



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		MULL DRILLING COMPANY, INC.	
Well	BENSON #1-4		
Field	McDONALD		
County	NESS	State	KANSAS
Location:		API # : 15-135-25482-0000 1500' FNL & 2300' FEL NE NW SW NE	
Permanent Datum Log Measured From Drilling Measured From		GROUND LEVEL Elevation 2333 KELLY BUSHING 9' A.G.L. KELLY BUSHING	
SEC 4 TWP 19S RGE 24W		Other Services CDL/CNL/PE MEL	
Date	11/10/12		
Run Number	ONE		
Depth Driller	4500		
Depth Logger	4504		
Bottom Logged Interval	4502		
Top Log Interval	00		
Casing Driller	8 5/8" @ 222		
Casing Logger	228		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.0/7.4	CHLORIDES 5200 PPM	
pH / Fluid Loss	10.5/8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.85 @ 83F		
Rmf @ Meas. Temp	.63 @ 83F		
Rmc @ Meas. Temp	1.02 @ 83F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	.58 @ 120F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	120F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	MACKLIN 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 SUPERIOR WELL SERVICE (785) 628-6395
 DIRECTIONS
 NESS CITY, KS. - 5 W. TO RD. N - 1 S. - E. & S. INTO

Database File:

010126pe.db

Dataset Pathname:

pass3.3

Presentation Format:

_dil2

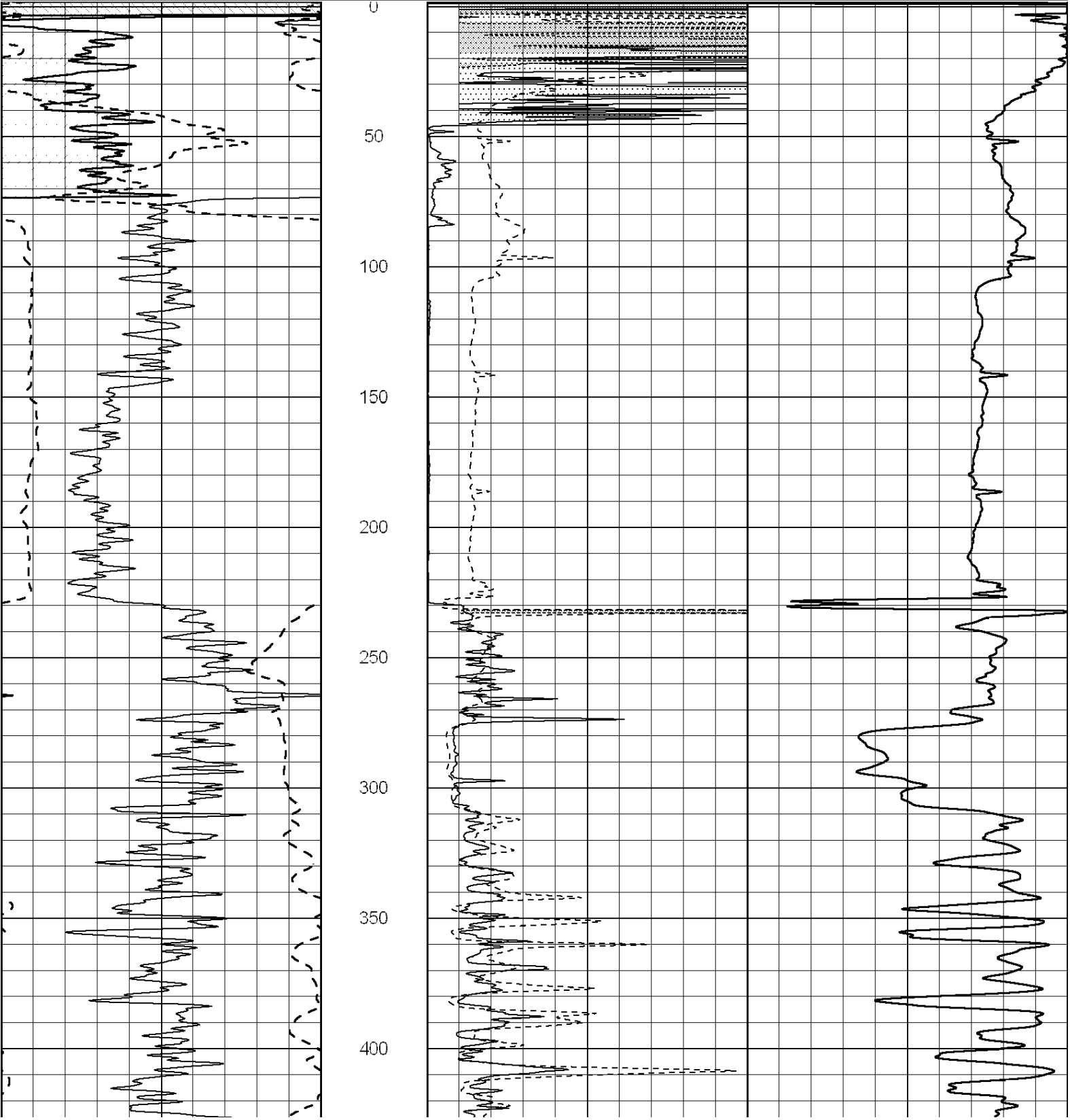
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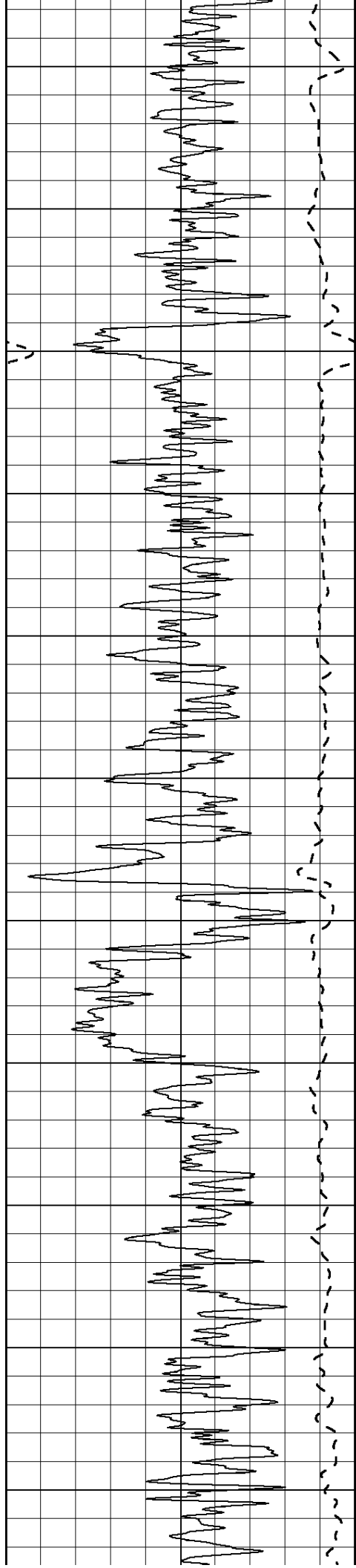
Sat Nov 10 21:20:26 2012 by Calc Open-Cased 090629

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50
-100	SP (mV)	100	0	Deep Induction (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

