

DUAL INDUCTION LOG

Company		L.D. DRILLING, INC.	
Well		#4 KELLI	
Field		GATES	
County		STAFFORD	
State		KANSAS	
Location:		API # : 15-185-23997-0000 1700' FSL & 2088' FVL NW - SE - NE - SW	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 5' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 30 TWP 21S RGE 12W		Elevation K.B. 1870 D.F. 1868 G.L. 1865	
Date	9/20/17		
Run Number	ONE		
Depth Driller	3760		
Depth Logger	3758		
Bottom Logged Interval	3756		
Top Log Interval	00		
Casing Driller	8 5/8"@334'		
Casing Logger	334		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7,900 PPM	
Density / Viscosity	8.9 / 68		
pH / Fluid Loss	10.0 / 1.2		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.400@80F		
Rmf @ Meas. Temp	.300@80F		
Rmc @ Meas. Temp	.480@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.2812@114F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	4:00 A.M.		
Maximum Recorded Temperature	114F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KIM SHOEMAKER		

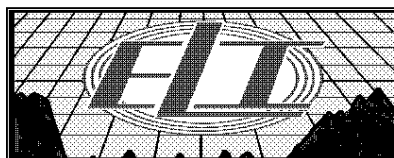
<<< Fold Here >>>

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 HAYS, KANSAS (785) 628-6395
DIRECTIONS

GREAT BEND, KS., S. ON HWY 281 5 MILES PAST COUNTY LINE TO "RD. 160", 3E., 1/2N., E. INTO



MAIN SECTION

Database File: 1828ddn.db
Dataset Pathname: pass3.7
Presentation Format: dil2
Dataset Creation: Wed Sep 20 05:28:19 2017
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

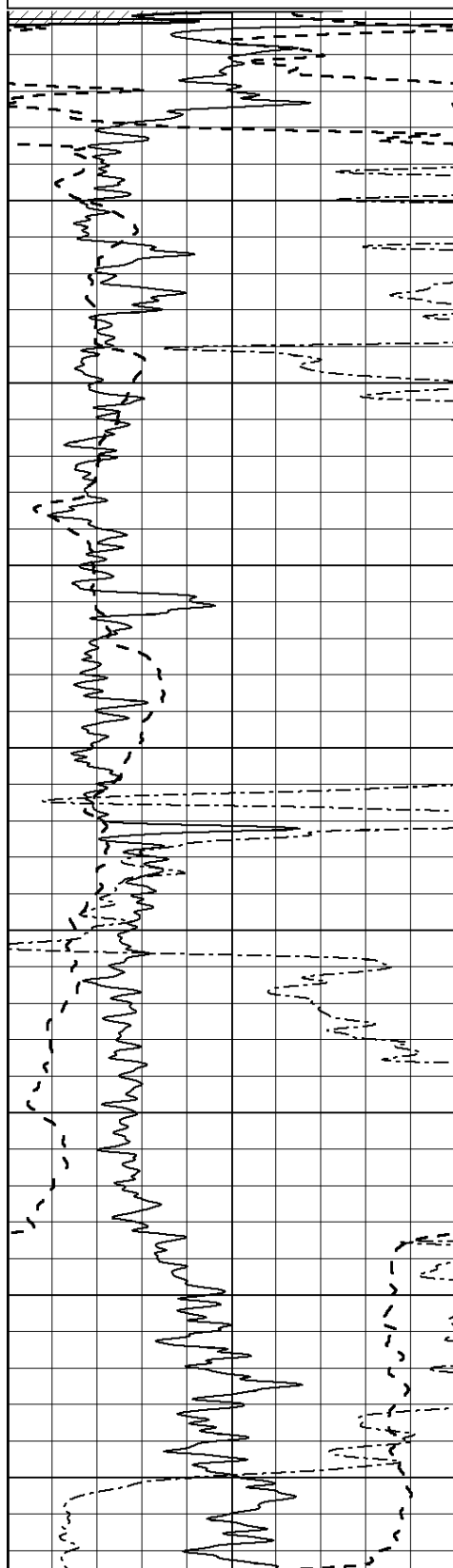
0	RLL3 (Ohm-m)	50
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0	RILD (Ohm-m)	50
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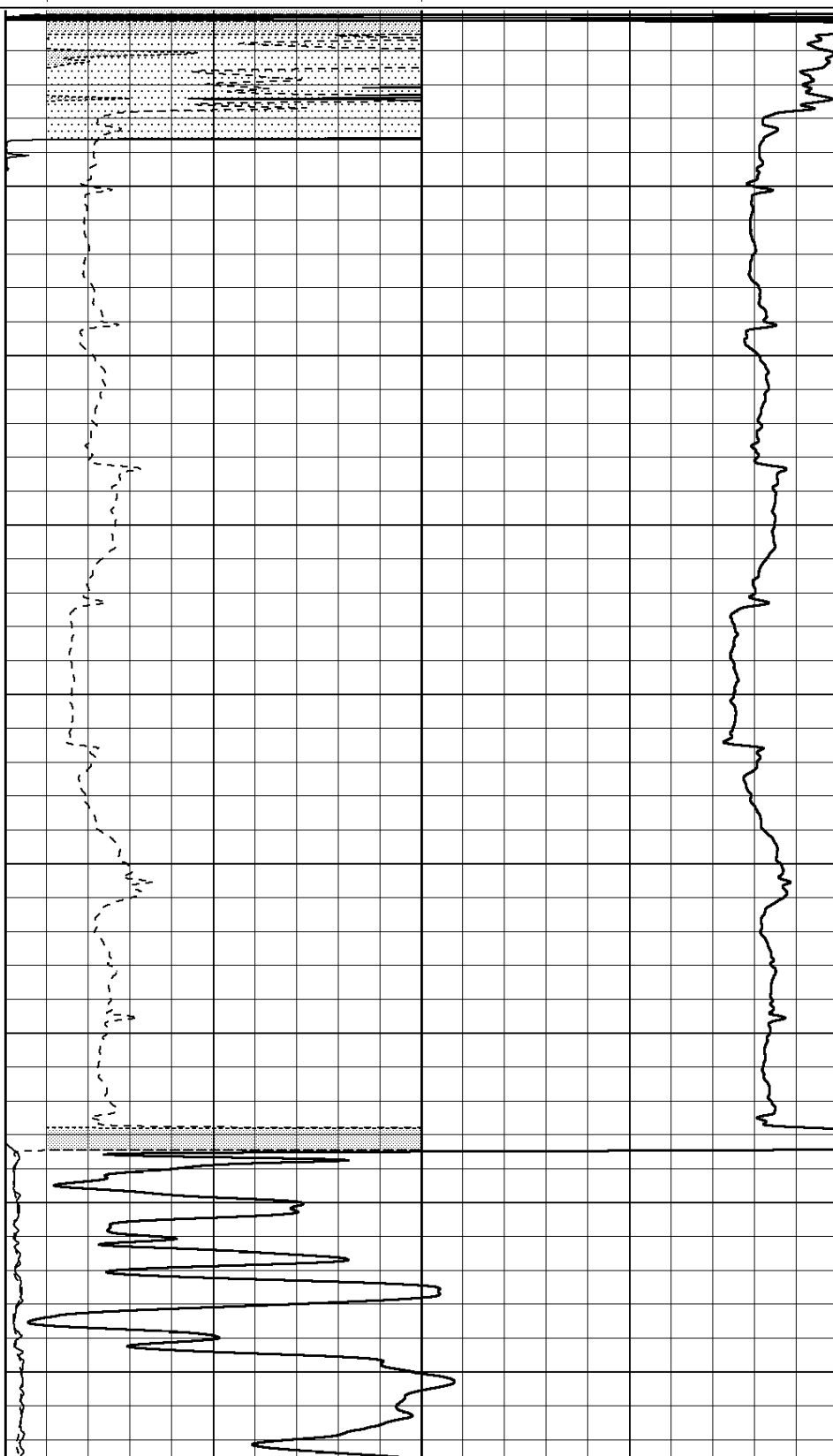
1000	CILD (mmho/m)	0
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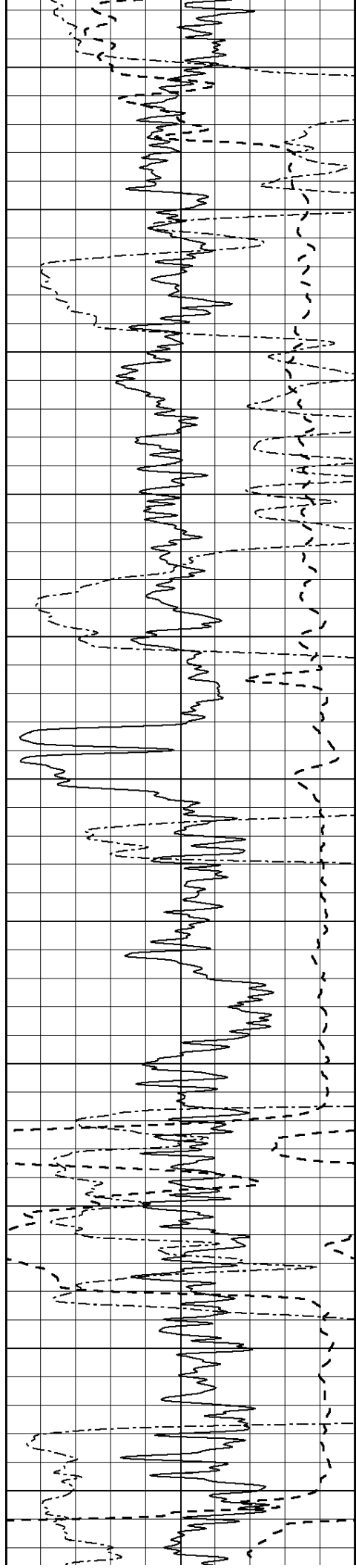
50	RILD X10 (Ohm-m)	500
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50	RLL3 X10 (Ohm-m)	500
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0
50
100
150
200
250
300
350
400





