



SUPERIOR
Hays,
Kansas

**DUAL
INDUCTION
LOG**

Company MULL DRILLING CO. INC.
Well LILA #1-12
Field WC
County LANE
State KANSAS

Company MULL DRILLING COMPANY, INC.
Well LILA #1-12
Field WC
County LANE State KANSAS

Location: API # : 15-101-22150-0000
NE/4 NE/4
1178'FNL & 339'FEL
SEC 12 TWP 18S RGE 28W
Permanent Datum GROUND LEVEL Elevation 2709
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL
MEL/SONIC
Elevation
K.B. 2714
D.F.
G.L. 2709

Date	12 FEB 09
Run Number	ONE
Depth Driller	4645
Depth Logger	4640
Bottom Logged Interval	4638
Top Log Interval	0
Casing Driller	8 5/8 @ 232'
Casing Logger	232
Bit Size	7 7/8
Type Fluid In Hole	CHEMICAL MUD
Density / Viscosity	9.6/57
pH / Fluid Loss	8.5/11.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.1 @ 75
Rmf @ Meas. Temp	1.0 @ 75
Rmc @ Meas. Temp	1.2 @ 75
Source of Rmf / Rmc	CAL/CAL
Rm @ BHT	0.8 @ 111
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	0630
Maximum Recorded Temperature	111
Equipment Number	680
Location	HAYS, KS
Recorded By	DUGAN DENTON
Witnessed By	PHIL ASKEY

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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 SERVICES
HAYS, KS. 785-628-6395

DIRECTIONS: DIGHTON; 5 EAST TO PAWNEE RD, 2 NORTH, 1 EAST INTO

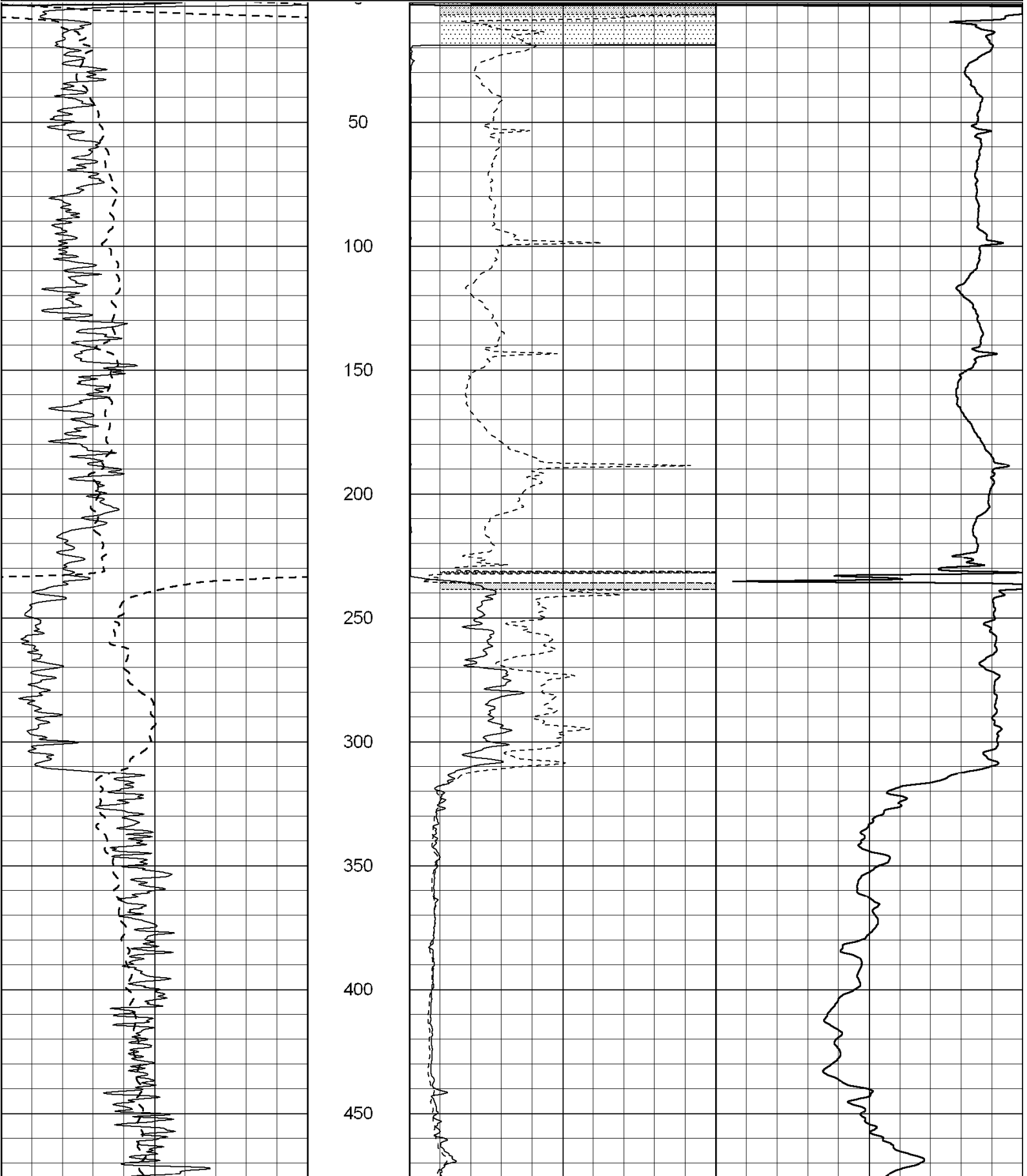
Charted by:

Depth in Feet scaled 1:600

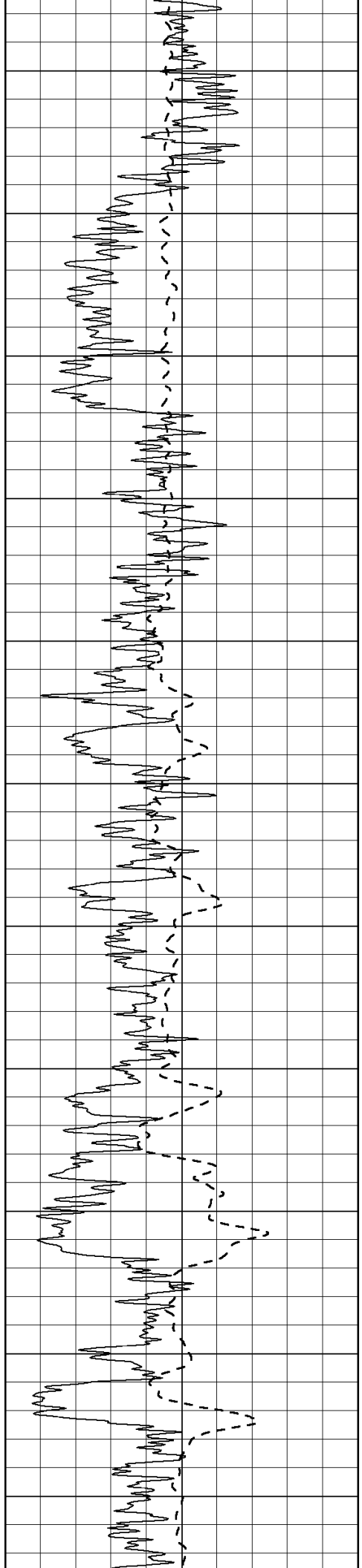
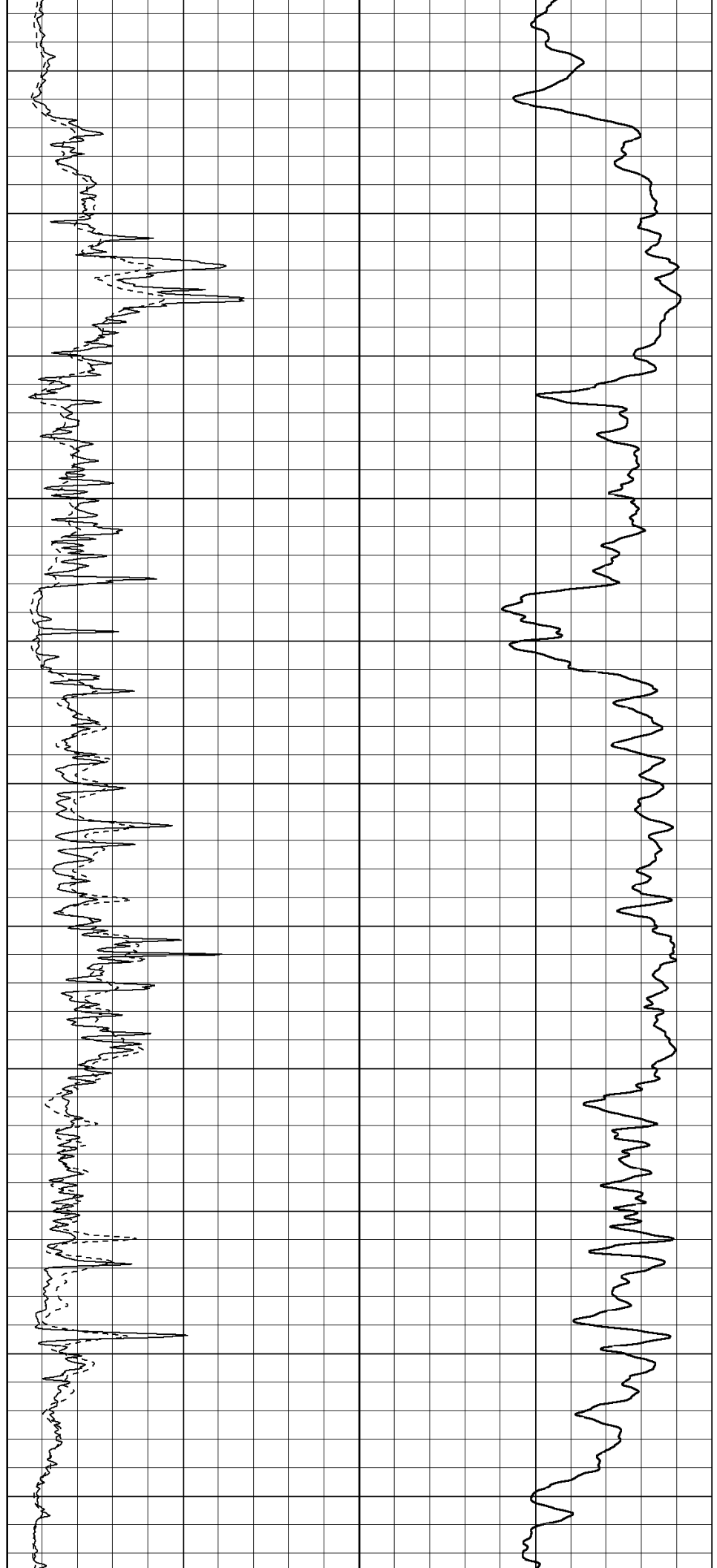
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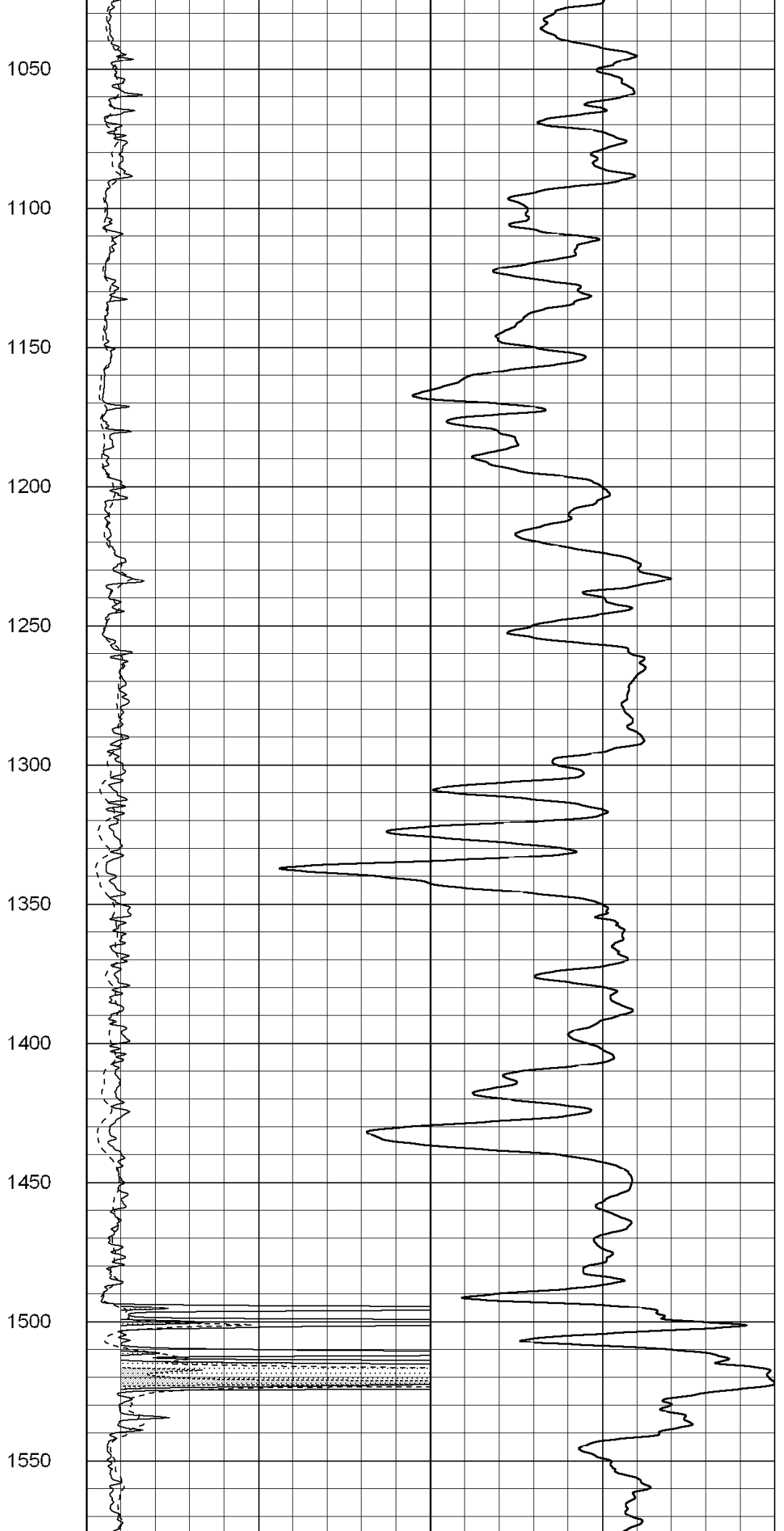
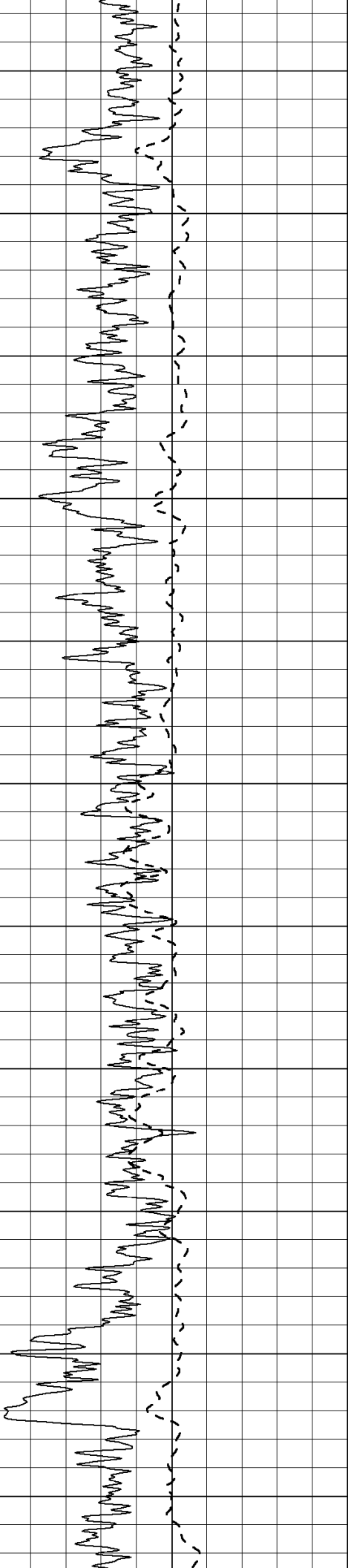
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0	Deep Induction (Ohm-m)	50

