



SUPERIOR
Hays,
Kansas

DUAL
INDUCTION
LOG

Company		MULL DRILLING CO., INC.	
Well		#1-17 WATERSON 'A'	
Field			
County		LANE	
State		KANSAS	
Location:		API # : 15-101-22256-0000	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 9' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 17 TWP 17S RGE 27W		Elevation	
486' FNL & 1320' FEL		K.B. 2718	
		D.F. 2716	
		G.L. 2709	
CDL/CNL			
MEL/SON			
Other Services			
Date		10/9/10	
Run Number		ONE	
Depth Driller		4680	
Depth Logger		4686	
Bottom Logged Interval		4684	
Top Log Interval		0	
Casing Driller		8 5/8" @ 230	
Casing Logger		228	
Bit Size		7 7/8	
Type Fluid in Hole		CHEMICAL MUD	
Density / Viscosity		9.2 / 48	
pH / Fluid Loss		9.5 / 10.4	
Source of Sample		FLOWLINE	
Rim @ Meas. Temp		0.75 @ 86F	
Rmf @ Meas. Temp		0.56 @ 86F	
Rmc @ Meas. Temp		0.90 @ 86F	
Source of Rmf / Rmc		MEASURED	
Rim @ BHT		0.53 @ 122F	
Time Circulation Stopped		2 HOURS	
Time Logger on Bottom			
Maximum Recorded Temperature		122F	
Equipment Number		680	
Location		HAYS, KS.	
Recorded By		JEFF GRONEMEG	
Witnessed By		KEVIN KESSLER	

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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

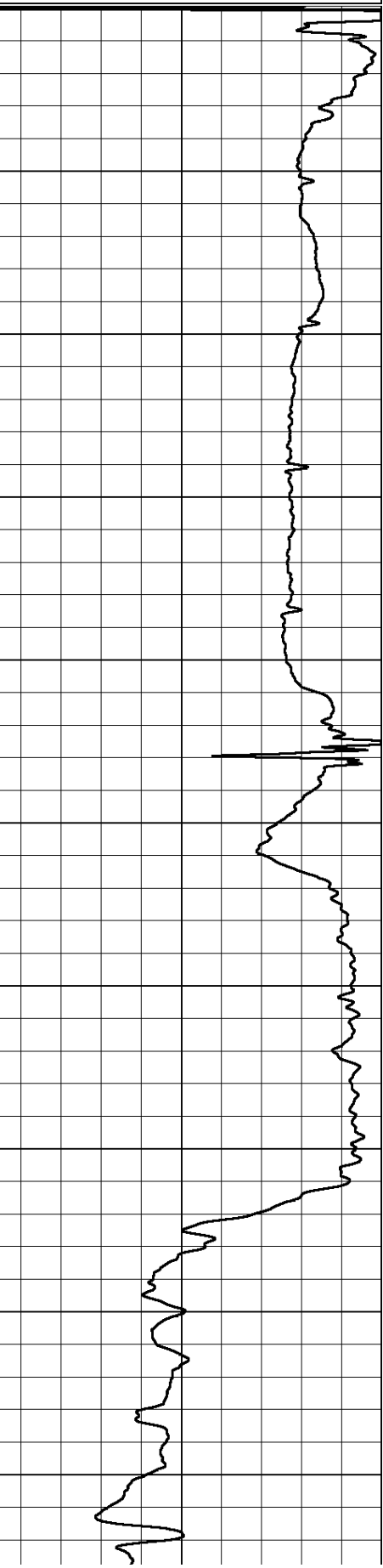
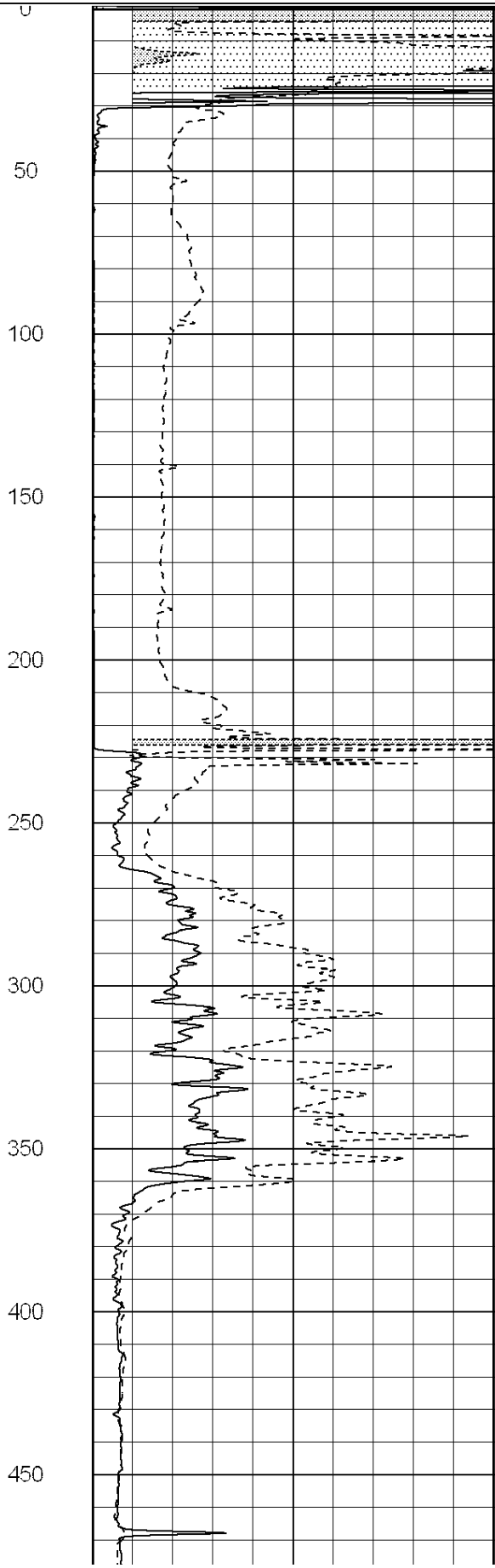
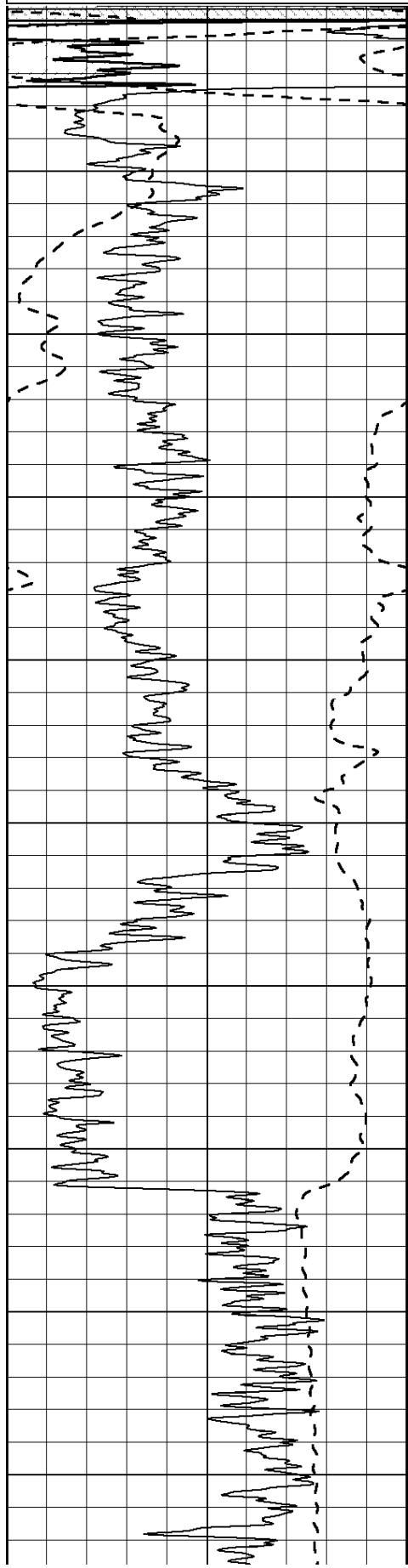
THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
UTICA, KS - WEST TO SCOUT RD - 3 MILES SOUTH - 1/2 MILE WEST
SOUTH INTO

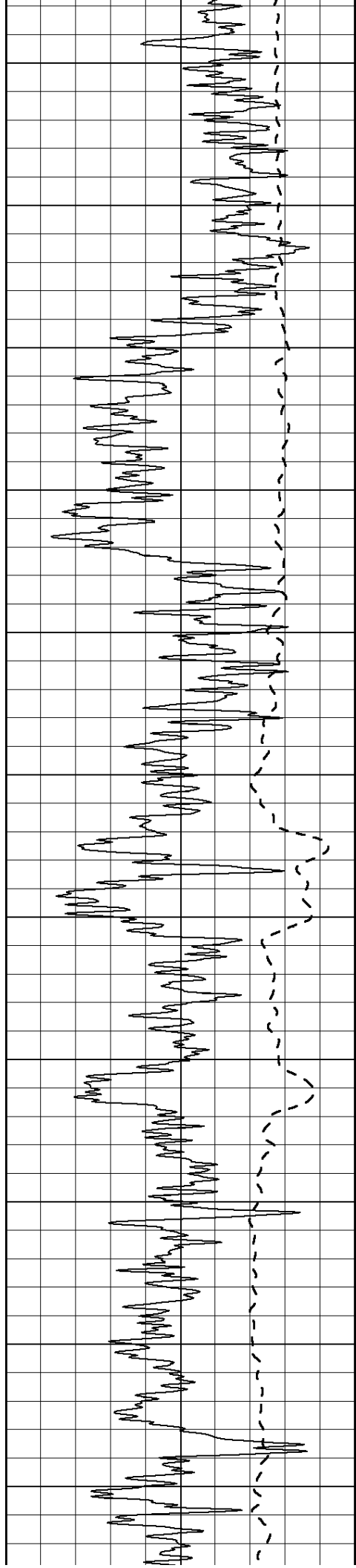
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0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50

