



HIGH RESOLUTION INDUCTION COMPENSATED DENSITY COMPENSATED NEUTRON

Pioneer Energy Services

Company	Bonanza Creek Energy Operating Co. LLC	Company	Bonanza Creek Energy Operating Co. LLC
Well	Pronghorn K-5-8 XRLNB	Well	Pronghorn K-5-8 XRLNB
Field	Wattenberg	Field	Wattenberg
County	Weld	County	Weld
State	Colorado	State	Colorado
Location:	API # : 05 123 40087 00	Other Services	None
Permanent Datum	SEC 5 TWP 5N RGE 61W	Elevation	4658
Log Measured From	KB	K.B. 4674	
Drilling Measured From	KB	D.F. 4673	
		G.L. 4658	
Date	September 21, 2014		
Run Number	1		
Depth Driller	5581		
Depth Logger			
Bottom Logged Interval			
Top Log Interval	Casing		
Casing Driller	463		
Casing Logger			
Bit Size	8-3/4"		
Type Fluid in Hole	WBM		
Density / Viscosity	9.1 / 36		
pH / Fluid Loss	7.5 / NA		
Source of Sample	Mudpit		
Rm @ Meas. Temp	2.6 @ 72 F		
Rmf @ Meas. Temp	2.09 @ 72 F		
Rmc @ Meas. Temp	3.16 @ 72 F		
Source of Rmf / Rmc	Measure / Calc		
Rm @ BHT	1.17 @ 160 F		
Time Circulation Stopped	2130 9/20/2014		
Time Logger on Bottom	0115 9/21/2014		
Maximum Recorded Temperature	160 F		
Equipment Number	36		
Location	Ft. Morgan, CO		
Recorded By	Shaun Stump		
Witnessed By	Tim May		

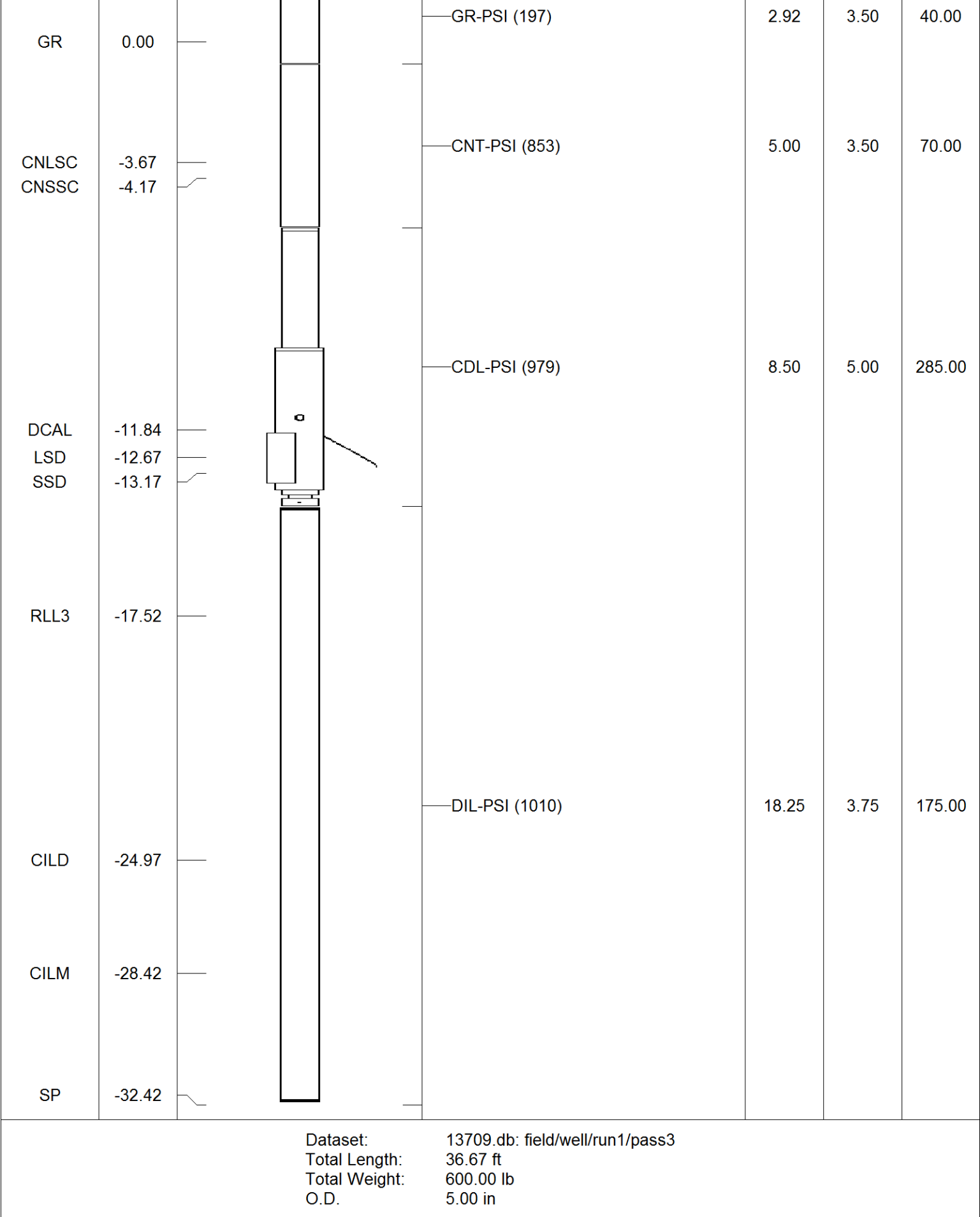
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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not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

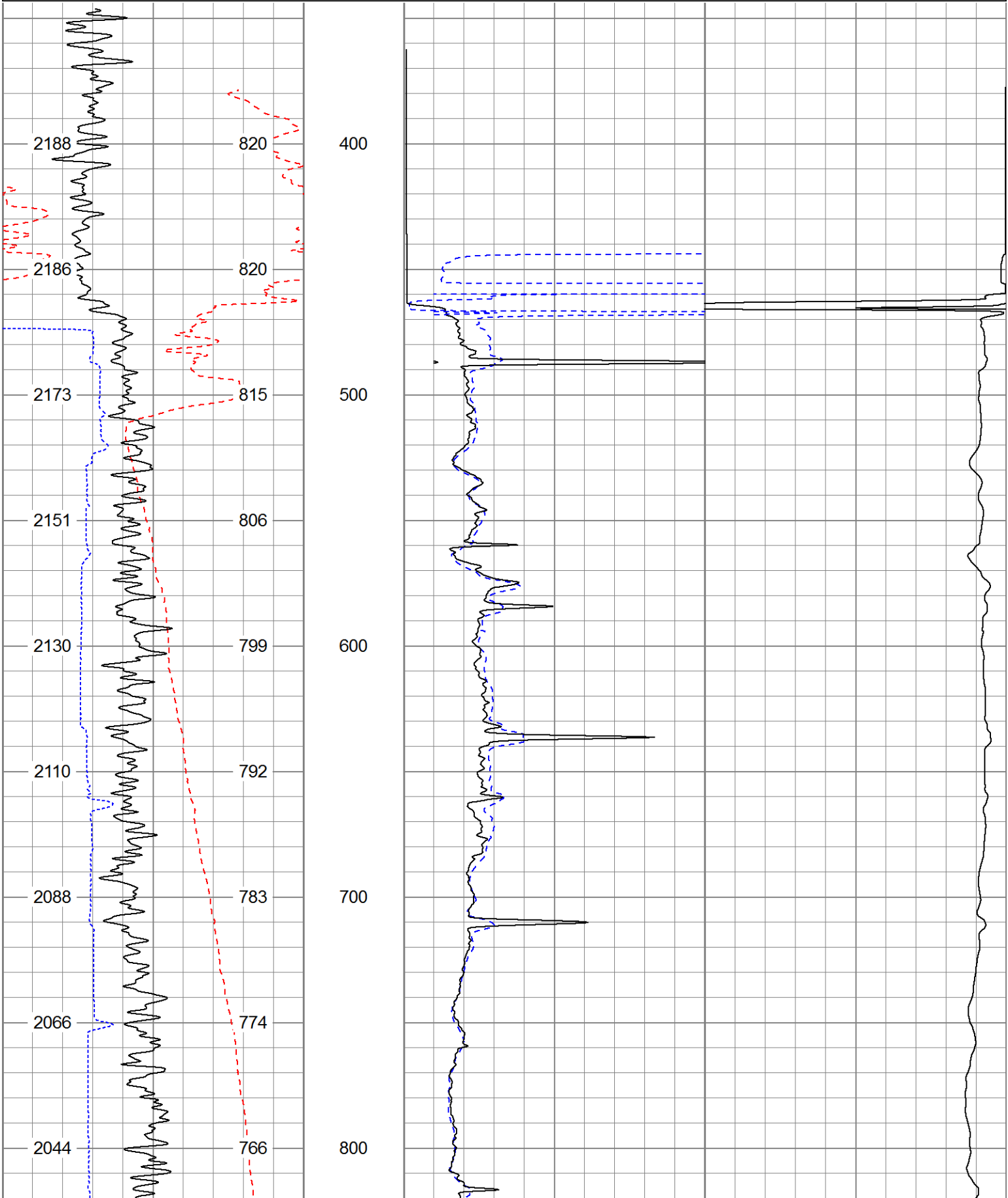
Comments

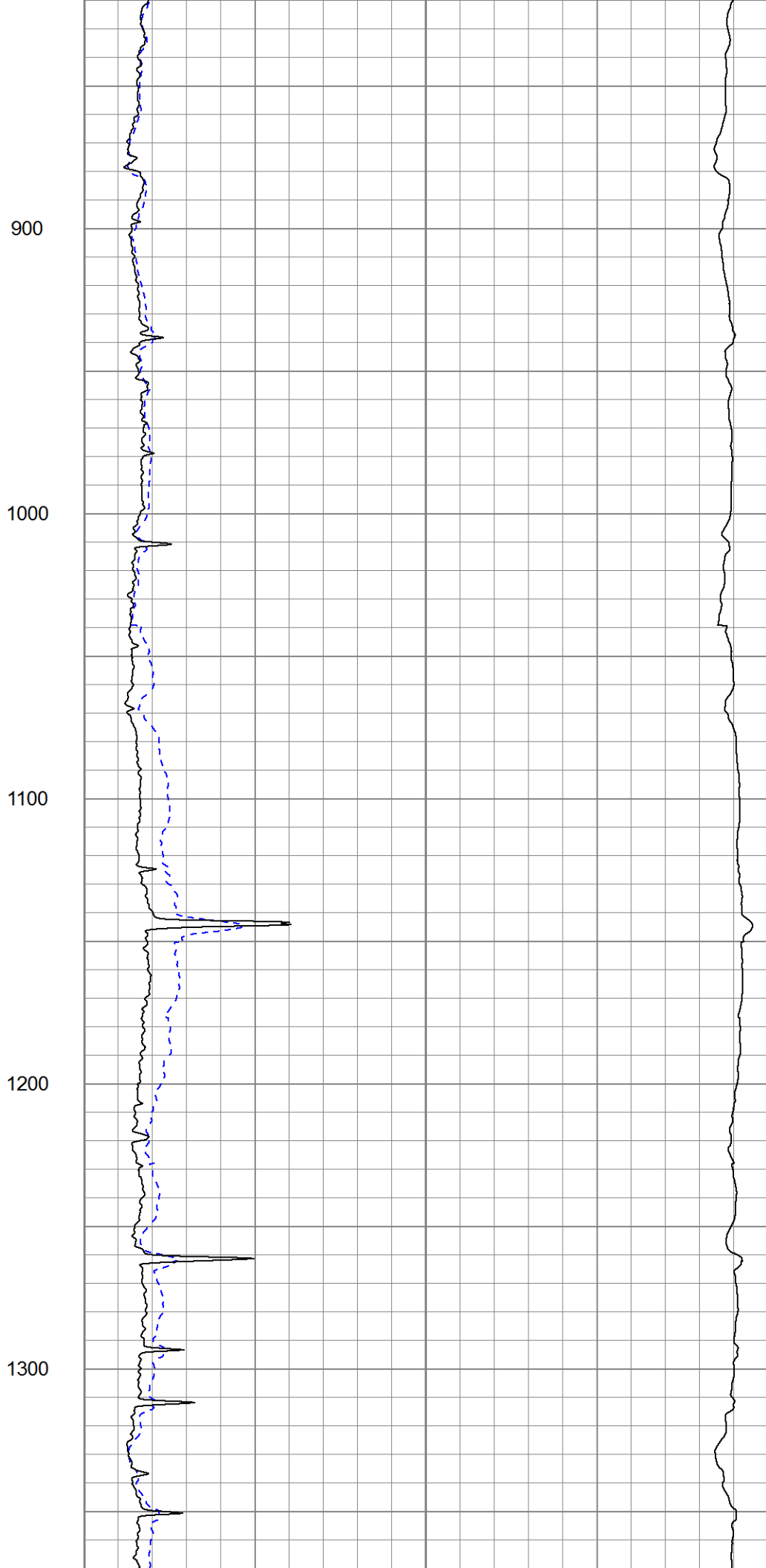
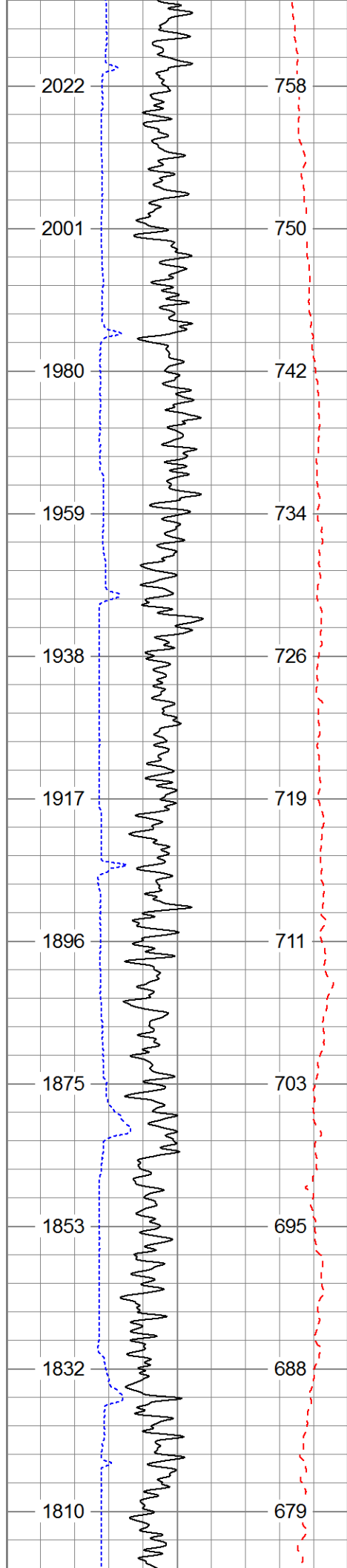
Annular volume calculated for 7" casing
Cade Drilling Rig 22
Thank you for using Pioneer Energy Services

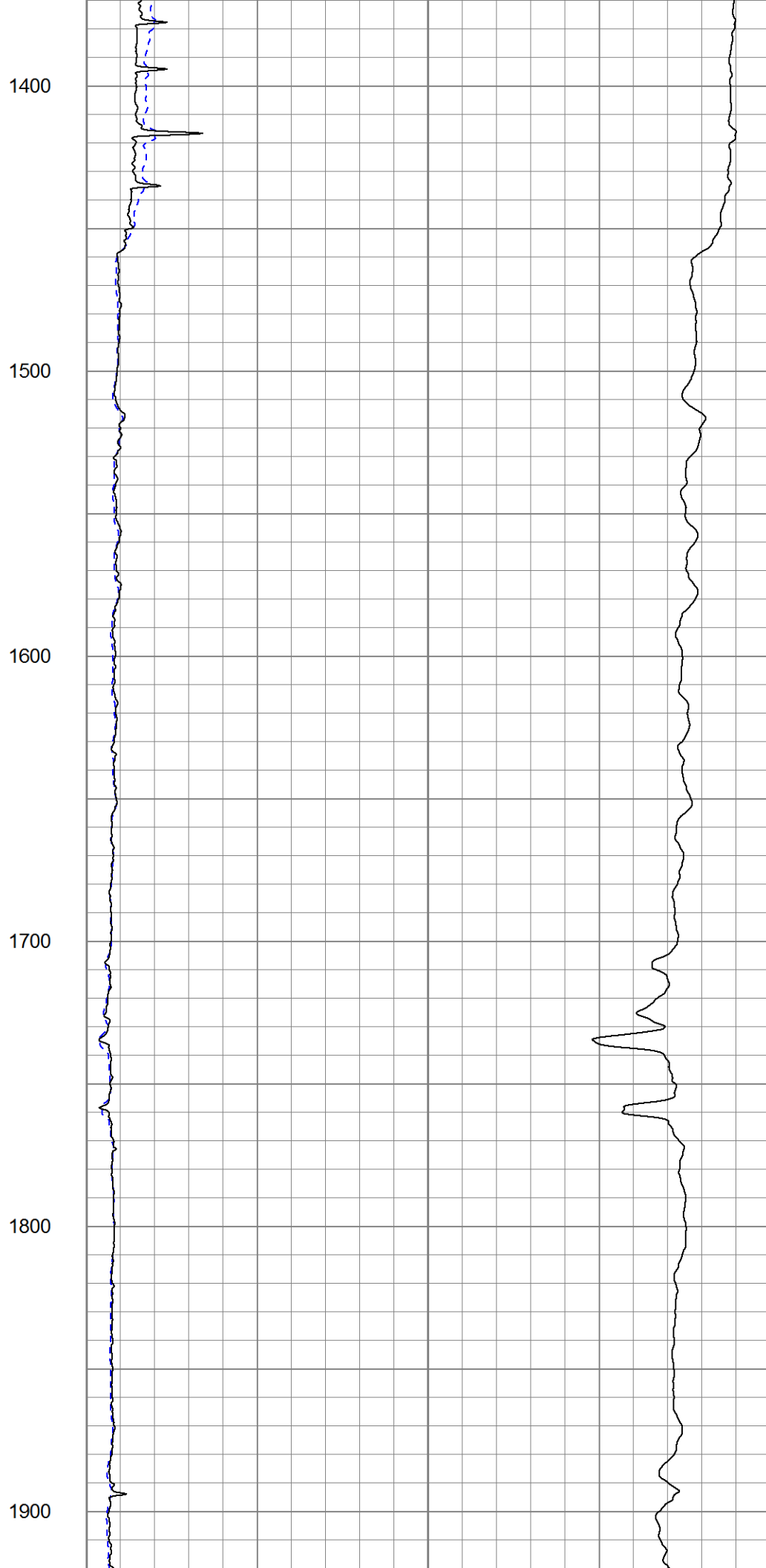
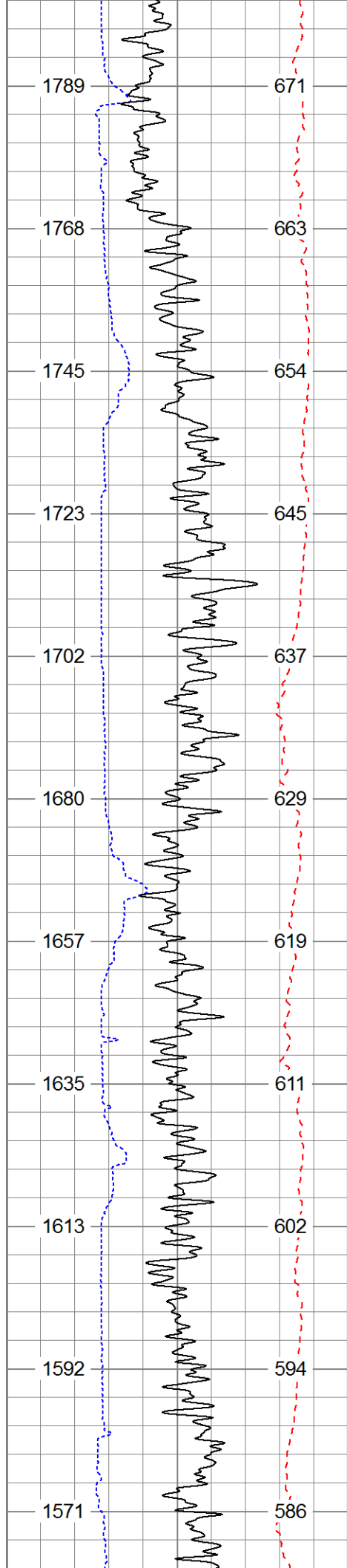
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CHD (~0)	2.00	3.50	30.00

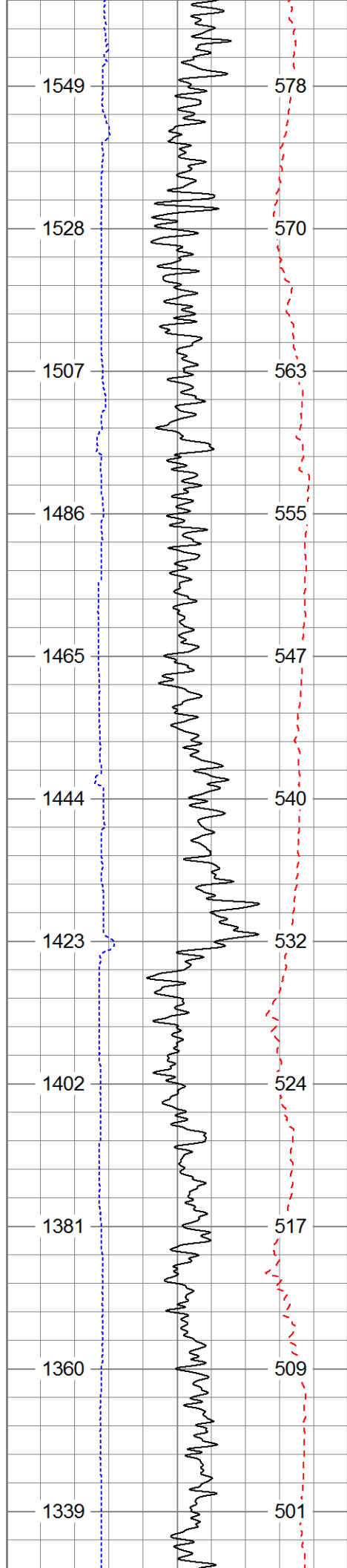


Charted by:			Depth in Feet scaled 1.000								
0	SP (mV)		200	0	Deep Resistivity (Ohm-m)		50	1000	CILD (mmho/m)		0
6	Caliper (in)		16	0	Shallow Resistivity (Ohm-m)		50				
0	Gamma Ray (GAPI)		200	50	RILD (Ohm-m)		500				
TBHV (ft3)				ABHV (ft3)		50	RLL3 (Ohm-m)		500		









