



CEMENT BOND GR / CCL LOG

Company **CAERUS OPERATING LLC**

Well
NPR 23B-8 596

Field **NPR**

County **GARFIELD** State **COLORADO**

Location:	API #:	05045239740000	Other Services
-----------	--------	----------------	----------------

SEC	8	TWP	5S	RGE	96W
-----	---	-----	----	-----	-----

Elevation

Permanent Datum	G.L.	Elevation	7763
-----------------	------	-----------	------

Drilling Measured From K.B.

Date	06-06-2019
------	------------

Run Number	O
------------	---

Depth Driller	8993
---------------	------

Present Depth Driller	8926.3
-----------------------	--------

Depth Logger	8922
--------------	------

Bottom Logged Interval	8922
------------------------	------

Top Log Interval	1950
------------------	------

Fluid Level	86
-------------	----

Type Fluid	WALLEN
------------	--------

Max. Recorded Temp.	240 ° F
---------------------	---------

Estimated Cement 10p	SEE LO
----------------------	--------

Equipment Number	208
------------------	-----

Location	Grand
----------	-------

Recorded by	EDWARD
-------------	--------

Witnessed by	MR. FAIRCLOTH
Replied to Demand	

Borehole Record

Run Number	Bit	From	To
------------	-----	------	----

Casing Record

Size	Weight	From	To
------	--------	------	----

Weight	From
--------	------

To

4.5"	11.6#	SURFA
------	-------	-------

11.6#	SURFA
-------	-------

973.8

<<< Fold Here >>>

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.

WARRIOR 7.0 SOFTWARE - Comments

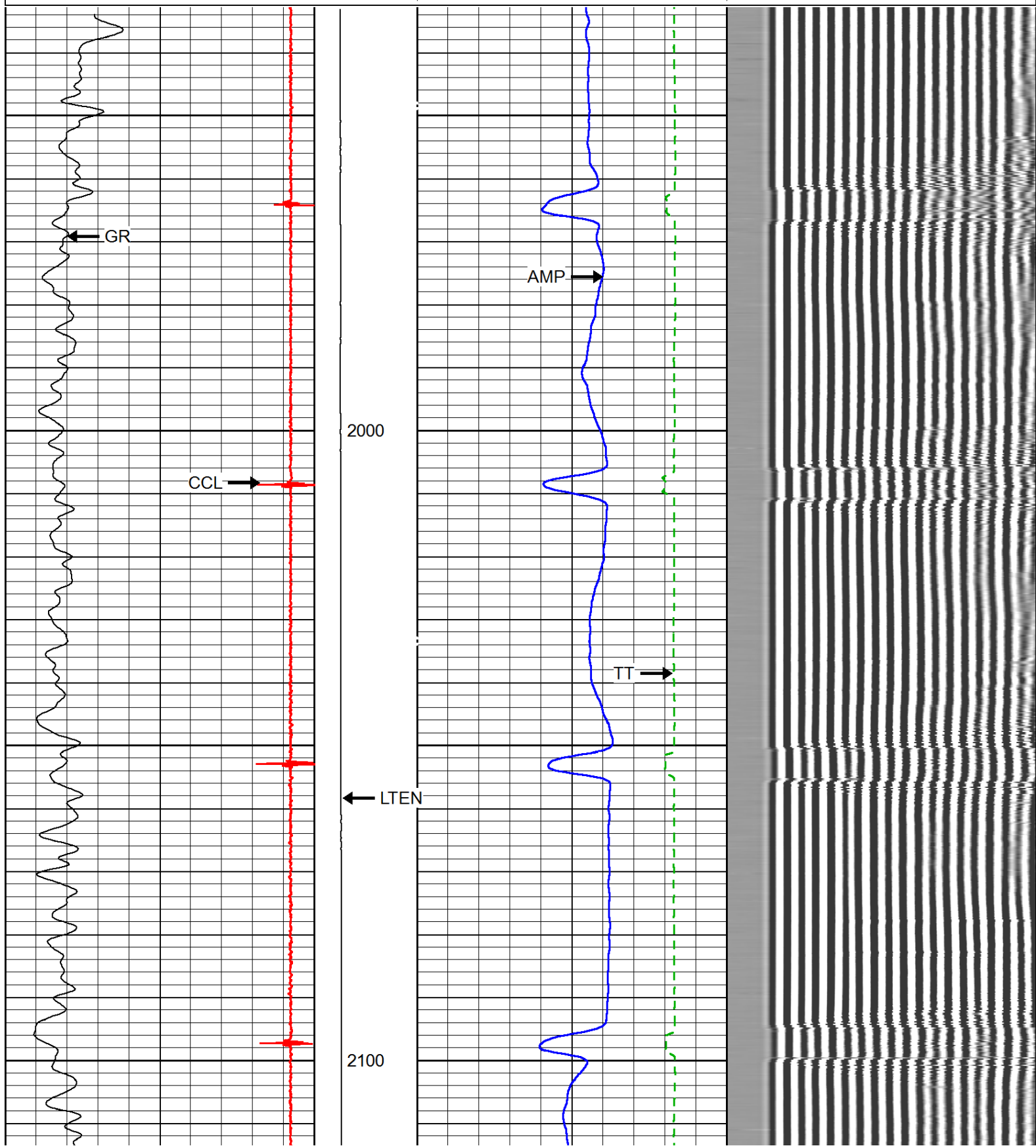
MAIN PASS SCALE IS 5"=100'.
CSG PSI = STATIC
SHORT JOINT AT 4446' - 4457'

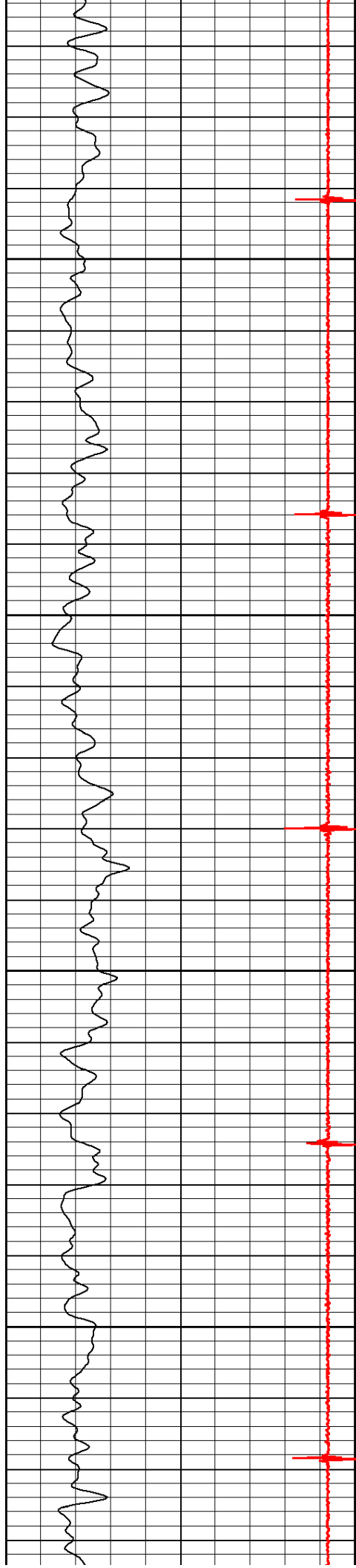


MAIN PASS

Database File: 060619_caerus_npr23b_8_596.db
 Dataset Pathname: MAINPASS/pass1
 Presentation Format: rmws_dsc
 Dataset Creation: Thu Jun 06 09:03:25 2019 by Log SCH 120430
 Charted by: Depth in Feet scaled 1:240

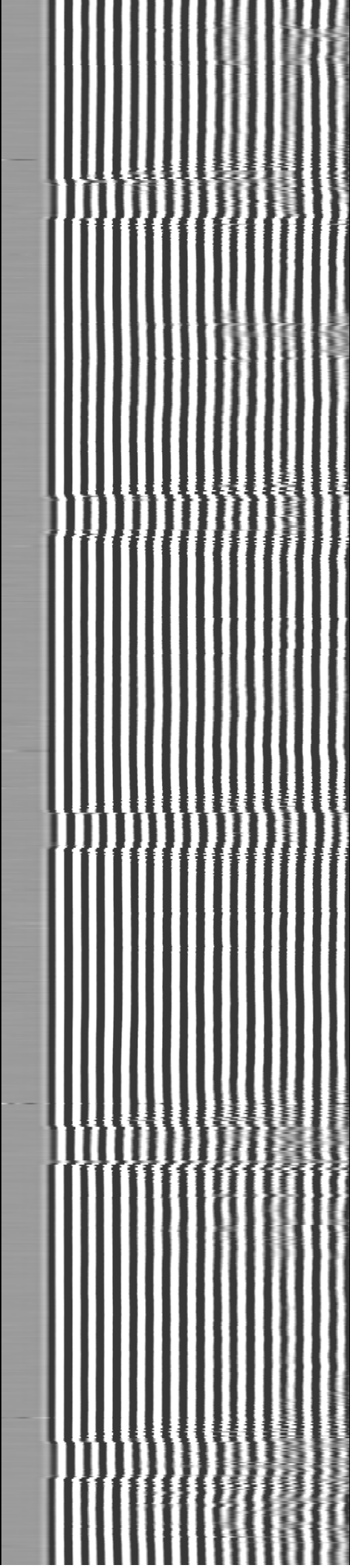
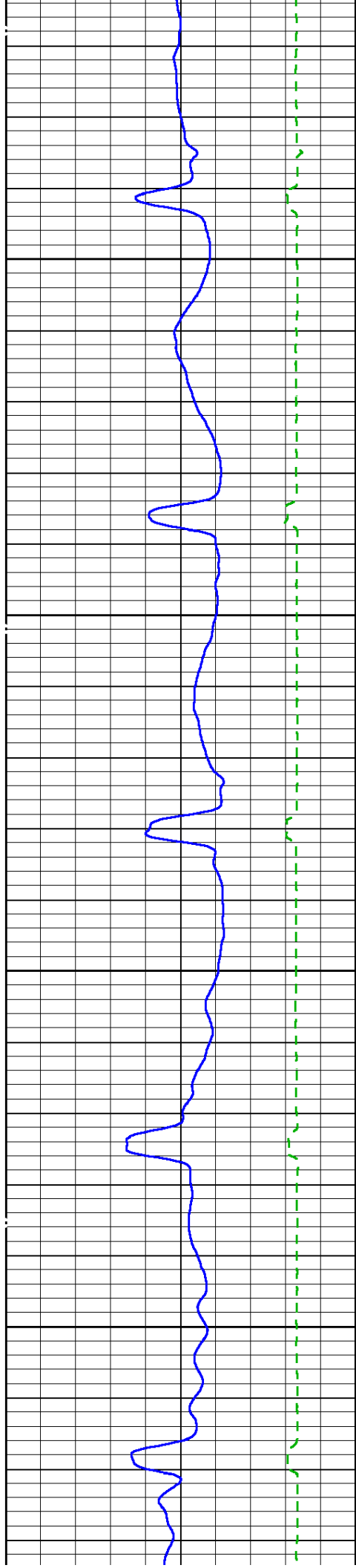
0	GR (GAPI)	150	LTEN	0	AMPx5 (mV)	20	200	VDL	1200
10000	CCL	18400	0 (lb)2500	0	AMP (mV)	100			
				380	TT (usec)	180			

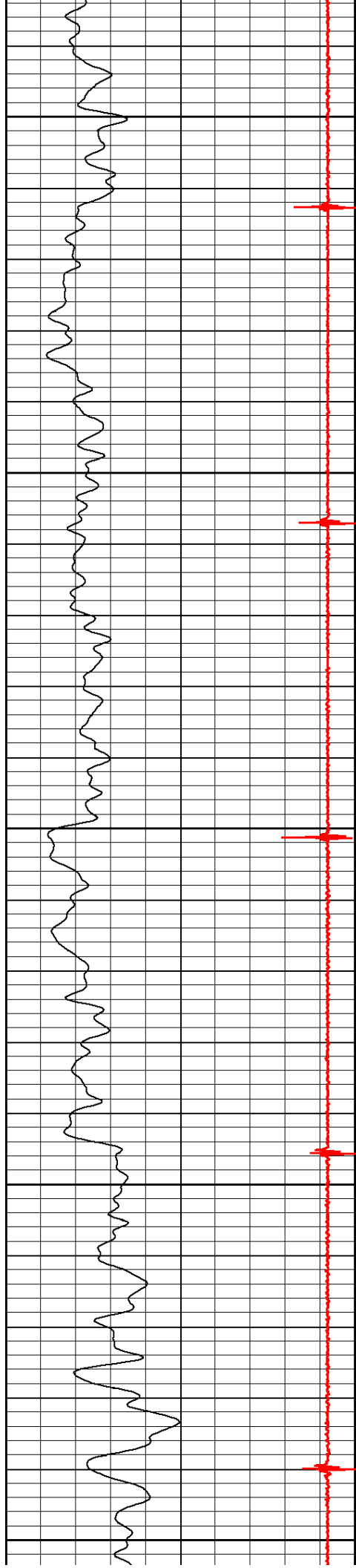




2200

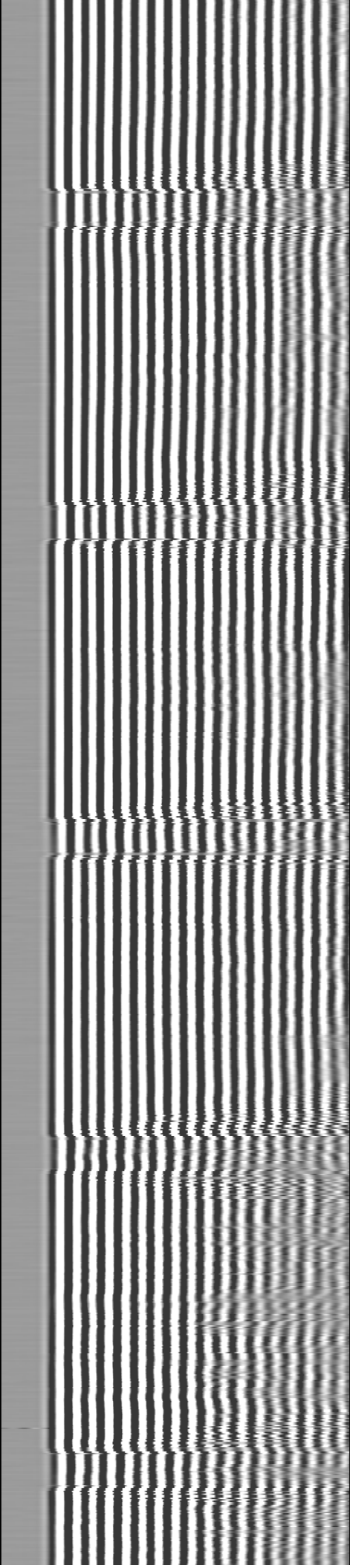
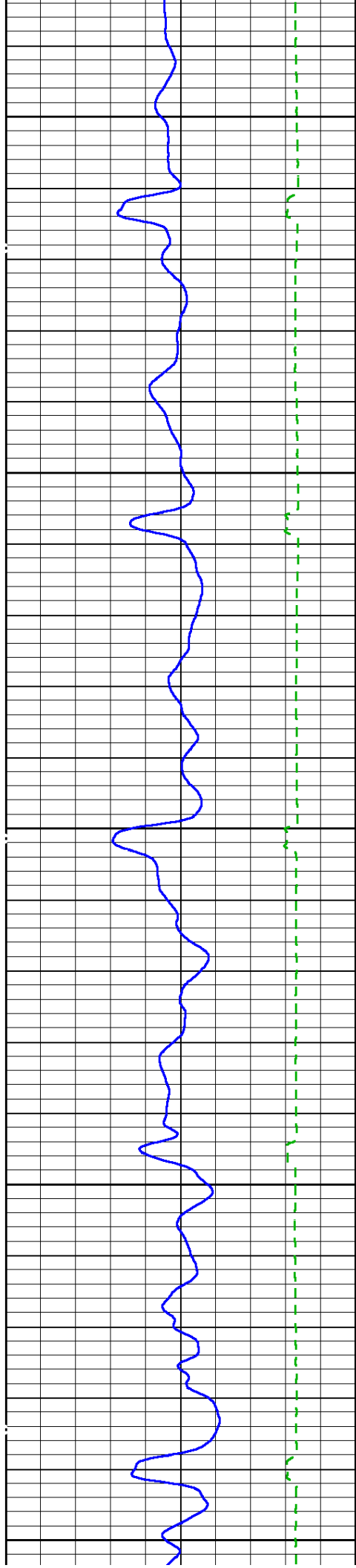
2300

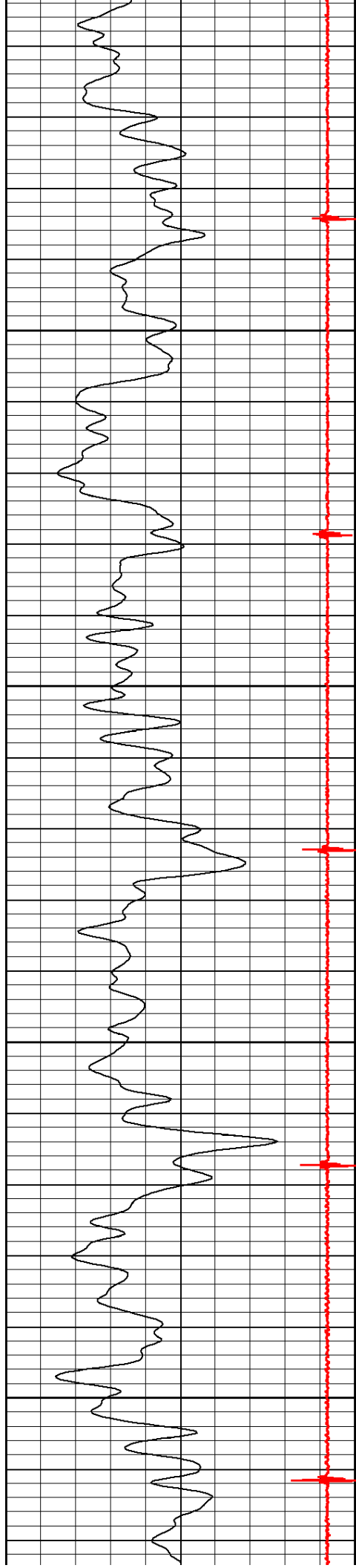




2400

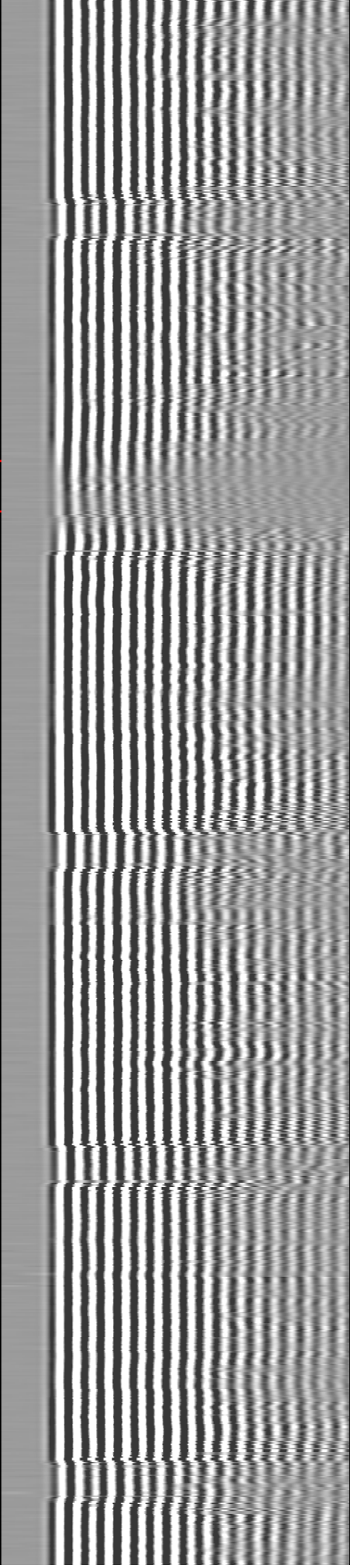
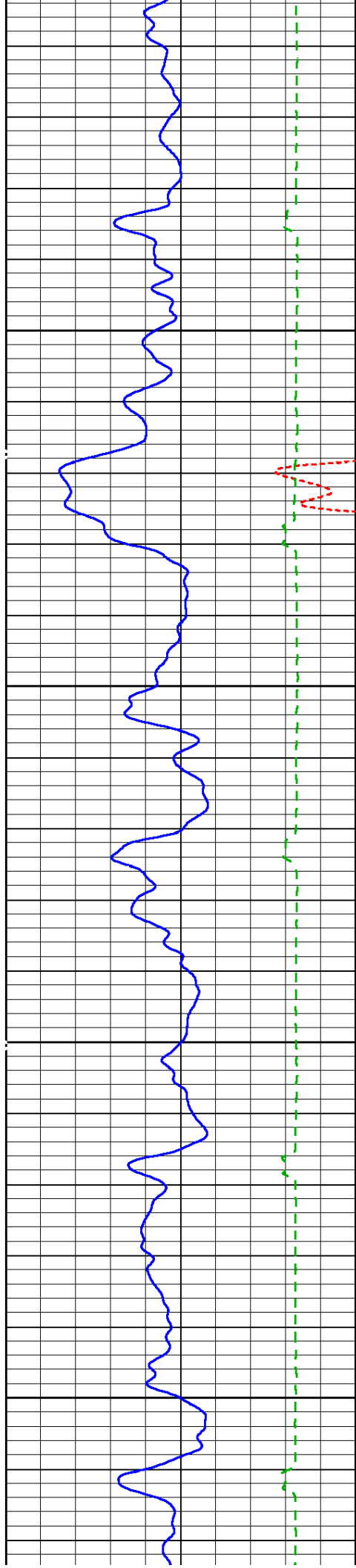
2500

