

DUAL INDUCTION LOG

Company DARRAH OIL COMPANY, LLC.
 Well YOUNKIN #1-10
 Field WILDCAT
 County LOGAN State KANSAS

Location: API #: 15-109-21604-0000
 2355' FSL & 290' FEL
 NE - NE - NE - SE
 SEC 10 TWP 14s RGE 34W
 Permanent Datum GROUND LEVEL Elevation 2927
 Log Measured From KELLY BUSHING 11" A.G.L.
 Drilling Measured From KELLY BUSHING
 Other Services
 CDL/CNL
 MEL/SON
 Elevation
 K.B. 2938
 D.F. 2936
 G.L. 2927

Date	6/18/20
Run Number	ONE
Depth Driller	4675
Depth Logger	4672
Bottom Logged Interval	4670
Top Log Interval	00
Casing Driller	8 5/8"@263'
Casing Logger	263
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/54
pH / Fluid Loss	9.5/7.5
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.590@85F
Rmf @ Meas. Temp	.443@85F
Rmc @ Meas. Temp	.708@85F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.411@122F
Time Circulation Stopped	2.5 HOURS
Time Logger on Bottom	3:30 P.M.
Maximum Recorded Temperature	122F
Equipment Number	922339
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	SETH EVENSON

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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 E.L.I. WIRELINE SERVICES HAYS, KANSAS (785)628-6395
 DIRECTIONS
 OAKLEY, KS., 13S. ON HWY 83 TO "QUAIL RD.", 7W. TO "RD. 370" 1S. TO "PLAINS RD.", 2W. TO "RD. 350", 4S. TO "LARIAT RD.", 1W. TO CATTLE GUARD, 1W. IN PASTURE THEN TAKE LEFT FORK

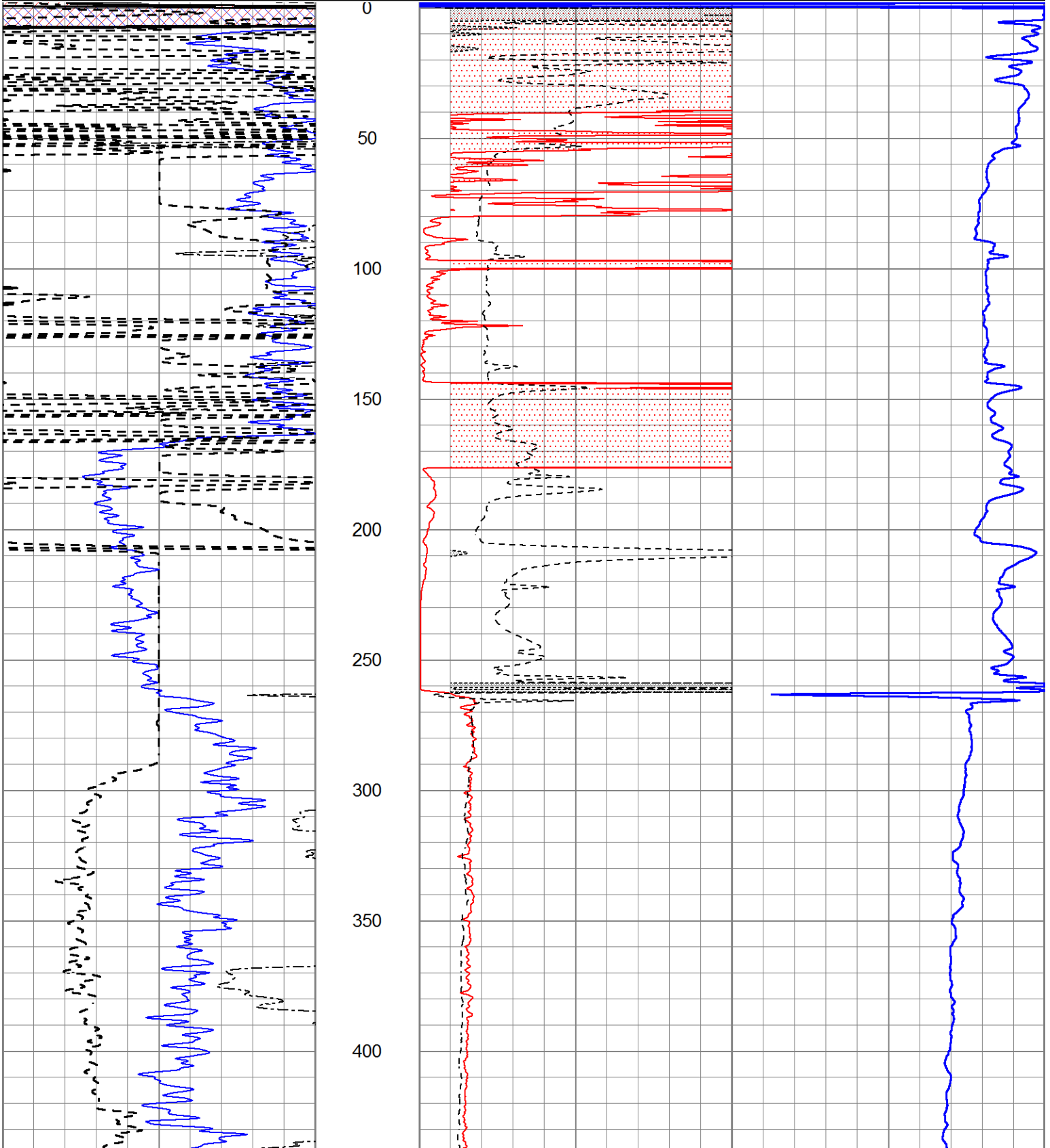


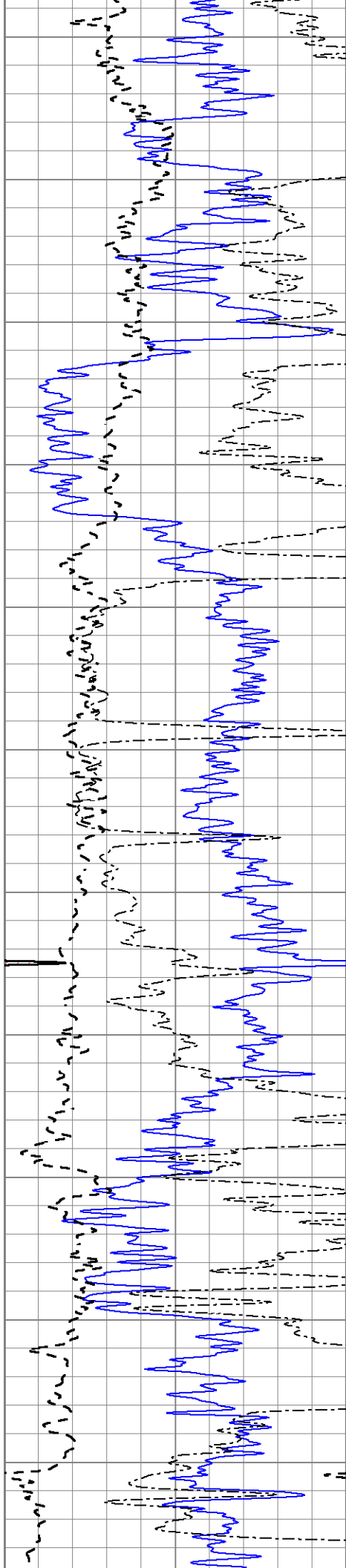
MAIN SECTION

Database File 4546pe.db
 Dataset Pathname pass3.7
 Presentation Format dil2
 Dataset Creation Thu Jun 18 17:13:35 2020
 Charted by Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

