



## GAMMA RAY TEMPERATURE LOG

File No:	Company CANADIAN NATURAL RESOURCES LTD.									
LSD. 16	Well		SHELL 32-03 CADOT 8-19-85-18							
SEC. 19	Field		PEACE RIVER							
TWP. 085	Province		ALBERTA		Country		CANADA			
RGE. 18	Surface Location 16-19-085-18W5				License 0330075		Other Services:			
WEST 5	LSD. 16	SEC. 19	TWP. 085	RGE 18	W. 5					
Permanent Datum			GROUND LEVEL		Elevation 615.1		Elev K.B. 625.2			
Log Meas. From			KELLY BUSHING		M. Above Datum 10.1		Elev D.F.			
Drilling Meas. From			KELLY BUSHING		Elev G.L. 615.1					
Date	DECEMBER 19, 2017				Perforations					
Run No	1				Density	Shots	From	To		
Type Log	CCL / GAMMA RAY / TEMPERATURE									
Depth Driller (OH)	1266.0									
Depth Driller (CH)	1266.0									
Depth Logged (PBTD)	1260.0									
Bottom Log Interval	1260.0									
Top Log Interval	5.0									
Fluid Type	H2O									
Fluid Level	N/A									
Wellhead Pressure (KPa)	VAC									
Max. Temp. (°C)	192°C				Carrier Size	mm	Carrier Type			
Truck # / Location	207 / RED DEER				Charge Size	gr	Charge Type			
Recorded By	TYLER SALMON				Penetration	mm	Entry Hole	mm		
Witnessed By	KIRK				Phasing					
Casing Record	Size (mm)	Weight (kg/m)			Top		Bottom			
CONDUCTOR	406.0				SURFACE		29.2			
INTERMEDIATE CASING	177.8	34.2			SURFACE		811.0			
PRODUCTION LINER	114.3	17.26			SURFACE		1266.0			

	Size (mm)	Type	Model	Depth
Bridge Plug				
Cement Retainer				
Packer				
Invoice #	4052			
Reference Literature	NO REFERENCE LITERATURE. TOOL REFERENCED TO KB.			
Remarks: LOGGED AS PER CUSTOMER REQUEST				
REPEAT PASS DONE @ 50-100M DUE TO PUMPNG DOWN ON BOTTOM				
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 interpretations, 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 as set out in our current price schedule.				

## Tool String Configuration

Max. Length: 2.42 m

Cable Head

Length: 0.40 m Max Diameter: 36.51 mm



— -0.65 m Top of String

# Lee Specialties Telemetry

Length: 1.51 m Max Diameter: 34.93 mm

# Lee Specialties Temperature

Length: 0.51 m Max Diameter: 34.93 mm



0.00 m - CCL

0.95 m - Gamma Ray

1.57 m - Temperature Probe

1.77 m Bottom of String

## MAIN PASS TEMPERATURE 1:1200

2017-12-20 05:48

CCL

METERS

1:1200

Temperature (°C)

25.00

225.00

Logging Up

File MAIN PASS 1200.pre

Shutin

0.00 100.00

Gamma Ray

0.00 150.00

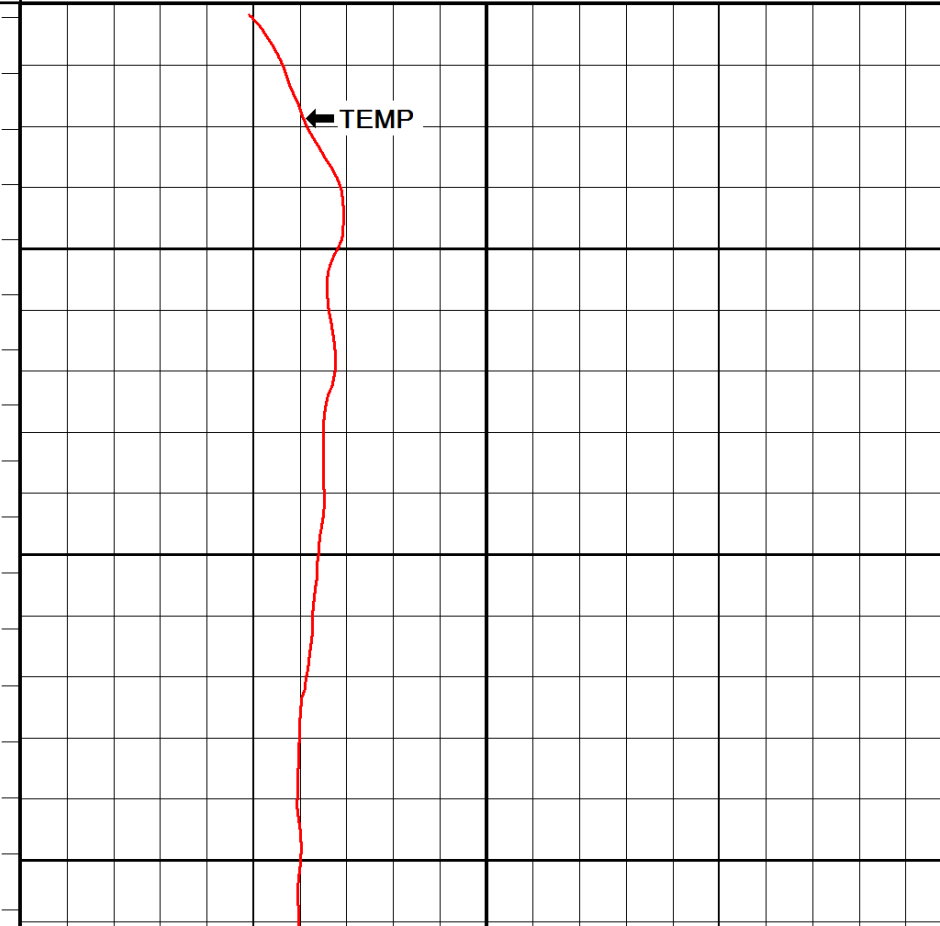
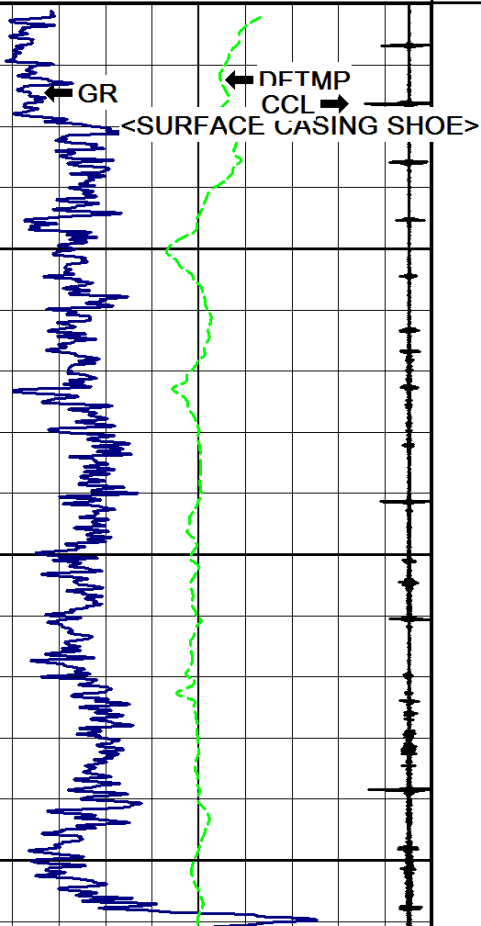
Diff Temp (°C/m)

