



**Cement Bond Log
w/ Variable Density
Gamma/CCL
Temp**

Company Great Western Operating Co
Well B-Farm LD 18-391HNX
Field Wattenberg
County Adams **State** Colorado

Location: API #: 05-001-10258
39.98365300 Lat
-104.93367200 Long
SEC 7 TWP 1S RGE 67W
Permanent Datum Ground Level Elevation 5124.5
Log Measured From GL + 20'
Drilling Measured From Kelly Bushing
Other Services 4.50" GR
Elevation K.B. 5144.5
D.F. 5142.5
G.L. 5124.5

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Date 23-Mar-19

Run Number	One
Depth Driller	18,159
Depth Logger	7,850
Bottom Logged Interval	7,850
Top Log Interval	Surface
Open Hole Size	8.50
Type Fluid	Water
Density / Viscosity	8.4 PPg
Max. Recorded Temp.	228
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	1730
Equipment Number	80
Location	Platteville, CO
Recorded By	H. Hill
Witnessed By	D. Pozas

Borehole Record			Tubing Record				
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625"	36#	Surface	1,758'
Prod. String				
Production String	5.5"	17#	Surface	18,159
Liner				

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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

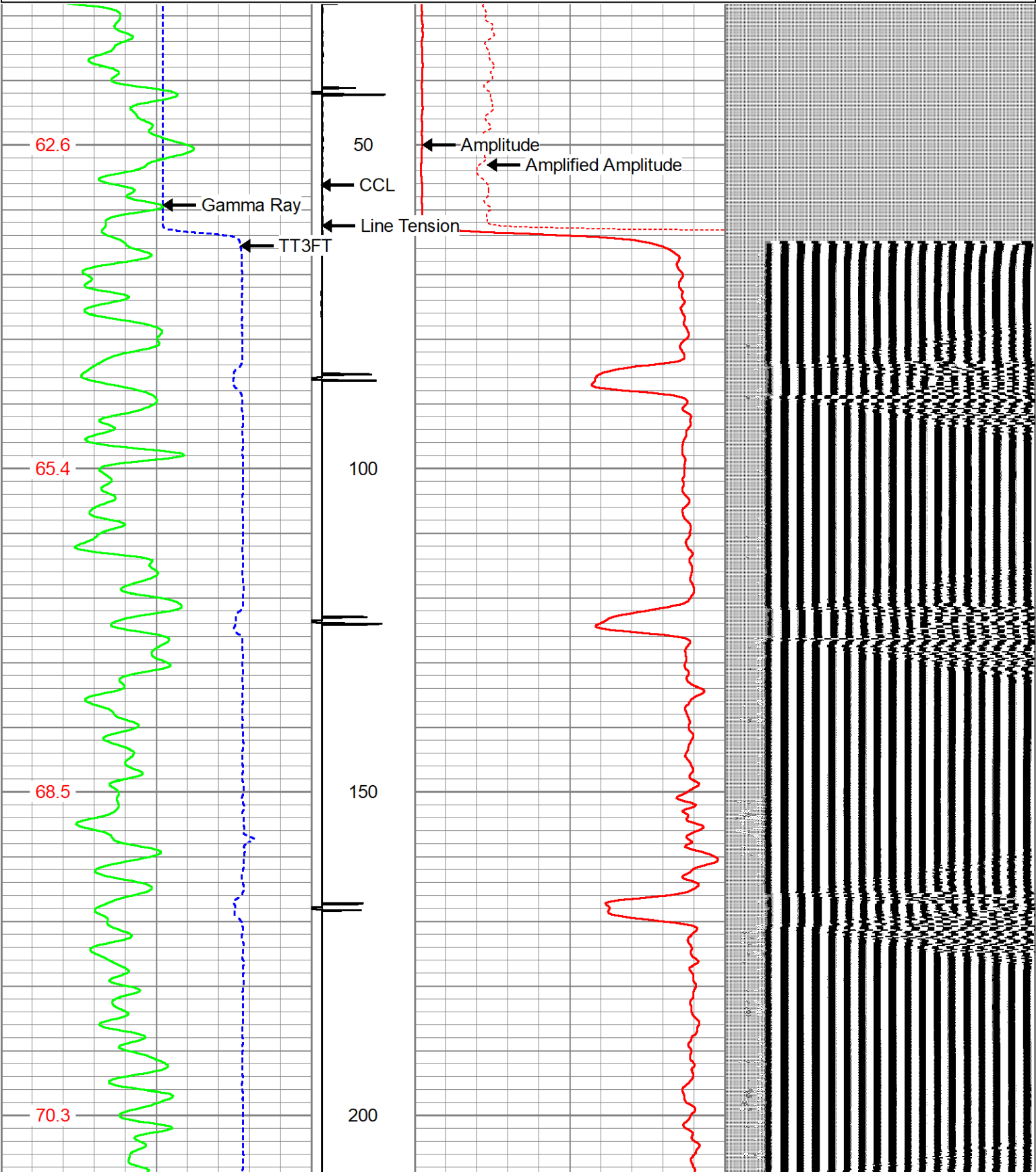
Cement Bong Log ran as per customer request
Depth Correlation to Casing Tally reported Marker Joint @7062'
Adjusted log +7.5' to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7878' with no debris
Log ran from 7840' to Surface
Log ran with 0PSI surface induced pressure
Centralized with 3 over tool Gemco Centralizers

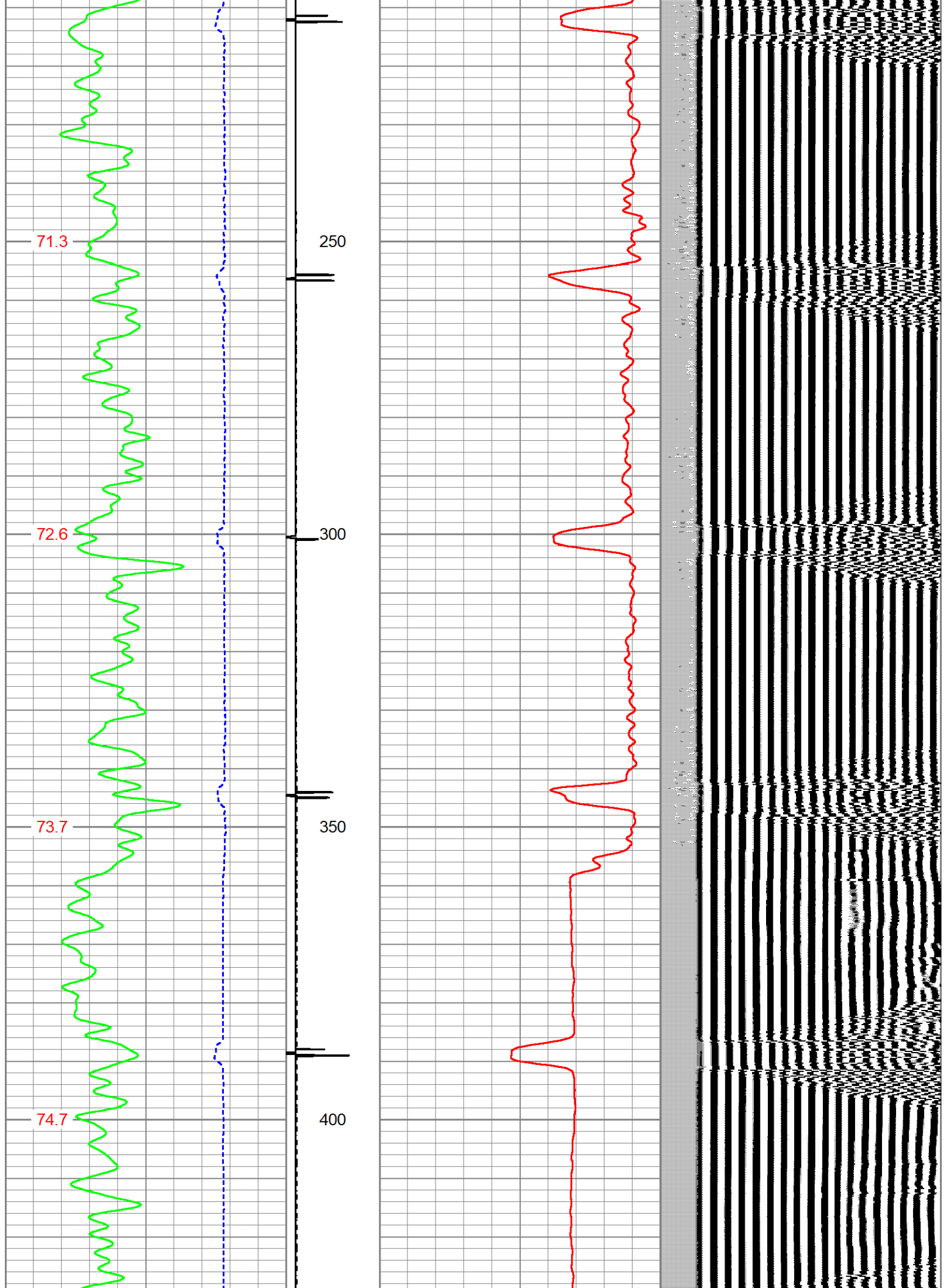
Thank you for using KLX Energy Services

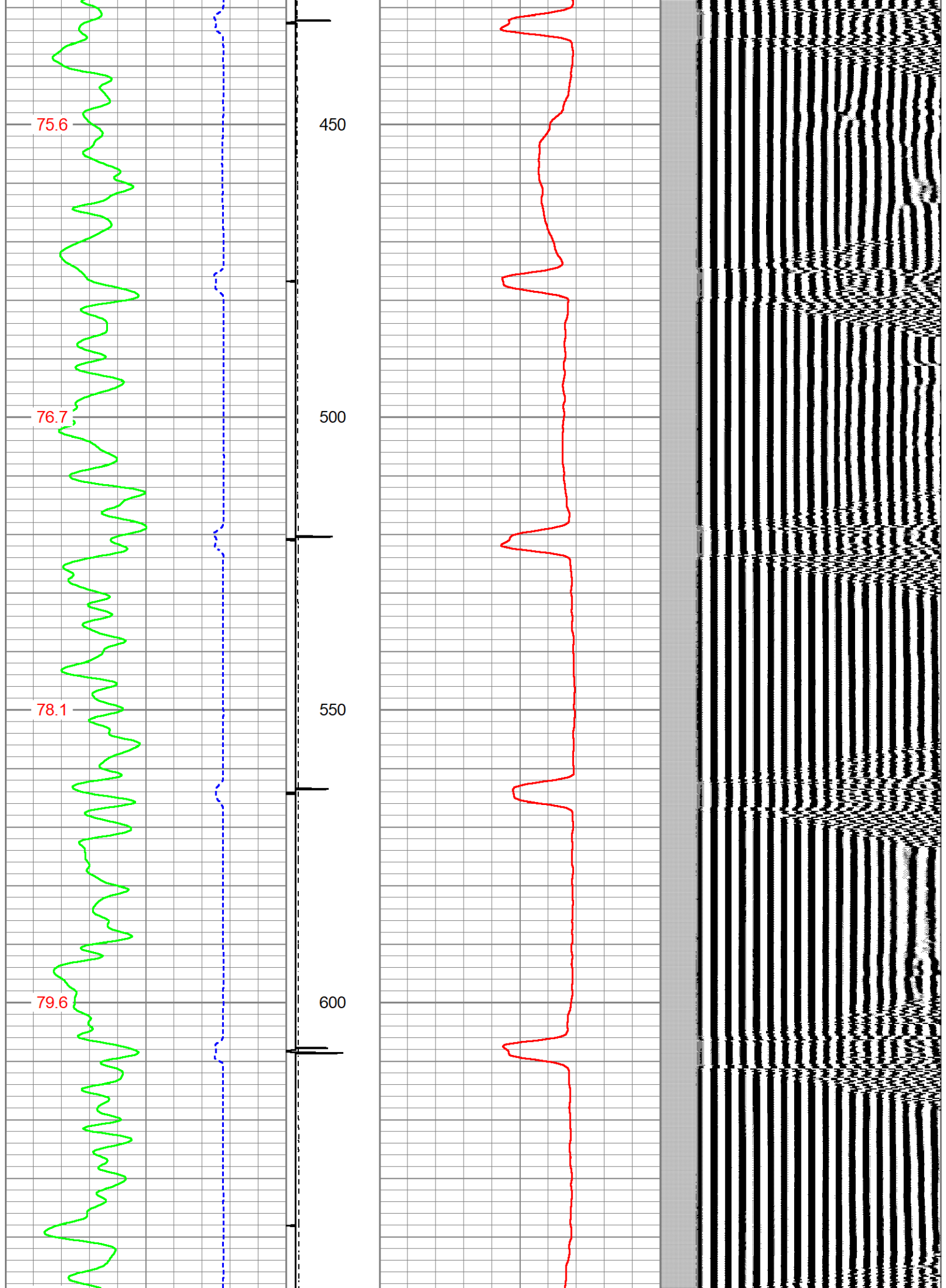


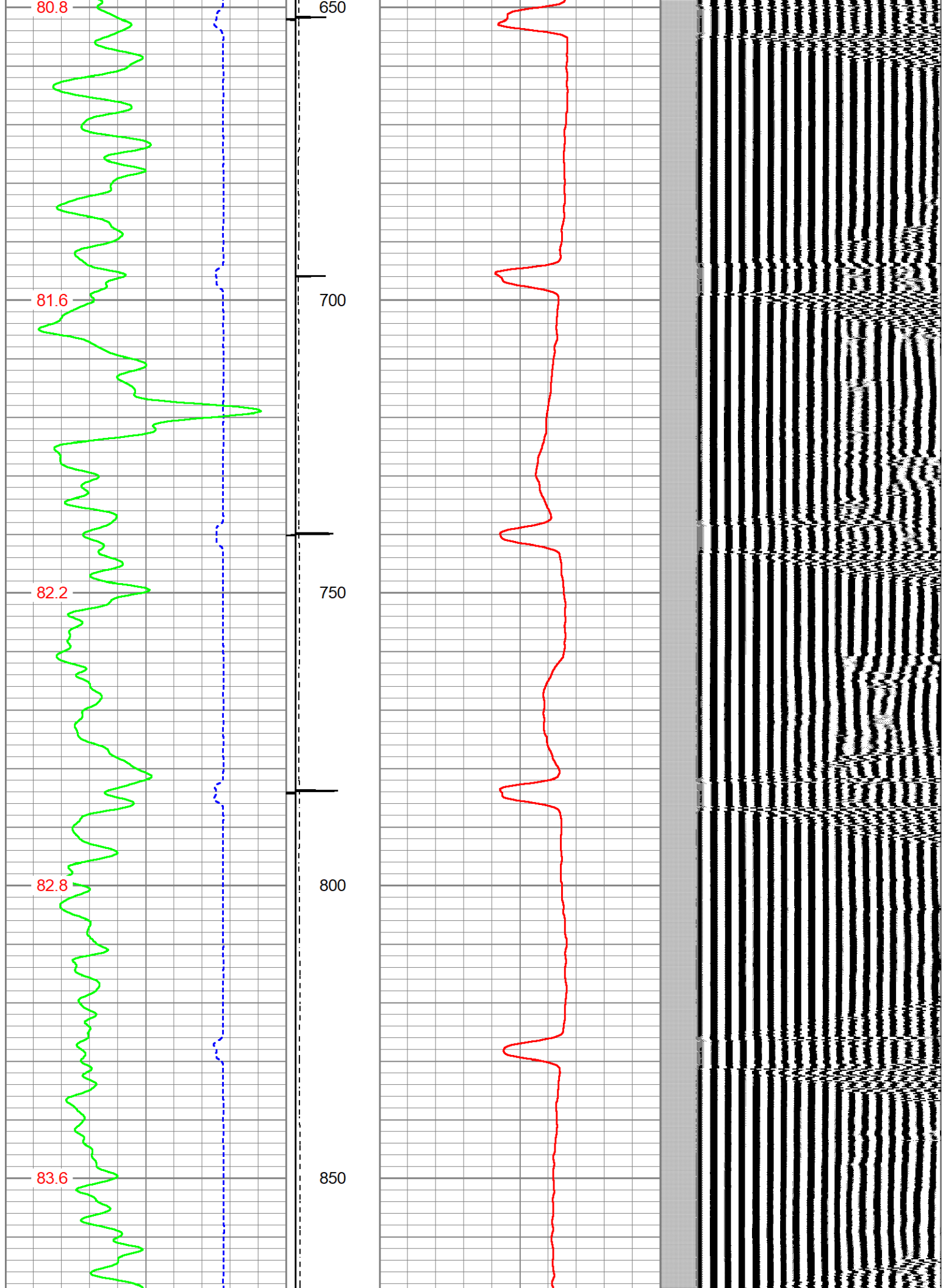
Database File	gw_bfarm_ld18-391hnx.db
Dataset Pathname	391HNX/RCBL/pass7
Presentation Format	cbl_cs
Dataset Creation	Sat Mar 23 17:34:40 2019
Charted by	Depth in Feet scaled 1:240

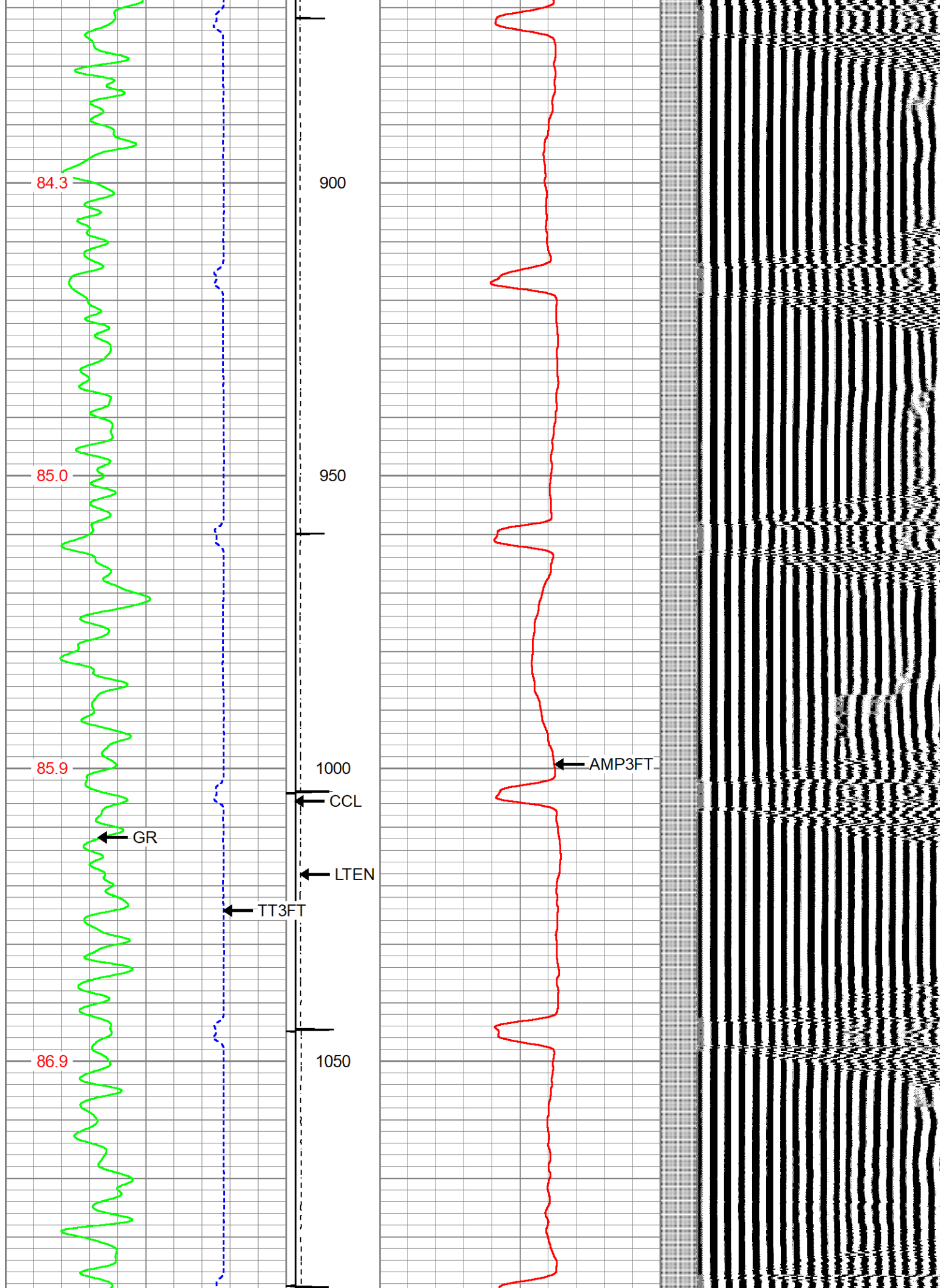
420	TT3FT (usec)	220	CCL	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	Line Tension	0	Amplified Amplitude (mV)	10			
Temp		0	(lb/2000						
(degF)									

