



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		RAYMOND OIL COMPANY, INC.	
Well	#1 BIGGS		
Field	WILDCAT		
County	THOMAS	State	KANSAS
Company		RAYMOND OIL COMPANY, INC.	
Well	#1 BIGGS		
Field	WILDCAT		
County	THOMAS	State	KANSAS
Location:	API #: 15-193-20954-0000 1613' FNL & 1765' FWL		Other Services CDL/CNL MEL
Permanent Datum	SEC 36	TWP 6S	RGE 36W
Log Measured From	GROUND LEVEL		Elevation 3282
Drilling Measured From	KELLY BUSHING 5' A.G.L. KELLY BUSHING		Elevation K.B. 3287 D.F. 3285 G.L. 3282
Date	7/22/15		
Run Number	ONE		
Depth Driller	4840		
Depth Logger	4844		
Bottom Logged Interval	4842		
Top Log Interval	00		
Casing Driller	8 5/8" @ 303'		
Casing Logger	302		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		CHLORIDES 4000 PPM
Density / Viscosity	9.3/57		
pH / Fluid Loss	10.0/9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.0 @ 93F		
Rmt @ Meas. Temp	.75 @ 93F		
Rmc @ Meas. Temp	1.2 @ 93F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.75 @ 124F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	124F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPELLUCCI		
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 NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
LEVANT, KS. - 9 NORTH TO Z RD. - 4 1/2 WEST - SOUTH INTO

Database File:

30510ddn.db

Dataset Pathname:

pass3.3

Presentation Format:

_dil2

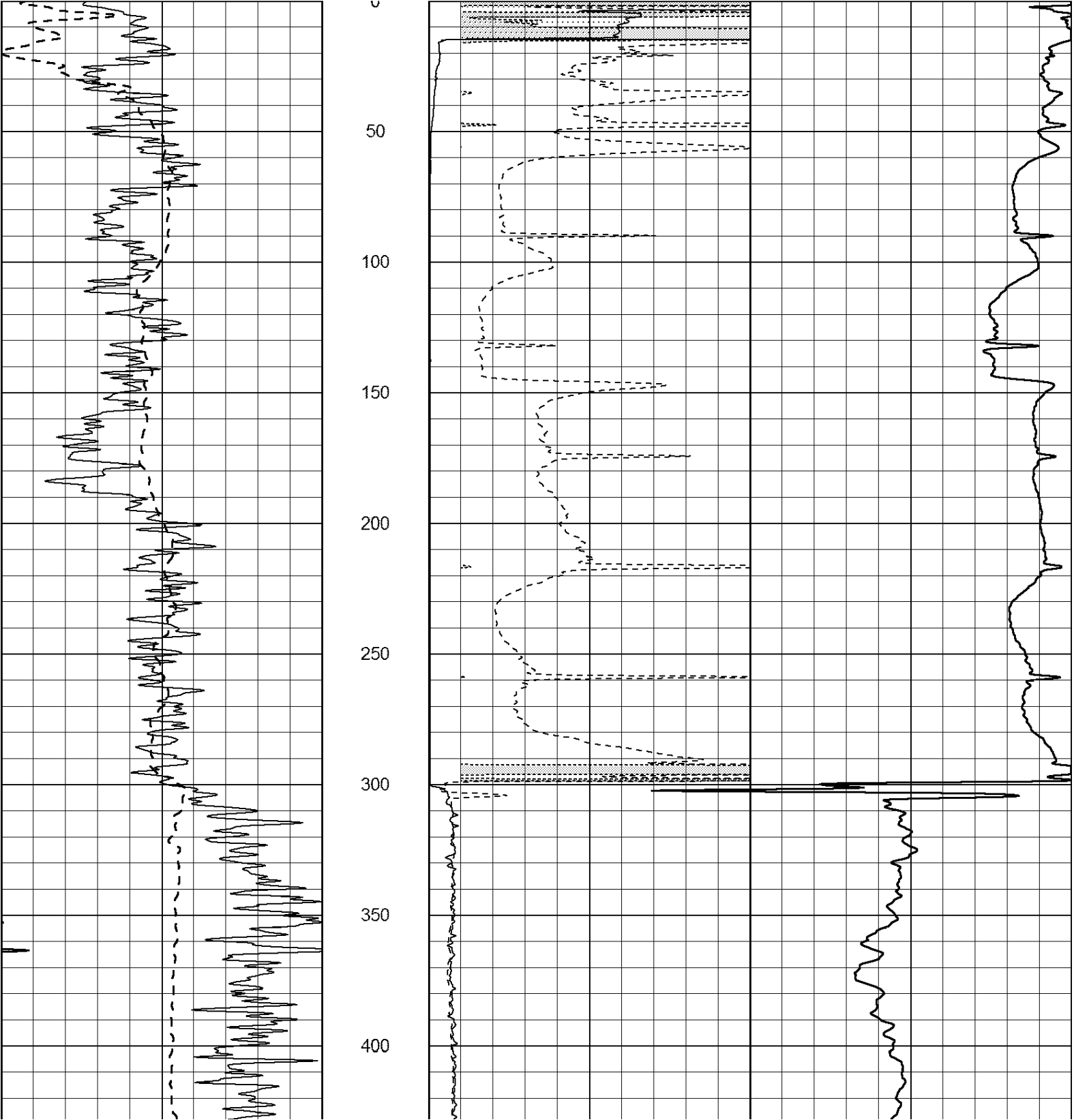
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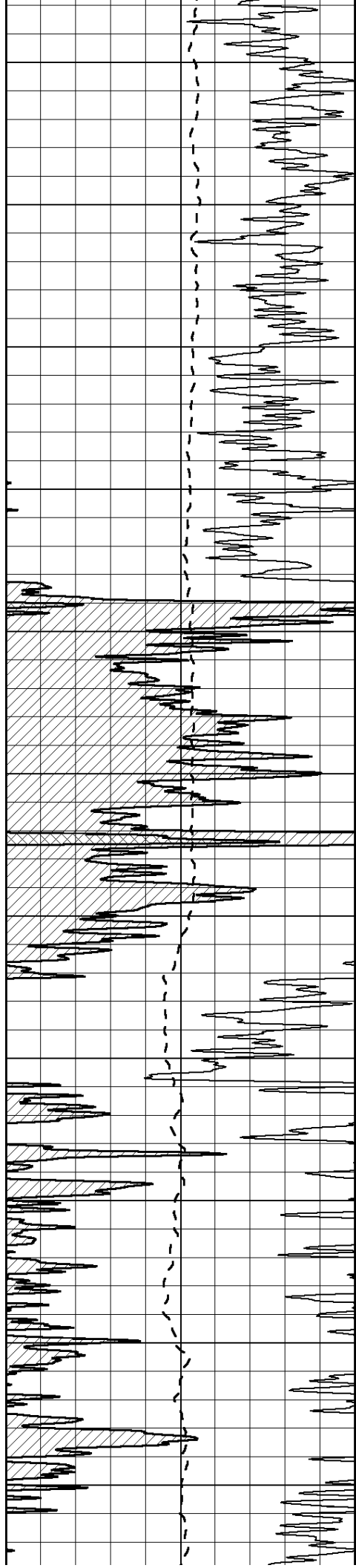
Wed Jul 22 04:22:27 2015 by Calc Open-Cased 090629

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
-----			1000			CILD (mmho/m)
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	





450

500

550

600

650

700

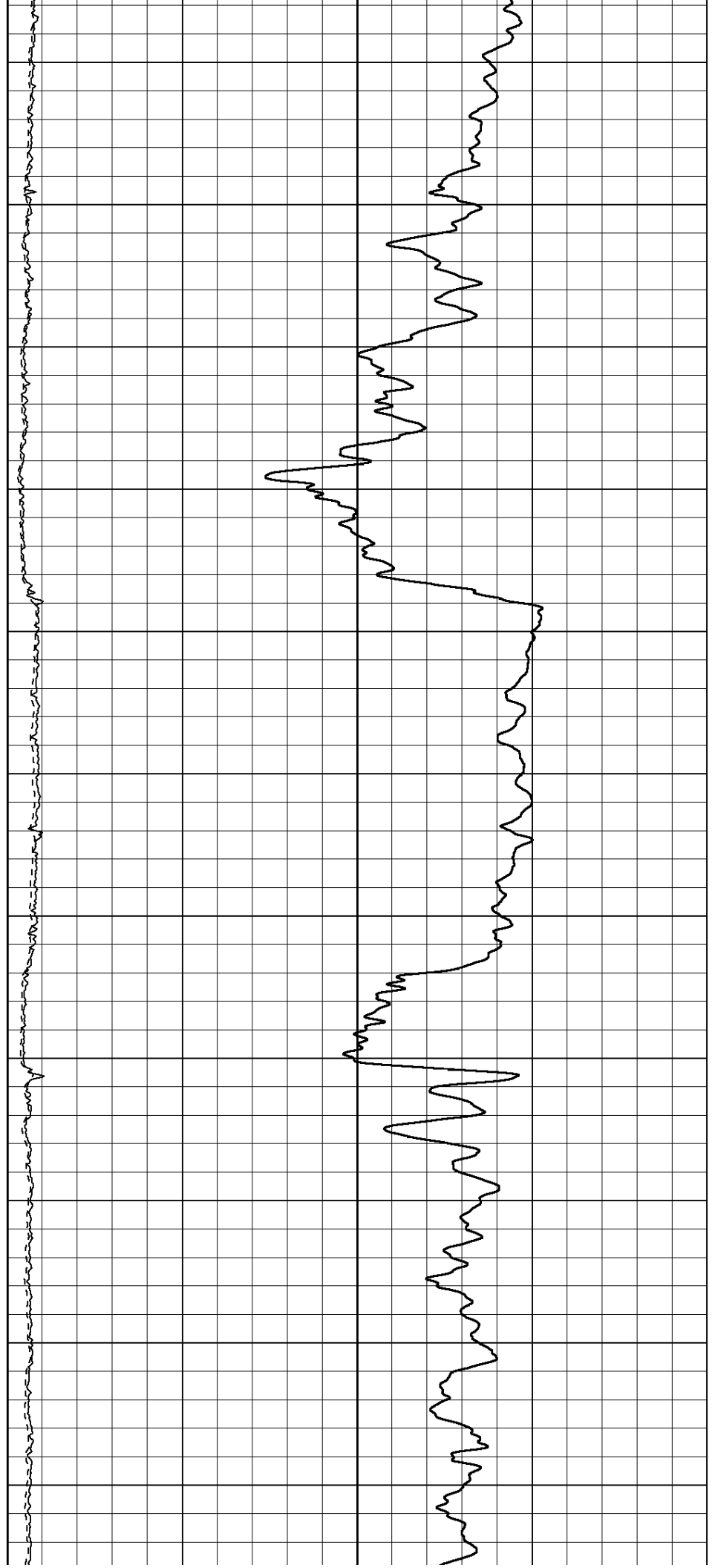
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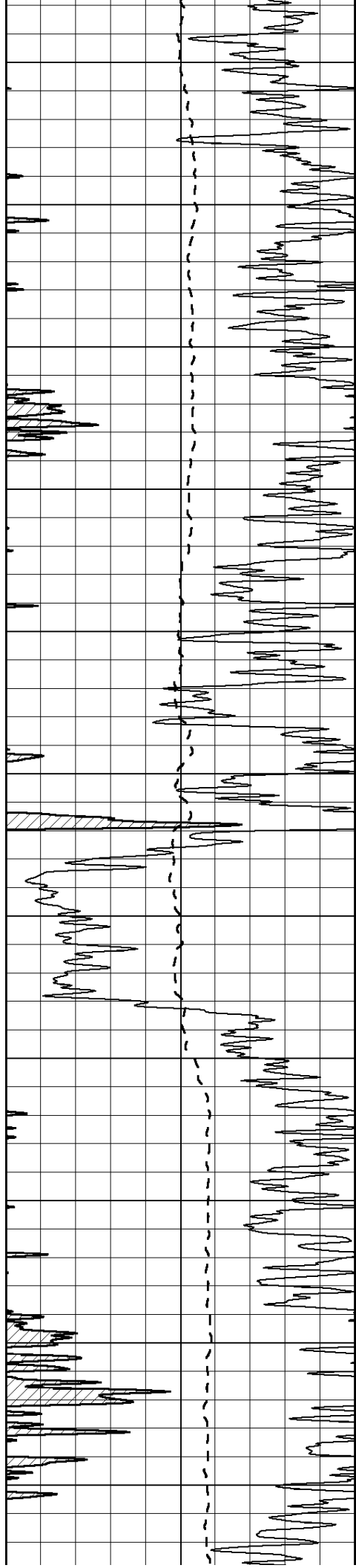
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850

