

DUAL INDUCTION LOG

Company L.D. DRILLING, INC.

Well #1-4 RIEMANN

Field

County LANE

State KANSAS

Location: API #: 15-101-22614-0000

2122' FNL & 1848' FEL

SEC 4 TWP 18S RGE 28W

Permanent Datum GROUND LEVEL Elevation 2714
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL
MEL
Elevation
K.B. 2719
D.F. 2717
G.L. 2714

Date 11/22/18

Run Number ONE

Depth Driller 4687

Depth Logger 4690

Bottom Logged Interval 4688

Top Log Interval 00

Casing Driller 8 5/8" @ 330

Casing Logger 330

Bit Size 7 7/8

Type Fluid in Hole CHEMICAL MUD CHLORIDES 3300 PPM

Density / Viscosity 9.4/50

pH / Fluid Loss 10.5/7.2

Source of Sample FLOWLINE

Rm @ Meas. Temp .80 @ 65F

Rmf @ Meas. Temp .60 @ 65F

Rmc @ Meas. Temp .96 @ 65F

Source of Rmf / Rmc MEASUREMENT

Rm @ BHT .42 @ 122F

Time Circulation Stopped 2 HOURS

Time Logger on Bottom 11/11

Maximum Recorded Temperature 122F

Equipment Number 3802

Location HAYS, KANSAS

Recorded By JASON CAPPELLUCCI

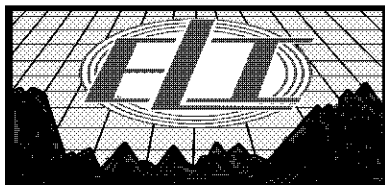
Witnessed By KIM SHOEMAKER

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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 ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
DIGHTON, KS. -3 EAST TO NEWTON RD. - 2 1/2 NORTH - WEST INTO



MAIN SECTION

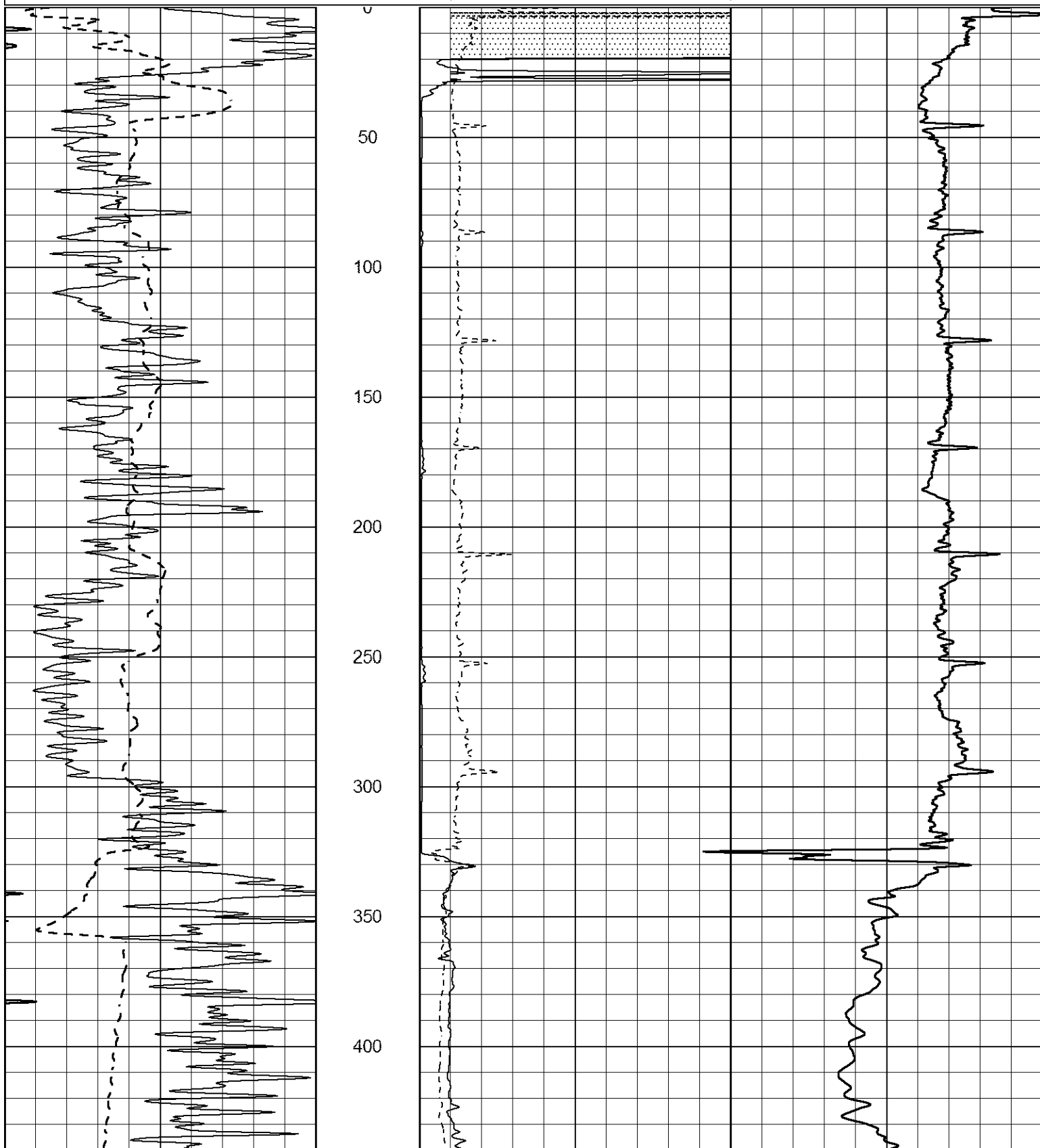
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Presentation Format _dil2
Dataset Creation Thu Nov 22 10:50:36 2018
Charted by Depth in Feet scaled 1:600

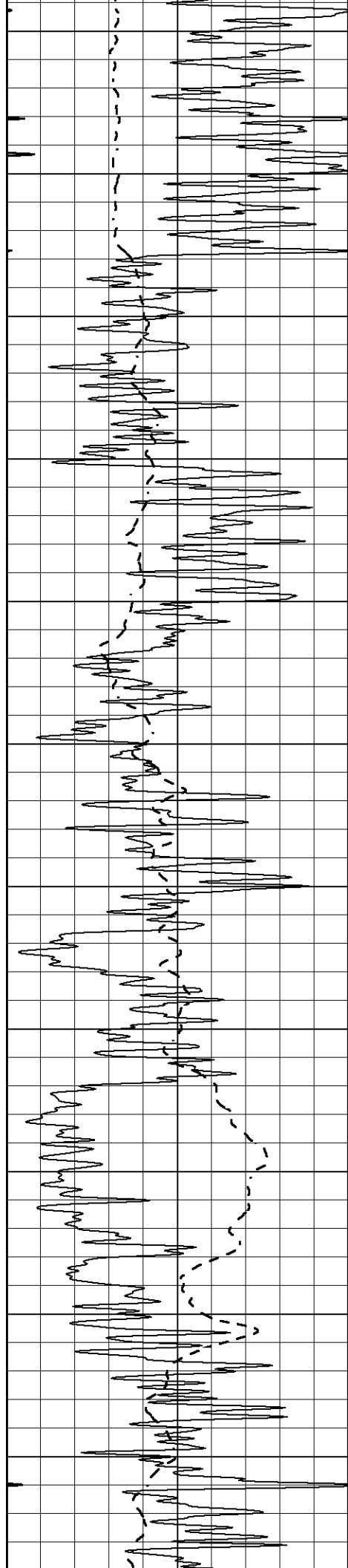
0 Gamma Ray (GAPI) 150
-100 SP (mV) 100

1000 CILD (mmho/m) 0
0 RLL3 (Ohm-m) 50
0 Deep Induction (Ohm-m) 50

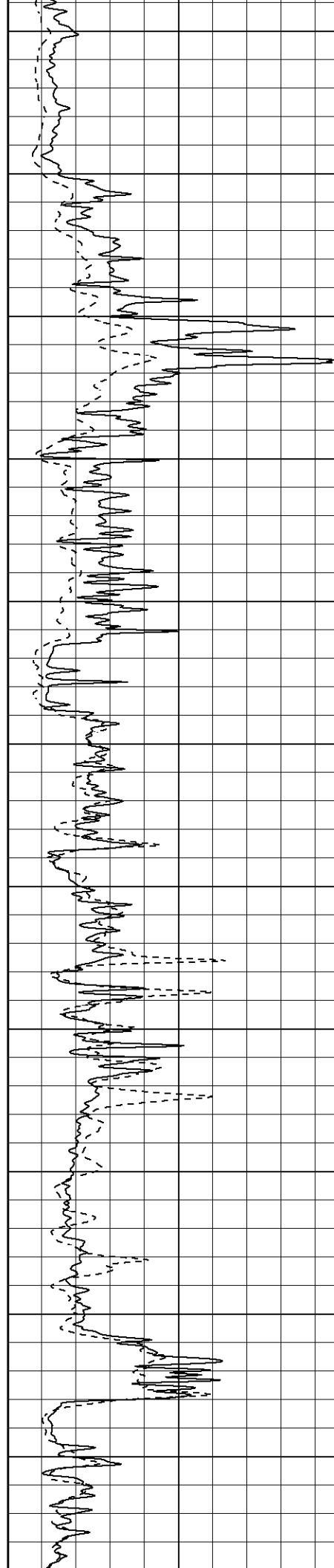
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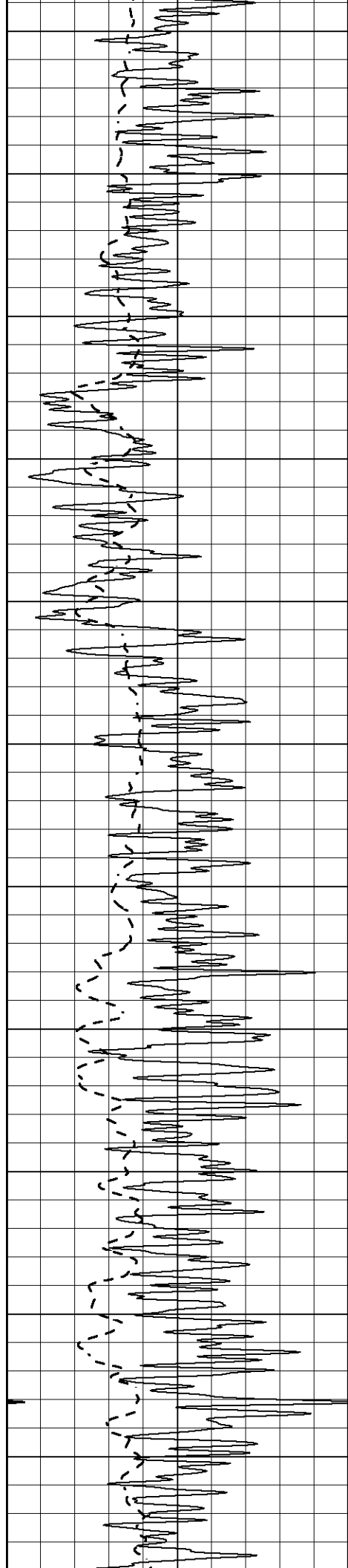
50 RLL3 X10 (Ohm-m) 500





