



**CEMENT BOND LOG W/
VARIABLE DENSITY,
GAMMA RAY, CCL, TEMP**

Company GREAT WESTERN OIL & GAS
Well OTTESSEN LE 09-368HC
Field Wattenberg
County Weld
State Colorado

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Location: API # : 05-123-44343
NWSE 33 1N 66W
40.0046/-104.777842
SEC 33 TWP 1N RGE 66W
Permanent Datum GL
Log Measured From KB
Drilling Measured From KB
Elevation 5076.5'
Other Services 4.50" G.R. J.B.
Elevation K.B. 5096.5'
D.F. ---
G.L. 5076.5'

Date 30-JAN-2019

Run Number TWO
Depth Driller 17,980'
Depth Logger 8000'
Bottom Logged Interval 7995'
Top Log Interval Surface
Open Hole Size NA
Type Fluid Fresh Water
Density / Viscosity 8.4
Max. Recorded Temp. 254°
Estimated Cement Top SEE LOG
Time Well Ready ROA
Time Logger on Bottom 15:52 PM
Equipment Number 80
Location Platteville, CO
Recorded By JOSEPH FRESQUEZ
Witnessed By ETHAN SAVOYA

Run Number Bit From To Size Weight From To

Casing Record Size Vguf't Top Bottom
Surface String 9-5/8" 36# SURFACE 1773'
Prot. String
Production String 5-1/2" 17# SURFACE 17,980'
Liner

<<< 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.

Comments

Cement Bond Log ran as per customer request
Depth Correlated to Casing Tally reported Marker Joint @ 7738 FT
Adjusted log +20 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 8140 FT with no debris
Log ran from 8000 FT to surface
Log ran with 0 PSI Surface Induced Pressure.

Thank you for choosing KLX Energy Services!!

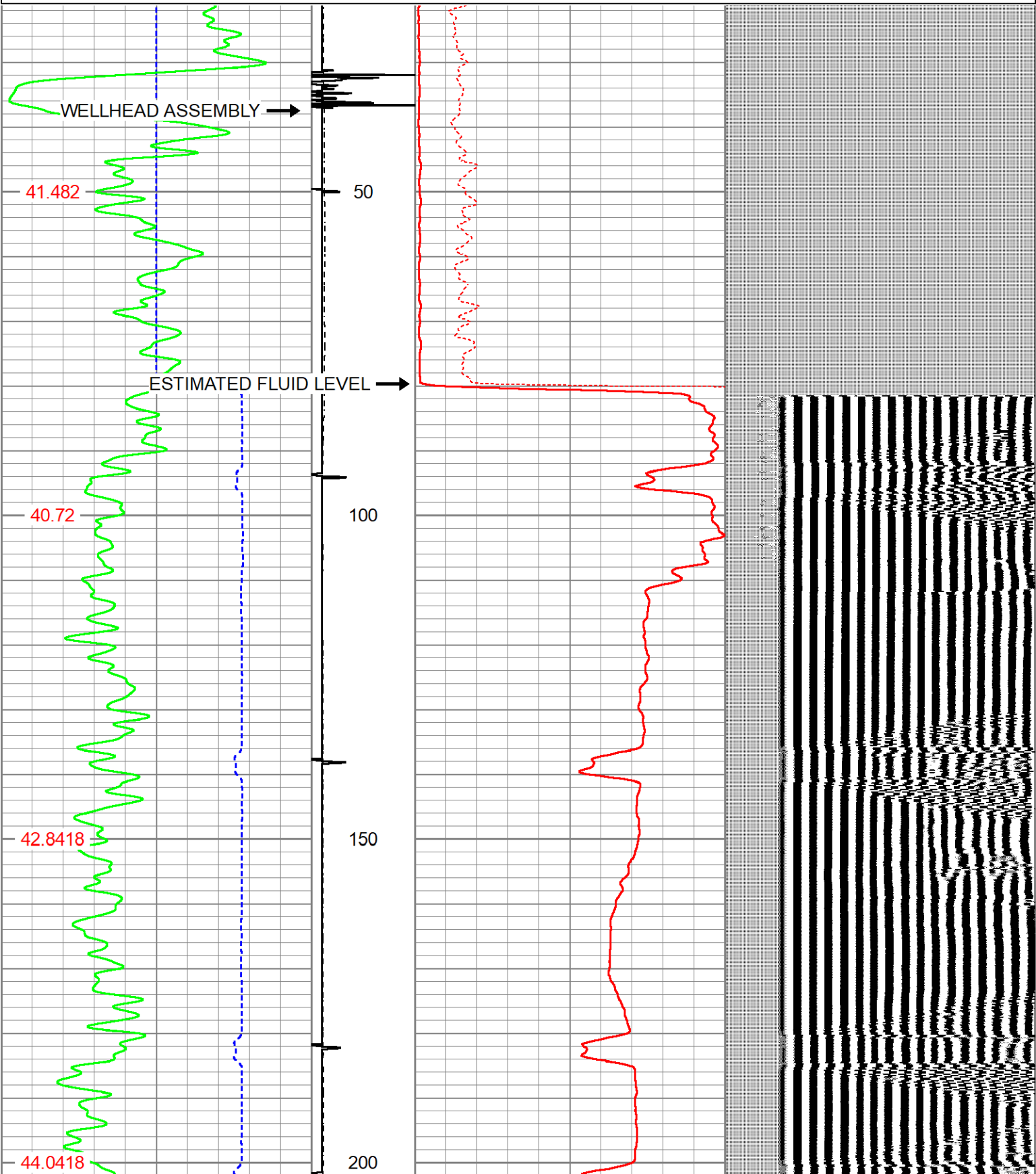


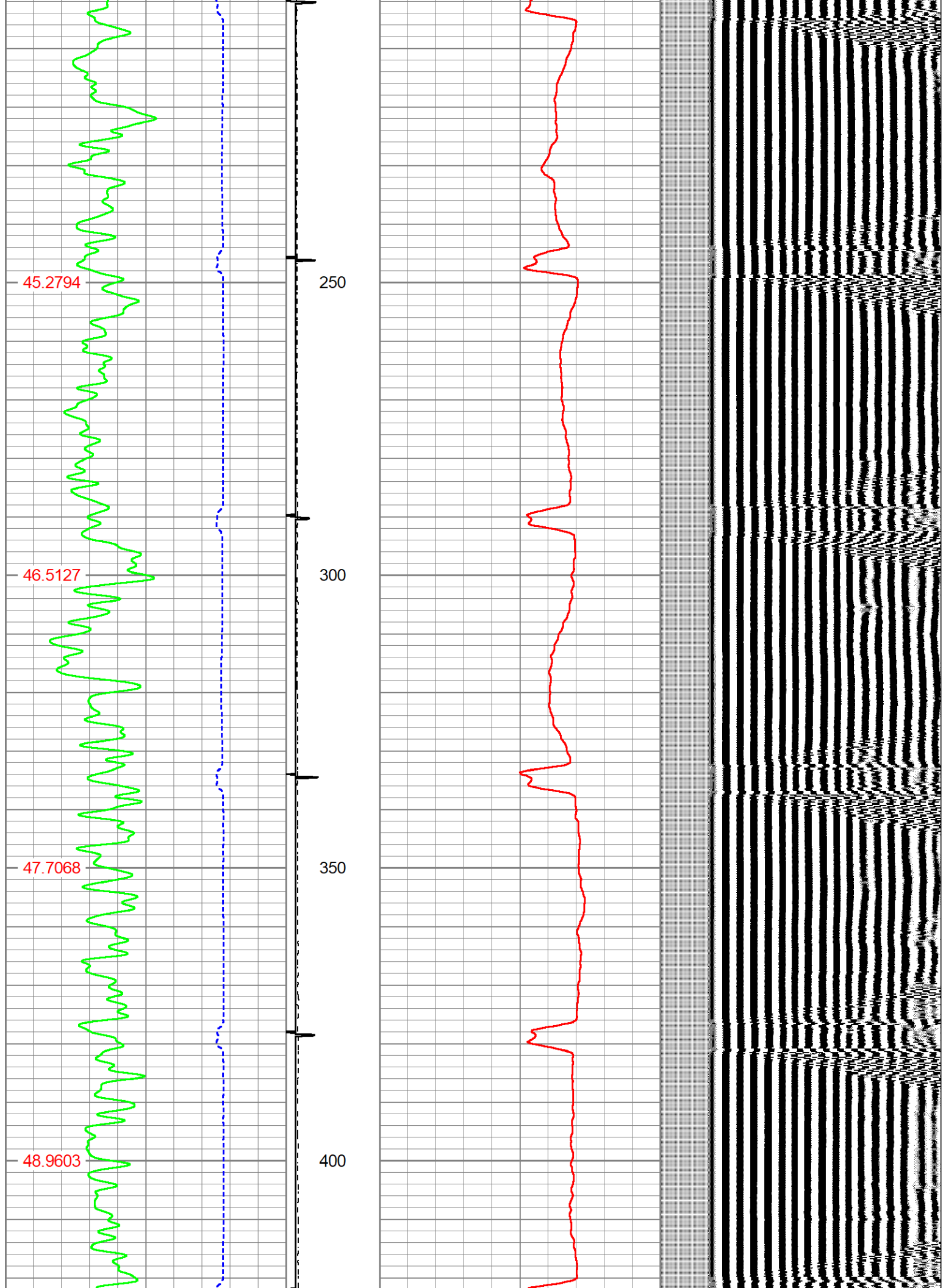
MAIN PASS

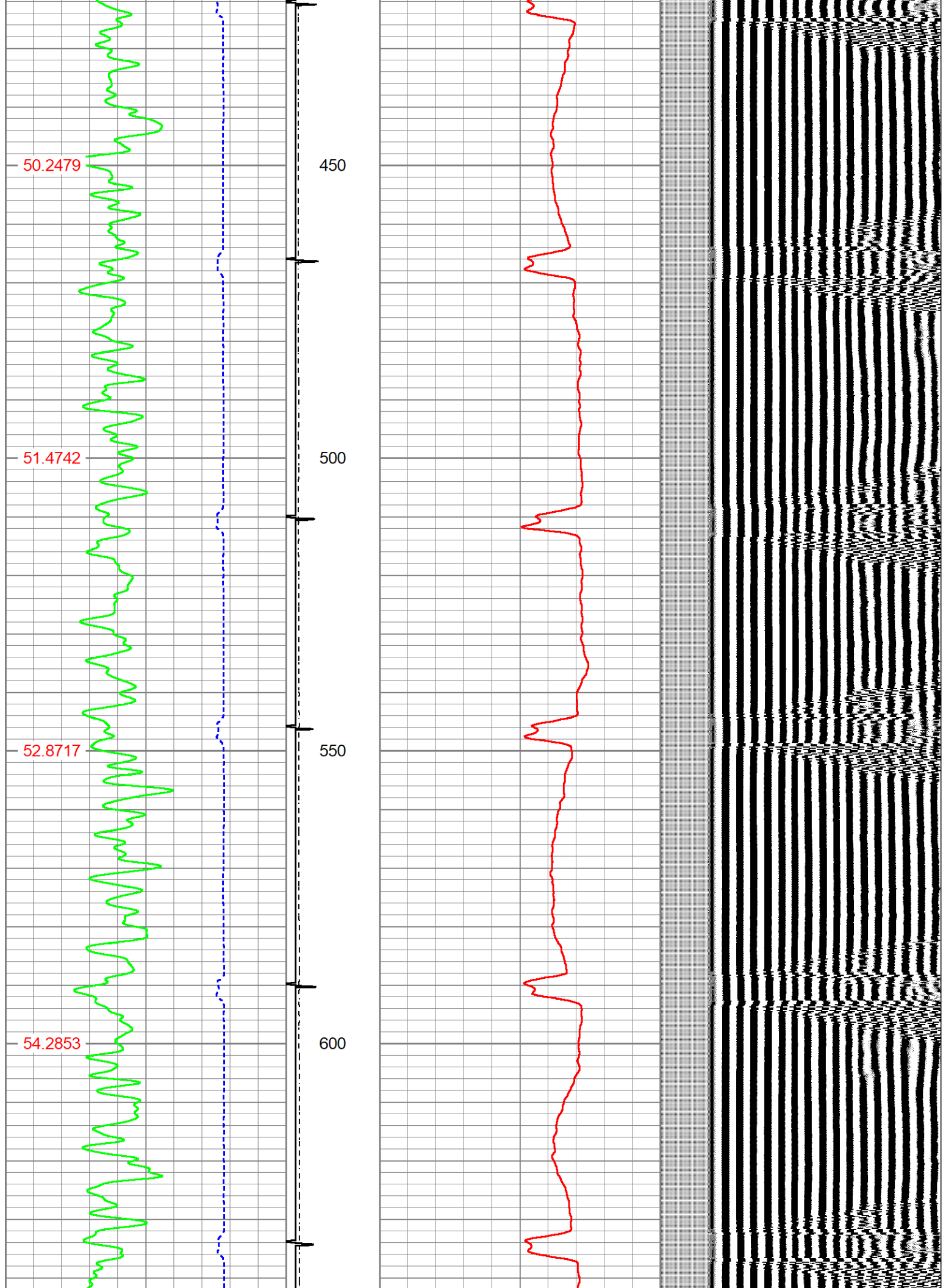
RECORDED WITH 0 PSI SURFACE INDUCED PRESSURE.

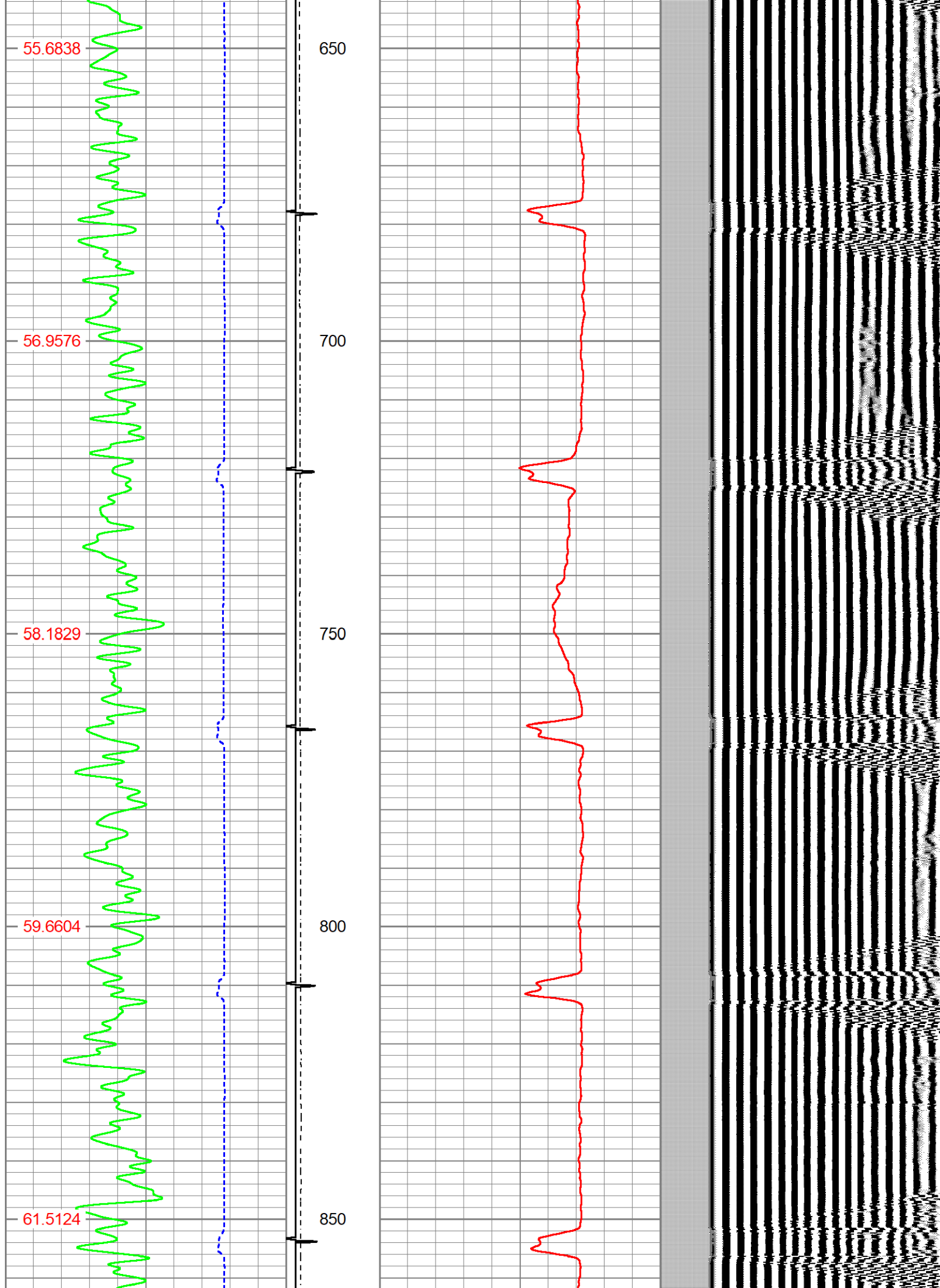
Database File	gw_ottesen_le09-368hc_30_2019.db
Dataset Pathname	368HC/cbl1/pass7
Presentation Format	cbl_cs
Dataset Creation	Wed Jan 30 15:52:29 2019
Charted by	Depth in Feet scaled 1:240