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

50	RLL3 X10 (Ohm-m)	500





500

550

600

650

700

750

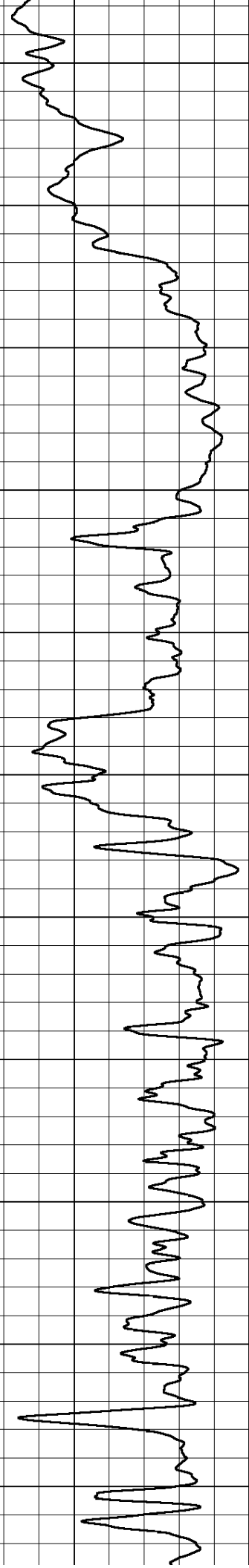
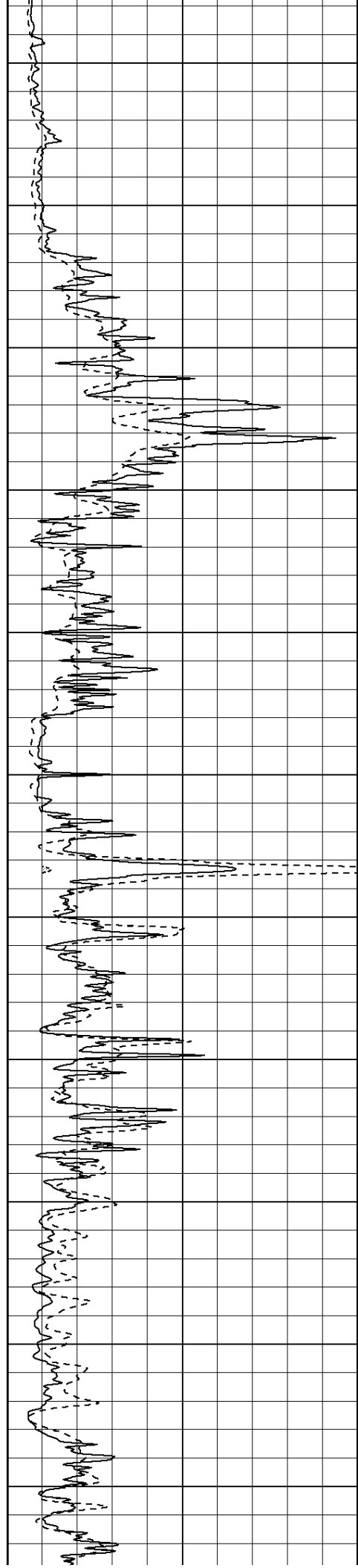
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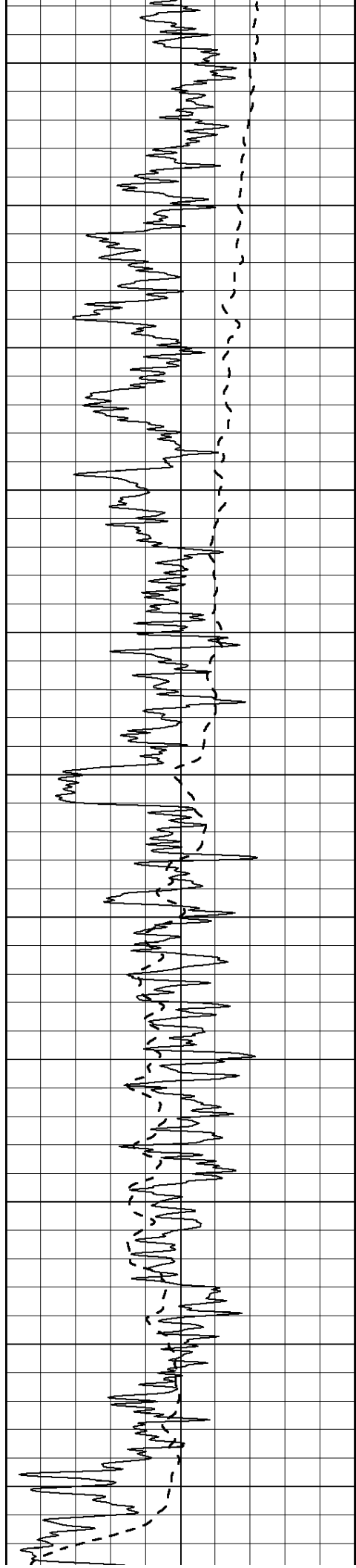
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900