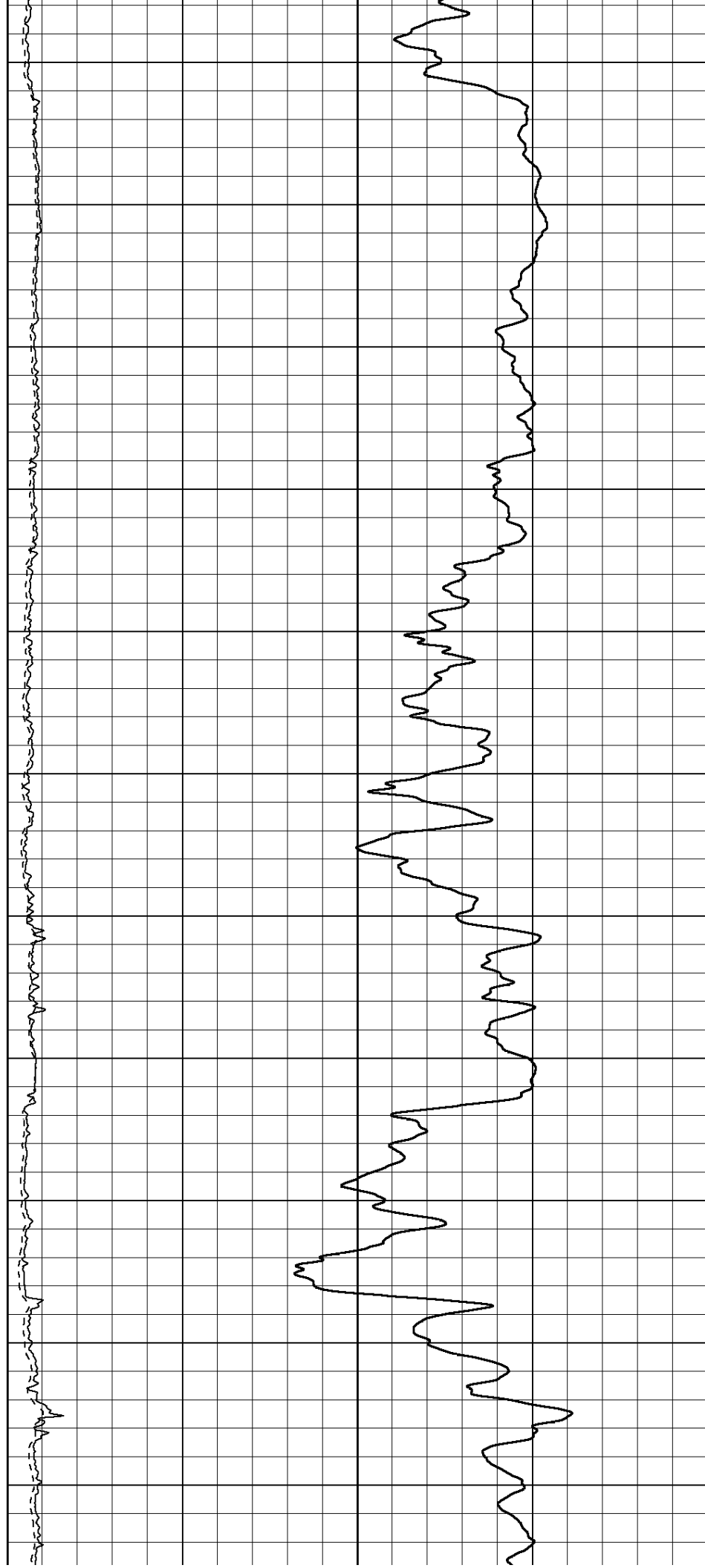
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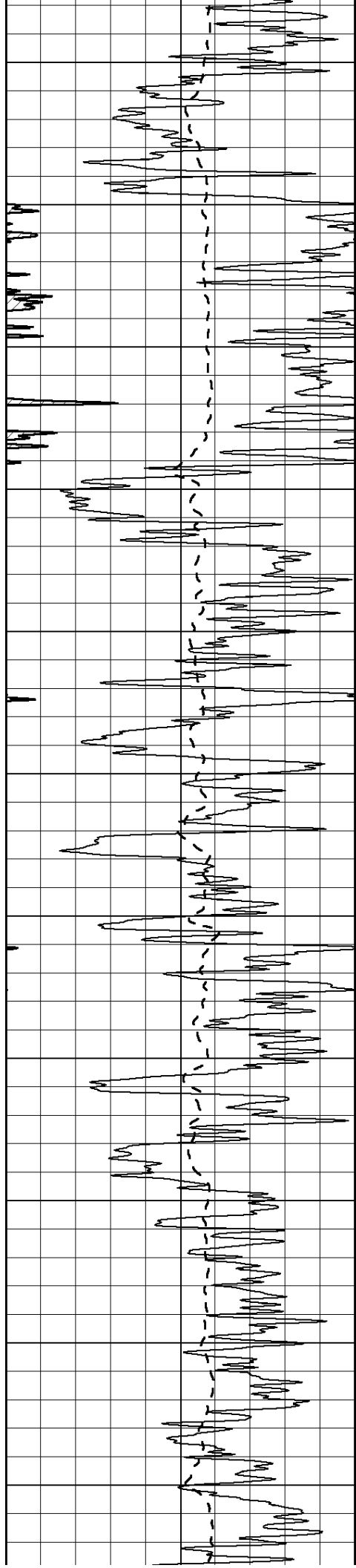
950





