



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company MAI OIL OPERATIONS, INC.  
Well HERBER "A" #1  
Field WILDCAT  
County RUSSELL State KANSAS

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Well HERBER "A" #1  
Field WILDCAT  
County RUSSELL  
State KANSAS

Location: API #: 15-167-23910-0000  
2125' FNL & 1875' FWL  
NE - SW - SE - NW  
SEC 21 TWP 14S RGE 12W  
GROUND LEVEL Elevation 1717  
Log Measured From KELLY BUSHING 8' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CDL/CNL  
MEL  
Elevation  
K.B. 1725  
D.F. 1723  
G.L. 1717

Date	10/29/13
Run Number	ONE
Depth Driller	3274
Depth Logger	3276
Bottom Logged Interval	3274
Top Log Interval	00
Casing Driller	349
Casing Logger	348
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.5/59
pH / Fluid Loss	10.5/10.4
Source of Sample	FLOWLINE
Rim @ Meas. Temp	0.70 @ 72F
Rmf @ Meas. Temp	0.53 @ 72F
Rmc @ Meas. Temp	0.84 @ 72F
Source of Rmf / Rmc	MEASURED
Rim @ BHT	.22 @ 109F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	109F
Equipment Number	860
Location	HAYS, KS.
Recorded By	CAPPELLUCCI
Witnessed By	JIM MUSGROVE

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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

NABORS COMPLETION & PRODUCTION SERVICES  
785-628-6395  
THANK YOU FOR YOUR BUSINESS  
DIRECTIONS: BUNKER HILL - 2 EAST ON OLD 40 - 1 1/2 SOUTH - EAST & SOUTH INTO