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





450

500

550

600

650

700

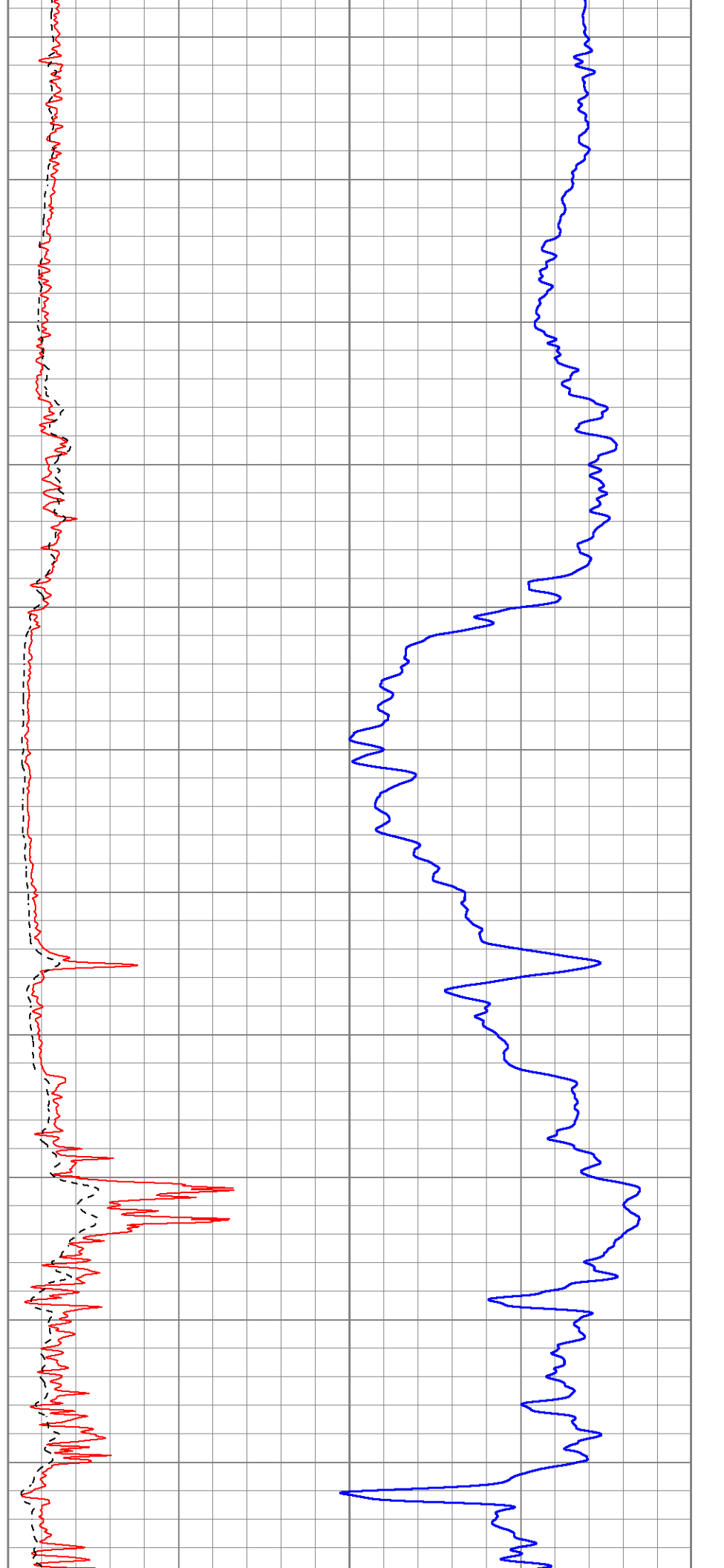
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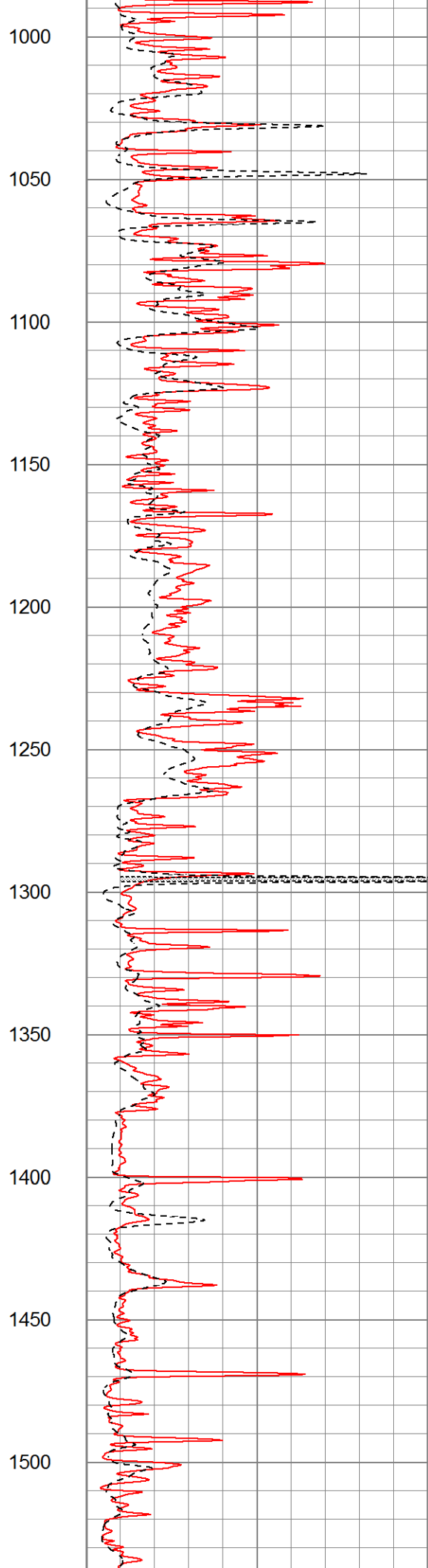
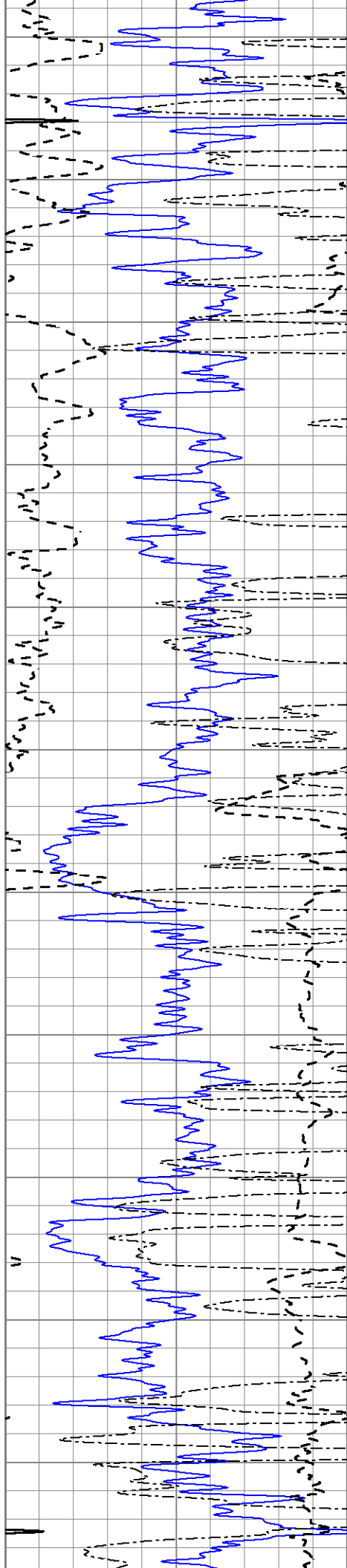
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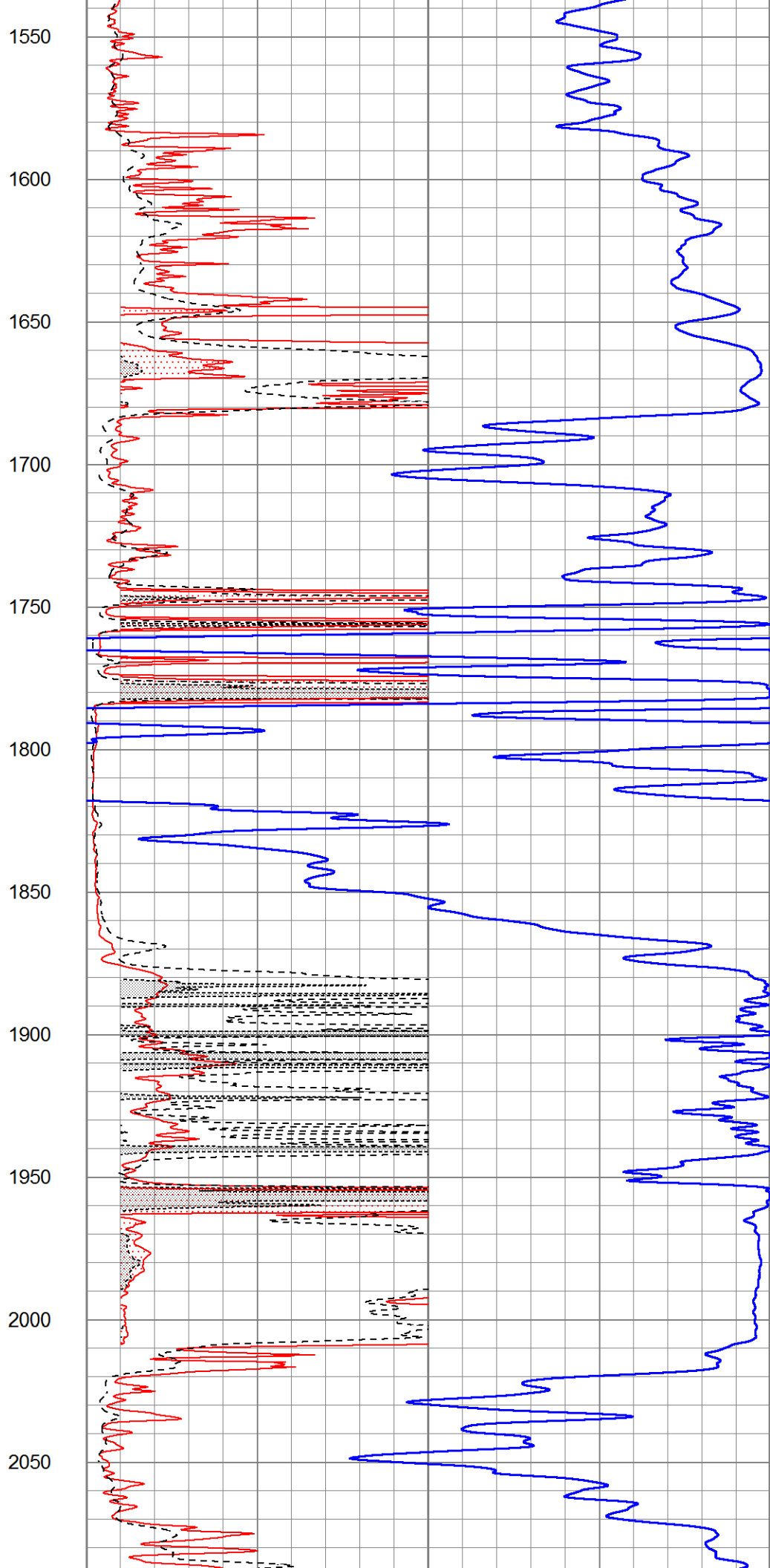
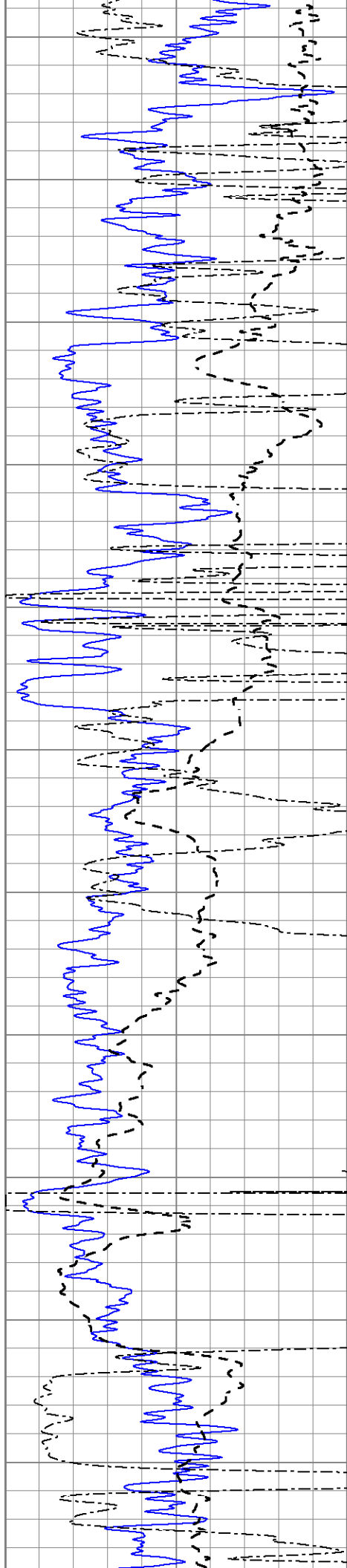
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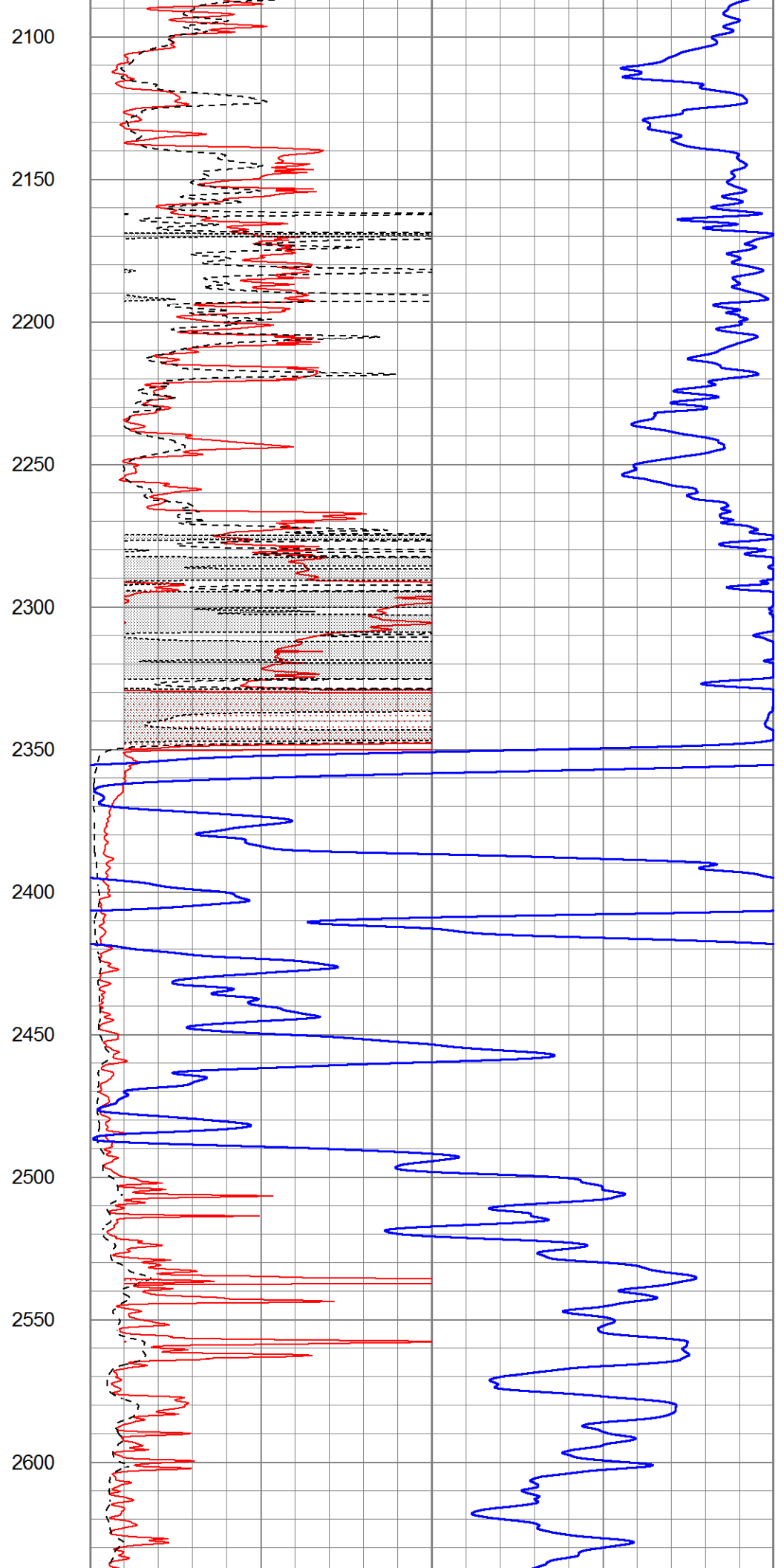
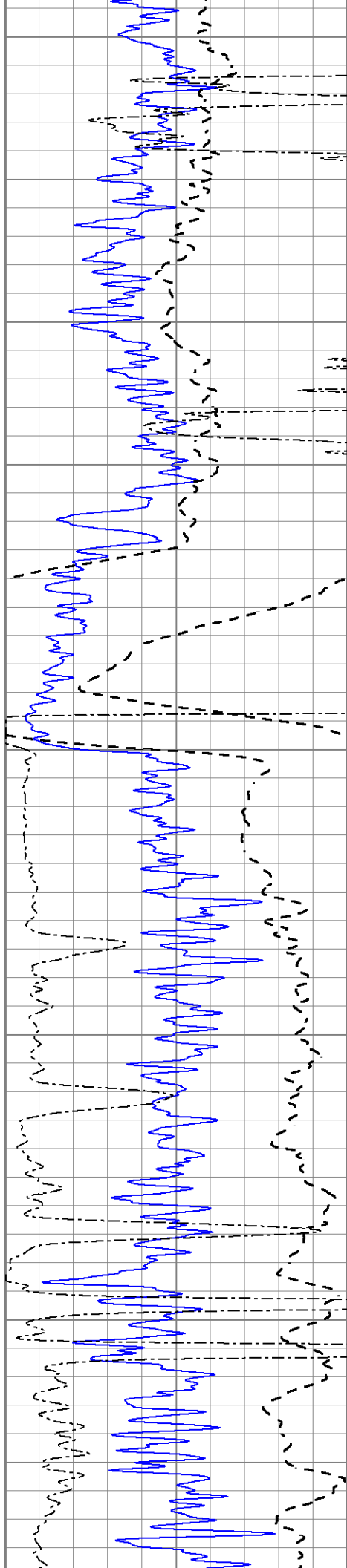
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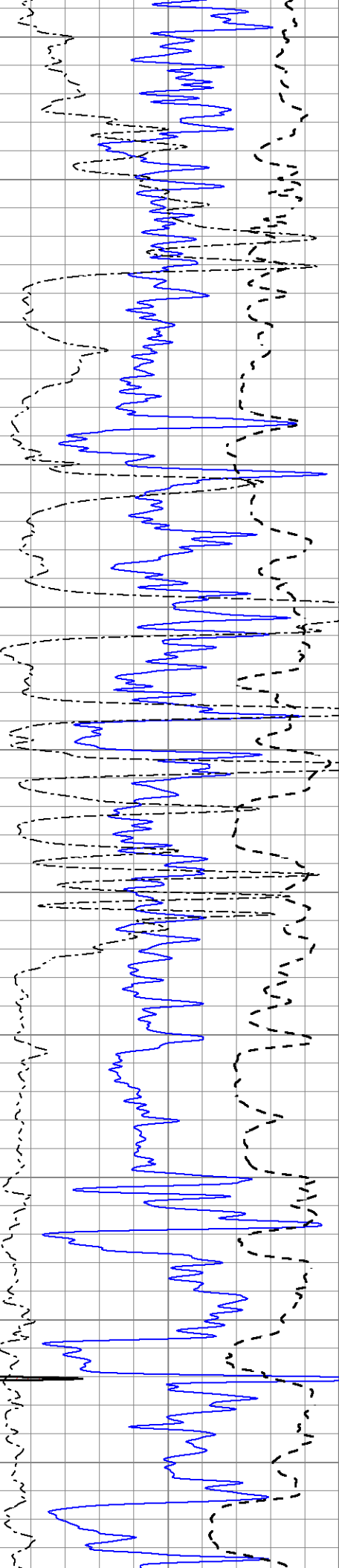
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2650

