



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		I. A. OPERATING, INC.	
Well		BEIKER TRUST #13-1	
Field		COOPER	
County		GRAHAM	
State		KANSAS	
Company		I. A. OPERATING, INC.	
Well		BEIKER TRUST #13-1	
Field		COOPER	
County		GRAHAM	
State		KANSAS	
Location:		API # : 15-065-24085-0000	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 8' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 13 TWP 10S RGE 21W		Elevation	
690' FSL & 1360' FEL		CDL/CNL	
SE - NE - SW - SE		MEL/SON	
2253		K.B. 2261	
2253		D.F. 2259	
2253		G.L. 2253	
Date	12/9/14		
Run Number	ONE		
Depth Driller	3950		
Depth Logger	3948		
Bottom Logged Interval	3946		
Top Log Interval	00		
Casing Driller	8 5/8"@221'		
Casing Logger	221		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4,000 PPM	
Density / Viscosity	9.3/56		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.800@70F		
Rmf @ Meas. Temp	.600@80F		
Rmc @ Meas. Temp	.960@70F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.483@116F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	2:00 P.M.		
Maximum Recorded Temperature	116F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	STEVE REED		

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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 "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
PALCO, KS., S. ON BLKTOP TO "CC RD.", 2 1/2W., 3/4N. INTO ON LEASE RD.

Database File:

26325ddn.db

Dataset Pathname:

pass3.8

Presentation Format:

dil2

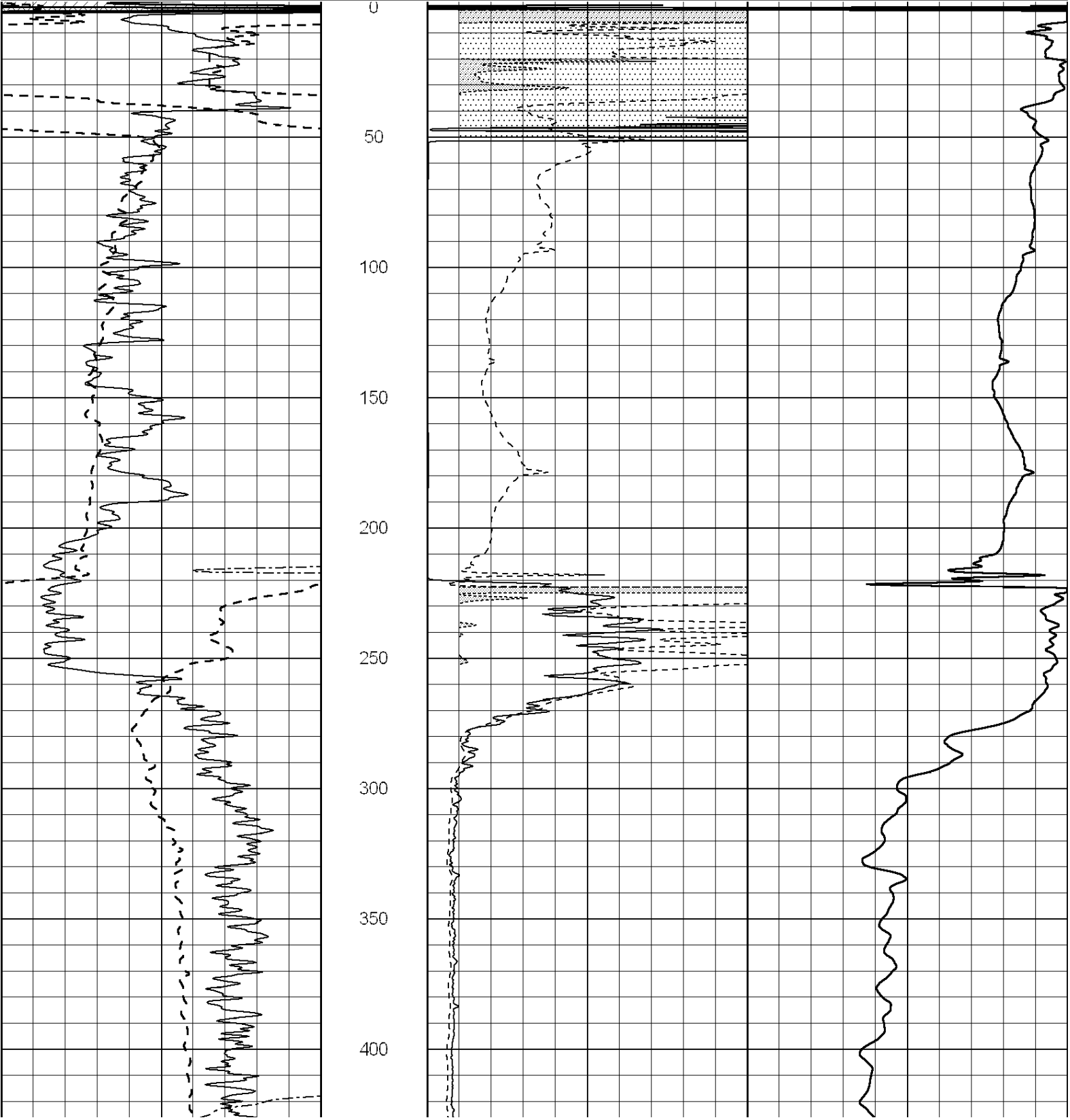
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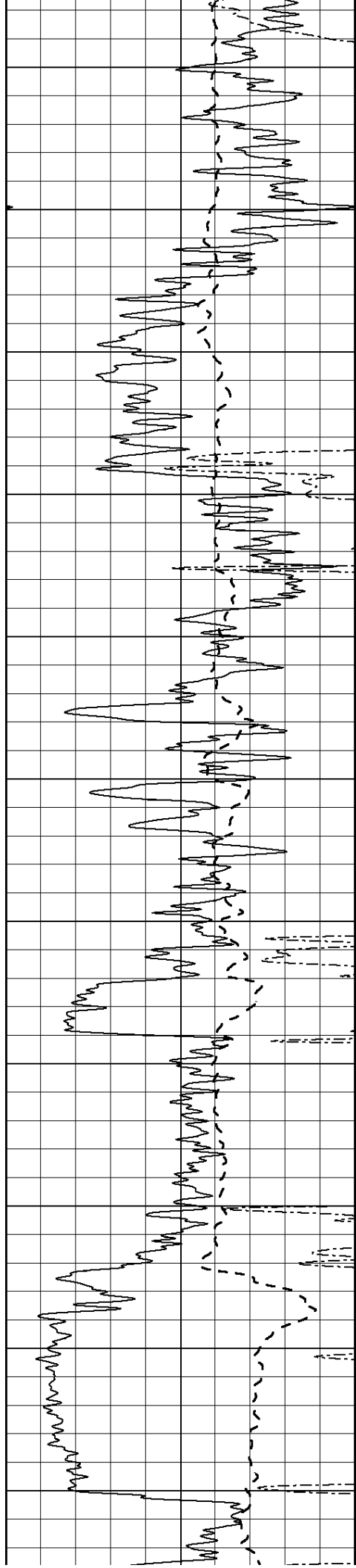
Tue Dec 09 15:19:41 2014 by Calc SOC 120430

Charted by:

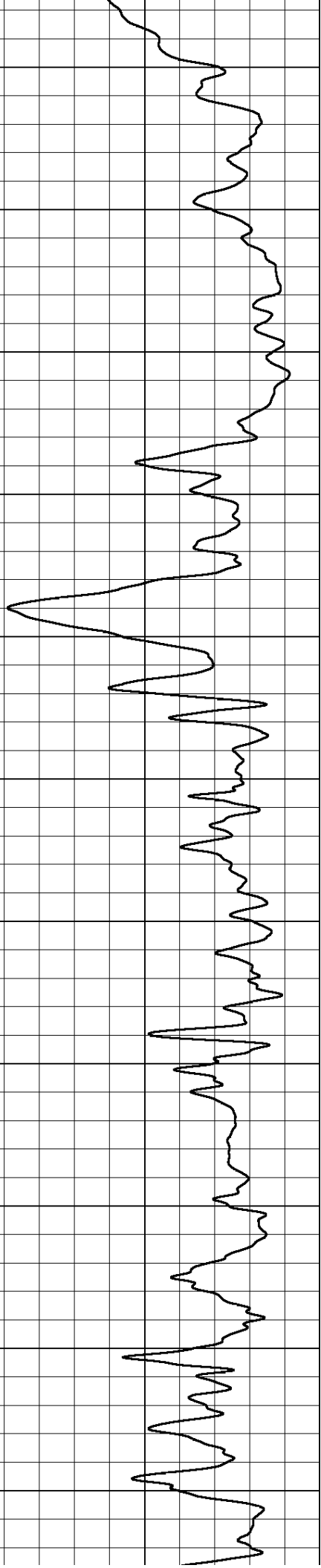
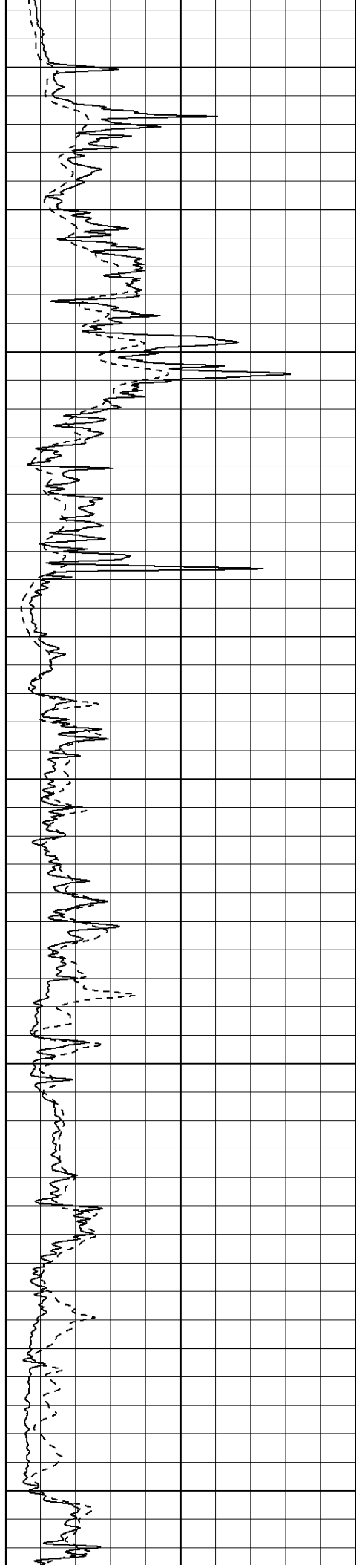
Depth in Feet scaled 1:600