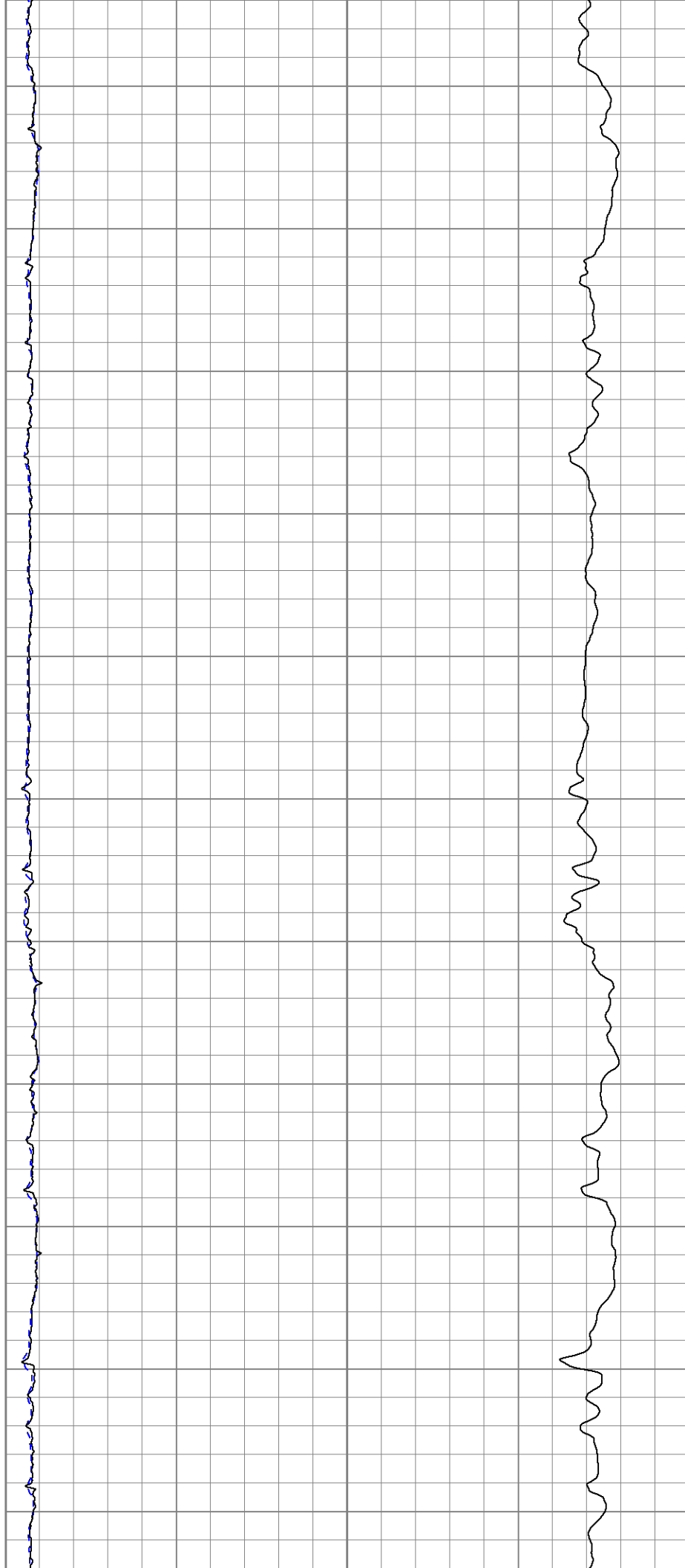
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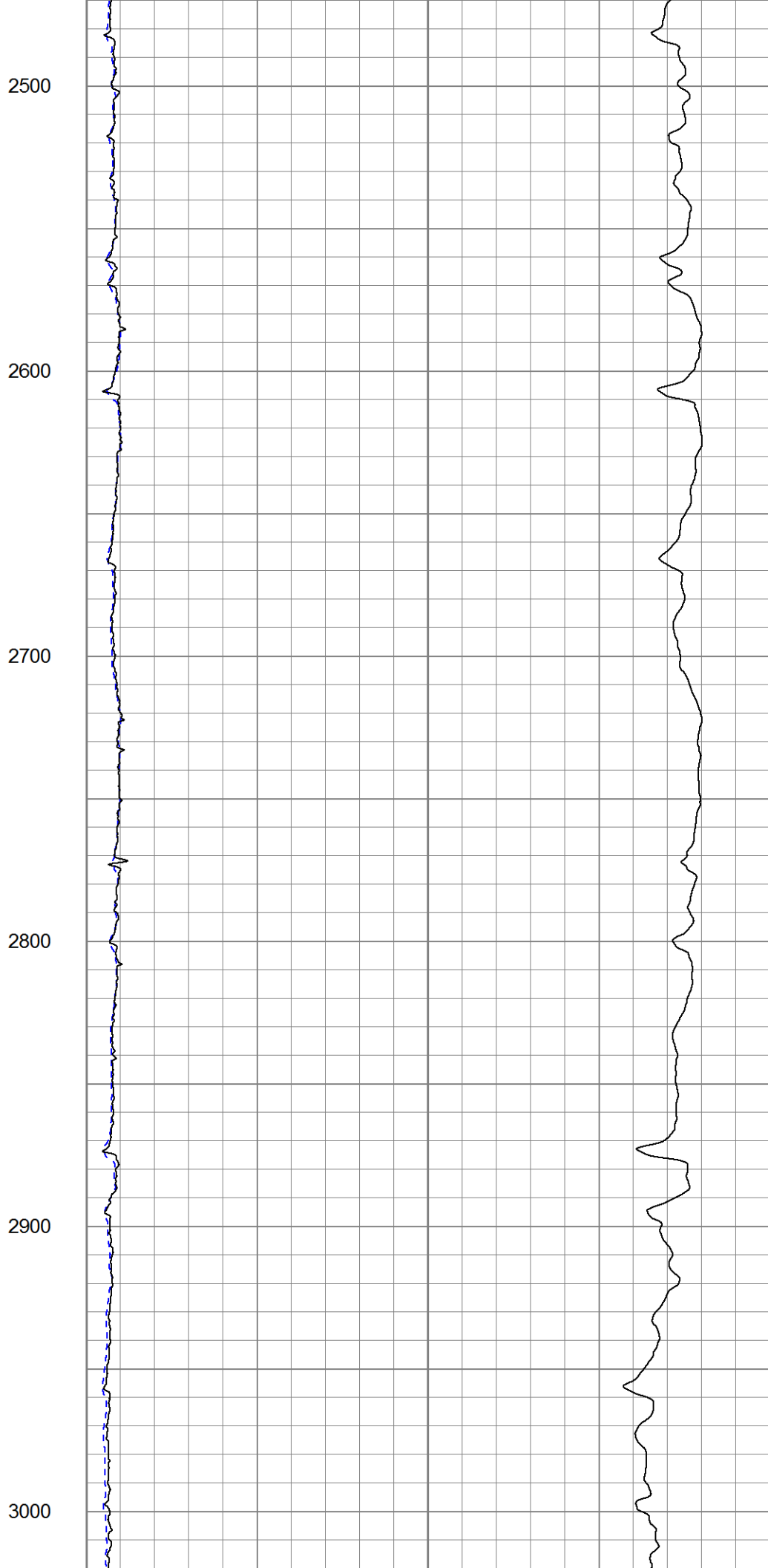
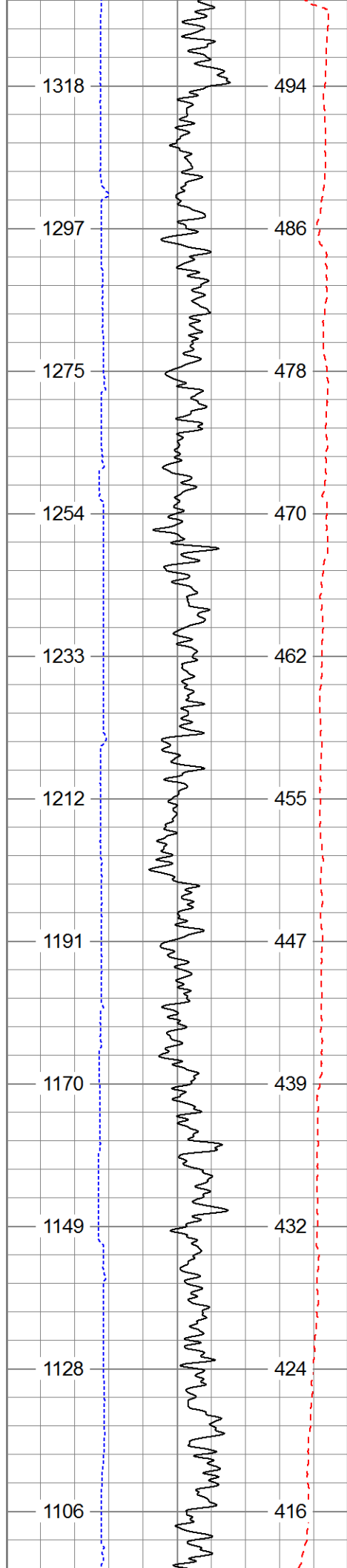
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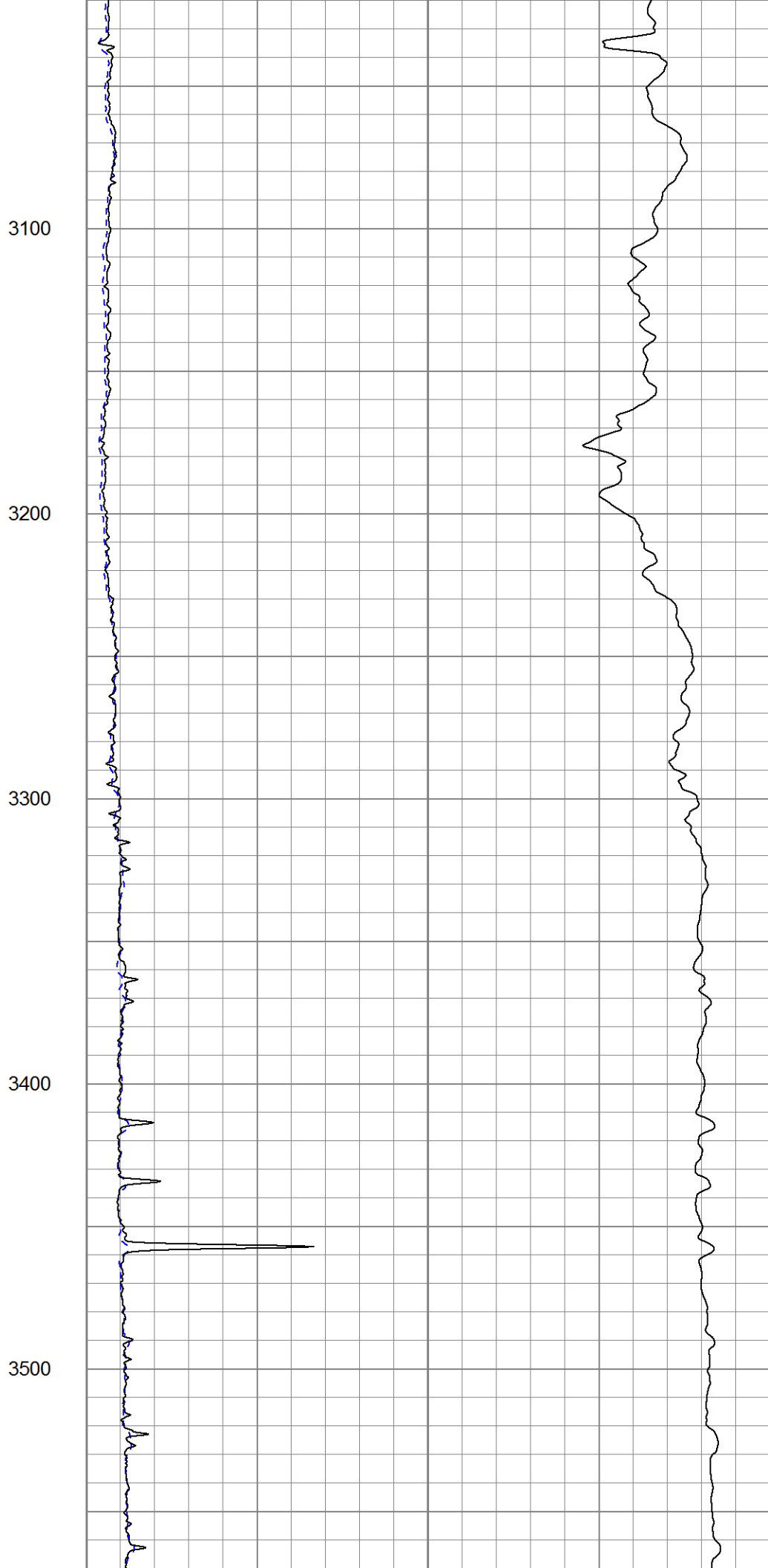
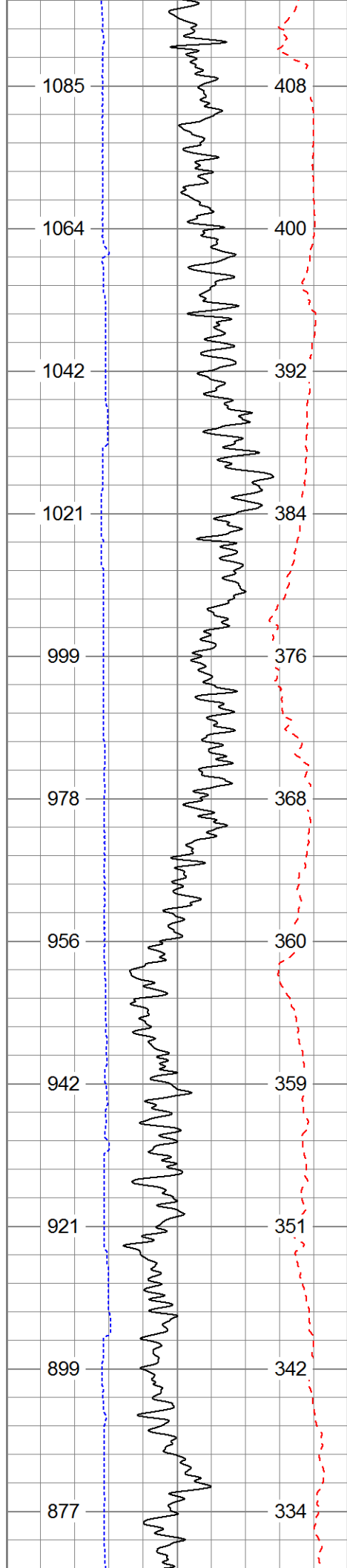
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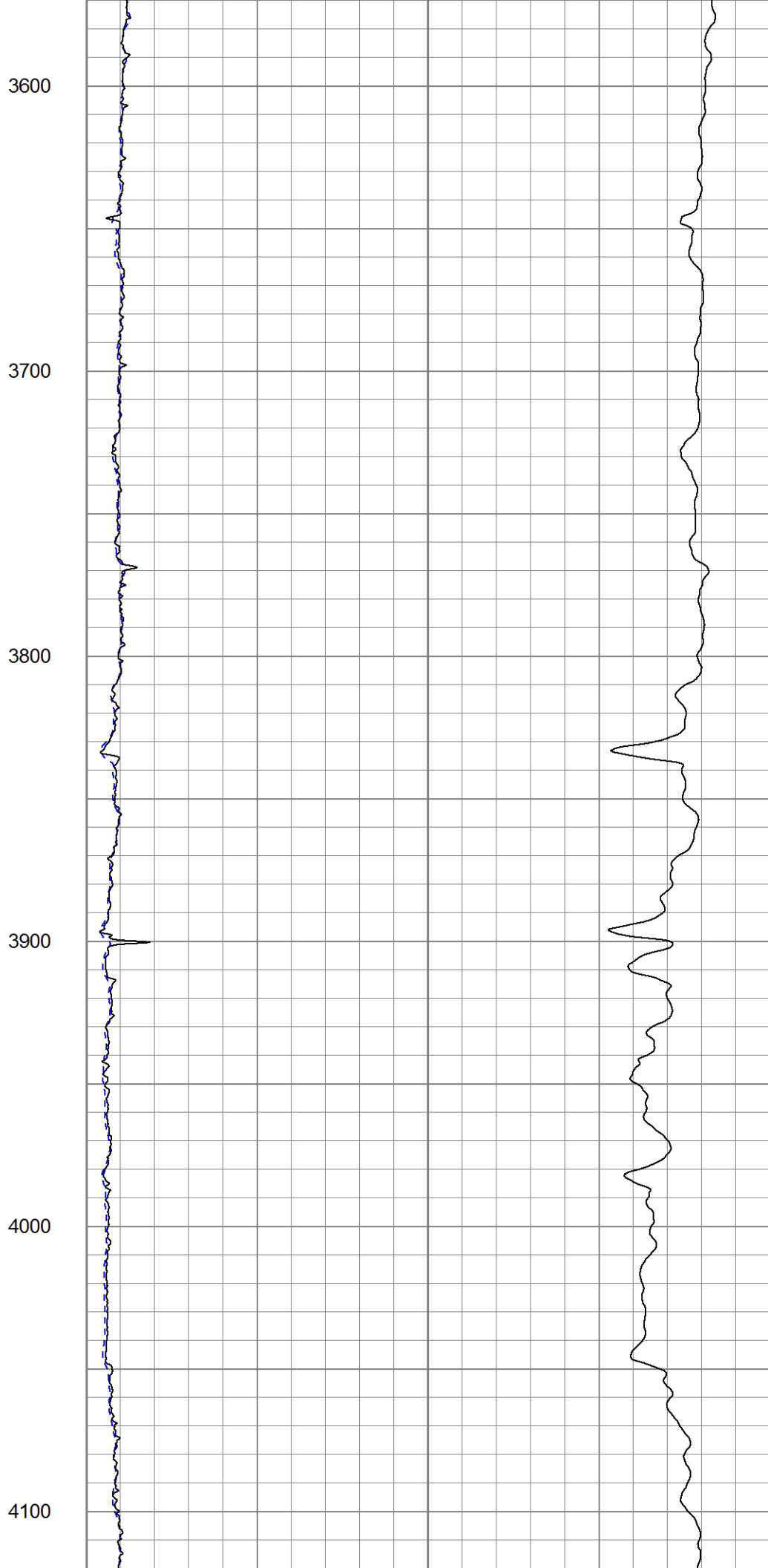
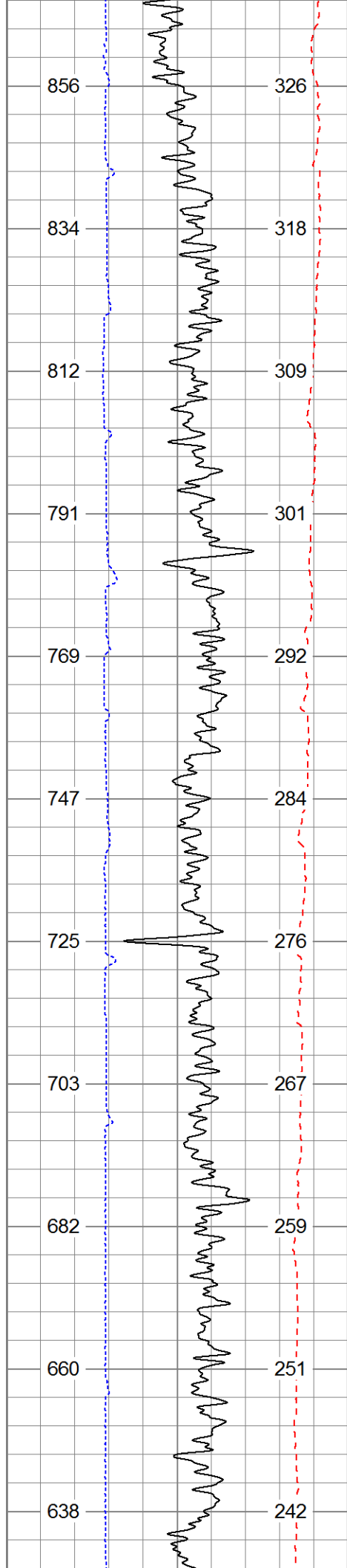
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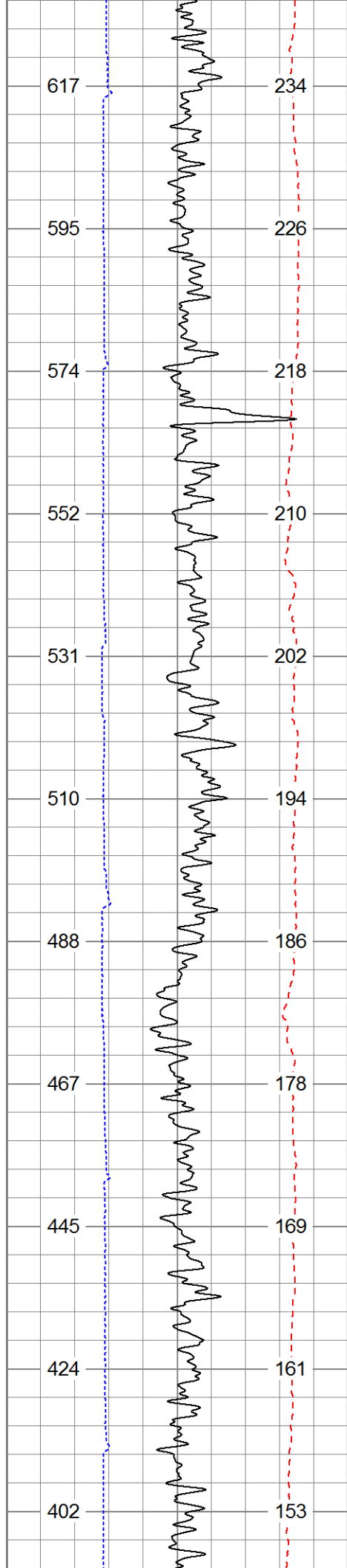
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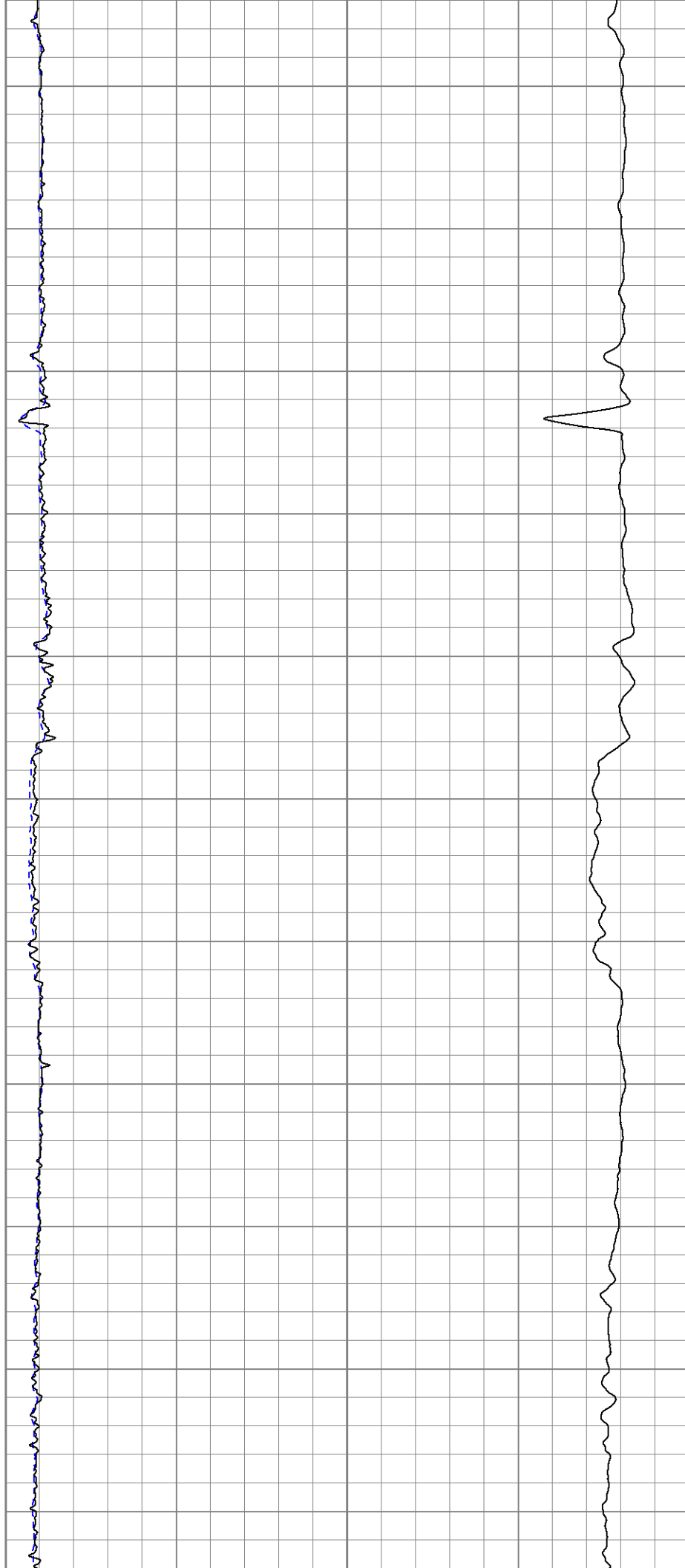
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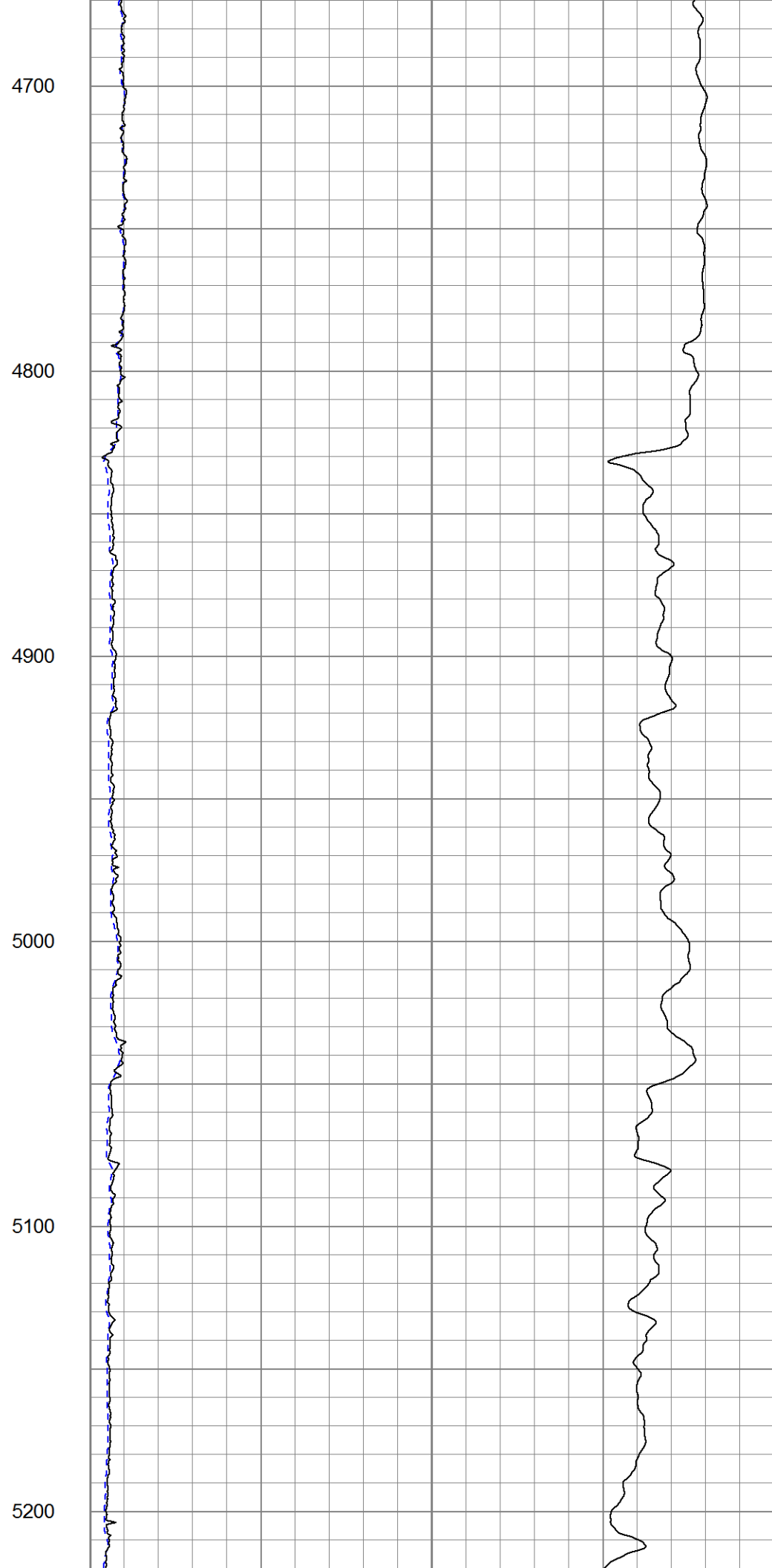
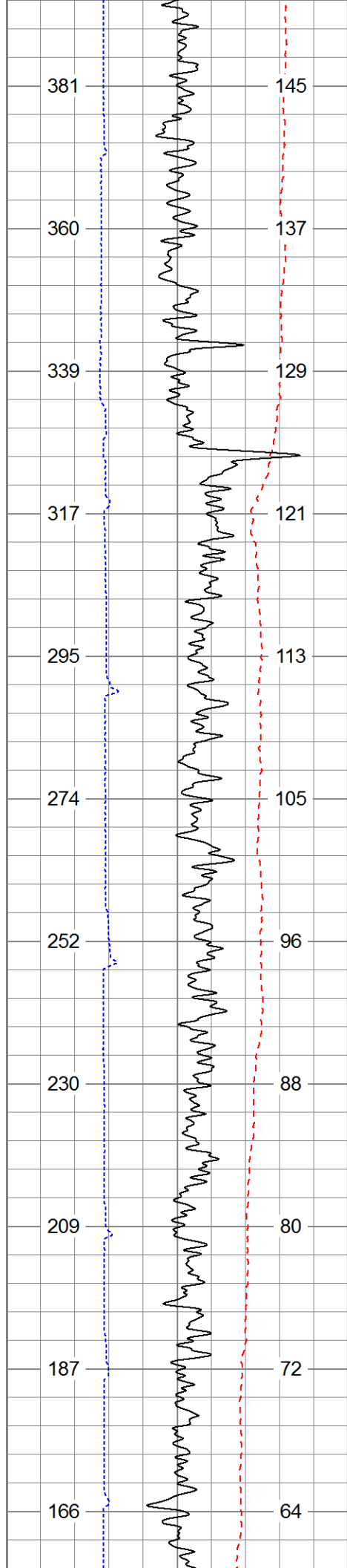
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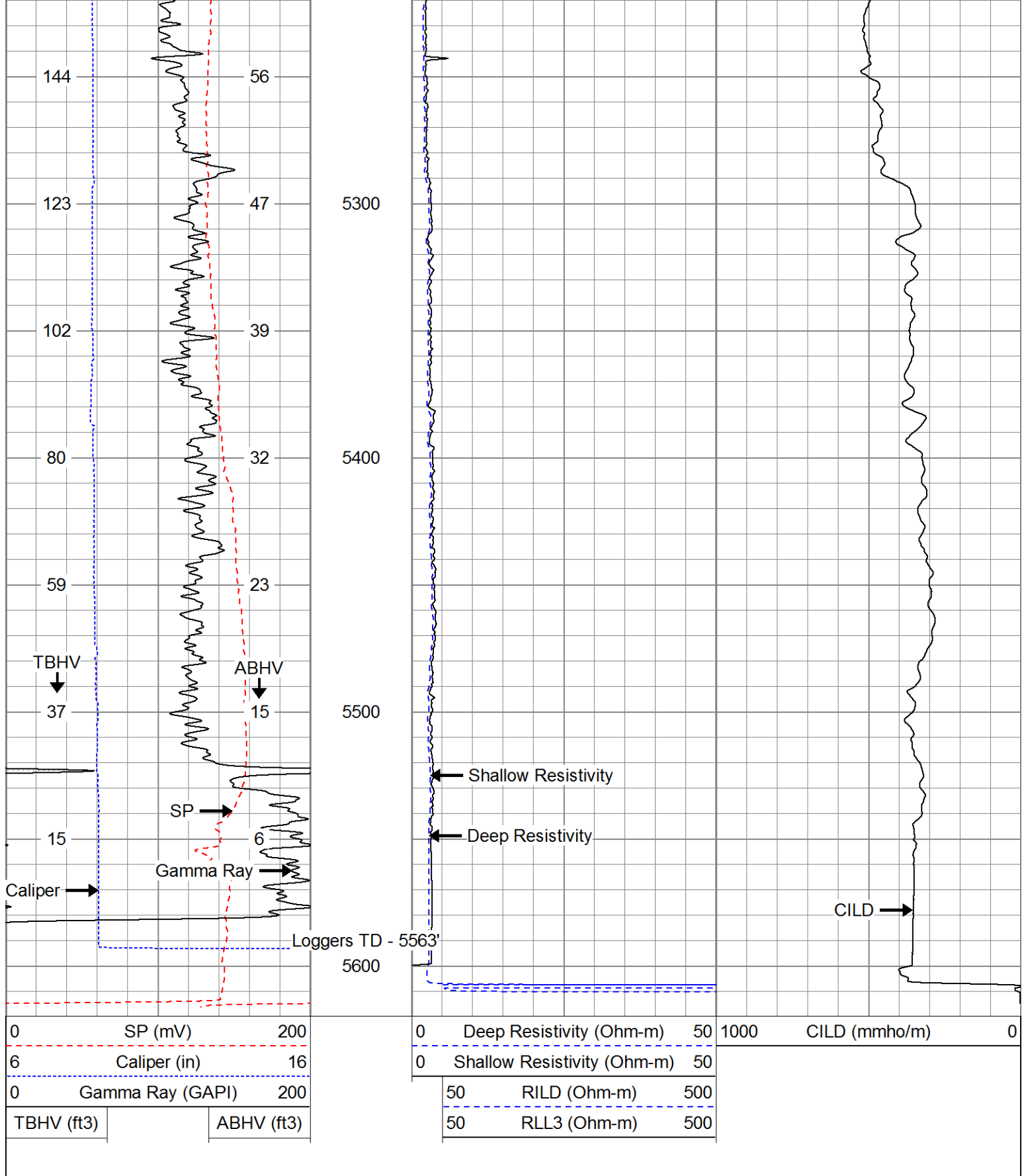
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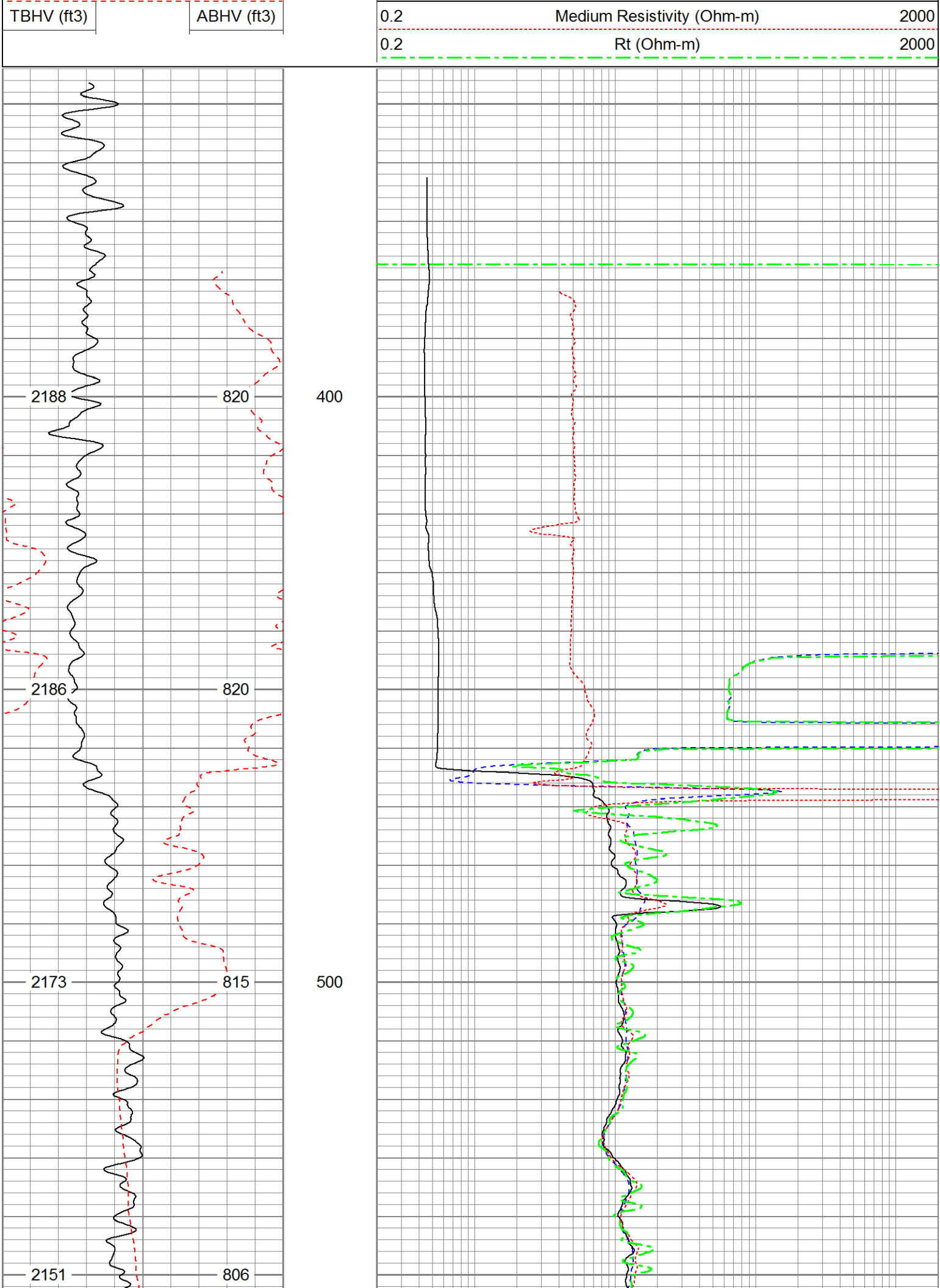


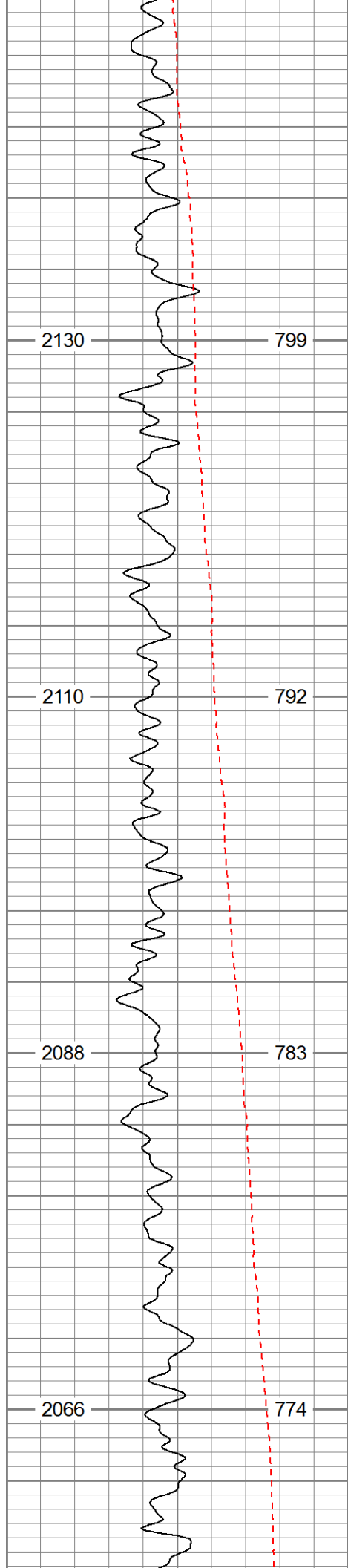




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Dataset Pathname: Final
Presentation Format: dil
Dataset Creation: Sun Sep 21 05:24:49 2014
Charted by: Depth in Feet scaled 1:240

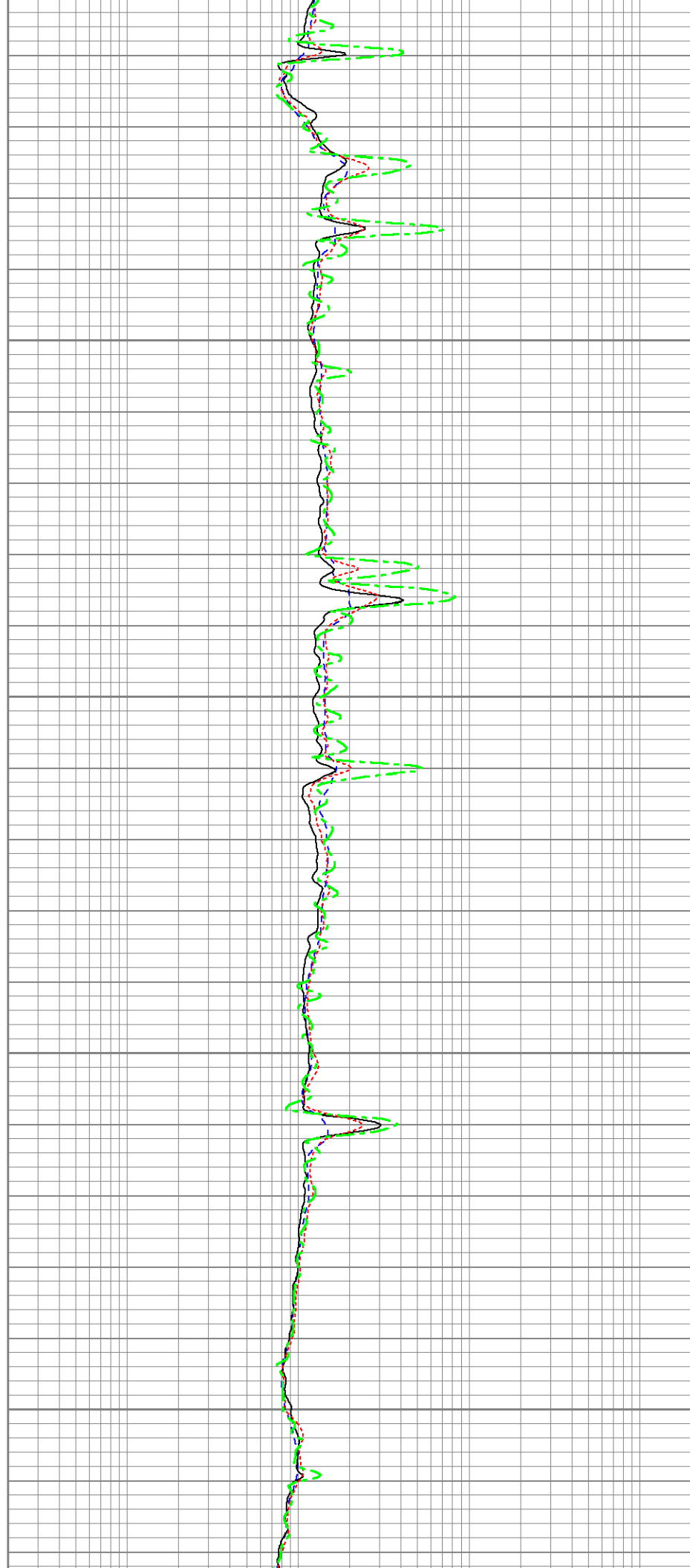
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0	SP (mV)	200	0.2	Shallow Resistivity (Ohm-m)	2000

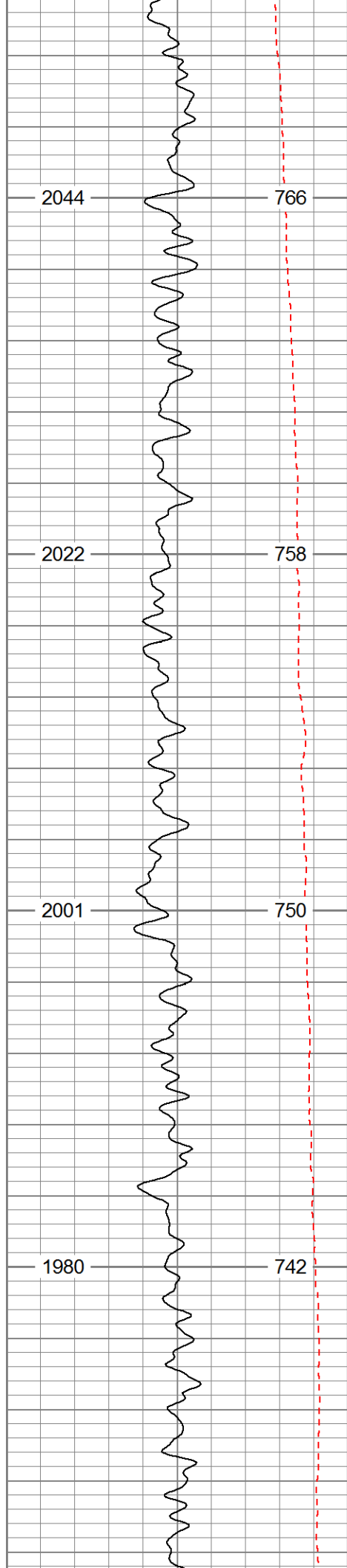




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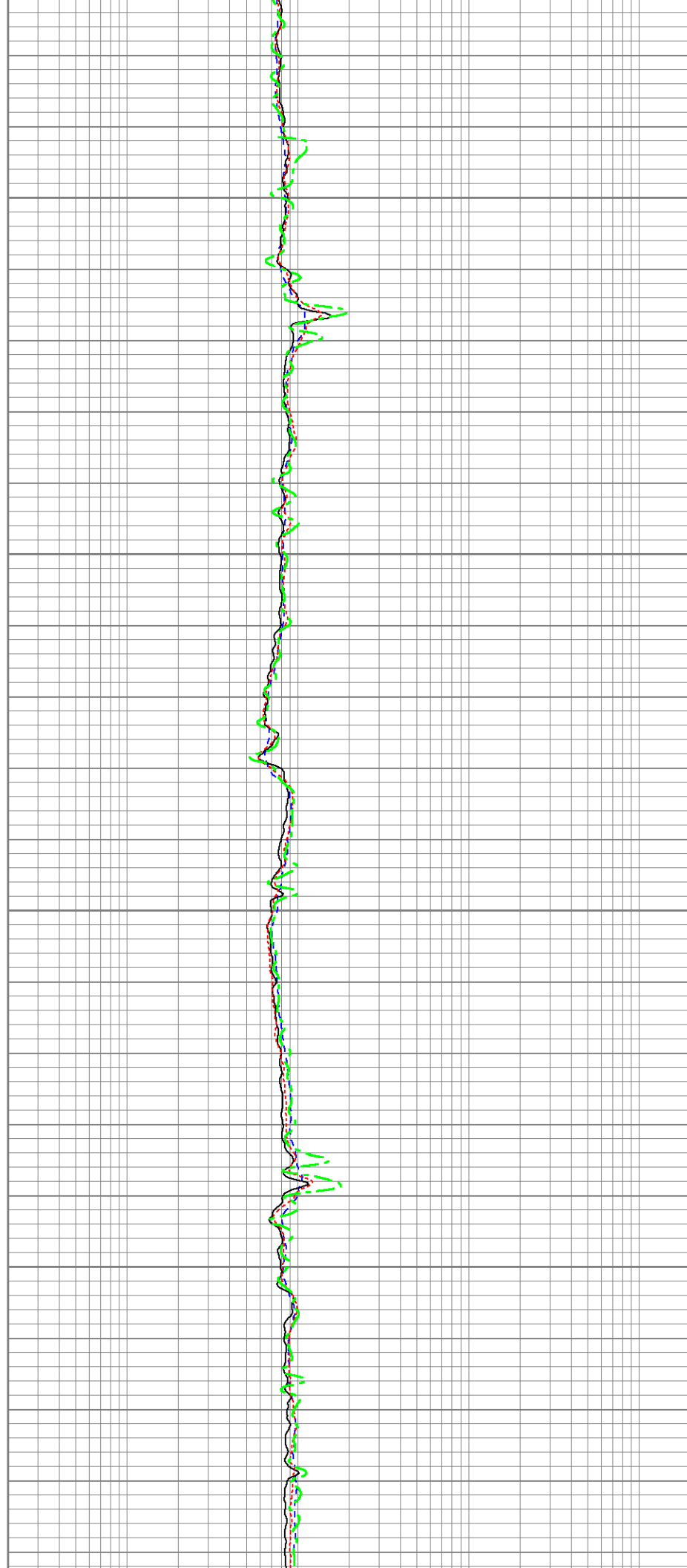
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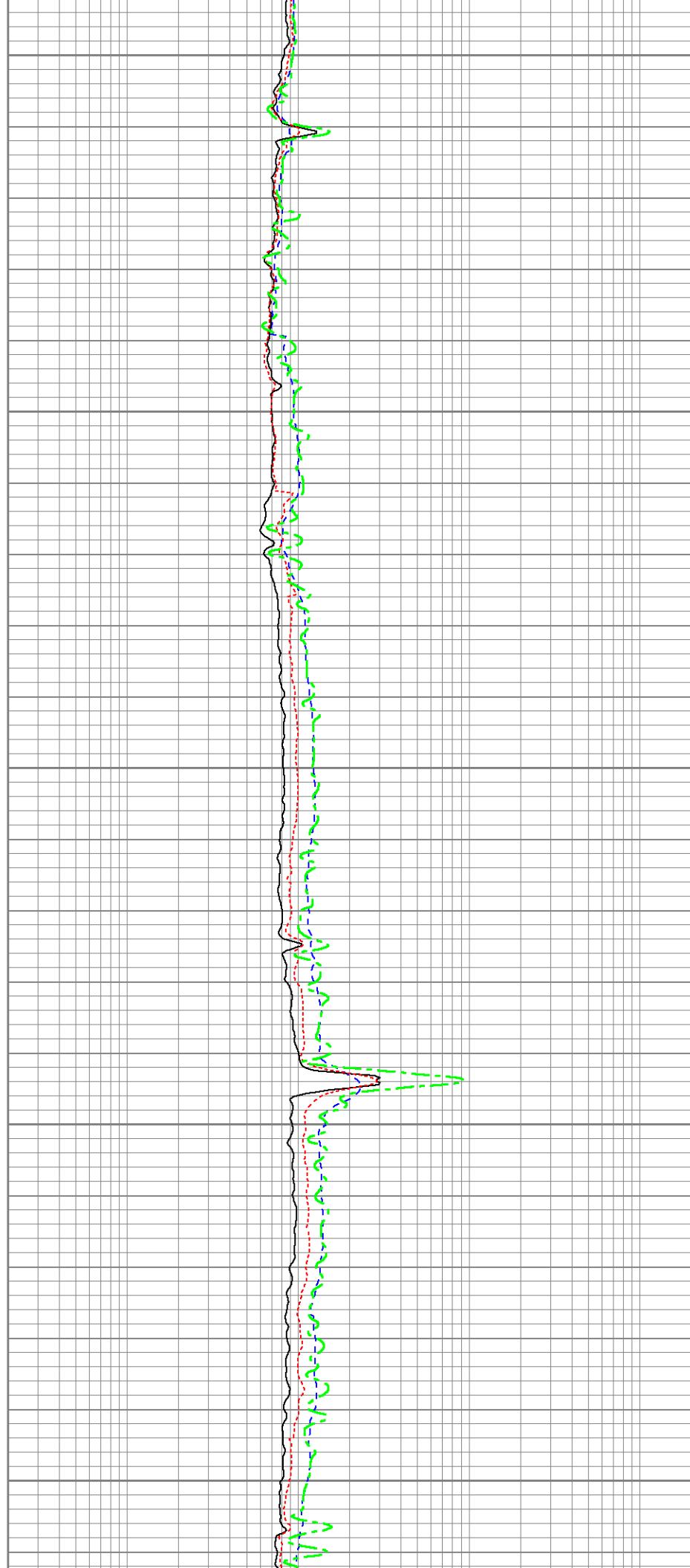
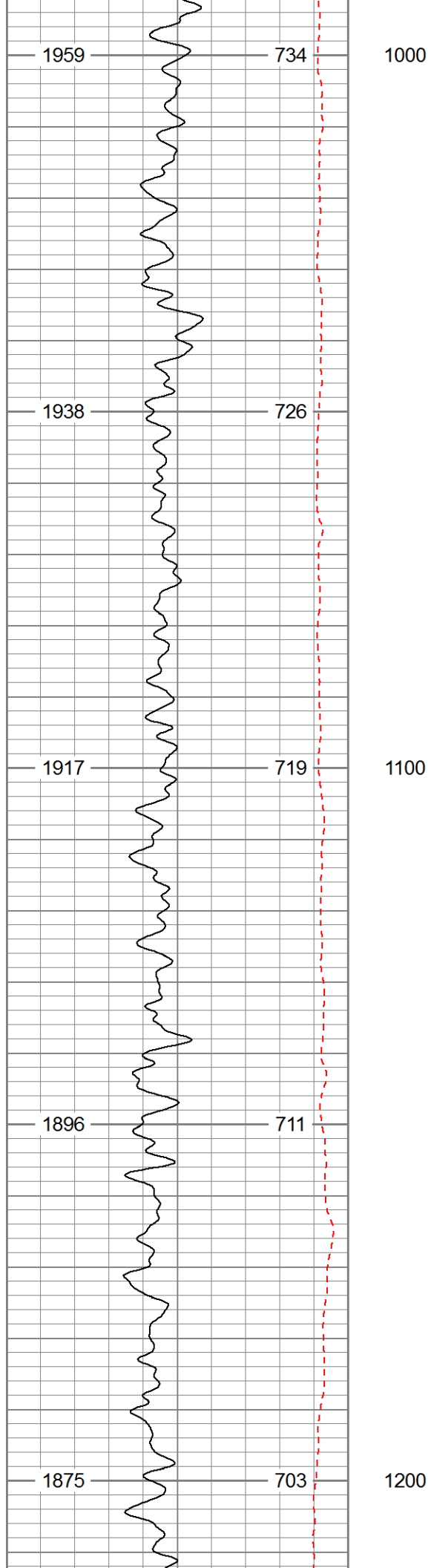


