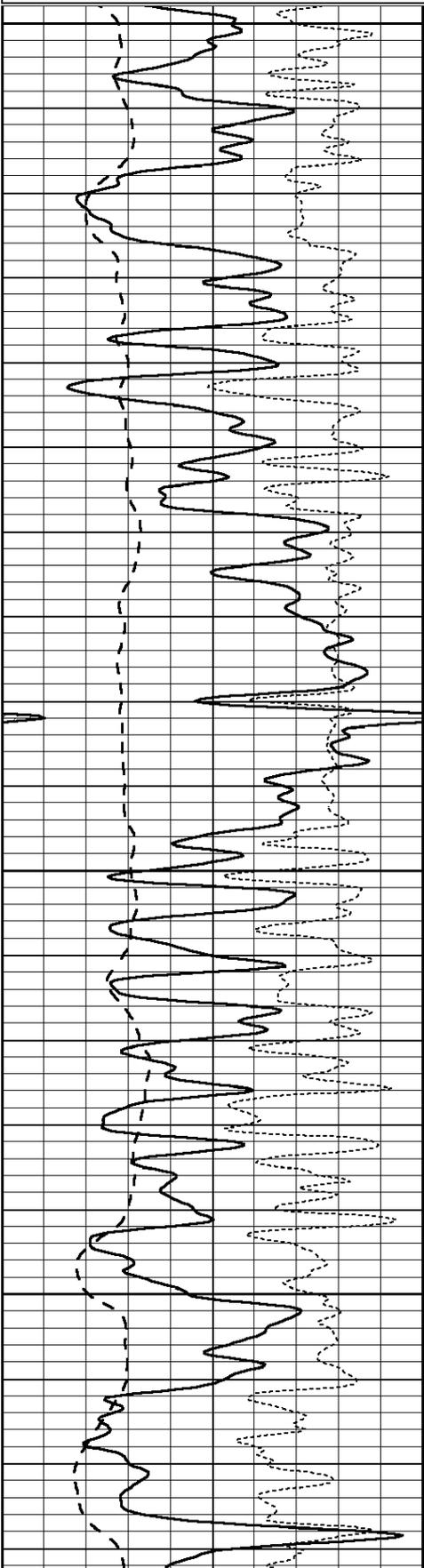
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-100	SP (mV)	100
-250	Rxo/Rt	50

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Dataset Pathname: pass3.2  
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 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

