

**COMPENSATED DENSITY  
NEUTRON  
LOG**

Company	Pioneer Natural Resources	Company	Pioneer Natural Resources
Well	Haught 42-30	Well	Haught 42-30
Field	Purgatoire River	Field	Purgatoire River
County	Las Animas	County	Las Animas
State	Colorado	State	Colorado
Location:	API #: 05 071 09710 00	Other Services	SIL
SEC 30 TWP 32S RGE 67W	2394' FNL & 1037' FEL	Elevation	
Permanent Datum	Ground Level	K.B. 7835'	
Log Measured From	Kelly Bushing 9' AGL	D.F. -----	
Drilling Measured From	Kelly Bushing	G.L. 7826'	
Date	7-4-11		
Run Number	One		
Depth Driller	2905'		
Depth Logger	2886'		
Bottom Logged Interval	2870'		
Top Log Interval	Surface Casing		
Casing Driller	8 5/8" @ 392'		
Casing Logger	388'		
Bit Size	7 7/8"		
Type Fluid in Hole	Water		
Density / Viscosity	///		
pH / Fluid Loss	///		
Source of Sample	///		
Rm @ Meas. Temp	///		
Rmf @ Meas. Temp	///		
Rmc @ Meas. Temp	///		
Source of Rmf / Rmc	///		
Rm @ BHT	///		
Time Circulation Stopped	10:30 P.M.		
Time Logger on Bottom	5:30 A.M.		
Maximum Recorded Temperature	90 DEG F		
Equipment Number	T590		
Location	Trinidad		
Recorded By	C. Sisneros		
Witnessed By	Mr. Derrick Berry		

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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.

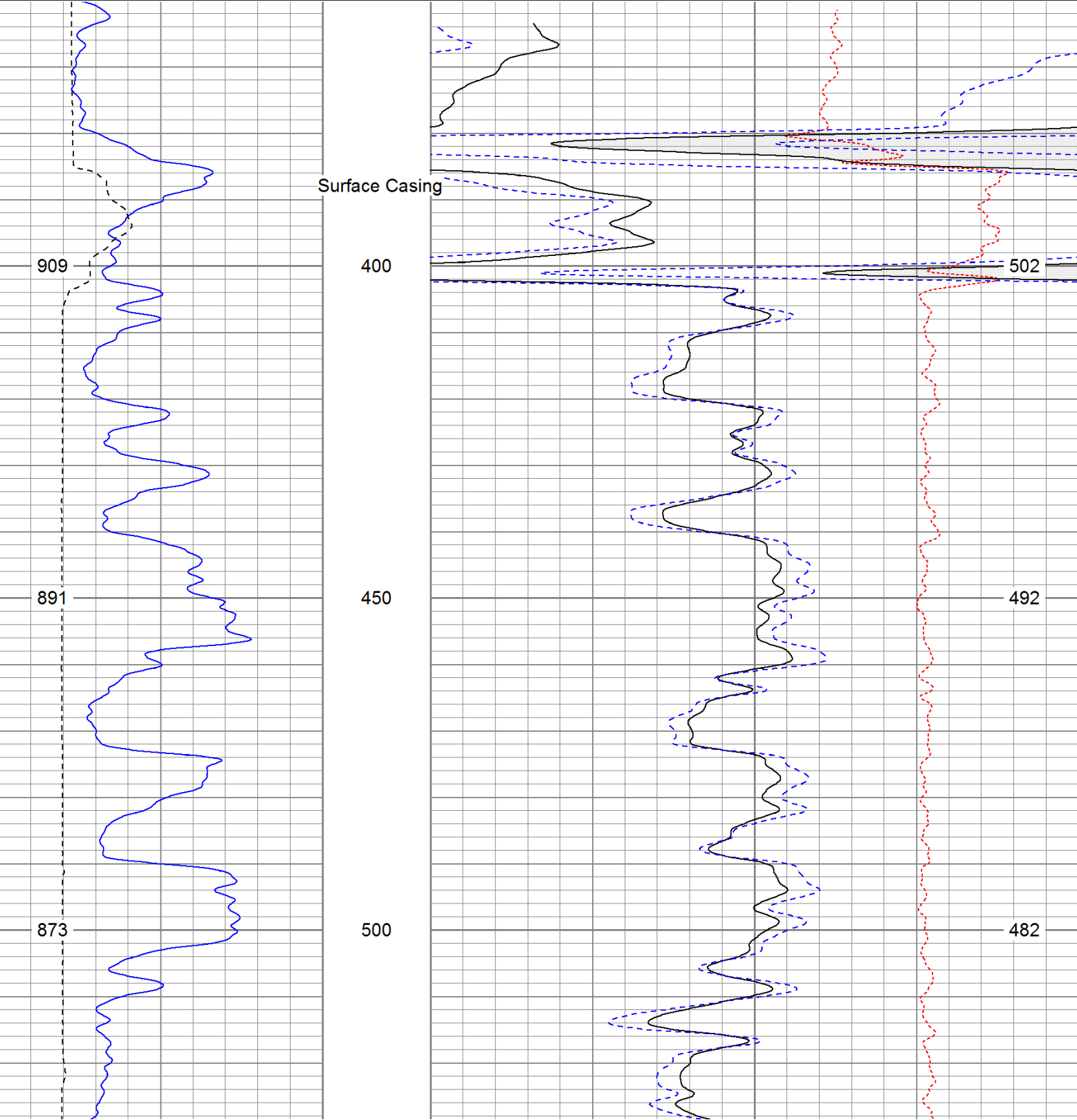
**Comments**

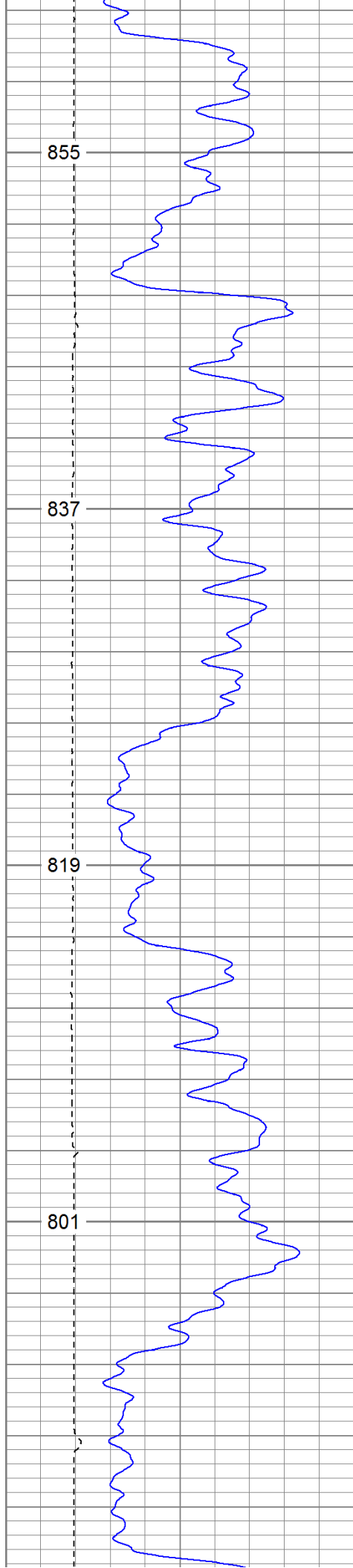
Density Porosity Presented On Sandstone Matrix.  
 ABHV Calculated For 5.5" Casing.  
 Neutron porosity invalid from 1640' to 1587' due to foam.  
 Directions:  
 Wet Canyon, San Pablo, @ Y at Dude canyon stay right, fourth left to location.

Database File: haught.db  
Dataset Pathname: pass2.2  
Presentation Format: cdl  
Dataset Creation: Tue Jul 05 07:59:04 2011 by Calc Open-Cased 110302  
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

2	RHOB (g/cc)		3
1	RHOB (g/cc)		2
30	DPOR (pu)		-10
-0.5		RHOC (g/cc)	0.5
7000		LTEN (lb)	0
ABHV (ft3)			



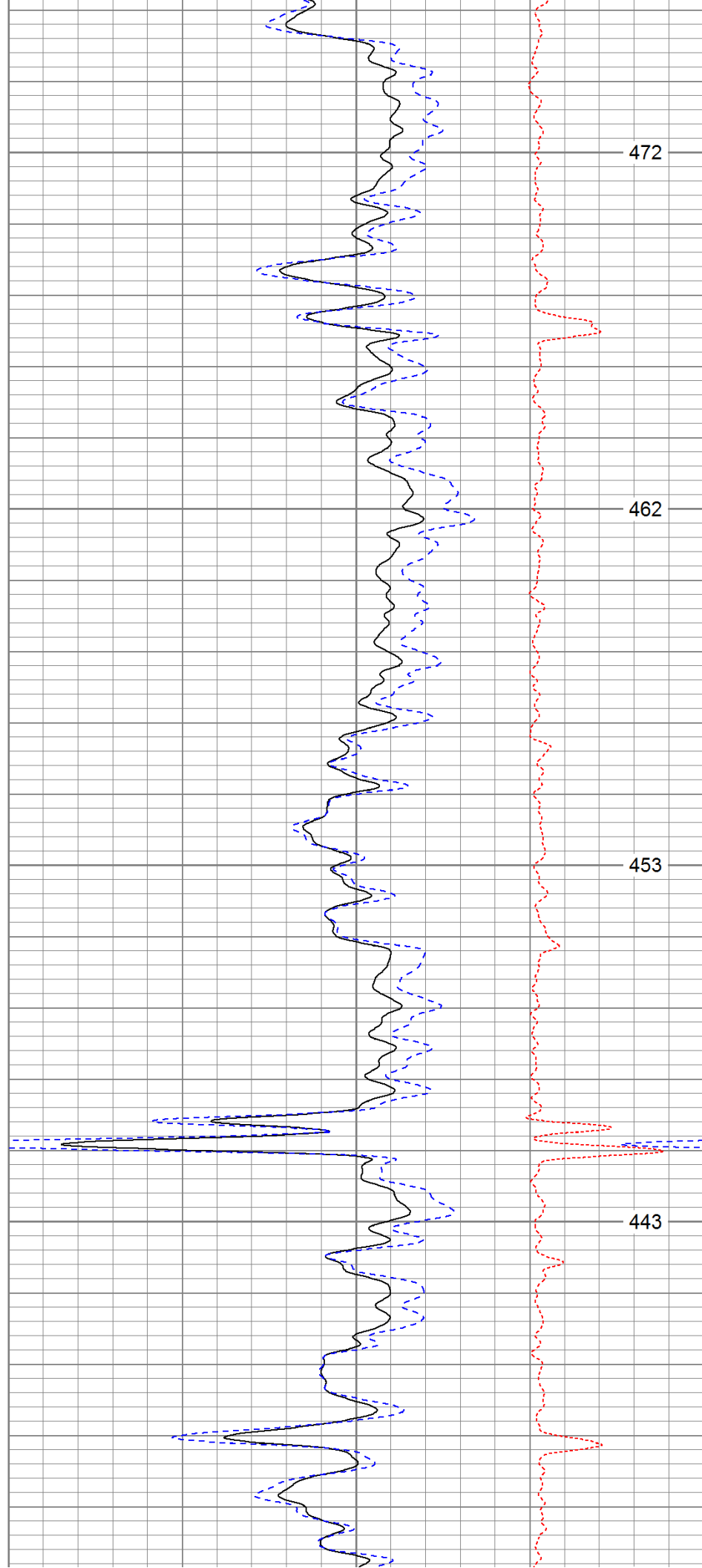


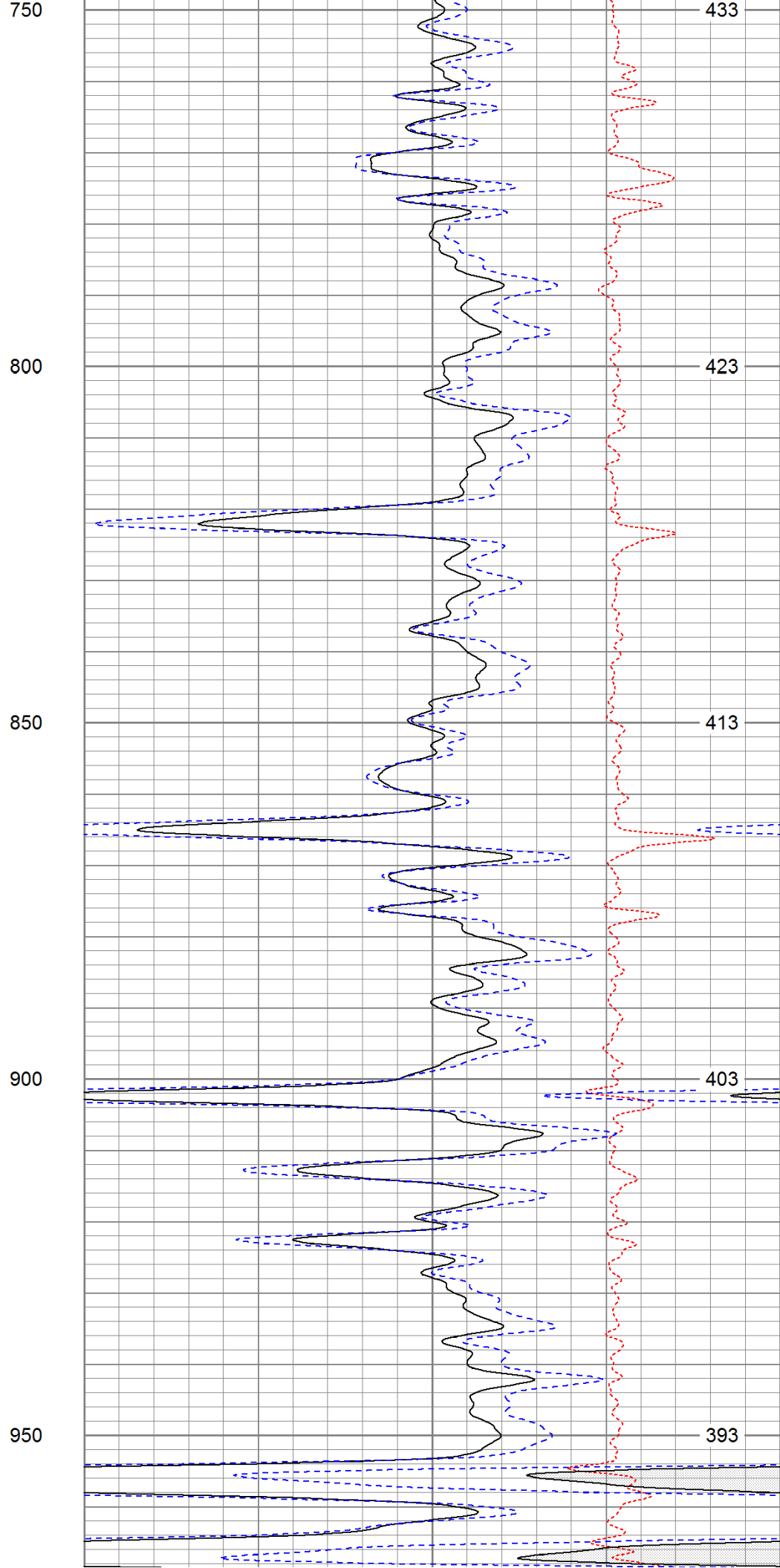
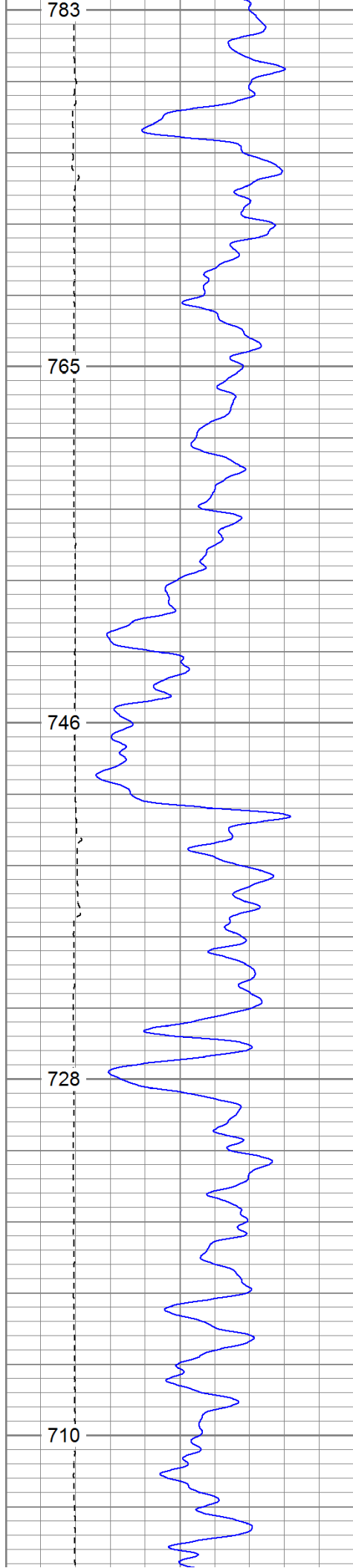
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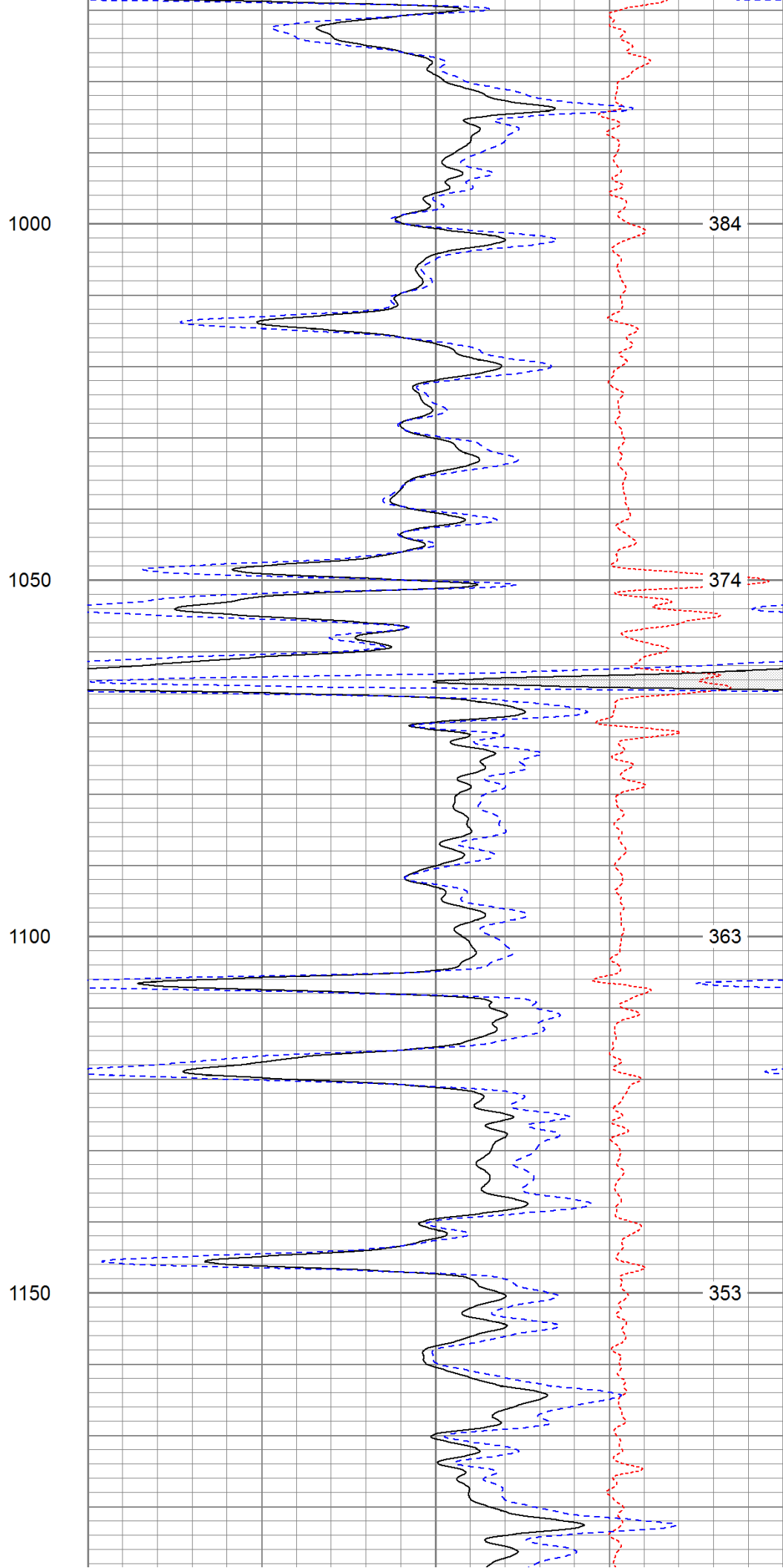
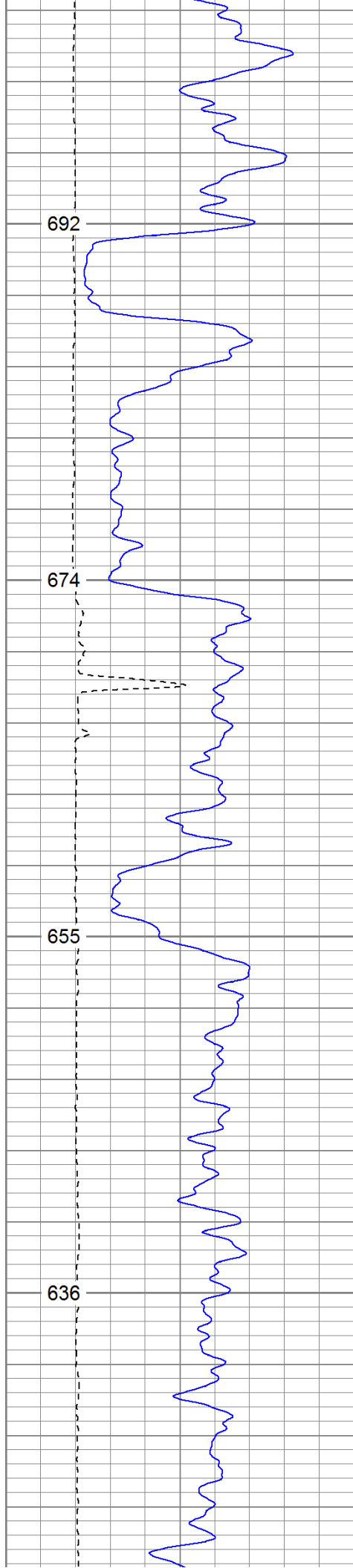
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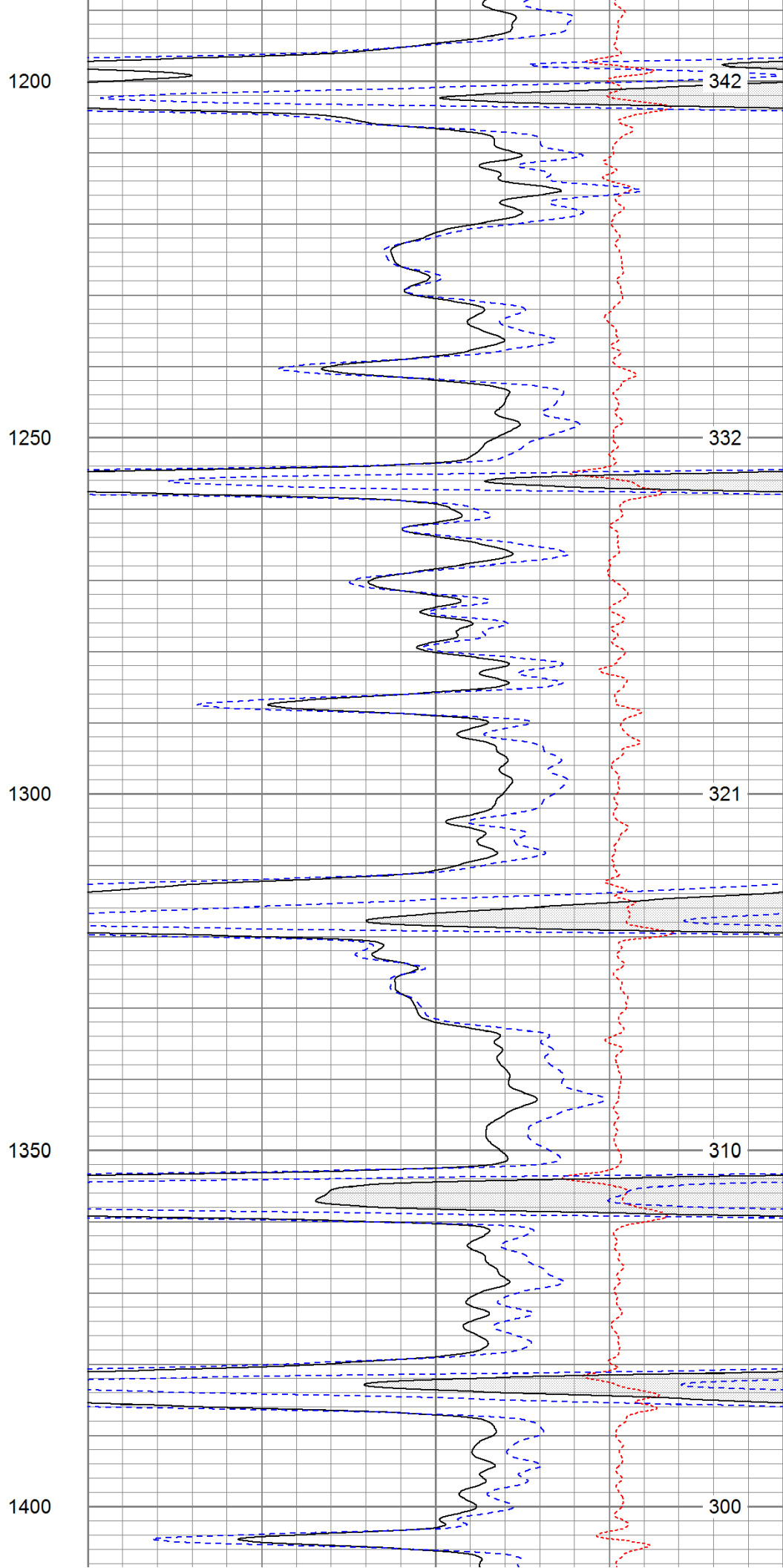
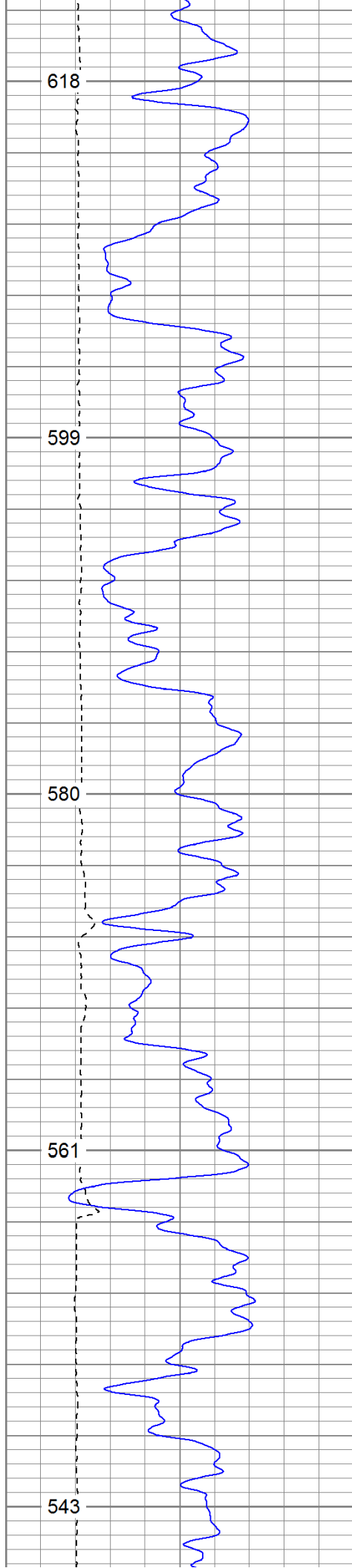
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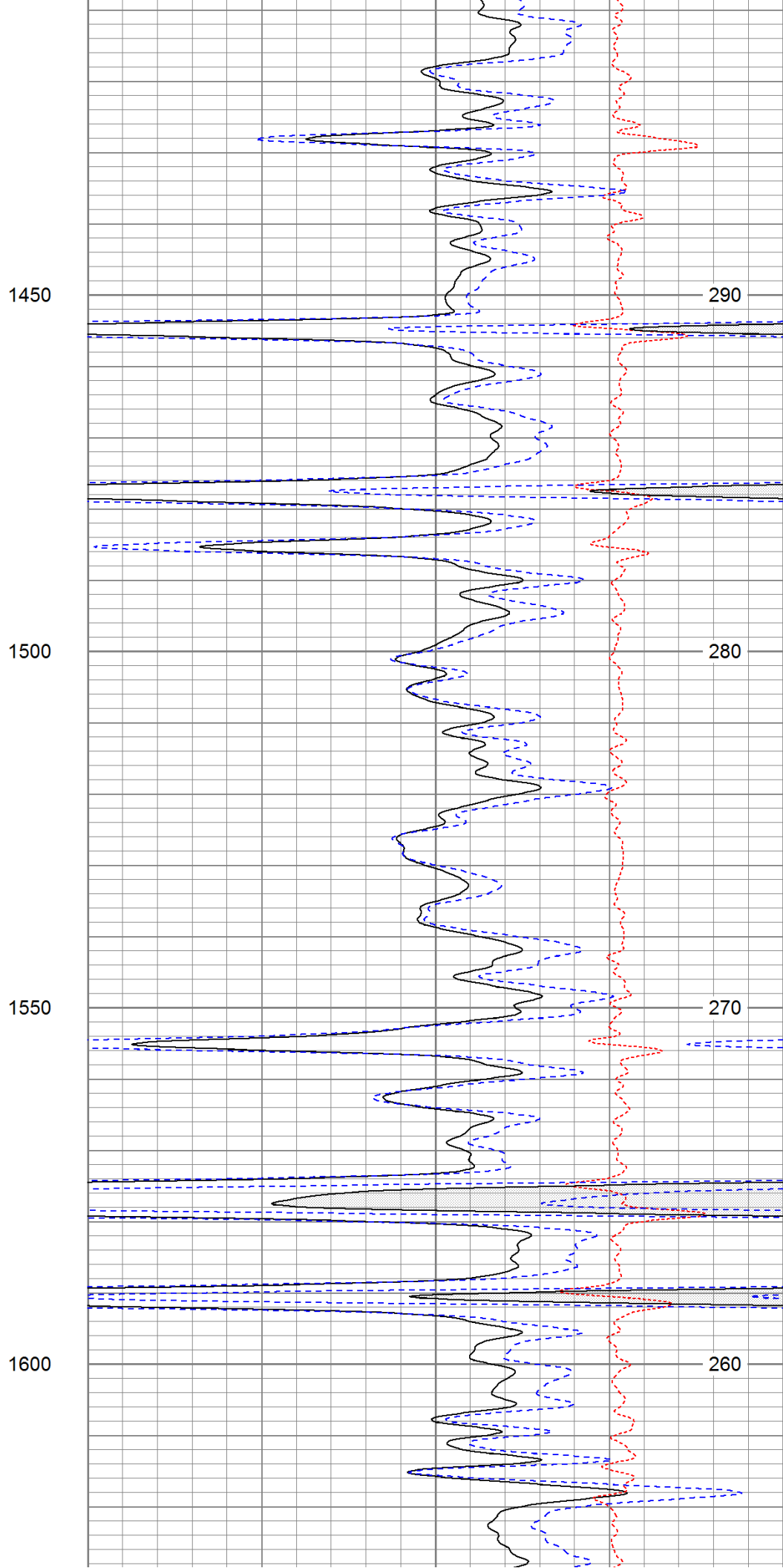
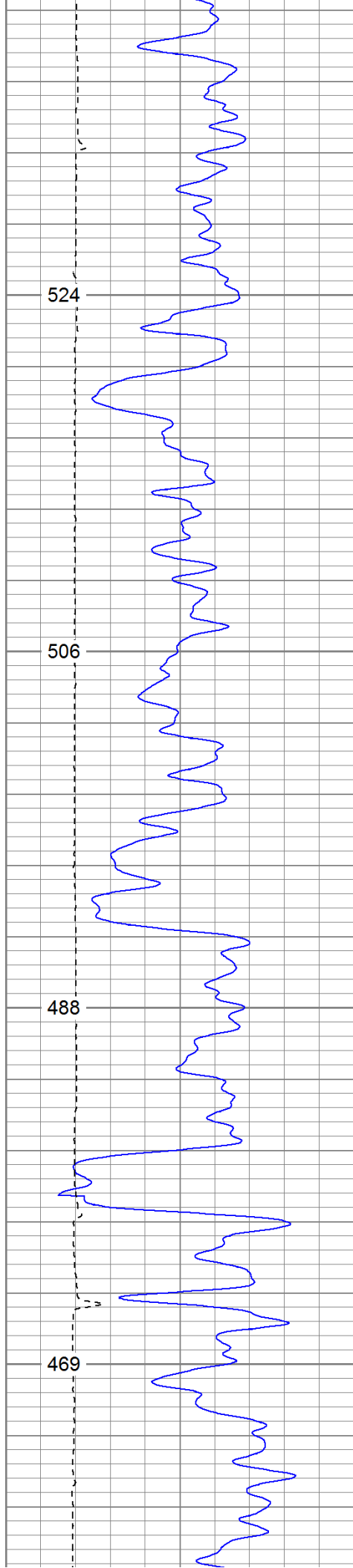
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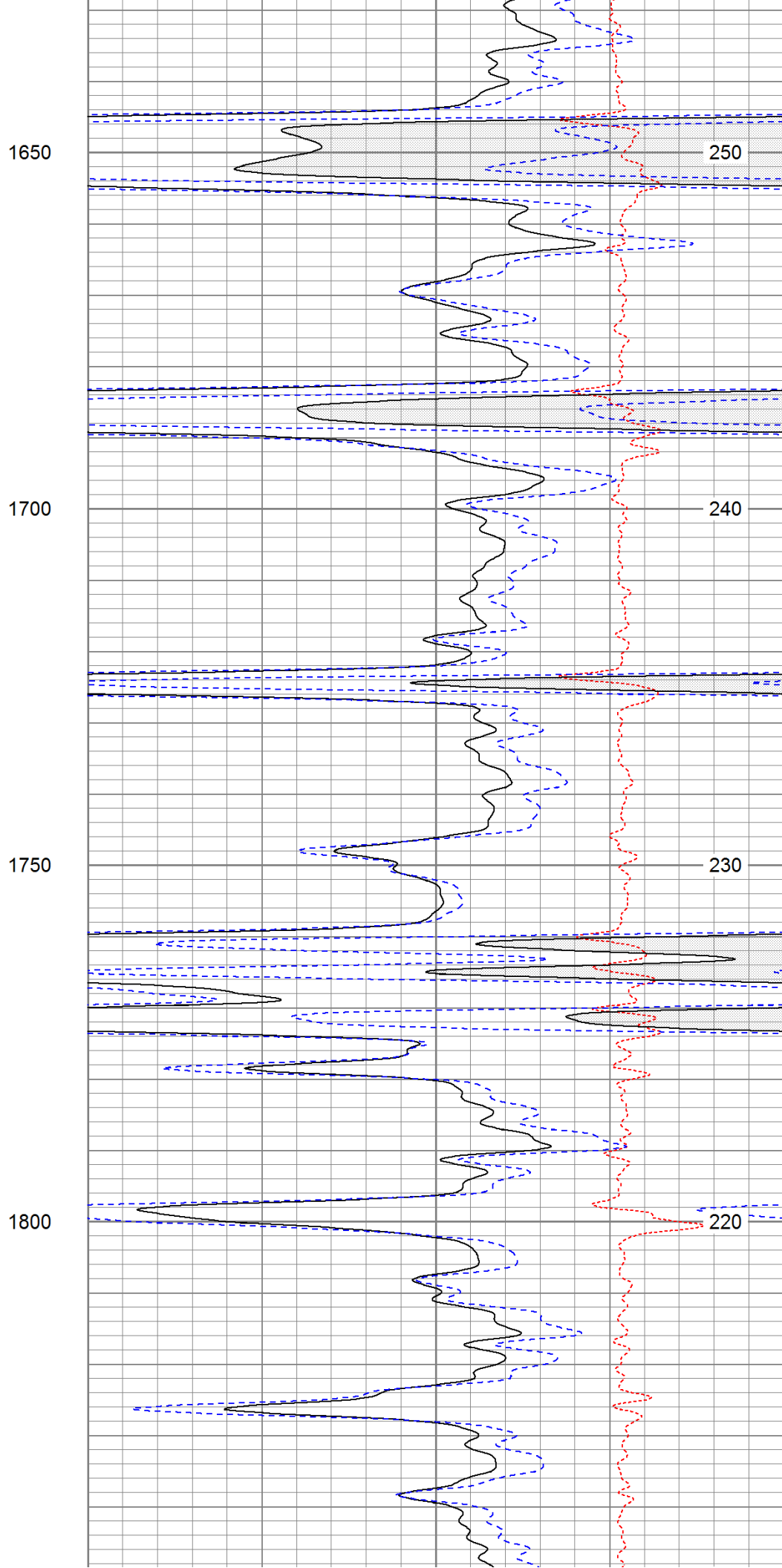
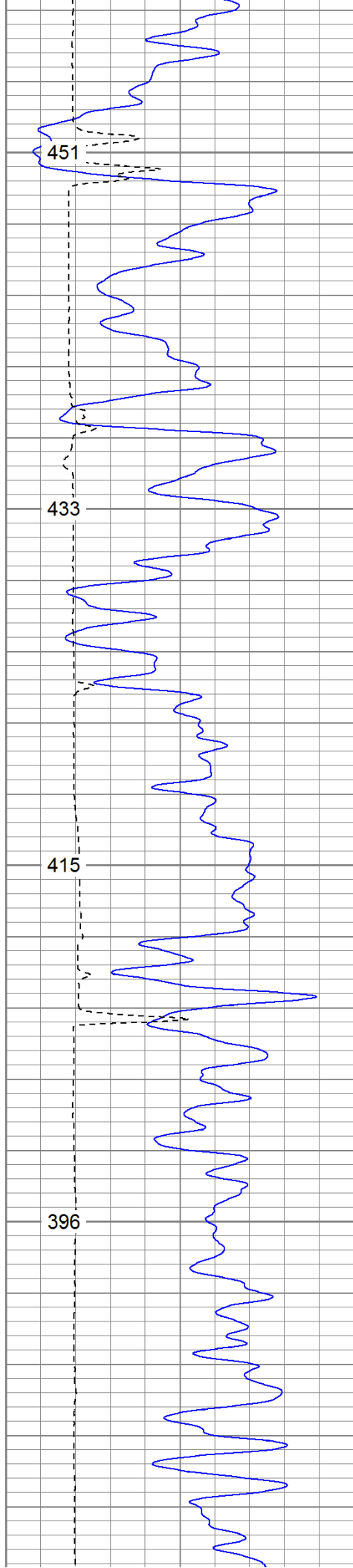