450
500
550
600
650
700
750
800
850
900
950





1000

1050

1100

1150

1200

1250

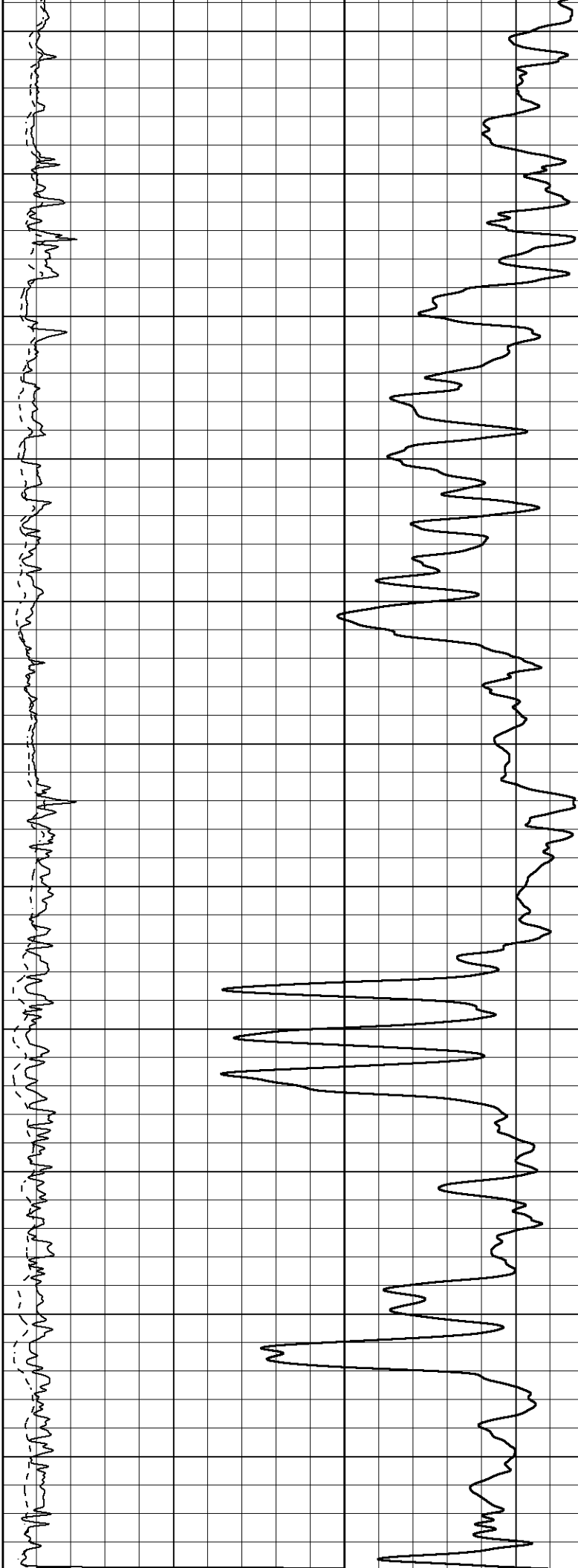
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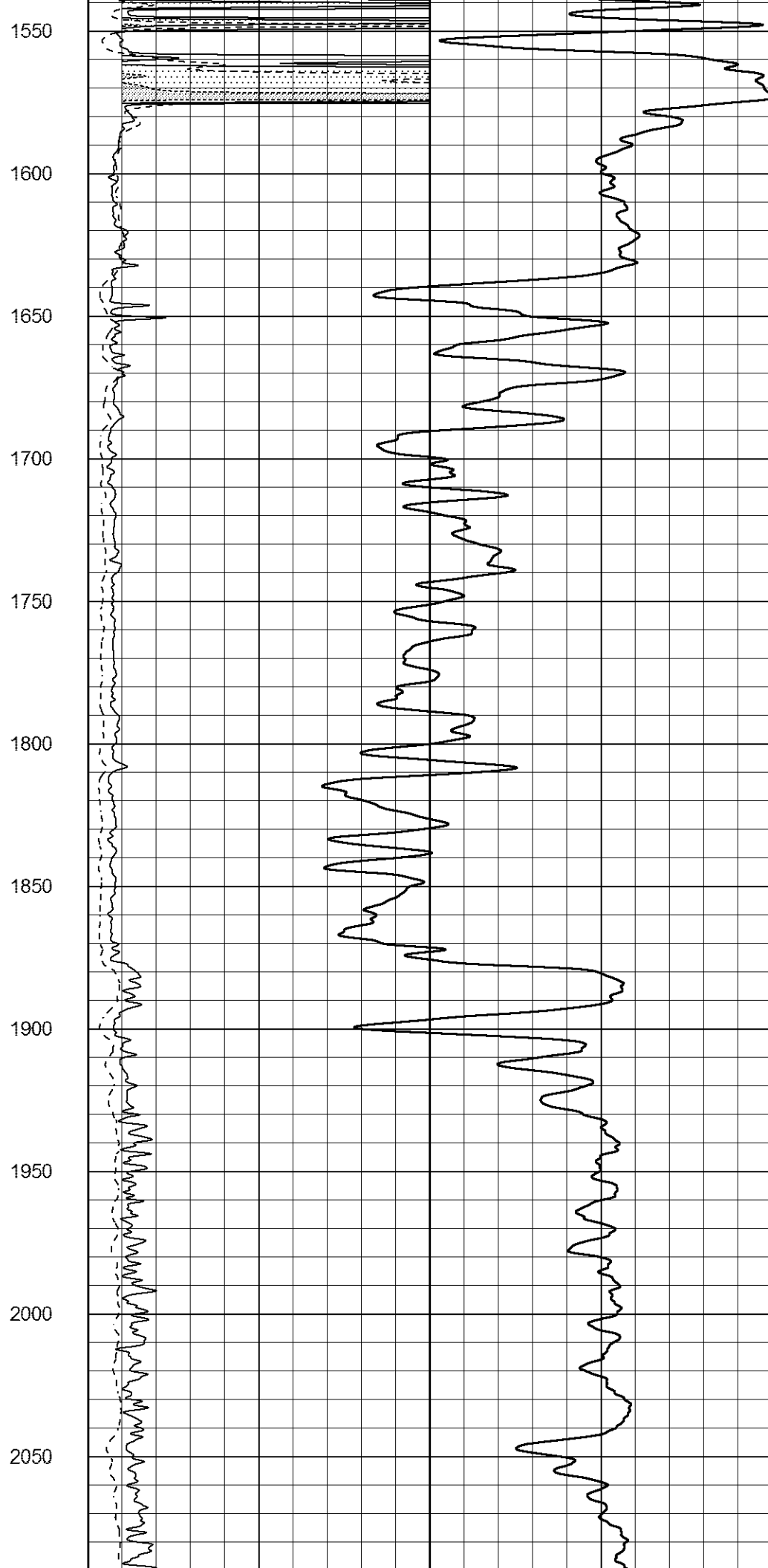
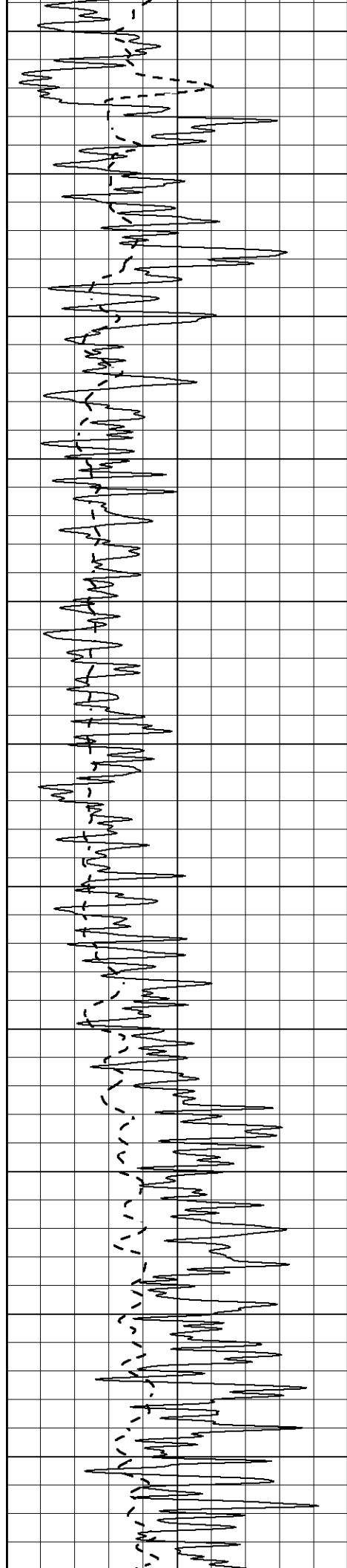
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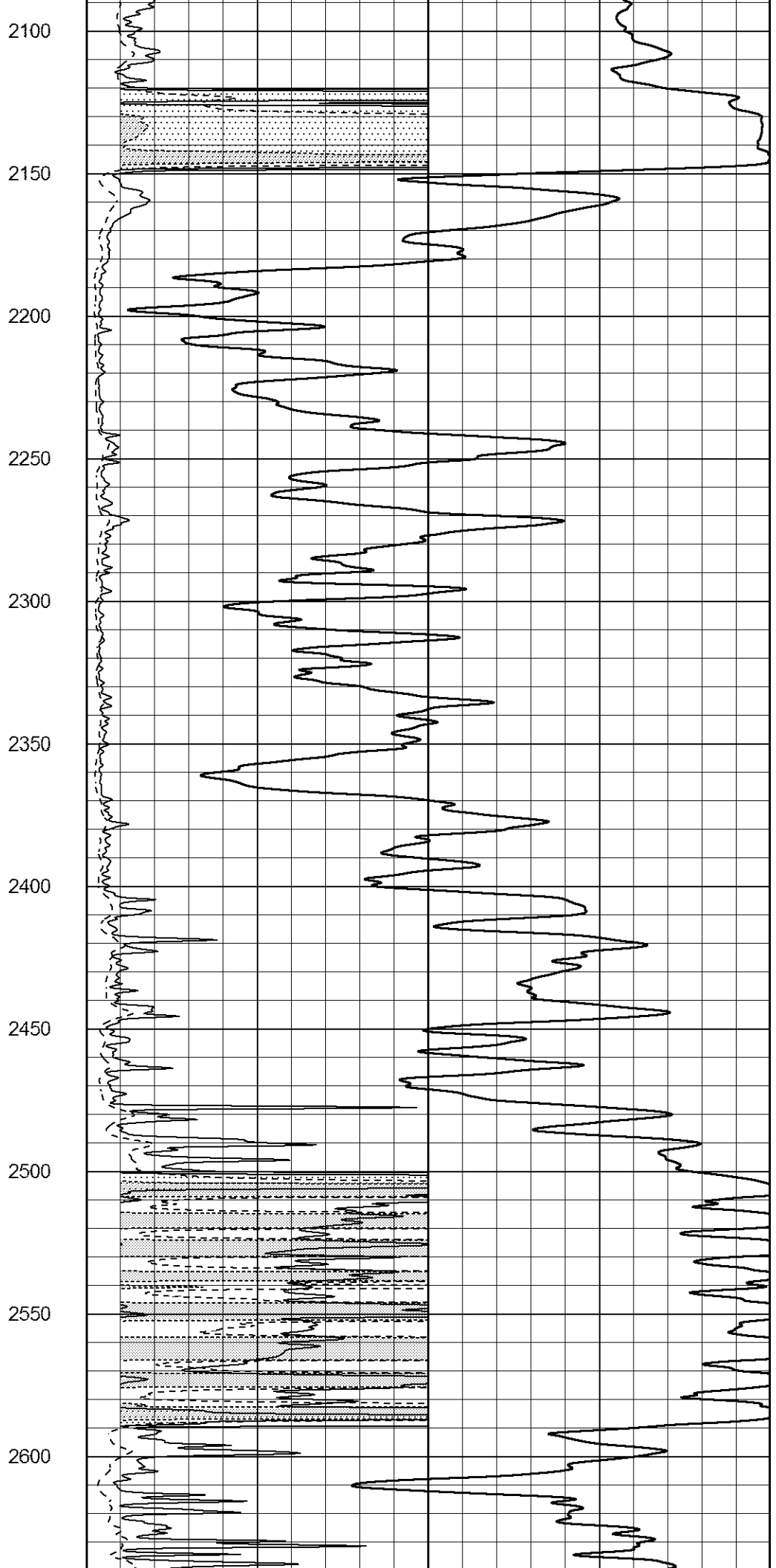
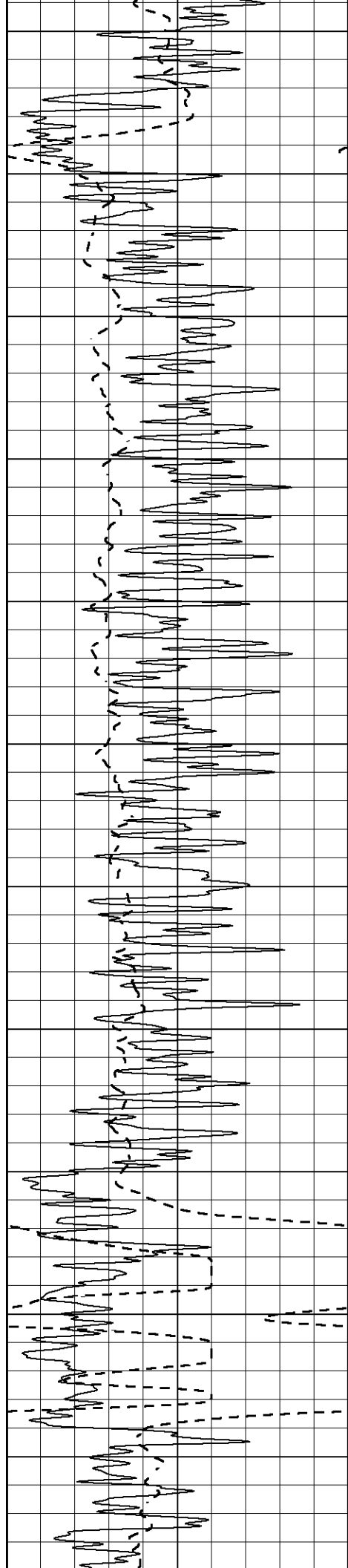
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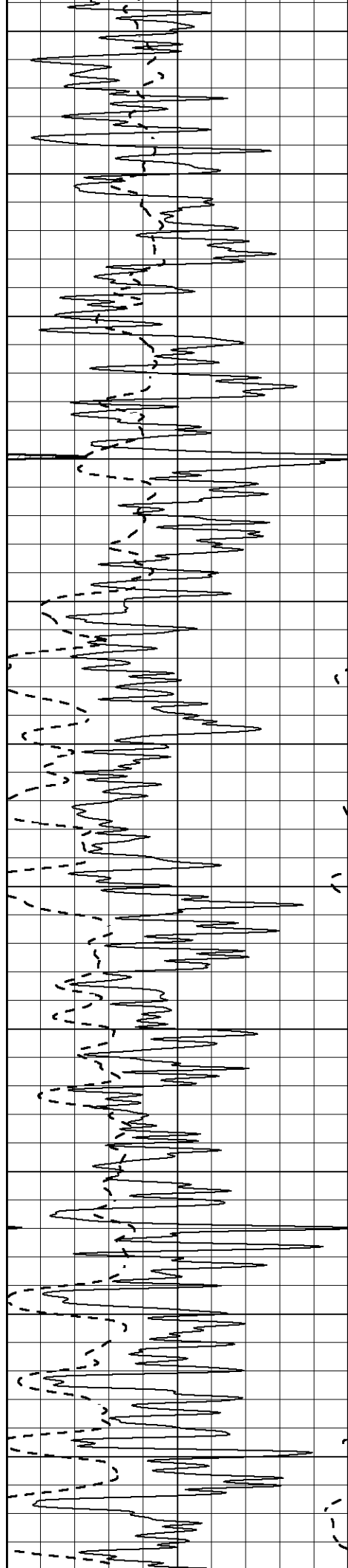
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1500









