



SUPERIOR
Hays,
Kansas

**DUAL INDUCTION
LOG**

Company PIONEER RESOURCES
Well KNOPP #3
Field WILDCAT
County LOGAN
State KANSAS

Company PIONEER RESOURCES
Well KNOPP #3
Field WILDCAT
County LOGAN State KANSAS

Location: API # : 15-109-21016-0000
SEC 13 TWP 14S RGE 32W
330' FSL & 330' FEL
Permanent Datum GROUND LEVEL Elevation 2780
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL
MEL
Elevation
K.B. 2785
D.F. 2783
G.L. 2780

Date	8/4/11
Run Number	TWO
Depth Driller	4600
Depth Logger	4602
Bottom Logged Interval	4600
Top Log Interval	00
Casing Driller	8 5/8"@218'
Casing Logger	218
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/55
pH / Fluid Loss	10.5/8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.580@100F
Rmt @ Meas. Temp	.435@100F
Rmc @ Meas. Temp	.698@100F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.479@121F
Time Circulation Stopped	4.5 HOURS
Time Logger on Bottom	5:45 A.M.
Maximum Recorded Temperature	121F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	RICHARD BELL

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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 HAYS, KANSAS (785) 628-6395
DIRECTIONS
OAKLEY, KS. (OLD 40 & HWY 83 JUNCTION) 20S. ON HWY 83 TO "JAYHAWK RD.", 2E., N. INTO



SUPERIOR
Hays,
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MAIN SECTION

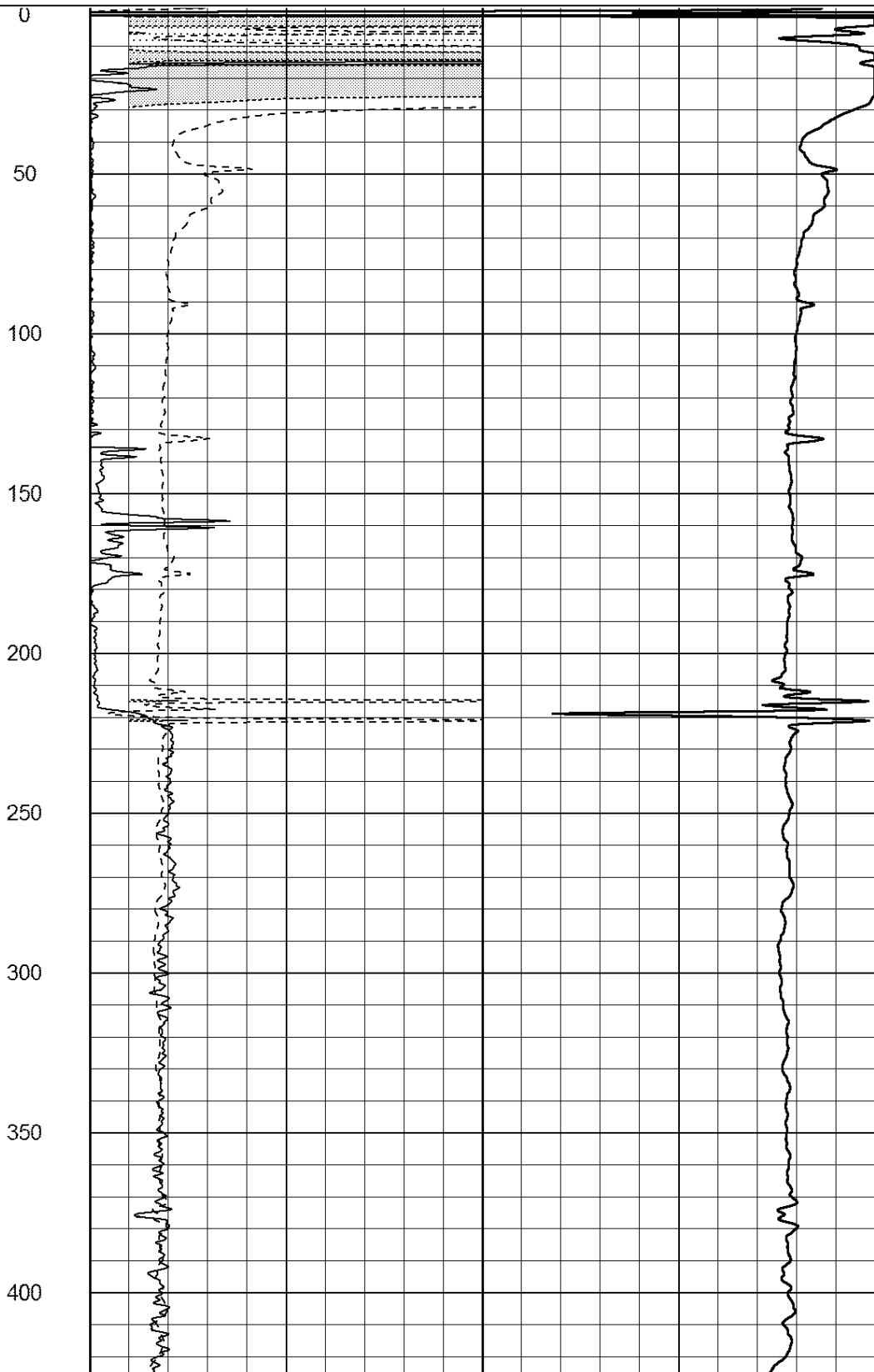
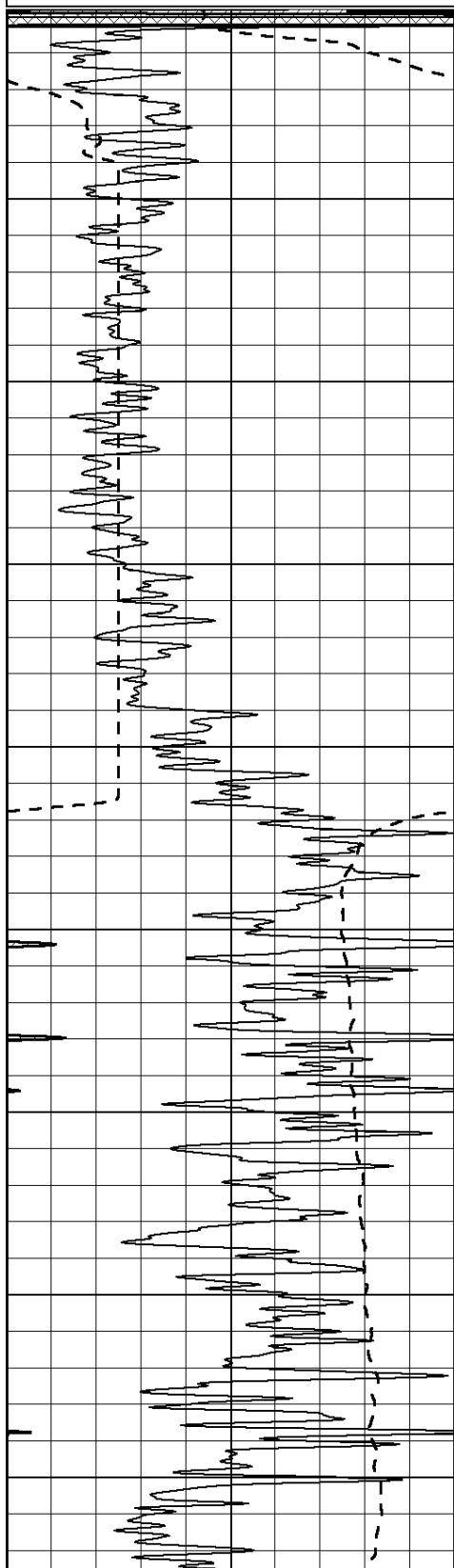
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 Dataset Creation: Thu Aug 04 09:01:19 2011 by Calc Open-Cased 110302
 Charted by: Depth in Feet scaled 1:600

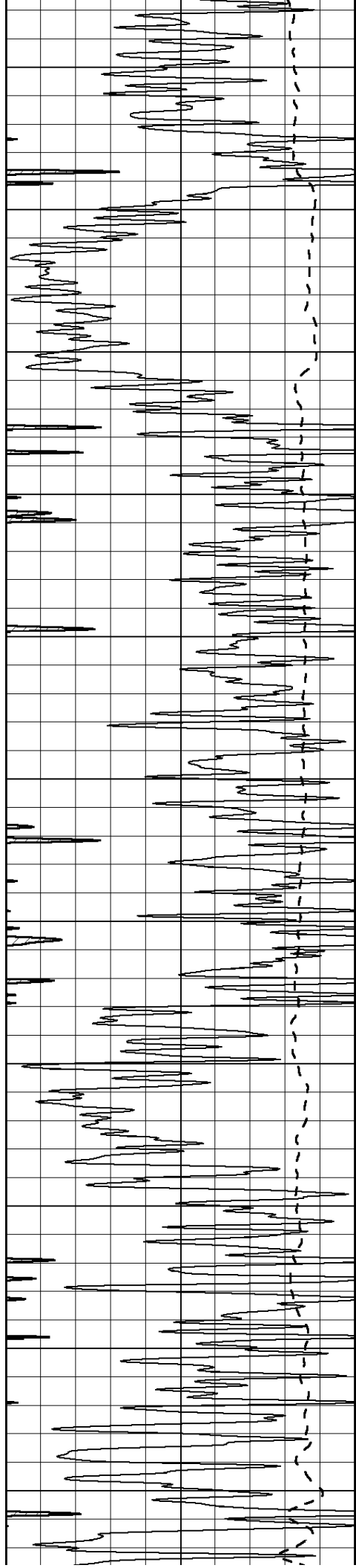
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-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

