



DUAL INDUCTION LOG

PIONEER
Pioneer Energy Services

Company **MURFIN DRILLING CO., INC.**

Well **GAMBLIN #1-22**

Field **WILDCAT**

County **CHEYENNE** State **KANSAS**

Location: API #: 15-023-21495-00-00

SEC 22 TWP 2S RGE 37W

Permanent Datum GROUND LEVEL Elevation 3410'

Log Measured From KELLY BUSHING

Drilling Measured From KELLY BUSHING

Other Services

CNL/CDL
MEL/BHCS

Elevation
K.B. 3415'
D.F. N/A
G.L. 3410'

Date 9/25/2018

Run Number ONE

Depth Driller 4950'

Depth Logger 4954'

Bottom Logged Interval 4953'

Top Log Interval 350'

Casing Driller 8.625" @ 387'

Casing Logger 0'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 900

Density / Viscosity 9.0 61

pH / Fluid Loss 11.5 6.0

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.75 @ 82

Rmt @ Meas. Temp 0.56 @ 82

Rmc @ Meas. Temp 1.01 @ 82

Source of Rmt / Rmc CHARTS

Rm @ BHT 0.49 @ 126

Operating Rig Time 5 HOURS

Max Rec. Temp. F 126

Equipment Number 91

Location HAYS

Recorded By IAN MABB

Witnessed By SAMAN SHARIFAIE

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

BIRD CITY, KS.

EAST TO RD. 32, NORTH 7 MILES, EAST INTO AT
THE TANK BATTERY

Log Measured From: KELLY BUSHING 5' Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: IAN MABB

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: SAMAN SHARIFAIE

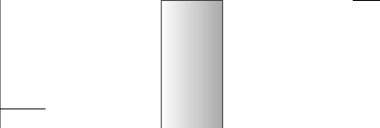
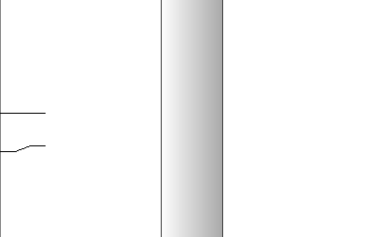
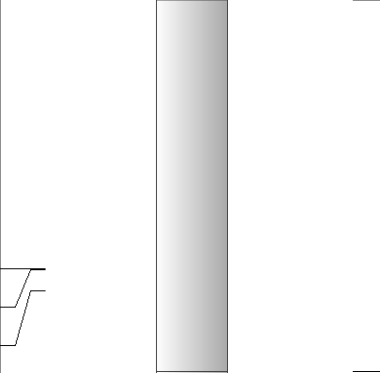
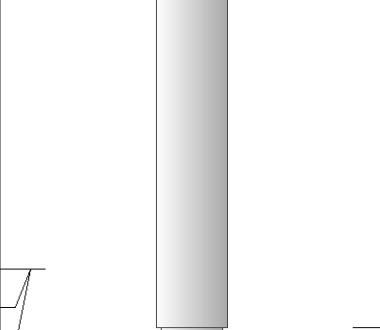
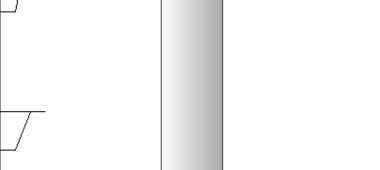
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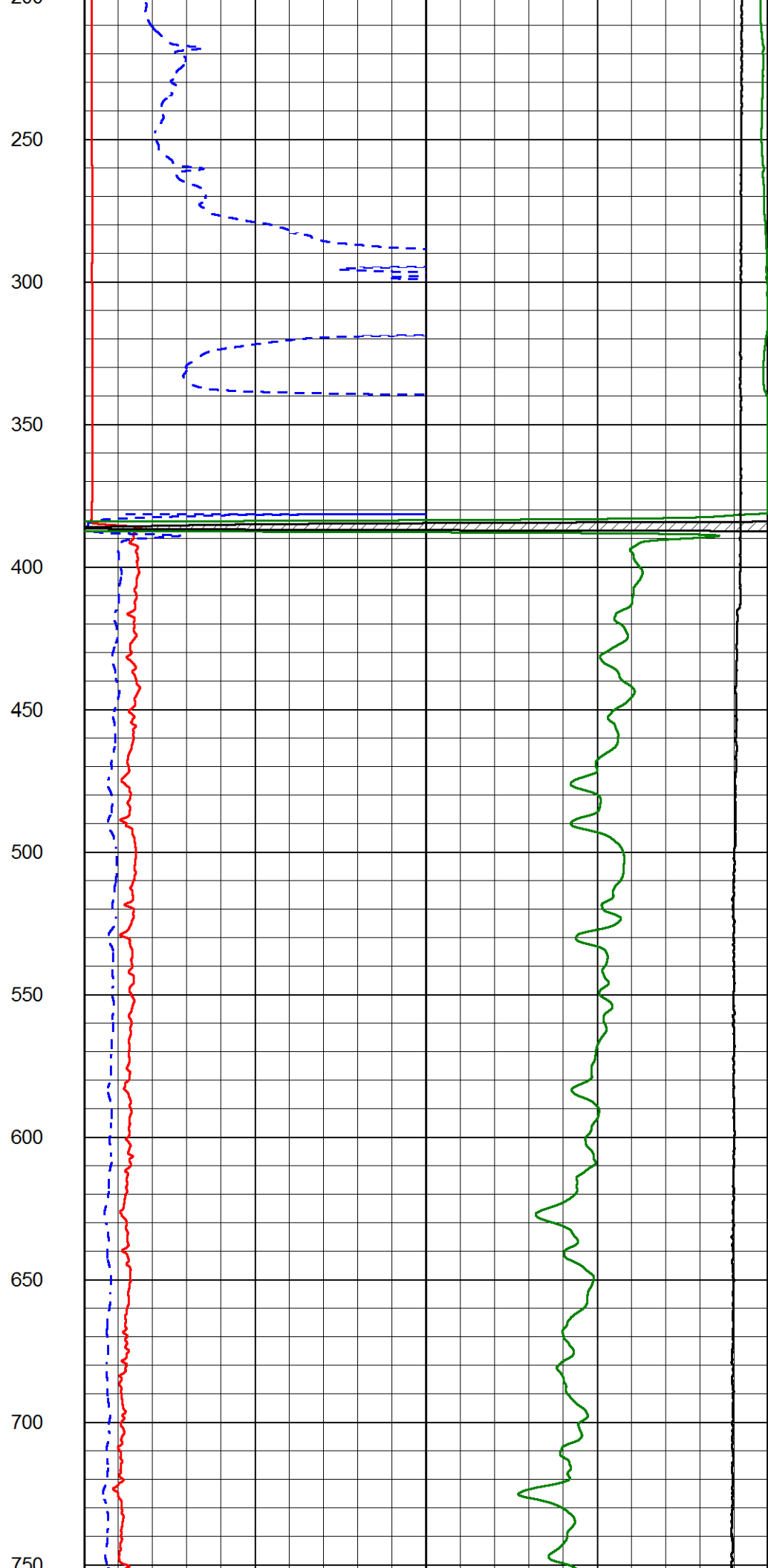
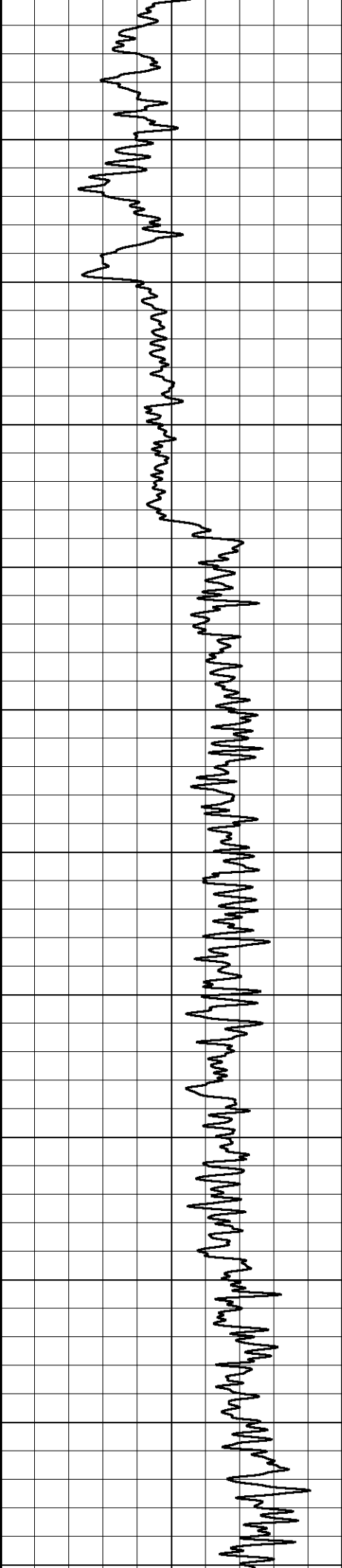
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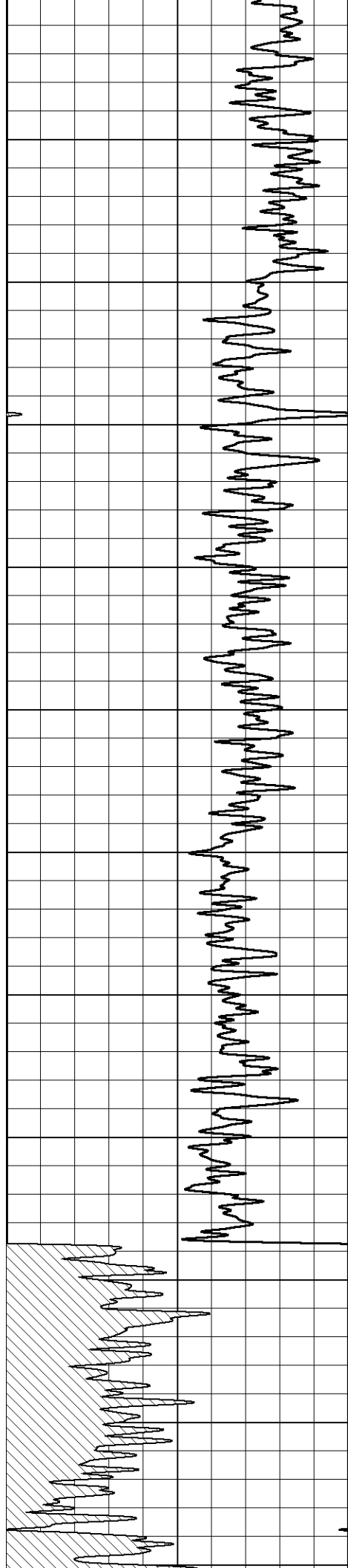
Secondary Witness:

Top - Bottom

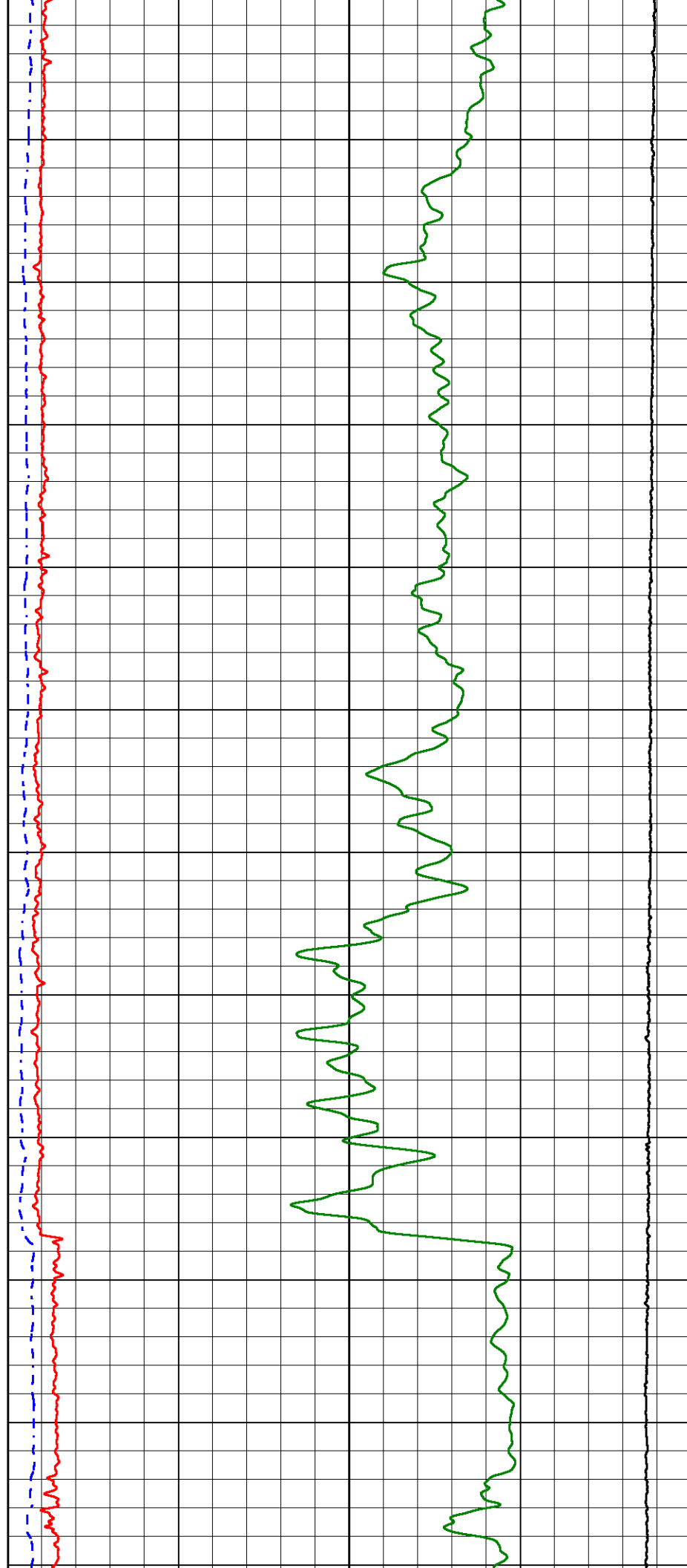
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	689	3
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
5	55	0	5.5	0	4954	126	7.875

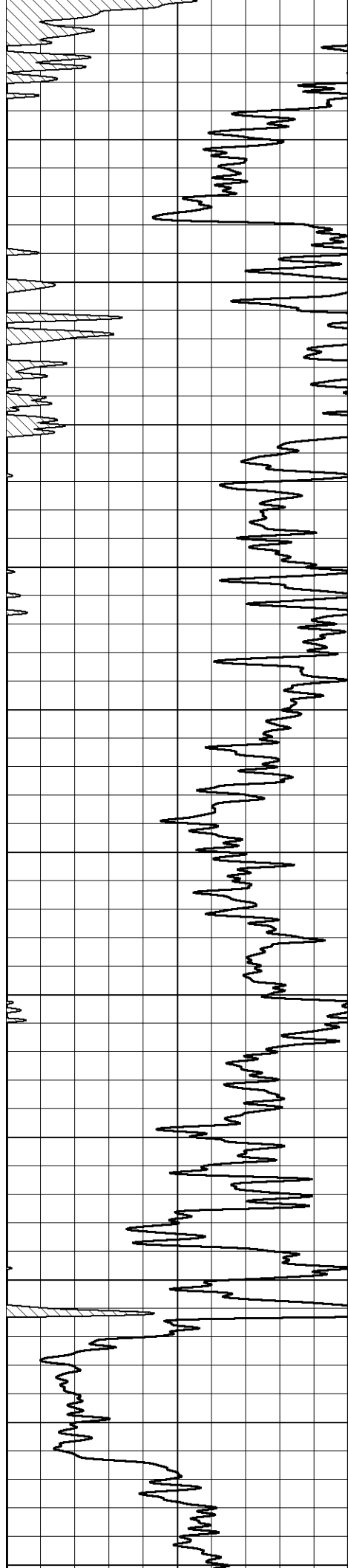
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (144-84)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					



