



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		CHARTER ENERGY, INC.	
Well		SYMNS #2	
Field			
County		STAFFORD	
State		KANSAS	
Location:		API # : 15-185-23897-0000	
Well		SYMNS #2	
Field		1957' FSL & 546' FEL NW - SE - NE - SE	
County		STAFFORD	
State		KANSAS	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 7' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 28 TWP 22S RGE 14W		Elevation K.B. 1957 D.F. 1955 G.L. 1950	
Date	8/27/14		
Run Number	ONE		
Depth Driller	3995		
Depth Logger	3996		
Bottom Logged Interval	3994		
Top Log Interval	0		
Casing Driller	8 5/8" @ 494'		
Casing Logger	492		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 22,000 PPM	
Density / Viscosity	8.9/4.1		
pH / Fluid Loss	9.0/24.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.30 @ 86F		
Rmt @ Meas. Temp	0.23 @ 86F		
Rmc @ Meas. Temp	0.36 @ 86F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	0.22 @ 116F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	116F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JEFF GRONEWEG		
Witnessed By	JIM MUSGROVE		

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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, KS. (785) 628-6395
DIRECTIONS:
INTERSECTION OF HWY 19 & RADIUM BLACKTOP - 3 MILES SOUTH
2 MILES EAST - 1/2 MILE SOUTH - WEST INTO

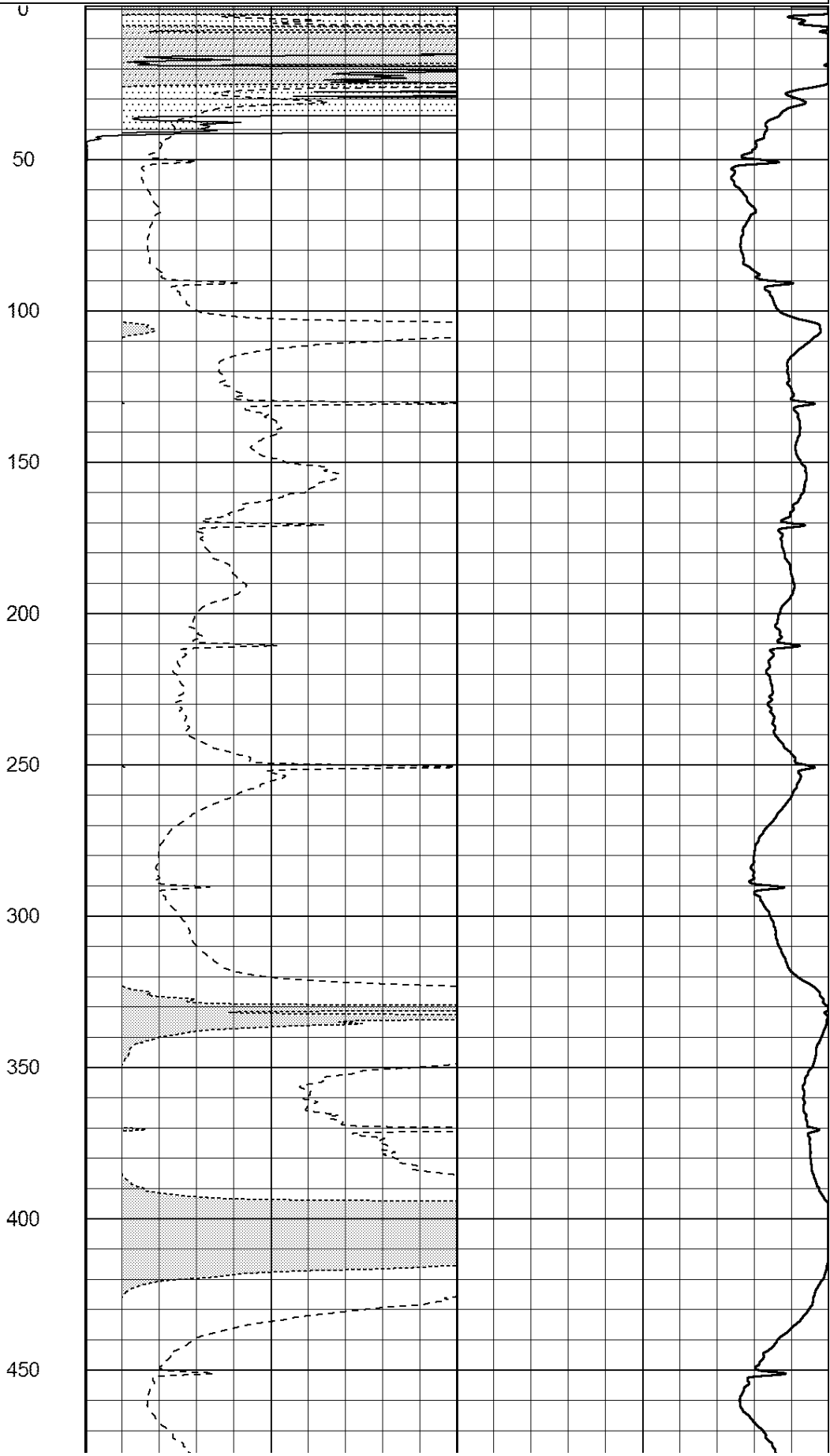
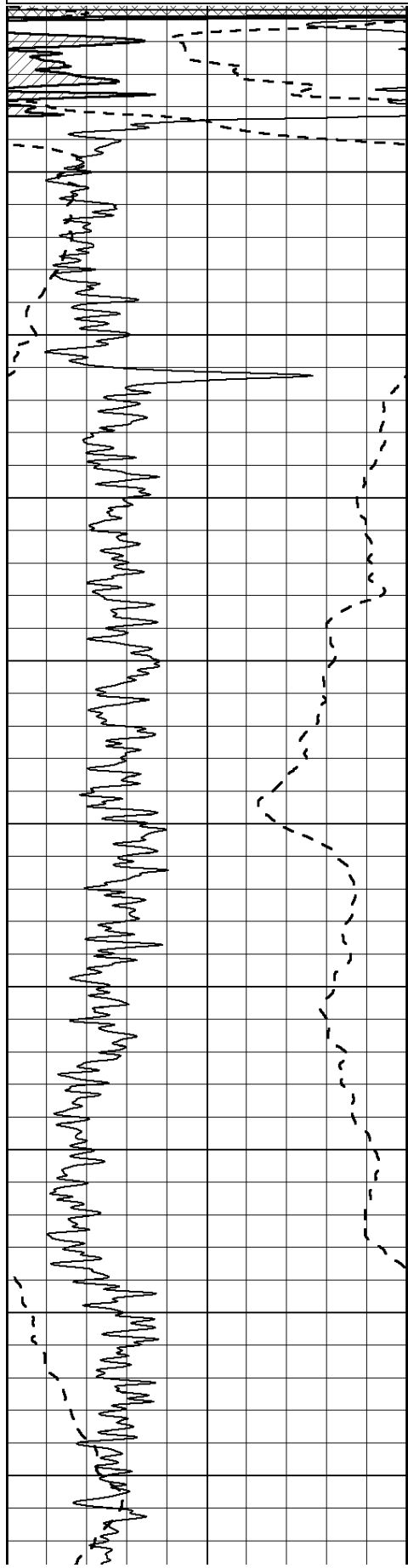
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Dataset Pathname: pass3.3
Presentation Format: _dil2
Dataset Creation: Wed Aug 27 03:44:23 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

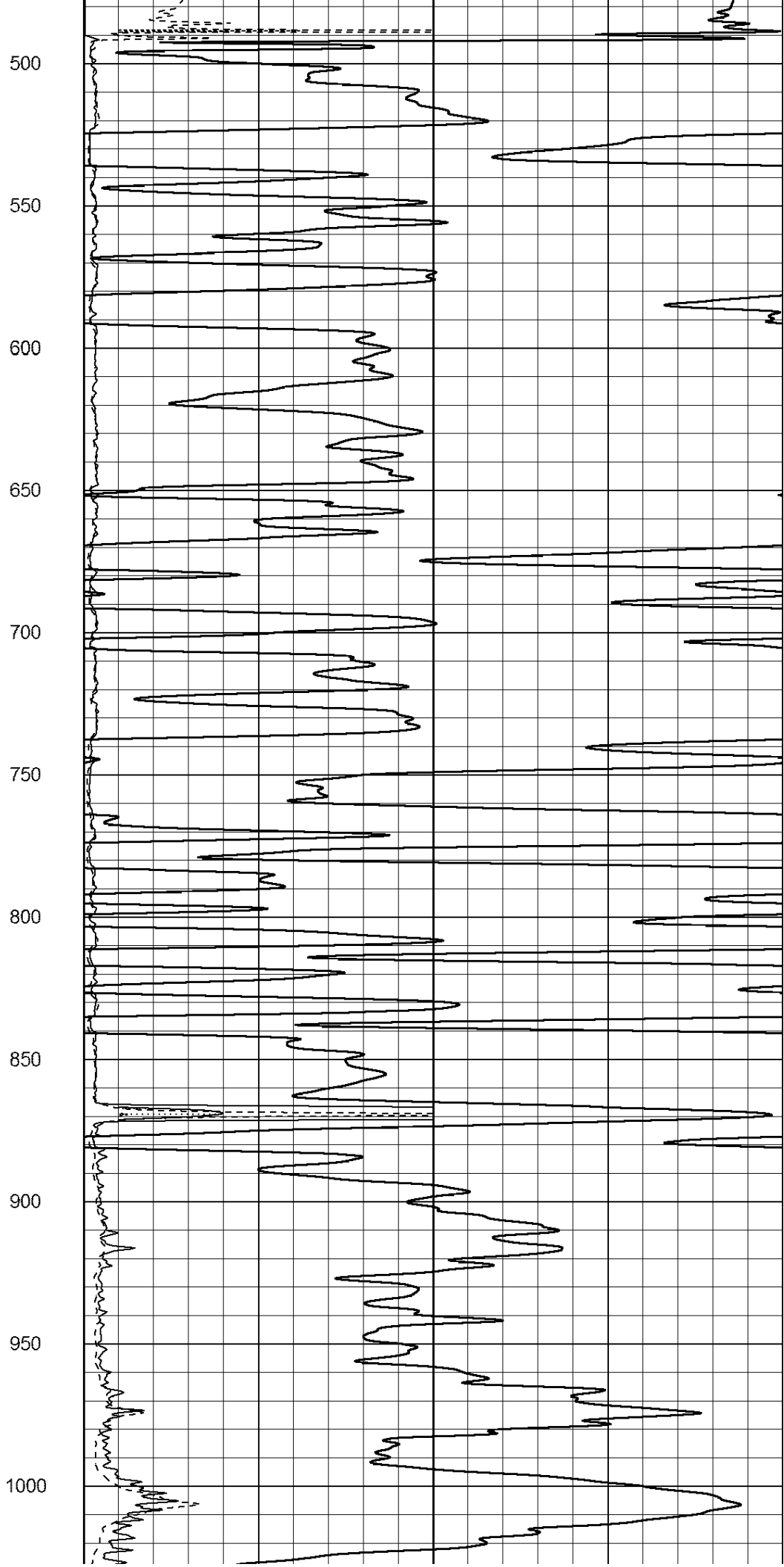
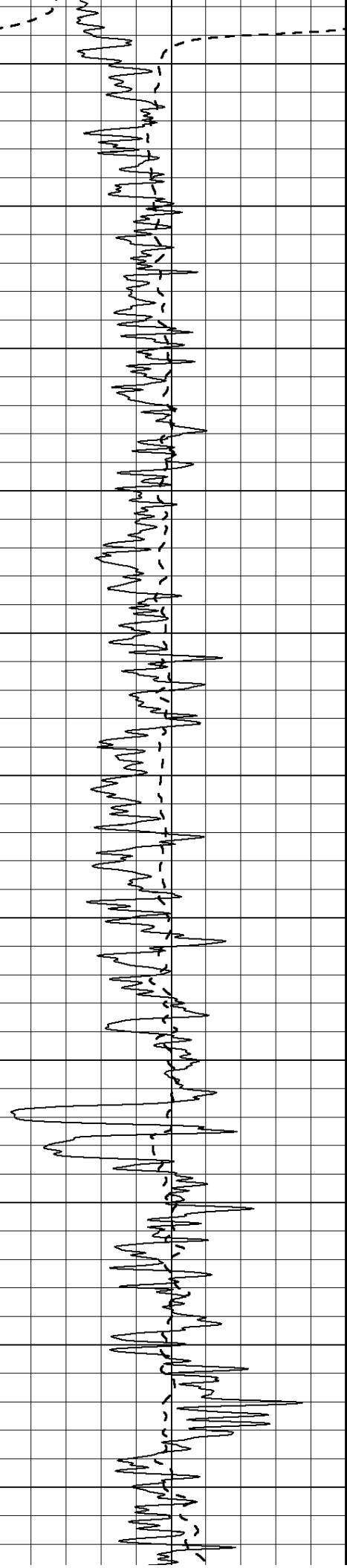
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-100	SP (mV)	100