2700

2750

2800

2850

2900

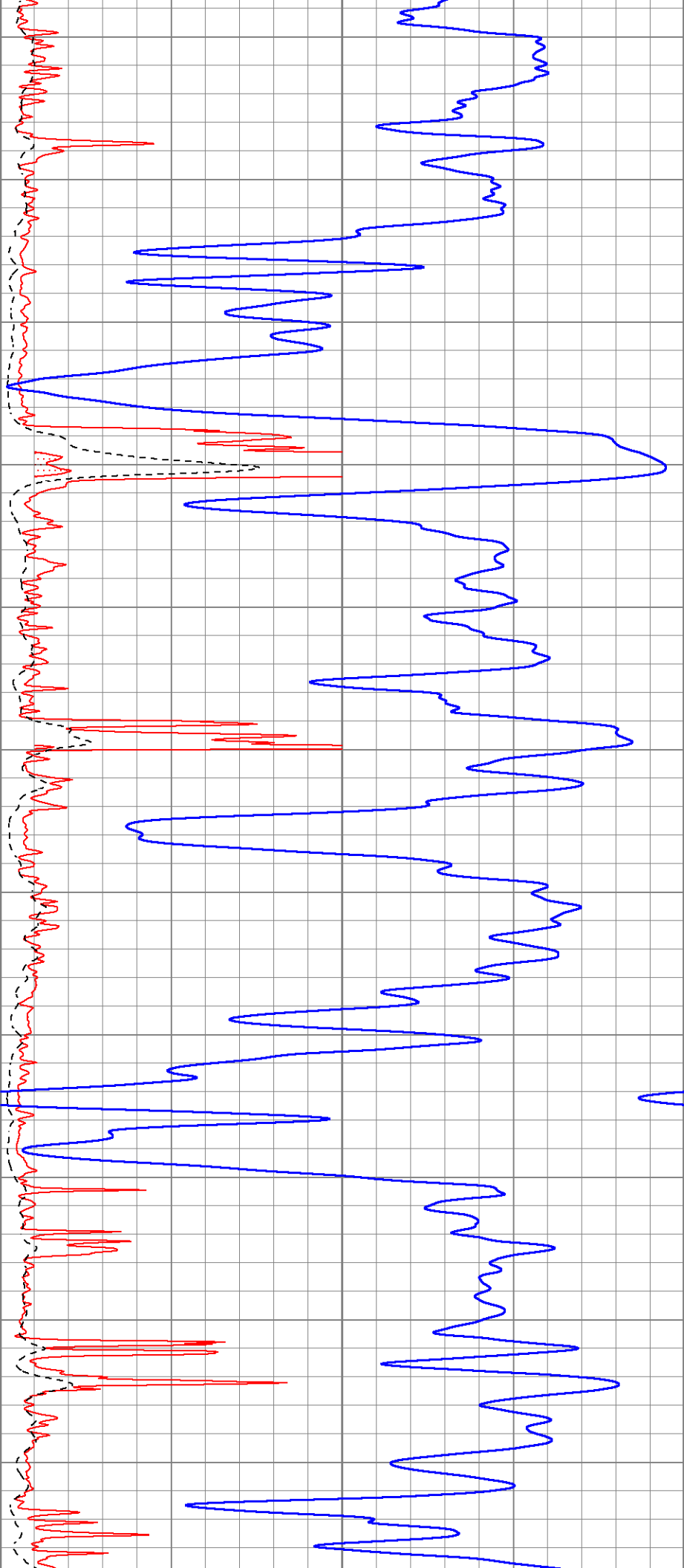
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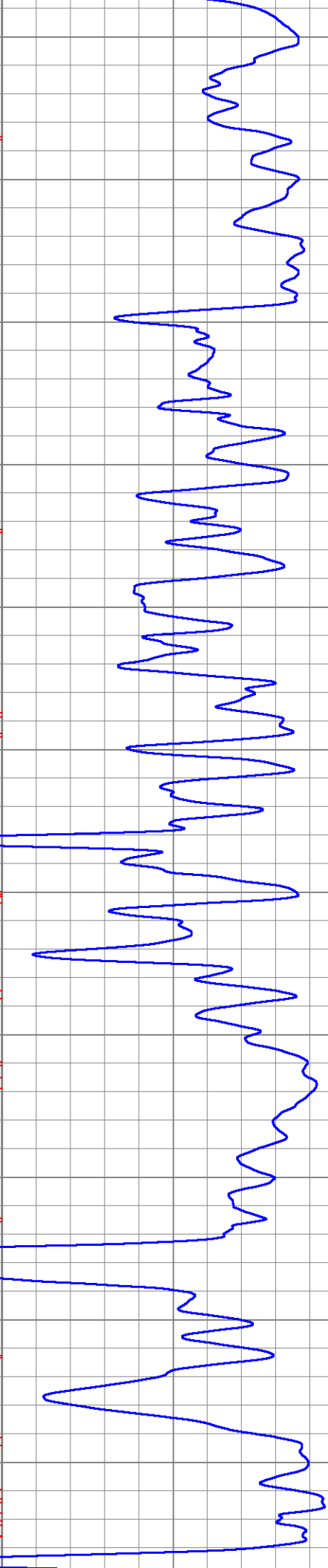
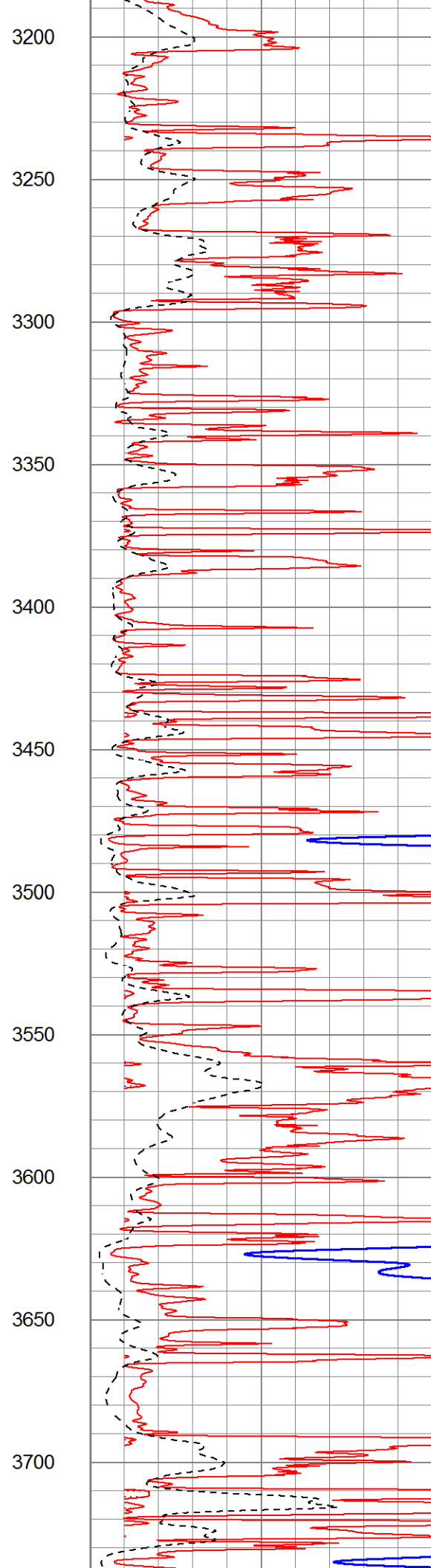
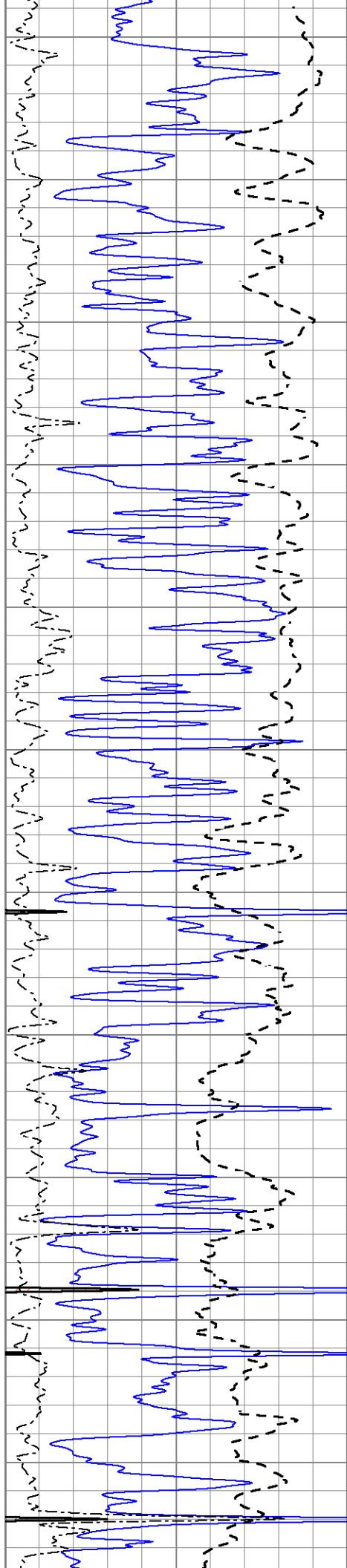
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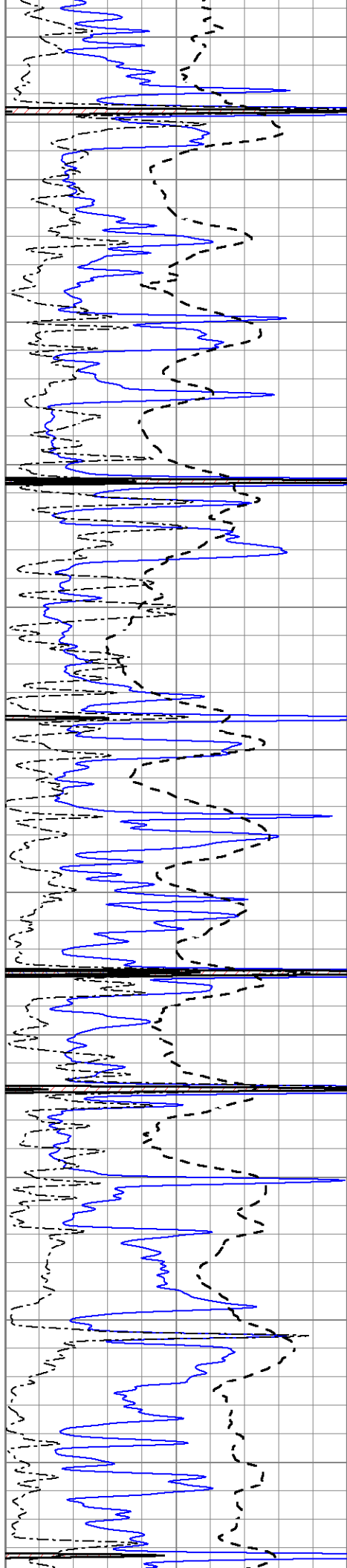
3050

