



**SUPERIOR**  
Hays,  
Kansas

**DUAL INDUCTION  
LOG**

Company MID-CONTINENT ENERGY  
Well #1-21 BAHM UNIT  
Field WILDCAT  
County LANE  
State KANSAS

Company MID - CONTINENT ENERGY OPERATING, CO.  
Well #1-21 BAHM UNIT  
Field WILDCAT  
County LANE State KANSAS

Location: API # : 15-101-22271-0000  
2428' FSL & 1255' FEL  
SEC 21 TWP 19S RGE 27W  
Permanent Datum GROUND LEVEL Elevation 2710  
Log Measured From KELLY BUSHING 8' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CDL/CNL  
MEL  
Elevation  
K.B. 2718  
D.F. 2716  
G.L. 2710

Date	1/4/11		
Run Number	ONE		
Depth Driller	4700		
Depth Logger	4700		
Bottom Logged Interval	4698		
Top Log Interval	00		
Casing Driller	8 5/8" @ 311'		
Casing Logger	311		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2,300 PPM	
Density / Viscosity	9.5/52		
pH / Fluid Loss	9.5/6.4		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.950 @ 82F		
Rmf @ Meas. Temp	.713 @ 82F		
Rmc @ Meas. Temp	1.14 @ 82F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.639 @ 122F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	3:00 A.M.		
Maximum Recorded Temperature	122F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
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 HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
ALAMOTA, KS. (HWY 96 & TURKEY RED RD.) 6 1/2S., W. INTO



**SUPERIOR**  
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**MAIN SECTION**

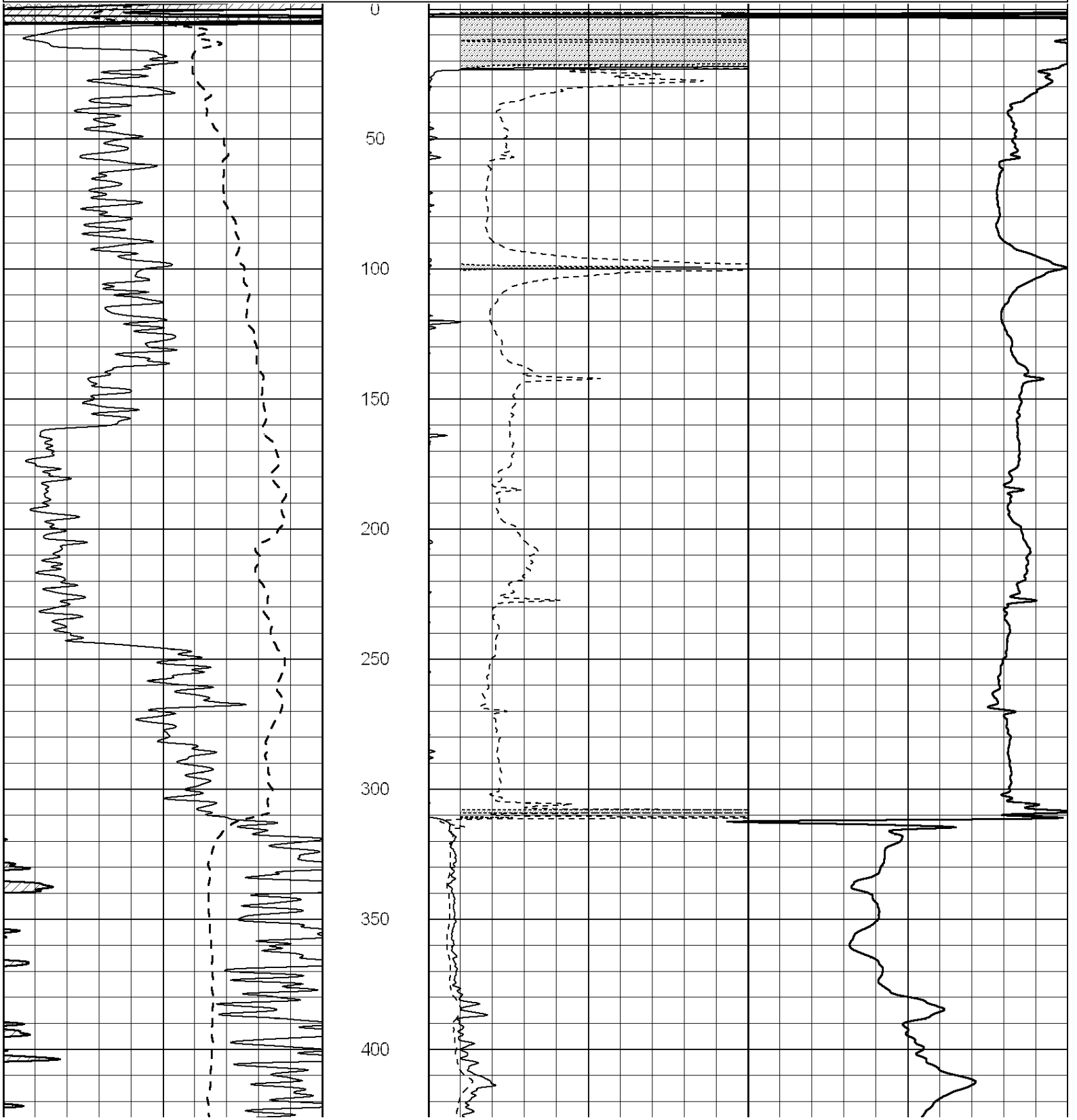
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 Charted by: Depth in Feet scaled 1:600

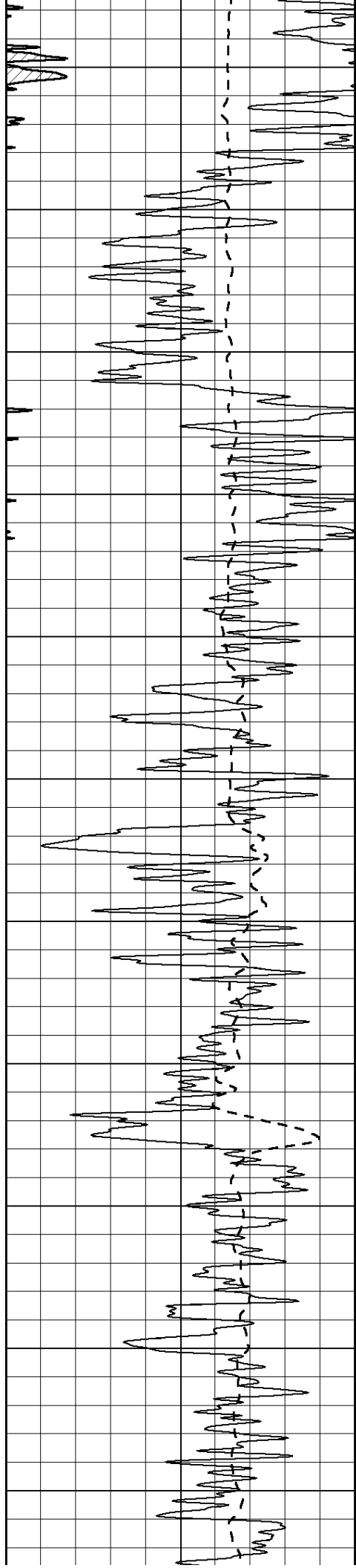
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 -100 SP (mV) 100