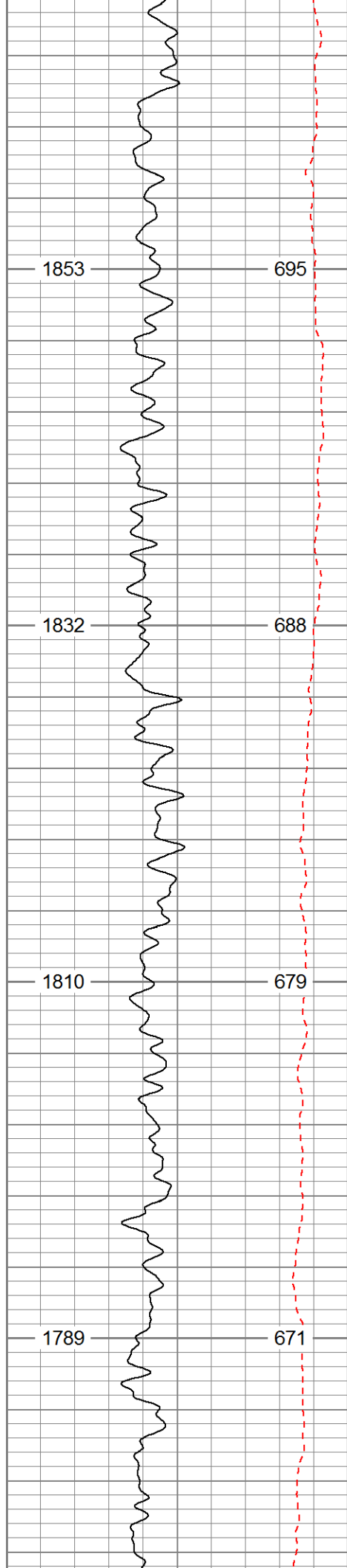


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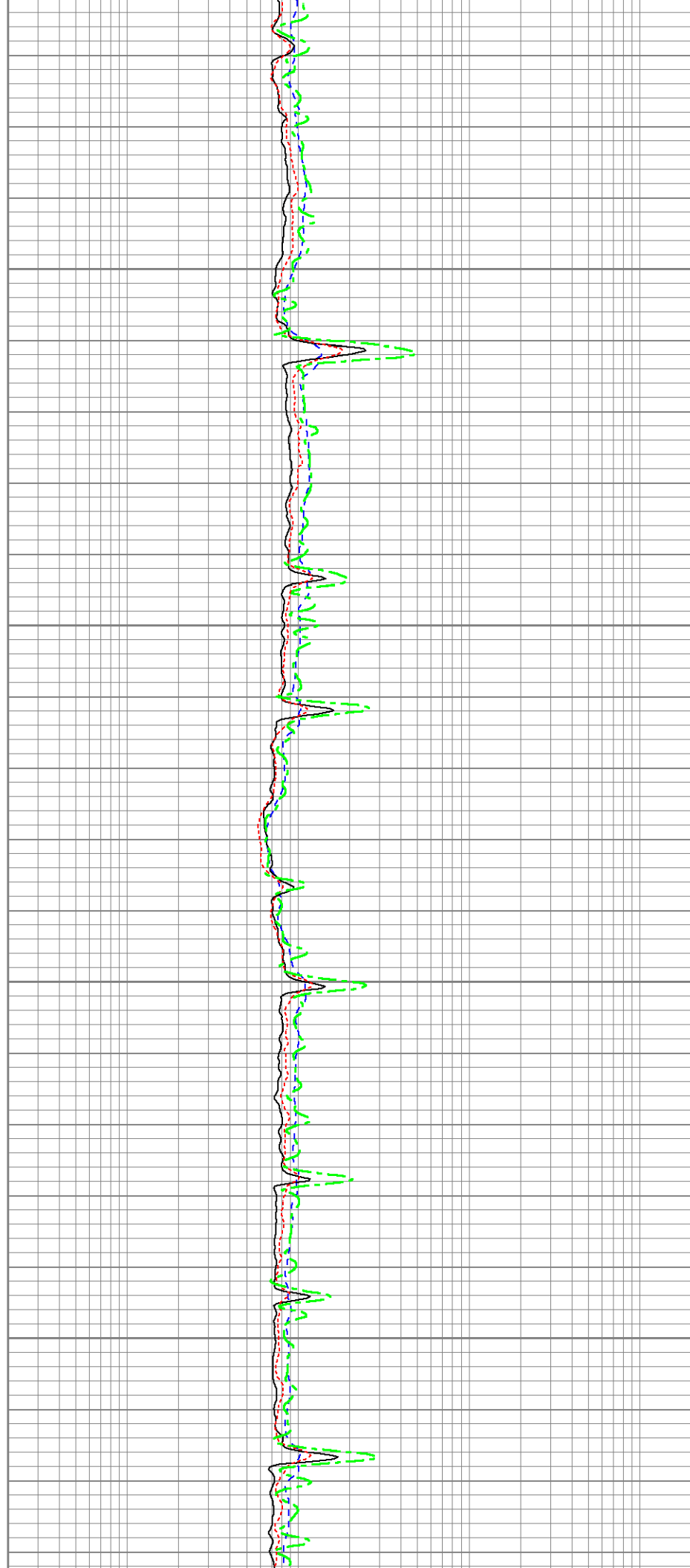


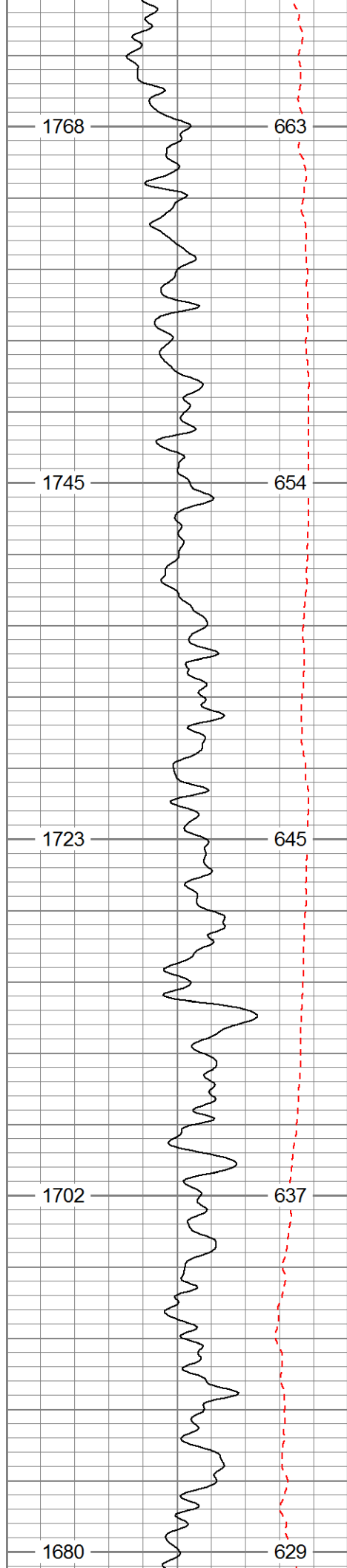




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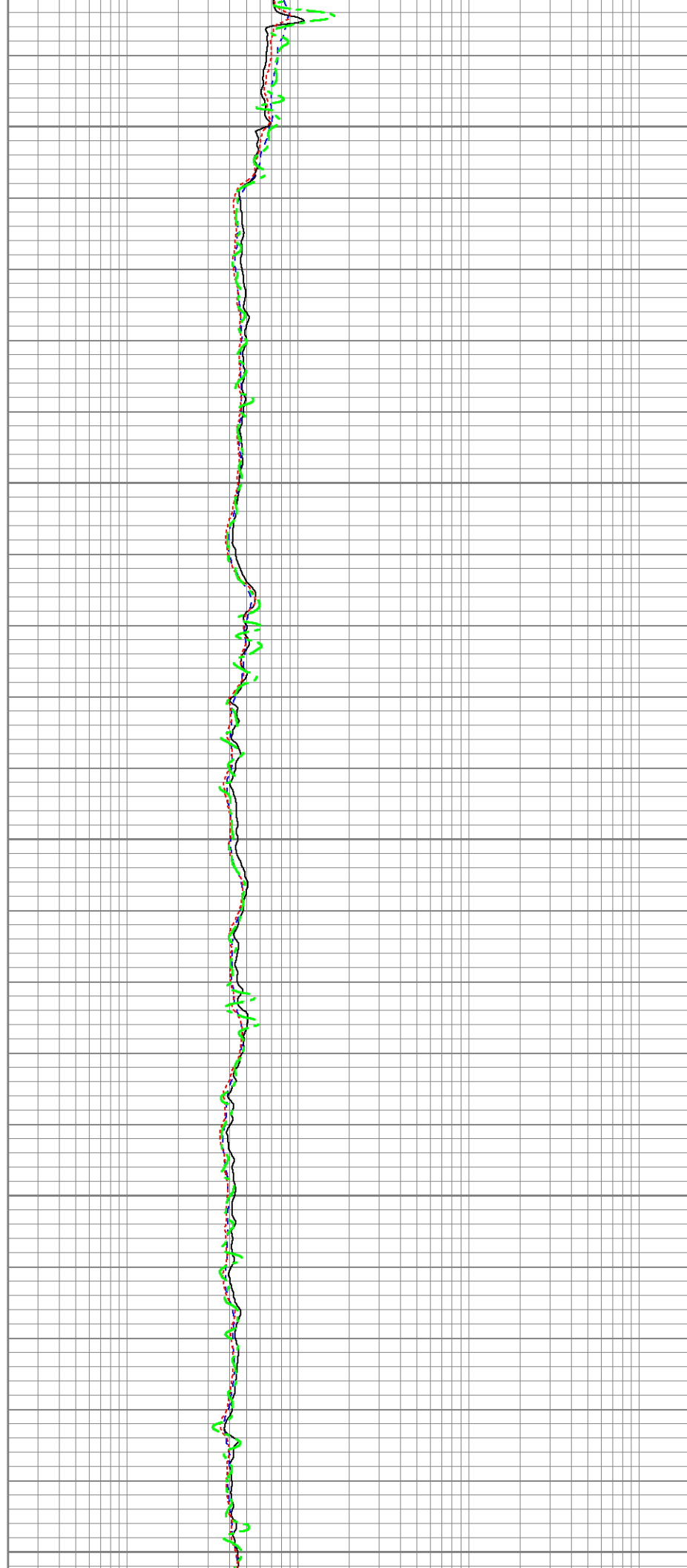
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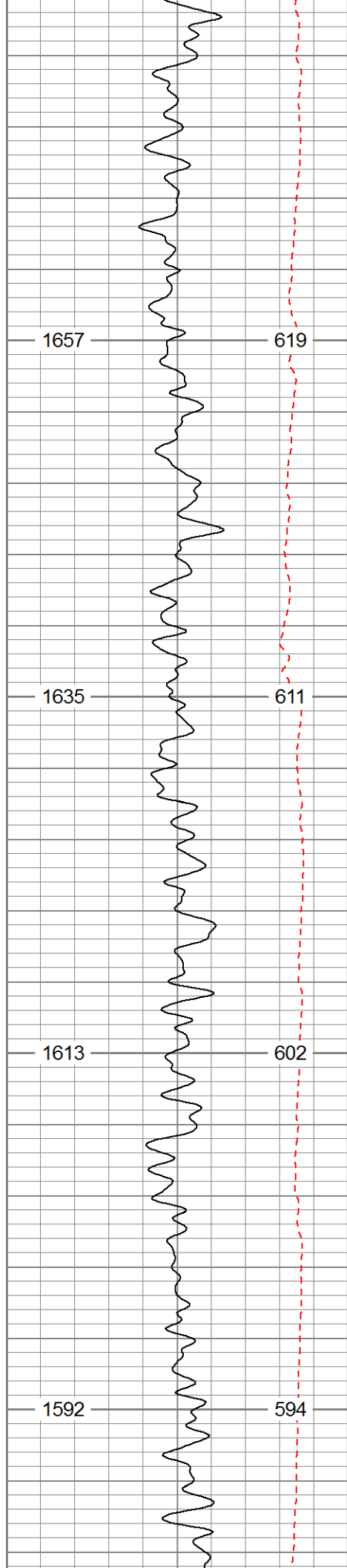




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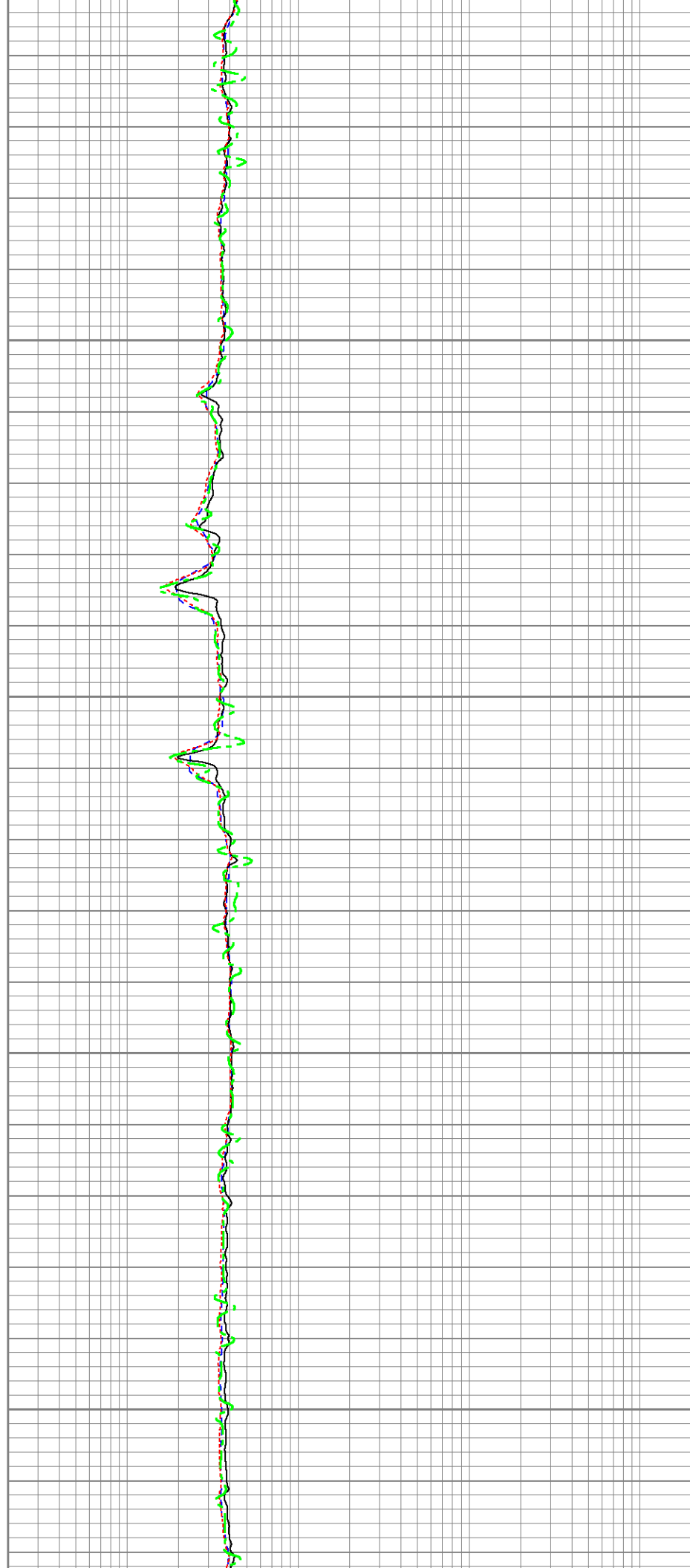
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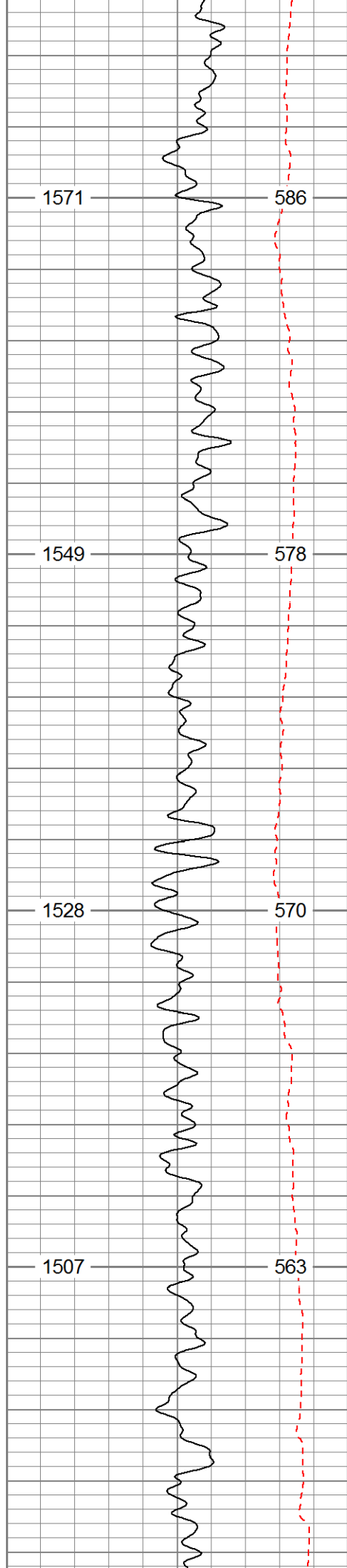




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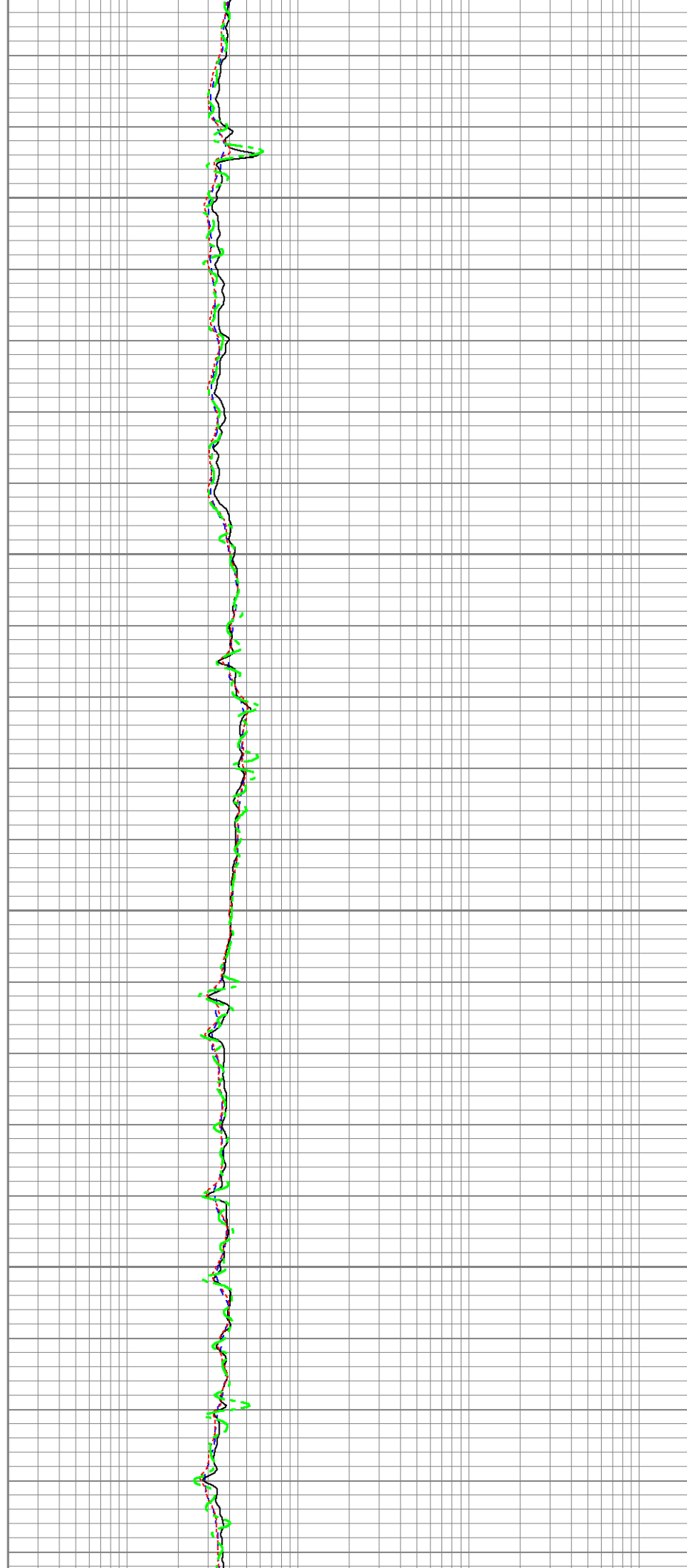
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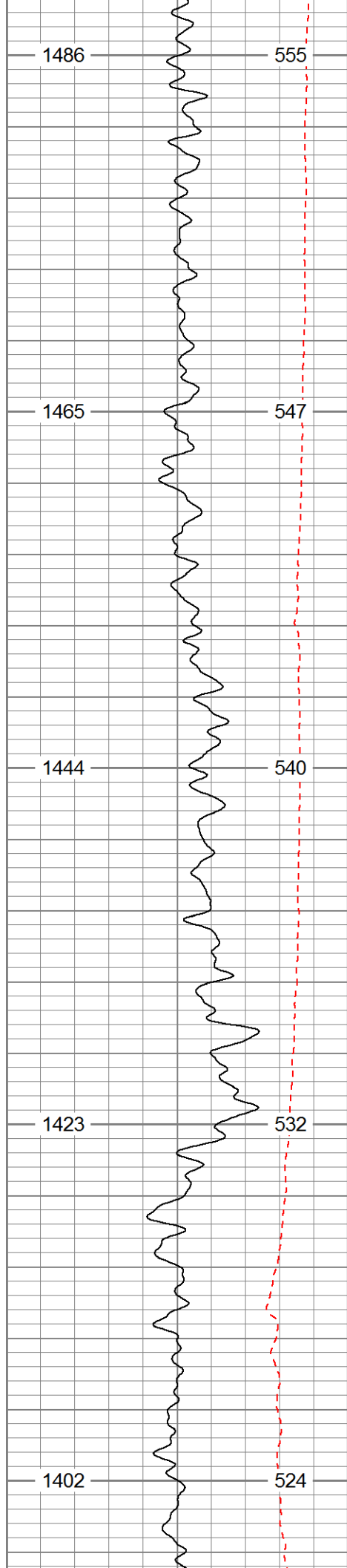




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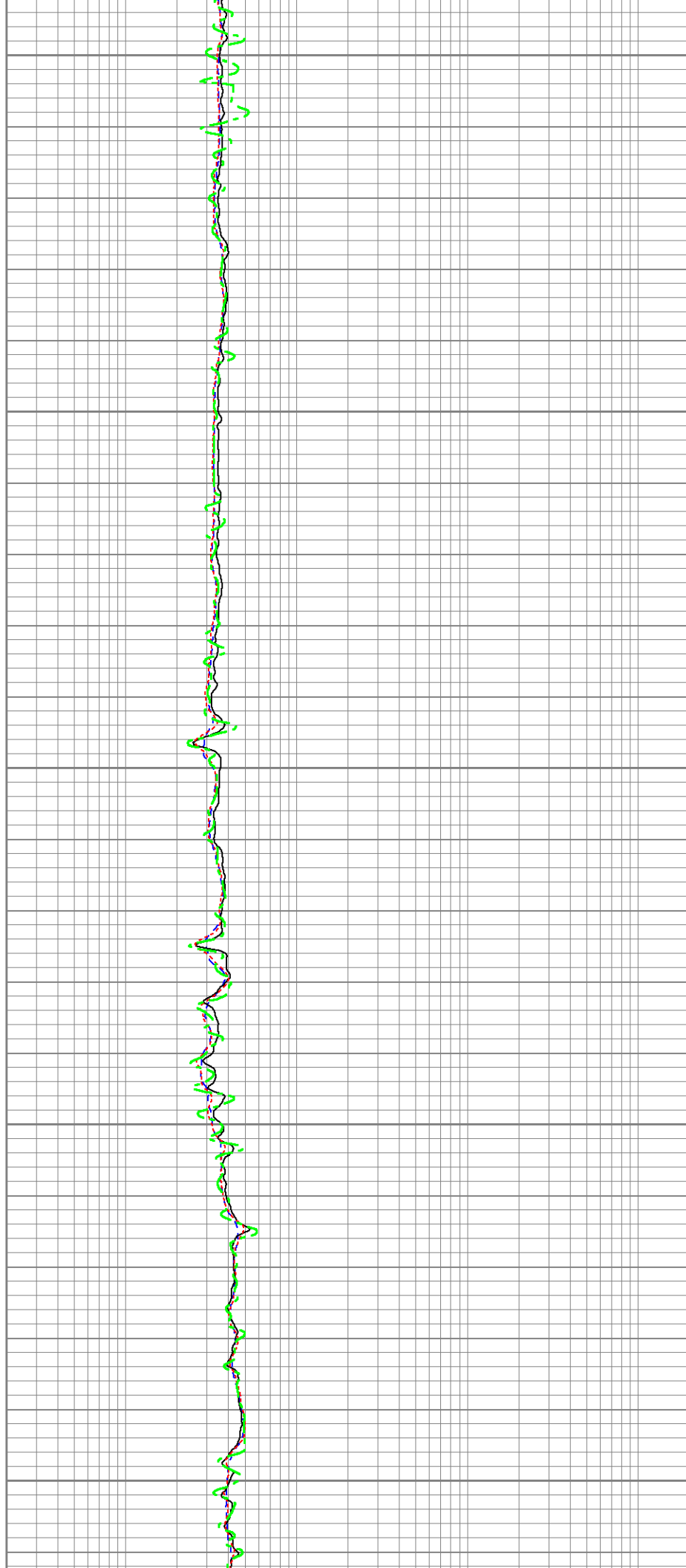


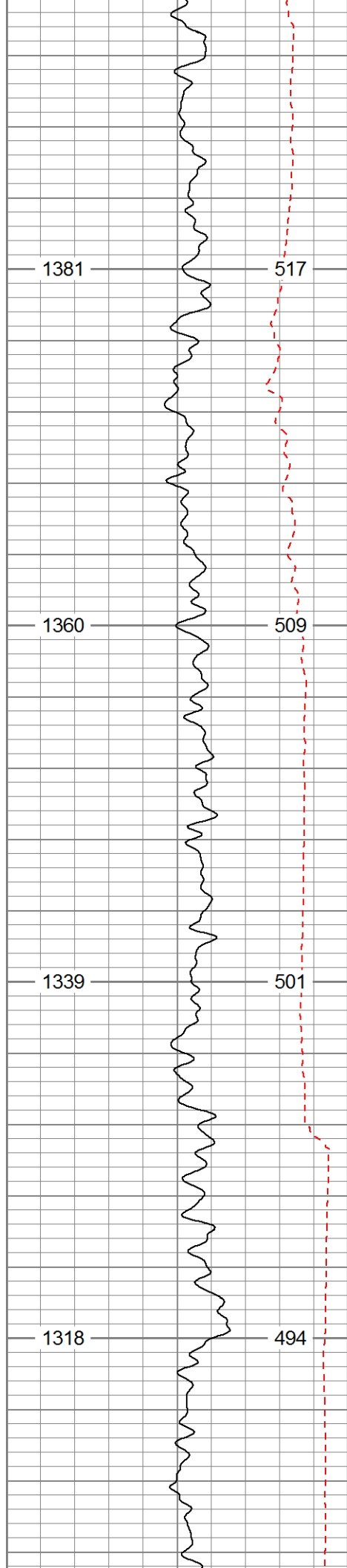


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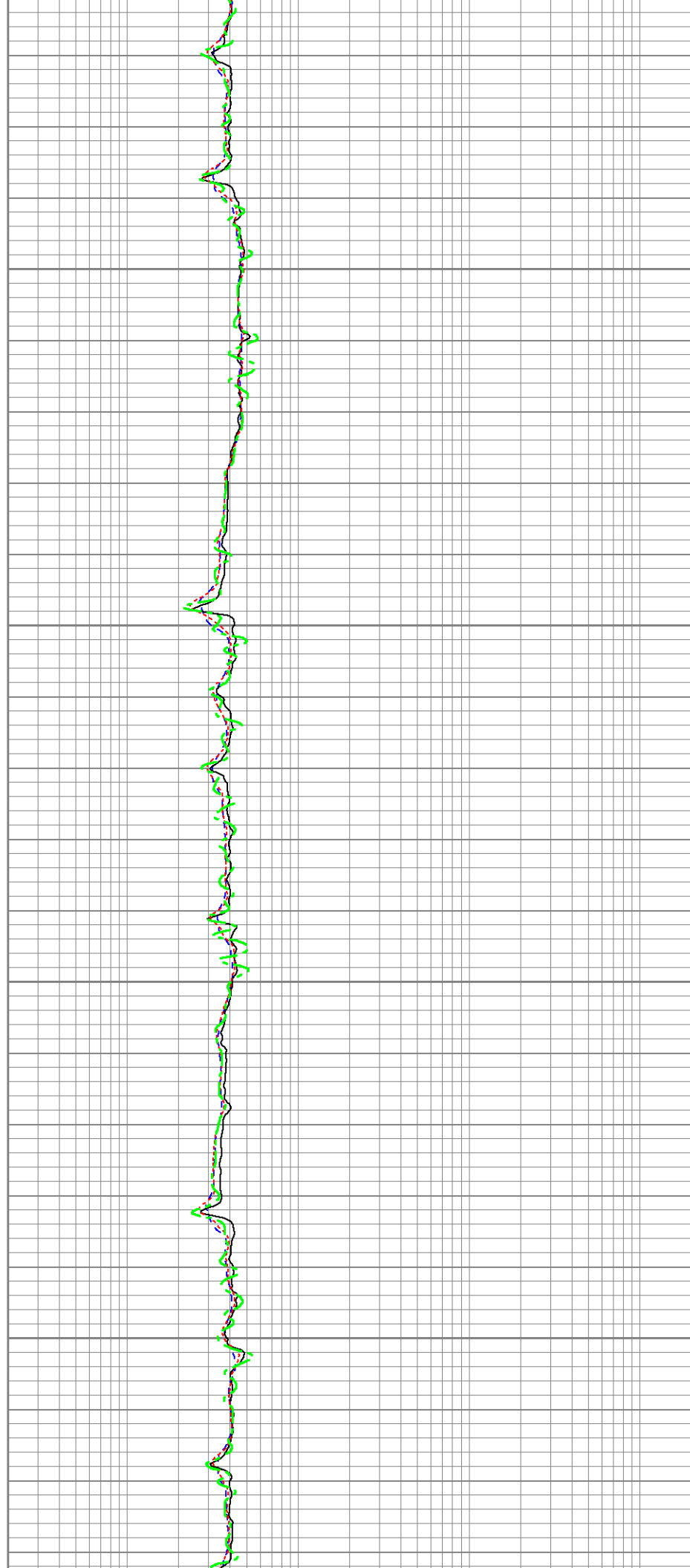
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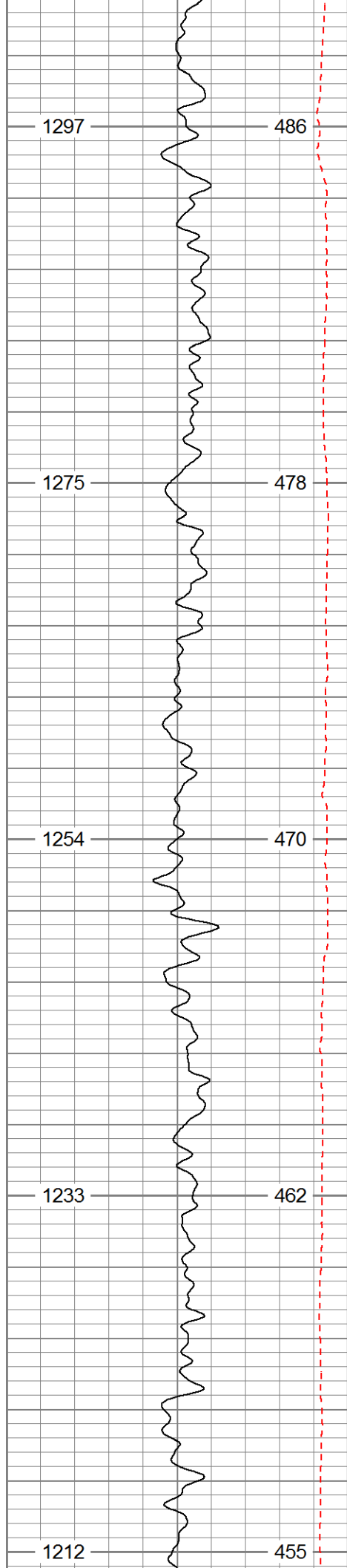




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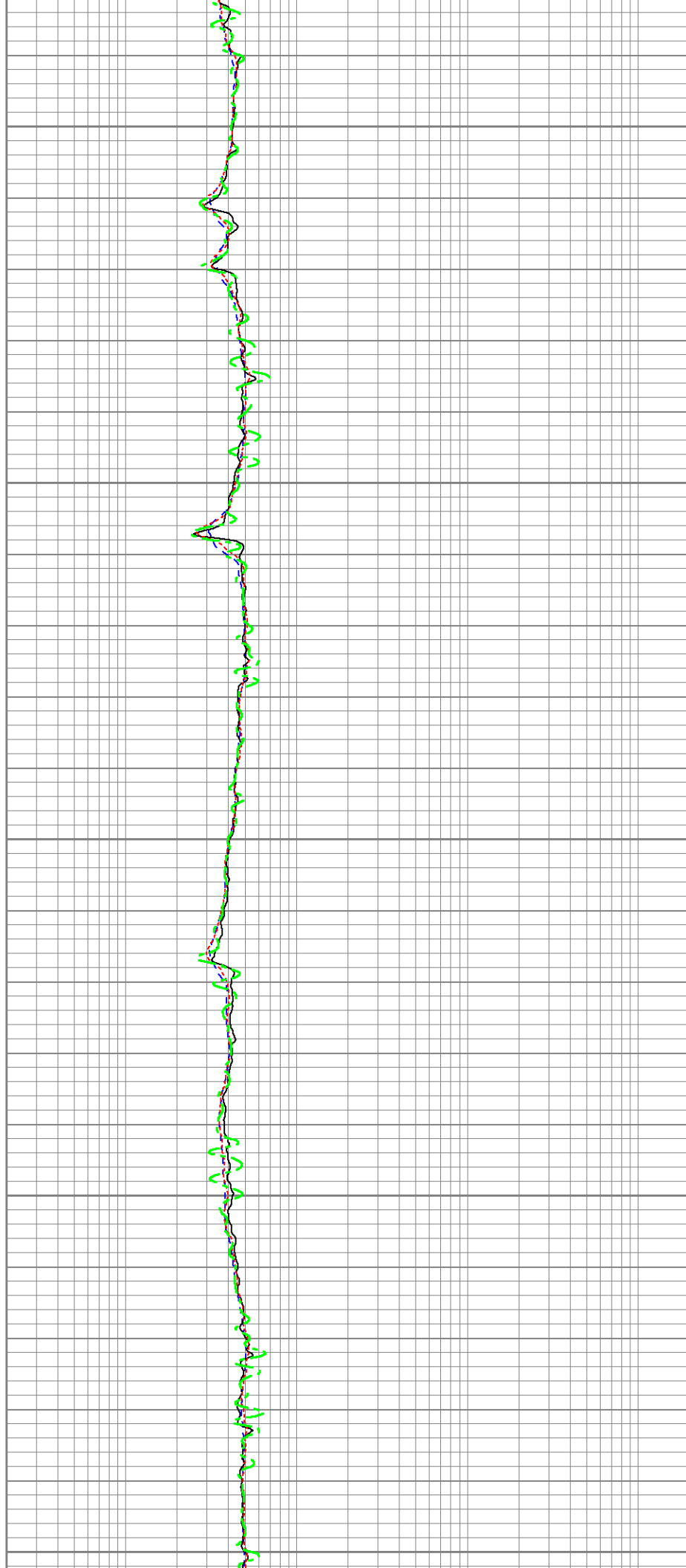
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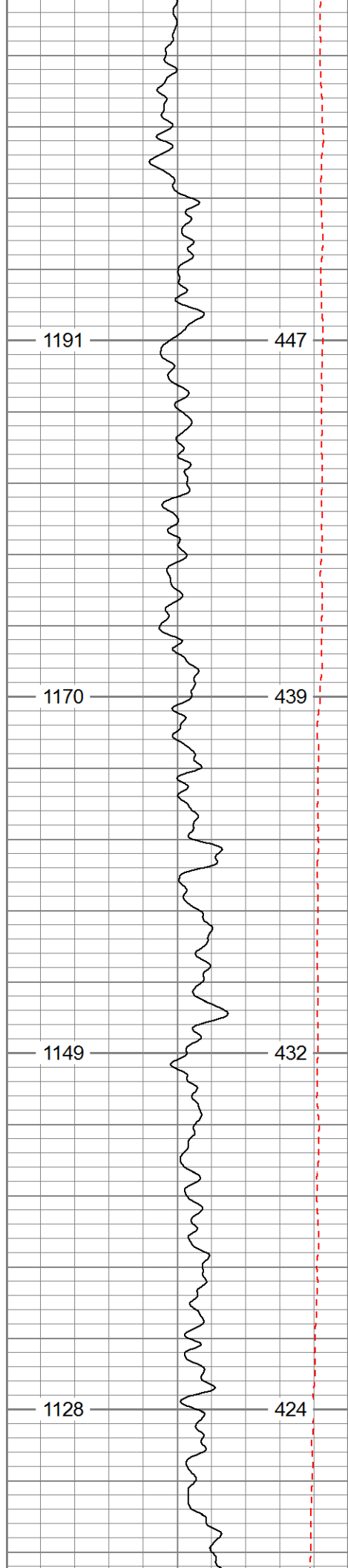




