



**CEMENT
BOND LOG
WITH GAMMA RAY**

Company **Bonaza Creek Energy**
Well **State Antelope K-0-28 HNB**
Field **Wattenberg**
County **Weld** State **Colorado**

Location: API # : 05-123-419730000

Other Services

SEC 21 TWP 5N RGE 62W

none

Permanent Datum GROUND LEVEL Elevation 4634
Log Measured From KB
Drilling Measured From KB

Elevation
K.B. 4651
D.F.
G.L. 4634

Date of Service

11/09/2015

Run Number

1

Depth Driller or PBTD

NOT GIVEN

Depth Logger

5987

Bottom Log Interval

5975

Top Log Interval

SURFACE

Open Hole Size

not given

Type Fluid

water

Fluid Level

surface

Fluid Density

NOT GIVEN

Max. Recorded Temperature

200

Max. Wellhead Pressure

0

Wellhead Connection

10k 7/16" flange

Estimated Cement Top

1120'

Unit Number

p-132

Wireline Size

9/32"

Location

fort morgan

Recorded By

NATHAN BIVENS

Witnessed By

B. MARTIN

Tubing Record

Size

Wt/Ft

Top

Bottom

Surface Casing

9 5/8"

36#

SURFACE

1560

Production Casing

7"

26#

SURFACE

6760

Liner Record

<<< 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.
s.o. # 2-220166

LOG FORMAT AS PER CUSTOMER REQUEST

THANK YOU FOR USING PIONEER ENERGY SERVICES

Your Pioneer Energy Services Crew

Engineer: NATHAN BIVENS
Operator: WAYNE BRIGANTE
Operator: TODD KRIEN
Operator: JOE PARISH

Tool Data - Services

Serial Number

Top - 50.00 ft

BHTEMP_Src TEMP	BOREID in 0	BOTTEMP degF 0	CASEOD in 0	CASETHCK in 0	CASEWGHT lb/ft 0	MAXAMPL mV 0	MINAMPL mV 0
MINATTN db/ft 0	PERFS 0	PPT usec 0	SRFTEMP degF 0	TDEPTH ft 0			

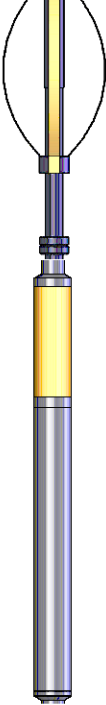
50.00 ft - 250.00 ft


BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 200	CASEOD in 7	CASEWGHT lb/ft 26	MINAMPL mV 1	MINATTN db/ft 0.08
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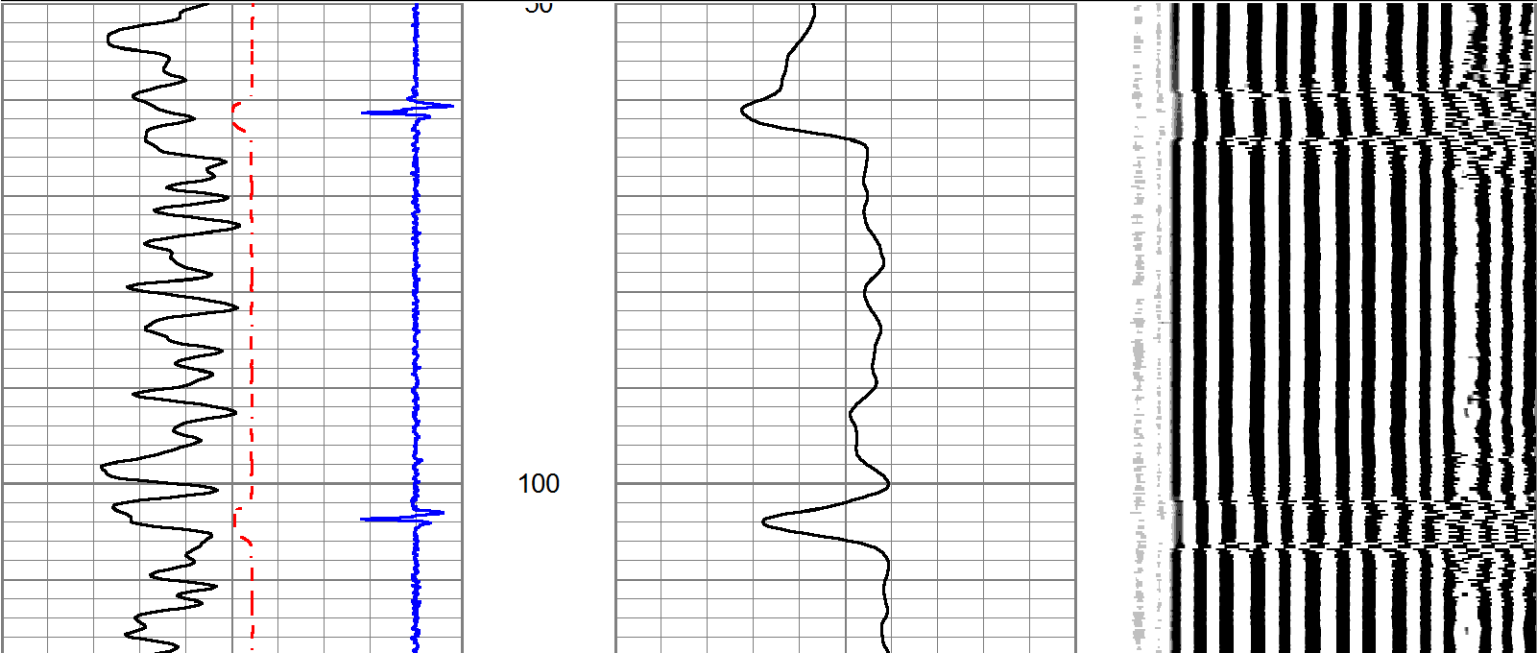
250.00 ft - Bottom

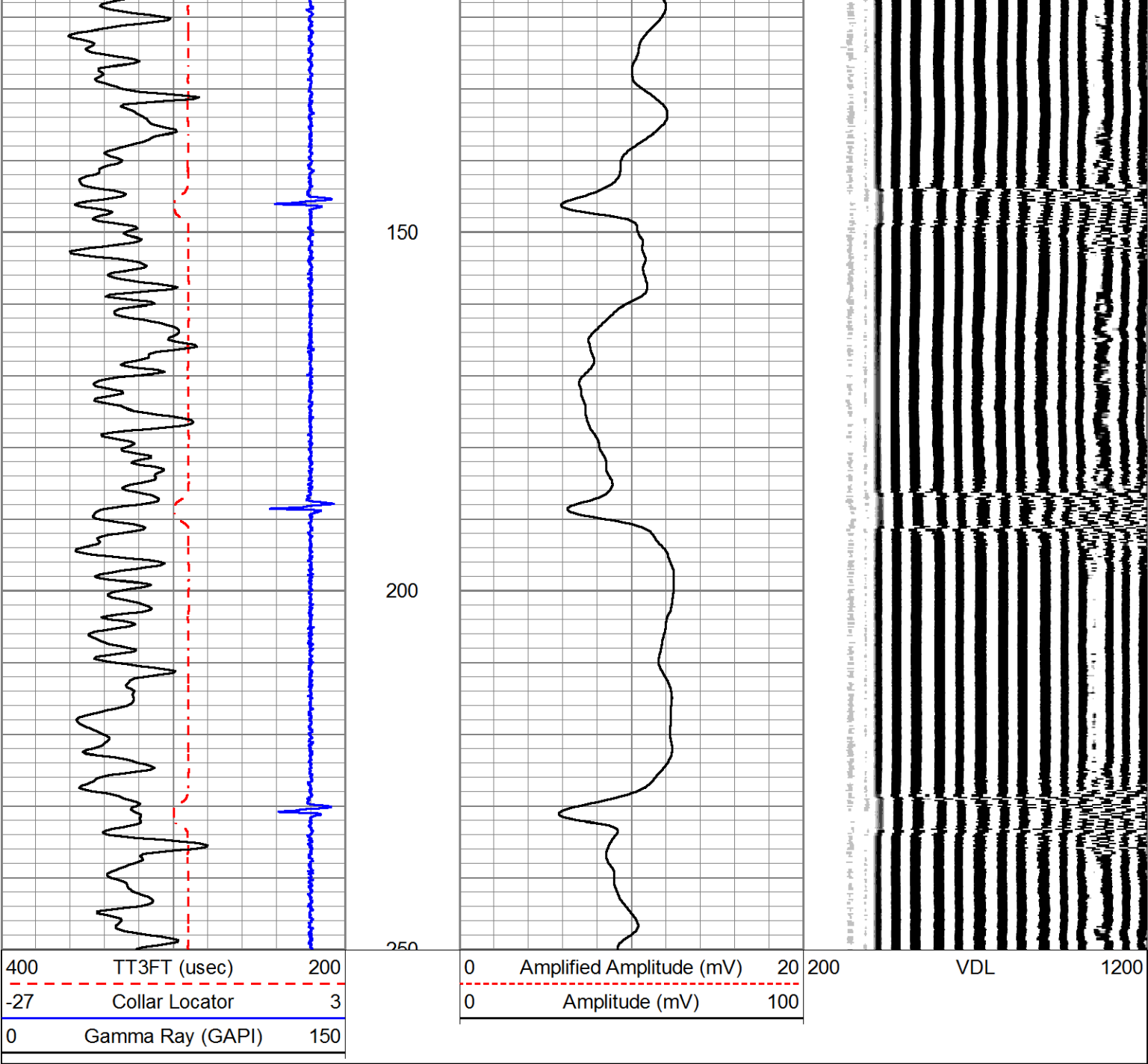
BHTEMP_Src TEMP	BOREID in 0	BOTTEMP degF 0	CASEOD in 0	CASEWGHT lb/ft 0	MINAMPL mV 0	MINATTN db/ft 0
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-Titan 1 7/16" Titan Cable Head	1.00	1.44	2.00
			CENT-Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
			RBT-Probe (pro_rib_2750_4.50)	8.75	2.75	90.00
WVFS8	11.81					
WVFS7	11.81					
WVFS6	11.81					
WVFS5	11.81					
WVFS4	11.81					
WVFS3	11.81					
WVFS2	11.81					
WVFS1	11.81					
WVFCAL	11.81					
WVF3FT	11.81					
WVF5FT	10.81					

TEMP	7.63		CENT-Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
CCL	3.92					
GR	2.54		GR-Probe275dig (120519) Probe Digital Gamma CCL	4.75	2.75	57.00
Dataset: state antelope k-o-28 hnb.db: field/well/run1/pass9 Total length: 20.25 ft Total weight: 179.00 lb O.D.: 2.75 in						

<div></div> <div>PIONEER</div>			FREE PIPE PASS & REPEAT PASS					
Database File		state antelope k-o-28 hnb.db						
Dataset Pathname		pass9						
Presentation Format		pnrcbl						
Dataset Creation		Mon Nov 09 12:59:00 2015						
Charted by		Depth in Feet scaled 1:240						
400	TT3FT (usec)	200	0	Amplified Amplitude (mV)	20	200	VDL	1200
-27	Collar Locator	3	0	Amplitude (mV)	100			
0	Gamma Ray (GAPI)	150						







PIONEER

MAIN PASS

Database File state antelope k-o-28 hnb.db

Dataset Pathname pass8

Presentation Format pncbl

Dataset Creation Mon Nov 09 12:23:34 2015

Charted by Depth in Feet scaled 1:240

400 TT3FT (usec) 200

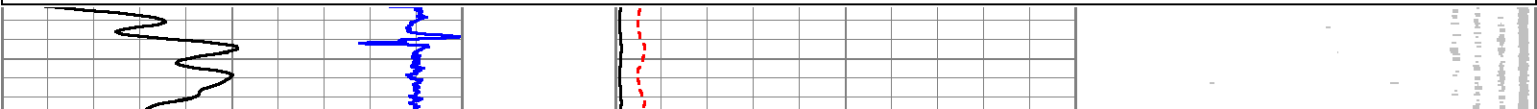
-27 Collar Locator 3

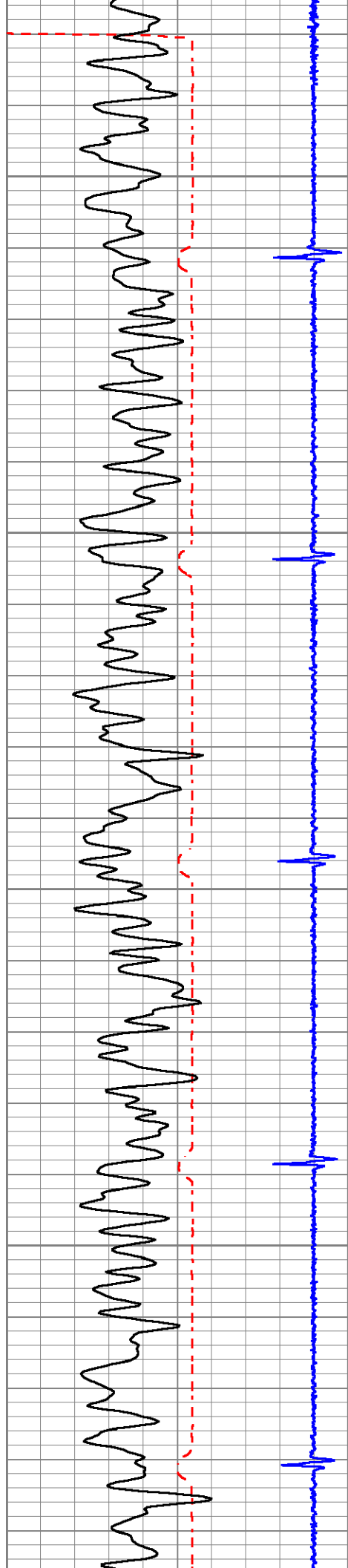
0 Gamma Ray (GAPI) 150

0 Amplified Amplitude (mV) 20

0 Amplitude (mV) 100

200 VDL 1200



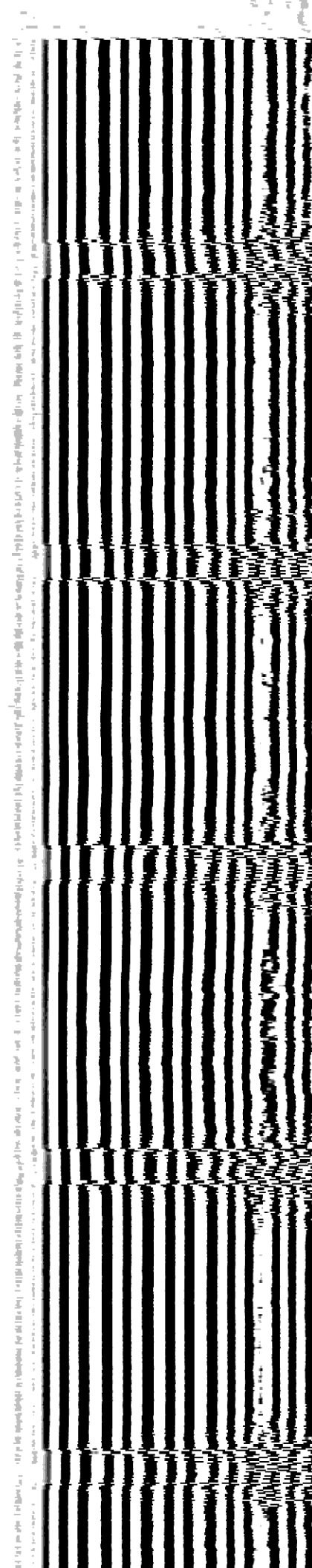
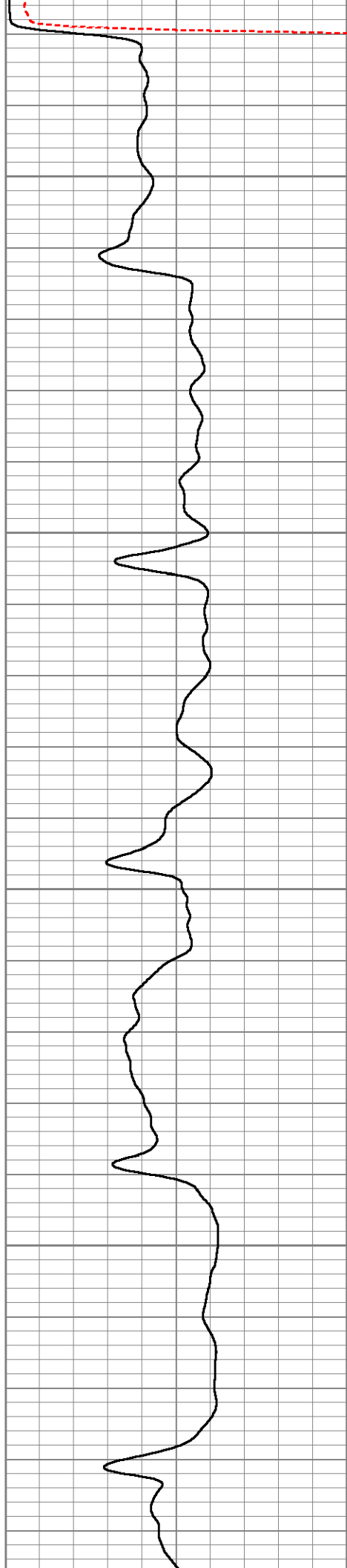