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

1000 CILD (mmho/m) 0

50 RILD X10 (Ohm-m) 500  
 50 RLL3 X10 (Ohm-m) 500





450

500

550

600

650

700

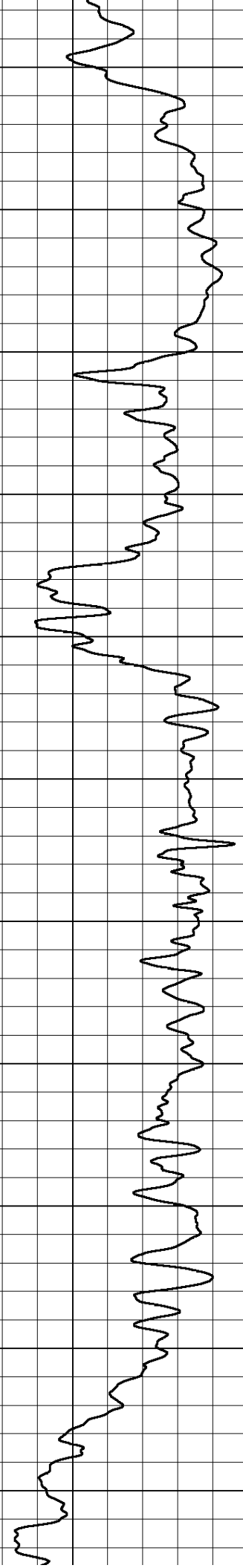
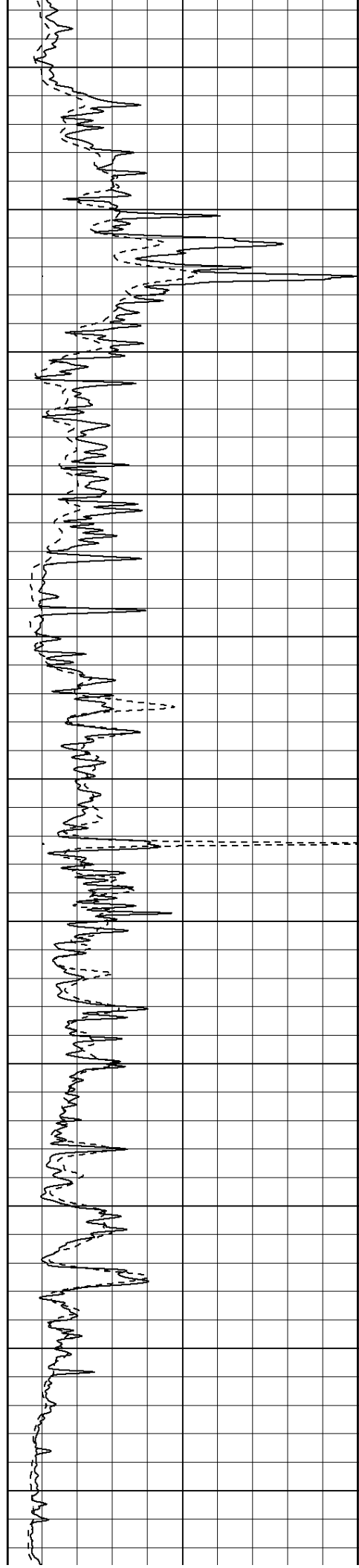
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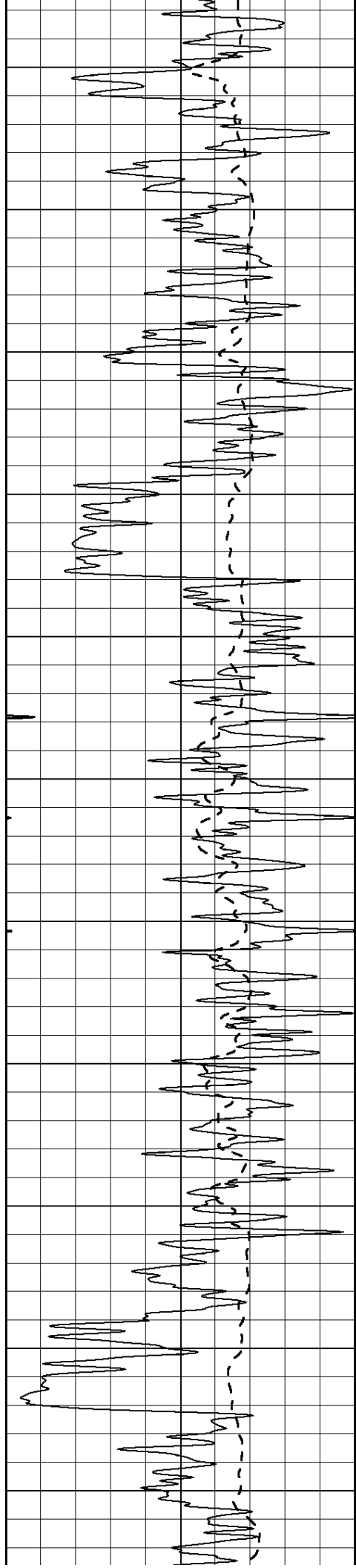
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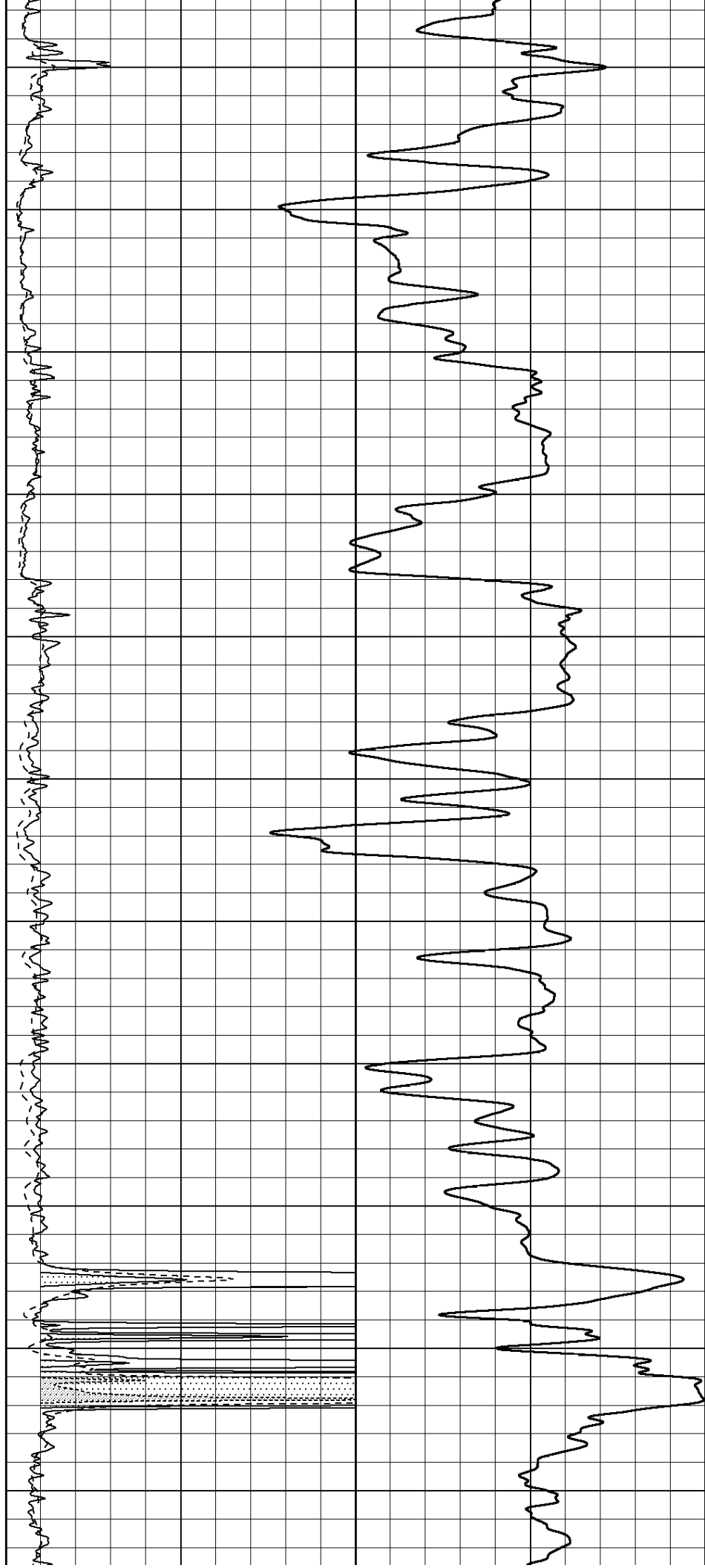
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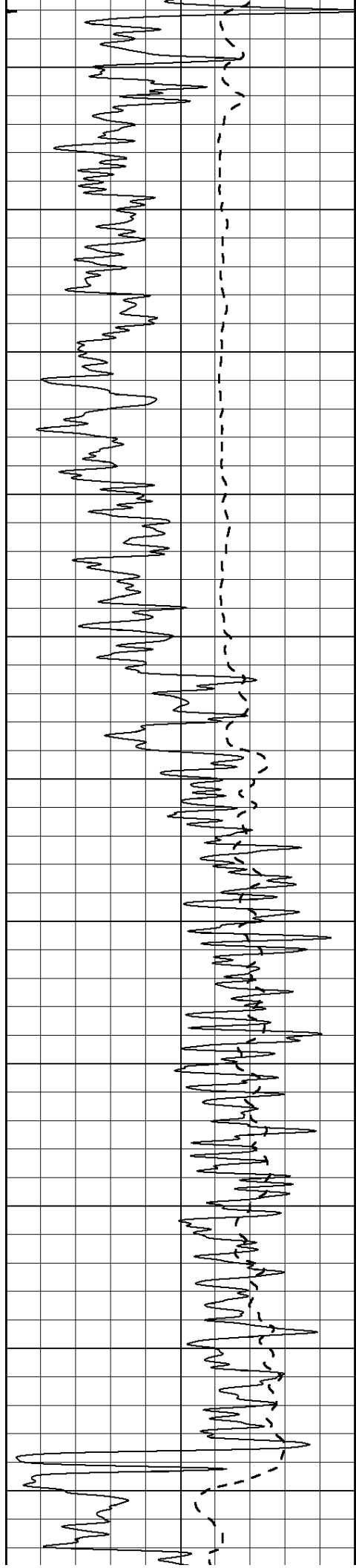
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1000  
1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500





