



**SUPERIOR**  
Hays,  
Kansas

**DUAL INDUCTION  
LOG**

Company	PFEIFER EXPLORATION, LLC.	Company	PFEIFER EXPLORATION, LLC.
Well	BRAUN - WERTH #3-1	Well	BRAUN - WERTH #3-1
Field	WILDCAT	Field	WILDCAT
County	ELLIS	County	ELLIS
State	KANSAS	State	KANSAS
Location:	API # : 15-051-26286-0000	Other Services	CDL/CNL MEL
	1400' FNL & 710' FWL		
	SEC 3 TWP 15S RGE 18W		
Permanent Datum	GROUND LEVEL	Elevation	2017
Log Measured From	KELLY BUSHING 8' A.G.L.		
Drilling Measured From	KELLY BUSHING		

Date	3/24/12
Run Number	ONE
Depth Driller	3700
Depth Logger	3702
Bottom Logged Interval	3700
Top Log Interval	00
Casing Driller	8 5/8"@222'
Casing Logger	222
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.0/49
pH / Fluid Loss	11.5/7.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.500@78F
Rmt @ Meas. Temp	.375@78F
Rmc @ Meas. Temp	.600@78F
Source of Rmt / Rmc	MEASUREMENT
Rm @ BHT	.345@113F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	6:30 P.M.
Maximum Recorded Temperature	113F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	ROGER MOSES
	JAY PFEIFER

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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 HAYS, KANSAS (785) 628-6395  
 DIRECTIONS  
 HAYS, KS. 6 1/4S. ON HWY 183 JUST PAST "ANTONINO RD.", E. INTO



**SUPERIOR**  
Hays,  
Kansas

**MAIN SECTION**

Database File: 408612ddn.db  
 Dataset Pathname: pass3.3  
 Presentation Format: \_dil2  
 Dataset Creation: Sat Mar 24 19:54:06 2012 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:600

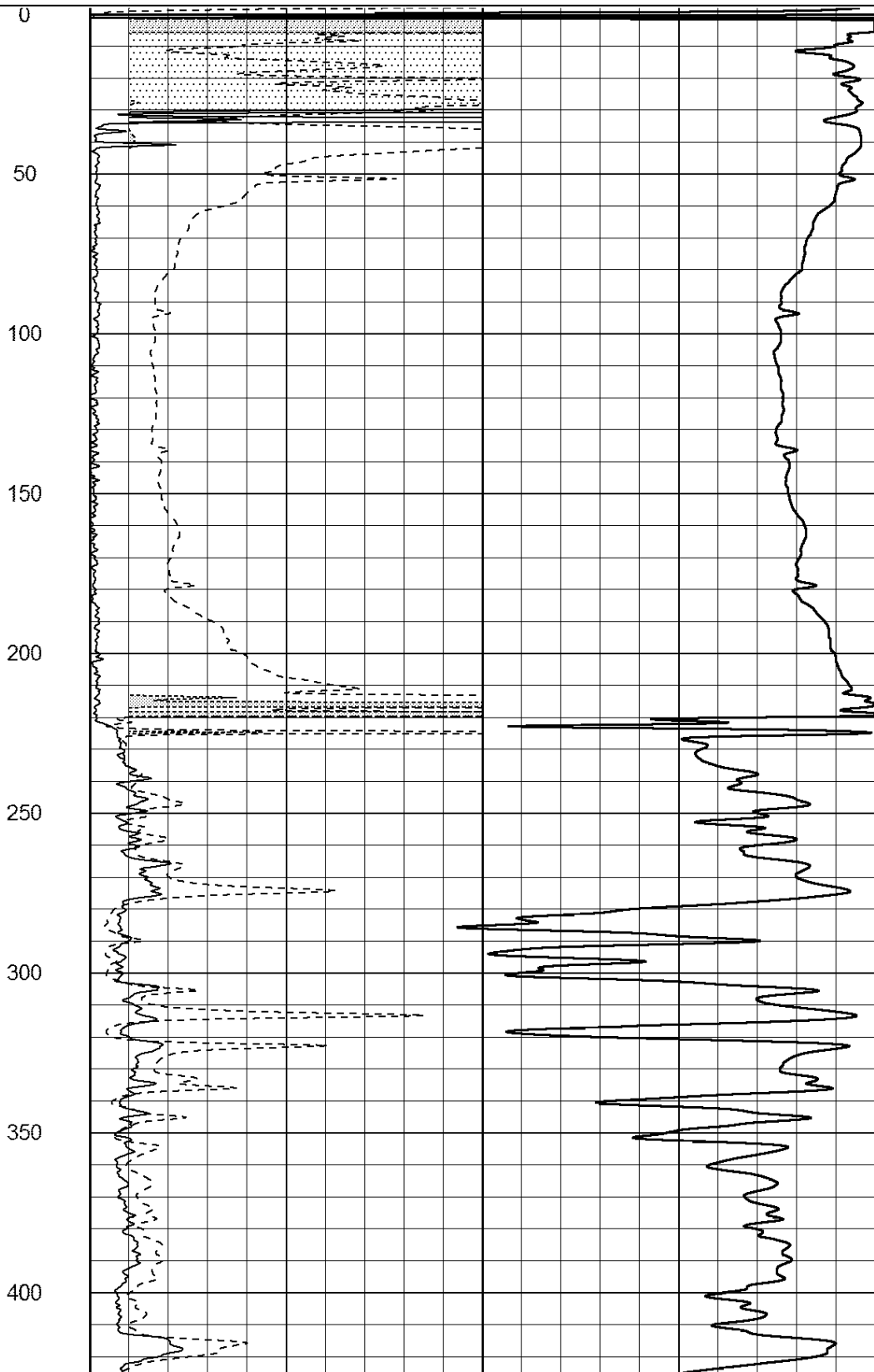
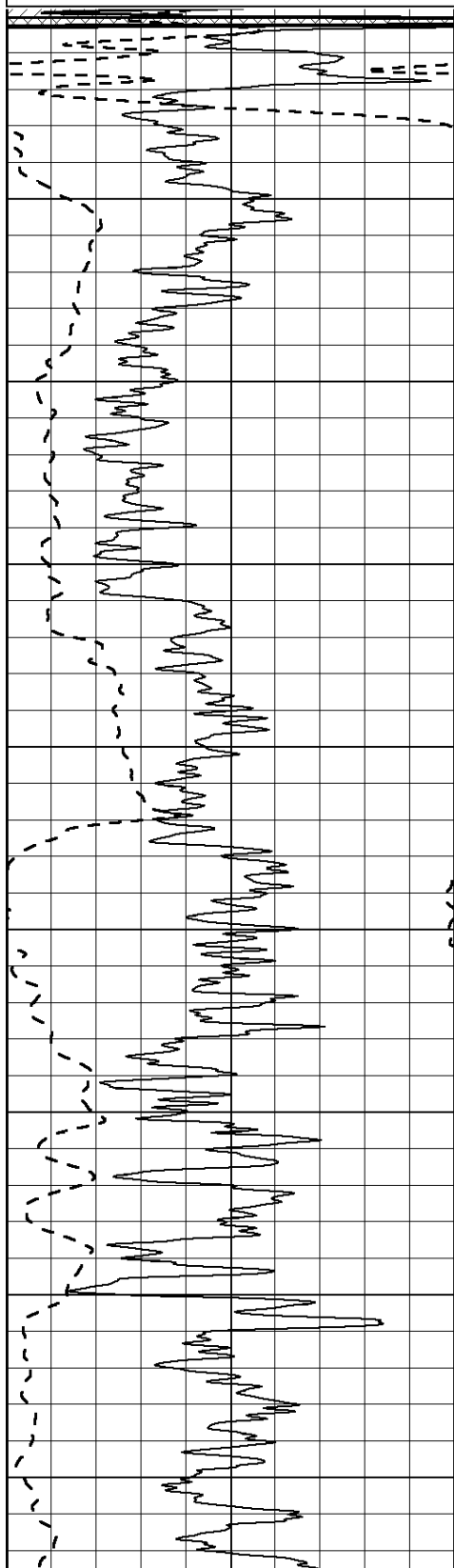
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-100	SP (mV)	100

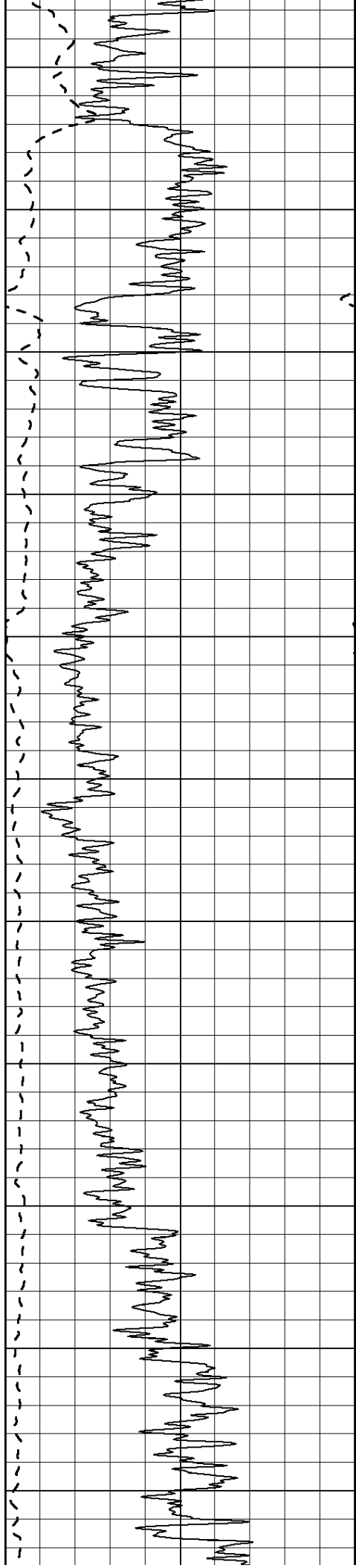
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

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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450