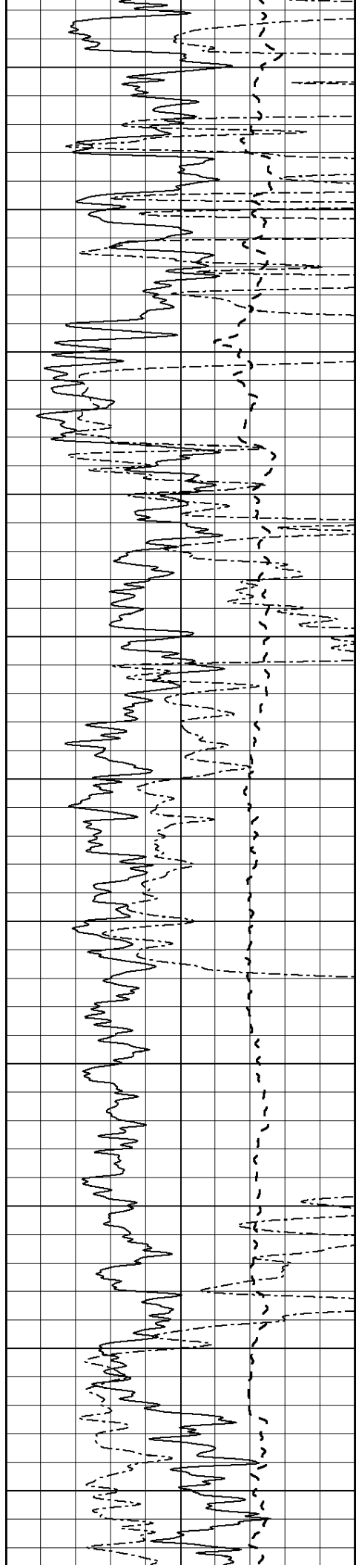
0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
0	RWA (Ohm-m)	1	1000		CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	





450
500
550
600
650
700
750
800
850
900
950





1000

1050

1100

1150

1200

1250

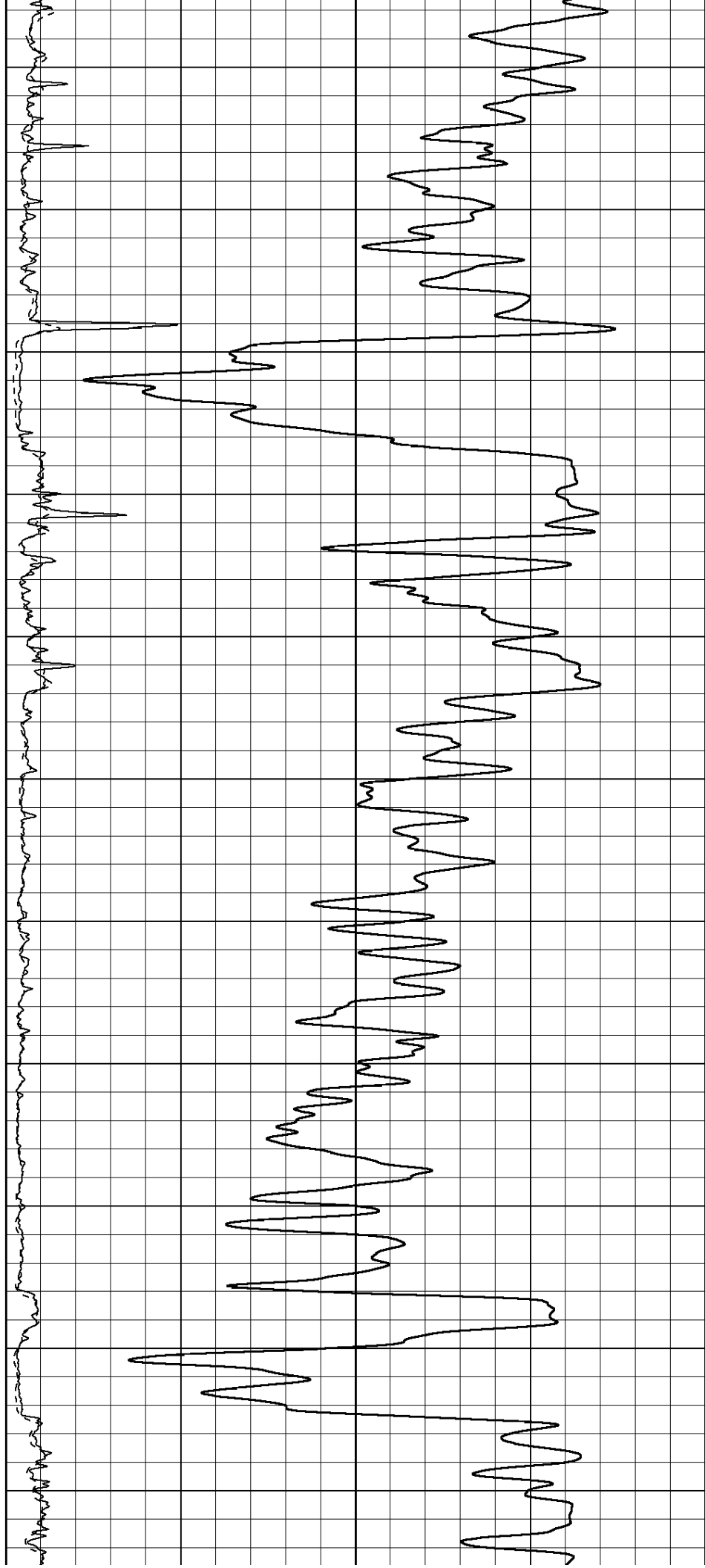
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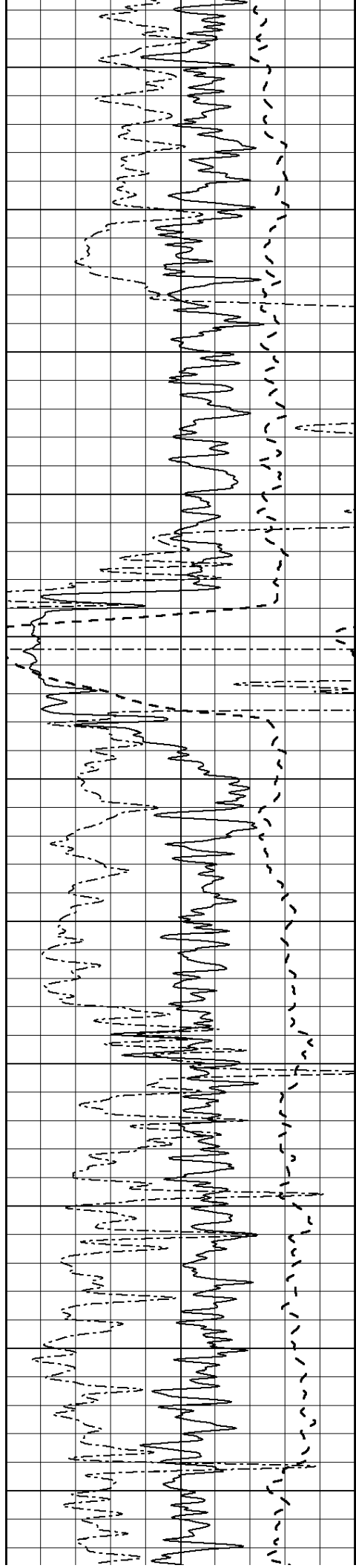
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1400