1550

1600

1650

1700

1750

1800

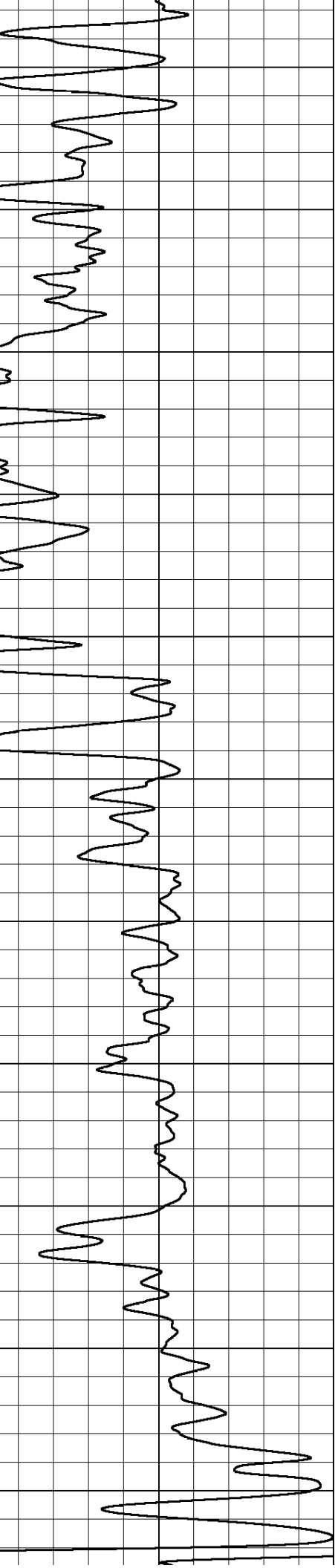
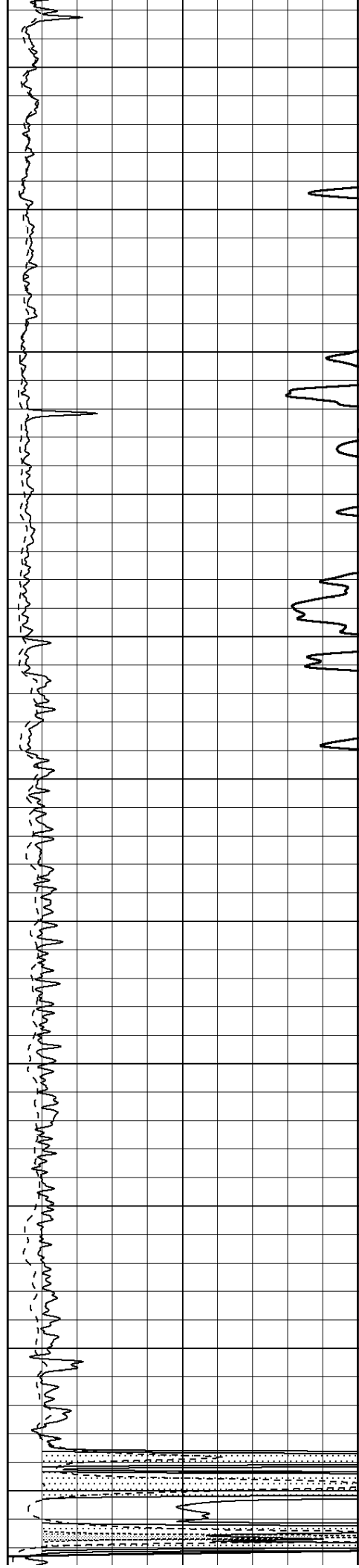
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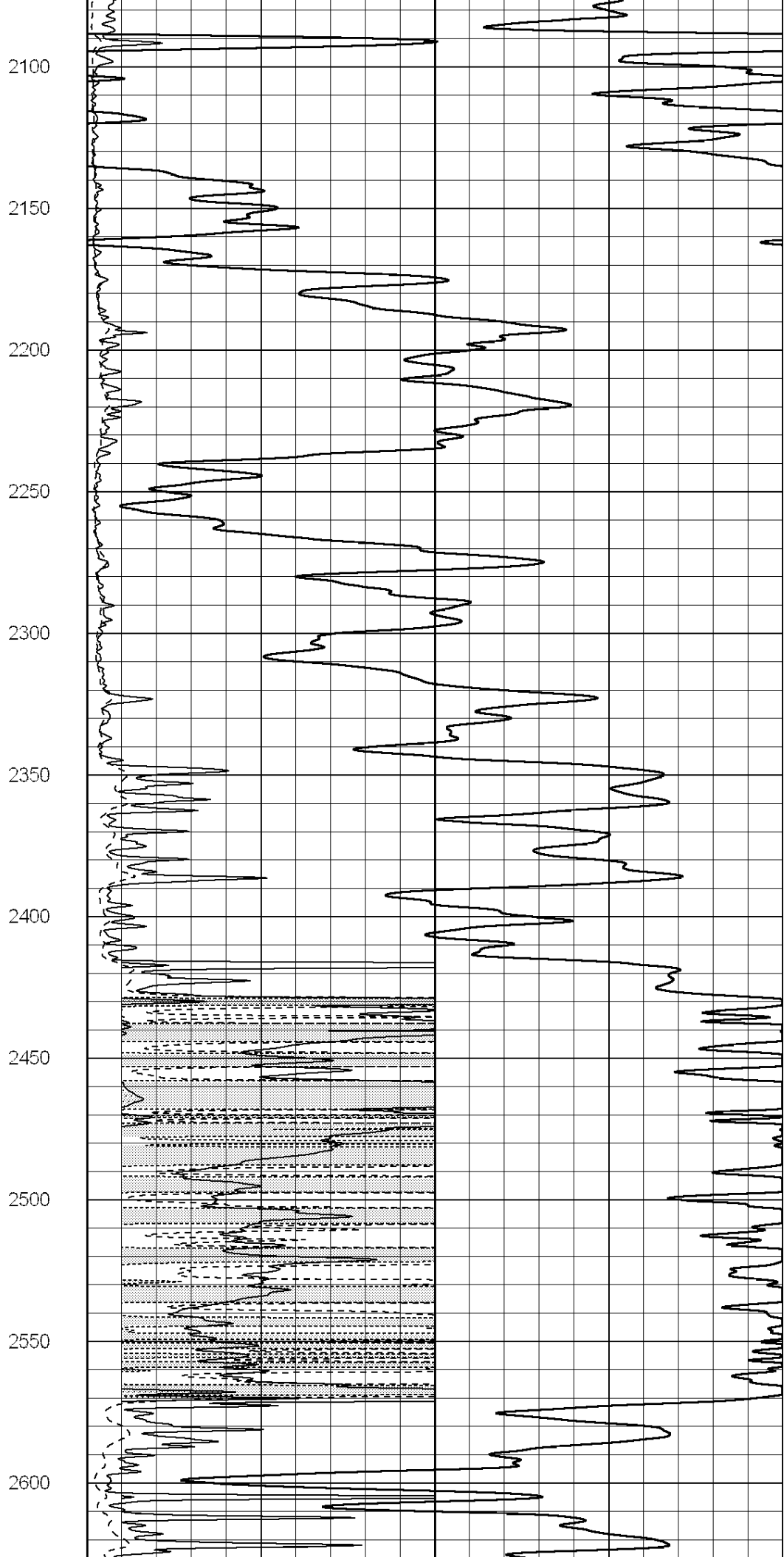
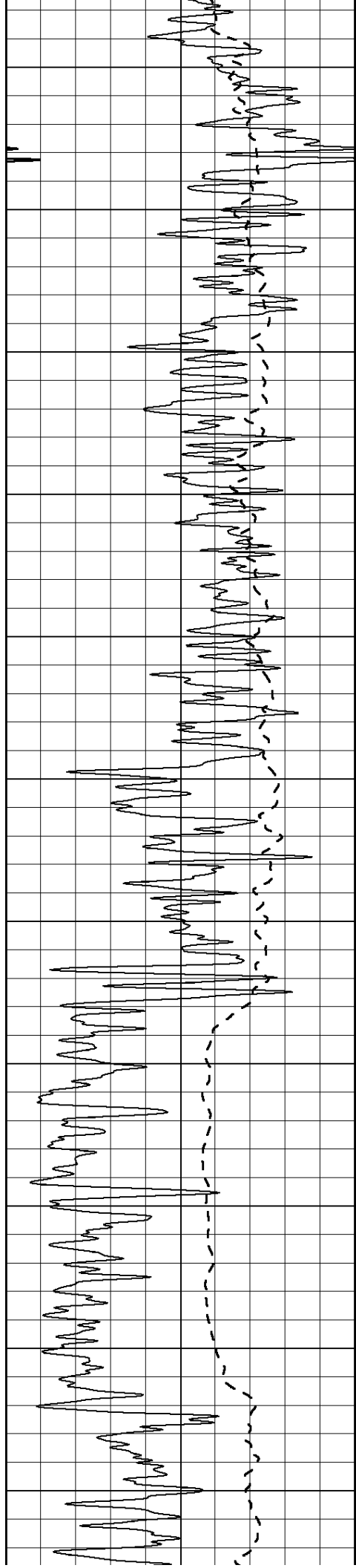
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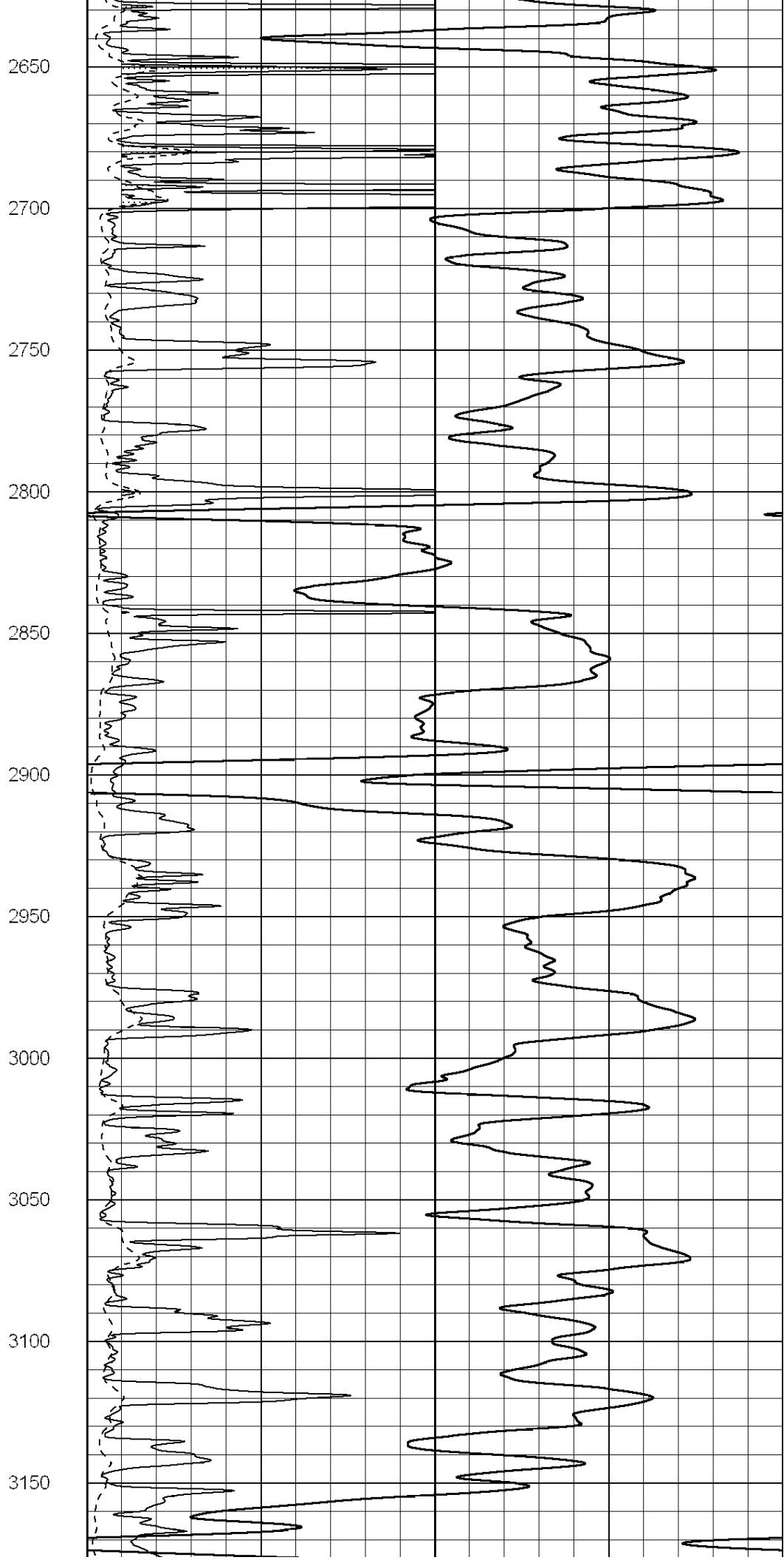
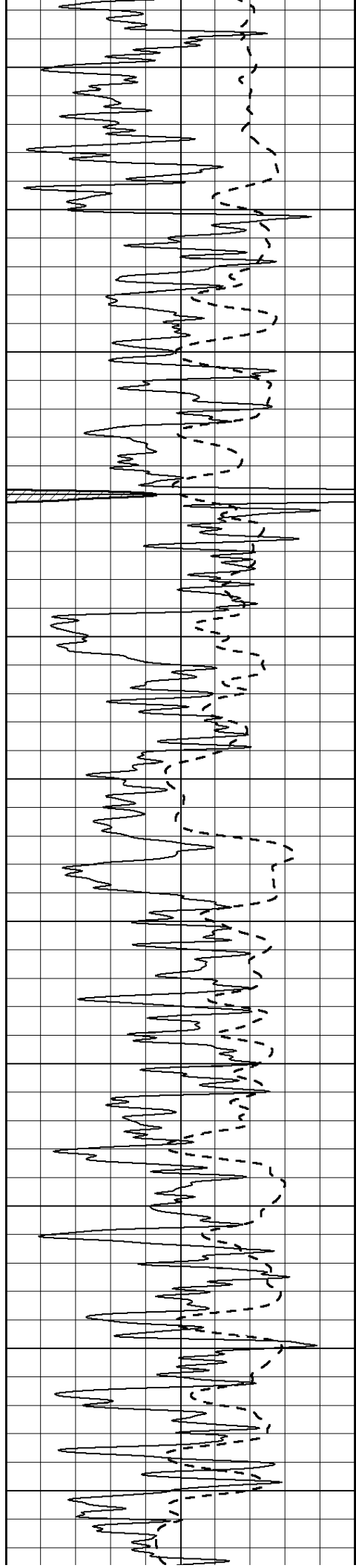
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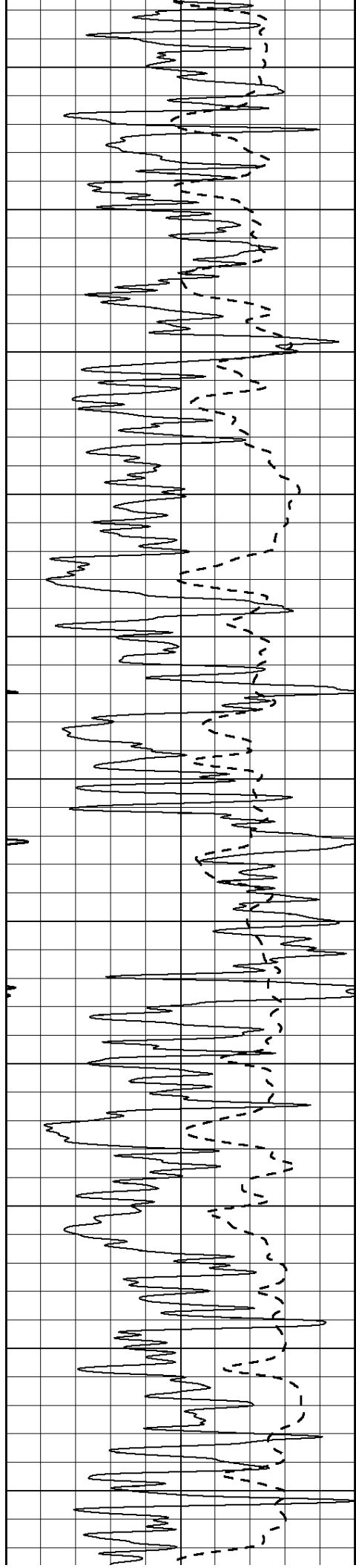
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2050