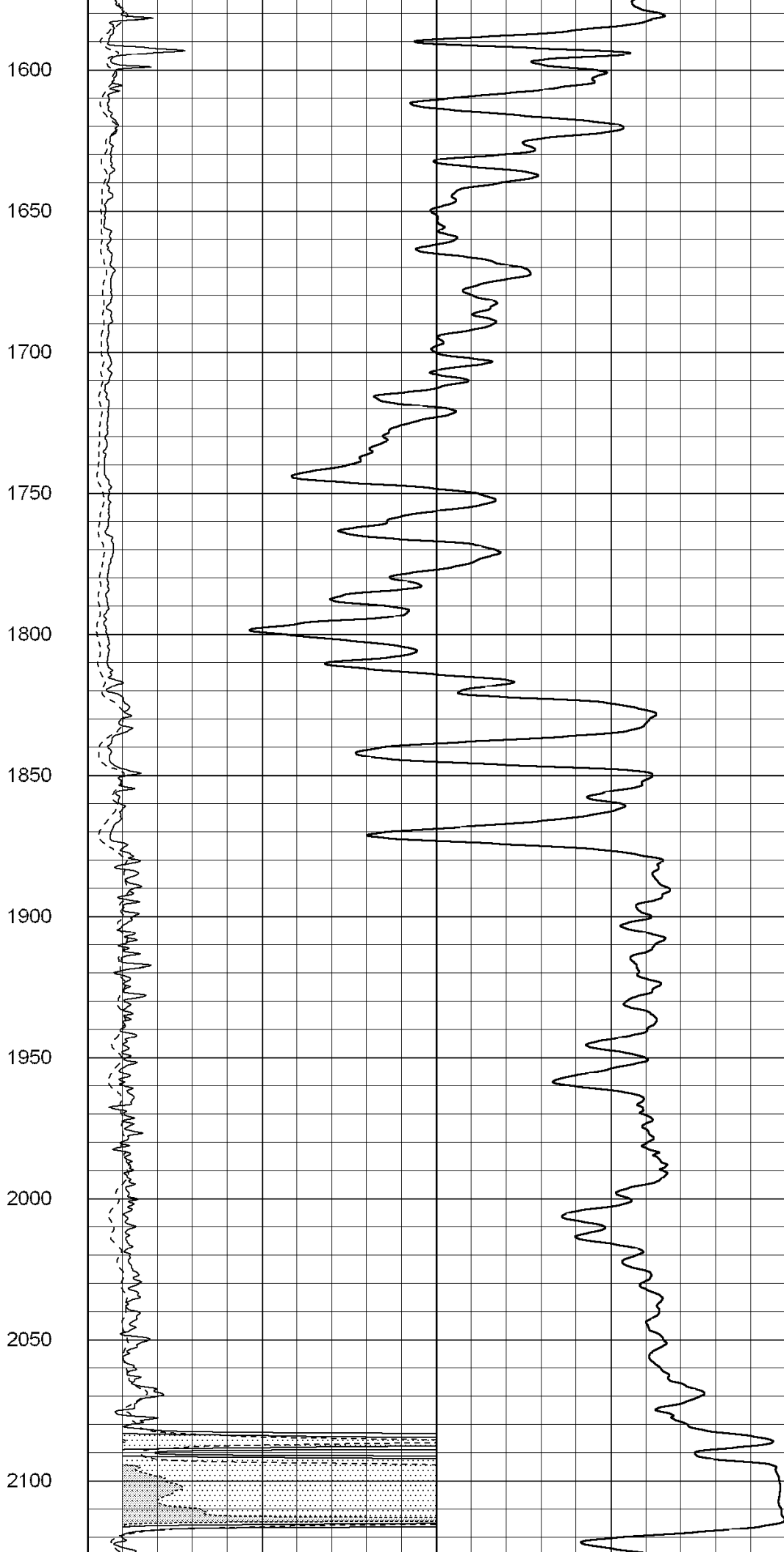
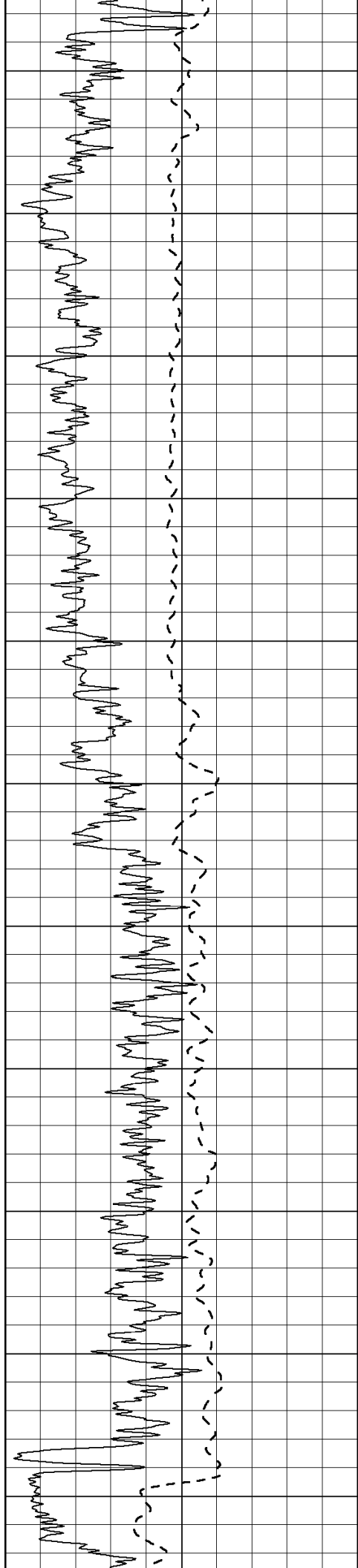
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50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