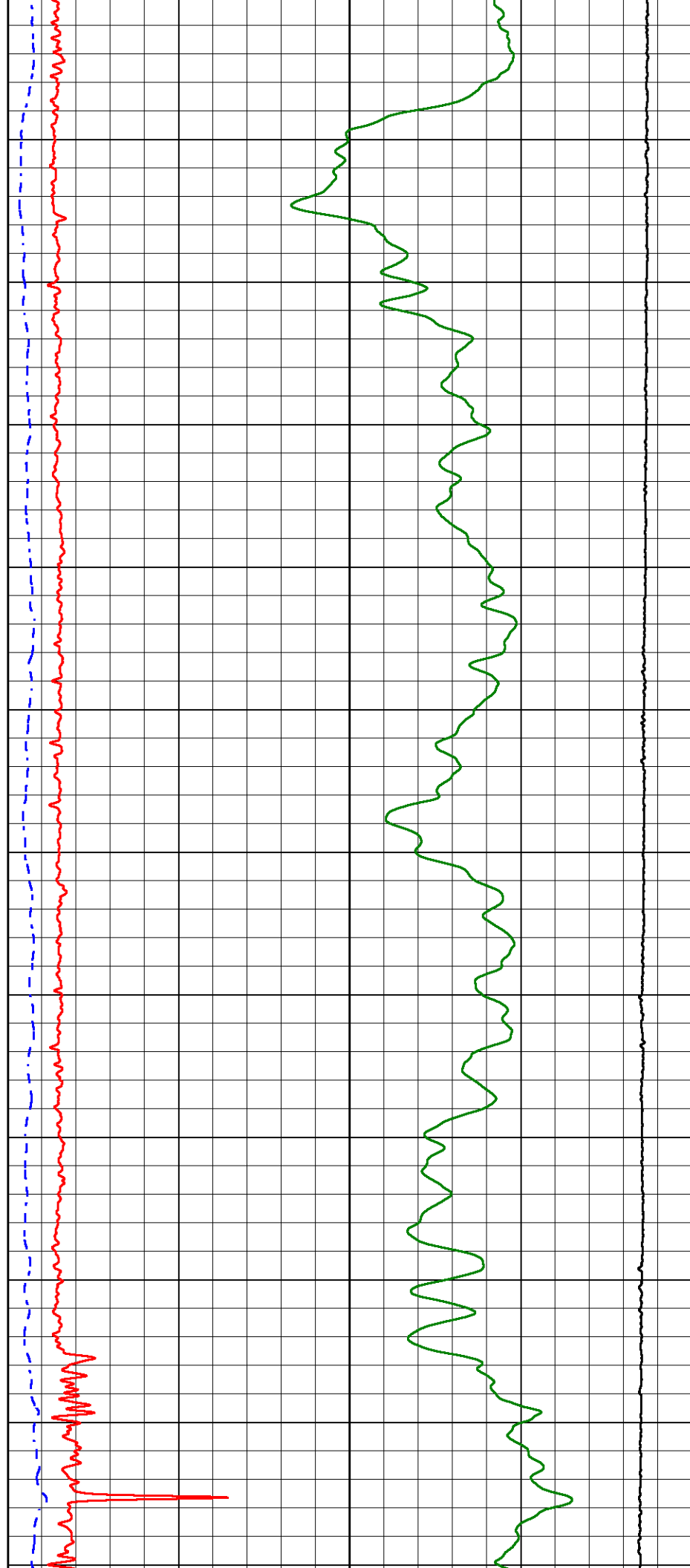


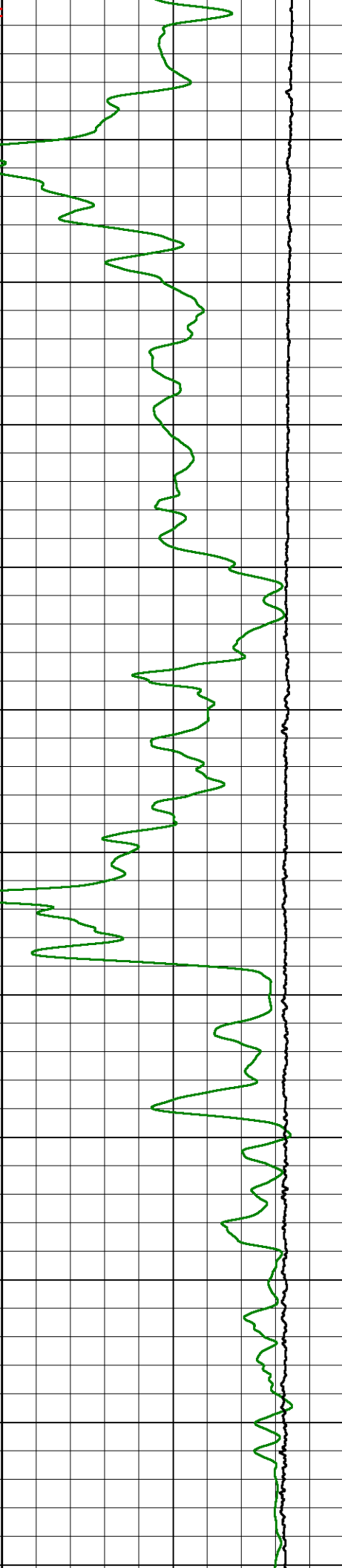
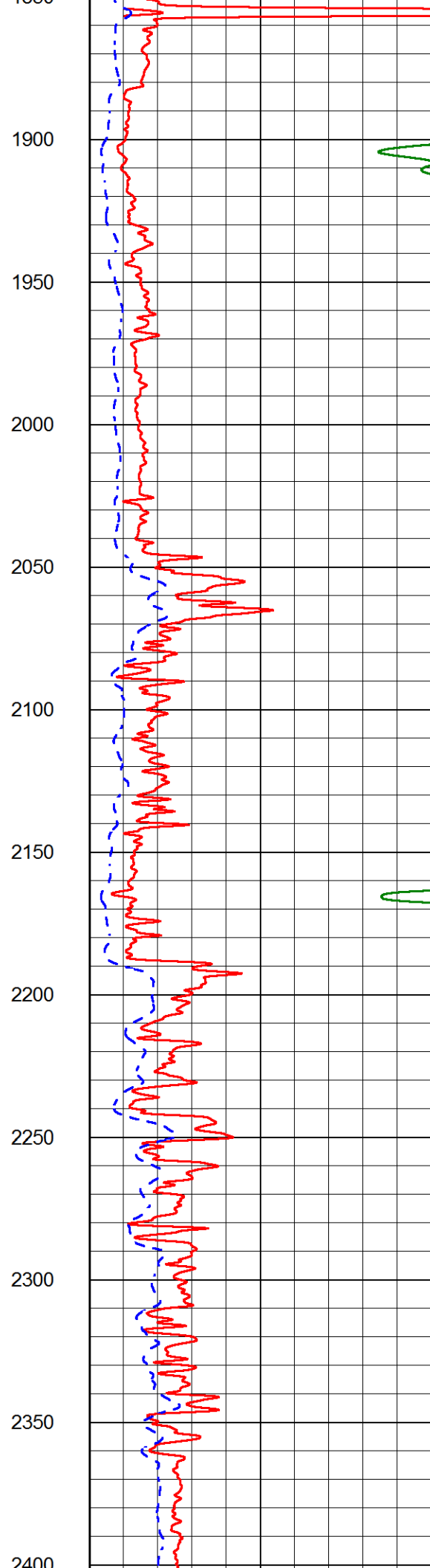
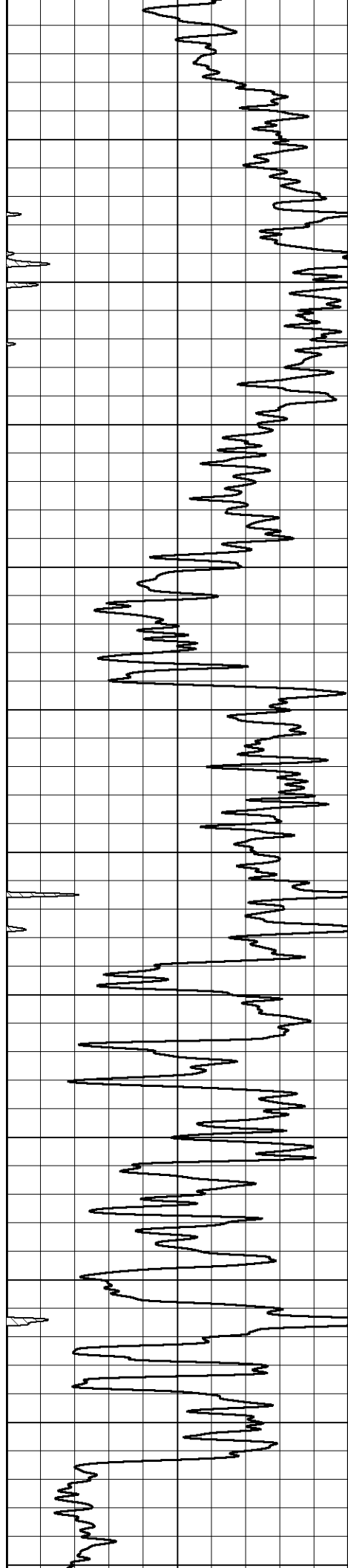
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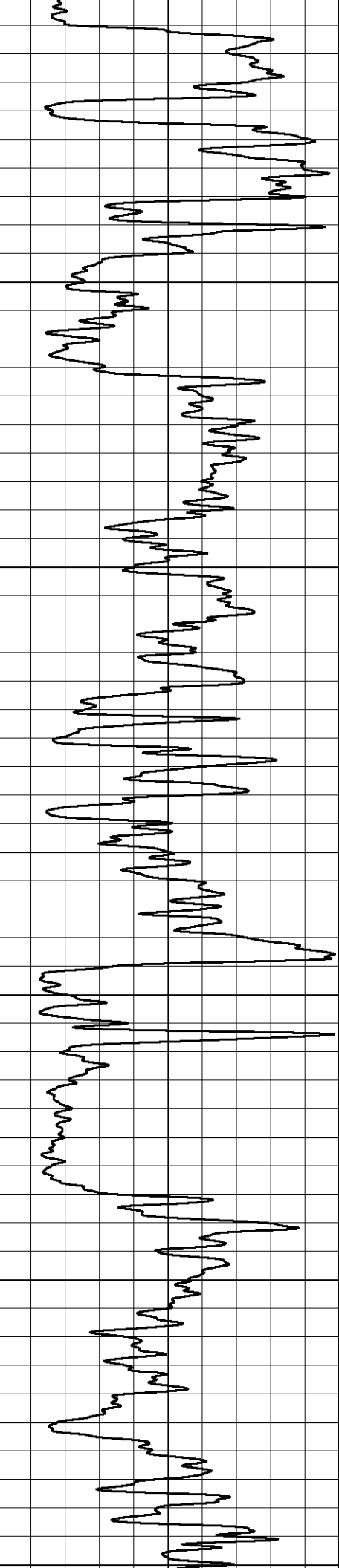




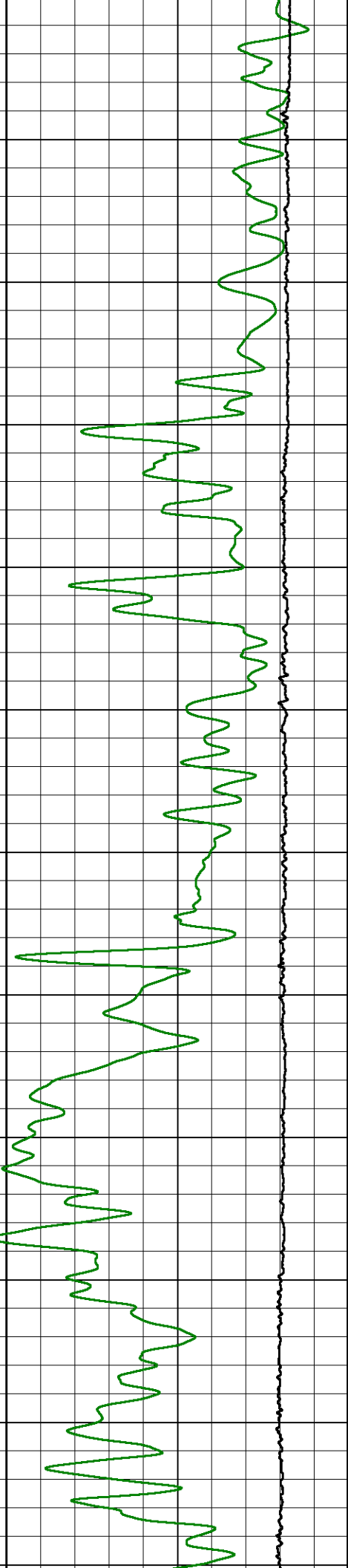
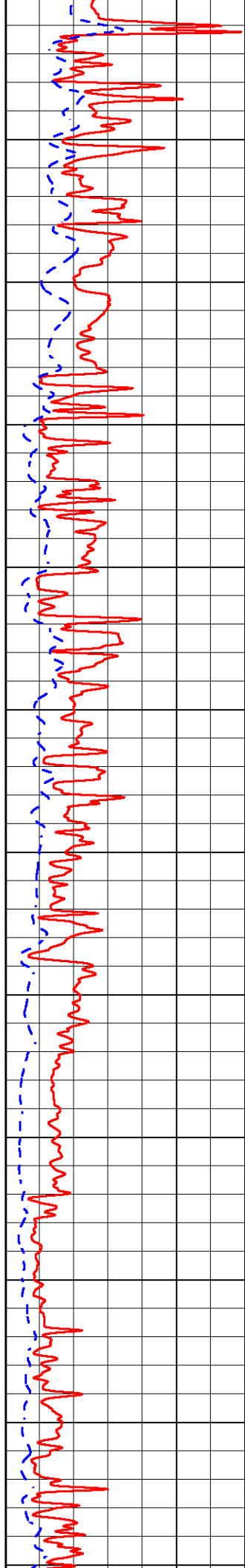
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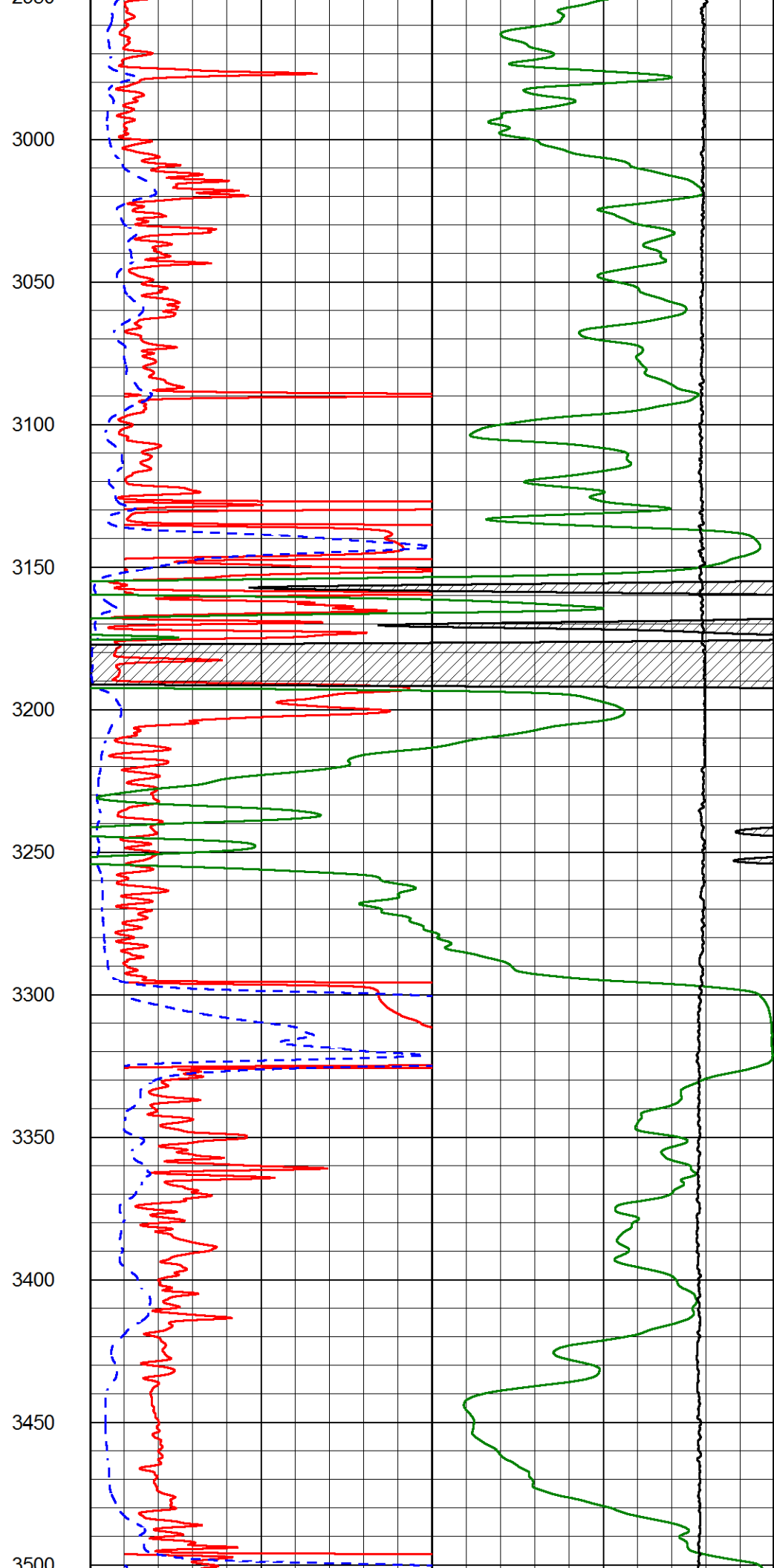
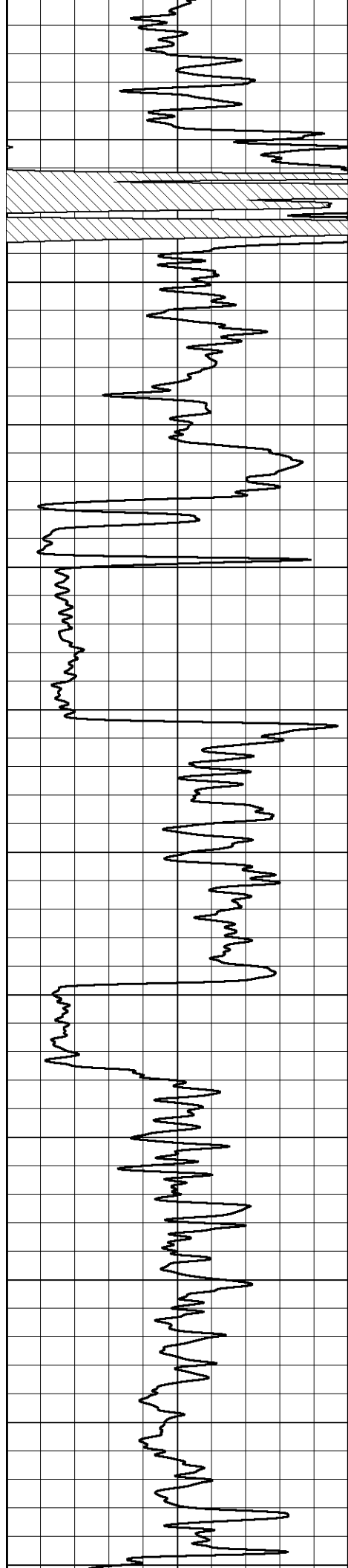


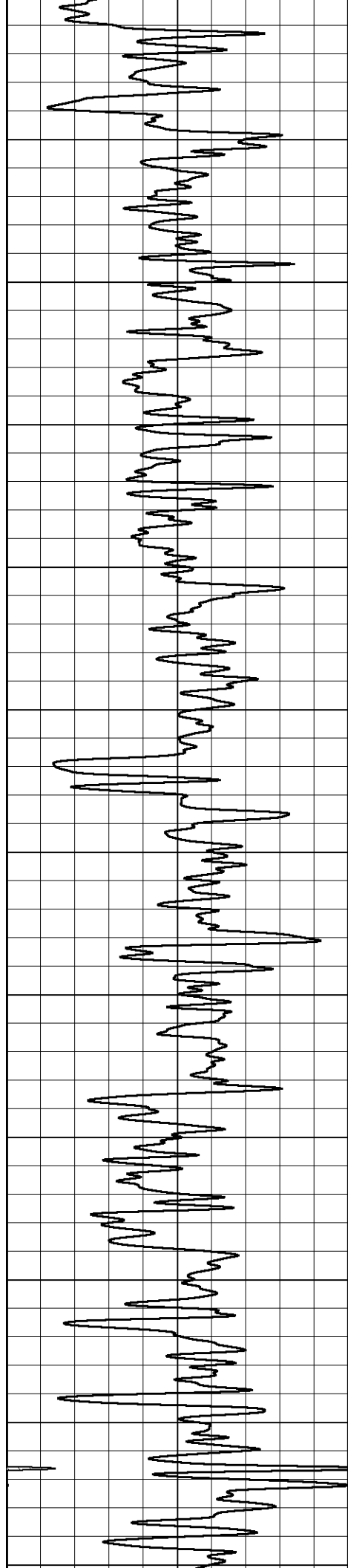




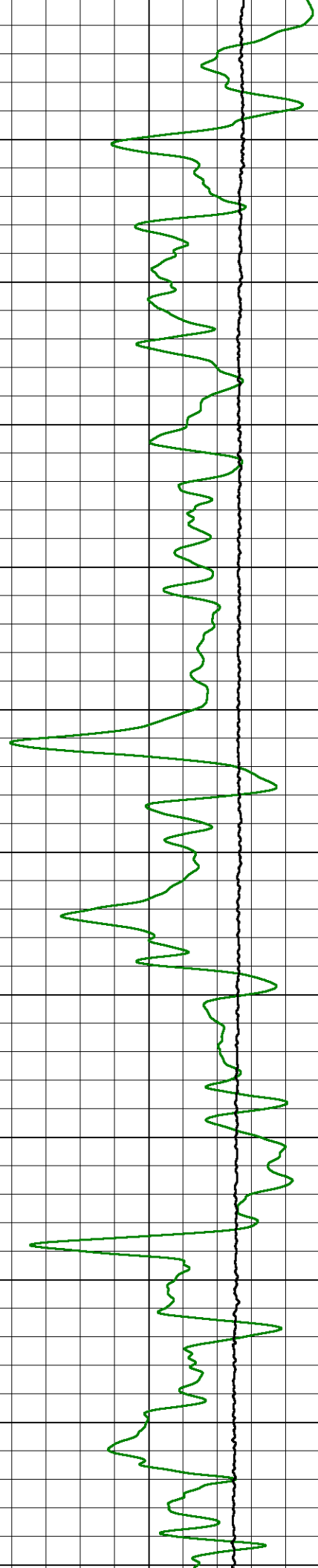
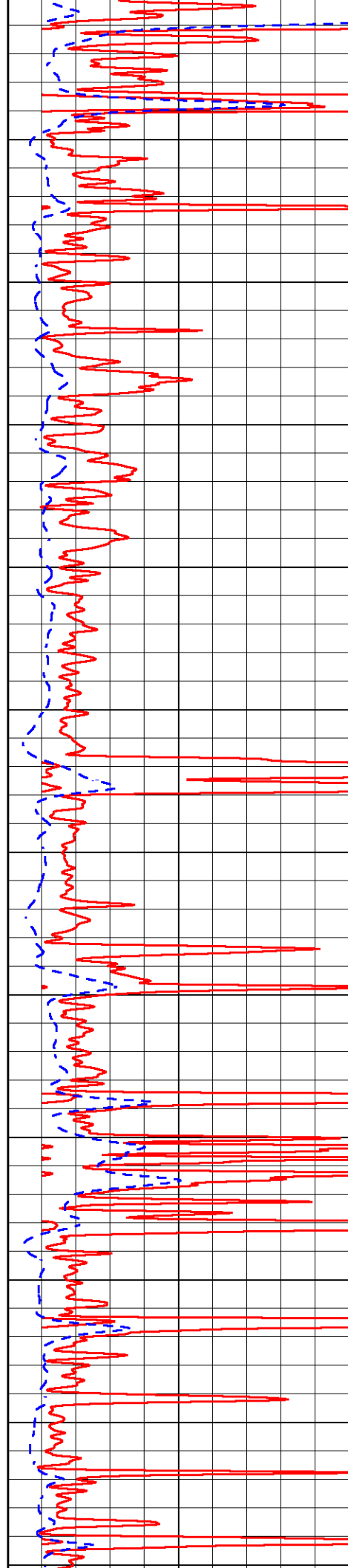
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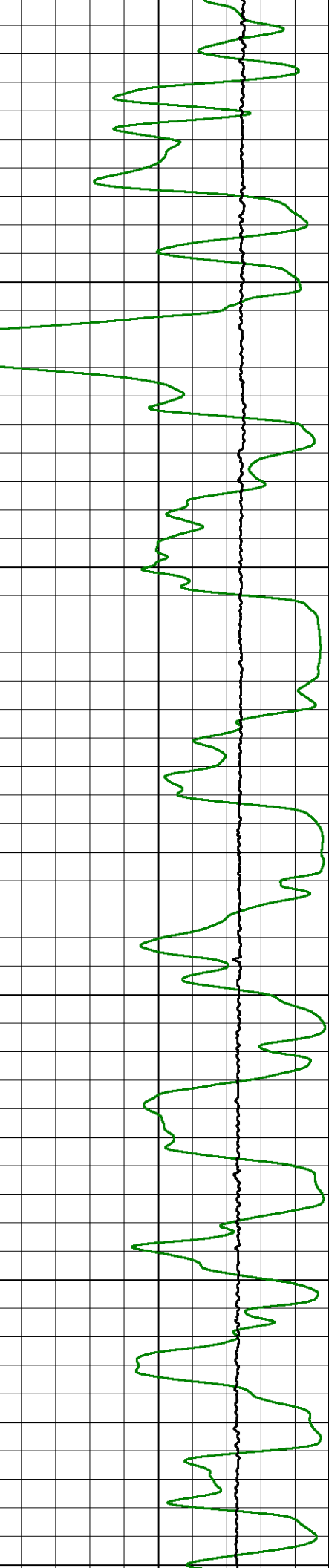
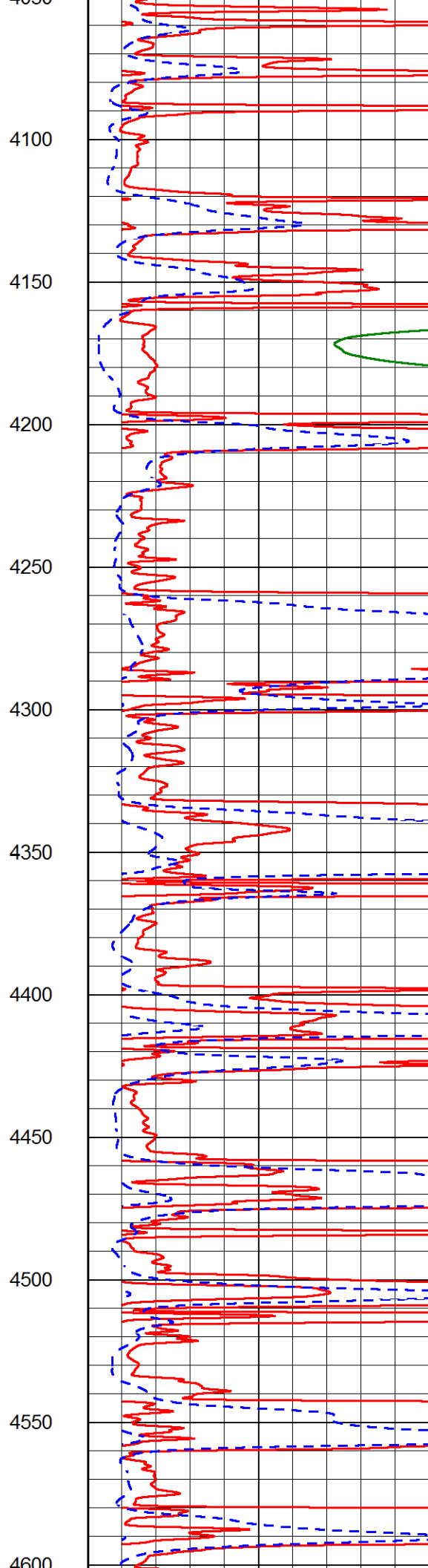
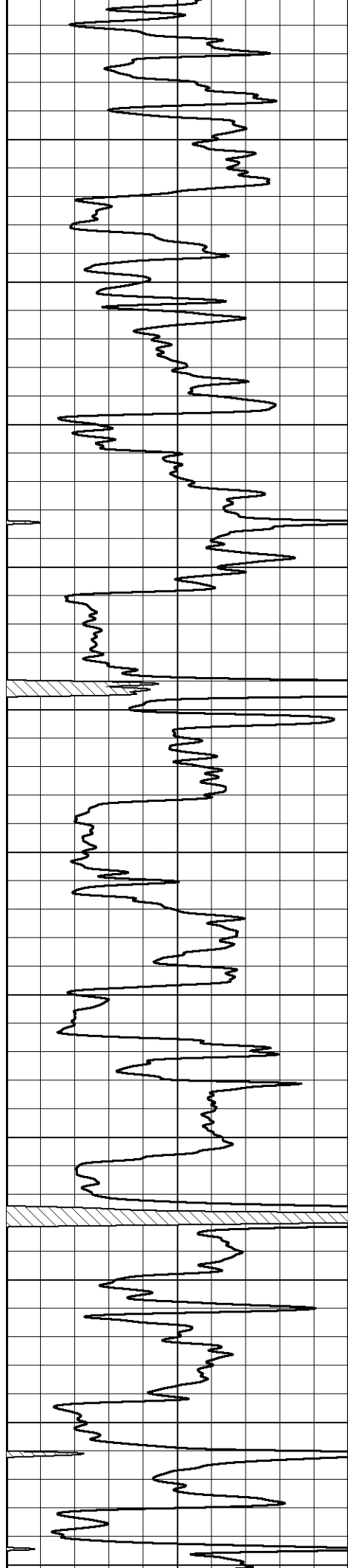


