



# RADIAL ANALYSIS BOND LOG

Baker Atlas

|  |  |  |  |
|--|--|--|--|
| File No:<br>CH090084                     | Company<br>Well<br>Field<br>County   | WPX ENERGY<br>CHEVRON GM 11-21<br>GRAND VALLEY<br>GARFIELD | State<br>COLORADO                            |
| API No:<br>05045223540000                | Location<br>SHL: 2012' FNL & 702' FEL (SEC 20)<br>BHL: 145' FNL & 569' FWL (SEC 21)<br>SEC 21 TWP 6S RGE 96W |  | Other Services<br>RPM                        |
| 21 6S 96W<br>GM 442-20 PAD<br>CYCLONE 17 | Permanent Datum<br>Log Measured From<br>Drill Measured From  |  | Elevations<br>KB 5596 ft<br>DF<br>GL 5575 ft |
| GL<br>KB<br>KELLY BUSING                 |  | Elevation<br>21 ft<br>Above P. D.                          |  |

|                              |               |           |
|------------------------------|---------------|-----------|
| Date                         | 08/OCT/14     |           |
| Run                          | ONE           |           |
| Service Order                | US090084J     |           |
| Depth Driller                | 7397 ft       |           |
| Depth Logger                 | 7336 ft       |           |
| Bottom Logged Interval       | 7326 ft       |           |
| Top Logged Interval          | 21 ft         |           |
| Time Started                 | 0800          |           |
| Time Finished                | 1200          |           |
| Operator Rig Time            | 4 HRS         |           |
| Type of Fluid in Hole        | WATER         |           |
| Fluid Density                | NA            |           |
| Salinity                     | NA            |           |
| Fluid Level                  | 62 ft         |           |
| Logged Cement Top            | NA            |           |
| Wellhead Pressure            | 0 psi         |           |
| Maximum Hole Deviation       | NA            |           |
| Nominal Logging Speed        | 65 fpm        |           |
| Maximum Recorded Temperature | 225 degF      |           |
| Reference Log                | NONE          |           |
| Reference Log Date           | NA            |           |
| Equipment No.                | 44271         | GRAND JCT |
| Recorded By                  | FLOYD RENEAU  |           |
| Witnessed By                 | COLLEAPLEGATE |           |

- FOLD HERE

In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

| Borehole Record |         |         |
|-----------------|---------|---------|
| Bit Size        | From    | To      |
| 13.5 in         | 21 ft   | 1155 ft |
| 8.75 in         | 1155 ft | 7397 ft |

| Casing Record |             |       |       |         |
|---------------|-------------|-------|-------|---------|
| Size          | Weight      | Grade | From  | To      |
| 9.625 in      |             |       | 21 ft | 1155 ft |
| 4.5 in        | 11.6 lbm/ft | I-80  | 21 ft | 7397 ft |

|  |
|--|
| Remarks  |
| All data on this log is shifted using the GCL curve to put the wellhead (top CCL mark) on depth with ground level elevation at the client's request. |
| The amount of linear shift is 1.5 feet.  |
| Logged with zero PSI at wellhead.  |
| BHT = 225°F  |
| SJ = 4135'-4156'   |

| Equipment Data |      |      |               |               |          |
|----------------|------|------|---------------|---------------|----------|
| Run            | Trip | Tool | Series Number | Serial Number | Position |
| 1              | 1    | VDL  | 1426XA        | 10404539      | CENT     |
| 1              | 1    | GR   | 2459XA        | 10218503      | CENT     |

*PRIMARY PRESENTATION*  
*0 PSI*

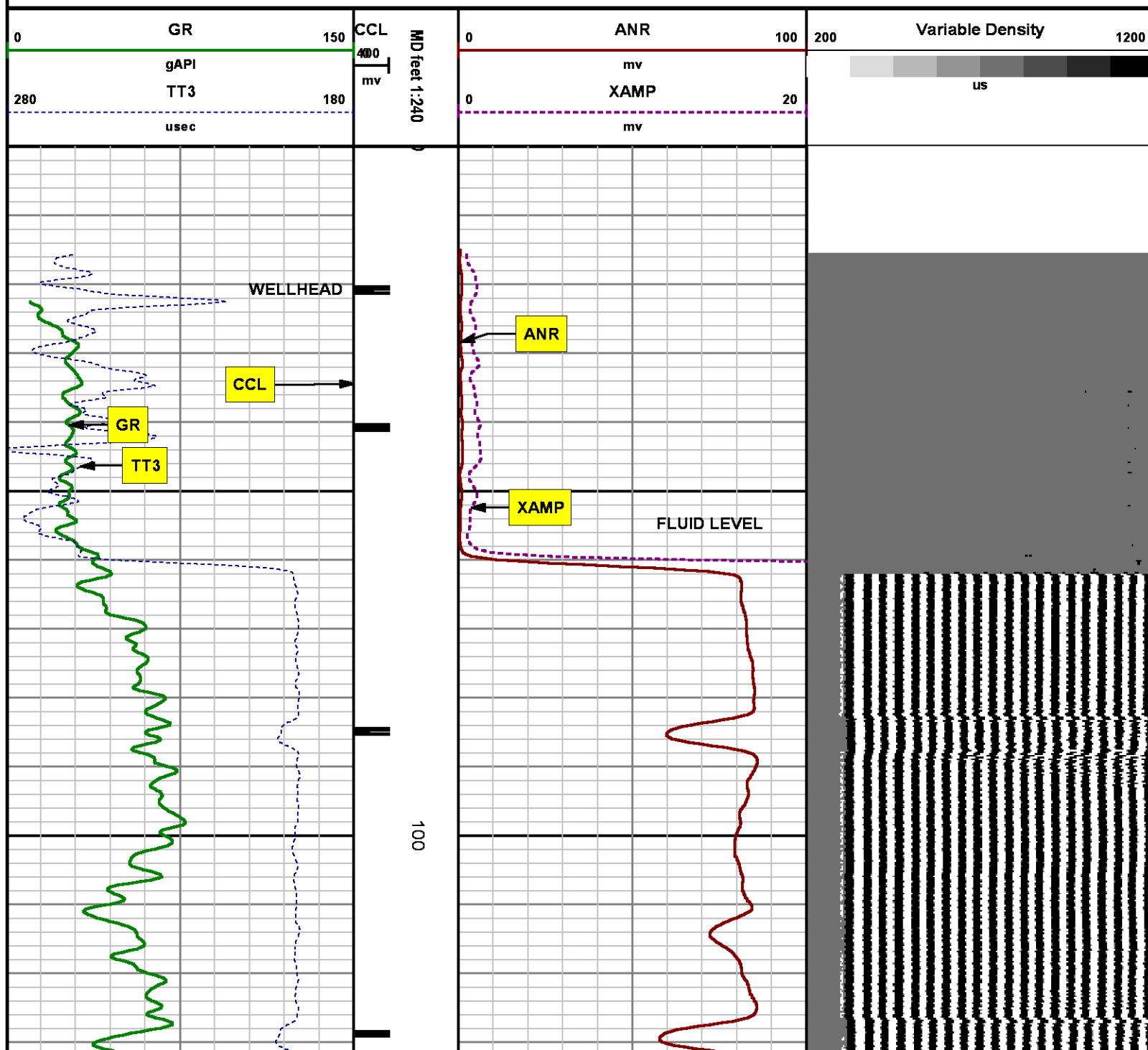
| MEASUREMENT TYPE | PARAMETER             | VALUE    | UNITS   | TOP    | BOTTOM   |
|------------------|-----------------------|----------|---------|--------|----------|
| RAL              | Amp Gate Start Far    | 305.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Start Near   | 195.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Start Radial | 195.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Far    | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Near   | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Radial | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | casing od             | 4.500    | inches  | 26.562 | 7338.500 |
| RAL              | casing wt             | 11.600   | lbm/ft  | 26.562 | 7338.500 |
| RAL              | FB Start Far          | 291.900  | usec    | 26.562 | 7338.500 |
| RAL              | FB Start Near         | 180.000  | usec    | 26.562 | 7338.500 |
| RAL              | FB Start Radial       | 1810.000 | usec    | 26.562 | 7338.500 |
| RAL              | FB Thresh Far         | 10.000   | mv      | 26.562 | 7338.500 |
| RAL              | FB Thresh Near        | 4.000    | mv      | 26.562 | 7338.500 |
| RAL              | FB Thresh Radial      | 4.000    | mv      | 26.562 | 7338.500 |
| RAL              | Fluid Travel Time     | 200.000  | usec/ft | 26.562 | 7337.781 |

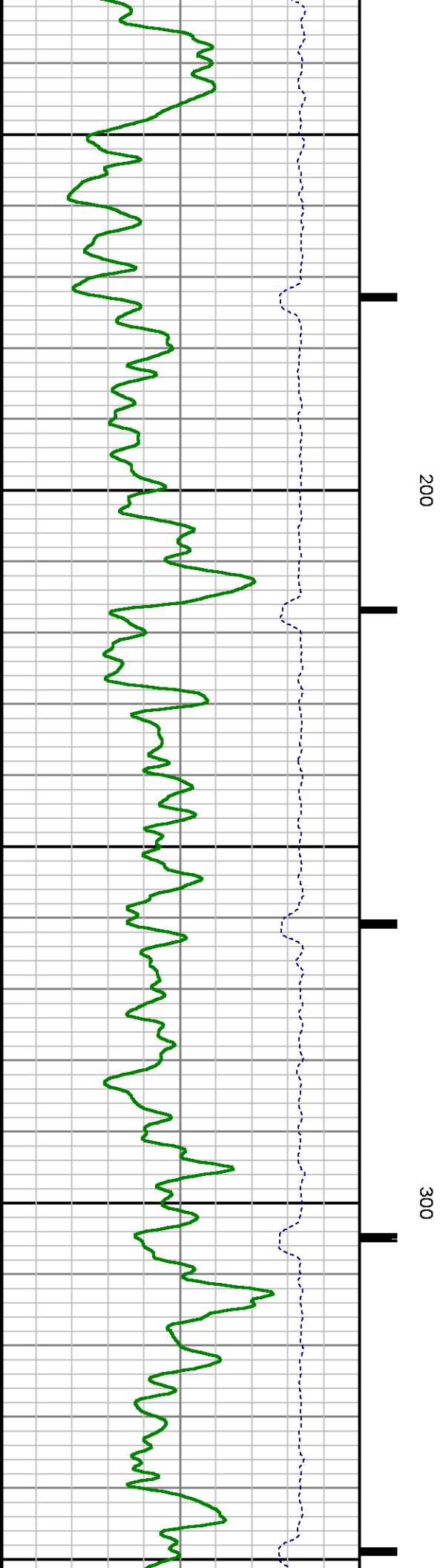
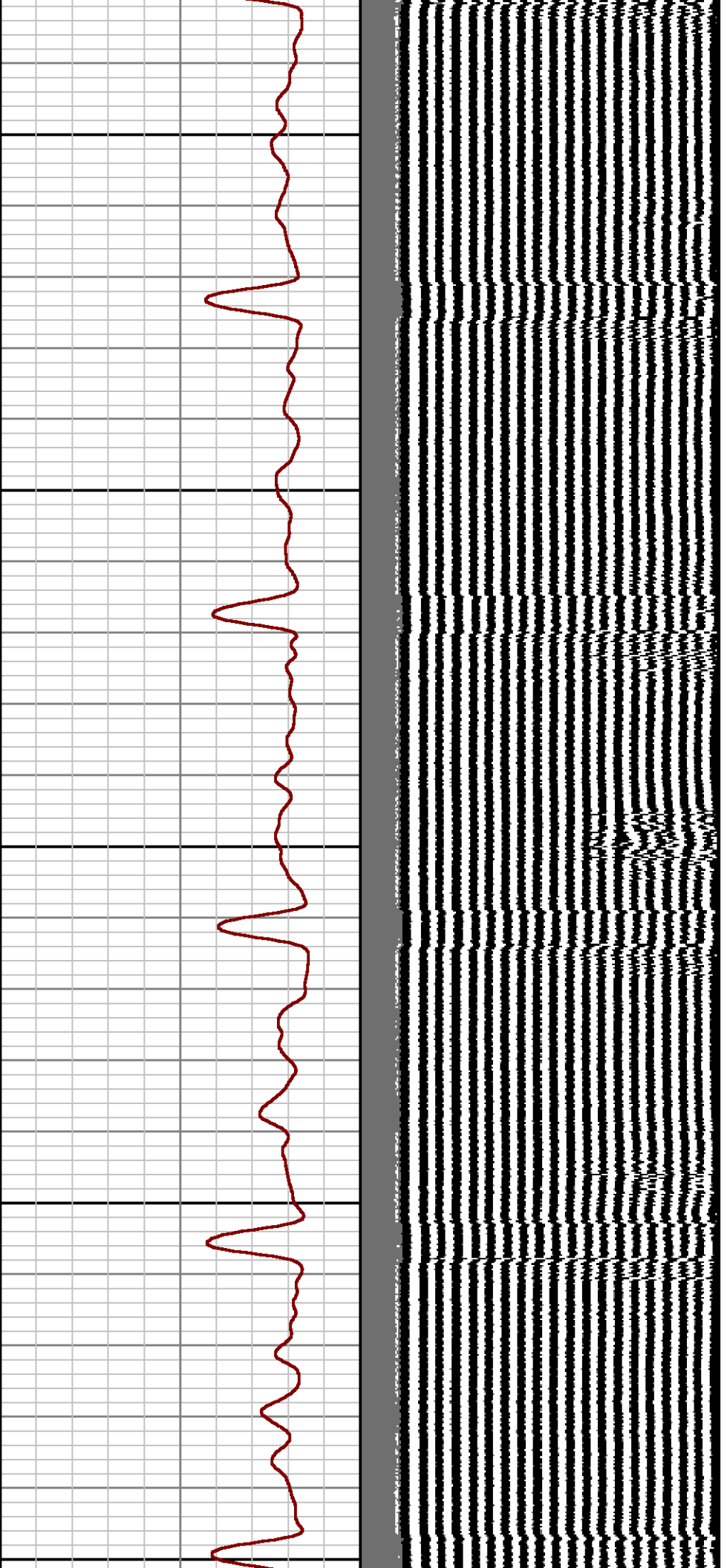
**DEPTH OFFSETS**  
(for Acquired Curves)

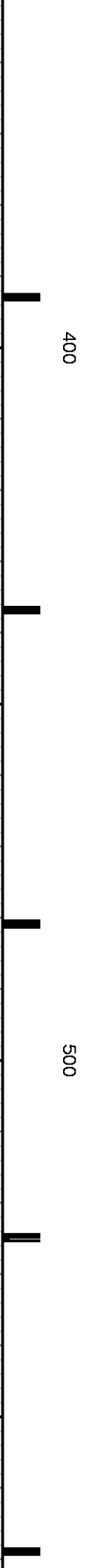
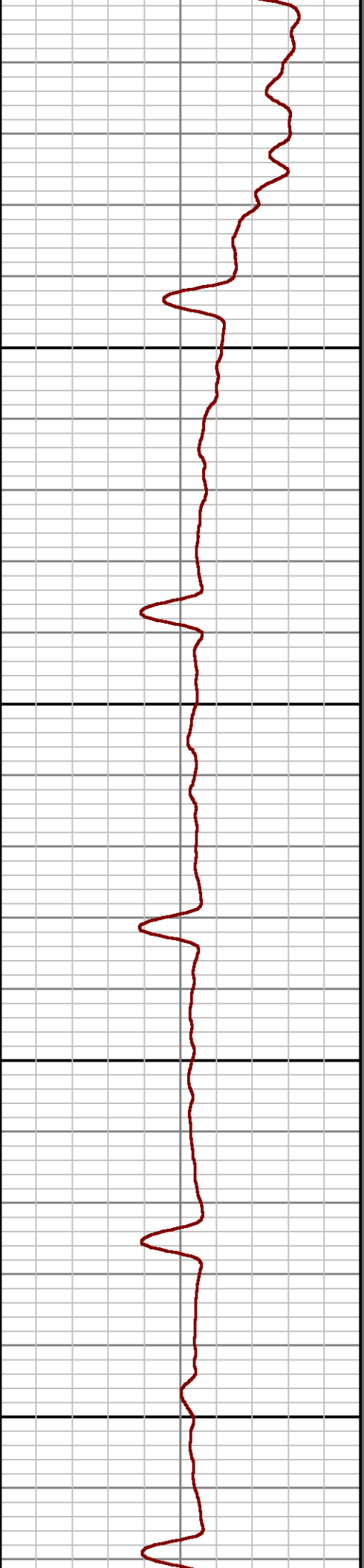
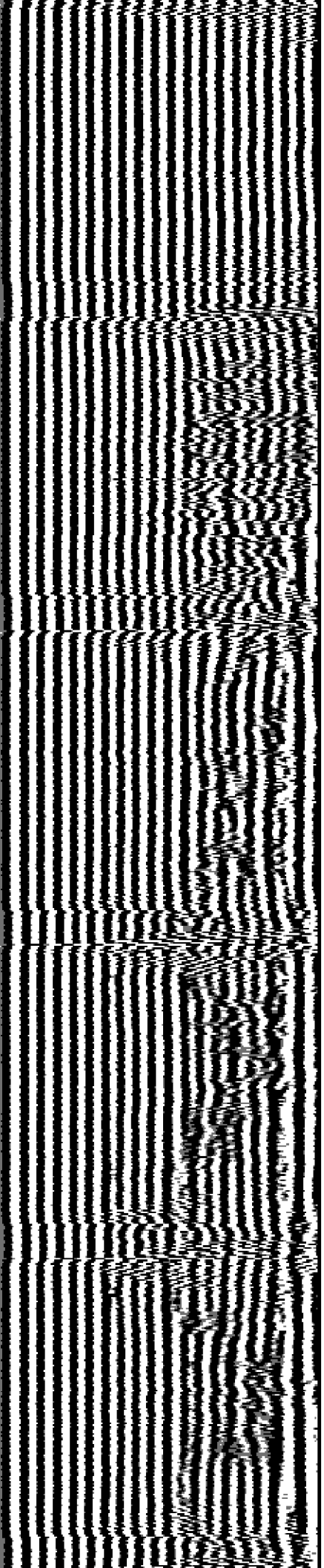
| SERIES | DEPTH OFFSET | ACQUIRED CURVES |     |     |     |     |      |
|--------|--------------|-----------------|-----|-----|-----|-----|------|
| 1426XA | -12.360      | ACAL            | ANR | AR1 | AR2 | AR3 | AR4  |
|        |              | AR5             | AR6 | AR7 | AR8 | CHV | FPR2 |

|      |      |      |      |      |      |
|------|------|------|------|------|------|
| FPR3 | FPR5 | TT3  | TTR1 | TTR2 | TTR3 |
| TTR4 | TTR5 | TTR6 | TTR7 | TTR8 | XAMP |
| AFAR | SIG  | TT5  |      |      |      |
| CCL  |      |      |      |      |      |
| GR   |      |      |      |      |      |
| NEU  |      |      |      |      |      |

**Created : 10/8/2014 9:56:50 AM**

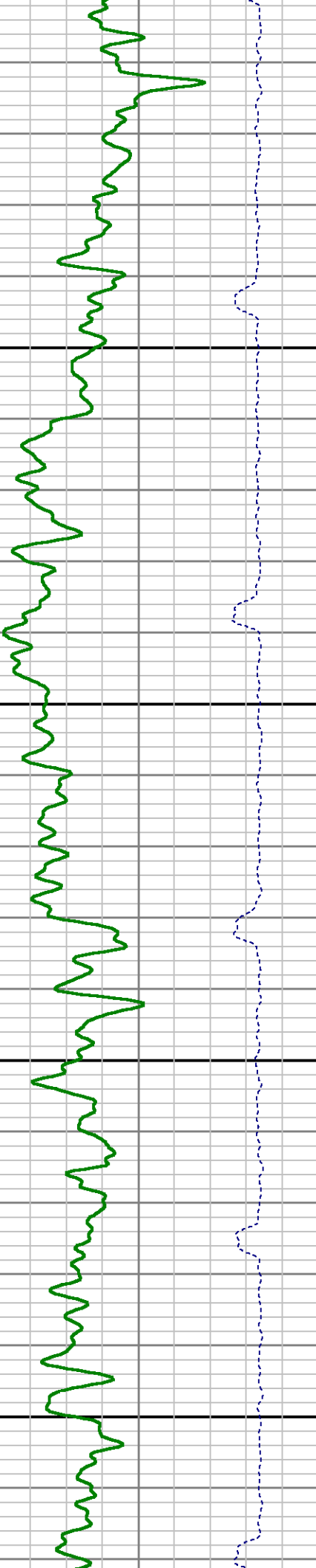


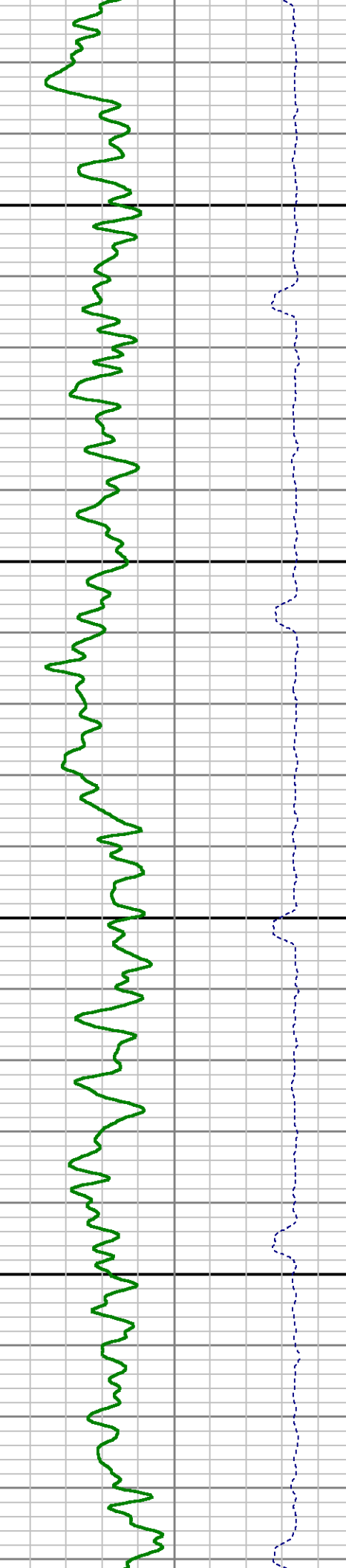
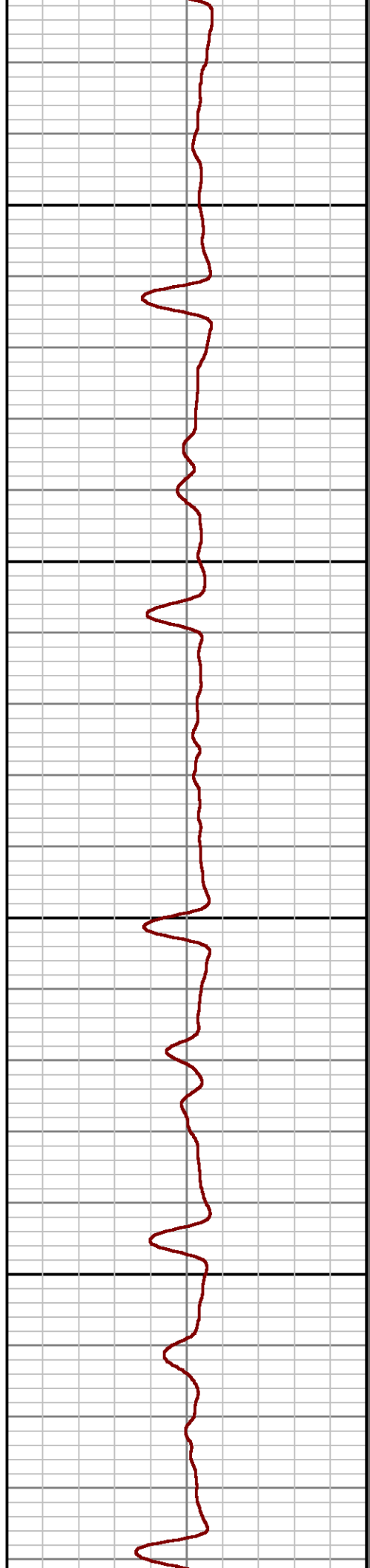
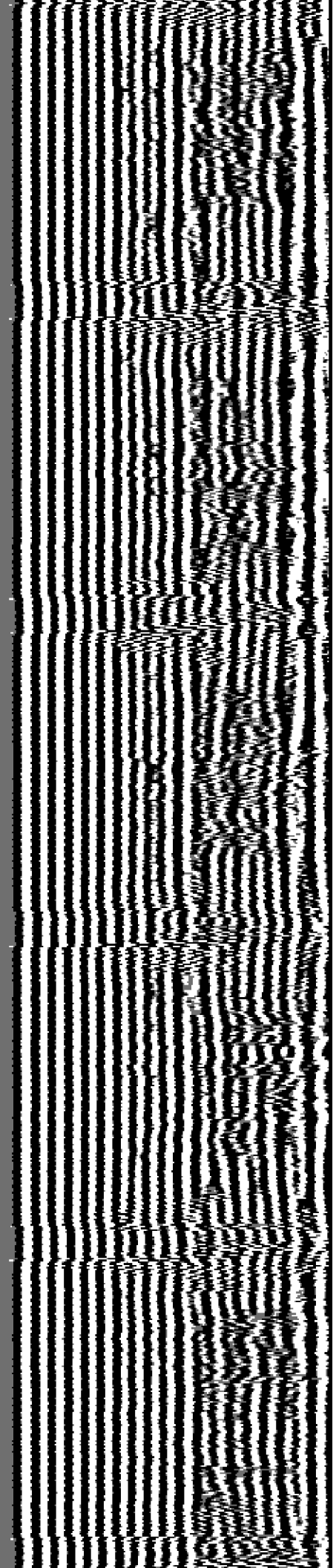