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





450

500

550

600

650

700

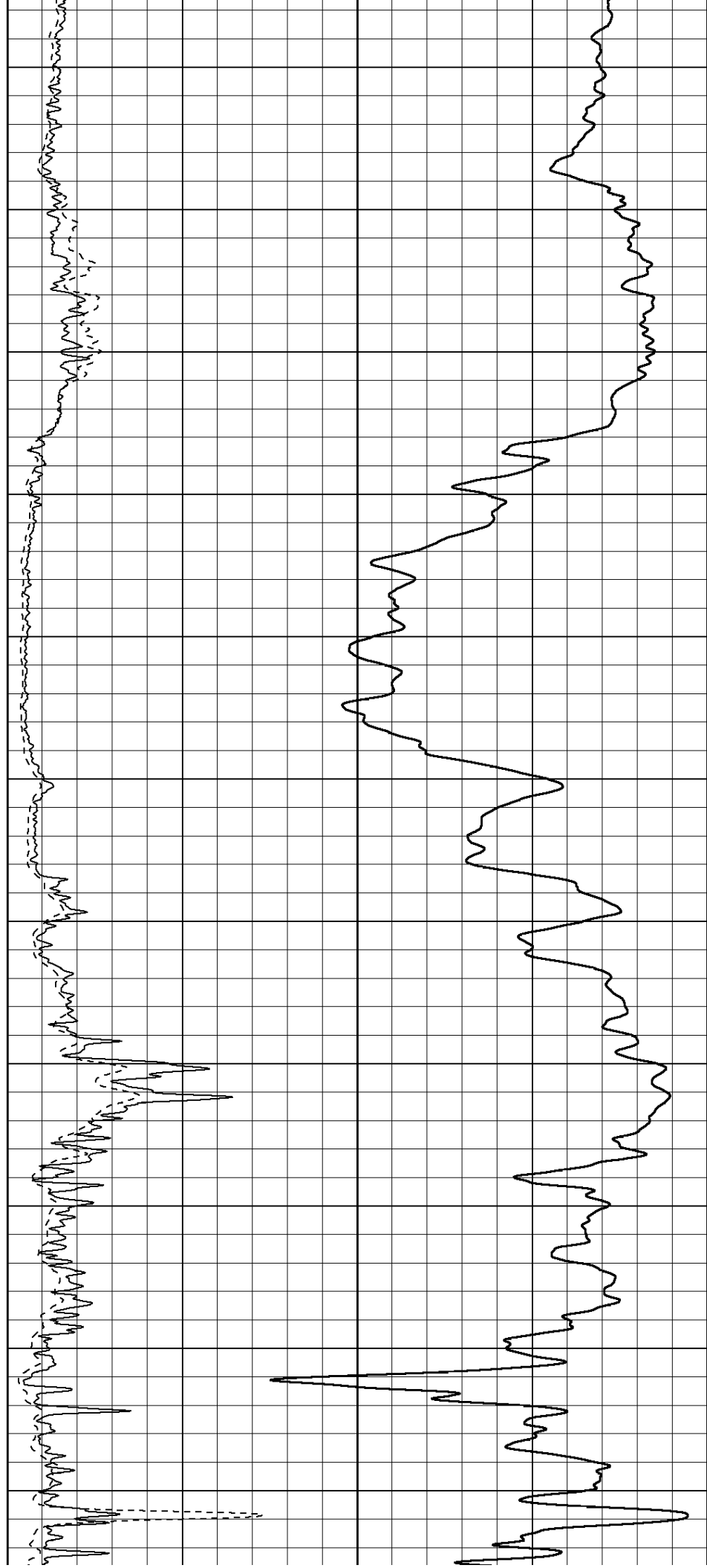
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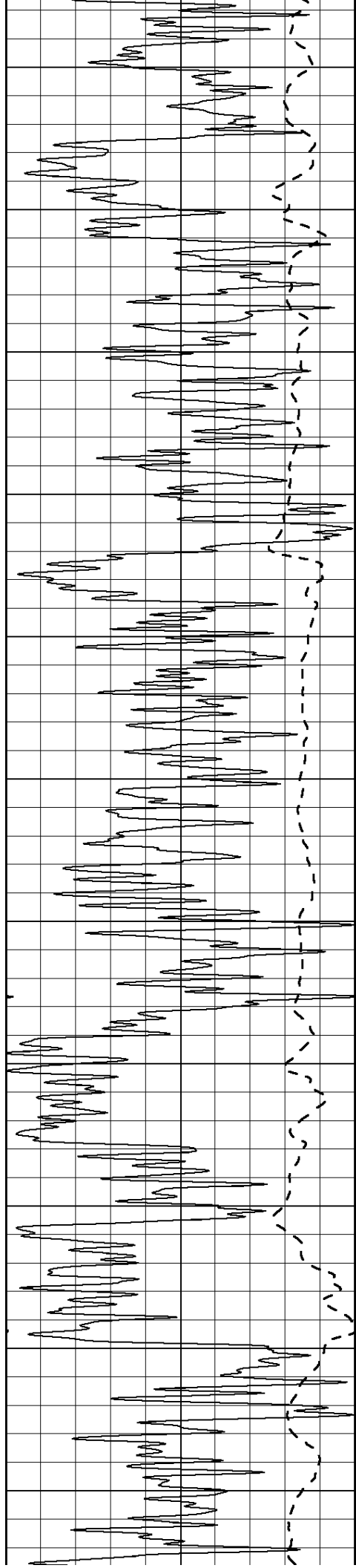
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850

900

950





1000

1050

1100

1150

1200

1250

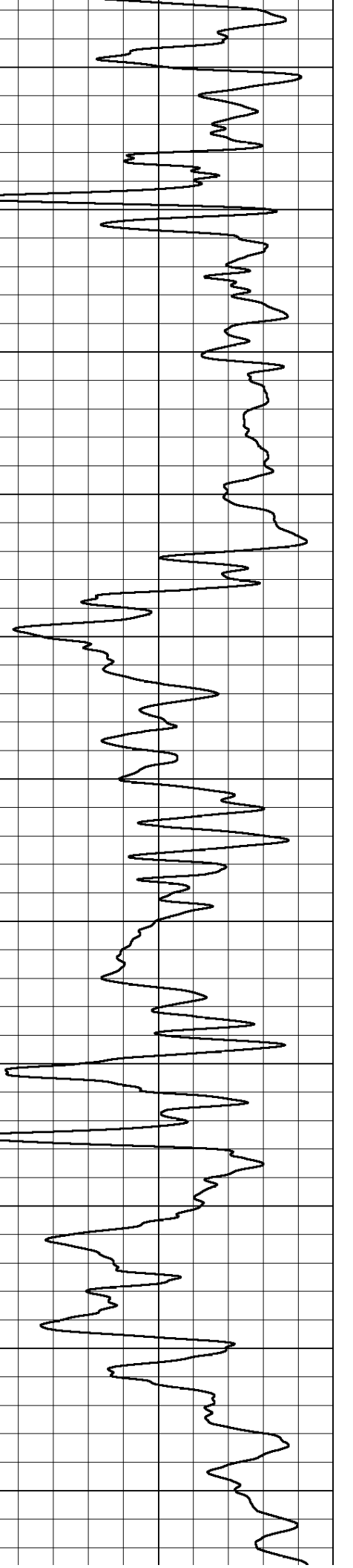
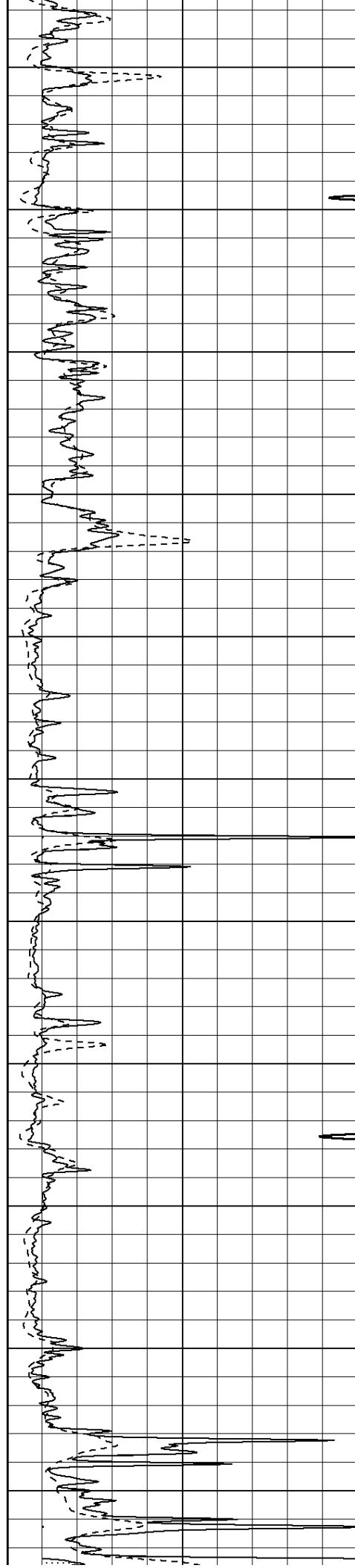
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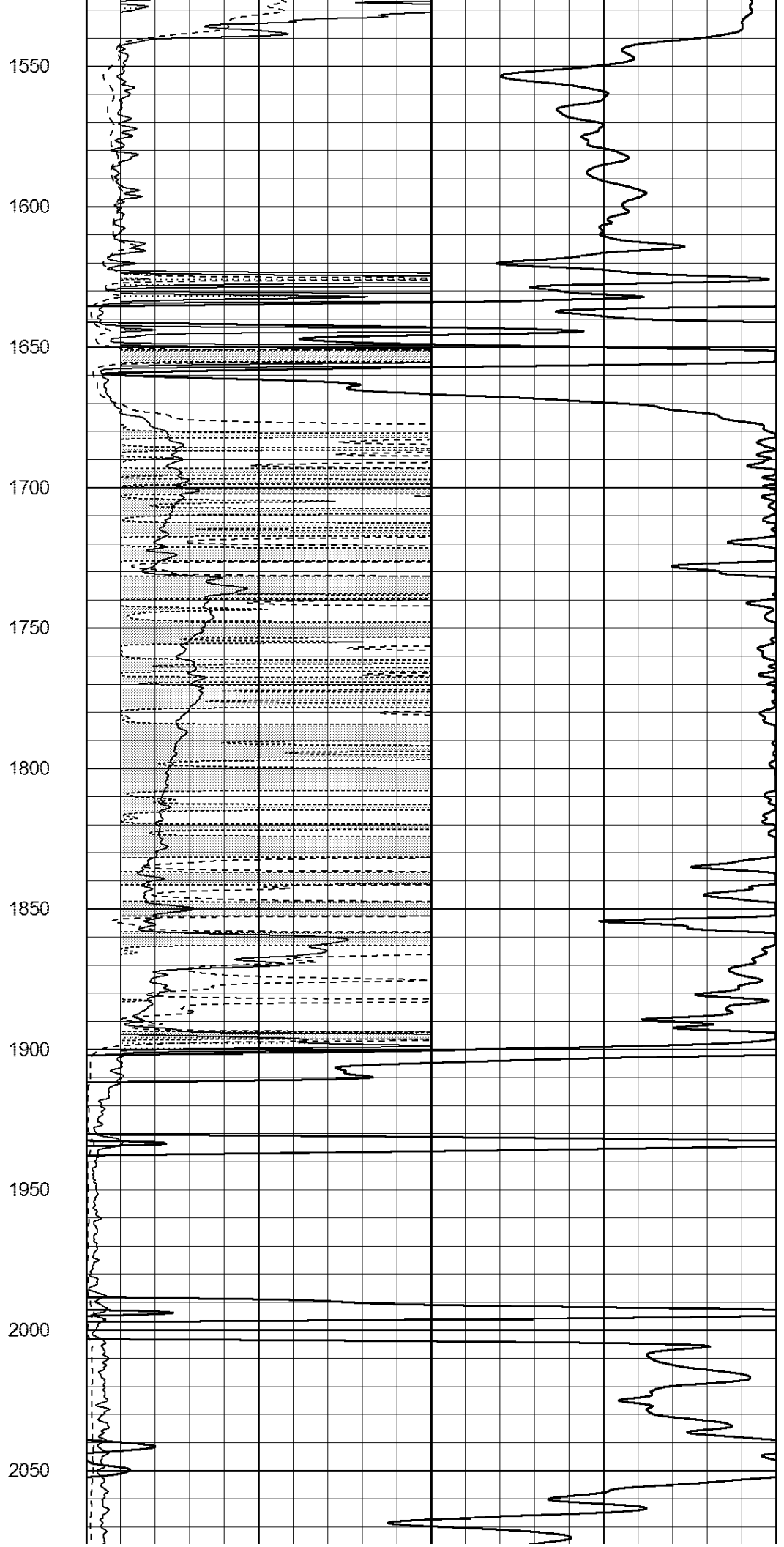
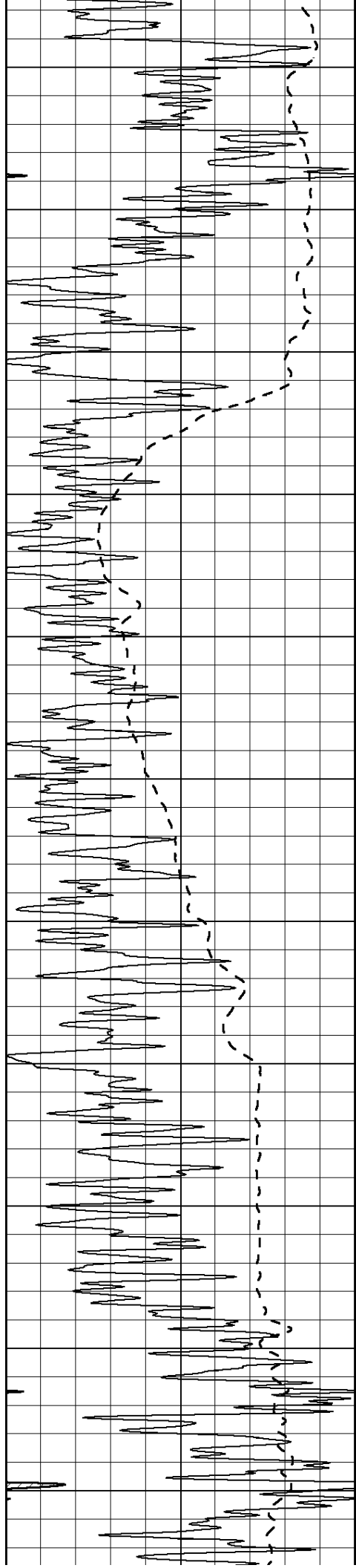
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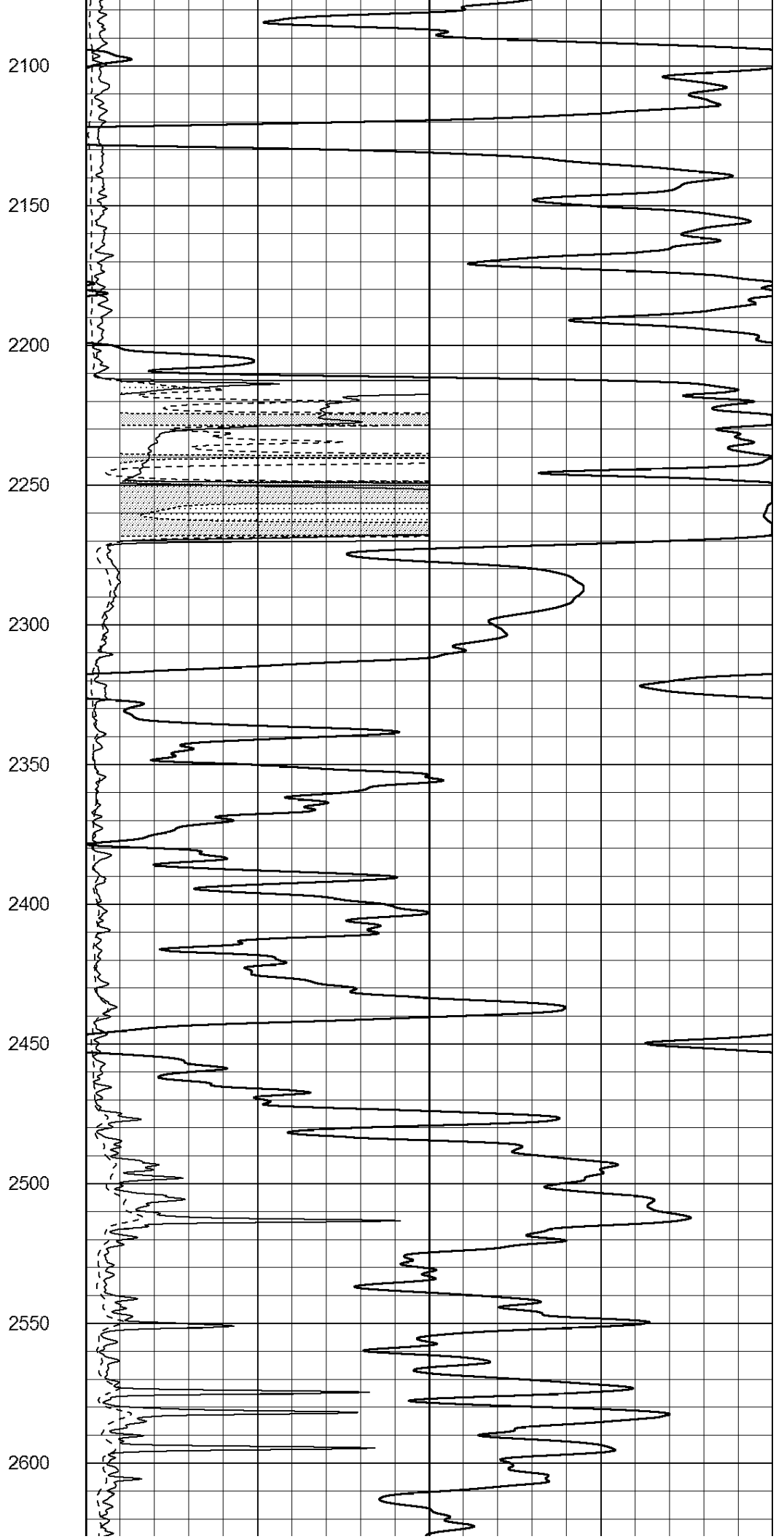
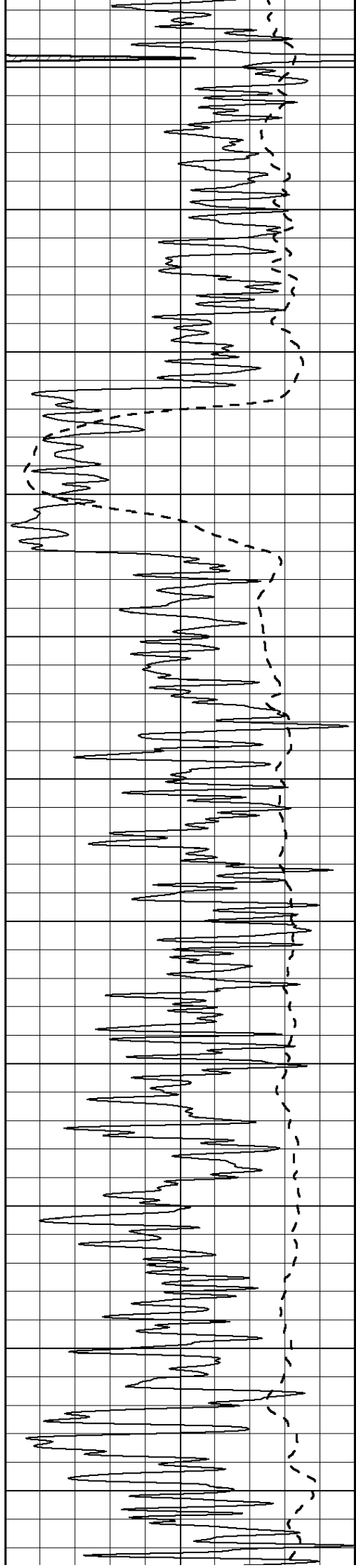
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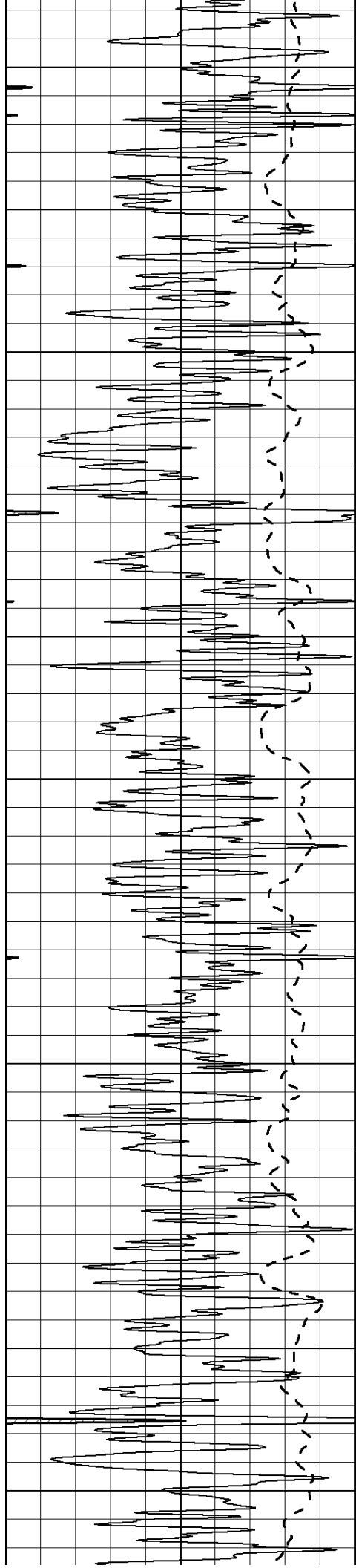
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1500









