



SUPERIOR
Hays,
Kansas

DUAL
INDUCTION
LOG

Company		MULL DRILLING COMPANY, INC.	
Well	DAVID #1-16X		
Field			
County	NESS	State	KANSAS
Location:		APL # : 15-135-25239-0000	Other Services CDL/CNL/PE MEL/SON
SEC 16 TWP 17S RGE 23W		Elevation	
Permanent Datum	GROUND LEVEL	Elevation	2421
Log Measured From	KELLY BUSHING 5' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	5/10/11		
Run Number	ONE		
Depth Driller	4550		
Depth Logger	4548		
Bottom Logged Interval	4546		
Top Log Interval	0		
Casing Driller	8 5/8" @ 220'		
Casing Logger	218		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7500 PPM	
Density / Viscosity	9.3 / 54		
pH / Fluid Loss	10.0 / 11.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.65 @ 78F		
Rmf @ Meas. Temp	0.49 @ 78F		
Rmc @ Meas. Temp	0.78 @ 78F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.42 @ 121F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	121F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JEFF GRONEMEG		
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 SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
INTERSECTION OF HWY 4 & 283 - 5 MILES SOUTH TO RD 210 - 1.1 MILES EAST
NORTH INTO

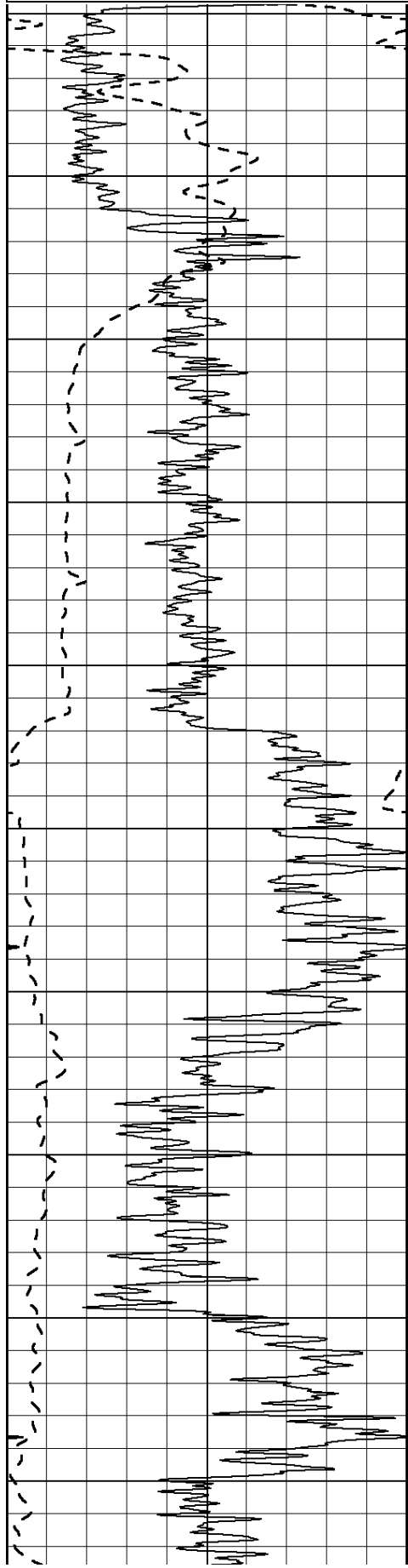
Database File: 007075pe.db
Dataset Pathname: pass3.2
Presentation Format: _dil2
Dataset Creation: Tue May 10 23:54:16 2011 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

Charted by: _____ Depth in Feet scaled 1:600

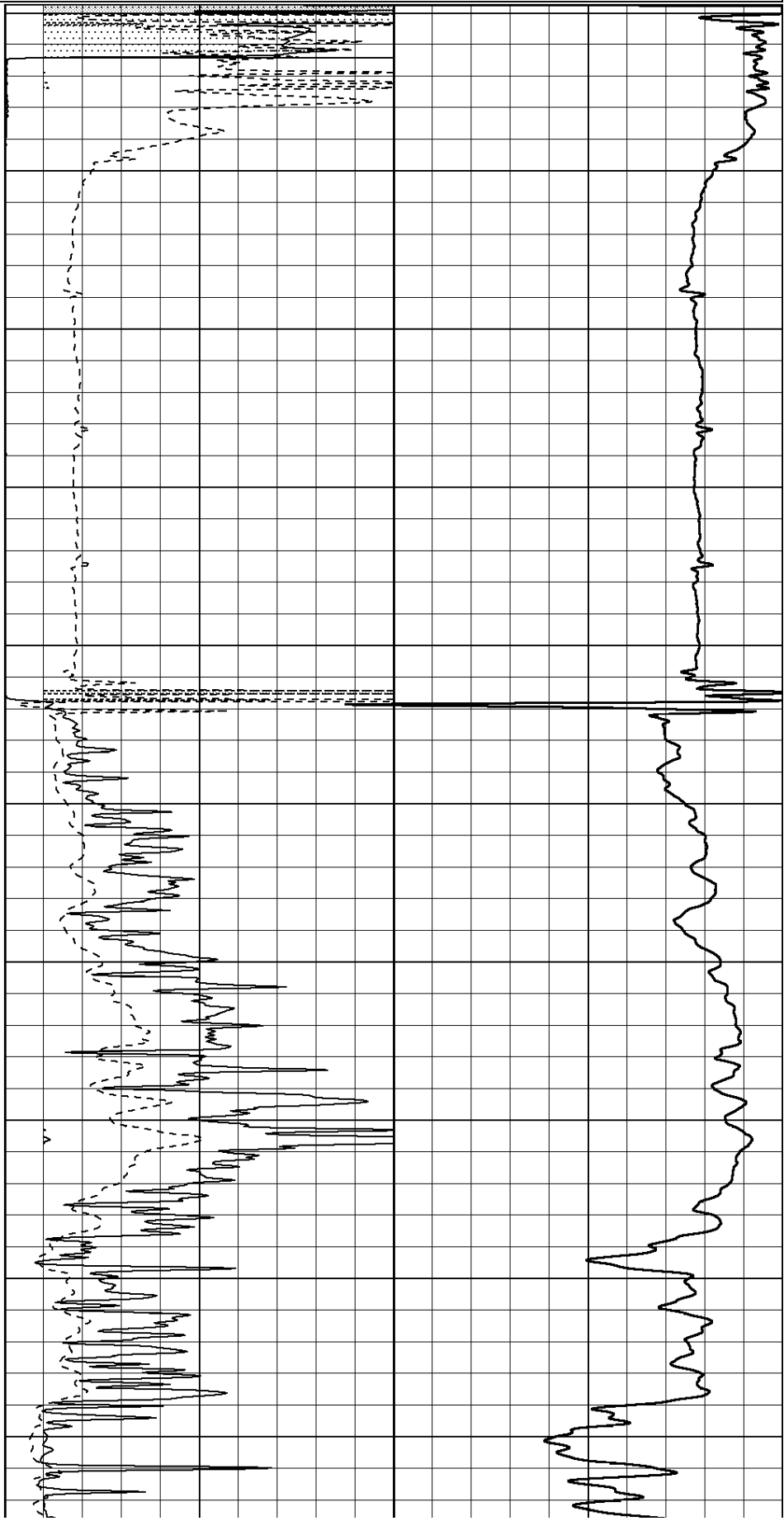
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-100	SP (mV)	100

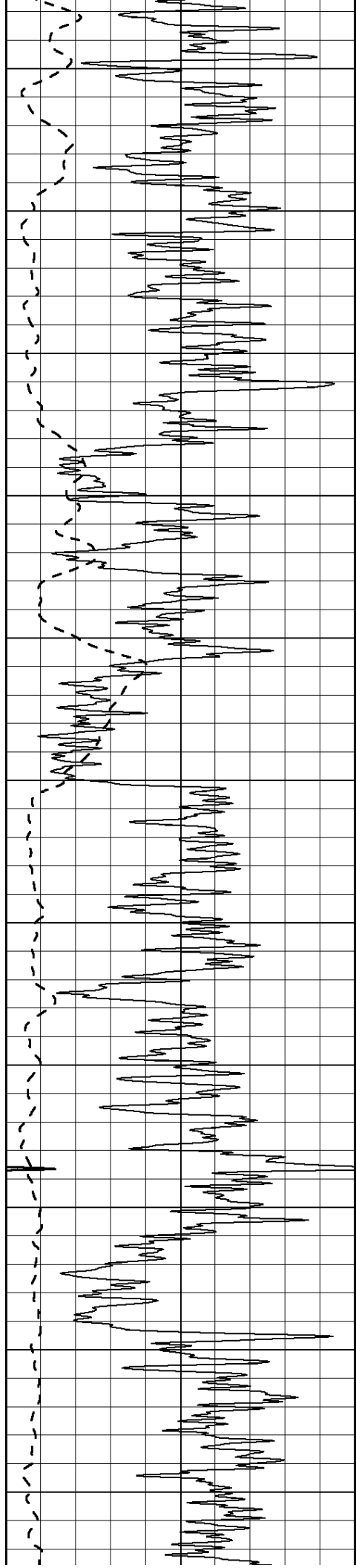
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50