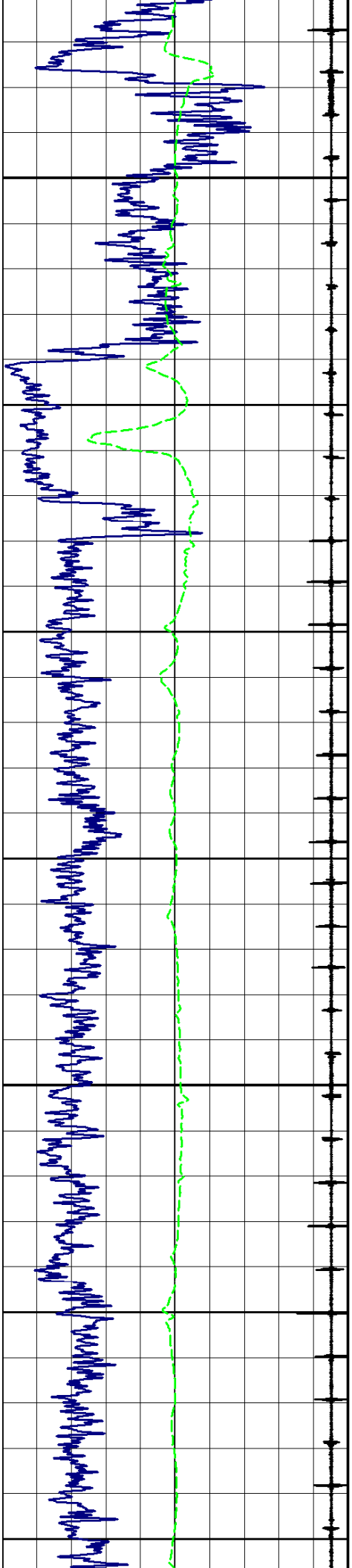
-5.00 5.00

Pass No. 19

10.06

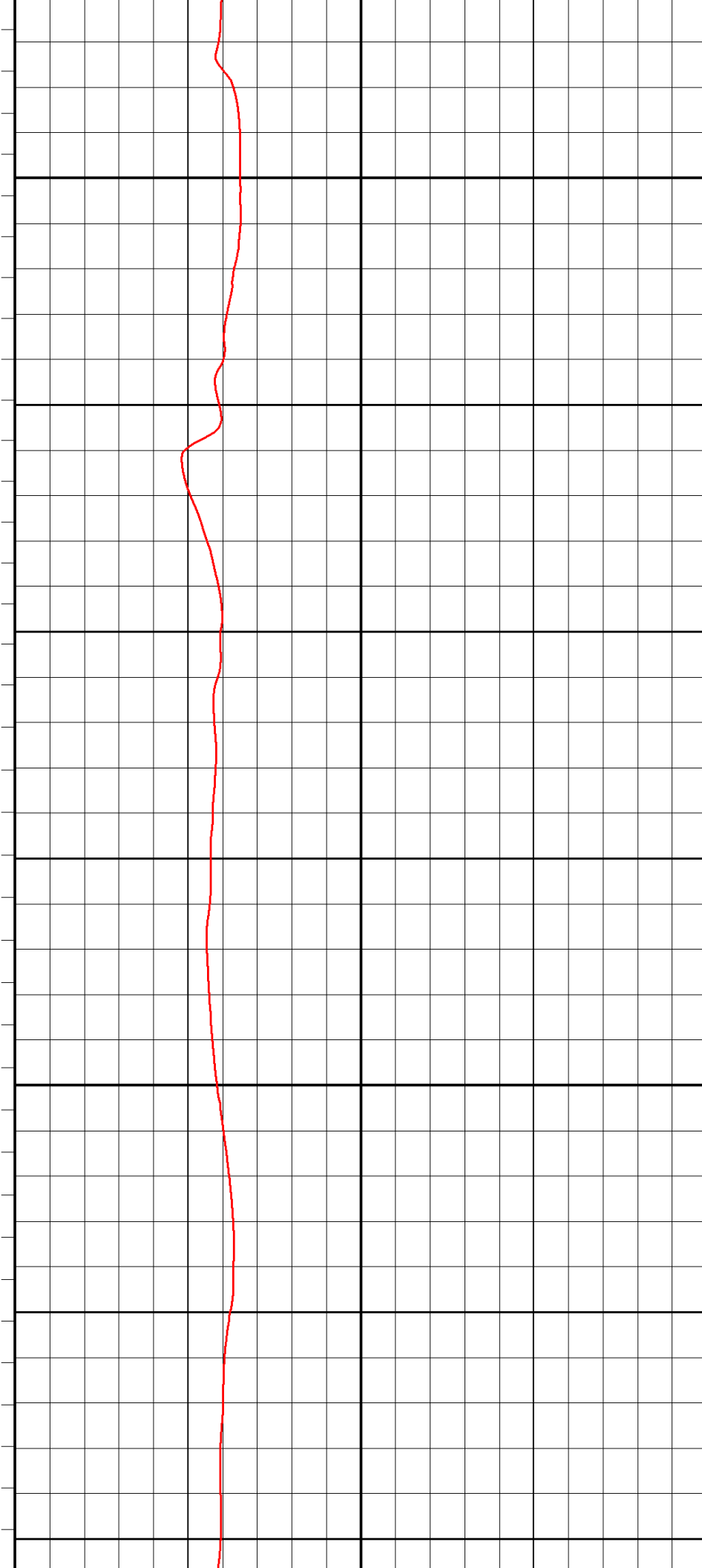
Rev. 2017.01.24

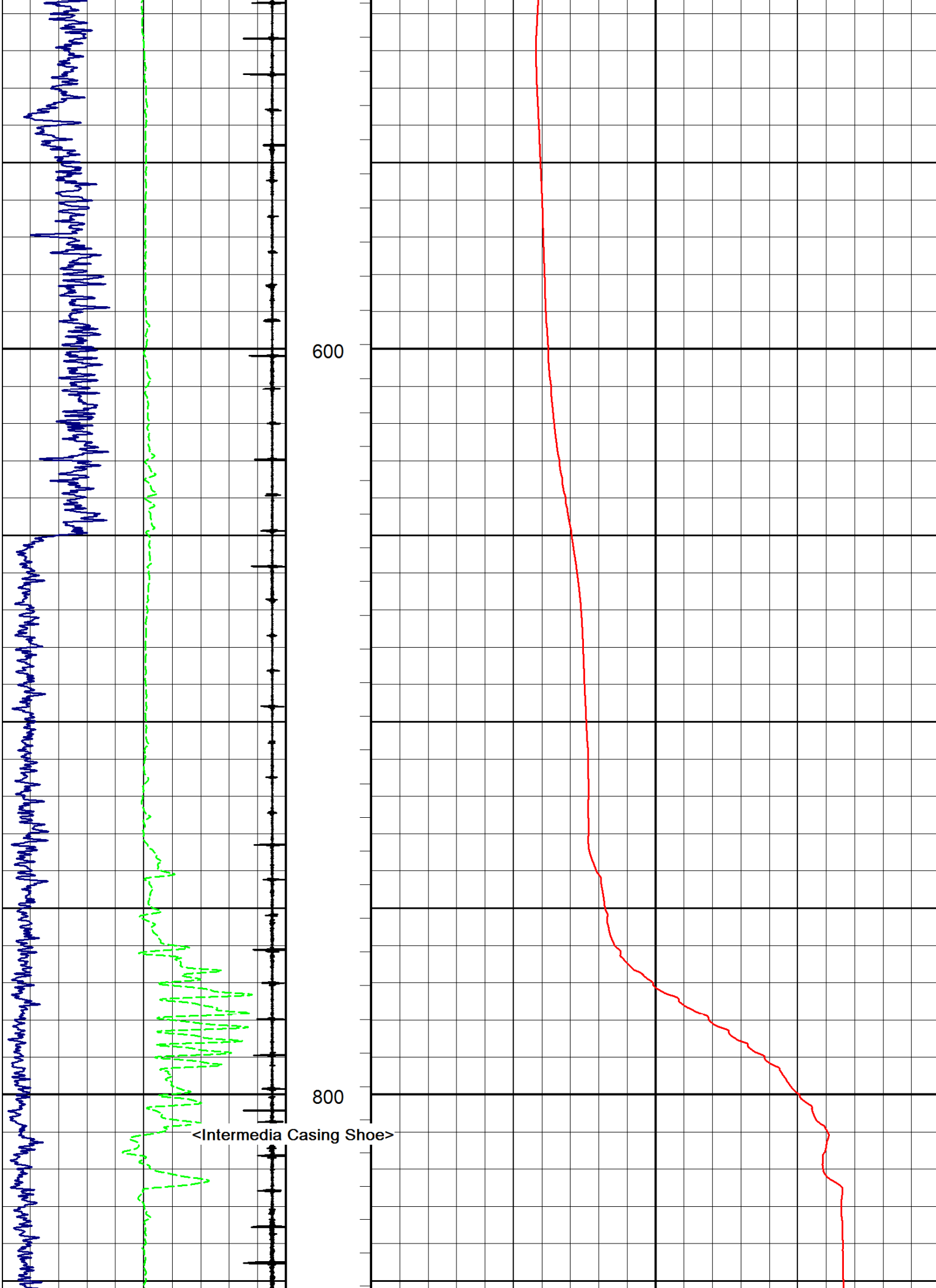


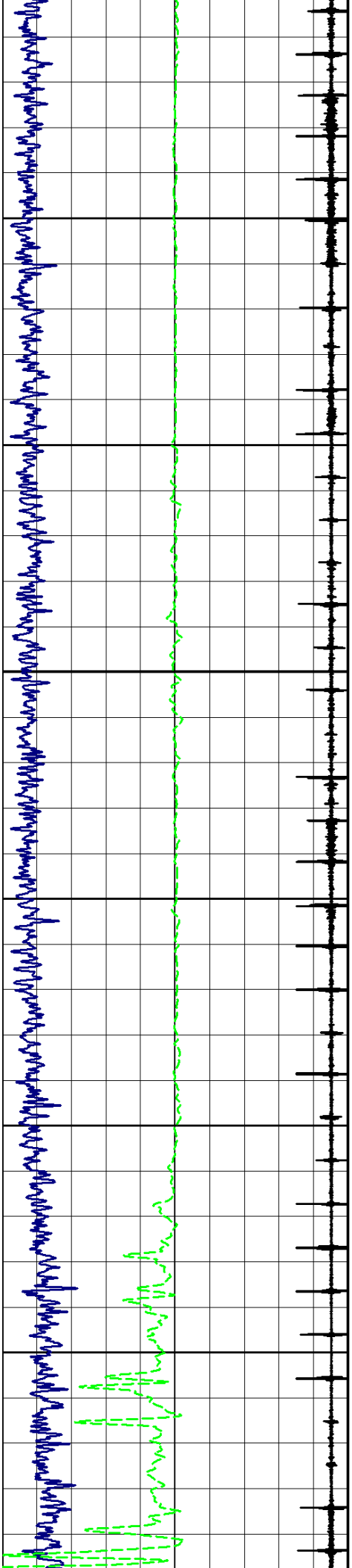


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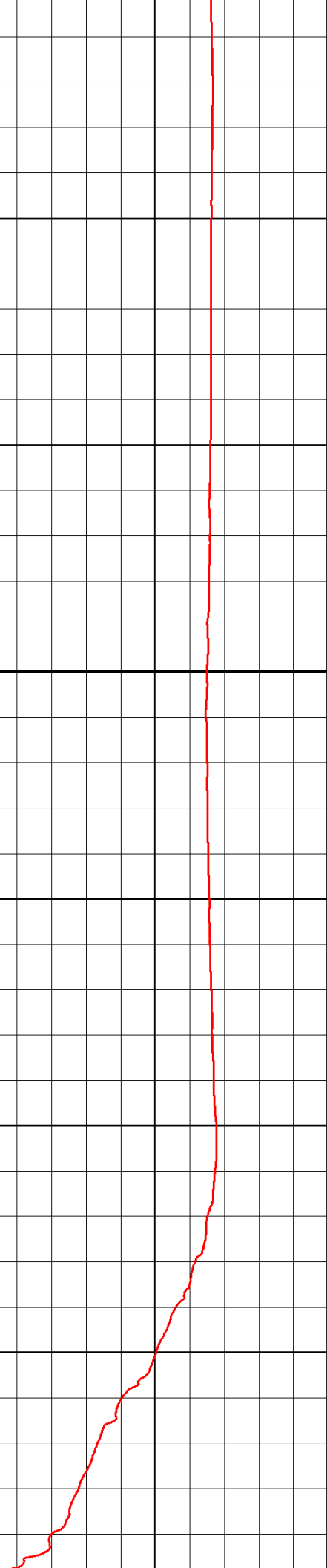
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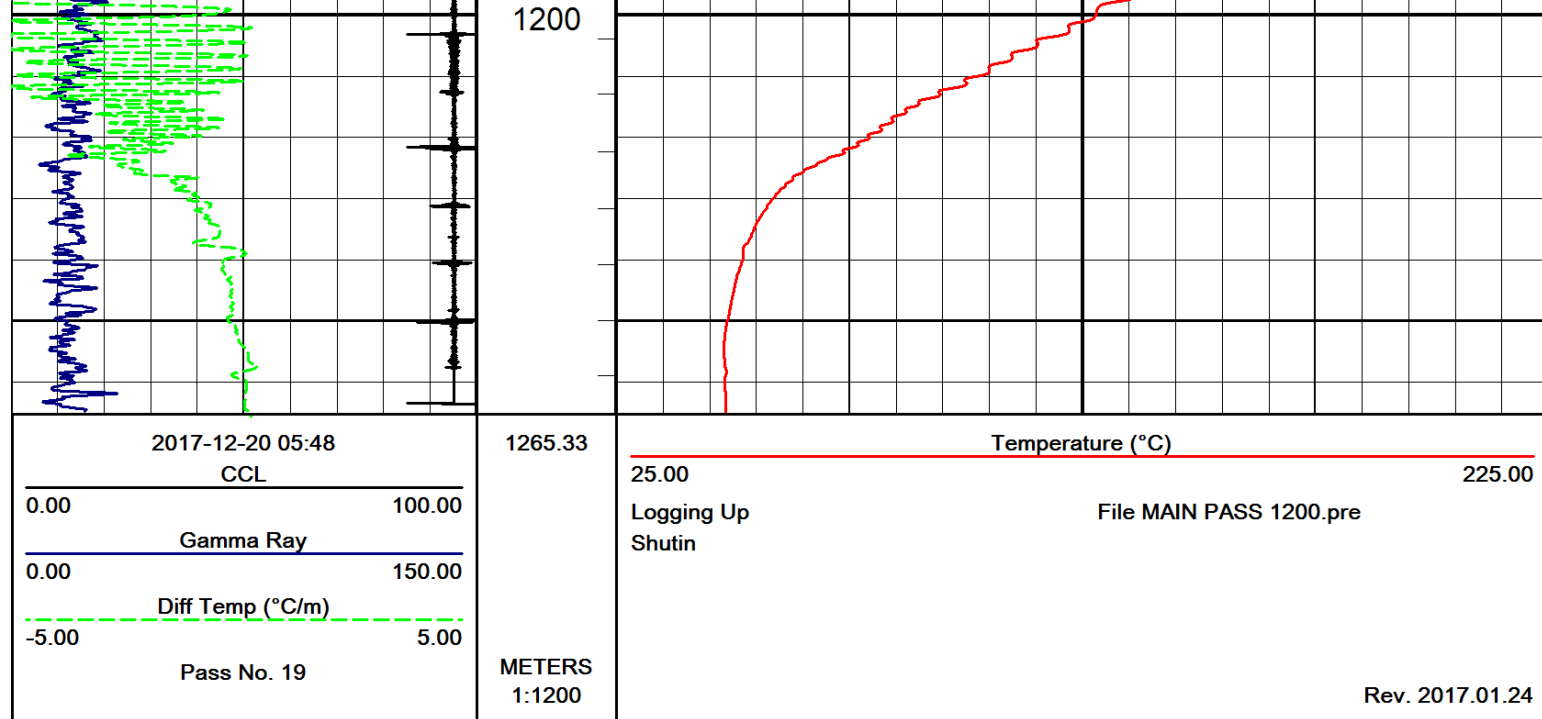