2650

2700

2750

2800

2850

2900

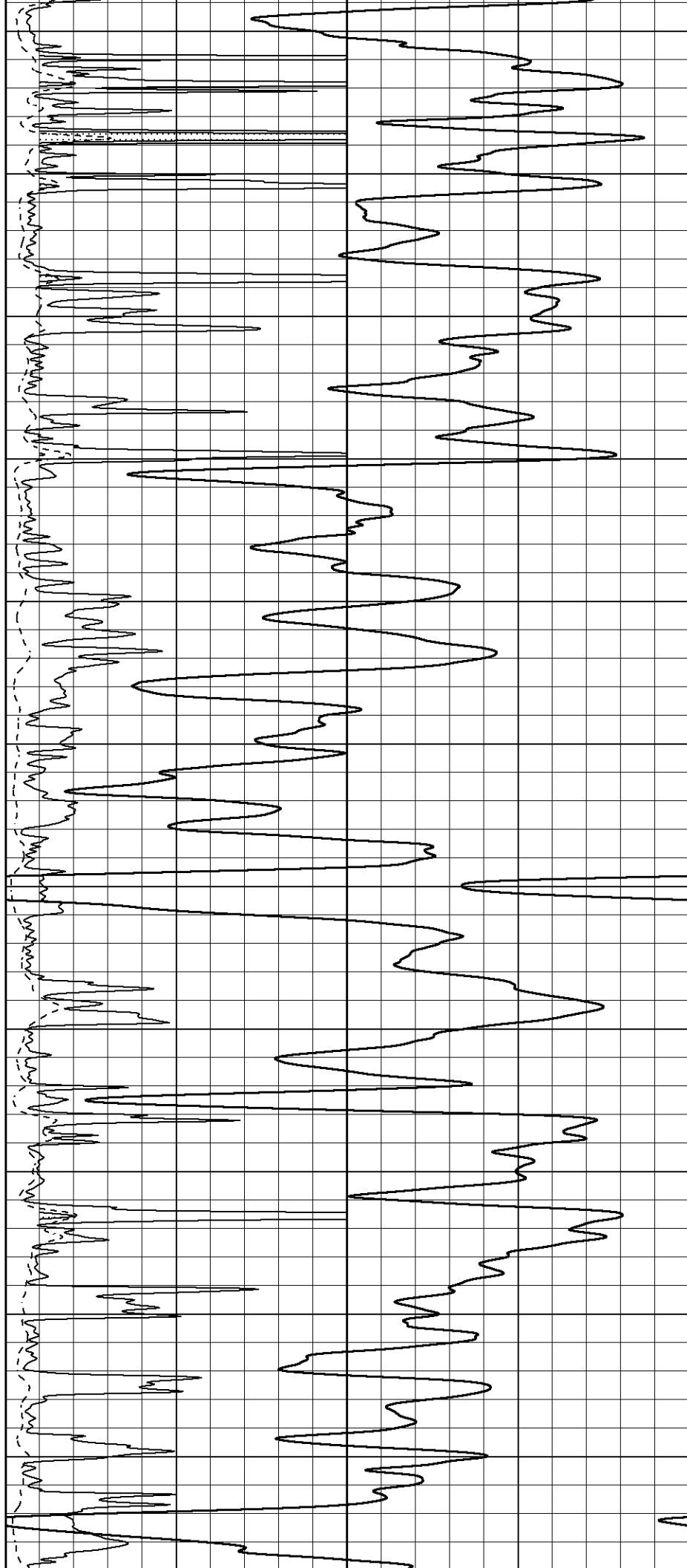
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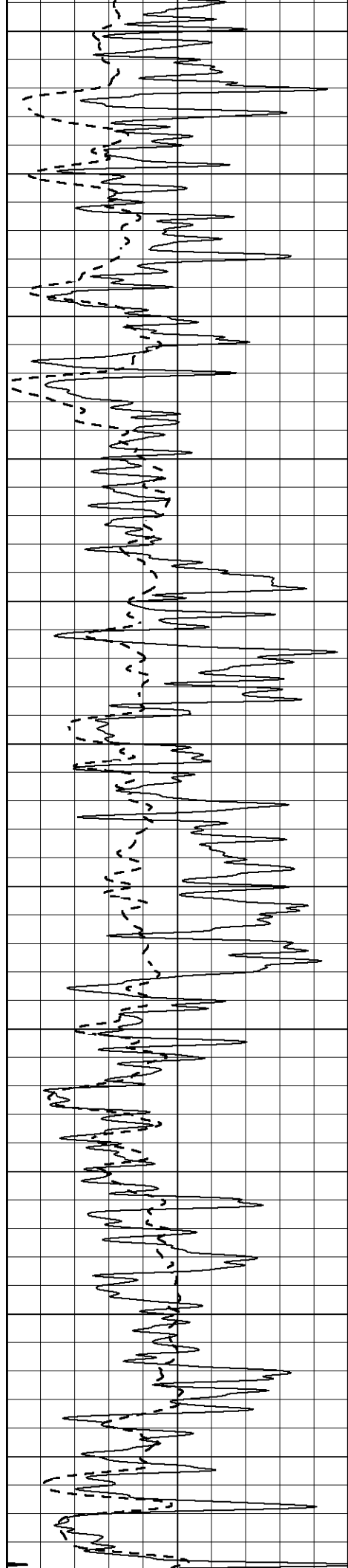
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3050