1450

1500





1550

1600

1650

1700

1750

1800

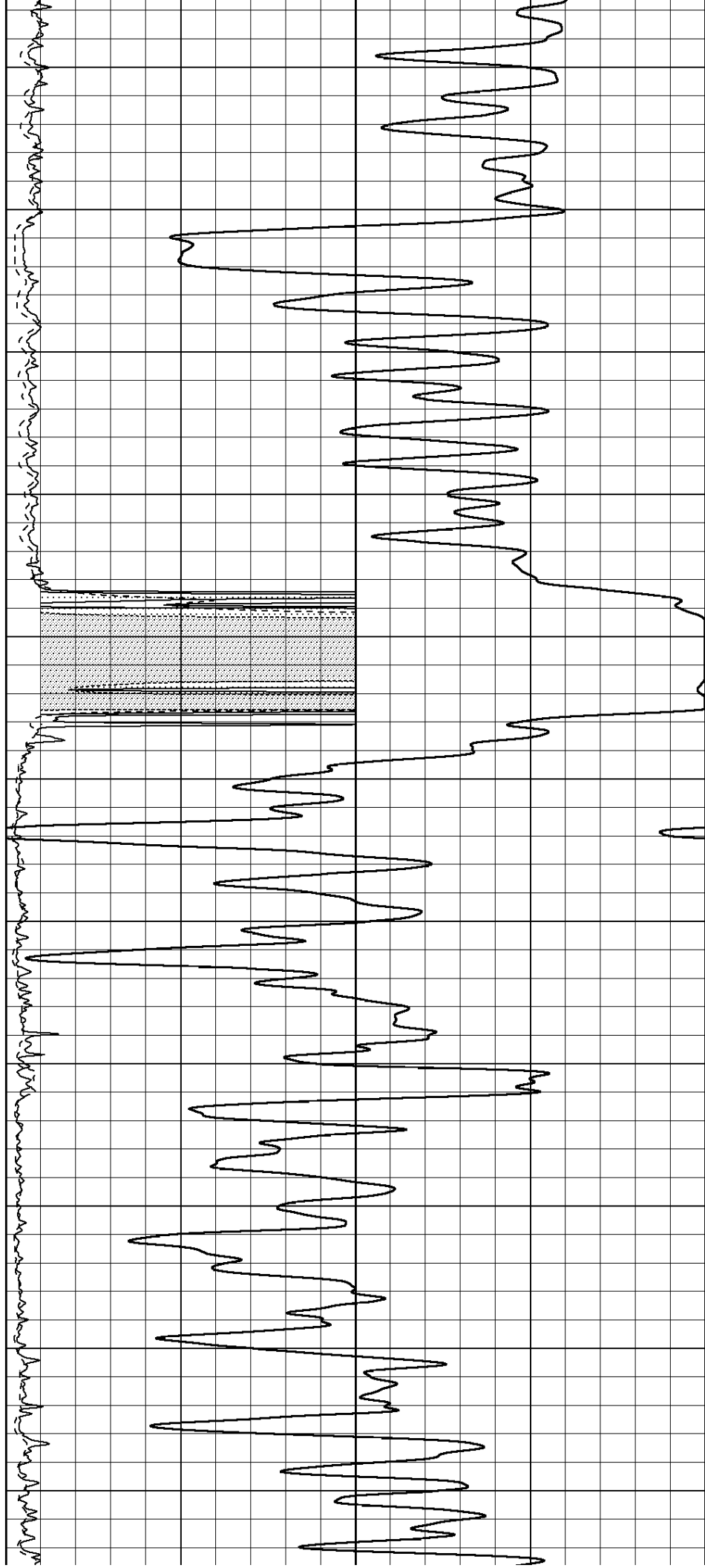
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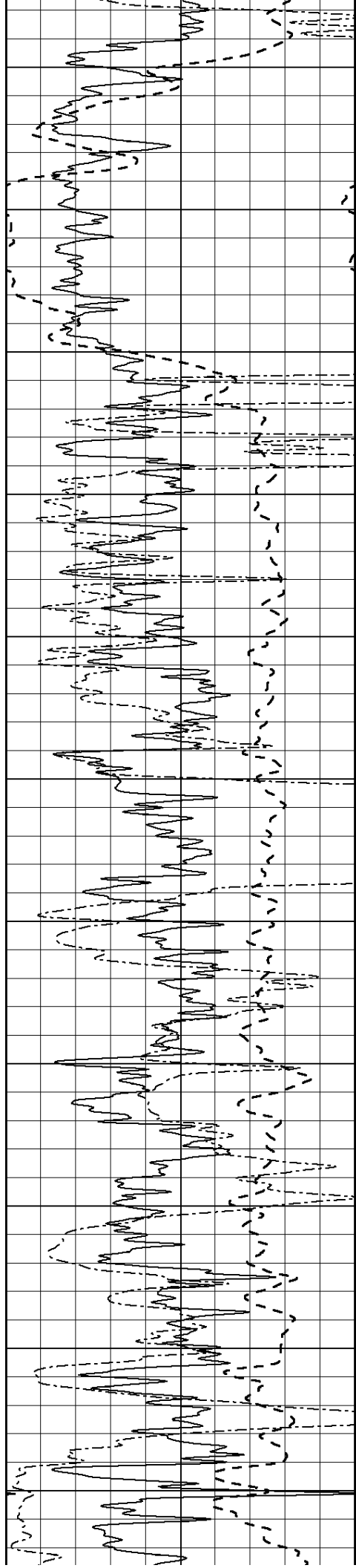
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

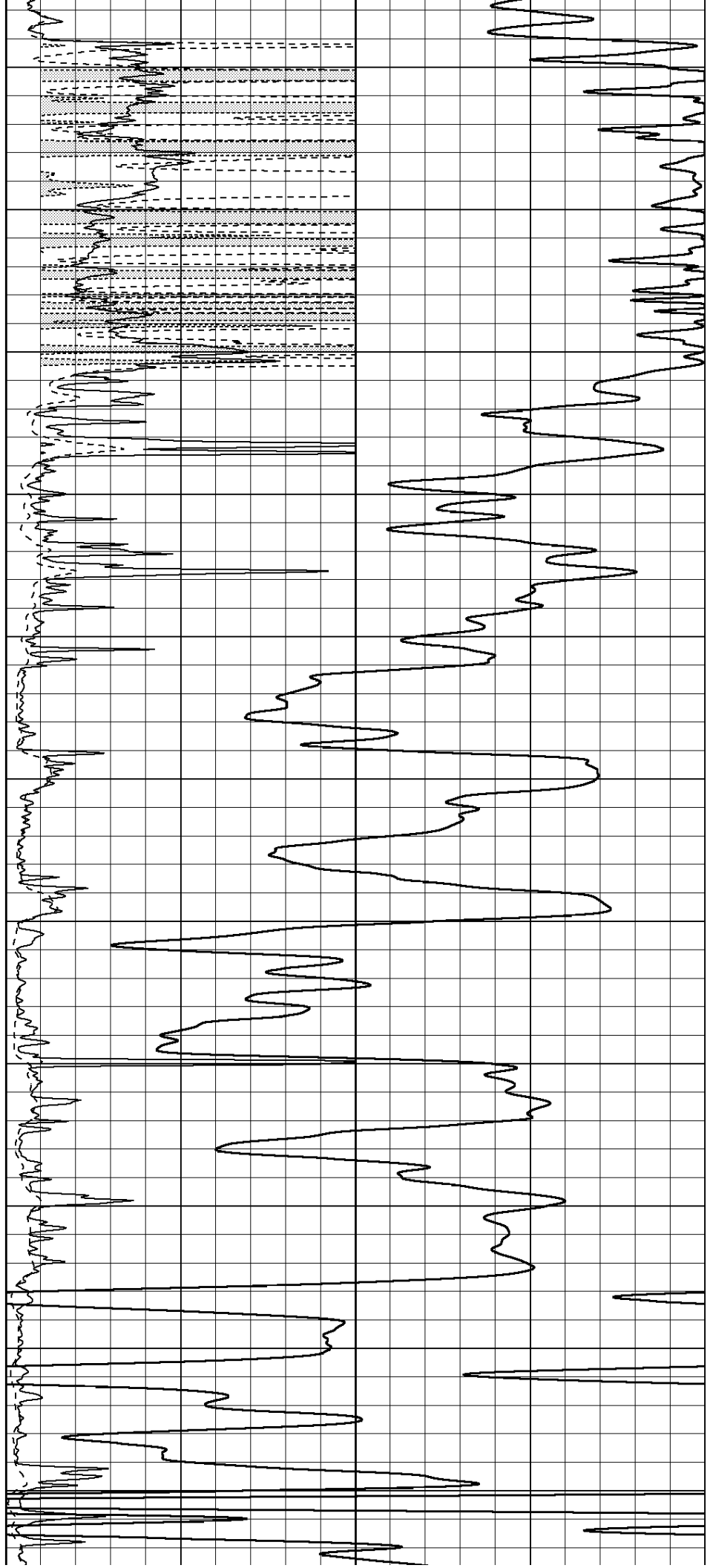
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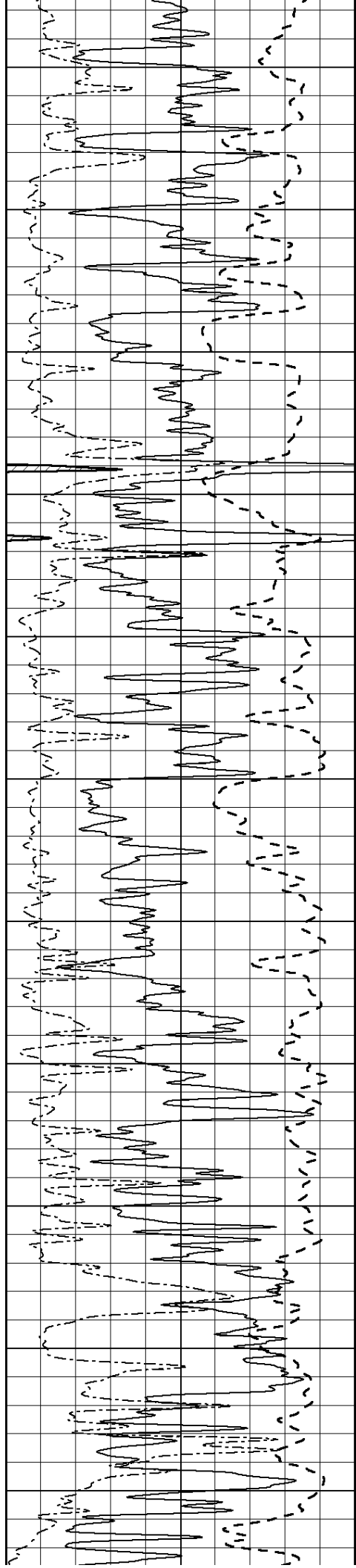
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2500