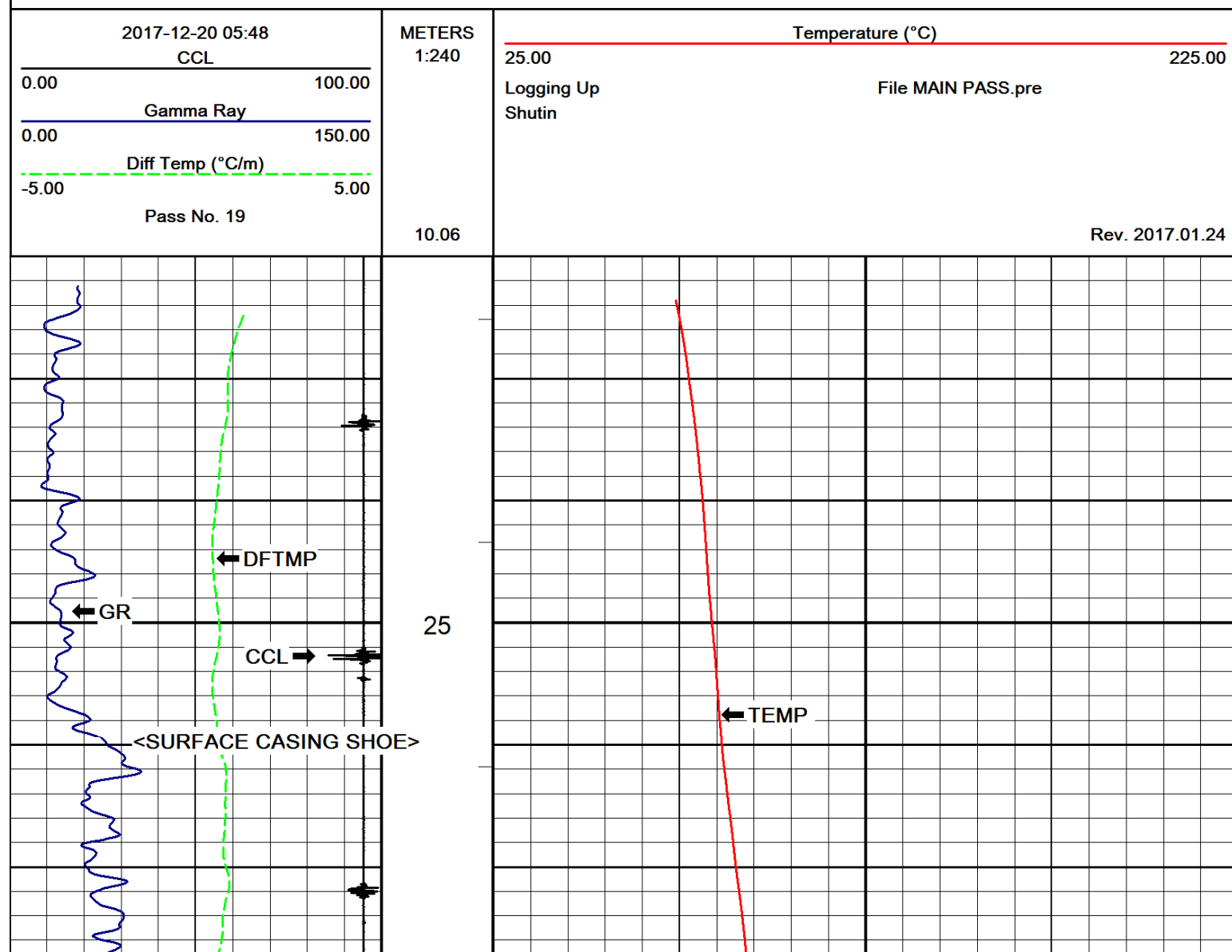


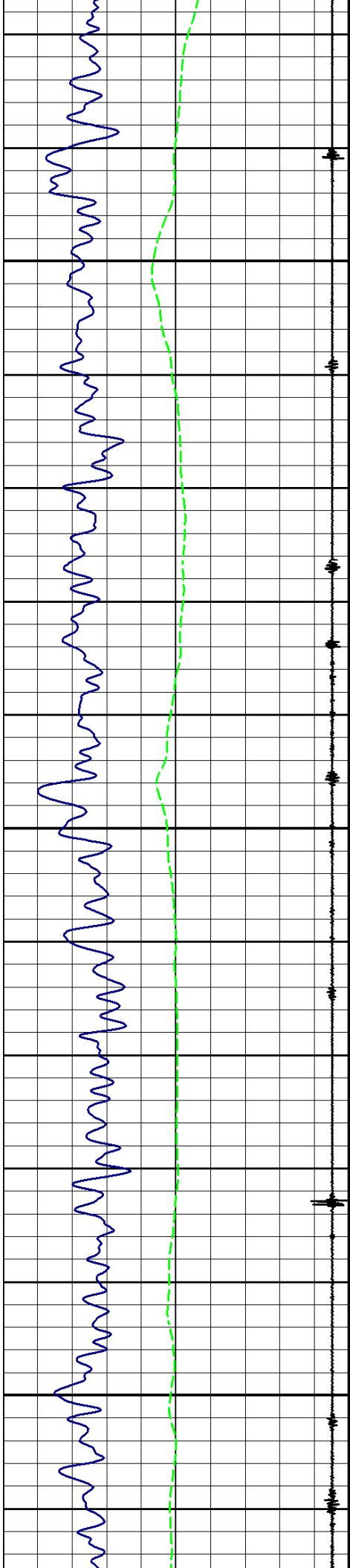
1000





## MAIN PASS TEMPERATURE

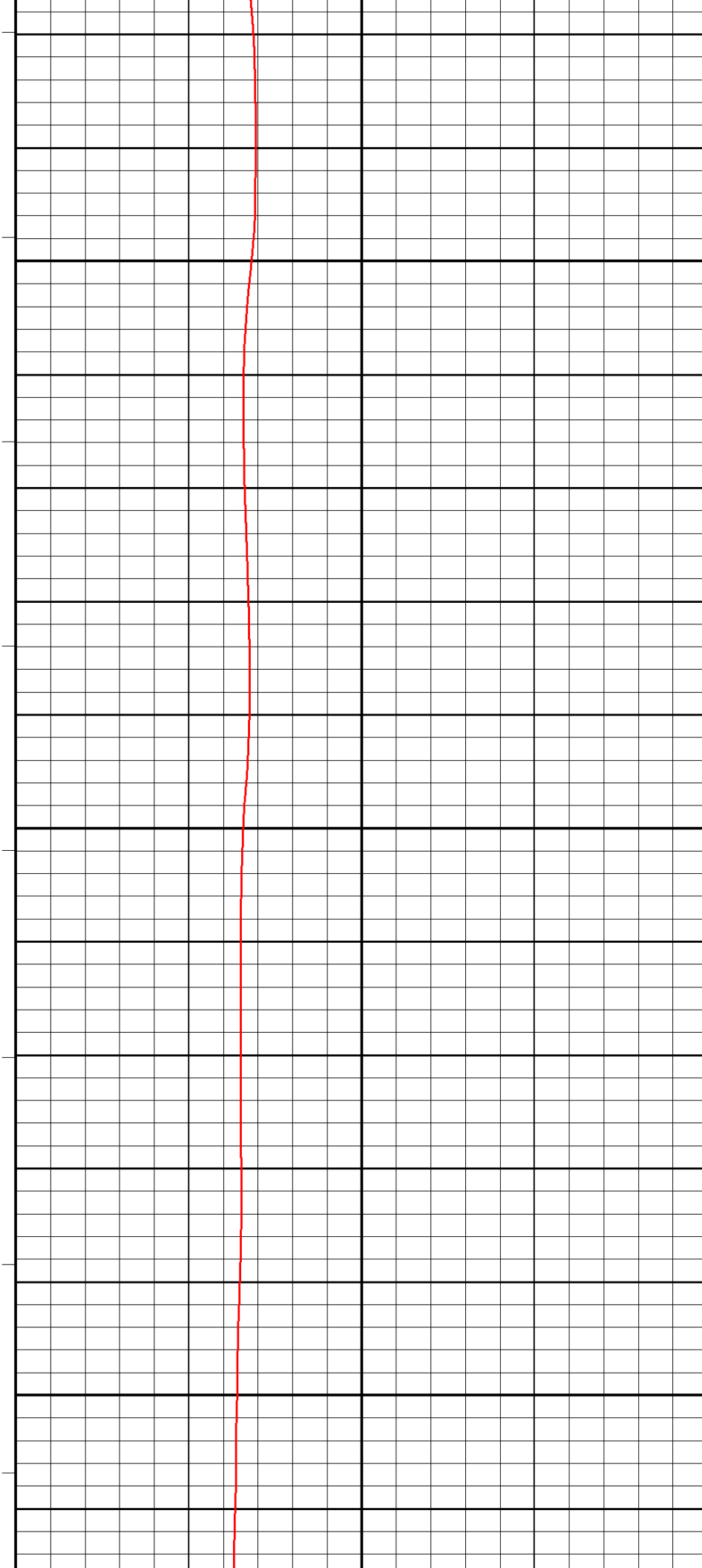


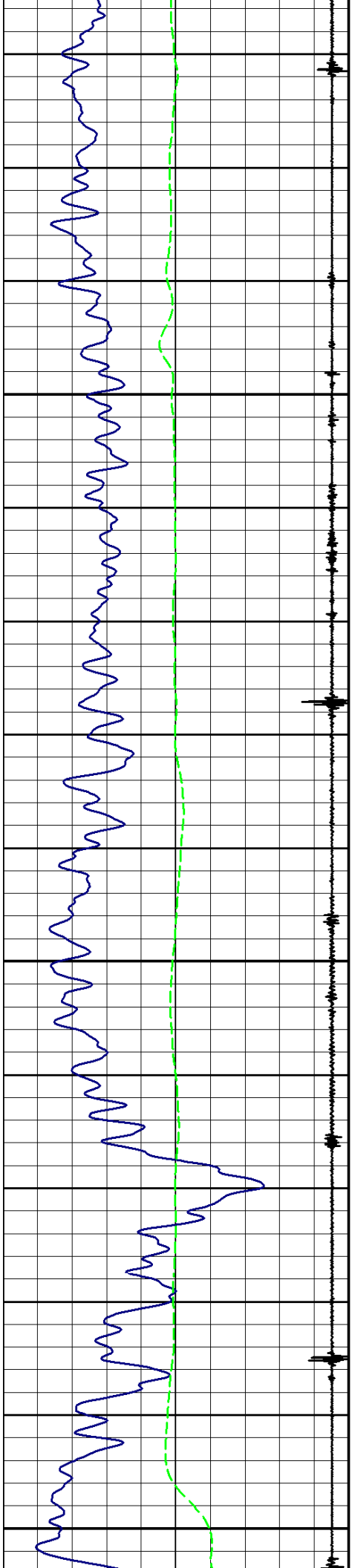


50

75

100

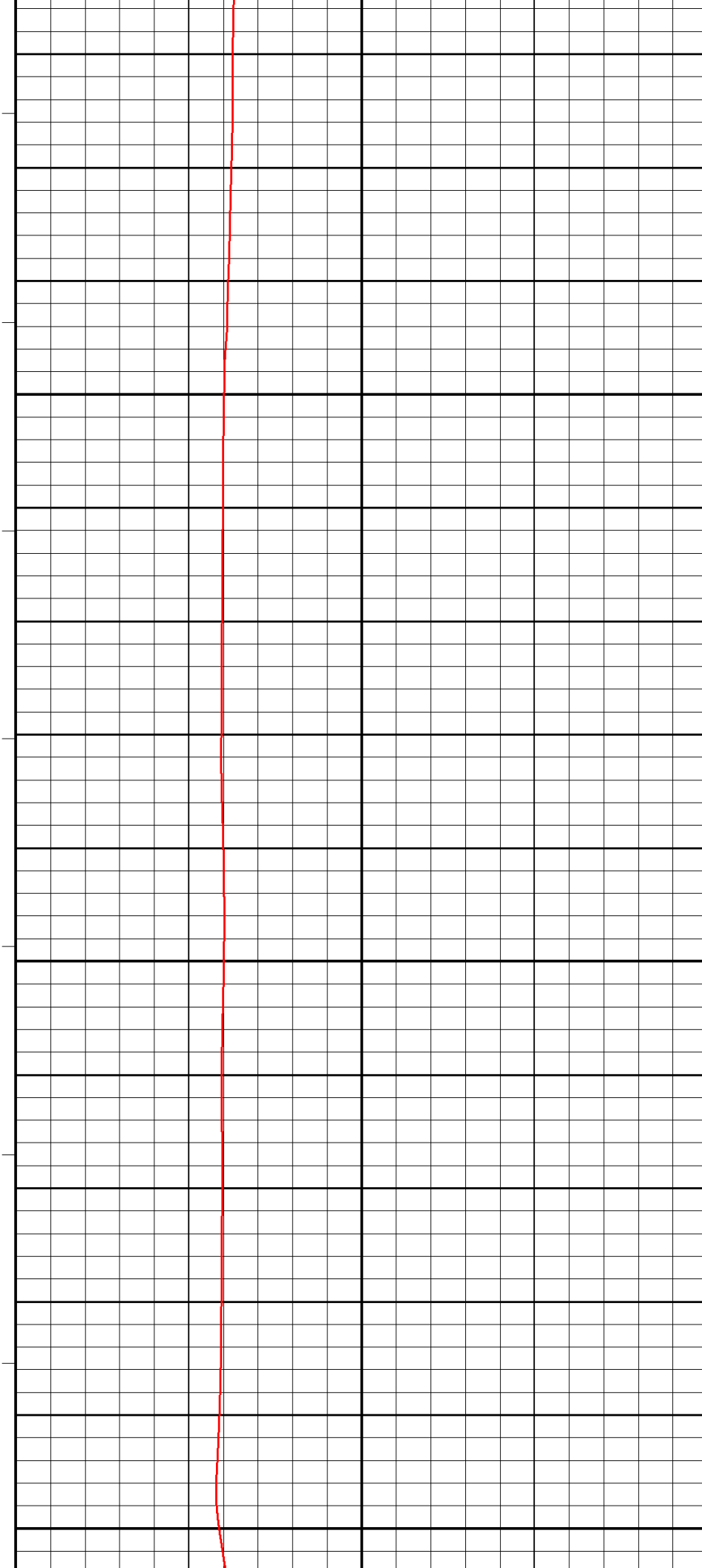




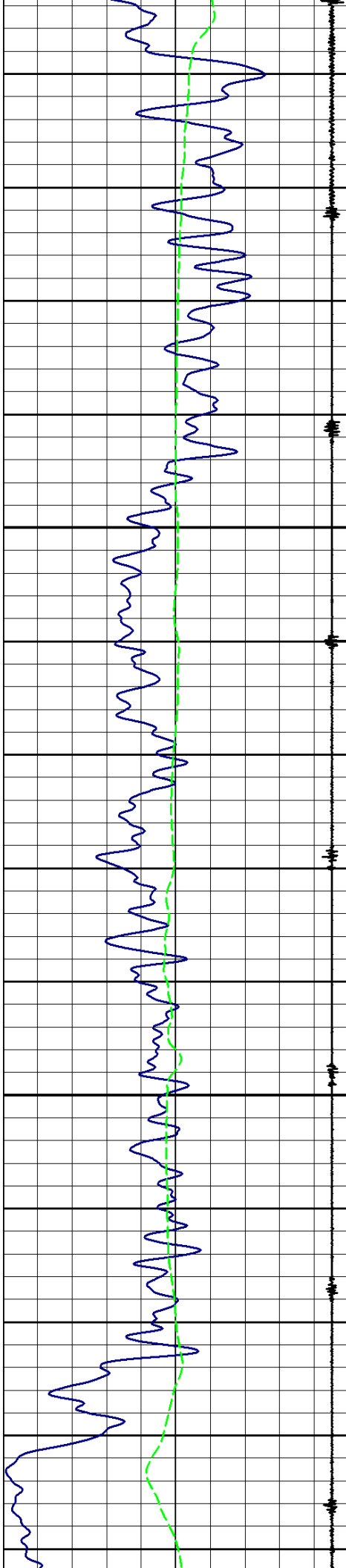
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150