450

500

550

600

650

700

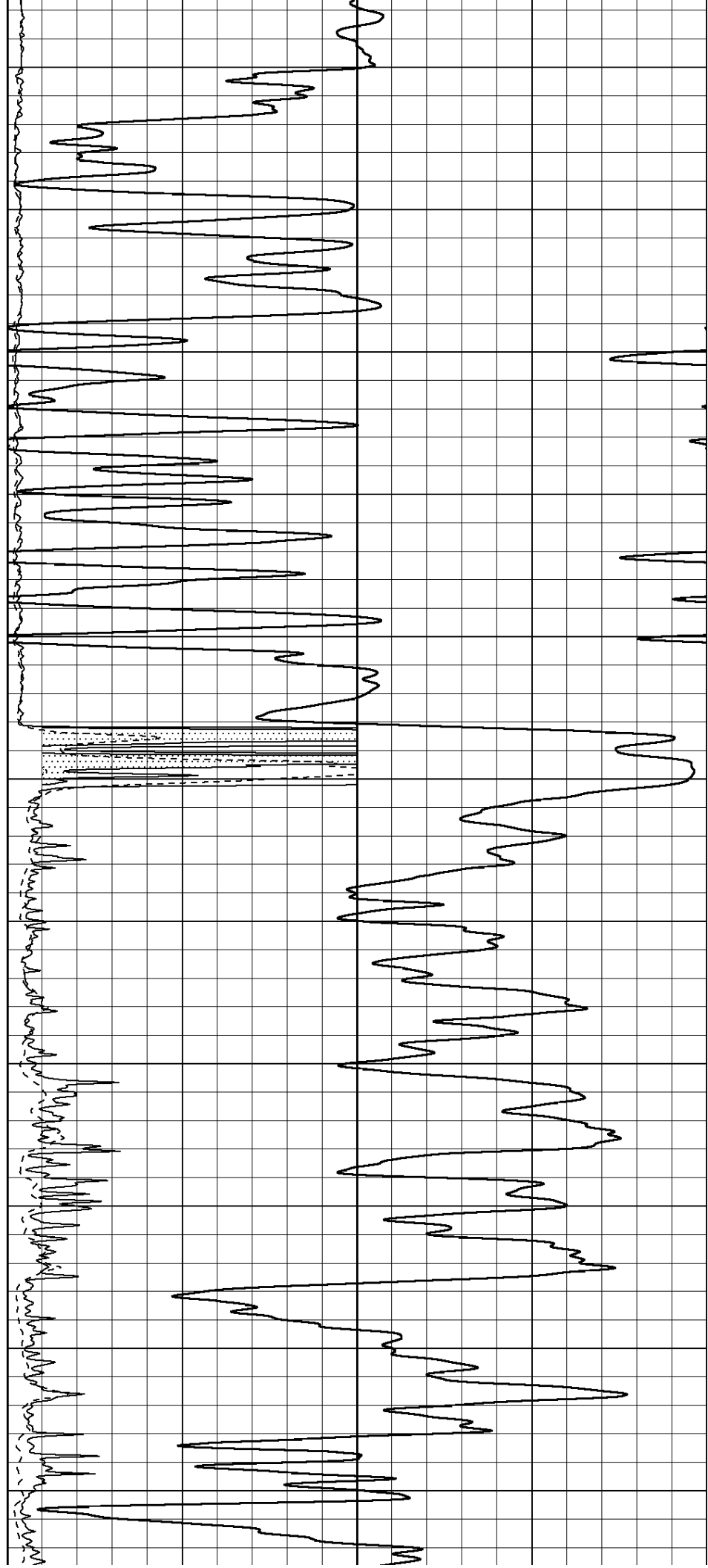
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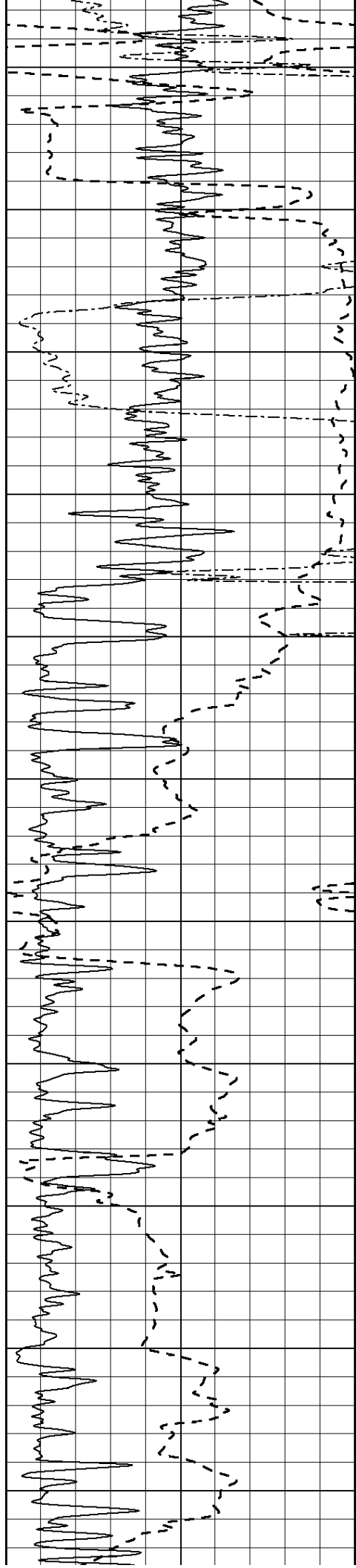
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850

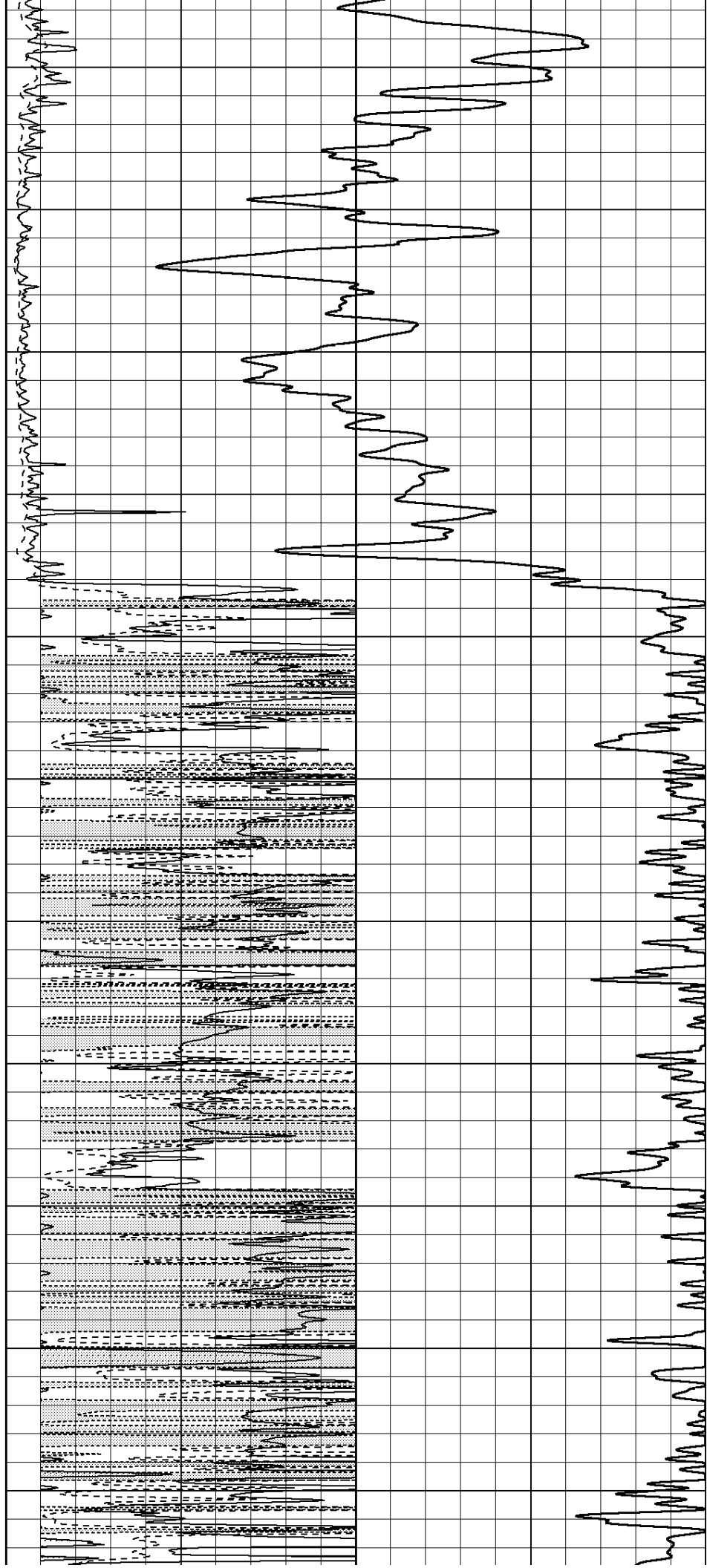
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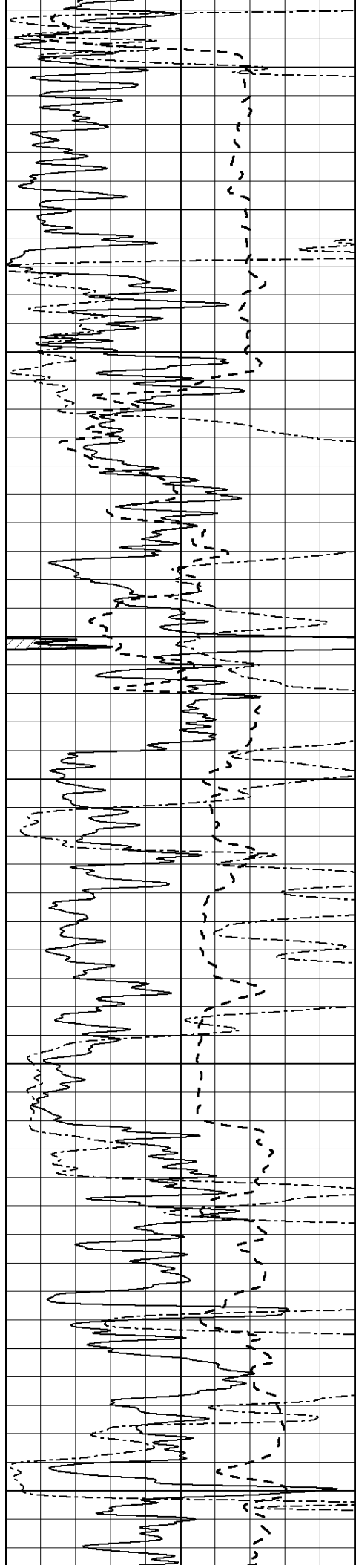
950