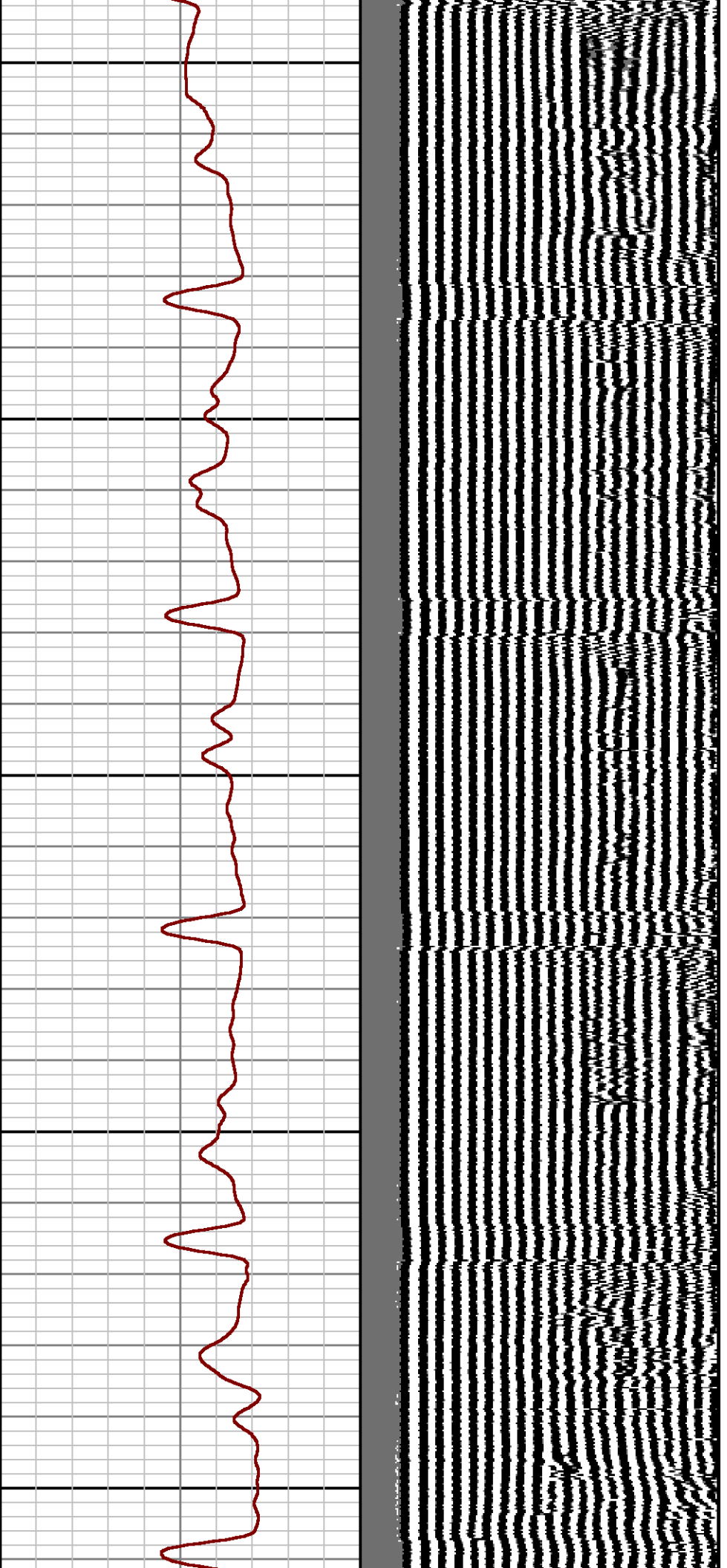


400

500



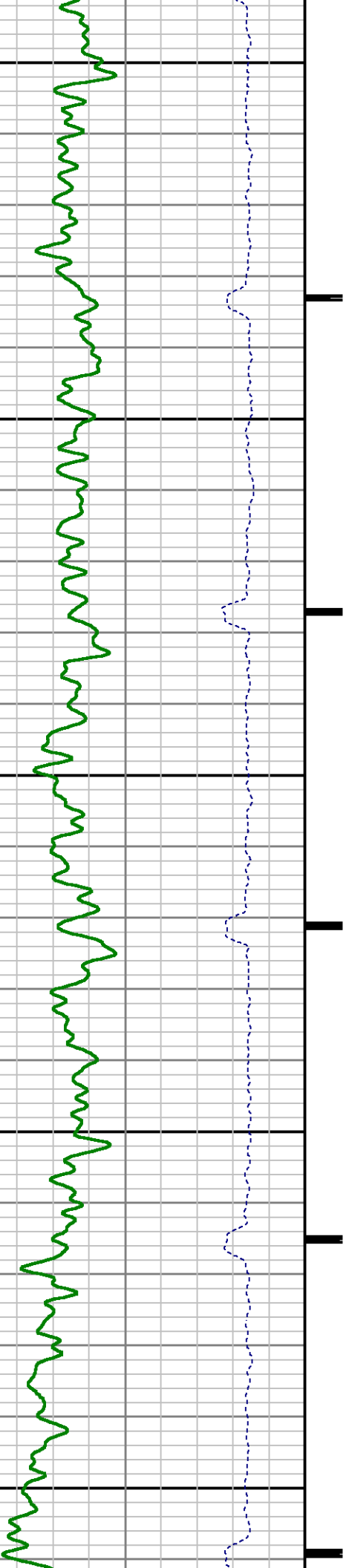




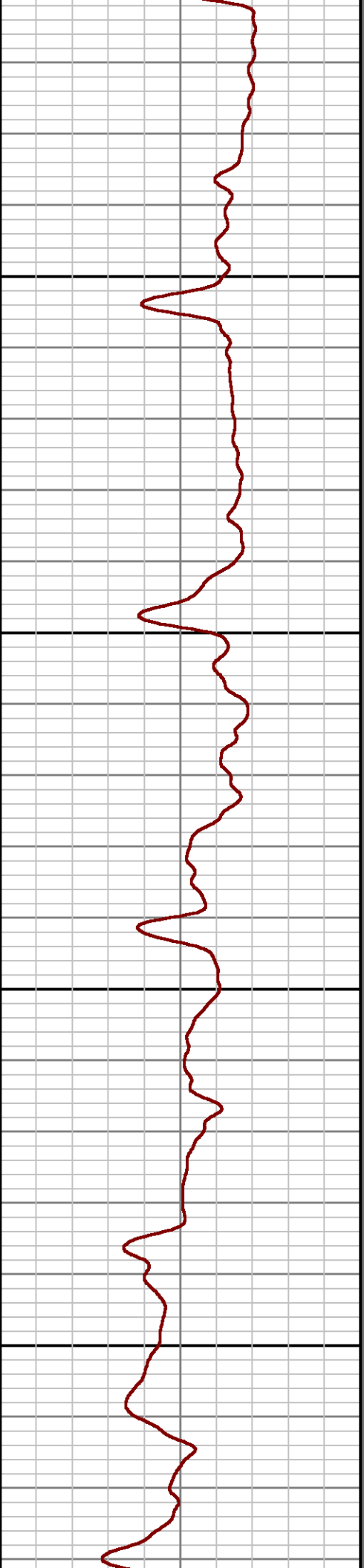
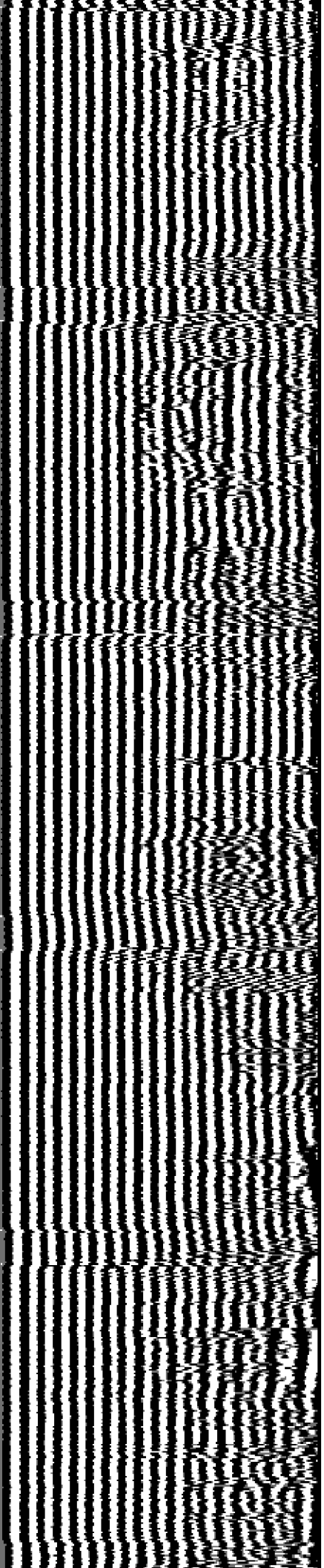
800

900

1000

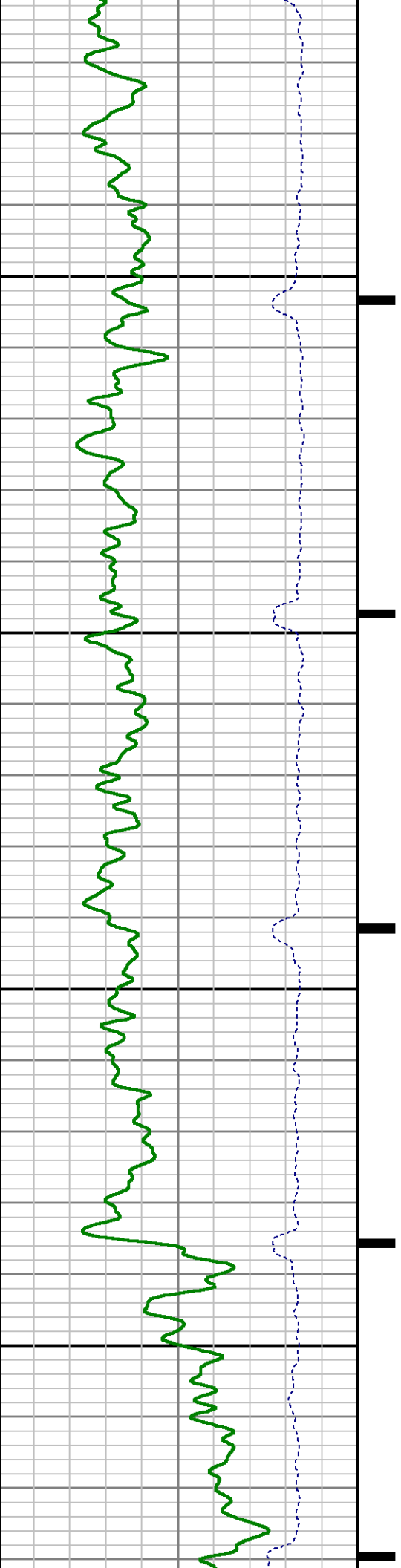




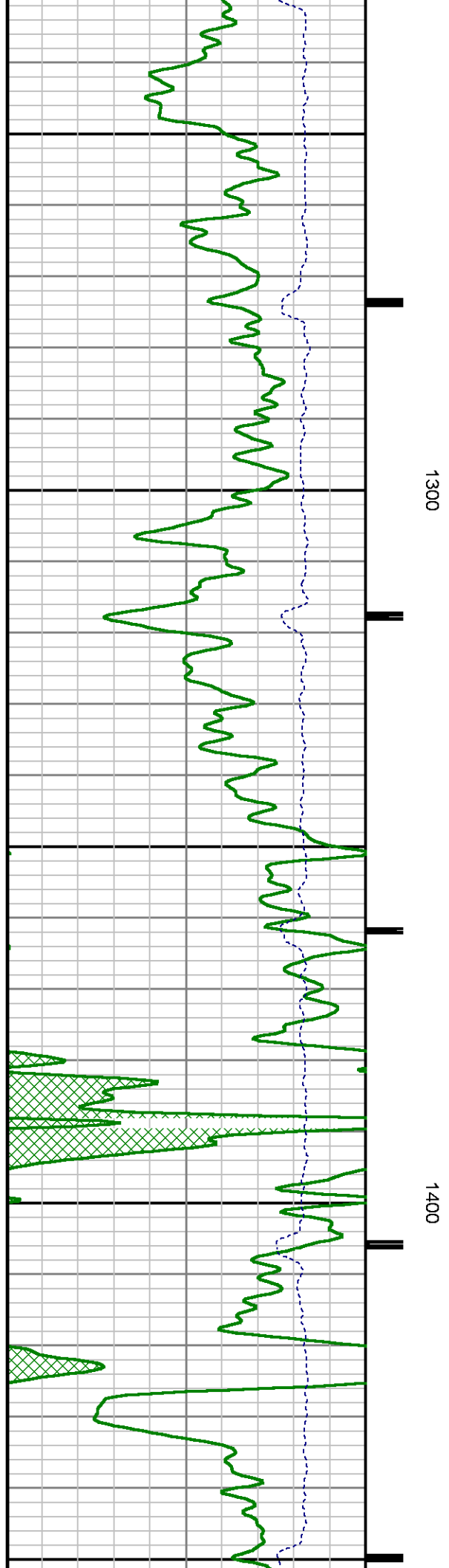
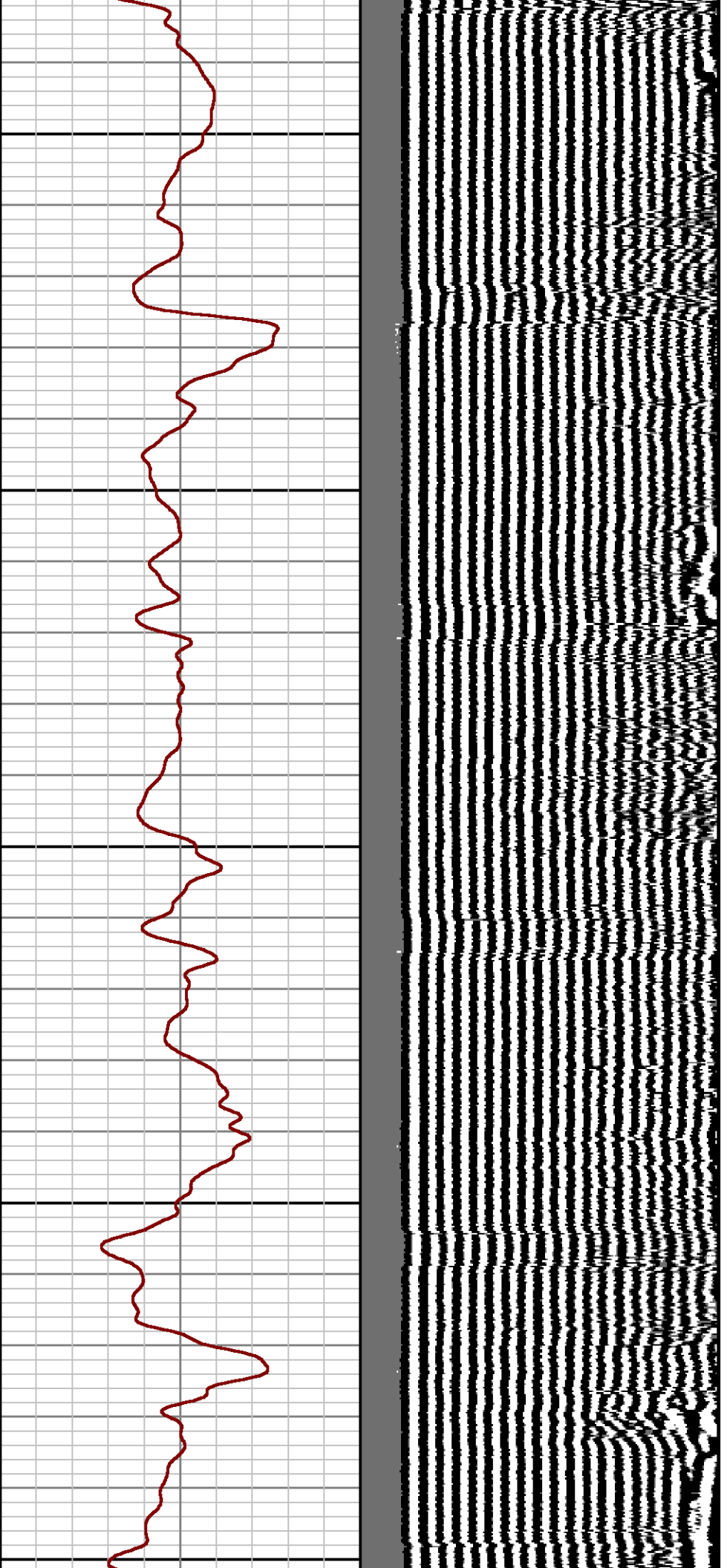


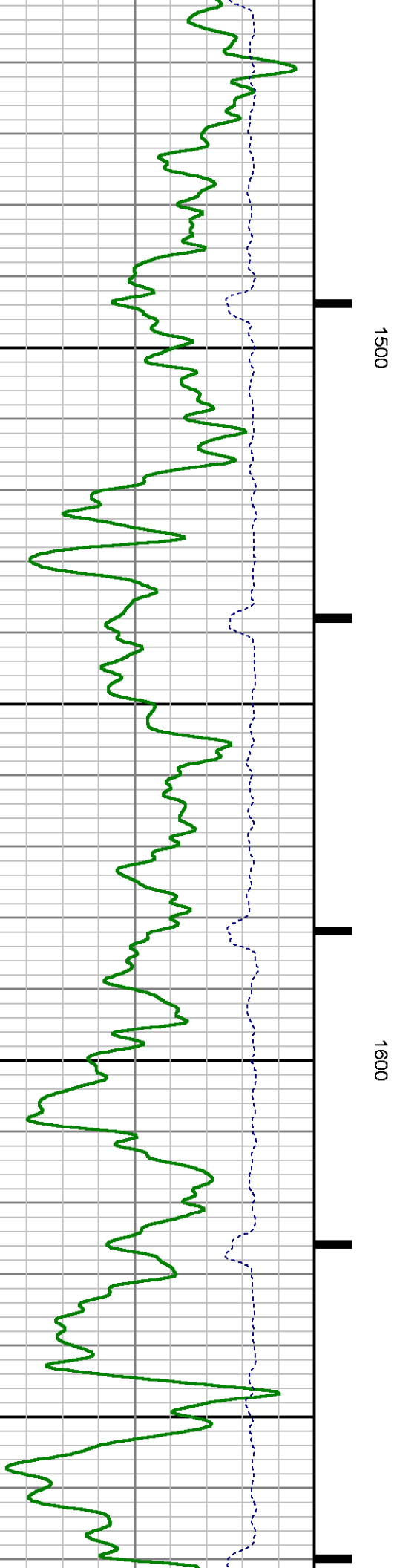
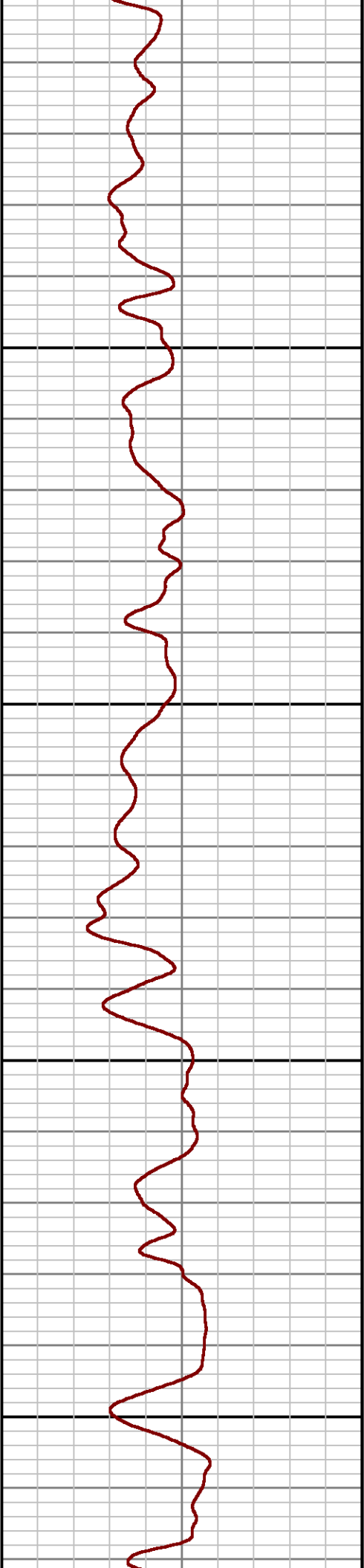
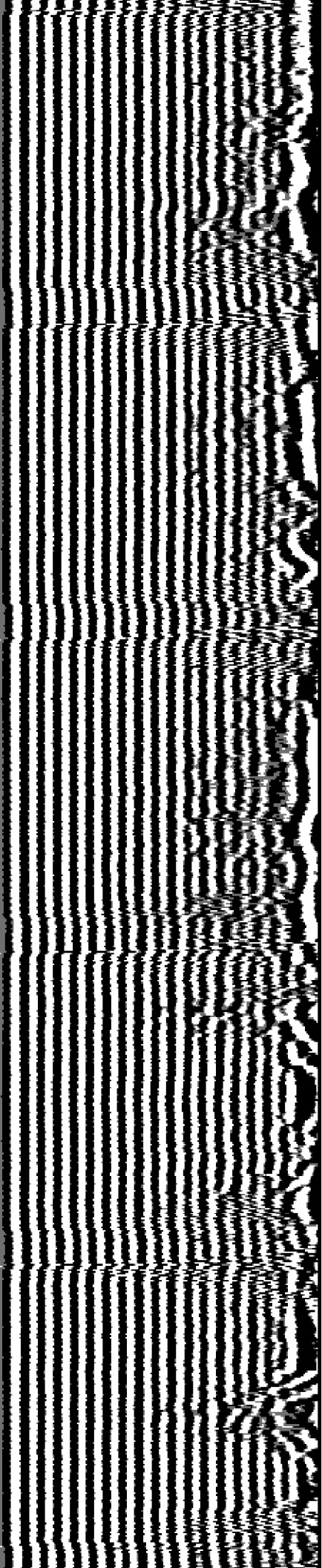
1100

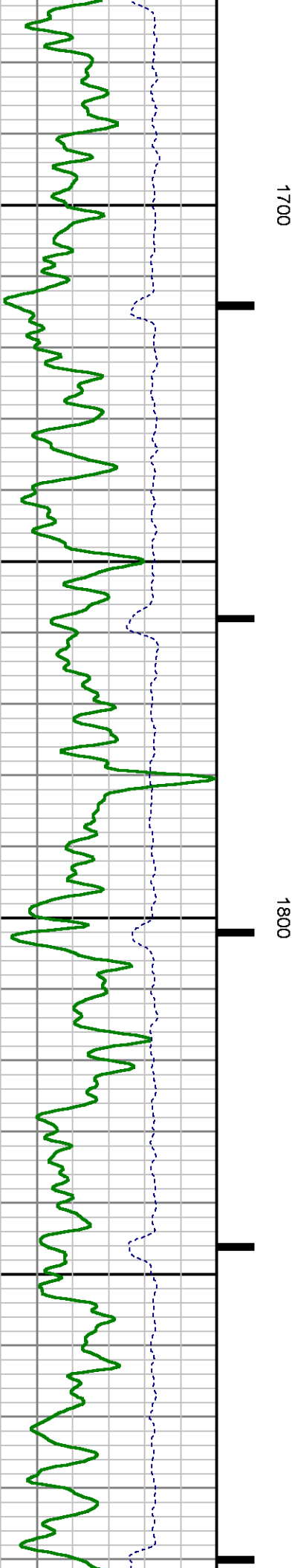
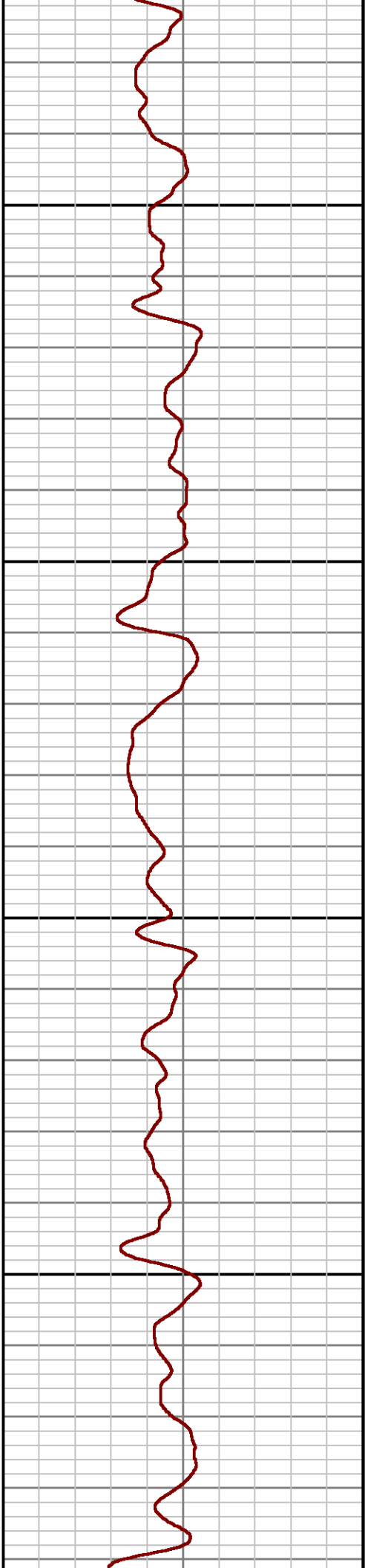
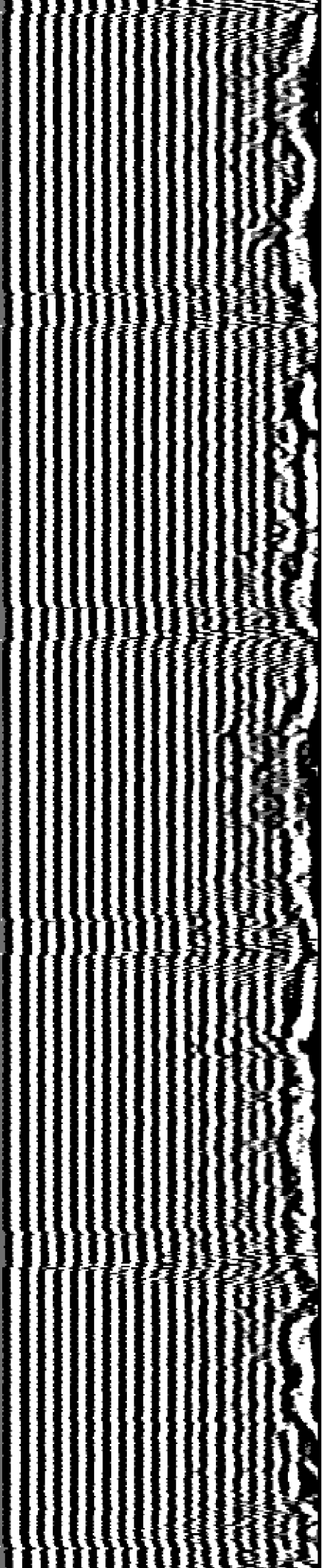
1200

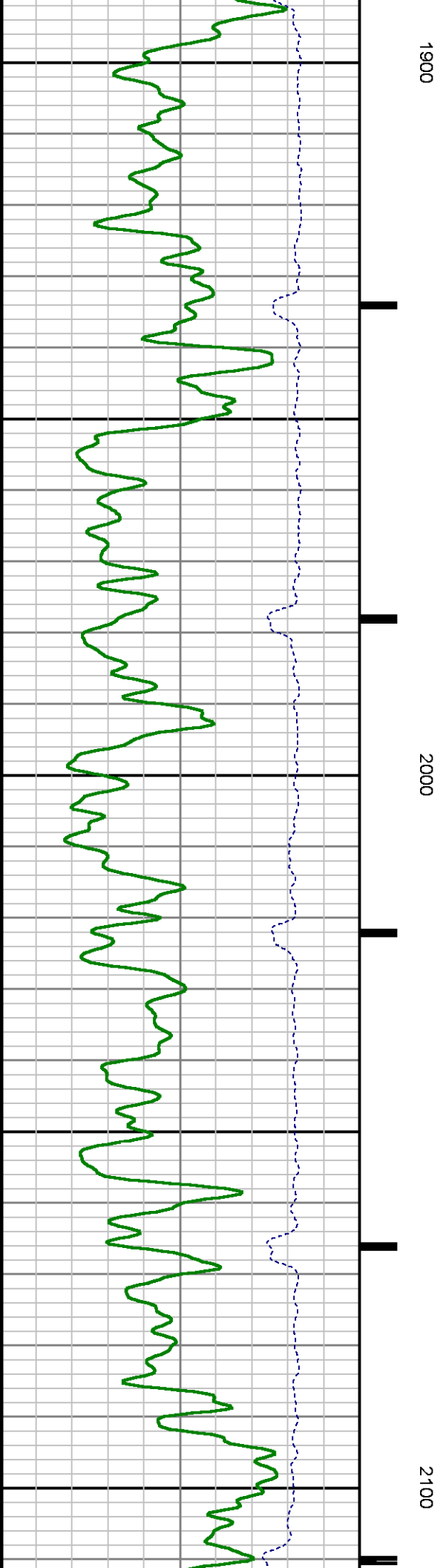
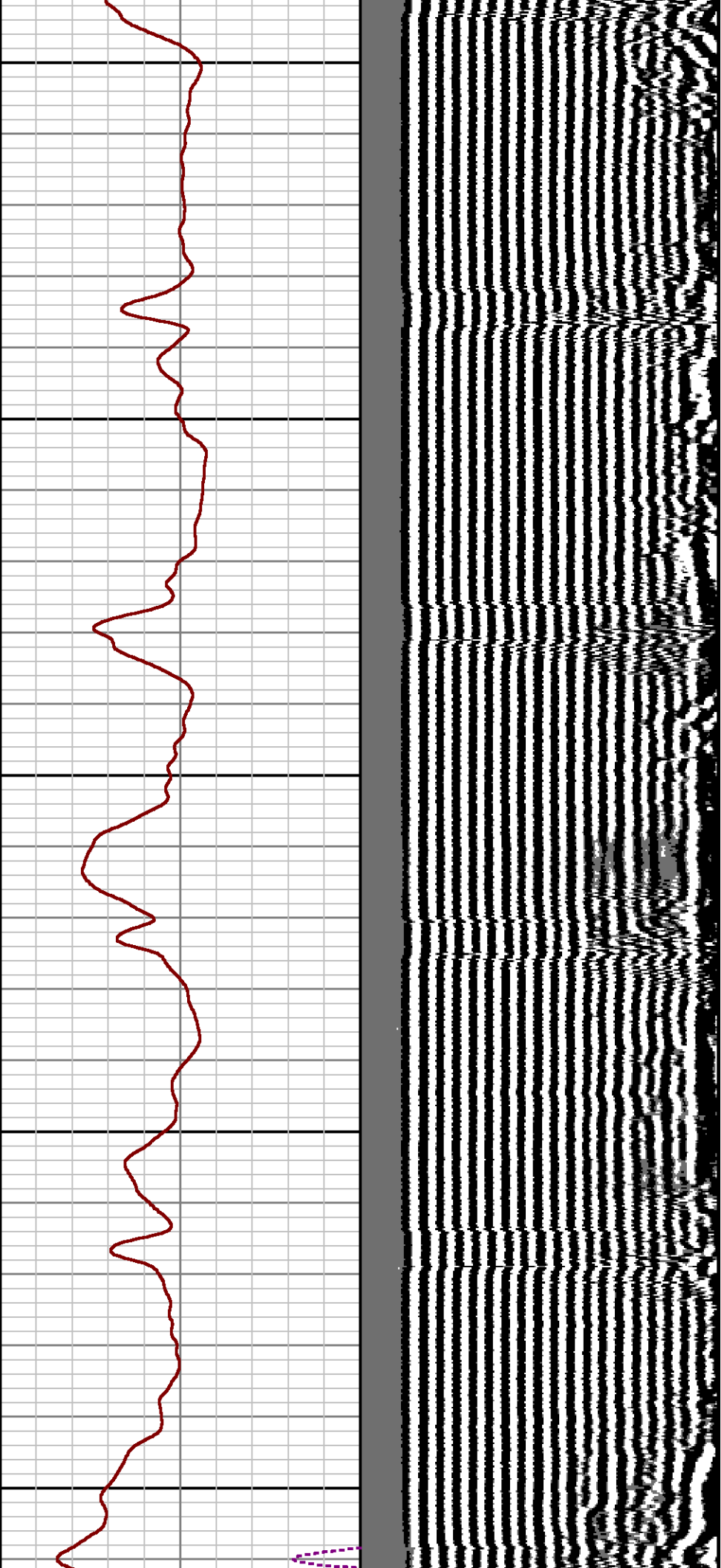


