



# DUAL INDUCTION LOG

Company L.D. DRILLING, INC.  
 Well SAMPSON TRUST #1-13  
 Field WILDCAT  
 County NESS State KANSAS

Location: API # : 15-135-26077-00-00  
 1450' FNL & 1410' FEL  
 SEC 13 TWP 18S RGE 23W  
 Permanent Datum GROUND LEVEL Elevation 2295  
 Log Measured From KELLY BUSHING 5' A.G.L.  
 Drilling Measured From KELLY BUSHING  
 Other Services CDL/CNL/MEL  
 Elevation K.B. 2300  
 D.F. 2298  
 G.L. 2295

Date	09/12/19
Run Number	ONE
Depth Driller	4450
Depth Logger	4451
Bottom Logged Interval	4449
Top Log Interval	00
Casing Driller	8 5/8" @ 329
Casing Logger	329
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.2/58
pH / Fluid Loss	10.0/7.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.8@83
Rmt @ Meas. Temp	.60@83
Rmc @ Meas. Temp	.96@83
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.55@120
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	120F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	KIM SHOEMAKER

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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 ELI WIRELINE, HAYS, KS. (785) 628-6395

DIRECTIONS  
 BAZINE WEST TO X RD. NORTH 3  
 1/2 WEST, SOUTH INTO.



# MAIN PASS

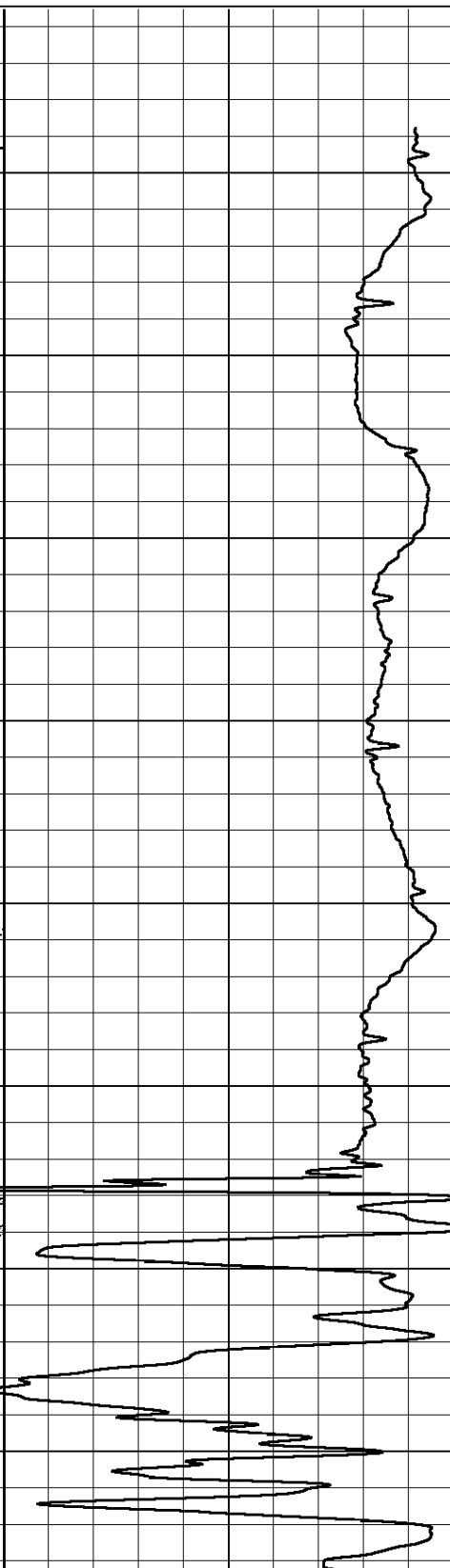
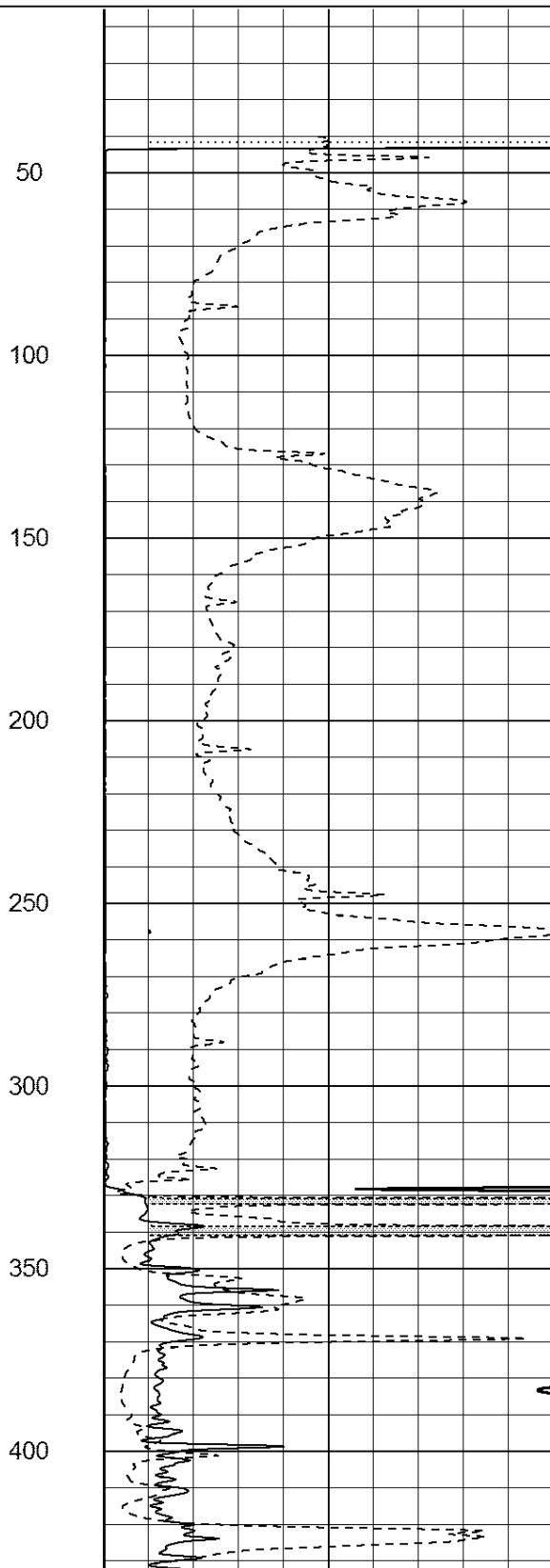
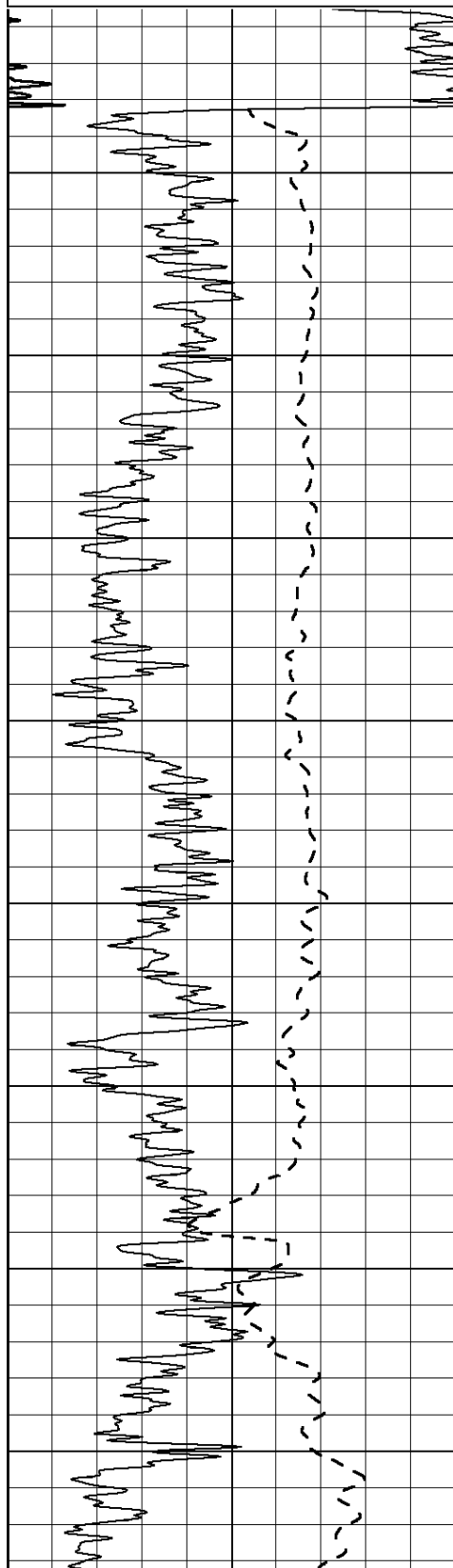
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 Presentation Format: \_dil2  
 Dataset Creation: Thu Sep 12 12:00:51 2019  
 Charted by: Depth in Feet scaled 1:600

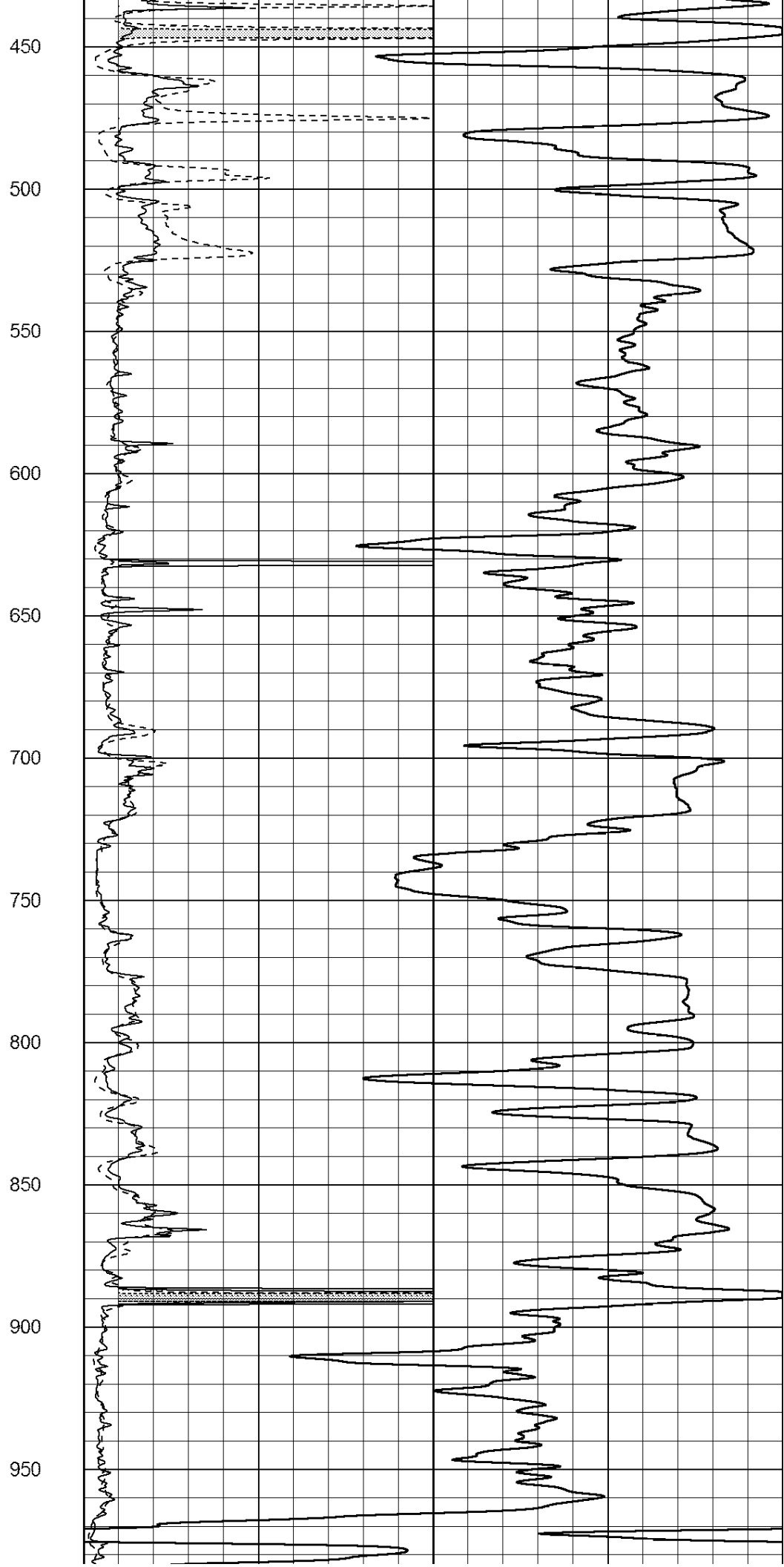
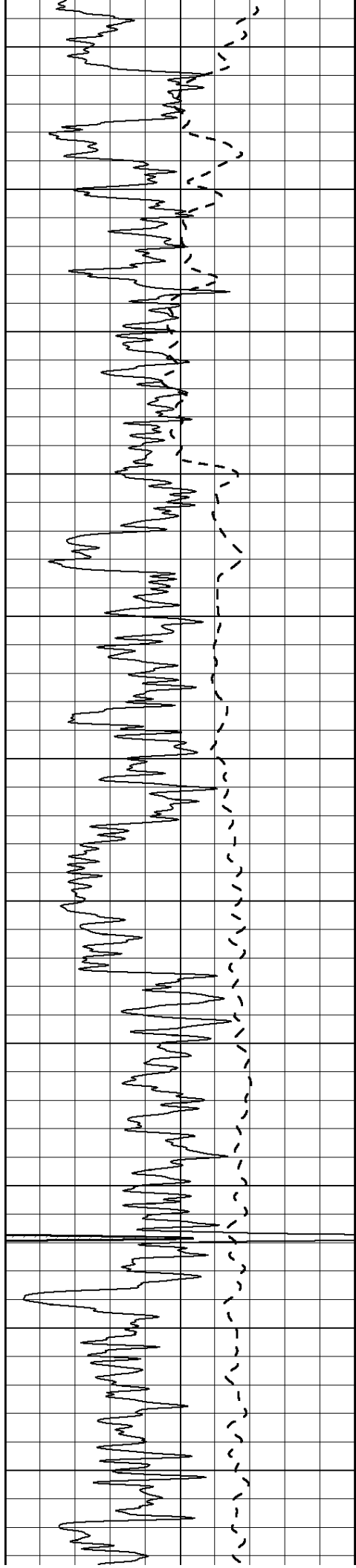
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-100	SP (mV)	100