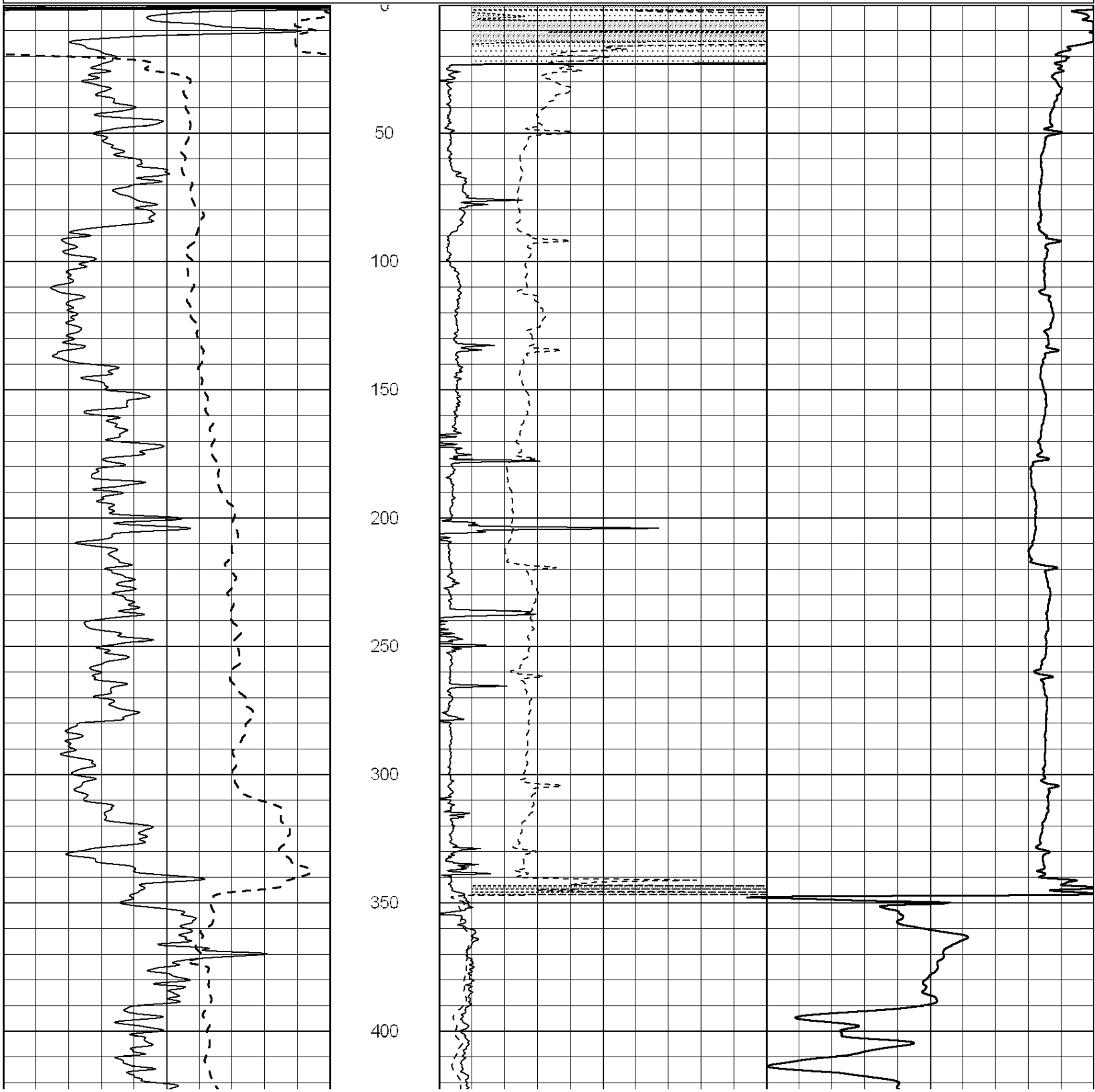


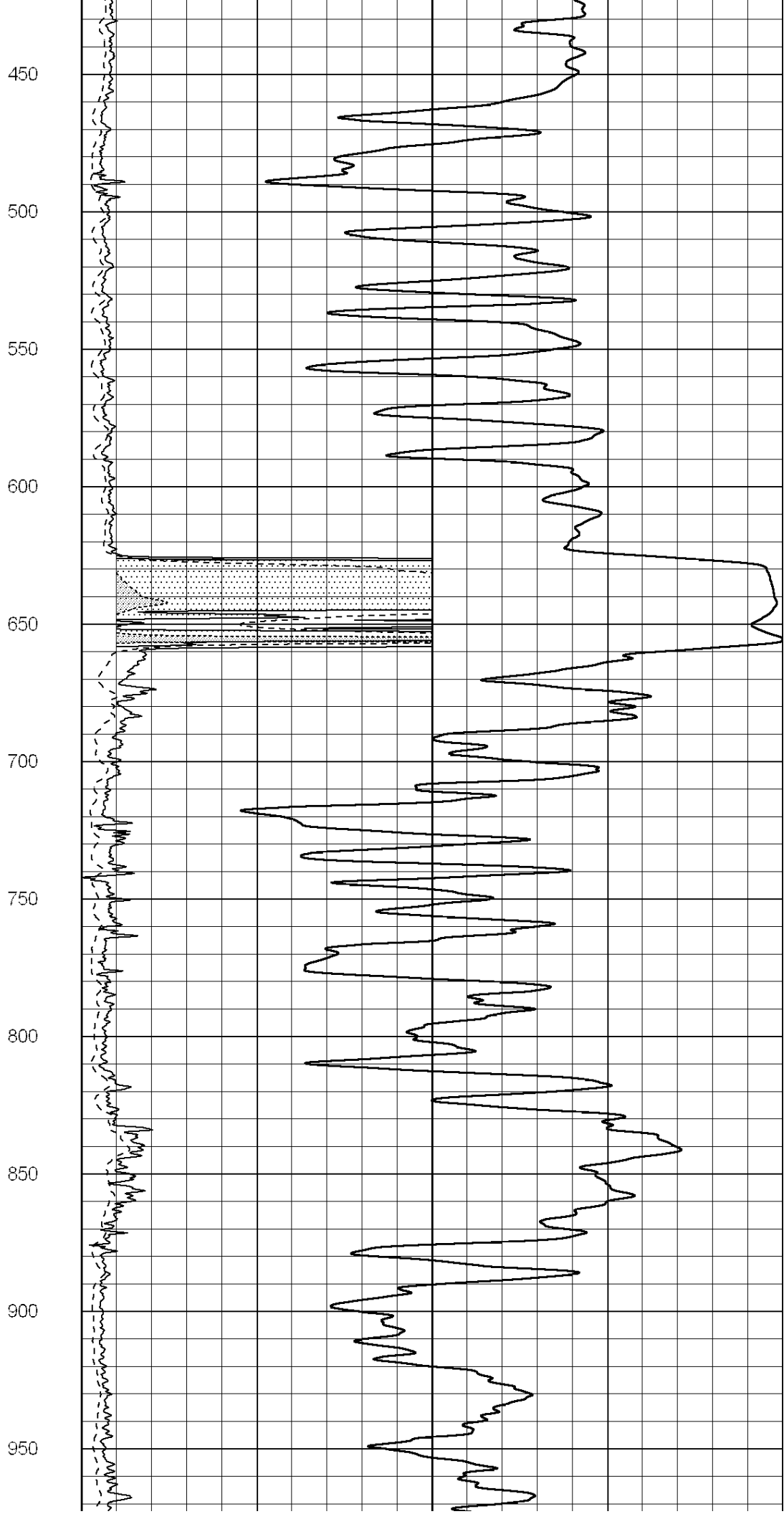
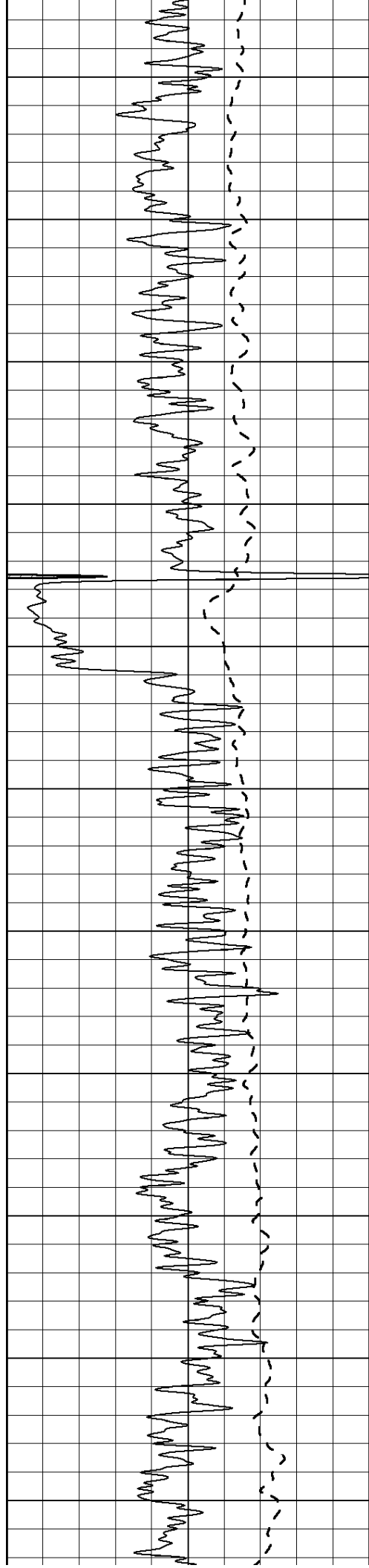
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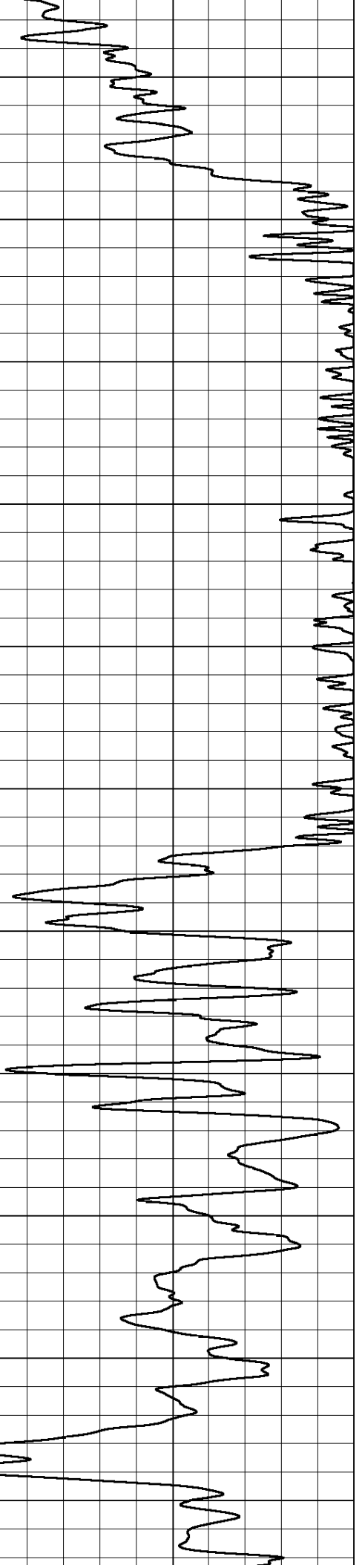
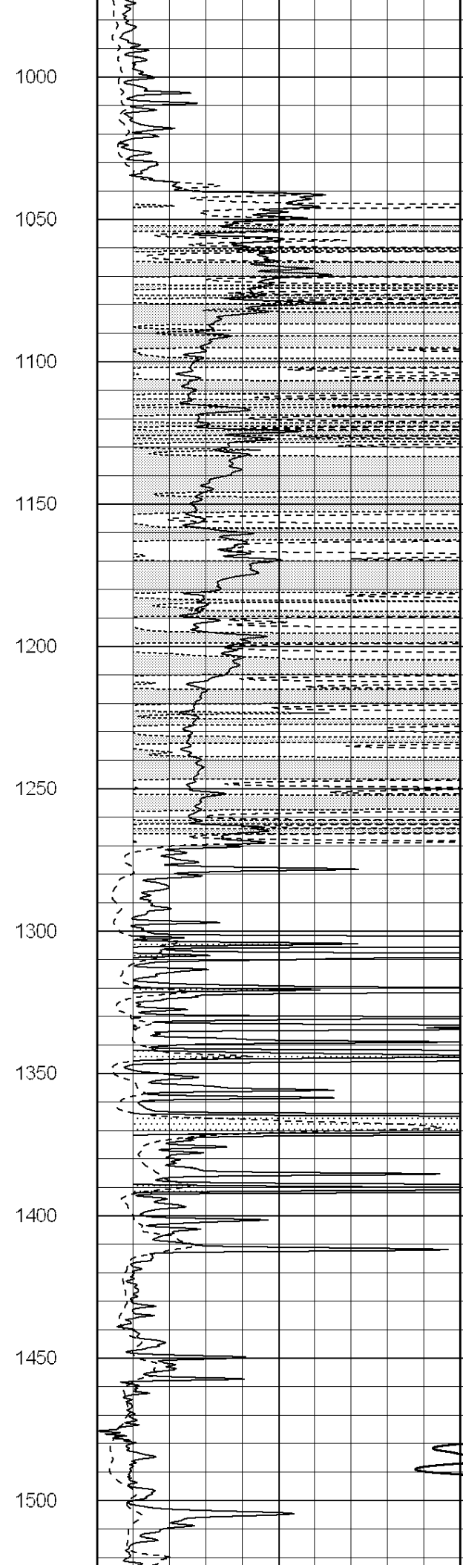
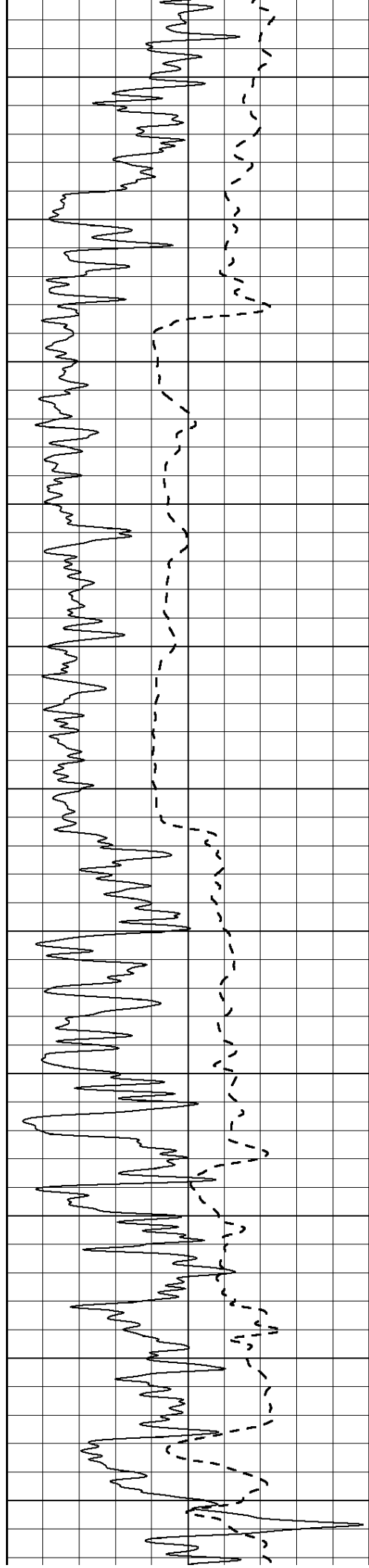
**MAIN SECTION**