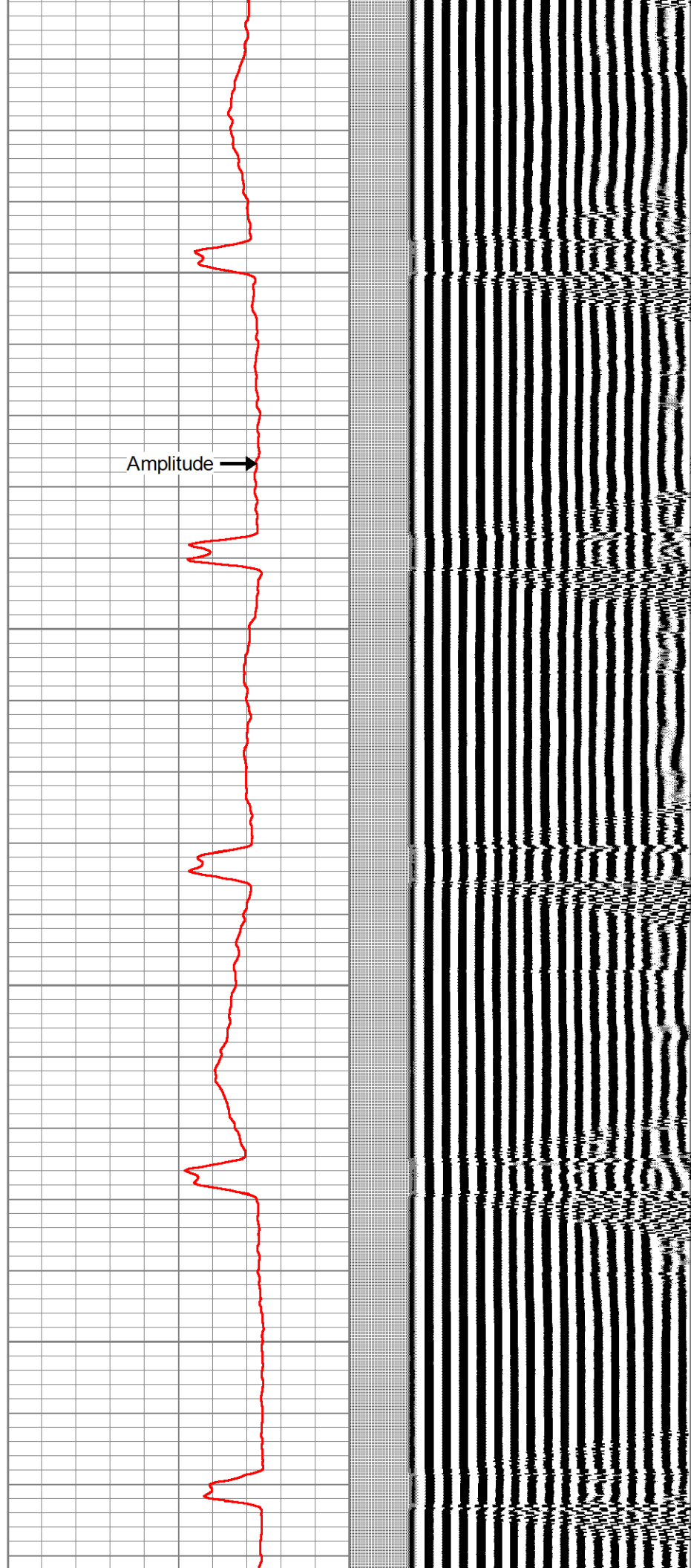
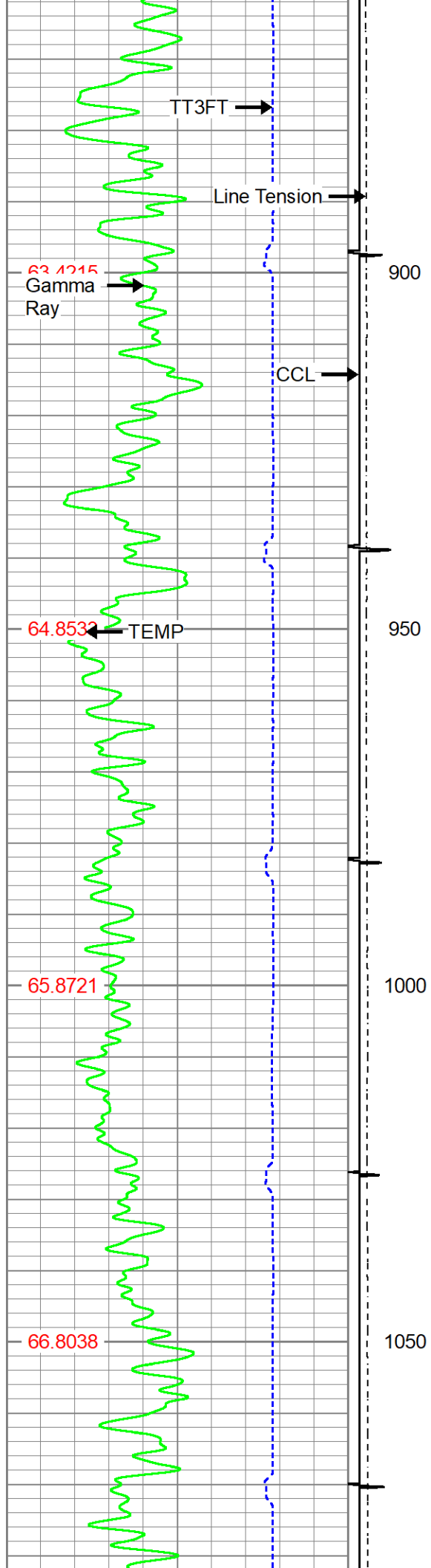
420	TT3FT (usec)	220	CCL	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	Line Tension	0	Amplified Amplitude (mV)	10			
TEMP		0	(lb)2000						
(degF)									

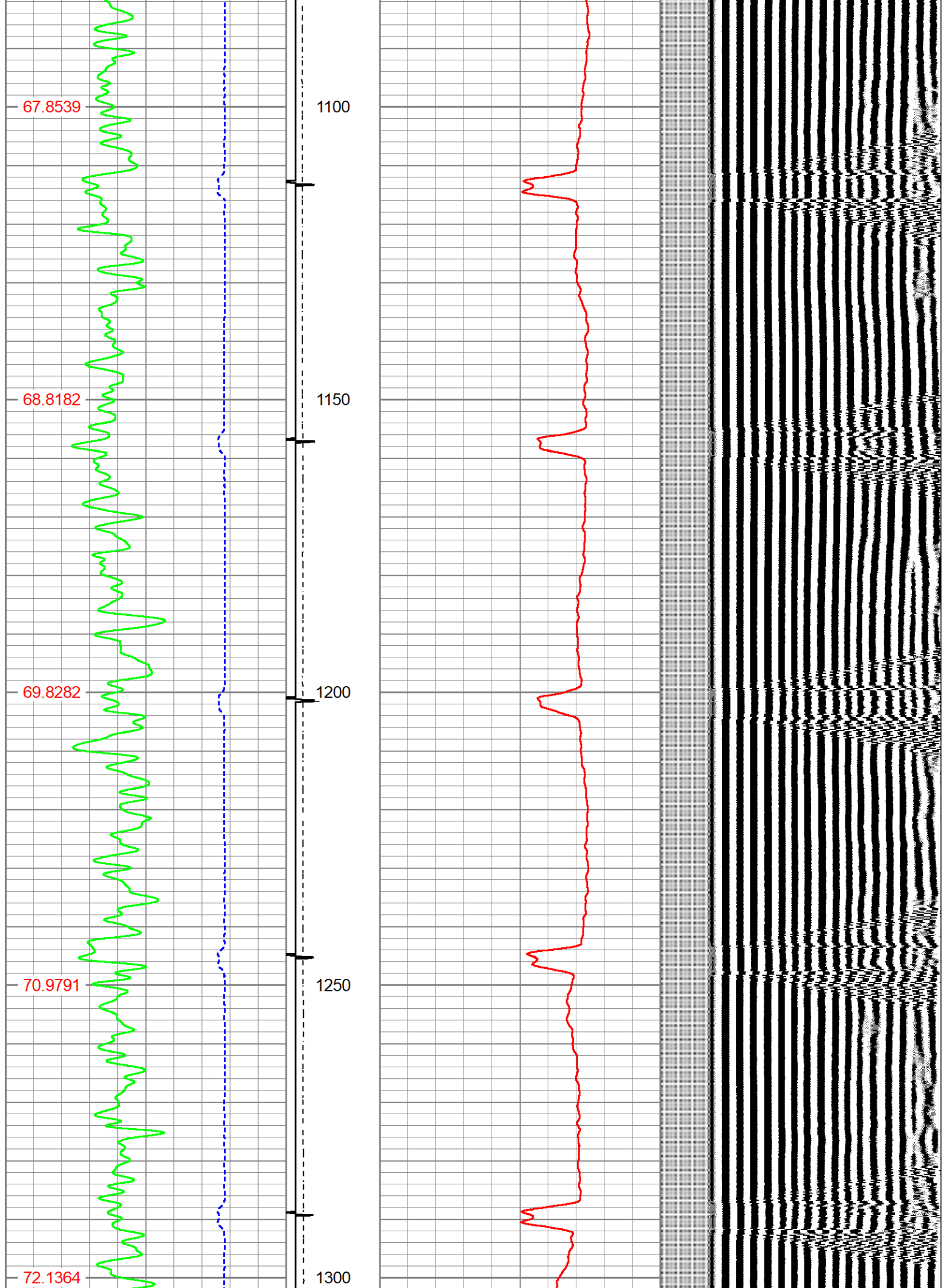


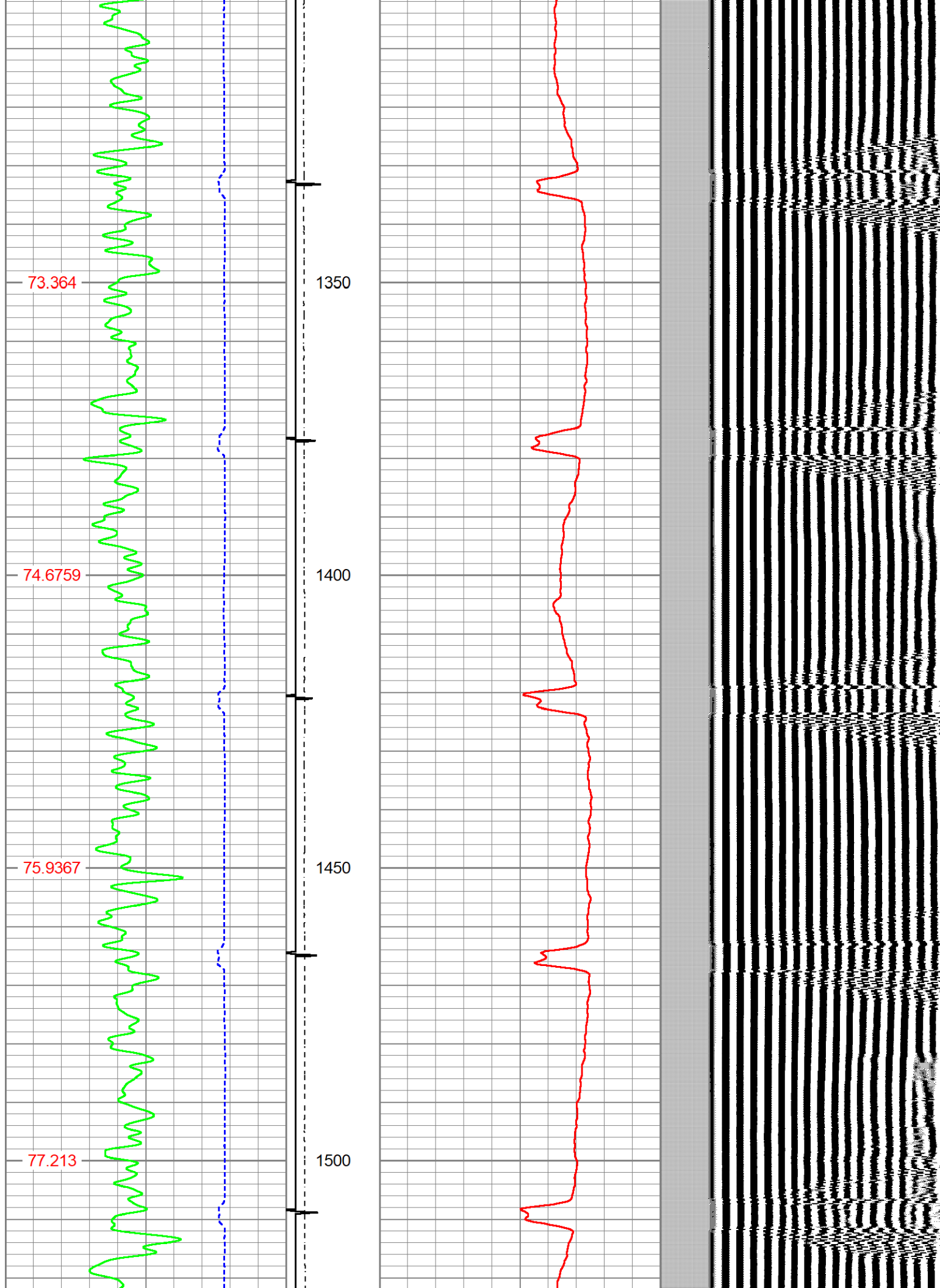


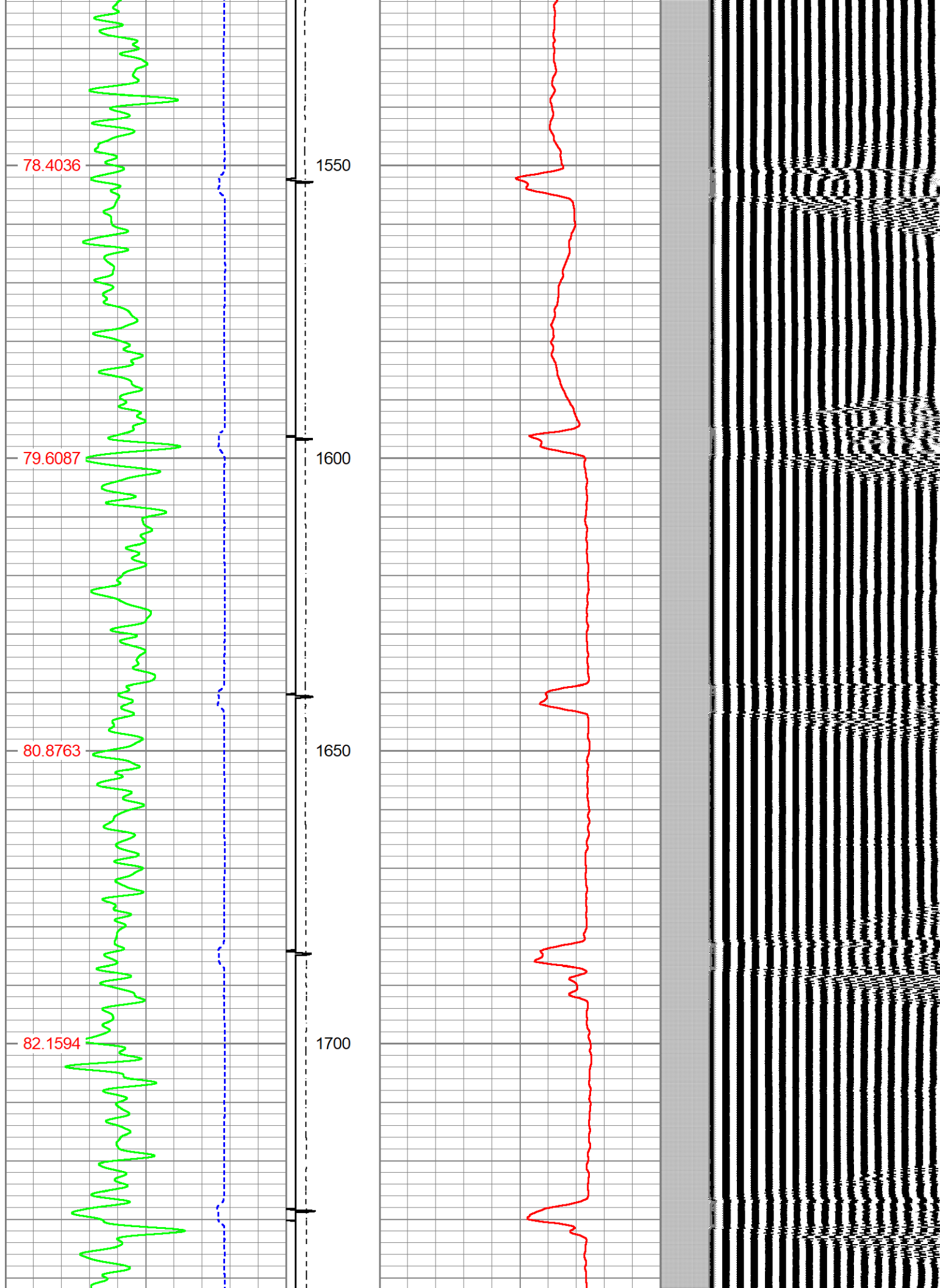


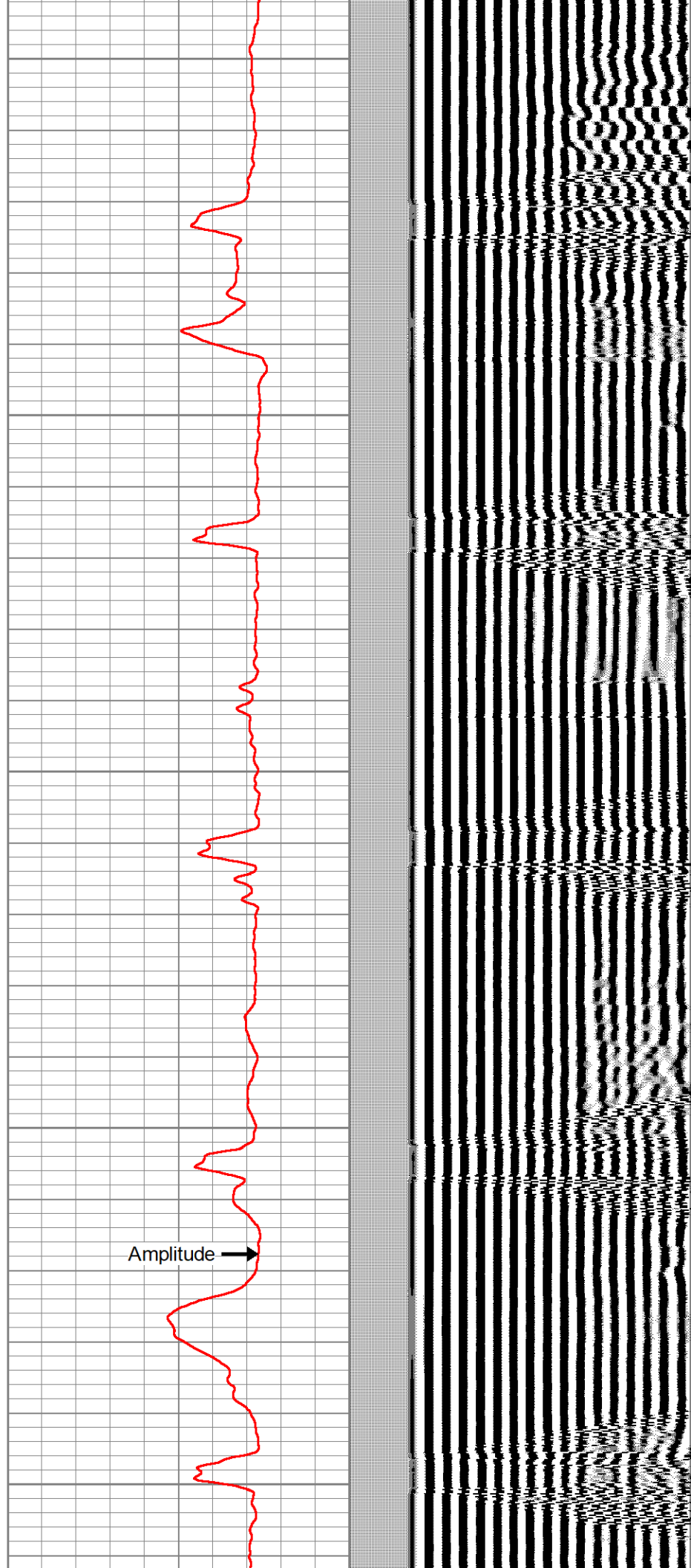
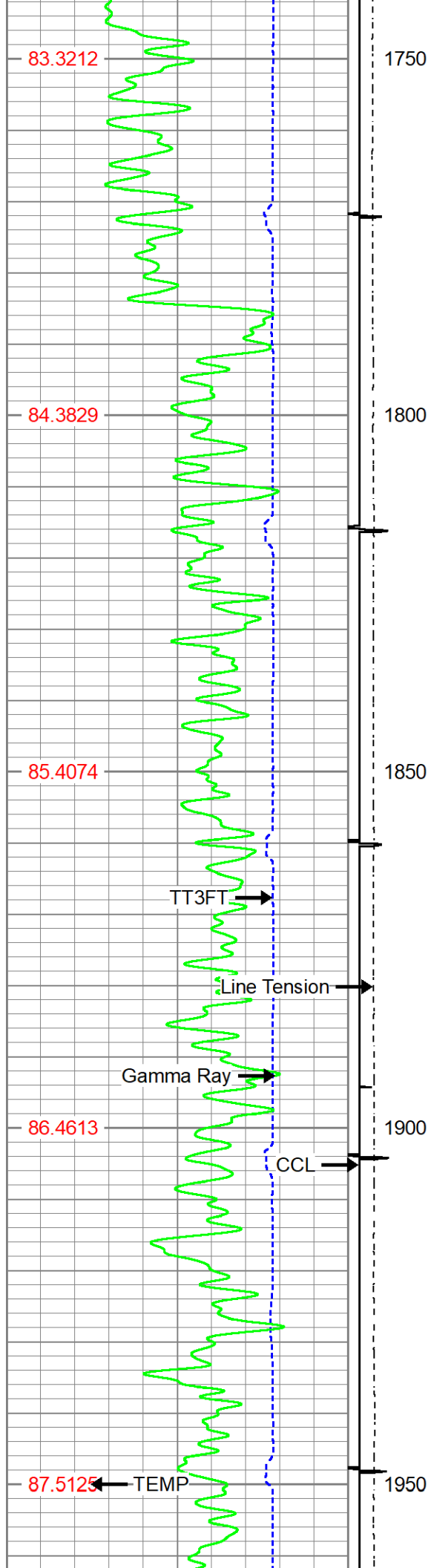