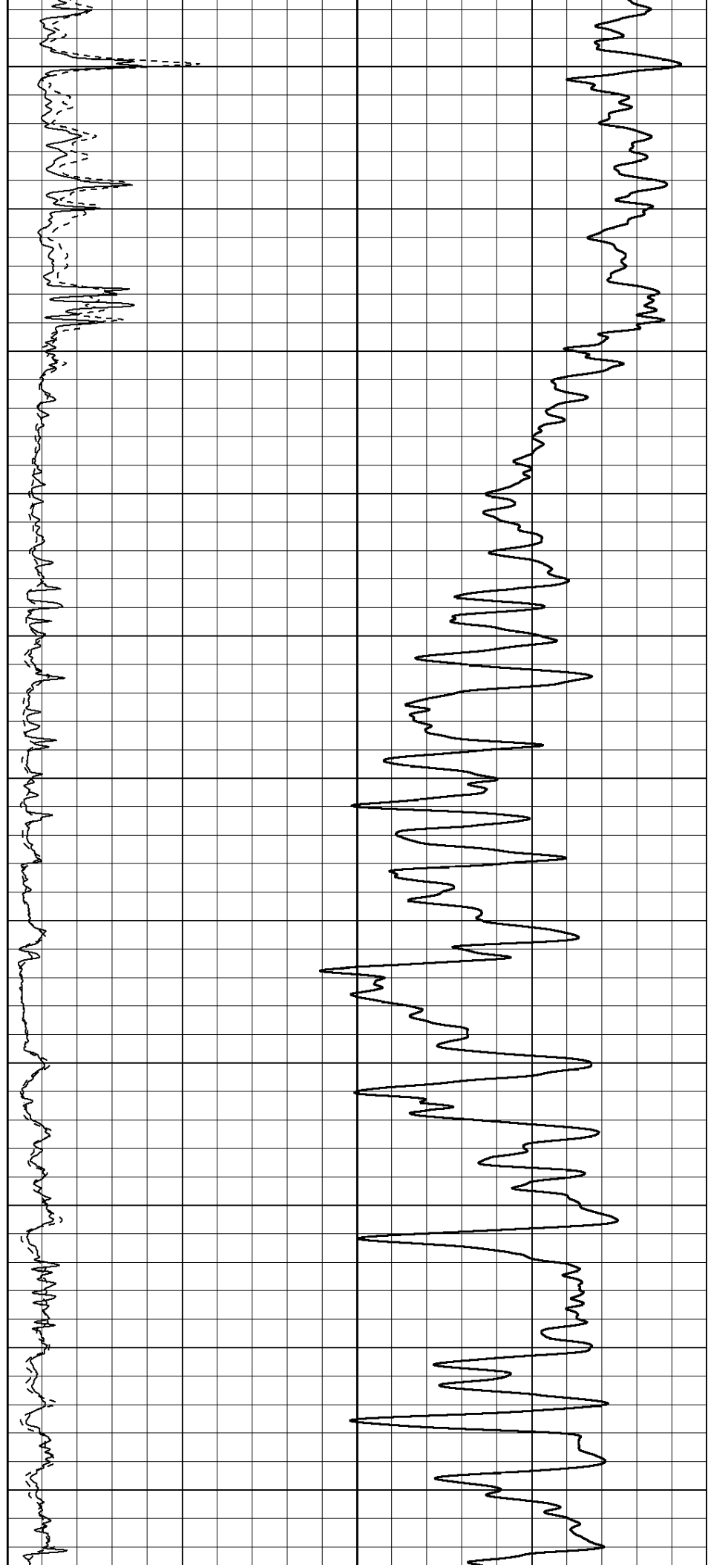
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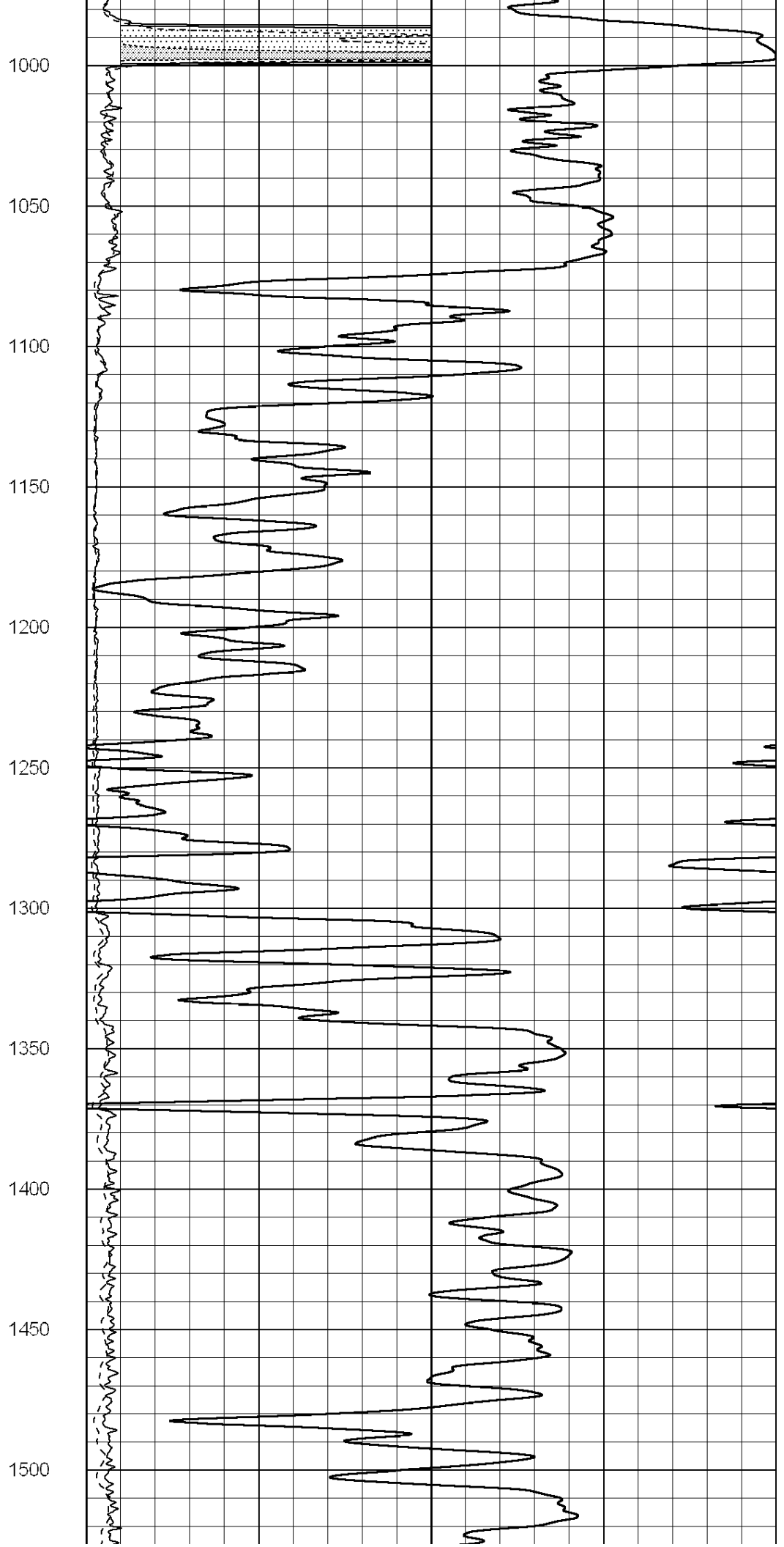
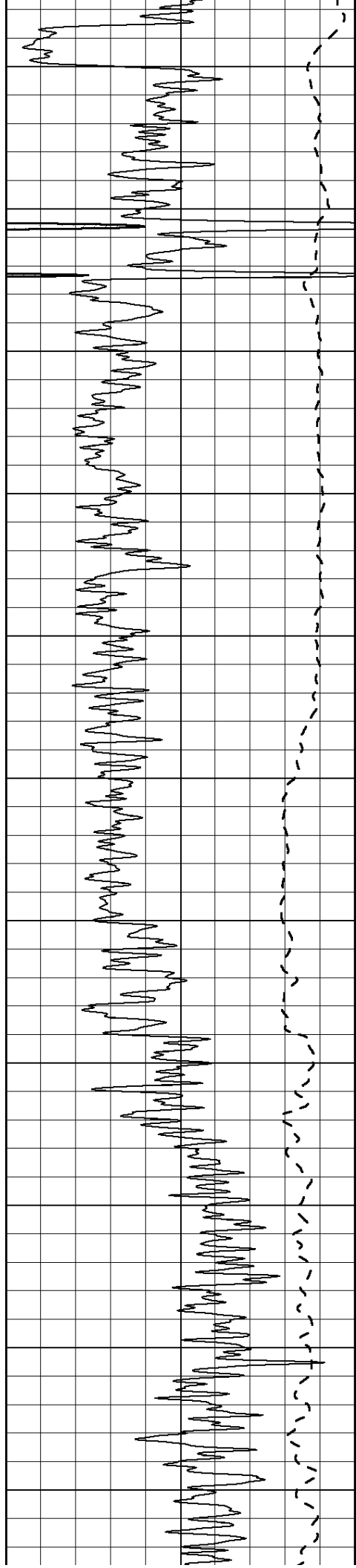
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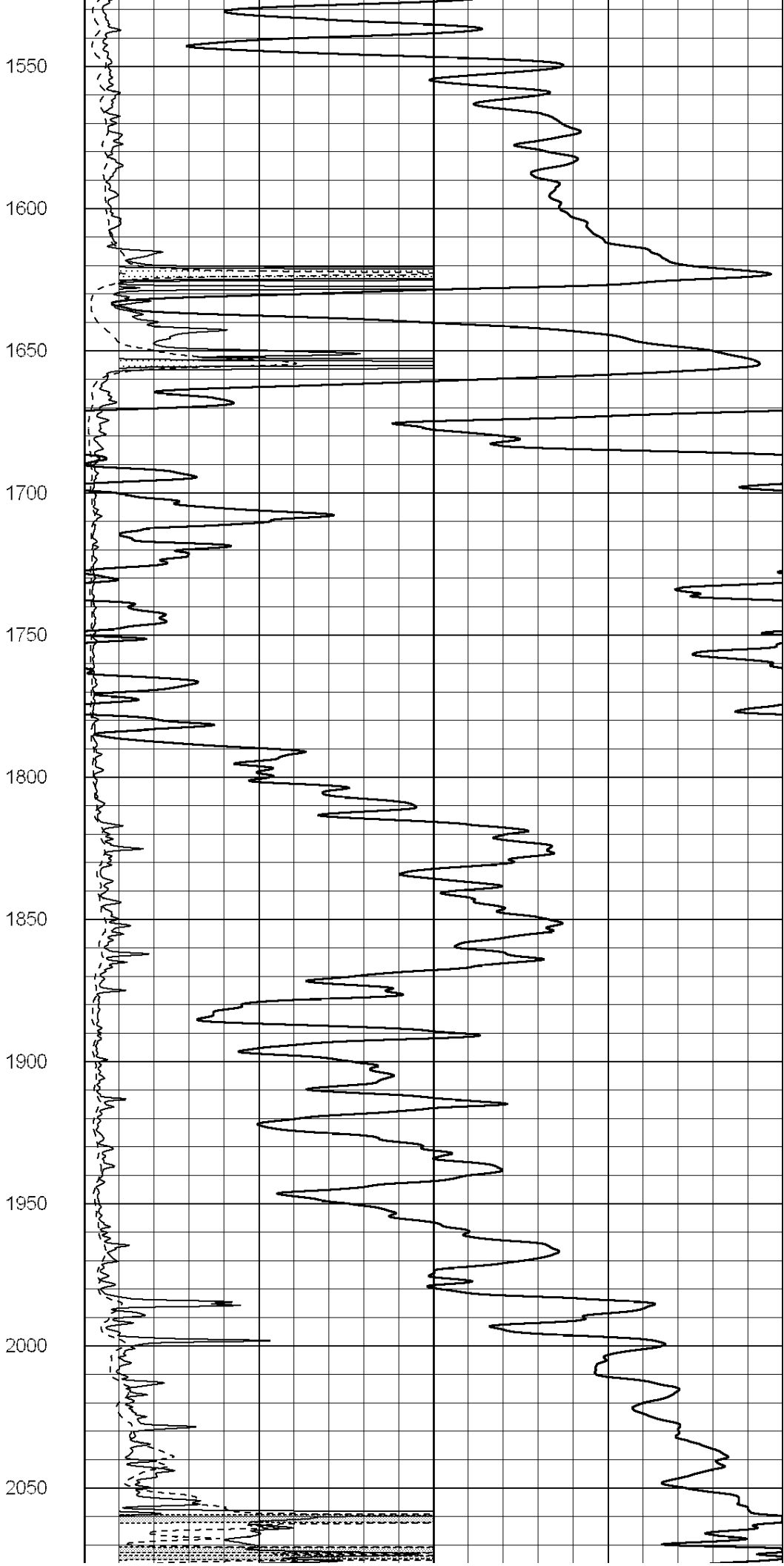
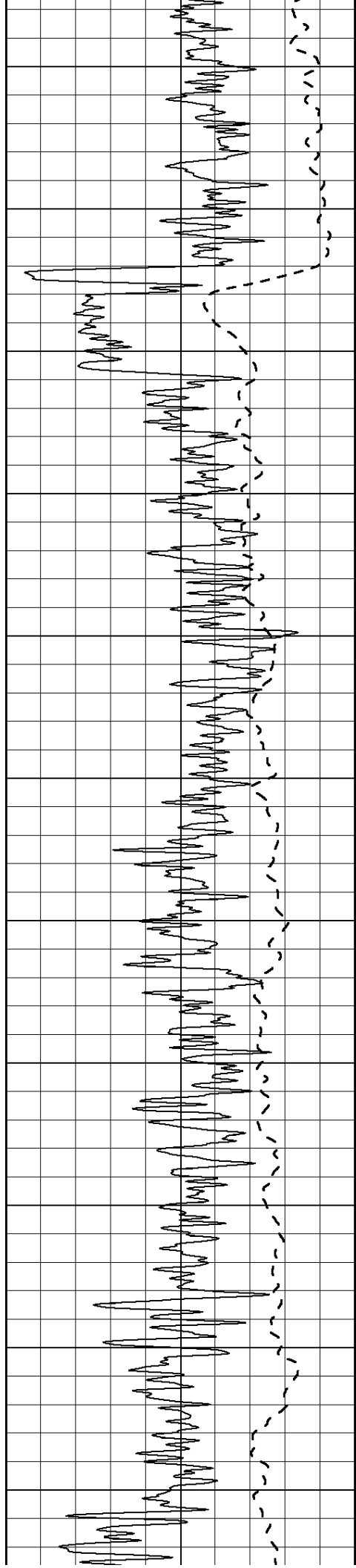
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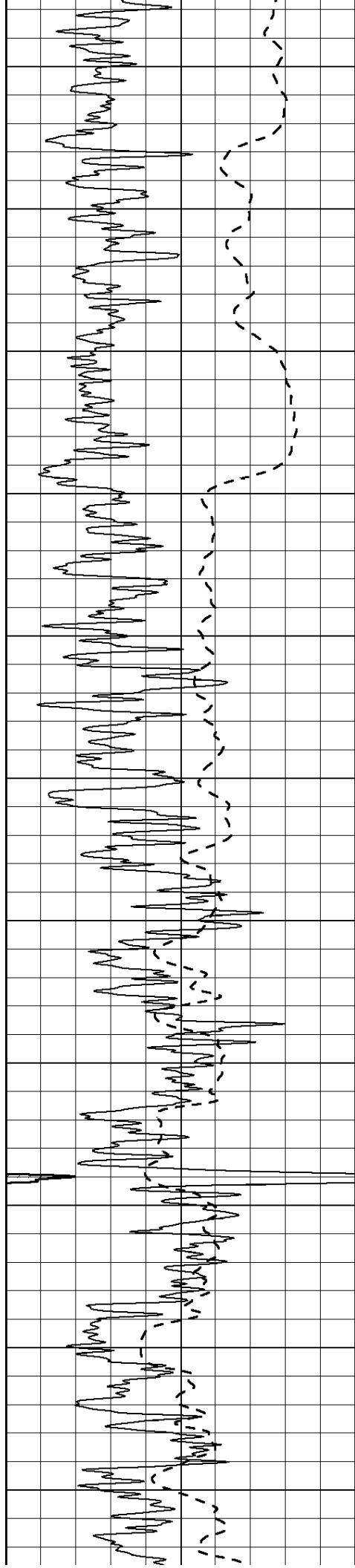
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950









