



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 KB  
Drilling Measured From Kelly Bushing  
Other Services  
K.B. 5144.5  
D.F. 5142.5  
G.L. 5124.5

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

Date

06-Mar-19

Run Number

One

Depth Driller

18,159

Depth Logger

16,465

Bottom Logged Interval

16,464

Top Log Interval

7000

Open Hole Size

8.50

Type Fluid

Water

Density / Viscosity

8.4PPG

Max. Recorded Temp.

120F

Estimated Cement Top

See Log

Time Well Ready

ROA

Time Logger on Bottom

10.18

Equipment Number

33

Location

Platteville, CO

Recorded By

H.Hill

Witnessed By

M.Pettyjohn

Borehole Record

Bit

From

To

Size

Weight

From

To

Casing Record

Size

Wgt/Ft

Top

Bottom

Surface String

9.625"

36#

Surface

1,758'

Prot. String

5.5"

17#

Surface

18,159'

Production String

5.5"

17#

Surface

18,159'

Liner

5.5"

17#

Surface

18,159'

Liner

5.5"

17#

Surface

18,159'

<<< 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 Correlation to Casing Tally reported Marker Joint @ 16,559'  
Adjusted Log 19' to correlate with Marker Joint  
Log ran from 16,465' to 7000'  
Log ran with ---PSI surface induced pressure  
Centralized with 4 over tool Gemco centralizers  
Pumped down with 4.30" Pump down sub and 5' 2.75"OD weight bar

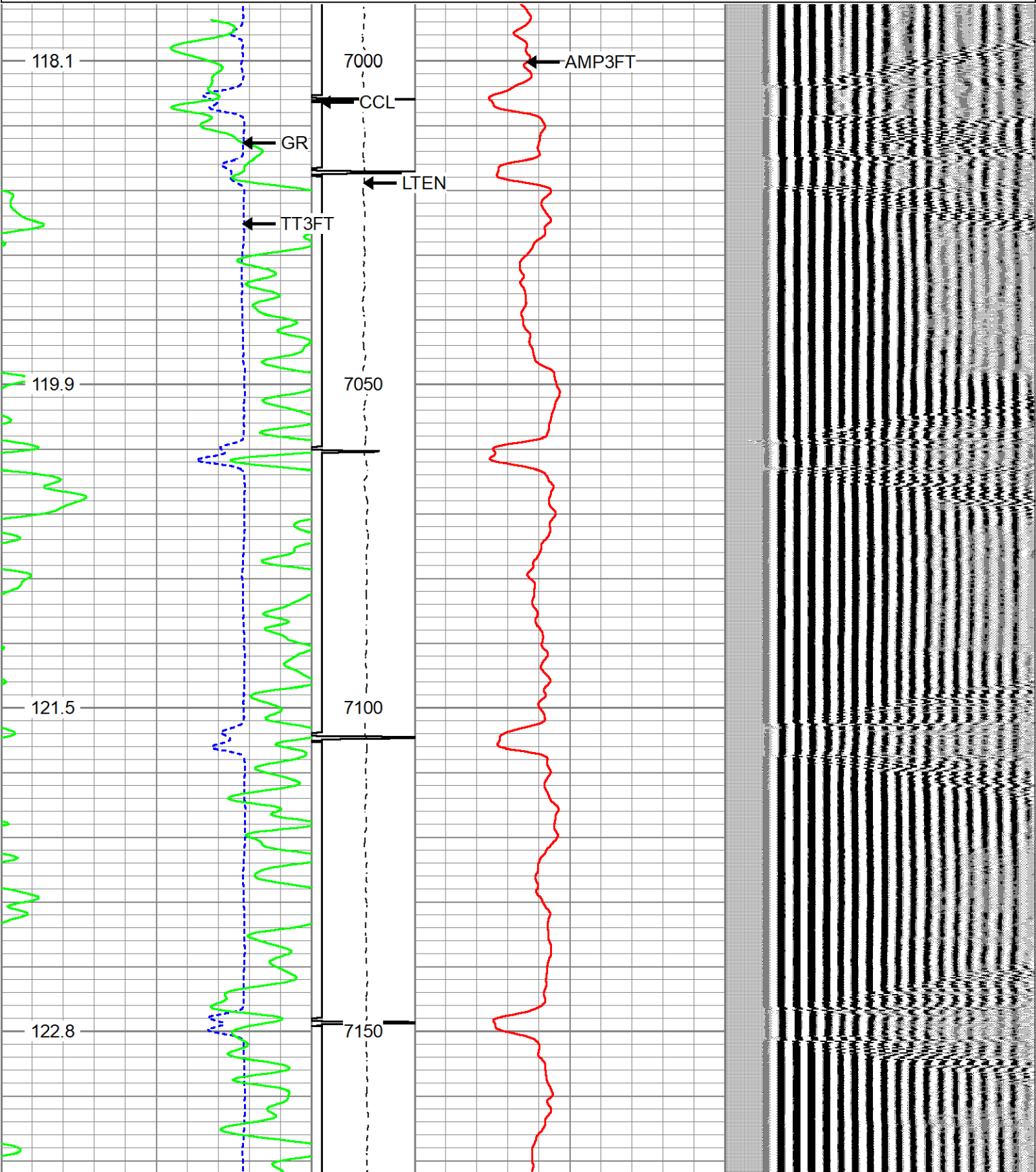


MAIN PASS - 5"

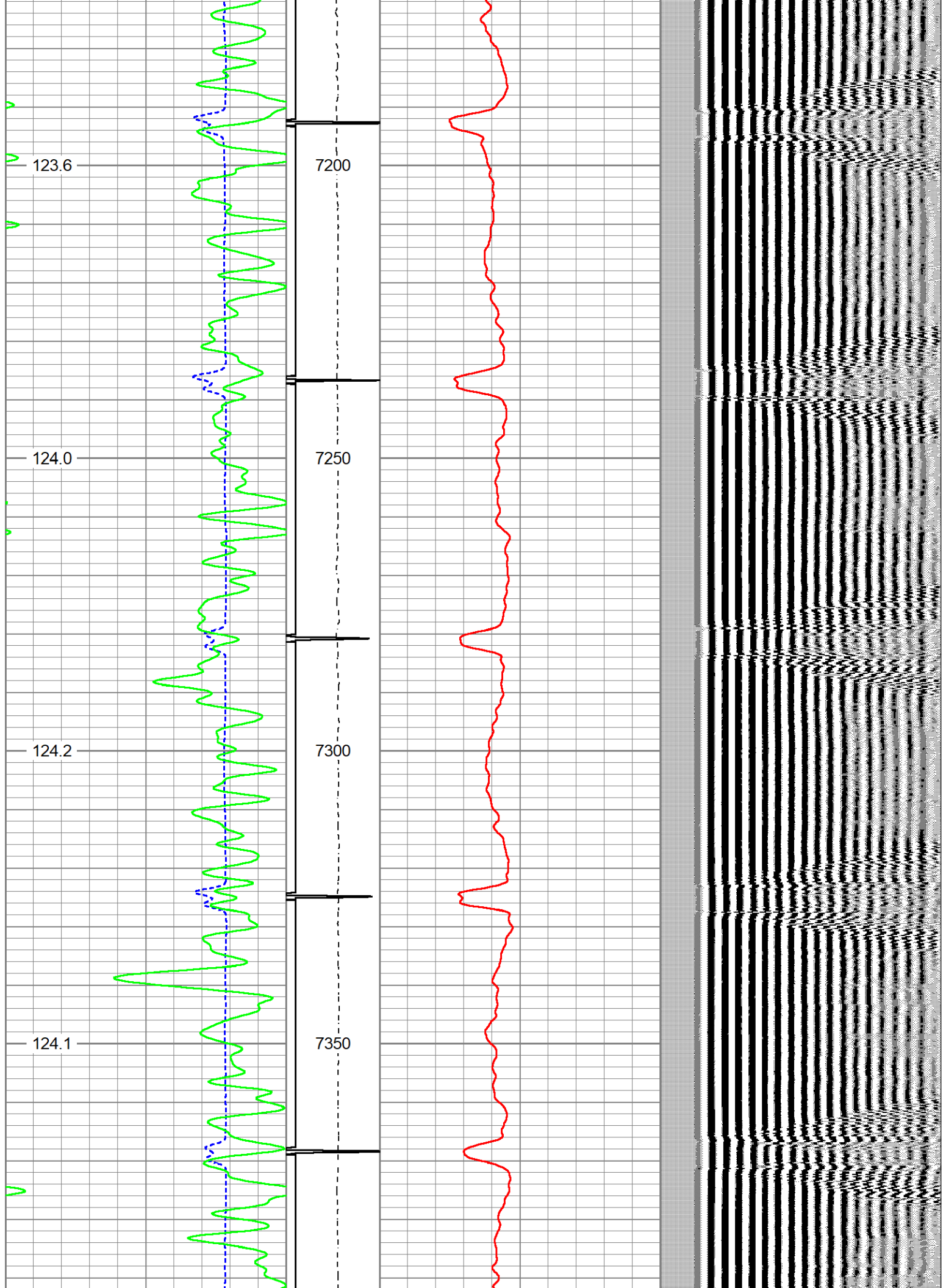
3100 PSI

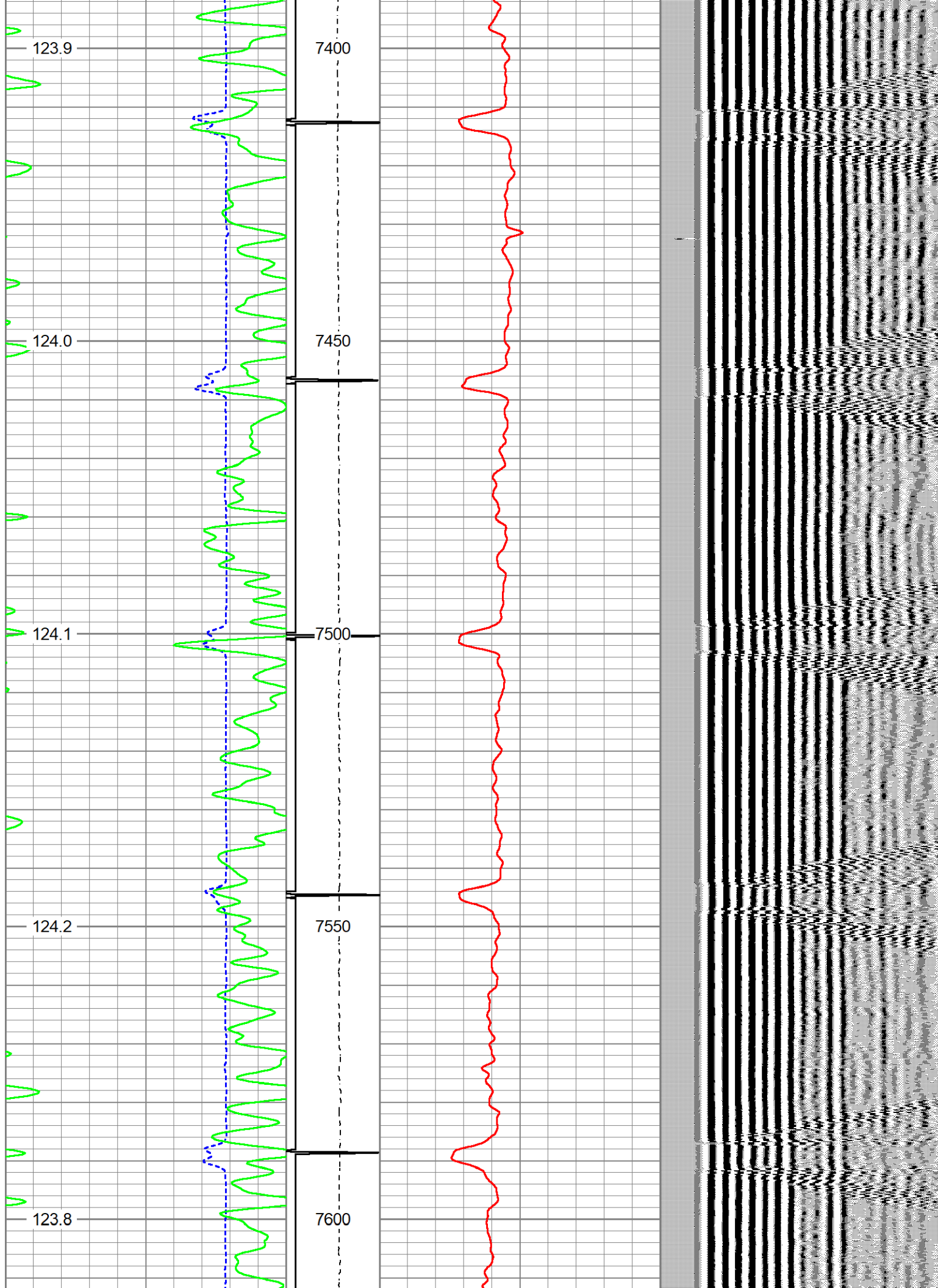
Database File	gw_bfarm_id_18-391hnx_5_apr_2019_pd_cbl.db
Dataset Pathname	391hnx/run1/pass6
Presentation Format	cbl_cs
Dataset Creation	Sat Apr 06 10:16:43 2019
Charted by	Depth in Feet scaled 1:240

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)2500						
(degF)									

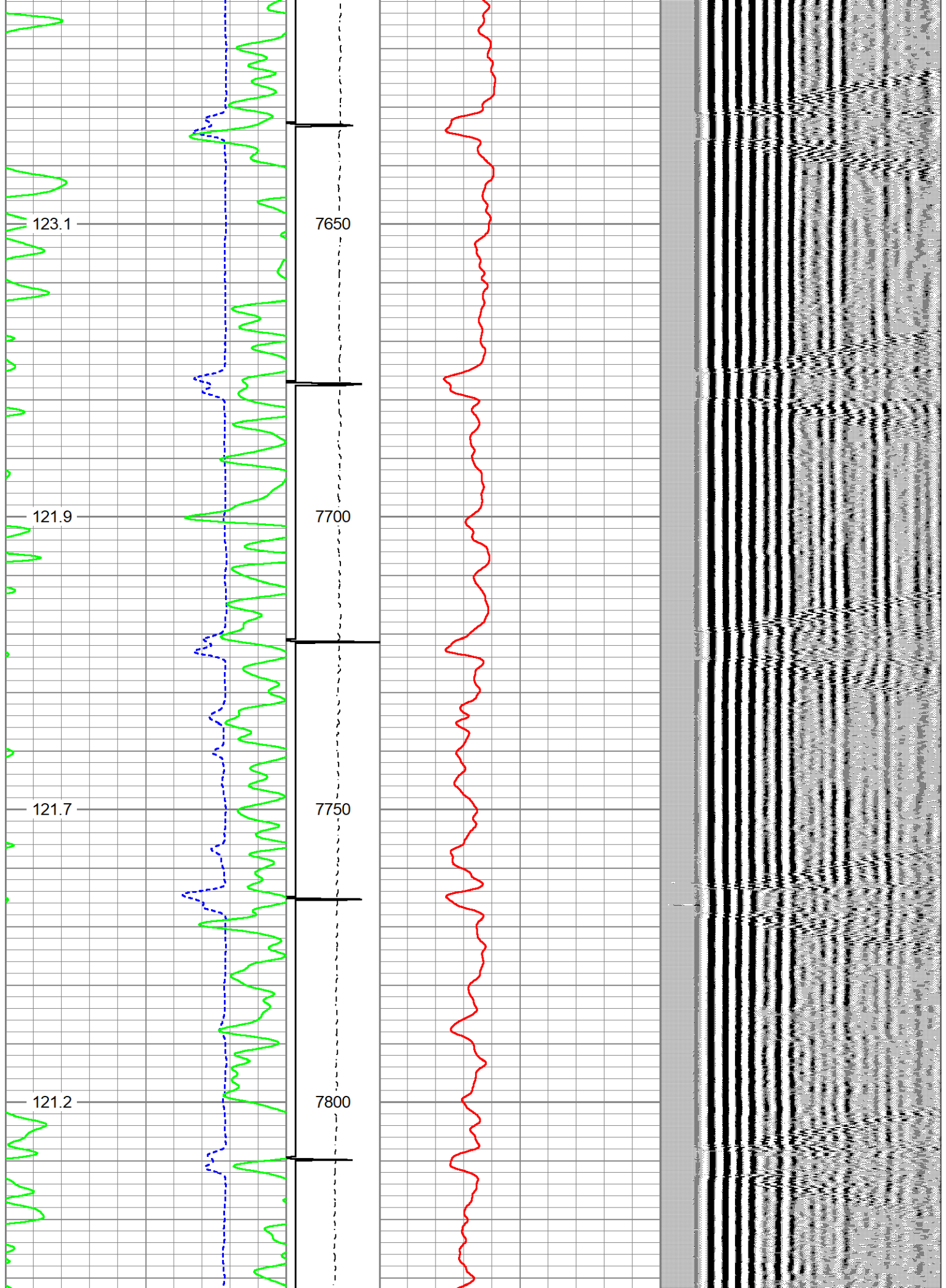


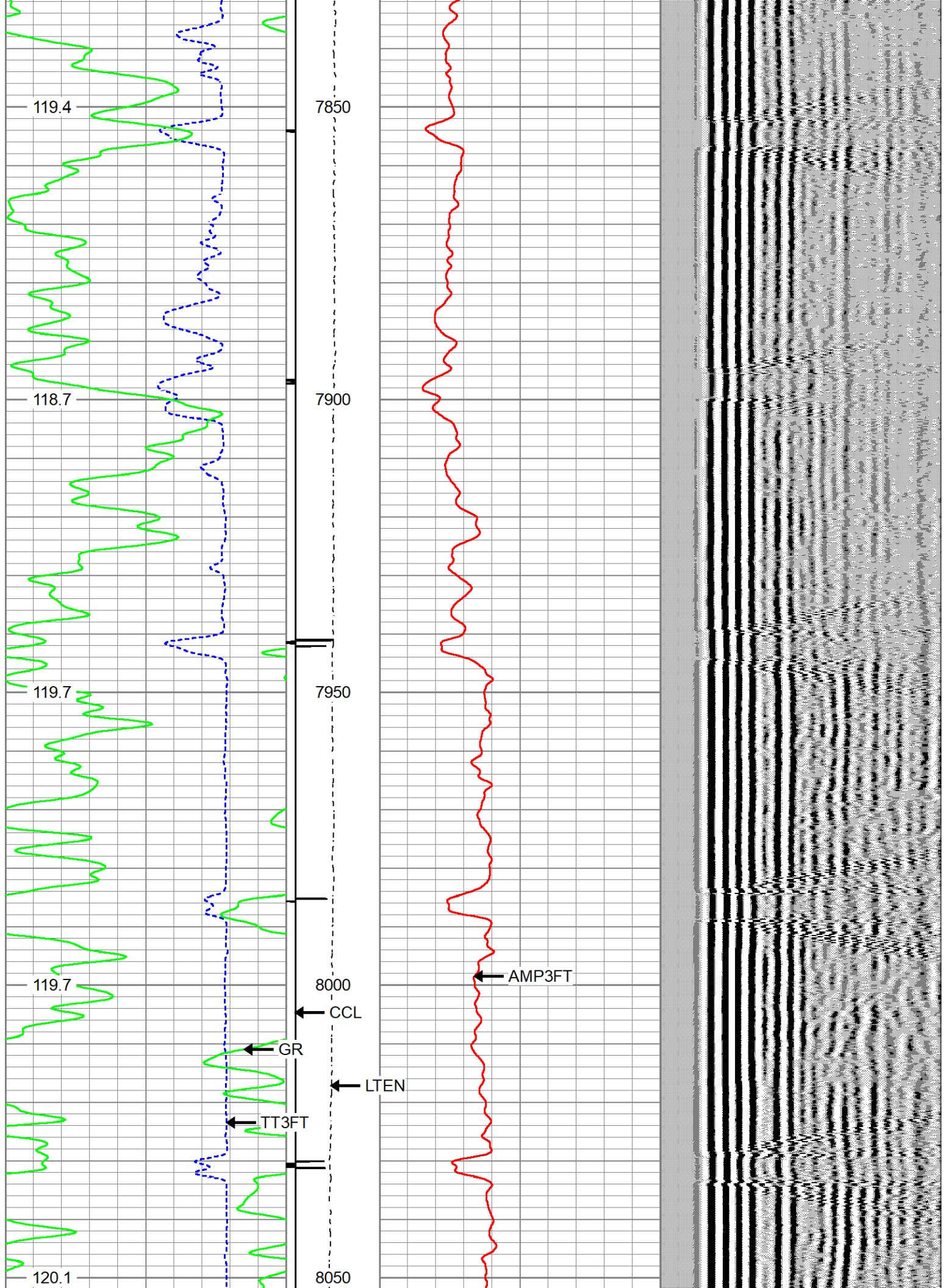




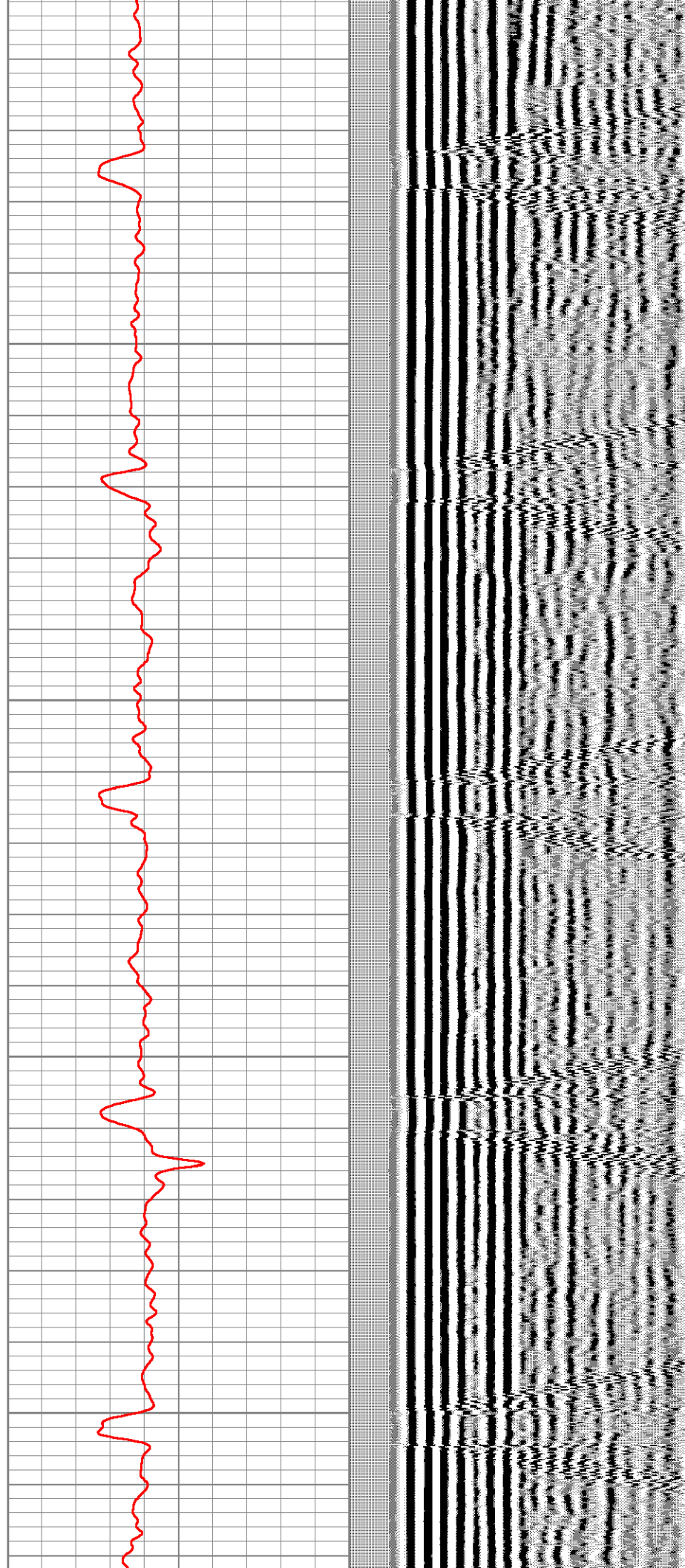
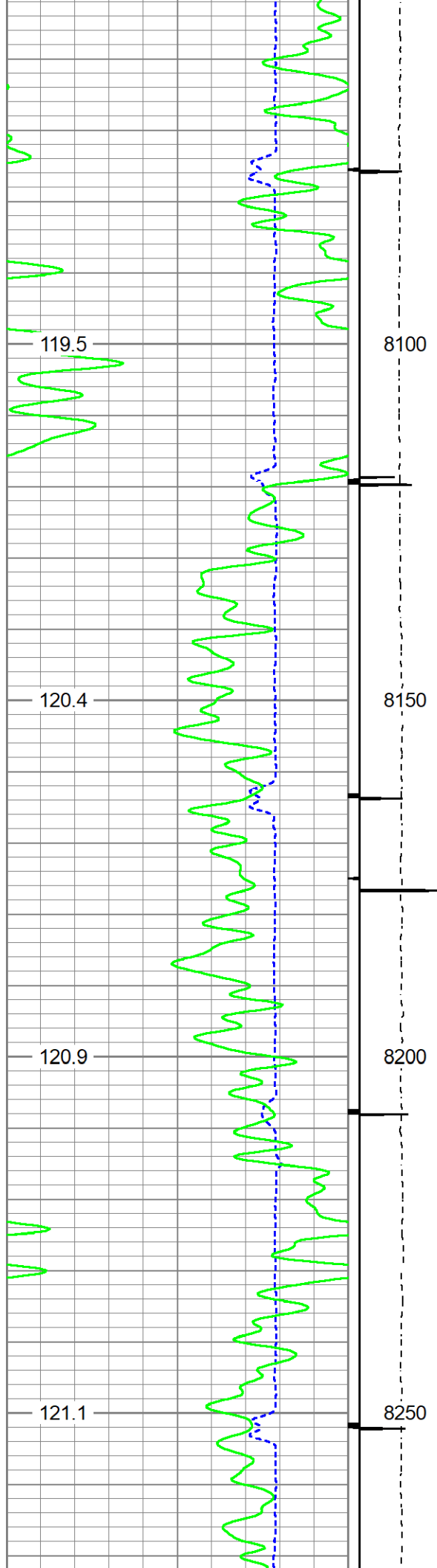