3100

3150





3200

3250

3300

3350

3400

3450

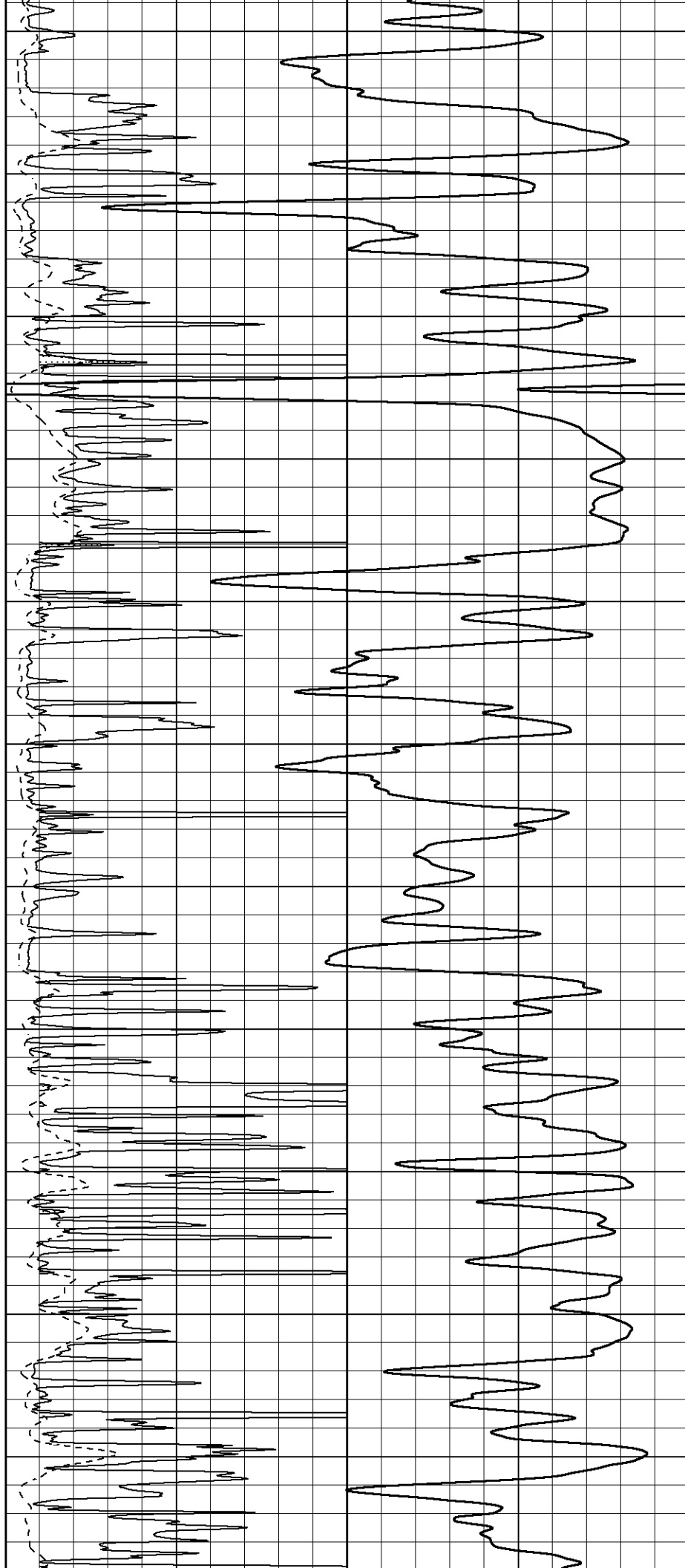
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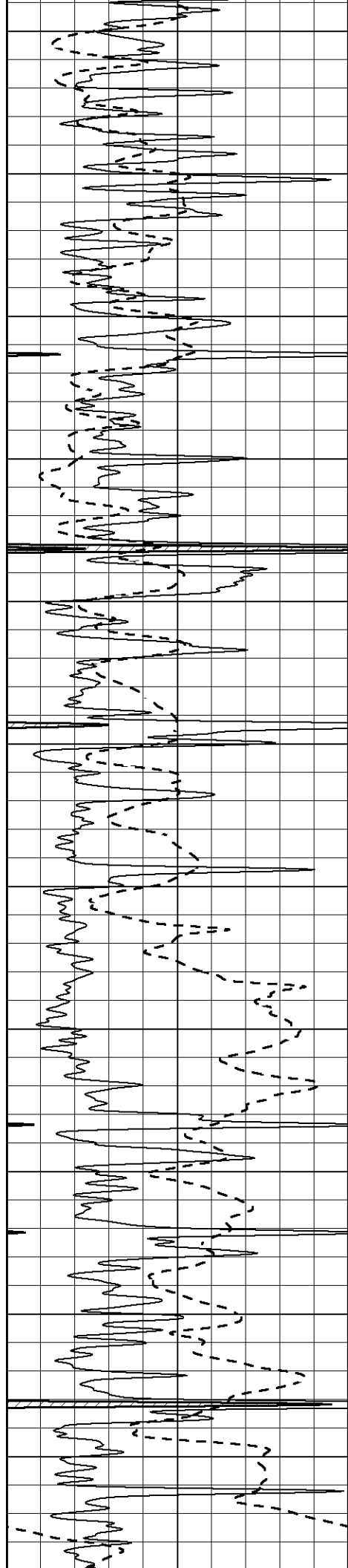
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3600

3650

3700





3750

3800

3850

3900

3950

4000

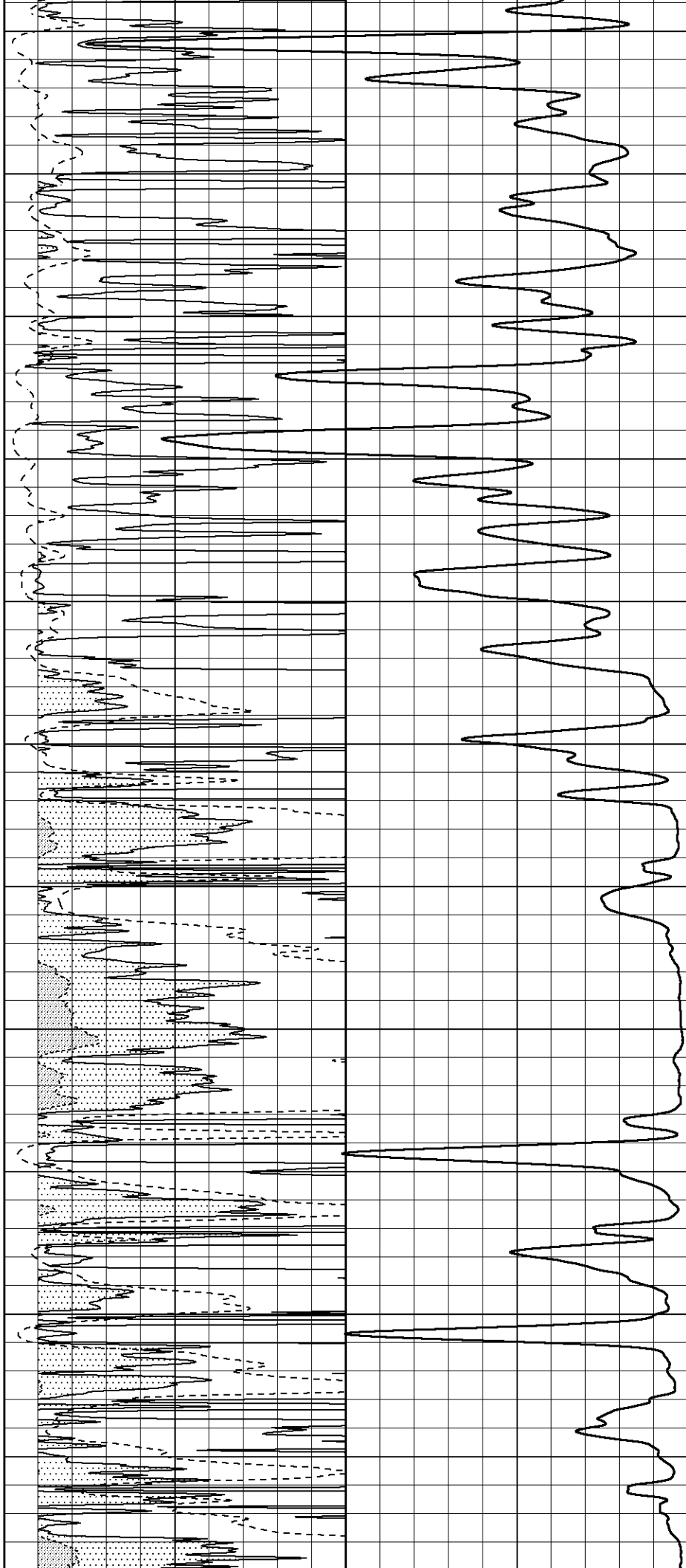
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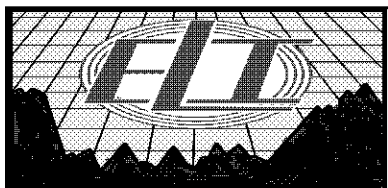
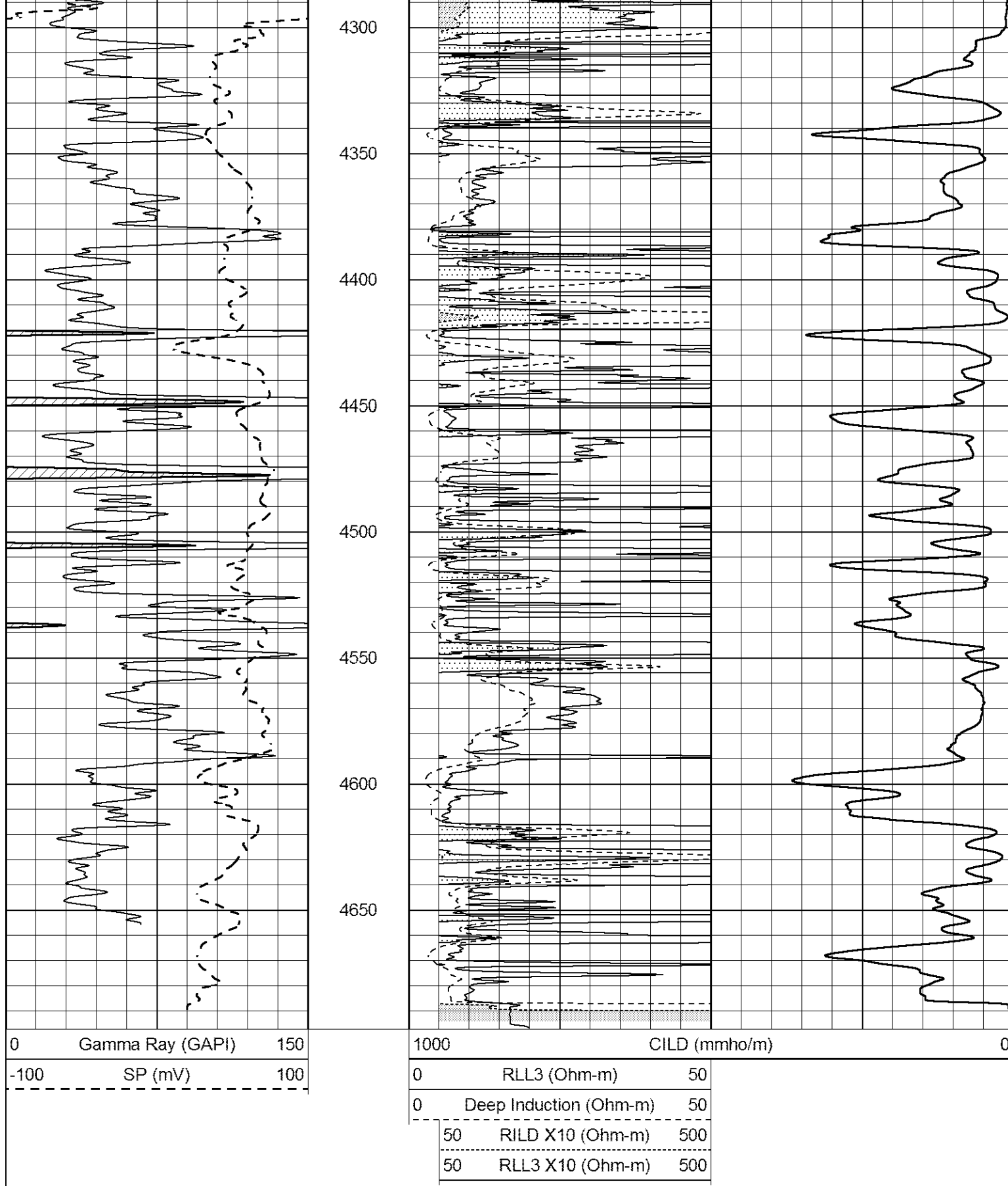
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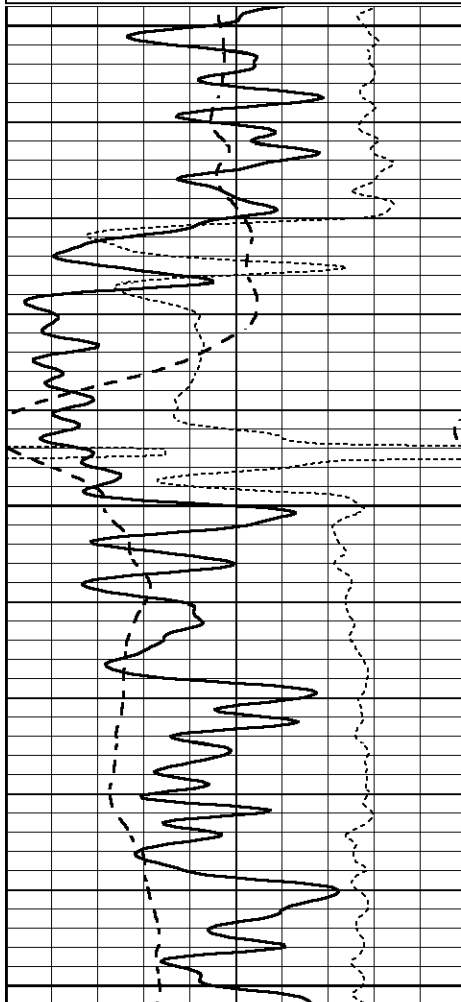