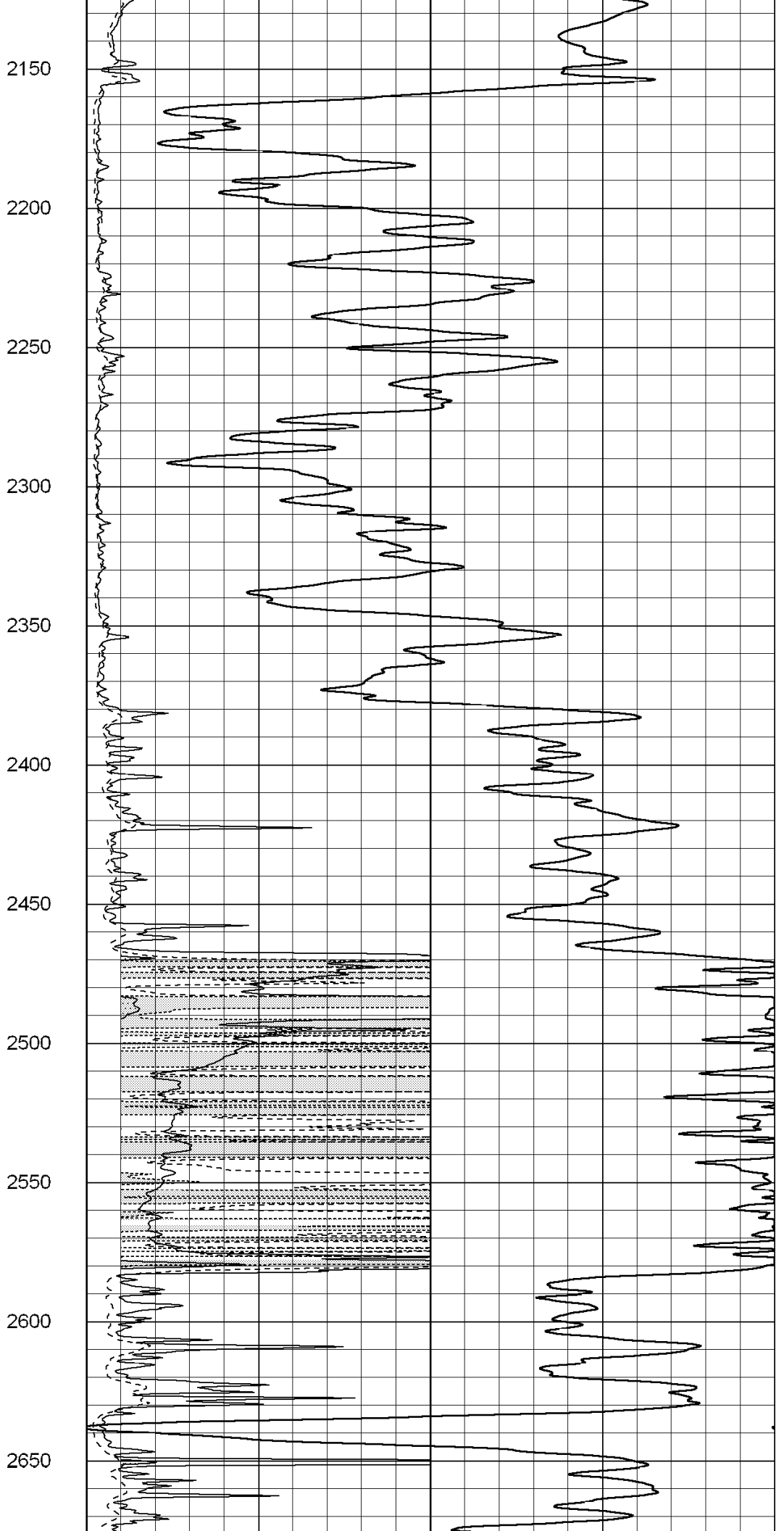
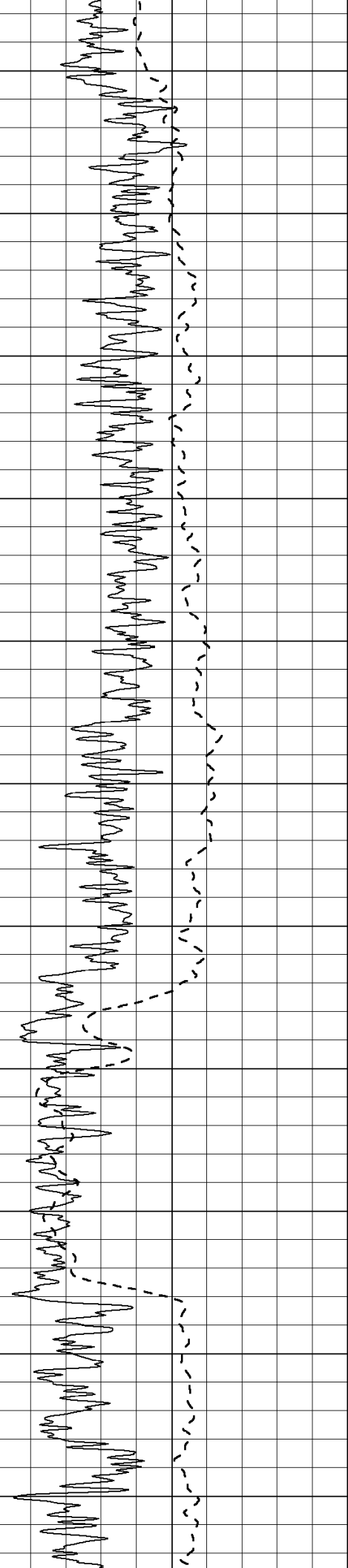


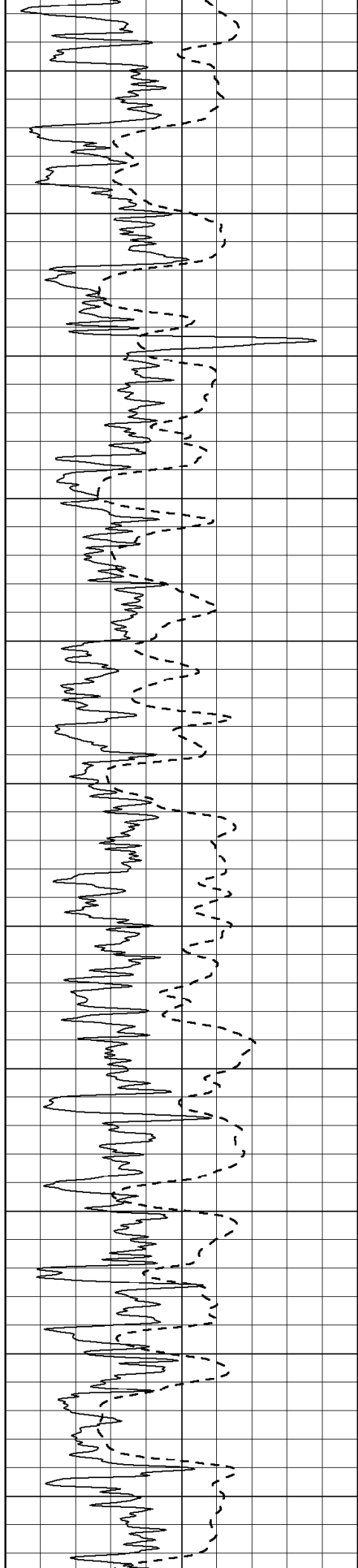
500
550
600
650
700
750
800
850
900
950
1000