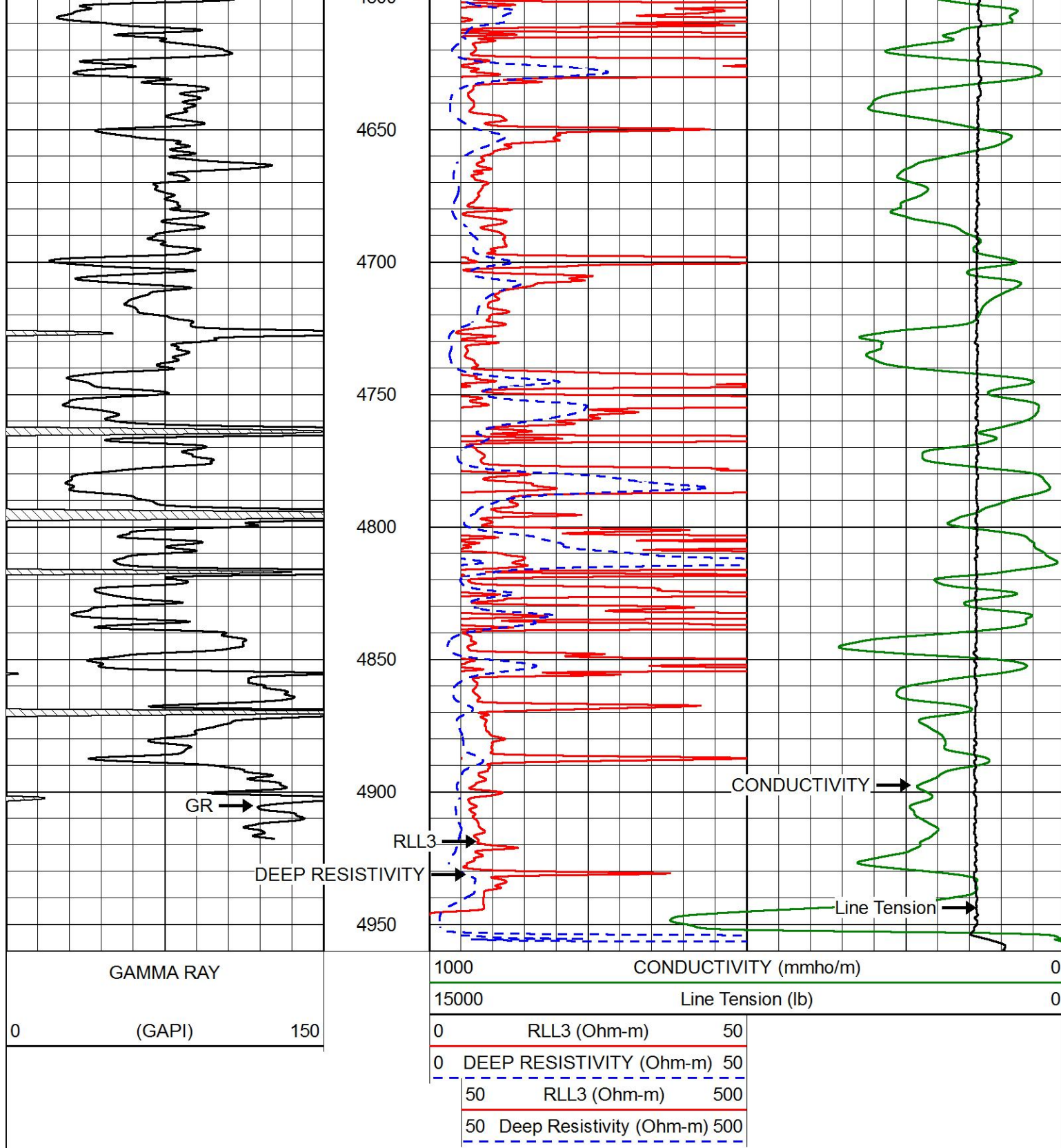




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3800
3850
3900
3950
4000
4050



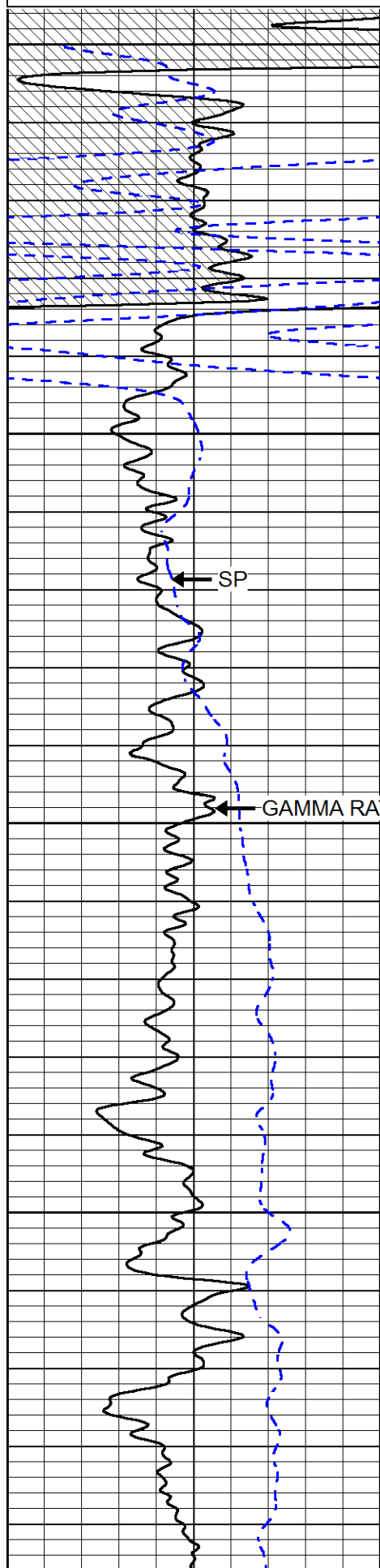




MAIN PASS

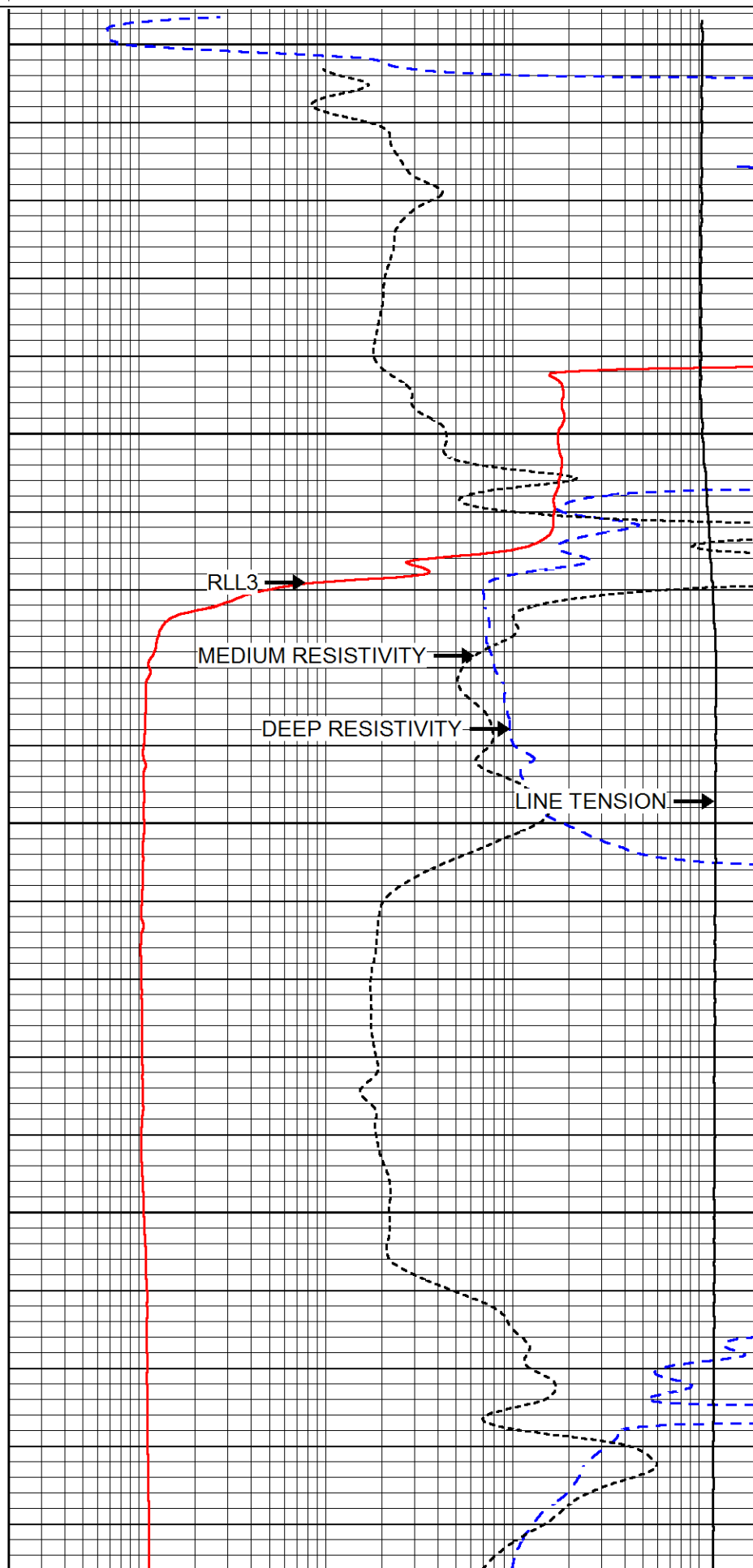
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Dataset Pathname	stackmel/pass4.1
Presentation Format	dil
Dataset Creation	Tue Sep 25 08:04:55 2018
Charted by	Depth in Feet scaled 1:240

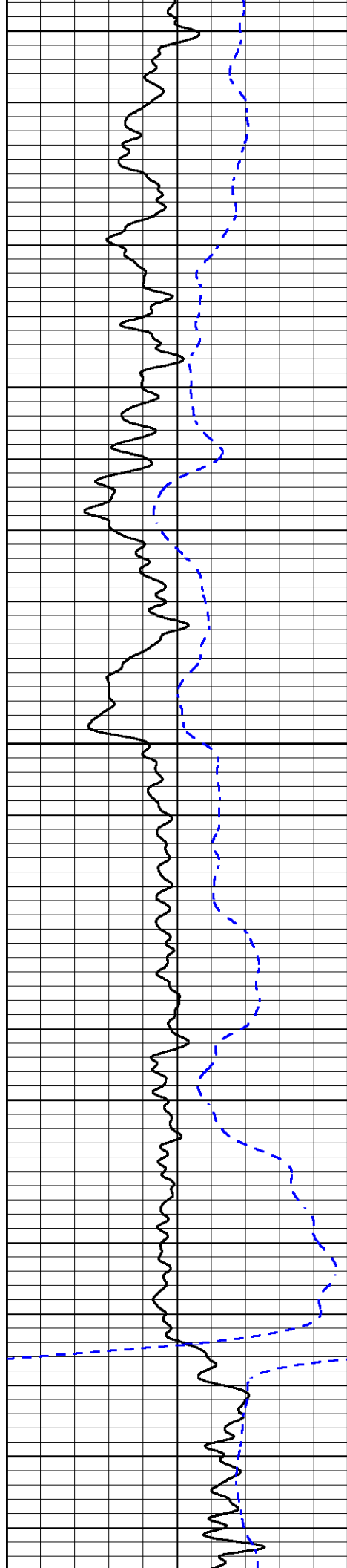
0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0



0
50
100
150

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0





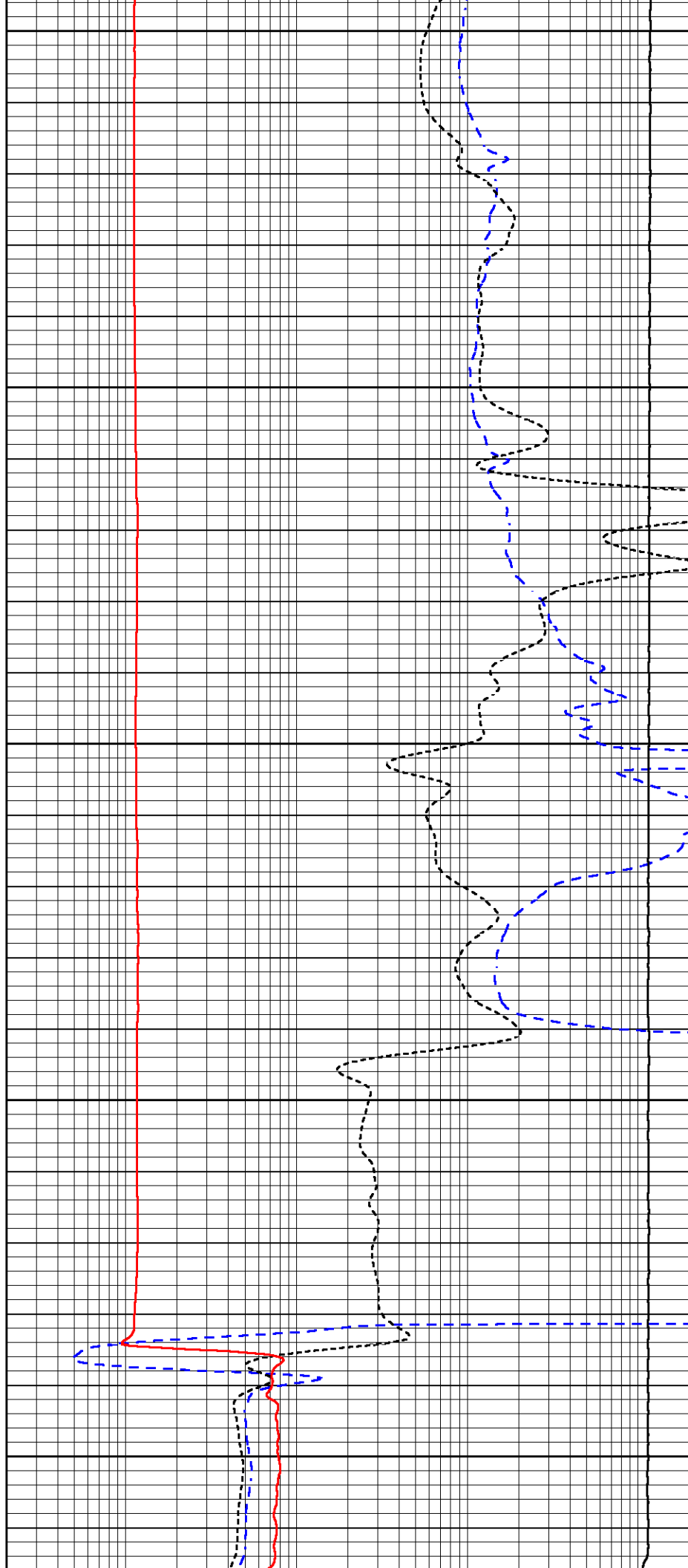
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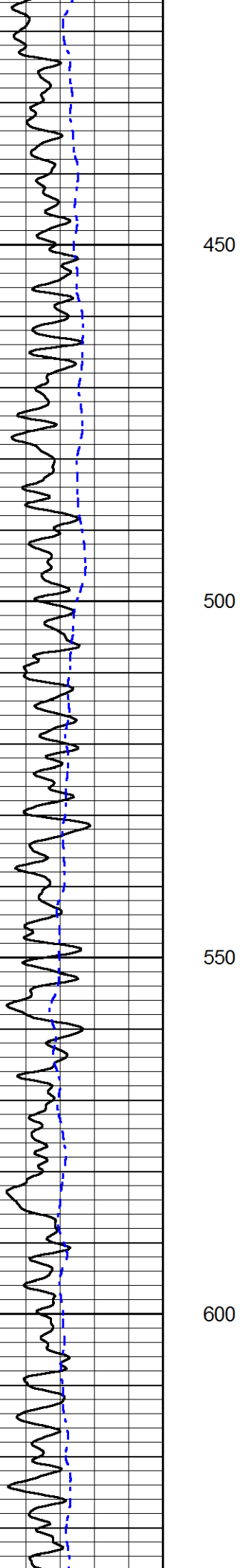
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300

350

400



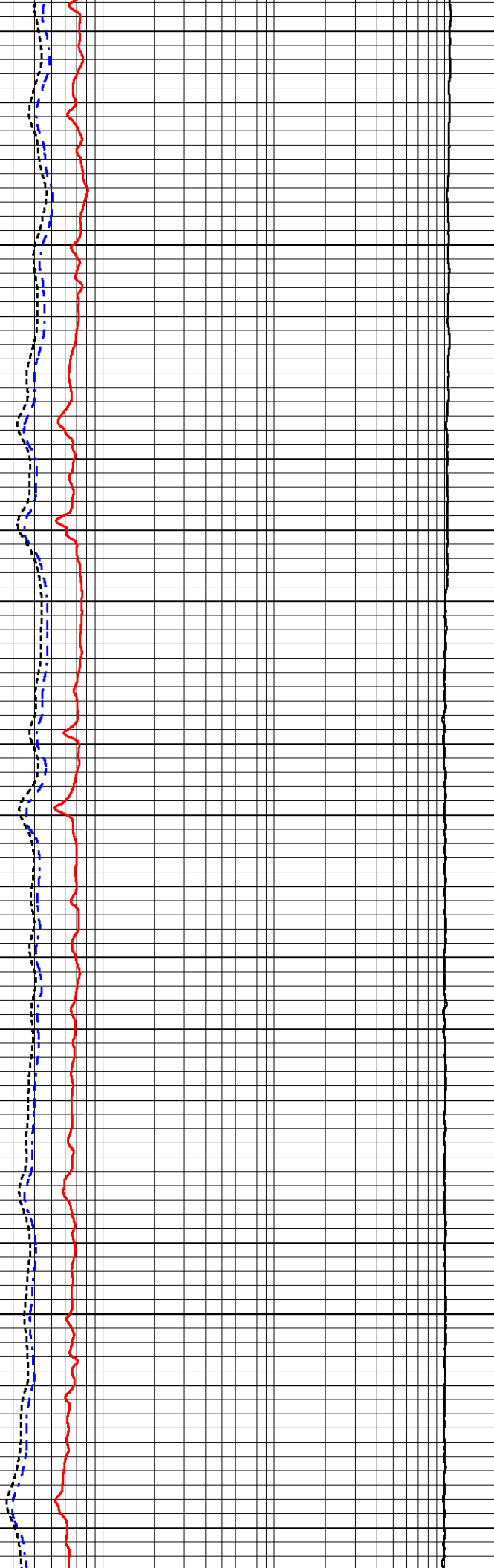


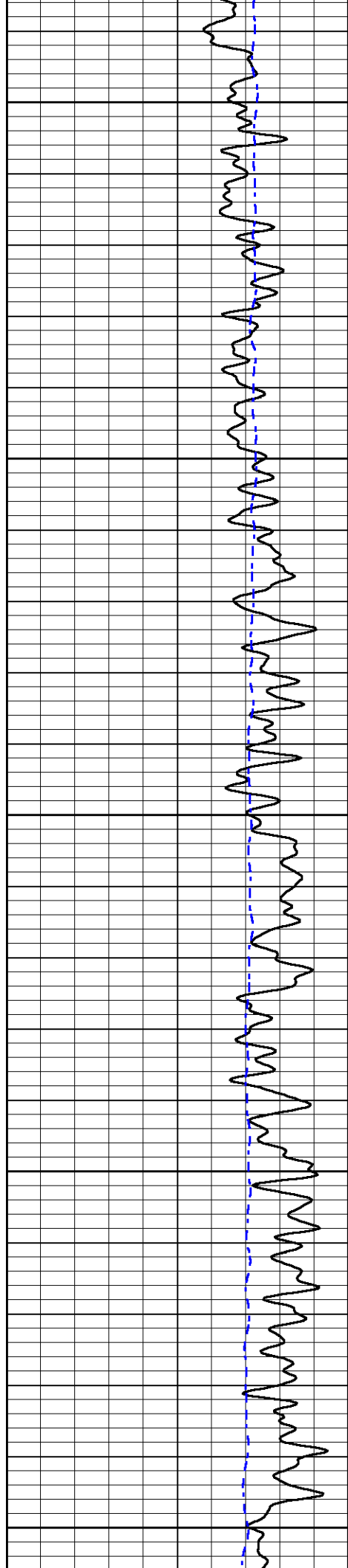
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500