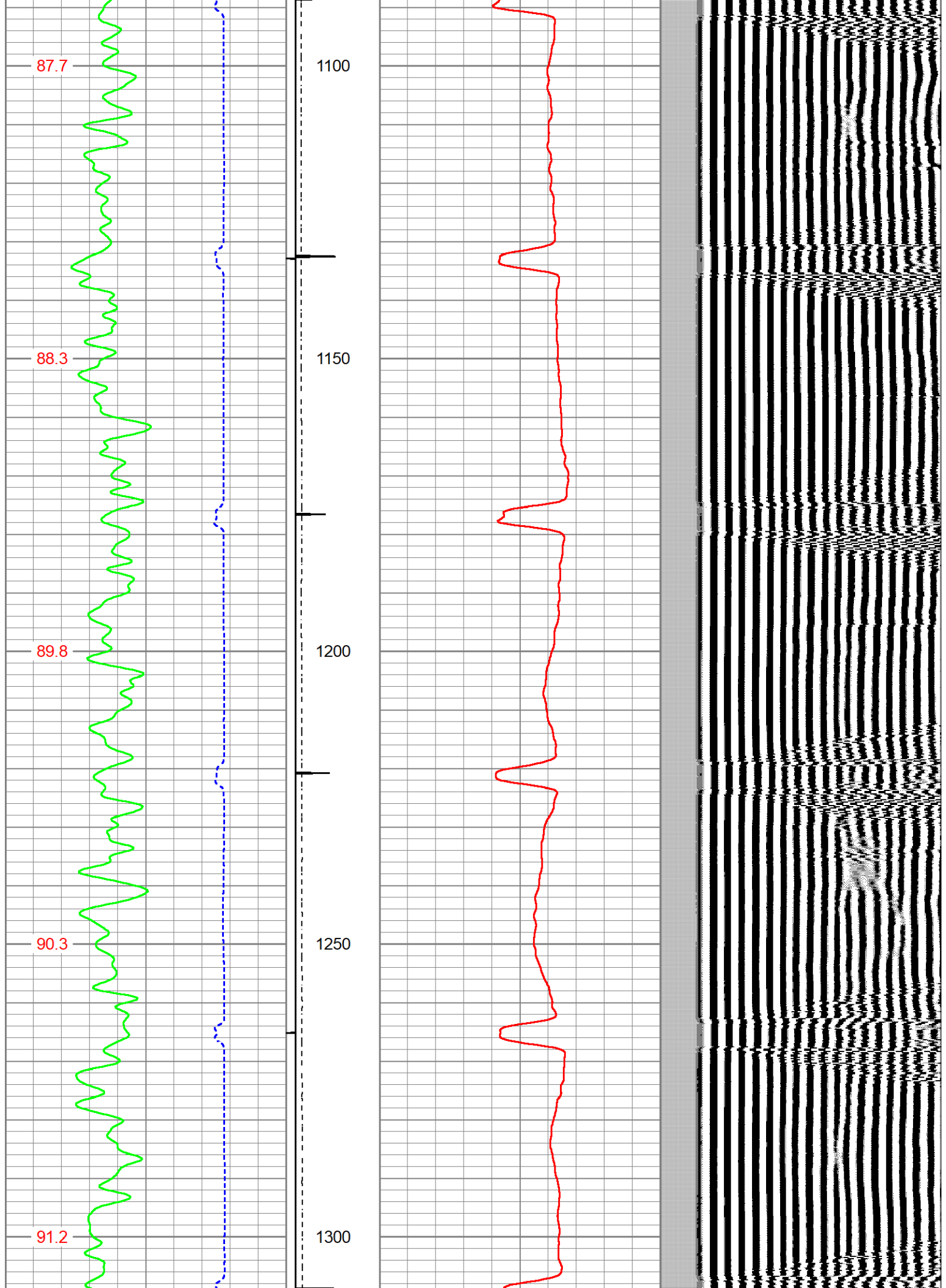


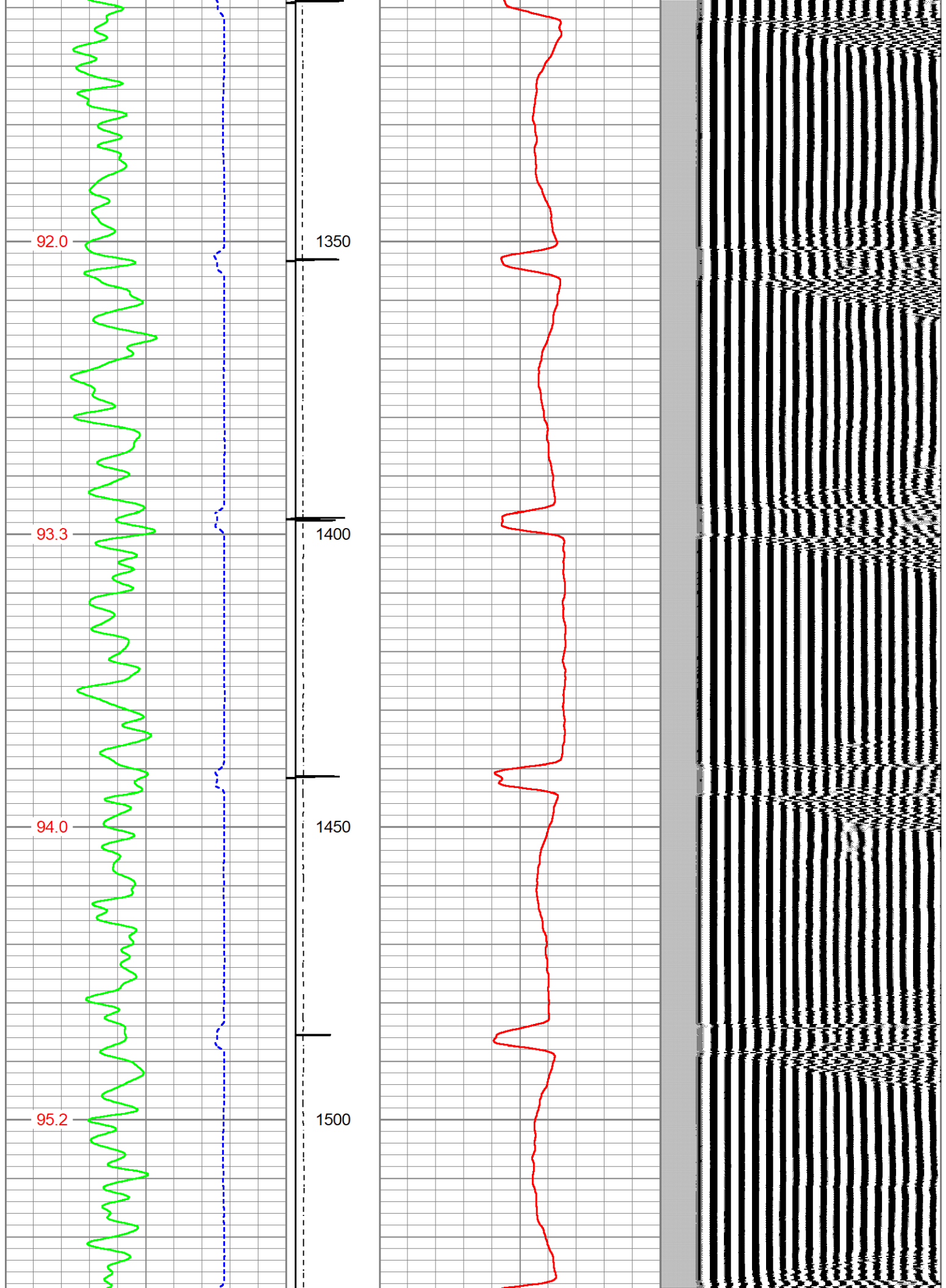


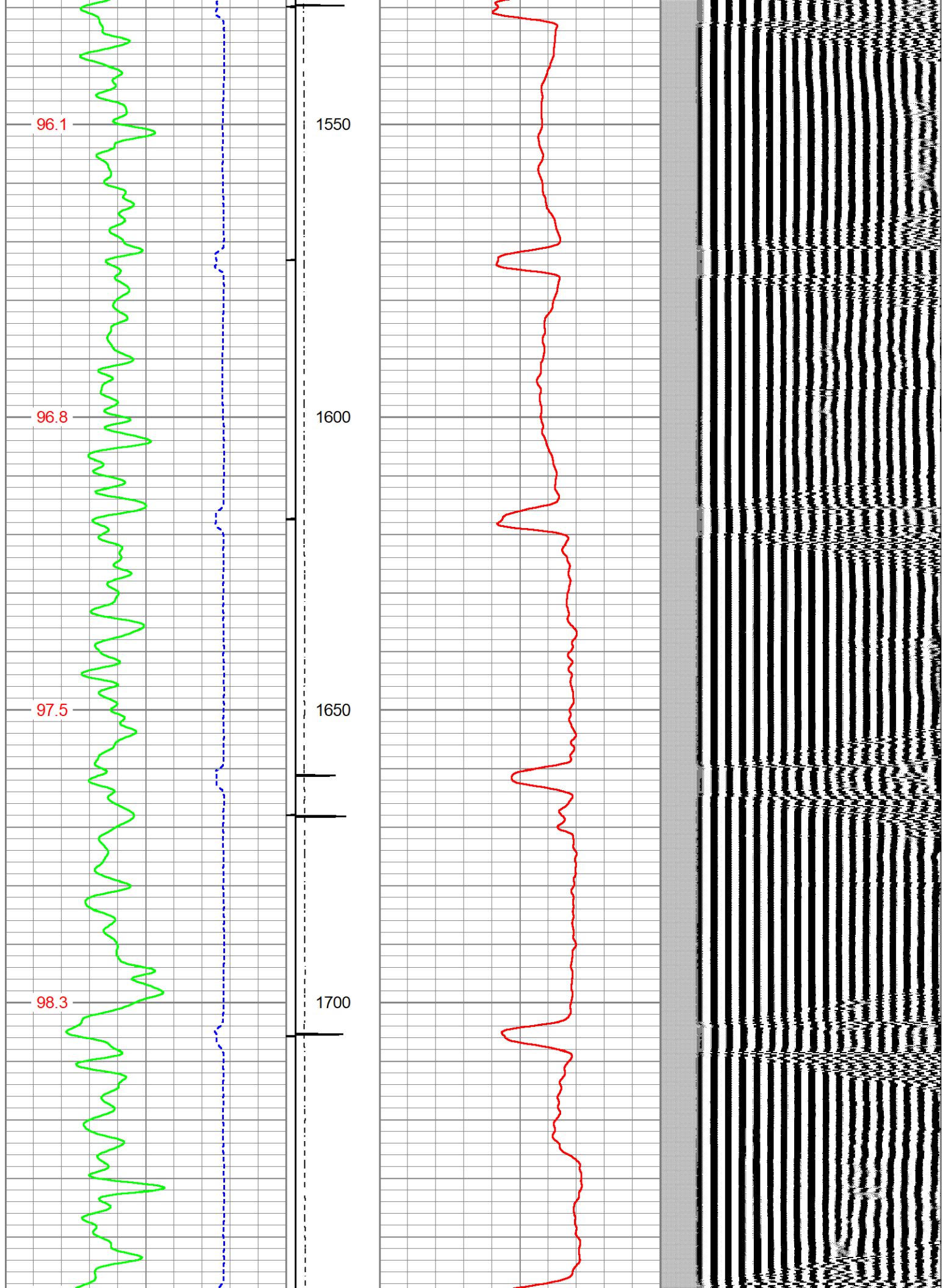


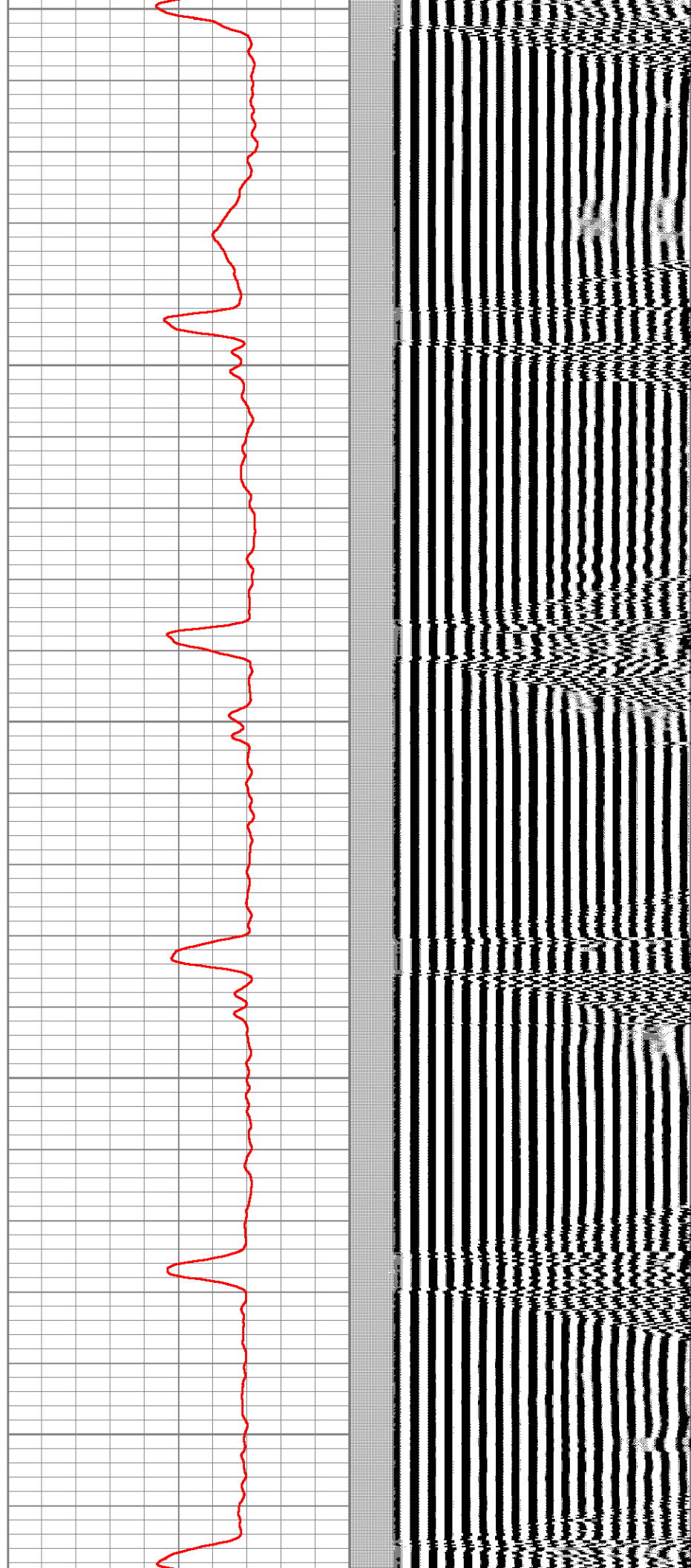
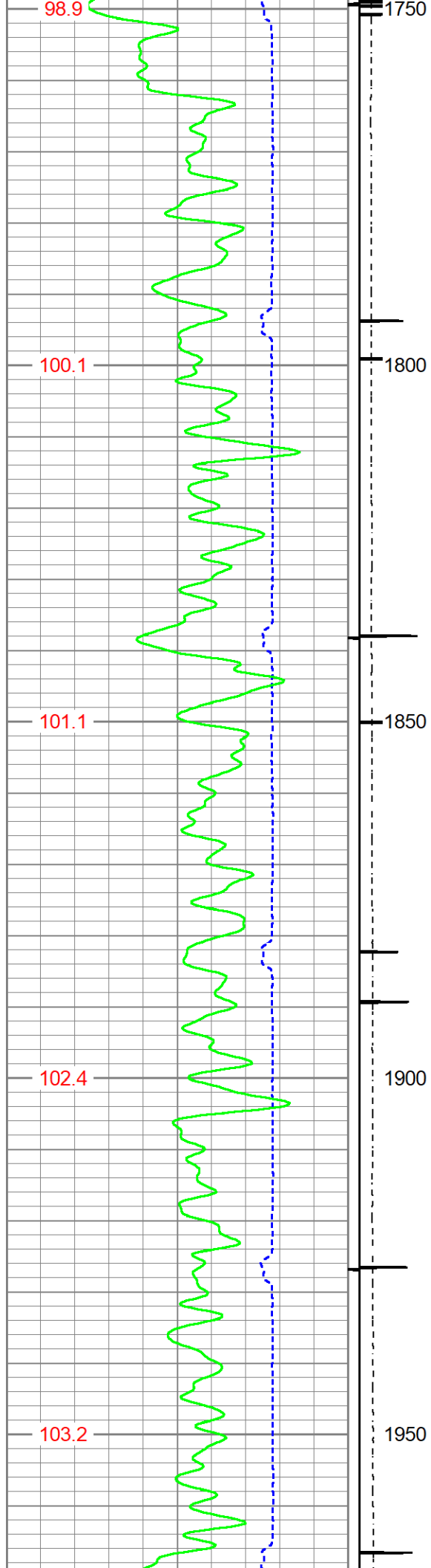