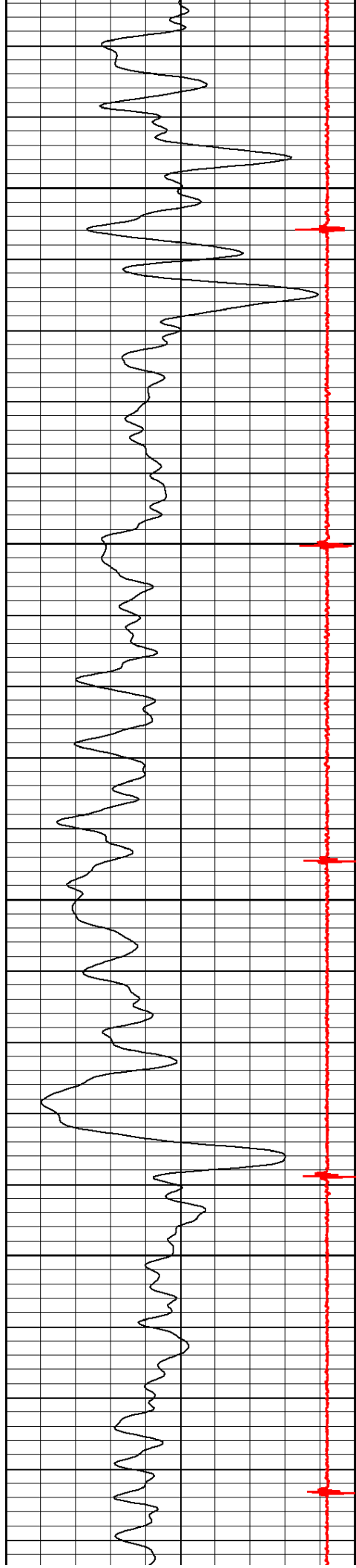




2600

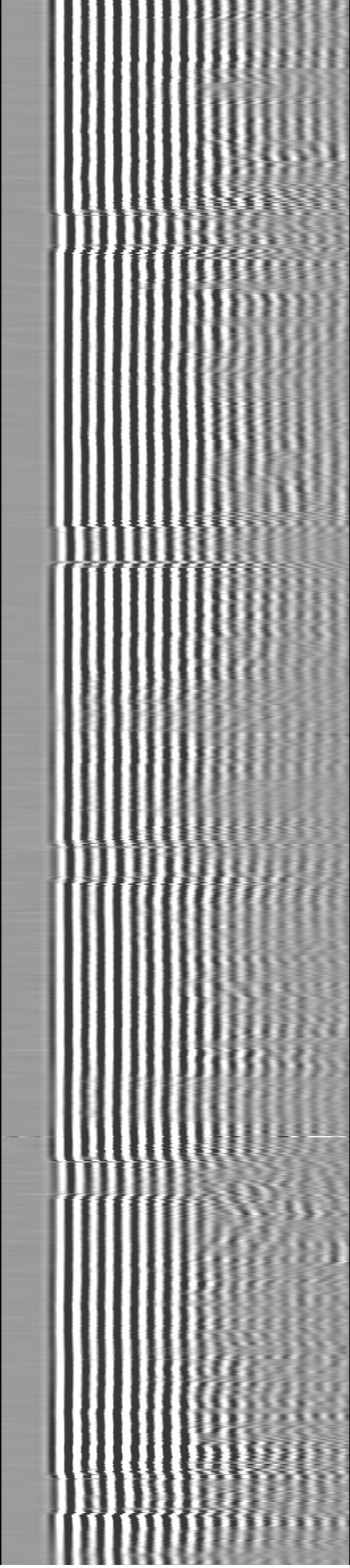
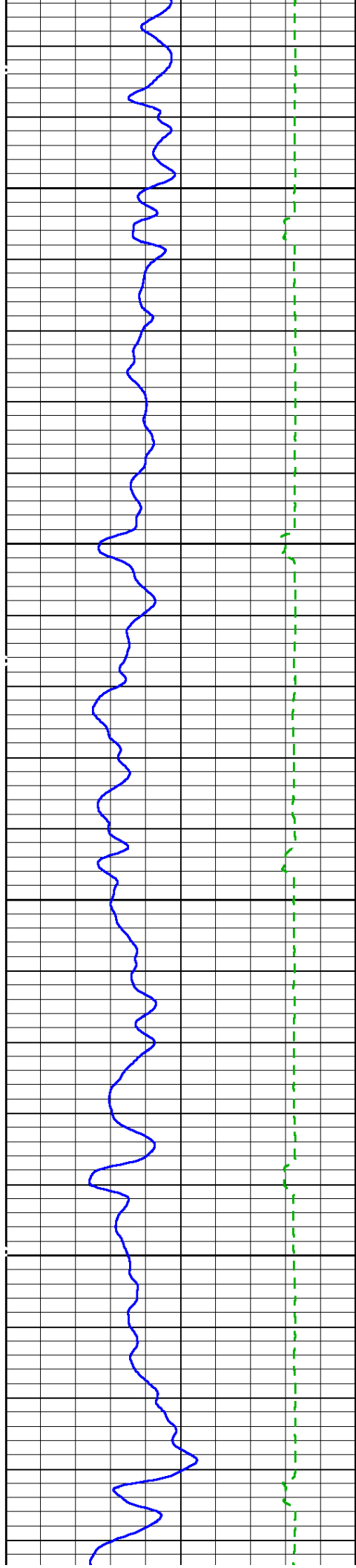
2700

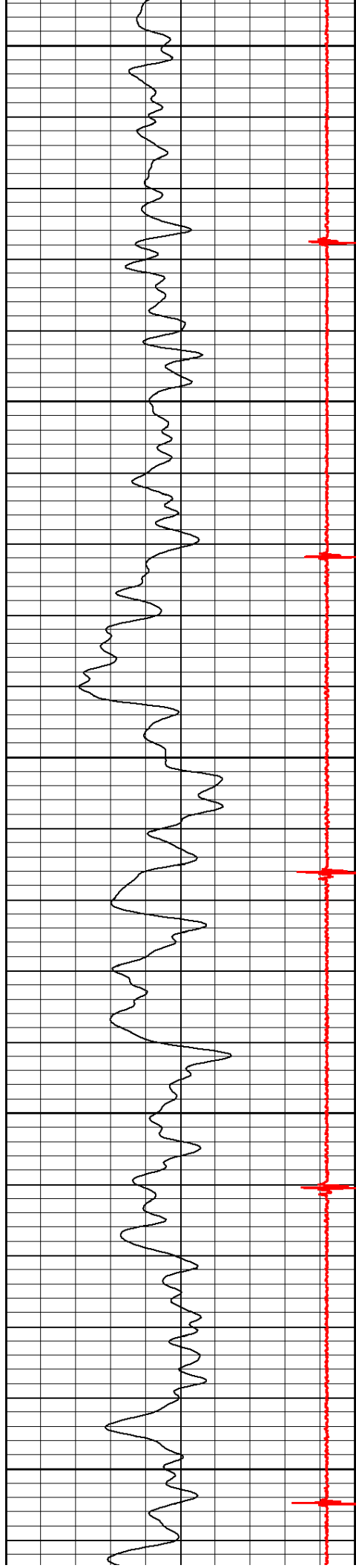




2800

2900

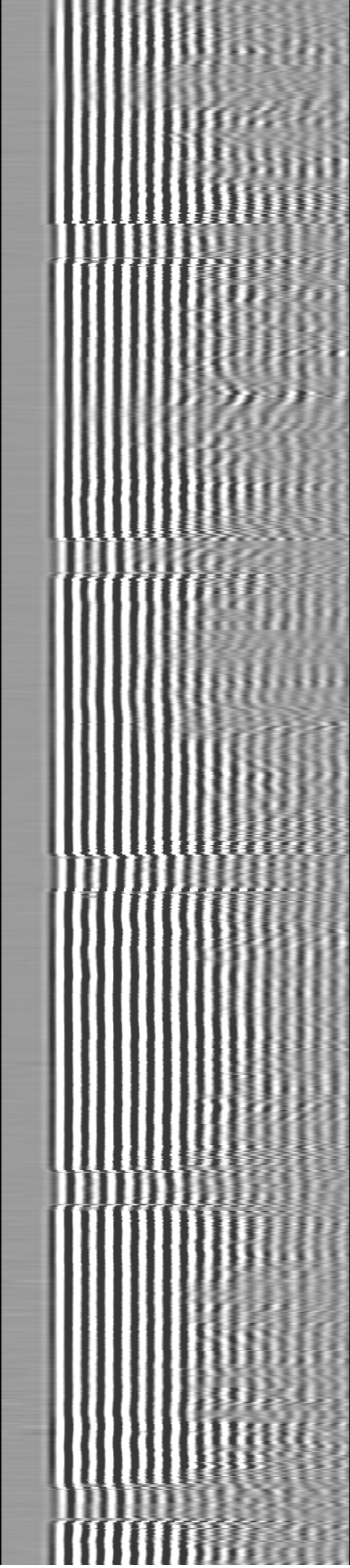
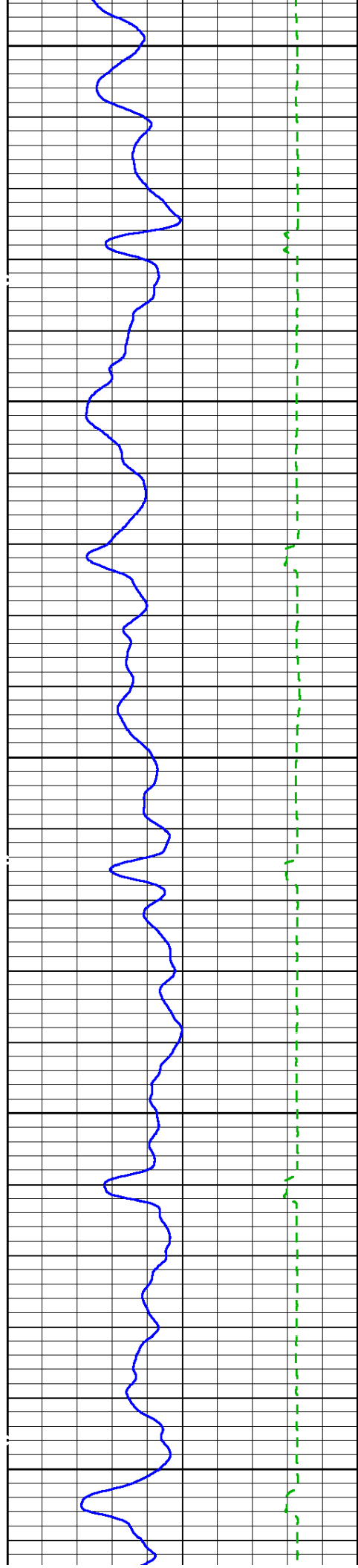


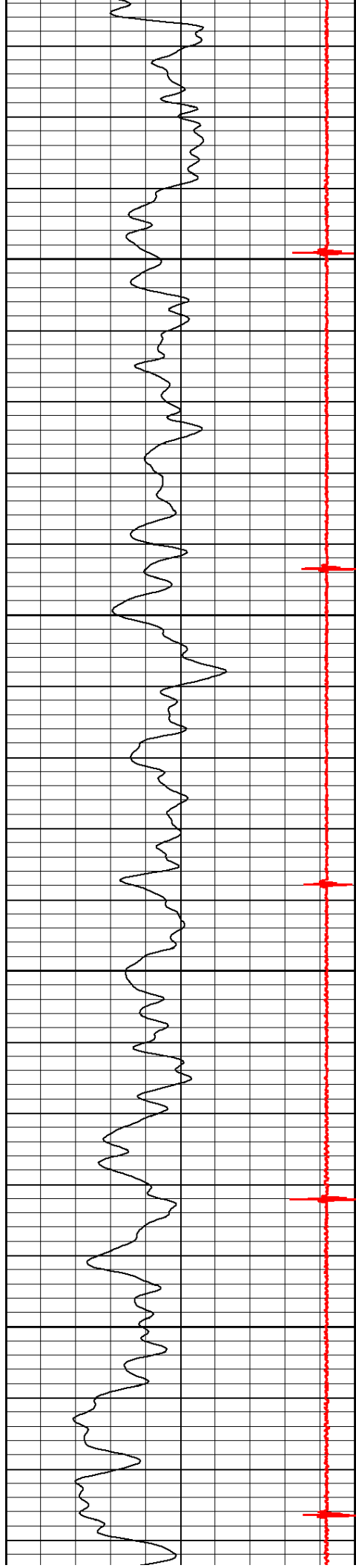


3000

3100

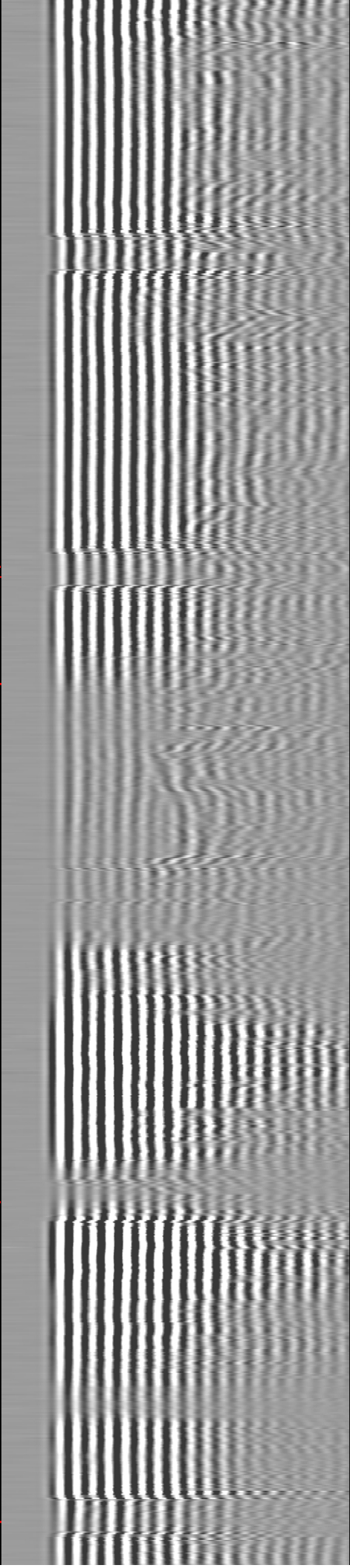
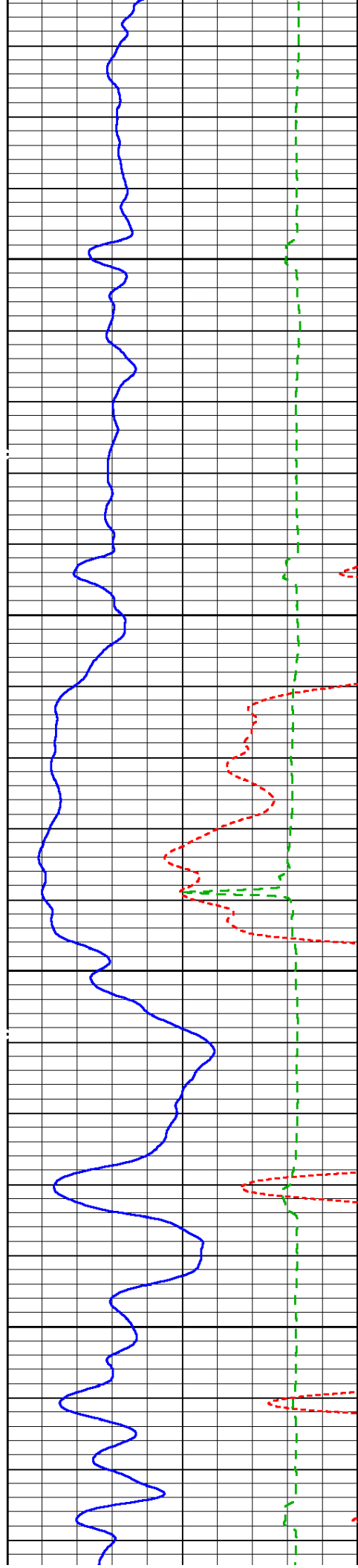
3200

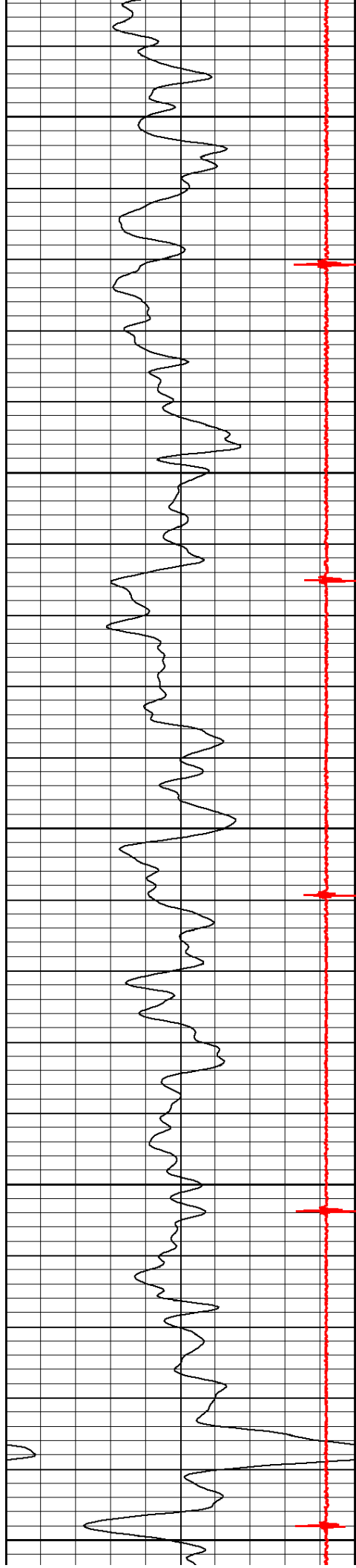




3300

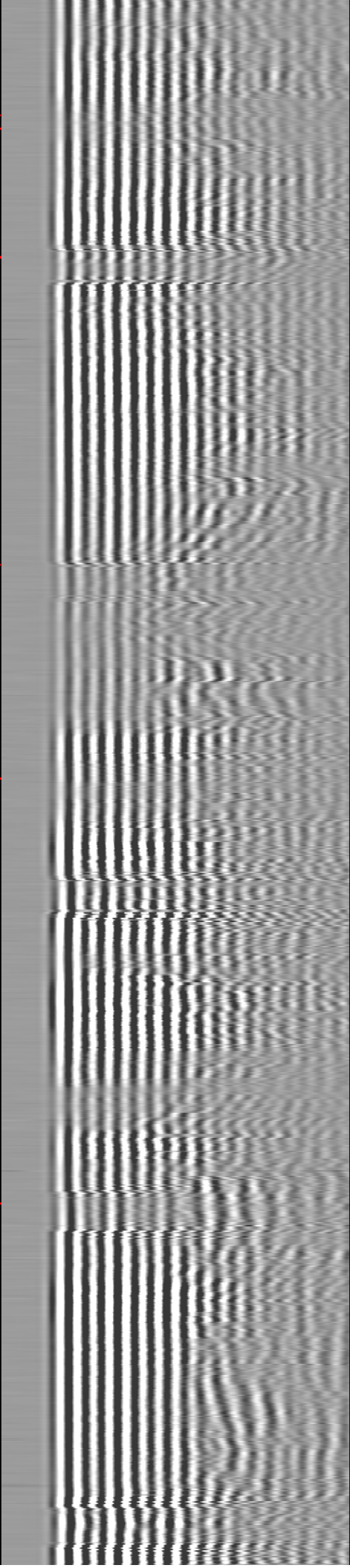
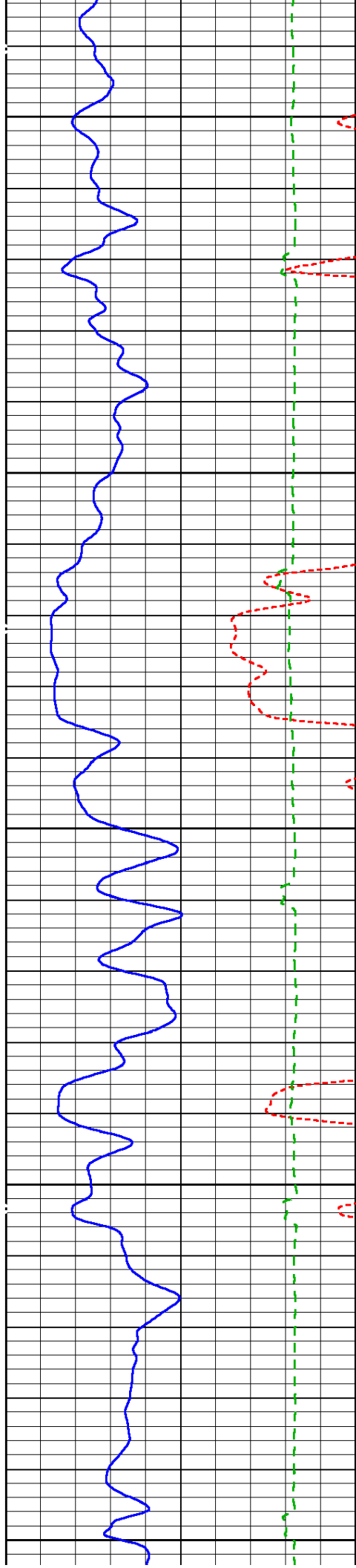
3400

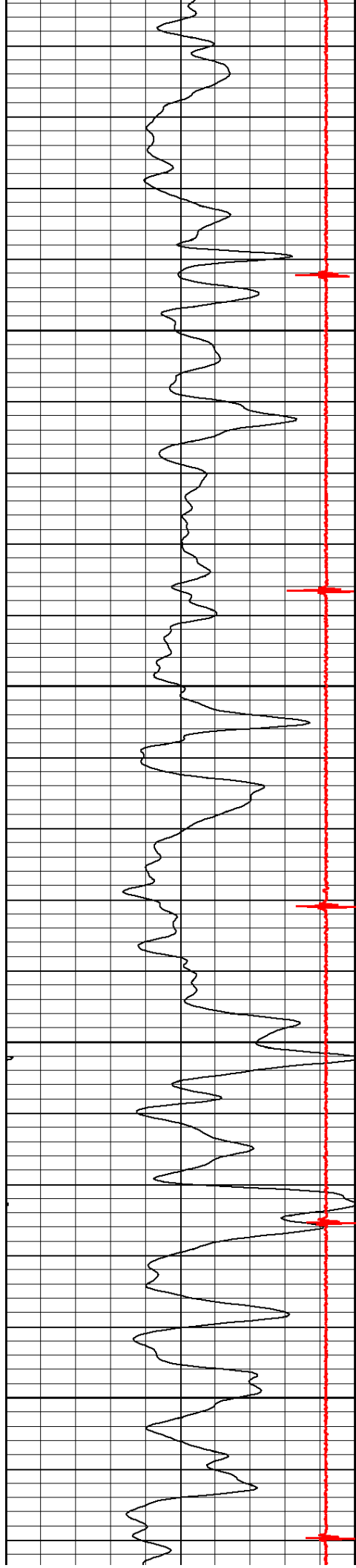




3500

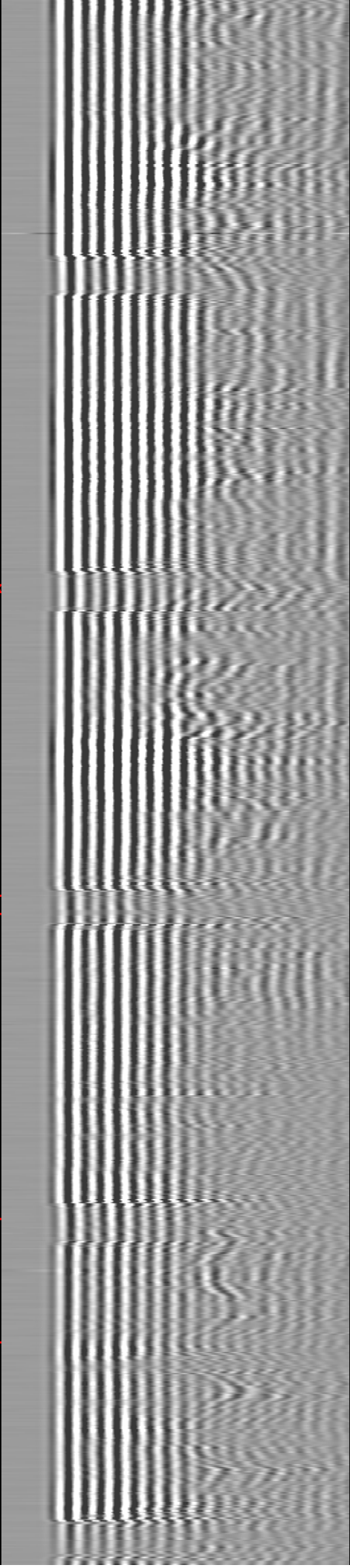
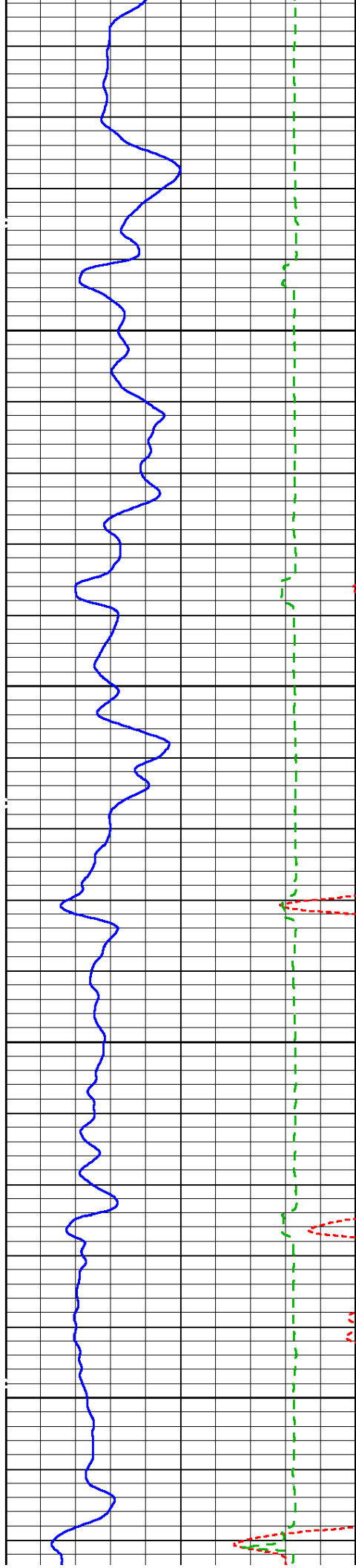
3600