1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

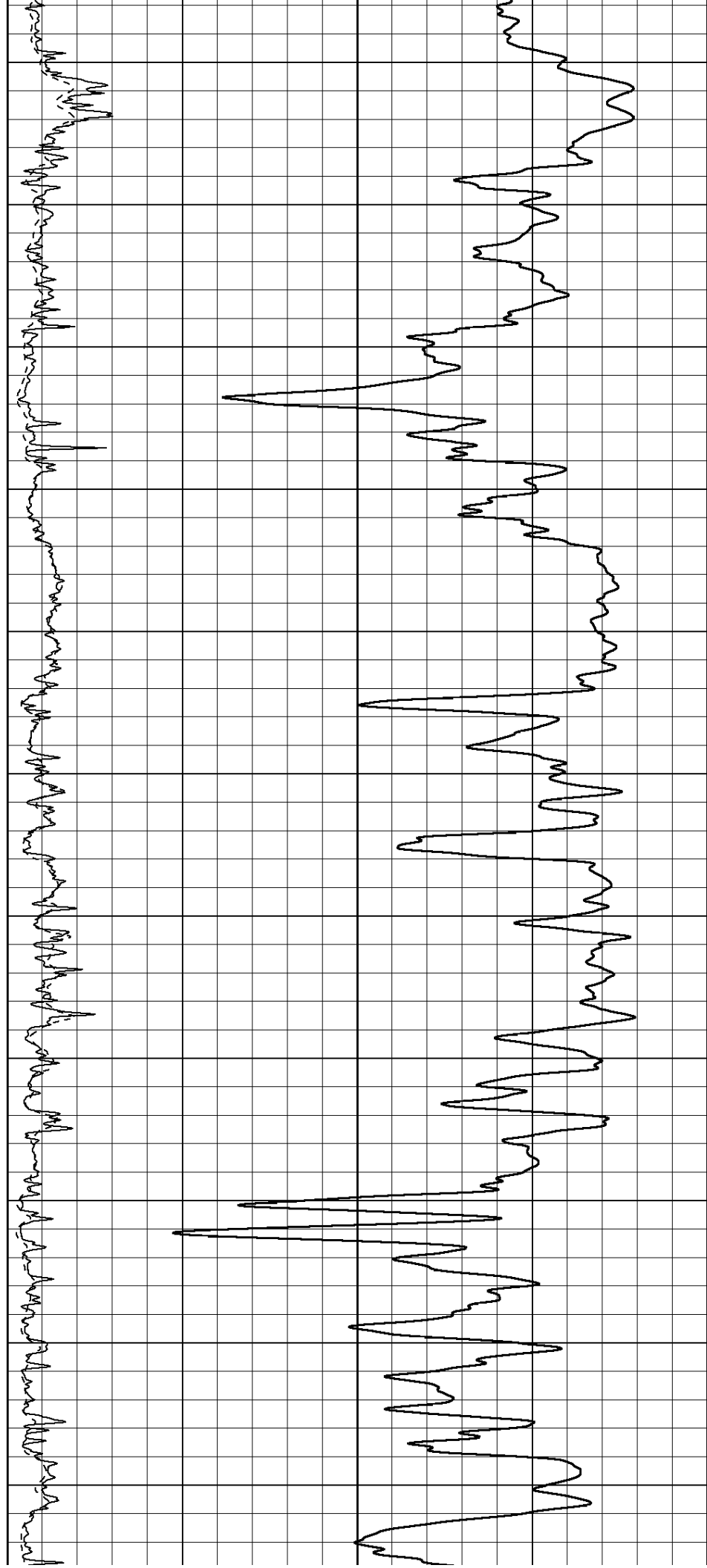
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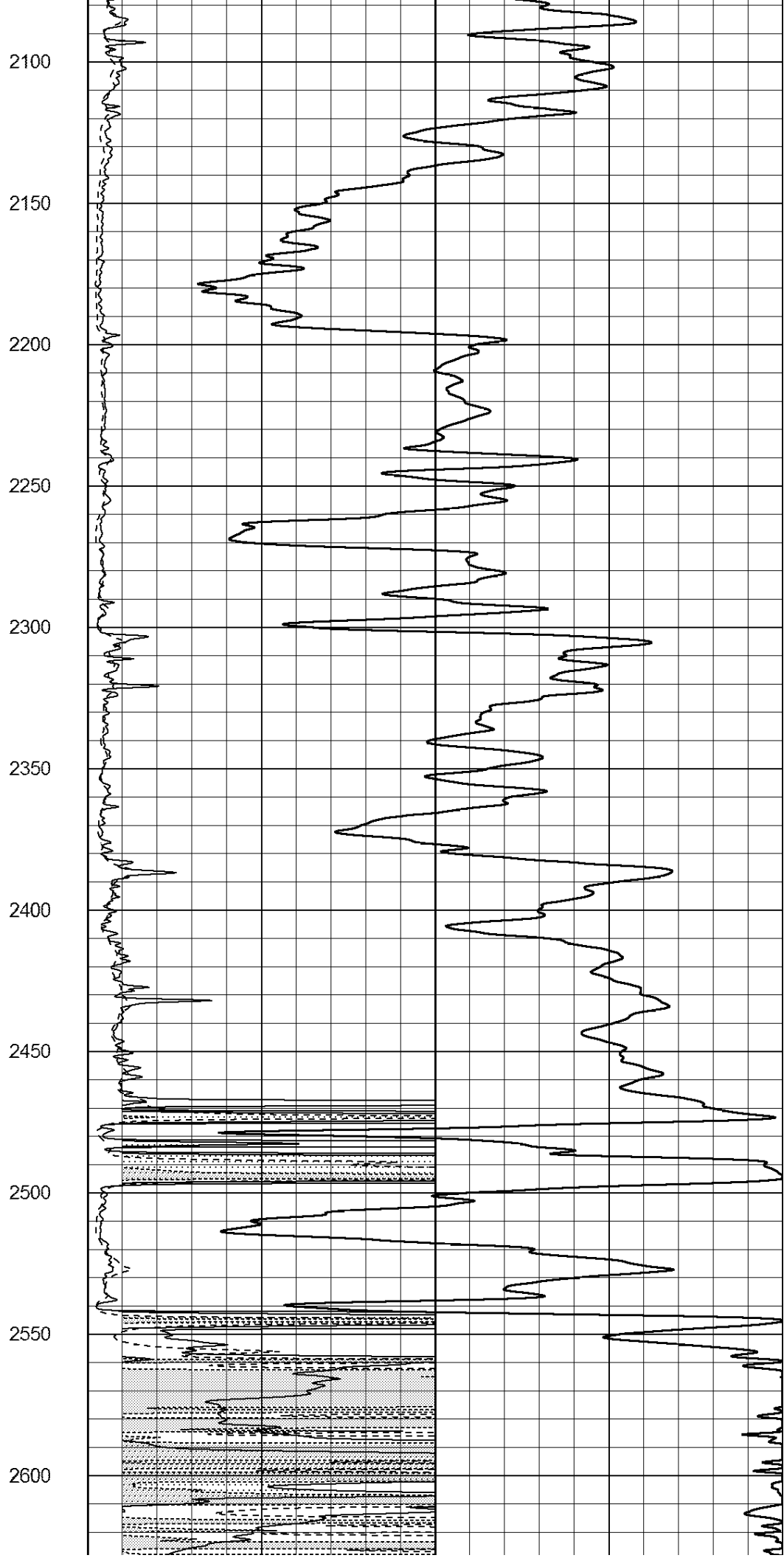
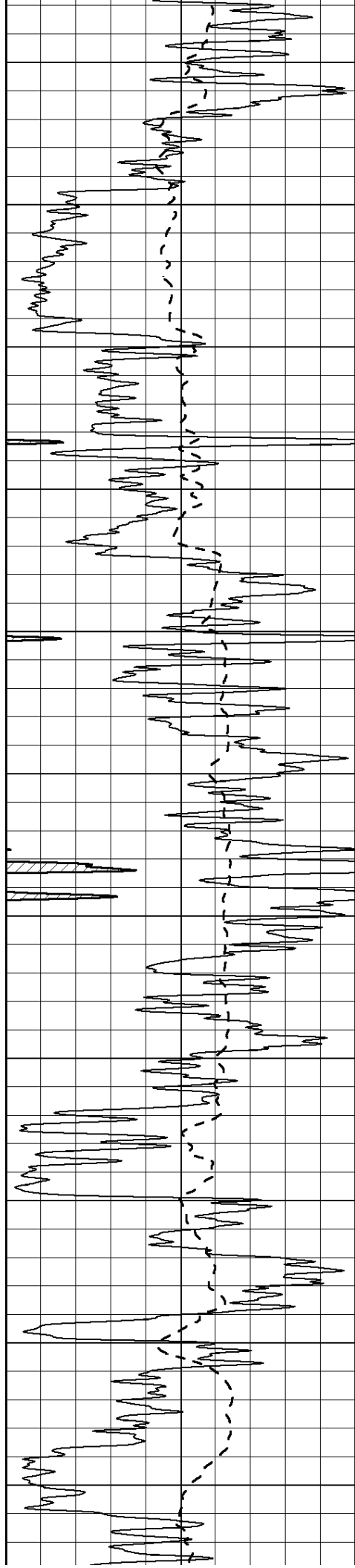
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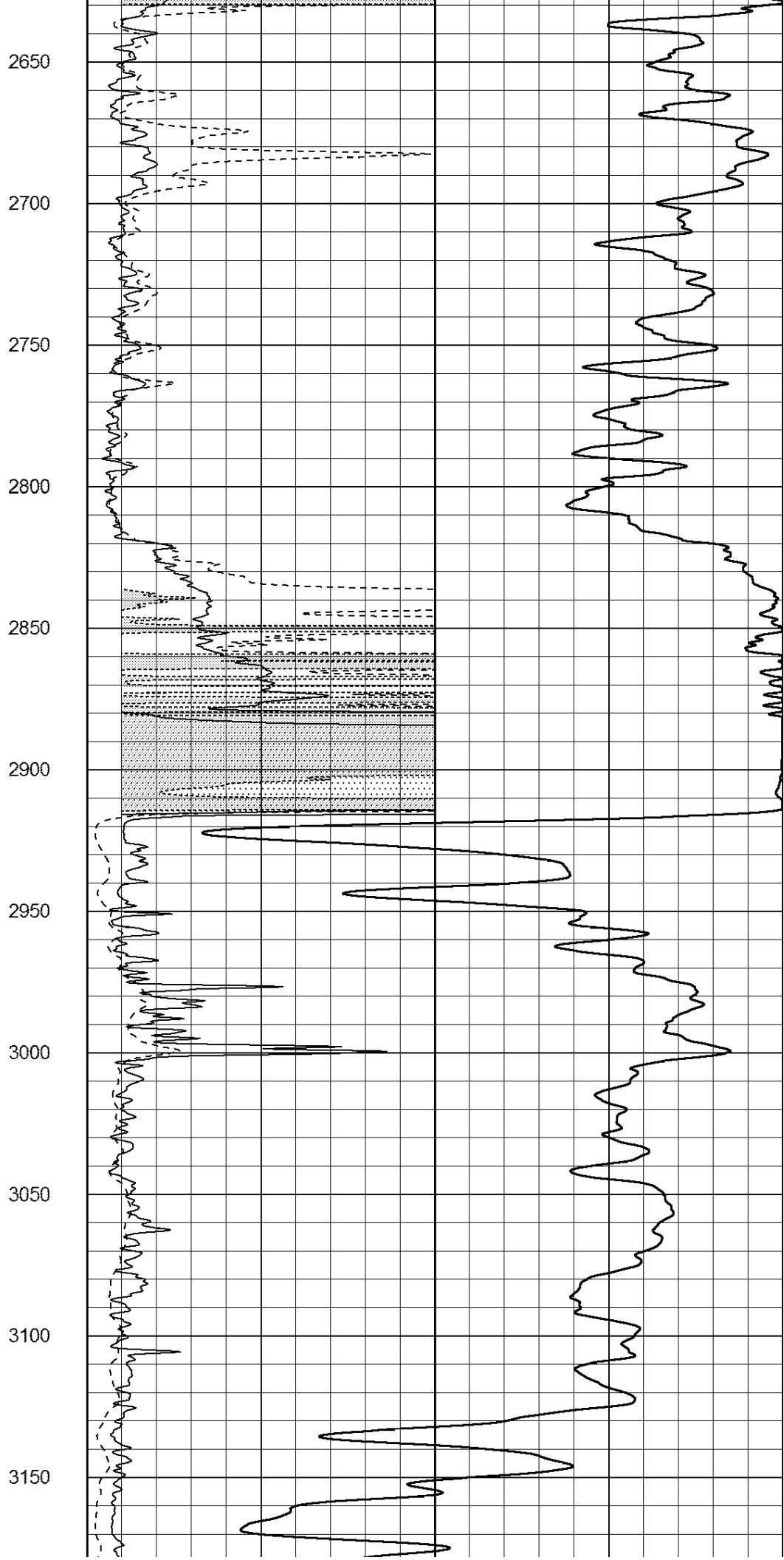
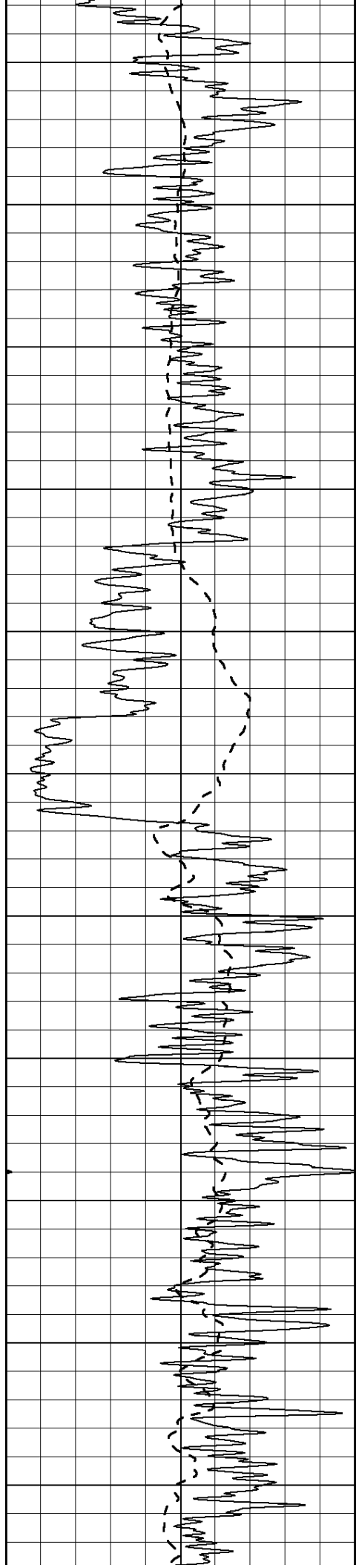
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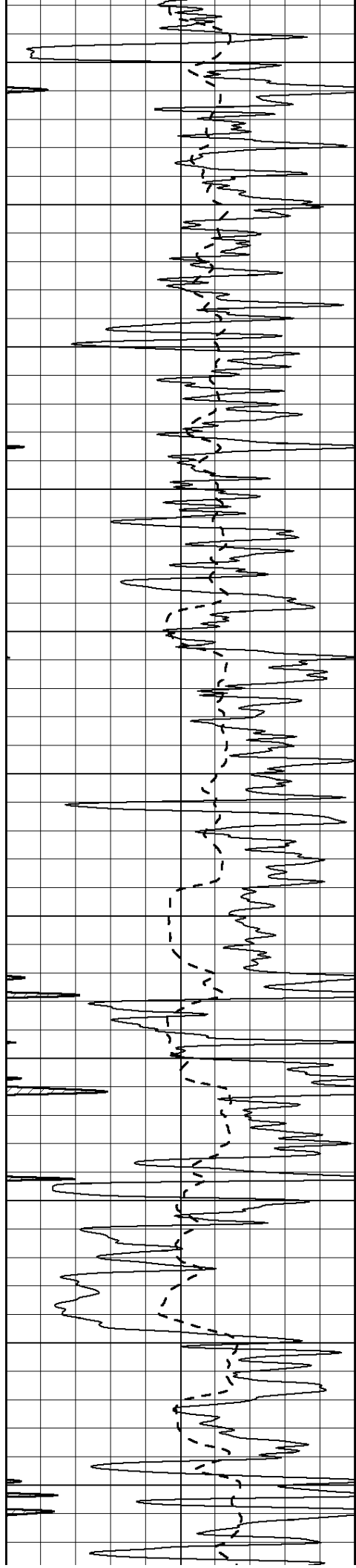
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2050









3200

3250

3300

3350

3400

3450

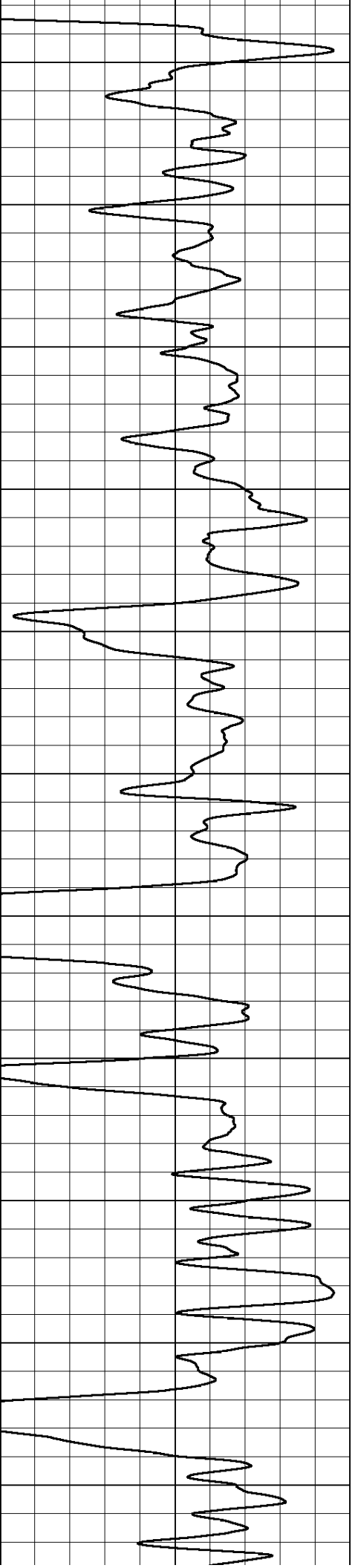
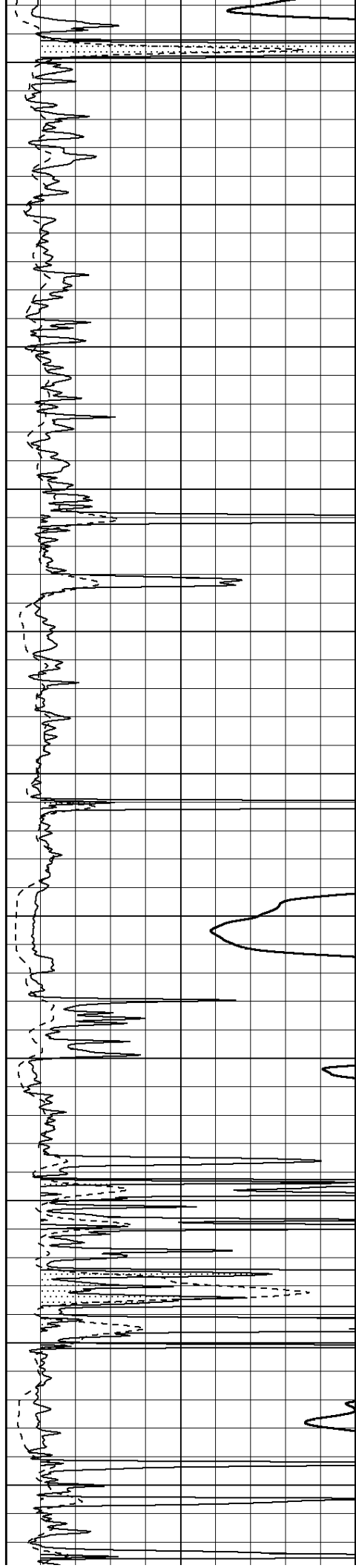
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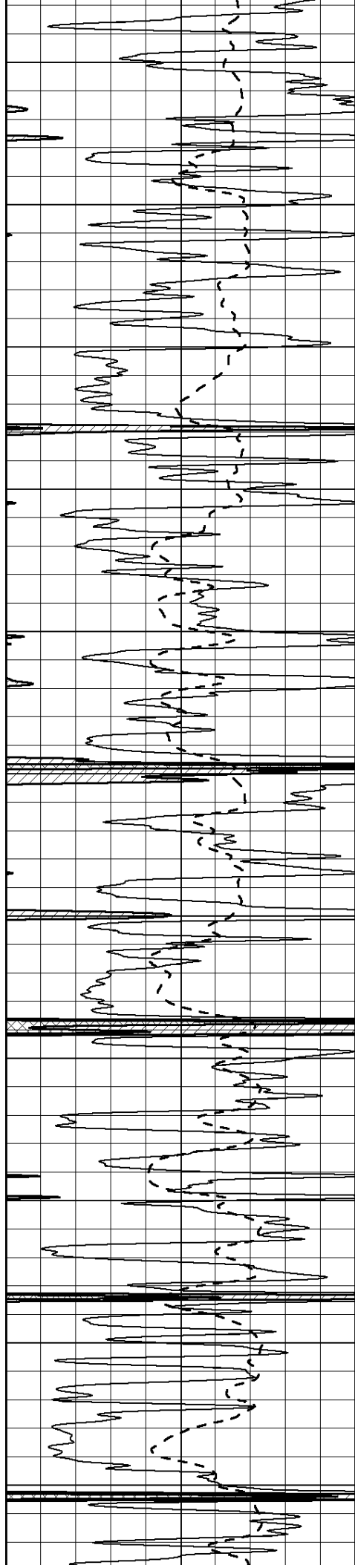
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3650