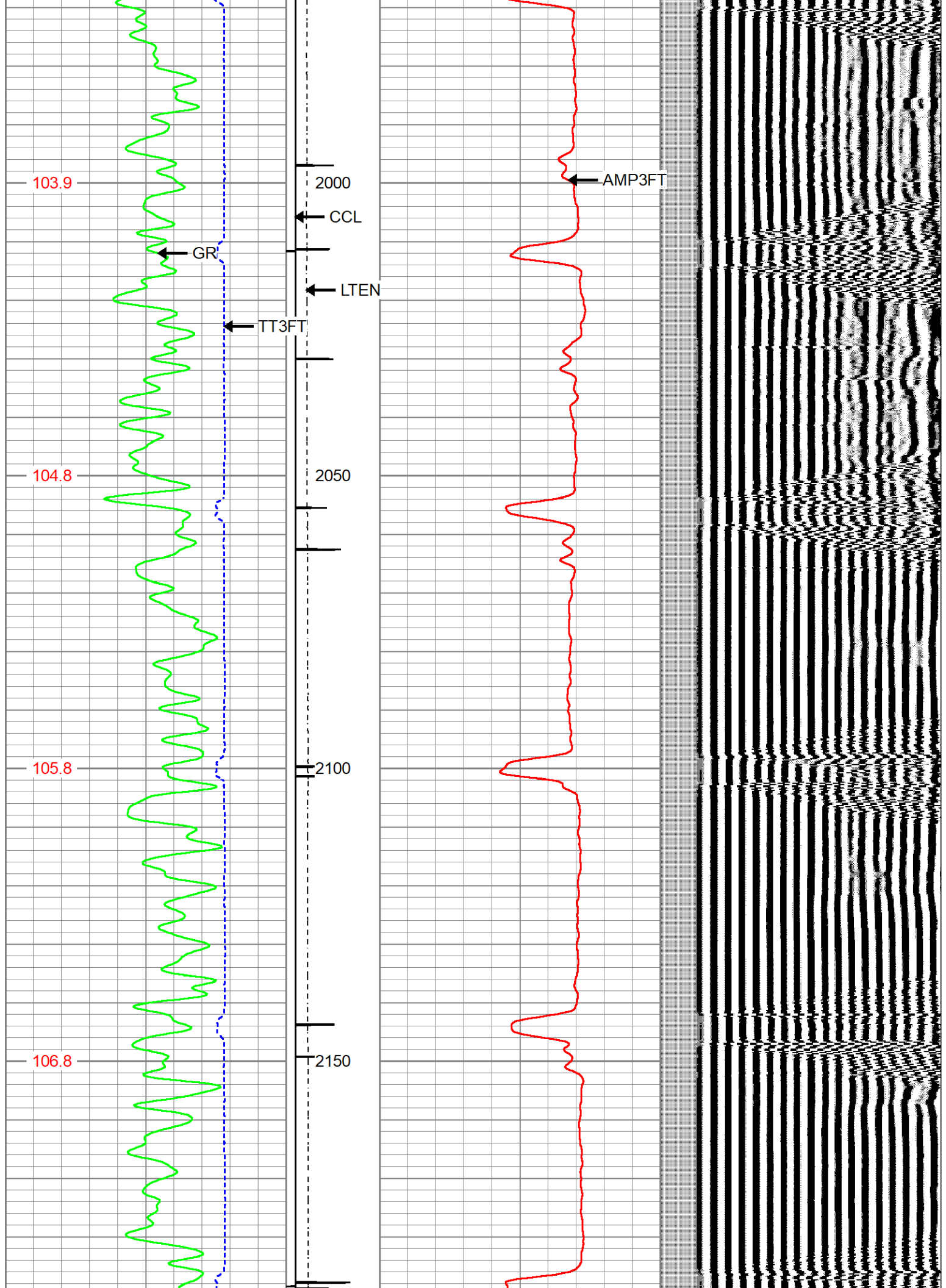


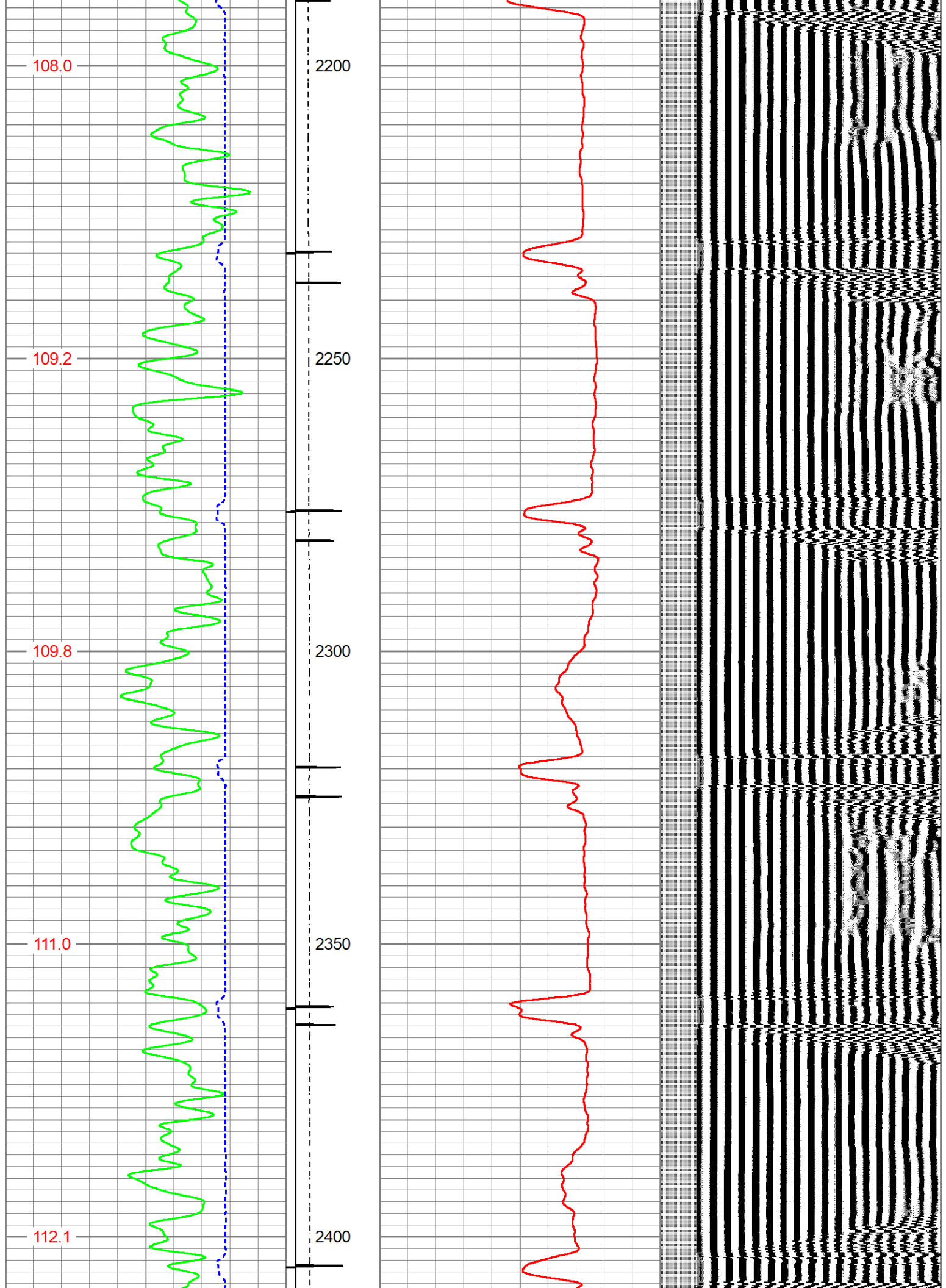


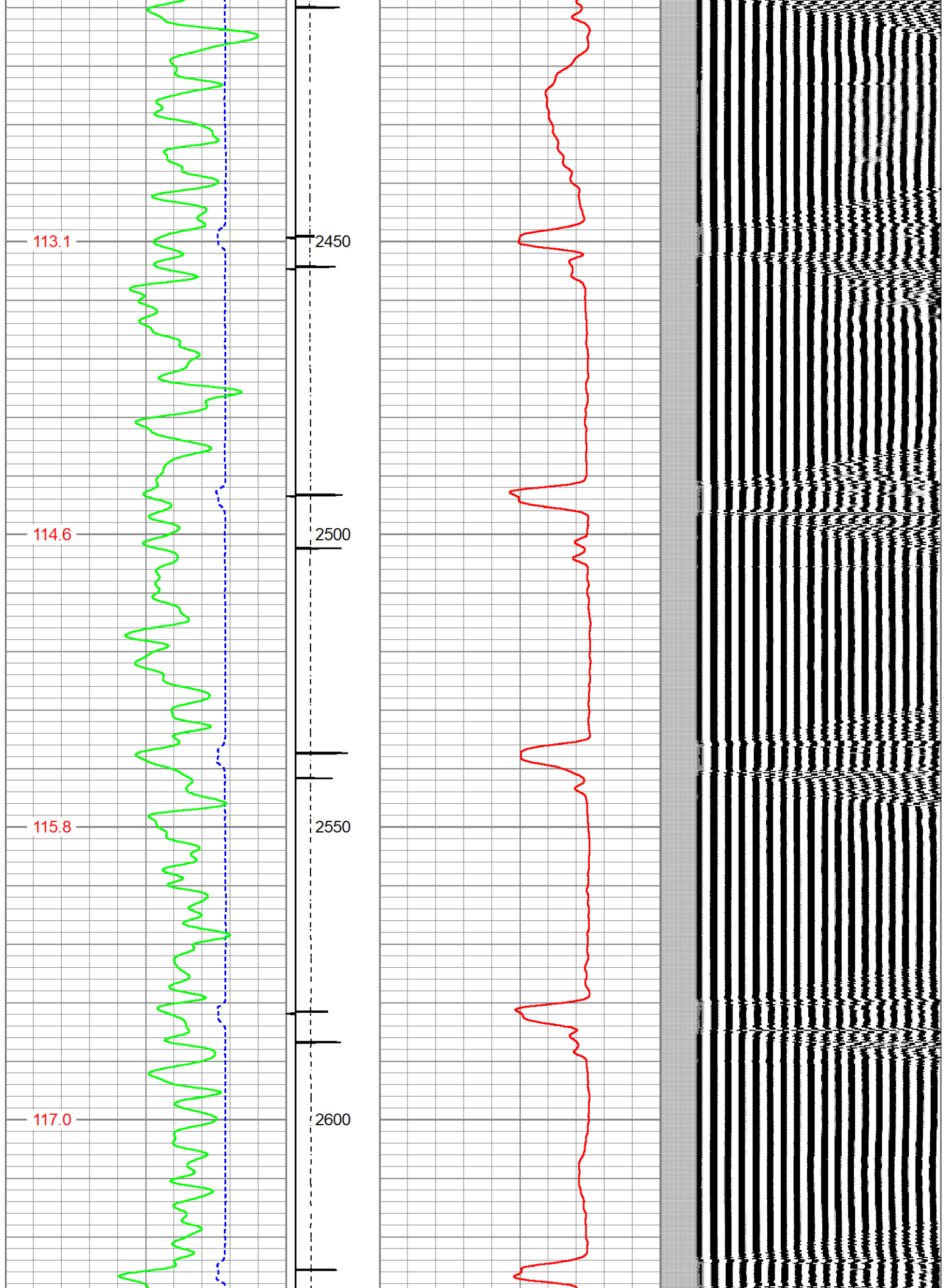


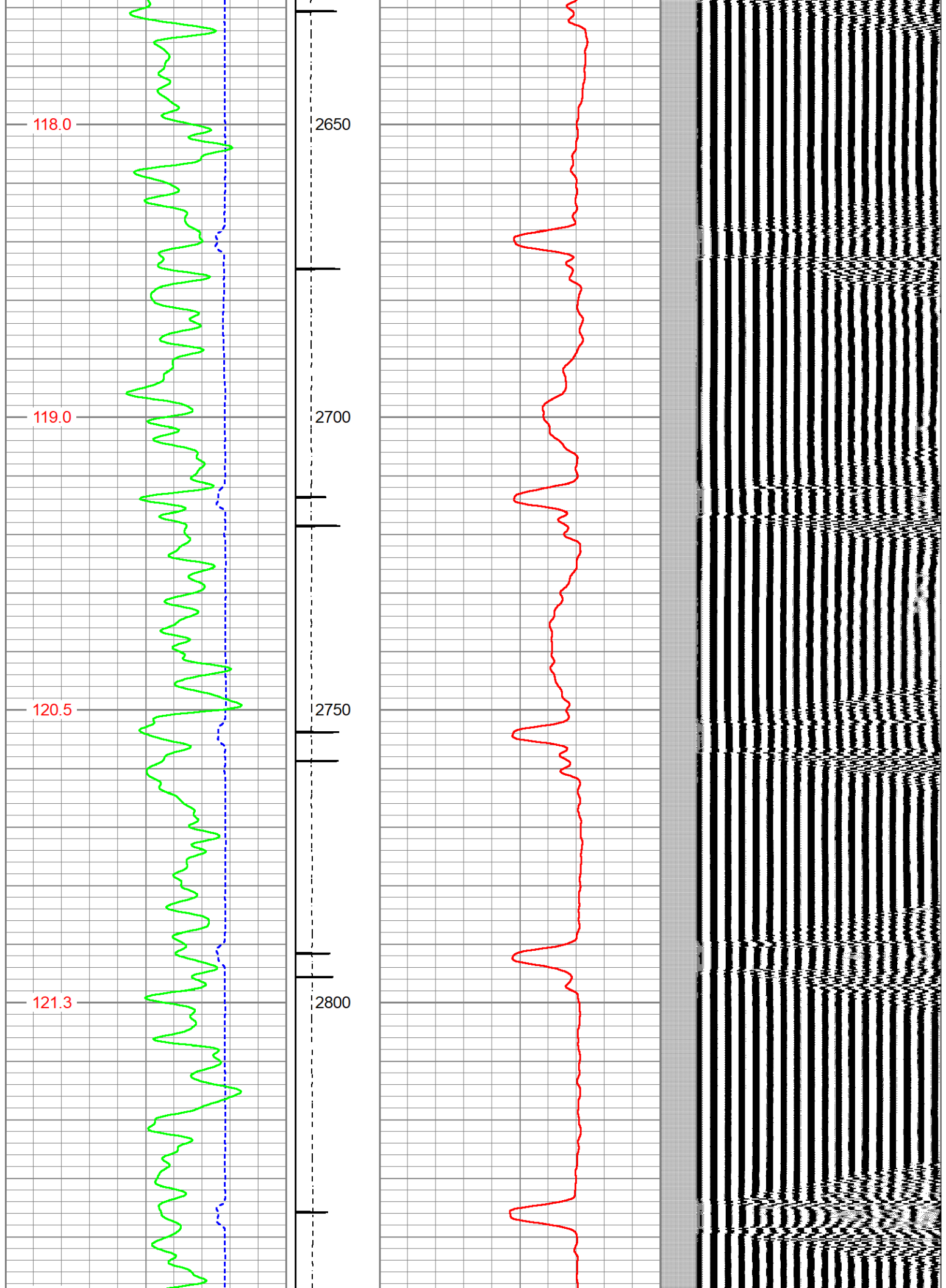


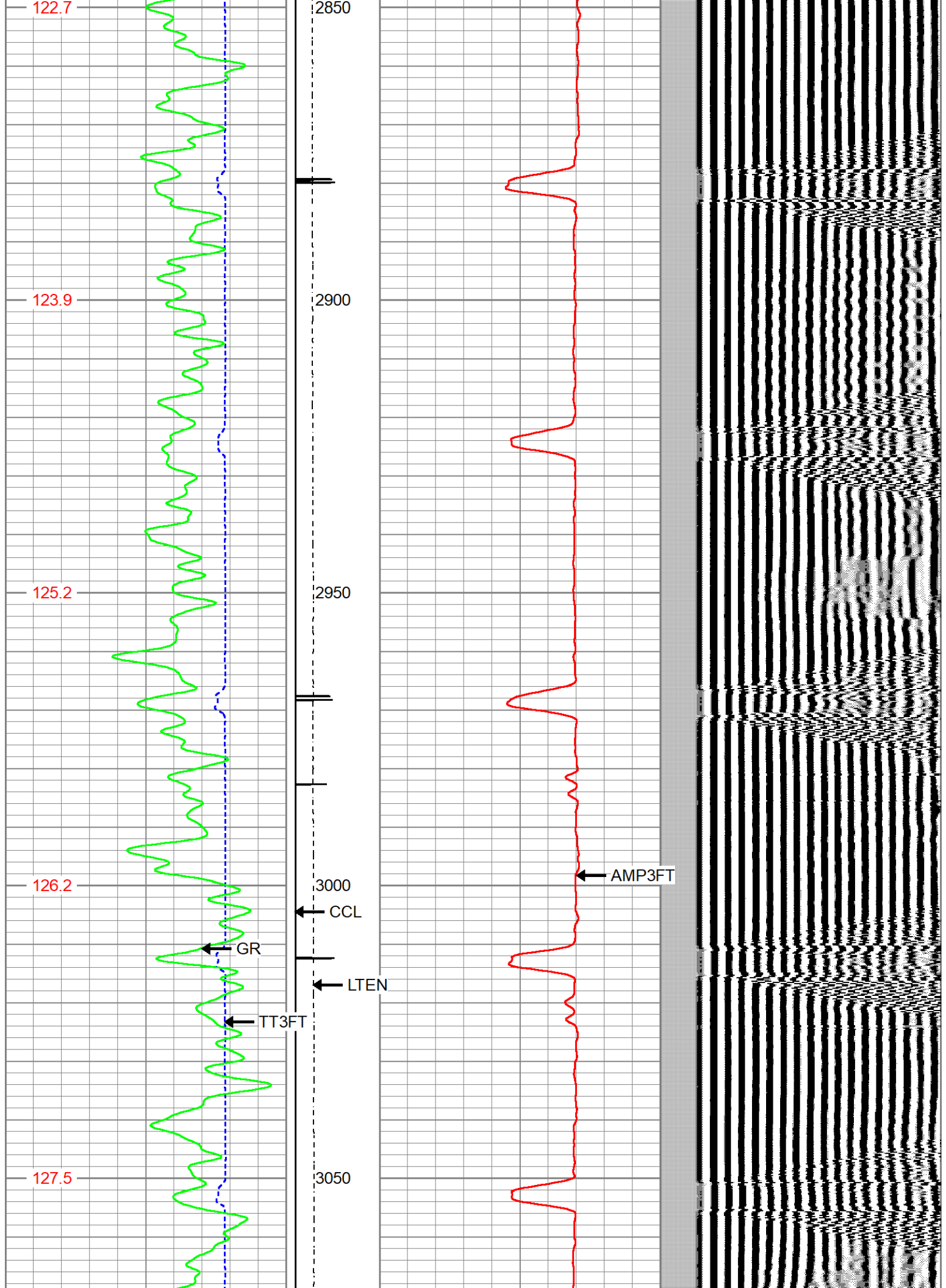


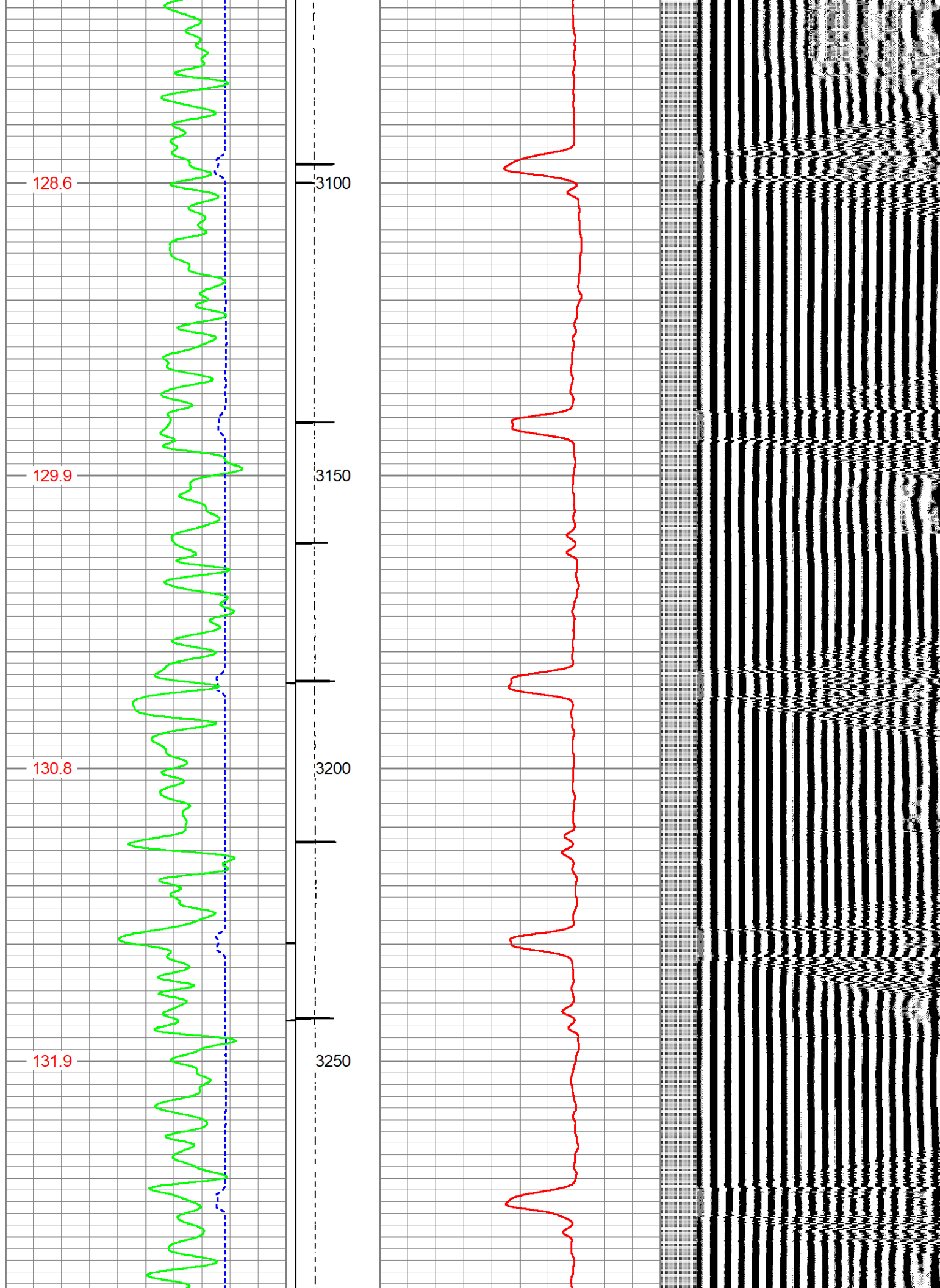