2100

2150

2200

2250

2300

2350

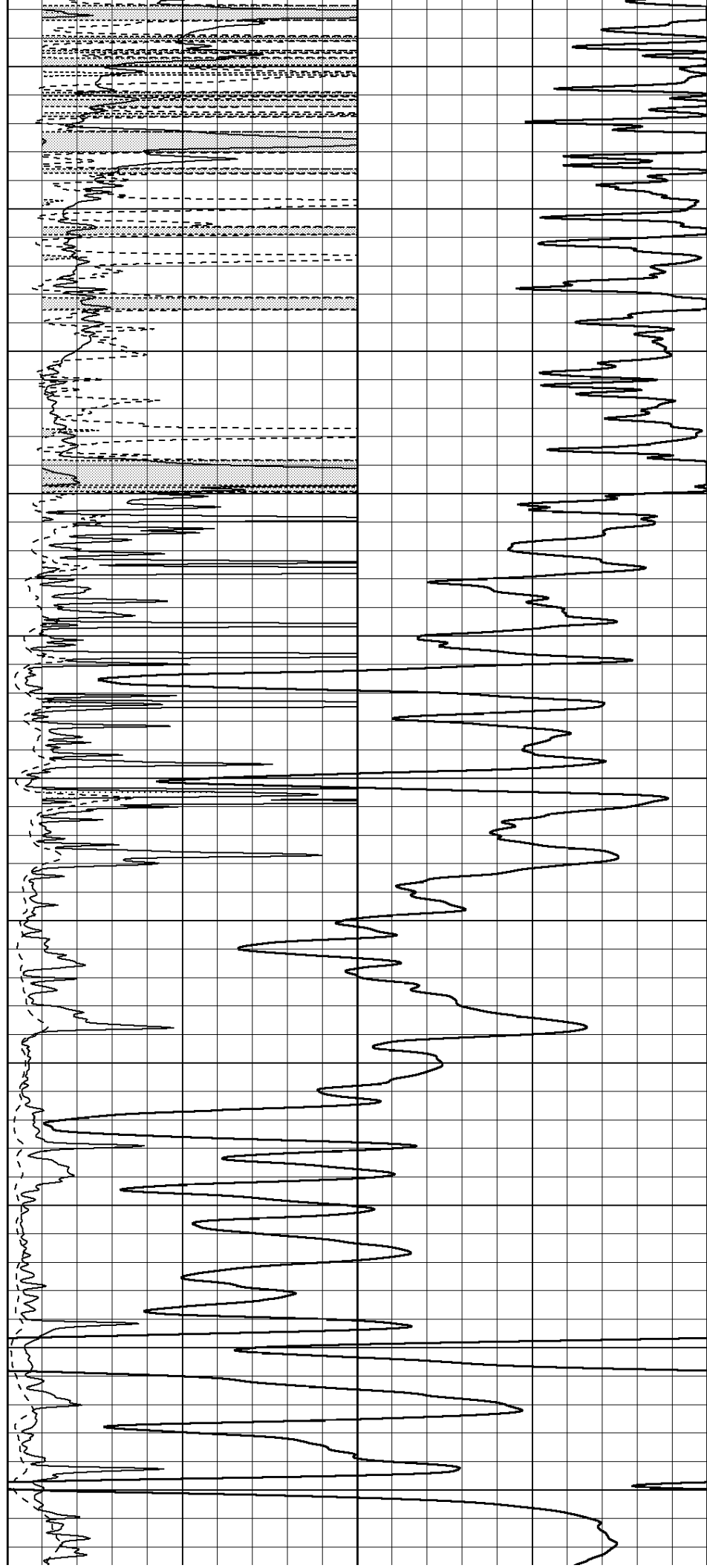
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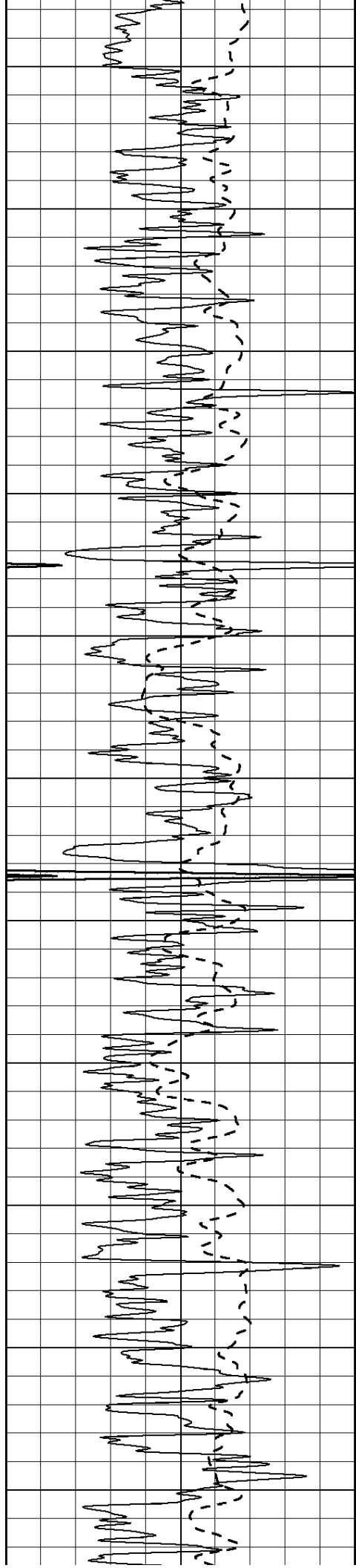
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2500

2550

2600





2650

2700

2750

2800

2850

2900

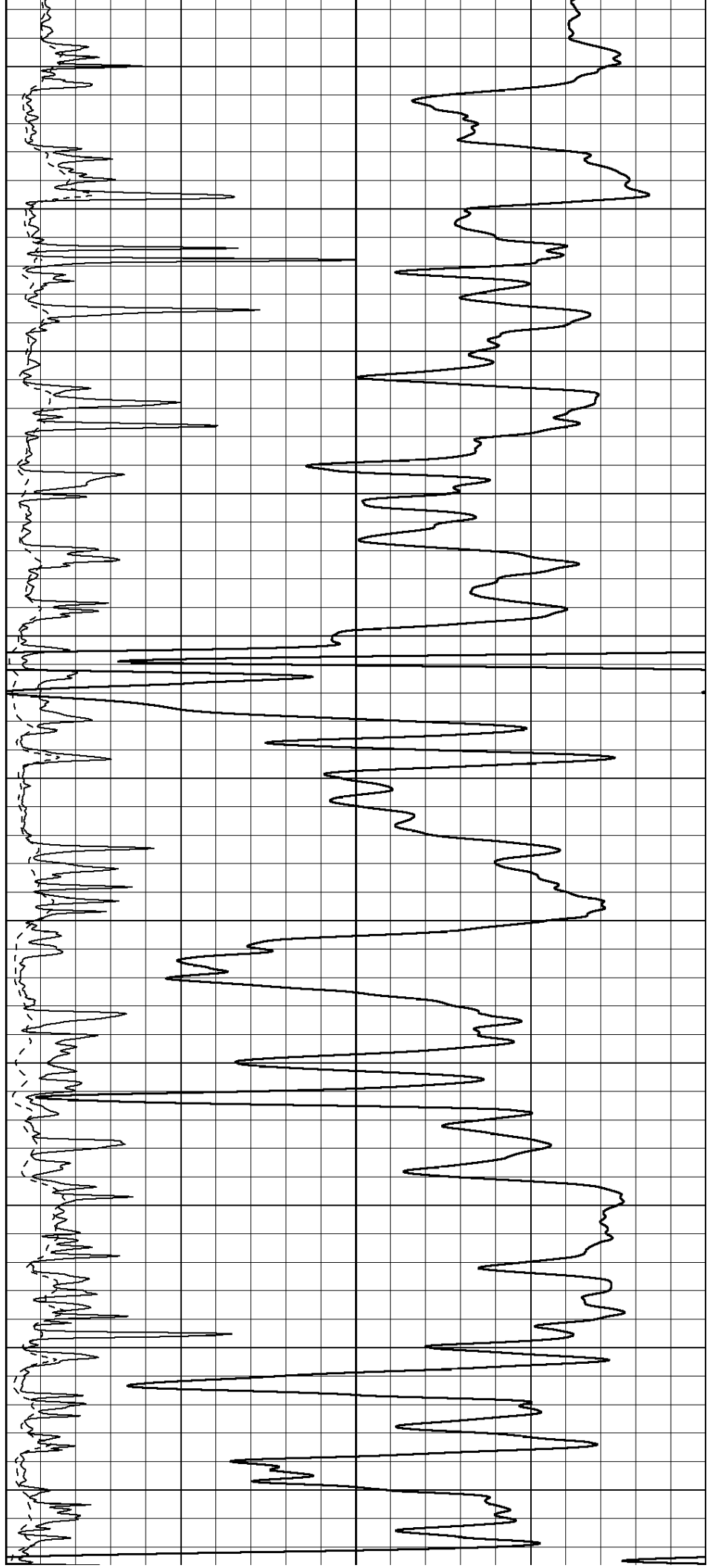
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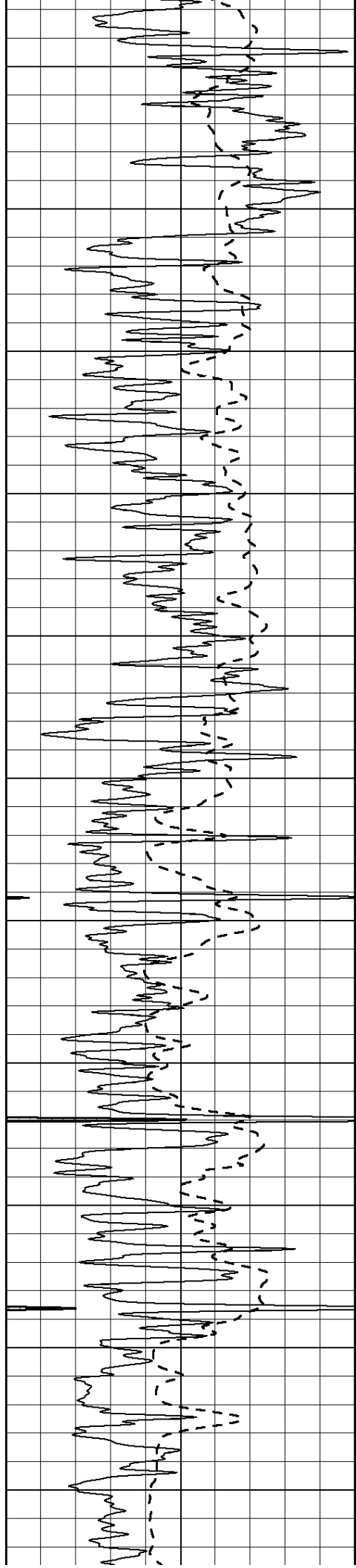
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3050

