



Pioneer Energy Services

Dual Induction Log

API No.

15-153-20918-00-00

Company **Murfin Drilling Company, Inc.**

Well **Culwell "D" # 1-30**

Field **Brumm North**

County **Rawlins** State **Kansas**

Location **2000' FSL & 2020' FWL**

Sec: **30** Twp: **1 S** Rge: **36 W**

Other Services
CNL/CDL
MEI/BHCS

Permanent Datum **Ground Level** Elevation **3275**

Log Measured From **Kelly Bushing** 10 Ft. Above Perm. Datum

Drilling Measured From **Kelly Bushing**

Elevation
K.B. 3285
D.F. 3275
G.L. 3275

Date **02/11/2013**

Run Number **One**

Depth Driller **4770**

Depth Logger **4770**

Bottom Logged Interval **4769**

Top Log Interval **0**

Casing Driller **13.375 @ 254**

Casing Logger **248**

Bit Size **17.250**

Type Fluid in Hole **Chemical**

Salinity, ppm CL **800**

Density / Viscosity **9.3 67**

pH / Fluid Loss **10.0 5.6**

Source of Sample **Flowline**

Rm @ Meas. Temp **.68 @ 44**

Rmf @ Meas. Temp **.51 @ 44**

Rmc @ Meas. Temp **.92 @ 44**

Source of Rmf / Rmc **Charts**

Rm @ BHT **.24 @ 126**

Operating Rig Time **5 Hours**

Max Rec. Temp. F **126**

Equipment Number **91**

Location **Hays**

Recorded By **D.Schmidt**

Witnessed By **Jeff Christian**

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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

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(785) 625-3858

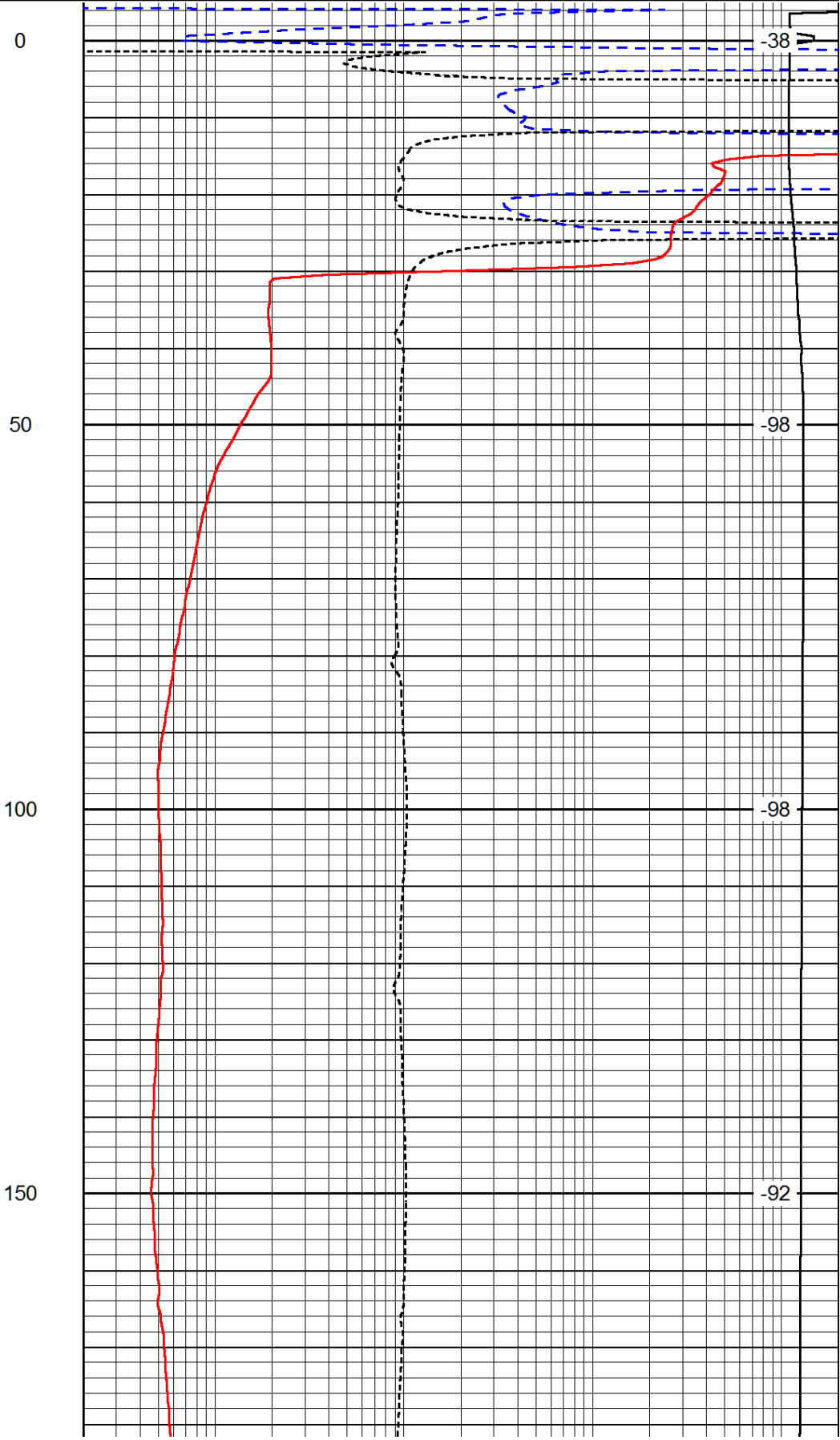
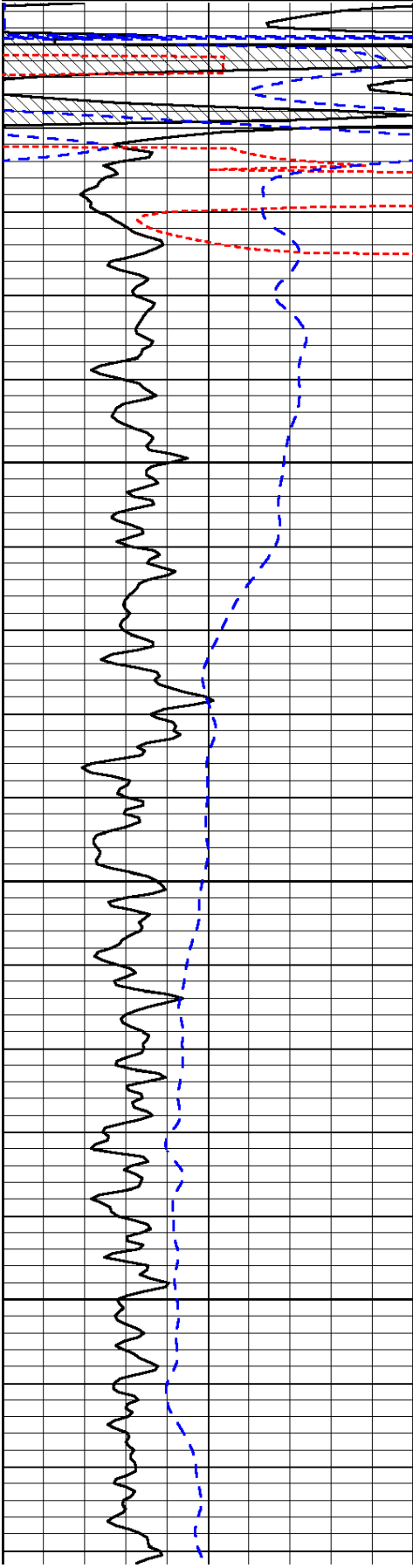
McDonald,
10 North to Z RD, 1 1/2 West,
North into

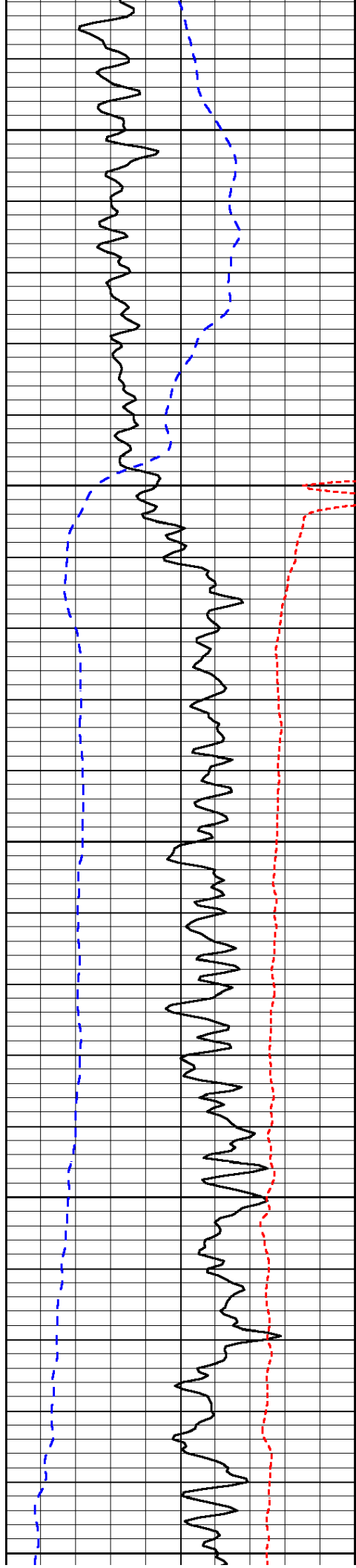
Database File: murfin_021113hd.db
Dataset Pathname: dil/mrfstack
Presentation Format: dil
Dataset Creation: Mon Feb 11 16:27:40 2013
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

LSPD
(ft/min)





200

250

300

350

400



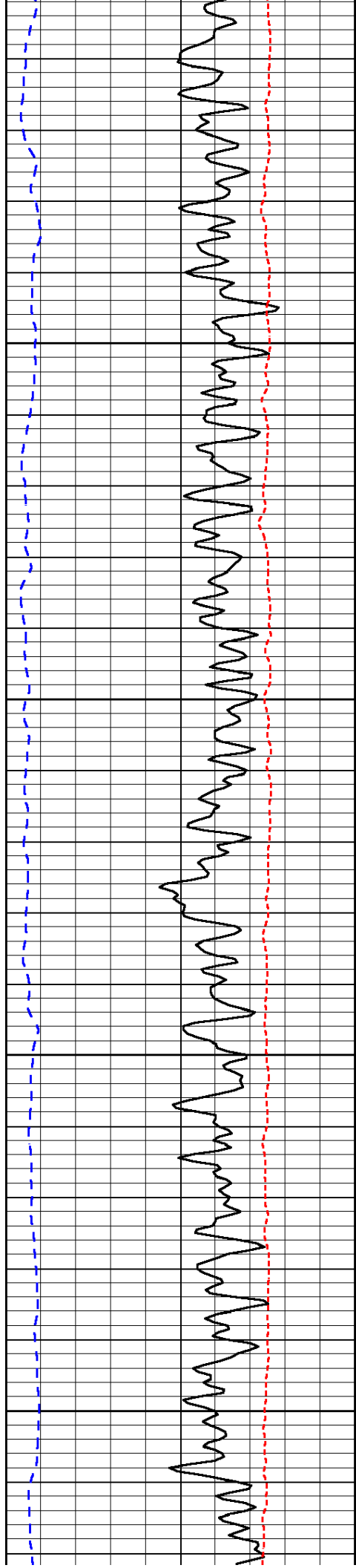
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-50