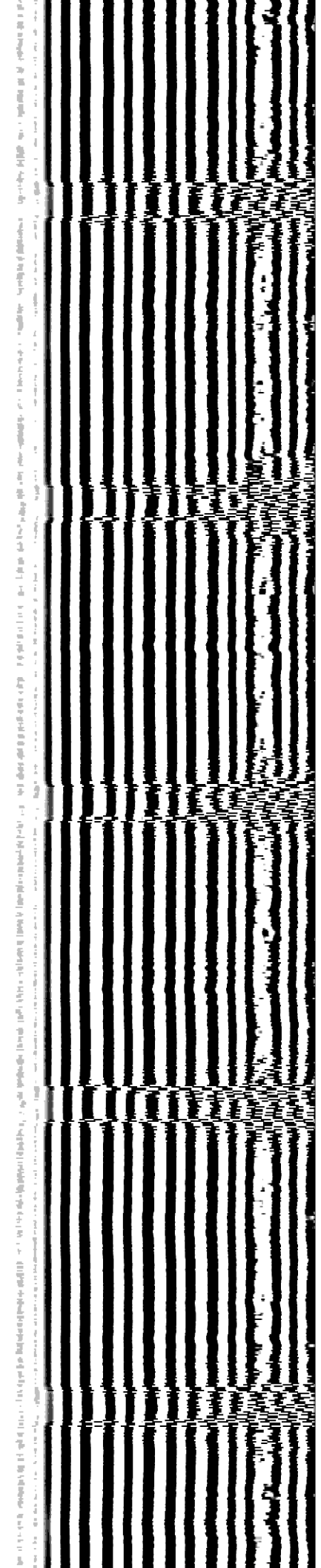
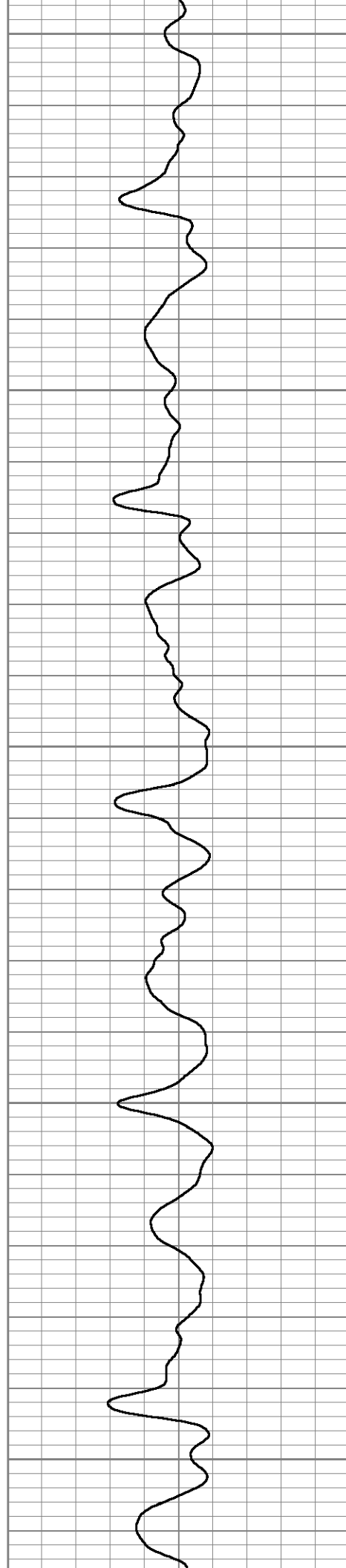
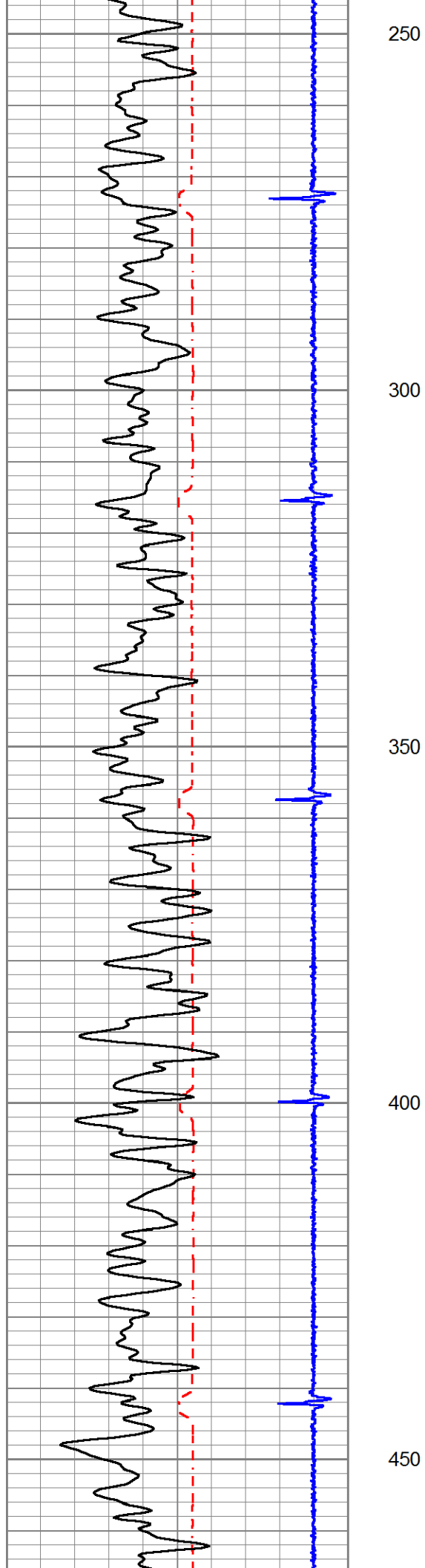
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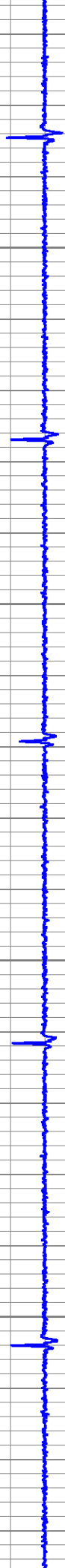
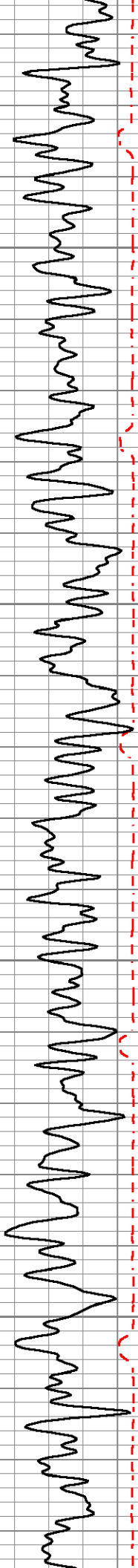
100

150

200





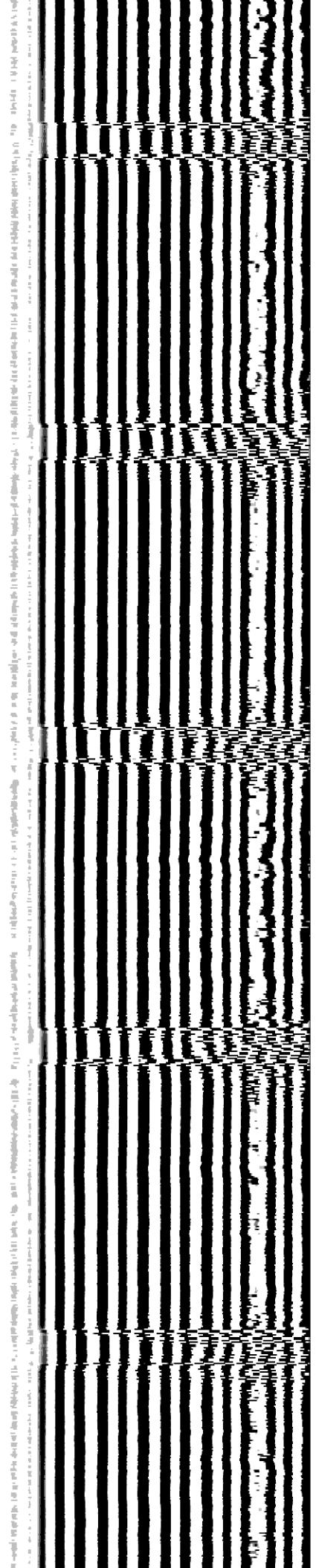


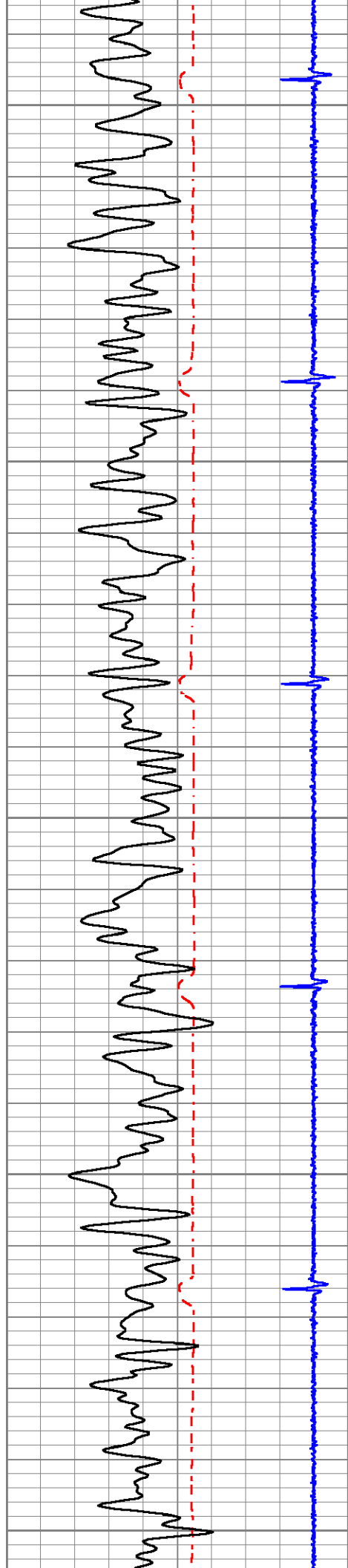
500

550

600

650





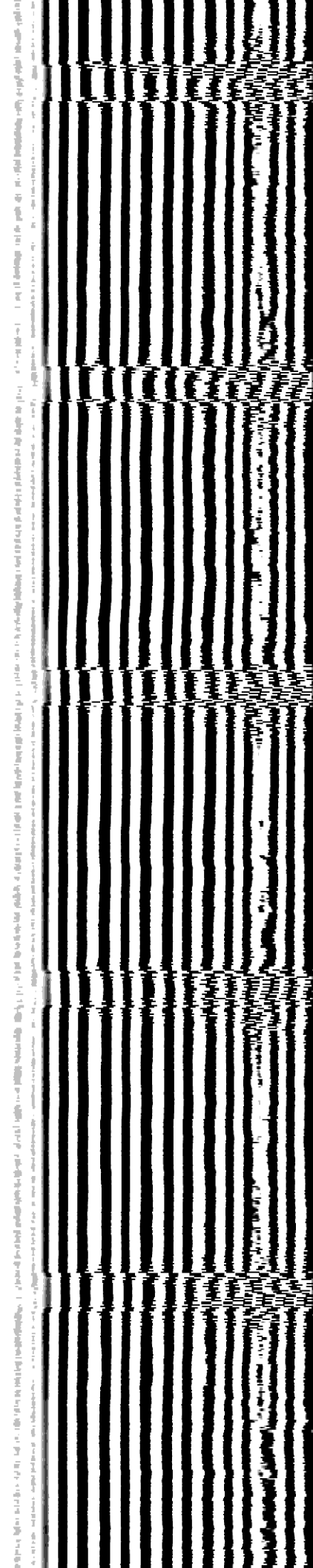
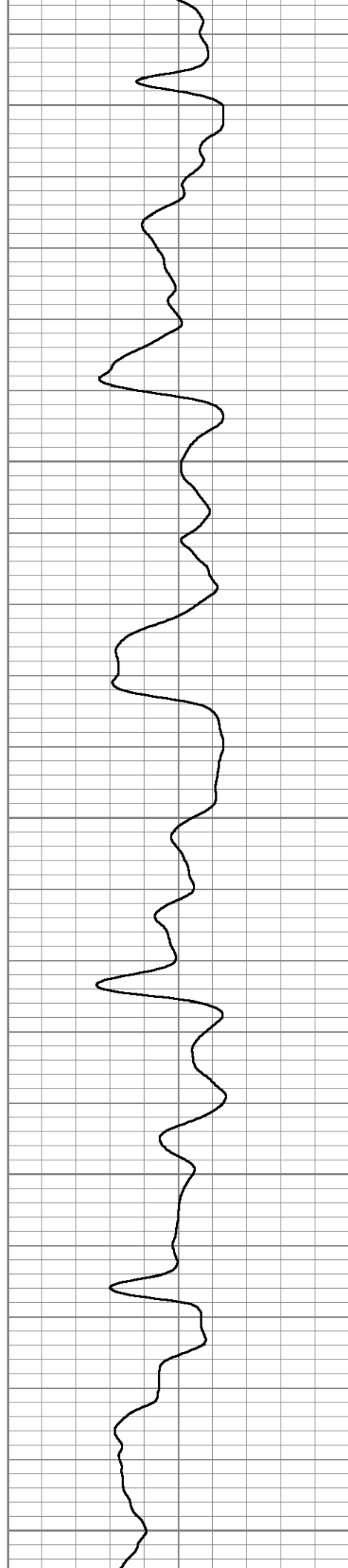
700

750

800

850

900



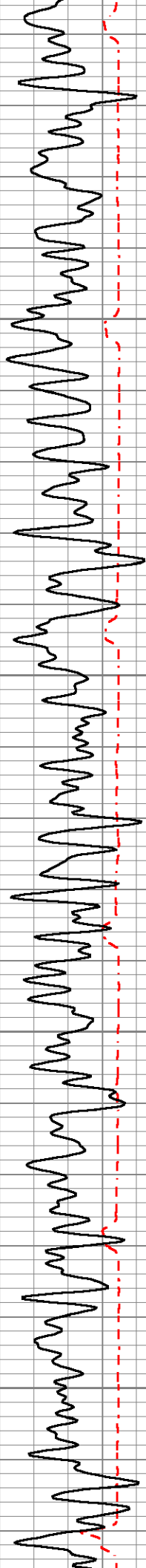
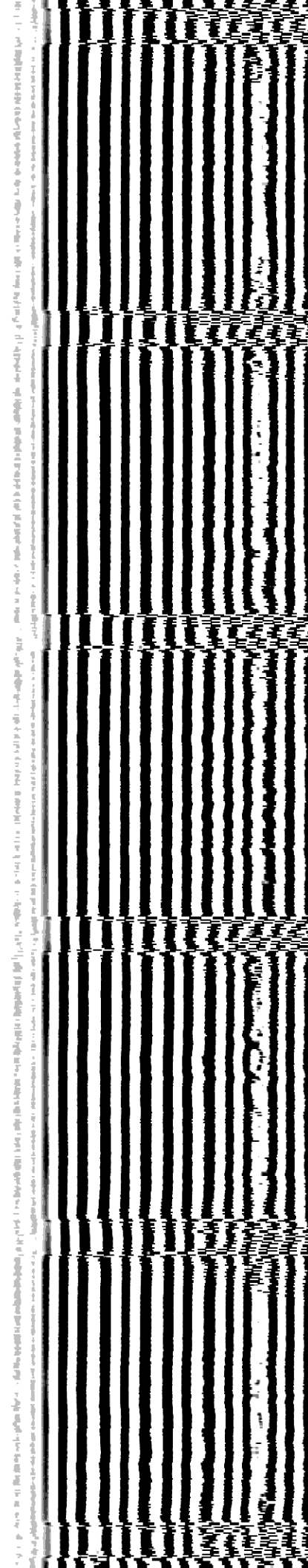
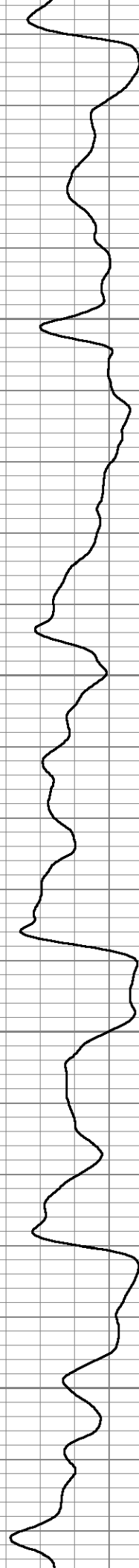
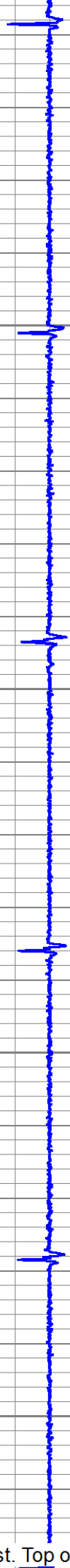
Est. Top of Cement →