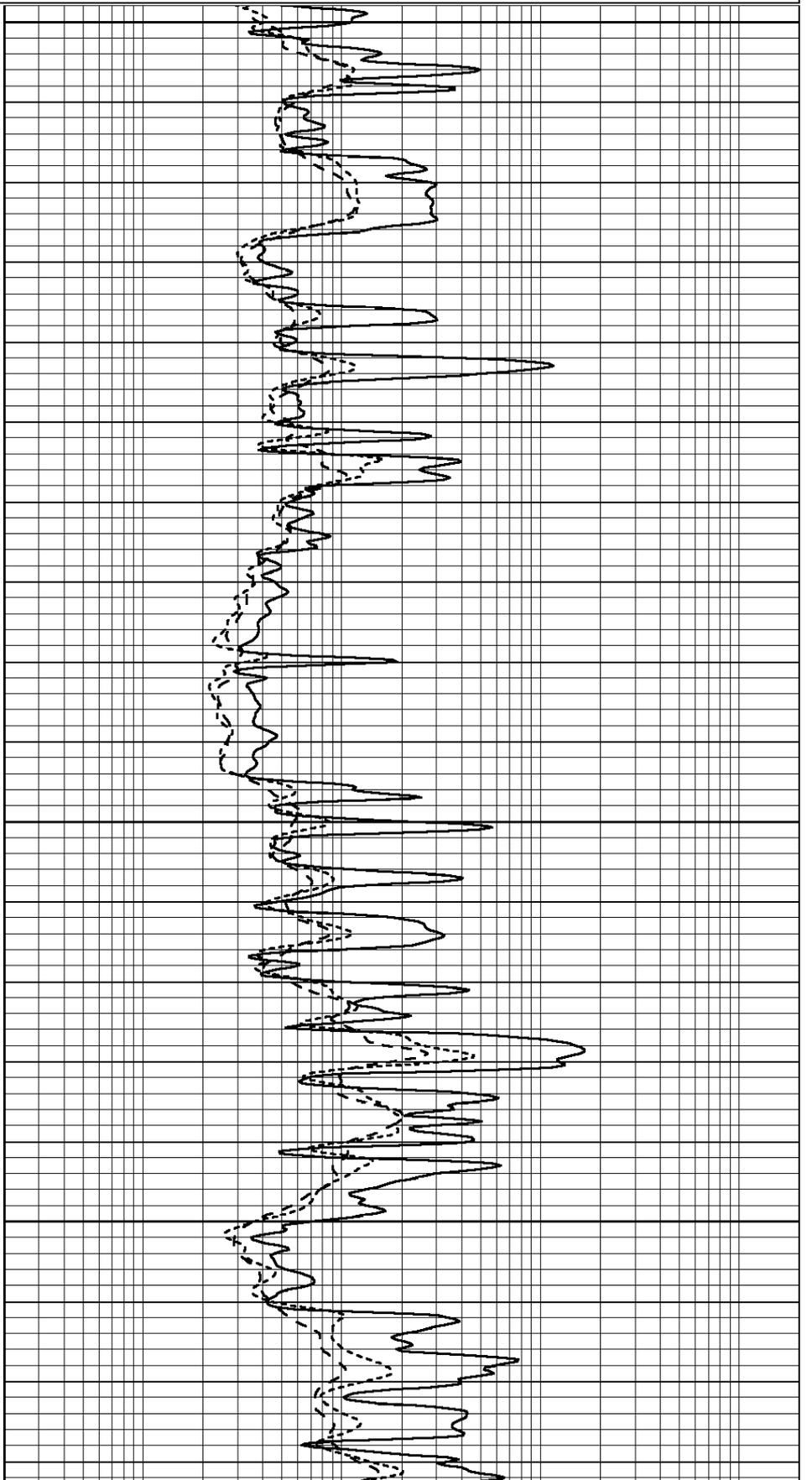


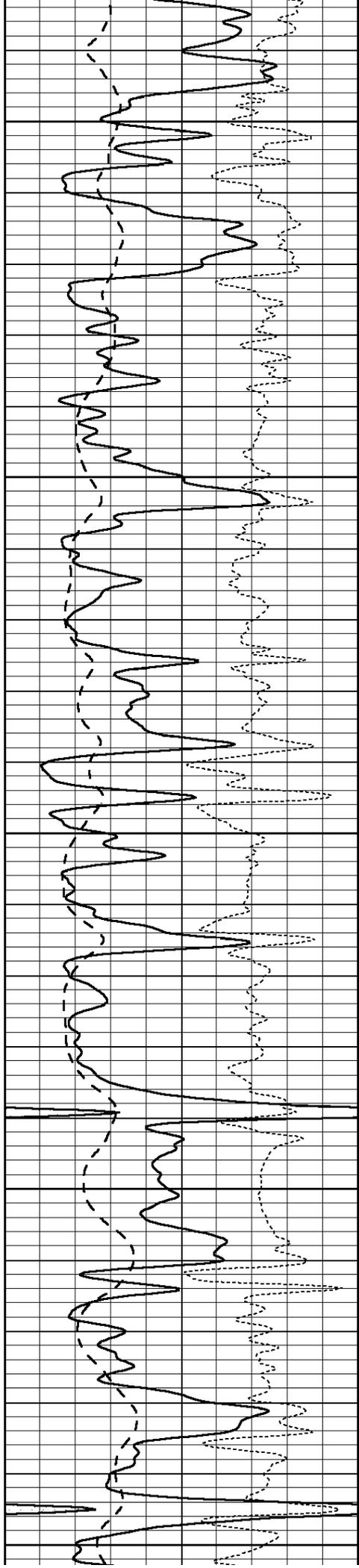
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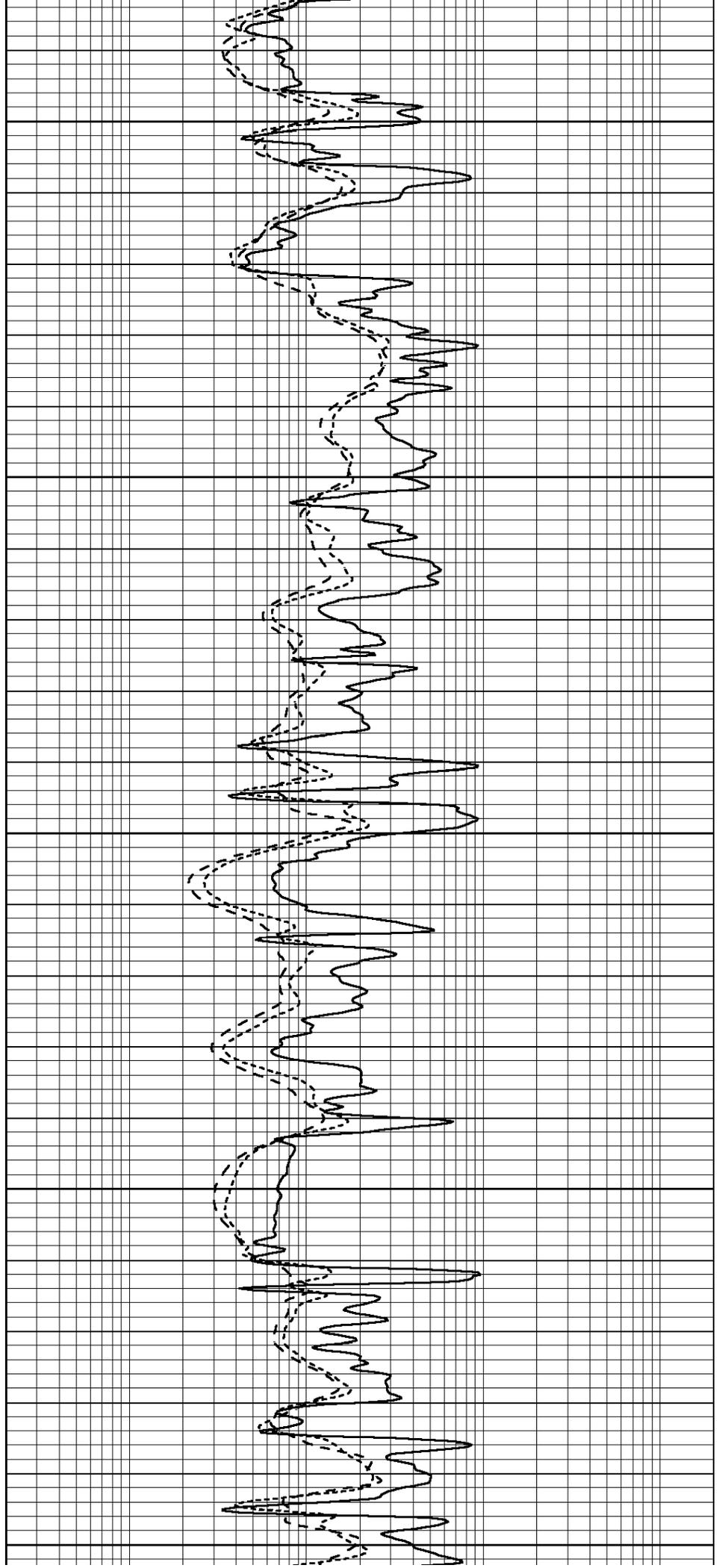