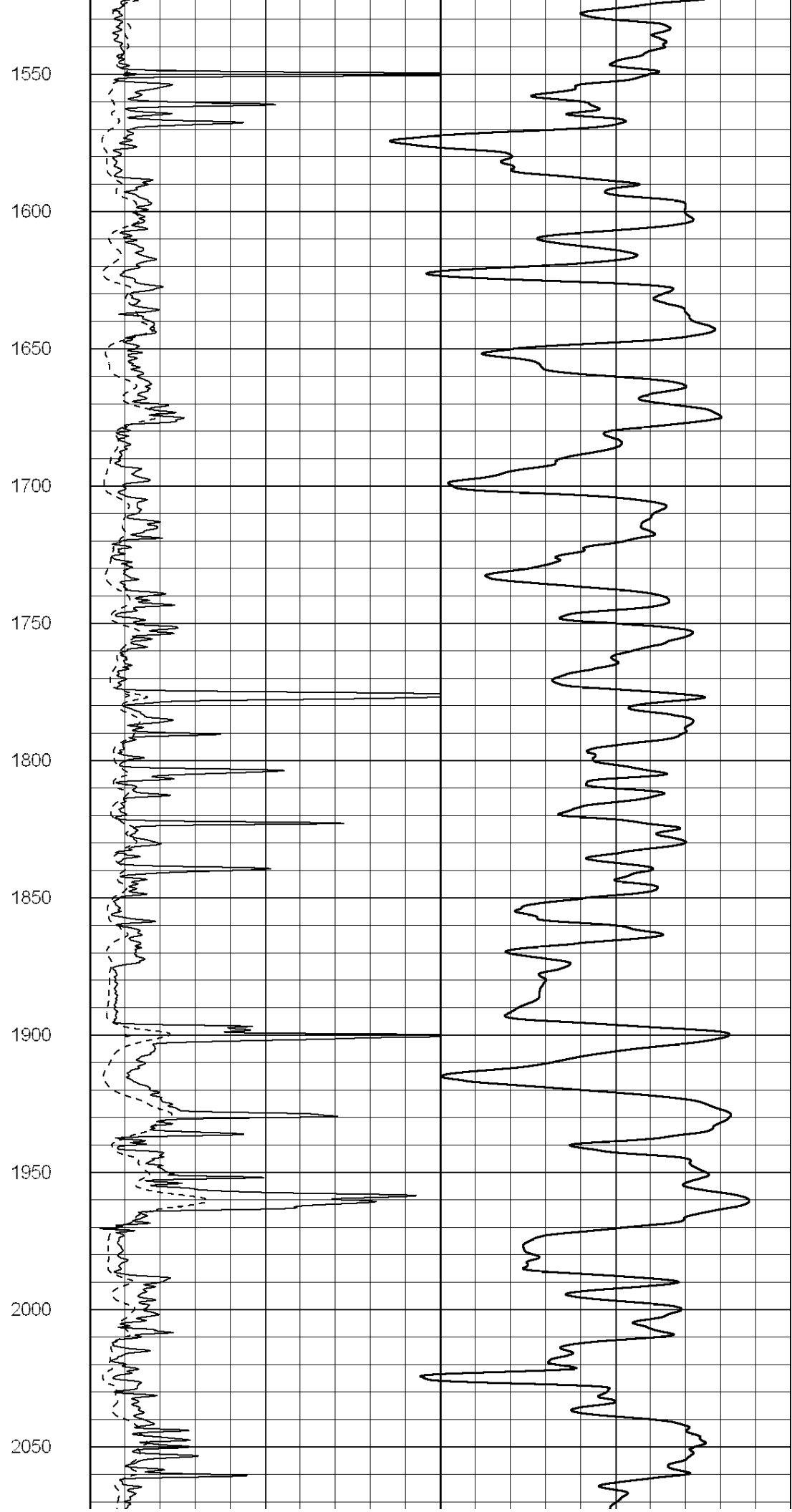
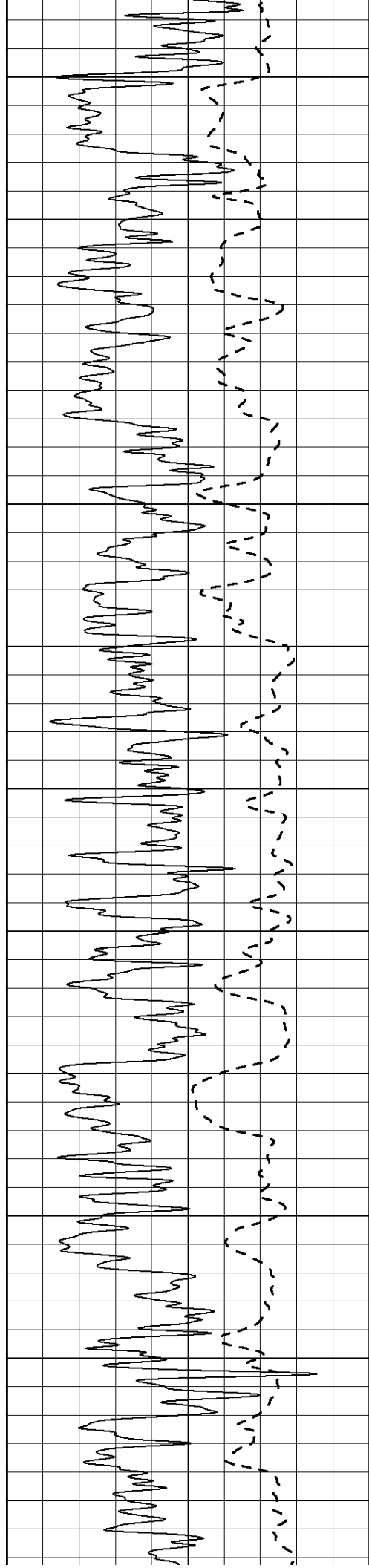
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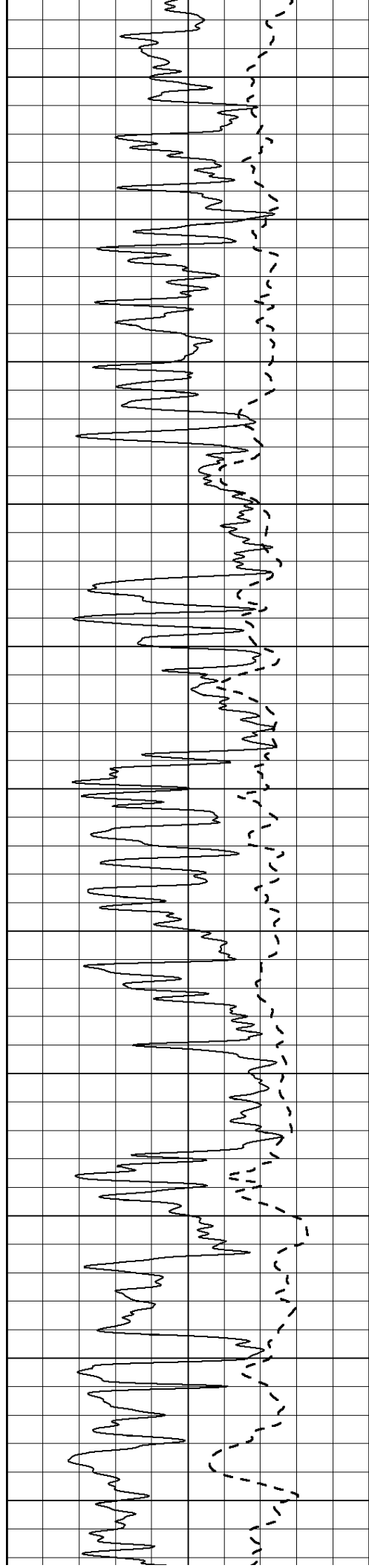
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			0	Deep Induction (Ohm-m)	50
			1000		CILD (mmho/m)
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500