950

1000





1050

1100

1150

1200

1250

1300

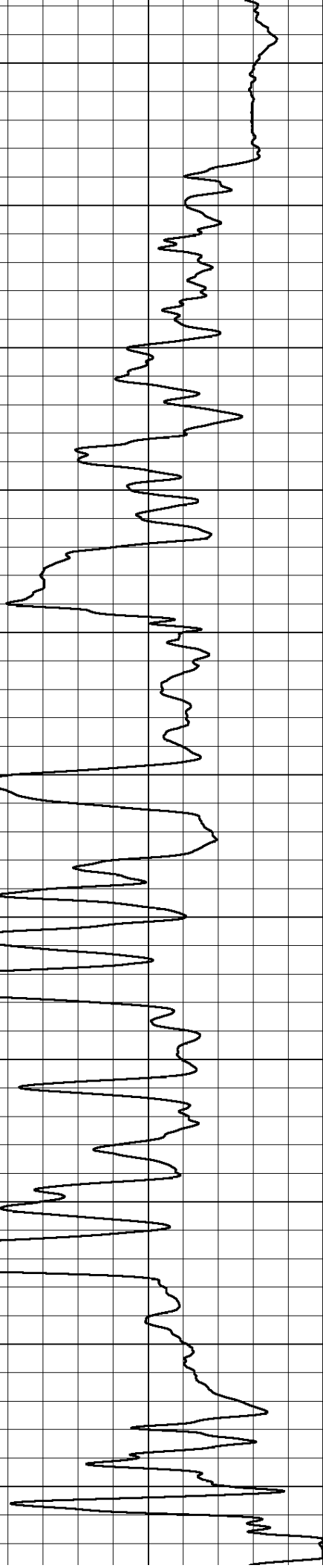
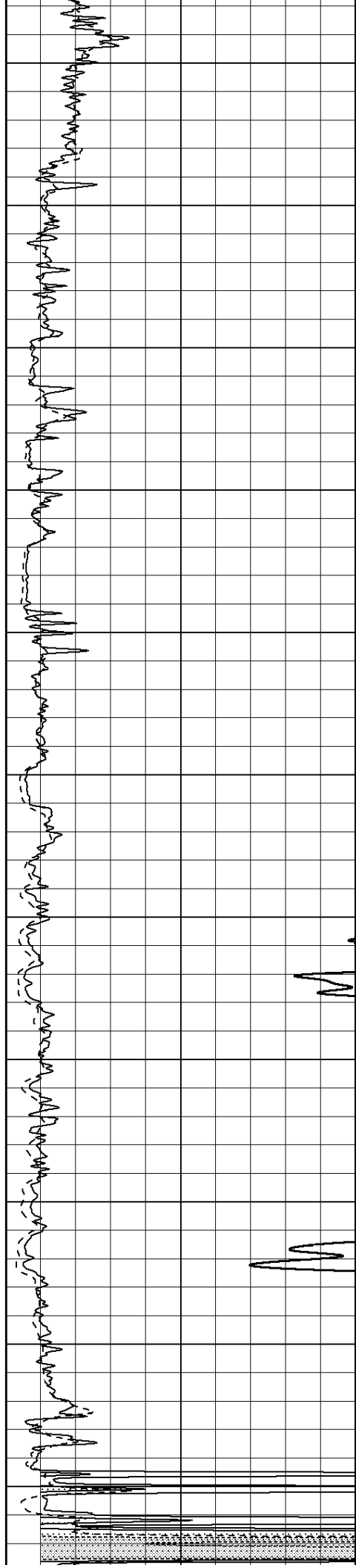
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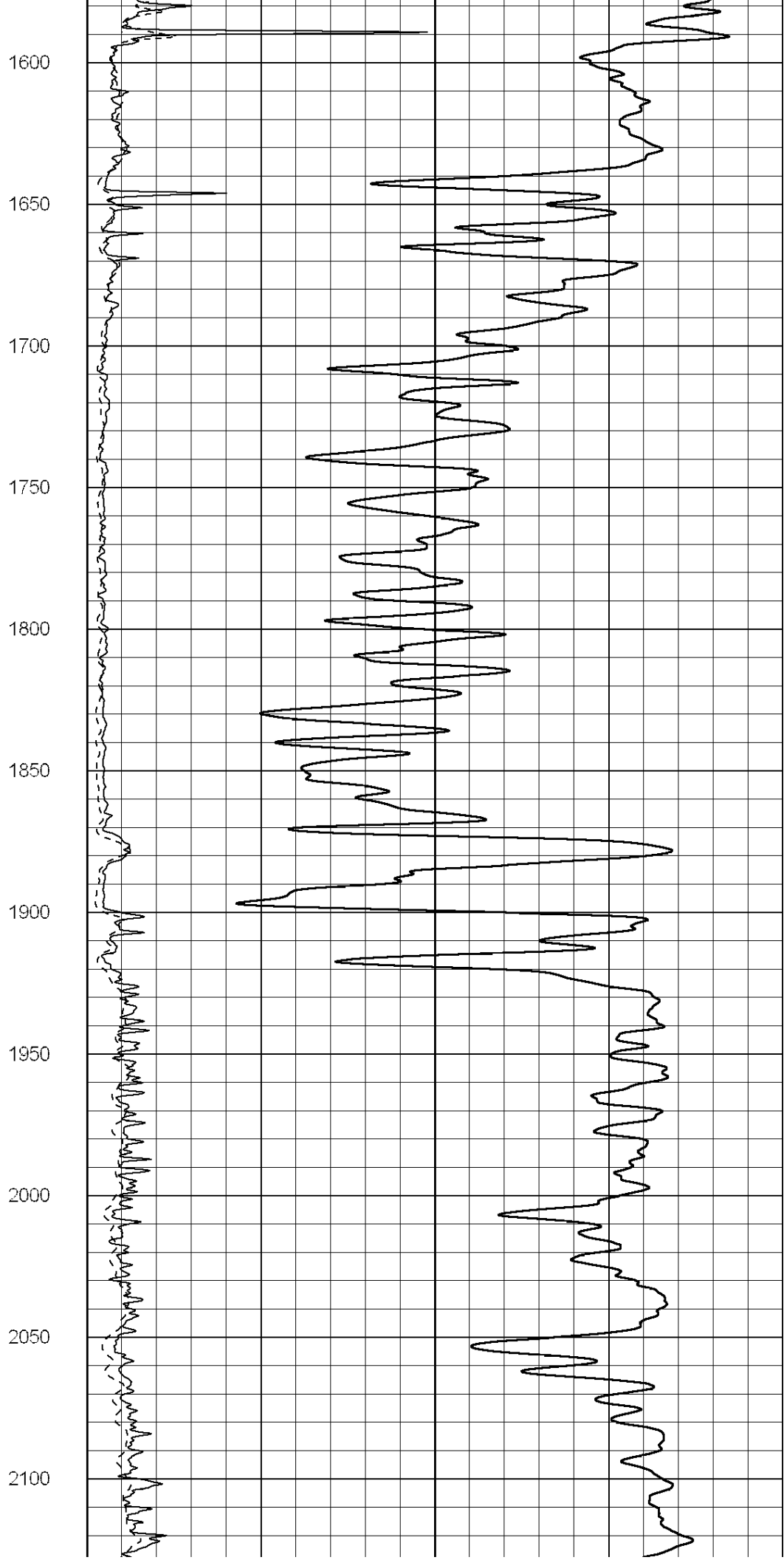
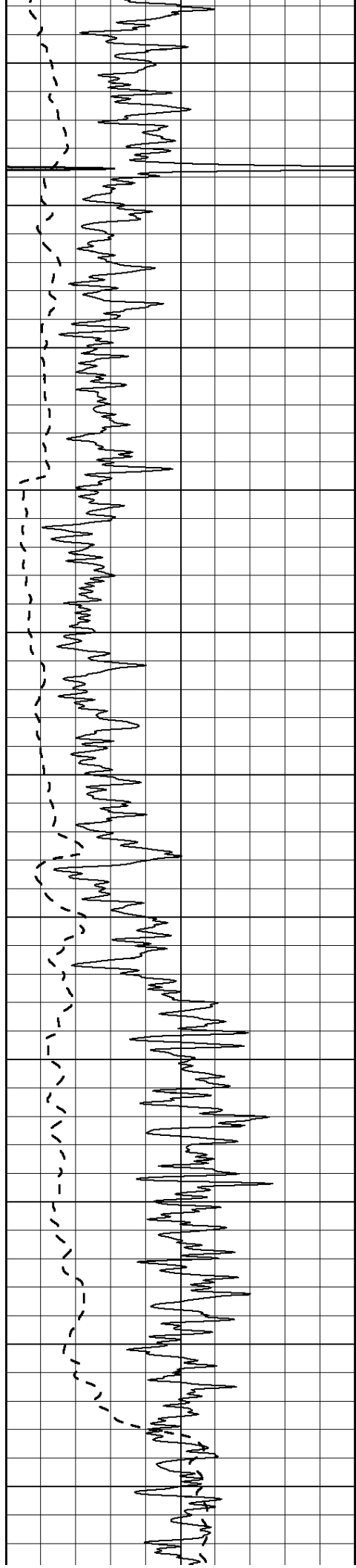
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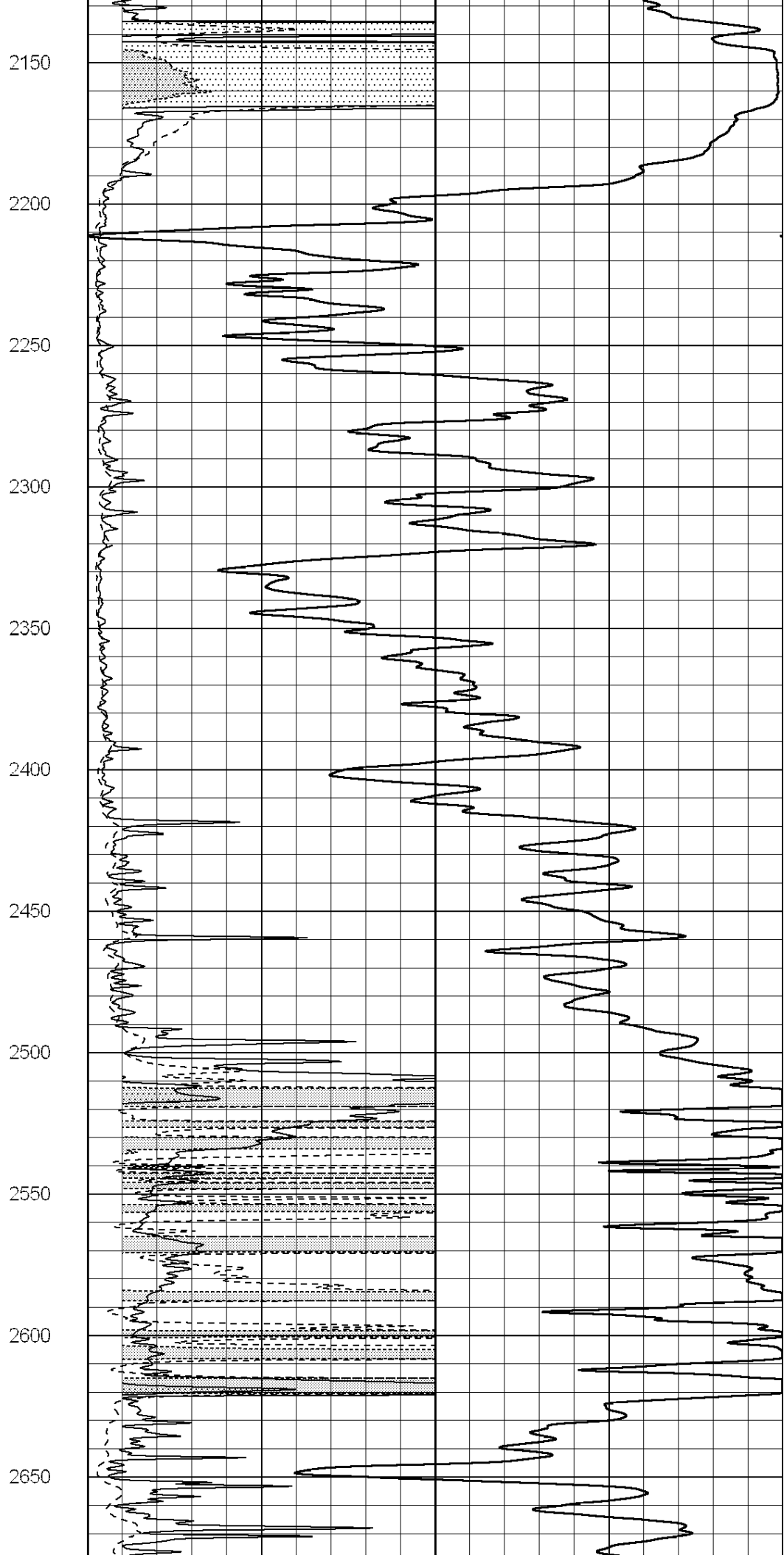
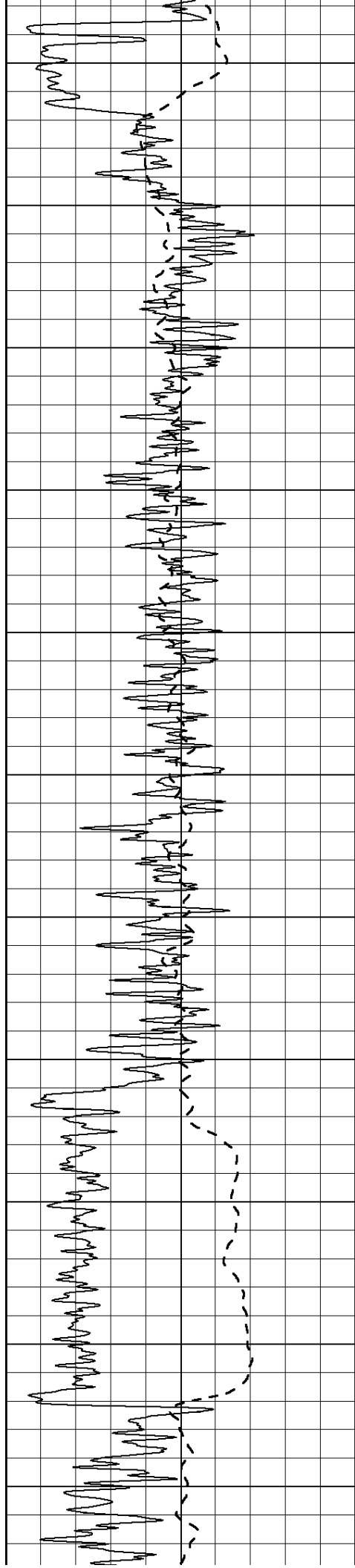
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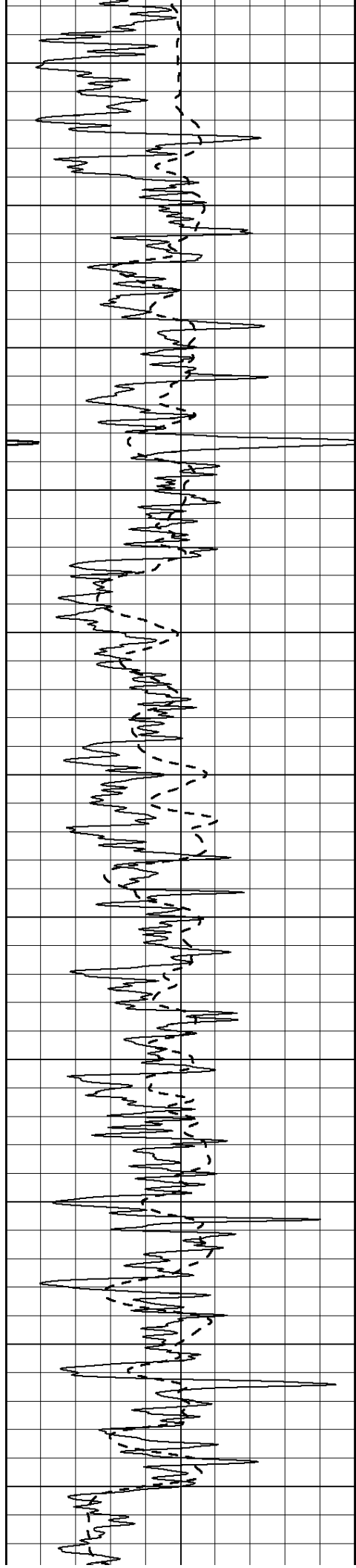
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1550









