



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company CHARTER ENERGY, INC.  
Well LEWIS #1  
Field WILDCAT  
County GOVE  
State KANSAS

Company CHARTER ENERGY, INC.  
Well LEWIS #1  
Field WILDCAT  
County GOVE State KANSAS

Location: API # : 15-063-22228-0000  
2495' FSL & 2575' FEL  
NW NW NW SE  
SEC 7 TWP 13S RGE 29W  
Permanent Datum GROUND LEVEL Elevation 2747  
Log Measured From KELLY BUSHING 6' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2763  
D.F. 2751  
G.L. 2747

Date	10/28/14
Run Number	ONE
Depth Driller	4500
Depth Logger	4502
Bottom Logged Interval	4500
Top Log Interval	00
Casing Driller	8 5/8" @ 264
Casing Logger	260
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/52
pH / Fluid Loss	8.0/8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.0 @ 70F
Rmt @ Meas. Temp	.75 @ 70F
Rmc @ Meas. Temp	1.20 @ 70F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.58 @ 120F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	120F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	JASON CAPPELLUCCI
Witnessed By	KURT TALBOTT

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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:  
GOVE, KS. - 6 WEST TO RD. 34 - 1 1/2 SOUTH - 1/2 EAST - NORTH INTO THRU GATE



**MAIN SECTION**

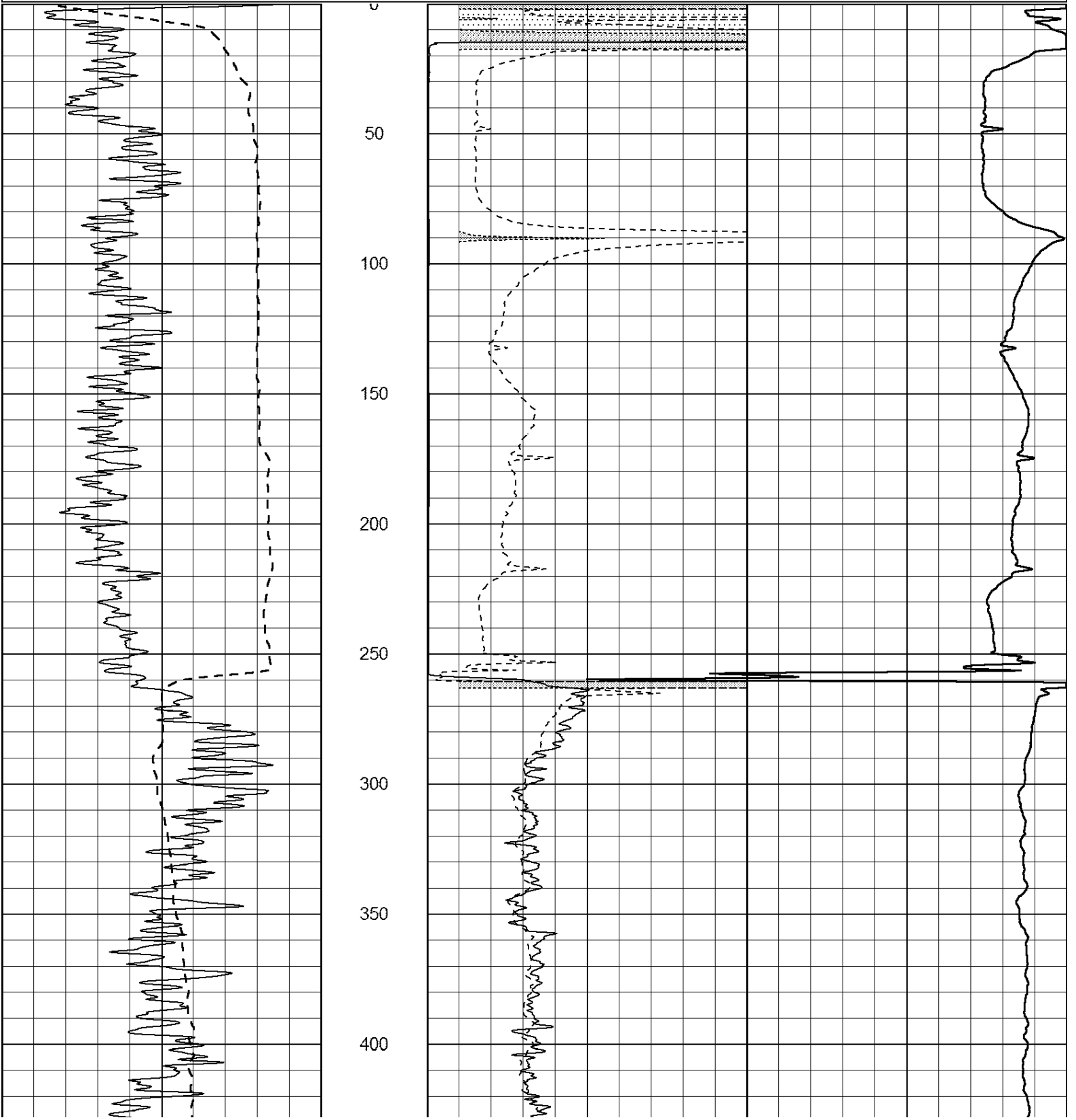
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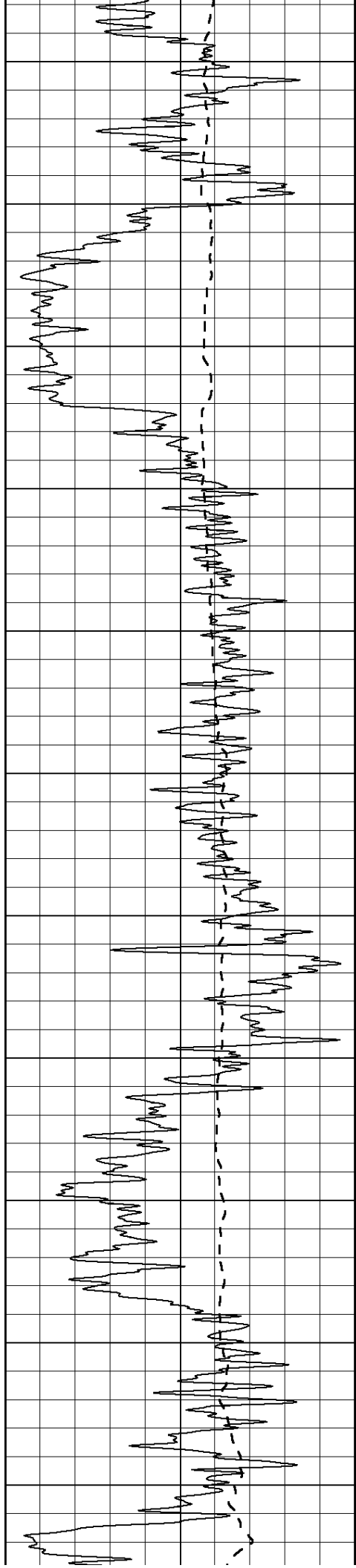
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-100	SP (mV)	100