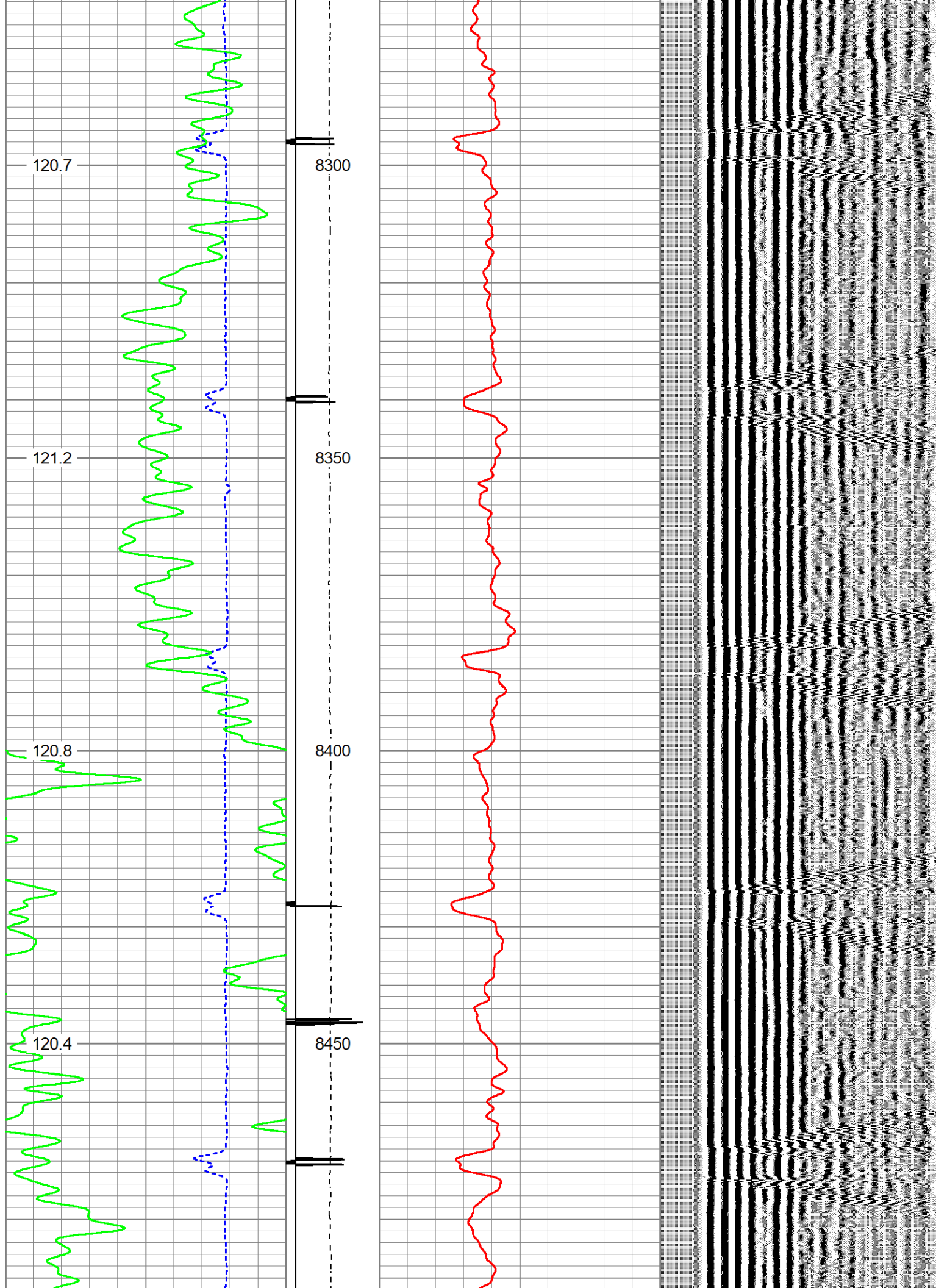




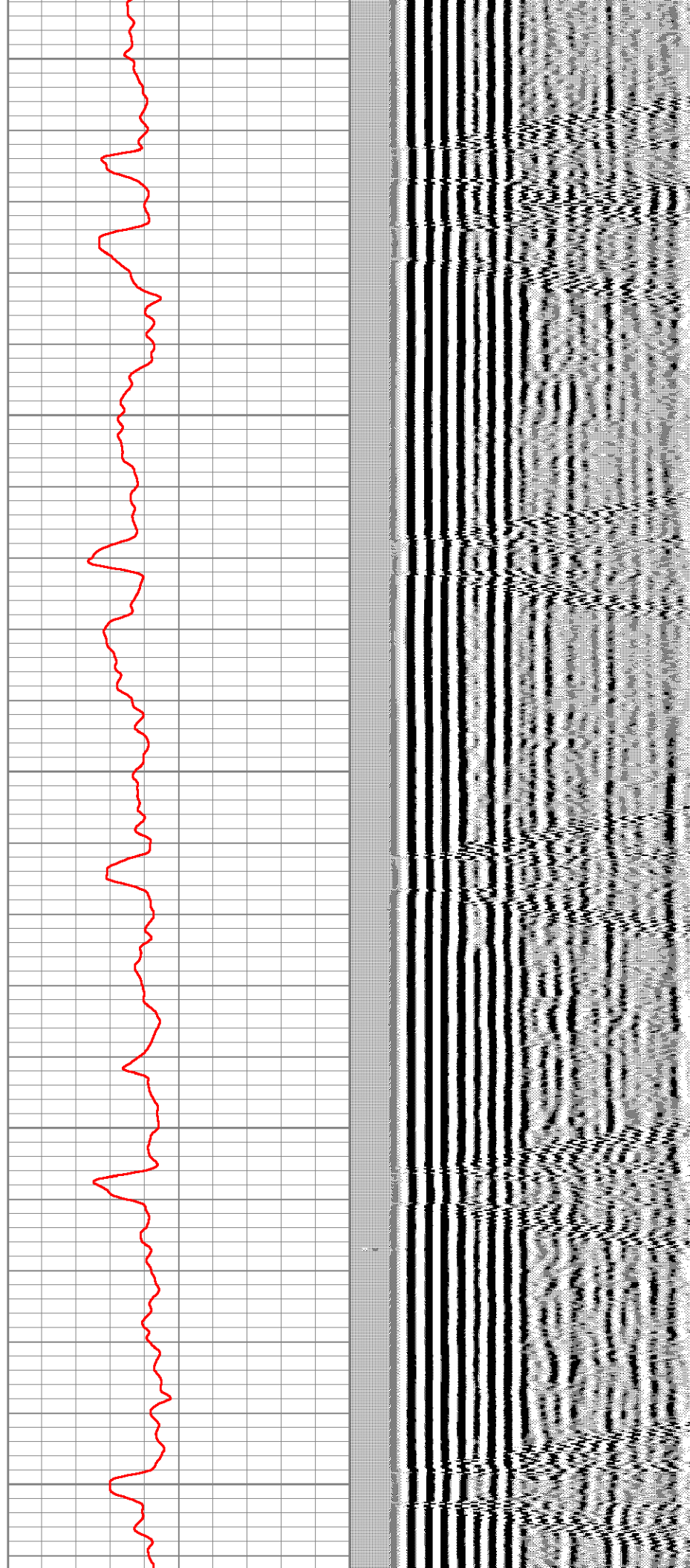
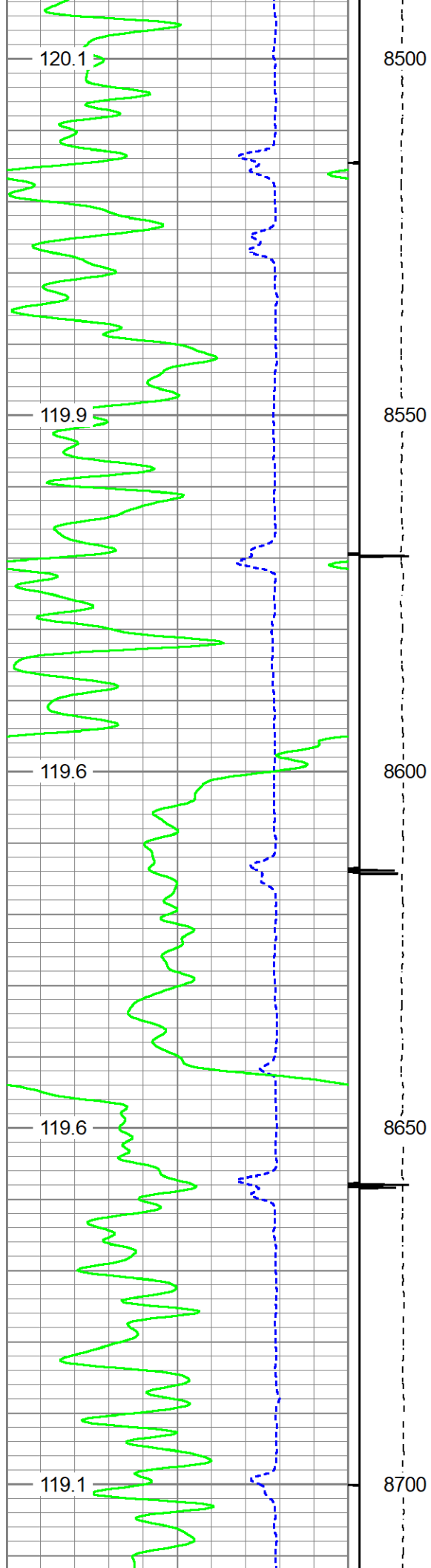


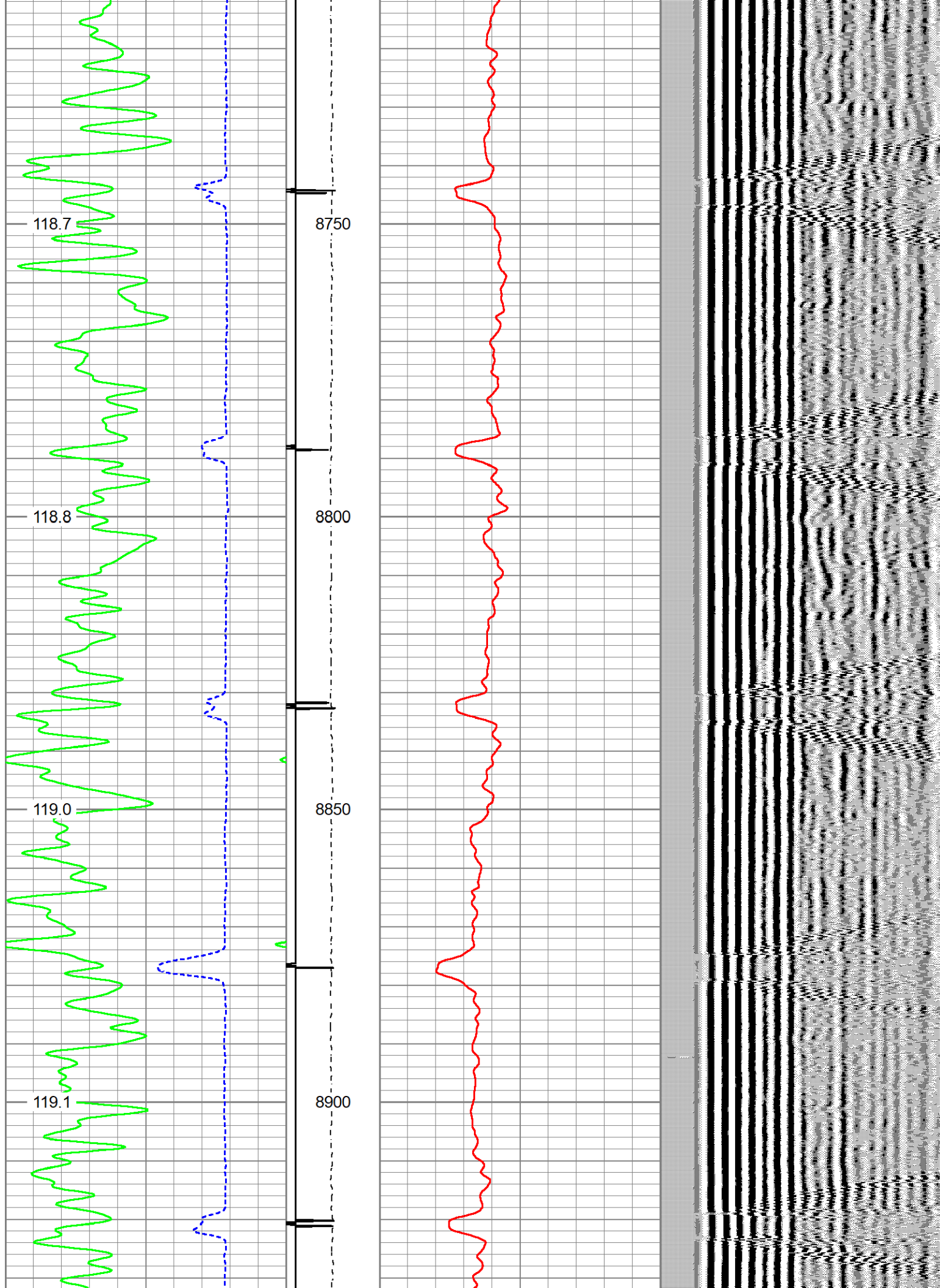




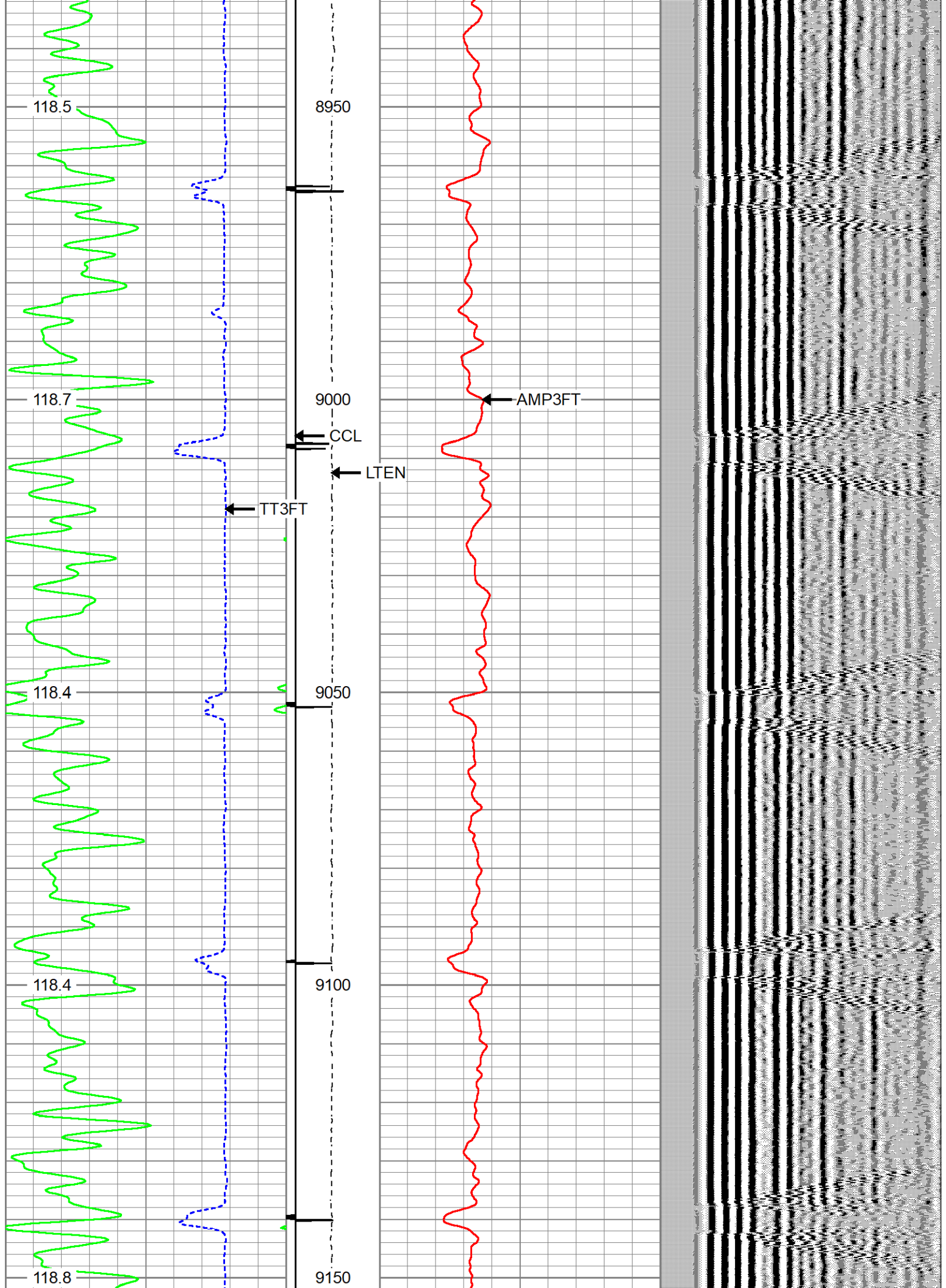


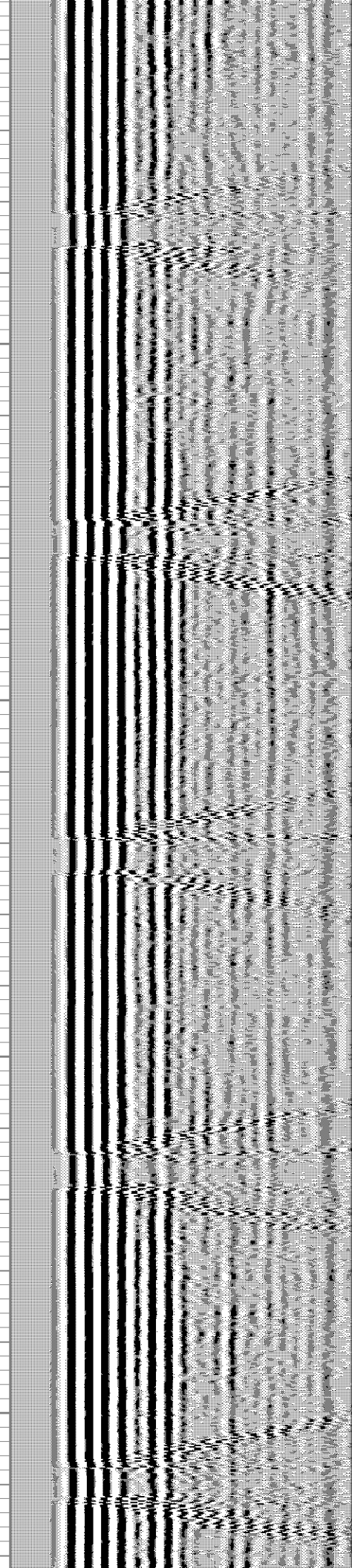
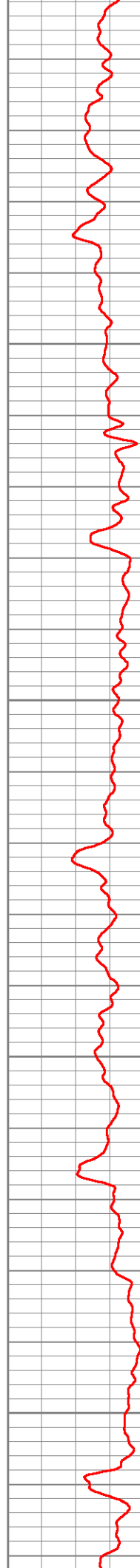
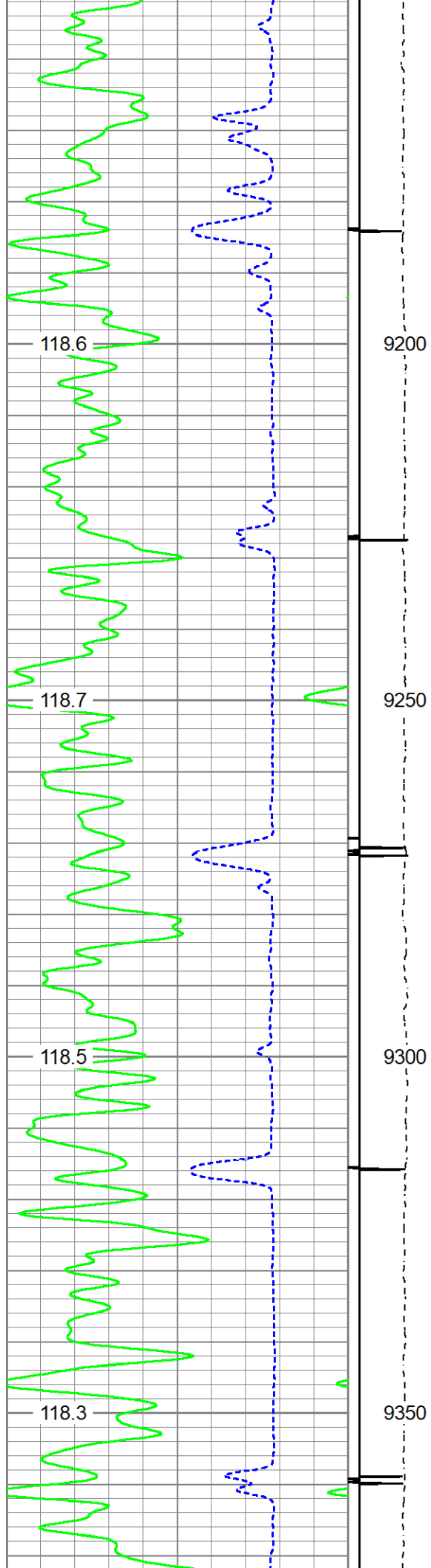




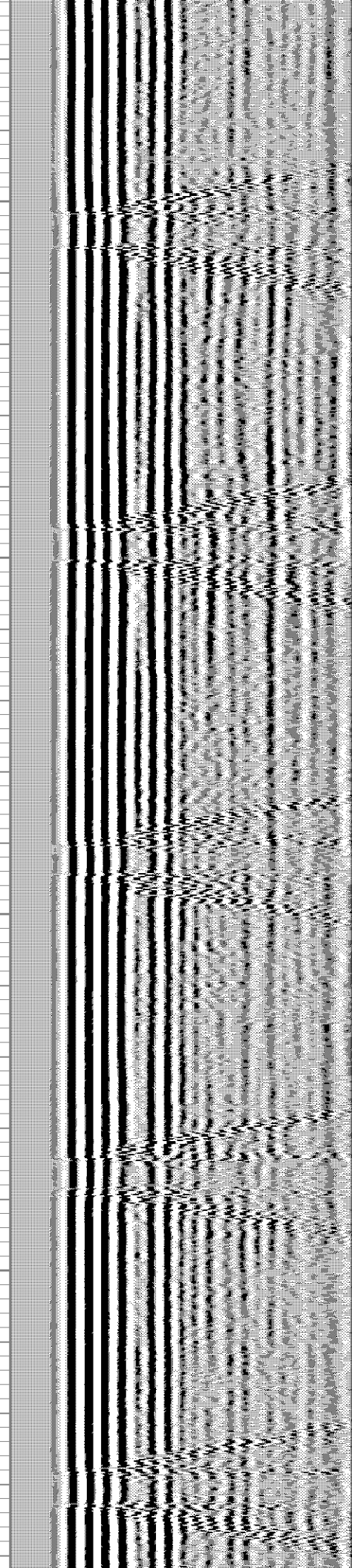
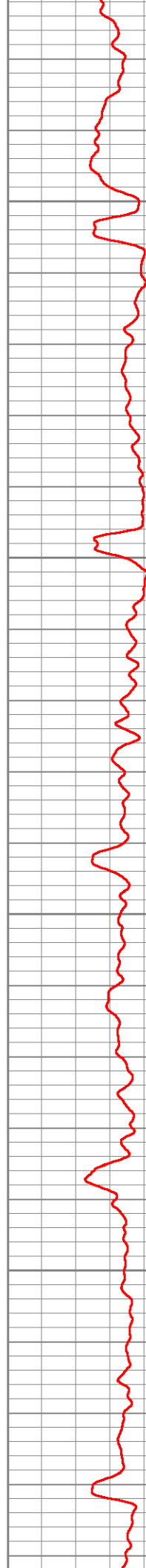
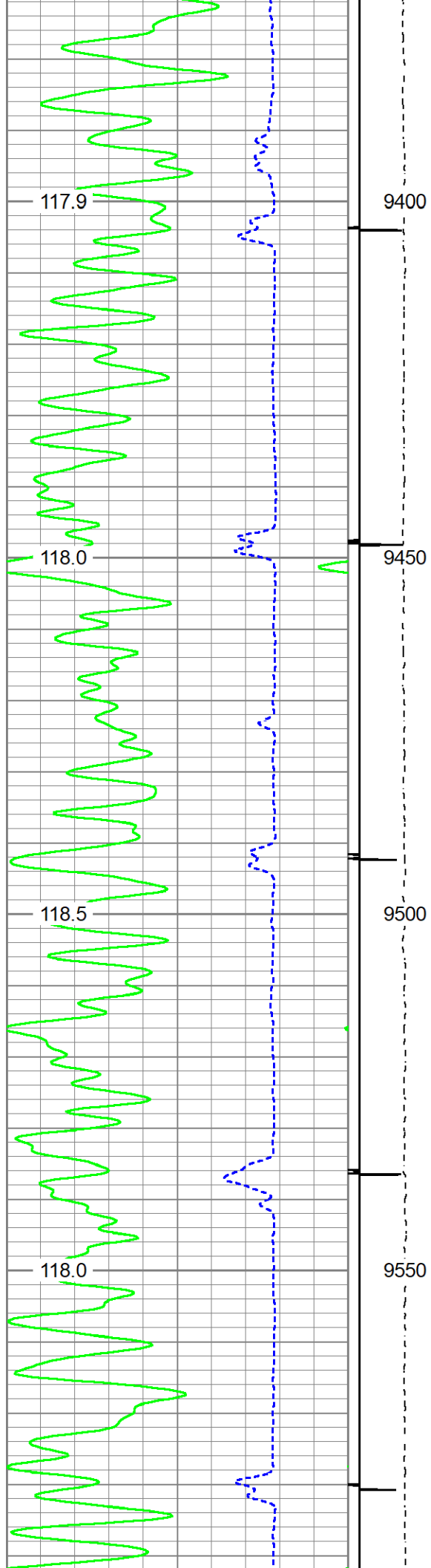


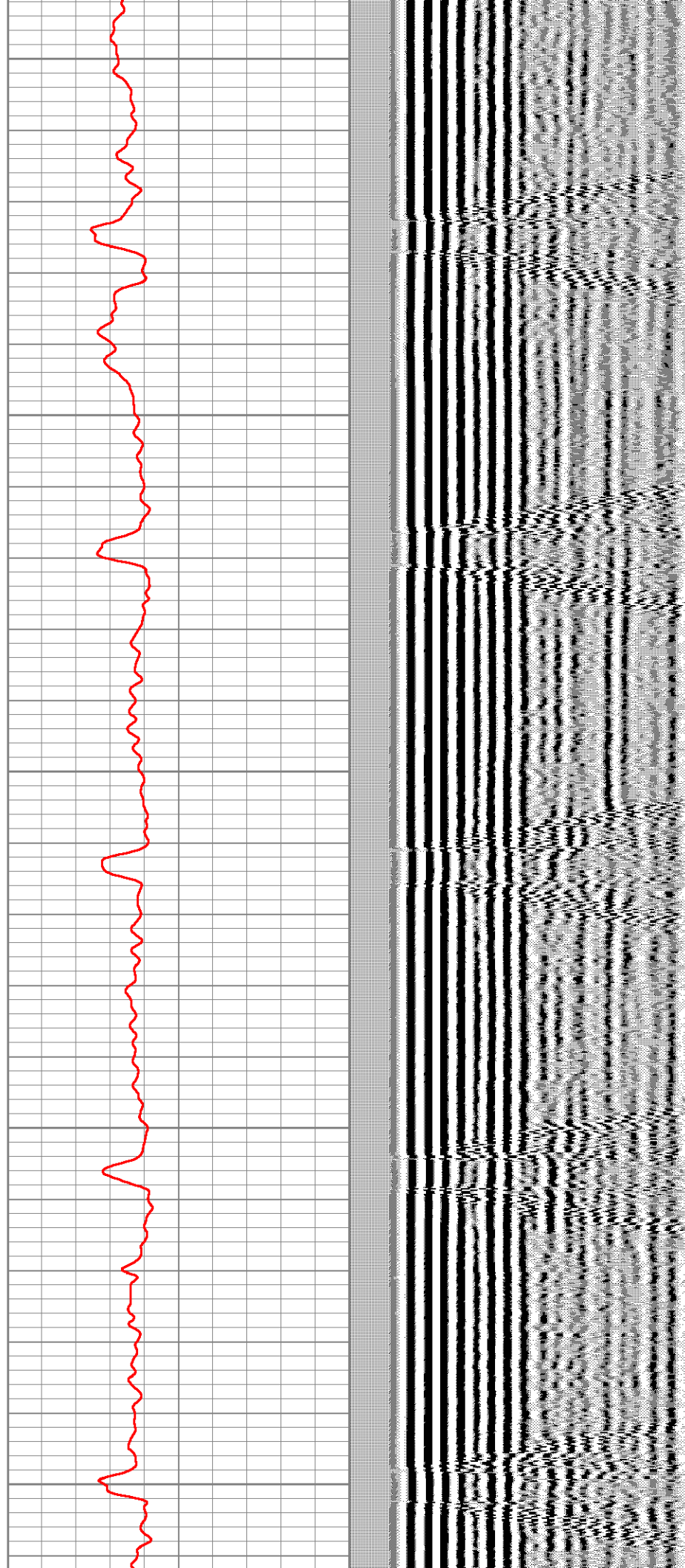
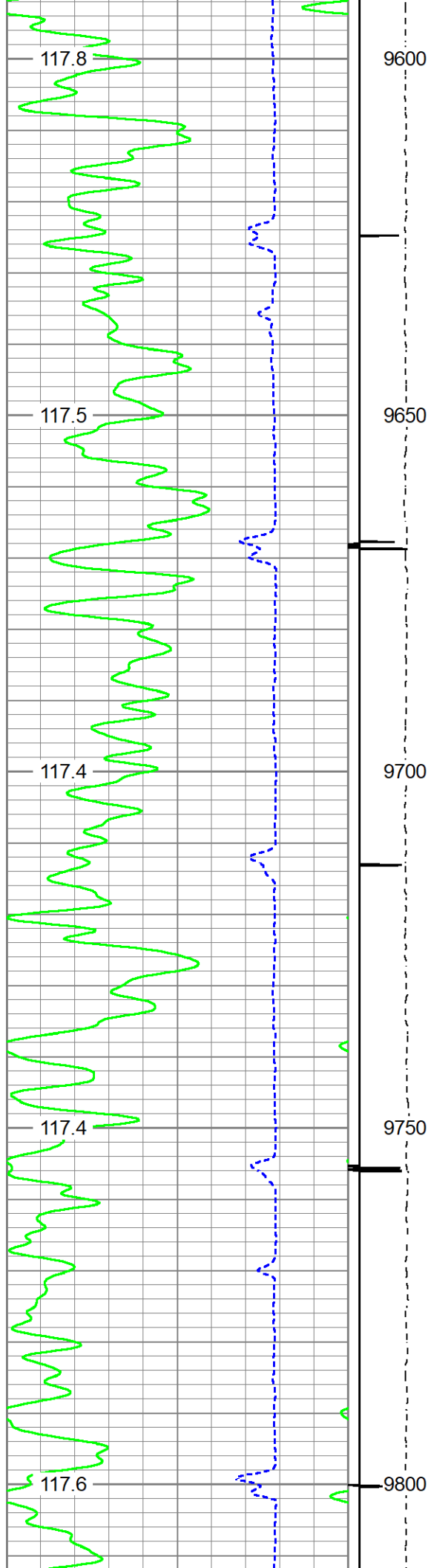