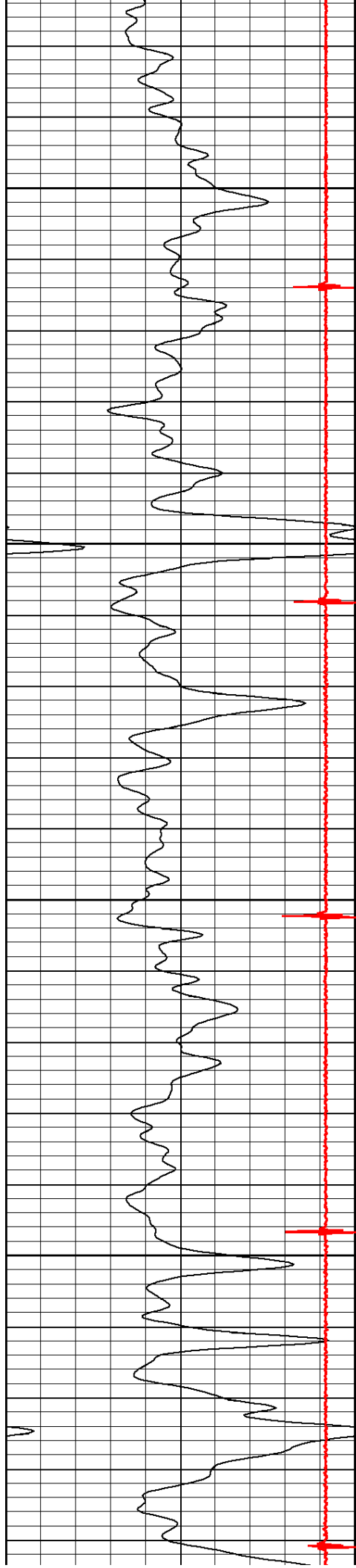




3700

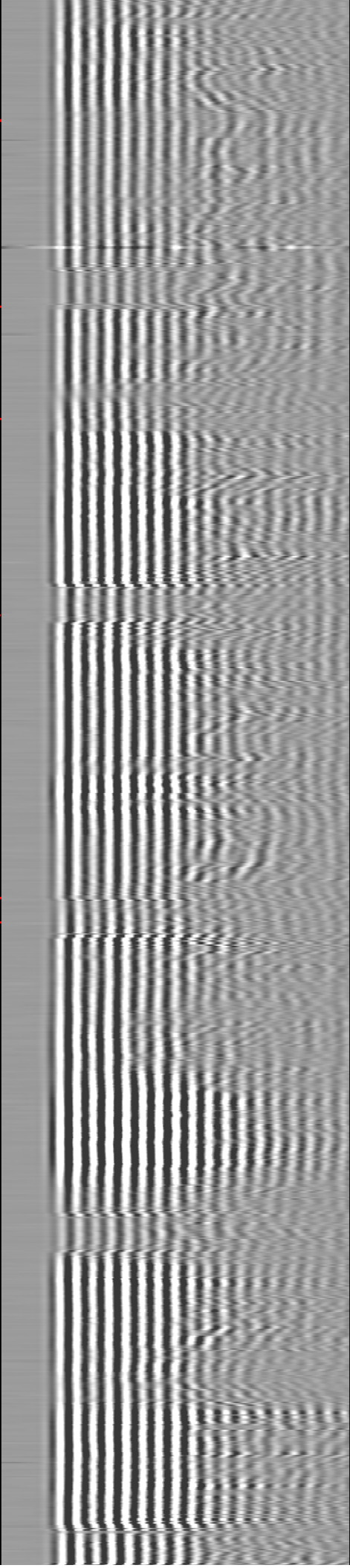
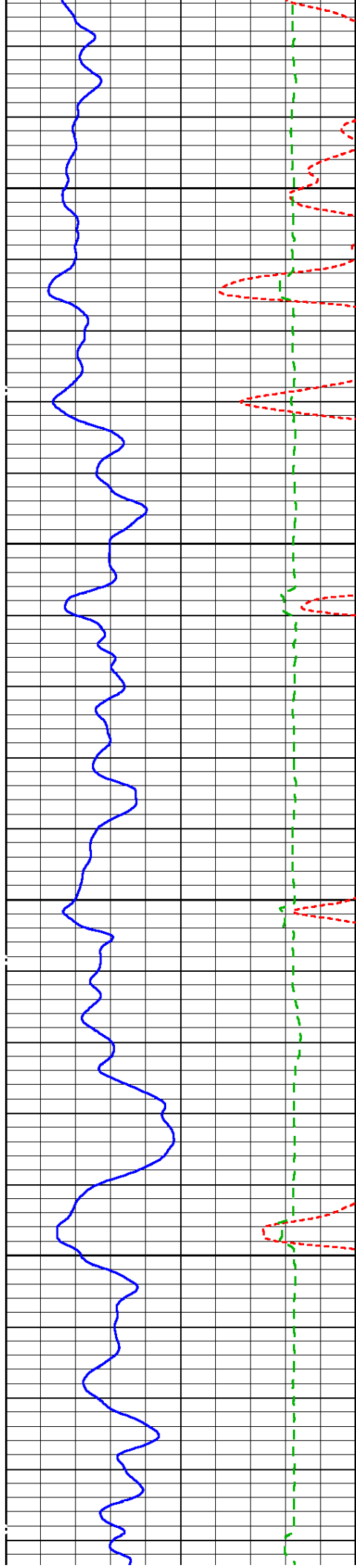
3800

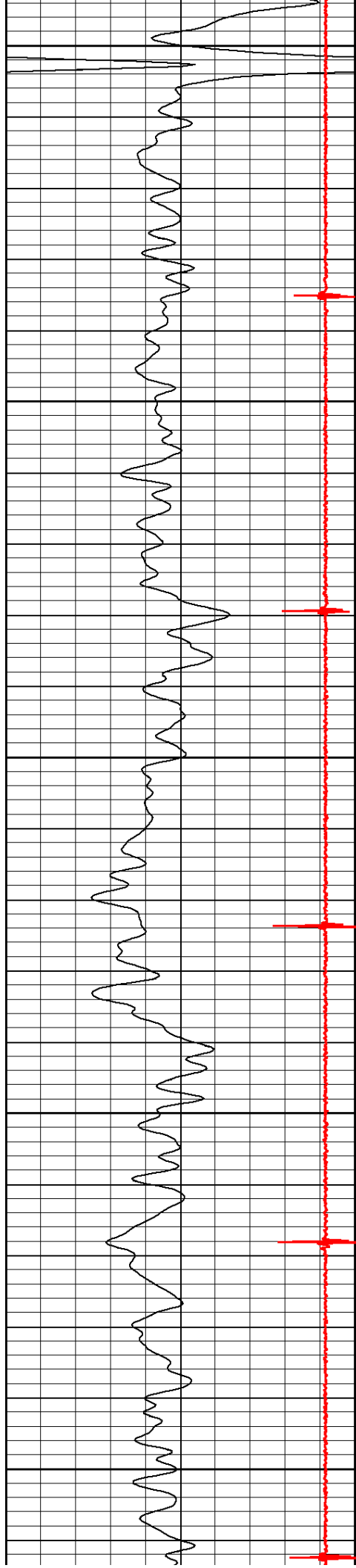




3900

4000

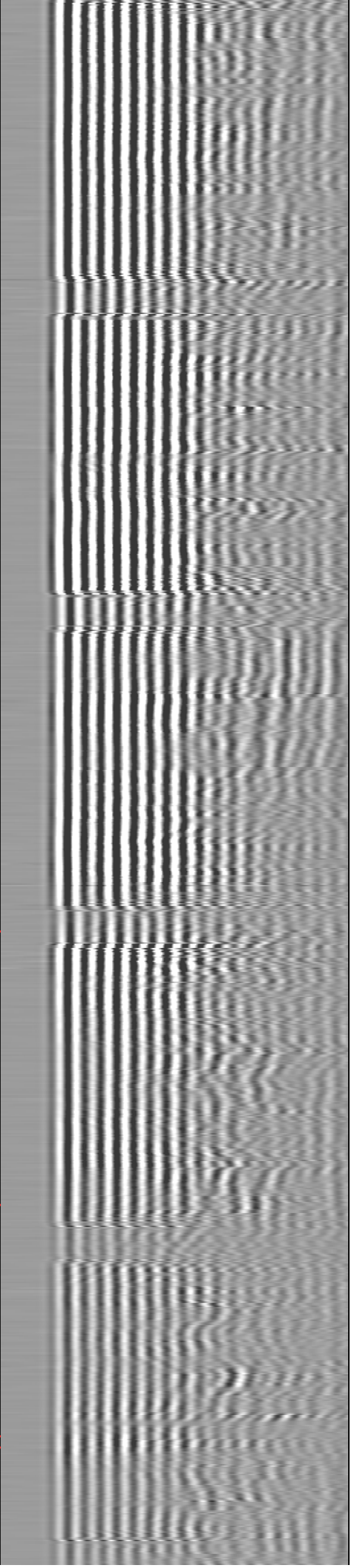
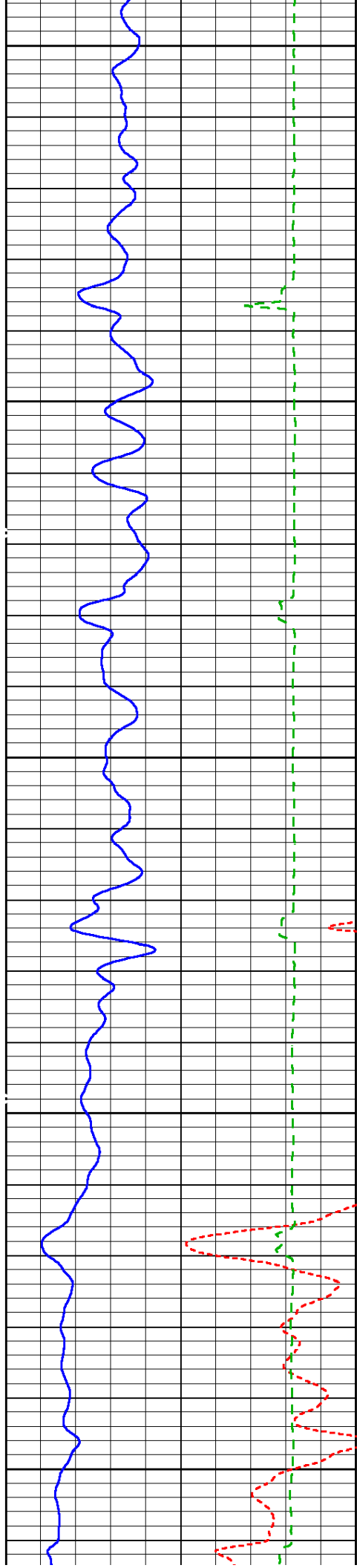


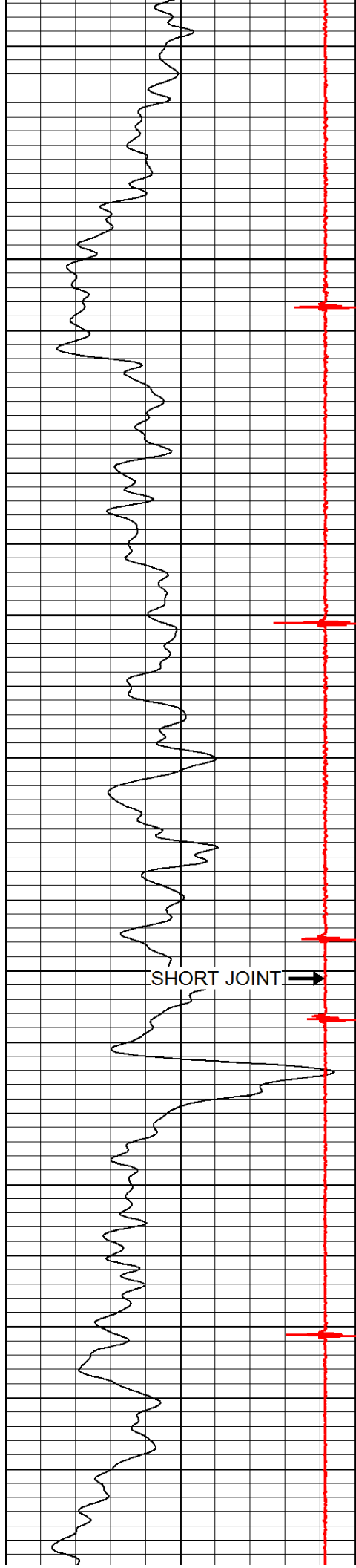


4100

4200

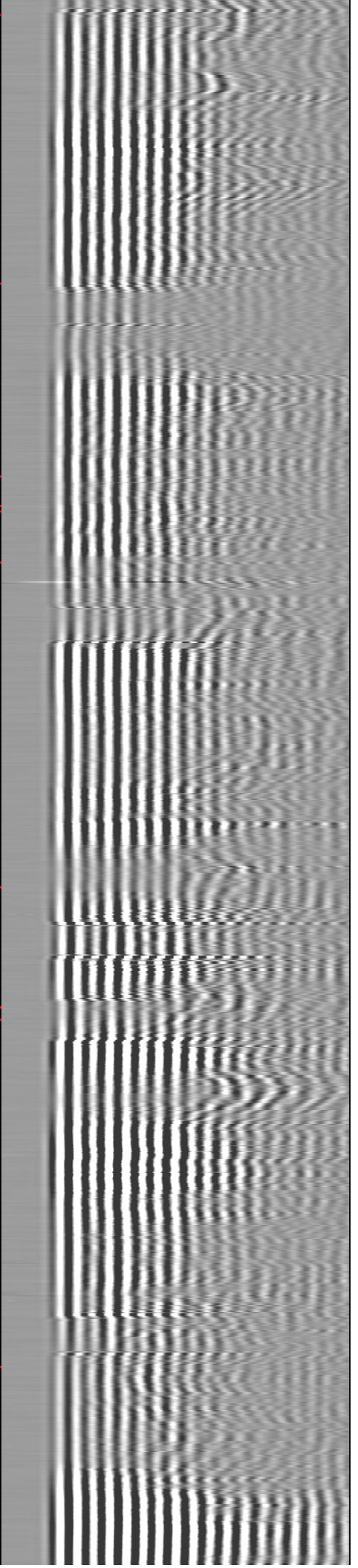
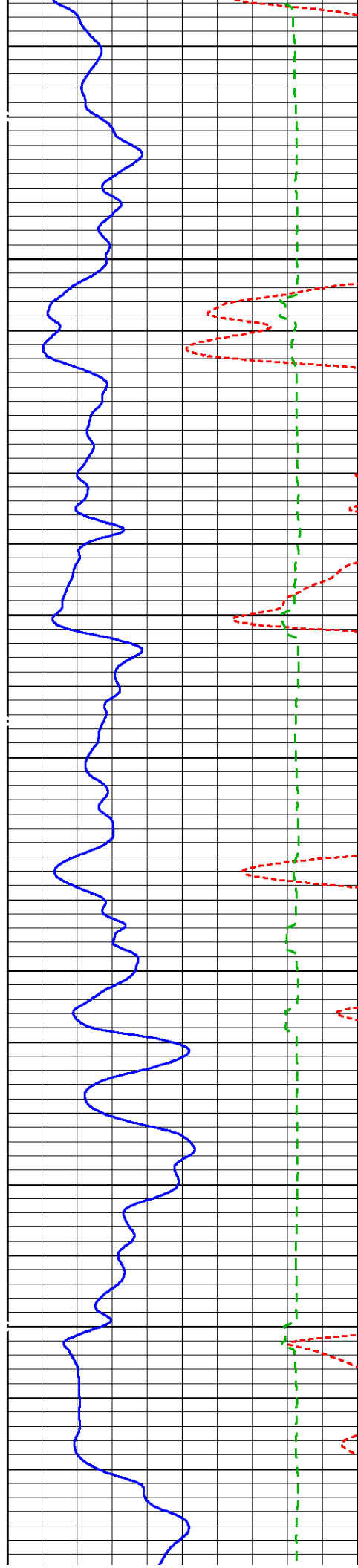
4300

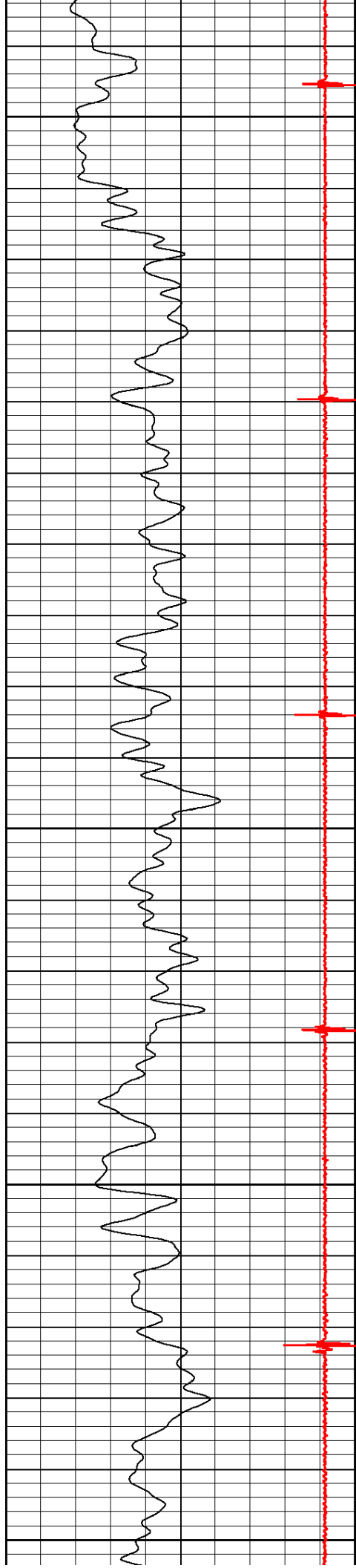




4400

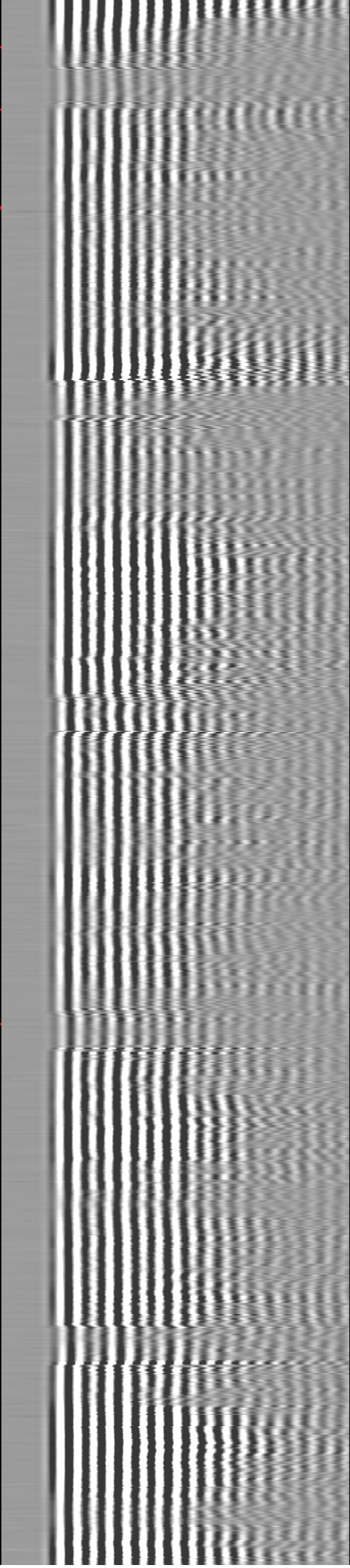
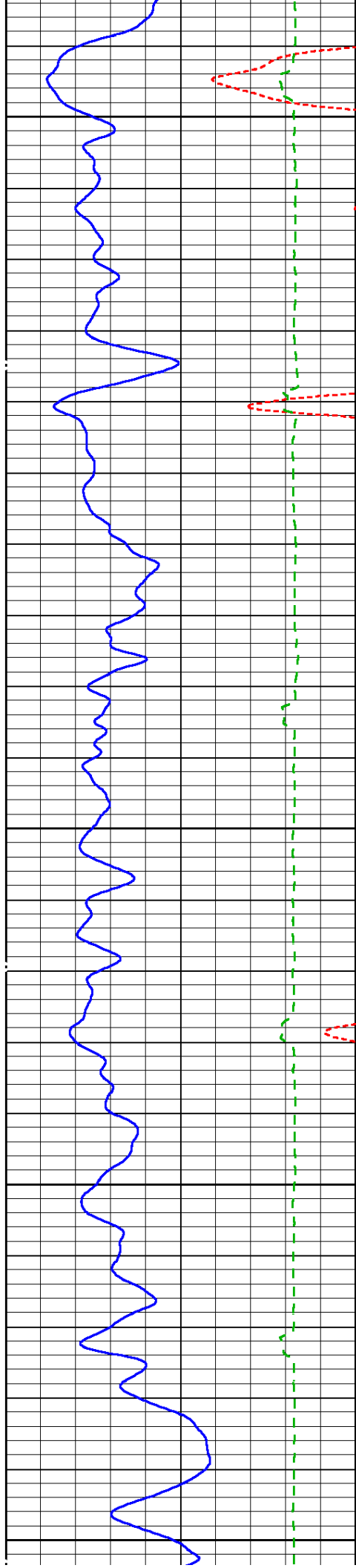
4500