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
50	RLL3 X10 (Ohm-m)	500





450

500

550

600

650

700

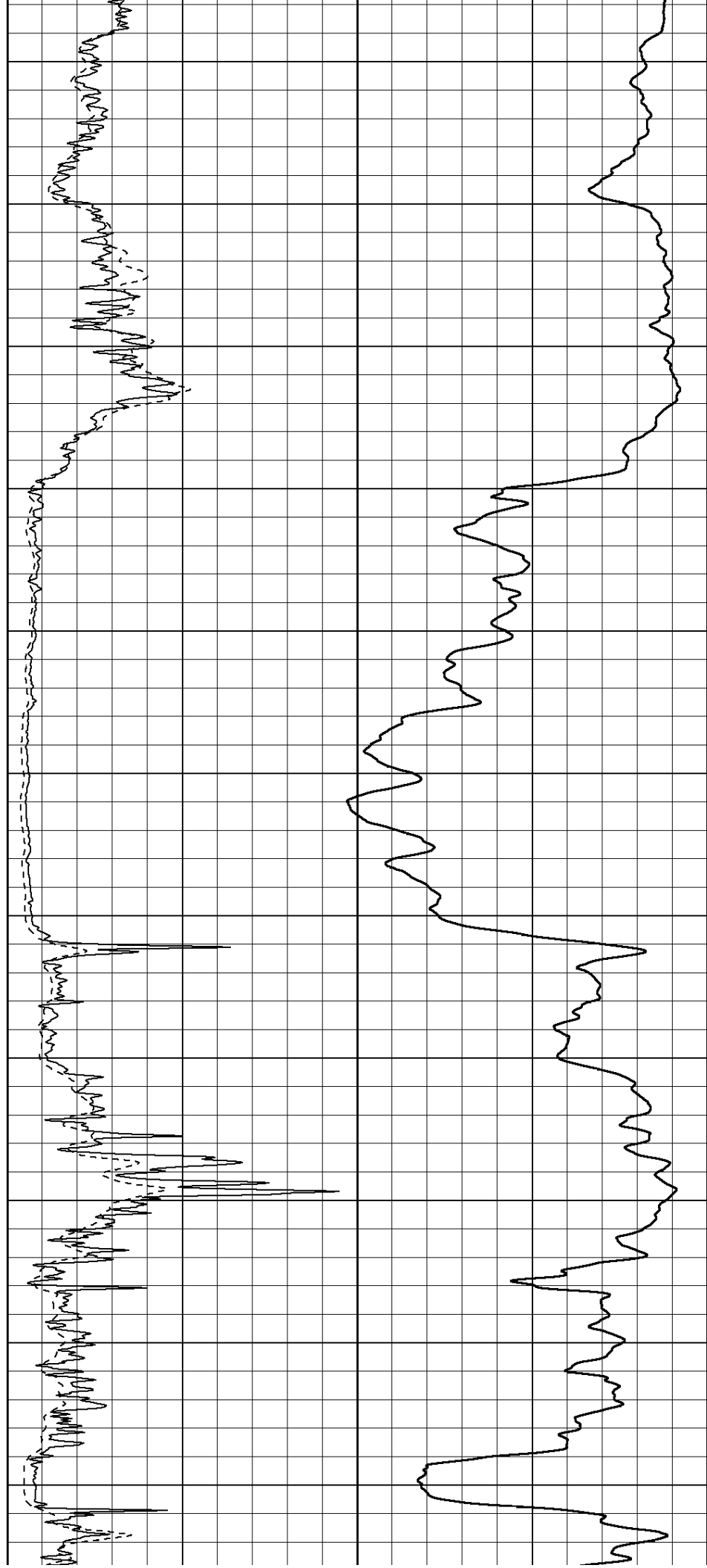
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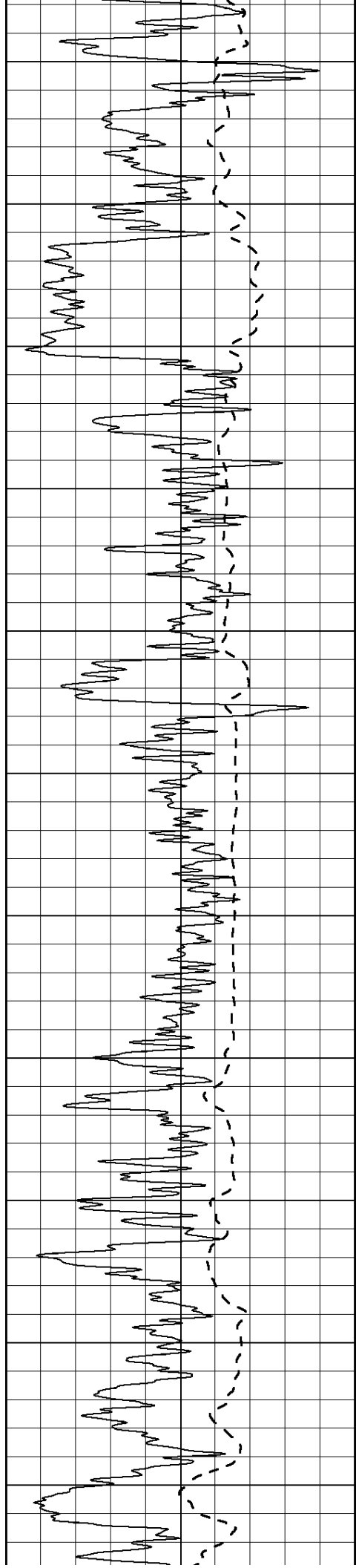
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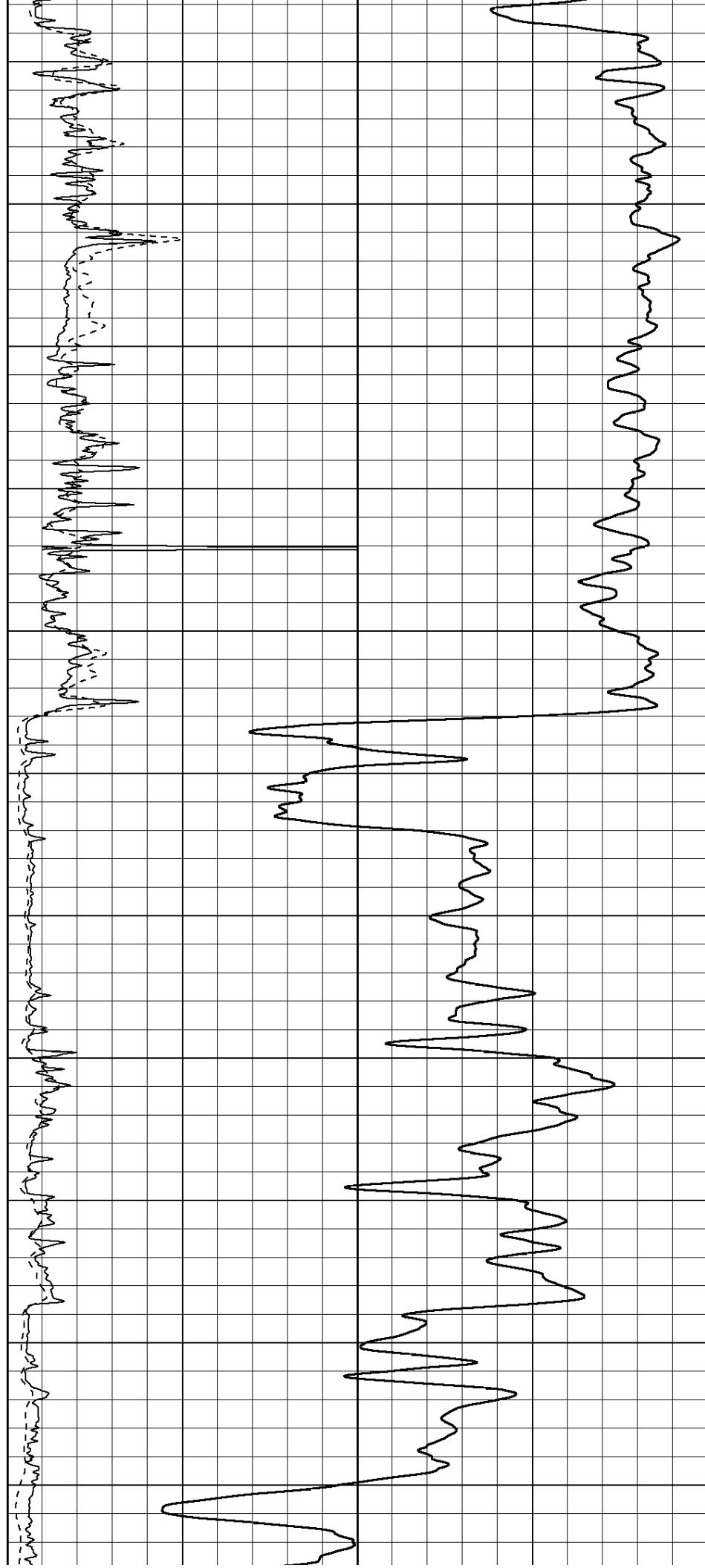
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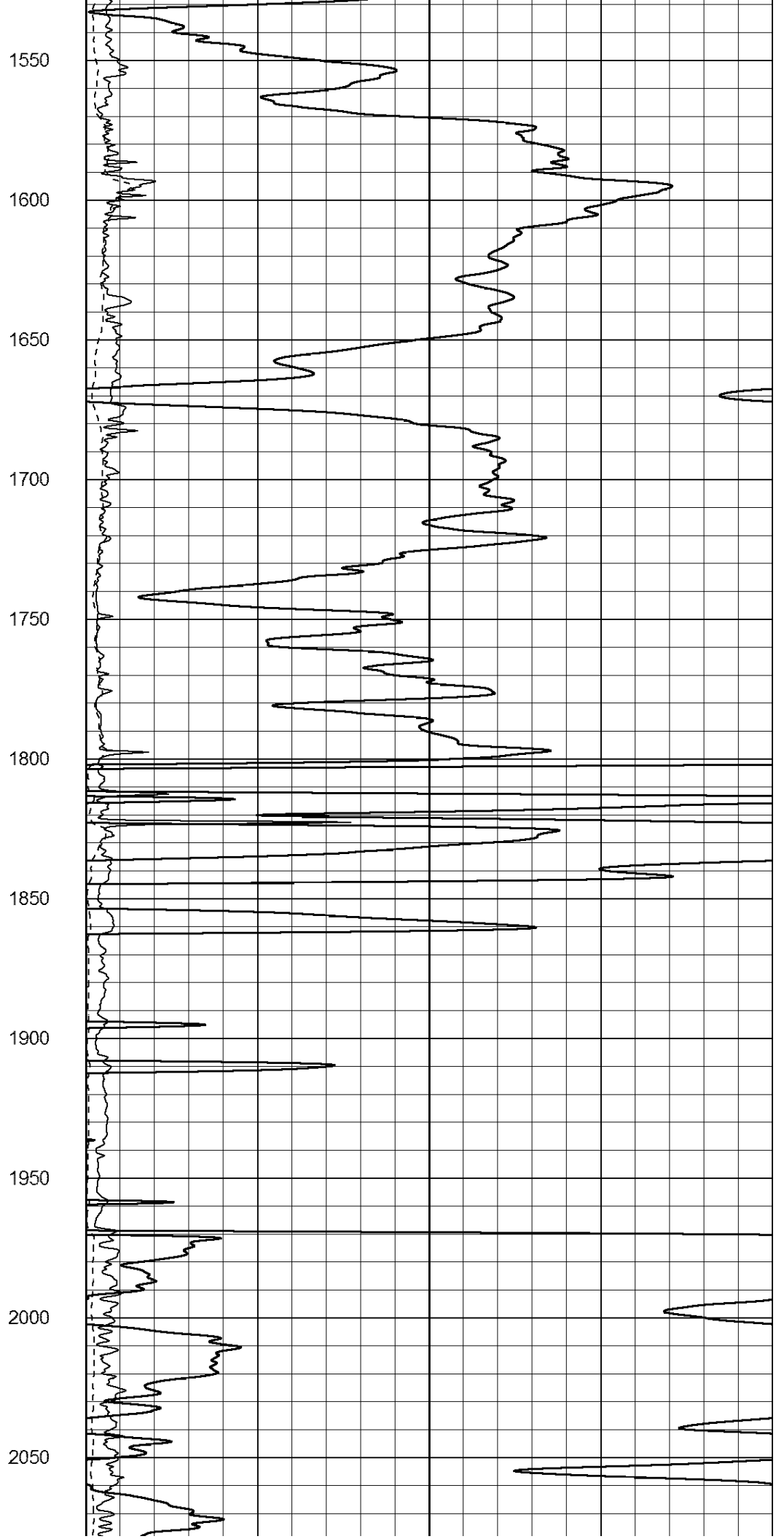
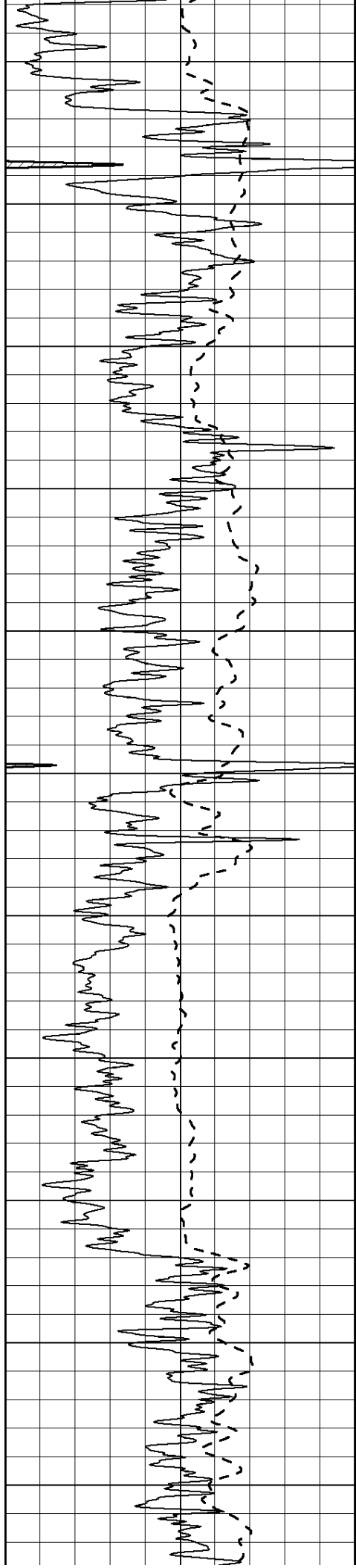
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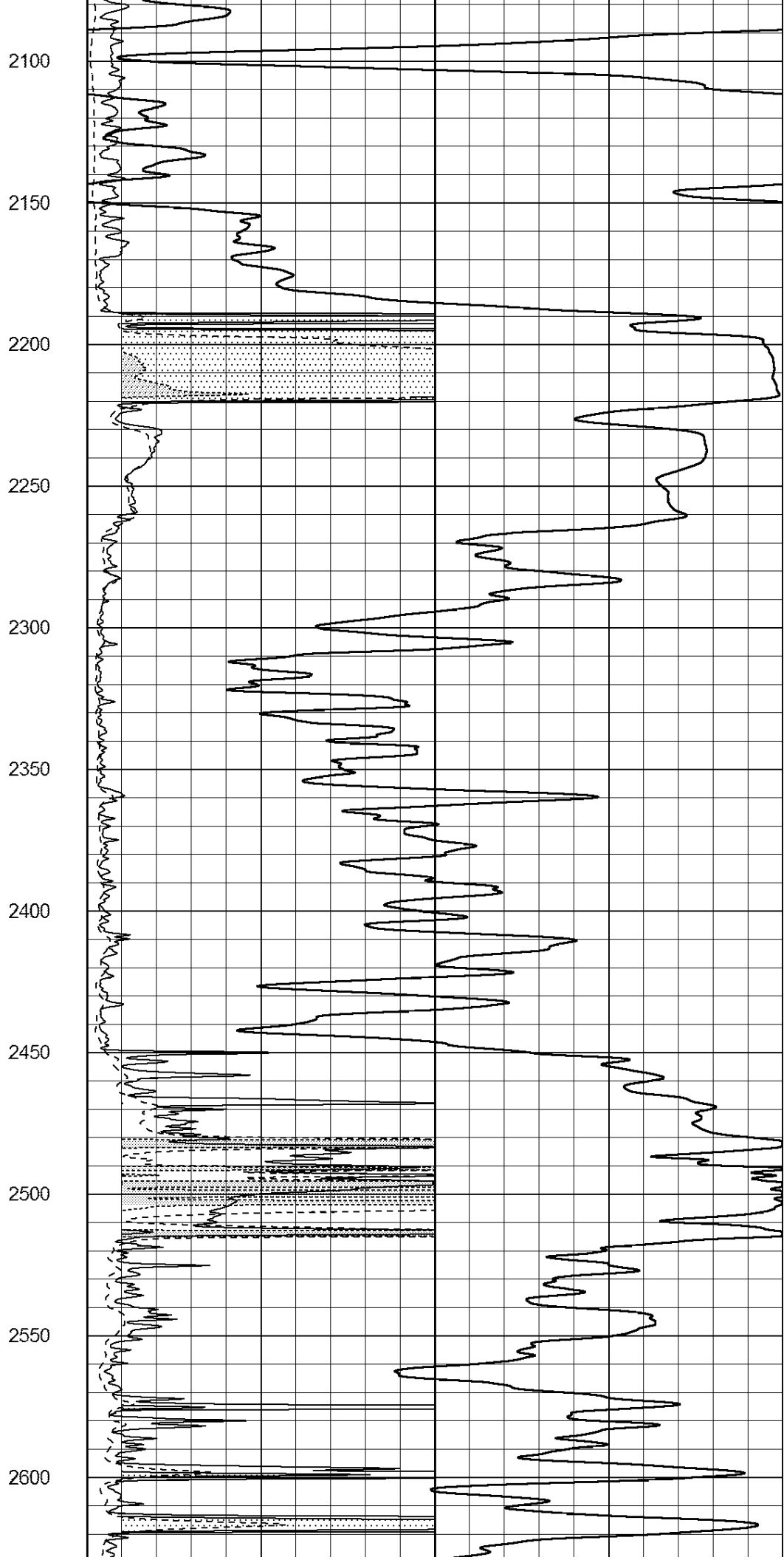
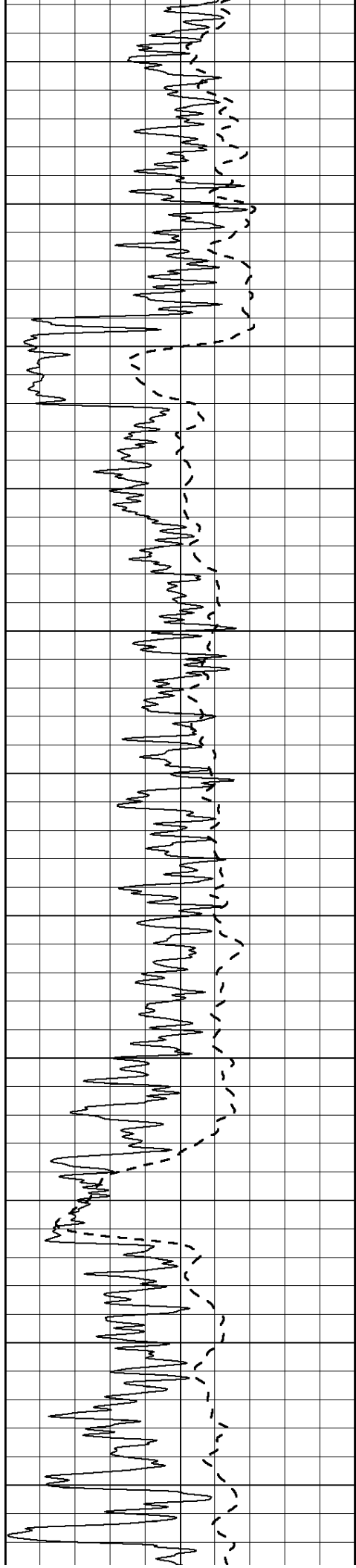


