



DUAL
INDUCTION
LOG

Company DEUTSCH OIL COMPANY
Well ZINK "B" #1-4
Field BAUMAN
County PRATT State KANSAS

Location: API # : 15-151-22460-0000
2310' FSL & 990' FEL
Permanent Datum GROUND LEVEL Elevation 1831
Log Measured From KELLY BUSHING 7' A.G.L
Drilling Measured From KELLY BUSHING
Elevation
K.B. 1838
D.F. 1836
G.L. 1831

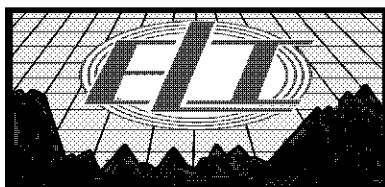
Date	4/18/17		
Run Number	ONE		
Depth Driller	4130		
Depth Logger	4133		
Bottom Logged Interval	4131		
Top Log Interval	00		
Casing Driller	8 5/8" @ 297		
Casing Logger	296		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5000 PPM	
Density / Viscosity	9.3/56		
pH / Fluid Loss	11.0/9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.52 @ 87F		
Rmf @ Meas. Temp	.39 @ 87F		
Rmc @ Meas. Temp	.62 @ 87F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.38 @ 118F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	118F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	AARON YOUNG		

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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

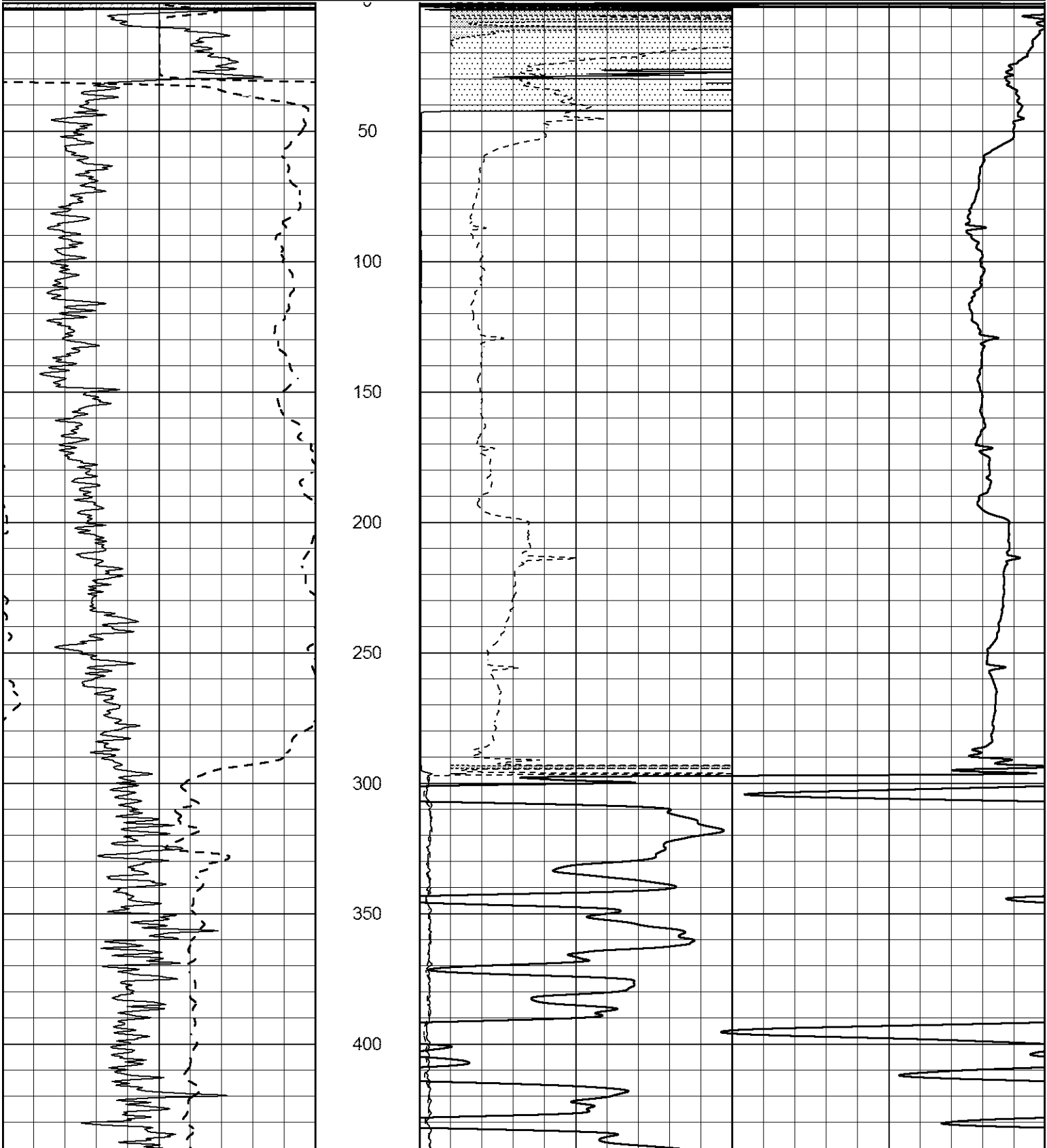
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
TURON, KS. - 4 WEST ON 110 RD. - 1/2 NORTH - WEST INTO



MAIN SECTION

Database File	1136pe8.db
Dataset Pathname	pass3.2
Presentation Format	_dil2
Dataset Creation	Tue Apr 18 16:01:14 2017
Charted by	Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	1000	CILD (mmho/m)	0
-100	SP (mV)	100	0	RLL3 (Ohm-m)	50
-----			0	Deep Induction (Ohm-m)	50
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500



450

500

550

600

650

700

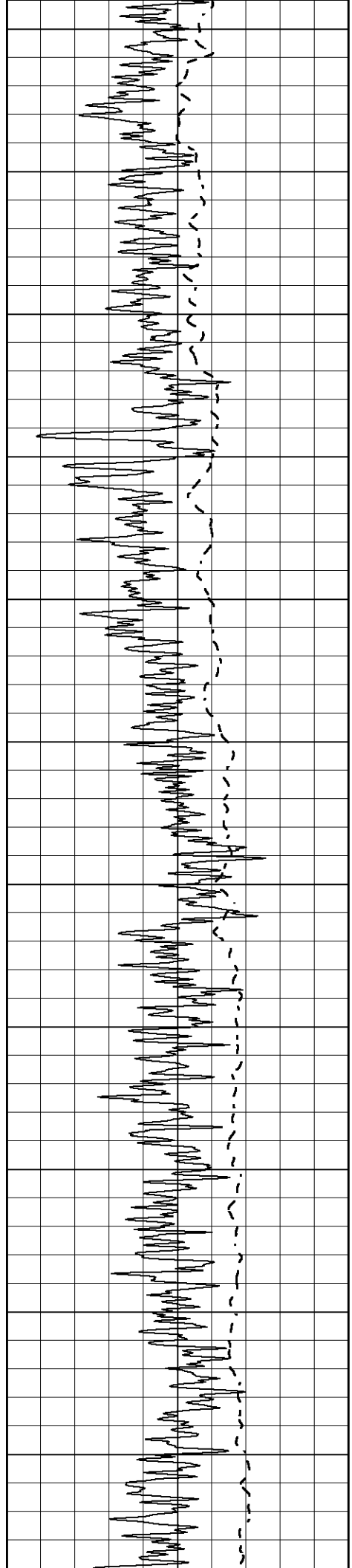
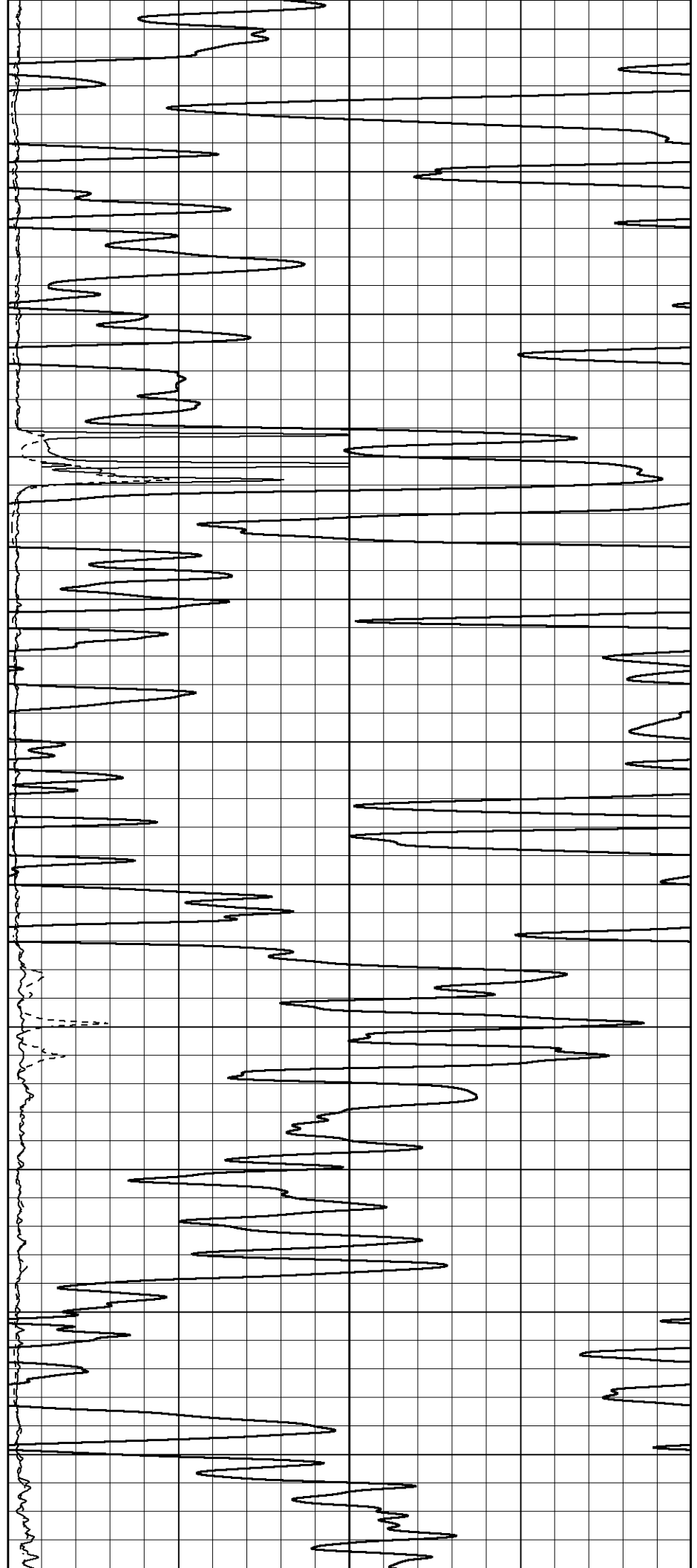
750