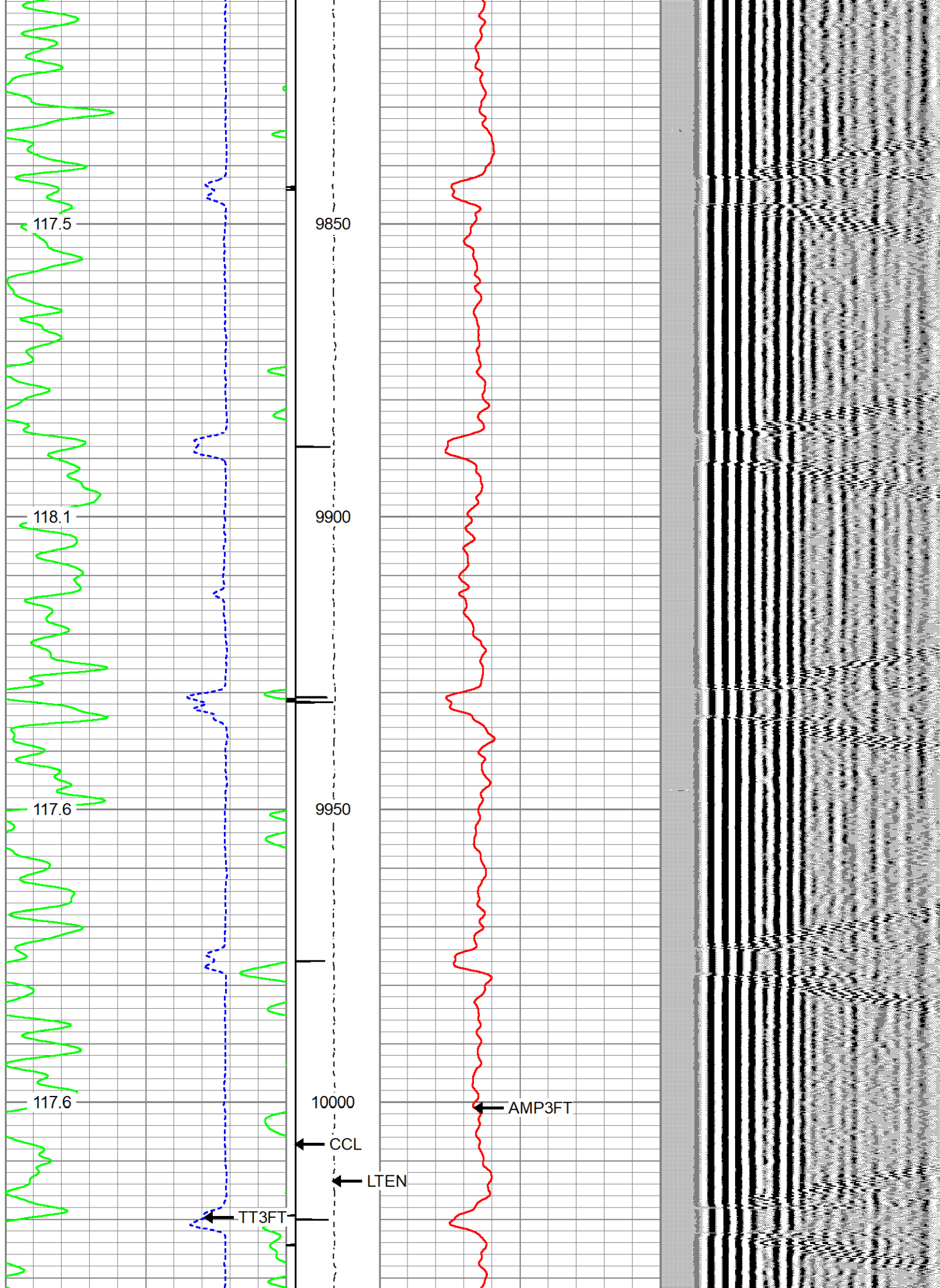


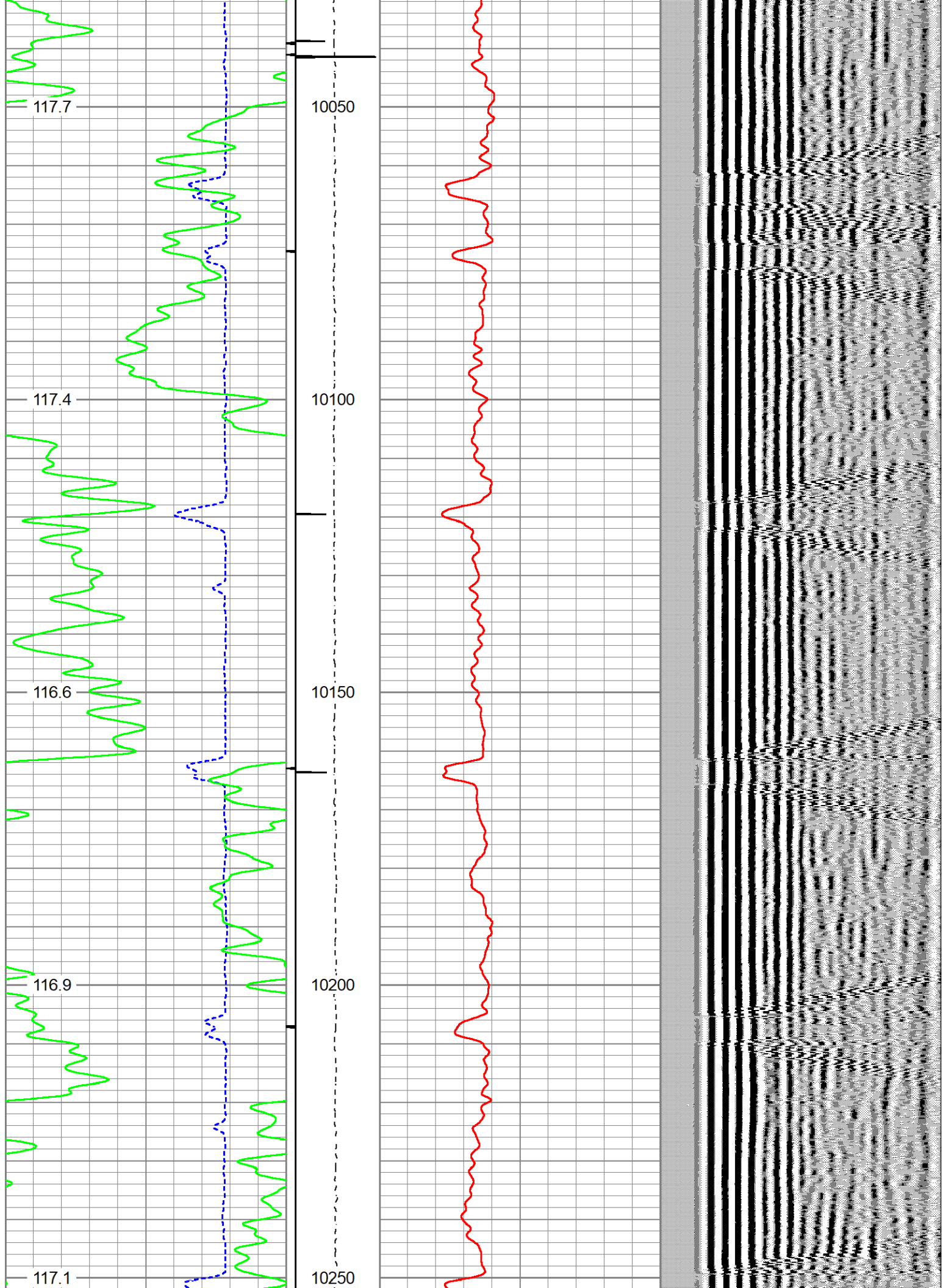




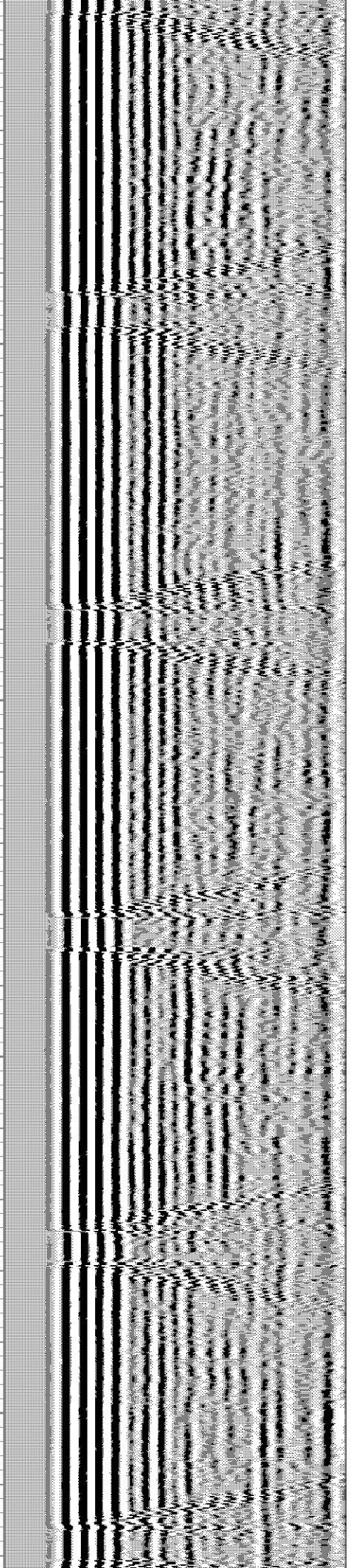
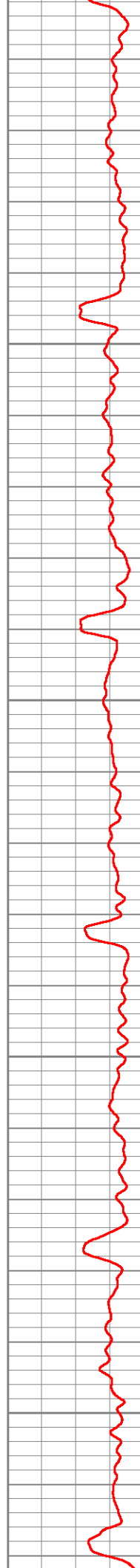
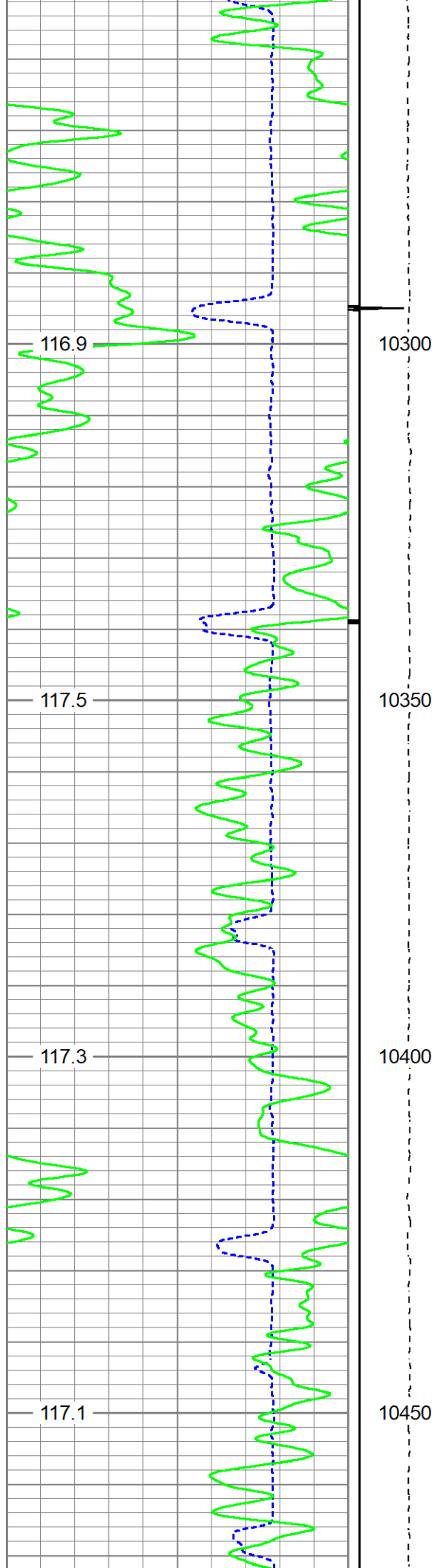


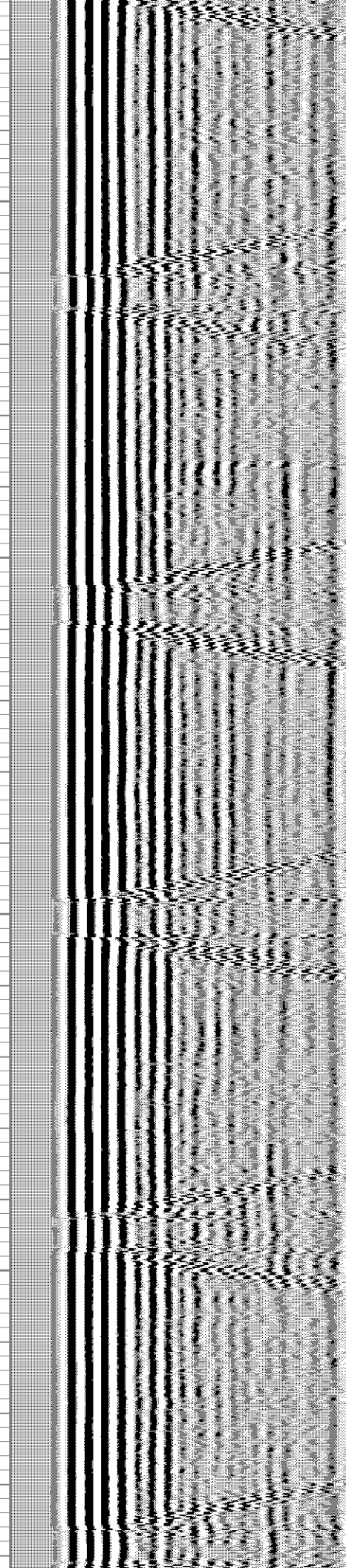
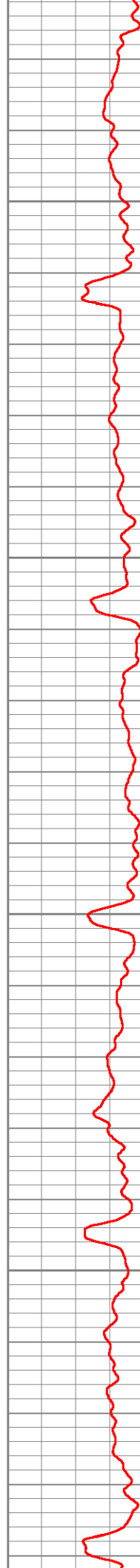
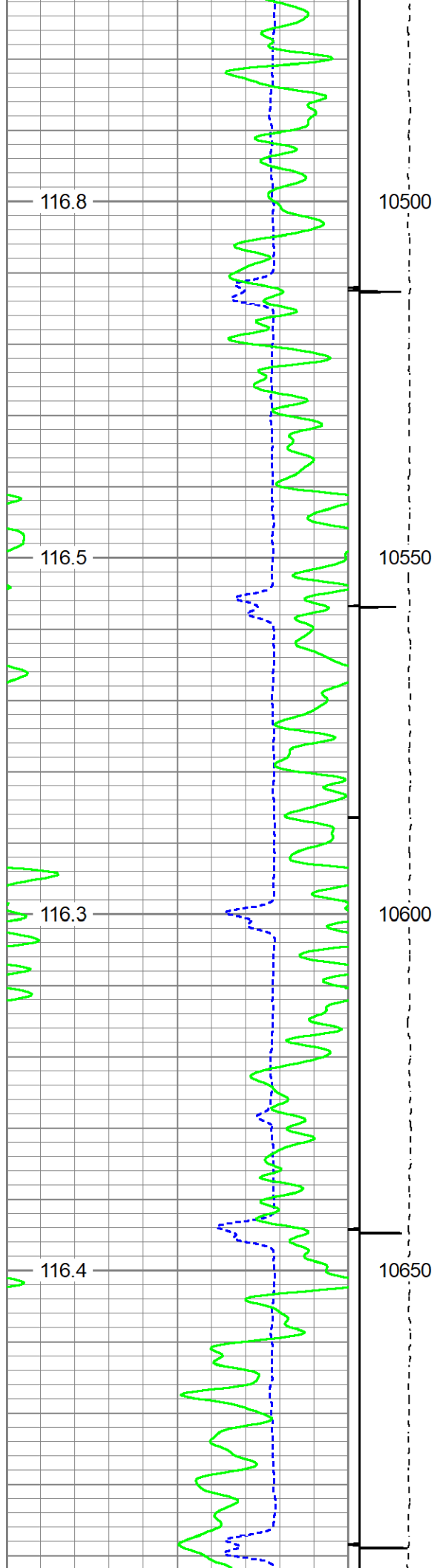




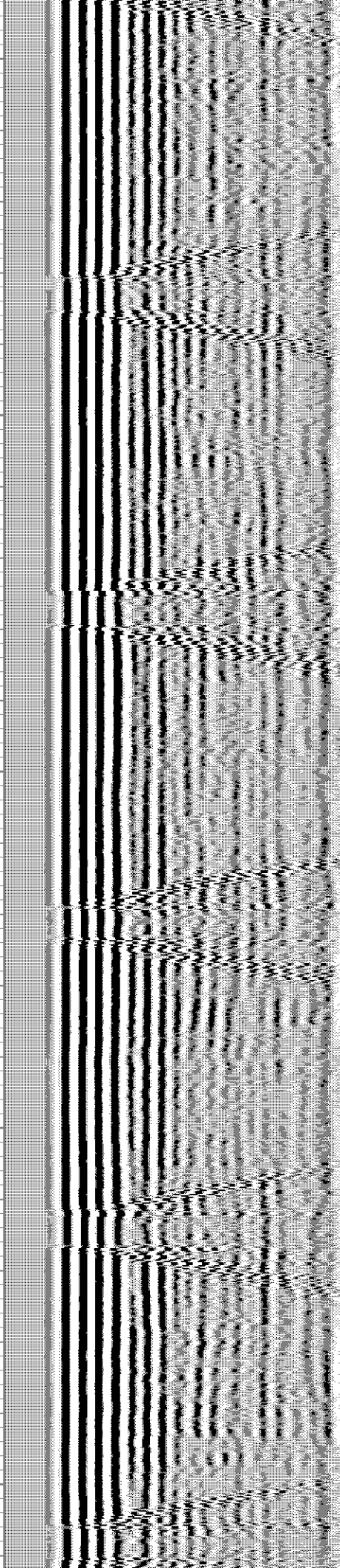
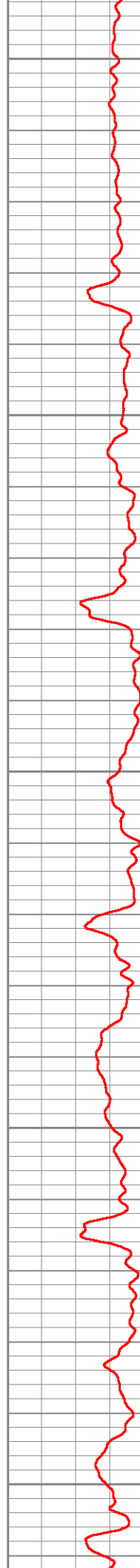
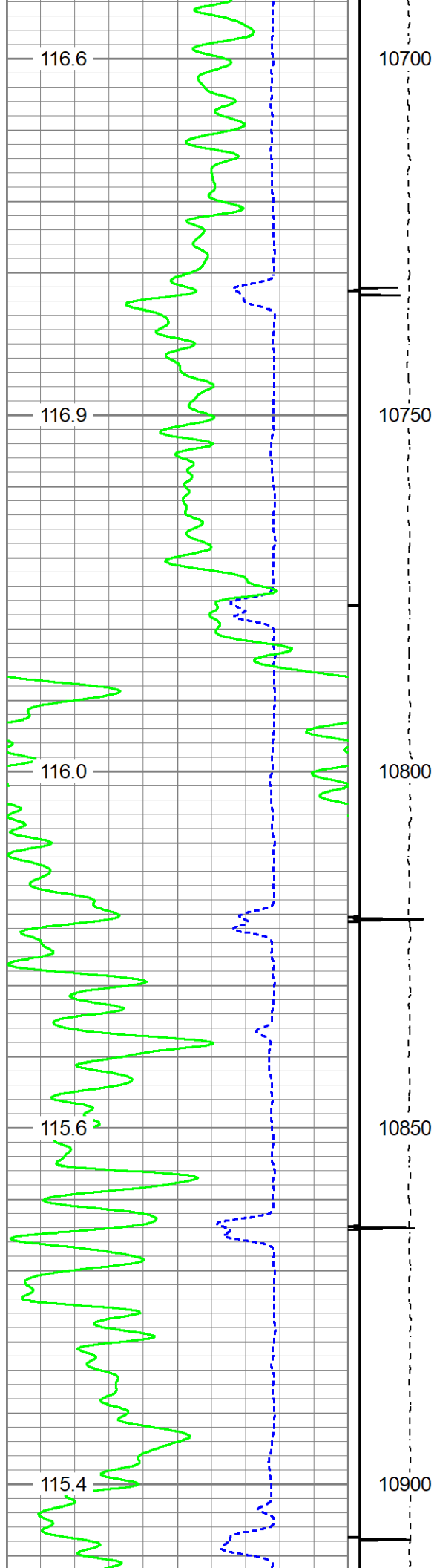


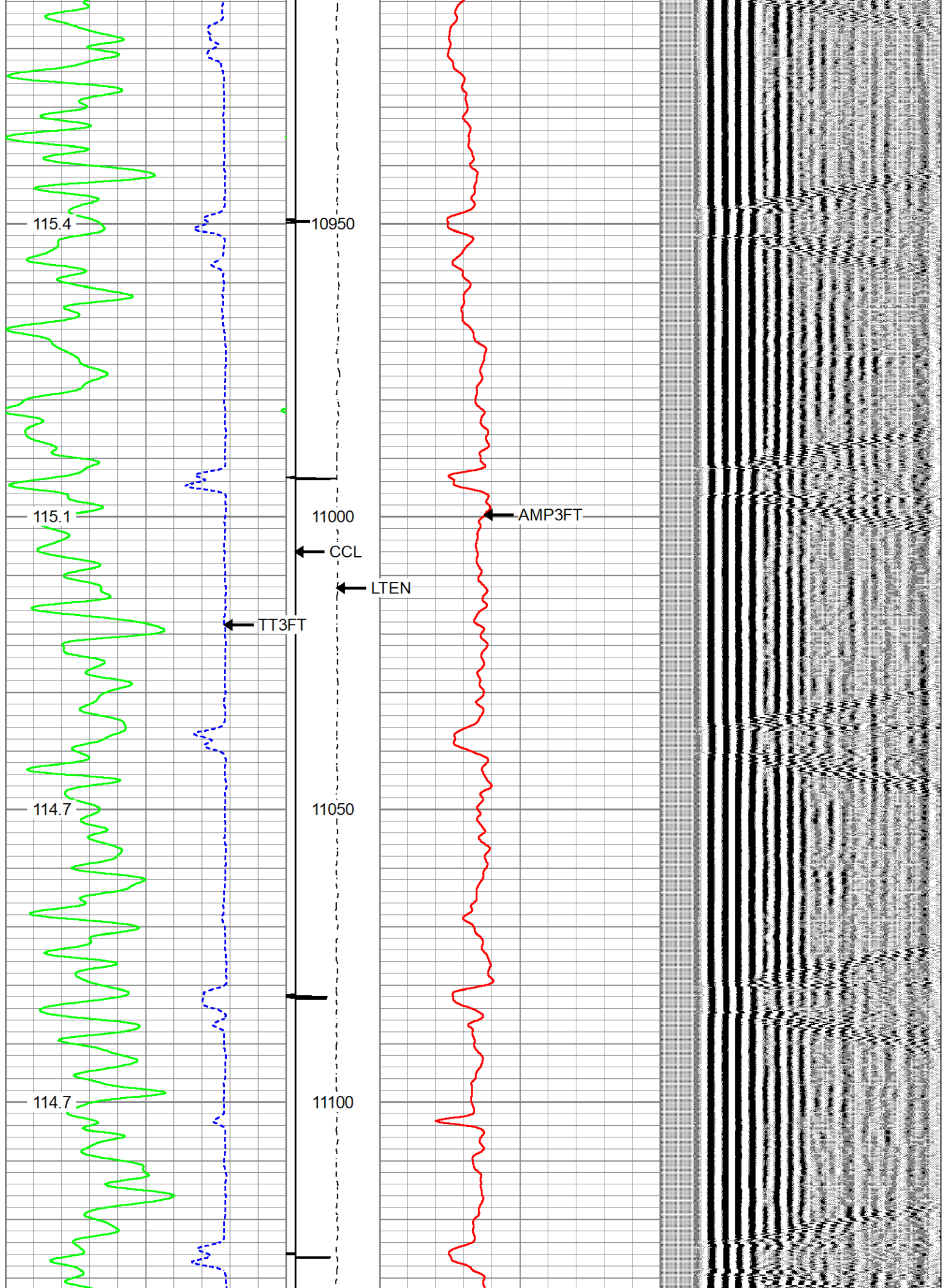




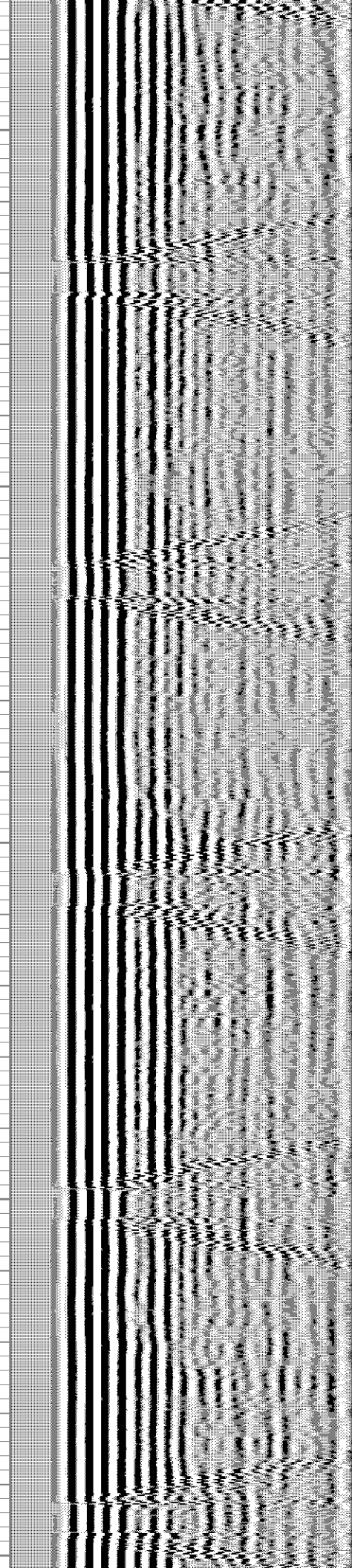
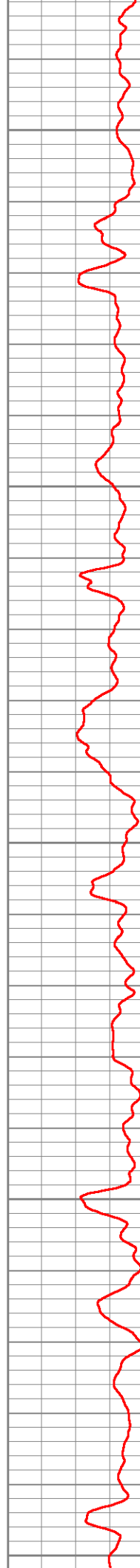
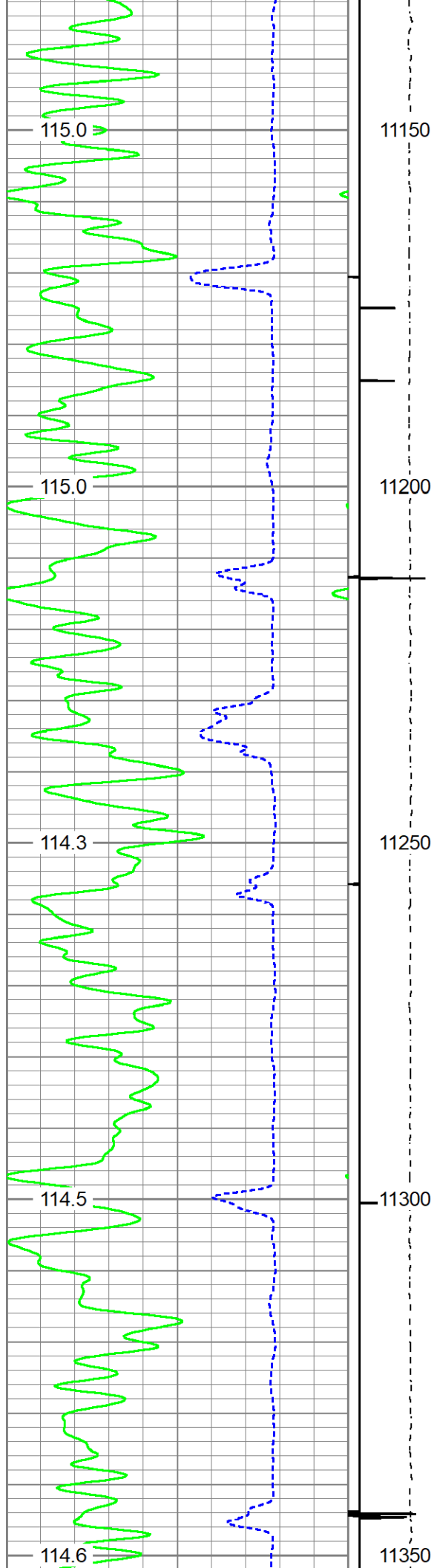