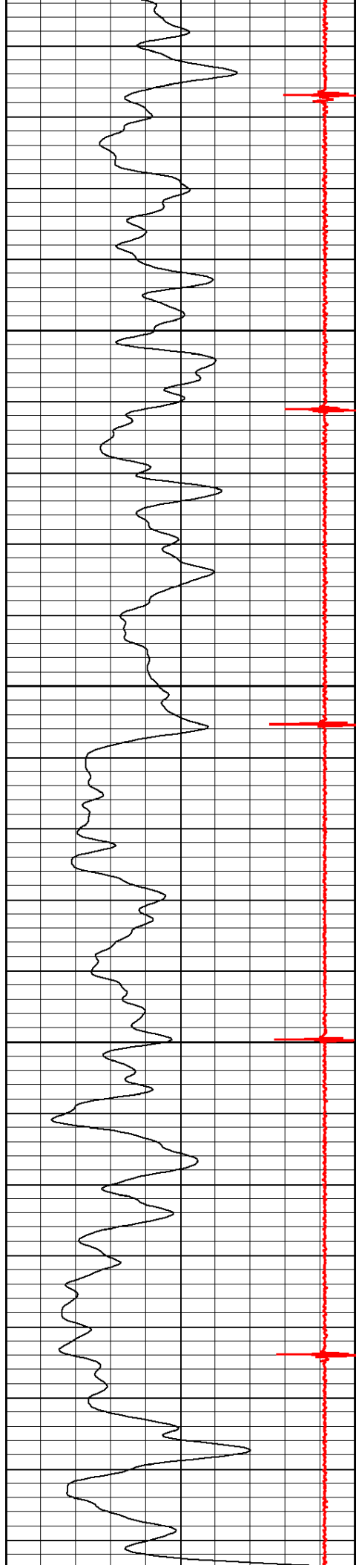




4600

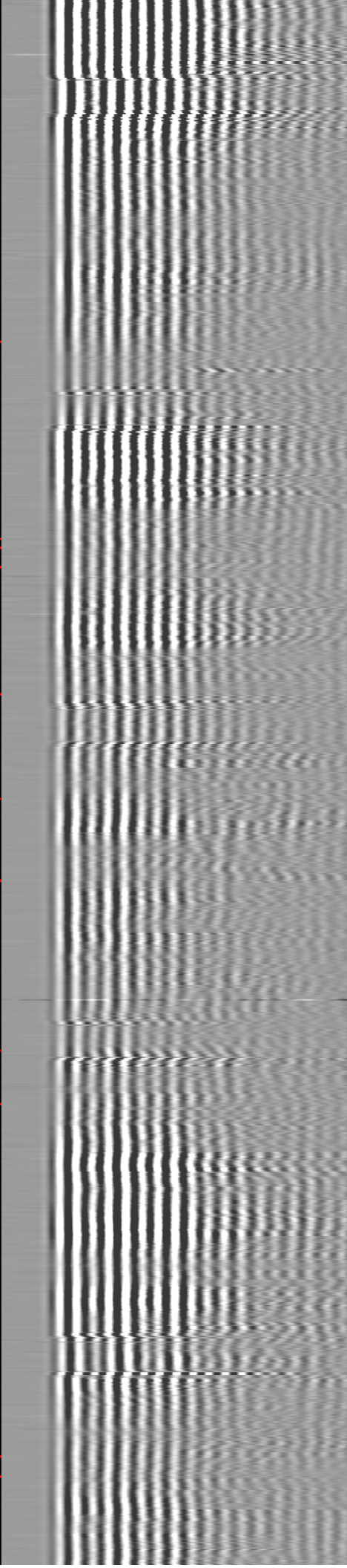
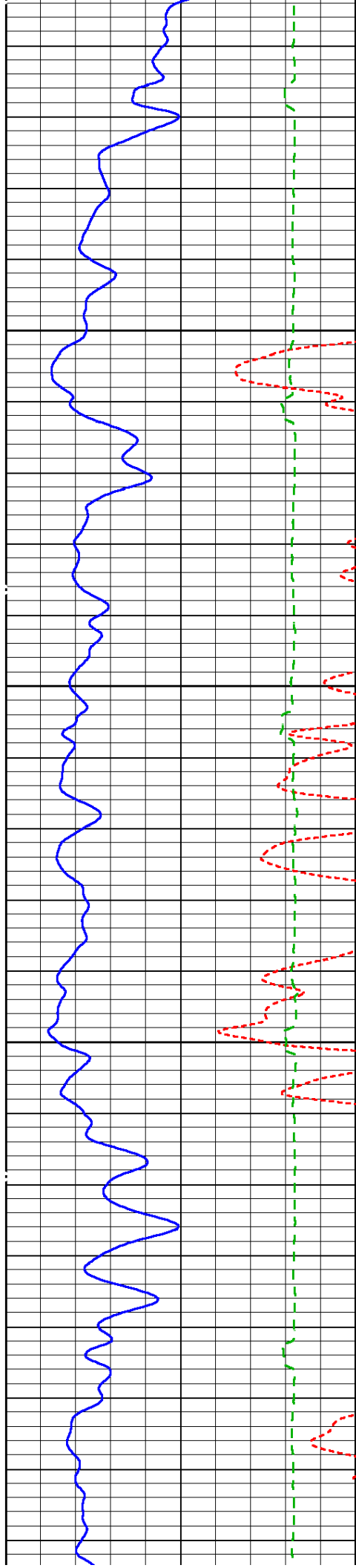
4700

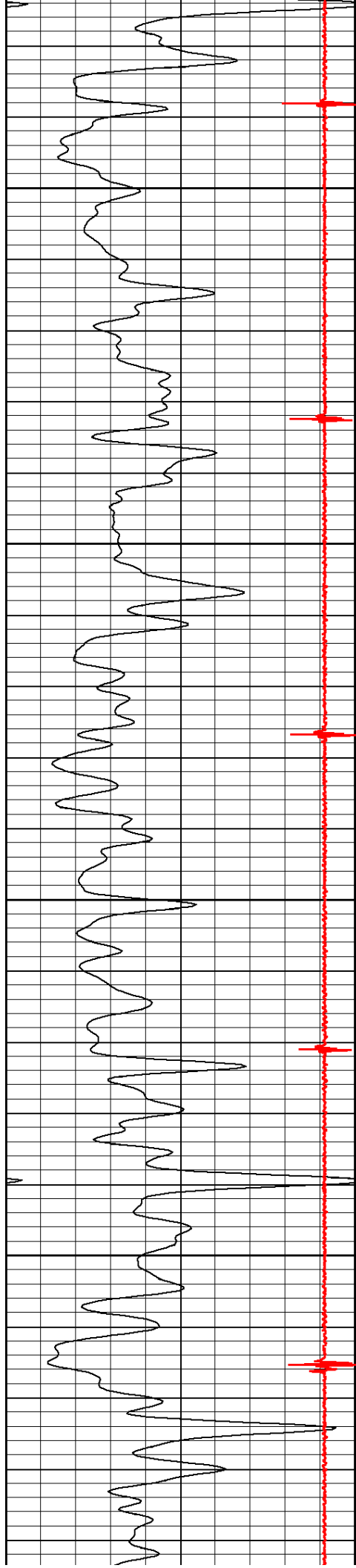




4800

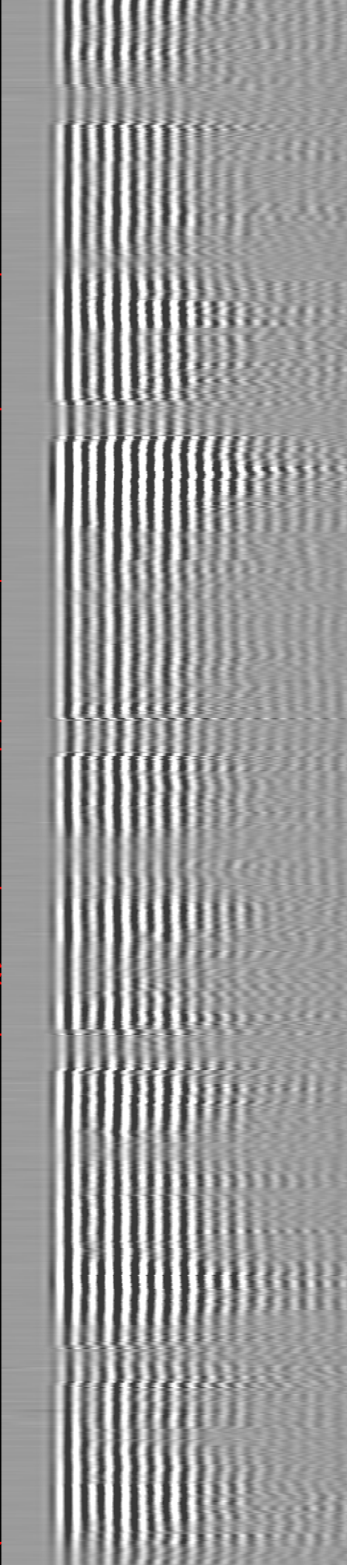
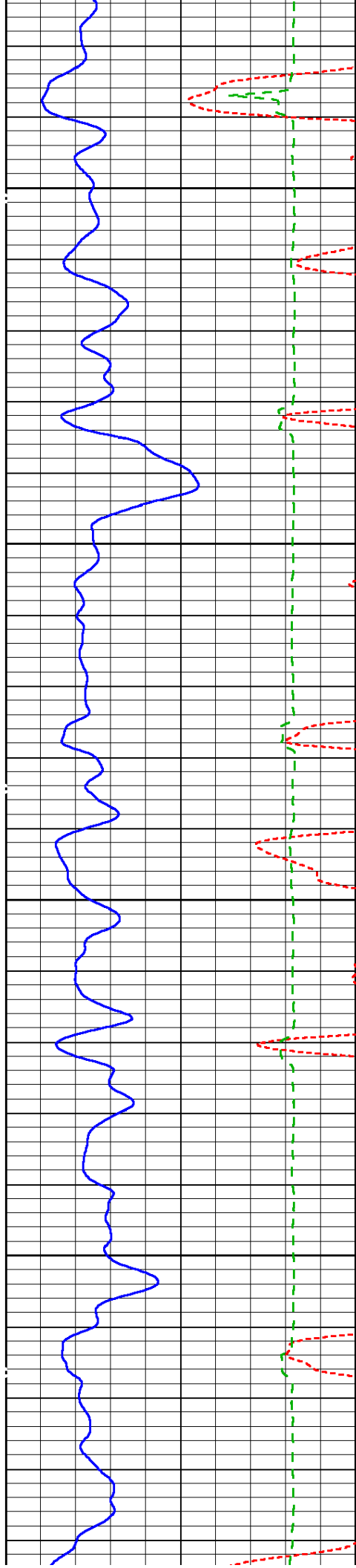
4900

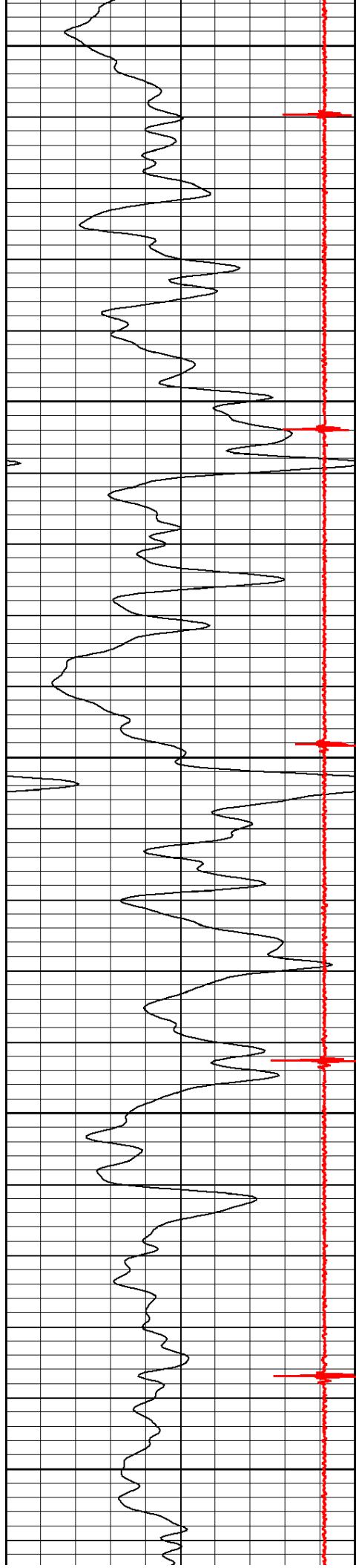




5000

5100

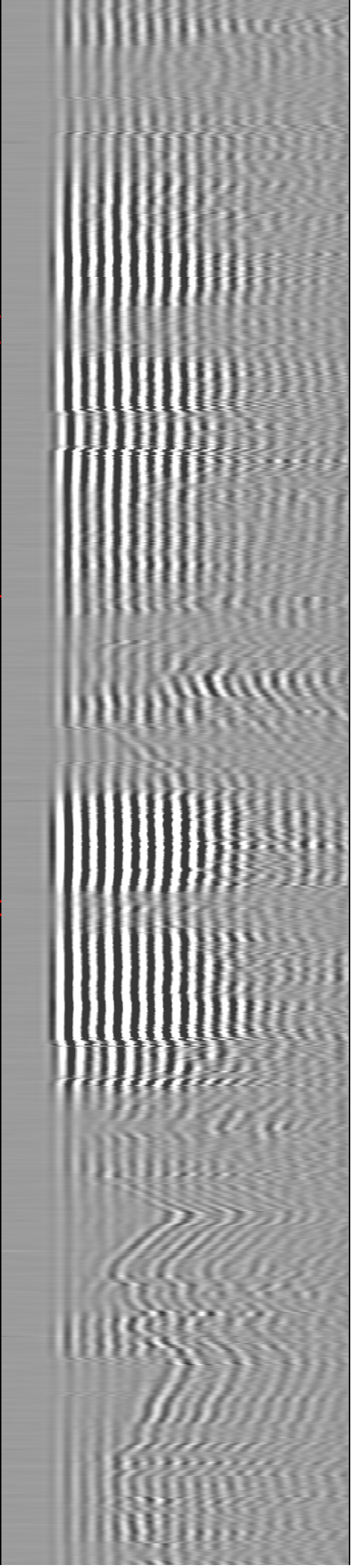
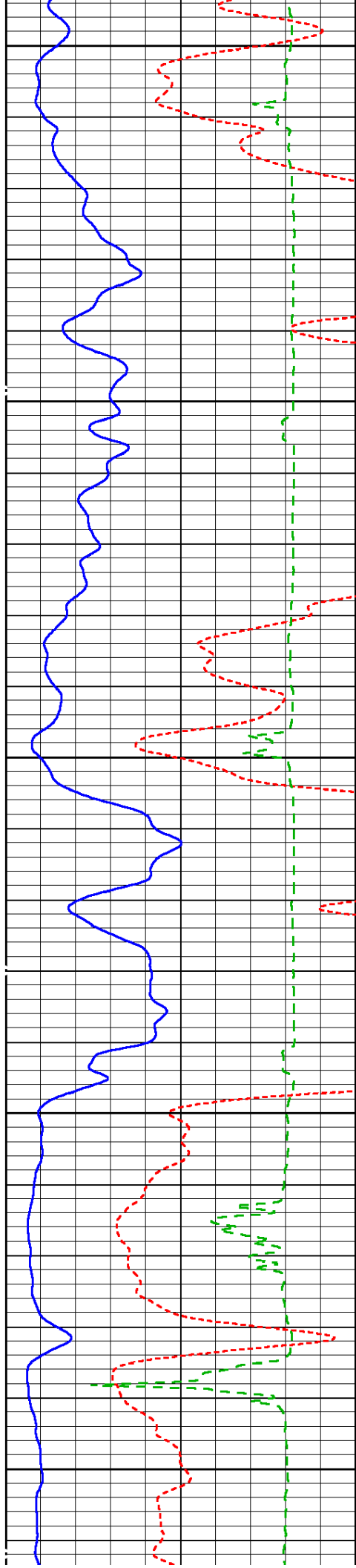


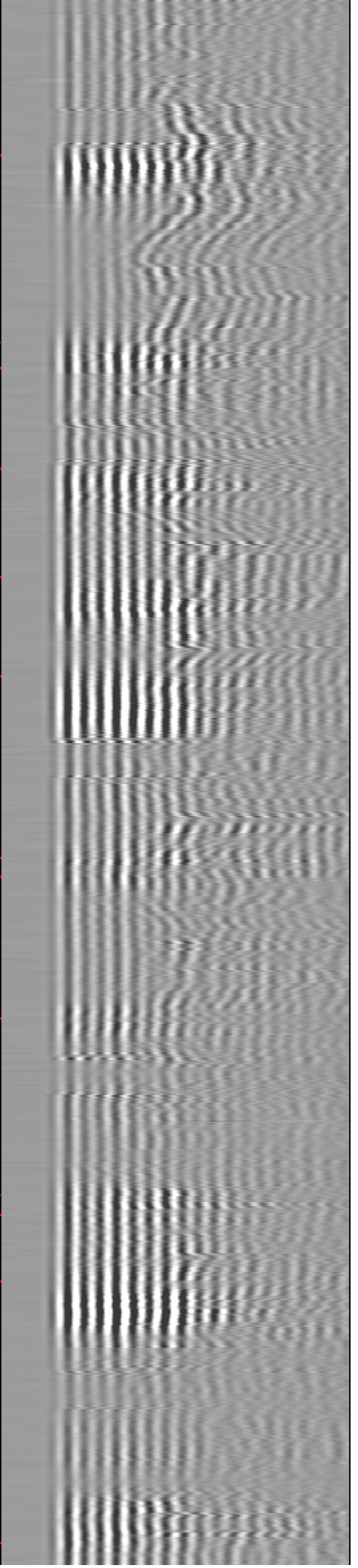
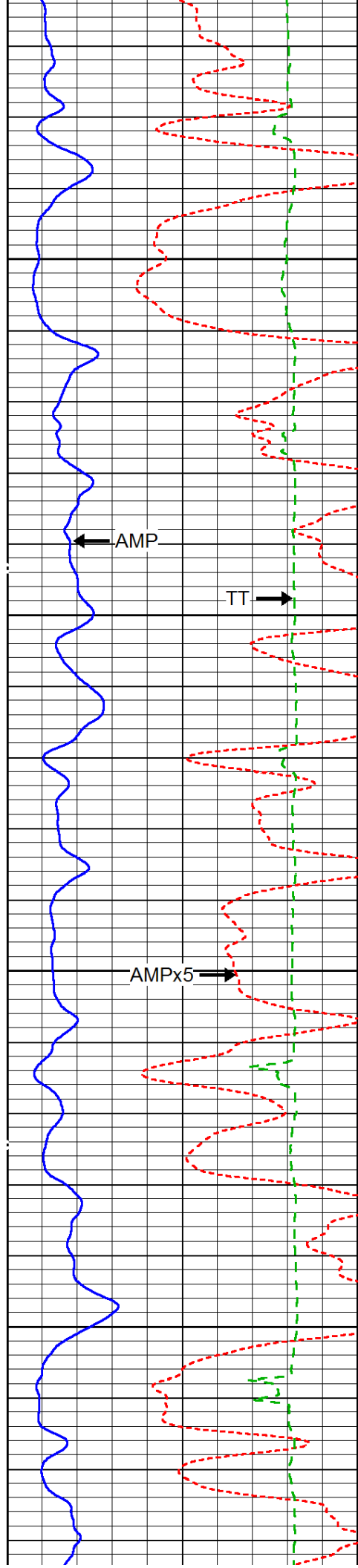
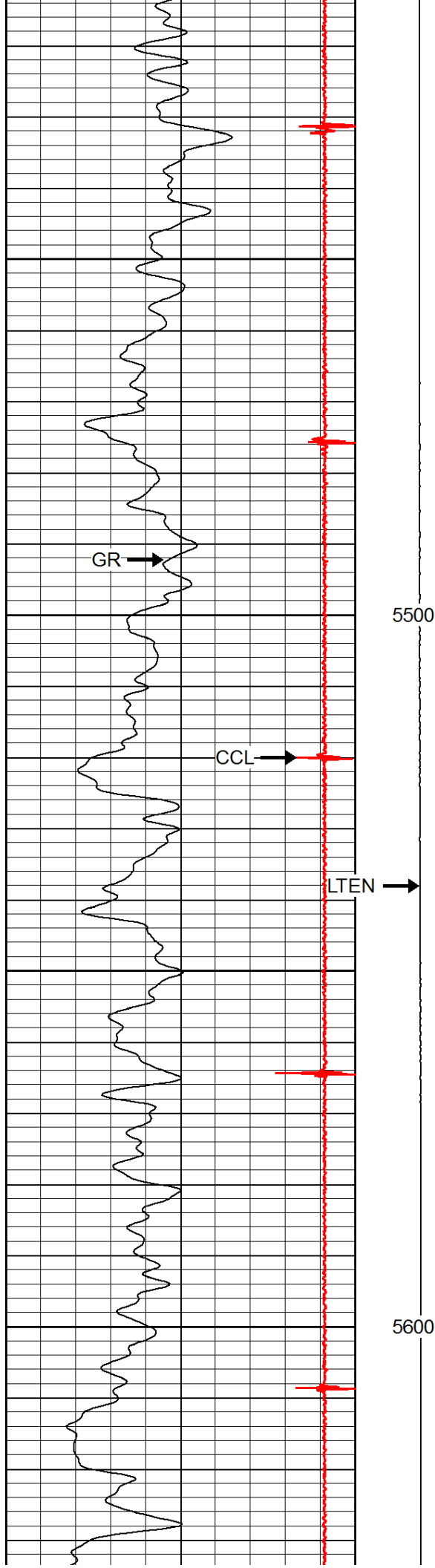


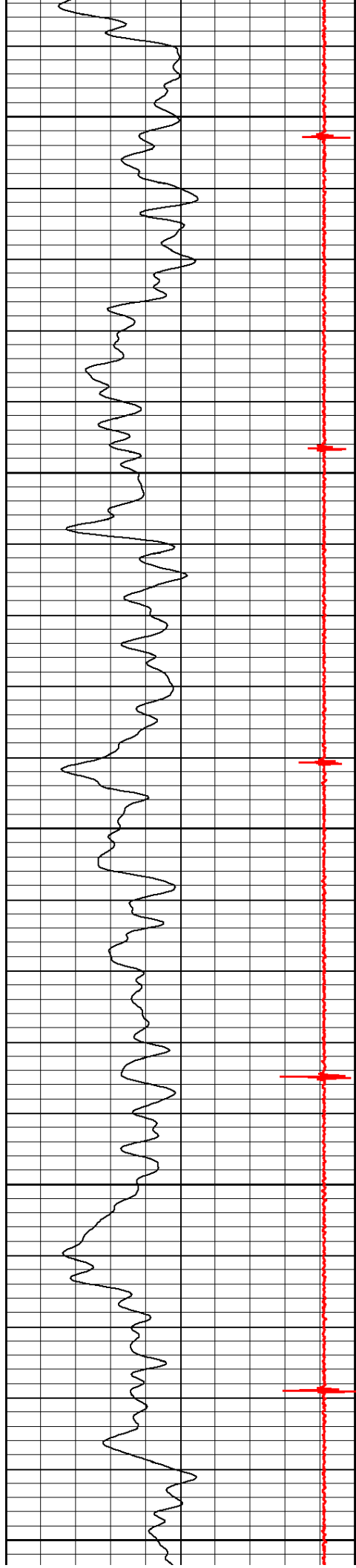
5200

5300

5400

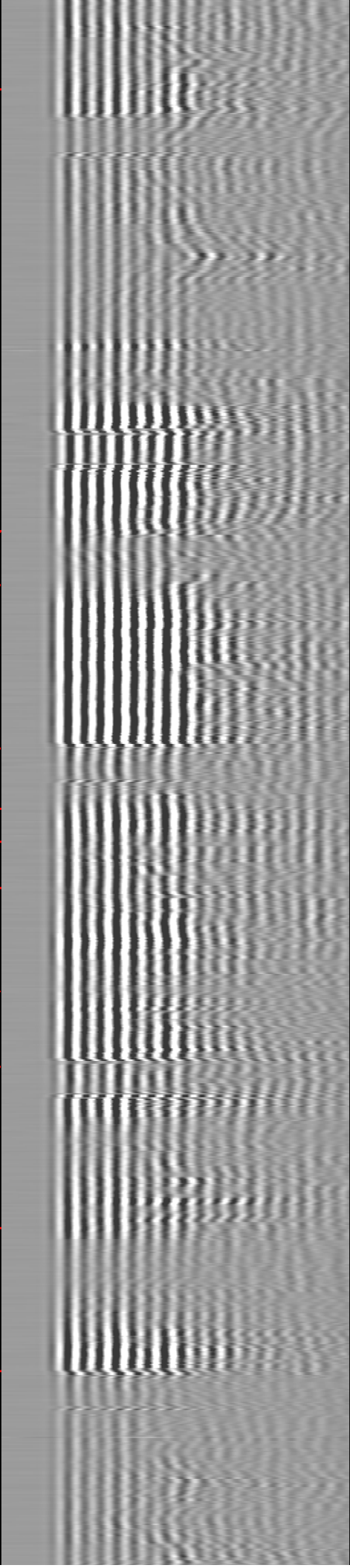
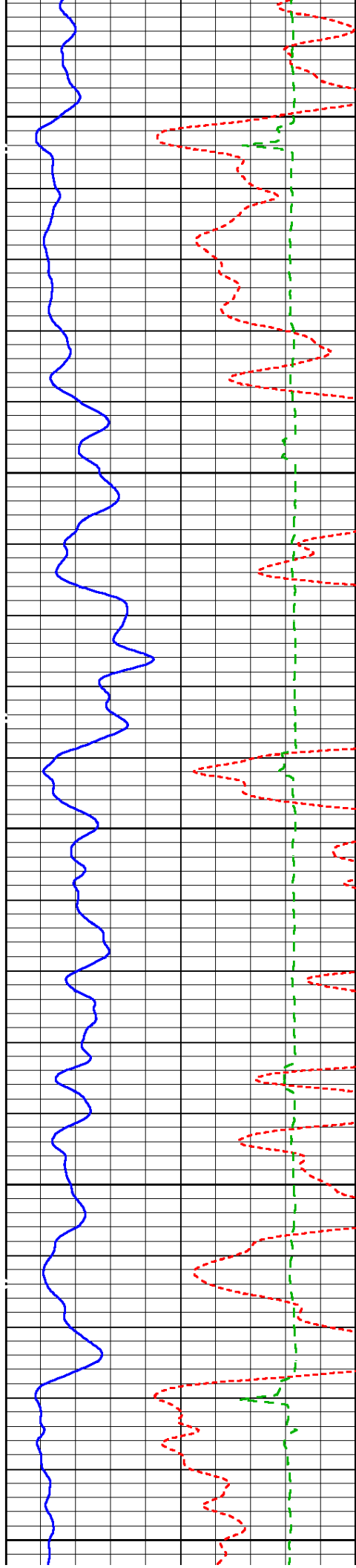