1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

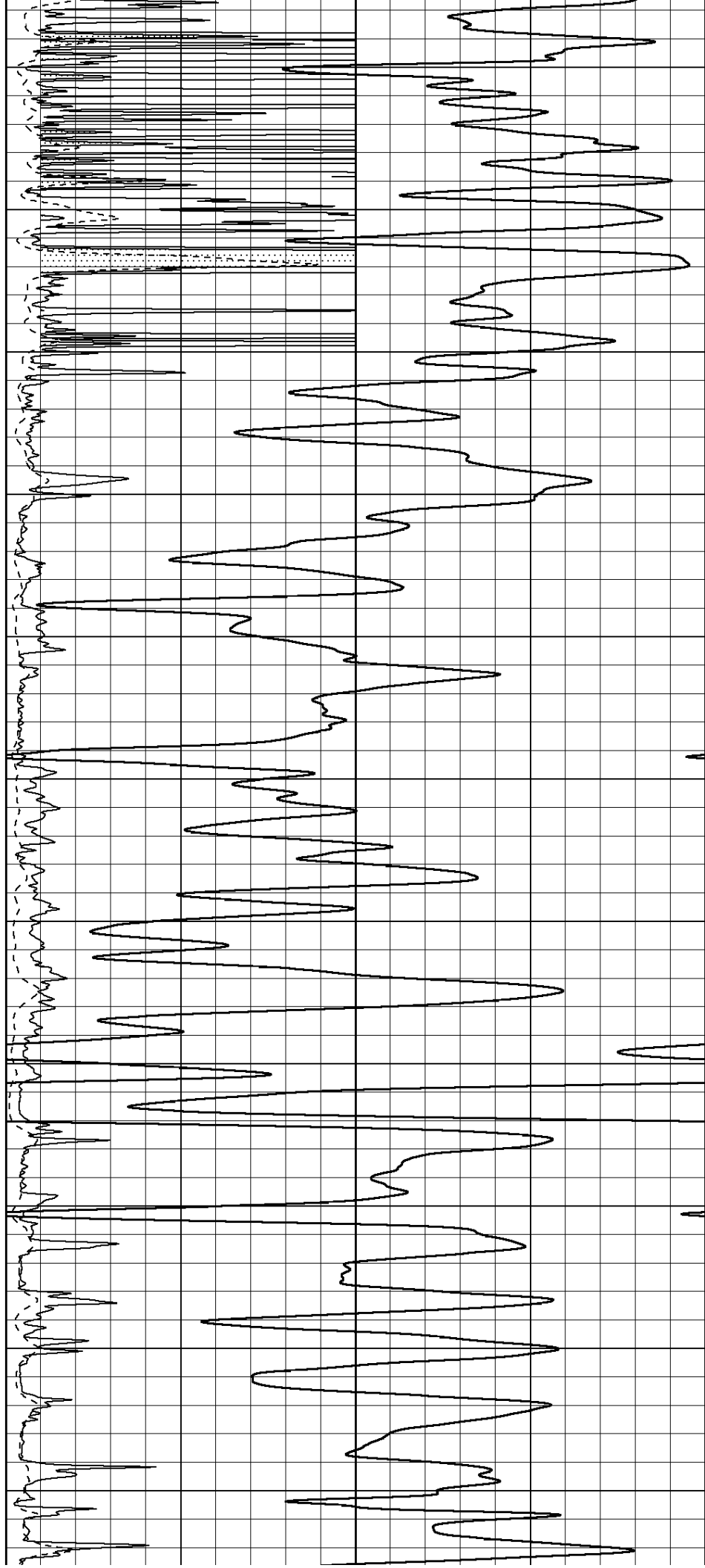
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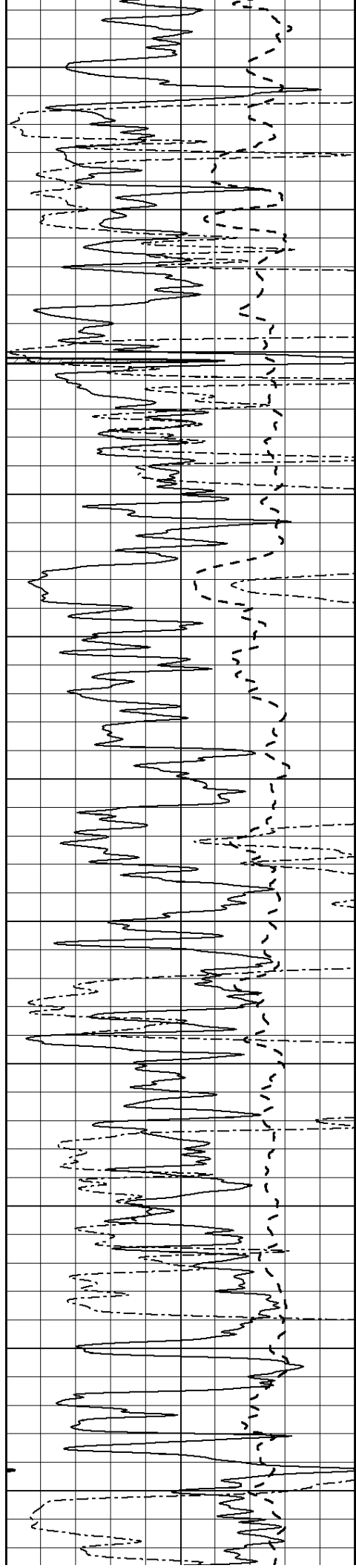
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1950

2000

2050





2100

2150

2200

2250

2300

2350

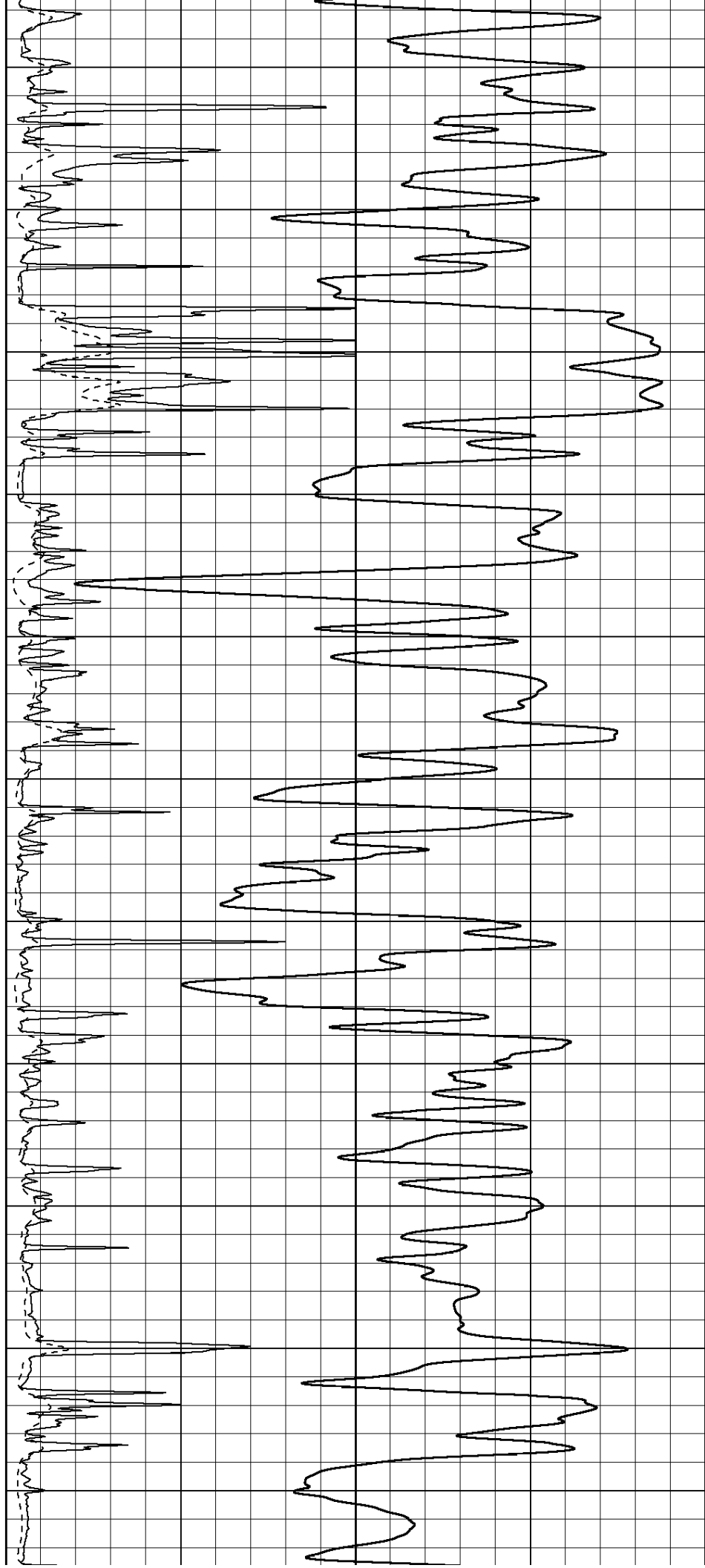
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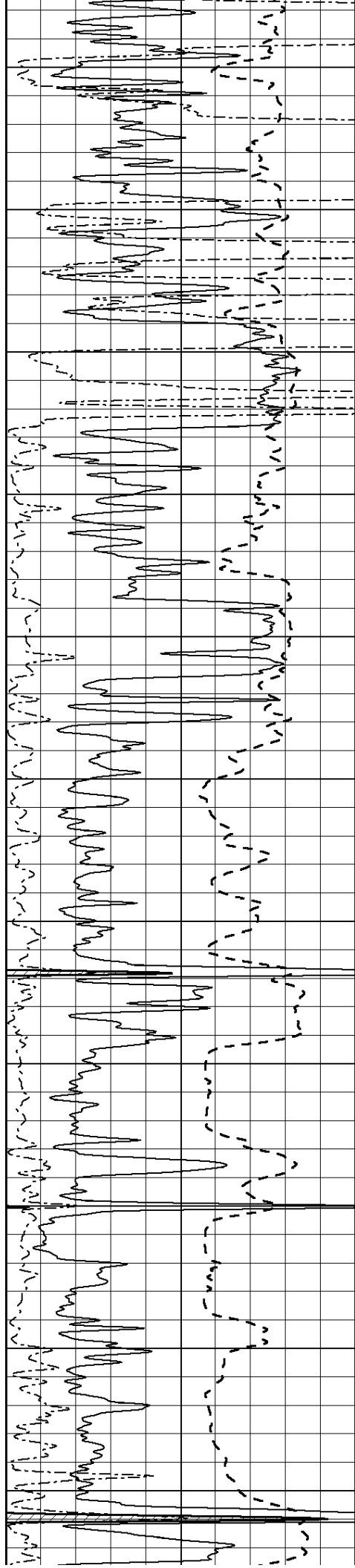
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