3700





3750

3800

3850

3900

3950

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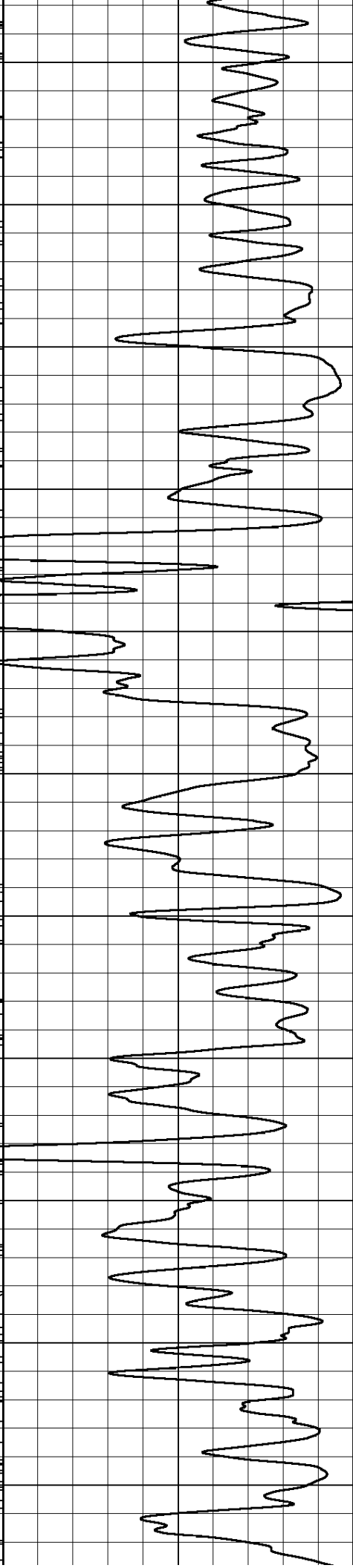
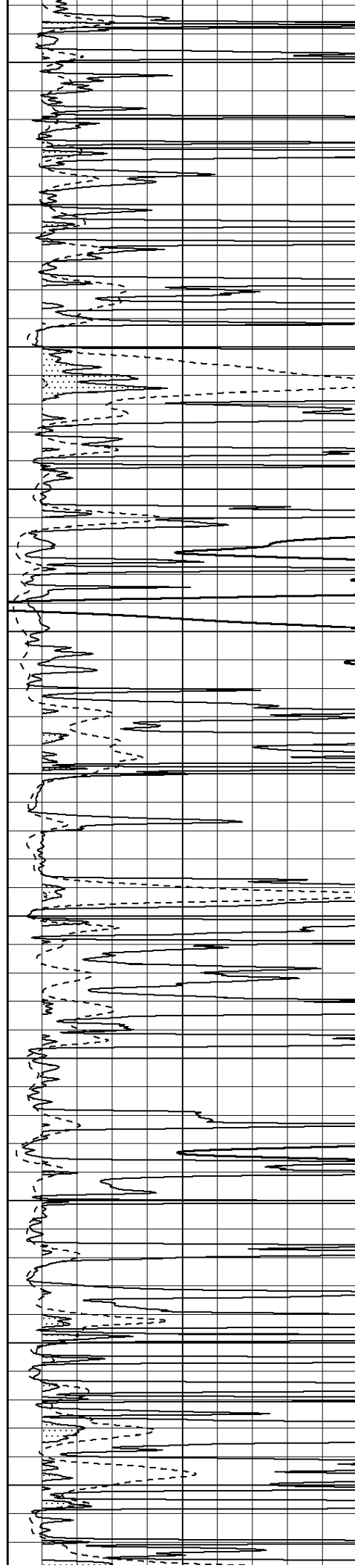
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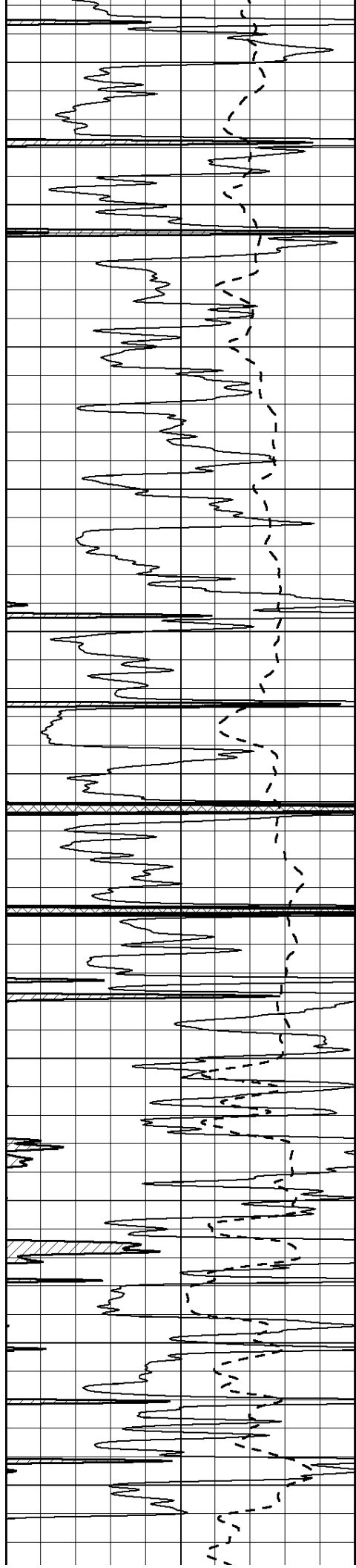
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4150

4200

4250





4300

4350

4400

4450

4500

4550

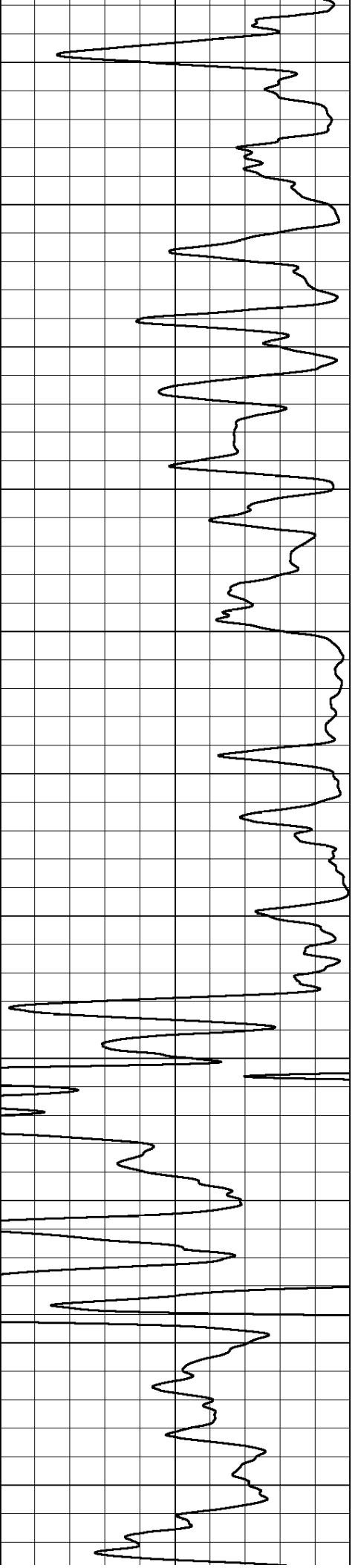
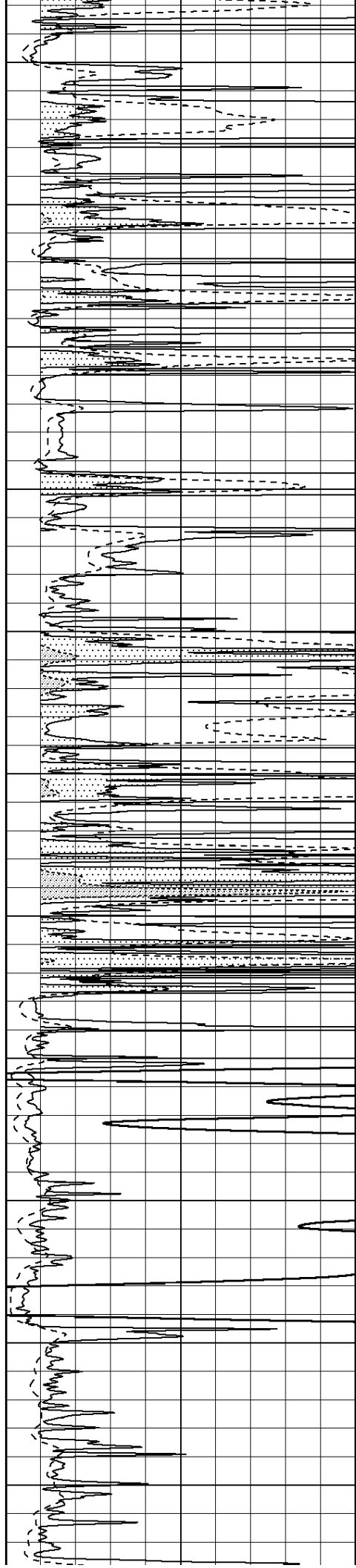
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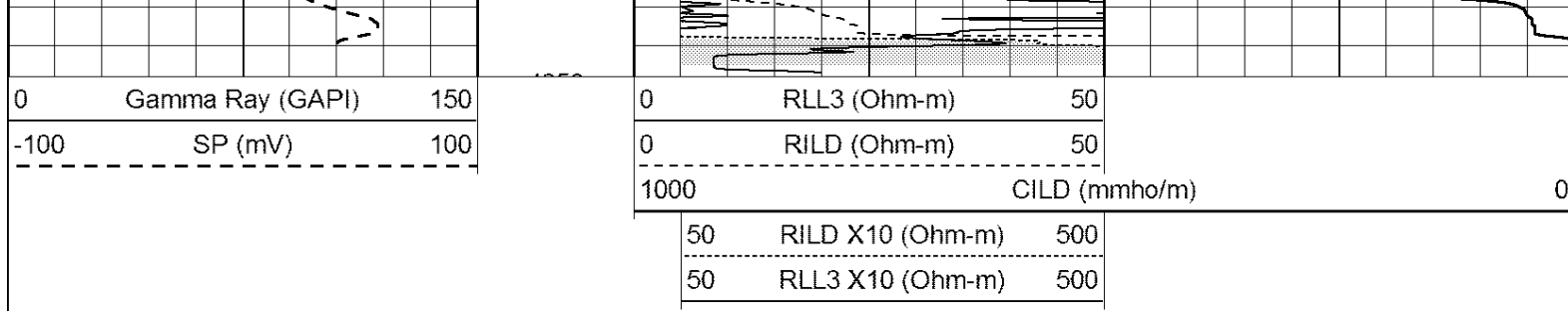
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4700