3100

3150







3750

3800

3850

3900

3950

4000

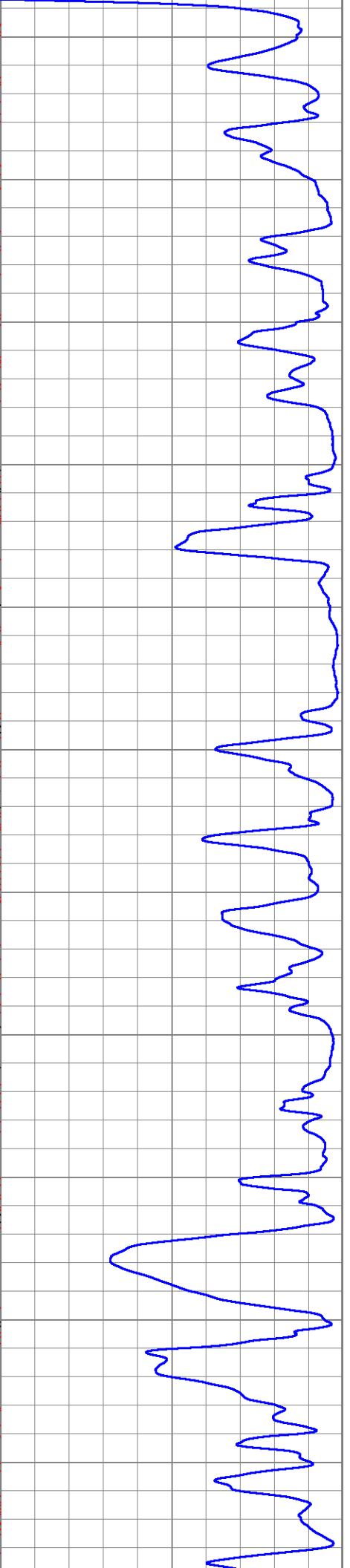
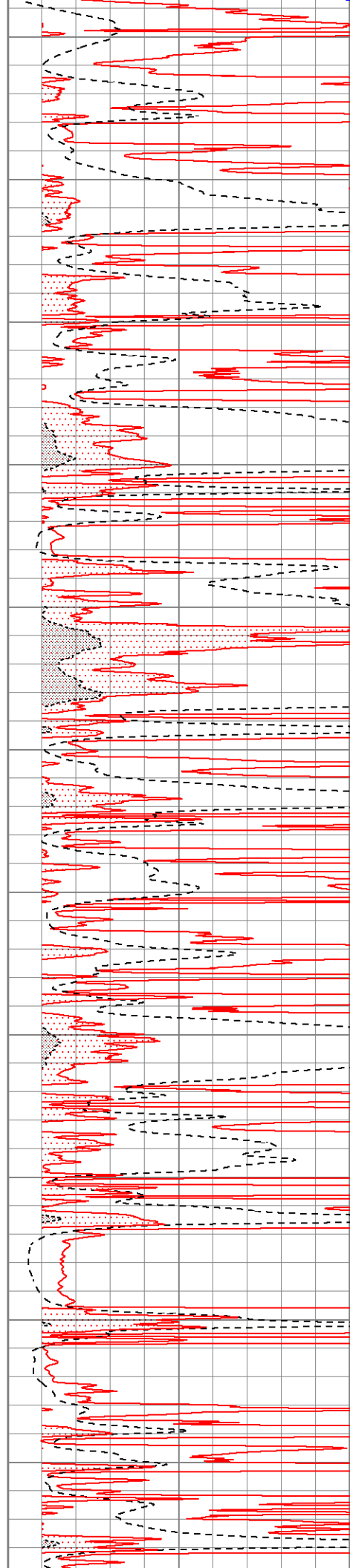
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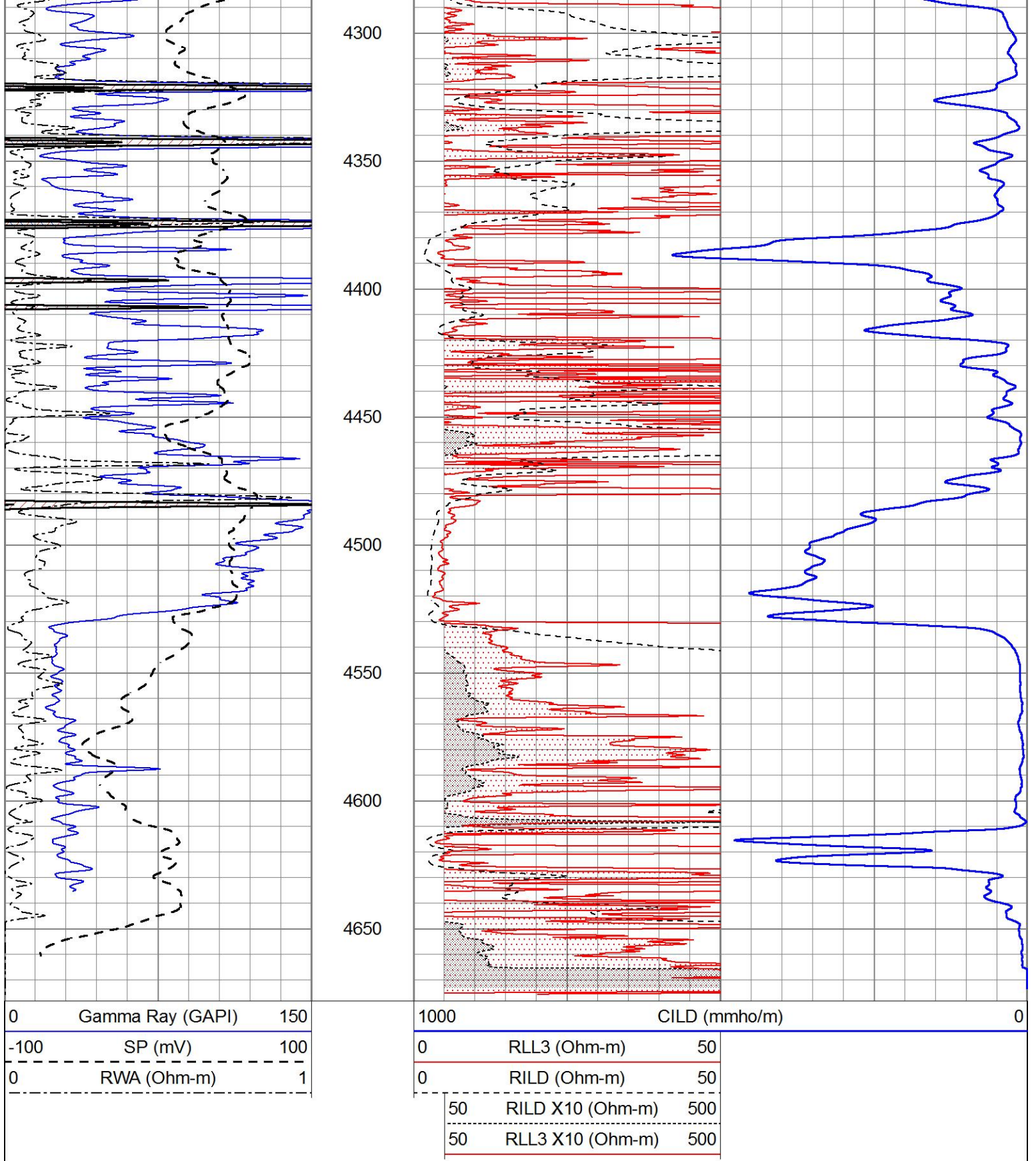
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4150

4200

4250



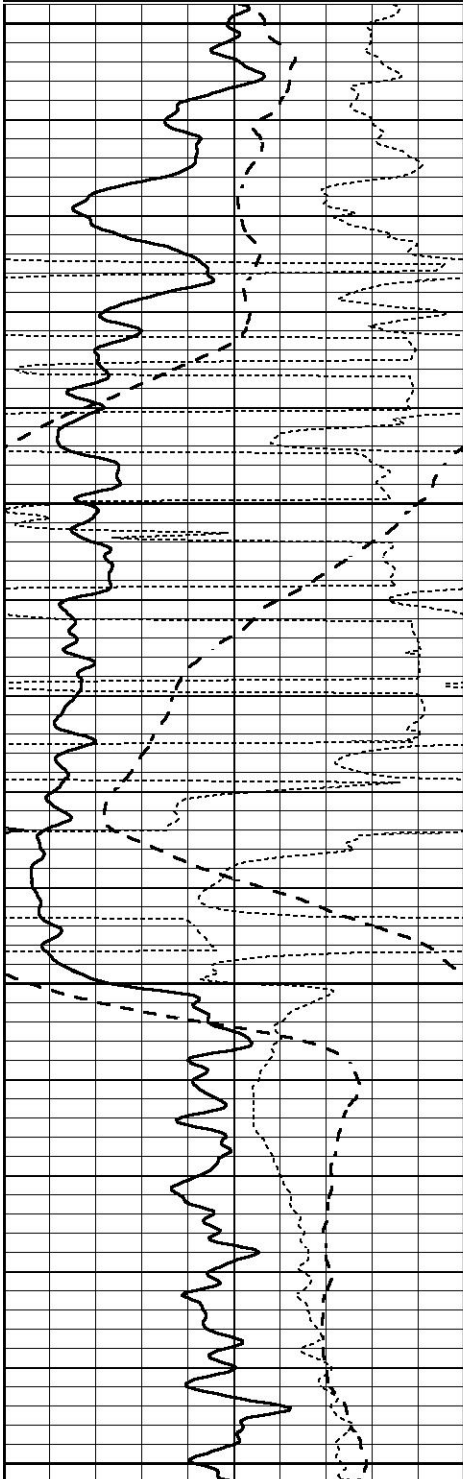


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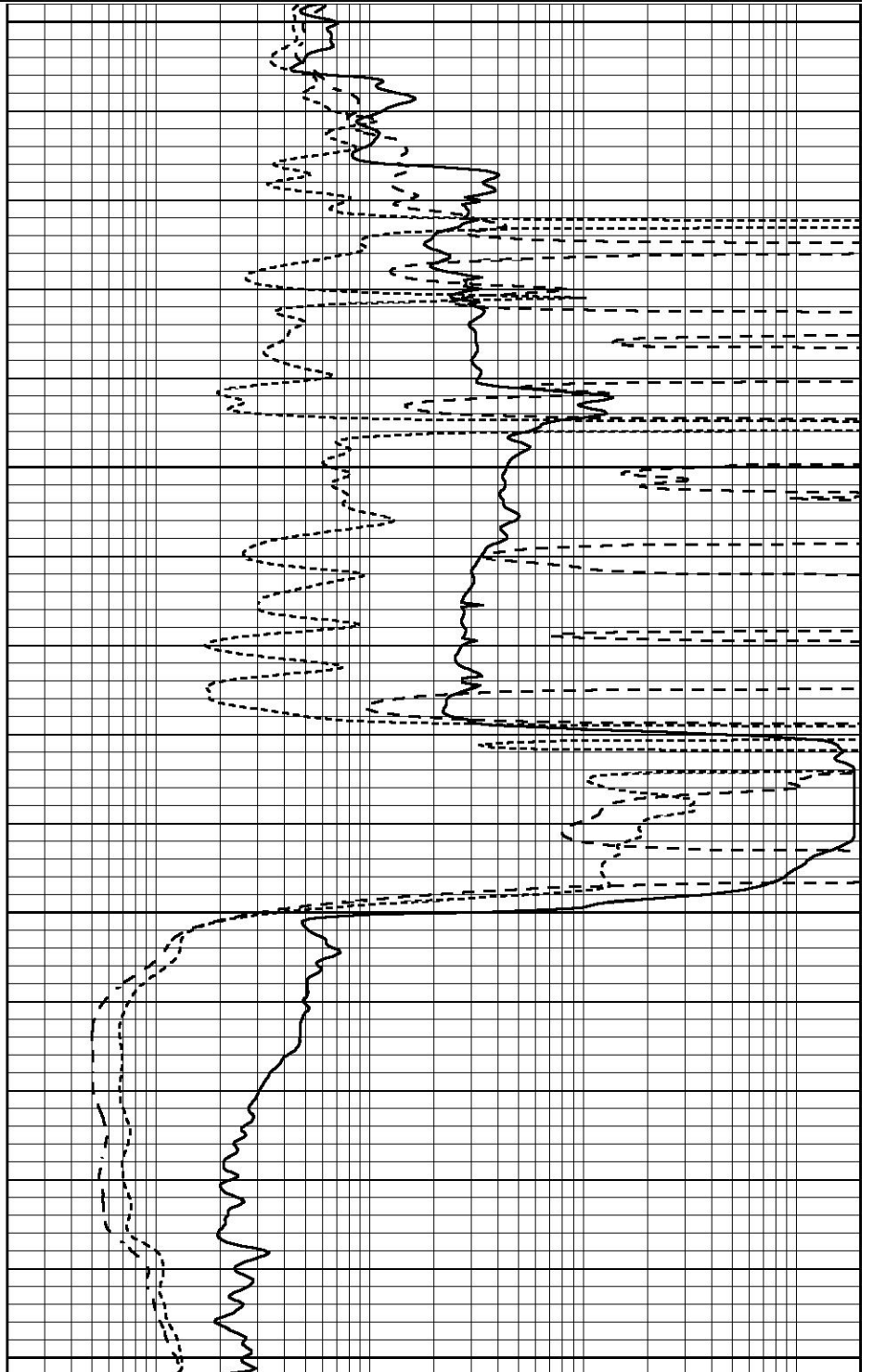
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 Presentation Format _dil
 Dataset Creation Thu Jun 18 17:17:52 2020