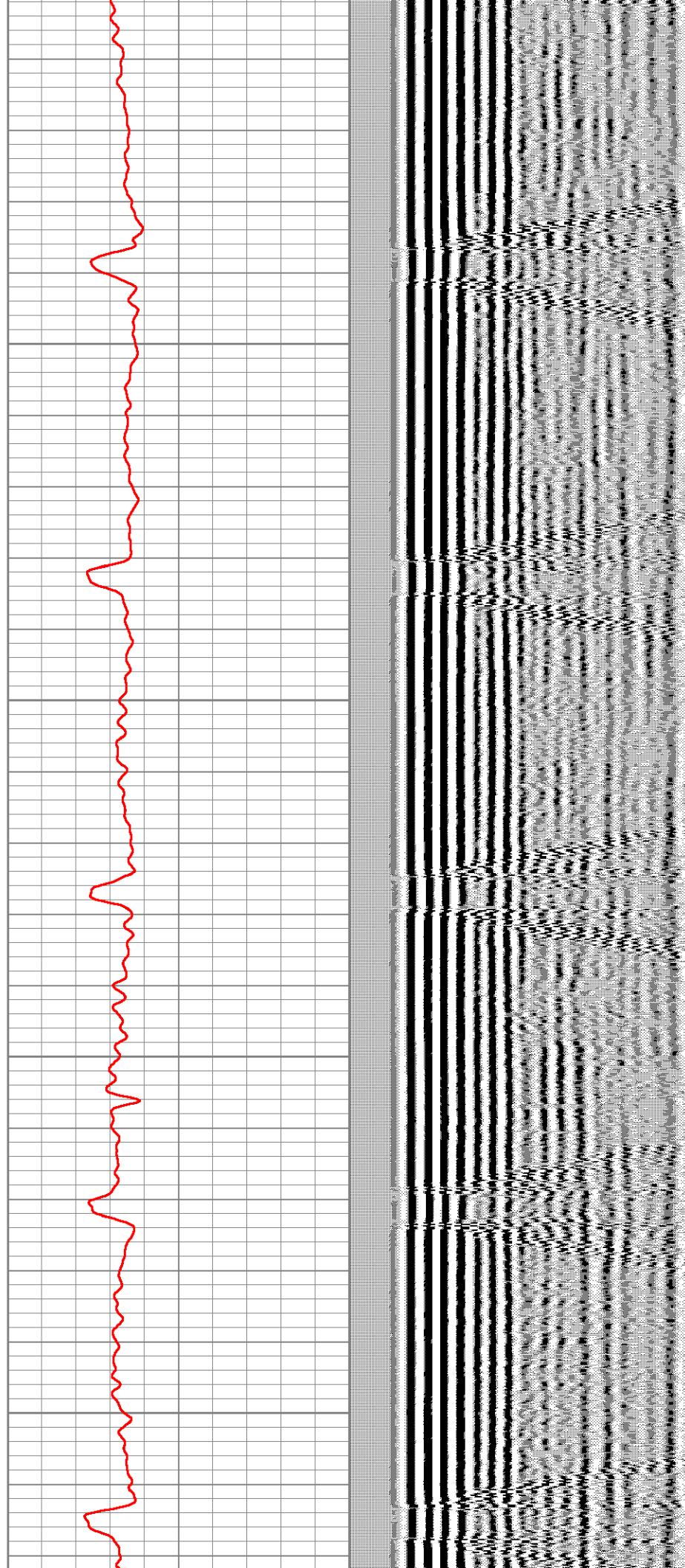
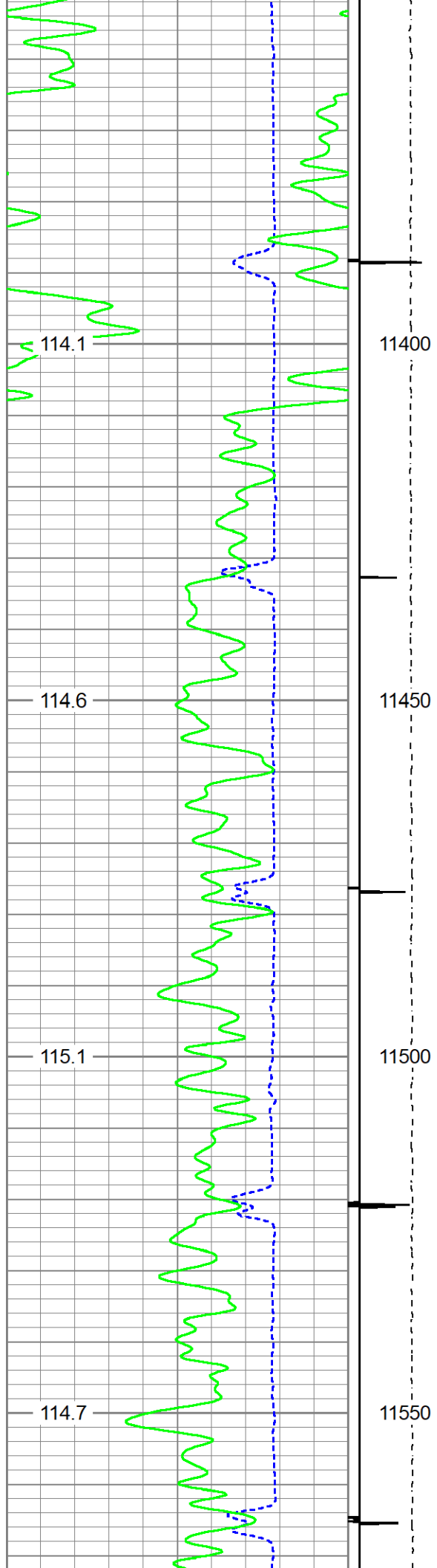




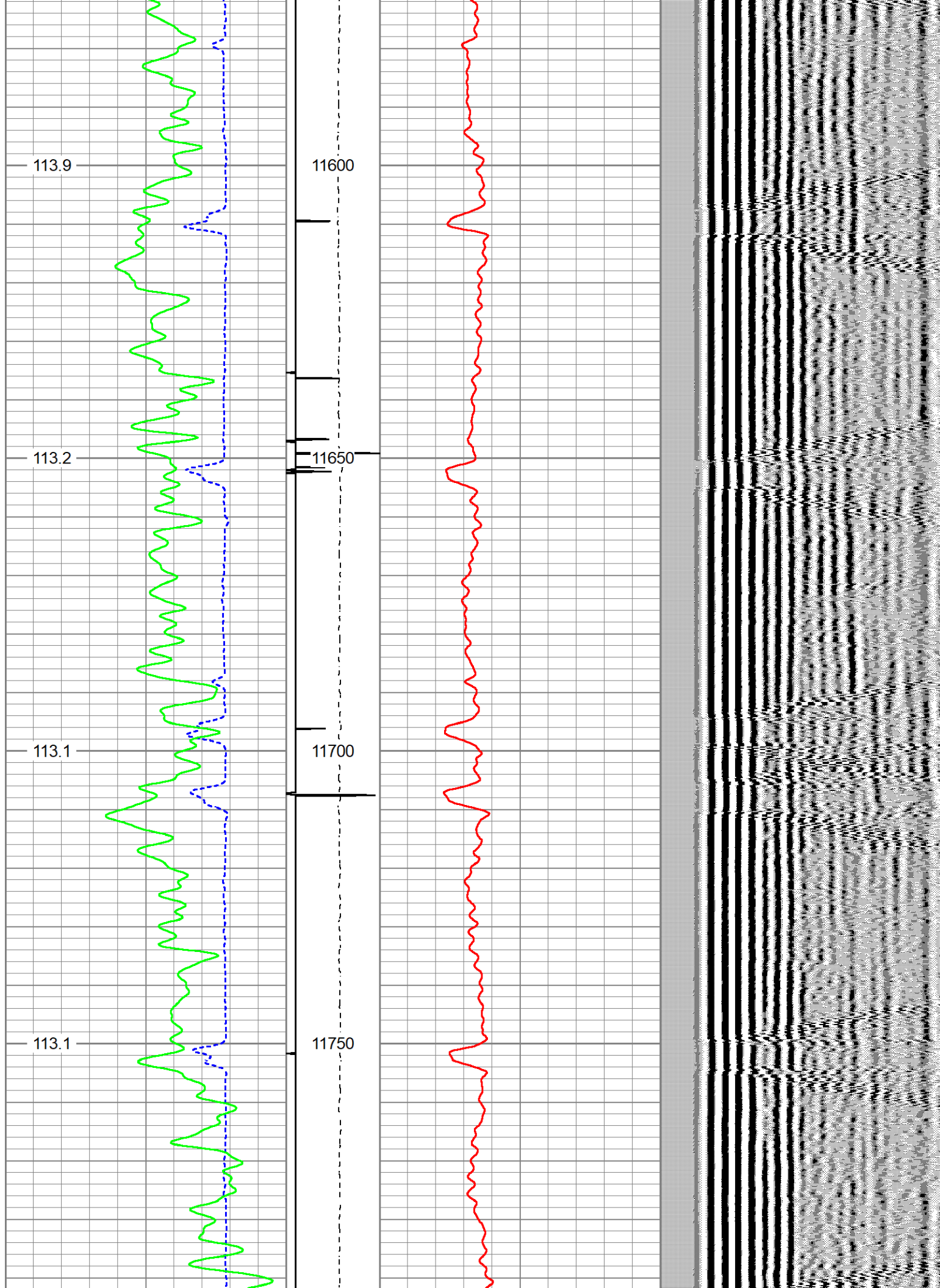


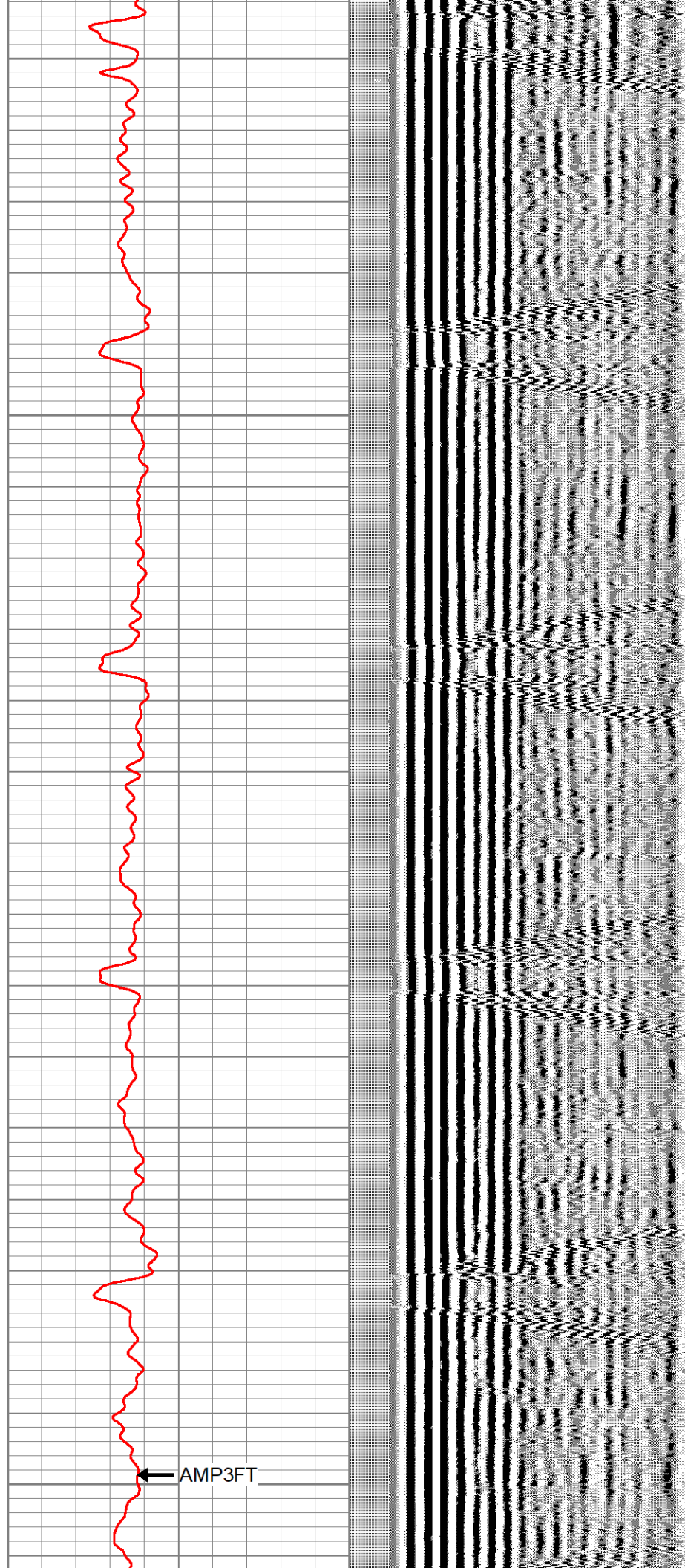
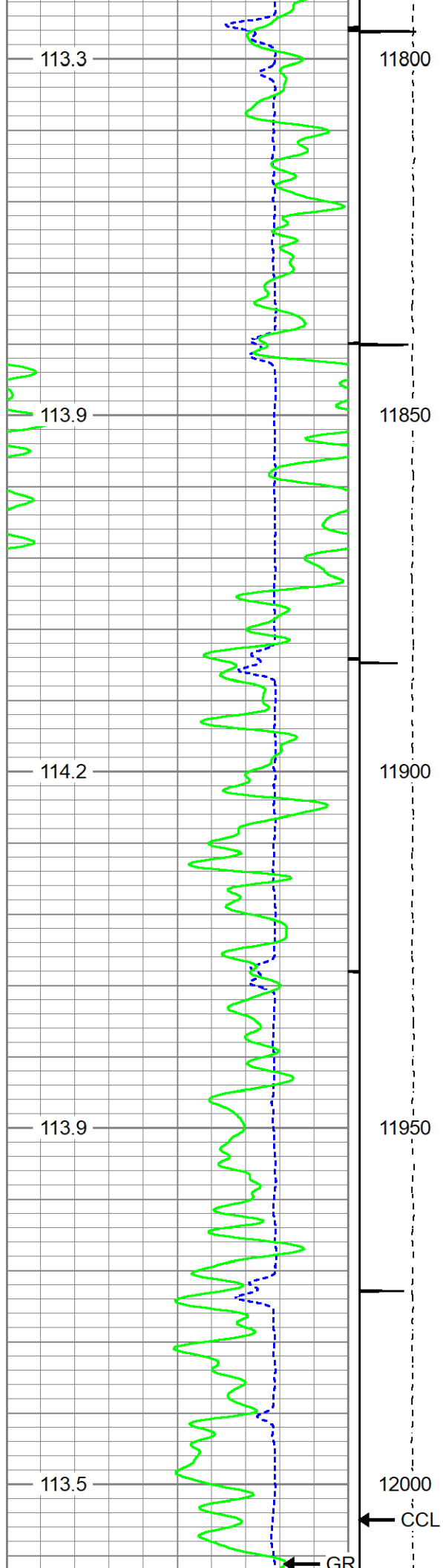




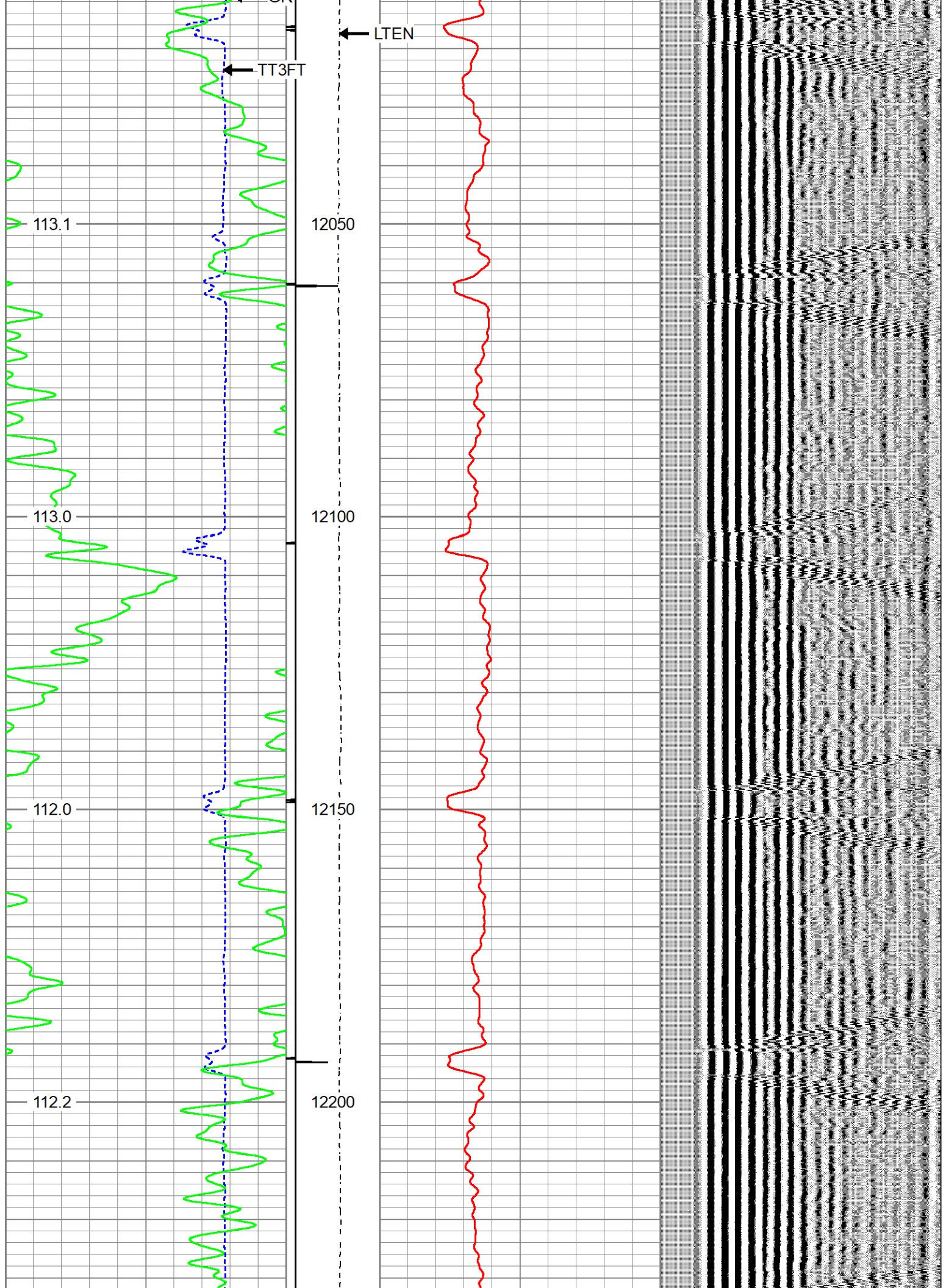


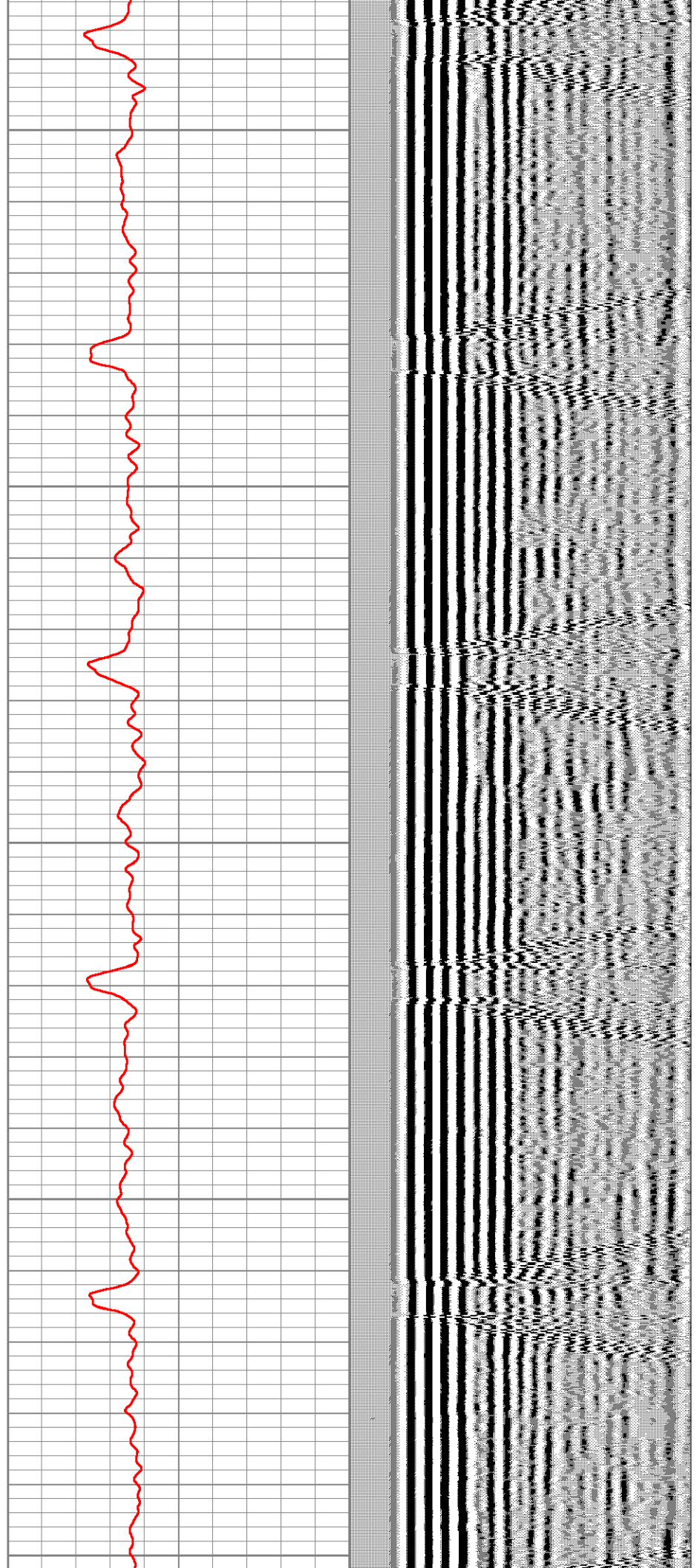
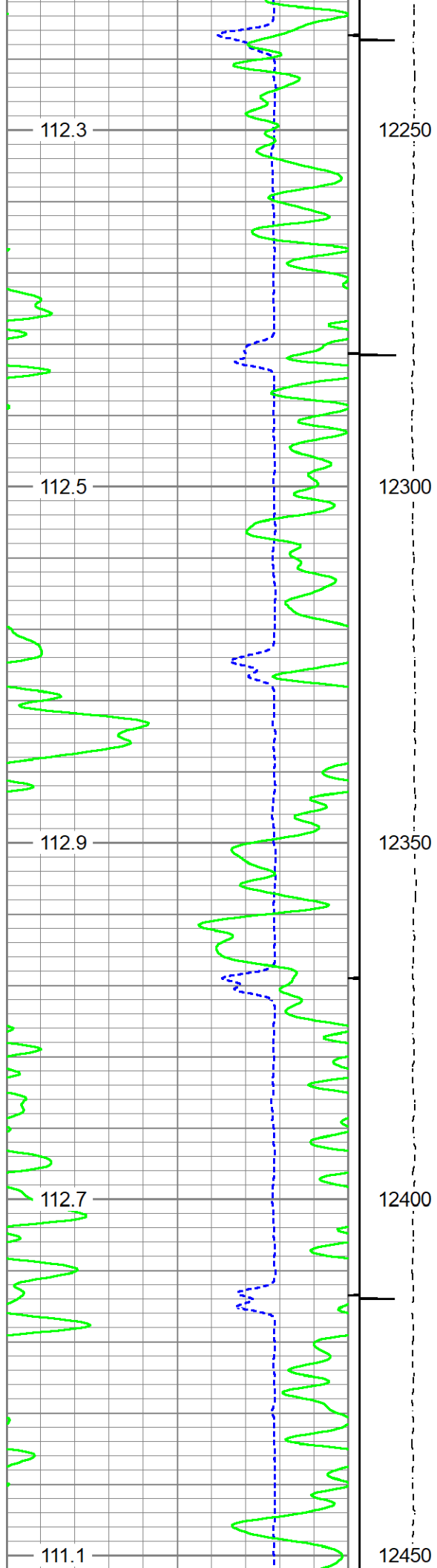