2650

2700

2750

2800

2850

2900

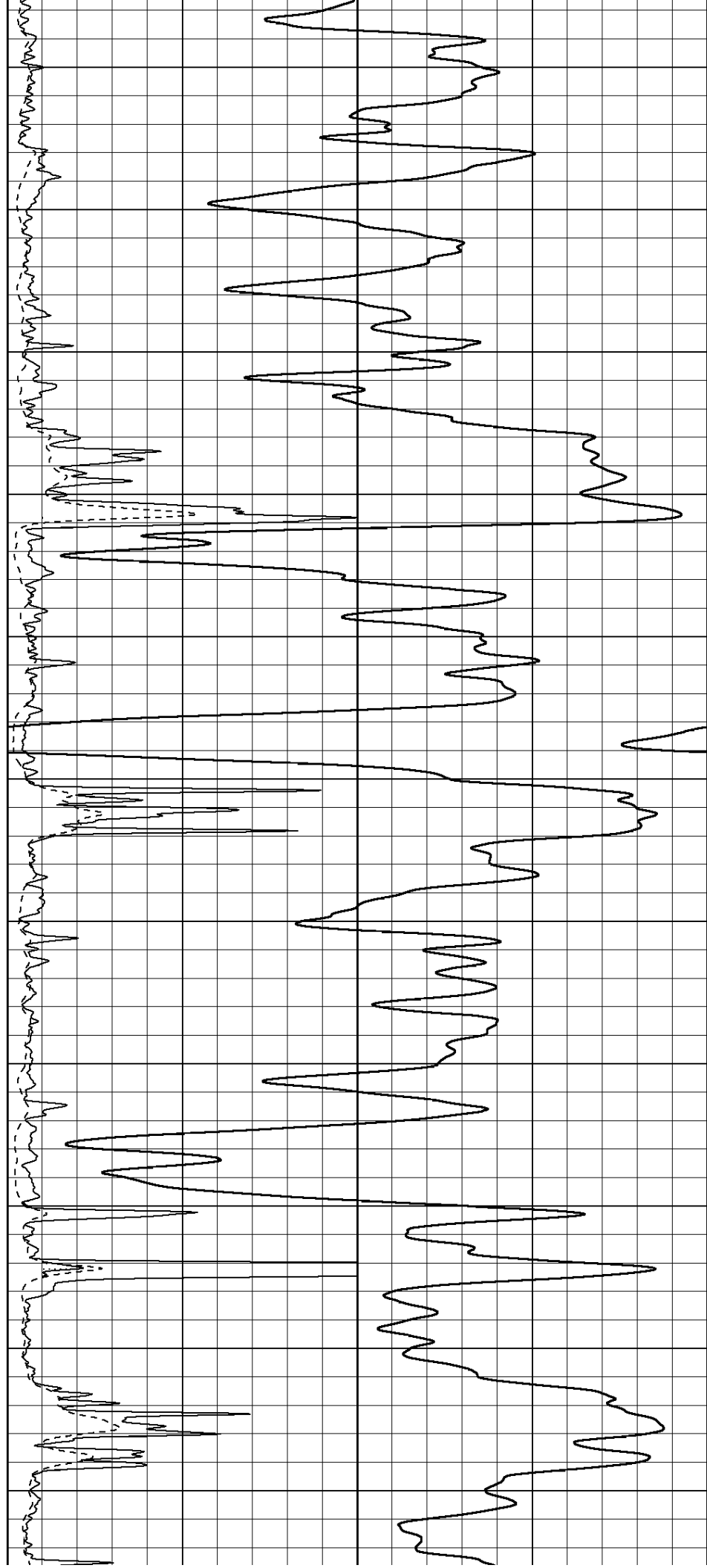
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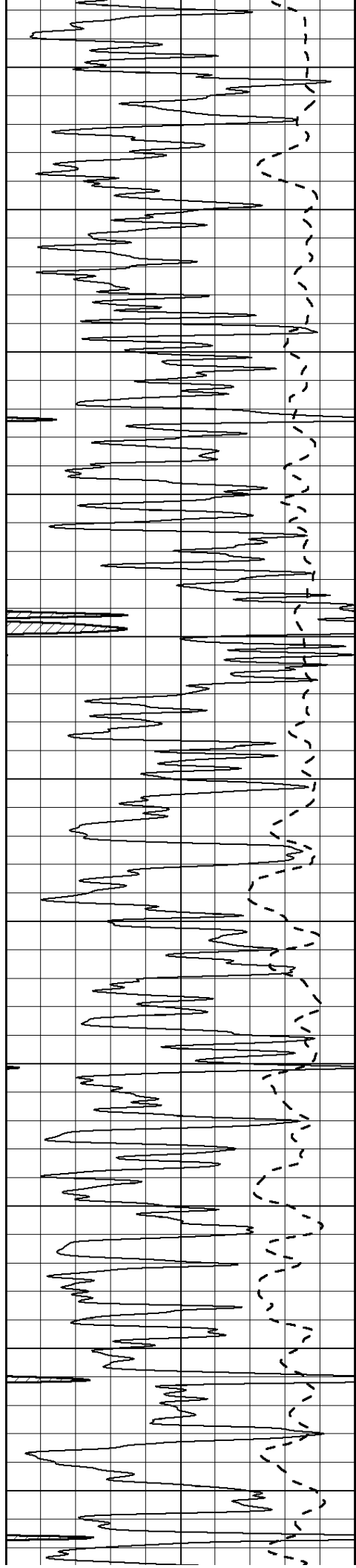
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3050