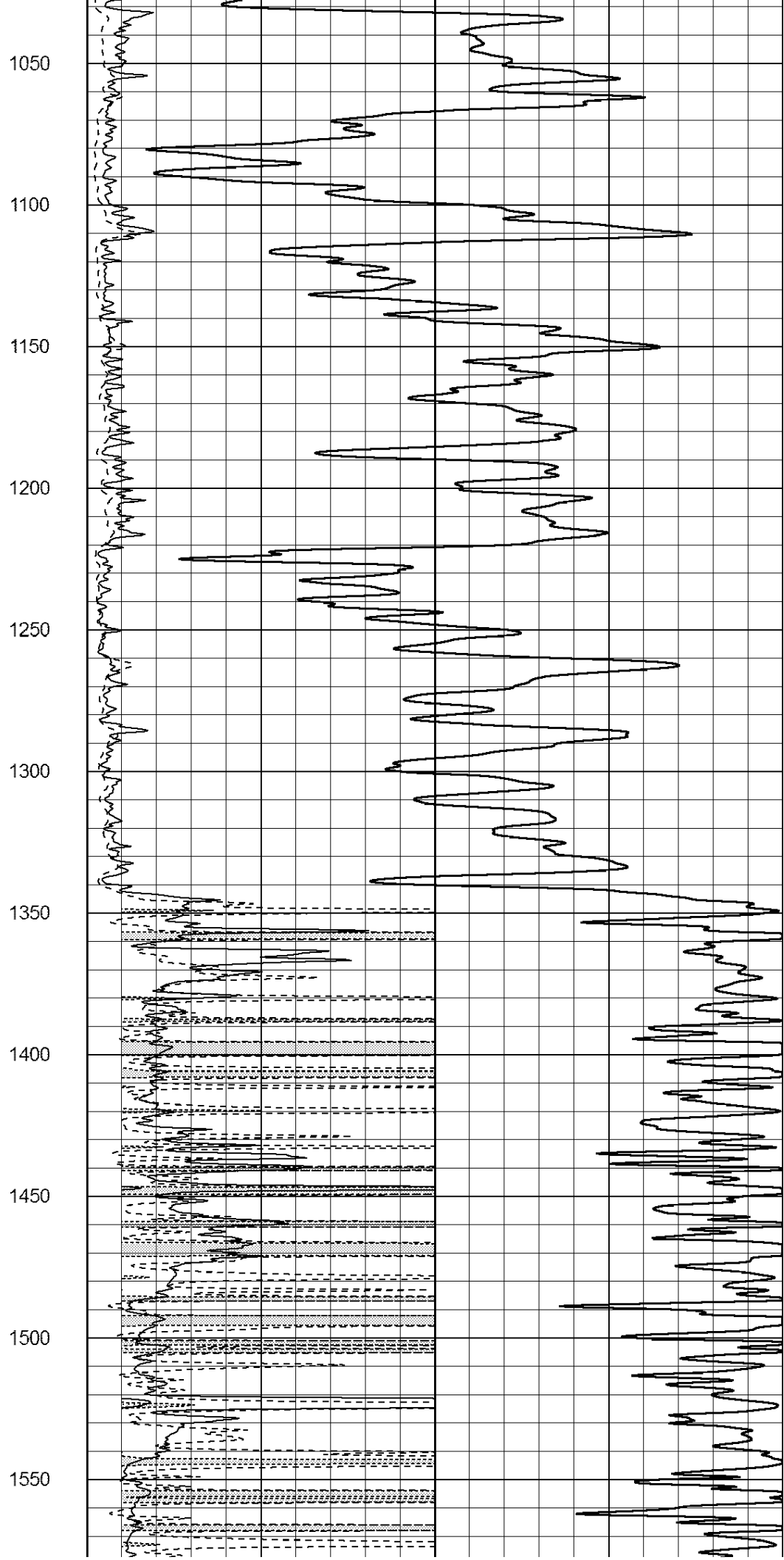
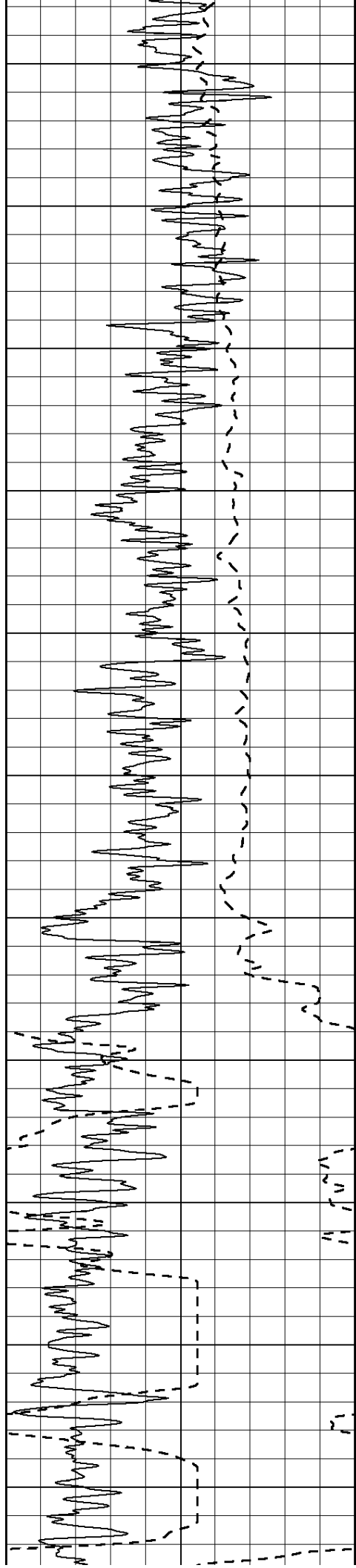
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0	RILD (Ohm-m)	50	

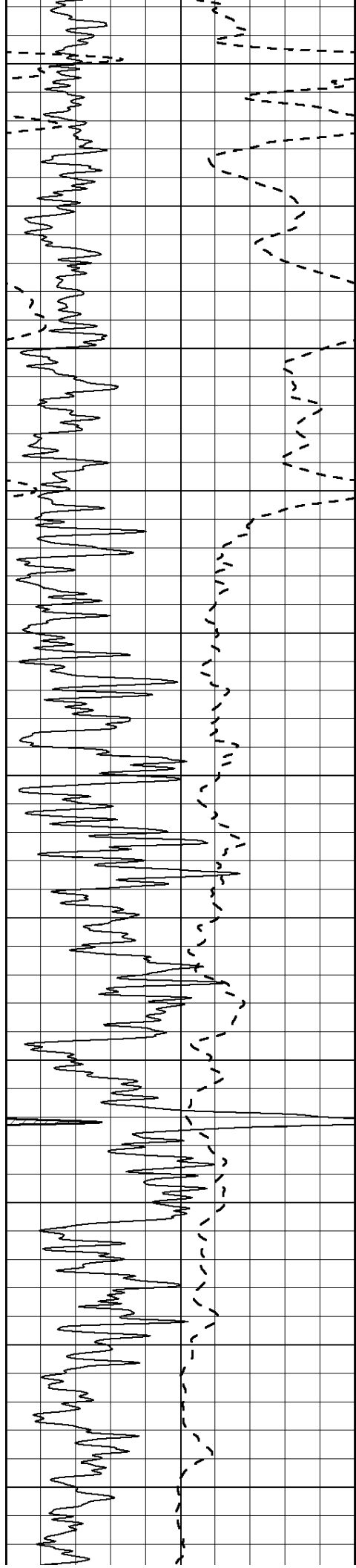
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50	RILD X10 (Ohm-m)	500	