2550

2600





2650

2700

2750

2800

2850

2900

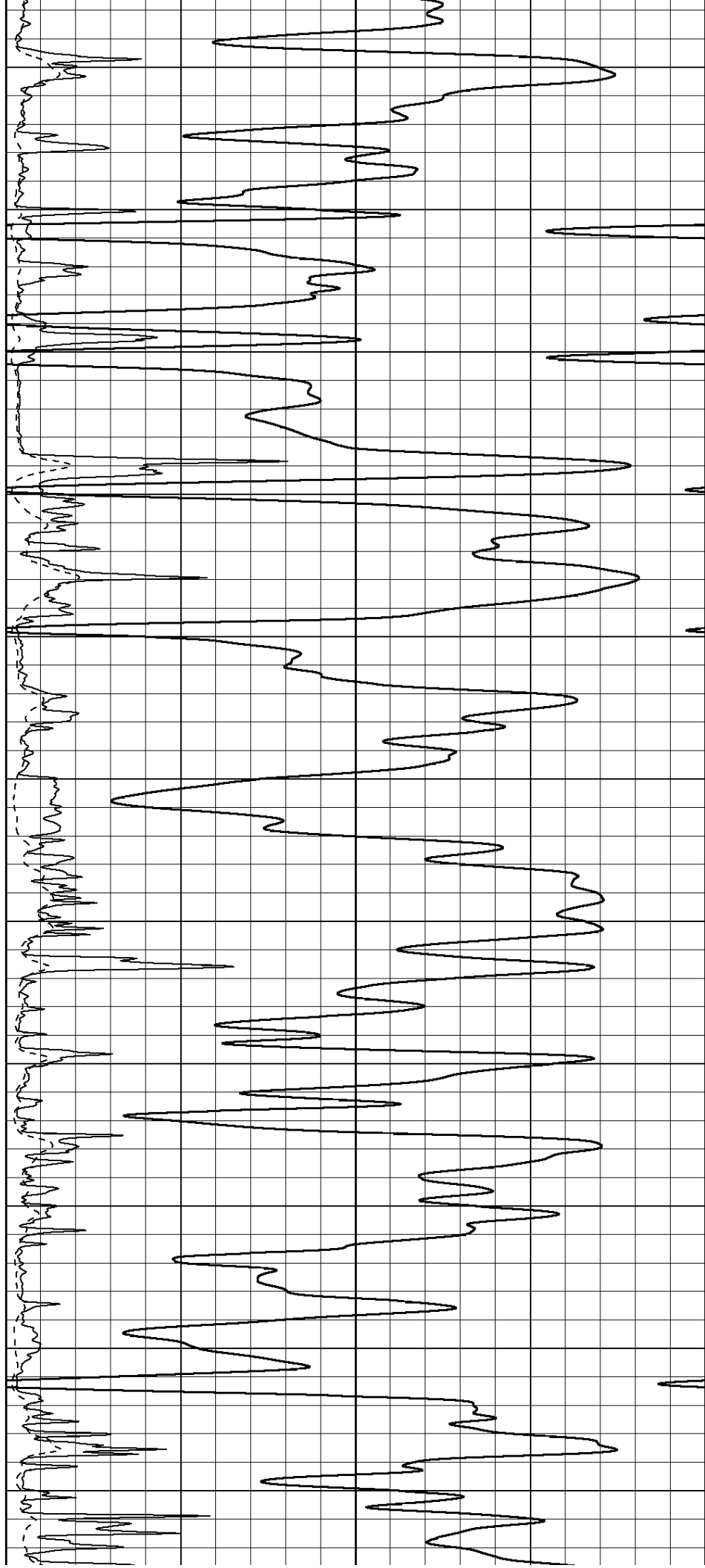
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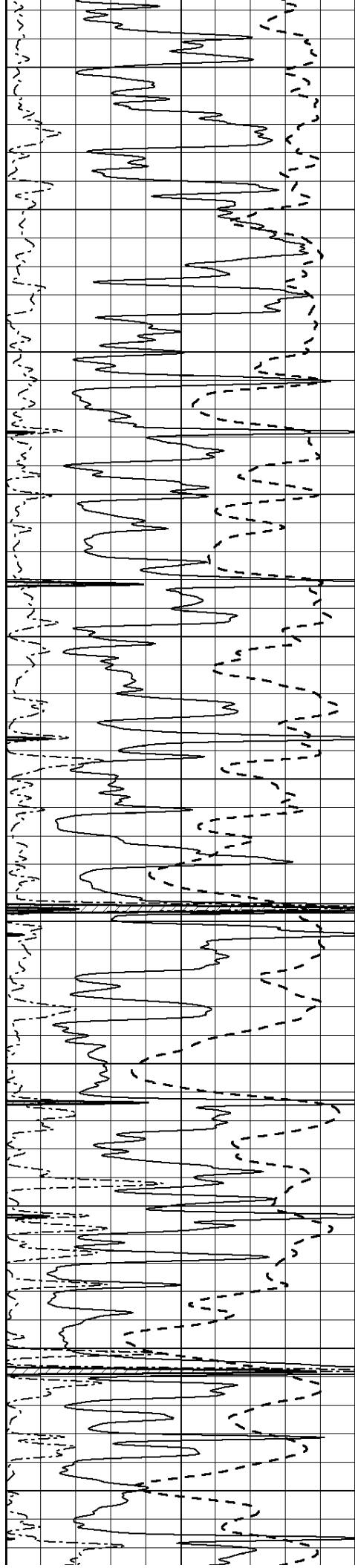
3000