-55

-82

-82

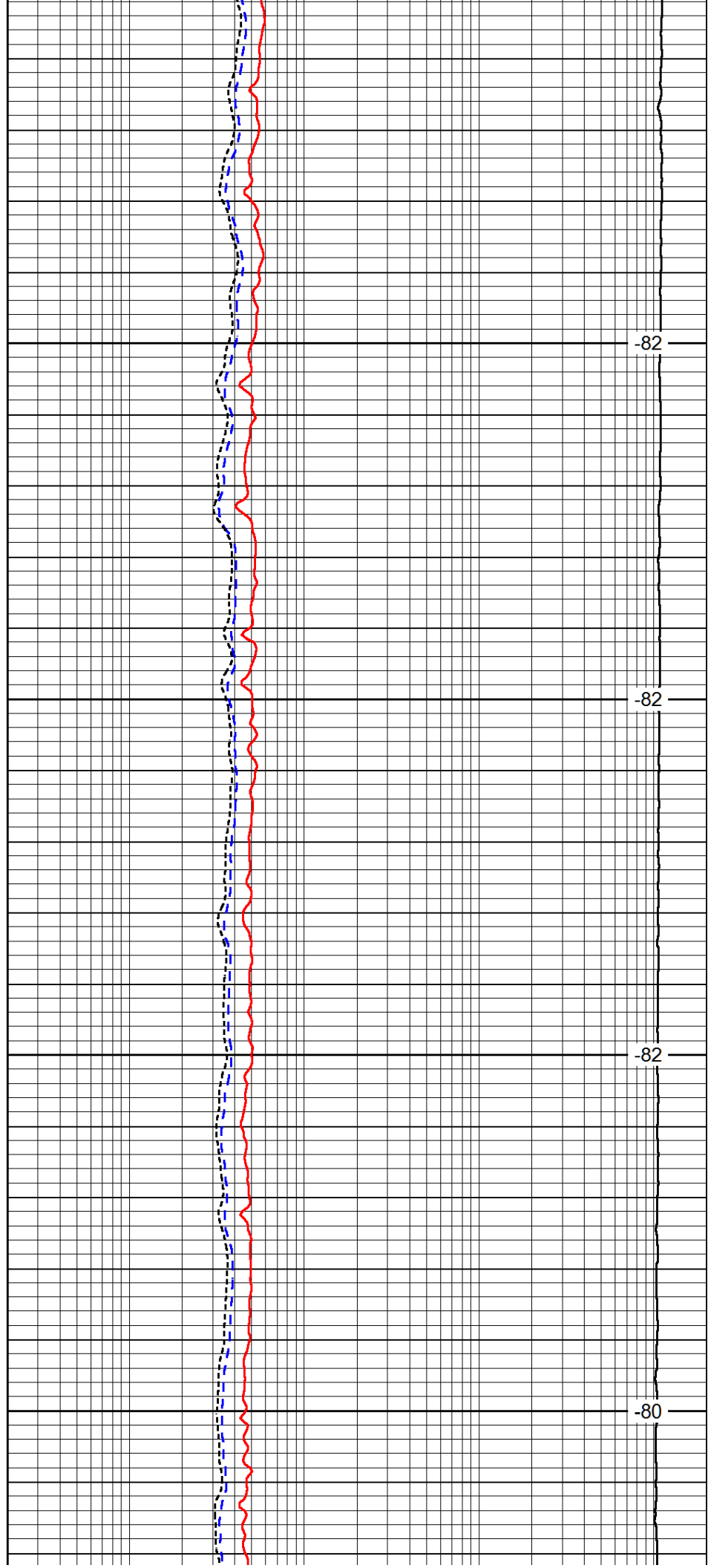


450

500

550

600

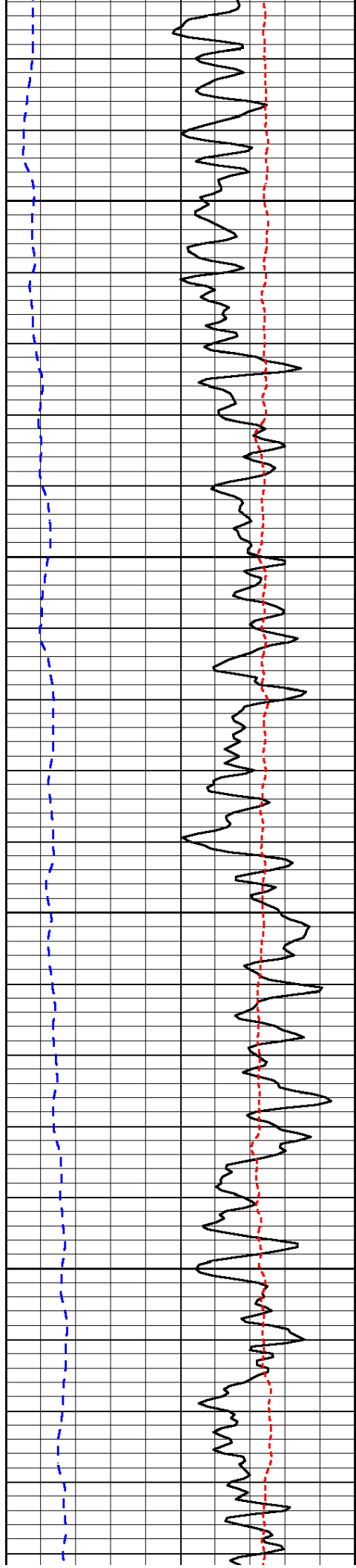


-82

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-82

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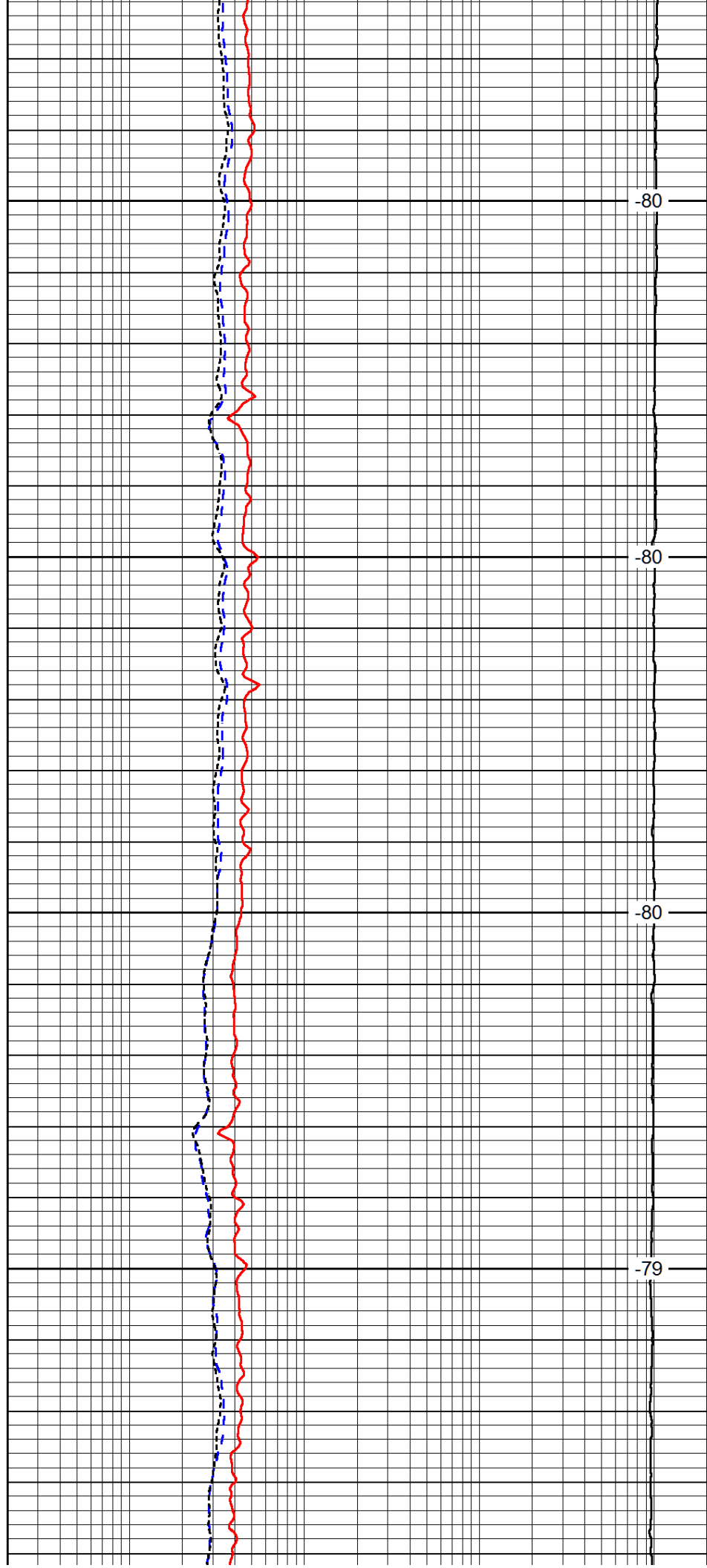


650

700

750

800

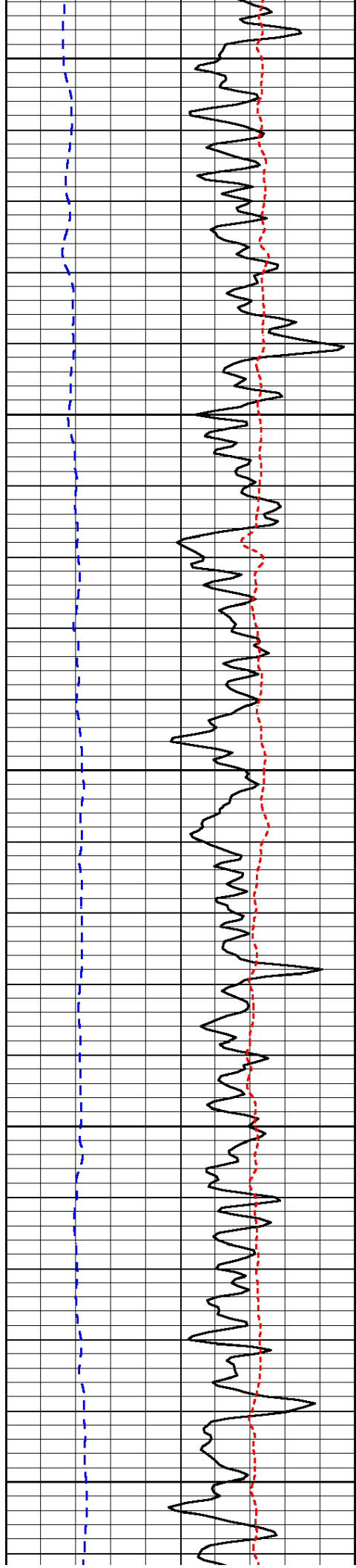


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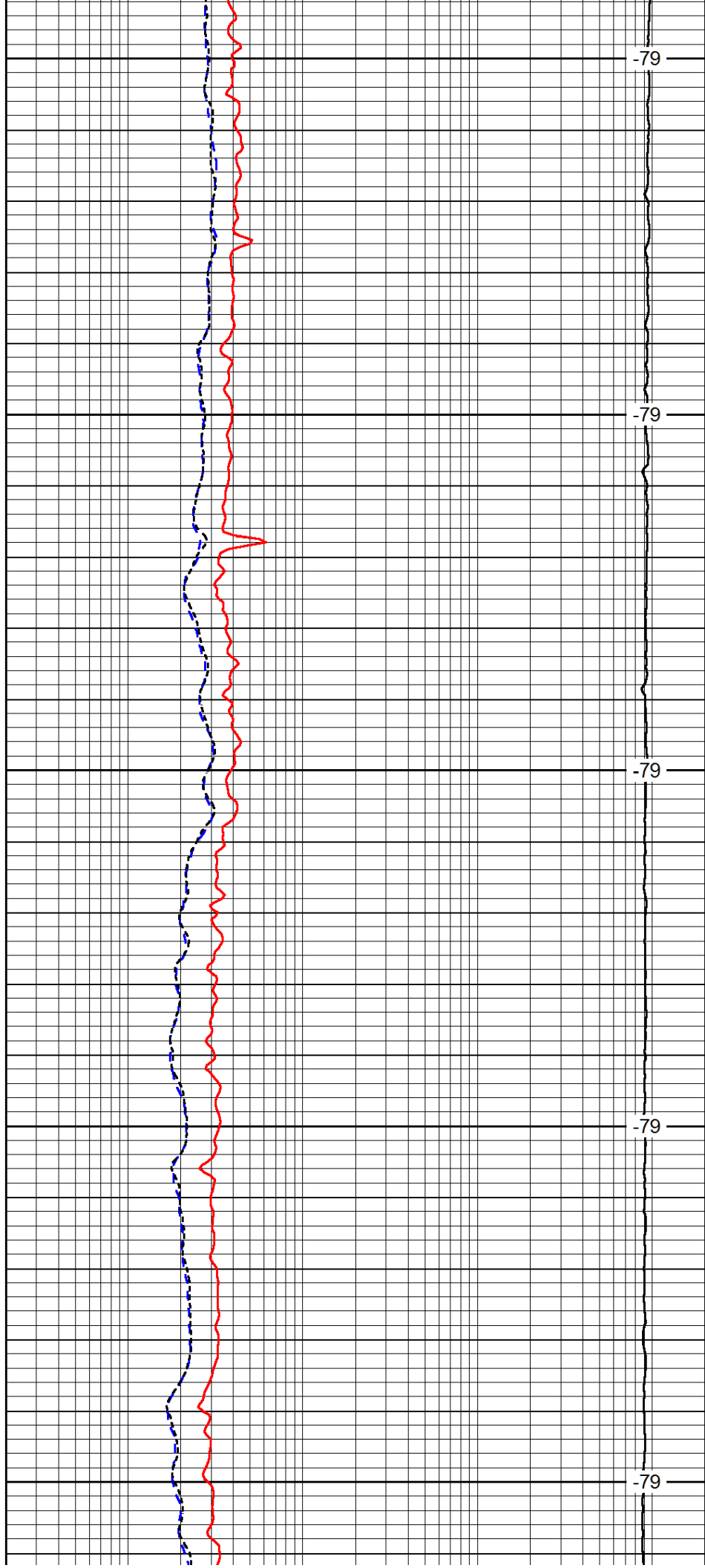
850

900

950

1000

1050



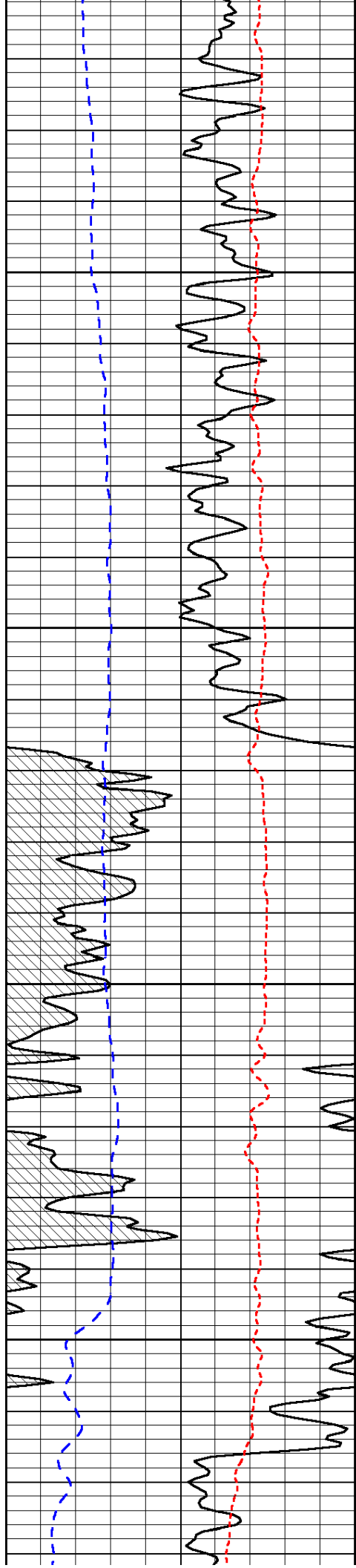
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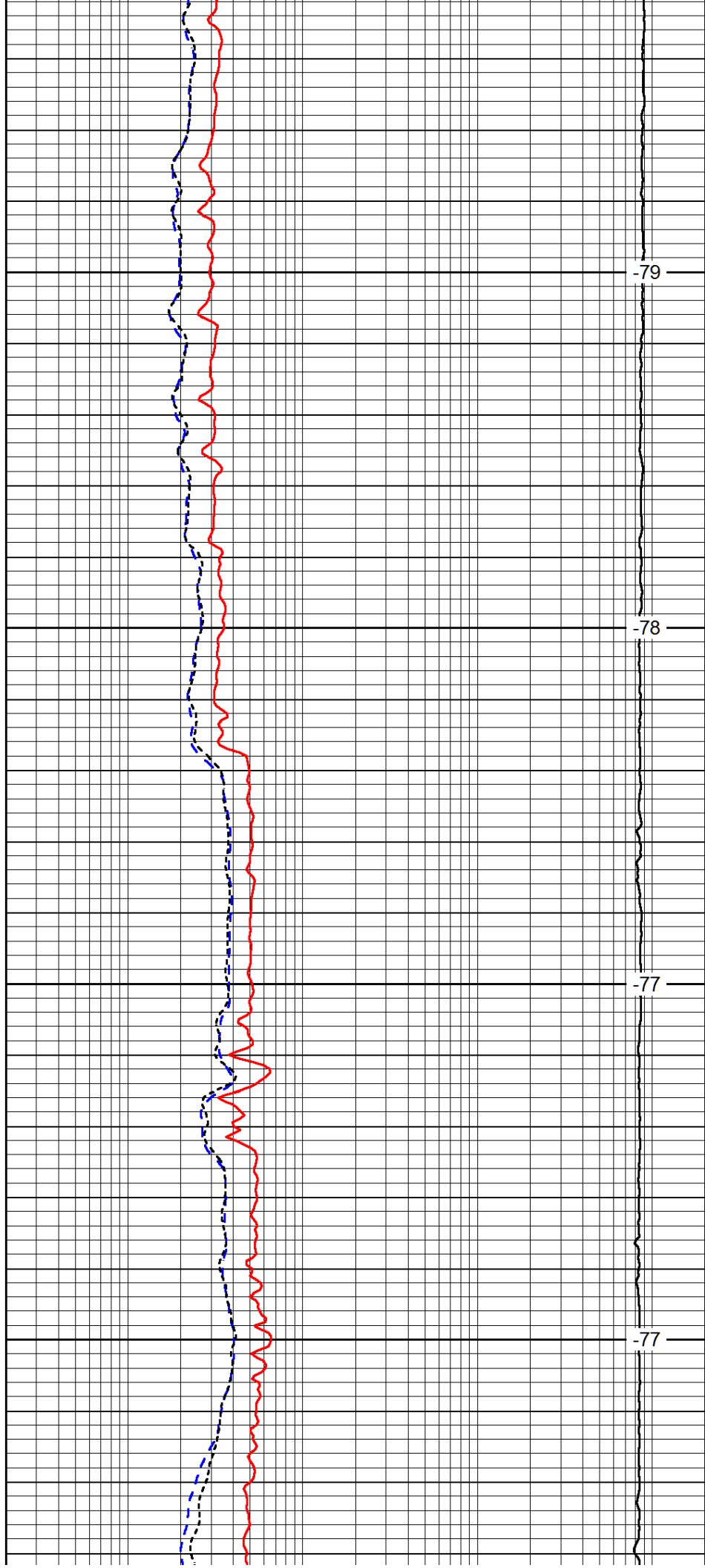