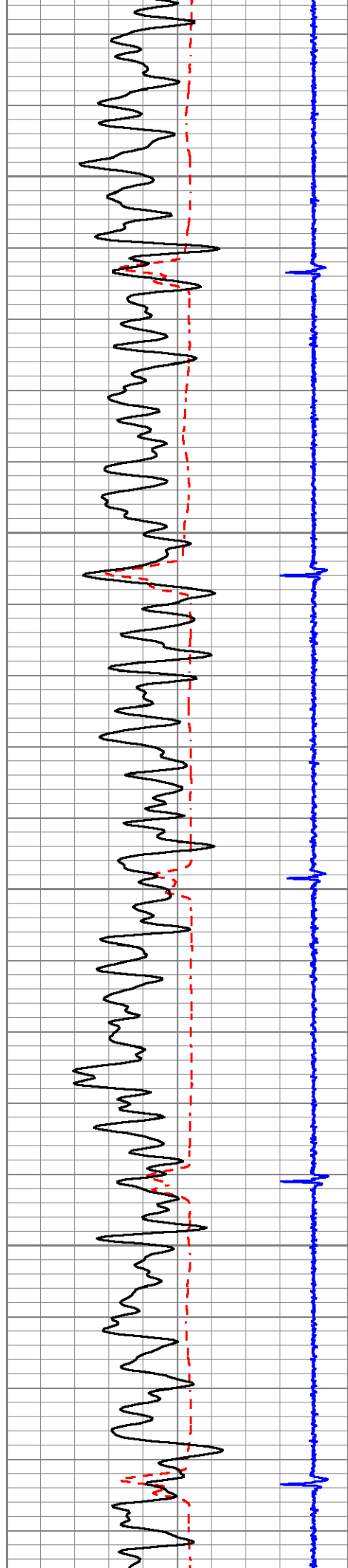
1100

1050

1000

950



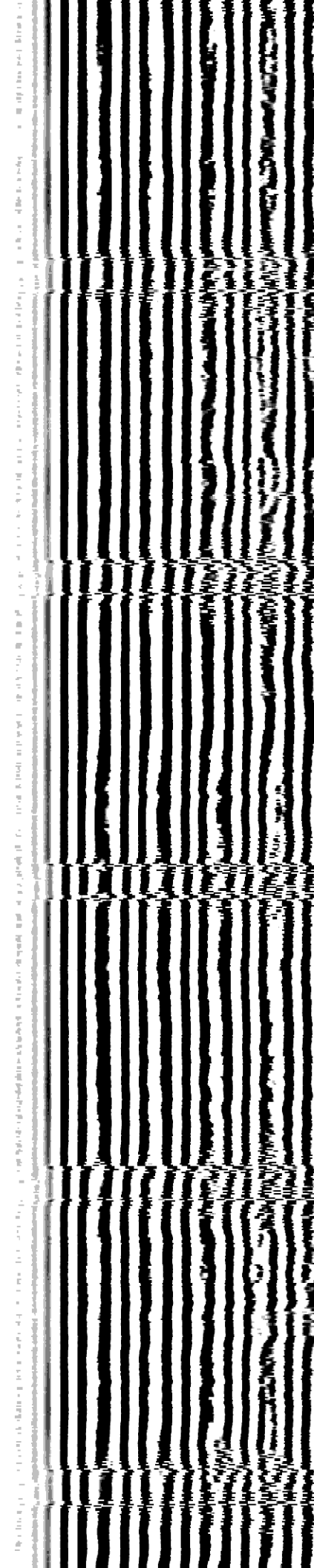
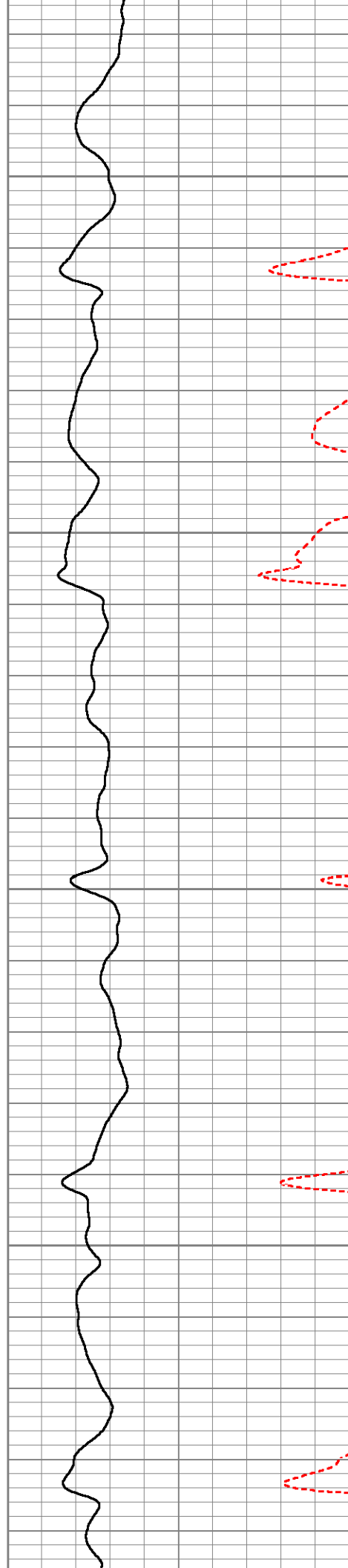


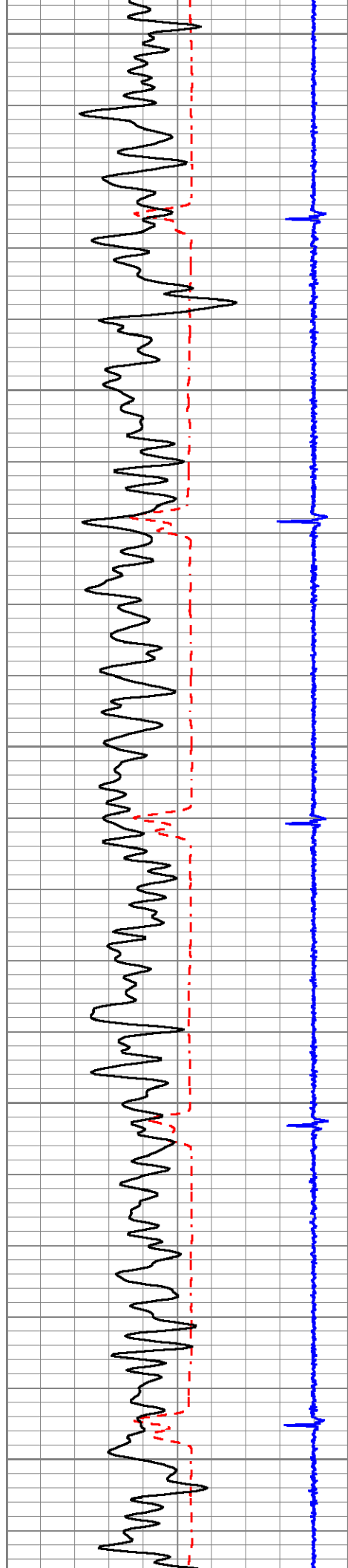
1150

1200

1250

1300





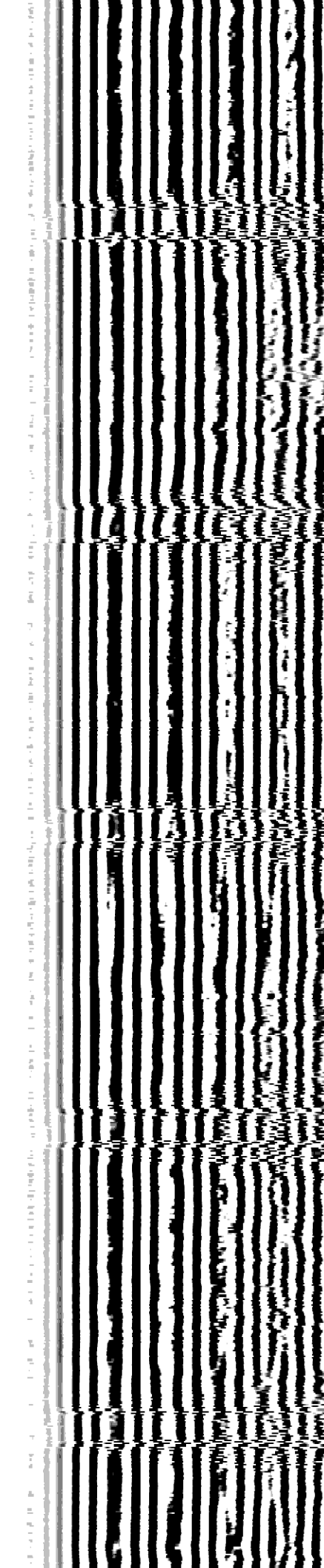
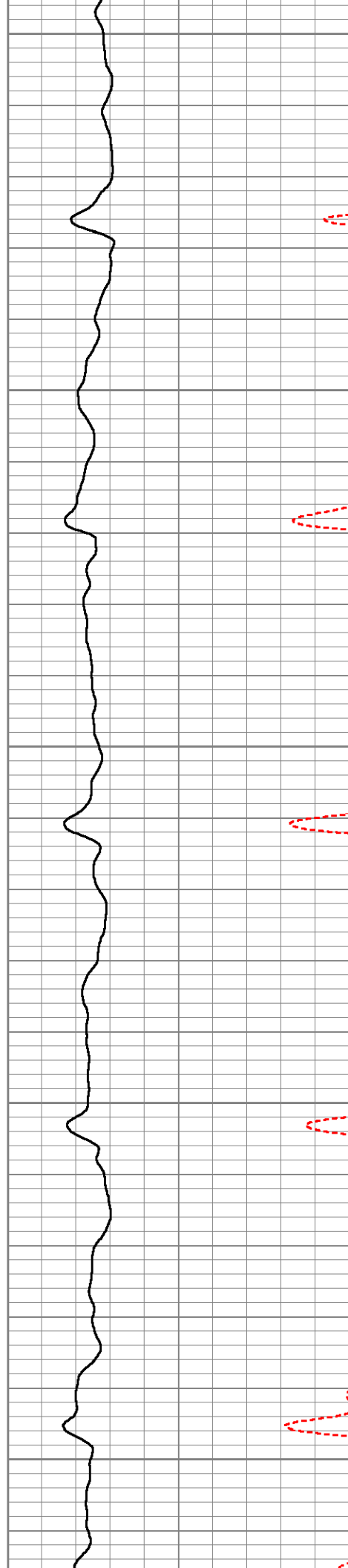
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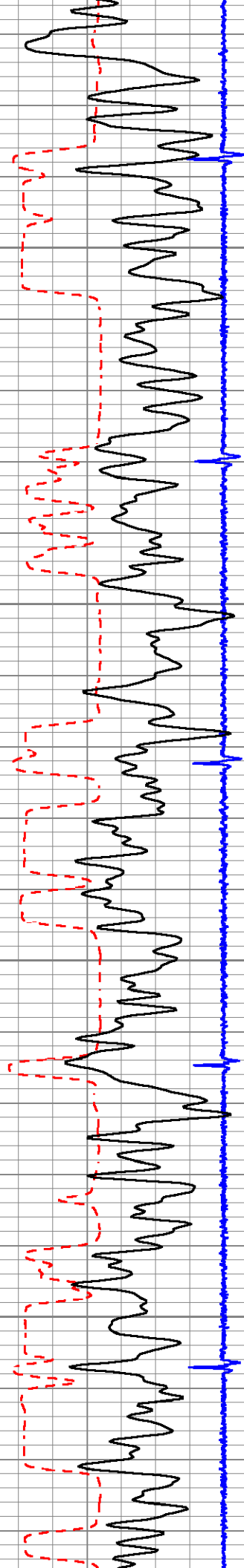
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1450

1500

1550



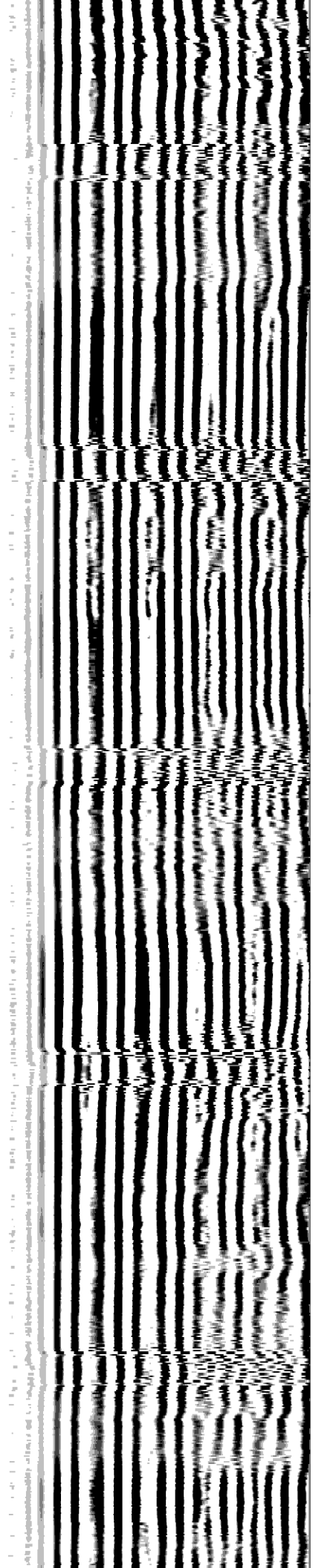


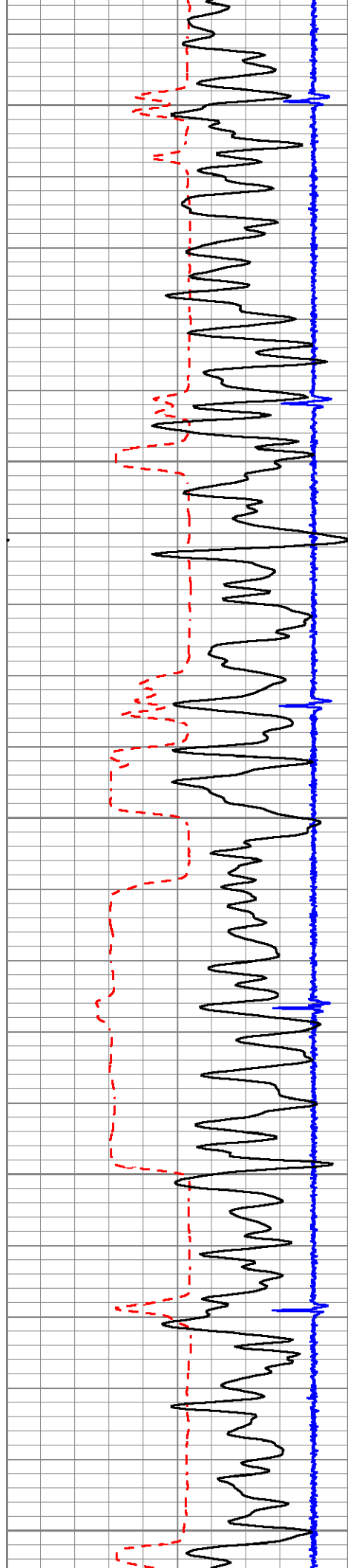
1600

1650

1700

1750





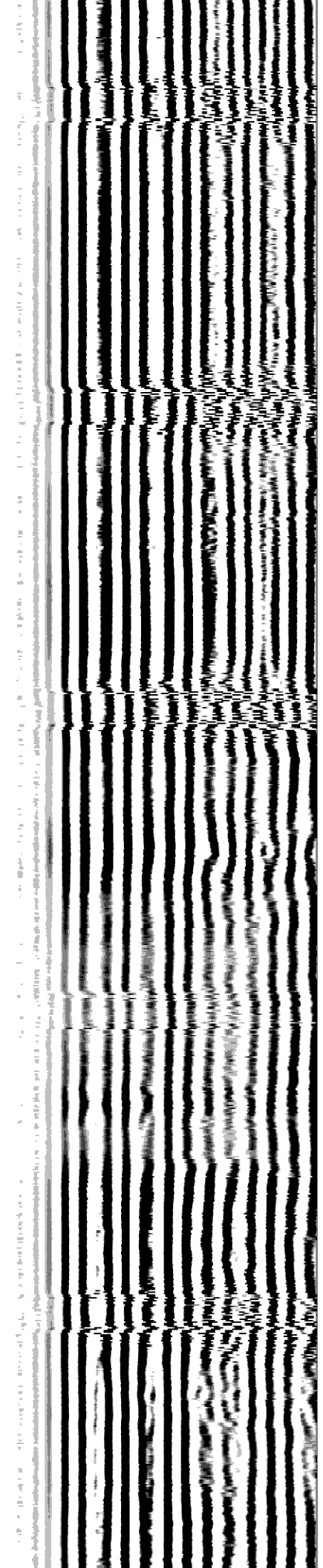
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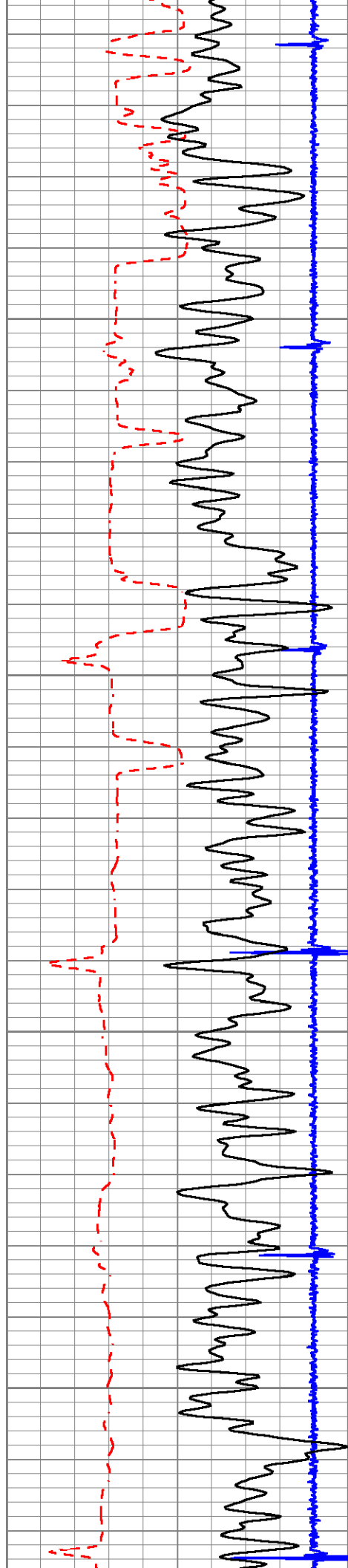
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1900

1950

2000



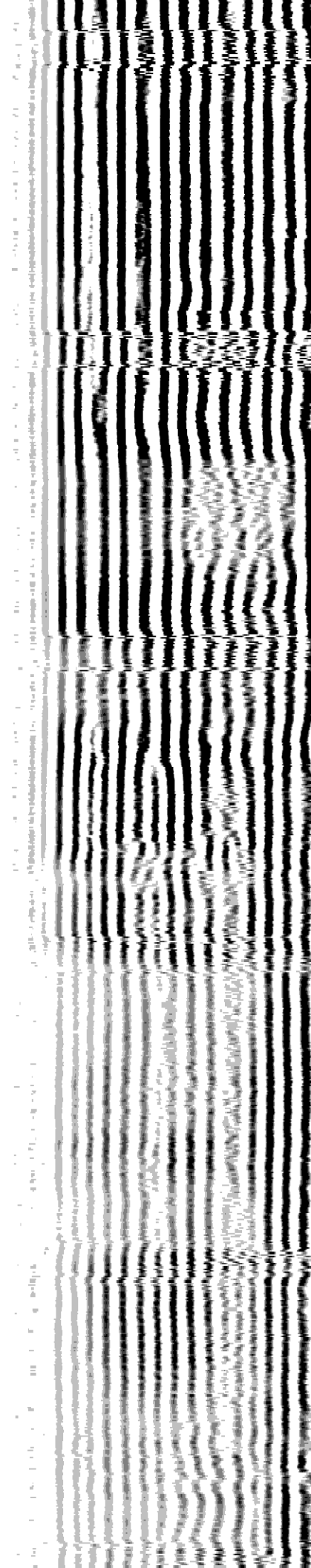
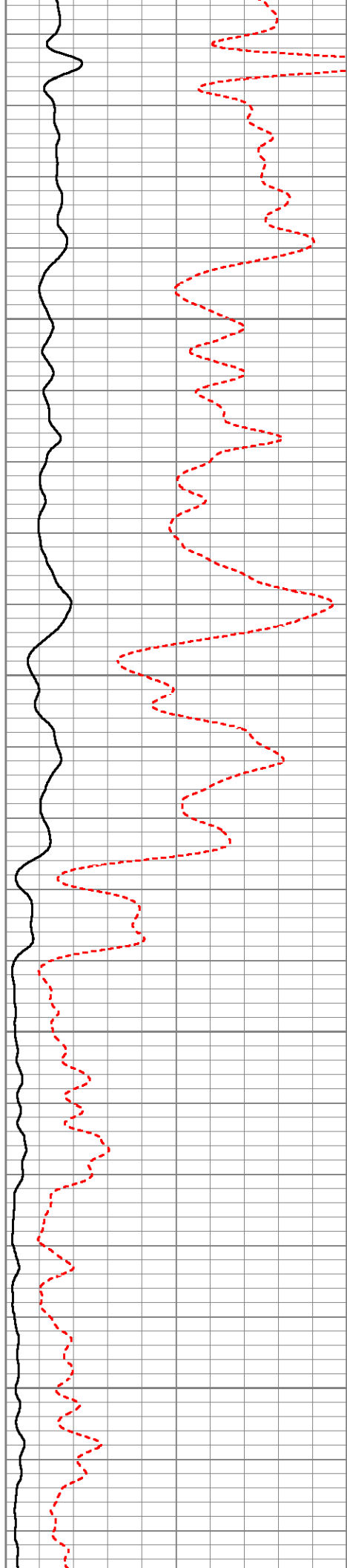