3200

3250

3300

3350

3400

3450

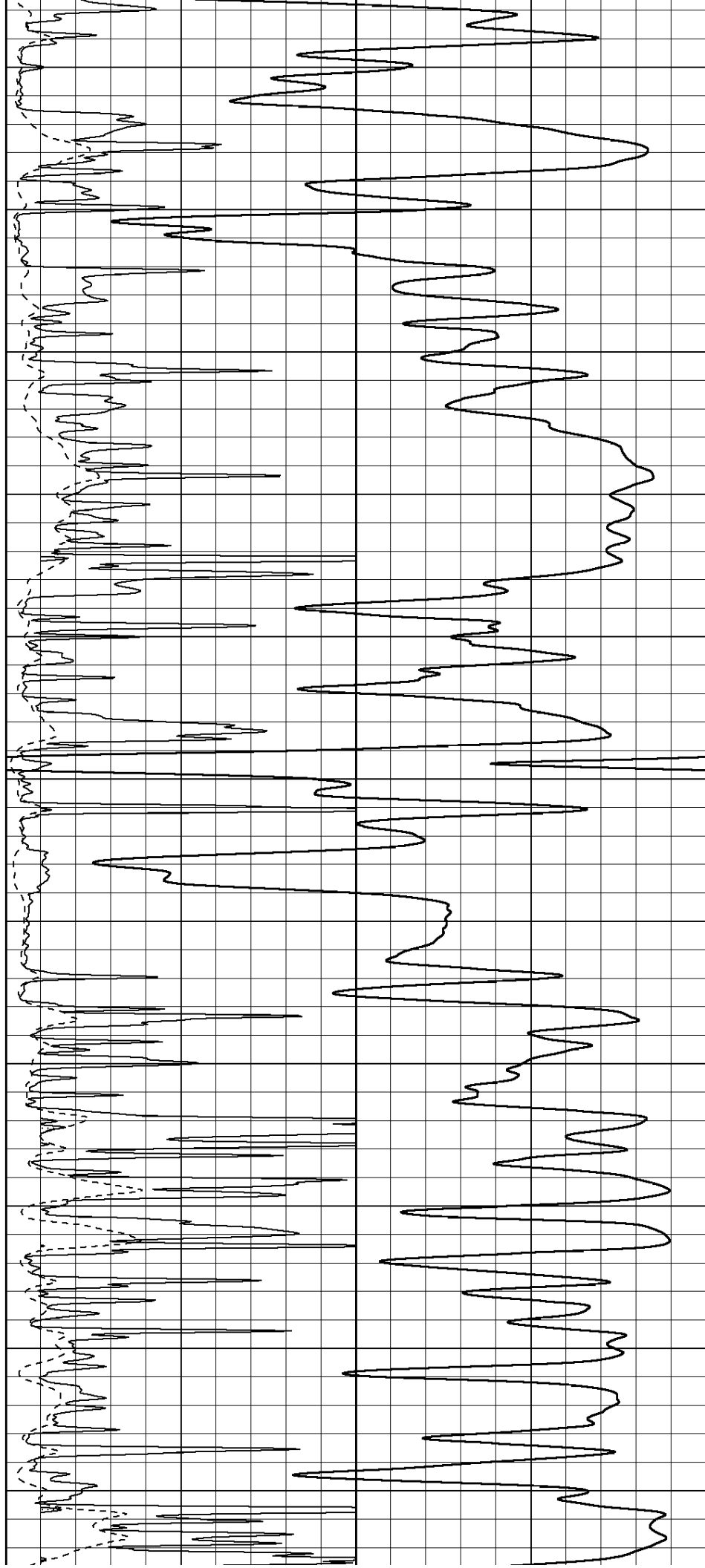
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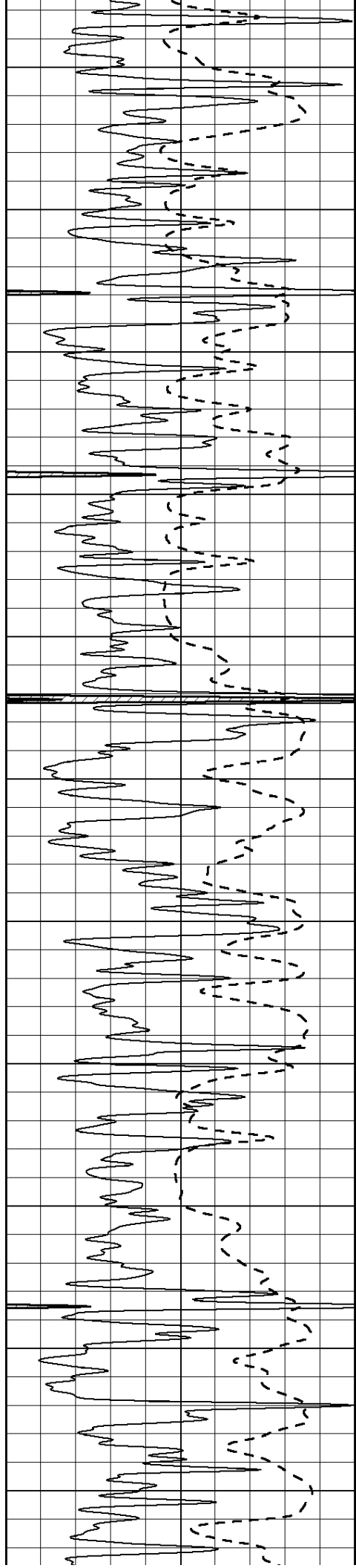
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3600