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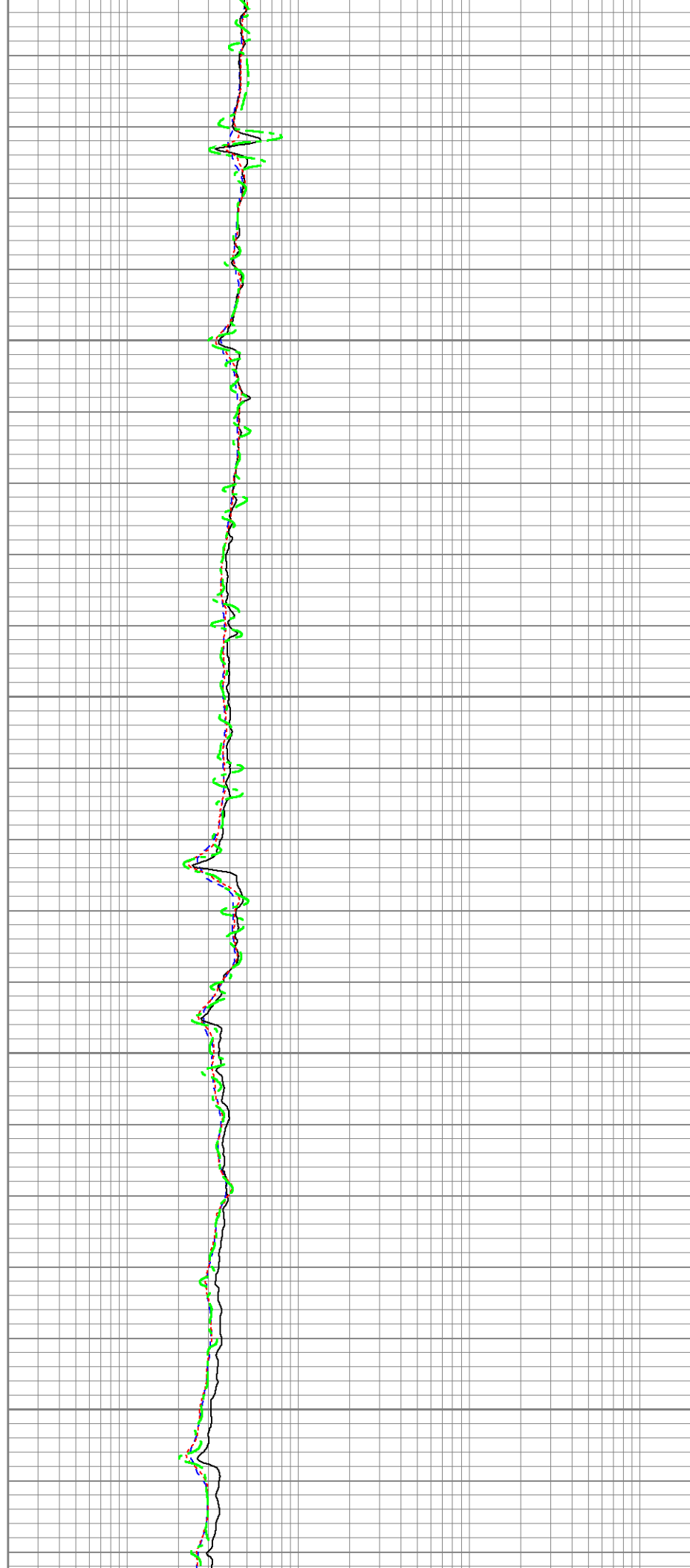
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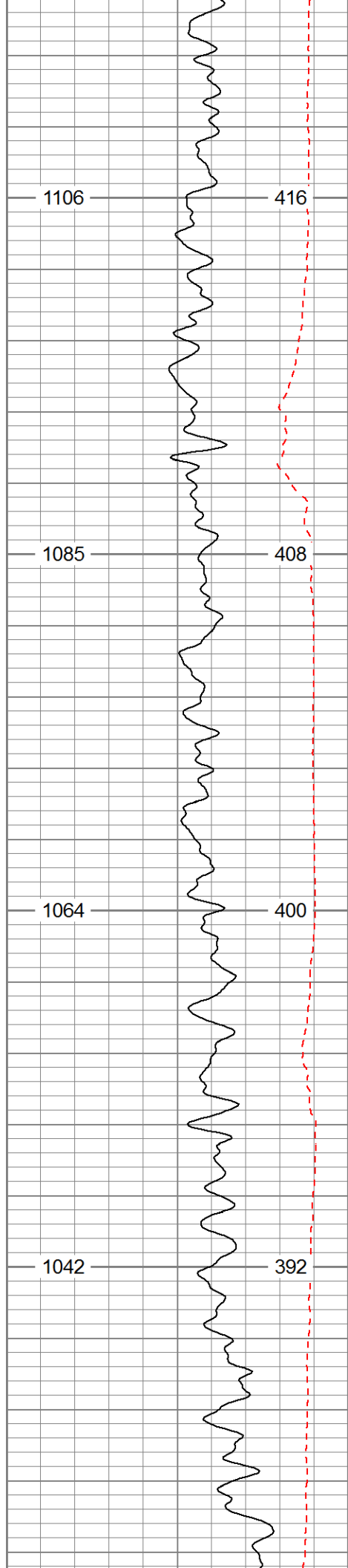




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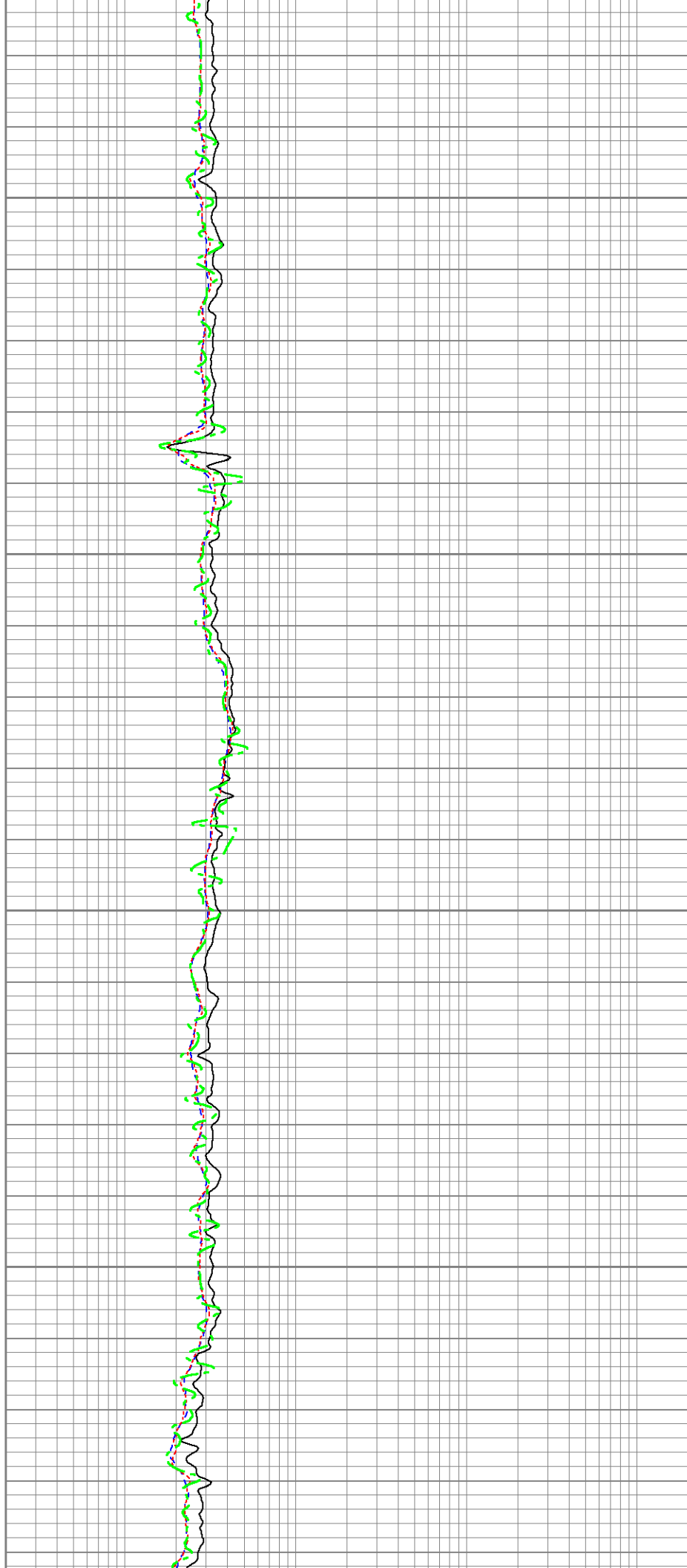
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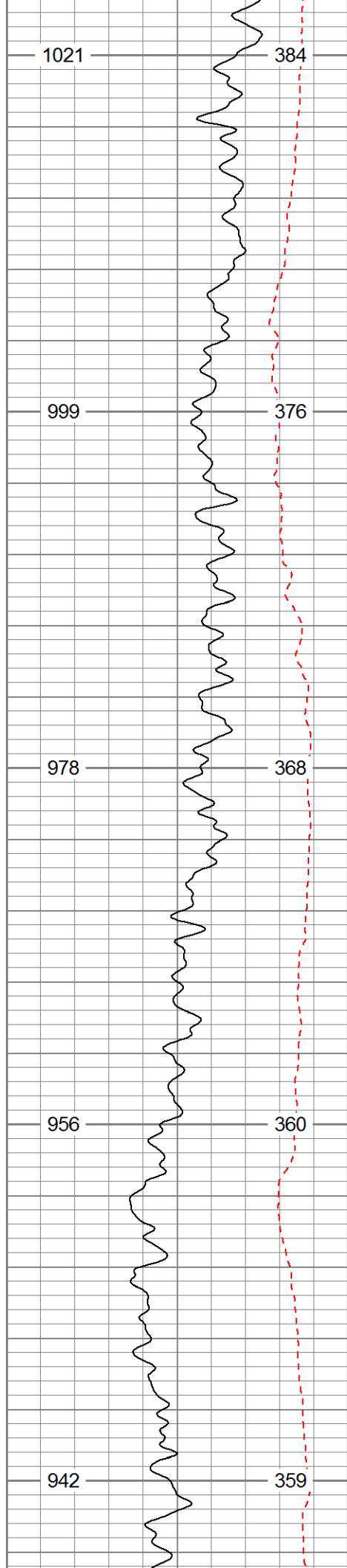




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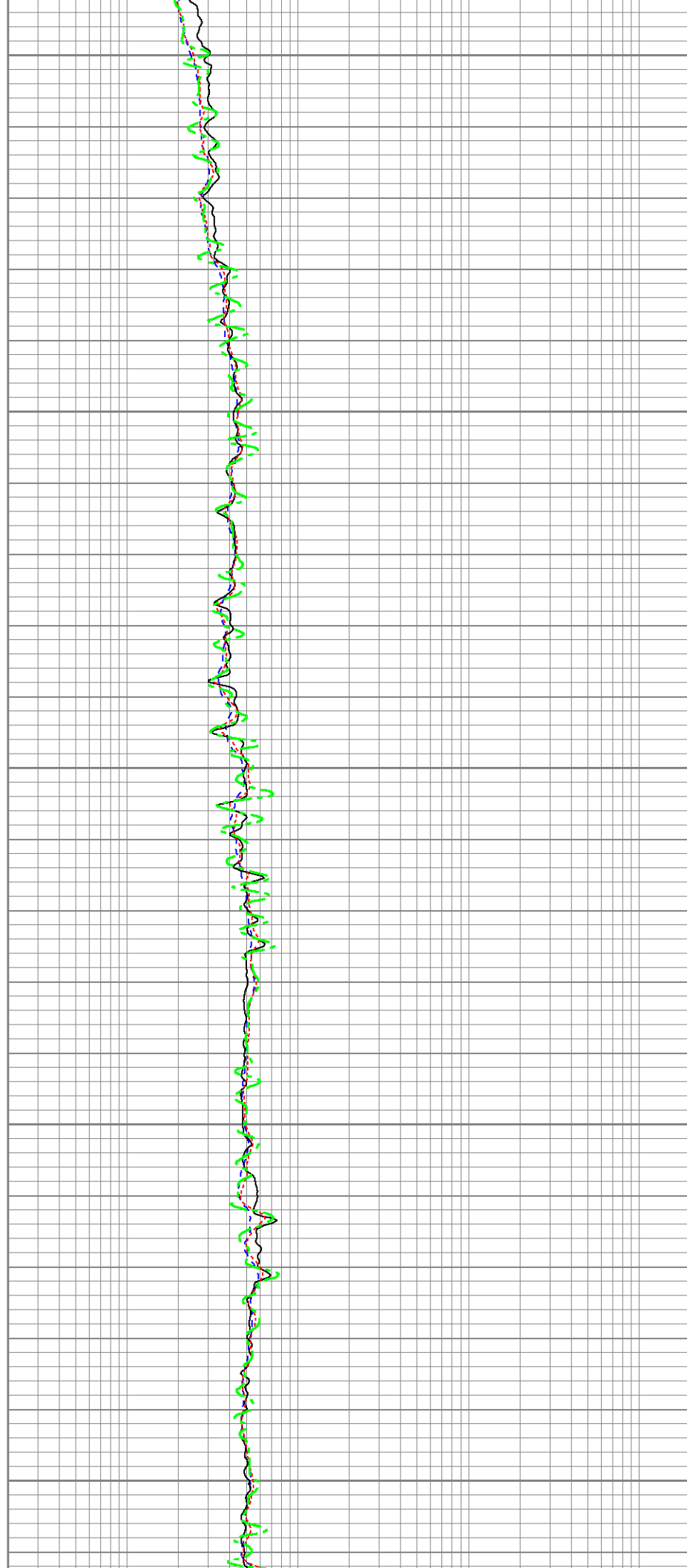


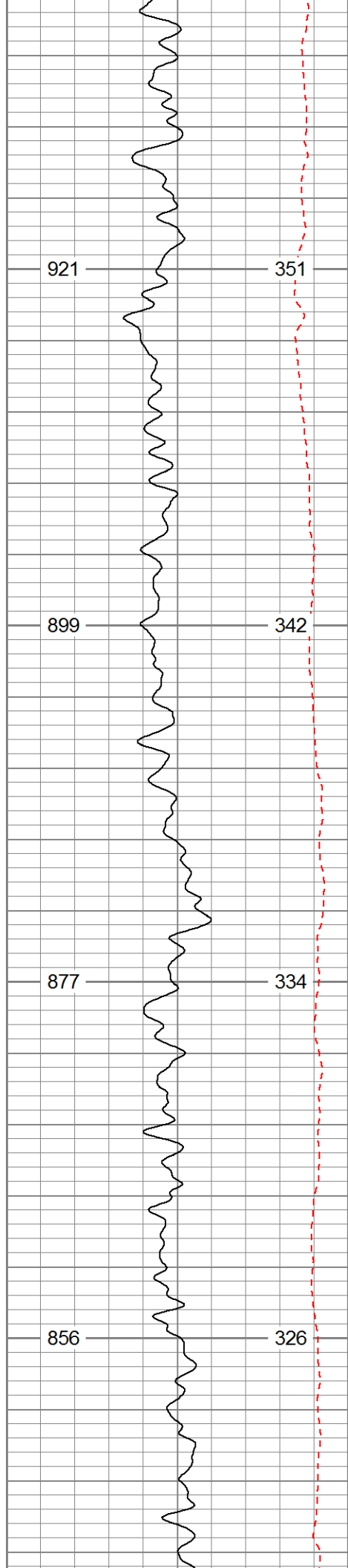


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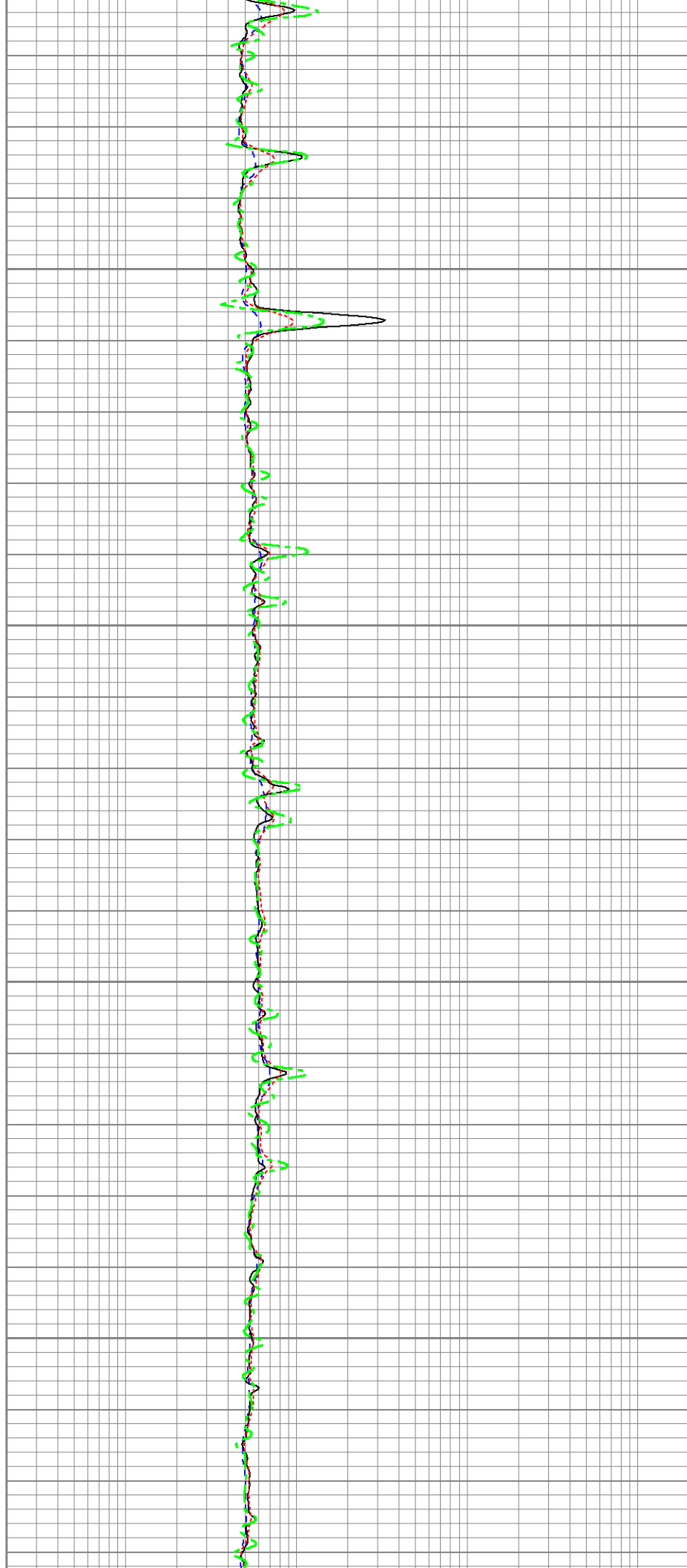
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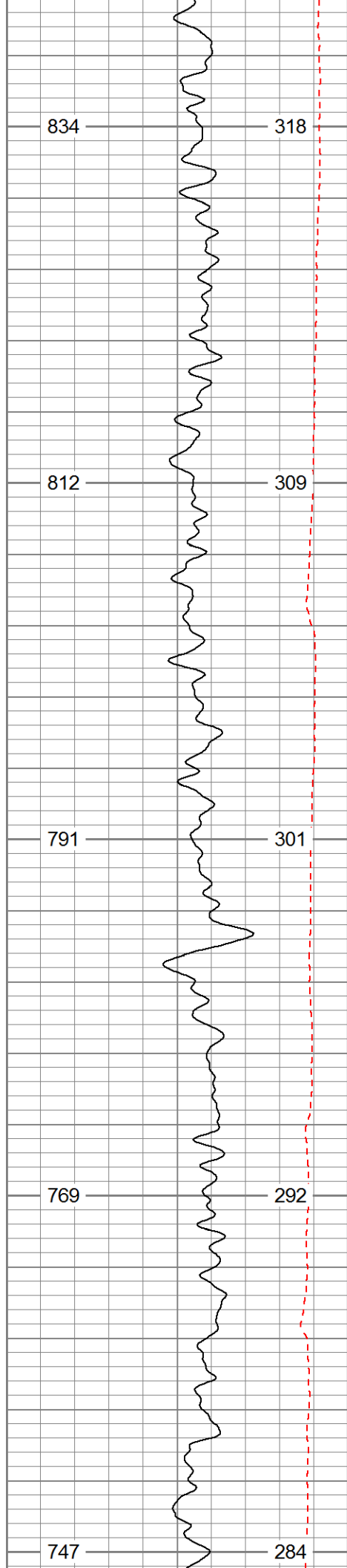




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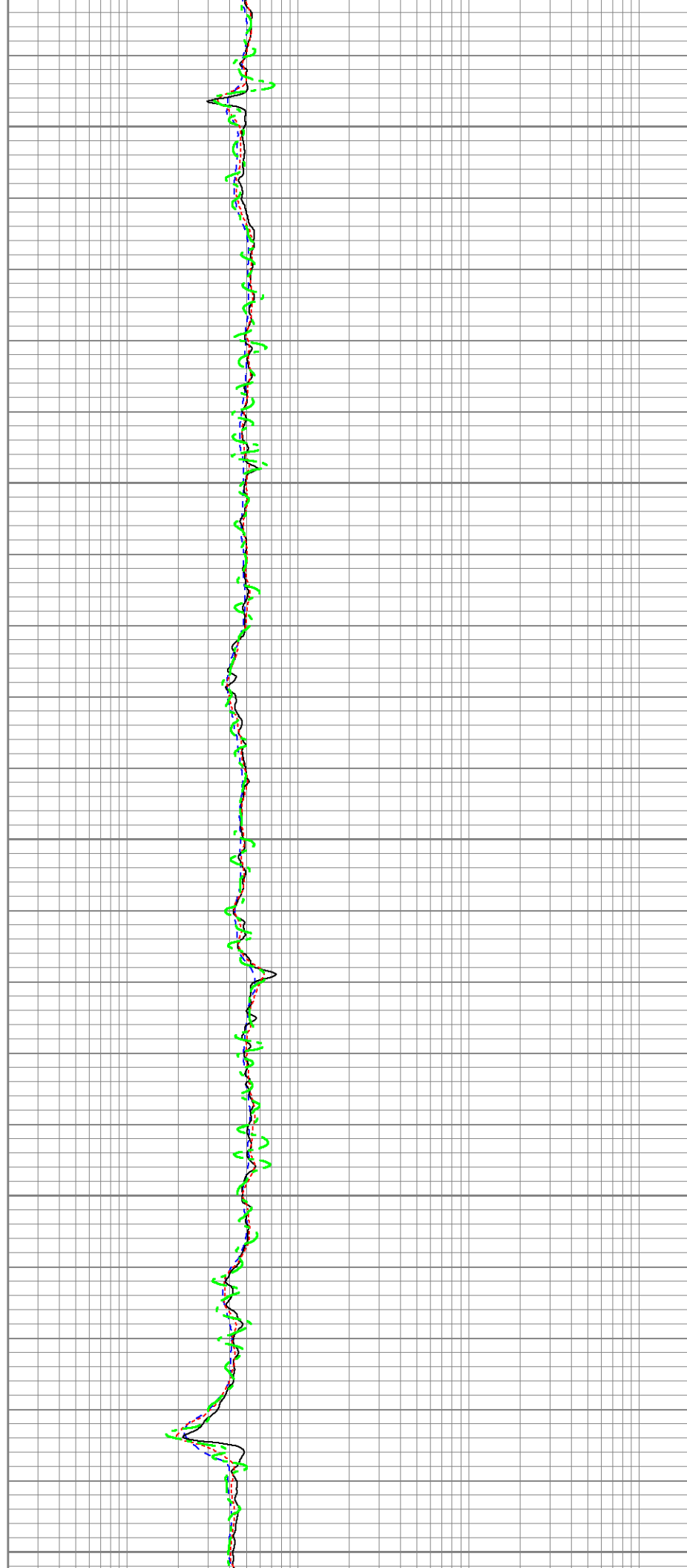
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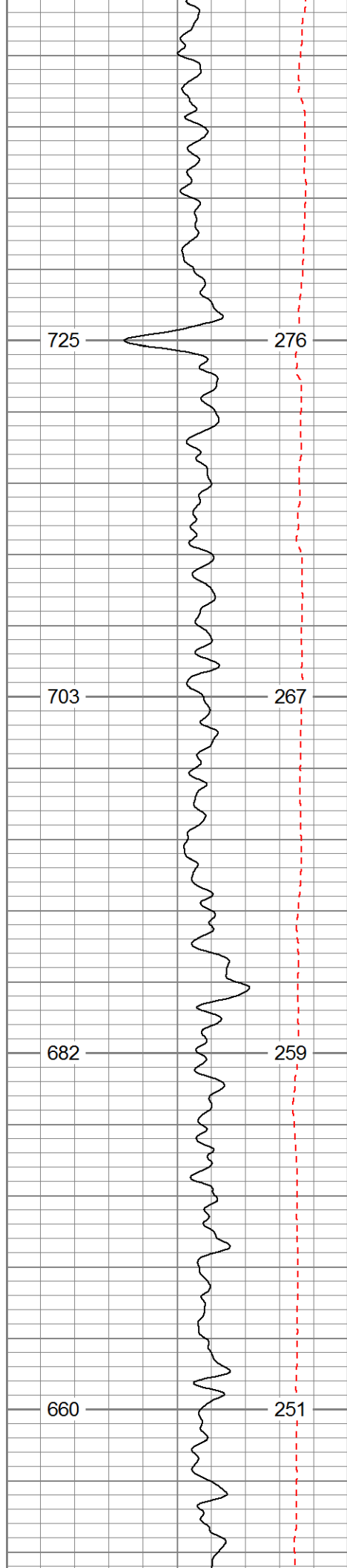




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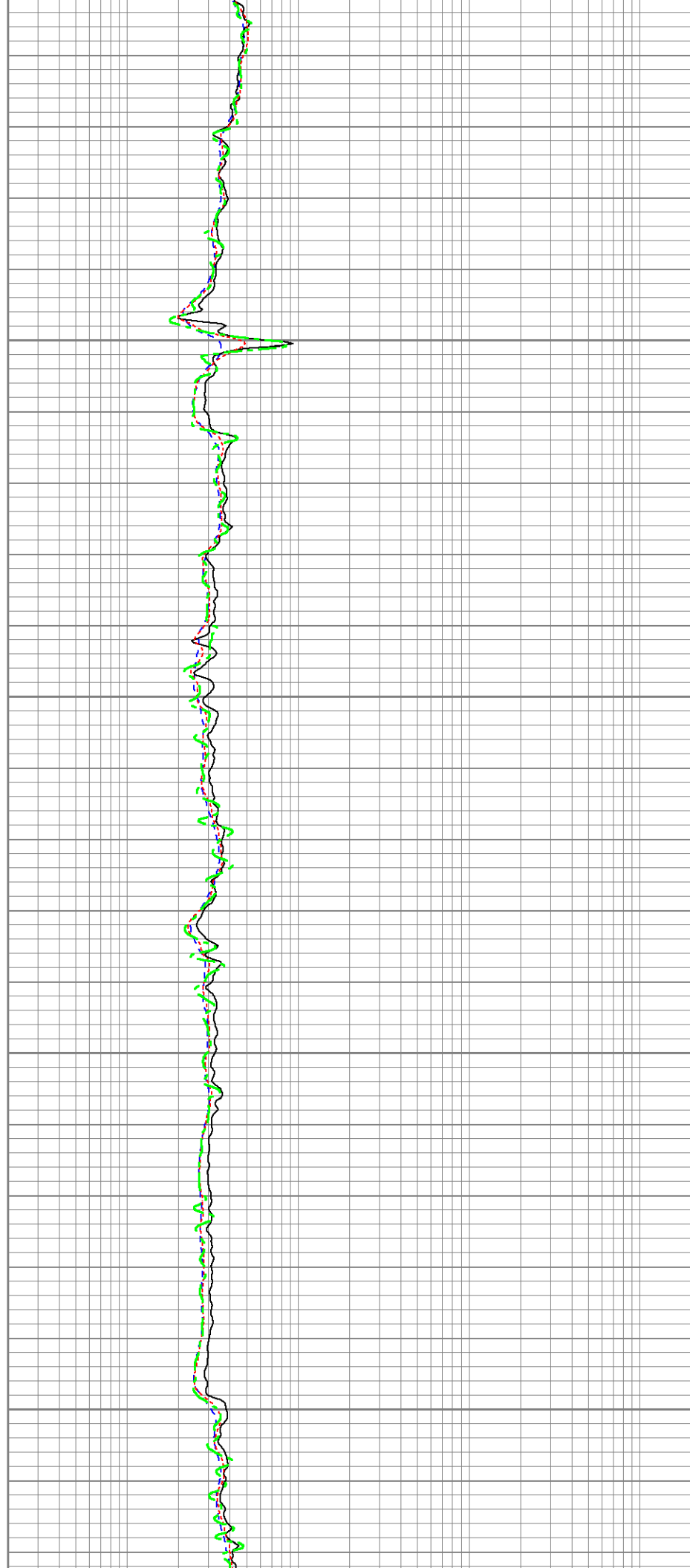
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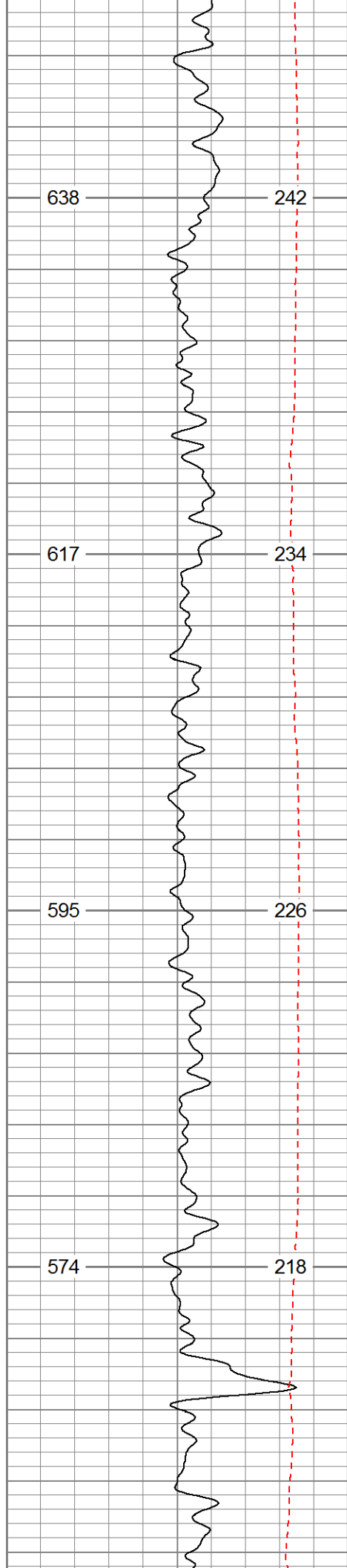




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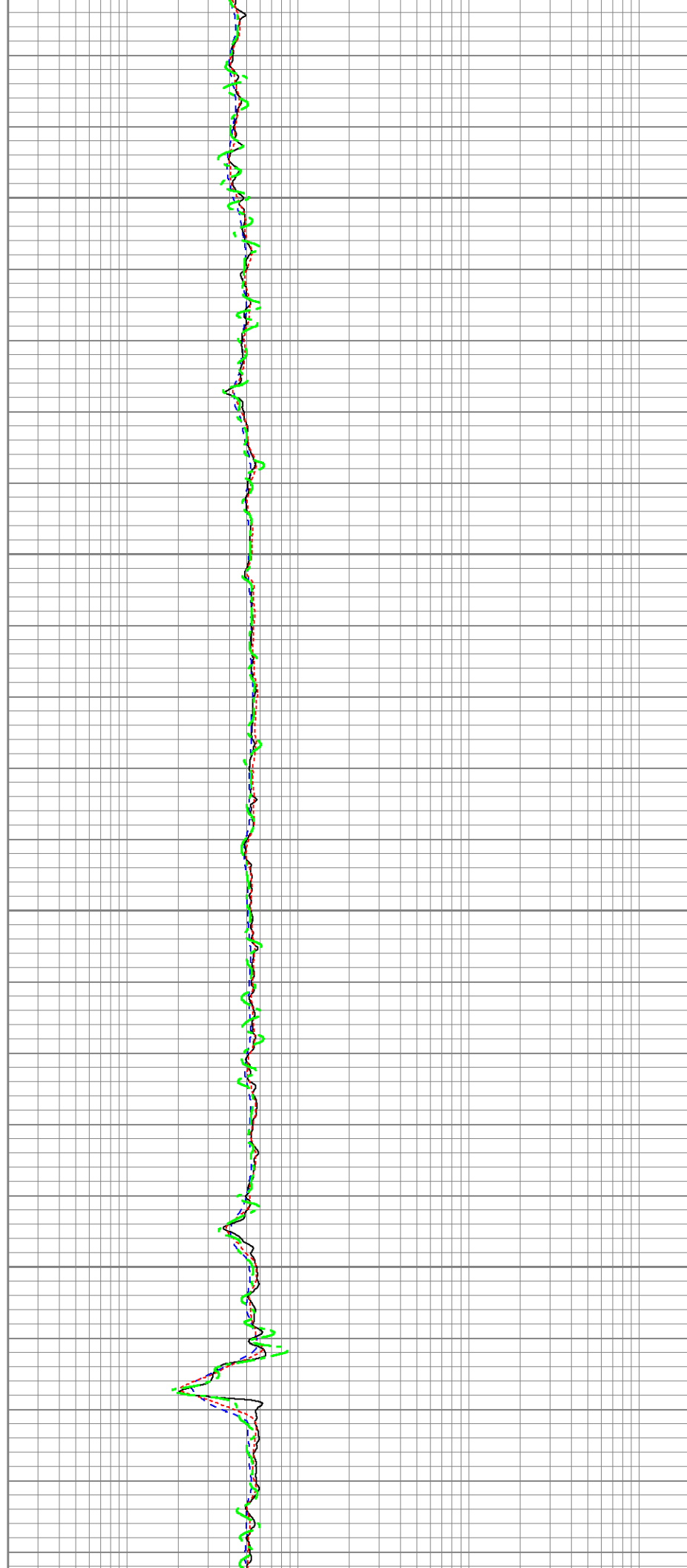
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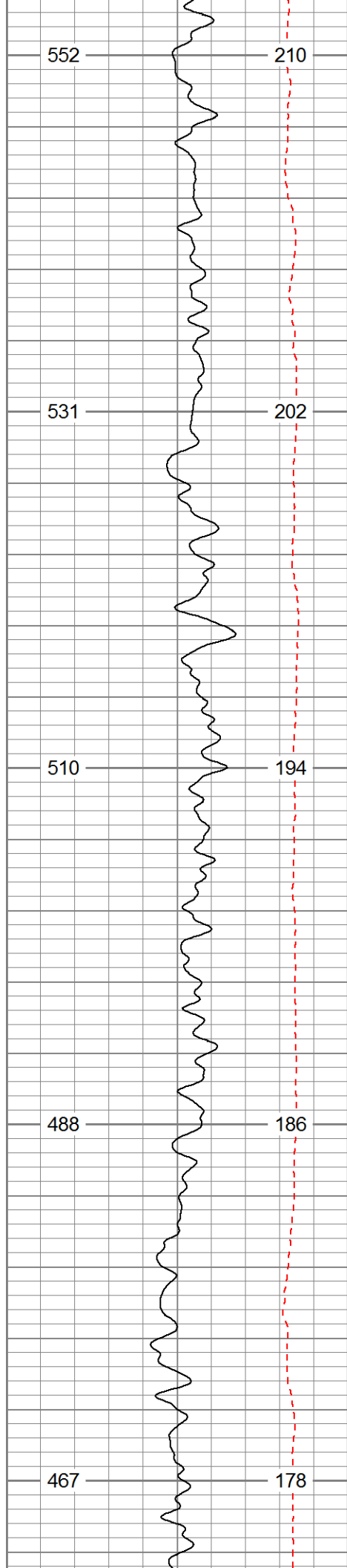