500

550

600

650

700

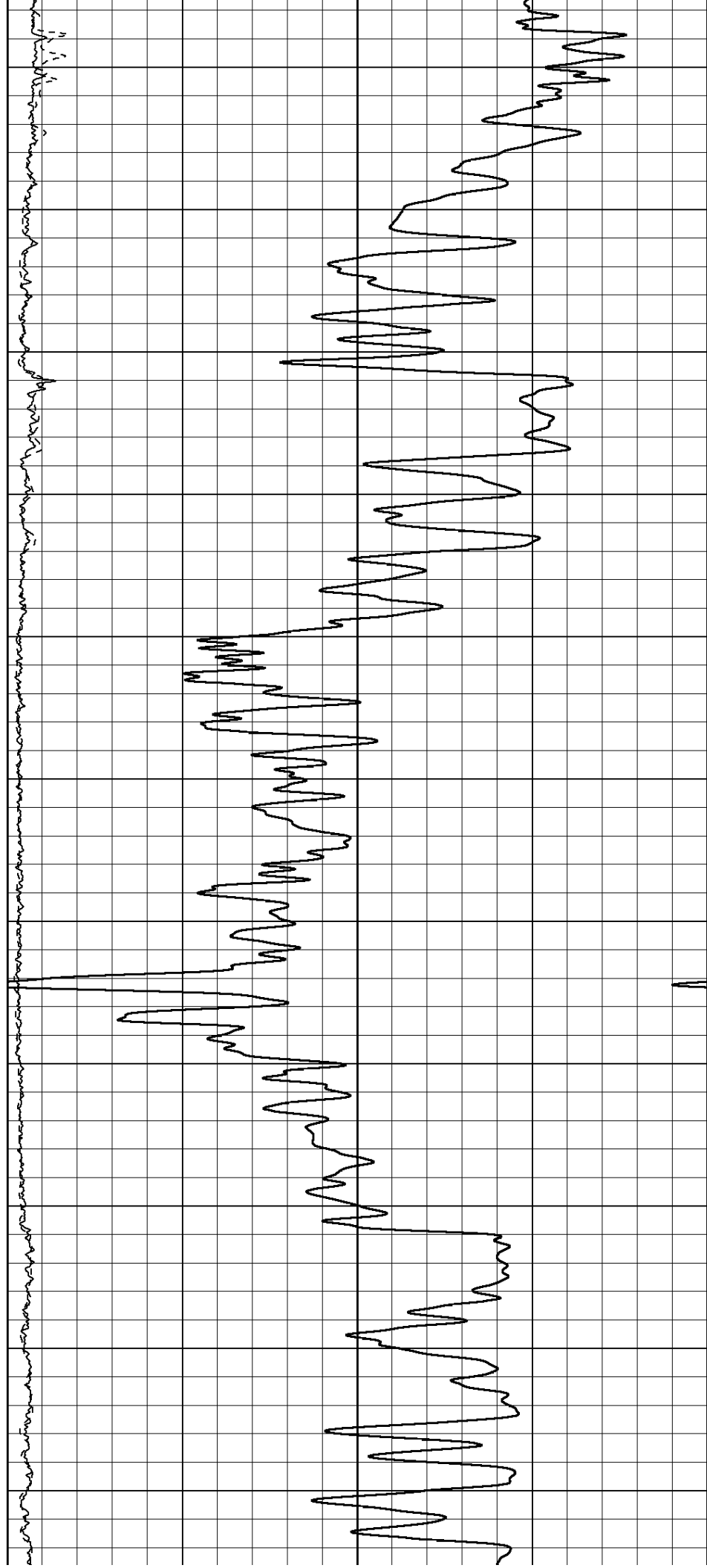
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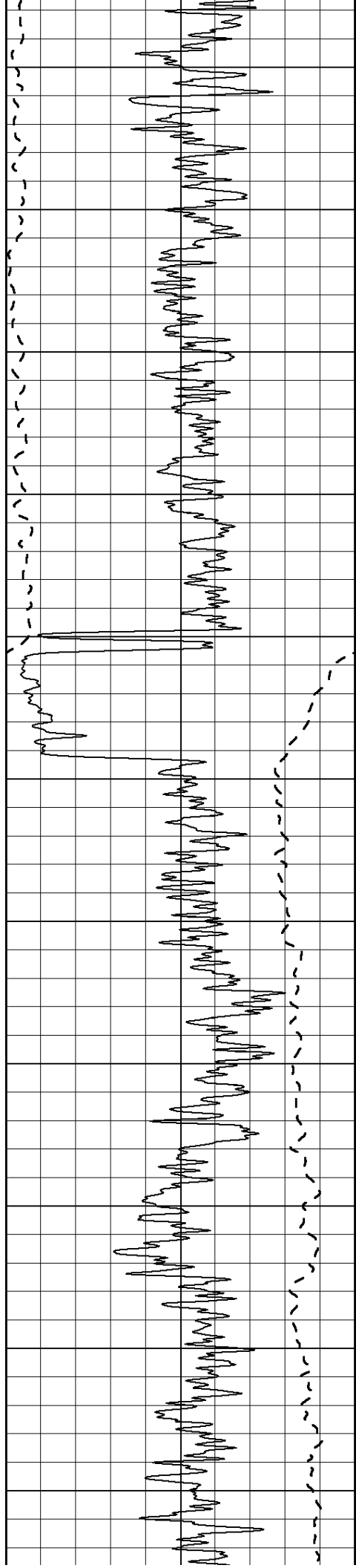
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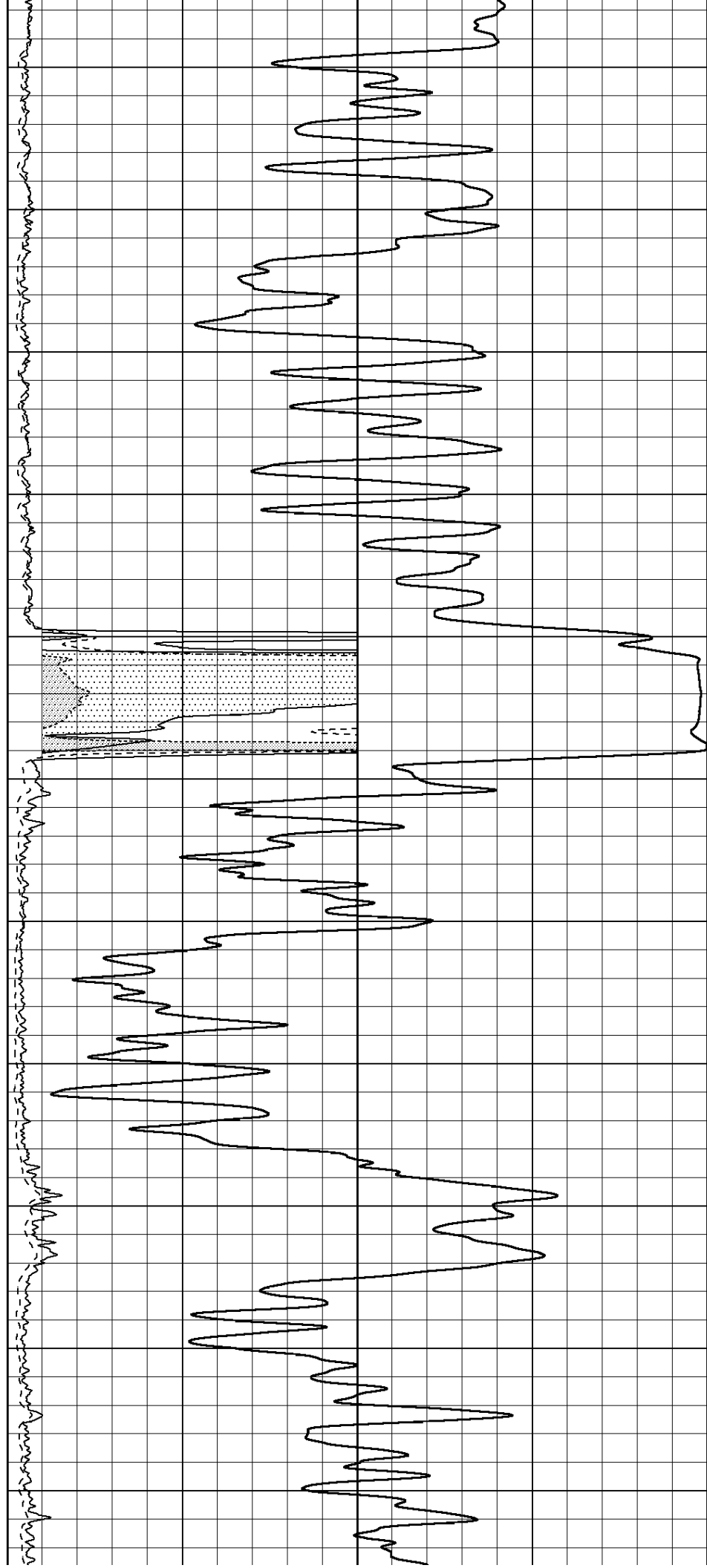
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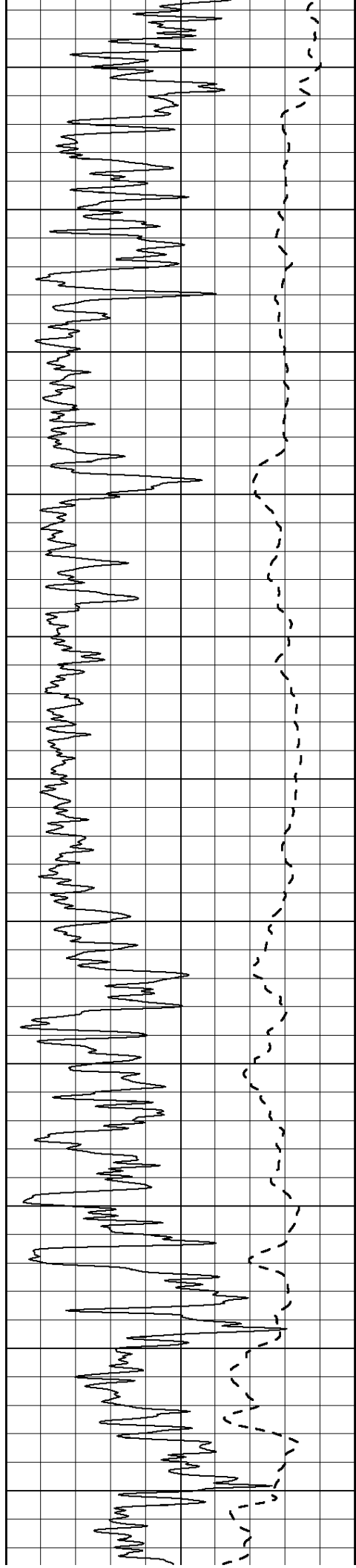
950