2700

2750

2800

2850

2900

2950

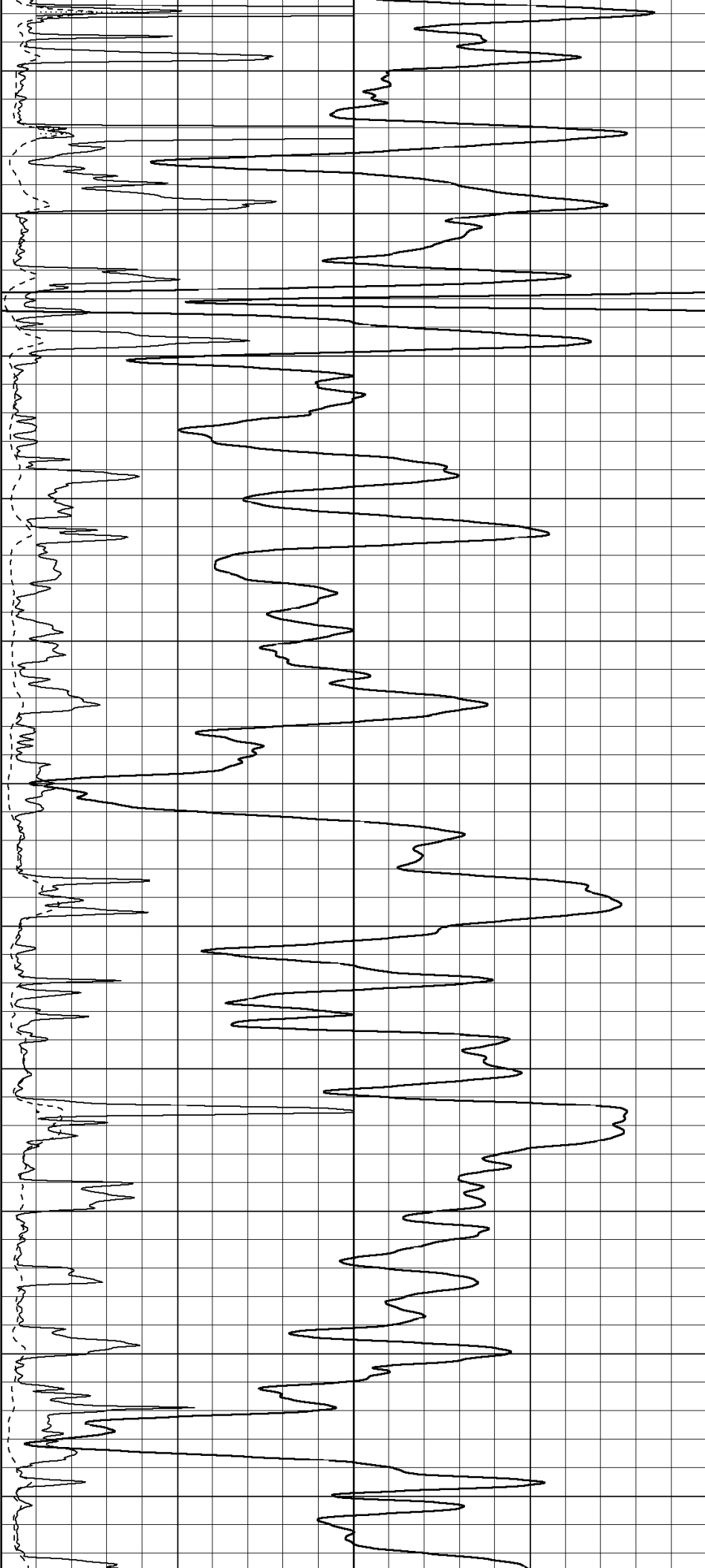
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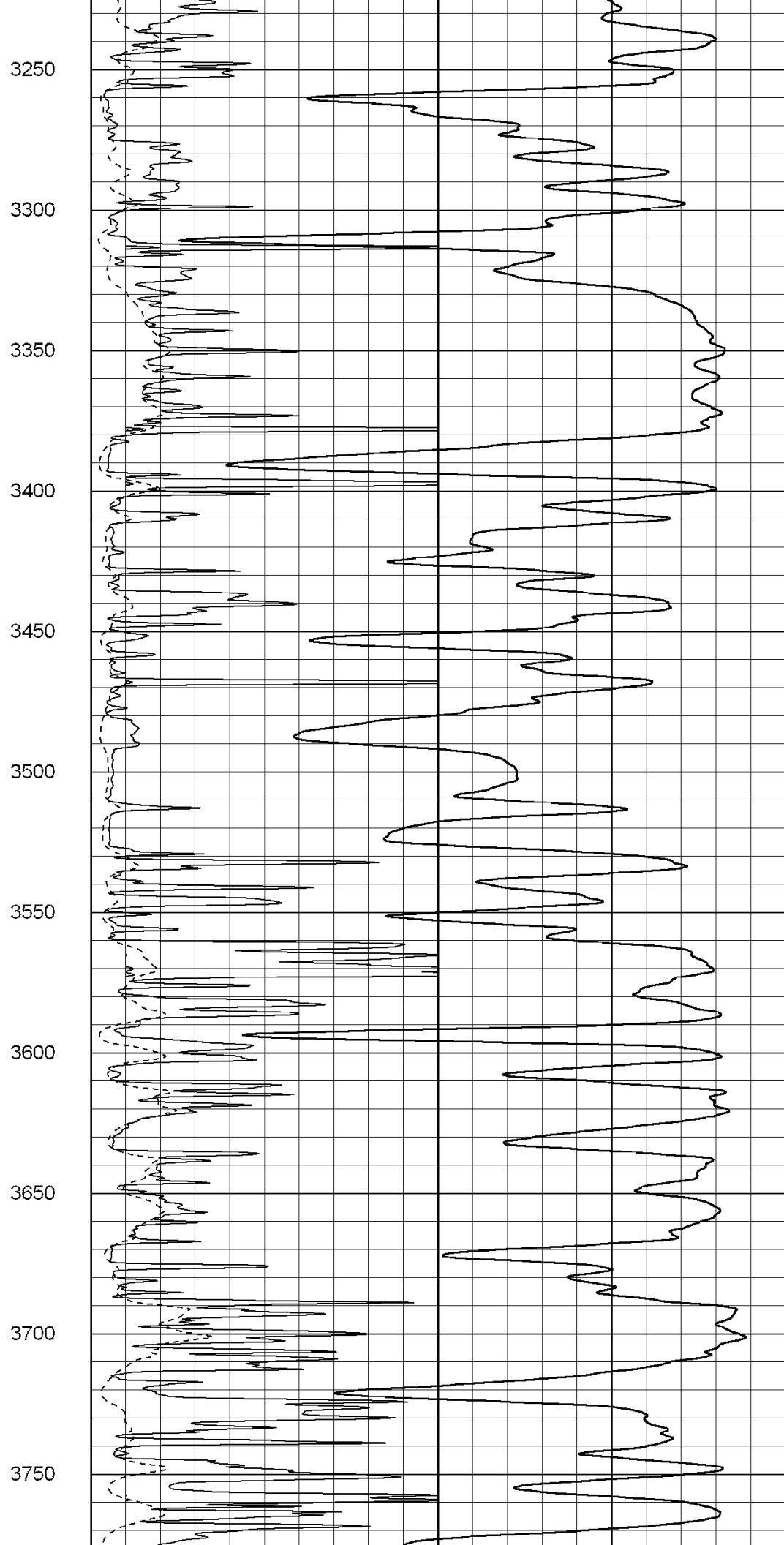
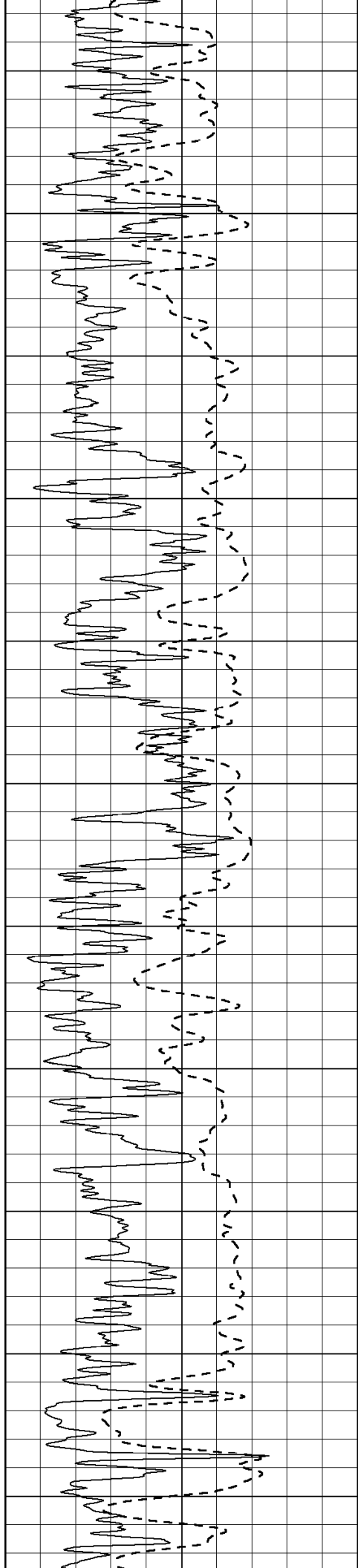
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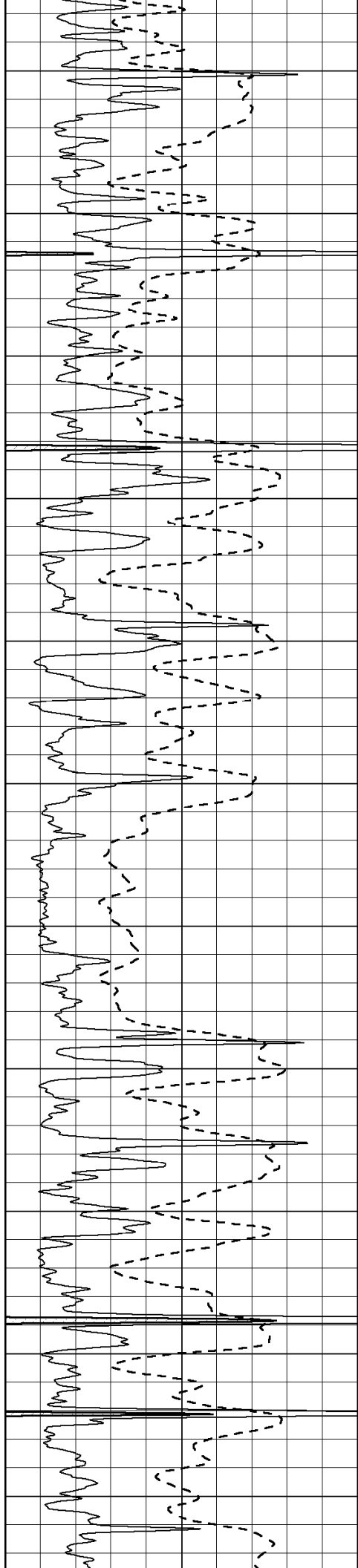
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3150

3200







3800

3850

3900

3950

4000

4050

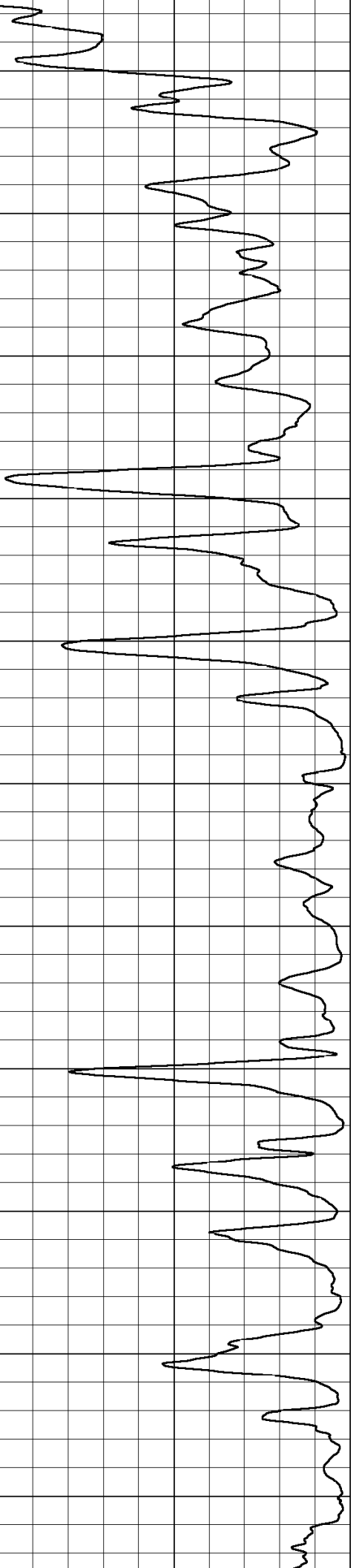
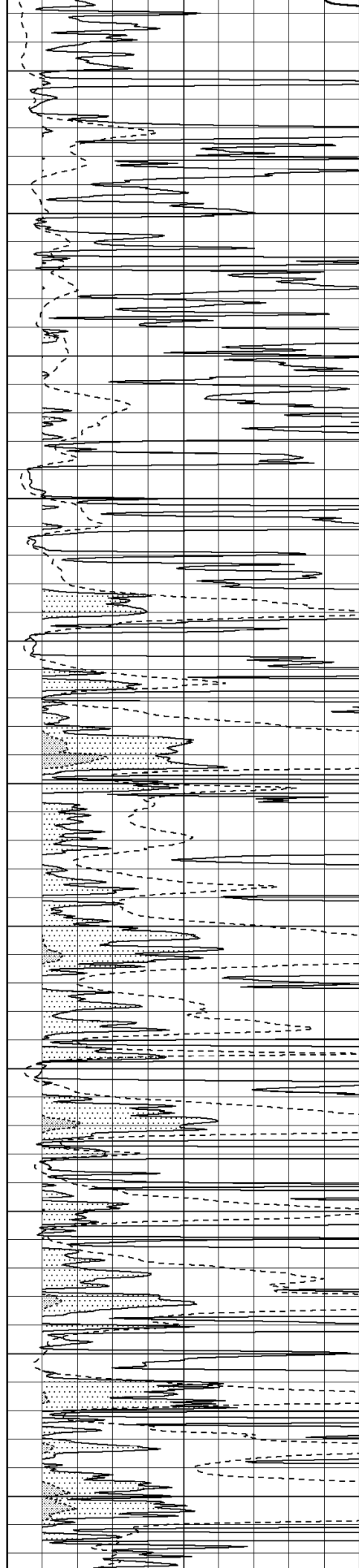
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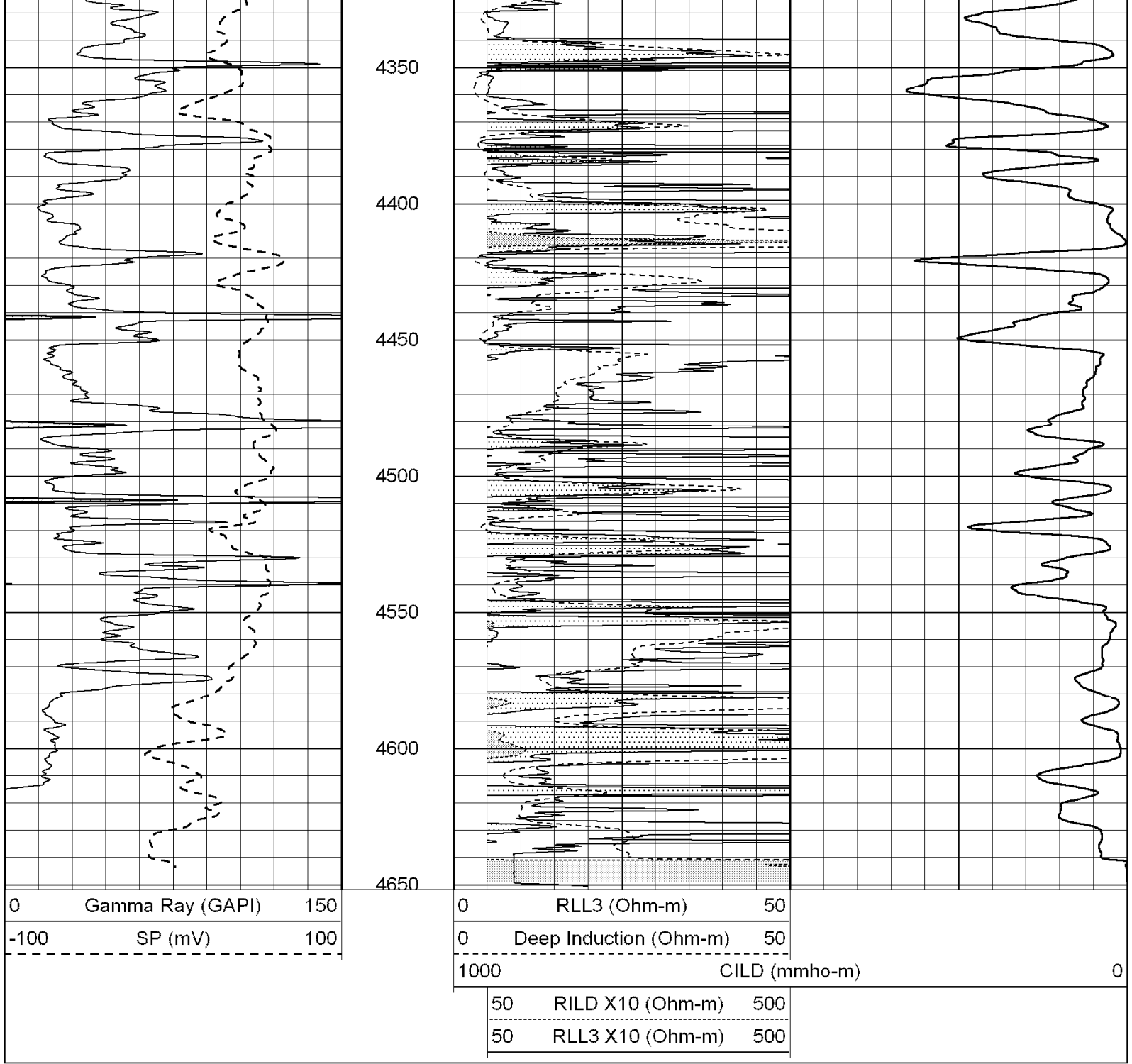
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4200