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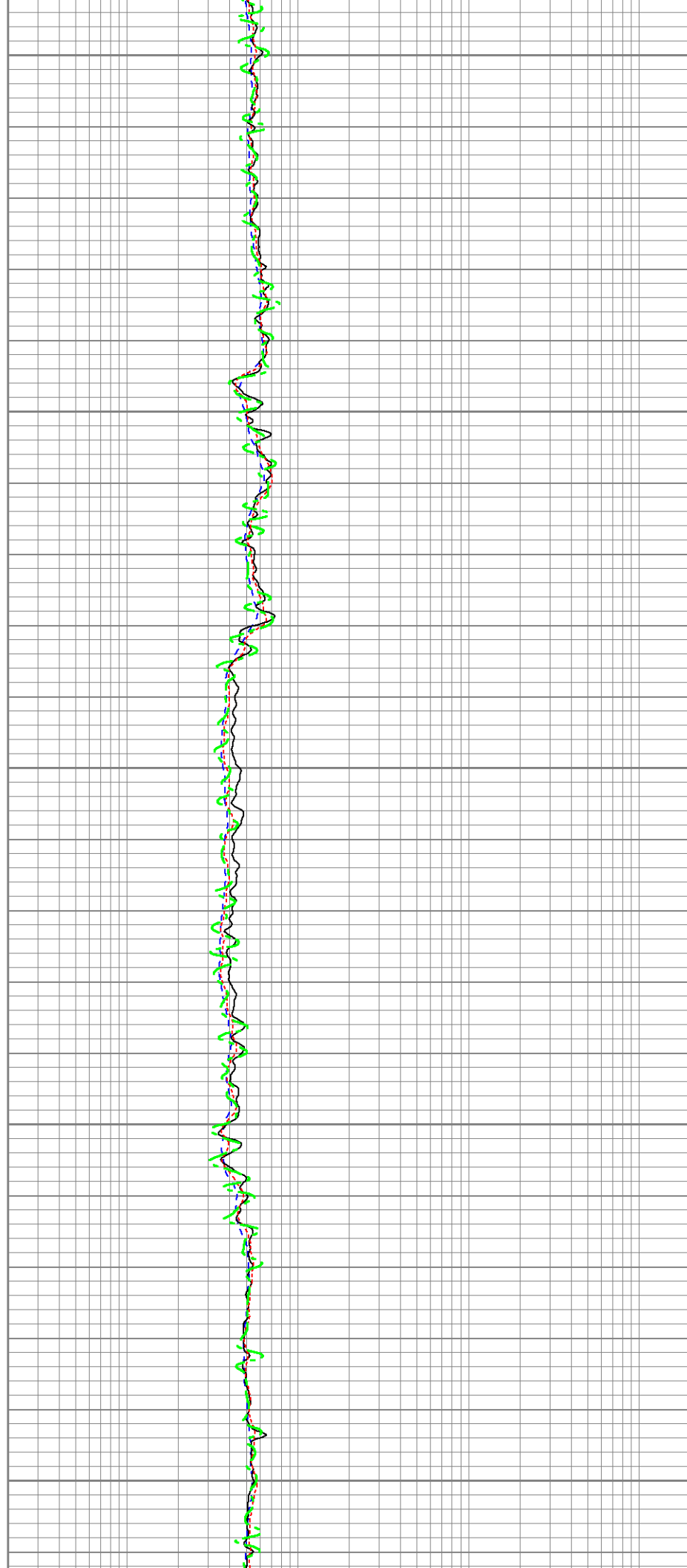


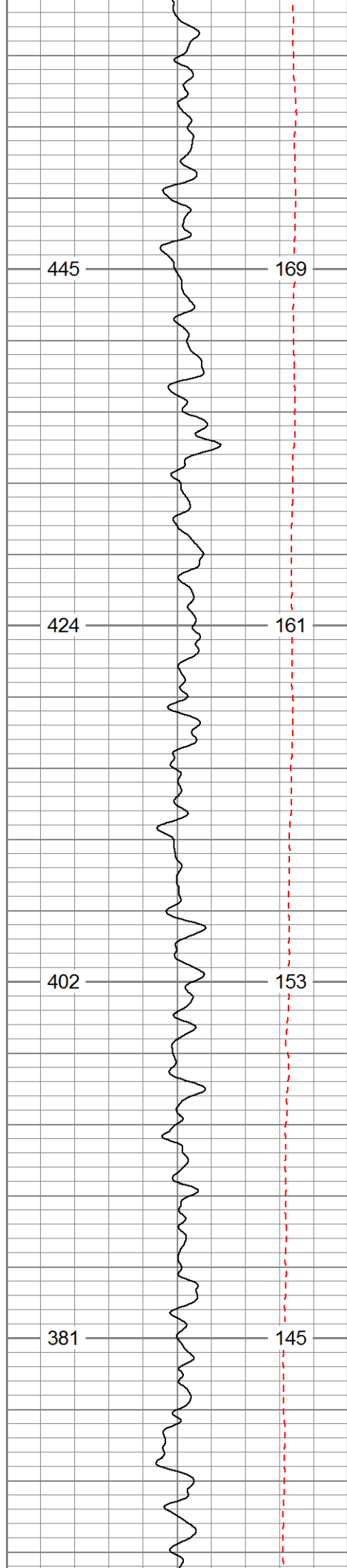


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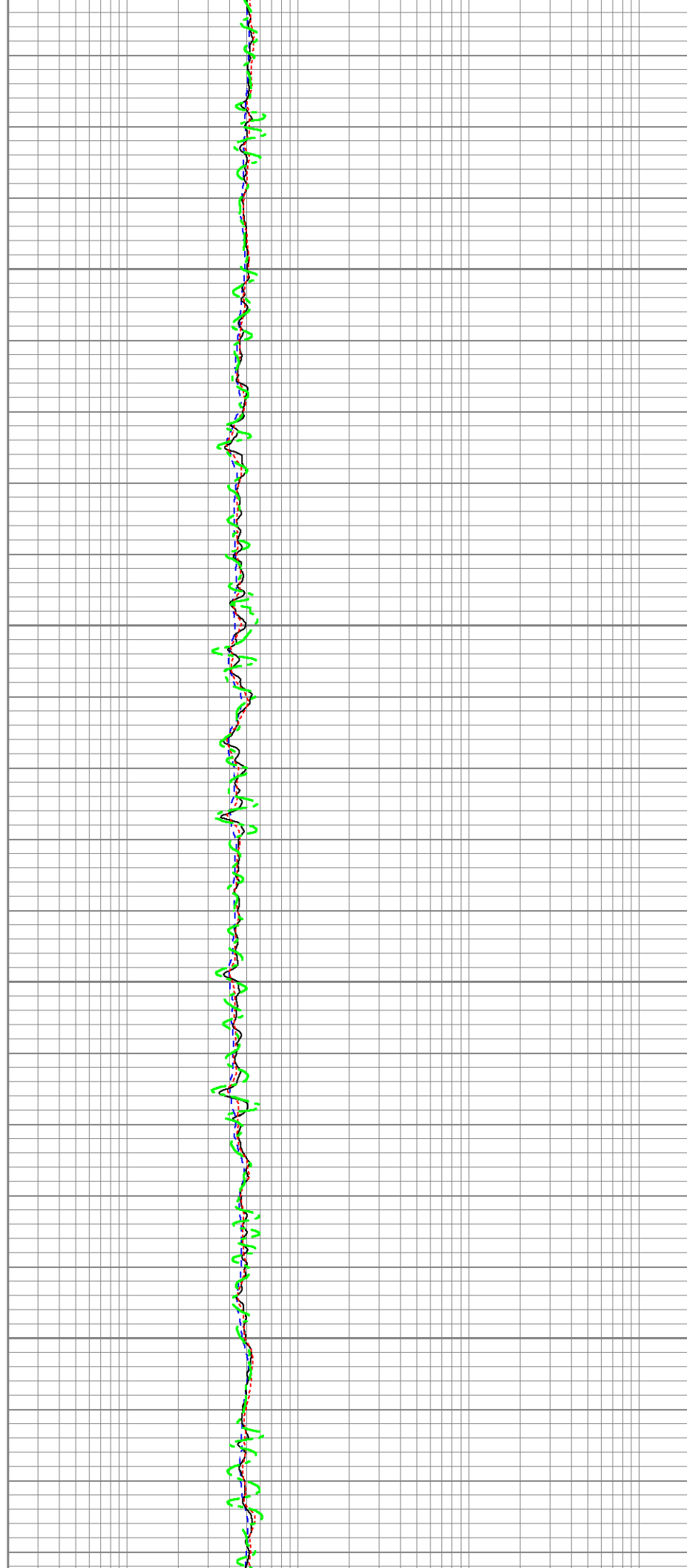
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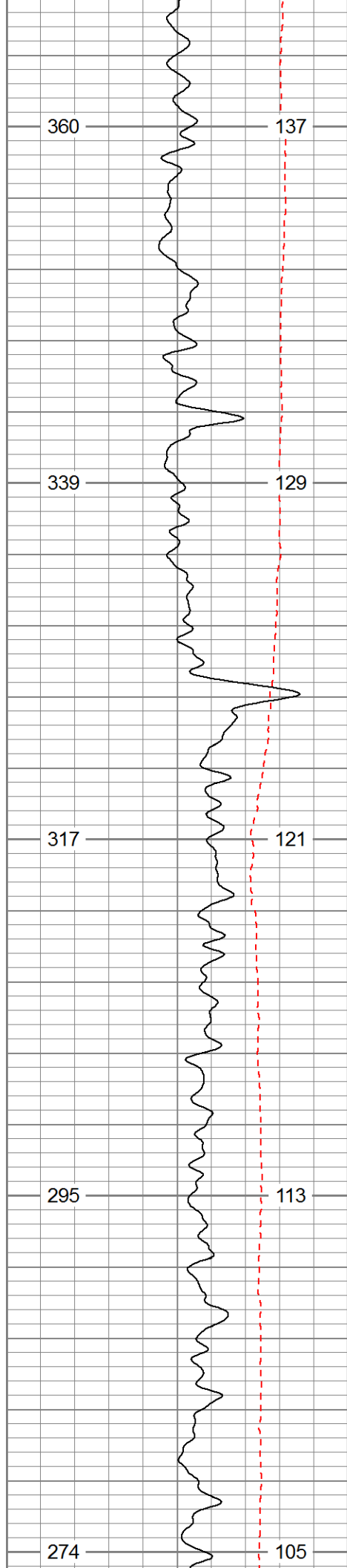




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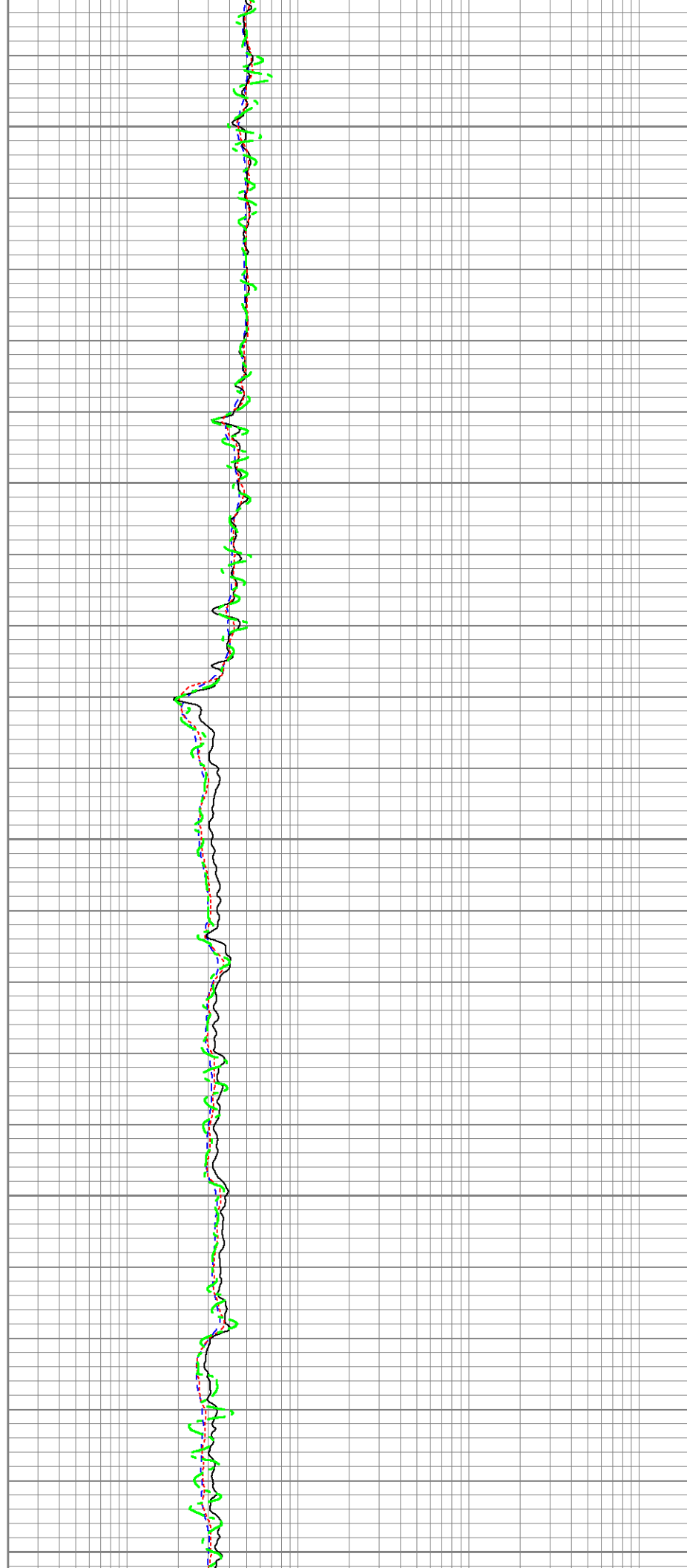
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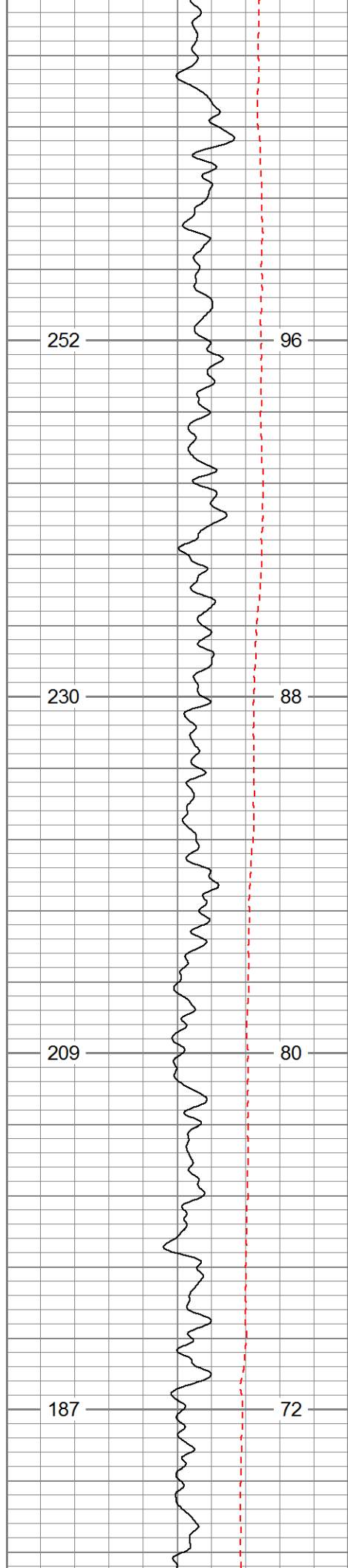




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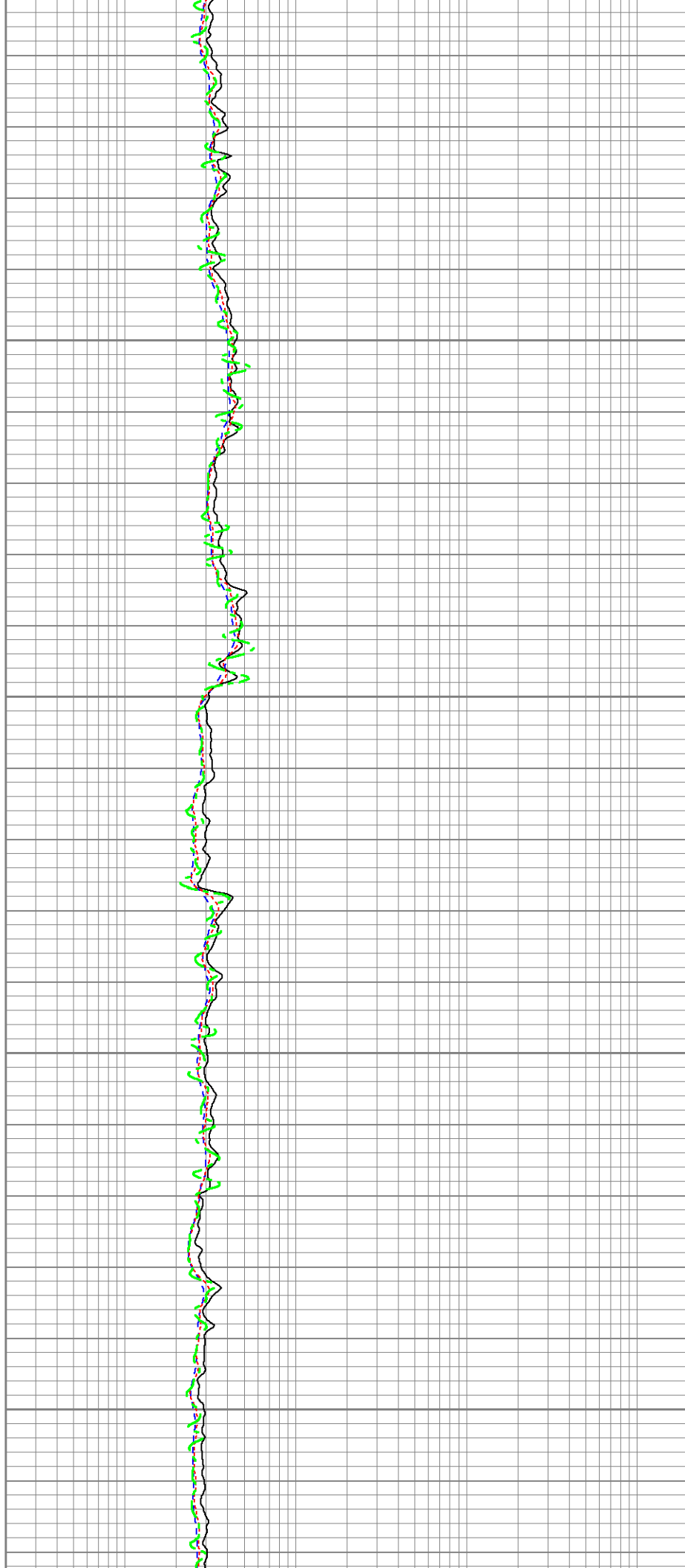
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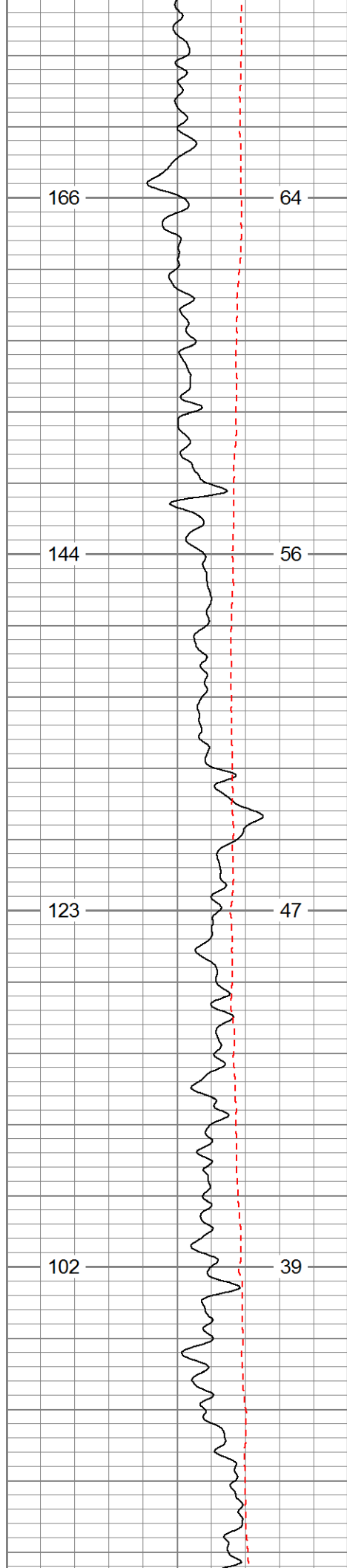




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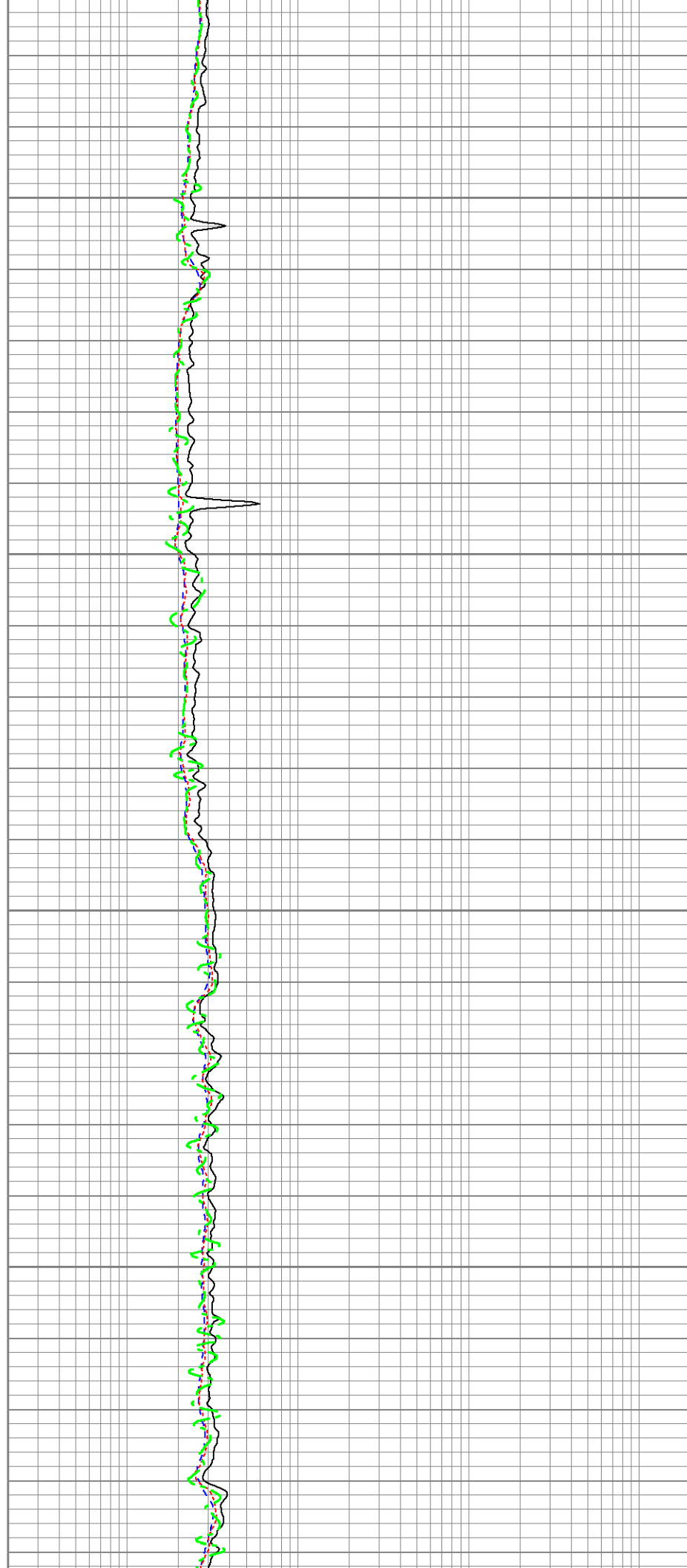
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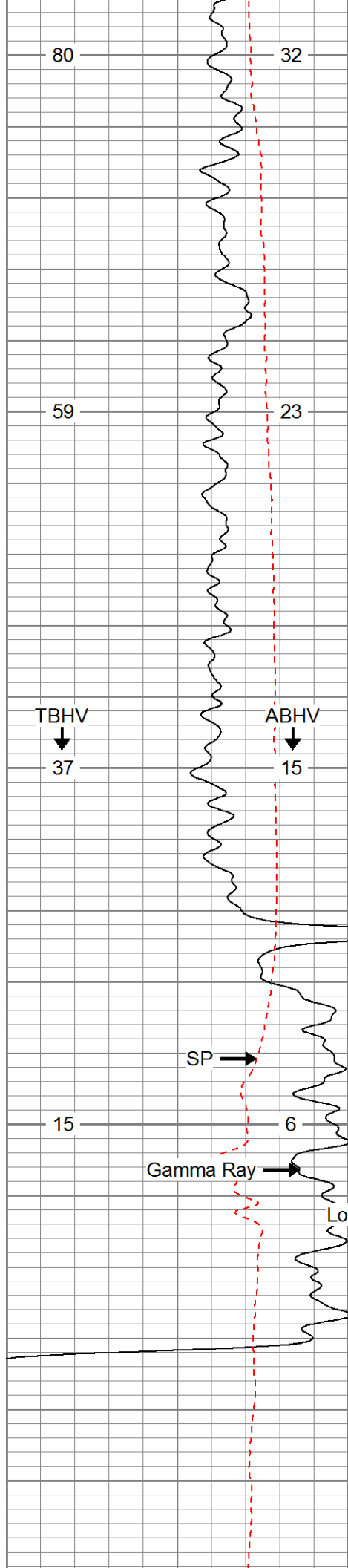




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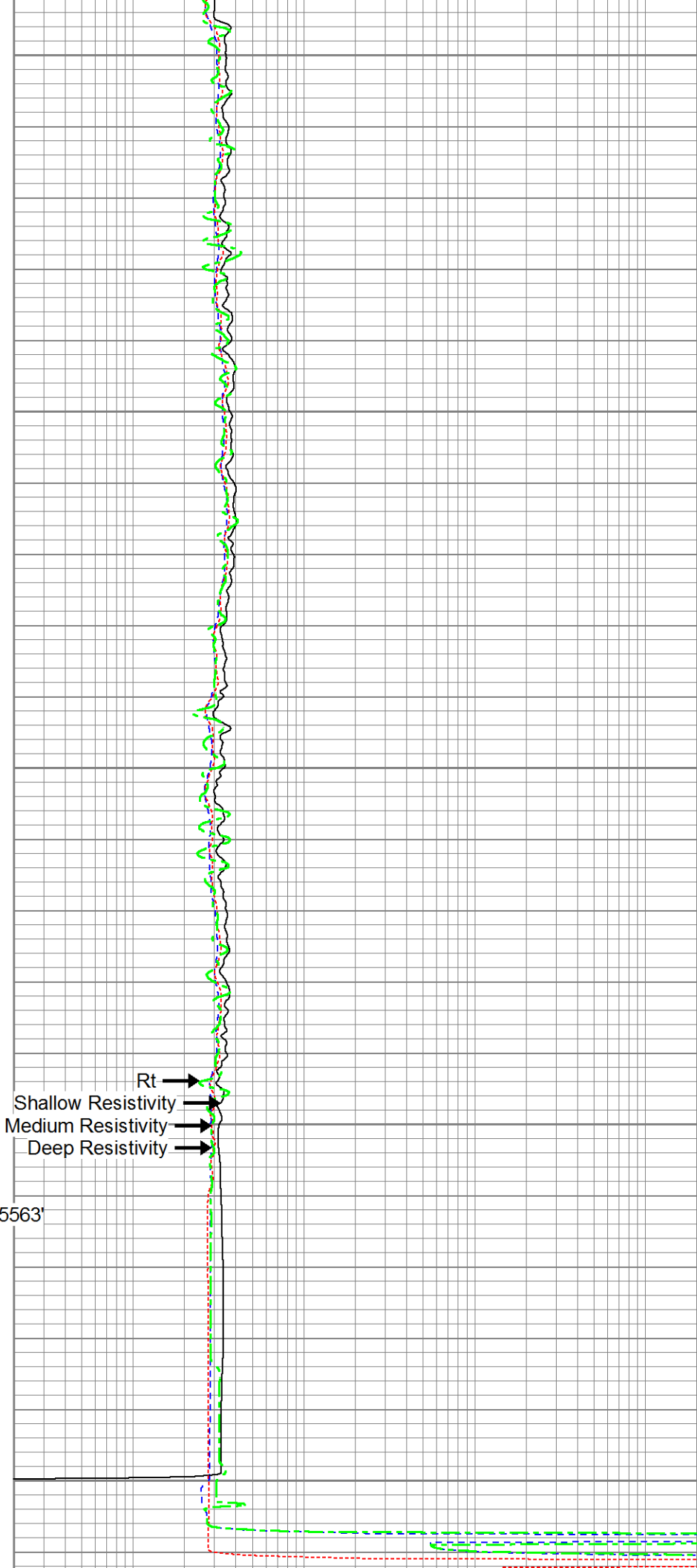


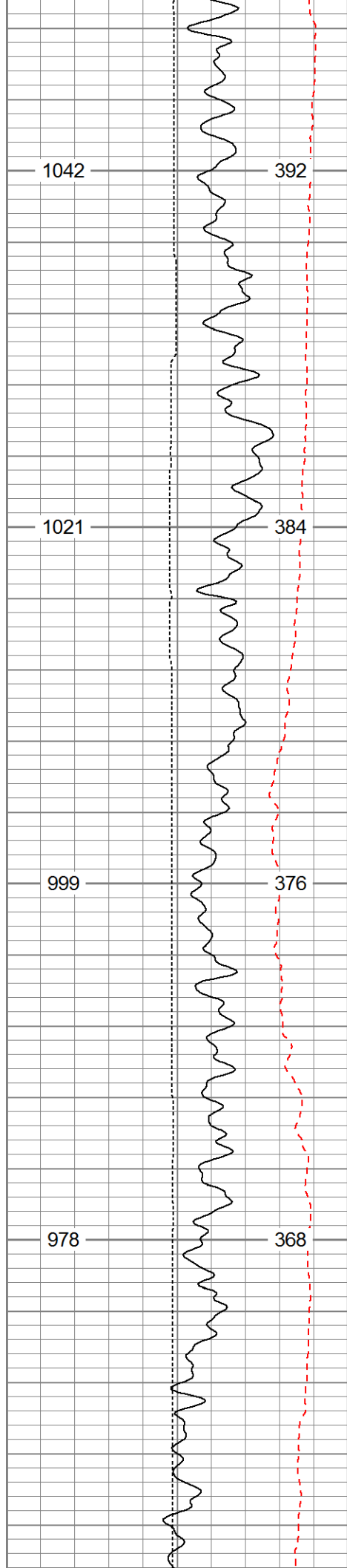


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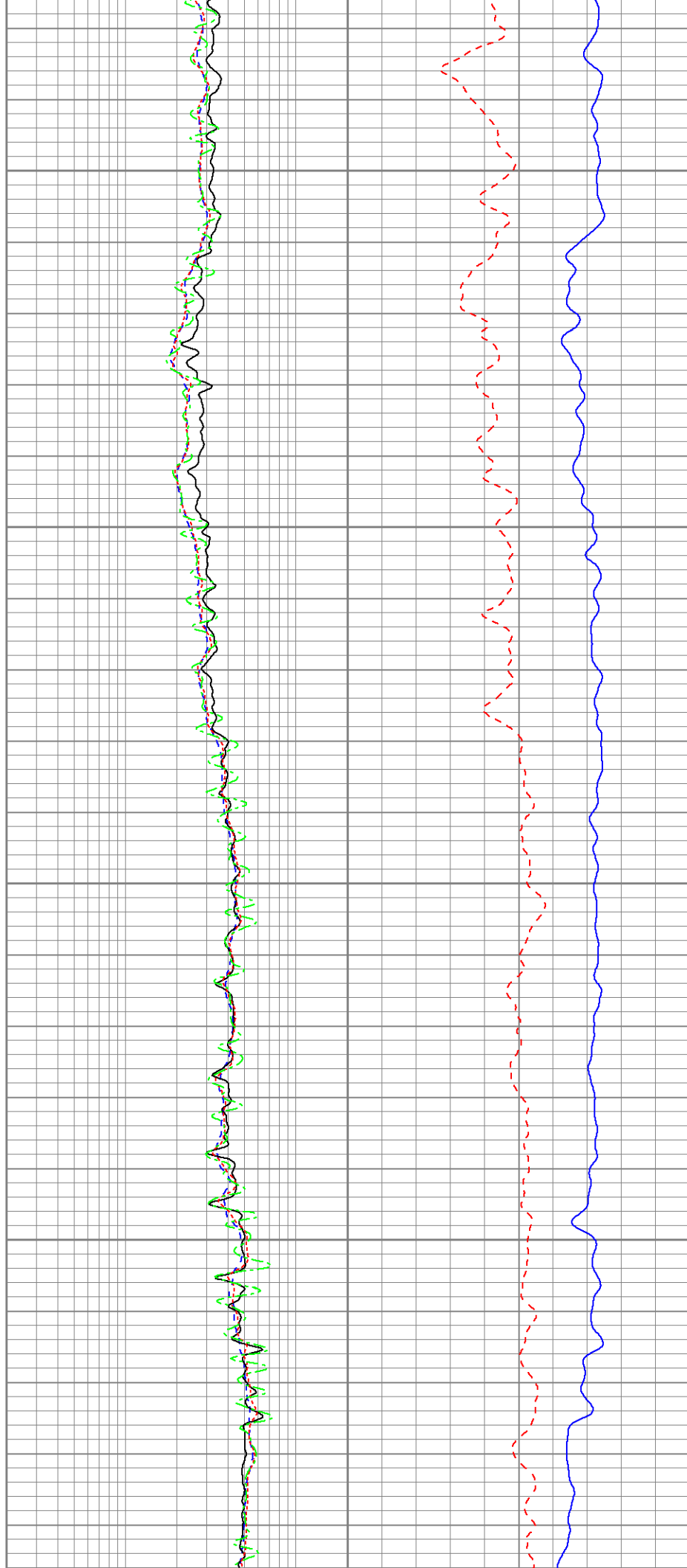
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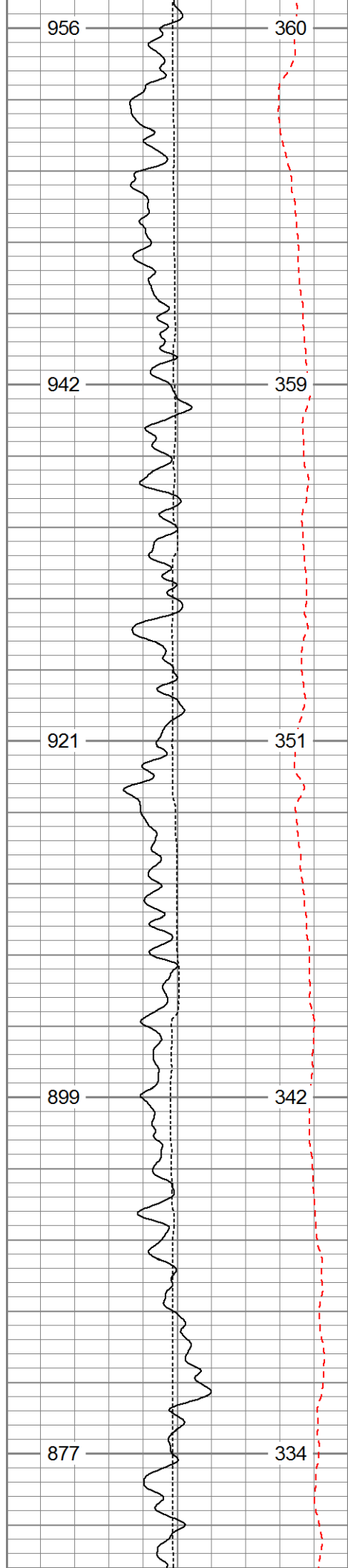