2100

2150

2200

2250

2300

2350

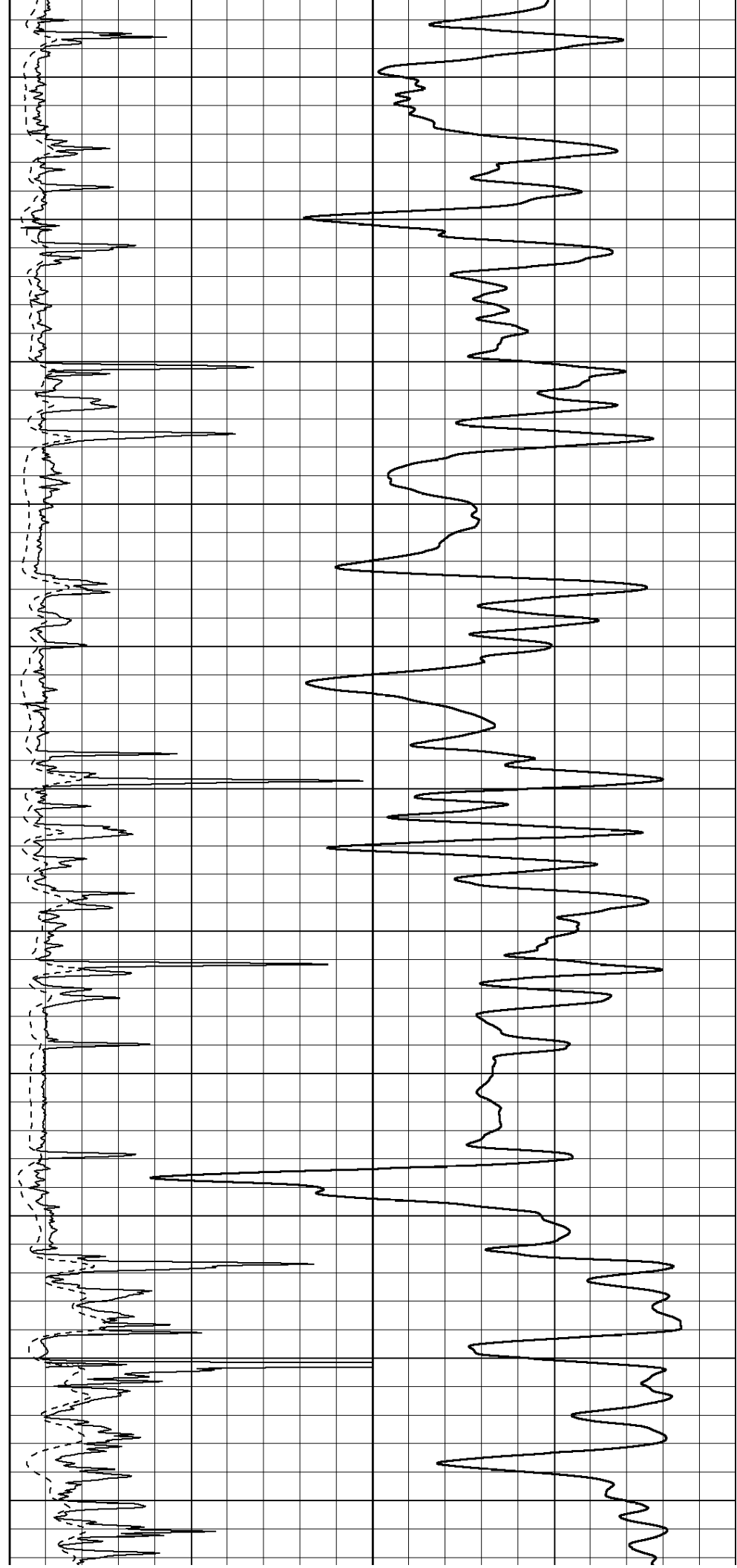
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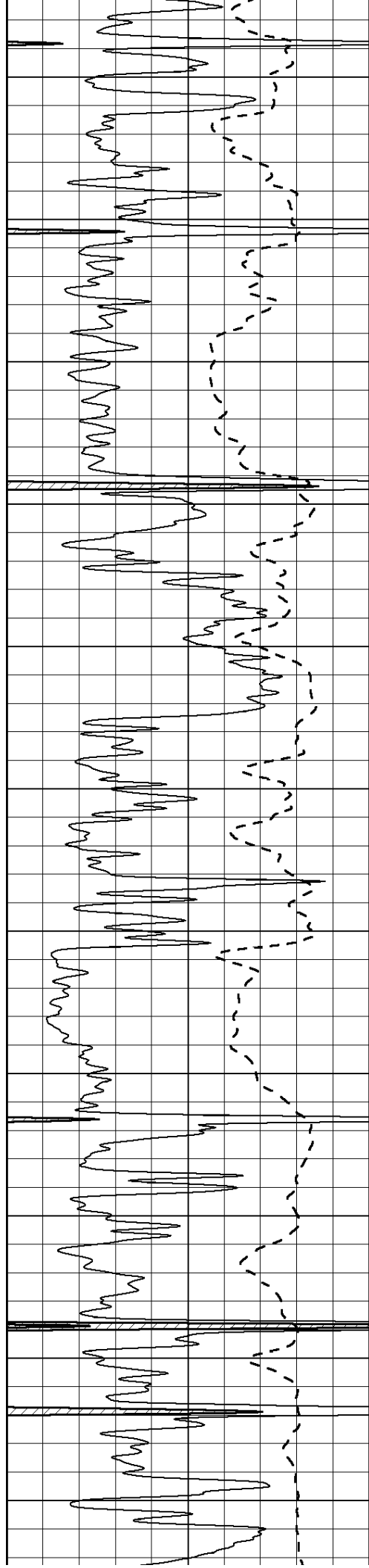
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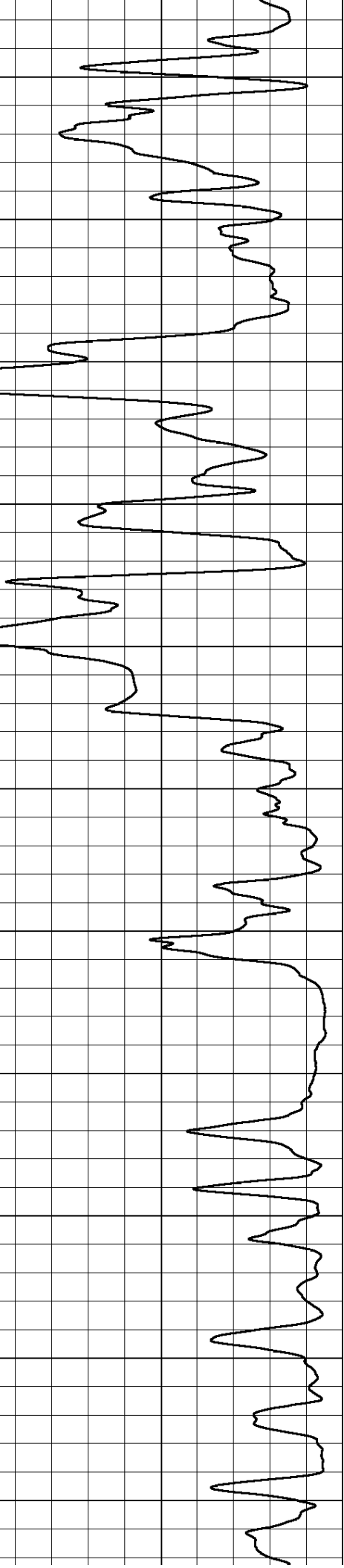
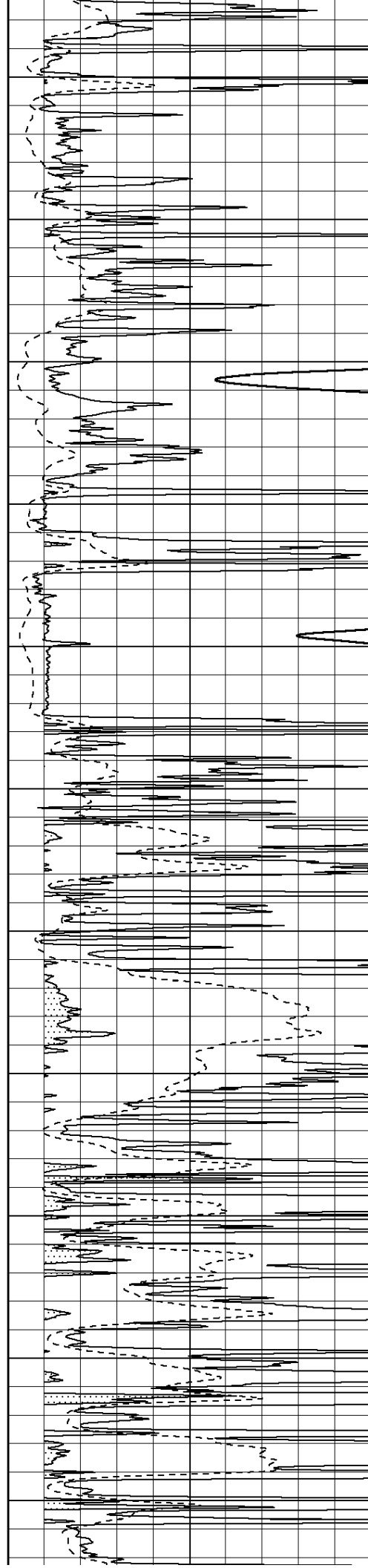
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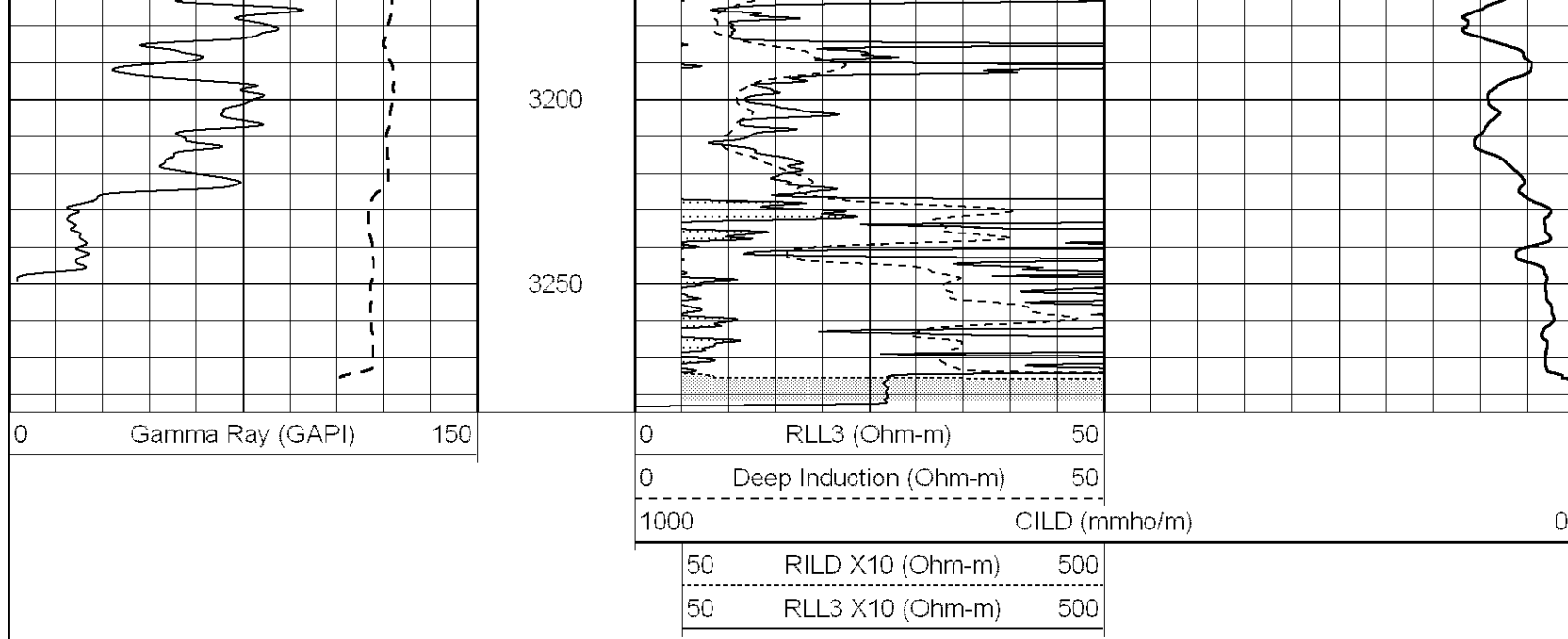
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2650  
2700  
2750  
2800  
2850  
2900  
2950  
3000  
3050  
3100  
3150



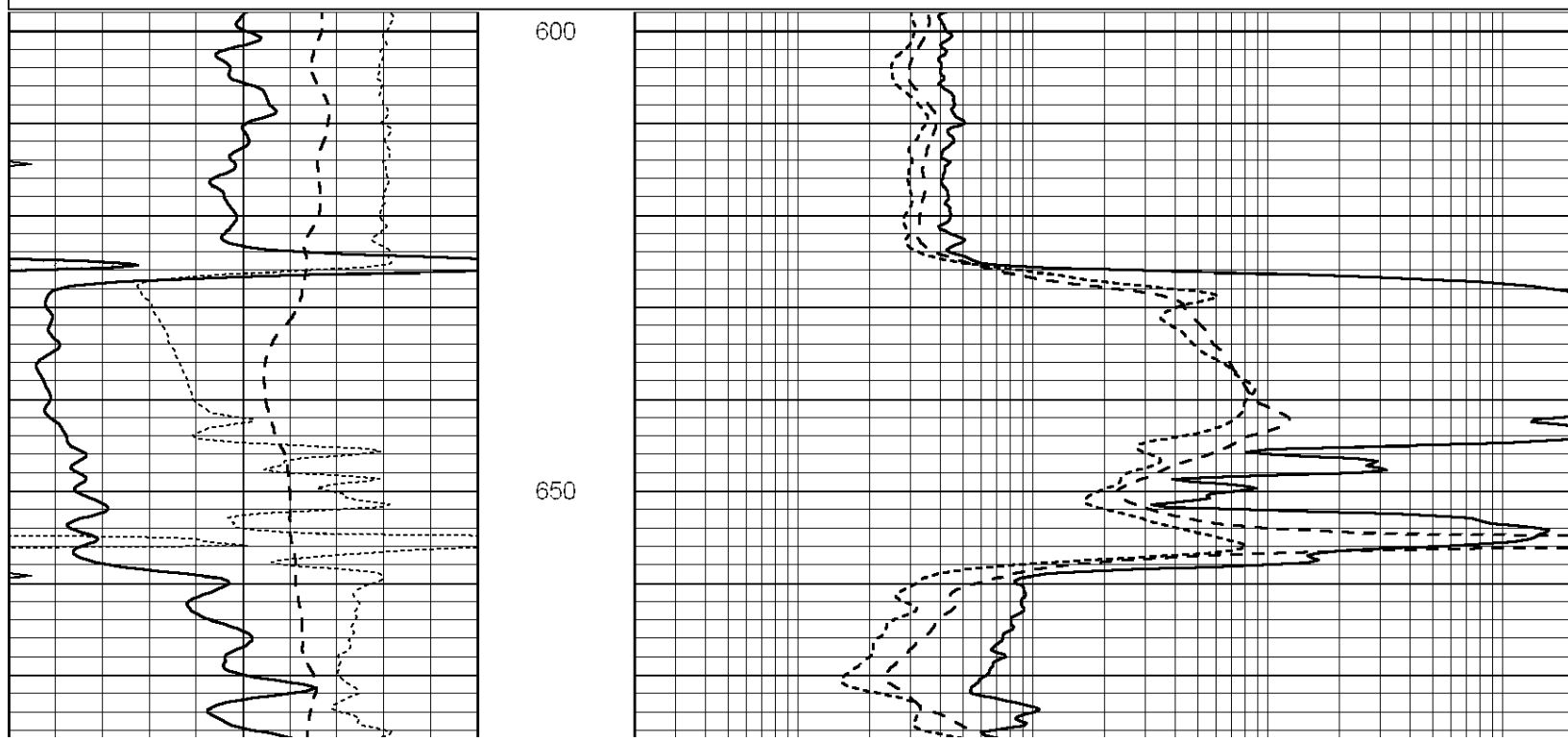


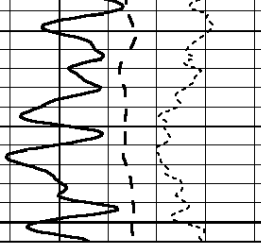
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# ANHYDRITE