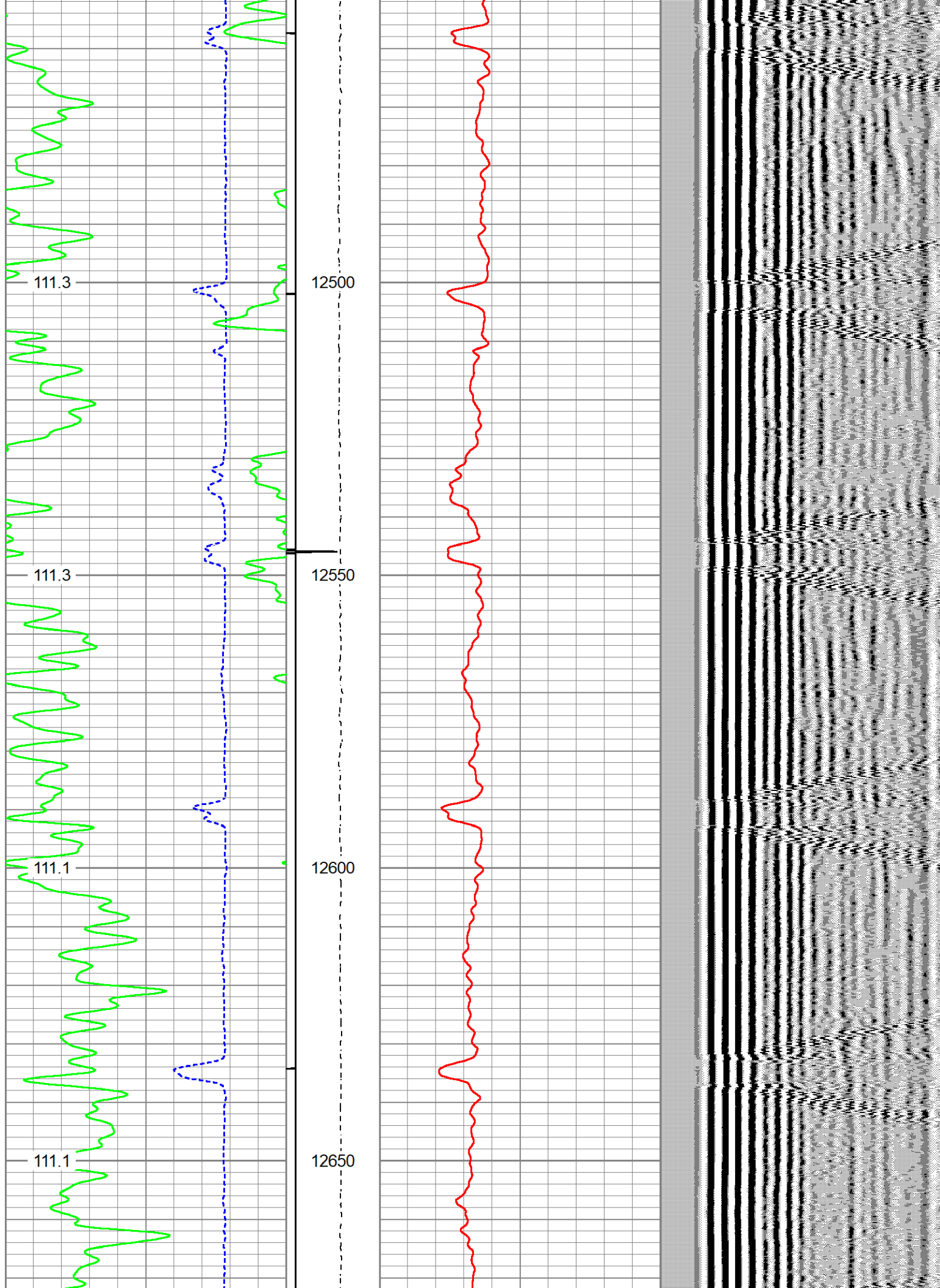


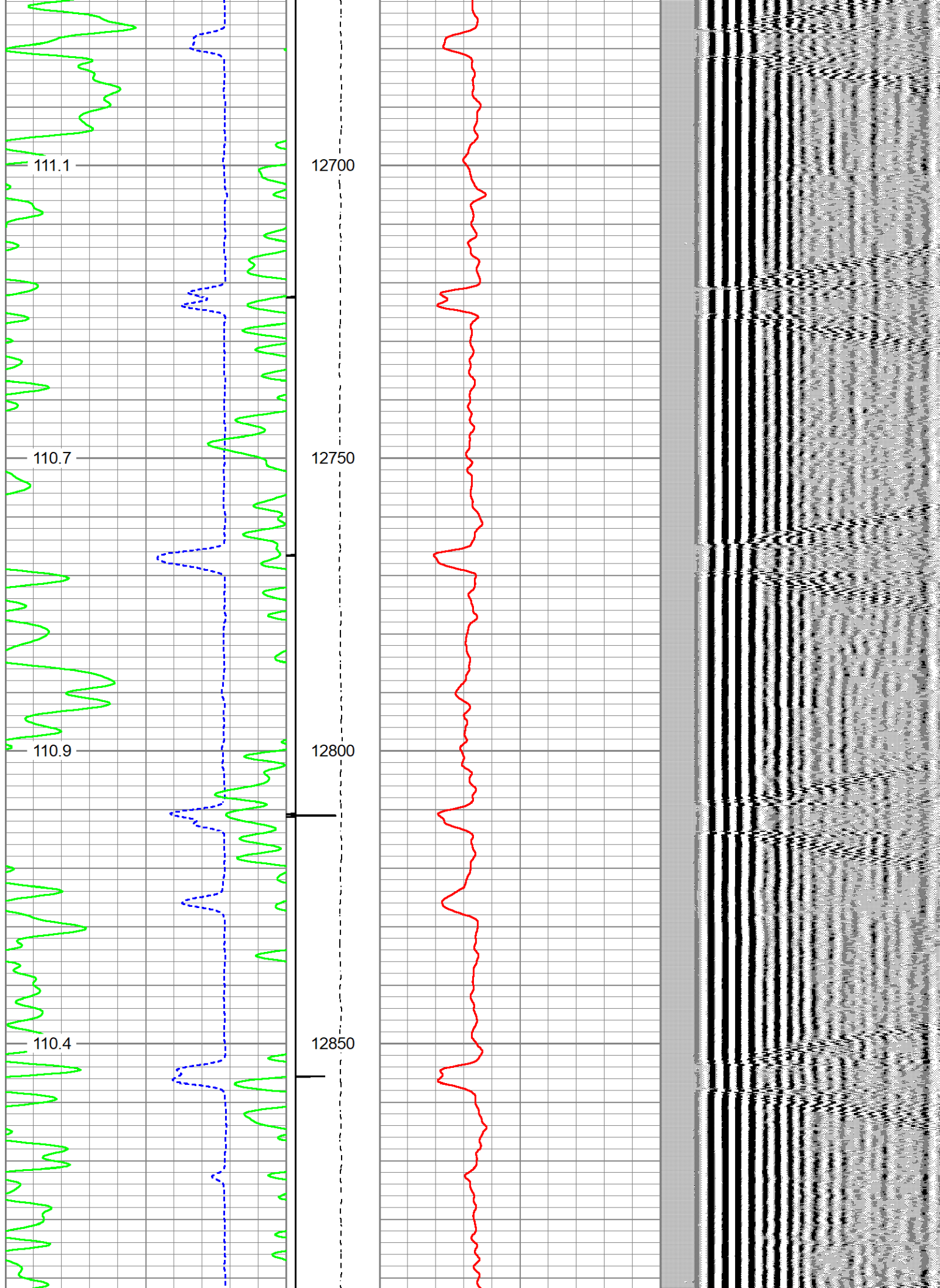




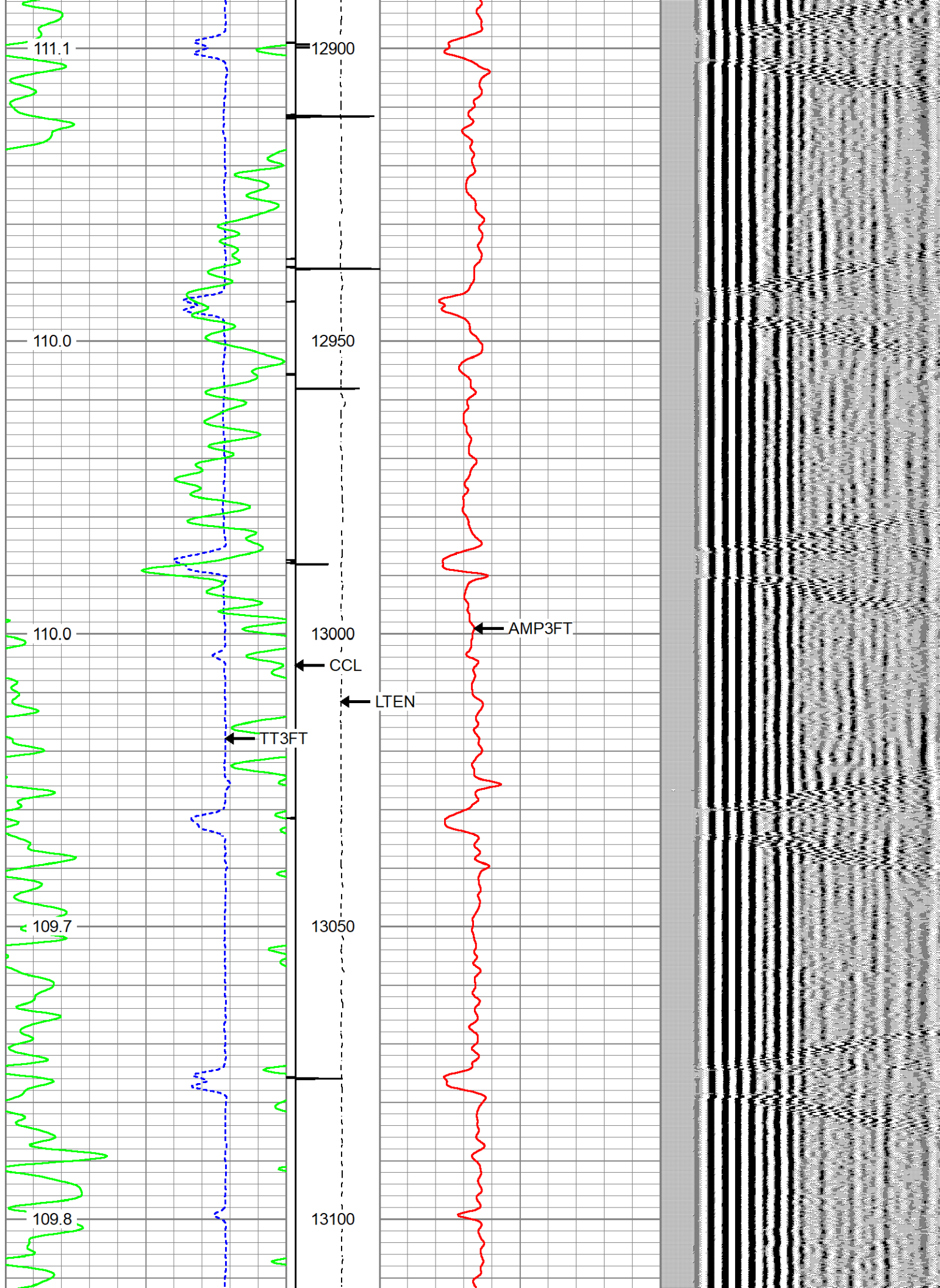


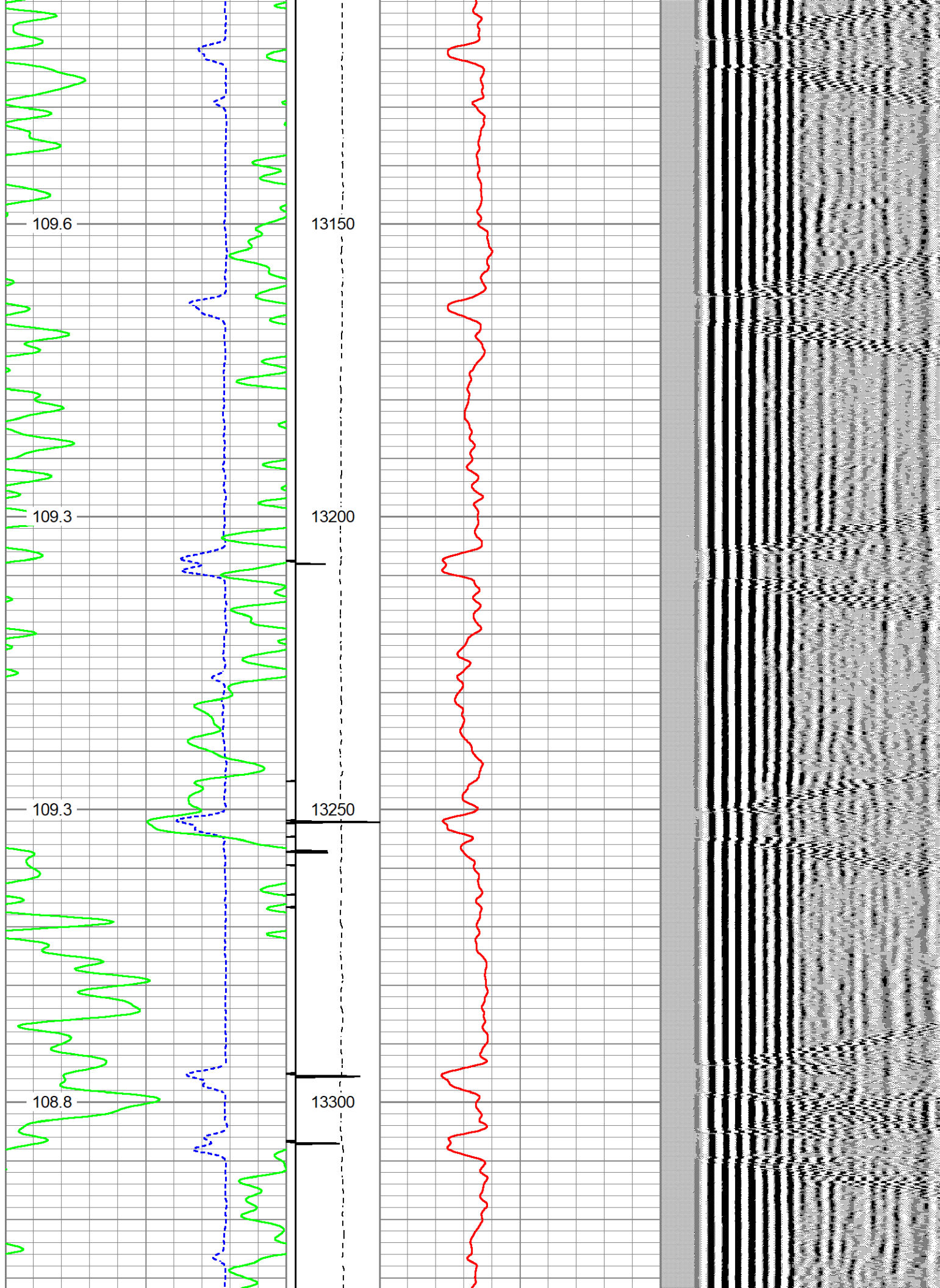




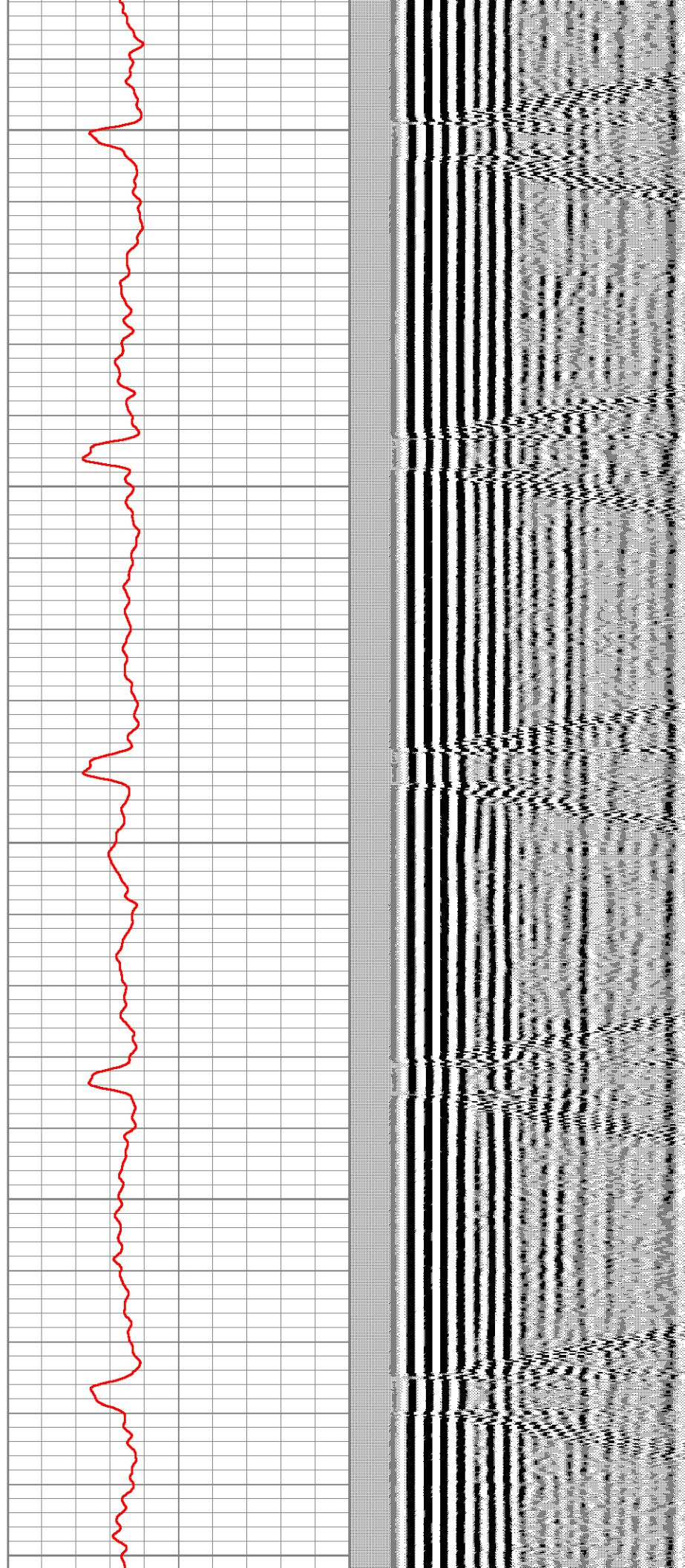
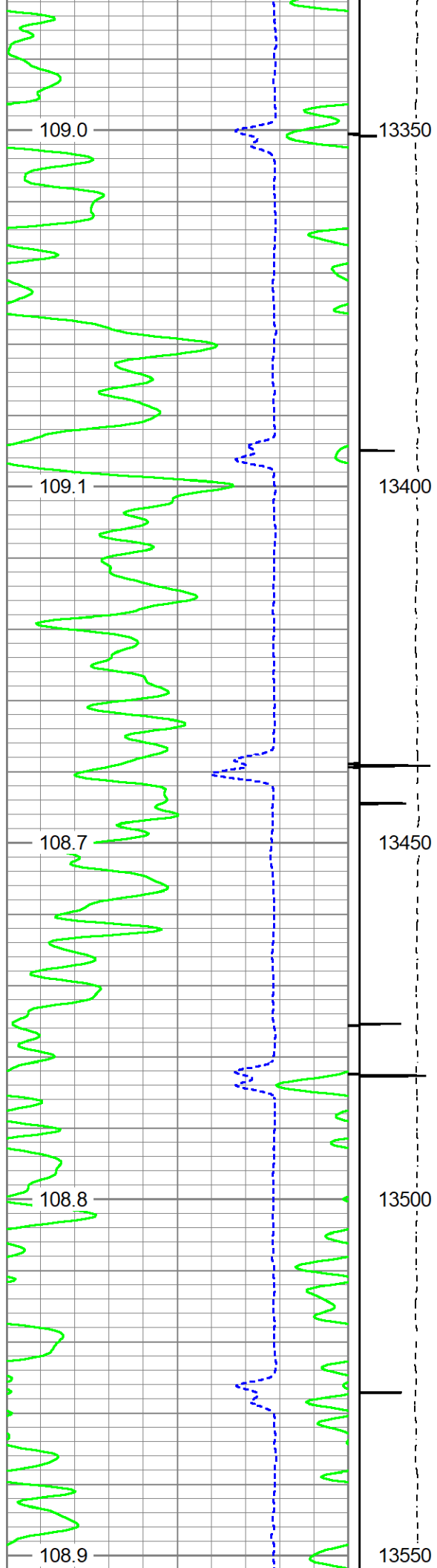


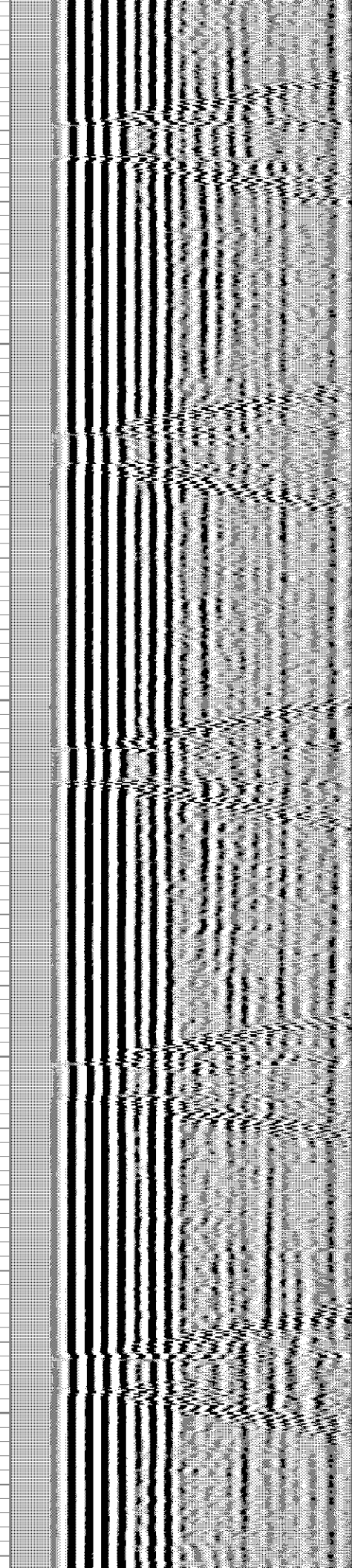
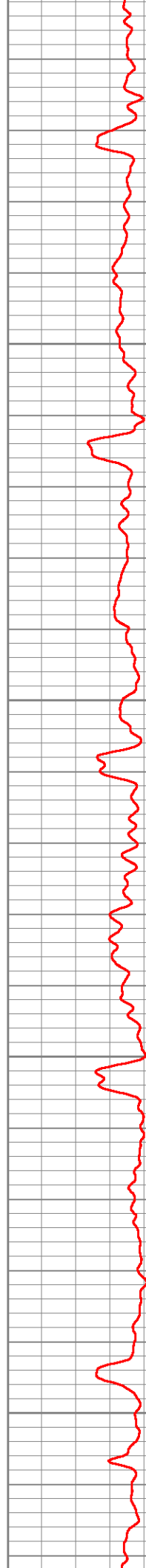
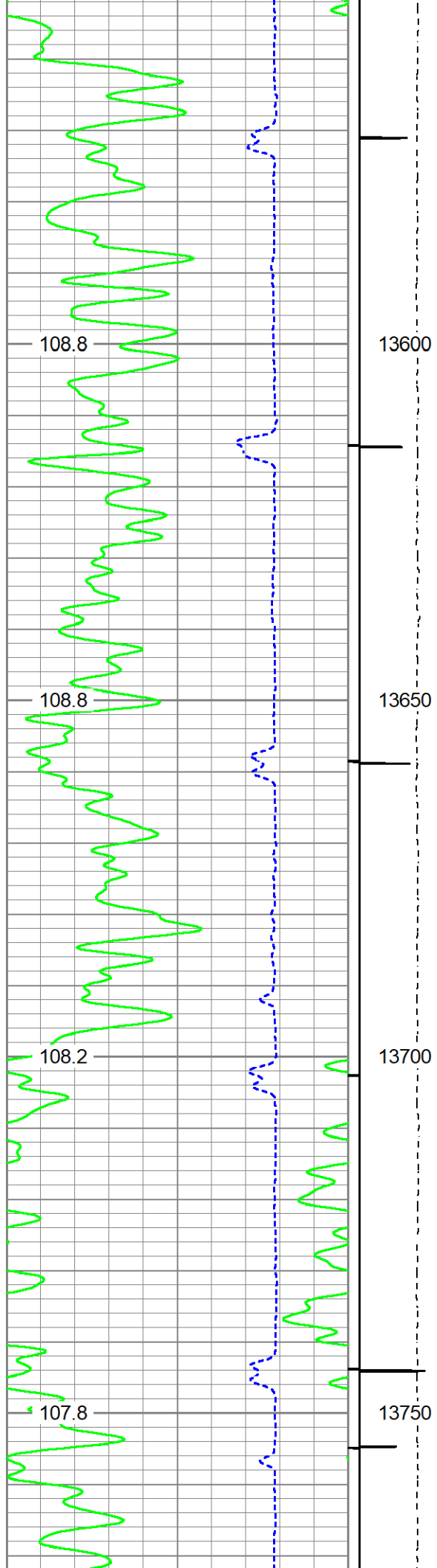