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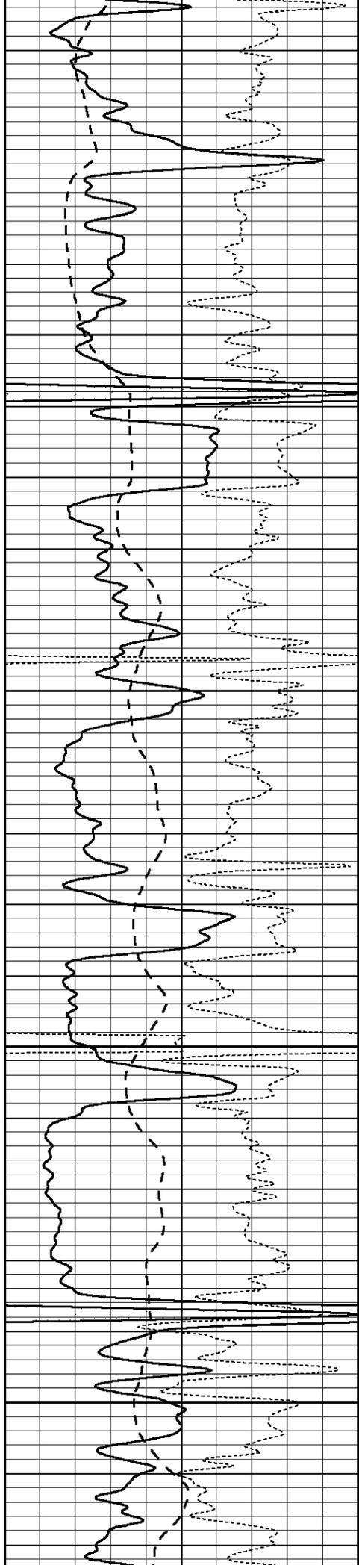
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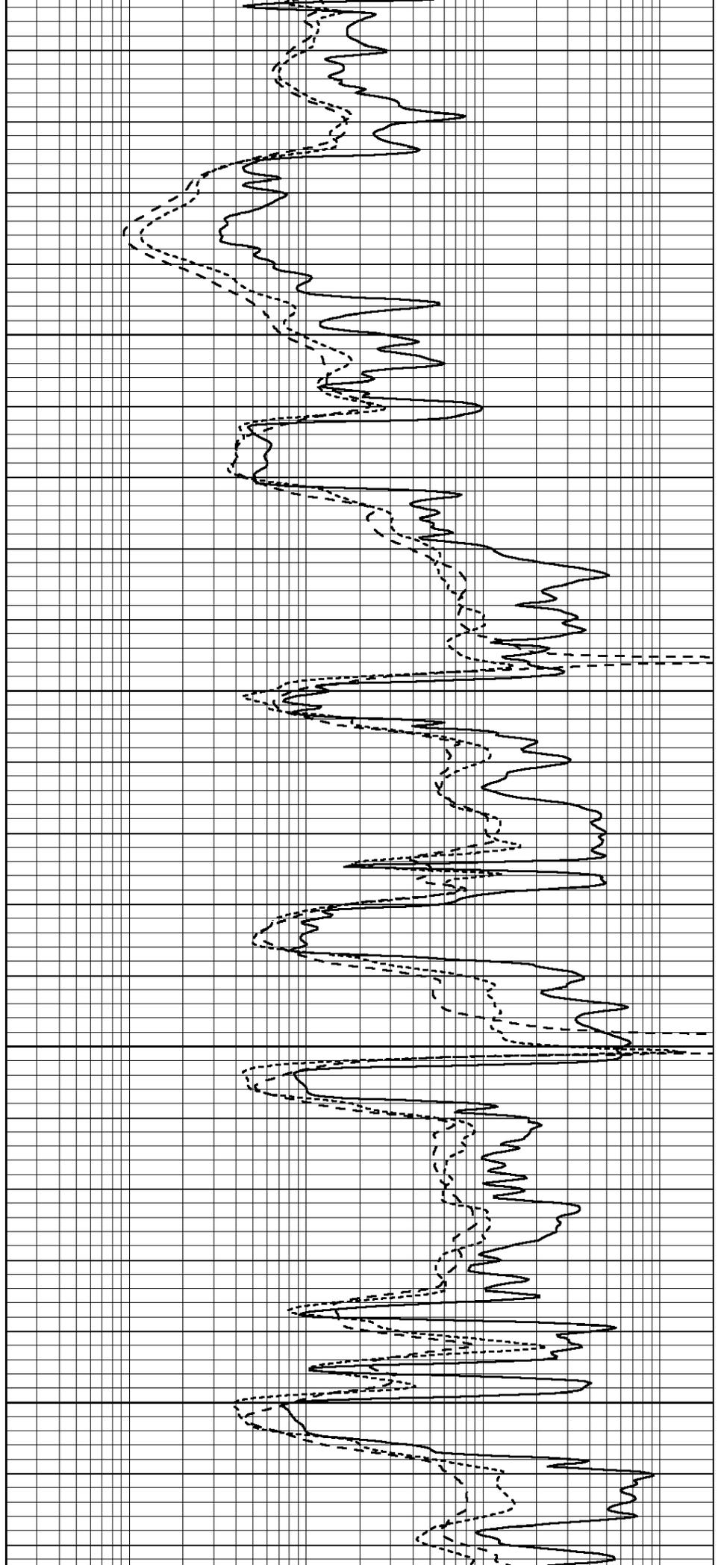