550

600





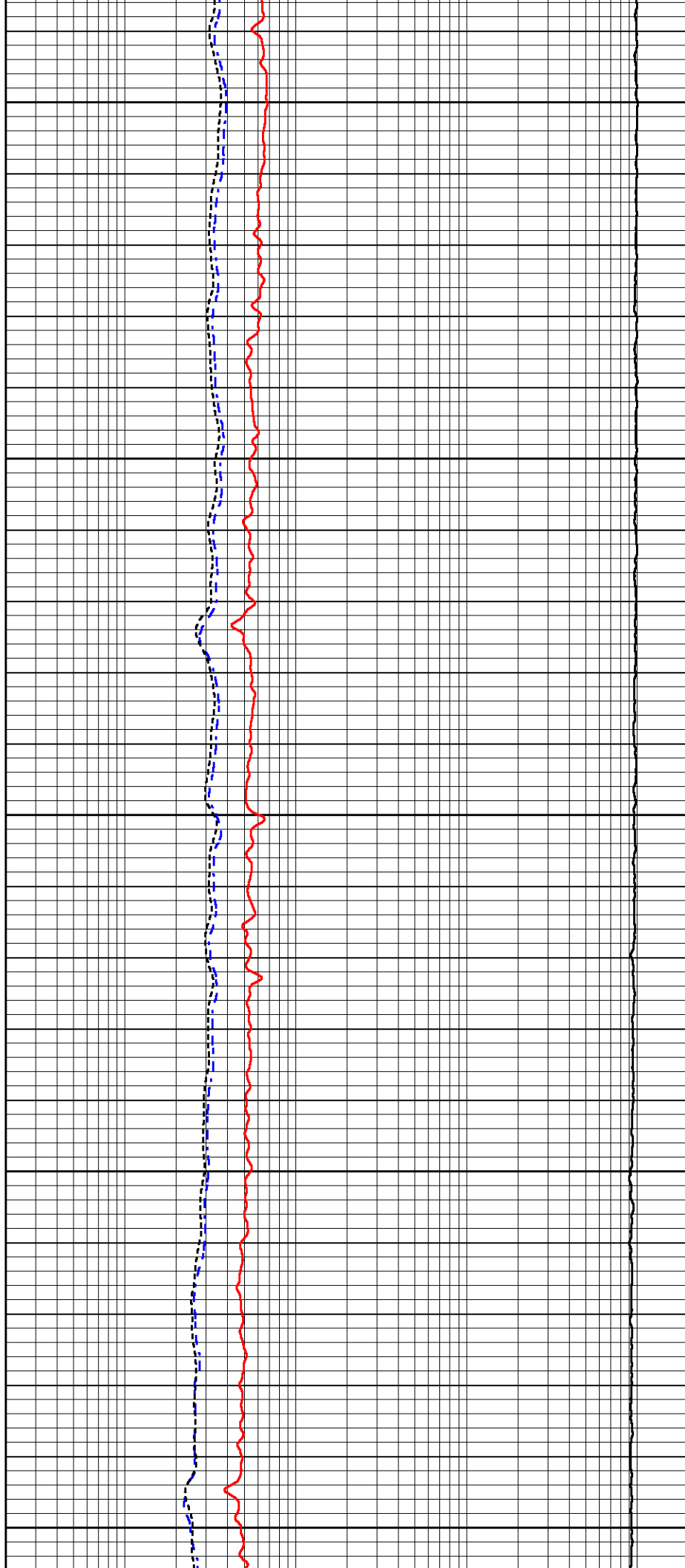
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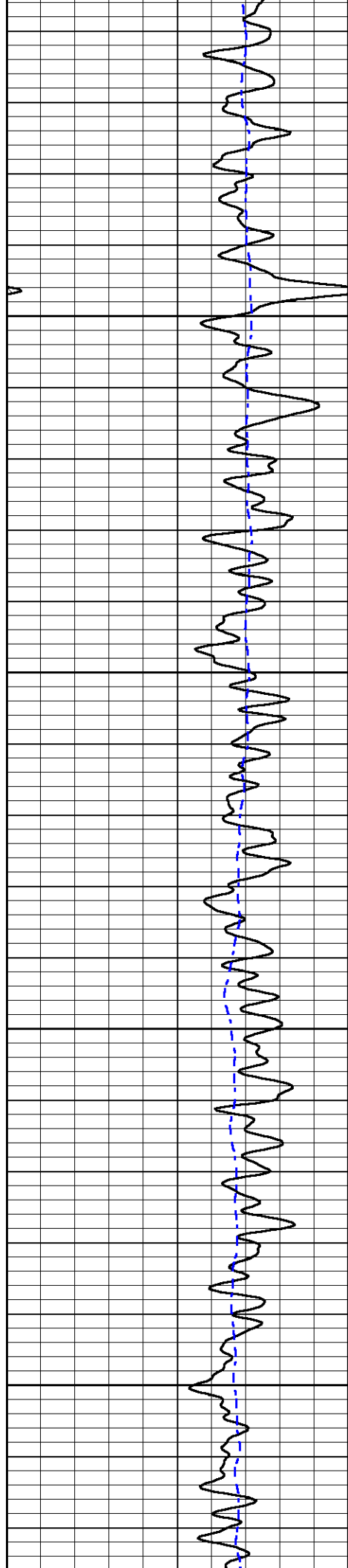
700

750

800

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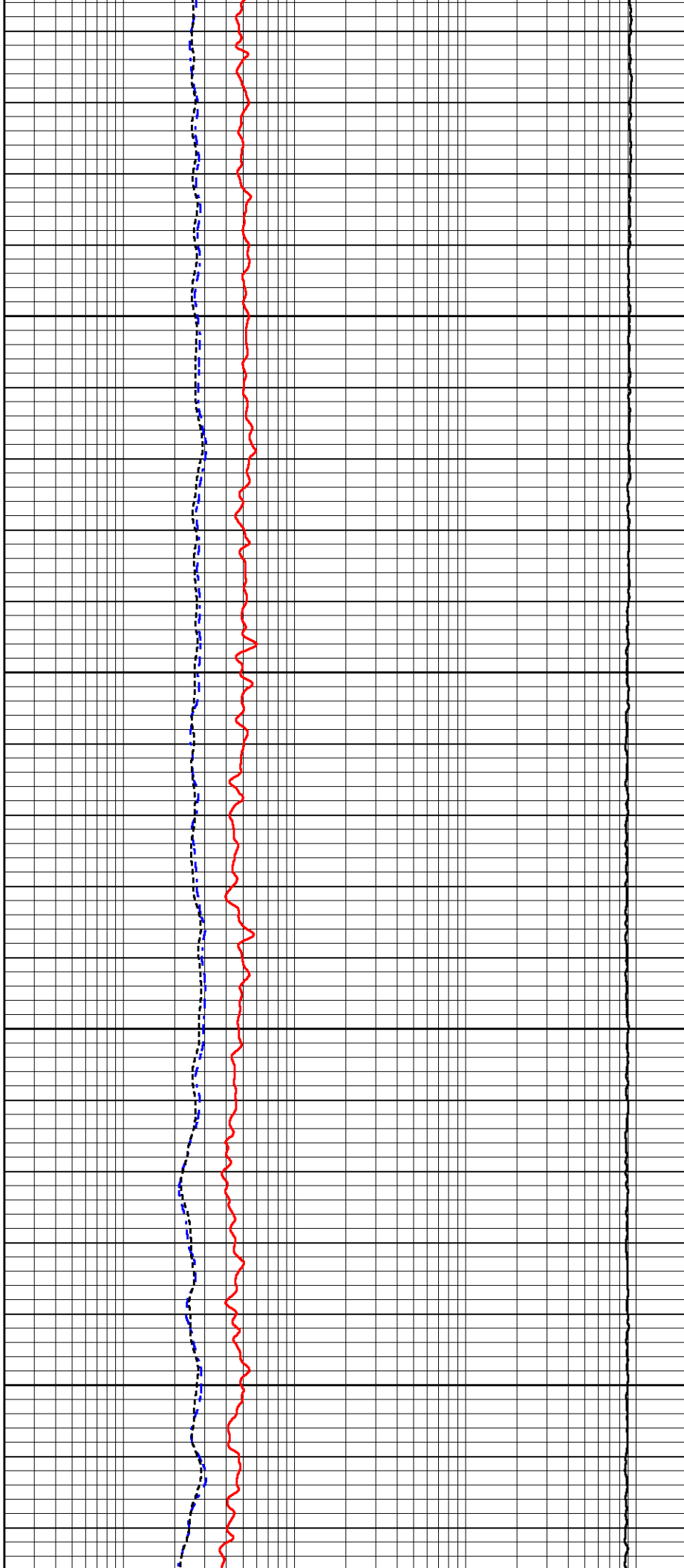


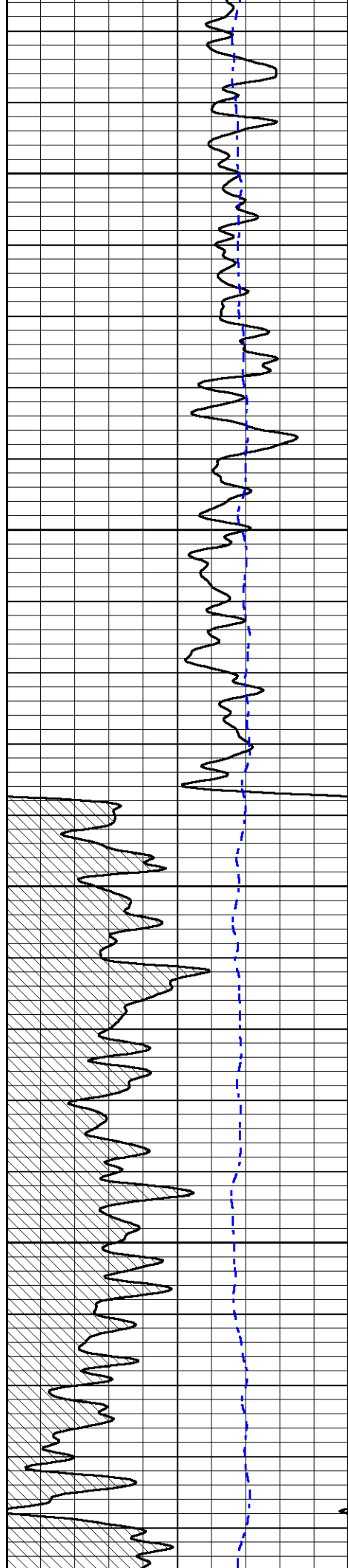
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1000

1050



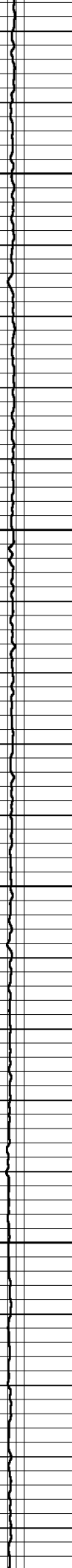
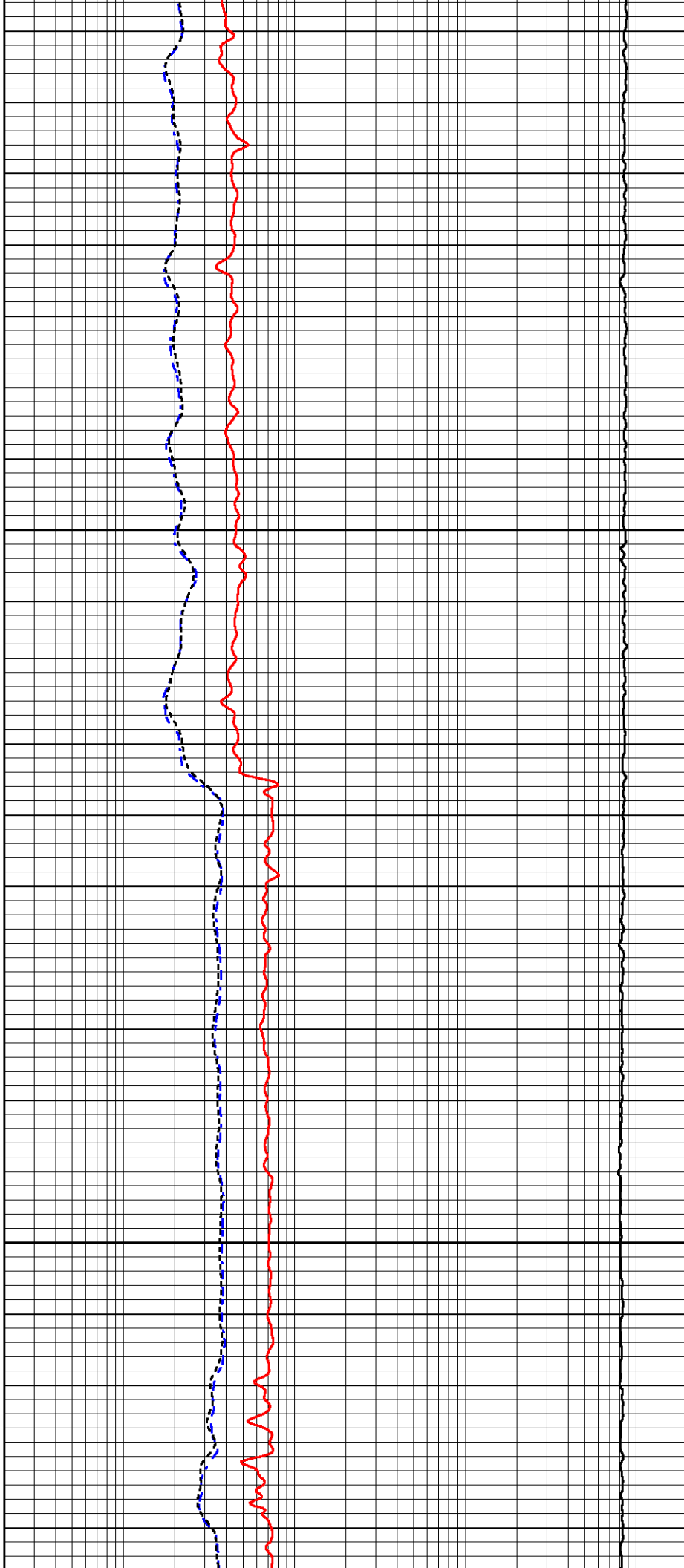


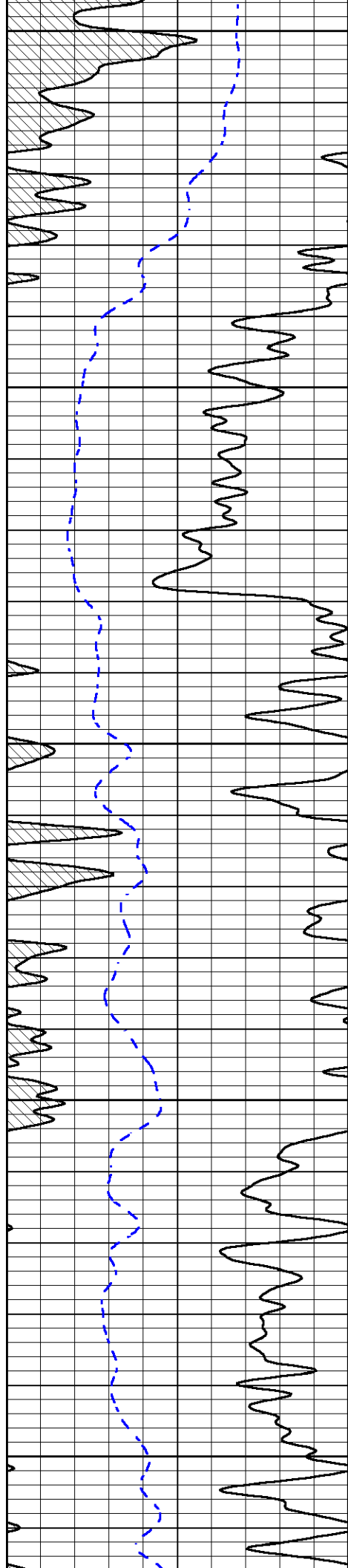
1100

1150

1200

1250





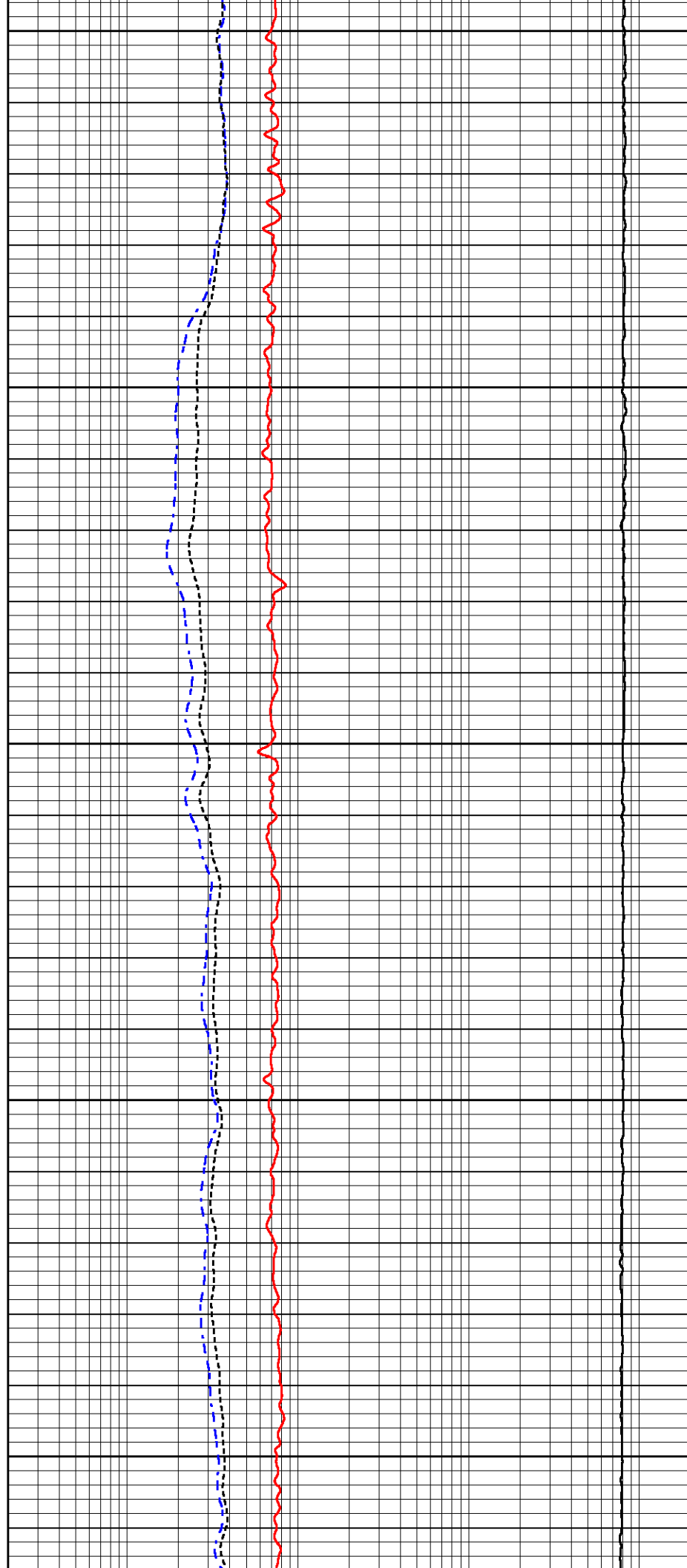
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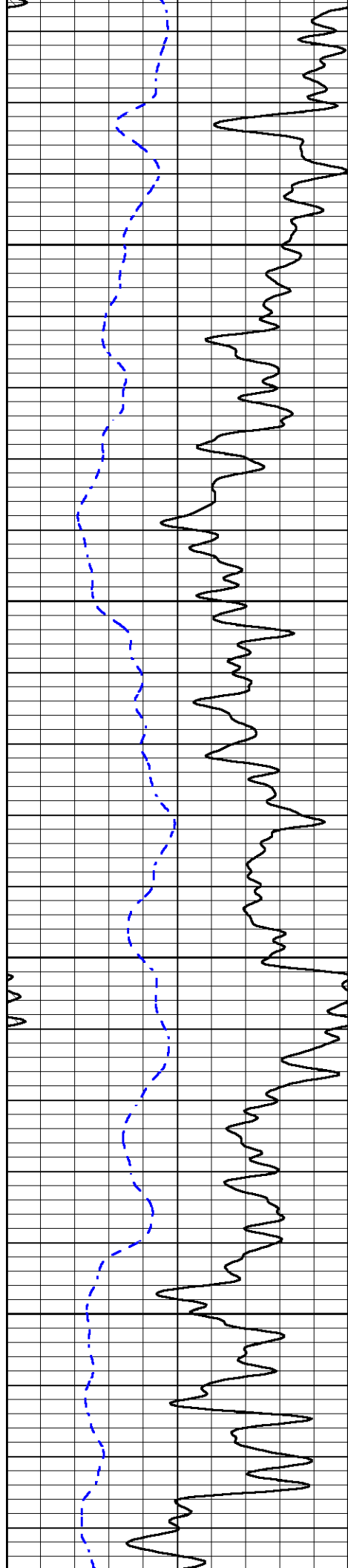
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1450