3100

3150





3200

3250

3300

3350

3400

3450

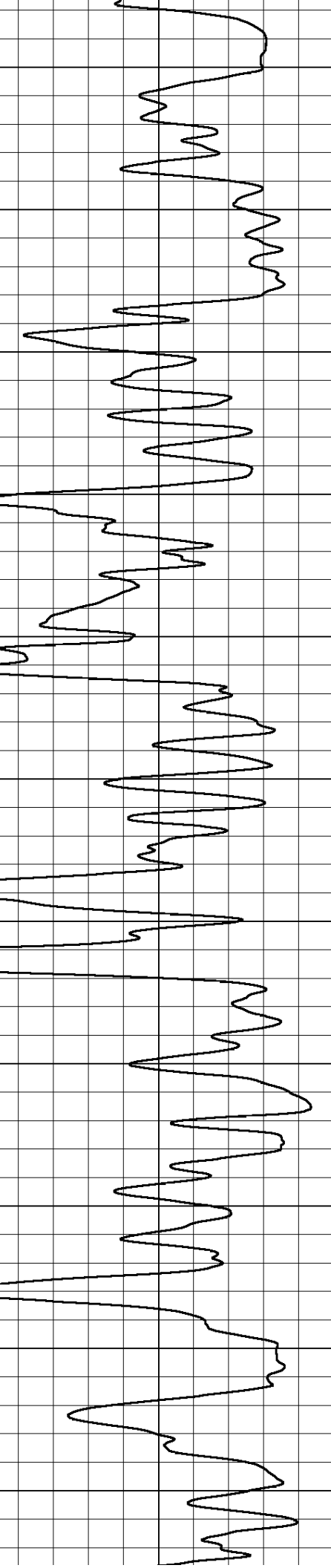
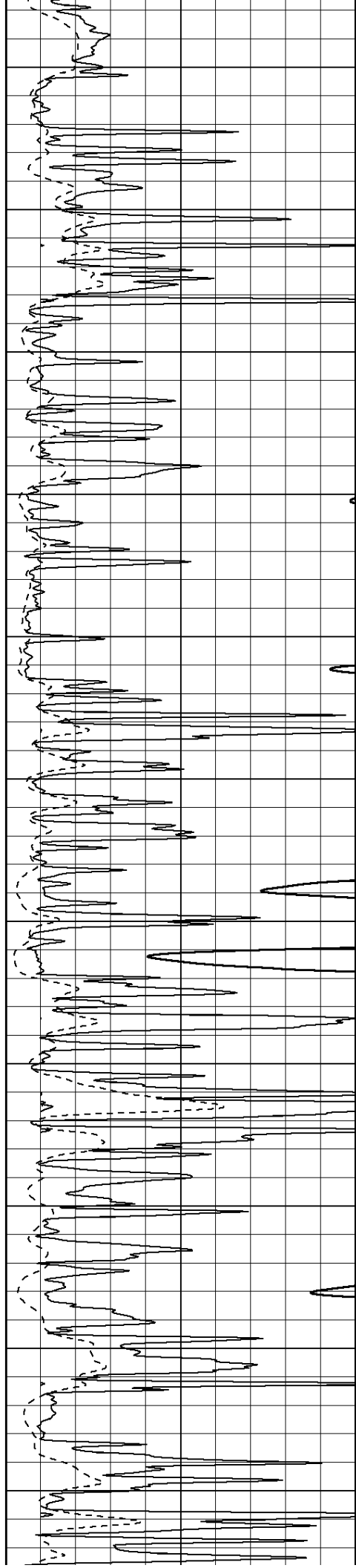
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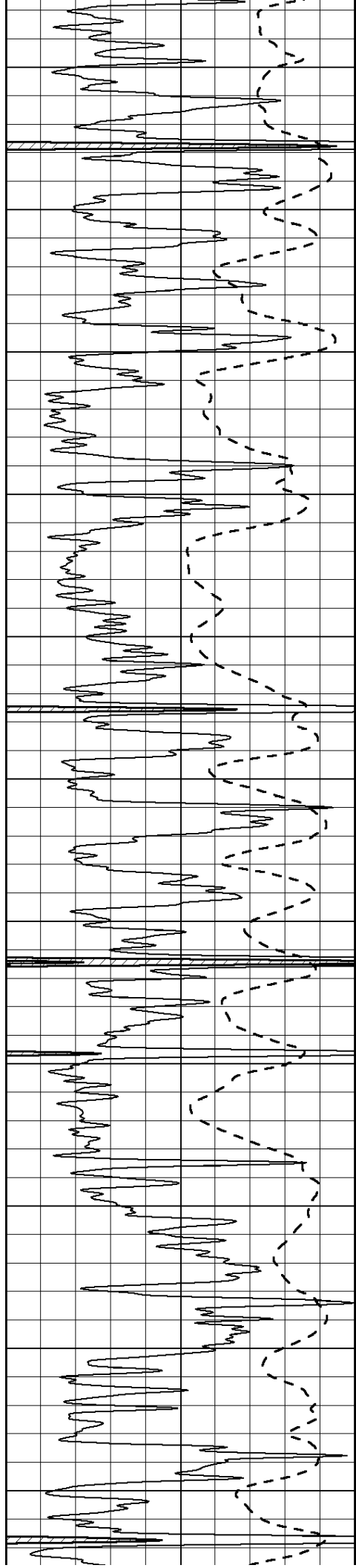
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3600

3650

3700





3750

3800

3850

3900

3950

4000

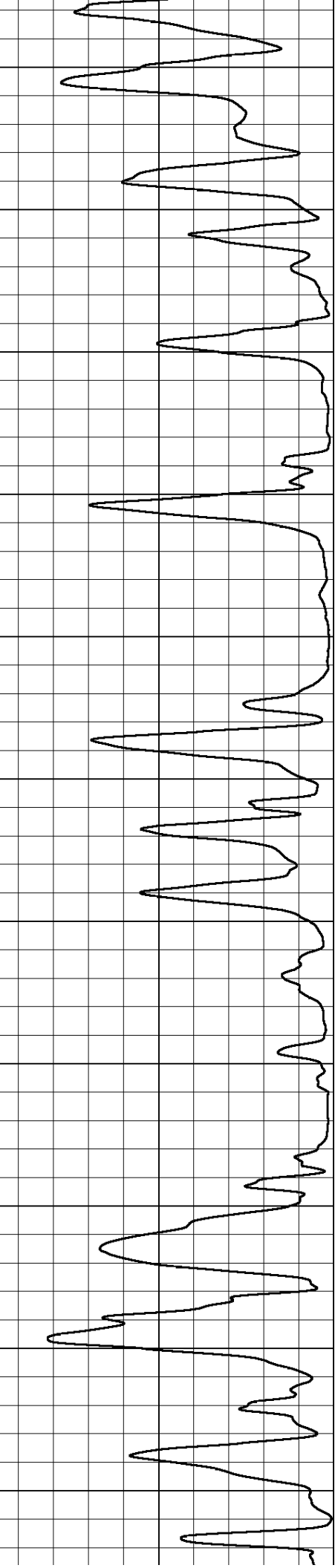
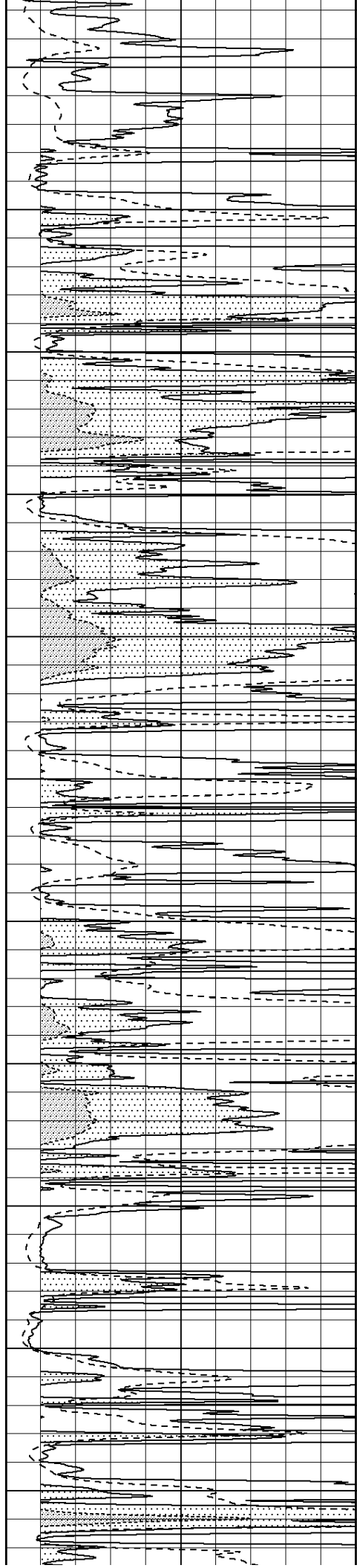
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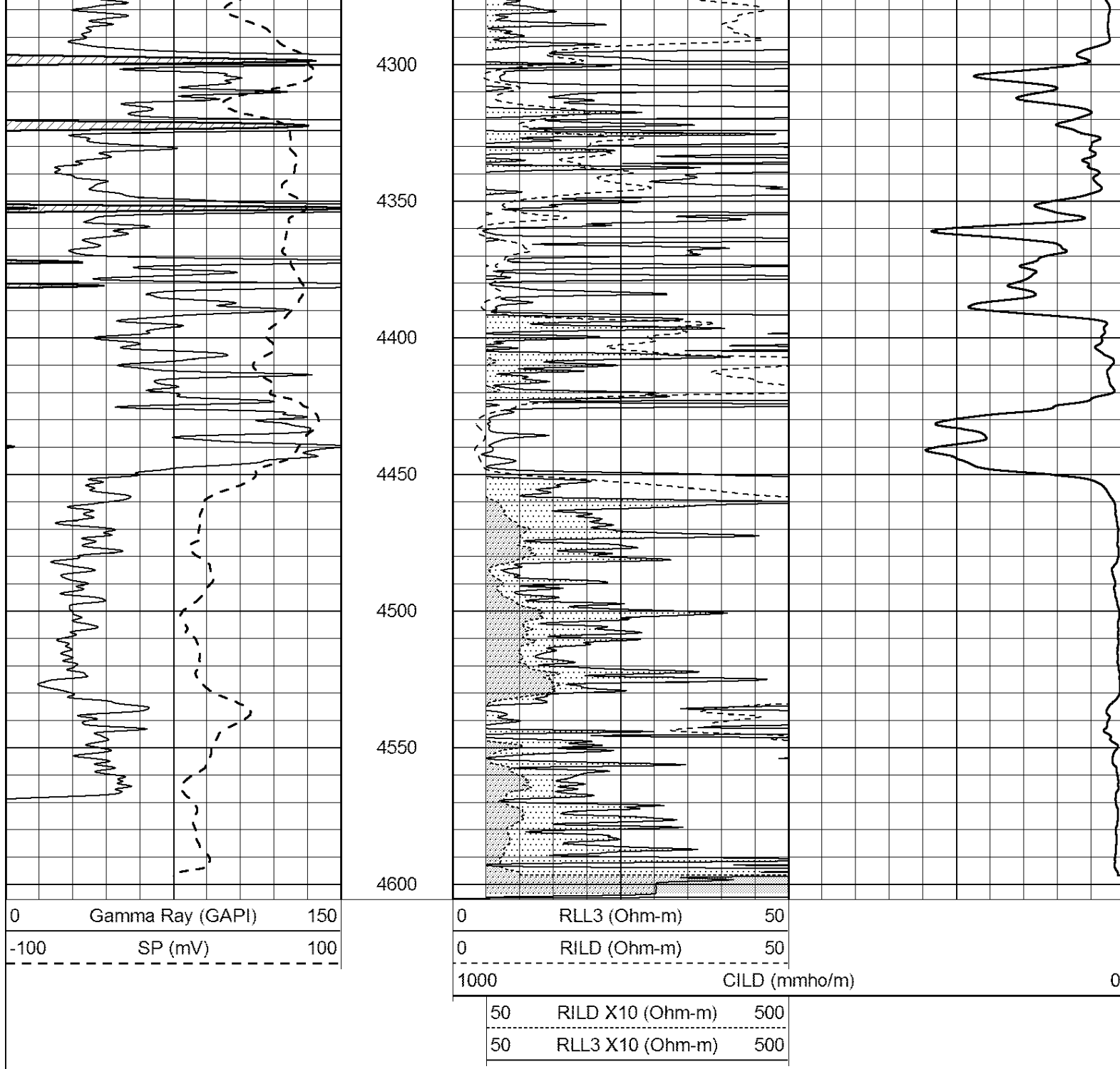
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4150