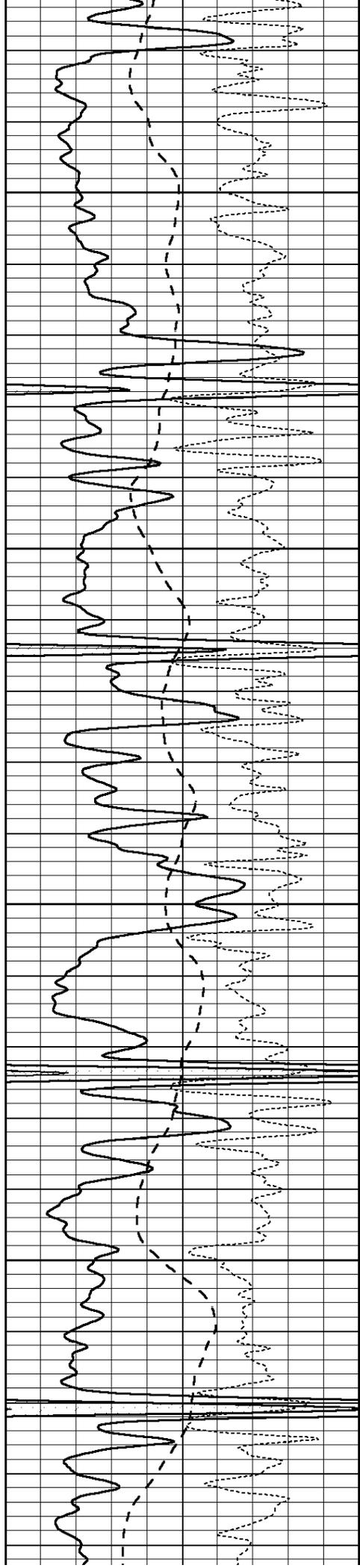
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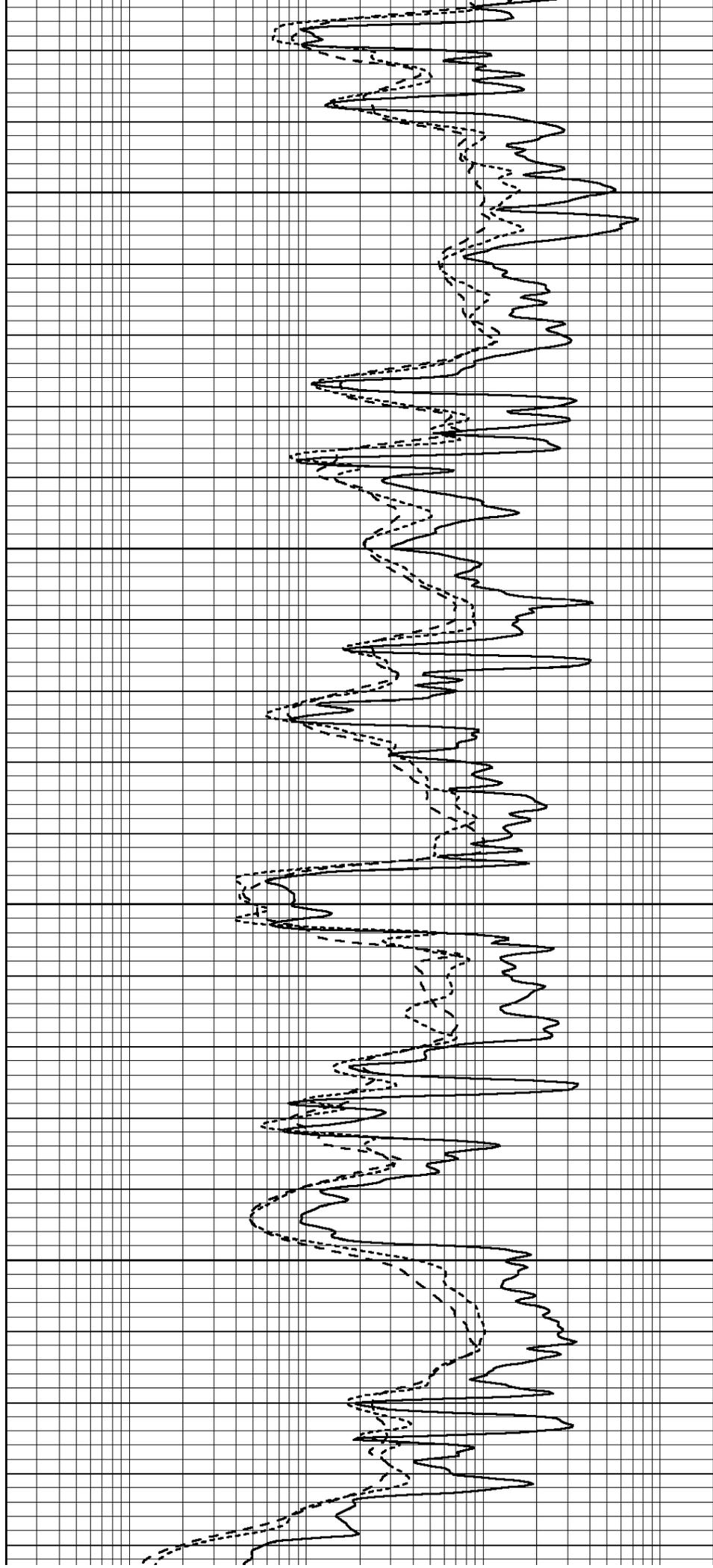