1500



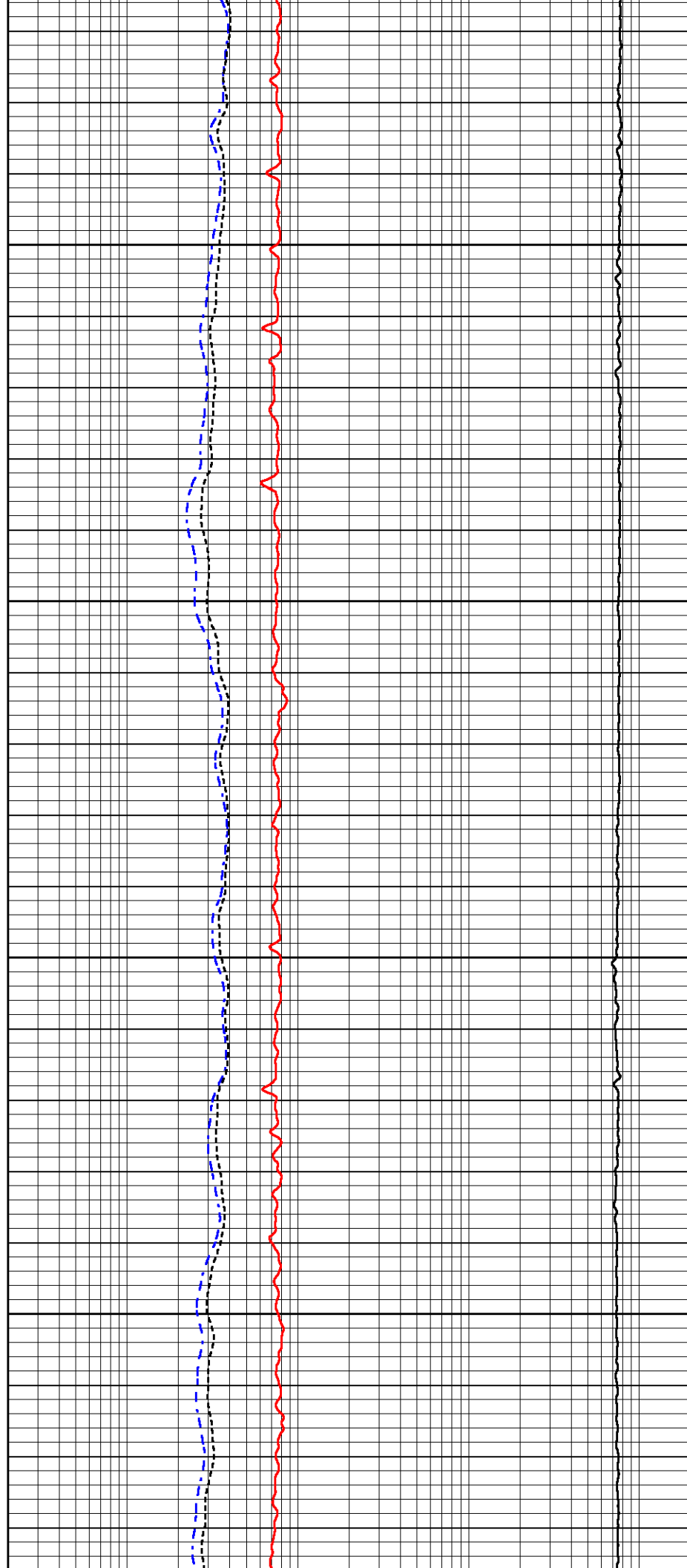


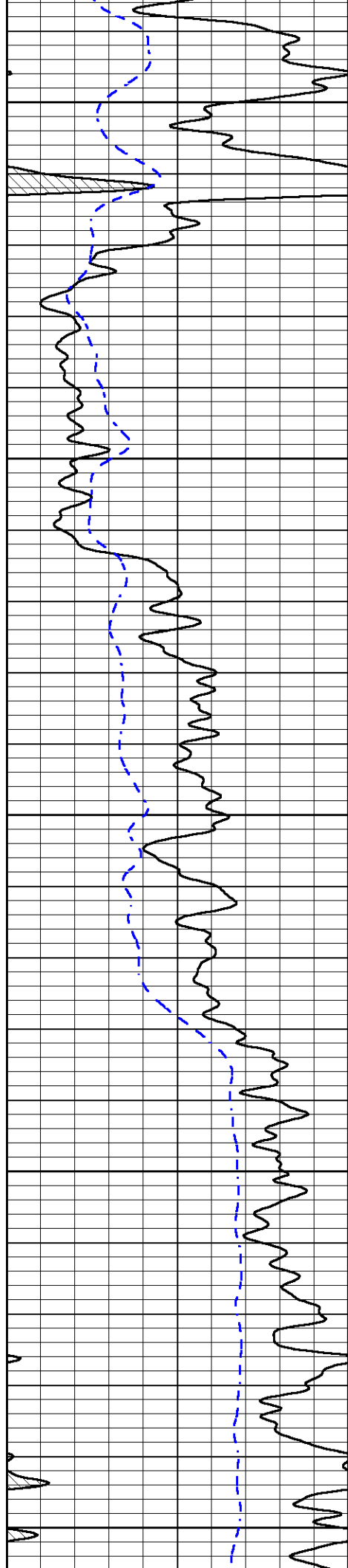
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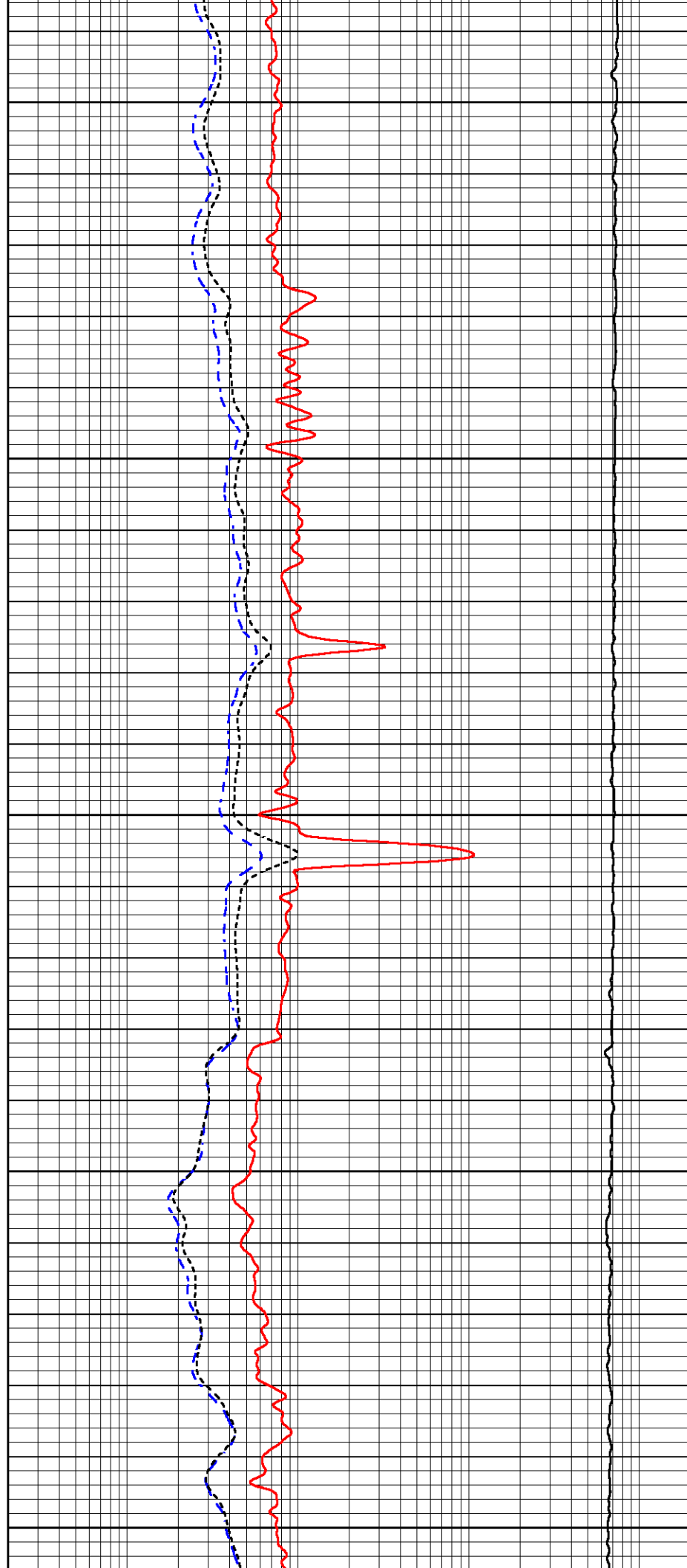
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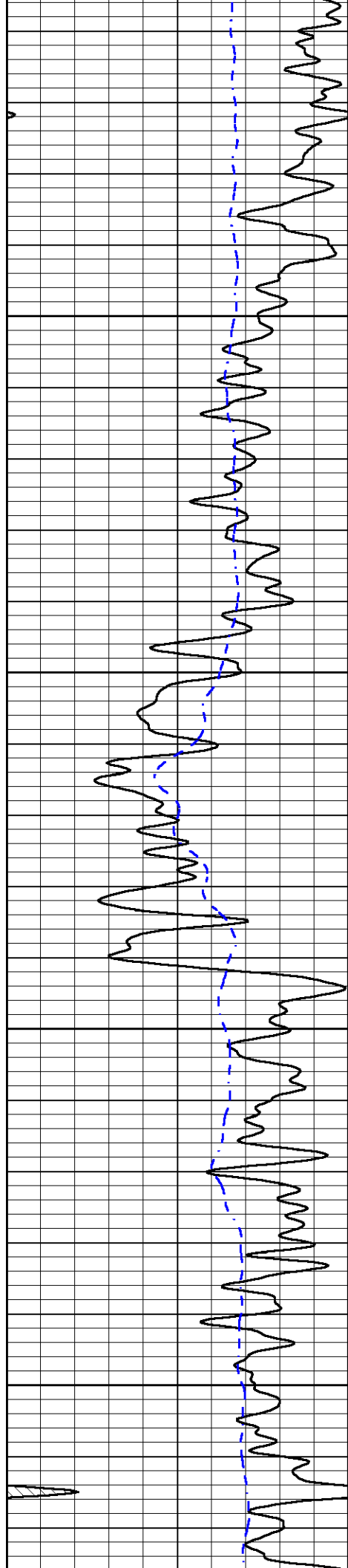
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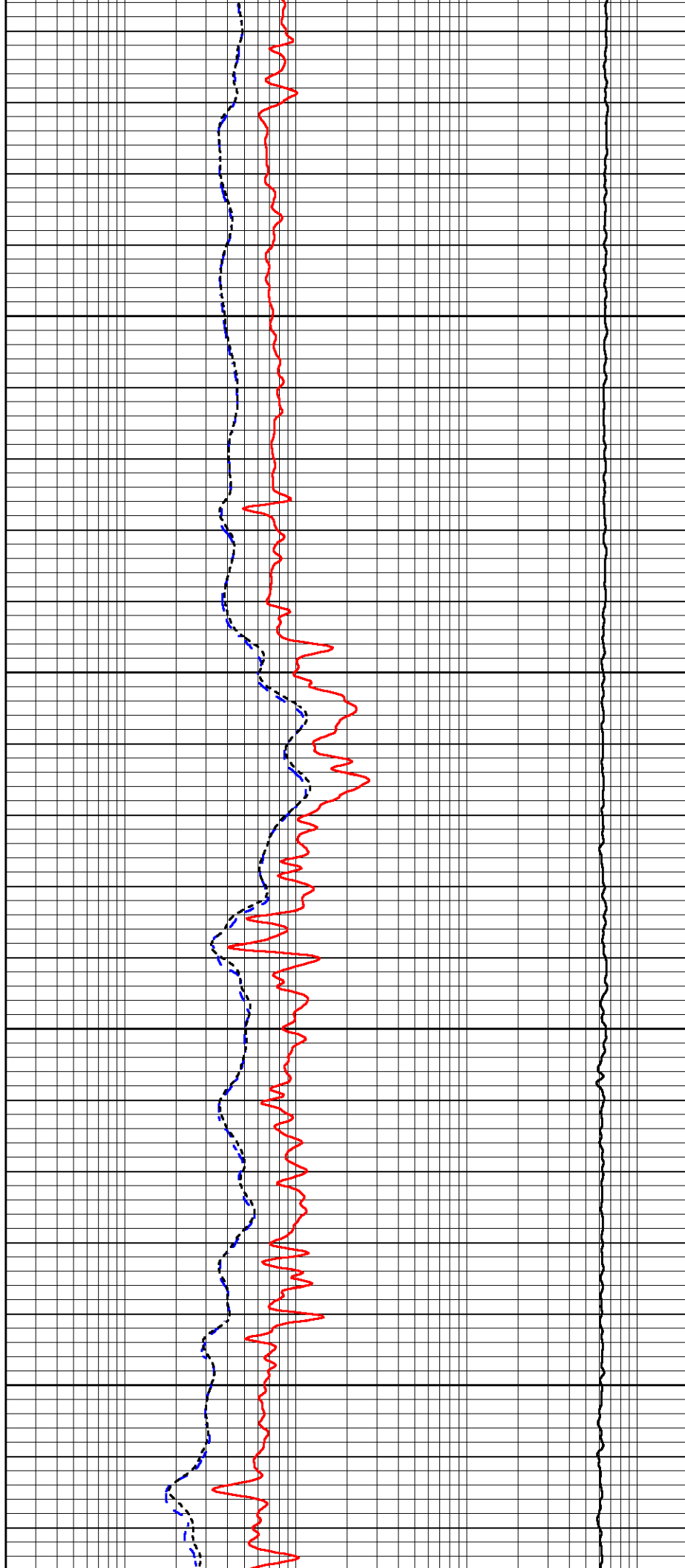


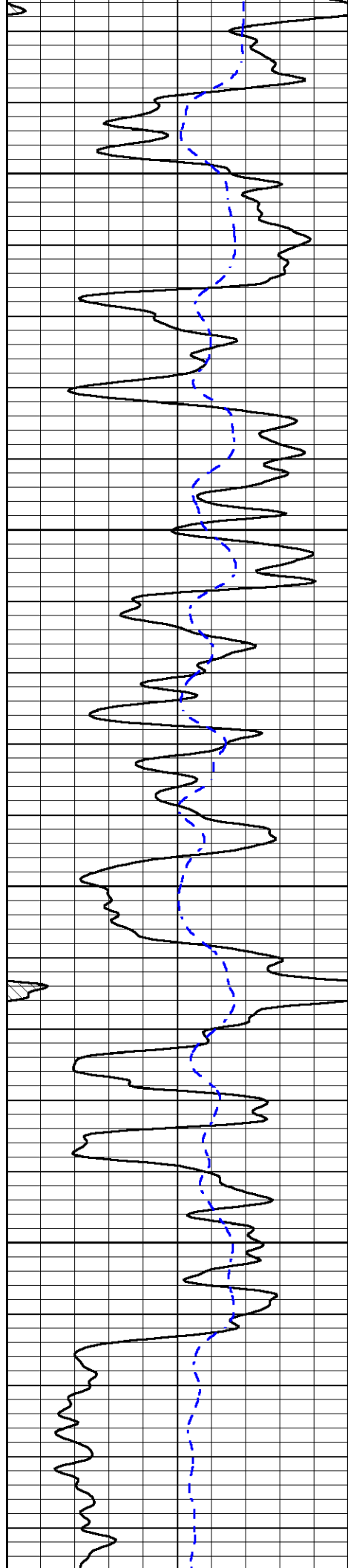
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2050

2100

2150



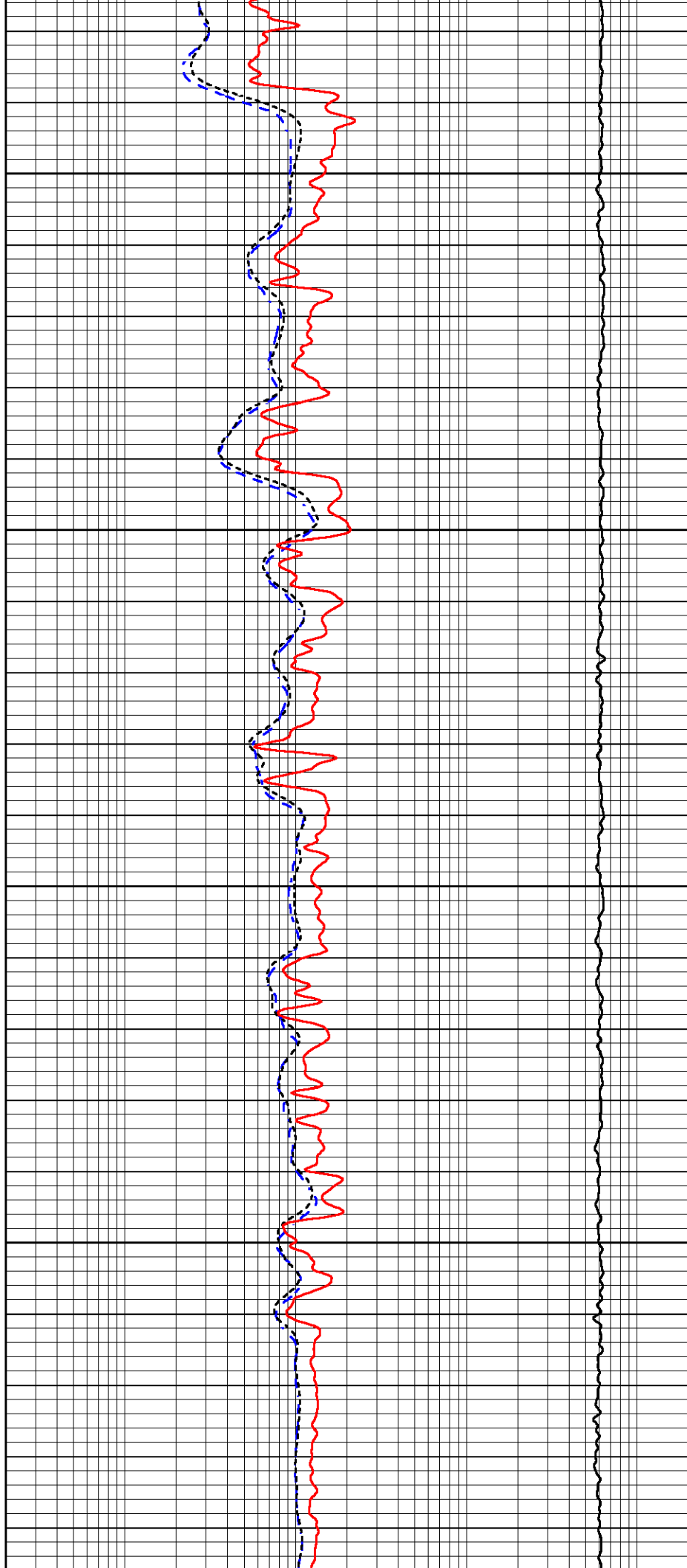


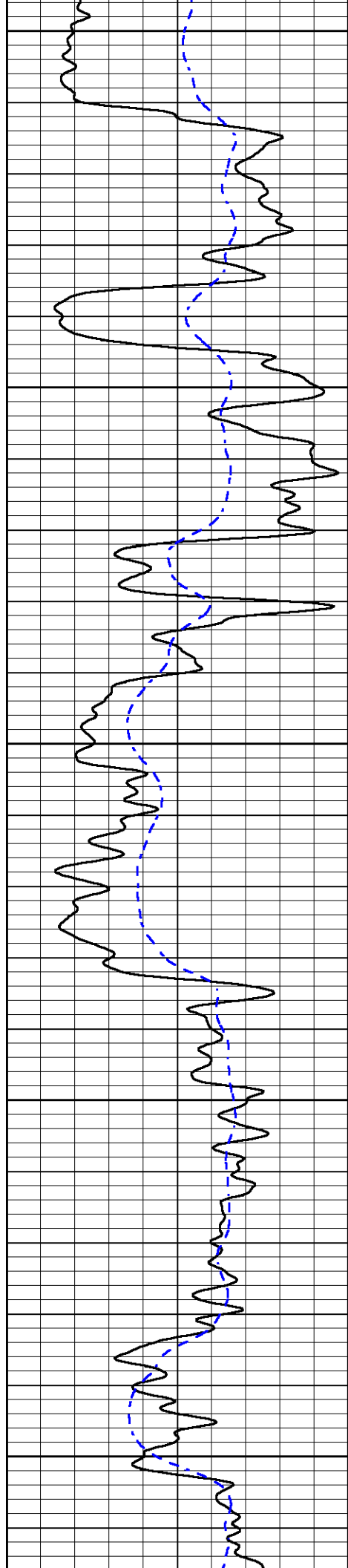
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2250