1100

1150

1200

1250

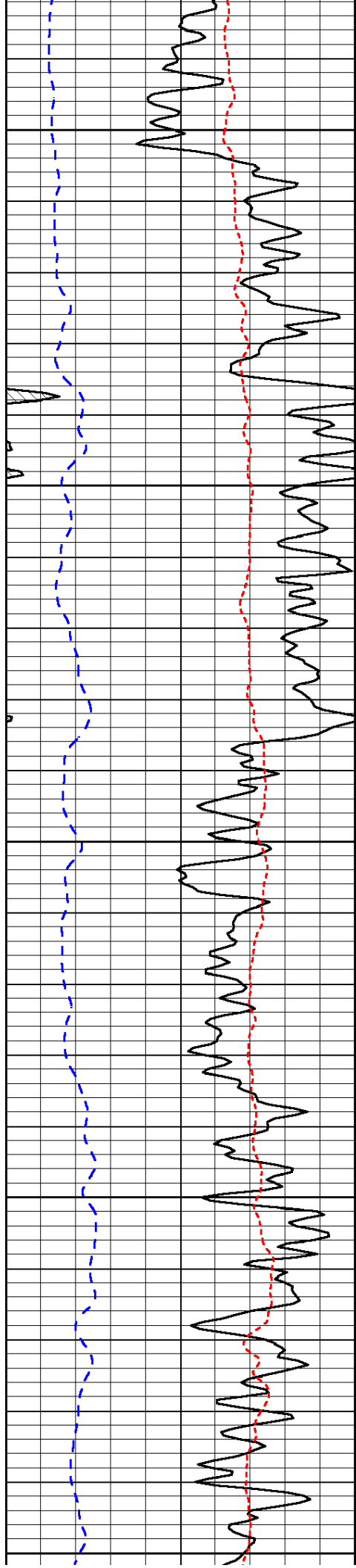


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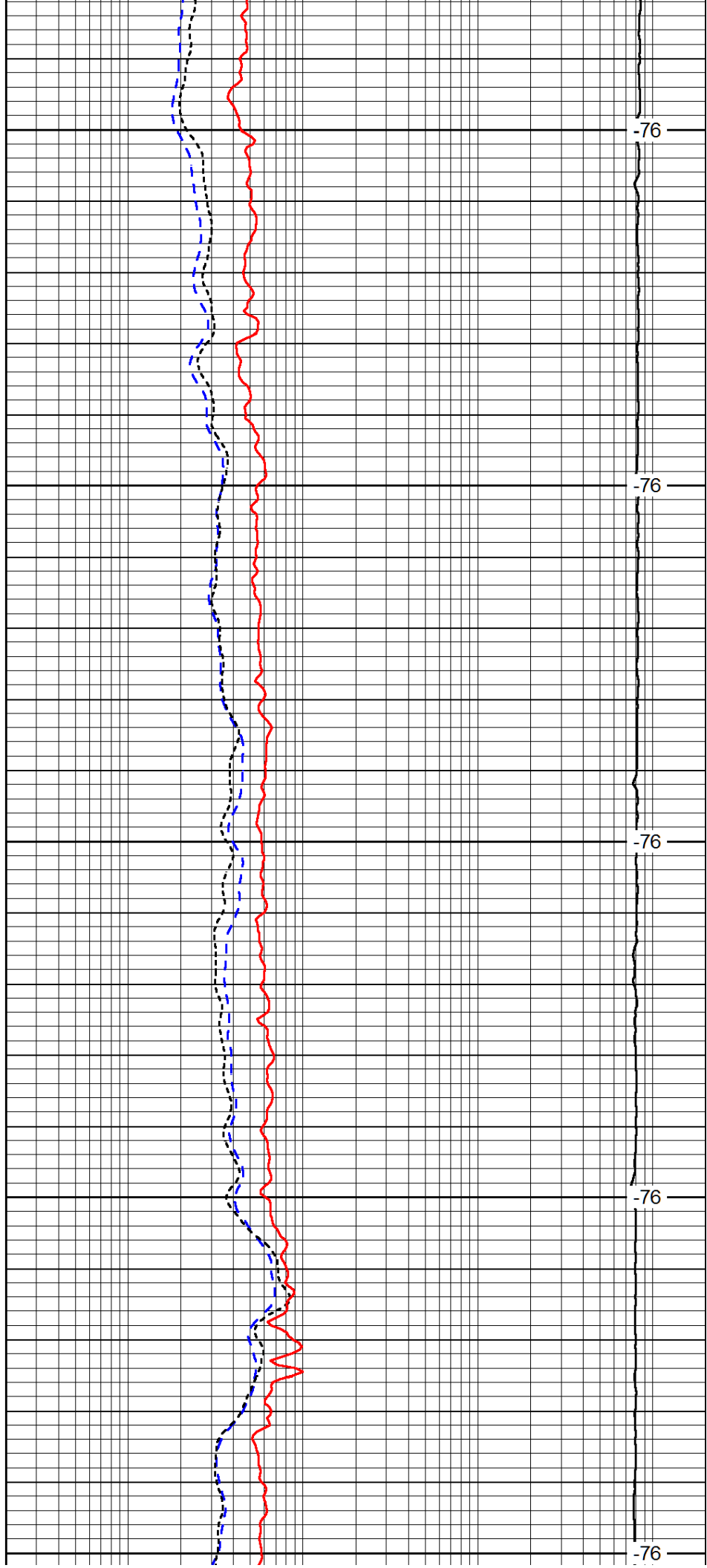
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1350

1400

1450

1500



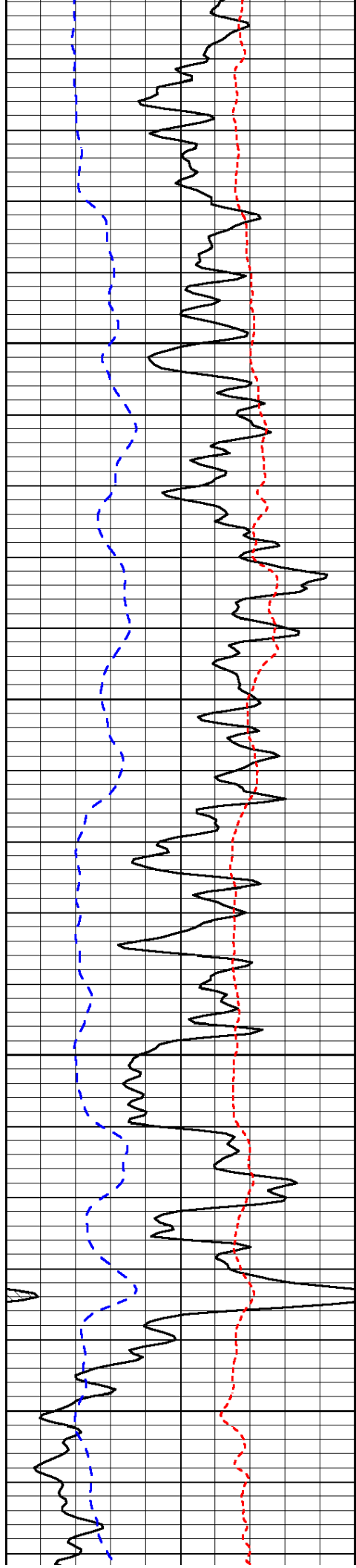
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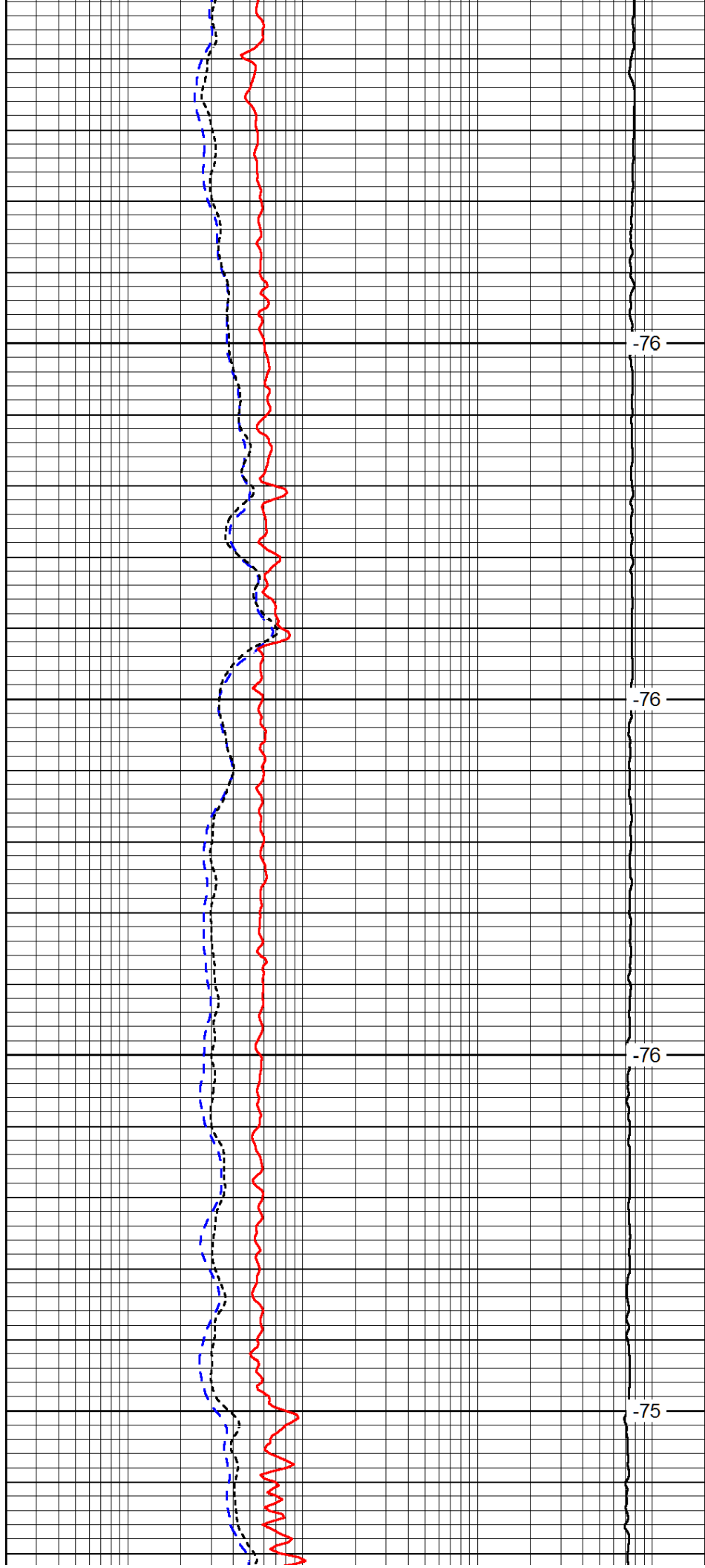