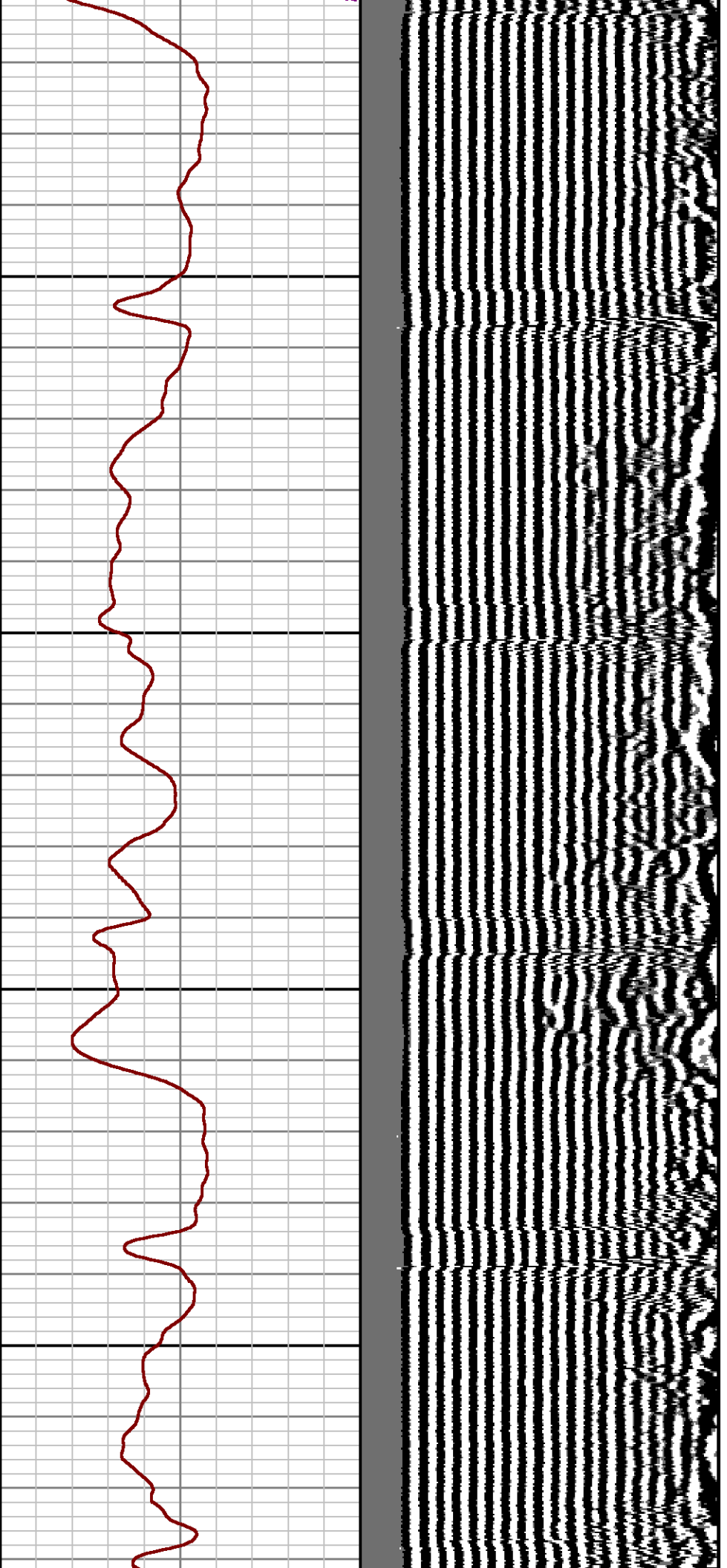






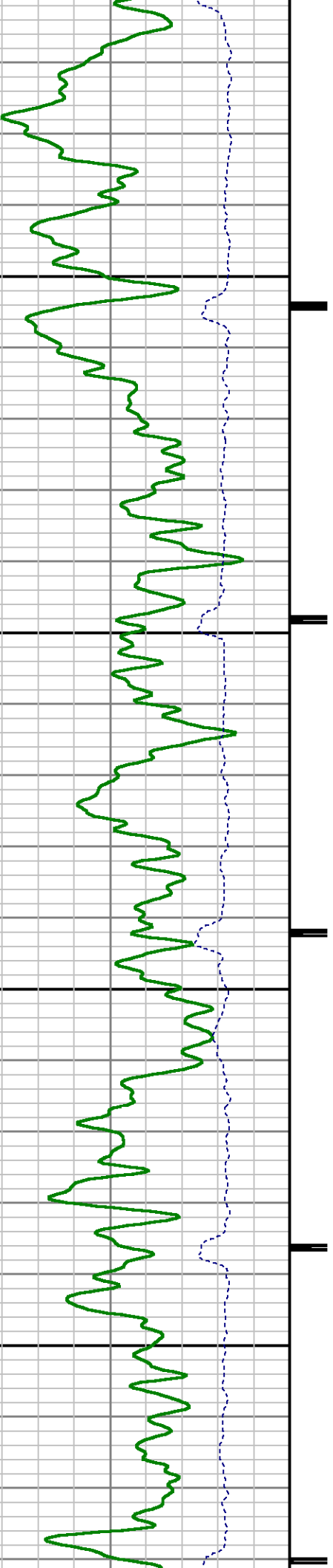




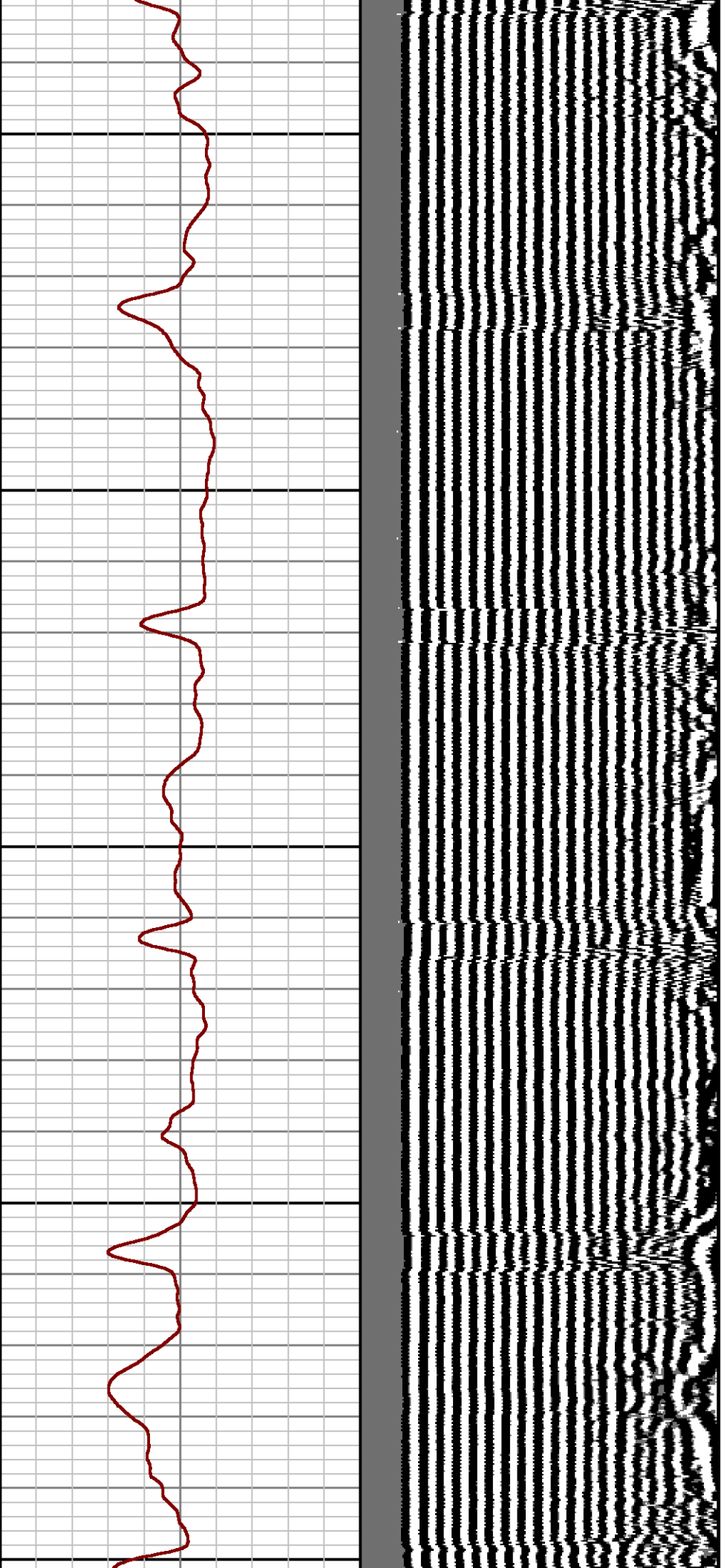


2200

2300

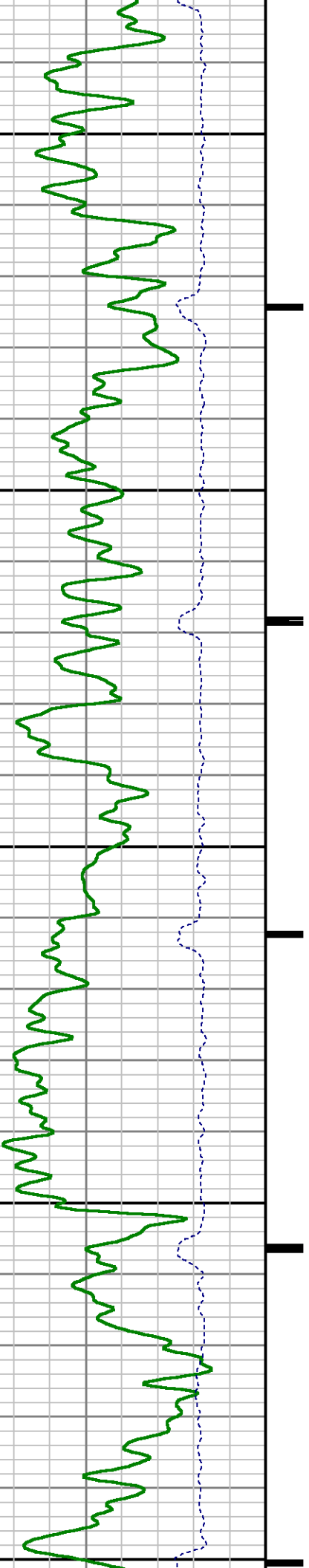




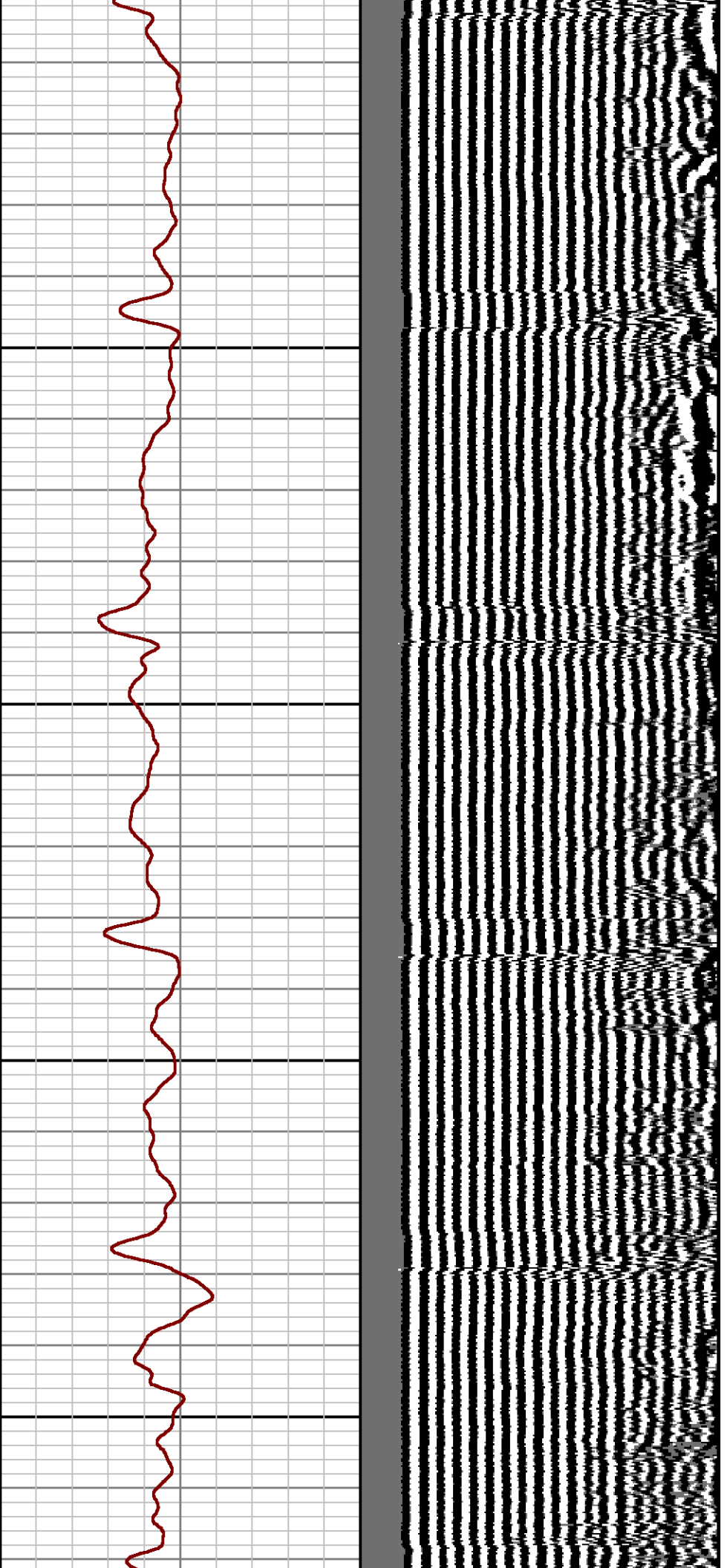


2400

2500

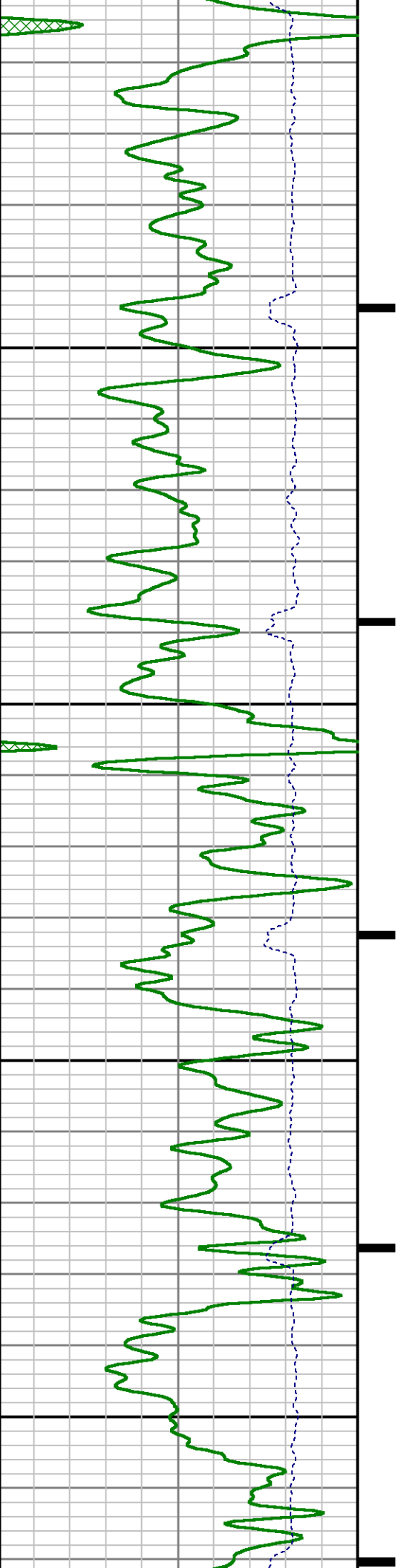


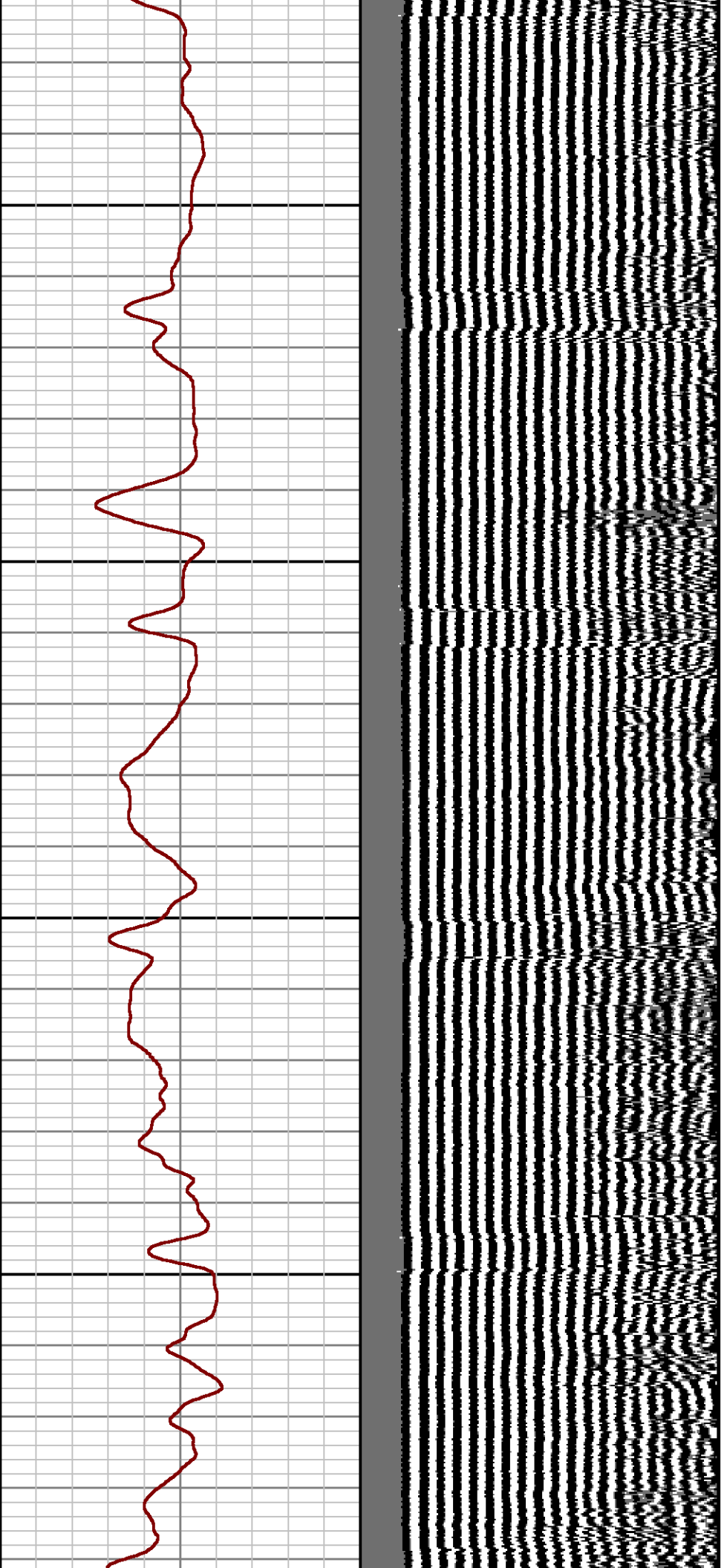




2600

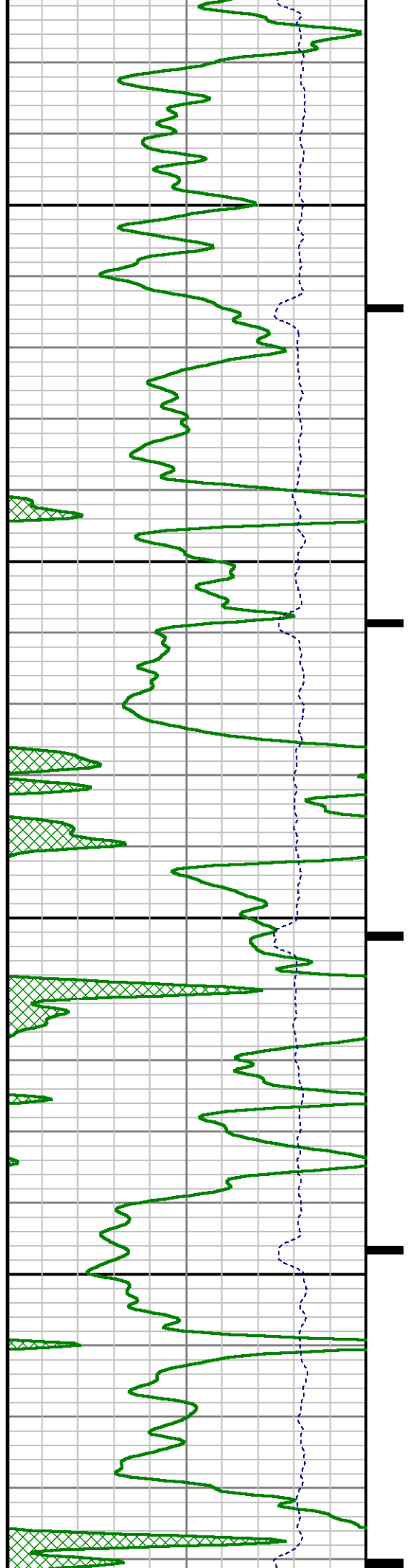
2700

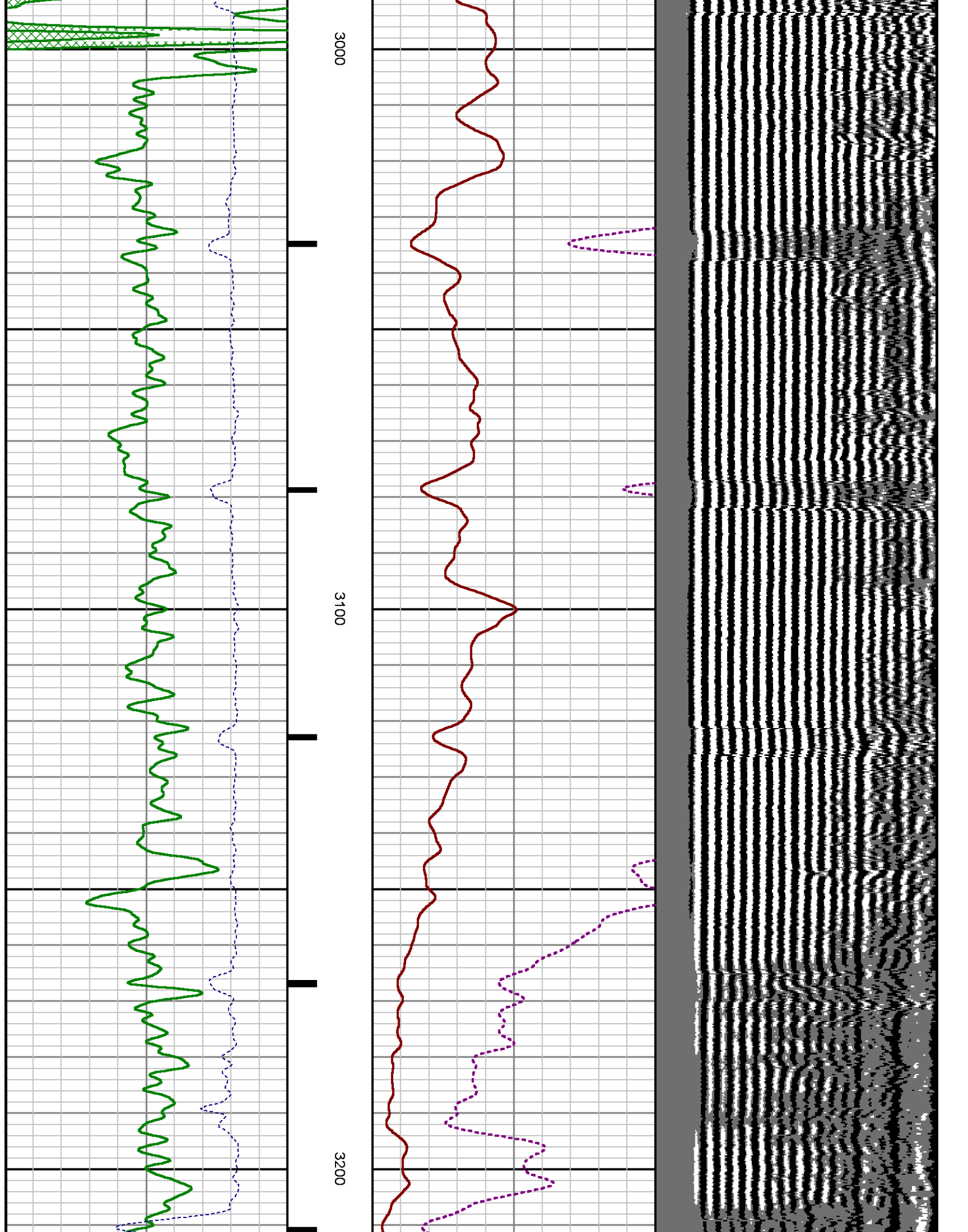


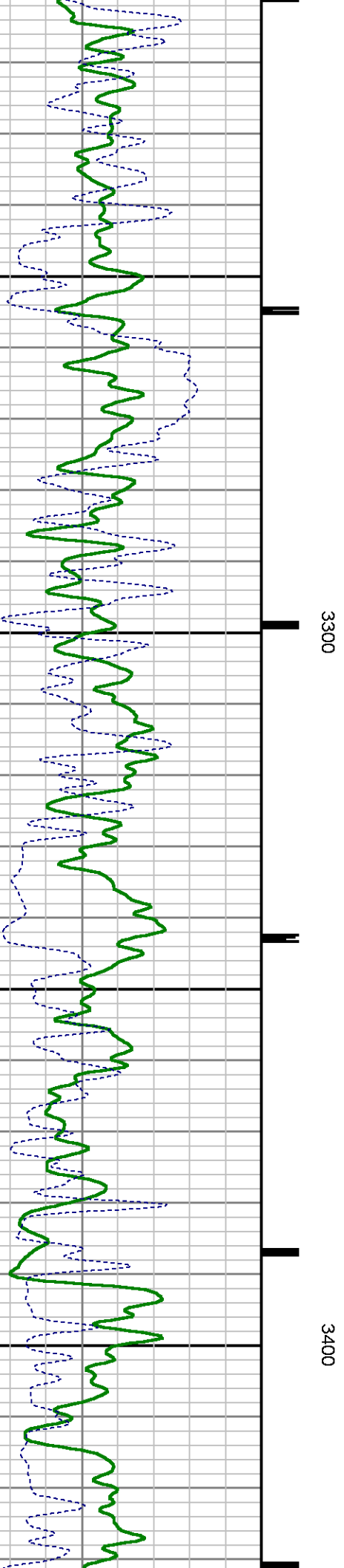
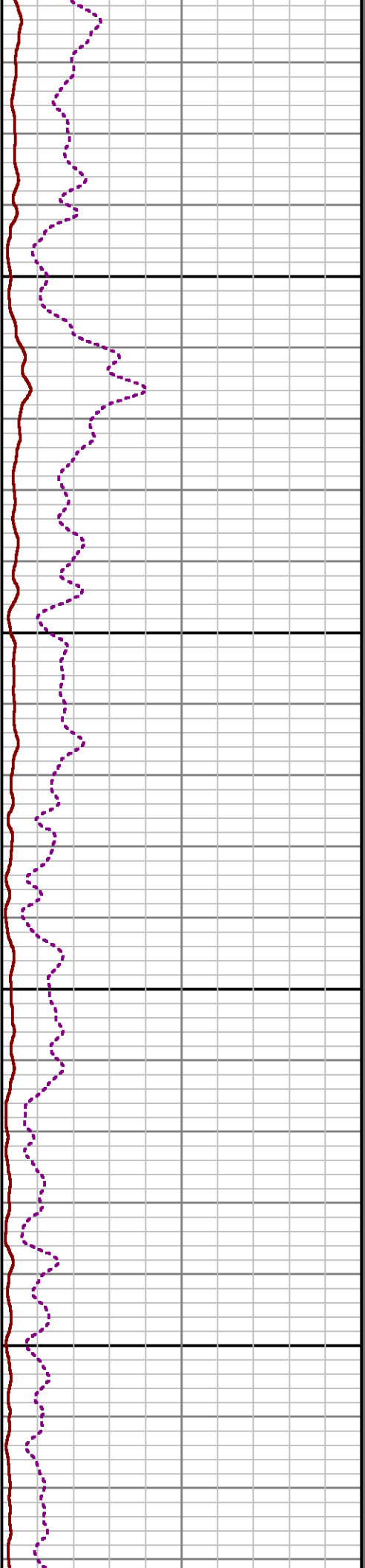
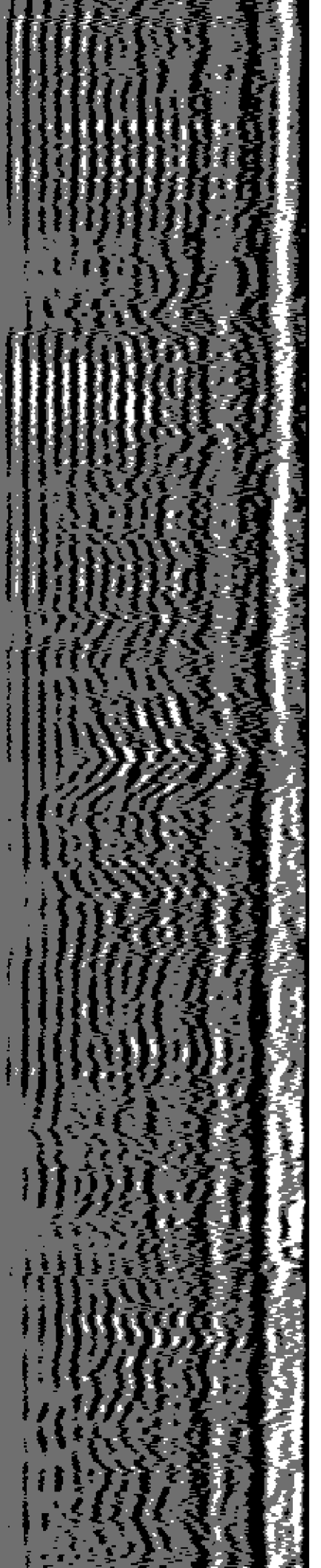