2700

2750

2800

2850

2900

2950

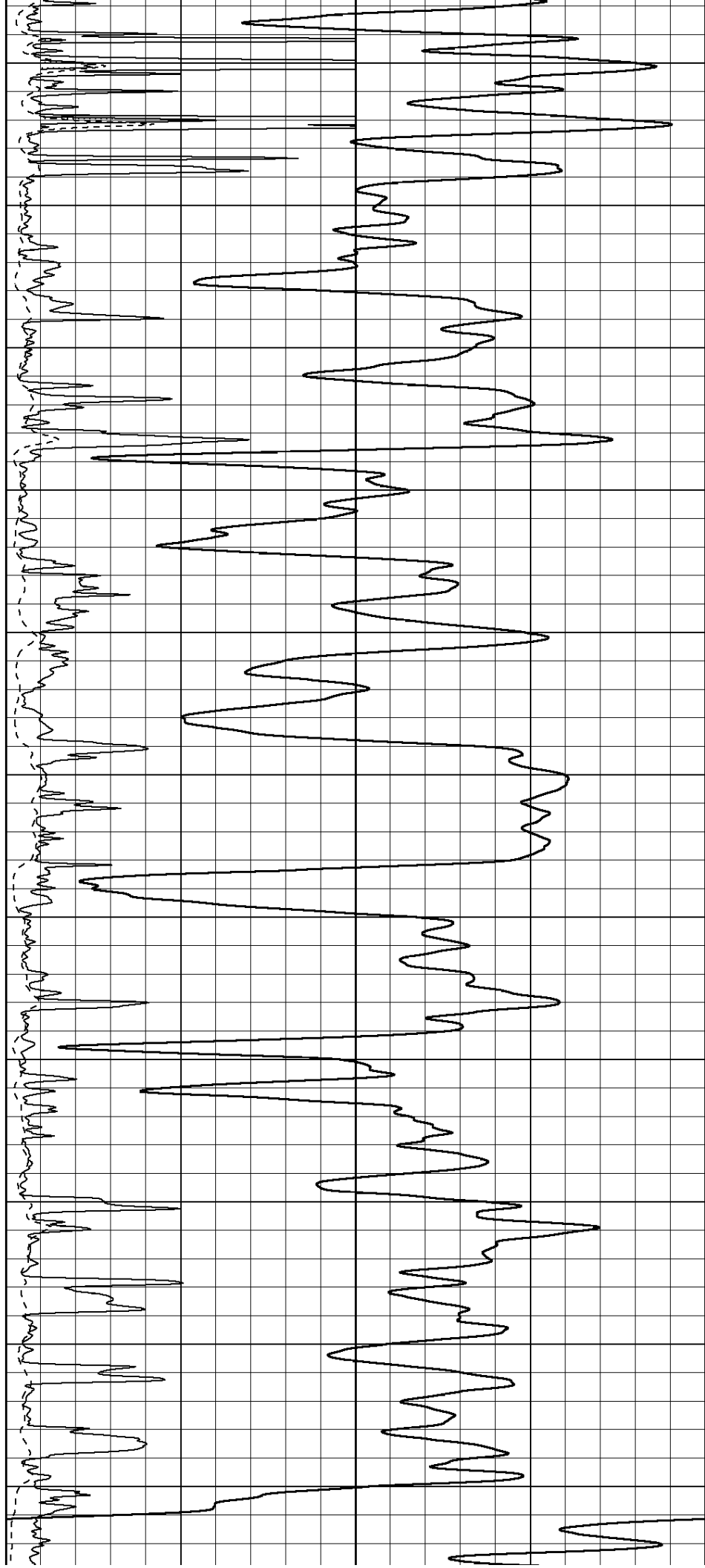
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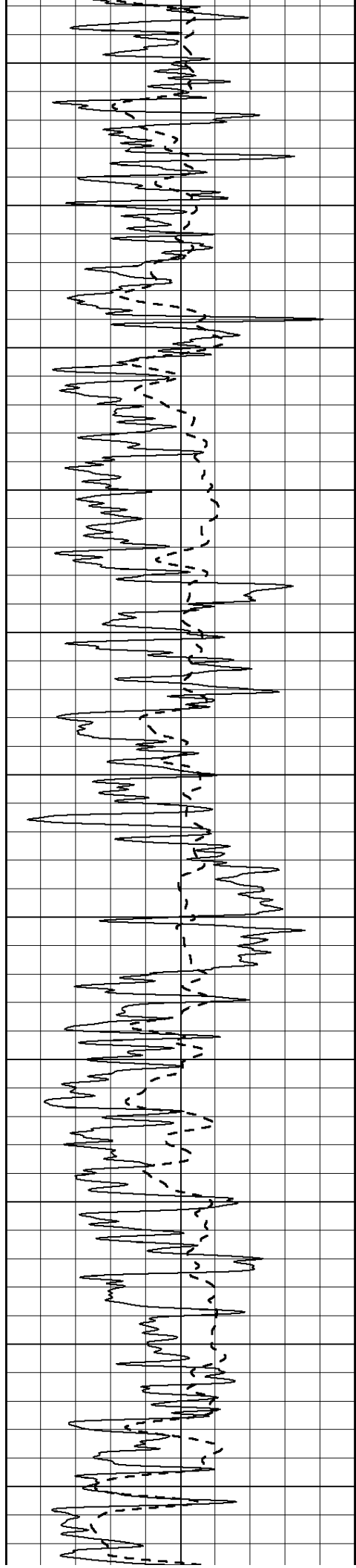
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3100

3150

3200





3250

3300

3350

3400

3450

3500

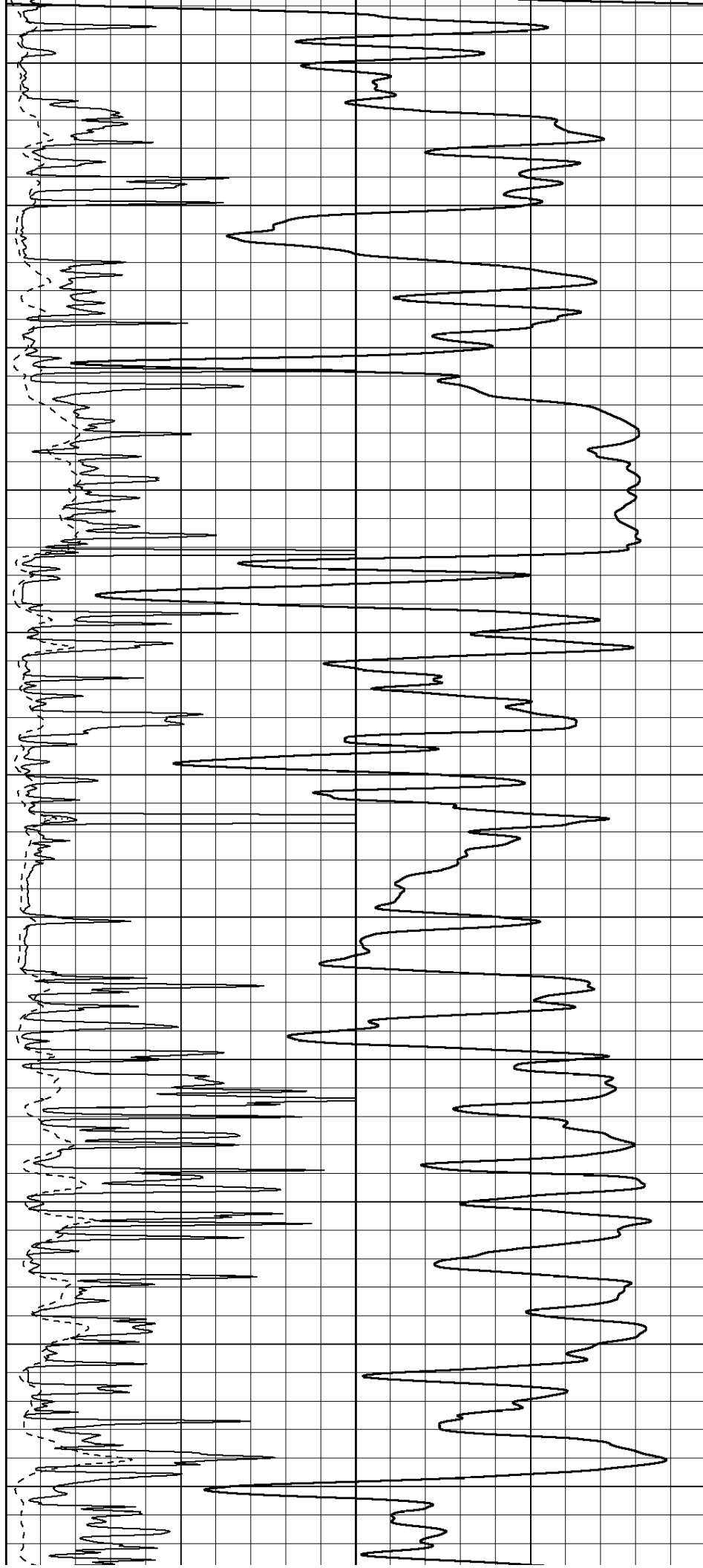
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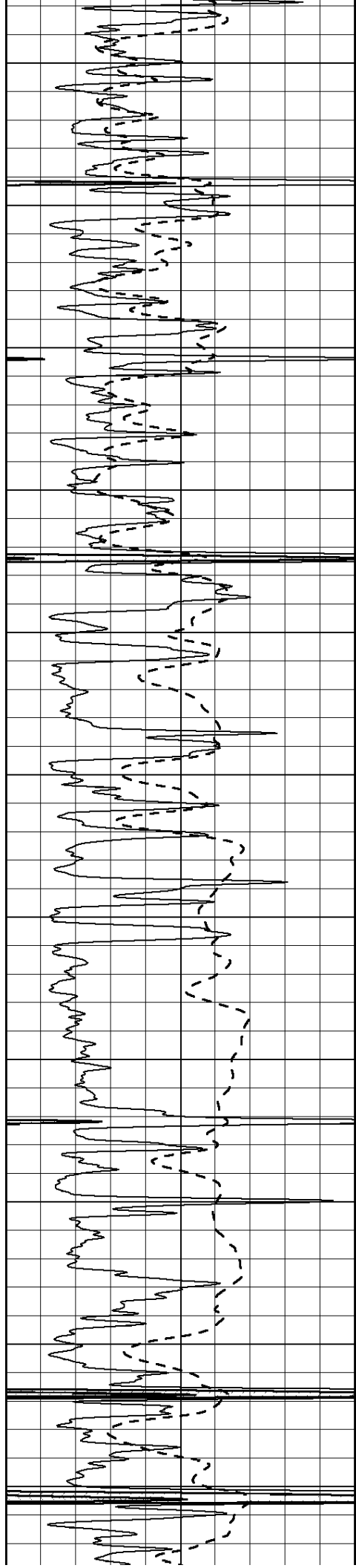
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3650