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1600

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1700

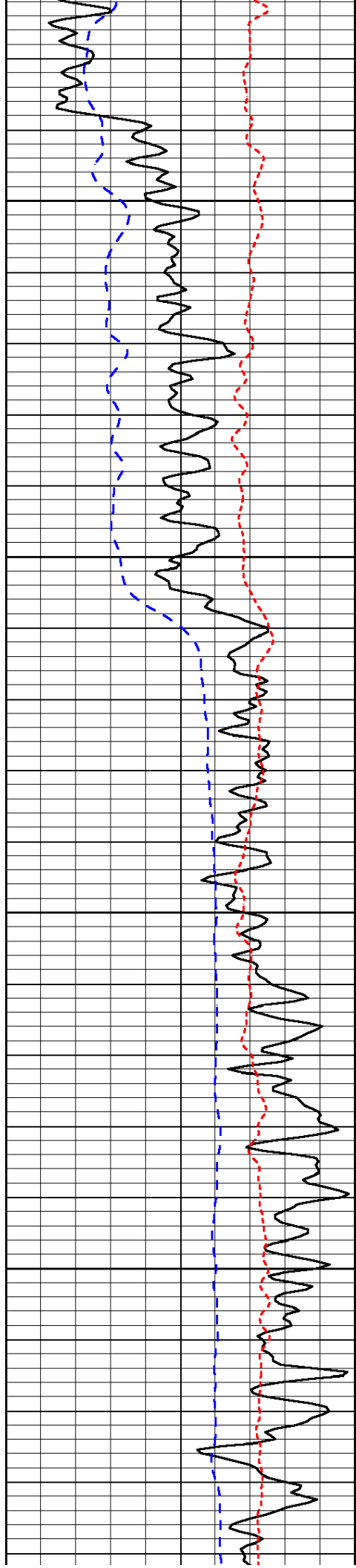


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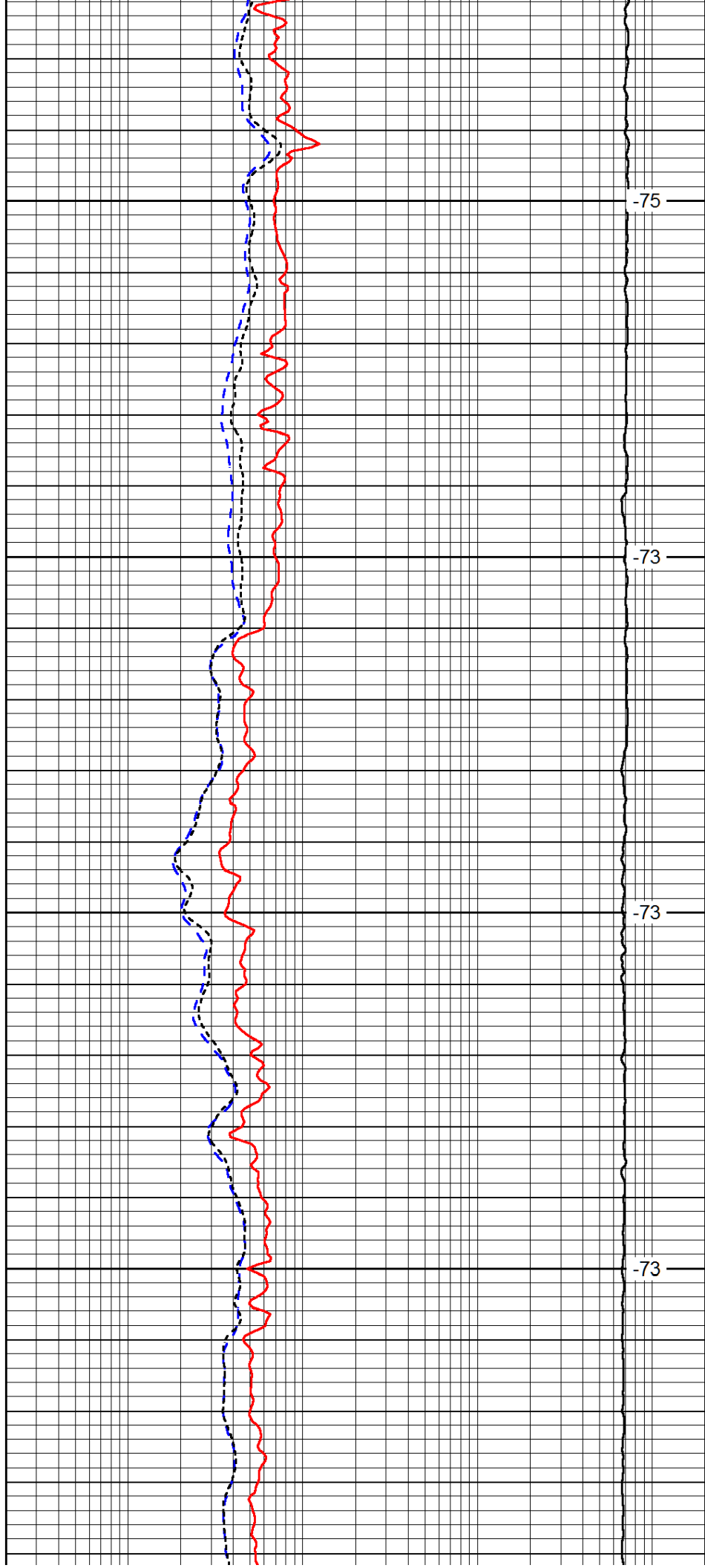


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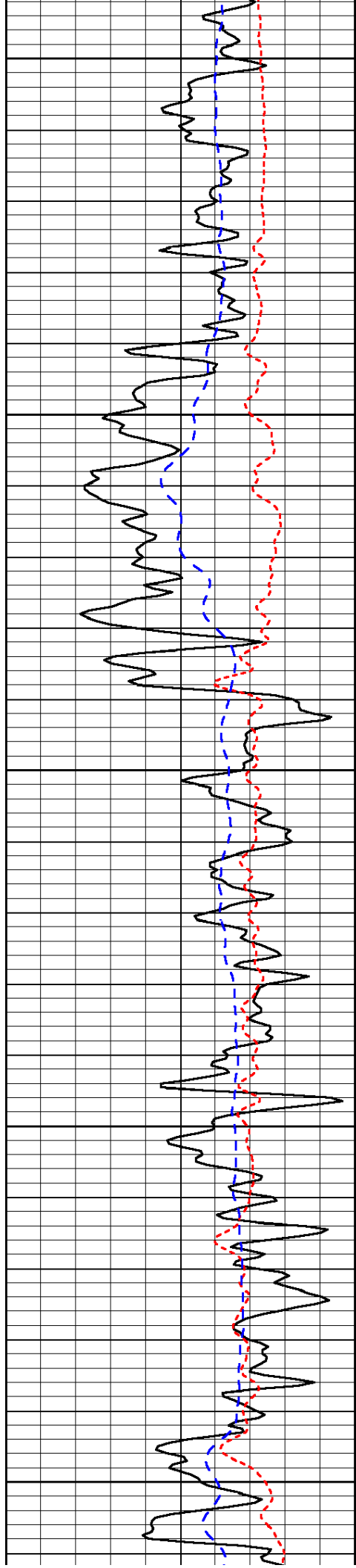


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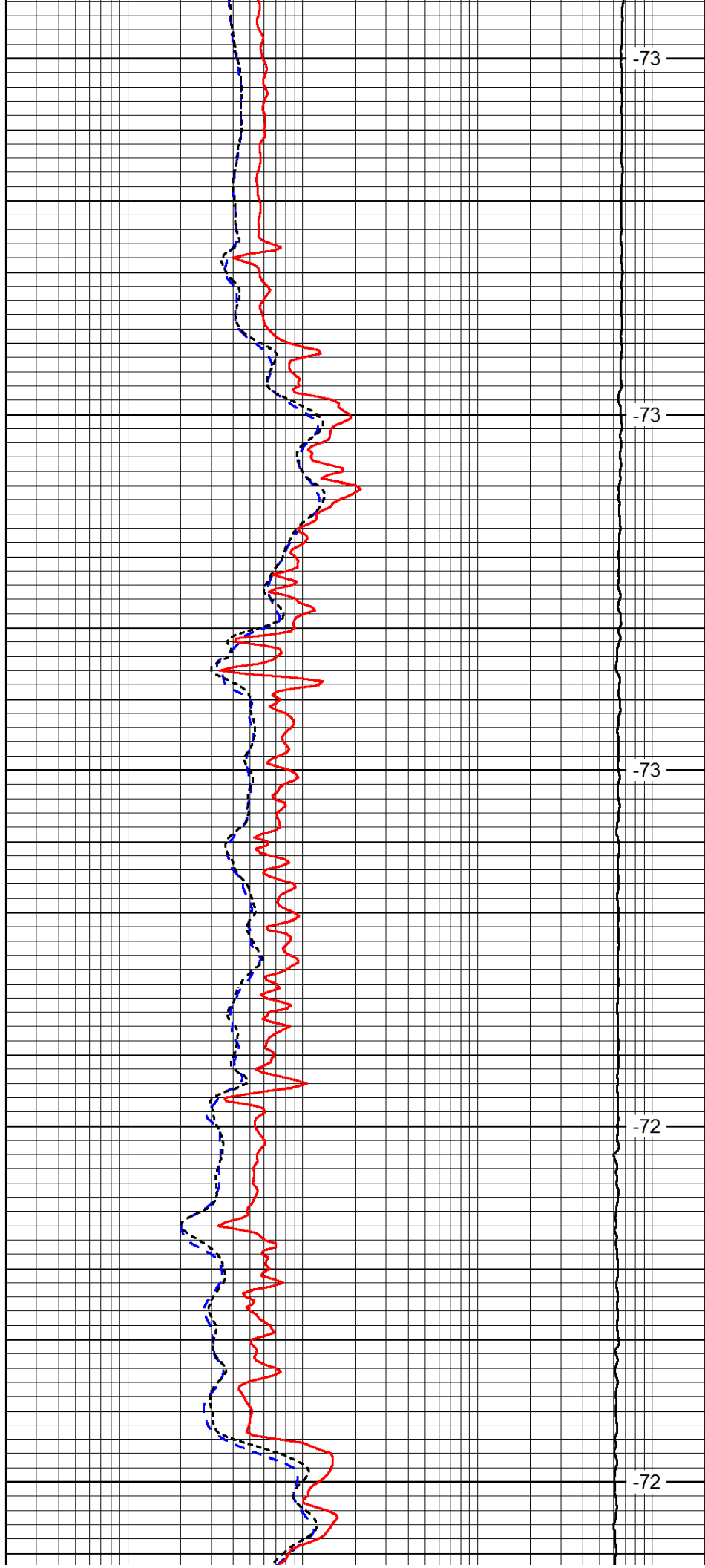
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2000

2050

2100

2150



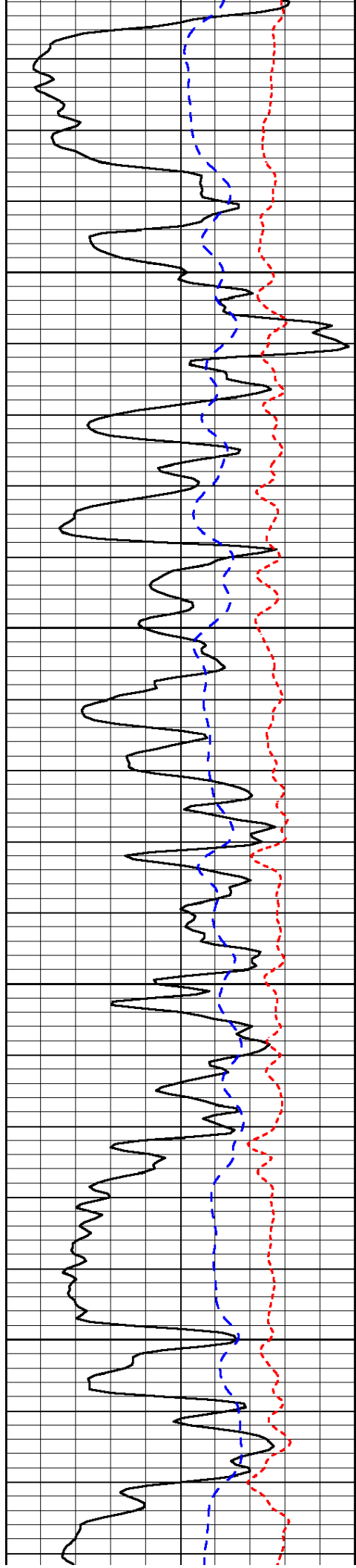
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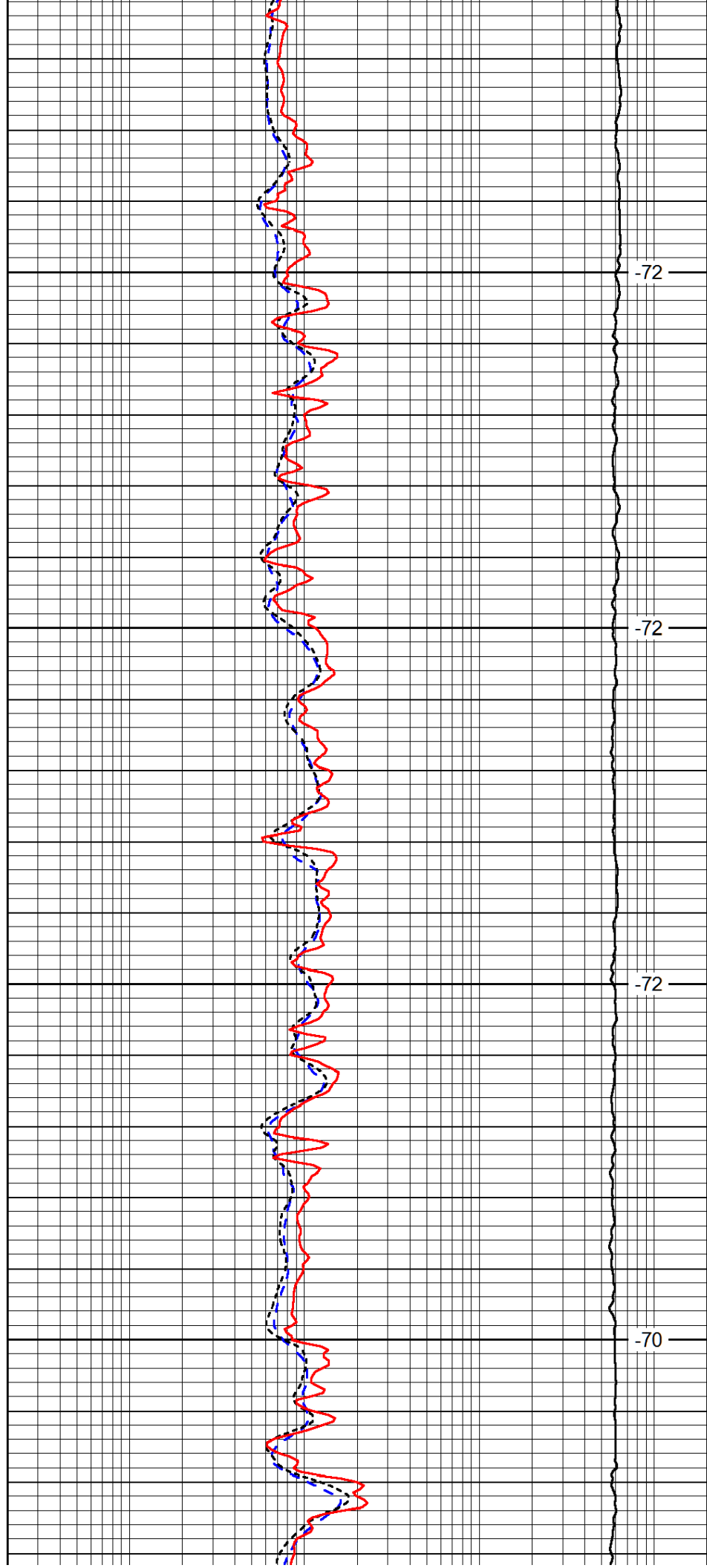