50	RLL3 X10 (Ohm-m)	500	

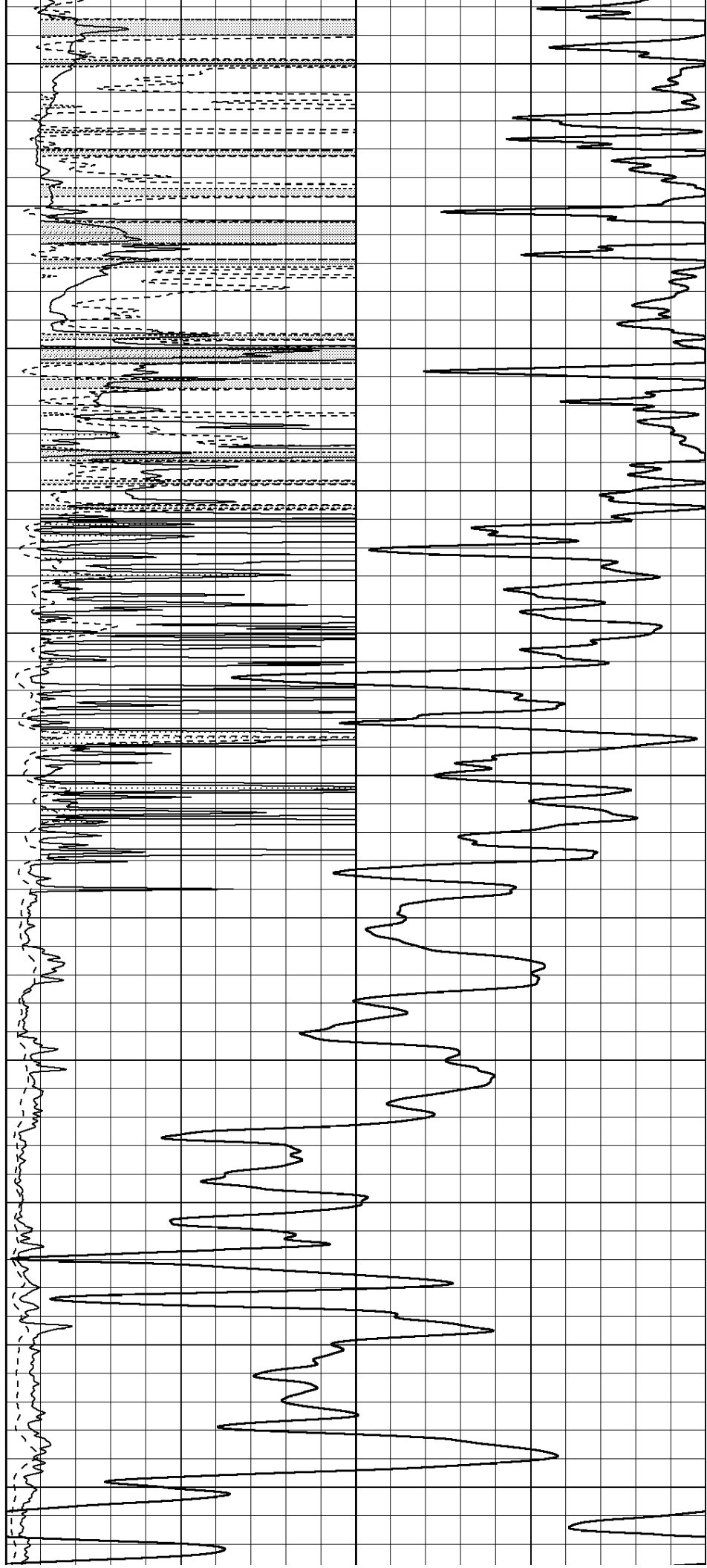


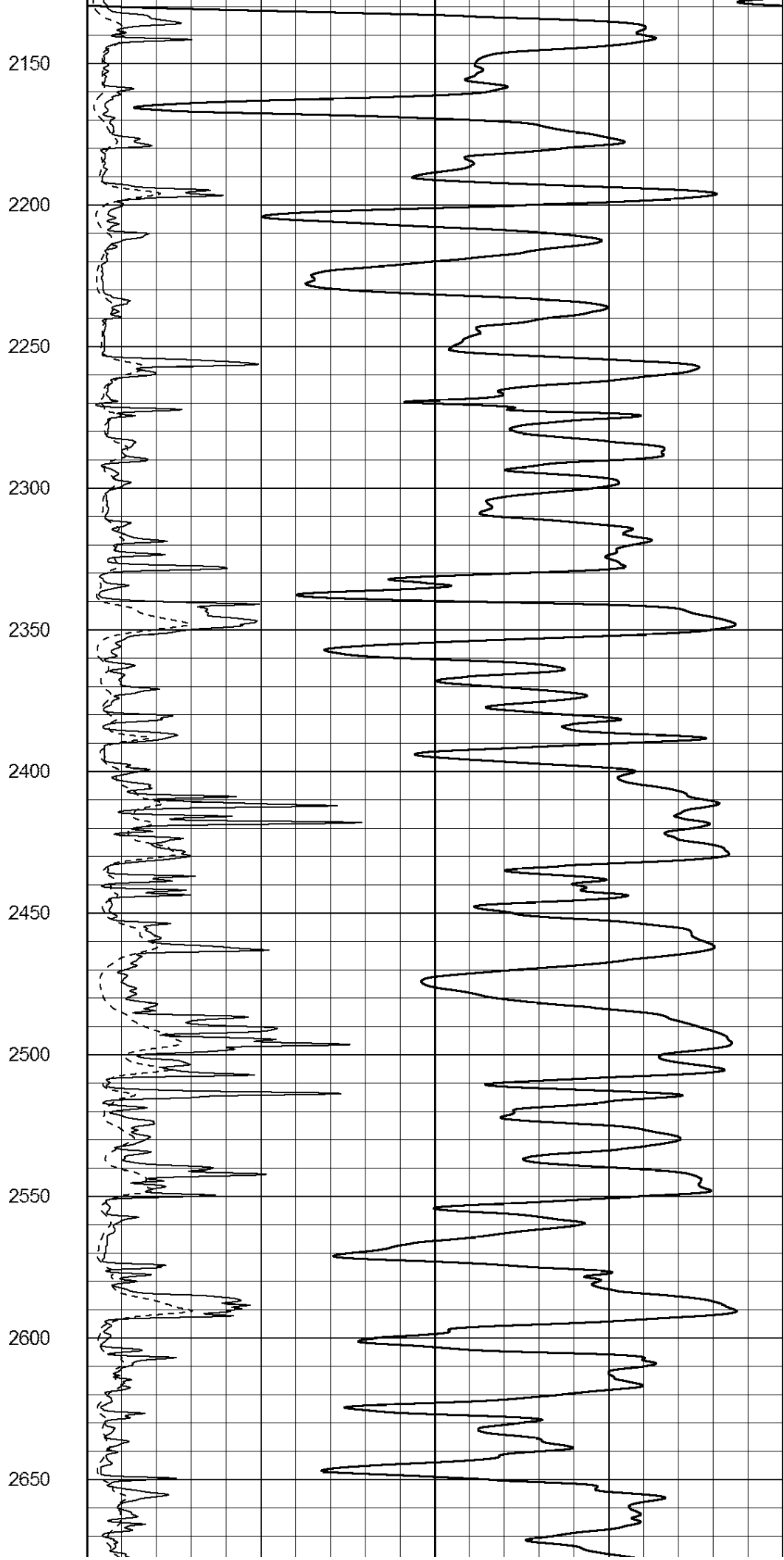
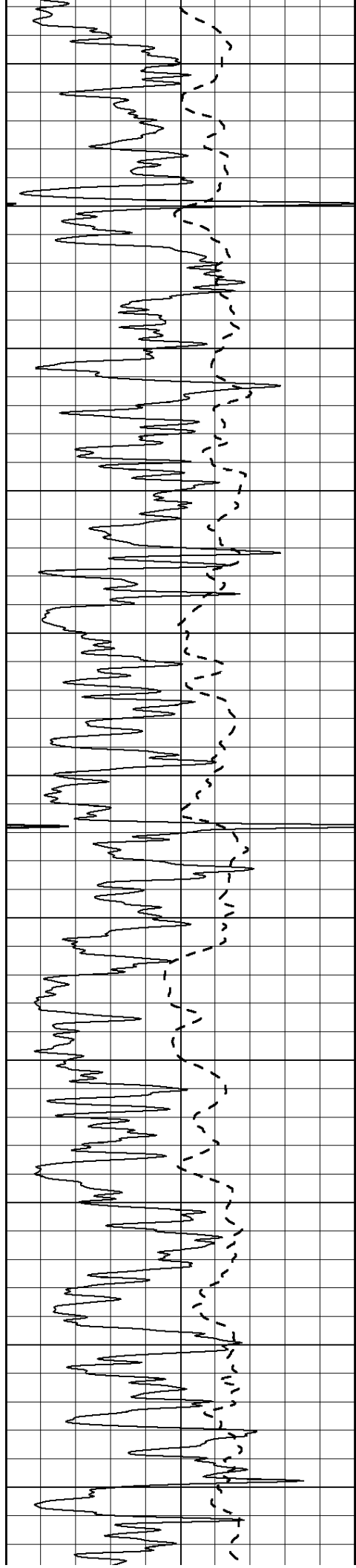


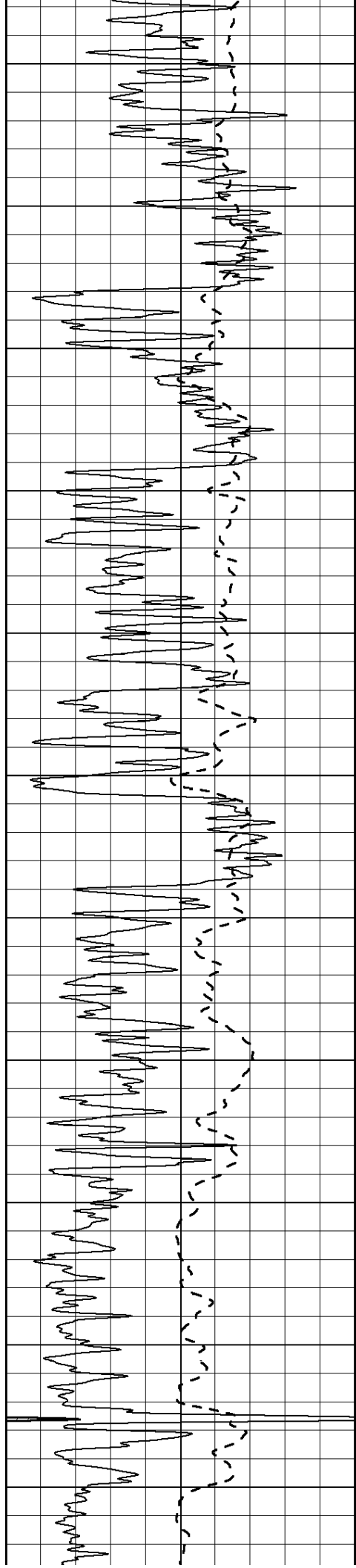




1600
1650
1700
1750
1800
1850
1900
1950
2000
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2100