3700

3750





3800

3850

3900

3950

4000

4050

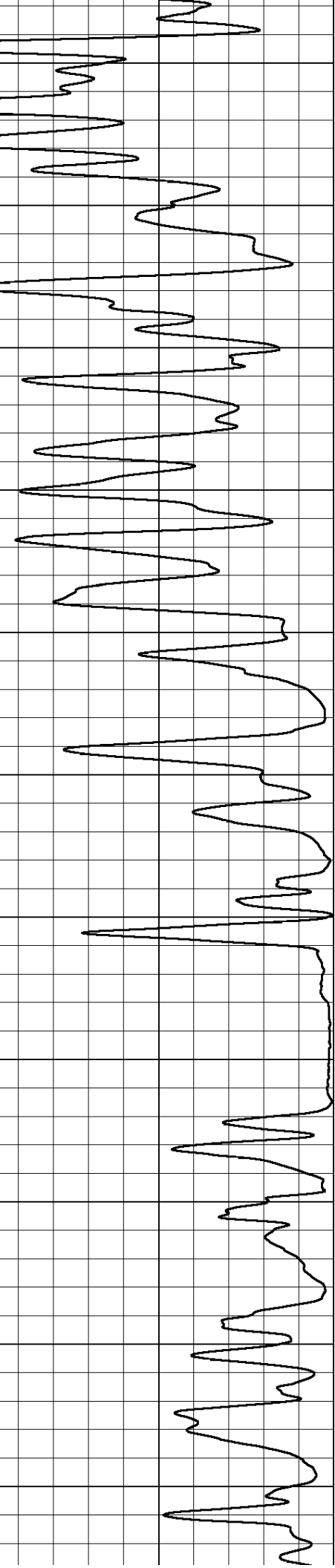
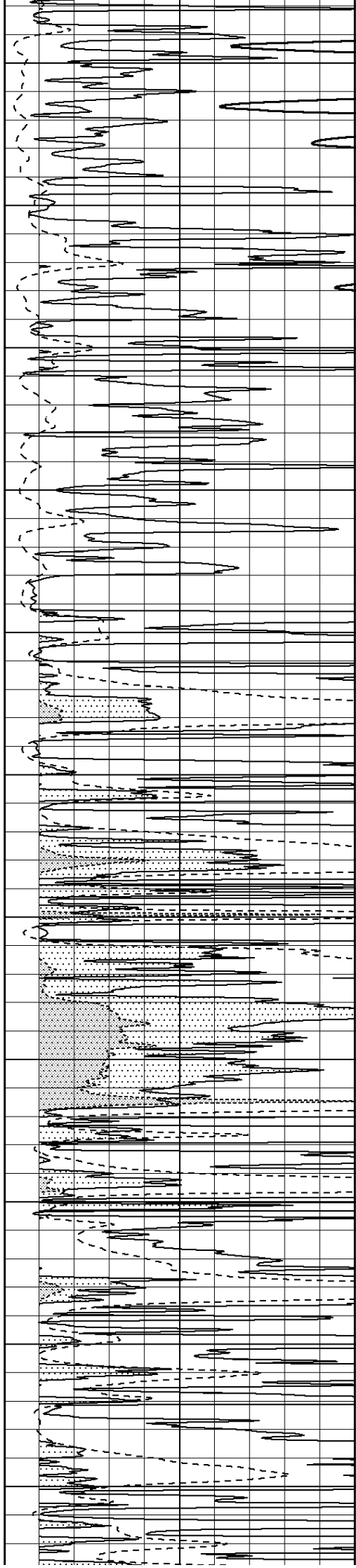
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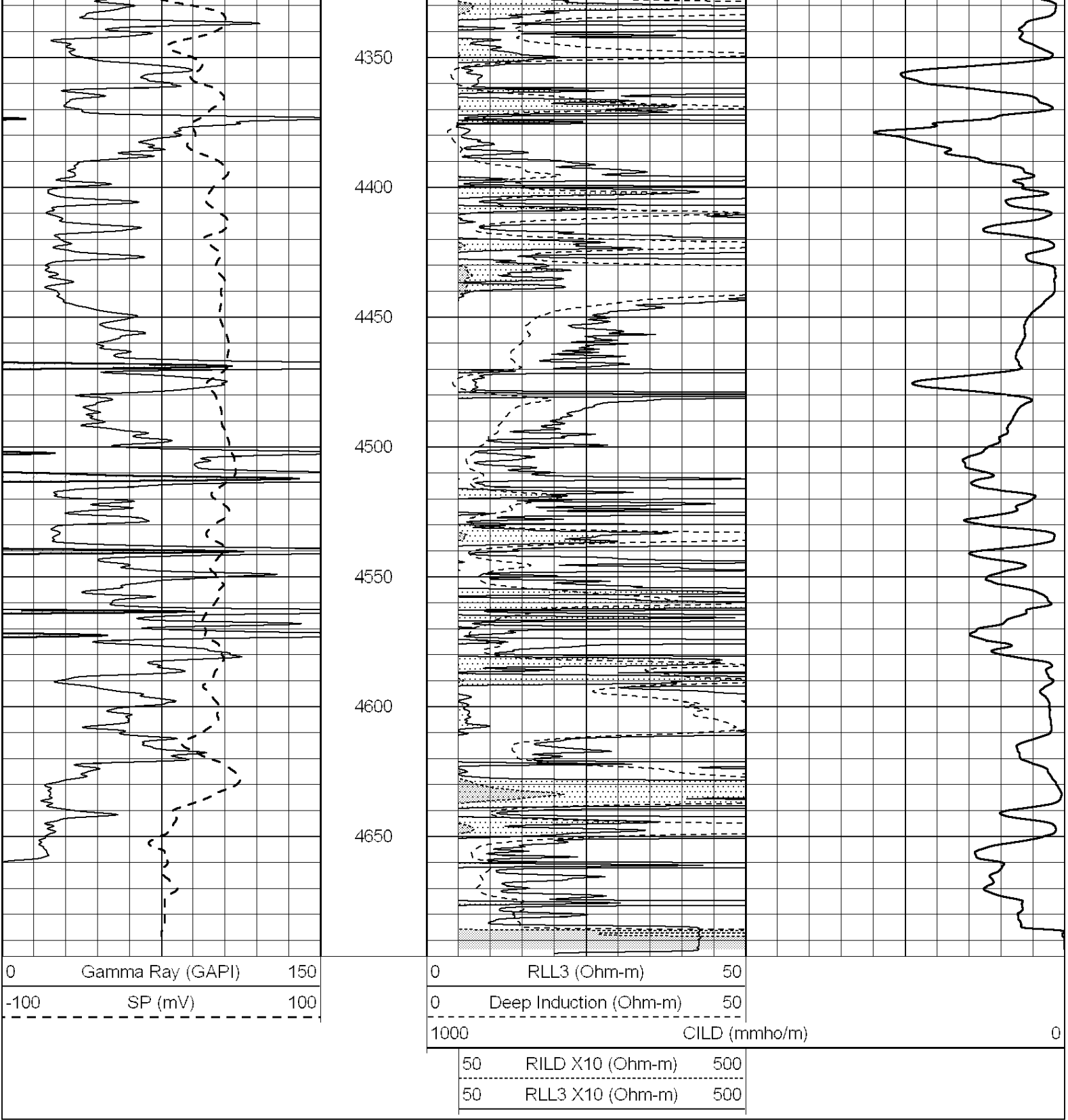
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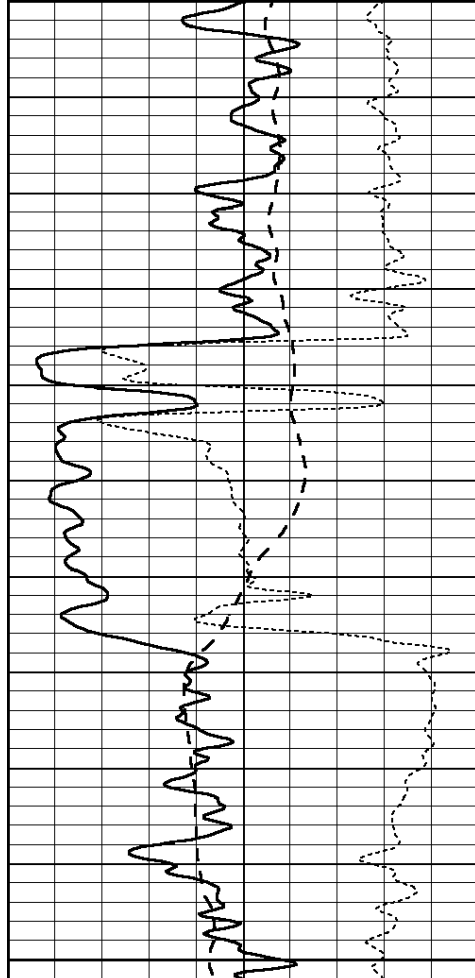
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4300





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Dataset Pathname: pass3.3					
Presentation Format: _dil					
Dataset Creation: Sat Oct 09 02:41:20 2010 by Calc Open-Cased 090629					
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	MEDIUM INDUCTION (Ohm-m) 2000
-250	Rxo/Rt		50	0.2	DEEP INDUCTION (Ohm-m) 2000

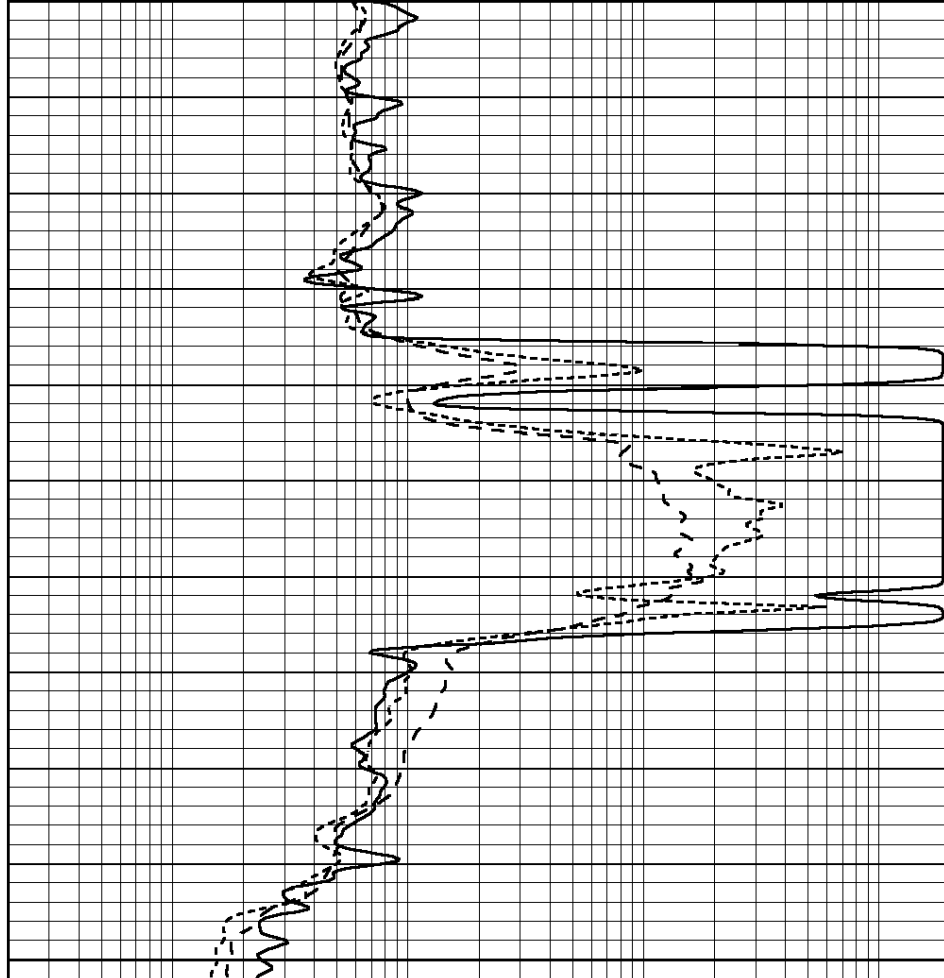


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

2100

2150

2200

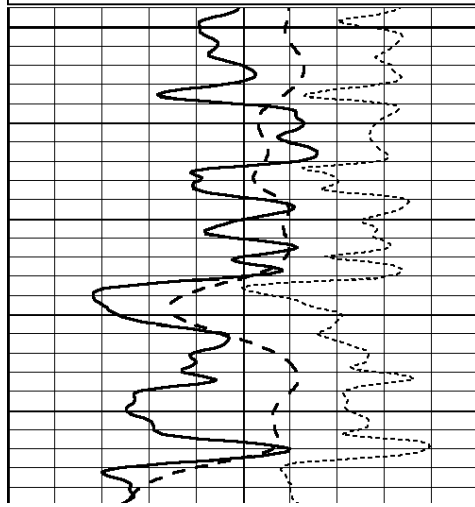


0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File: 005931ddn.db
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 Presentation Format: _dil
 Dataset Creation: Sat Oct 09 01:03:53 2010 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

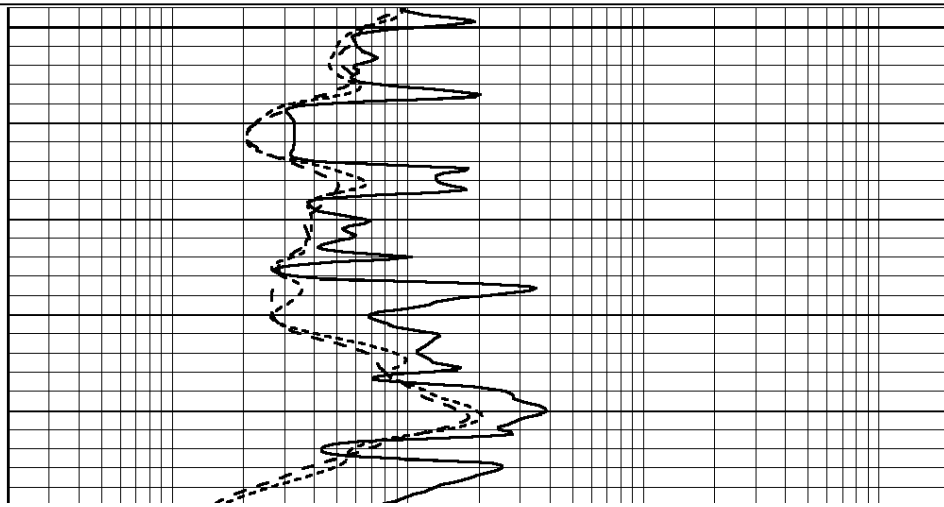
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-100	SP (mV)	100
-250	Rxo/Rt	50