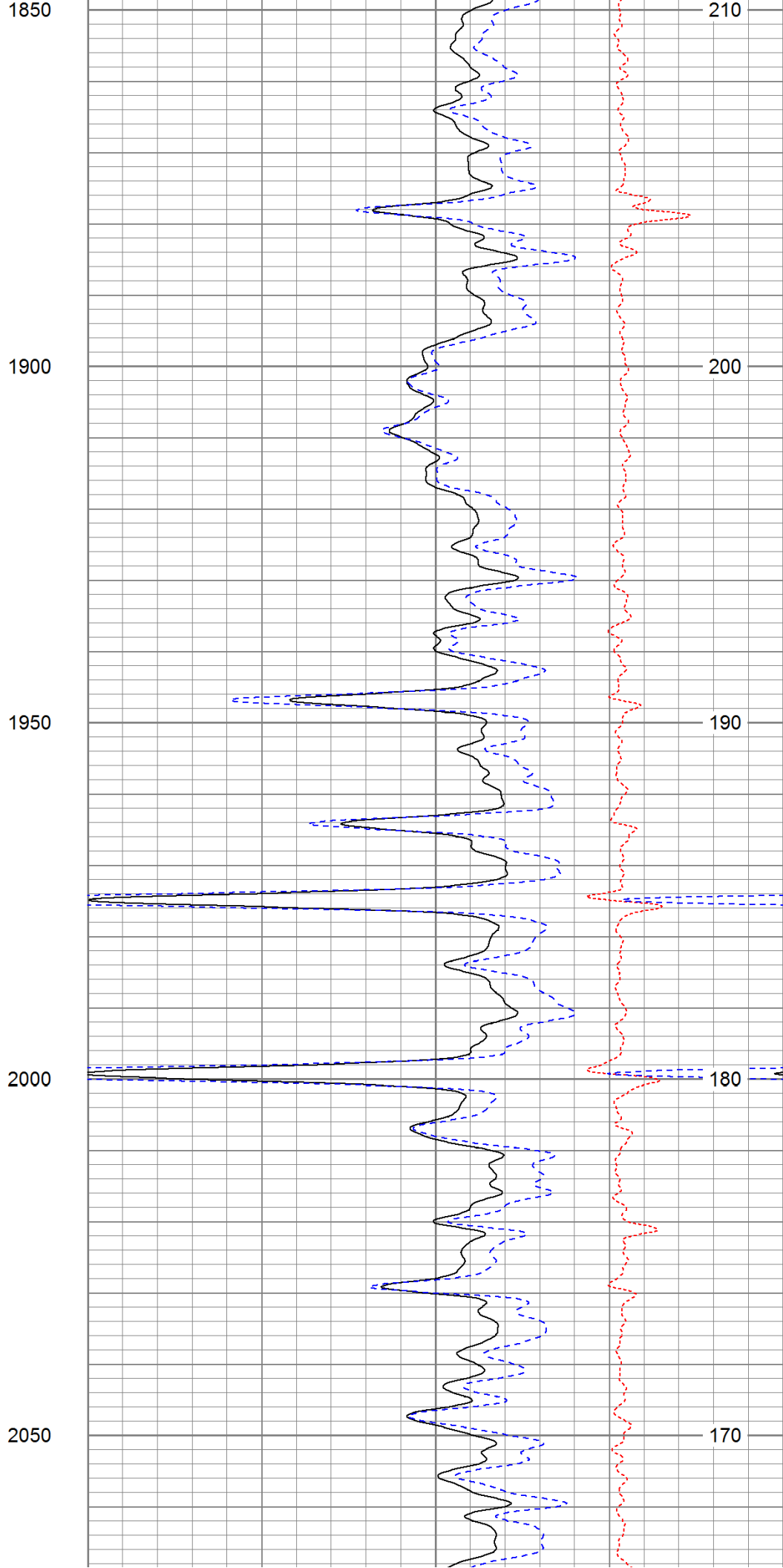
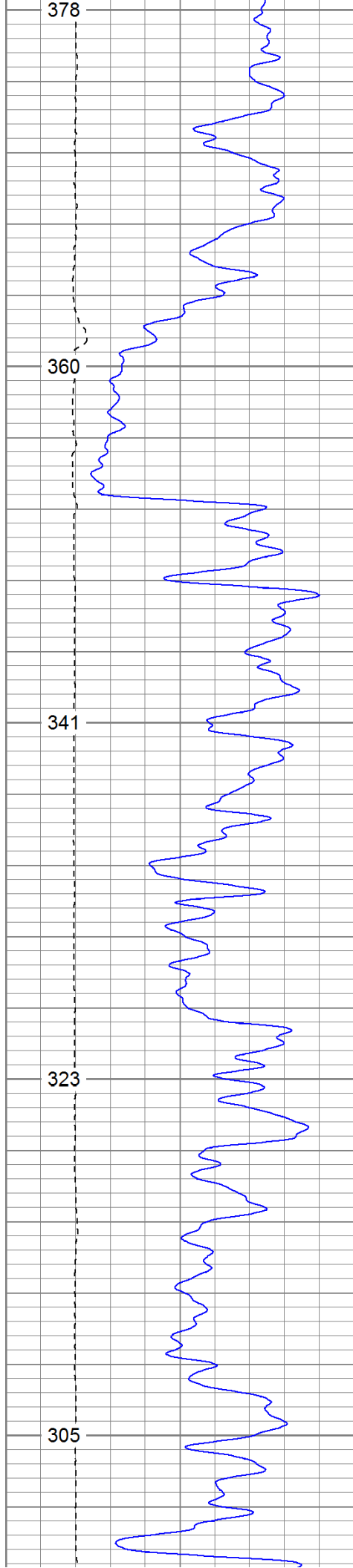


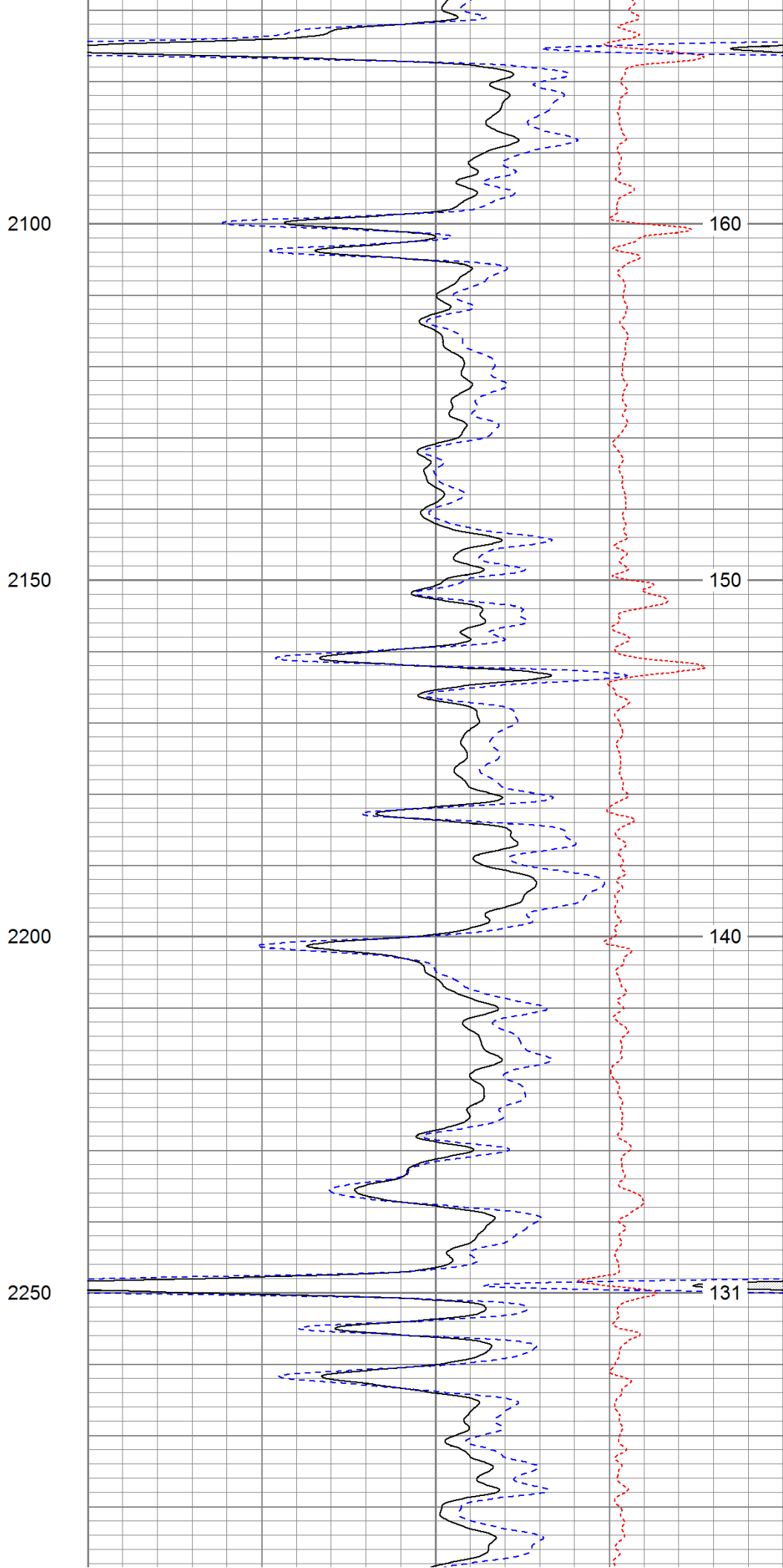
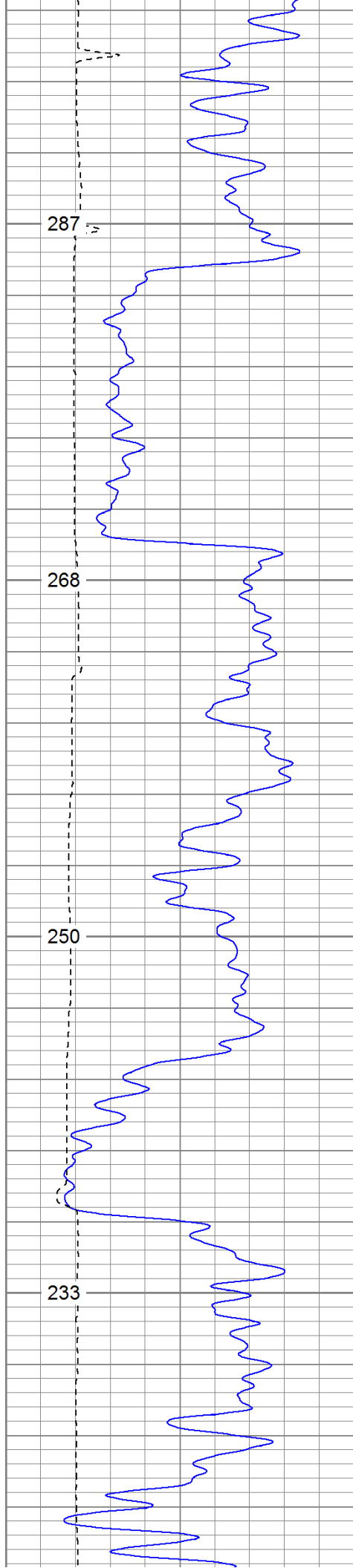


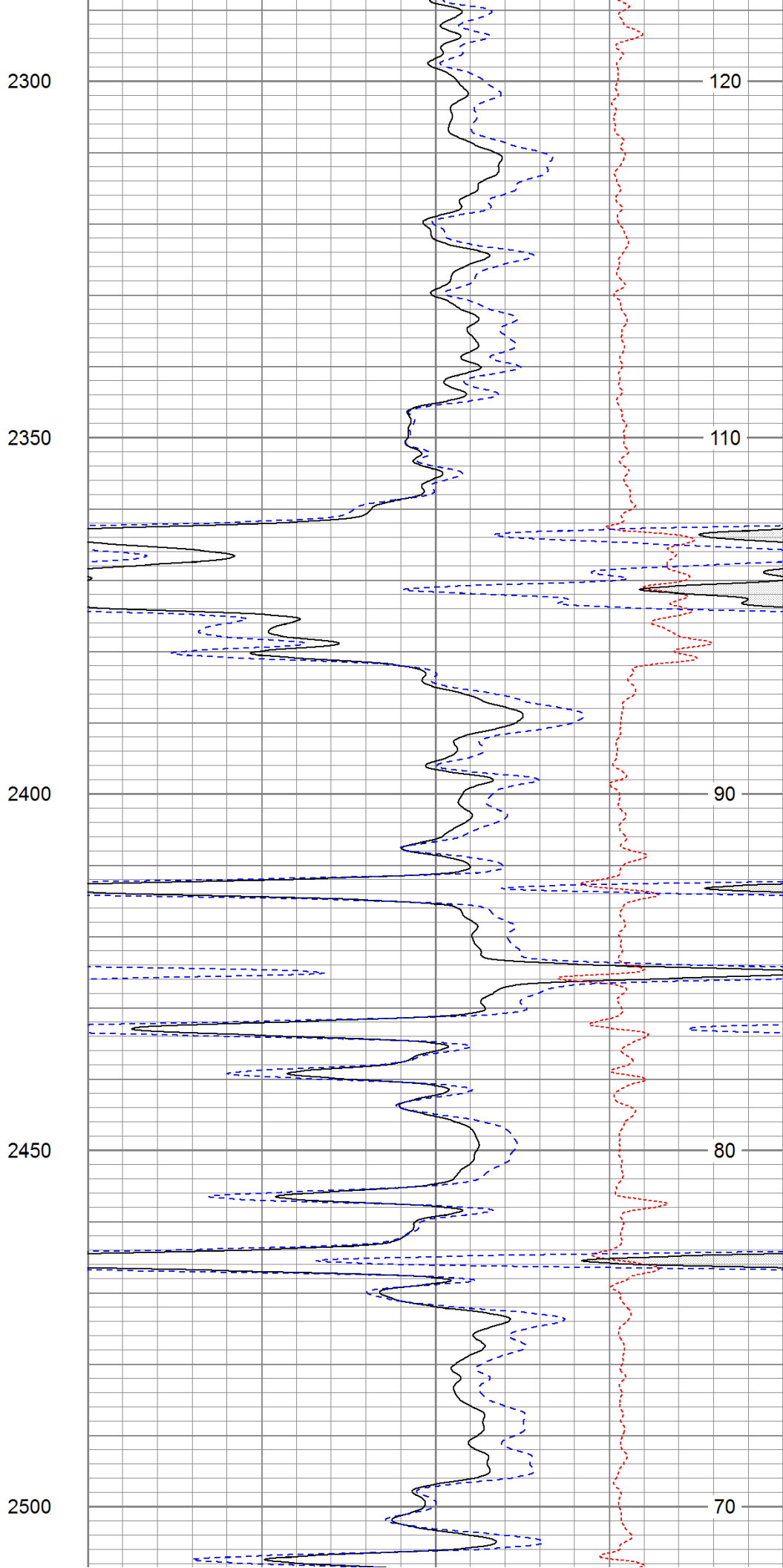
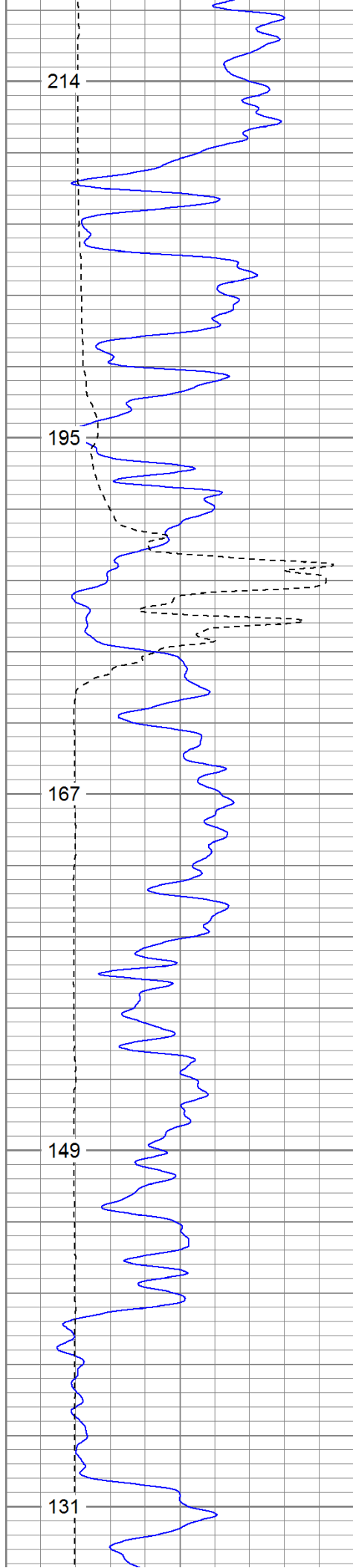


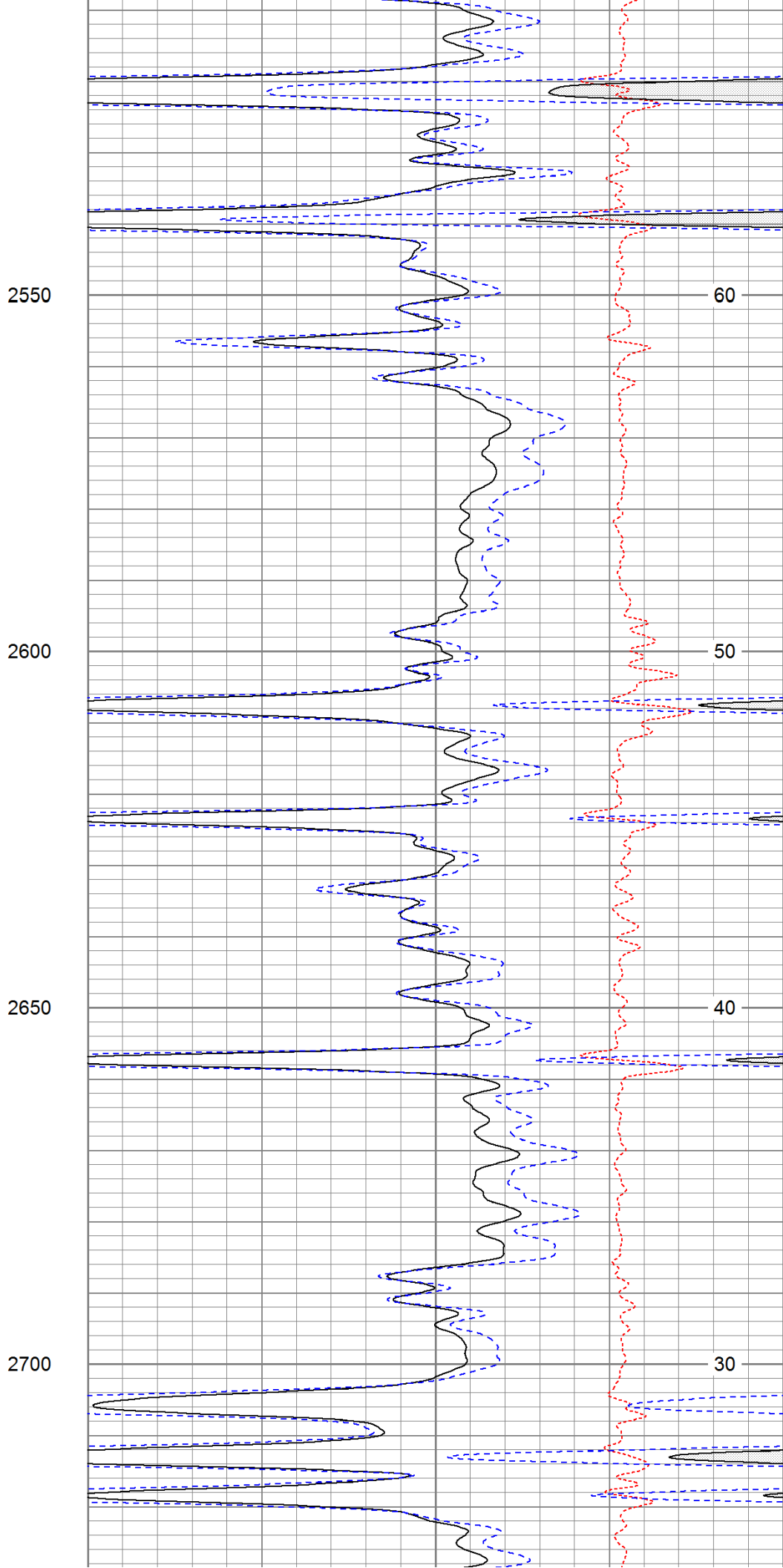
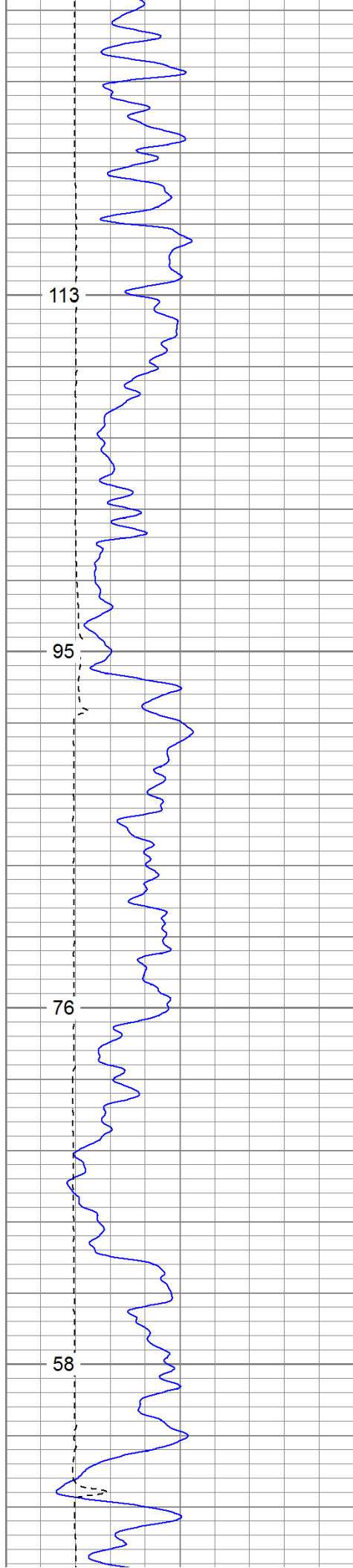