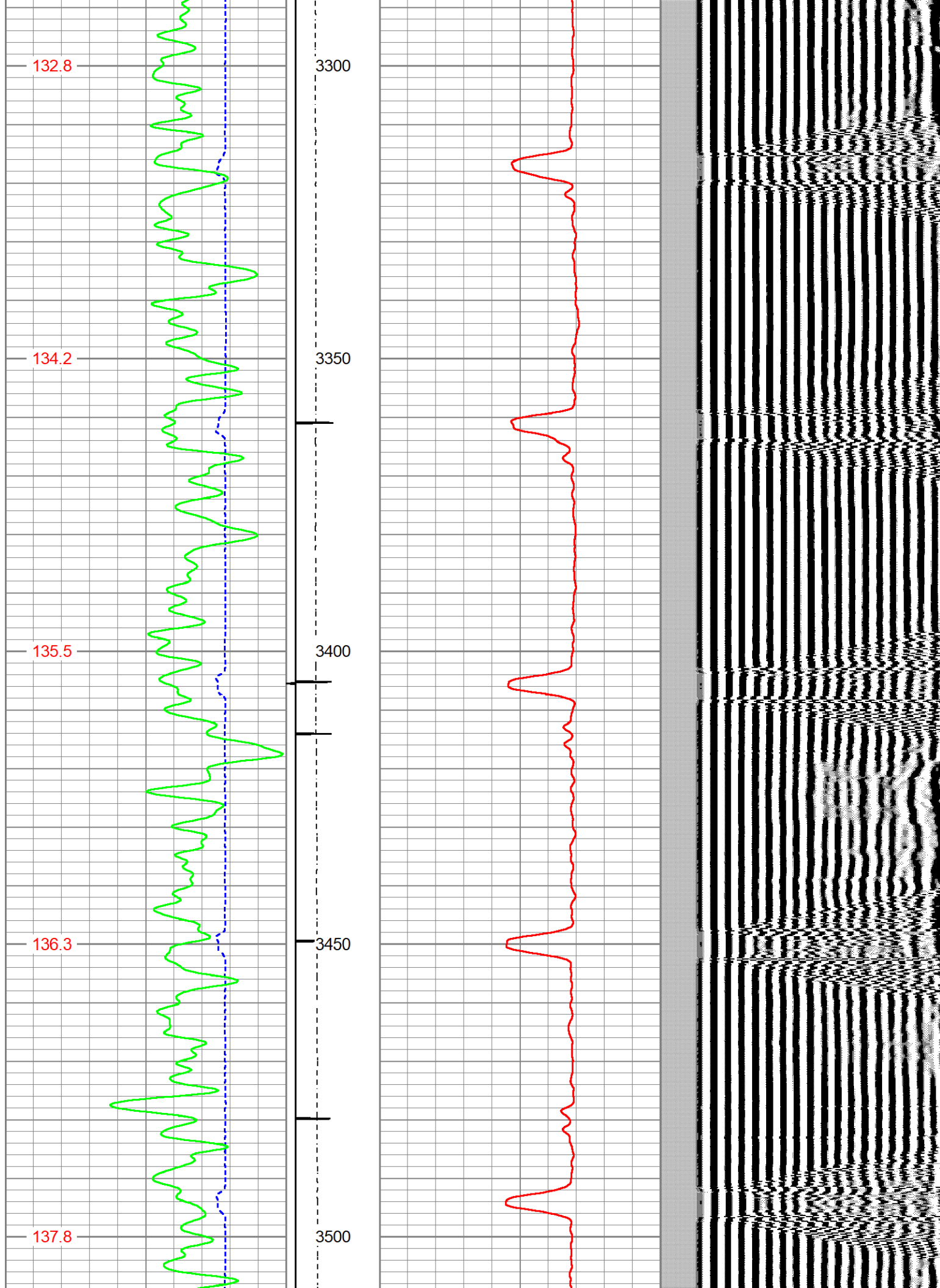


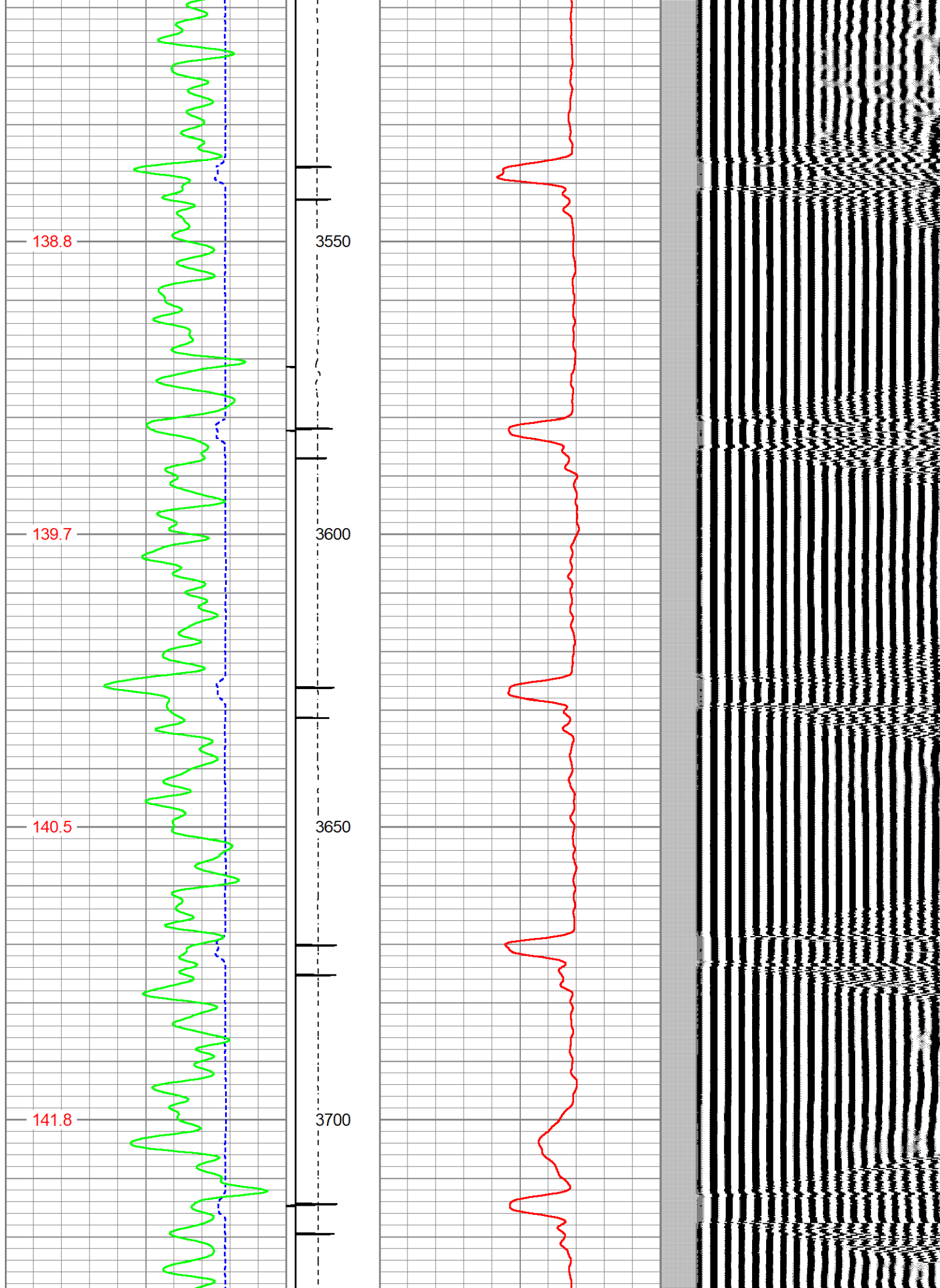


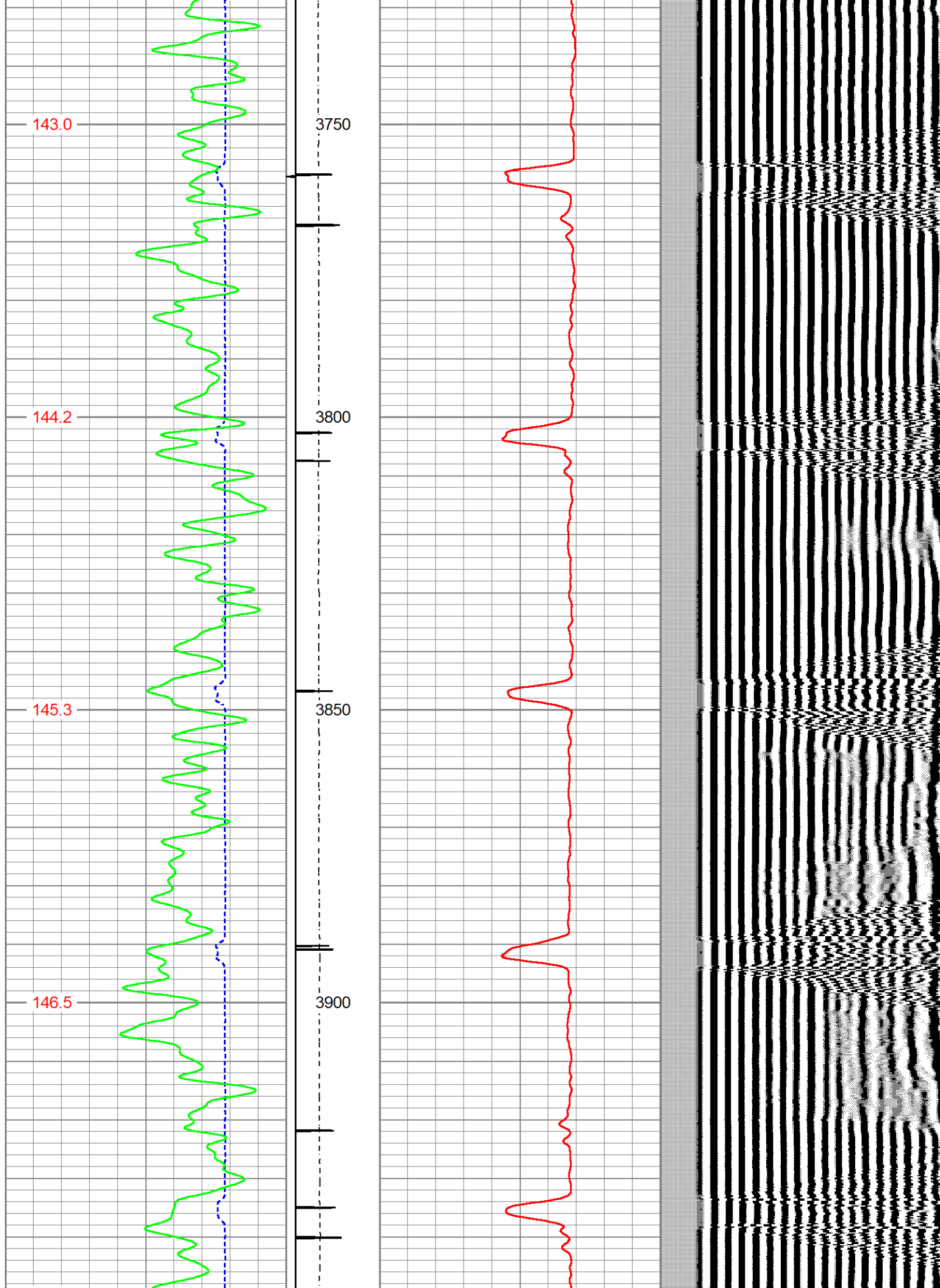


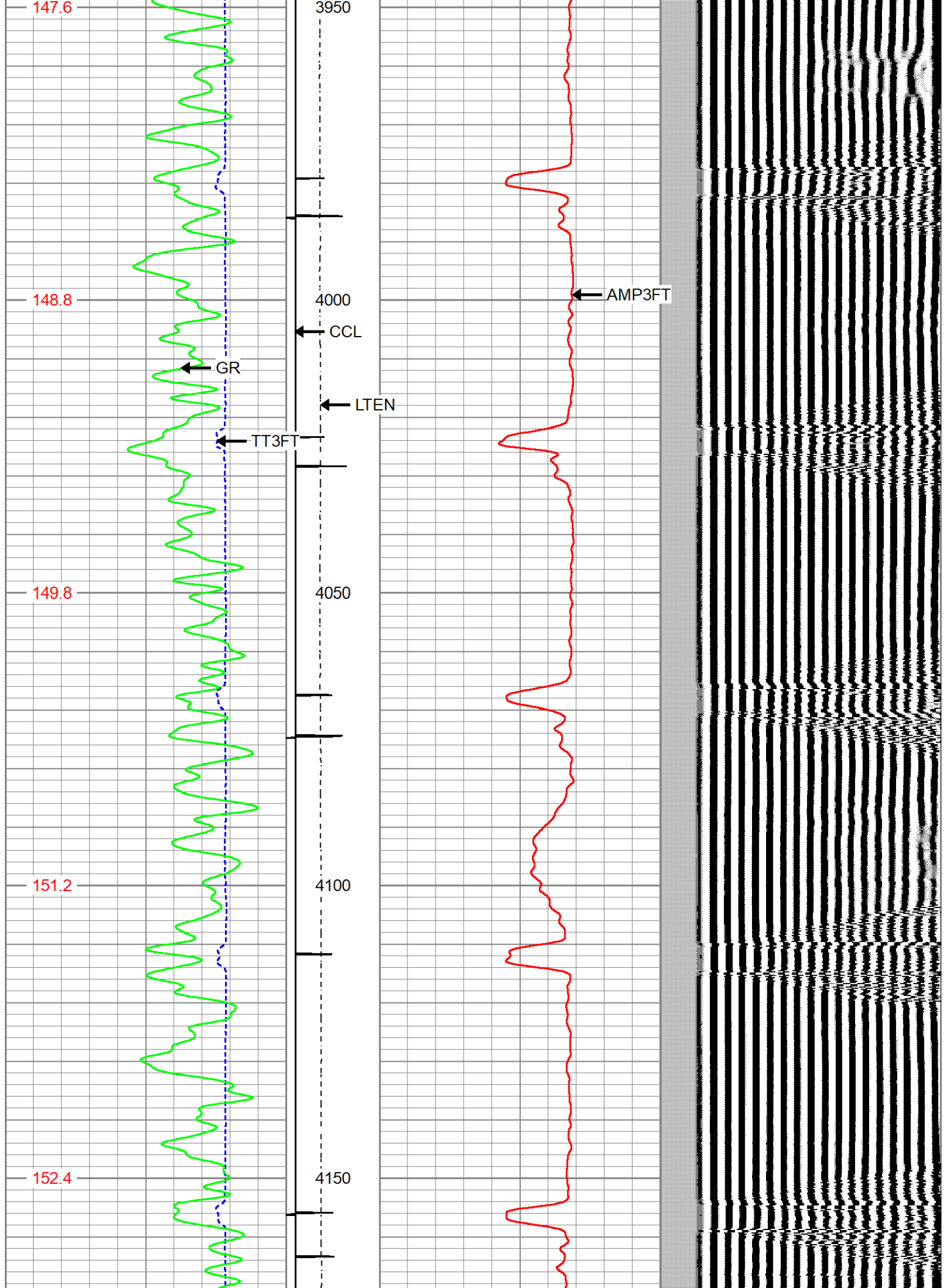


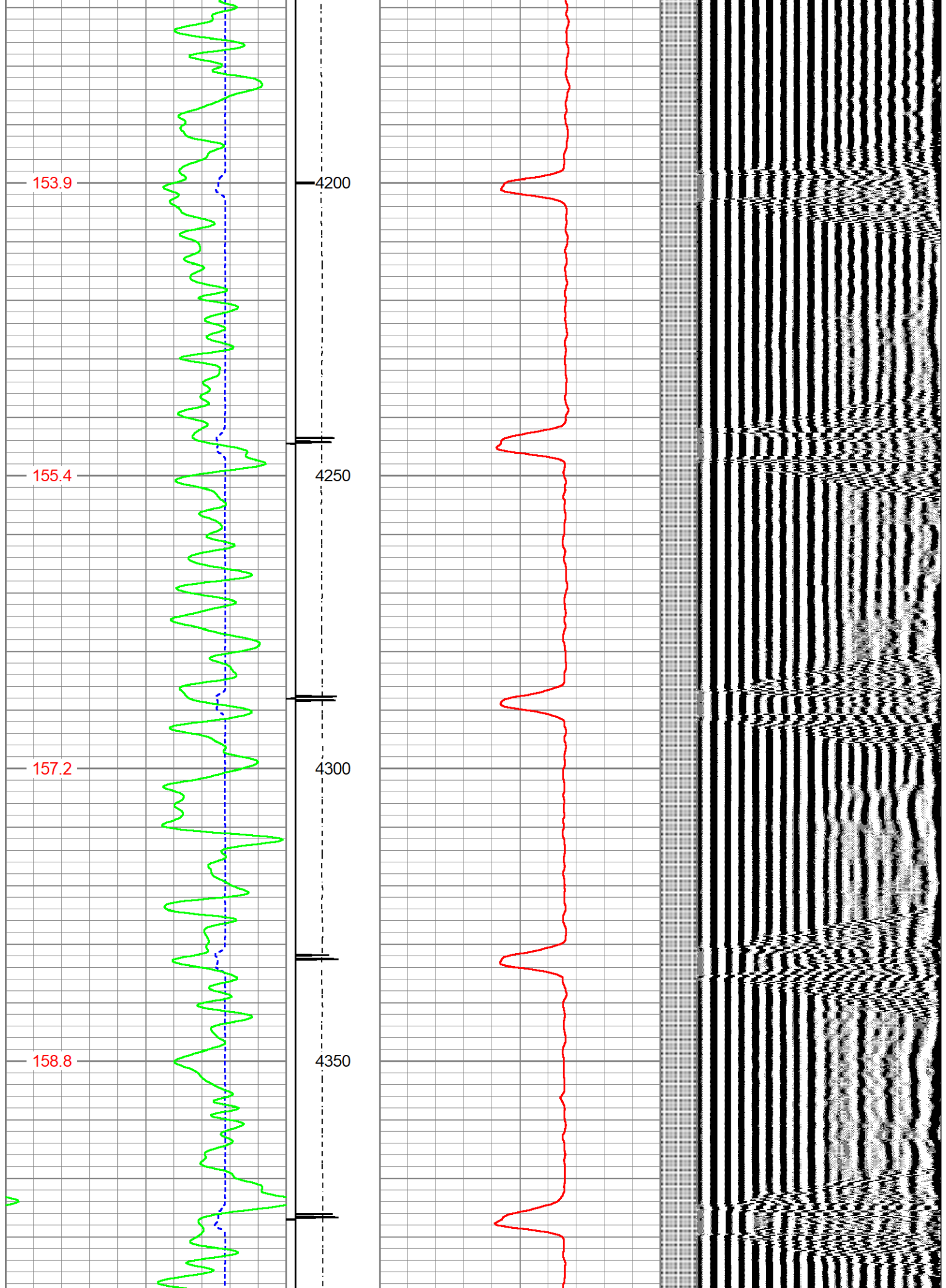