2700

2750

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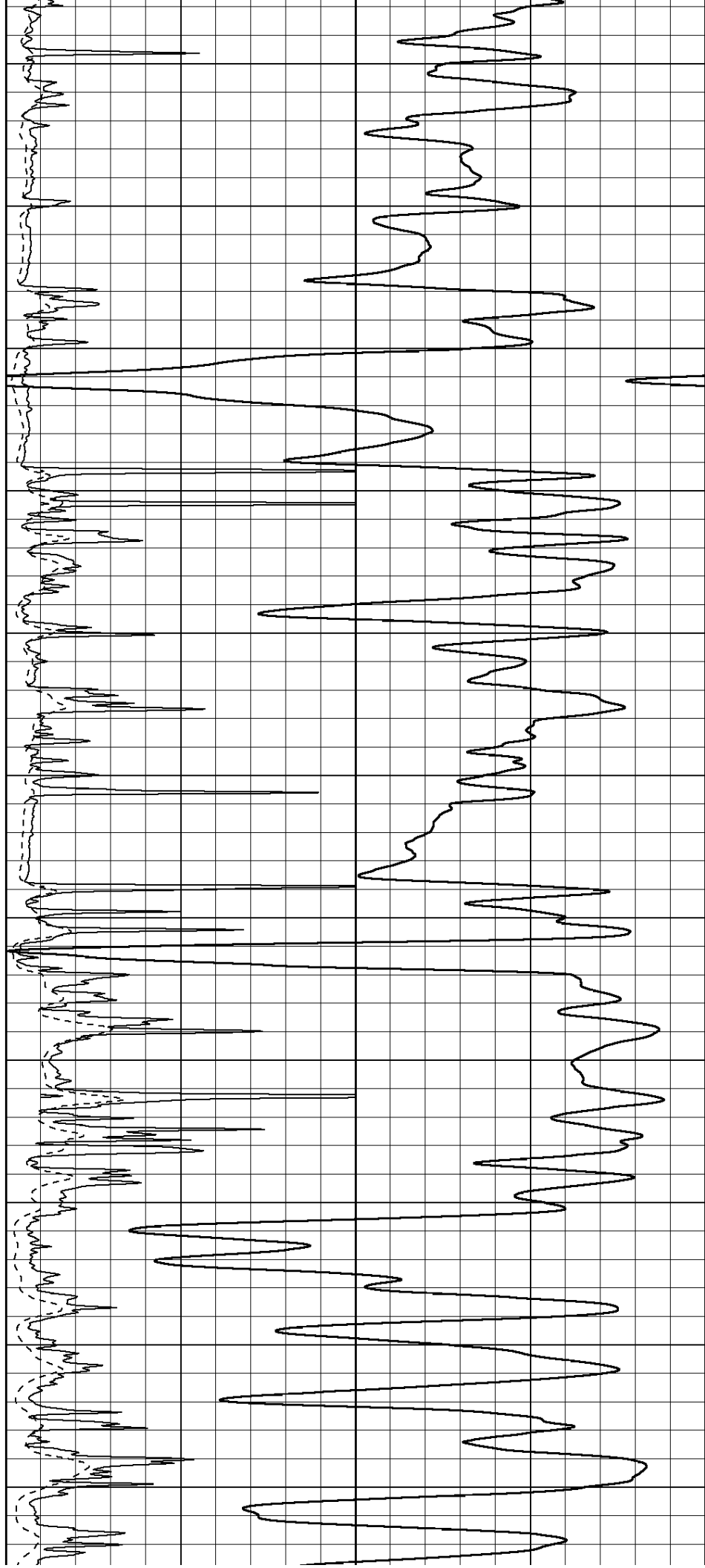
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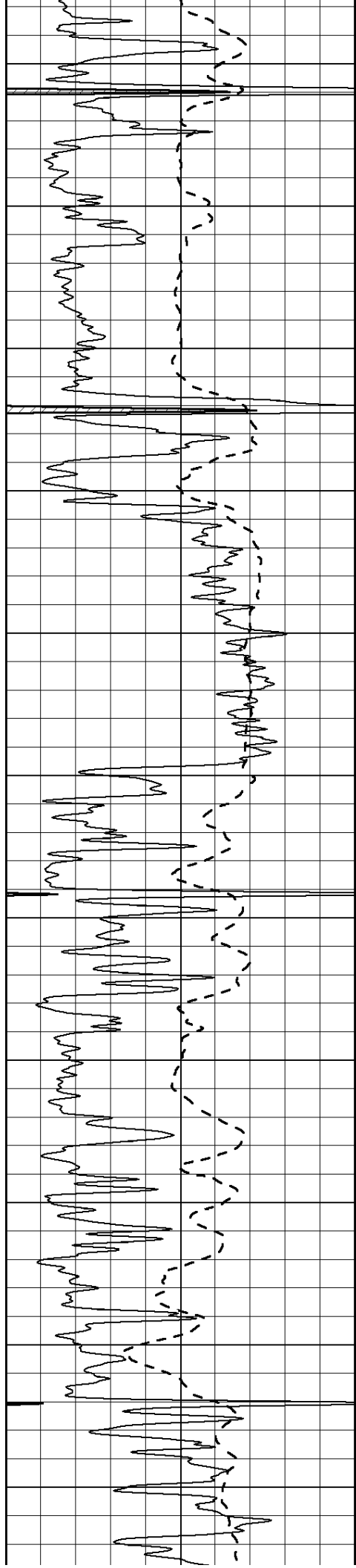
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3100