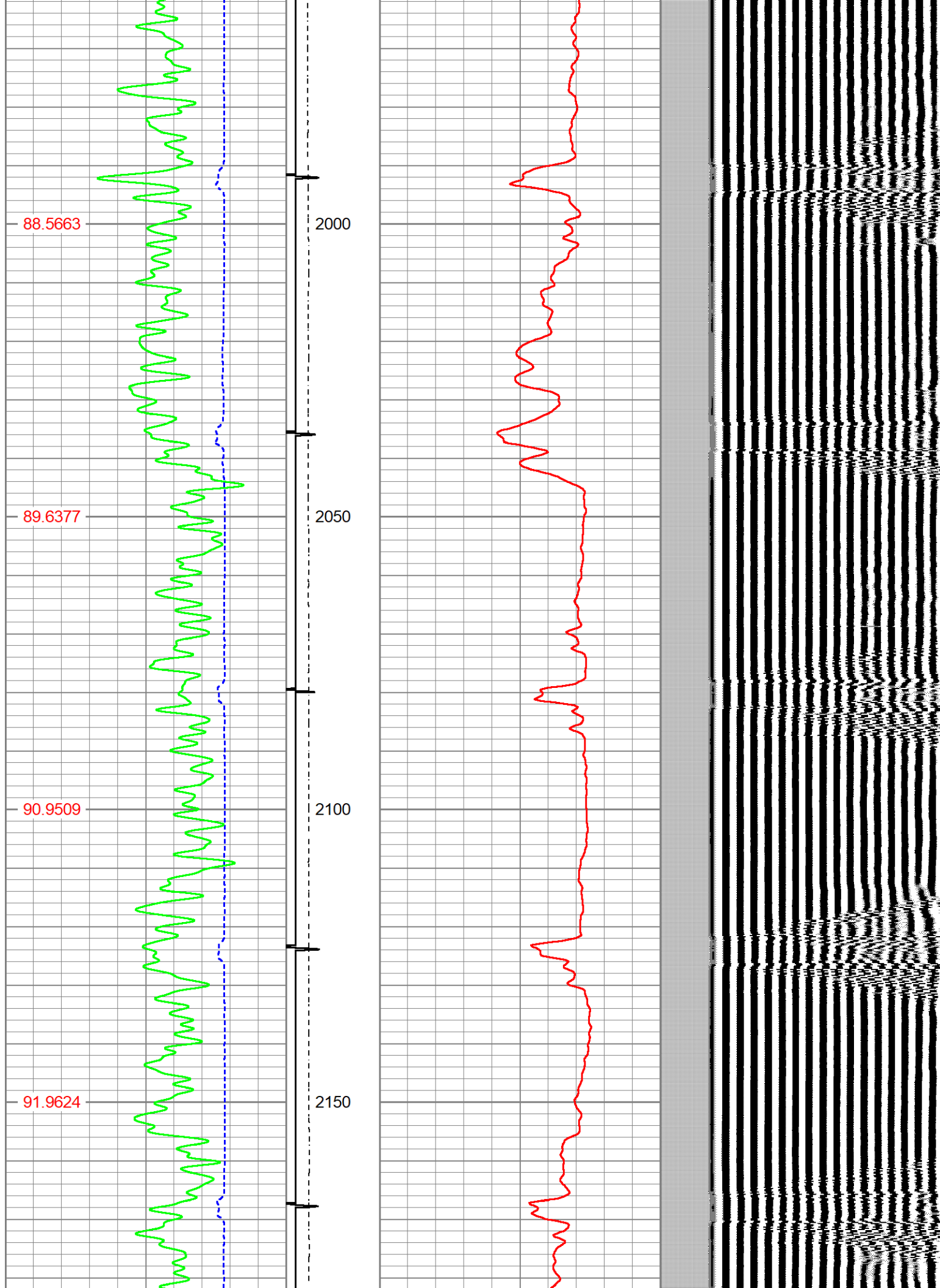


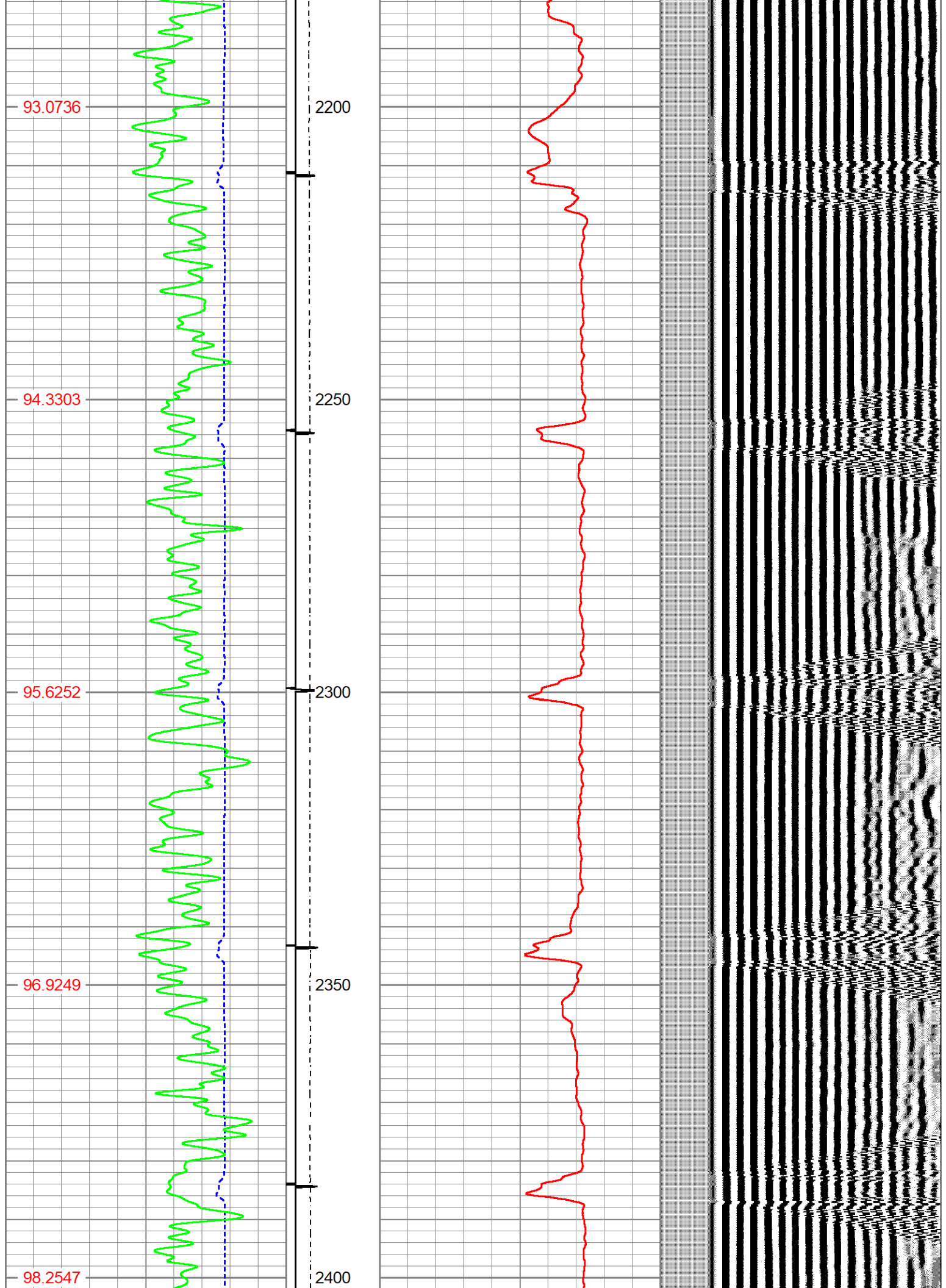


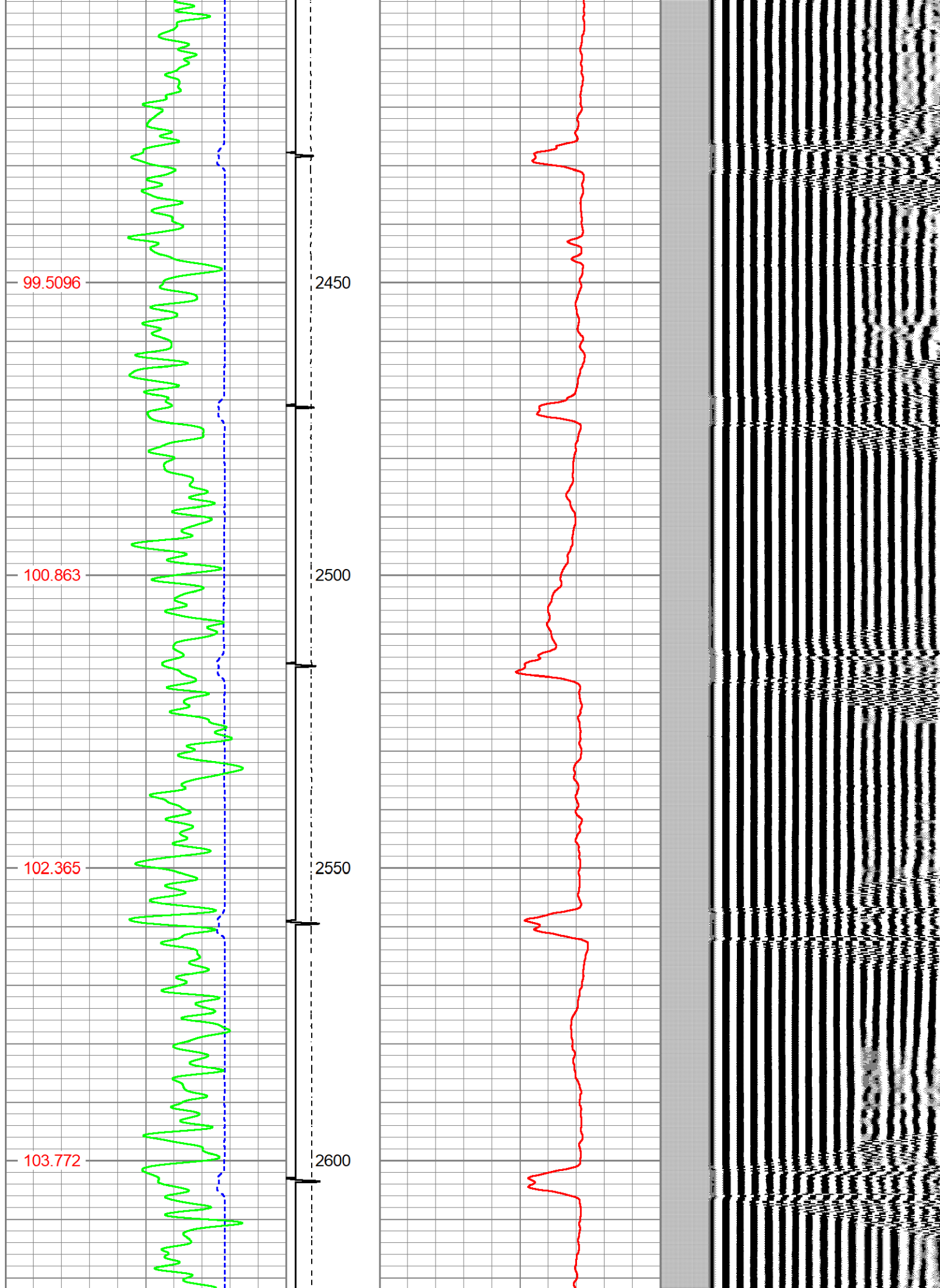


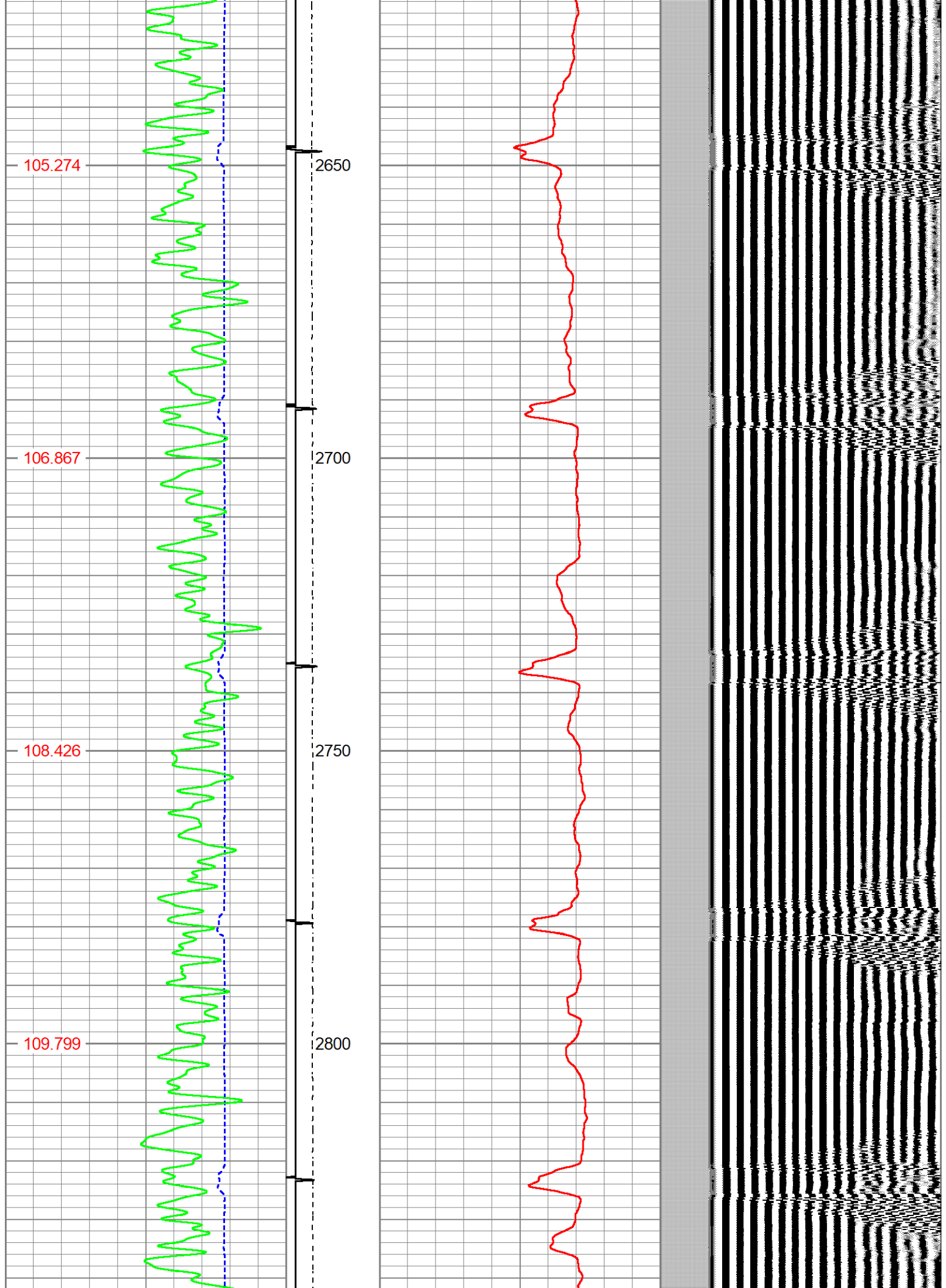


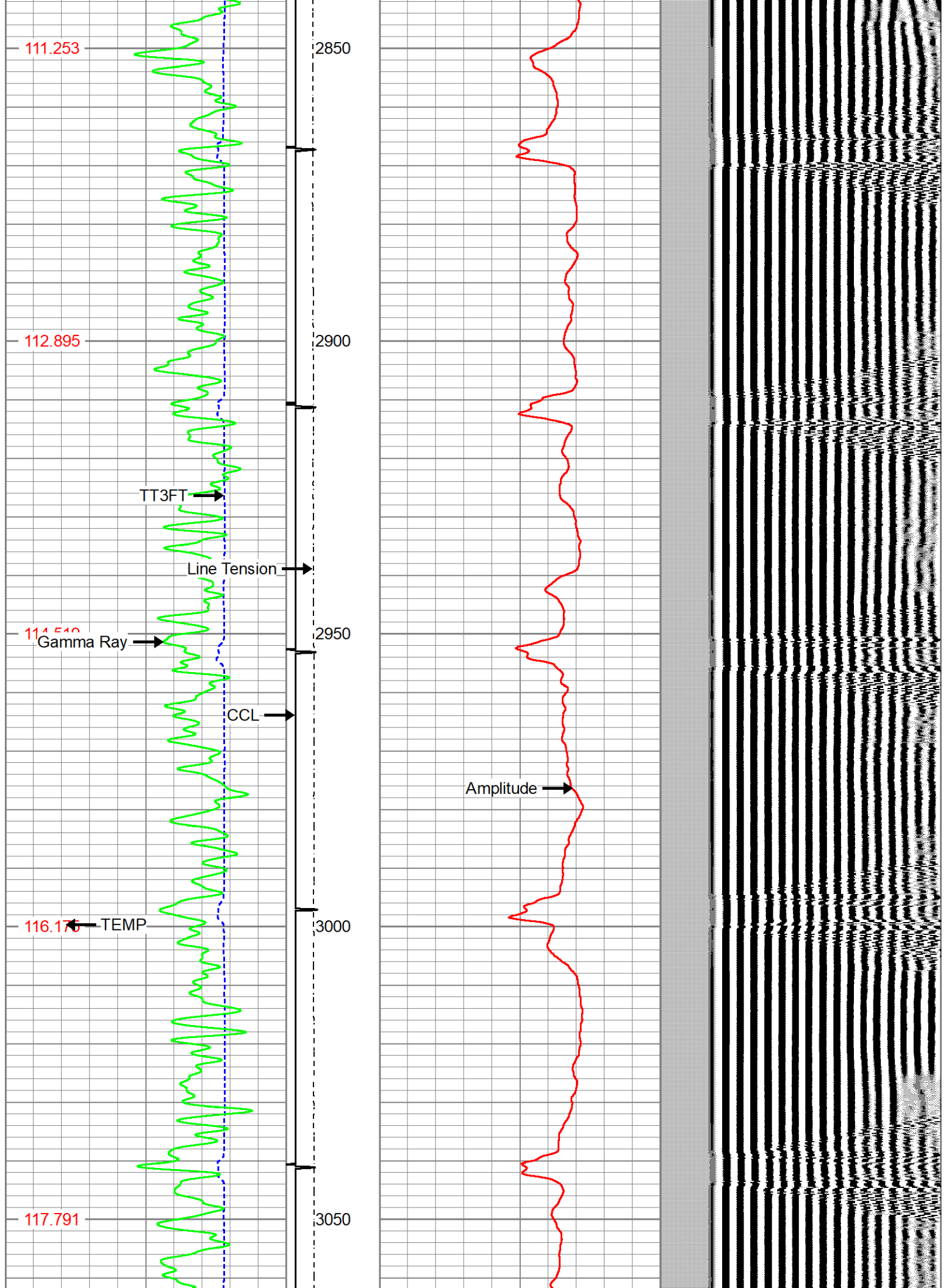


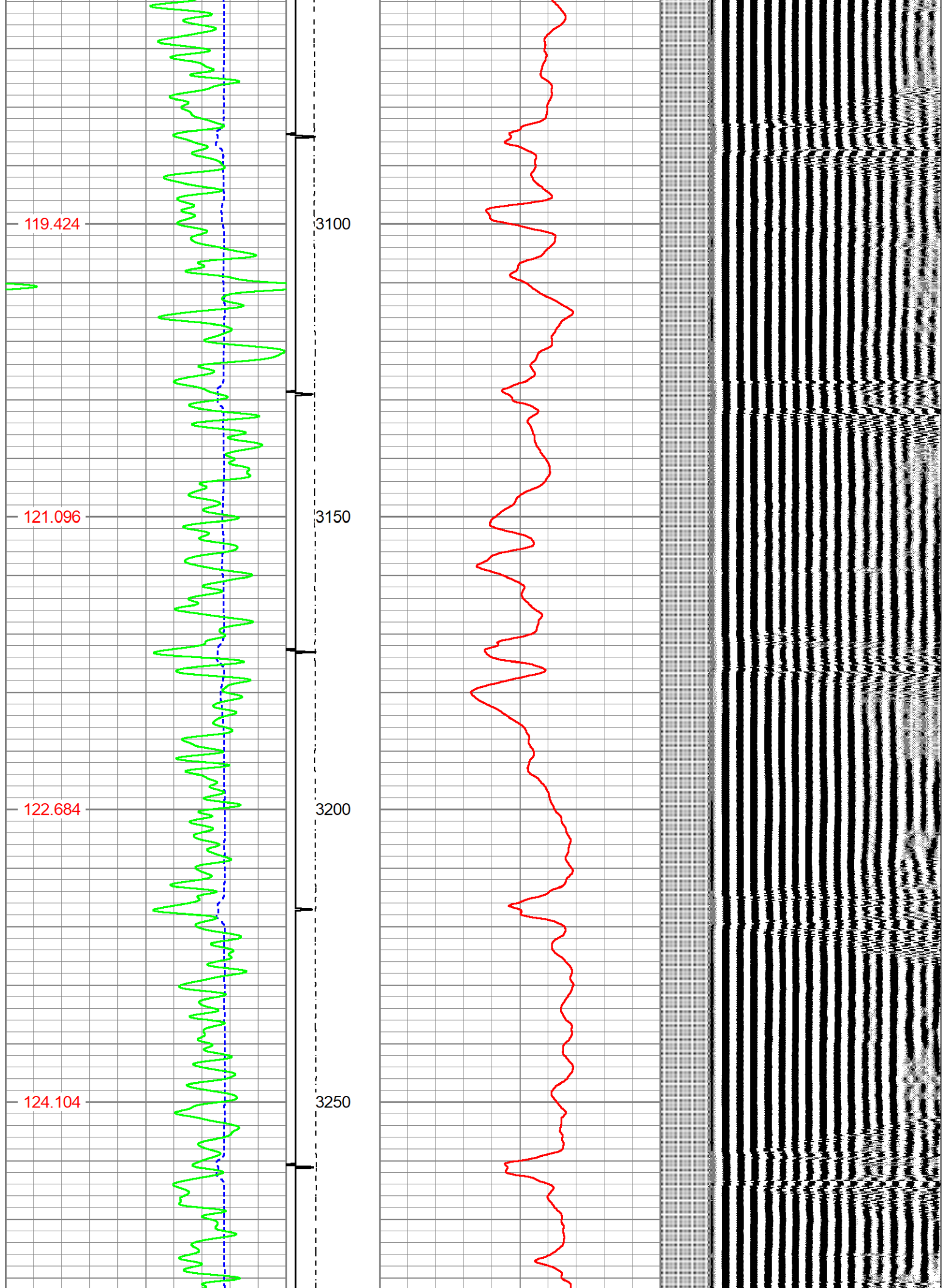