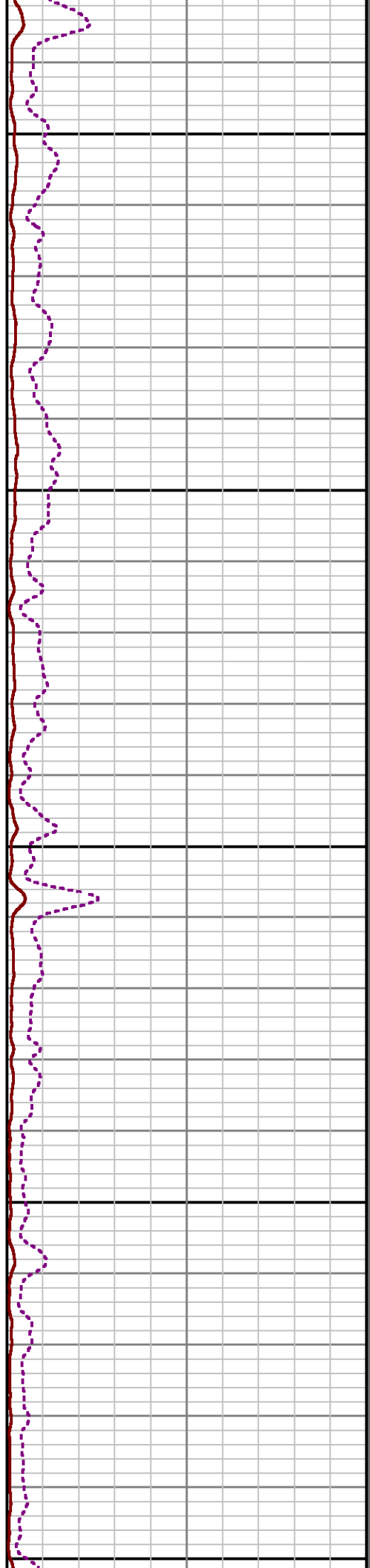
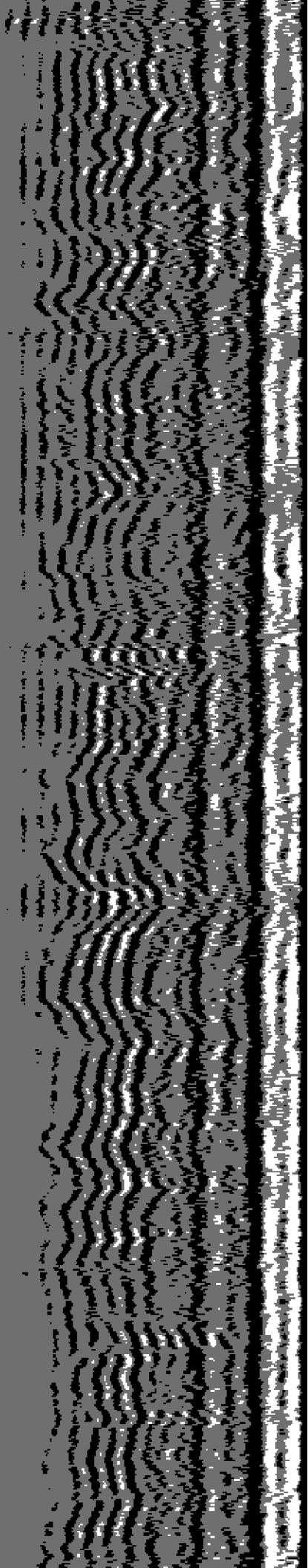
2800

2900



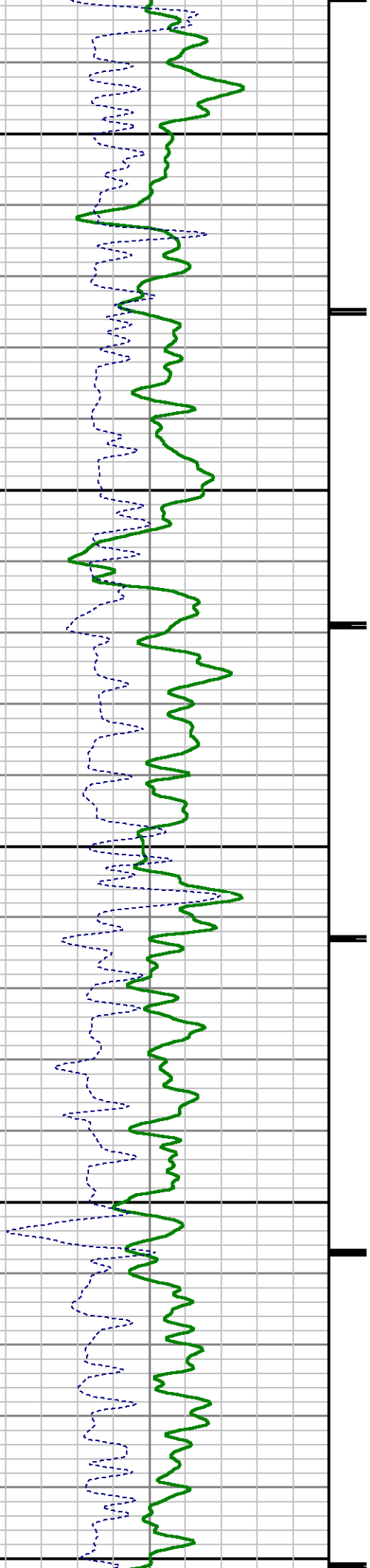




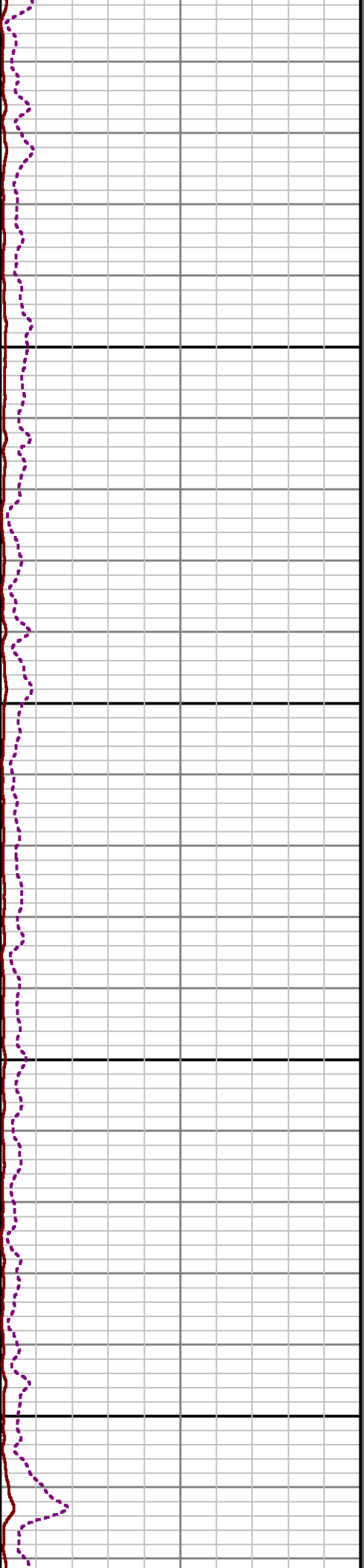
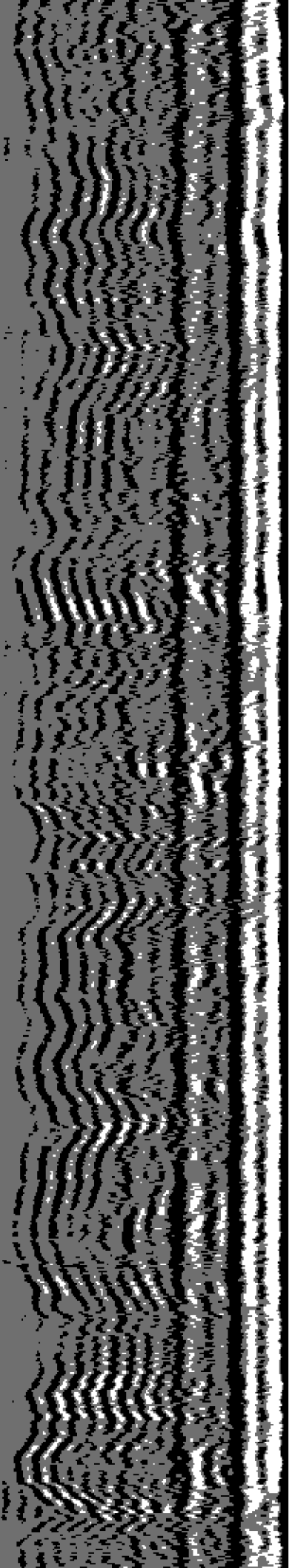


3500

3600

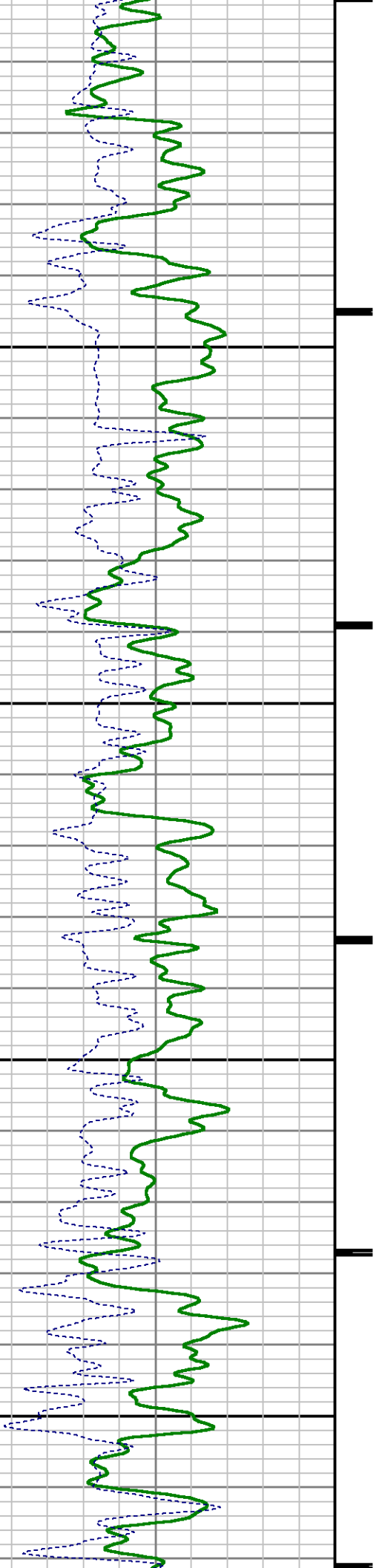




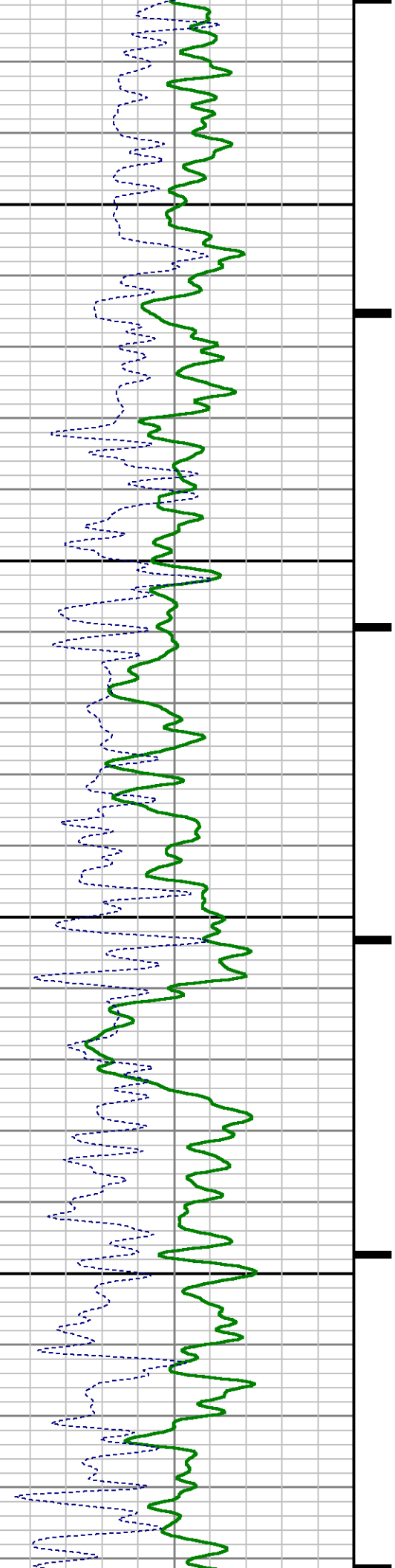
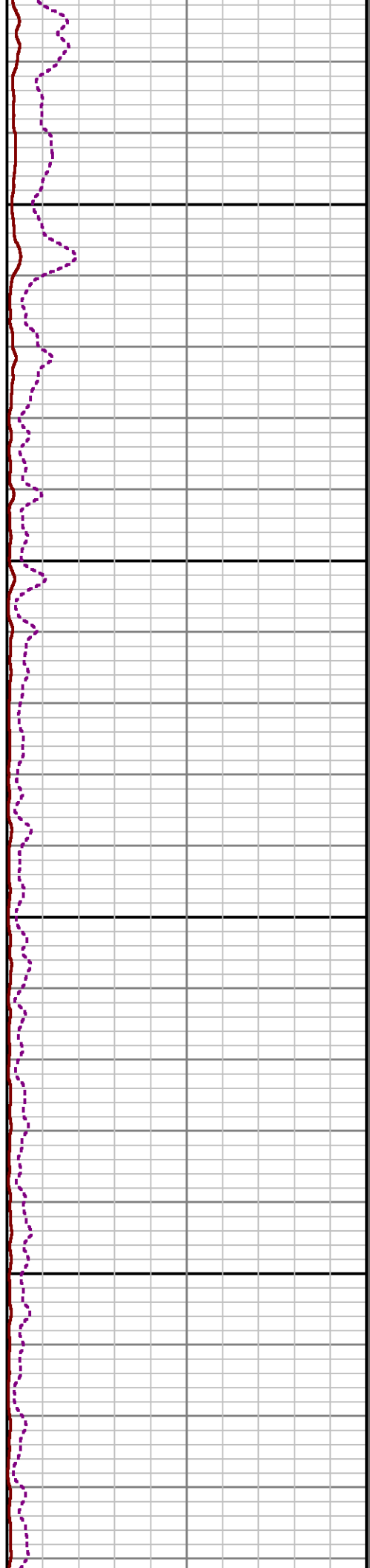
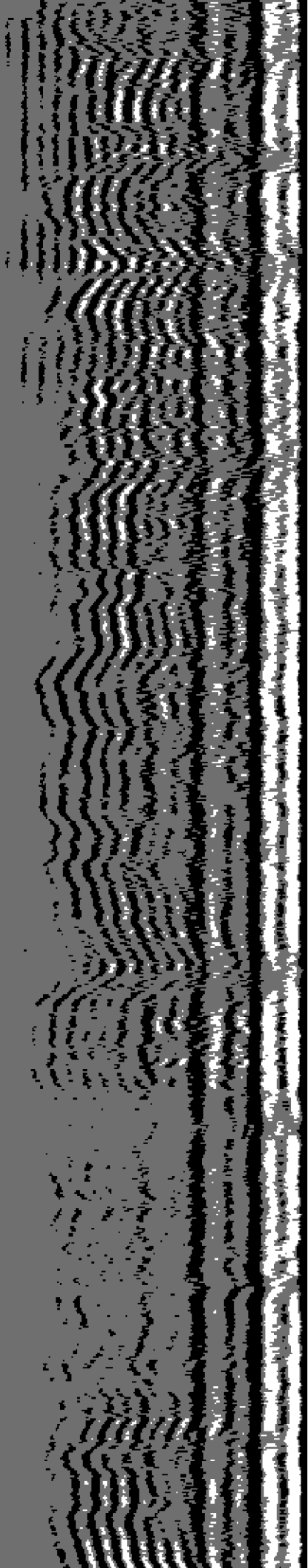


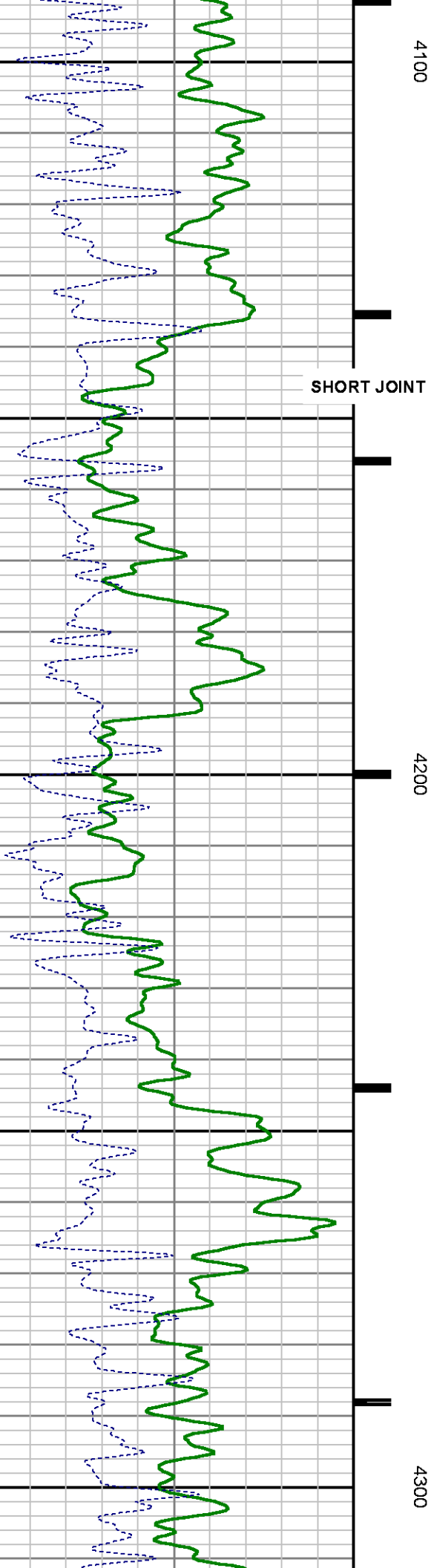
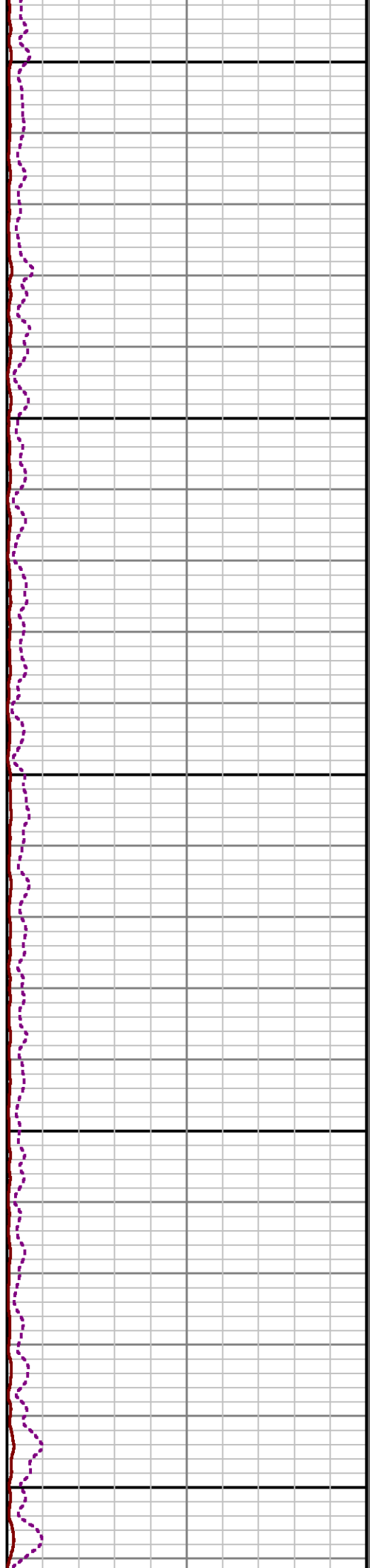
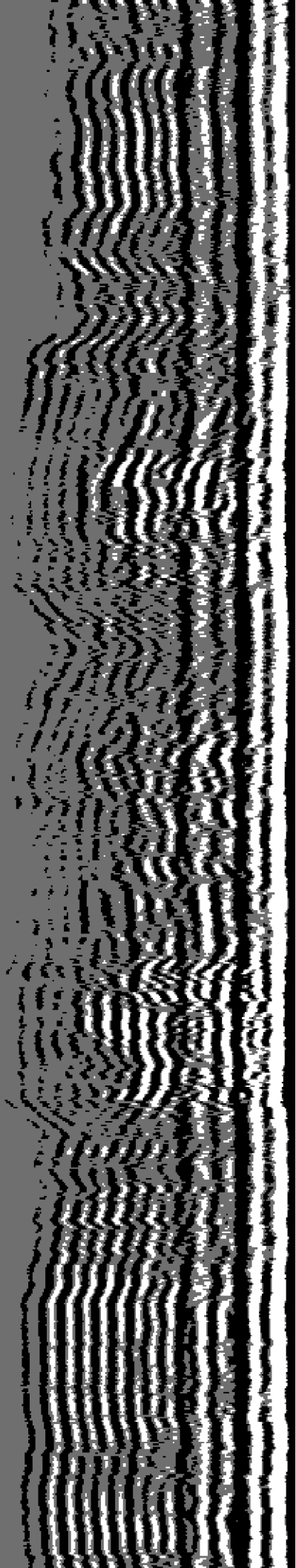
3700

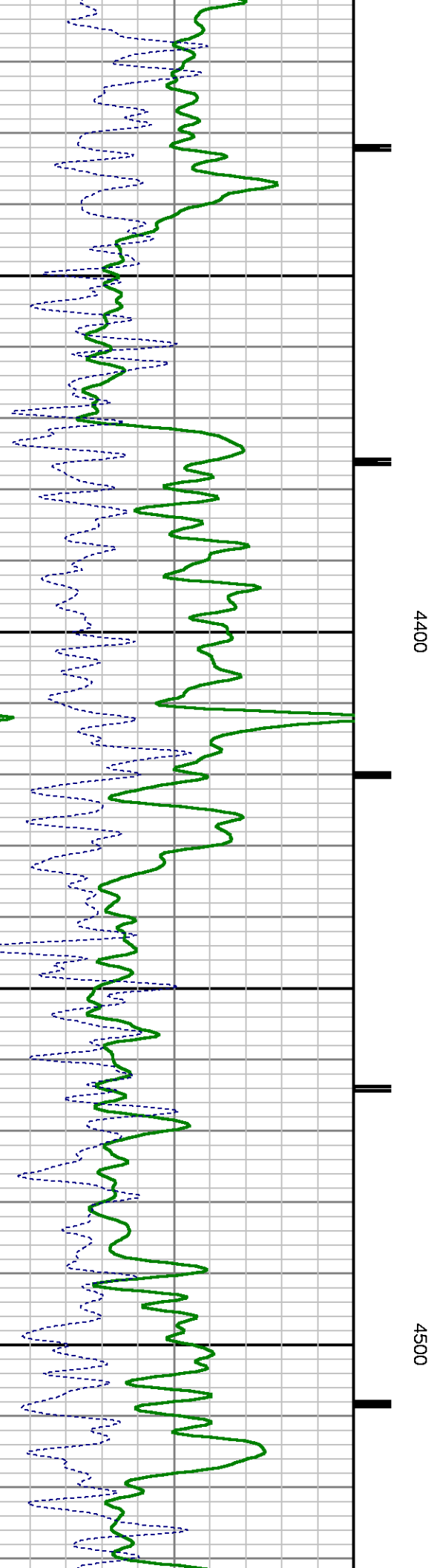
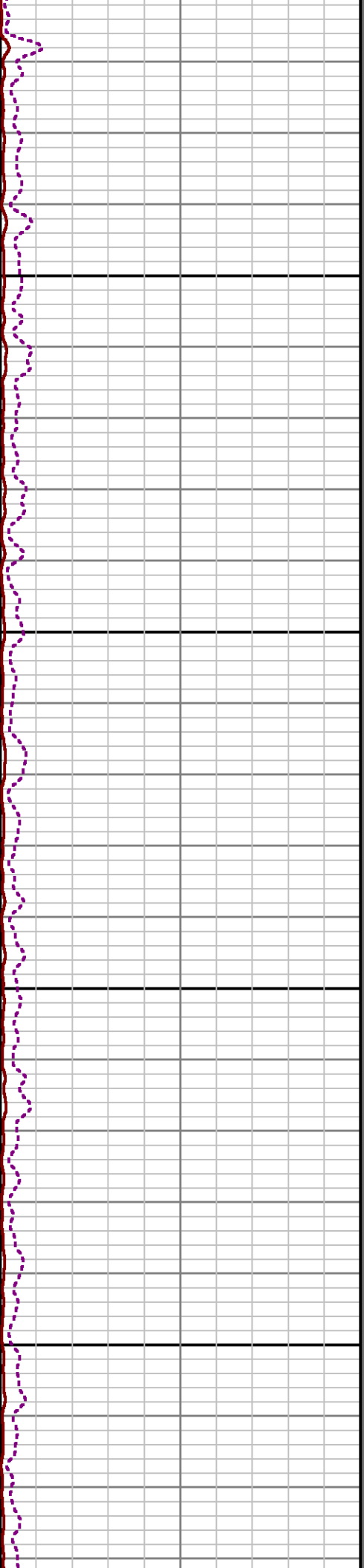
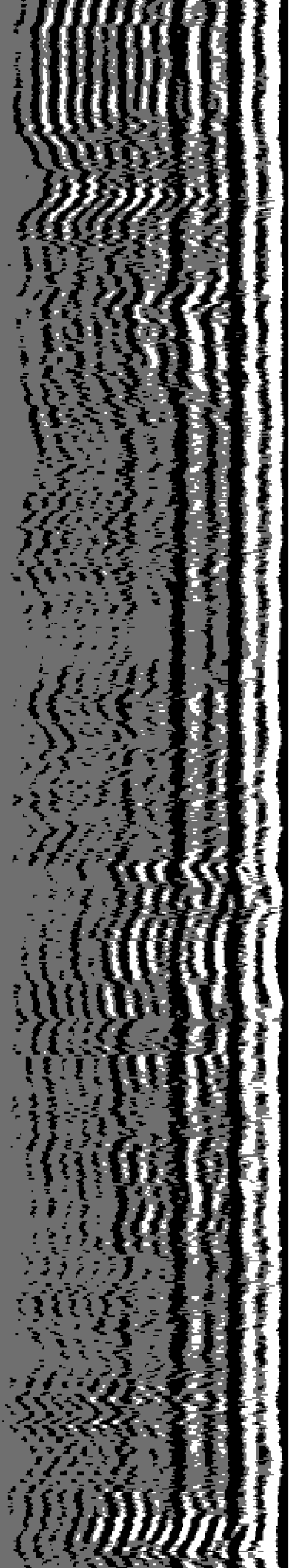
3800