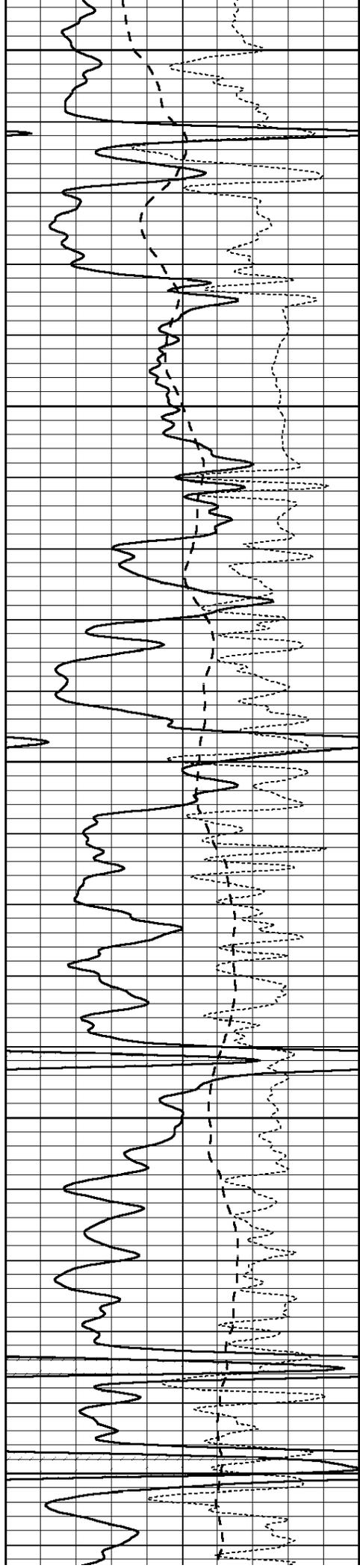
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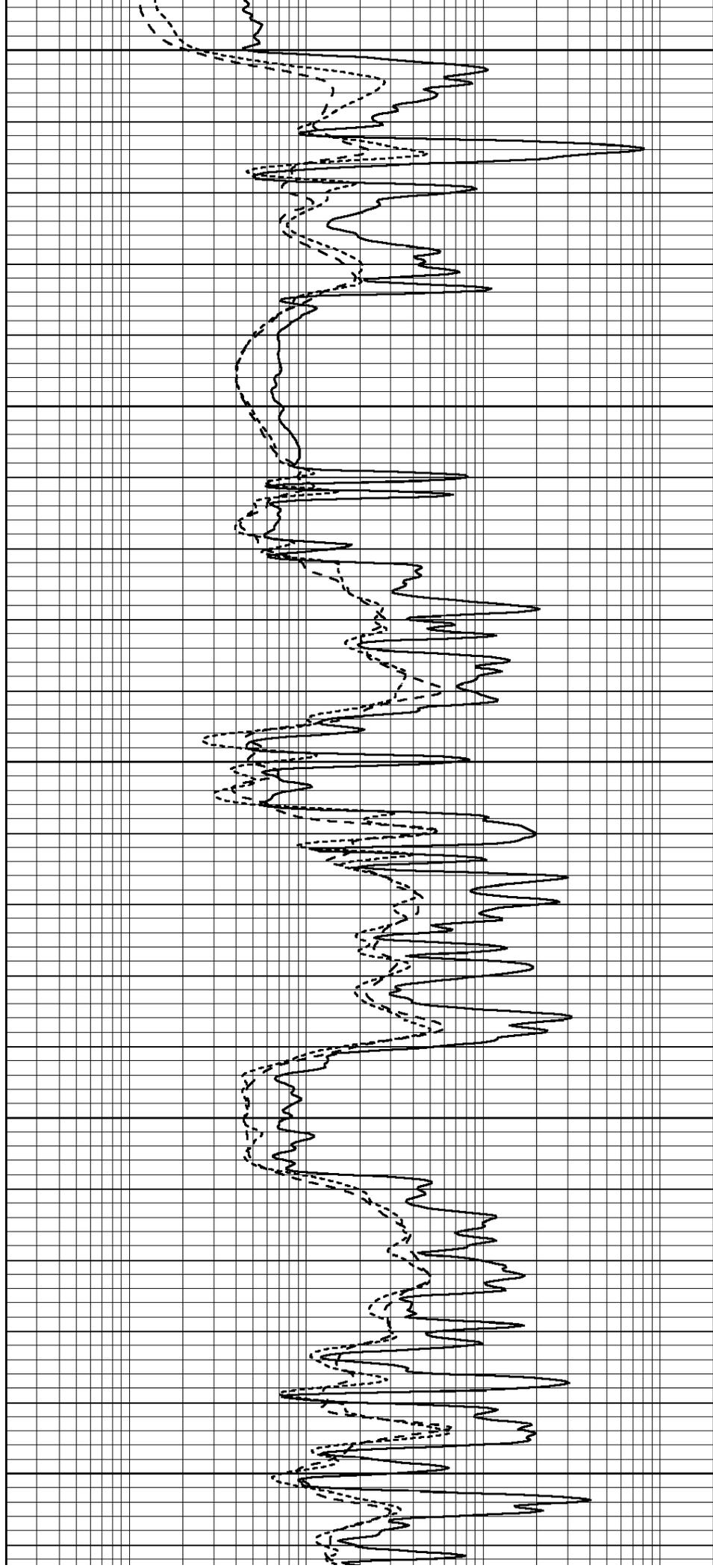
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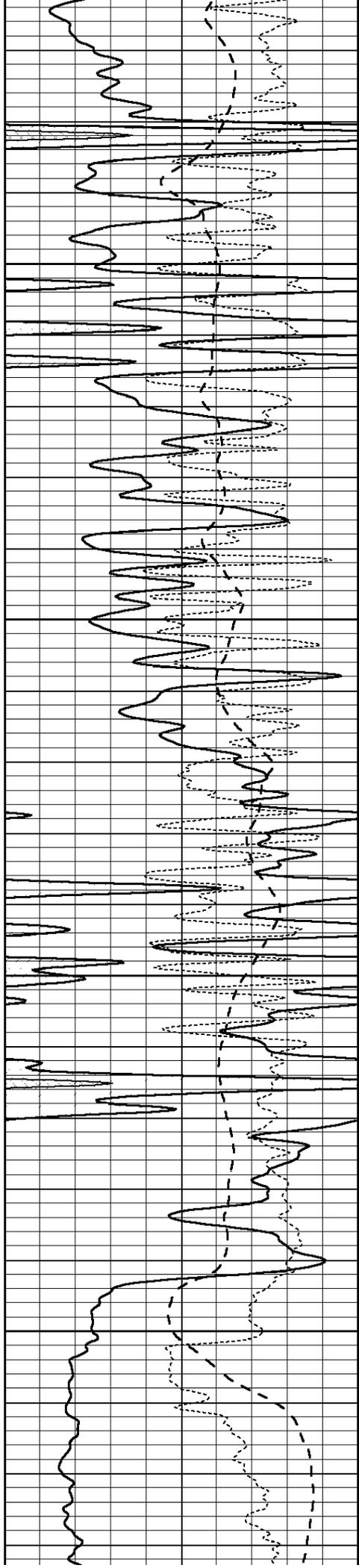
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4400