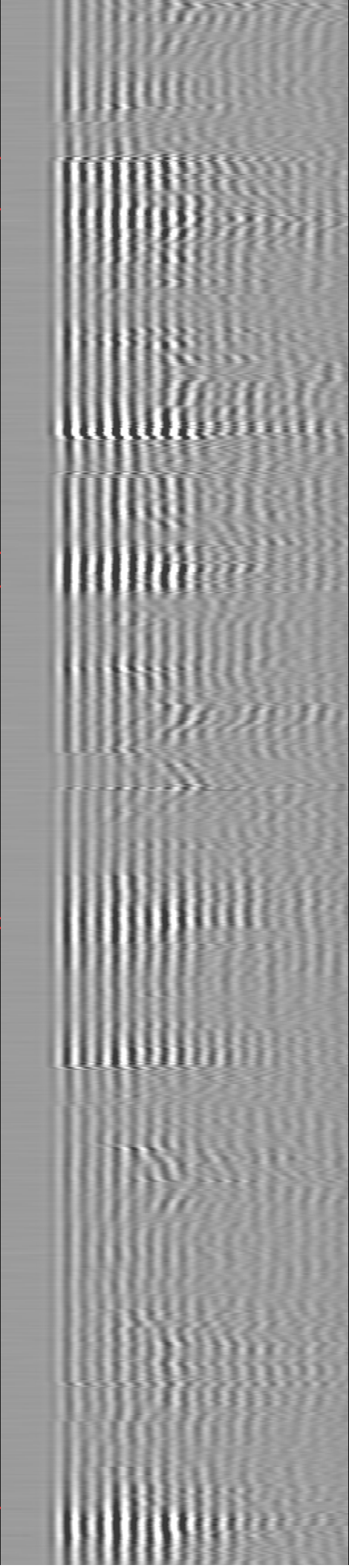
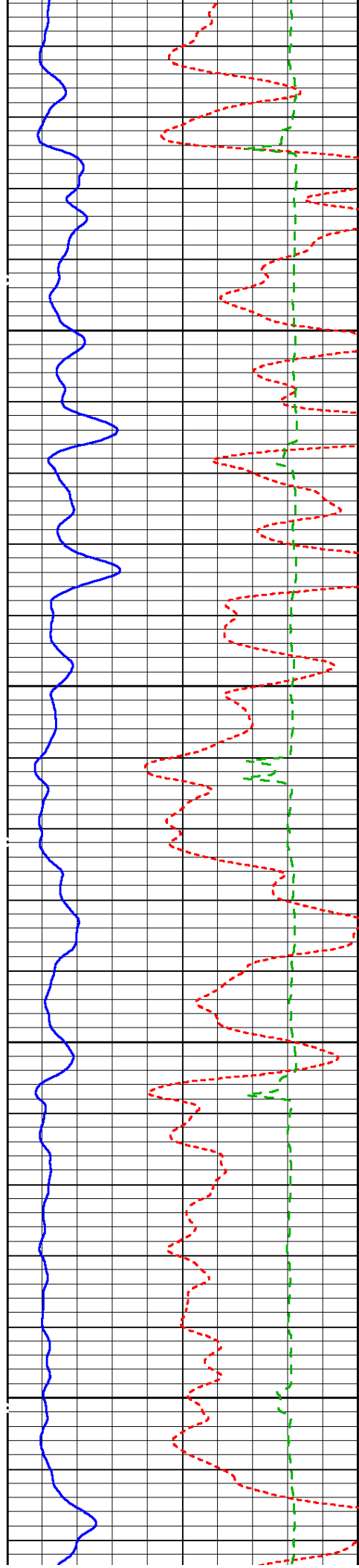
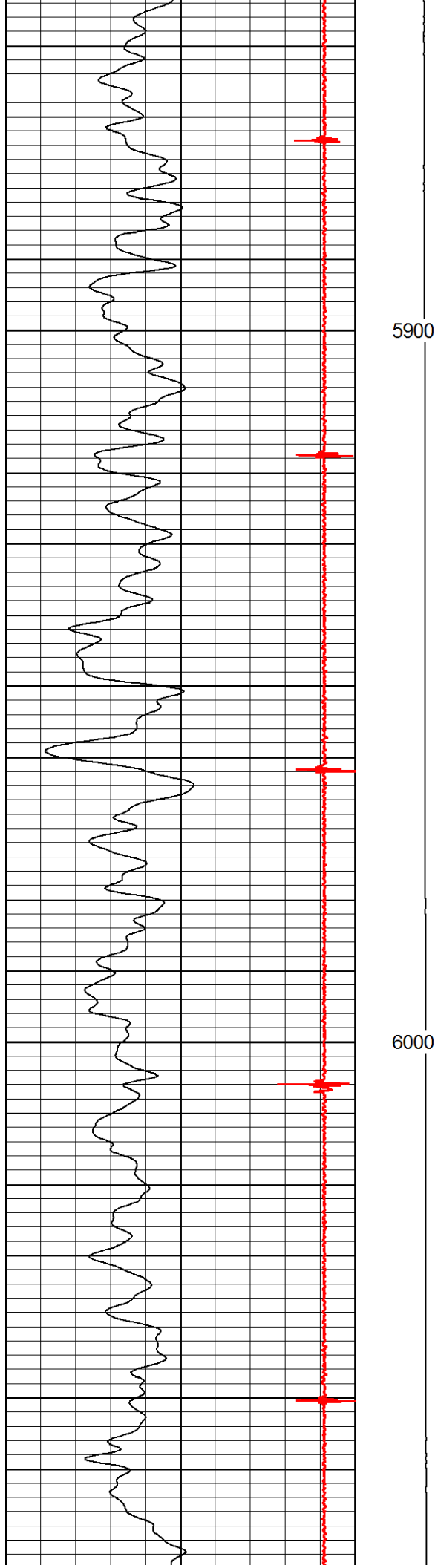


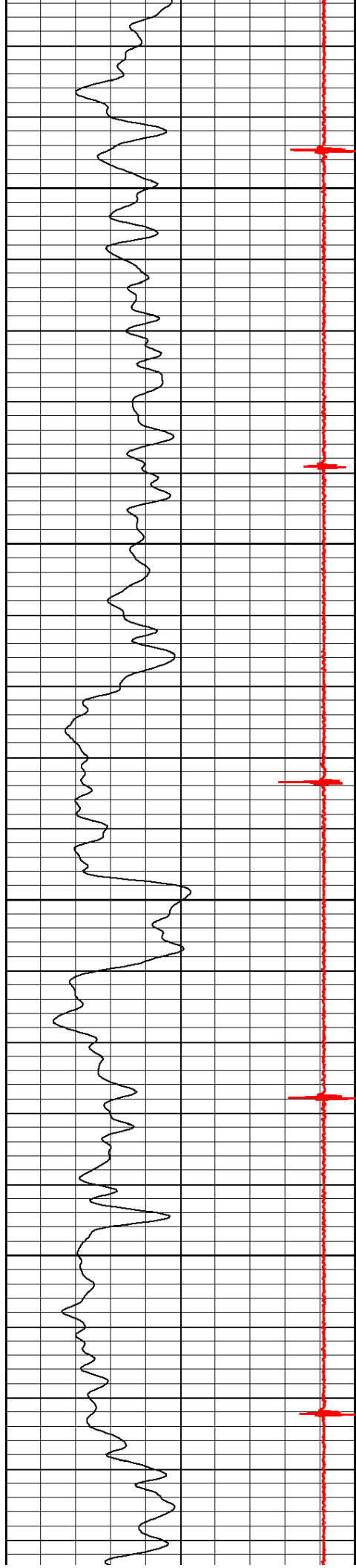


5700

5800

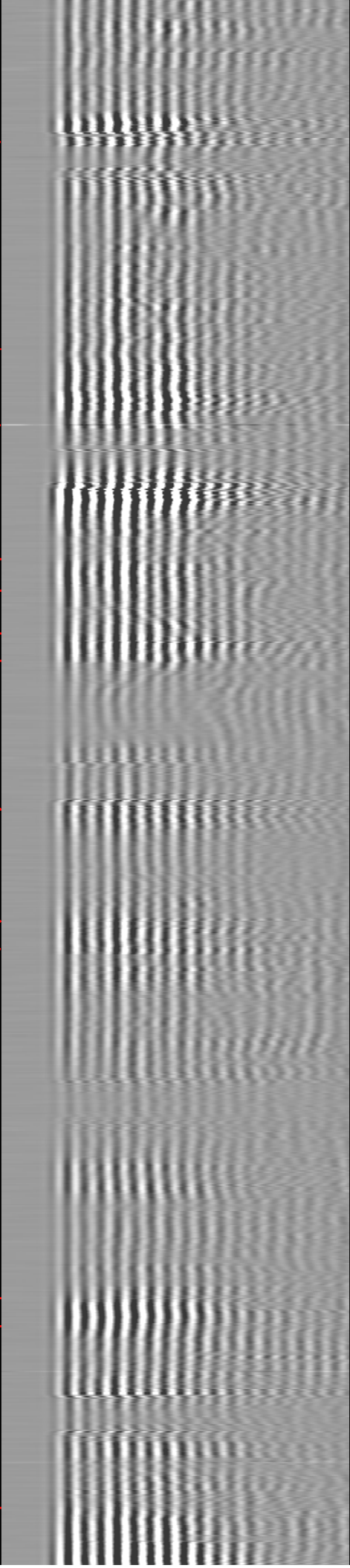
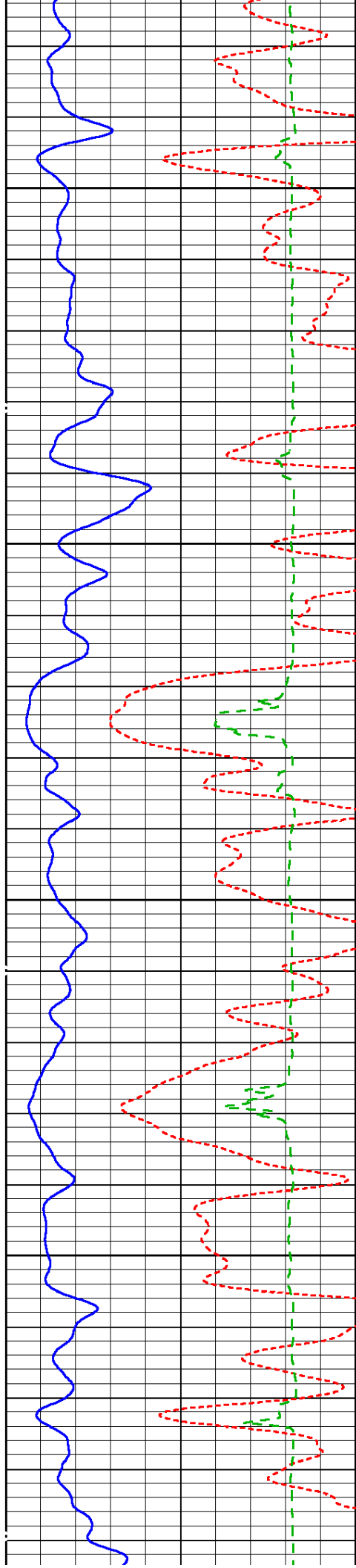


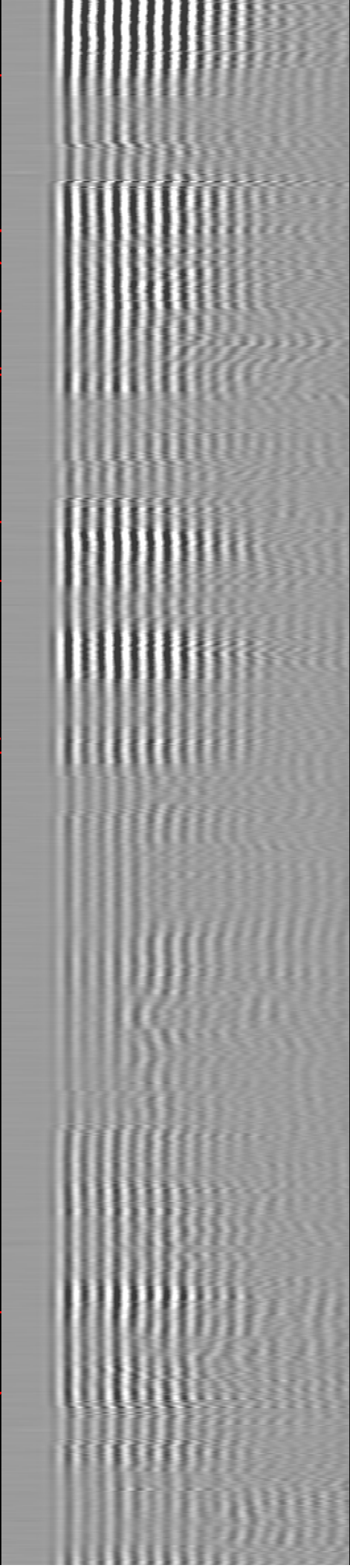
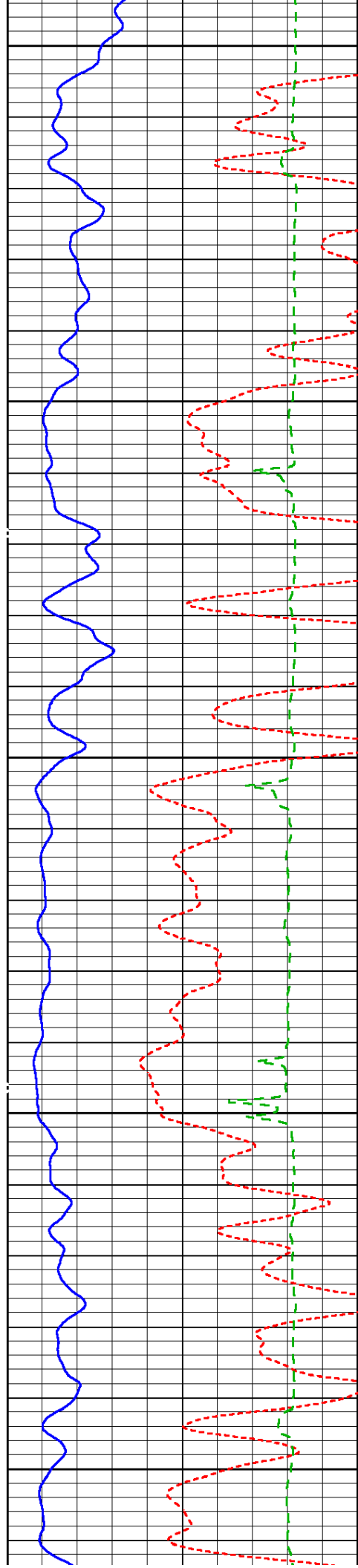
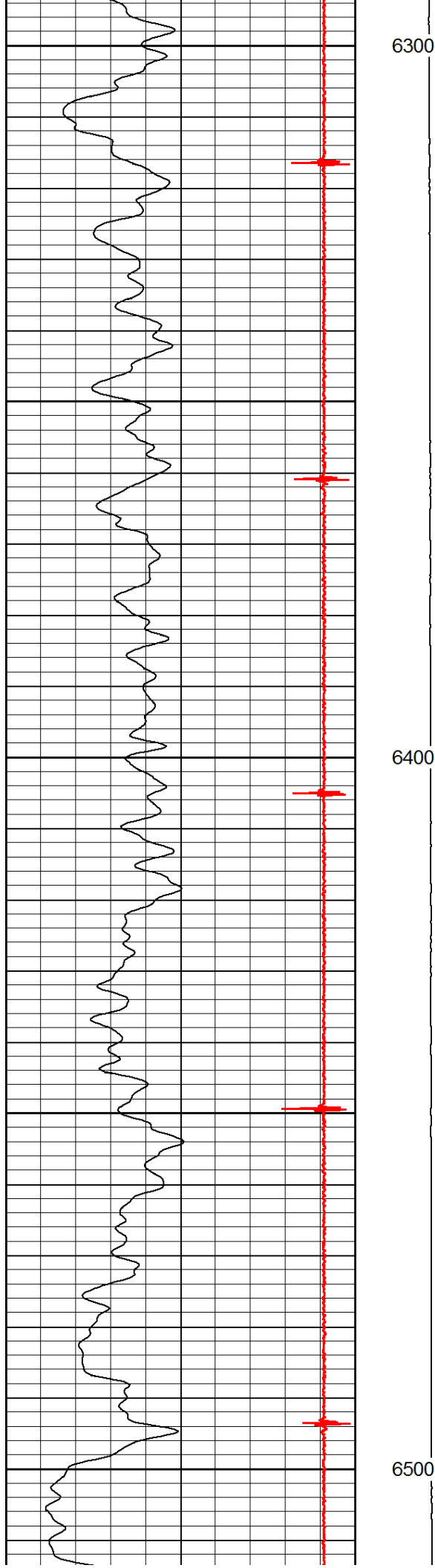


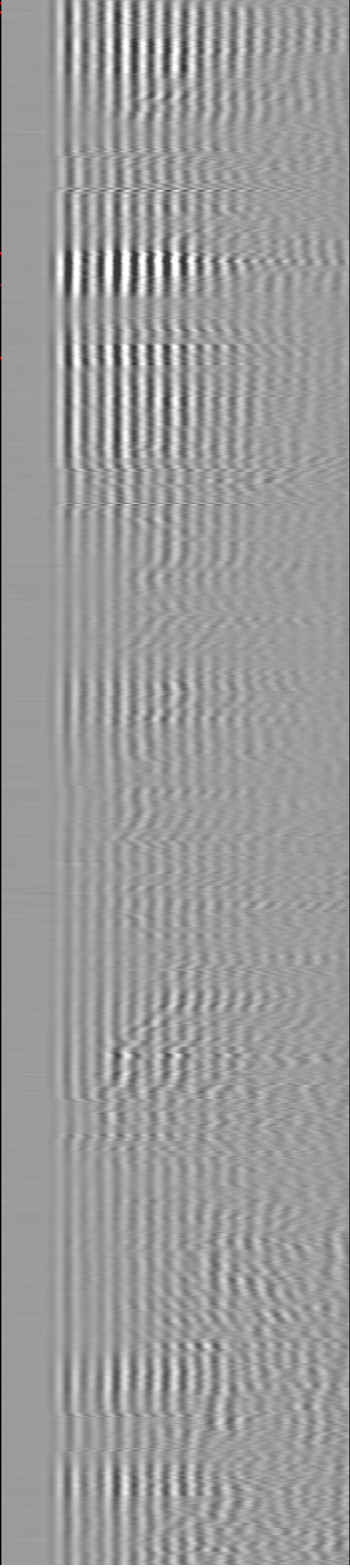
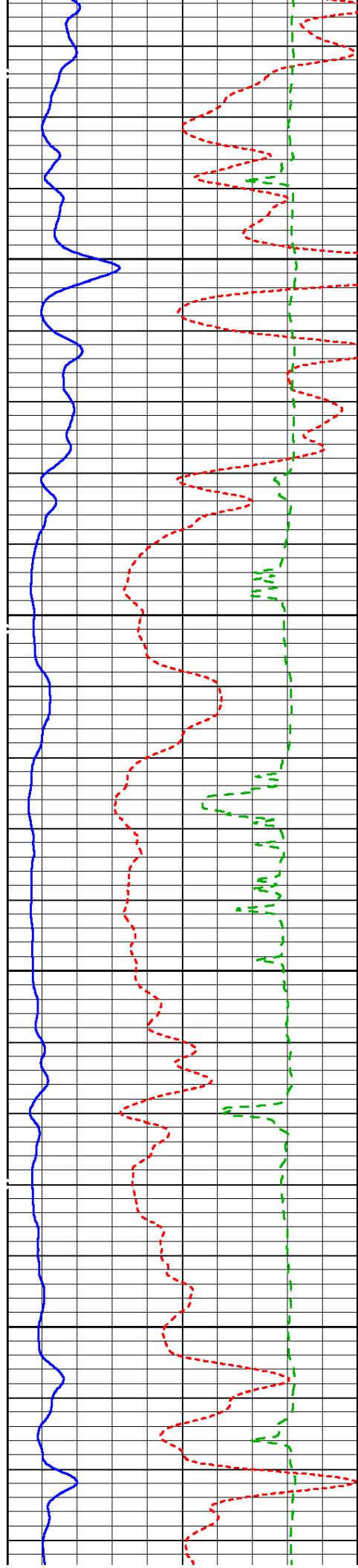
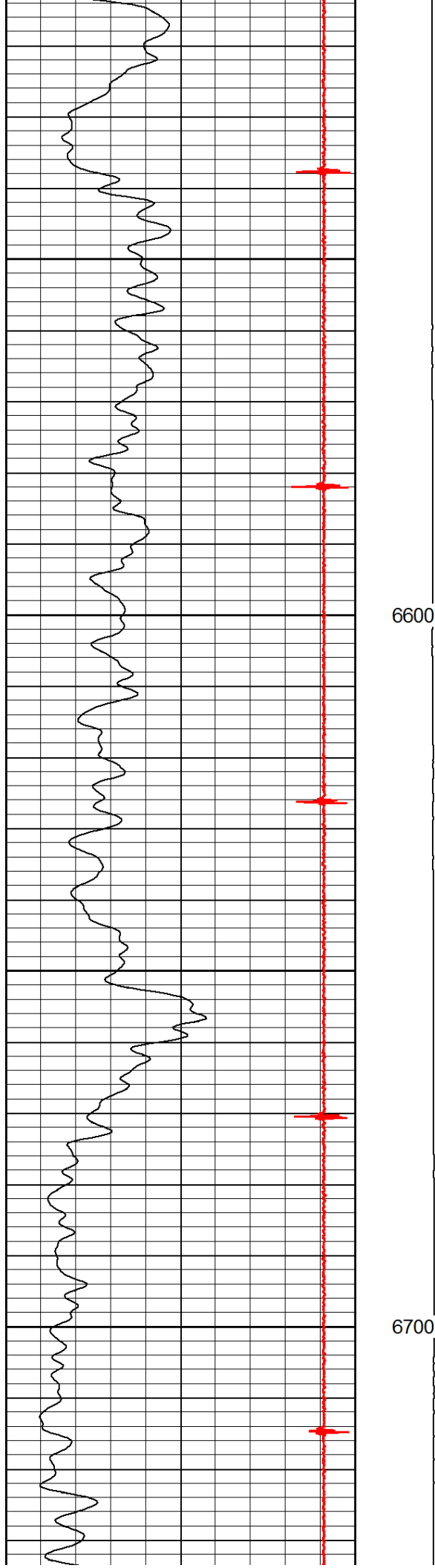