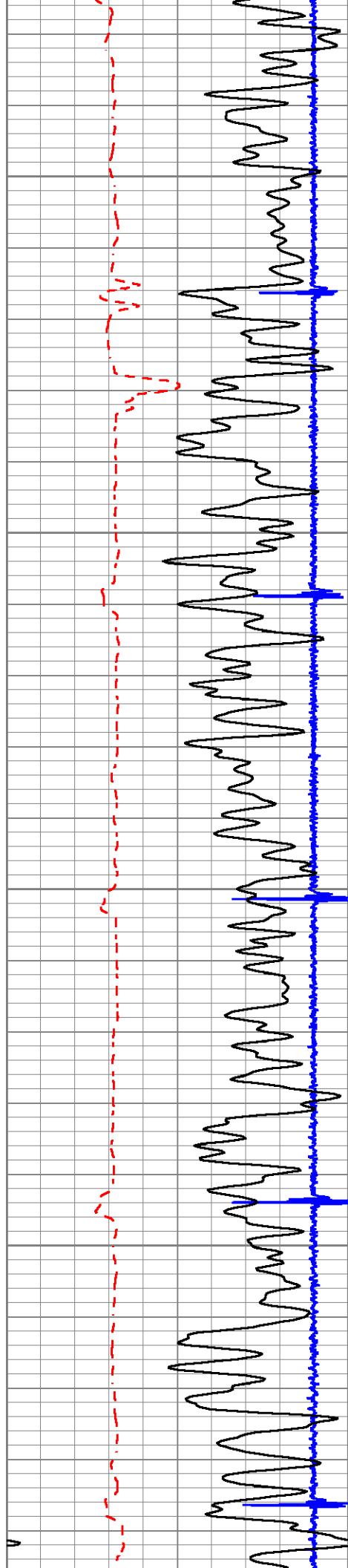
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2100

2150

2200



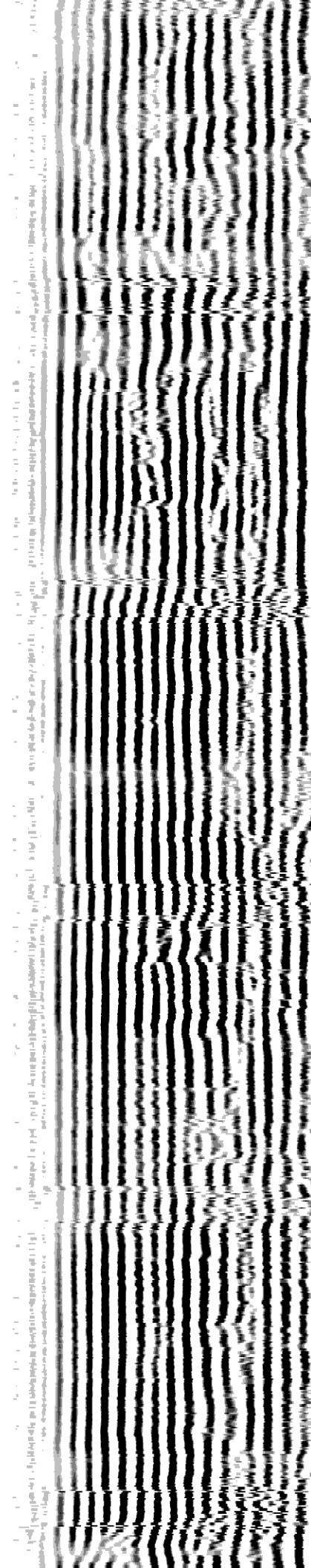
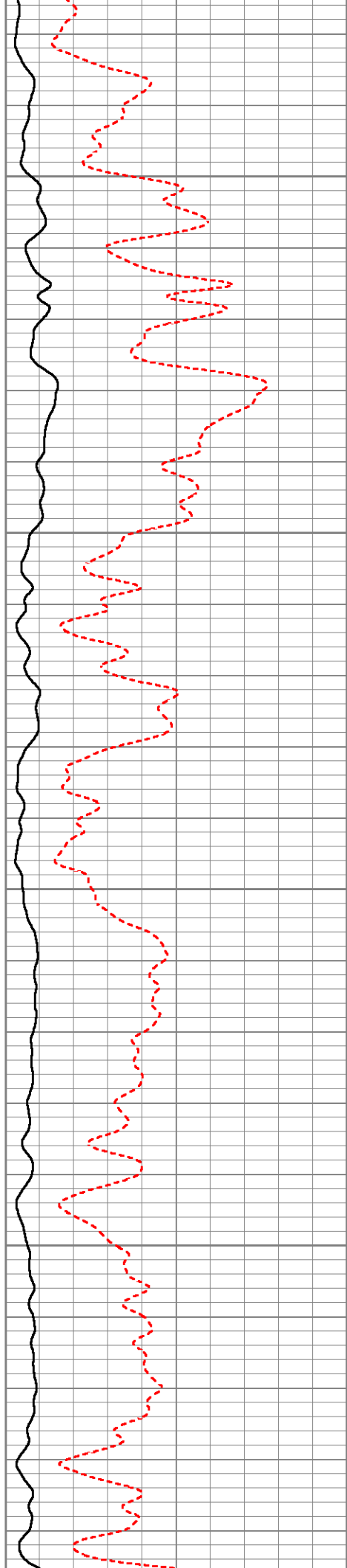


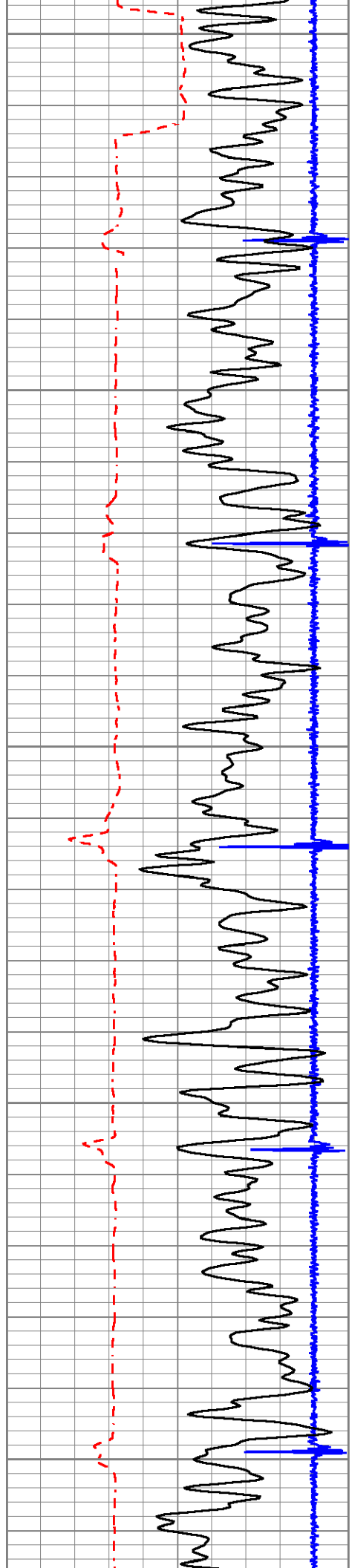
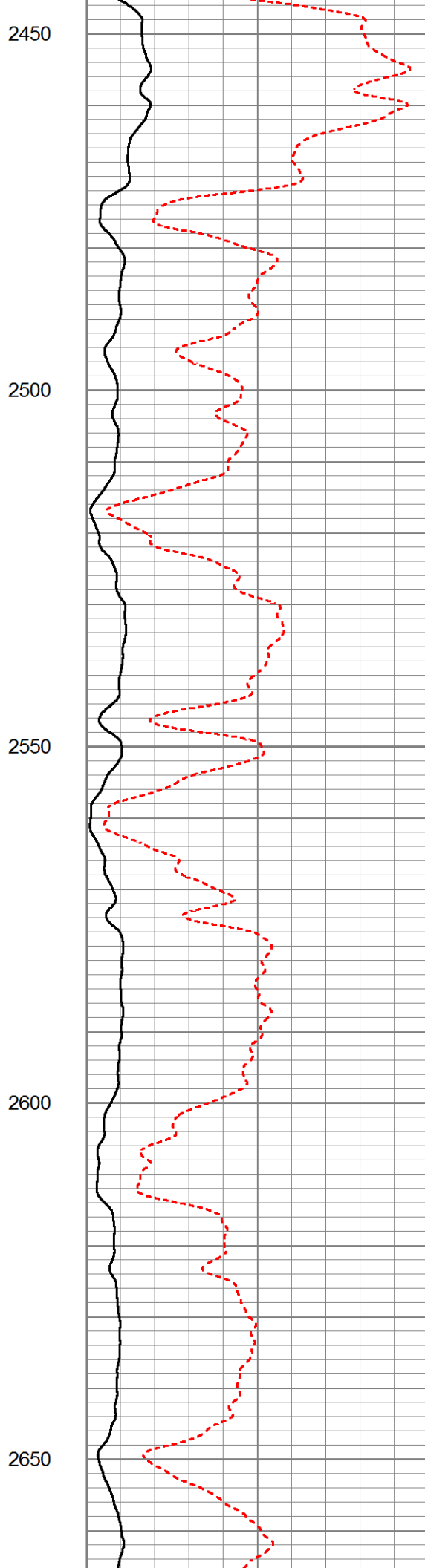
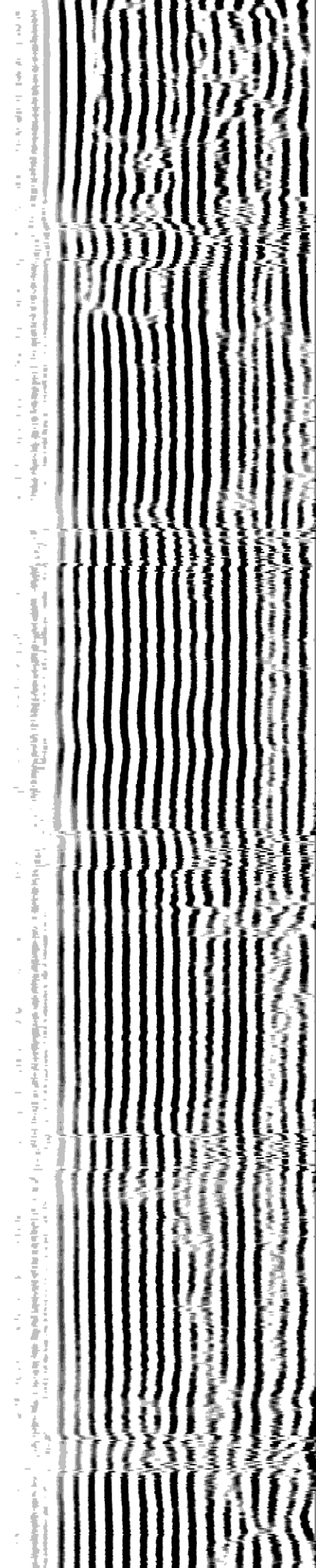
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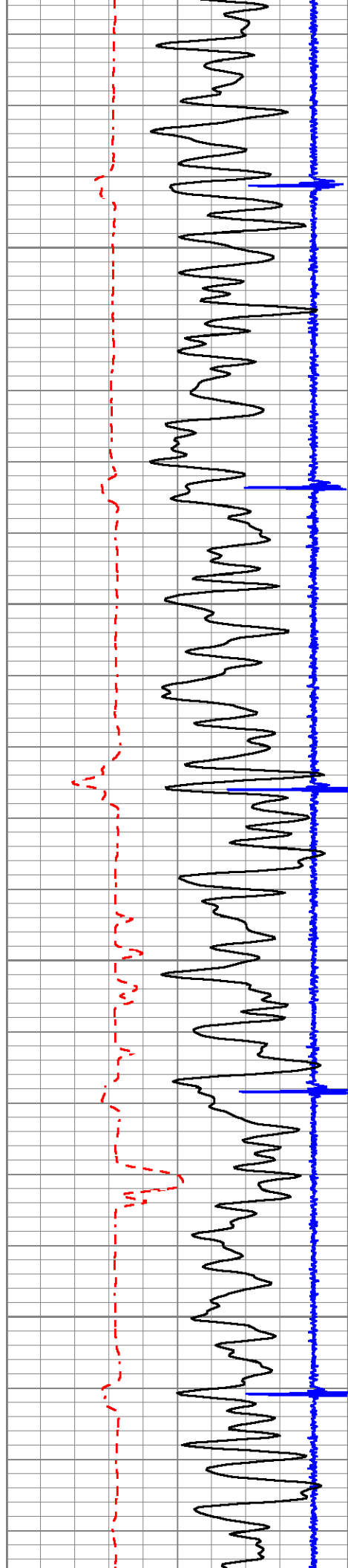
2300

2350

2400





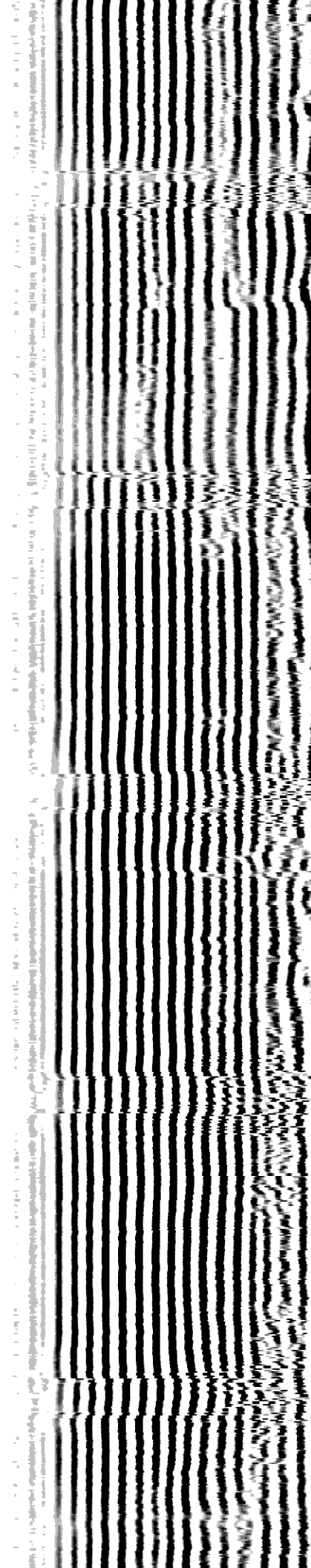
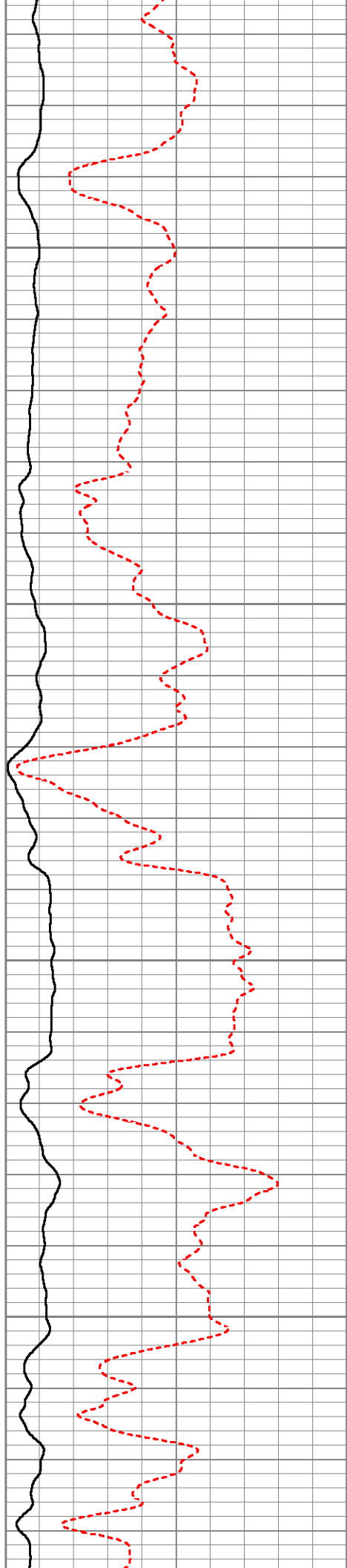