ANHYDRITE

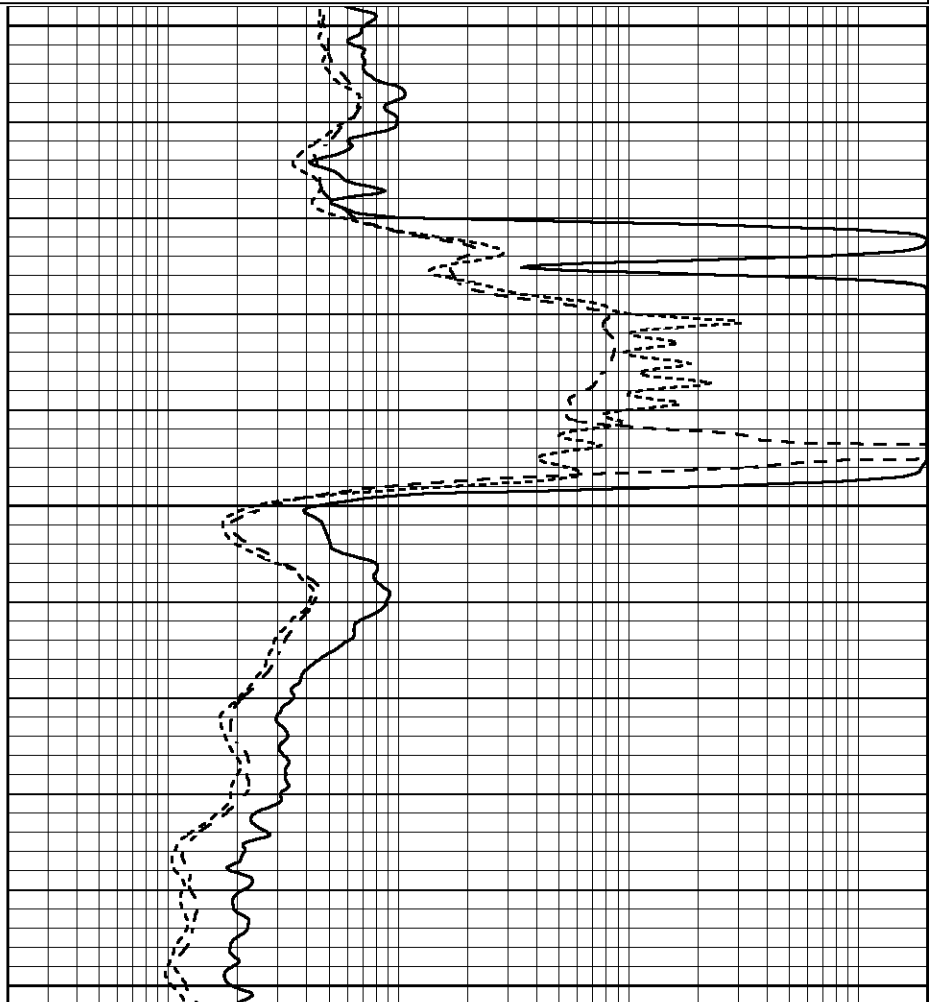
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Charted by Depth in Feet scaled 1:240

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



0	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



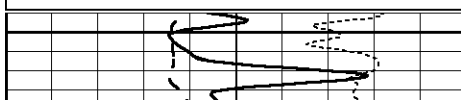
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



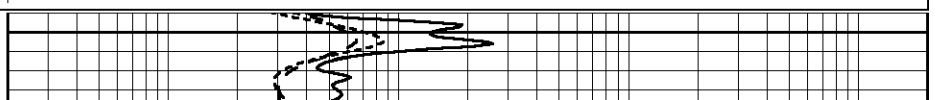
MAIN SECTION

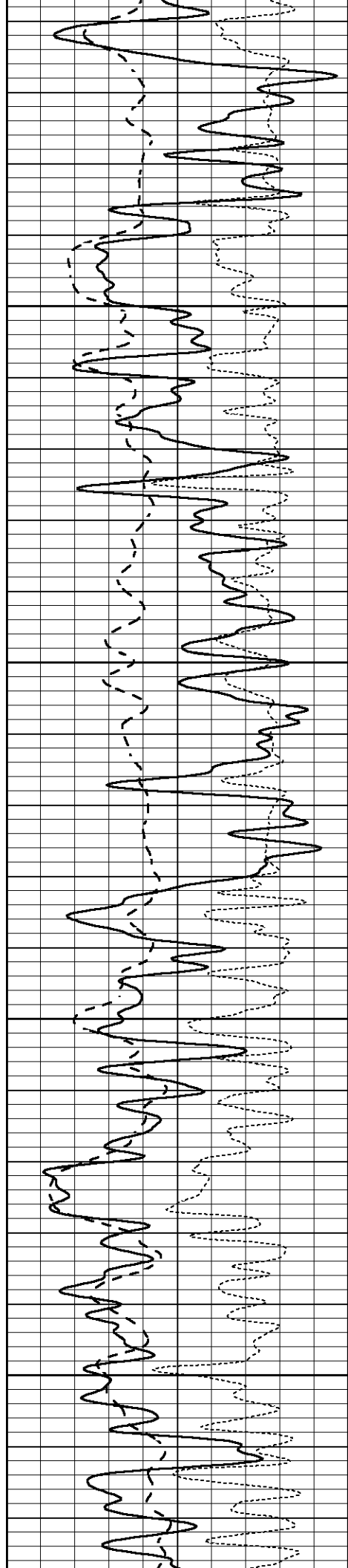
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Charted by Depth in Feet scaled 1:240