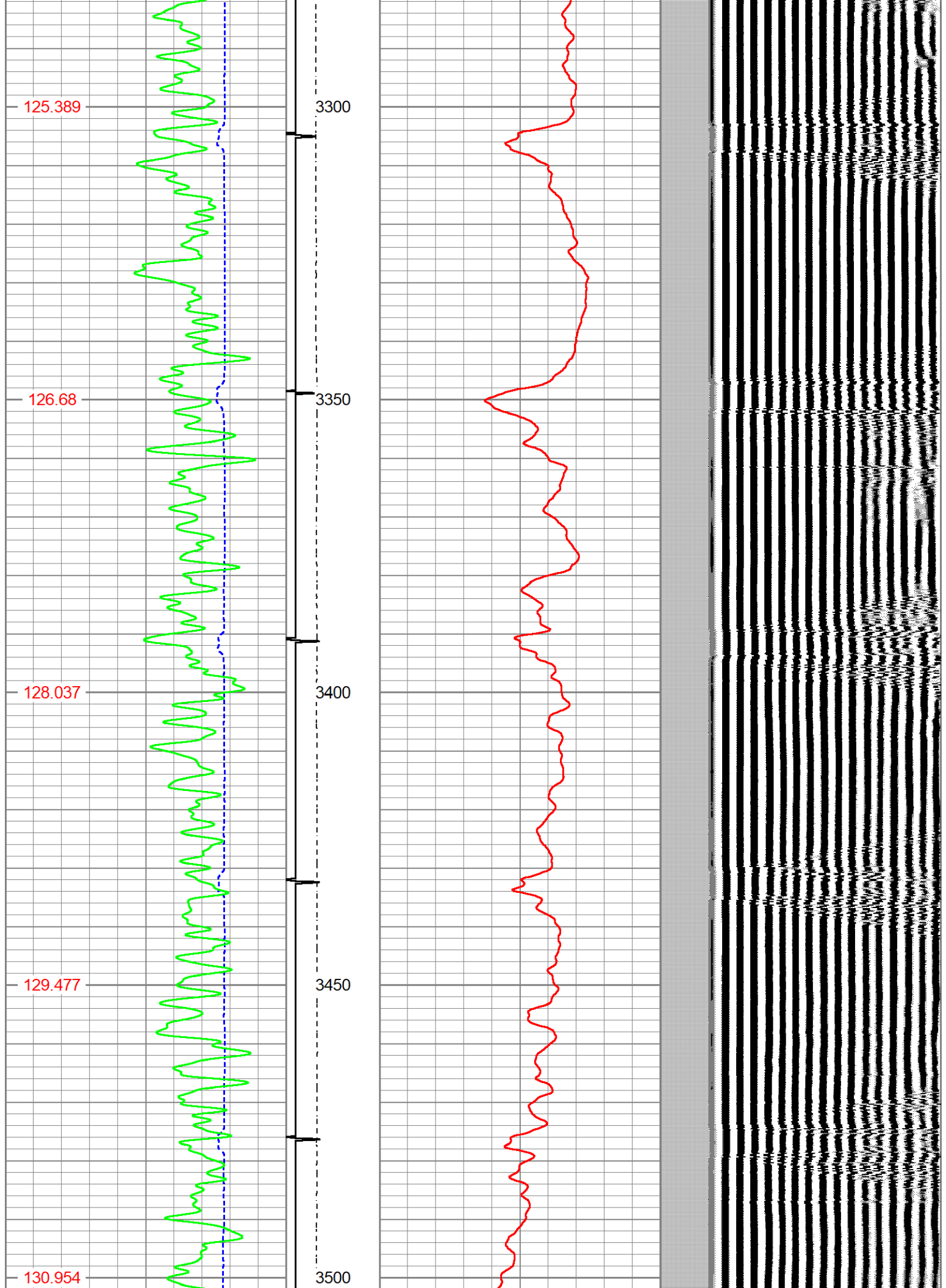


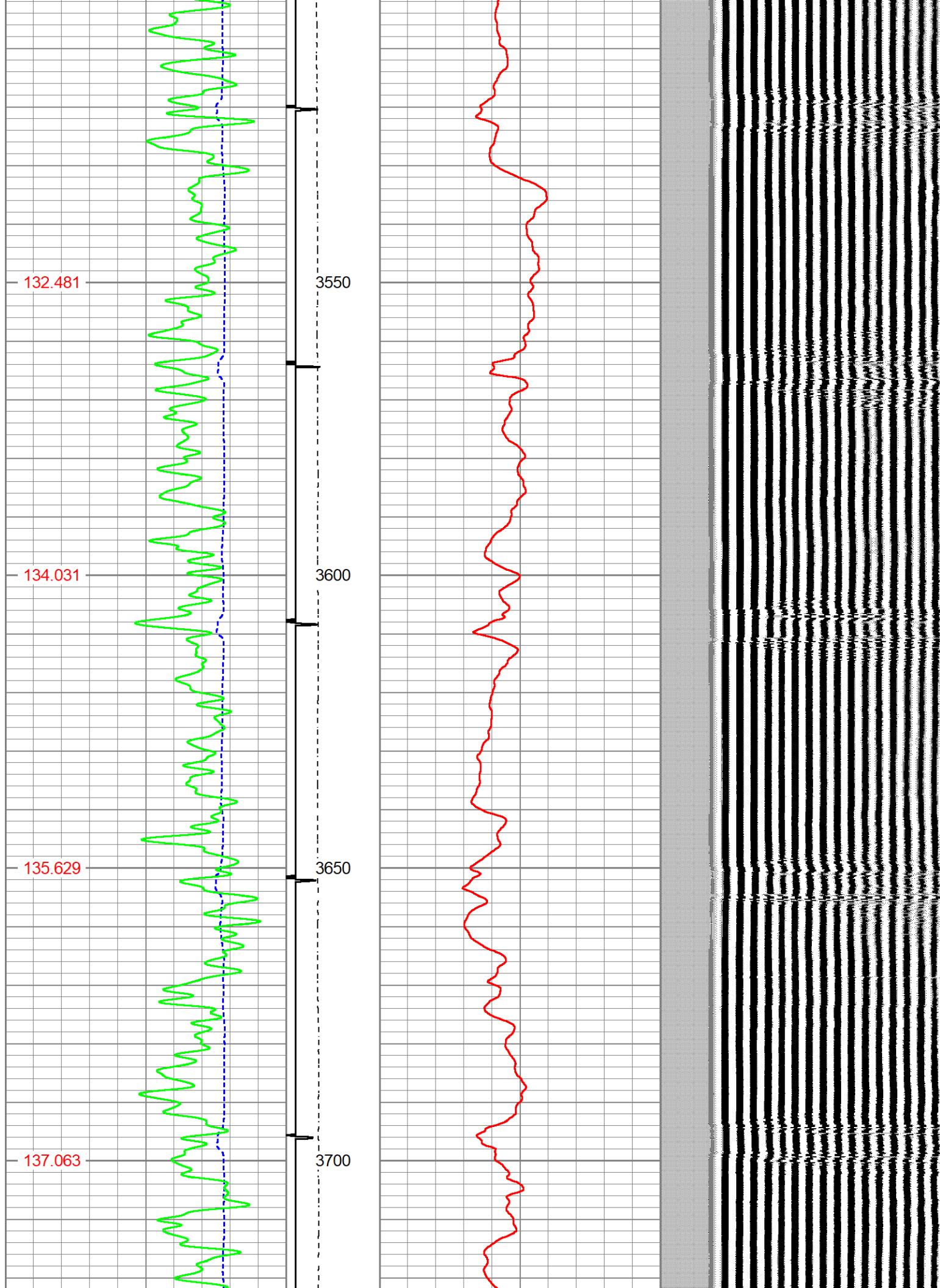


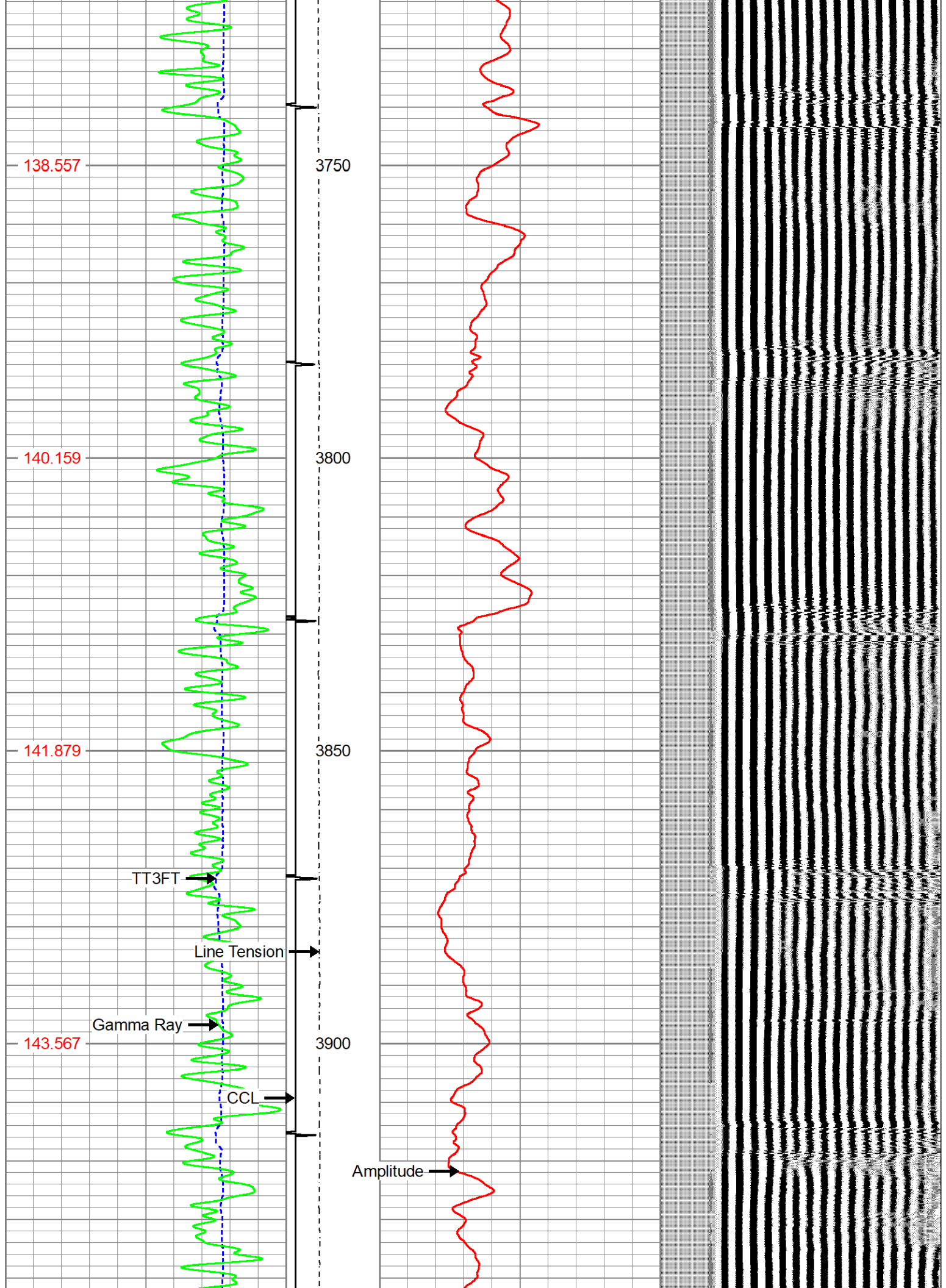


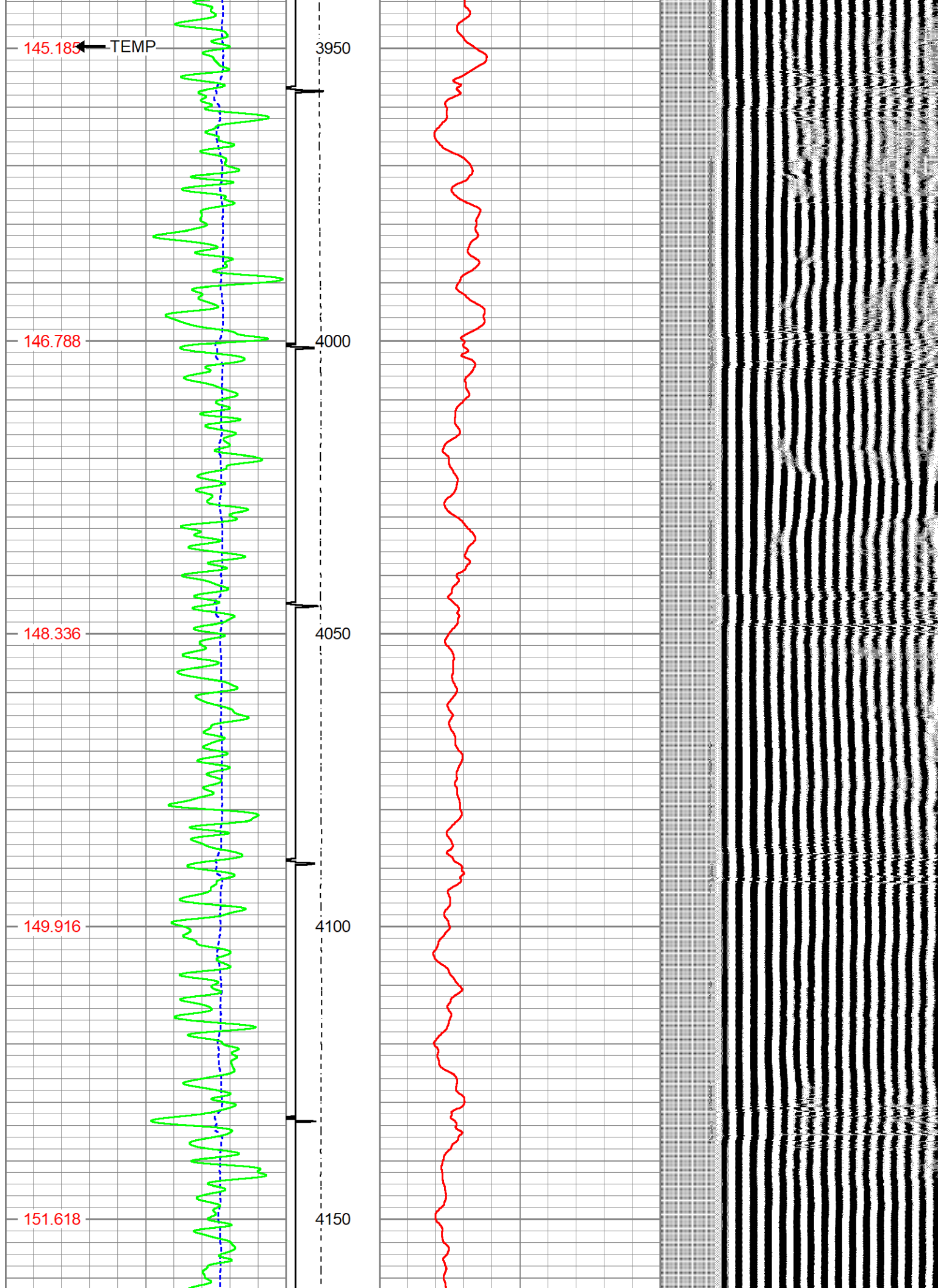


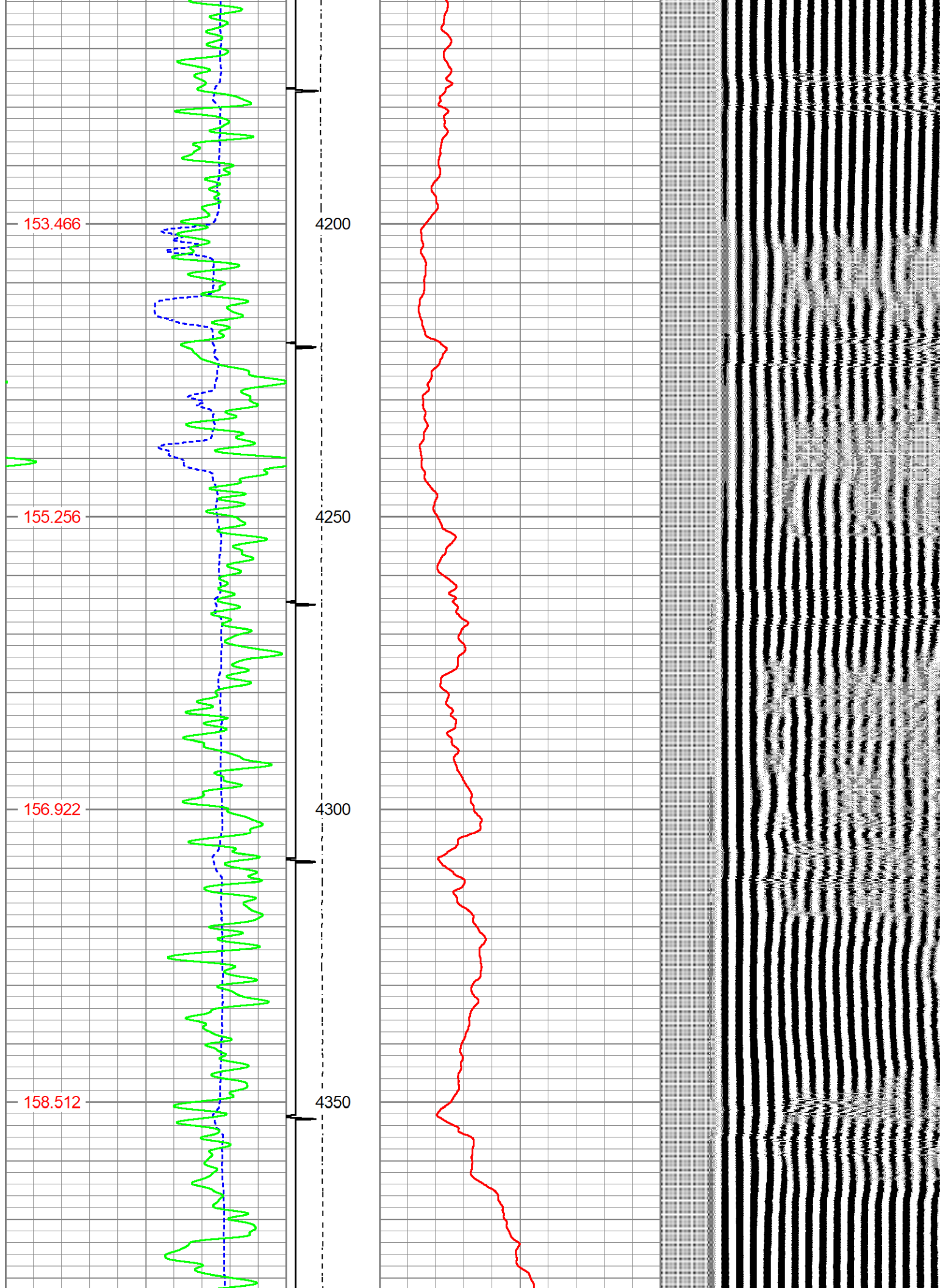