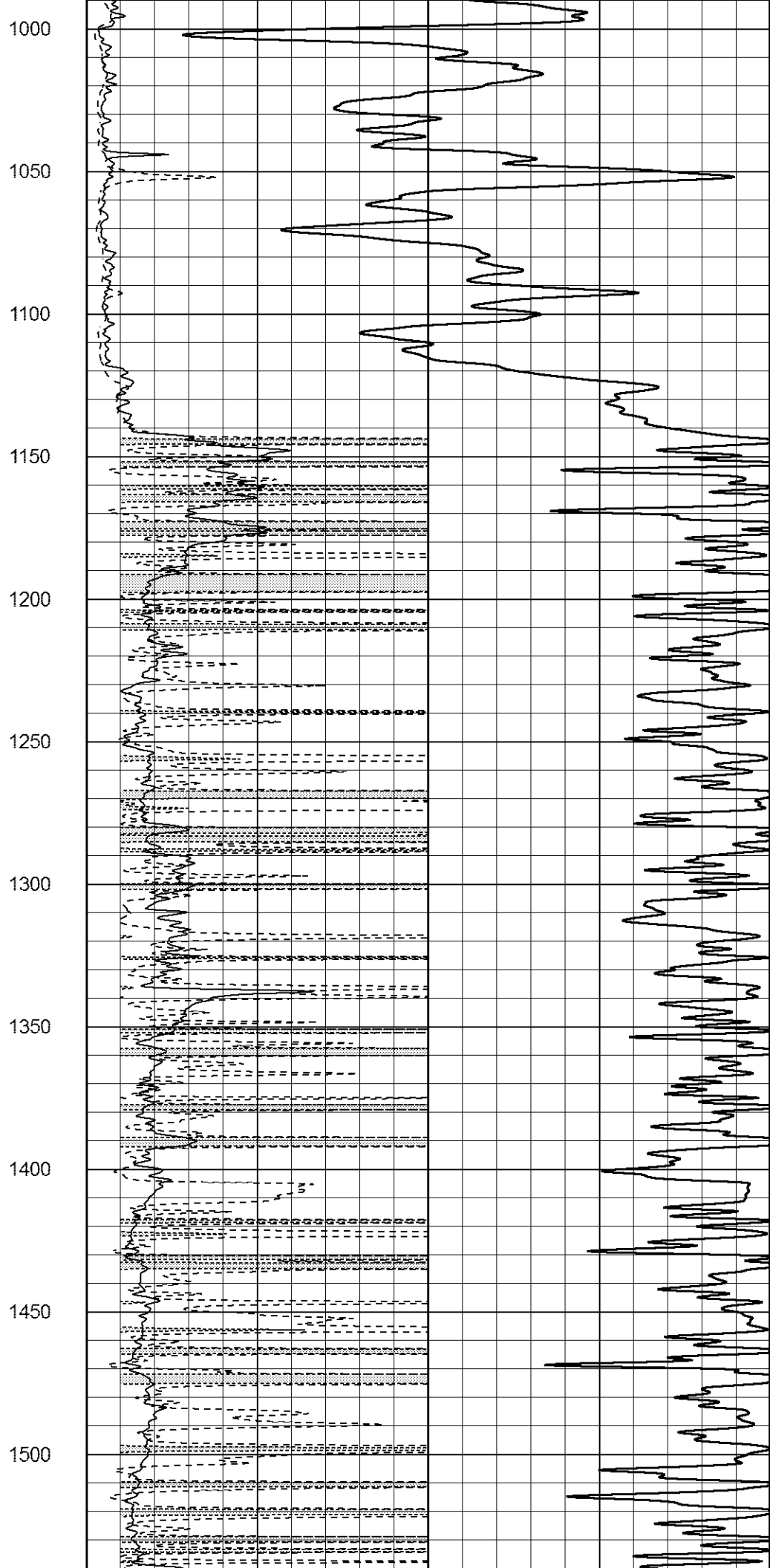
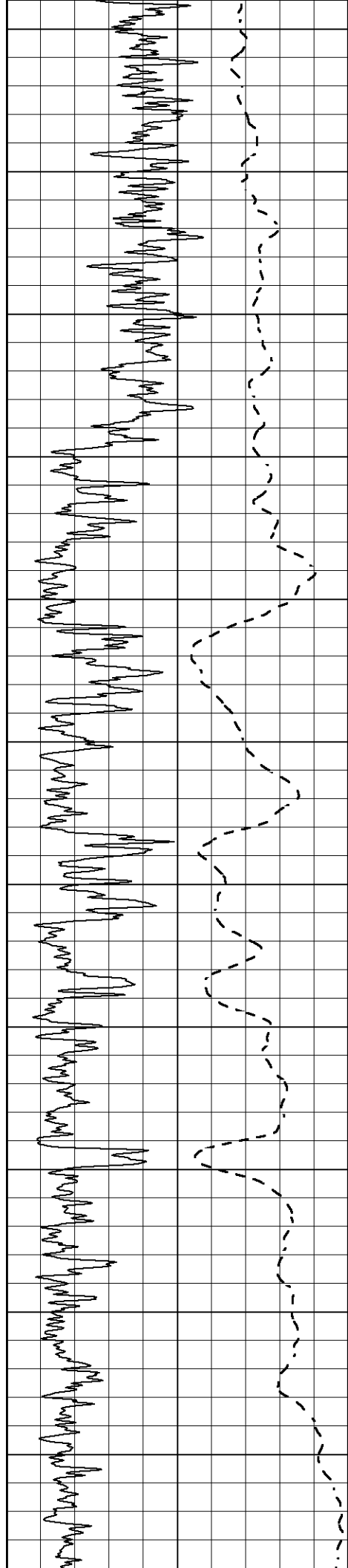
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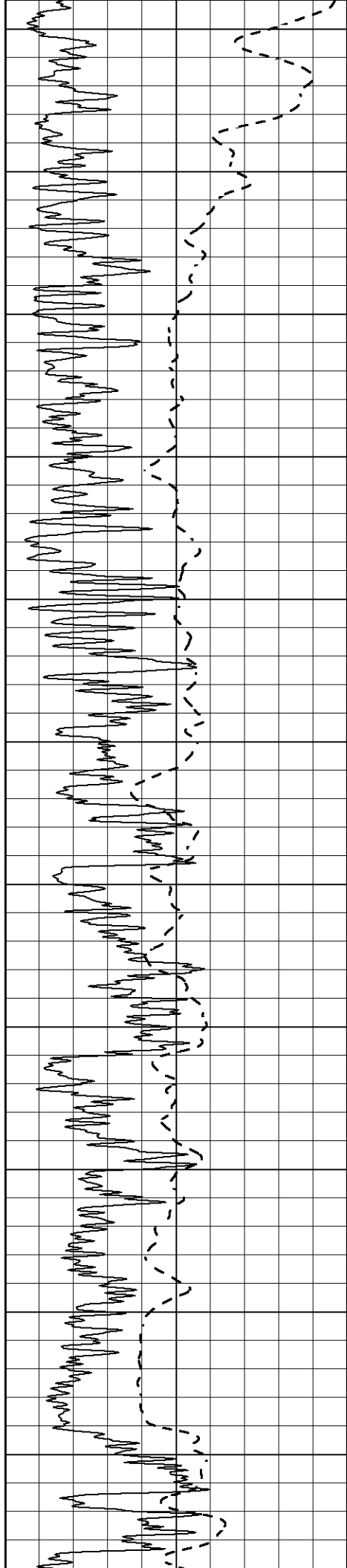
850