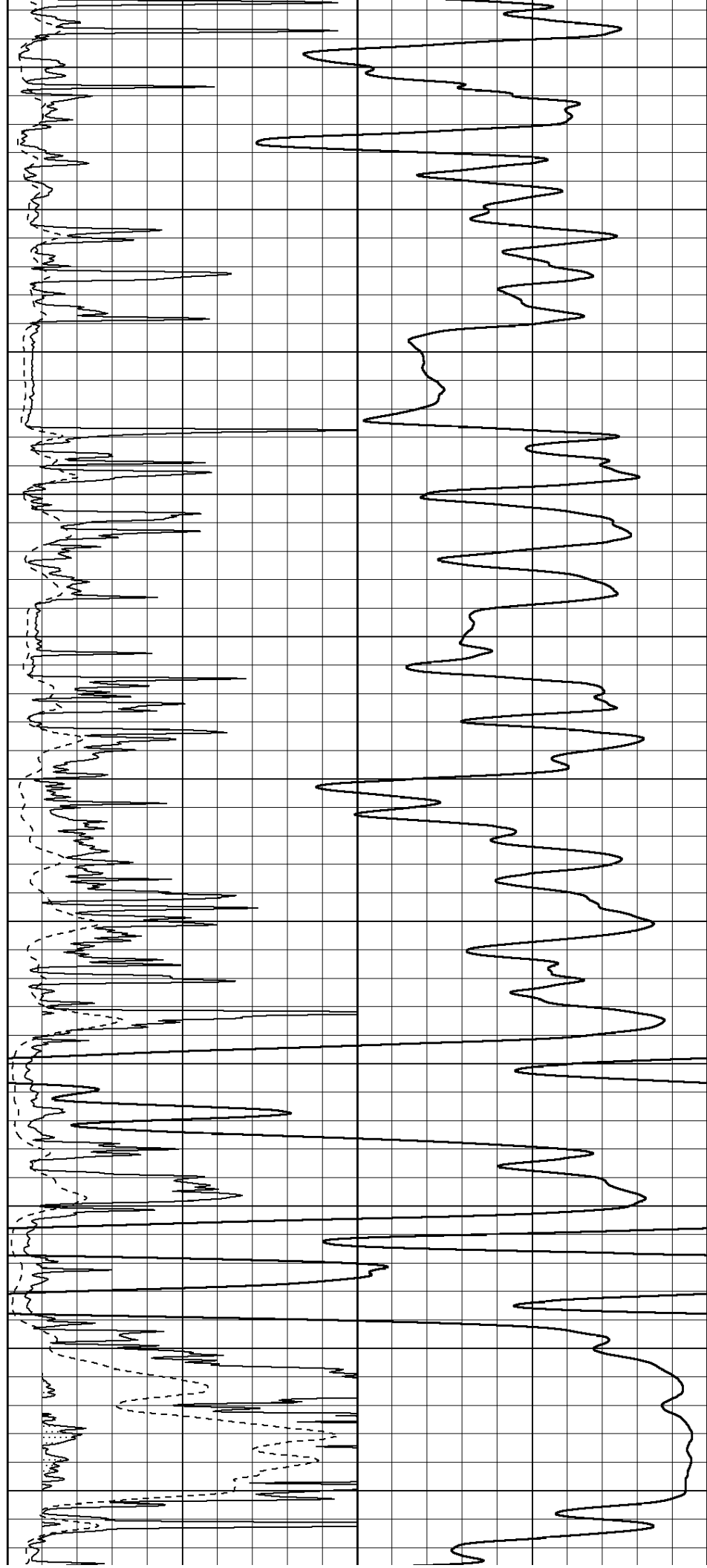
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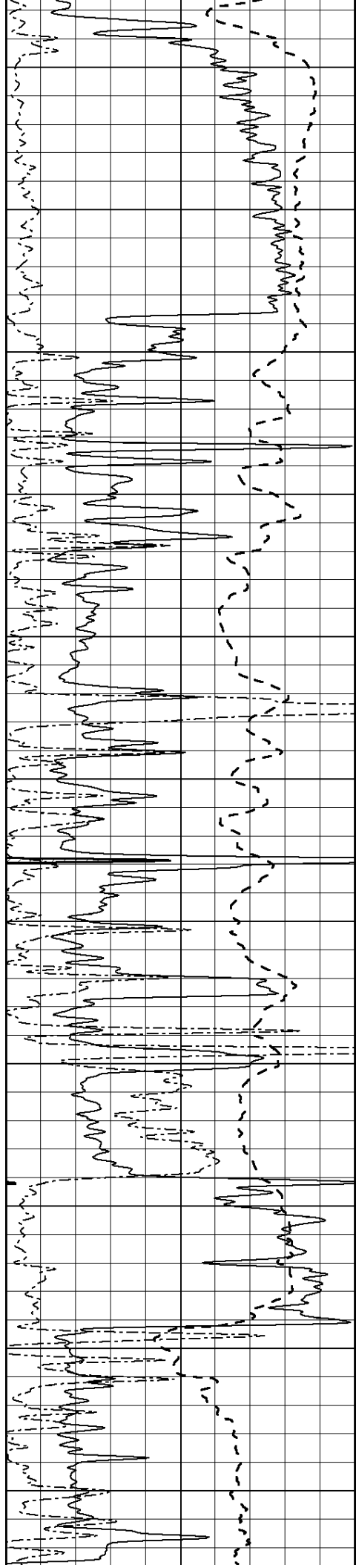
3000

3050

3100

3150





3200

3250

3300

3350

3400

3450

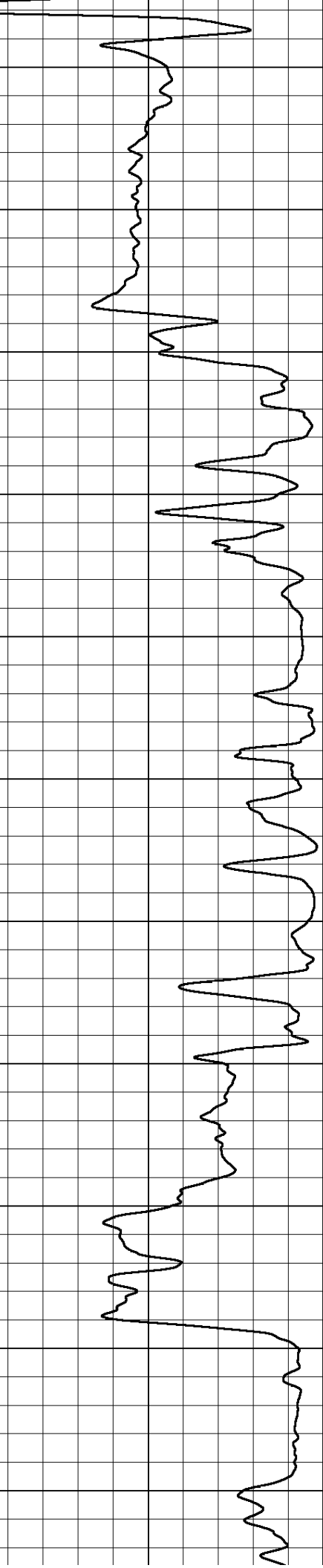
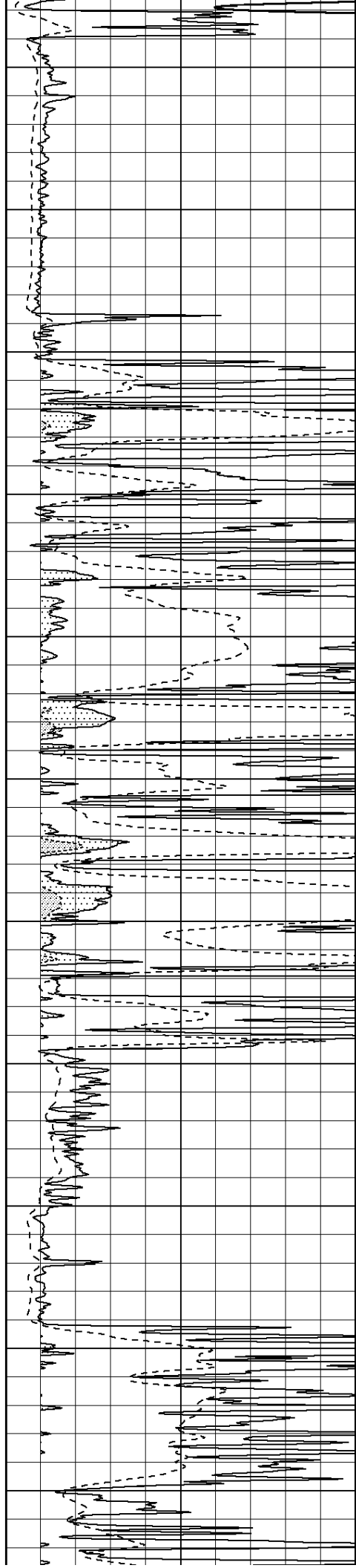
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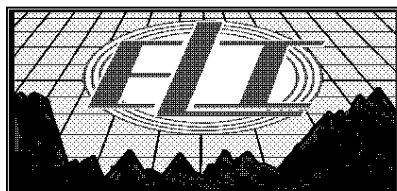
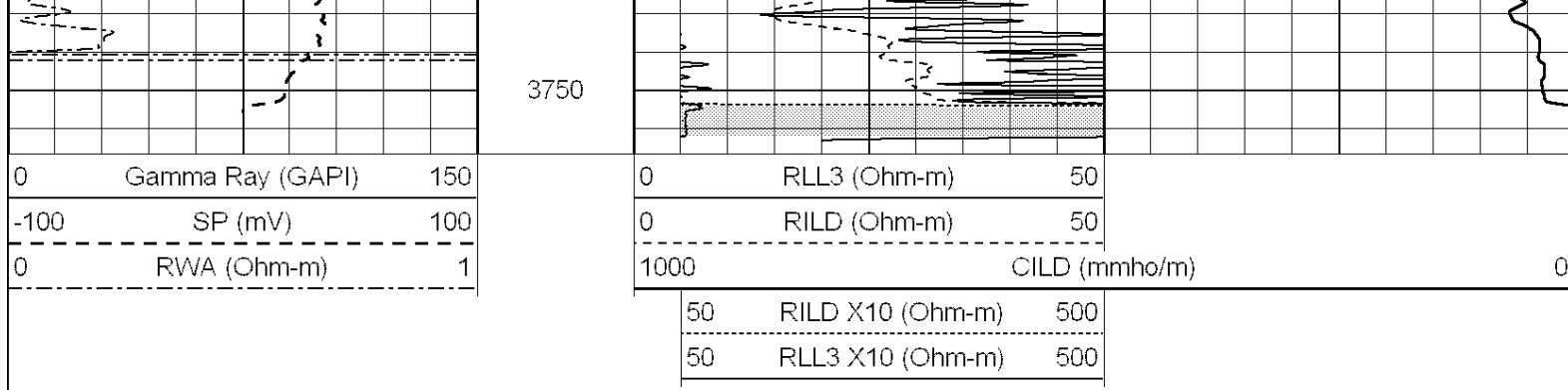
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3600