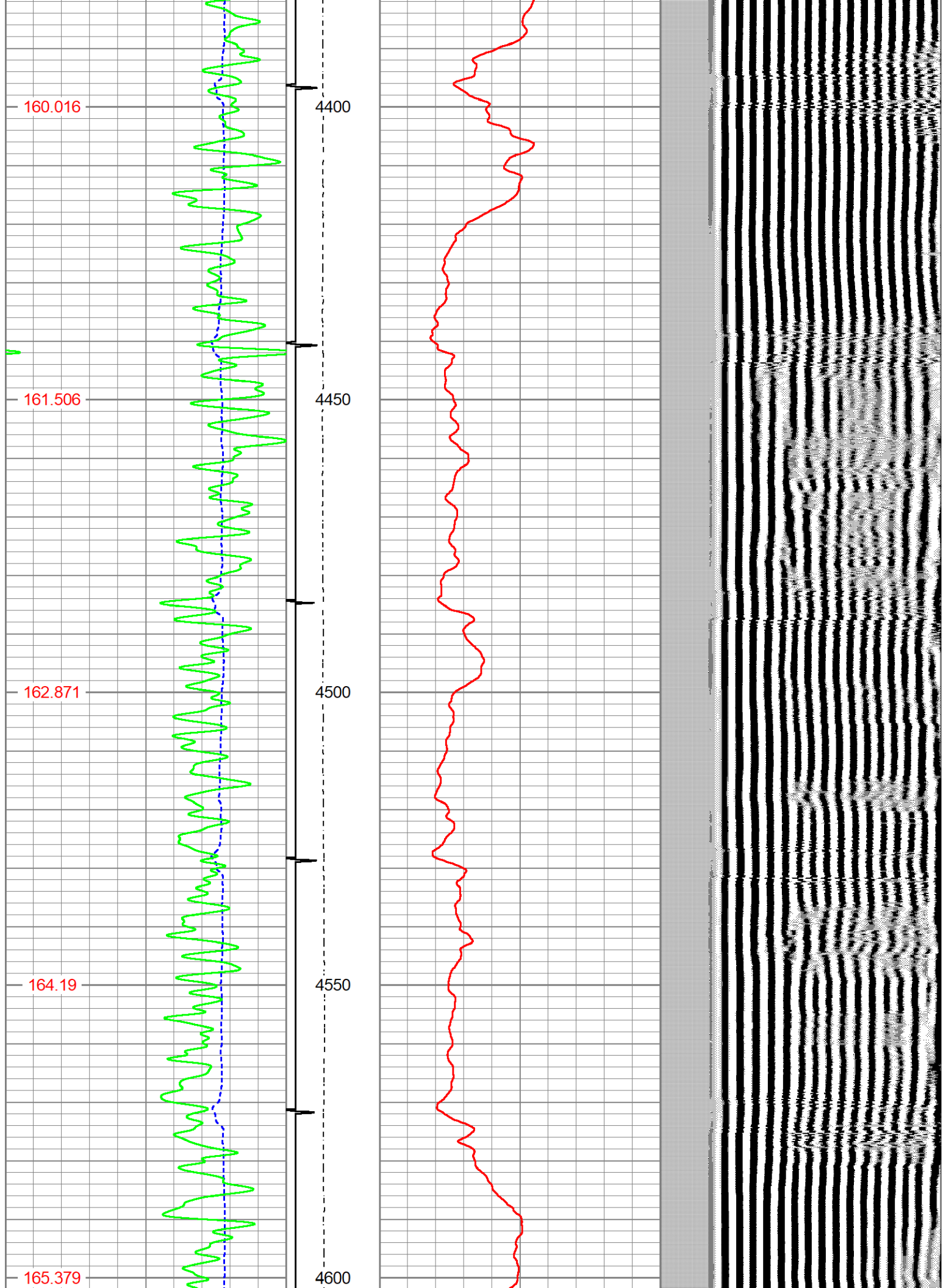


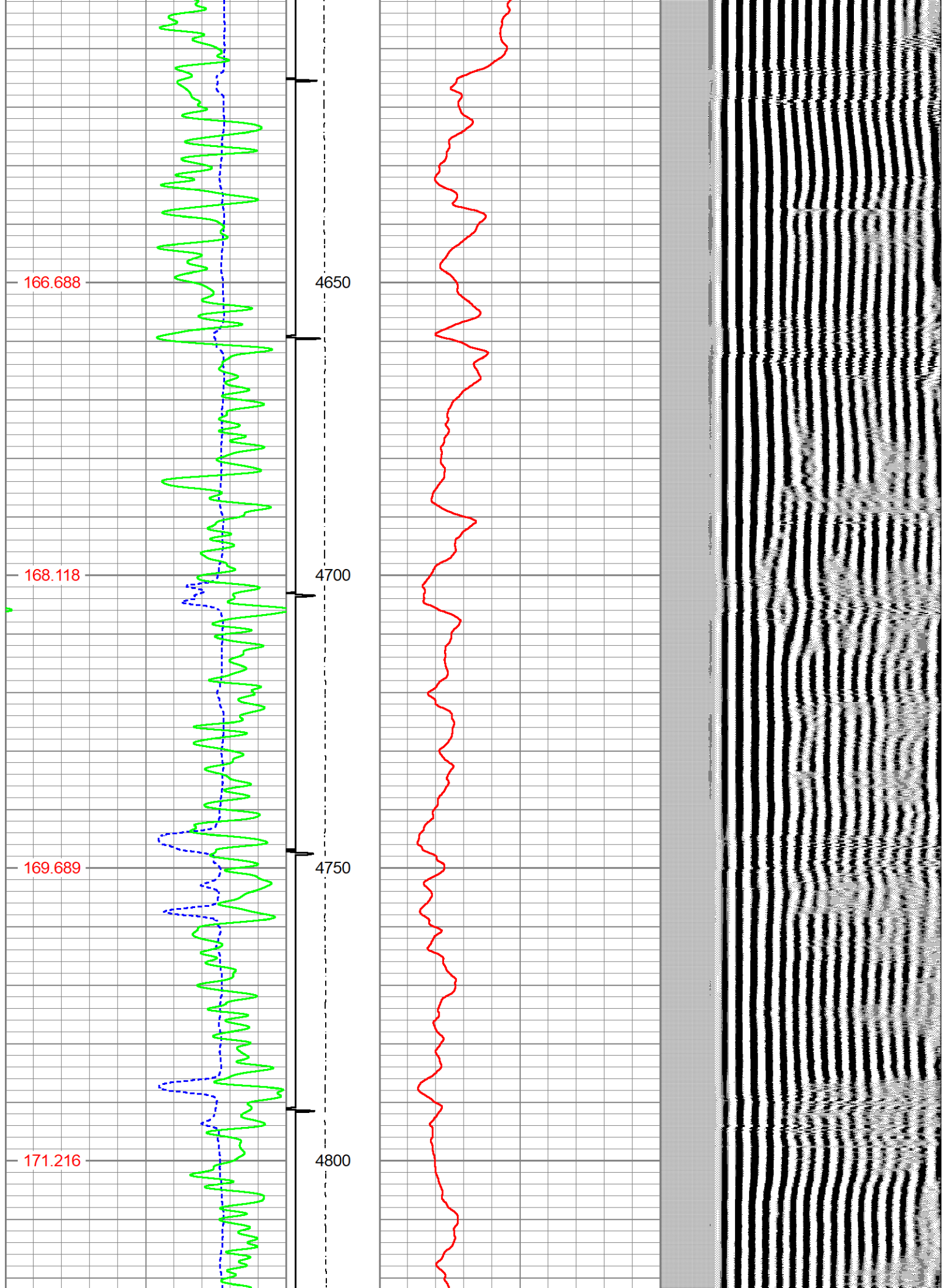


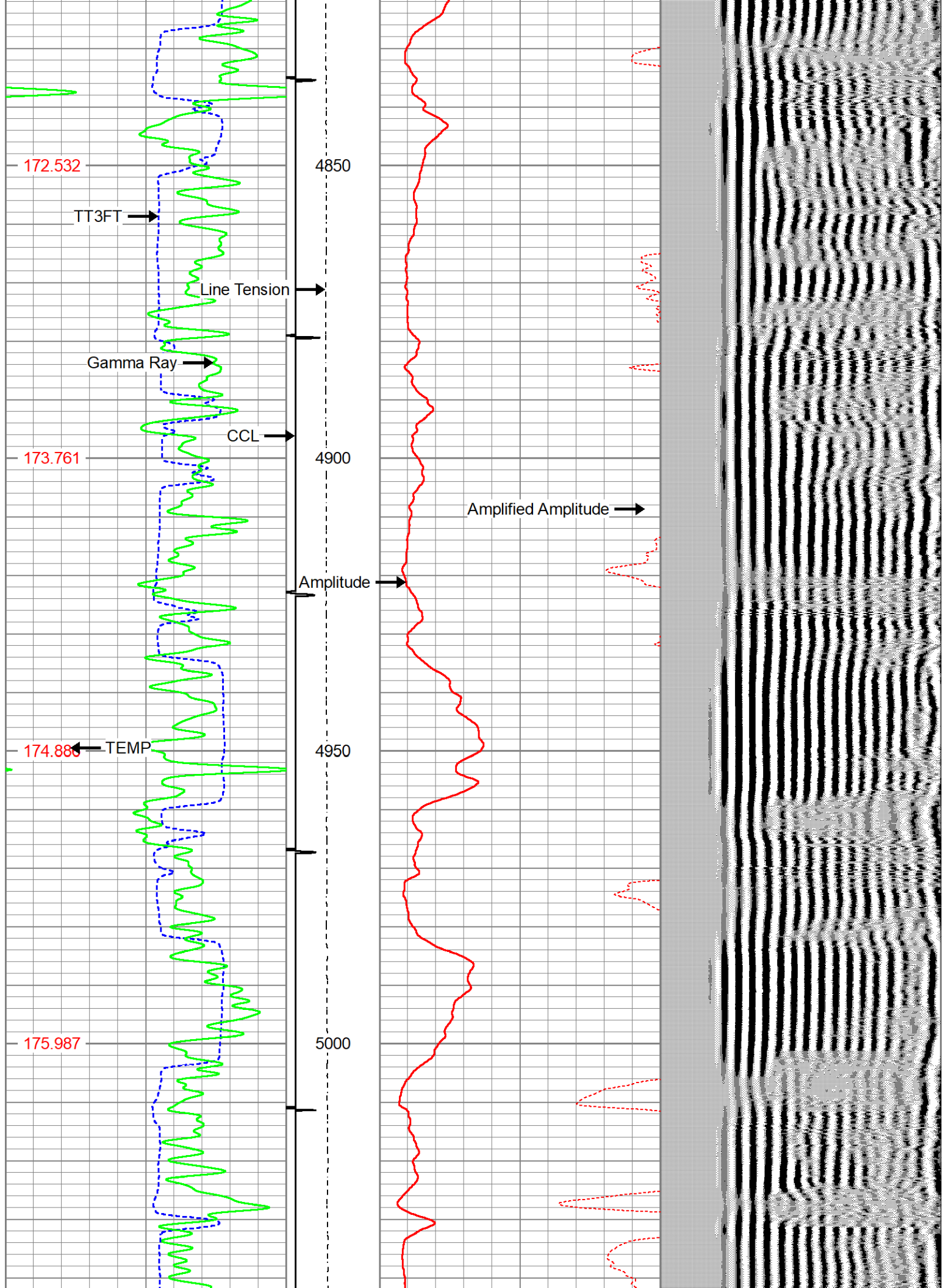


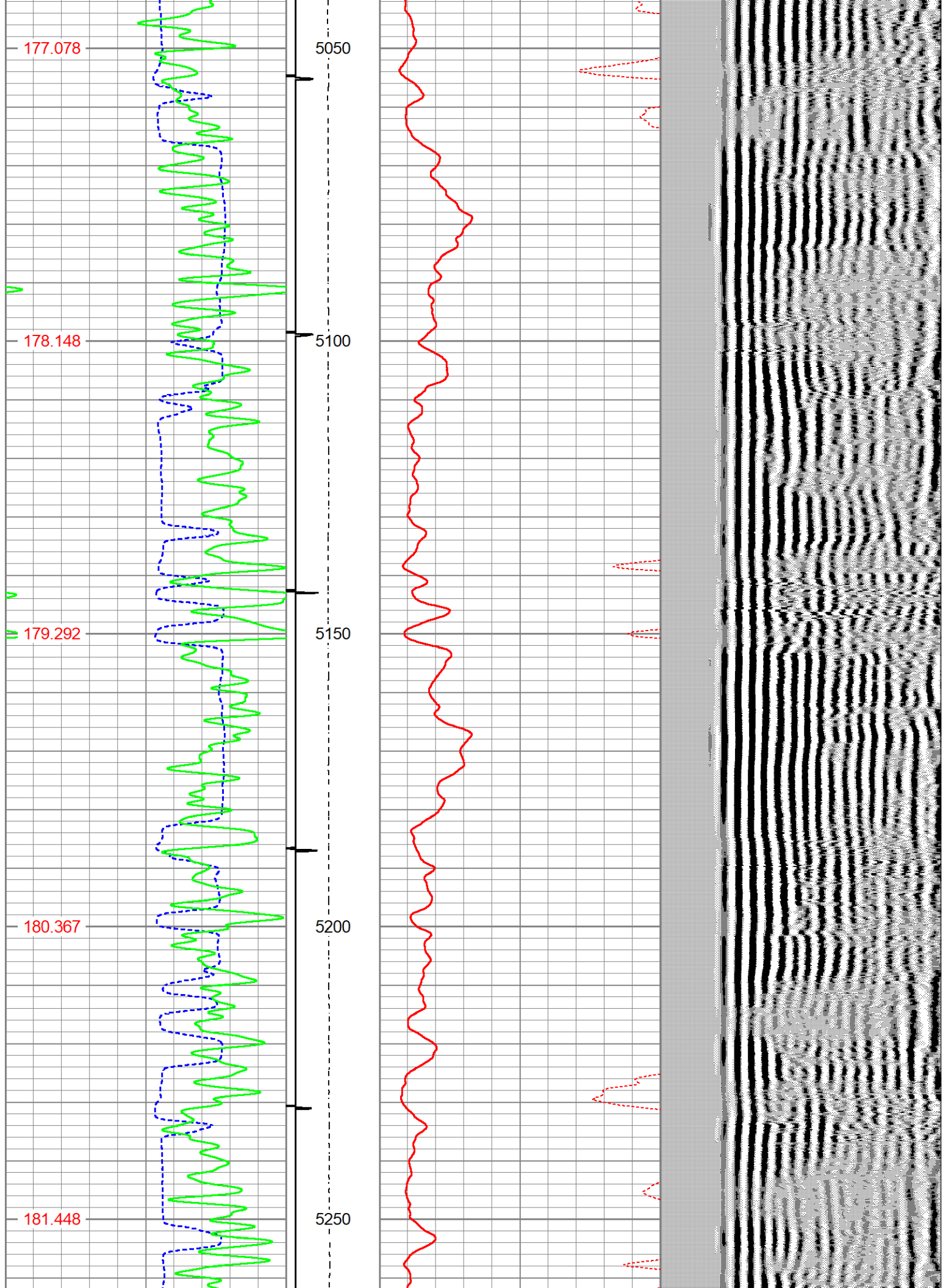


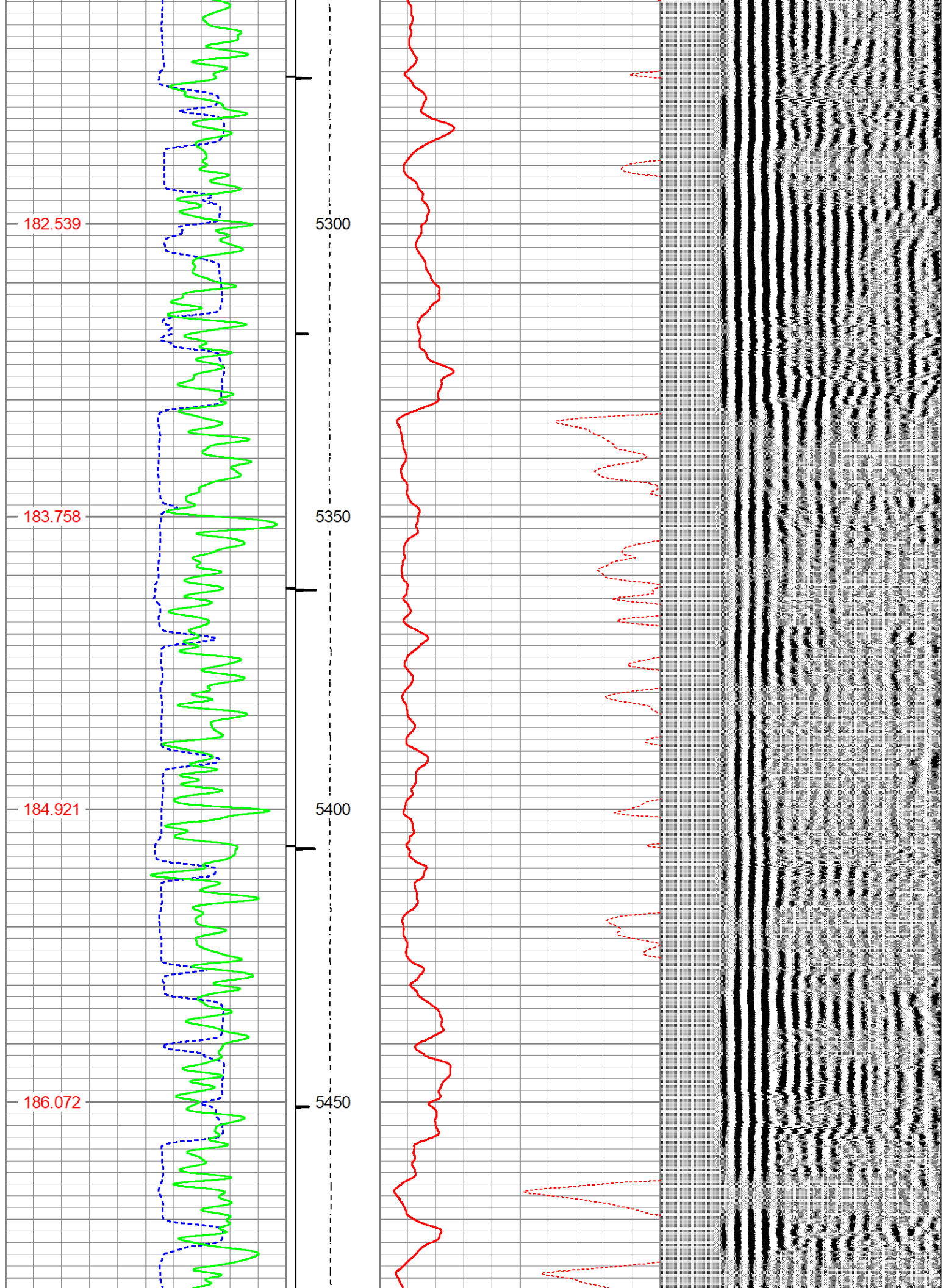


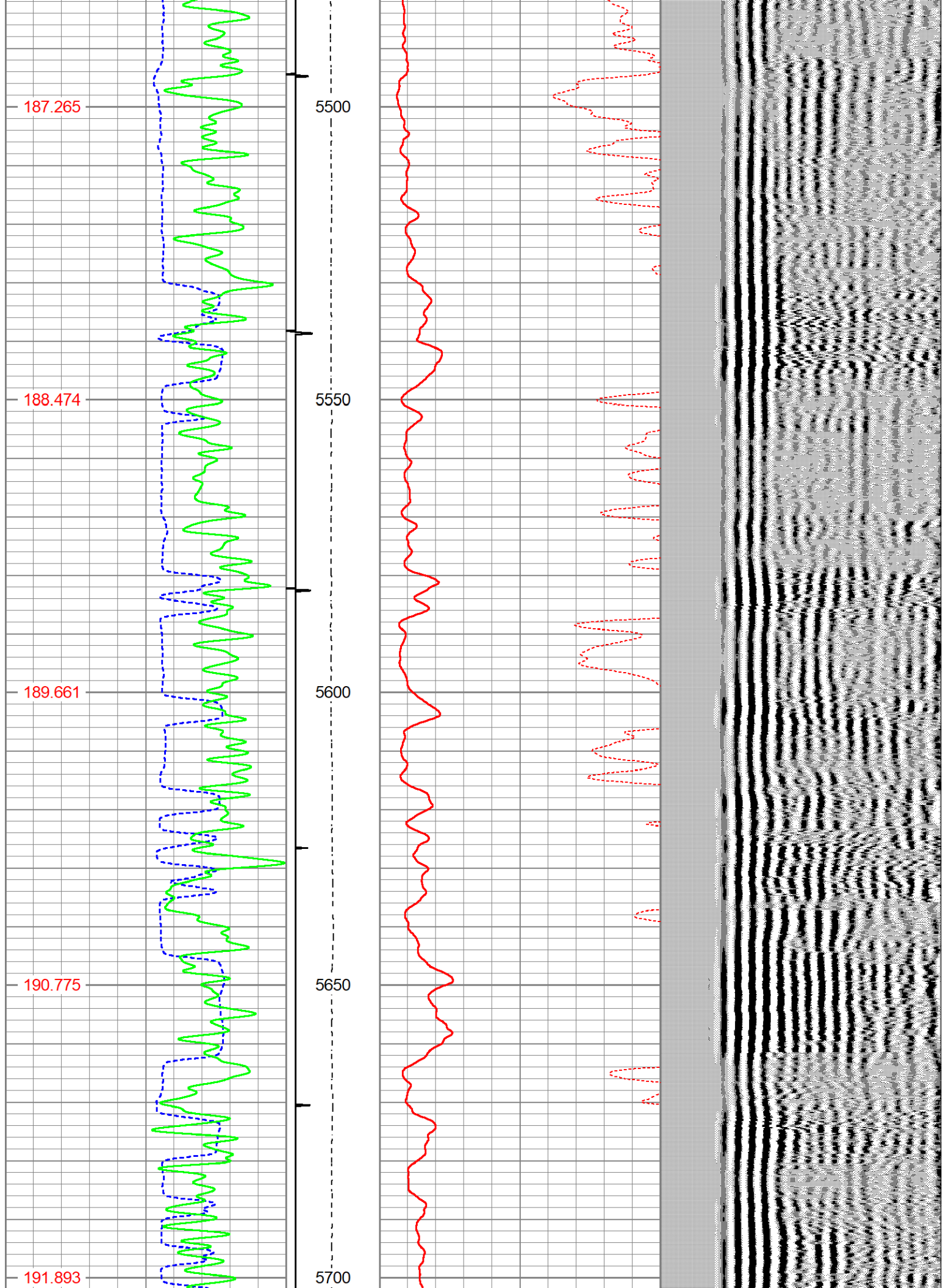