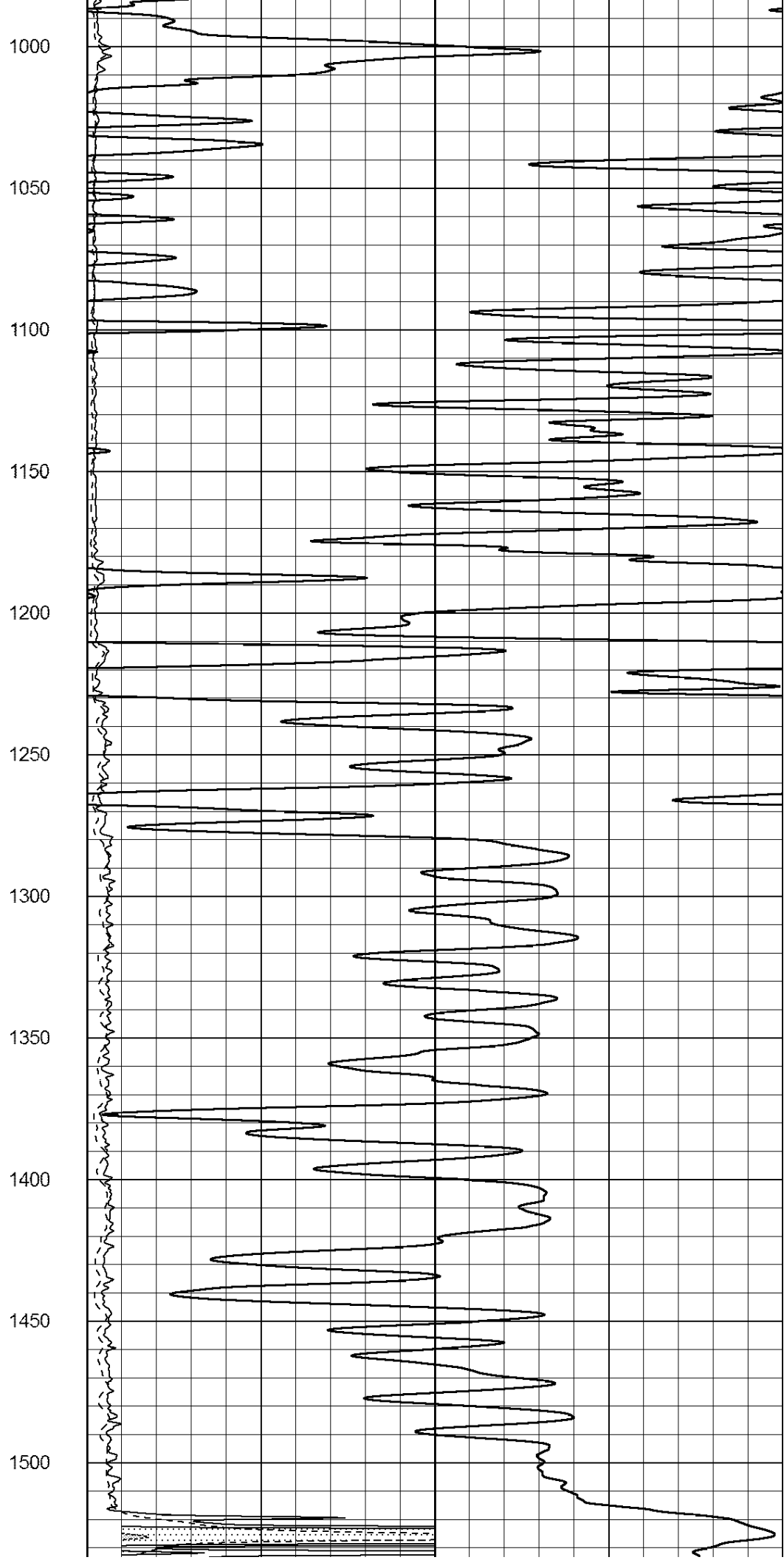
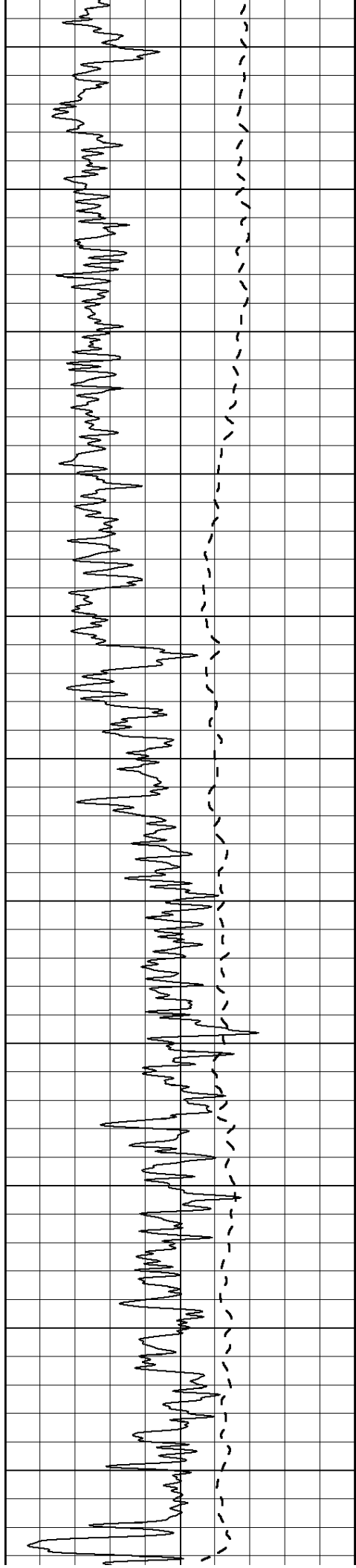
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0	RILD (Ohm-m)	50