175

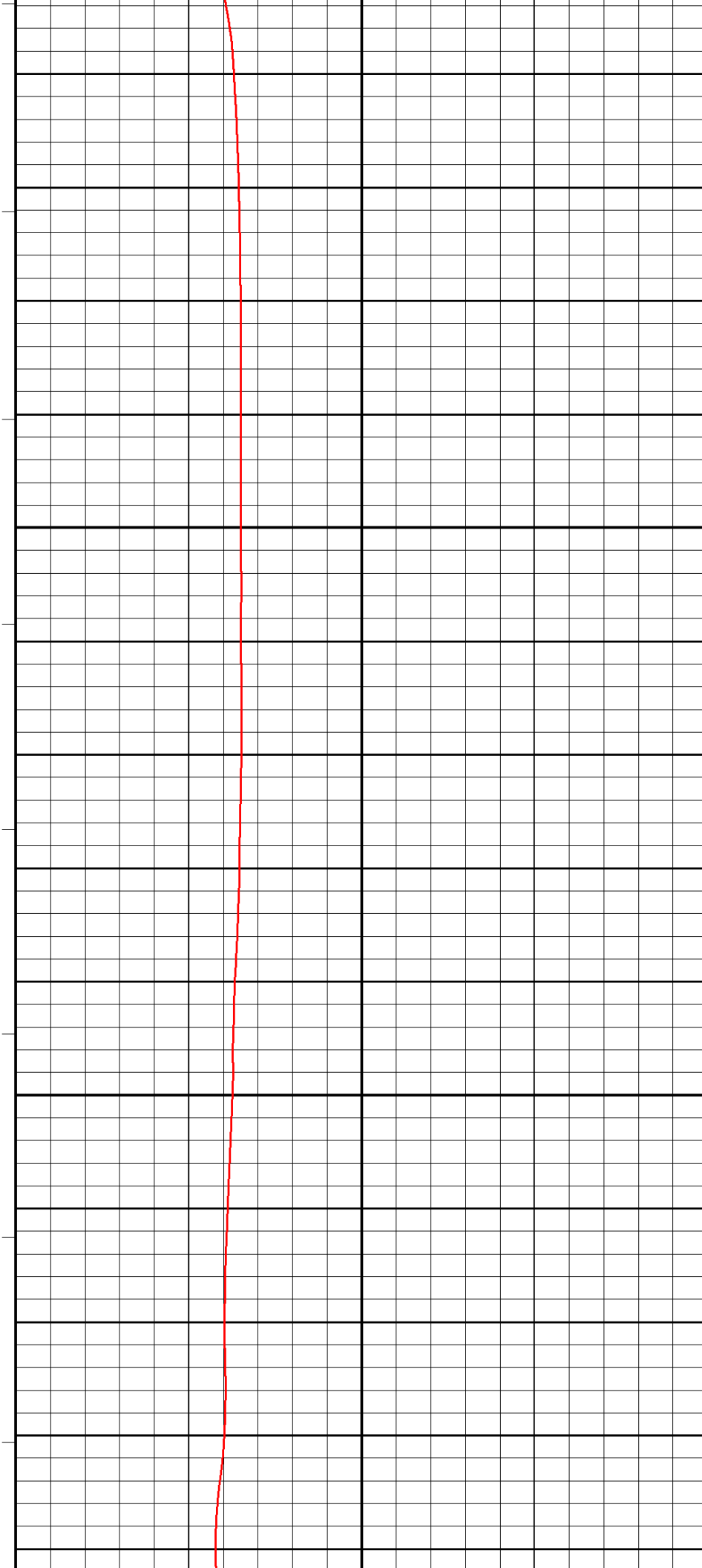


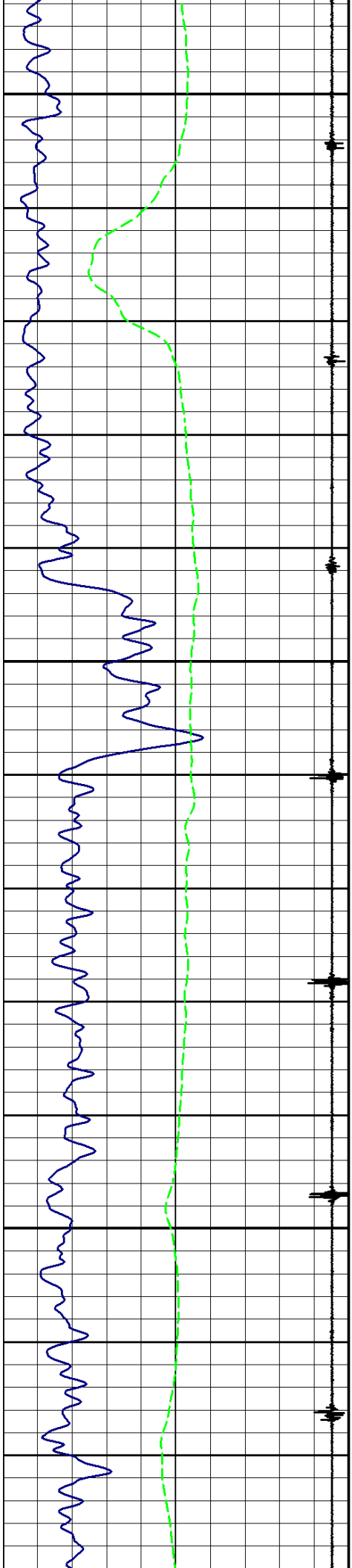




200

225

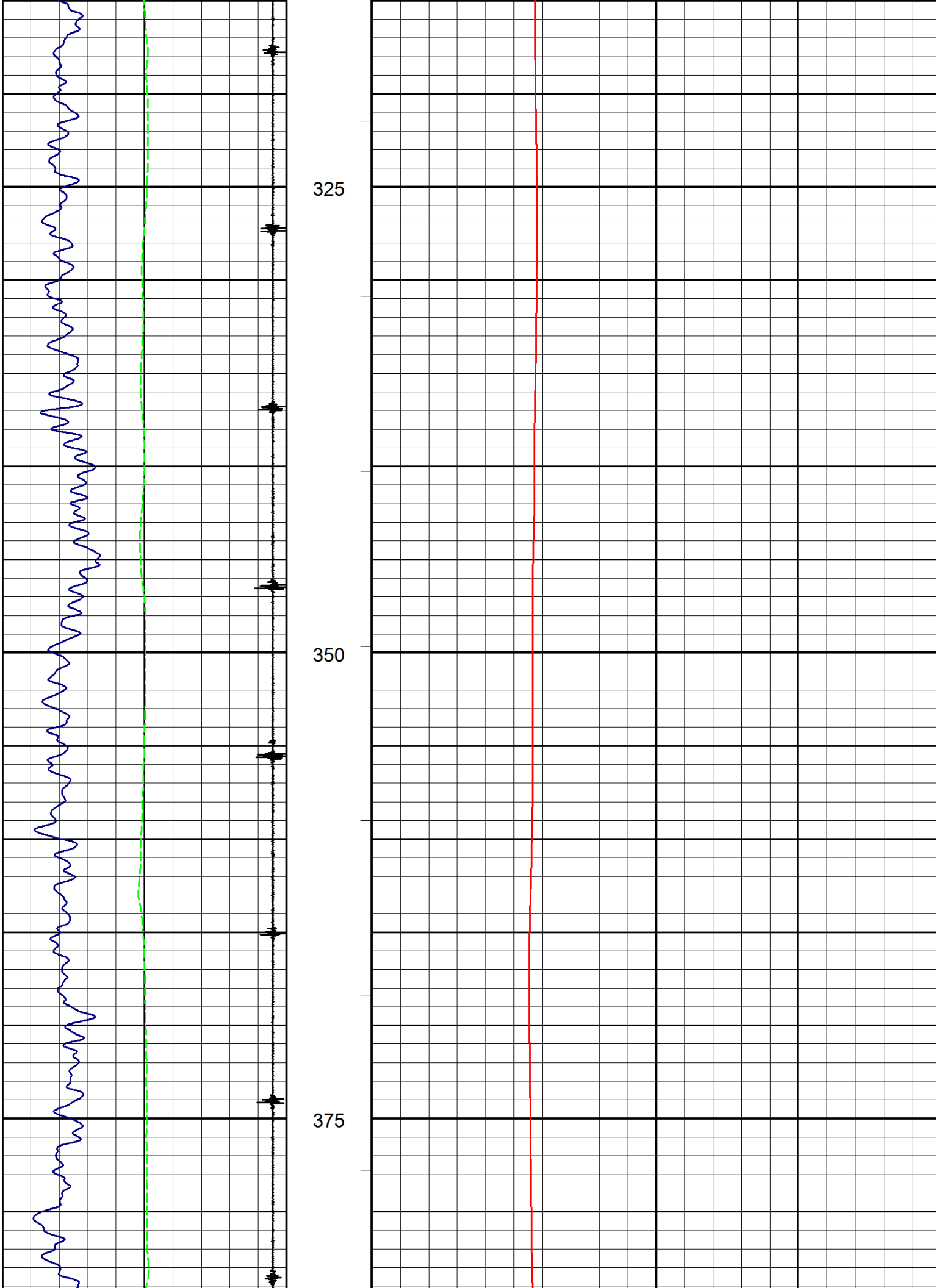


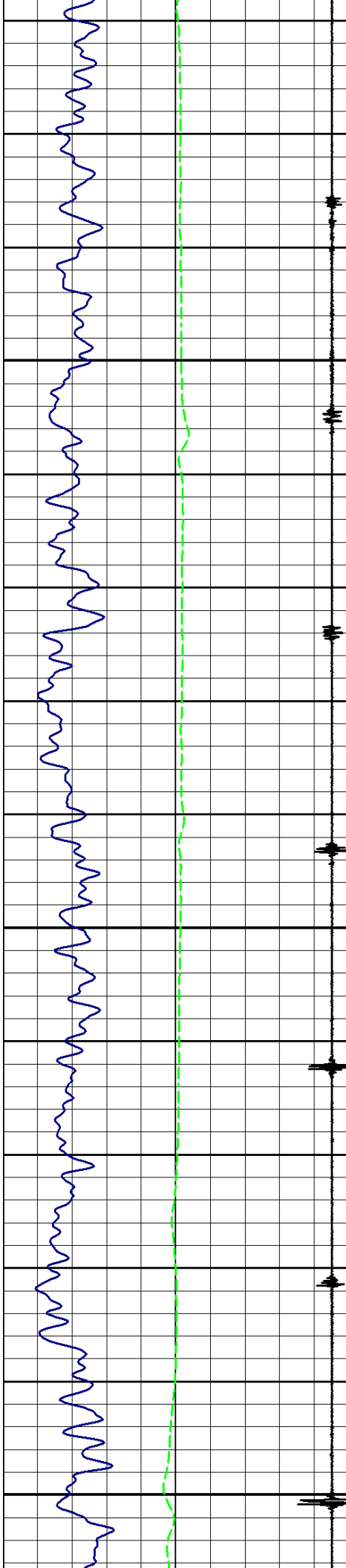


250

275

300