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



0
50
100
150
200
250
300
350
400
450





500

550

600

650

700

750

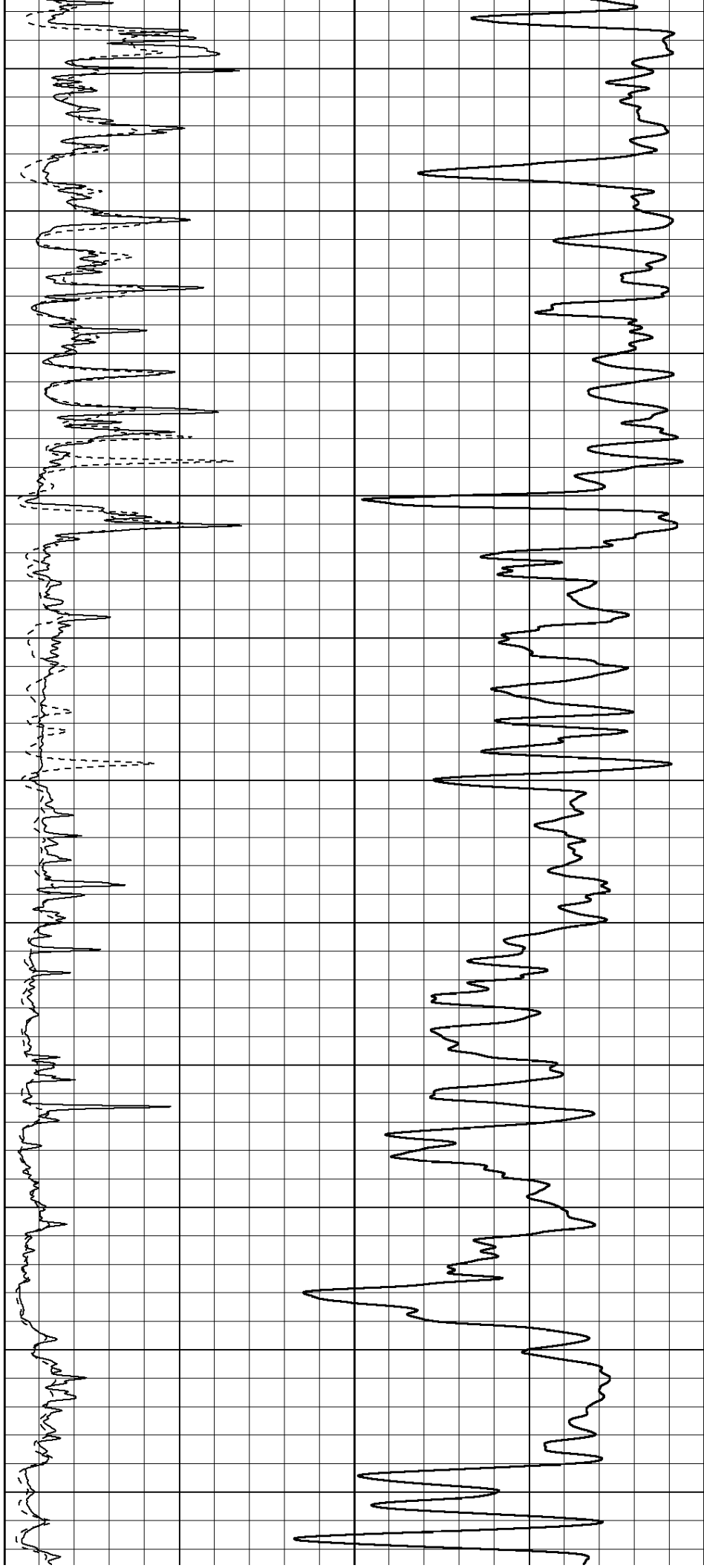
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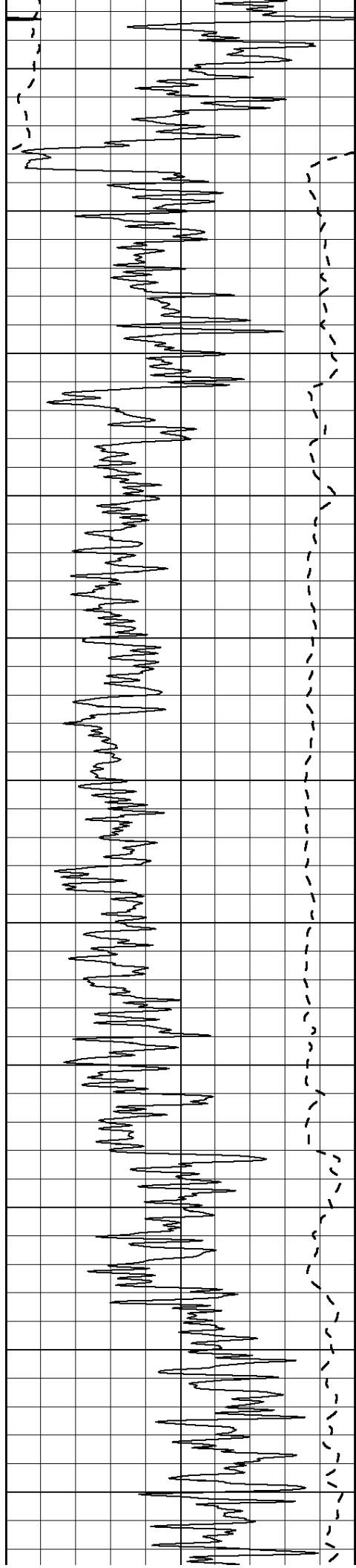
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900

950

1000





1050

1100

1150

1200

1250

1300

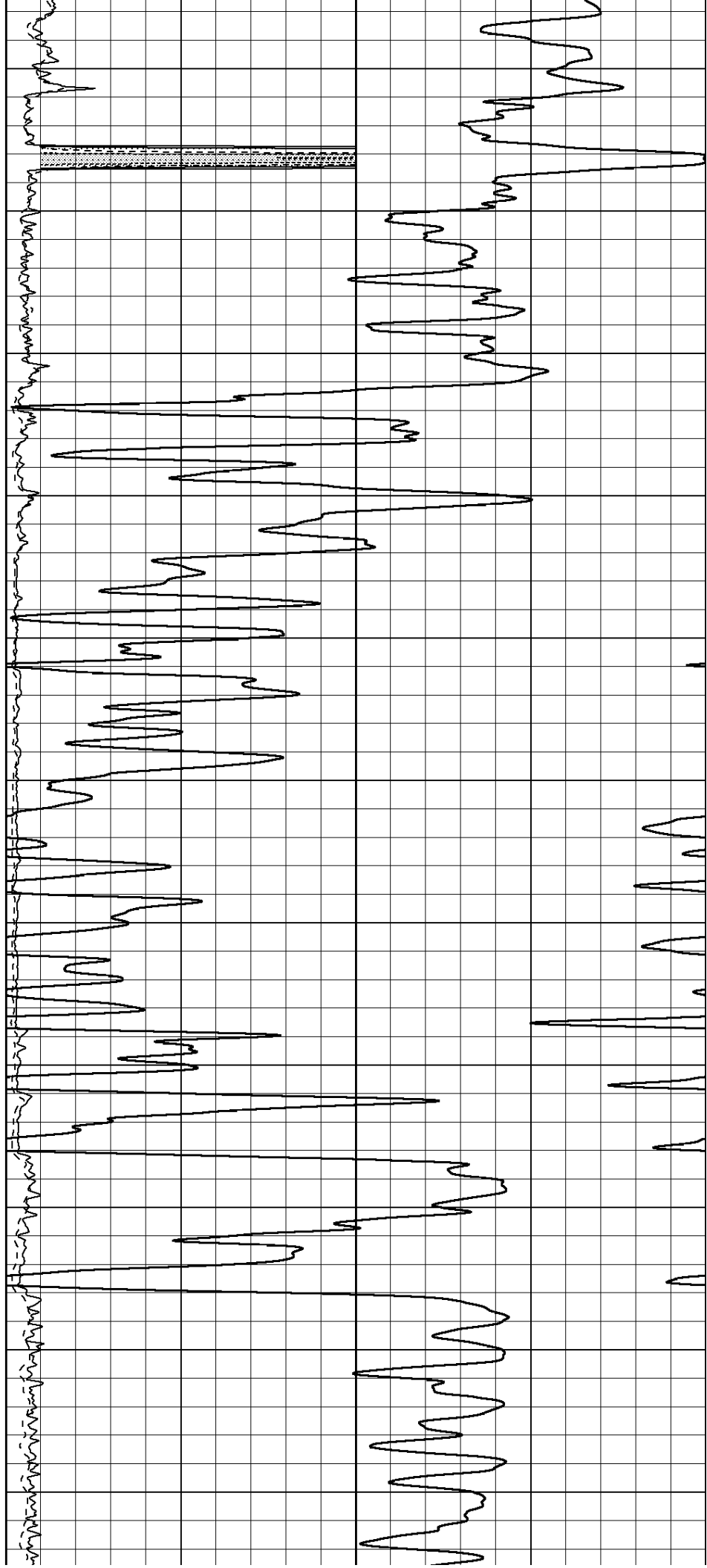
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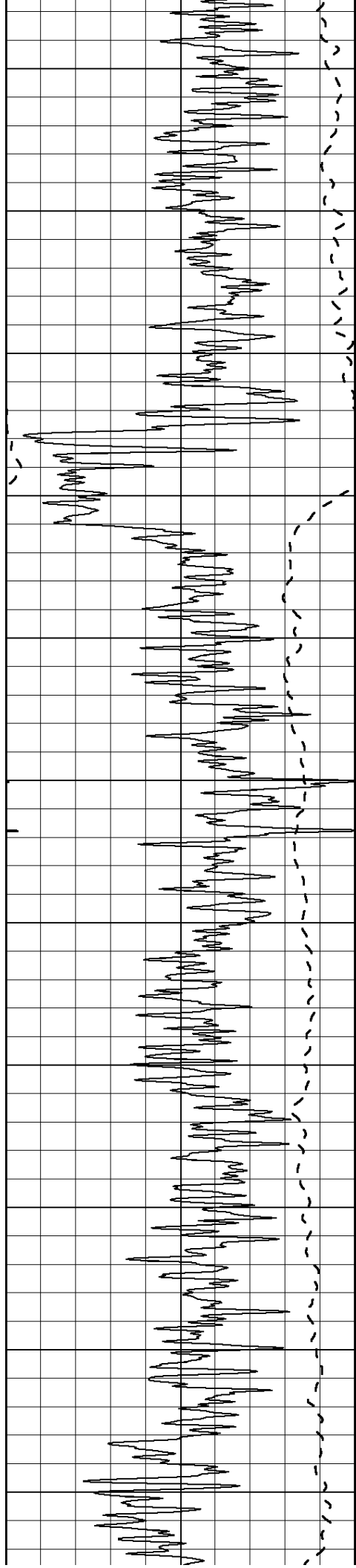
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1450

1500

1550





1600

1650

1700

1750

1800

1850

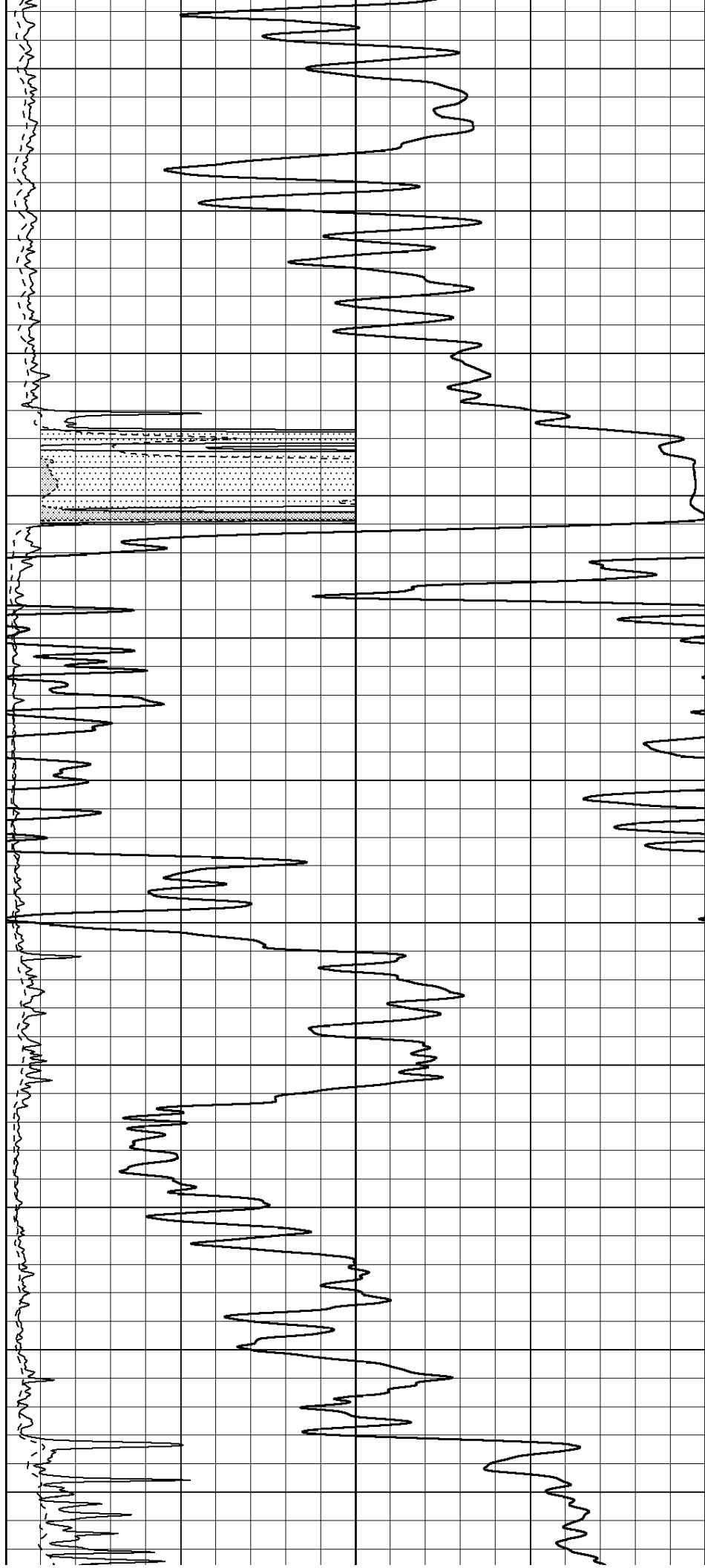
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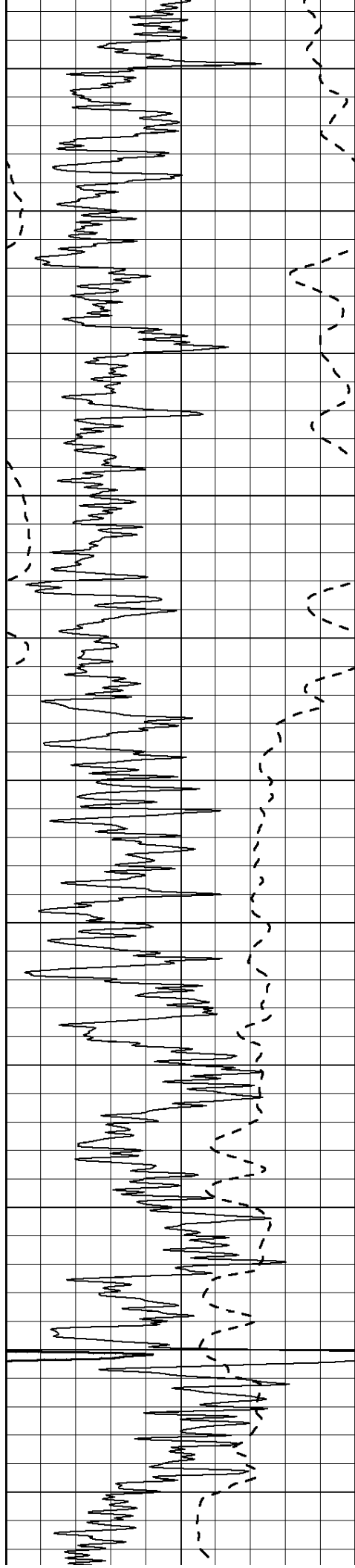
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2000