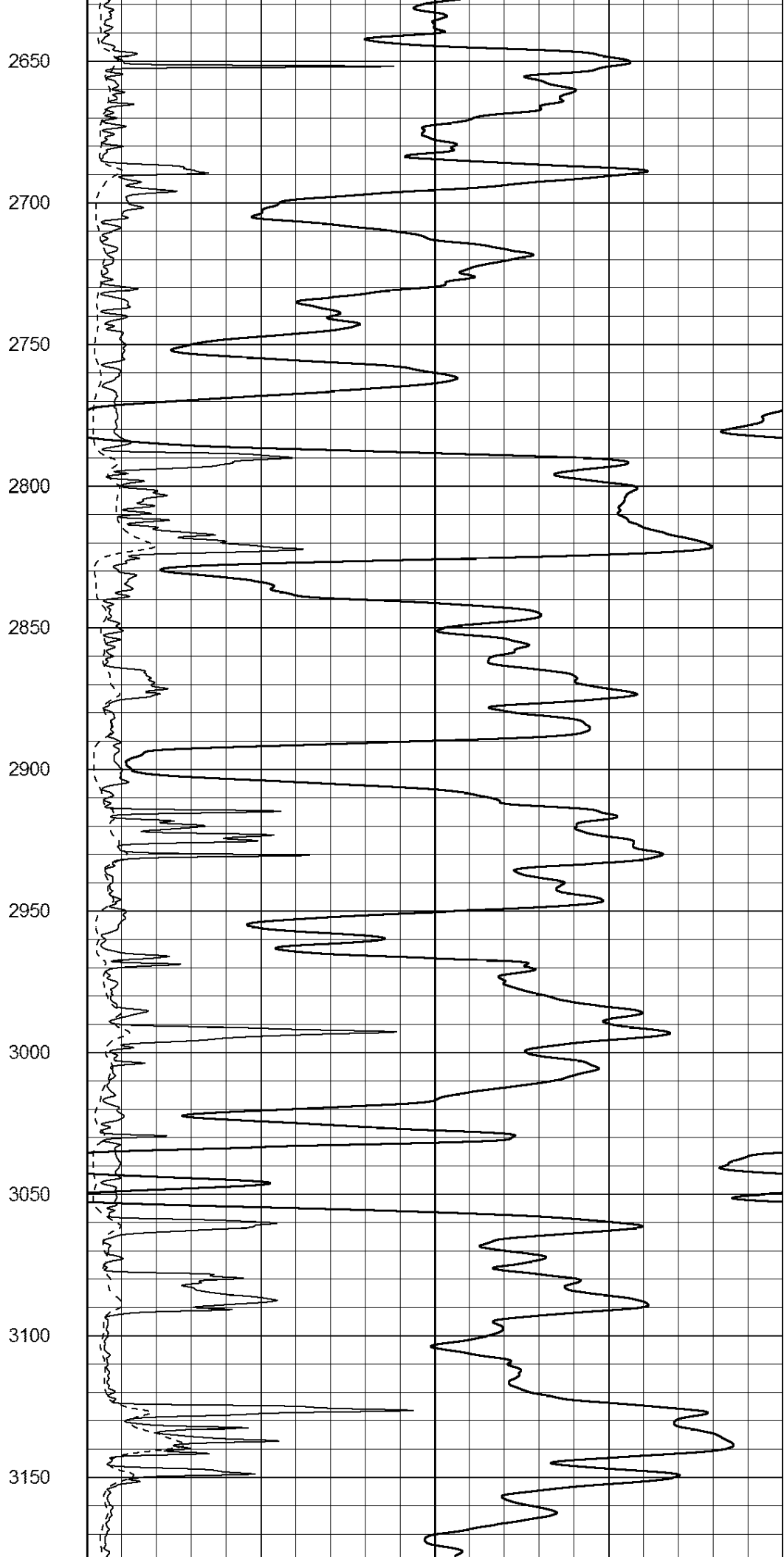
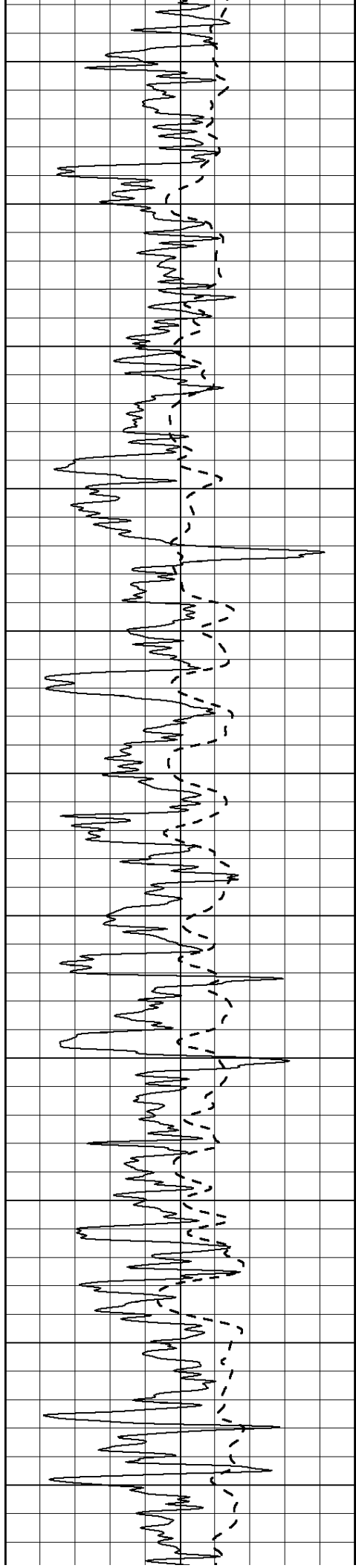