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2250

2300

2350

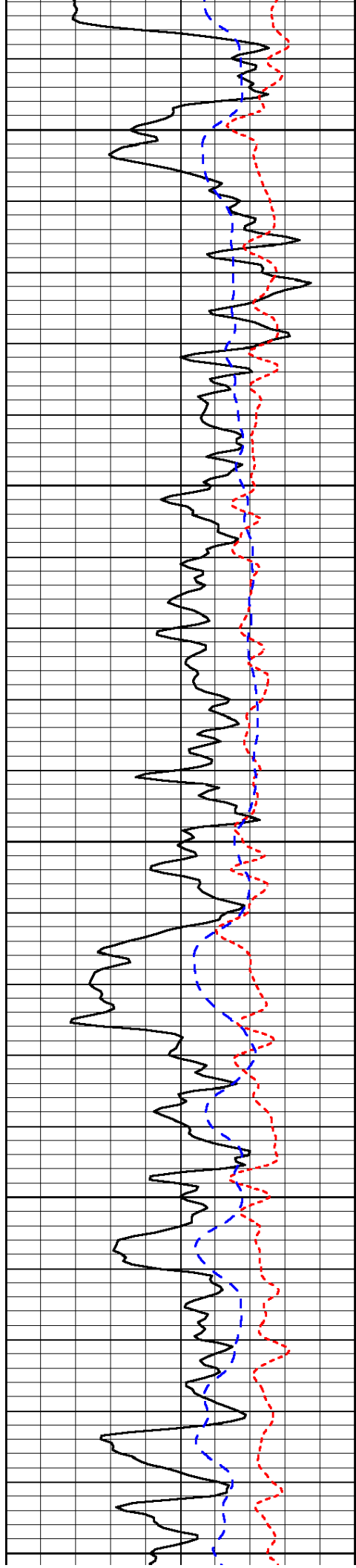


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-72

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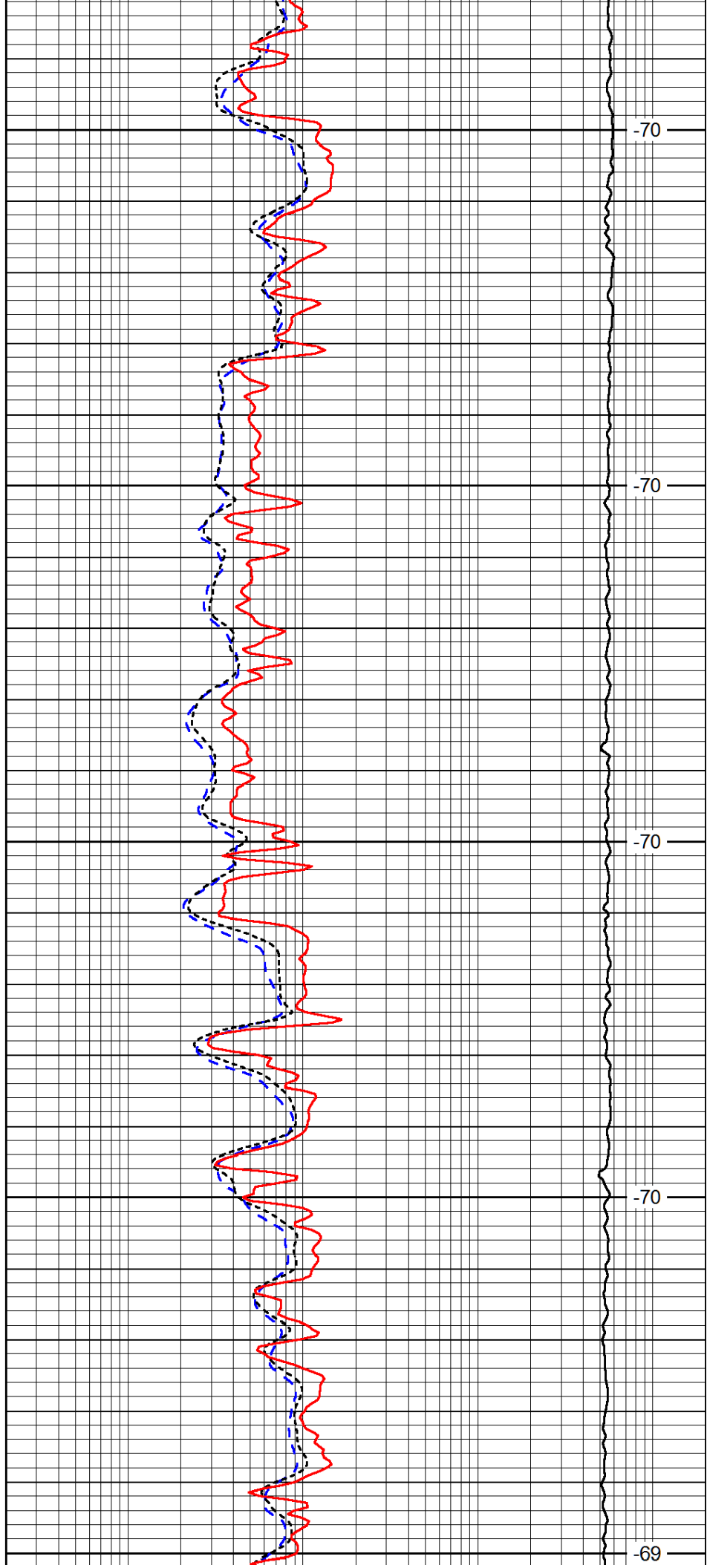
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2500

2550

2600



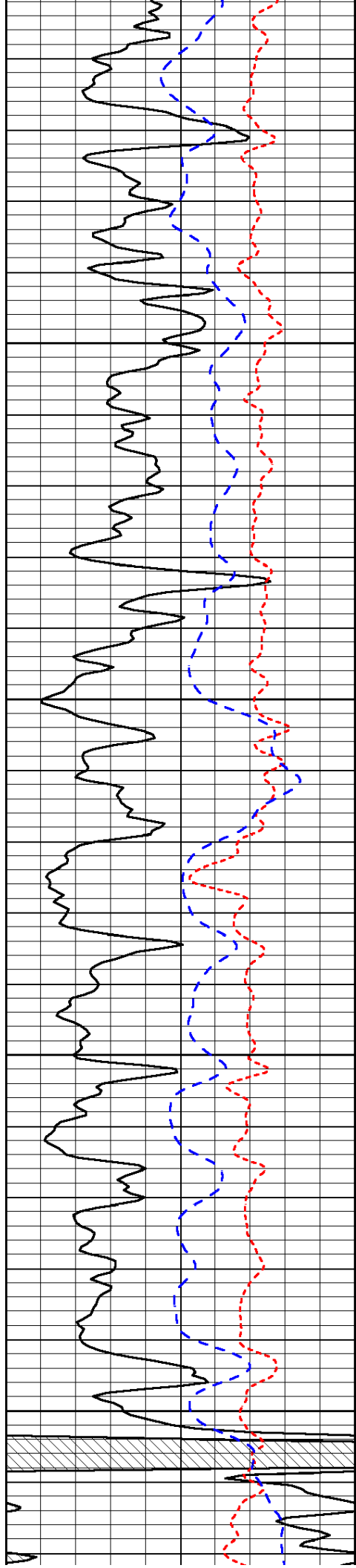
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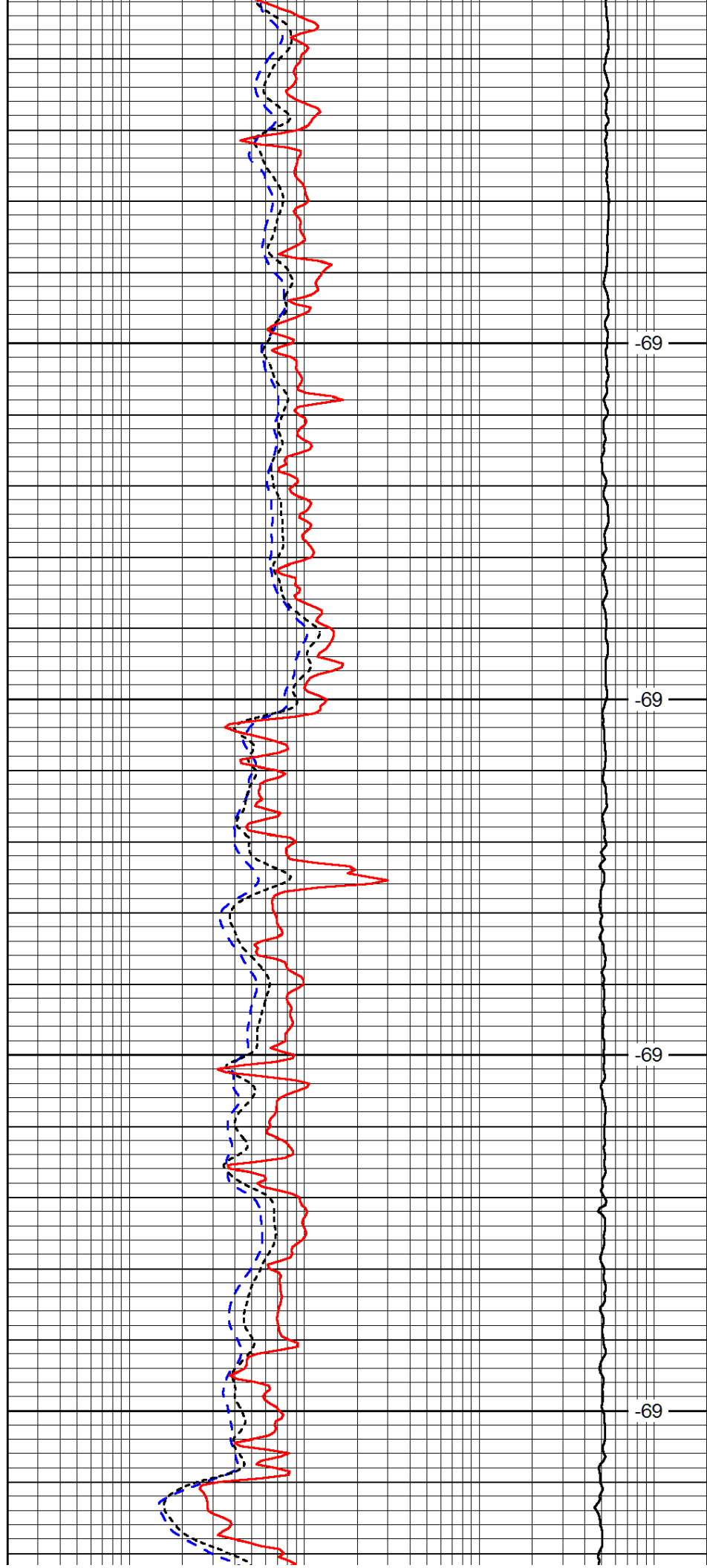


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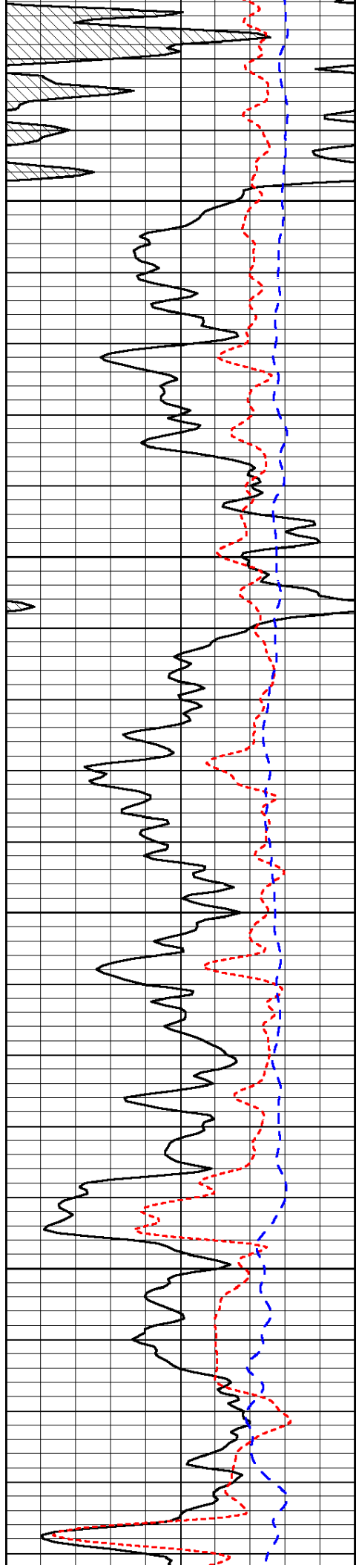


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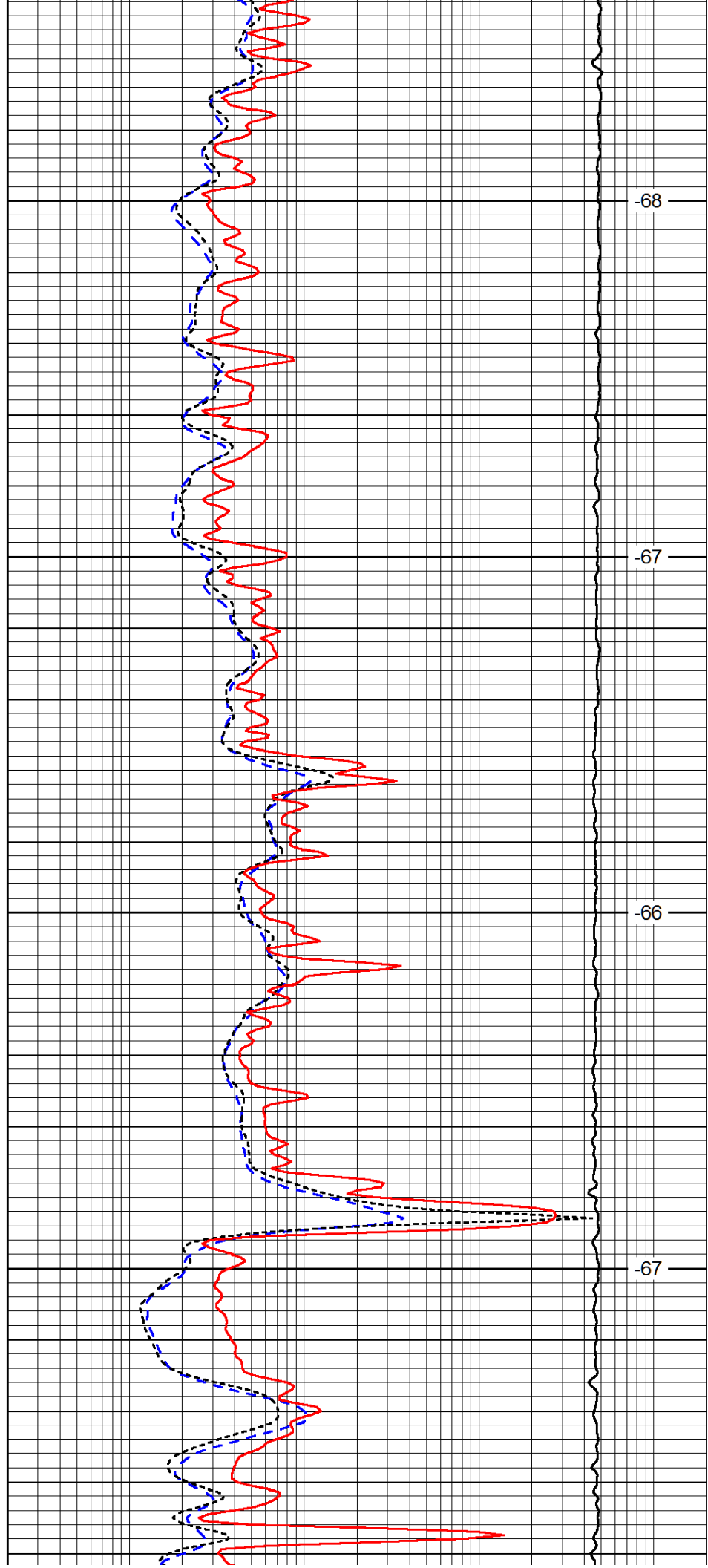