1000  
1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500





1550

1600

1650

1700

1750

1800

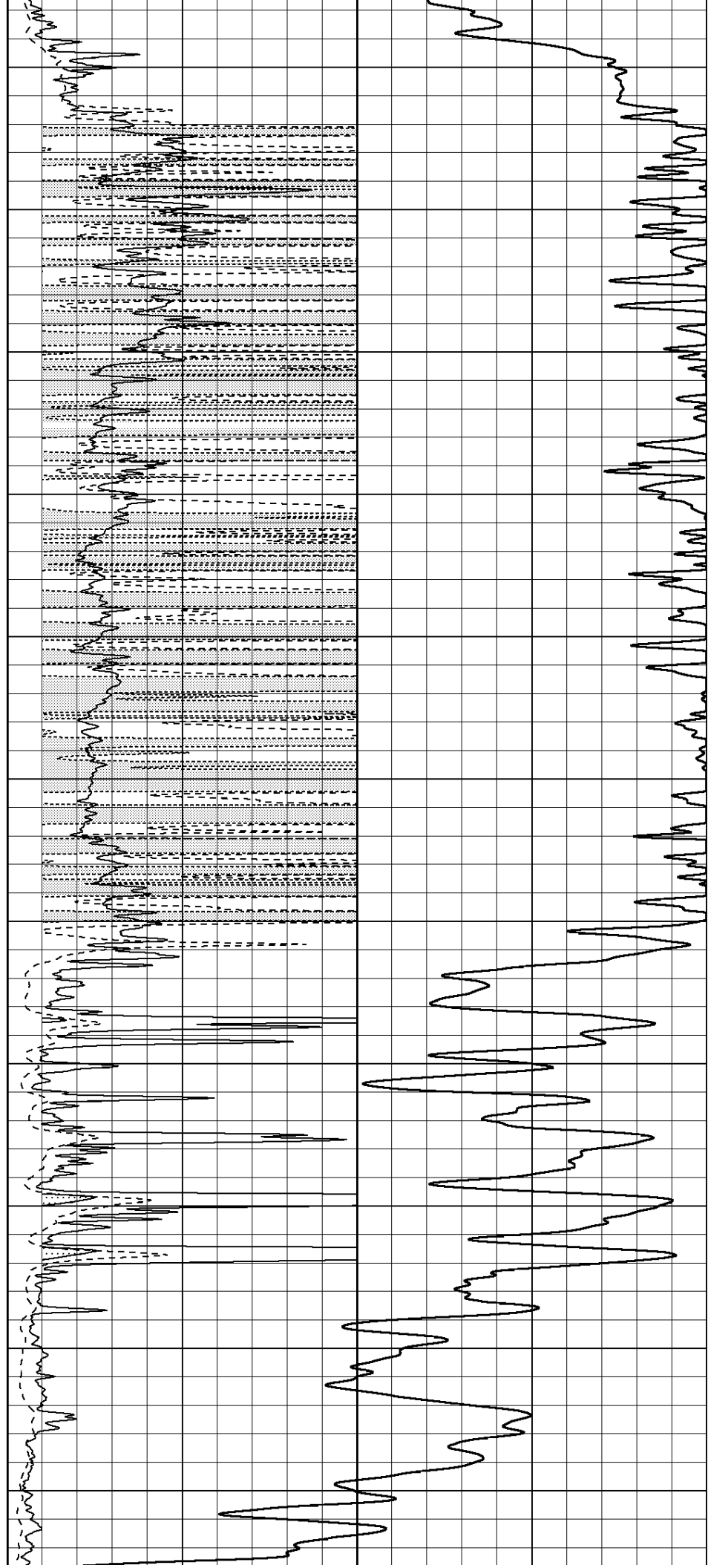
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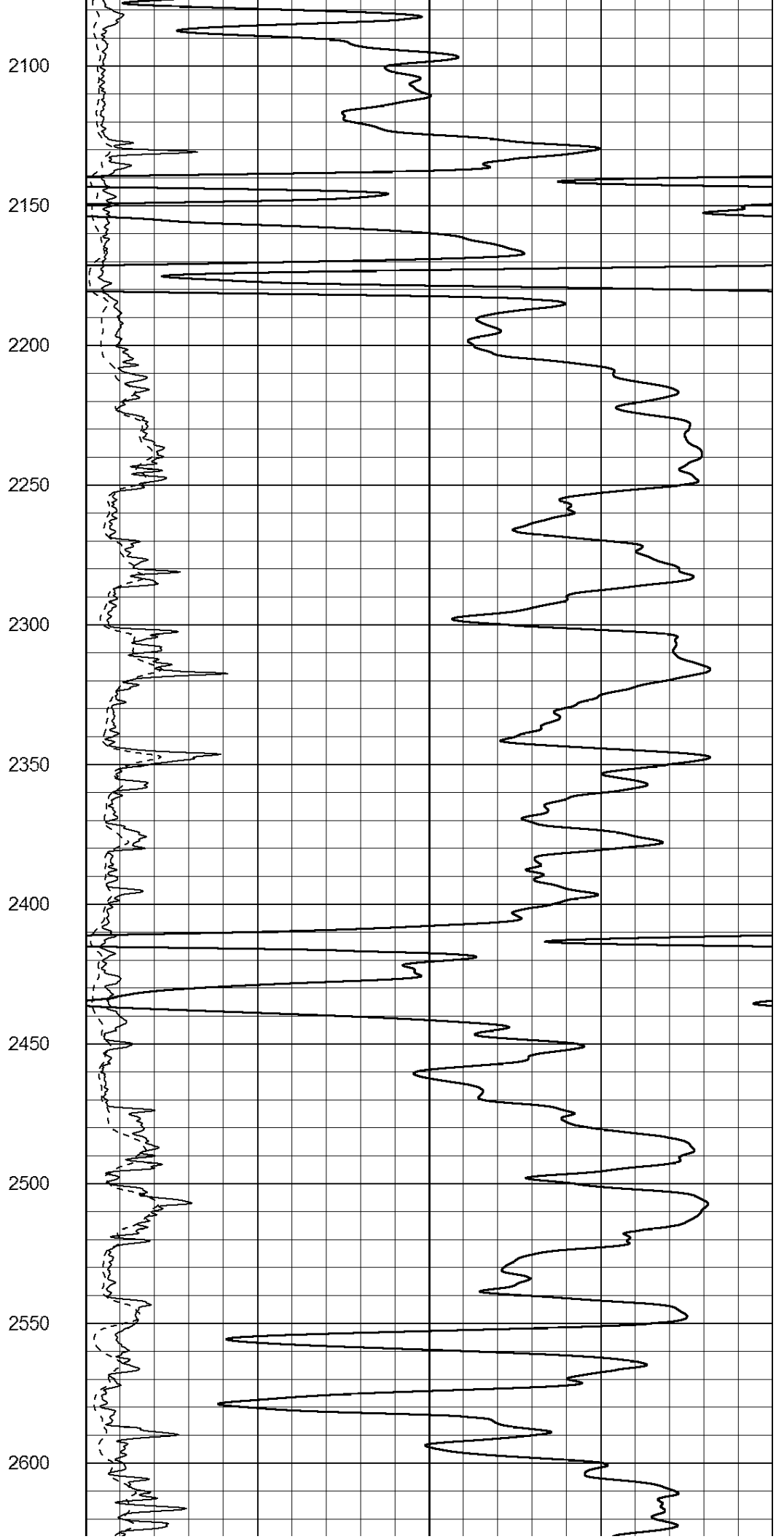
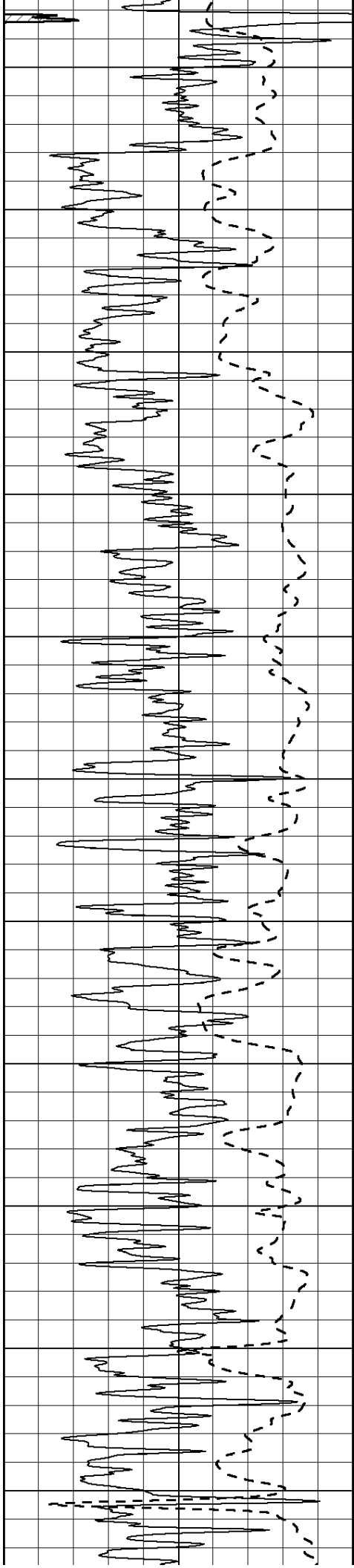
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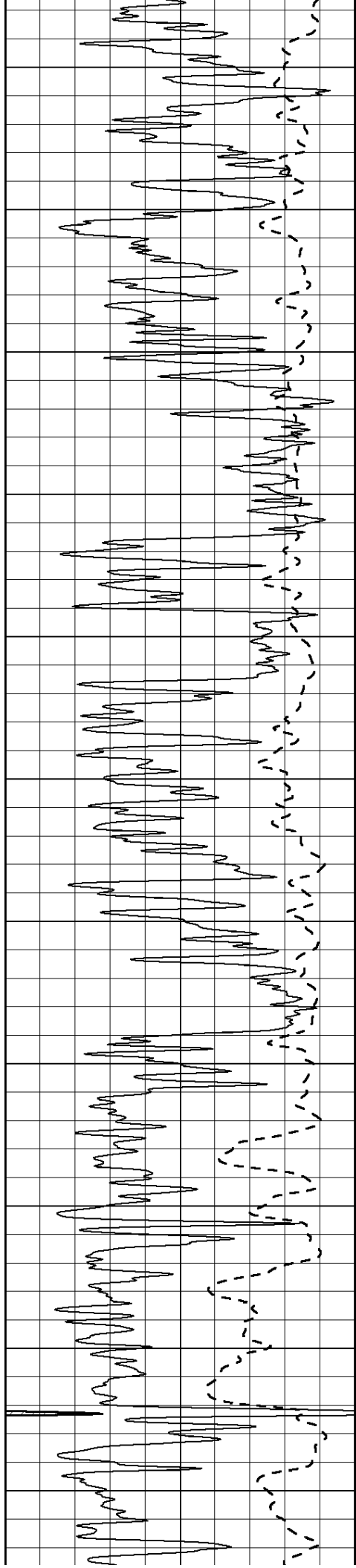
1950