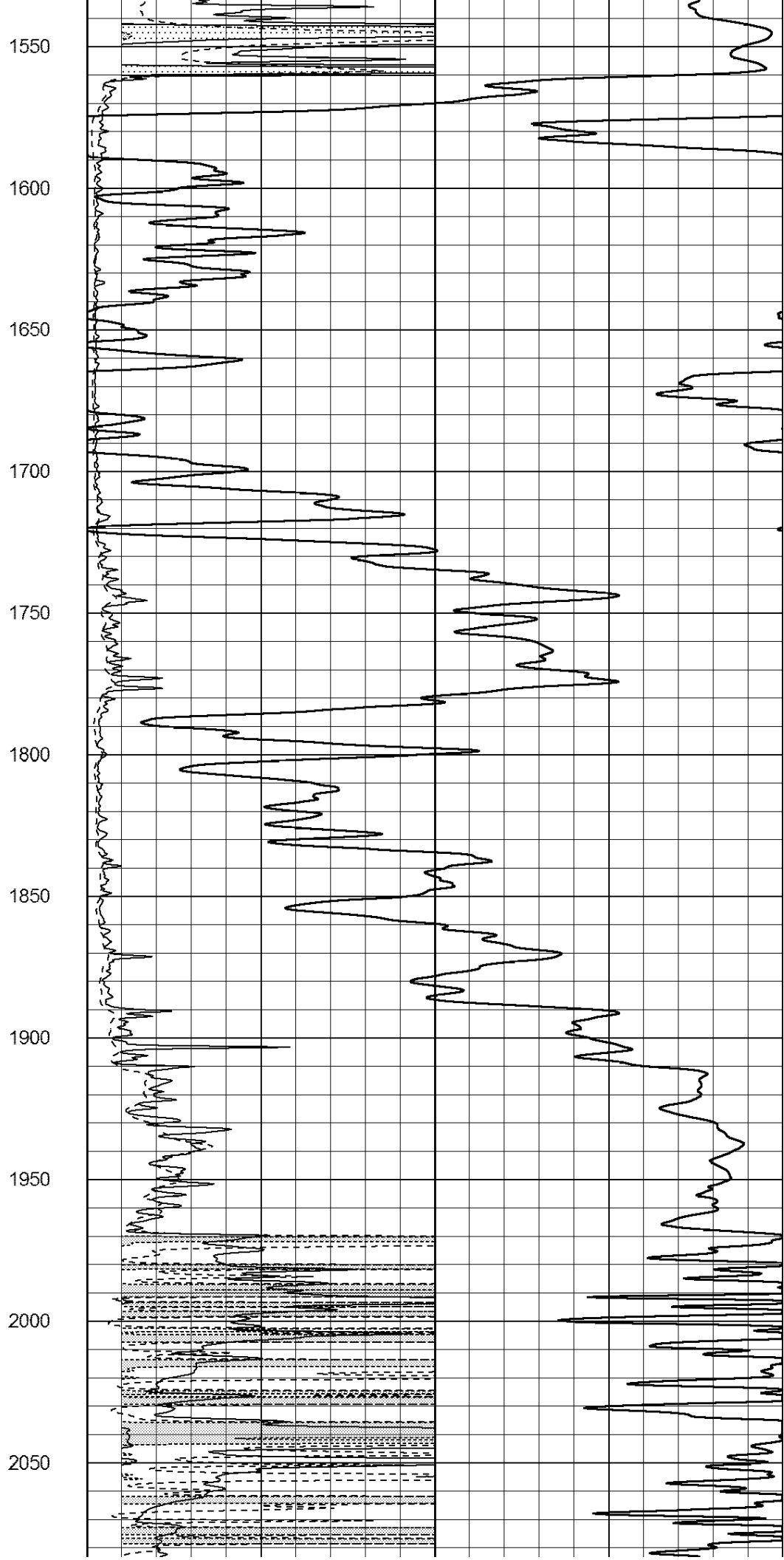
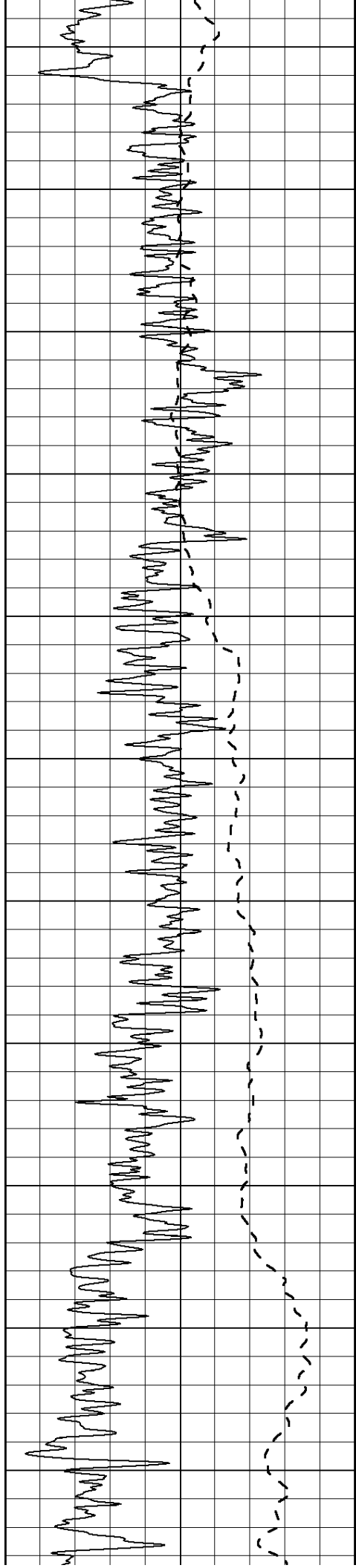
1000	CILD (mmho/m)	0
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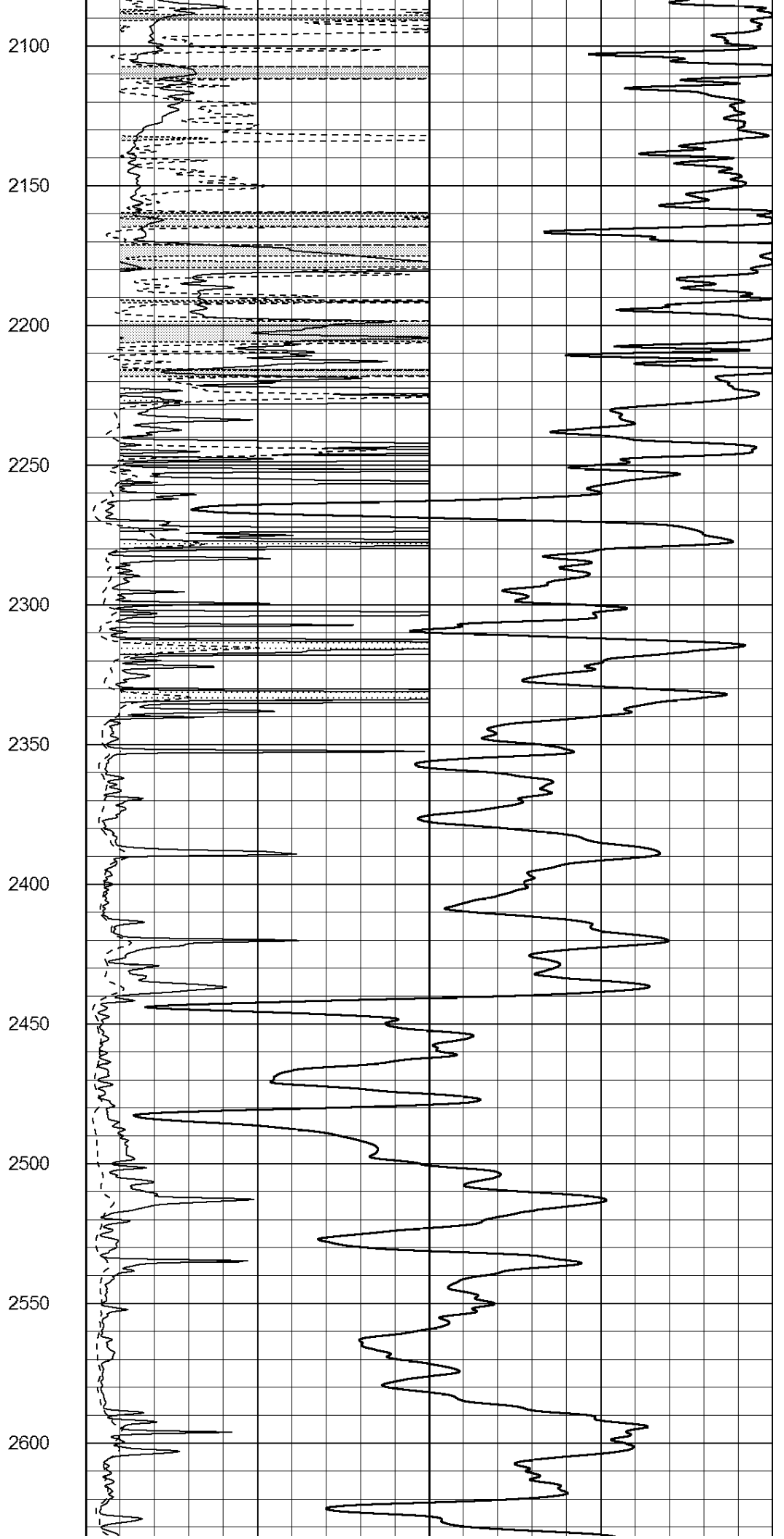
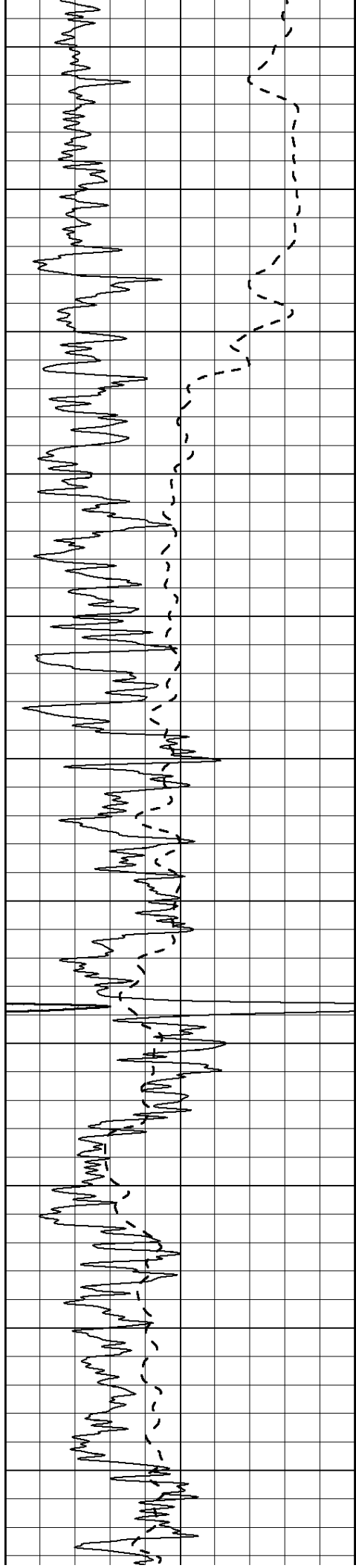
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50	RLL3 X10 (Ohm-m)	500

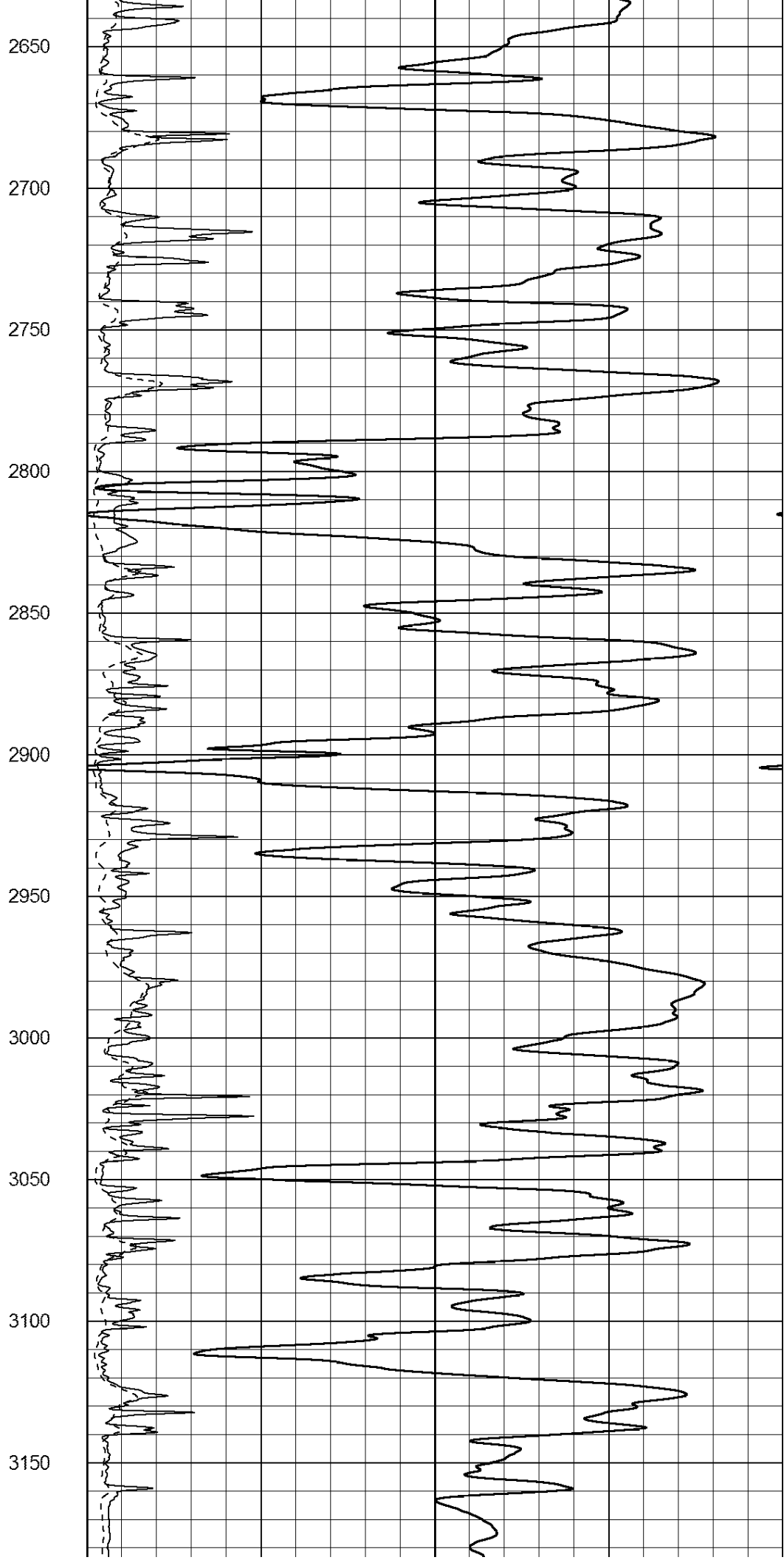
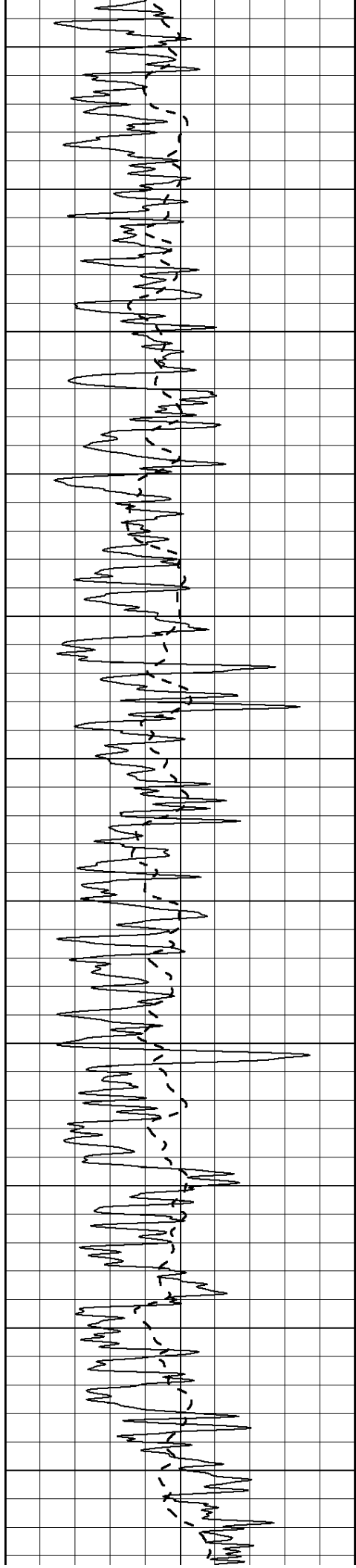