3100

3150





3200

3250

3300

3350

3400

3450

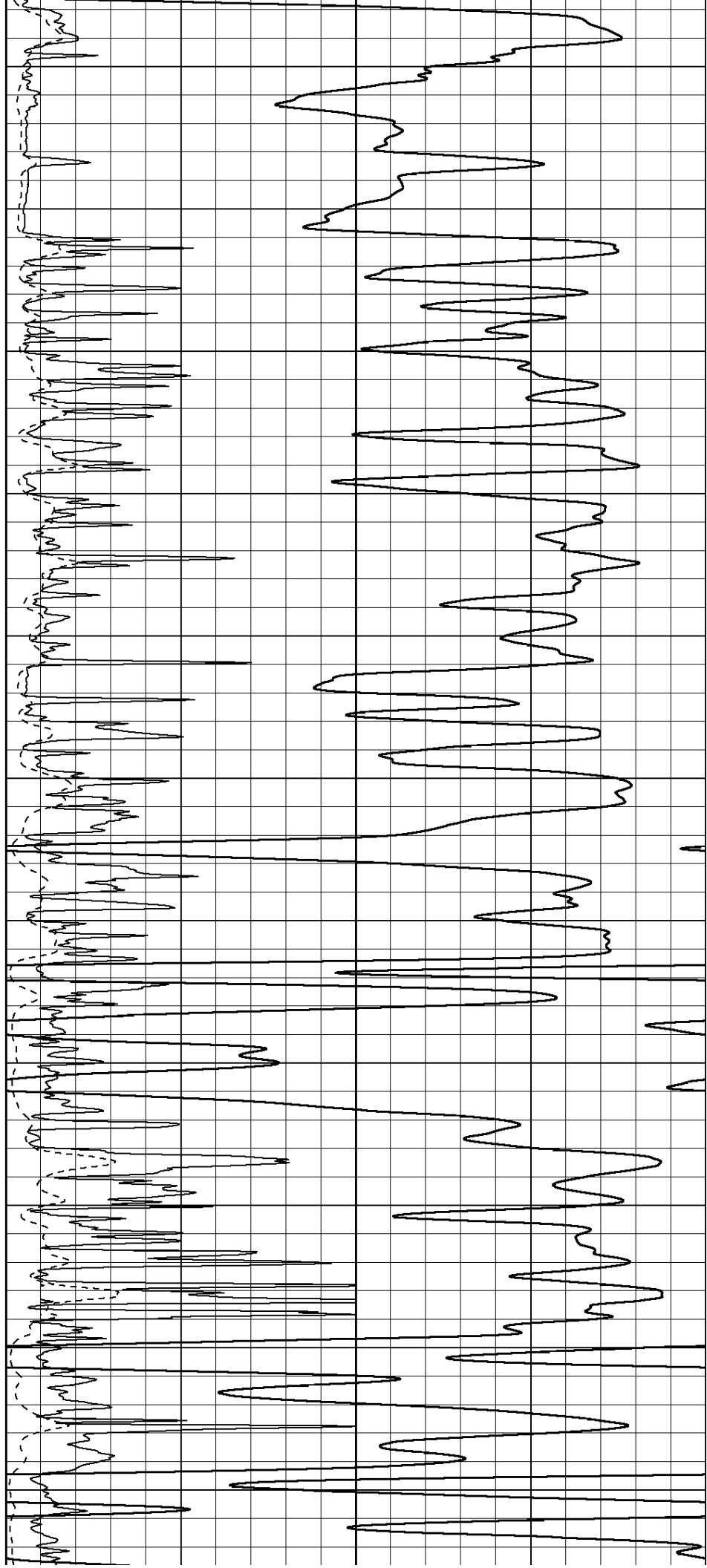
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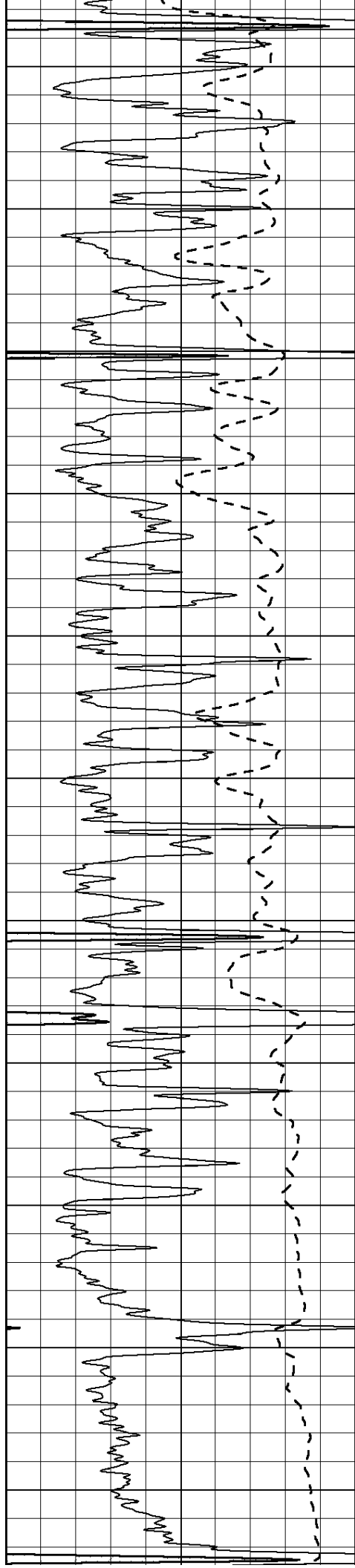
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3600

3650

3700





3750

3800

3850

3900

3950

4000

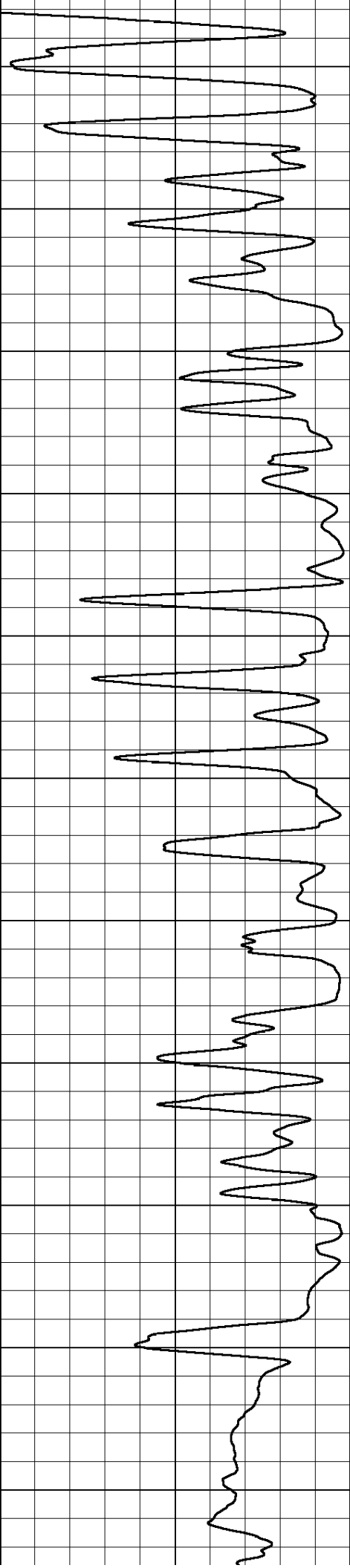
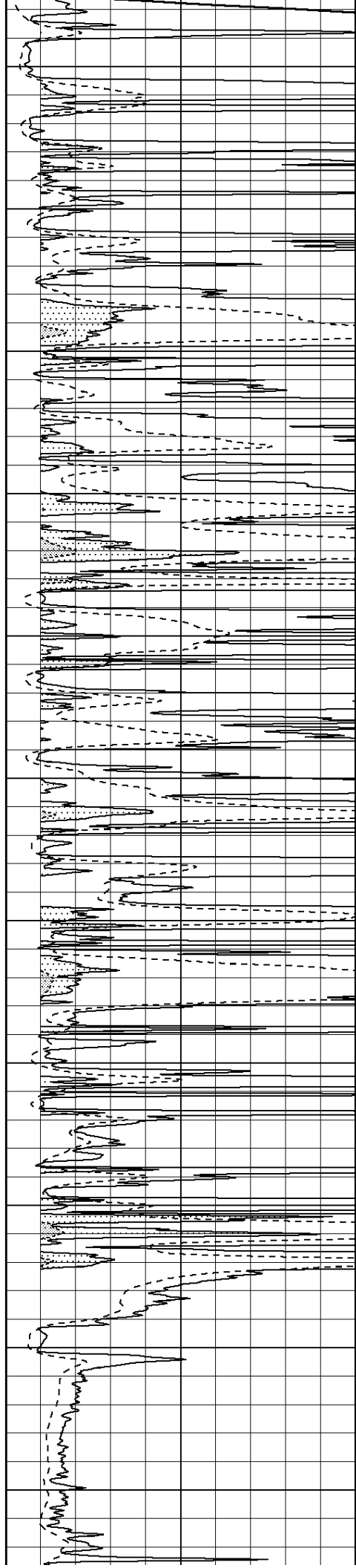
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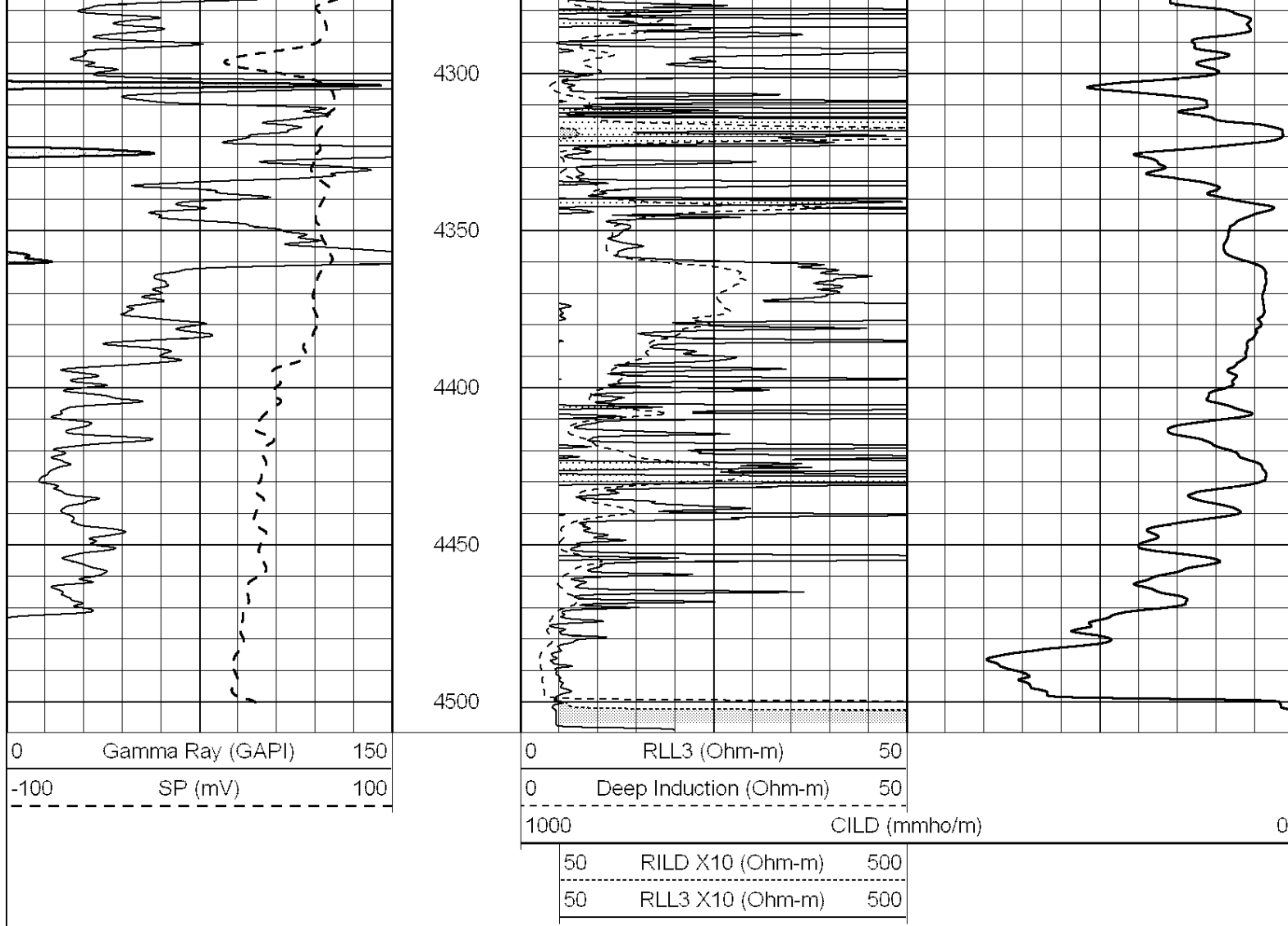
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4150