3650

3700

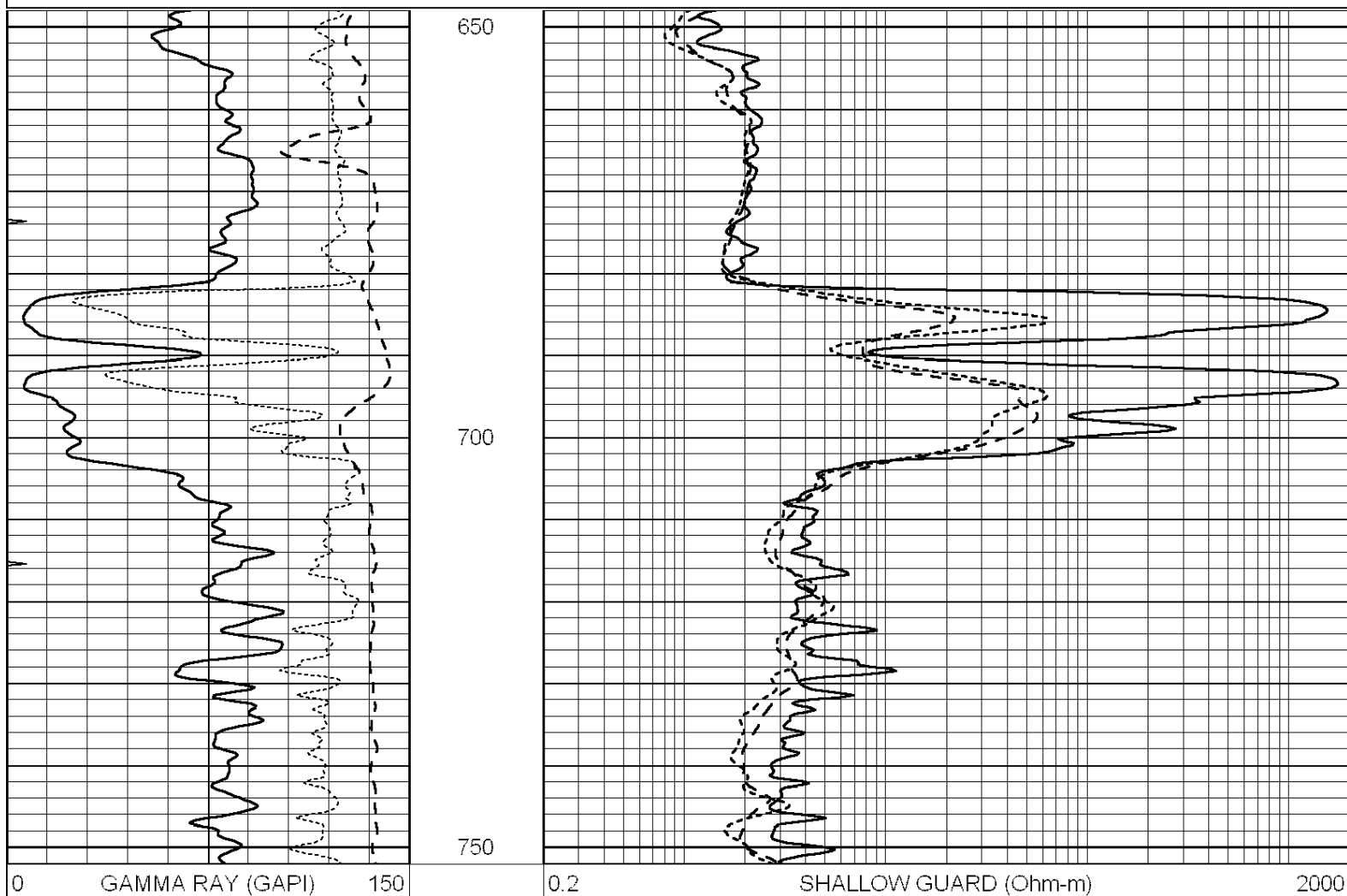




ANHYDRITE

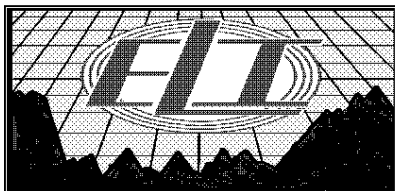
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 Dataset Pathname: pass3.7A
 Presentation Format: _dil
 Dataset Creation: Wed Sep 20 05:29:45 2017
 Charted by: Depth in Feet scaled 1:240

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			



-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

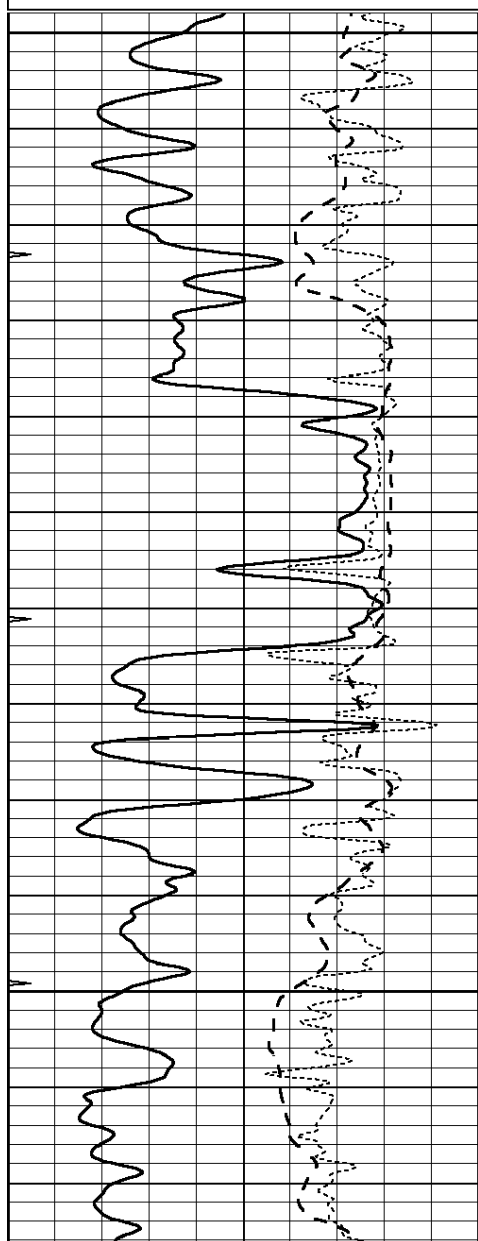


MAIN SECTION

Database File: 1828ddn.db
 Dataset Pathname: pass3.7
 Presentation Format: _dil
 Dataset Creation: Wed Sep 20 05:28:19 2017
 Charted by: Depth in Feet scaled 1:240

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

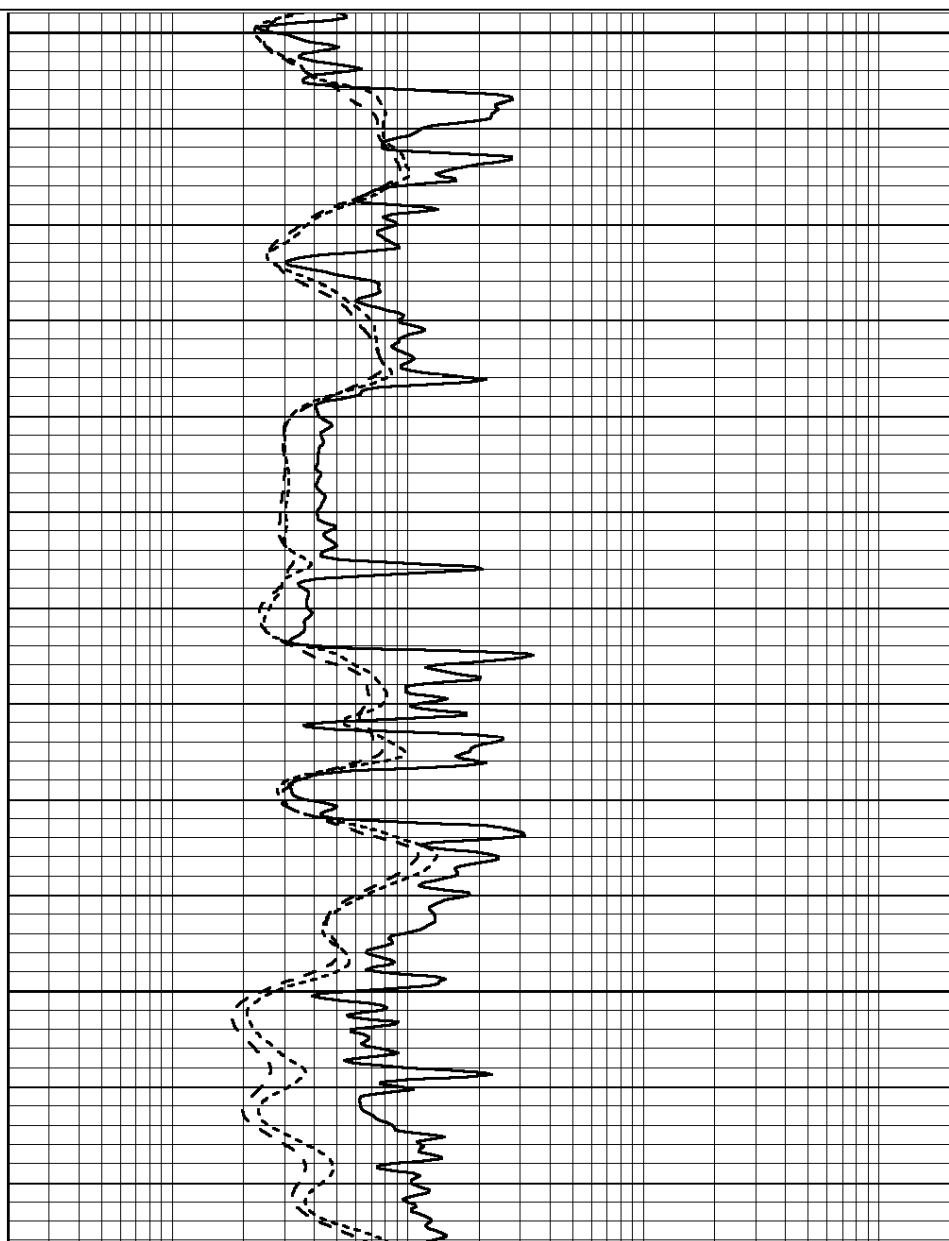
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