4250

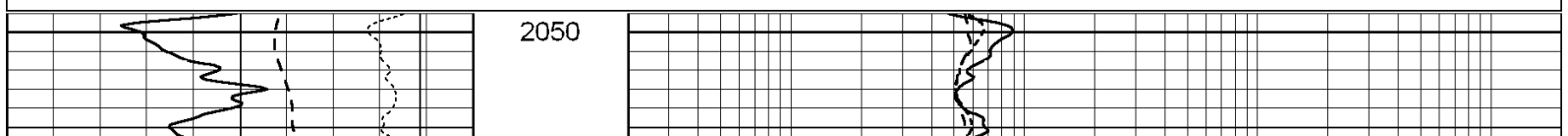
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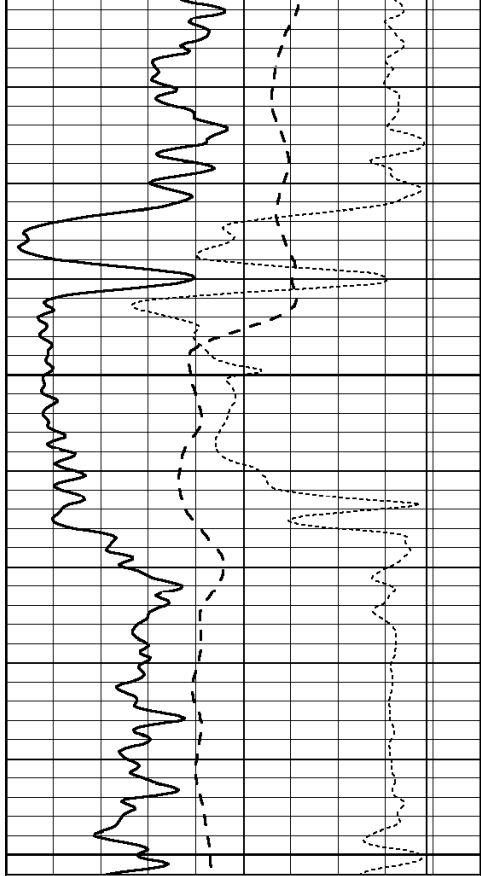




Database File: 3192mulldrill.db
 Dataset Pathname: pass3
 Presentation Format: _dil
 Dataset Creation: Thu Feb 12 06:37:48 2009 by Log Open-Cased 070814
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
10000	LTEN (lb)	0			

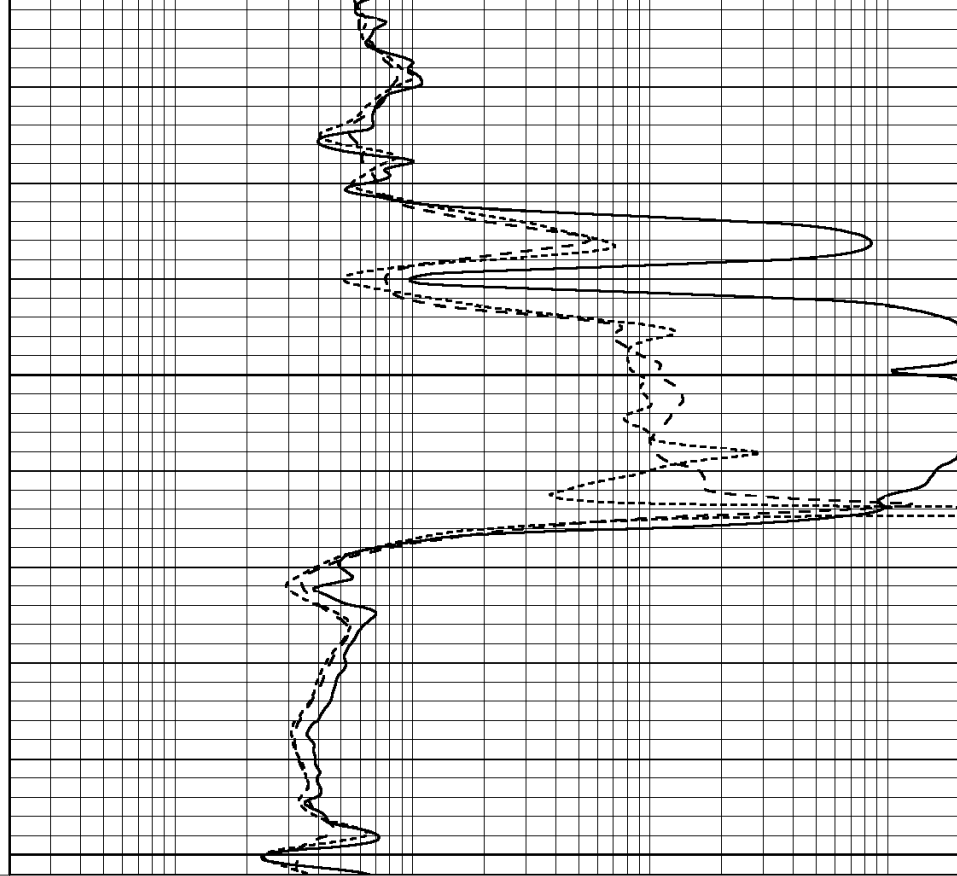




0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
10000	LTEN (lb)	0

2100

2150

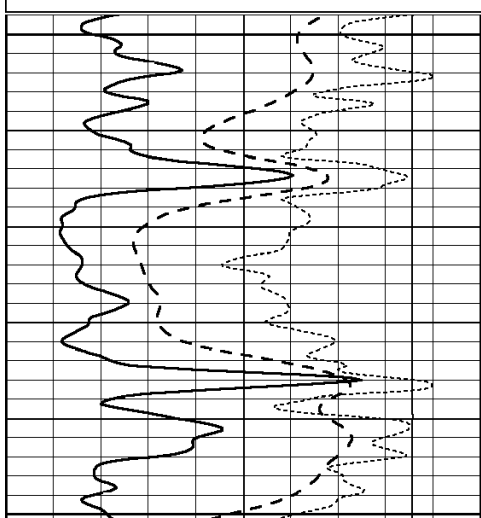


0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 3192mulldrill.db
 Dataset Pathname: pass3
 Presentation Format: _dil
 Dataset Creation: Thu Feb 12 06:37:48 2009 by Log Open-Cased 070814
 Charted by: Depth in Feet scaled 1:240

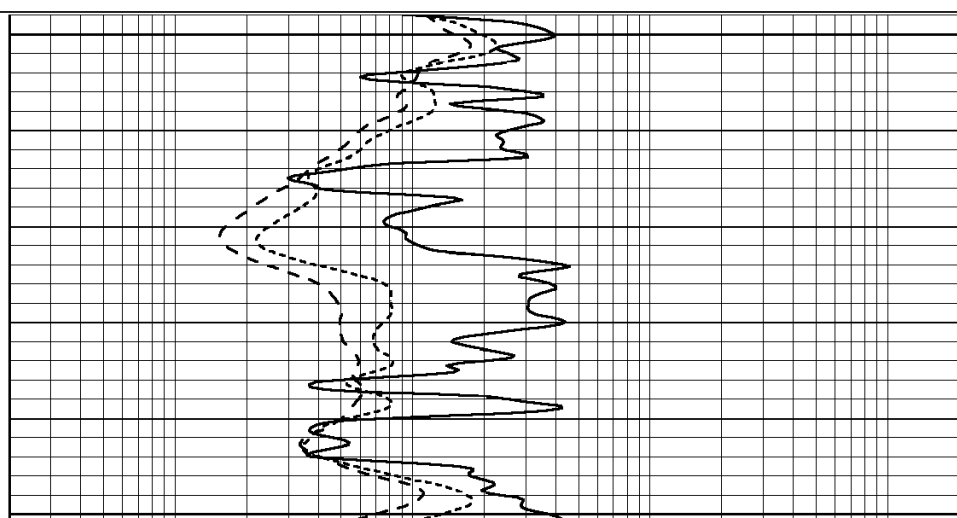
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-100	SP (mV)	100
-250	Rxo/Rt	50
10000	LTEN (lb)	0