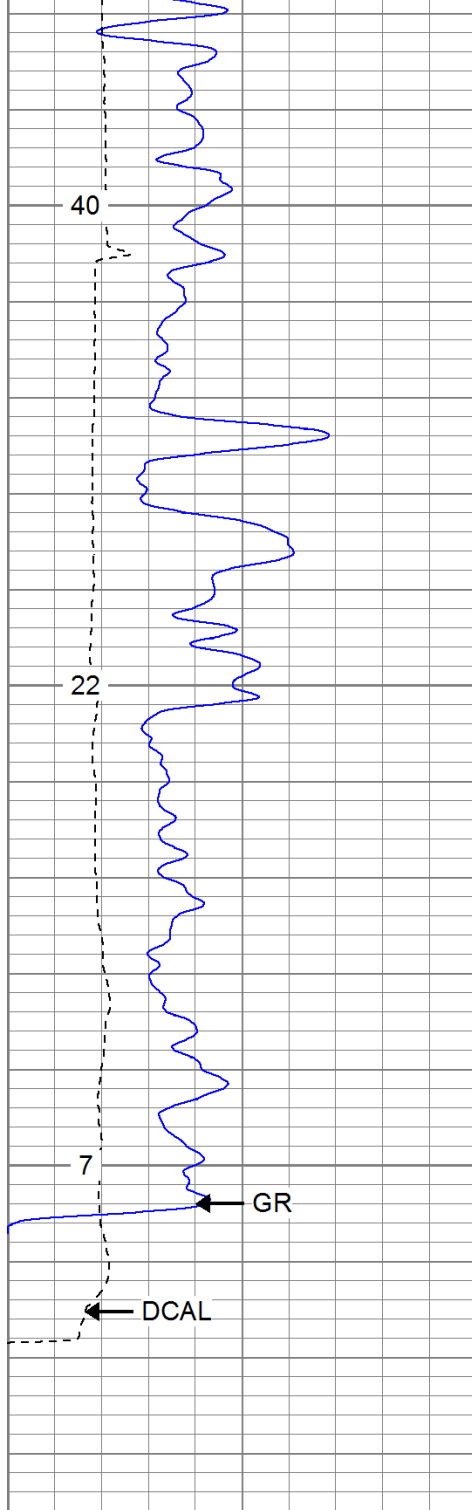




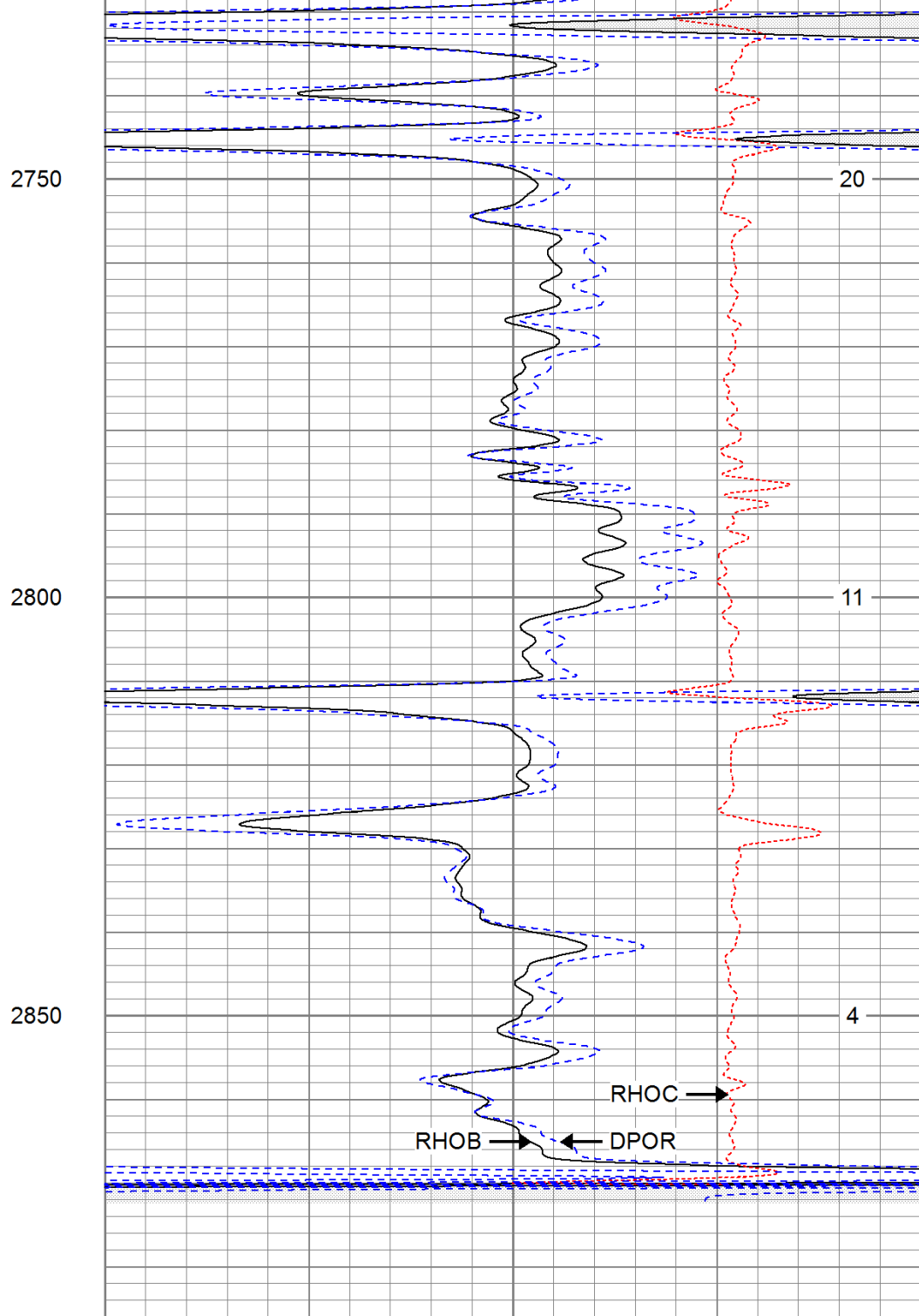








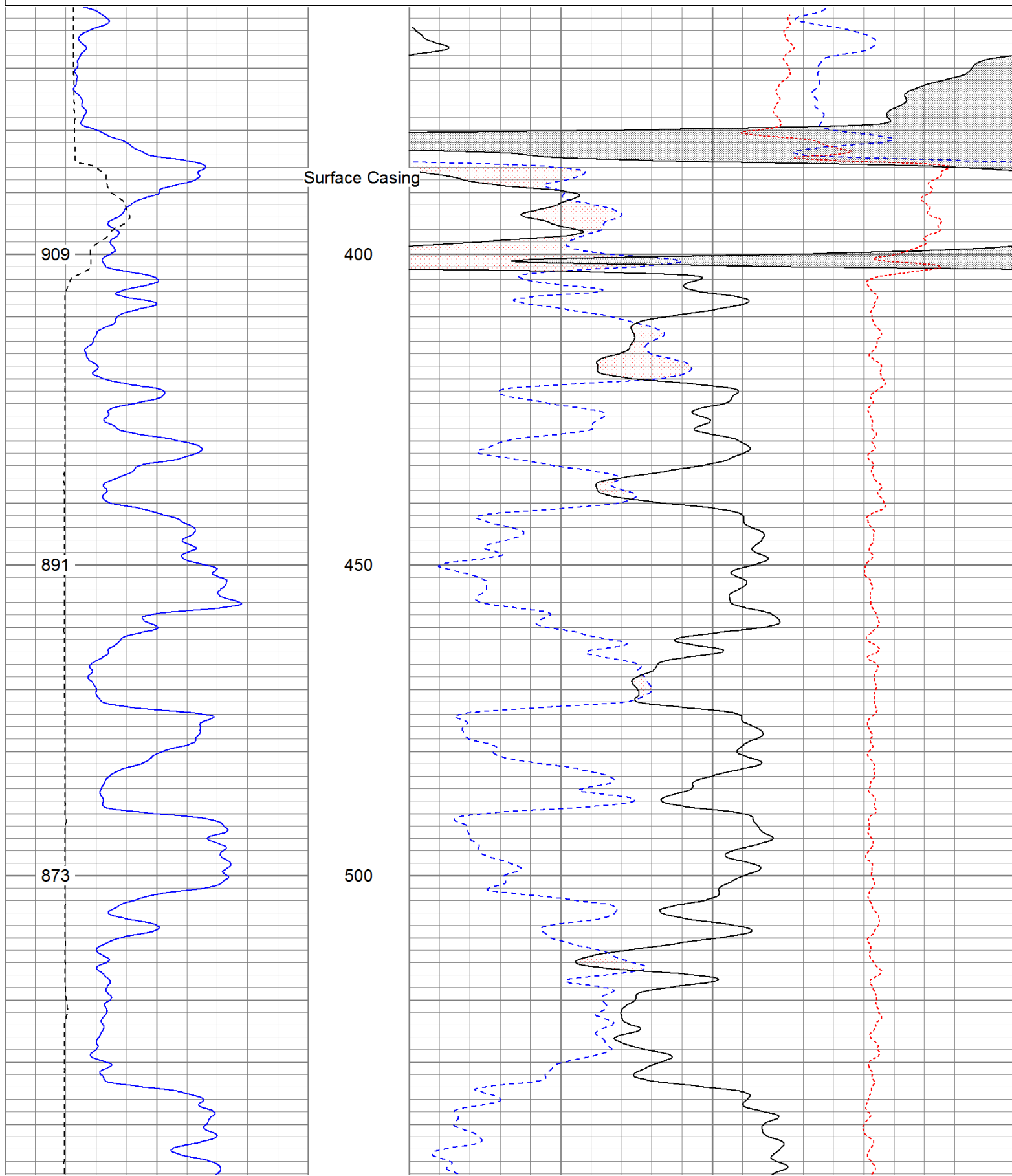
0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

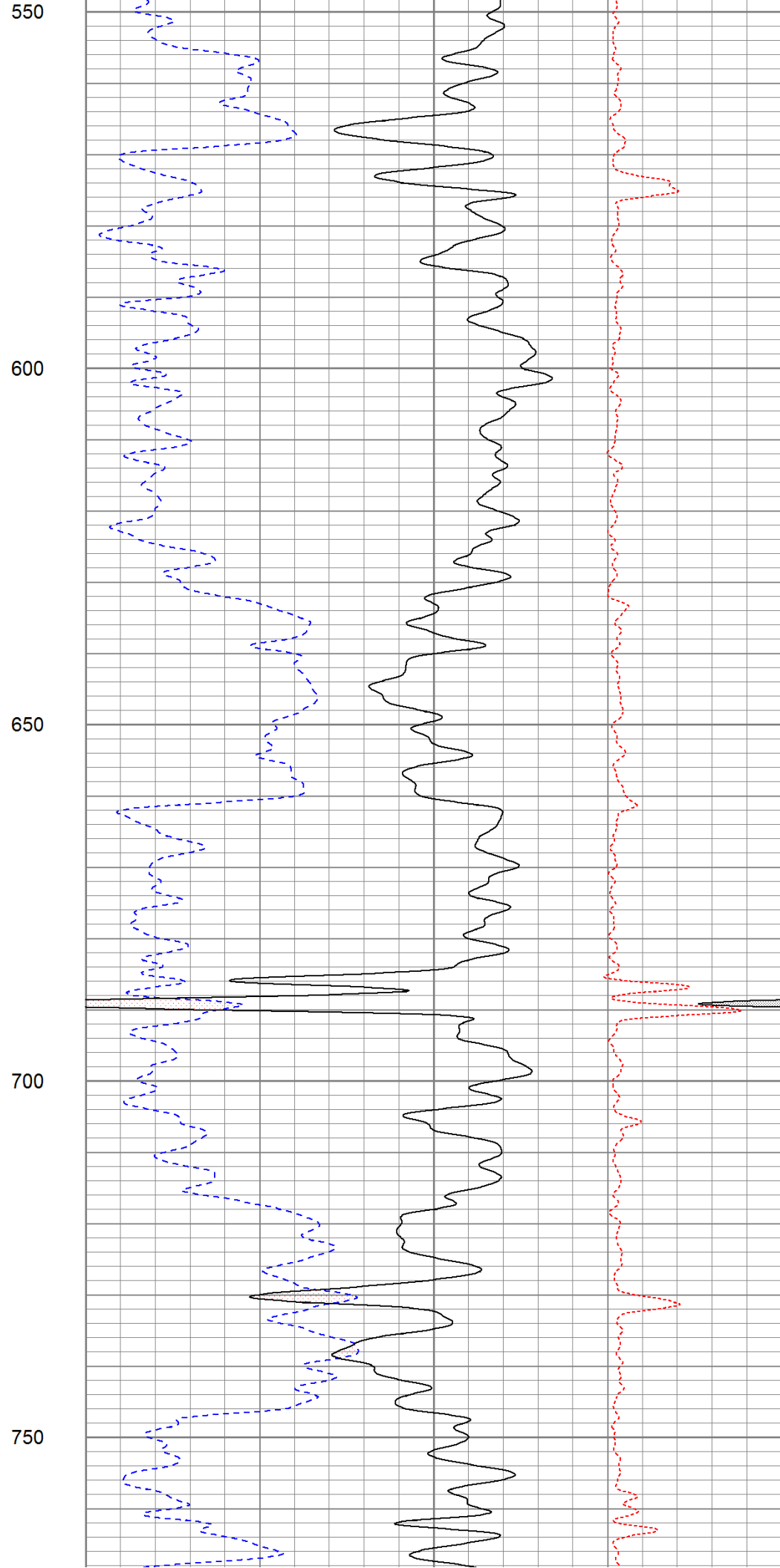
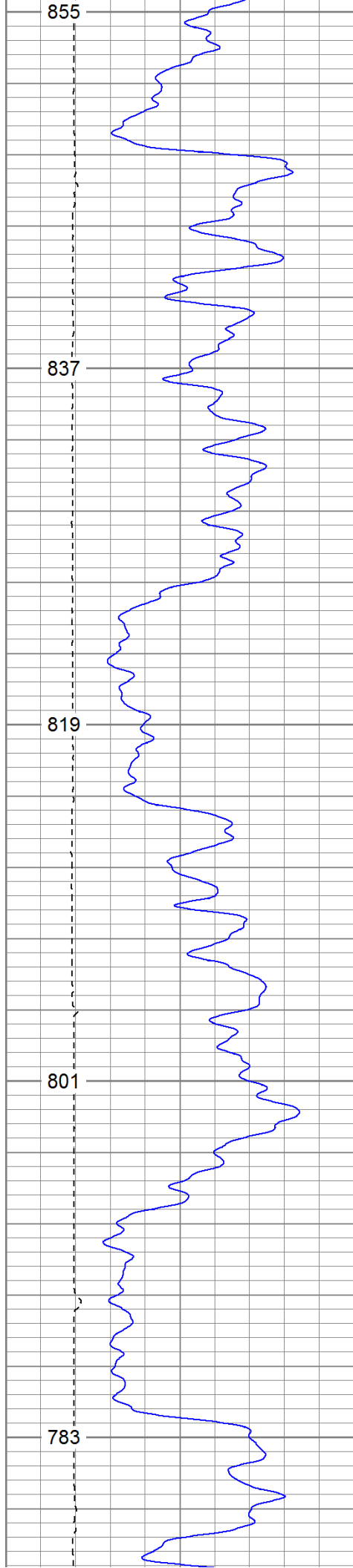


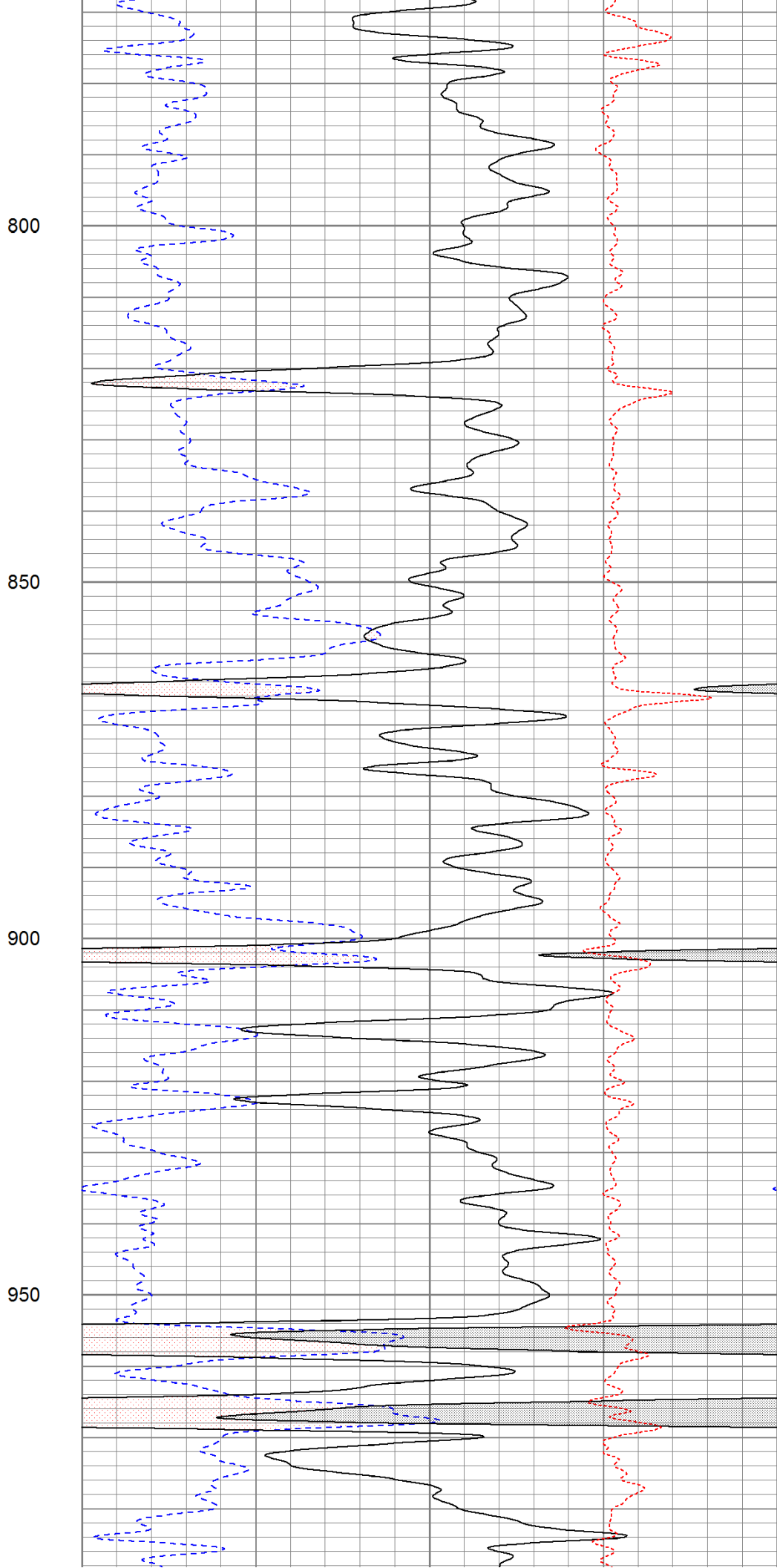
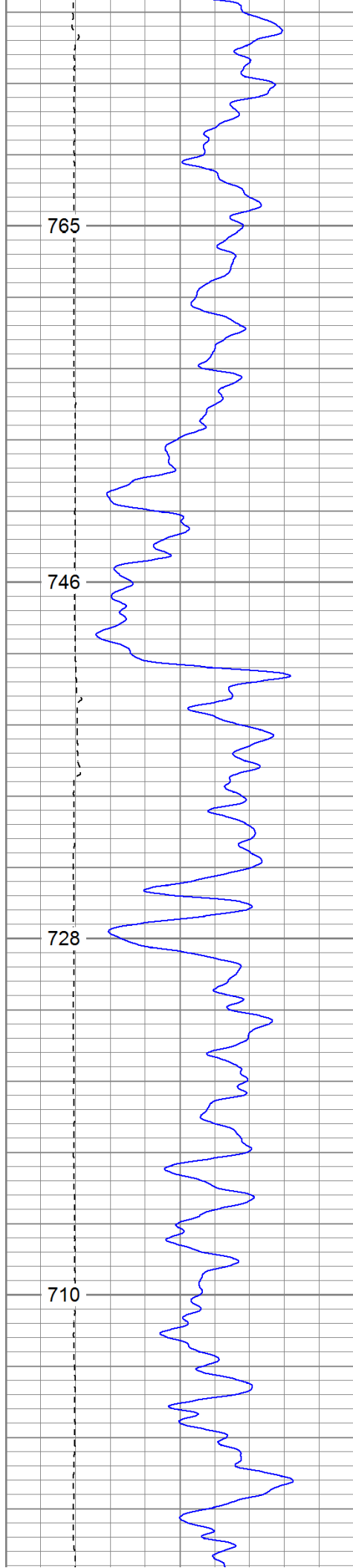
2	RHOB (g/cc)	3
1	RHOB (g/cc)	2
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5
7000	LTEN (lb)	0
ABHV (ft3)		

0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

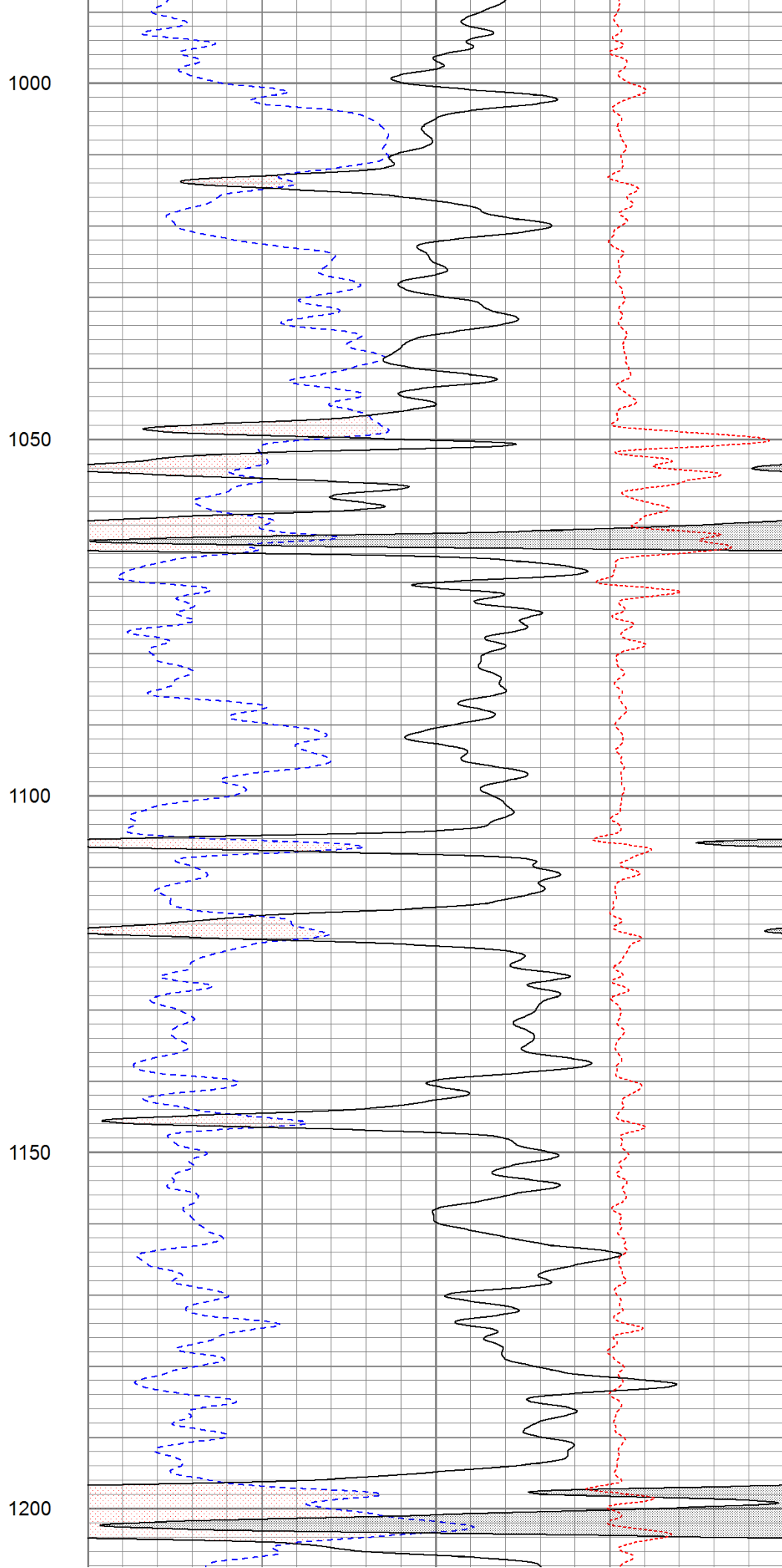
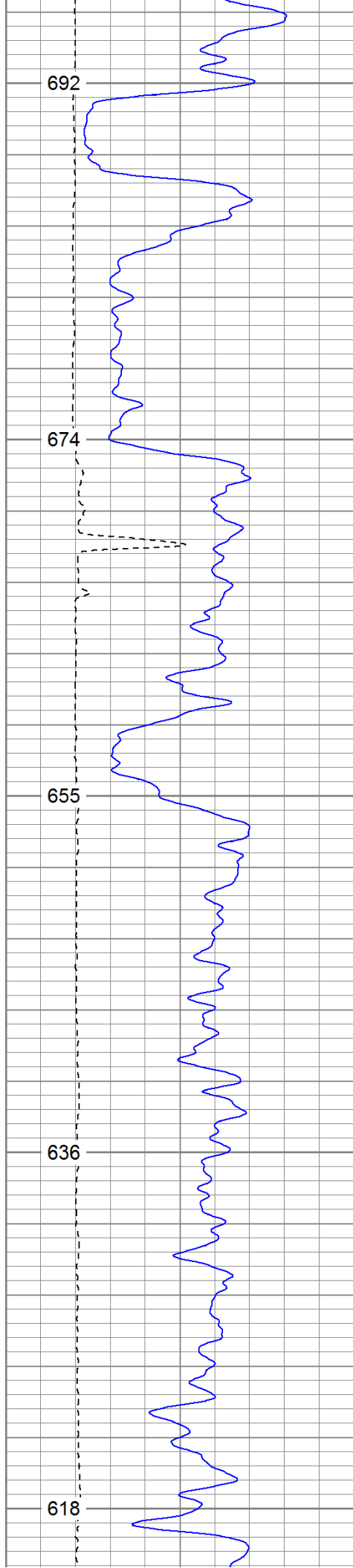
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30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5

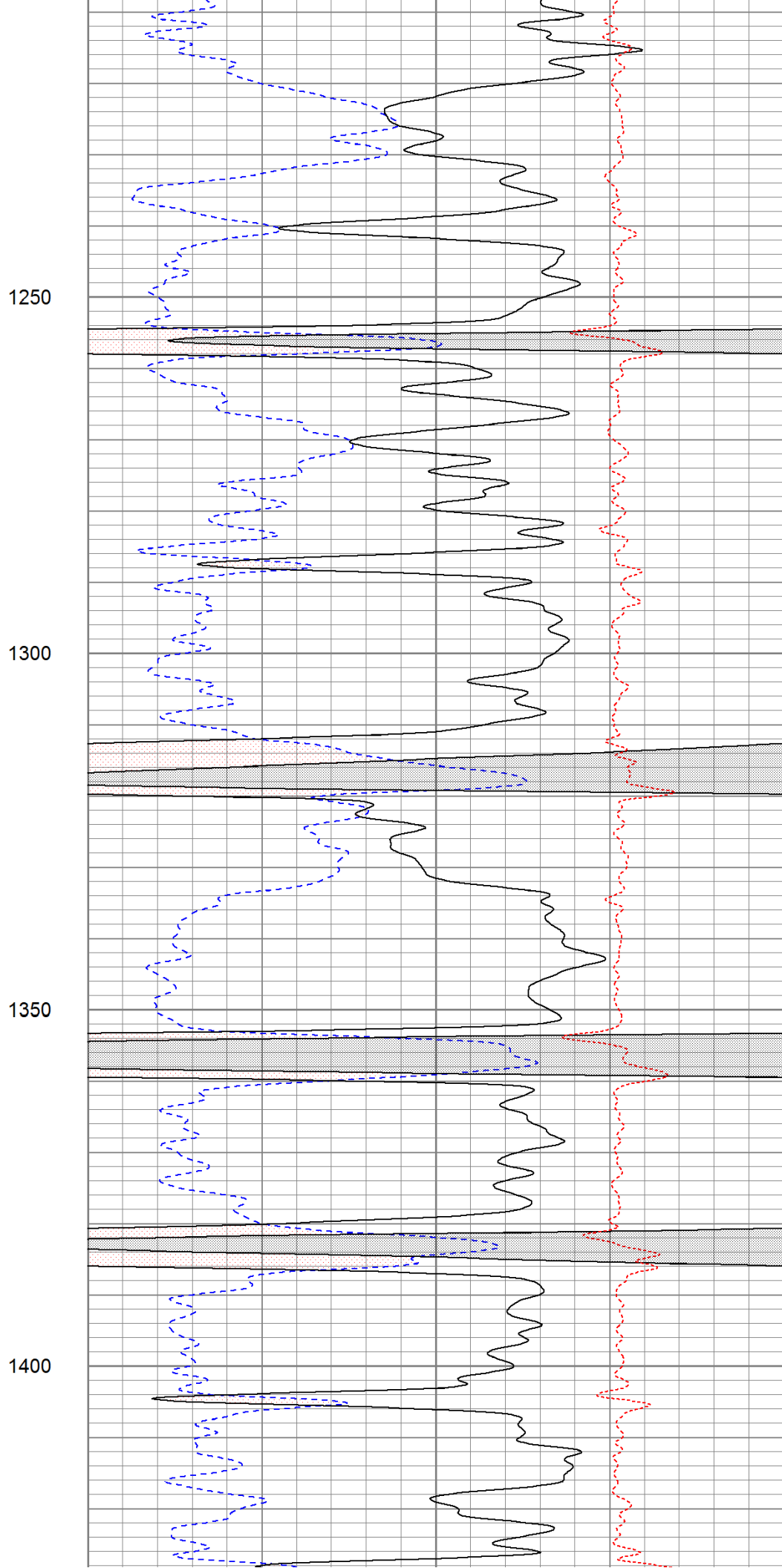
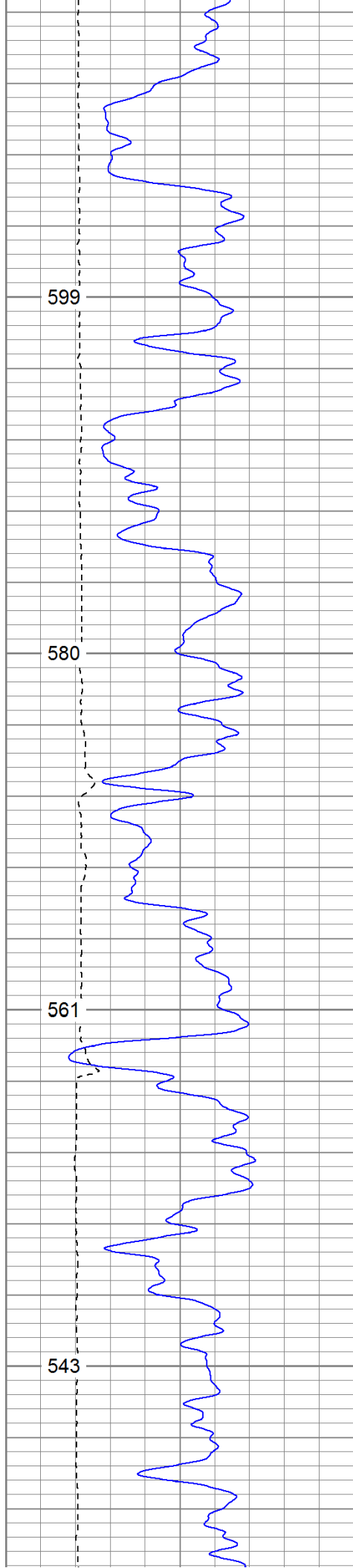


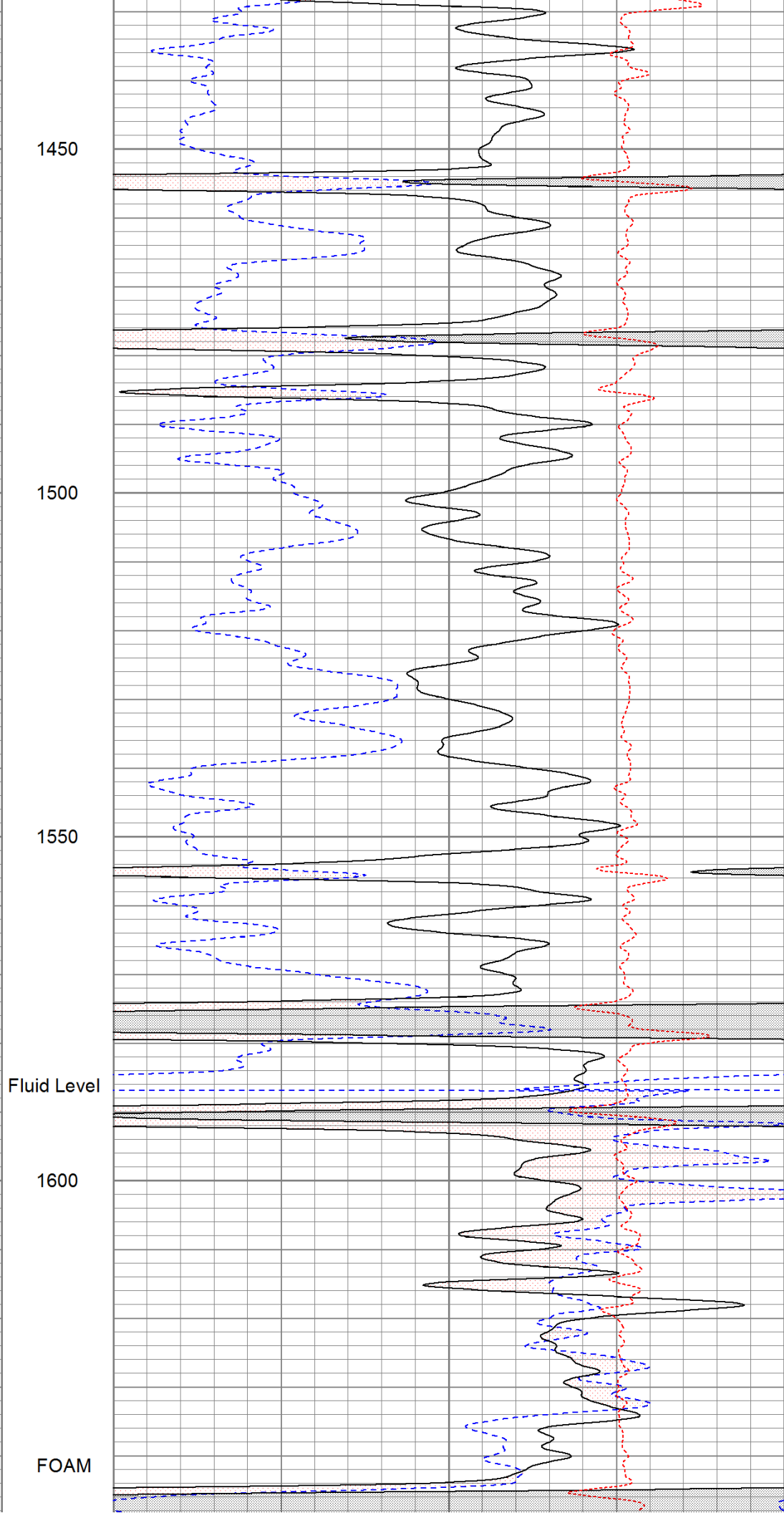
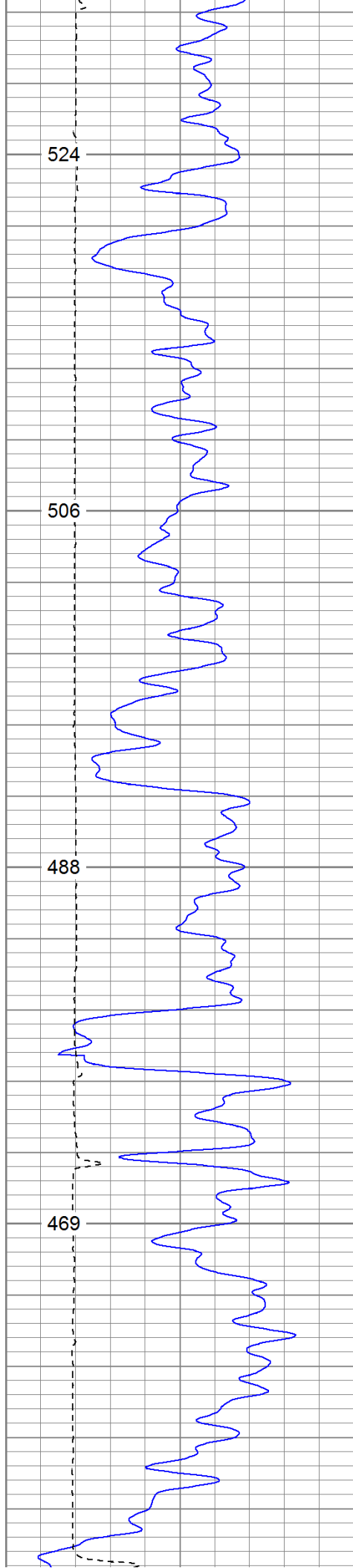