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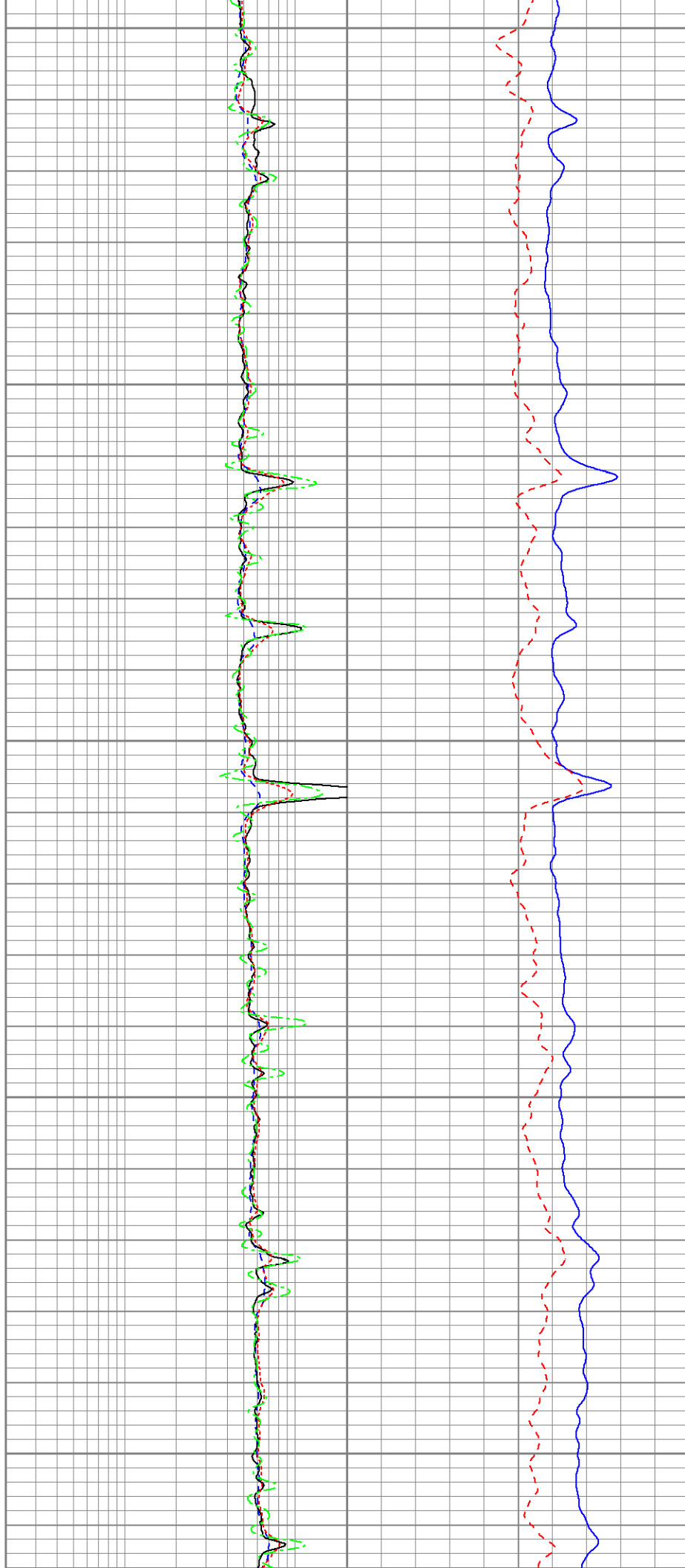
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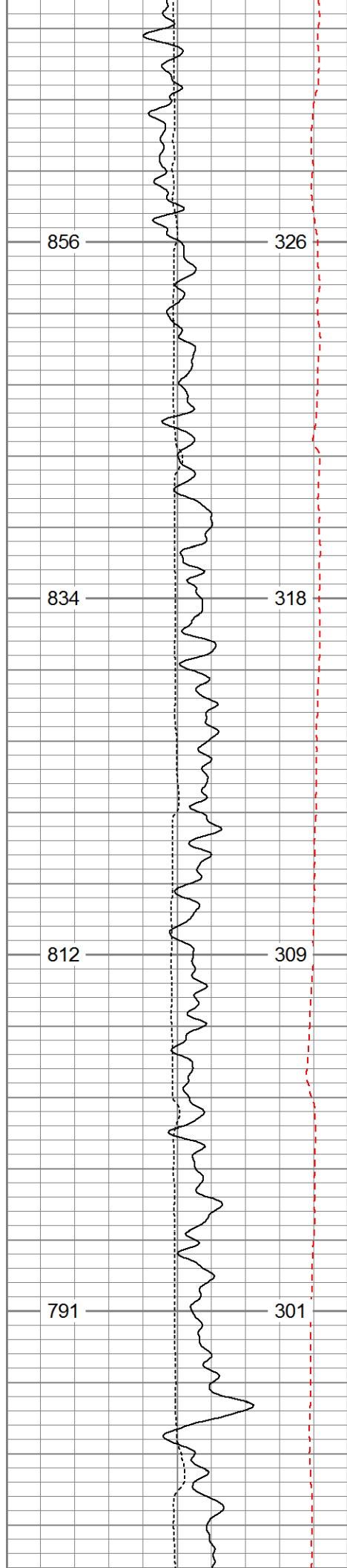




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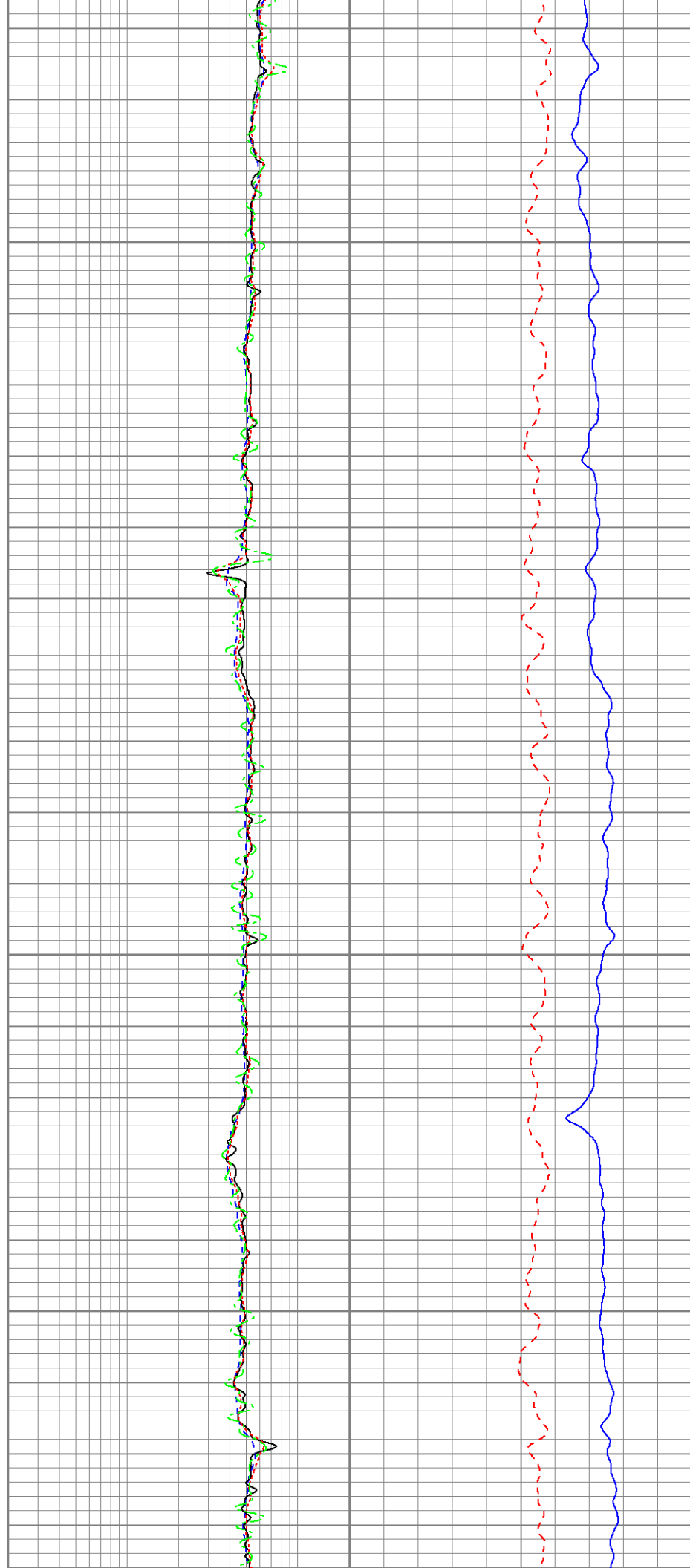
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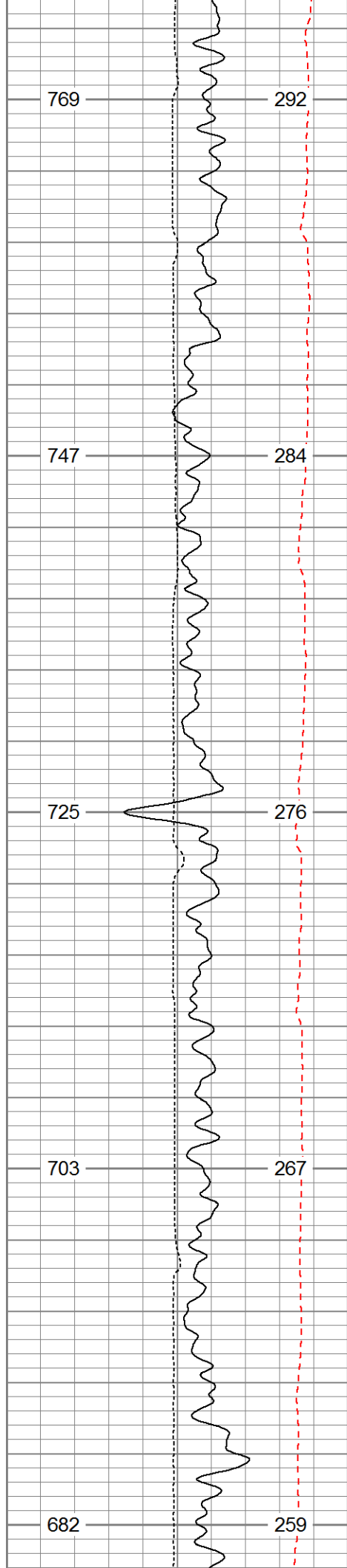




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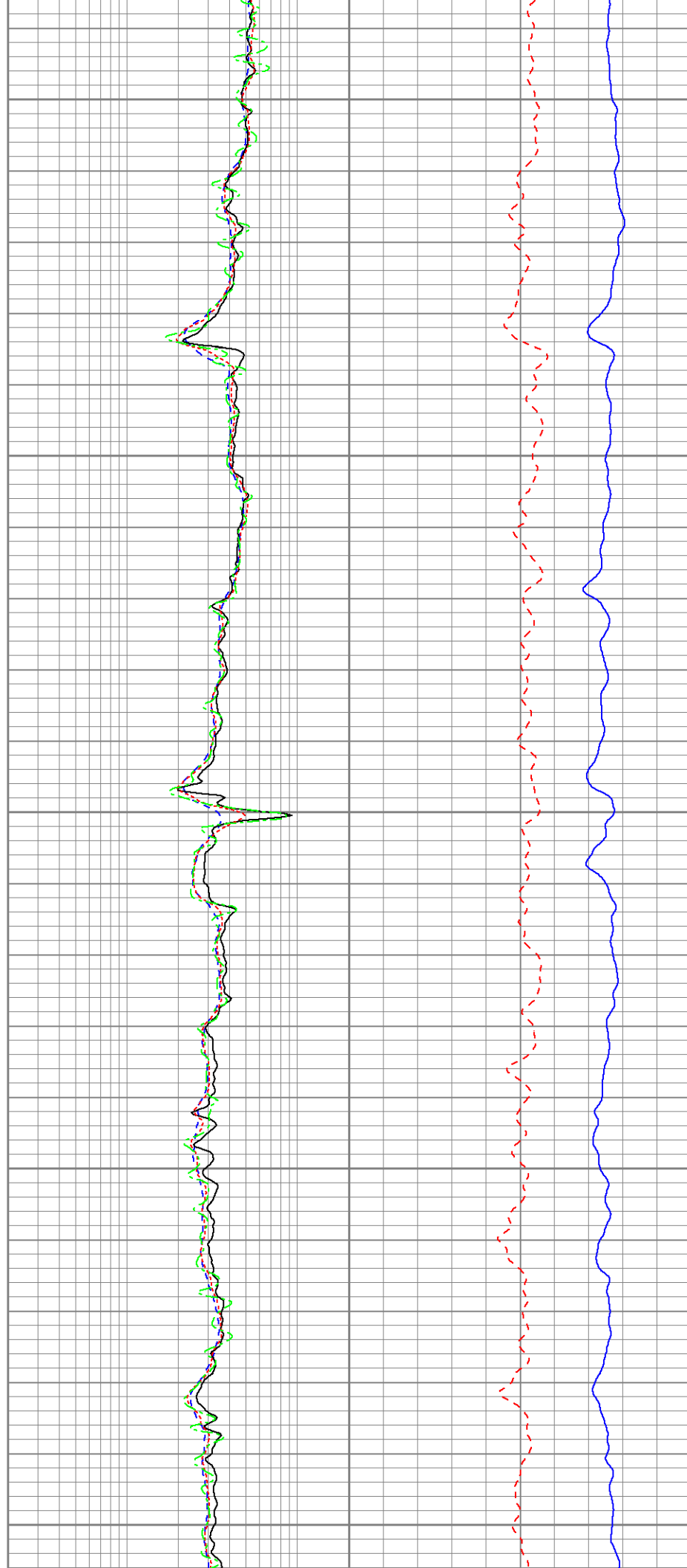


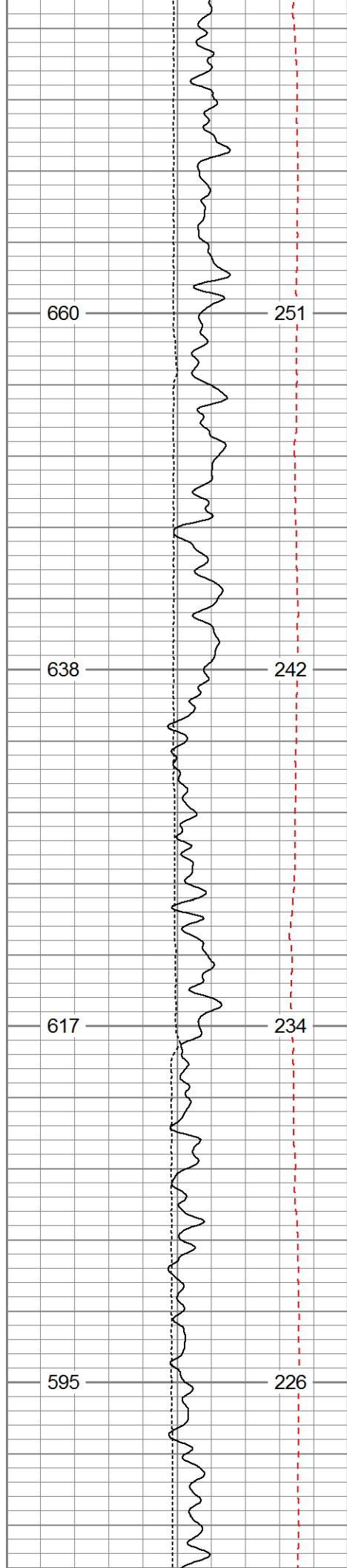


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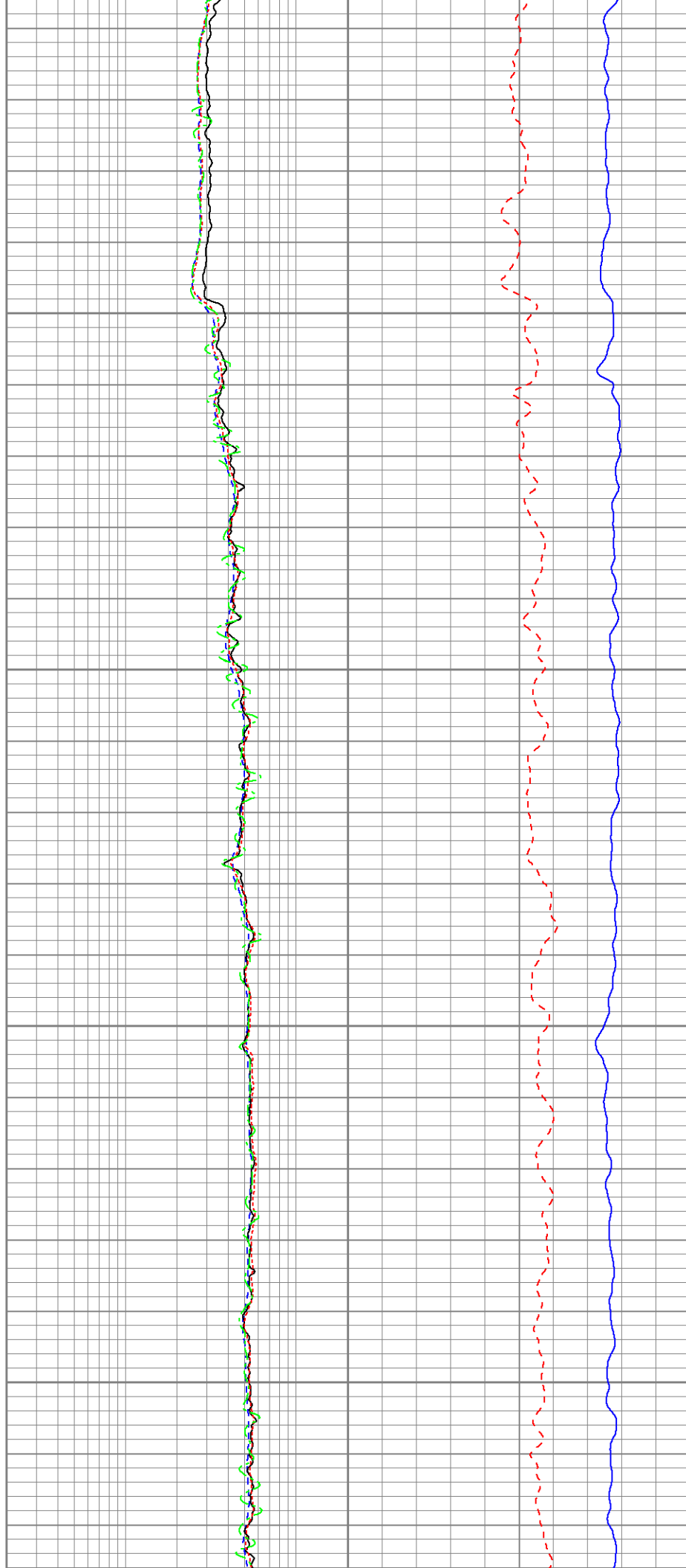
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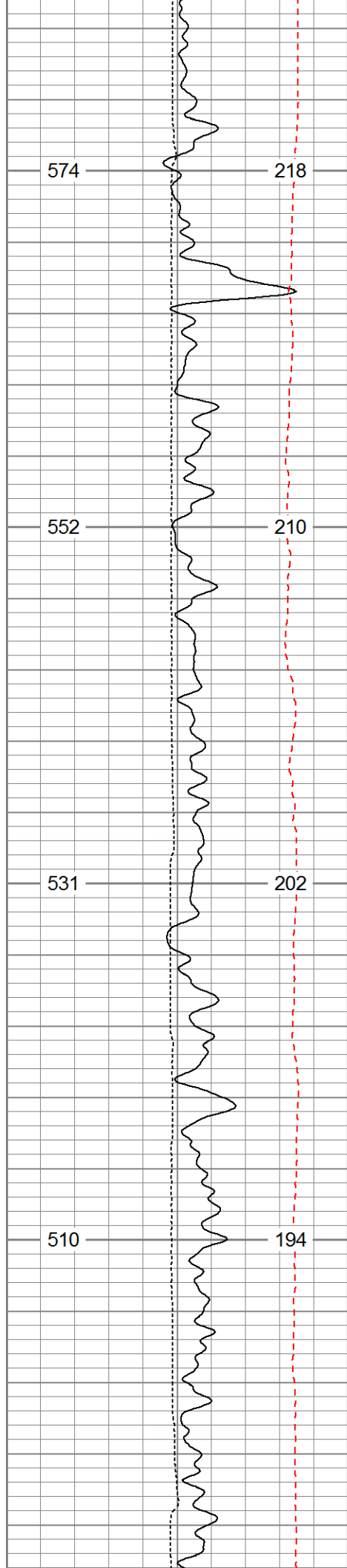




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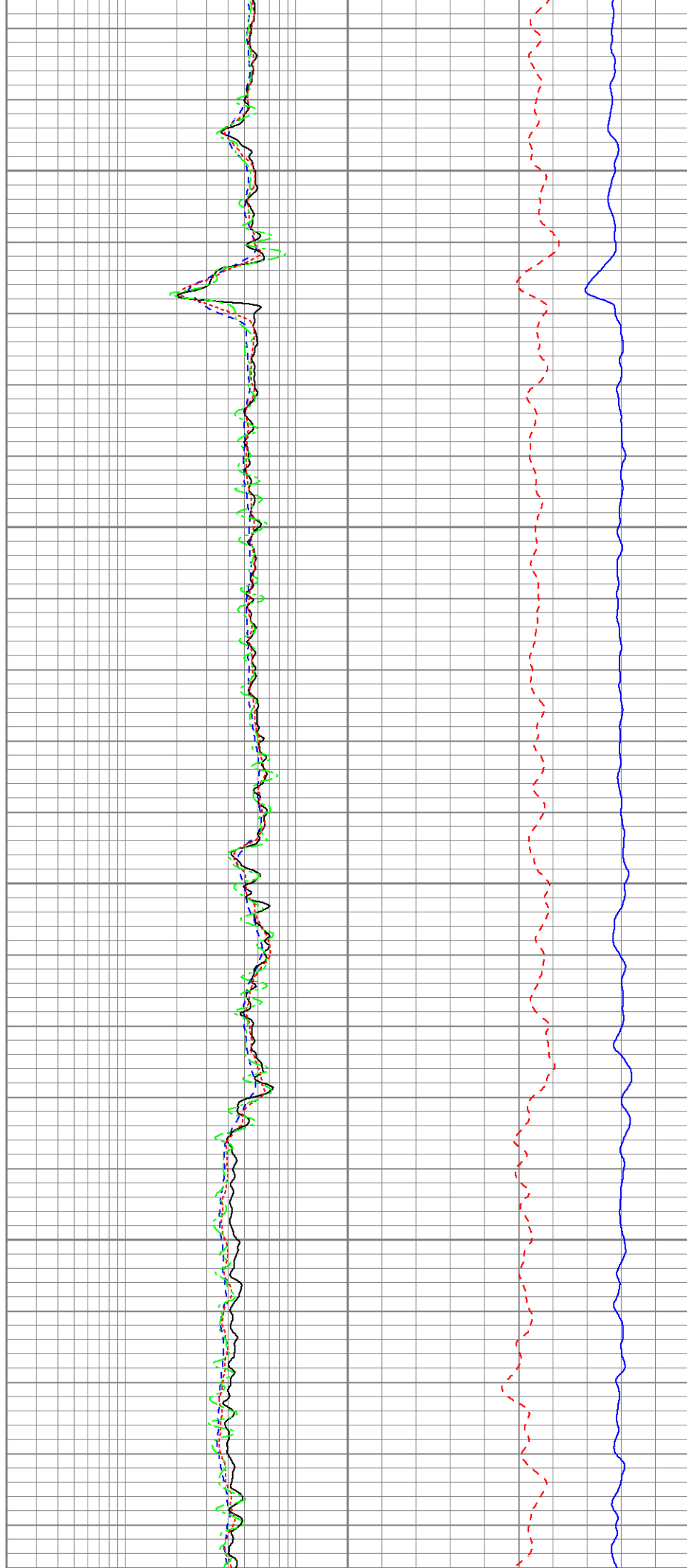
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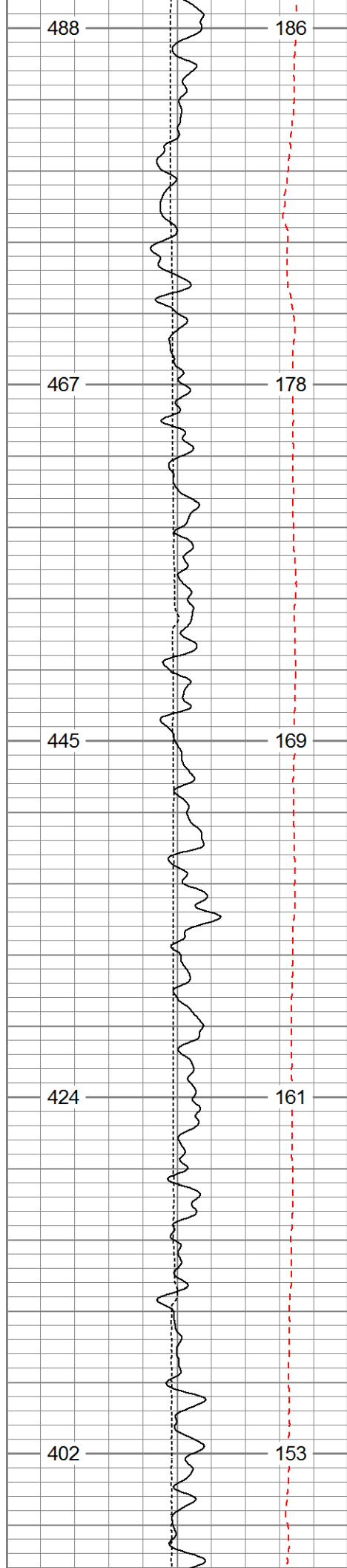




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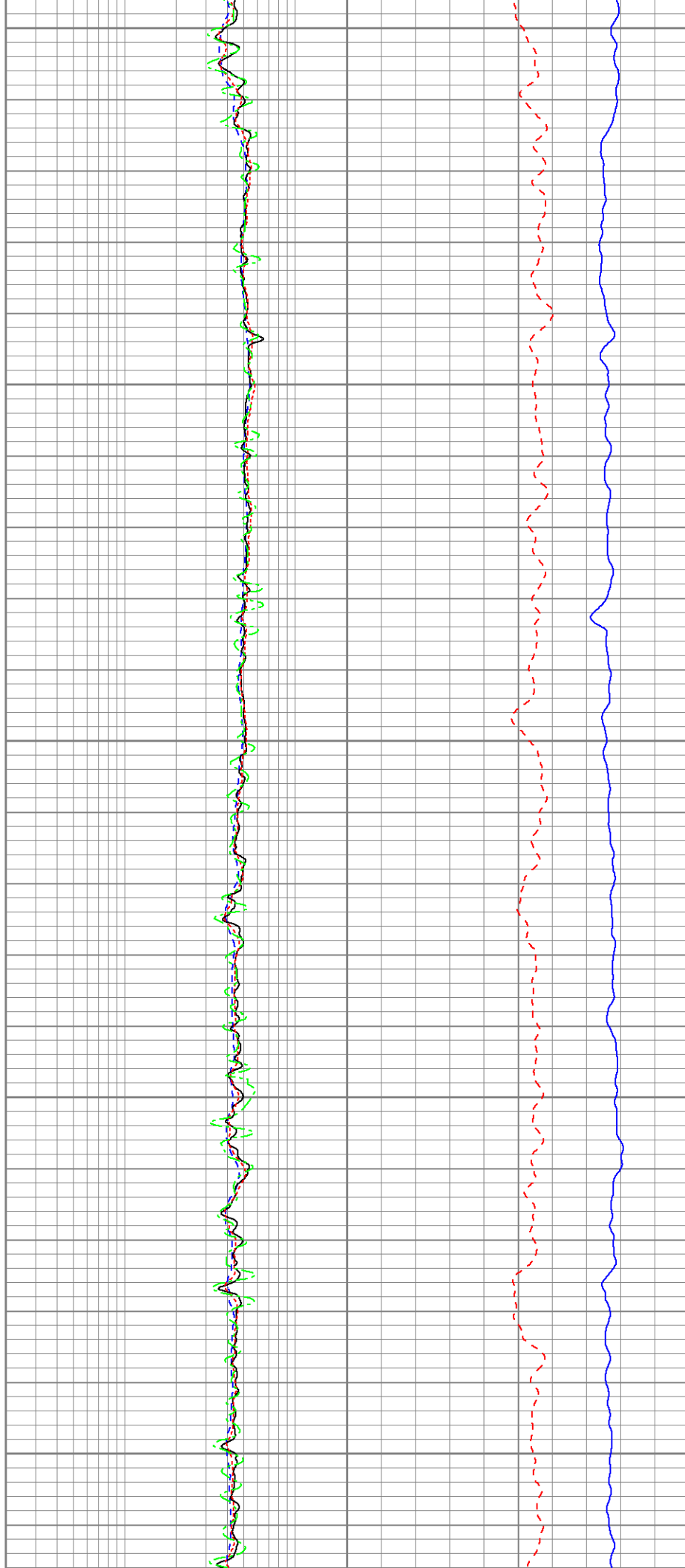
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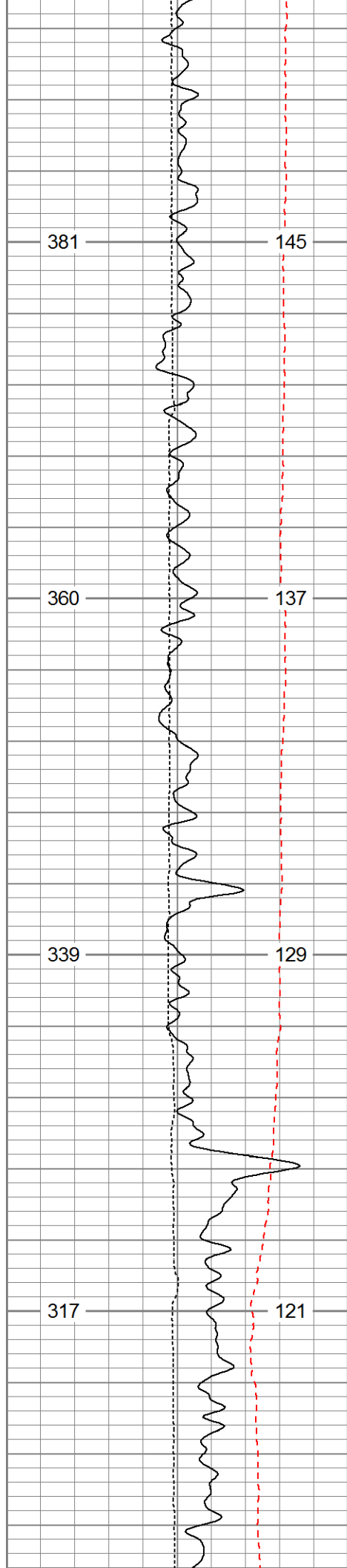




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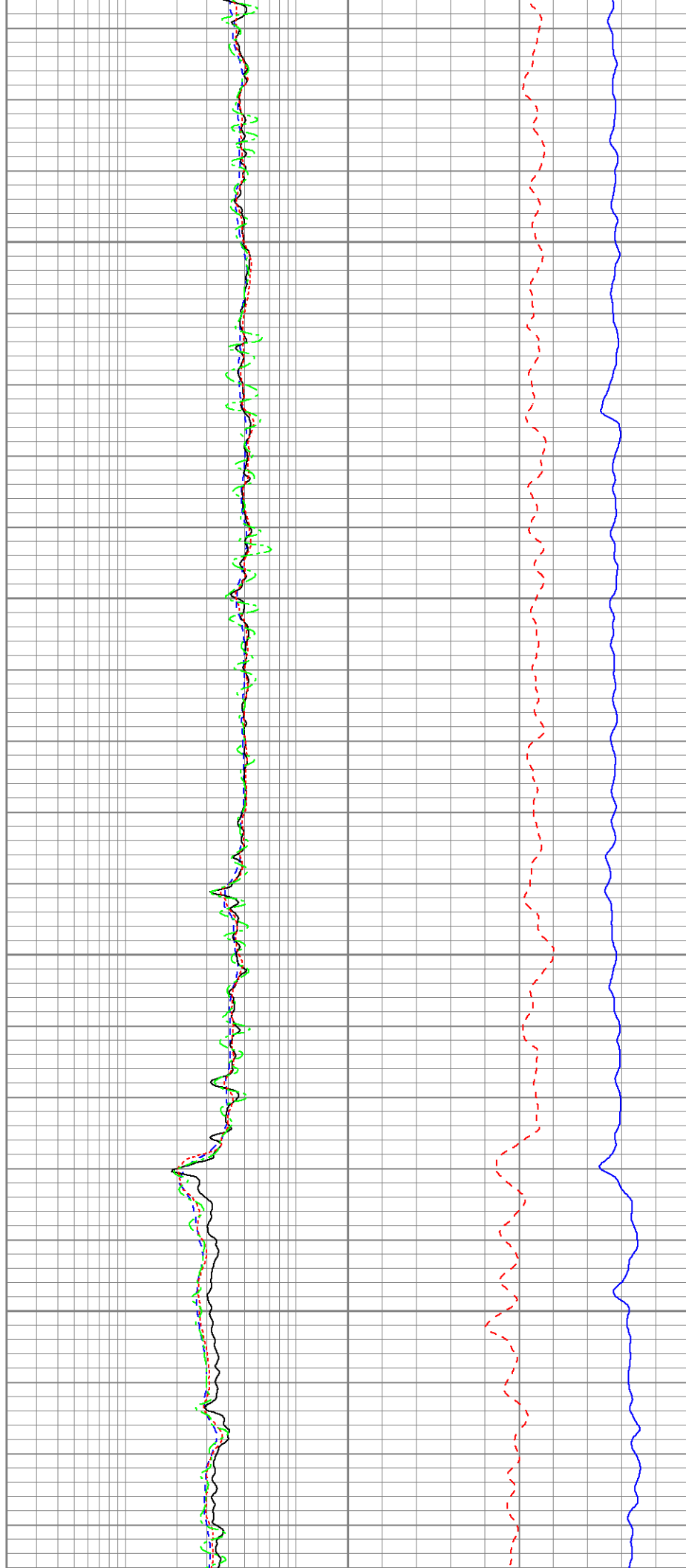
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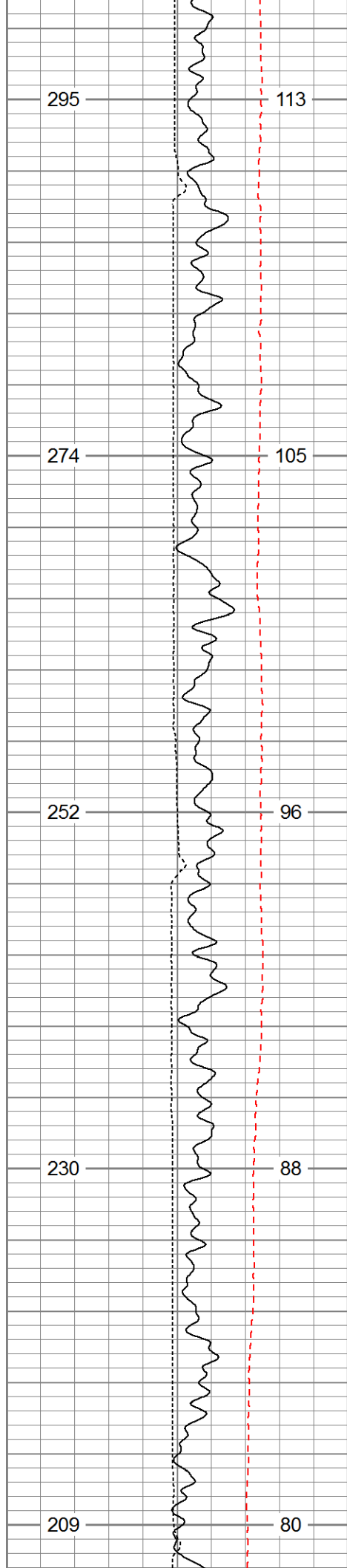




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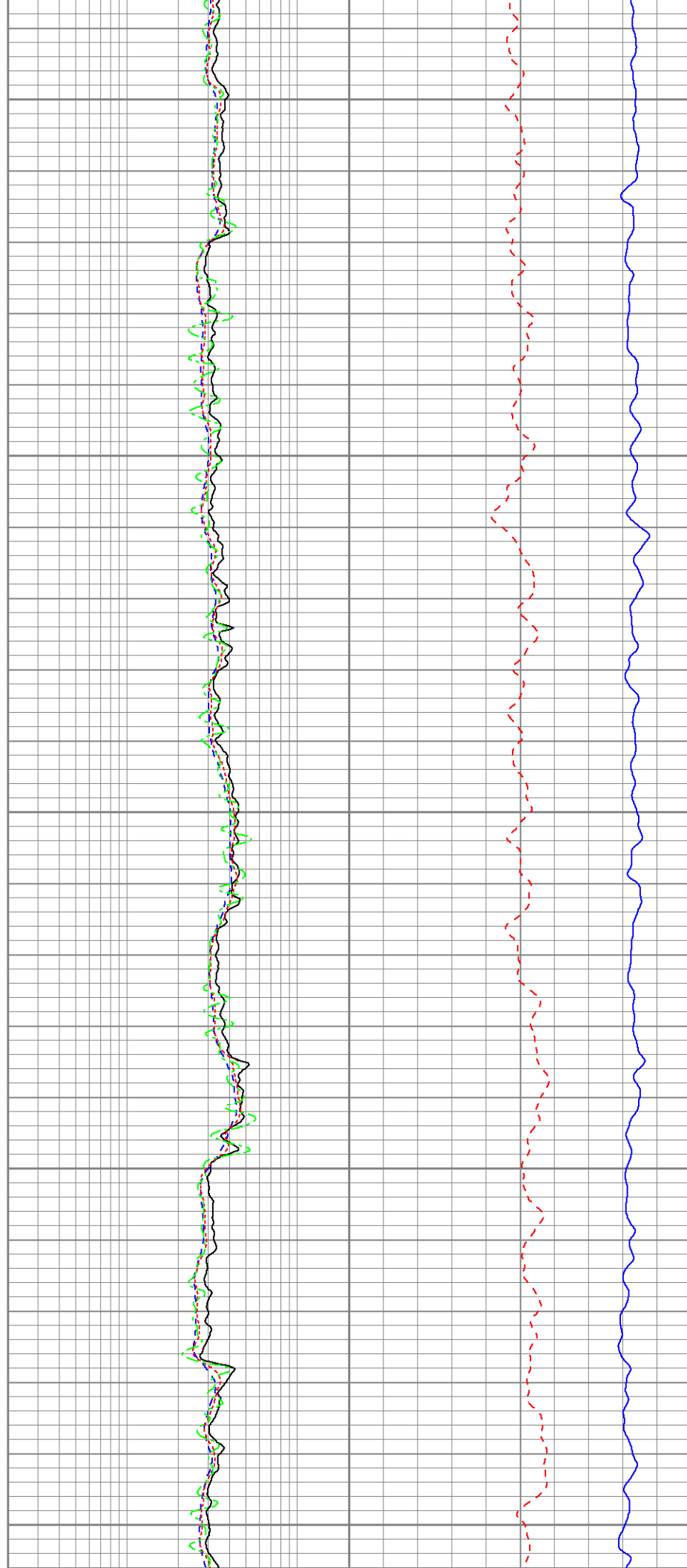