3050

3100

3150





3200

3250

3300

3350

3400

3450

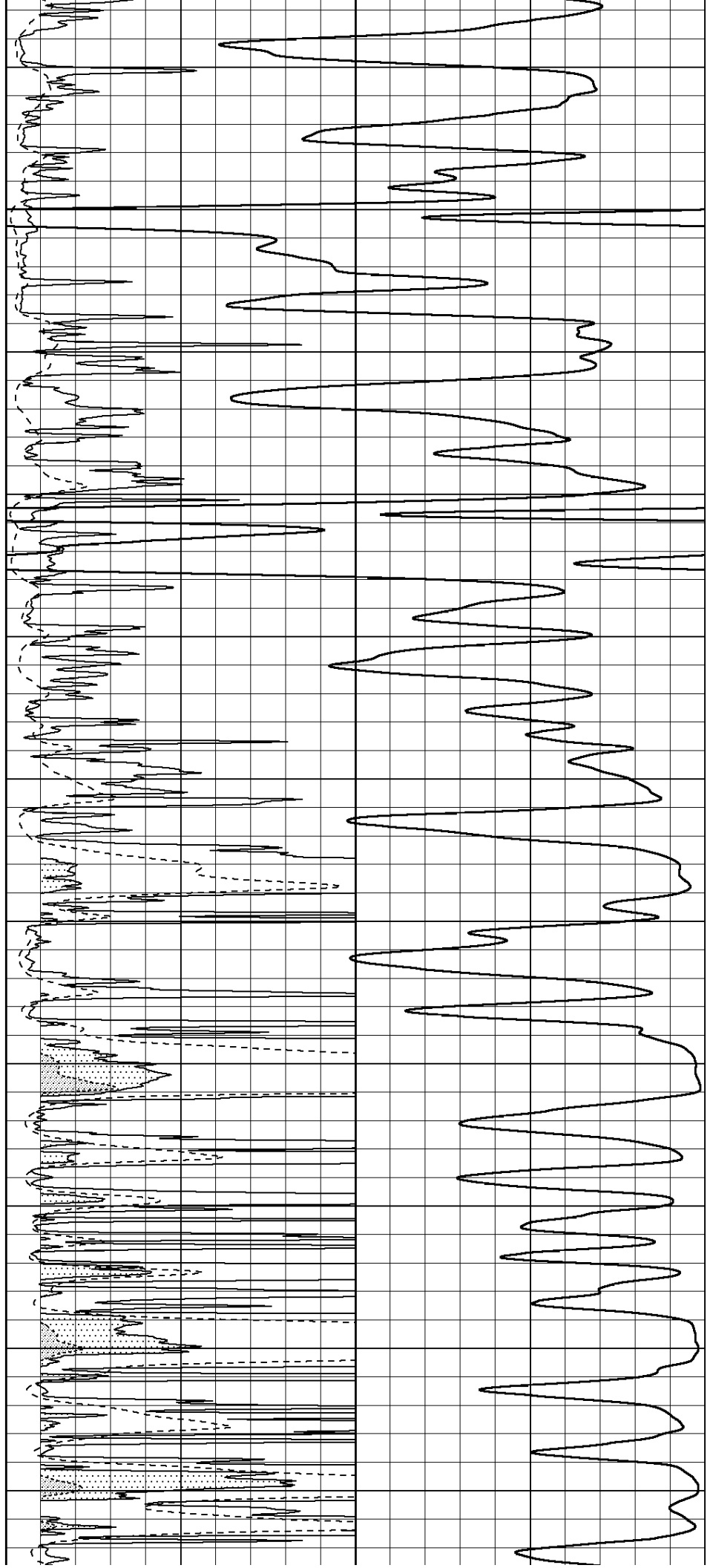
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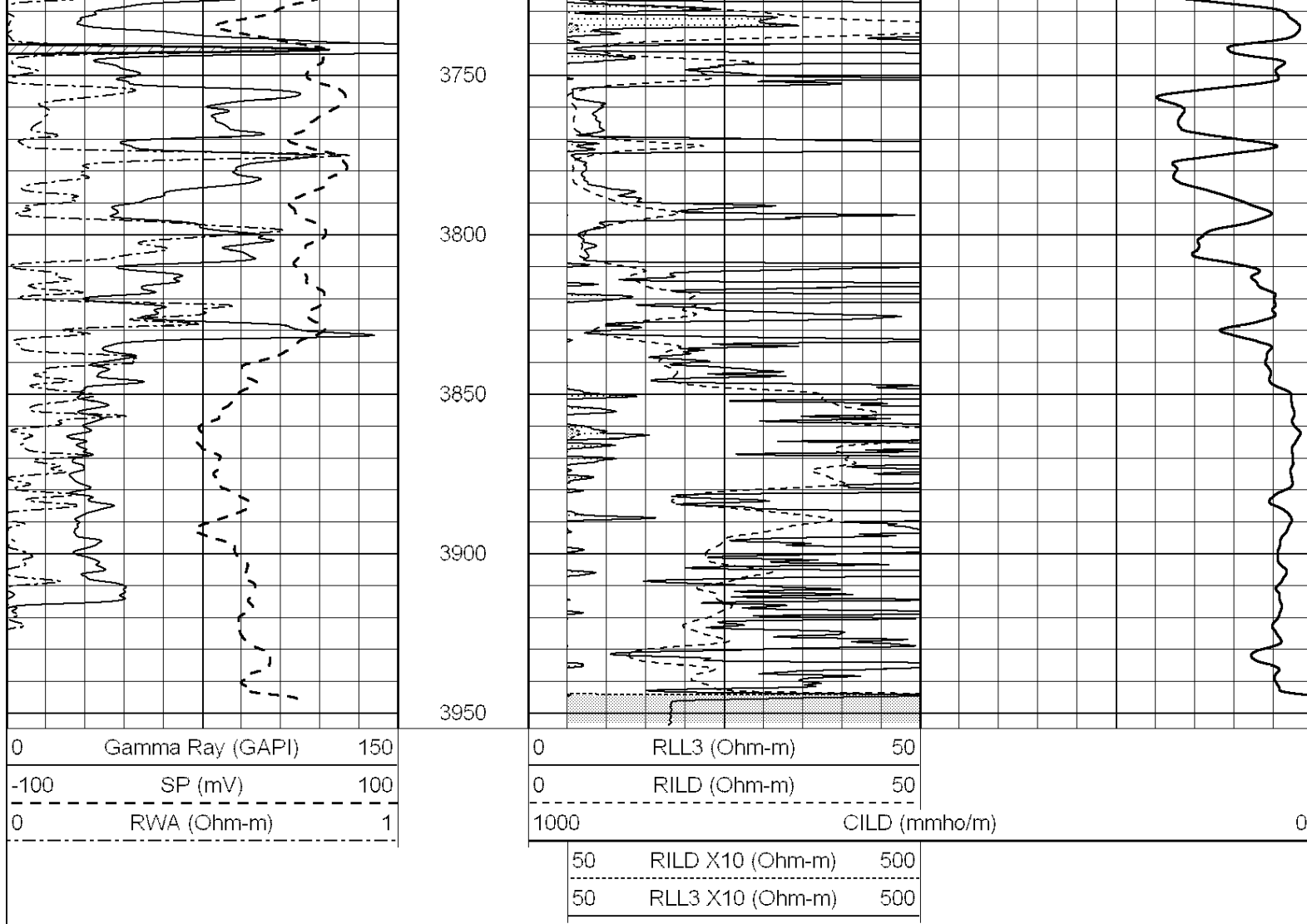
3550

3600

3650

3700





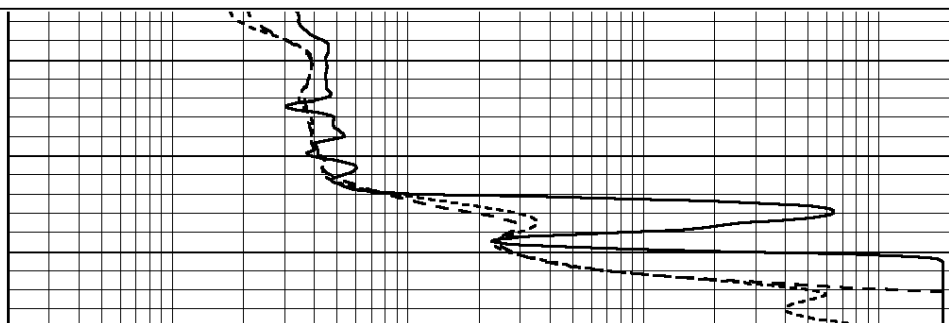
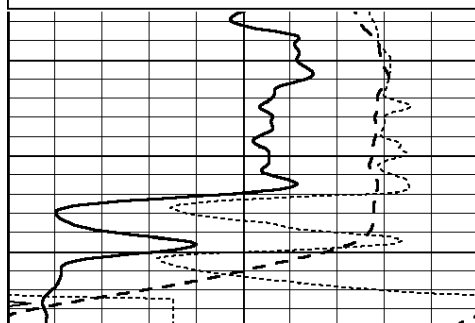
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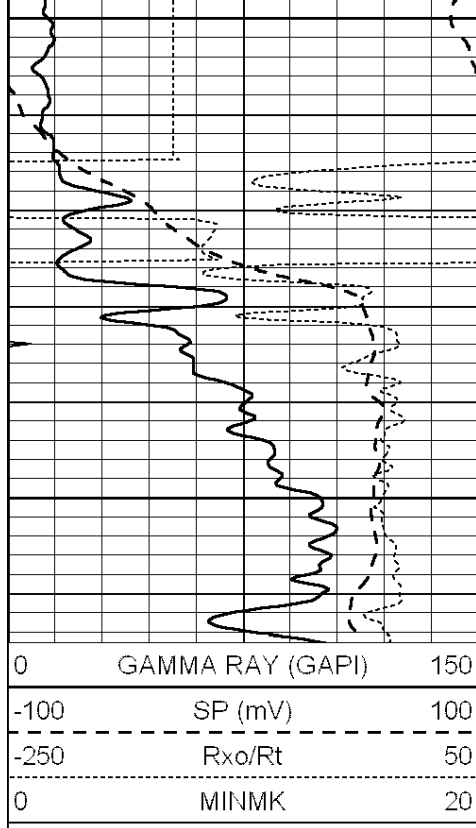
ANHYDRITE

Database File: 26325ddn.db
 Dataset Pathname: pass3.9
 Presentation Format: _dil
 Dataset Creation: Tue Dec 09 15:20:16 2014 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

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

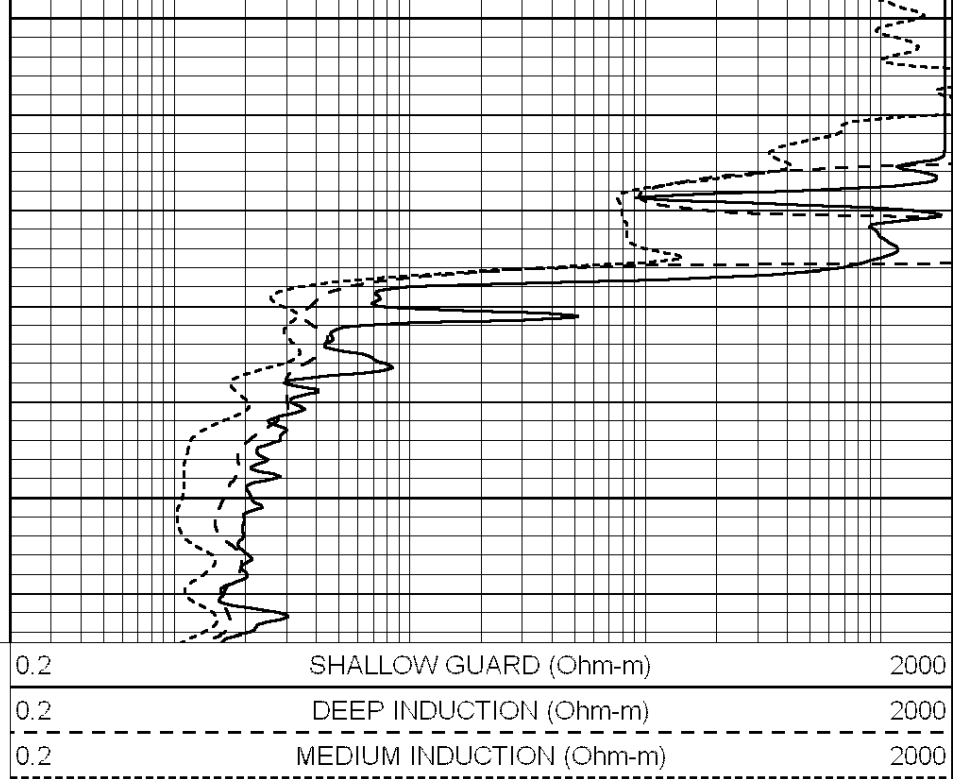
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