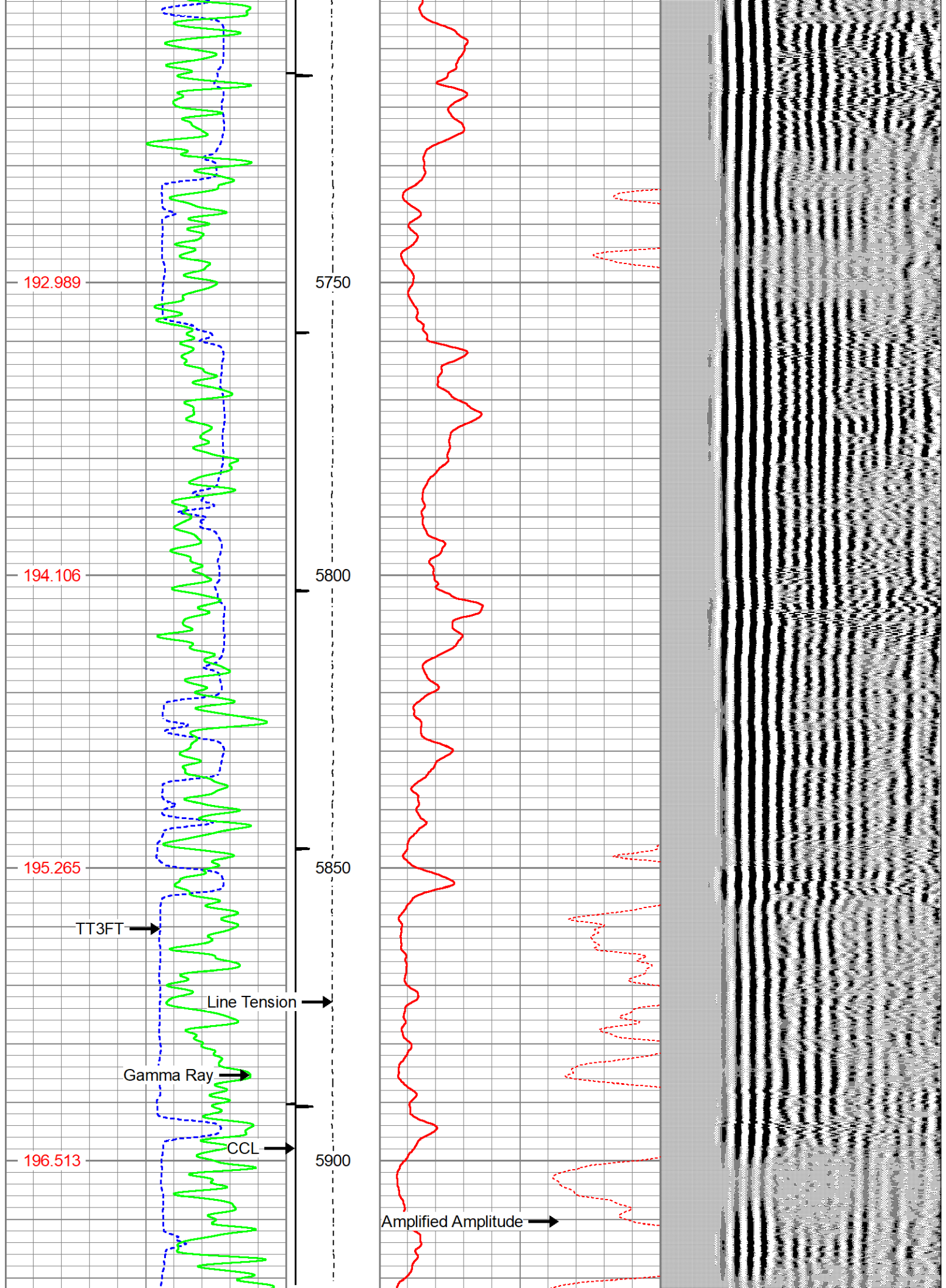


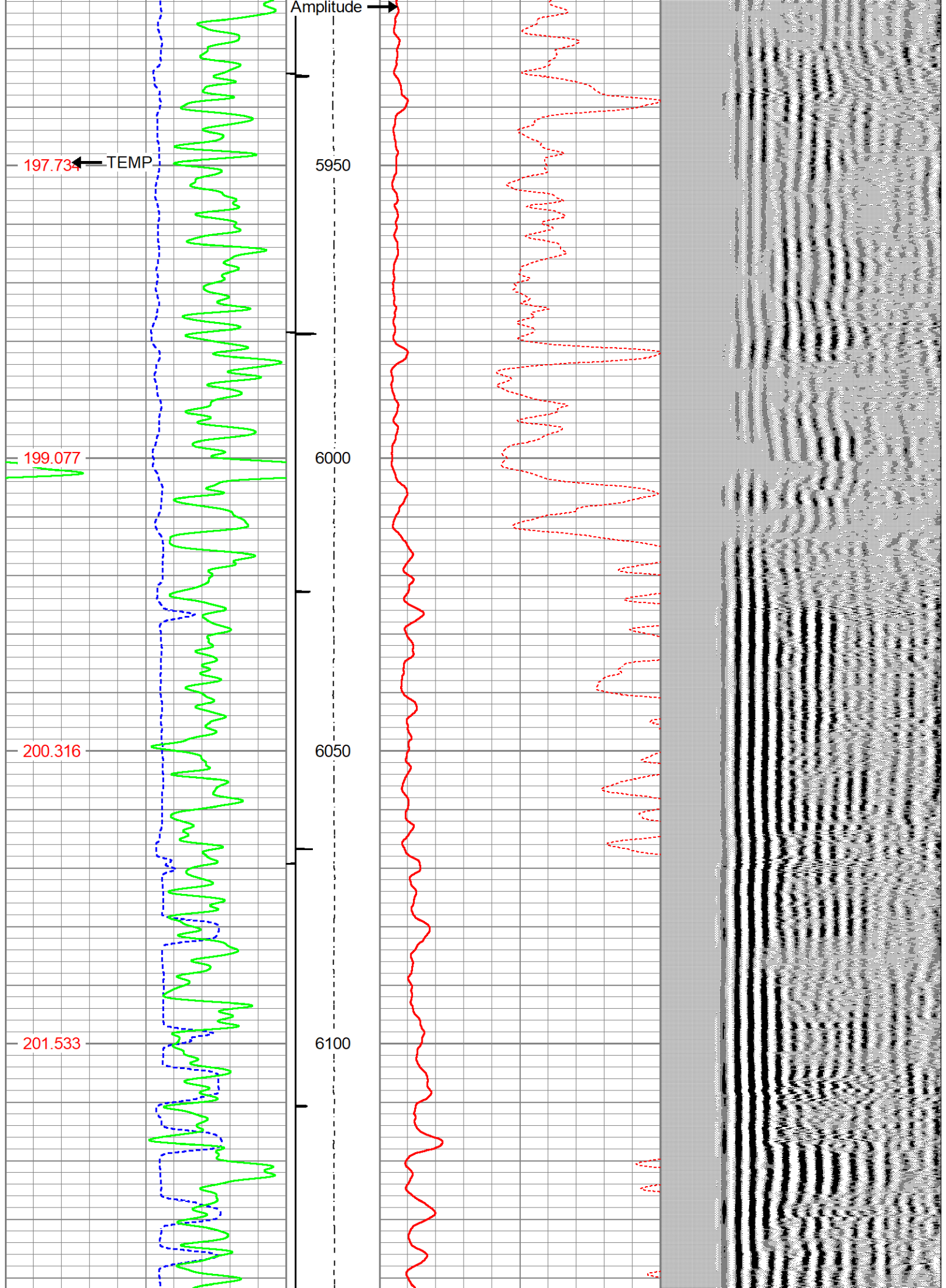


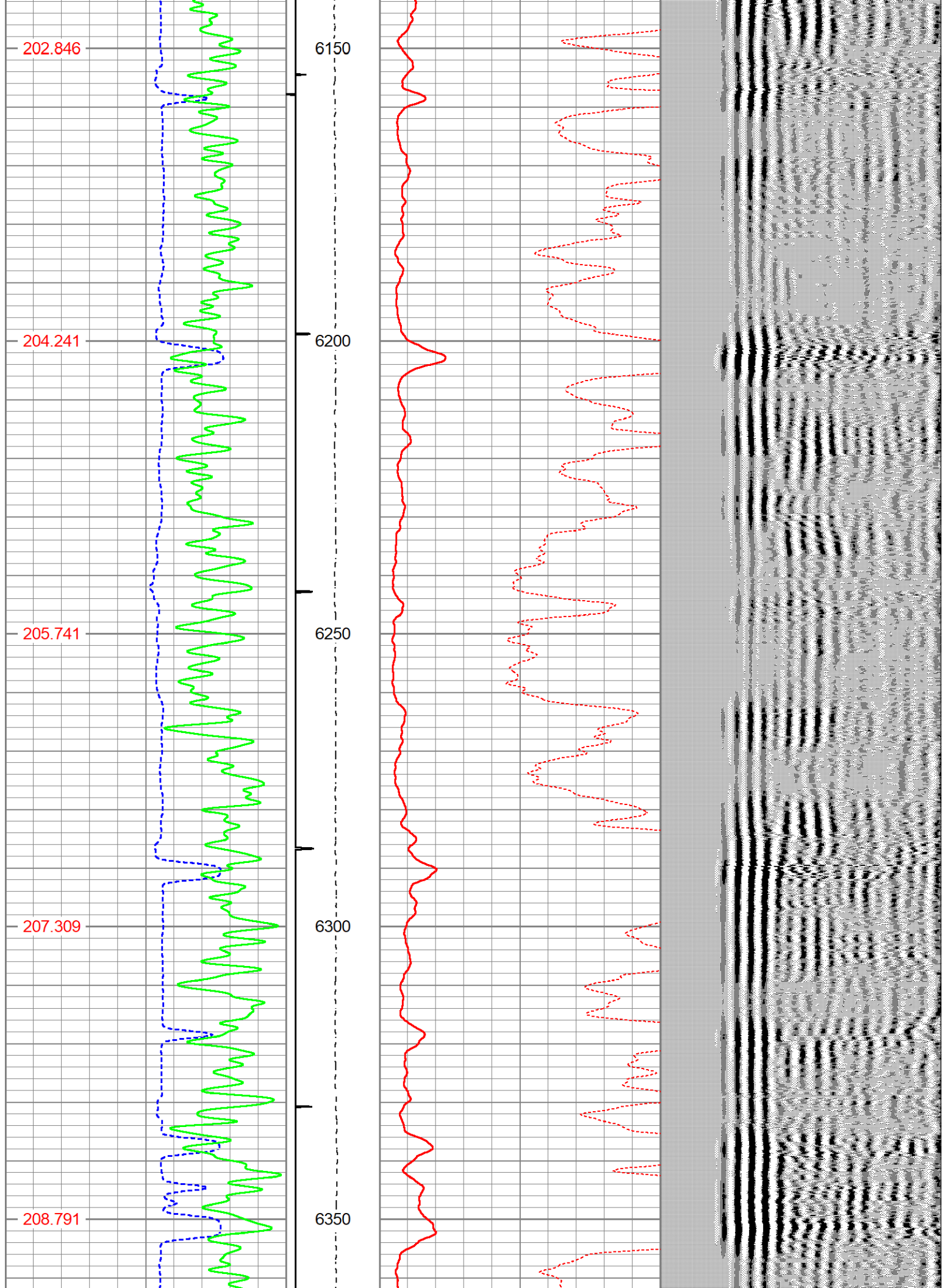


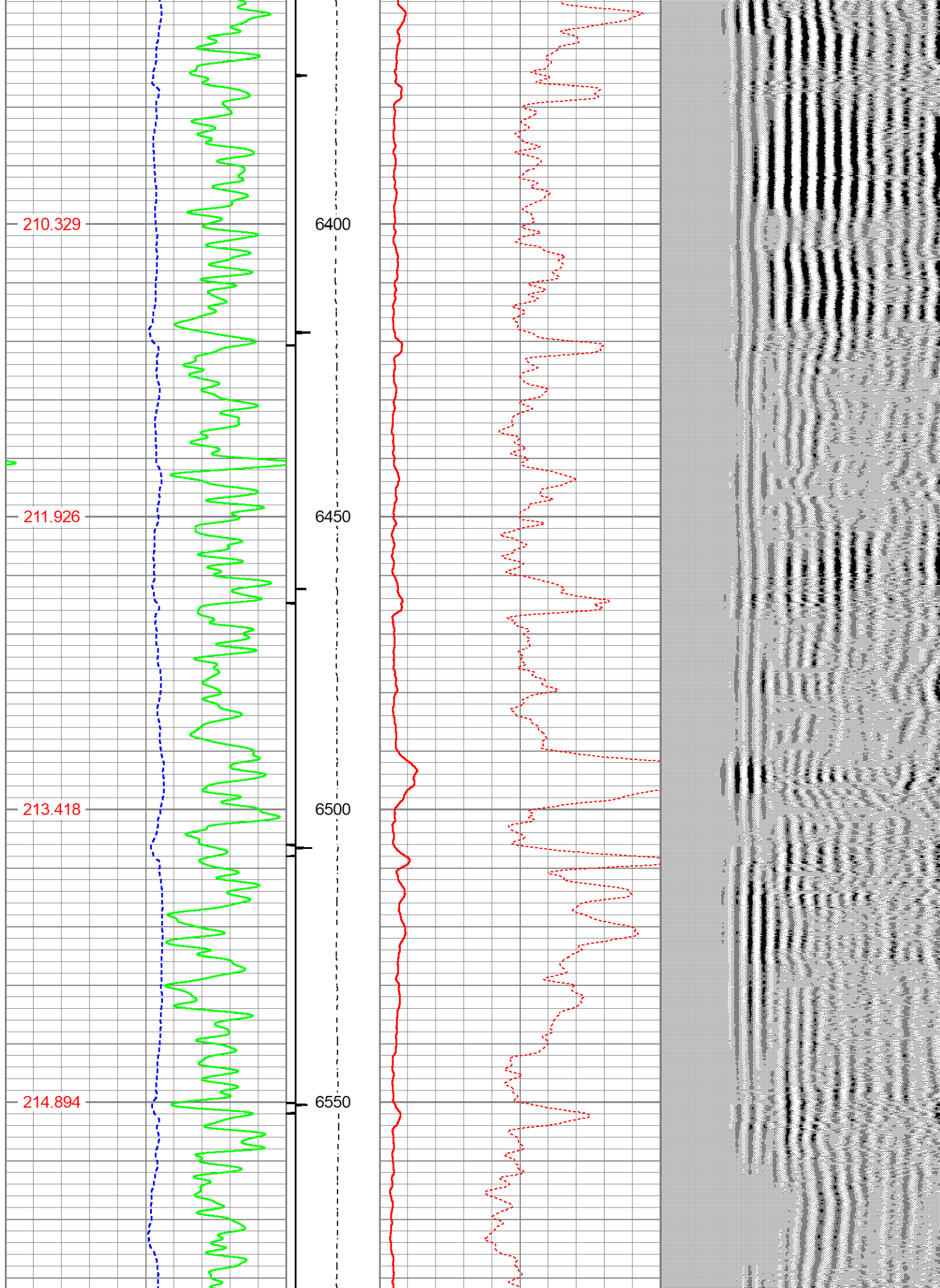


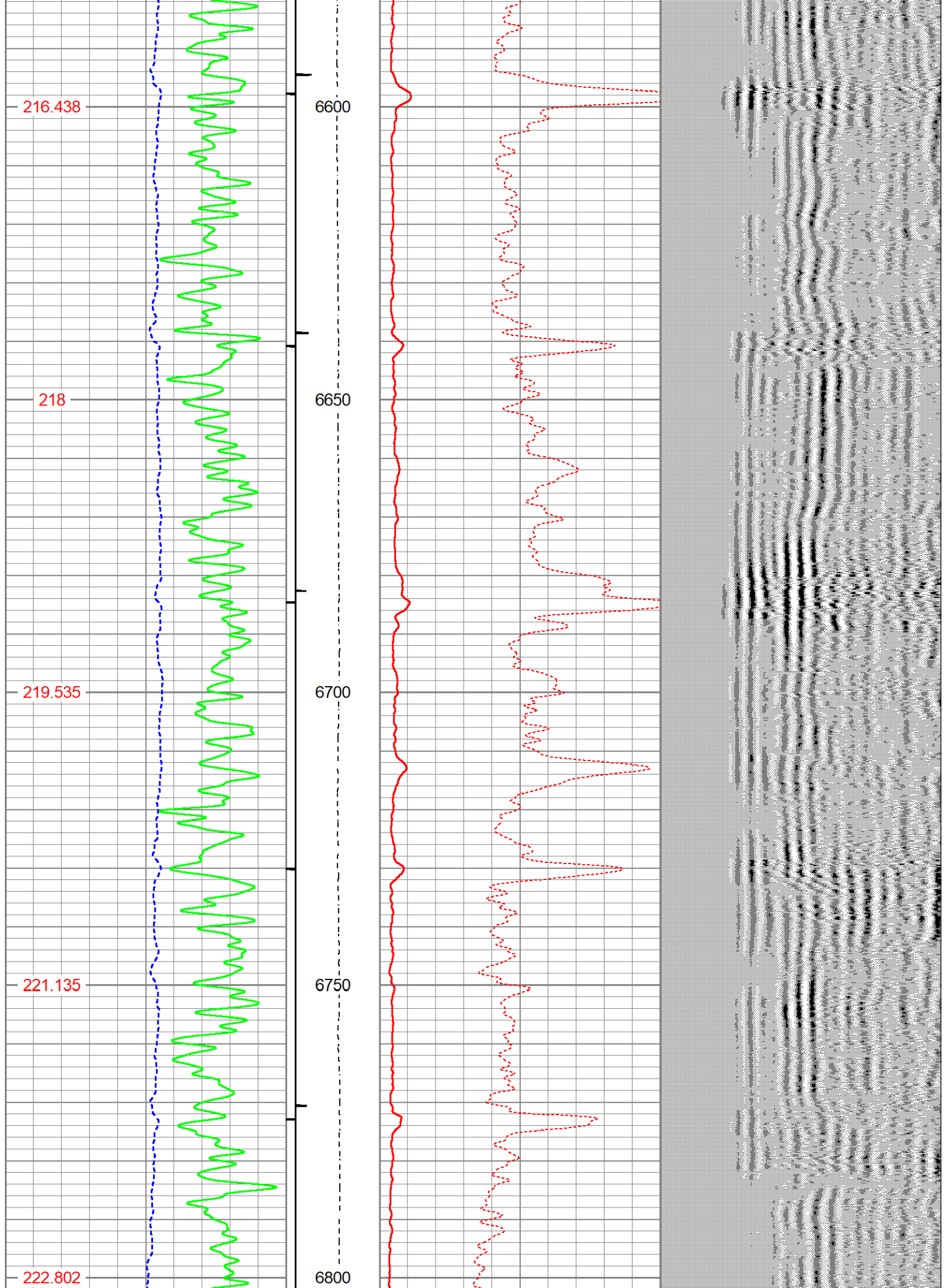