4450



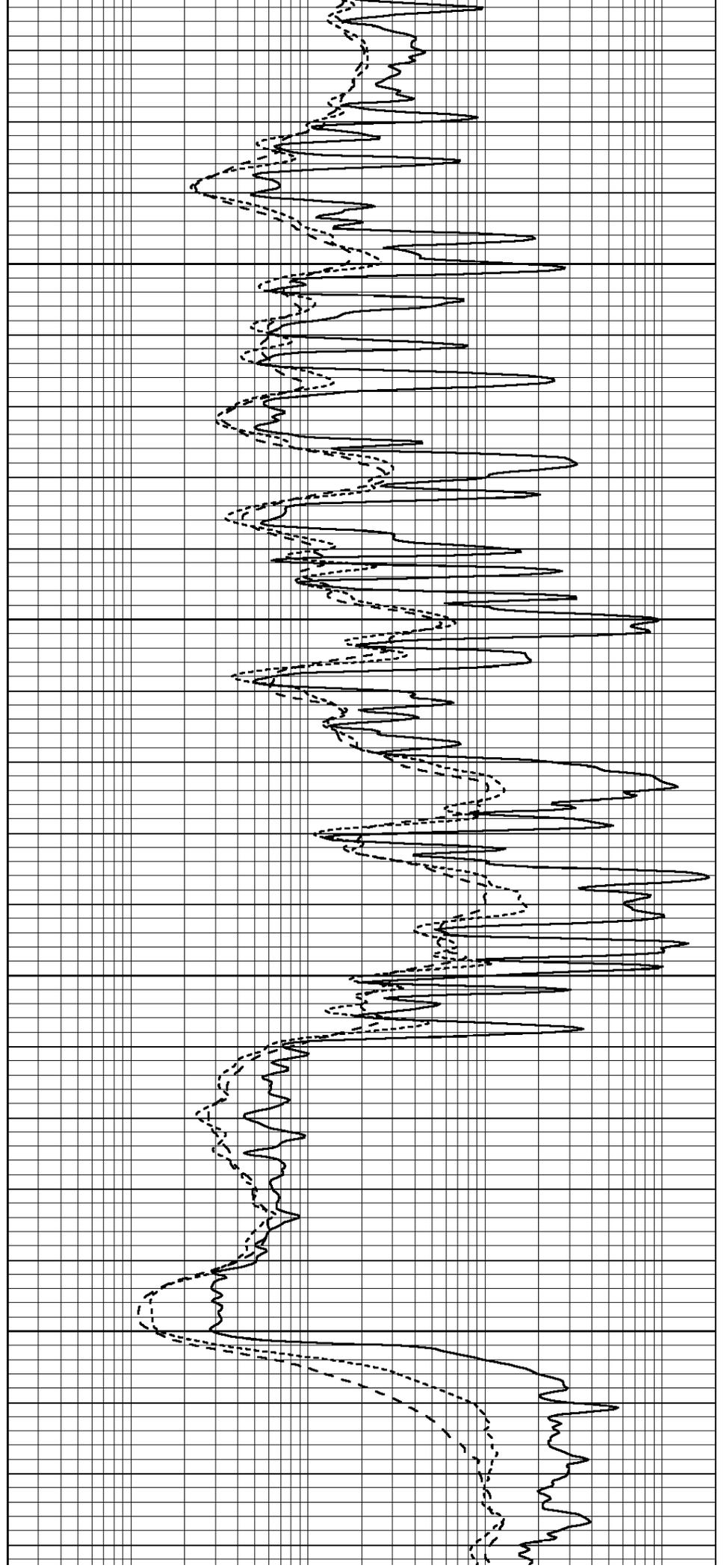


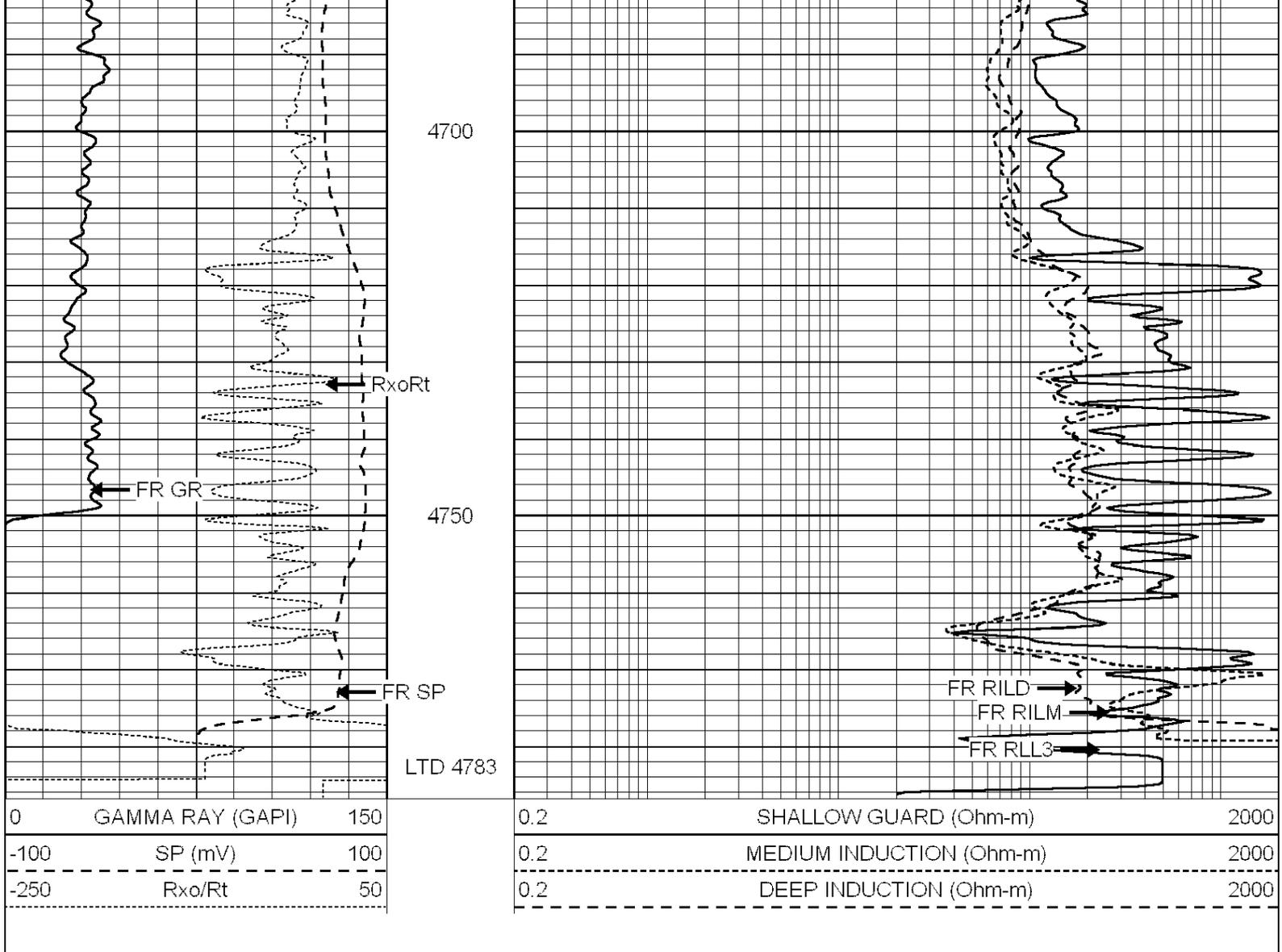
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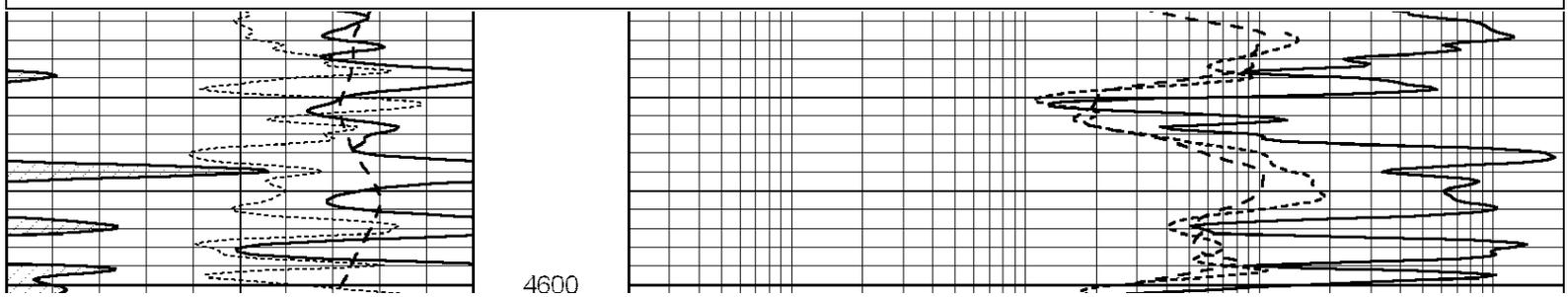