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2900

2950

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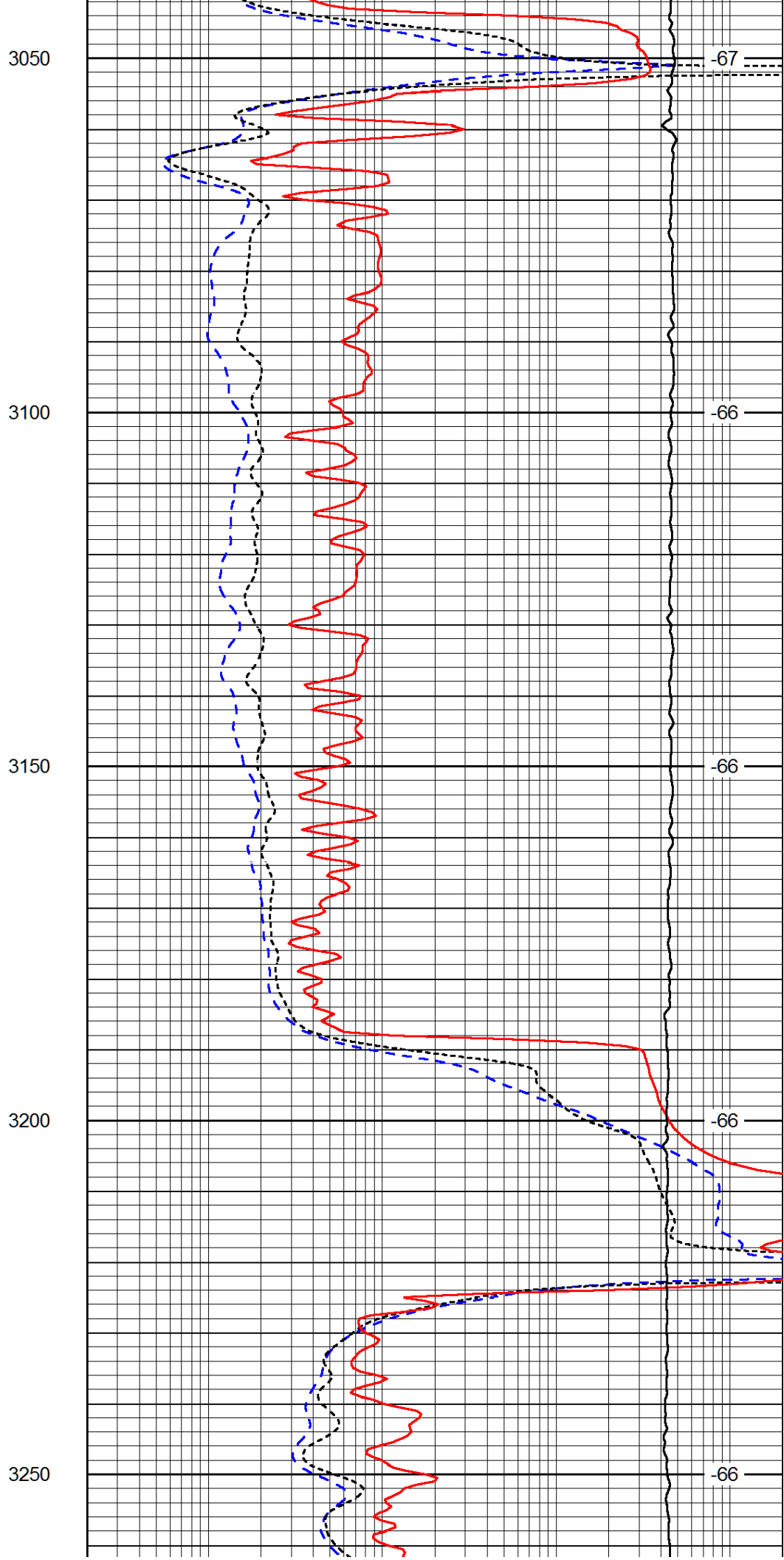
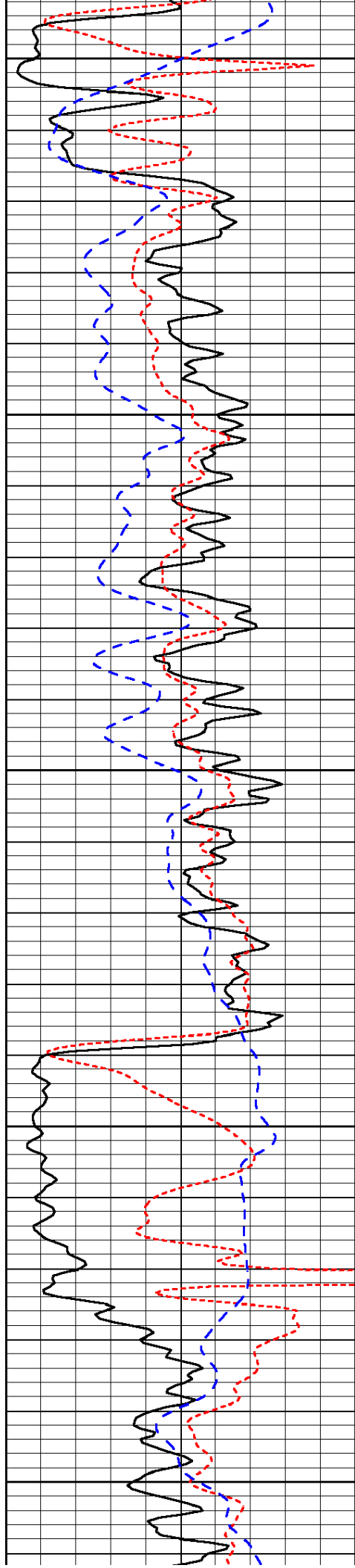


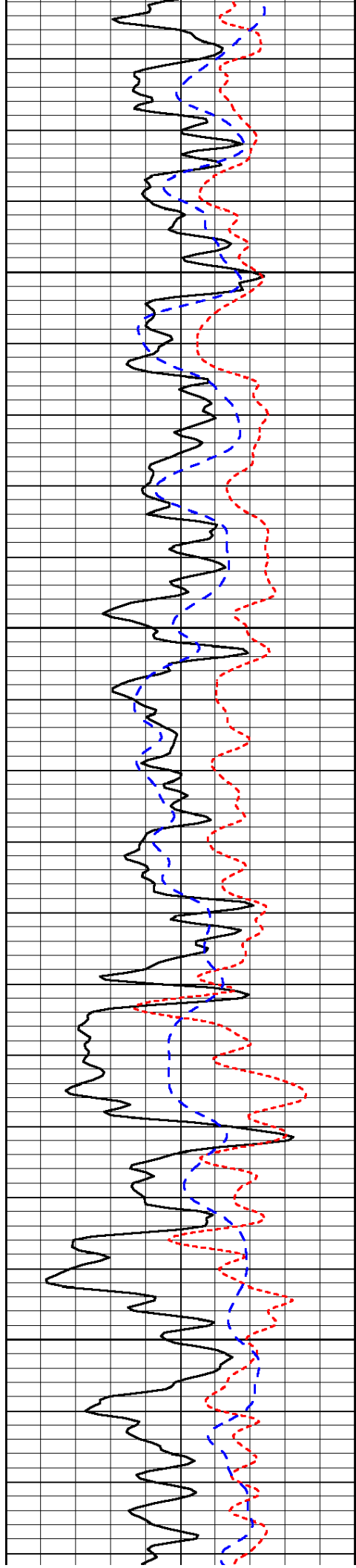
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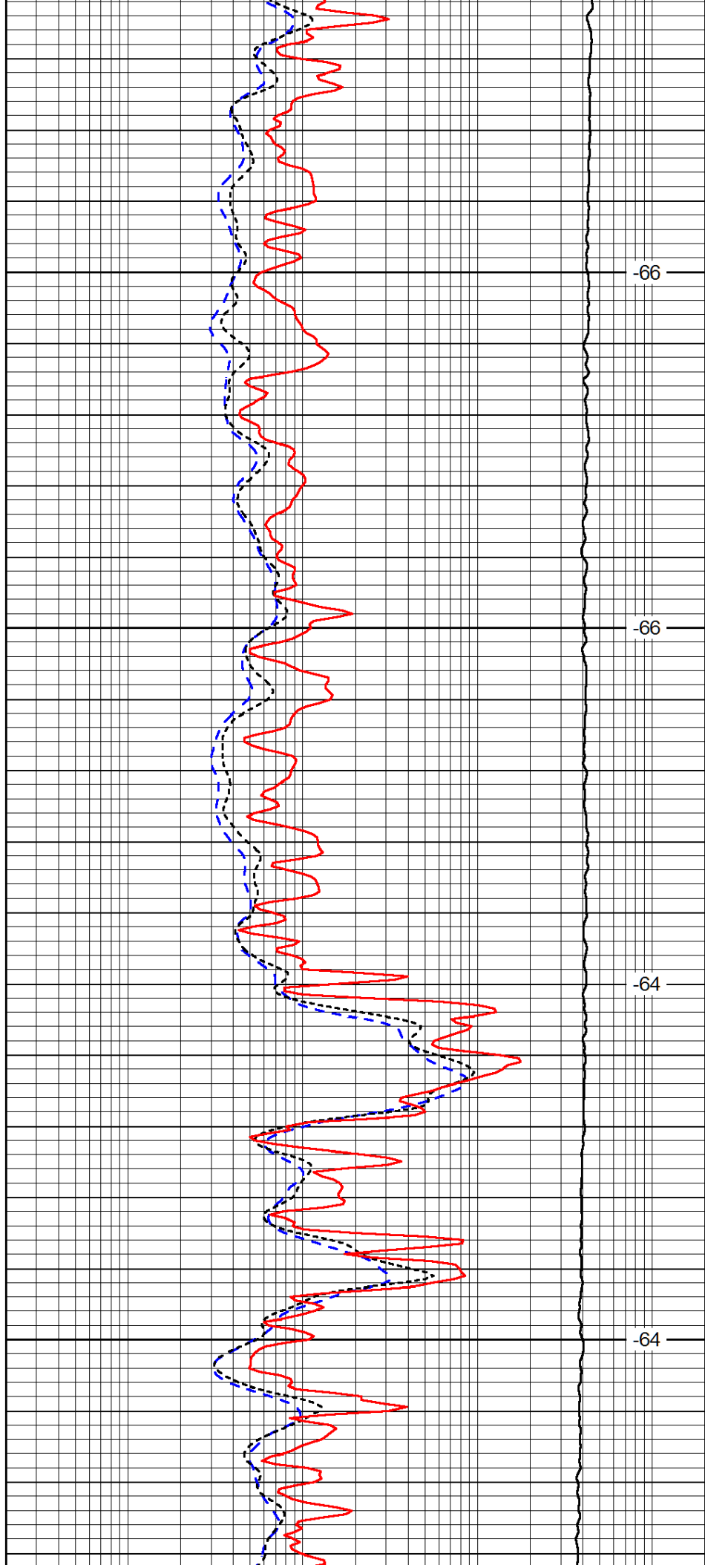


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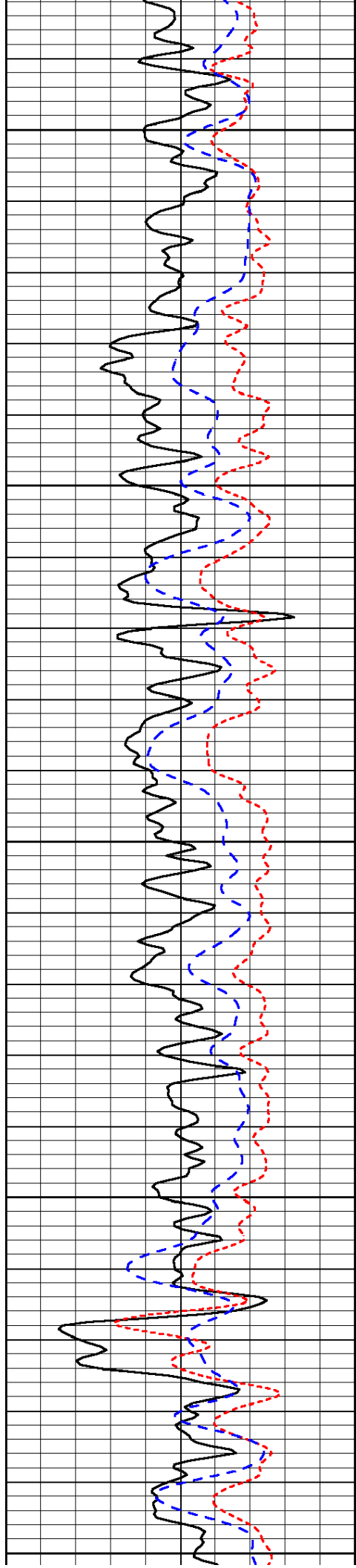