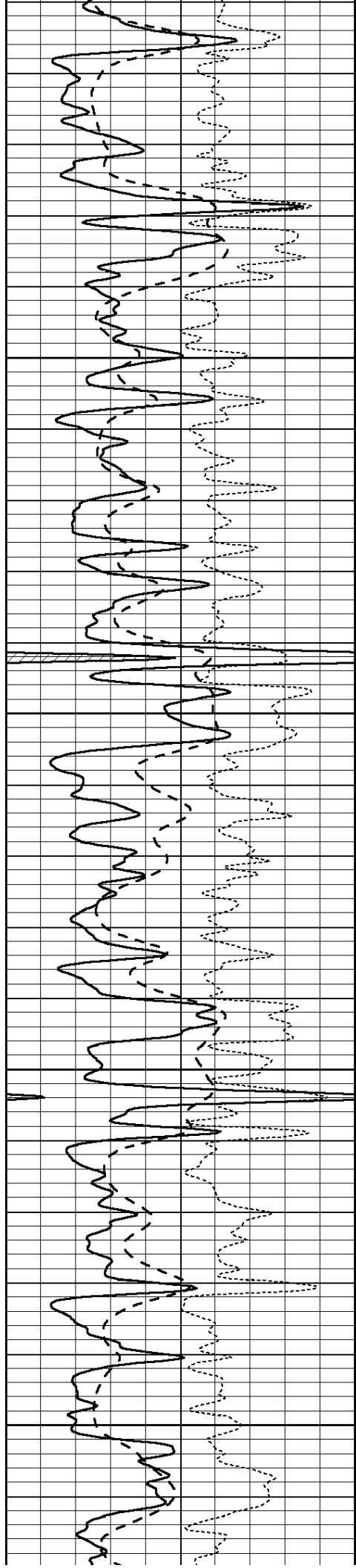
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



3700

3750





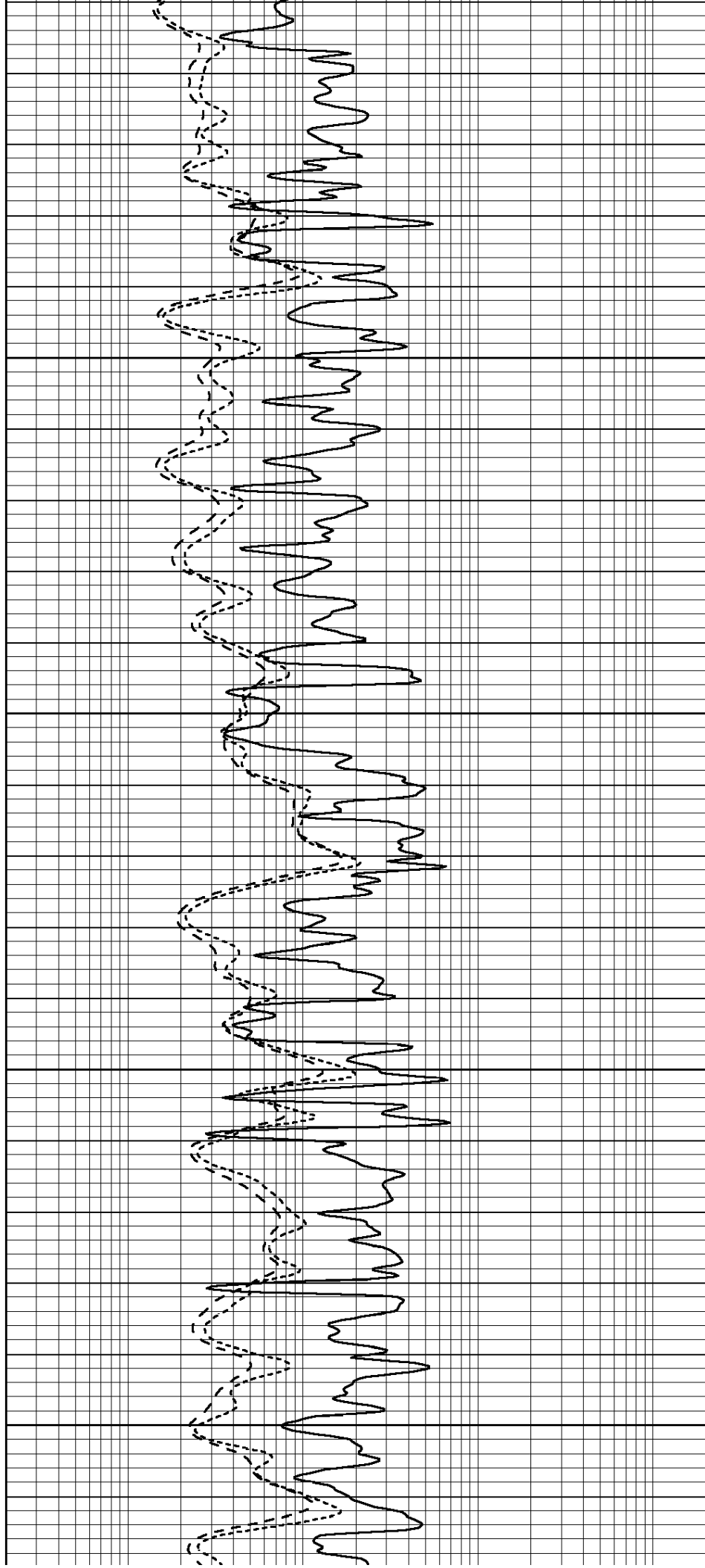
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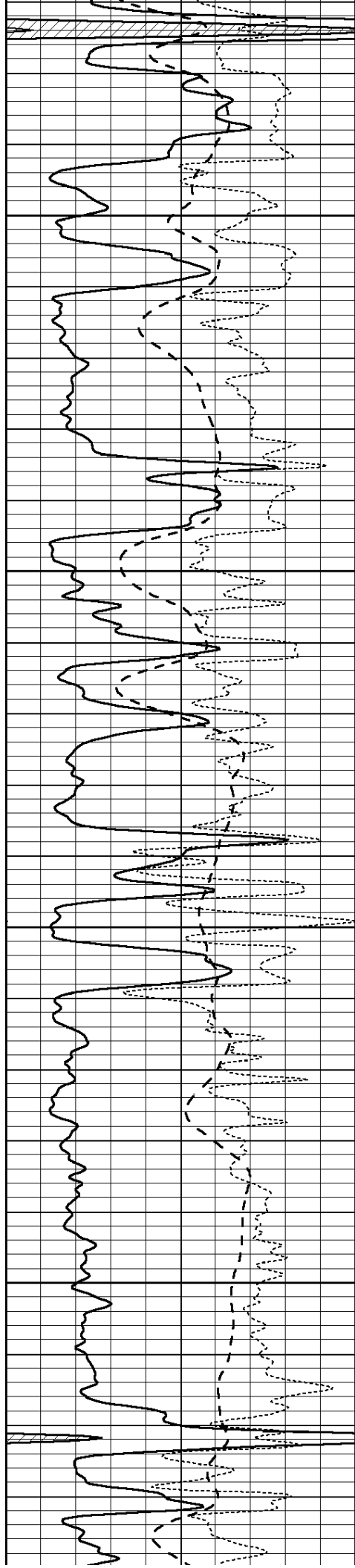
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3850

3900

3950



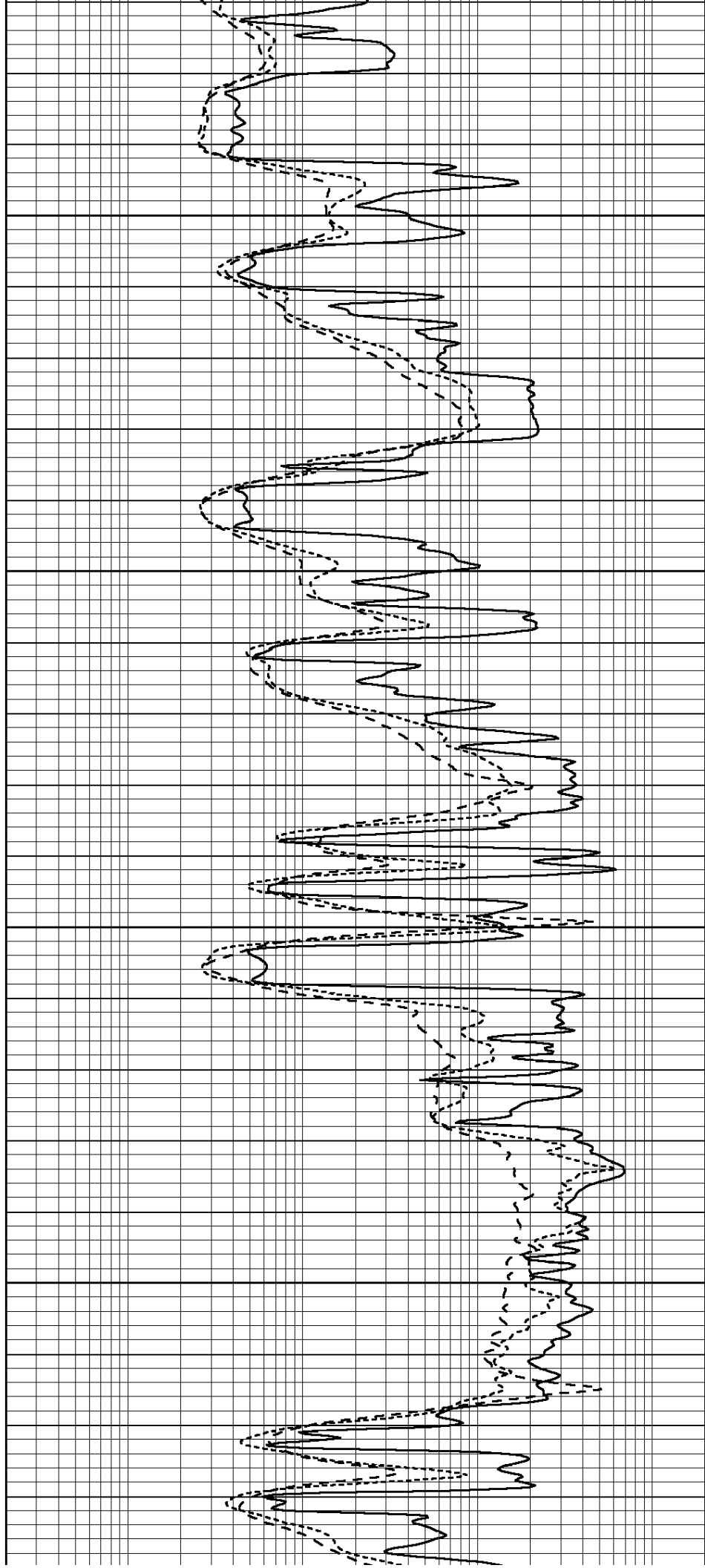


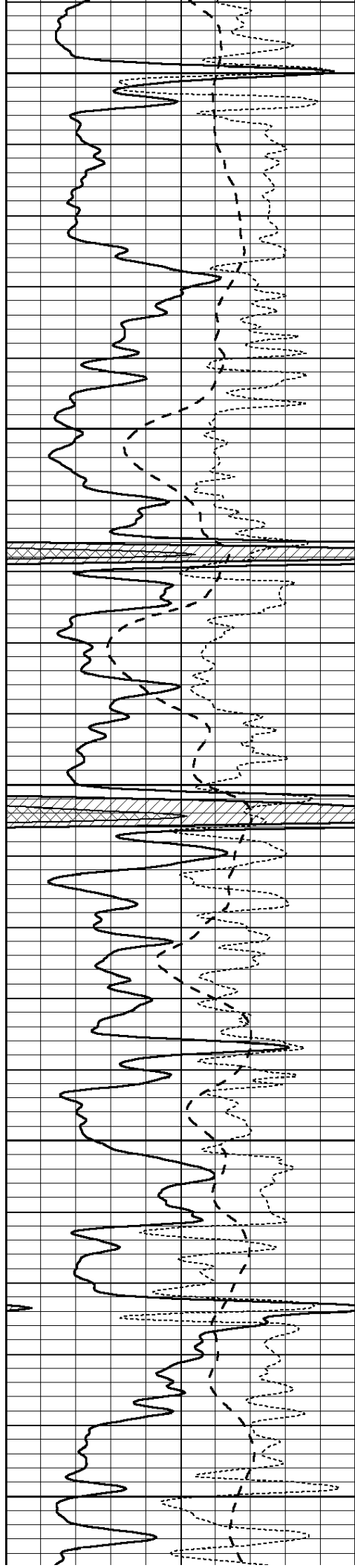
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4050