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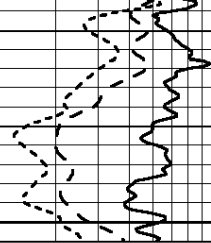
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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





700

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20



0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



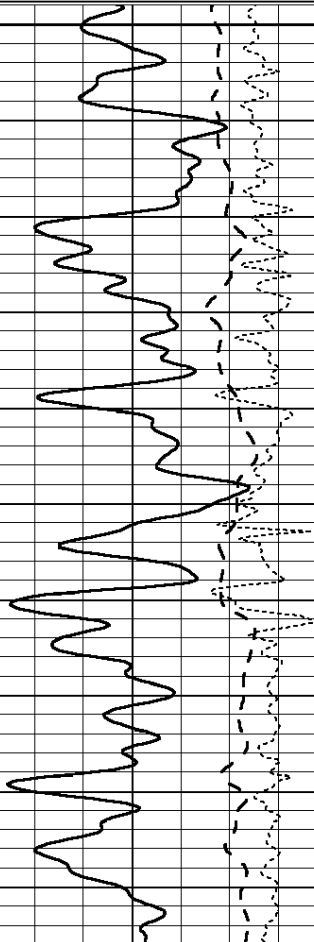
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# MAIN SECTION

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 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

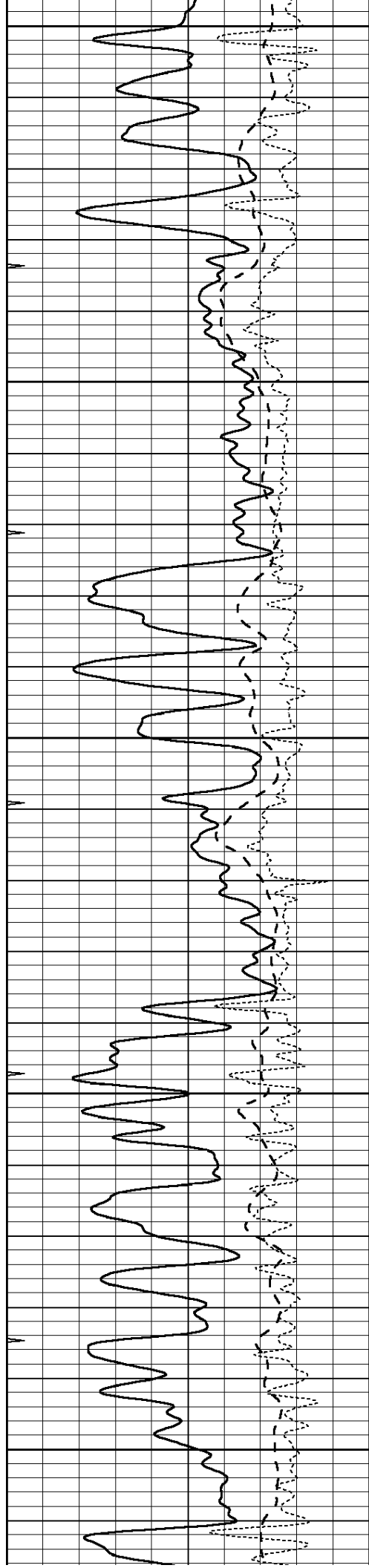
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



2100

2150





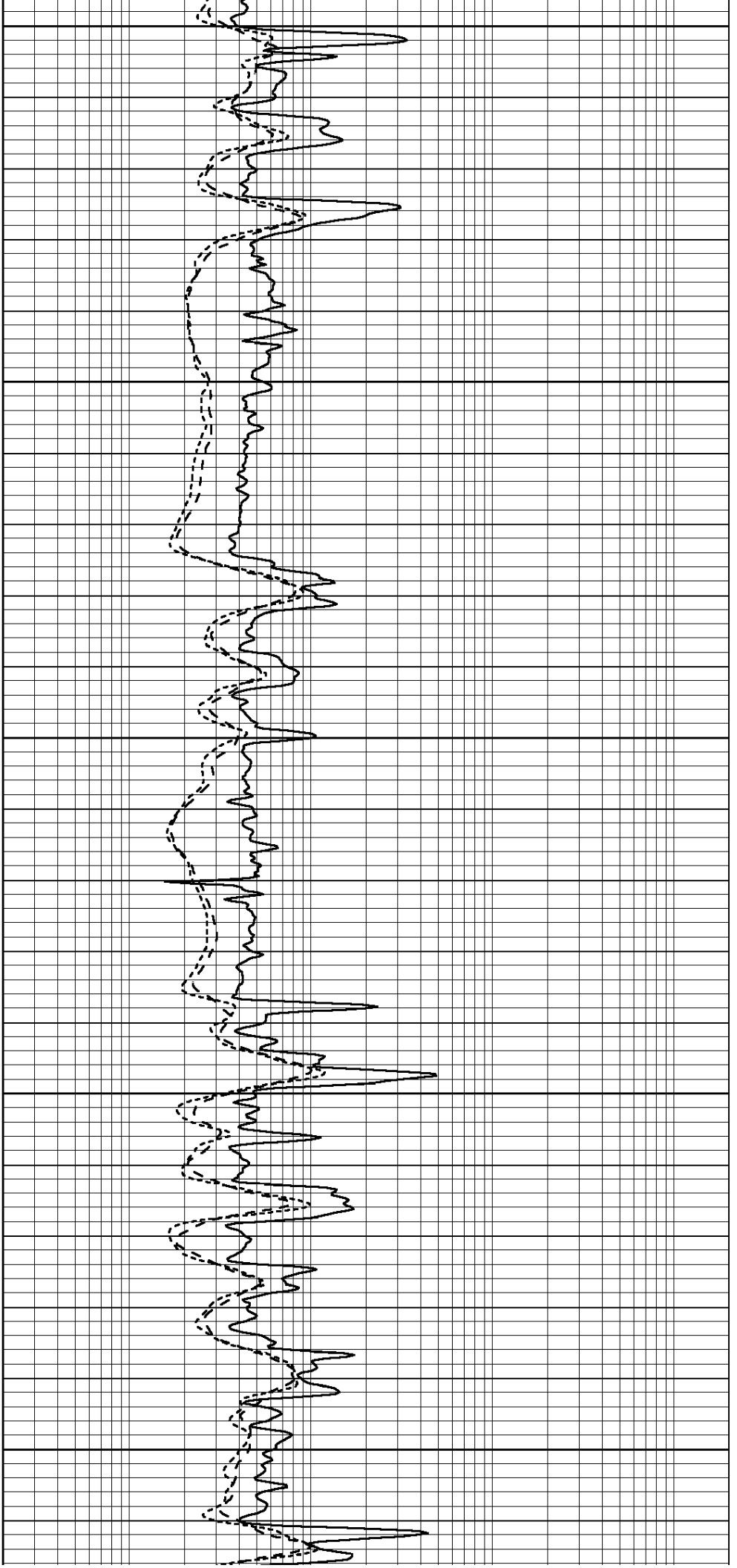
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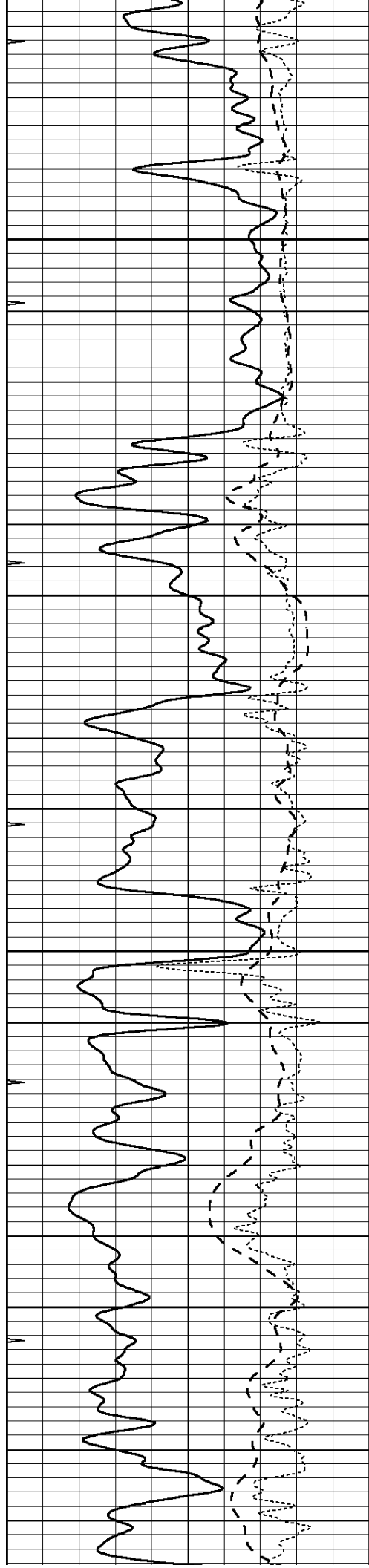
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2300