900

950







1550

1600

1650

1700

1750

1800

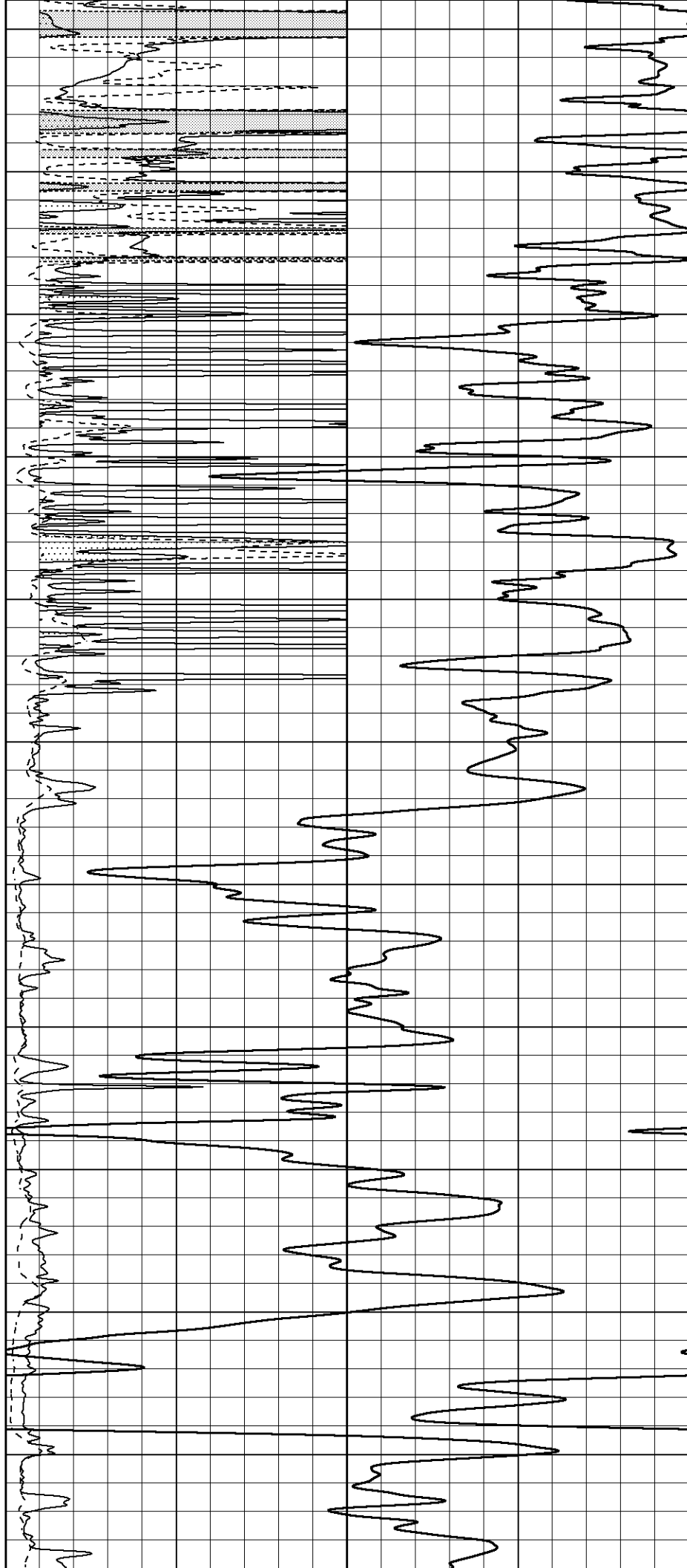
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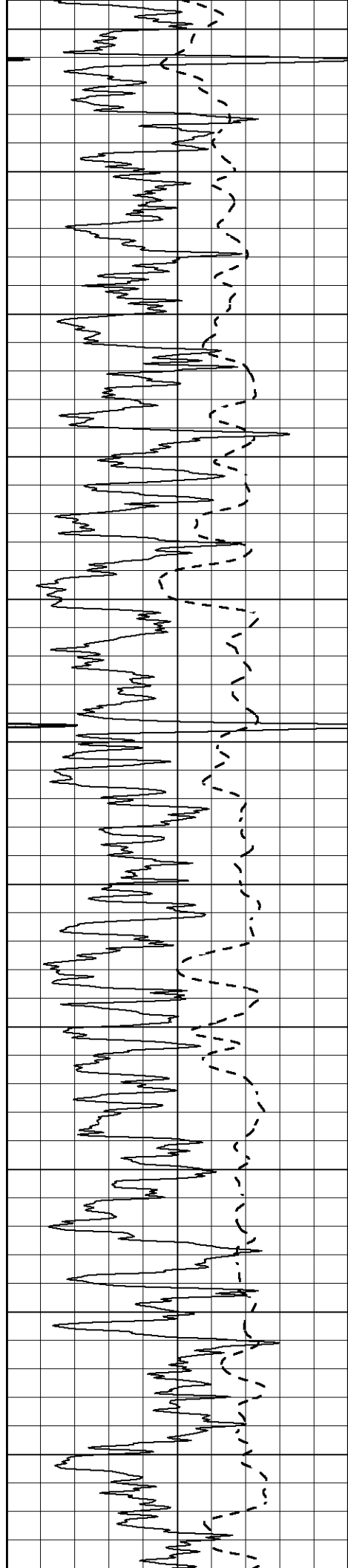
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