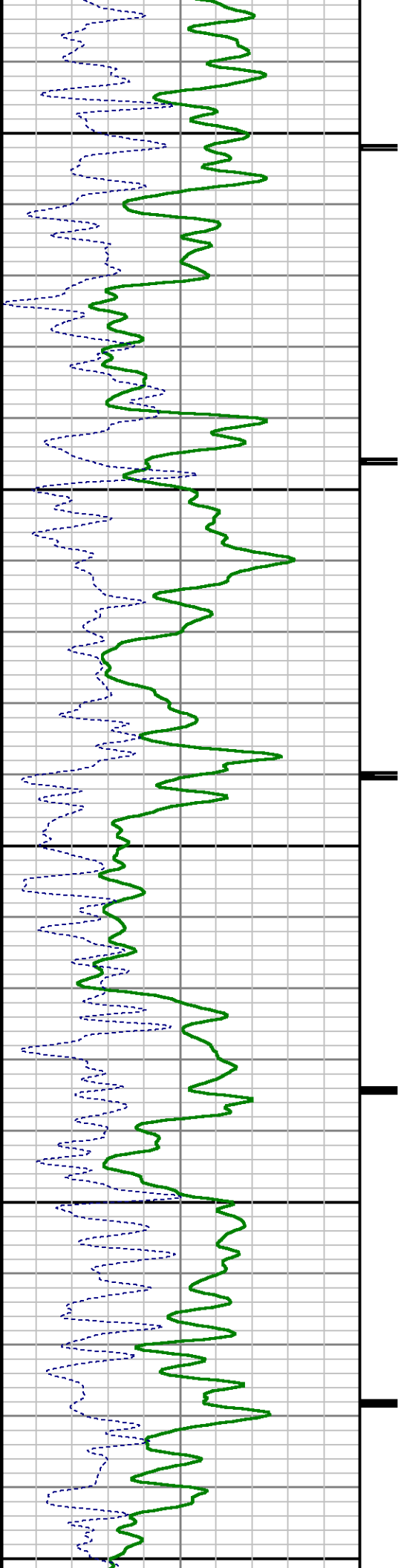
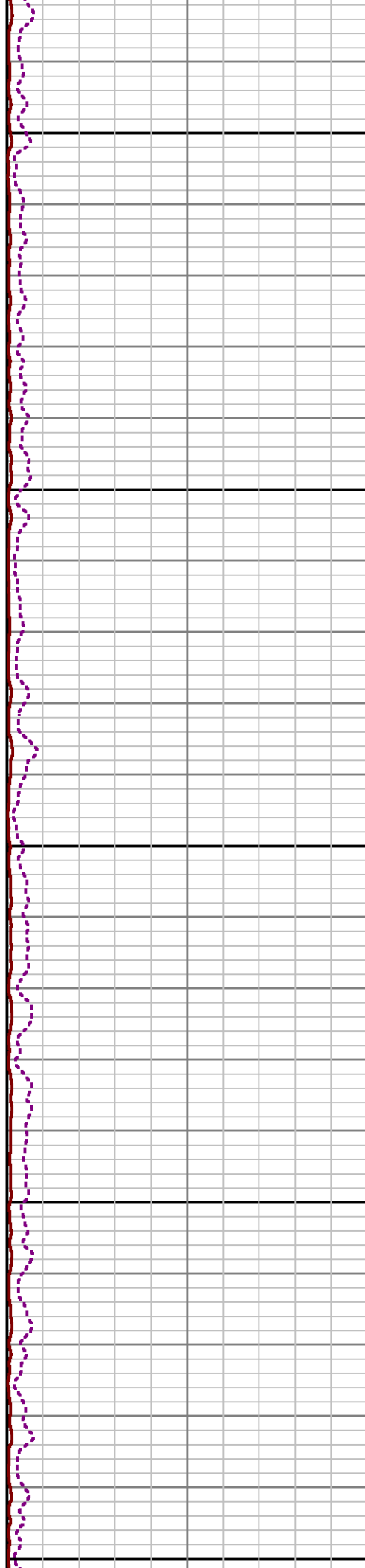
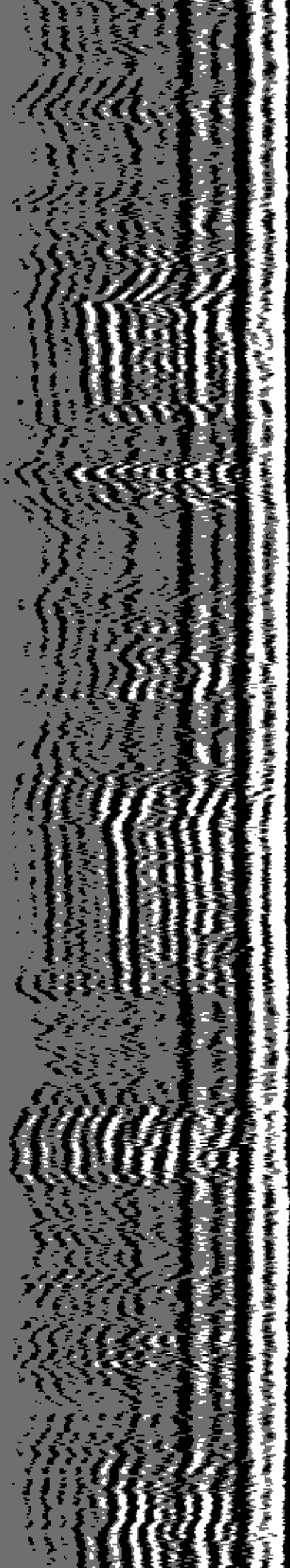


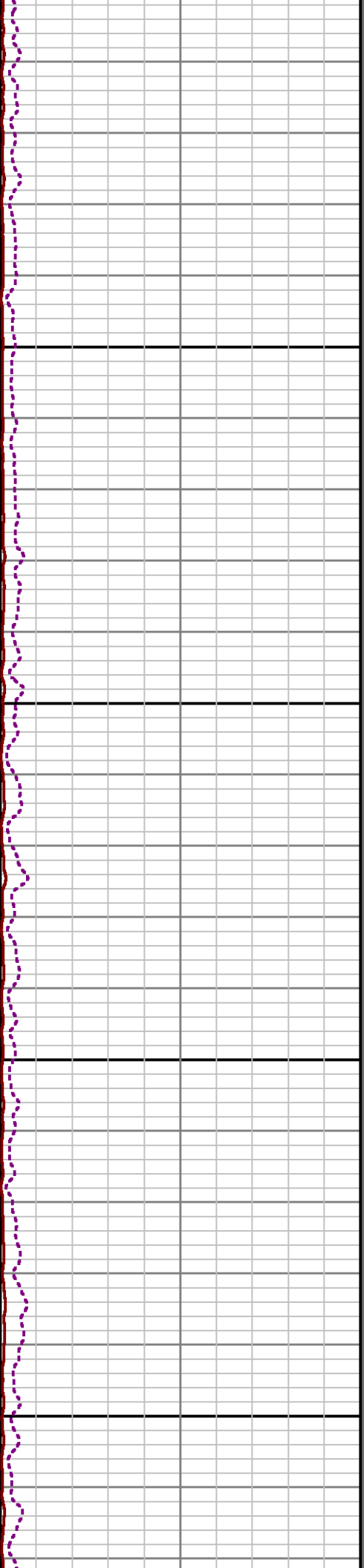
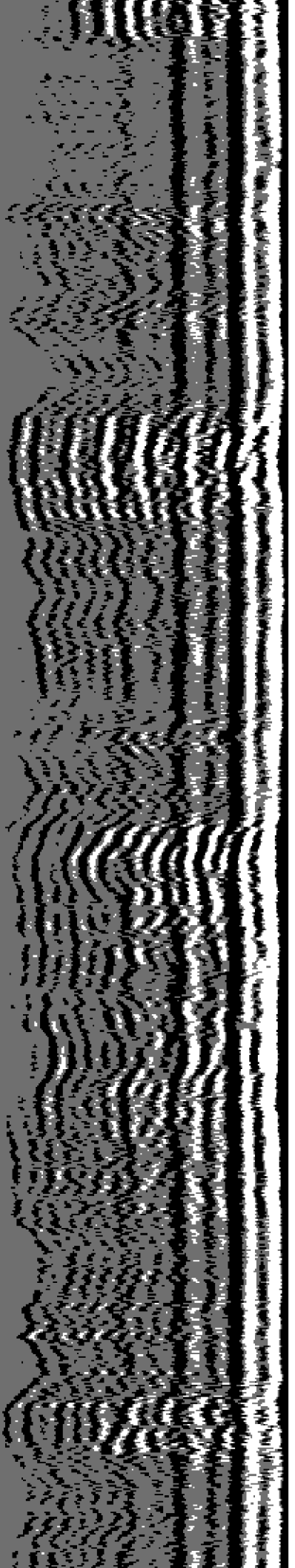






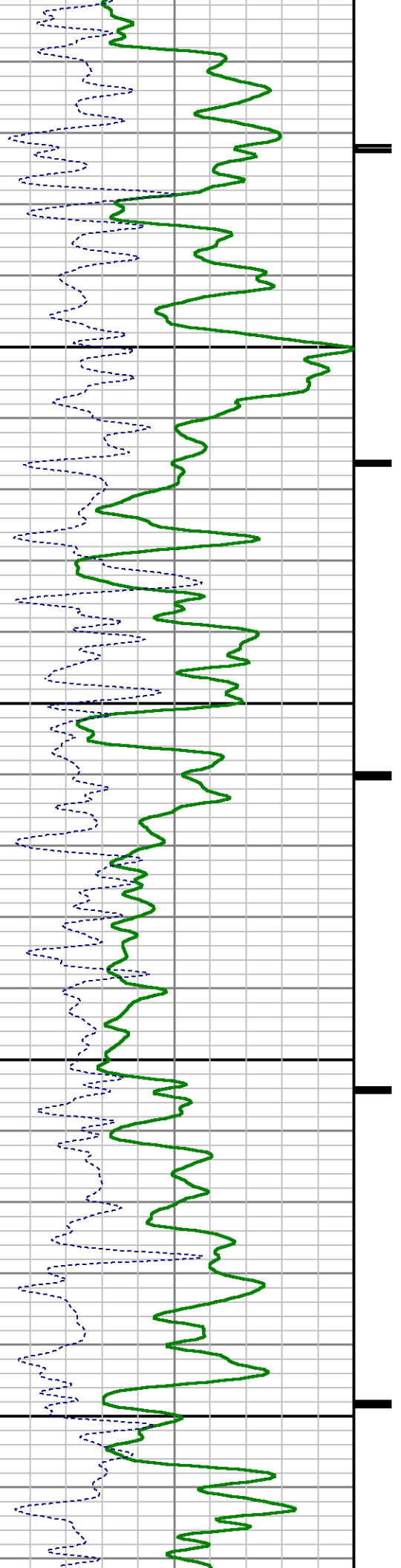


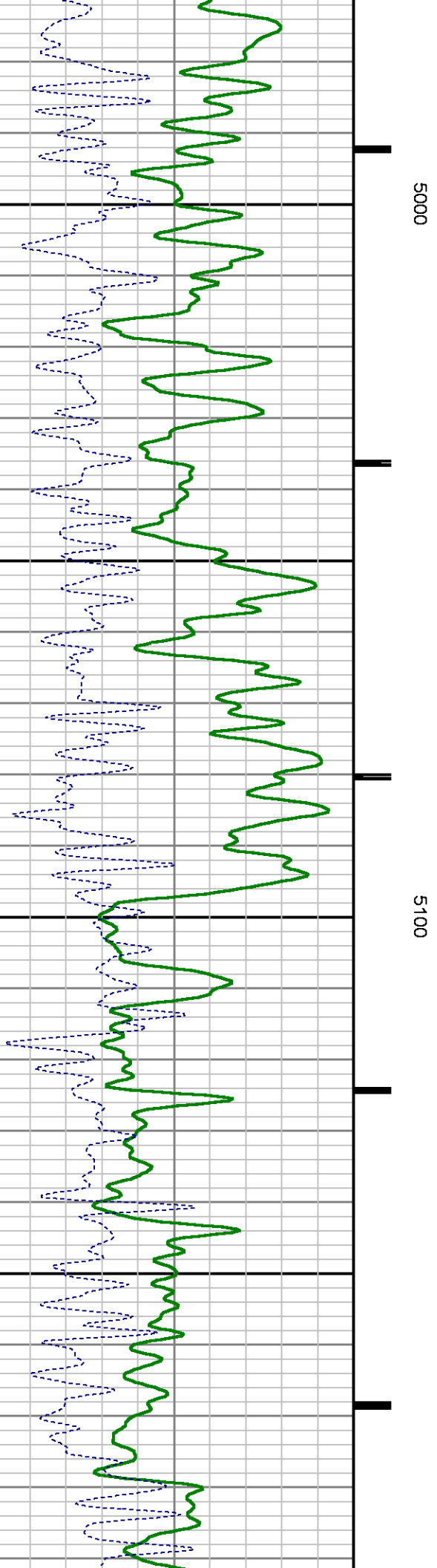
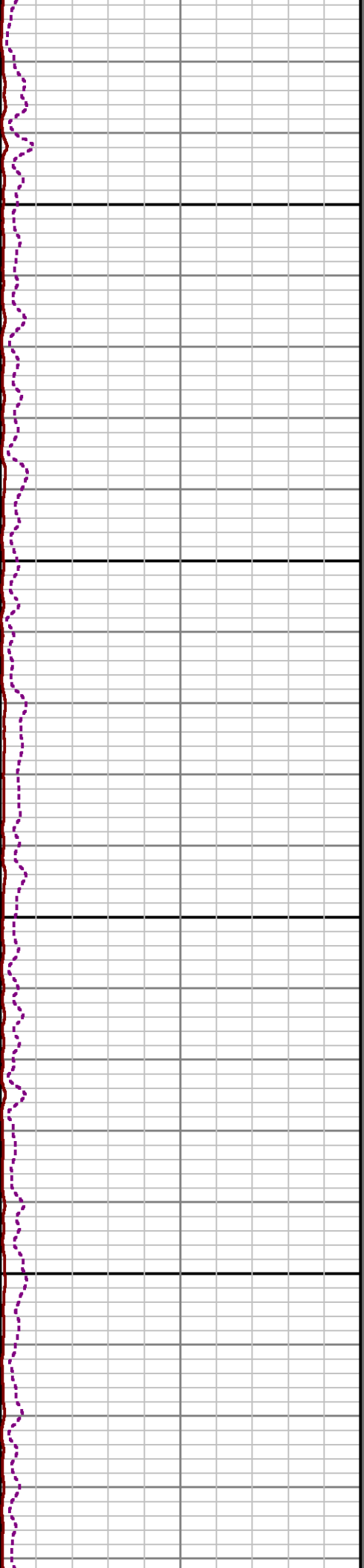
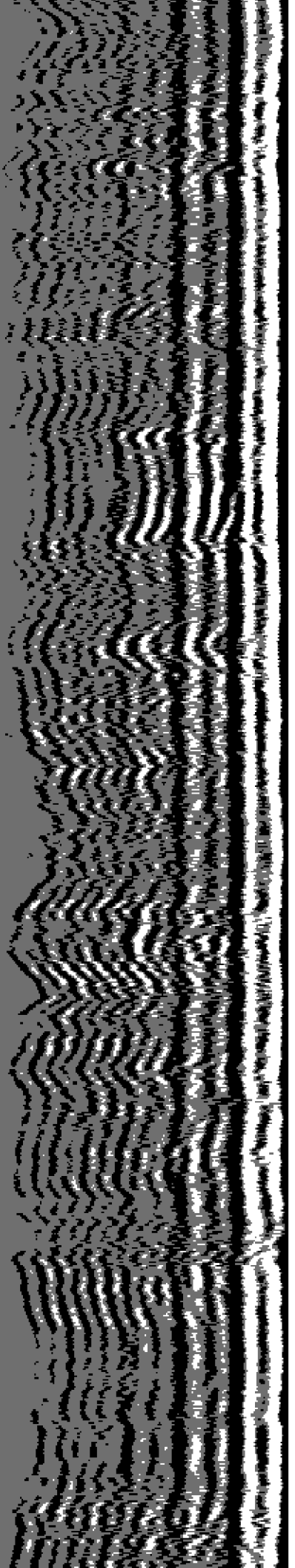




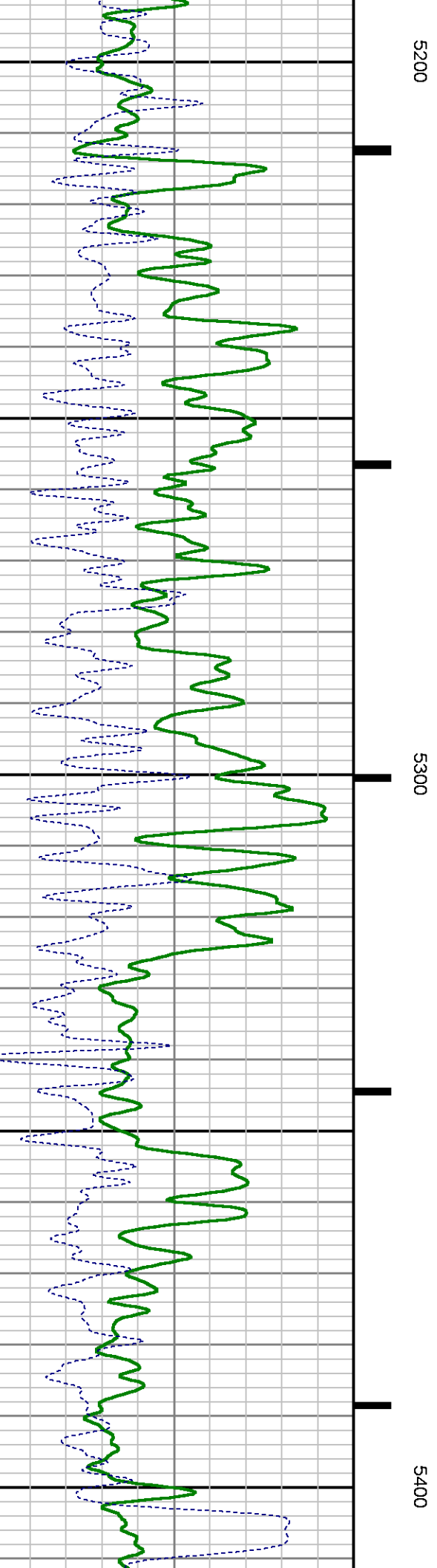
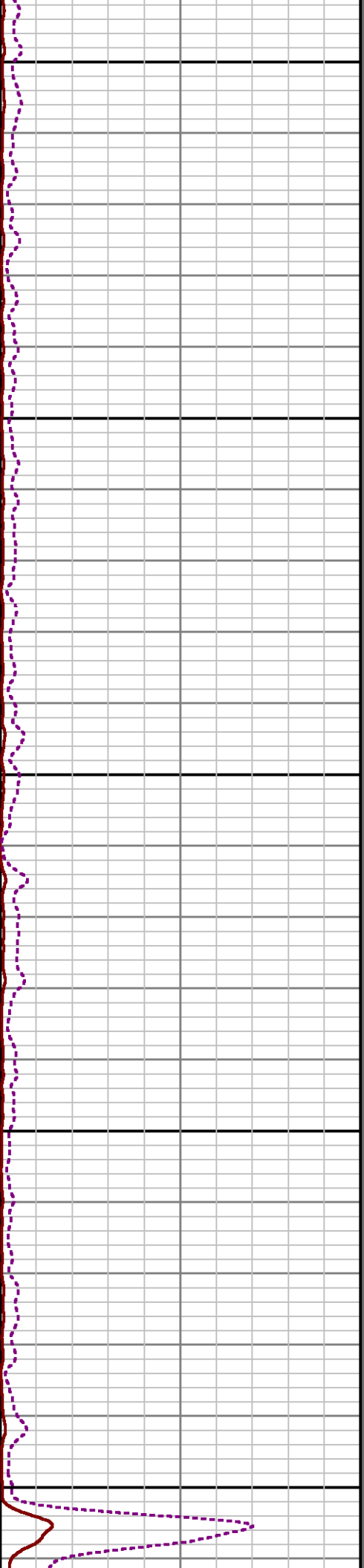
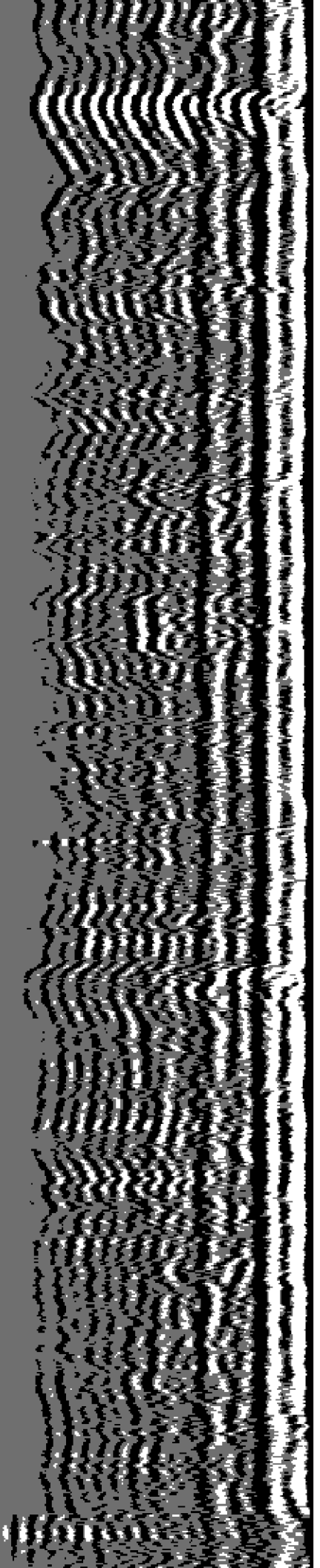
4800

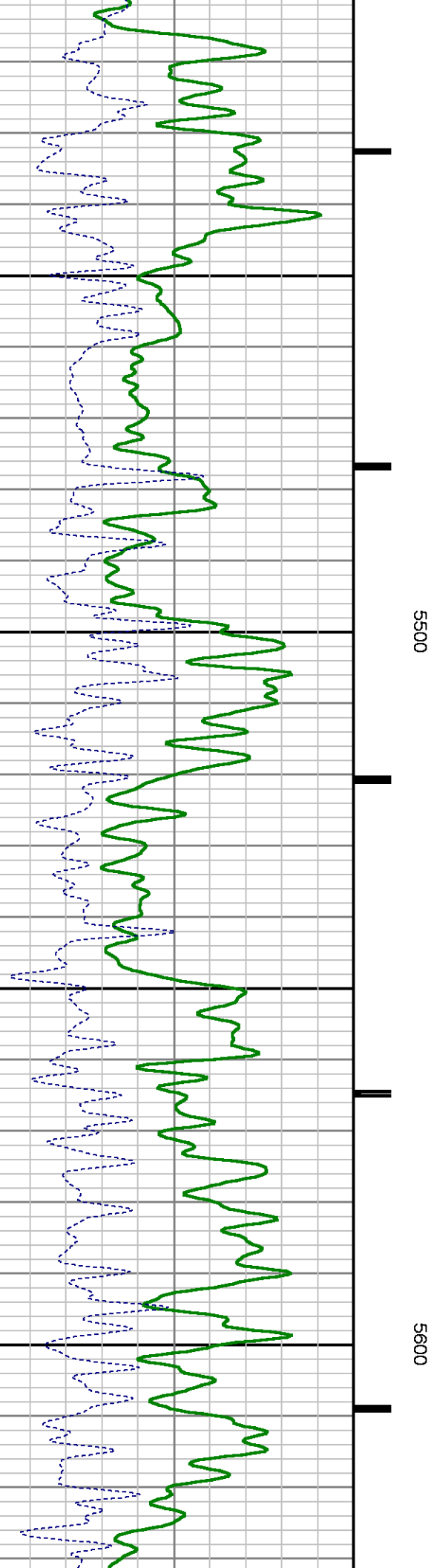
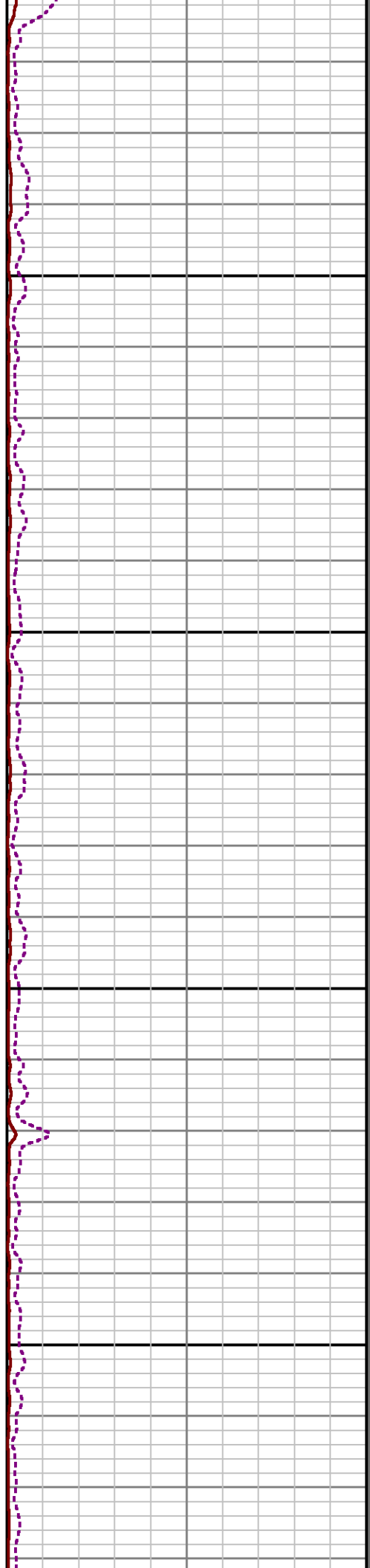
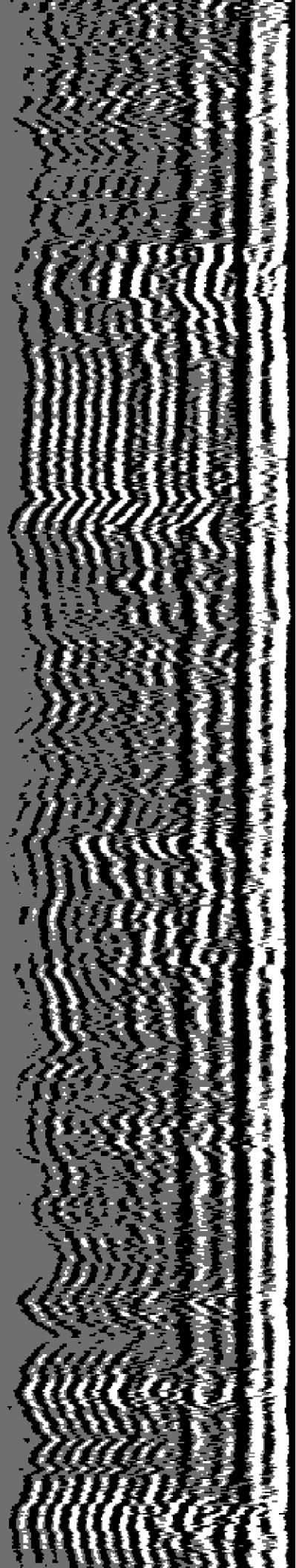
4900