2300

2350





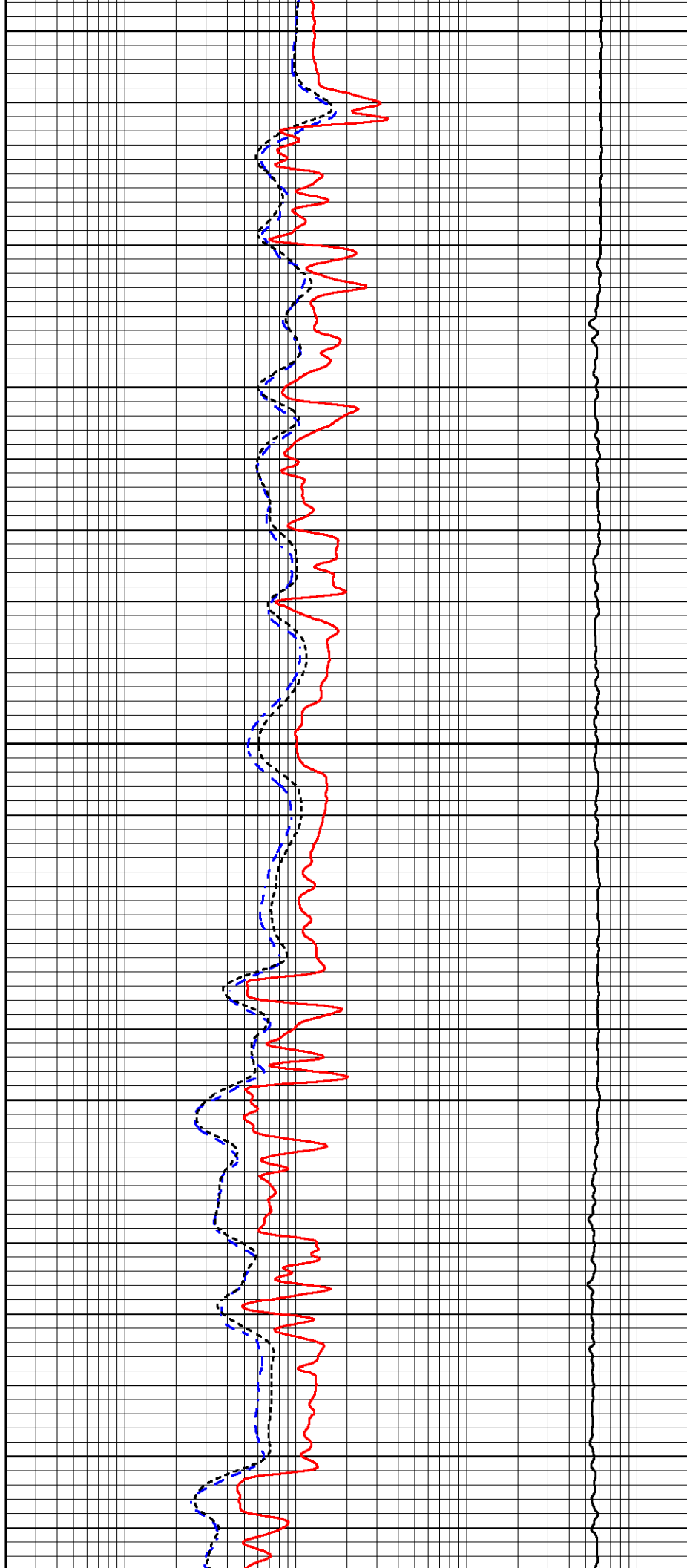
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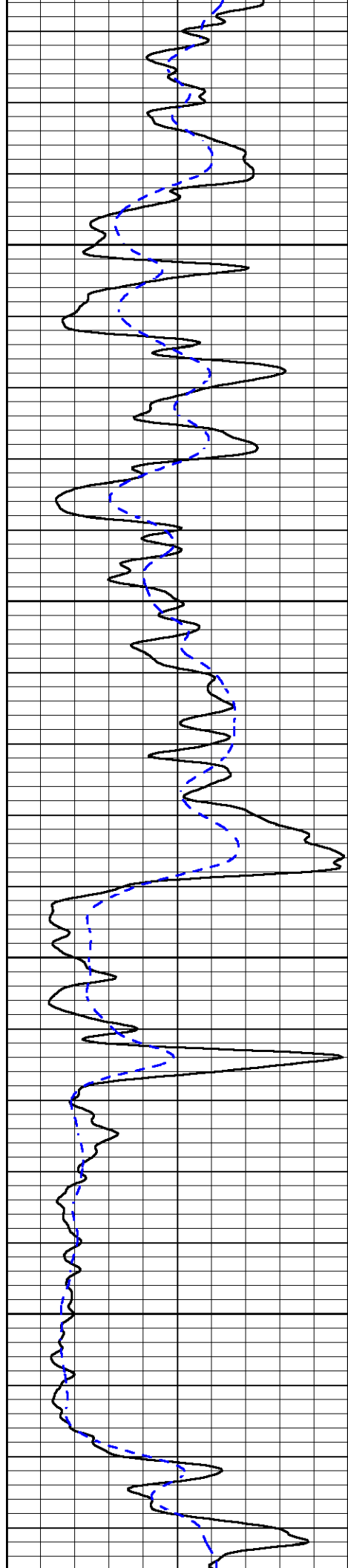
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2550

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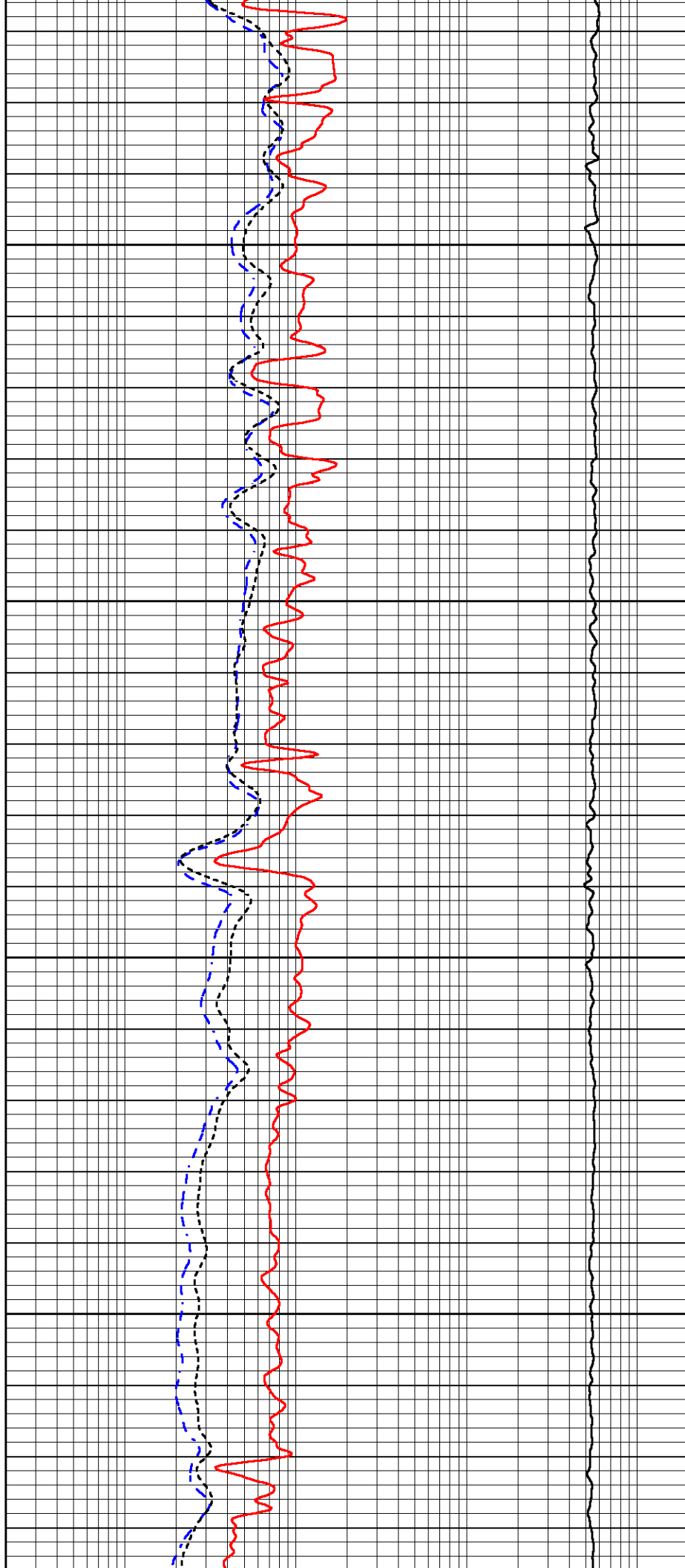


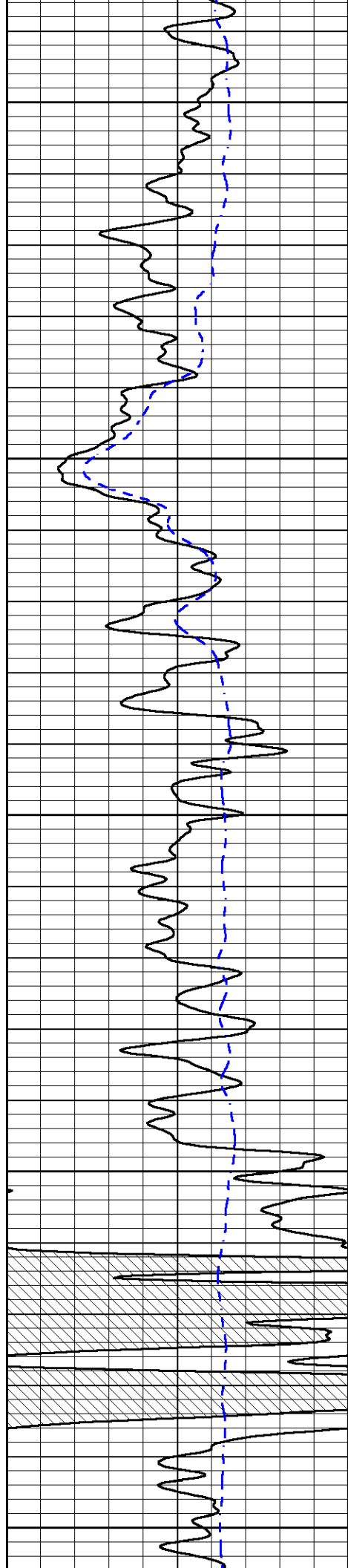
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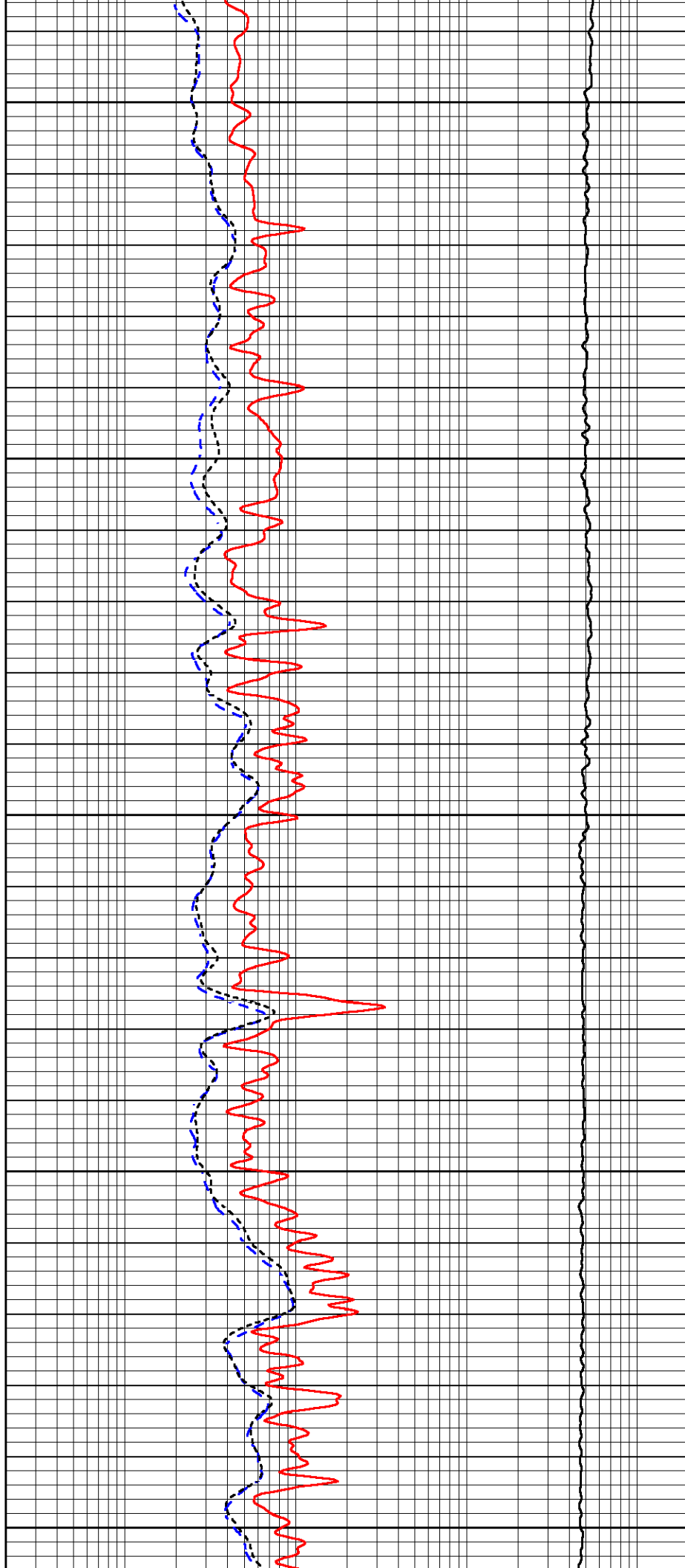
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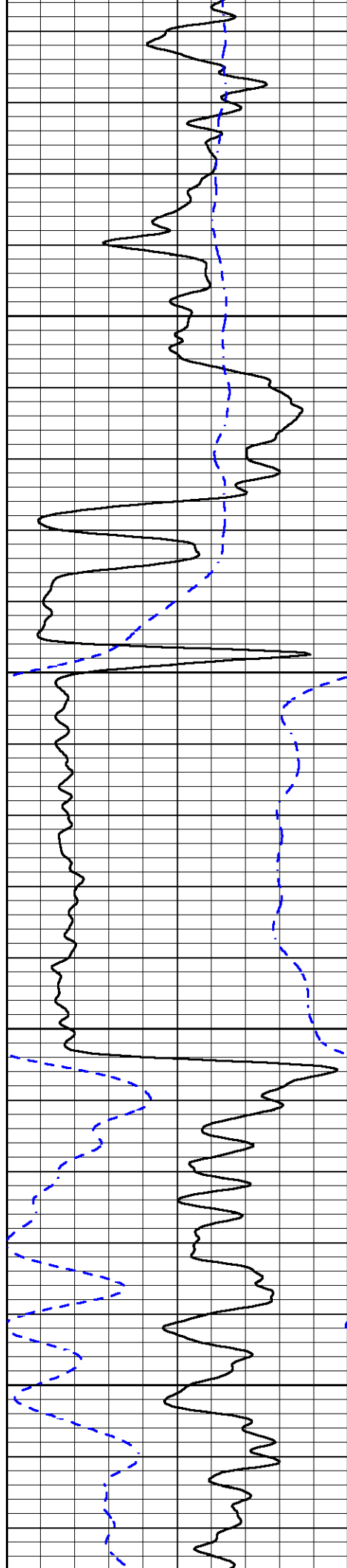
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3050



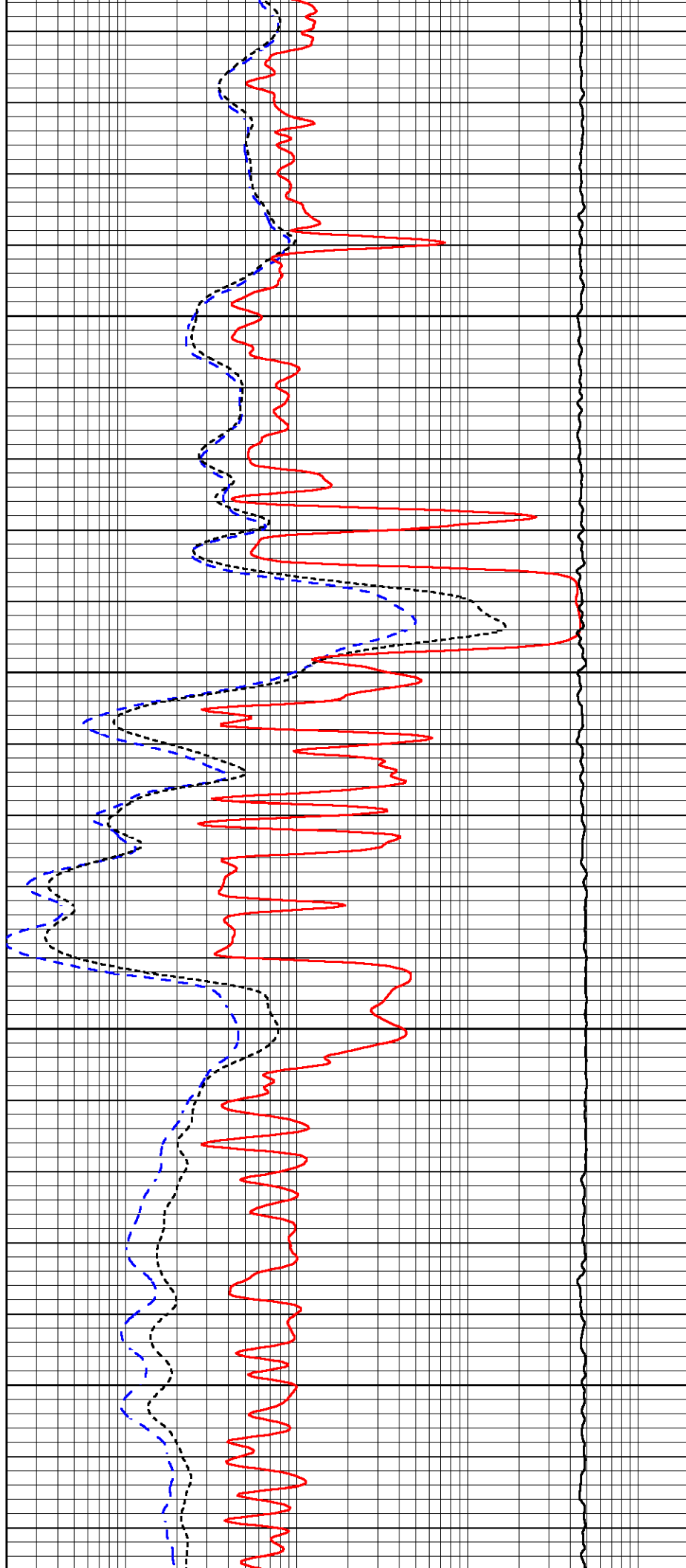


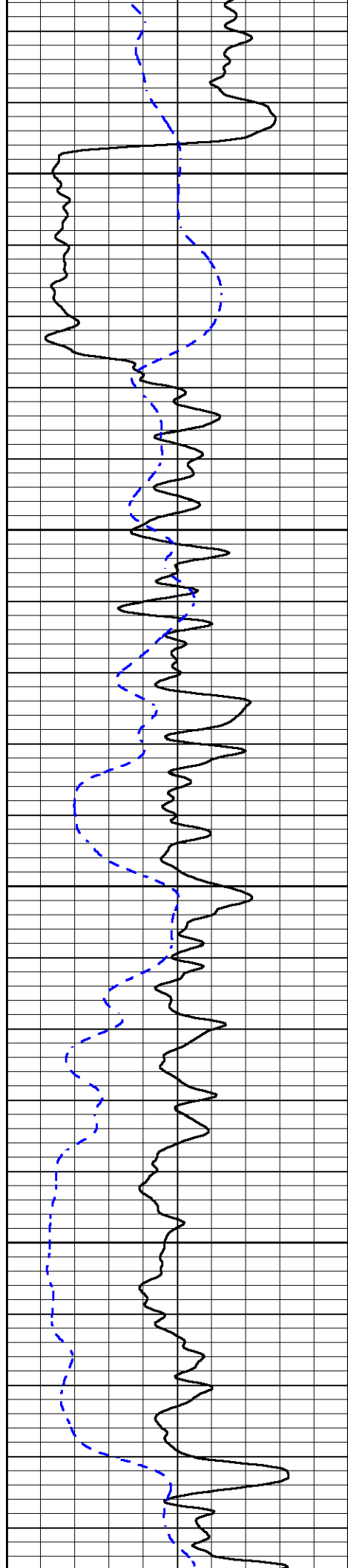
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3150

3200

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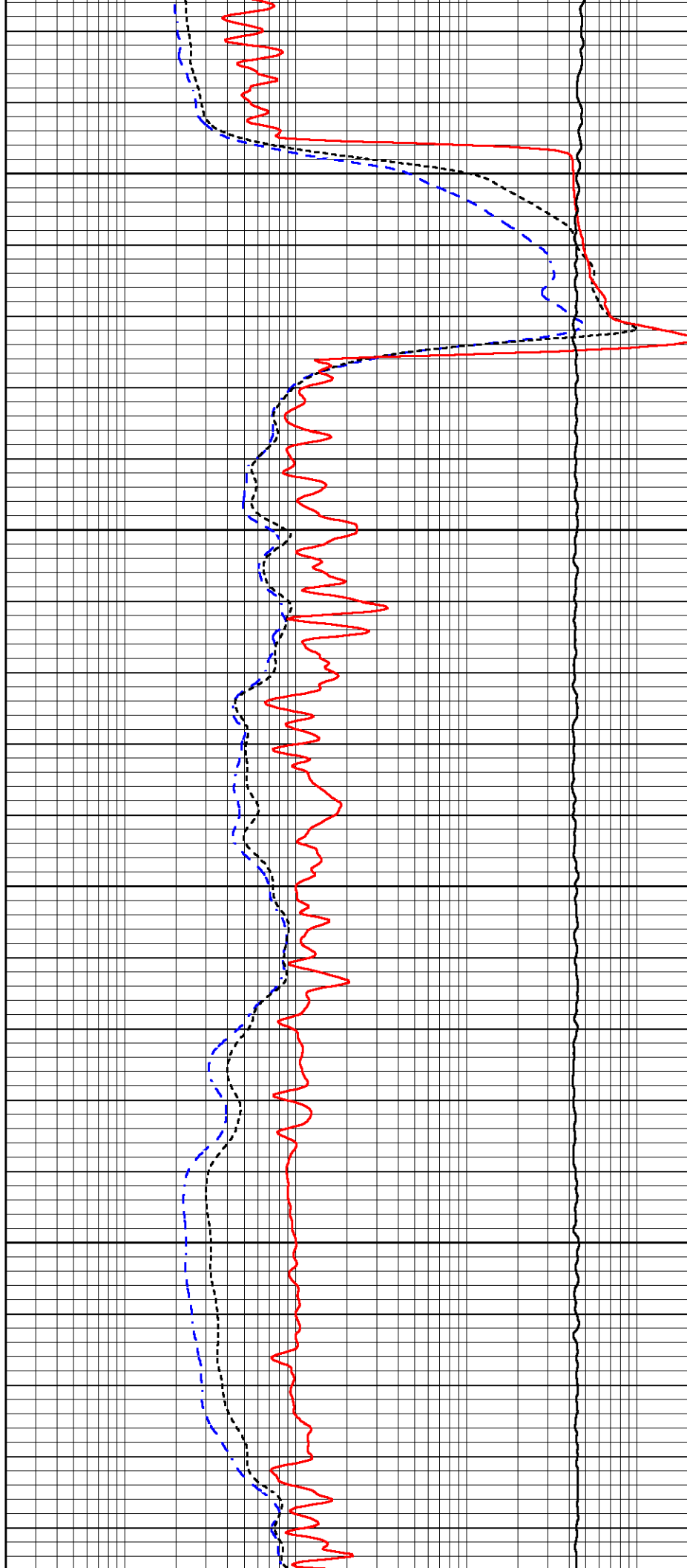