2350

2400



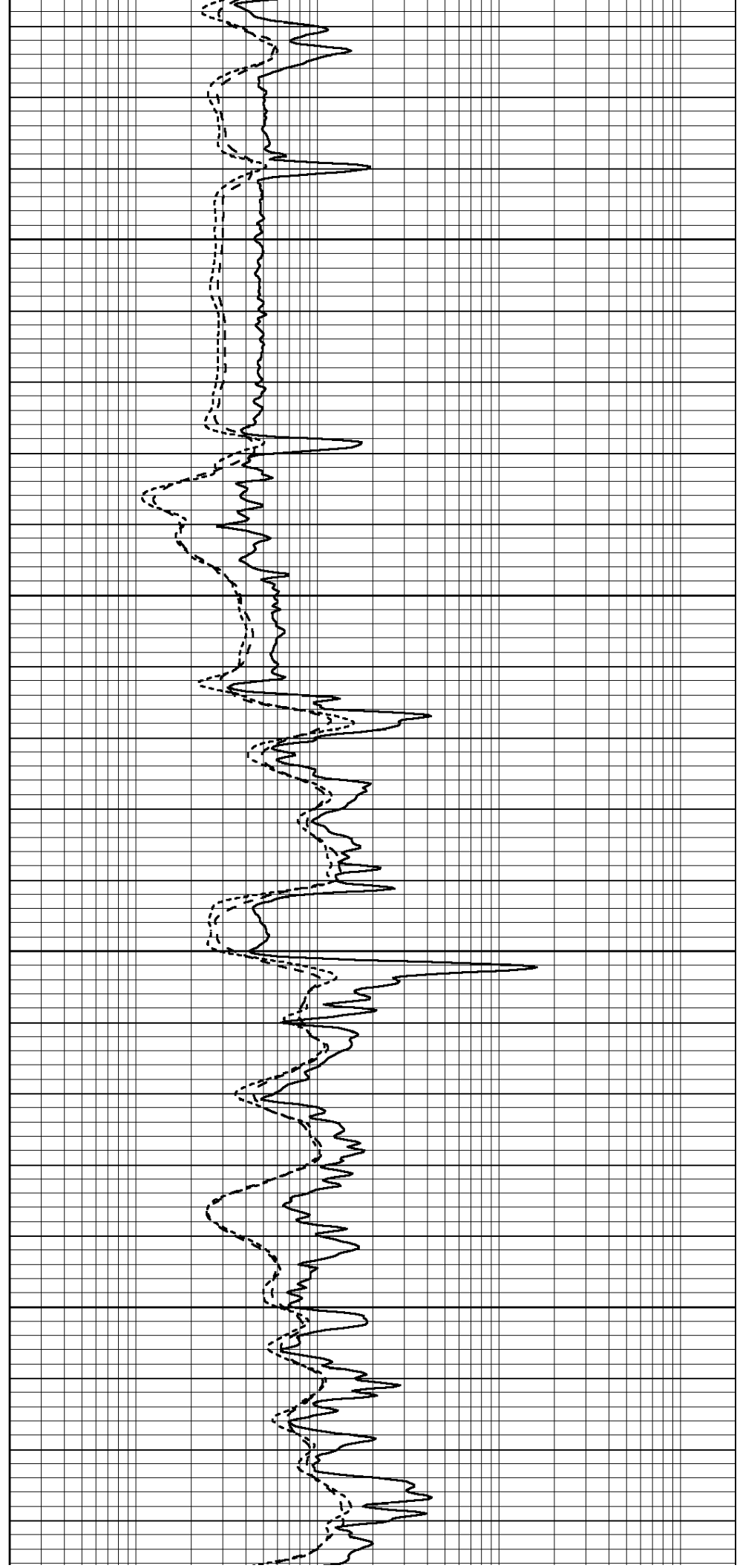


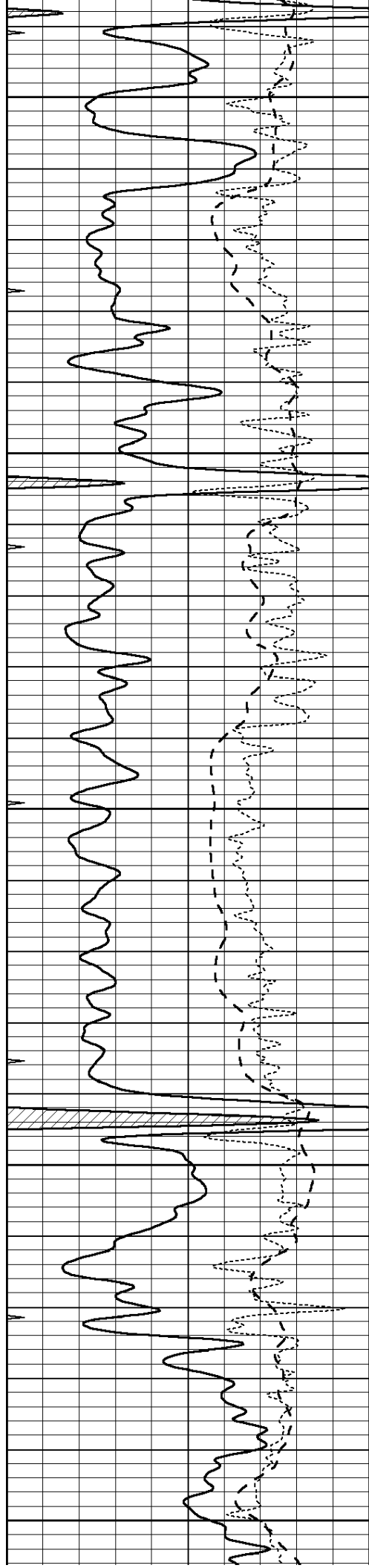
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2500

2550

2600





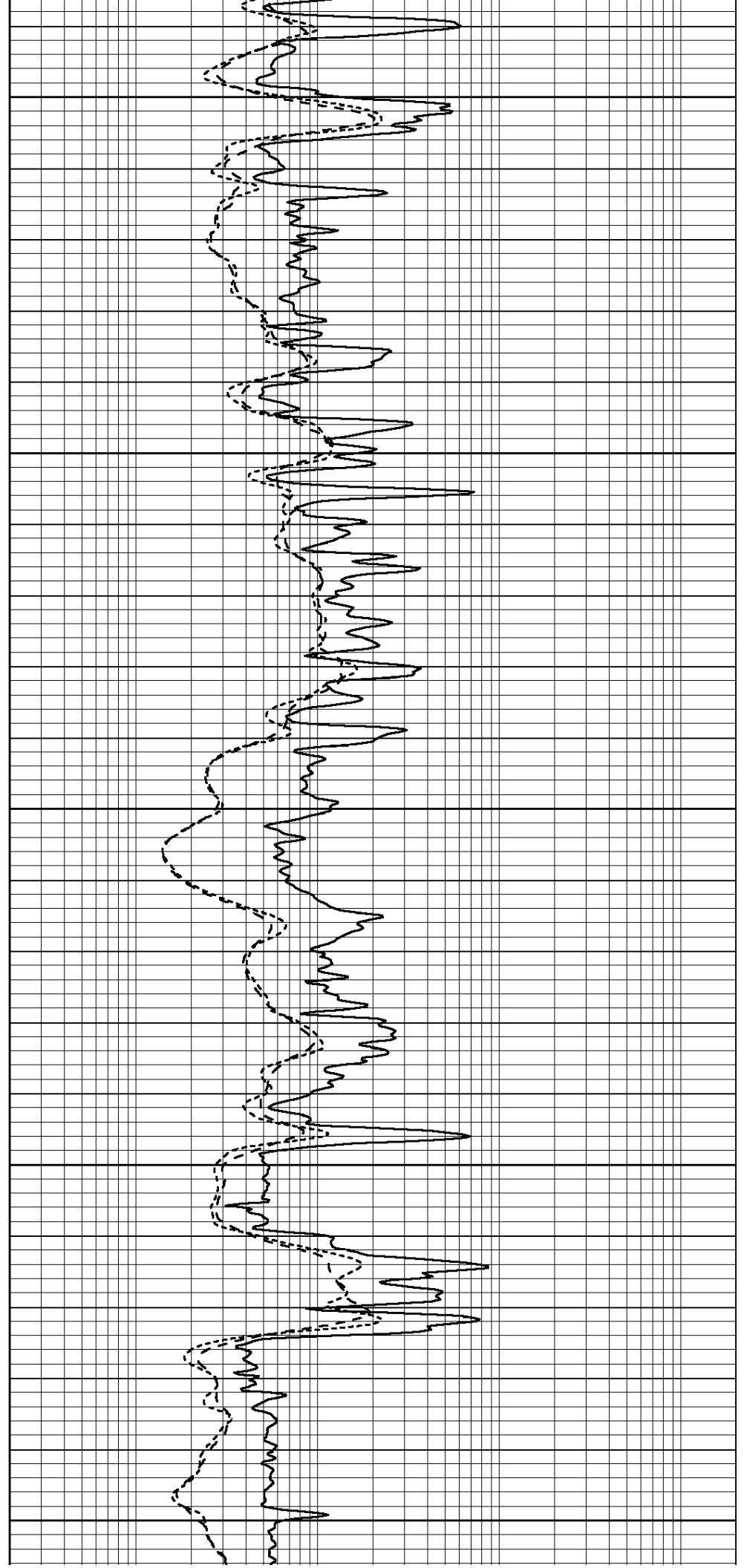
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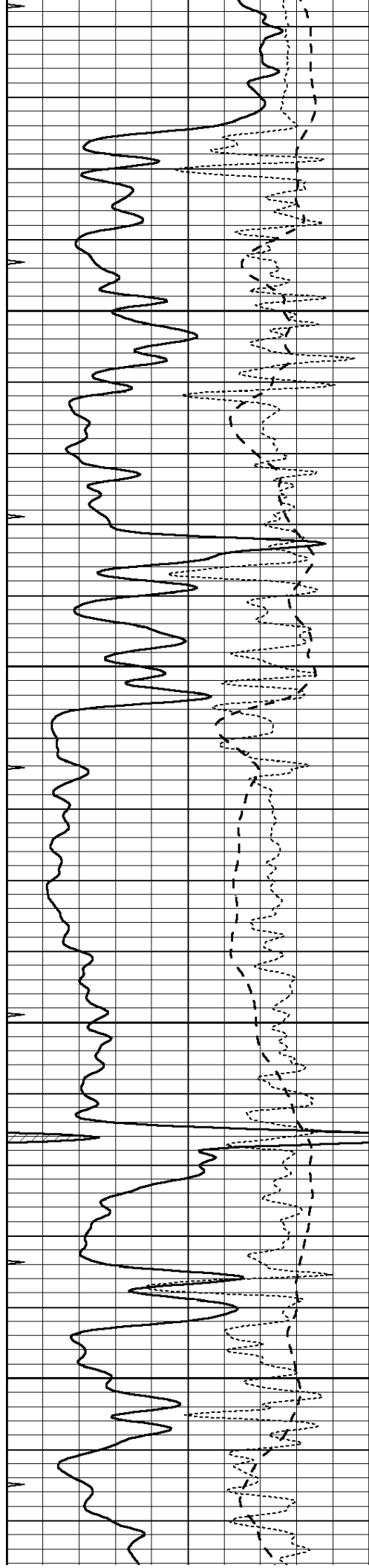
2700