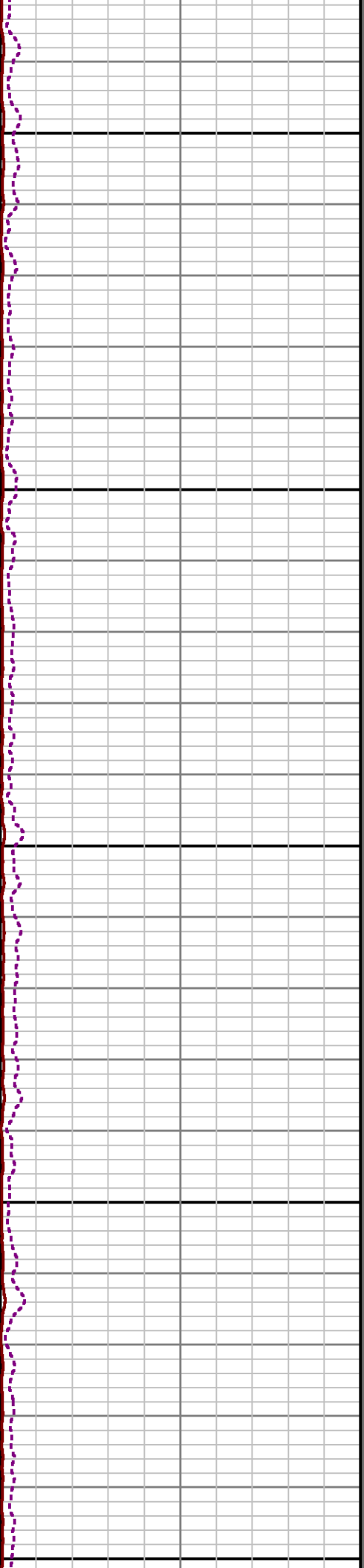
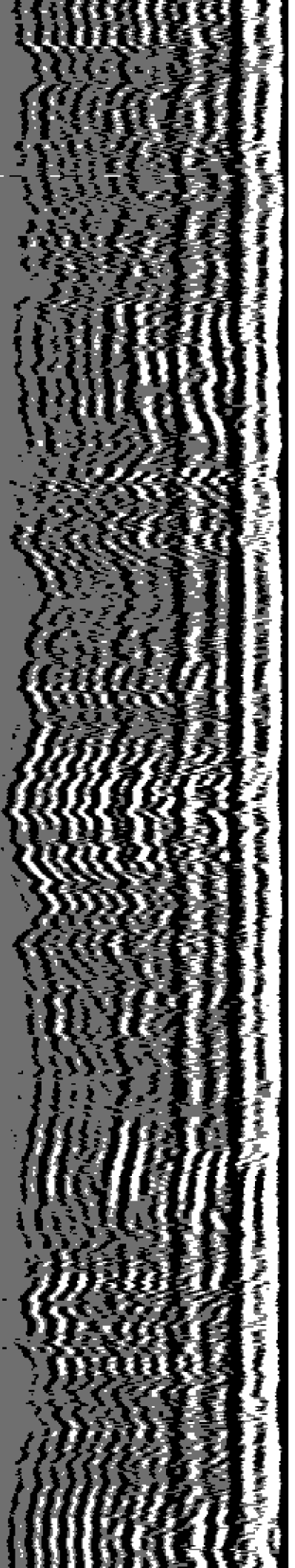






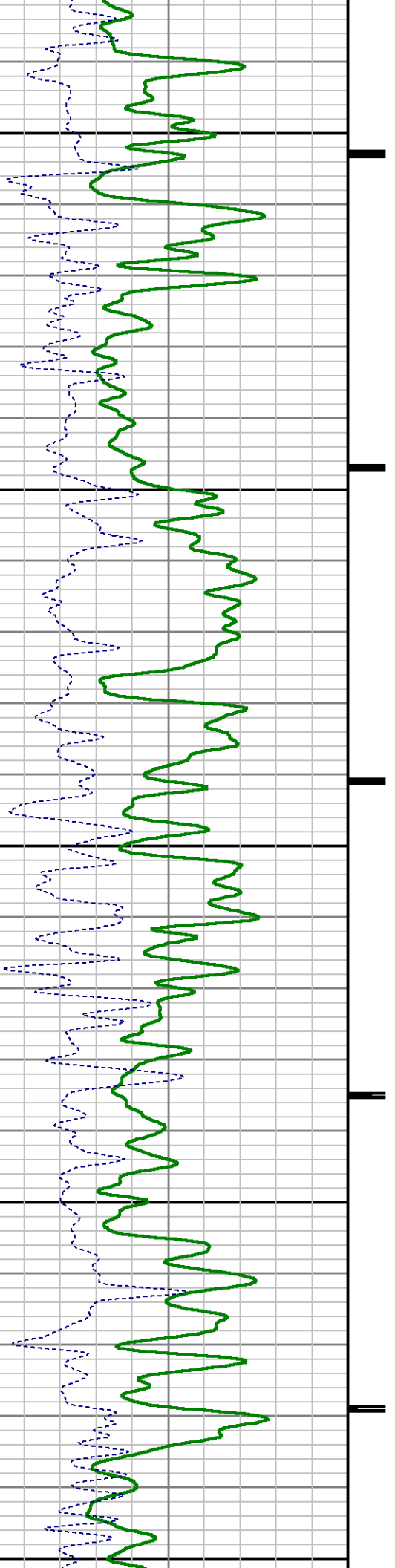


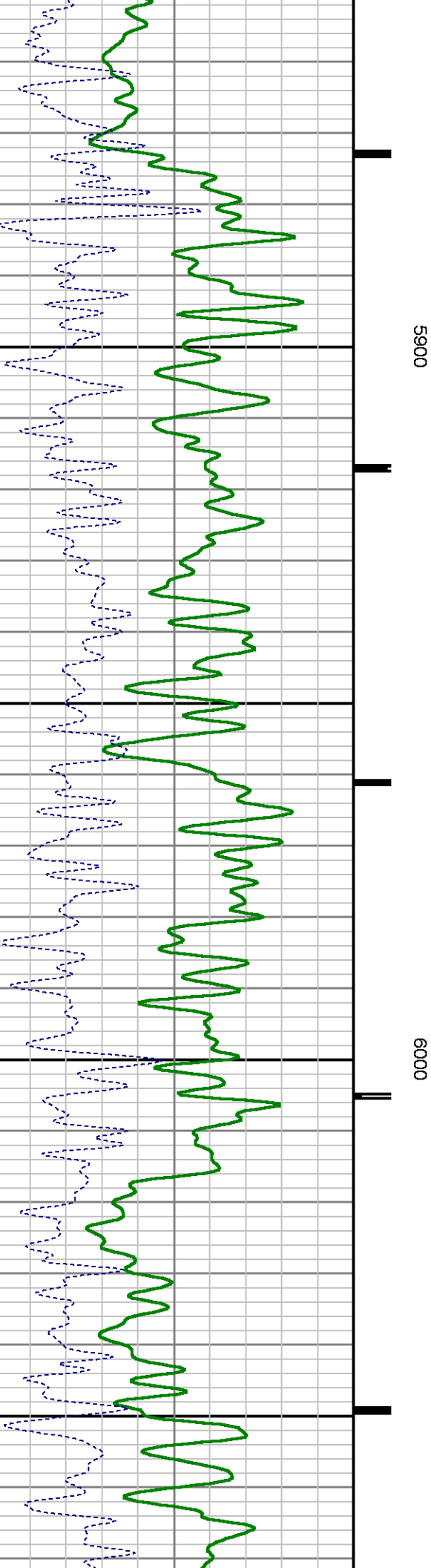
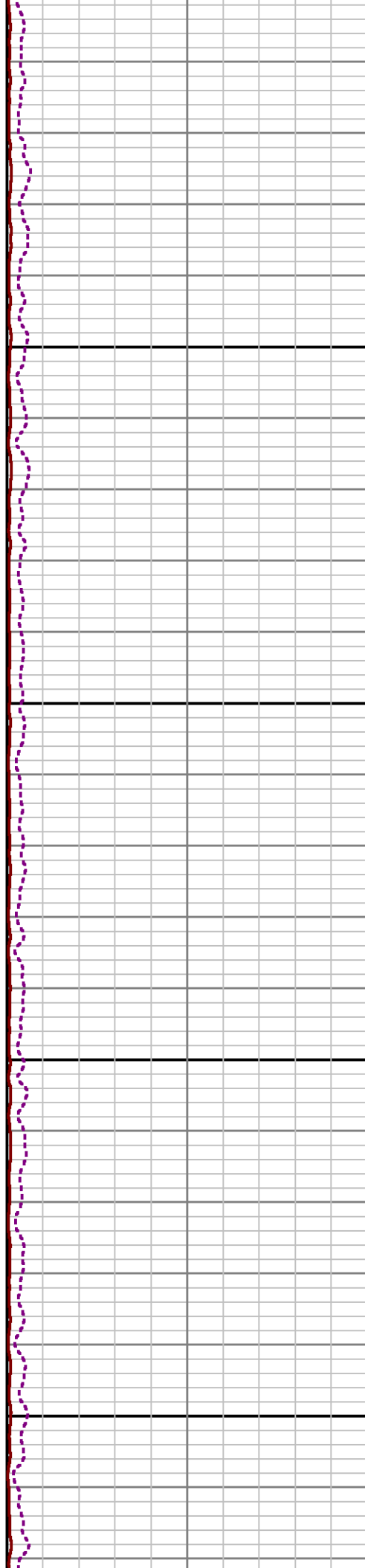
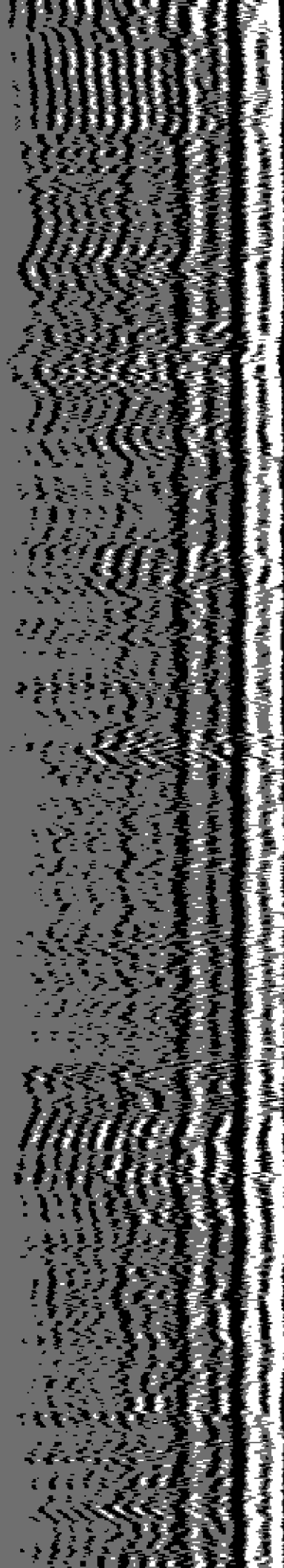


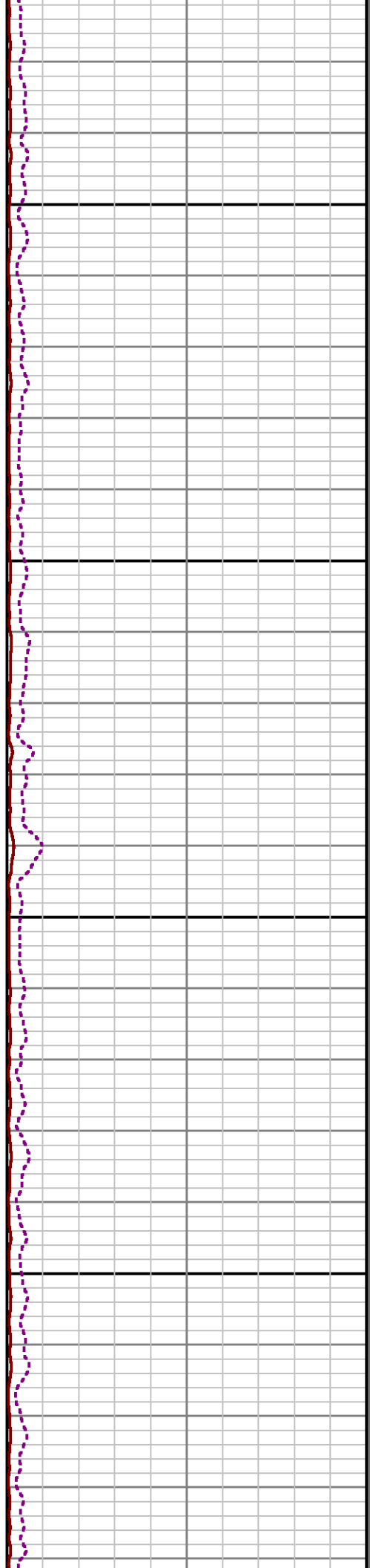
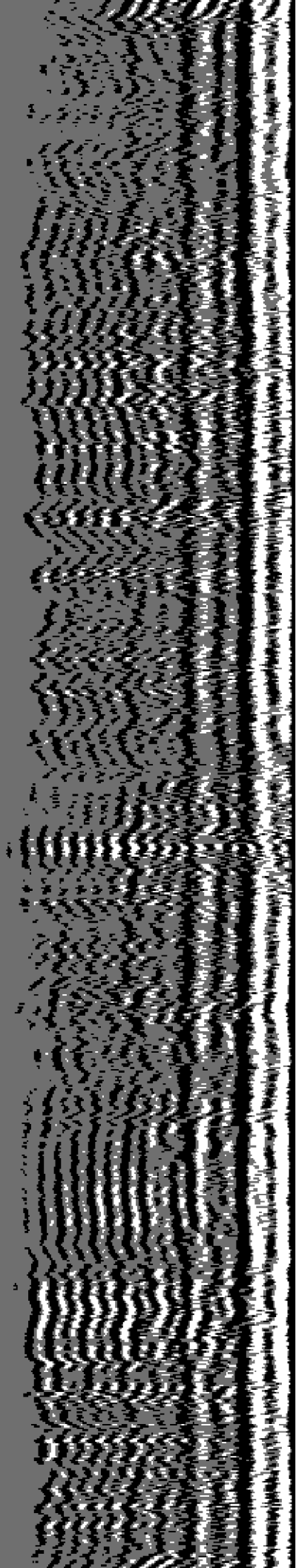


5700

5800

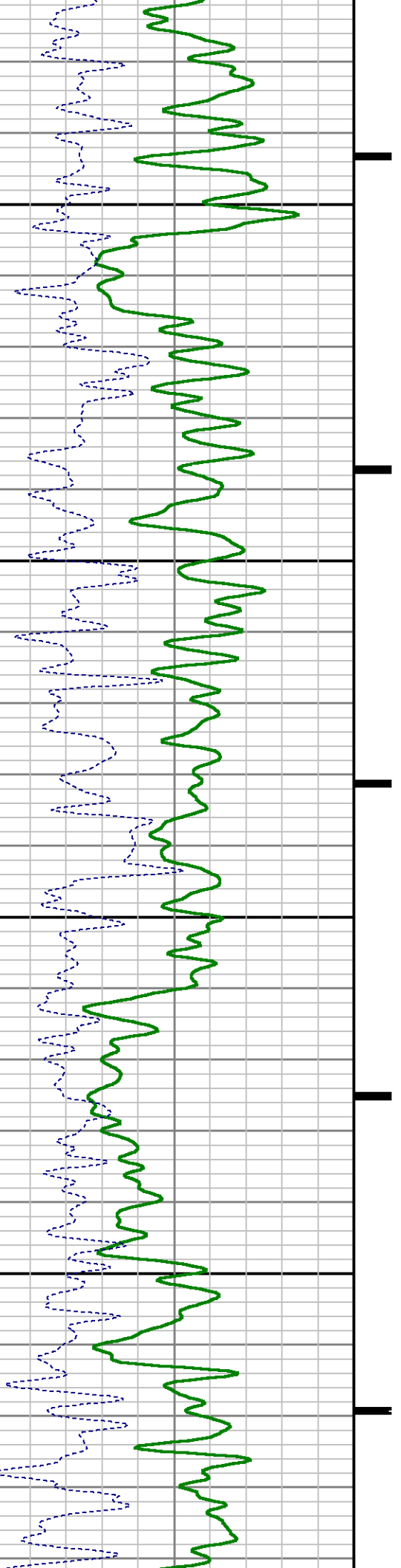


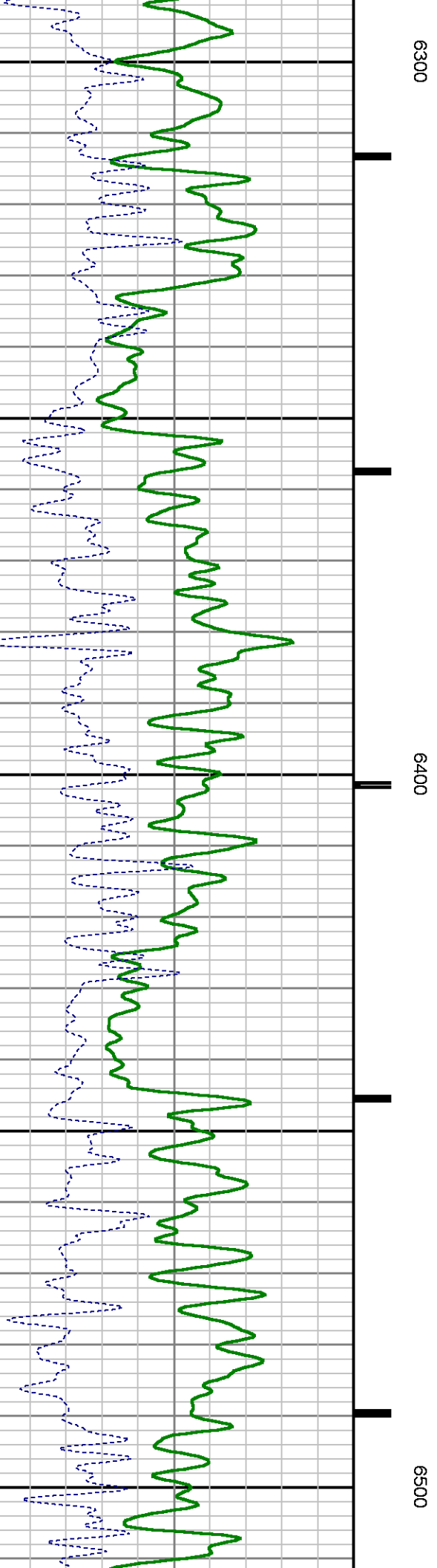
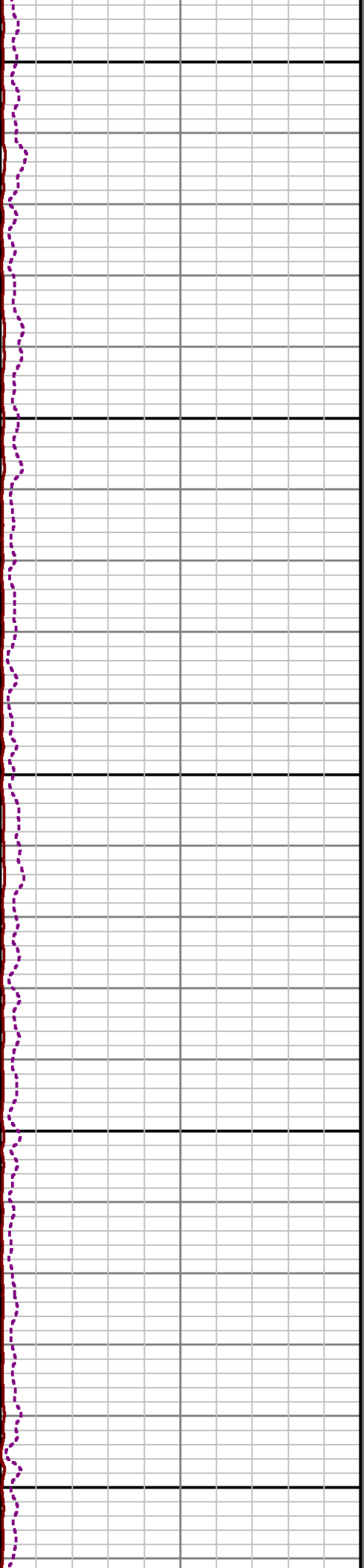
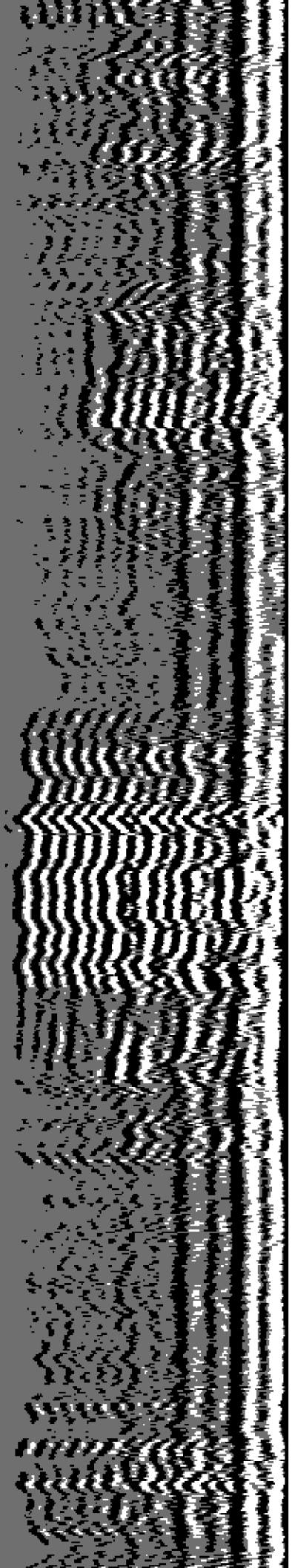




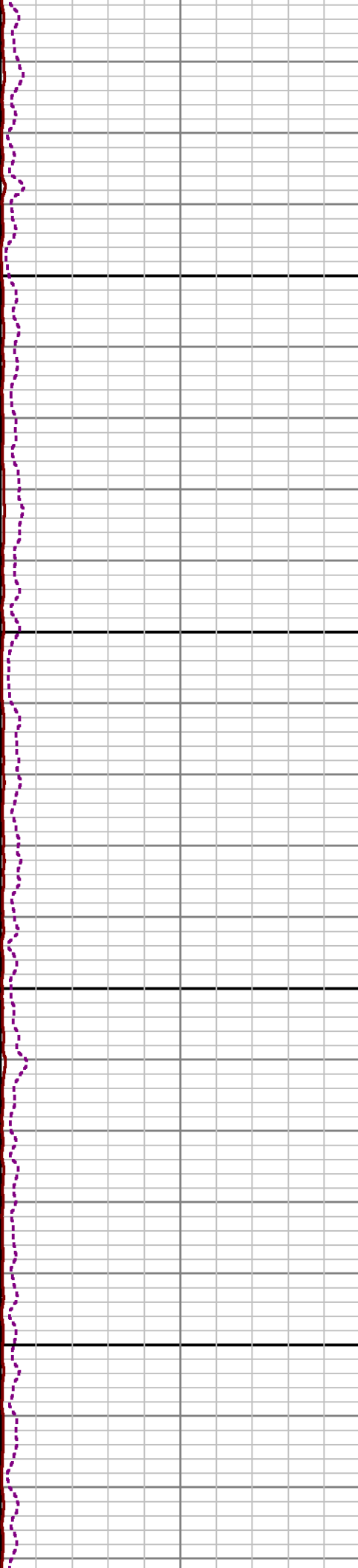
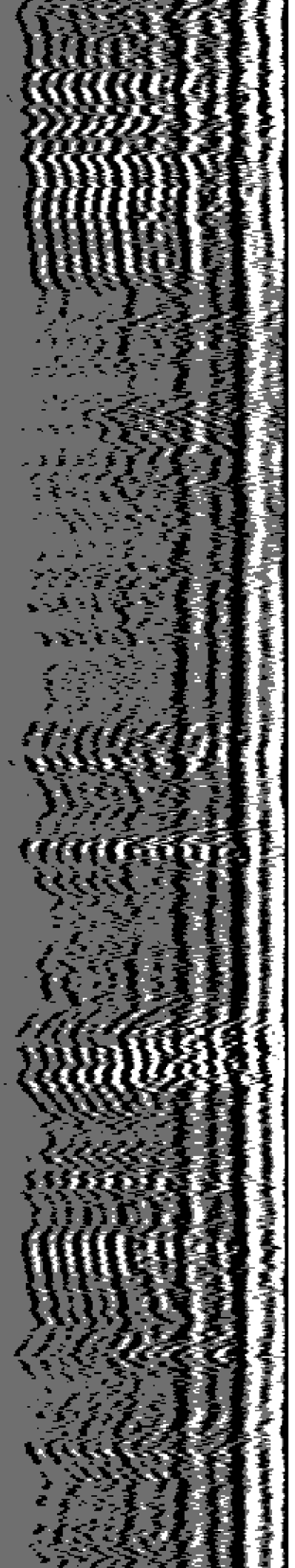
6100

6200



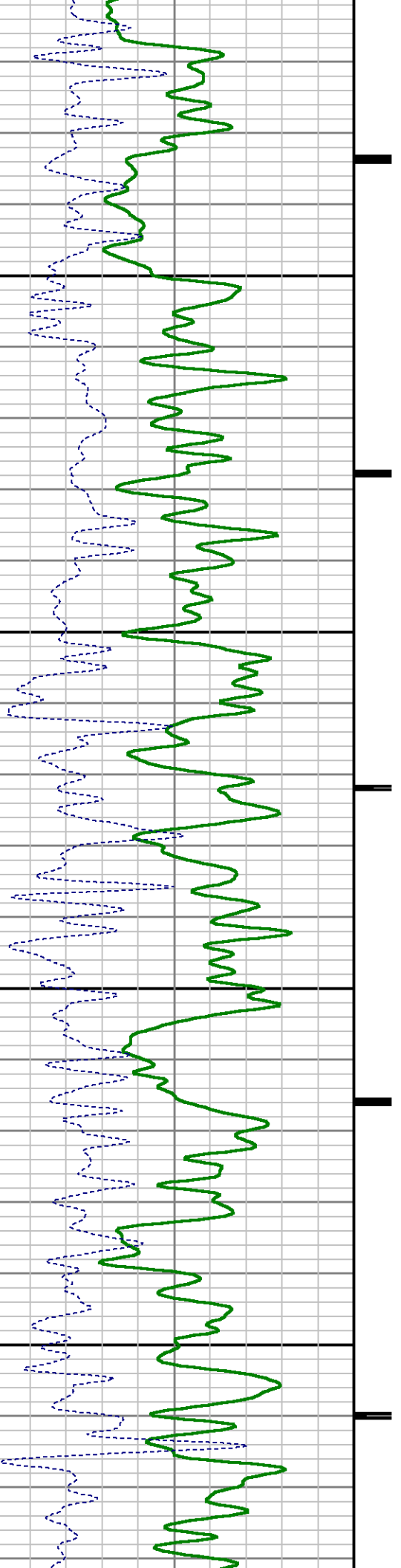


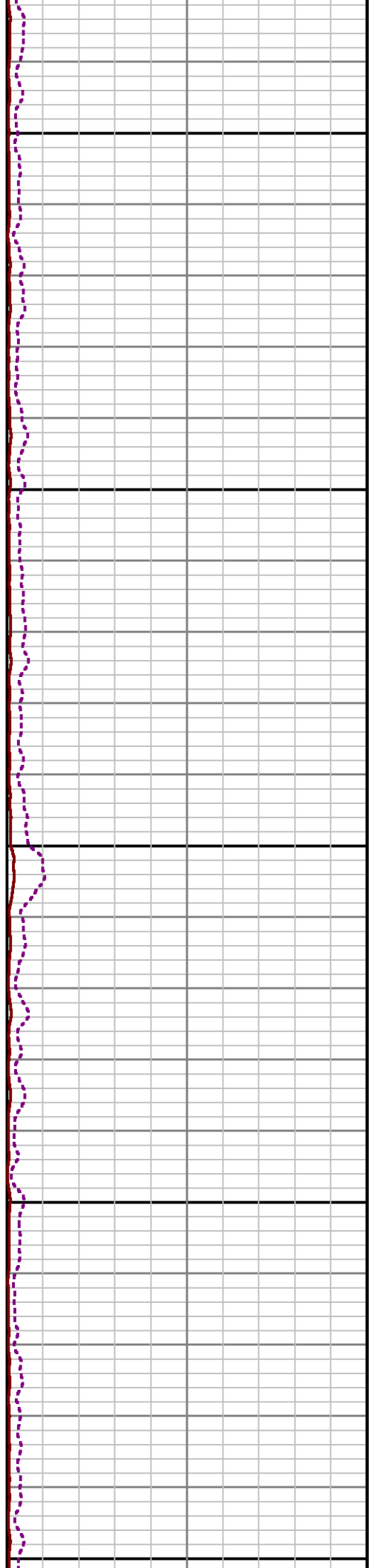
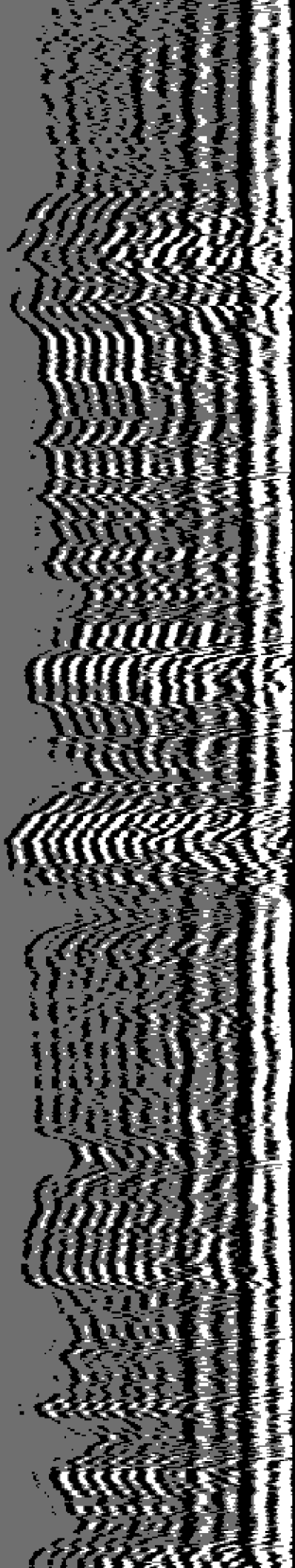