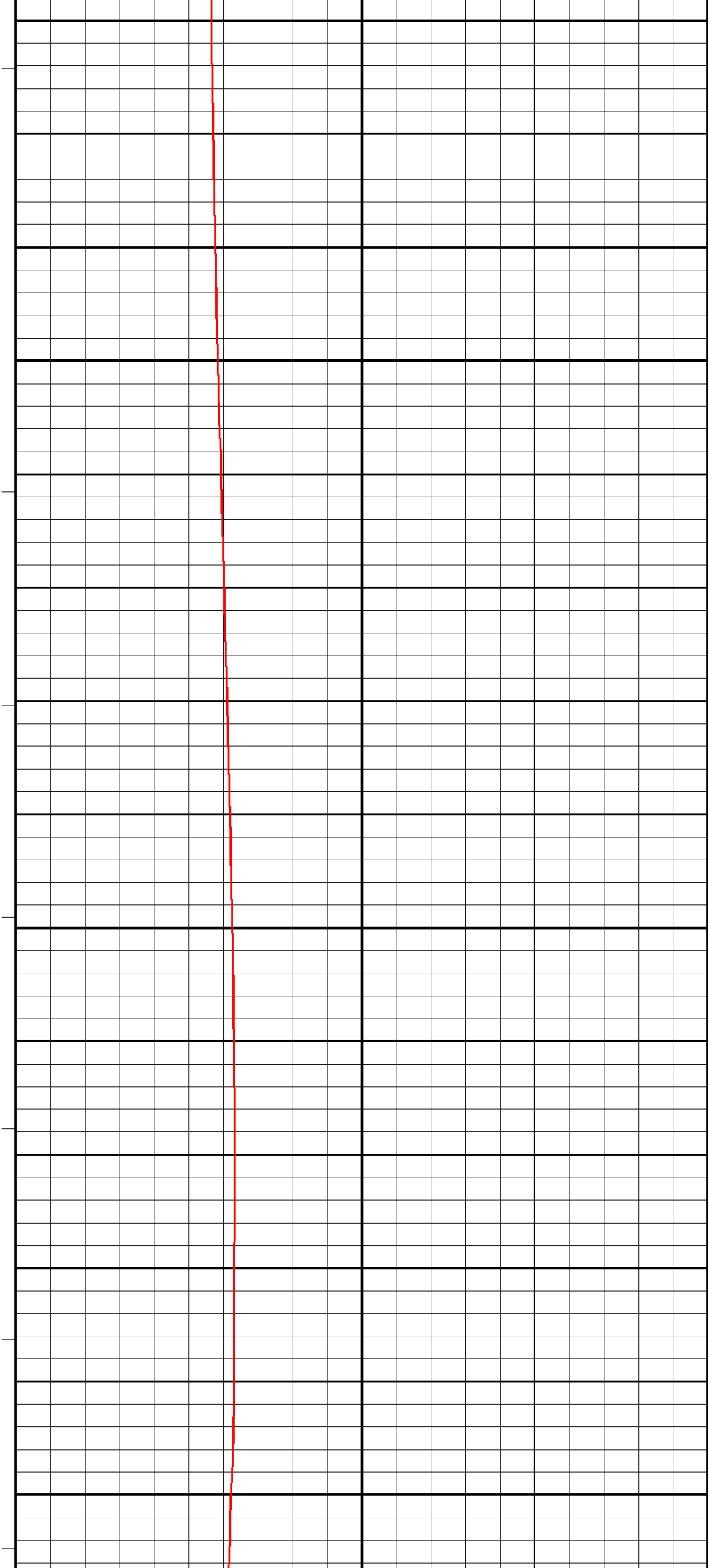


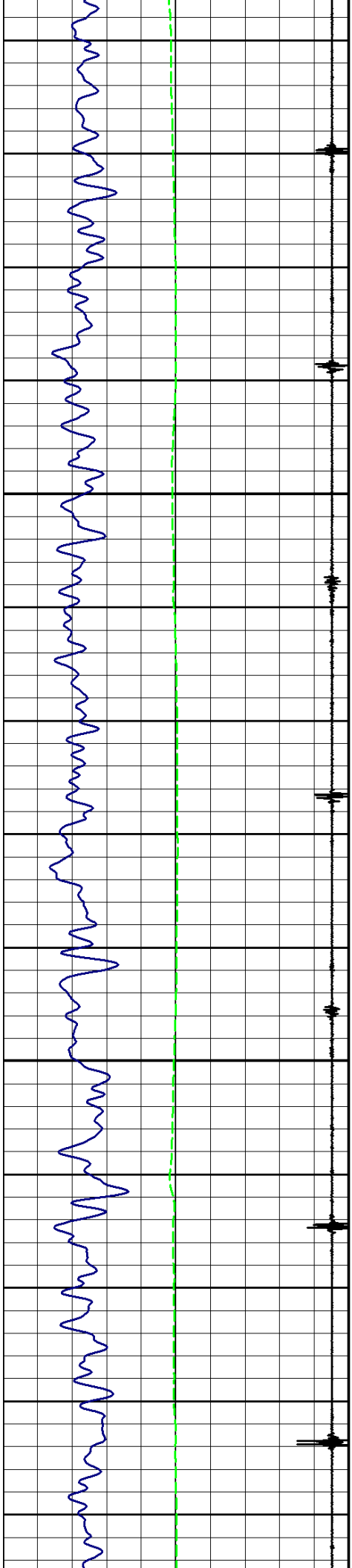


400

425

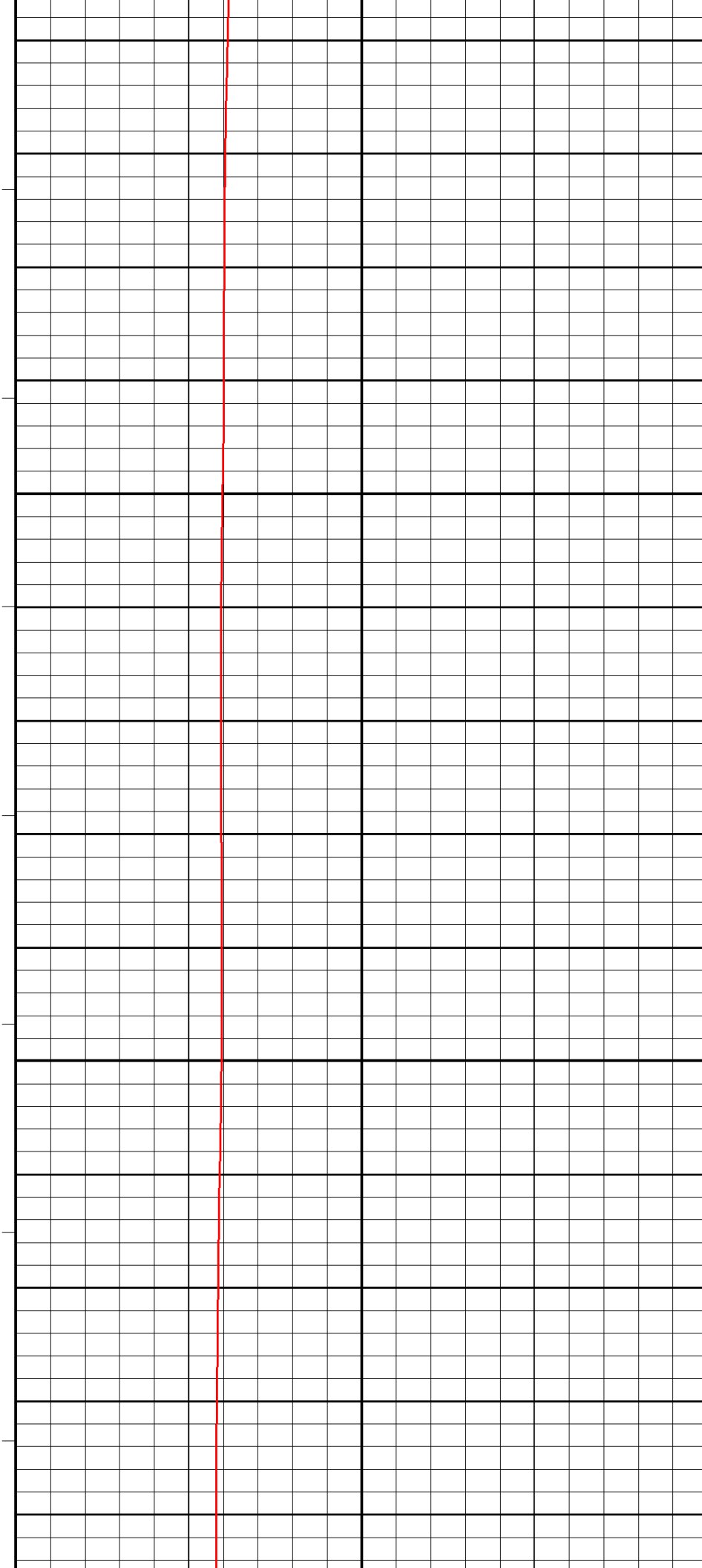
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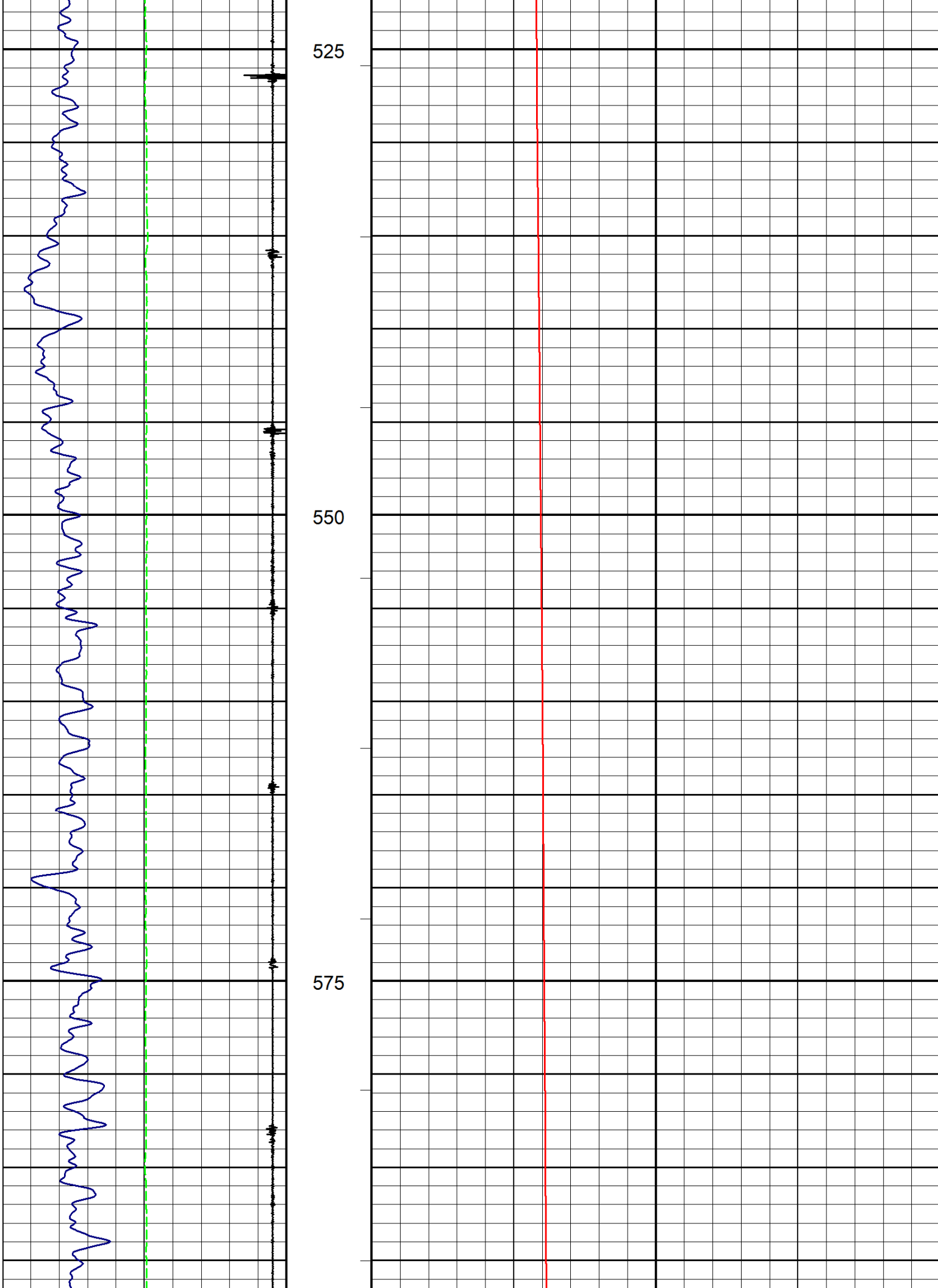