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



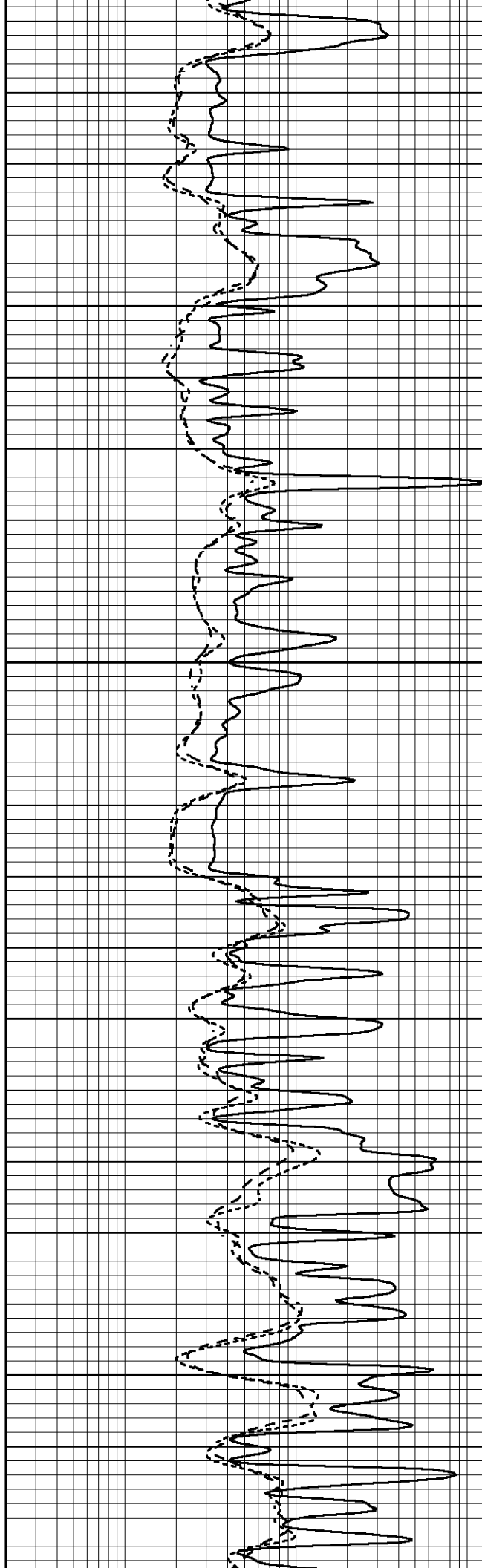


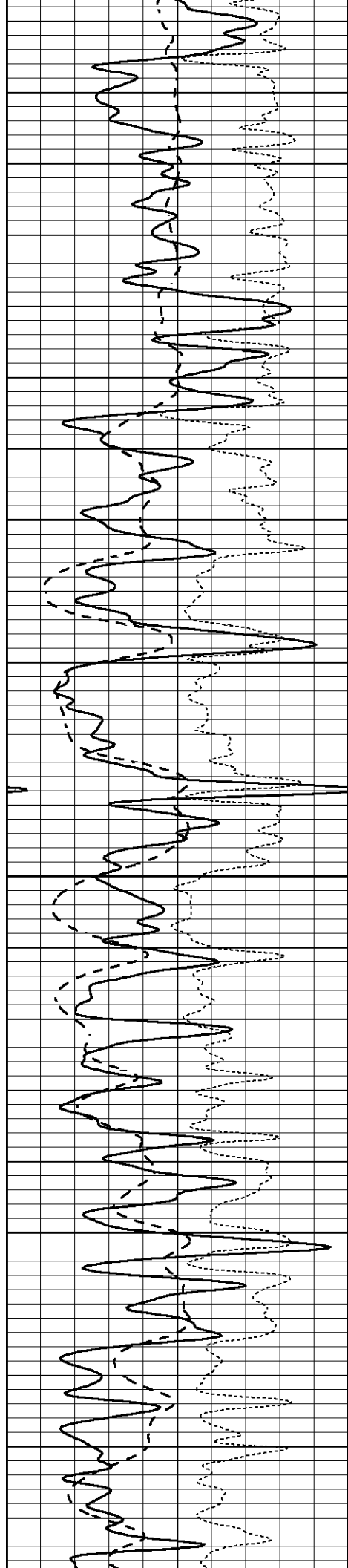
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3550

3600



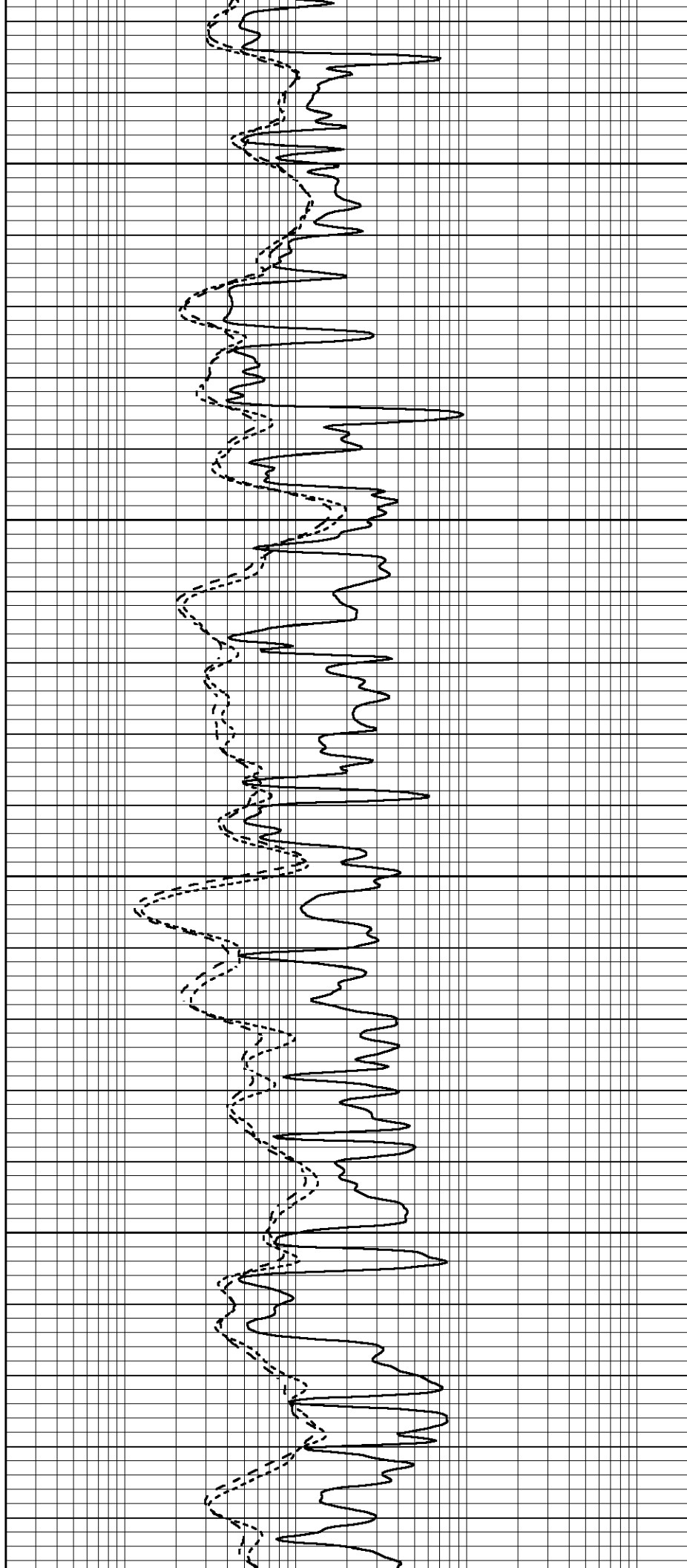


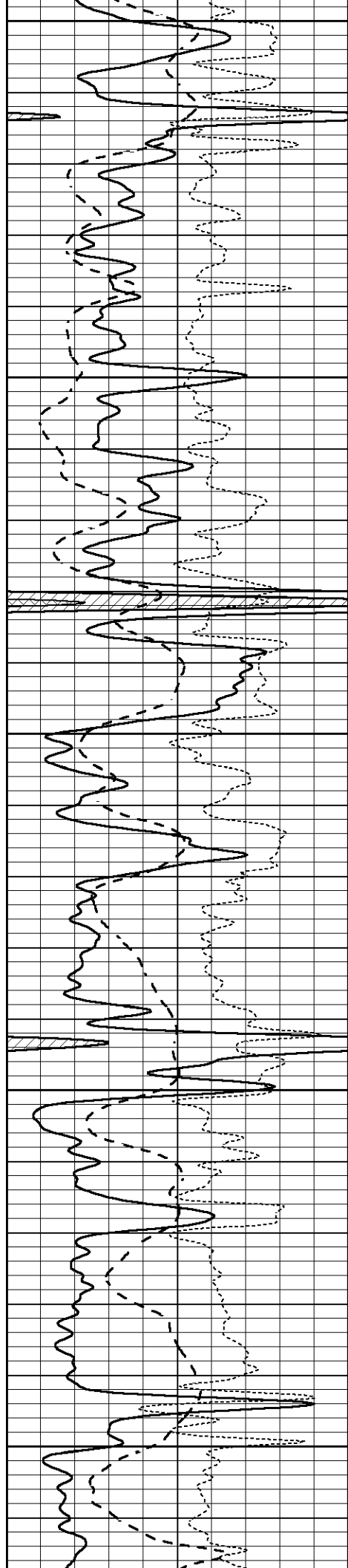
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3800





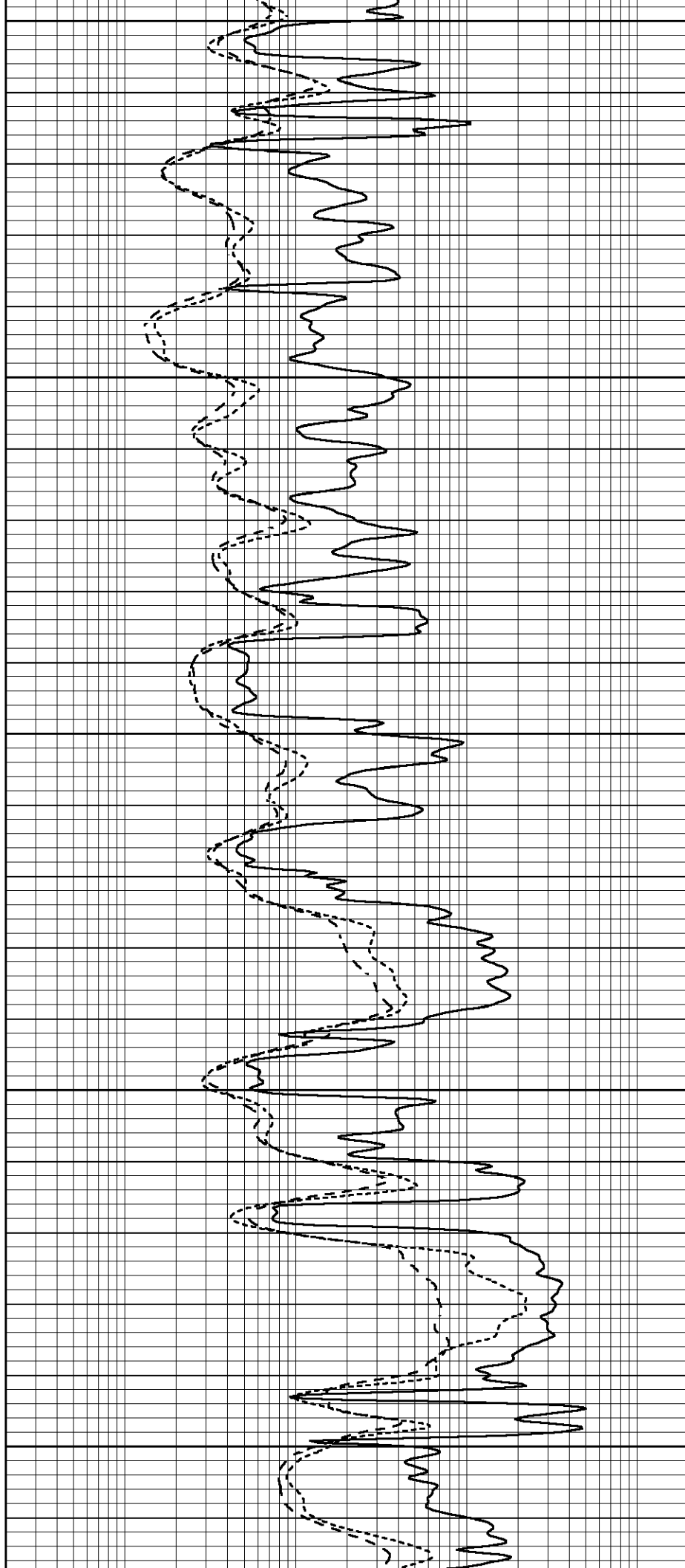
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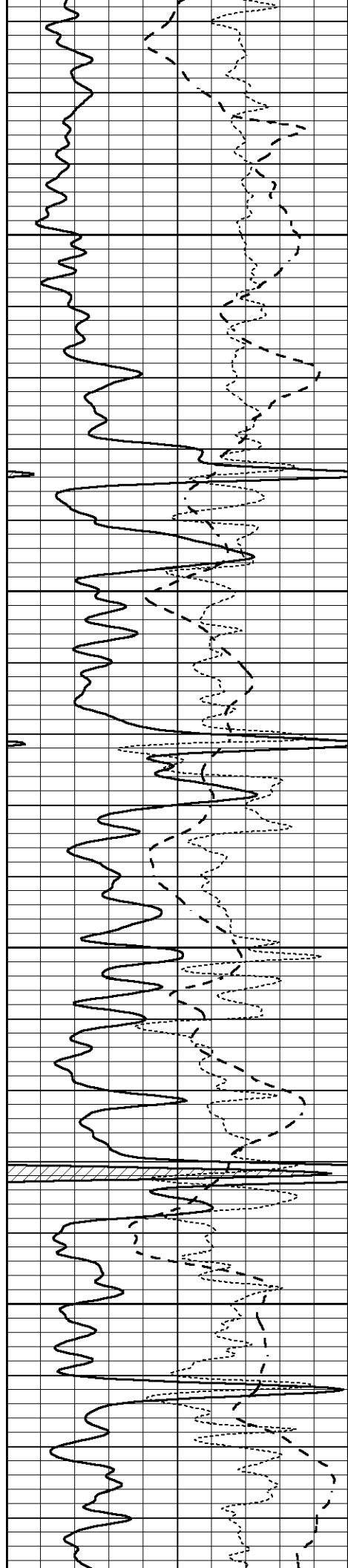
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3950