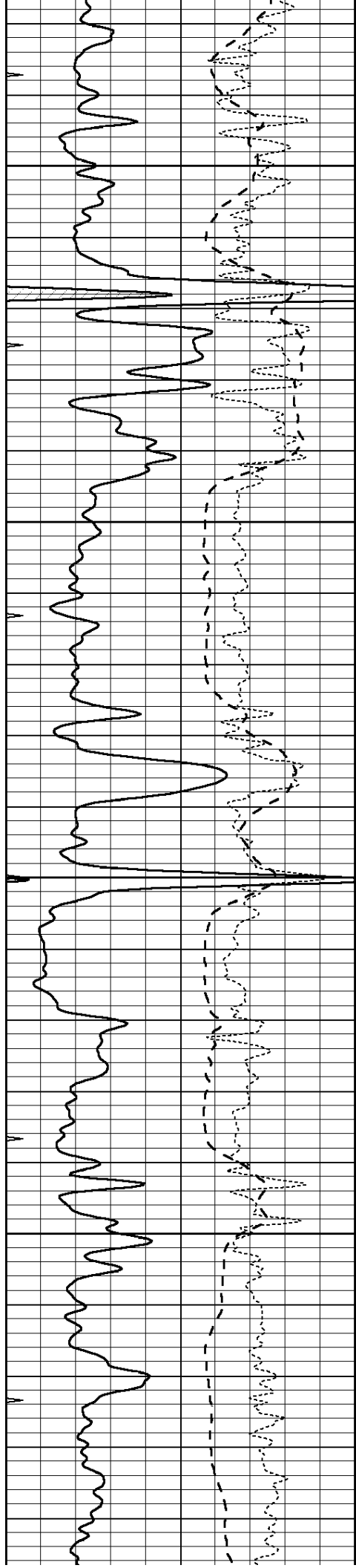


2800

2850

2900



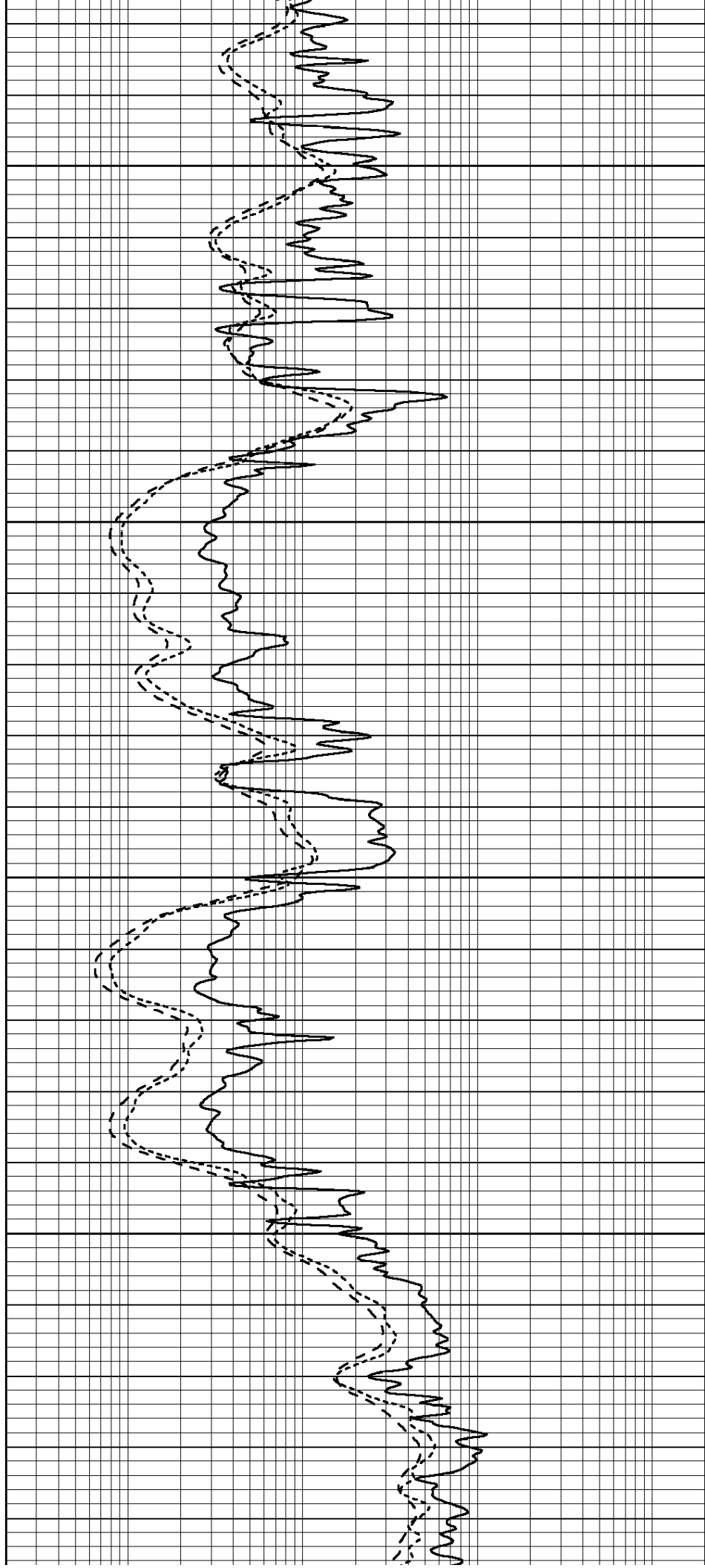


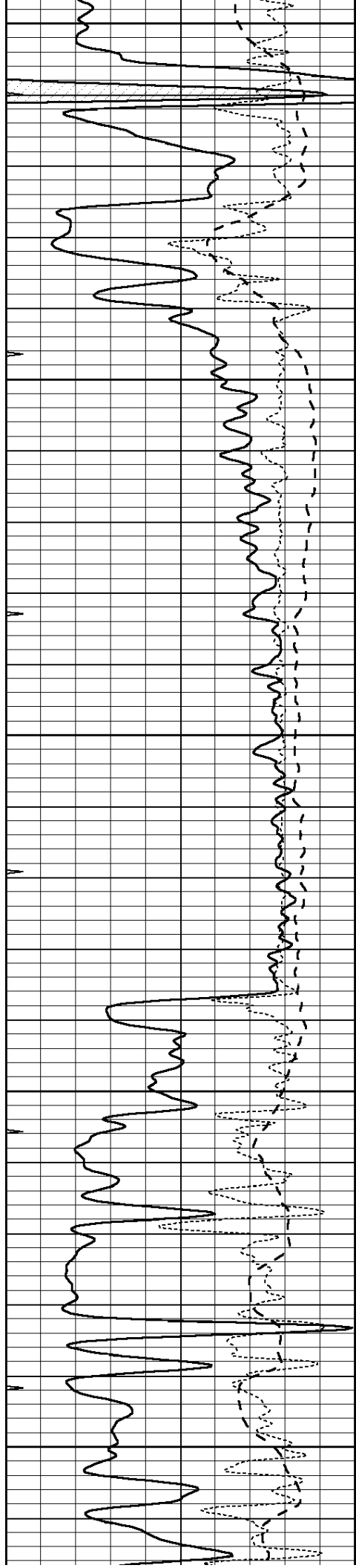
2950

3000

3050

3100





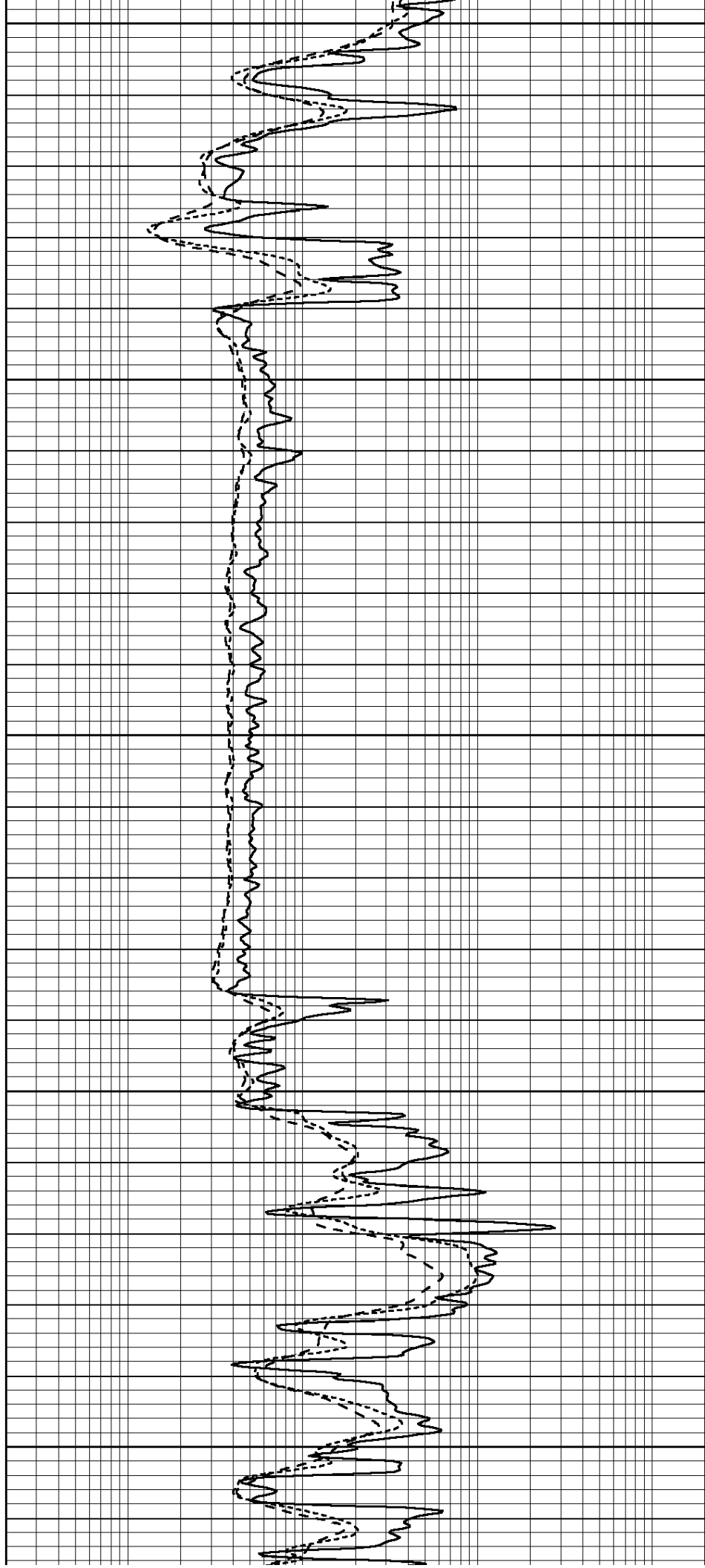
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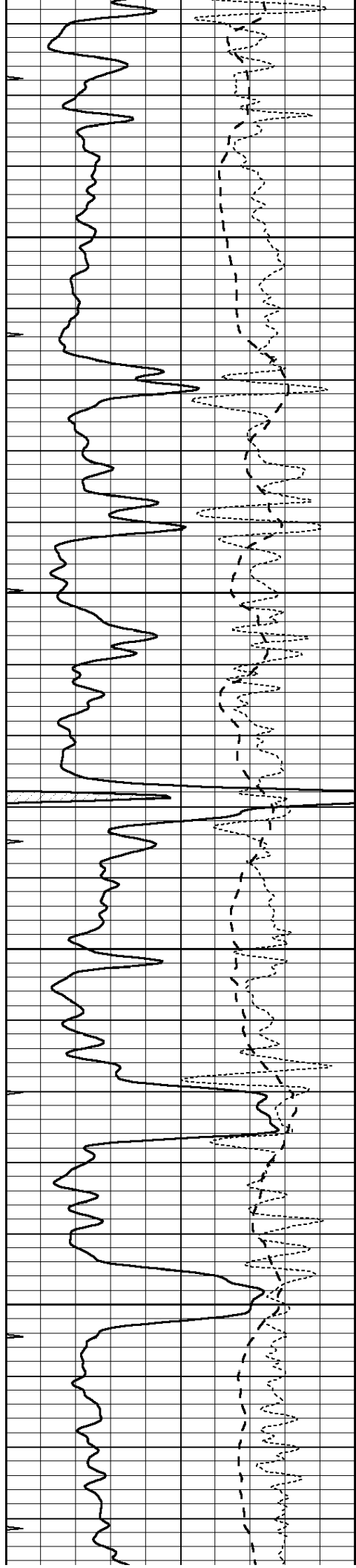
3200