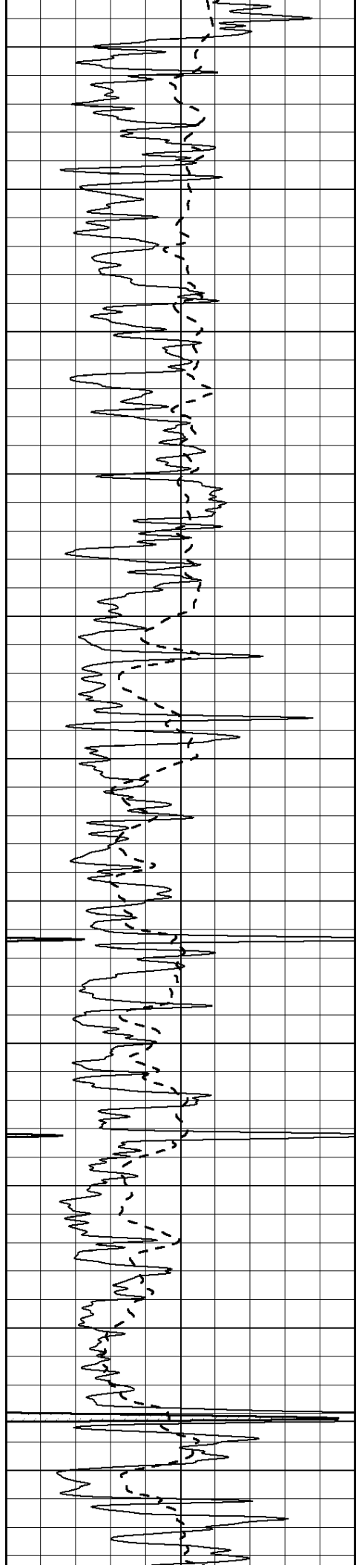












3200

3250

3300

3350

3400

3450

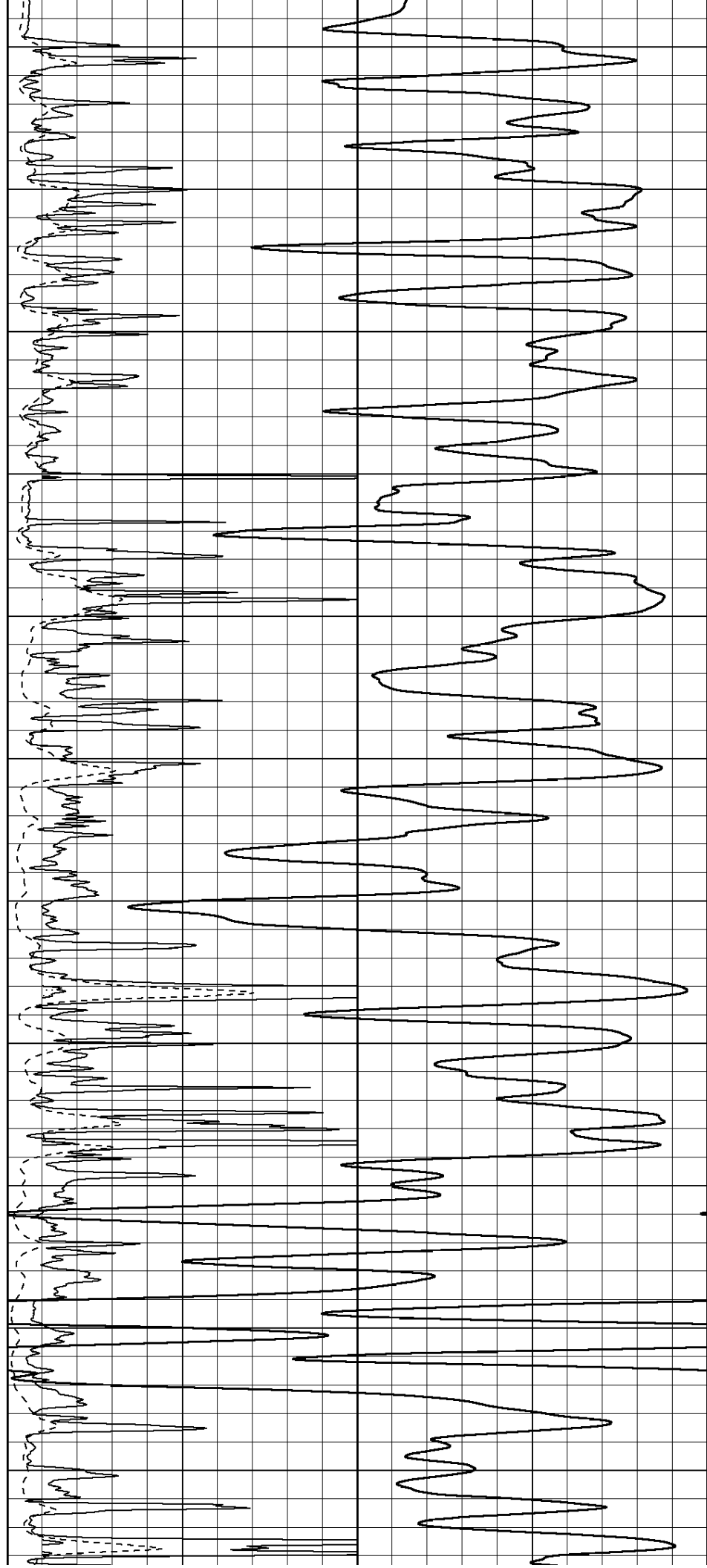
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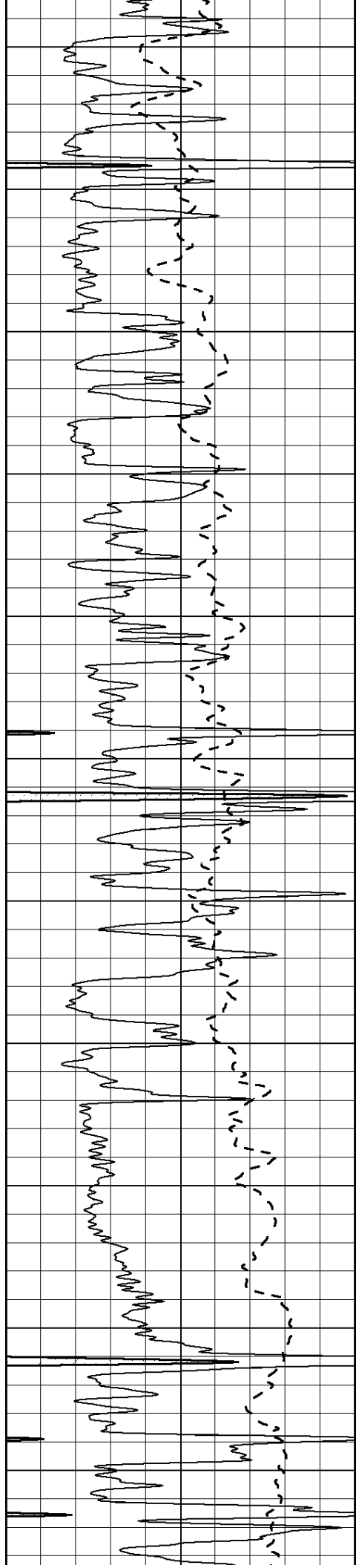
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3700





3750

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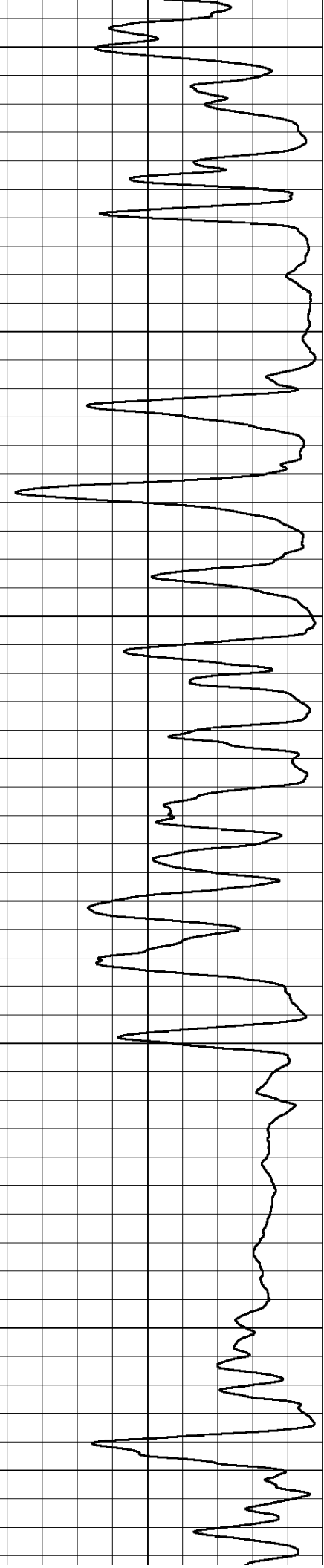
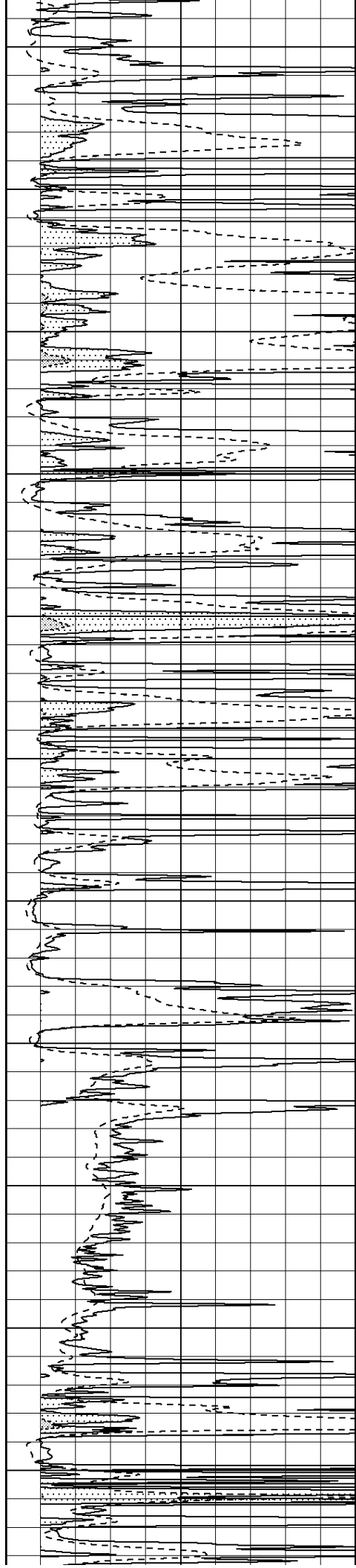
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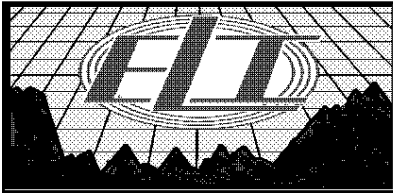
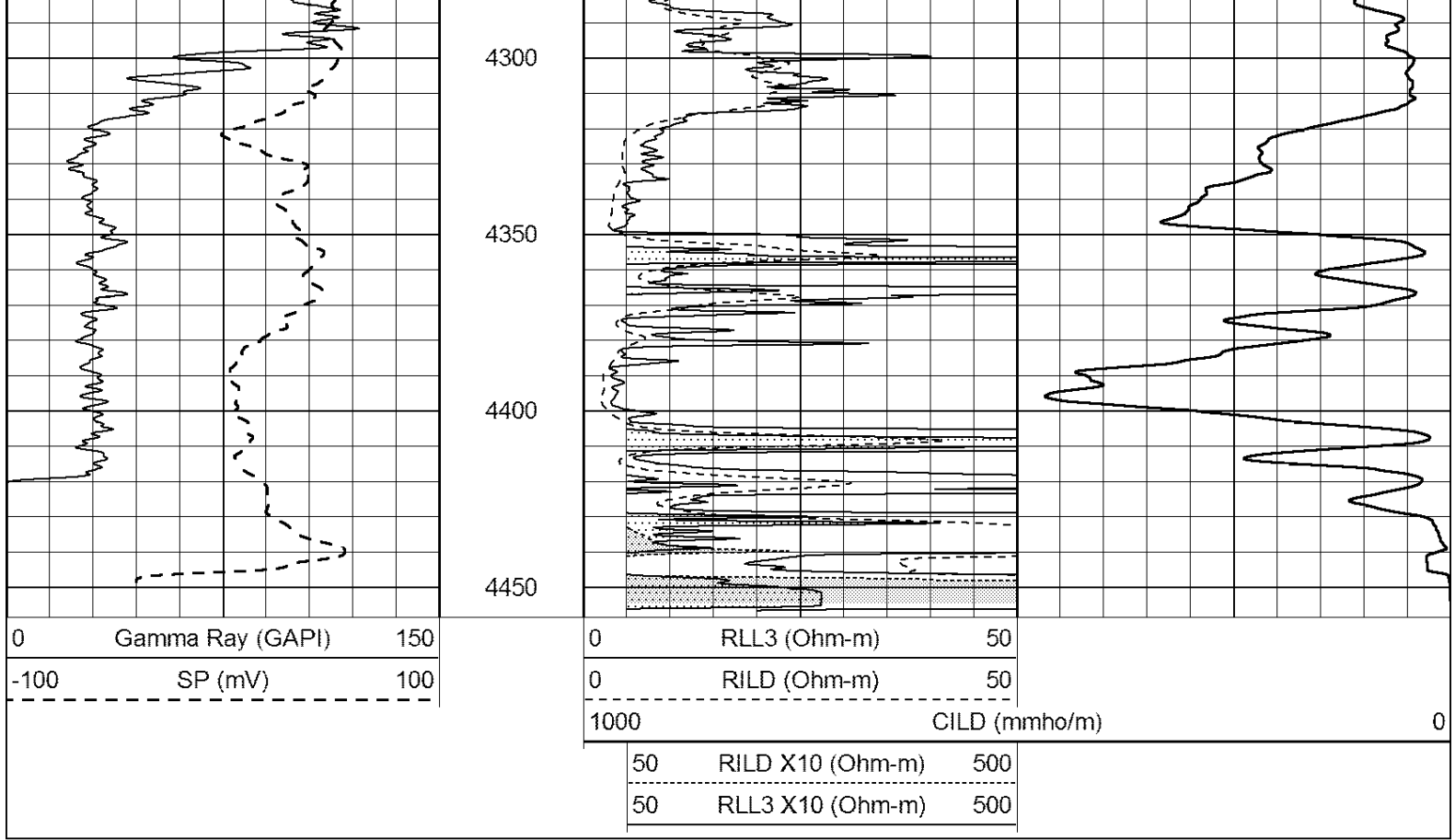
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4150