4100

4150





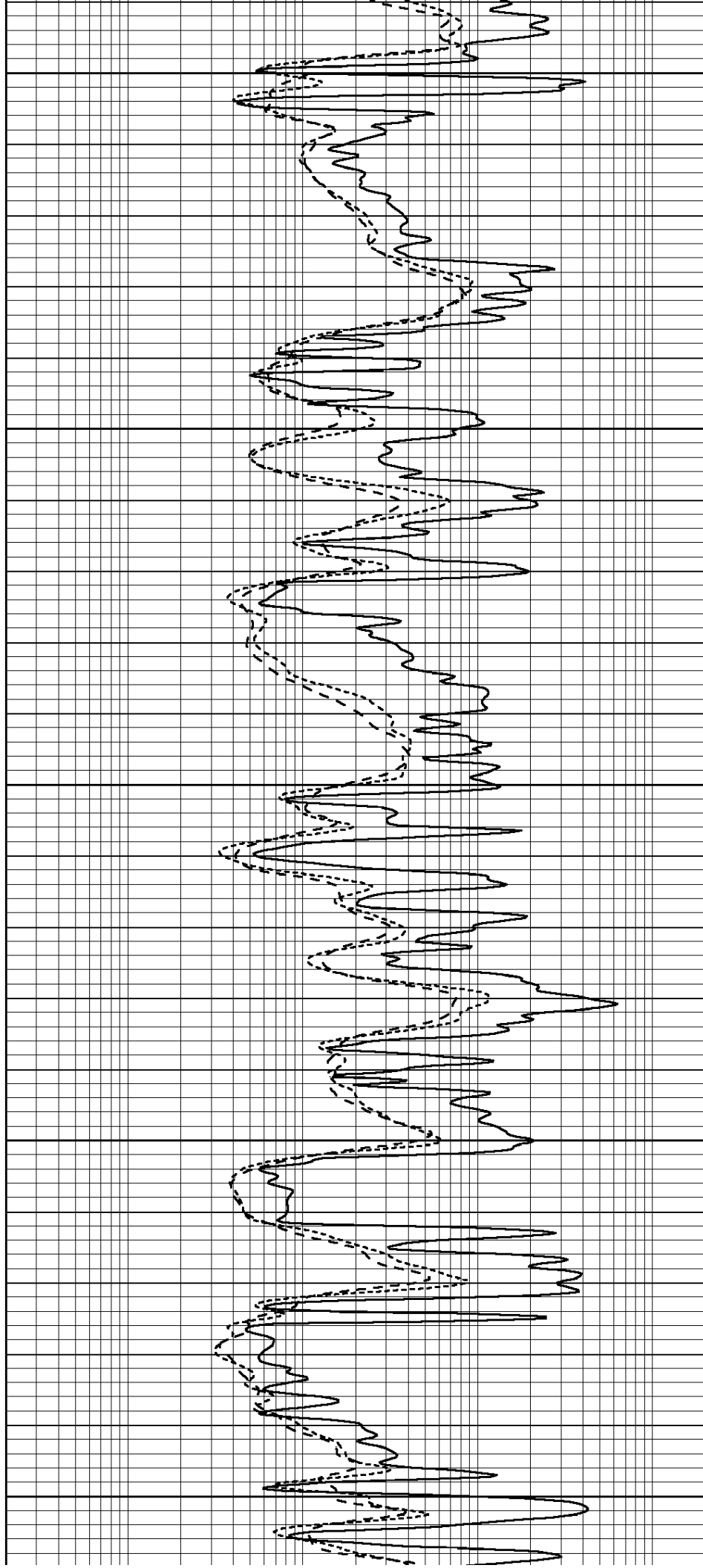
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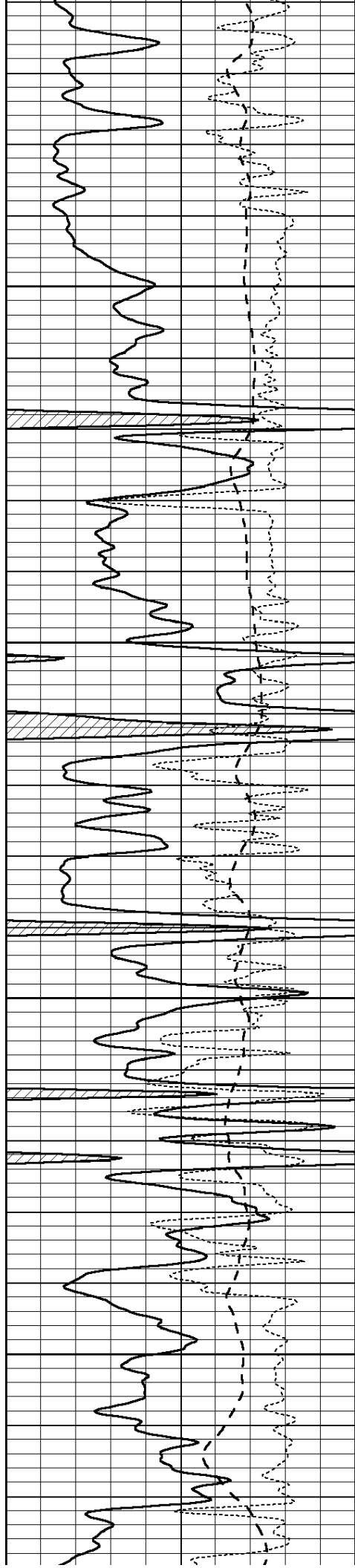
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4300