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



2250
 2300
 2350
 2400



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
0	MINMK	20



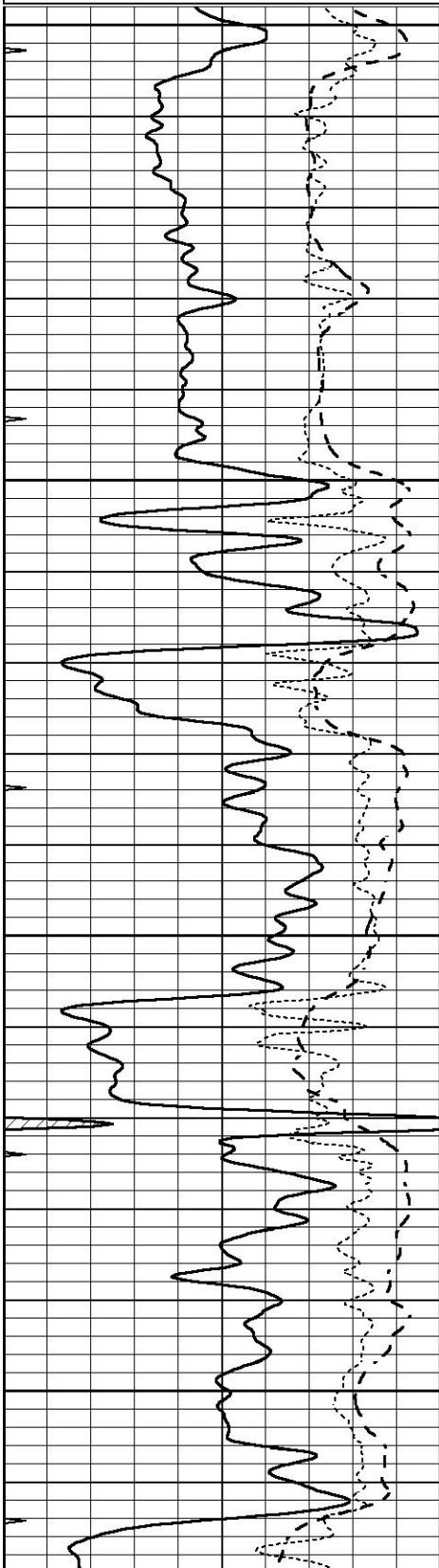
MAIN SECTION

MAIN SECTION

Database File 4546pe.db
Dataset Pathname pass3.7
Presentation Format _dil
Dataset Creation Thu Jun 18 17:13:35 2020
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

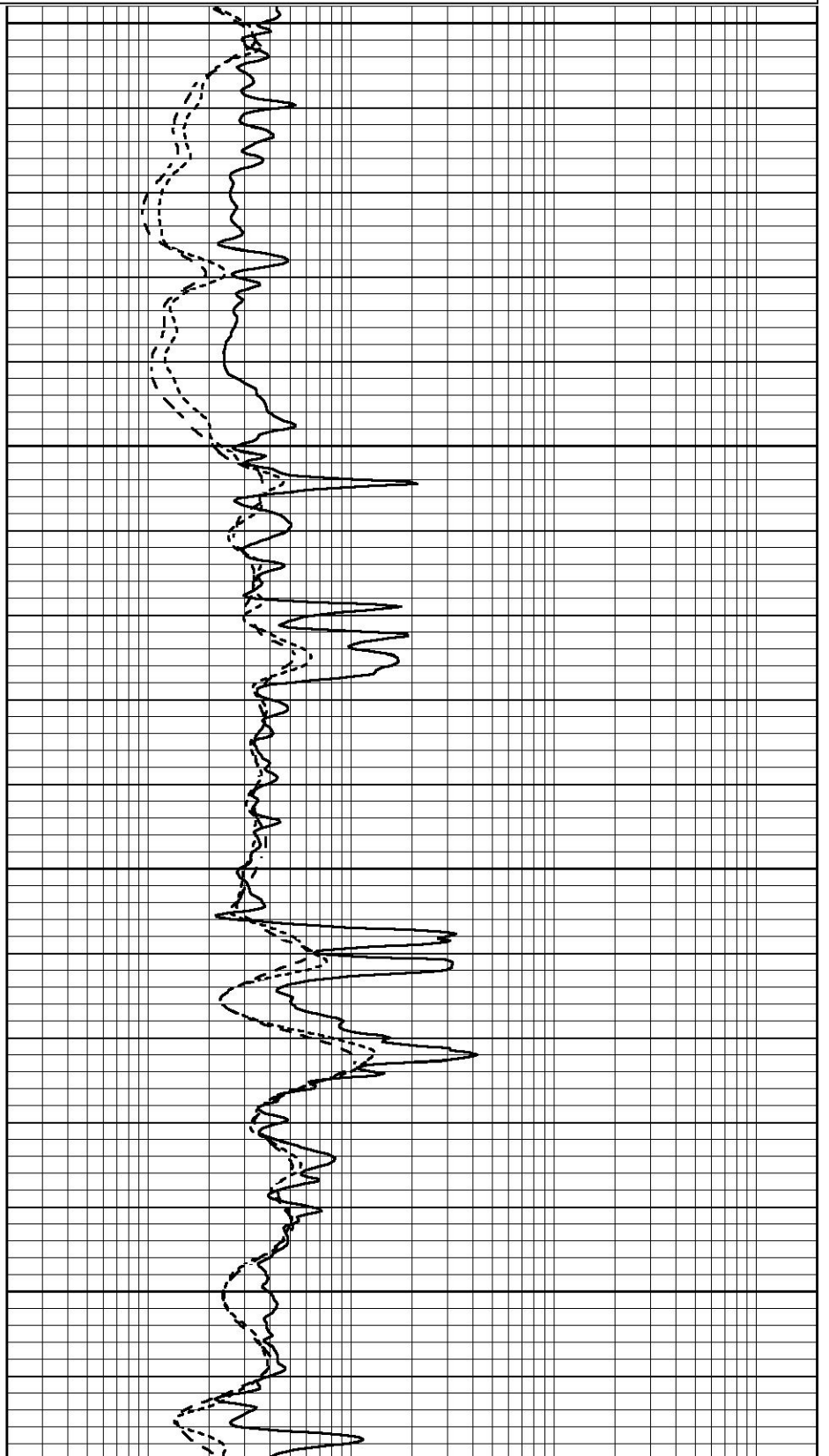


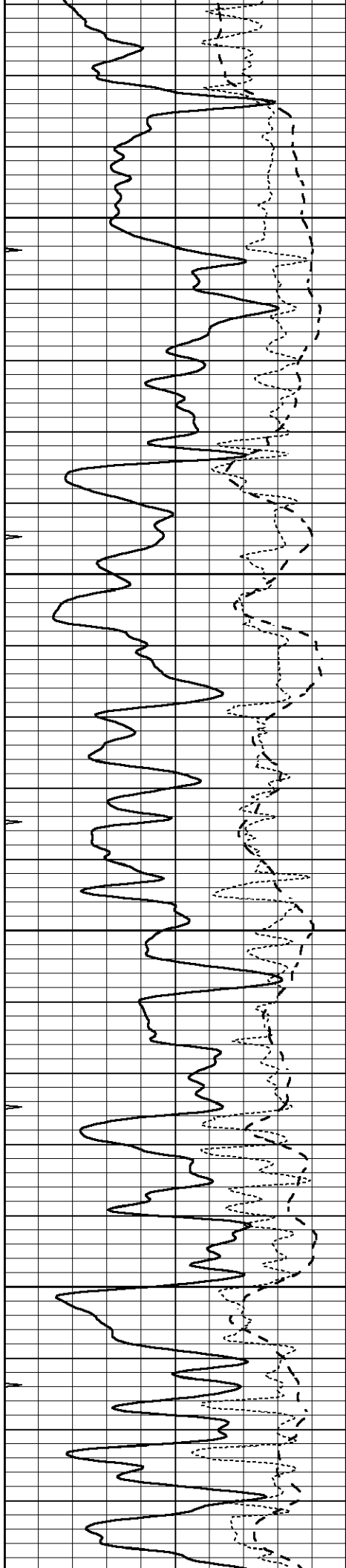
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3050

3100

3150



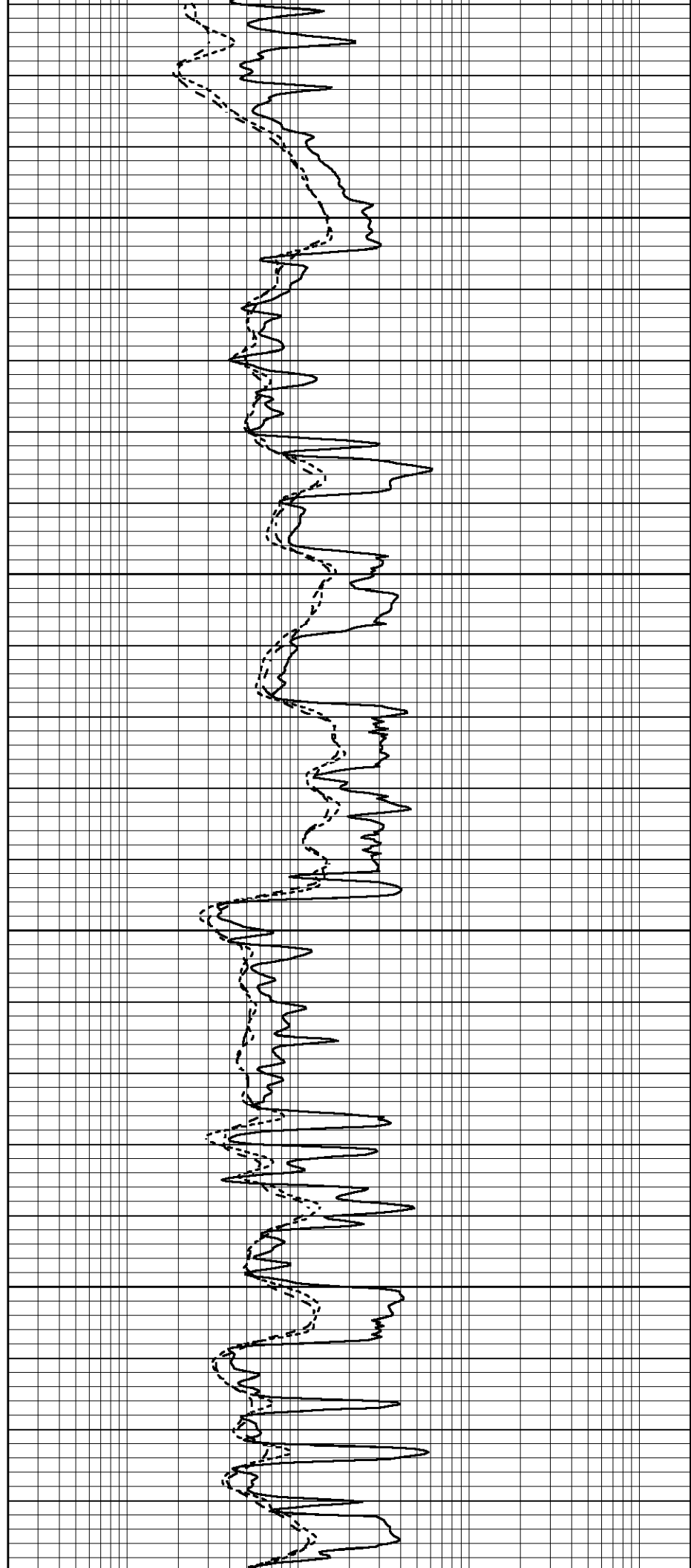


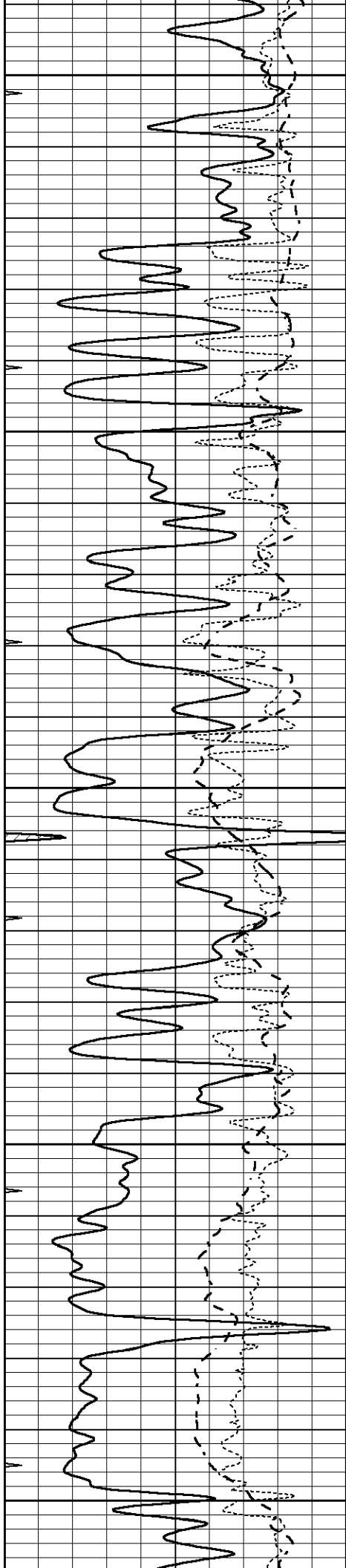
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3250