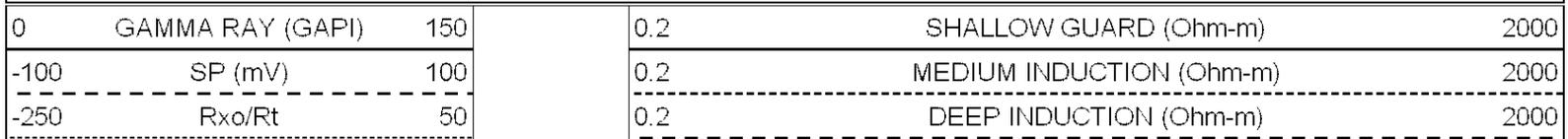
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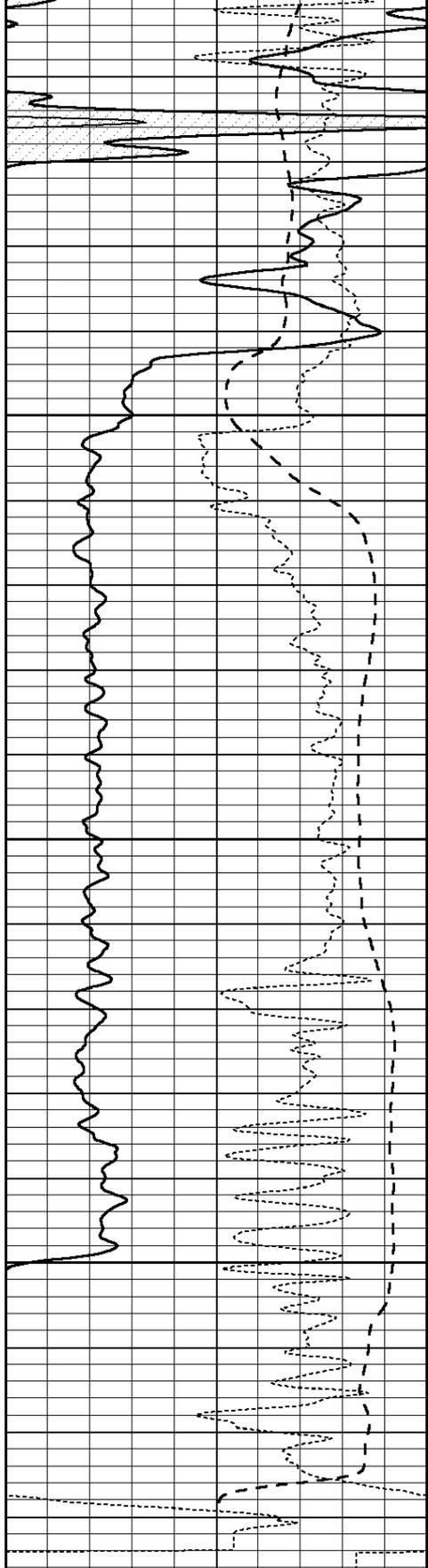