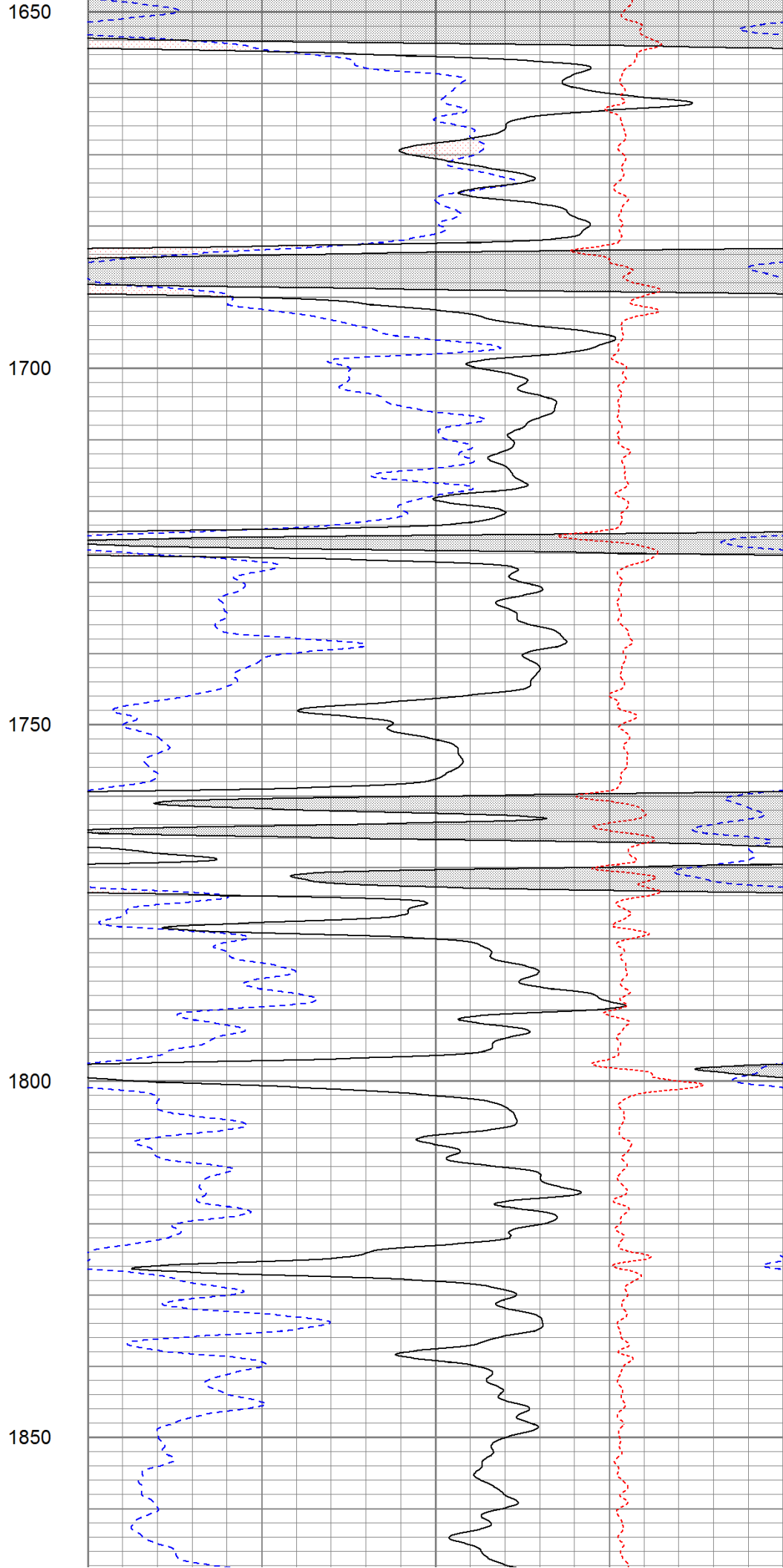
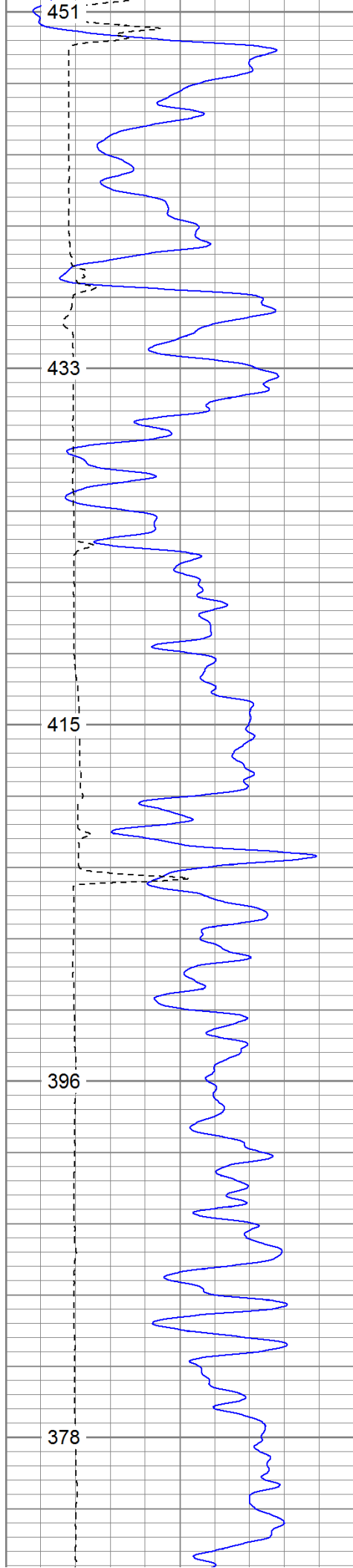


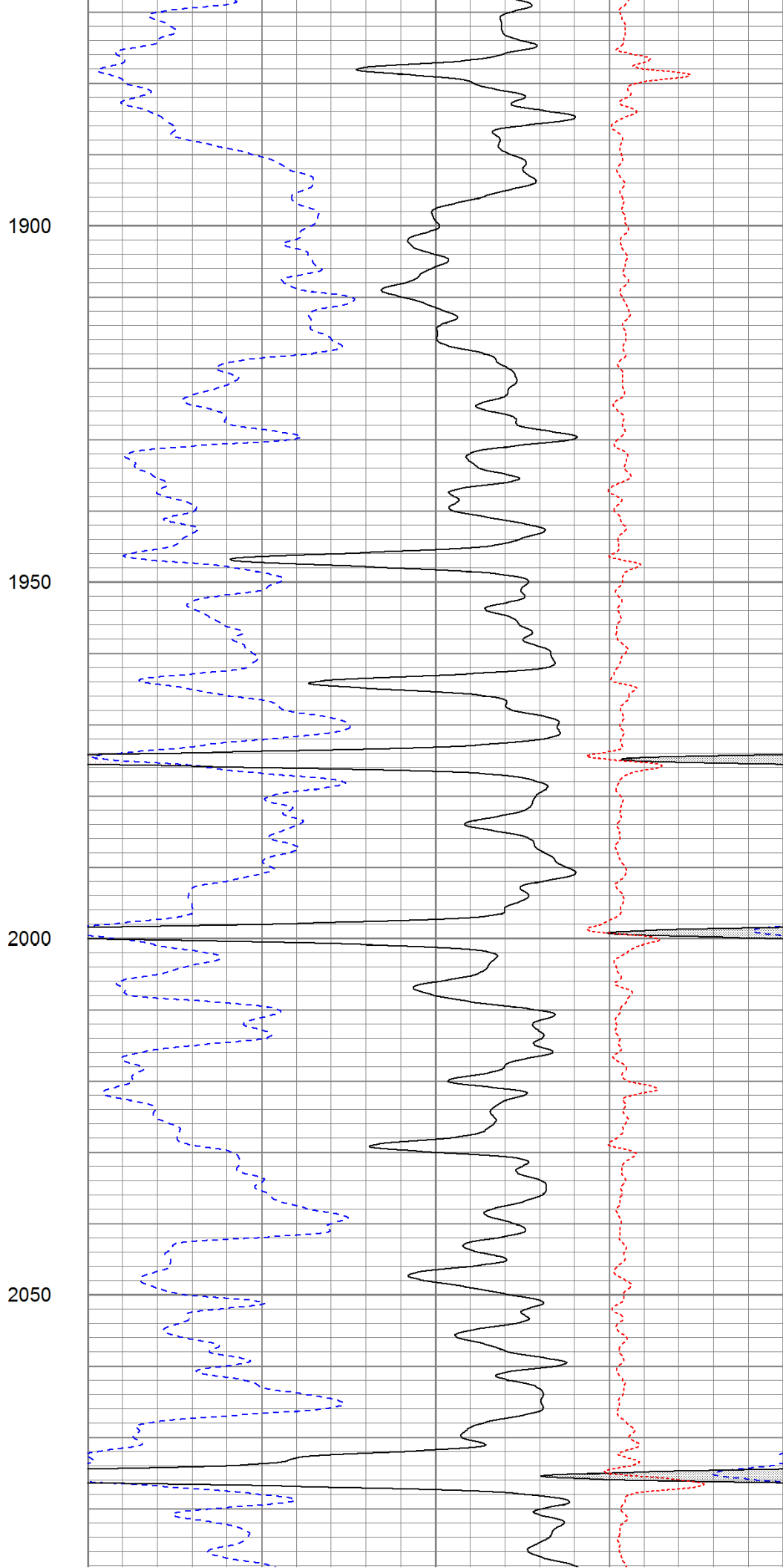
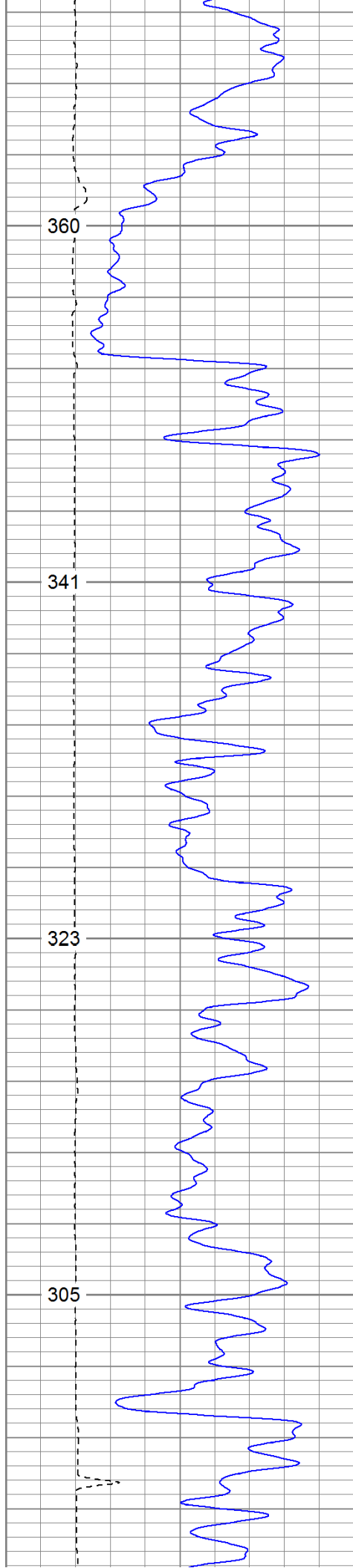


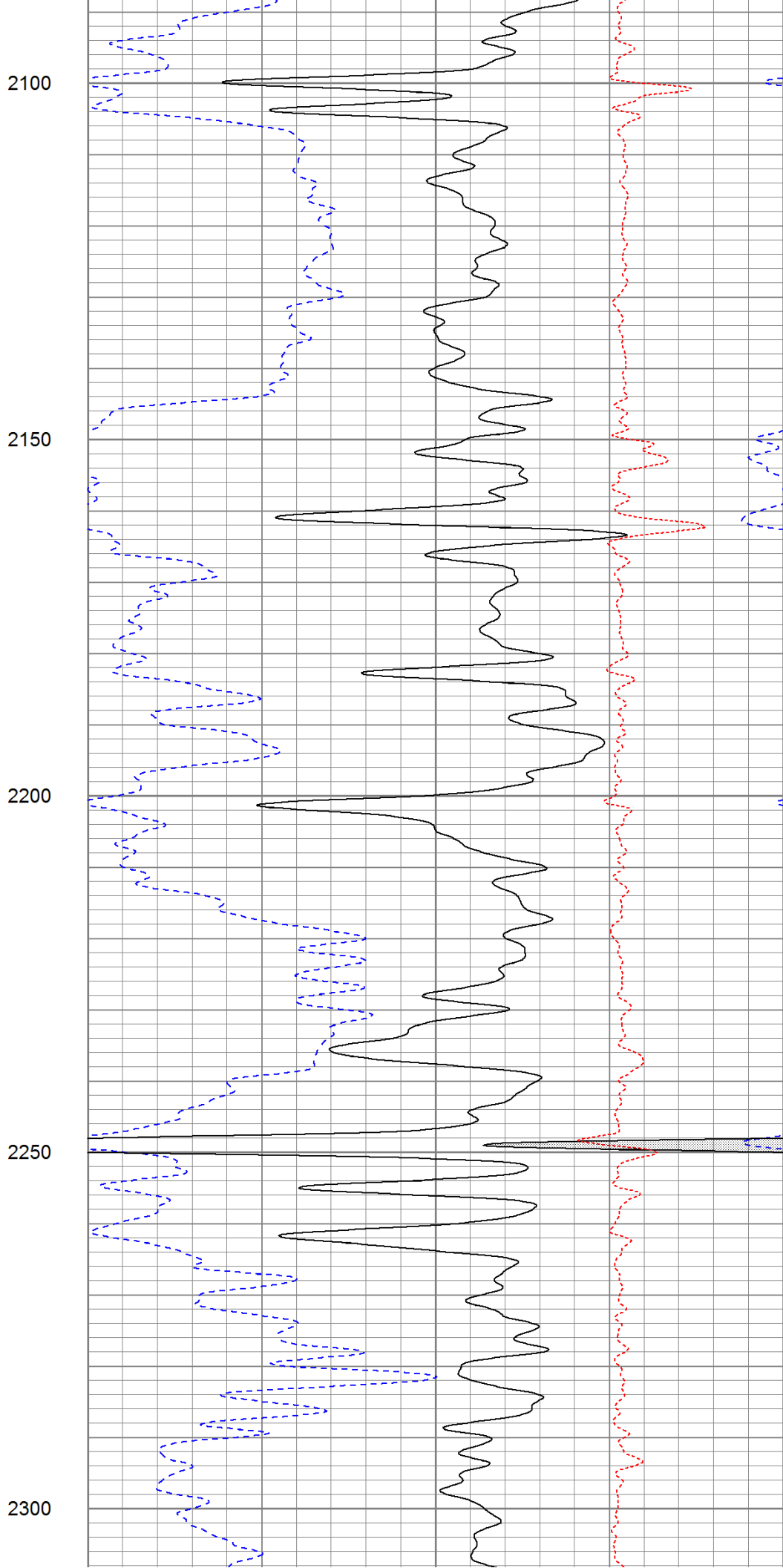
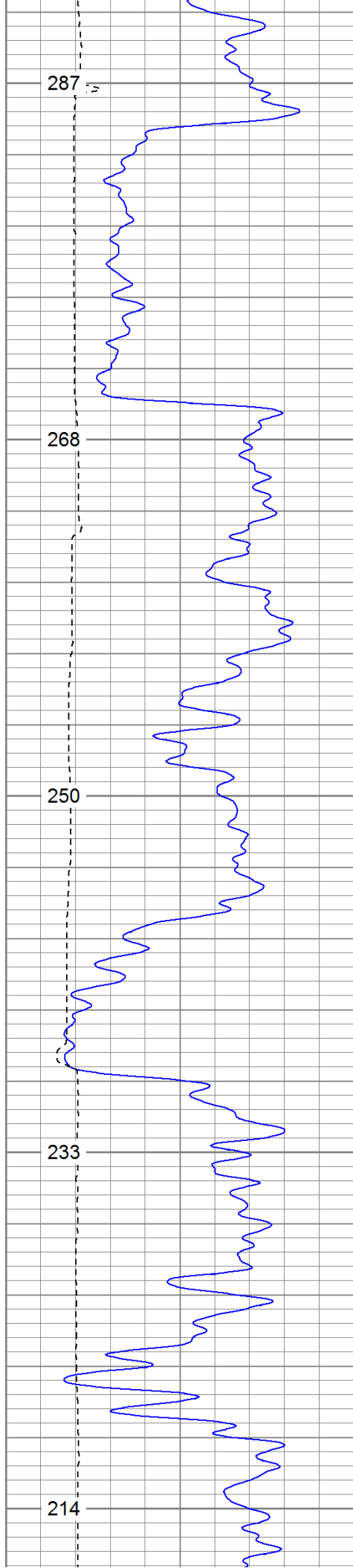


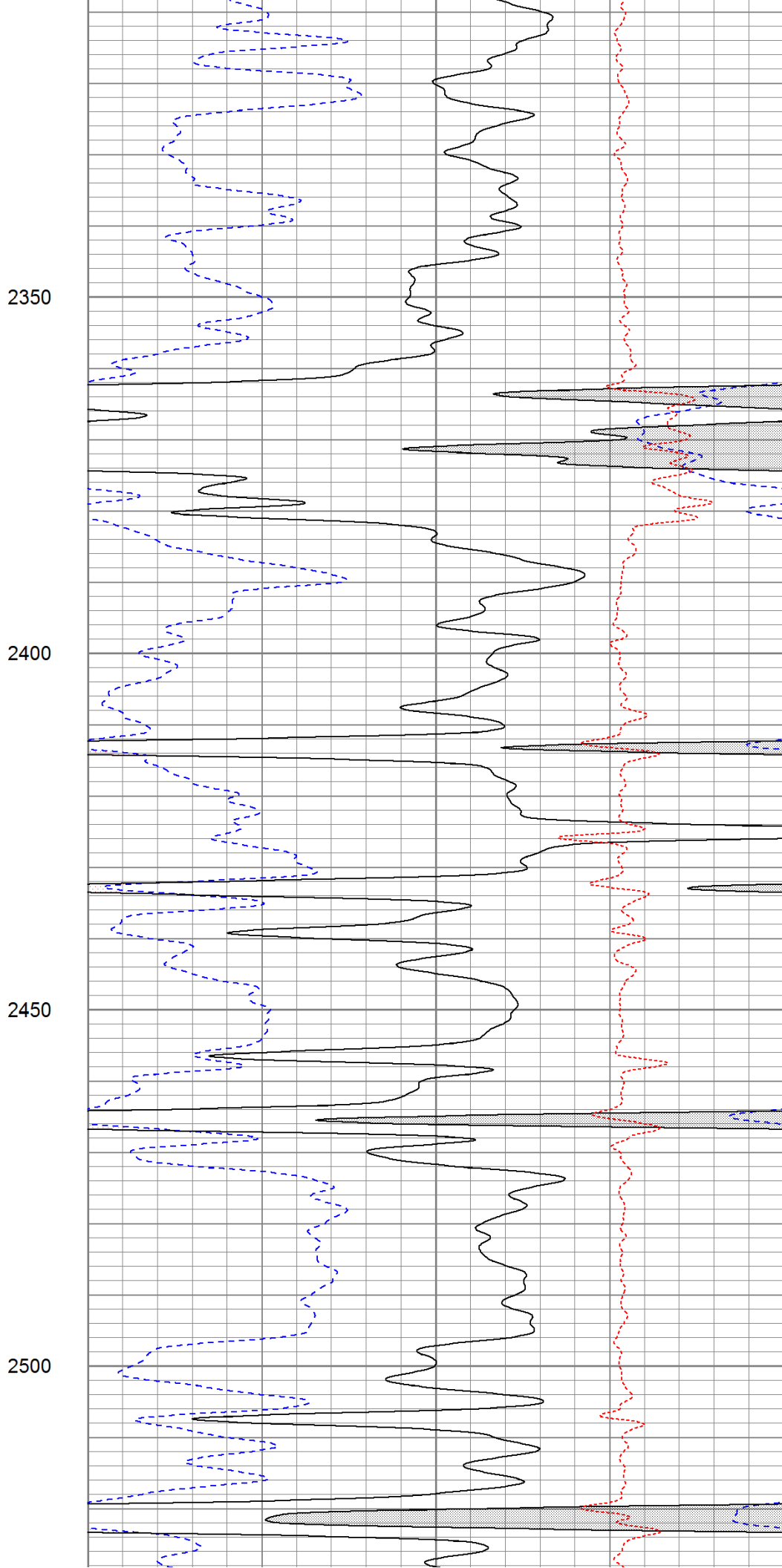
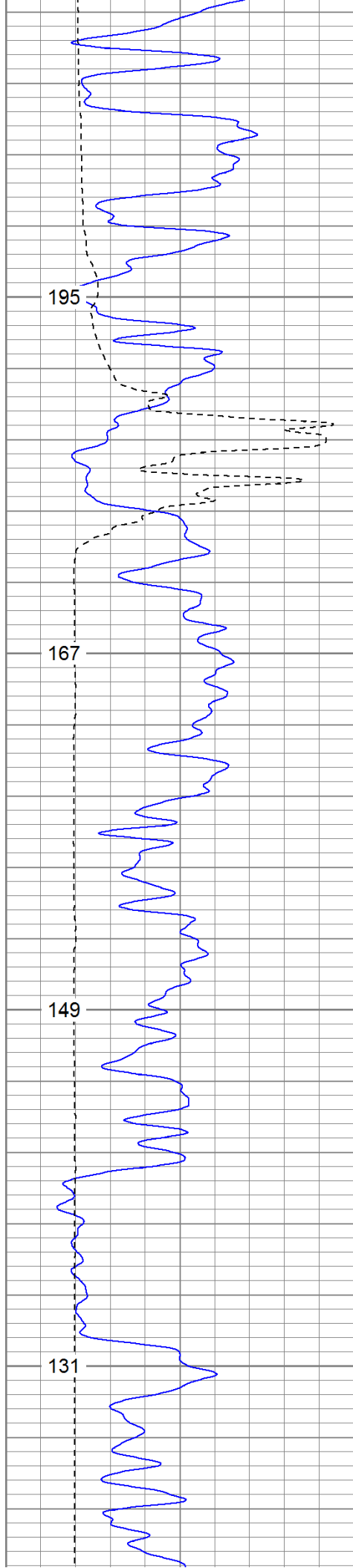


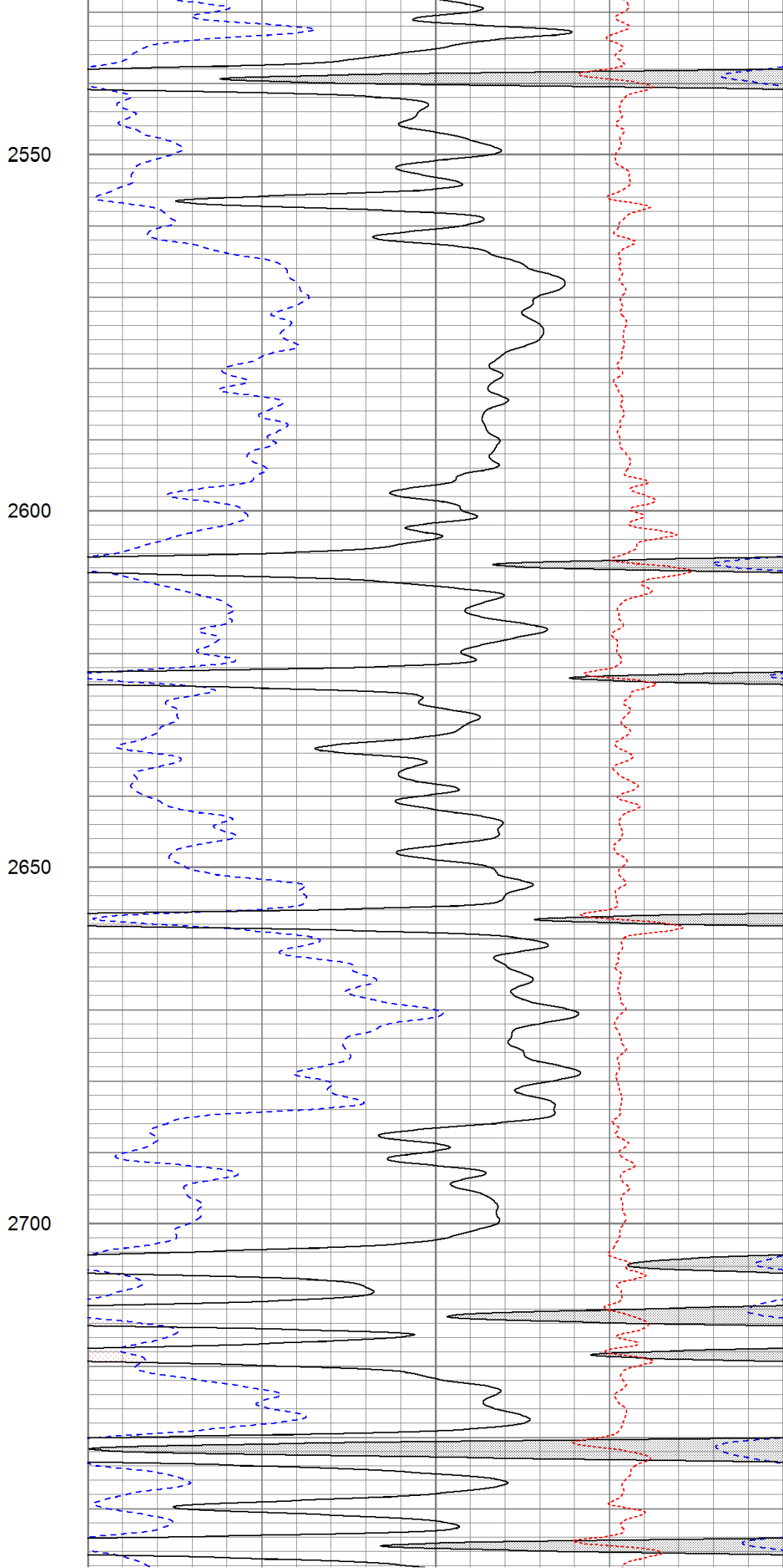
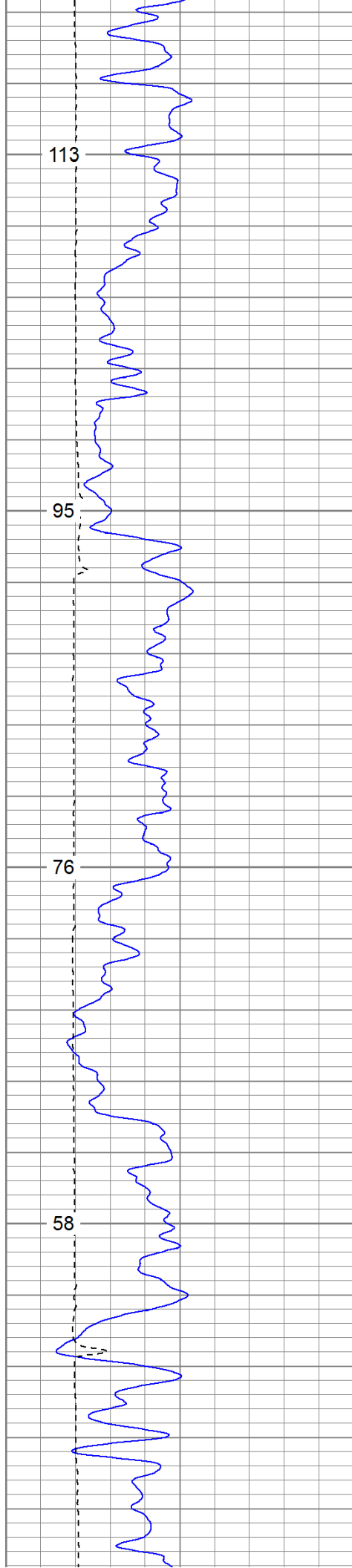