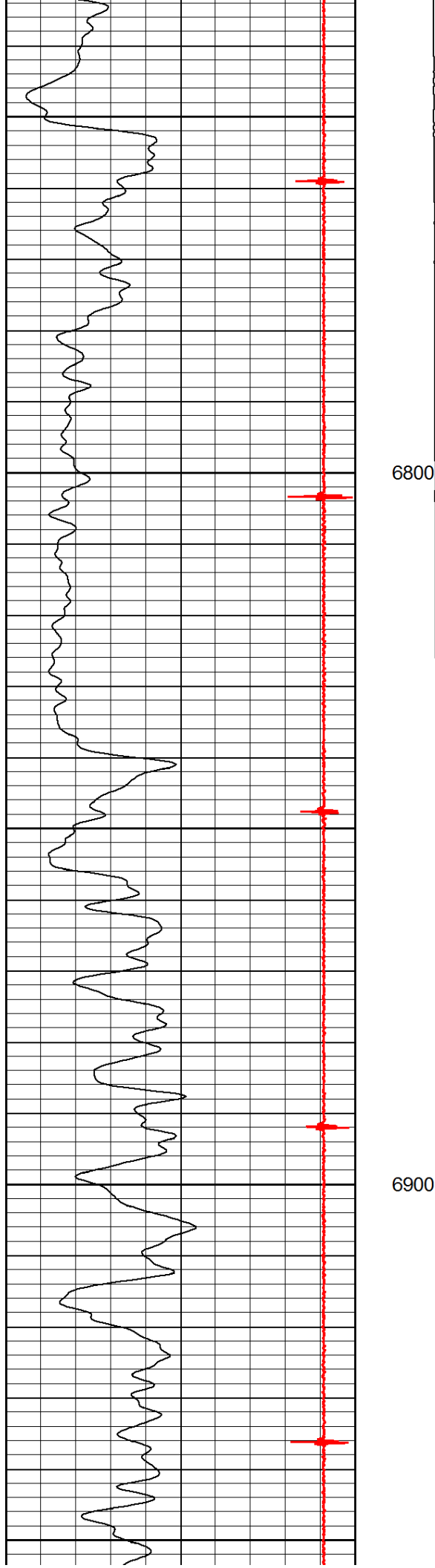
6100

6200



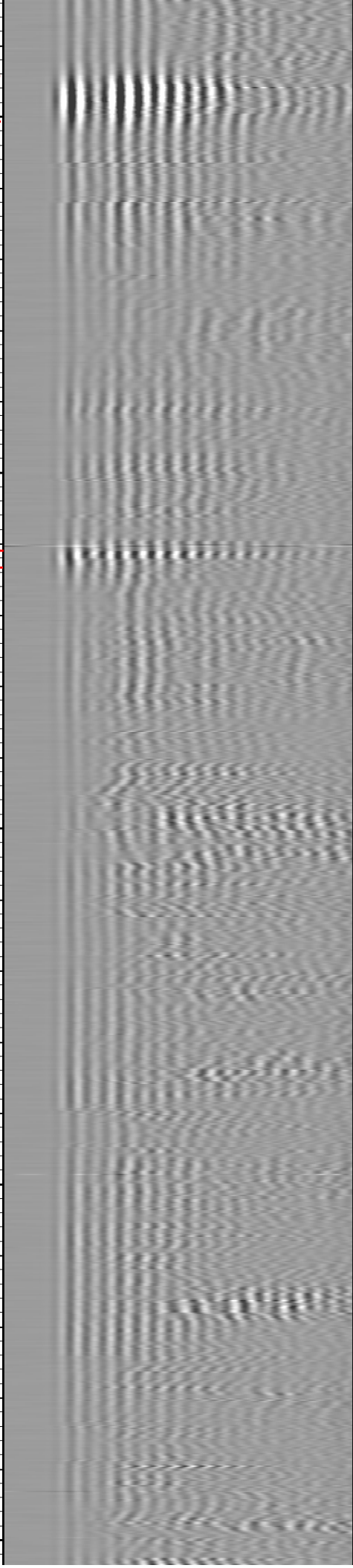
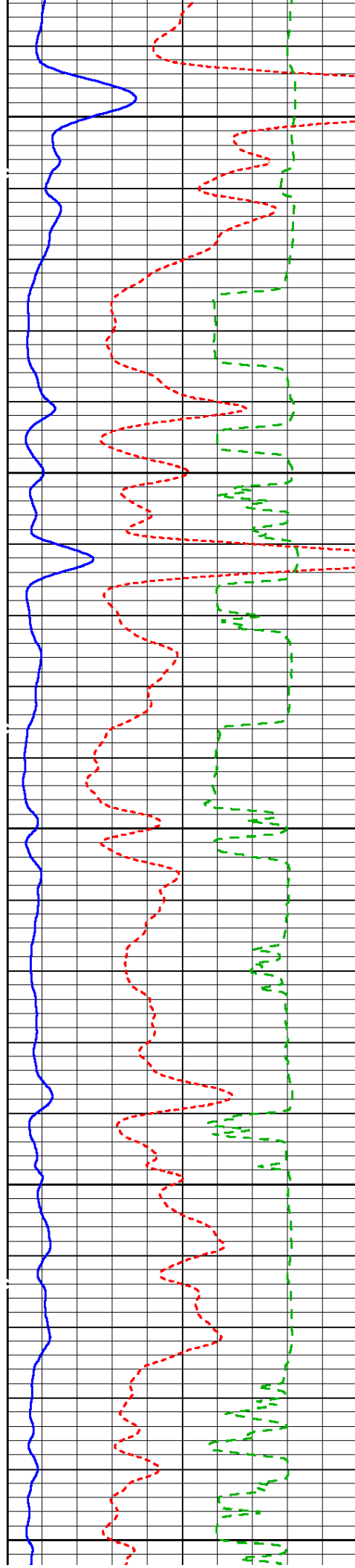


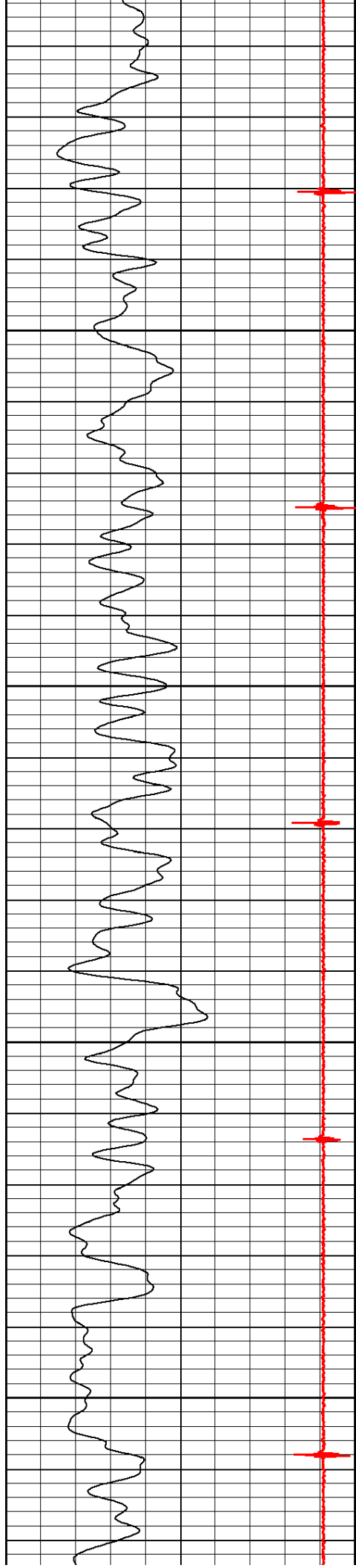




6800

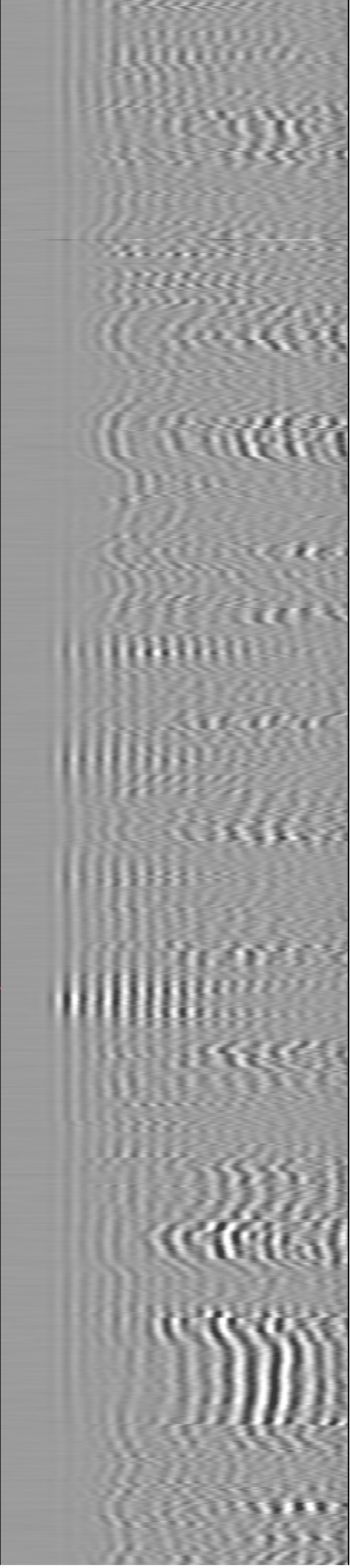
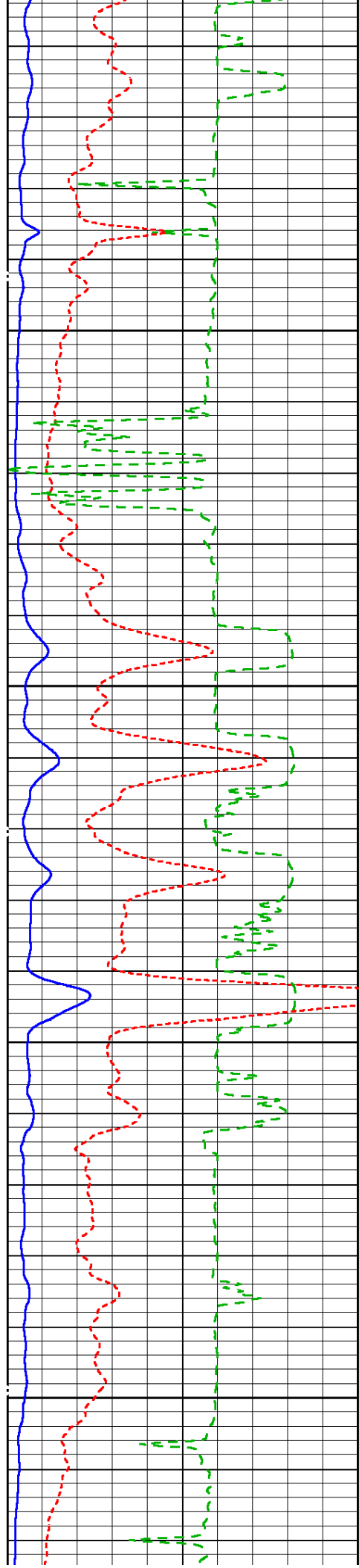
6900

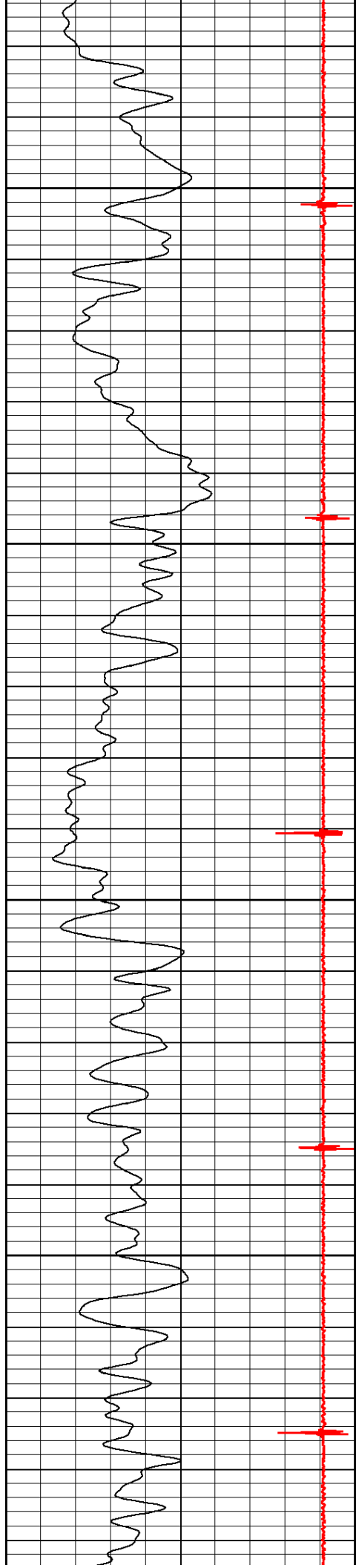




7000

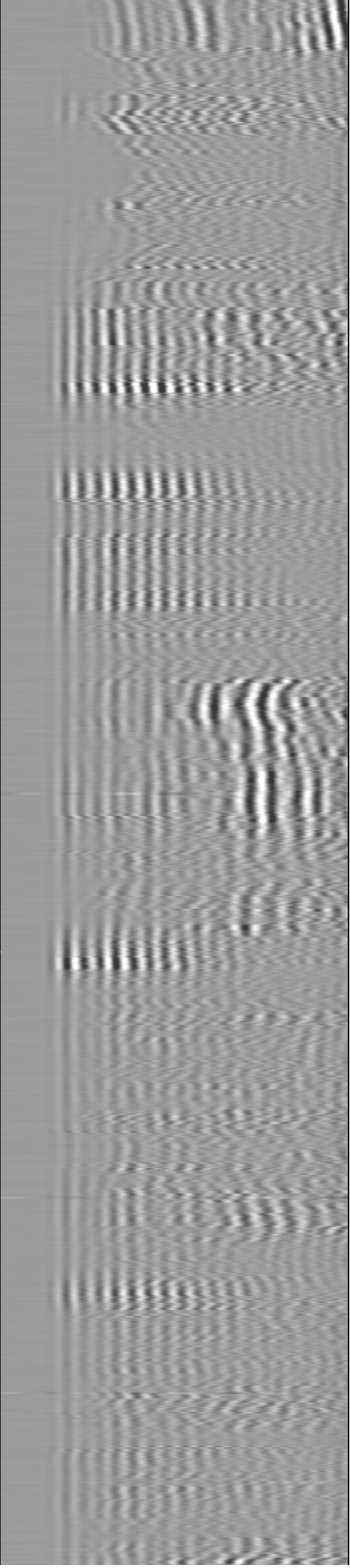
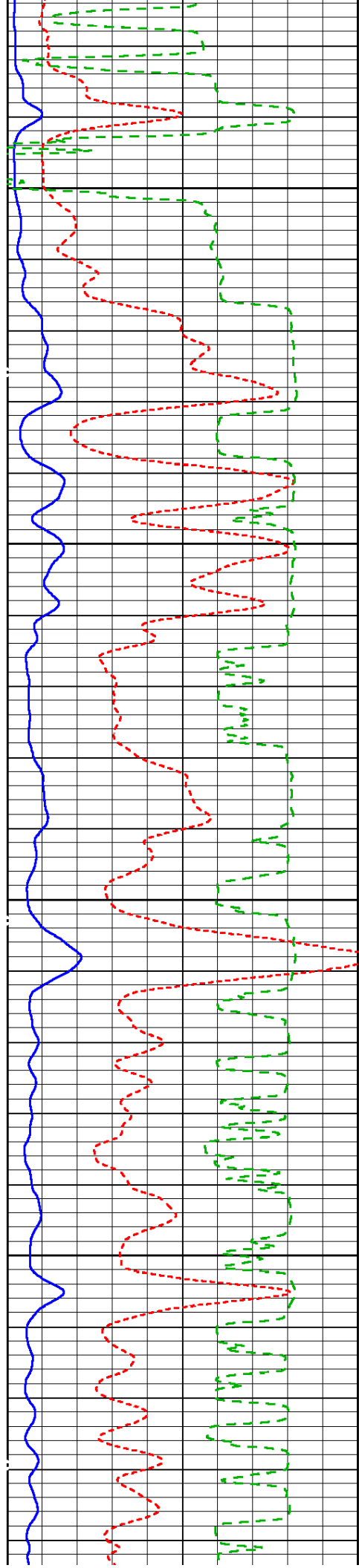
7100

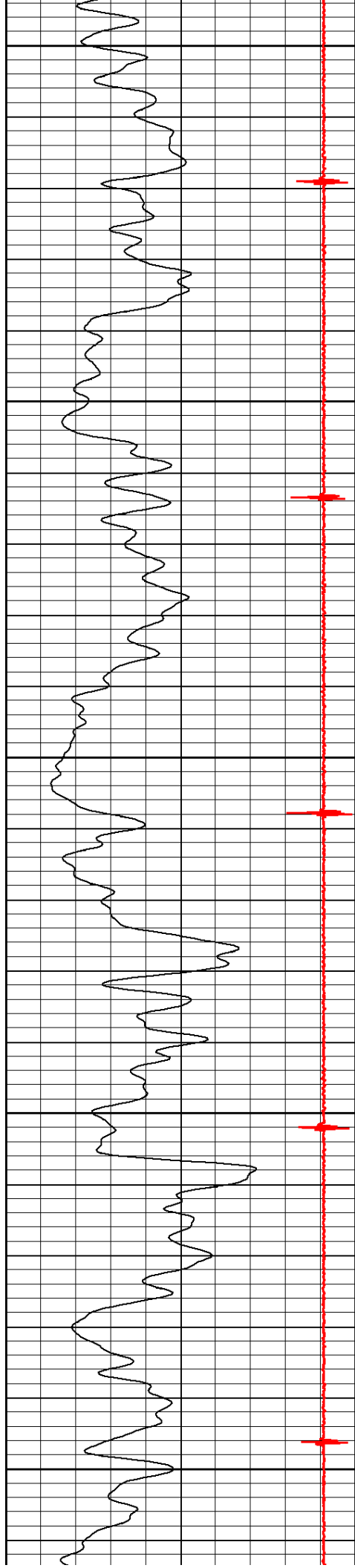




7200

7300

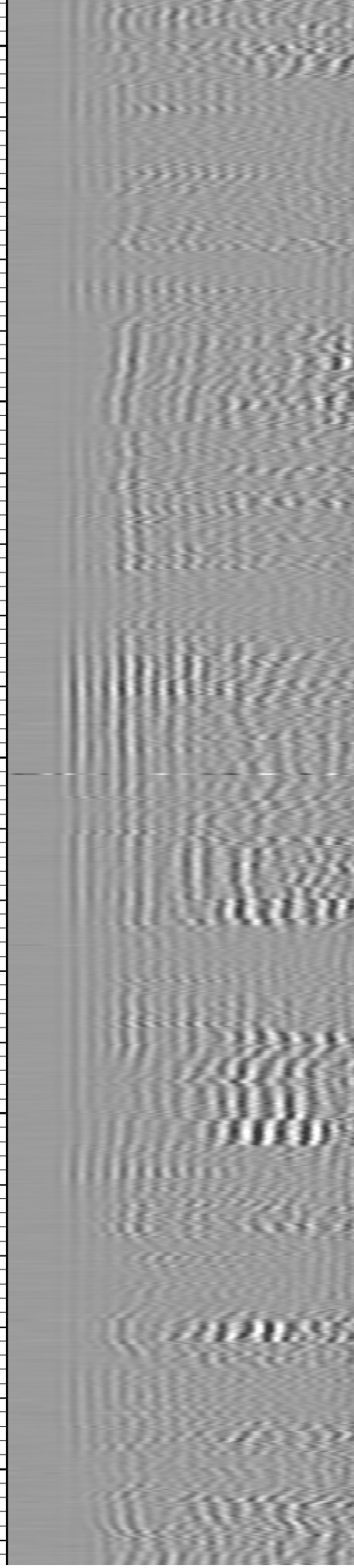
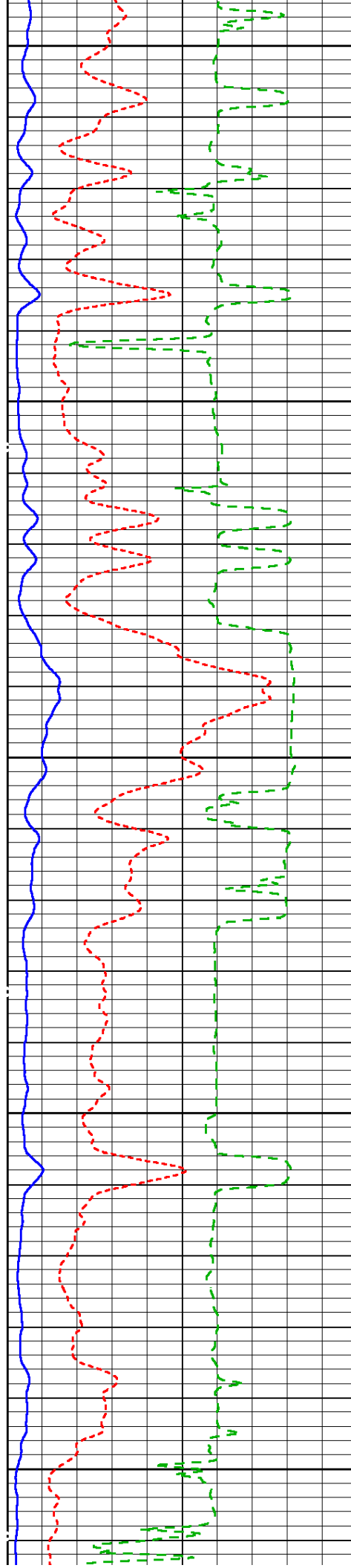


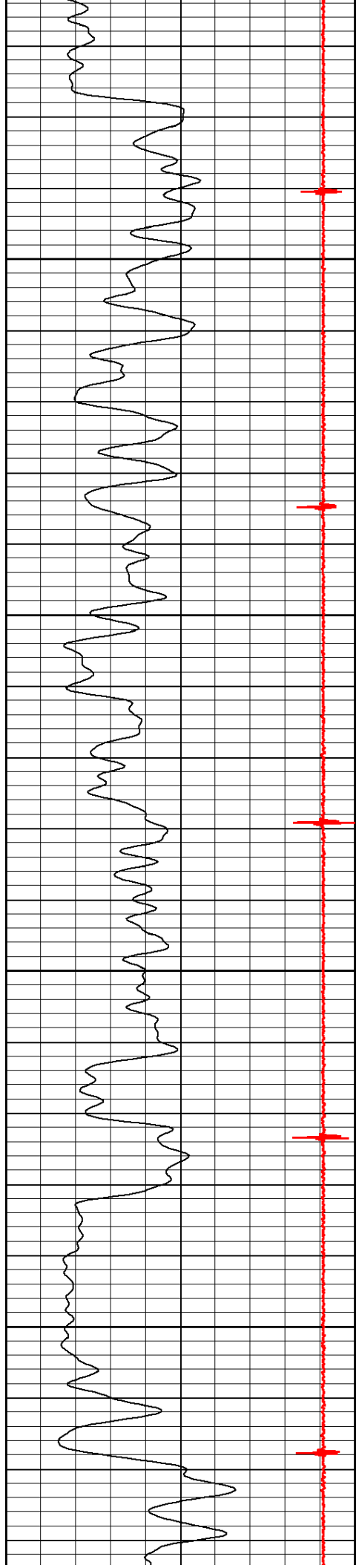


7400

7500

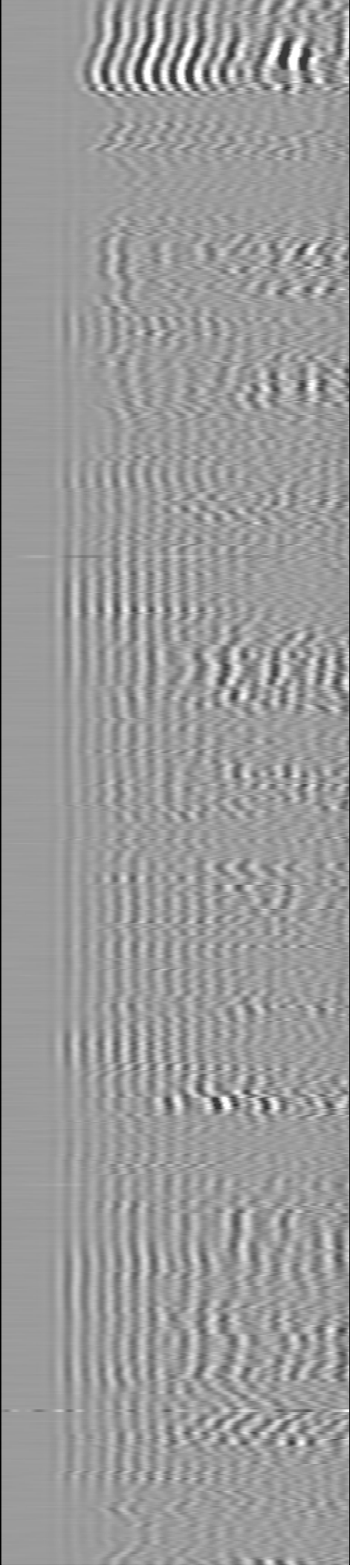
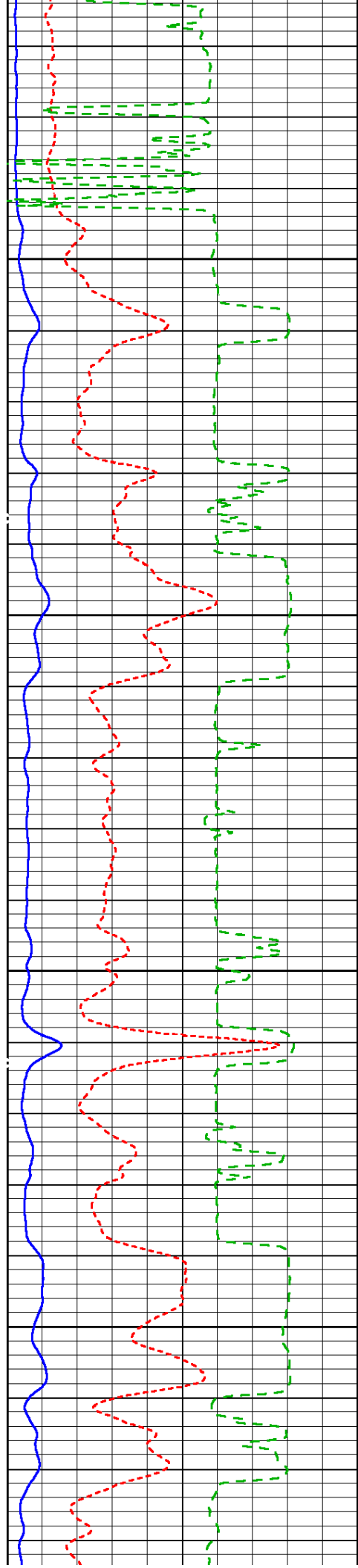
7600