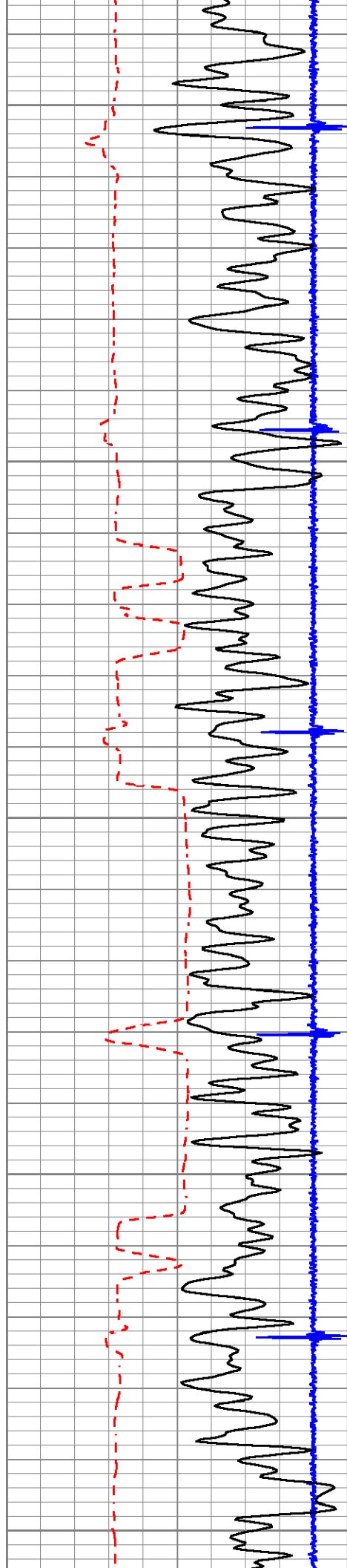
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2750

2800

2850





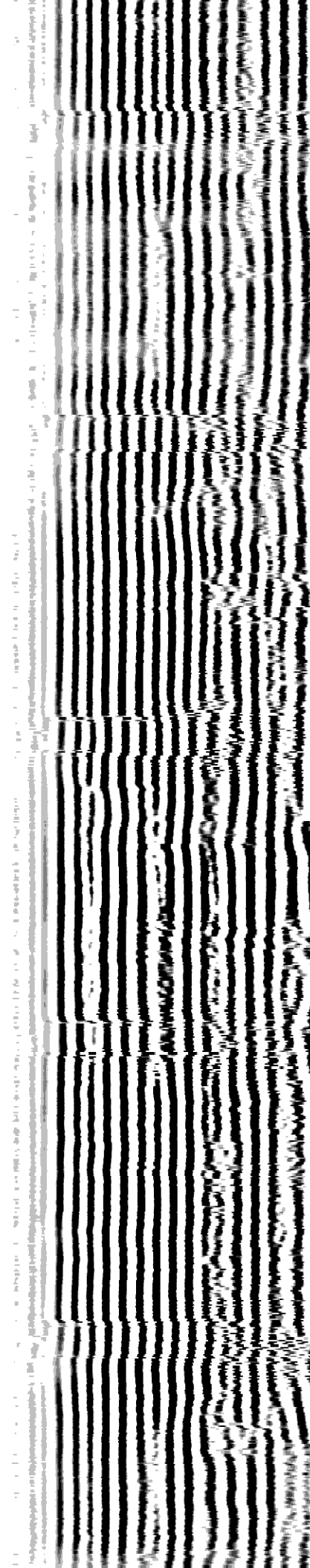
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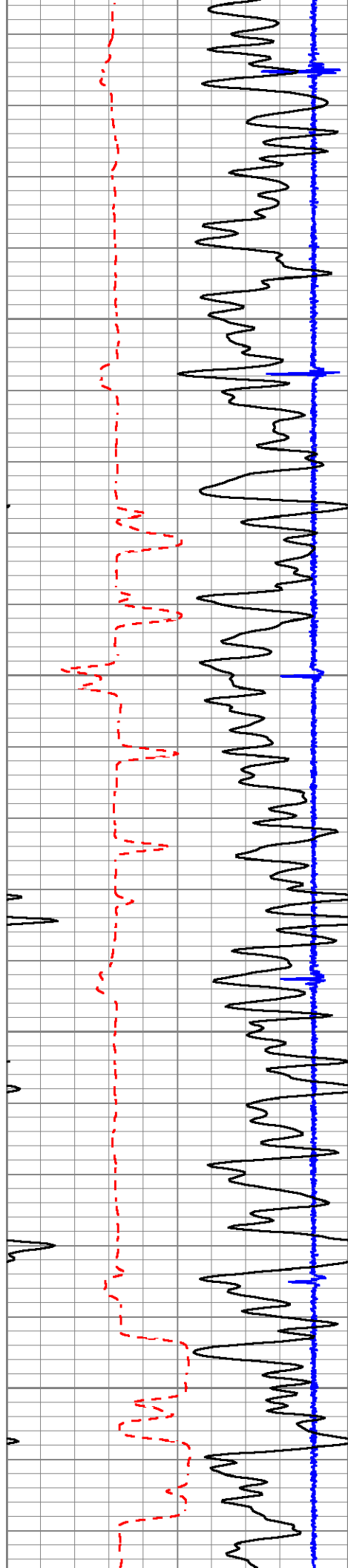
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3000

3050

3100



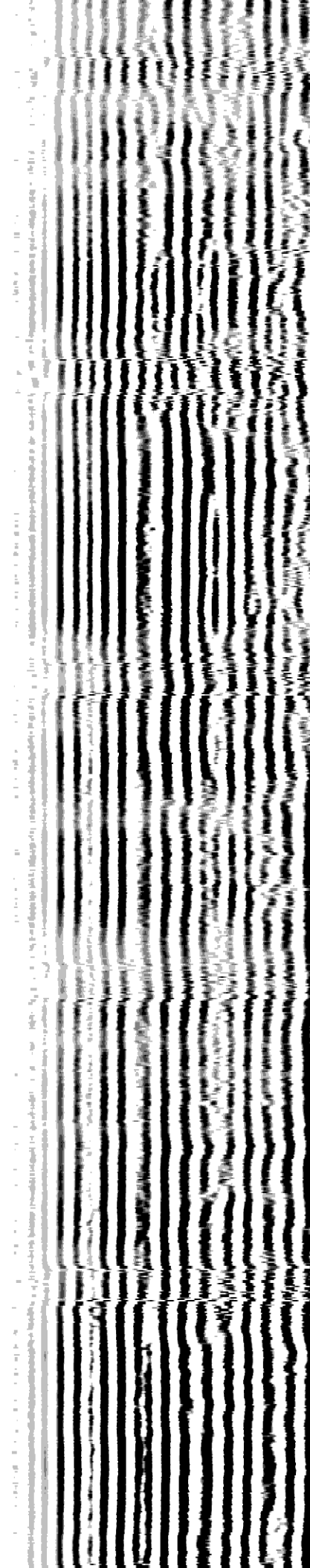
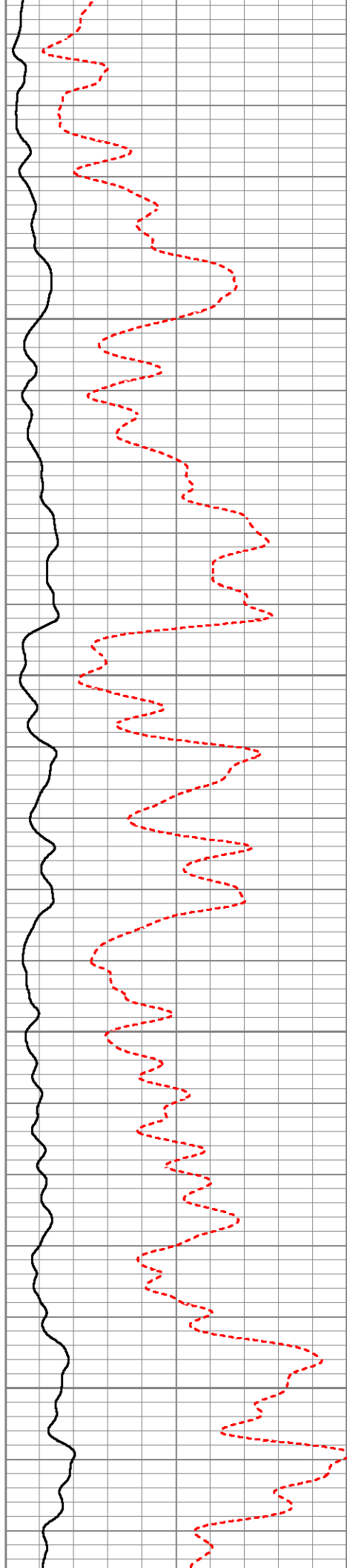


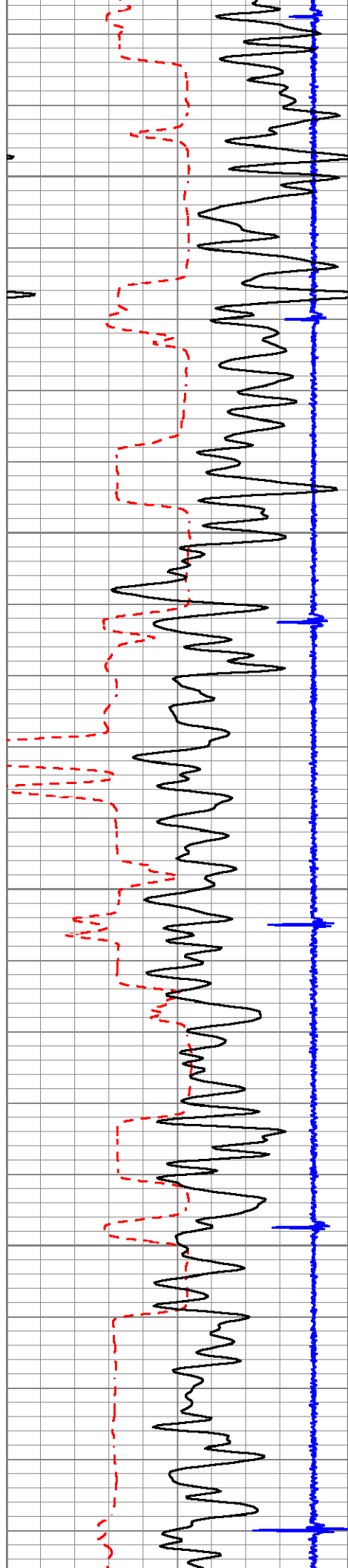
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3200

3250

3300



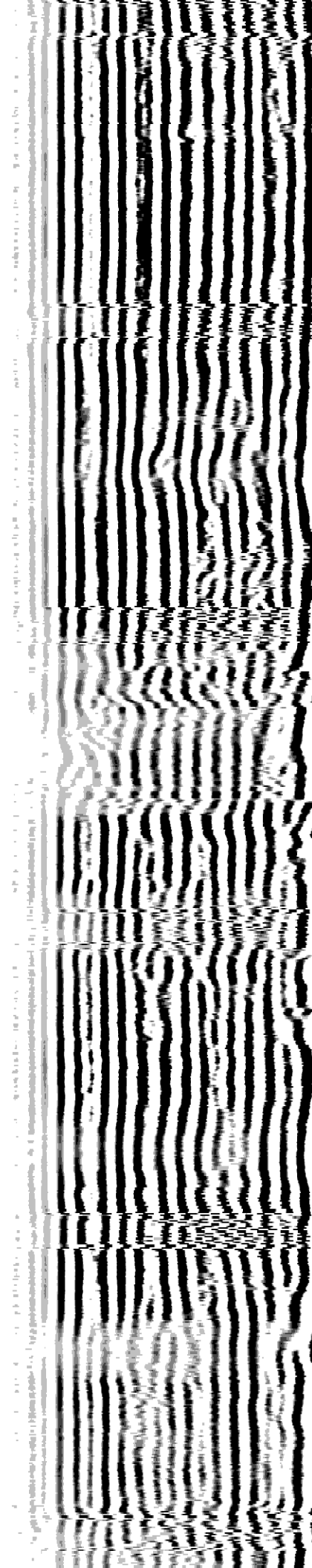
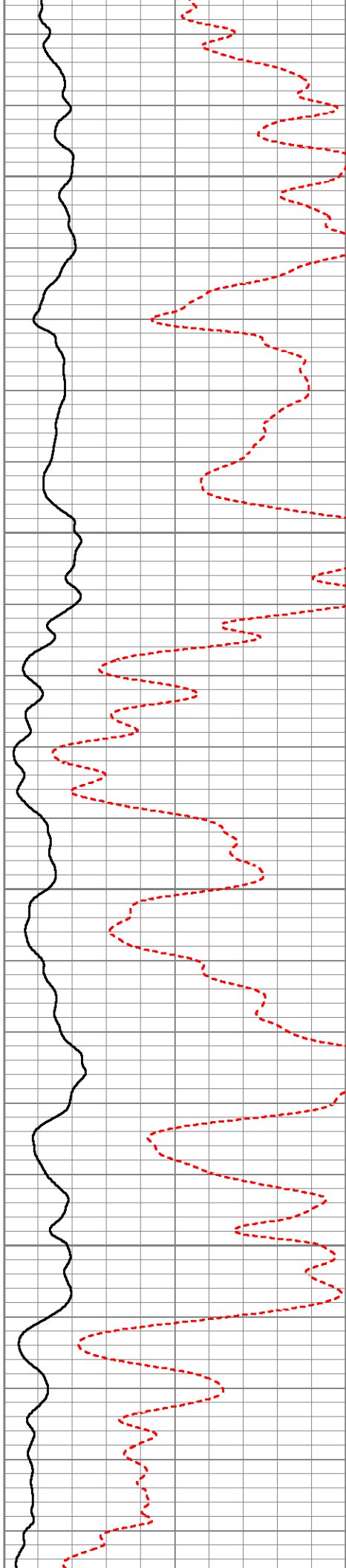


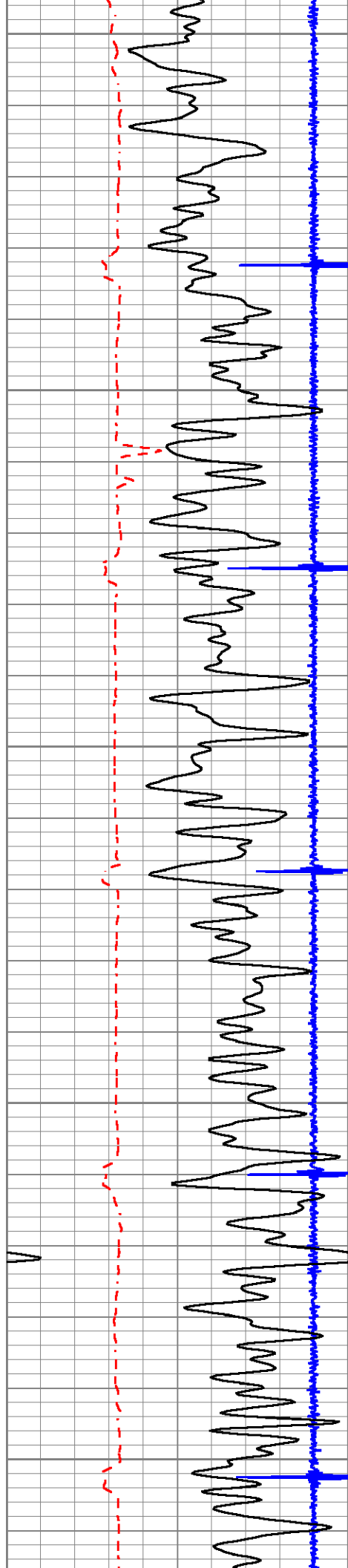
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3500





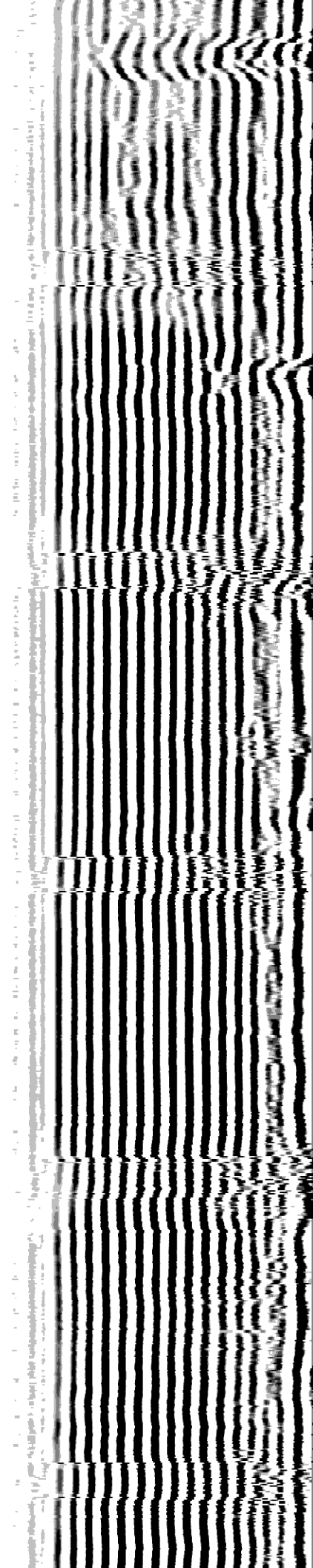
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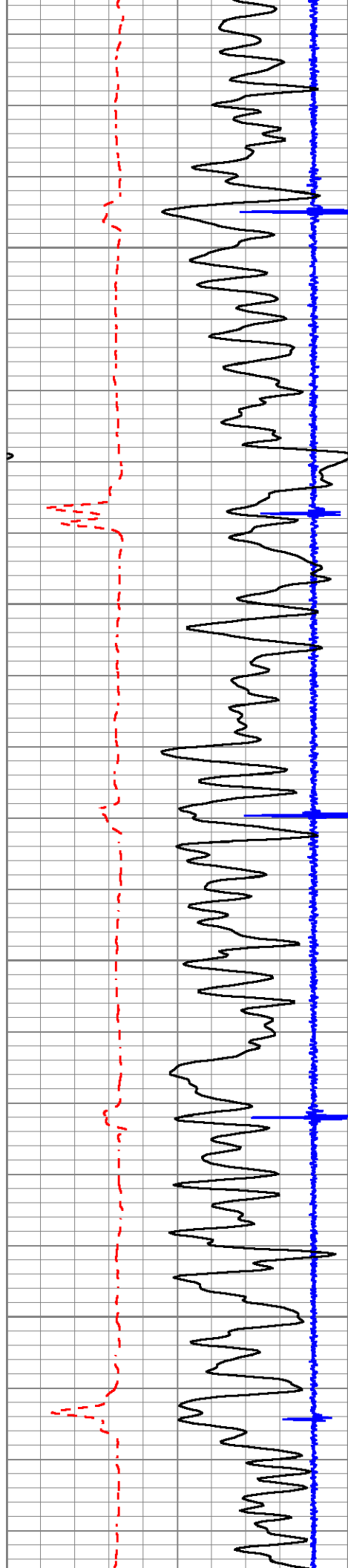
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3700