4200

4250



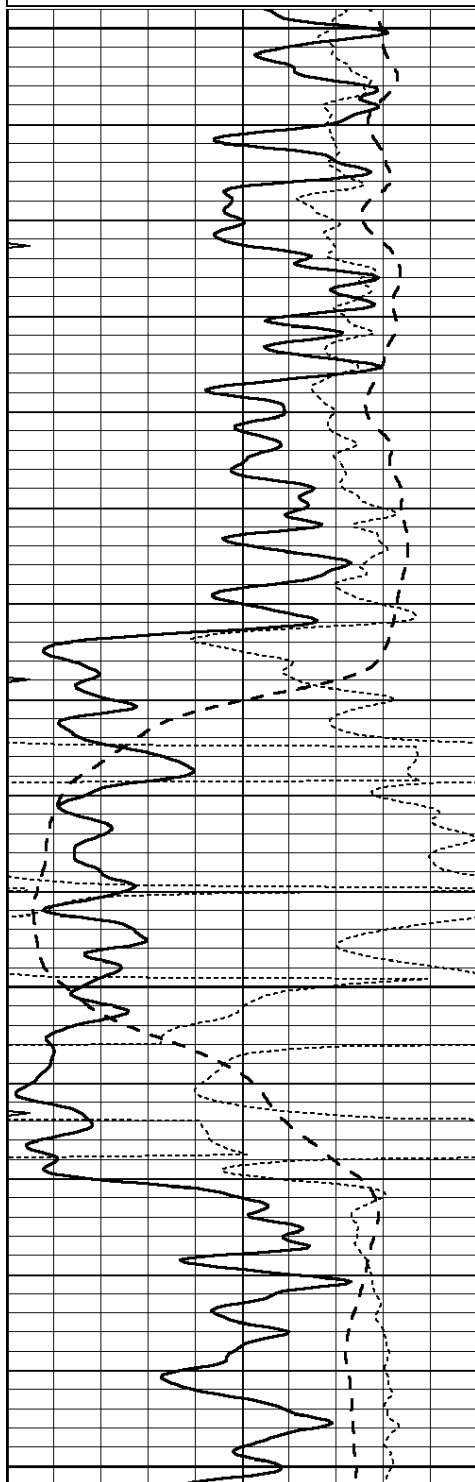


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ANHYDRITE

Database File: 007101ddn.db
 Dataset Pathname: pass6.7
 Presentation Format: dil
 Dataset Creation: Thu Aug 04 09:02:11 2011 by Calc Open-Cased 110302
 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	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