2000

2050







2650

2700

2750

2800

2850

2900

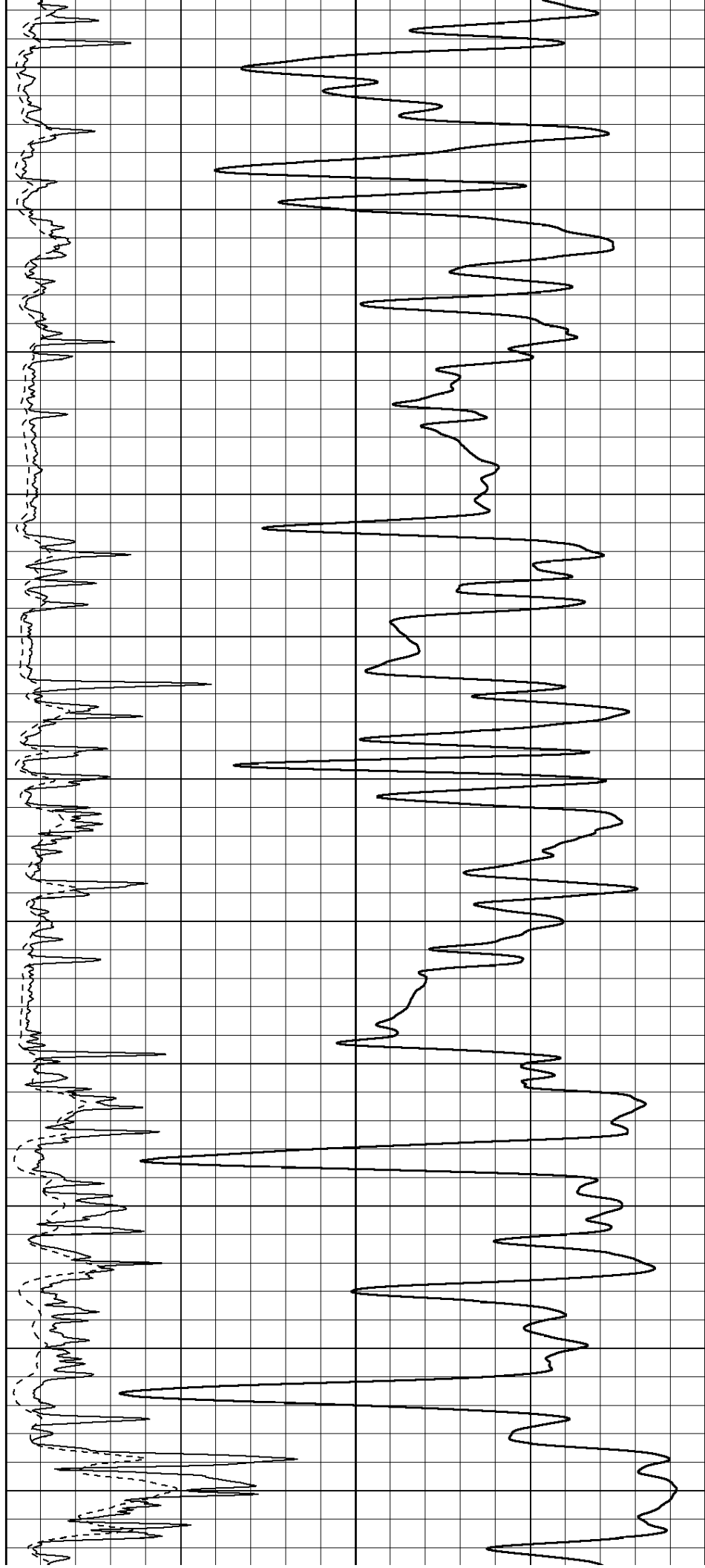
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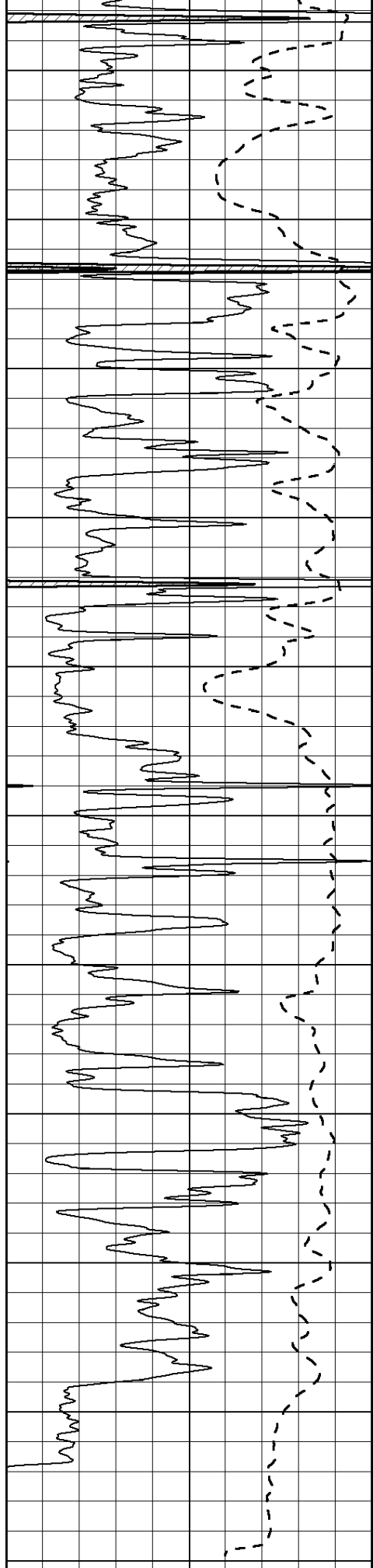
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3050

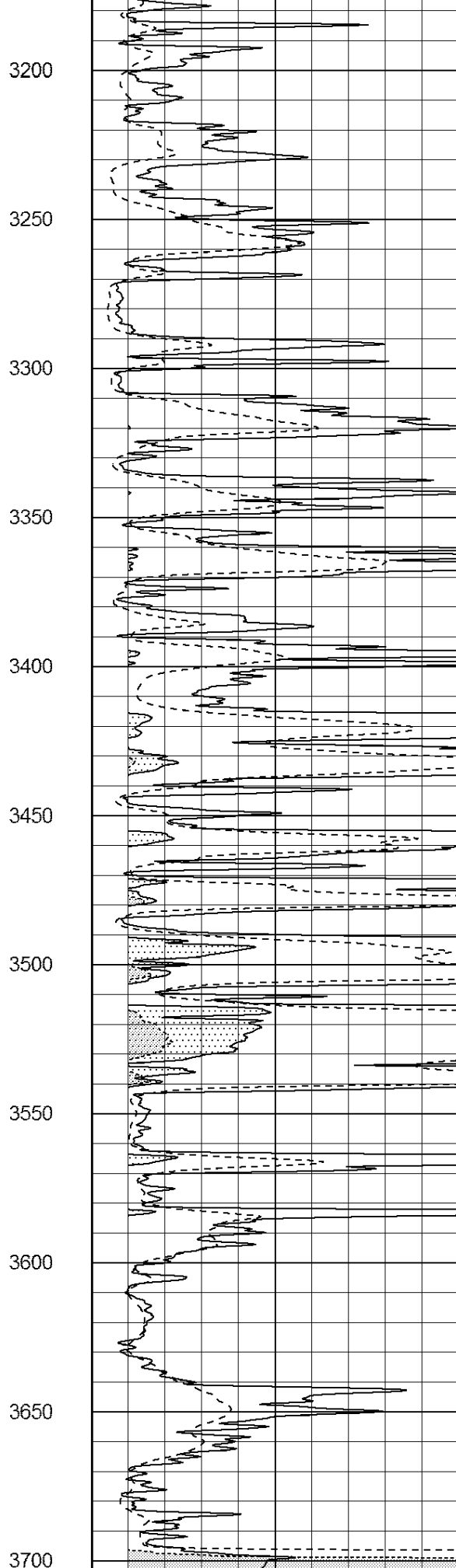
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3150