# REPEAT SECTION

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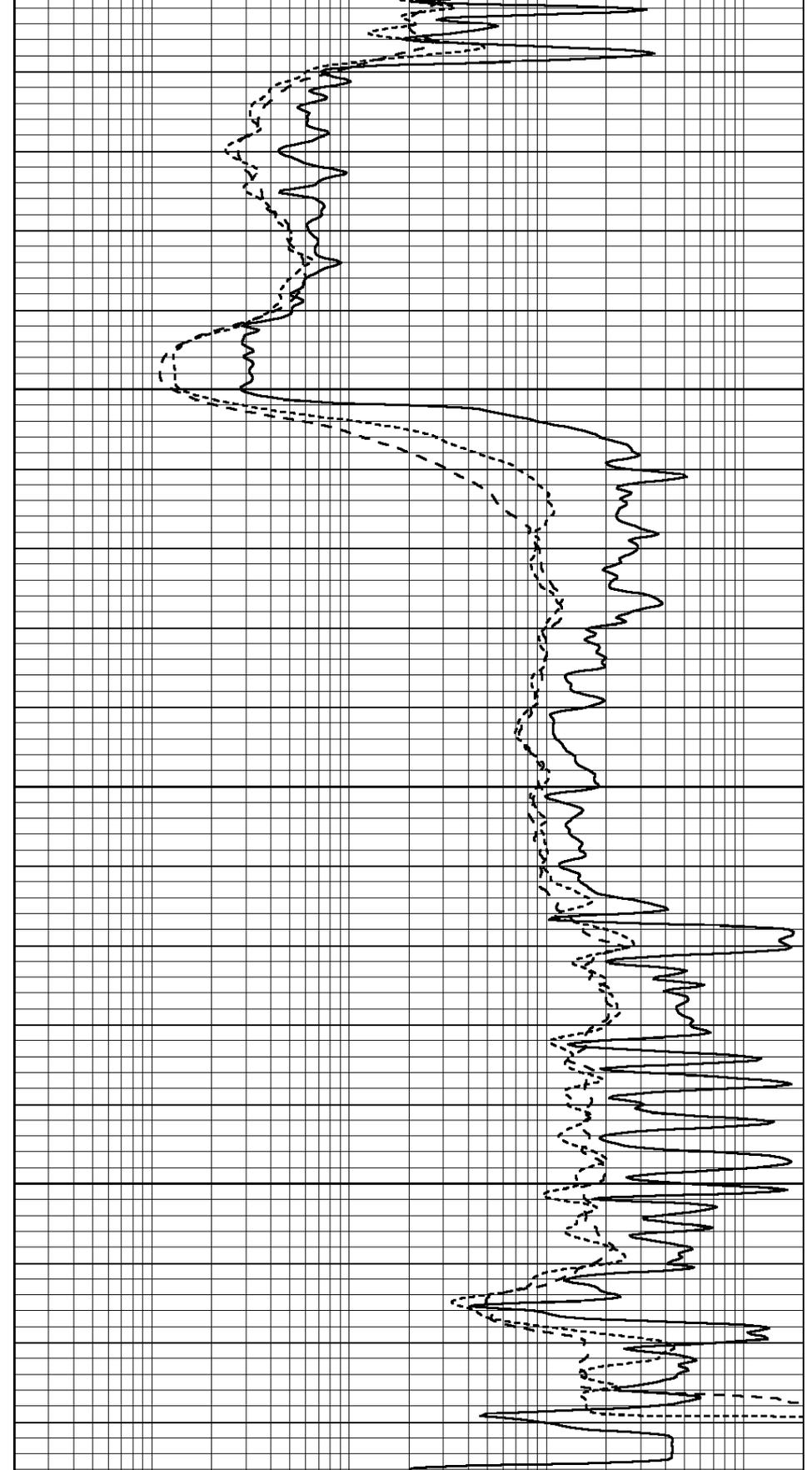


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

4650

4700

4750



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

Calibration Report

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		
		-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	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: GEAR3-GEARHART  
 Source / Verifier: 143 / 143  
 Master Calibration Performed: Fri Jan 04 15:48:16 2013

Master Calibration

	Density		Far Detector	Near Detector	cps
		g/cc			
Magnesium	1.710	g/cc	935.36	501.55	cps
Aluminum	2.580	g/cc	209.32	357.01	cps
Spine Angle = 77.21			Density/Spine Ratio = 0.567		
	Size		Reading		
Small Ring	8.00	in	4.29	V	
Large Ring	14.00	in	6.24	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 May 29 06:02:23 2014	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.7535	GAPI/cps