2050

2100





2150

2200

2250

2300

2350

2400

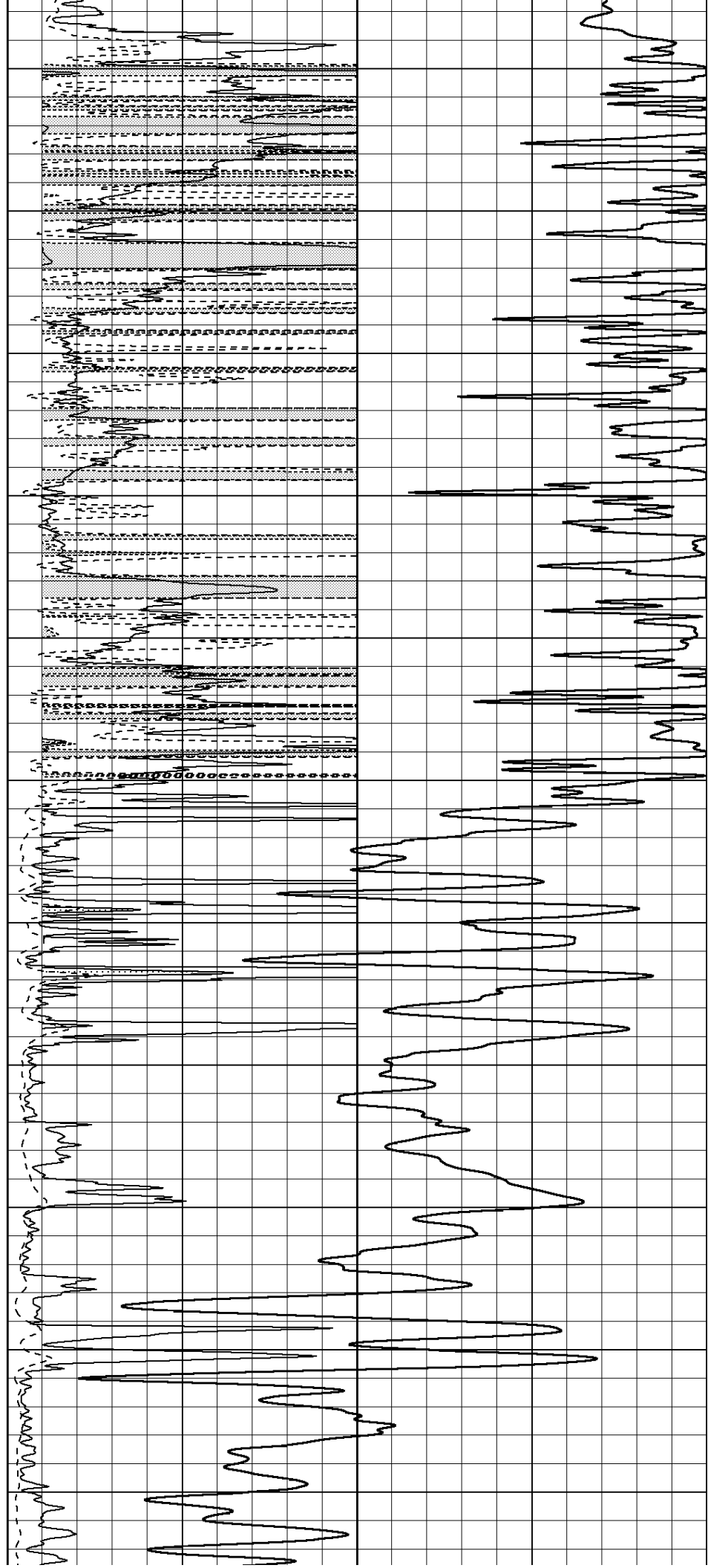
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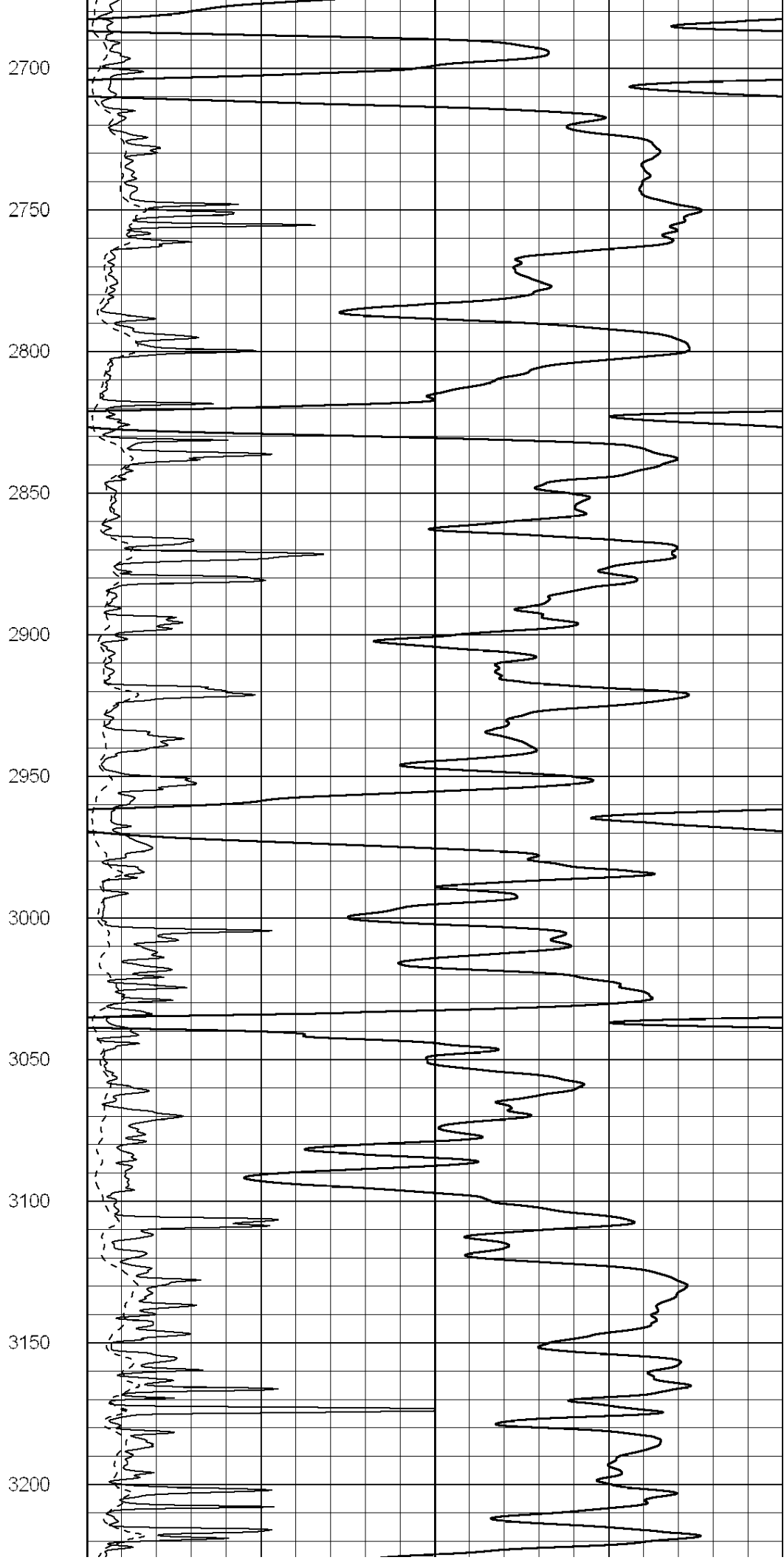
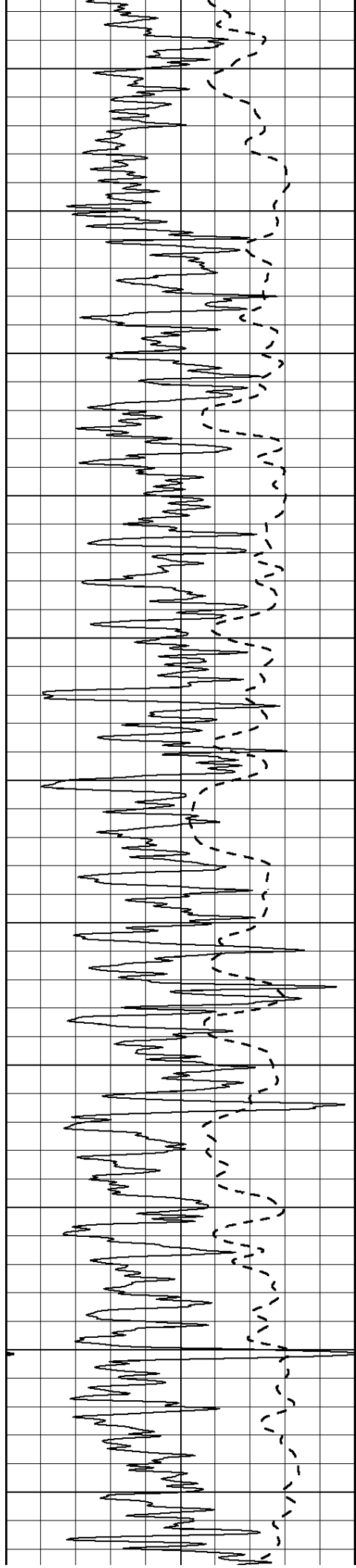
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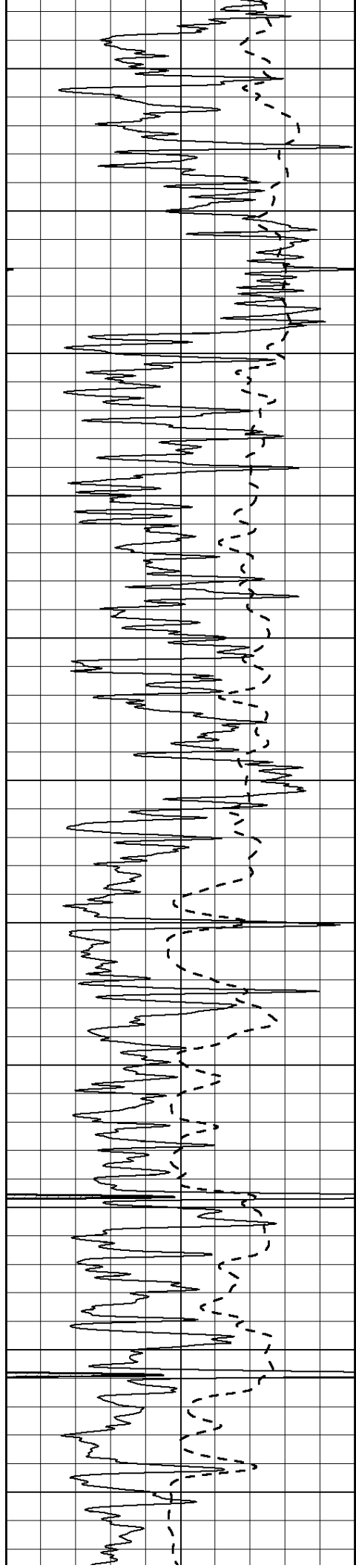
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2600