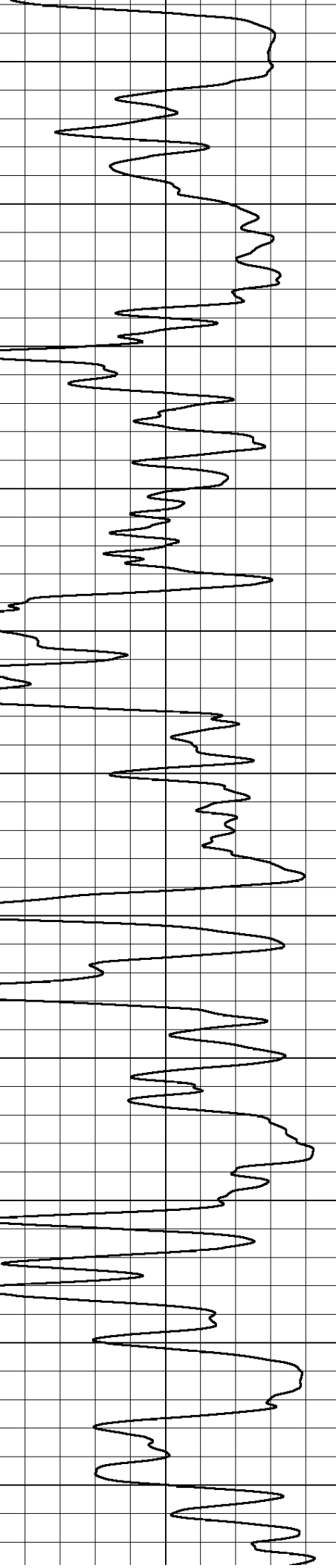
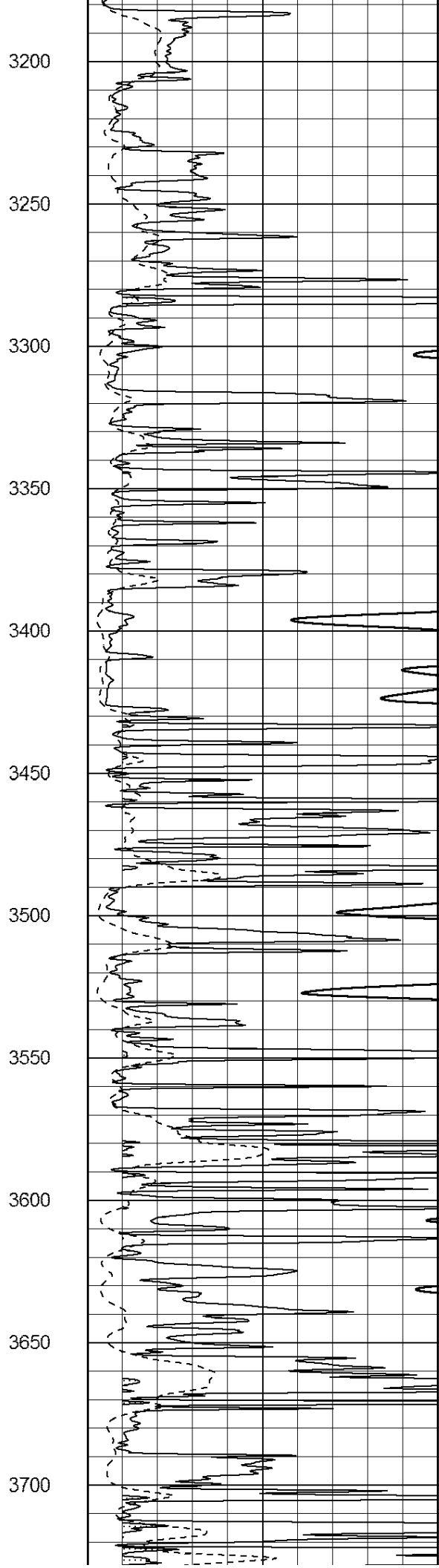
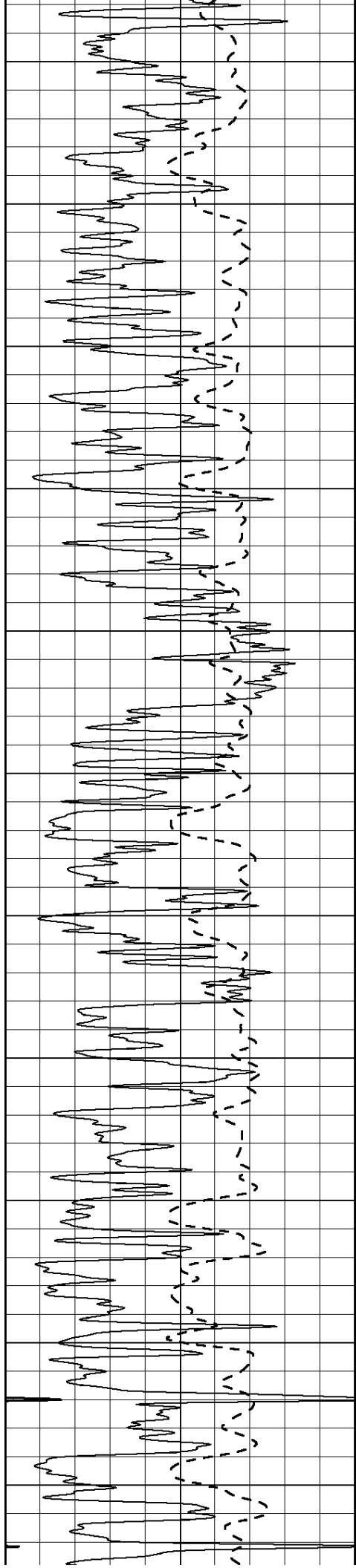
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1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500

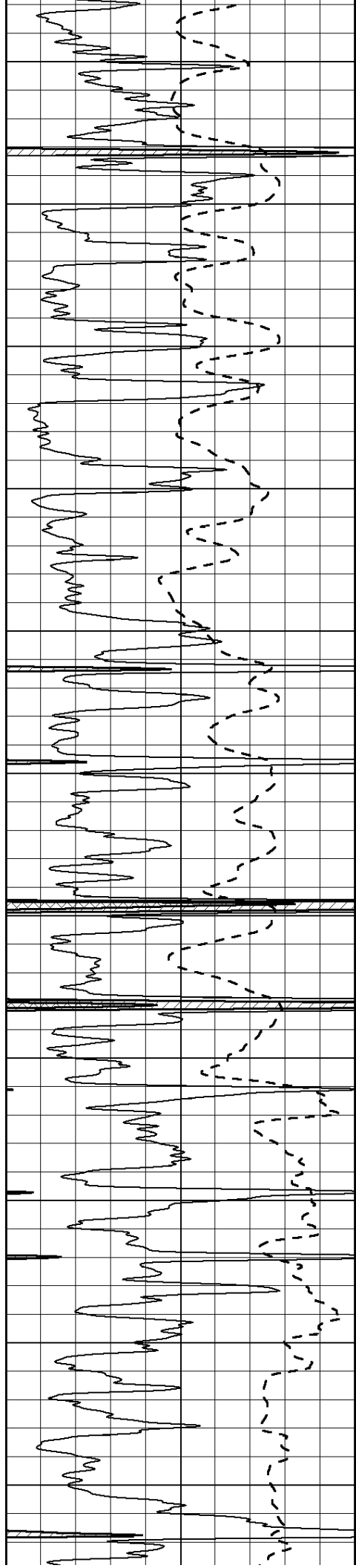




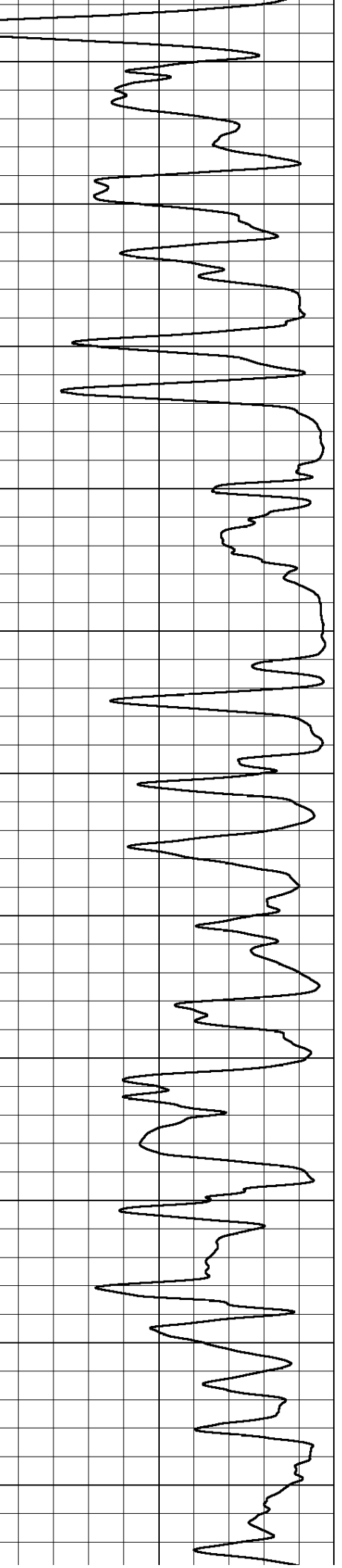
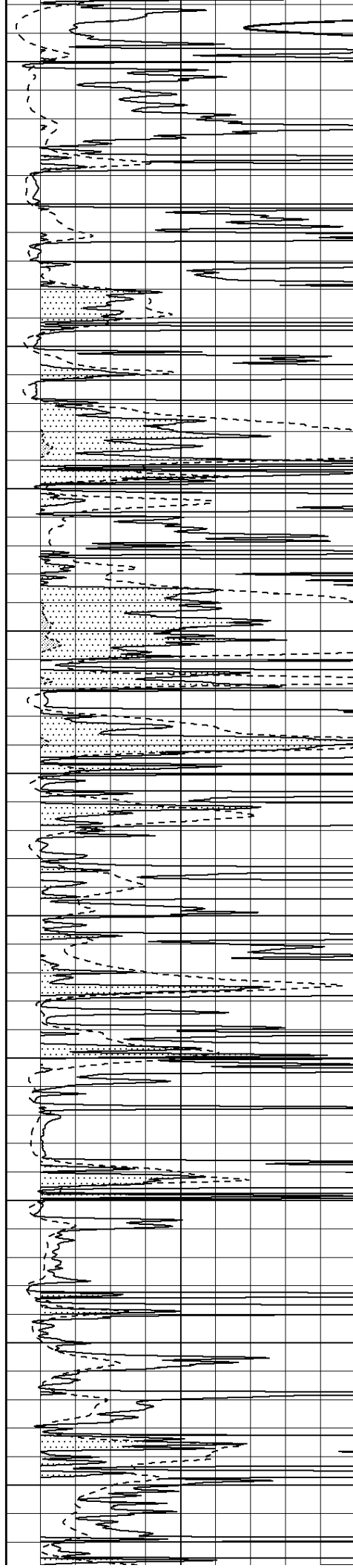