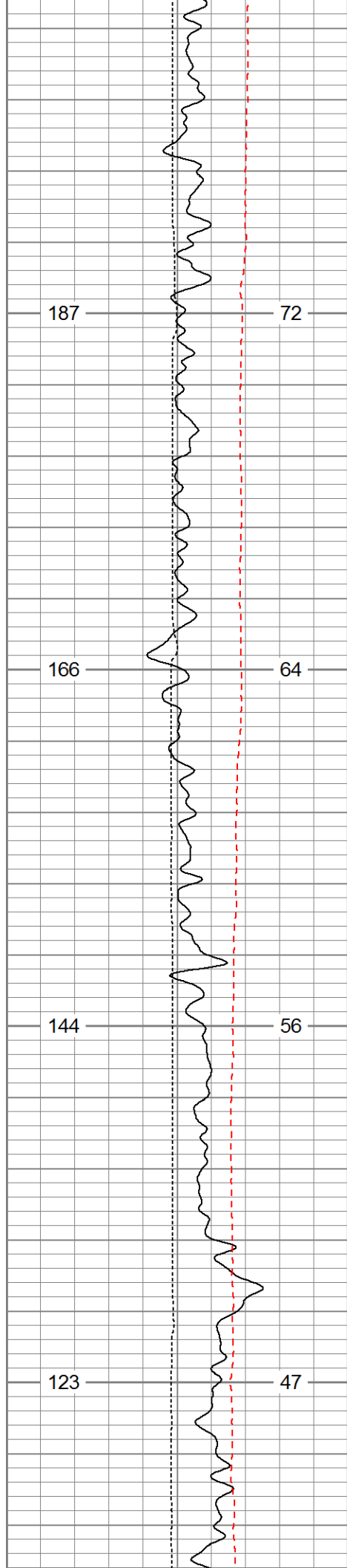


4900

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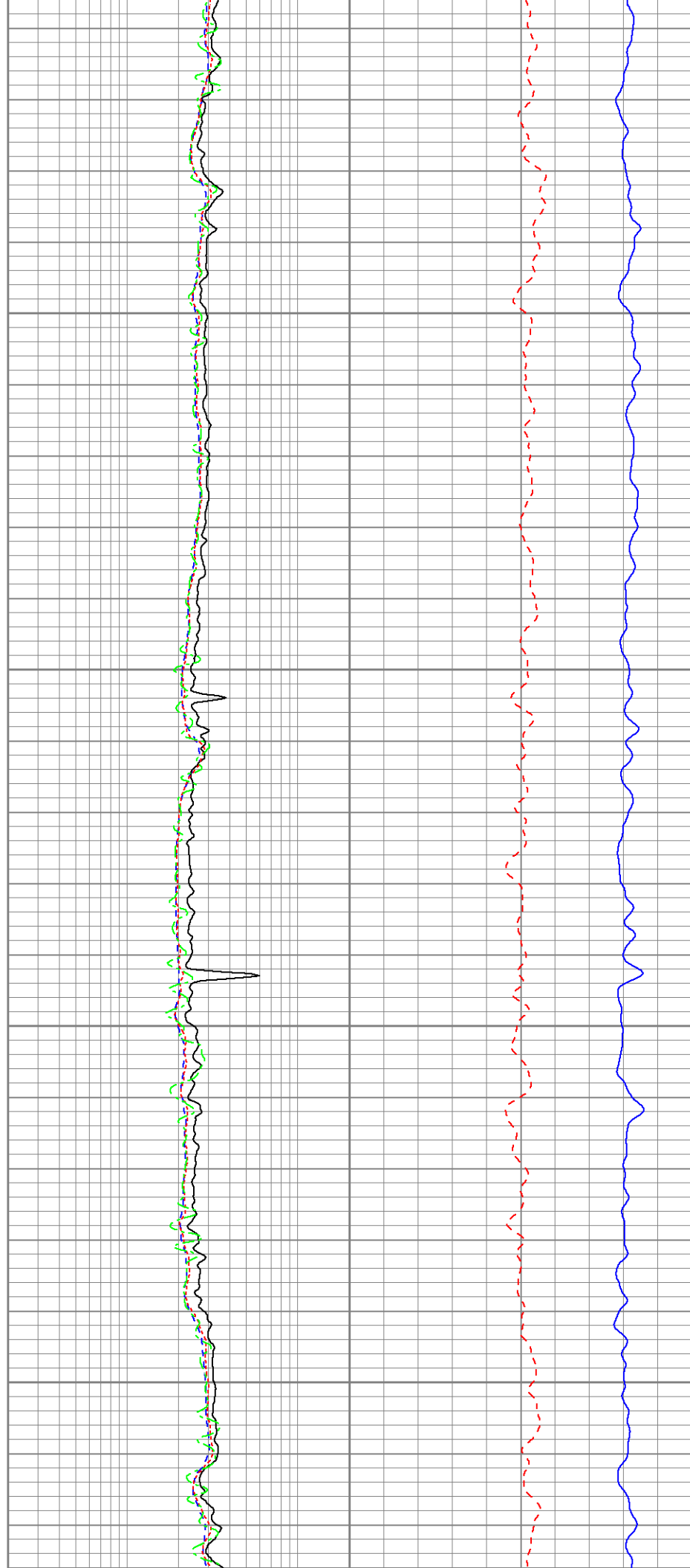
5100

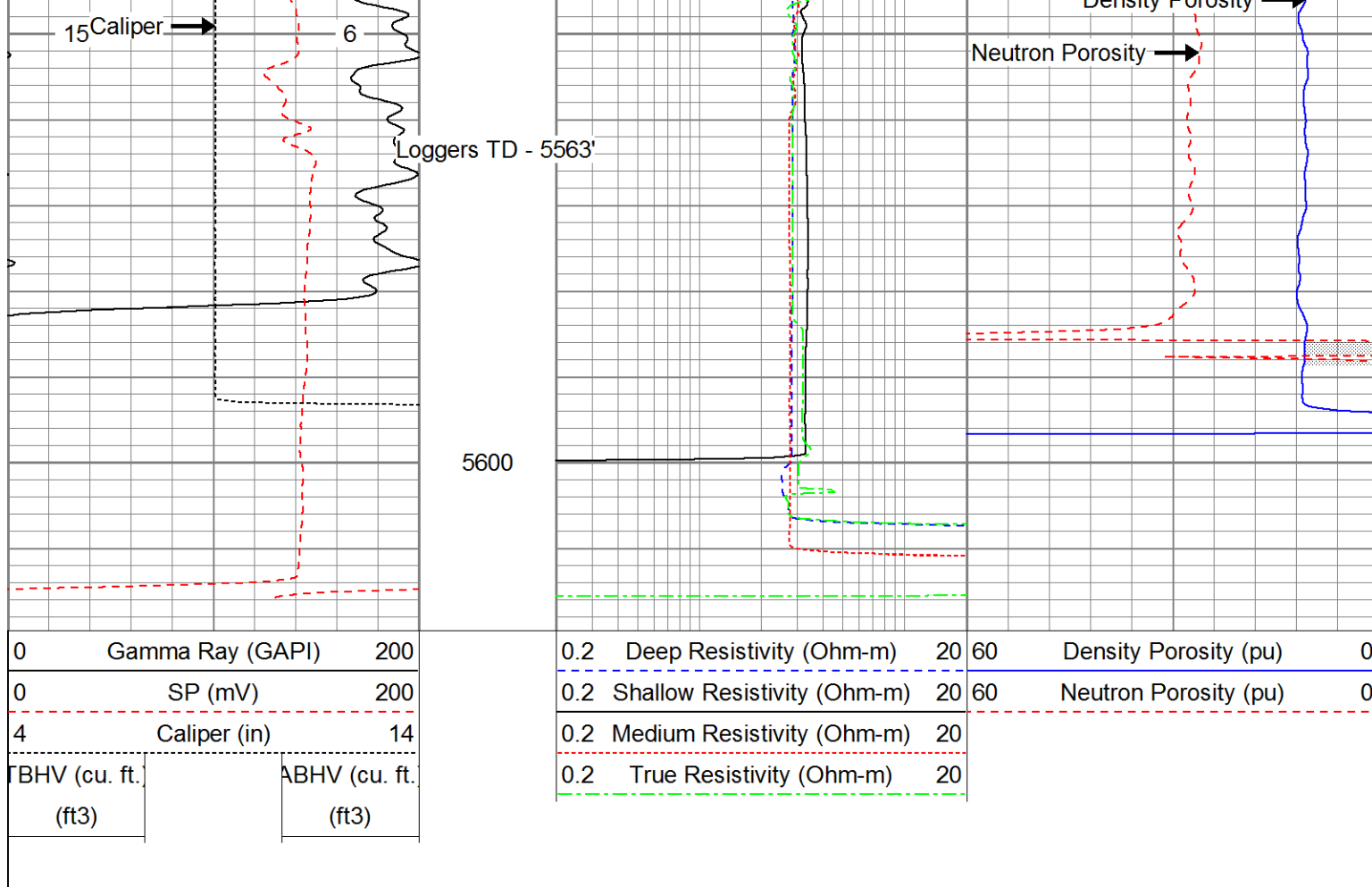




5200

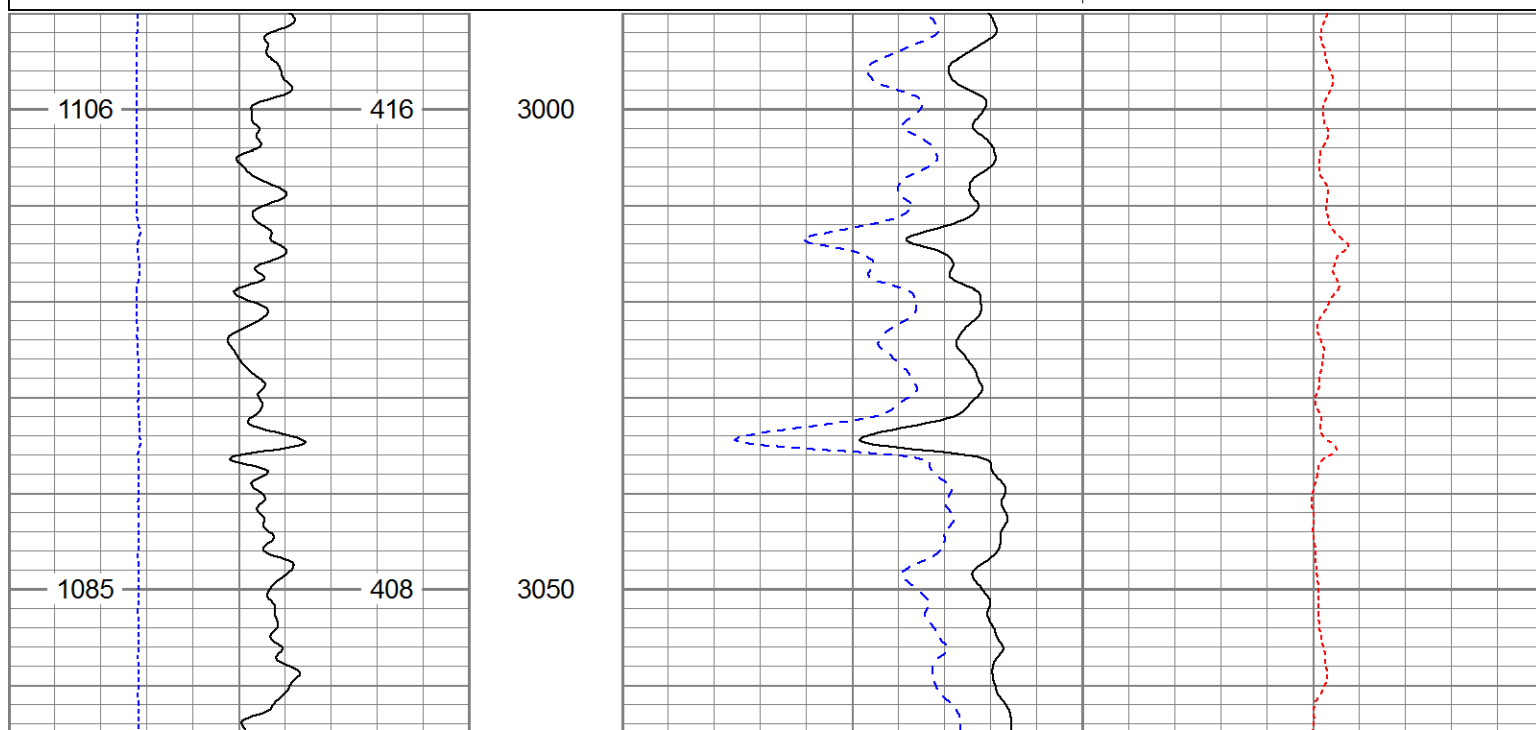
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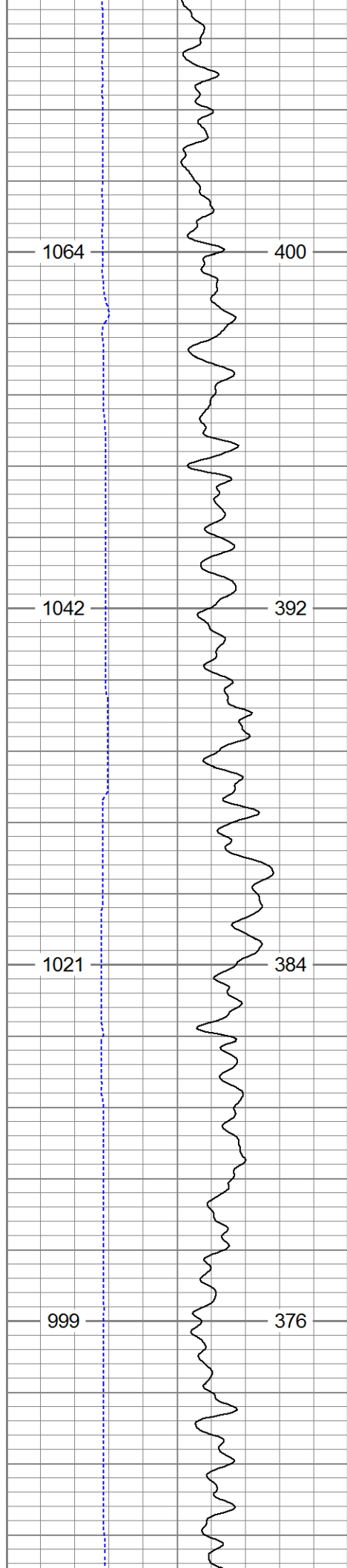




Database File: 13709.db
 Dataset Pathname: Final
 Presentation Format: cdl
 Dataset Creation: Sun Sep 21 05:24:49 2014
 Charted by: Depth in Feet scaled 1:240

6	Caliper (in)	16	2	Bulk Density (g/cc)	3
0	Gamma Ray (GAPI)	200	30	Density Porosity (pu)	-10
				-0.5	Correction (g/cc)
				0.5	



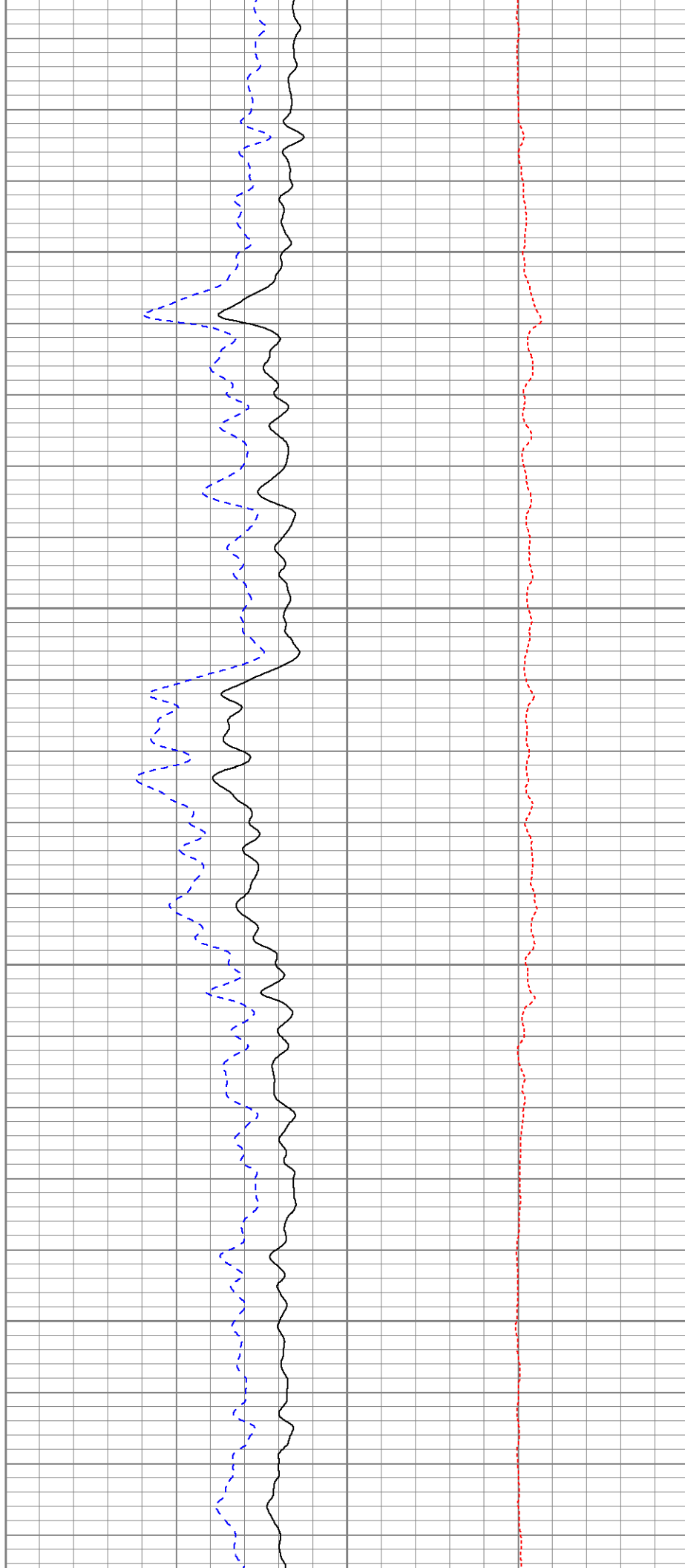


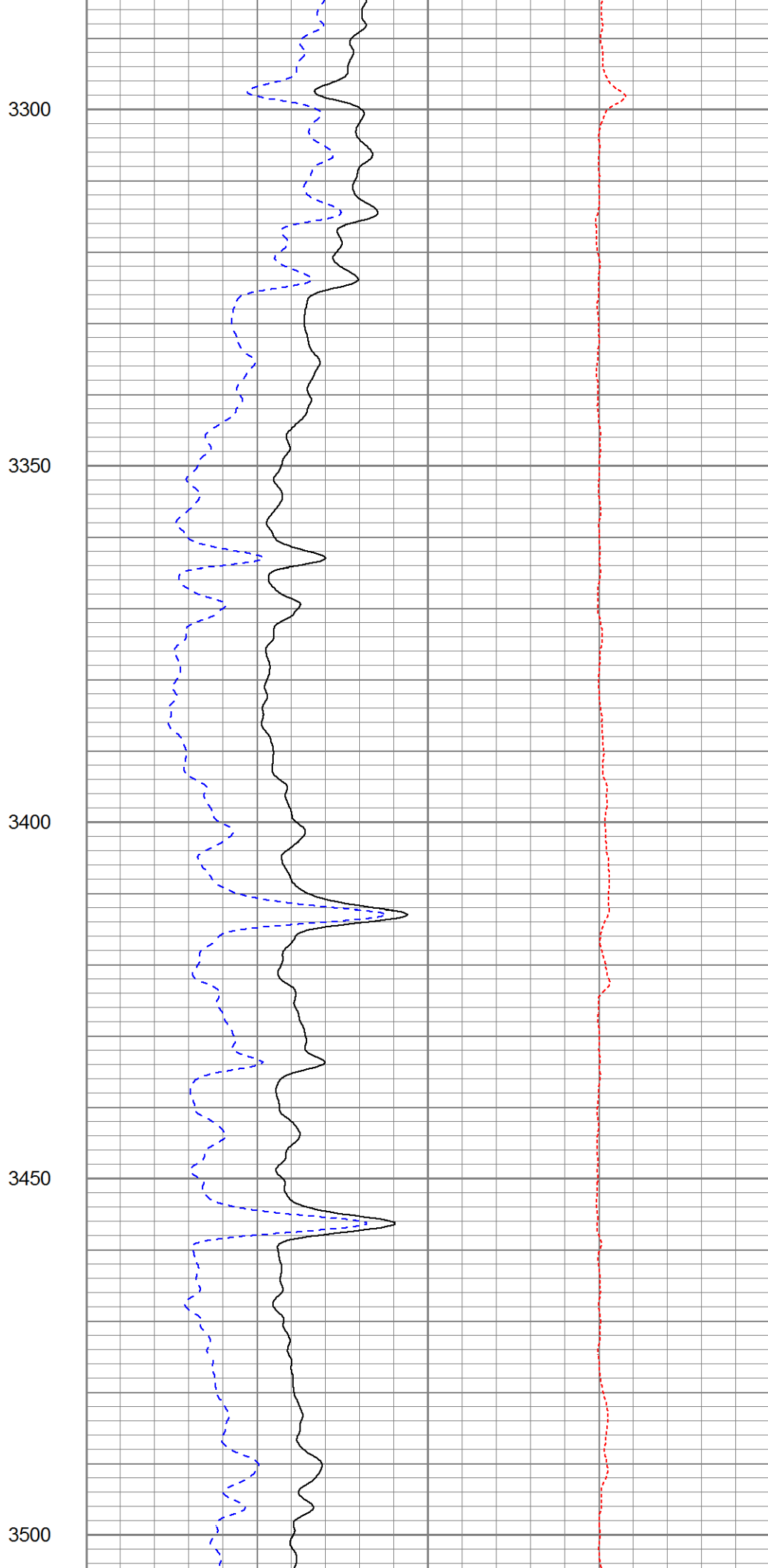
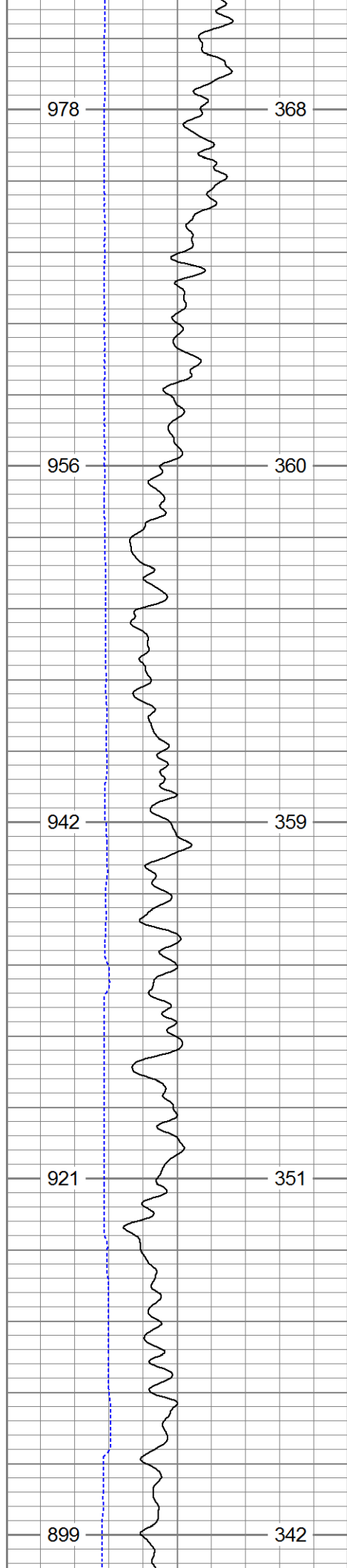
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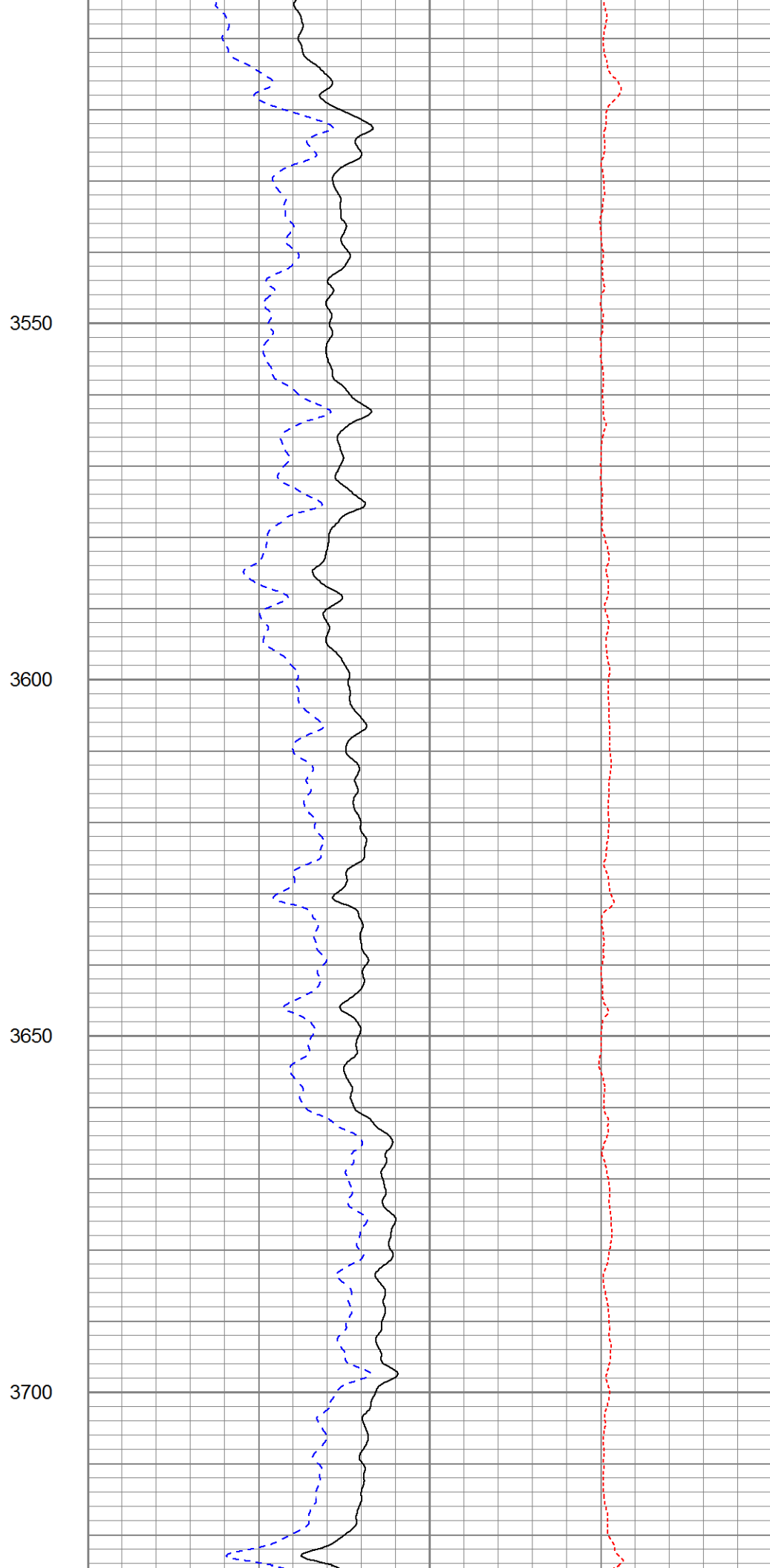
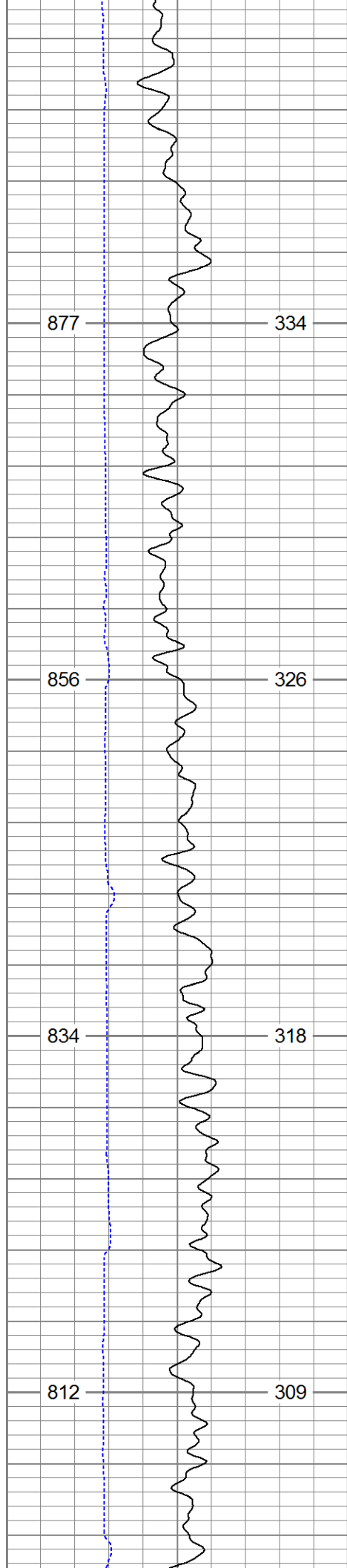
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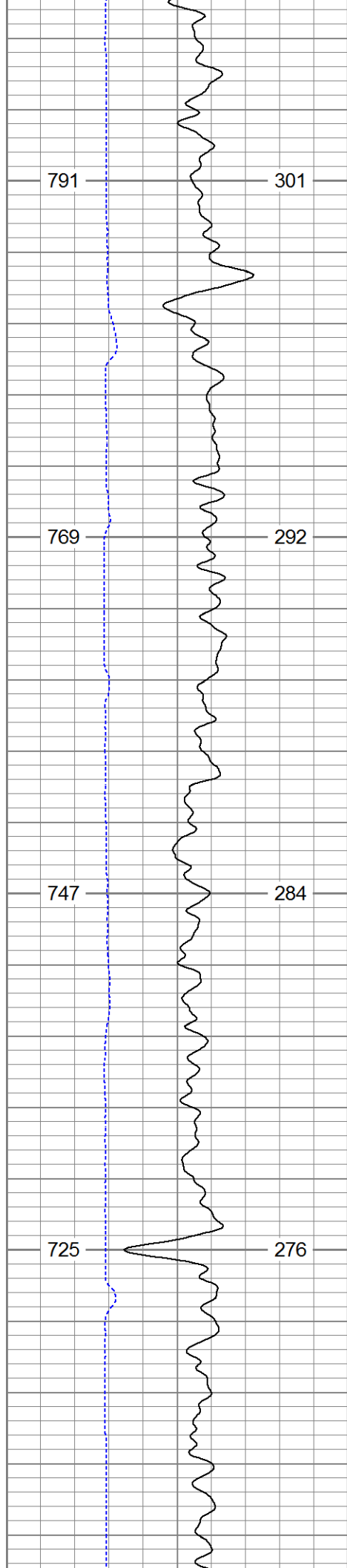
3200