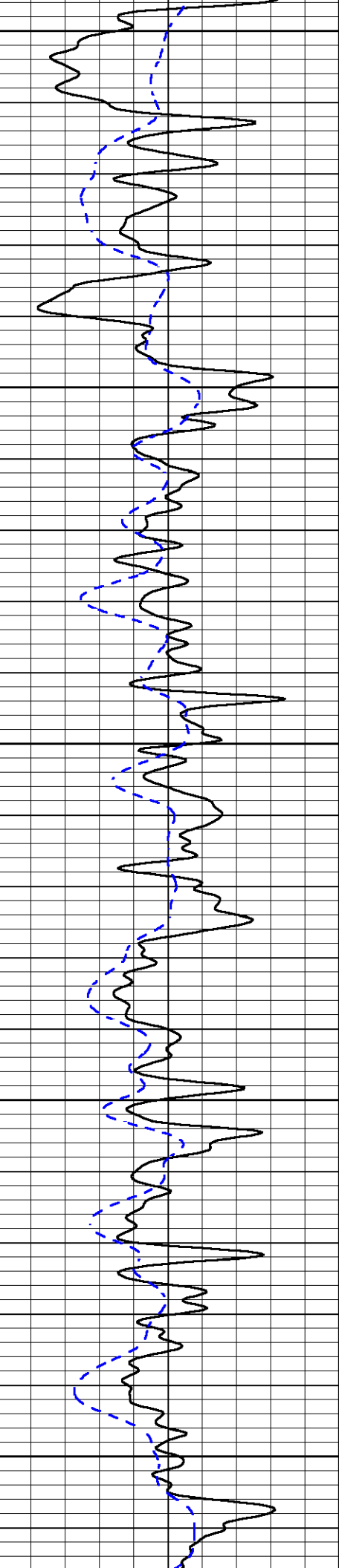
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3400

3450





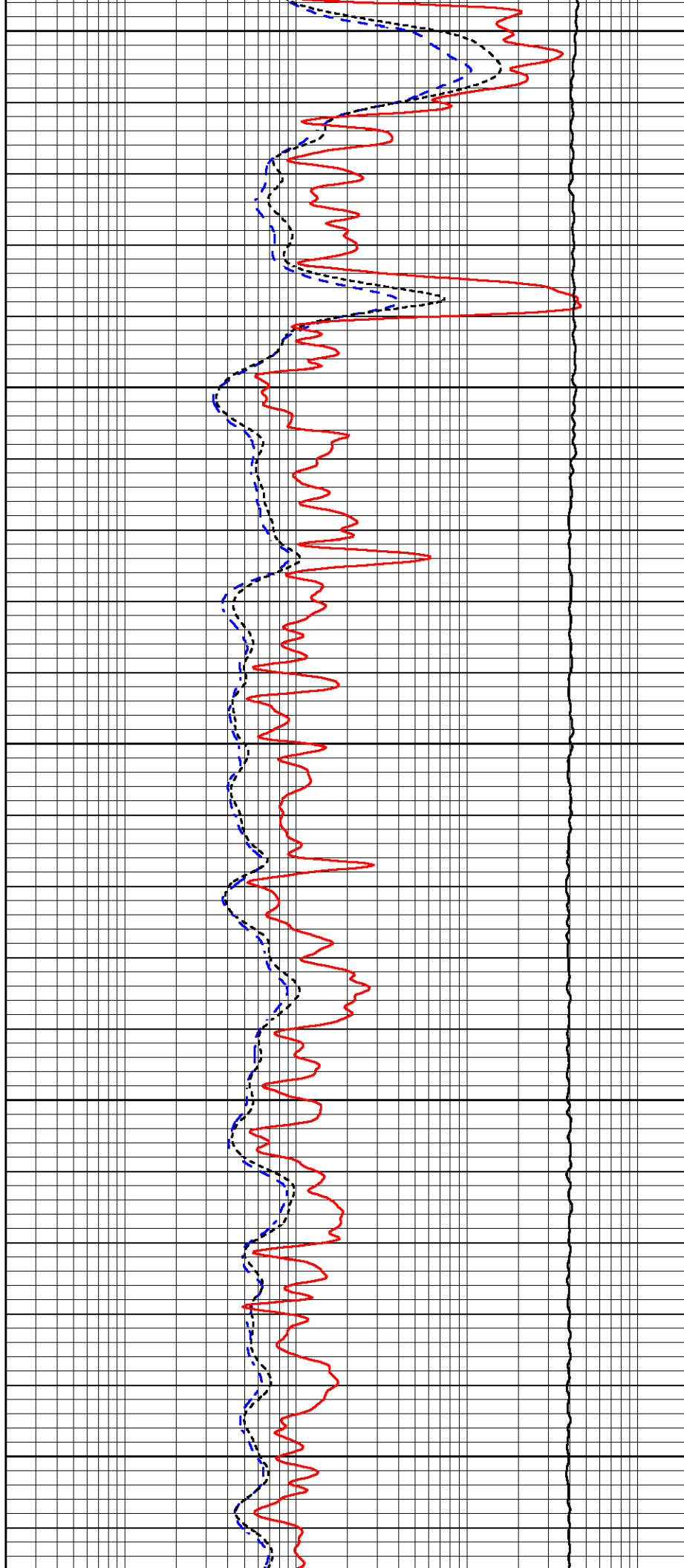
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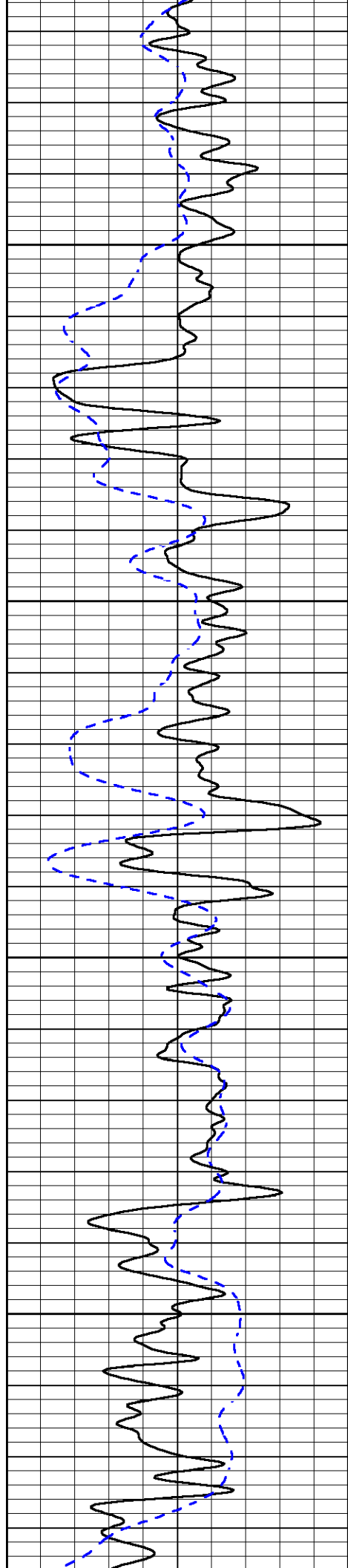
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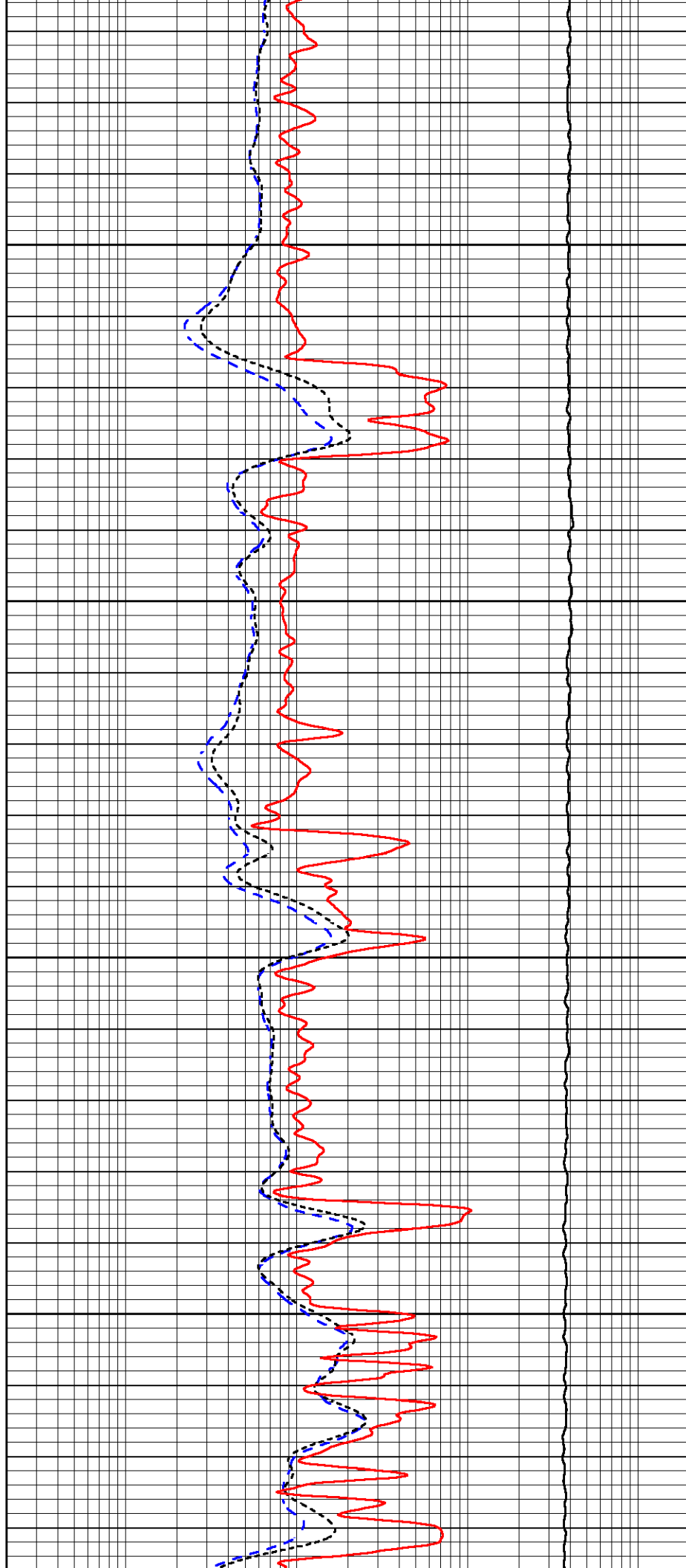


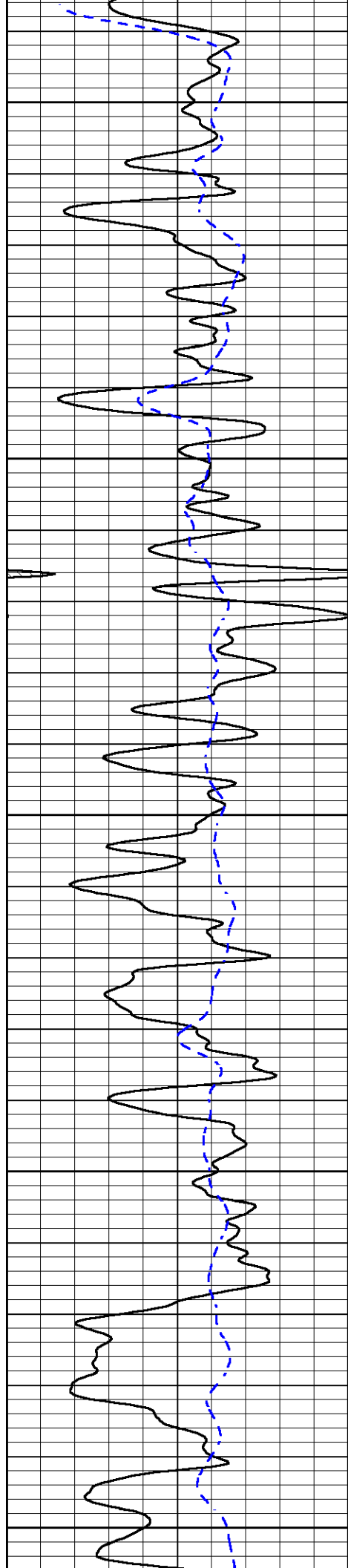
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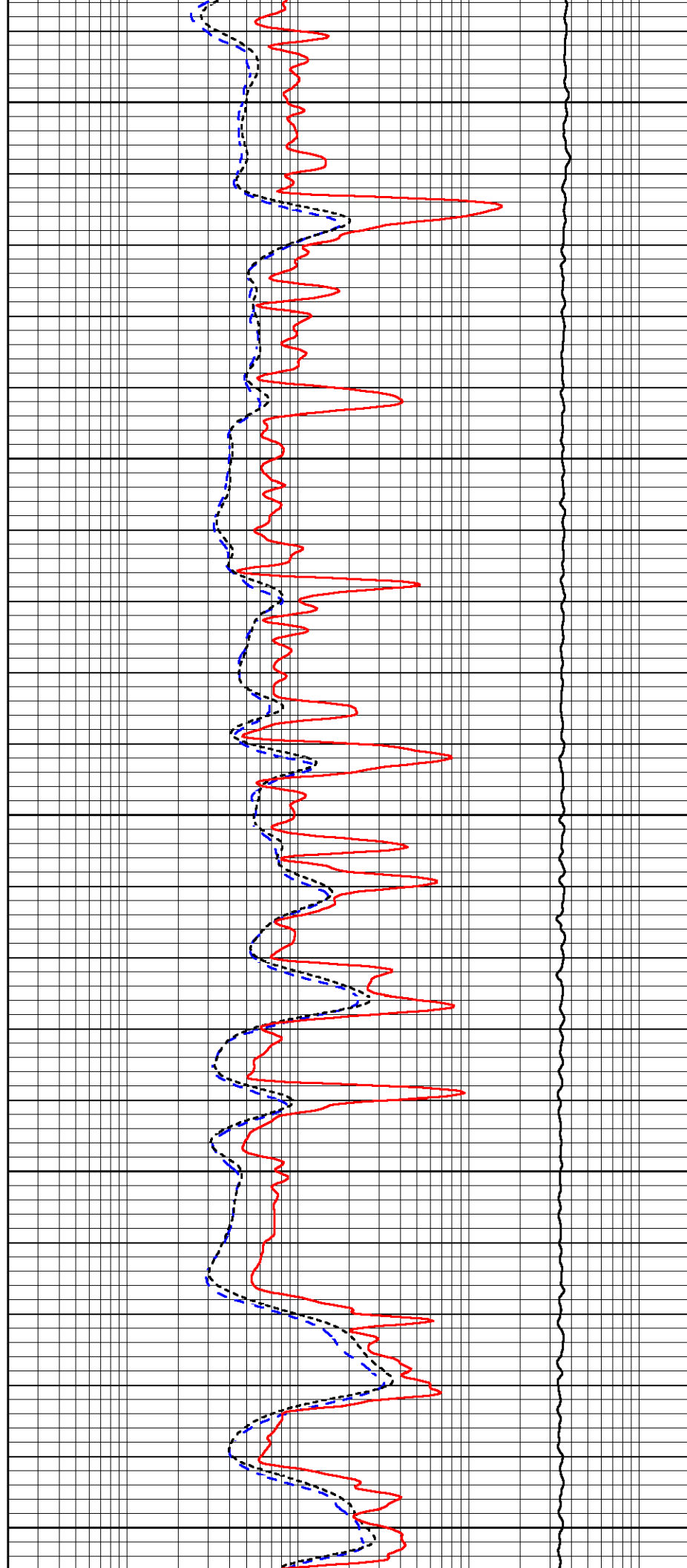
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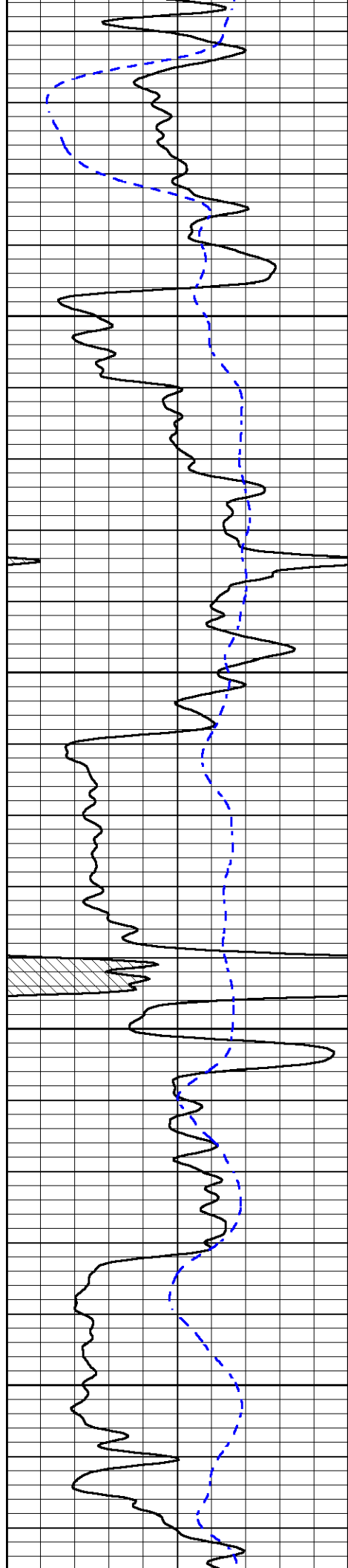
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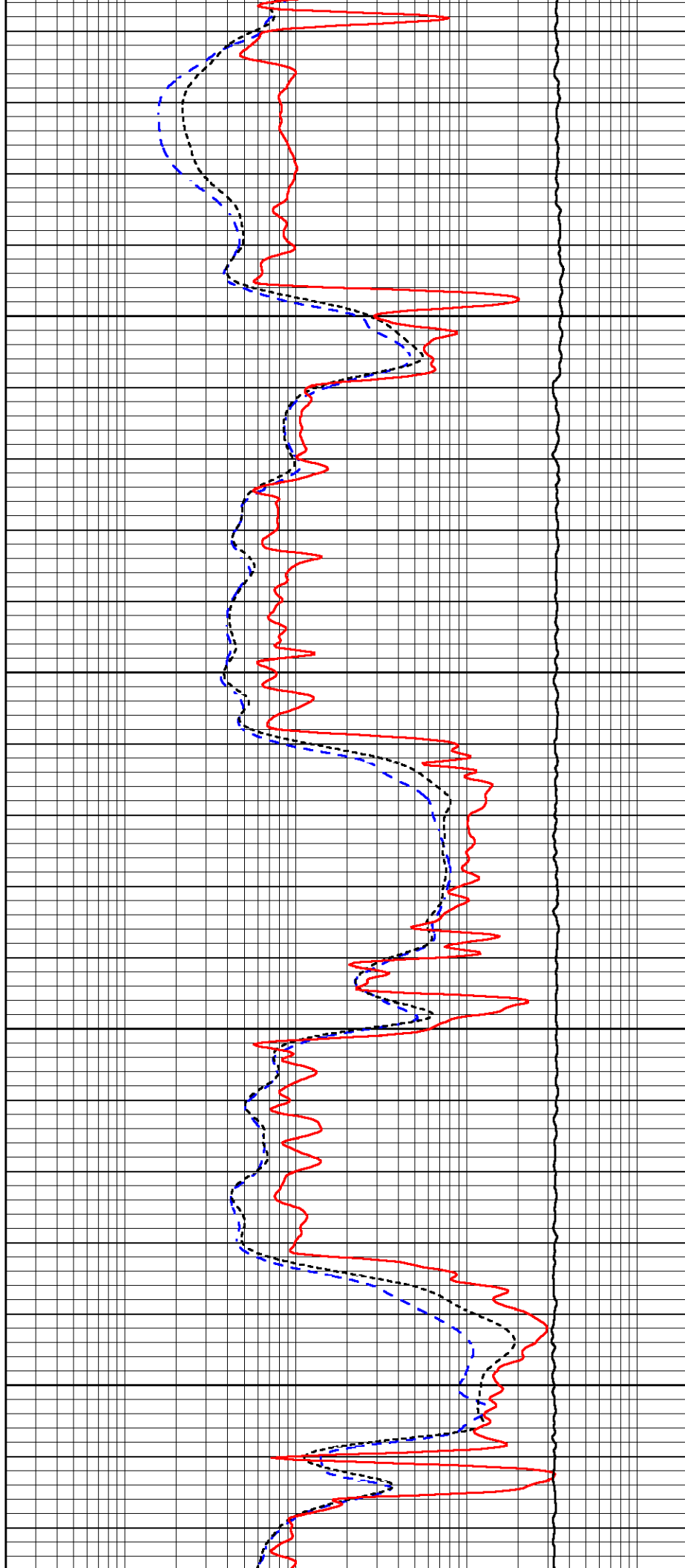