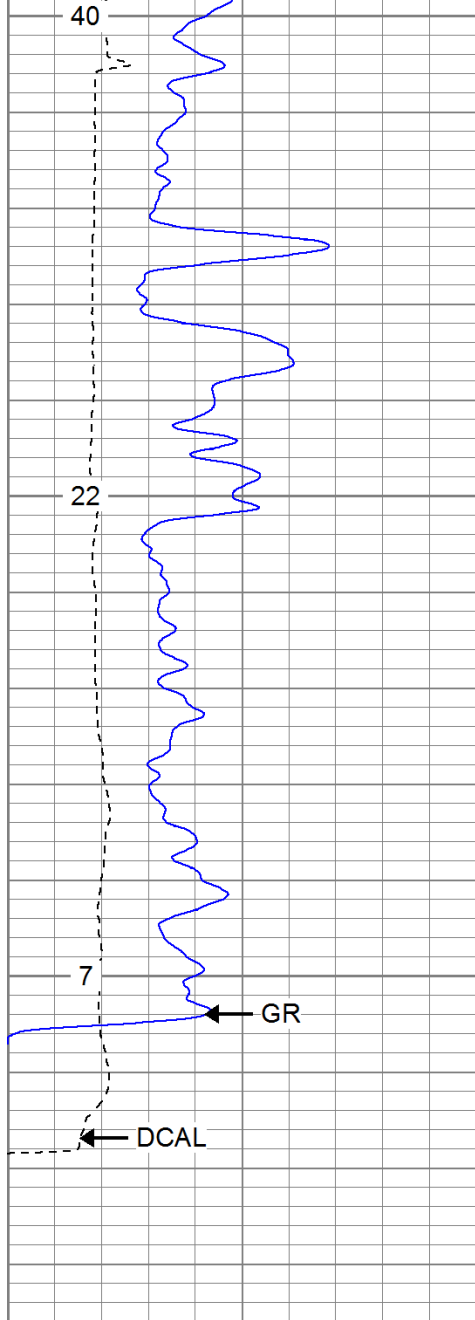




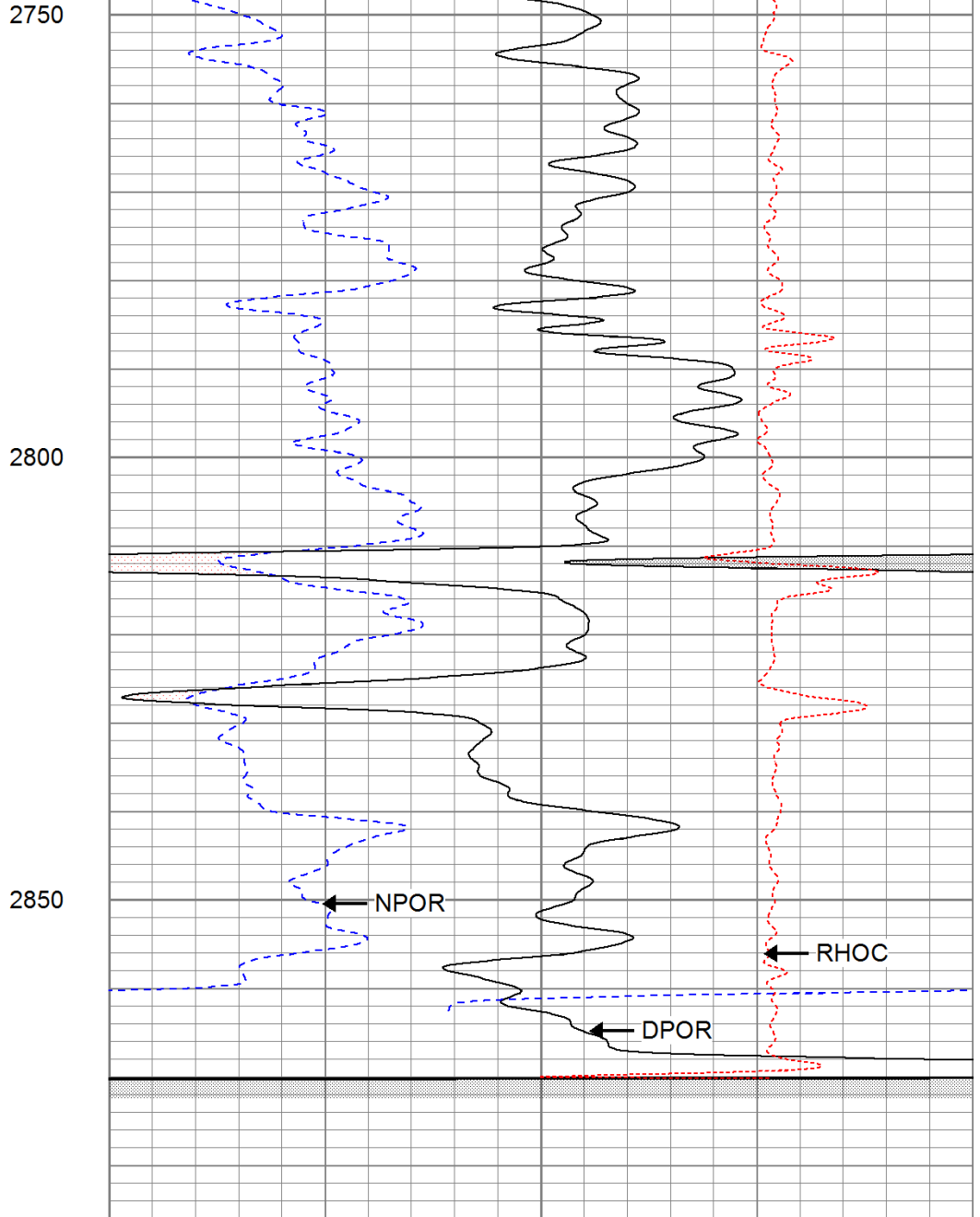








0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		



30	NPOR (pu)	-10
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5

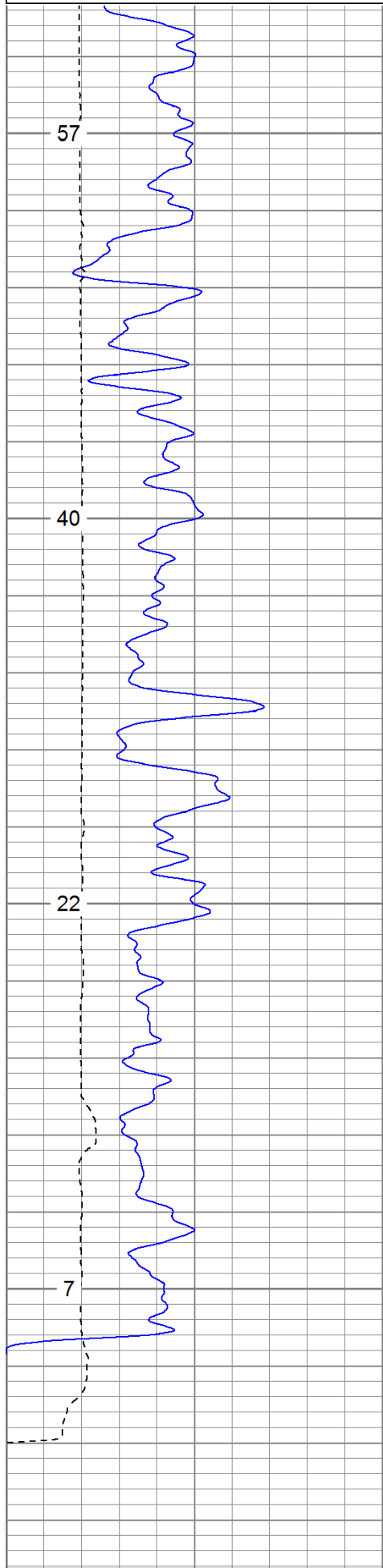


## Repeat Pass

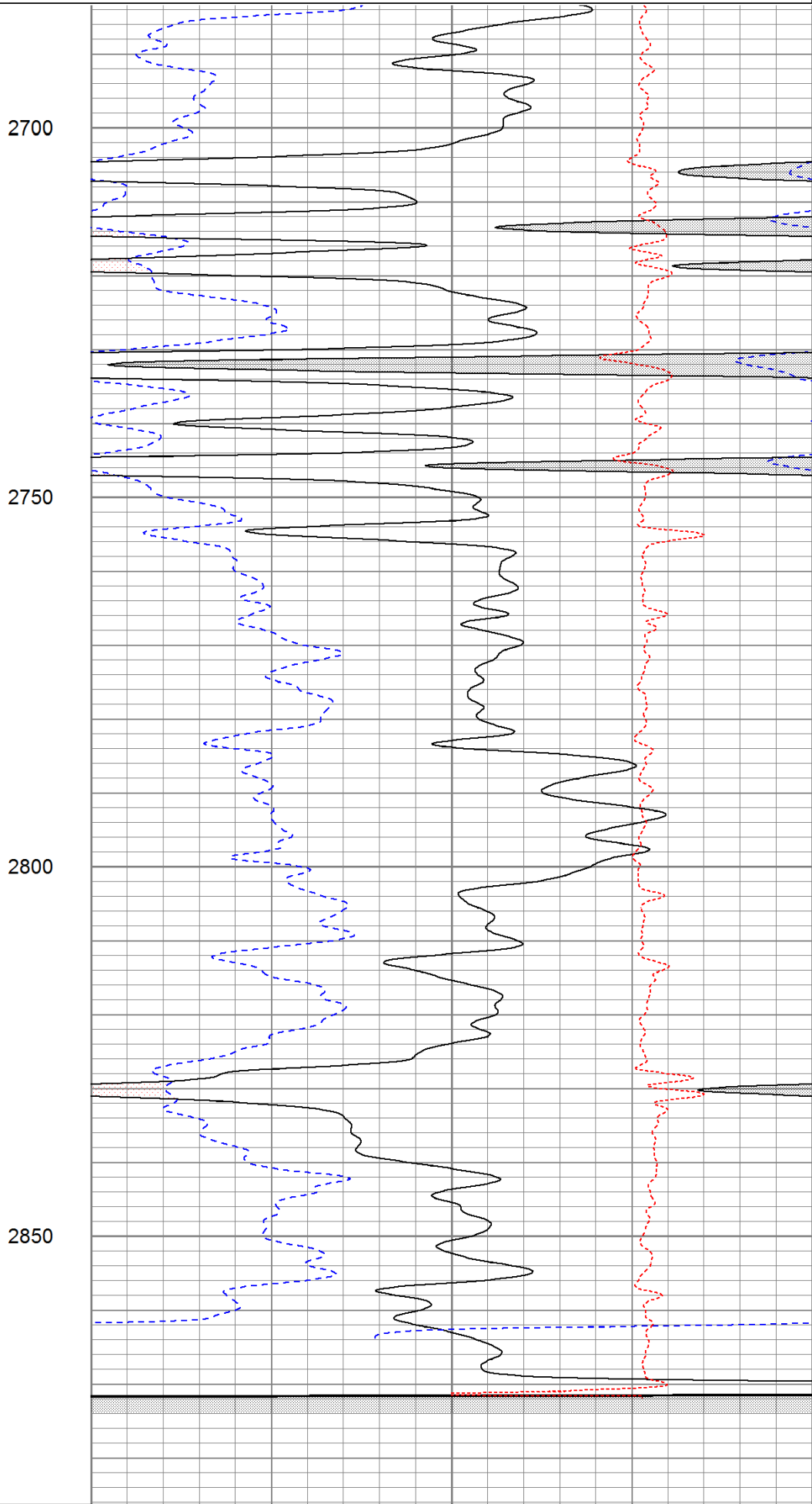
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 Dataset Pathname: pass1.1  
 Presentation Format: cdnl  
 Dataset Creation: Mon Jul 04 07:20:35 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

30	NPOR (pu)	-10
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5



0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

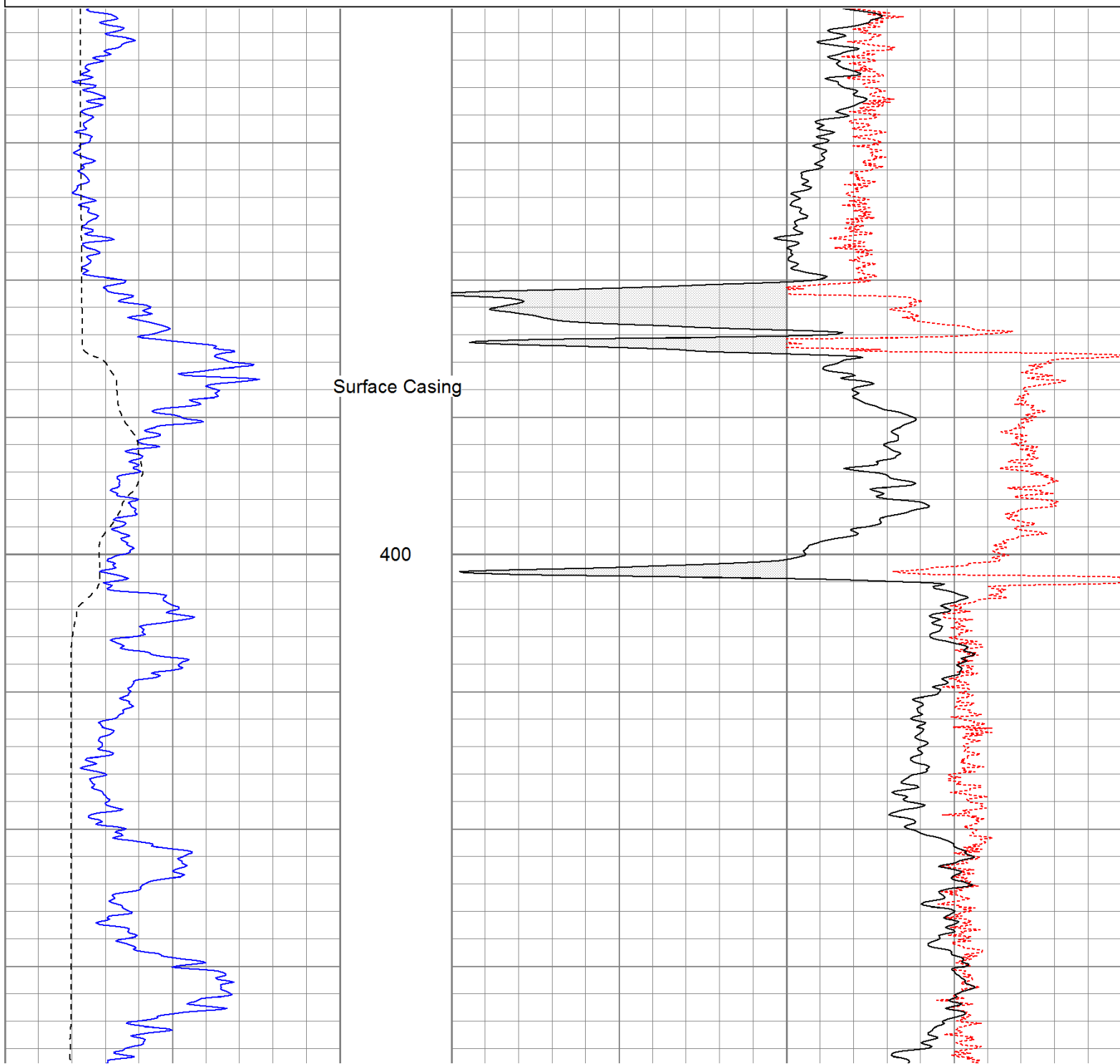


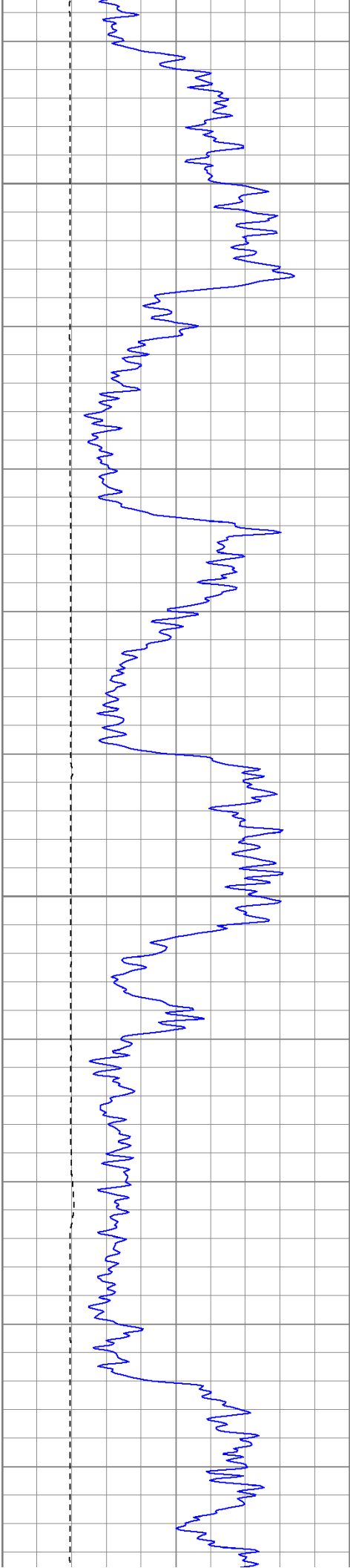
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30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5

# High Resolution Pass

Database File: haught.db  
 Dataset Pathname: pass2.3  
 Presentation Format: cdlhr  
 Dataset Creation: Tue Jul 05 08:02:11 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:120

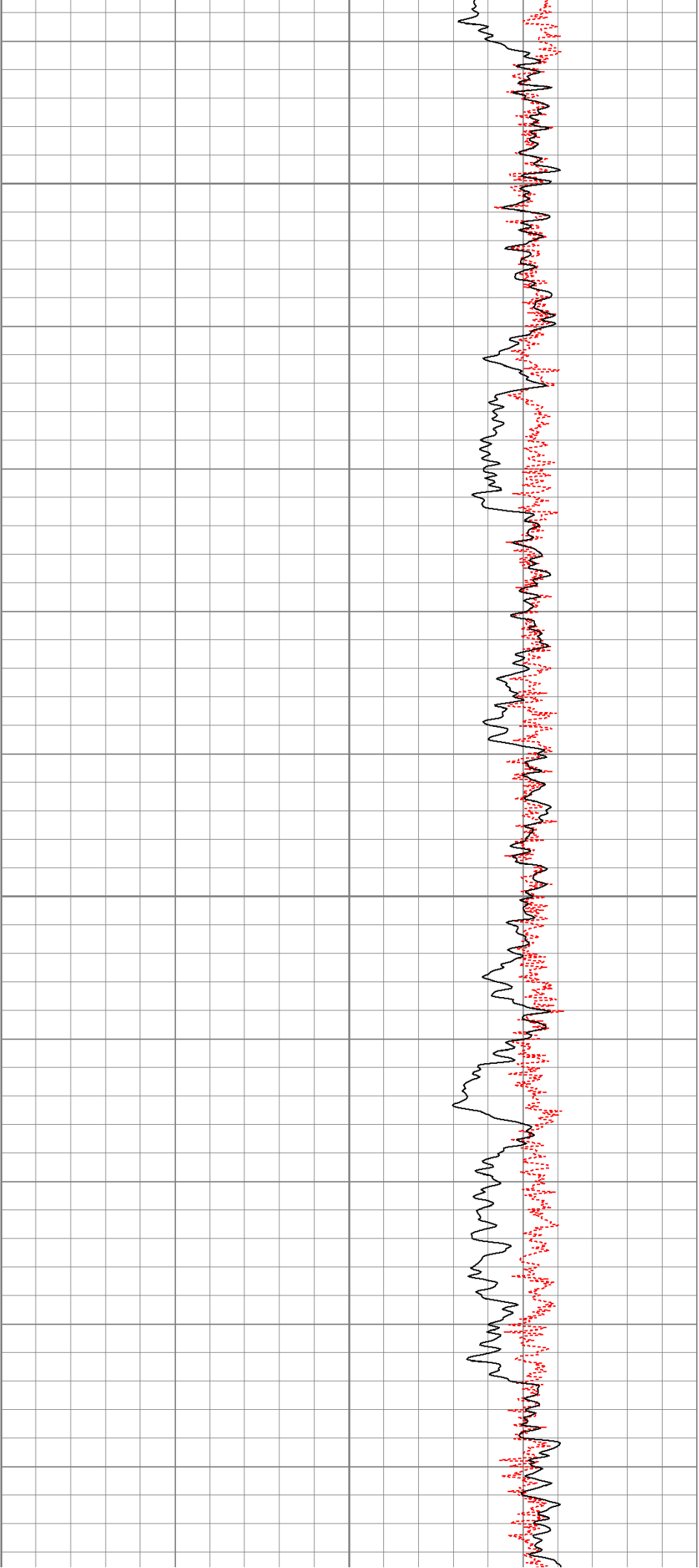
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6	DCAL (in)	16		-0.5	RHOC (g/cc) 0.5

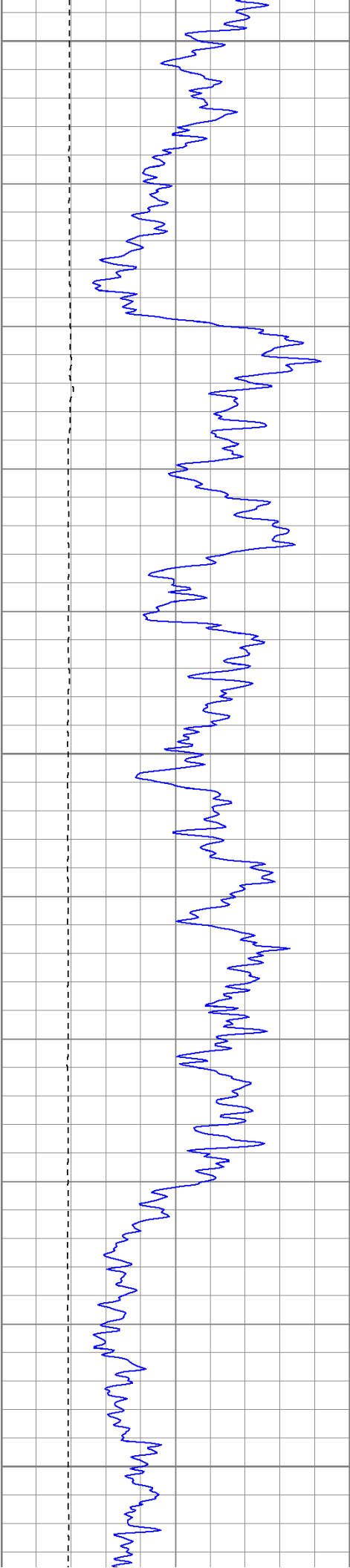




450

500

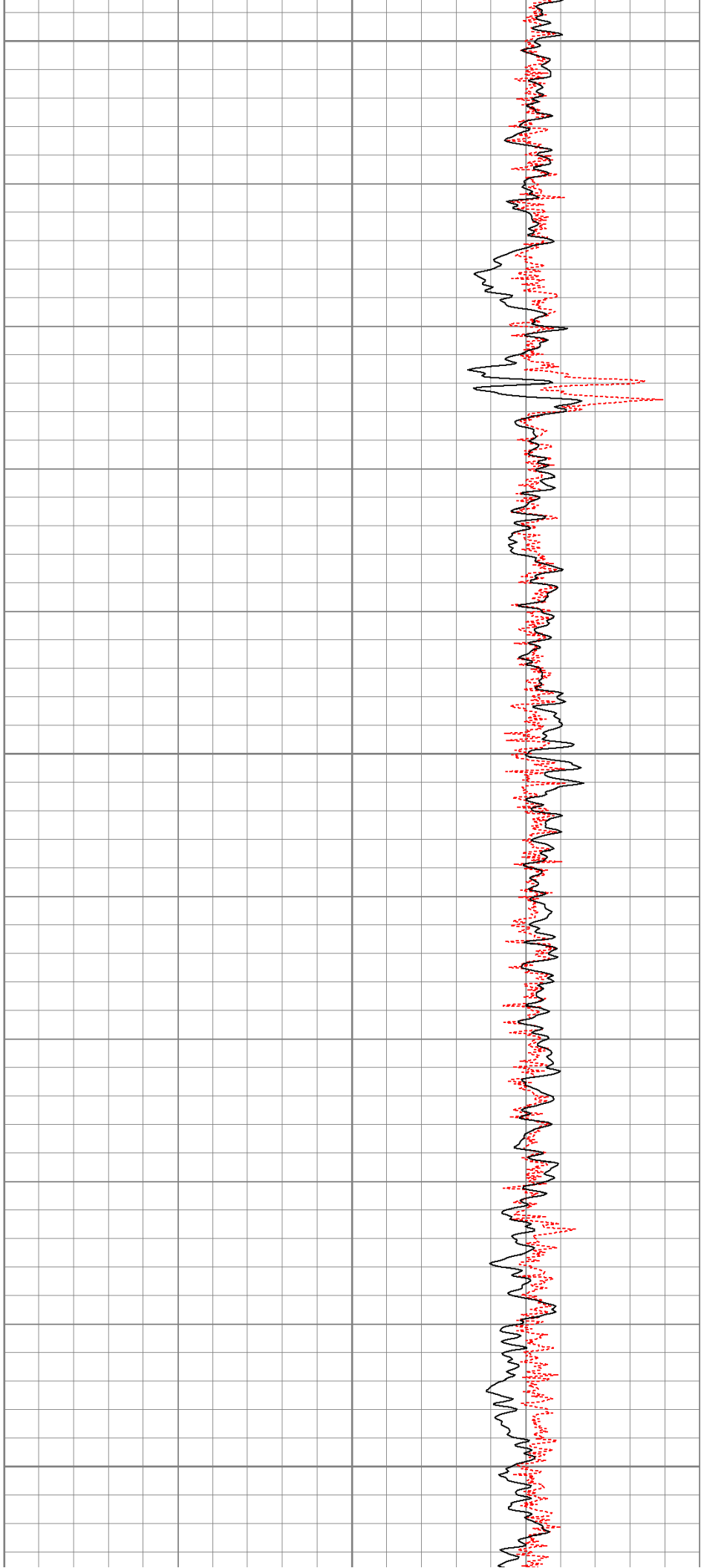


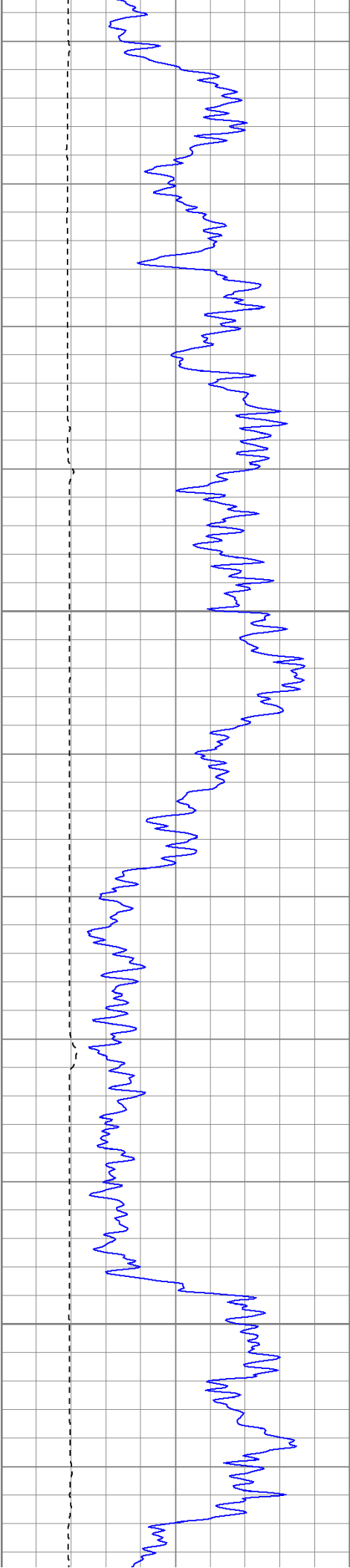


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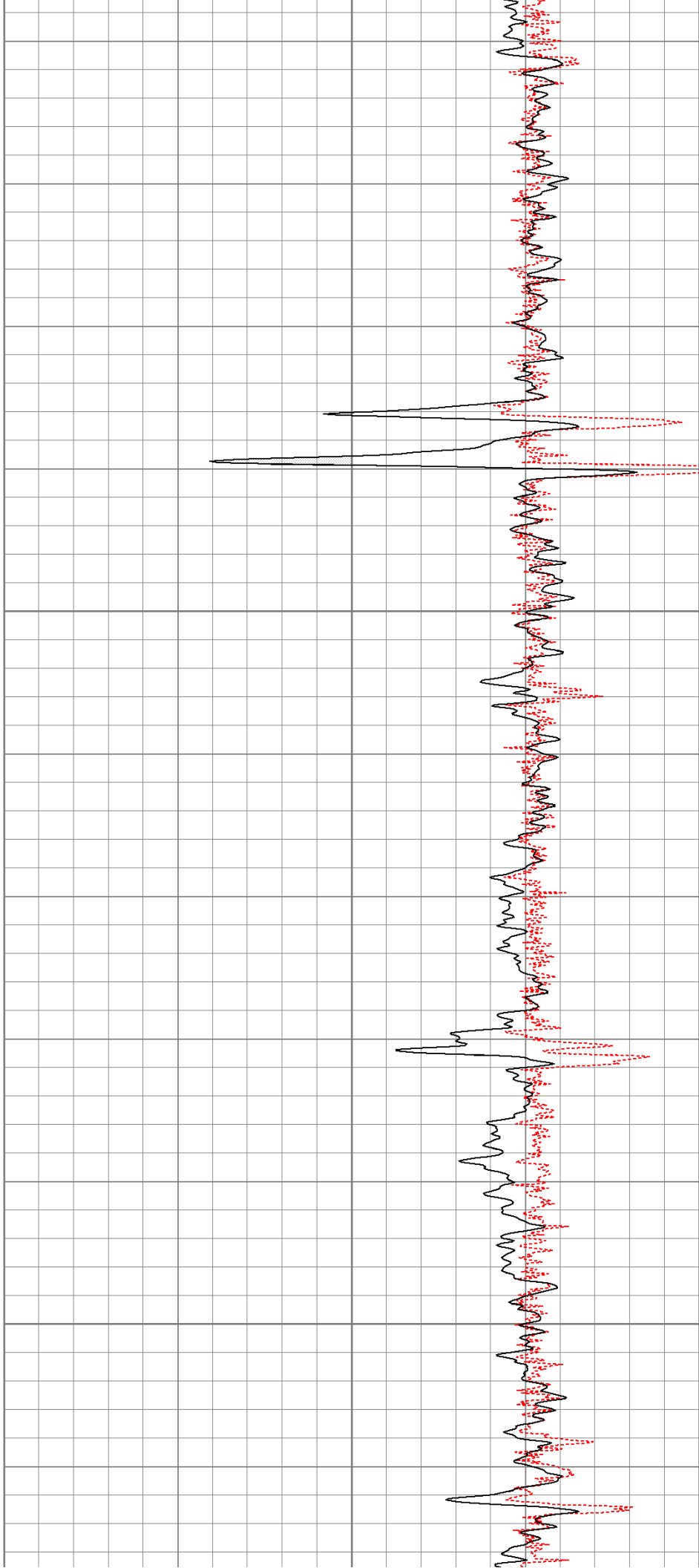
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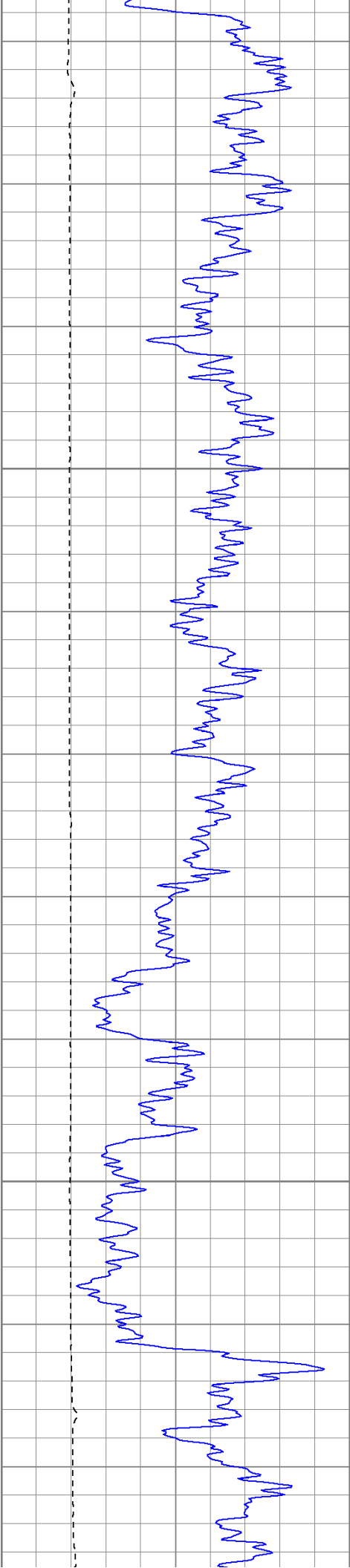




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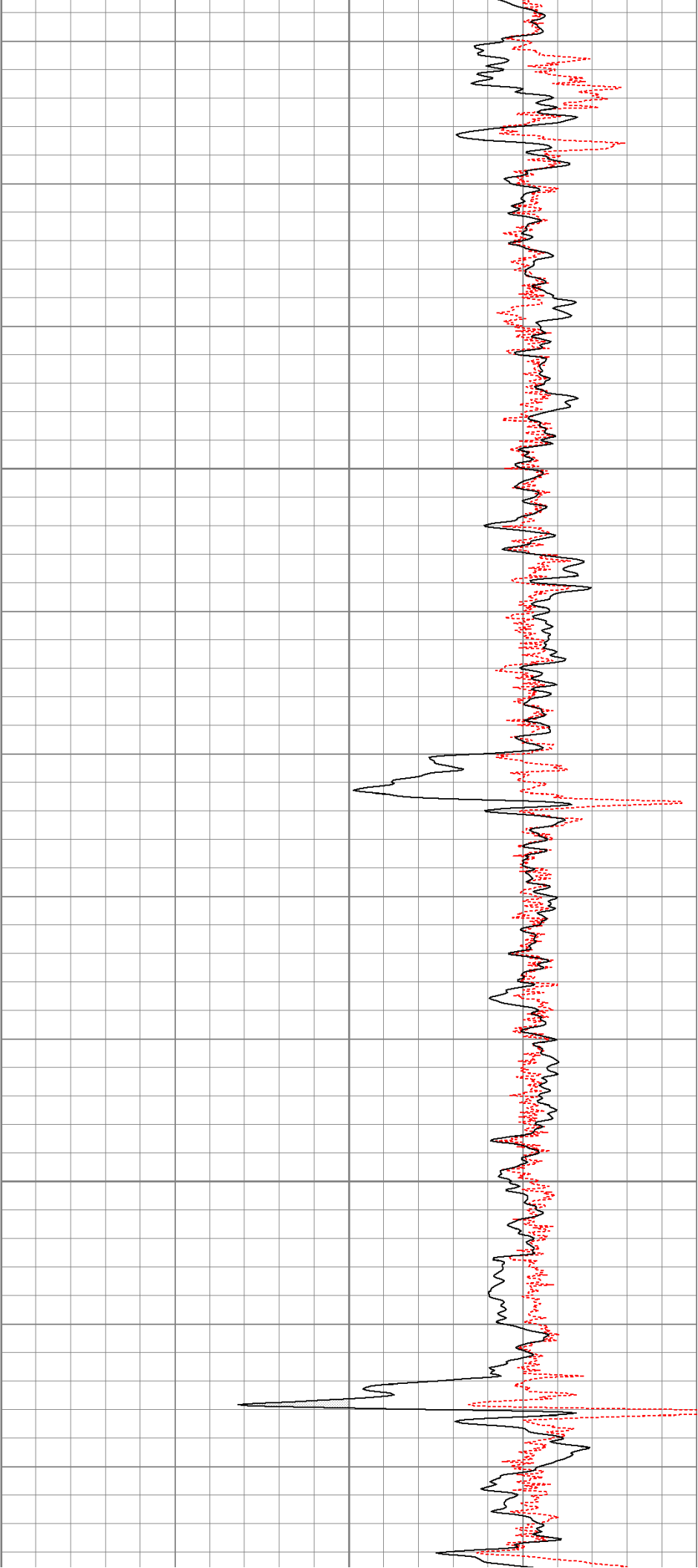
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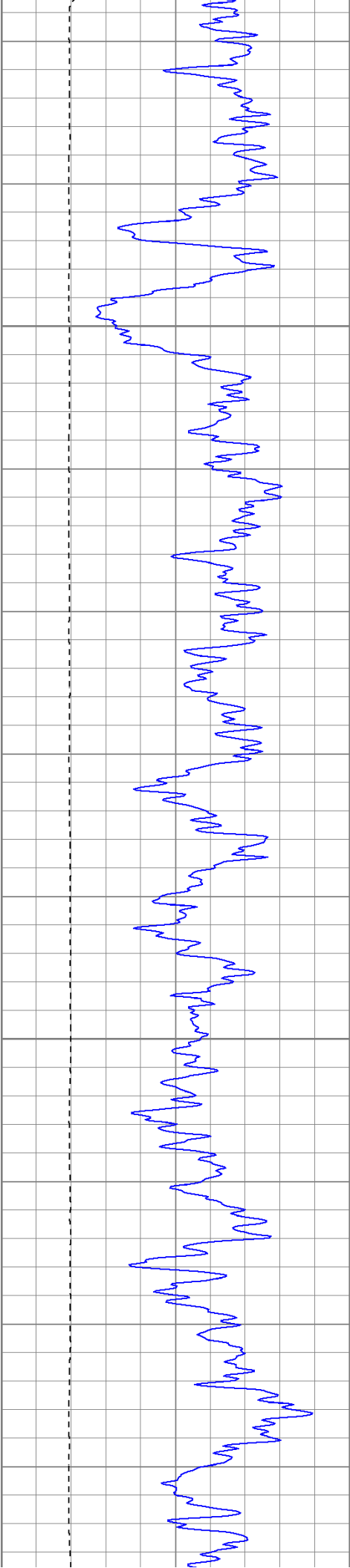