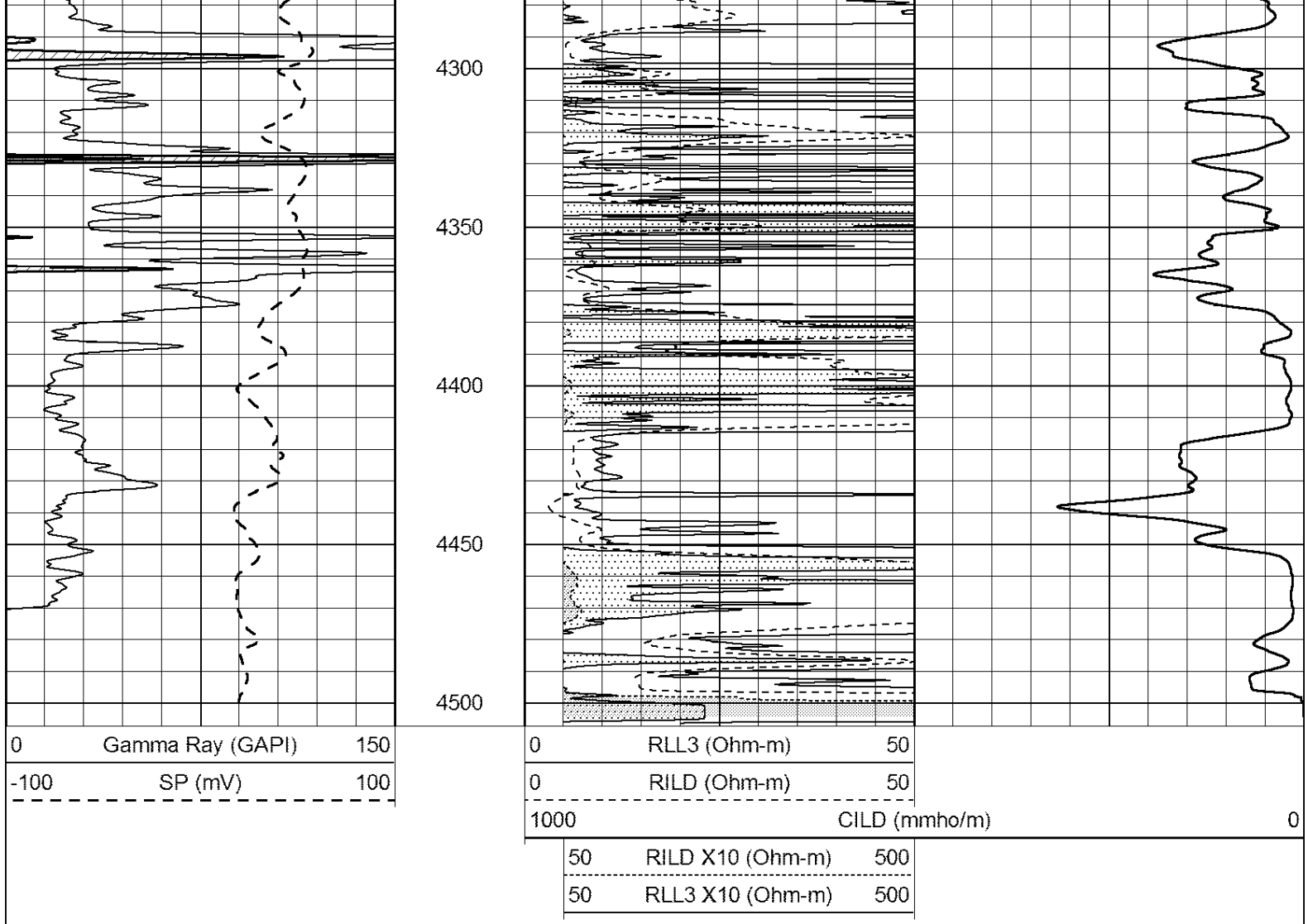






3750  
3800  
3850  
3900  
3950  
4000  
4050  
4100  
4150  
4200  
4250



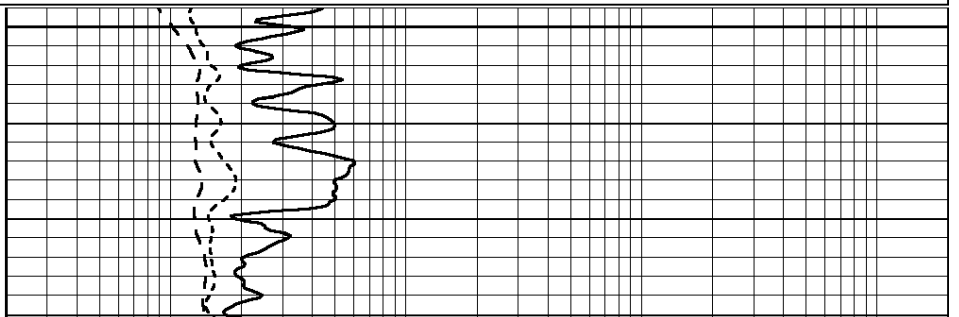
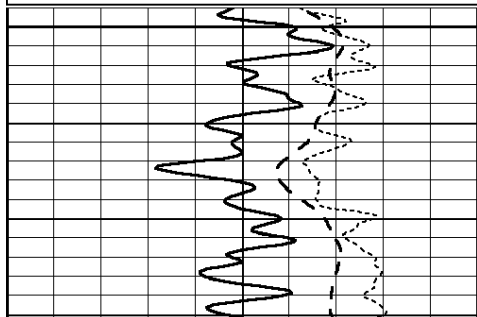


# ANHYDRITE

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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

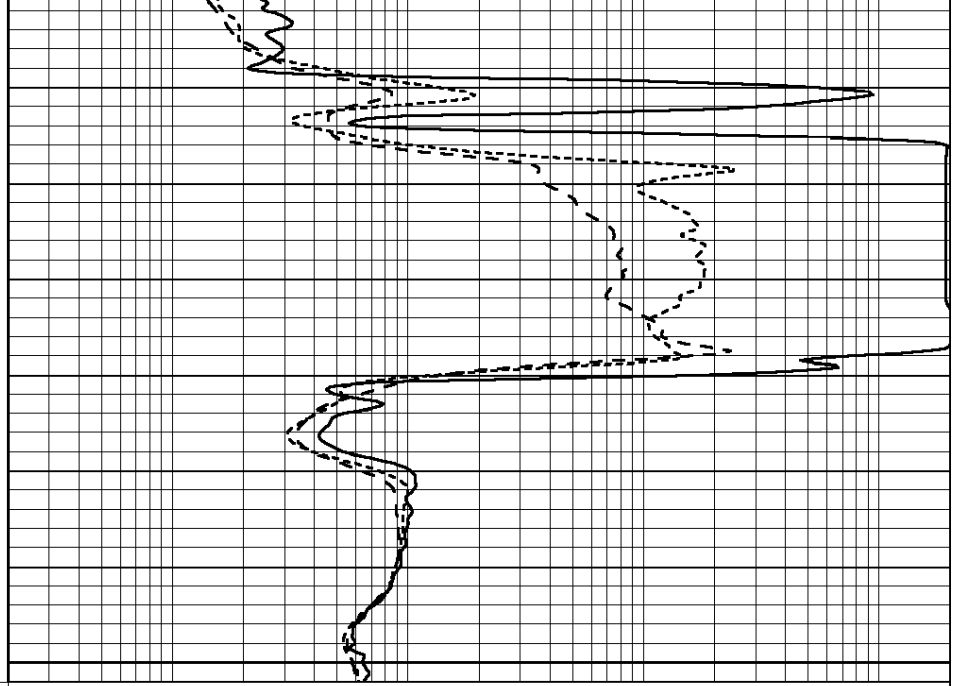




2200

2250

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

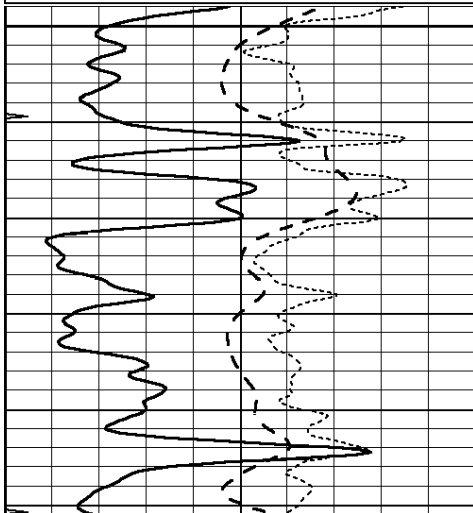


# MAIN SECTION

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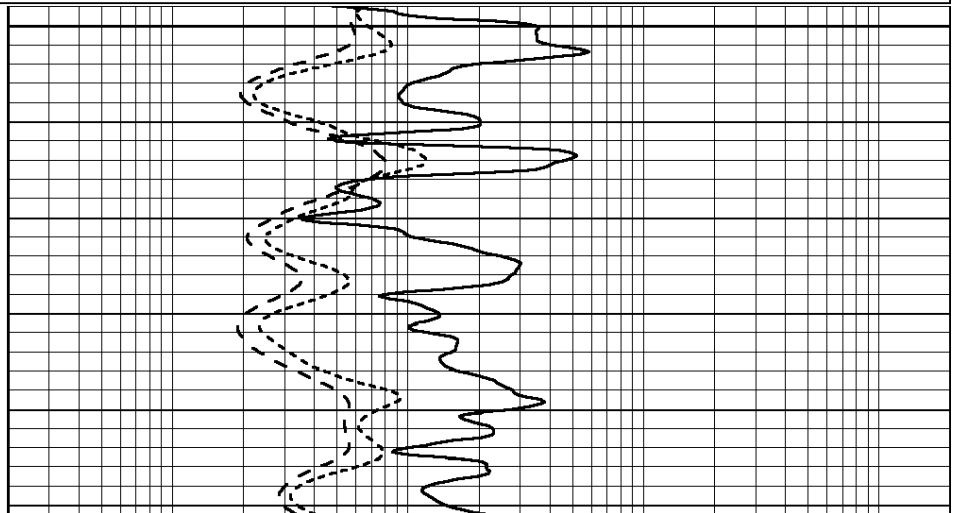
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