2650







3250

3300

3350

3400

3450

3500

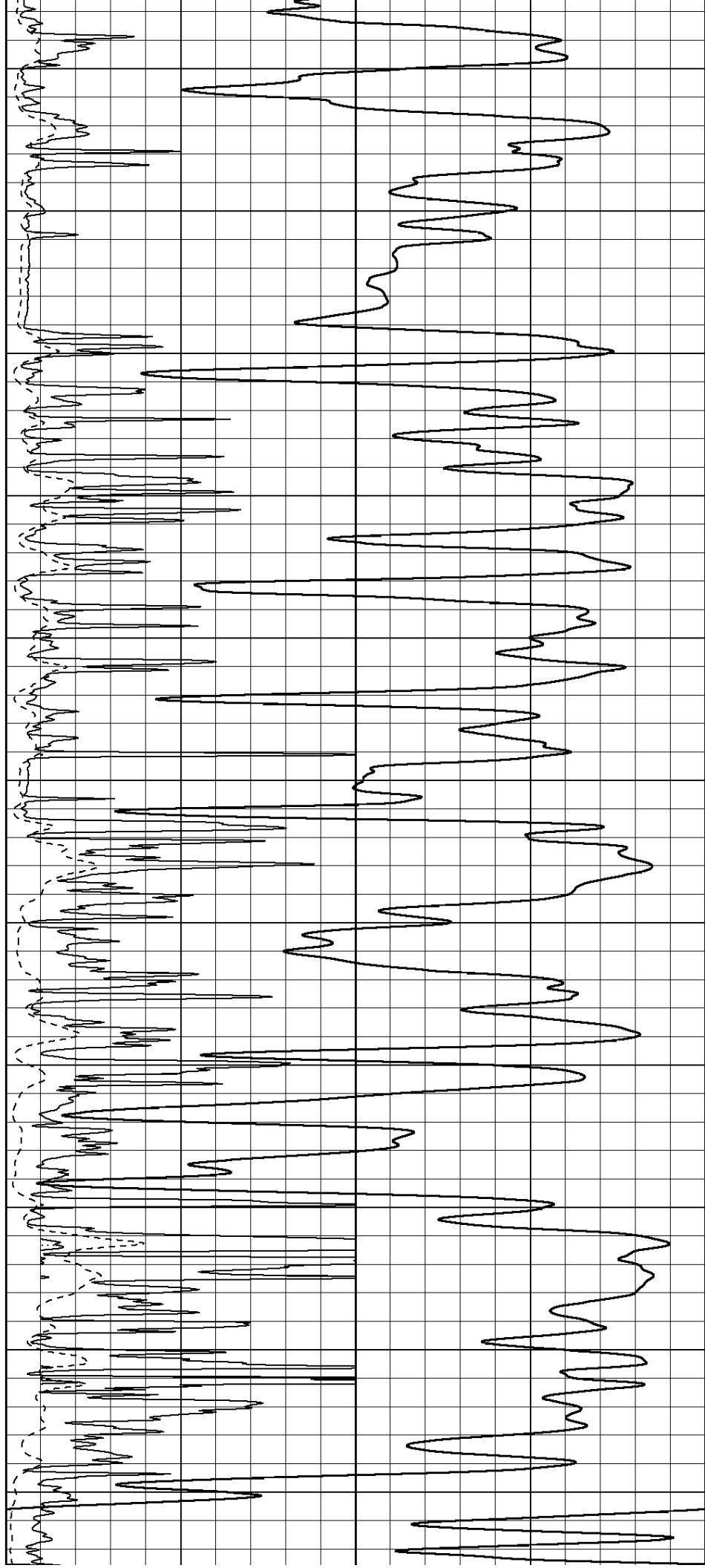
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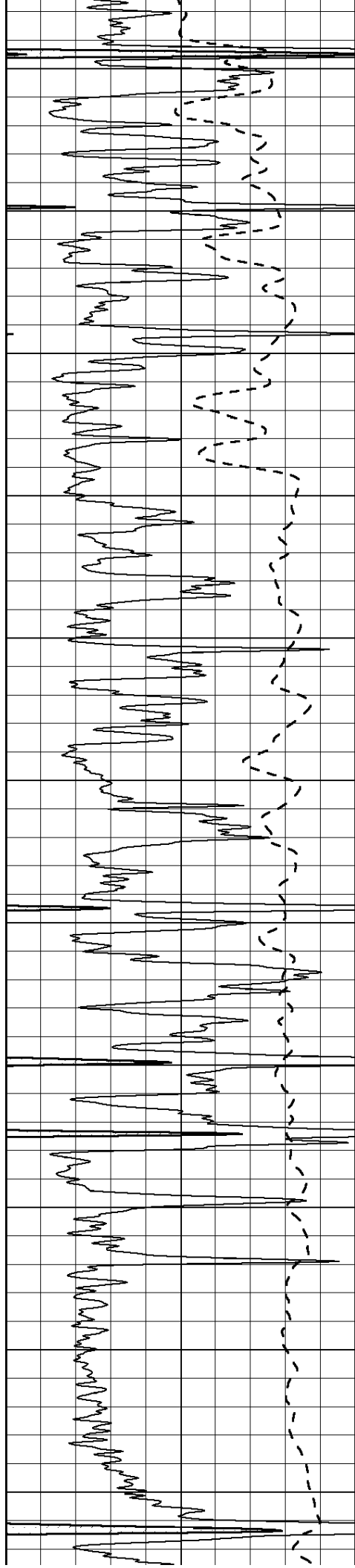
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3650

3700

3750





3800

3850

3900

3950

4000

4050

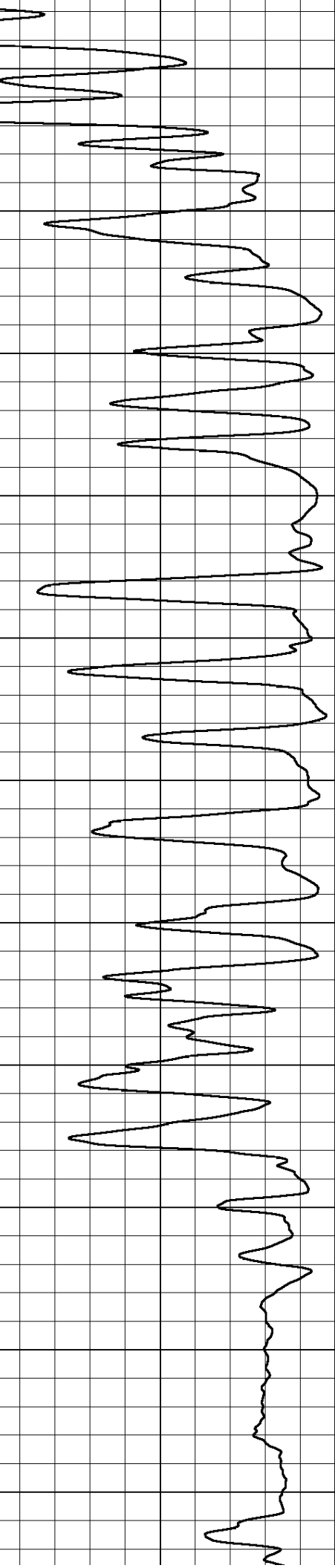
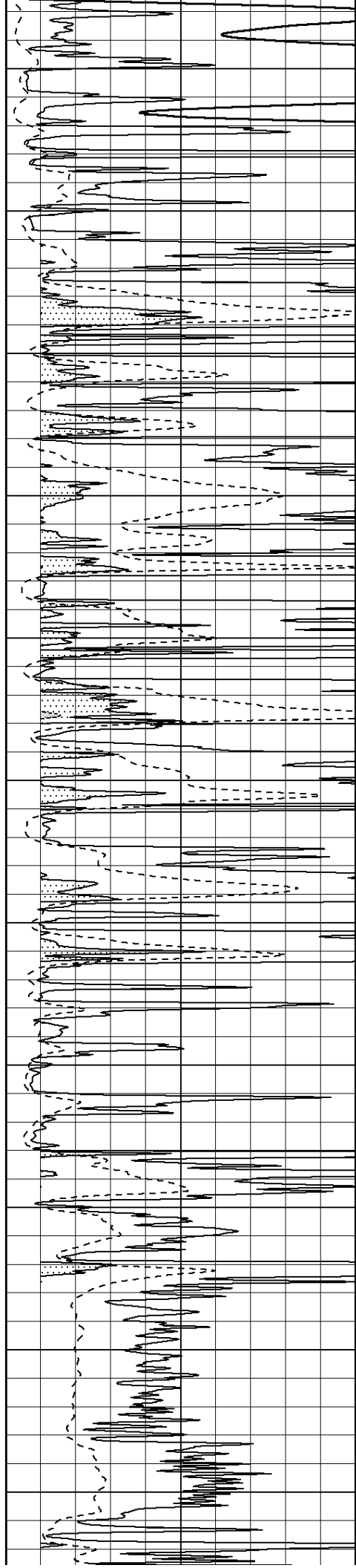
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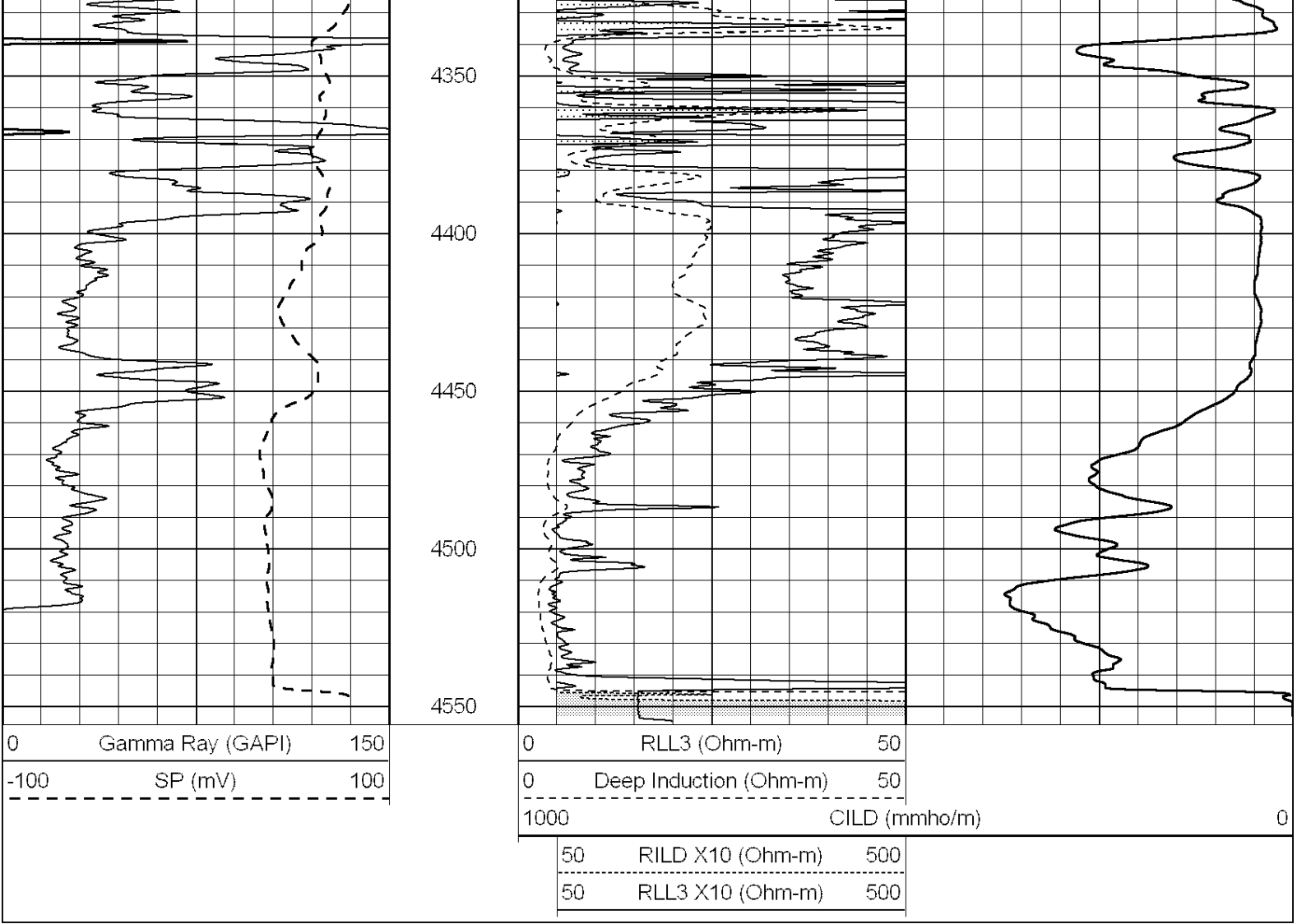
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4200