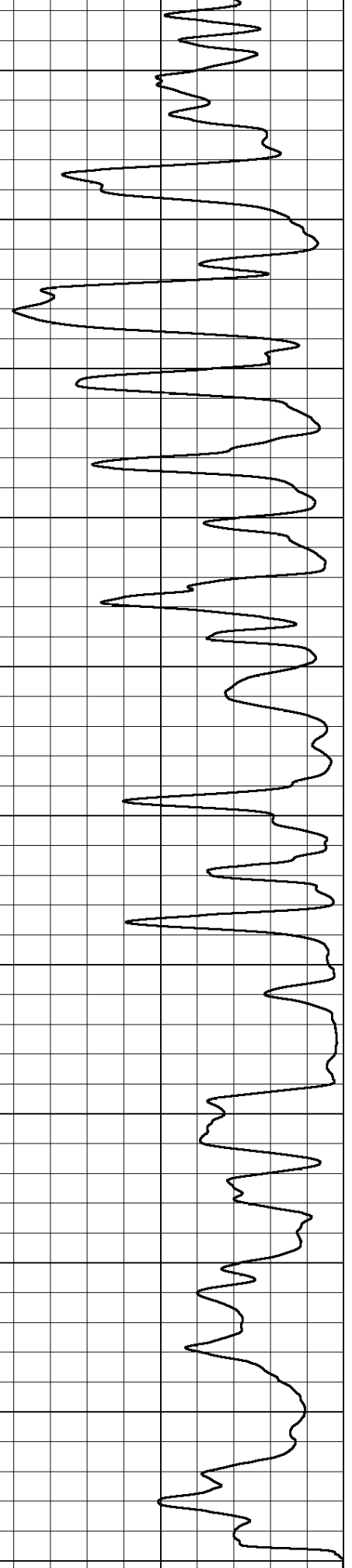




0	Gamma Ray (GAPI)	150
-100	SP (mV)	100



0	RLL3 (Ohm-m)	50
0	RII D (Ohm-m)	50



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



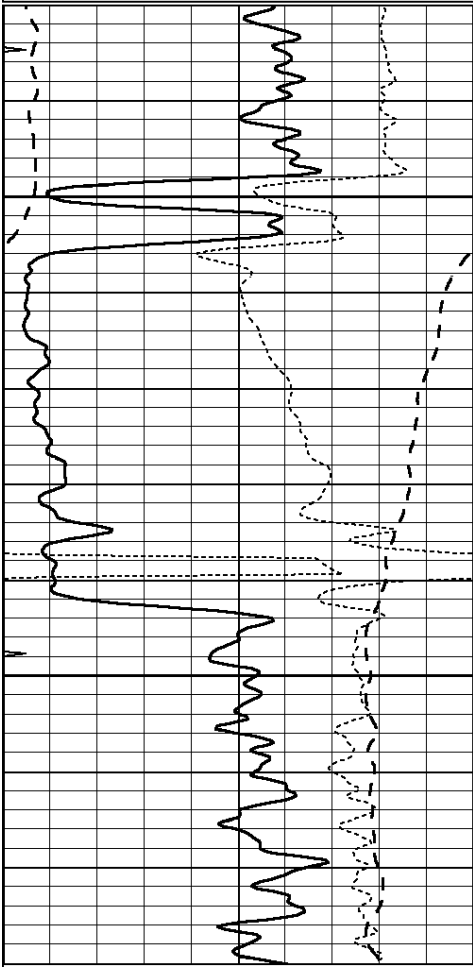
SUPERIOR  
Hays,  
Kansas

# ANHYDRITE

Database File: 408612ddn.db  
 Dataset Pathname: pass3.4  
 Presentation Format: dil  
 Dataset Creation: Sat Mar 24 19:54:34 2012 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

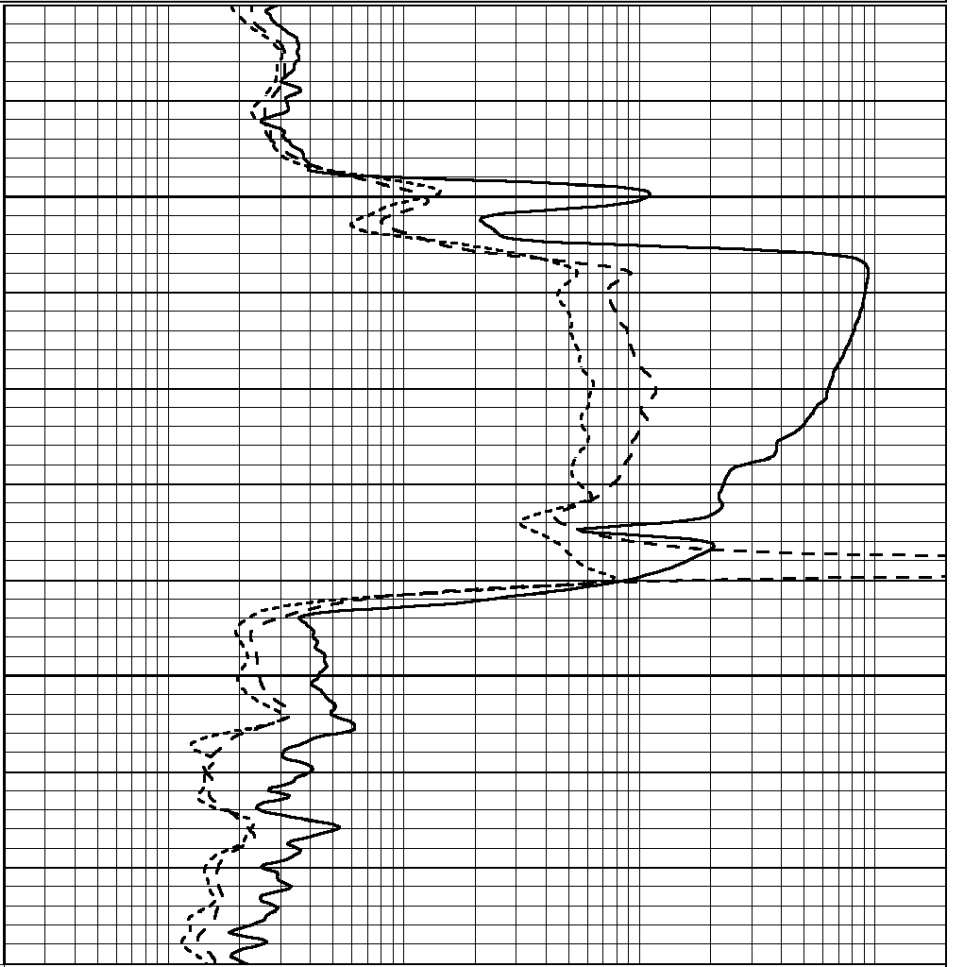
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



1200

1250



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



SUPERIOR

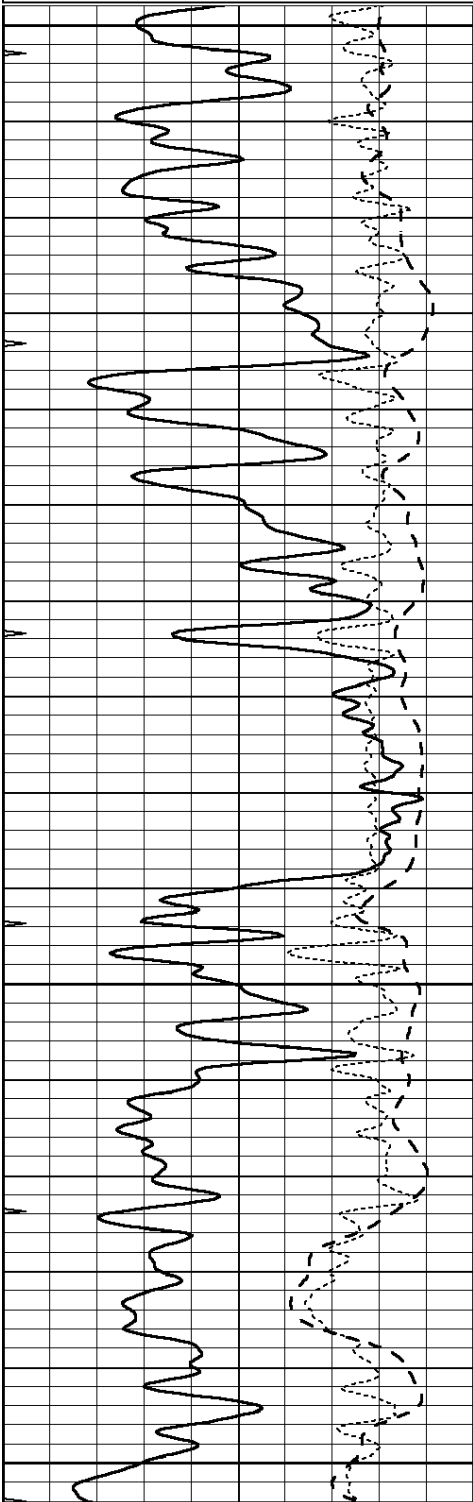
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# MAIN SECTION

Database File: 408612ddn.db  
 Dataset Pathname: pass3.3  
 Presentation Format: dil  
 Dataset Creation: Sat Mar 24 19:54:06 2012 by Calc Open-Cased 110302  
 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