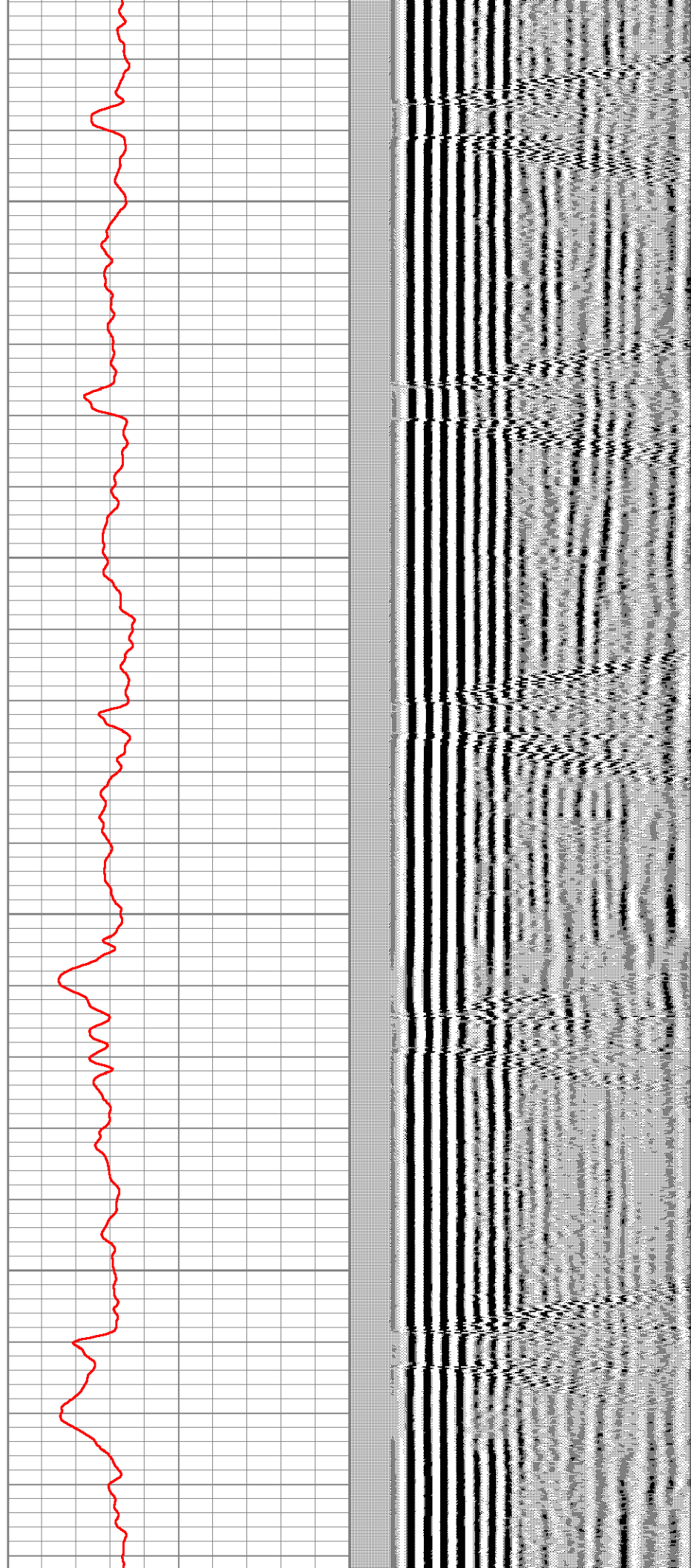
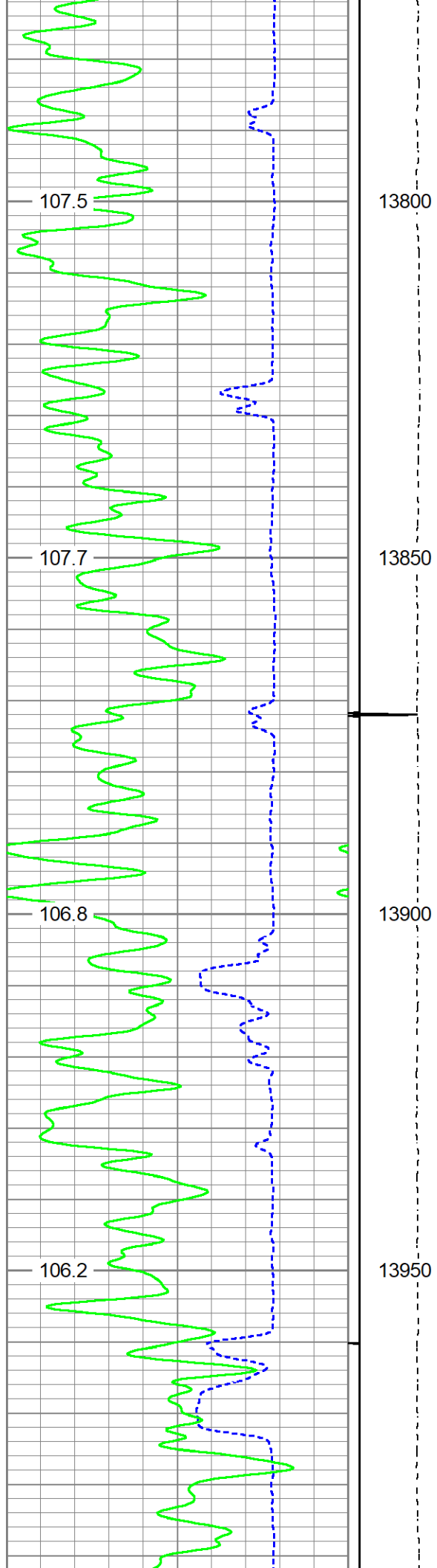


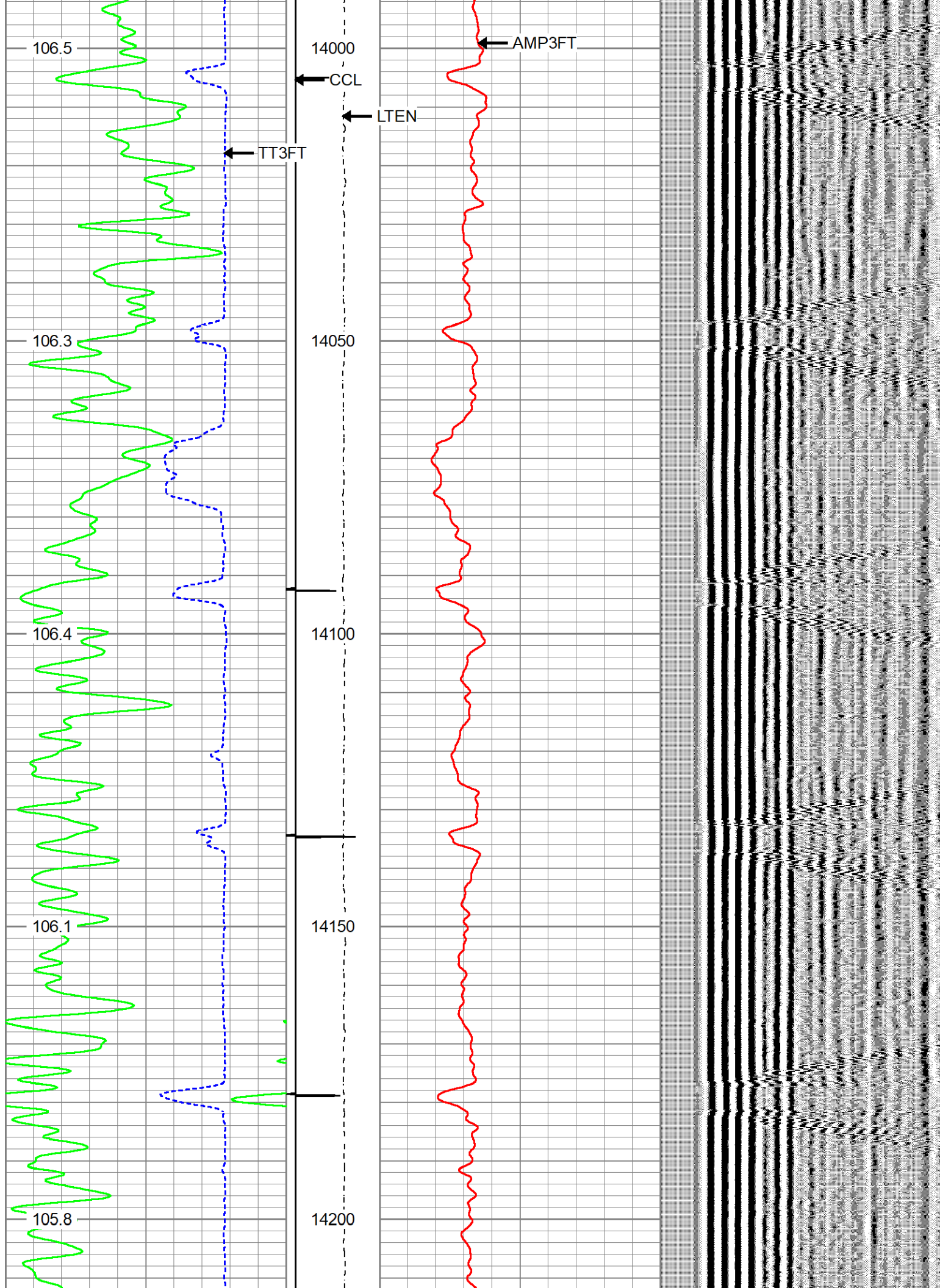




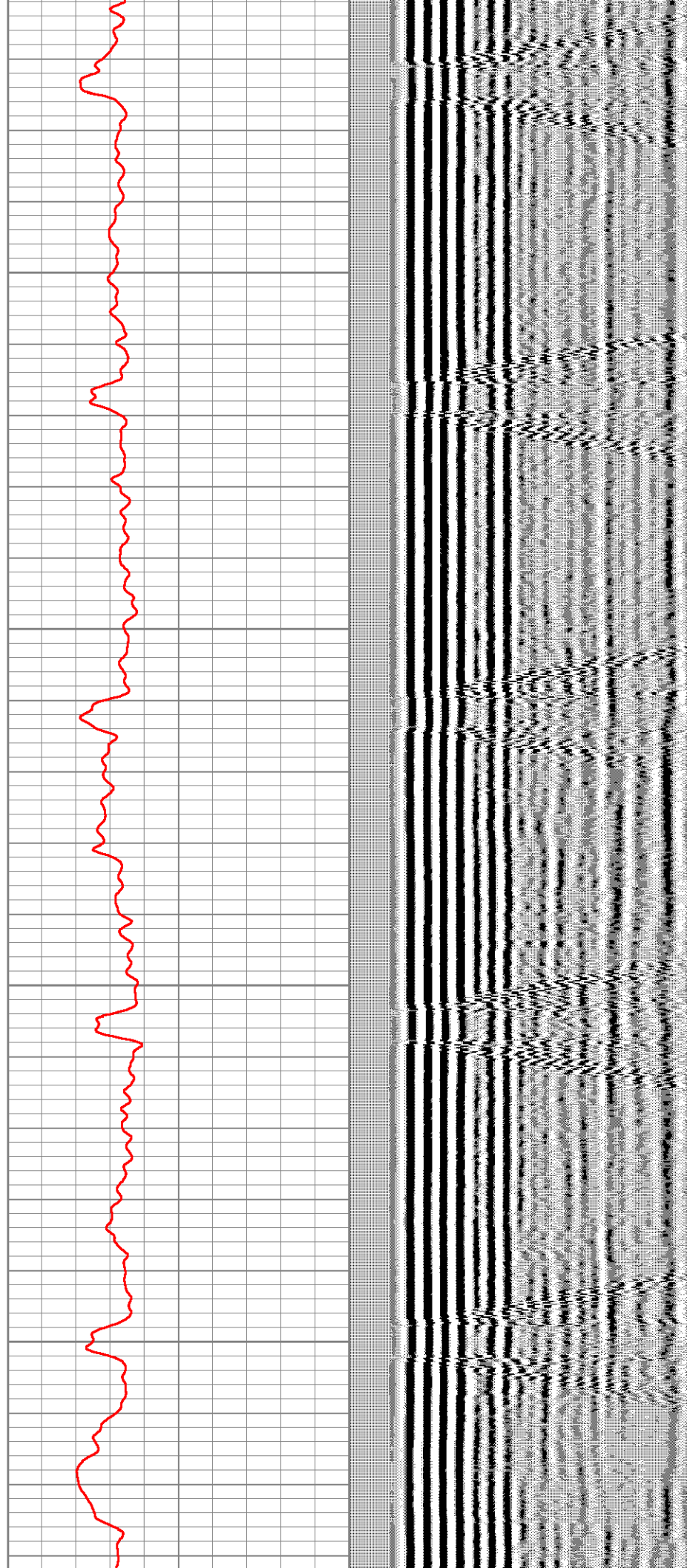
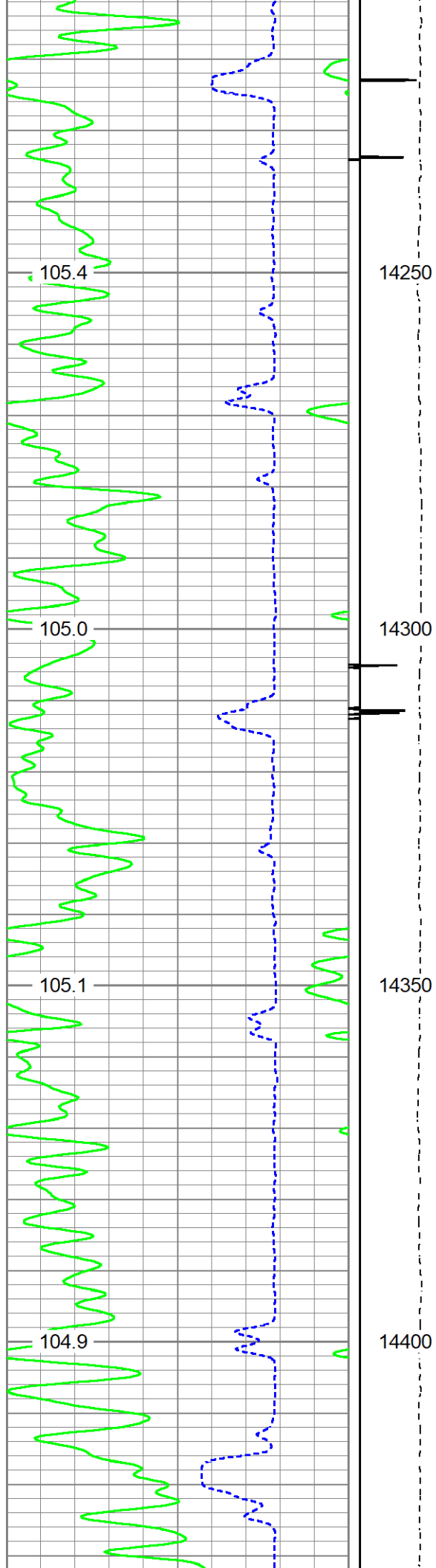


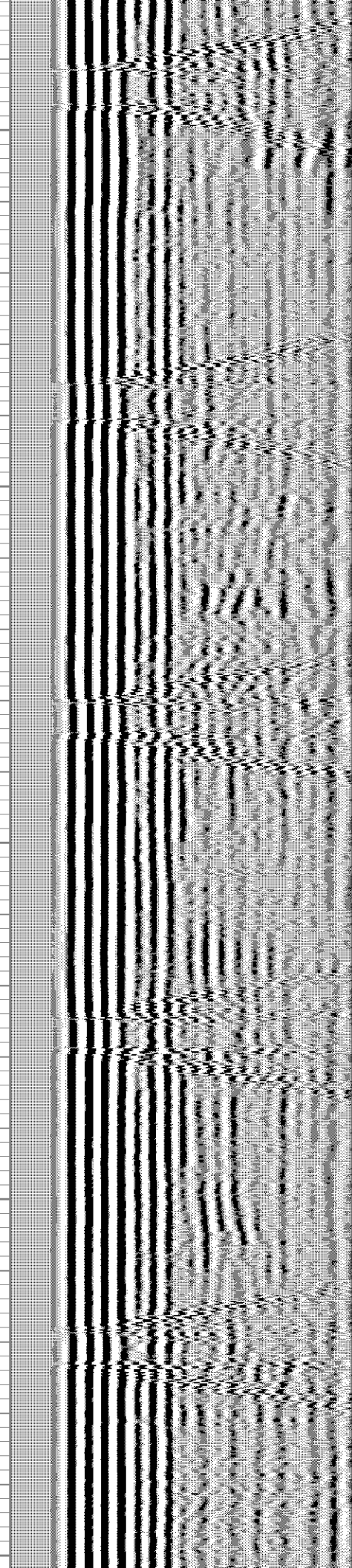
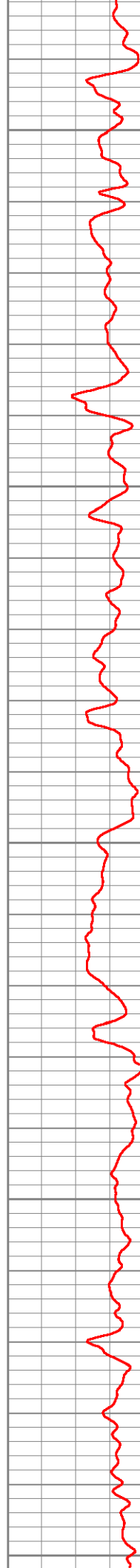
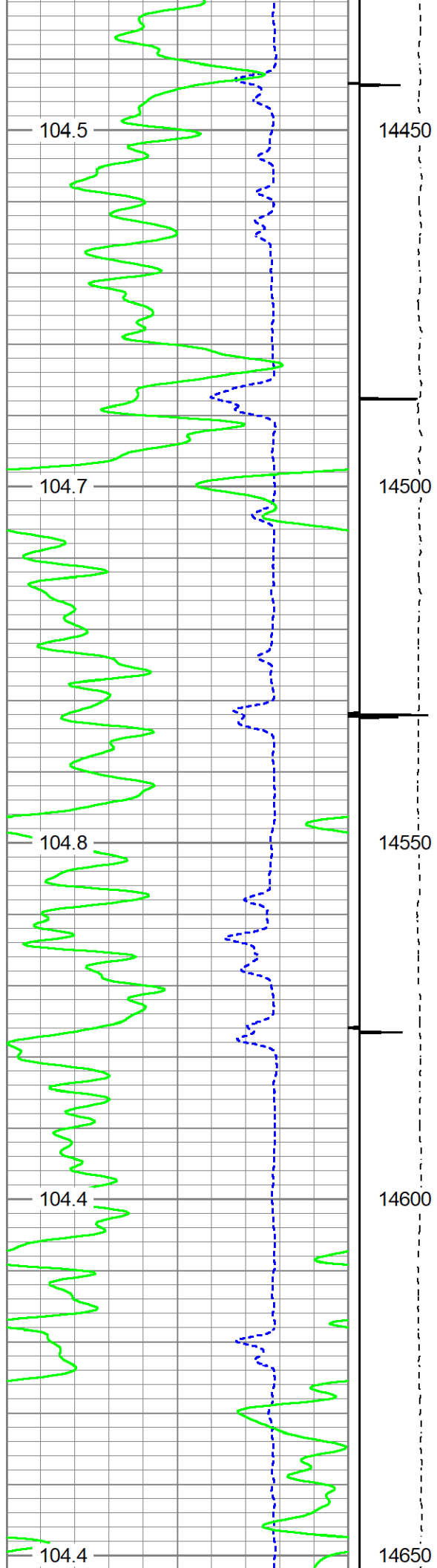




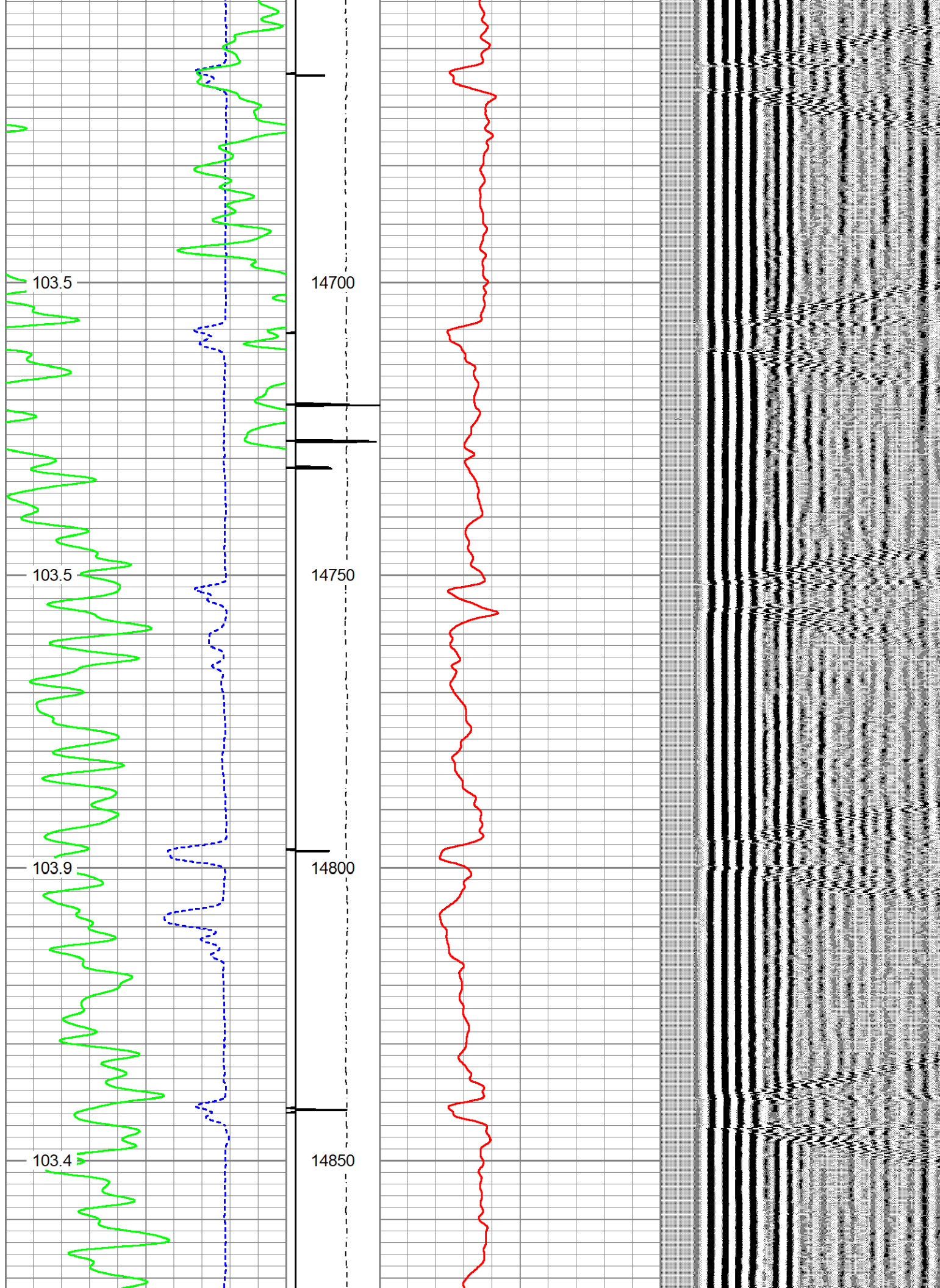


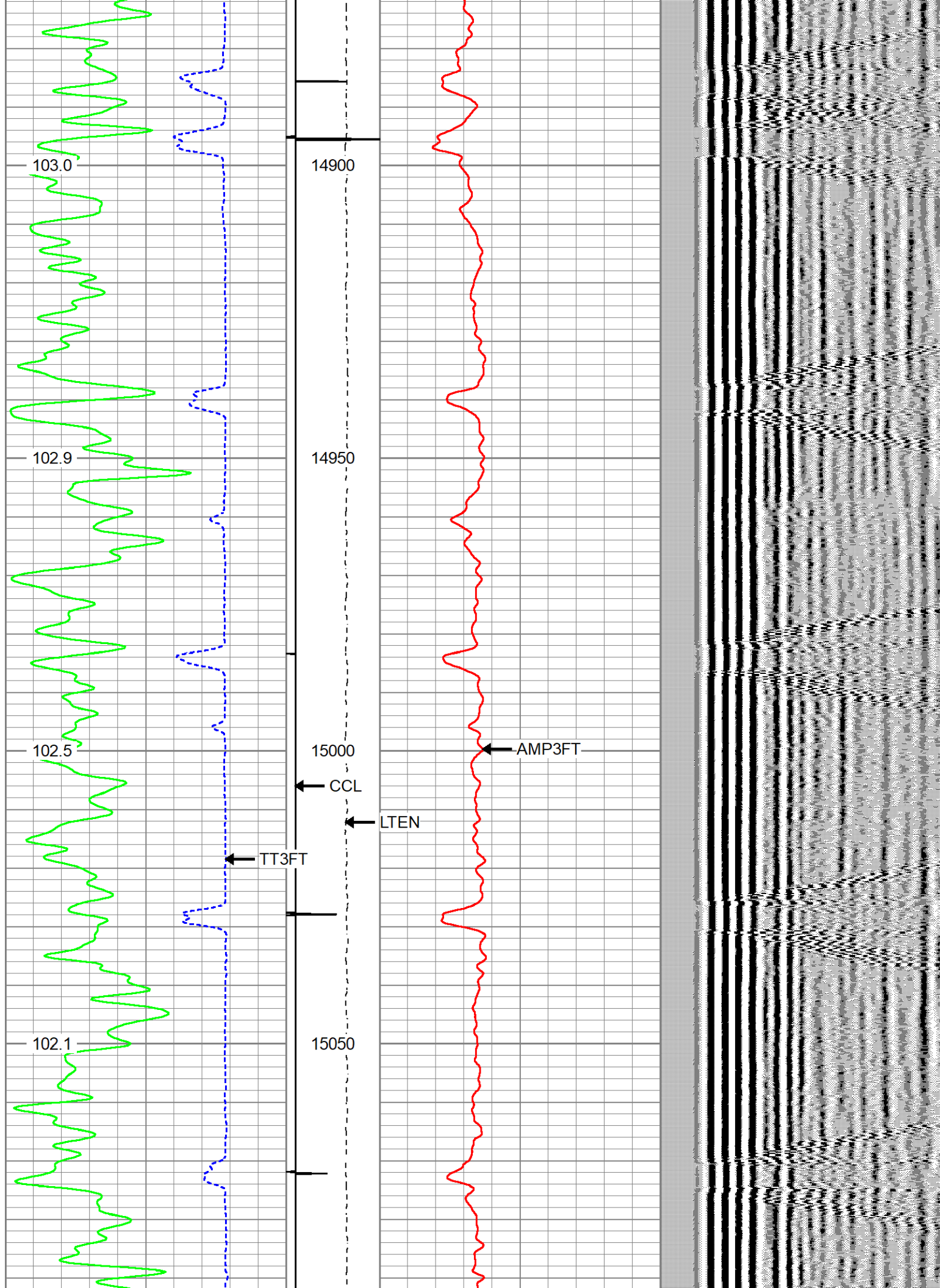




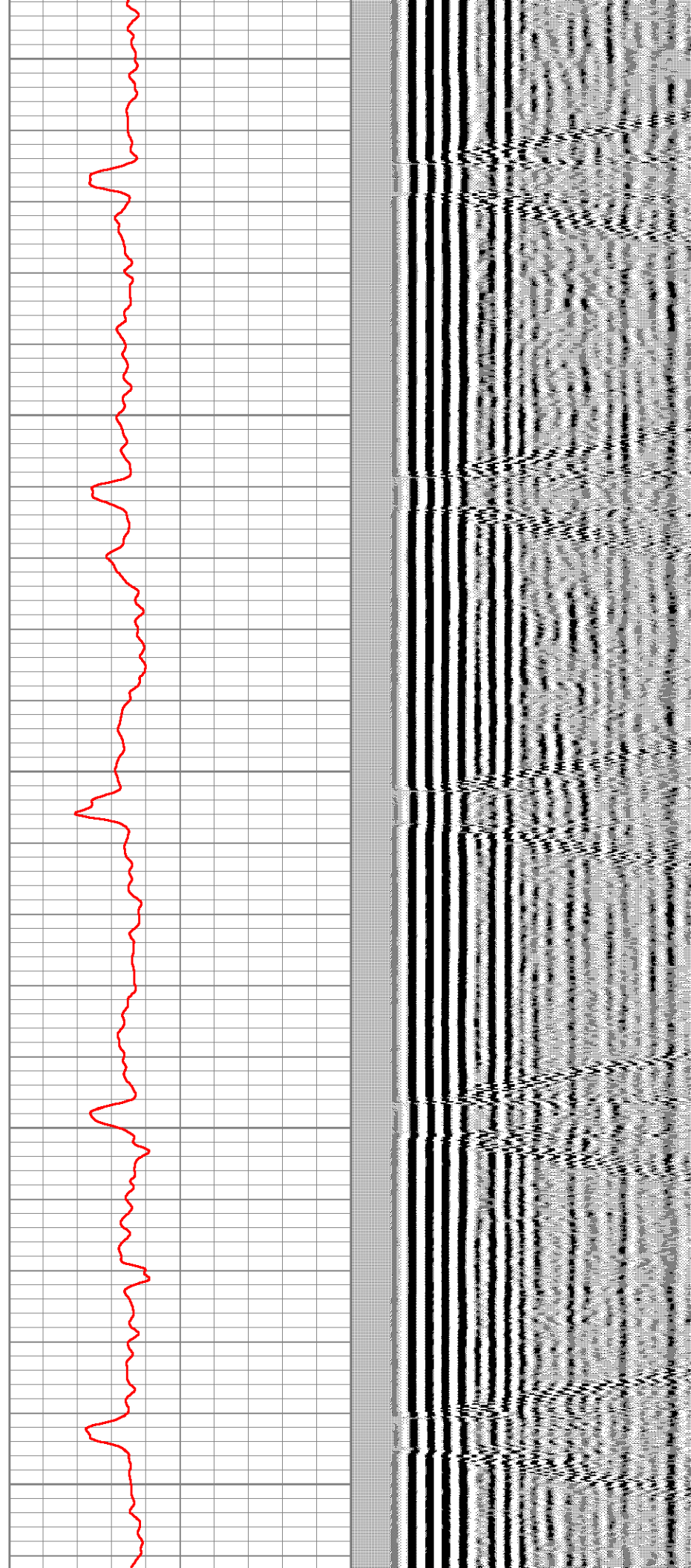
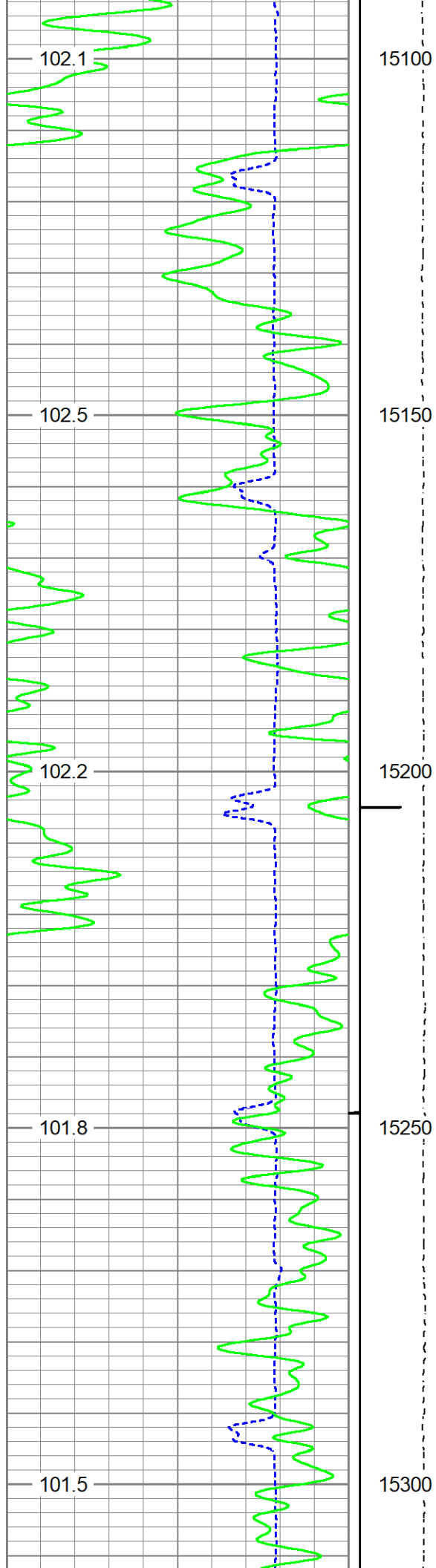