4750

4800

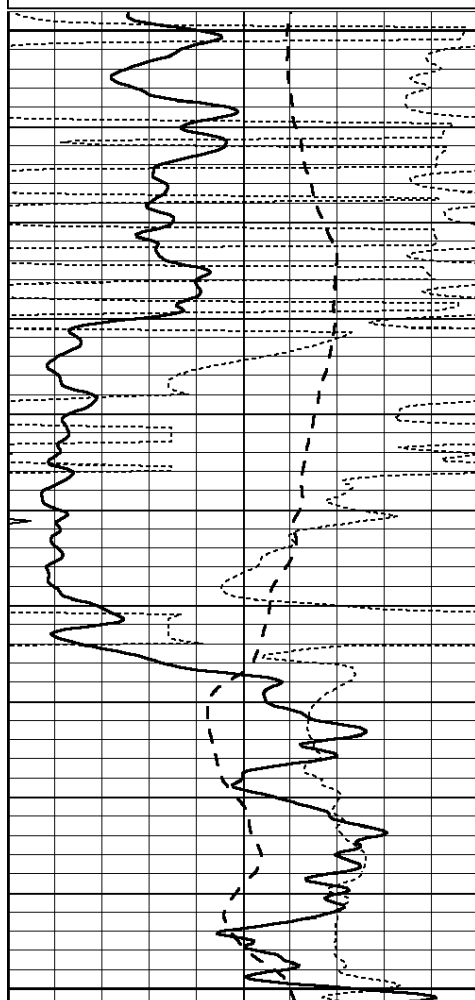




ANHYDRITE

Database File: 30510ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Wed Jul 22 03:40:01 2015 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

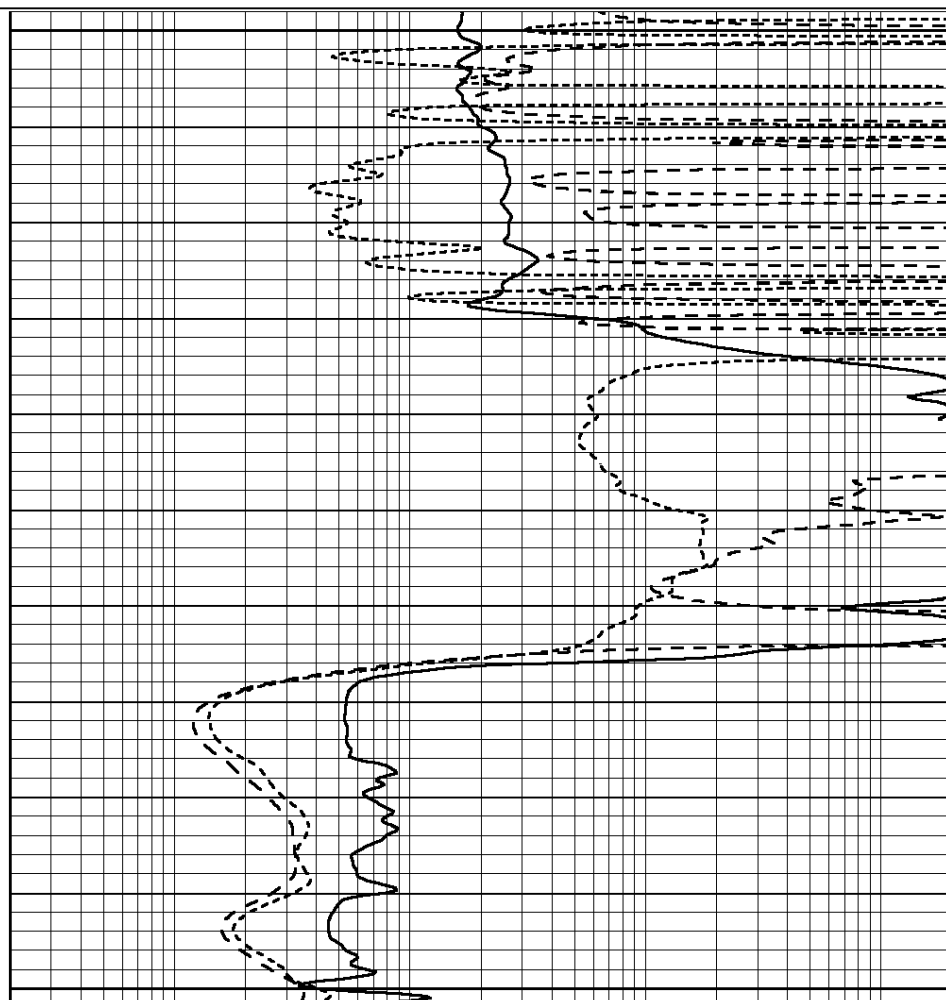
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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



2850

2900

2950



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (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

0	MINMK	20
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0.2	MEDIUM INDUCTION (Ohm-m)	2000
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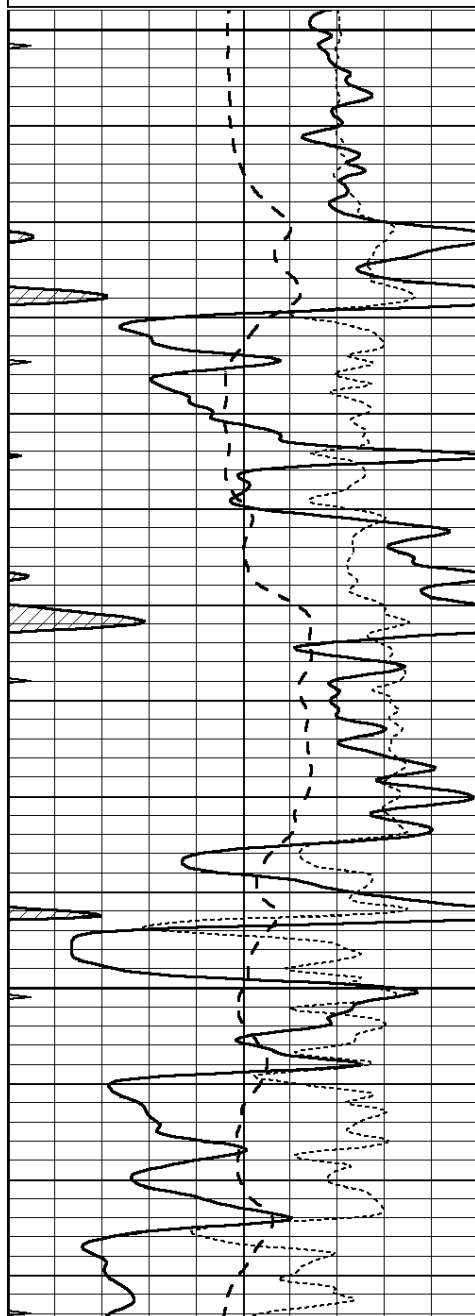


MAIN SECTION

Database File: 30510ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Wed Jul 22 03:32:06 2015 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

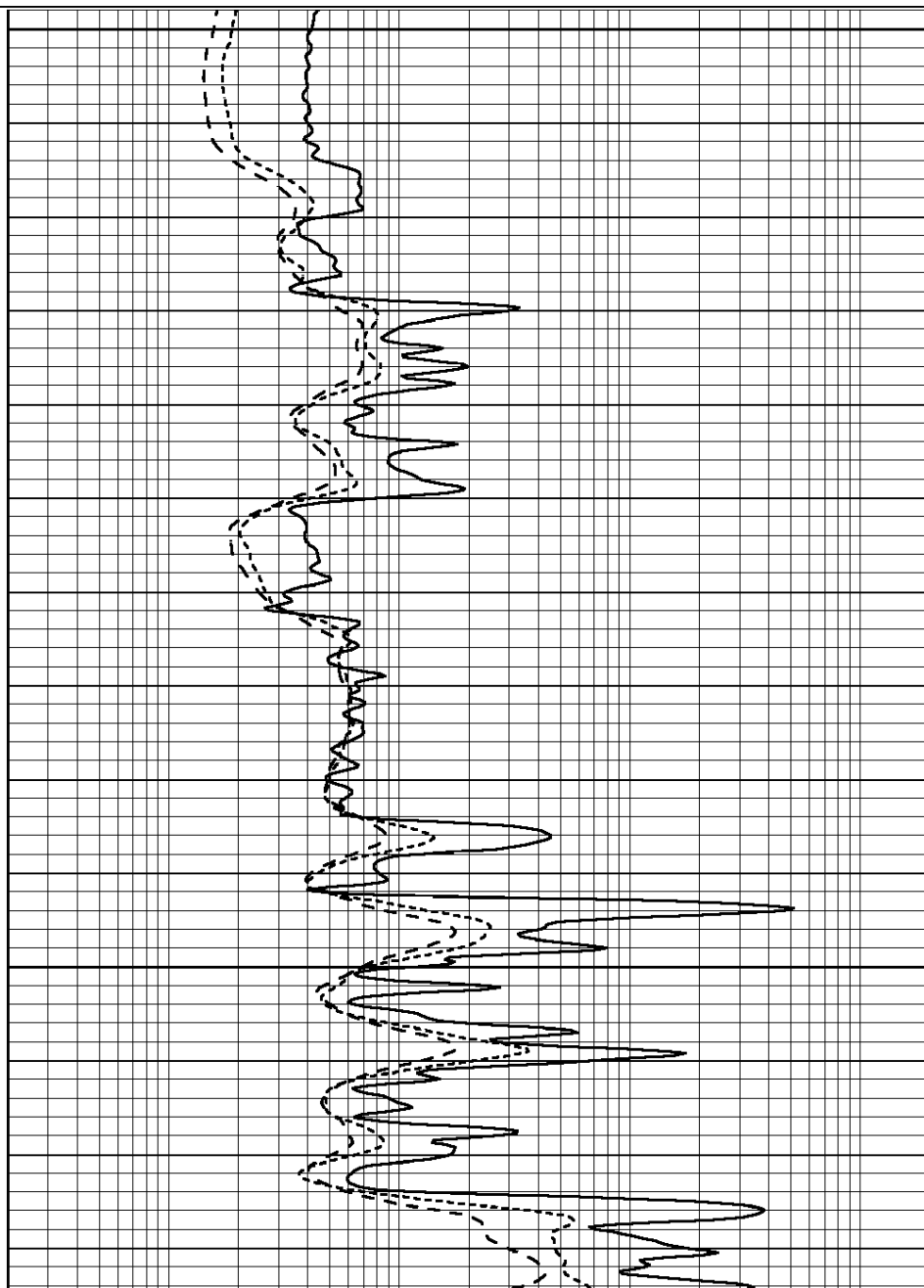
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