3750



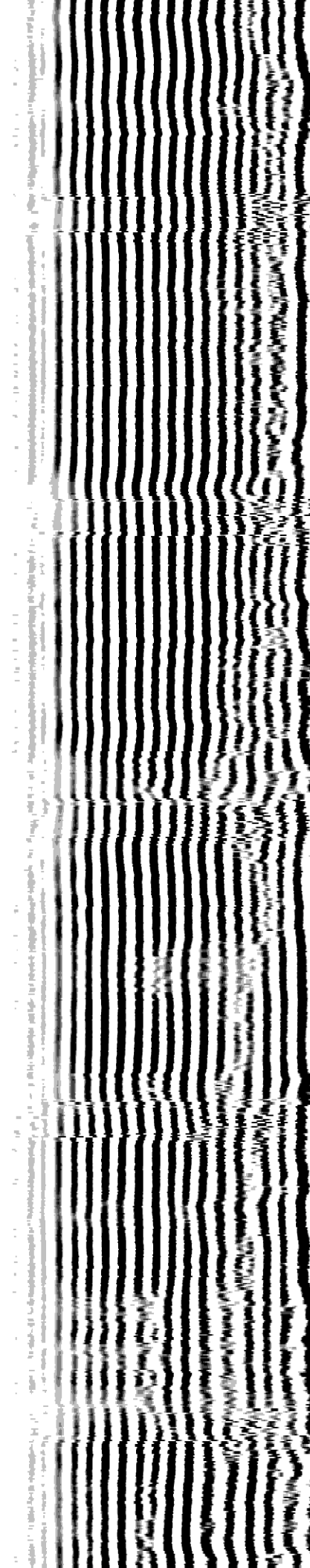
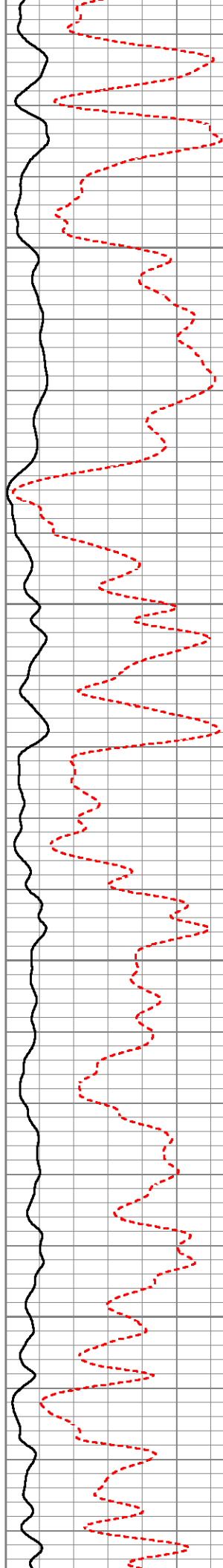


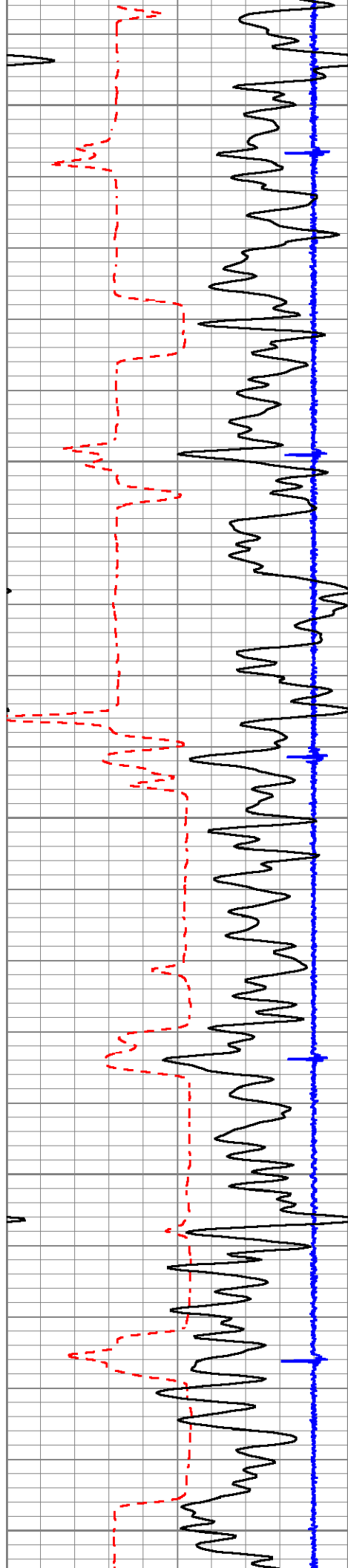
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3850

3900

3950





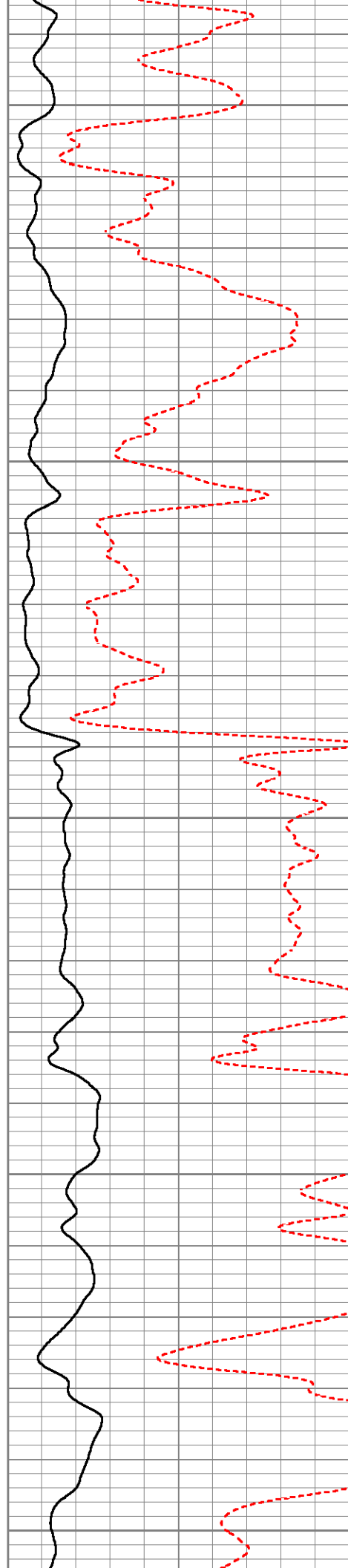
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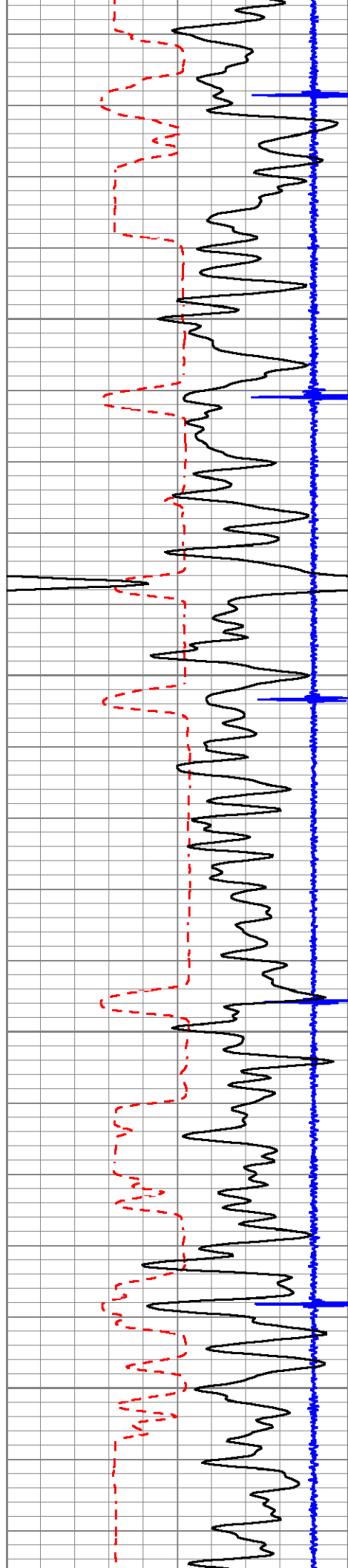
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4150

4200



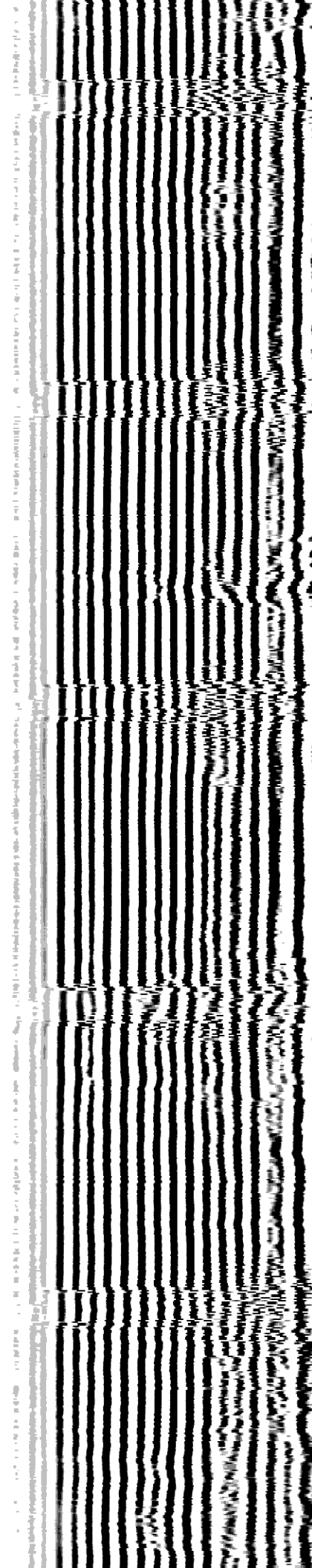
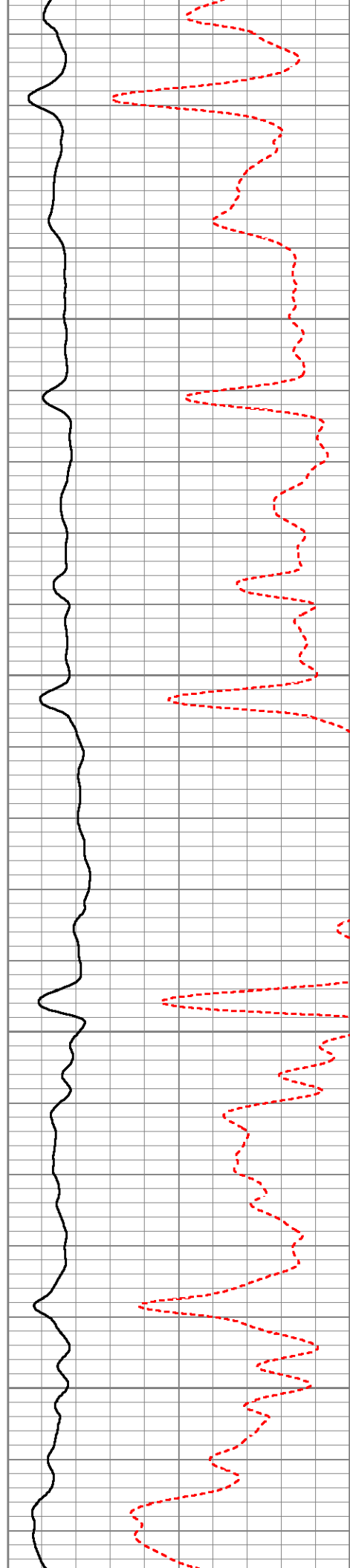


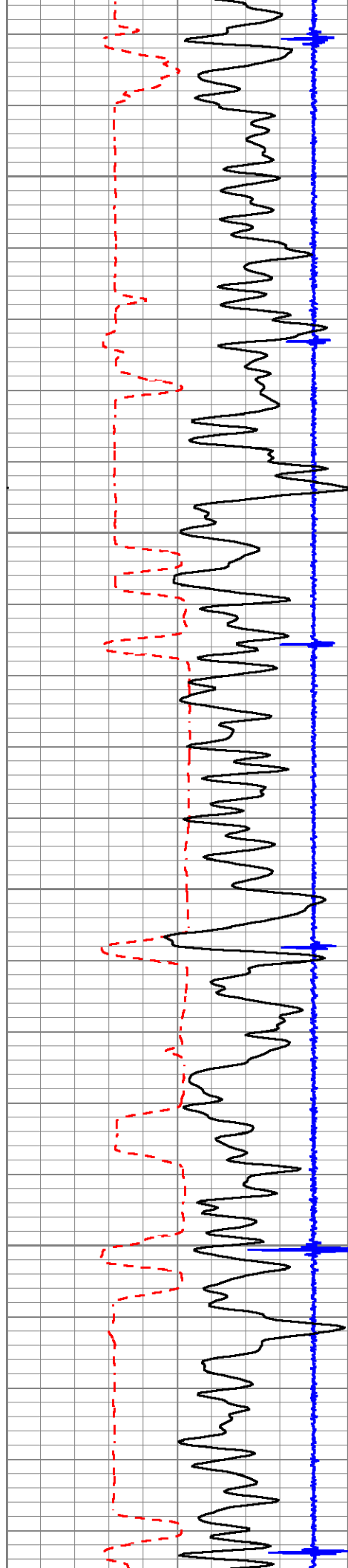
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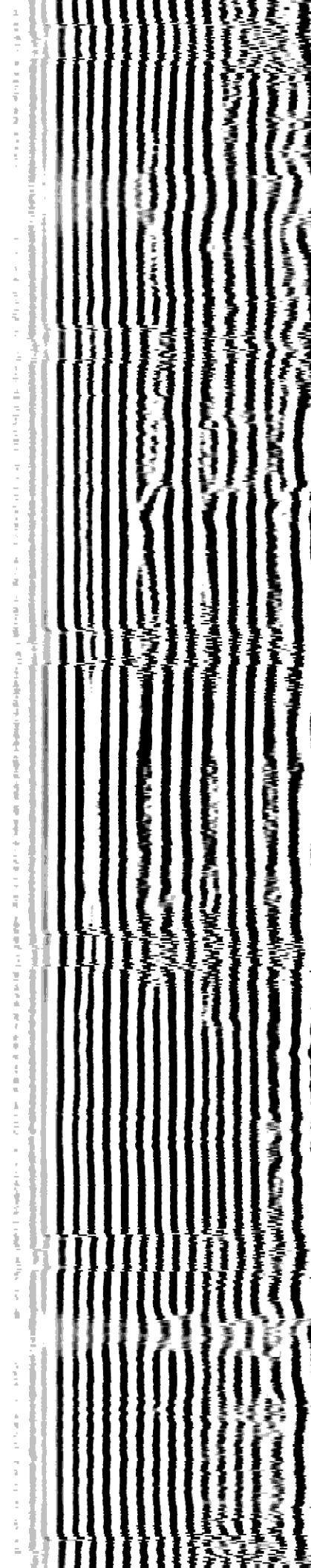
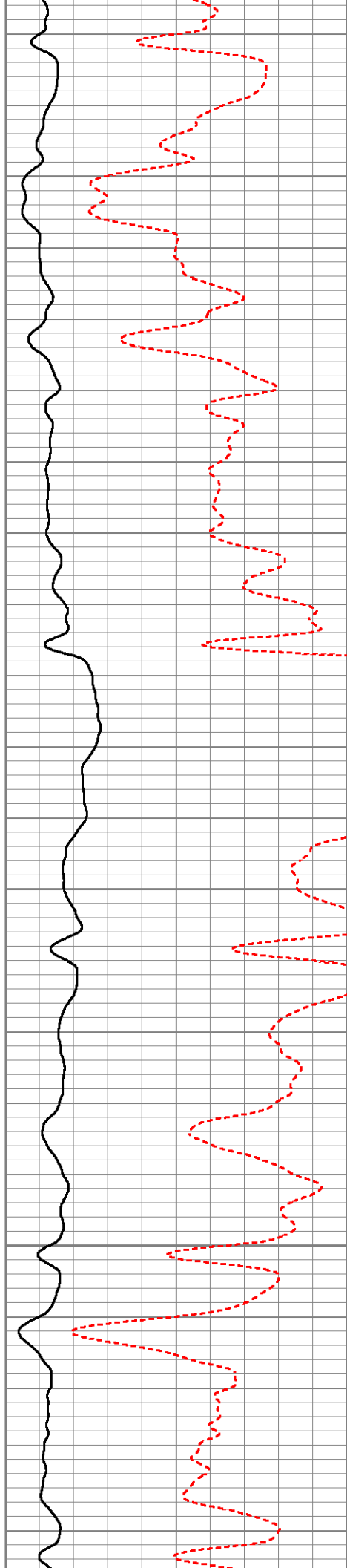