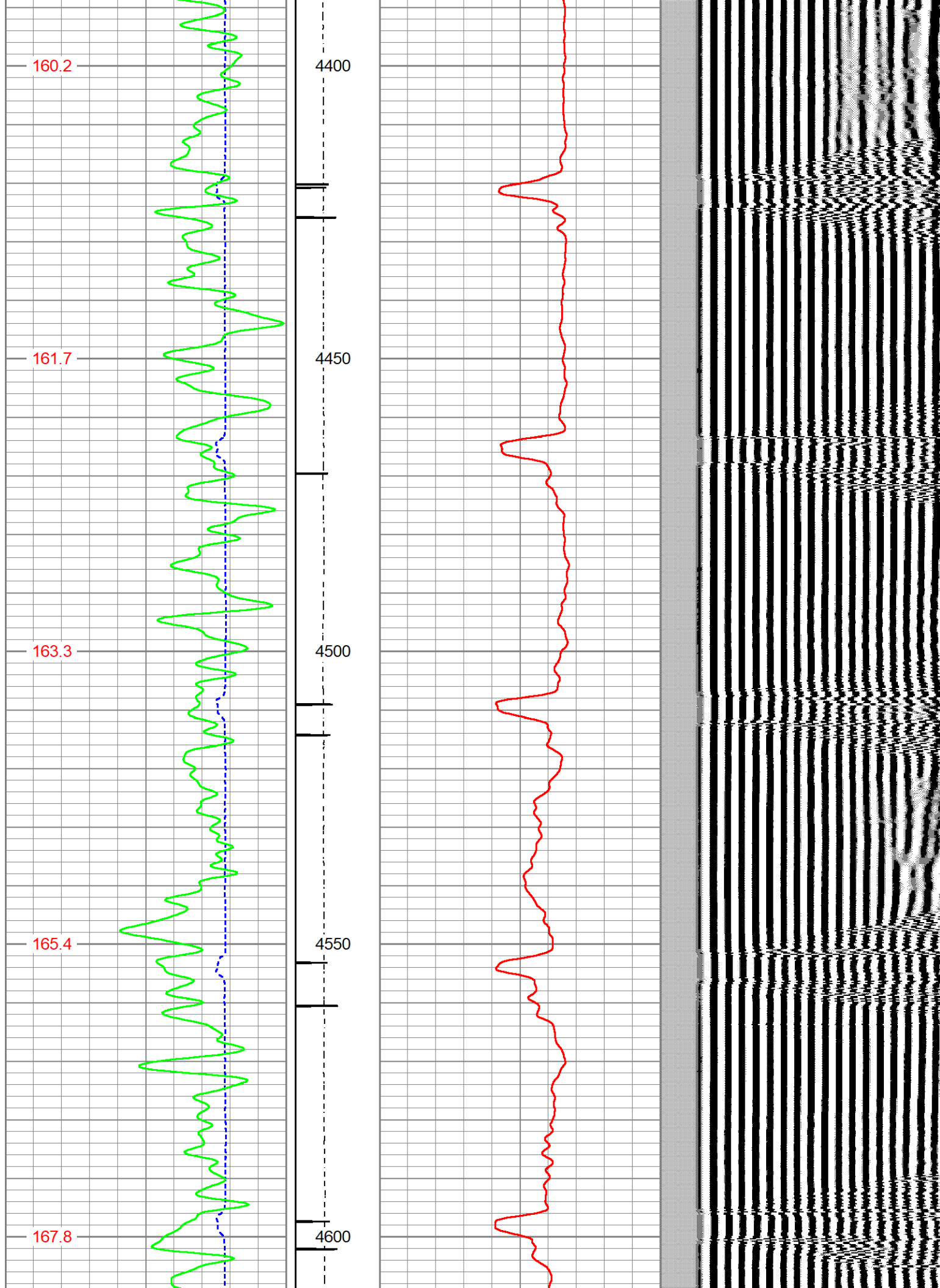


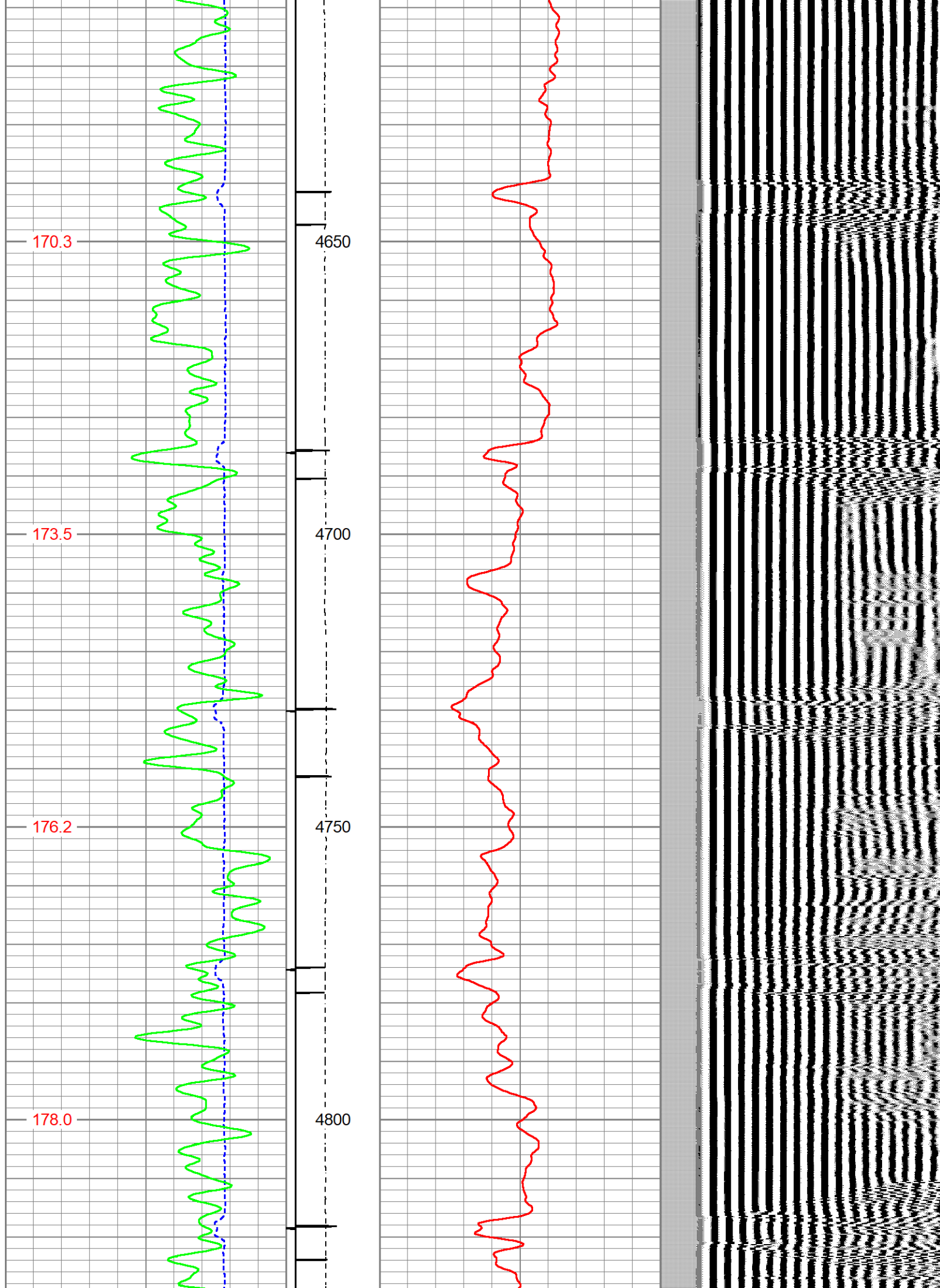


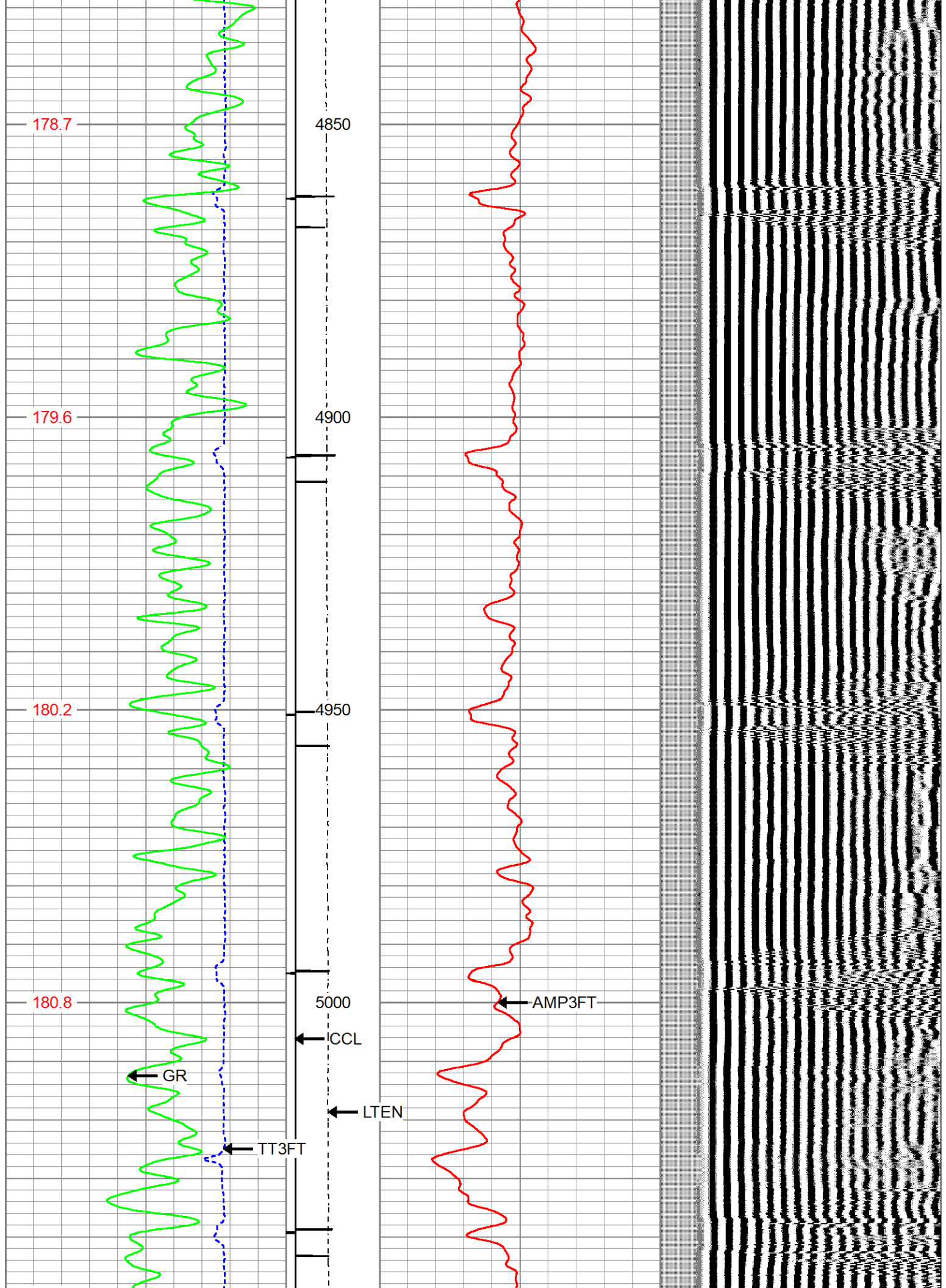


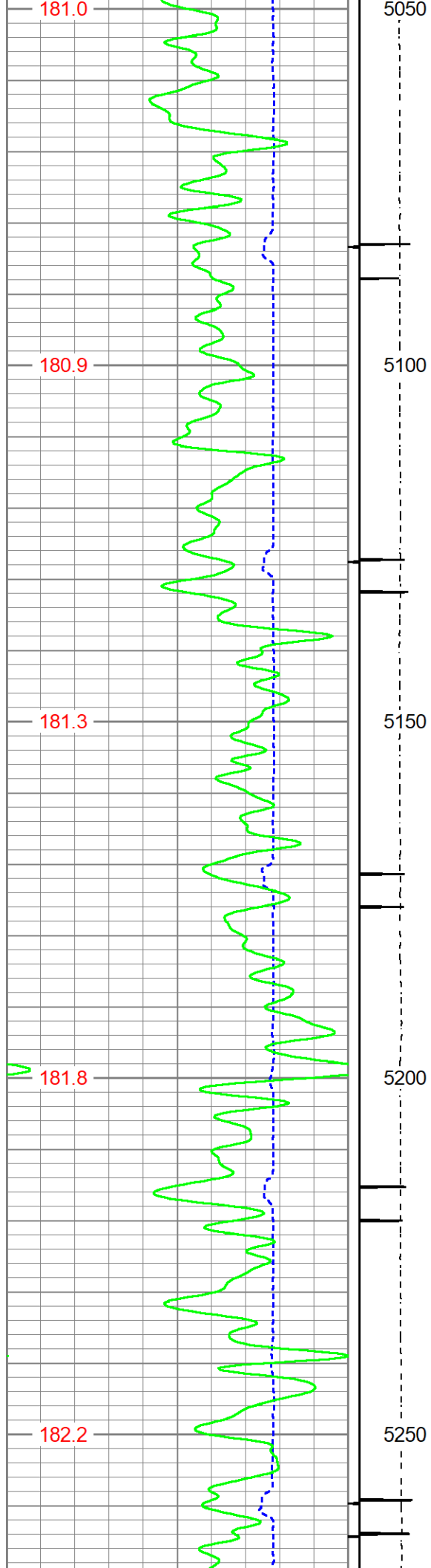




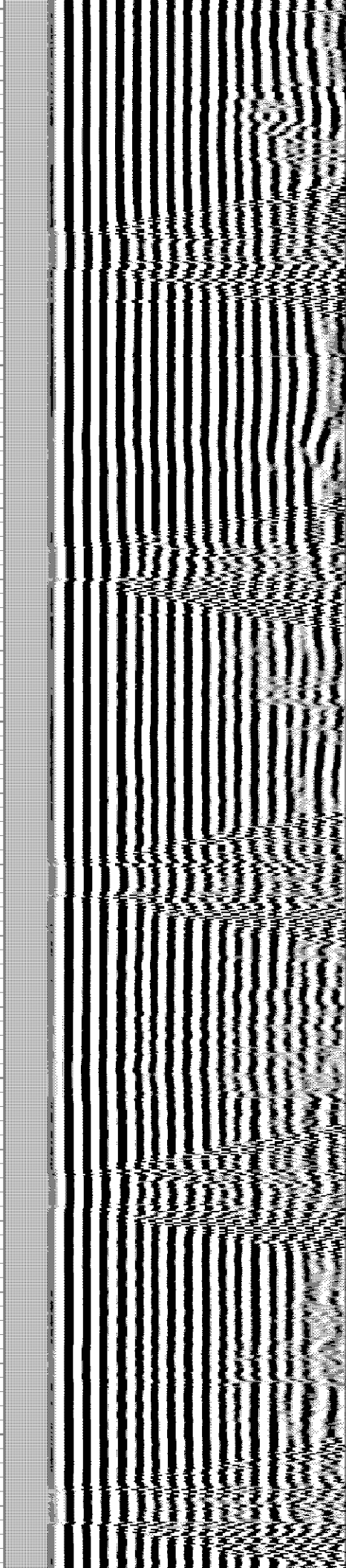
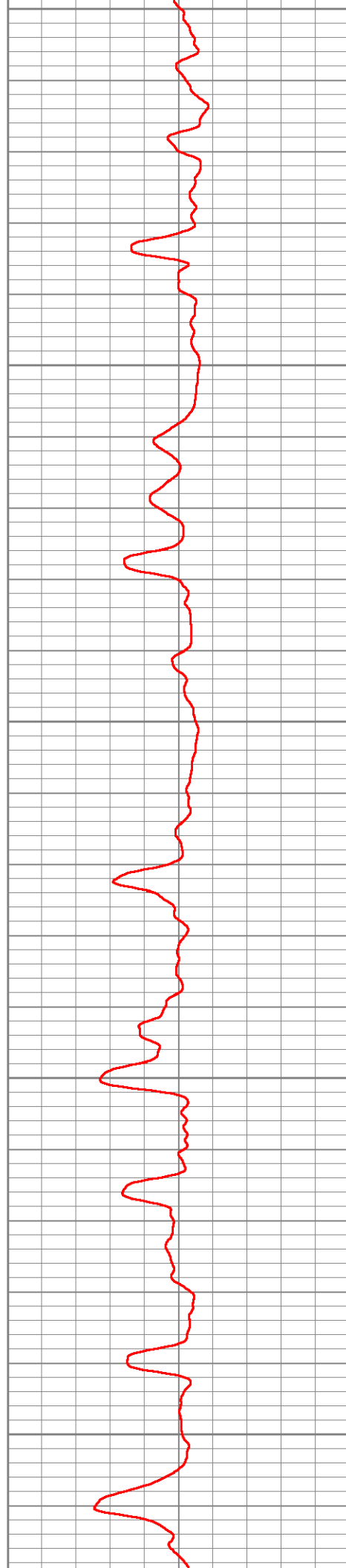