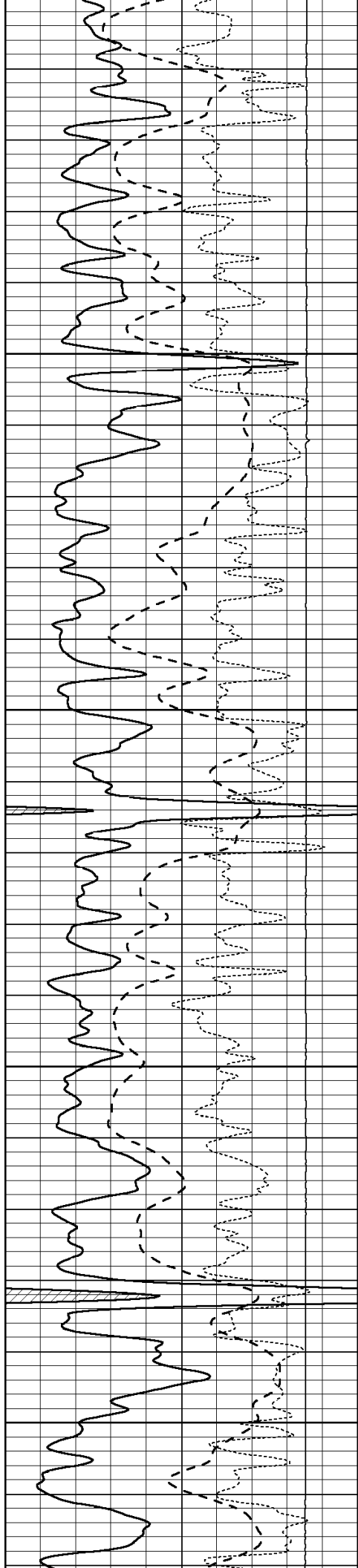
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3700

3750





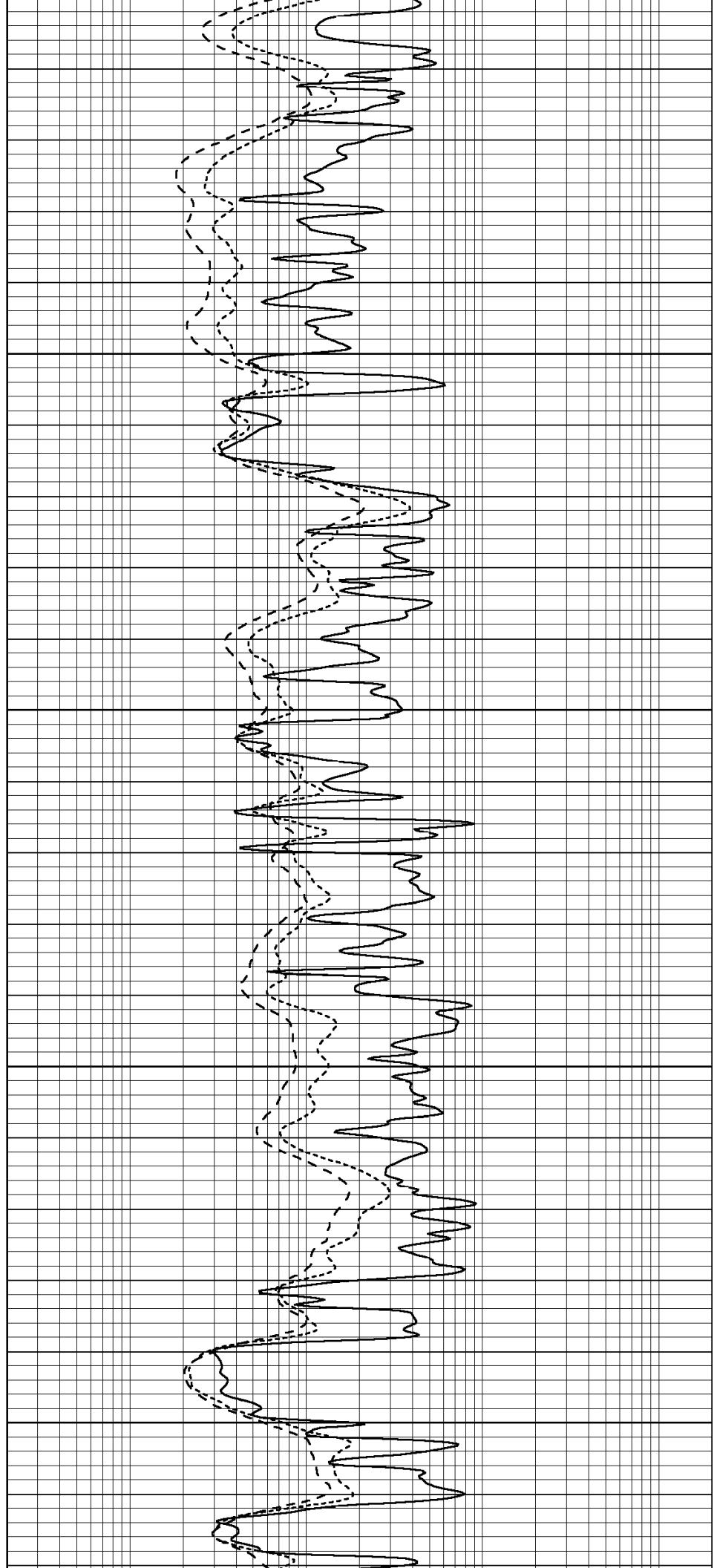
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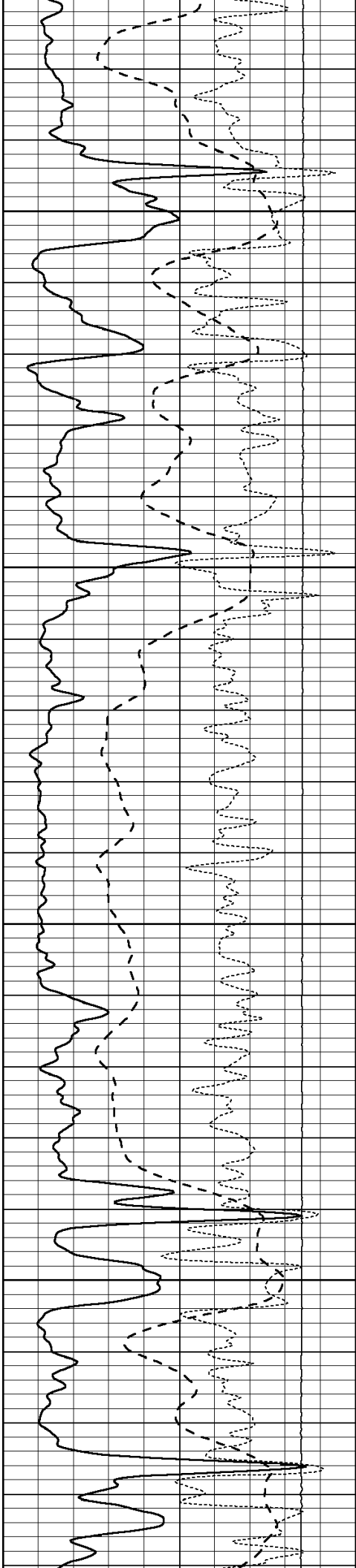
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3850