3650

3700





3750

3800

3850

3900

3950

4000

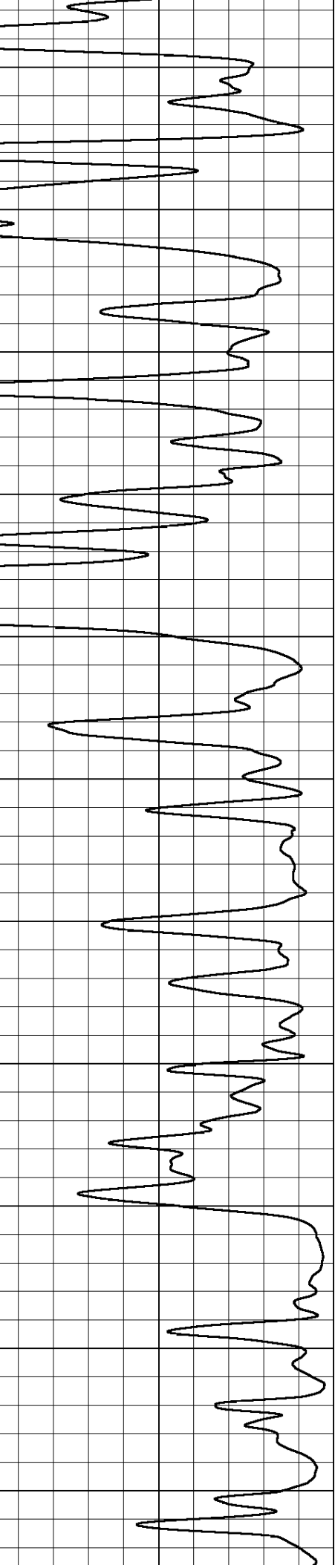
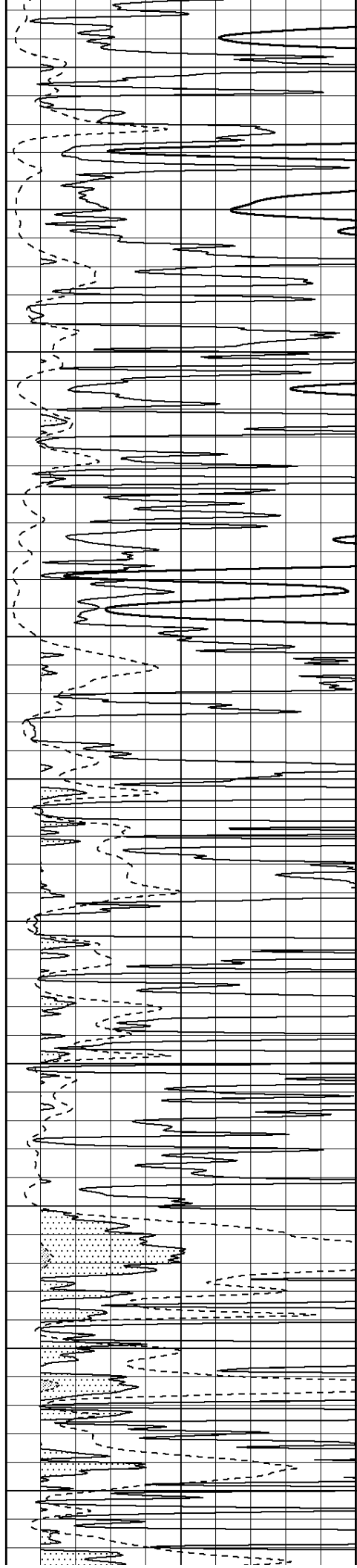
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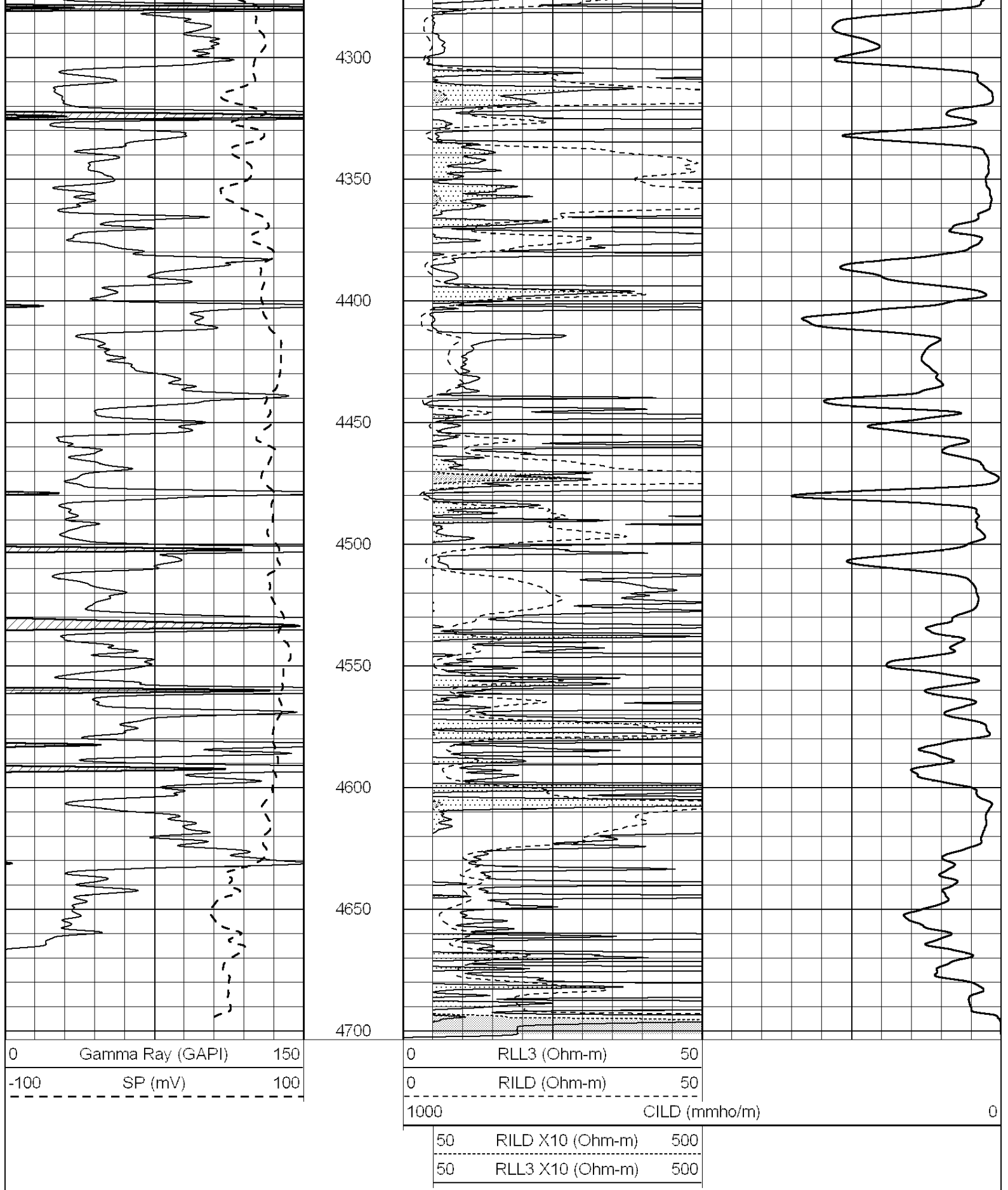
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4150

4200

4250





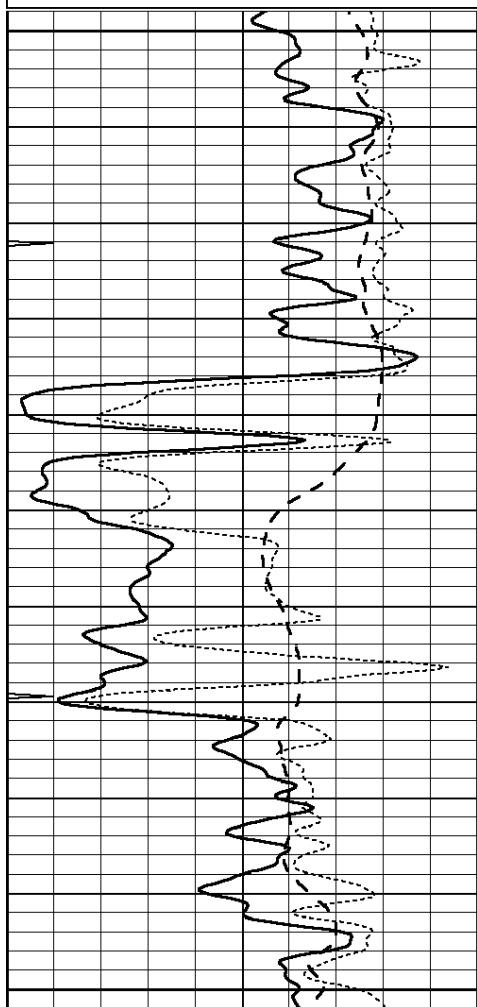
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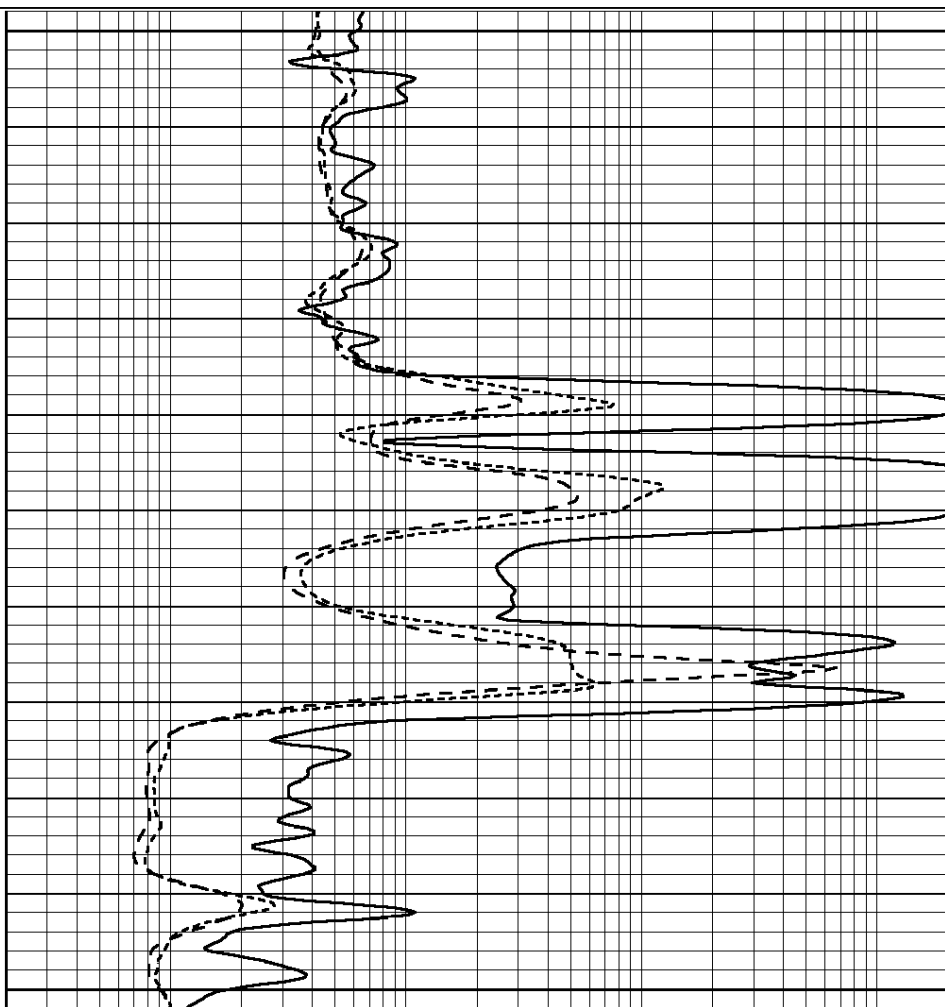
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 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