6600

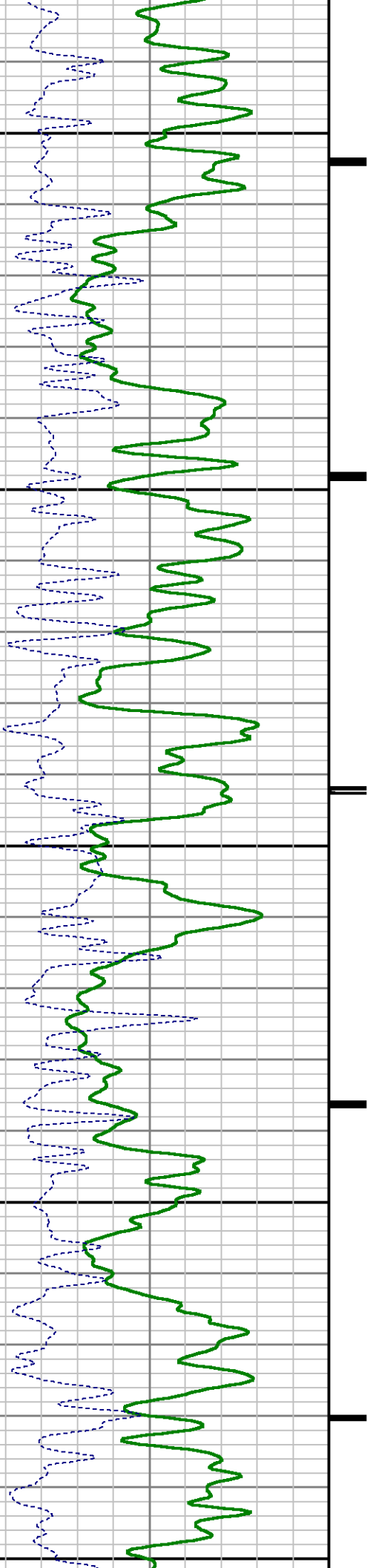
6700

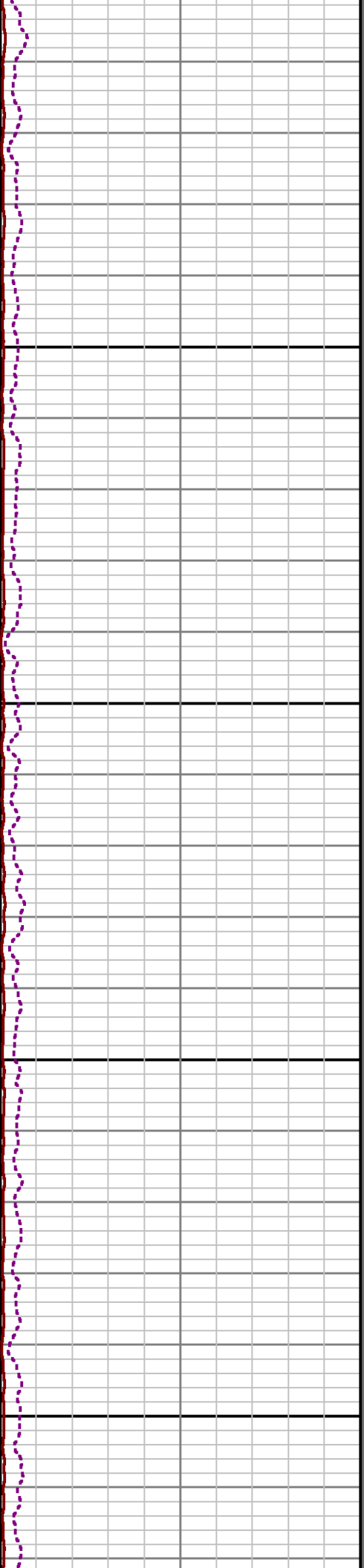
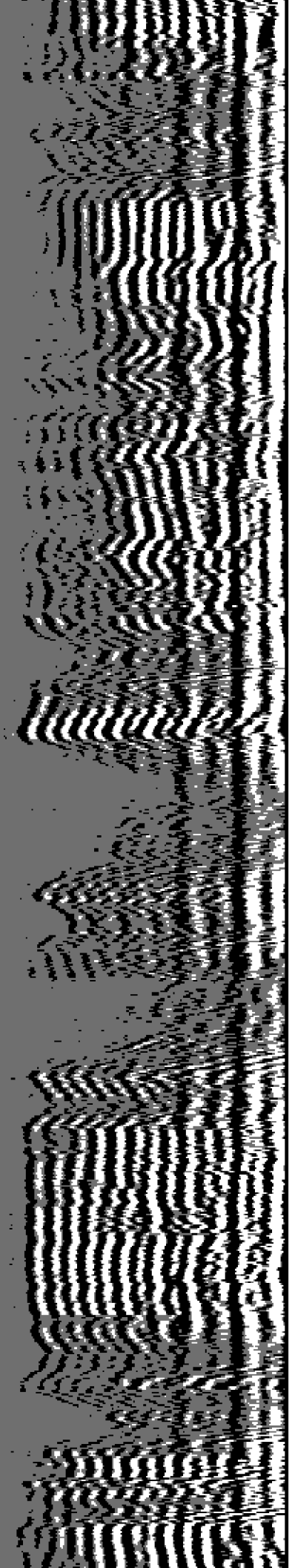




6800

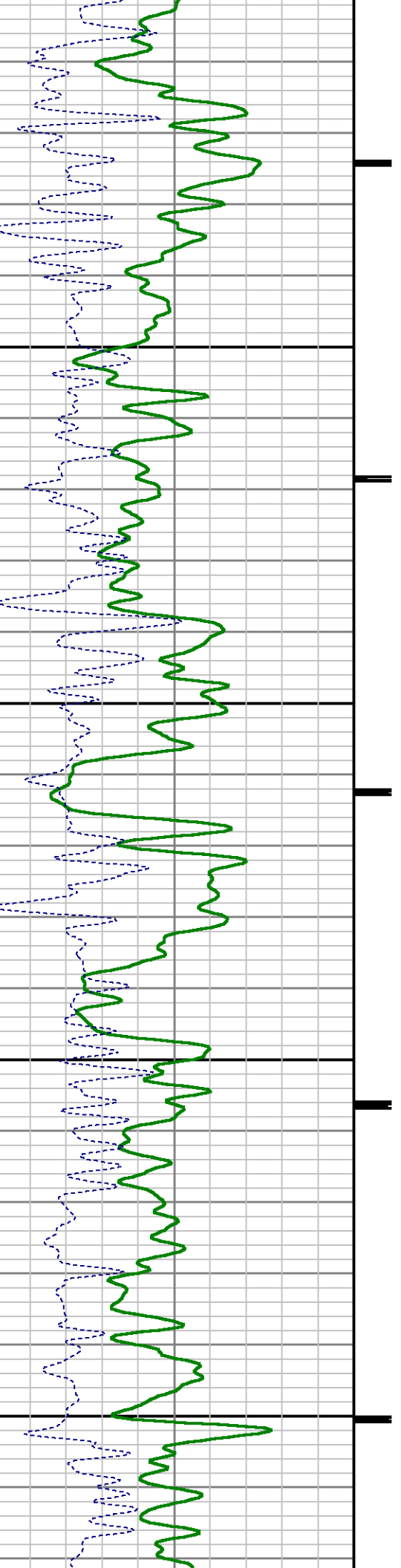
6900

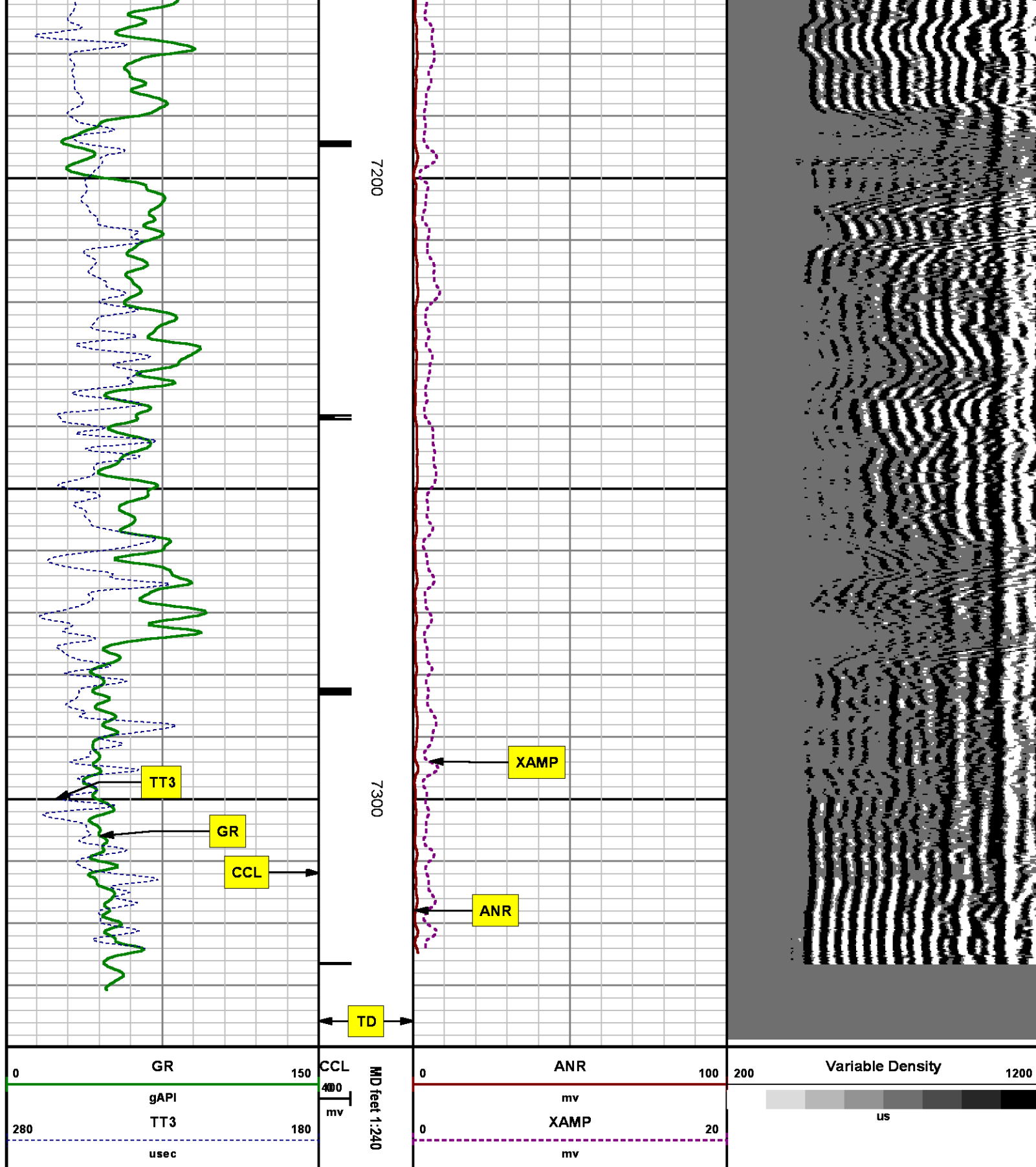




7000

7100





SECONDARY PRESENTATION  
O PSI

| MEASUREMENT TYPE | PARAMETER             | VALUE    | UNITS   | TOP    | BOTTOM   |
|------------------|-----------------------|----------|---------|--------|----------|
| RAL              | Amp Gate Start Far    | 305.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Start Near   | 195.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Start Radial | 195.000  | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Far    | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Near   | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | Amp Gate Width Radial | 25.000   | usec    | 26.562 | 7338.500 |
| RAL              | casing od             | 4.500    | inches  | 26.562 | 7338.500 |
| RAL              | casing wt             | 11.600   | lbm/ft  | 26.562 | 7338.500 |
| RAL              | FB Start Far          | 291.900  | usec    | 26.562 | 7338.500 |
| RAL              | FB Start Near         | 180.000  | usec    | 26.562 | 7338.500 |
| RAL              | FB Start Radial       | 1810.000 | usec    | 26.562 | 7338.500 |
| RAL              | FB Thresh Far         | 10.000   | mv      | 26.562 | 7338.500 |
| RAL              | FB Thresh Near        | 4.000    | mv      | 26.562 | 7338.500 |
| RAL              | FB Thresh Radial      | 4.000    | mv      | 26.562 | 7338.500 |
| RAL              | Fluid Travel Time     | 200.000  | usec/ft | 26.562 | 7337.781 |

## DEPTH OFFSETS

(for Acquired Curves)

| SERIES | DEPTH OFFSET | ACQUIRED CURVES |      |      |      |      |      |
|--------|--------------|-----------------|------|------|------|------|------|
| 1426XA | -12.360      | ACAL            | ANR  | AR1  | AR2  | AR3  | AR4  |
|        |              | AR5             | AR6  | AR7  | AR8  | CHV  | FPR2 |
|        |              | FPR3            | FPR5 | TT3  | TTR1 | TTR2 | TTR3 |
|        |              | TTR4            | TTR5 | TTR6 | TTR7 | TTR8 | XAMP |
| 1426XA | -11.360      | AFAR            | SIG  | TT5  |      |      |      |
| 2459XA | -7.250       | CCL             |      |      |      |      |      |
| 2459XA | -5.390       | GR              |      |      |      |      |      |
| 2459XA | 0.000        | NEU             |      |      |      |      |      |

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

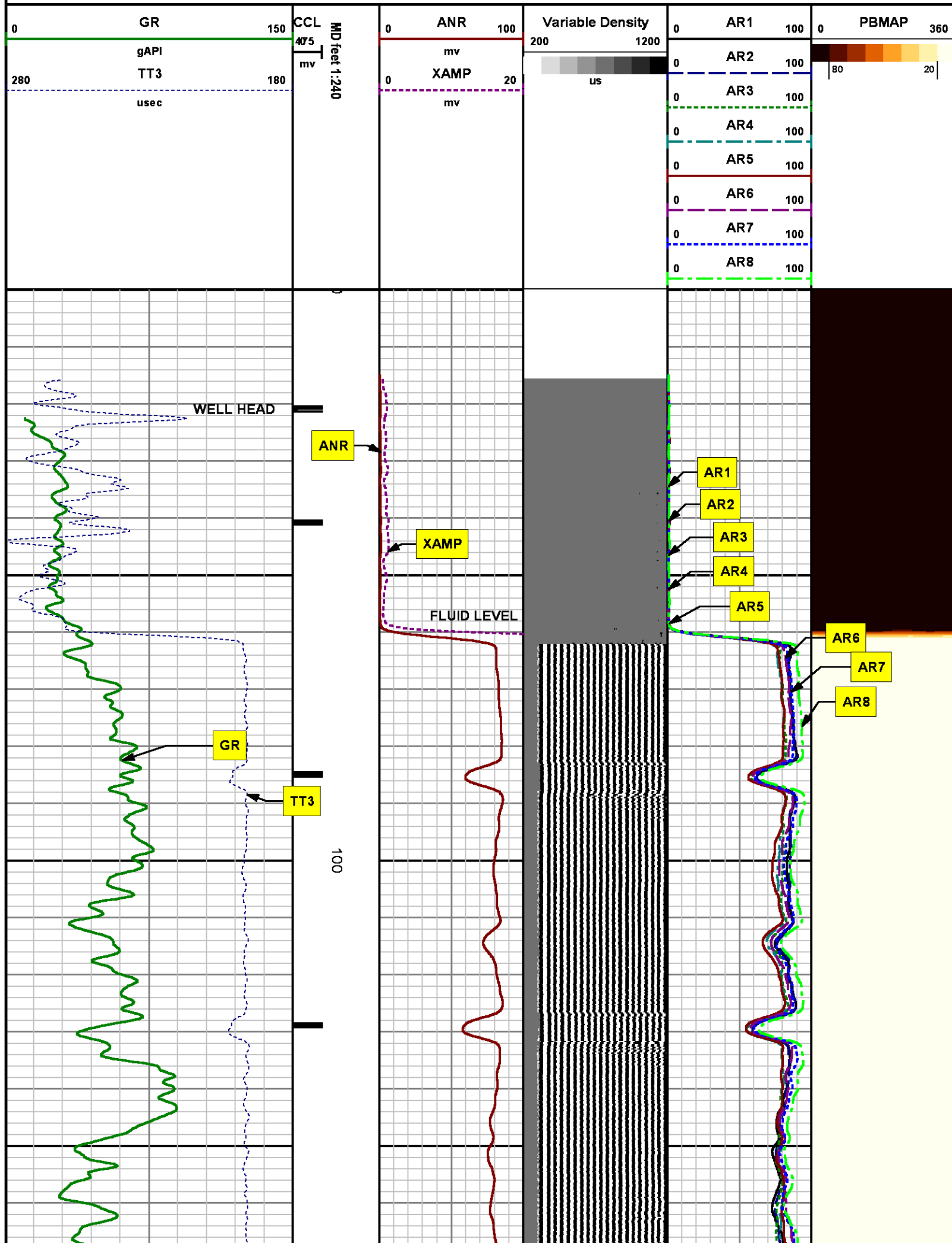
Company : WPX ENERGY

Well : CHEVRON GM 11-21

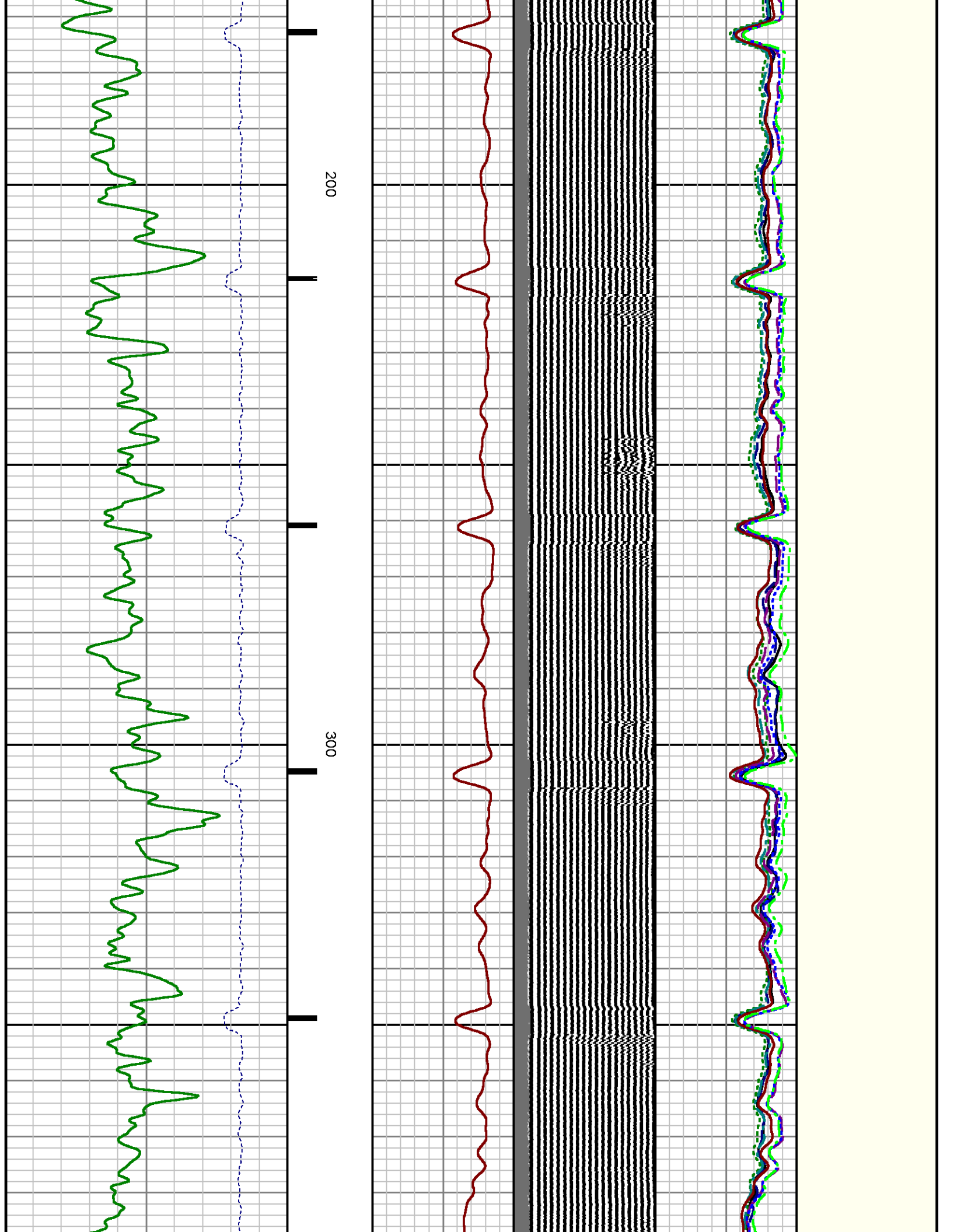
File Name : d:\welldata\wpx\gm 11-21\11ra\main.xtf

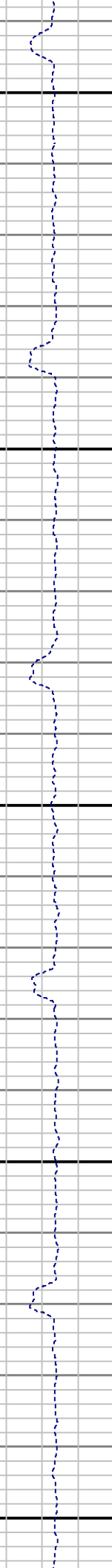
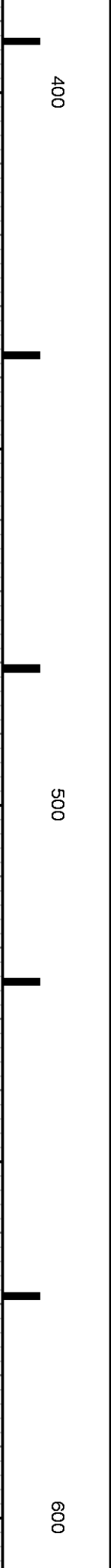
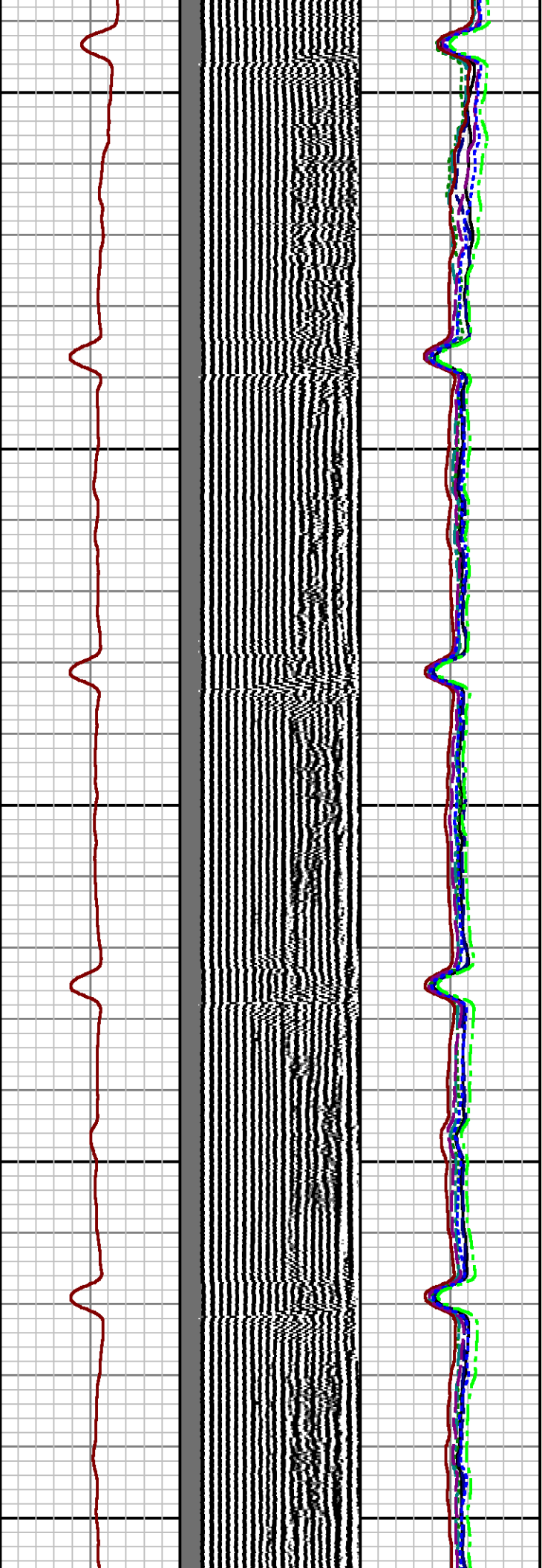
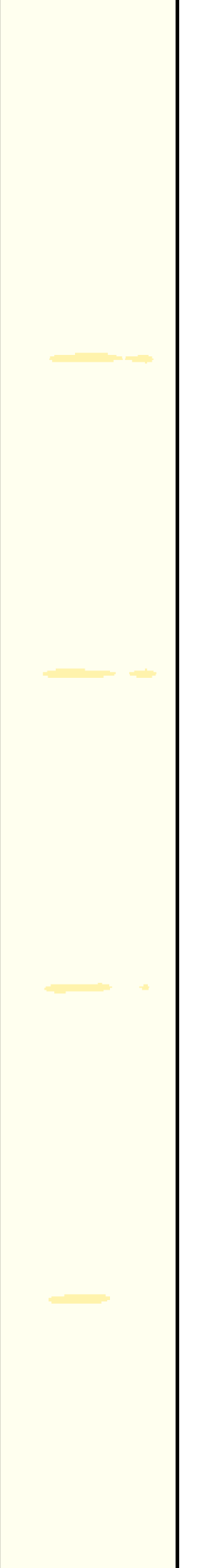
Mode : PlotMgr 5.4.504