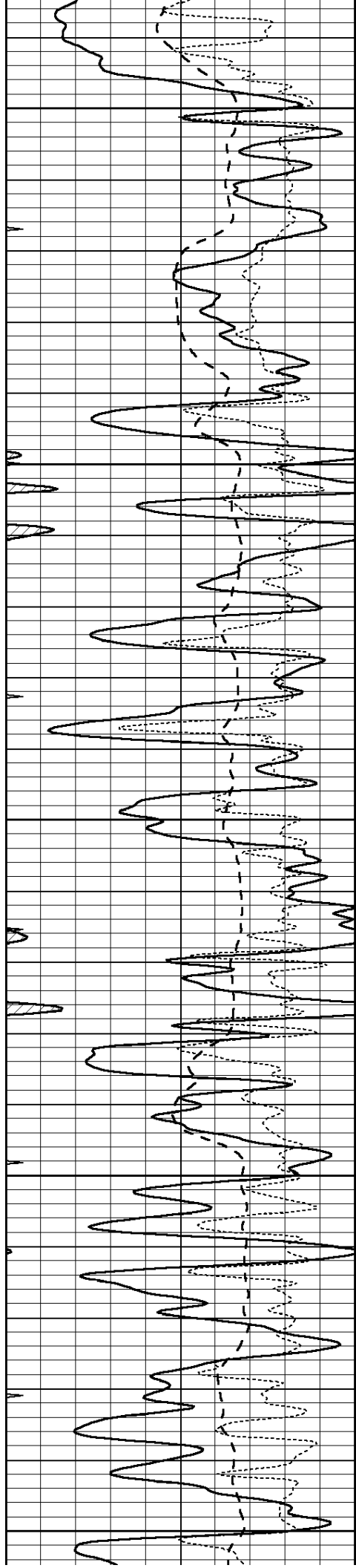


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3550

3600





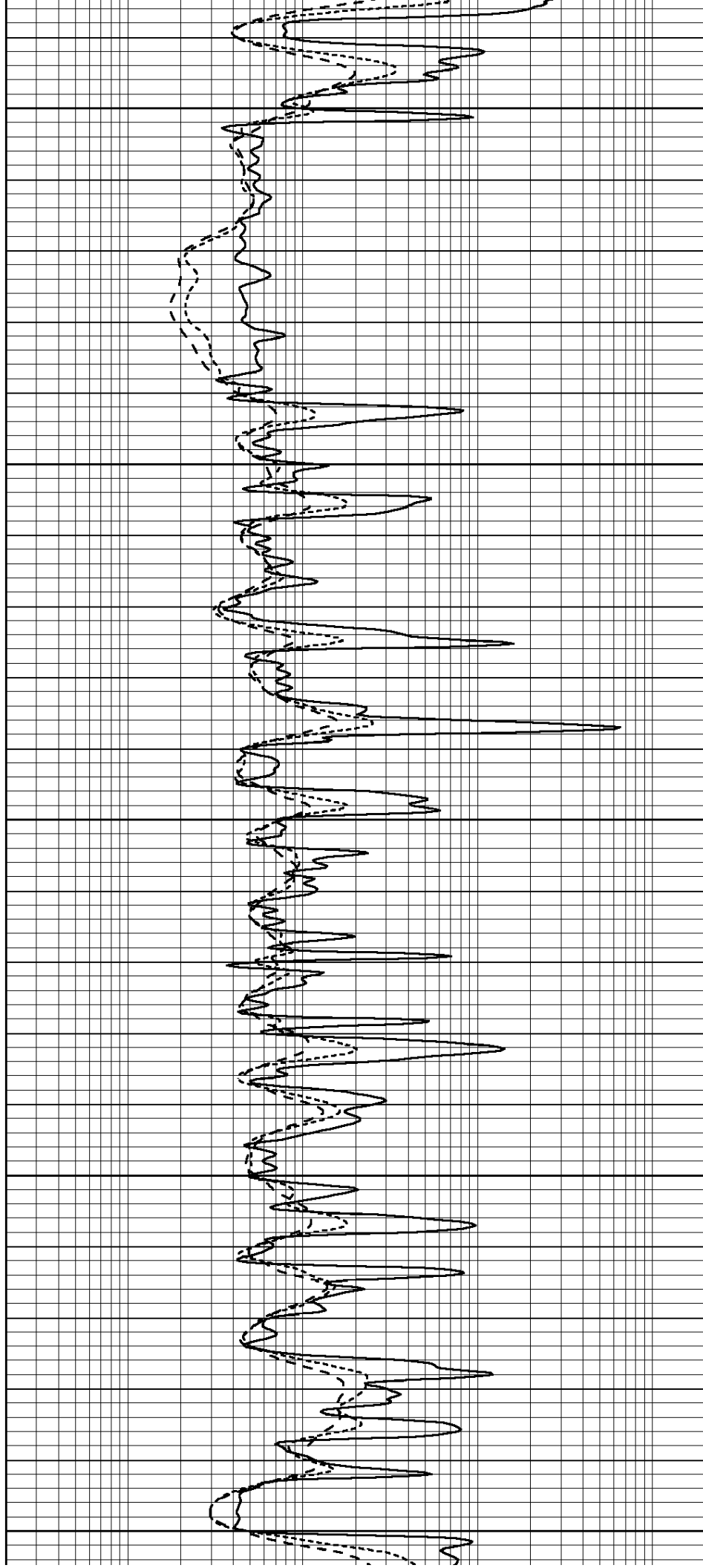
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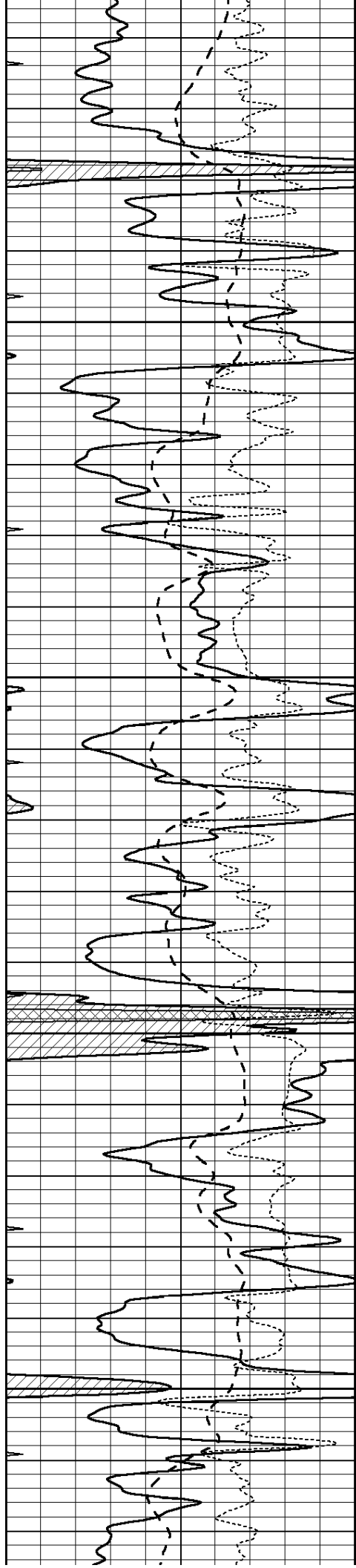
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3800

3850



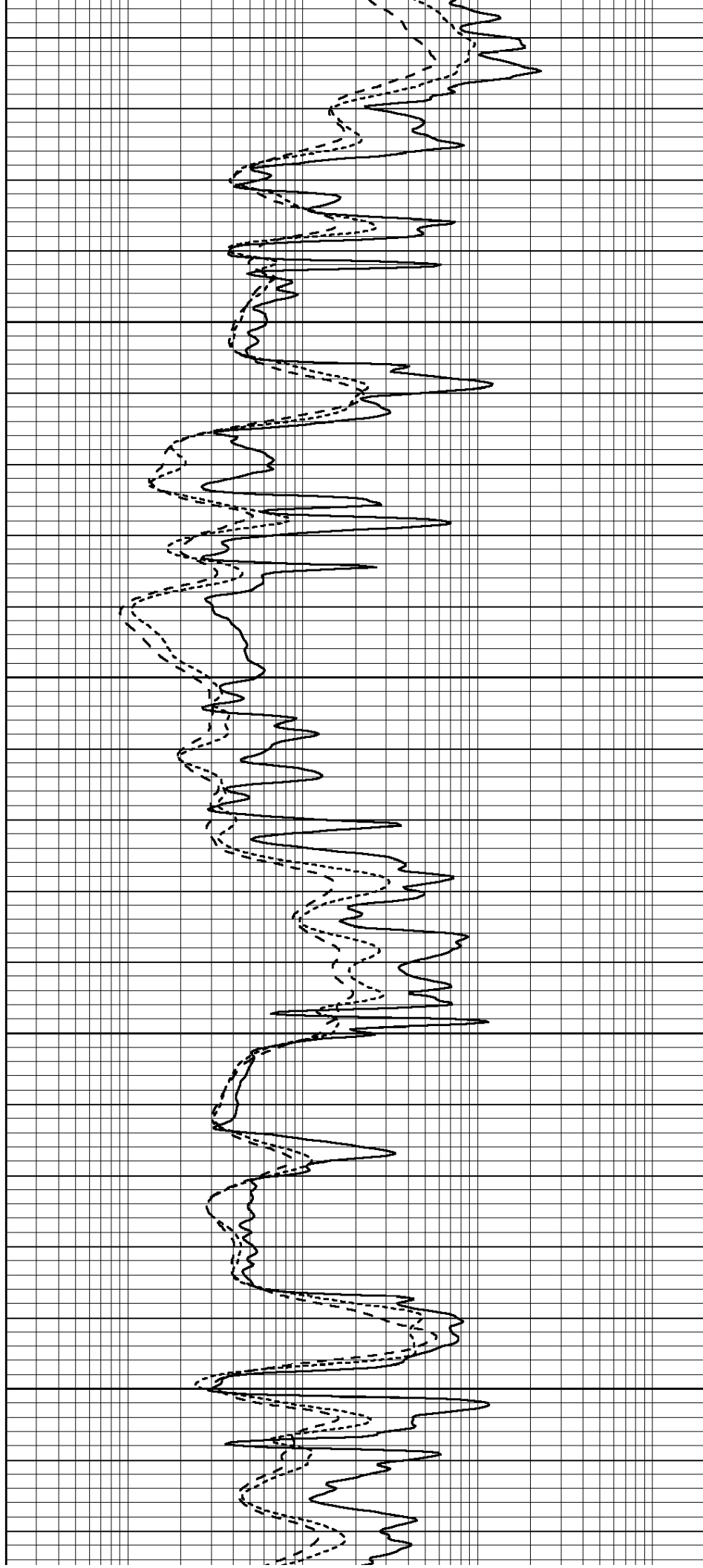


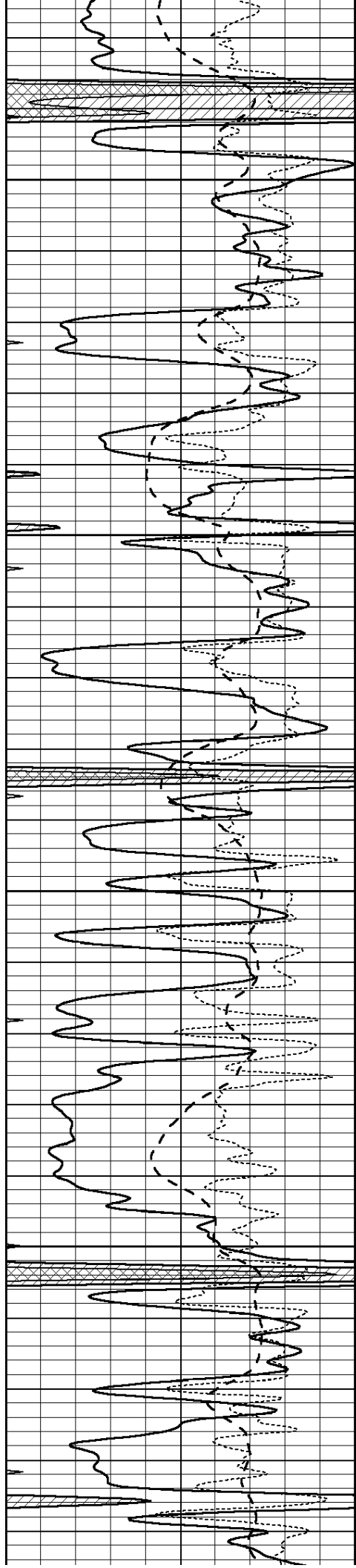
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3950