4200

4250



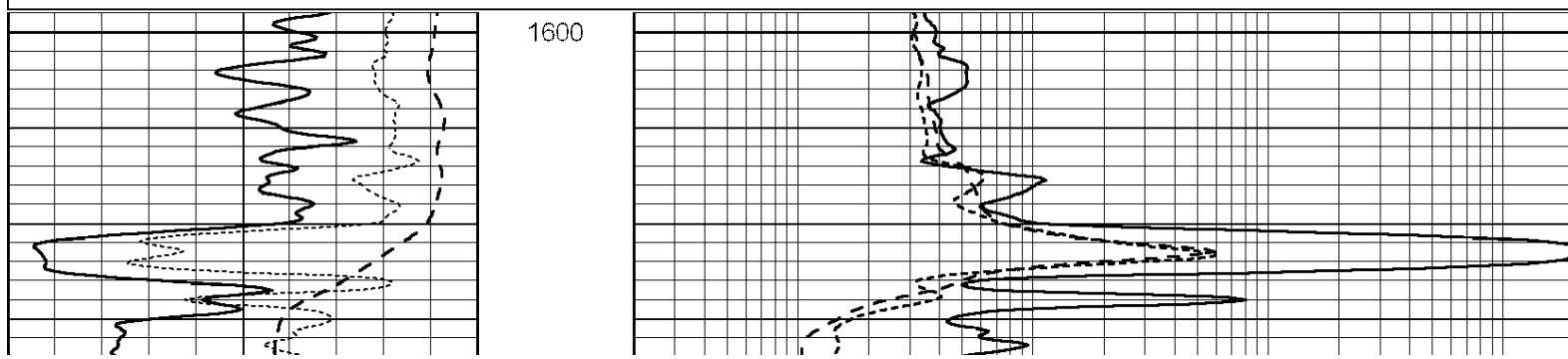


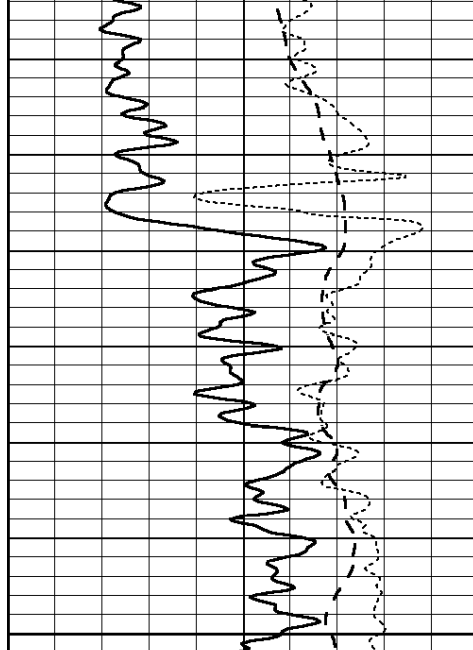
NABORS
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 SERVICES CO.**

ANHYDRITE

Database File: 010126pe.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Sat Nov 10 20:45:53 2012 by Calc Open-Cased 090629
 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	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

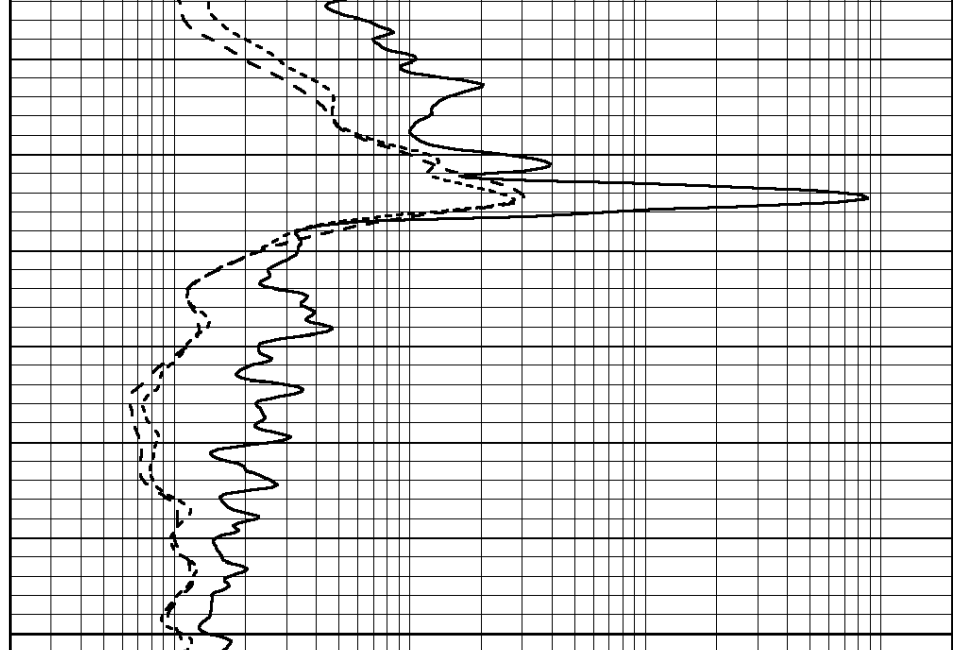




1650

1700

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

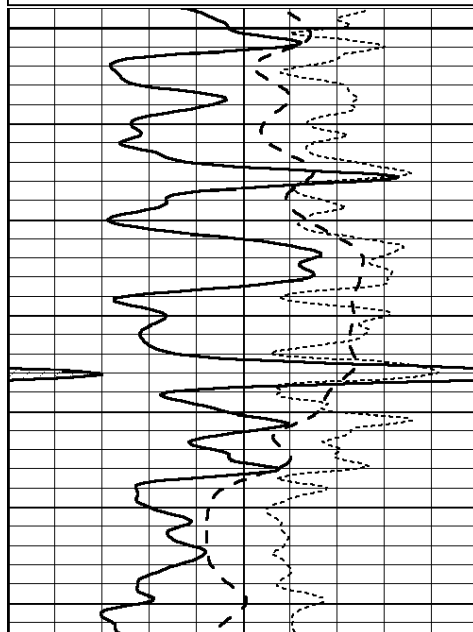


MAIN SECTION

Database File: 010126pe.db
Dataset Pathname: pass3.1
Presentation Format: _dil
Dataset Creation: Sat Nov 10 20:26:28 2012 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

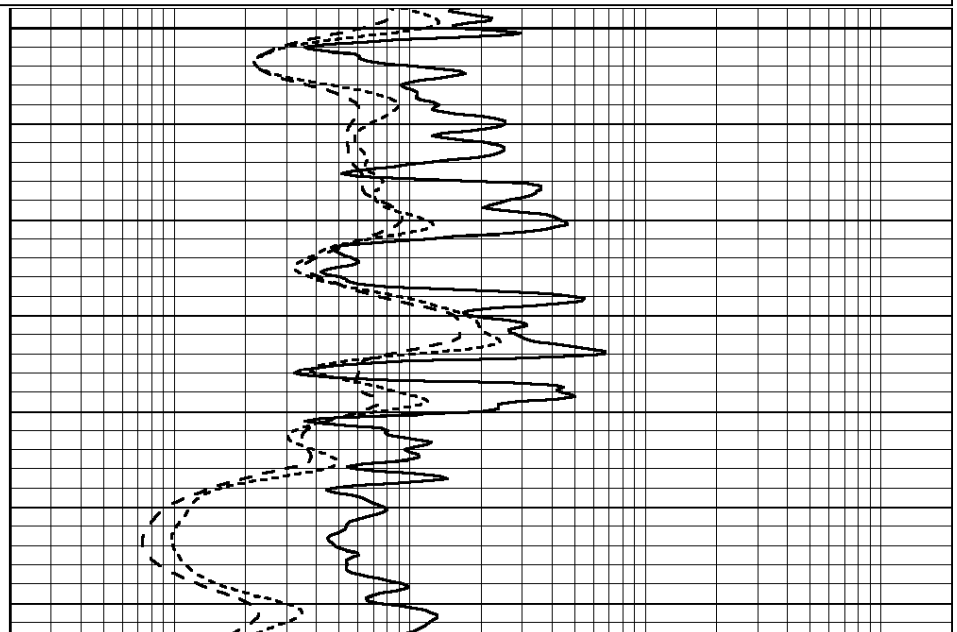
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-100	SP (mV)	100
-250	Rxo/Rt	50