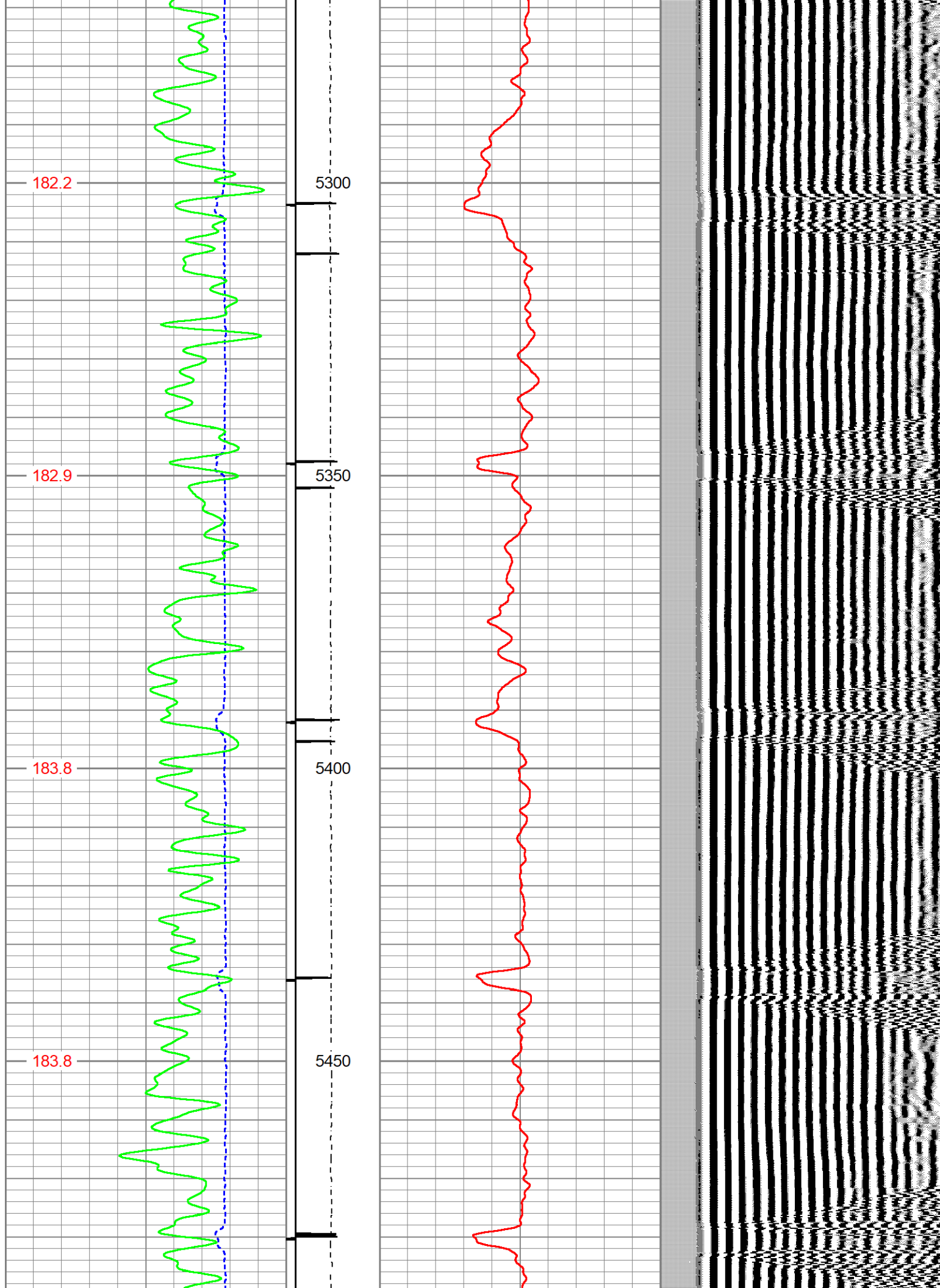


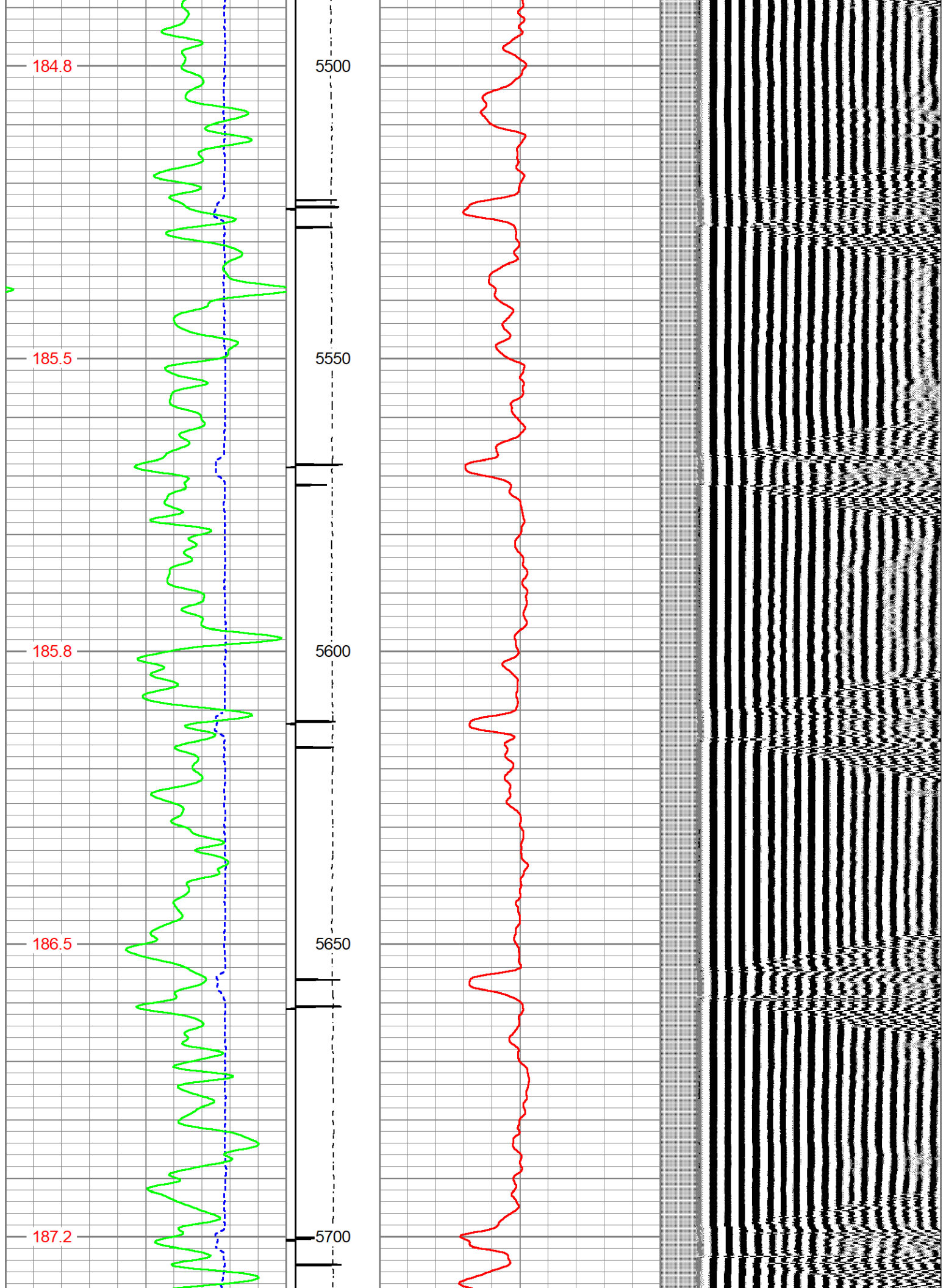


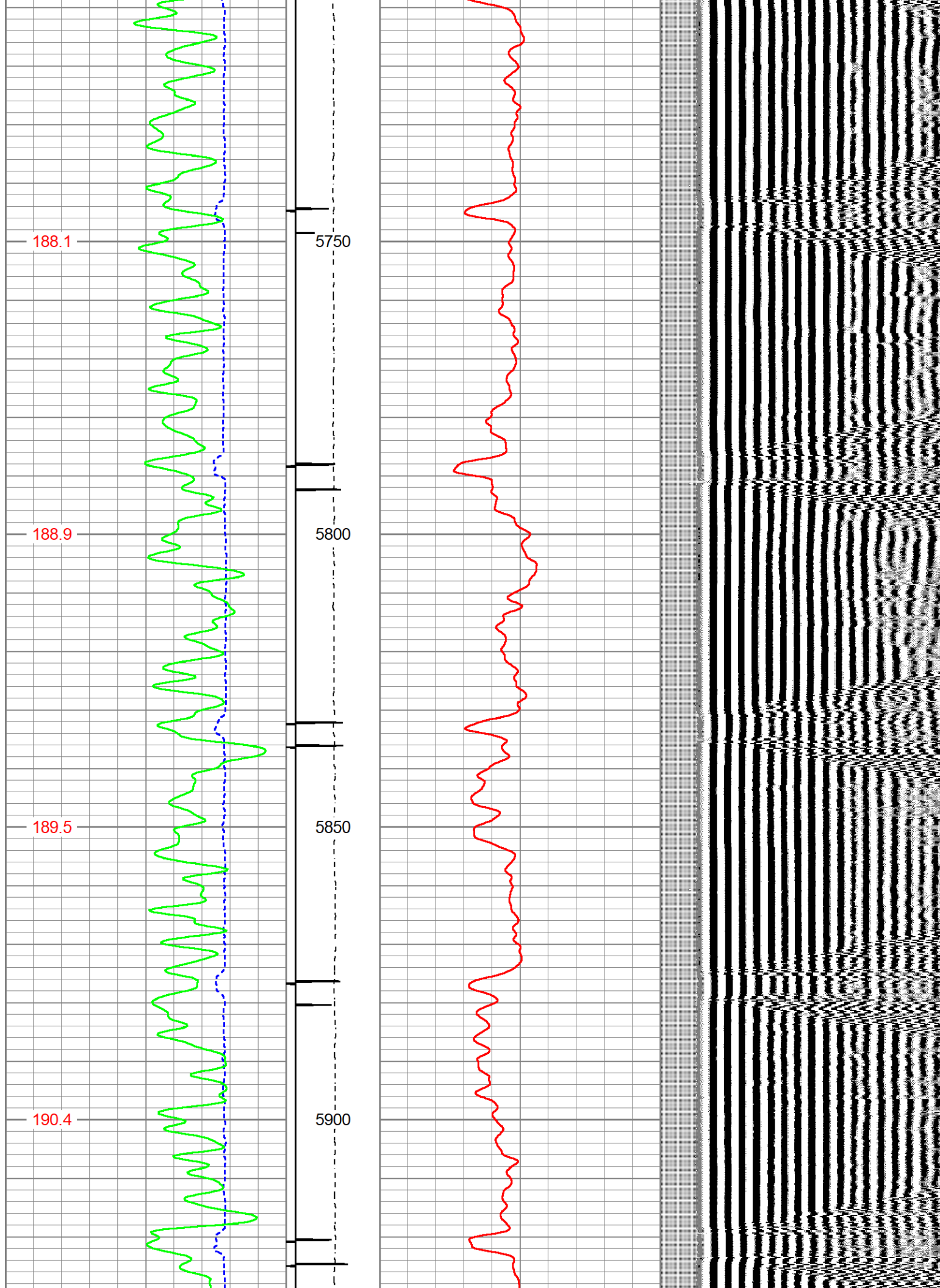


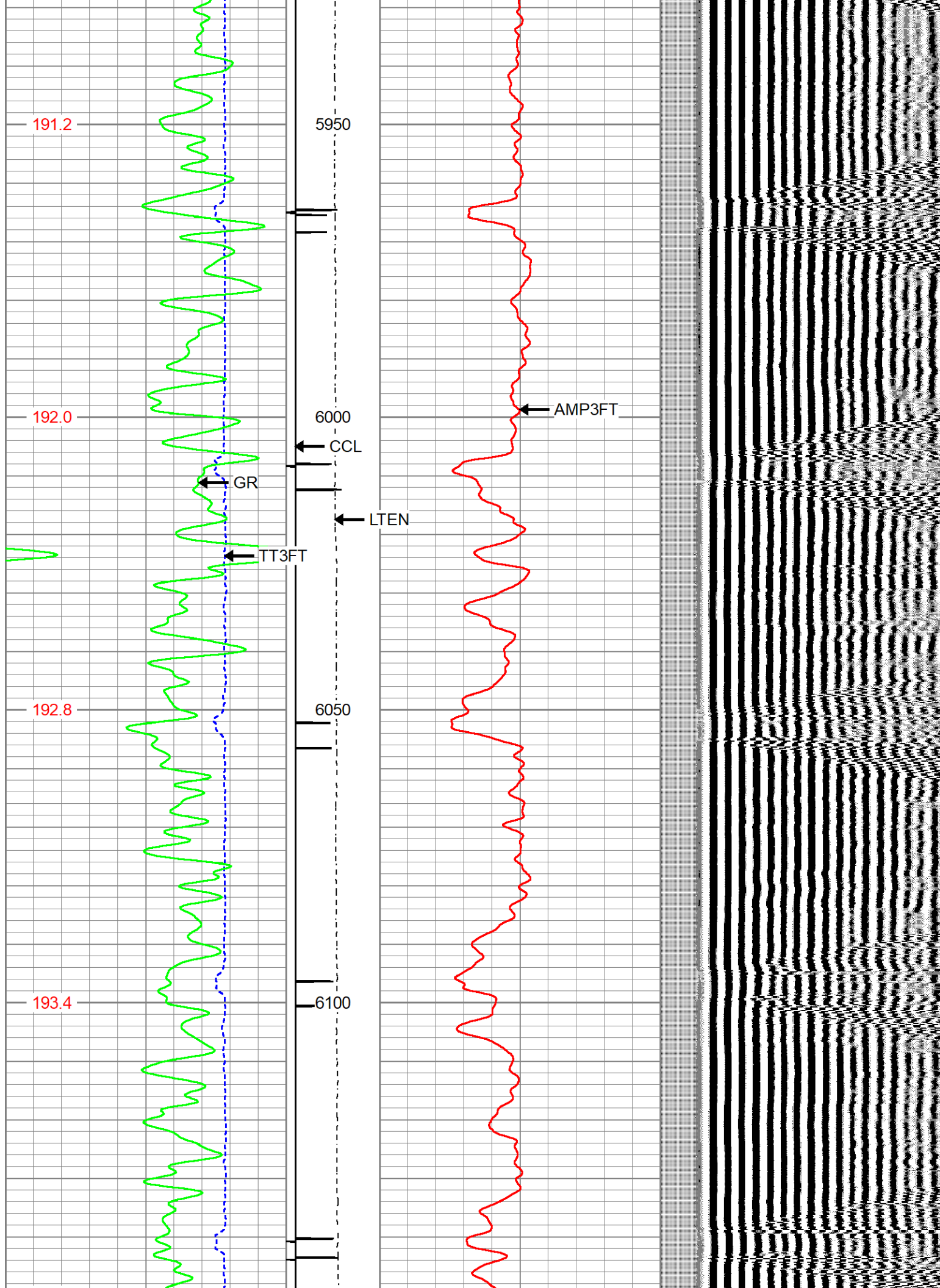
5050
5100
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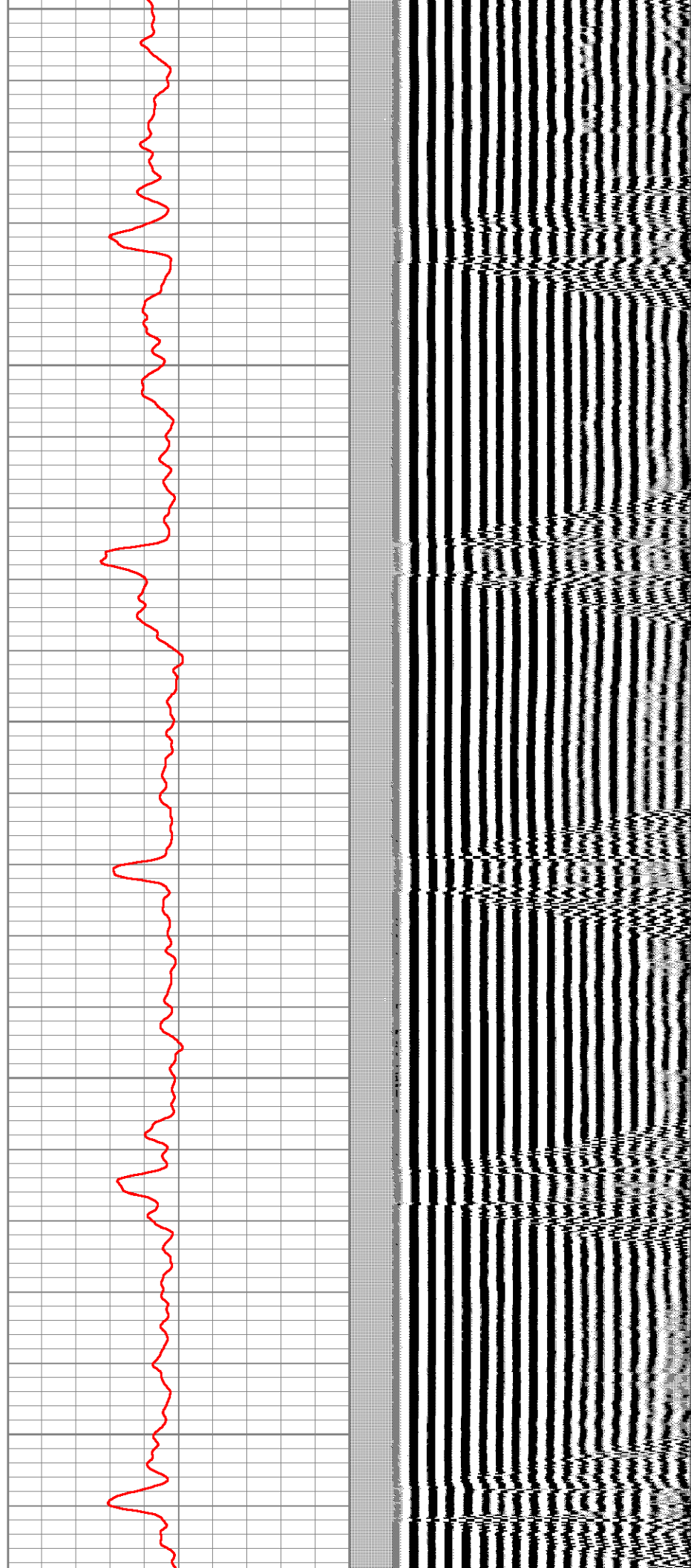
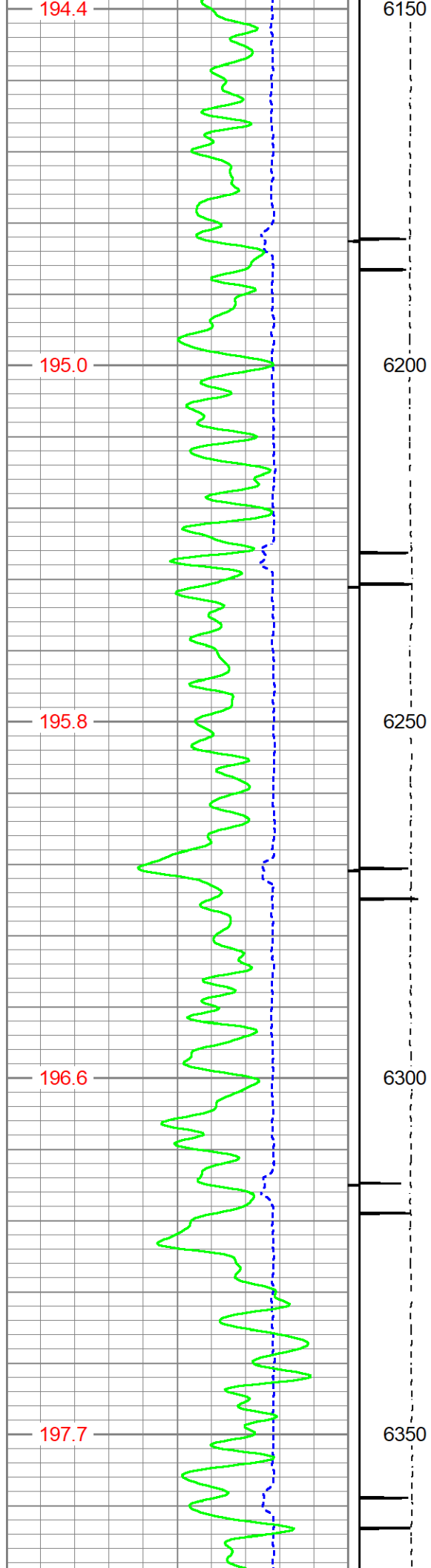