4250

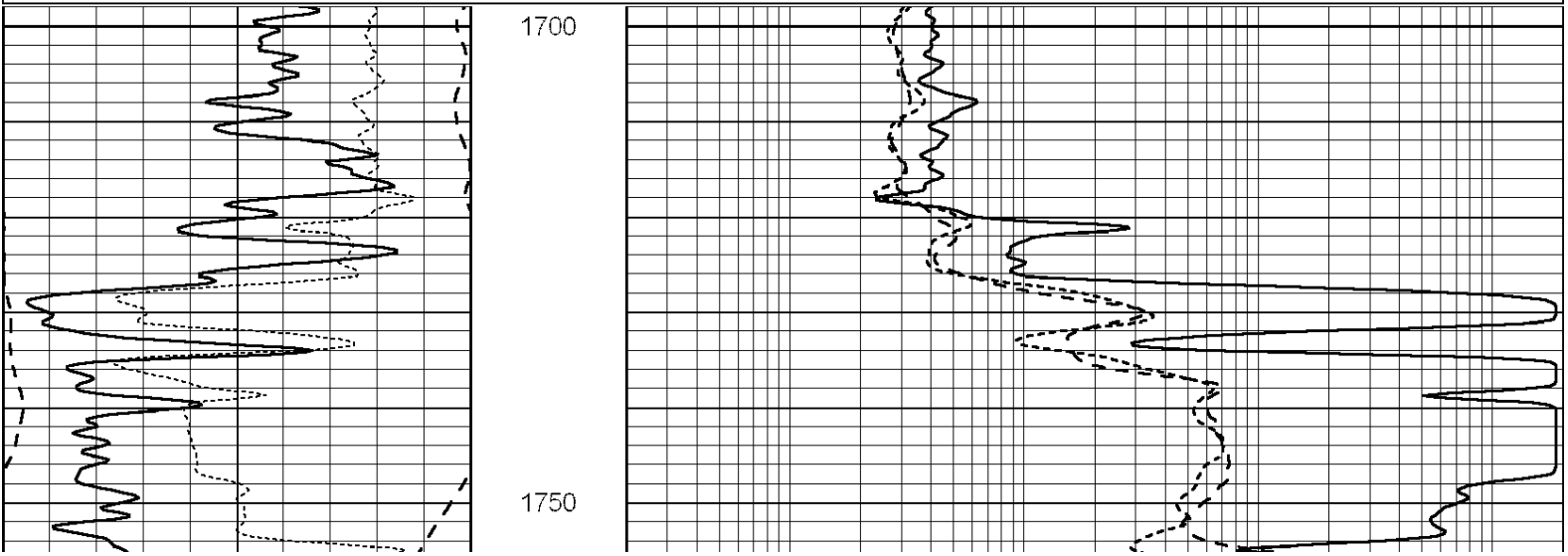
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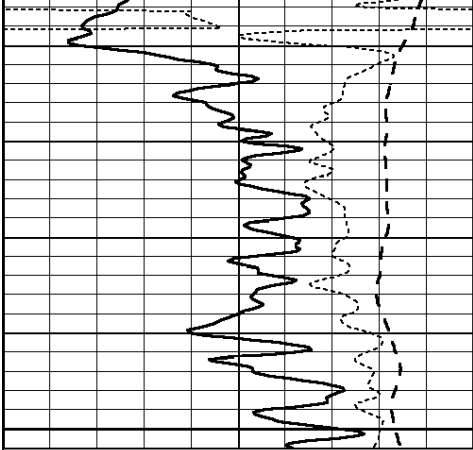




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Dataset Pathname:	pass3.2
Presentation Format:	_dil
Dataset Creation:	Tue May 10 23:54:16 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

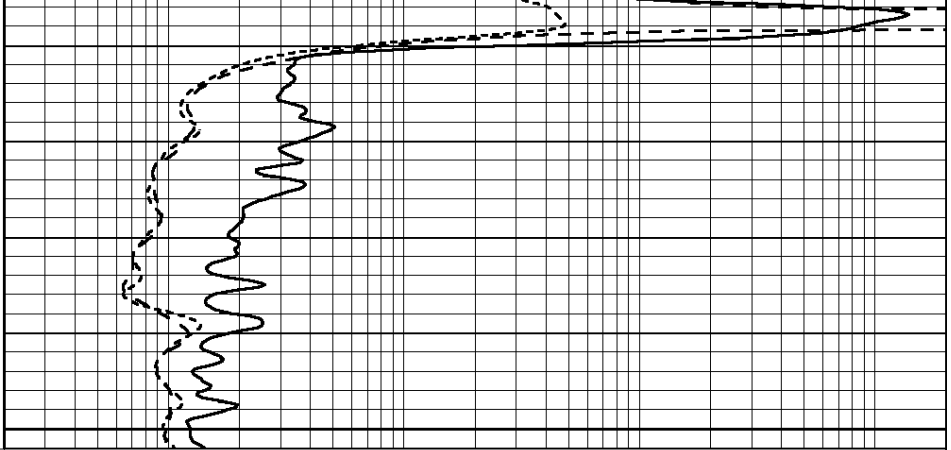
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000





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

1800

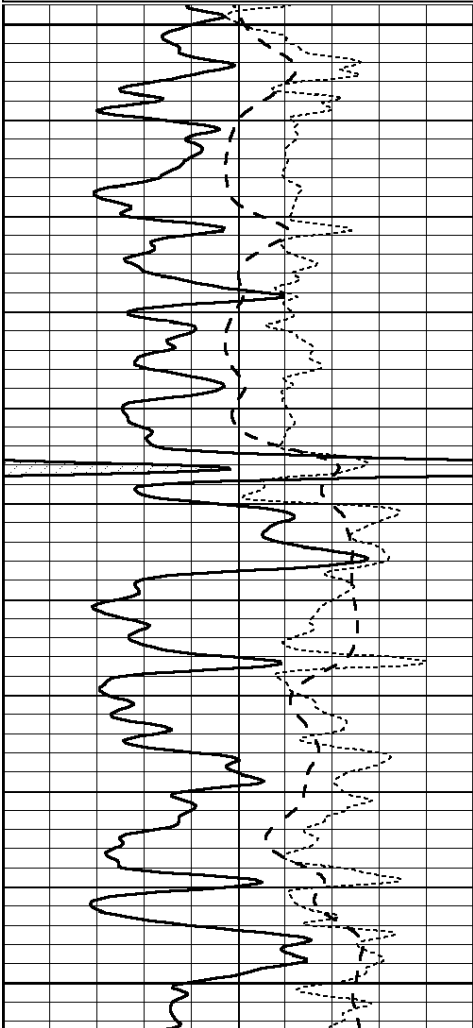


0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File: 007075pe.db
Dataset Pathname: pass3.1
Presentation Format: dil
Dataset Creation: Tue May 10 22:25:49 2011 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