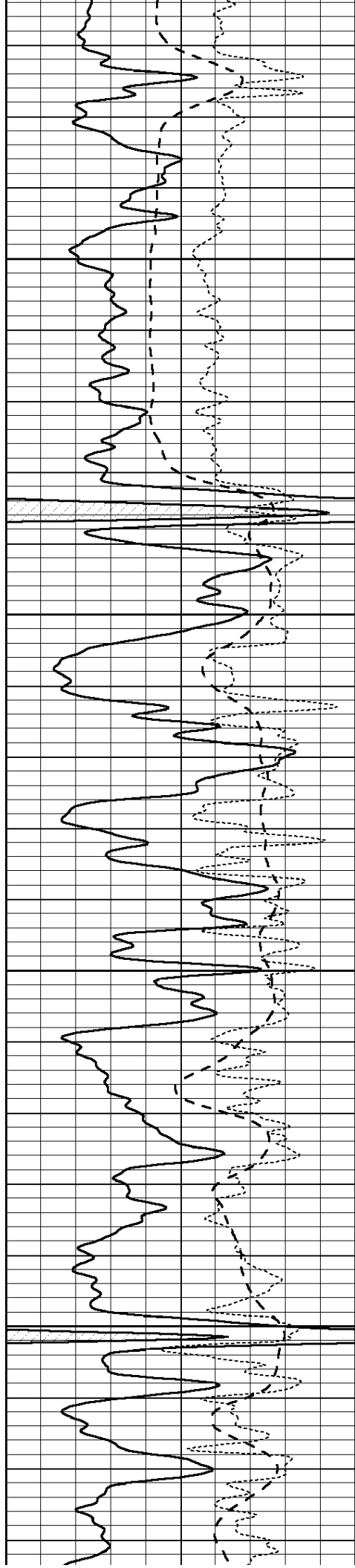
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



3600

3650



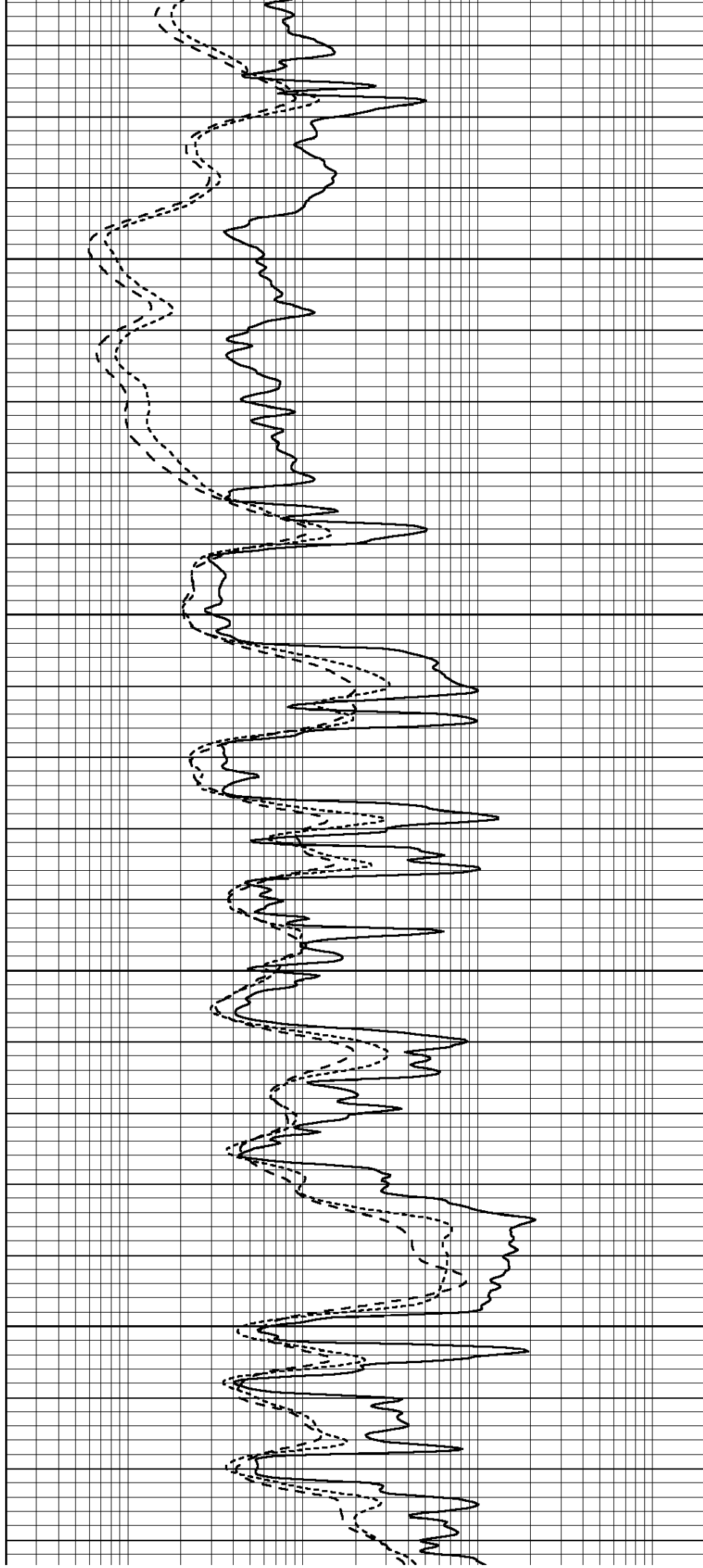


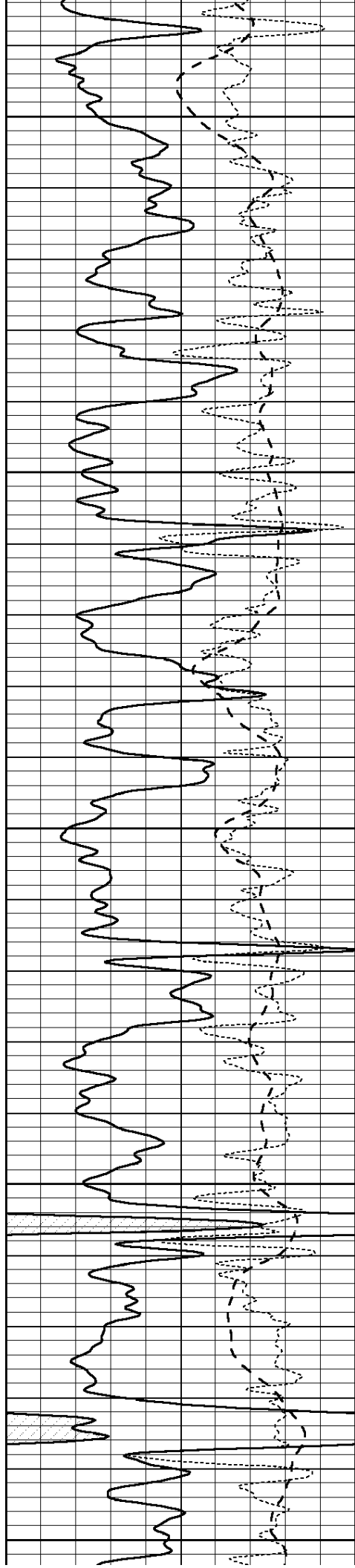
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3750

3800

3850





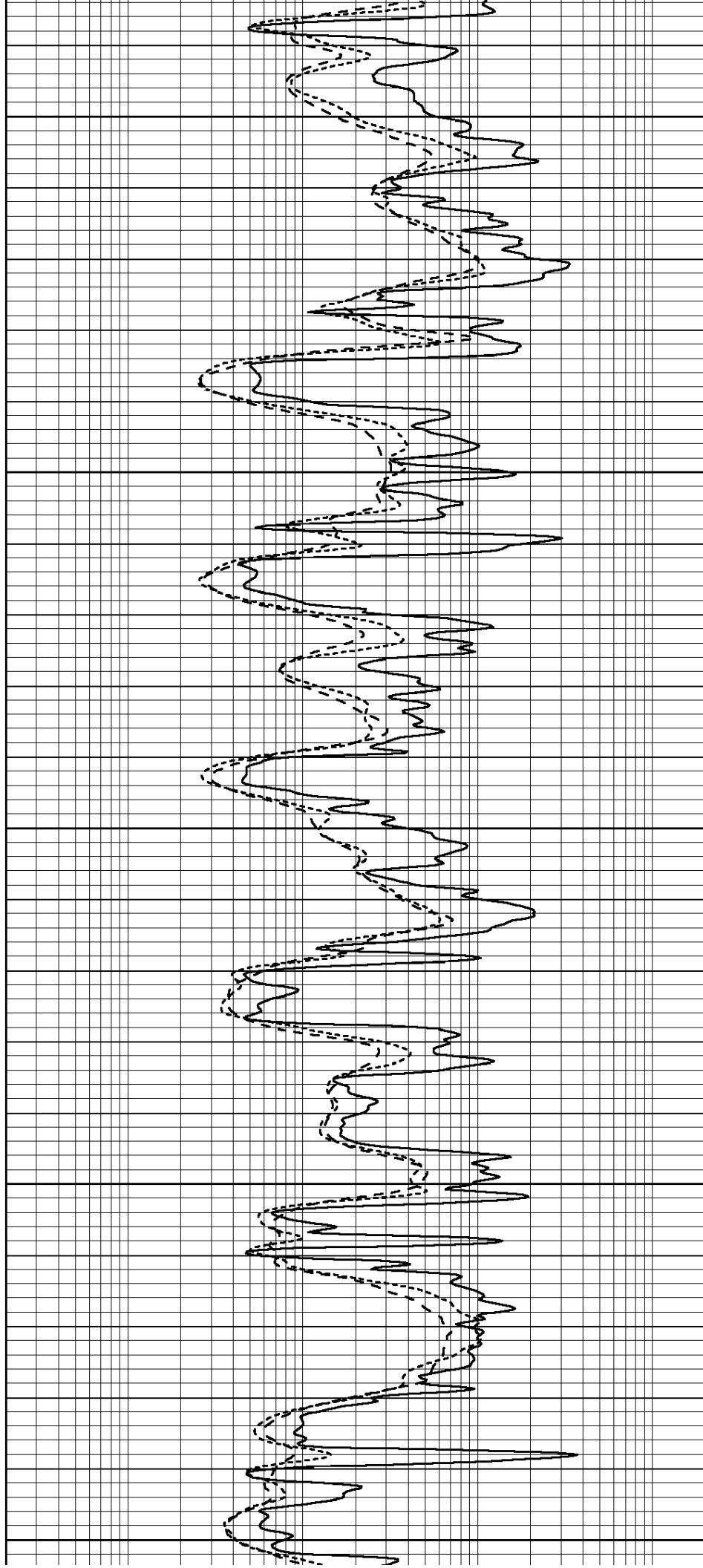
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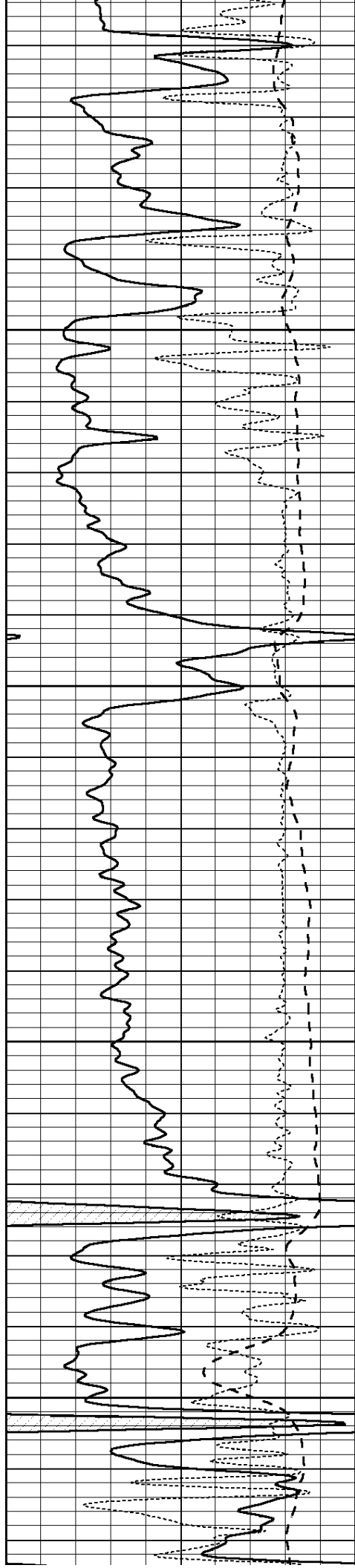
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4000