4200

4250



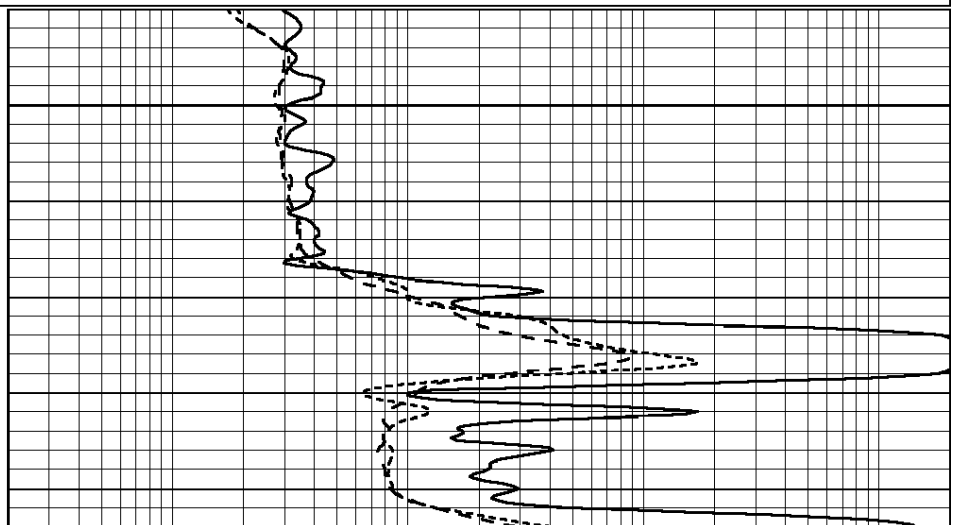
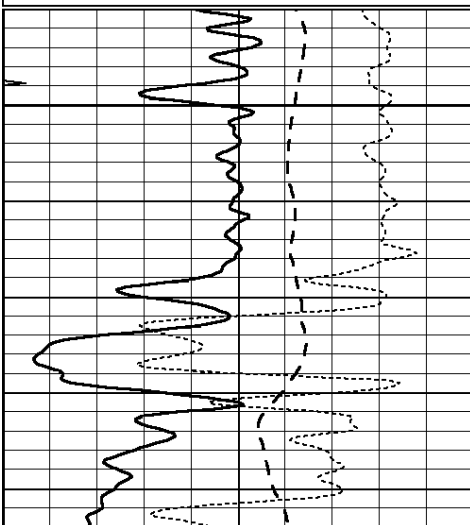


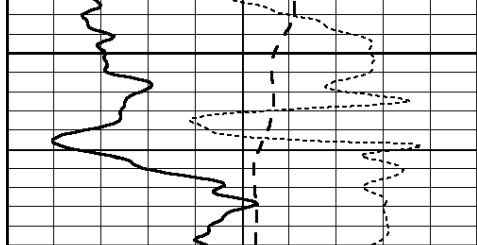
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Database File: 4091ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Thu Sep 12 12:00:51 2019  
 Charted by: Depth in Feet scaled 1:240

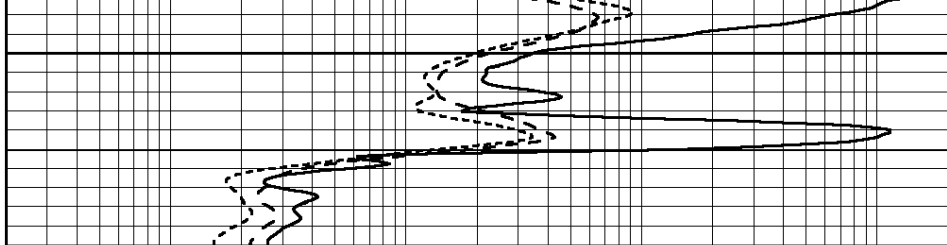
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



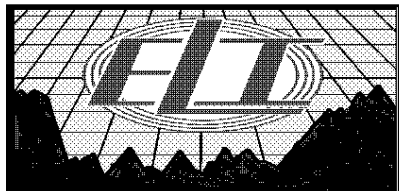


1550



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

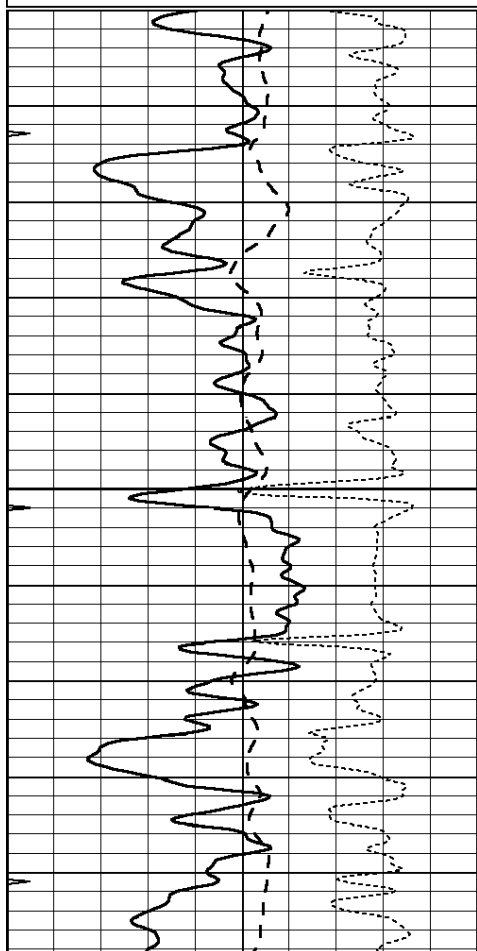


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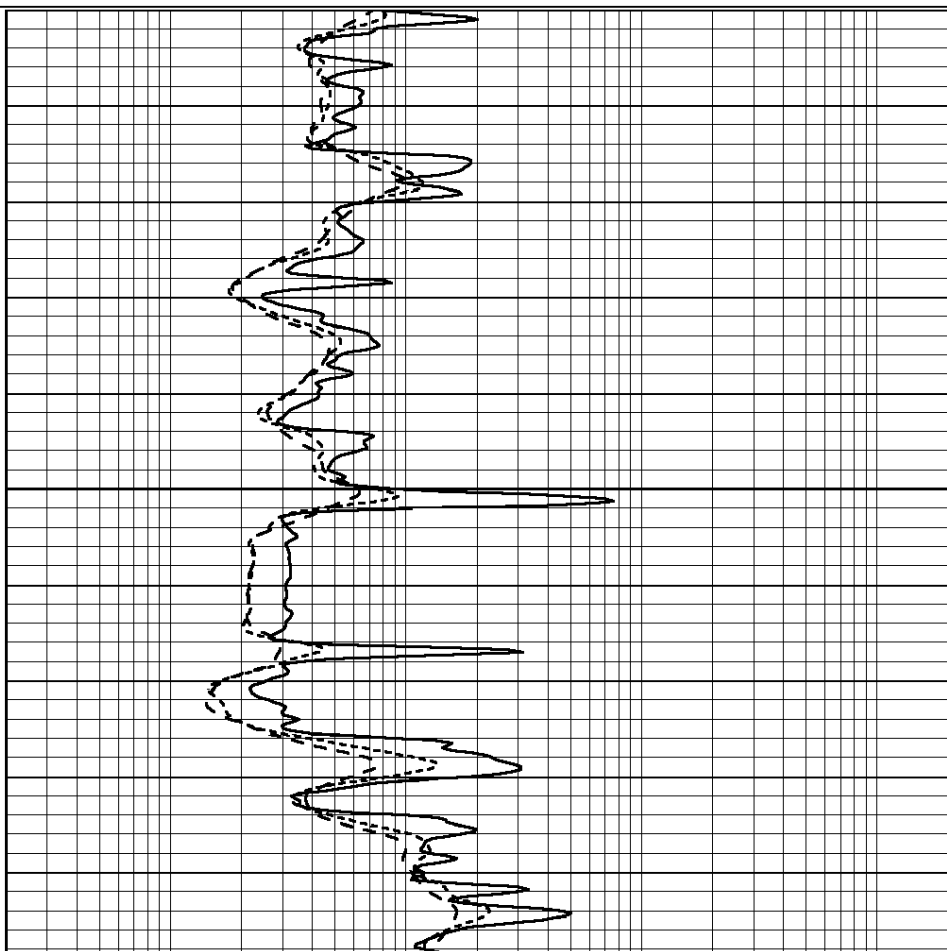
Database File: 4091ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Thu Sep 12 12:00:51 2019  
 Charted by: Depth in Feet scaled 1:240

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

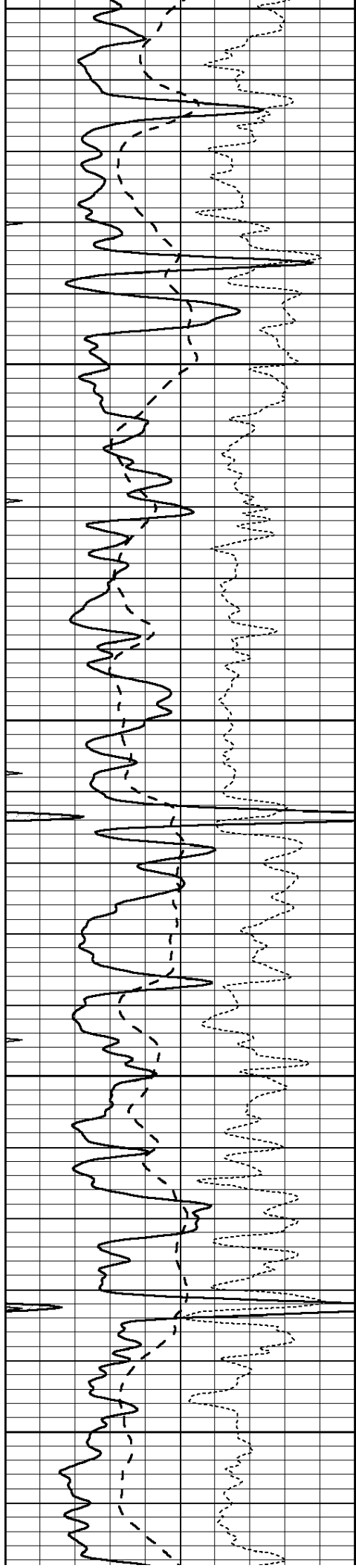
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3500