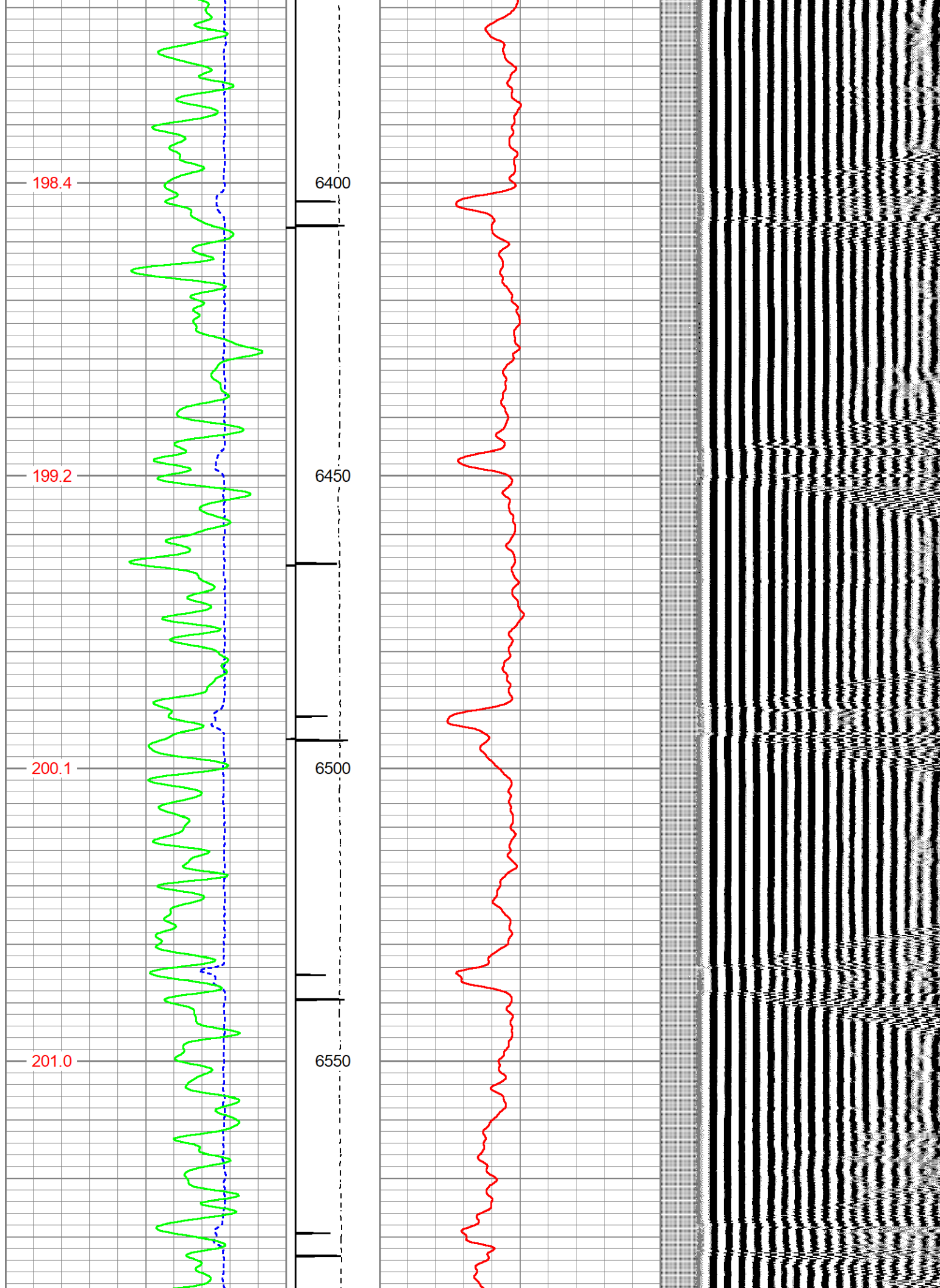


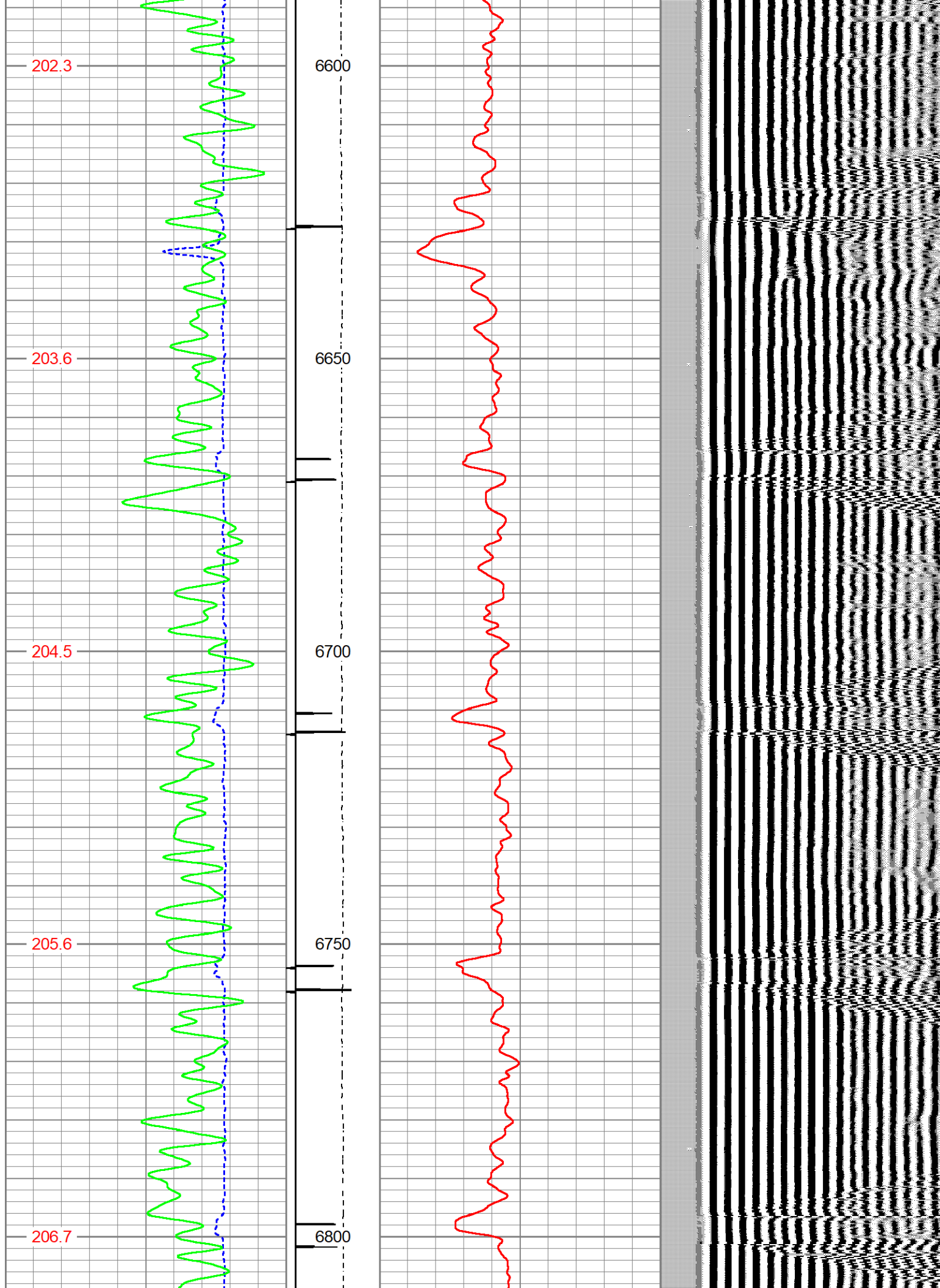


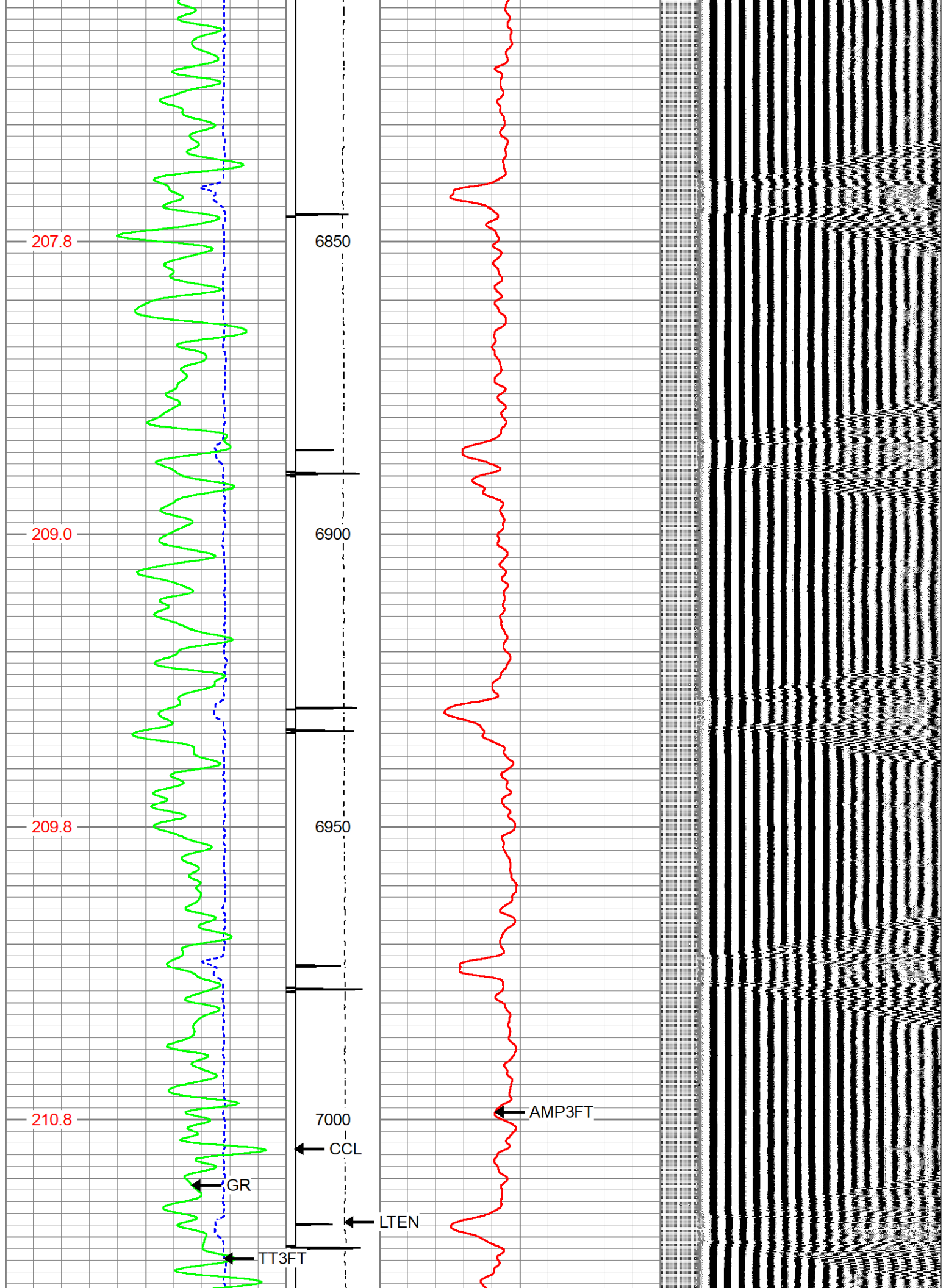


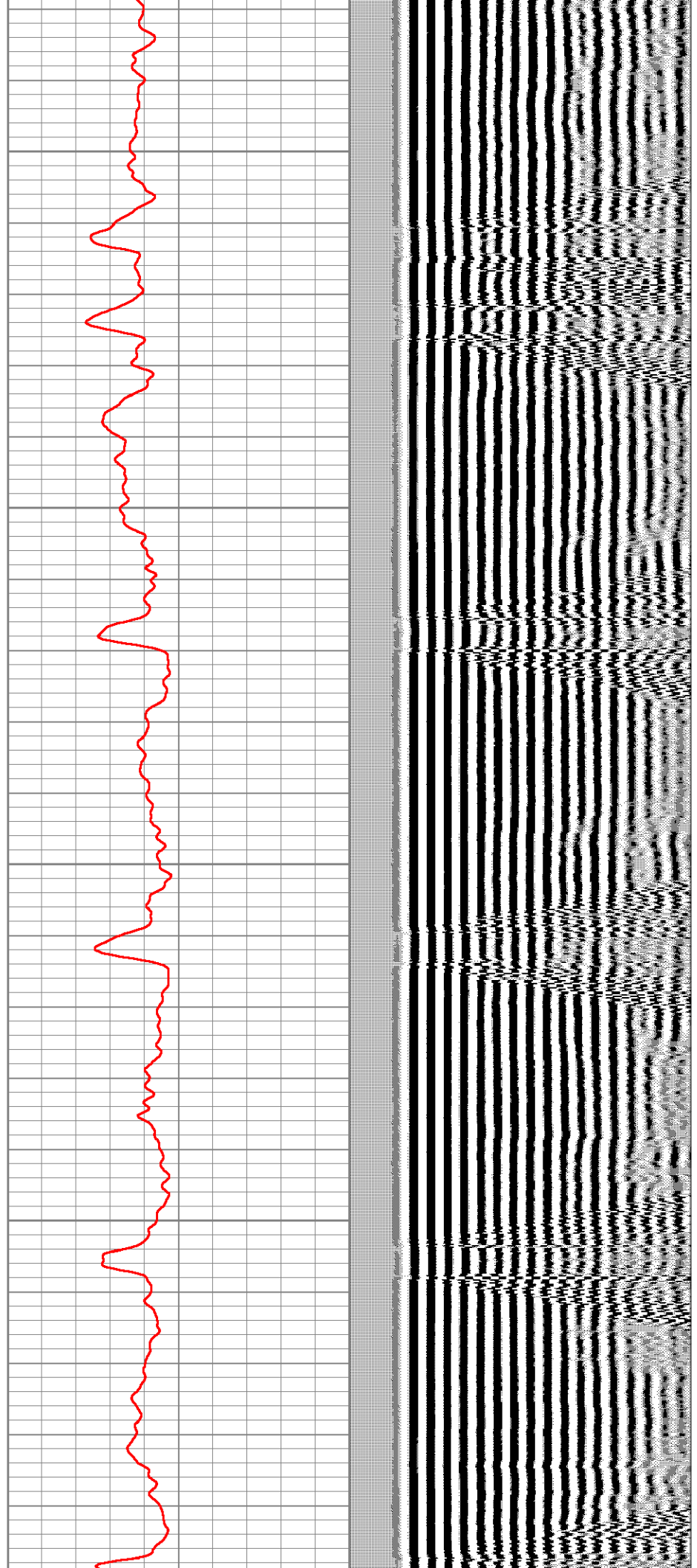
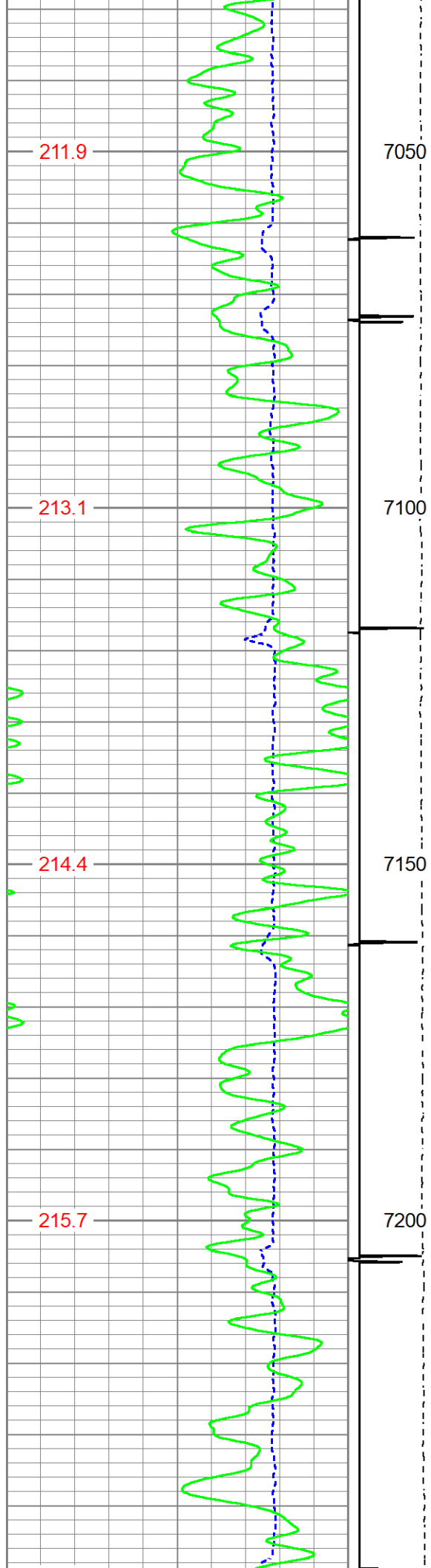


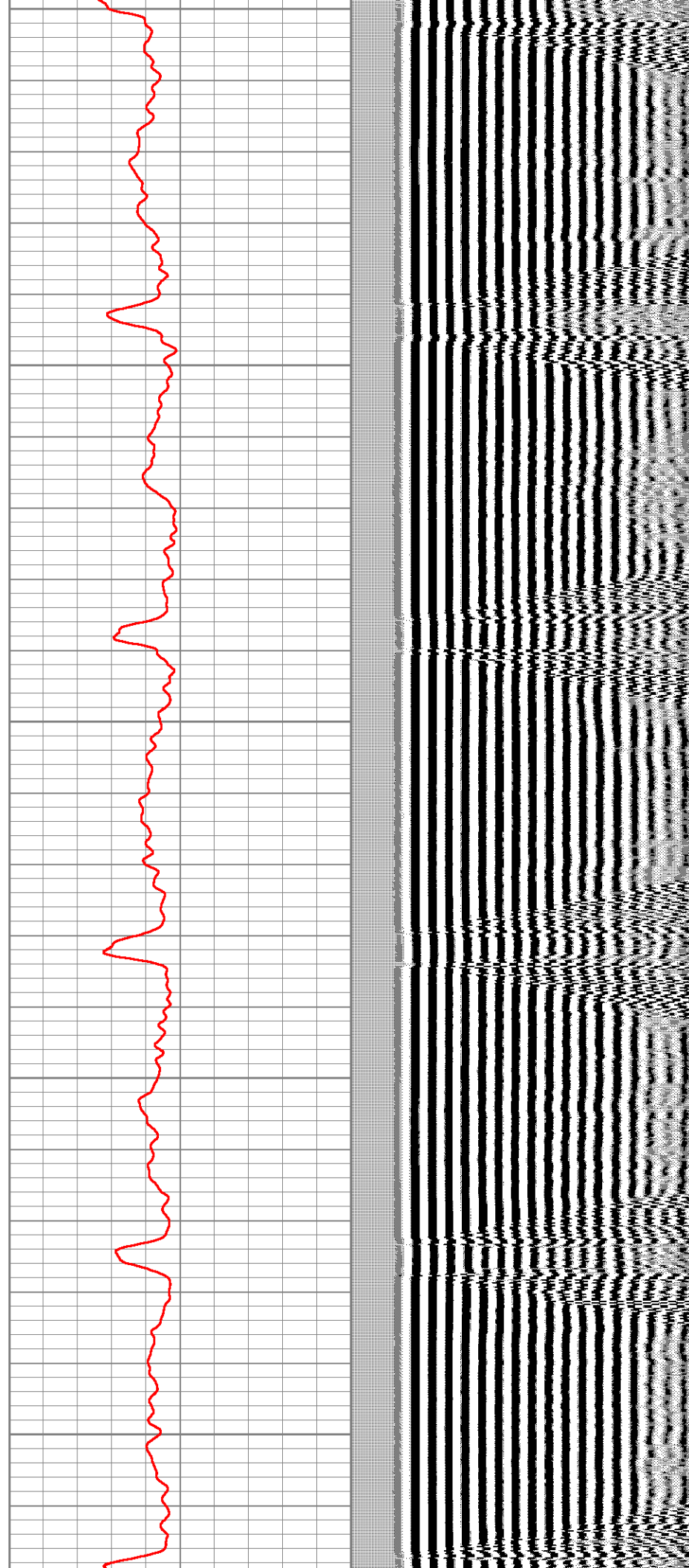
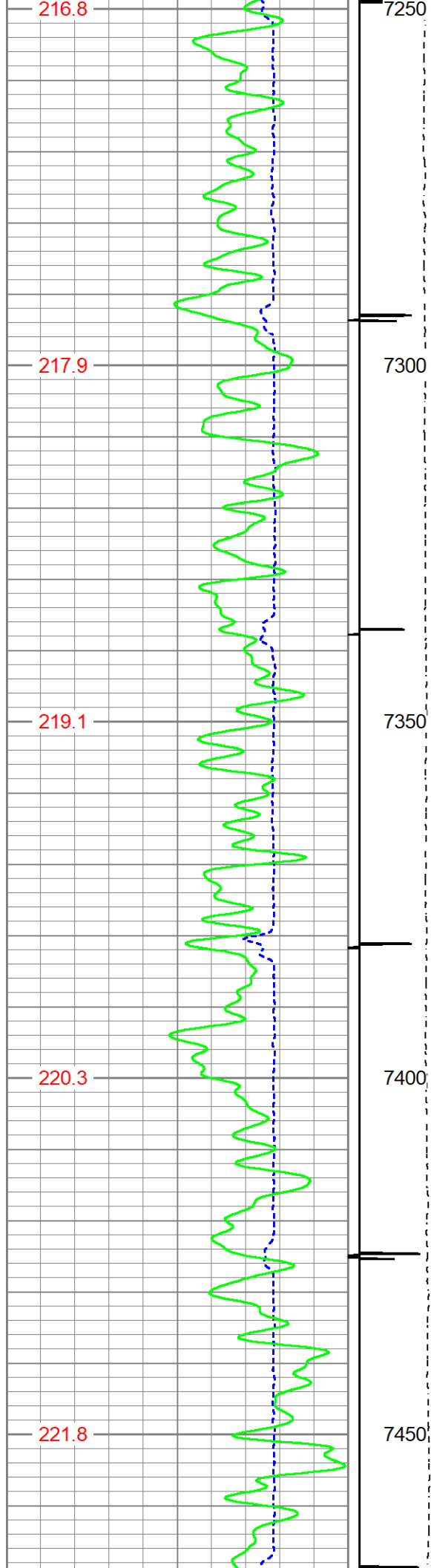