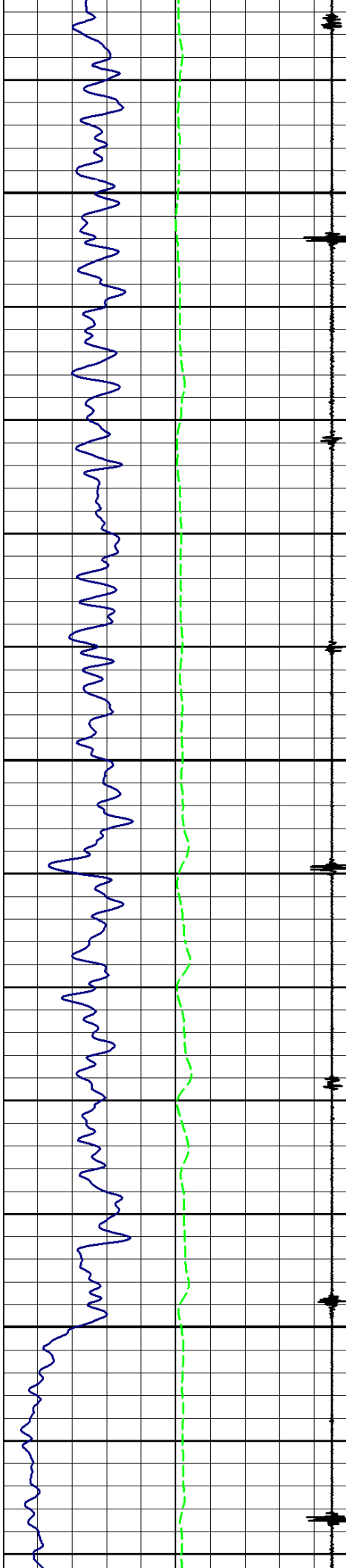


475

500



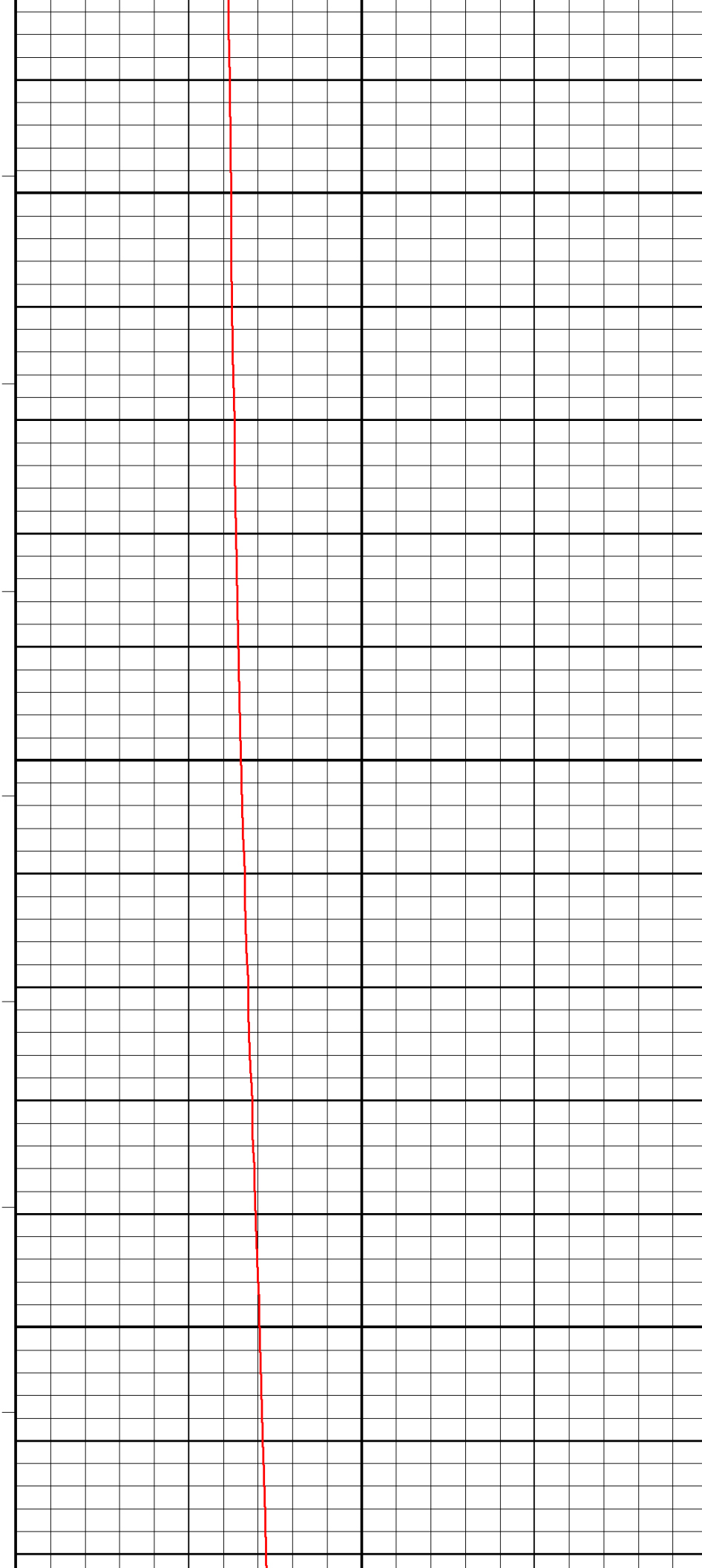


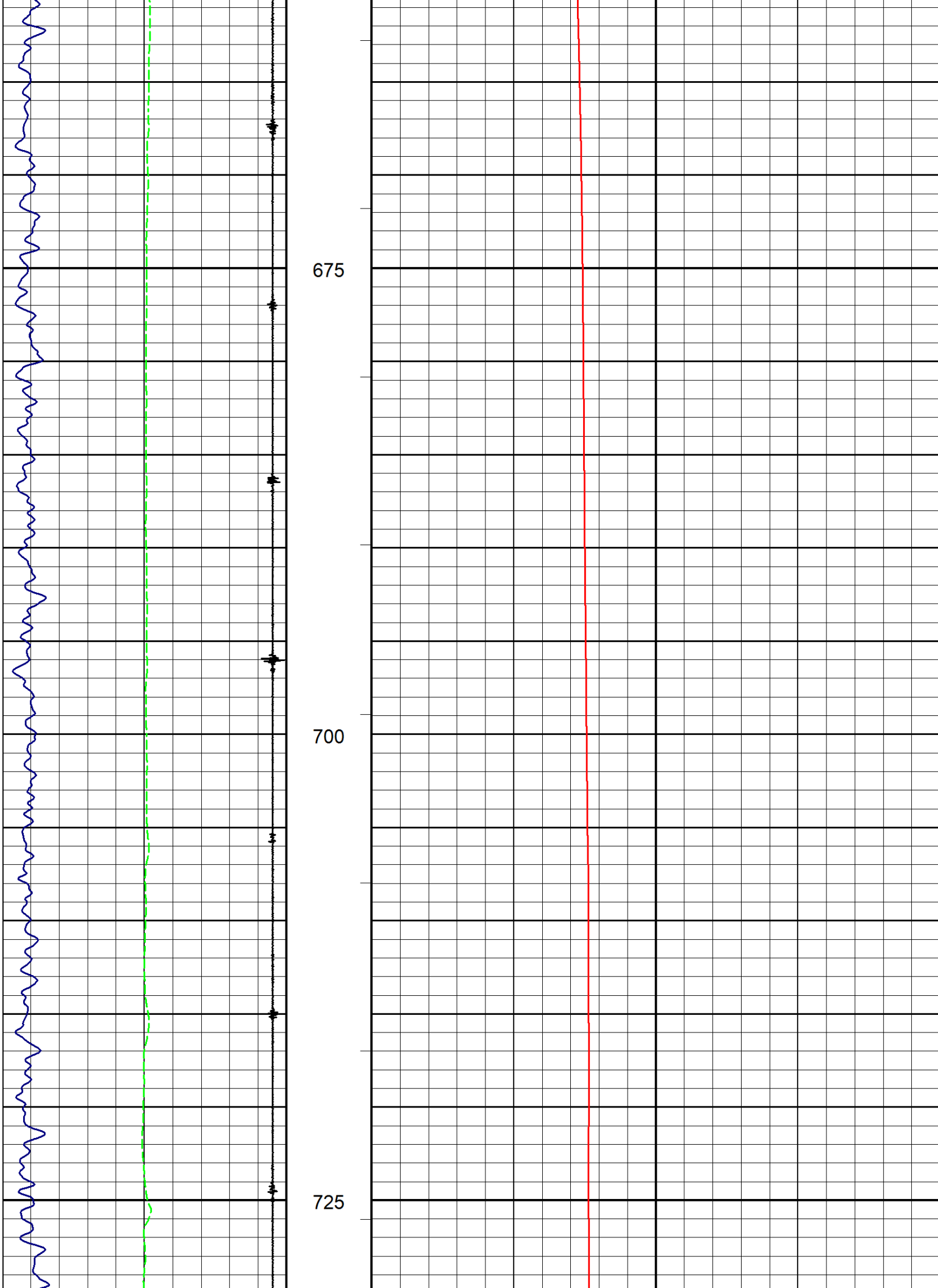


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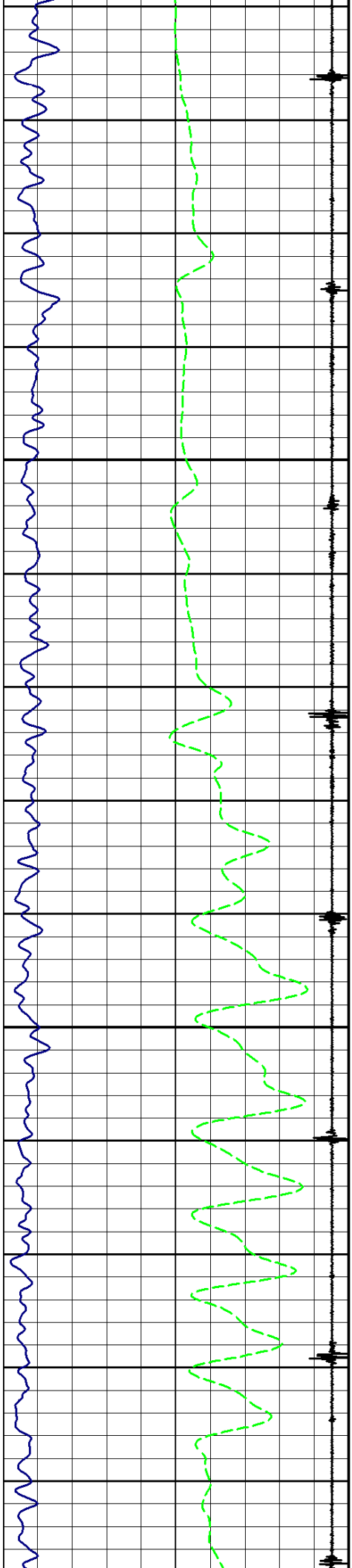
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650