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



2000  
2050  
2100



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

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



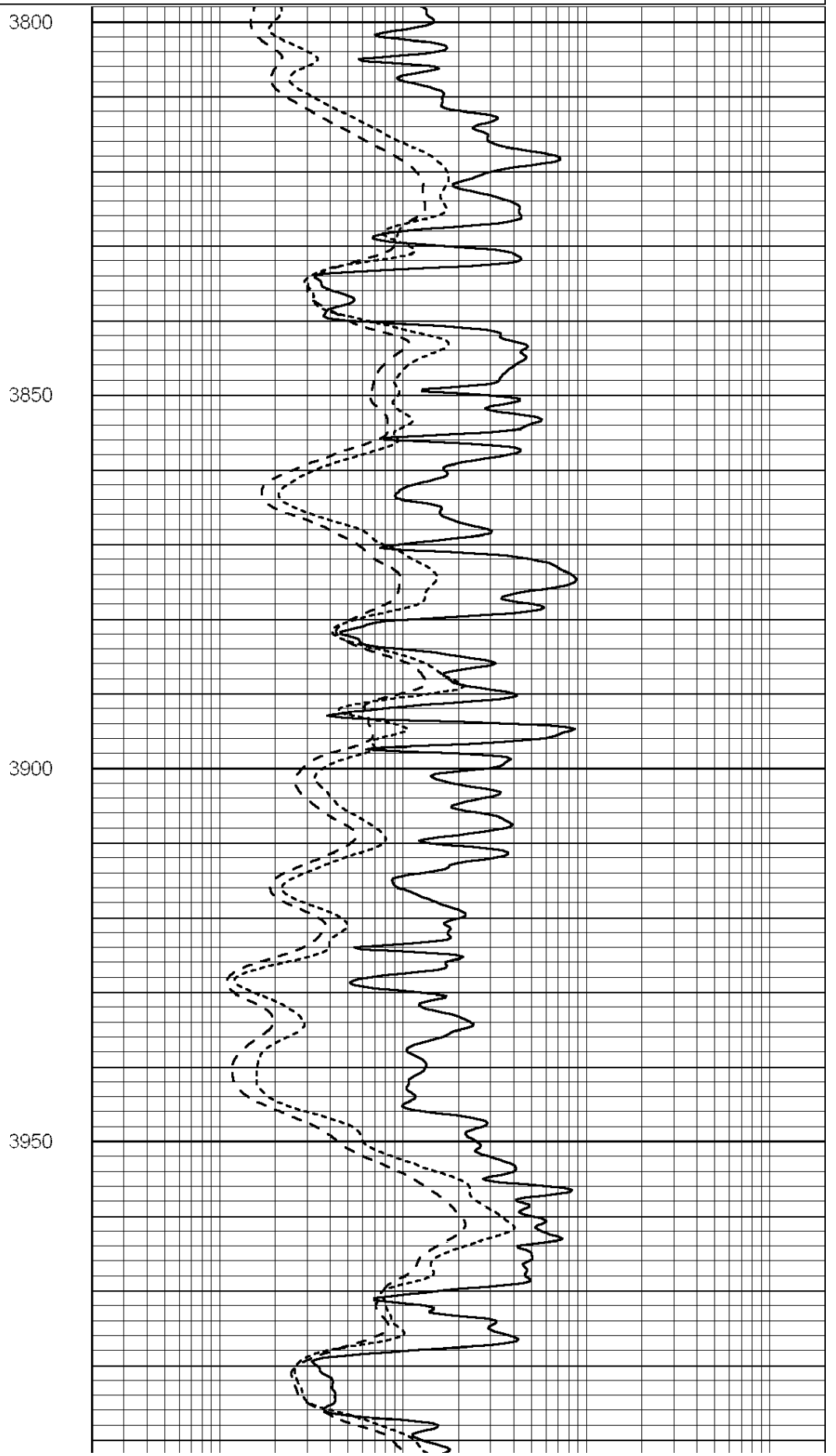
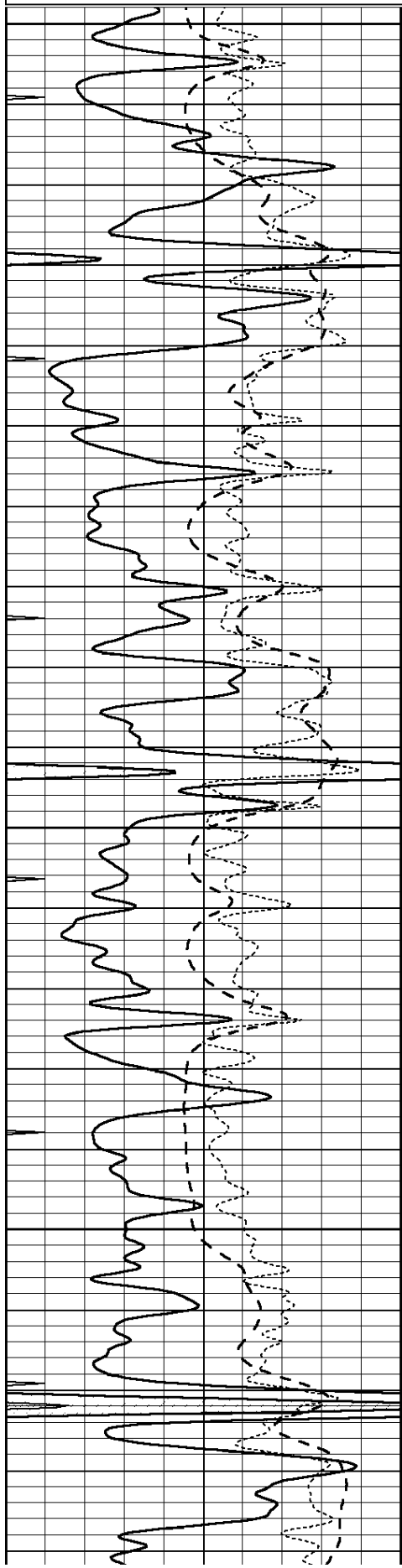
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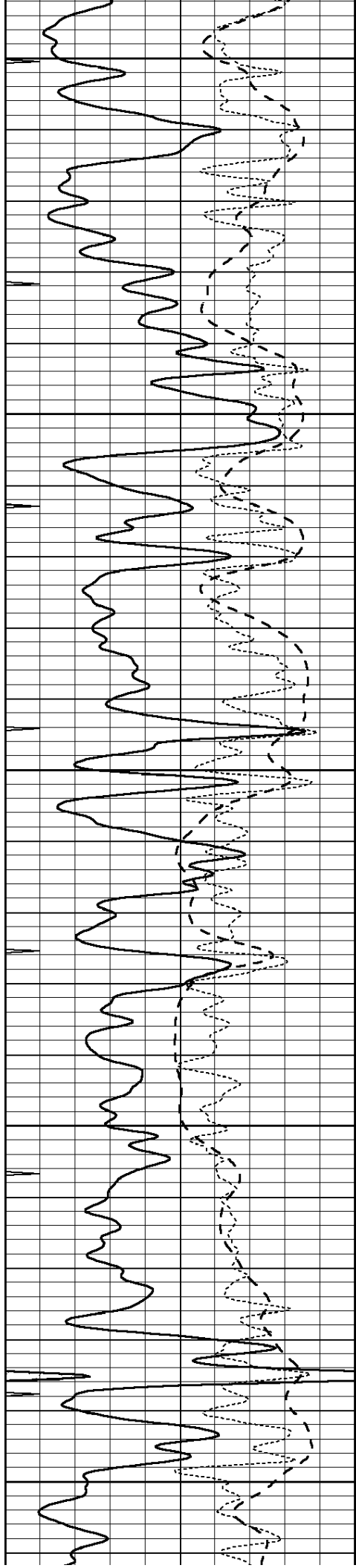
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 Dataset Creation: Tue Jan 04 04:25:21 2011 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

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





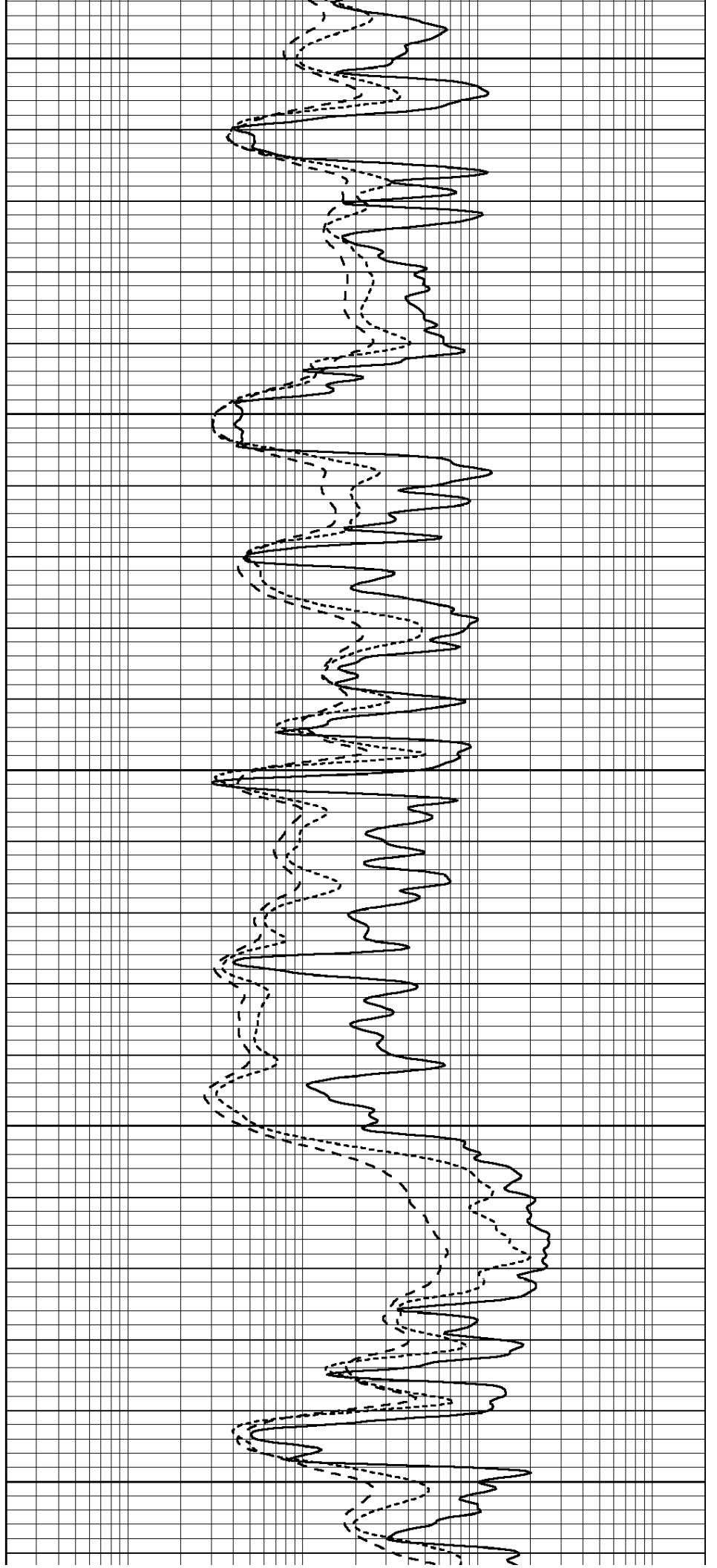
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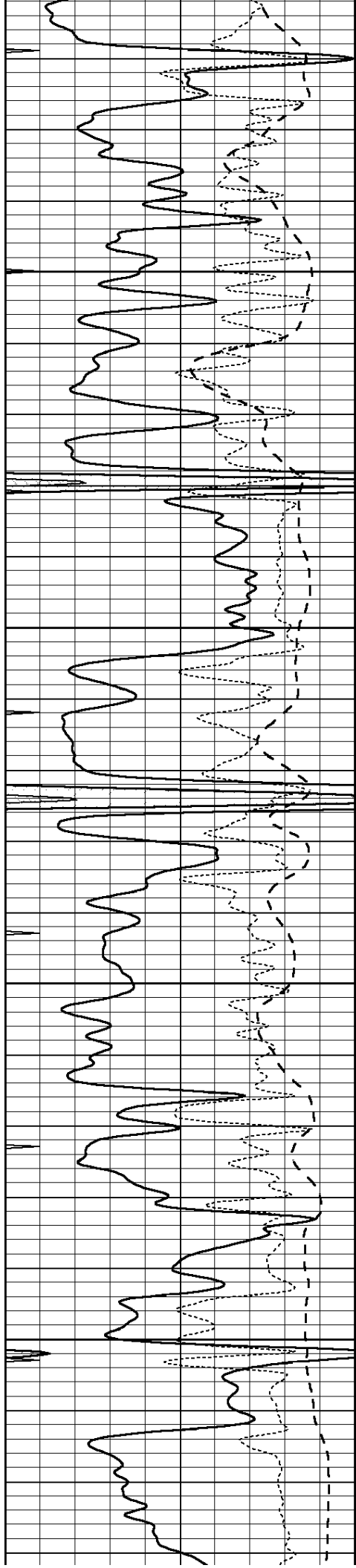
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4100