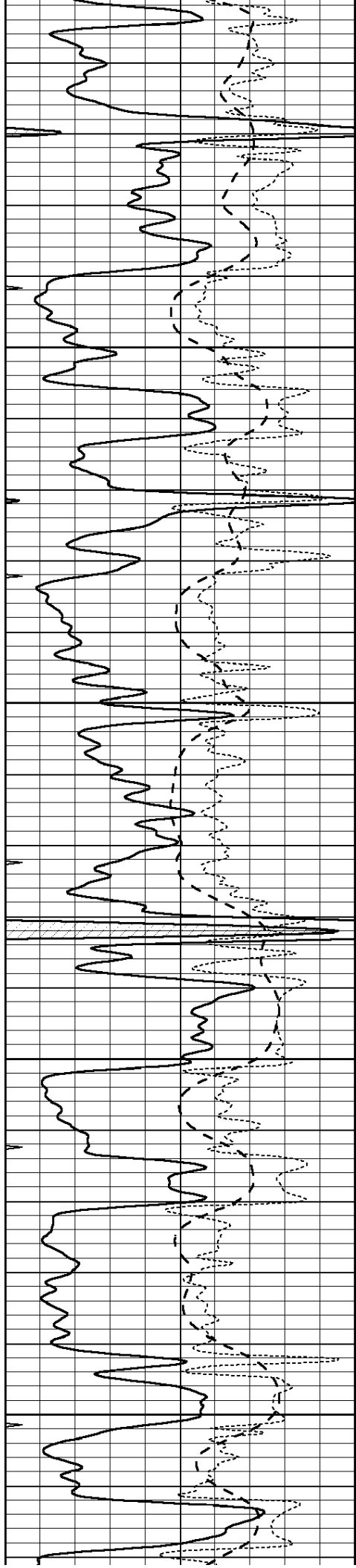
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3600

3650



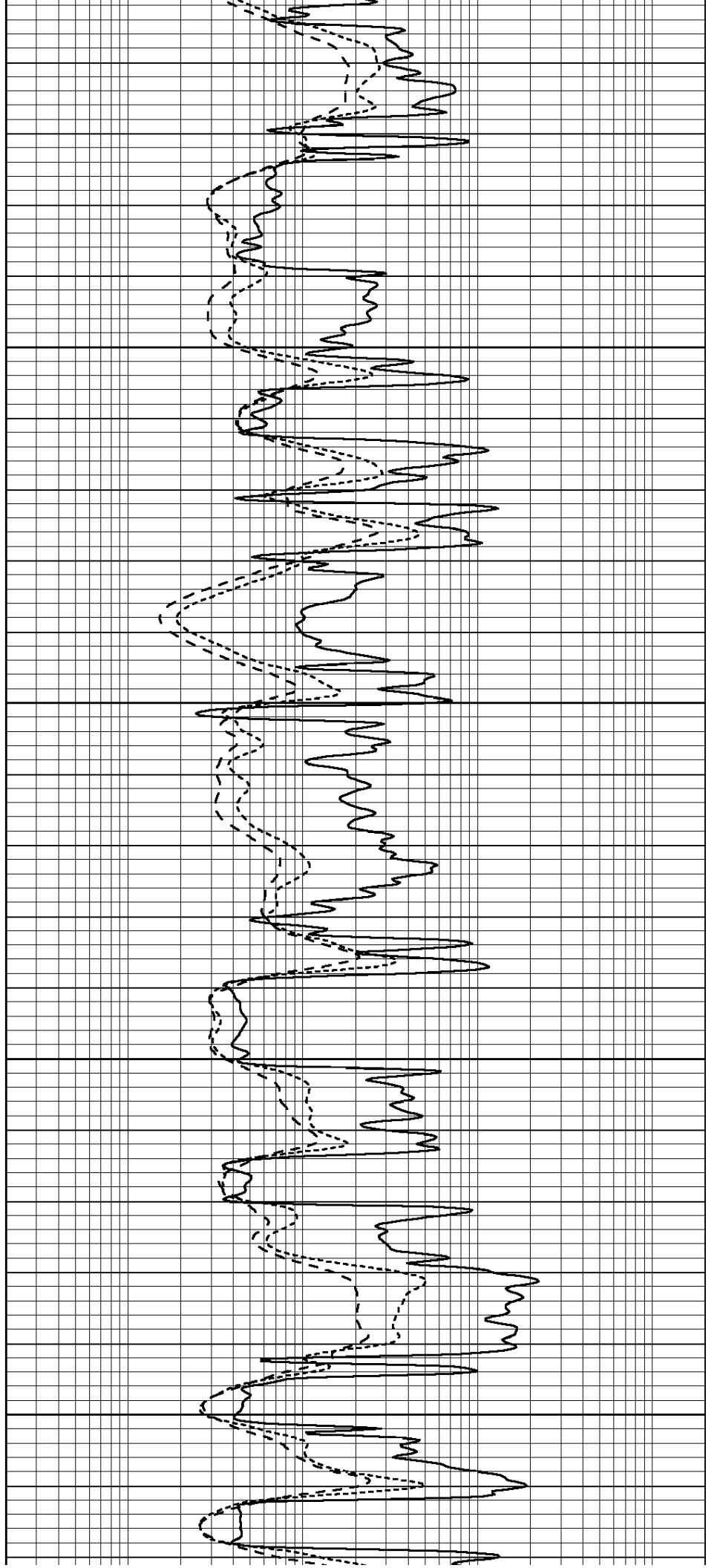


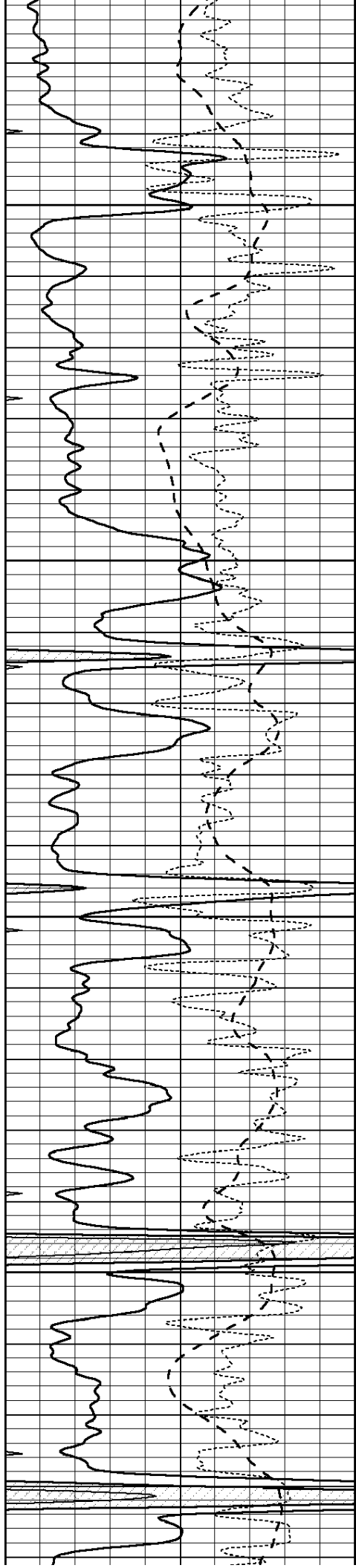
3700

3750

3800

3850



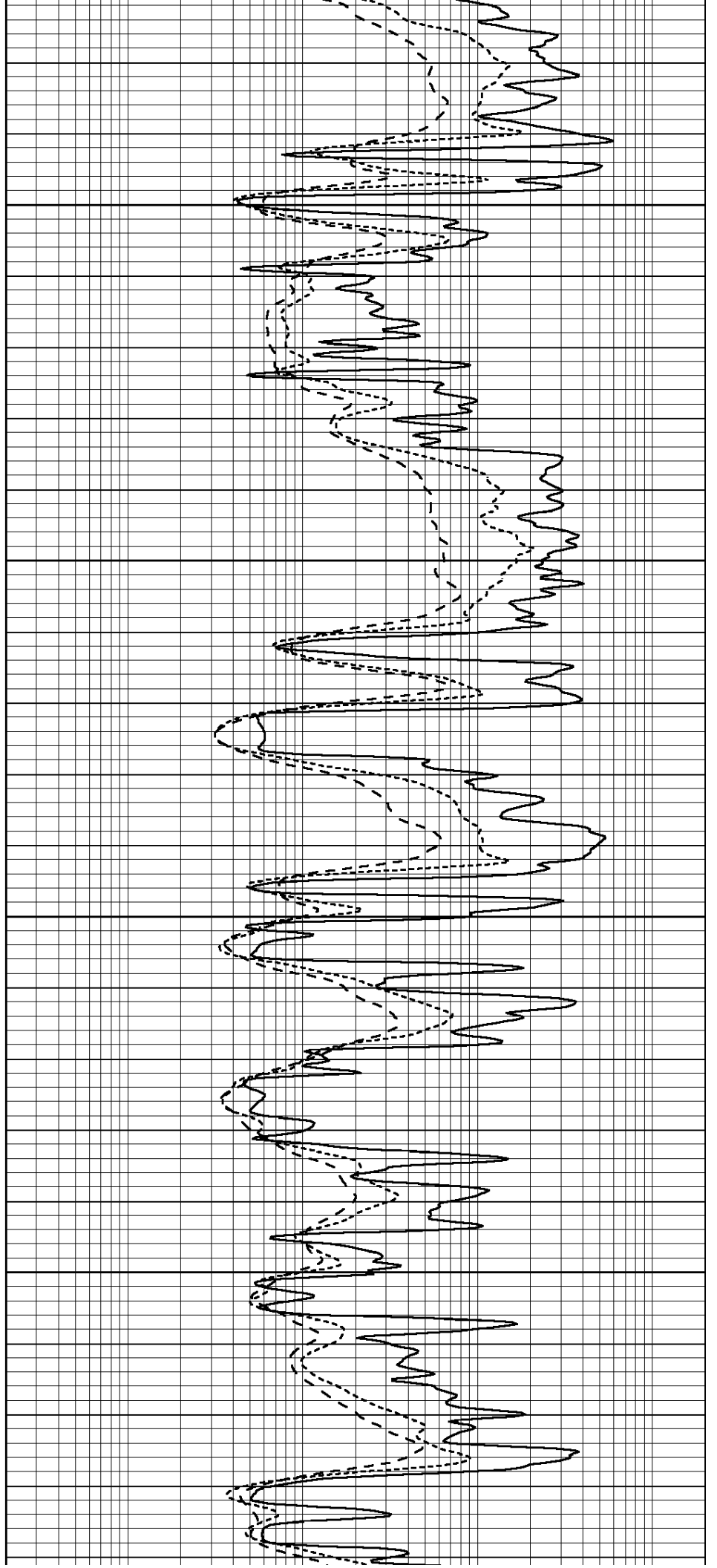


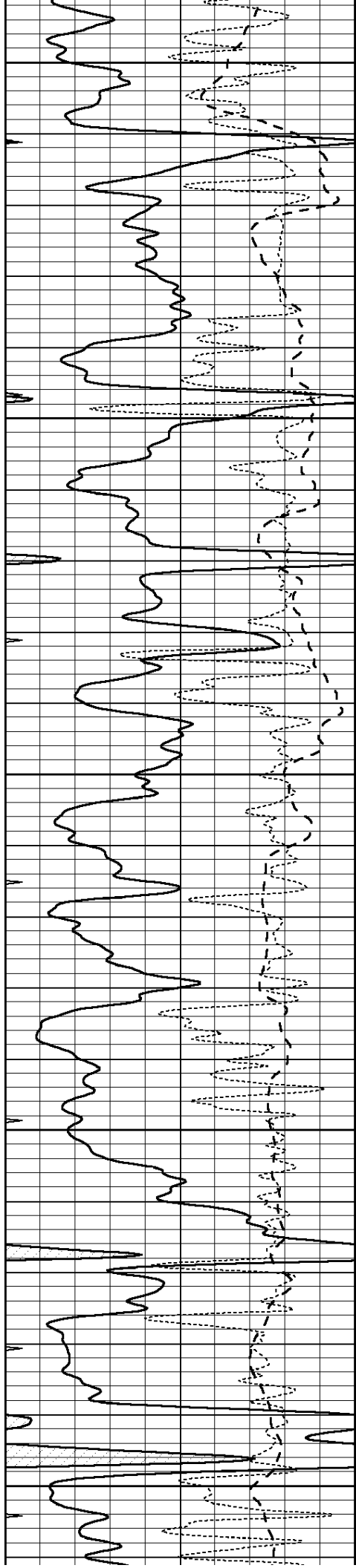
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3950