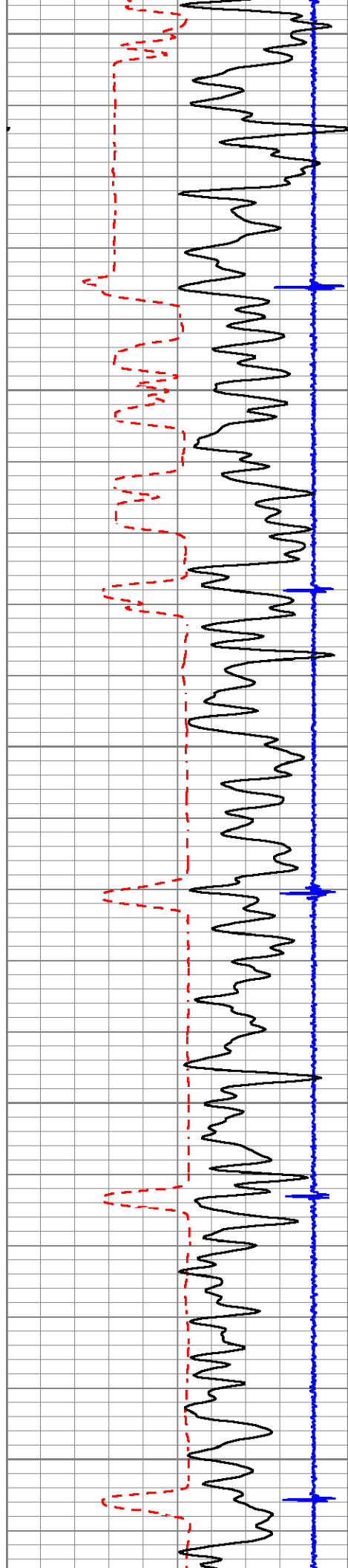
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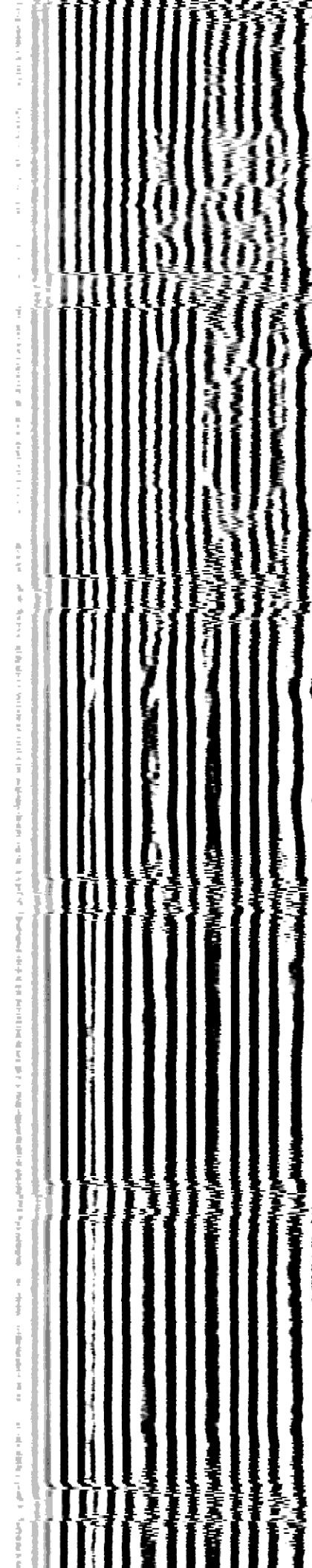
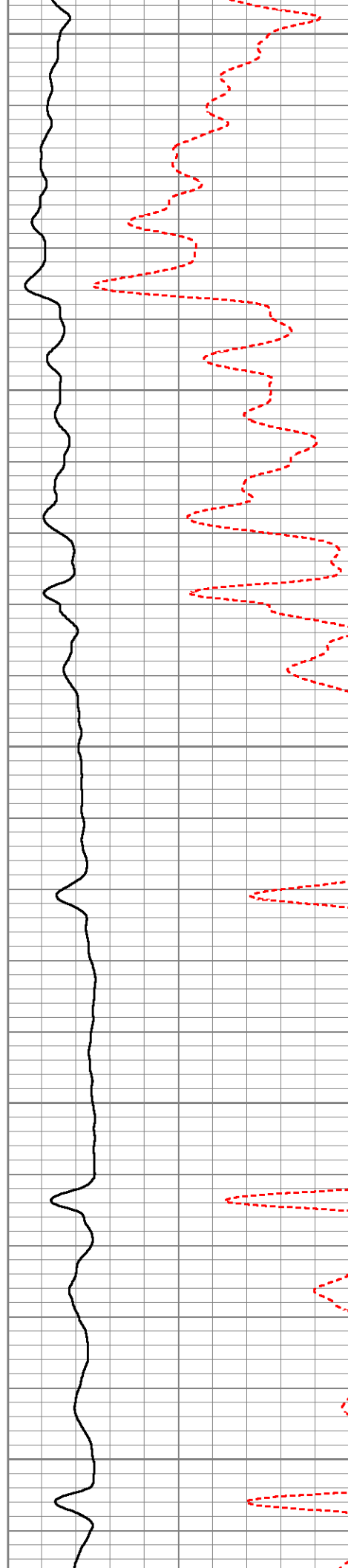
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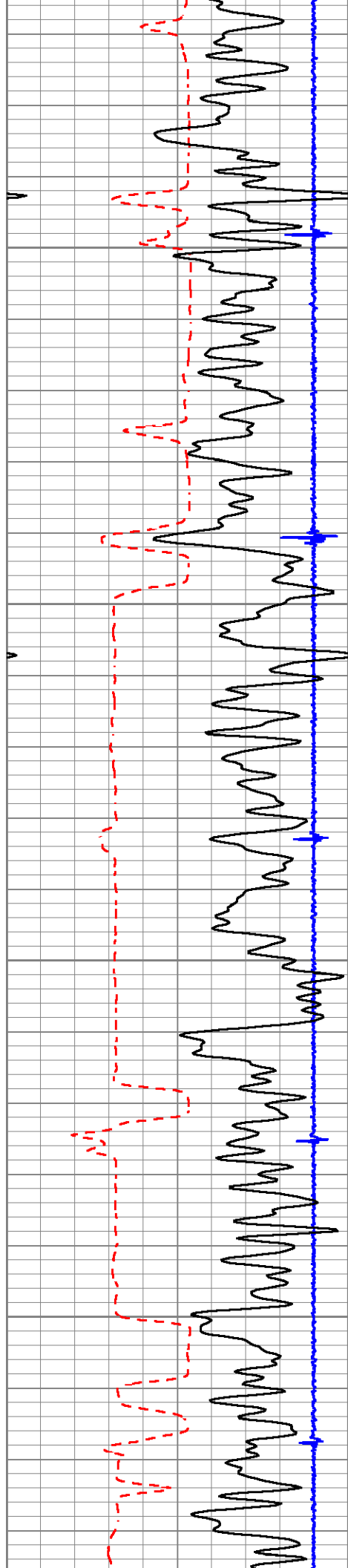
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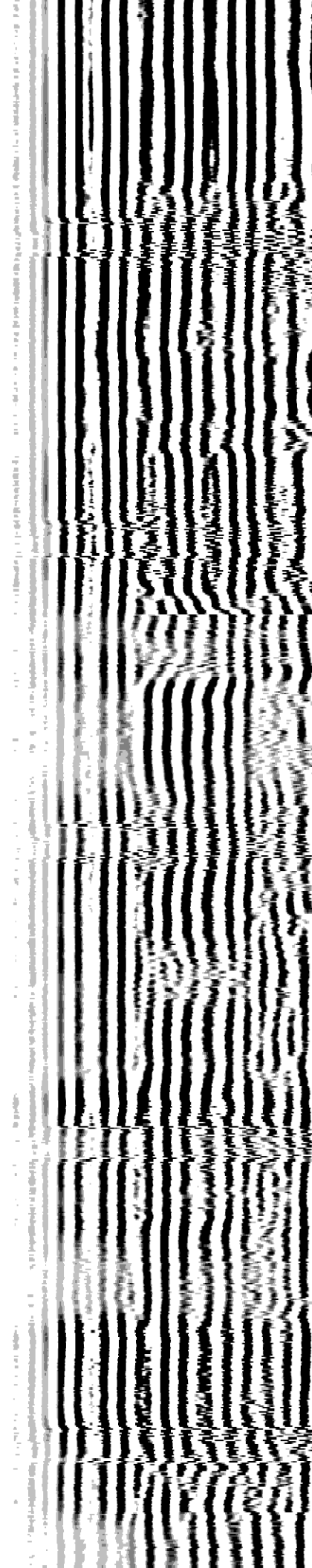
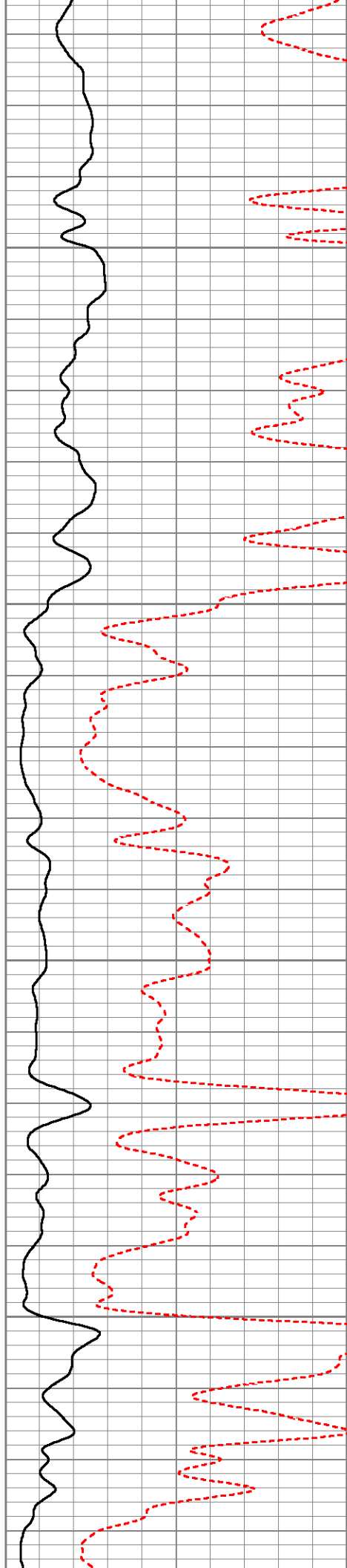


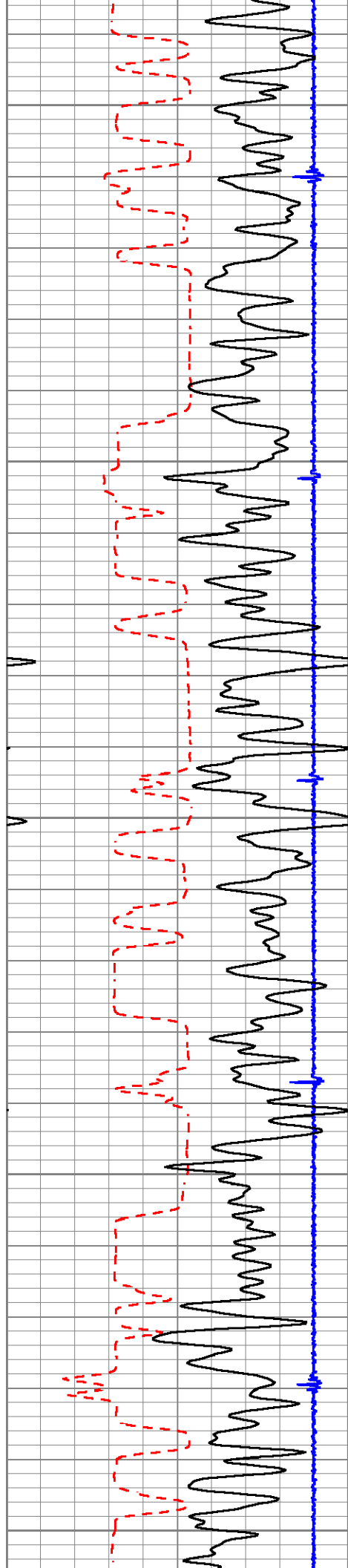
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4950

5000

5050





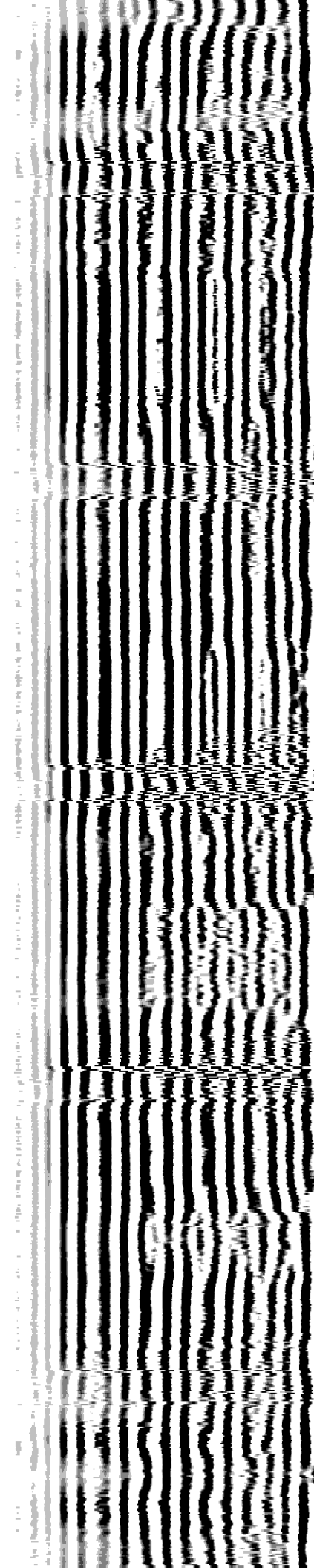
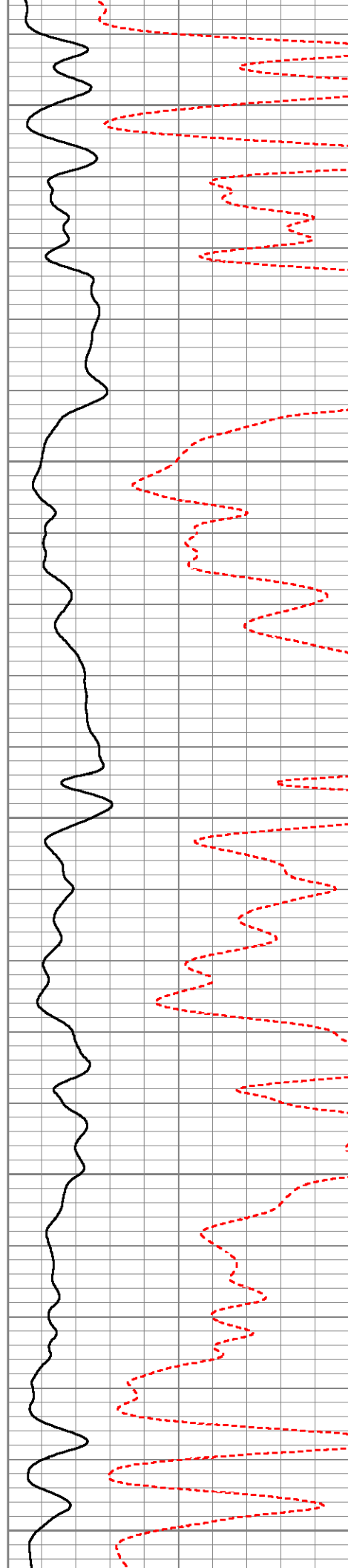
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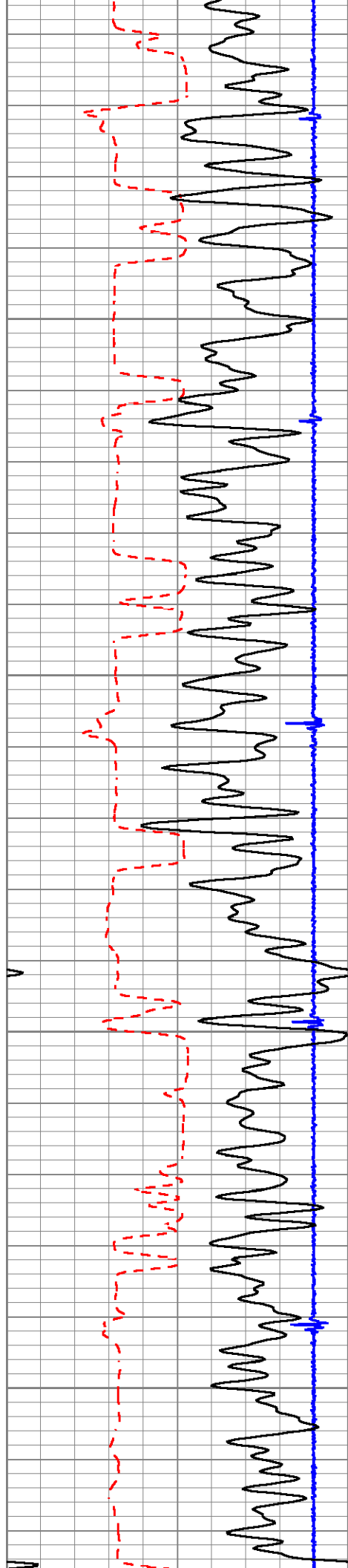
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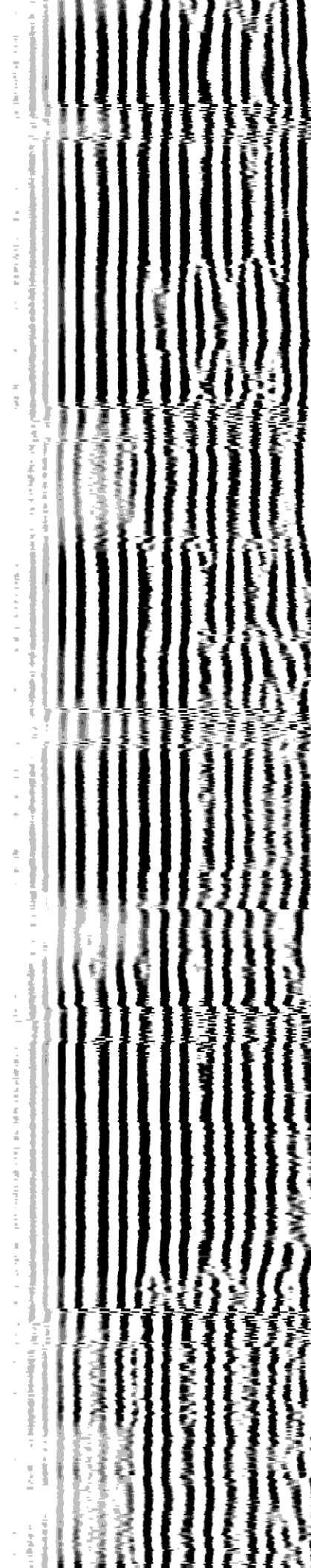
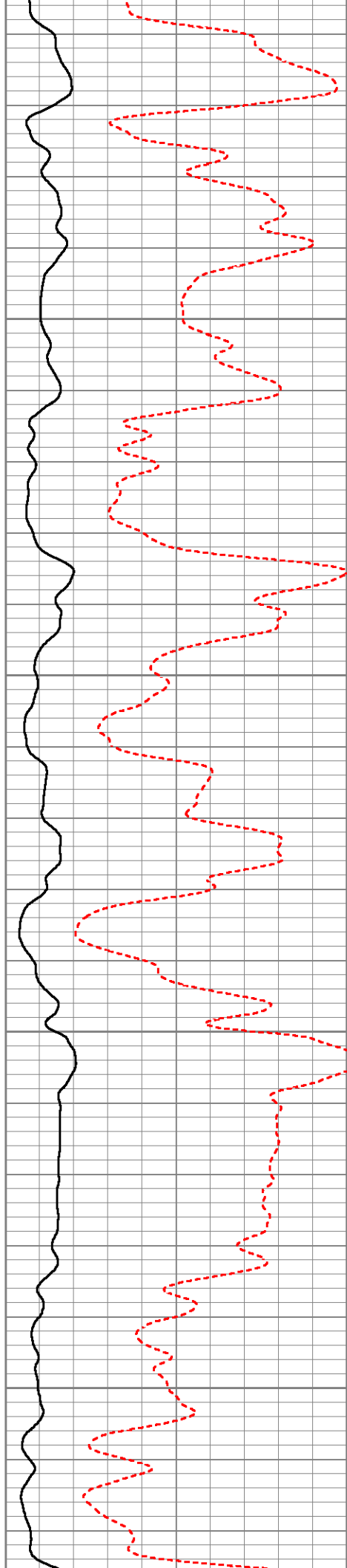