4150

4200



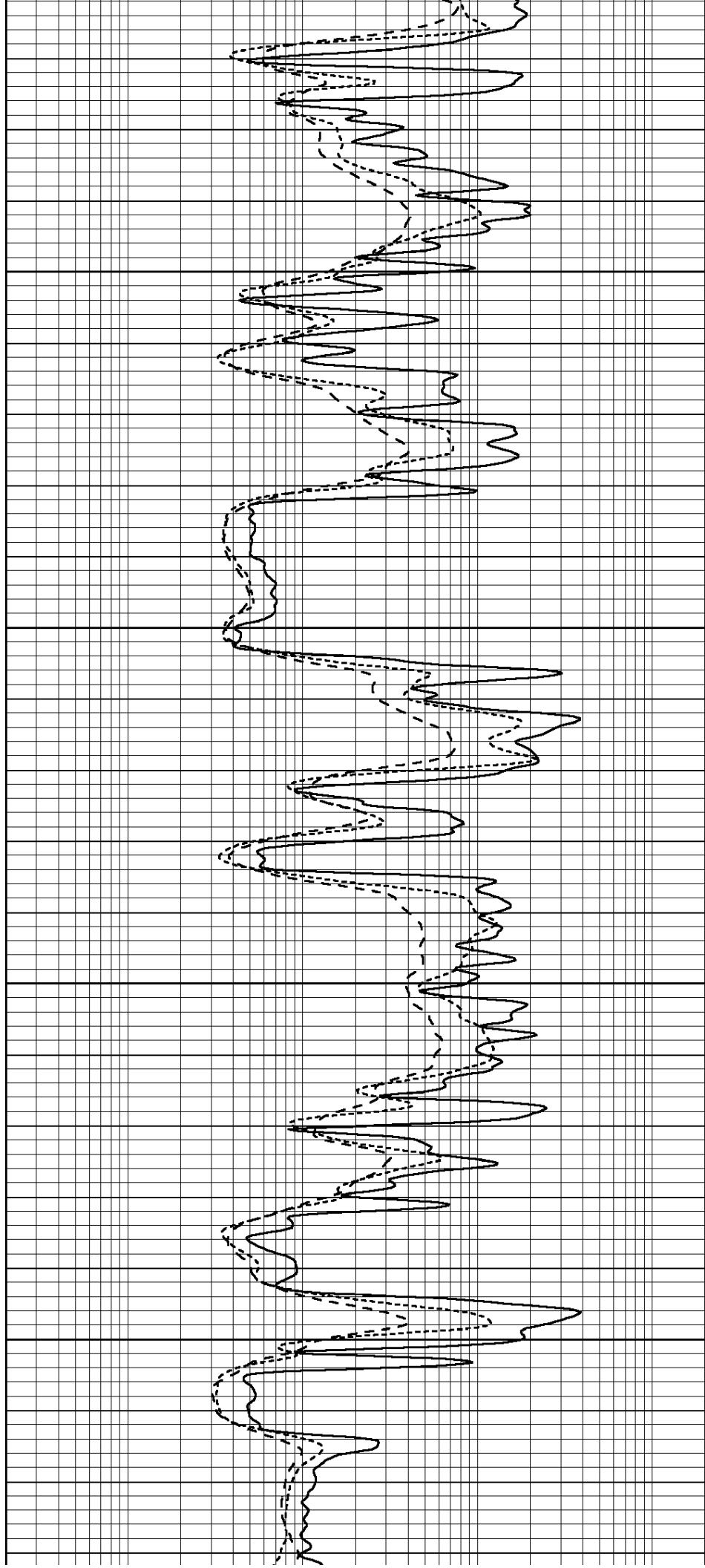


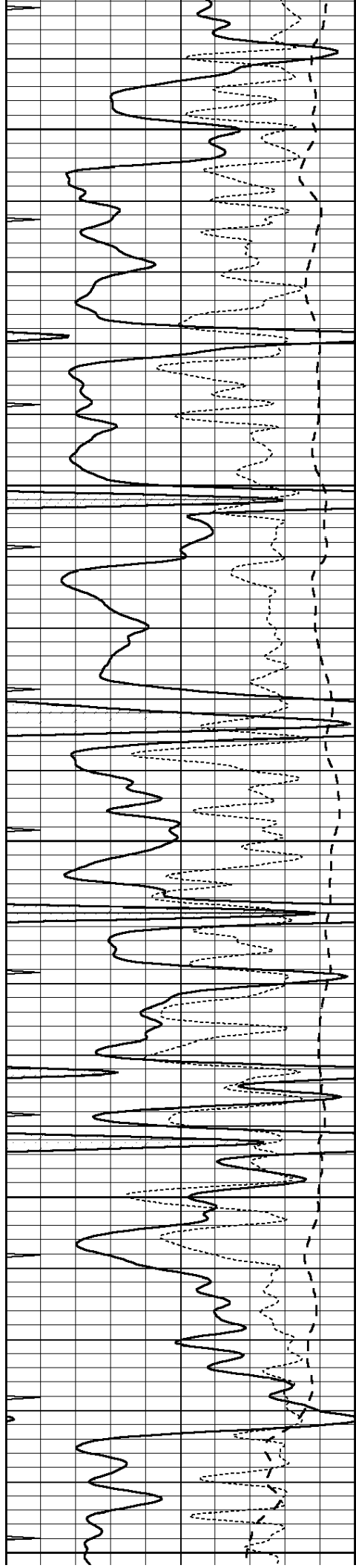
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4300

4350

4400





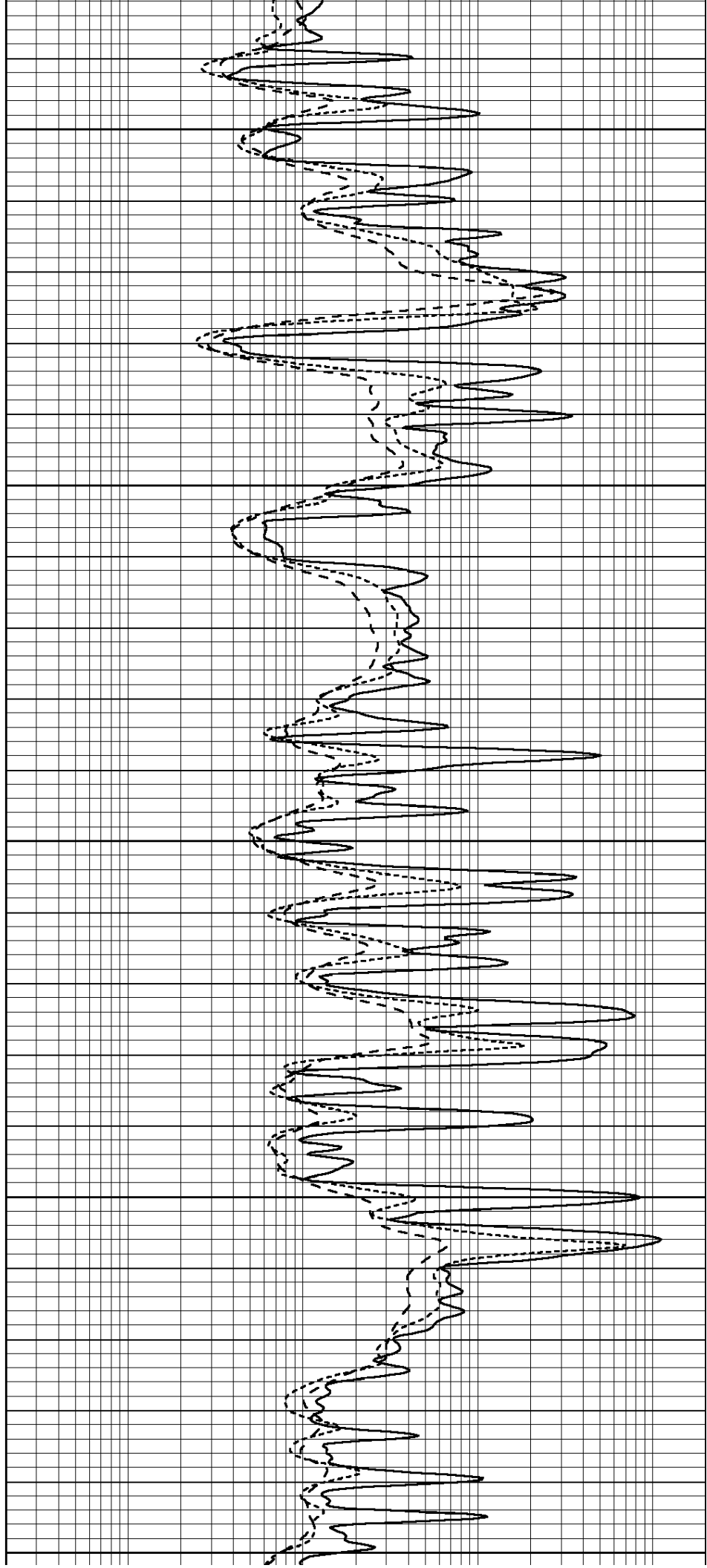
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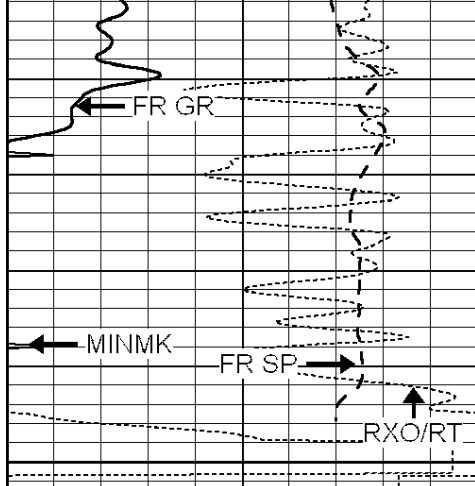
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4550