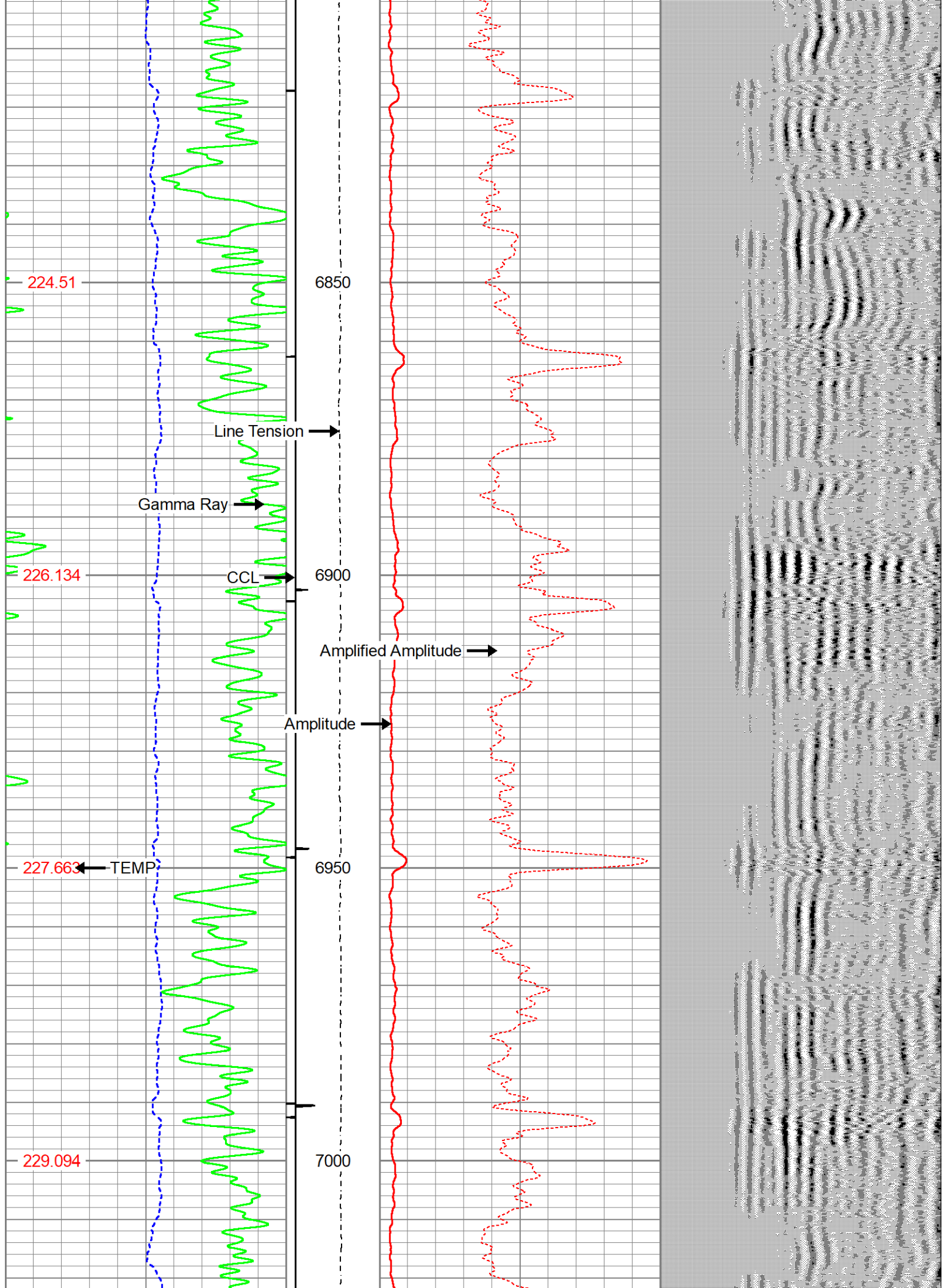


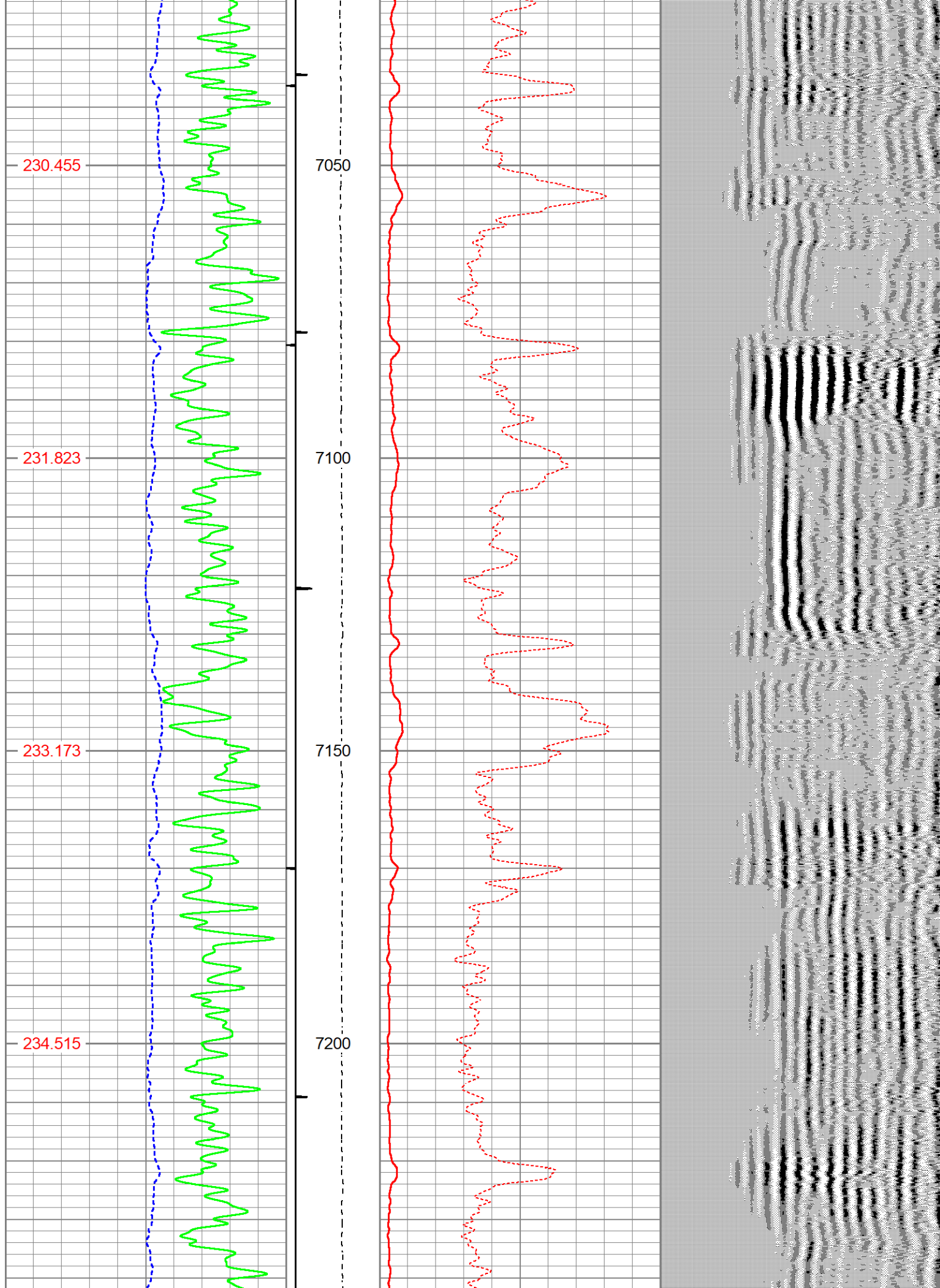


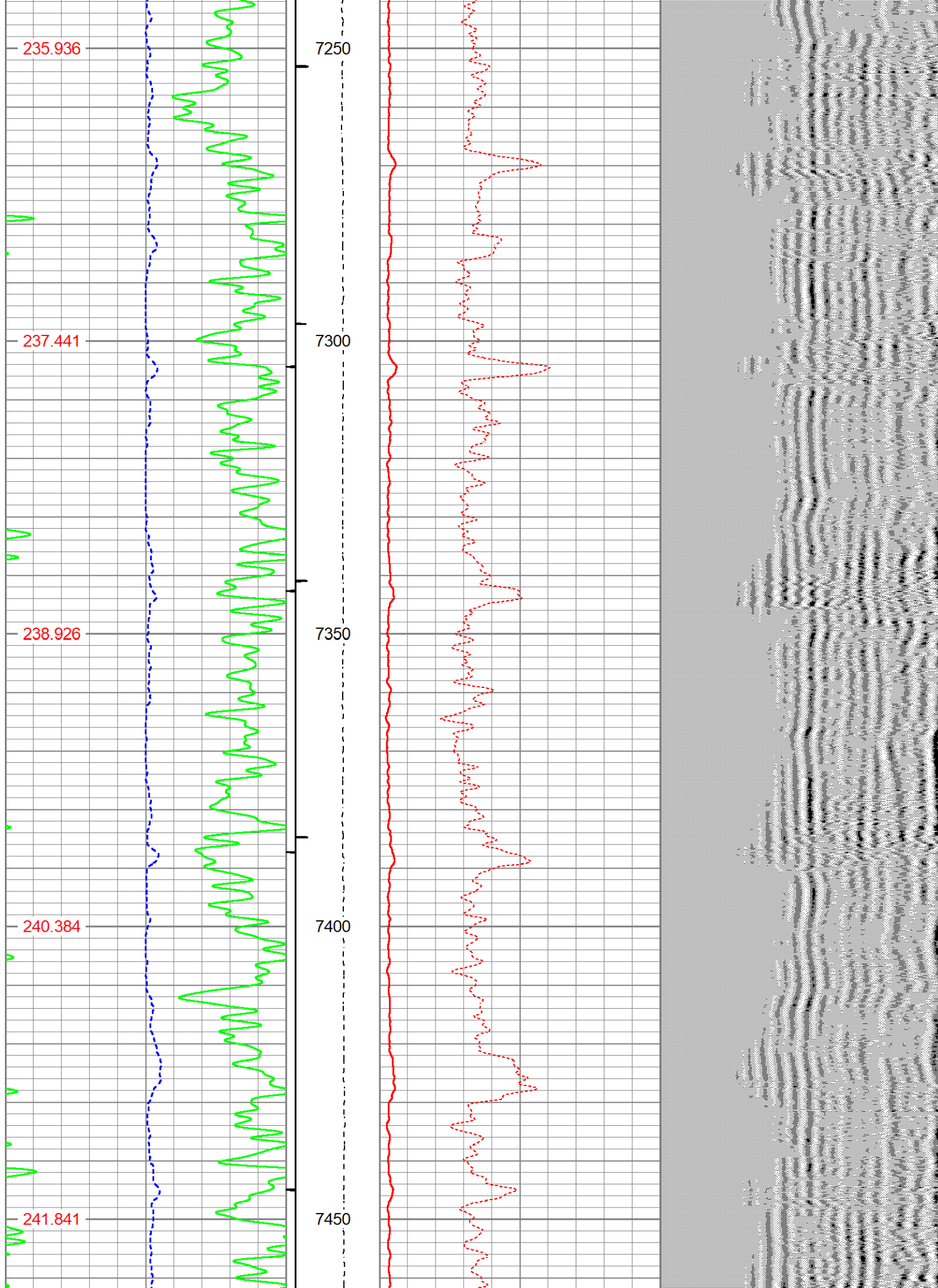


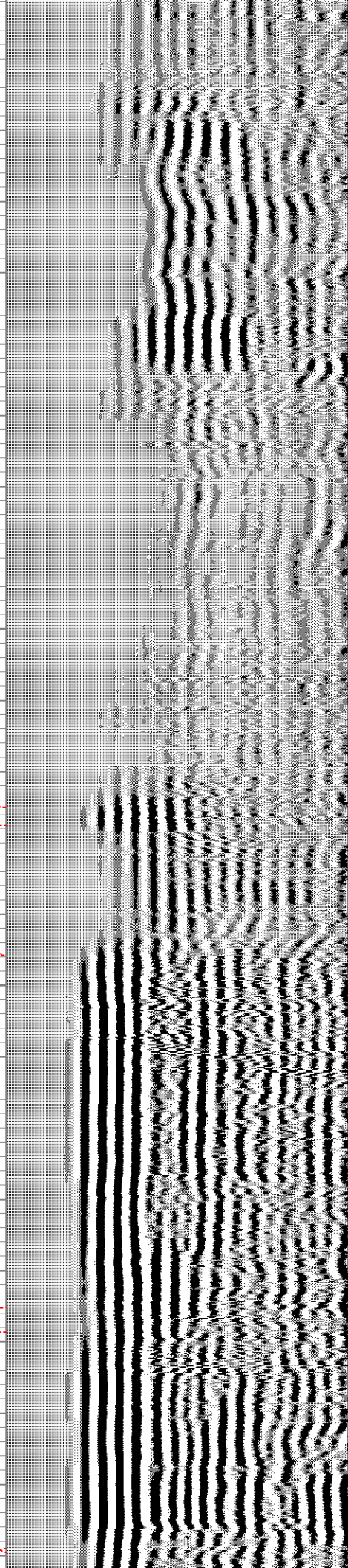
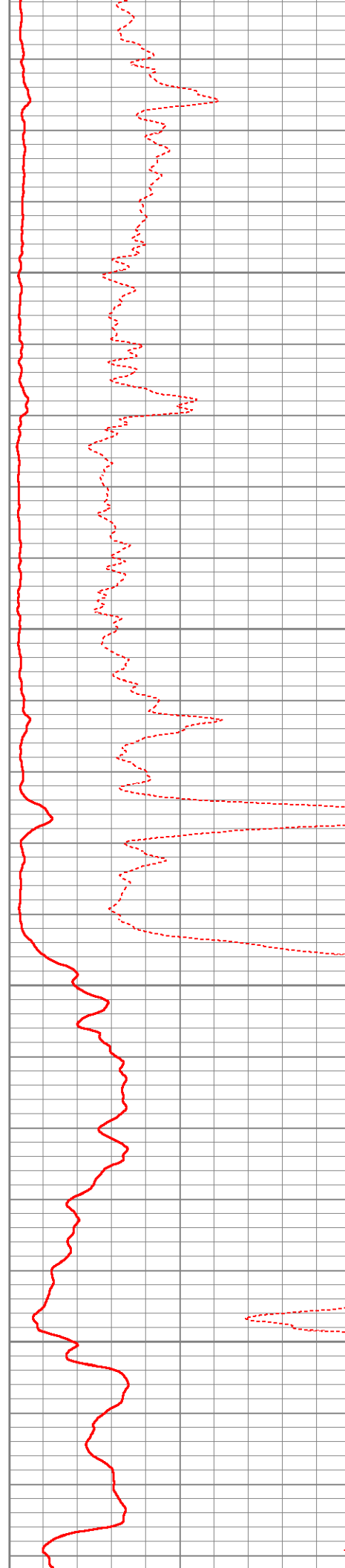
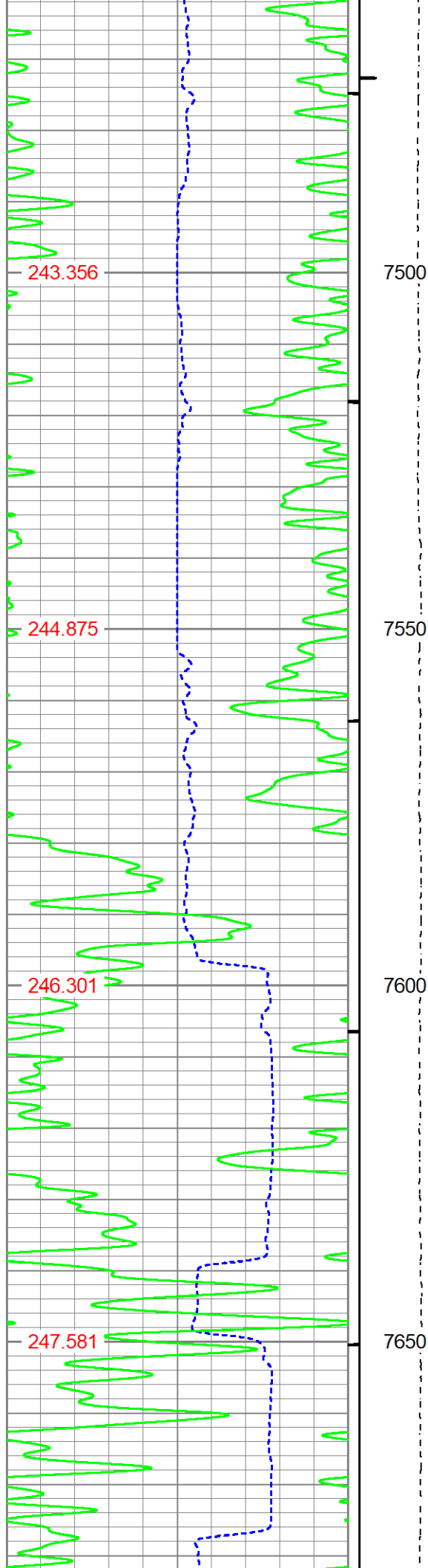