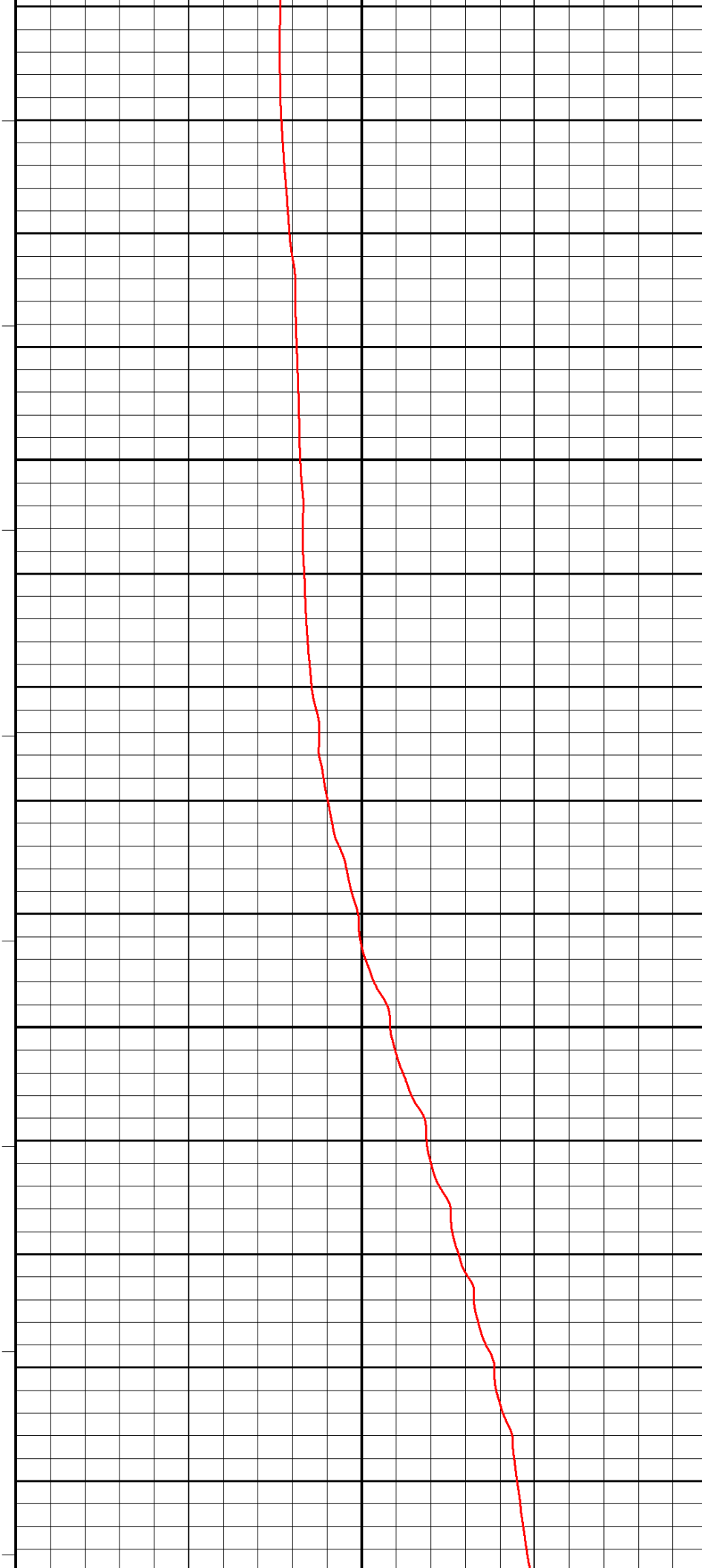


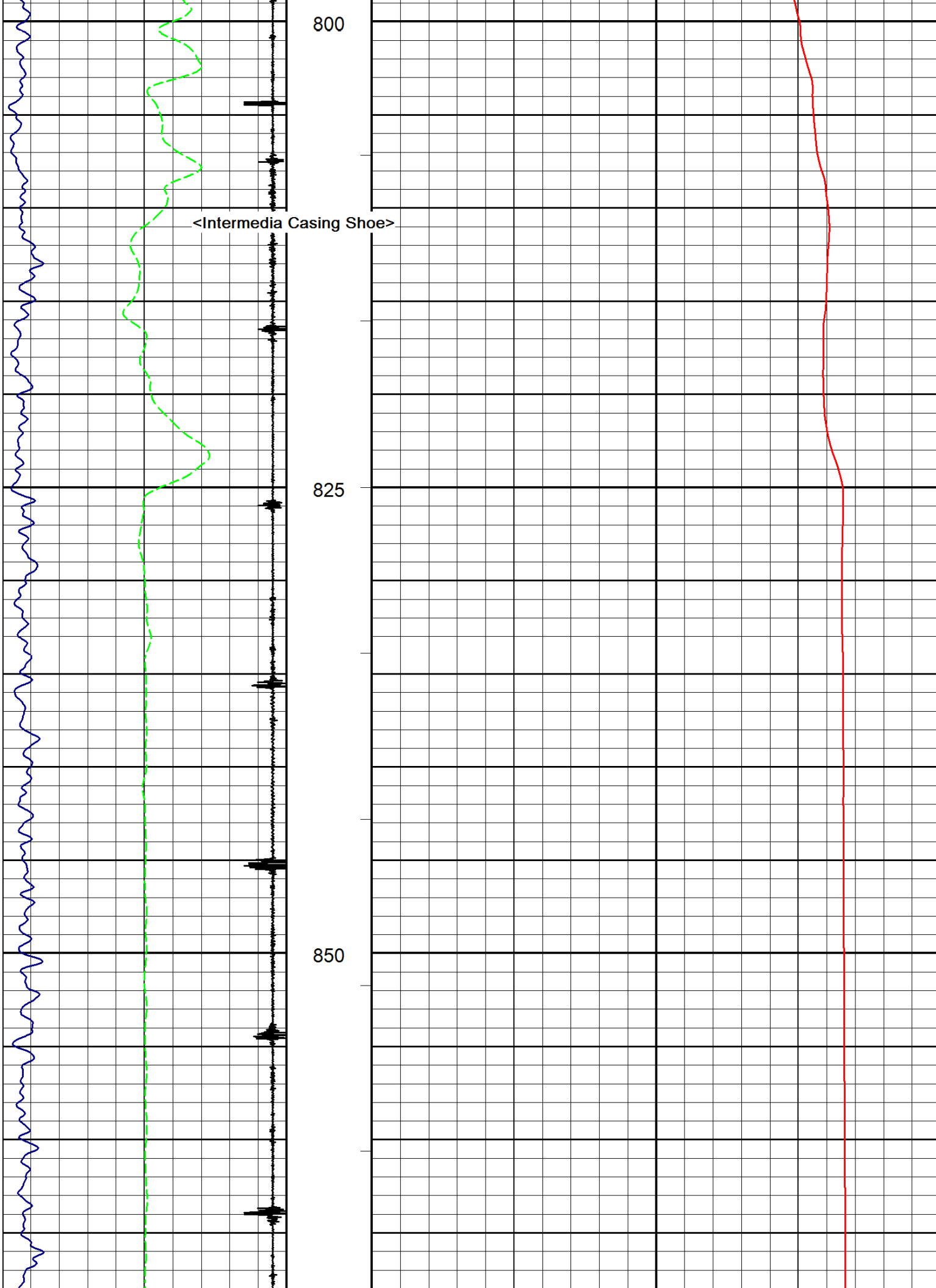


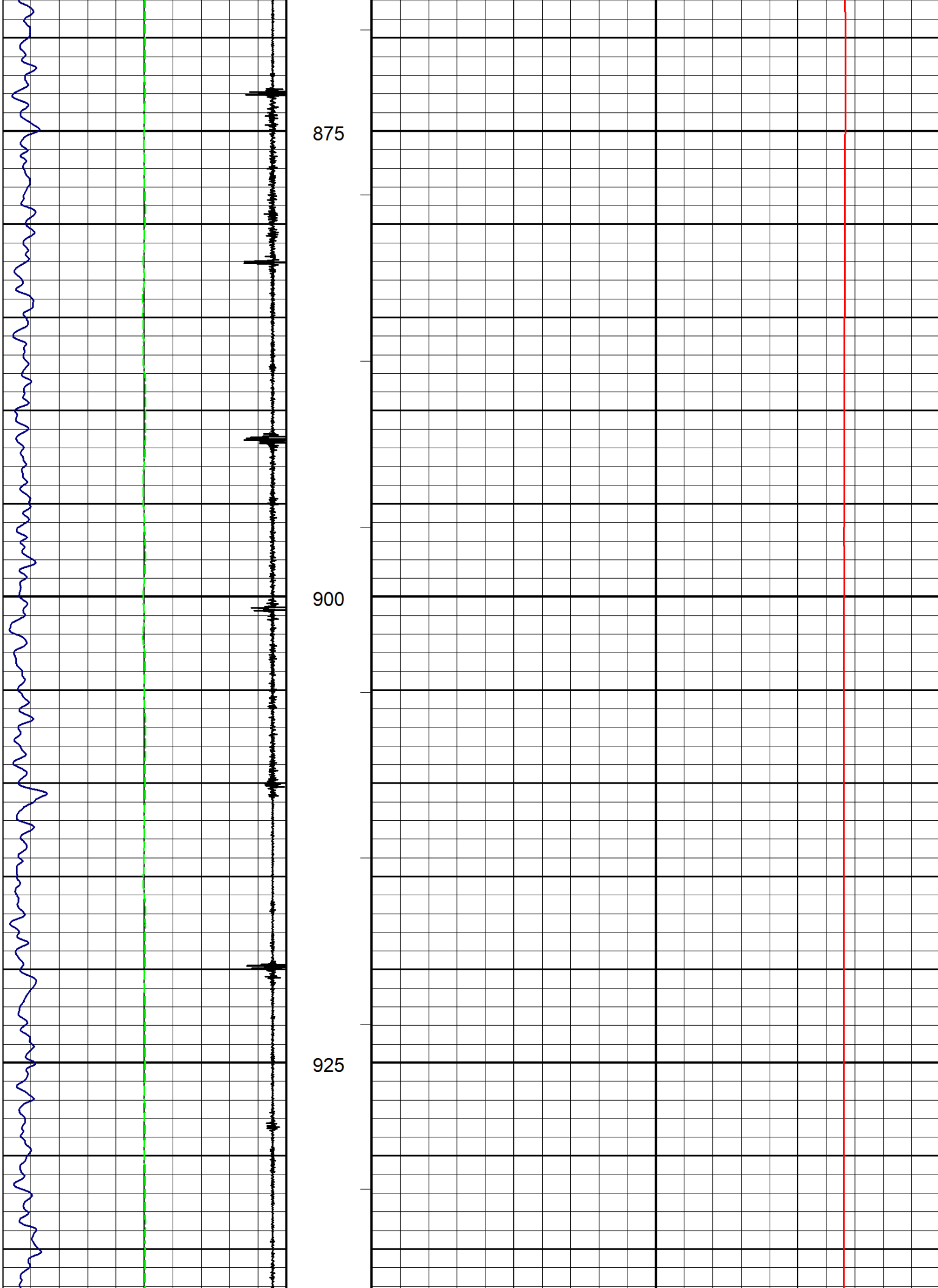


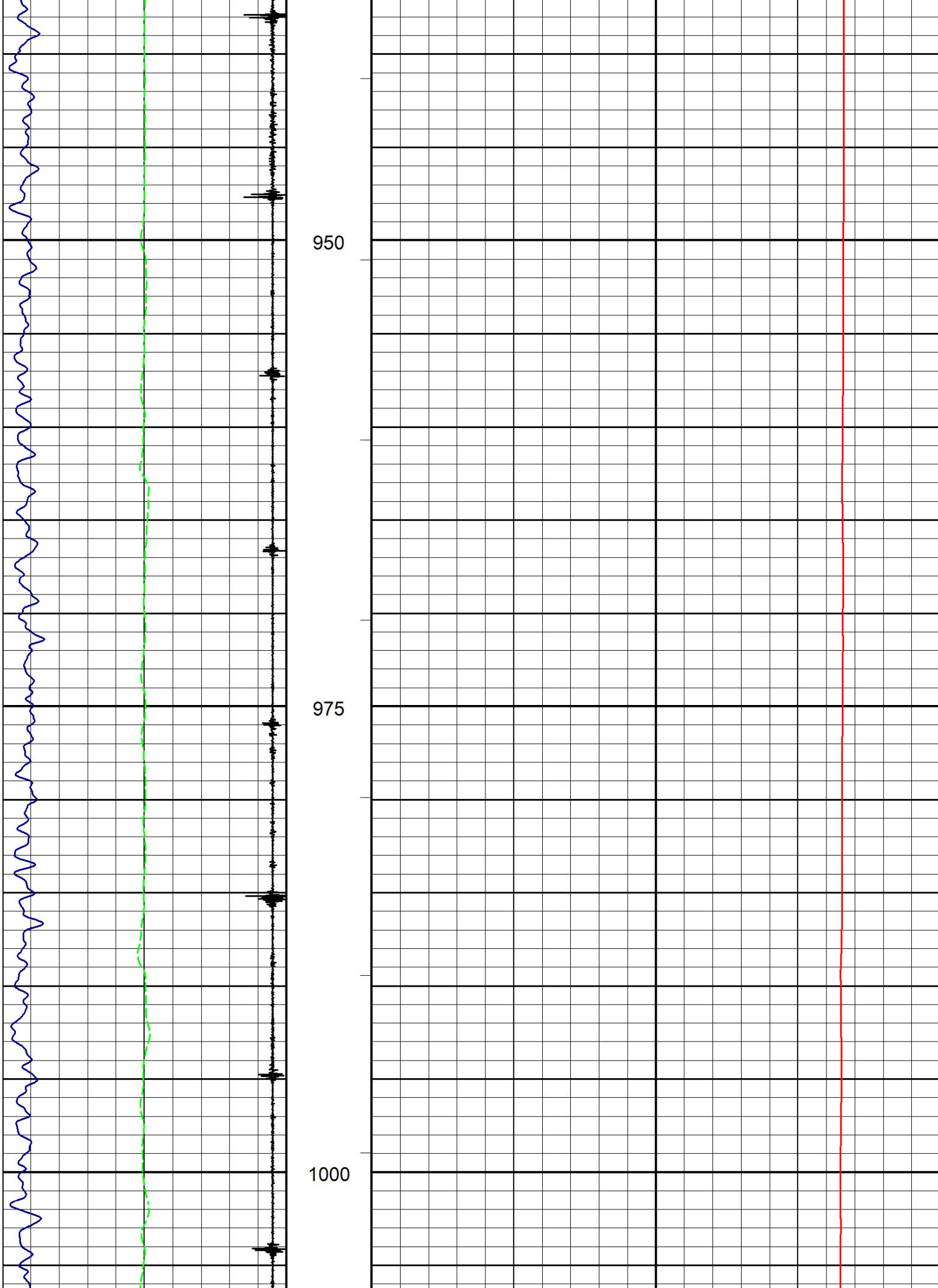
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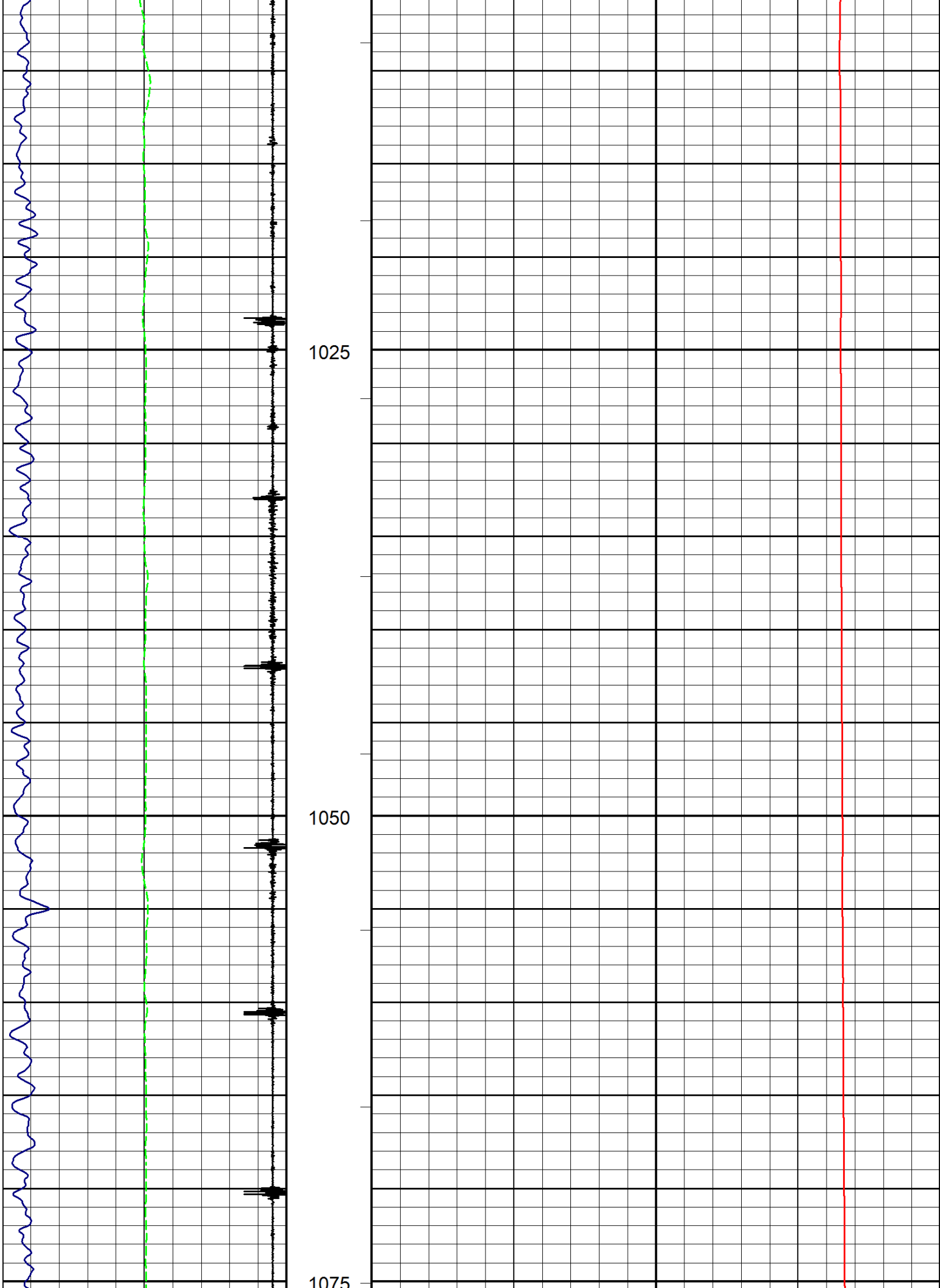
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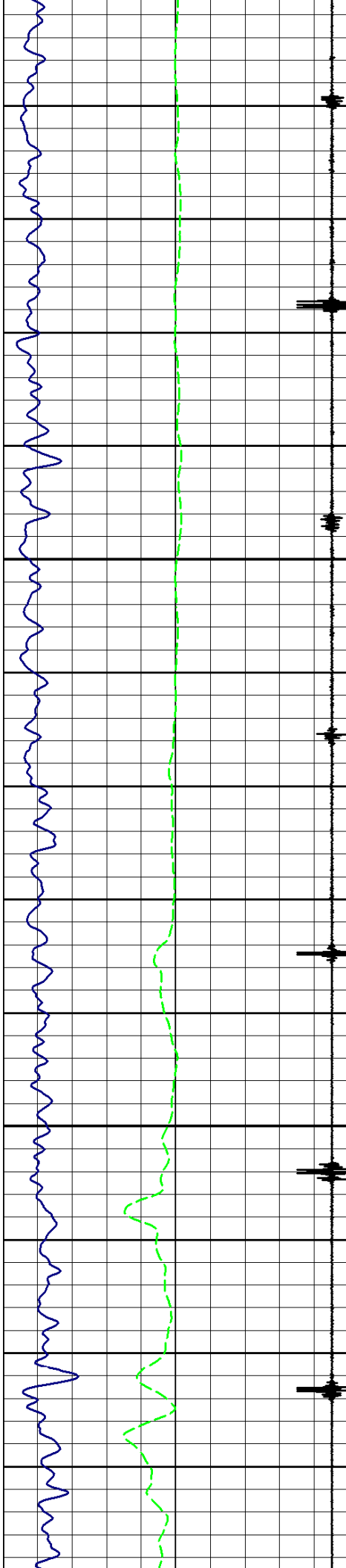