3300

3350





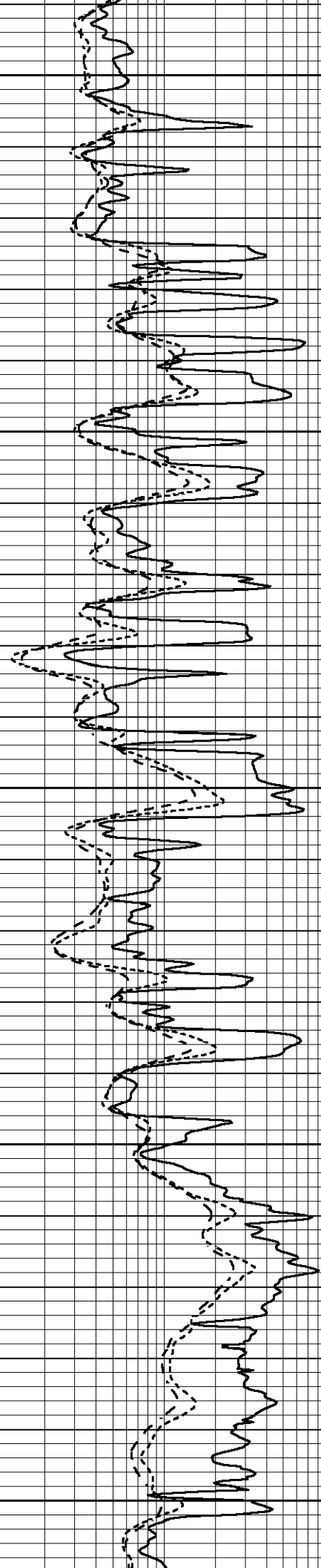
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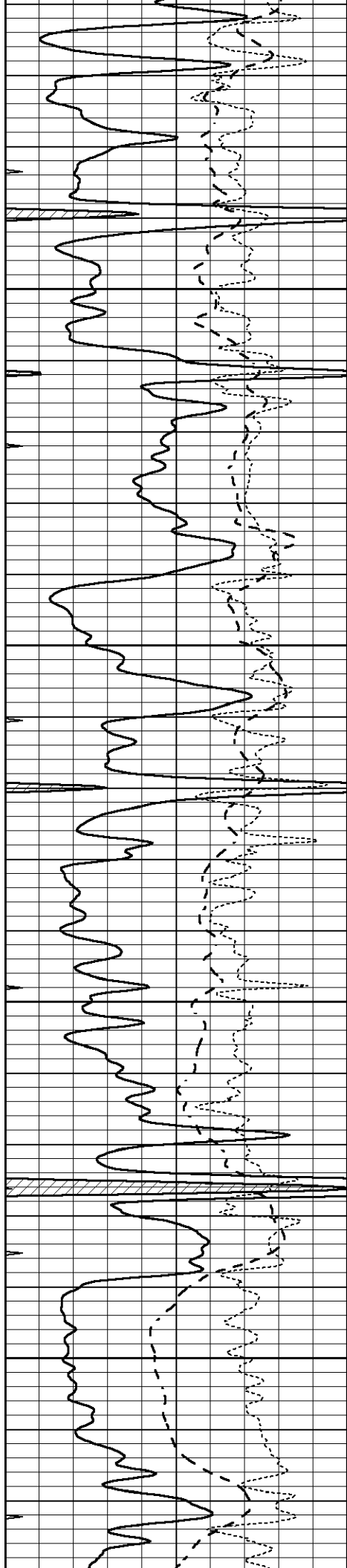
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3500

3550

3600



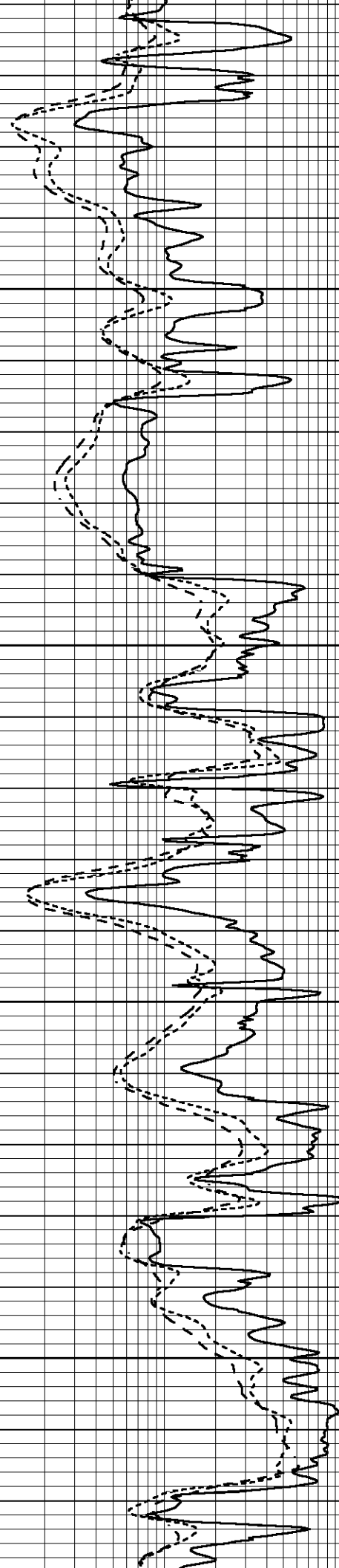


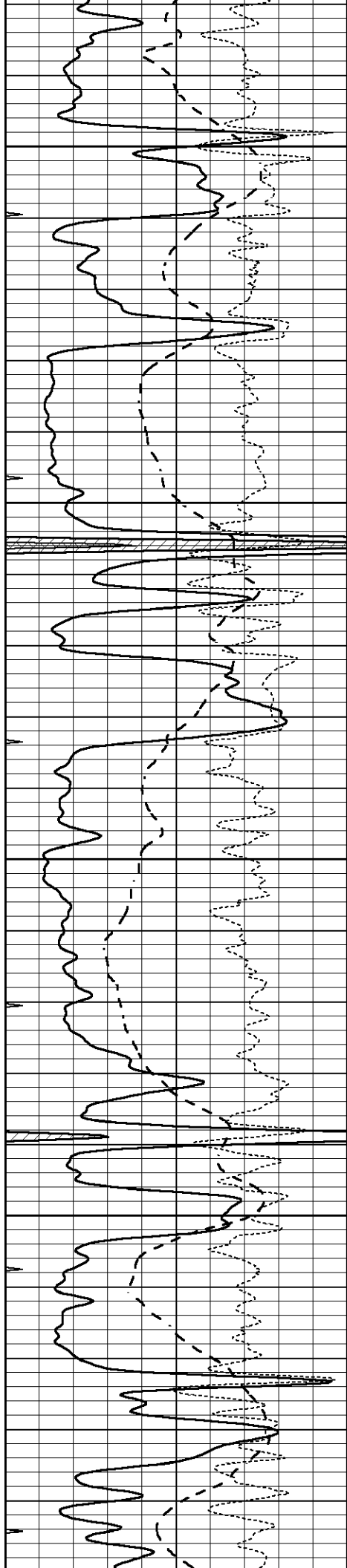
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3700