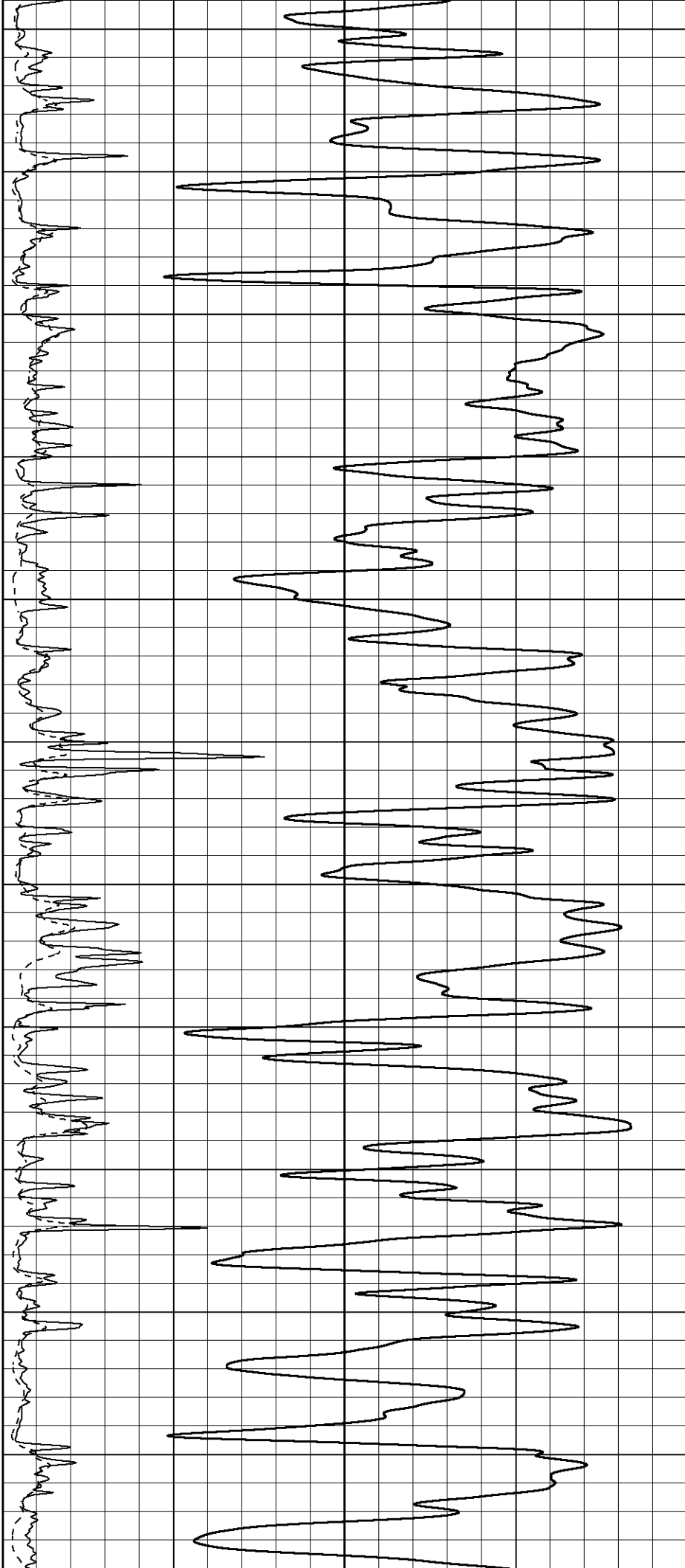
2400

2450

2500

2550

2600



2650

2700

2750

2800

2850

2900

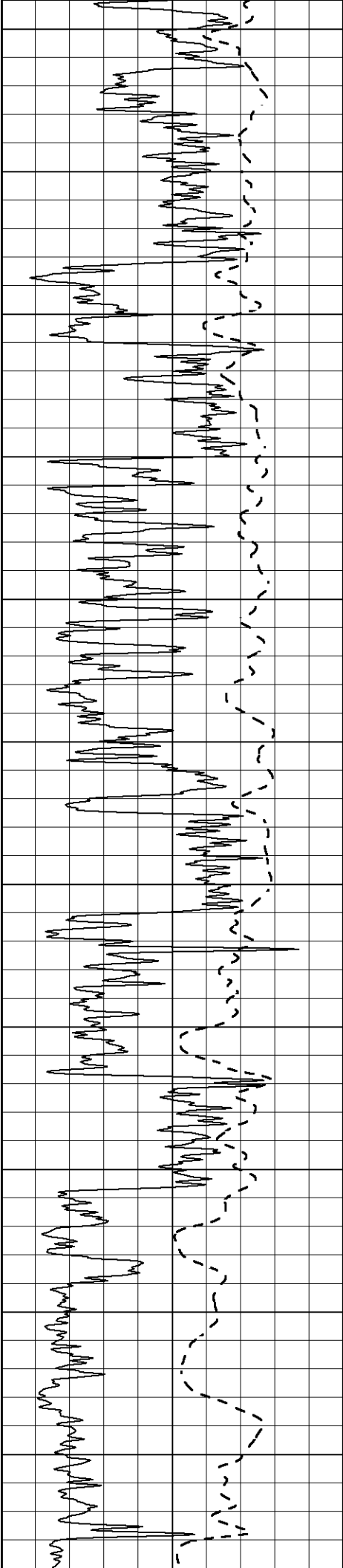
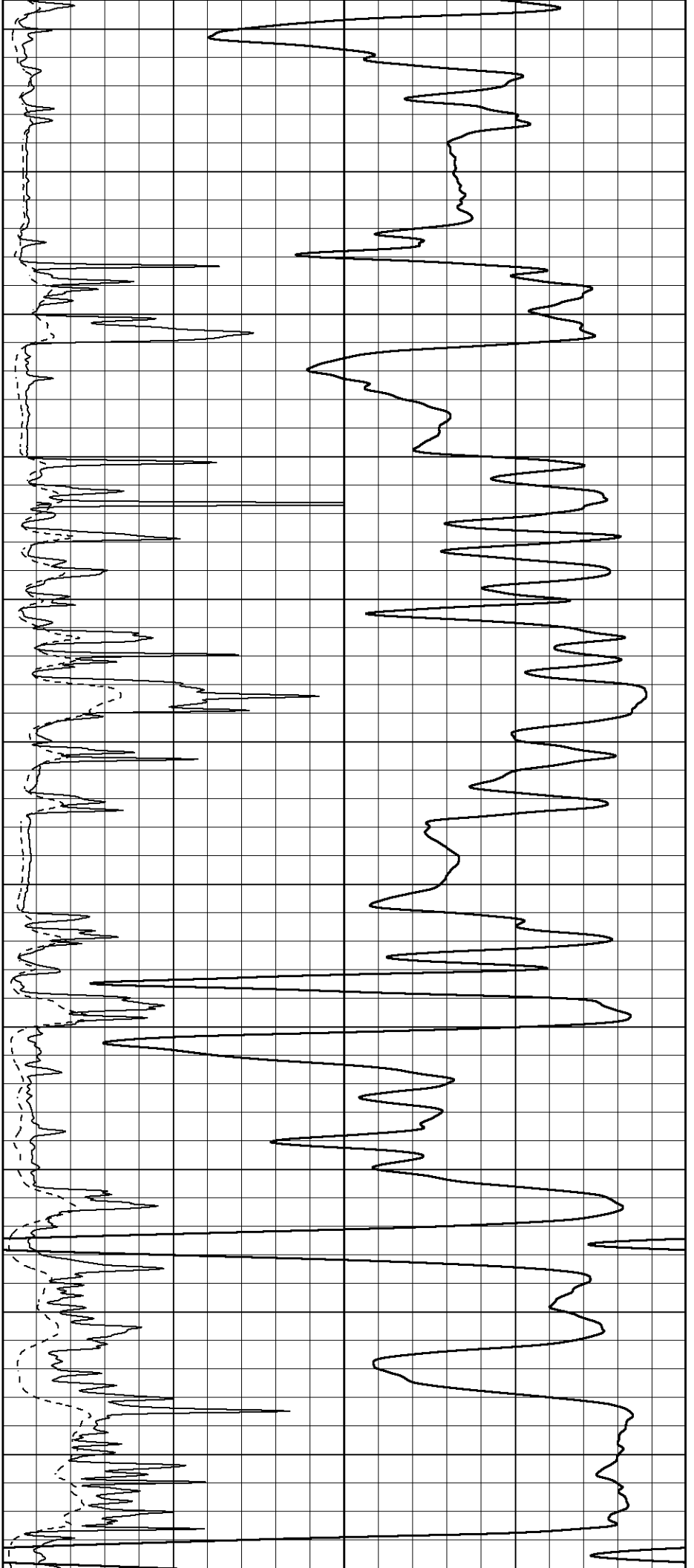
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