4050

4100



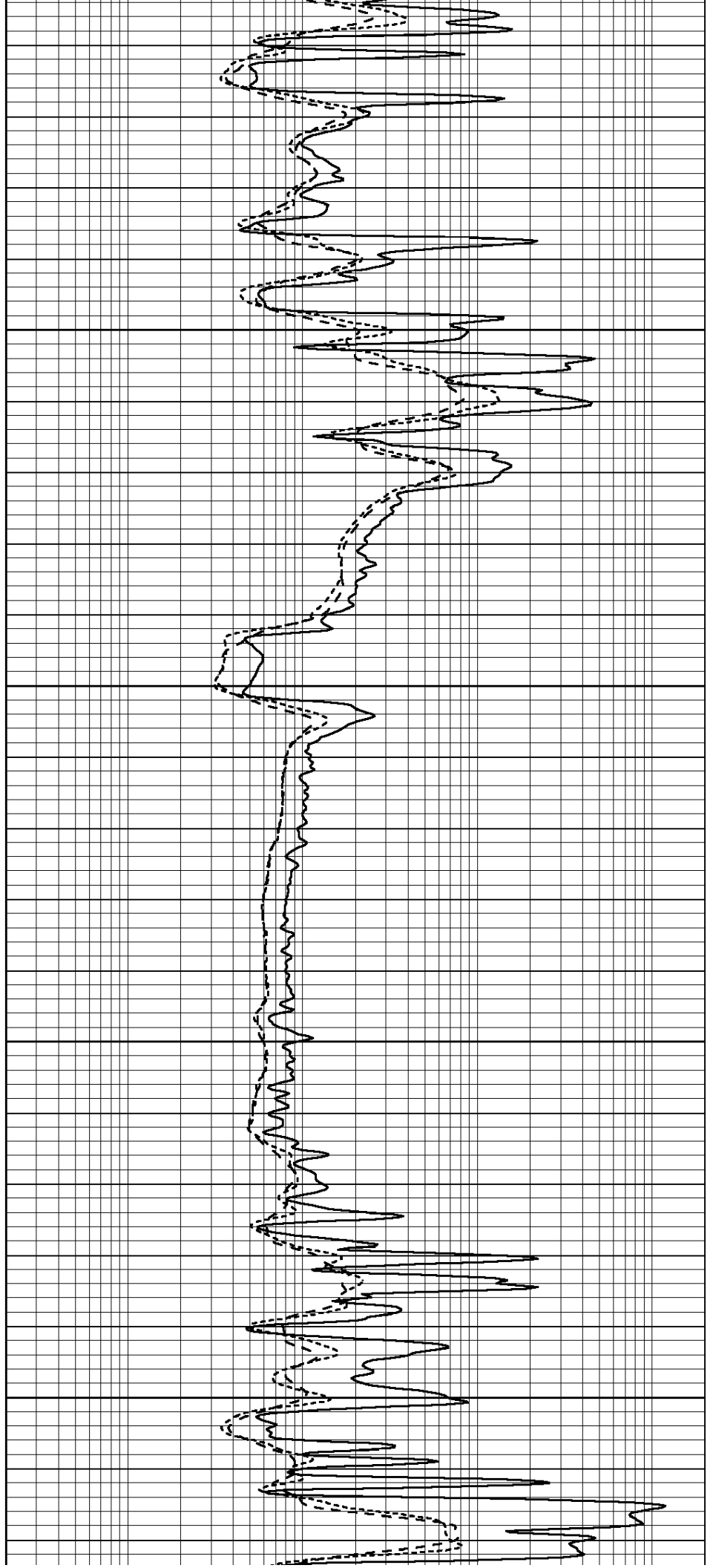


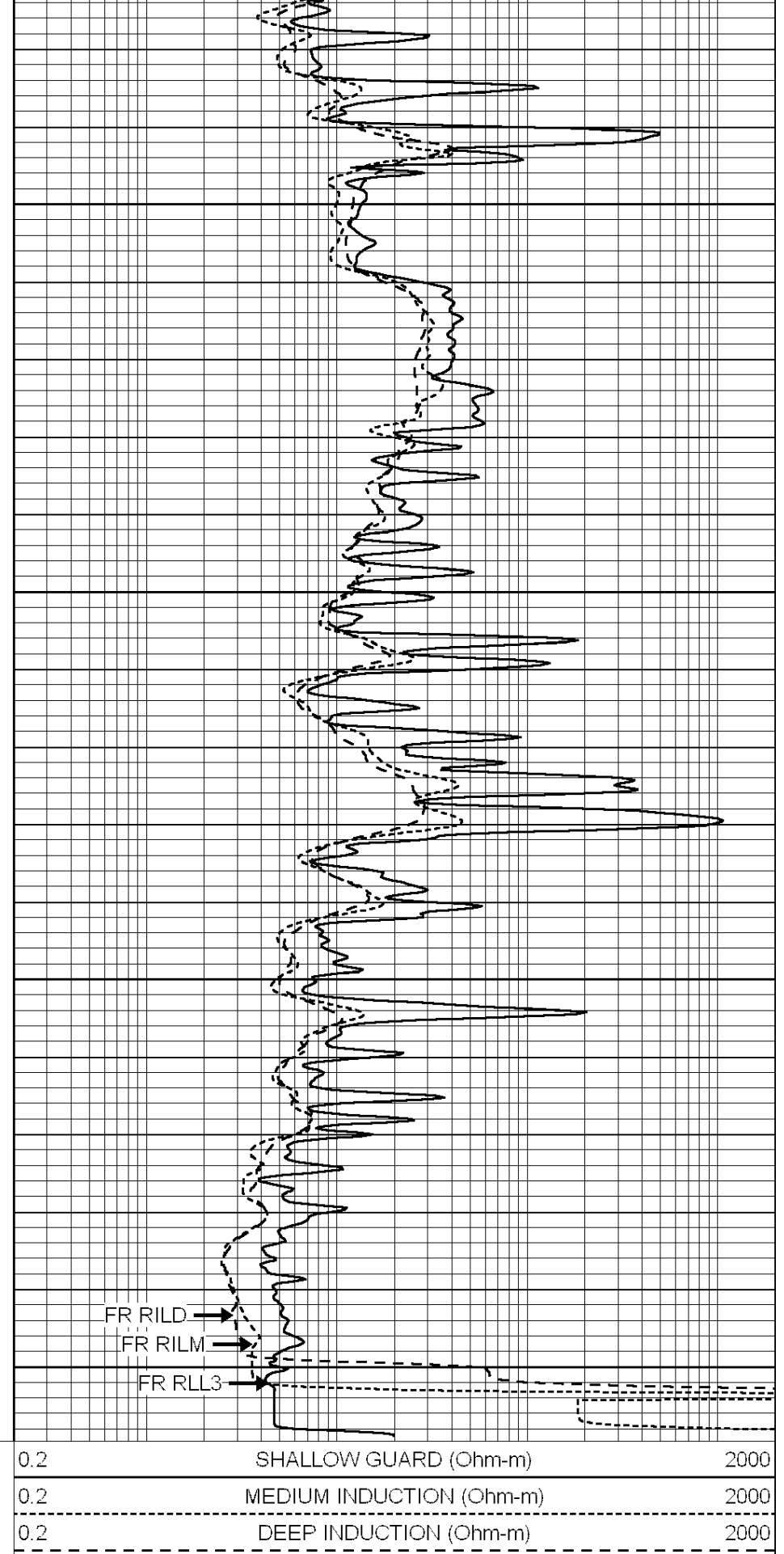
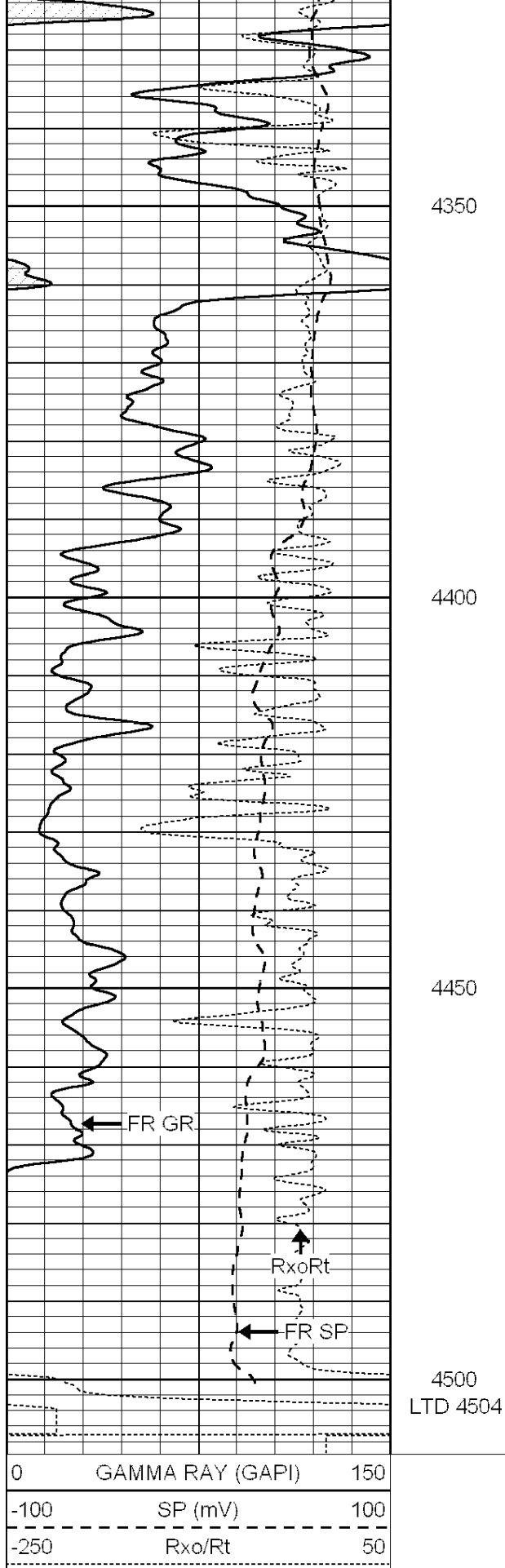
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4200