3150

3200





3250

3300

3350

3400

3450

3500

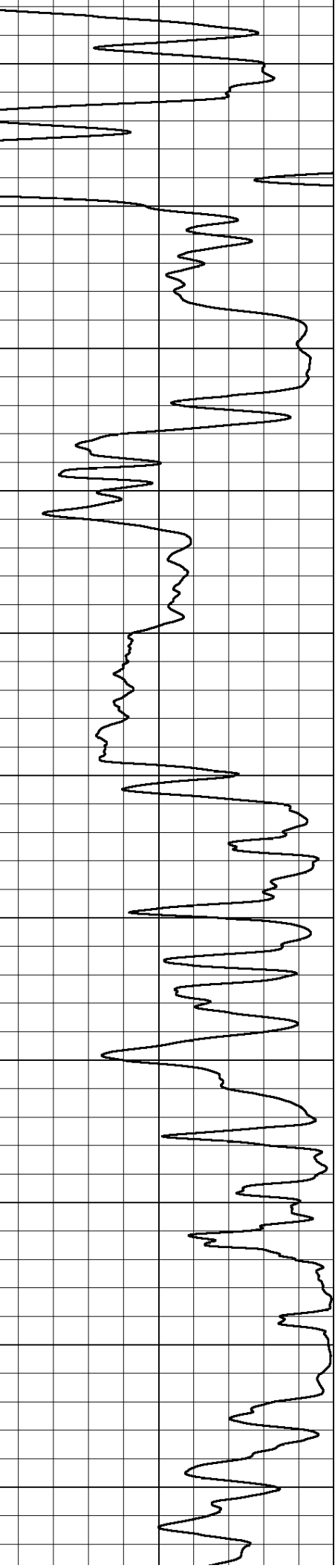
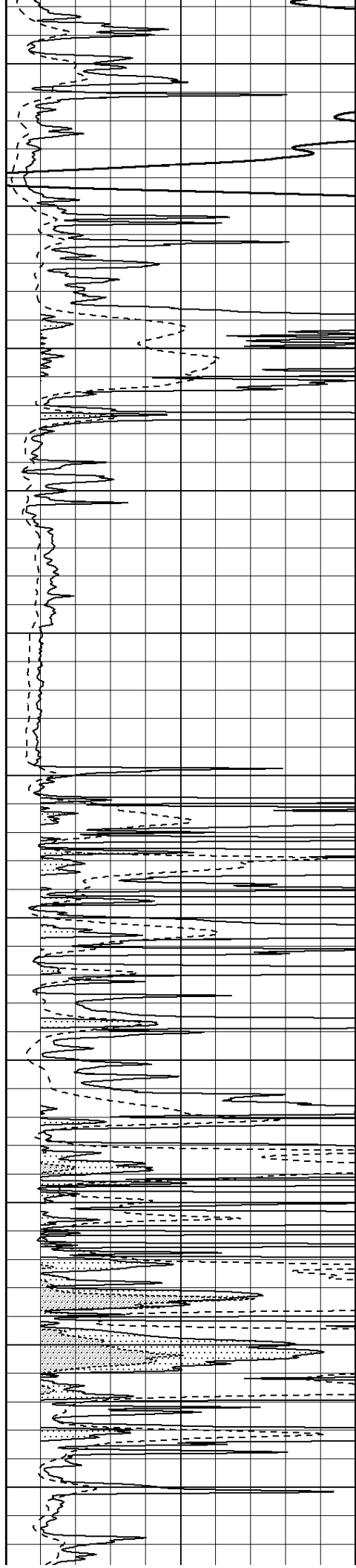
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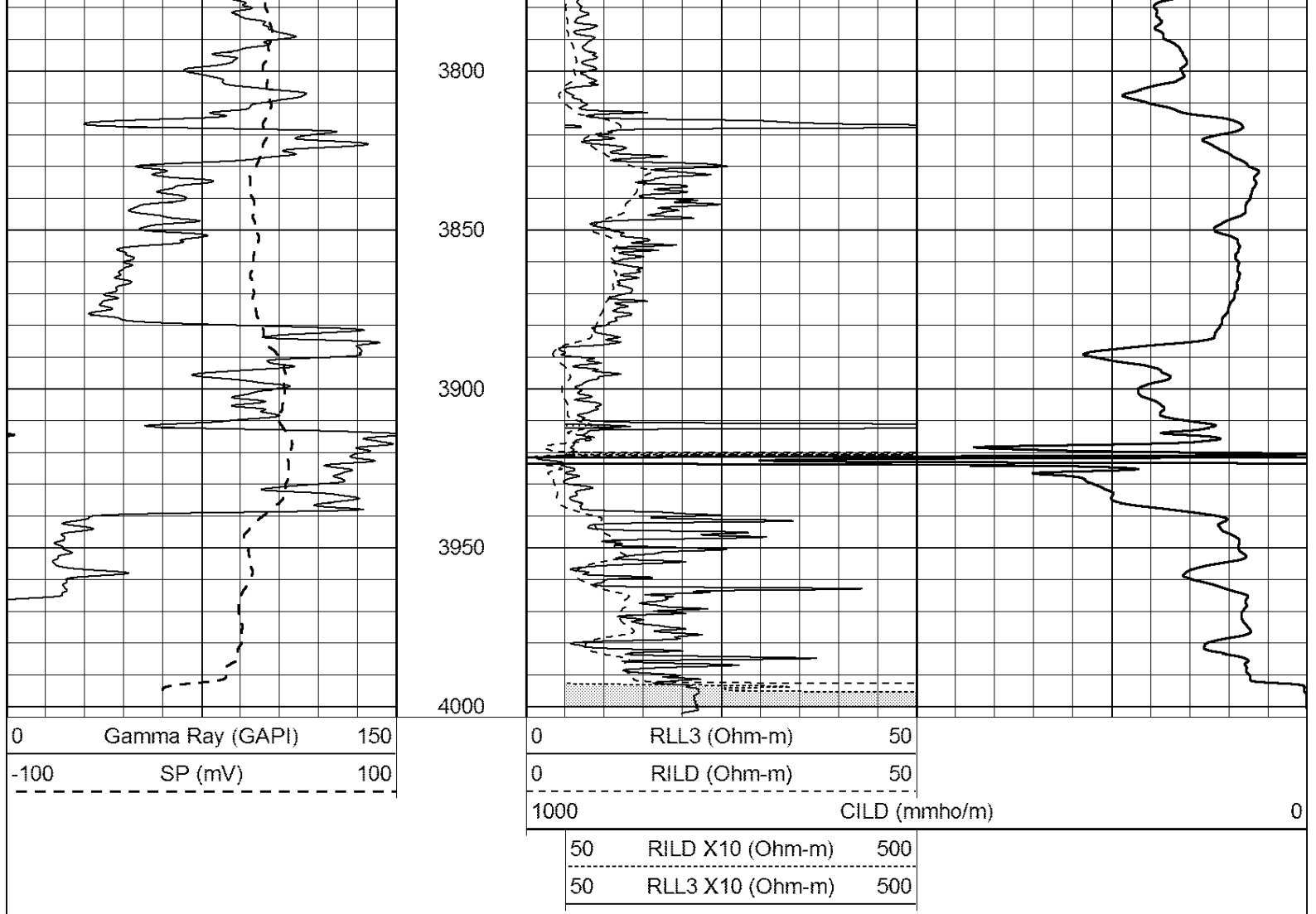
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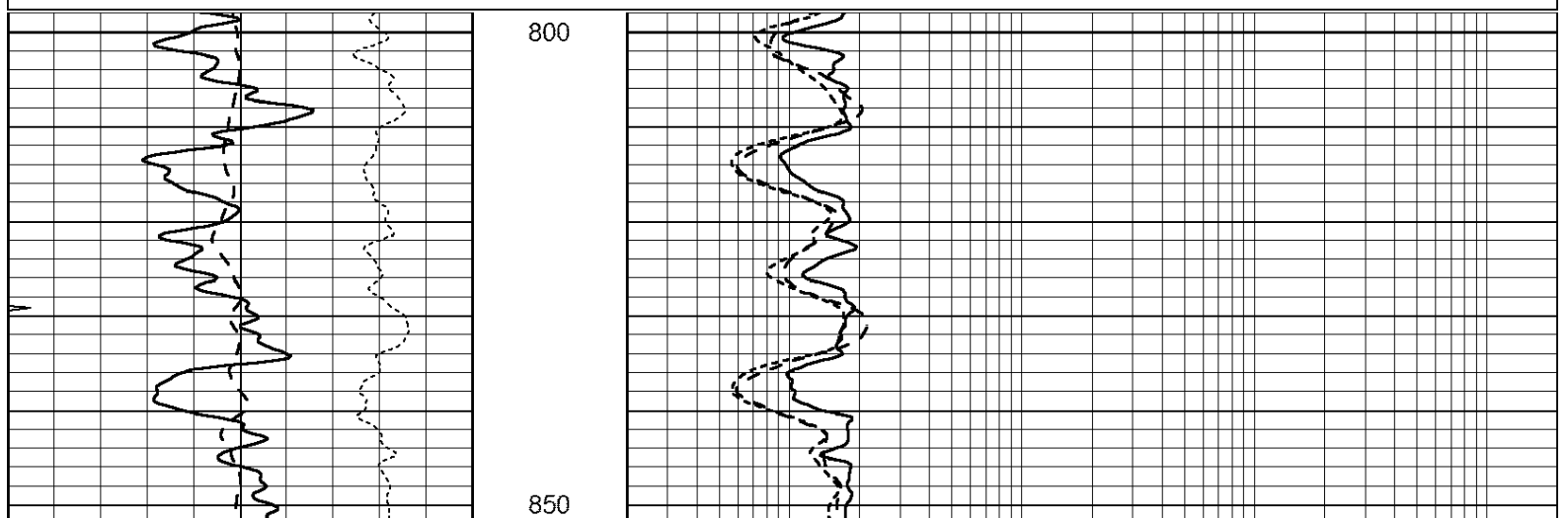
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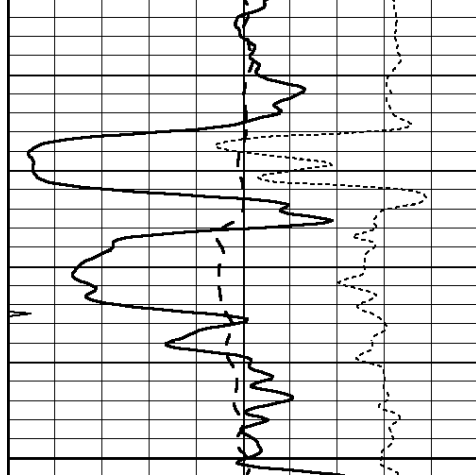




Database File: 25858ddn.db
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 Charted by: Depth in Feet scaled 1:240

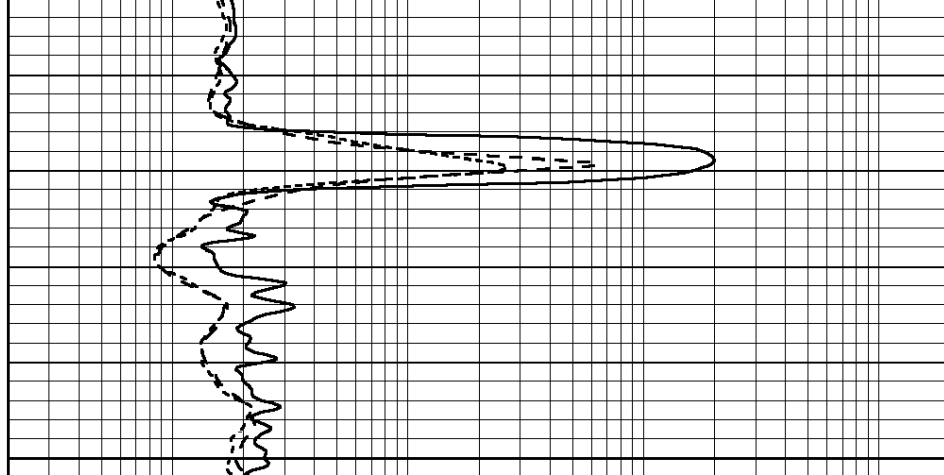
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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





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

900



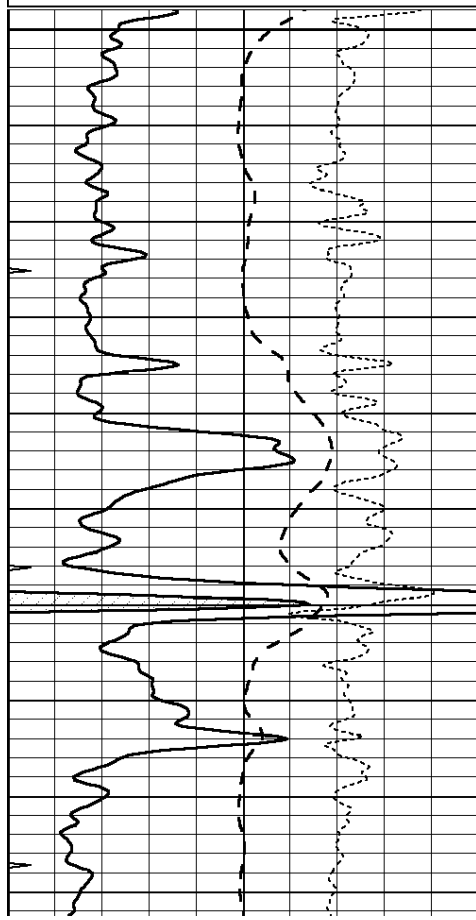
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0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 25858ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
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 Charted by: Depth in Feet scaled 1:240