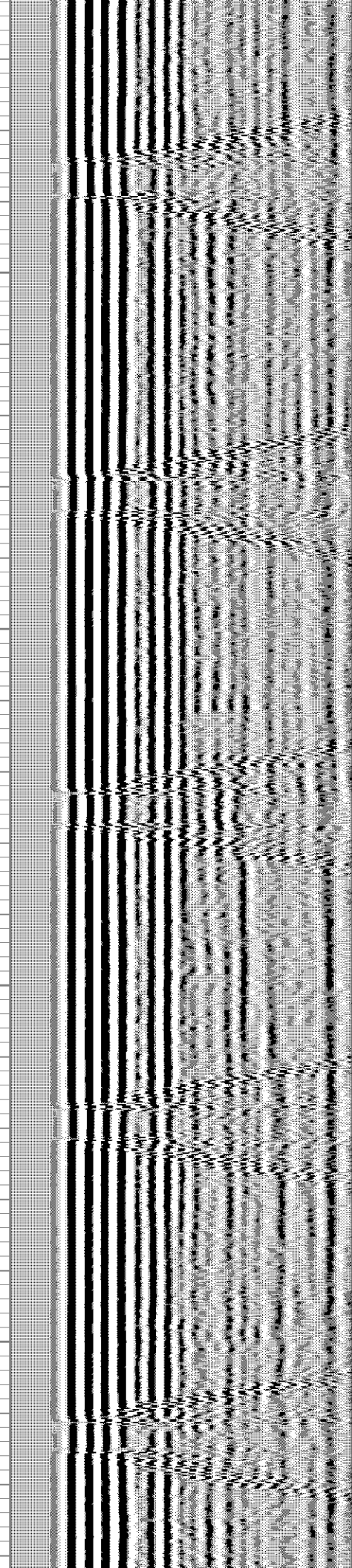
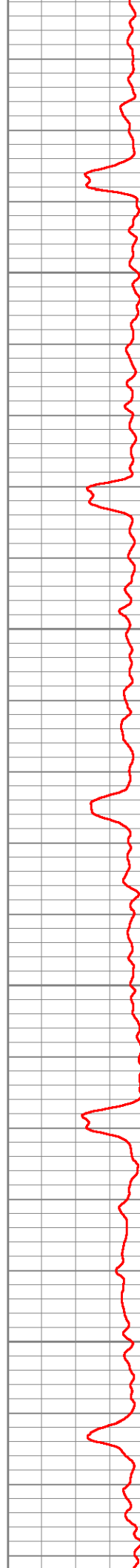
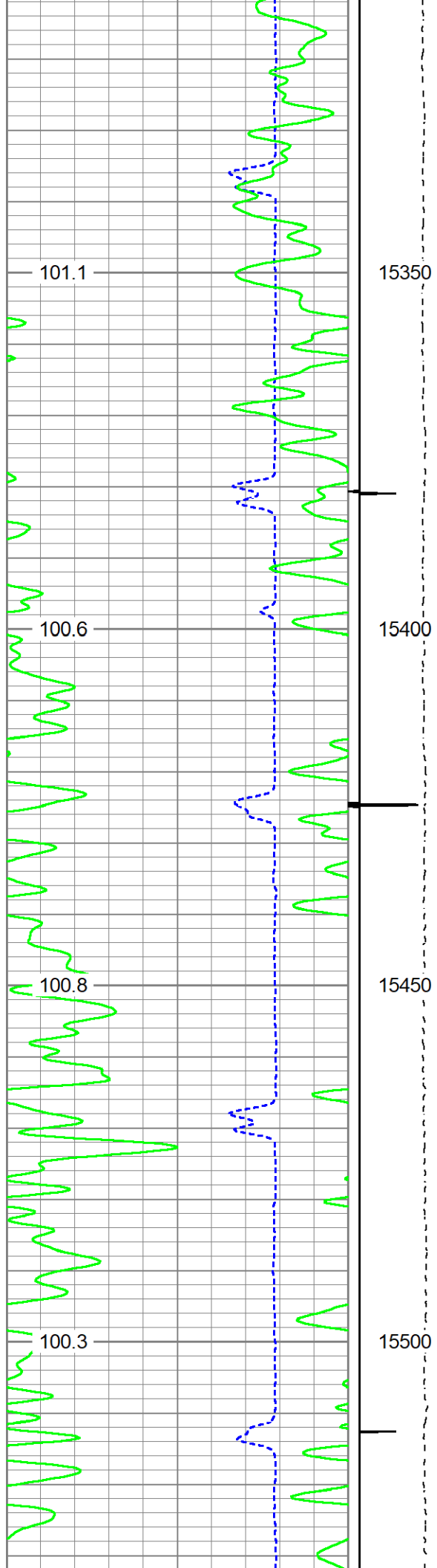




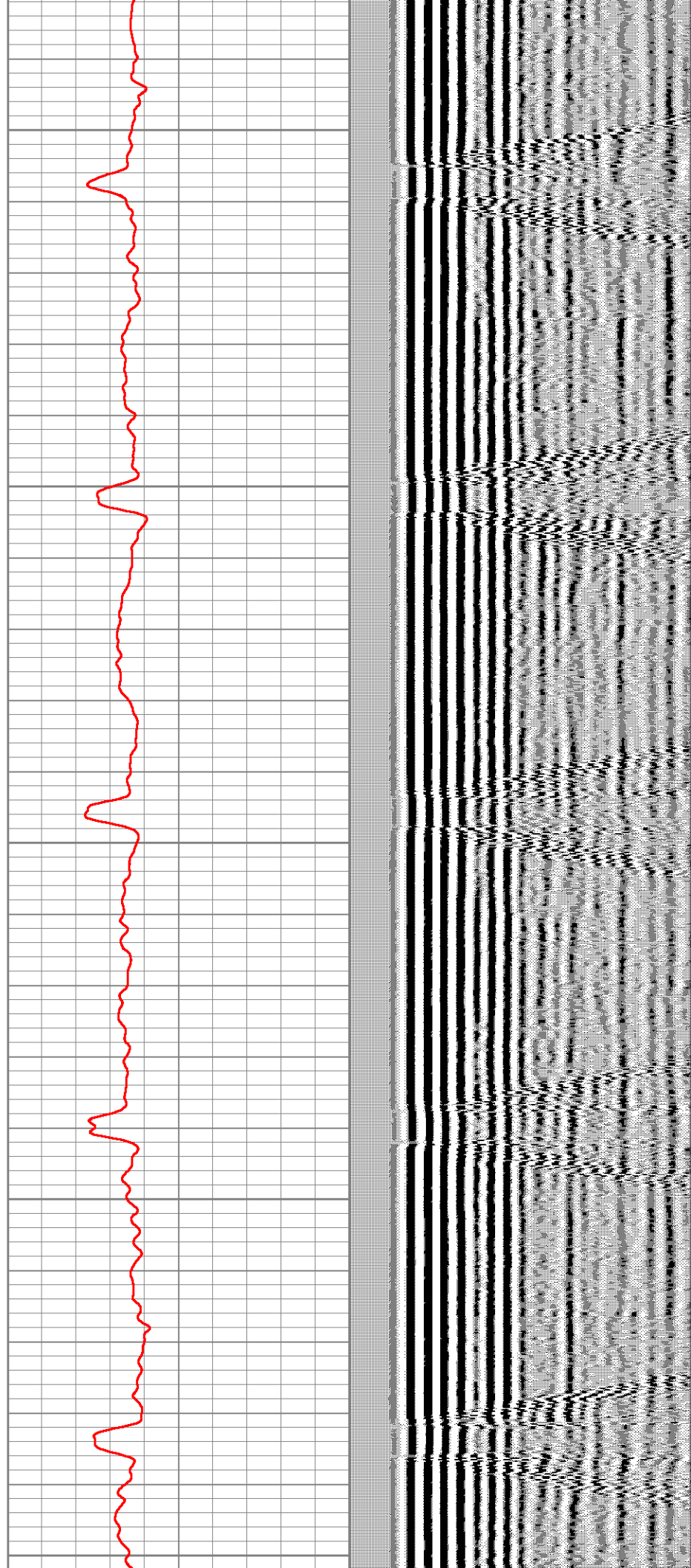
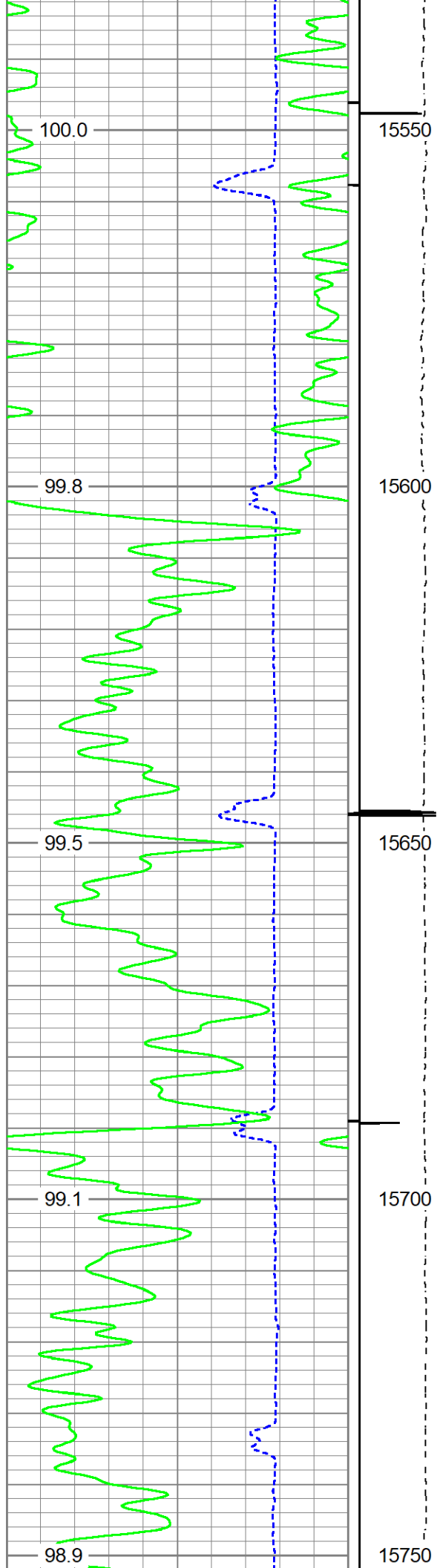


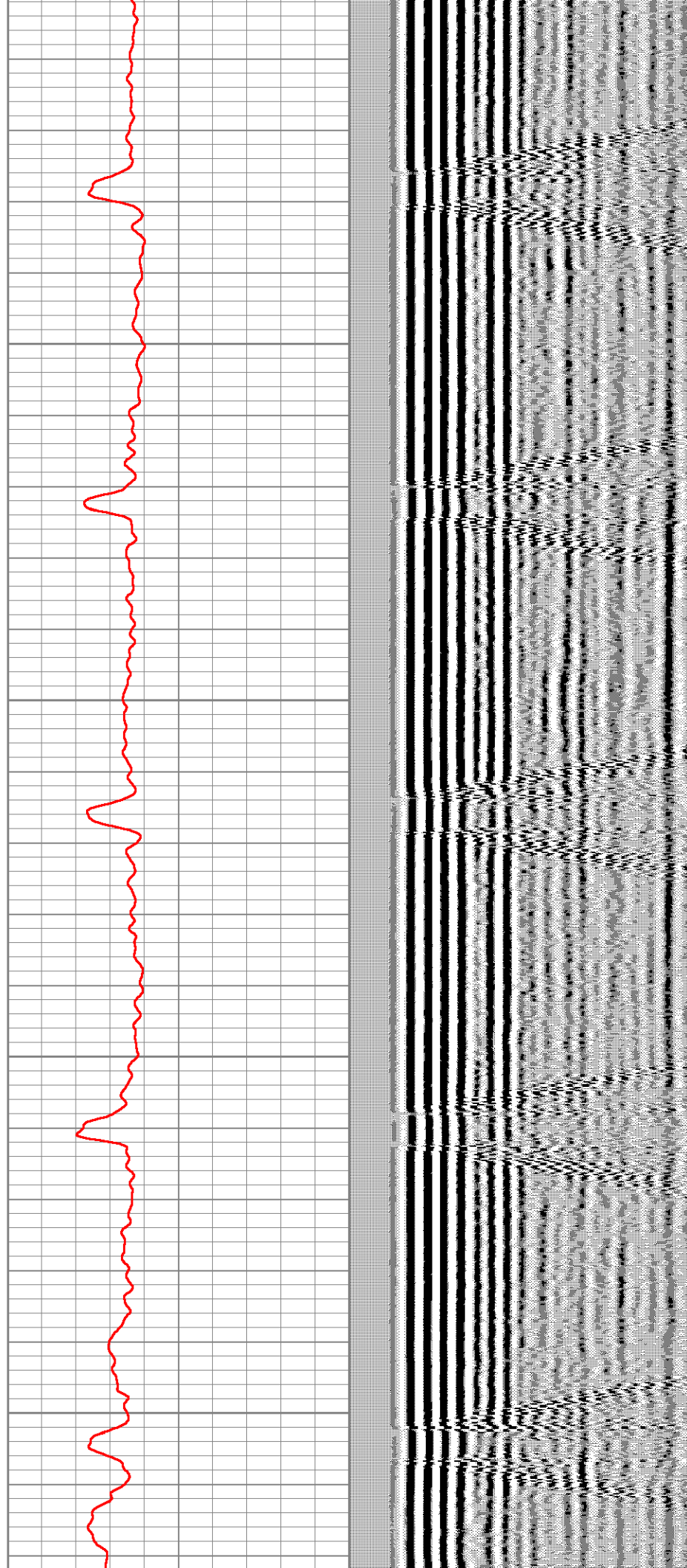
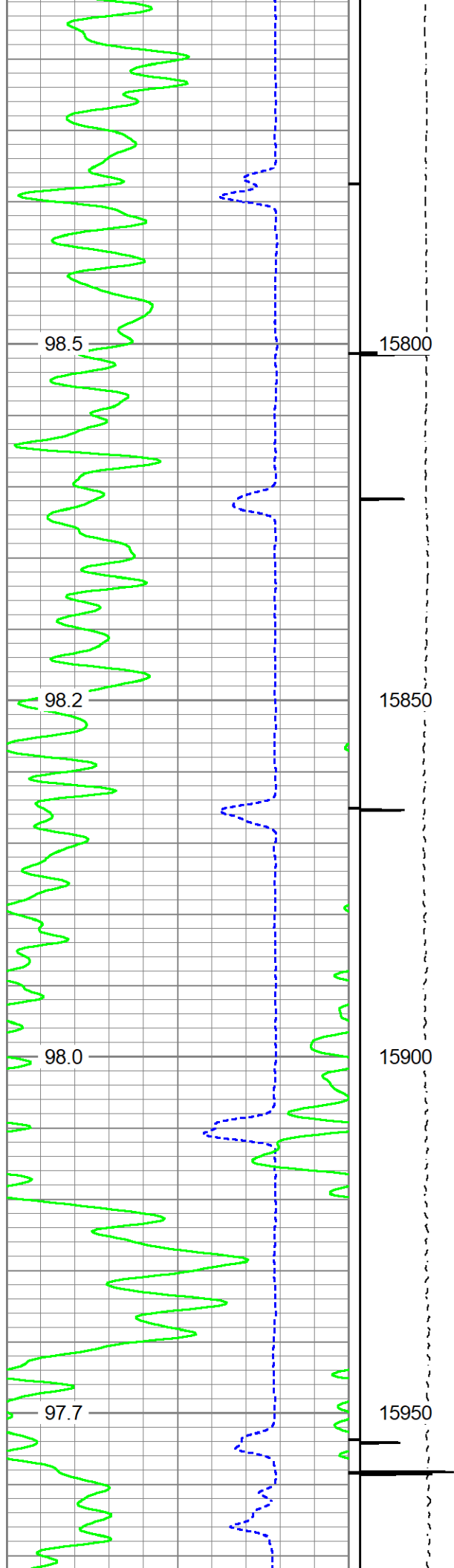




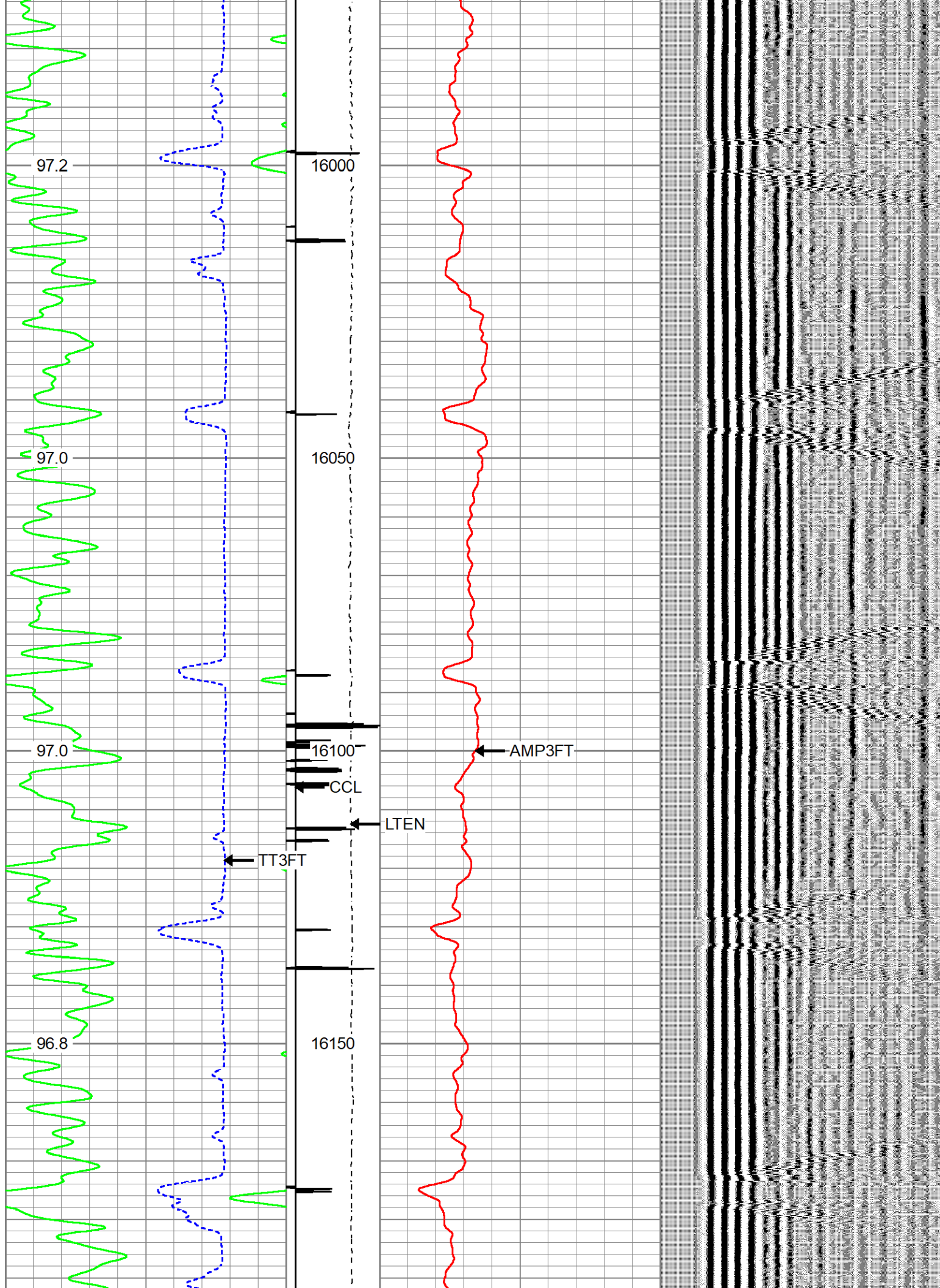


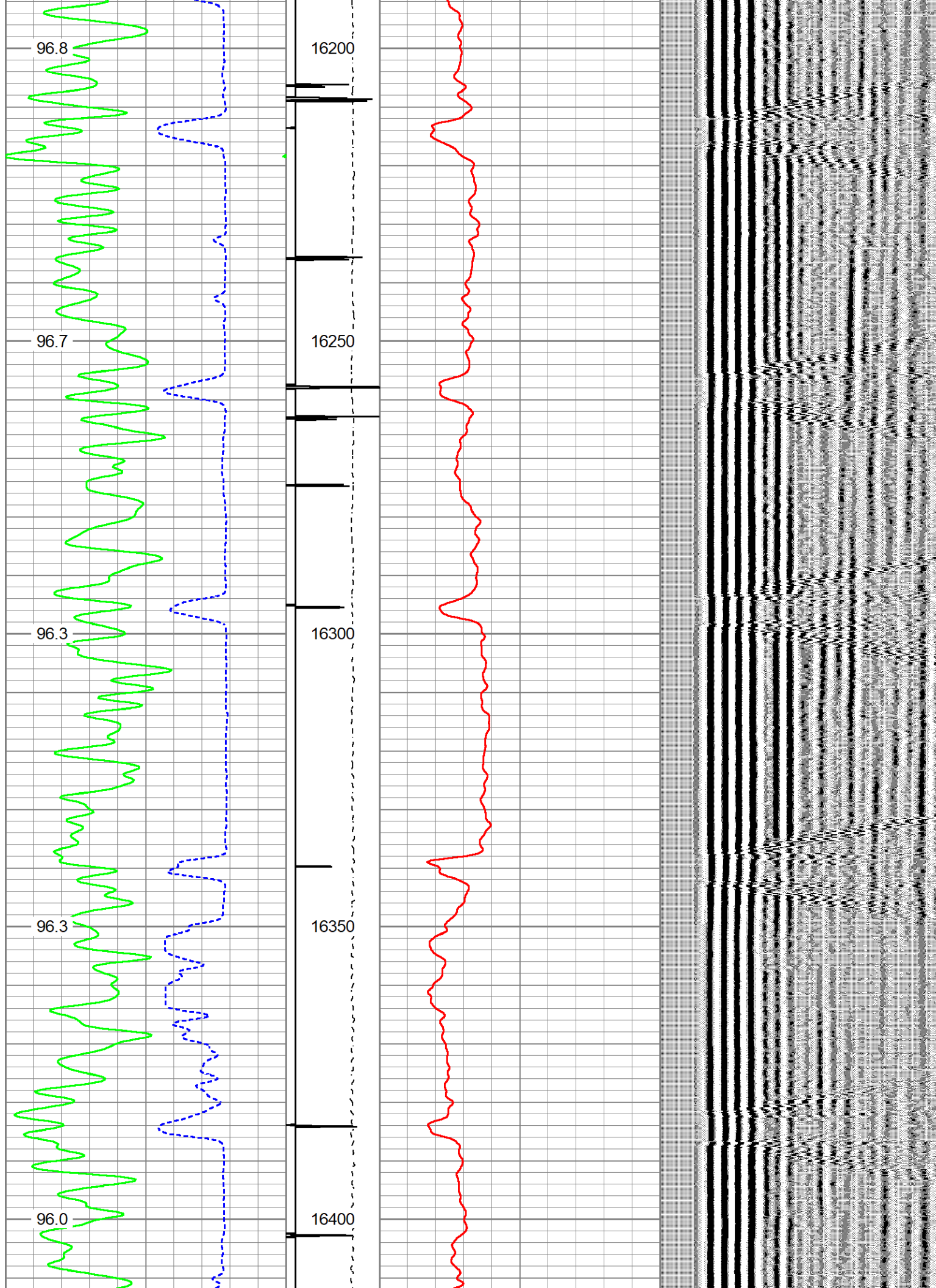




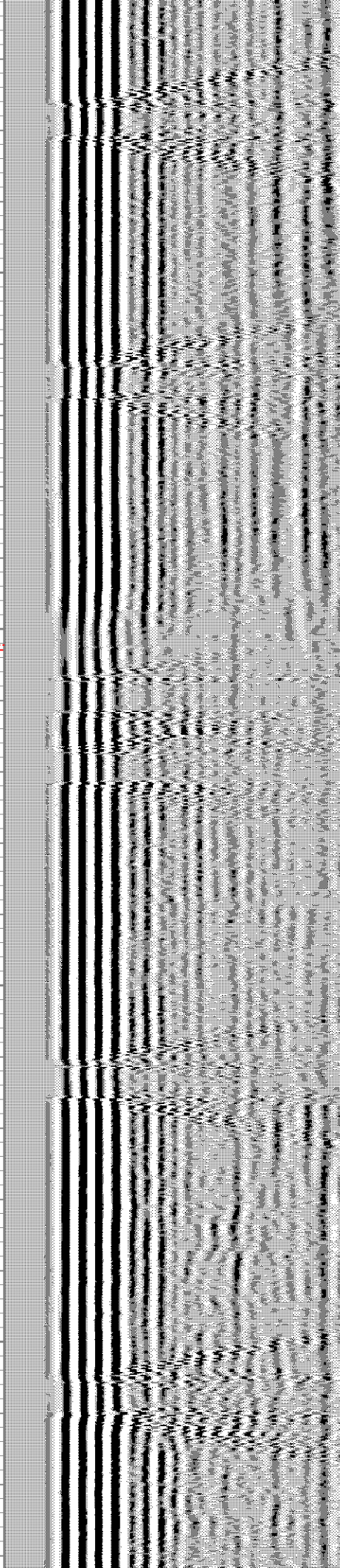
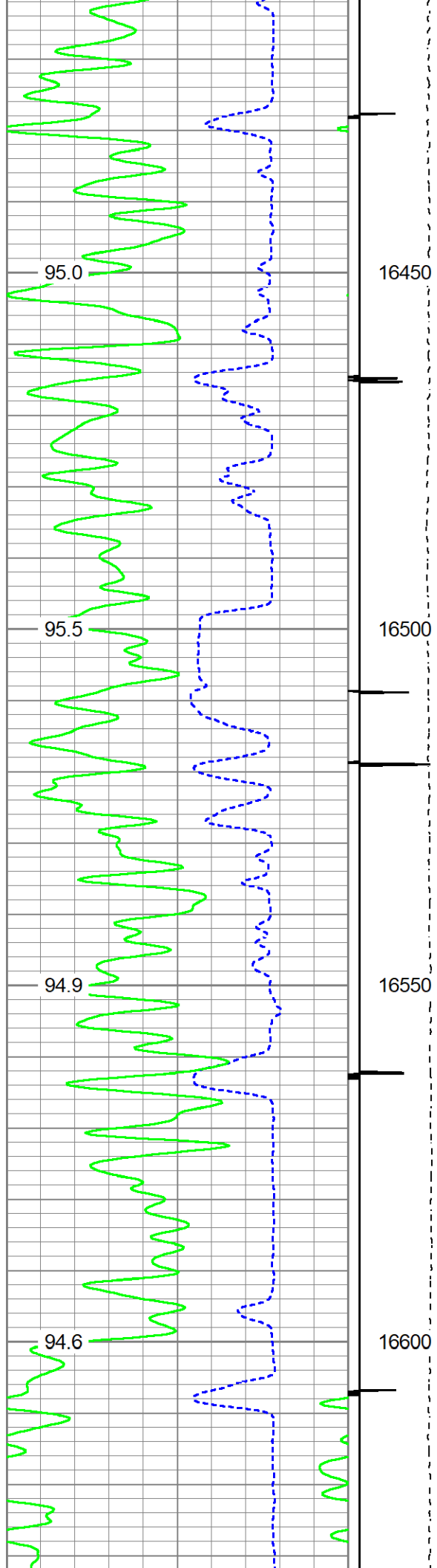