4250

4300

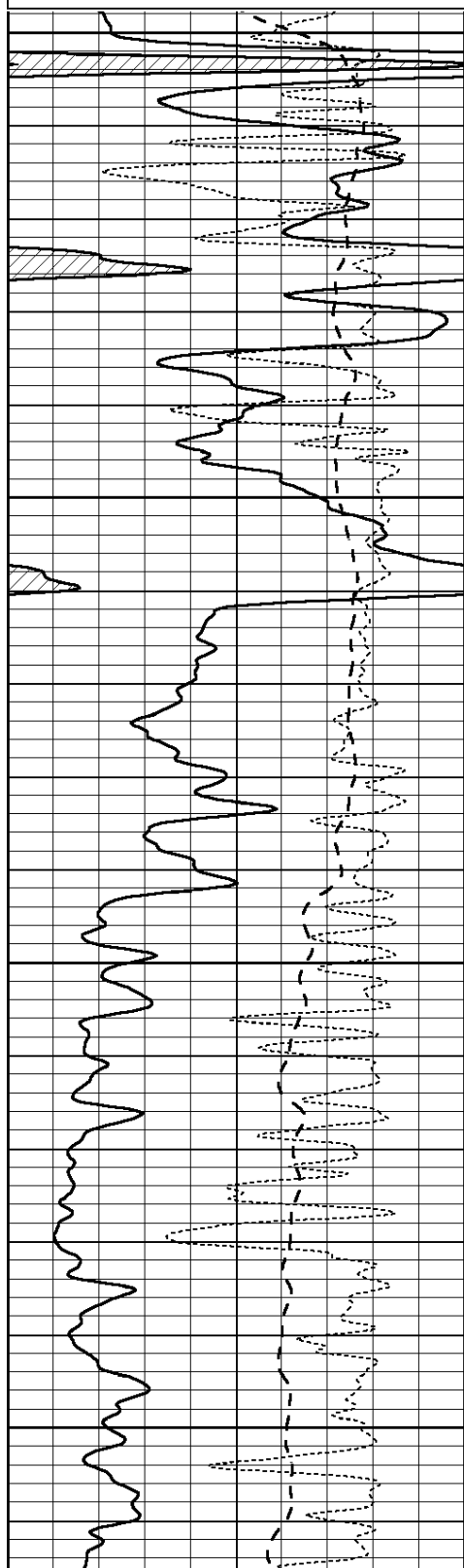




Database File: 010126pe.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Sat Nov 10 20:19:51 2012 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

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

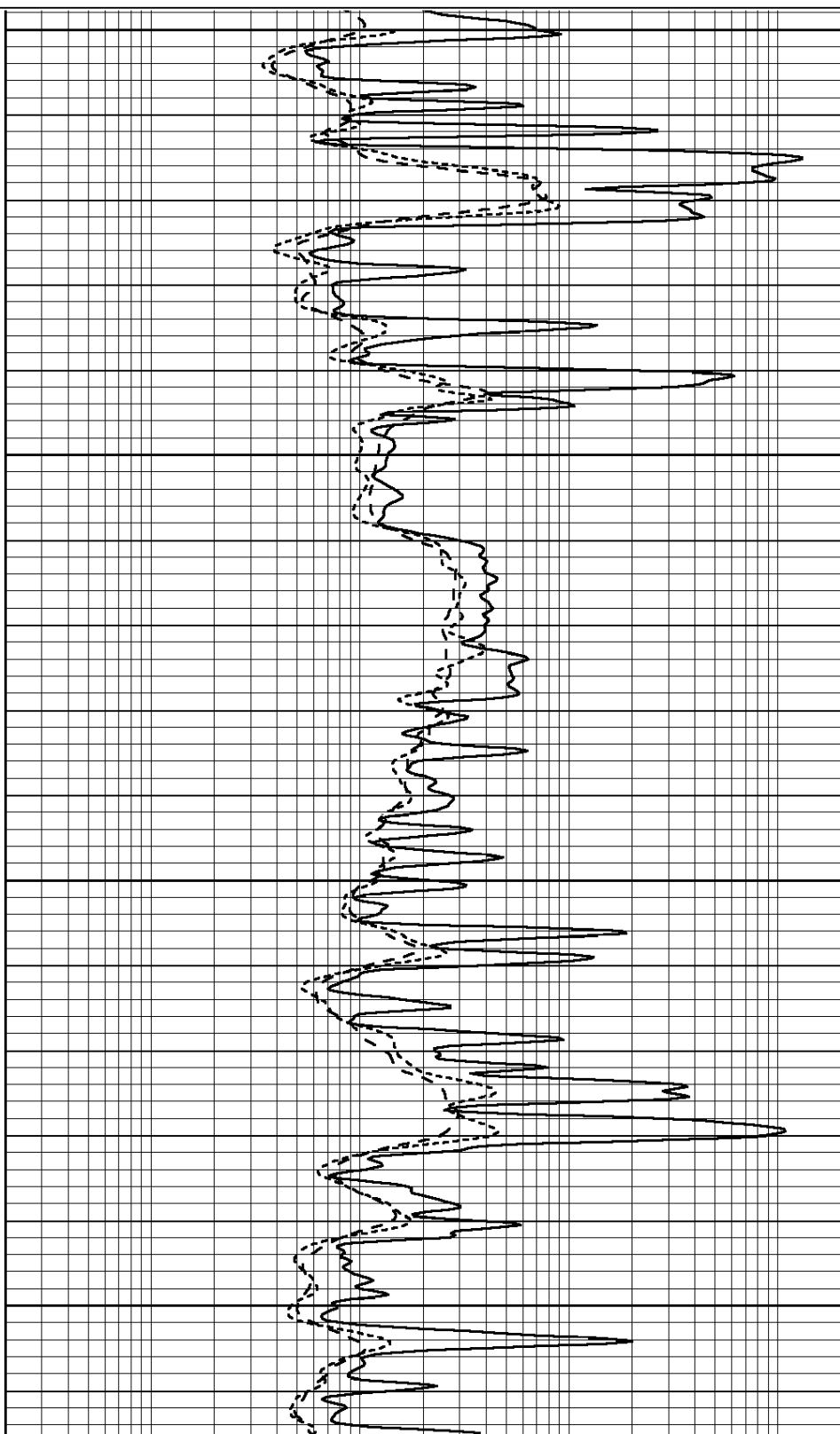


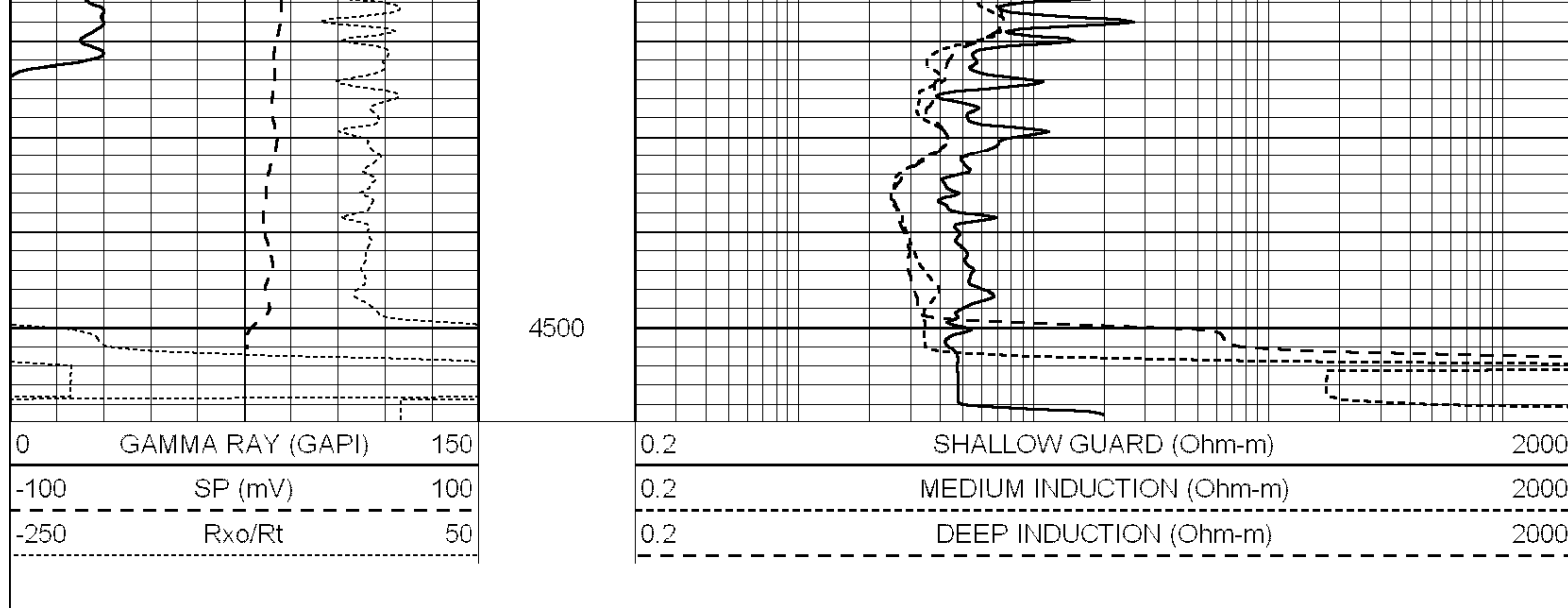
4300

4350

4400

4450





Calibration Report

Database File: 010126pe.db
Dataset Pathname: pass3.1
Dataset Creation: Sat Nov 10 20:26:28 2012 by Calc Open-Cased 090629

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

Readings				References			Results	
Loop:	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		

Litho Density Calibration Report
Serial: 002 Model: PRB
Performed Thu May 24 10:48:35 2012

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	869.0	7503.7	2278.2	8031.6	cps
Window 2	814.2	6016.2	1916.9	6332.7	cps
Window 3	662.8	3301.5	1210.8	3422.7	cps
Window 4	200.3	202.6	201.6	200.2	cps
Long Space	0.0	5202.0	1102.6	5518.5	cps
Short Space	1.2	998.0	637.9	1006.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 43.9	Rib Slope	: 0.963	Density/Spine Ratio	: 0.545
Spine Angle	: 73.9	Spine Slope	: 3.466	Spine Intercept	: -15.4

Caliper

	Readings	Reference	
Low Ref	3.7	8.0	
High Ref	6.1	14.0	
Gain: 2.5			Offset: -2.3

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: #8
Tool Model: OPEN
Performed: Mon Jun 13 16:56:43 2011

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 175.0 cps

Sensitivity: 0.8371 GAPI/cps