4600

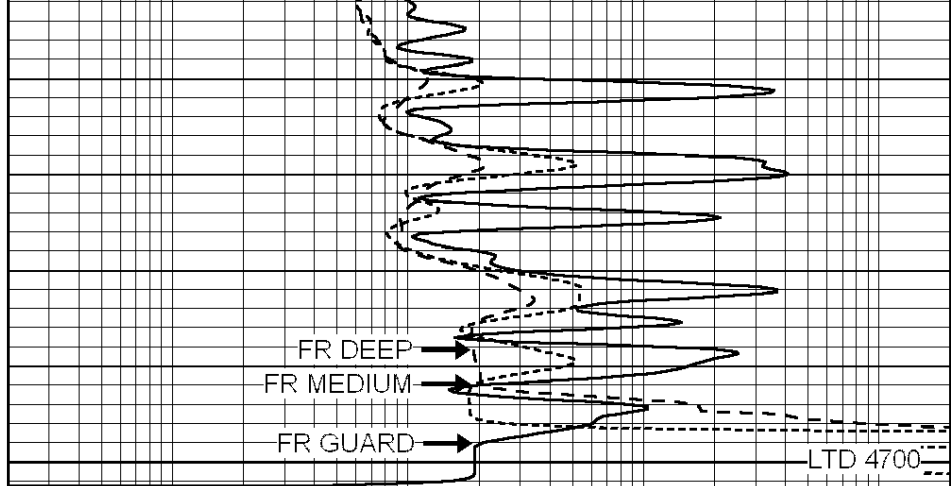
4650





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

4700



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



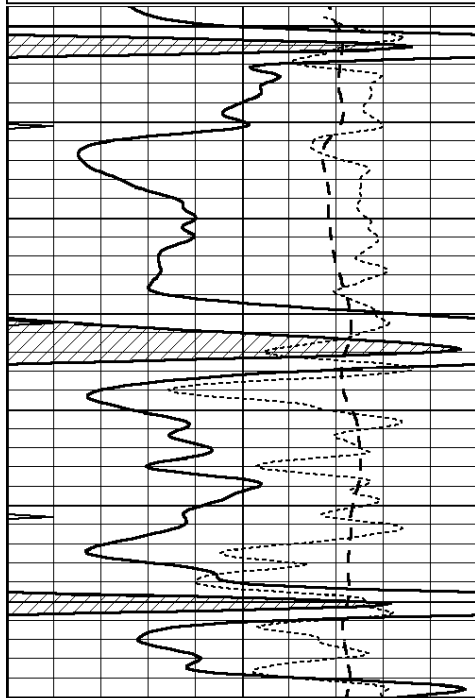
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# REPEAT SECTION

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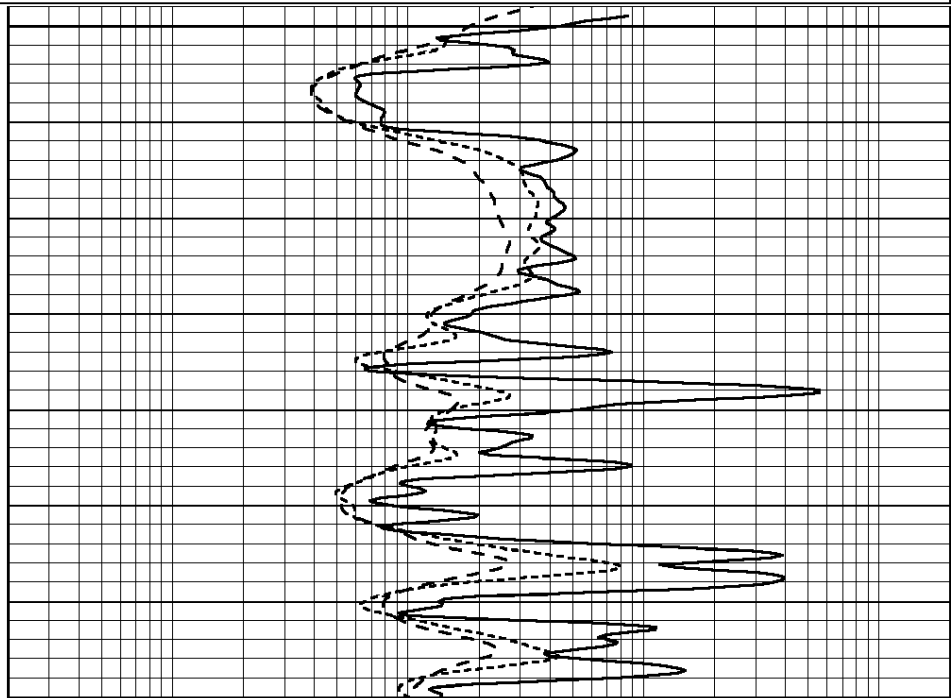
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

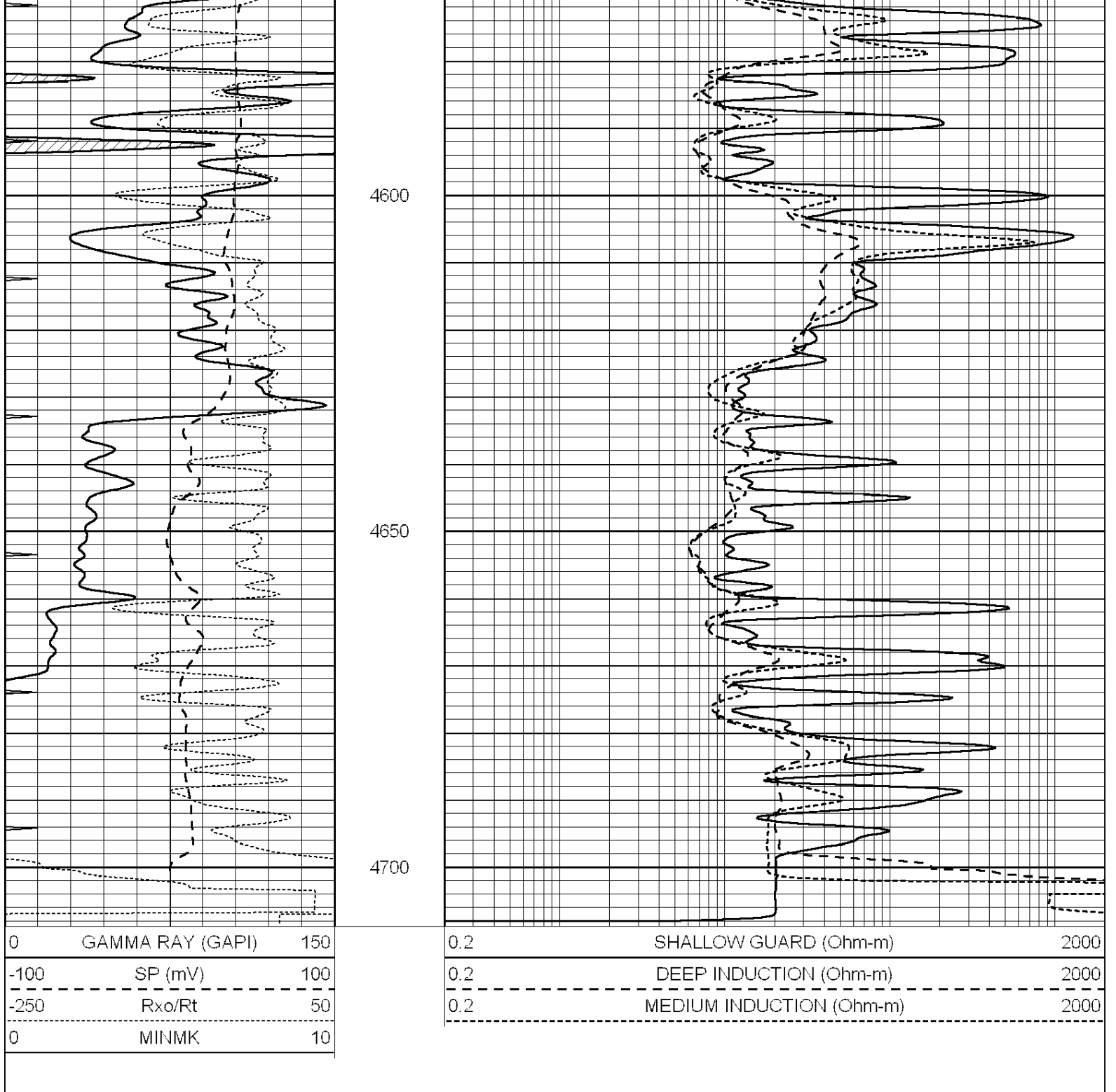
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4500

4550





### Calibration Report

Database File: 006263ddn.db  
 Dataset Pathname: pass3.7  
 Dataset Creation: Tue Jan 04 04:25:21 2011 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: DIL3-GEAR  
 Performed: Sun Jan 02 04:03:49 2011

Loop:	Readings			References		Results		
	Air	Loop		Air	Loop	m	b	
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	3.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-15.000

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555
Litho Density Calibration Report Serial: 003N Model: PRB Performed Tue Sep 08 14:14:44 2009								
Litho Density Calibration								
	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	2.1	6.7						
High Ref	4.6	14.0						
	Gain: 3.0			Offset: 0.6				
Compensated Neutron Calibration Report								
	Serial Number:	NEU_3I						
	Tool Model:	G						
CALIBRATION								
	Detector	Readings	Target	Normalization				
	Short Space	997.00 cps	1000.00 cps	1.0000				
	Long Space	986.00 cps	1000.00 cps	1.0000				
Gamma Ray Calibration Report								
Serial Number:	GR3							
Tool Model:	OPEN							
Performed:	Tue Jan 04 02:53:40 2011							
Calibrator Value:	200.0	GAPI						
Background Reading:	3.0	cps						
Calibrator Reading:	186.0	cps						
Sensitivity:	0.6500	GAPI/cps						