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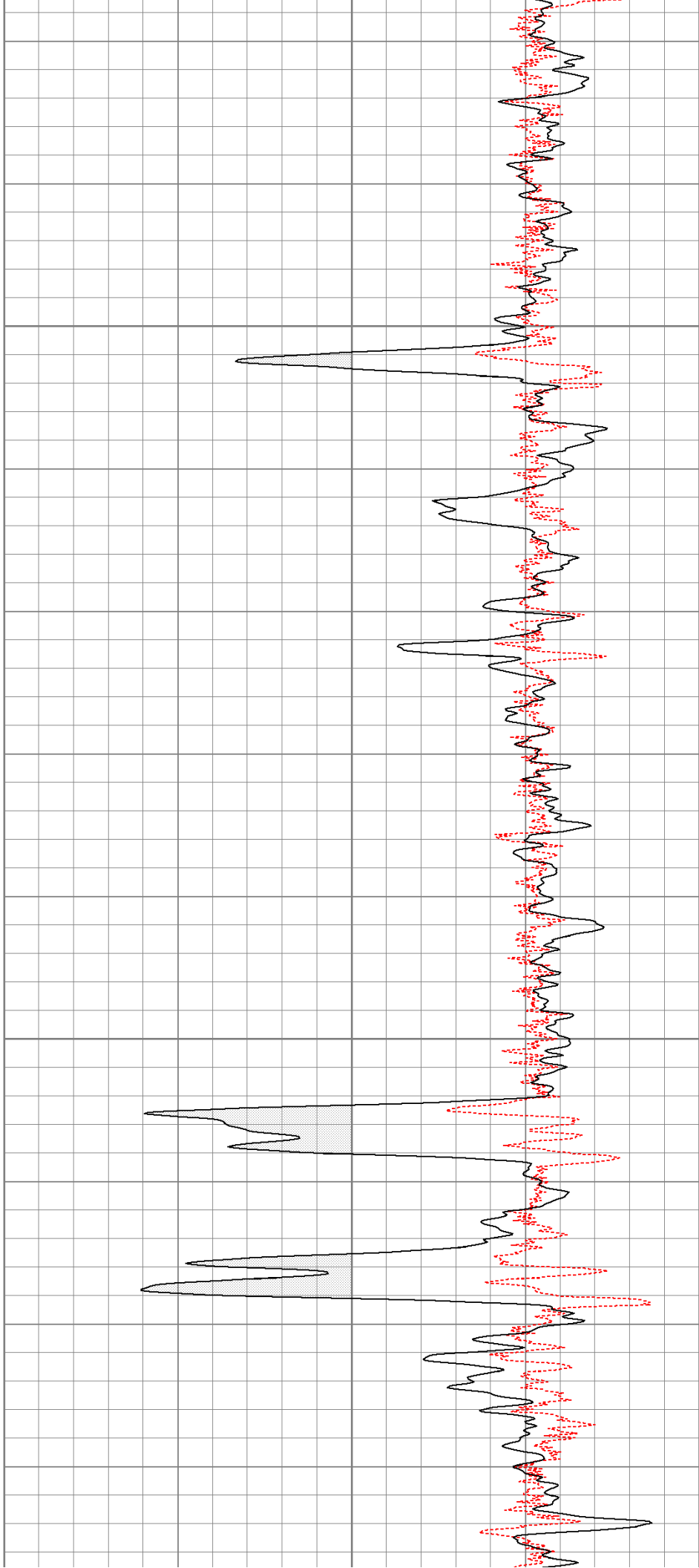
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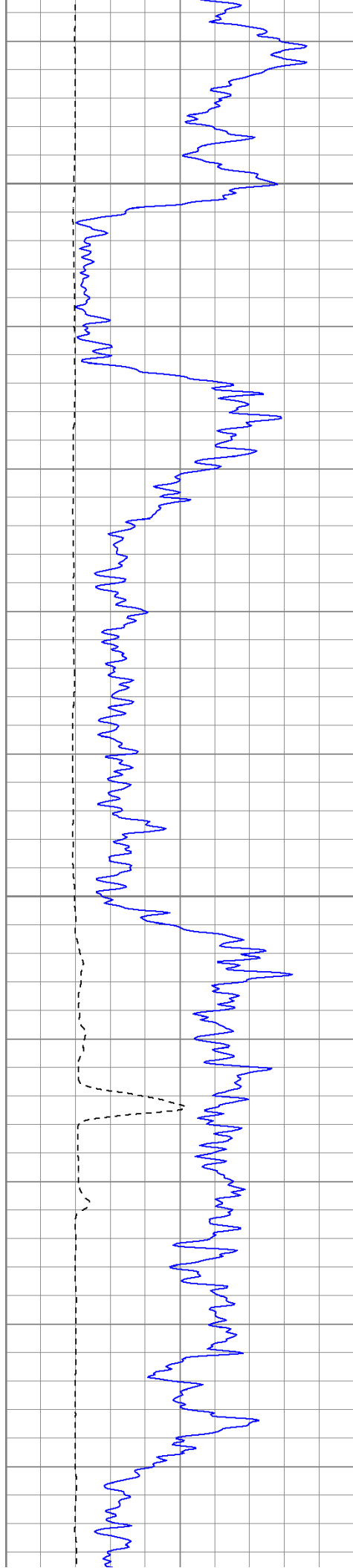


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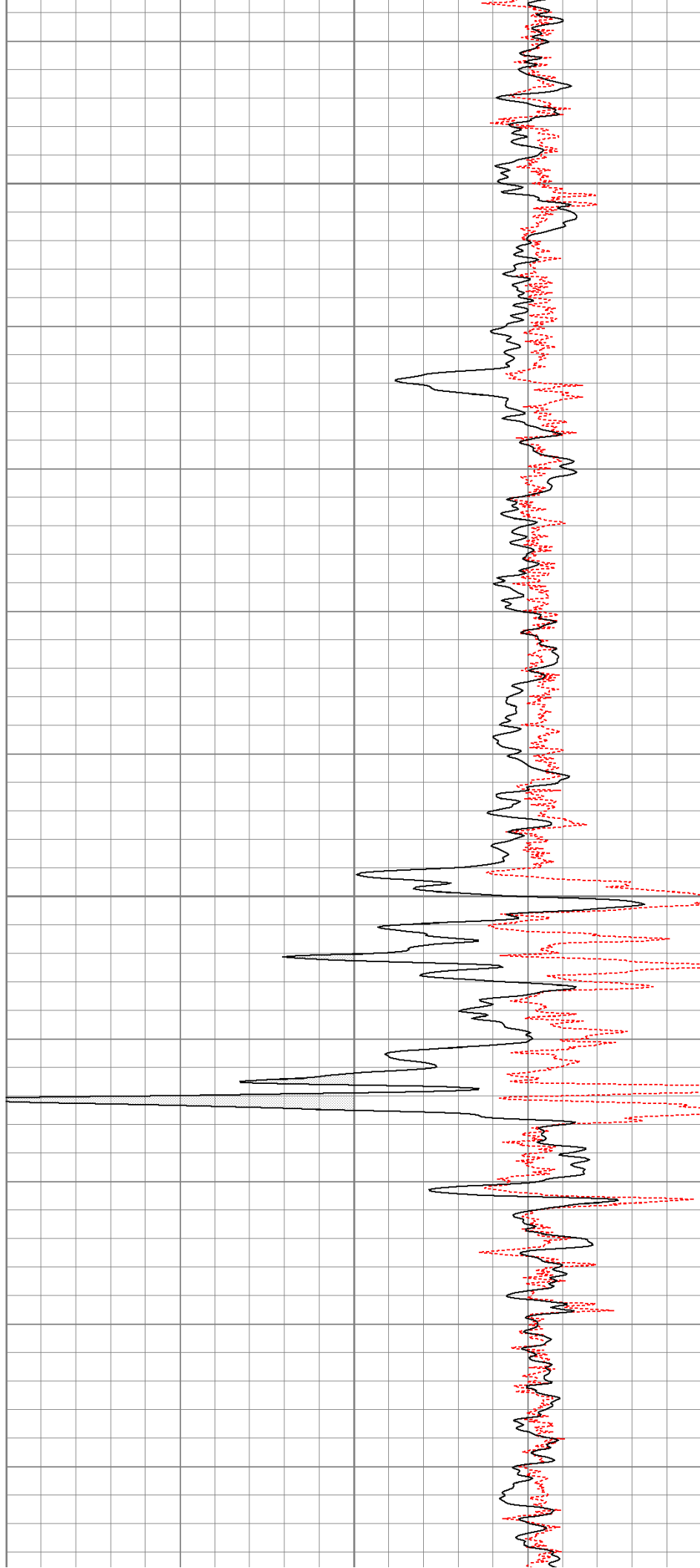


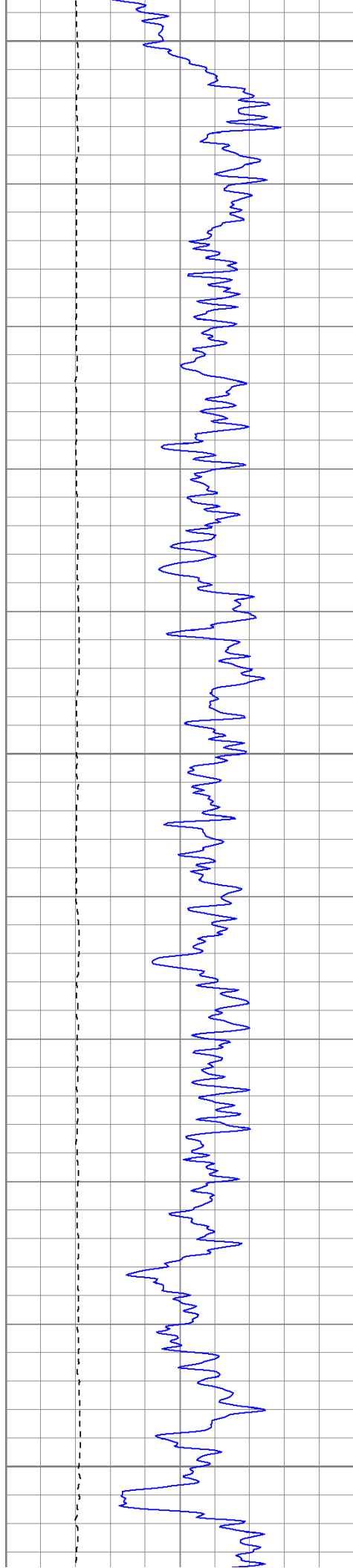




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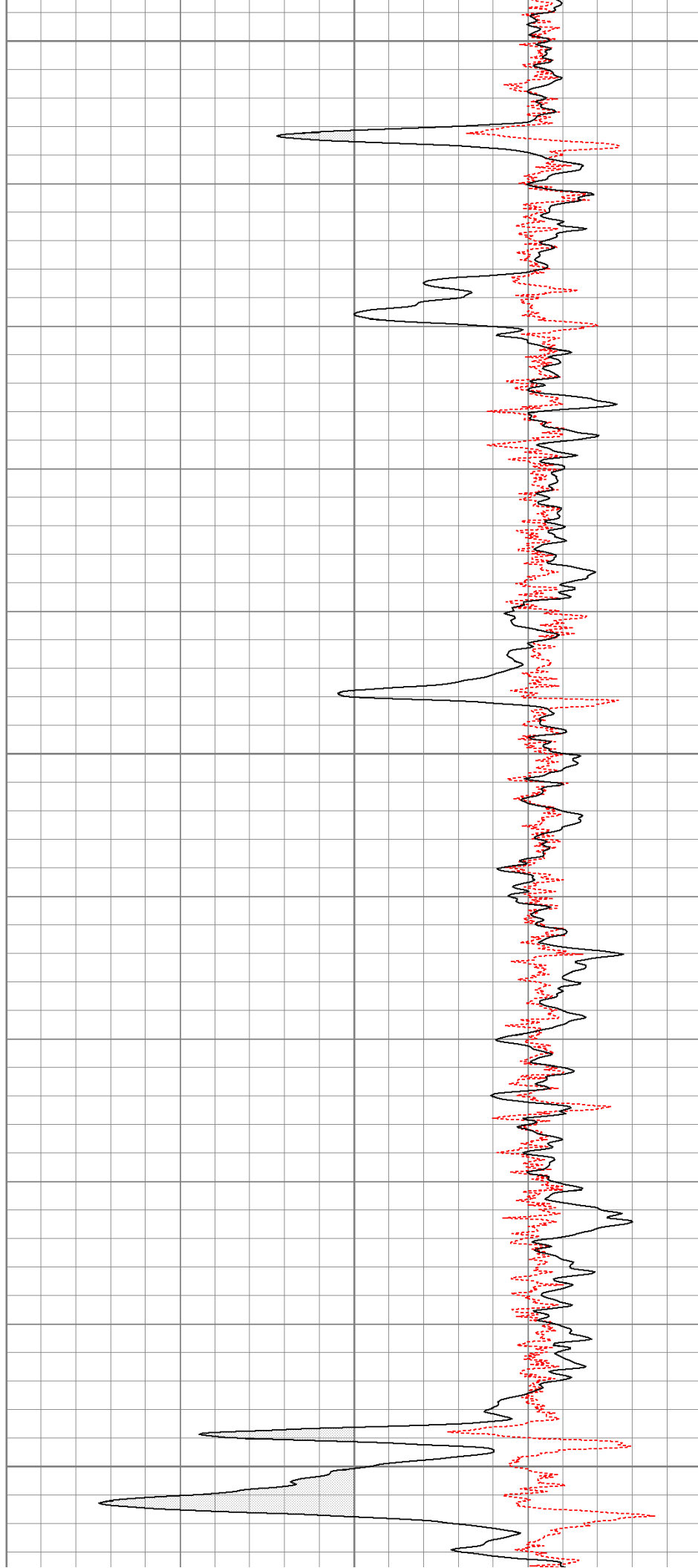


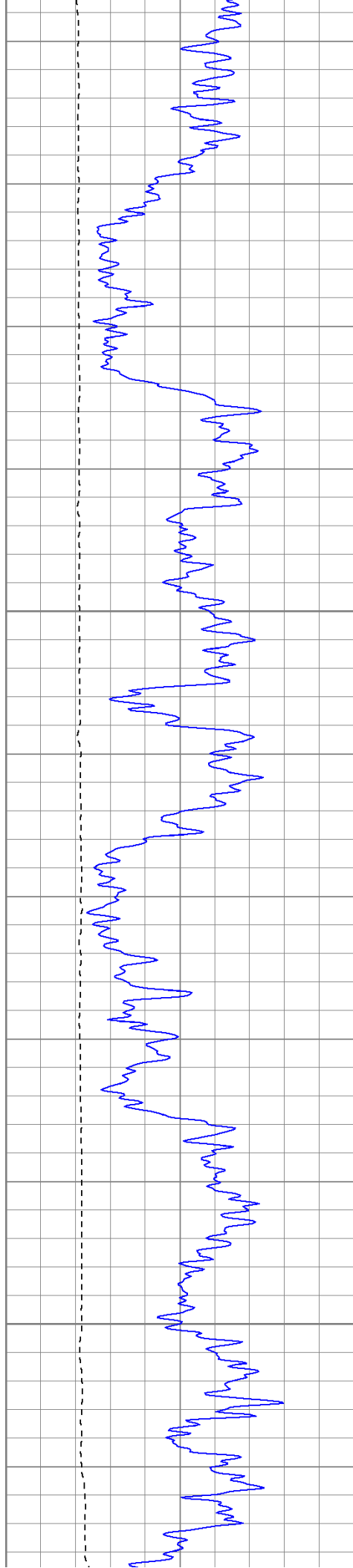


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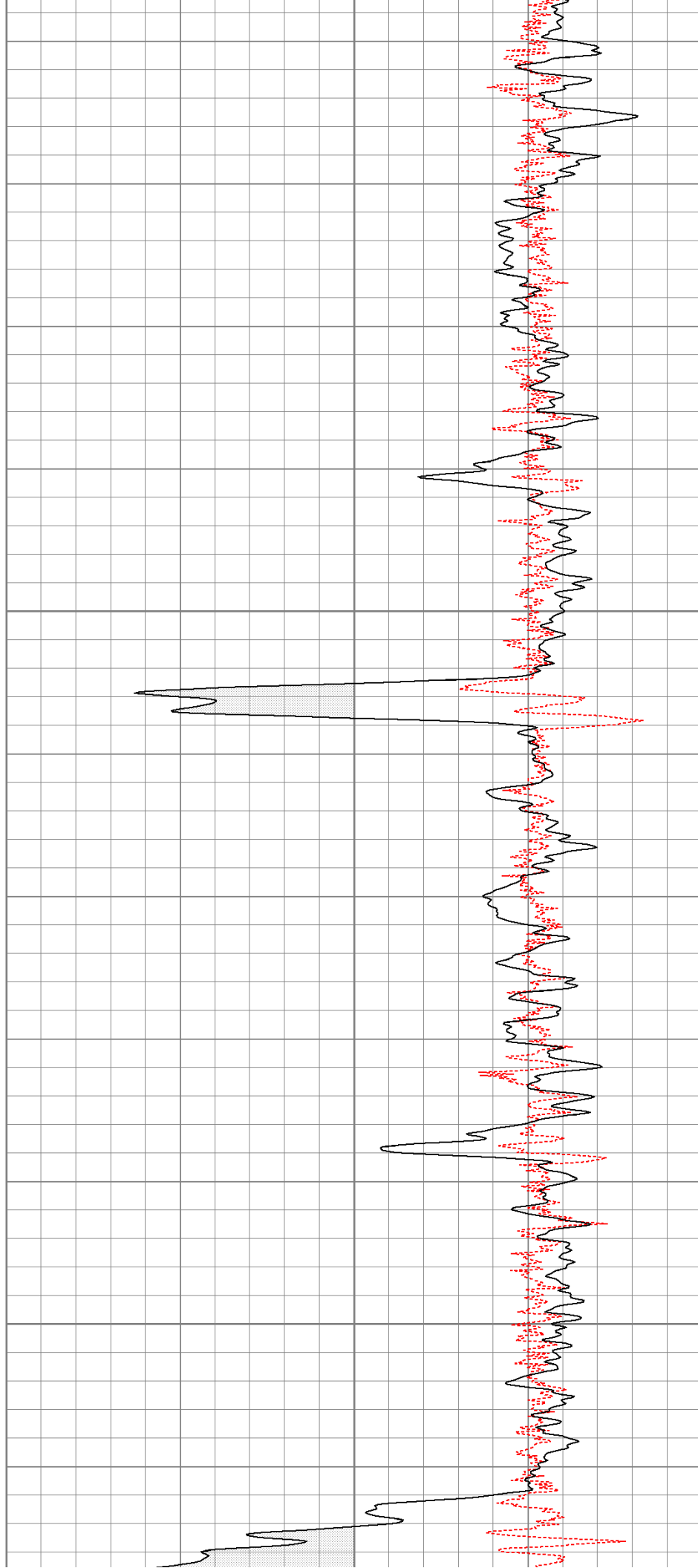
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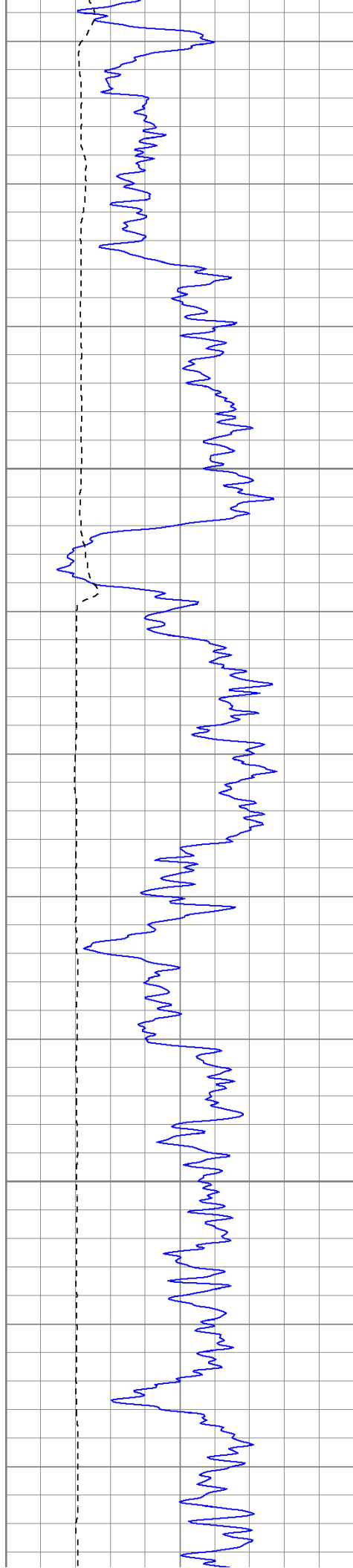




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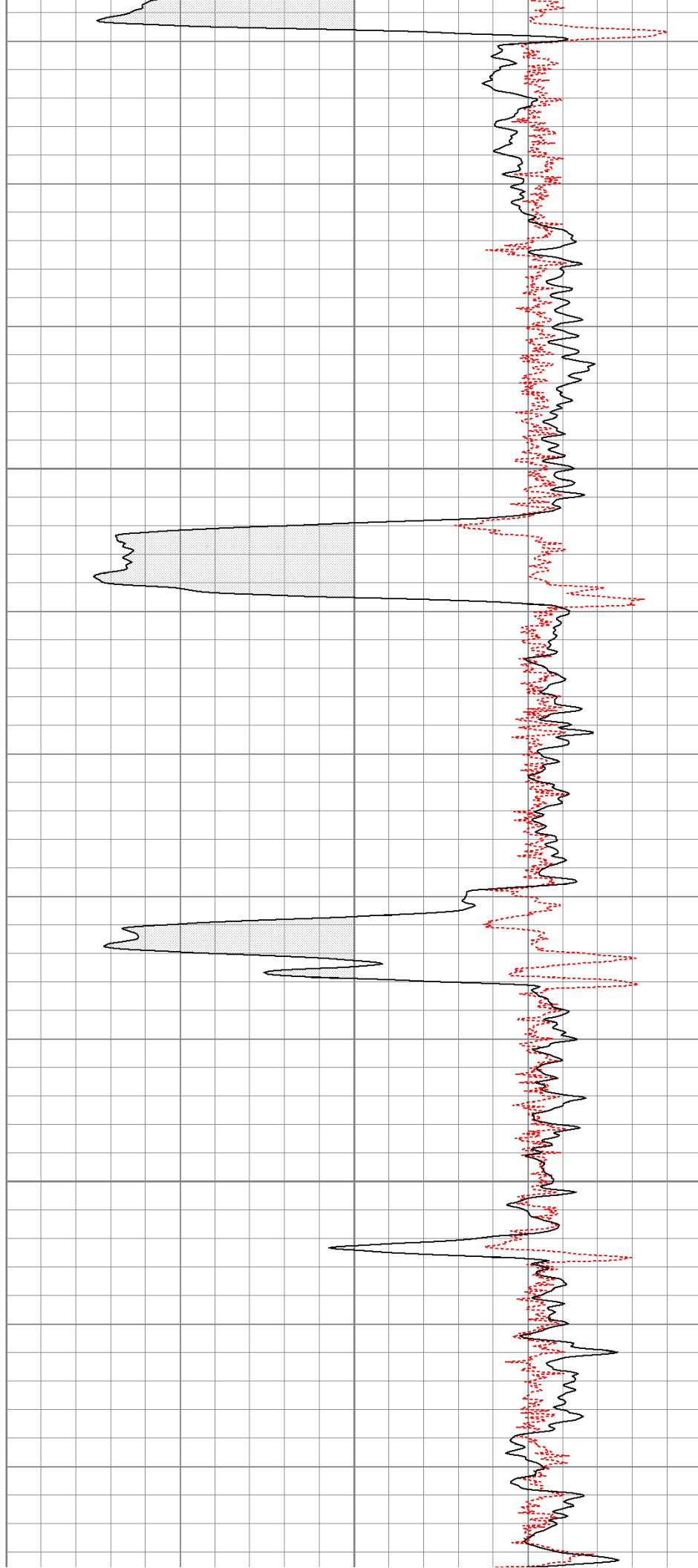
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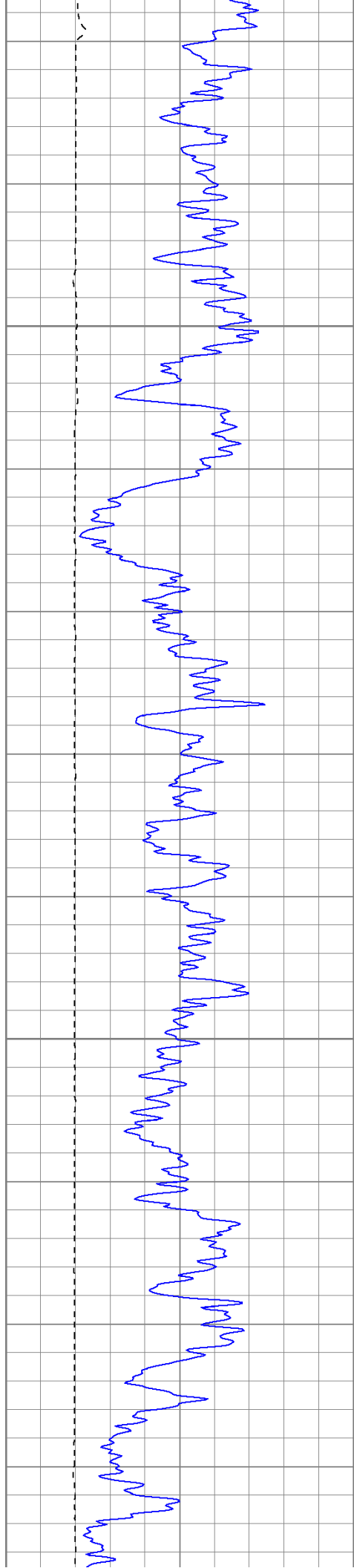




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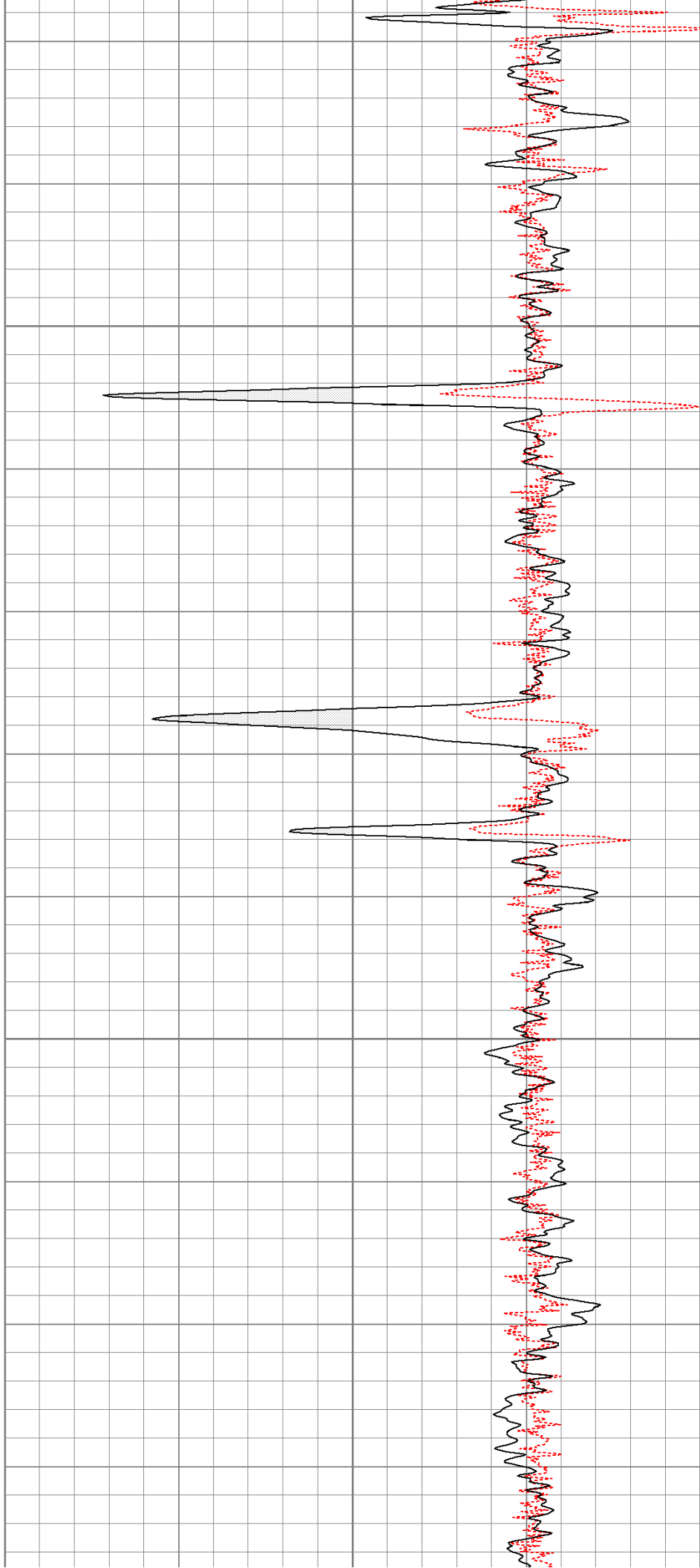
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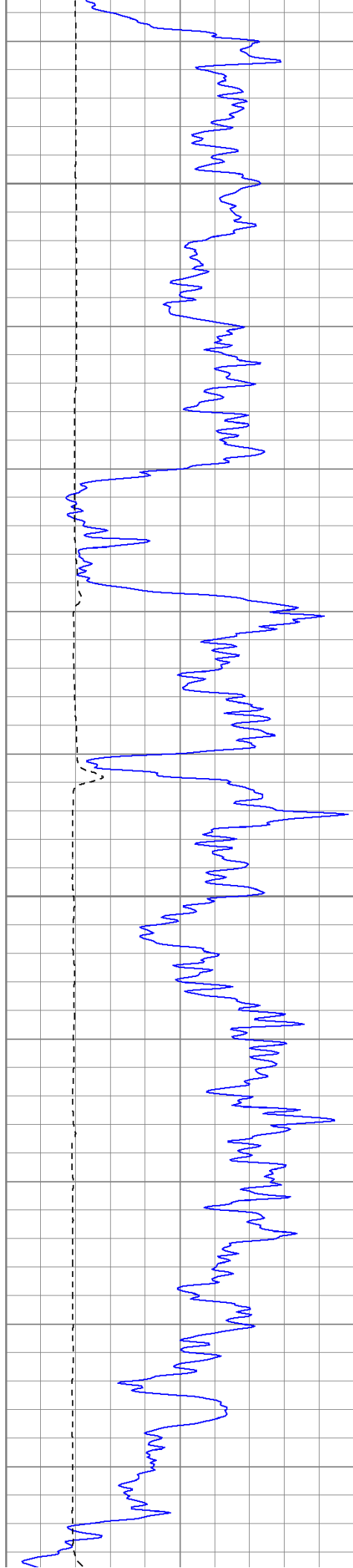