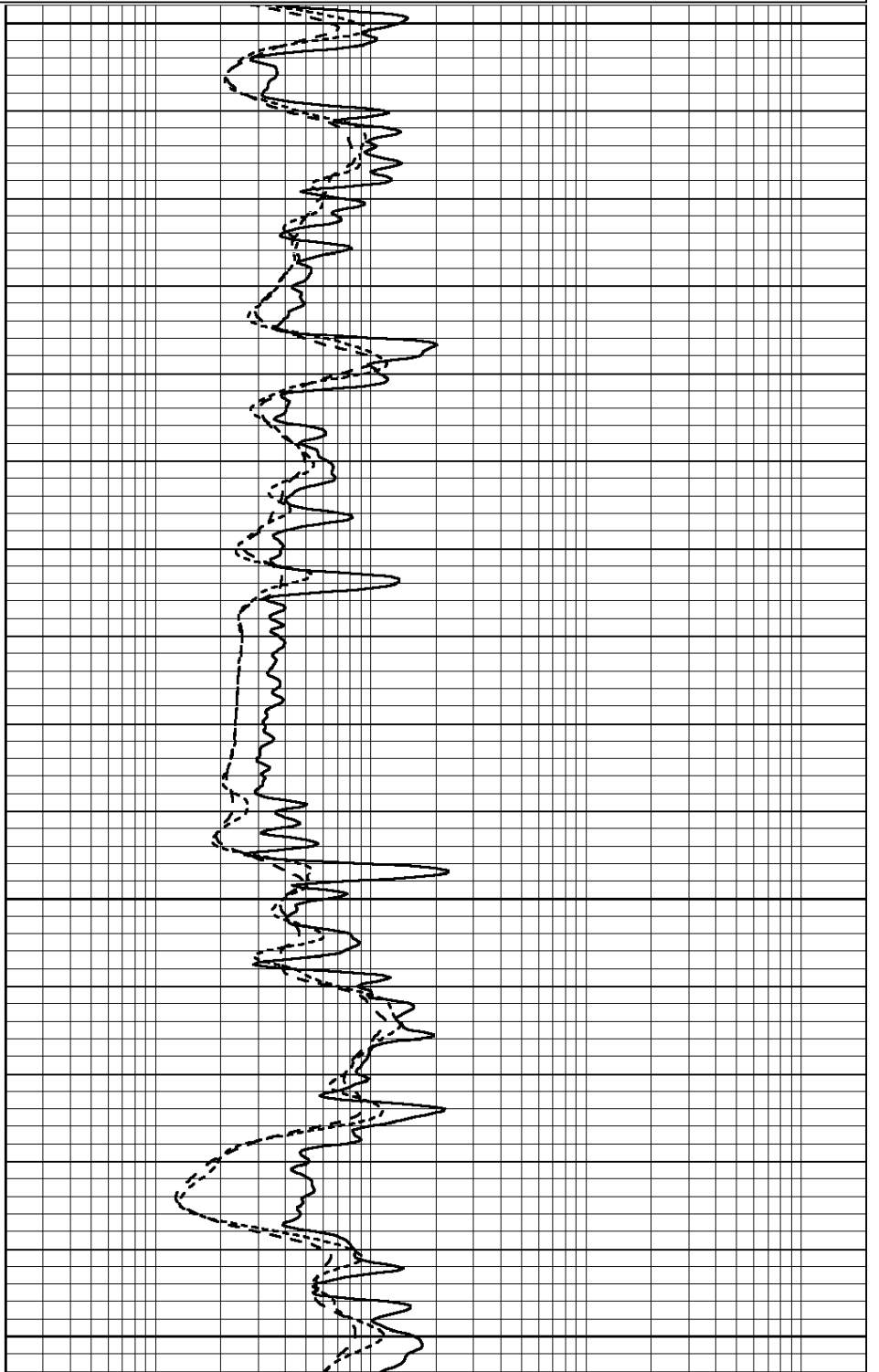


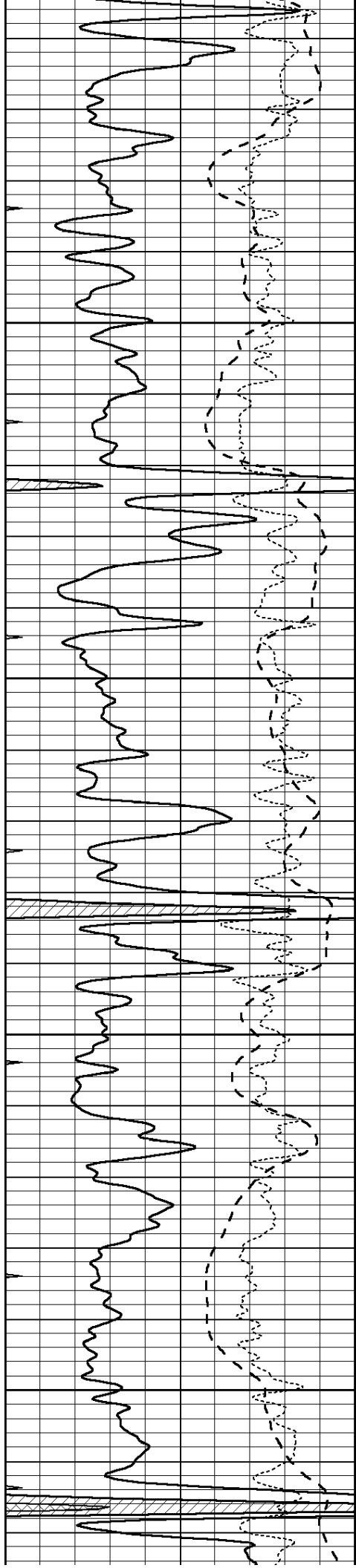
2900

2950

3000

3050



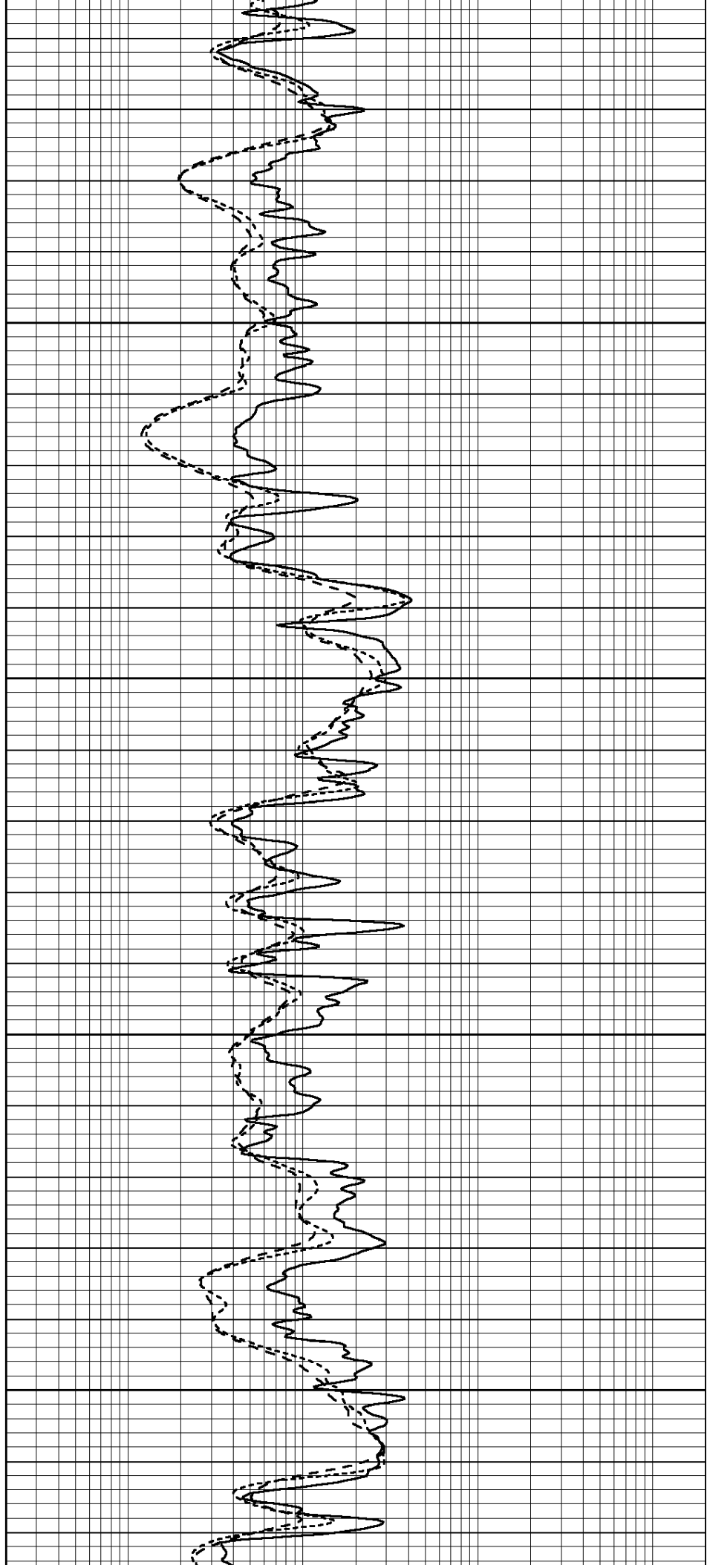


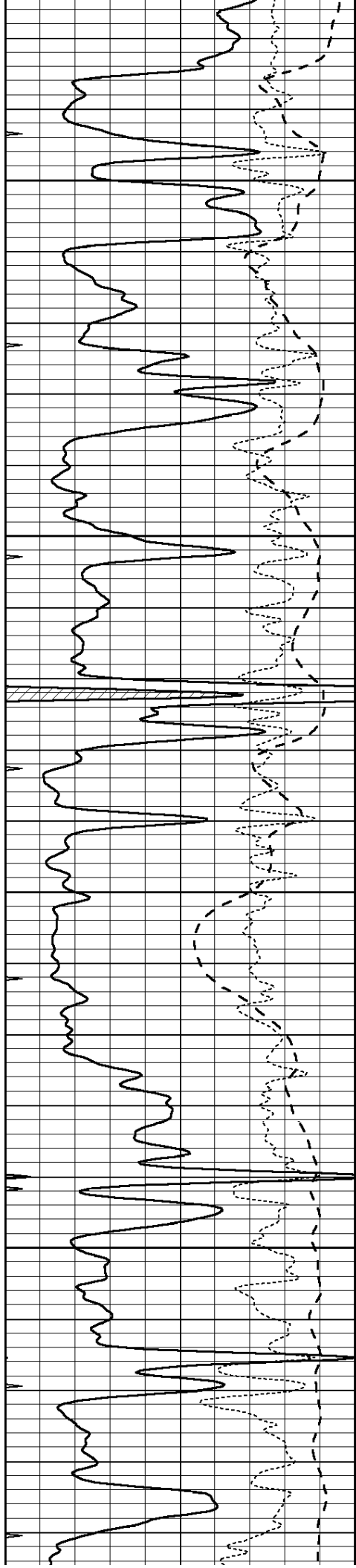
3100

3150

3200

3250



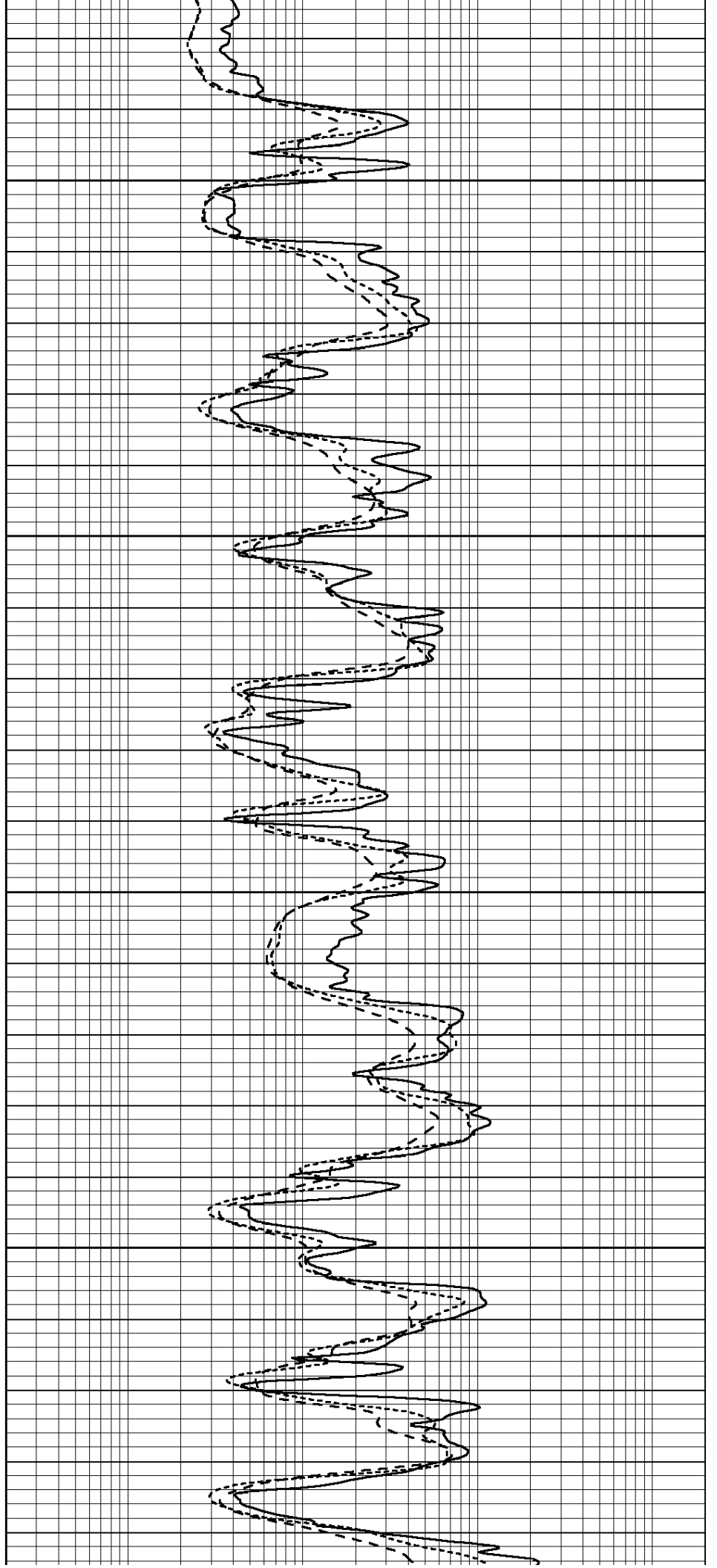


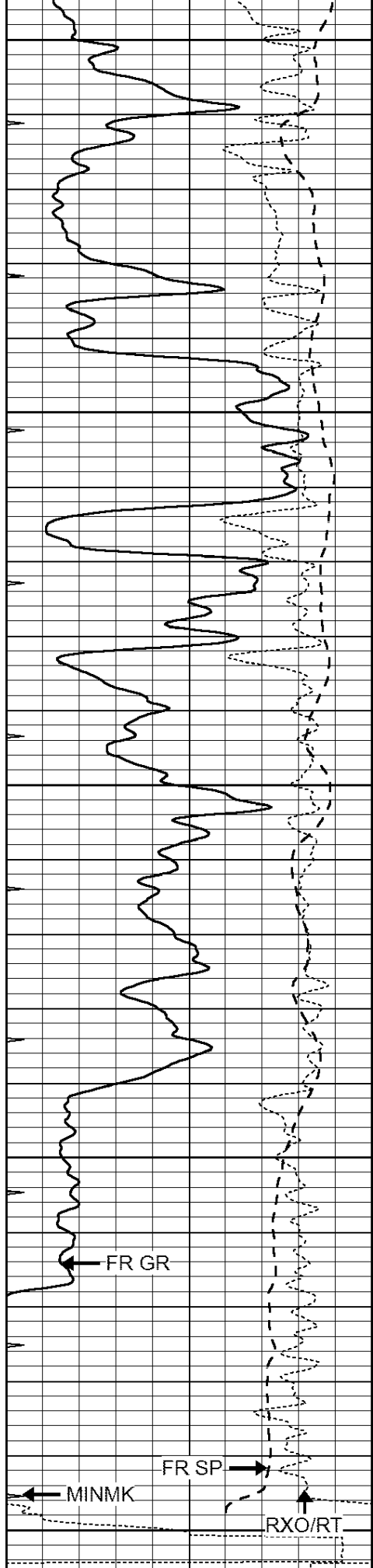
3300

3350

3400

3450





3500

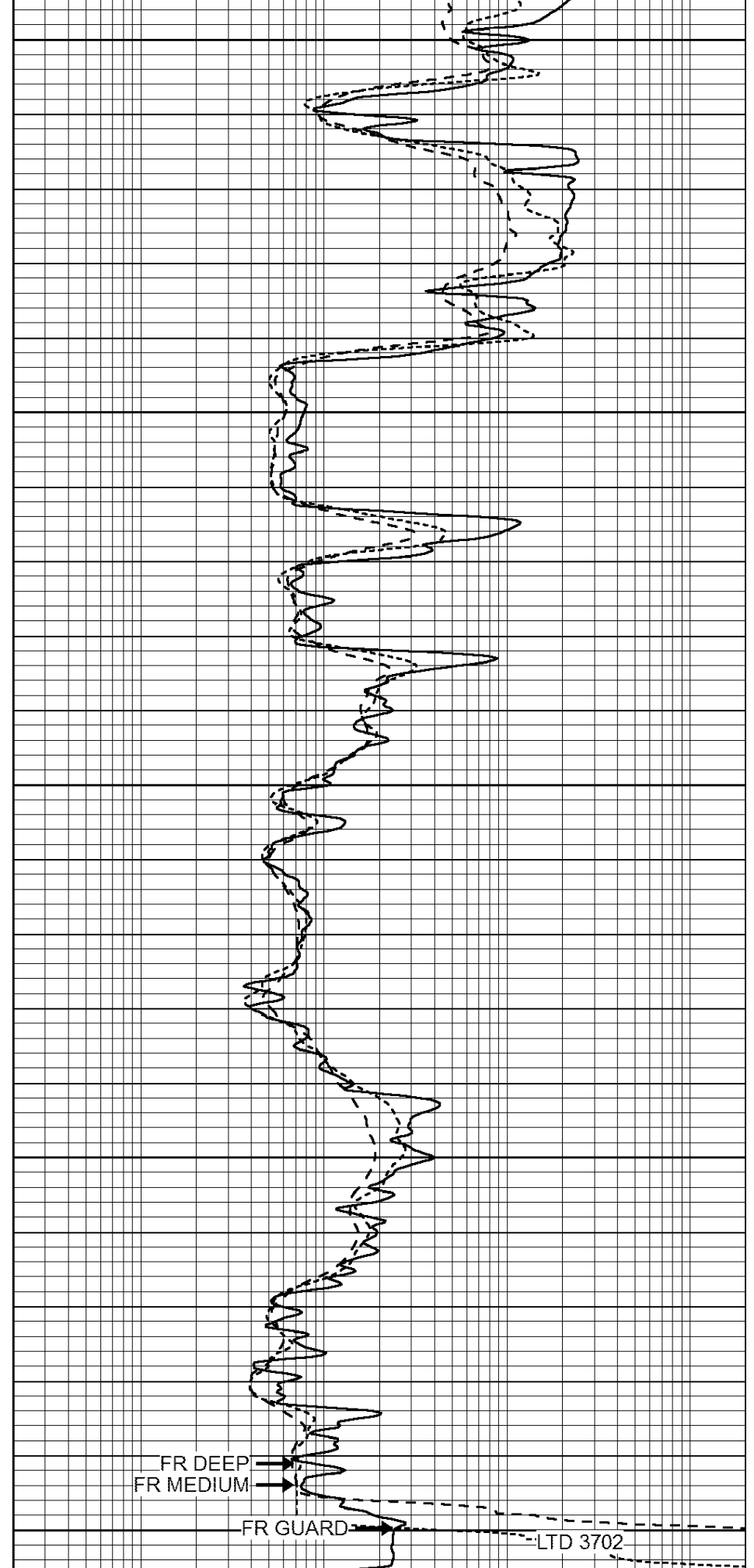