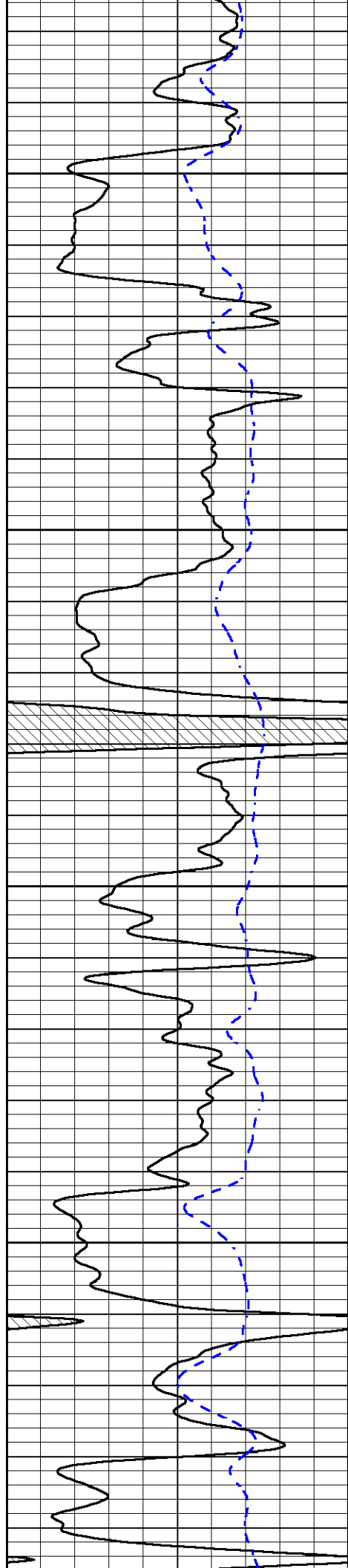
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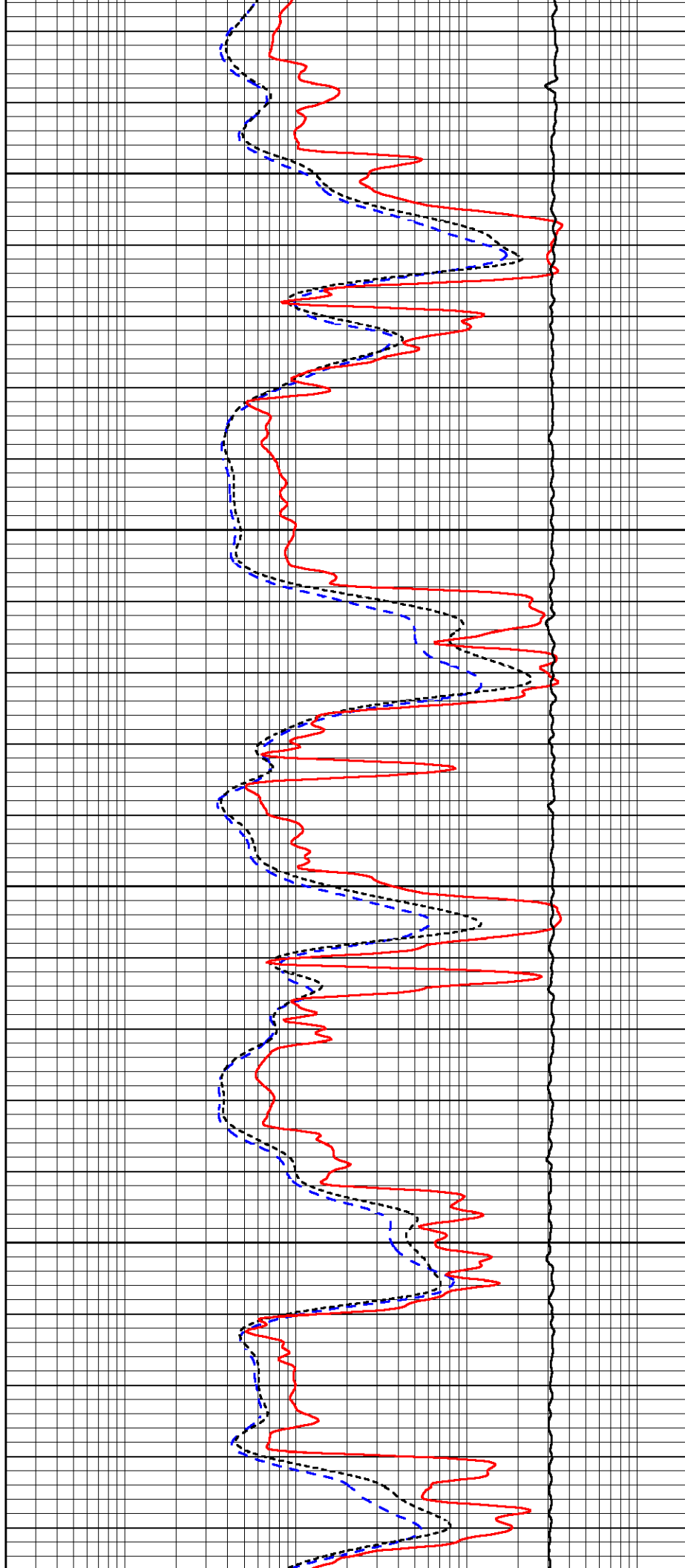


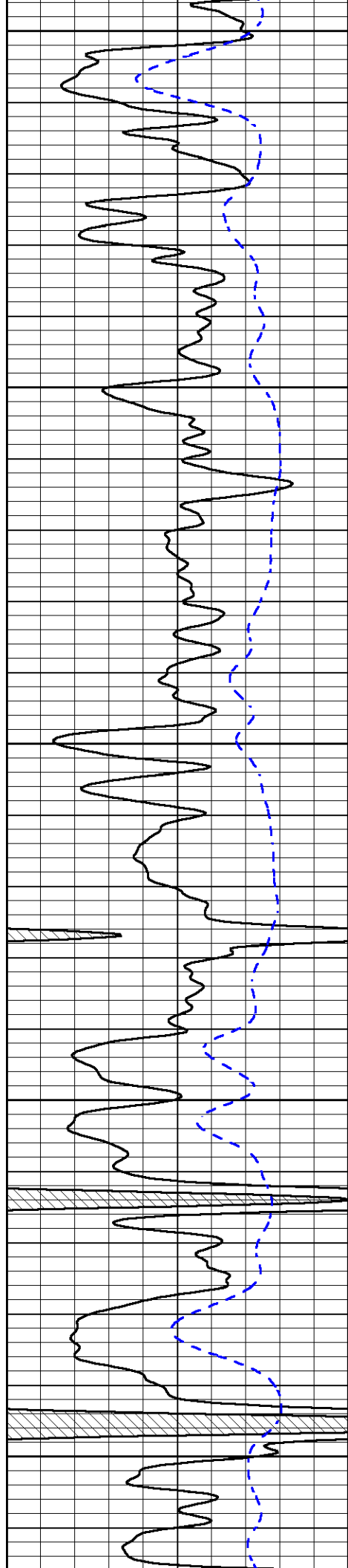
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4500

4550





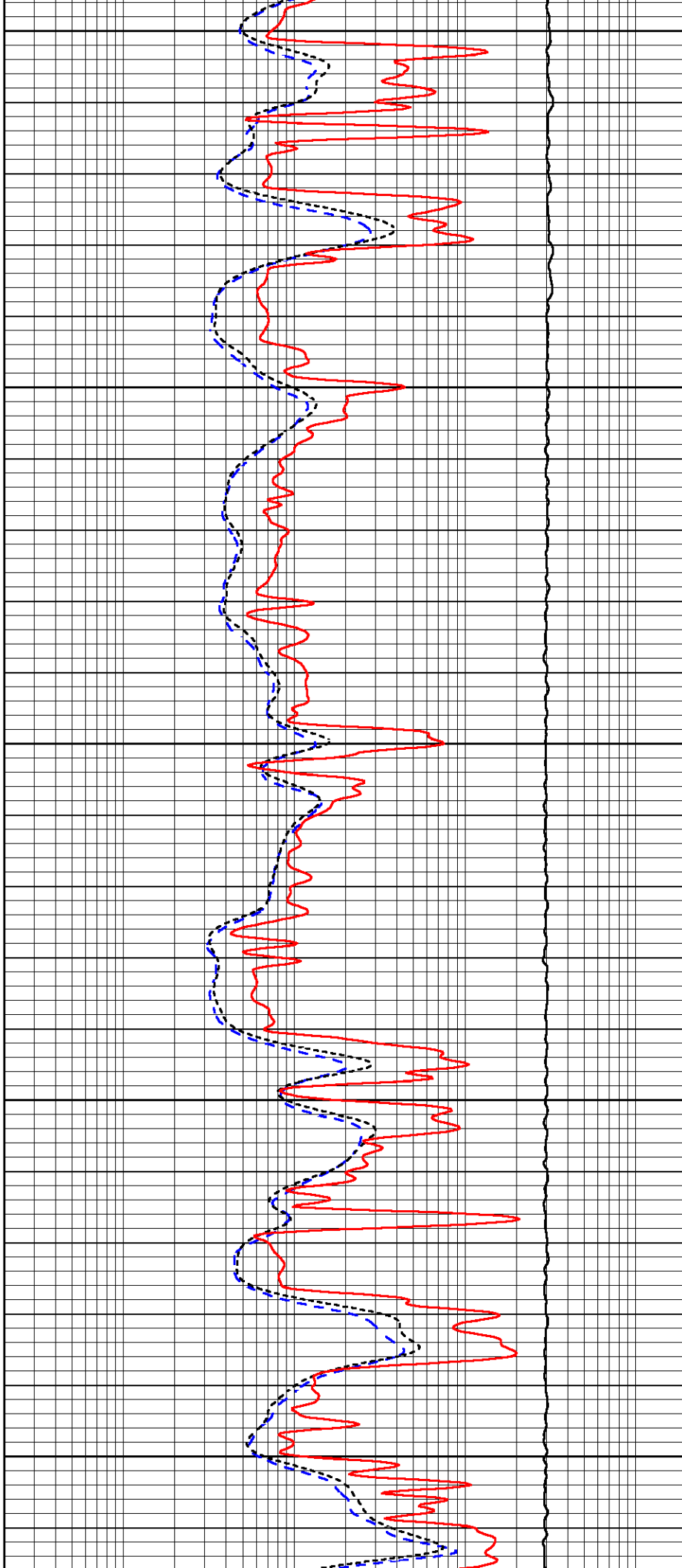
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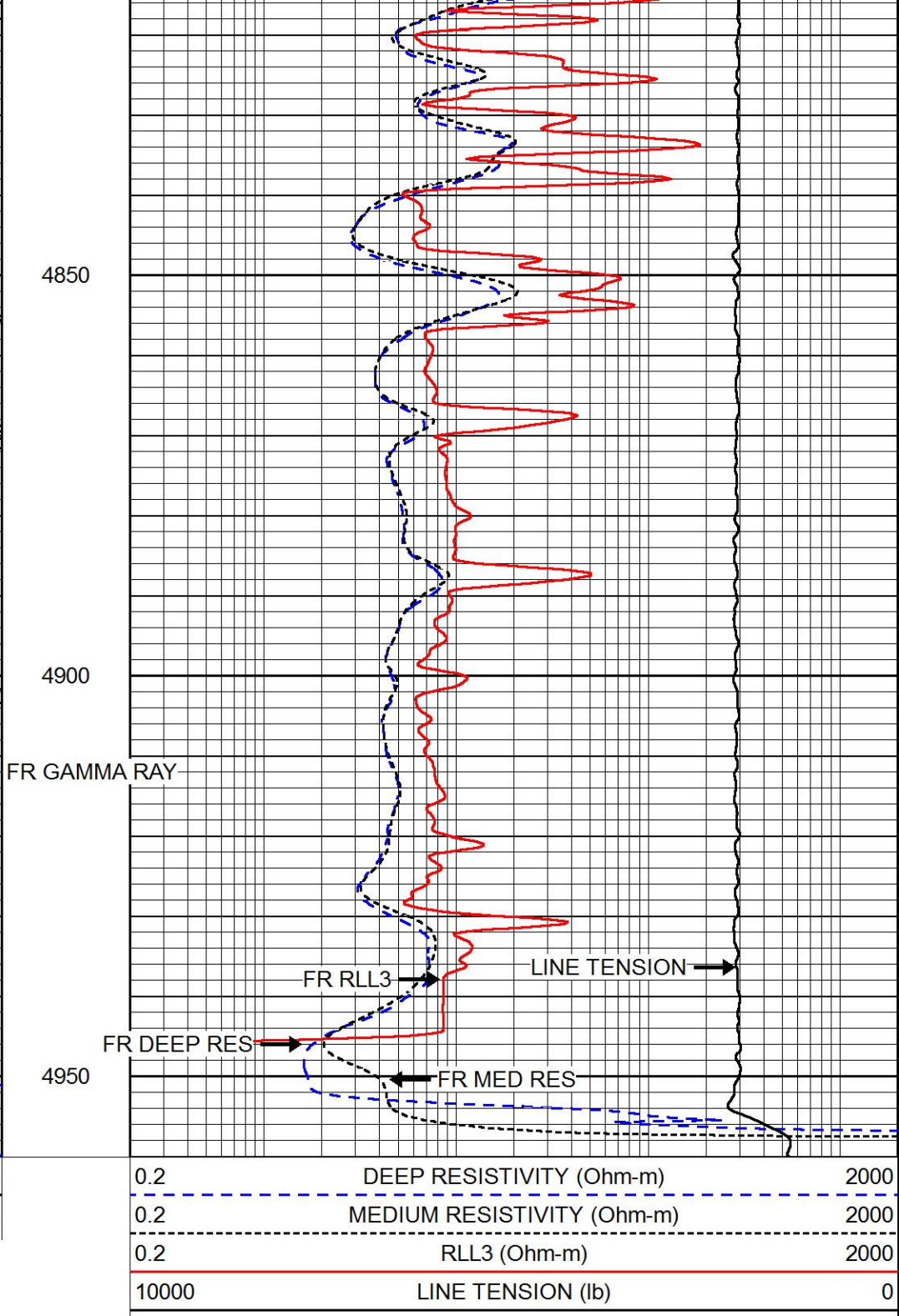
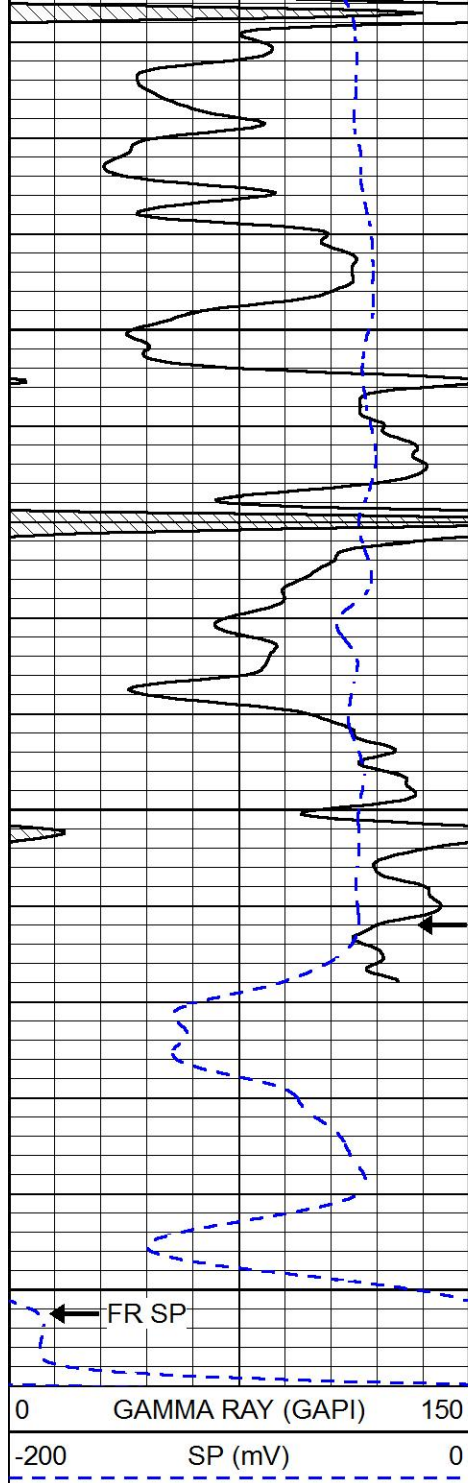
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4700

4750

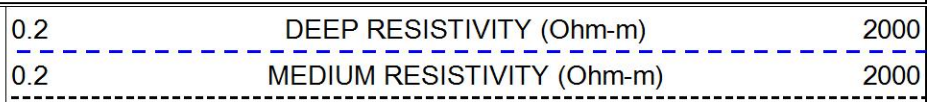
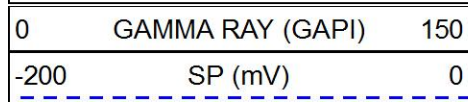
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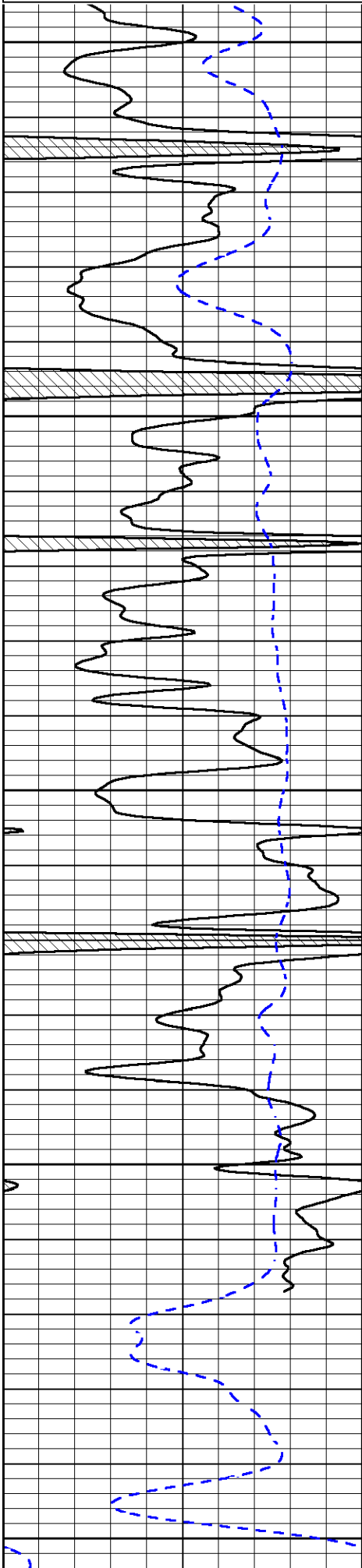


REPEAT SECTION

Database File murfin_gamblin_1_22.db
 Dataset Pathname stackmel/pass2.1
 Presentation Format dil
 Dataset Creation Tue Sep 25 07:06:27 2018
 Charted by Depth in Feet scaled 1:240



0.2	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0



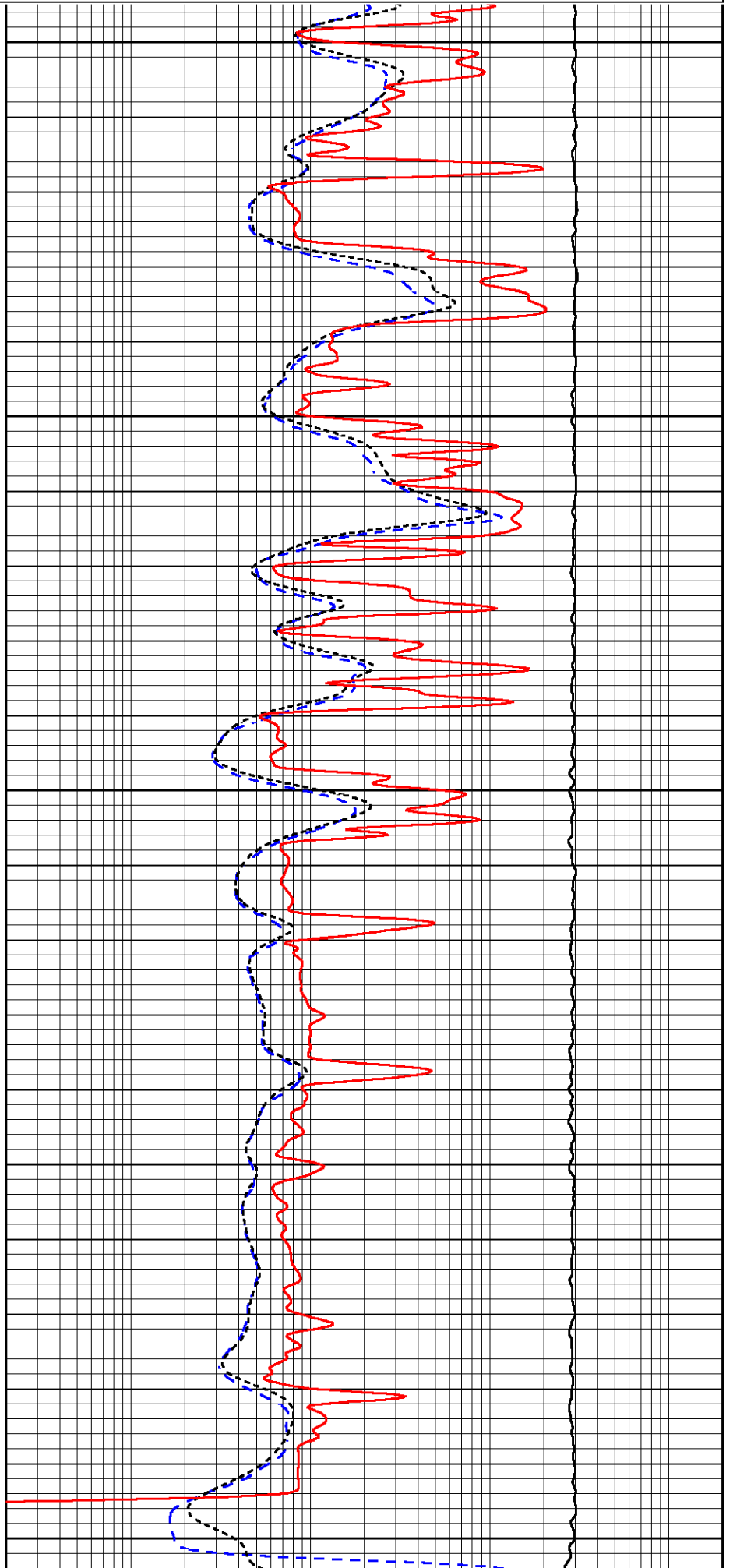
4750

4800

4850

4900

4950



0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0

Database File	murfin_gamblin_1_22.db
Dataset Pathname	stackmel/pass3.1
Dataset Creation	Tue Sep 25 07:07:00 2018

Serial-Model: 967 (HT)-PSI HIGH TEMP
Calibration Performed: Sun Aug 26 00:41:13 2018

		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-20.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Serial-Model: PSI-01-PSIML
Performed: Sat Sep 08 05:17:35 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	28000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	35000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.9500

Serial-Model: 144-84-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Thu Aug 30 10:10:19 2018

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4867.47	6031.92	cps
Aluminum	2.650	g/cc	906.23	3806.99	cps
Spine Angle = 74.69			Density/Spine Ratio = 0.514		
	Size		Reading		
Small Ring	5.00	in	0.70		
Large Ring	15.00	in	0.04		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	FRI AUG 24 10:30:30 2018

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number:	89	
Tool Model:	M&W	
Calibration Performed:	Fri Aug 24 11:16:10 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	MURFIN DRILLING CO., INC.
Well	GAMBLIN #1-22
Field	WILDCAT
County	CHEYENNE
State	KANSAS