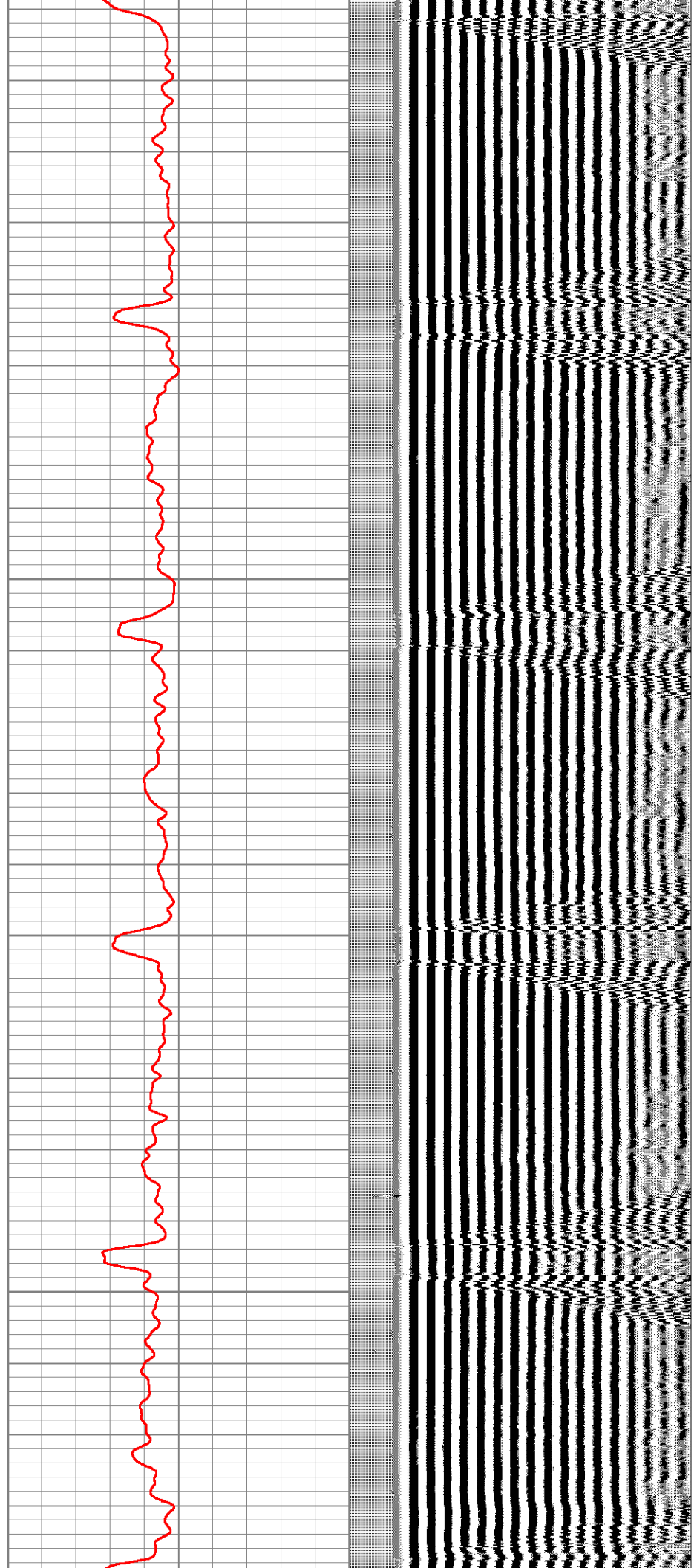
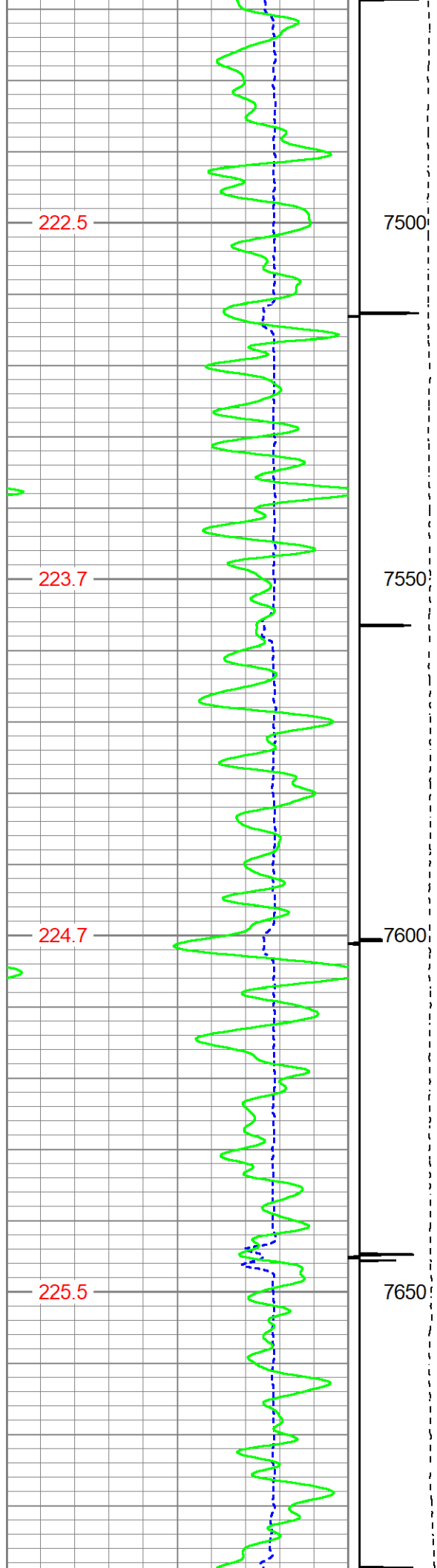


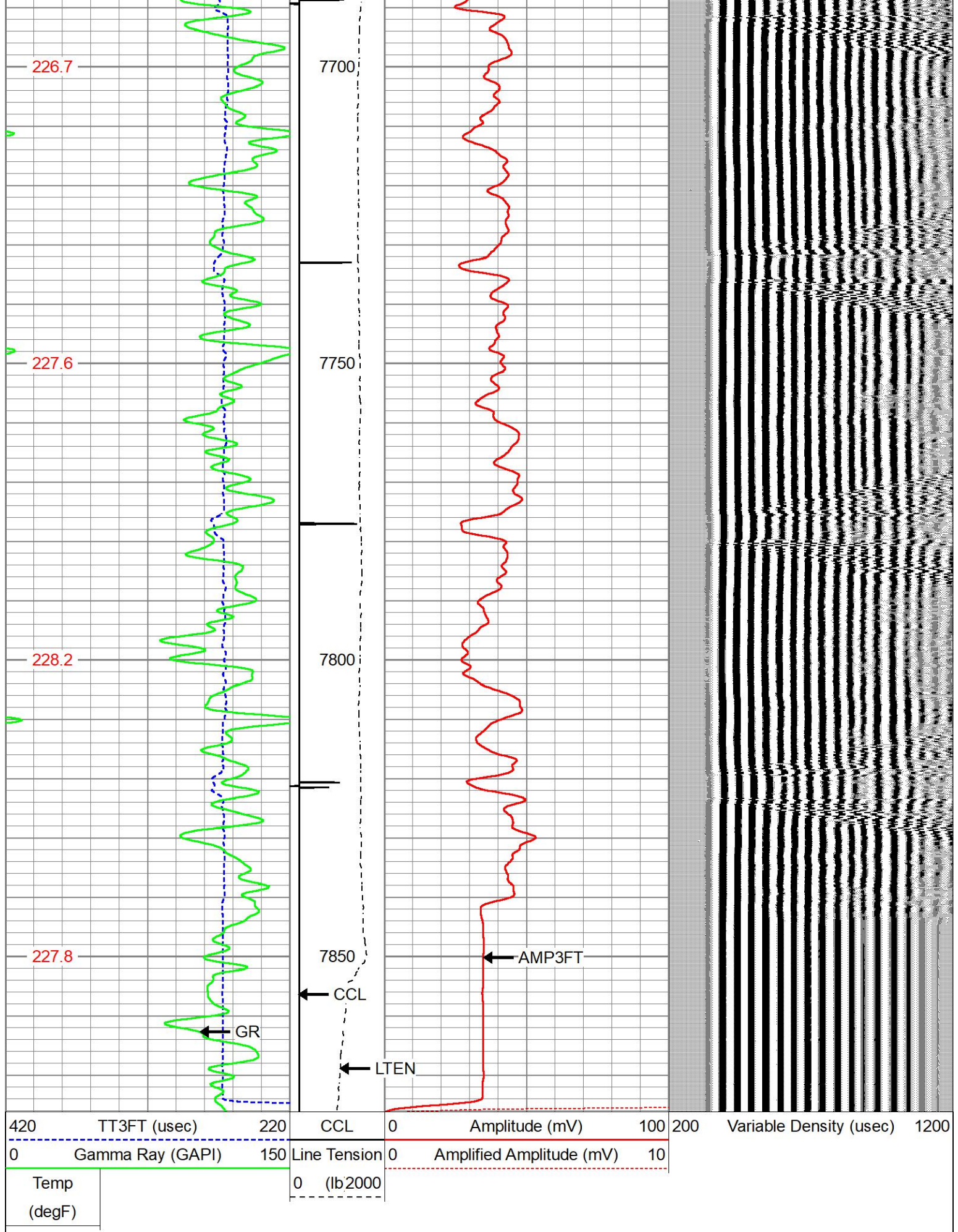






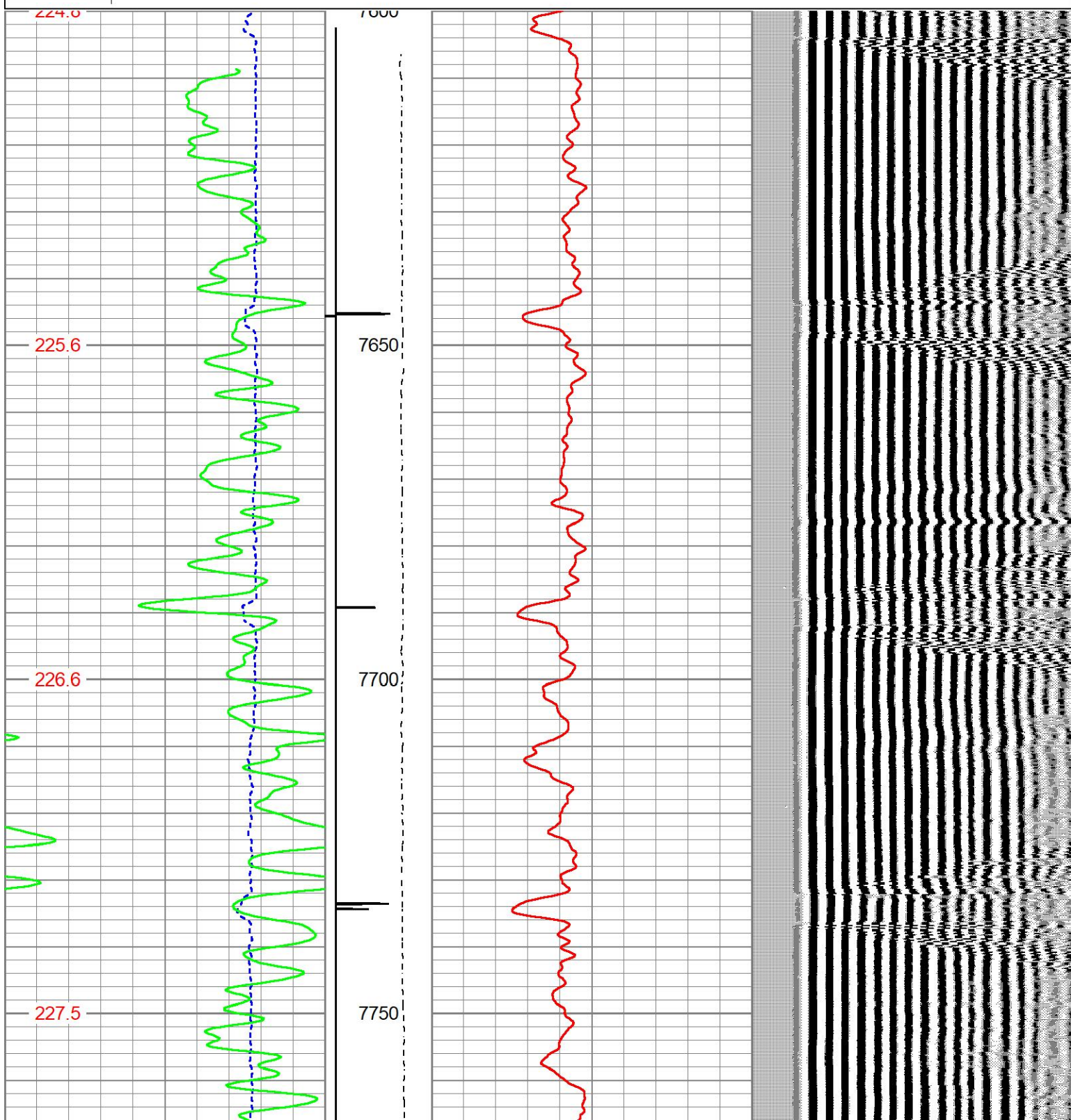


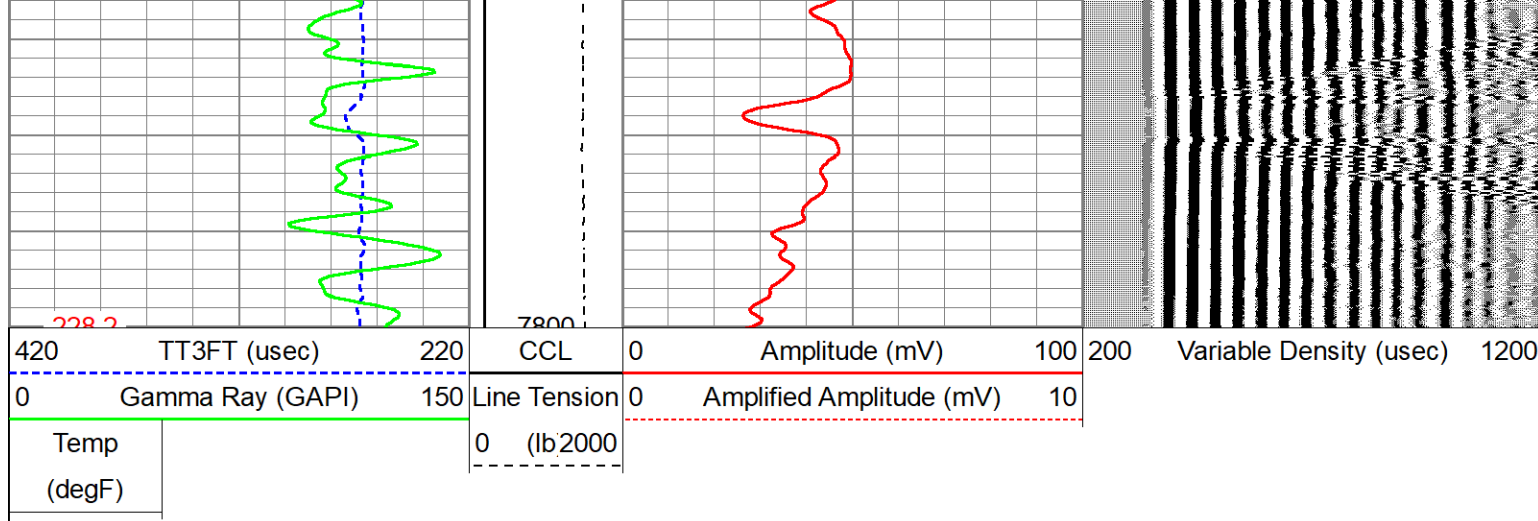




Database File gw_bfarm_ld18-391hnx.db
 Dataset Pathname 391HNX/RCBL/pass5
 Presentation Format cbl_cs
 Dataset Creation Sat Mar 23 17:29:33 2019
 Charted by Depth in Feet scaled 1:240

420	TT3FT (usec)	220	CCL	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	Line Tension	0	Amplified Amplitude (mV)	10			
Temp (degF)			0 (lb2000)						





Log Variables

DatabaseC:\ProgramData\Warrior\Data\gw_bfarm_Id18-391hnx.db
Dataset field/391HNX/RCBL/pass7/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	100	5.5	0	17	72	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		uSec	degF	ft			
0.8	No	0	0	7880			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Calibration Report

Database File gw_bfarm_Id18-391hnx.db
Dataset Pathname 391HNX/RCBL/pass7
Dataset Creation Sat Mar 23 17:34:40 2019

Gamma Ray Calibration Report

Serial Number: 081054
Tool Model: Probe
Performed: (Not Performed)

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: FW1306-47
Tool Model: Probe 2.75 Radii W/Temp

Calibration Casing Diameter: 5.500 in

Calibration Depth: 639.350 ft

Master Calibration, performed Sat Mar 23 17:02:19 2019:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.005	0.387	1.000	72.000	185.837	0.108
CAL	0.002	0.566				
5'	0.001	0.378	1.000	72.000	188.316	0.754
SUM						
S1	0.038	0.404	0.000	72.000	196.726	-7.449
S2	-0.000	0.385	0.000	72.000	187.056	0.073
S3	0.002	0.393	0.000	72.000	184.124	-0.330
S4	0.001	0.392	0.000	72.000	184.412	-0.212
S5	0.001	0.389	0.000	72.000	185.328	-0.165
S6	0.001	0.384	0.000	72.000	187.782	-0.167
S7	0.001	0.374	0.000	72.000	193.322	-0.245
S8	0.040	0.376	0.000	72.000	214.092	-8.470



Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.566	1.000	0.000

Air Zero Calibration, performed Sat Mar 23 16:51:17 2019:

	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	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HeadVolt	13.67		CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00

Temp	10.82						
				RBT-Probe 2.75 Radii W/Temp (FW1306-47) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	8.58						
WVFS7	8.58						
WVFS6	8.58						
WVFS5	8.58						
WVFS4	8.58						
WVFS3	8.58						
WVFS2	8.58						
WVFS1	8.58						
WVFCAL	8.58						
WVF3FT	8.58						
WVF5FT	7.58						
HEADVOLT	4.33						
CCL	3.64						
				GR-Probe (081054) Probe 2.75" 4 Channel Pulse	4.33	2.75	30.00
GR	0.90						
Dataset: gw_bfarm_ld18-391hnx.db: field/391HNX/RCBL/pass7 Total length: 14.73 ft Total weight: 125.00 lb O.D.: 2.75 in							

	Company	Great Western Operating Co				
	Well	B-Farm LD 18-391HNX				
	Field	Wattenberg				
	County	Adams				
	State	Colorado				
						Country USA