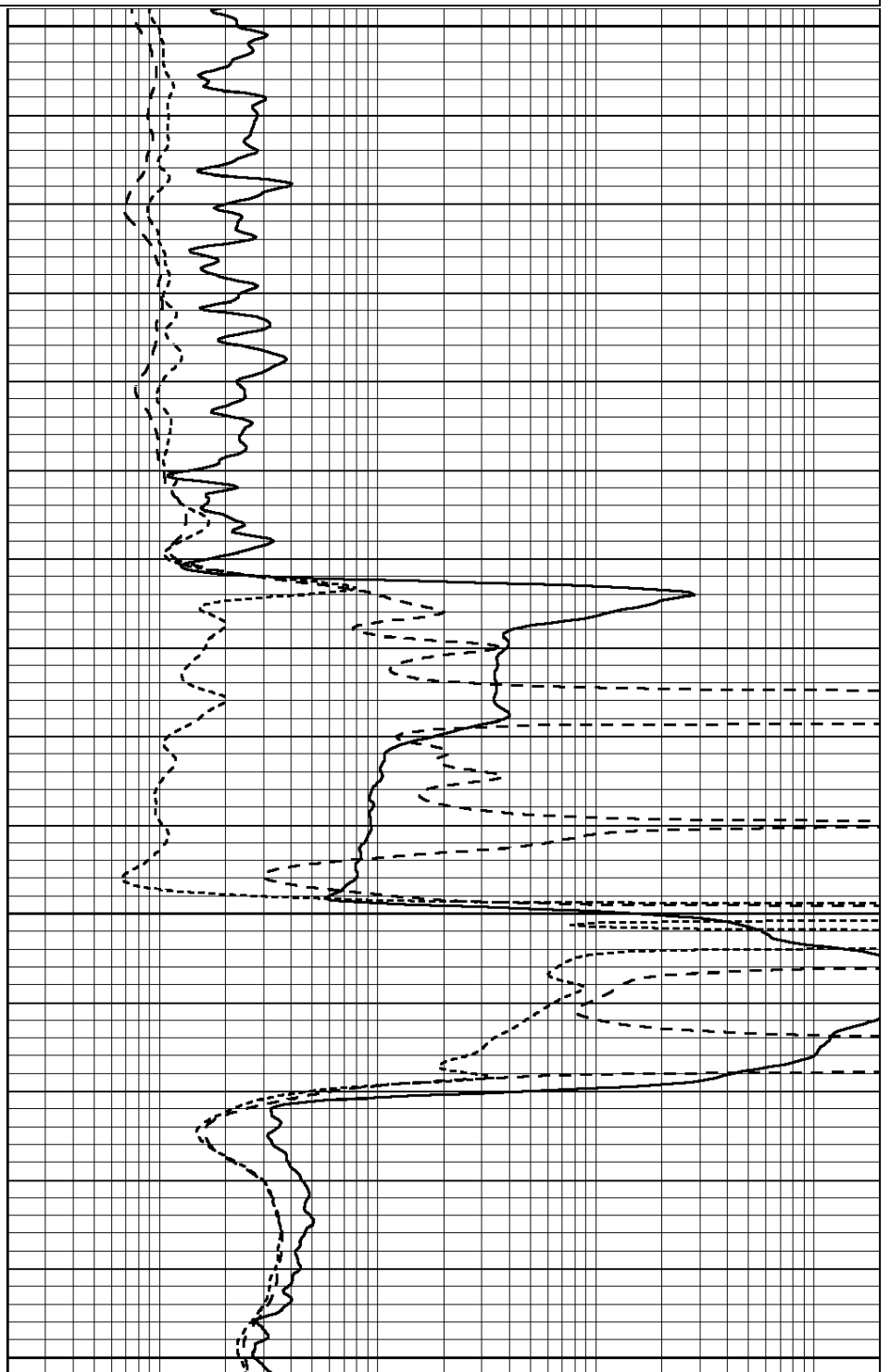
2150

2200

2250

2300

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

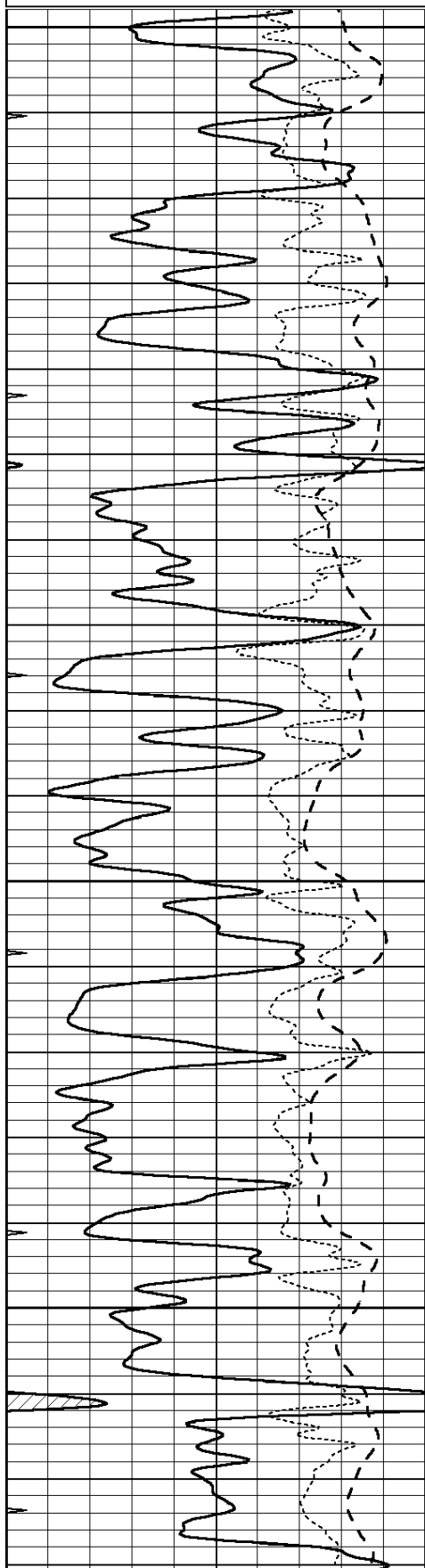


SUPERIOR
Hays,
Kansas

MAIN SECTION

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

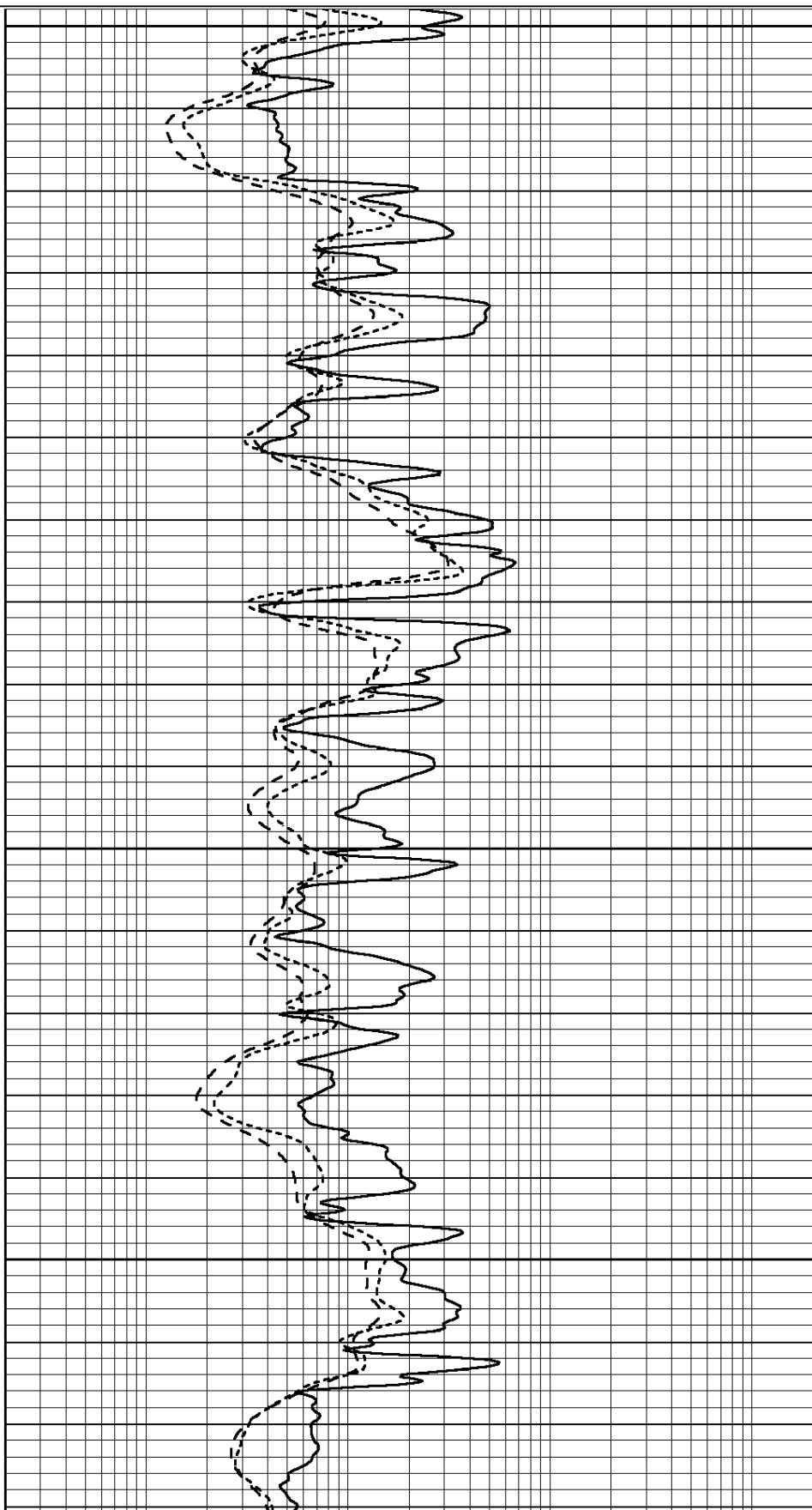


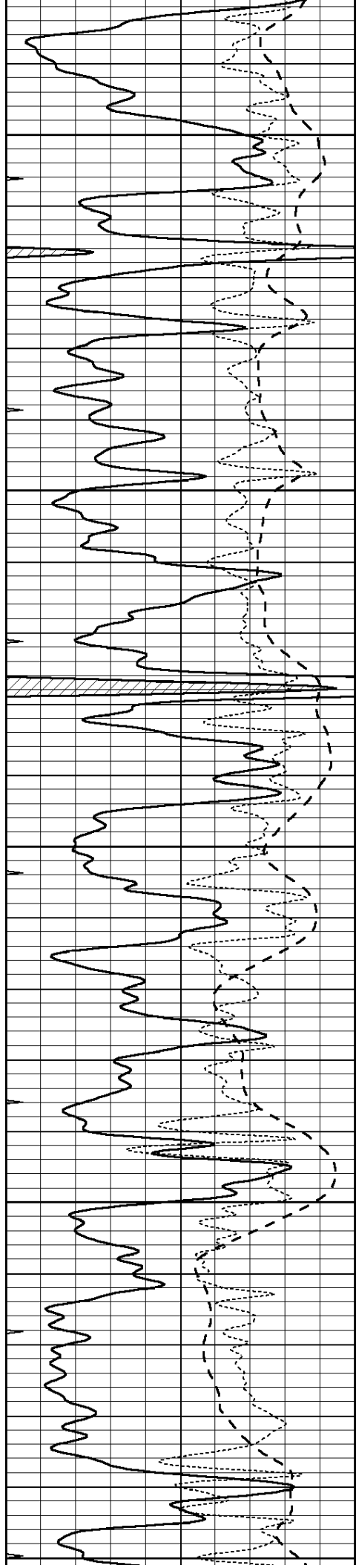
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3550

3600

3650





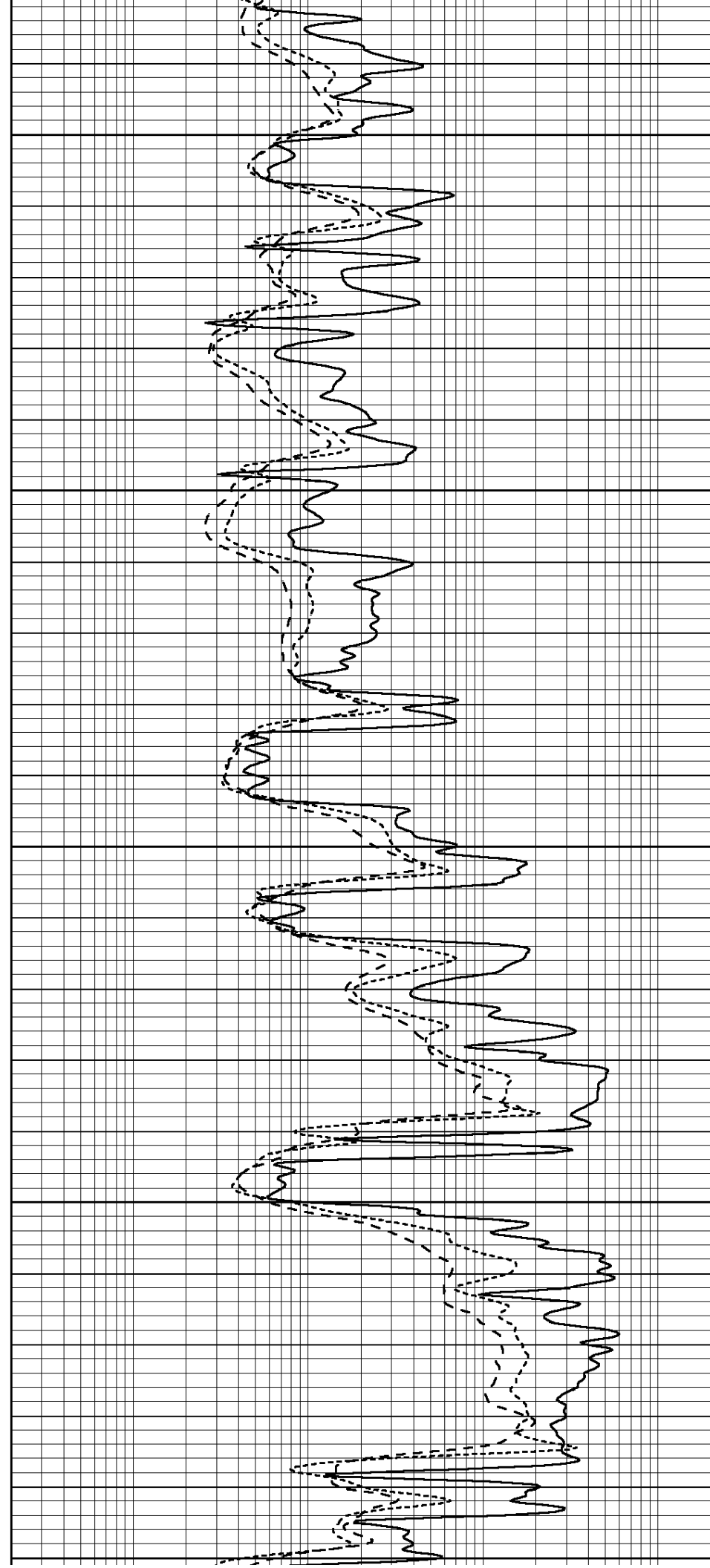
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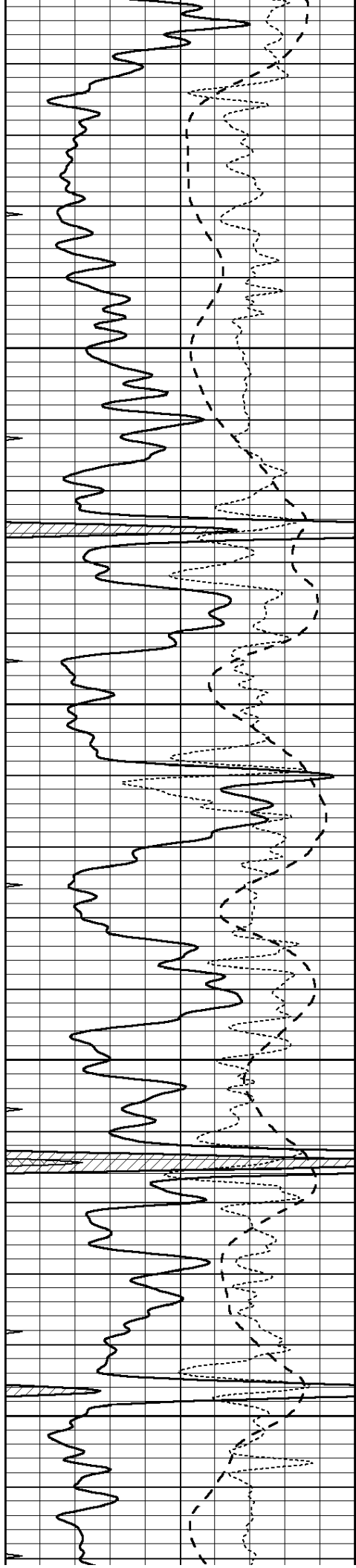
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3850