2750

2800

2850



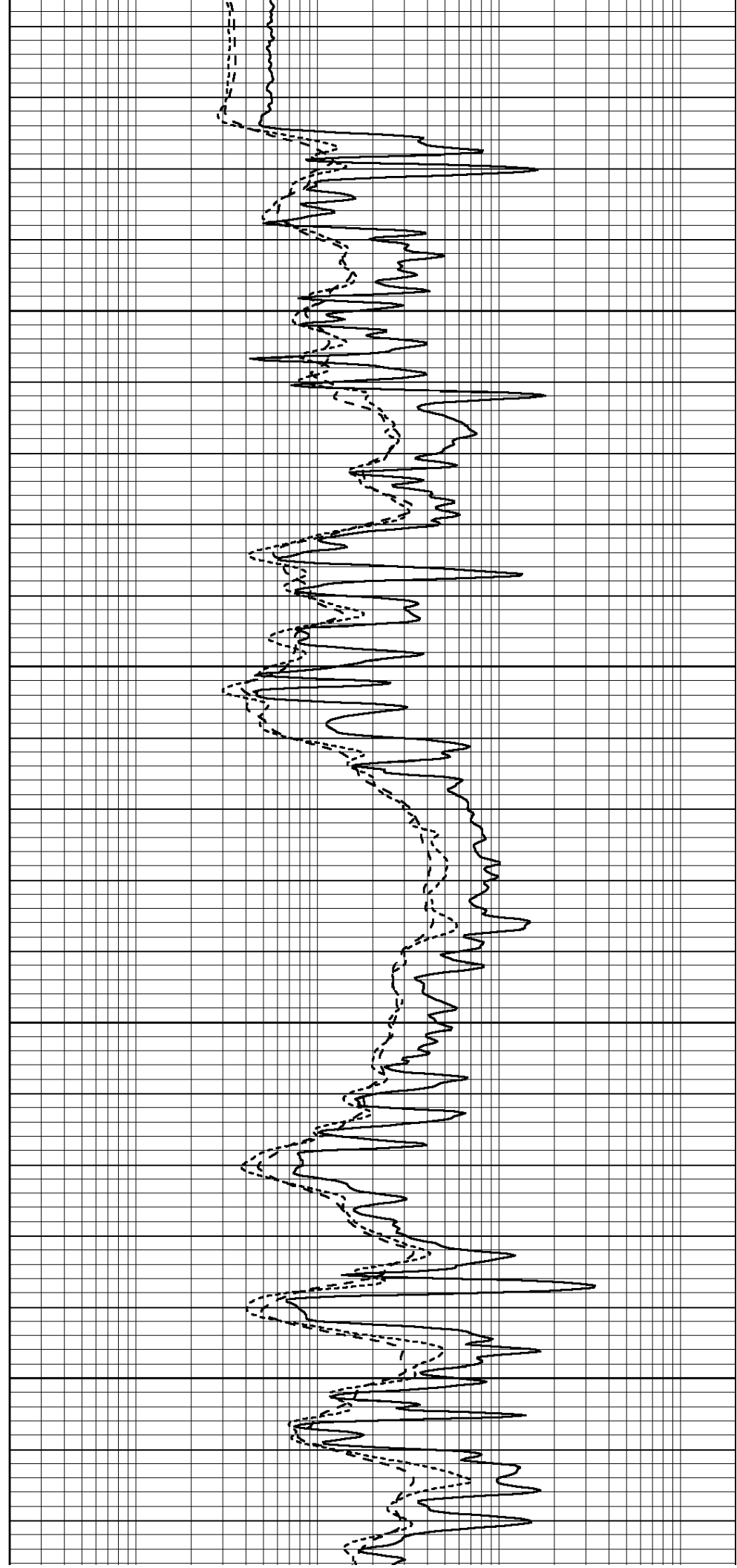


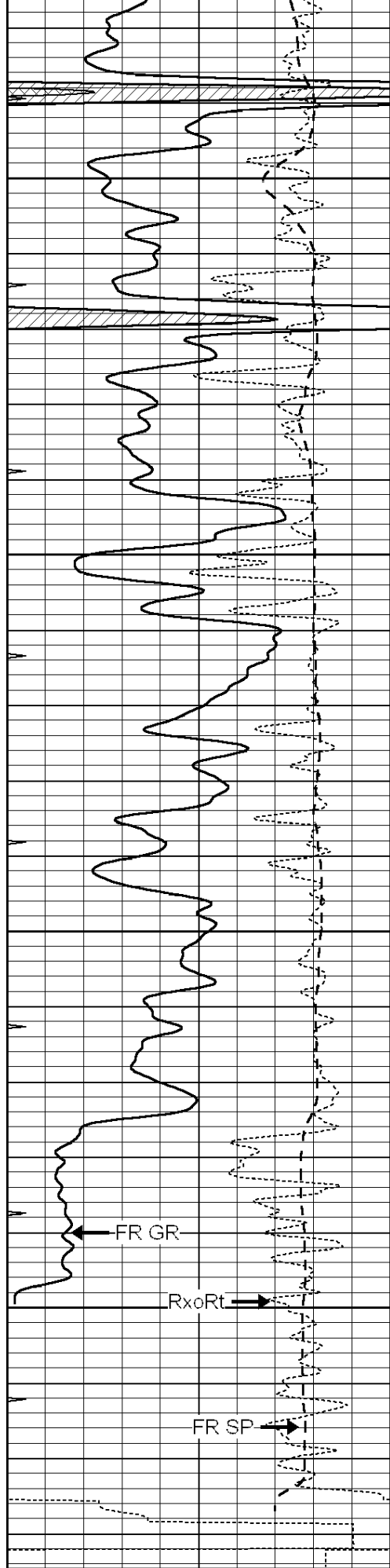
2900

2950

3000

3050





3100

3150

3200

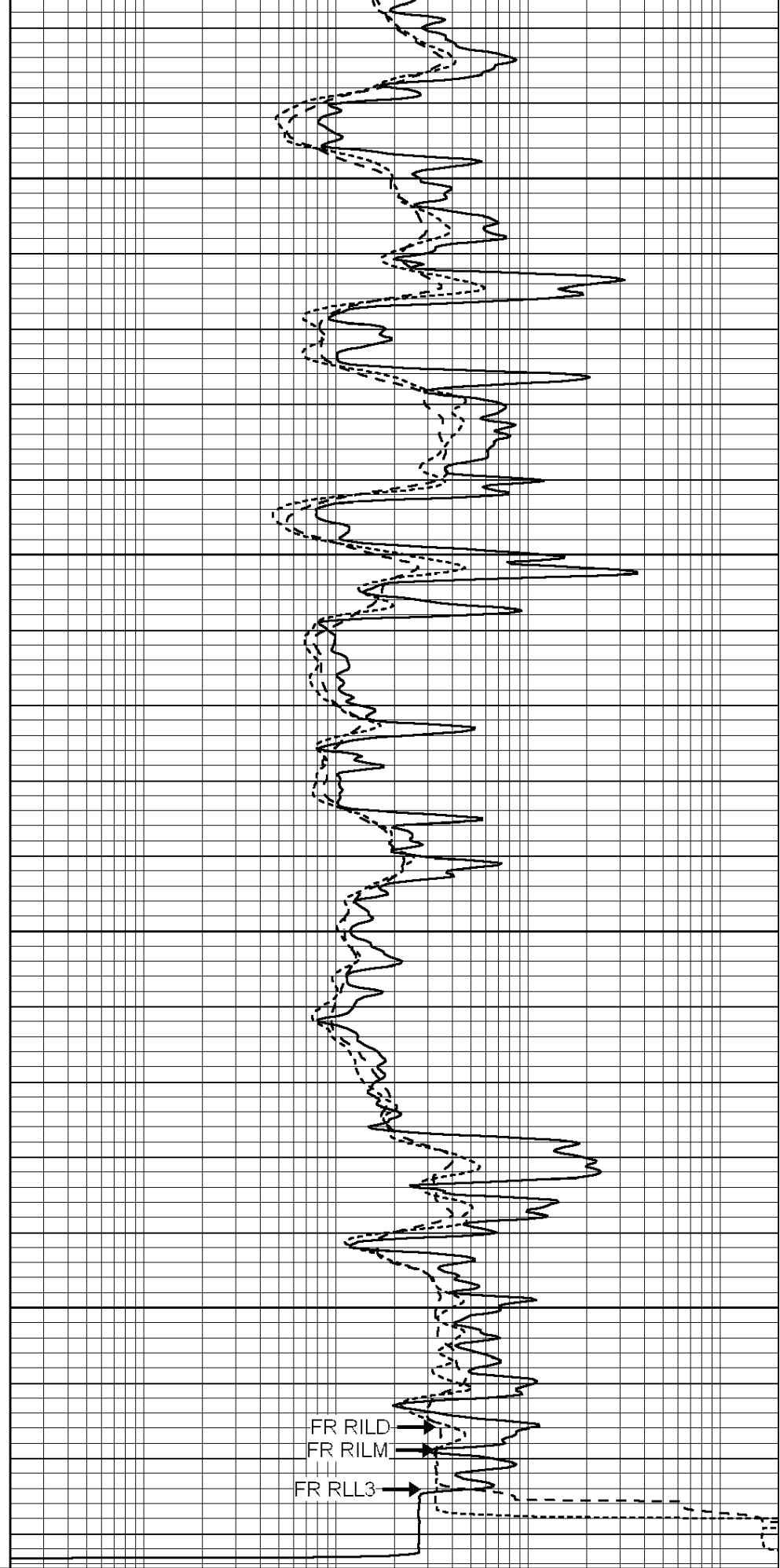
3250

LTD 3276

0 GAMMA RAY (GAPI) 150

-100 SP (mV) 100

0.2 RxoRt 50



0.2 RLL3 (Ohm-m) 2000

0.2 DEEP INDUCTION (Ohm-m) 2000

0.2 MEDIUM INDUCTION (Ohm-m) 2000

-250	RxoRt	50
0	MINMK	20

0.2	MEDIUM INDUCTION (Ohm-ft)	2000
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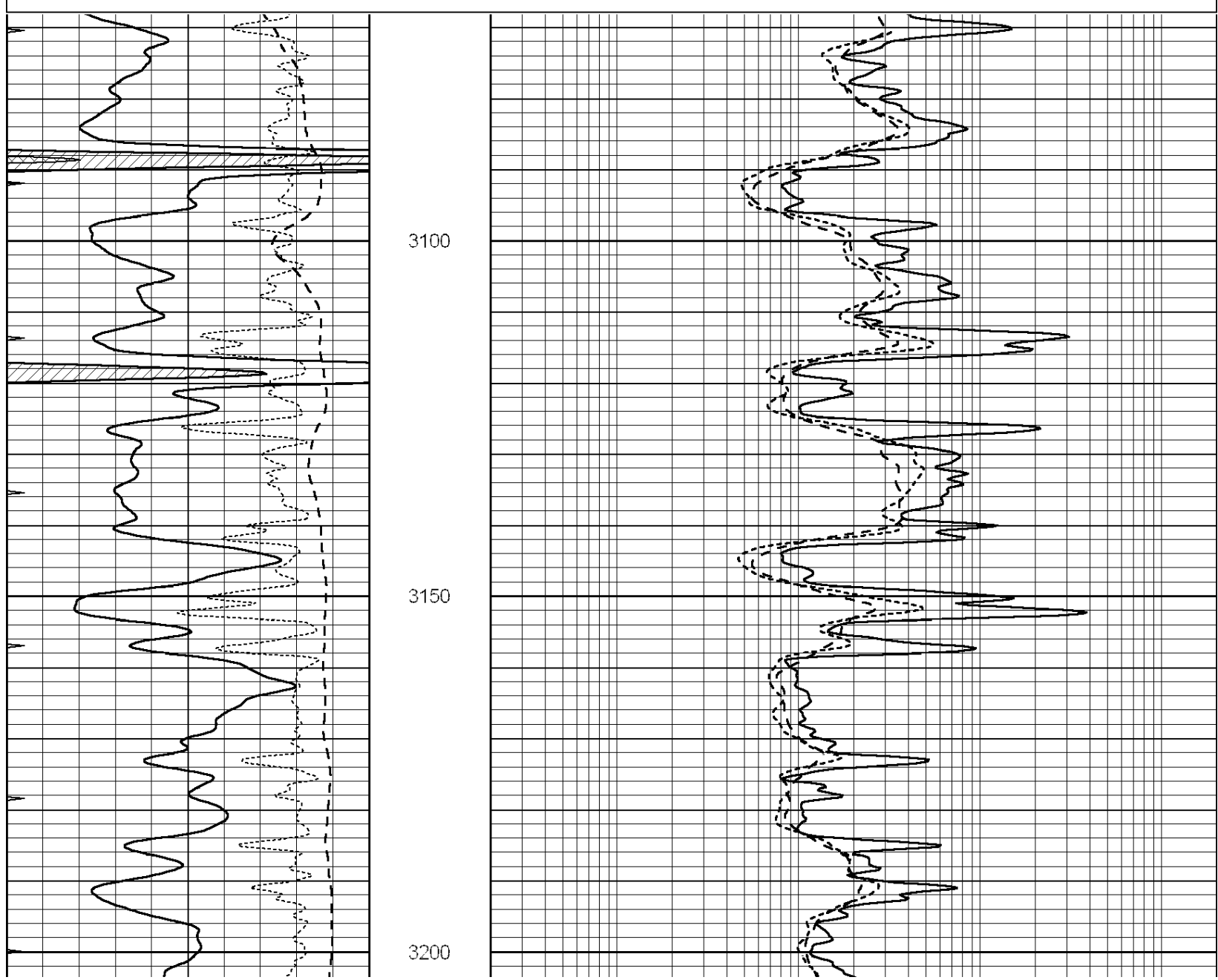
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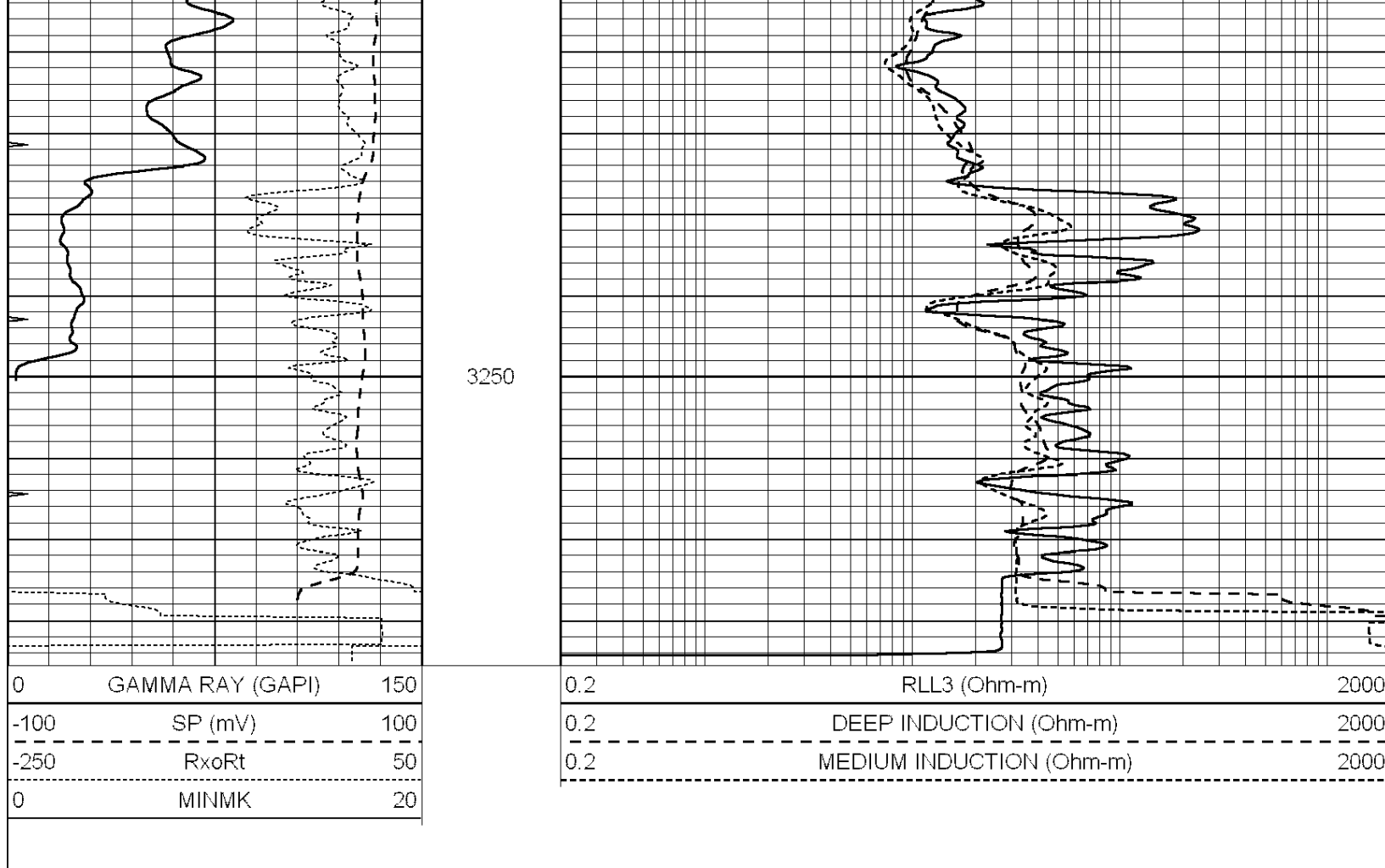
# REPEAT SECTION

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 Dataset Creation: Tue Oct 29 04:01:04 2013 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





### Calibration Report

Database File: 012028ddn.db  
 Dataset Pathname: pass3.1  
 Dataset Creation: Tue Oct 29 04:04:35 2013 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: DIL3-GEAR  
 Performed: Mon Oct 28 10:42:50 2013

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	480.000	10.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	570.000	-1.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	560.000	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	540.000	-4.000

### Compensated Density Calibration Report

Serial-Model: GEAR1-GEARHART  
 Source / Verifier: 147 / 147  
 Master Calibration Performed: Mon Oct 28 08:14:15 2013

### Master Calibration

	Density		Far Detector	Near Detector
Magnesium	1.710	g/cc	1205.77	610.74
Aluminum	2.500	g/cc	974.94	410.70

Aluminum

2.990 g/cc

271.21

419.72 cps

Spine Angle = 75.89

Density/Spine Ratio = 0.572

	Size		Reading	
Small Ring	8.20	in	4.83	V
Large Ring	14.00	in	7.01	V

Compensated Neutron Calibration Report

Serial Number: NEU\_4I  
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: GR5  
Tool Model: OPEN  
Performed: Mon Oct 28 12:29:55 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 0.8400 GAPI/cps