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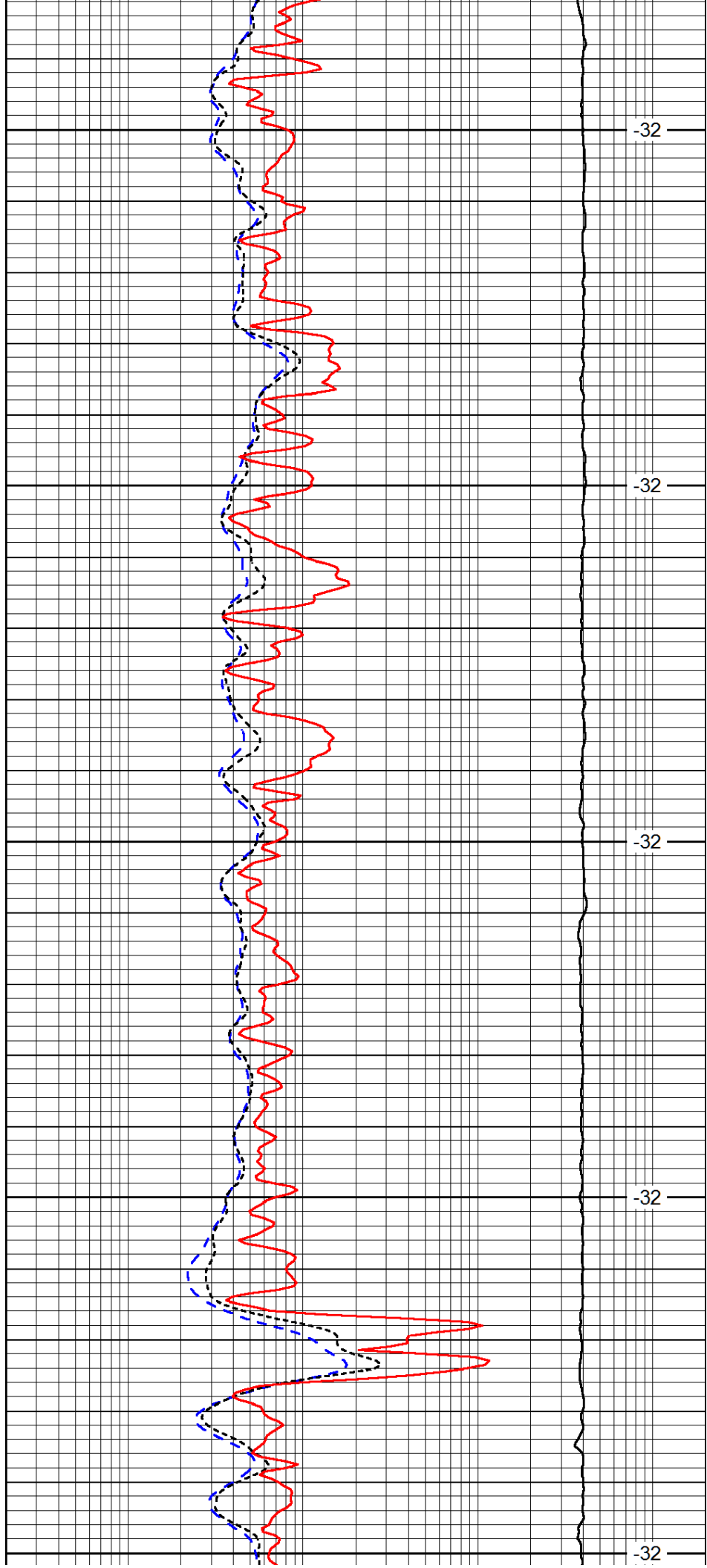
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3600

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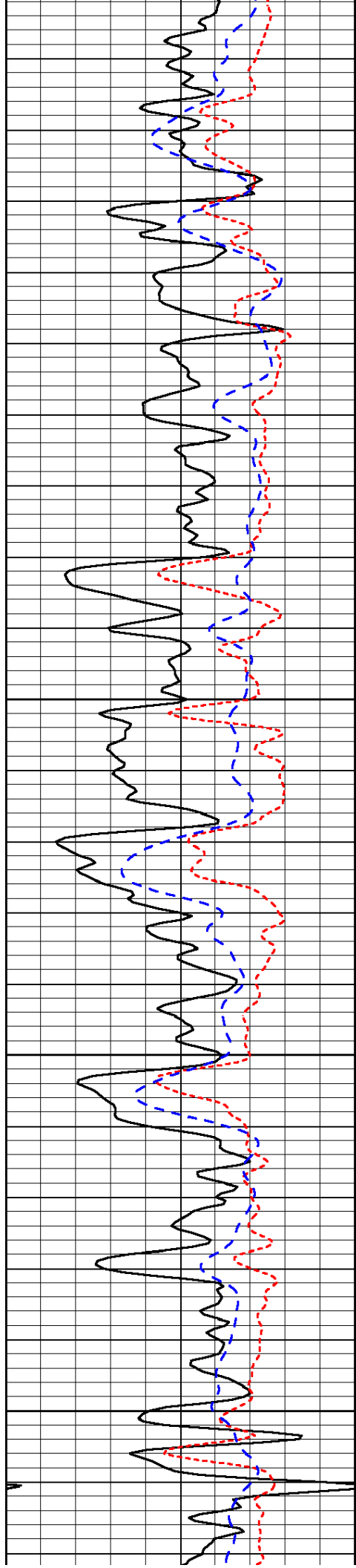
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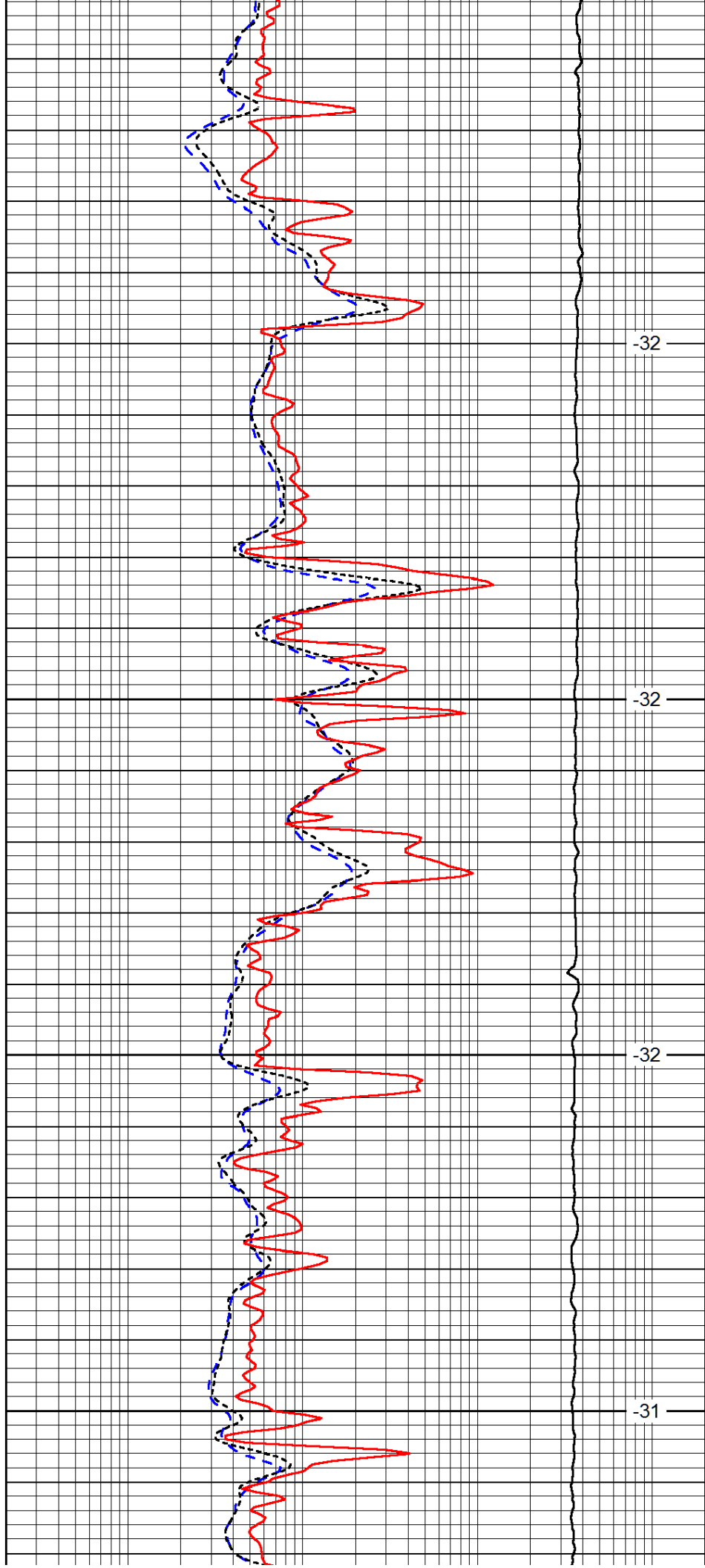


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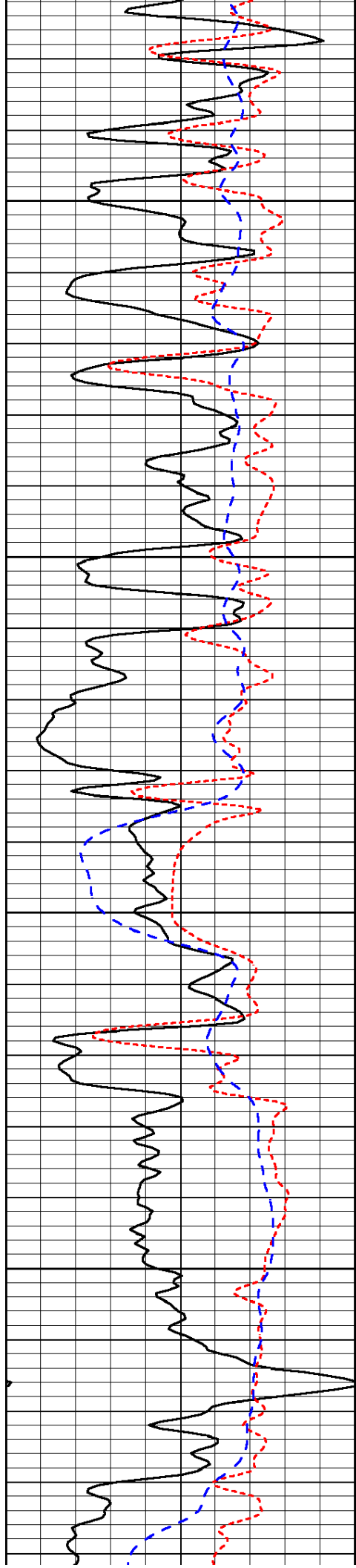


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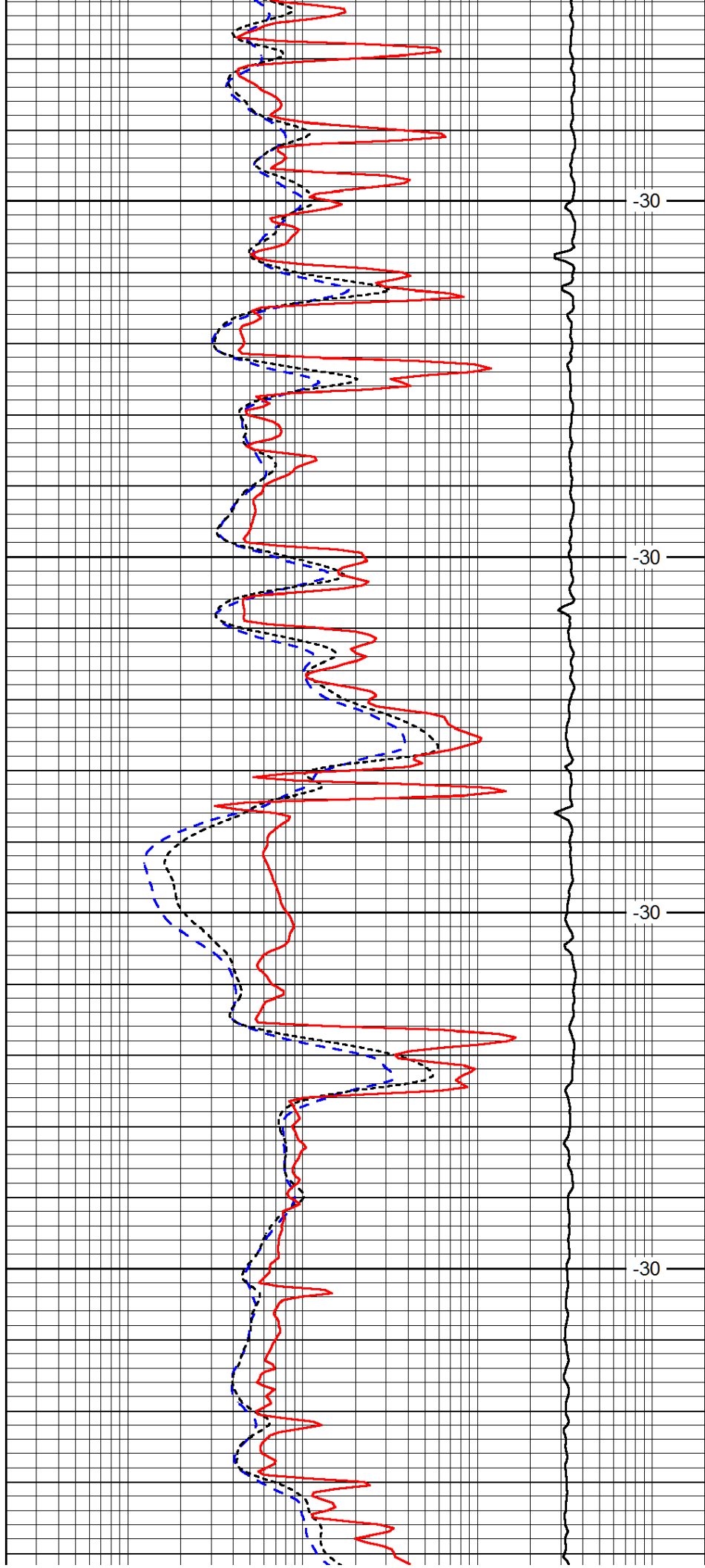