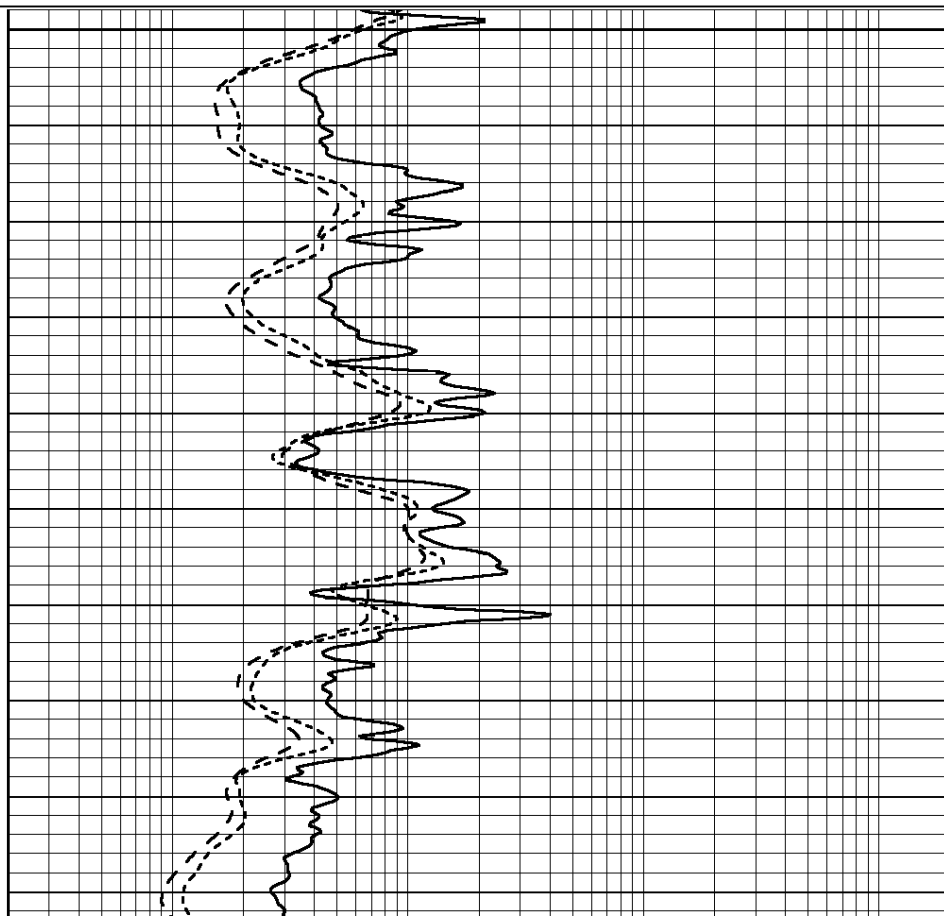
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

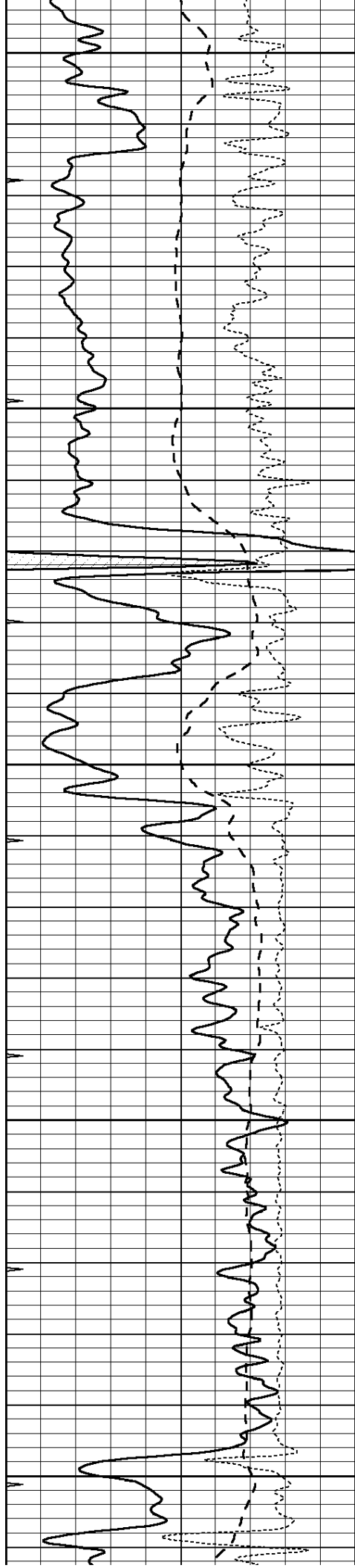
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

3200



3250





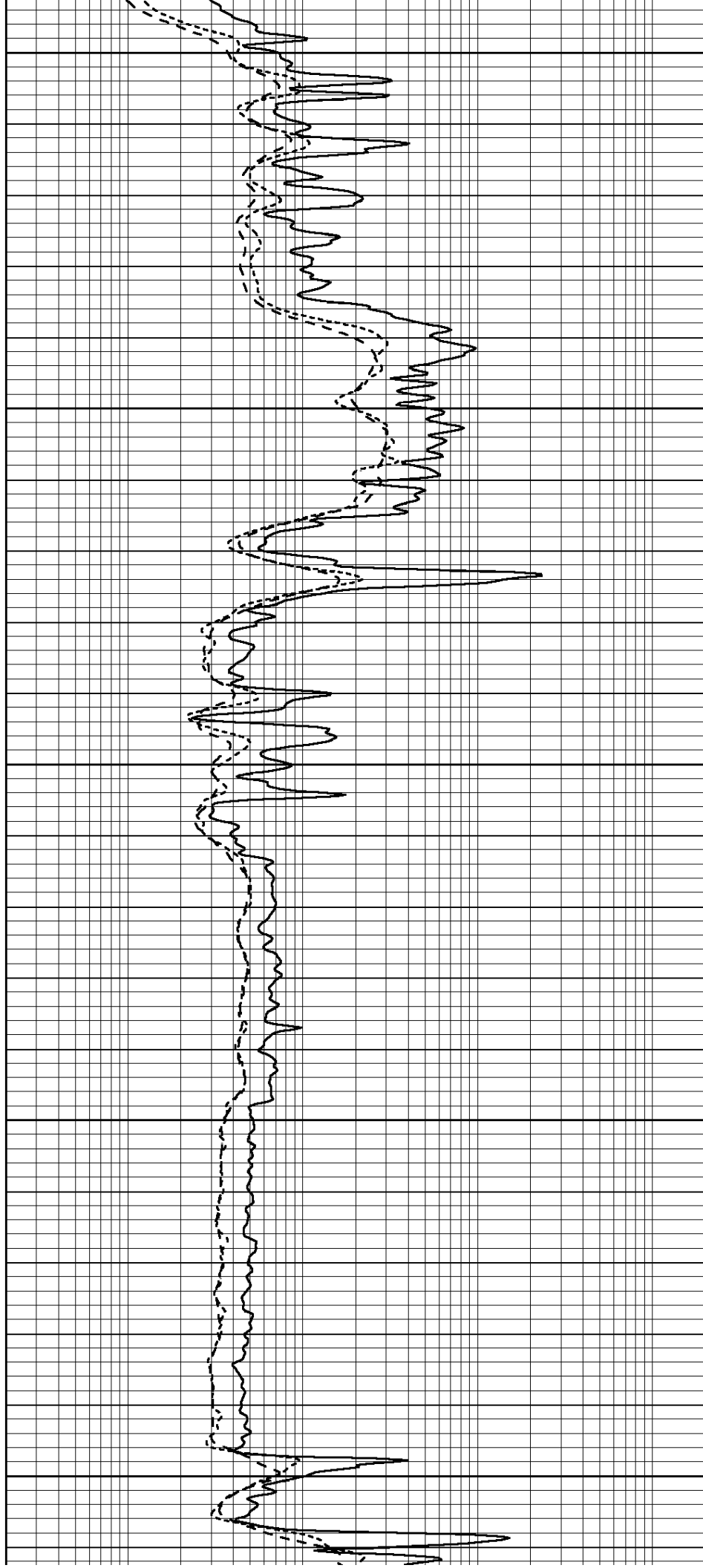
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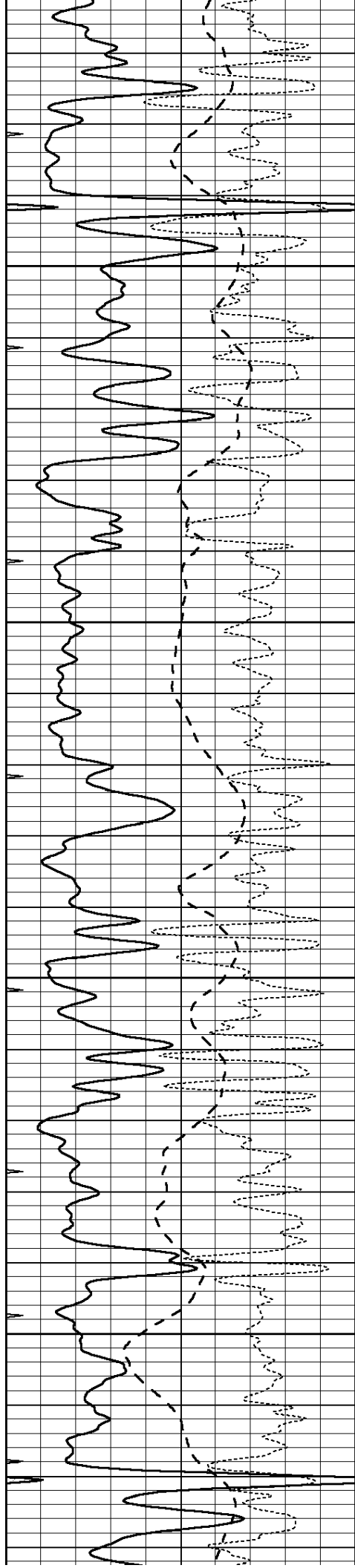
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3450