3900

3950



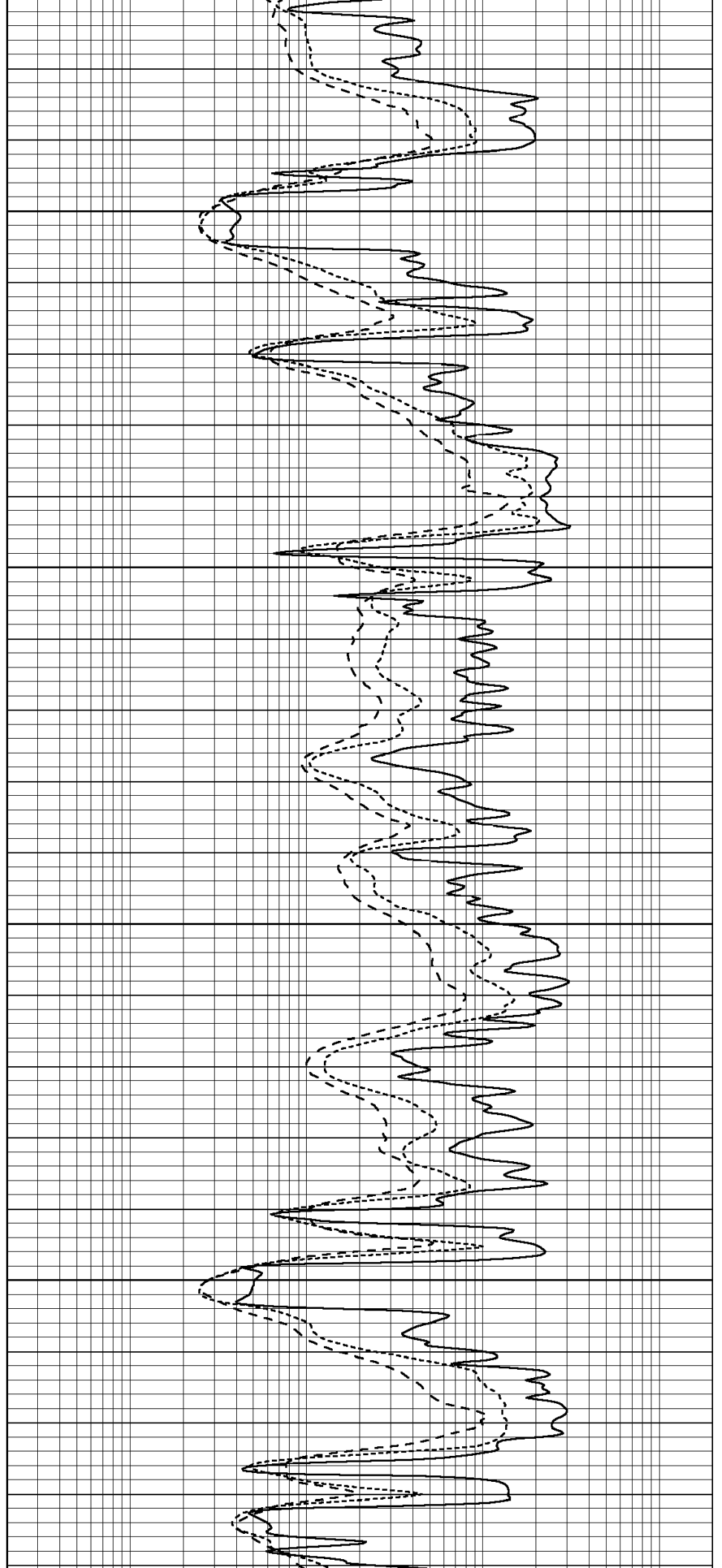


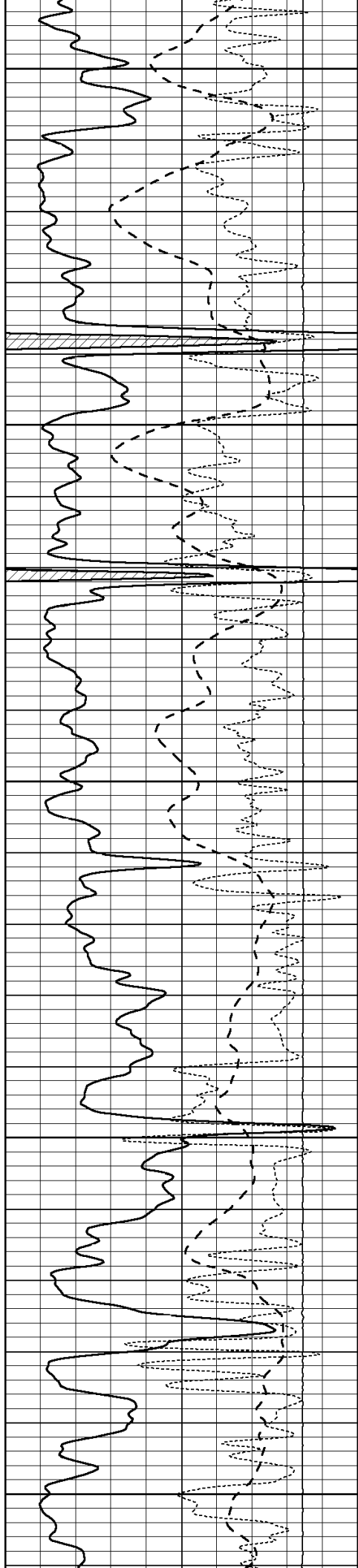
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4050

4100

4150





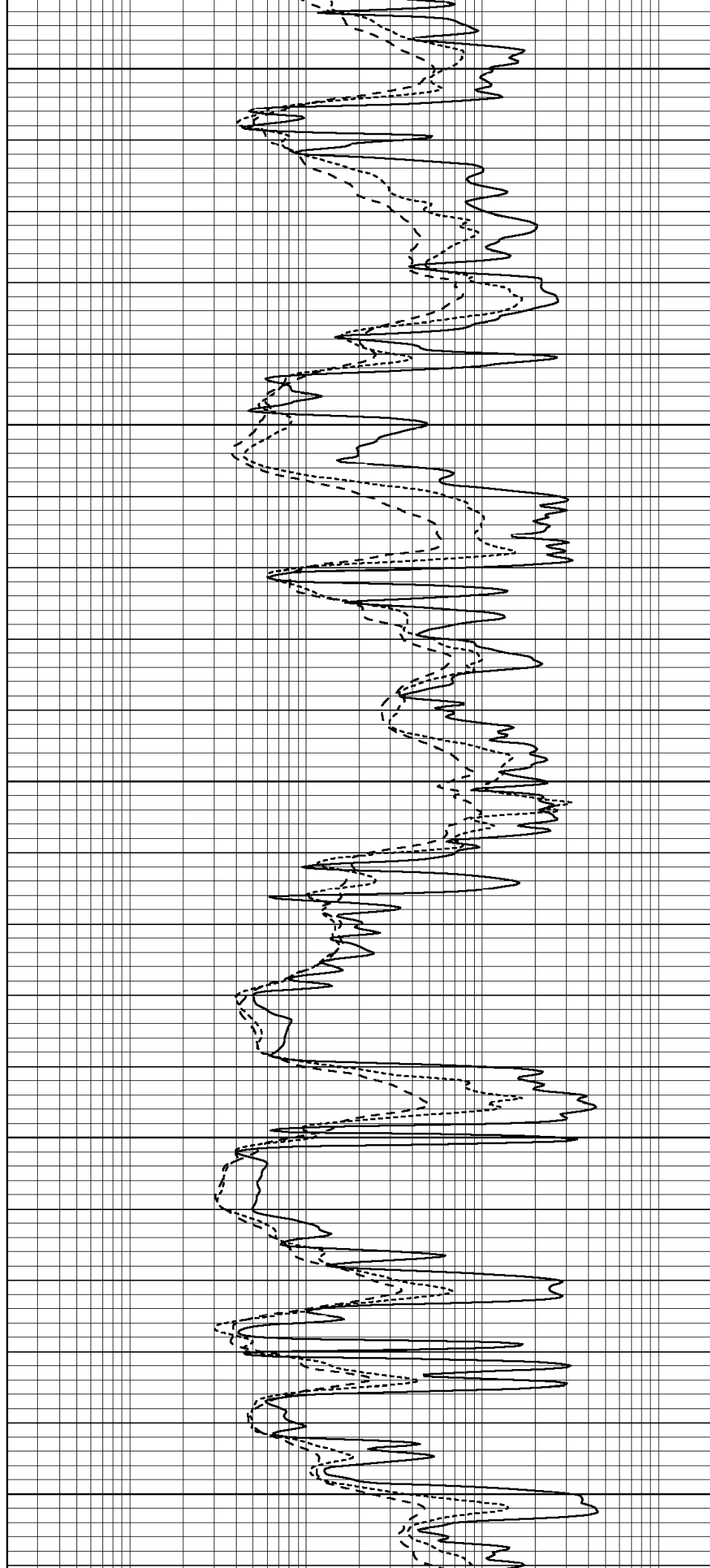
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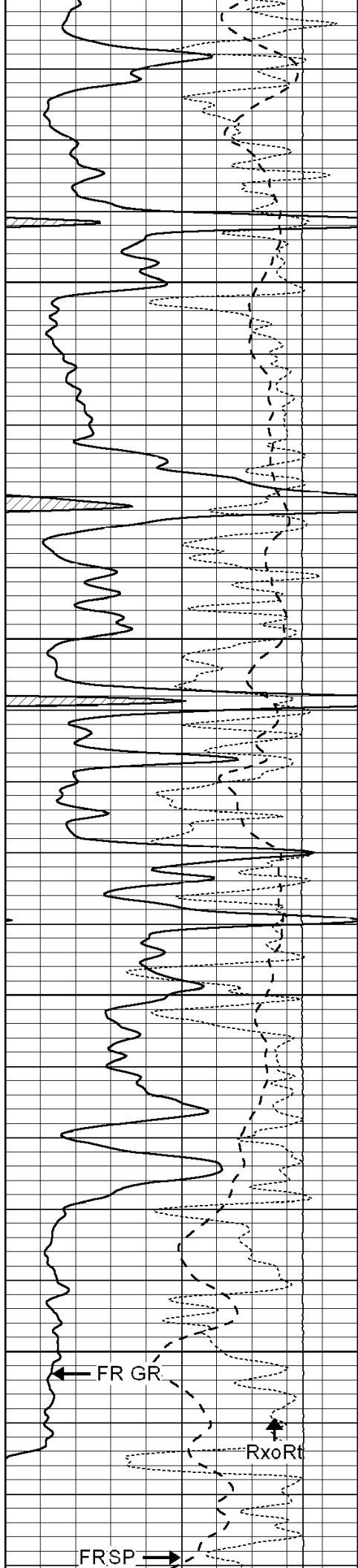
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4300

4350

4400



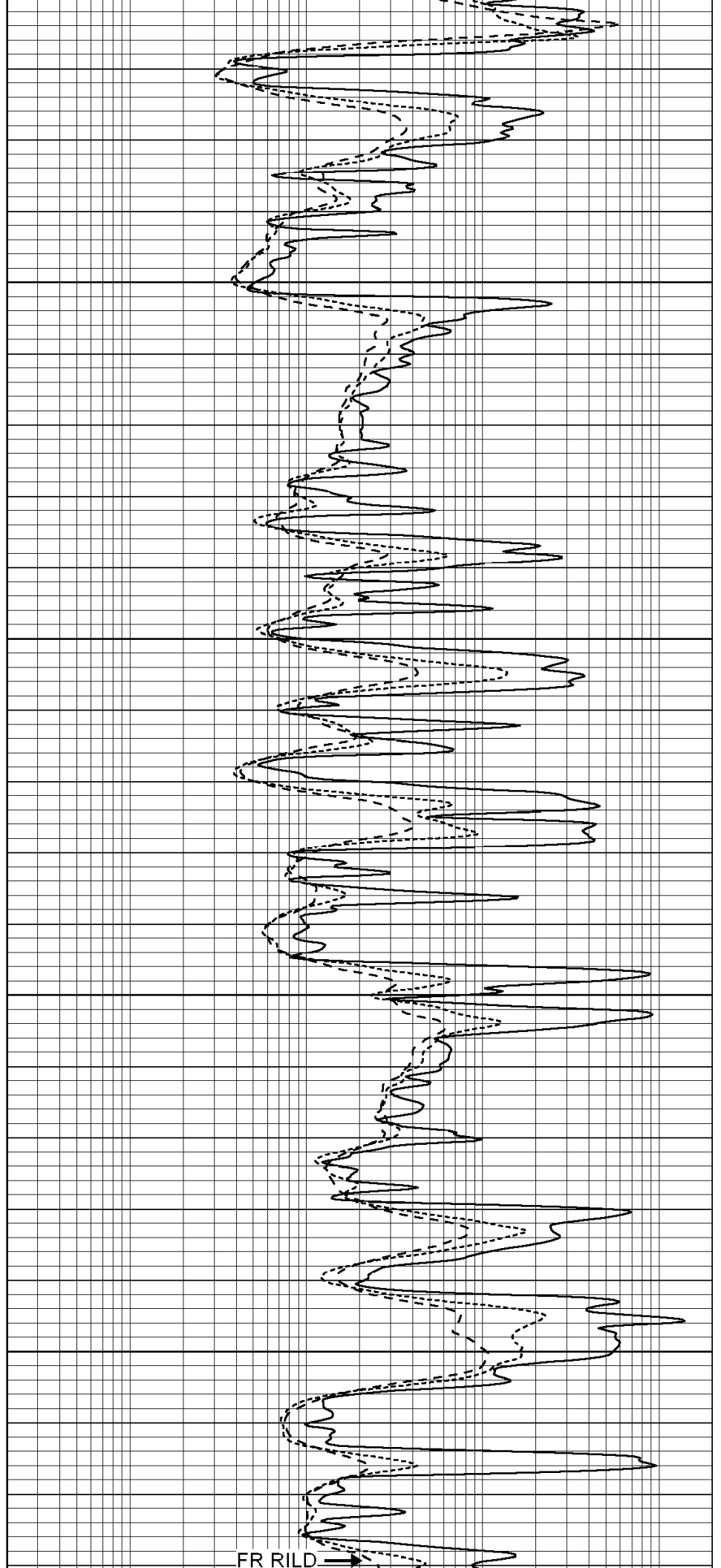


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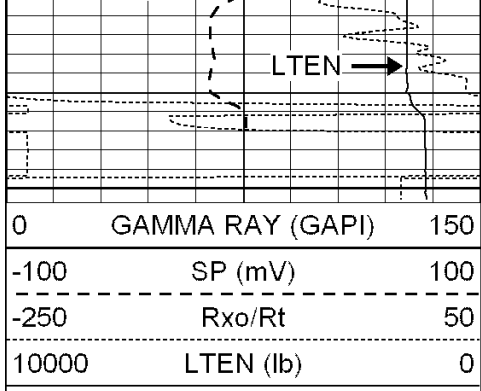
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4550