4000

4050



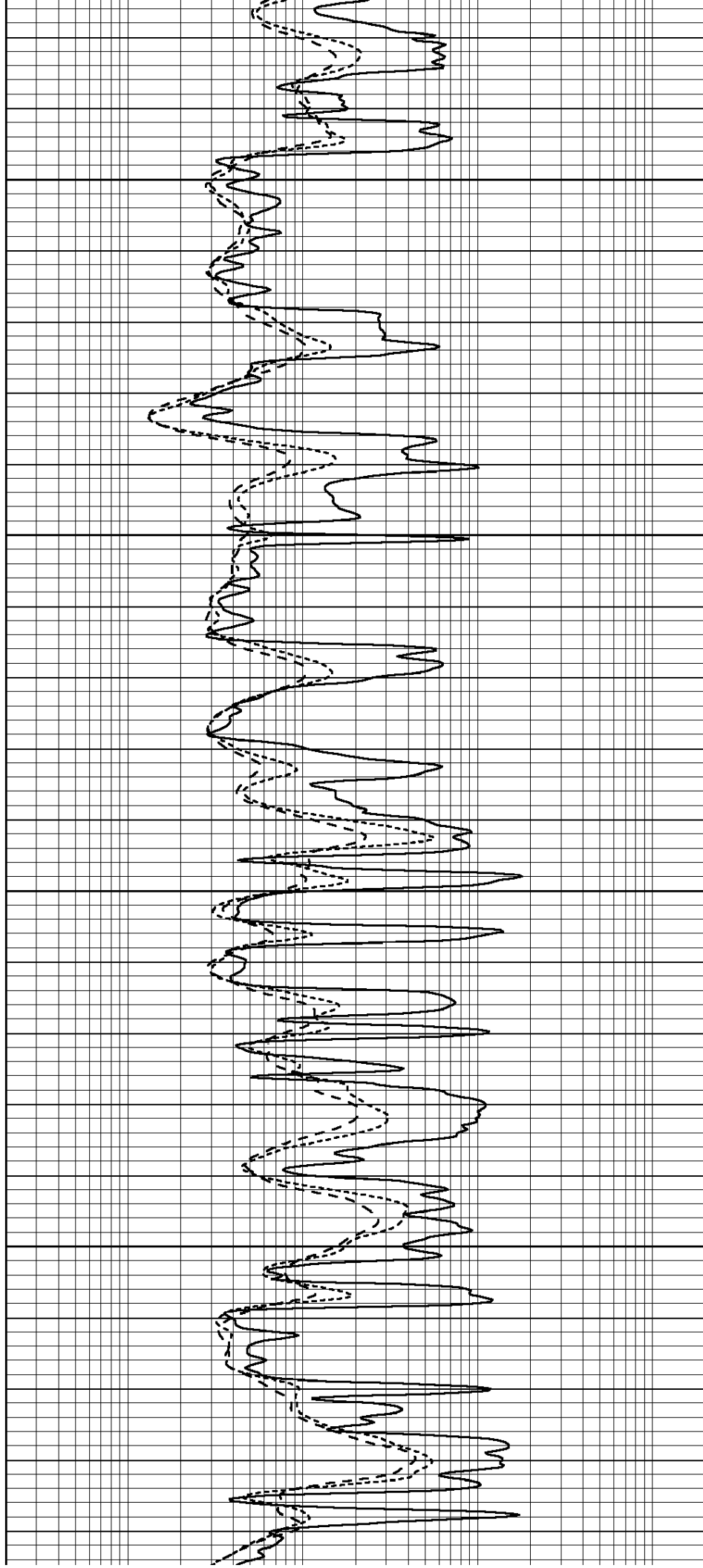


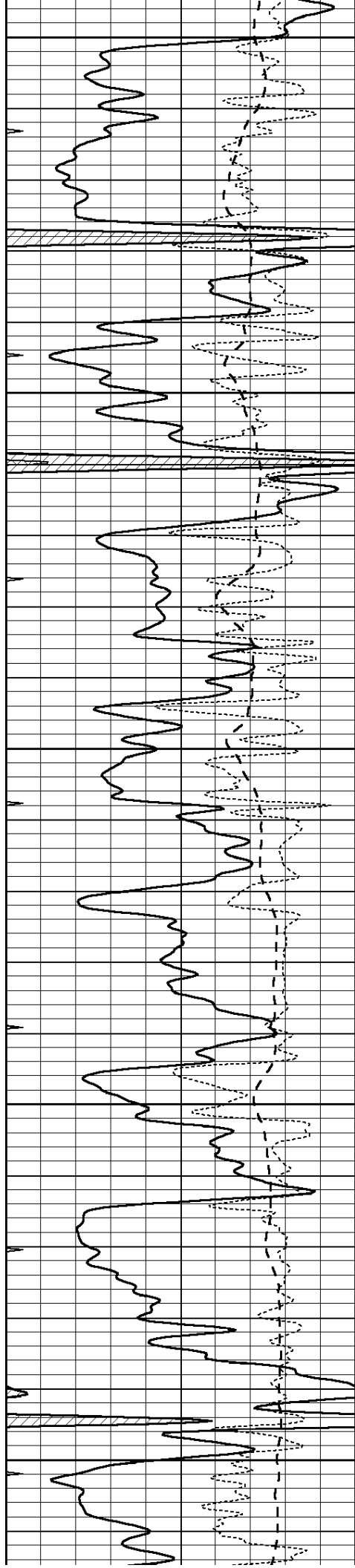
4100

4150

4200

4250





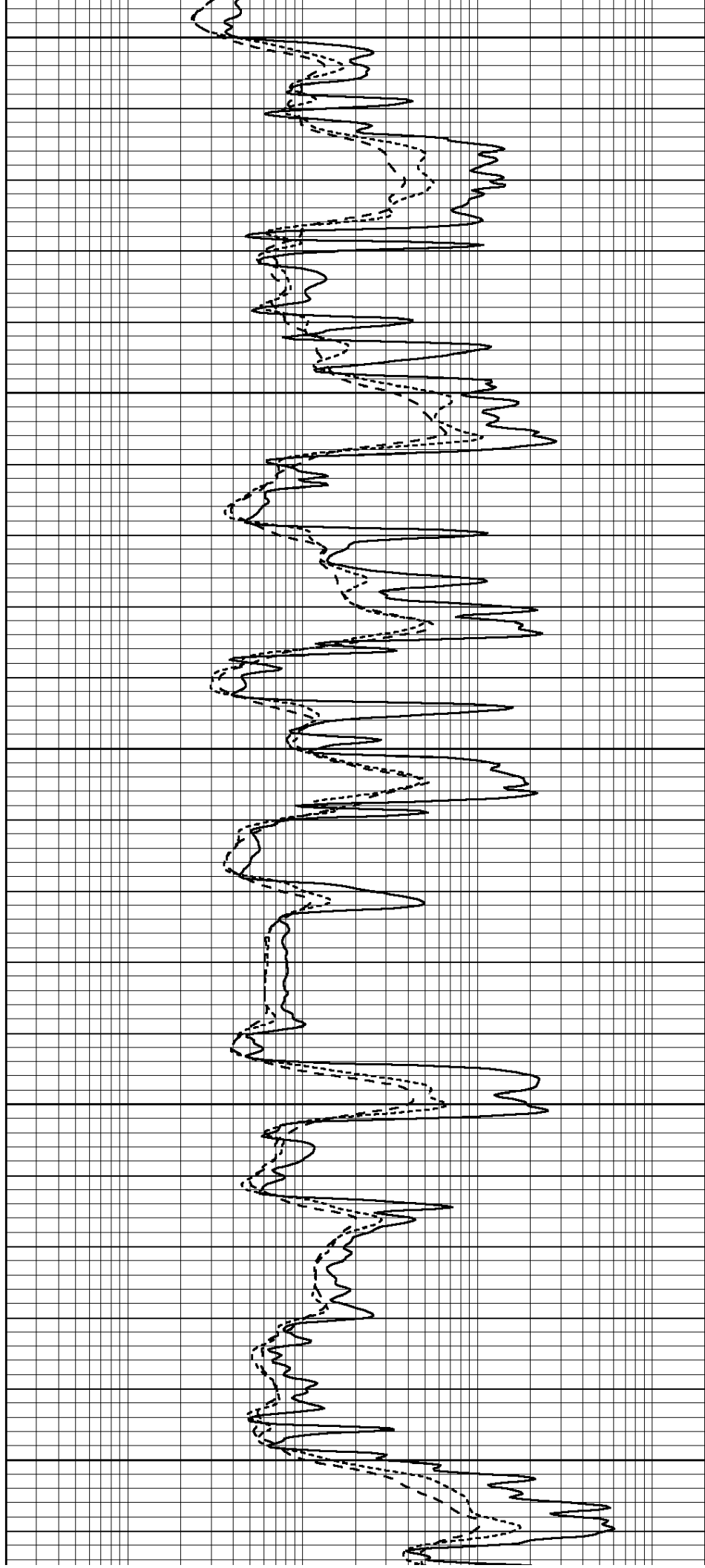
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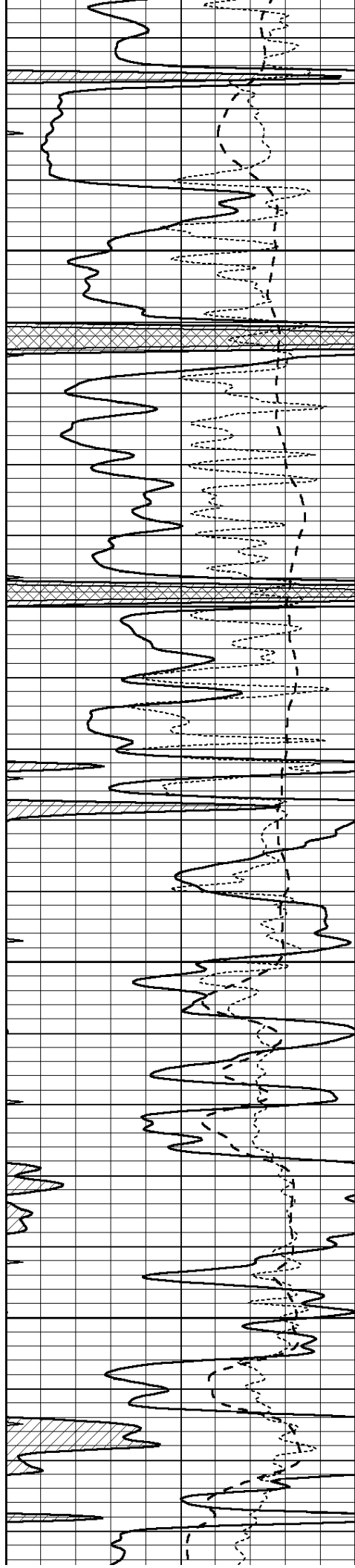
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4400

4450

4500



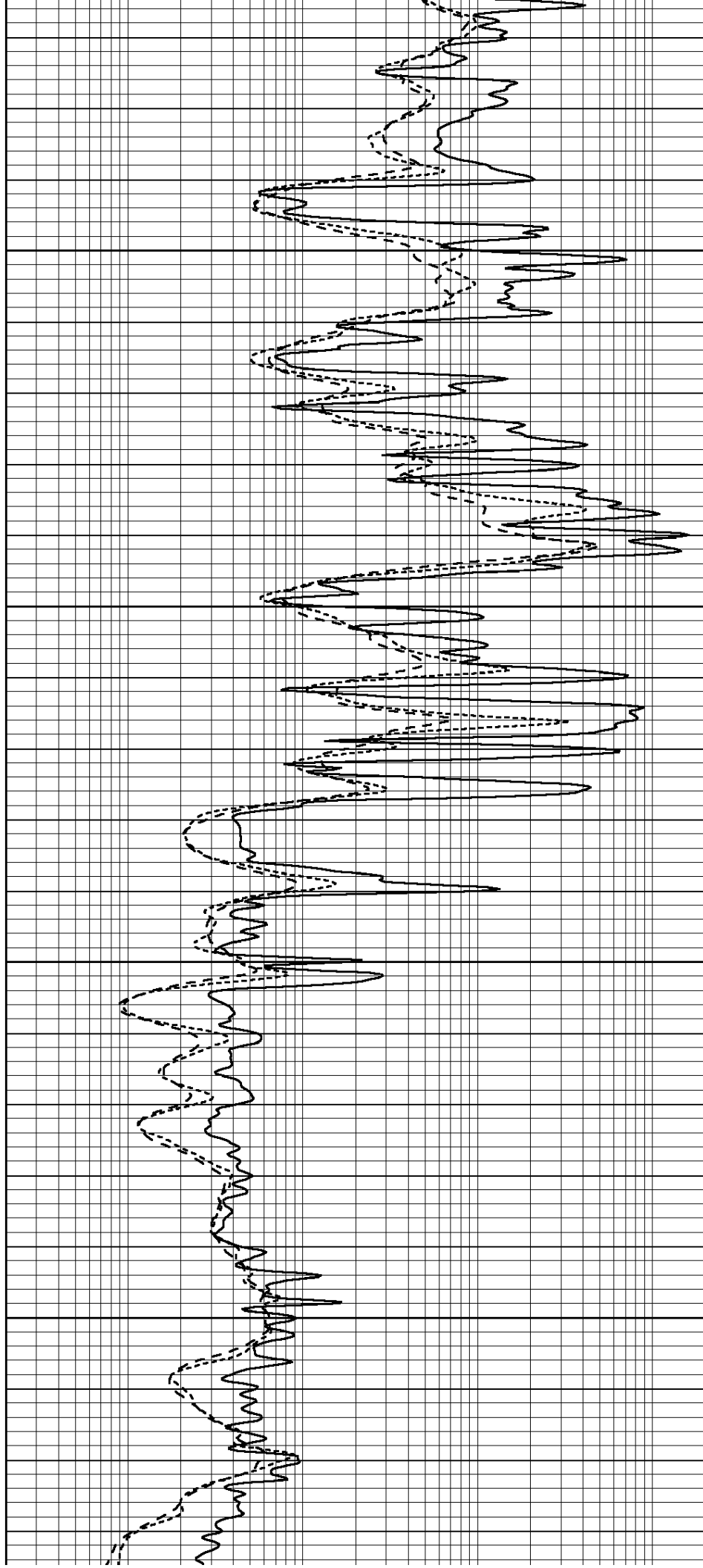


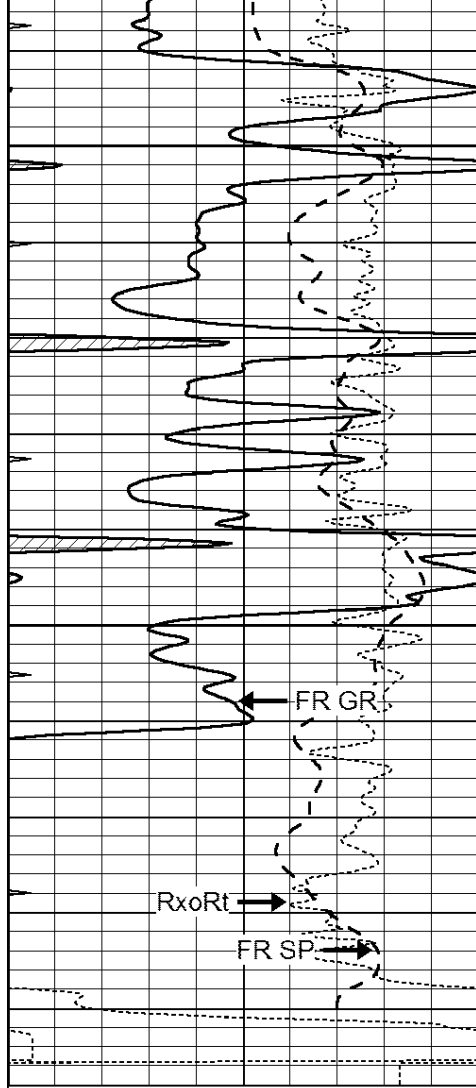
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4600