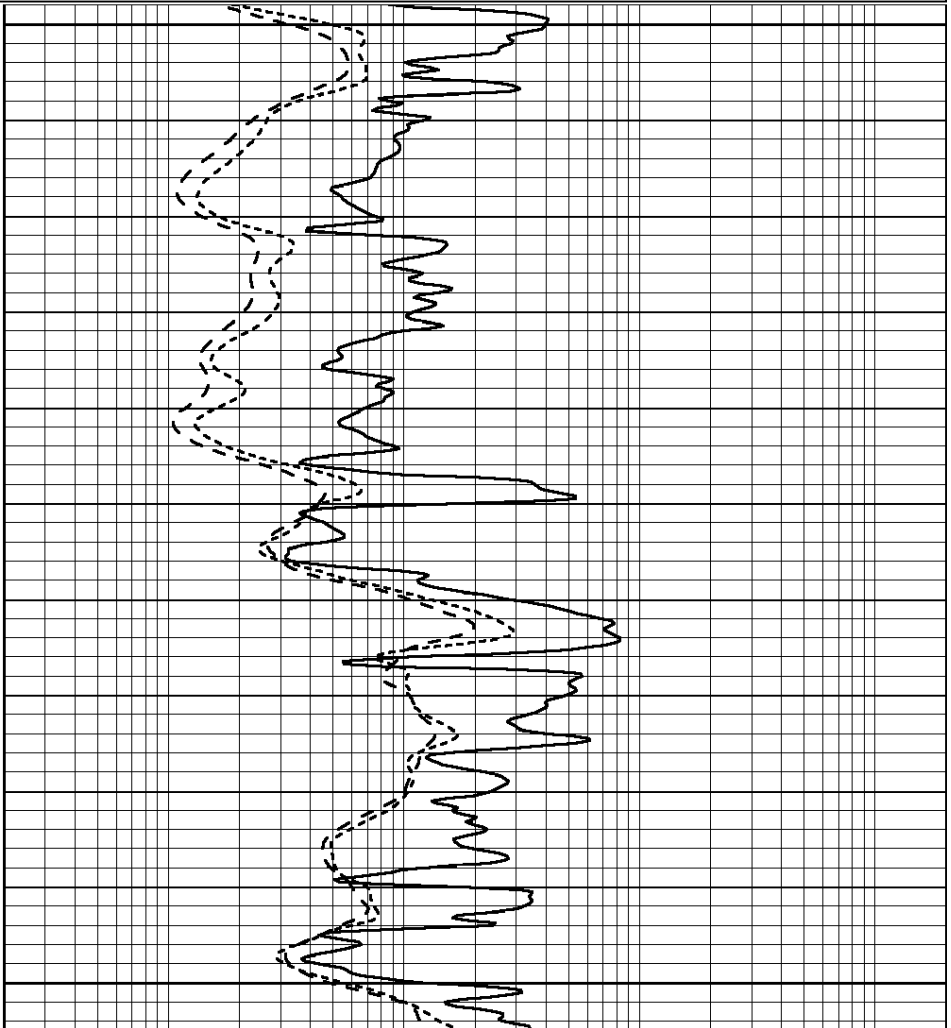
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

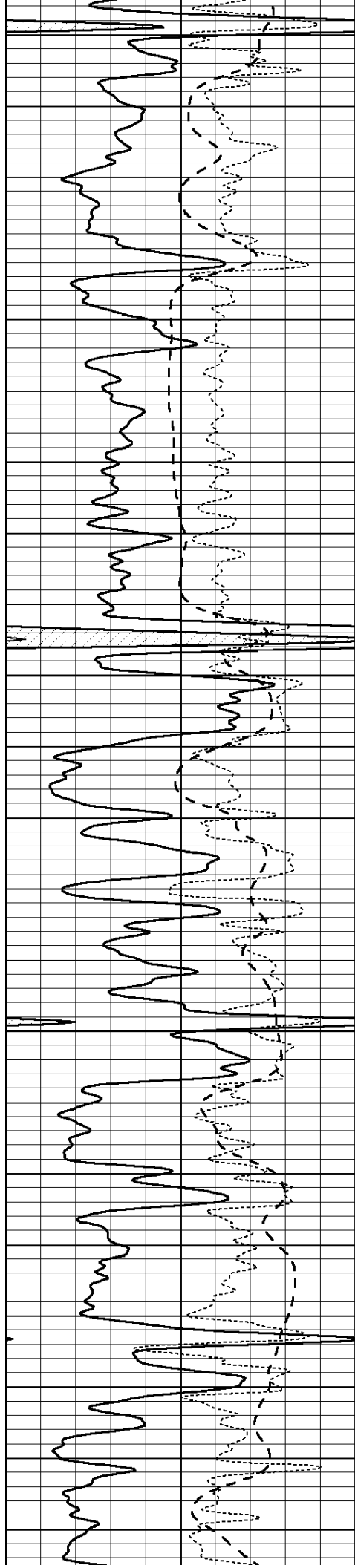


3600

3650

3700



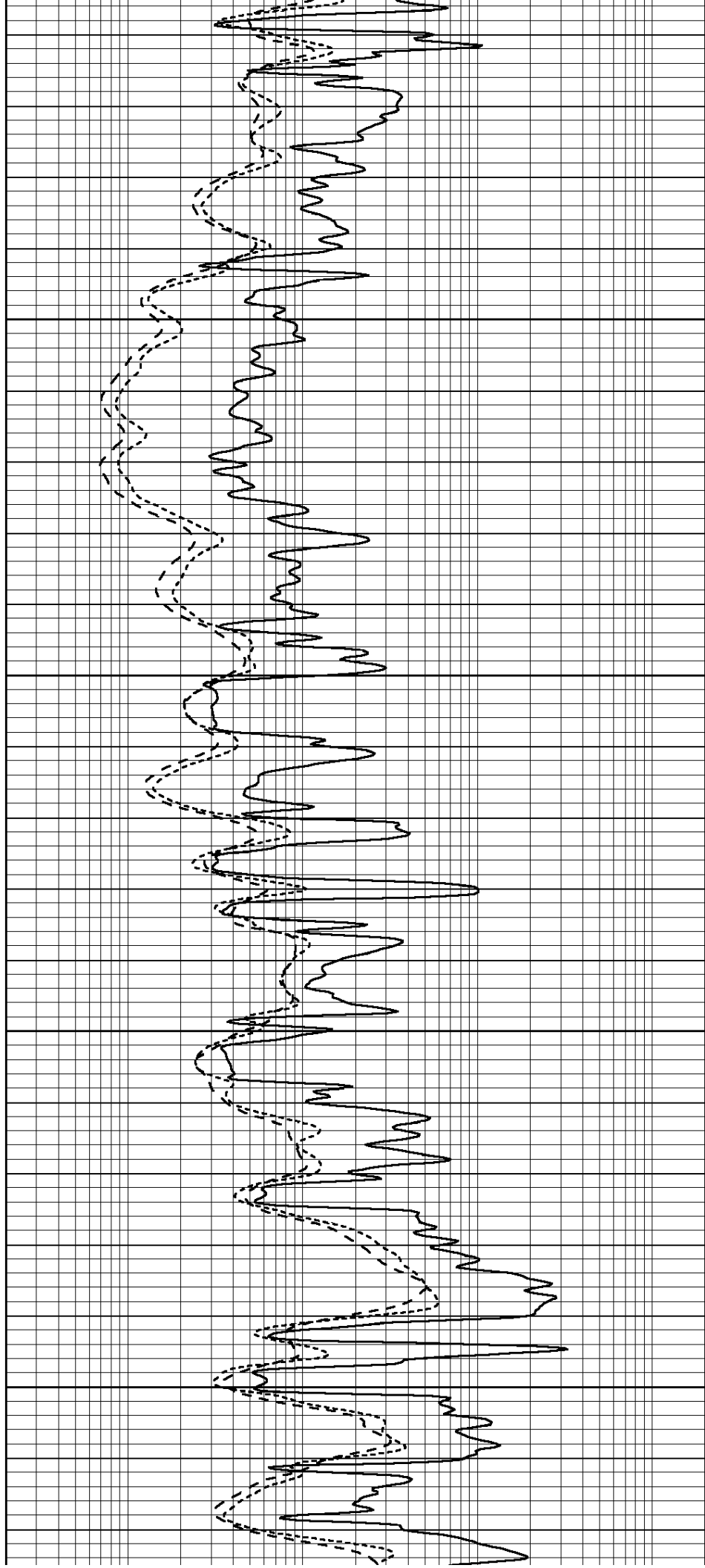


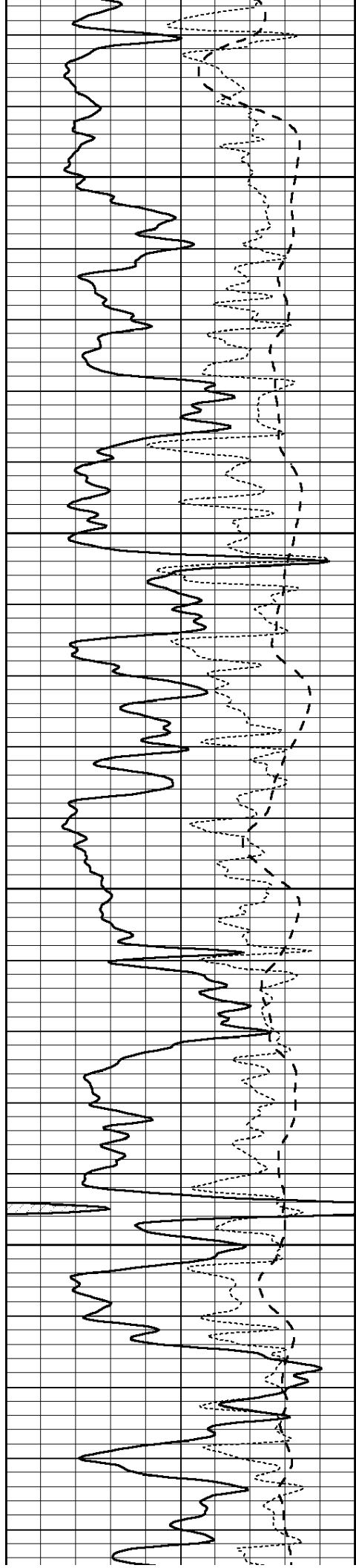
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3800