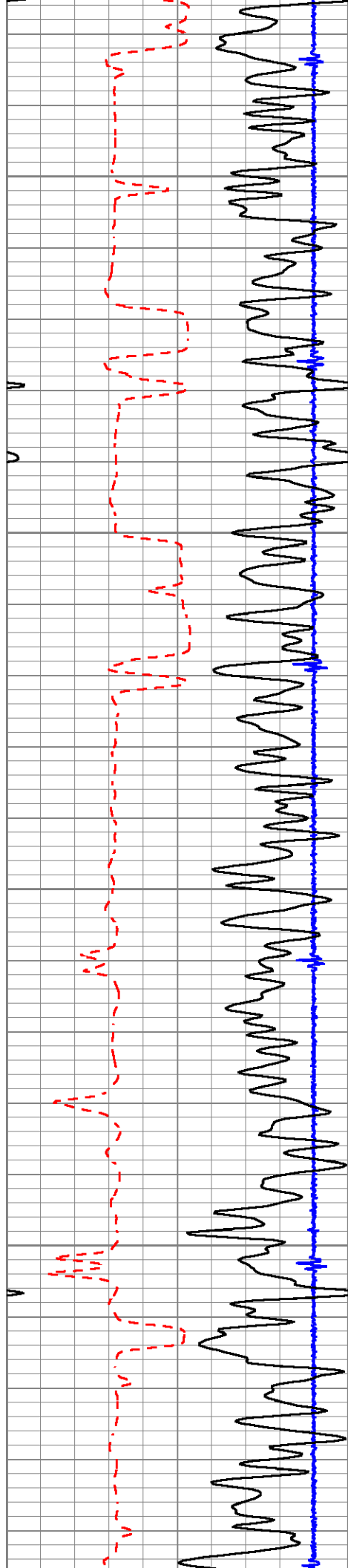
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5400

5450

5500



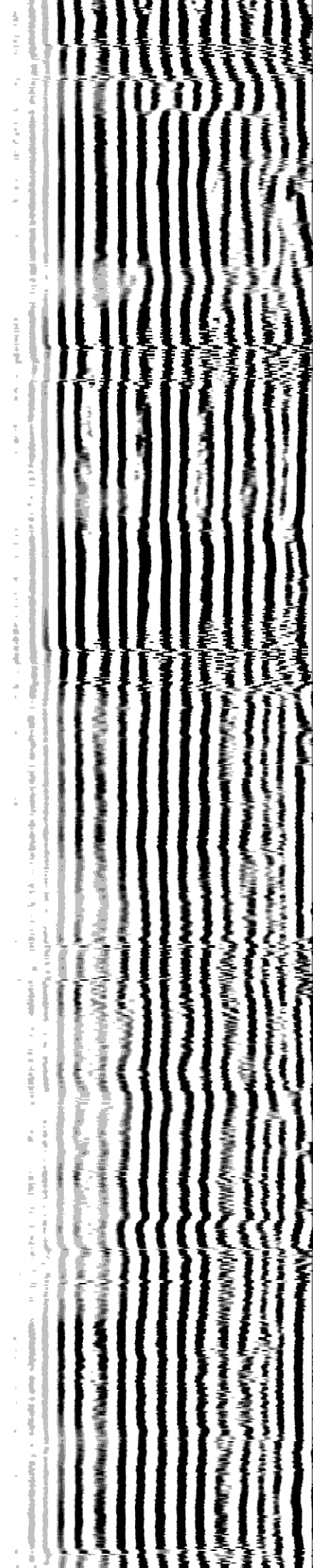
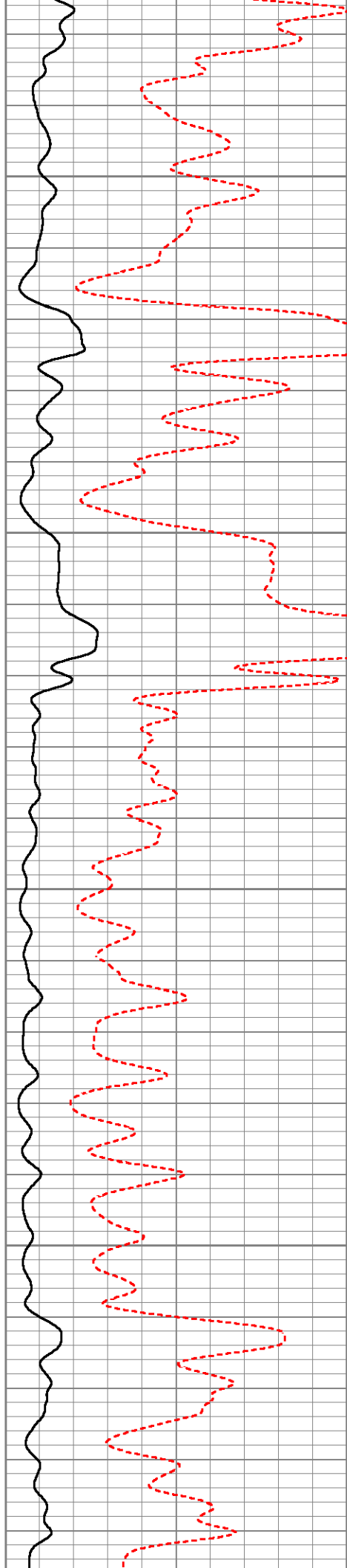


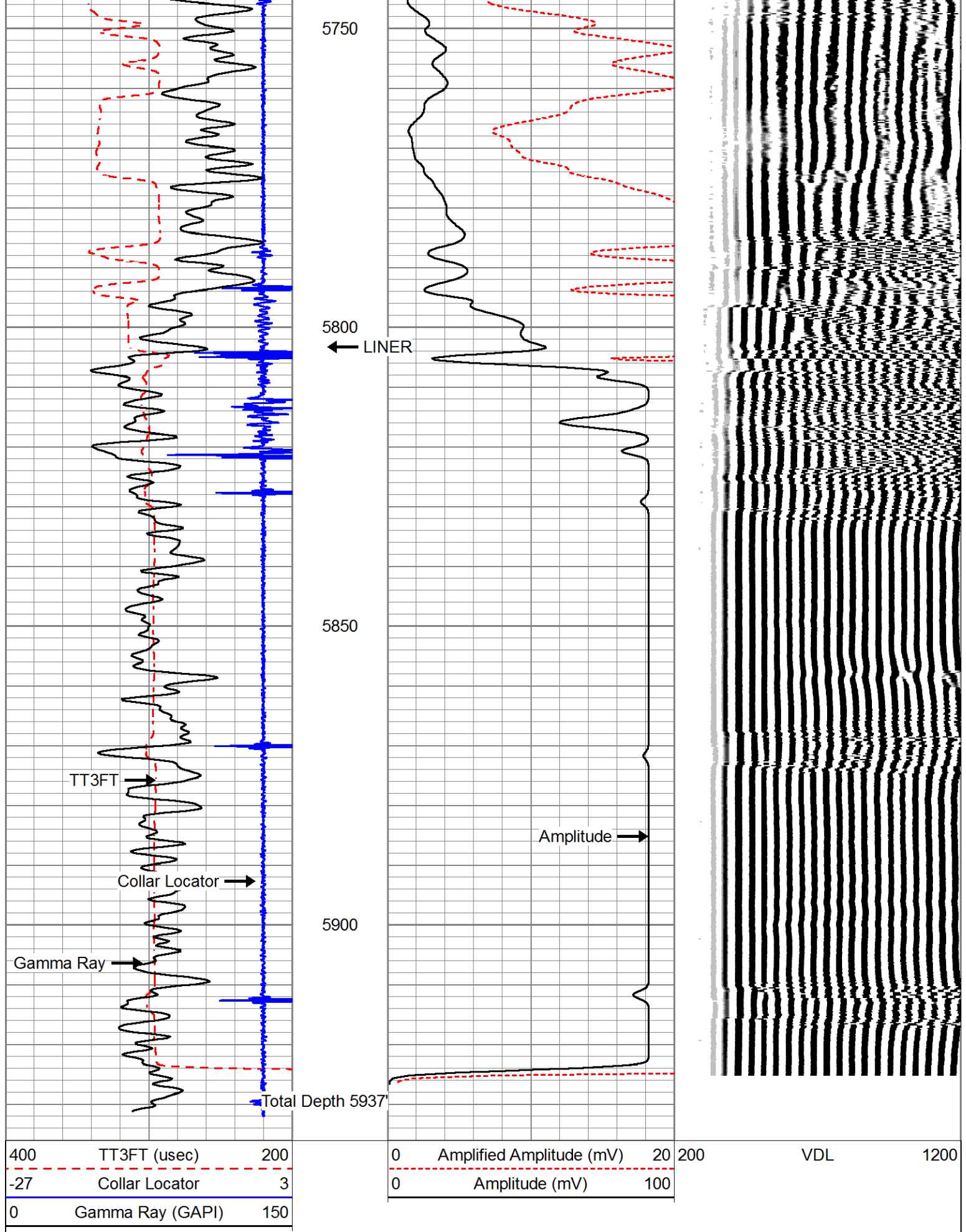
5550

5600

5650

5700

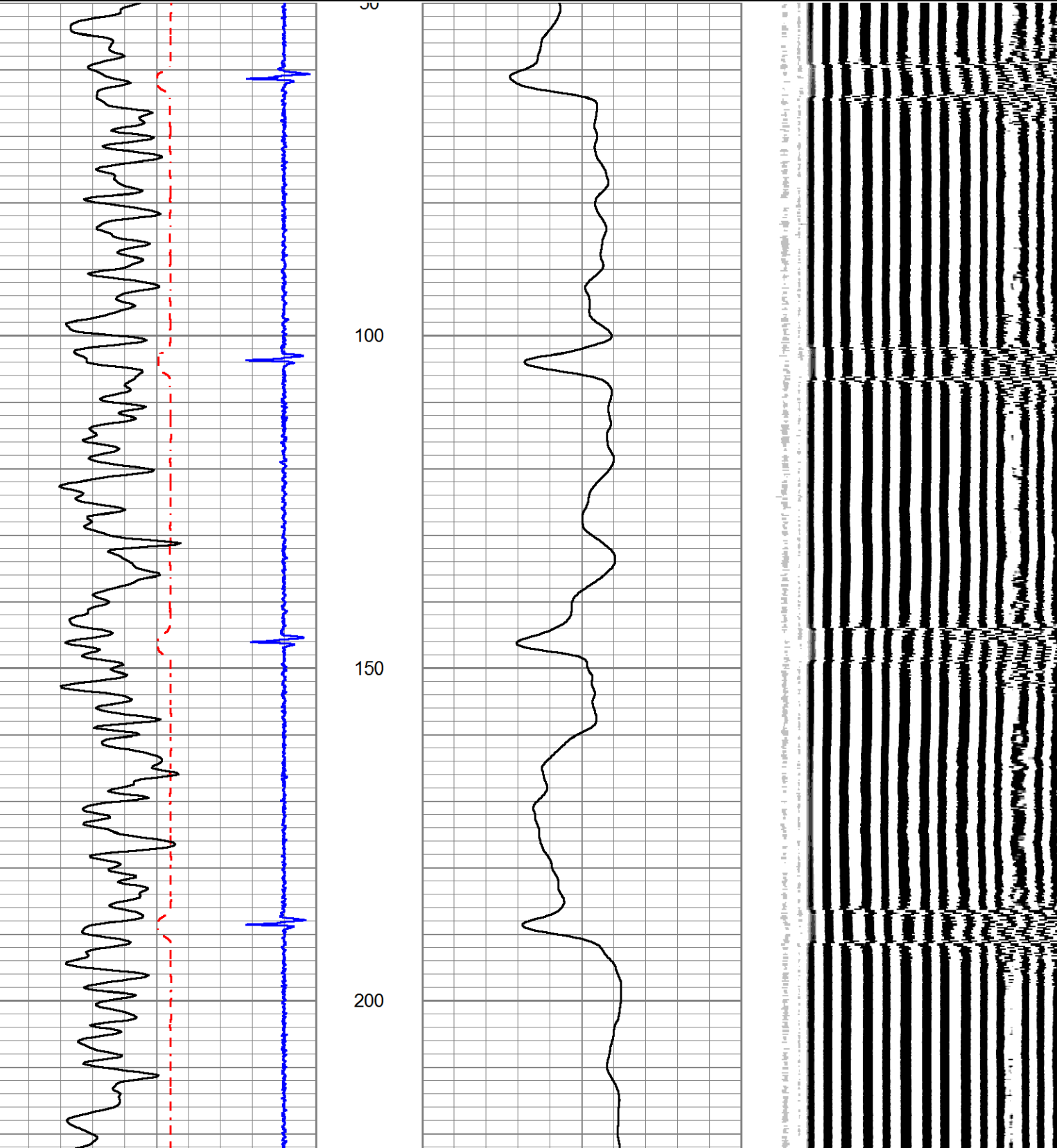


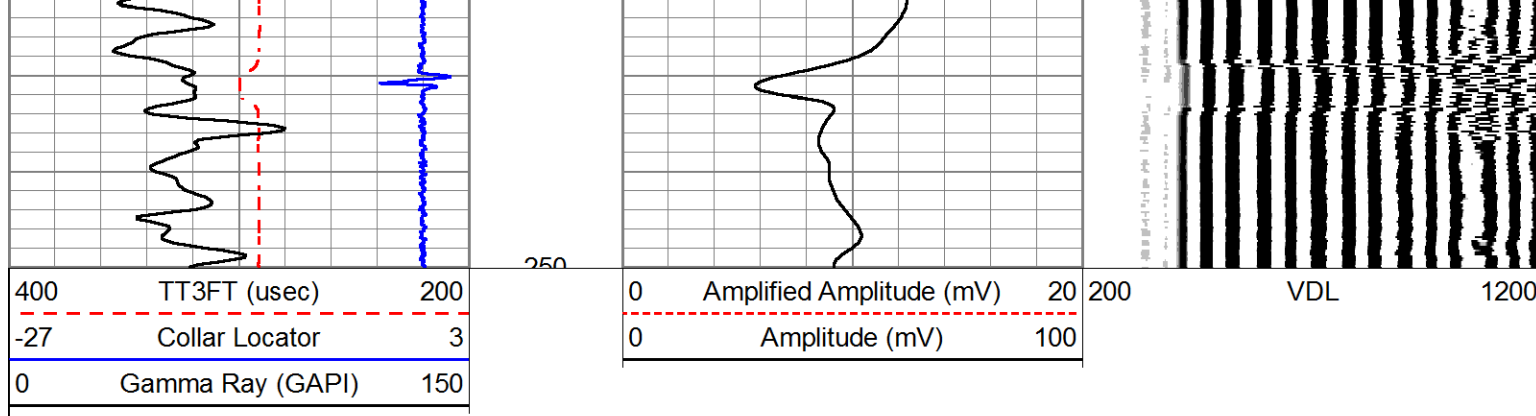


Database File state antelope k-o-28 hnb.db
Dataset Pathname pass9
Presentation Format pncbl
Dataset Creation Mon Nov 09 12:59:00 2015
Charted by Depth in Feet scaled 1:240

400	TT3FT (usec)	200
-27	Collar Locator	3
0	Gamma Ray (GAPI)	150

0	Amplified Amplitude (mV)	20	200	VDL	1200
0	Amplitude (mV)	100			





Calibration Report

Database File state antelope k-o-28 hnb.db
 Dataset Pathname pass8
 Dataset Creation Mon Nov 09 12:23:34 2015

Gamma Ray Calibration Report

Serial Number: 120519
 Tool Model: Probe275dig
 Performed: Thu Feb 26 11:33:28 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: pro_rib_2750_4.50
 Tool Model: Probe

Calibration Casing Diameter: 7.000 in
 Calibration Depth: 212.892 ft

Master Calibration, performed Mon Nov 09 10:31:15 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.010	1.700	0.300	62.165	36.178	0.662
CAL	1.934	1.933				
5'	0.003	1.700	0.300	62.165	36.448	0.197
SUM						
S1	1.510	1.656	0.000	100.000	686.730	-1036.940
S2	1.601	1.696	0.000	100.000	1056.490	-1691.670
S3	1.608	1.653	0.000	100.000	2183.370	-3510.130
S4	1.589	1.613	0.000	100.000	4293.500	-6823.740
S5	1.542	1.595	0.000	100.000	1904.230	-2936.700
S6	1.469	1.571	0.000	100.000	981.430	-1441.960
S7	1.445	1.585	0.000	100.000	717.778	-1037.530
S8	1.418	1.579	0.000	100.000	619.012	-877.671

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset

CAL	0.000	0.000	1.934	1.933	1.000	0.000
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Air Zero Calibration, performed Thu Feb 26 07:15:18 2015:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Temperature Calibration Report

Serial Number: pro_rib_2750_4.50
Tool Model: Probe
Performed: (Not Performed)

	Reference	Reading
Low Reference:	0.00 degF	0.00 cps
High Reference:	1.00 degF	1.00 cps

Gain: 1.00
Offset: 0.00
Delta Spacing 1



Company	Bonaza Creek Energy	
Well	State Antelope K-0-28 HNB	
Field	Wattenberg	
County	Weld	
State	Colorado	Country