3350



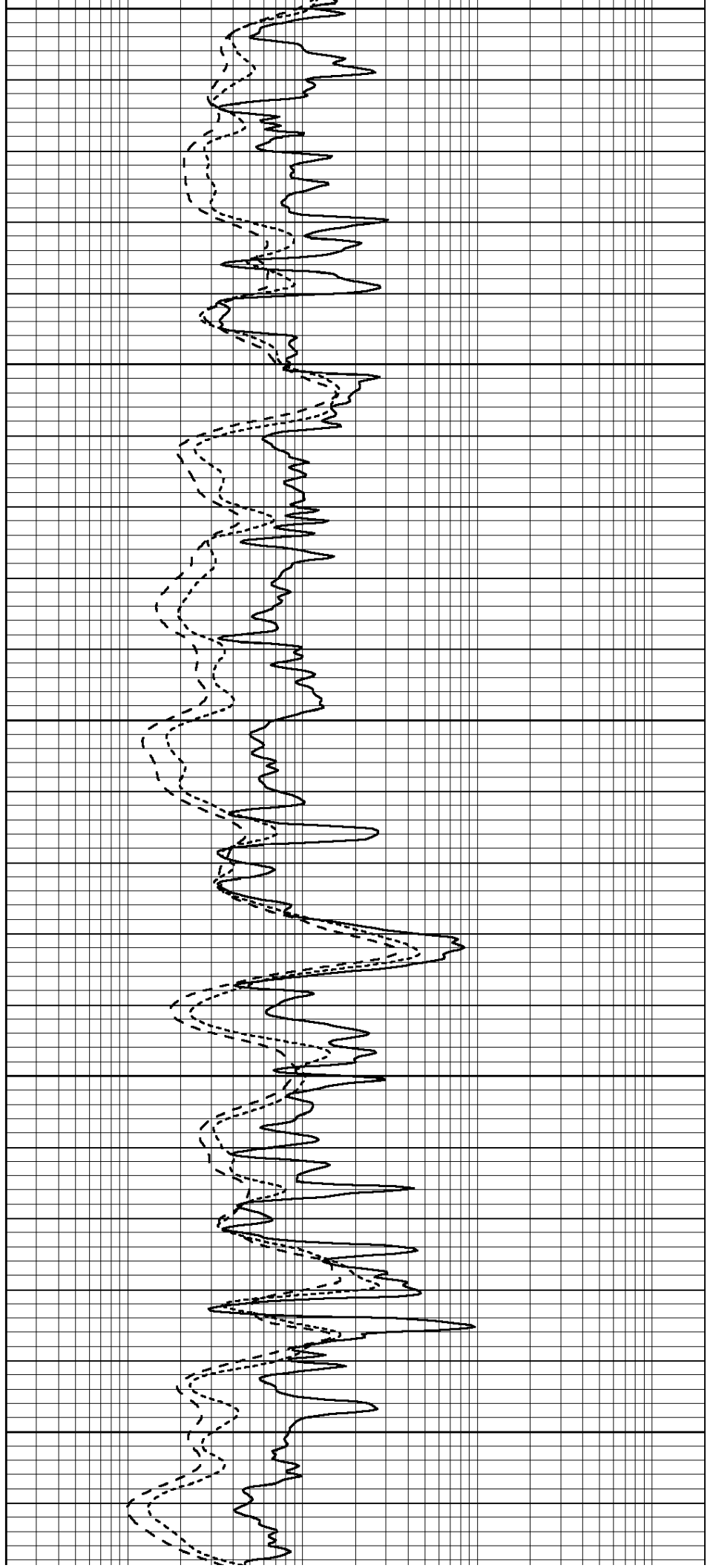
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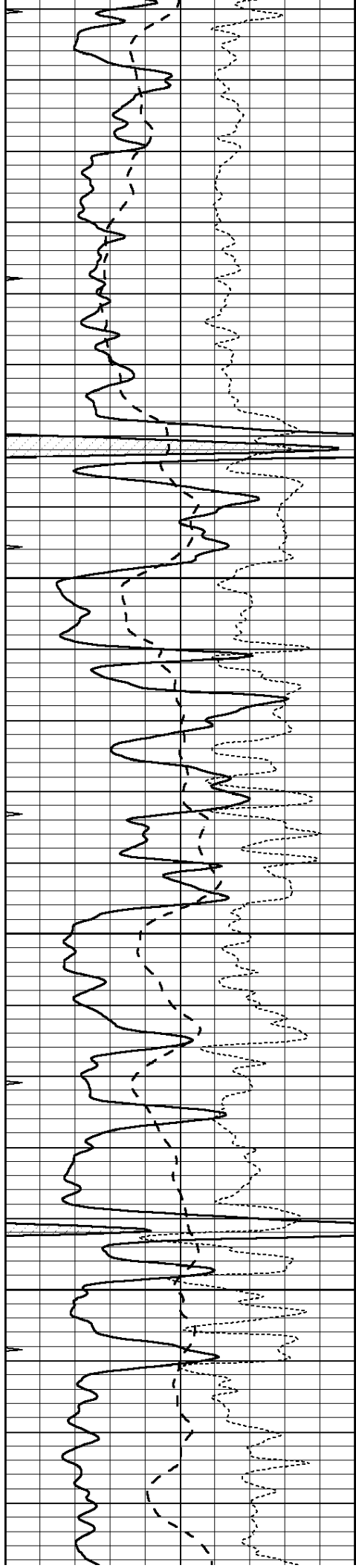
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3600



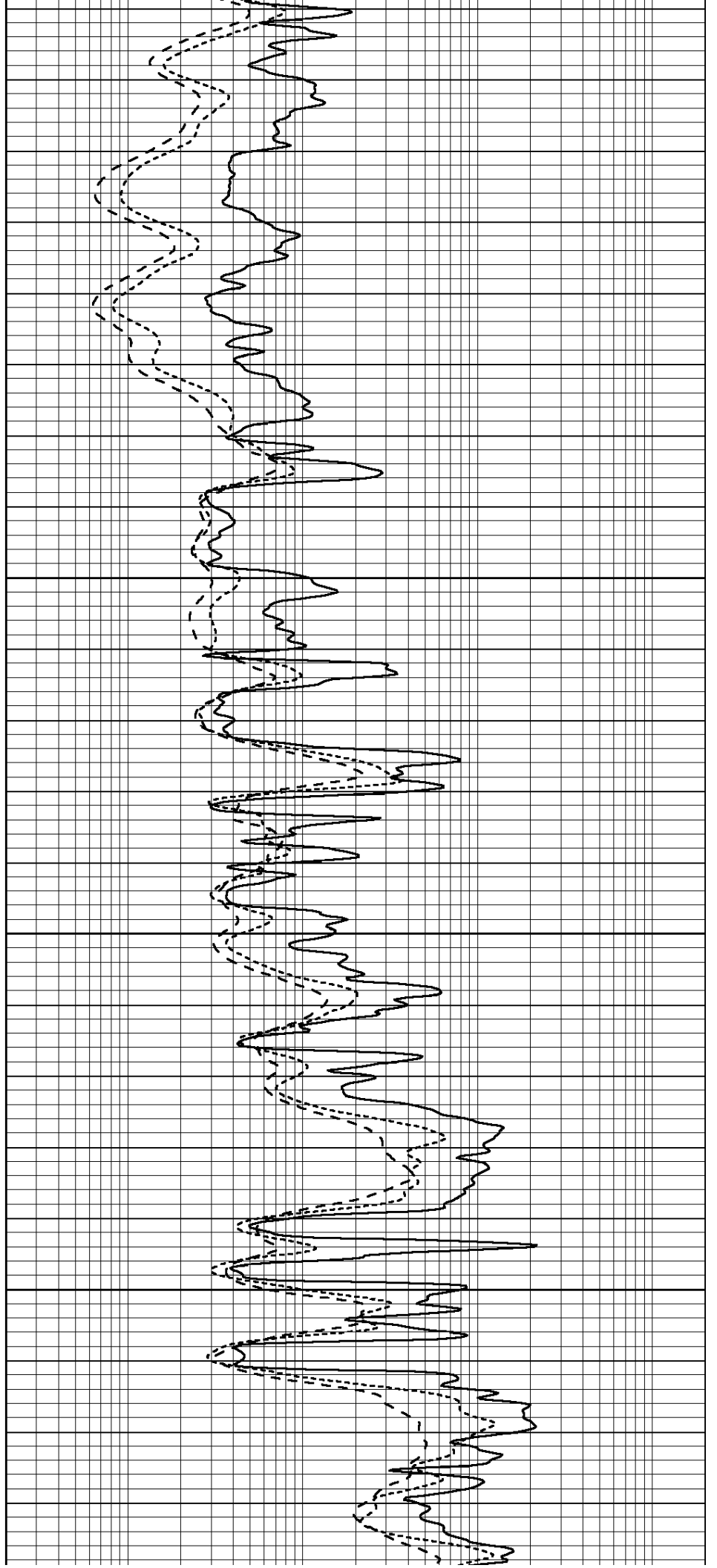


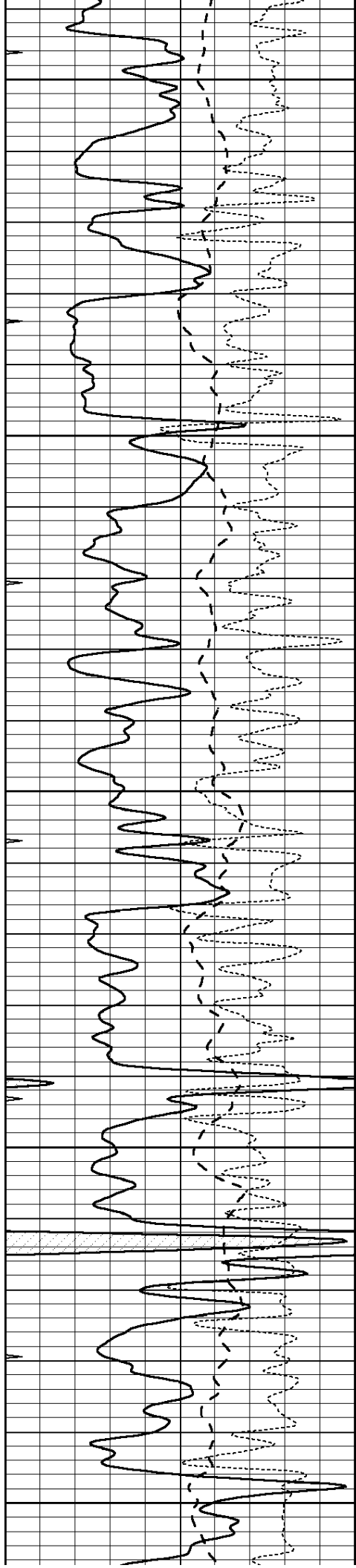
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3700