3850

3900



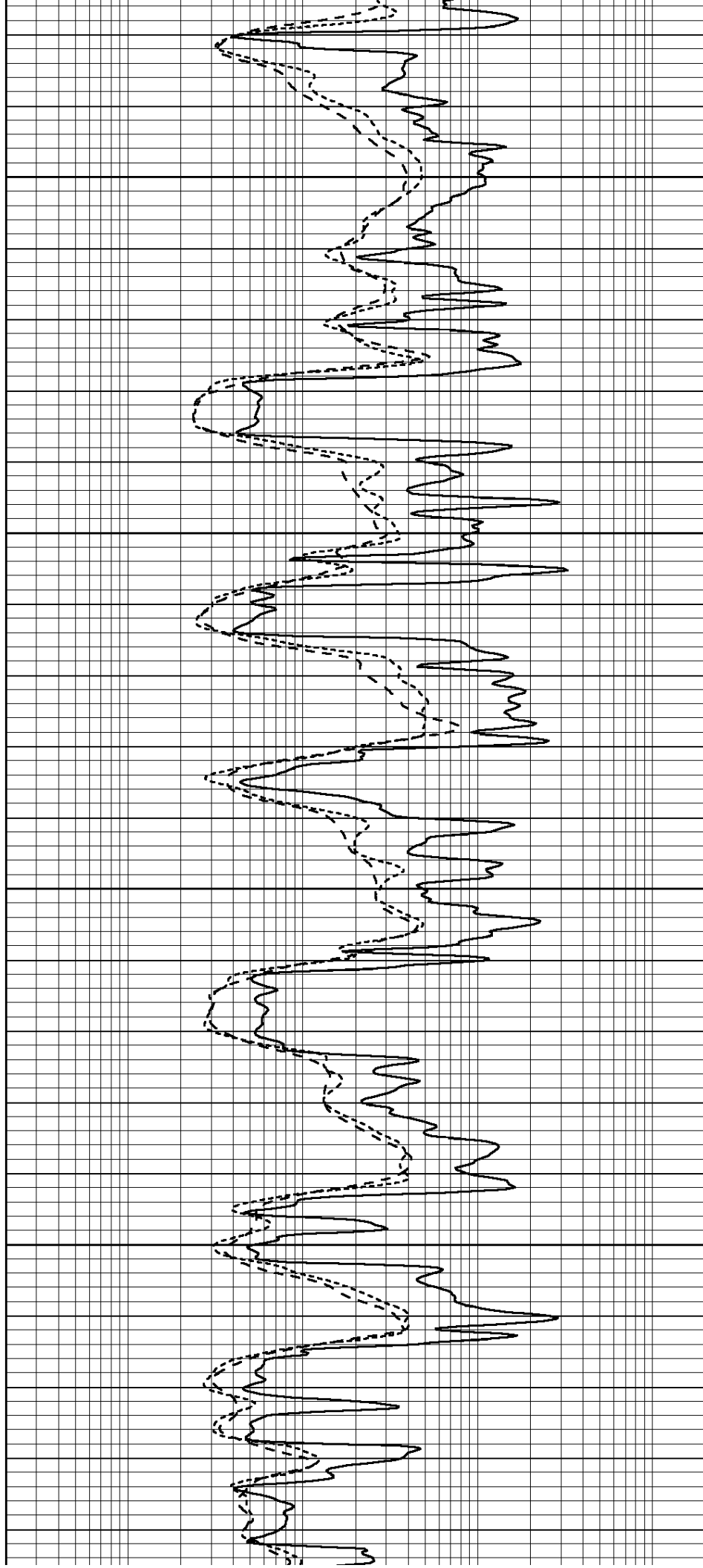


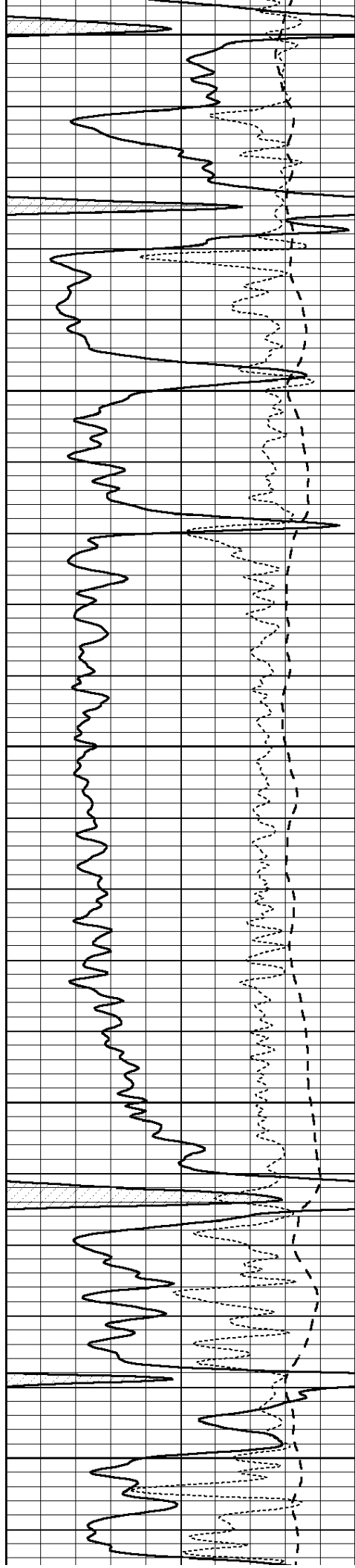
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4000

4050

4100





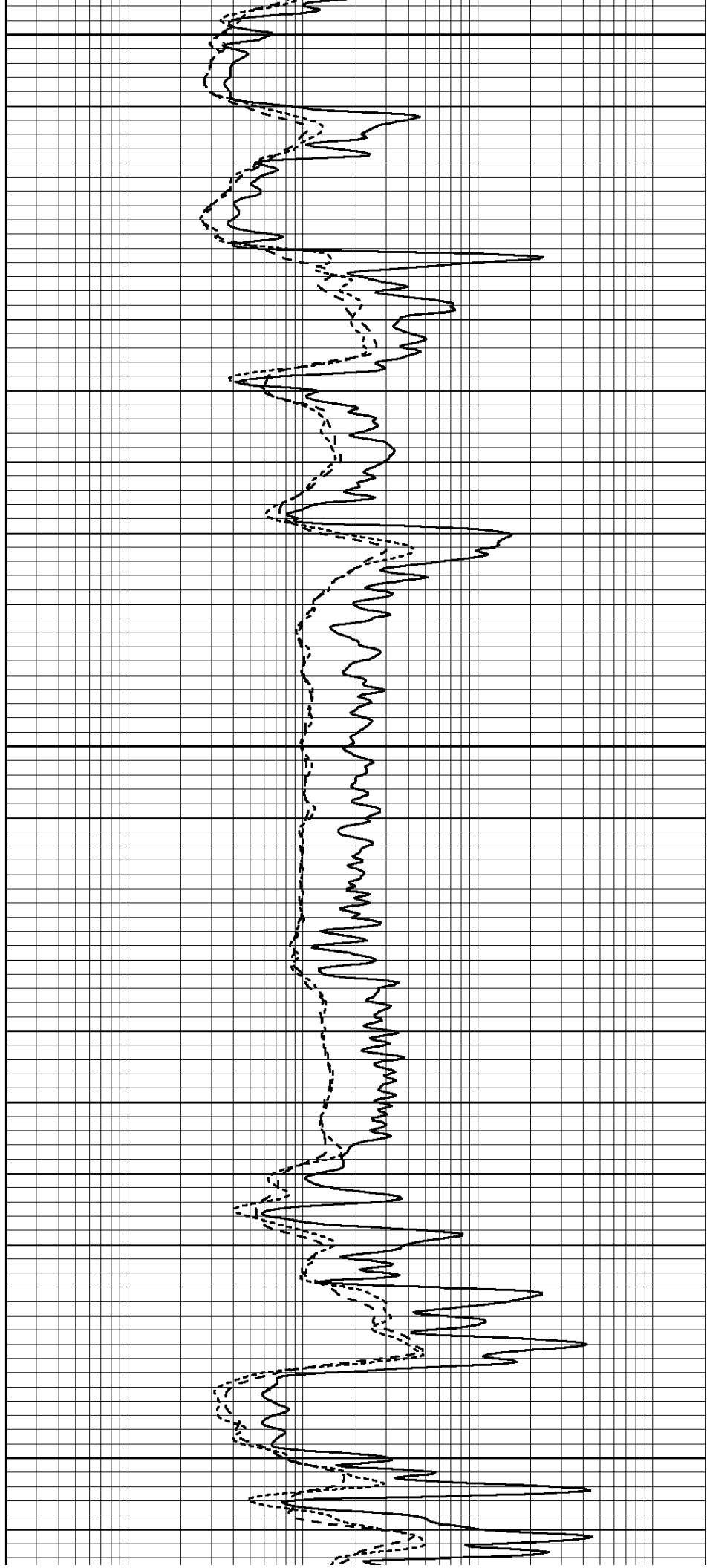
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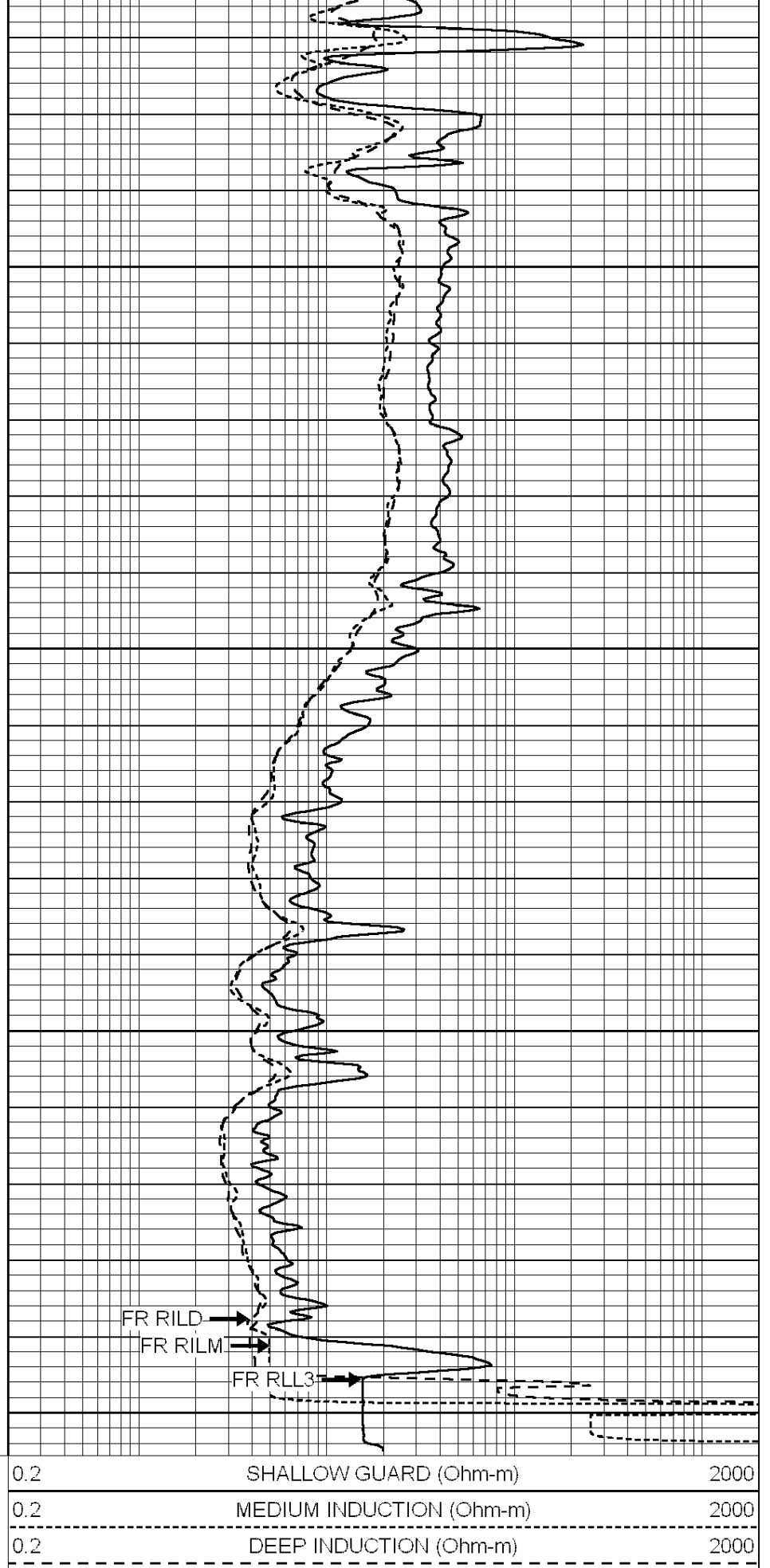
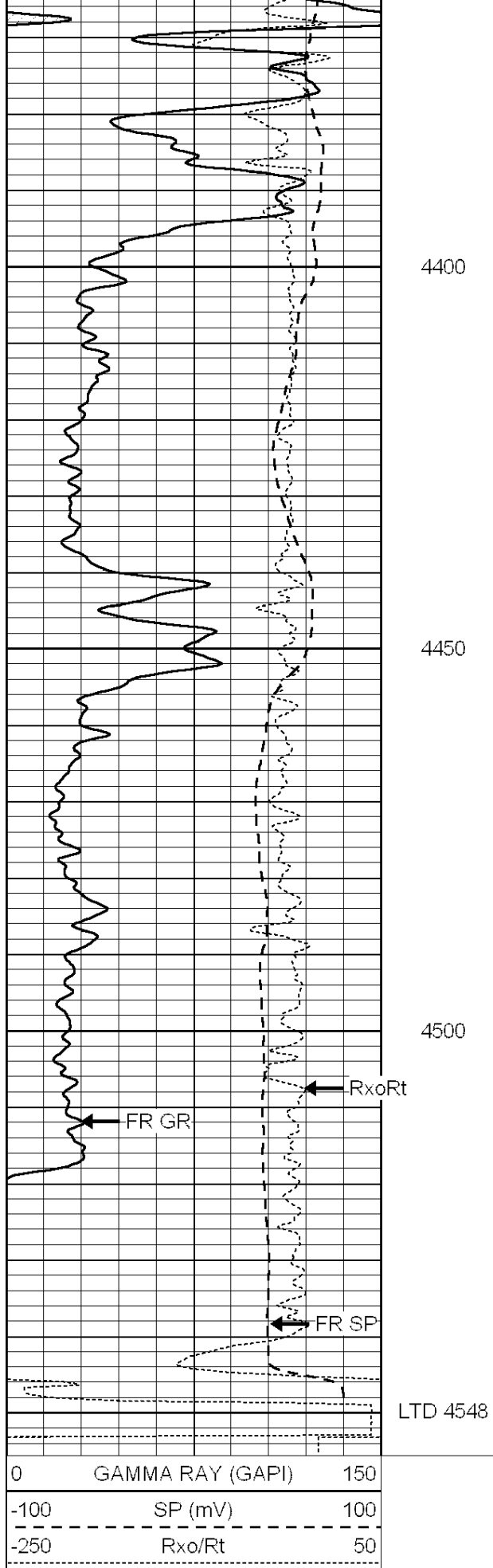
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4250