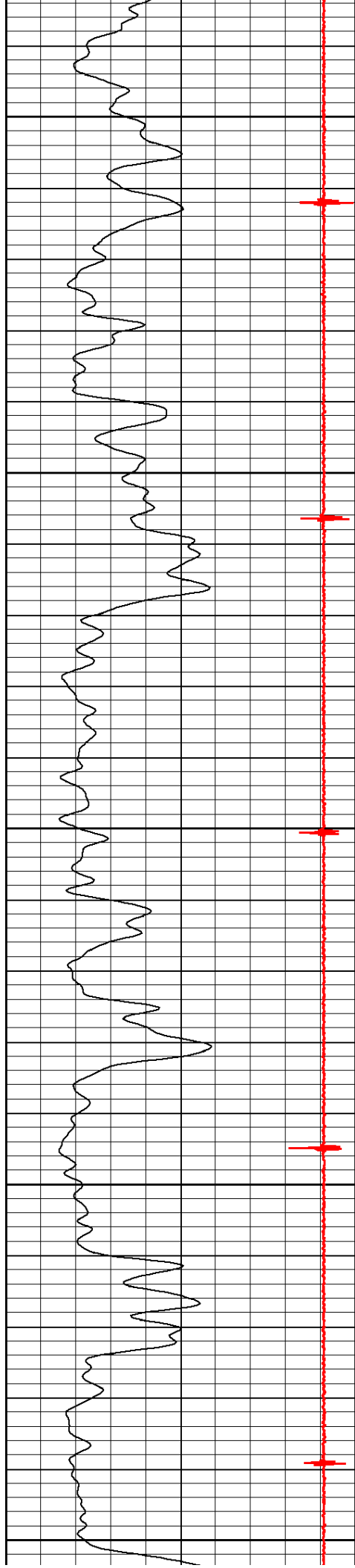




7700

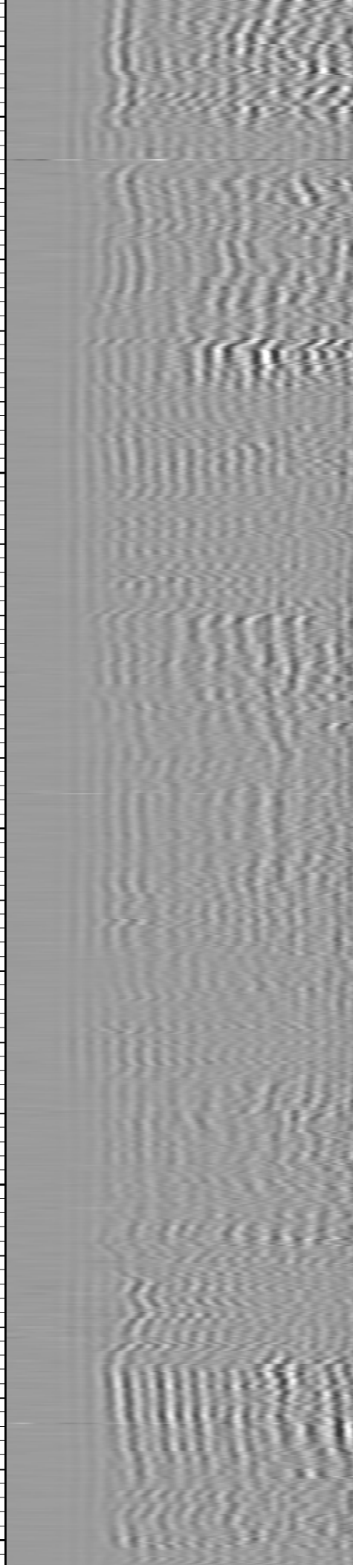
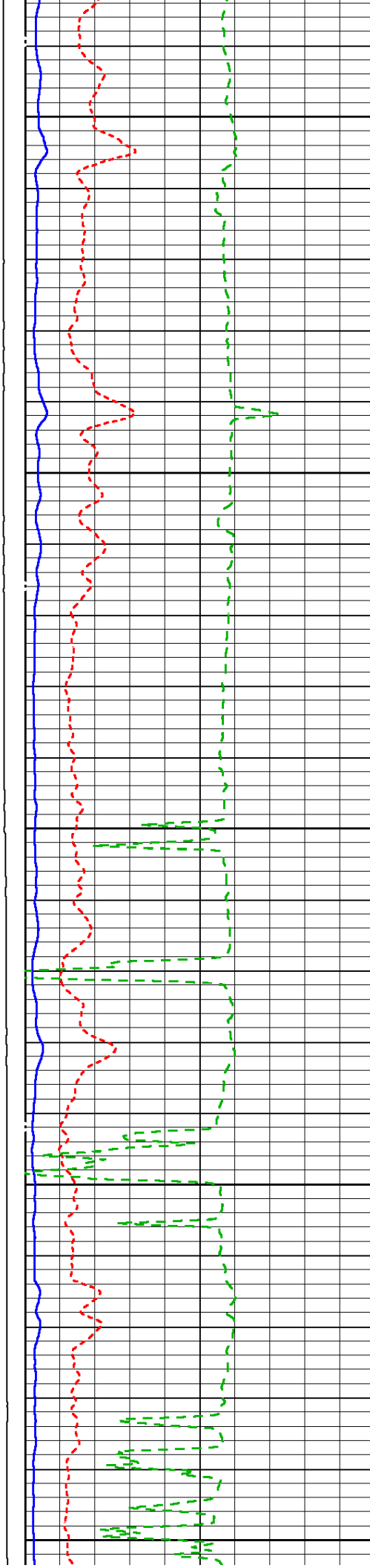
7800

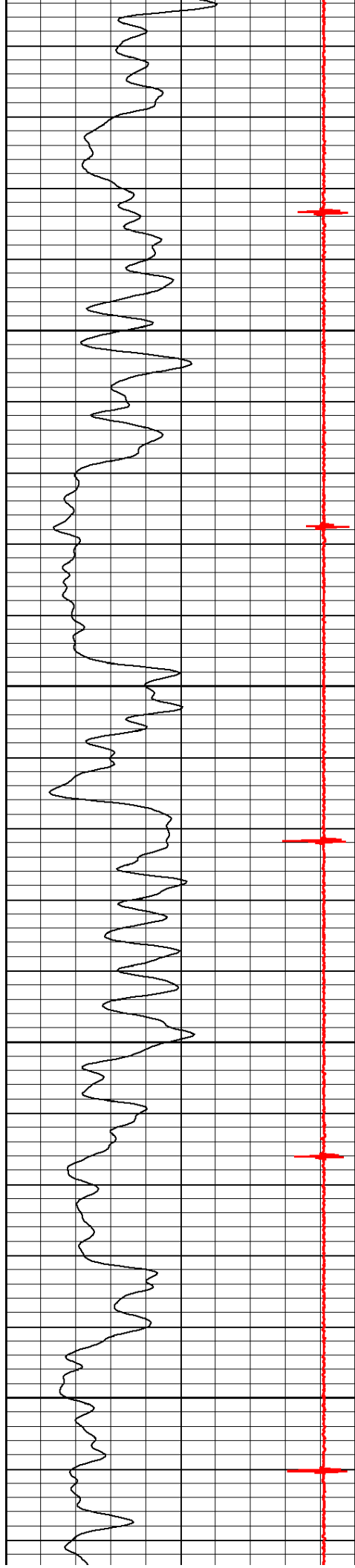




7900

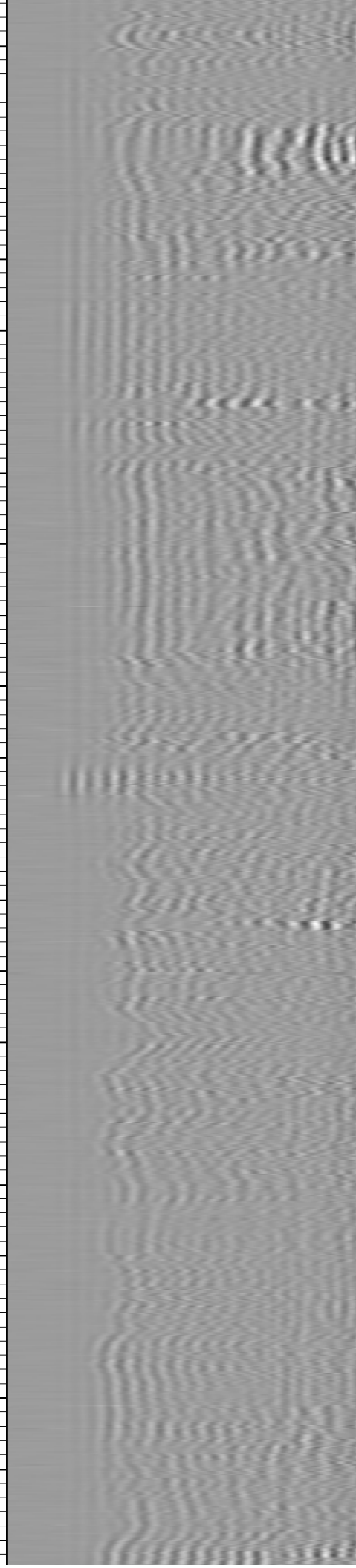
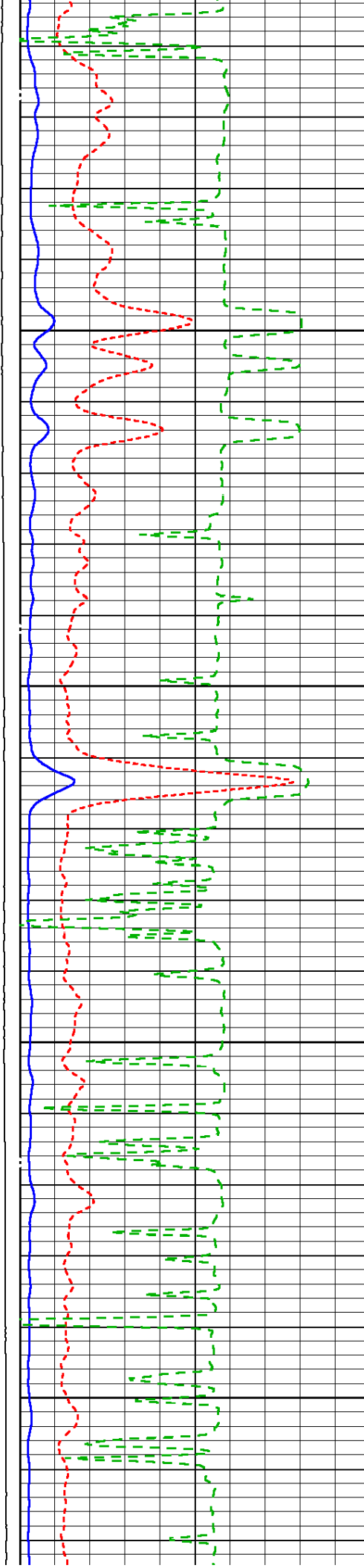
8000

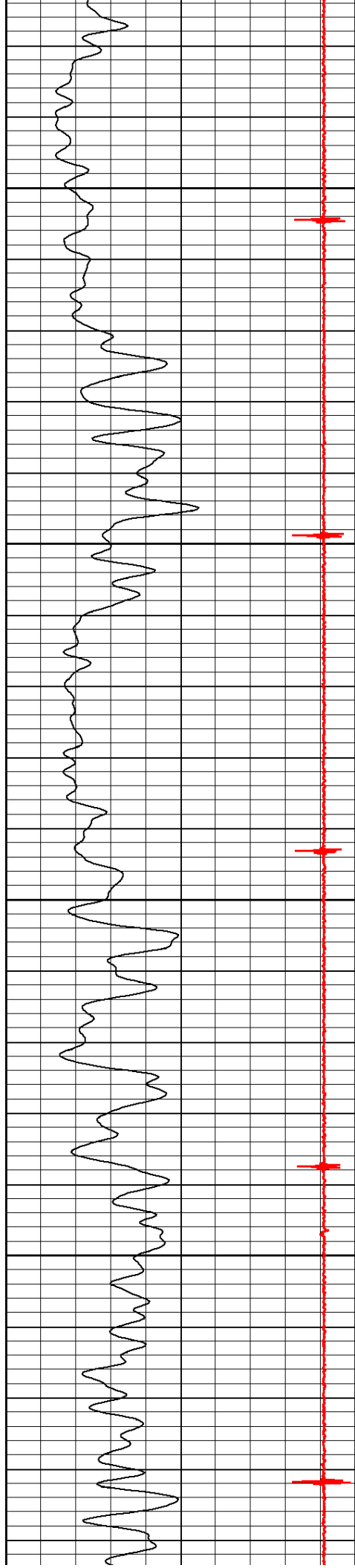




8100

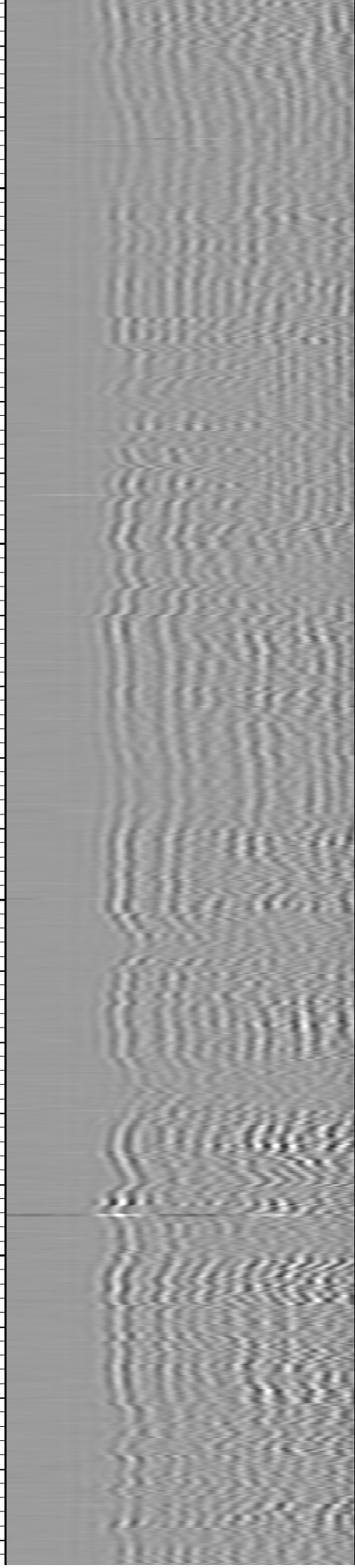
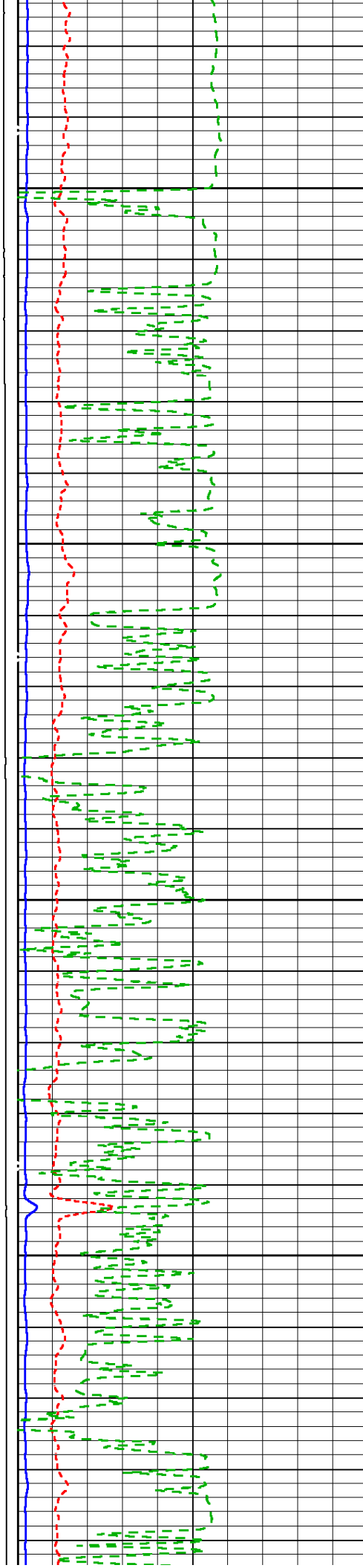
8200

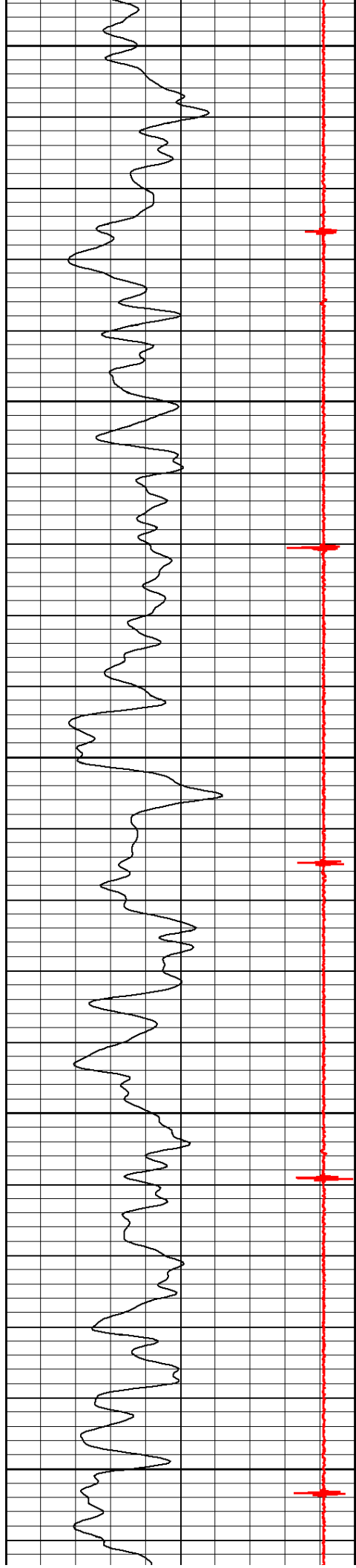




8300

8400

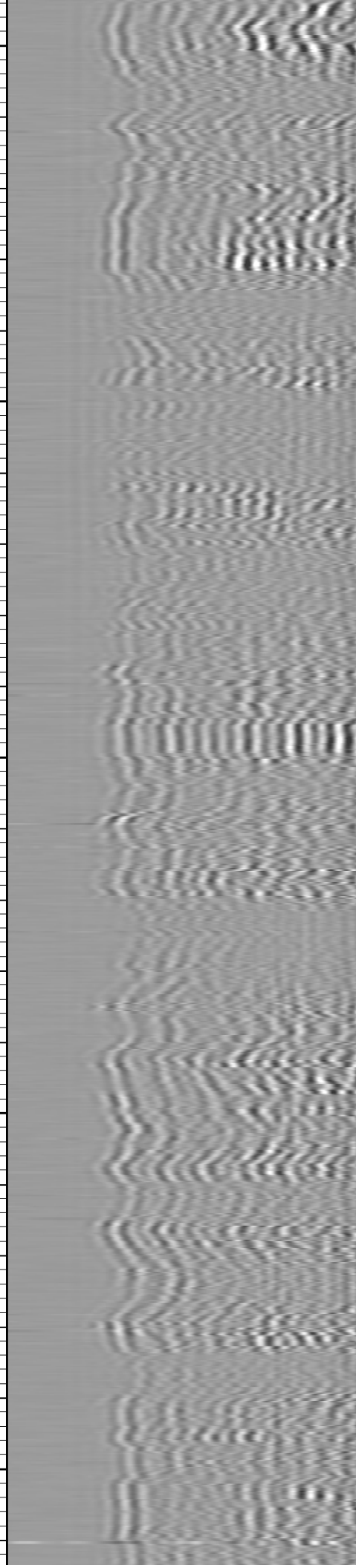
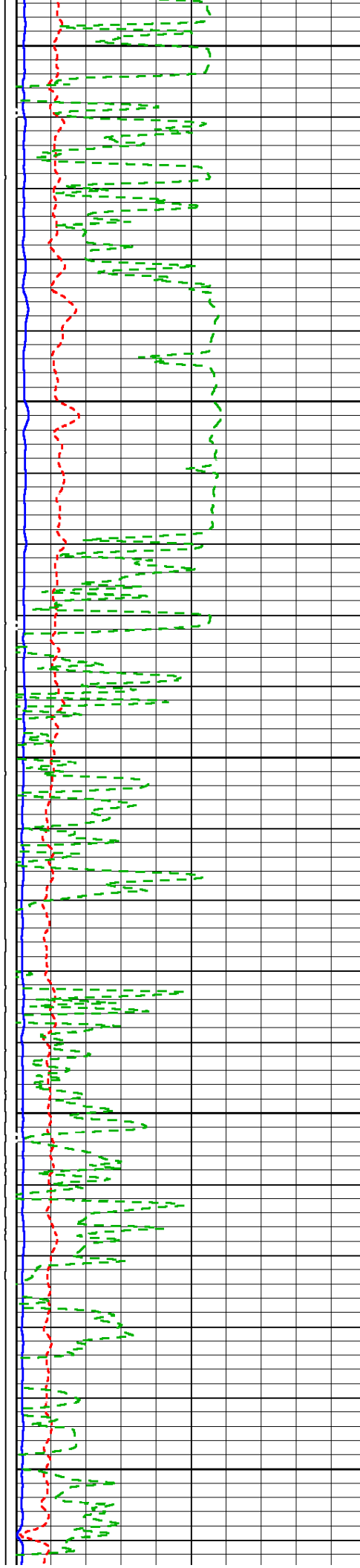