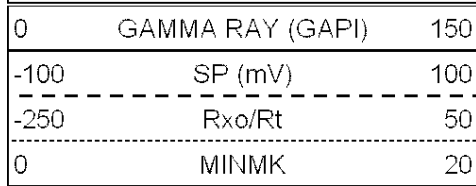
1750

1800



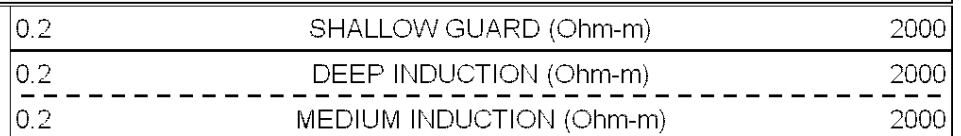
MAIN SECTION

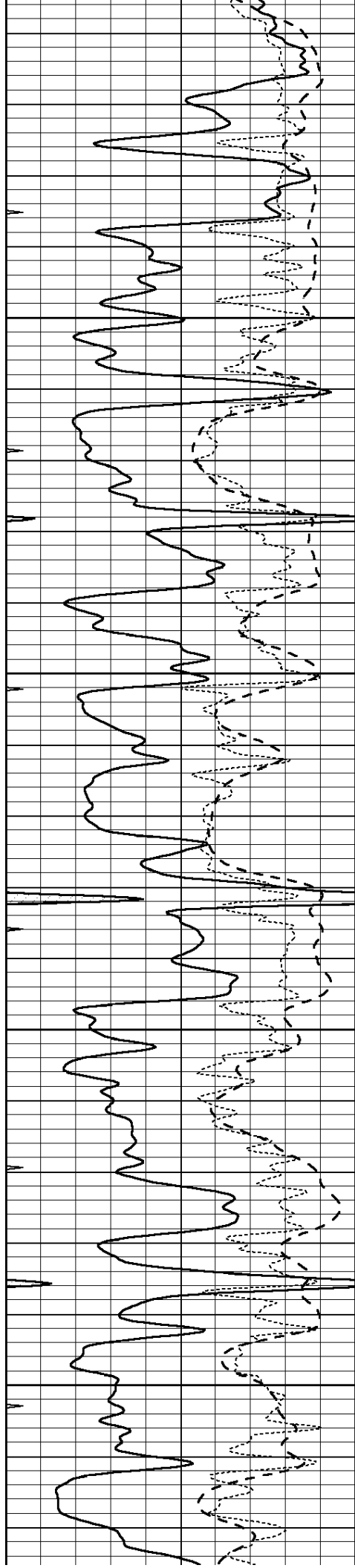
Database File: 26325ddn.db
Dataset Pathname: pass3.8
Presentation Format: _dil
Dataset Creation: Tue Dec 09 15:19:41 2014 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240