4350

4400



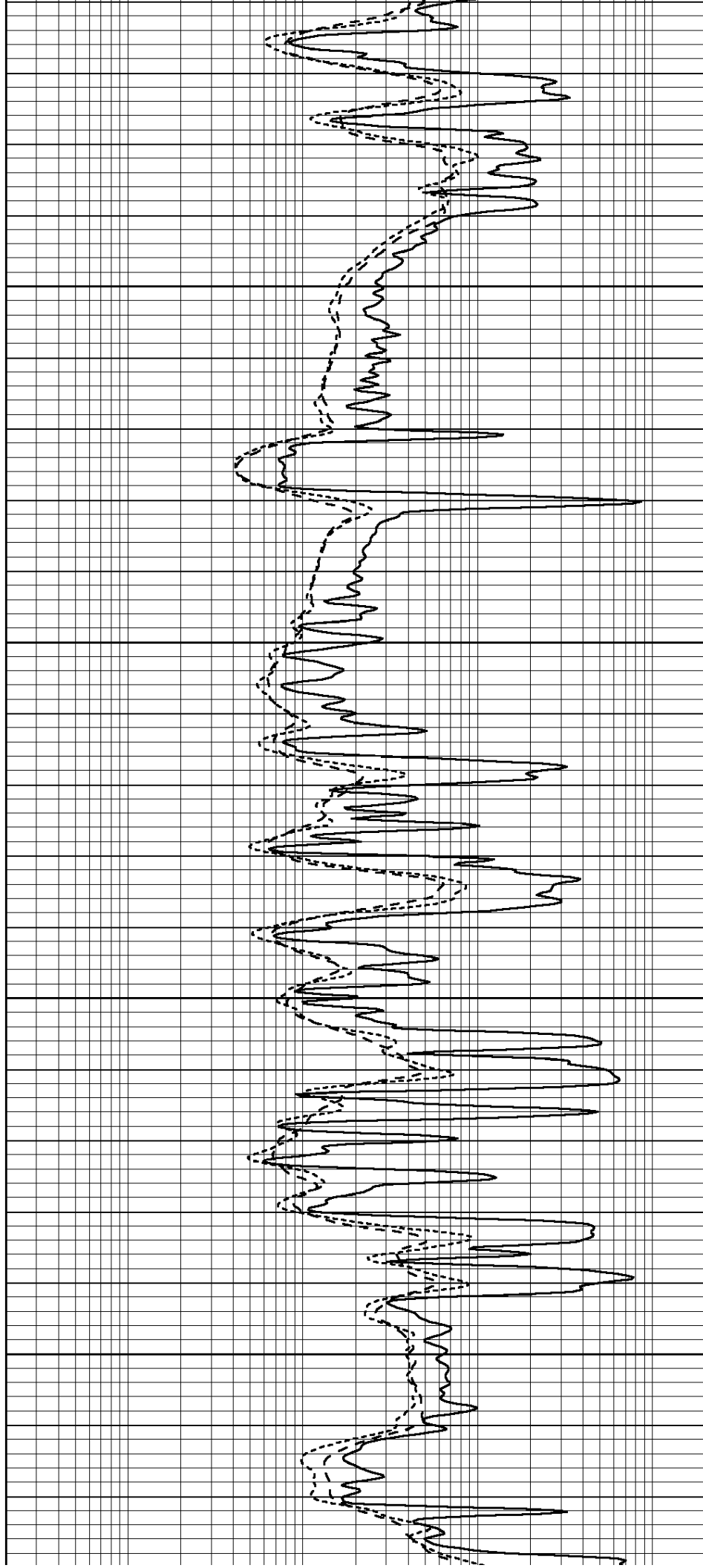


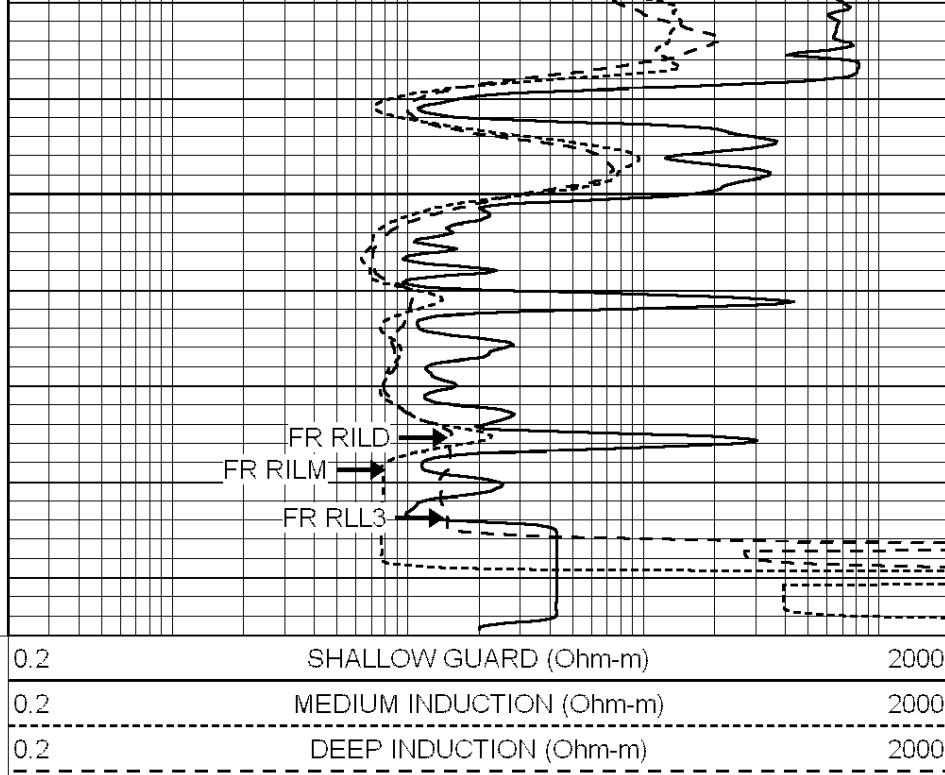
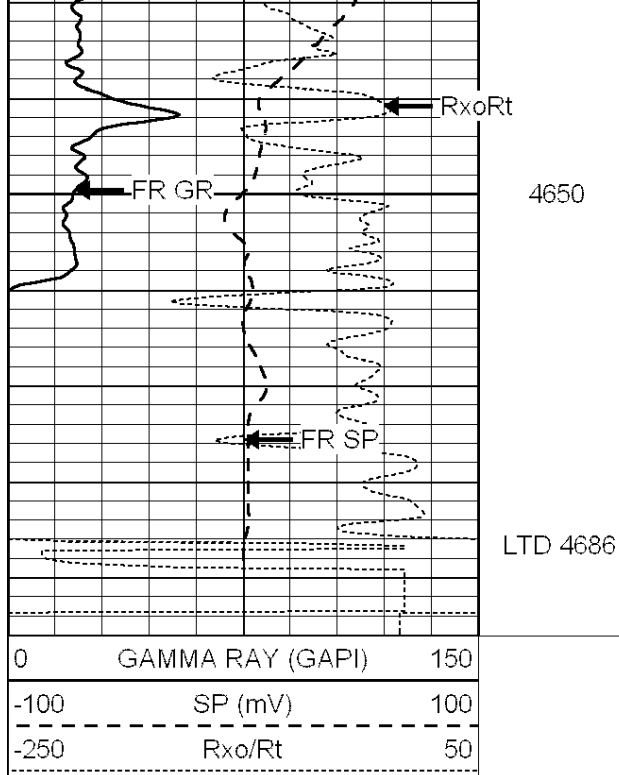
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4500

4550

4600

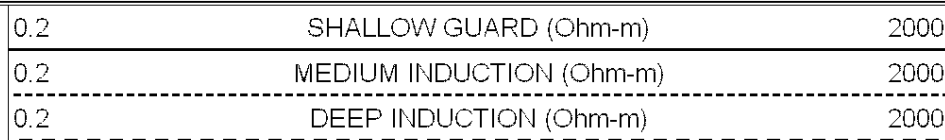
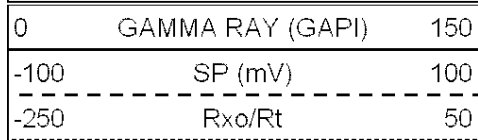


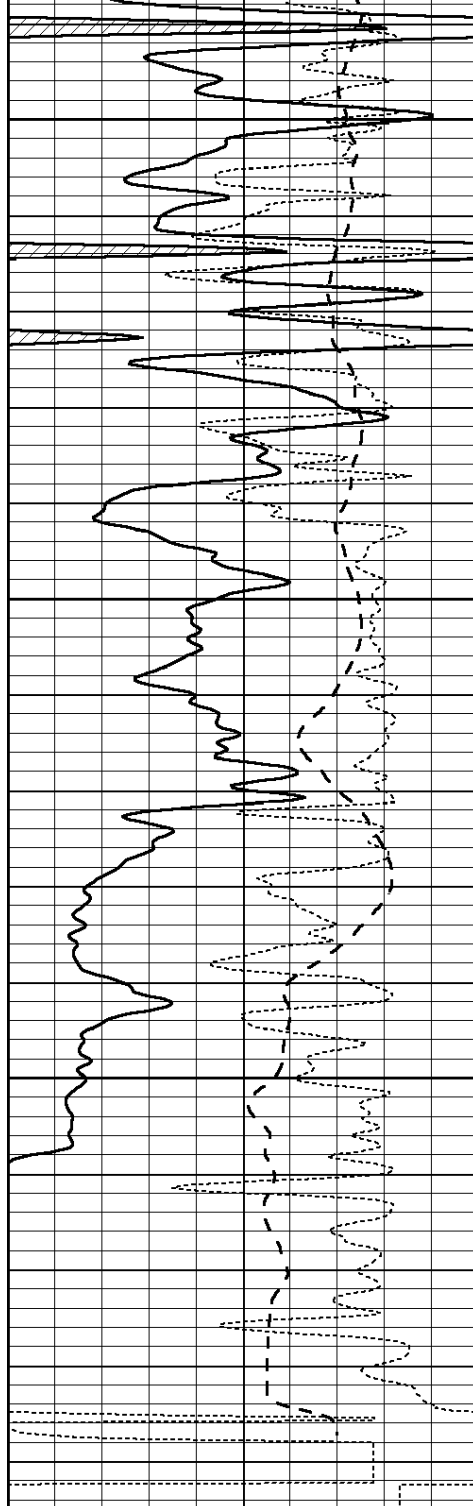


SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 005931ddn.db
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 Presentation Format: _dil
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 Charted by: Depth in Feet scaled 1:240



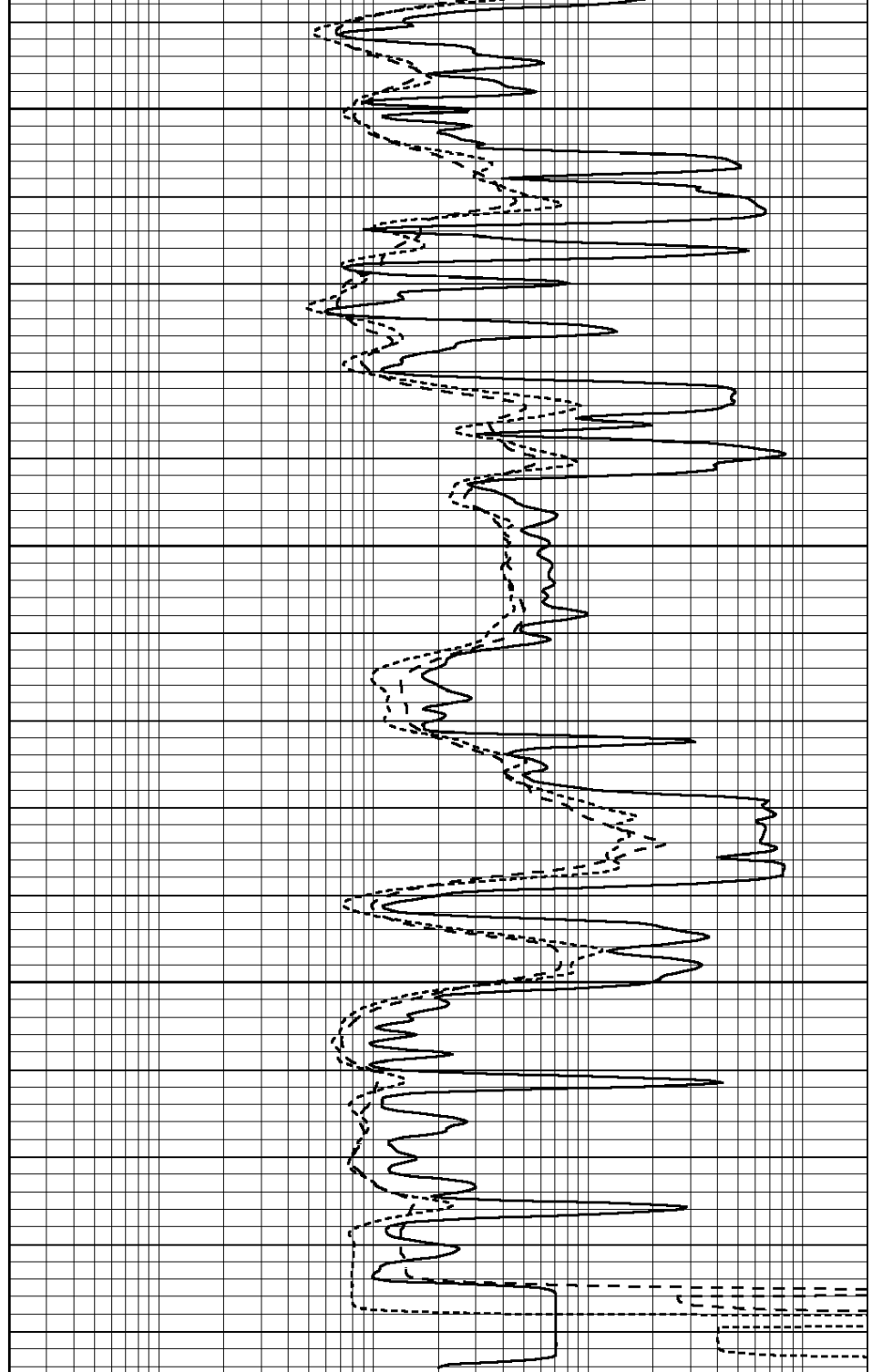


4550

4600

4650

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

Calibration Report

Database File: 005931ddn.db
 Dataset Pathname: pass3.3
 Dataset Creation: Sat Oct 09 02:41:20 2010 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE7-DILG
Surface Cal Performed:	Wed Jul 30 06:14:24 2008
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	621.923	8.759		
Medium	0.039	0.728	V	0.000	464.000	mmho/m	673.322	-26.058		
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		

Compensated Density Calibration Report

Serial-Model: GEAR4-GEARHART
Source / Verifier: 143 / 143
Master Calibration Performed: Tue May 11 10:59:10 2010

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1015.91	497.51	cps
Aluminum	2.600	g/cc	227.67	350.20	cps
Spine Angle = 76.79			Density/Spine Ratio = 0.579		
	Size		Reading		
Small Ring	8.00	in	2.50	V	
Large Ring	14.00	in	4.70	V	

Compensated Neutron Calibration Report

Serial Number: 5I
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:	GR6
Tool Model:	OPEN
Performed:	Wed Jul 14 14:14:30 2010

Calibrator Value:	150.0	GAPI
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Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps

Sensitivity:	0.5335	GAPI/cps
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