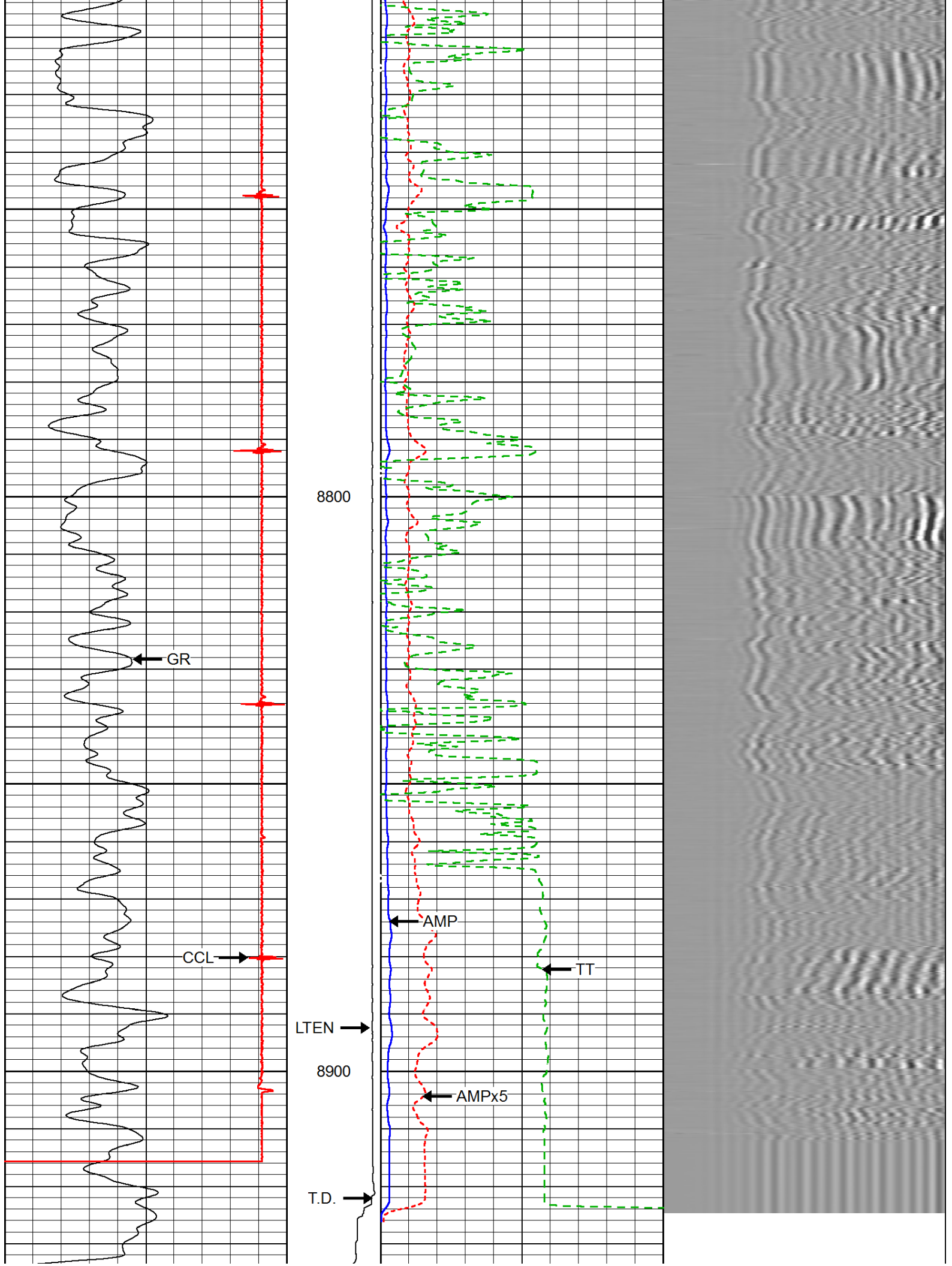


8500

8600

8700

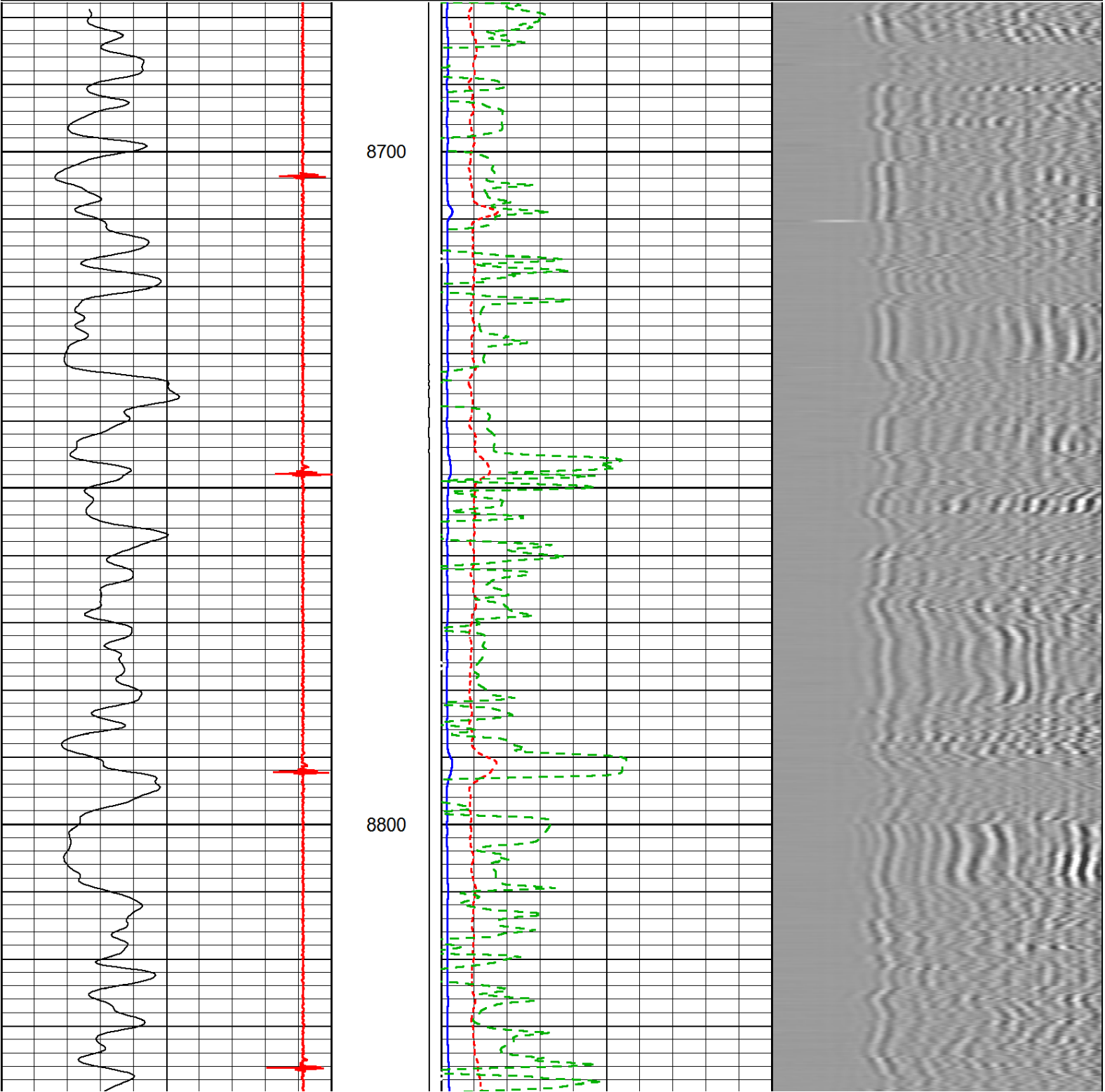


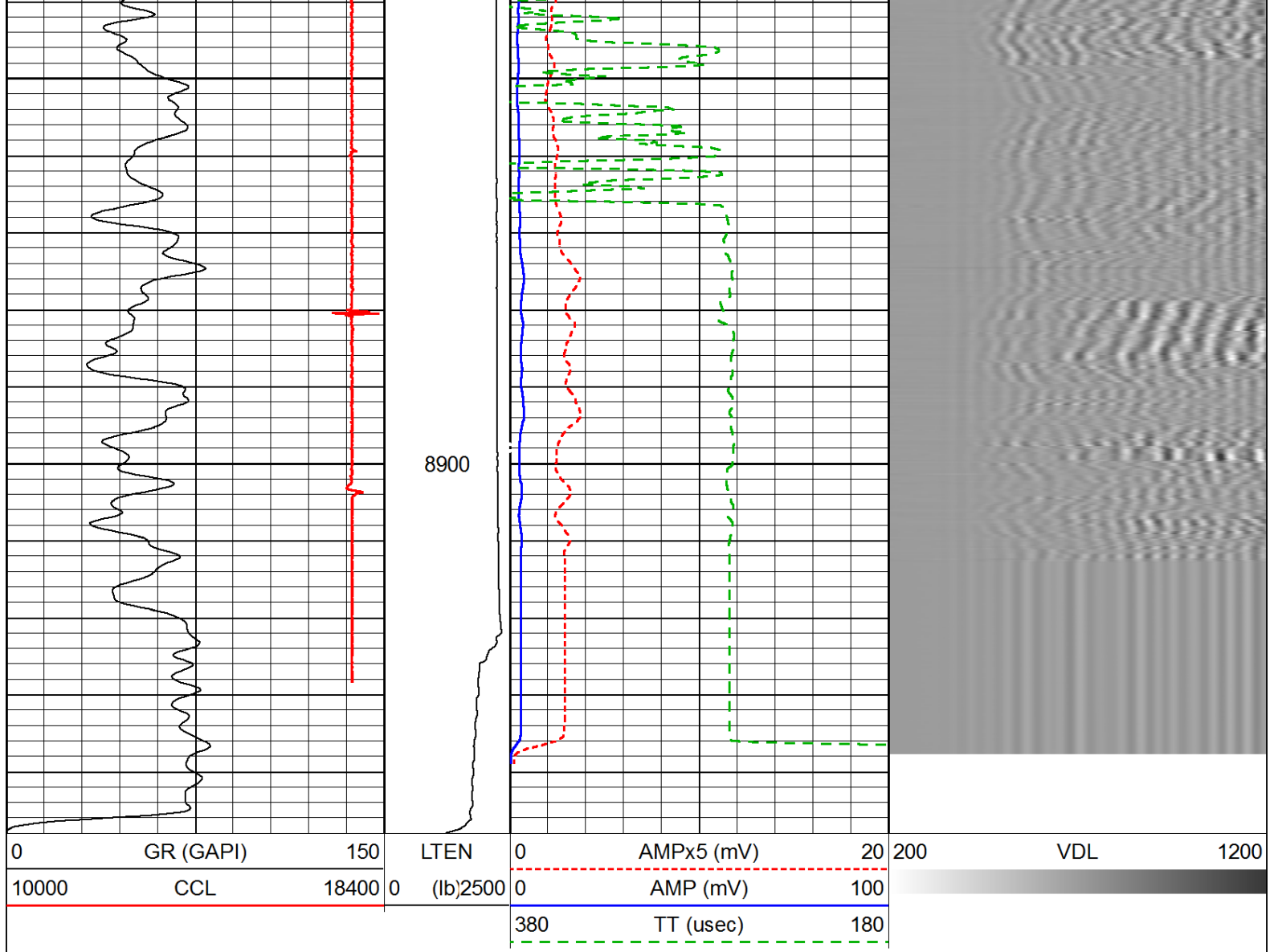


0	GR (GAPI)	150	LTEN	0	AMPx5 (mV)	20	200	VDL	1200
10000	CCL	18400	0 (lb)2500	0	AMP (mV)	100			
				380	TT (usec)	180			

Database File:	060619_caerus_npr23b_8_596.db
Dataset Pathname:	REPEATPAS/pass1
Presentation Format:	rmws_dsc
Dataset Creation:	Thu Jun 06 08:56:10 2019 by Log SCH 120430
Charted by:	Depth in Feet scaled 1:240

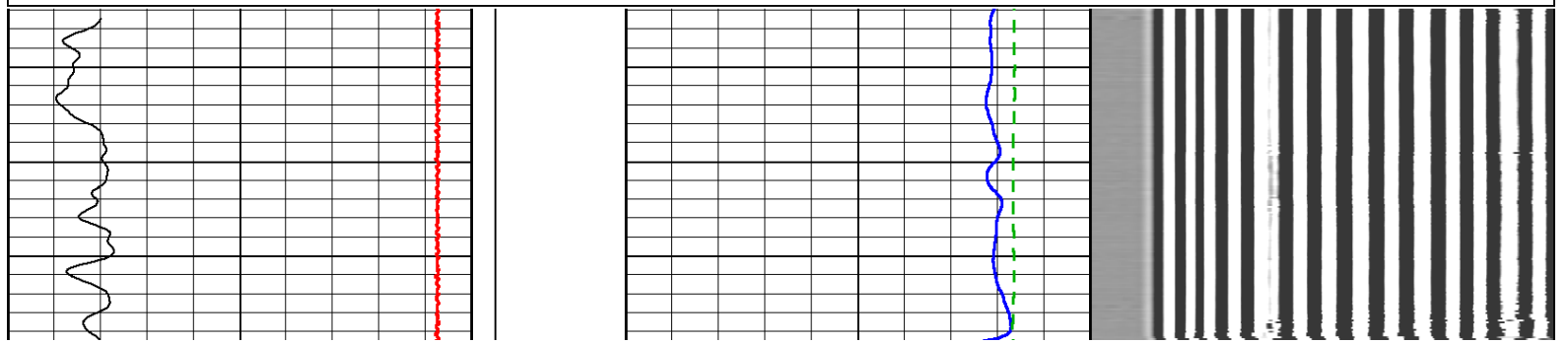
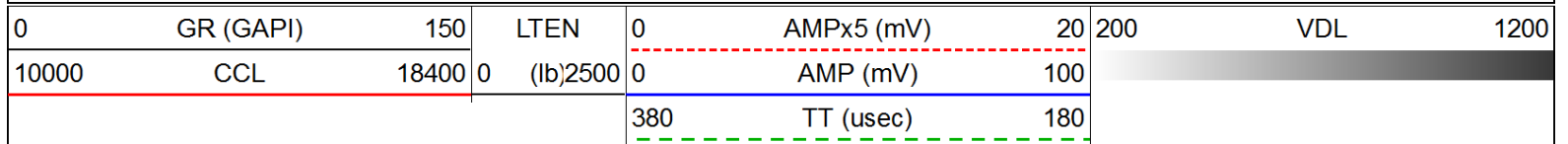
0	GR (GAPI)	150	LTEN	0	AMPx5 (mV)	20	200	VDL	1200
10000	CCL	18400	0 (lb)2500	0	AMP (mV)	100			
				380	TT (usec)	180			

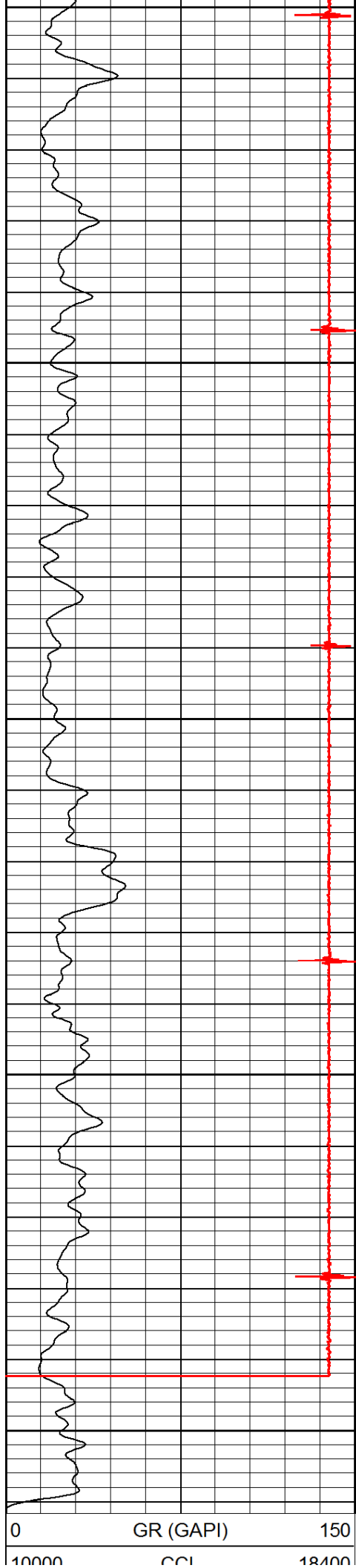




FREE PIPE PASS

Database File: 060619_caerus_npr23b_8_596.db
 Dataset Pathname: FREEPIPE/pass1
 Presentation Format: rmws_dsc
 Dataset Creation: Thu Jun 06 10:35:41 2019 by Log SCH 120430
 Charted by: Depth in Feet scaled 1:240



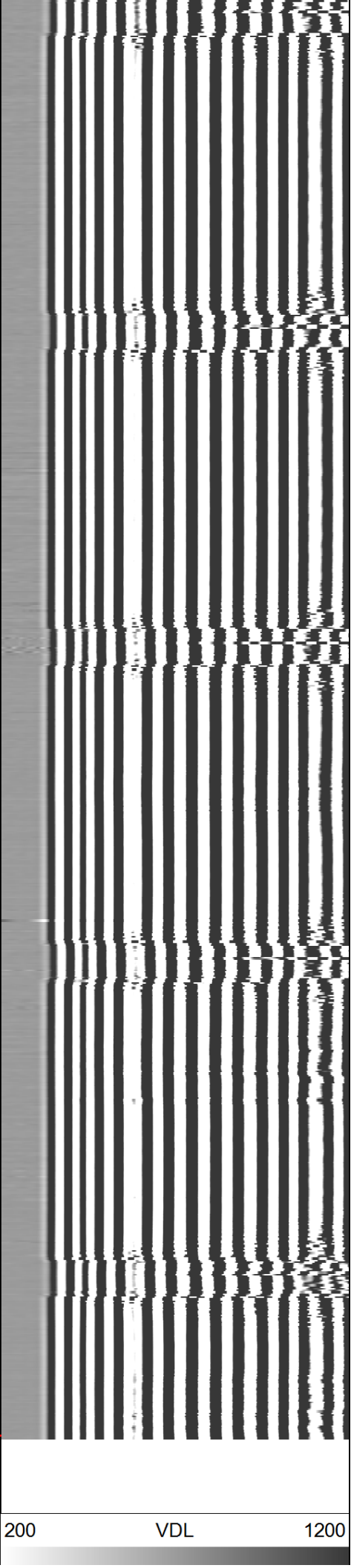
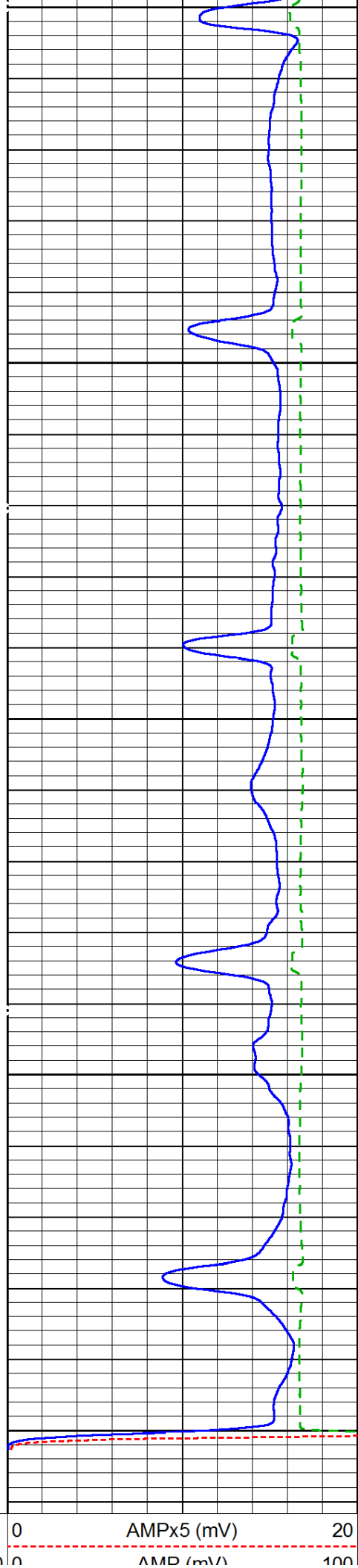


900

1000

1100

LTEN



10000	CCE	10400	0	(lb/2500)	0	100
			380	TT (usec)		180

Log Variables

Database: C:\Warrior\Data\060619_caerus_npr23b_8_596.db
Dataset: field/well/FREEPIPE/pass1

Top - Bottom

PPT usec 0	CASEWGHT lb/ft 11.6	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	CASEOD in 4.5	PERFS 0	TDEPTH ft 0
BOTTEMP degF 100	BOREID in 7.875						

Calibration Report

Database File: 060619_caerus_npr23b_8_596.db
Dataset Pathname: FREEPIPE/pass1
Dataset Creation: Thu Jun 06 10:35:41 2019 by Log SCH 120430

Temperature Calibration Report

Serial Number: 10006811
Tool Model: 016
Performed: Mon Apr 30 16:22:18 2012

Point #	Reading	Reference
1	11649.00 cps	65.14 degF
2	18183.00 cps	105.26 degF
3	29168.00 cps	174.16 degF
4	40750.00 cps	246.15 degF
5	51960.00 cps	317.35 degF
6	57688.00 cps	353.34 degF
7	cps	degF
8	cps	degF
9	cps	degF
10	cps	degF

Gamma Ray Calibration Report

Serial Number: 10009364
Tool Model: 020
Performed: Wed Jun 05 08:18:50 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.7000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 10009775
Tool Model: 004

Calibration Casing Diameter: 4.500 in
Calibration Depth: 367.908 ft

Master Calibration, performed Thu Jun 06 08:20:58 2019:

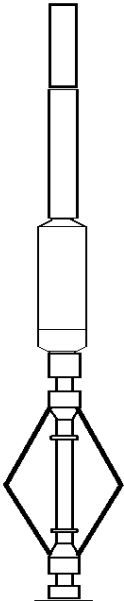

Raw (v)

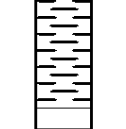
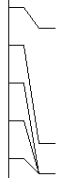

Calibrated (mv)

Results

	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.010	0.994	1.000	81.196	71.553	0.212
5FT	-0.001	0.825	1.000	81.196	97.152	1.052
S1	0.009	1.008	0.000	100.000	100.026	-0.858
S2	0.008	0.998	0.000	100.000	101.068	-0.841
S3	0.008	0.985	0.000	100.000	102.328	-0.818
S4	0.008	0.991	0.000	100.000	101.681	-0.802
S5	0.007	1.007	0.000	100.000	100.030	-0.722
S6	0.008	1.113	0.000	100.000	90.453	-0.693
S7	0.008	1.037	0.000	100.000	97.214	-0.765
S8	0.008	1.010	0.000	100.000	99.864	-0.816

Calibration Report						
Serial Number:		10009775				
Tool Model:		004				
Performed:						
		Reference (degF)	Reading ()			
Low:		0.000	0.000			
High:		1.000	1.000			
		Gain = 1.000	Offset= 0.000			

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CCL	19.17		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-002 (10009054) Crossover Ultrawire Toolbus To Ultralink	1.58	1.69	6.50
			CCL-028 (10008803) CCL UW 3 1/8" SONDEX	1.61	3.13	36.00
			PRC-022 (215770) (6 ARM 2 3/8" ROLLER CENTRALIZER SONDEX)	3.00	2.38	21.40
WVFS3FT	11.32		RBT-004 (10009775) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	11.32					
WVFS2	11.32					
WVFS3	11.32					
WVFS4	11.32					
WVFS5	11.32					
WVFS6	11.32					
WVFS7	11.32					

Log Data		Well Diagram		Tool Joint Data		
WVFS8	11.32		PRC-022 (10007456) (6 ARM 2 3/8" ROLLER CENTRALIZER SONDEX)	3.00	2.38	21.40
CBLTEMP	11.32					
CBLROT	11.32					
WVF5FT	10.32					
GR	1.76		PGR-020 (10009364) Production Gamma Ray	1.93	1.69	9.50
TEMP	0.37					
TSTAMP	0.00					
ITEMPX	0.00					
HVOLTX	0.00		PRT-016 (10006811) Platinum Resistance Thermometer	1.04	1.69	6.00
			BUL-006 (10009483) Bullnose Terminator	0.22	1.69	1.20
Dataset: 060619_caerus_npr23b_8_596.db: field/well/FREEPIPE/pass1 Total Length: 22.90 ft Total Weight: 244.00 lb O.D. 3.13 in						