4300

4350







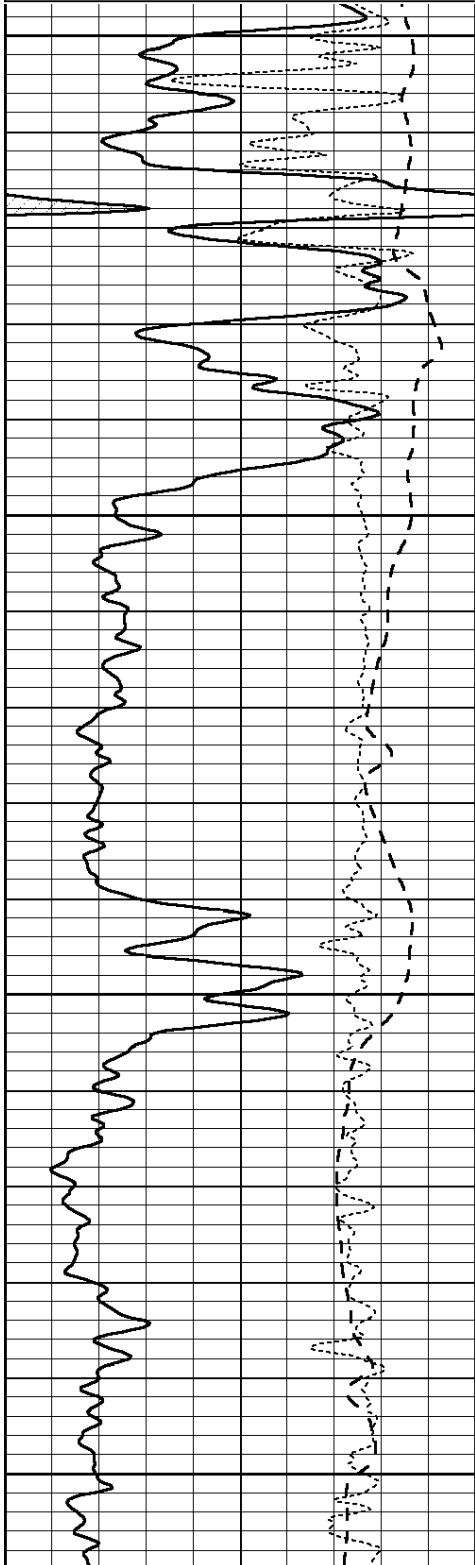
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 007075pe.db
Dataset Pathname: pass2.3
Presentation Format: _dil
Dataset Creation: Tue May 10 23:43:07 2011 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

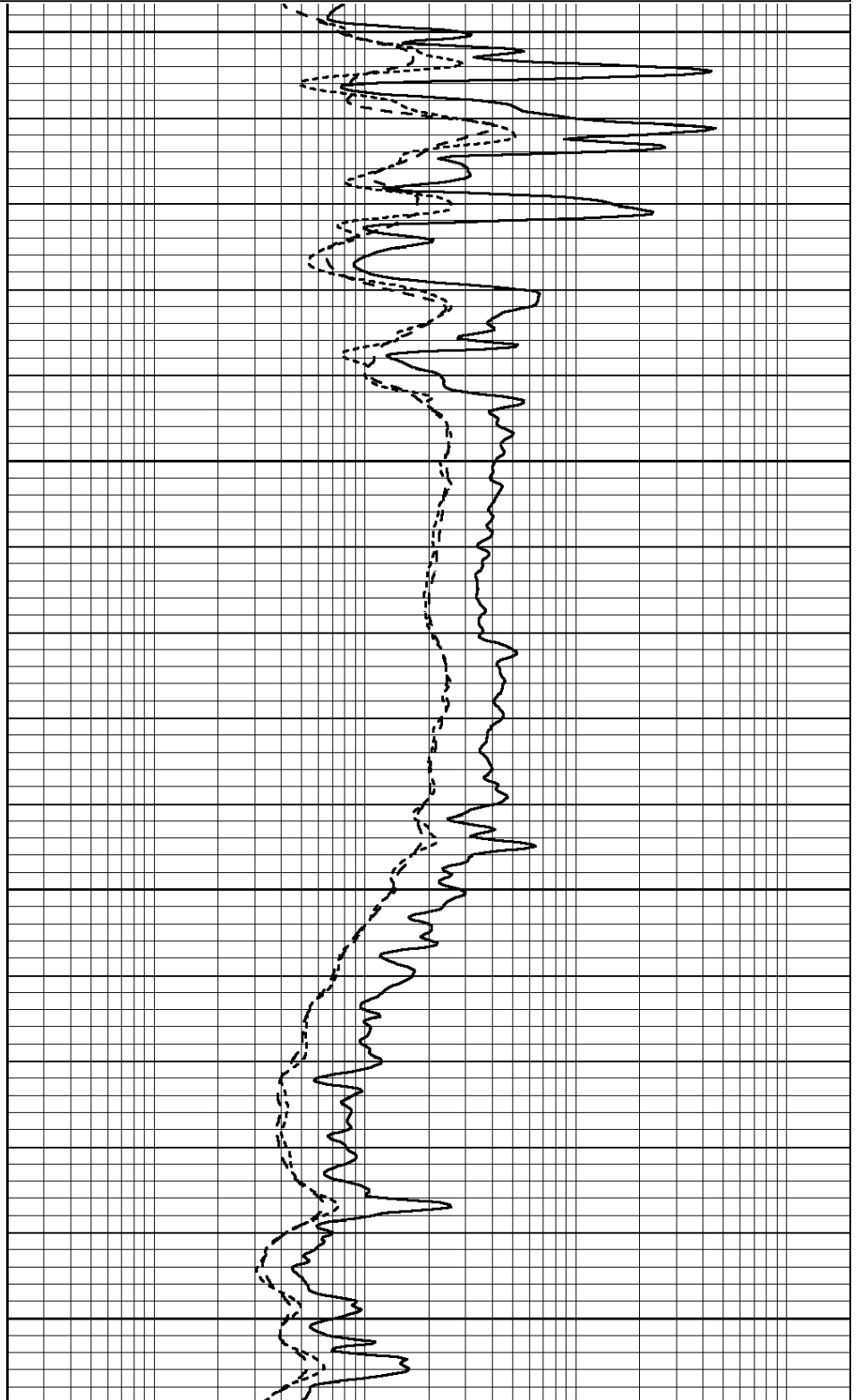


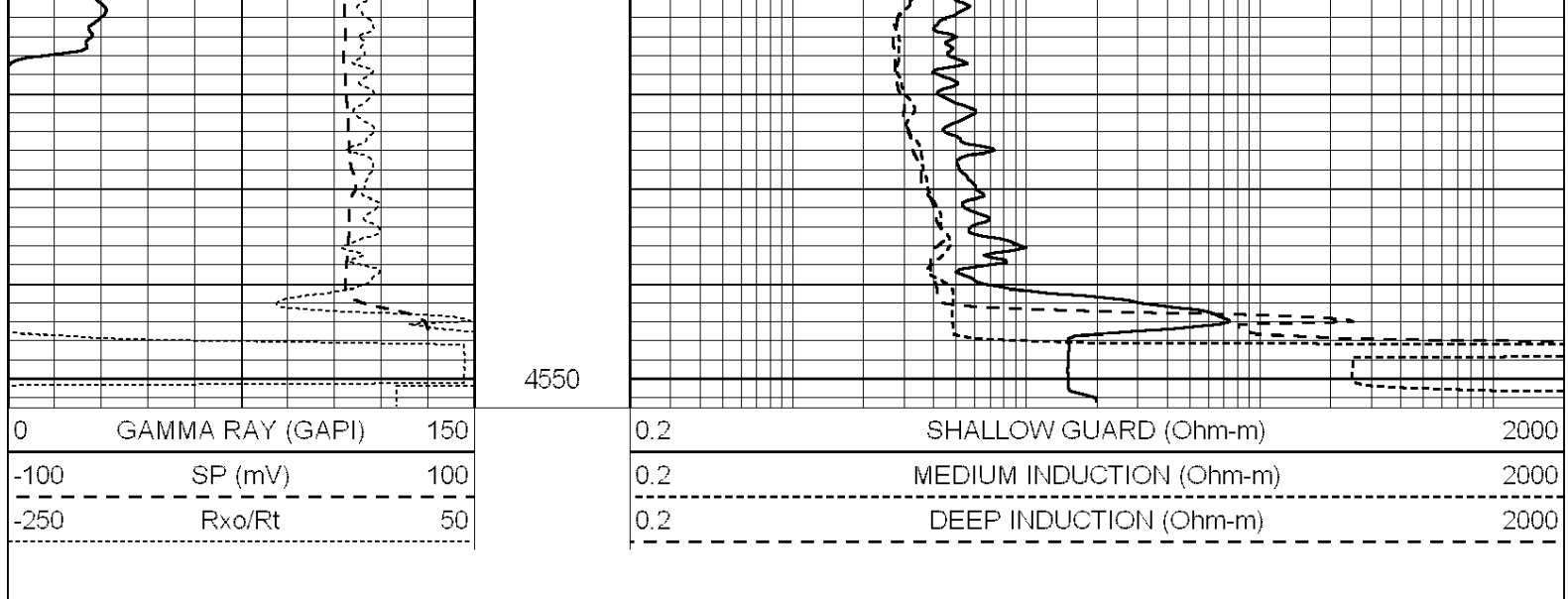
4350

4400

4450

4500





Calibration Report

Database File: 007075pe.db
 Dataset Pathname: pass3.2
 Dataset Creation: Tue May 10 23:54:16 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Wed Jul 30 06:14:24 2008
 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	8.759
Medium	0.039	0.728	V	0.000	464.000	mmho/m	673.322	-26.058
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

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1056.3	9118.0	2809.7	10378.4	cps
Window 2	969.9	7671.9	2431.6	8565.8	cps
Window 3	683.8	2939.8	1161.0	3161.8	cps
Window 4	231.4	231.6	226.7	230.8	cps
Long Space	0.0	6702.0	1461.7	7595.9	cps
Short Space	1.2	1433.6	959.4	1568.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.559
Spine Angle	: 75.2	Spine Slope	: 3.791	Spine Intercept	: -18.7

Caliper

	Readings	Reference	
Low Ref	2.8	8.0	
High Ref	5.0	14.0	
Gain: 2.7			Offset: -1.0

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: Sun Apr 10 22:50:36 2011

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 175.0 cps

Sensitivity: 0.8971 GAPI/cps