4000

4050



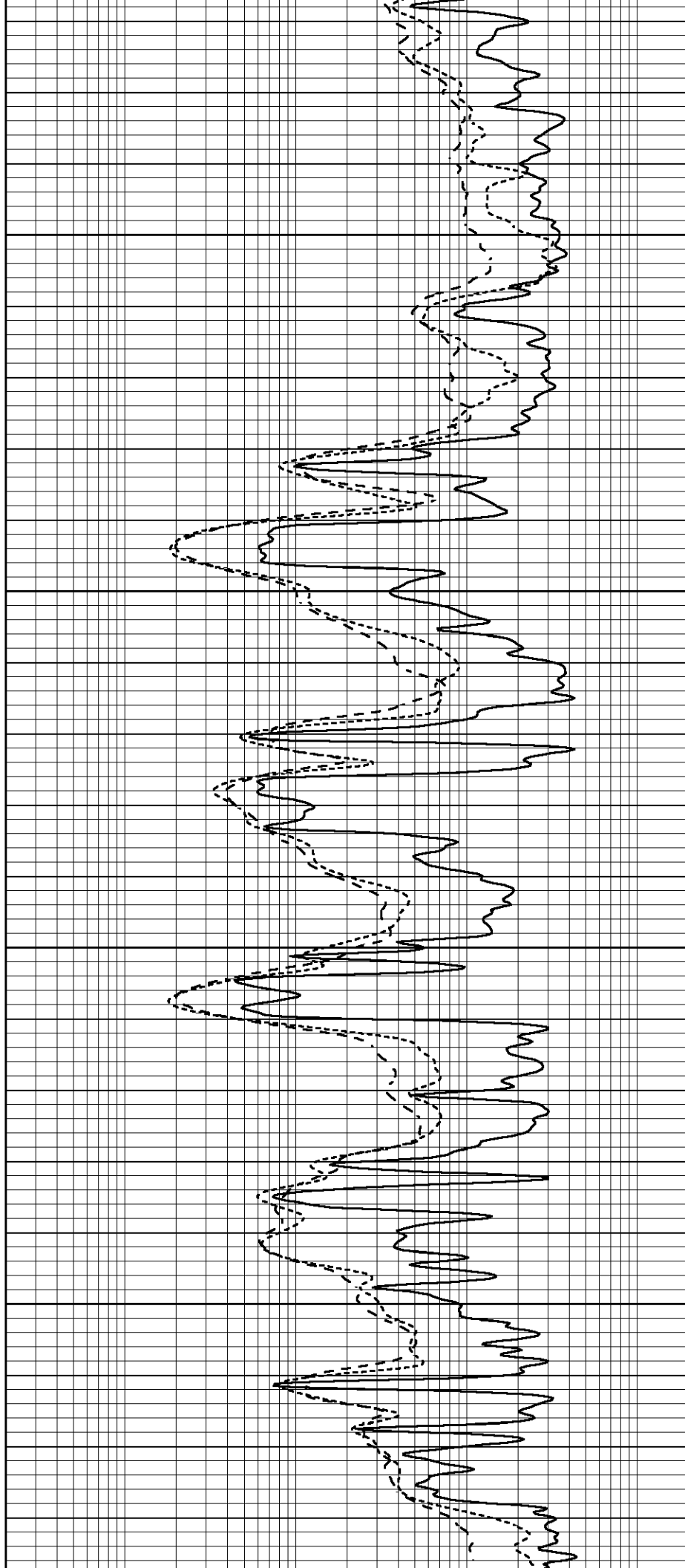


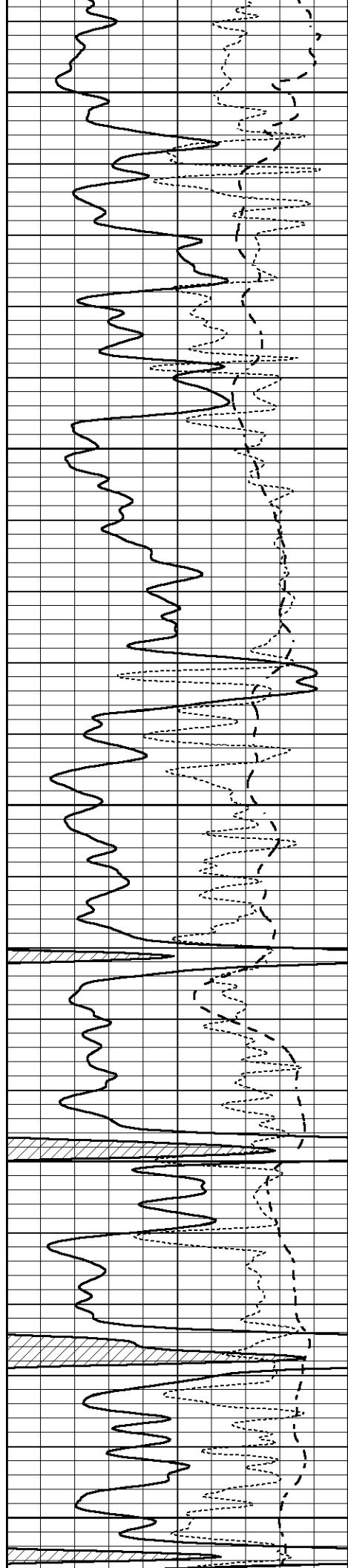
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4150

4200

4250





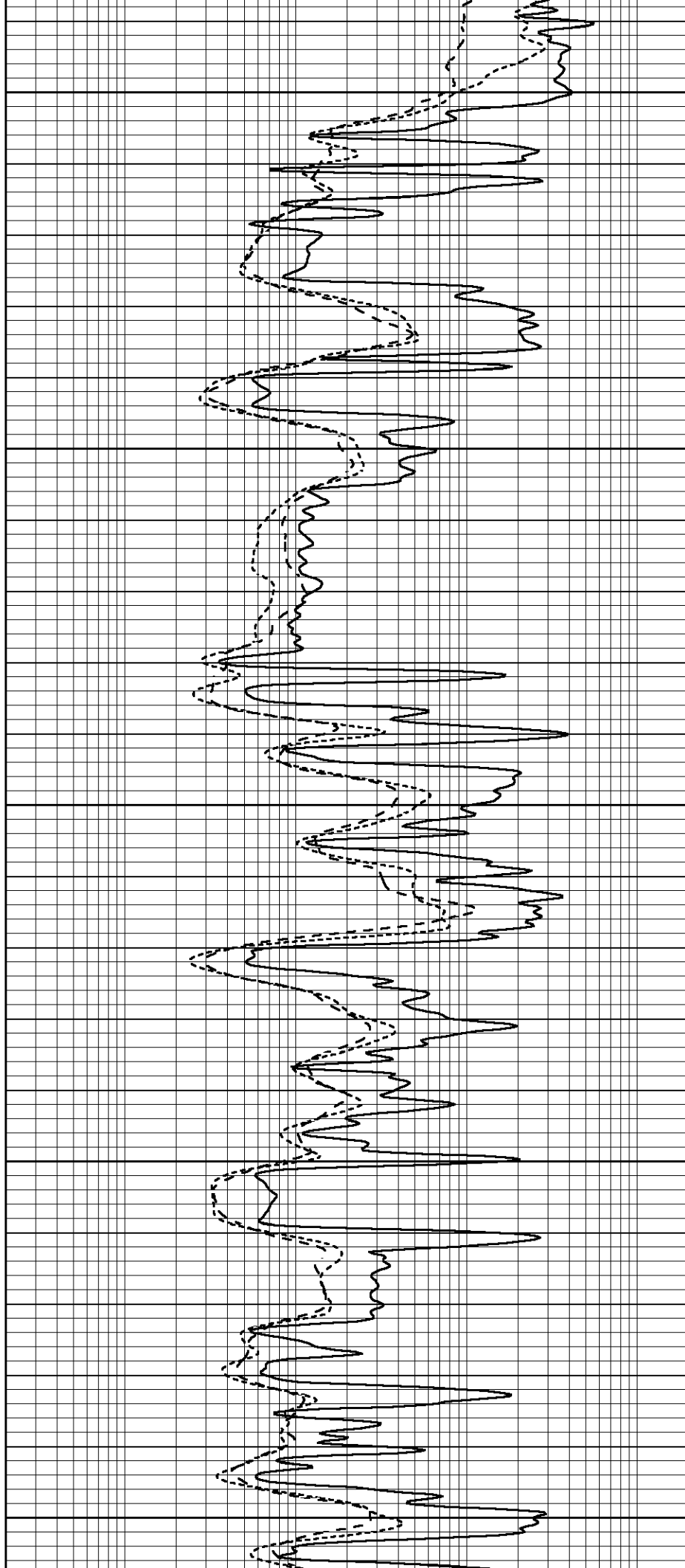
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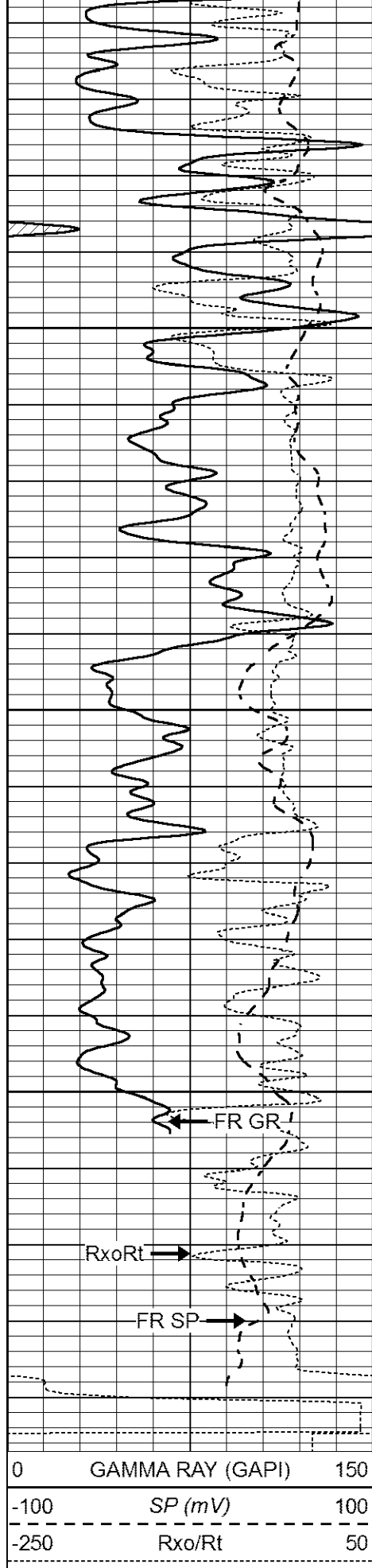
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4450