3200

3250



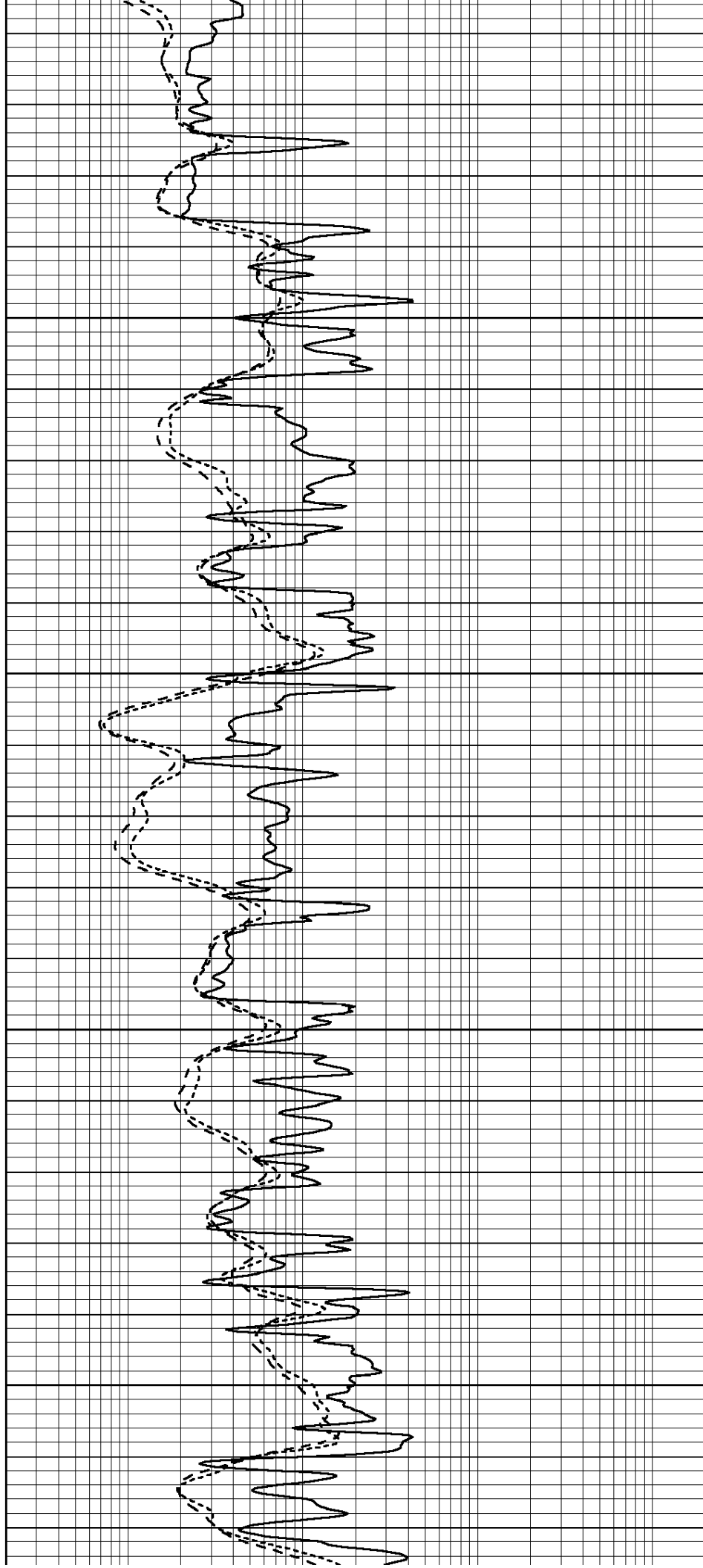


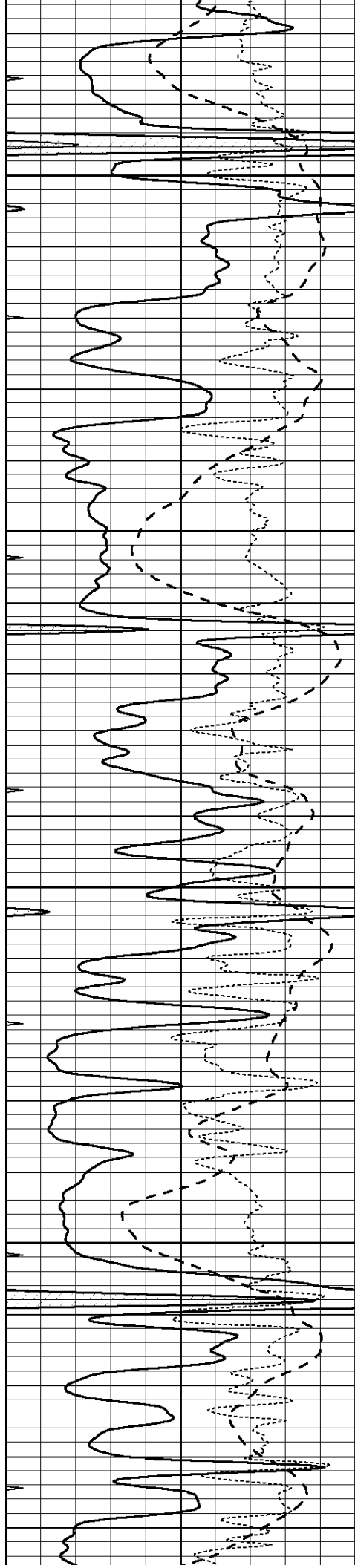
3300

3350

3400

3450



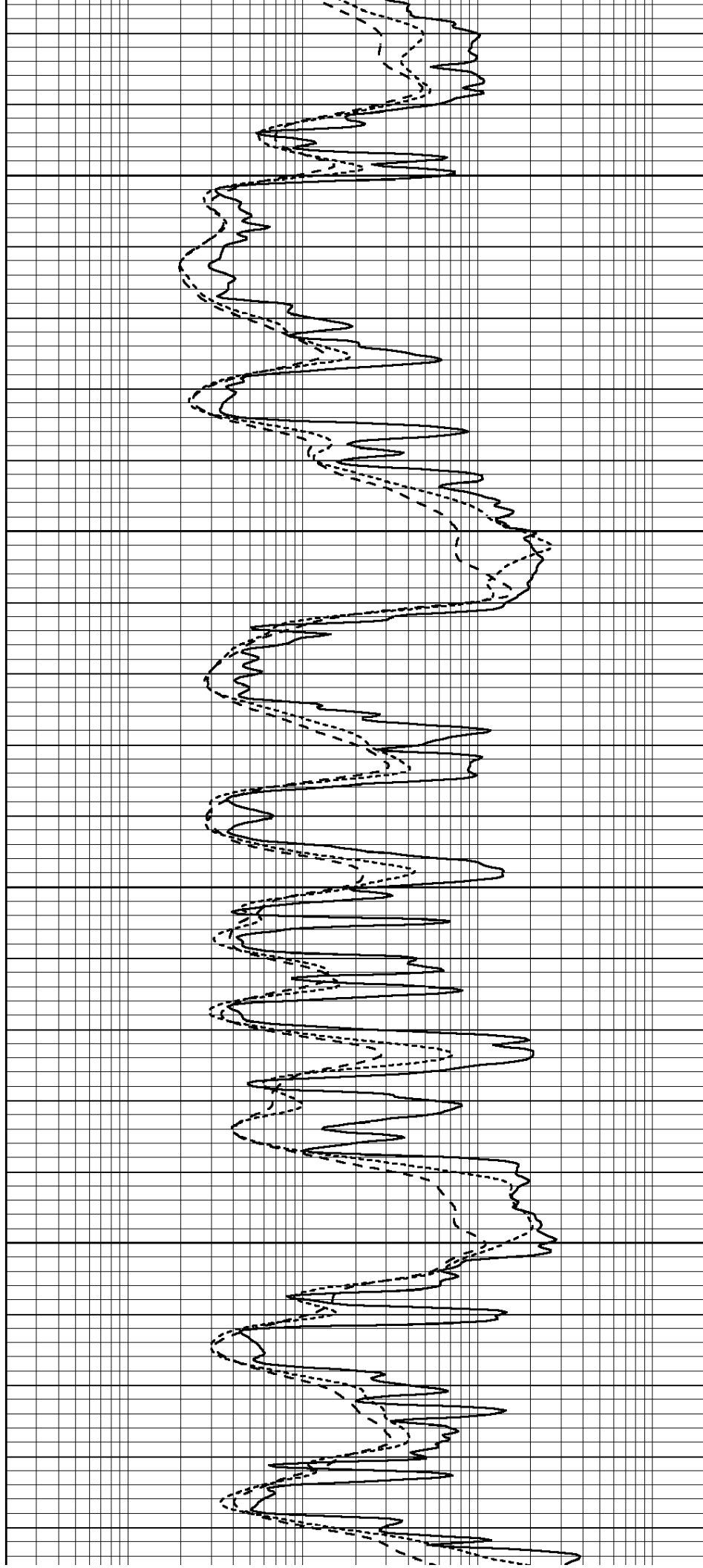


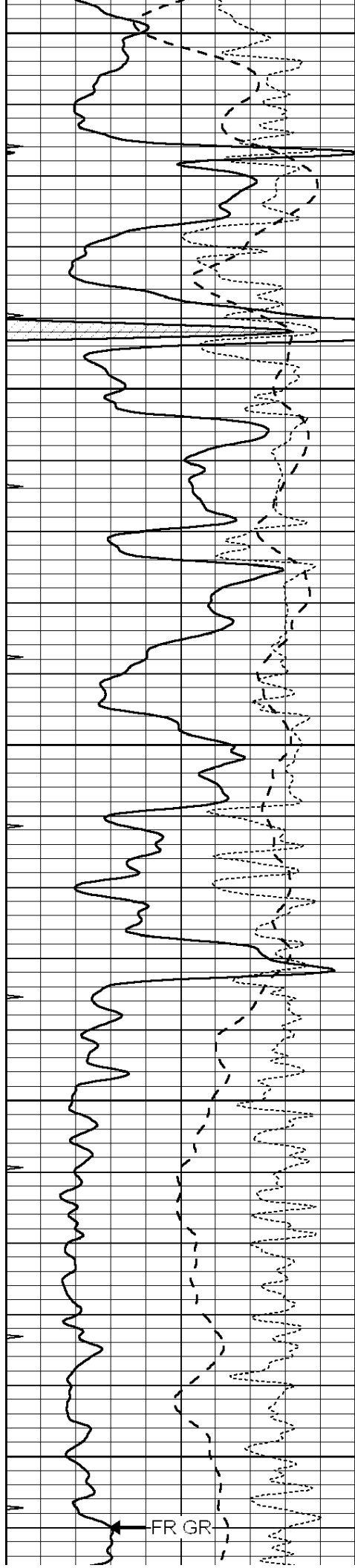
3500

3550

3600

3650





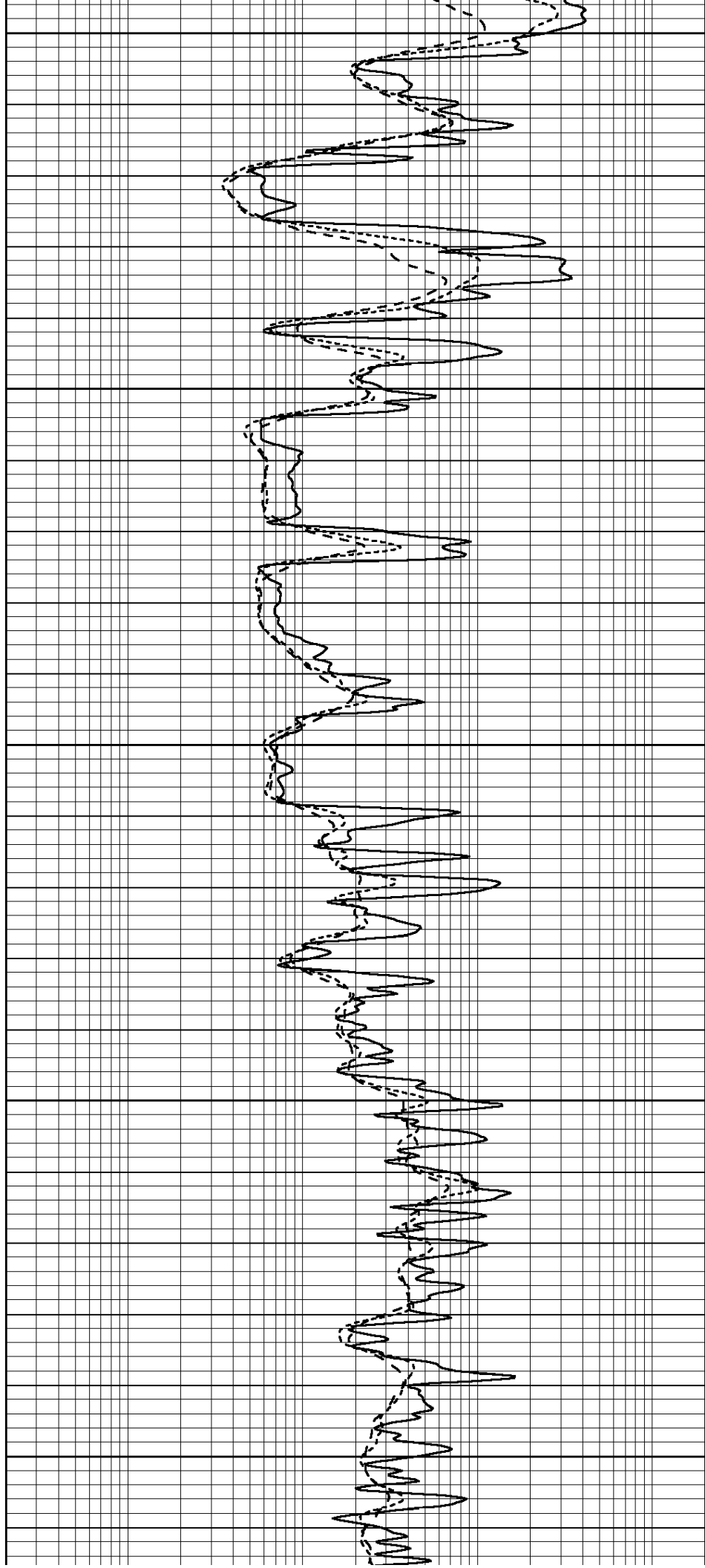
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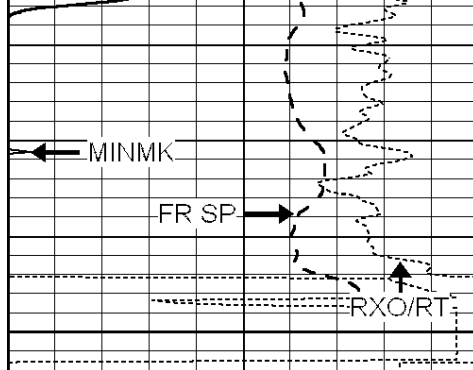
3750