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4700



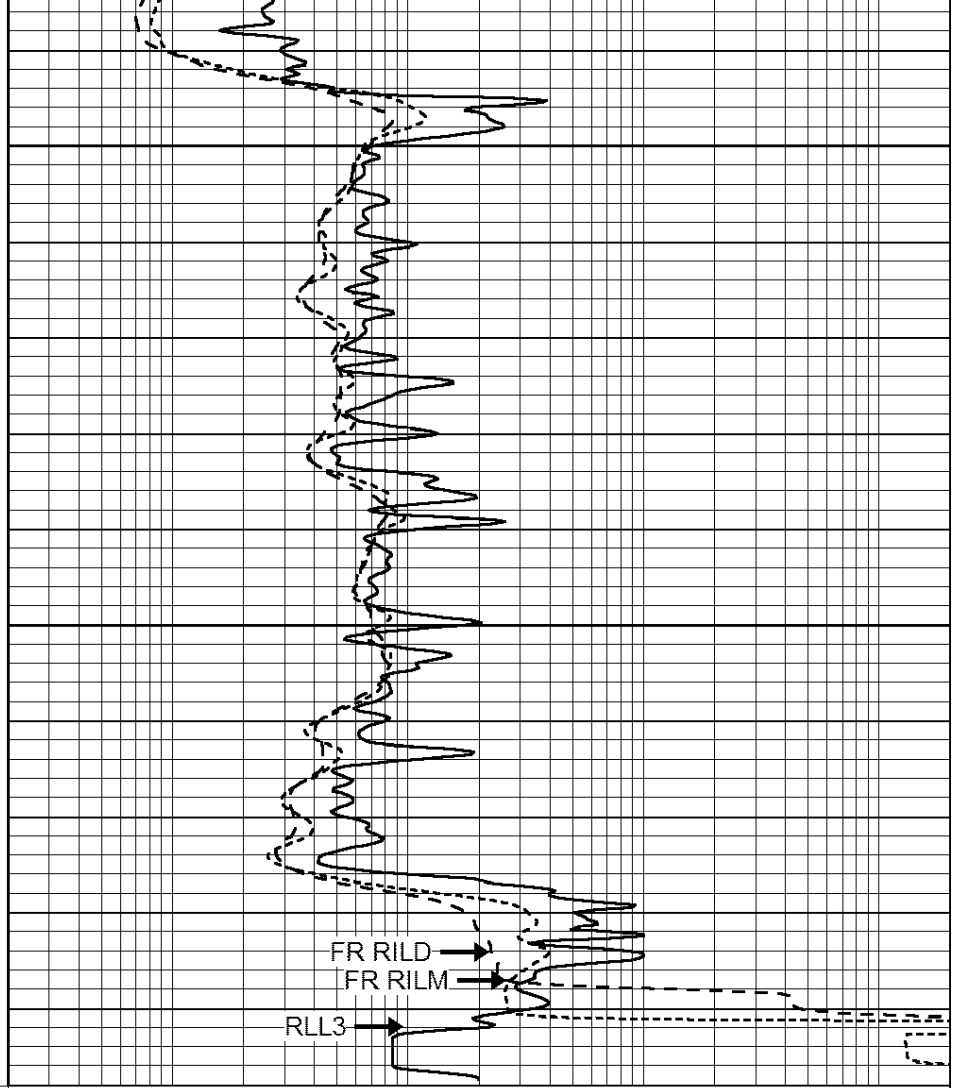


4750

4800

LTD 4844

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



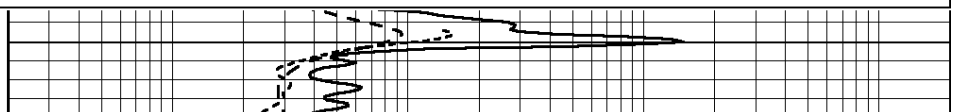
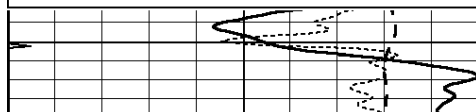
NABORS
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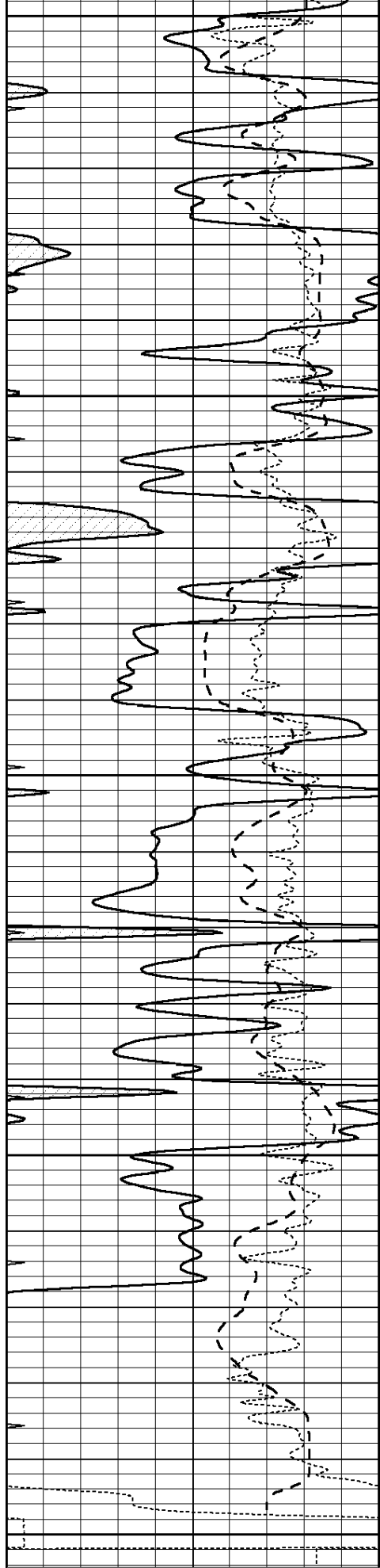
REPEAT SECTION

Database File: 30510ddn.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Wed Jul 22 02:59:19 2015 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





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

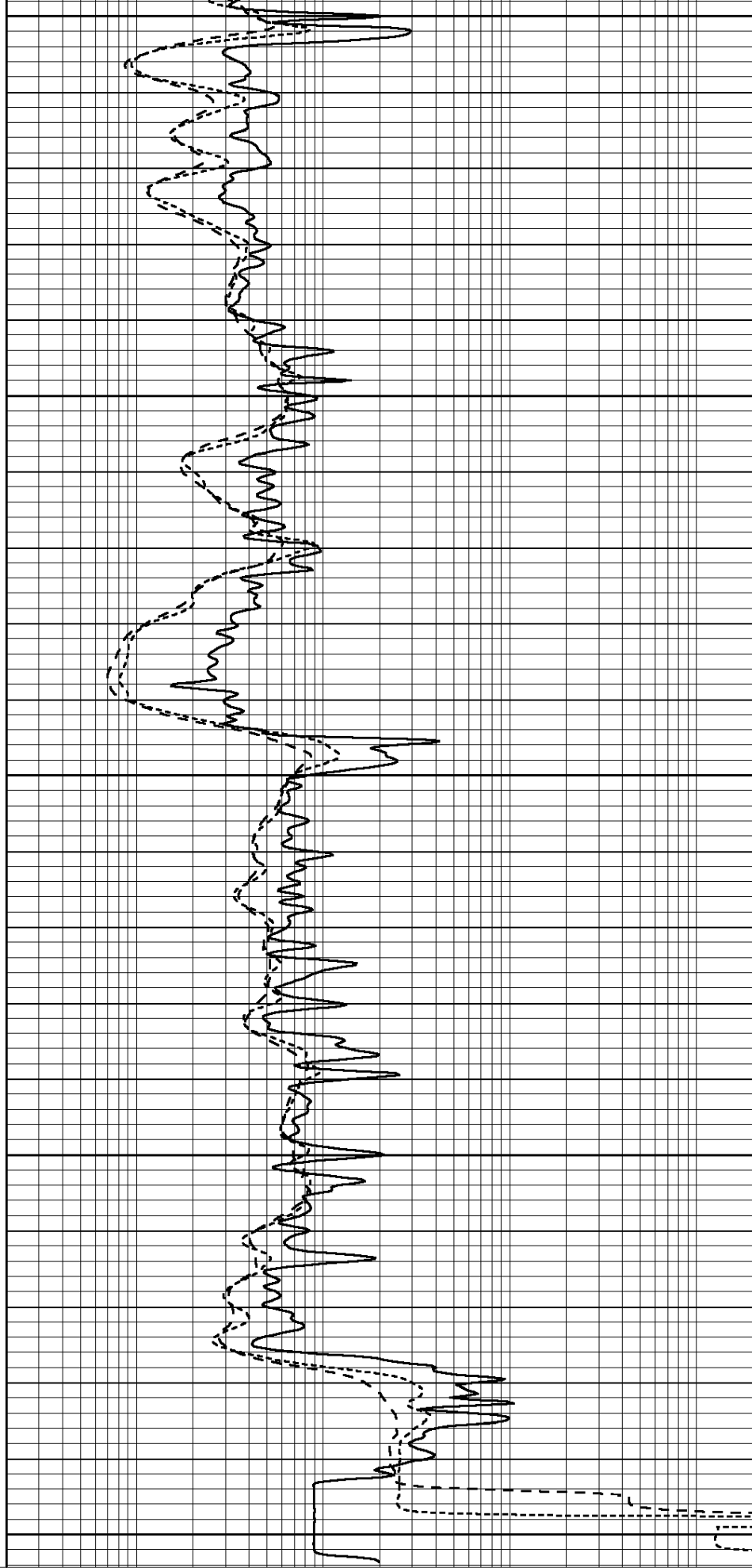
4650

4700

4750

4800

4850



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

0	MINMK	20
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Calibration Report		
Database File:	30510ddn.db	
Dataset Pathname:	pass2.1	
Dataset Creation:	Wed Jul 22 02:59:19 2015 by Calc Open-Cased 090629	

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Sun May 10 19:54:09 2015
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	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
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
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Serial-Model:	GEAR3-GEARHART
Source / Verifier:	143 / 143
Master Calibration Performed:	Sun May 10 19:53:41 2015
Before Survey Verification Performed:	
After Survey Verification Performed:	

Master Calibration						
	Density			Far Detector	Near Detector	
Magnesium	1.710	g/cc		881.29	468.35	cps
Aluminum	2.560	g/cc		210.51	354.56	cps
Spine Angle = 79.00				Density/Spine Ratio = 0.583		

	Size		Reading			
Small Ring	8.00	in	4.29	V		
Large Ring	14.00	in	6.24	V		
Before Survey Verification						
	Target		Measured			
		g/cc		g/cc		
		g/cc		g/cc		
		g/cc		g/cc		
After Survey Verification						
	Target		Measured			
		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		
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 May 10 18:59:16 2015			
	Calibrator Value:		150.0		GAPI	
	Background Reading:		0.0		cps	
	Calibrator Reading:		276.0		cps	

Sensitivity:

0.8000

GAPI/cps