3500



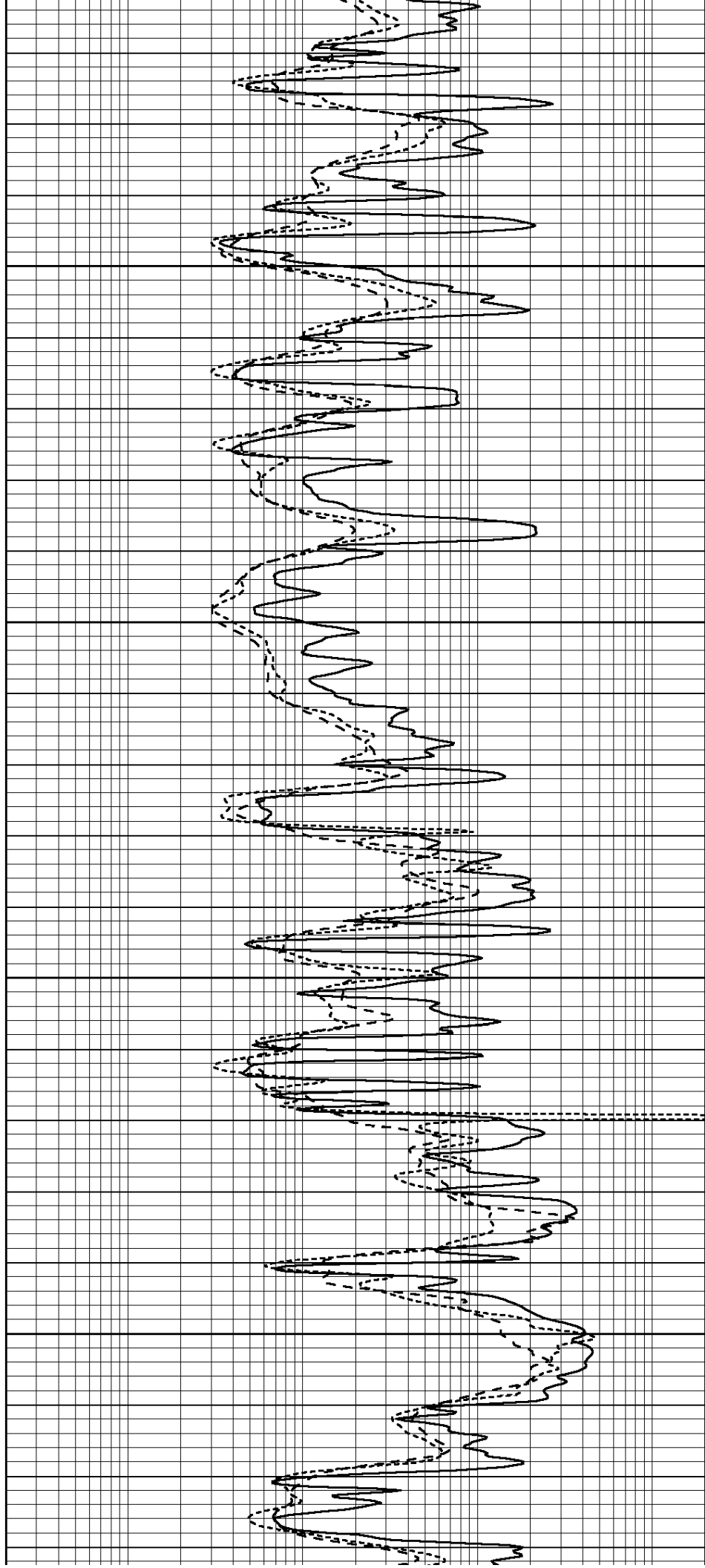


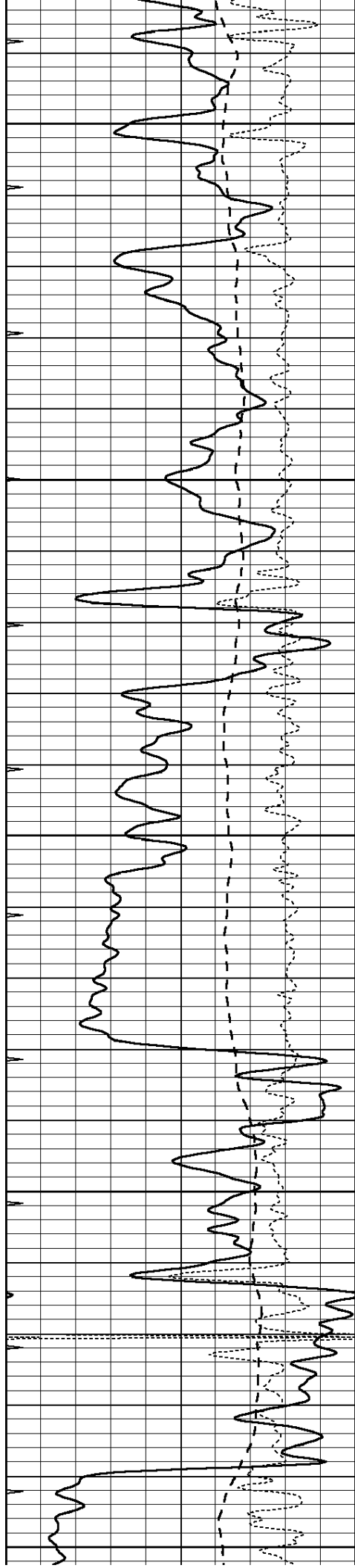
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3650

3700





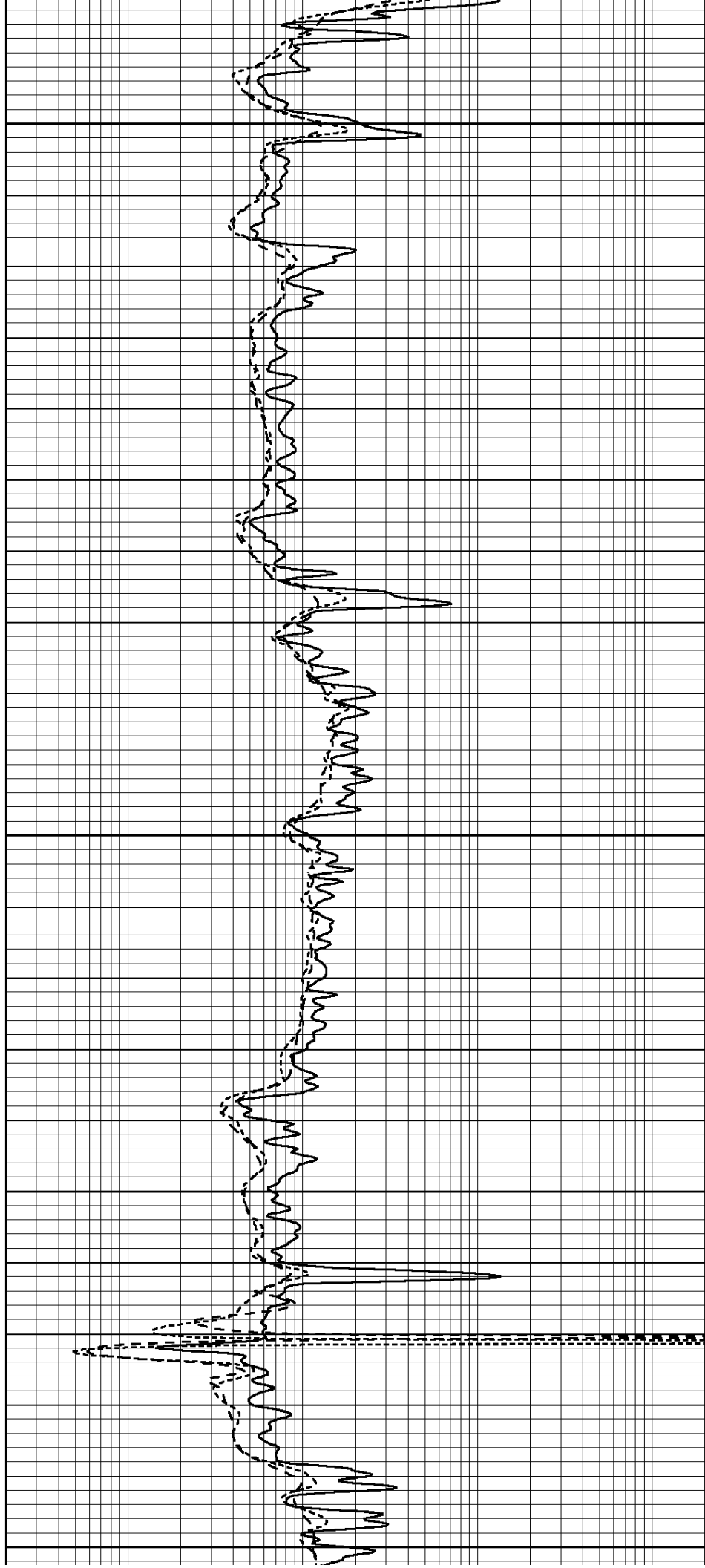
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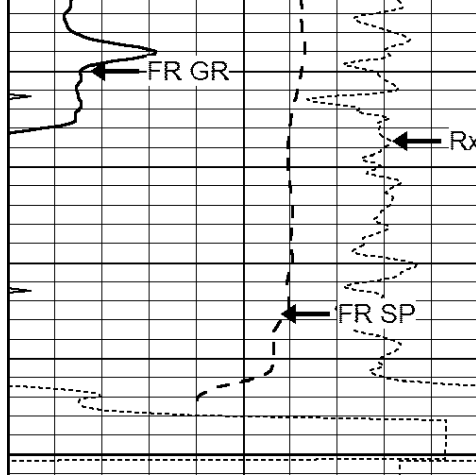
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3850