4000

4050





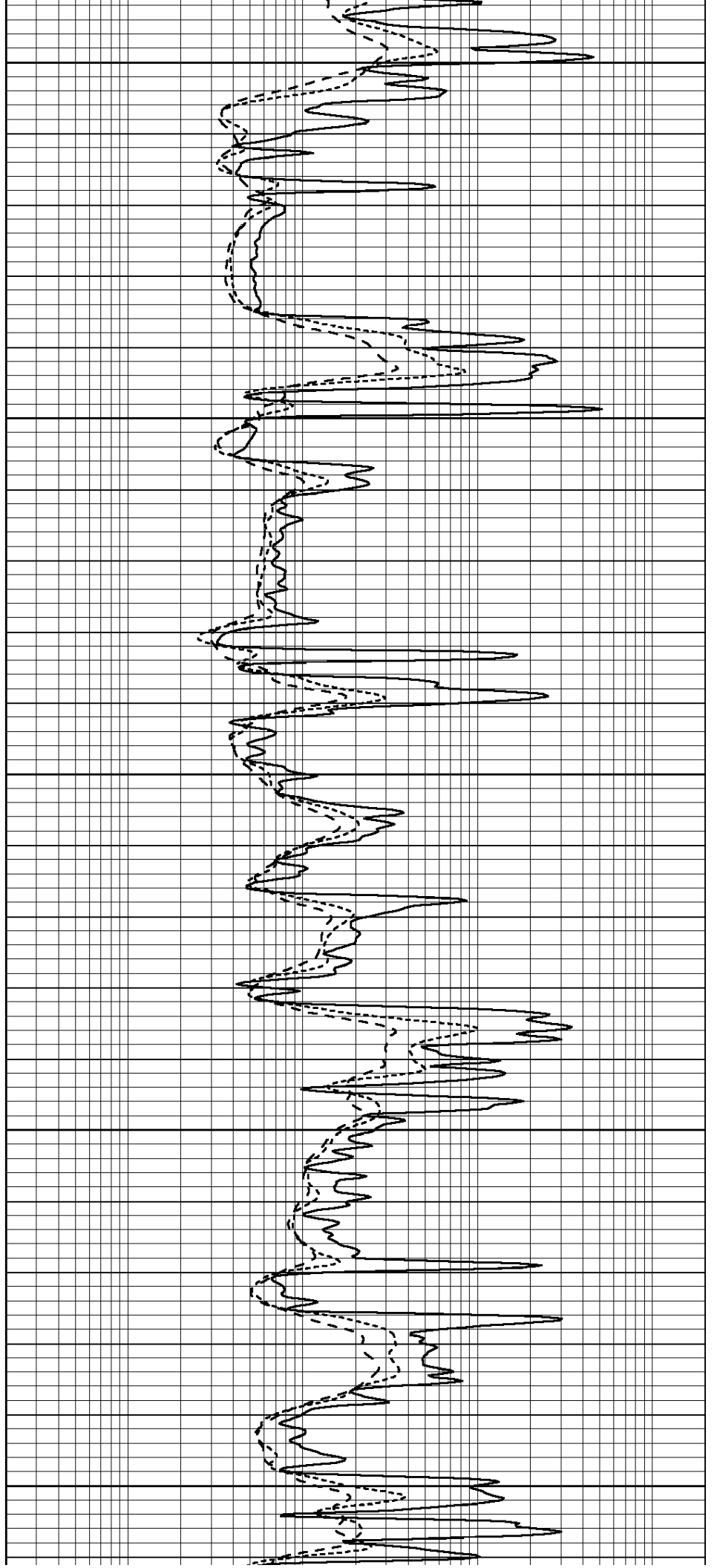
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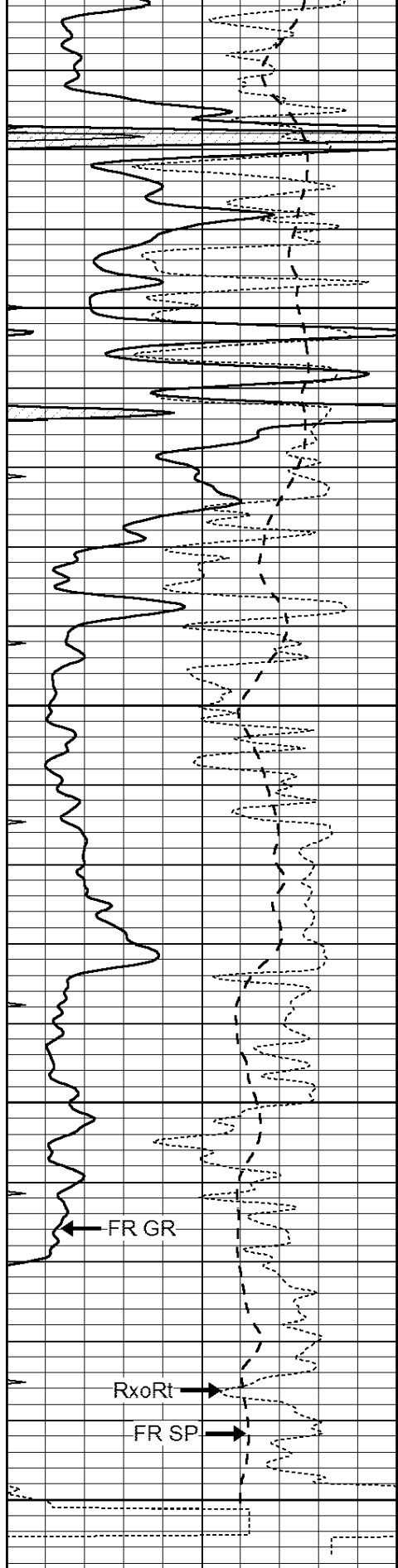
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4200

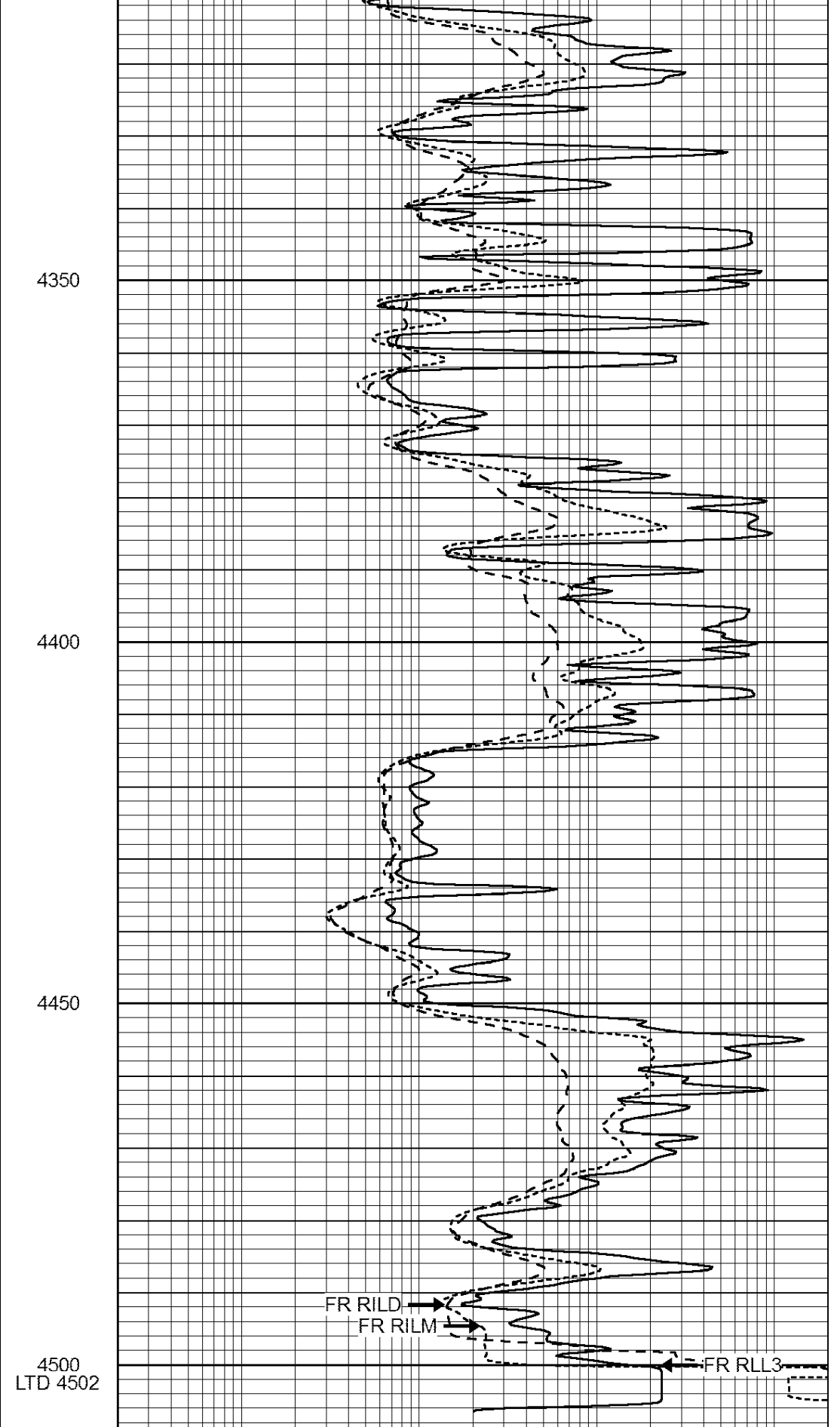
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4300