3800

3850

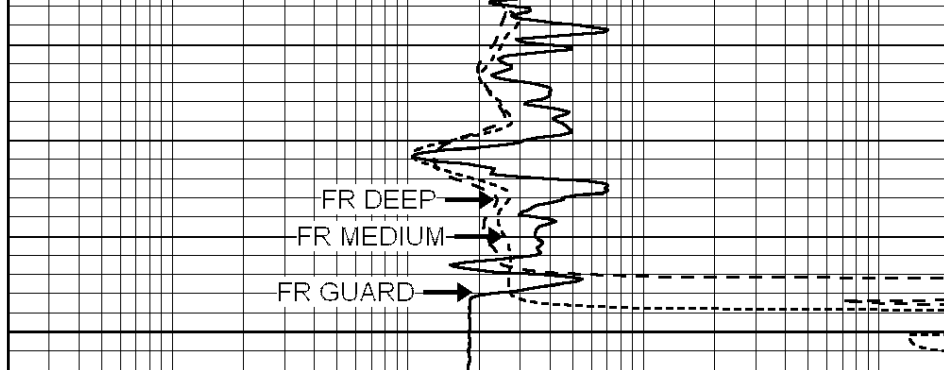
3900





LTD 3948
3950

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



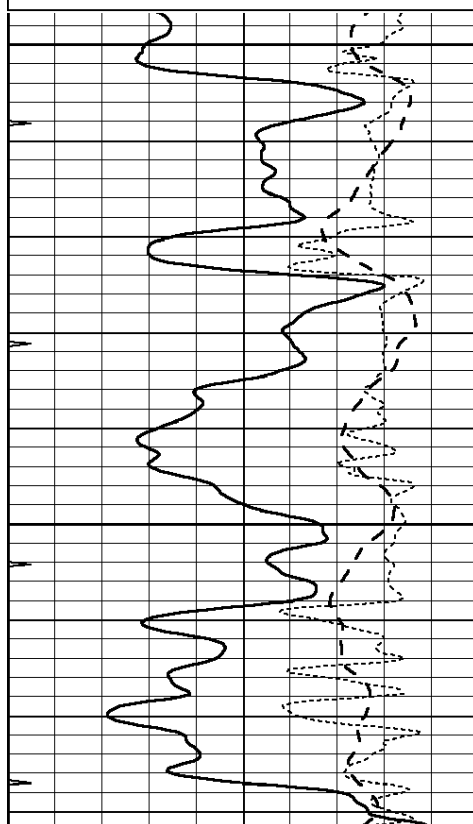
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REPEAT SECTION

Database File: 26325ddn.db
Dataset Pathname: pass2.7
Presentation Format: _dil
Dataset Creation: Tue Dec 09 14:15:33 2014 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

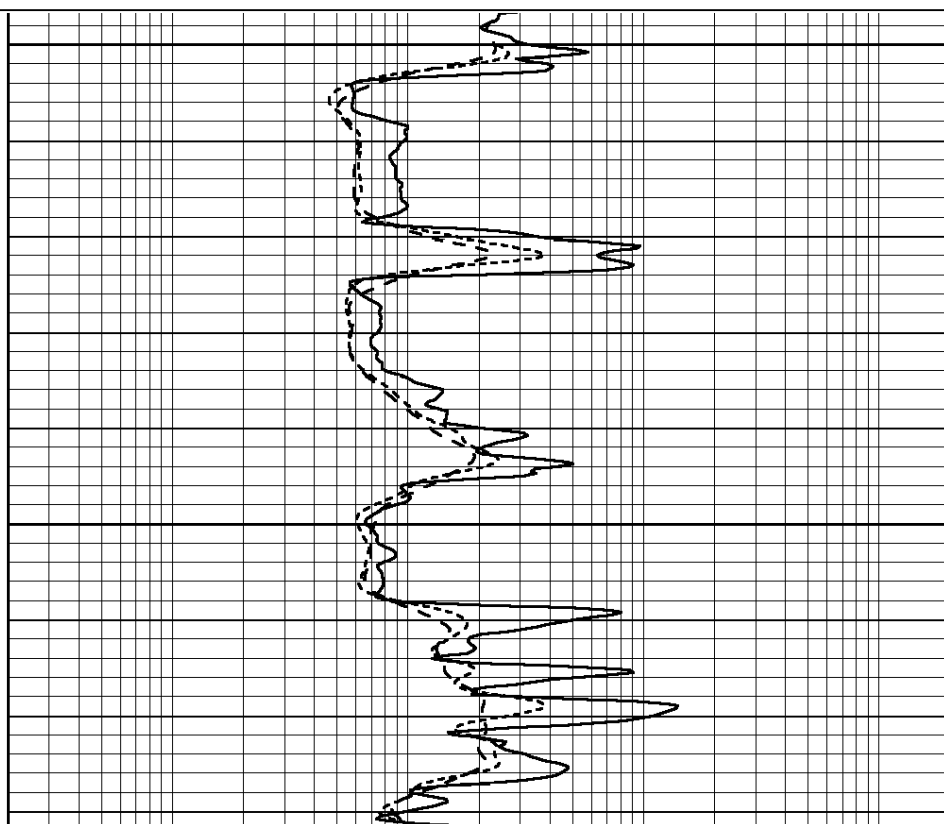
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

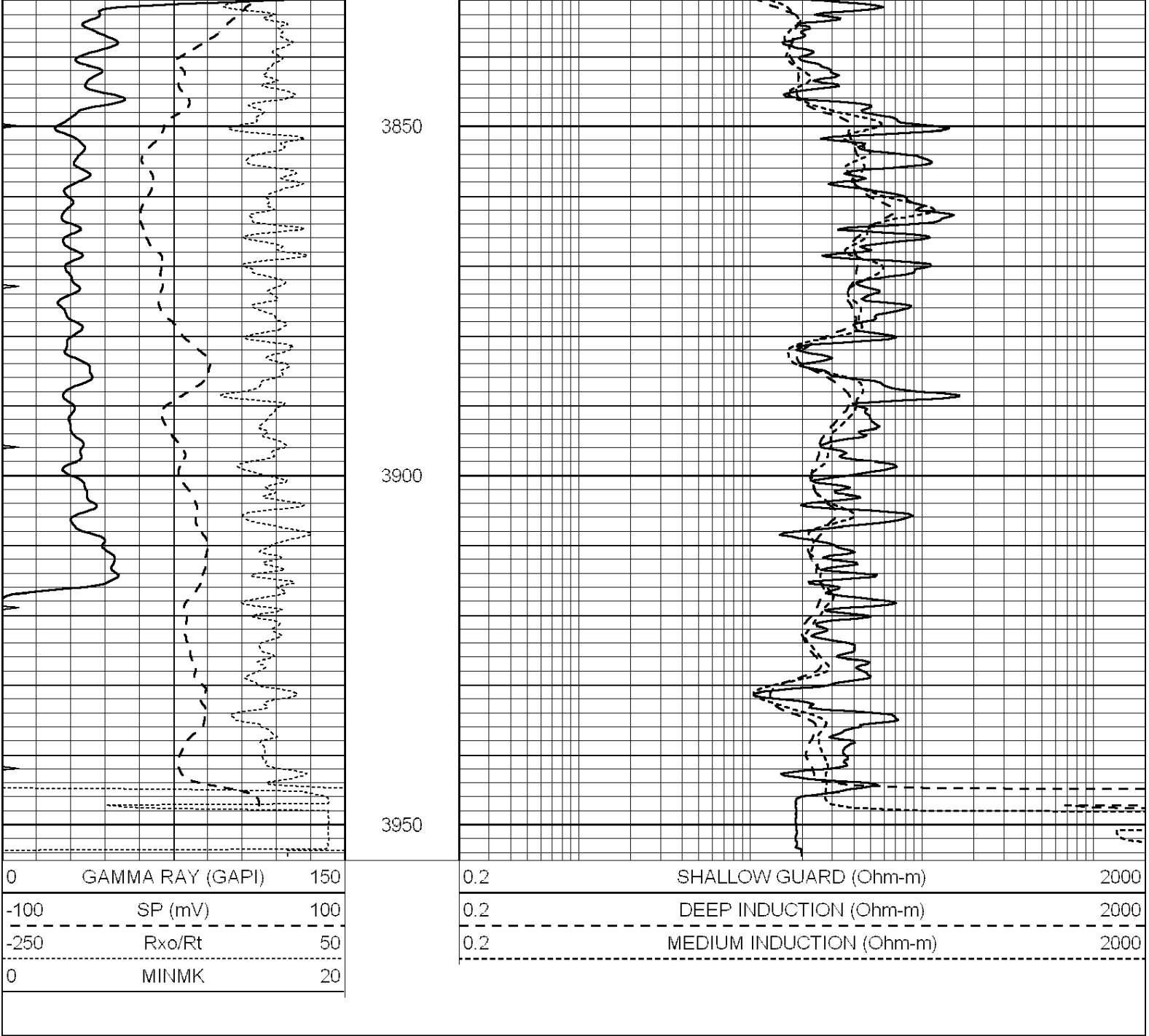
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3750

3800





Calibration Report								
Database File:		26325ddn.db						
Dataset Pathname:		pass3.8						
Dataset Creation:		Tue Dec 09 15:19:41 2014 by Calc SOC 120430						
Dual Induction Calibration Report								
Serial-Model:			PROBE9-DILG					
Surface Cal Performed:			Sat Dec 06 09:31:12 2014					
Downhole Cal Performed:			Mon Jul 28 12:02:56 2008					
After Survey Verification Performed:			Mon Jul 28 12:02:56 2008					
Surface Calibration								
		Readings		References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-18.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	670.000	-26.000
Interval:	Zero	Cal		Zero	Cal		m	b

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
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: 003N Model: PRB								
Master Calibration			Performed Tue Sep 08 14:14:44 2009					
	Background	Magnesium		Aluminum		Sandstone		
Window 1	2042.6	12312.8		4225.8		13758.4		cps
Window 2	1855.8	10134.7		3624.2		11113.1		cps
Window 3	1639.4	6760.2		2716.3		7260.3		cps
Window 4	466.4	469.2		466.1		476.5		cps
Long Space	0.0	8278.9		1768.4		9257.4		cps
Short Space	2.2	2377.3		1544.1		2574.2		cps
Rho		1.7100		2.5900		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio		: 0.549		
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept		: -18.8		
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	
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					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
Gamma Ray Calibration Report					
Serial Number:		070558			
Tool Model:		OPEN_GR			
Performed:		Mon Nov 17 10:01:40 2014			
Calibrator Value:		1.0	GAPI		
Background Reading:		0.0	cps		
Calibrator Reading:		1.0	cps		
Sensitivity:		0.2800	GAPI/cps		