3750

3800





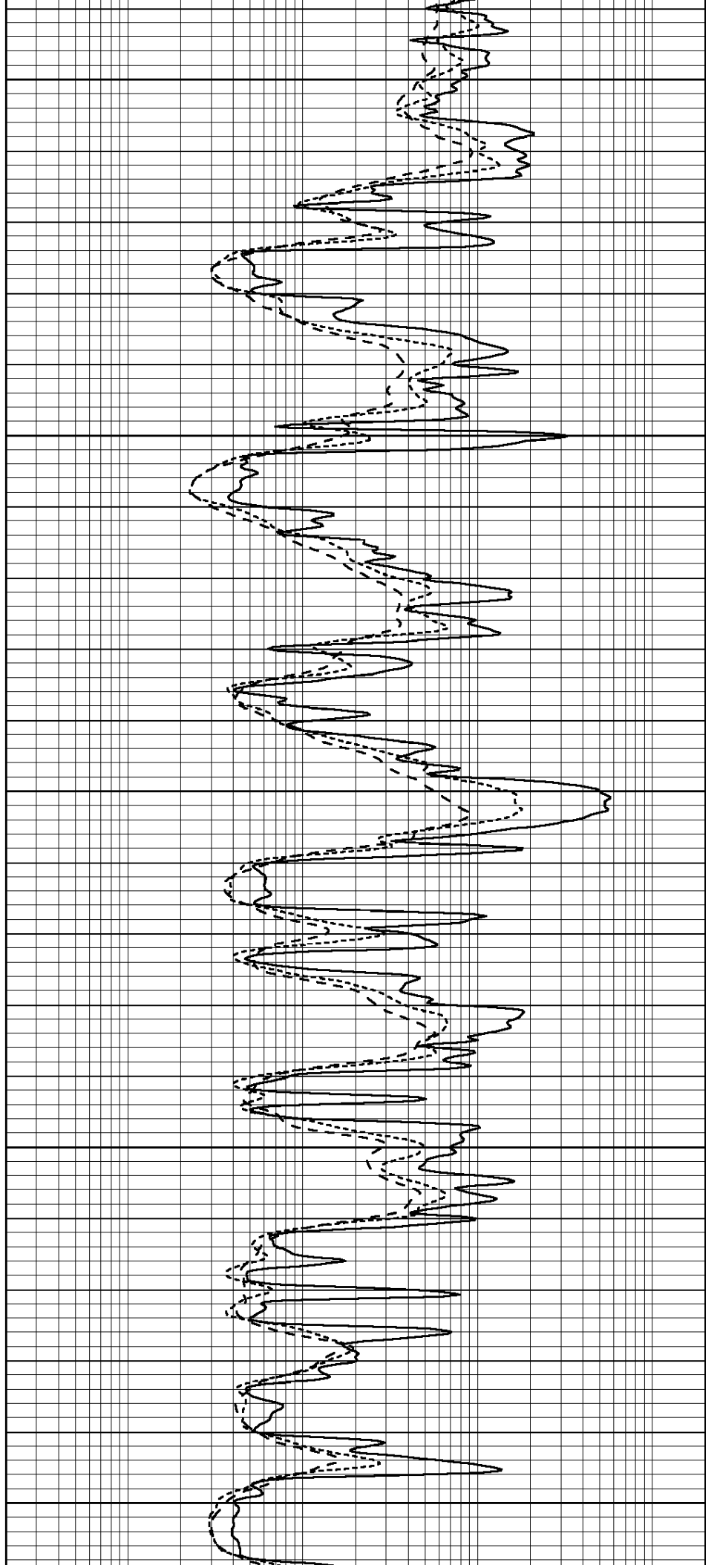
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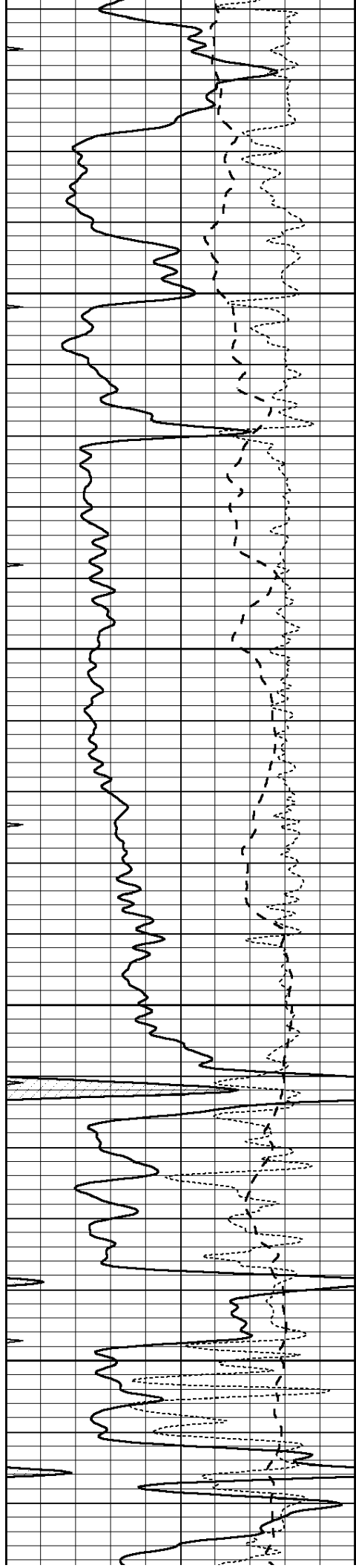
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4050



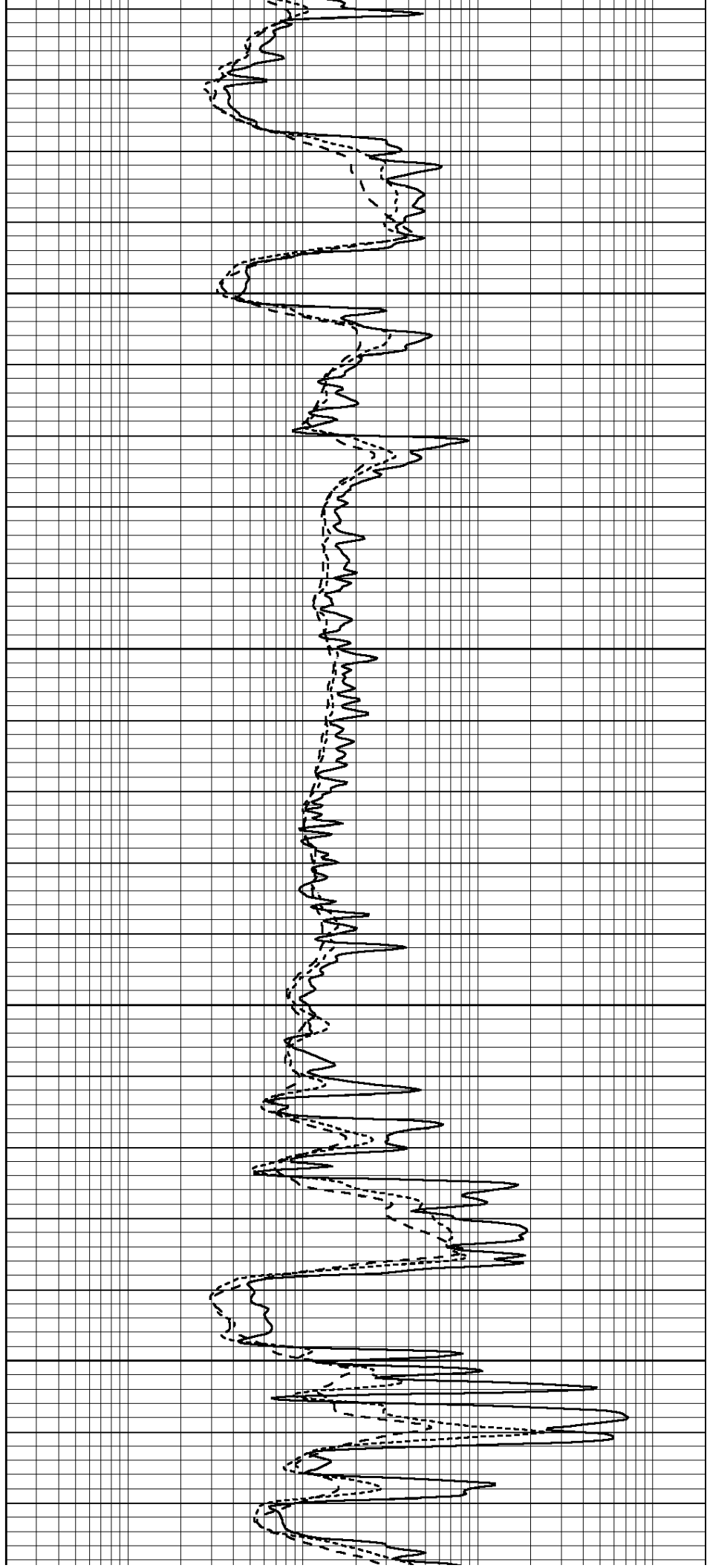


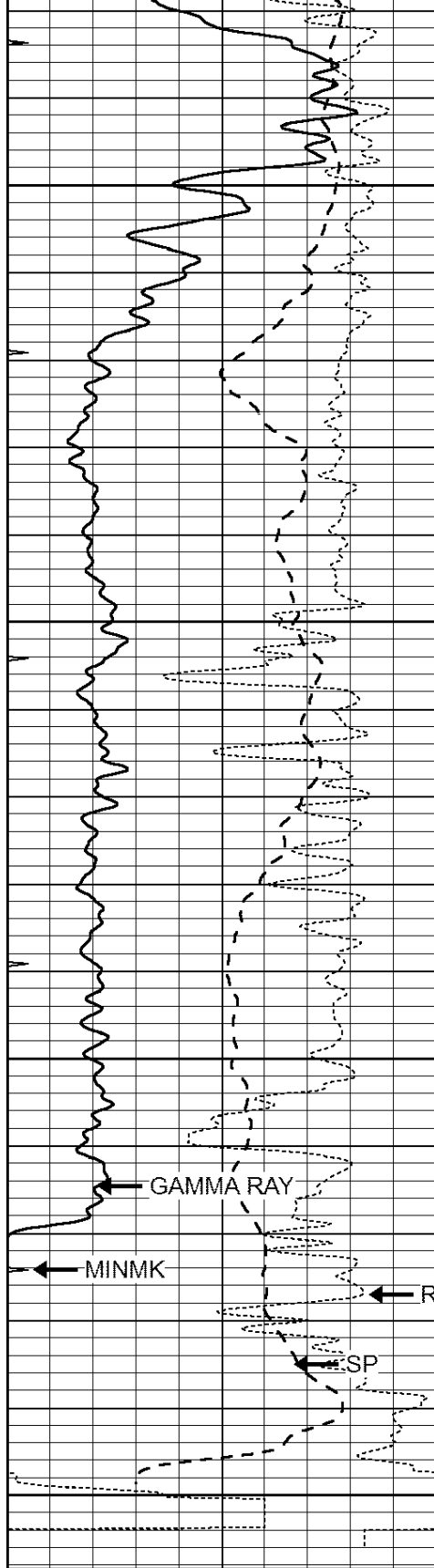
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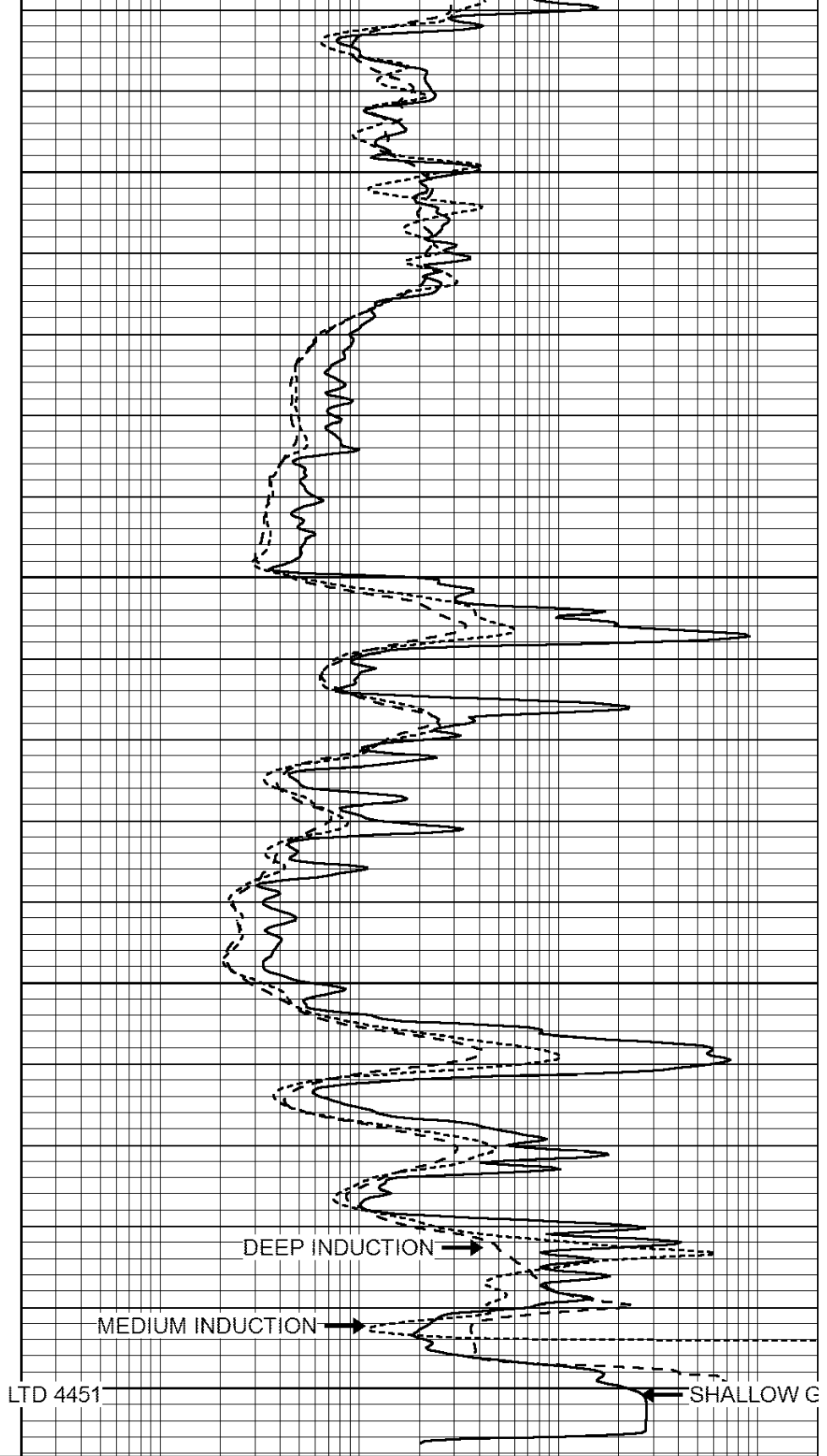
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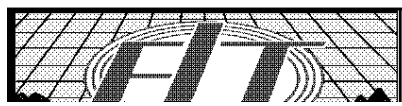
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