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



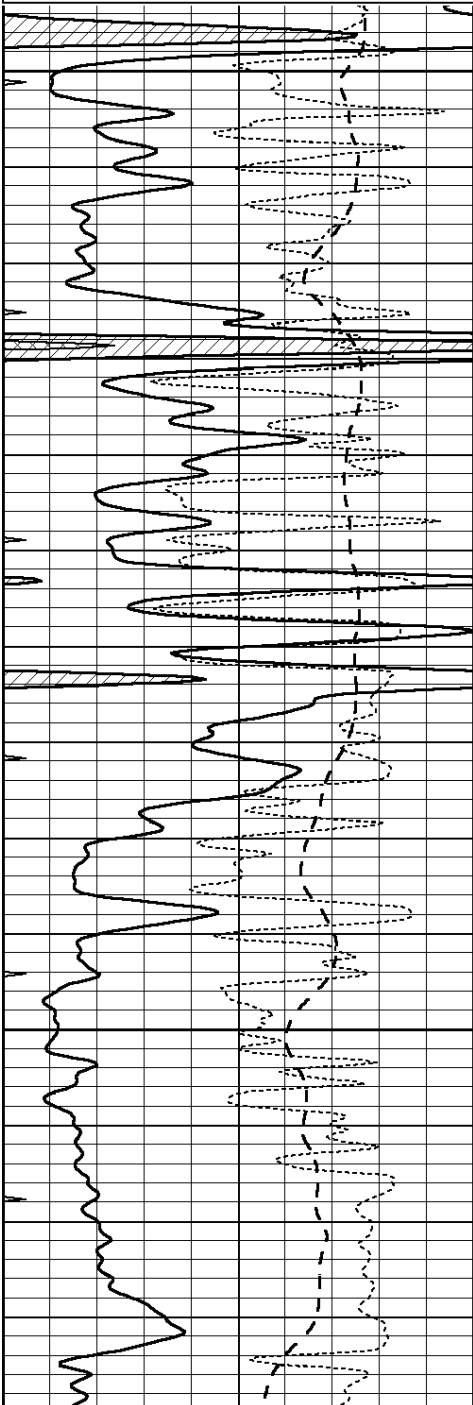
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# REPEAT SECTION

Database File: 26219ddn.db  
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 Presentation Format: \_dil  
 Dataset Creation: Tue Oct 28 04:49:31 2014 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	20

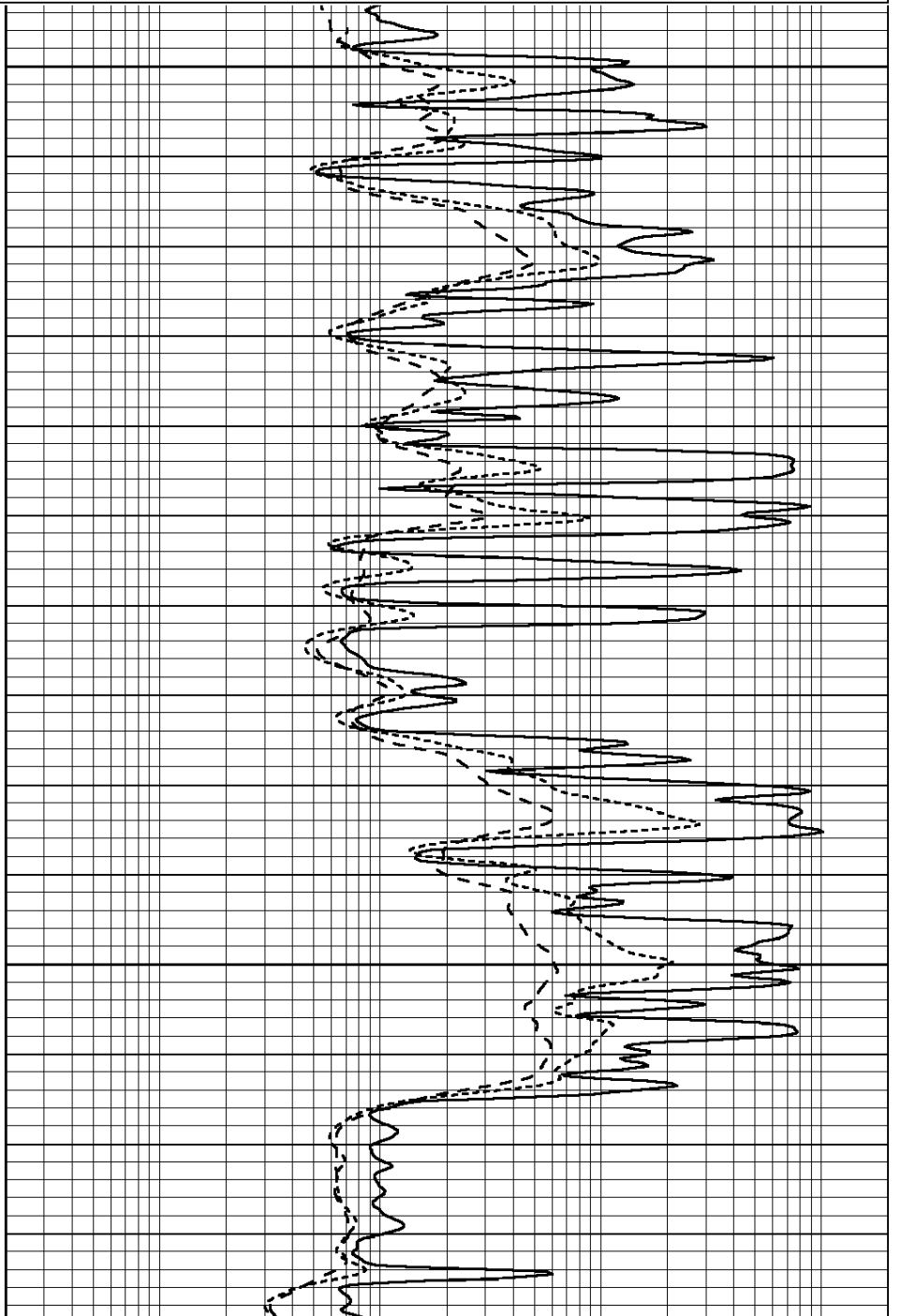
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

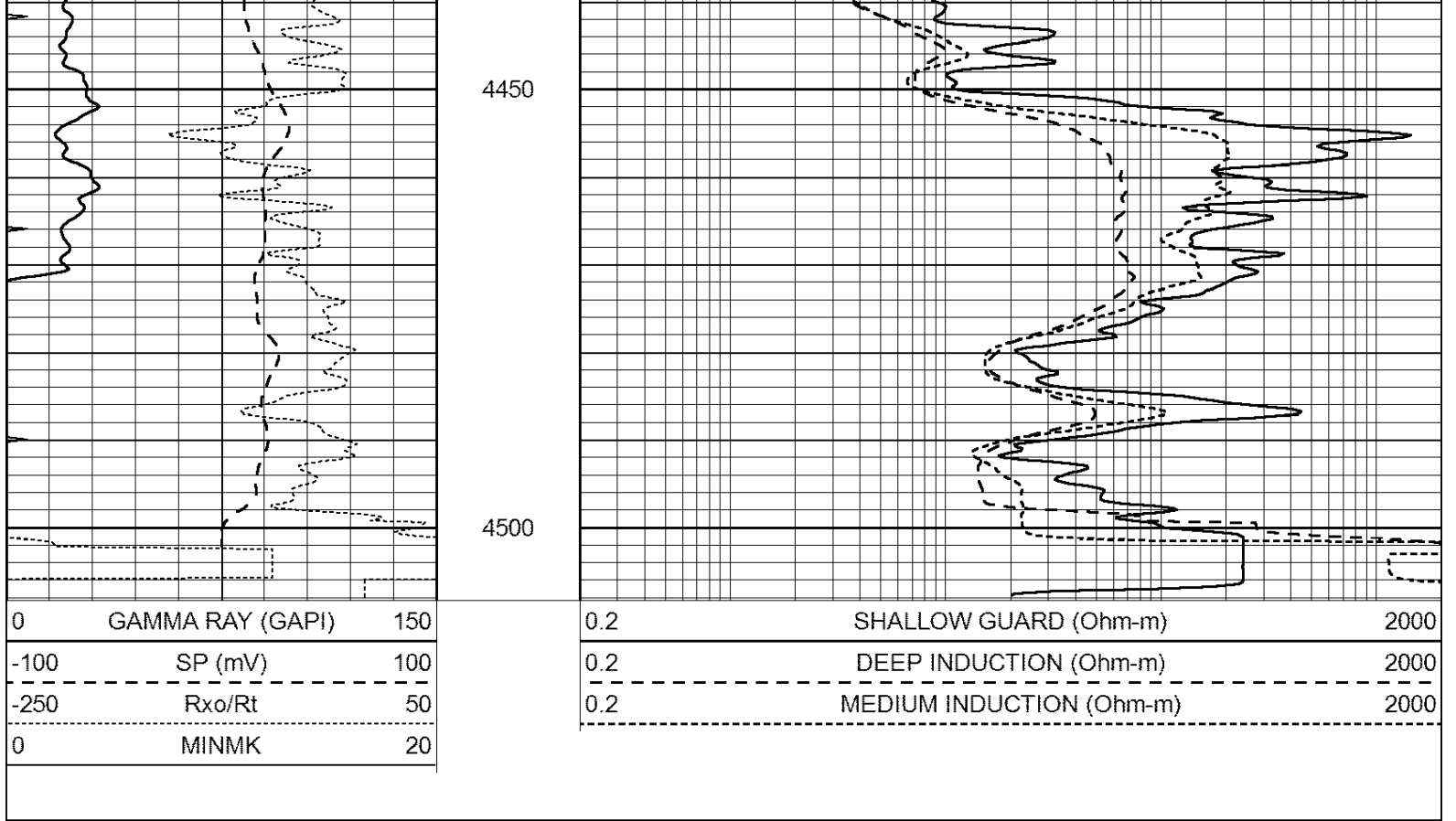


4300

4350

4400





### Calibration Report

Database File: 26219ddn.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Tue Oct 28 04:49:31 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

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

#### Downhole Calibration

	Readings			V	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
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	<u>Zero</u>	<u>Cal</u>		<u>Zero</u>	<u>Cal</u>		<u>m'</u>	<u>b'</u>
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

	<u>Density</u>		<u>Far Detector</u>	<u>Near Detector</u>	
Magnesium	1.710	g/cc	935.36	501.55	cps
Aluminum	2.600	g/cc	209.32	357.01	cps
Spine Angle = 77.21			Density/Spine Ratio = 0.580		
	<u>Size</u>		<u>Reading</u>		
Small Ring	8.00	in	4.29	V	
Large Ring	14.00	in	6.24	V	

Before Survey Verification

<u>Target</u>	<u>Measured</u>
g/cc	g/cc
g/cc	g/cc
g/cc	g/cc

After Survey Verification

<u>Target</u>	<u>Measured</u>
g/cc	g/cc
g/cc	g/cc
g/cc	g/cc

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	

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:	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