3550

3600

3650

3700

0 GAMMA RAY (GAPI) 150  
 -100 SP (mV) 100



FR DEEP  
 FR MEDIUM

FR GUARD

LTD 3702

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

-250	Rxo/Rt	50
0	MINMK	20

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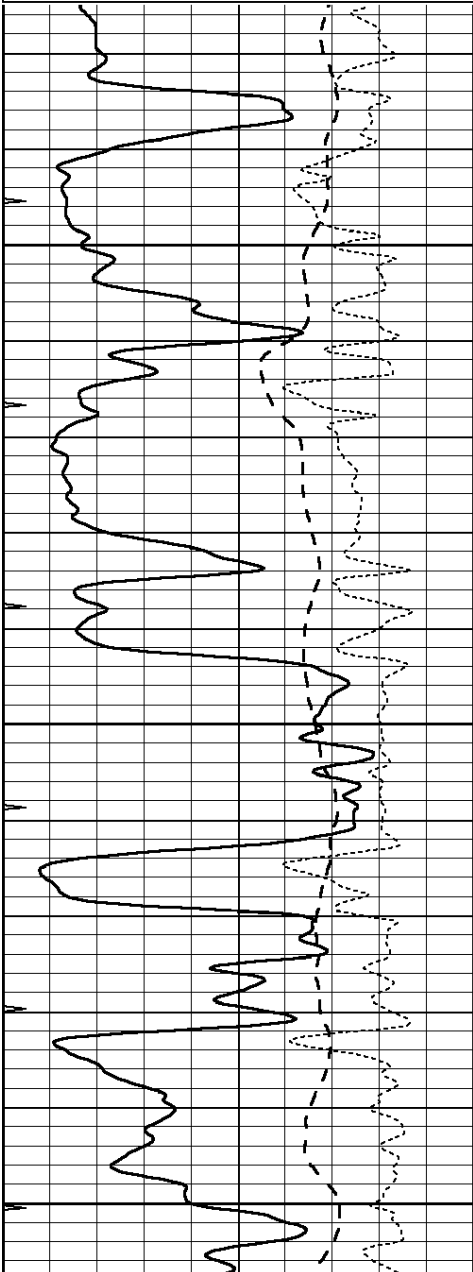
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# REPEAT SECTION