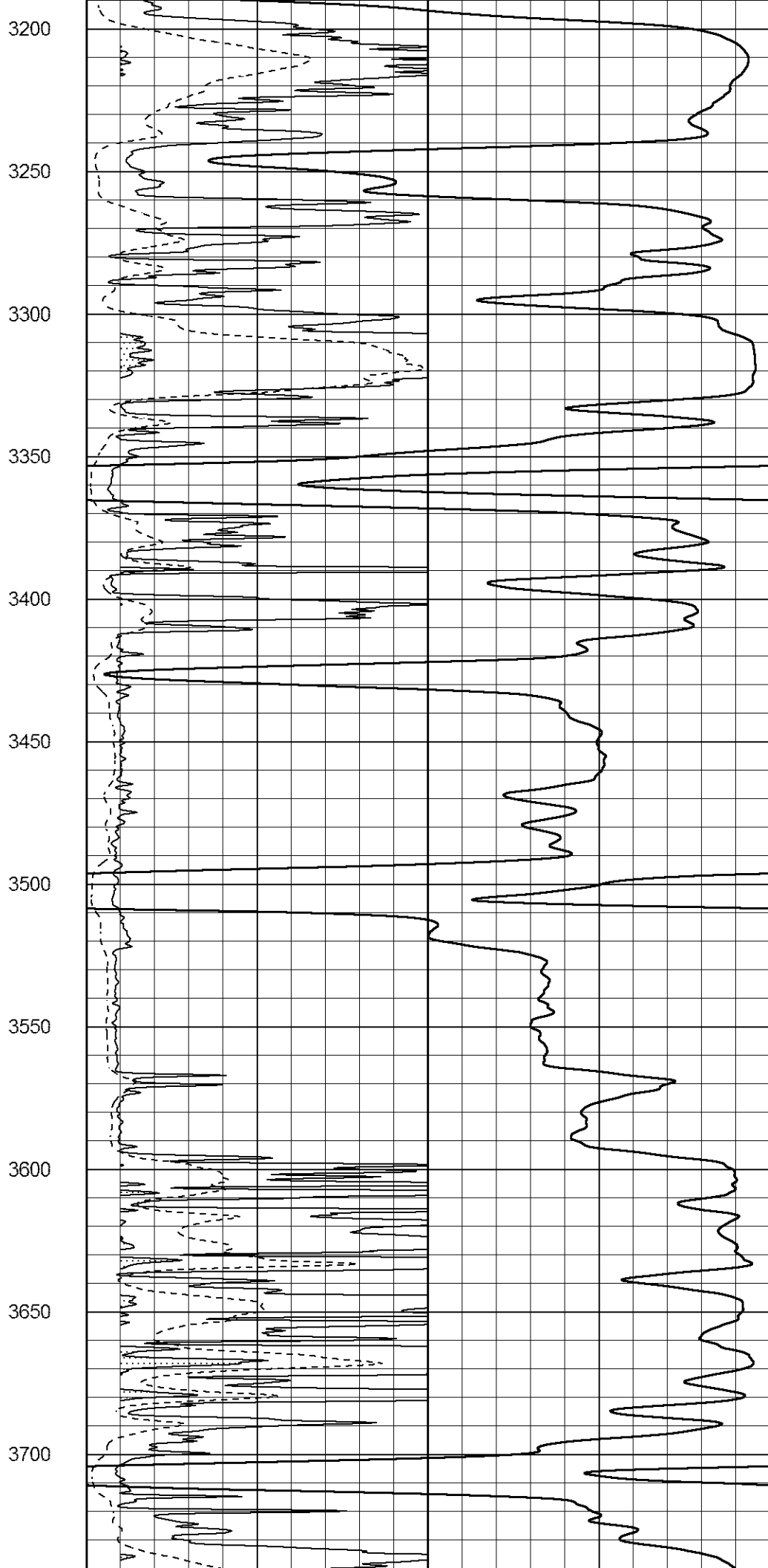
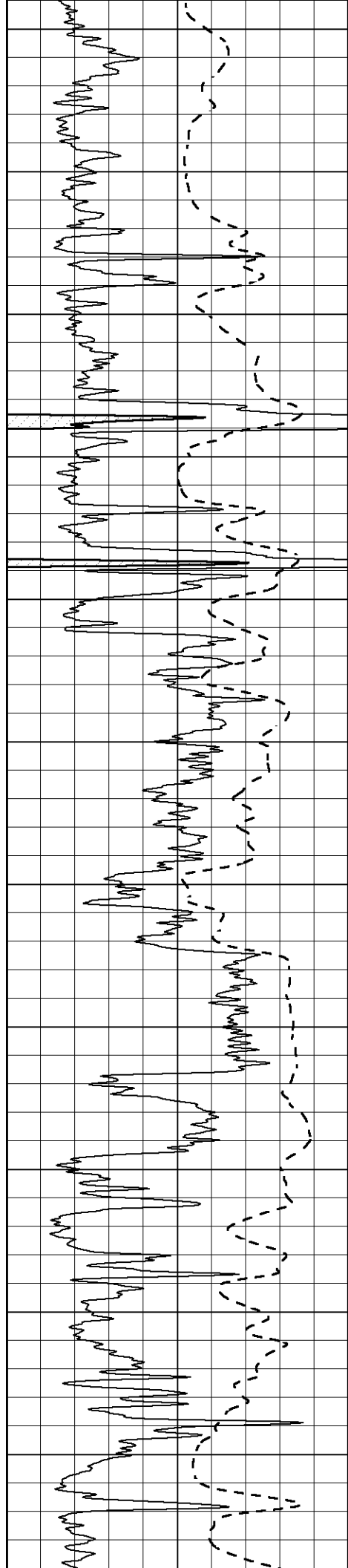
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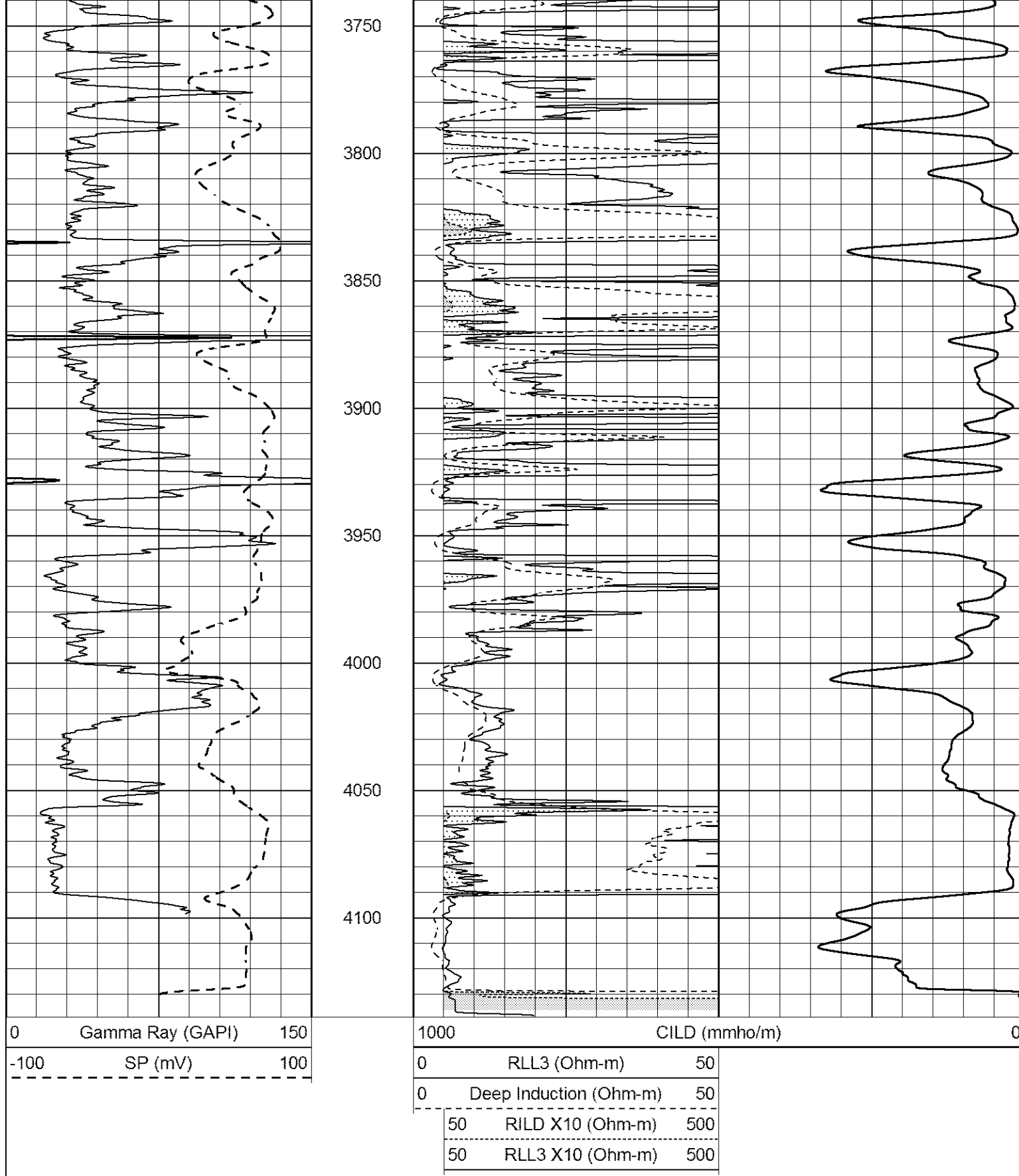
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3100