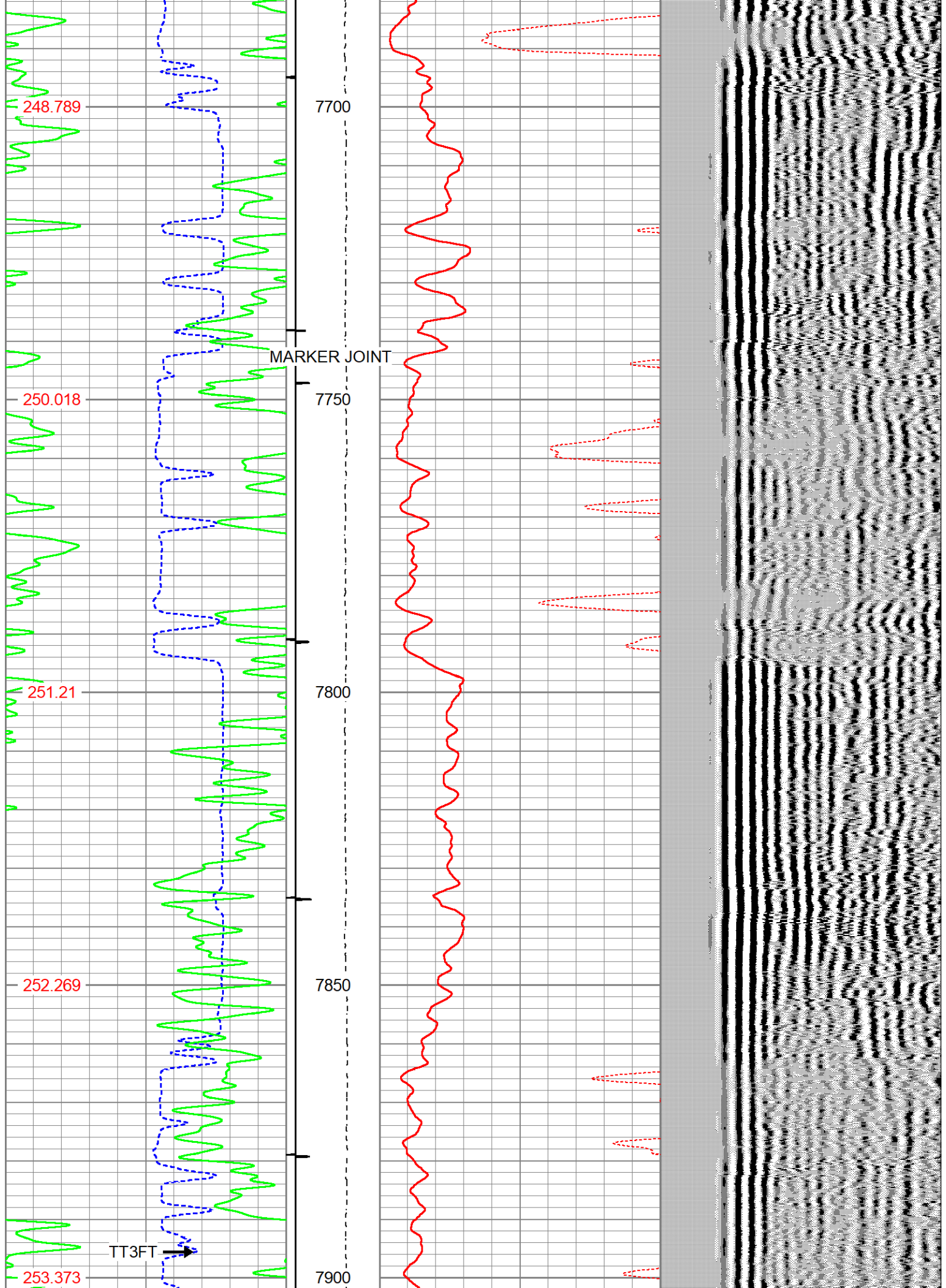


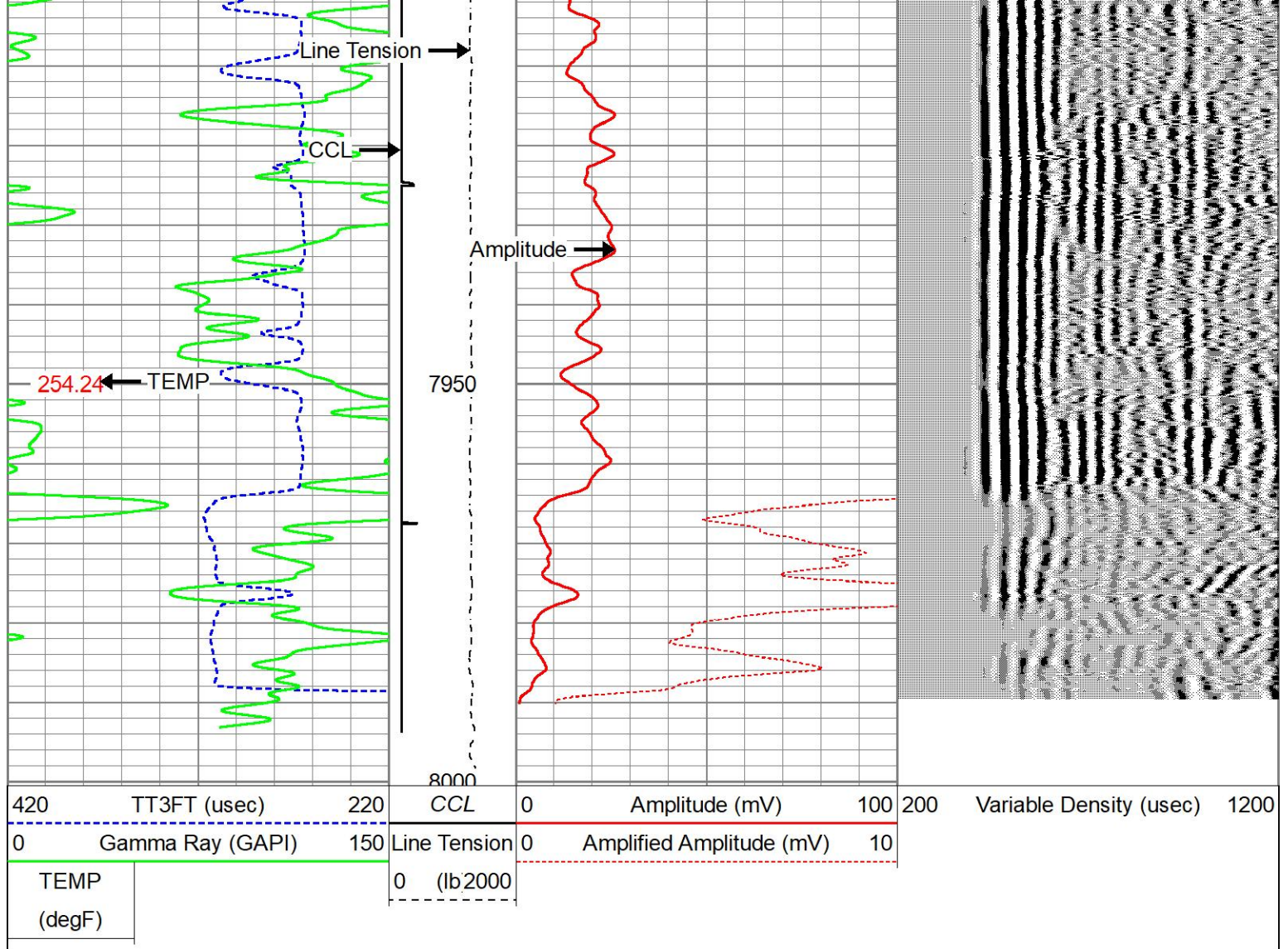








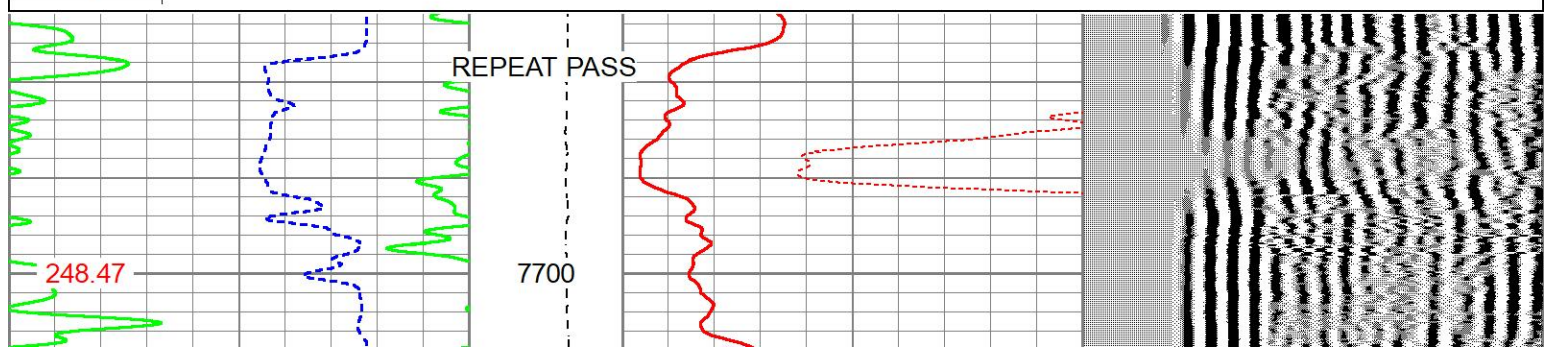
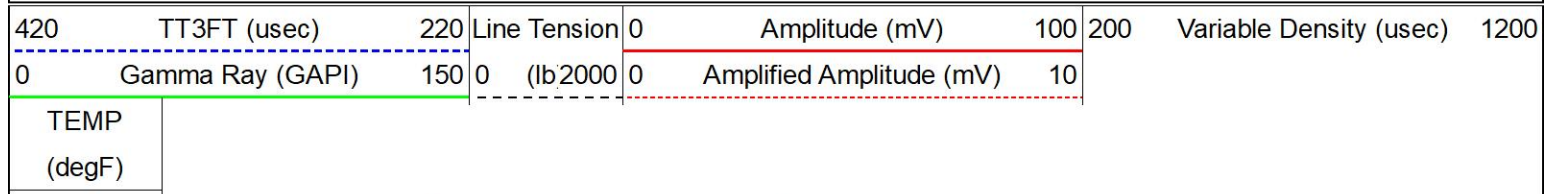


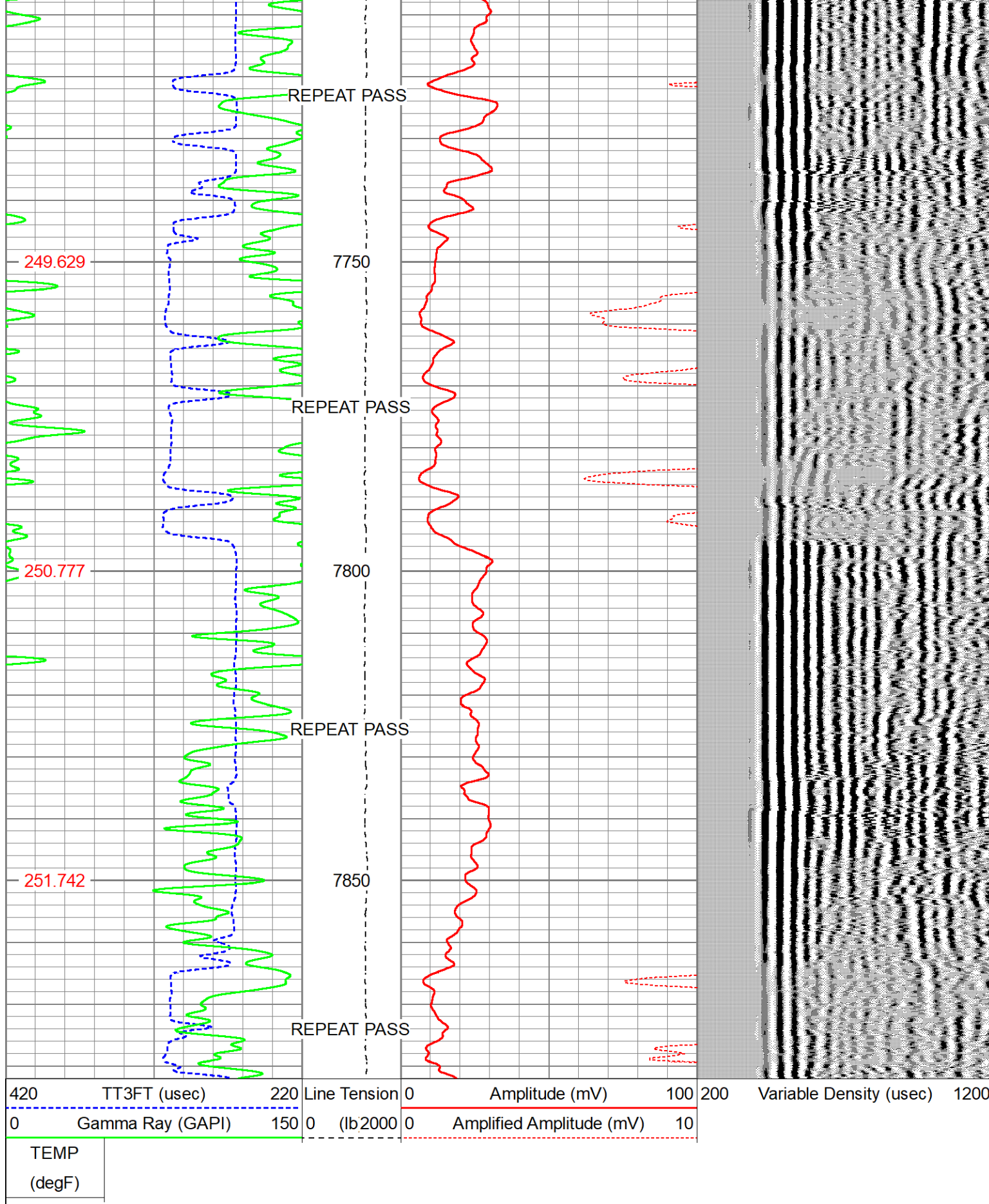


REPEAT PASS

RECORDED WITH 0 PSI SURFACE INDUCED PRESSURE.

Database File gw_ottesen_le09-368hc_30_2019.db
 Dataset Pathname 368HC/cbl1/pass5
 Presentation Format cbl_cs
 Dataset Creation Wed Jan 30 15:47:19 2019
 Charted by Depth in Feet scaled 1:240





Log Variables

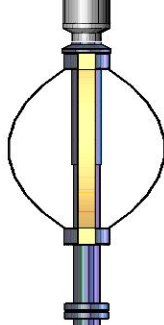
DatabaseC:\ProgramData\Warrior\Data\gw_ottesen_le09-368hc_30_2019.db
Dataset field/368HC/cbl1/pass7/_vars_

Top - Bottom

BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL	MINATTN
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in 7.875	degF 250	in 5.5	in 0	lb/ft 17	mV 71.9	mV 1	db/ft 0.8
PERFS No	PPT usec 262	SRFTEMP degF 0	TDEPTH ft 0				
Variable Description							
BOREID : Borehole I.D.		CASEWGHT : Casing Weight		PERFS : Perforation Flag			
BOTTEMP : Bottom Hole Temperature		MAXAMPL : Maximum Amplitude		PPT : Predicted Pipe Time			
CASEOD : Casing O.D.		MINAMPL : Minimum Amplitude		SRFTEMP : Surface Temperature			
CASETHCK : Casing Thickness		MINATTN : Minimum Attenuation		TDEPTH : Total Depth			

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
ErrCt	18.89					
			RBT-Probe 2.75 Radii HT (FW1307-48) RADII HT	11.28	2.75	130.00
WVFS8	11.79					
WVFS7	11.79					
WVFS6	11.79					
WVFS5	11.79					
WVFS4	11.79					
WVFS3	11.79					
WVFS2	11.79					
WVFS1	11.79					
WVFCAL	11.79					
WVF3FT	11.79					
WVF5FT	10.79					
CCL\$2	6.64					
CCL\$1	6.64					
GCT_Temp	6.09					
GR	5.22		GC-GCT275-0000 (GCT275 0000_base) Probe GCT275-0000 w/Temp	4.77	2.75	55.00



CENT-PTS275
BC275-0000 Centralizer

2.83

2.75

24.00

Dataset: gw_ottesen_le09-368hc_30_2019.db: field/368HC/cbl1/pass7
Total length: 18.89 ft
Total weight: 209.00 lb
O.D.: 2.75 in

Calibration Report

Database File gw_ottesen_le09-368hc_30_2019.db
Dataset Pathname 368HC/cbl1/pass7
Dataset Creation Wed Jan 30 15:52:29 2019

Gamma Ray Calibration Report

Serial Number: GCT275-0000_base
Tool Model: GCT275-0000
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: FW1307-48
Tool Model: Probe 2.75 Radii HT

Calibration Casing Diameter: 5.500 in
Calibration Depth: 594.467 ft

Master Calibration, performed Wed Jan 30 15:23:04 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.000	0.348	1.000	71.921	203.526	1.032
CAL	0.001	0.512				
5'	0.001	0.311	1.000	71.921	228.509	0.863
SUM						
S1	0.005	0.331	0.000	71.900	220.370	-1.151
S2	0.001	0.333	0.000	71.900	216.649	-0.167
S3	0.001	0.340	0.000	71.900	211.682	-0.142
S4	0.000	0.359	0.000	71.900	200.512	-0.039
S5	0.000	0.367	0.000	71.900	195.761	-0.038
S6	0.000	0.365	0.000	71.900	196.992	-0.026
S7	0.000	0.351	0.000	71.900	204.729	-0.037
S8	0.000	0.342	0.000	71.900	210.209	-0.074

Internal Reference Calibration, performed (Not Performed):

Raw (v)

Calibrated (v)

Results

	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.001	0.512	1.000	0.000

Air Zero Calibration, performed Wed Jan 30 15:15:14 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



Company	GREAT WESTERN OIL & GAS	
Well	OTTESEN LE 09-368HC	
Field	Wattenberg	
County	Weld	
State	Colorado	Country