3900



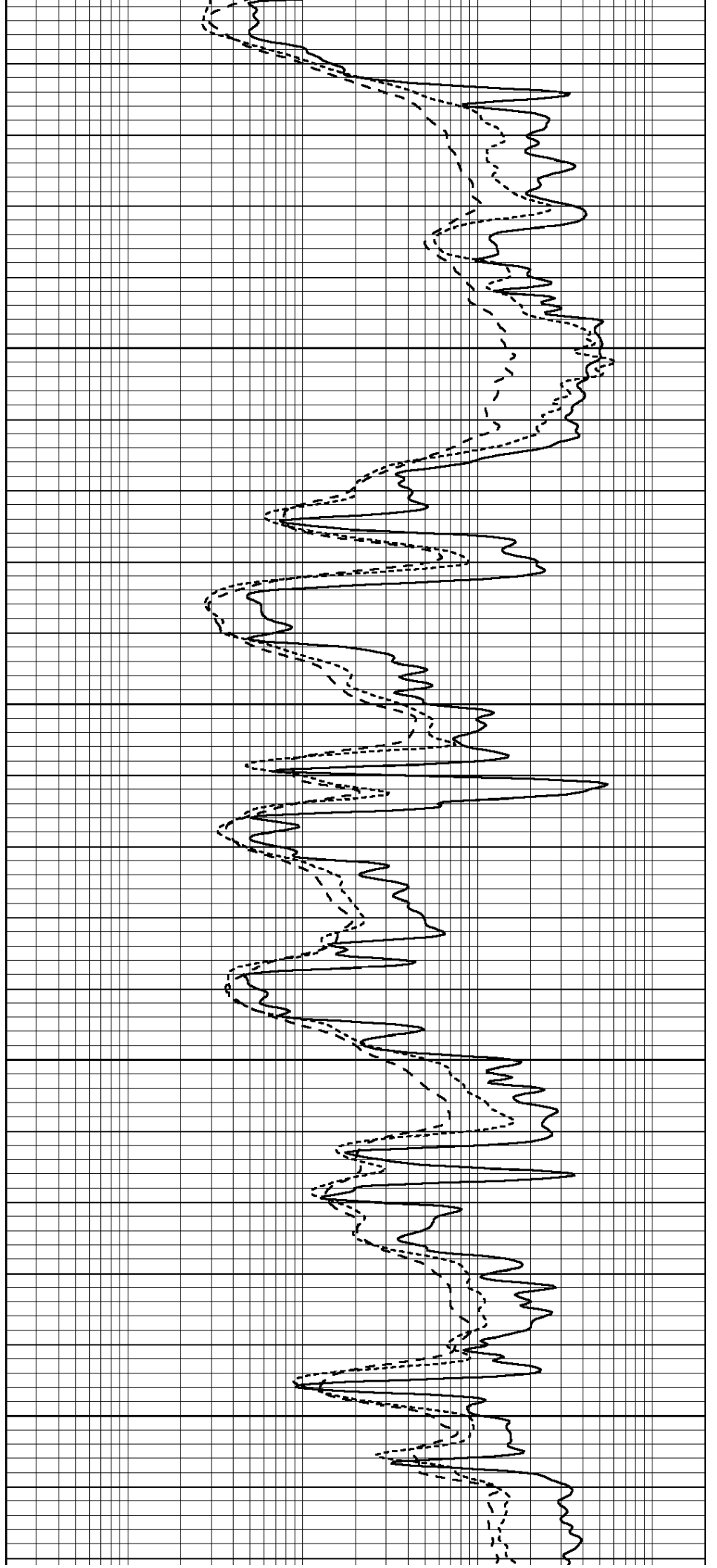


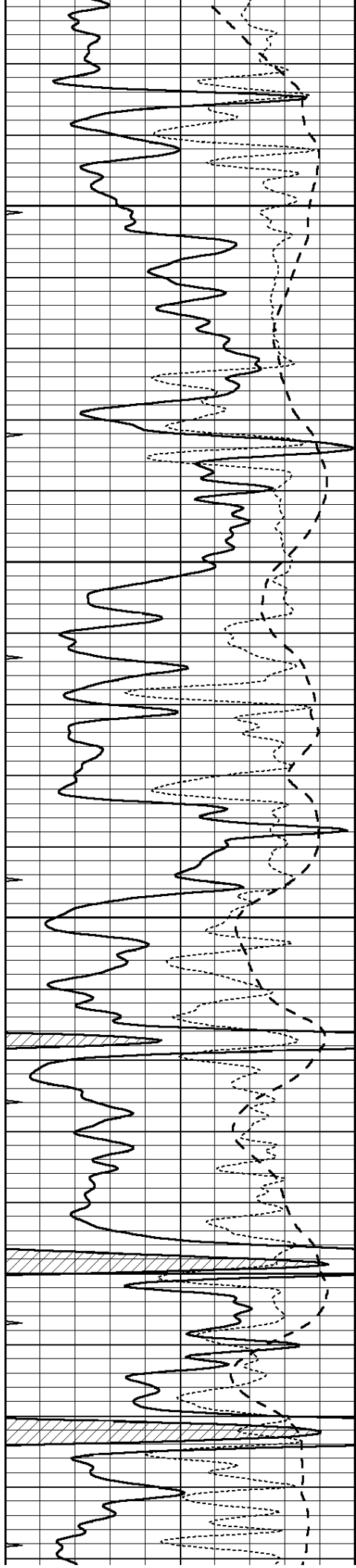
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4000

4050

4100



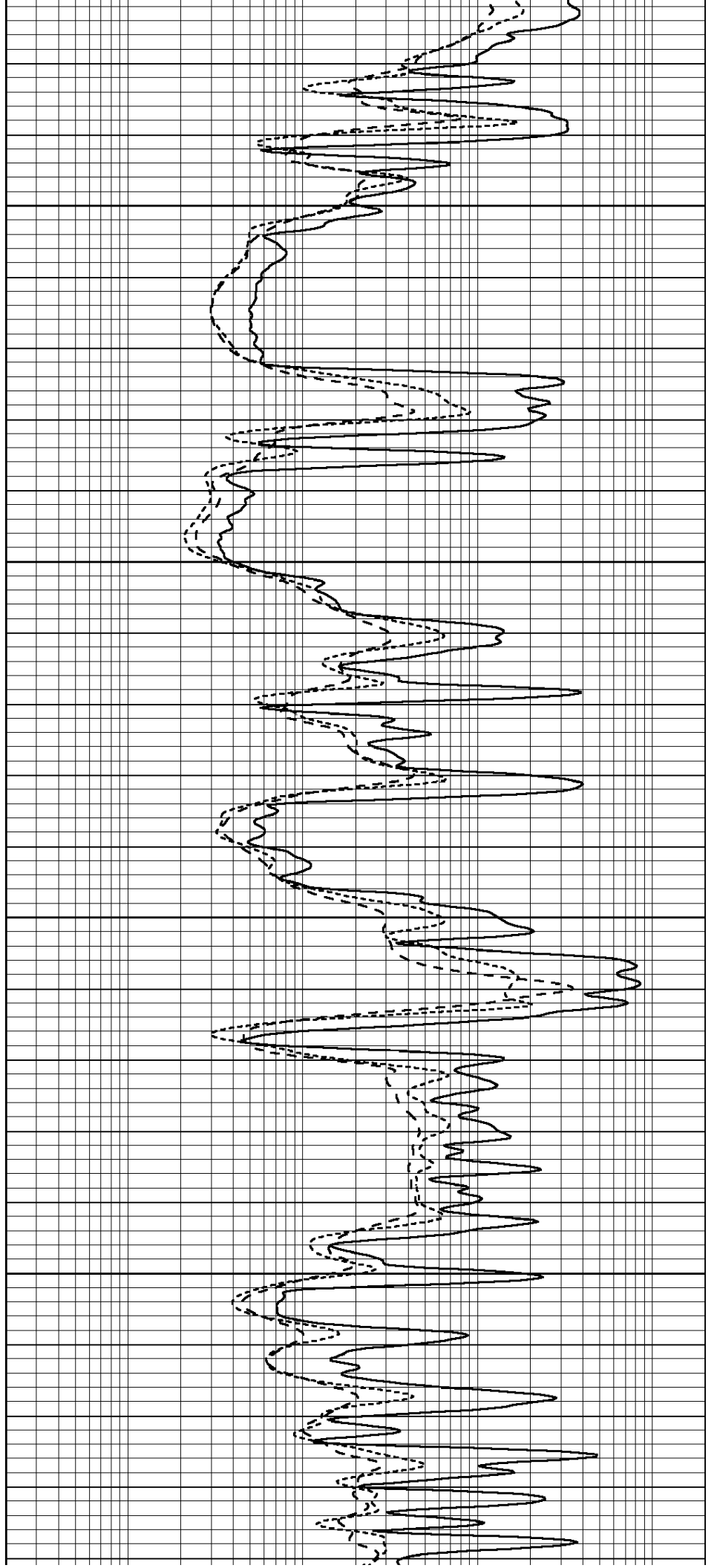


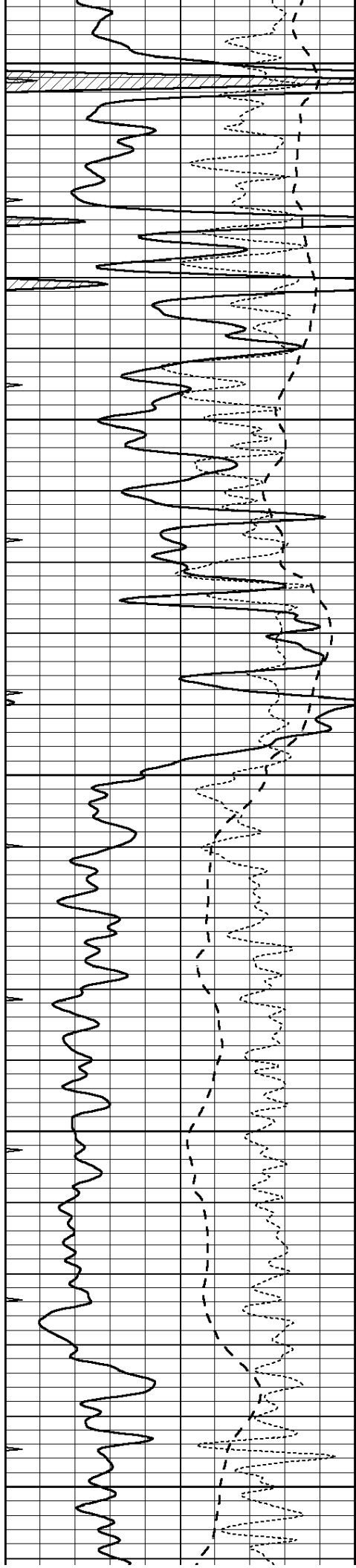
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4200

4250

4300





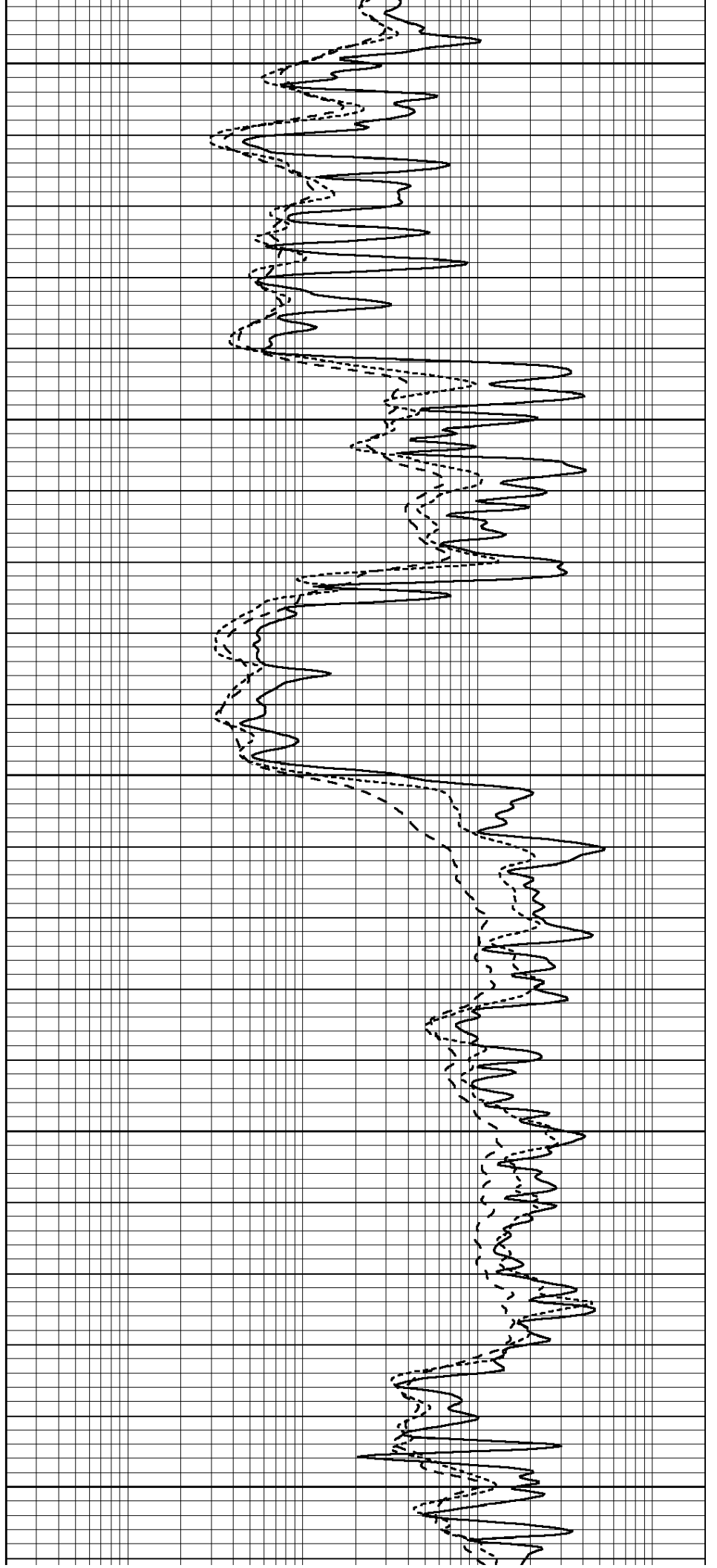
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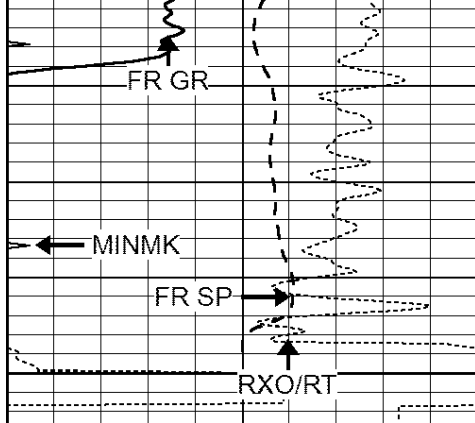
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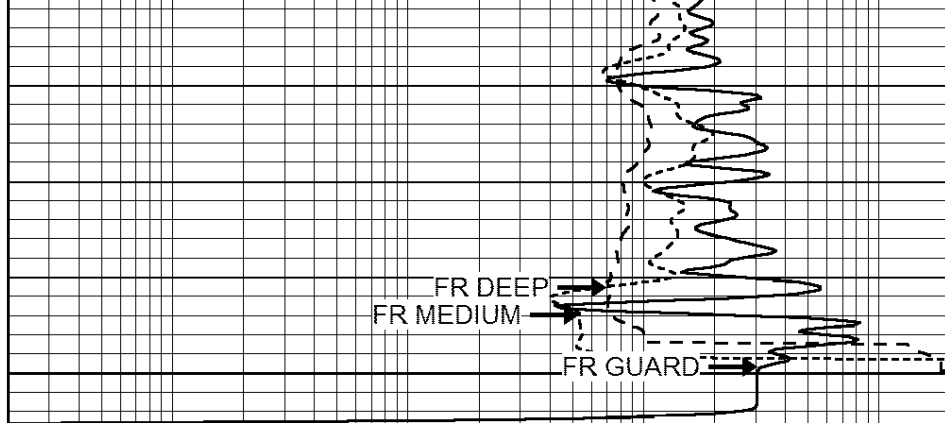
4550