4300  
4350  
4400  
4450



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

LTD 4451



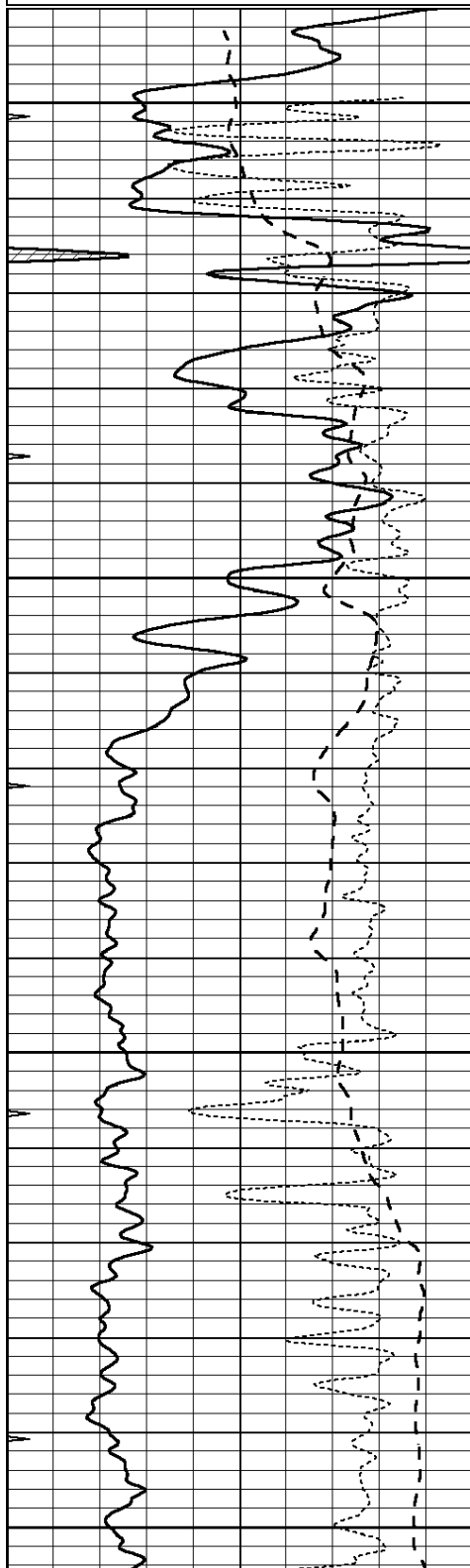
# DEDEAT SECTION

# REPEAT SECTION

Database File: 4091ddn.db  
Dataset Pathname: pass2.1  
Presentation Format: \_dil  
Dataset Creation: Thu Sep 12 11:35:09 2019  
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

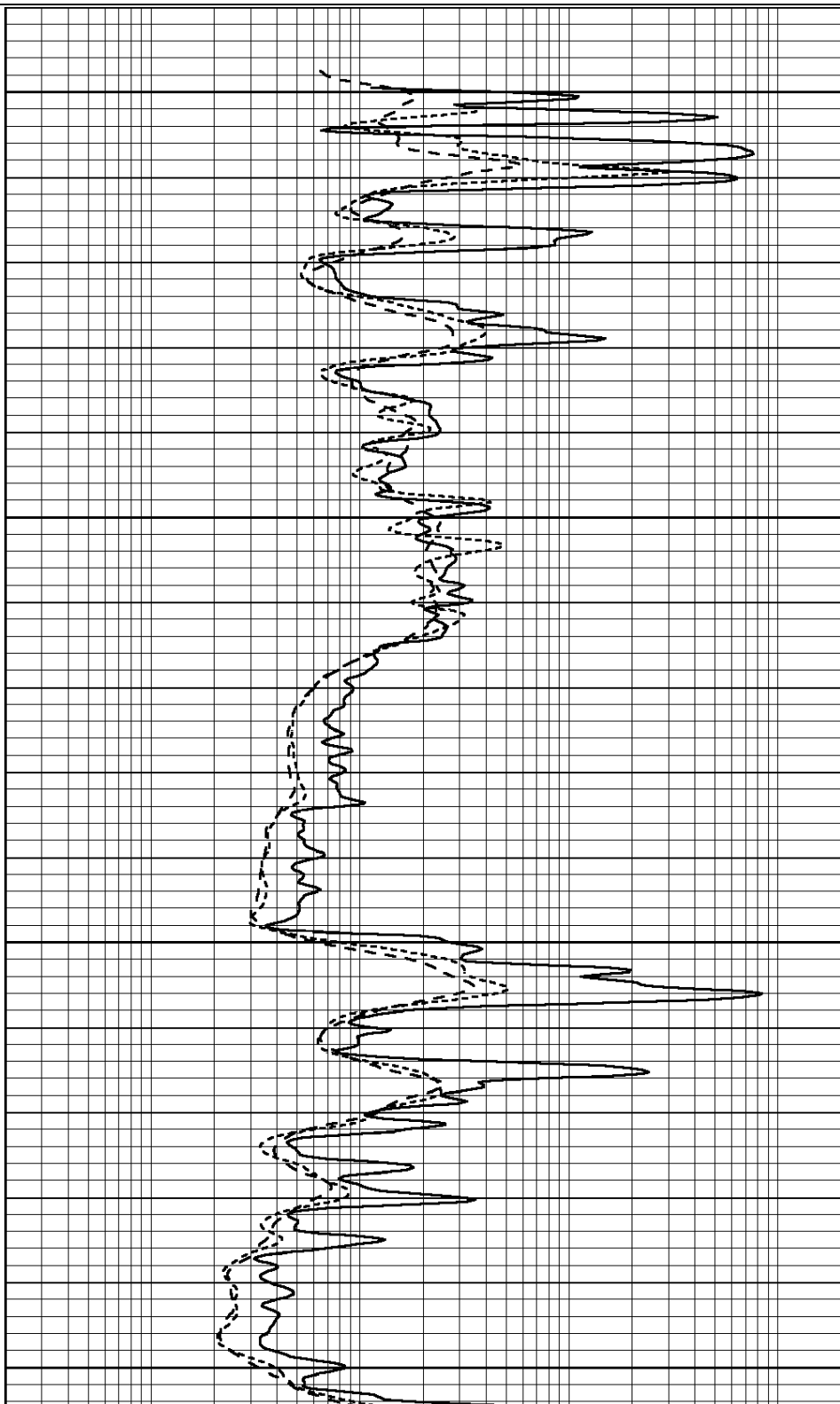


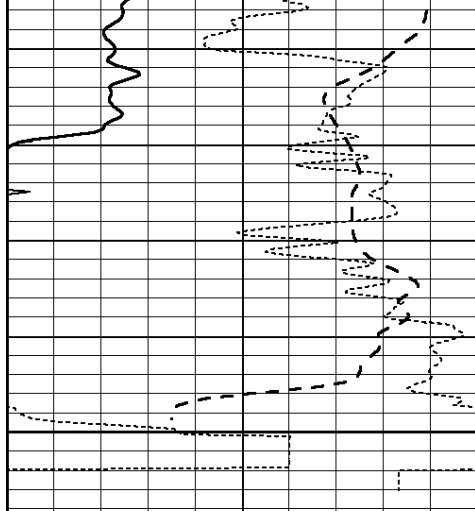
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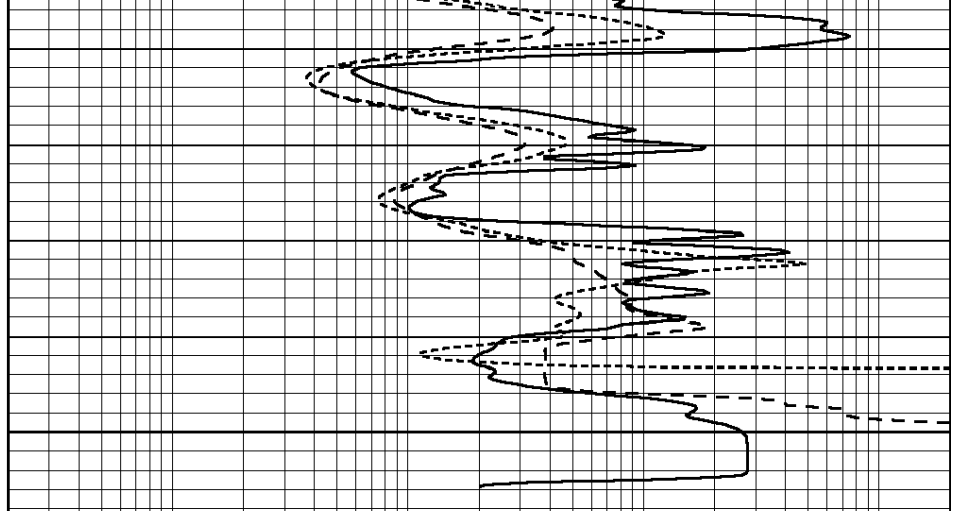
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4400





4450



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

### Calibration Report

Database File: 4091ddn.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Thu Sep 12 11:35:09 2019

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Mon Sep 10 14:28:35 2018  
 Downhole Cal Performed: Mon Sep 10 14:28:38 2018  
 After Survey Verification Performed: Mon Sep 10 14:28:40 2018

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal	V	Zero	Cal	mmho/m	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	V	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	V	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	V	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	V	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	V	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	V	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: 006      Model: PRB

Master Calibration

Performed Fri Feb 22 09:59:16 2019

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1164.1	7287.2	2529.1	8656.3	cps
Window 2	1091.2	5350.1	2037.8	6279.8	cps
Window 3	821.7	2635.2	1183.7	2961.9	cps
Window 4	277.9	276.4	275.2	279.7	cps
Long Space	0.0	4355.6	946.5	5188.6	cps
Short Space	1.6	1496.1	994.4	1563.6	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 44.8	Rib Slope	: 0.993	Density/Spine Ratio	: 0.569
Spine Angle	: 74.8	Spine Slope	: 3.682	Spine Intercept	: -18.6

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:      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 Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	
3)	Short Space Long Space	cps cps	pu	

POST-SURVEY VERIFICATION				
	Detector	Readings	Measured	Target
1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	GR6		
Tool Model:	OPEN		
Performed:	Wed Jul 03 12:57:34 2019		
Calibrator Value:	150.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	276.0	cps	
Sensitivity:	0.5700	GAPI/cps	