3150

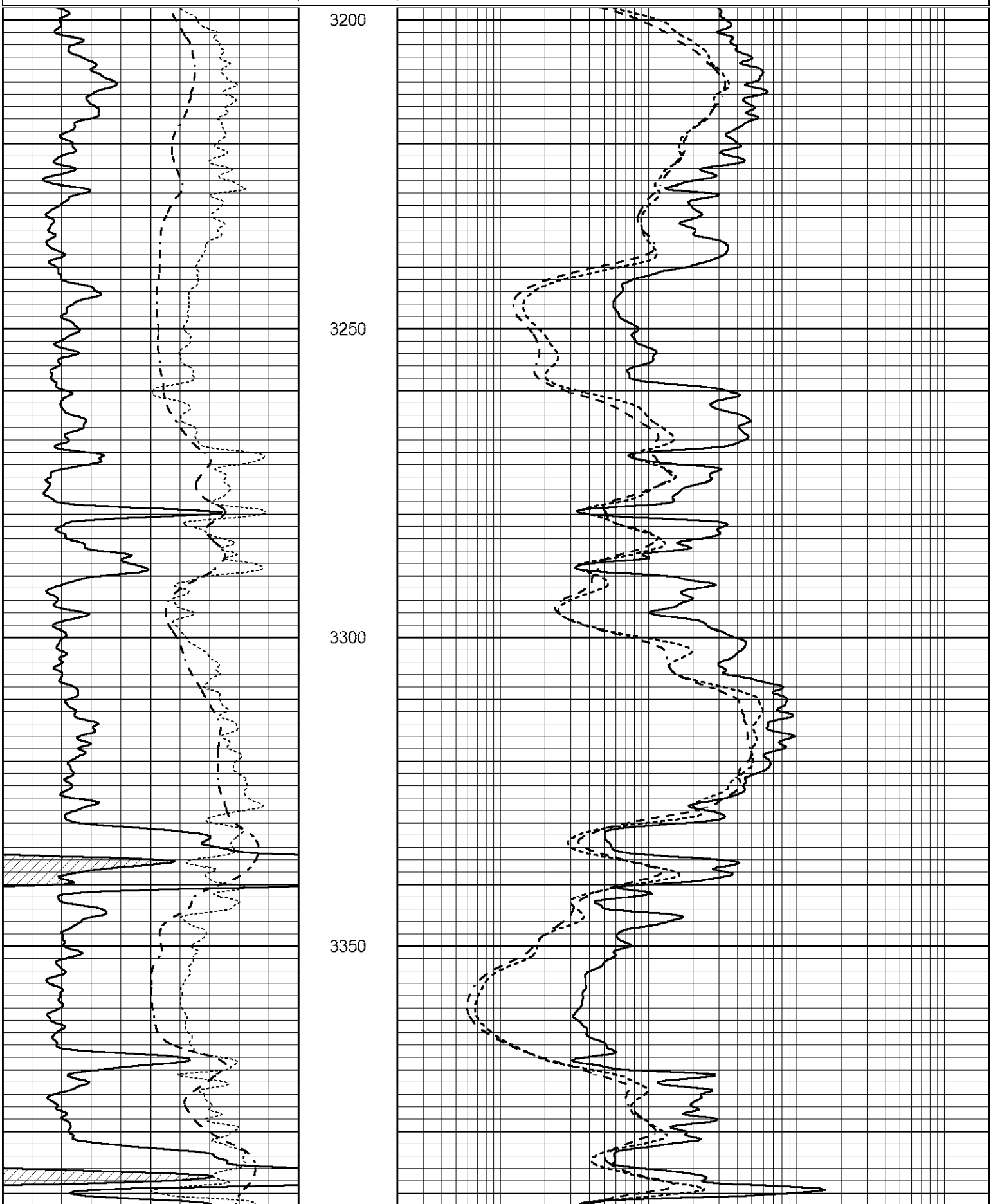


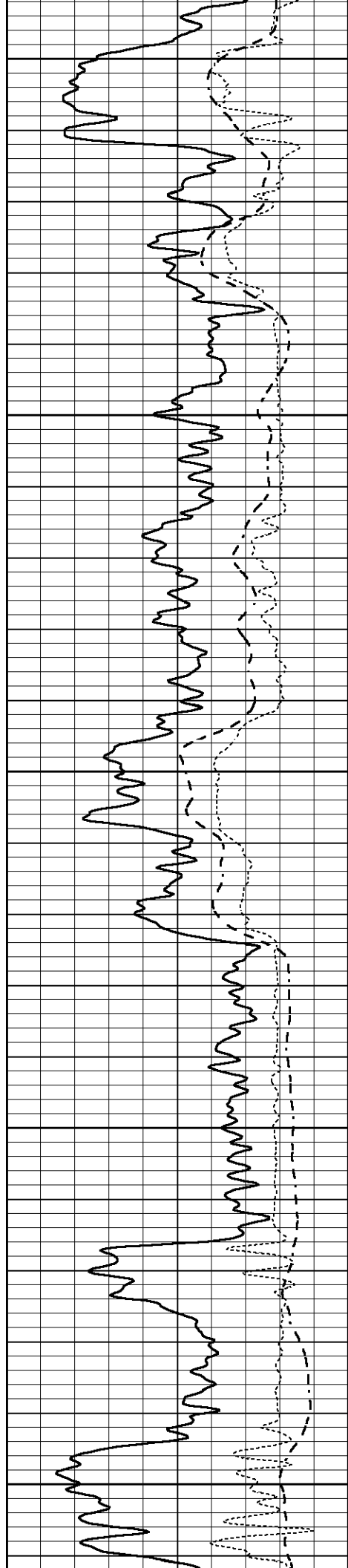




MAIN SECTION

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





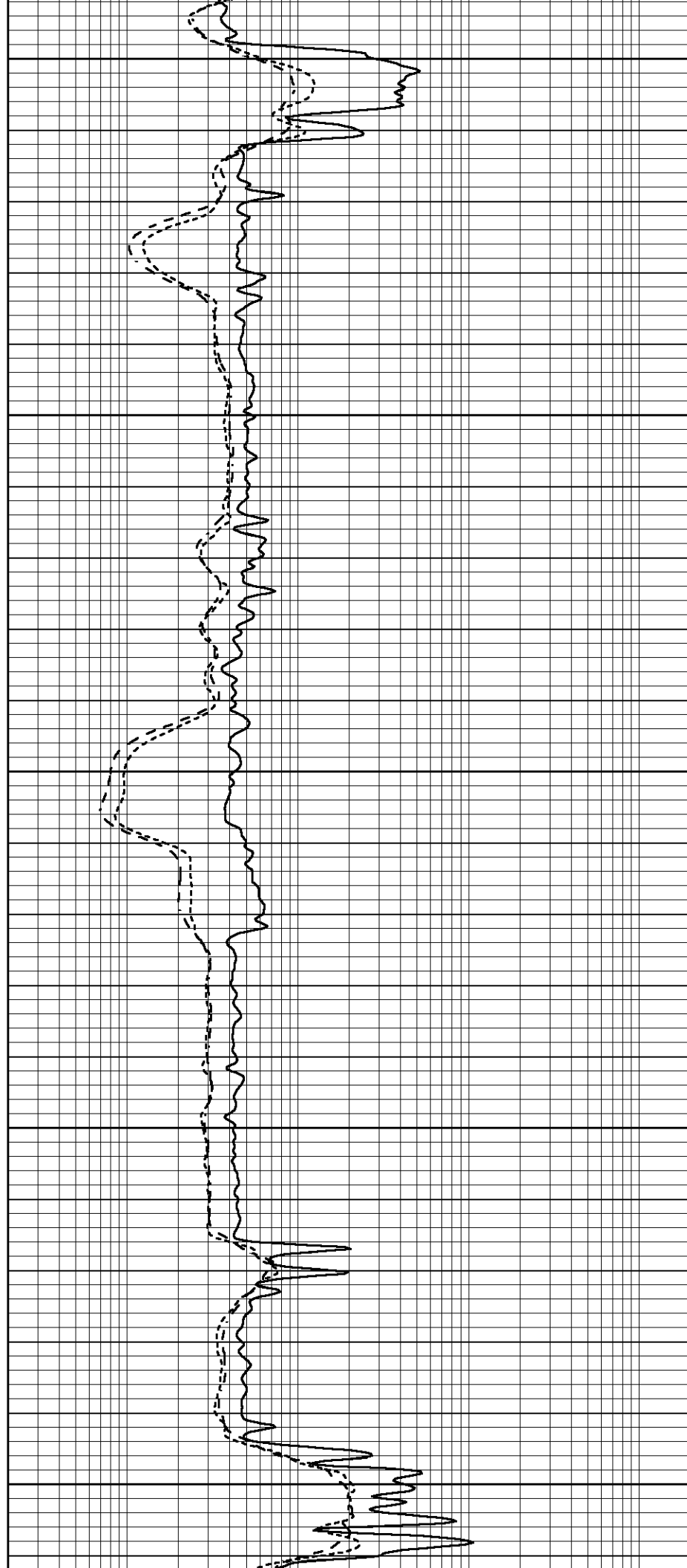
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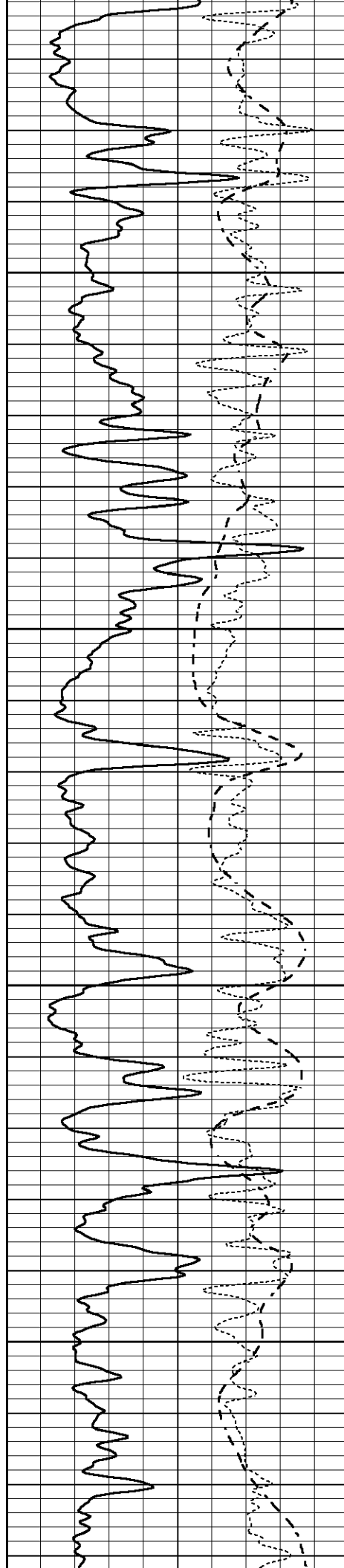
3450