3750

3800





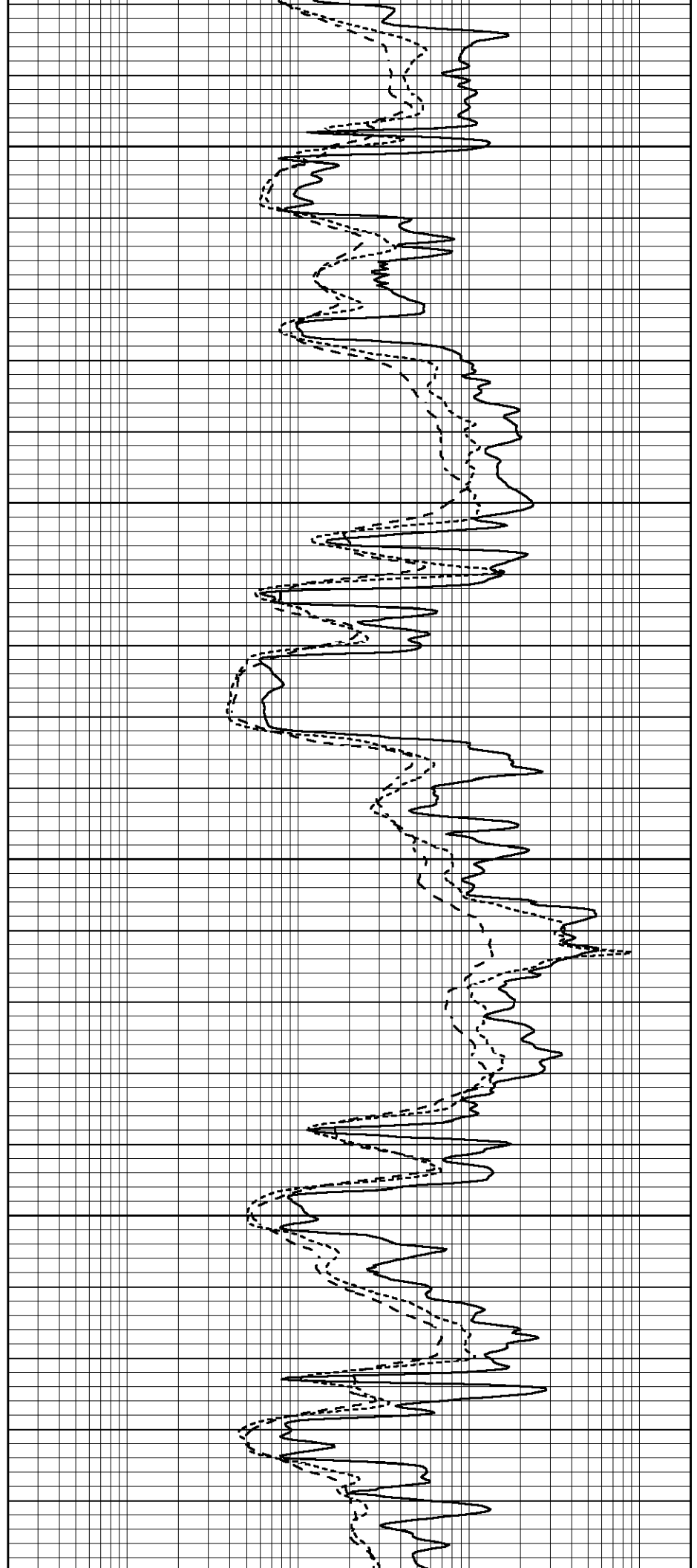
3850

3900

3950

4000

4050



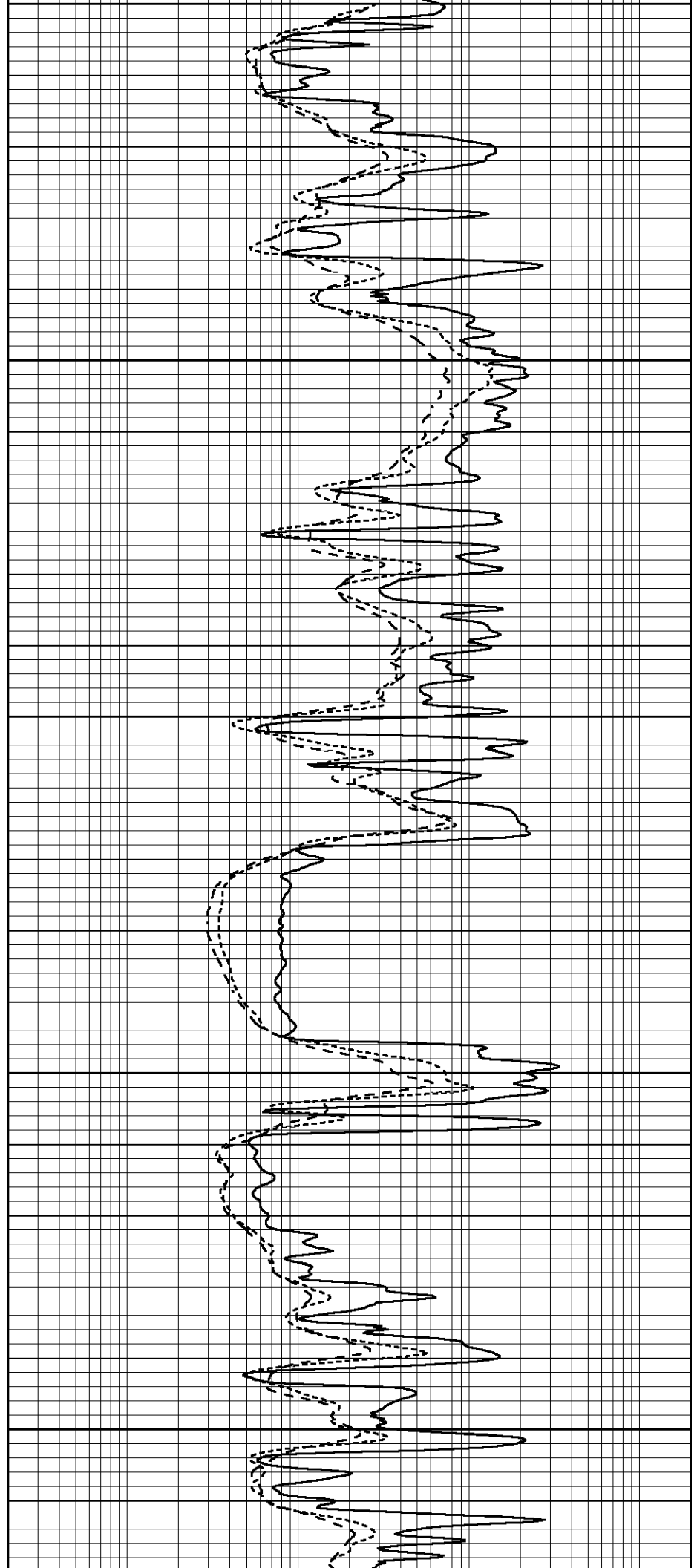
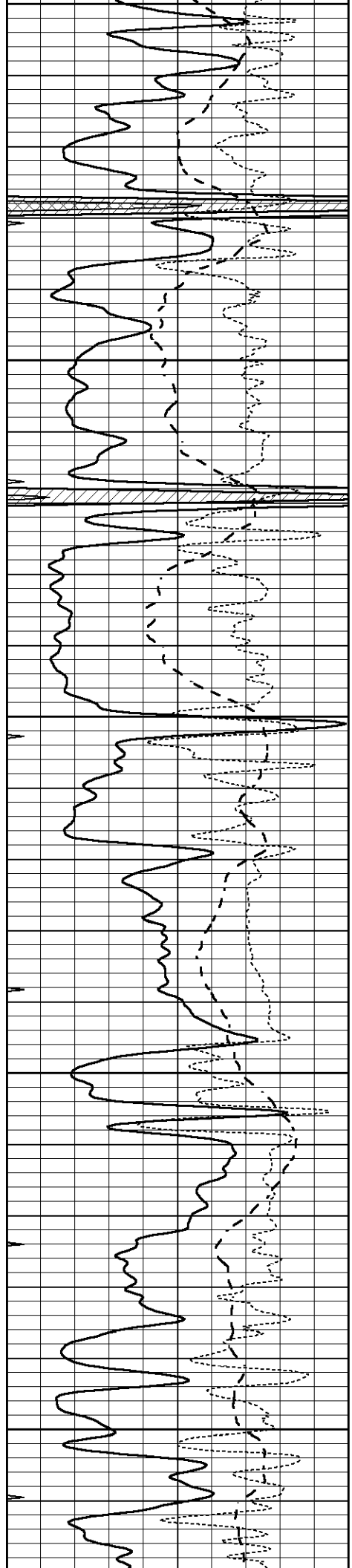
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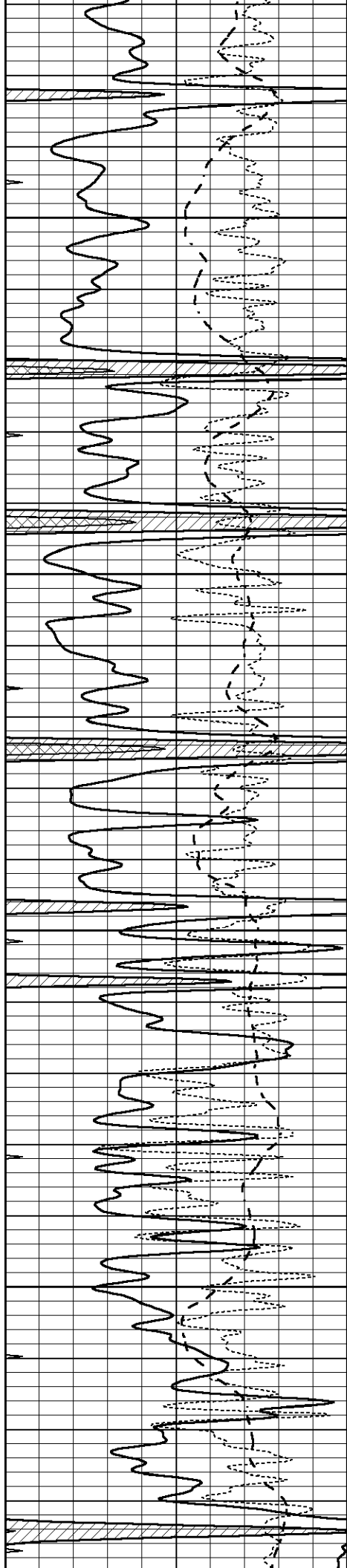
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4150