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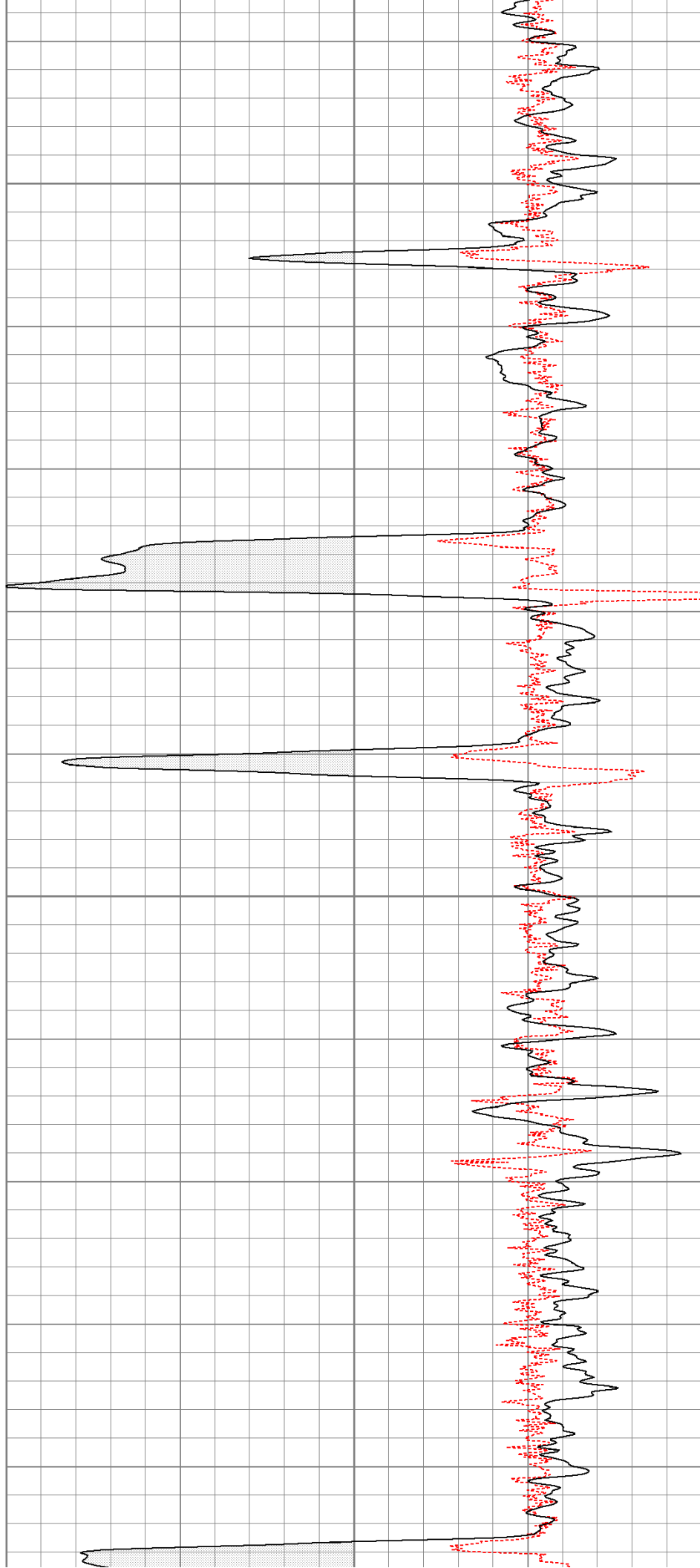
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1550

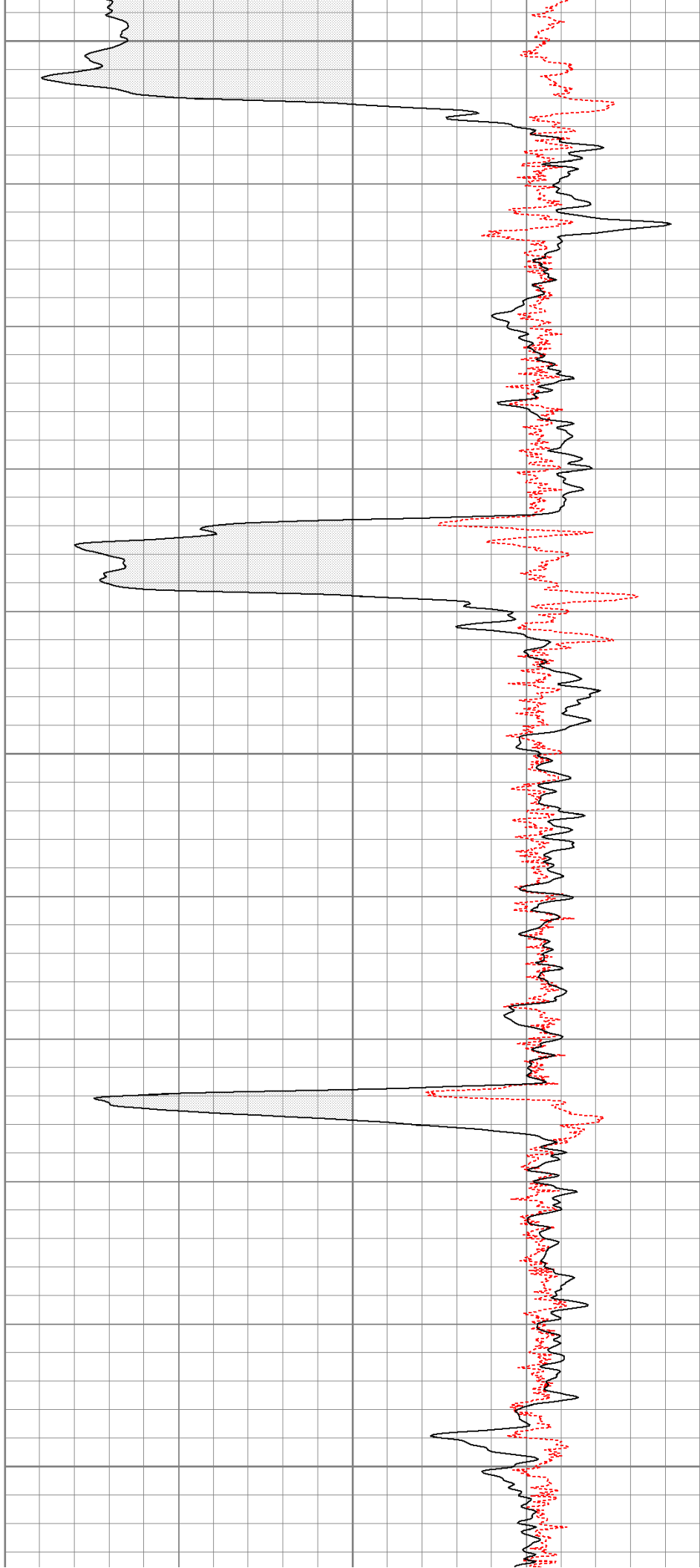
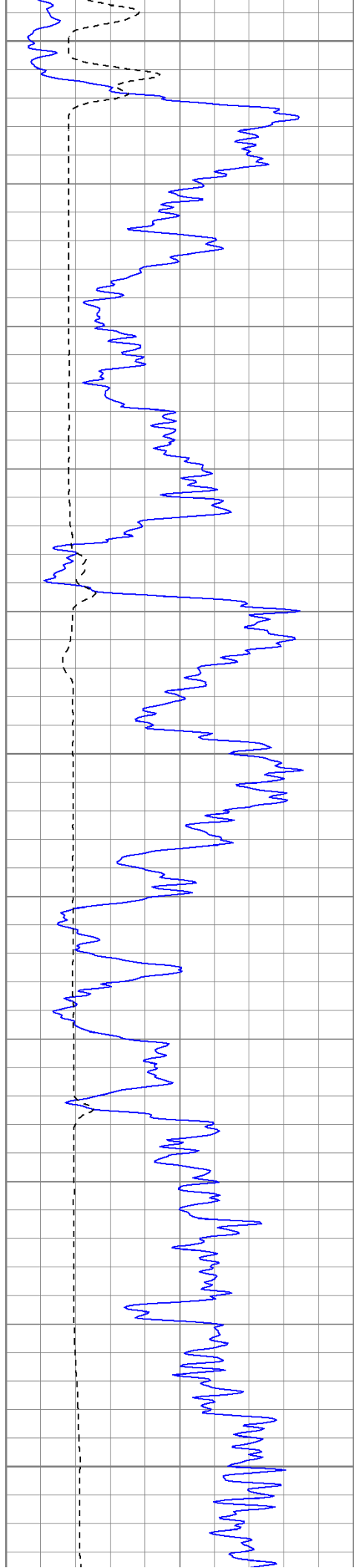
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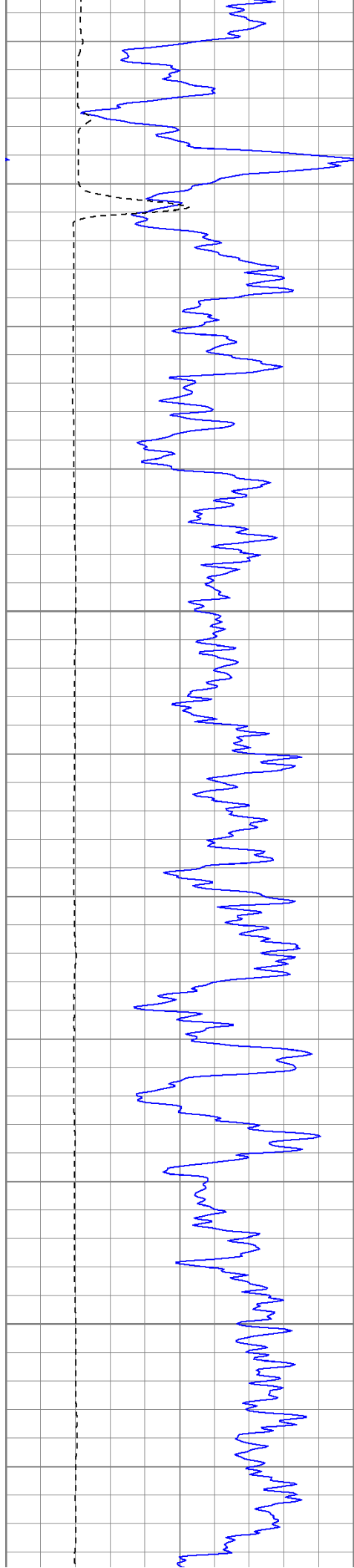


1650

1700

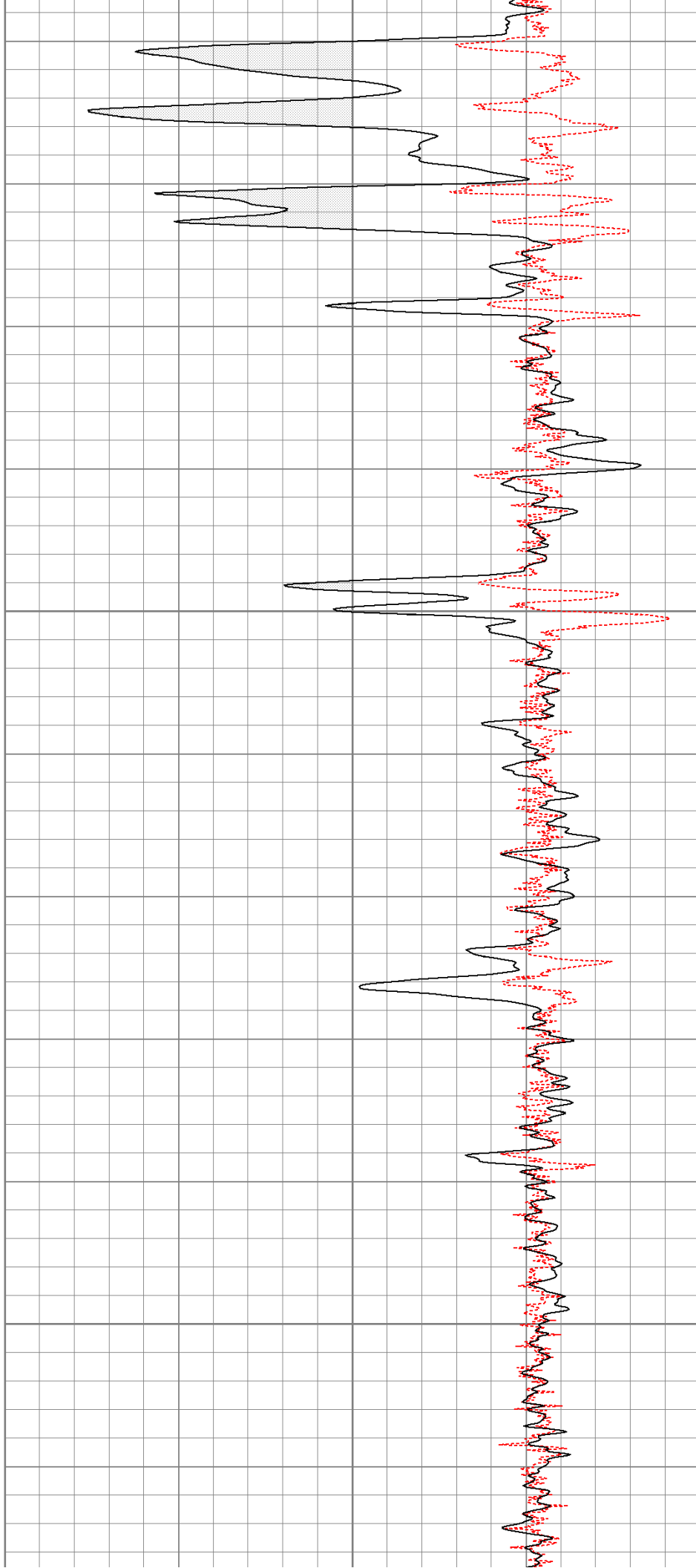
1750



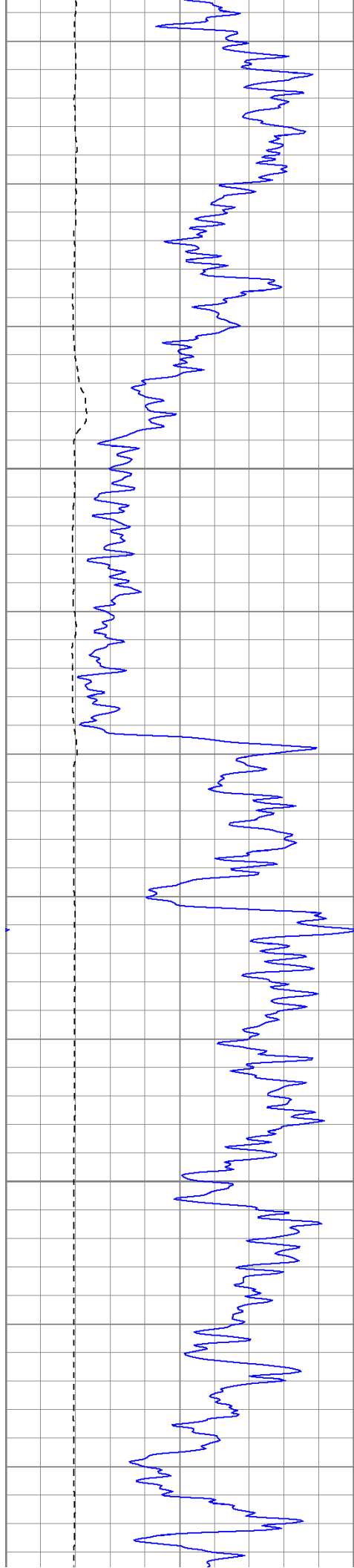


1800

1850

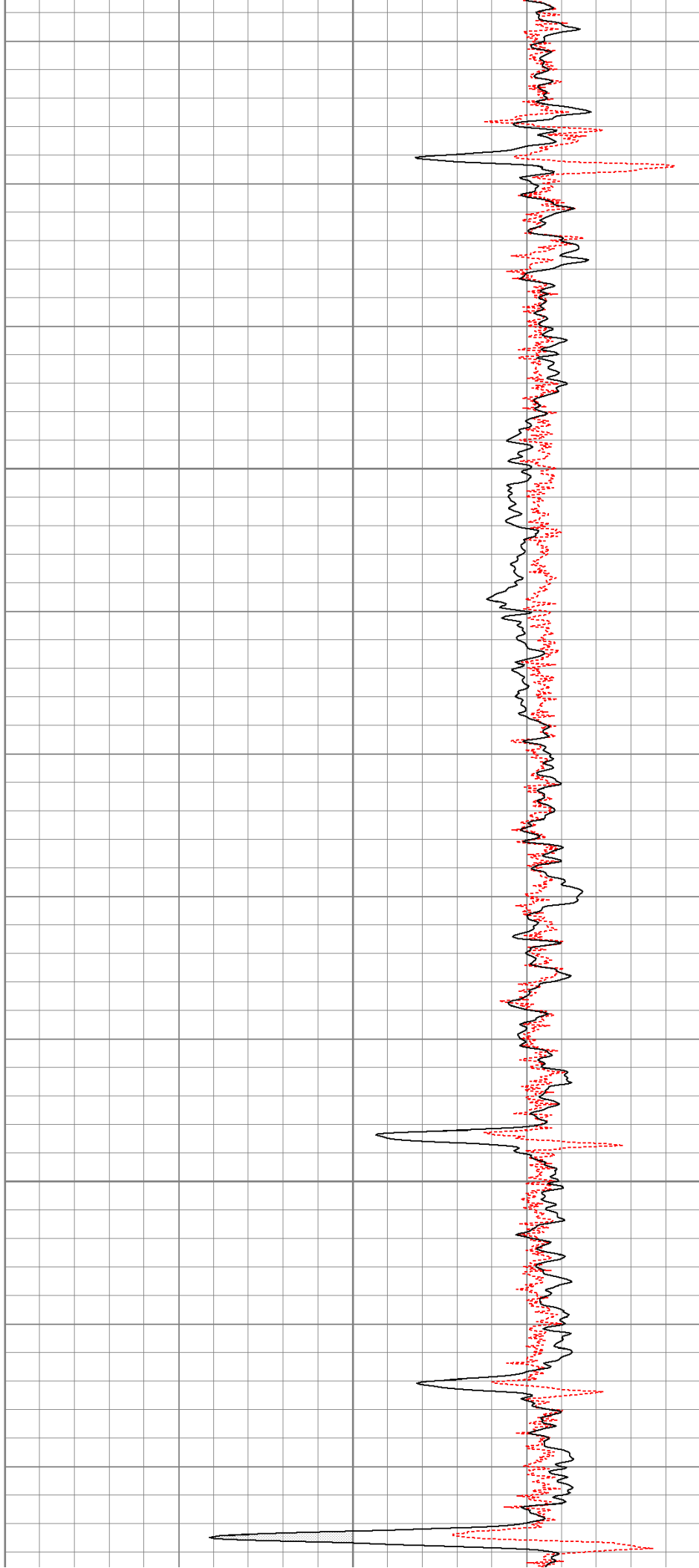


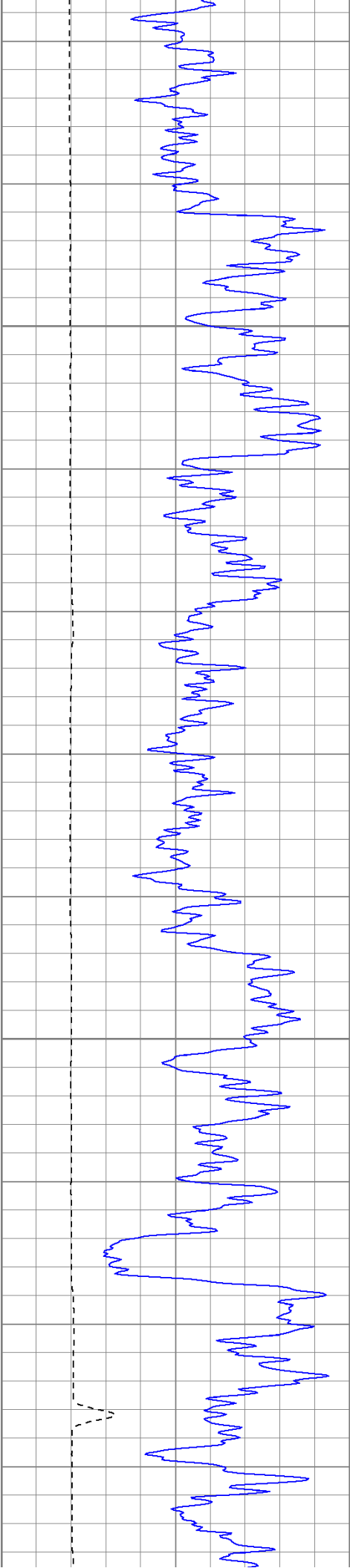




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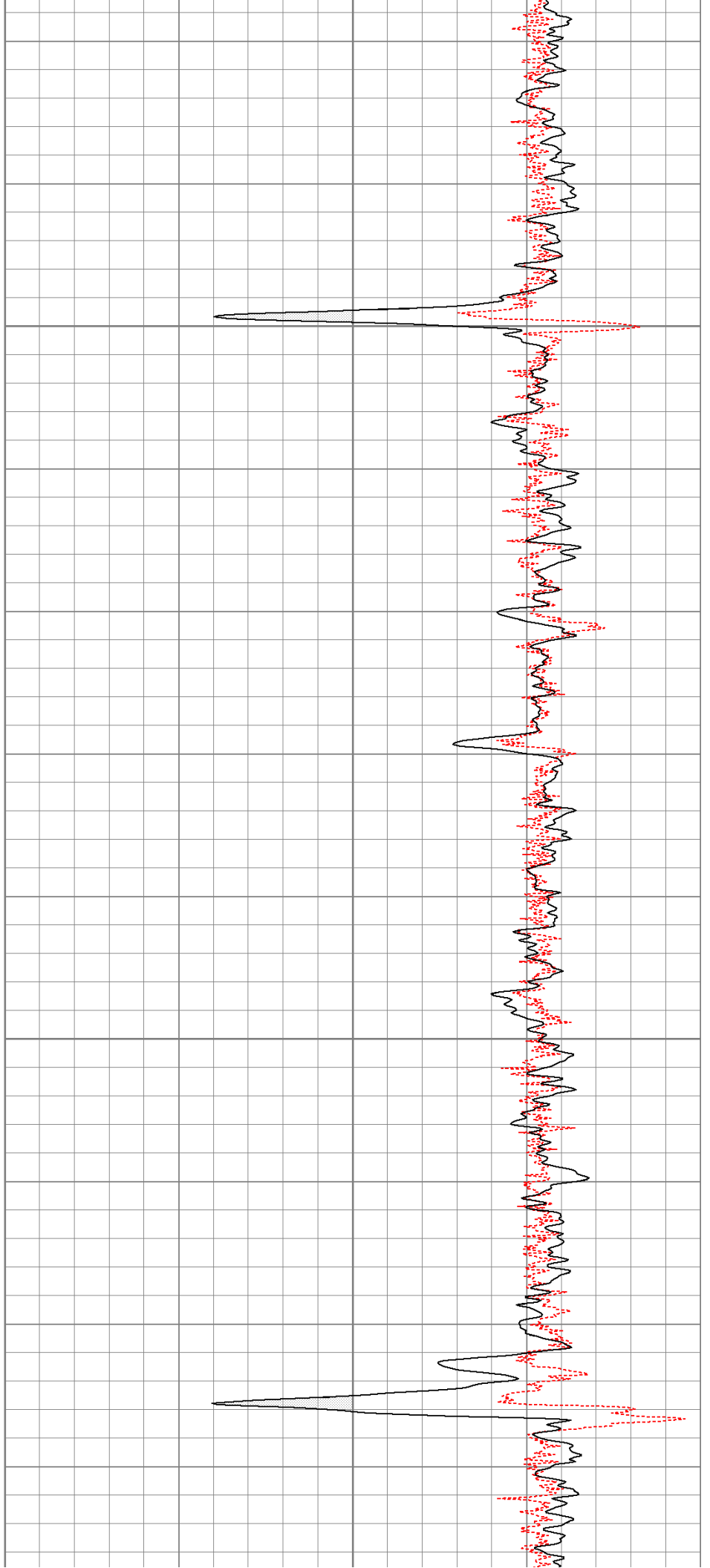
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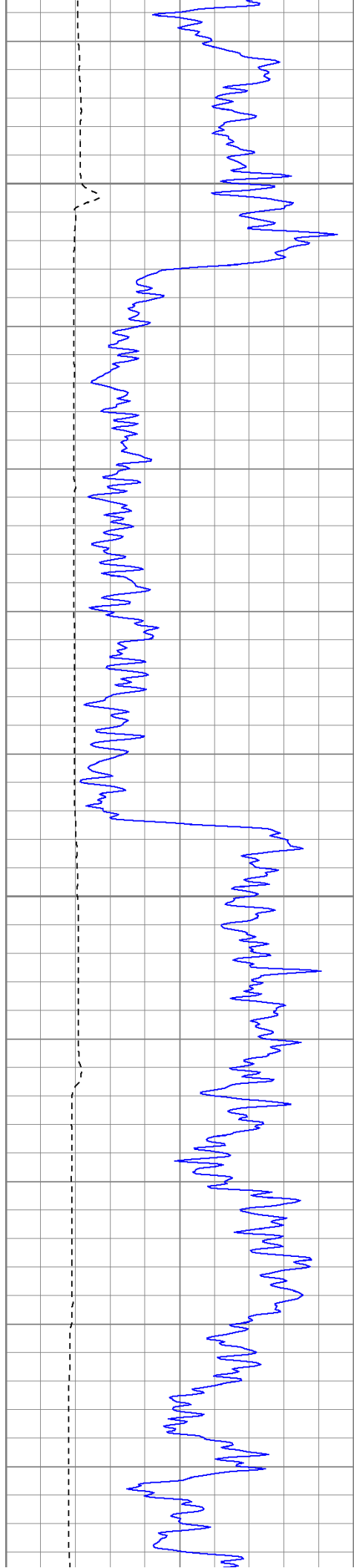




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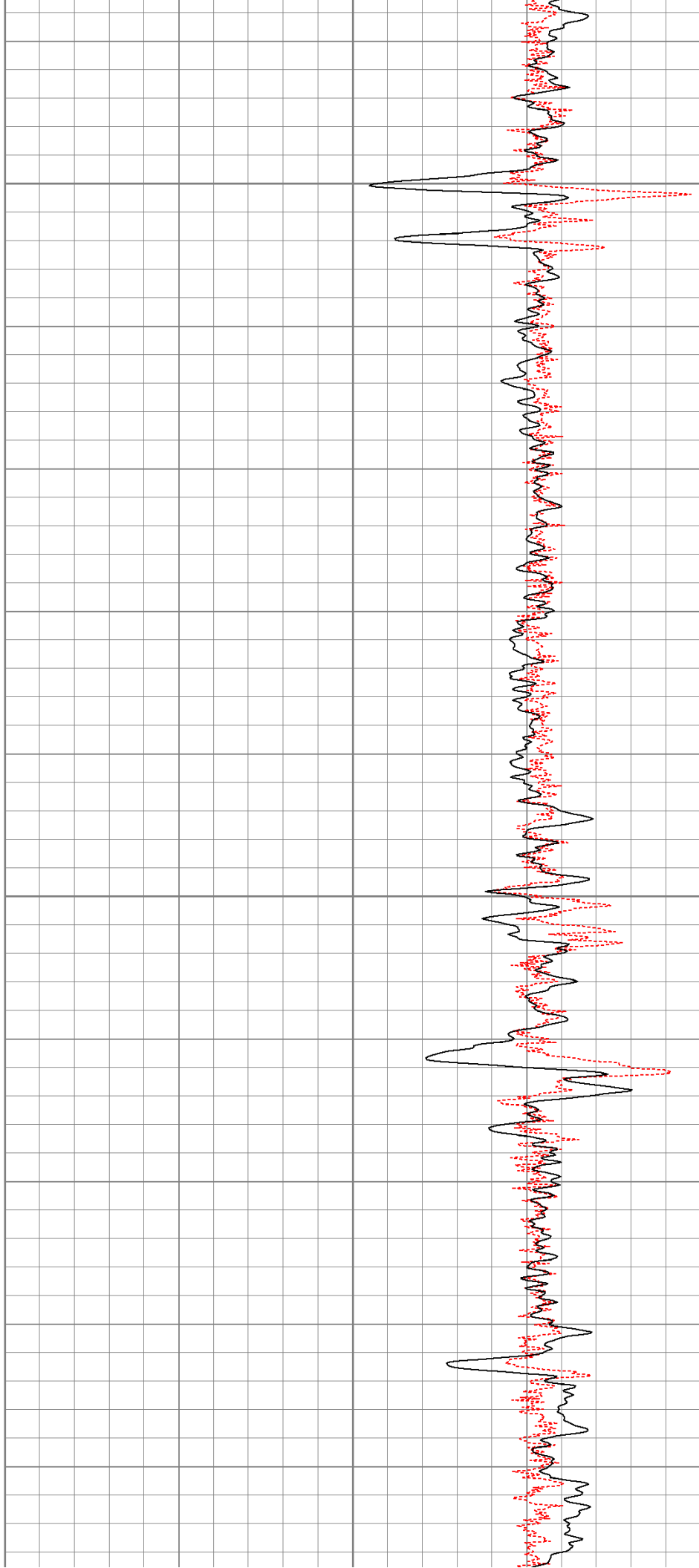
2050