3250

3300

3350



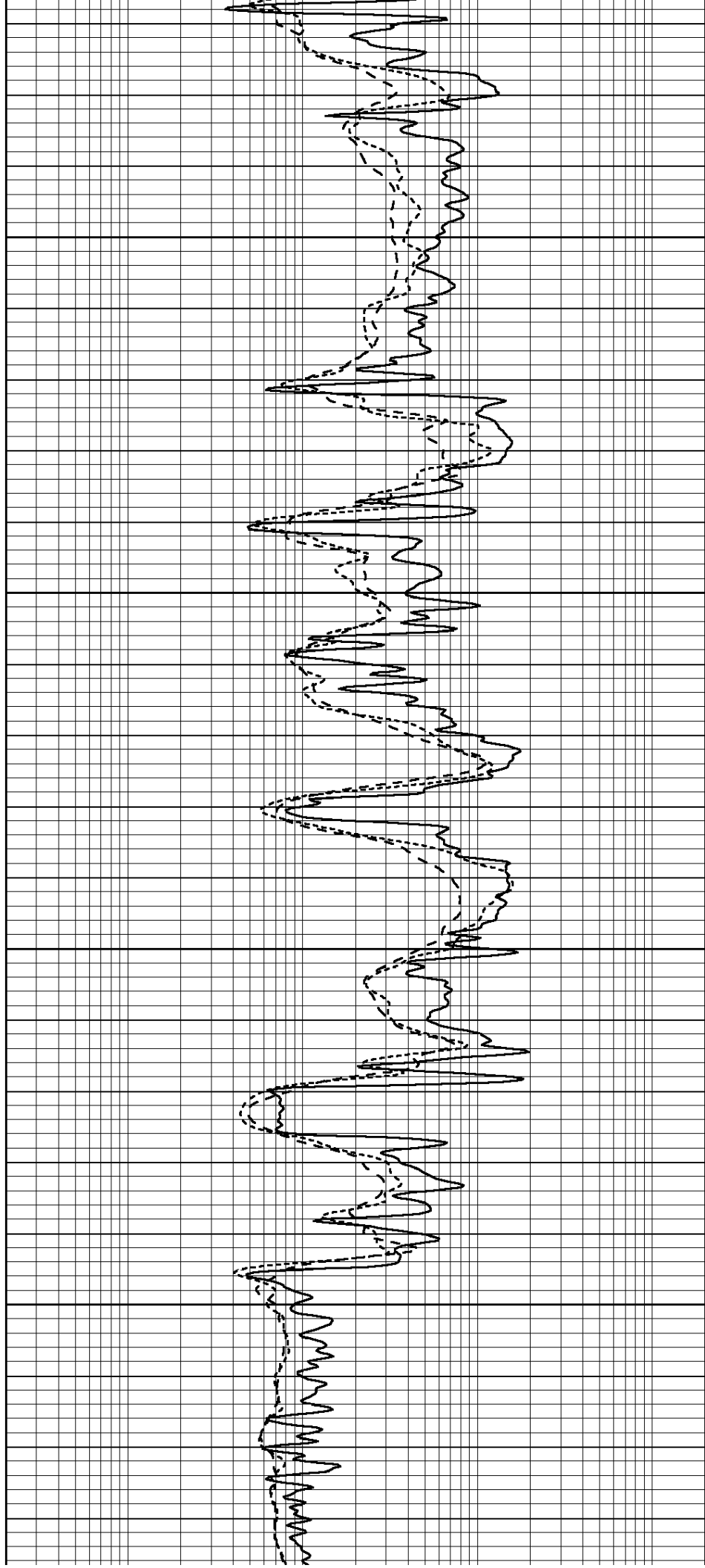


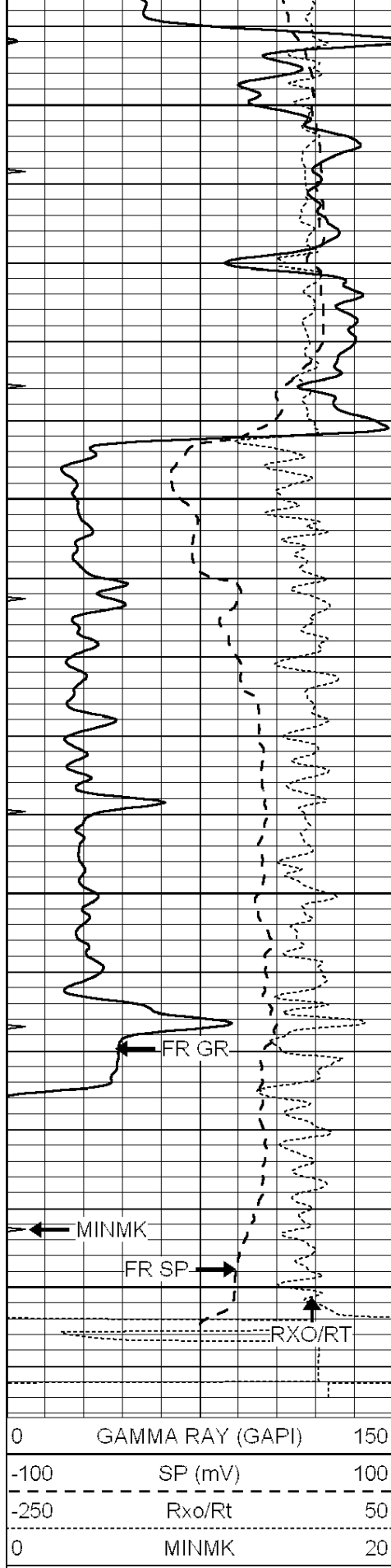
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3450

3500

3550





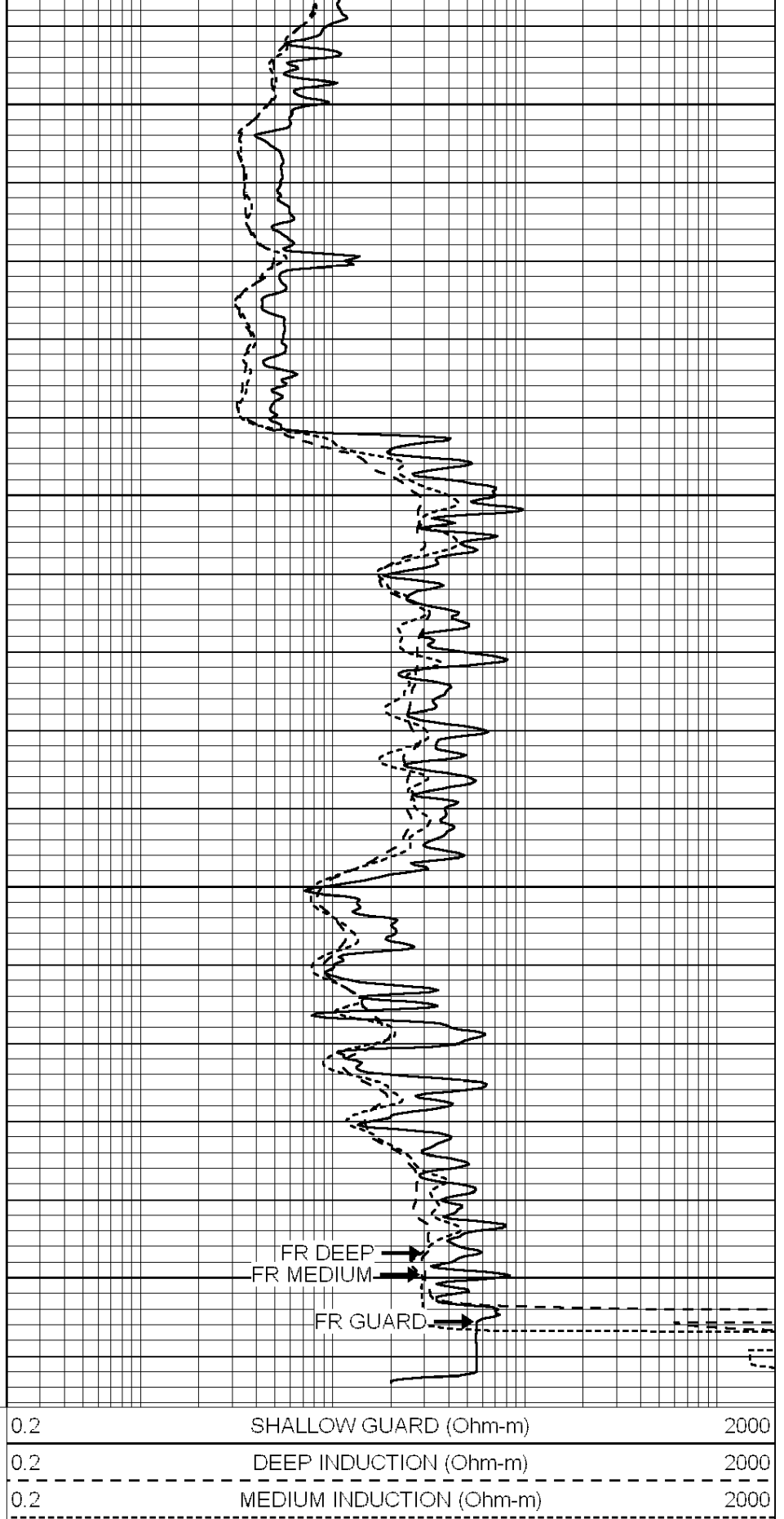
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3650

3700

3750

LTD 3758



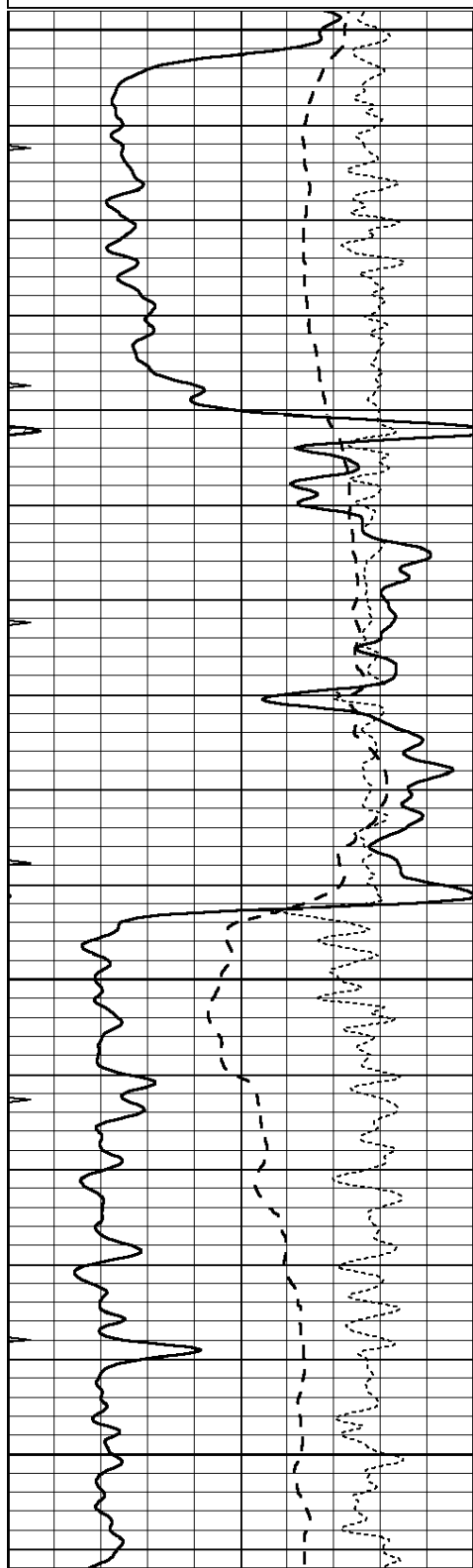
DEDEAT SECTION

REPEAT SECTION

Database File: 1828ddn.db
 Dataset Pathname: pass2.3
 Presentation Format: _dil
 Dataset Creation: Wed Sep 20 04:38:09 2017
 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