3250







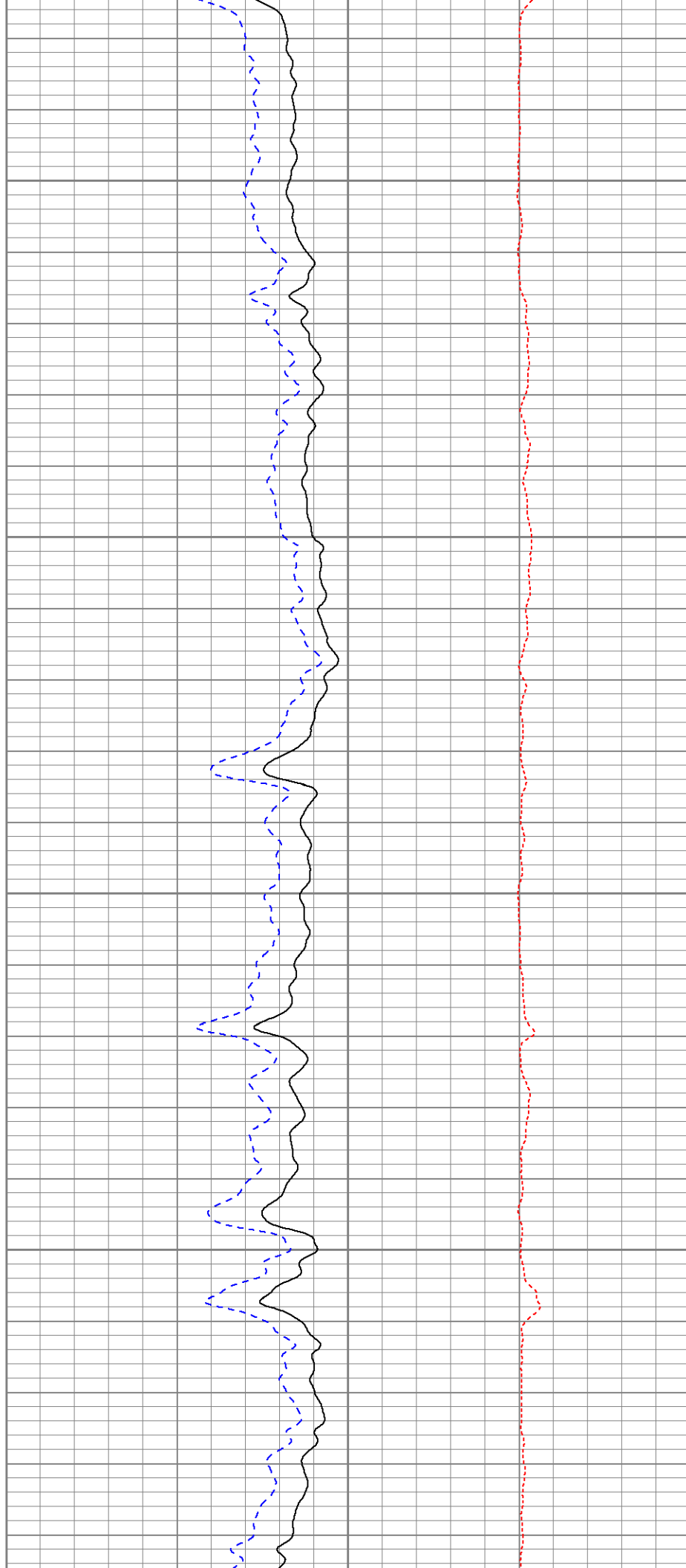


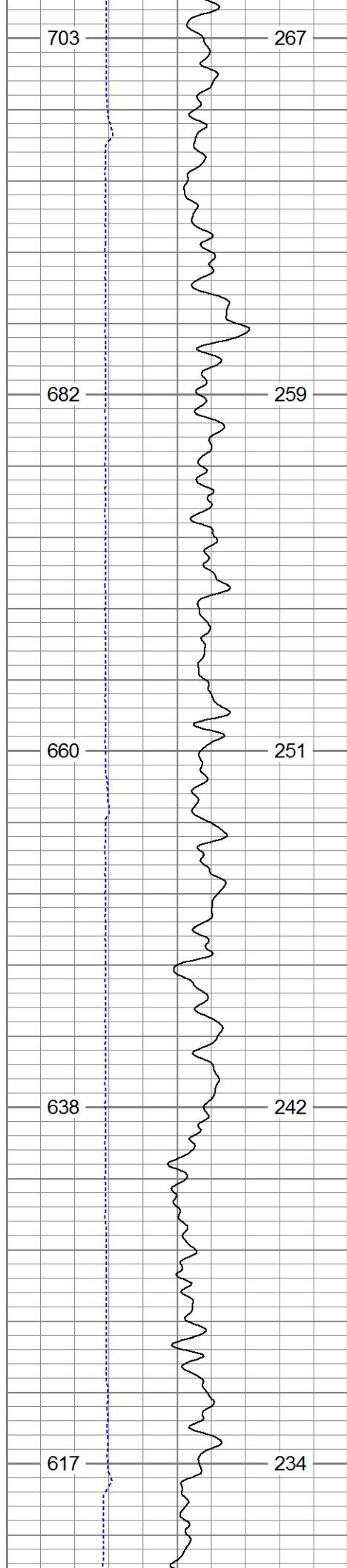
3750

3800

3850

3900





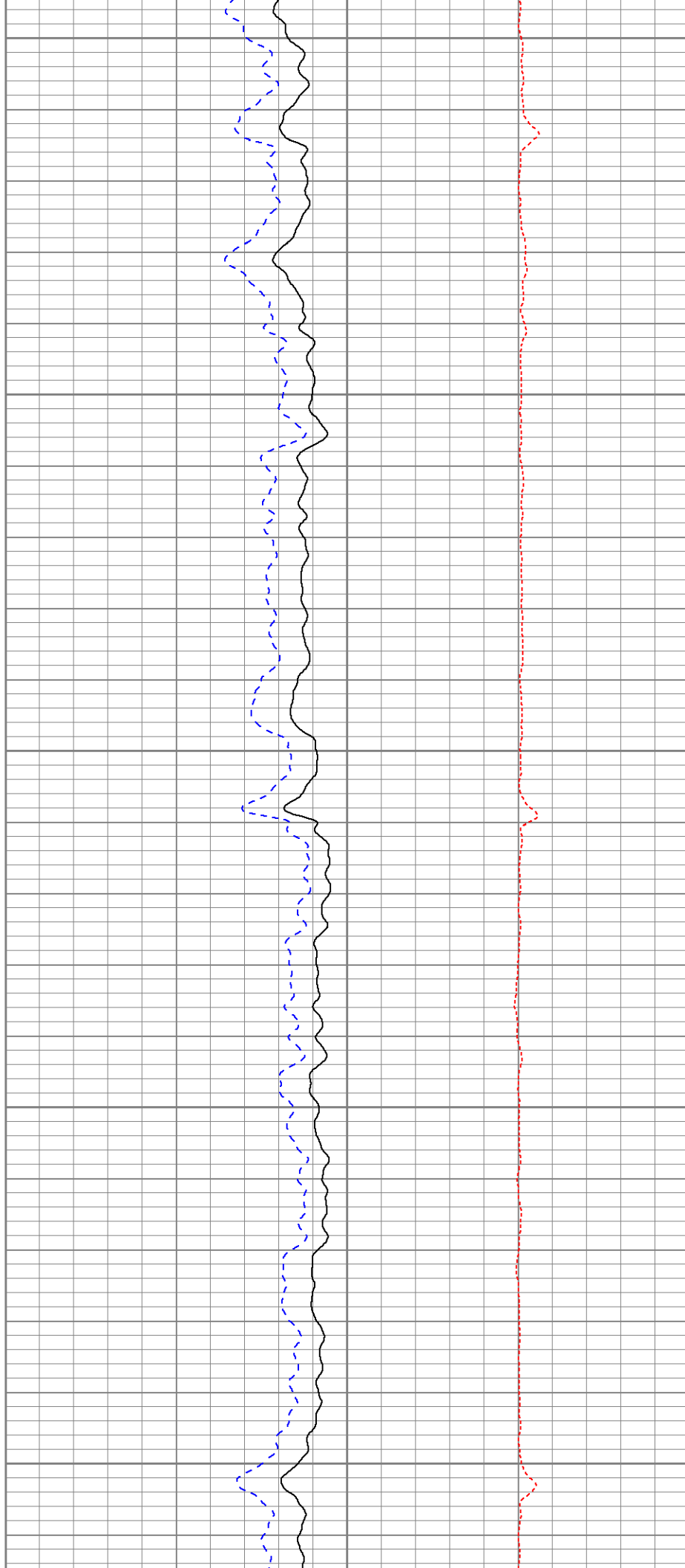
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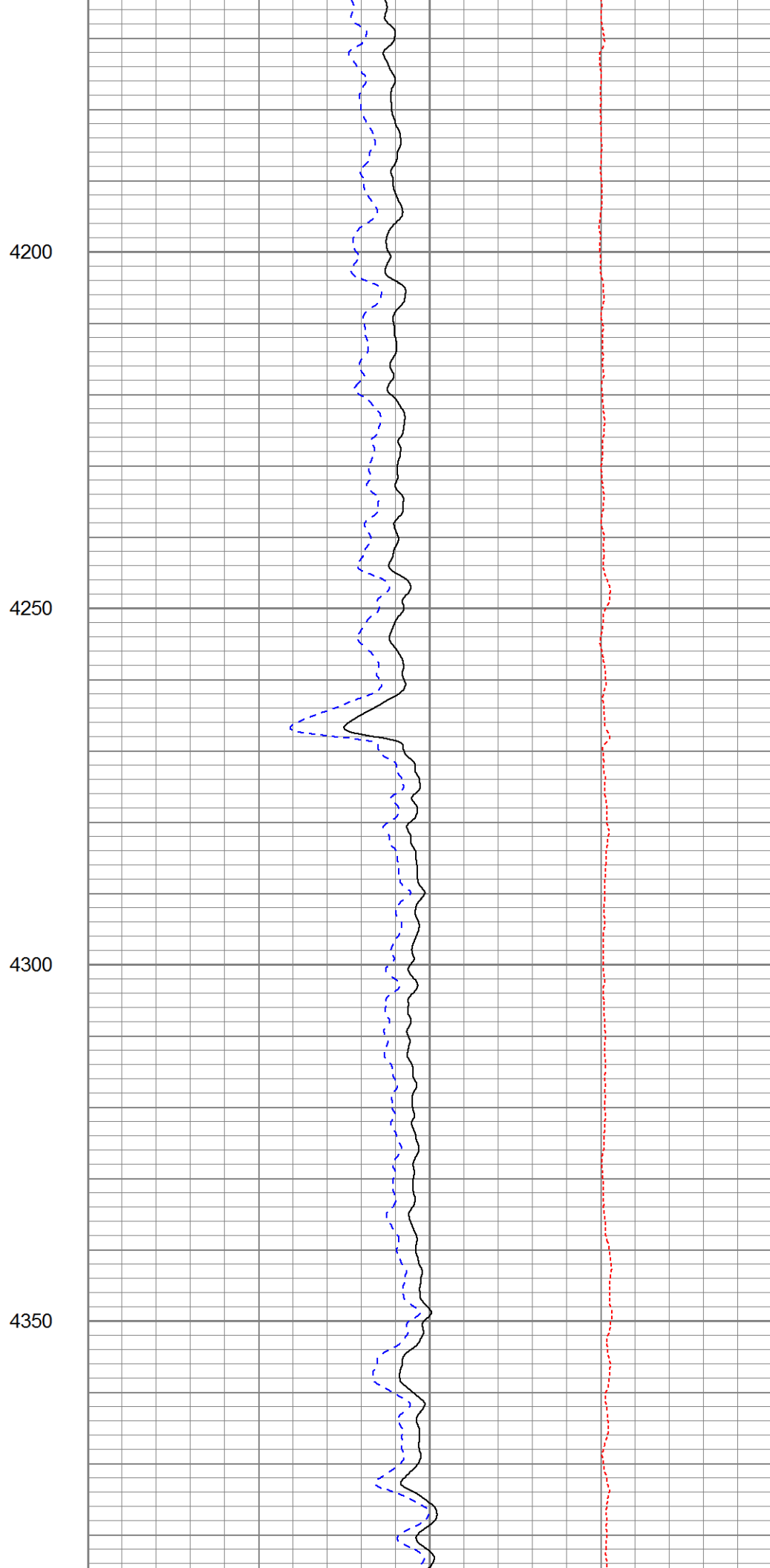
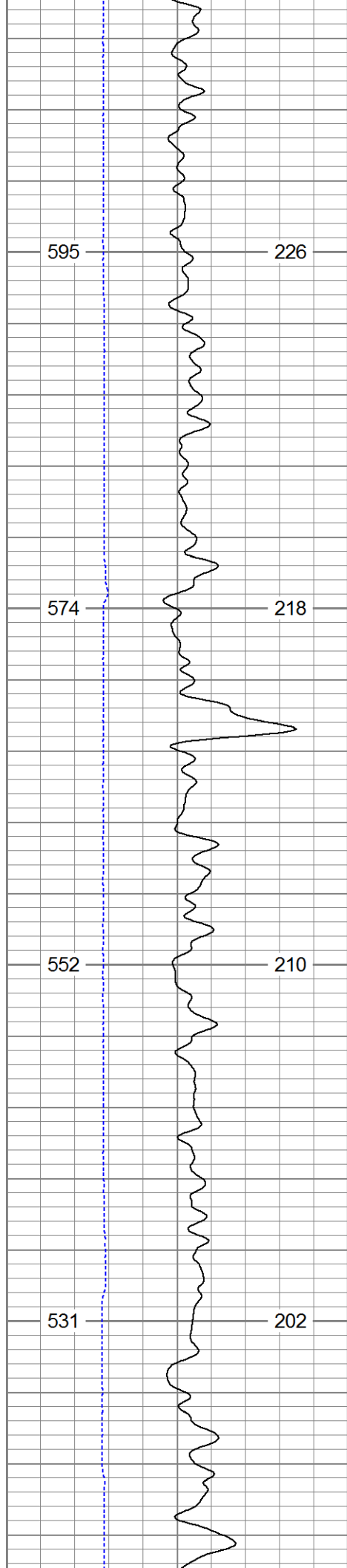
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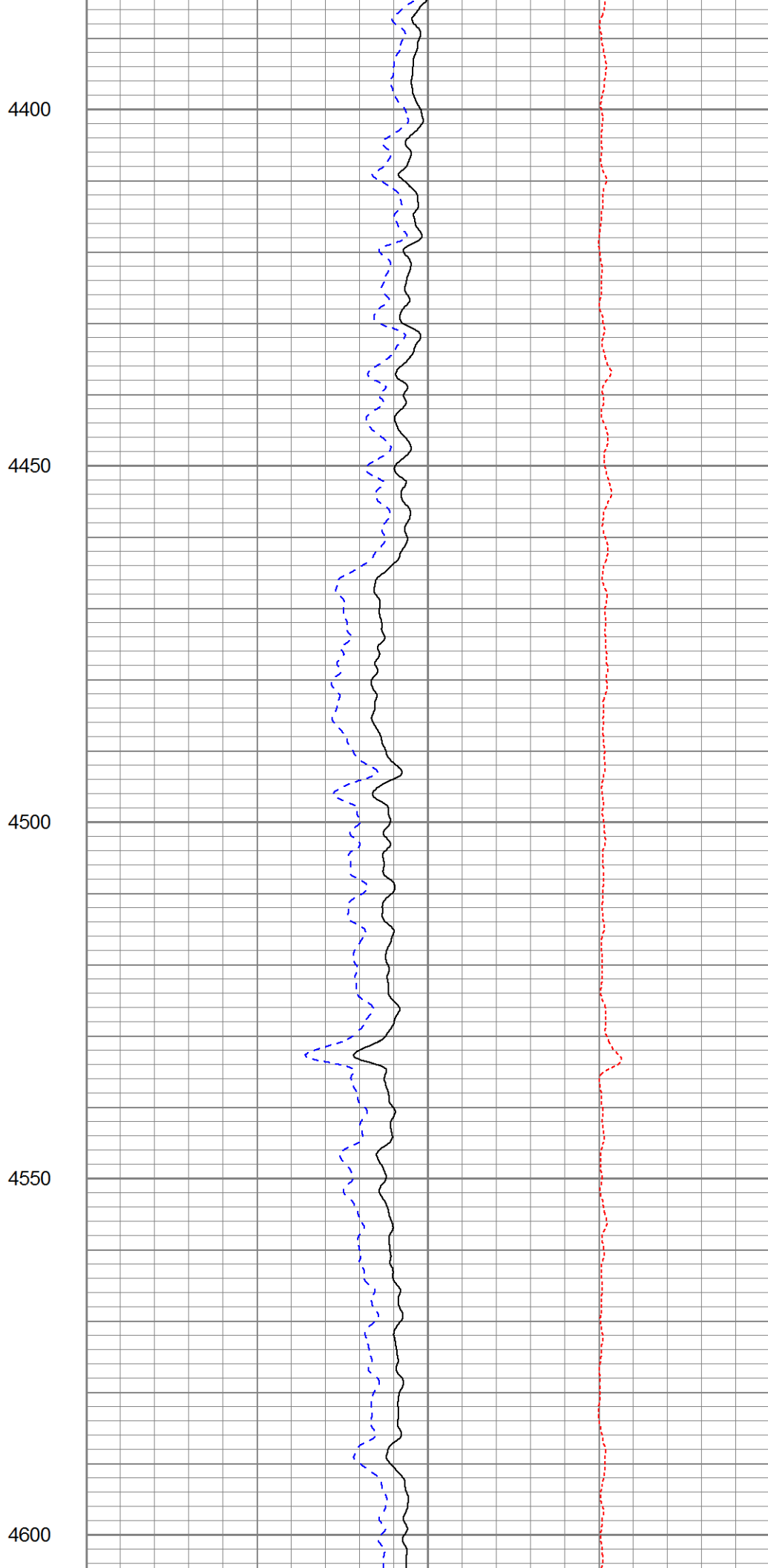
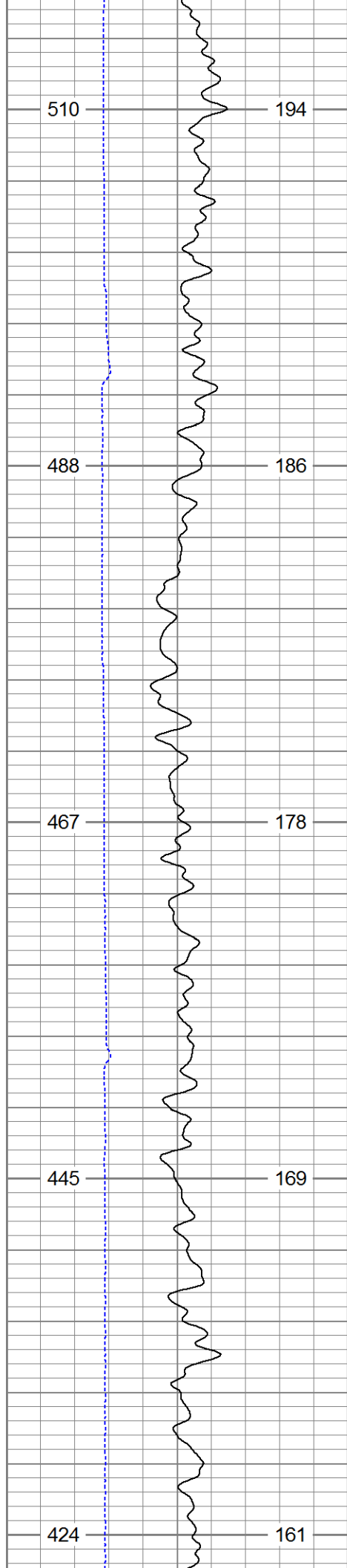
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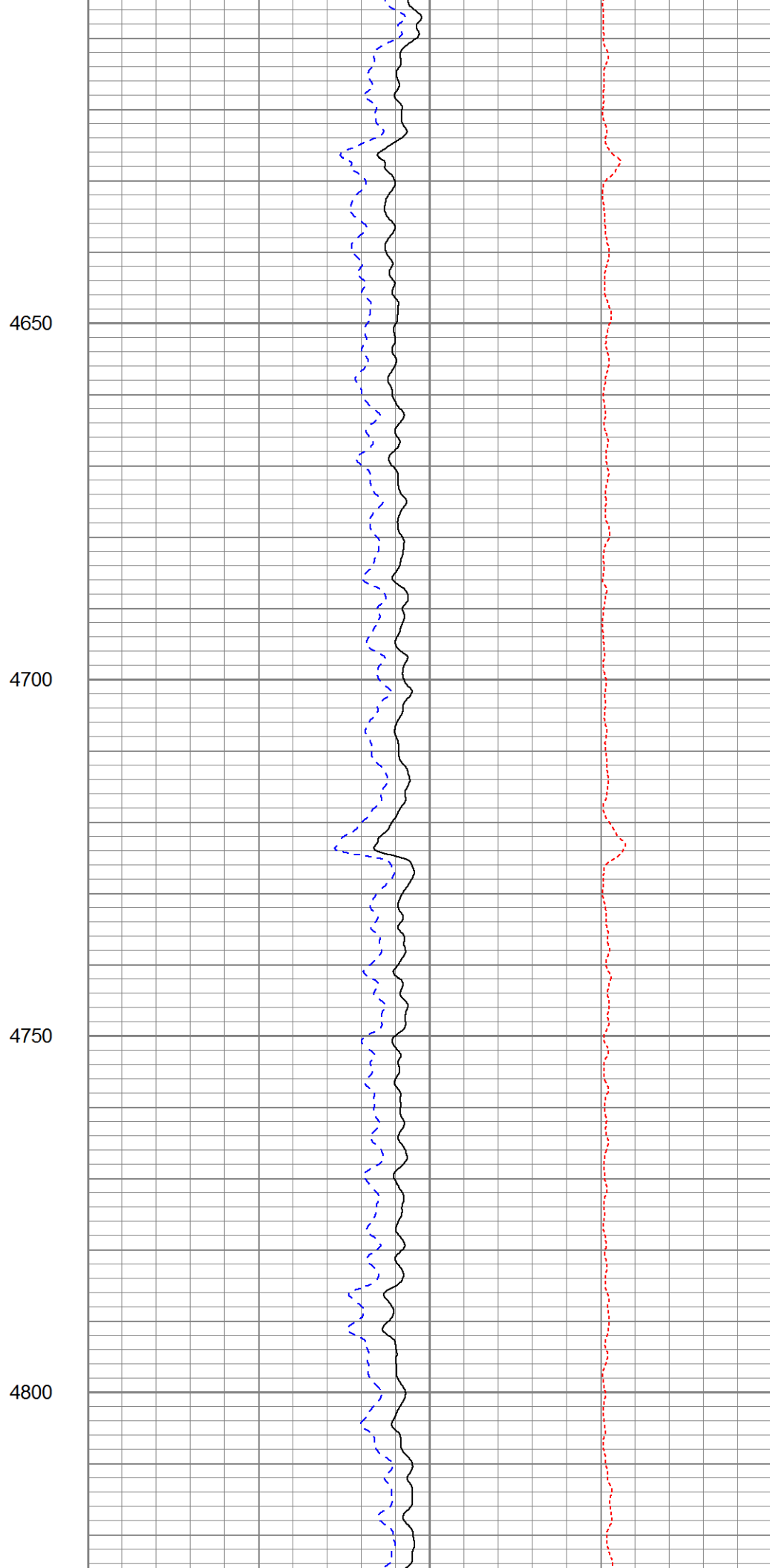
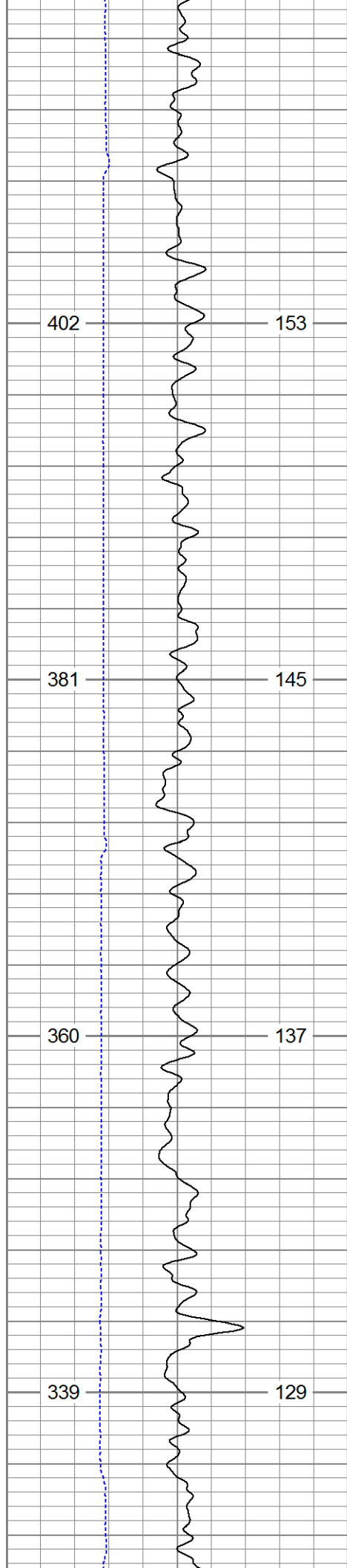
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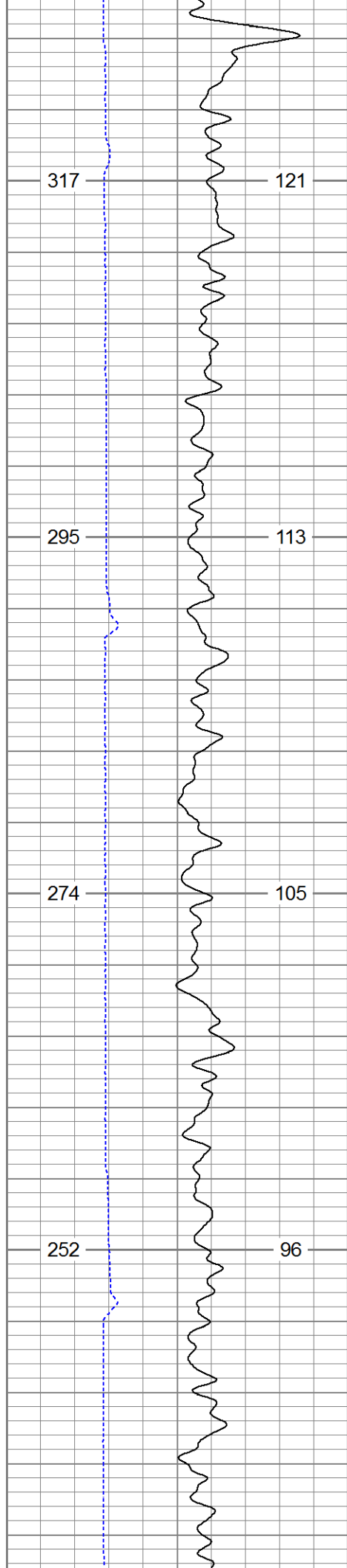
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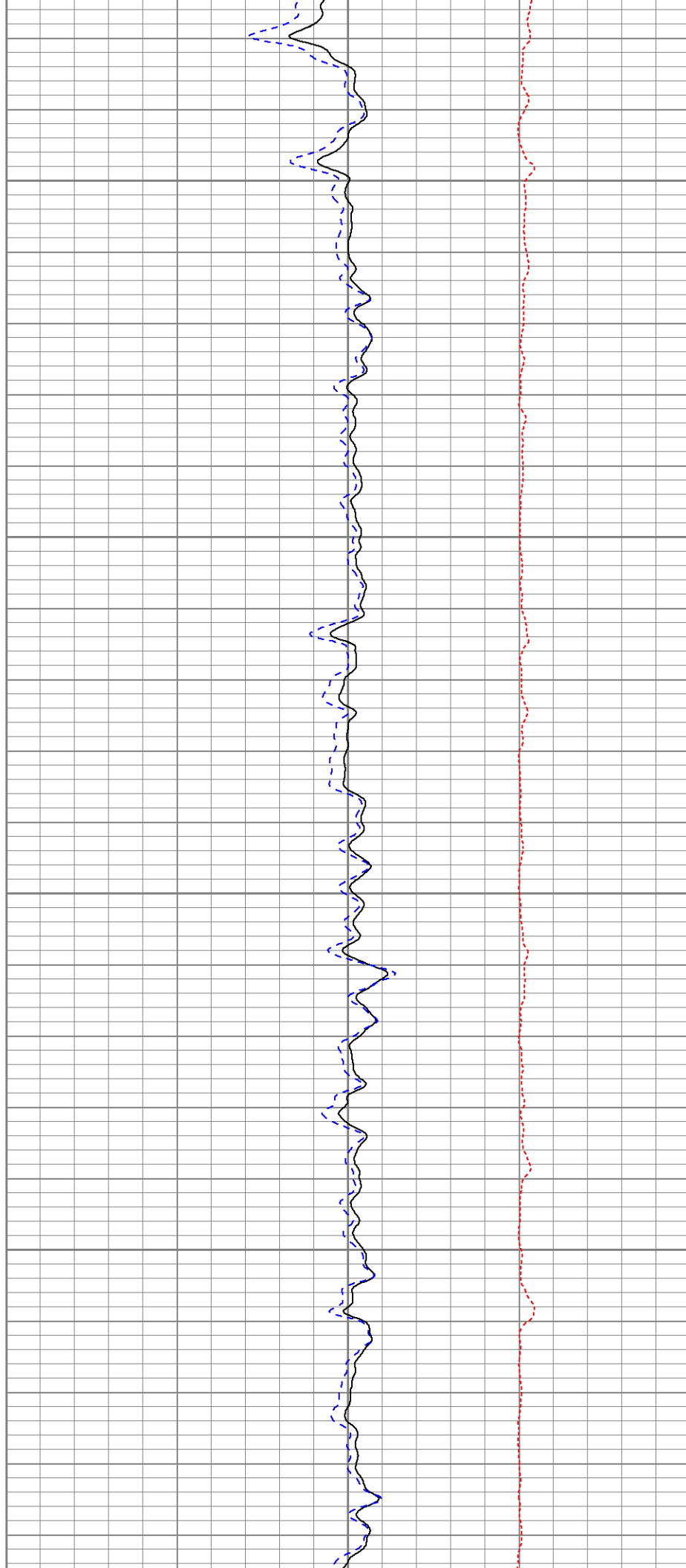


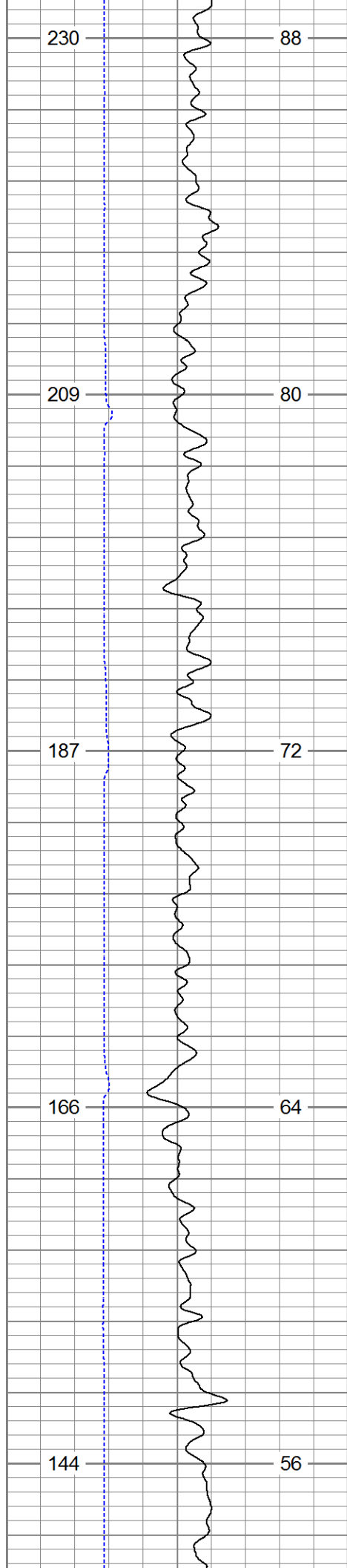
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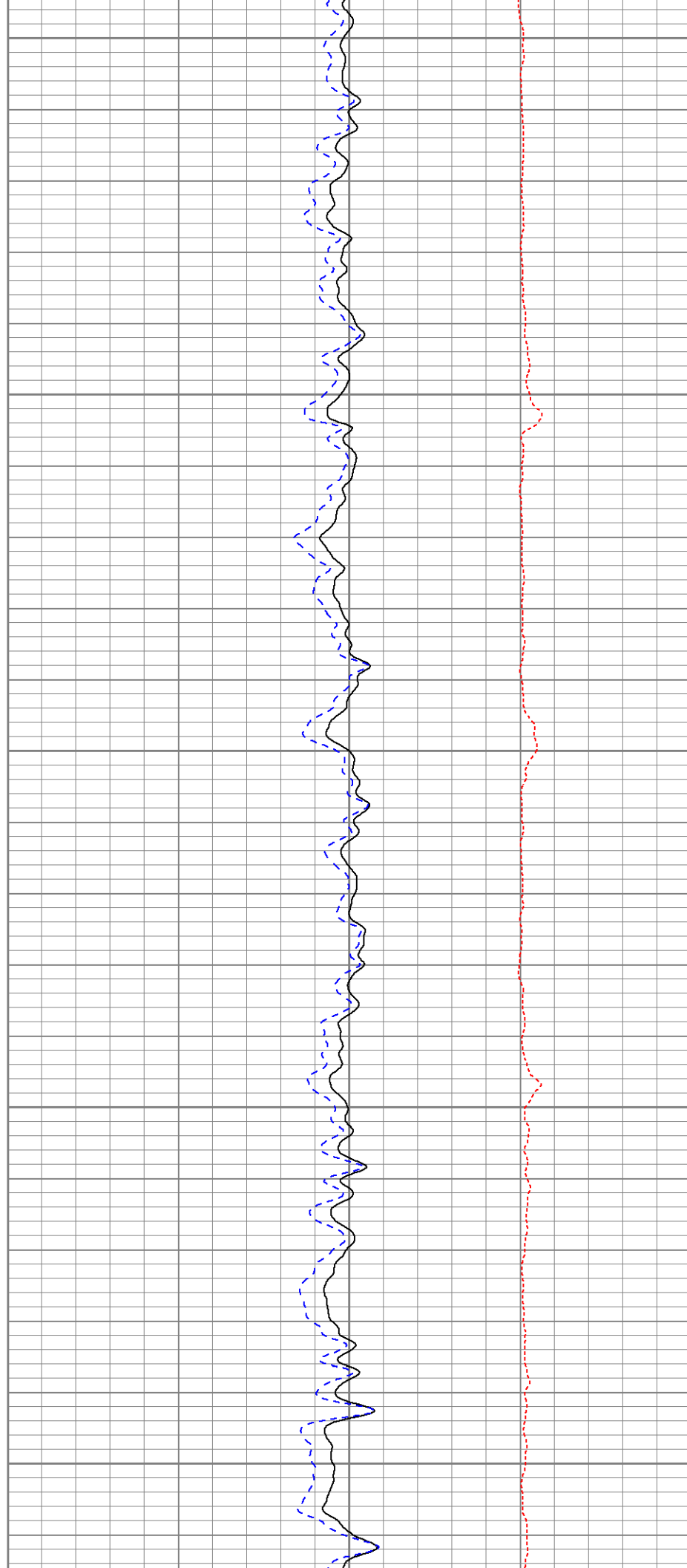
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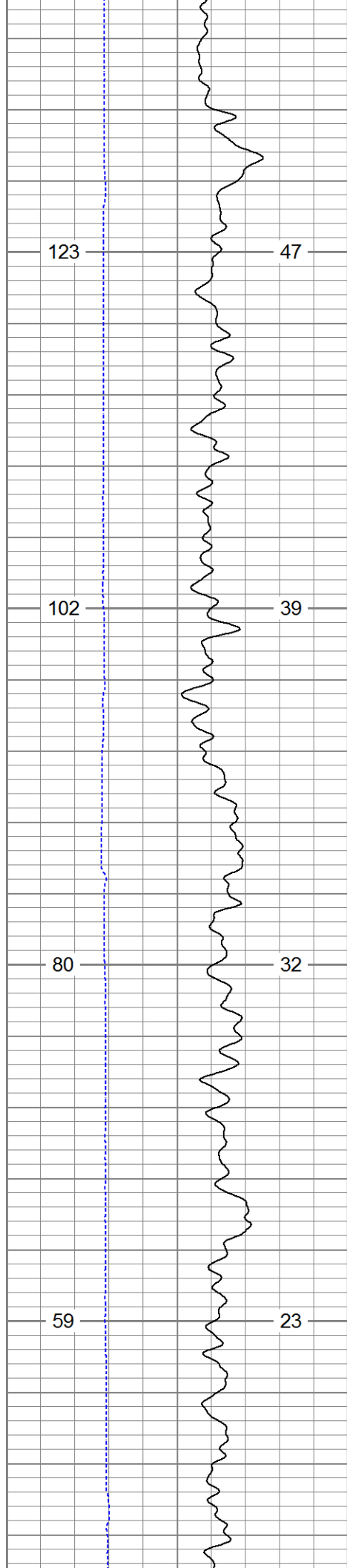
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5150

5200

5250



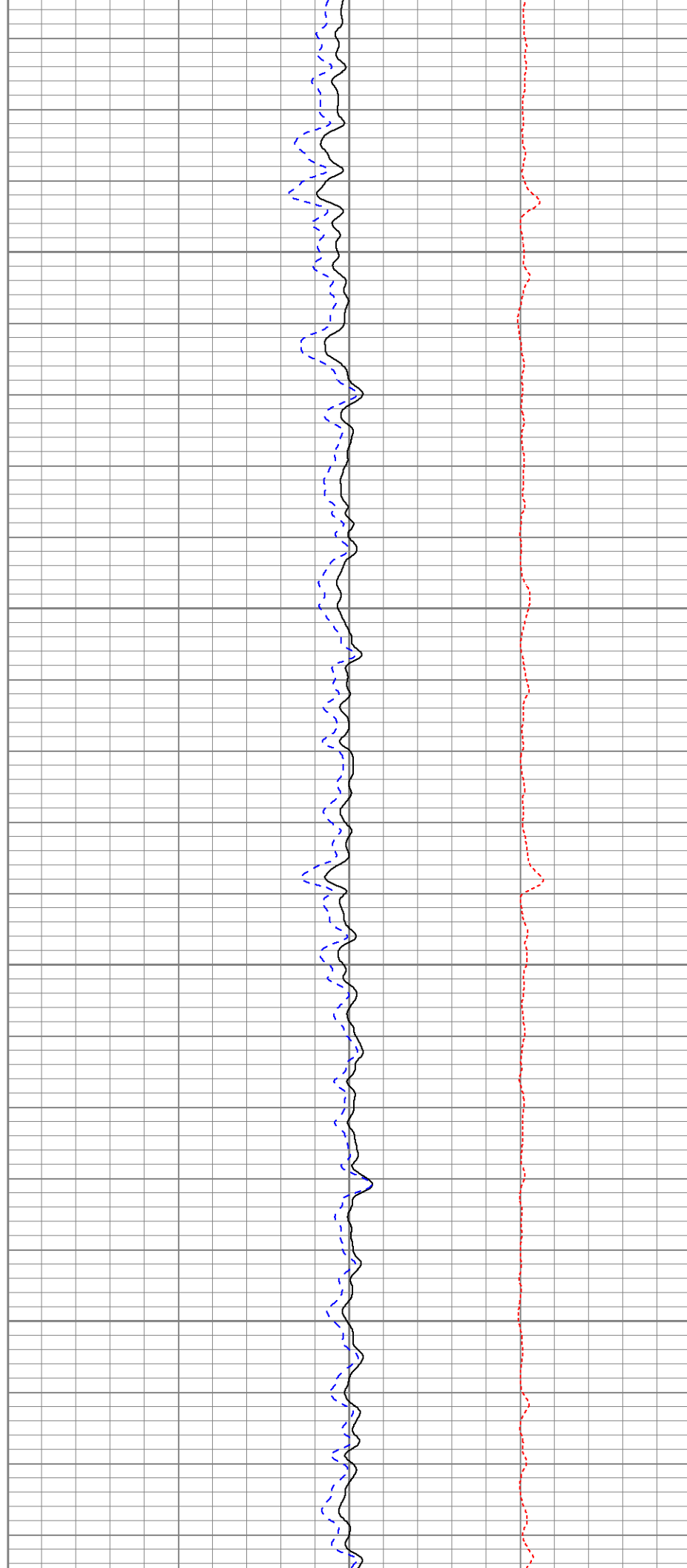


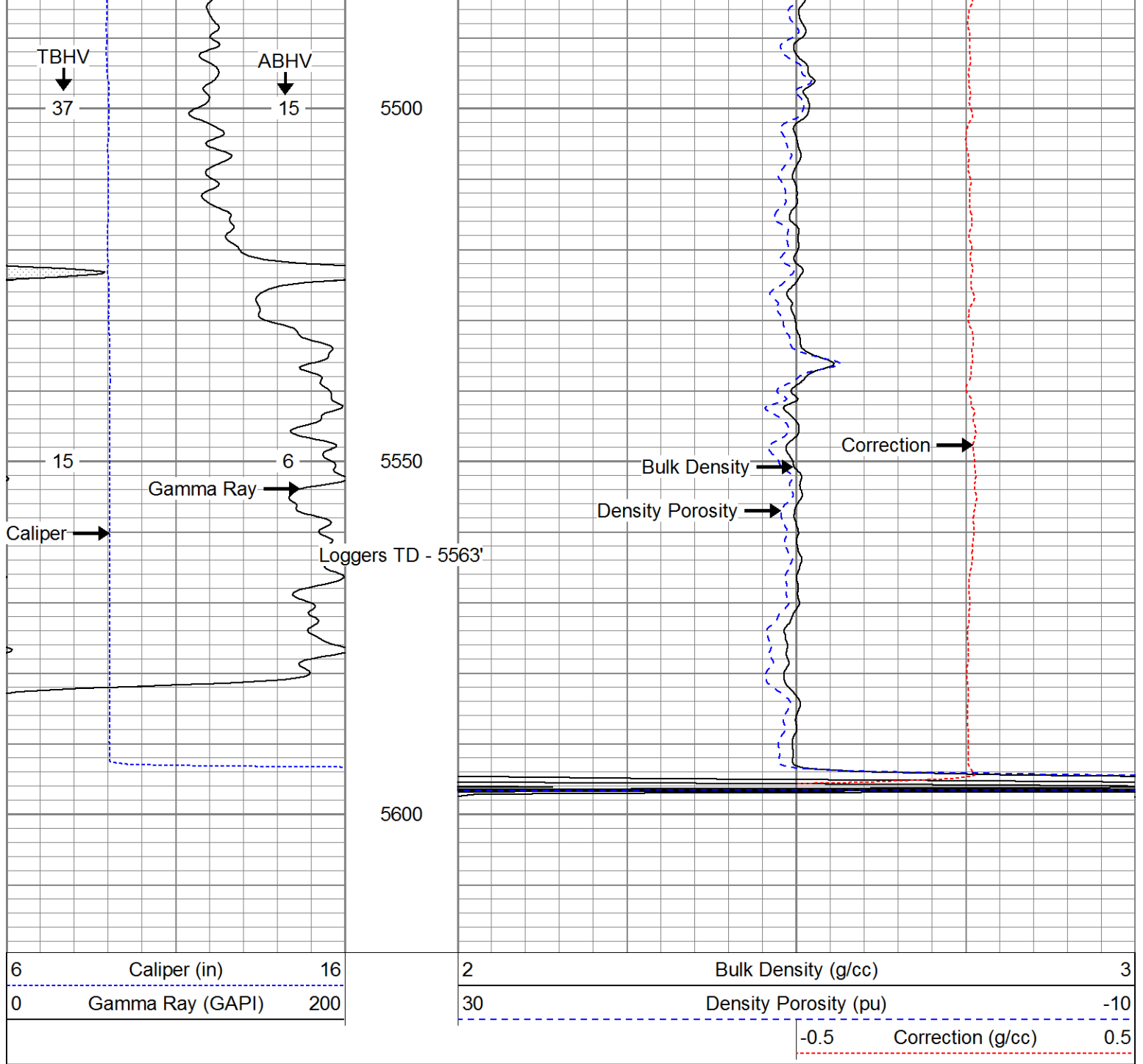
5300

5350

5400

5450





Calibration Report							
Database File:	13709.db						
Dataset Pathname:	pass1						
Dataset Creation:	Sun Sep 21 02:44:51 2014 by Log Open-Cased 110302						
Dual Induction Calibration Report							
Serial-Model:		1010-PSI					
Surface Cal Performed:							
Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.550	-33.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.480	-27.000

Compensated Density Calibration Report

Serial-Model:
Master Calibration Performed:

979-PSI
Wed Aug 20 14:34:48 2014

Master Calibration

	Density		Far Detector		Near Detector	
Magnesium	1.750	g/cc	11187.10		15127.80	cps
Aluminum	2.690	g/cc	2023.73		9655.31	cps
	Size		Reading			
Small Ring		in				
Medium Ring		in				
Large Ring		in				

Compensated Neutron Calibration Report

Serial Number: 853
Tool Model: PSI

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.9000
Long Space	1.00	cps	1.00	cps	1.9200

Gamma Ray Calibration Report

Serial Number: 197
Tool Model: PSI
Performed: Tue Oct 18 17:42:20 2011

Calibrator Value: 275.0 GAPI

Background Reading: 32.0 cps
Calibrator Reading: 340.0 cps

Sensitivity: 0.6000 GAPI/cps