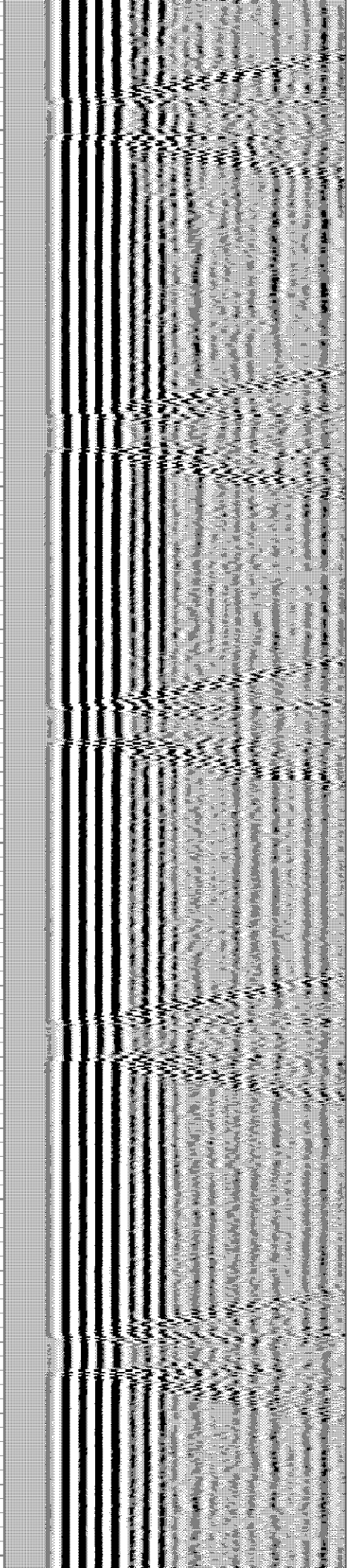
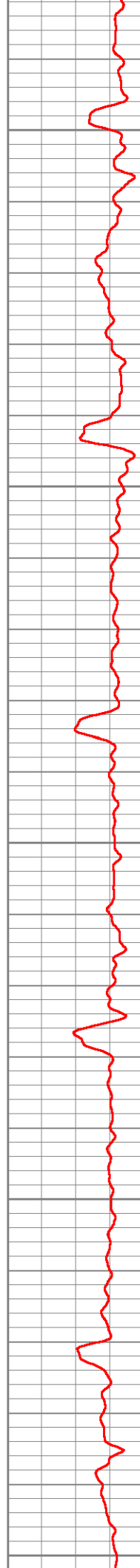
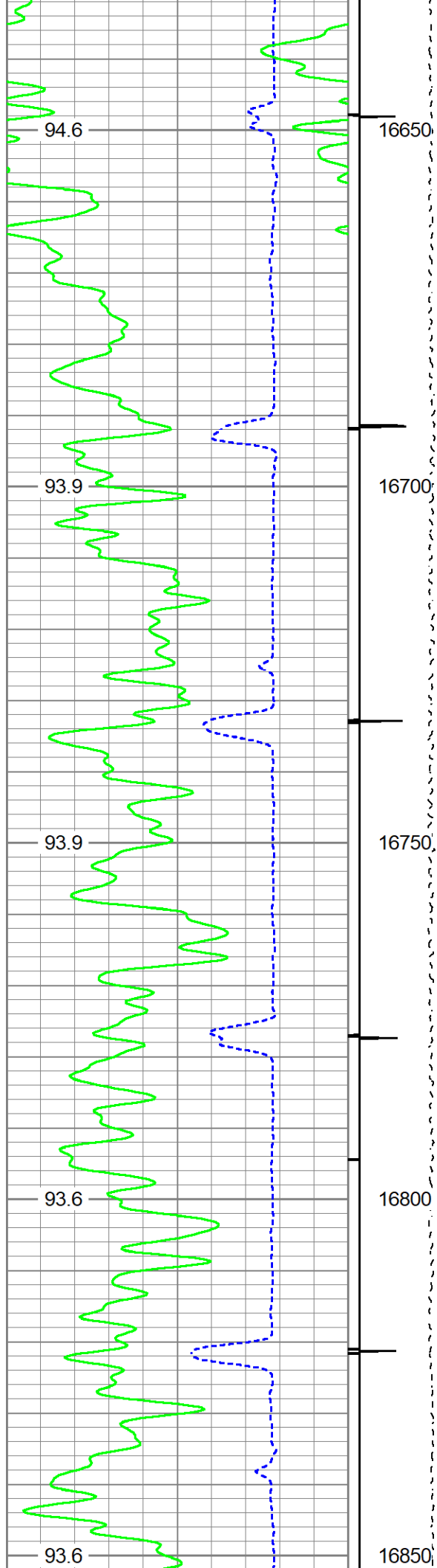




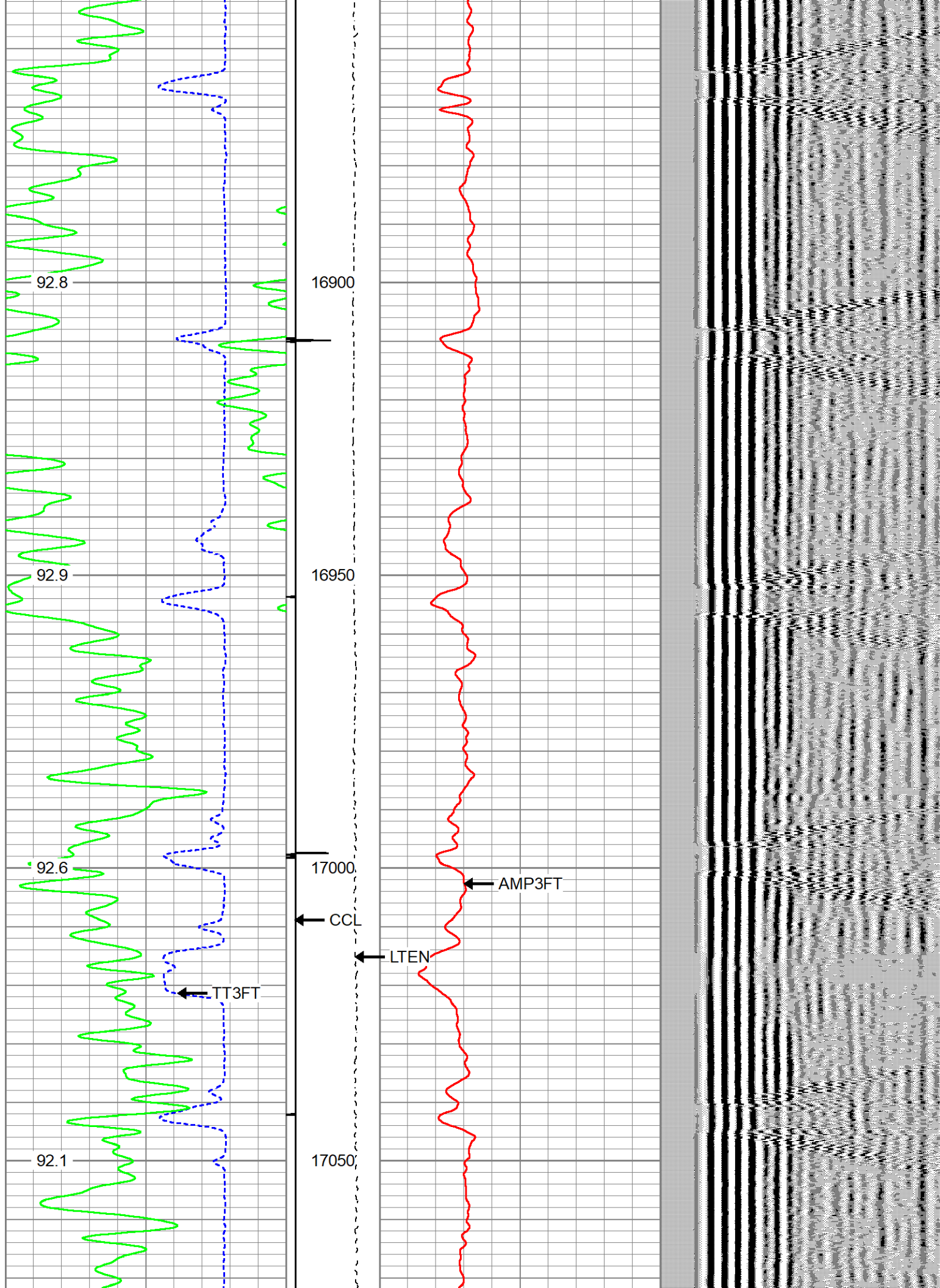


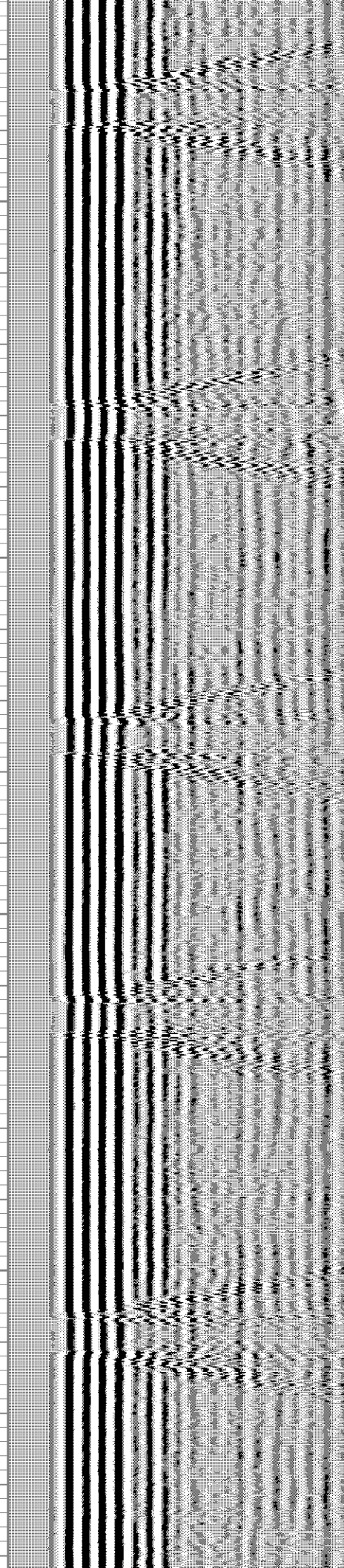
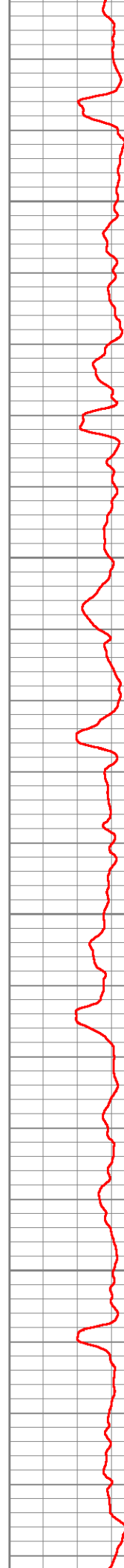
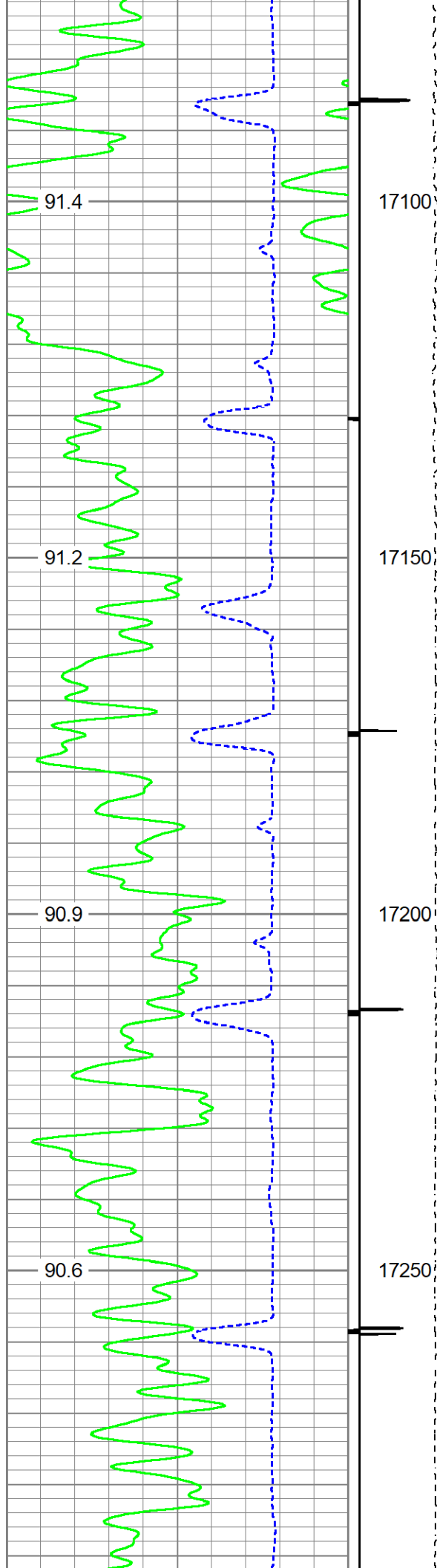




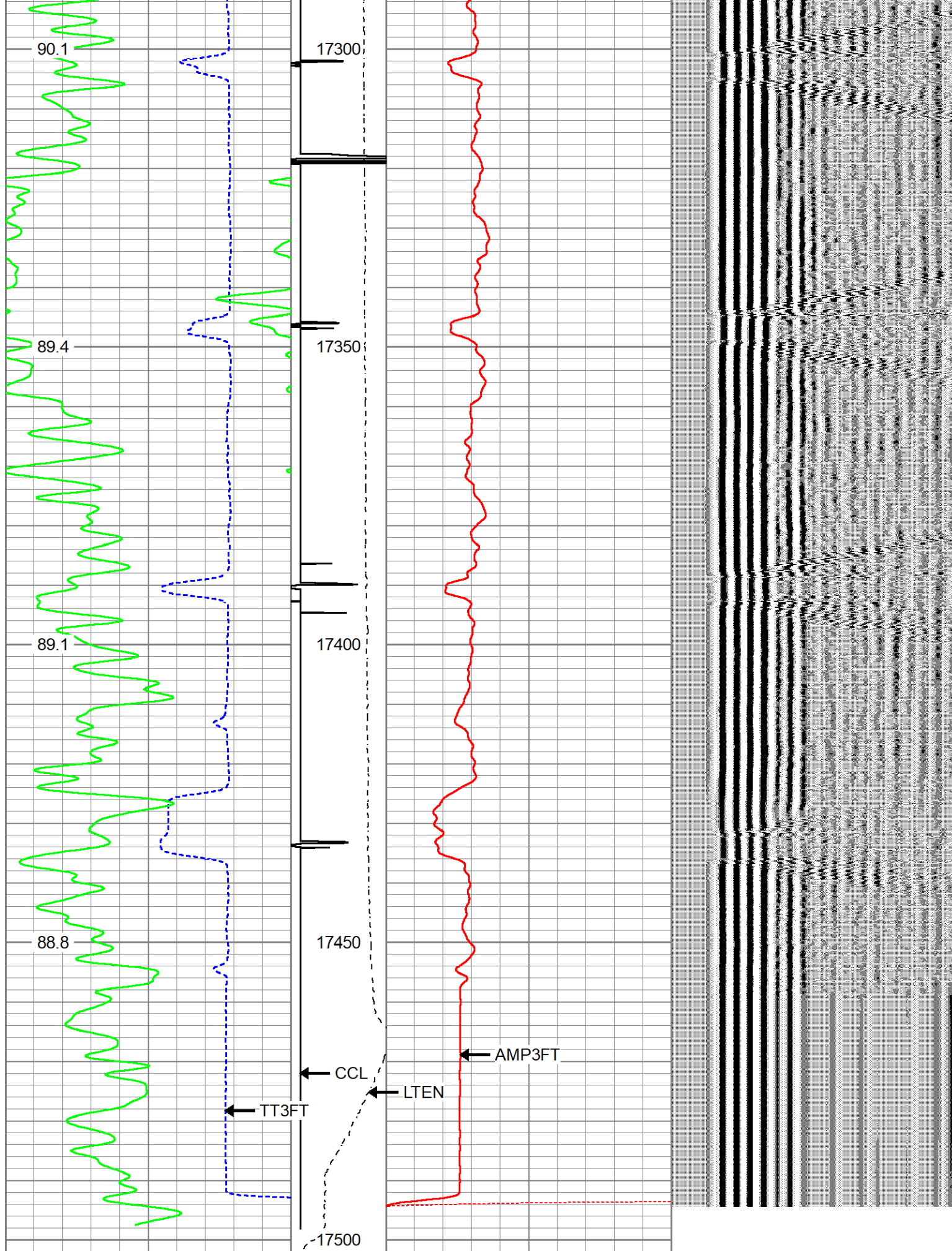












420	TT3FT (usec)	220	CCL	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	Line Tension	0	Amplified Amplitude (mV)	10			
Temp (degF)		0	(lb)2500						

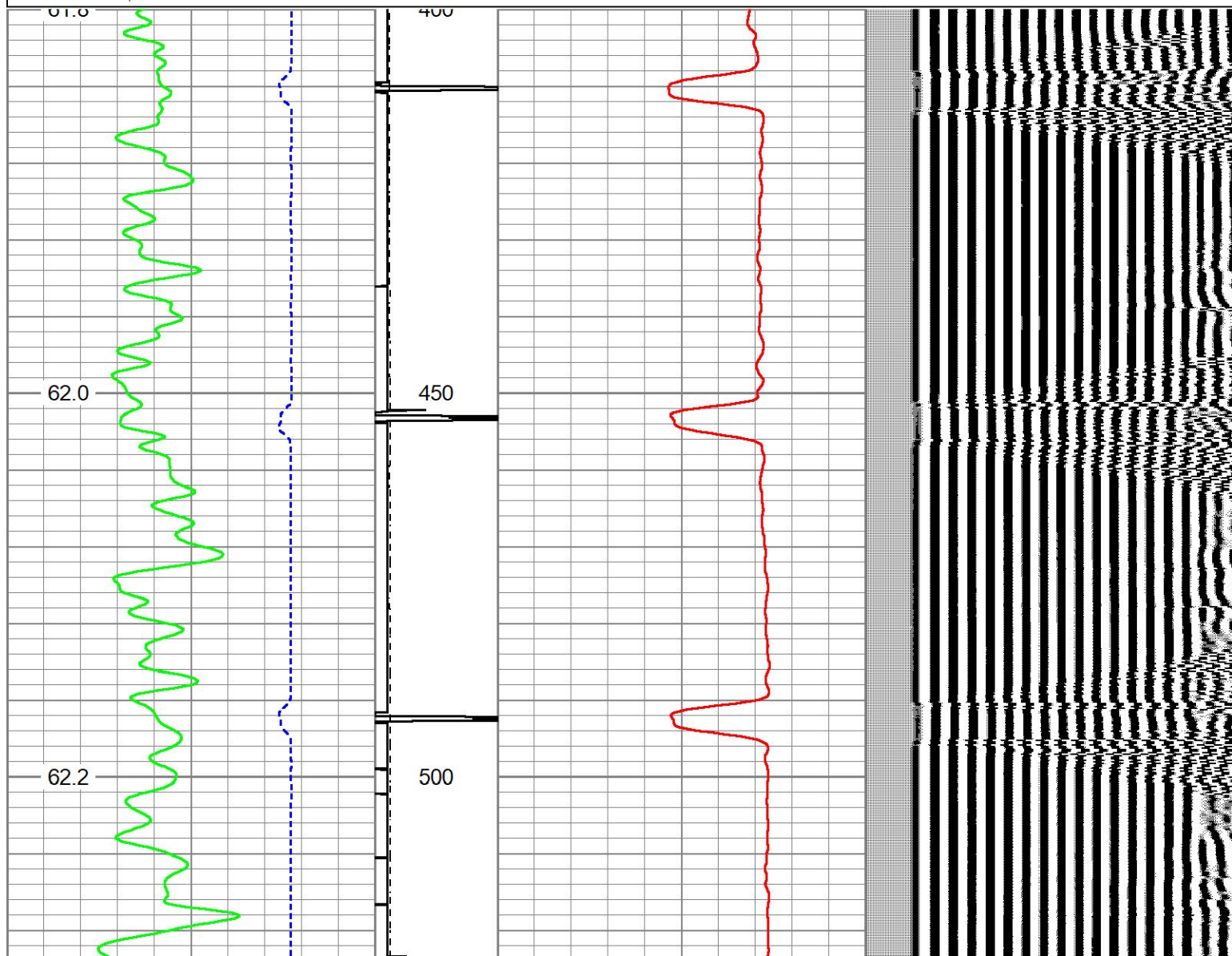


## FREE PIPE PASS

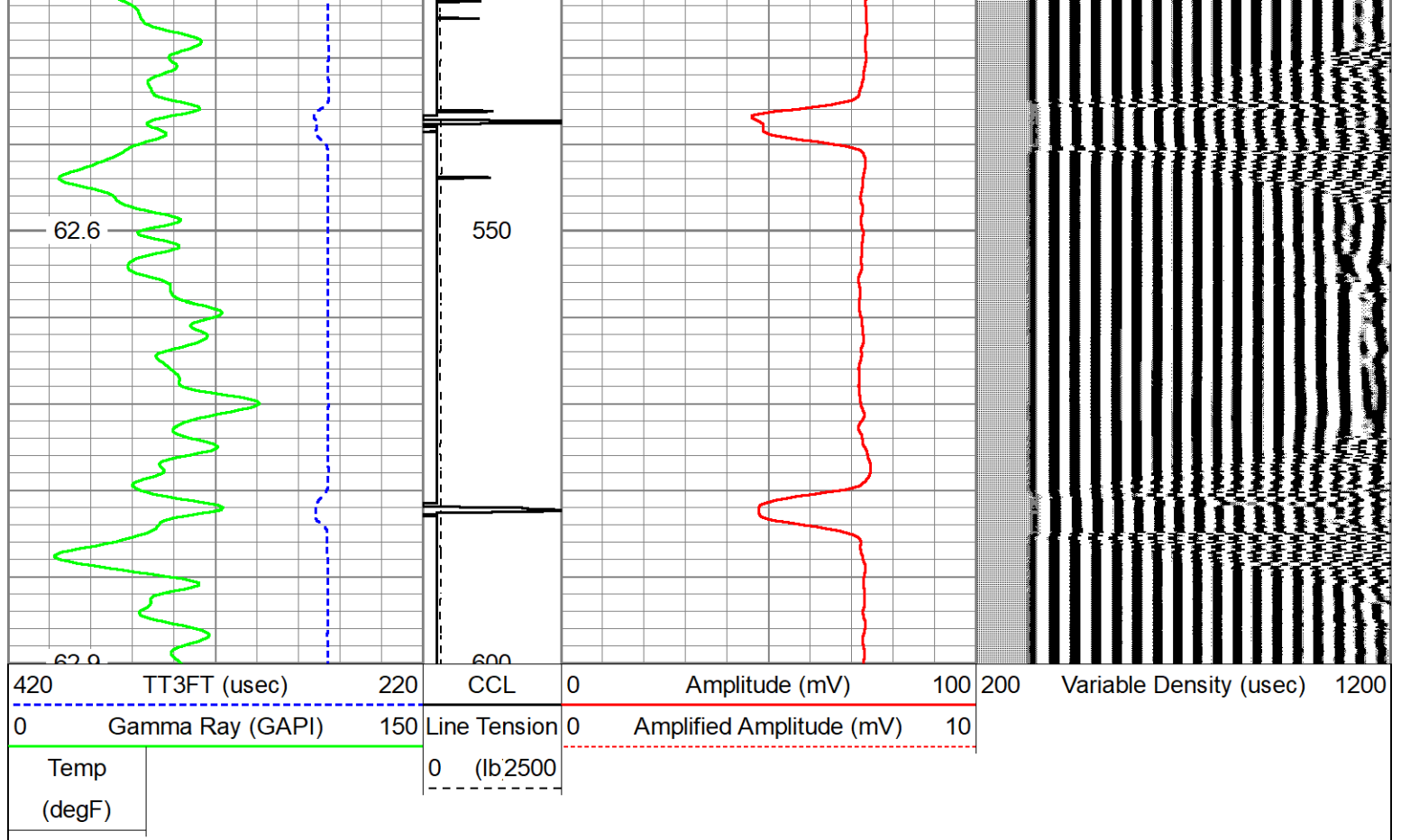
3100 PSI

Database File gw\_bfarm\_id\_18-391hnx\_5\_apr\_2019\_pd\_cbl.db  
Dataset Pathname 391hnx/run1/pass10  
Presentation Format cbl\_cs  
Dataset Creation Sat Apr 06 12:33:58 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	(lb)2500						







## Log Variables

DatabaseC:\ProgramData\Warrior\Data\gw\_bfarm\_ld\_18-391hnx\_5\_apr\_2019\_pd\_cbl.db  
Dataset field/391hnx/run1/pass12/\_vars\_

### Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	240	5.5	0	17	71.9	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
0.8	No	263	0	0			

### 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\_ld\_18-391hnx\_5\_apr\_2019\_pd\_cbl.db  
Dataset Pathname 391hnx/run1/pass12  
Dataset Creation Sat Apr 06 12:39:14 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:	710.458	ft

Master Calibration, performed Sat Apr 06 08:38:57 2019:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	0.378	1.000	71.921	192.017	-0.711
CAL	0.008	0.588				
5'	0.007	0.371	1.000	71.921	194.850	-0.299
SUM						
S1	0.049	0.397	0.000	72.000	207.014	-10.176
S2	0.007	0.377	0.000	72.000	194.501	-1.394
S3	0.010	0.397	0.000	72.000	186.182	-1.955
S4	0.010	0.394	0.000	72.000	187.705	-1.938
S5	0.010	0.398	0.000	72.000	185.450	-1.775
S6	0.010	0.392	0.000	72.000	188.502	-1.822
S7	0.010	0.378	0.000	72.000	195.714	-1.887
S8	0.077	0.368	0.000	72.000	247.285	-18.978

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.008	0.588	1.000	0.000

Air Zero Calibration, performed Mon Mar 25 06:30:30 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)
			CHD-Titan	1.00	1.44	5.00



HeadVolt	13.67		Titan 1 7/16" GO Cablehead		
Temp	10.82				
			RBT-Probe 2.75 Radii W/Temp (FW1306-49.39) Probe 2.75" Radial with Integral Temperature Sub		
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		
GR	0.90		4.33	2.75	30.00
Dataset: gw_bfarm_ld_18-391hnx_5_apr_2019_pd_cbl.db: field/391hnx/run1/pass12 Total length: 14.73 ft Total weight: 125.00 lb O.D.: 2.75 in					



Well B-Farm LD 18-391HNX

Field Wattenberg

County Adams

State Colorado

Country USA