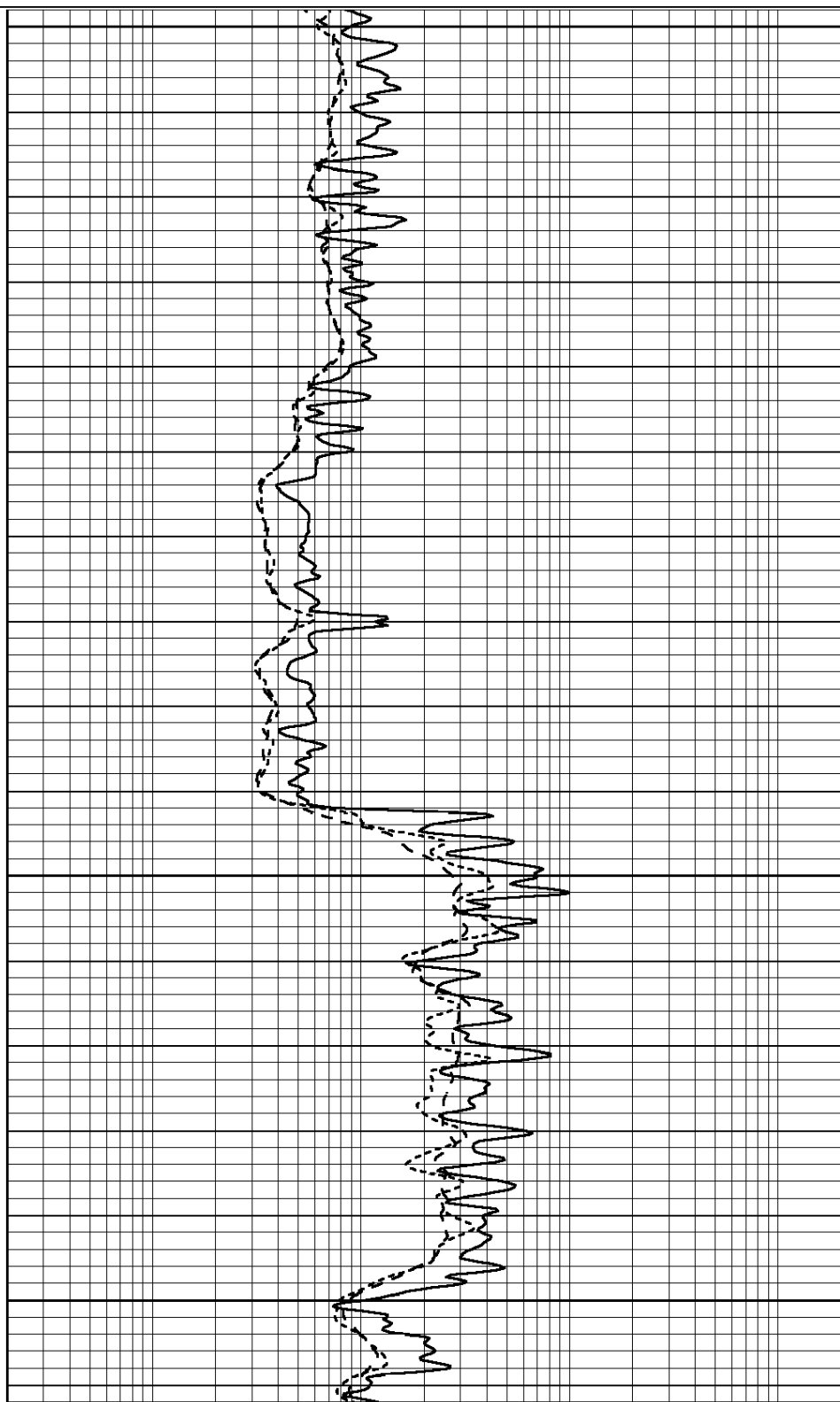


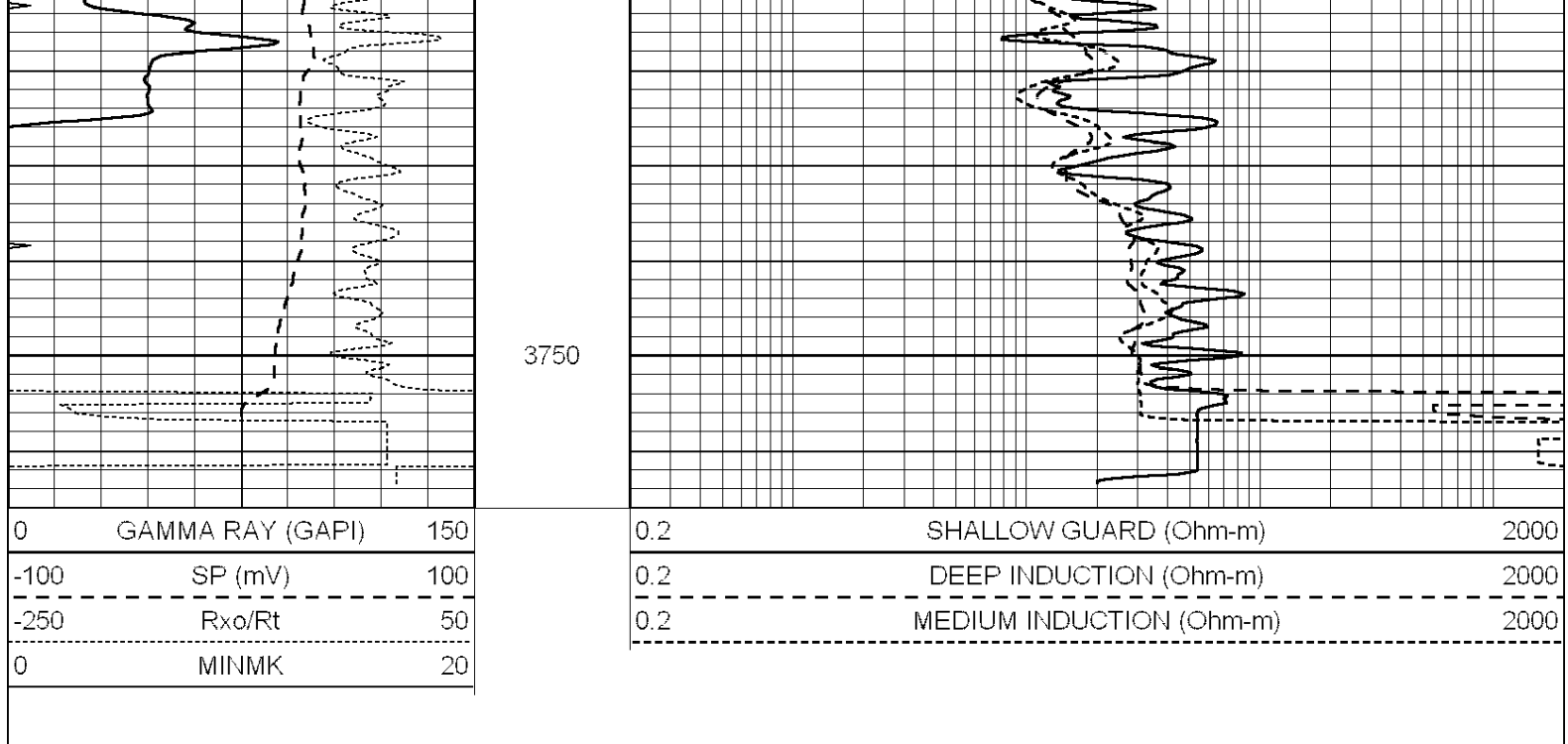
3550

3600

3650

3700





Calibration Report

Database File: 1598ddn.db
Dataset Pathname: pass4
Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
Surface Cal Performed: Wed Aug 30 00:06:33 2017
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
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

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 Report

Serial: 002 Model: PRB

Master Calibration		Performed Mon Aug 21 11:27:42 2017						
	Background		Magnesium		Aluminum		Sandstone	
Window 1	837.1		10632.5		2945.1		12110.1	cps
Window 2	772.0		9117.4		2570.1		10197.3	cps
Window 3	631.7		4669.0		1481.9		5042.9	cps
Window 4	187.0		187.5		185.9		189.9	cps
Long Space	0.0		8345.4		1798.1		9425.3	cps
Short Space	1.1		1927.9		1285.9		2050.2	cps
Rho			1.7100		2.5960		1.3800	g/cc
Pe			0.0000		2.5700		1.5500	
Rib Angle	: 45.2		Rib Slope	: 1.008	Density/Spine Ratio		: 0.558	
Spine Angle	: 75.2		Spine Slope	: 3.790	Spine Intercept		: -19.6	

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969						
Window 1	0.0		0.0		0.0		0.0	cps
Window 2	0.0		0.0		0.0		0.0	cps
Window 3	0.0		0.0		0.0		0.0	cps
Window 4	0.0		0.0		0.0		0.0	cps
Long Space	0.0		0.0		0.0		0.0	cps
Short Space	0.0		0.0		0.0		0.0	cps
Measured Rho			0.0000		0.0000		0.0000	g/cc
Measured Correction			0.0000		0.0000		0.0000	g/cc
Measured Pe					0.0000		0.0000	

After Survey Verification		Performed Wed Dec 31 18:00:00 1969						
Window 1	0.0		0.0		0.0		0.0	cps
Window 2	0.0		0.0		0.0		0.0	cps
Window 3	0.0		0.0		0.0		0.0	cps
Window 4	0.0		0.0		0.0		0.0	cps
Long Space	0.0		0.0		0.0		0.0	cps
Short Space	0.0		0.0		0.0		0.0	cps
Measured Rho			0.0000		0.0000		0.0000	g/cc
Measured Correction			0.0000		0.0000		0.0000	g/cc
Measured Pe					0.0000		0.0000	

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Compensated Neutron Calibration Report

Serial Number:	070808
Tool Model:	Probe

PRE-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION			
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Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	070558		
Tool Model:	OPEN_GR		
Performed:	Wed May 31 00:09:32 2017		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.2800	GAPI/cps	