3900

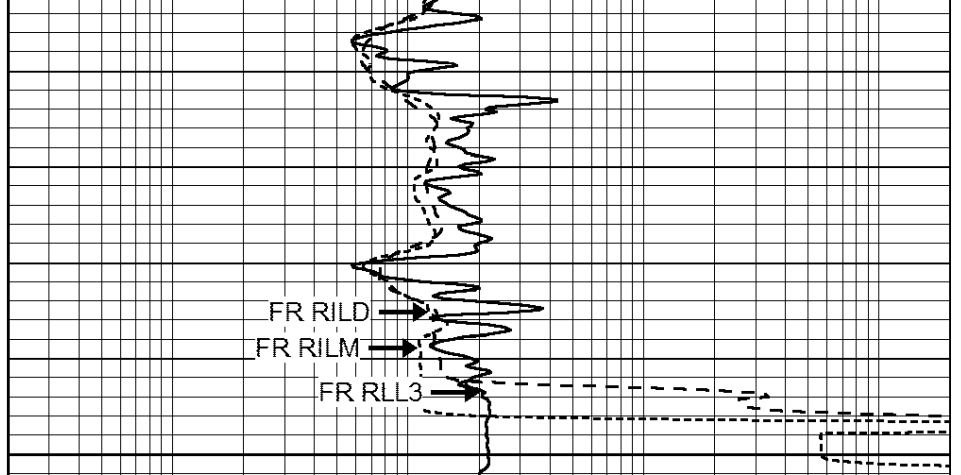
3950





LTD 3996
4000

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

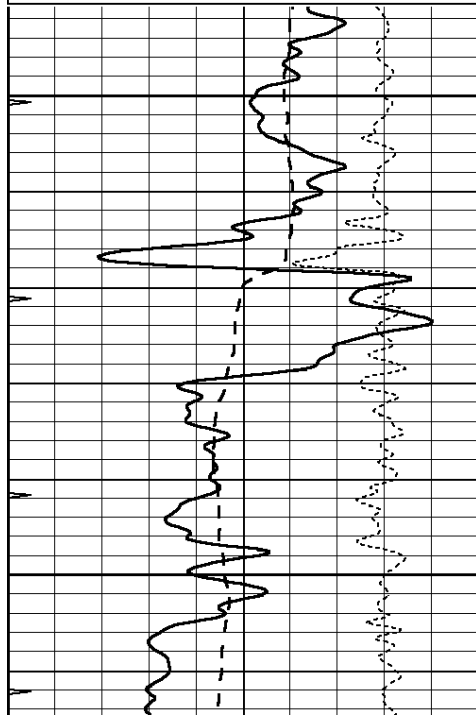


REPEAT SECTION

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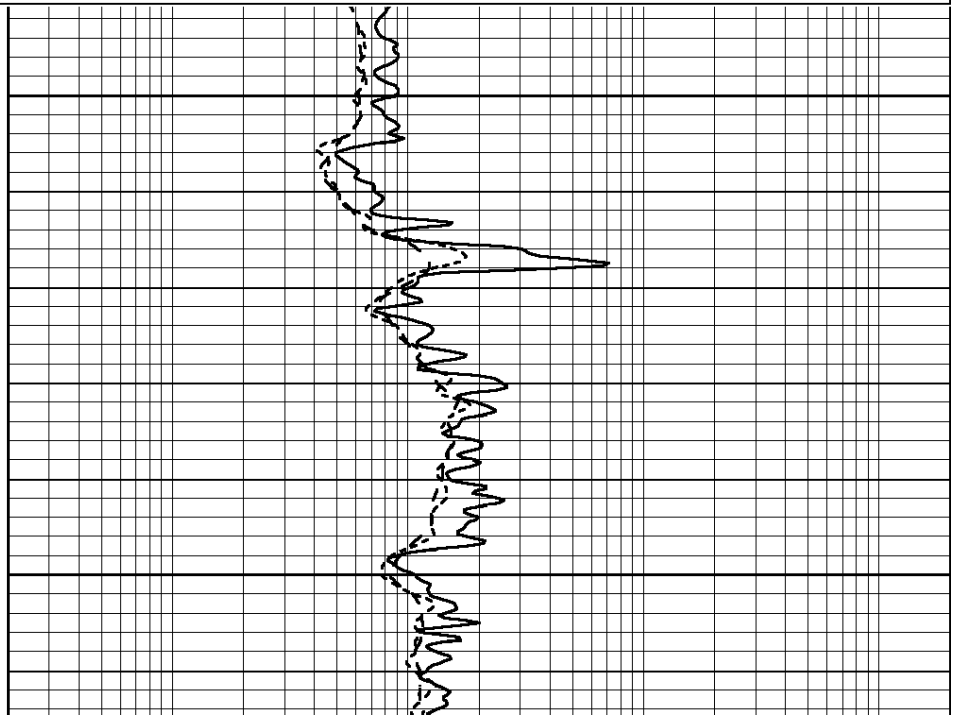
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

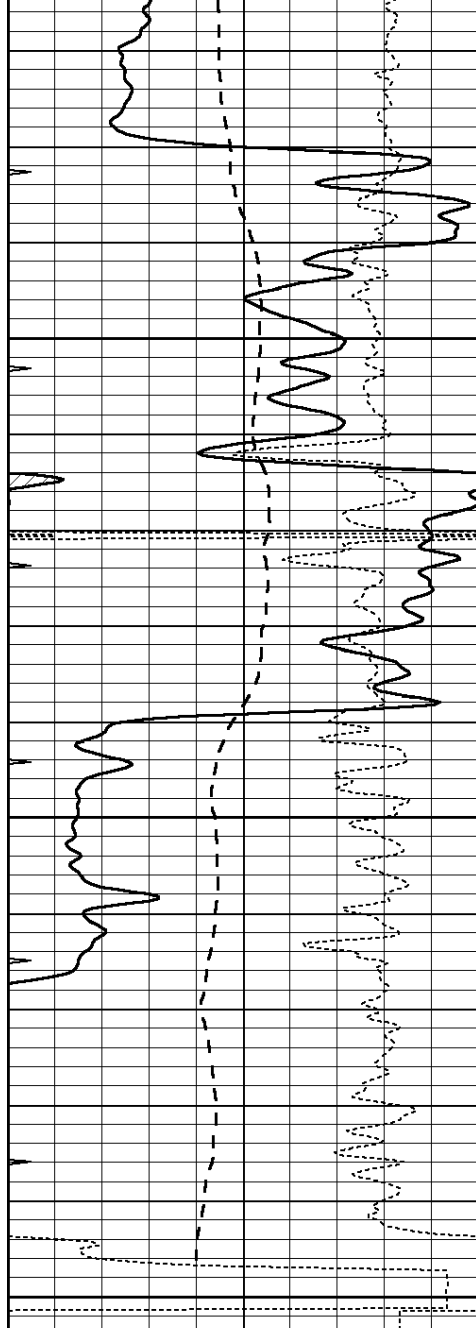
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3800

3850



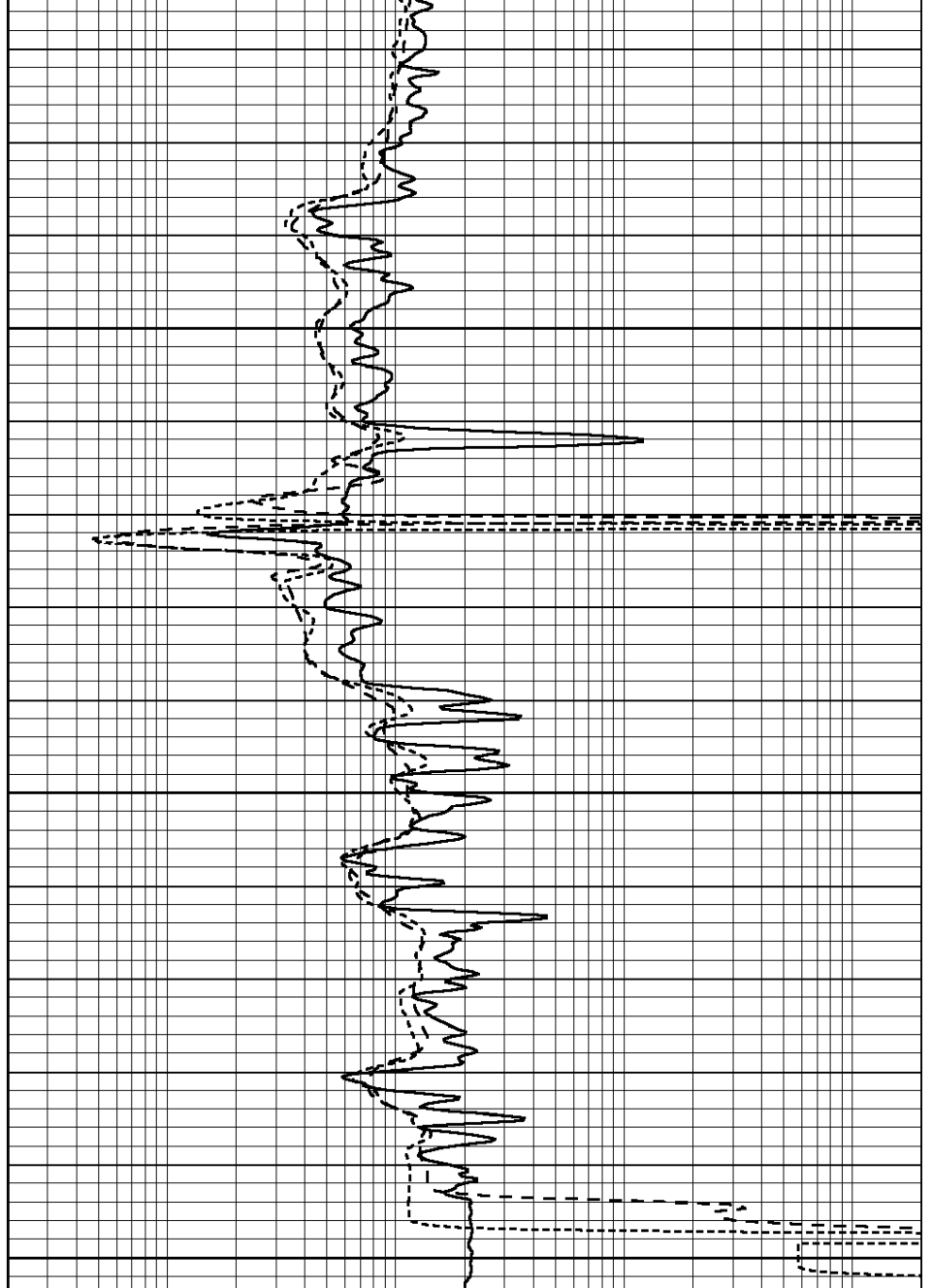


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

3900

3950

4000



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

Calibration Report

Database File: 25858ddn.db
 Dataset Pathname: pass3.3
 Dataset Creation: Wed Aug 27 03:44:23 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Sun Aug 17 08:09:53 2014
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Readings

References

Results

Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	-2.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-16.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration								
Readings			References			Results		
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	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:	GEAR3-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Sun Aug 17 08:09:42 2014
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration						
	Density		Far Detector	Near Detector		
Magnesium	1.710	g/cc	935.36	501.55	cps	
Aluminum	2.580	g/cc	209.32	357.01	cps	
Spine Angle = 77.21			Density/Spine Ratio = 0.567			
	Size		Reading			
Small Ring	8.00	in	4.29	V		
Large Ring	14.00	in	6.24	V		

Before Survey Verification								
Target			Measured					

After Survey Verification								
Target			Measured					

Compensated Neutron Calibration Report

Serial Number: 6I
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

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Sun Aug 17 15:23:09 2014

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.7000 GAPI/cps