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4000

4050

4100

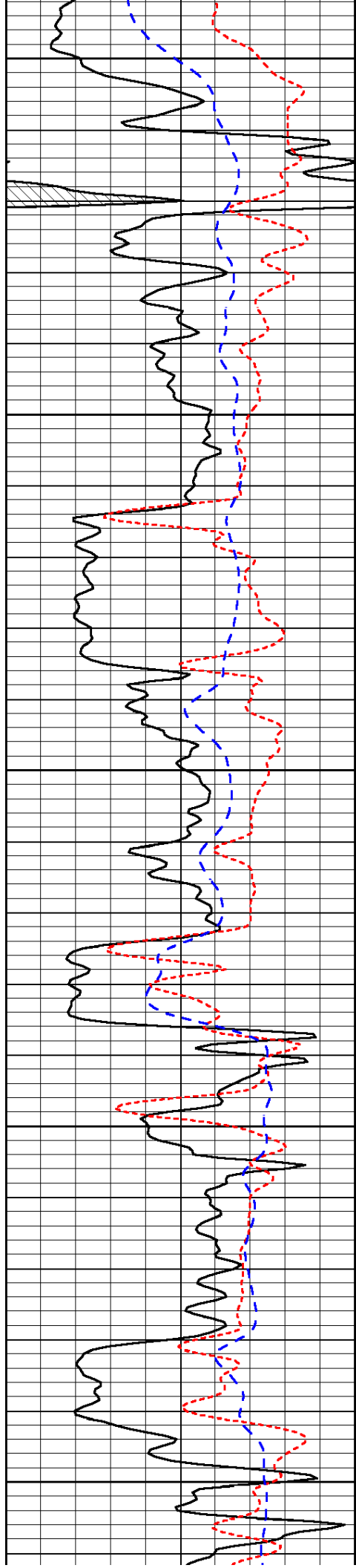


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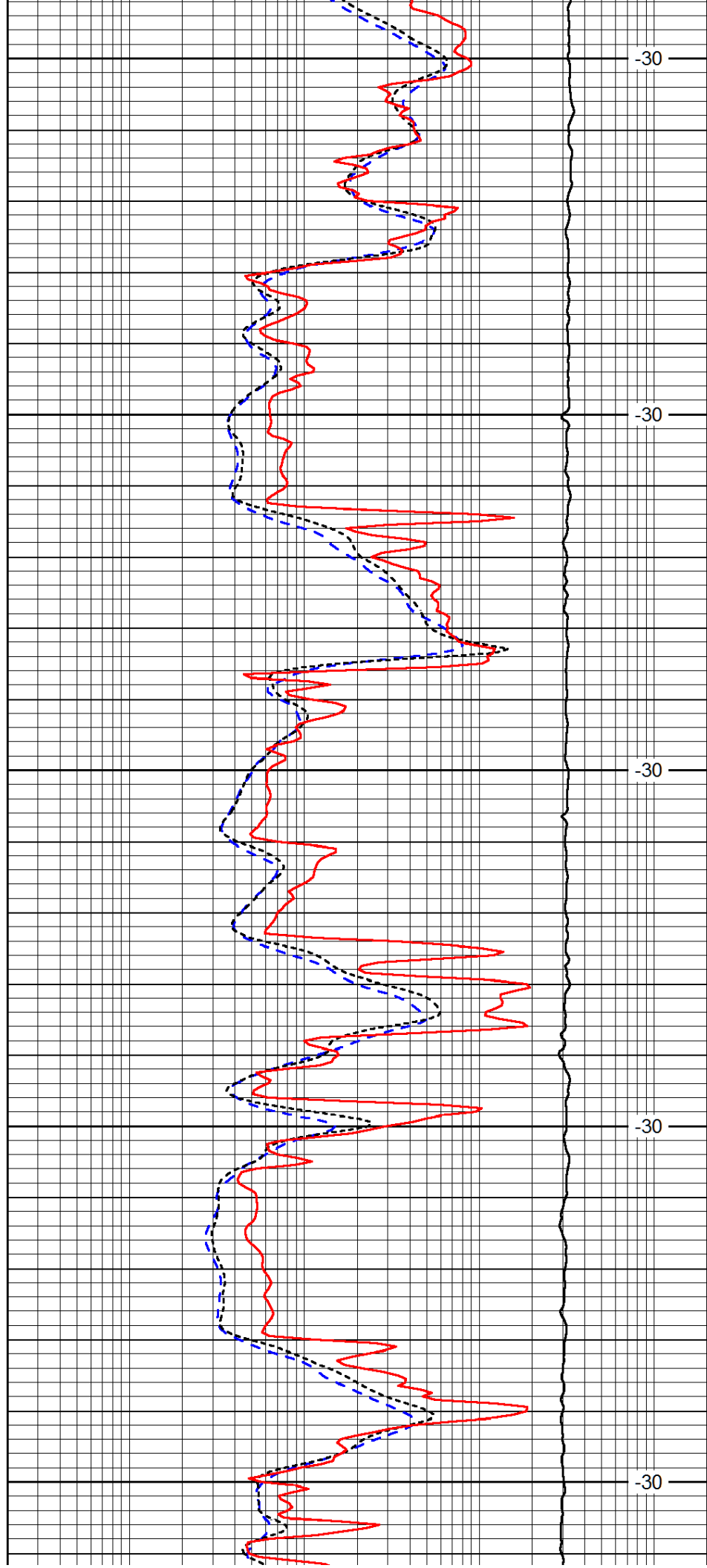
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4200

4250

4300

4350



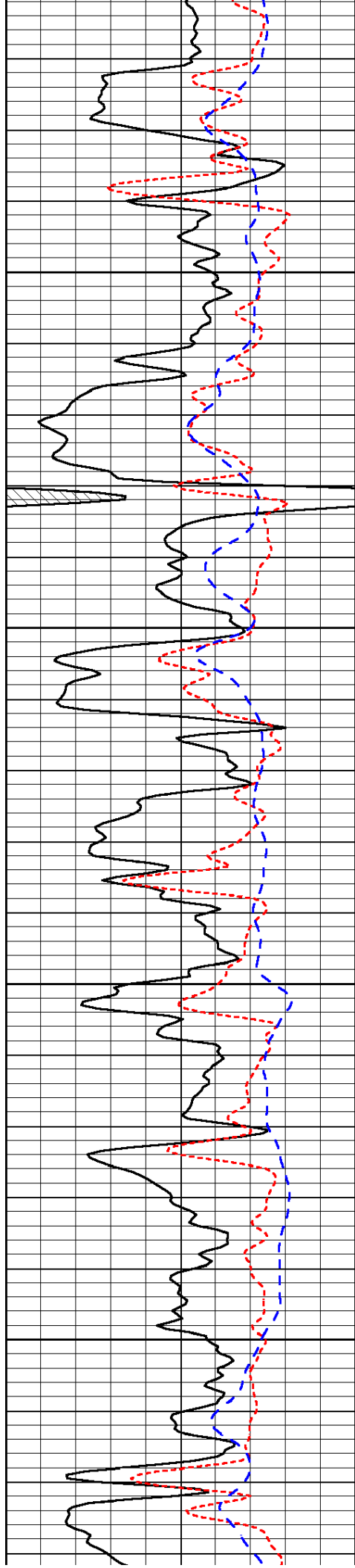
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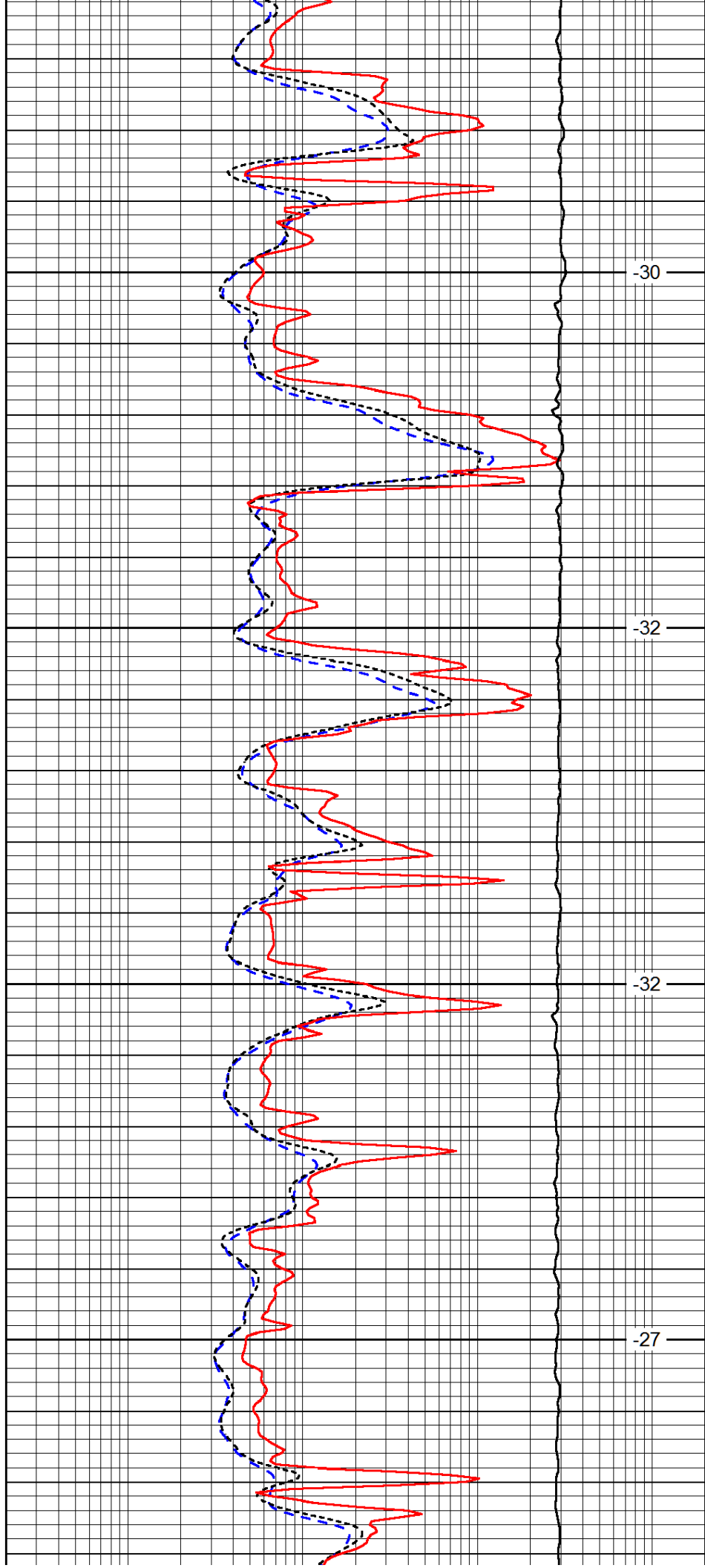


4400

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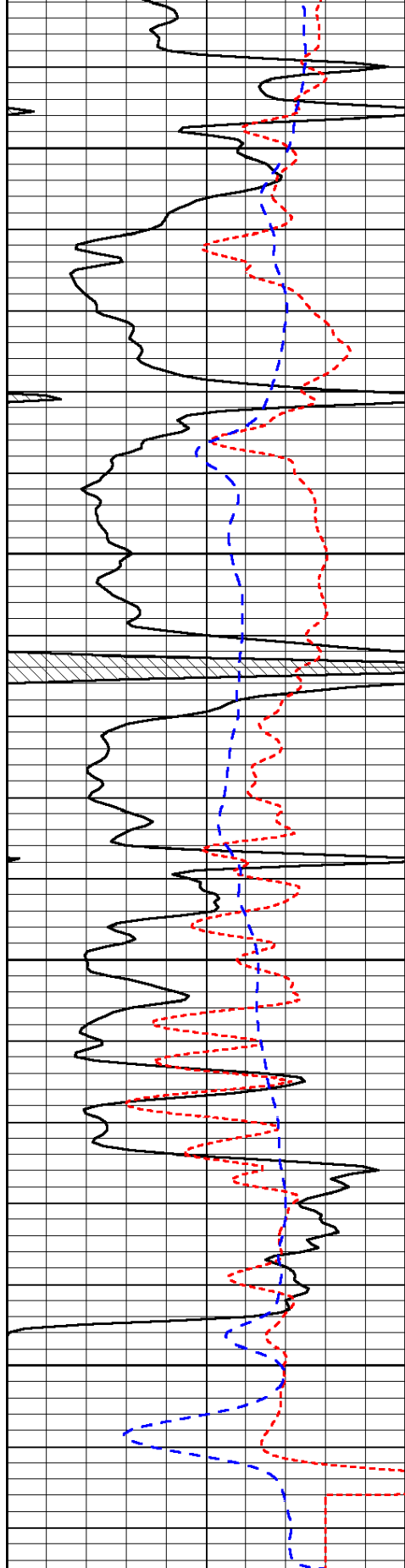


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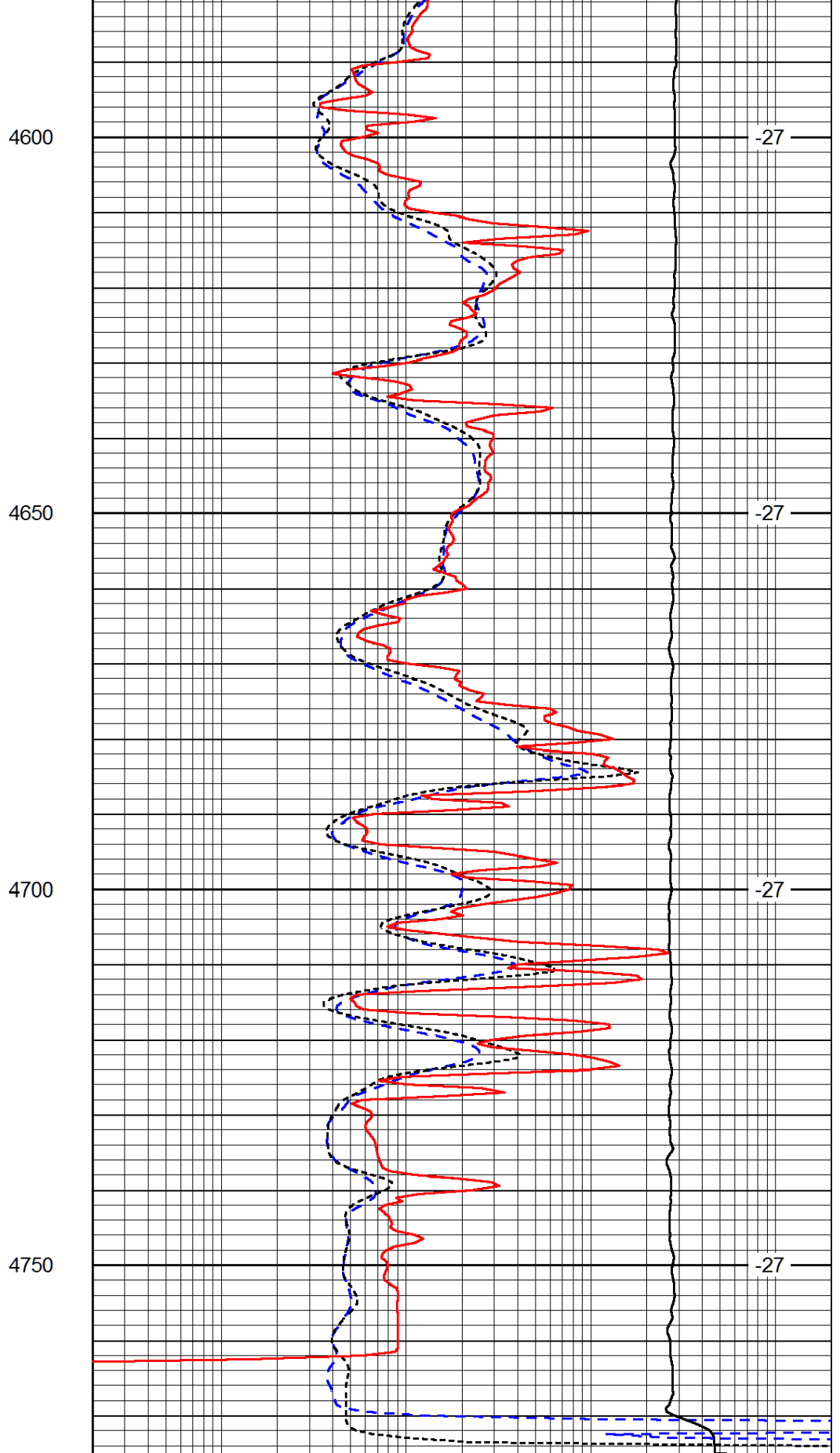
-32

-32

-27



0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

LSPD

(ft/min)