Database File: 408612ddn.db  
 Dataset Pathname: pass2.4  
 Presentation Format: dil  
 Dataset Creation: Sat Mar 24 19:18:16 2012 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

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

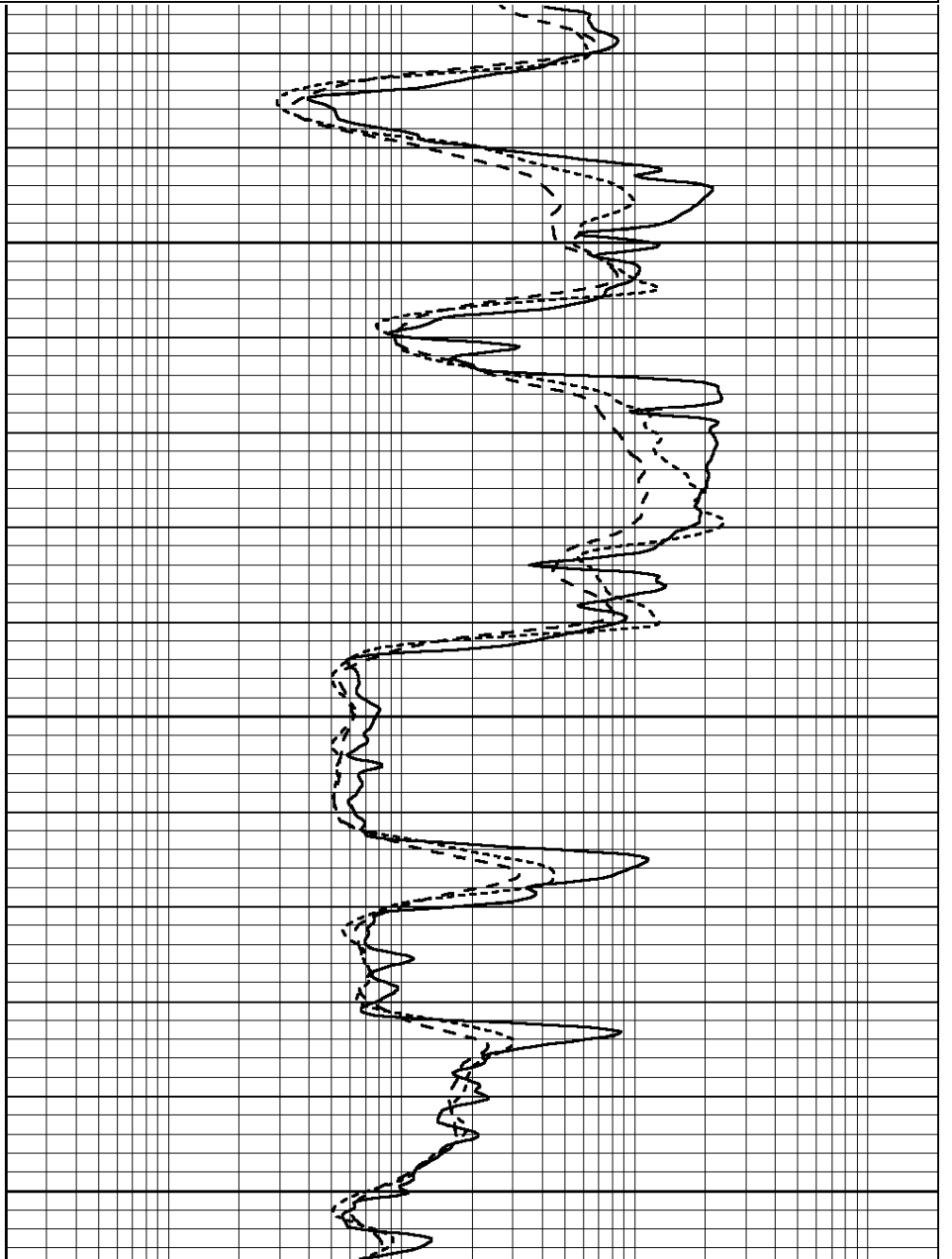
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

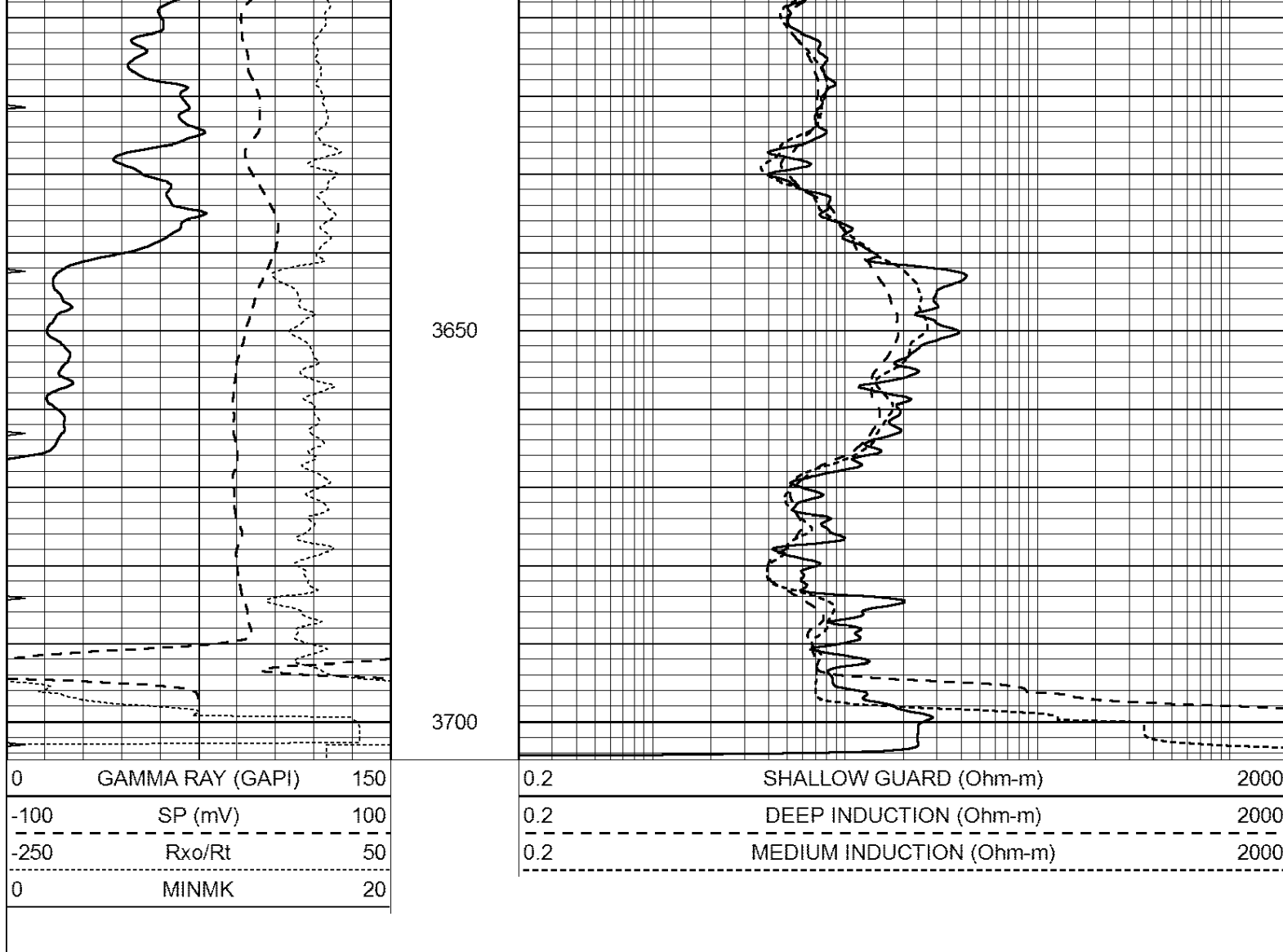


3500

3550

3600





### Calibration Report

Database File: 408612ddn.db  
 Dataset Pathname: pass3.3  
 Dataset Creation: Sat Mar 24 19:54:06 2012 by Calc Open-Cased 110302

### Dual Induction Calibration Report

Serial-Model: DIL4-GEAR  
 Performed: Sat Mar 24 18:51:21 2012

Loop:	Readings				References		Results	
	Air	Loop			Air	Loop	m	b
Deep	0.008	0.666	V	0.000	400.000	mmho/m	570.000	4.000
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	560.000	5.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549

Litho Density Calibration Report  
 Serial: 003N Model: PRB  
 Performed Tue Sep 08 14:14:44 2009

### Litho Density Calibration

Background Magnesium Aluminium Sandstone

	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			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

Caliper	Readings	Reference	
Low Ref	2.0	7.2	
High Ref	4.0	15.0	
	Gain: 3.8		Offset: -0.3

### 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:	070559	
Tool Model:	OPEN_GR	
Performed:	Sat Mar 24 18:51:25 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.3000	GAPI/cps