4200

4250



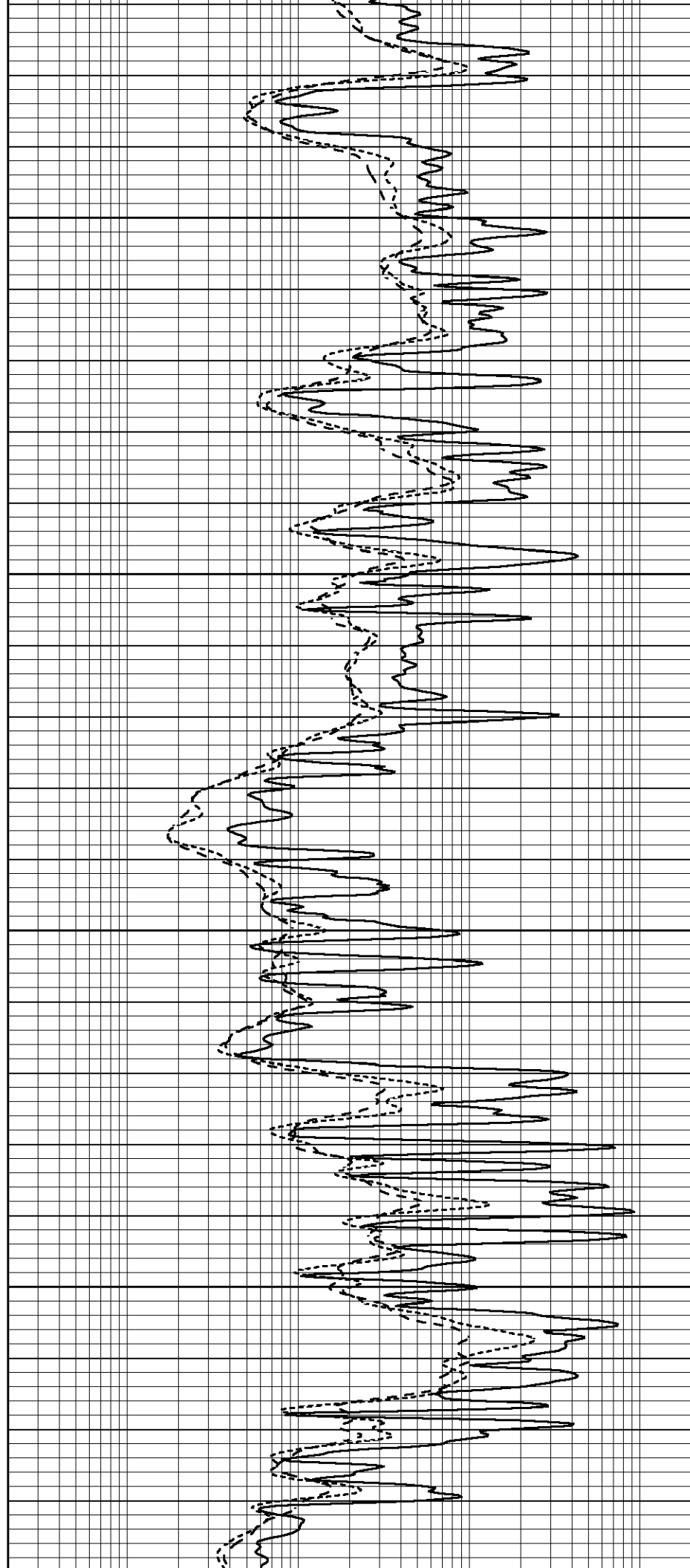


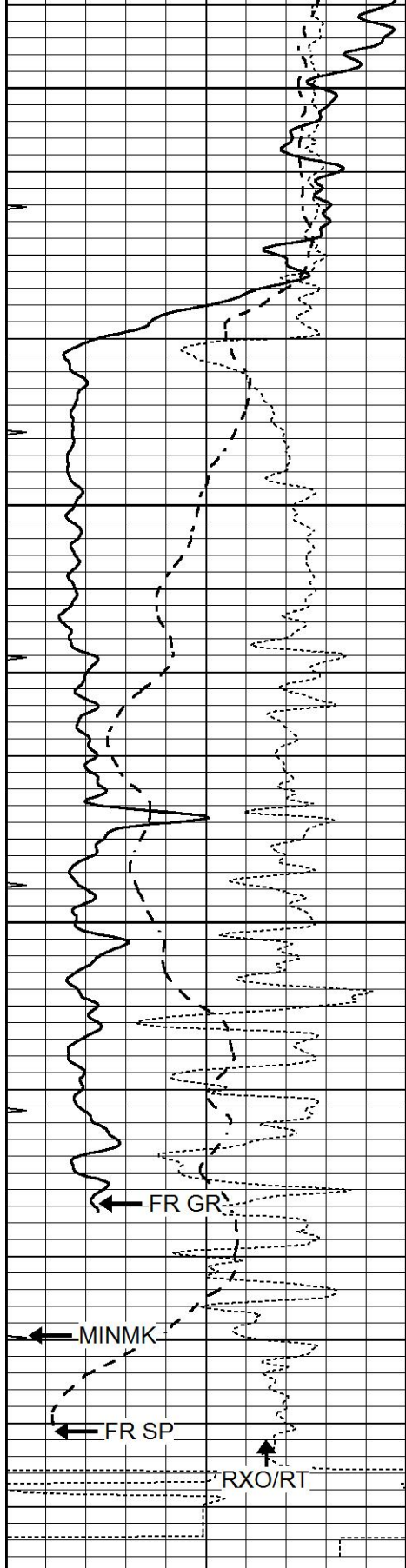
4300

4350

4400

4450





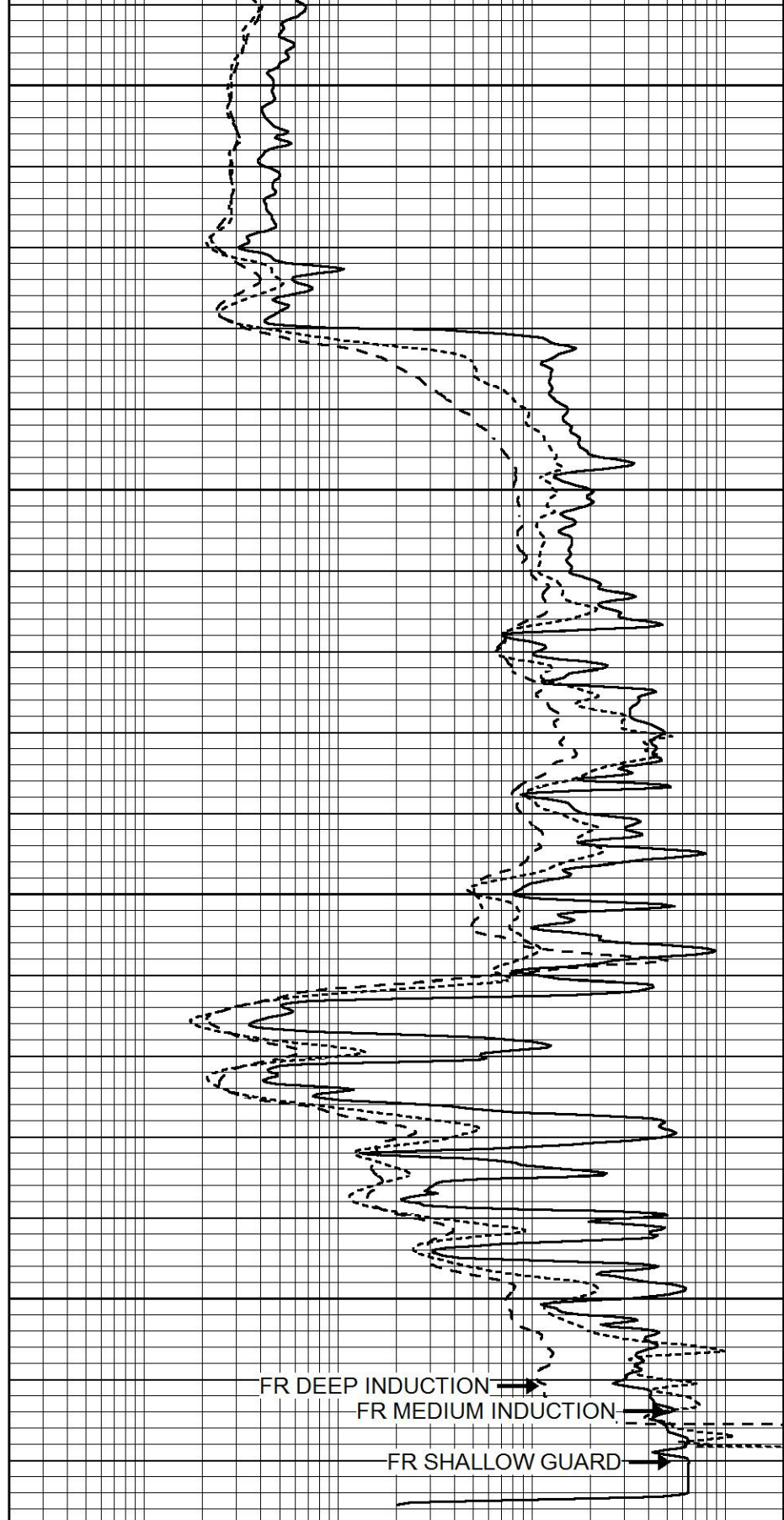
4500

4550

4600

4650

LTD 4672



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



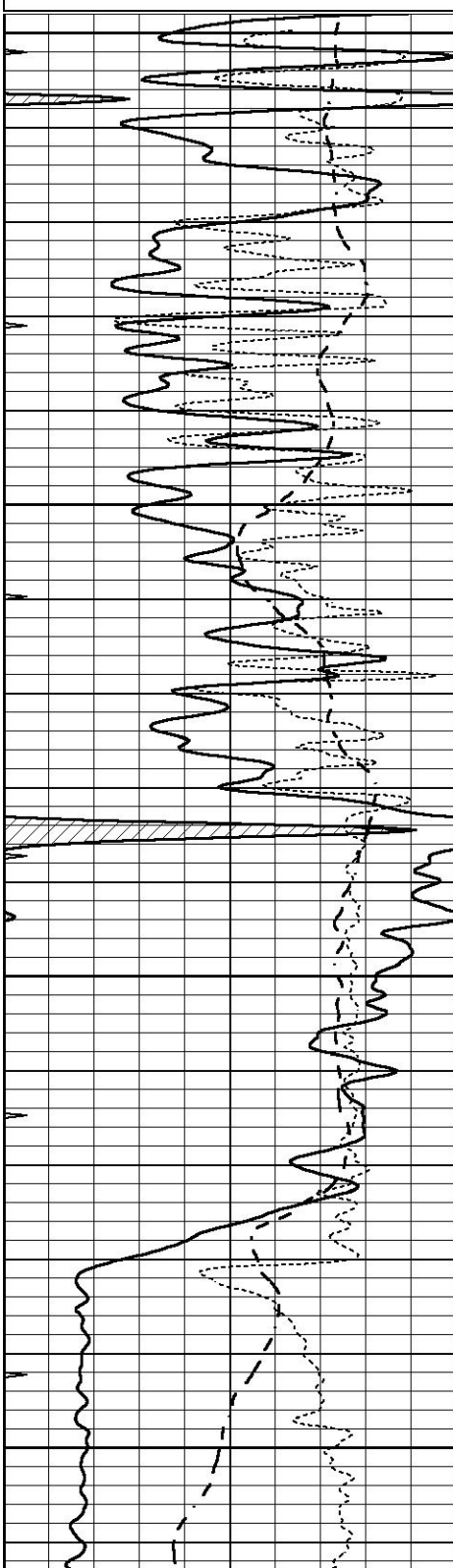


REPEAT SECTION

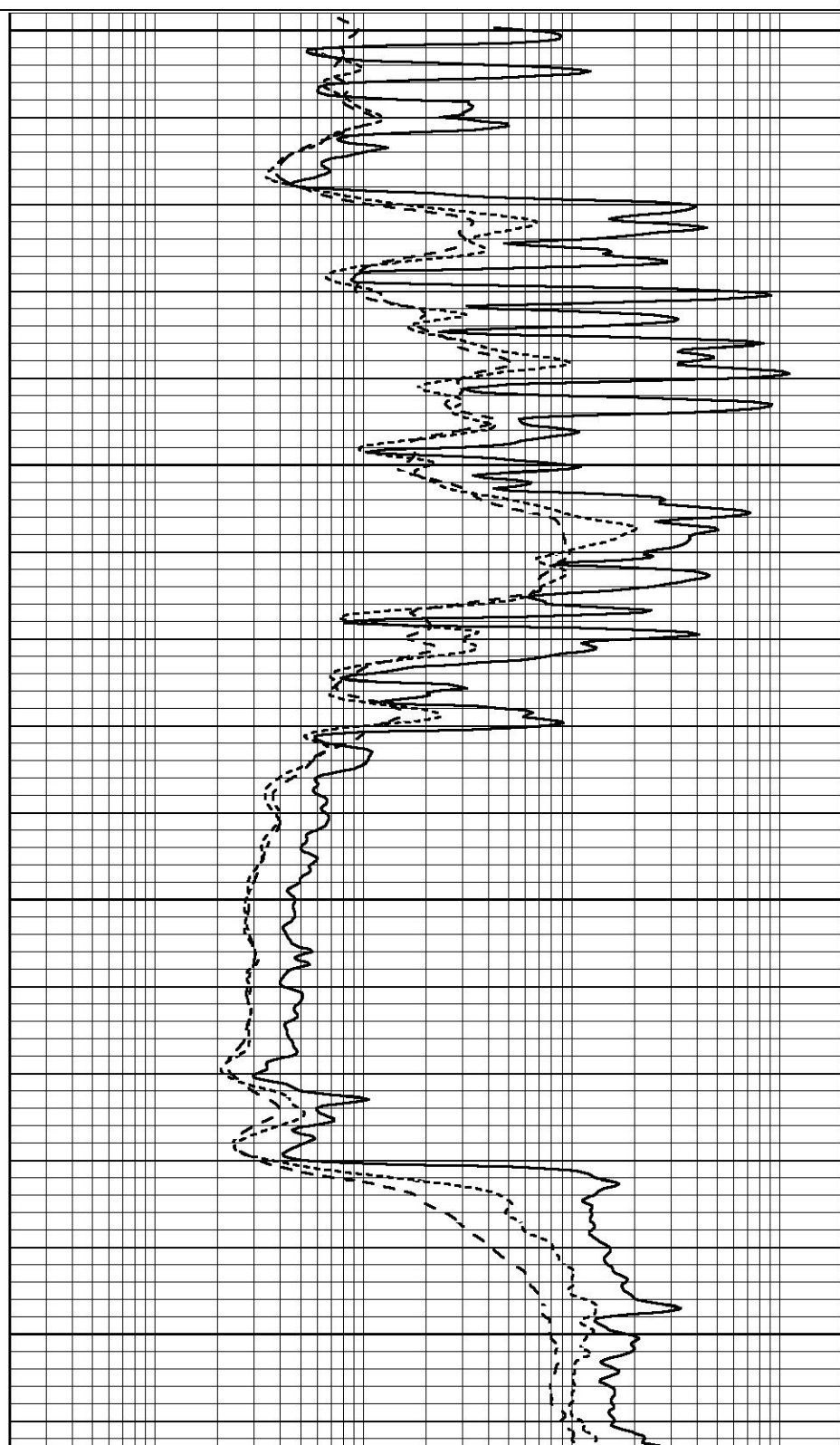
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Dataset Pathname pass2.3
Presentation Format _dil
Dataset Creation Thu Jun 18 16:04:49 2020
Charted by Depth in Feet scaled 1:240

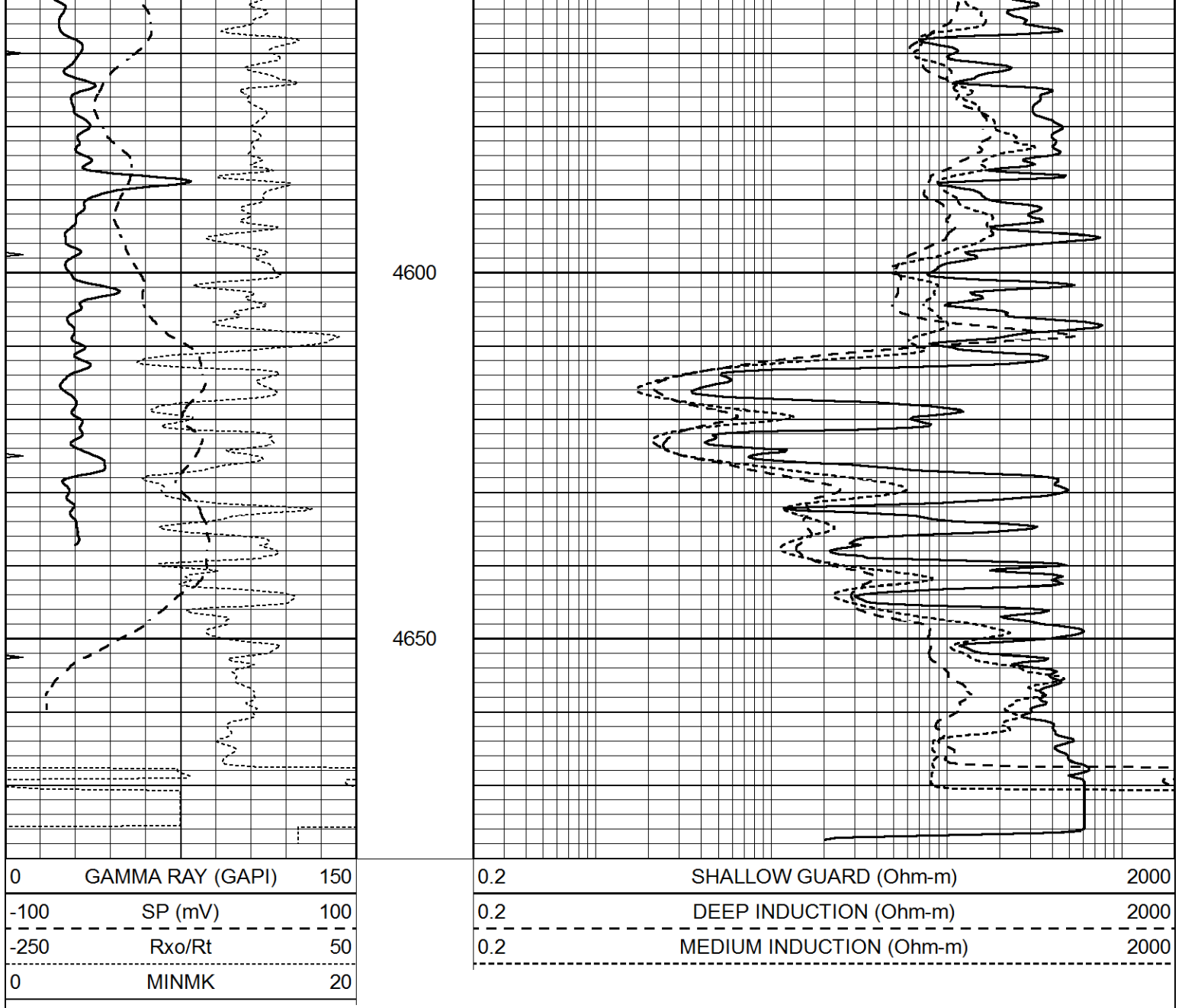
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



4400
4450
4500
4550





Calibration Report

Database File 4546pe.db
 Dataset Pathname pass3.7
 Dataset Creation Thu Jun 18 17:13:35 2020

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Thu Jun 18 15:47:26 2020
 Downhole Cal Performed: Thu Mar 12 11:45:10 2020
 After Survey Verification Performed: Thu Mar 12 11:45:00 2020

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	-8.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-63.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.035	0.710	V	0.000	464.000	mmho/m	655.077	-6.100

Downhole Calibration		Readings		References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	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		
		0.000	mmho-m		4000.000	mmho-m		

Litho Density Calibration Report
Serial: 004 Model: PRB

Master Calibration		Performed Mon May 11 10:45:58 2020			
	Background	Magnesium	Aluminum	Aluminum+Fe	
Window 1	1199.7	10039.4	3208.4	2838.9	cps
Window 2	1096.3	8590.5	2806.1	2527.9	cps
Window 3	934.1	5176.2	1855.7	1739.5	cps
Window 4	267.0	271.6	264.8	264.9	cps
Long Space	0.0	7494.2	1709.8	1431.6	cps
Short Space	1.1	1784.3	1183.7	971.1	cps
Rho		1.7100	2.5900	0.0000	g/cc
Pe		2.0000	2.7500	5.7900	
Rib Angle	: 44.5	Rib Slope	: 0.982	Density/Spine Ratio	: 0.574
Spine Angle	: 74.5	Spine Slope	: 3.601	Spine Intercept	: -18.0

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: 070808PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Wed Jul 03 10:25:53 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.3000 GAPI/cps