4600



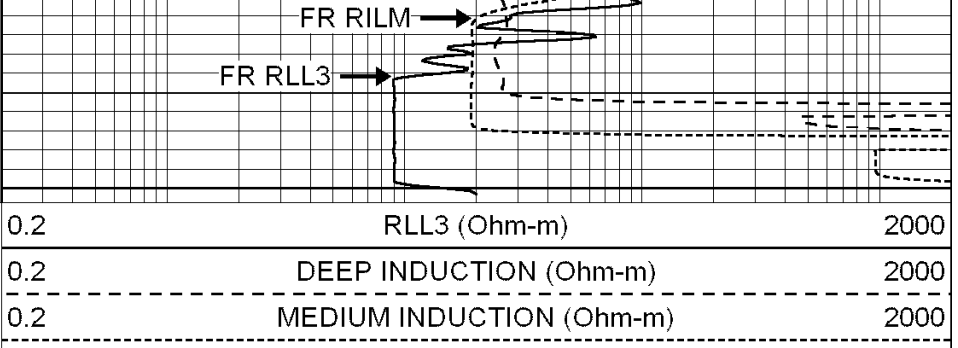
FR RILD →



LTD 4640

4650

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
10000	LTEN (lb)	0



0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

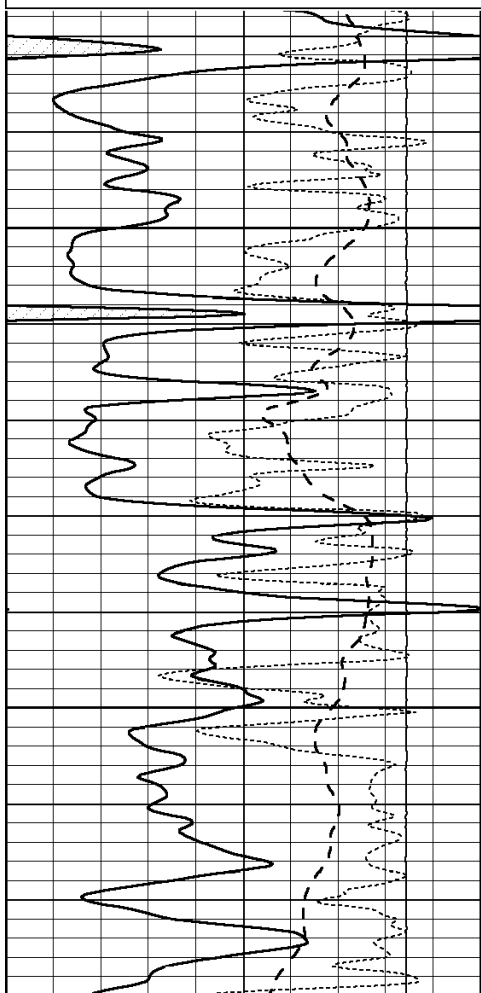


REPEAT SECTION

Database File: 3192mulldrill.db
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 Charted by: Depth in Feet scaled 1:240

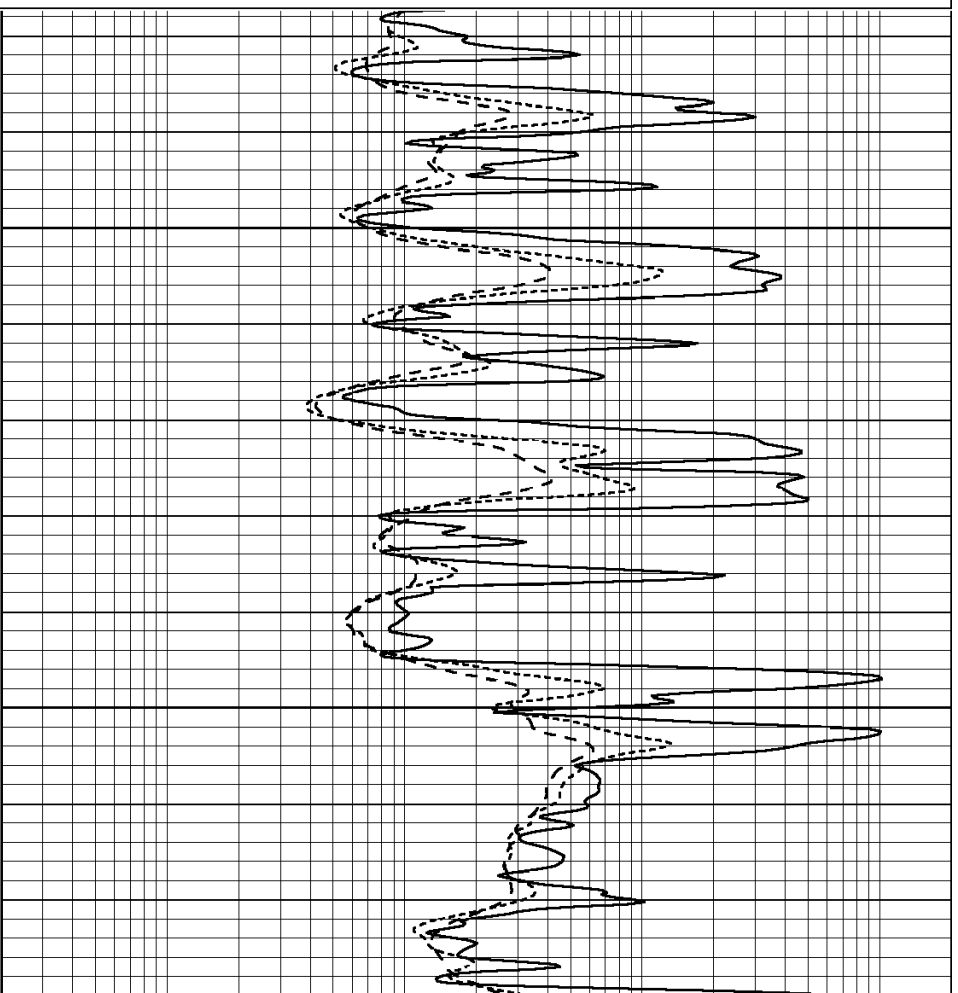
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
10000	LTEN (lb)	0

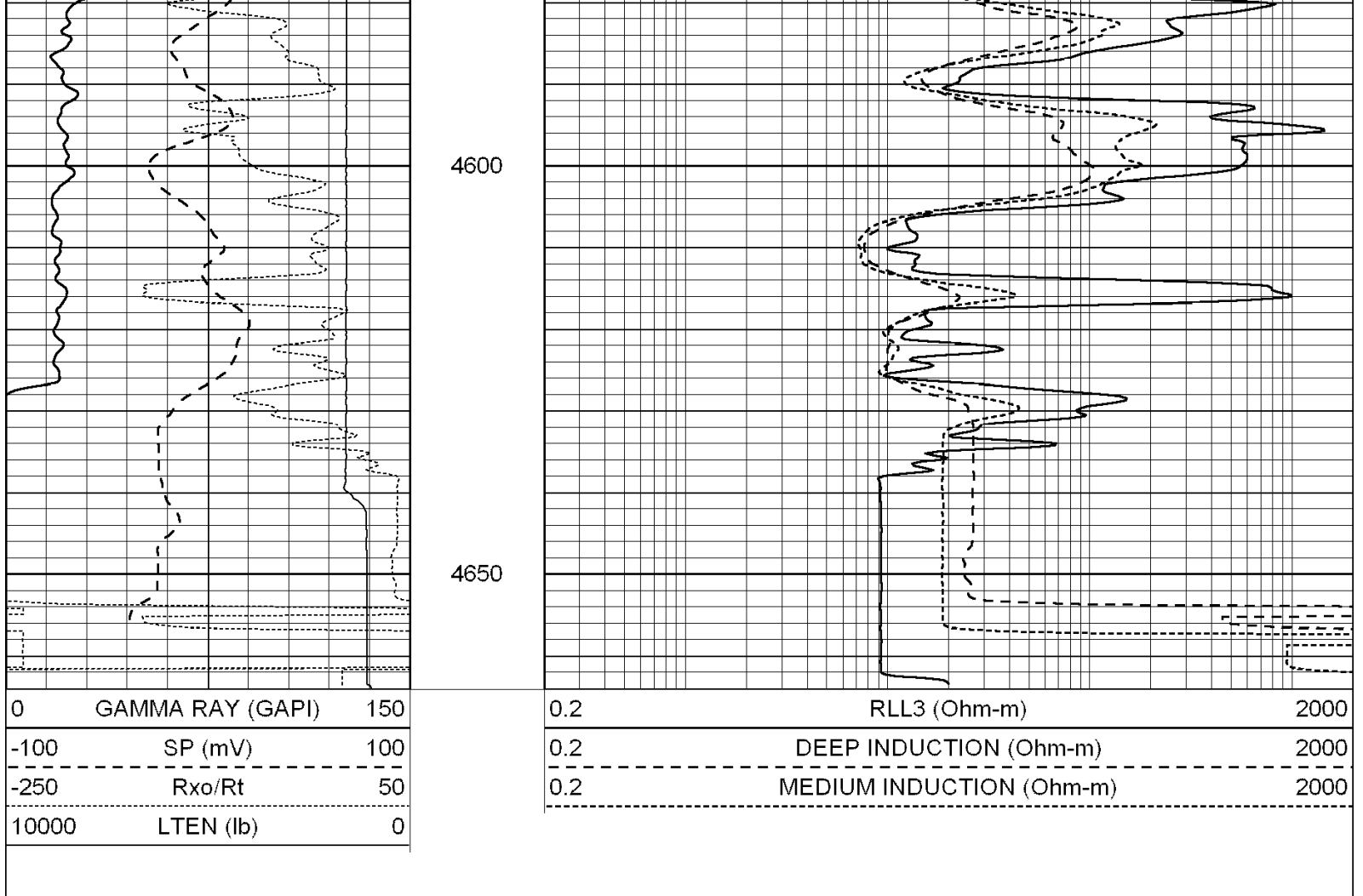
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4500

4550





Calibration Report

Database File: 3192mulldrill.db
 Dataset Pathname: pass3
 Dataset Creation: Thu Feb 12 06:37:48 2009 by Log Open-Cased 070814

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Fri Aug 01 06:33:19 2008
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings				References			Results	
	Air	Loop			Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho-m	632.616	-9.730	
Medium	0.029	0.796	V	0.000	464.000	mmho-m	605.049	-17.680	
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
	-6.500	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:	GEAR4-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Fri Jan 16 10:06:35 2009

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1358.55	649.93	cps
Aluminum	2.580	g/cc	325.11	479.52	cps
Spine Angle = 78.00			Density/Spine Ratio = 0.595		
	Size		Reading		
Small Ring	8.00	in	3.56	V	
Large Ring	14.00	in	6.65	V	

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

Gamma Ray Calibration Report

Serial Number:	GR6	
Tool Model:	OPEN	
Performed:	Mon Feb 09 12:32:10 2009	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	351.0	cps
Sensitivity:	0.4274	GAPI/cps