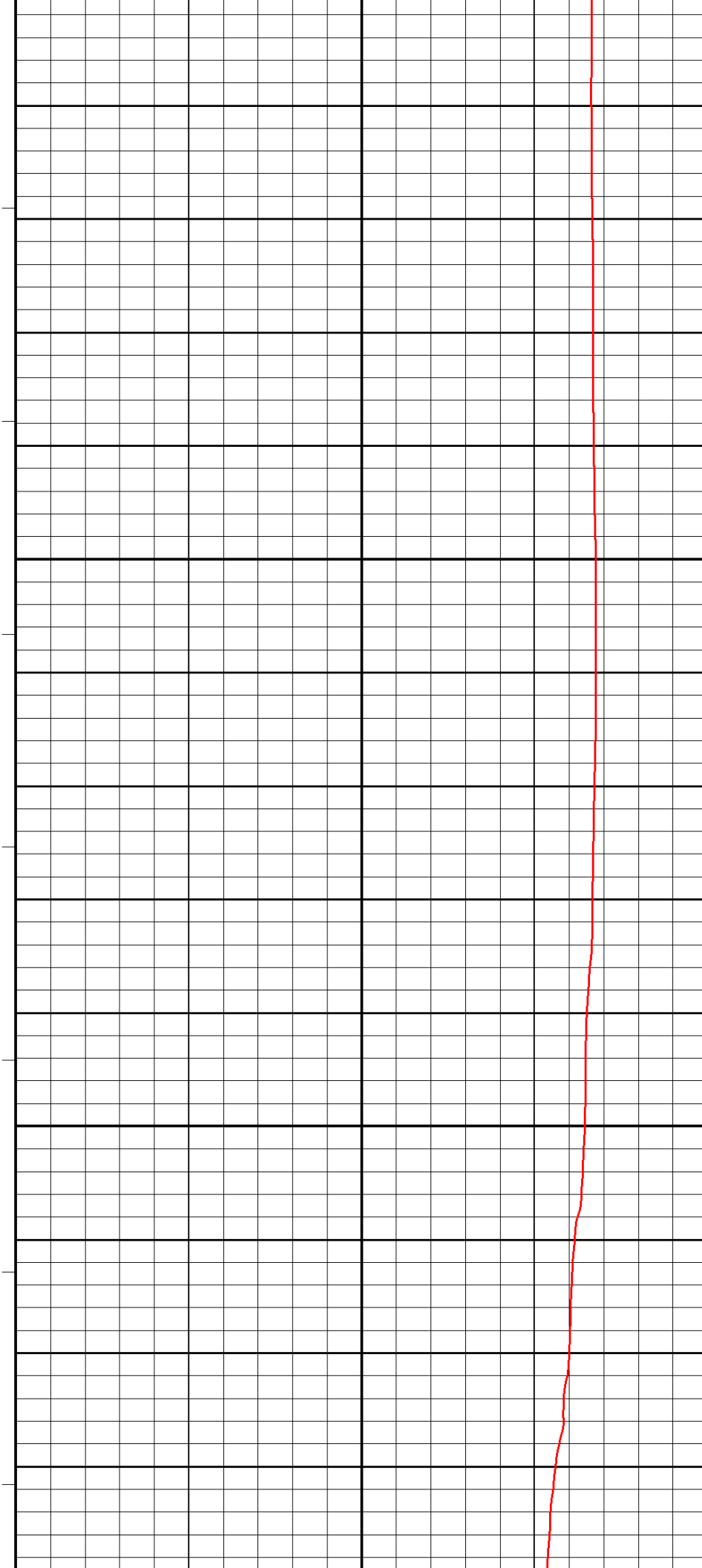


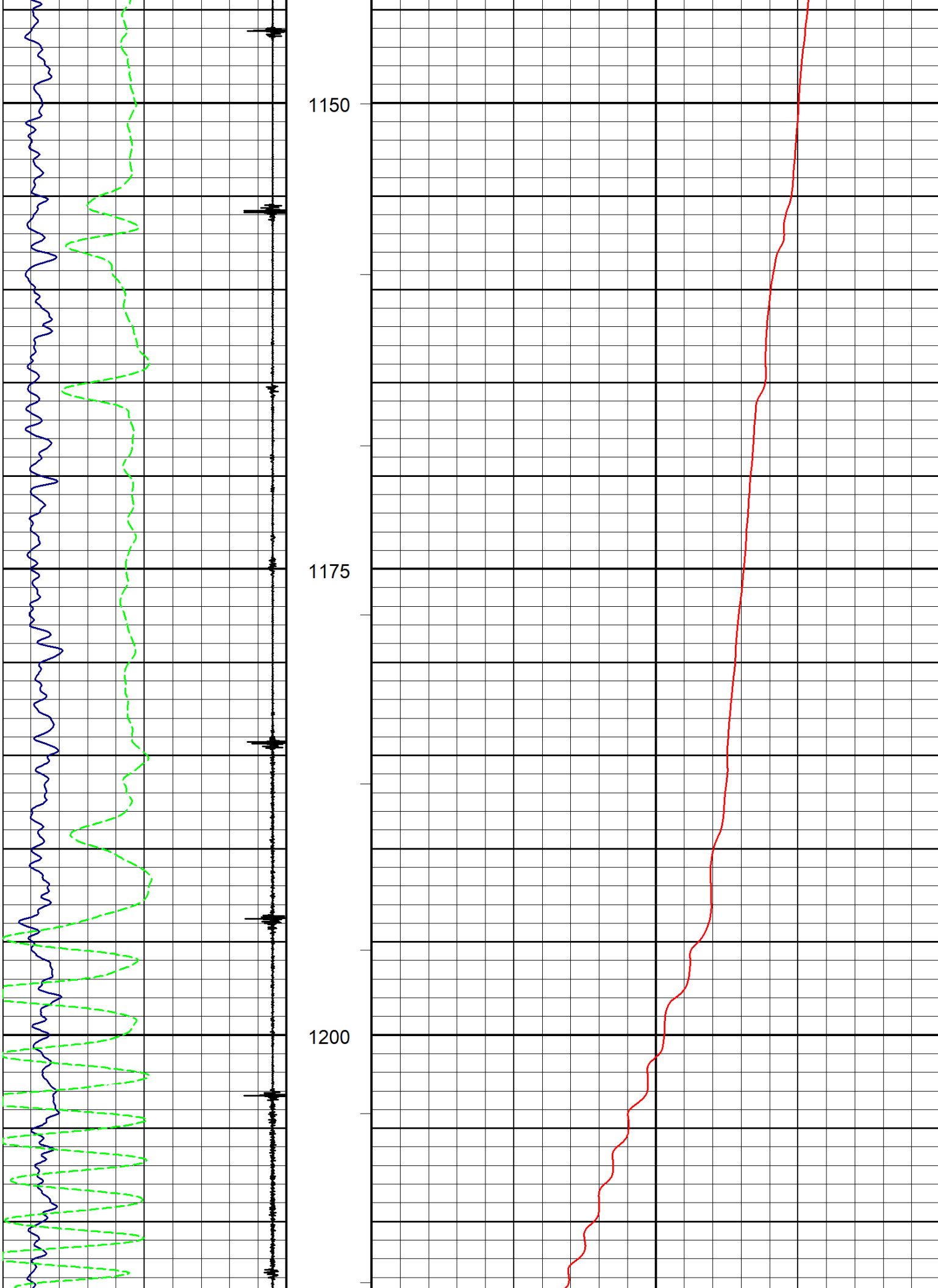


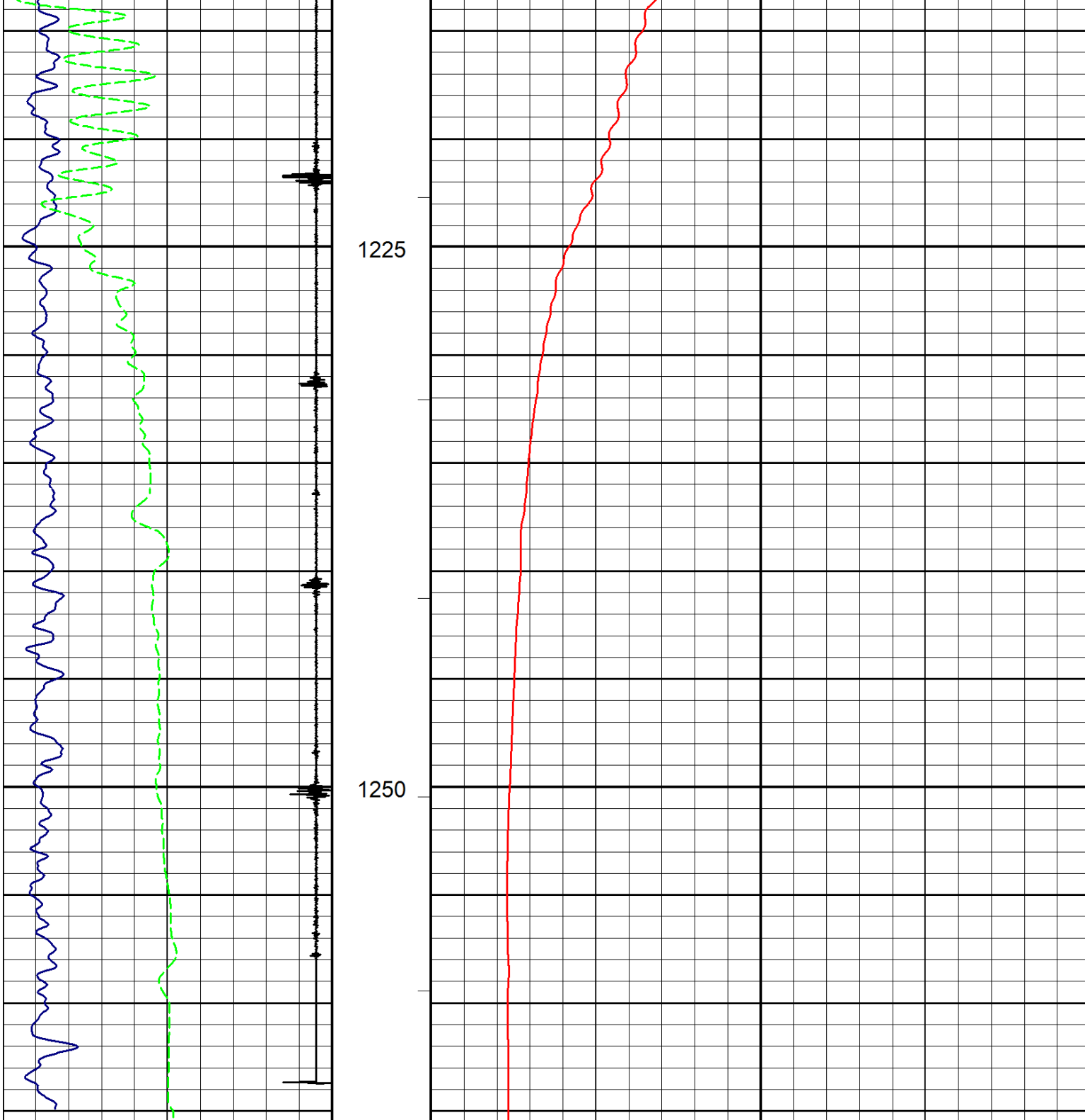


1100

1125





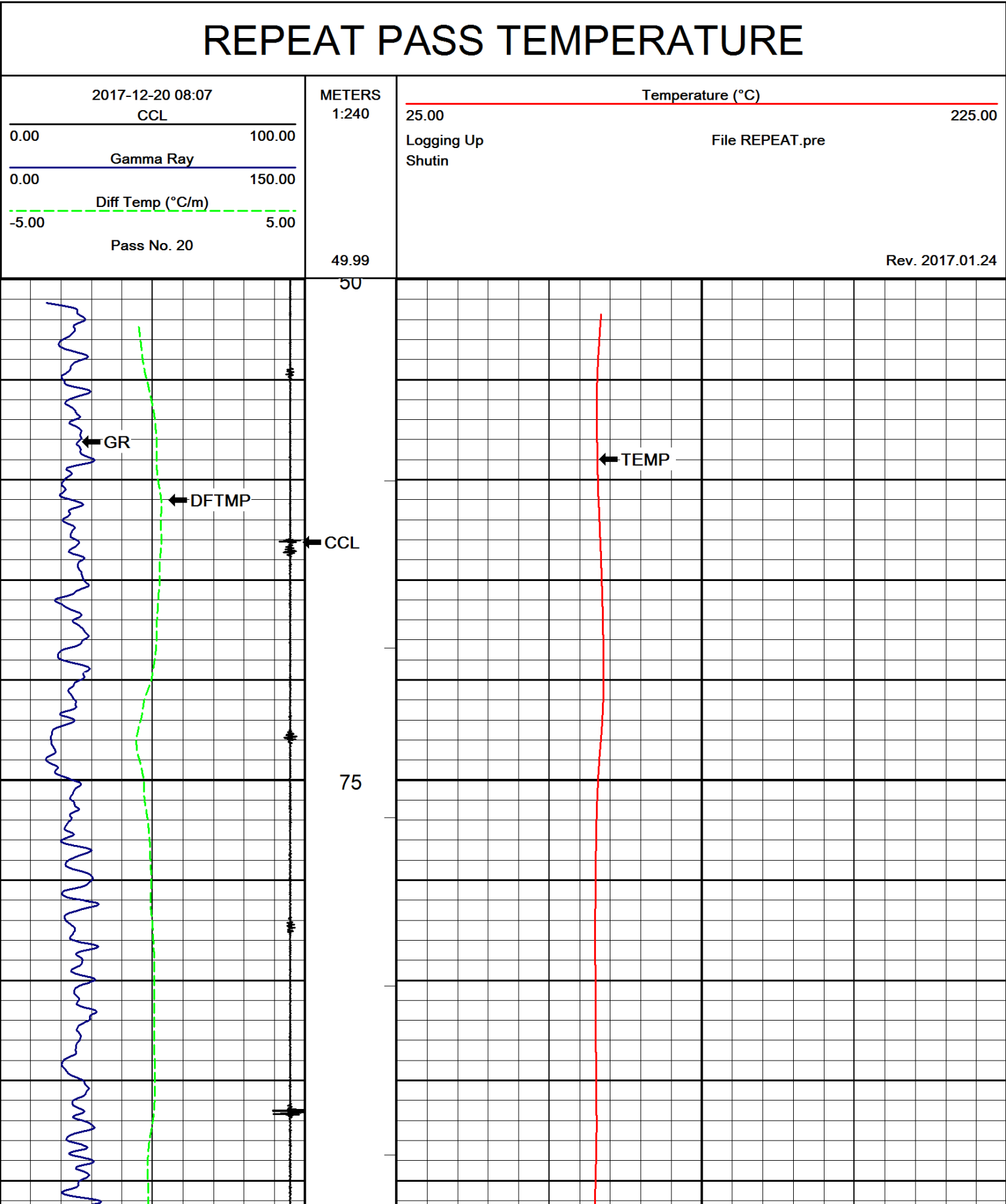


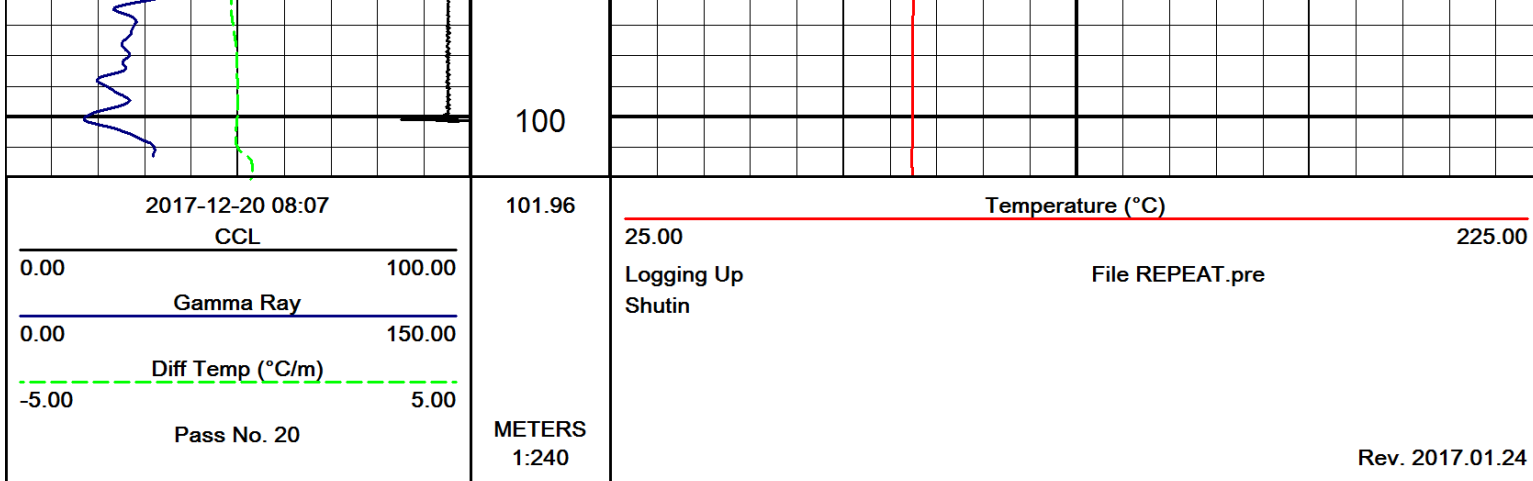
2017-12-20 05:48 CCL			1265.56			Temperature (°C)					
0.00			100.00			25.00					
Gamma Ray						225.00					
0.00			150.00			Logging Up					
Diff Temp (°C/m)						File MAIN PASS.pre					
-5.00			5.00			Shutin					
Pass No. 19			METERS								
			1:240			Rev. 2017.01.24					

Trace Summary											
Name	Units	Track	Chart Left	Chart Right	Channel	Gain	Shift	Filter	Coeff	Depth Offset(m)	Time Sample



Tension	lbF	1	0	1000	16	1	0	Butterworth	1.2	1.8	
CCL		1	0	100	4	0.028	95	None		0	
Gamma Ray		1	0	150	8	2	0	Butterworth	1	0.95	2
Temperature	°C	4	25	225		1	0	Butterworth	1.2	1.57	2
Diff Temp	°C/m	1	-5	5		1	0	Butterworth	1.2	1.57	





### Trace Summary

Name	Units	Track	Chart Left	Chart Right	Channel	Gain	Shift	Filter	Coeff	Depth Offset(m)	Time Sample
CCL		1	0	100	16	0.028	95	None		0	
Gamma Ray		1	0	150	4	2.5	0	Butterworth	1	0.95	2
Temperature	°C	4	25	225	8	1	0	Butterworth	1.2	1.57	2
Diff Temp	°C/m	1	-5	5		1	0	Butterworth	1.2	1.57	



**Company** CANADIAN NATURAL RESOURCES LTD.  
**Well** SHELL 32-03 CADOT 8-19-85-18  
**Field** PEACE RIVER  
**Province** ALBERTA  
**LSD. 16 SEC. 19 TWP. 085 RGE. 18 W. 5**