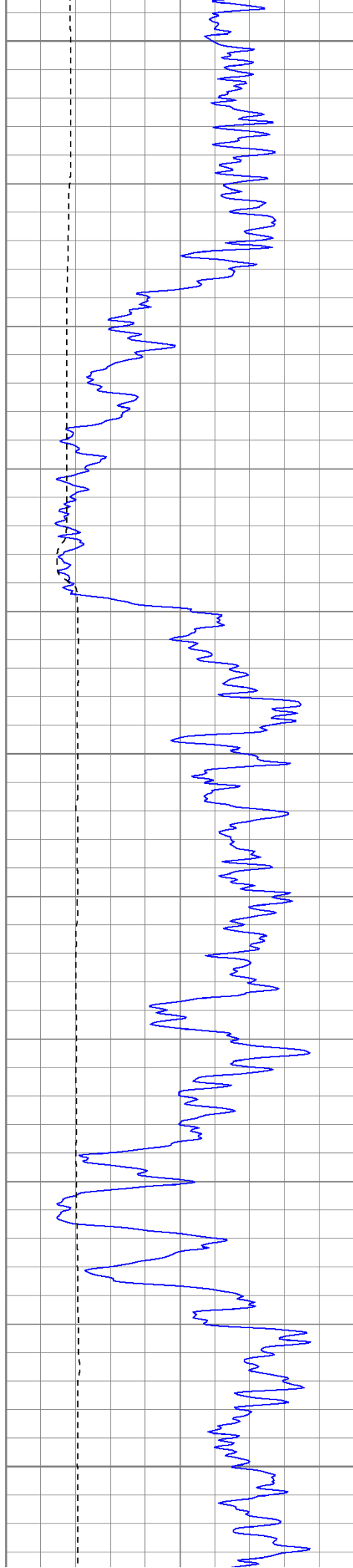




2100

2150

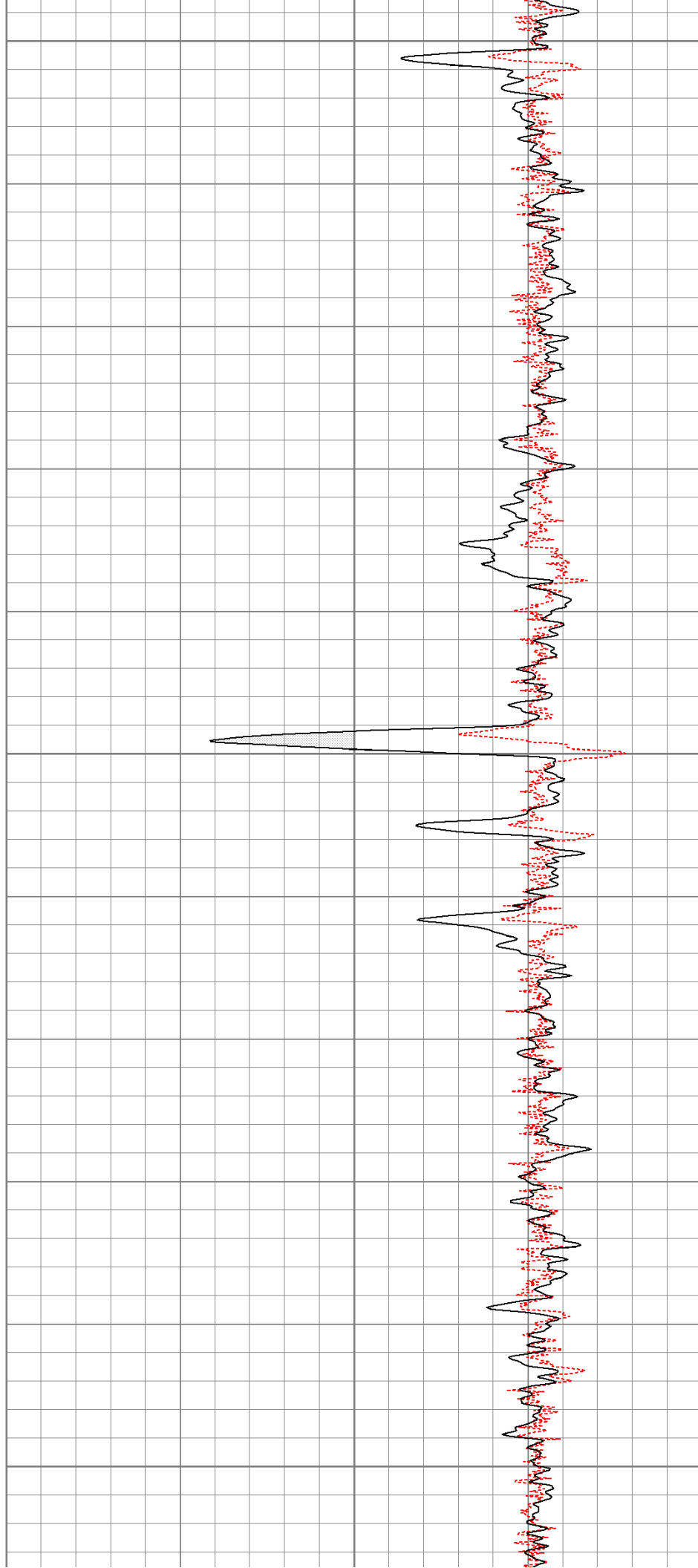


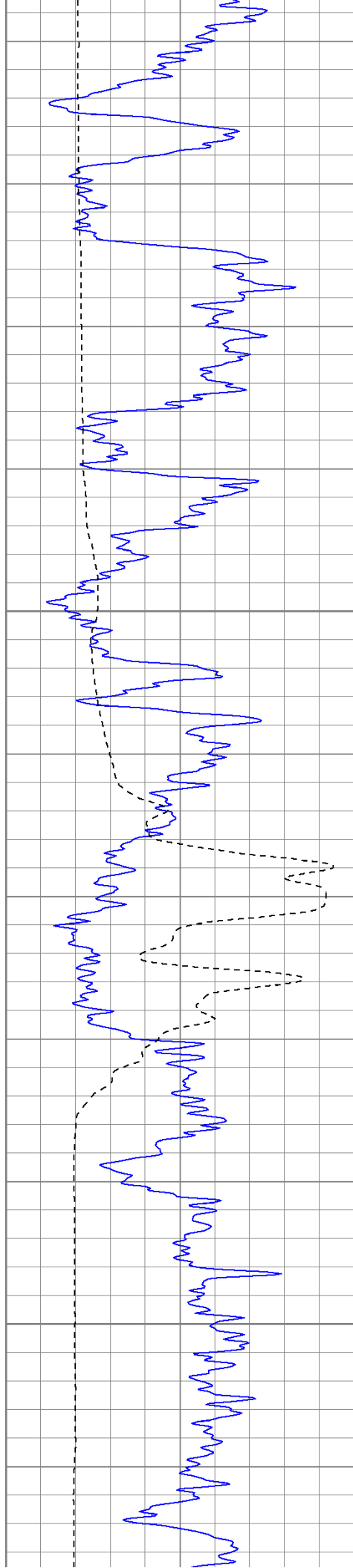


2200

2250

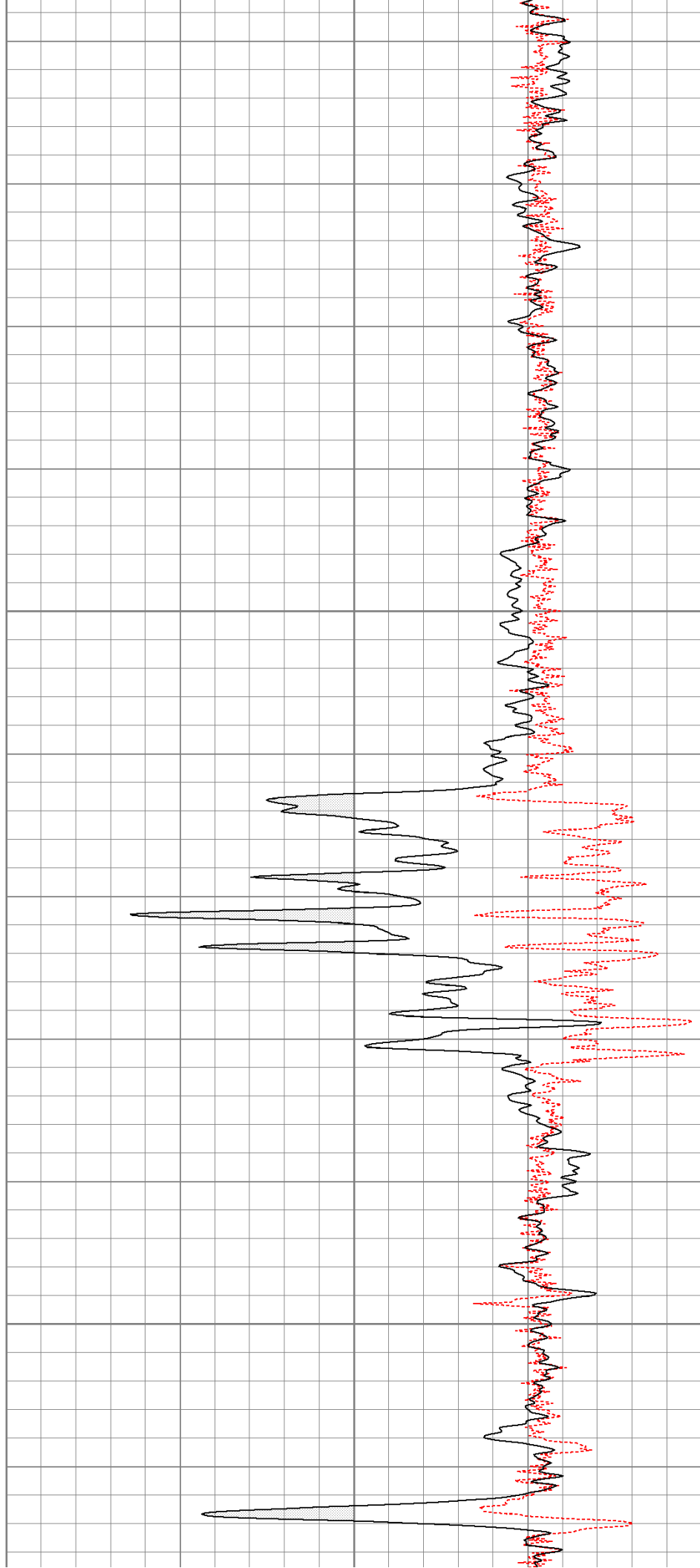
2300

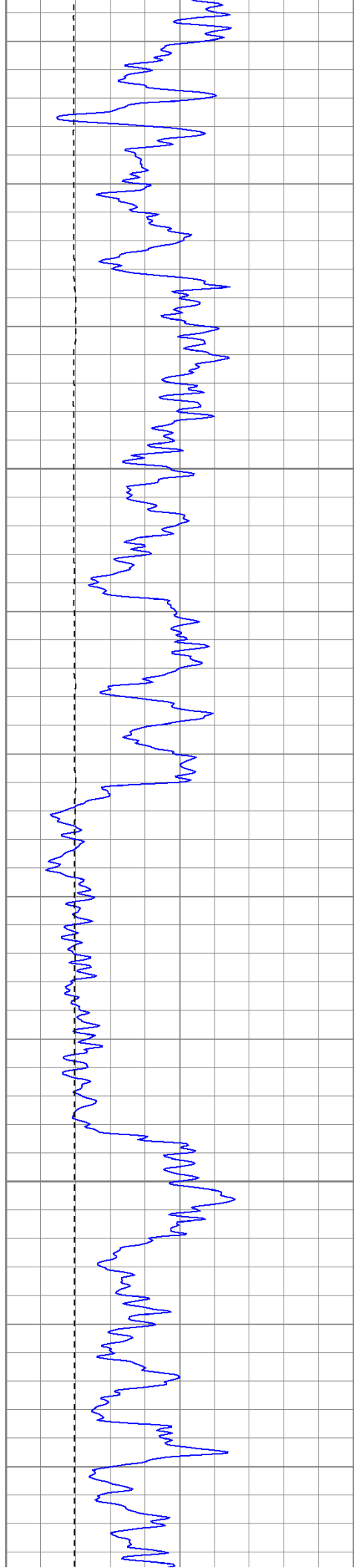




2350

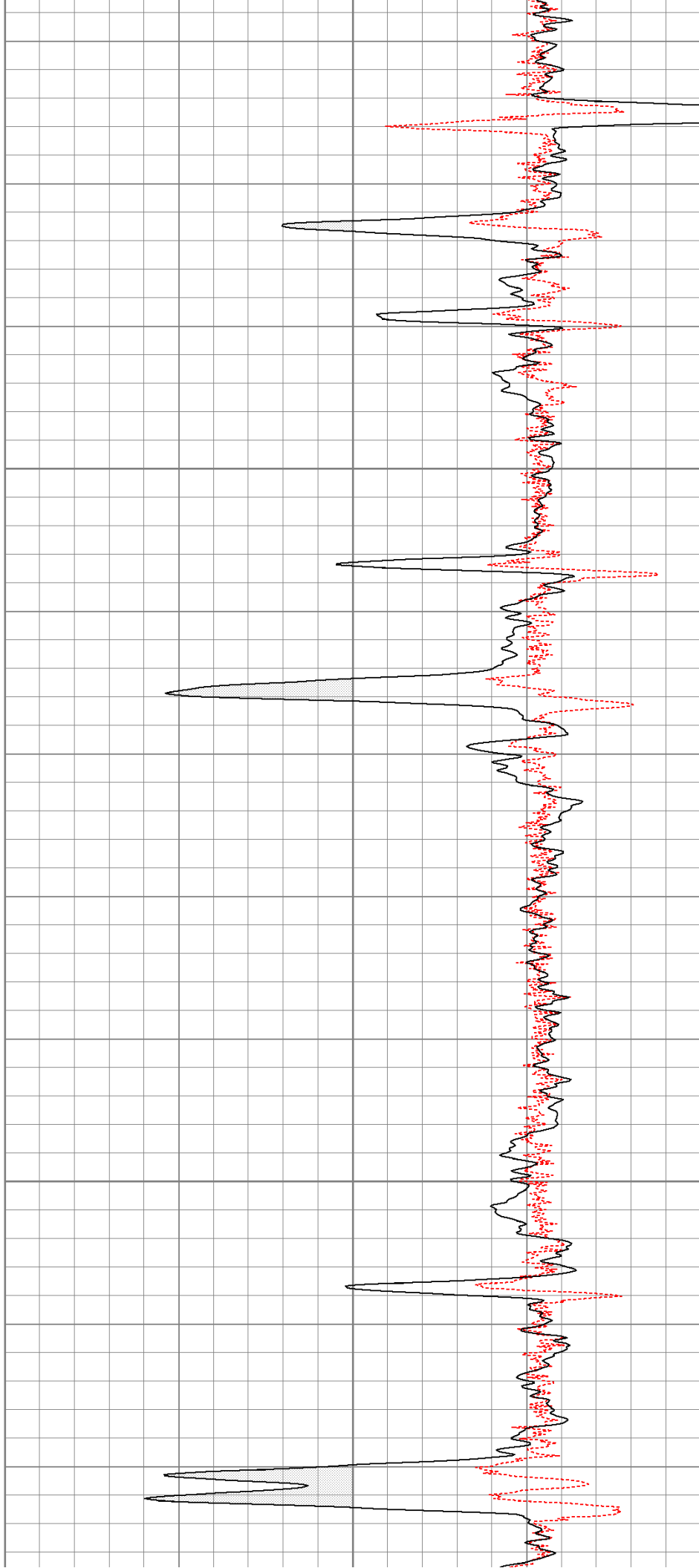
2400

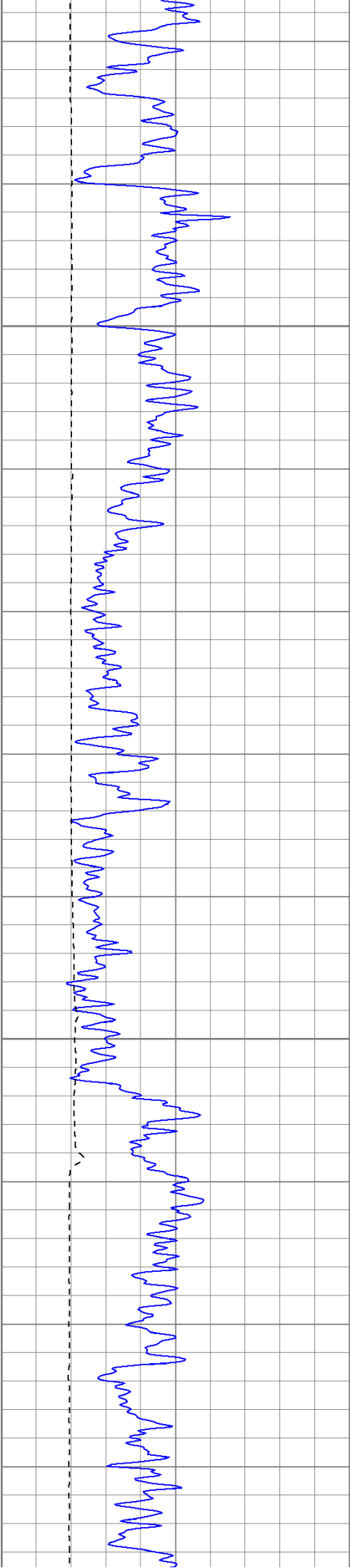




2450

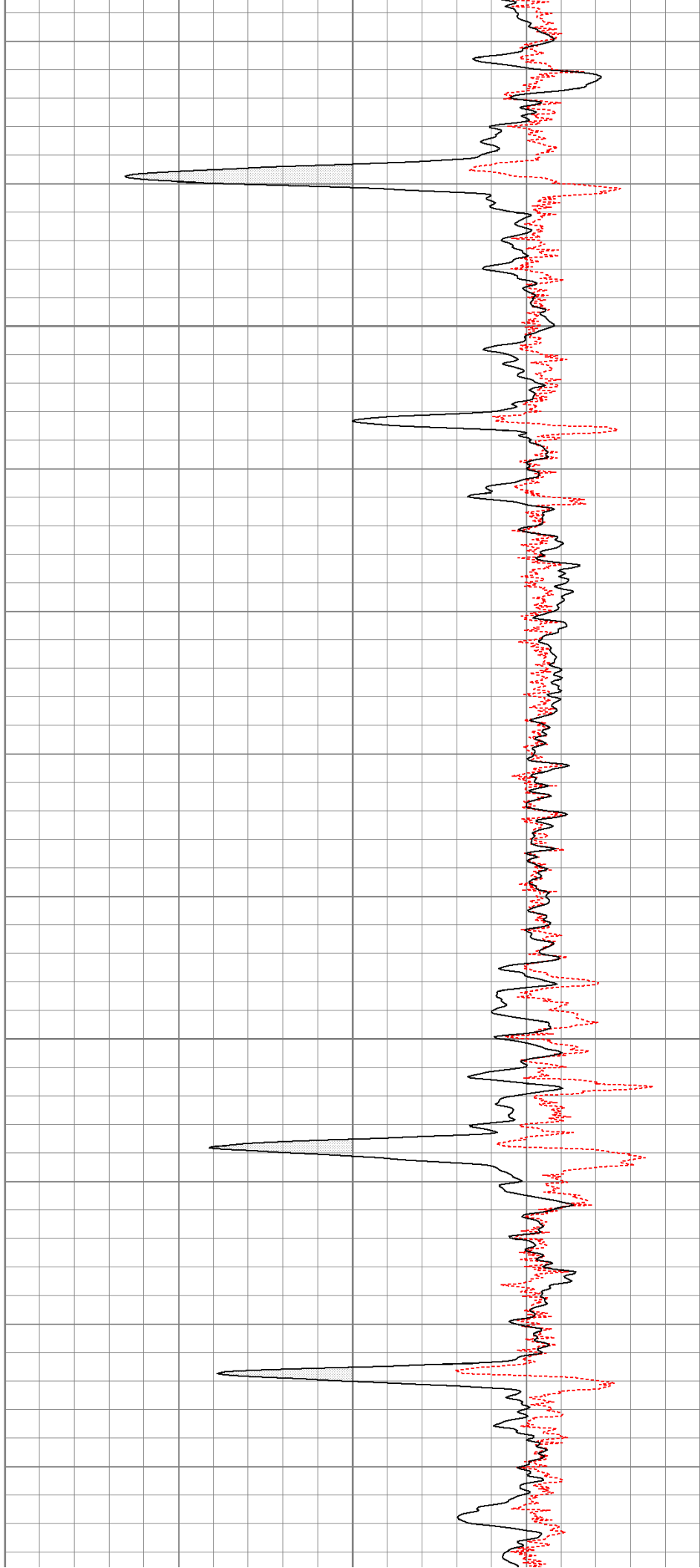
2500

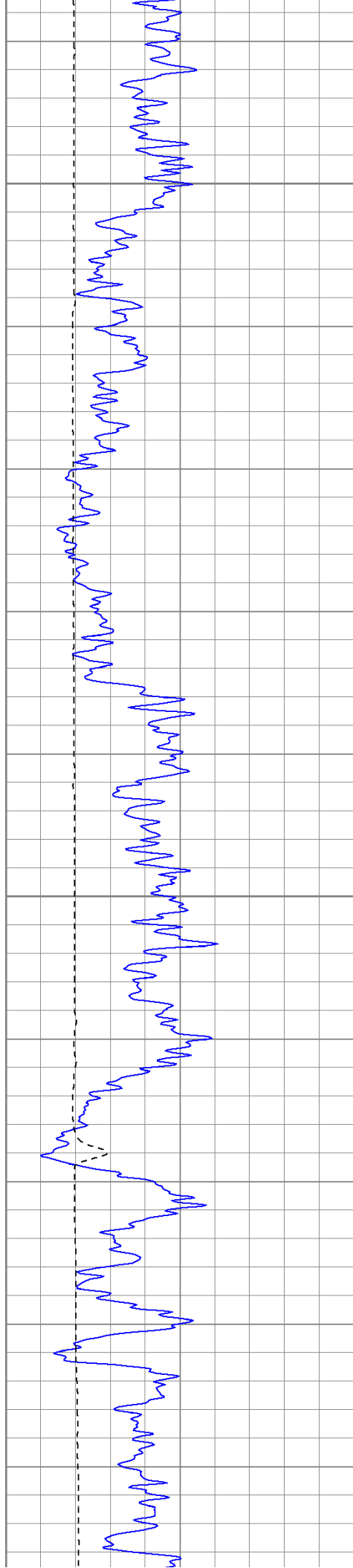




2550

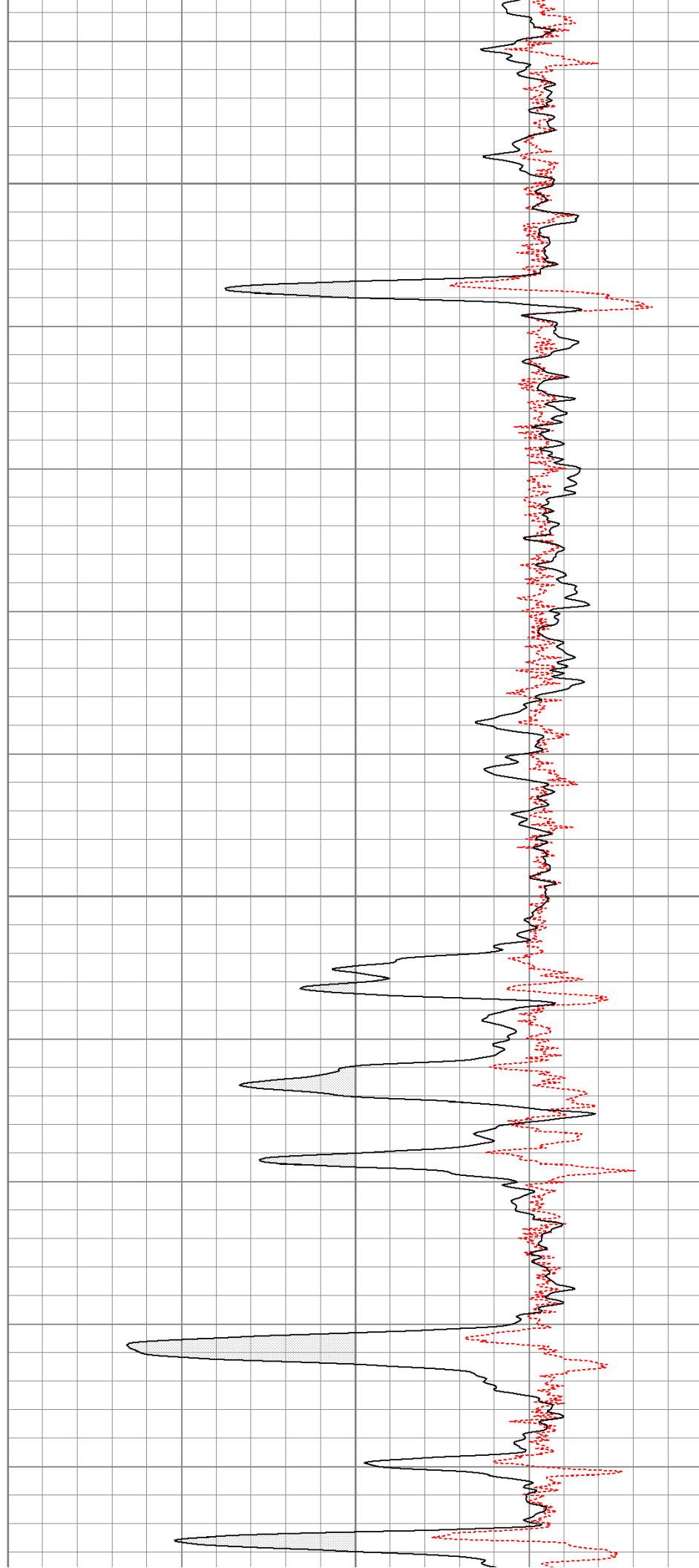
2600



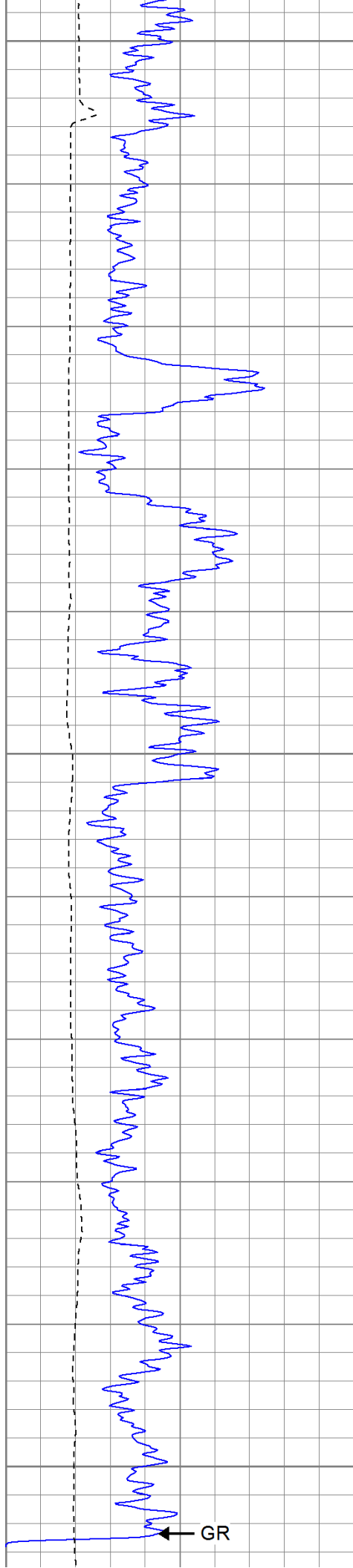


2650

2700



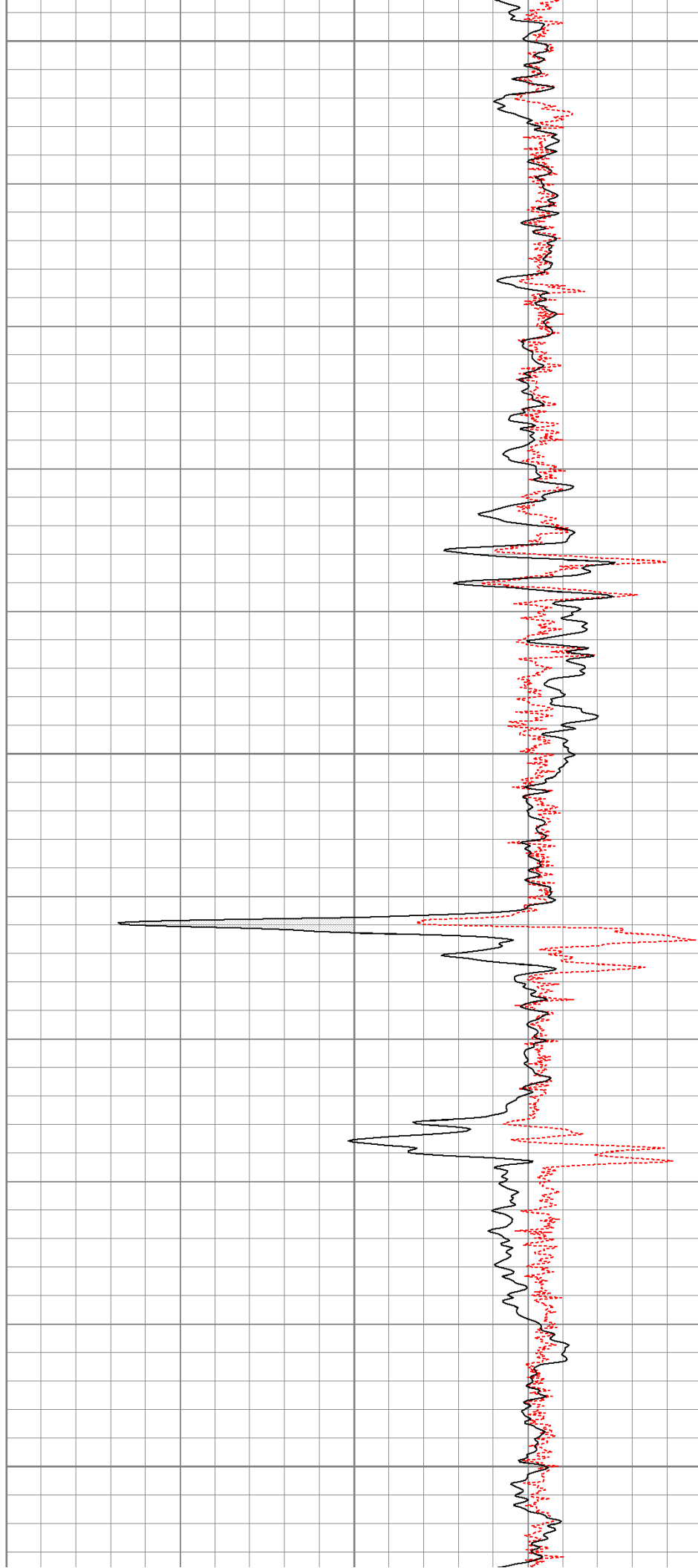


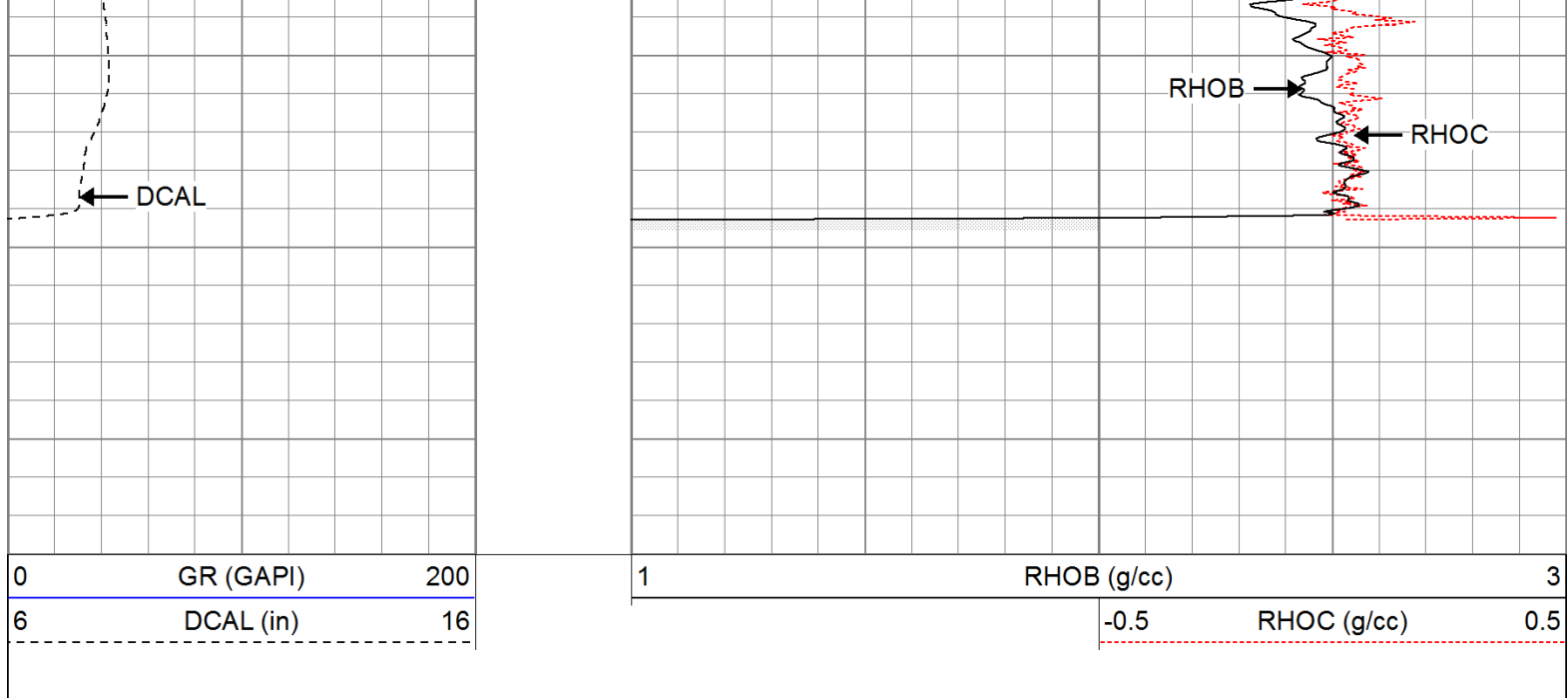


2750

2800

2850





### Calibration Report

Database File: haught.db  
 Dataset Pathname: pass1  
 Dataset Creation: Mon Jul 04 05:37:19 2011 by Log Open-Cased 110302

### Induction Tool Calibration Report

Serial Number: 903  
 Tool Model: Probe  
 Downhole Cal Performed: Sat Jun 18 15:02:12 2011  
 Surface Cal Performed: Sat Jun 18 17:40:00 2011  
 After Survey Verification Performed:

Surface Calibration:	Air	Loop	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	-0.045	0.642	V
Internal Reference:	Zero	Cal	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	0.006	0.641	V

Downhole Calibration:	Internal Zero	Internal Cal	
Conductivity Reference:	-0.702	499.904	mmho
Conductivity Reading:	-0.082	503.319	V
Short Normal Reference:	0.000	20.000	Ohm-m
Short Normal Reading:	0.006	0.233	V

Results:	Gain	Offset
Loop Conductivity:	728.211	32.770
Downhole Correction:	0.994	-0.621
Short Normal Resistivity:	88.245	-3.000

After Survey Verification	Internal Zero	Internal Cal	
Conductivity Reading:	0.000	0.000	V
Conductivity Result:	0.000	0.000	mmho
Short Normal Reading:	0.000	0.000	V
Short Normal Result:	0.000	0.000	Ohm-m

### Compensated Density Calibration Report

Serial-Model: 901-2.75POH  
 Source / Verifier: /  
 Master Calibration Performed: Wed Jun 08 09:11:26 2011  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1001.79	578.48	cps
Aluminum	2.590	g/cc	180.36	300.39	cps
Spine Angle = 69.08			Density/Spine Ratio = 0.479		
	Size		Reading		
Small Ring	8.00	in	2.50	V	
Large Ring	16.00	in	4.57	V	

Before Survey Verification			
Target		Measured	
	g/cc		g/cc
	g/cc		g/cc
	g/cc		g/cc


After Survey Verification	
Target	Measured
g/cc	g/cc
g/cc	g/cc
g/cc	g/cc

# Neutron Calibration Report

Serial Number:	803	
Tool Model:	2.75POH	
Performed:	Wed Jun 08 13:12:55 2011	
Calibrator Value:	1	NAPI
Calibrator Reading:	1	cps
Sensitivity:	1	NAPI/cps

# Gamma Ray Calibration Report

Serial Number:	804	
Tool Model:	2.75POH	
Performed:	Tue Jun 14 18:09:29 2011	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	29.58		None	0.75	1.50	5.00
			GR-2.75POH (804) Probe 2.75" Probe Open Hole Gamma Ray	3.73	2.75	43.00
			NEW 2.75POH (800)	4.75	2.75	53.00