3500

3550

3600



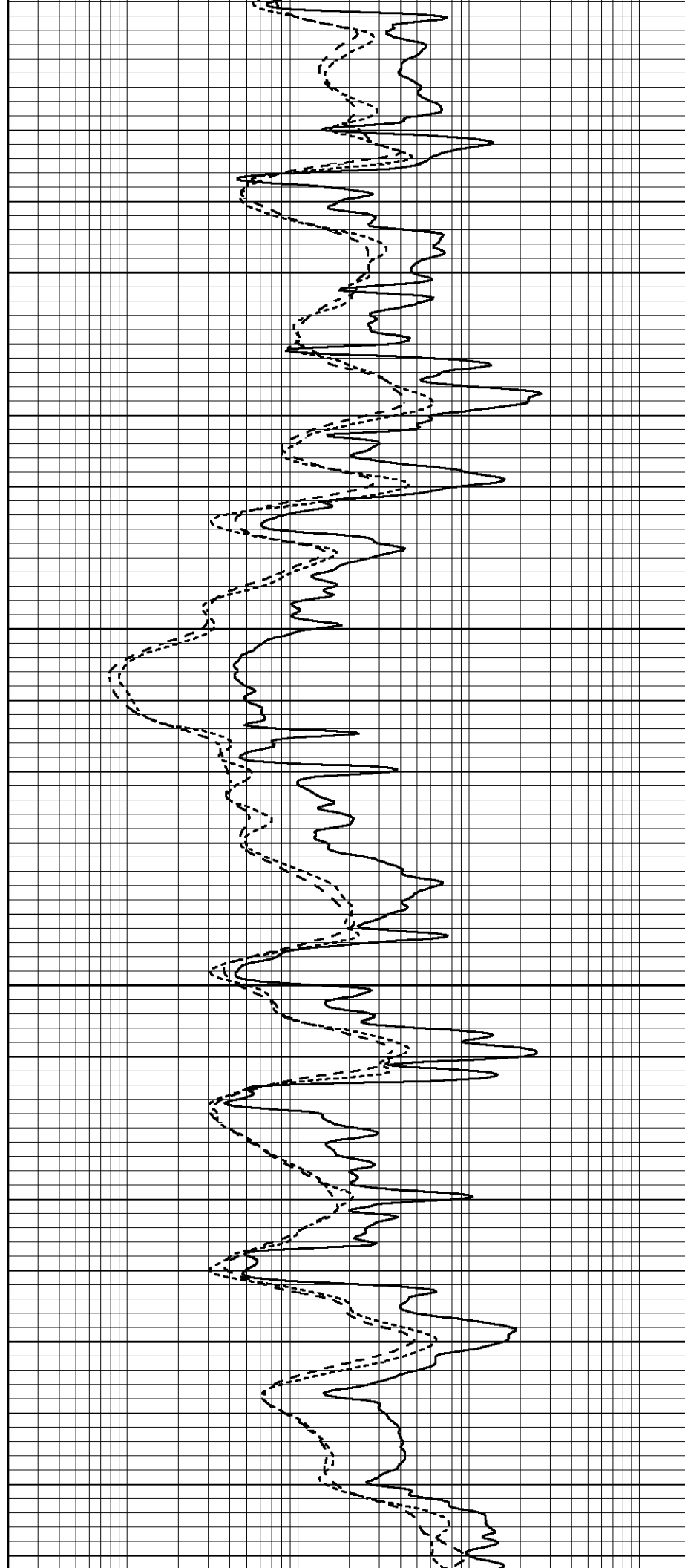


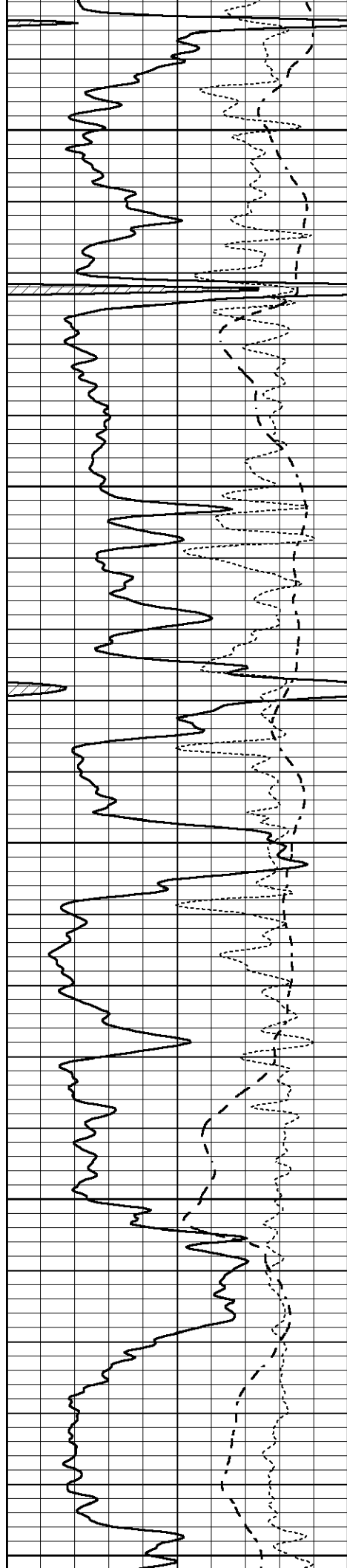
3650

3700

3750

3800





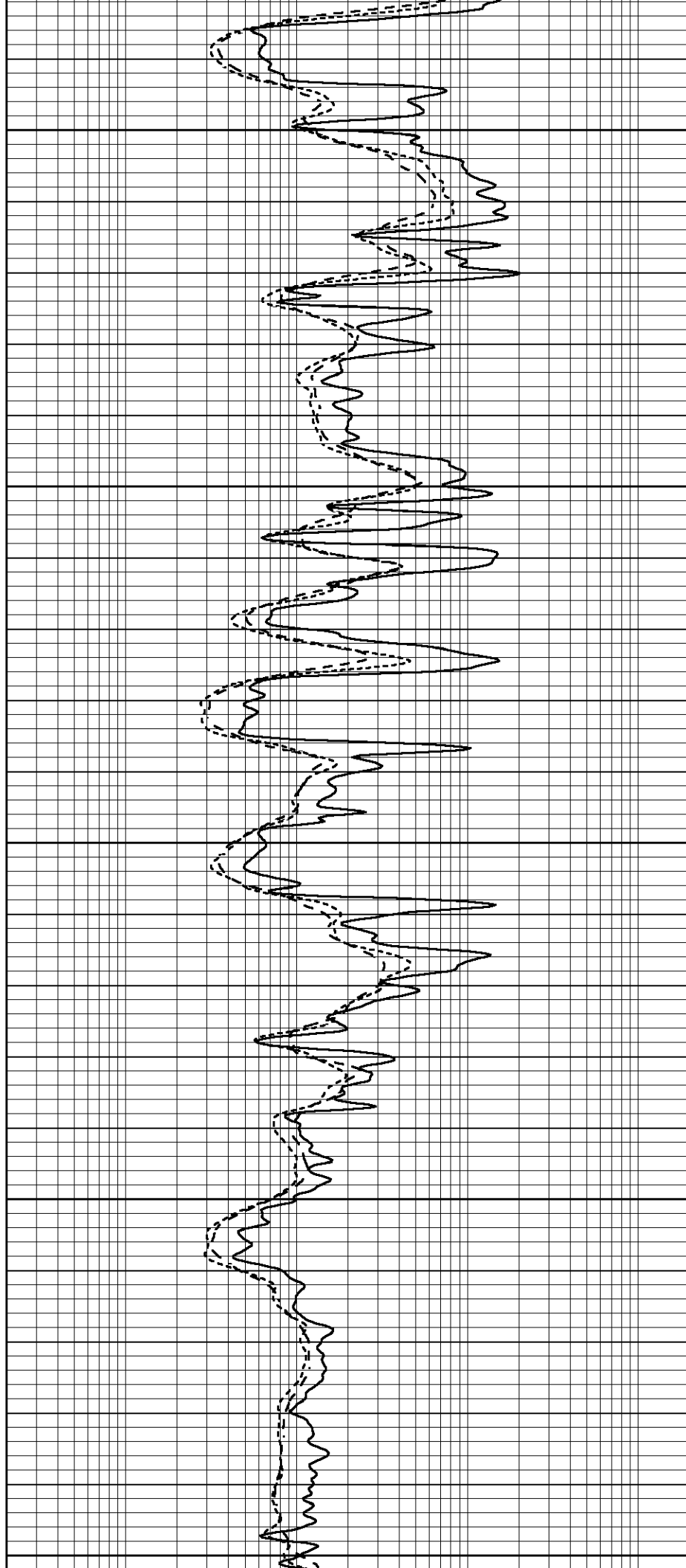
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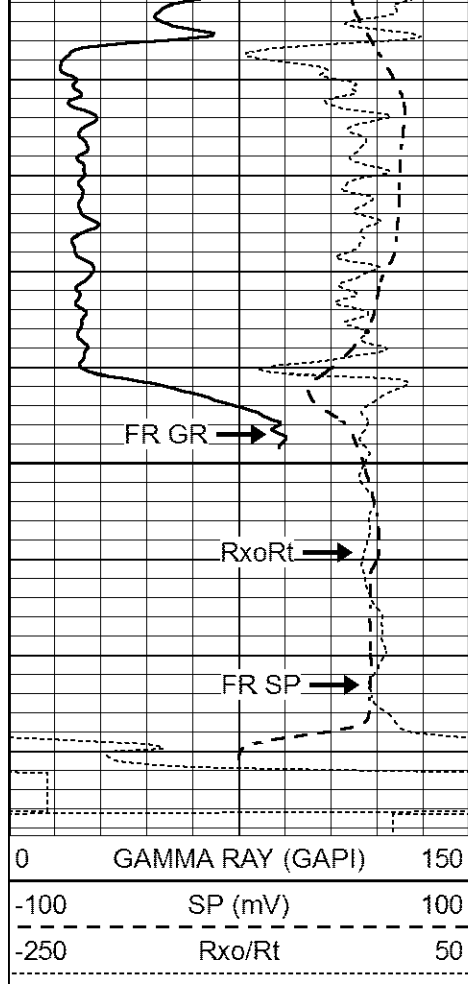
3900

3950

4000

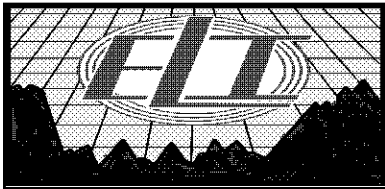
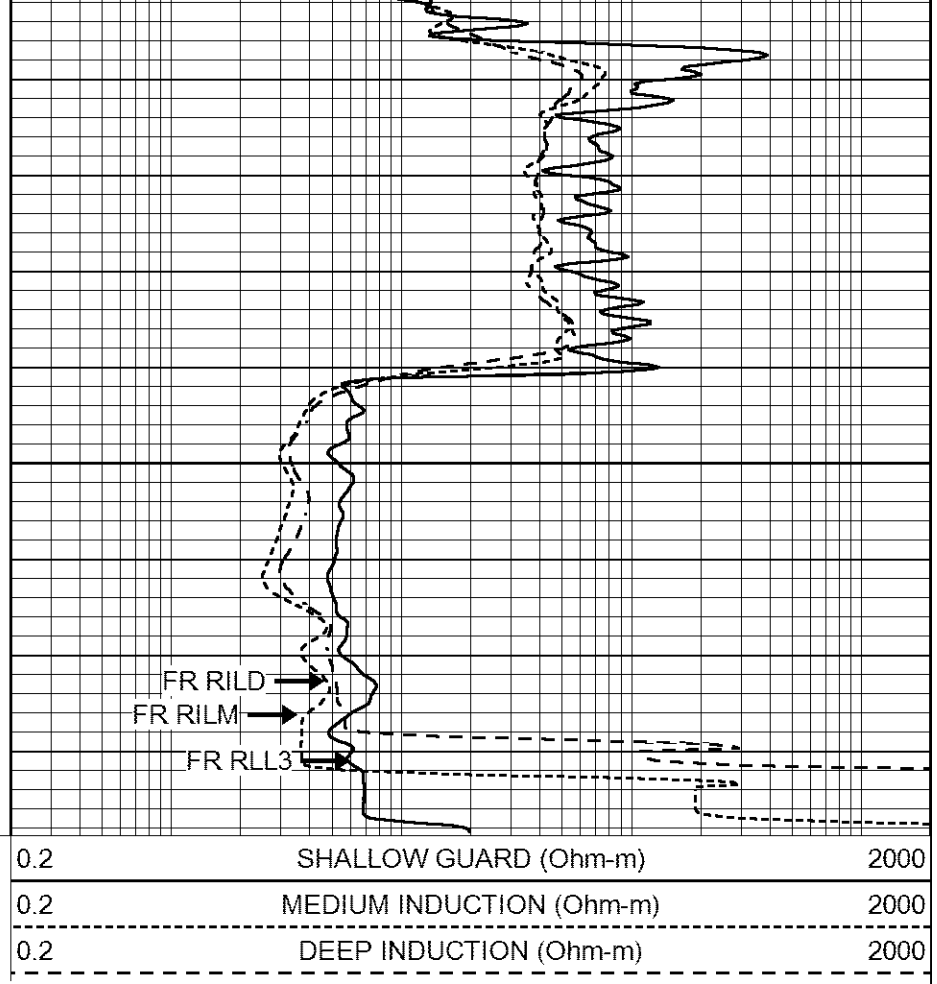
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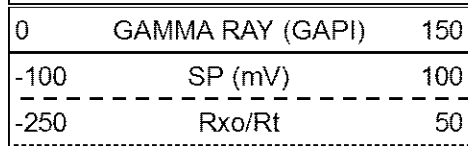
4100