4600
LTD 4602

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



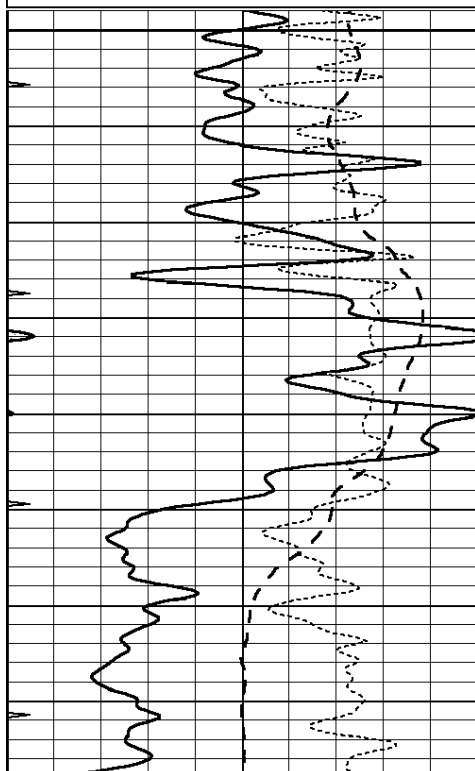
SUPERIOR
Hays,
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REPEAT SECTION

Database File: 007101ddn.db
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 Charted by: Depth in Feet scaled 1:240

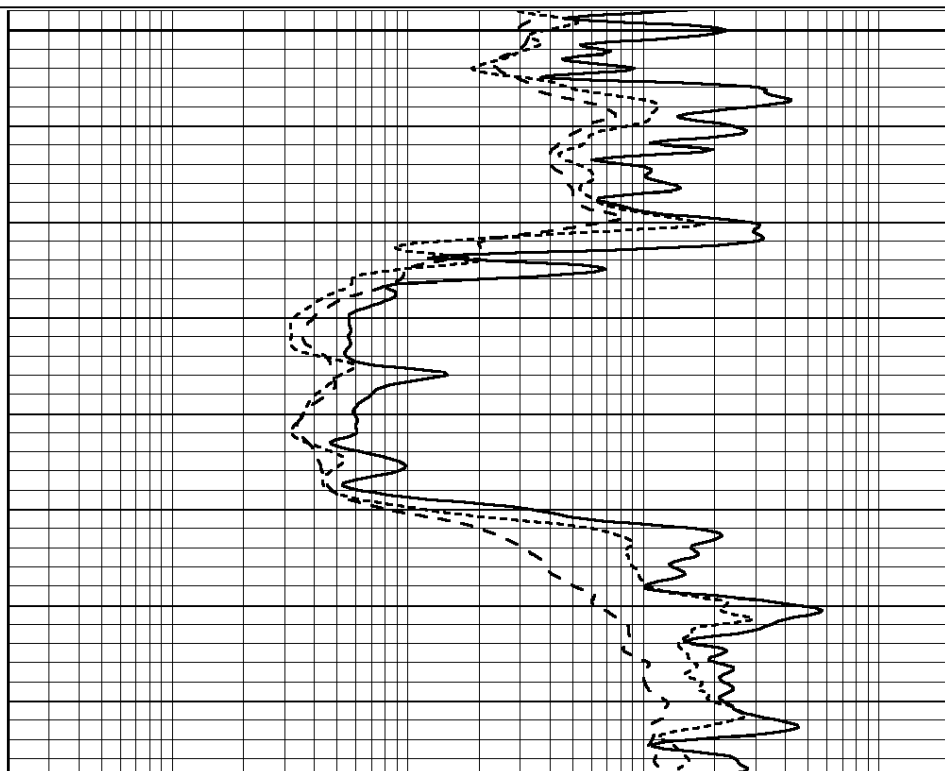
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

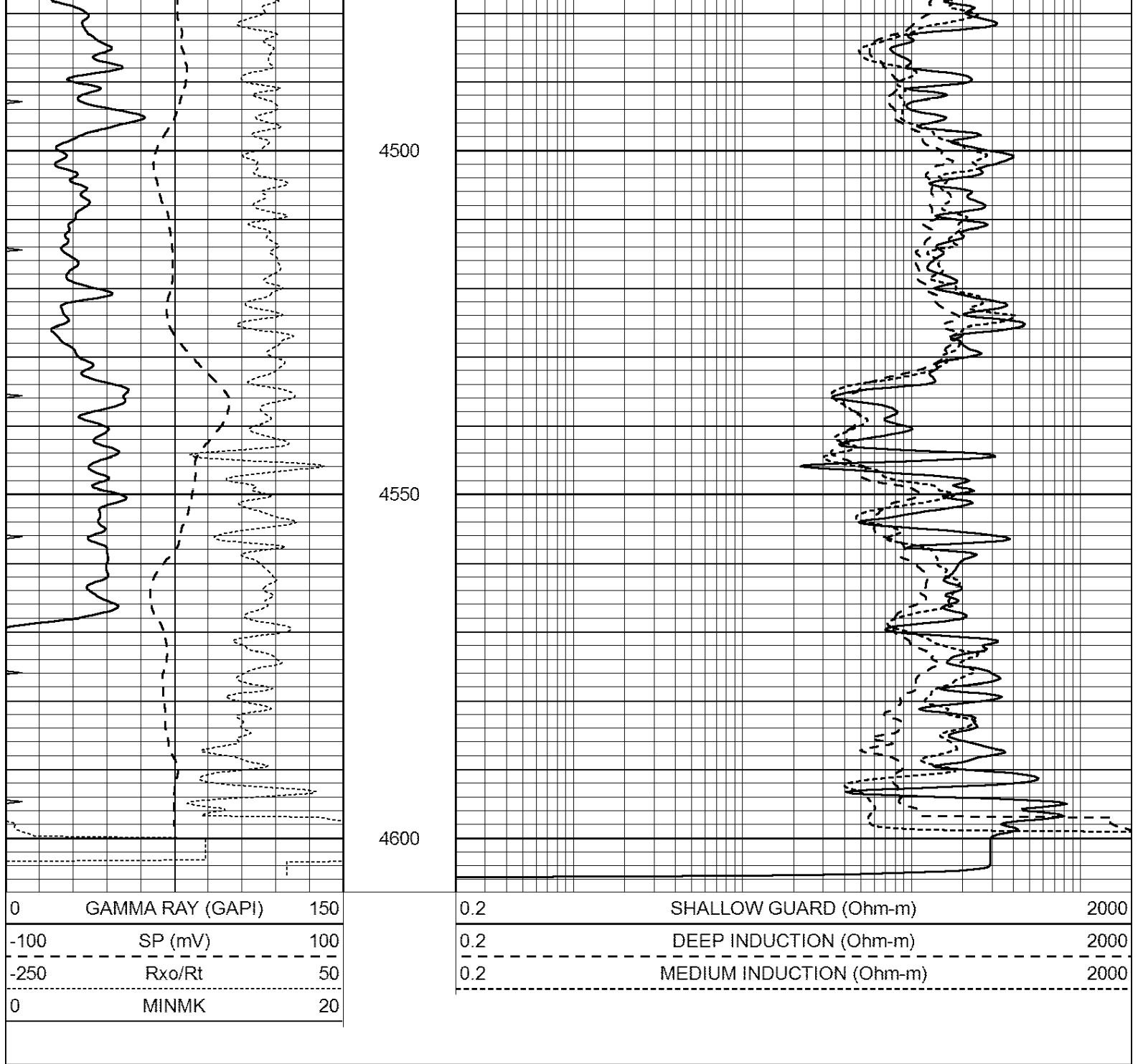
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4400

4450





Calibration Report

Database File: 007101ddn.db
 Dataset Pathname: pass6.6
 Dataset Creation: Thu Aug 04 09:01:19 2011 by Calc Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR
 Performed: Thu Aug 04 07:22:49 2011

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	9.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-6.000
Internal:	Zero	Cal		Zero	Cal		m	b

Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555

Litho Density Calibration Report
 Serial: 006 Model: PRB
 Performed Sun Aug 15 09:48:41 2010

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1686.6	11612.8	3932.0	12718.8	cps
Window 2	1531.4	9204.7	3267.8	9851.9	cps
Window 3	1198.3	4733.6	1952.5	4920.6	cps
Window 4	317.3	321.2	325.9	303.6	cps
Long Space	0.0	7673.3	1736.4	8320.4	cps
Short Space	1.7	2548.5	1657.2	2628.8	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 43.8	Rib Slope	: 0.961	Density/Spine Ratio	: 0.569
Spine Angle	: 73.8	Spine Slope	: 3.453	Spine Intercept	: -18.1

Caliper

	Readings	Reference	
Low Ref	4.4	8.4	
High Ref	6.5	15.0	
	Gain: 3.0		Offset: -4.9

Compensated Neutron Calibration Report

Serial Number: NEU_4I
 Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	996.00 cps	1000.00 cps	1.0000
Long Space	977.00 cps	1000.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR3
 Tool Model: OPEN
 Performed: Thu Aug 04 07:37:59 2011

Calibrator Value: 200.0 GAPI

Background Reading: 3.0 cps
 Calibrator Reading: 186.0 cps

Sensitivity: 4.5000 GAPI/cps