4500



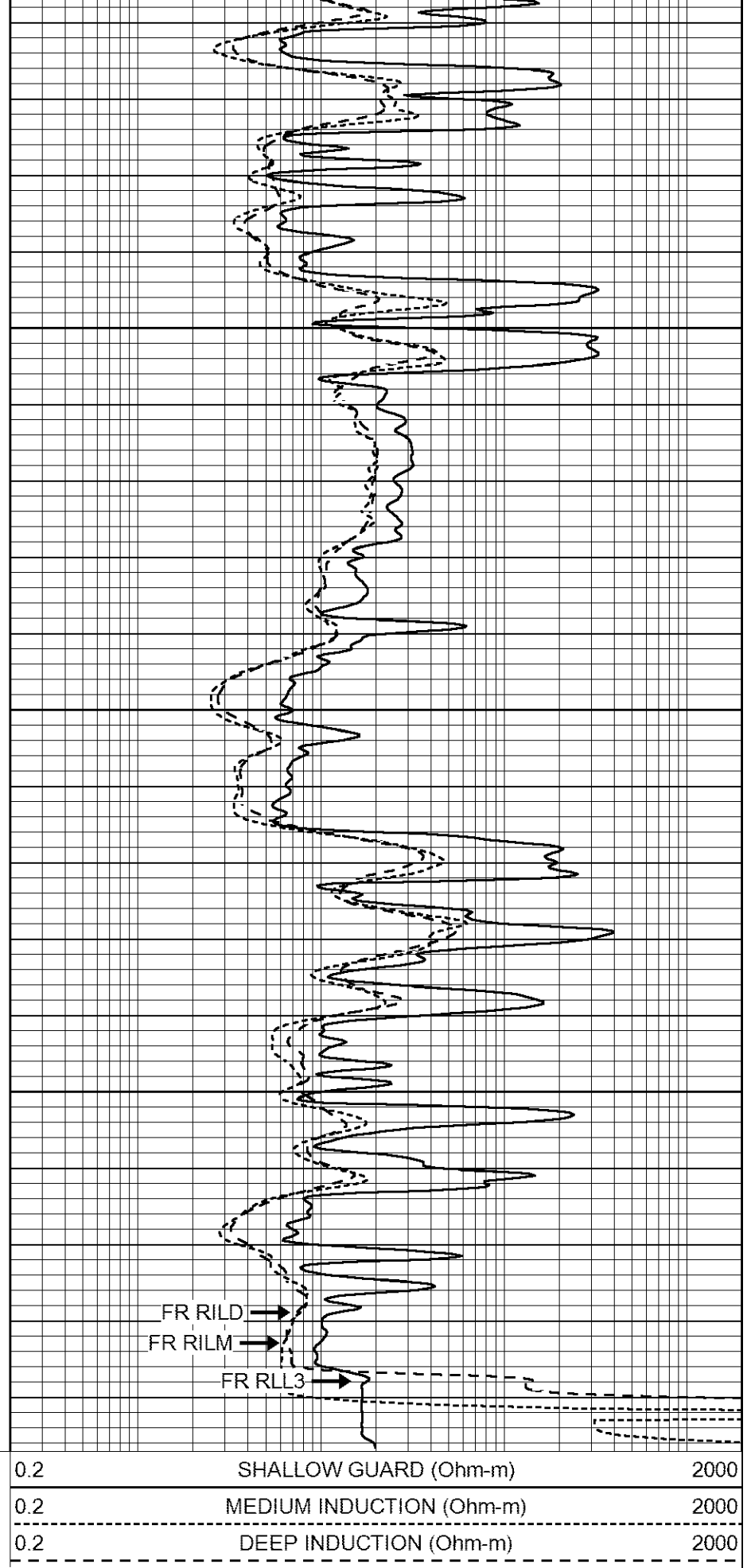


4550

4600

4650

LTD 4690



FR RILD

FR RILM

FR RLL3



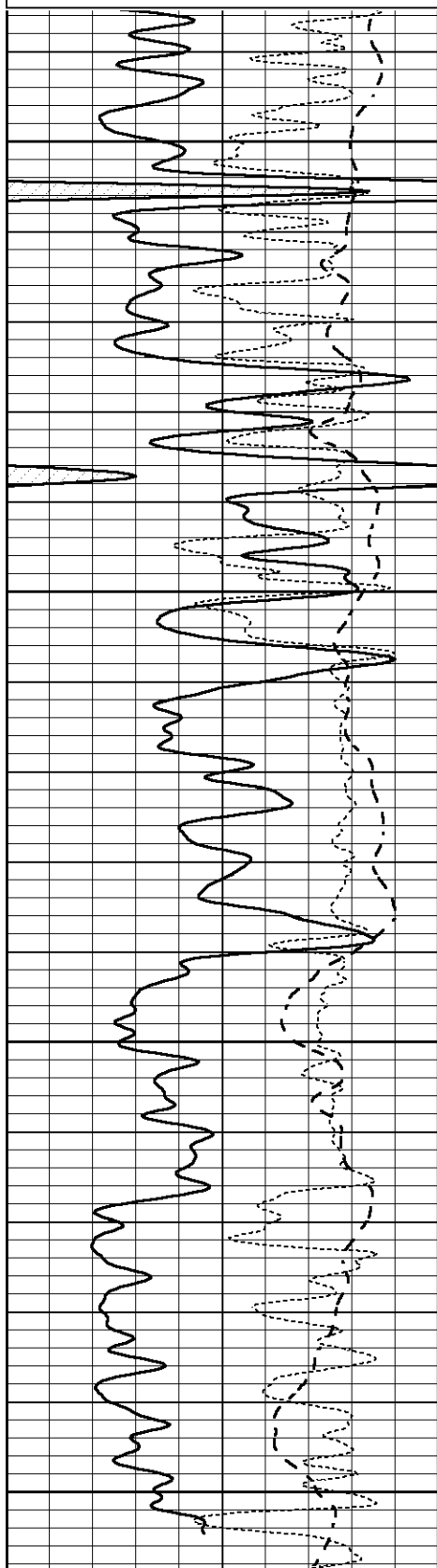
REPEAT SECTION

REPEAT SECTION

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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

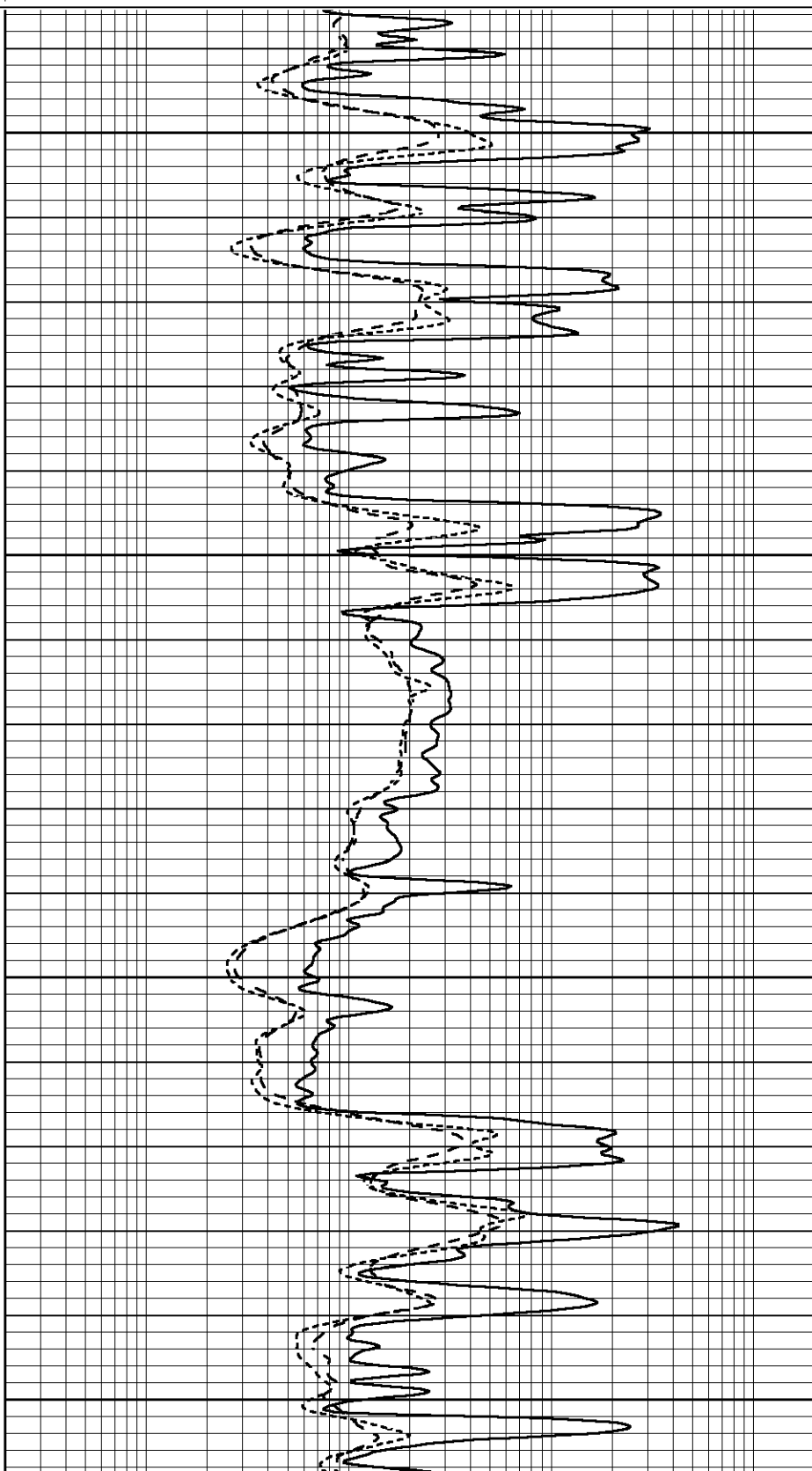


4500

4550

4600

4650



PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	7	
Tool Model:	Probe1	
Performed:	Wed Jun 29 11:10:58 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4300	GAPI/cps