LTD 4133

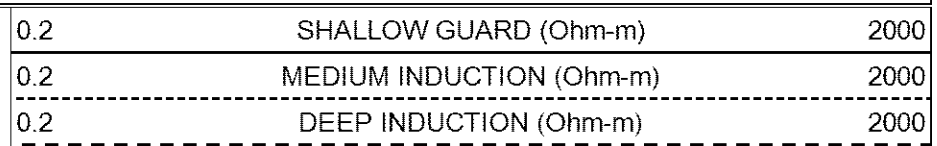


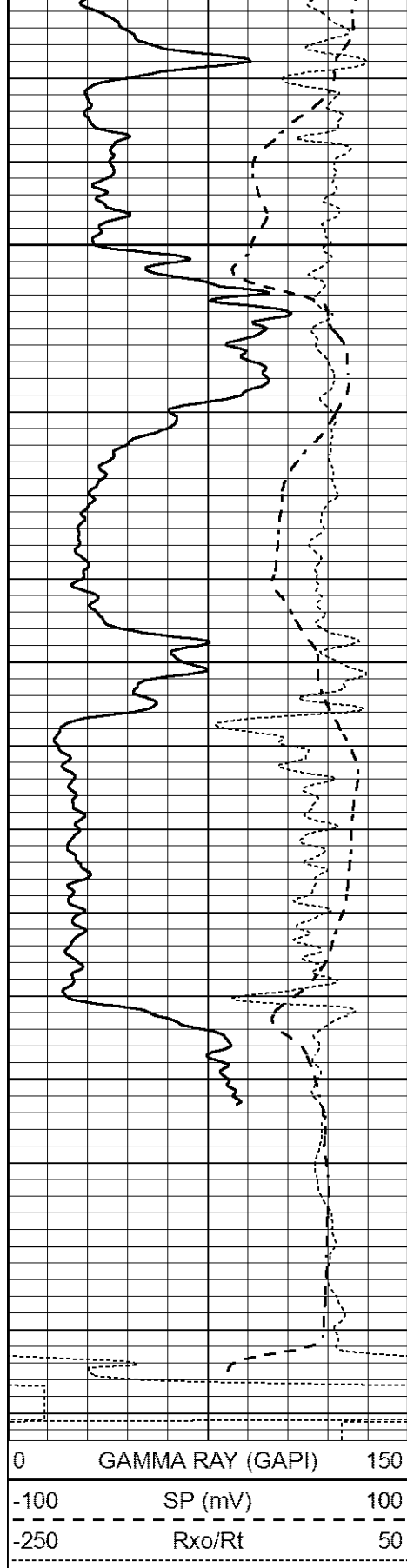
REPEAT SECTION

Database File 1136pe8.db
 Dataset Pathname pass2.1
 Presentation Format _dil
 Dataset Creation Tue Apr 18 14:50:25 2017
 Charted by Depth in Feet scaled 1:240



3950

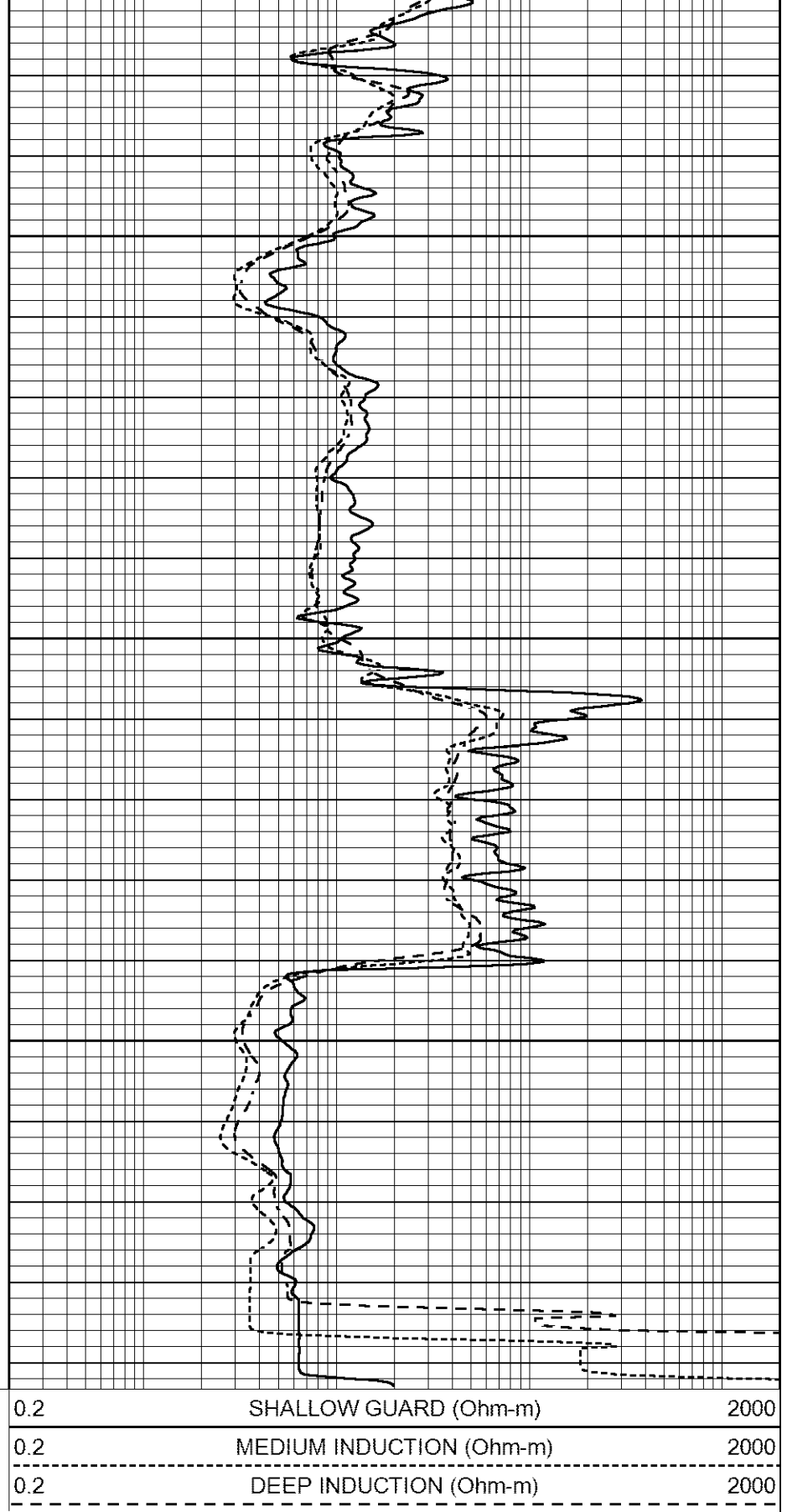




4000

4050

4100



Calibration Report

Database File 1136pe8.db
 Dataset Pathname pass2.1
 Dataset Creation Tue Apr 18 14:50:25 2017

Dual Induction Calibration Report

Serial Model:

FW1410 55 Probe

Serial-Model: FW1410-004 10Se
 Surface Cal Performed: Thu Mar 12 09:27:11 2015
 Downhole Cal Performed: Thu Mar 12 09:29:20 2015
 After Survey Verification Performed: Thu Mar 12 09:29:20 2015

Surface Calibration								
Readings			References			Results		
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration								
Readings			References			Results		
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification								
Readings			Targets			Results		
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report
 Serial: 140704
 Model: V4_10P
 Source Number: 74GBq-19

Master Calibration					Performed: Wed Feb 11 18:53:41 2015			
	Background		Aluminum	Magnesium				
Window 1	613.01		6027.40	27508.60	cps			
Window 2	48.21		1424.77	7132.66	cps			
Window 4	266.48		1373.19	5767.15	cps			
Window 5	622.07		10090.30	18937.90	cps			
Window 6	49.07		1682.84	3271.18	cps			
Window 8	298.04		3248.38	5980.58	cps			
Bulk Density	-		2.6020	1.6830	g/cc			
Pe	-		3.0000	2.5070	b/e			
LS Alpha:	: -1.8451		SS Alpha:	: -0.7542		LS CPE:	: 1.0882	
LS Beta:	: 138648.8473		SS Beta:	: 21960.9250		SS CPE:	: 1.5181	

Before Survey Background Counts Verification					Performed: Wed Dec 31 18:00:00 1969			
Window 1	0.00		cps					
Window 2	0.00		cps					
Window 4	0.00		cps					

Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification

Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration

Performed: Wed Feb 11 18:53:41 2015

Results	Readings	References (in)			
Low	High	Low	High	Gain	Offset
5123.0	9461.6	8.5	14.0	0.0	1.4

Before Survey Caliper Verification

Performed:

	Reference	Reading
Caliper (in)		

After Survey Caliper Verification

Performed:

	Reference	Reading
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number:

080621PMC

Tool Model:

NABORS

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:

070558

Tool Model:

Probe1

Performed:

Wed Jun 29 08:29:10 2016

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.3000

GAPI/cps