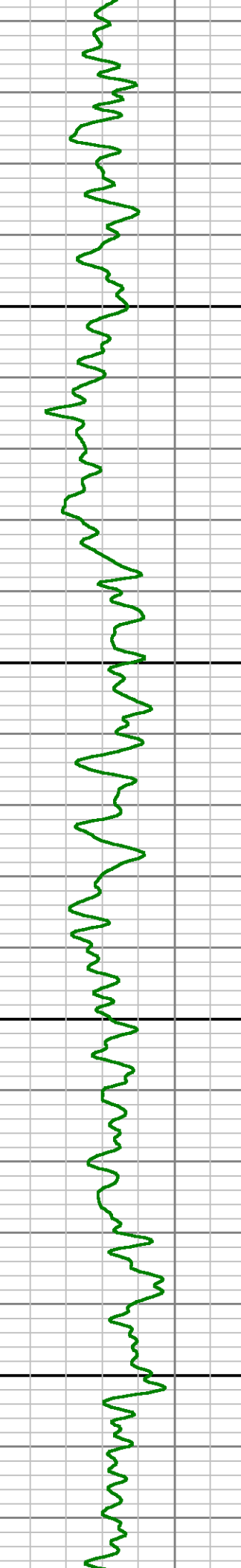
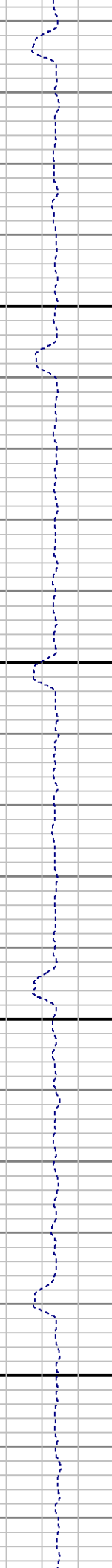
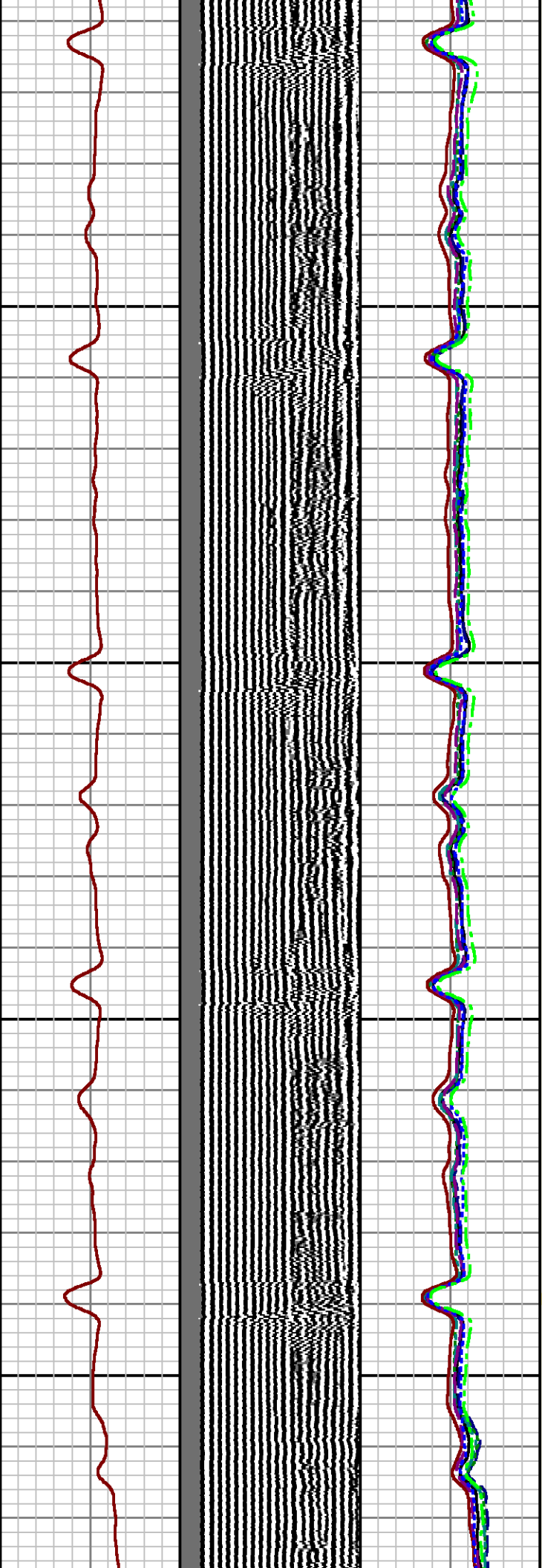
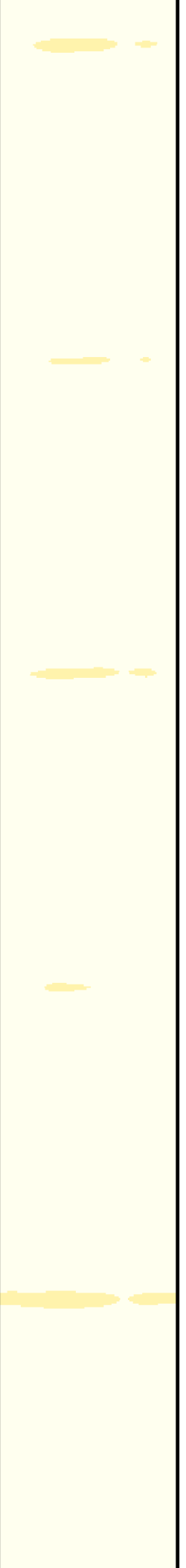
Interval : 0.00 - 7340.00 feet UP

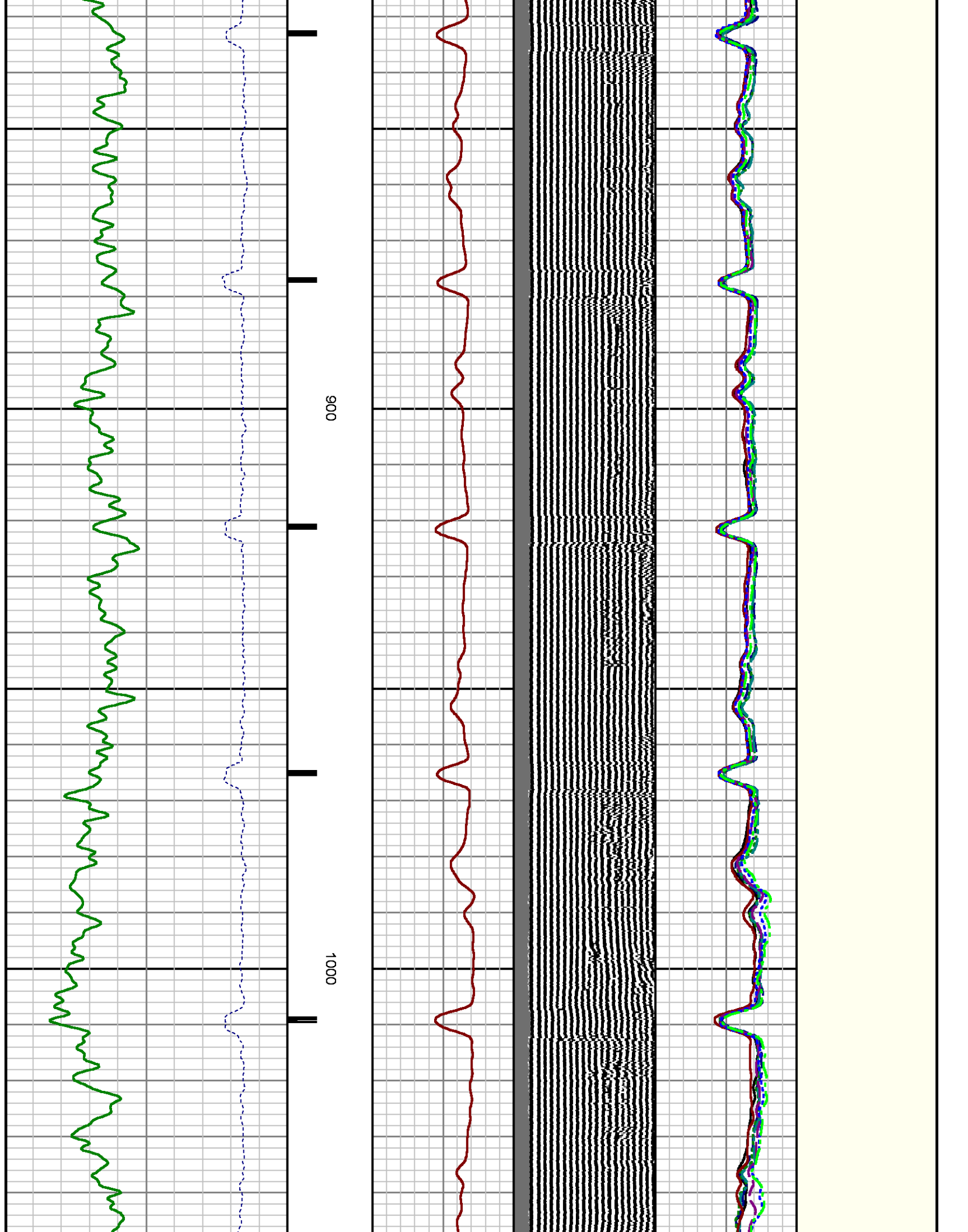


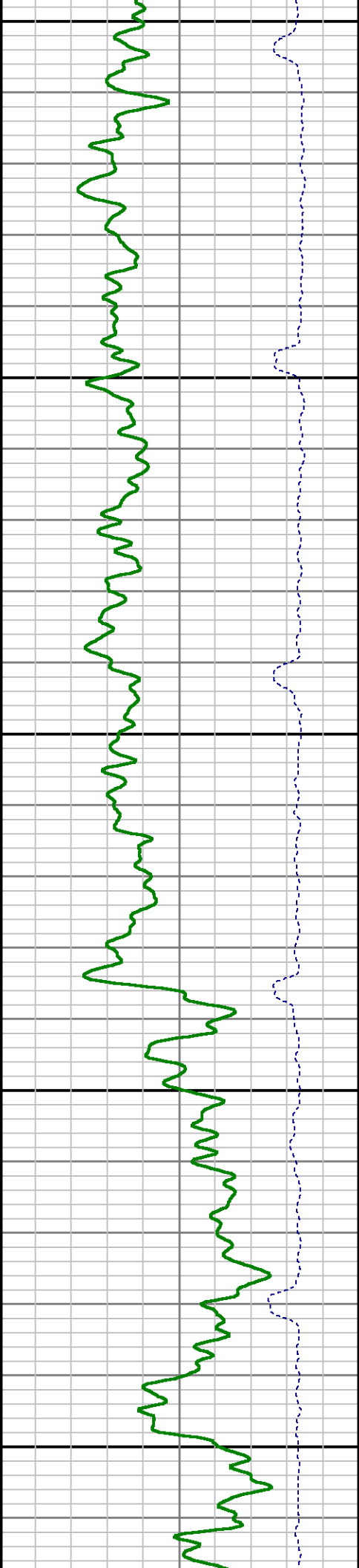
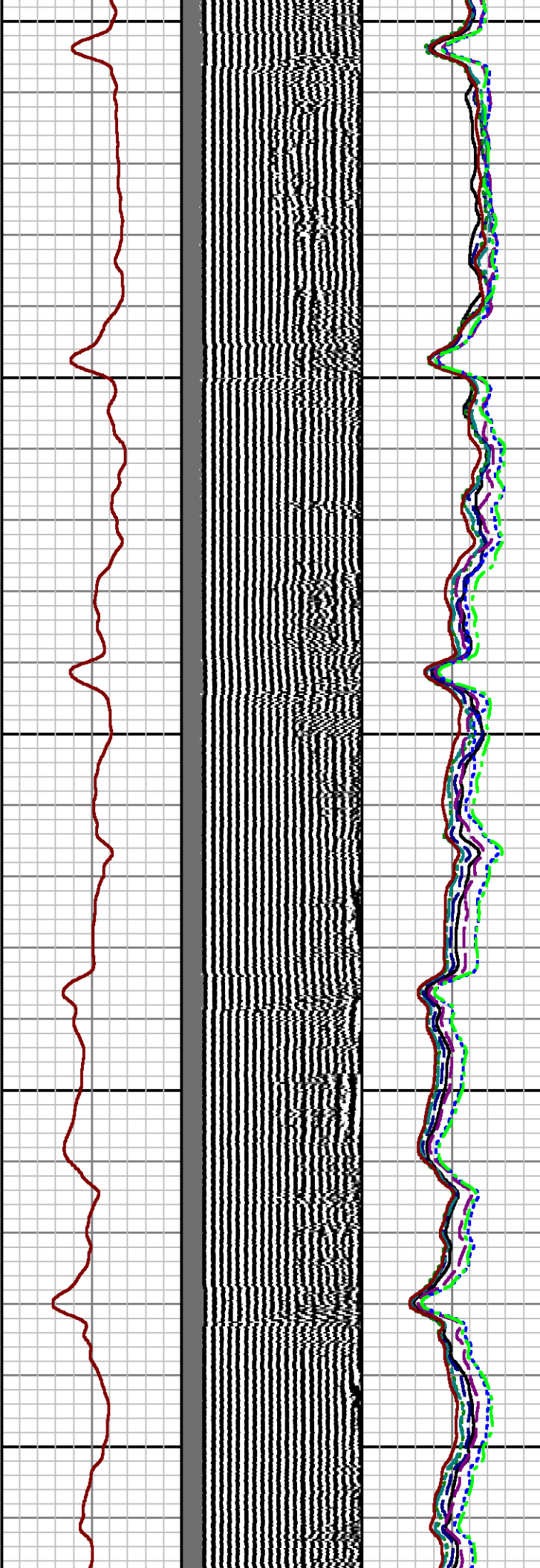
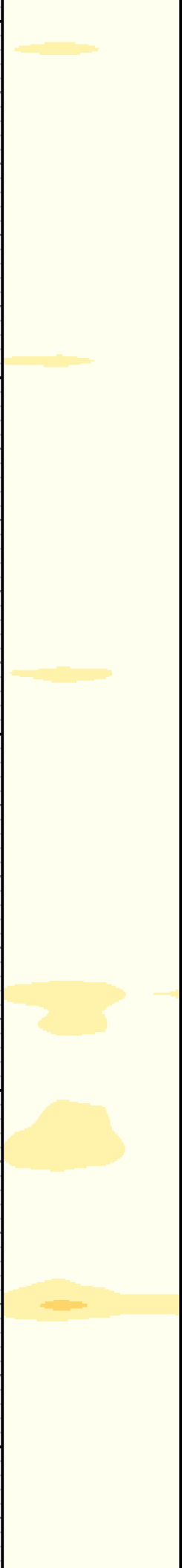




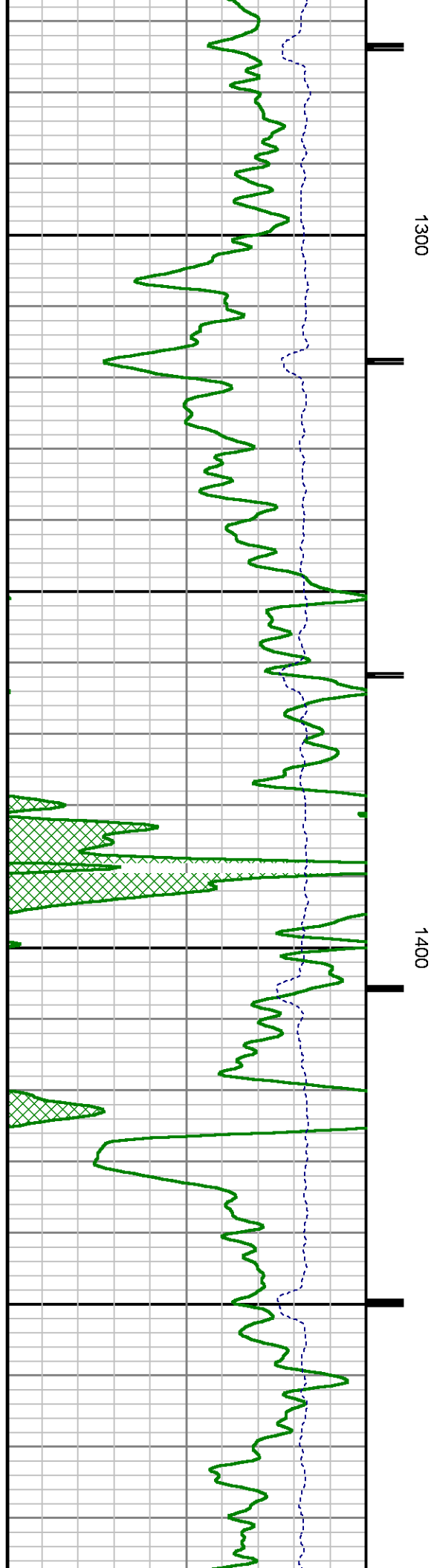
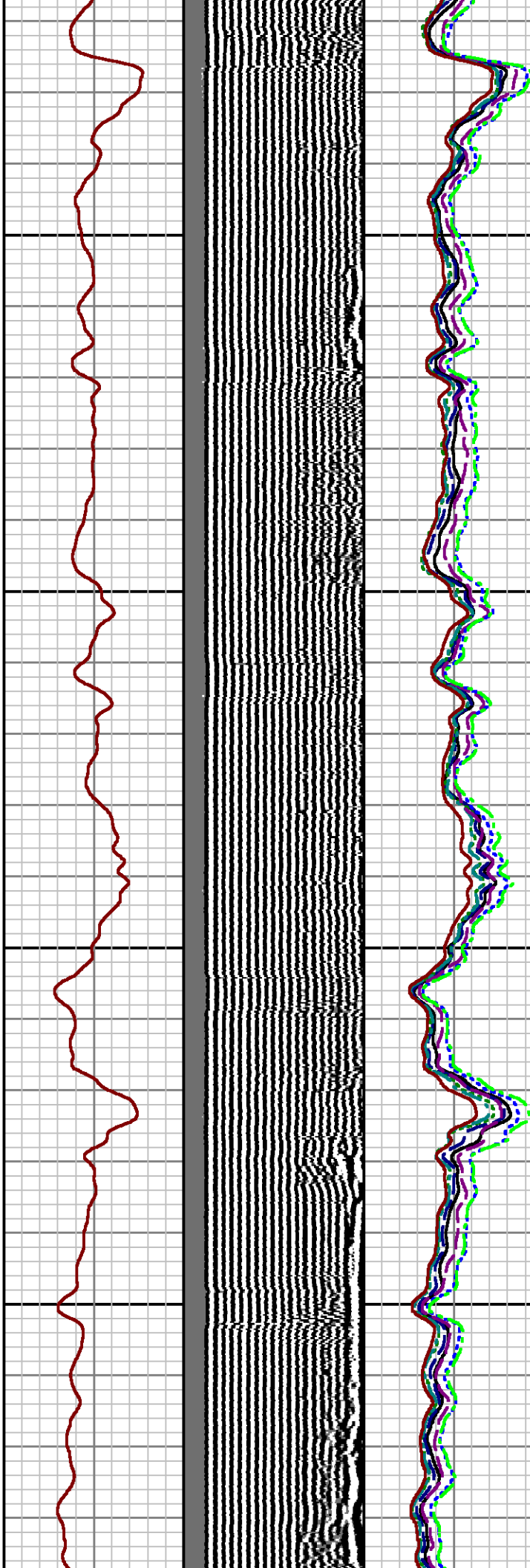
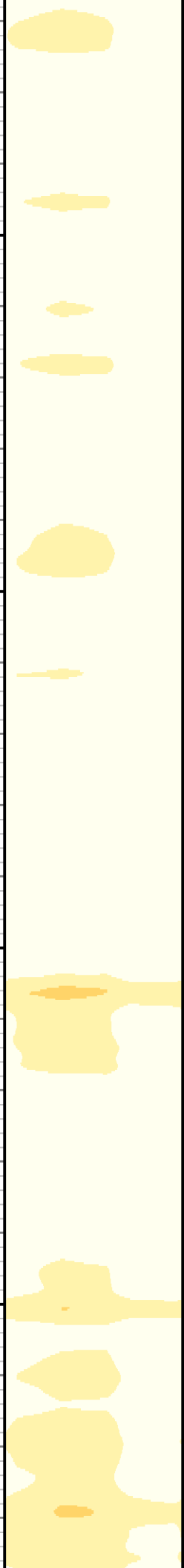




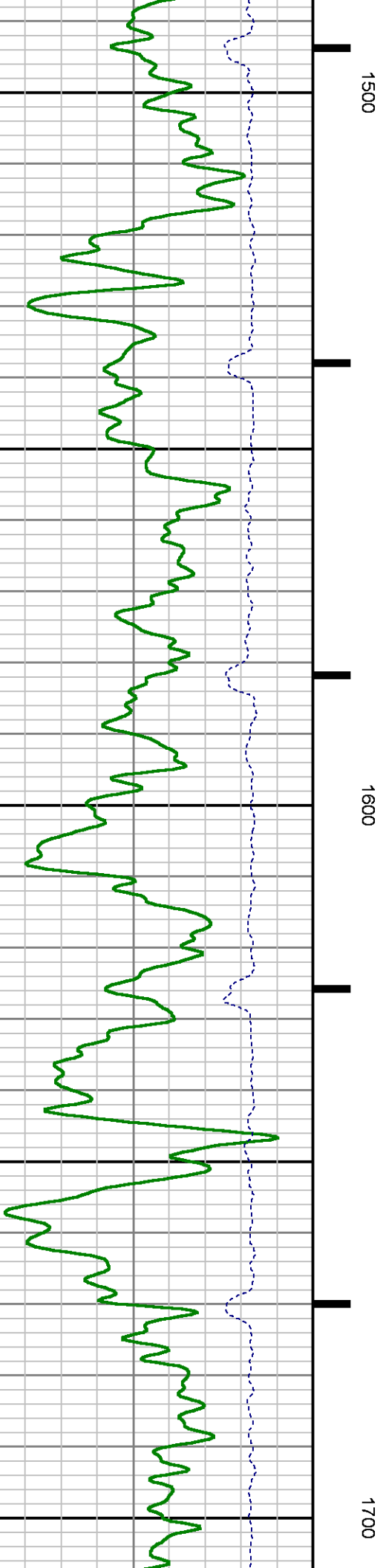
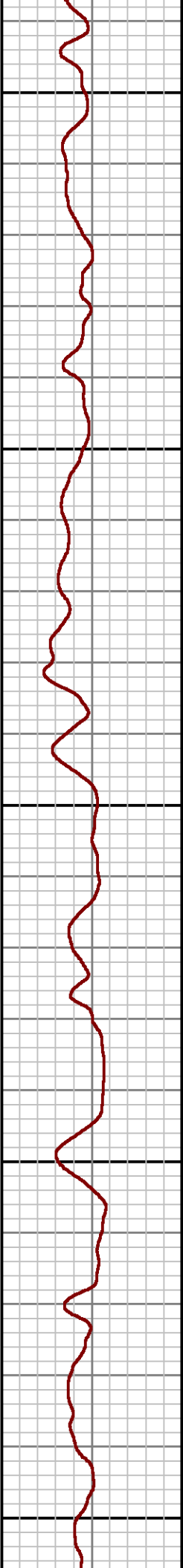
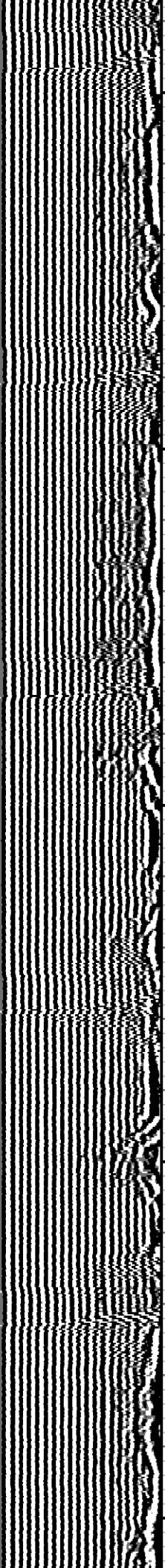
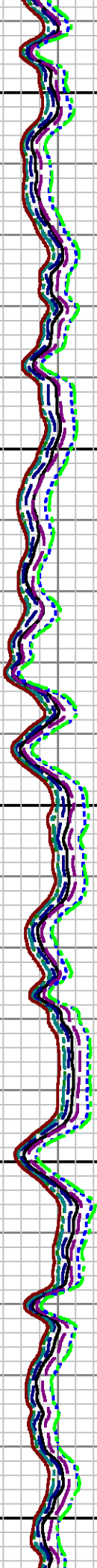
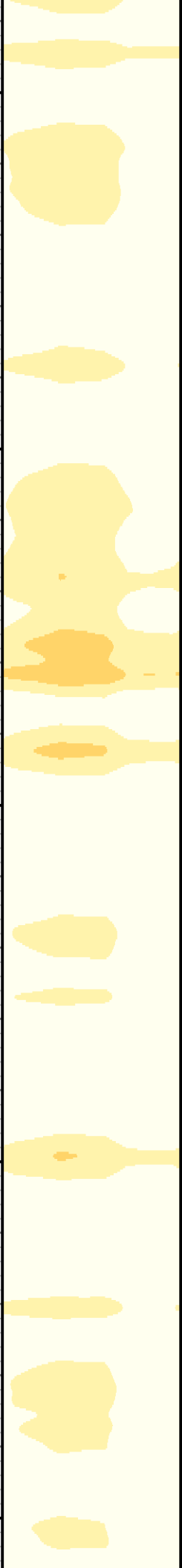


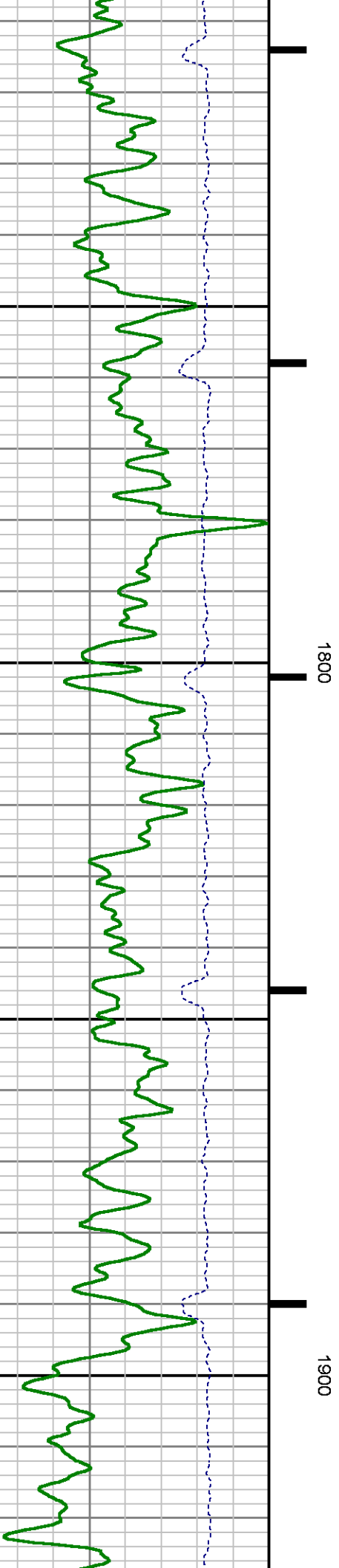
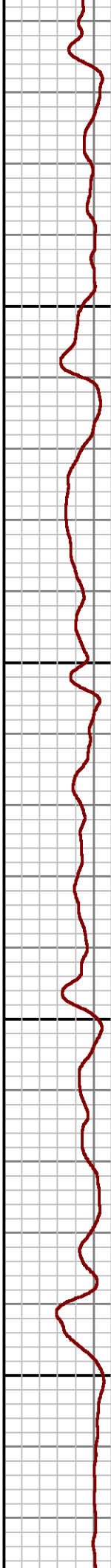
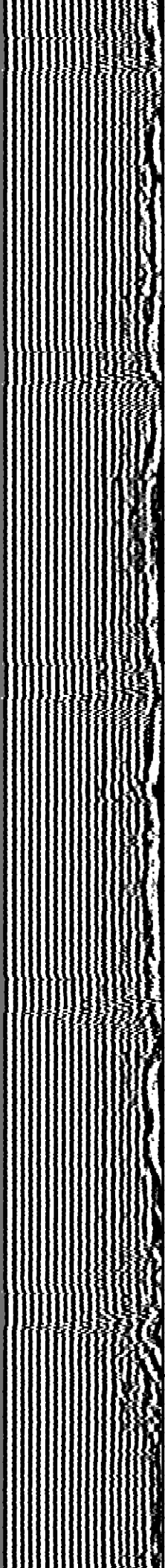
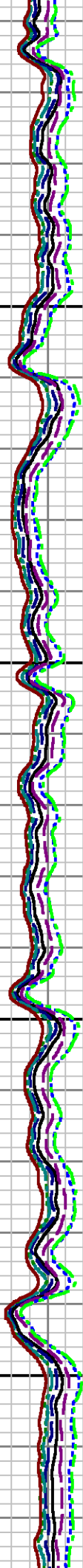
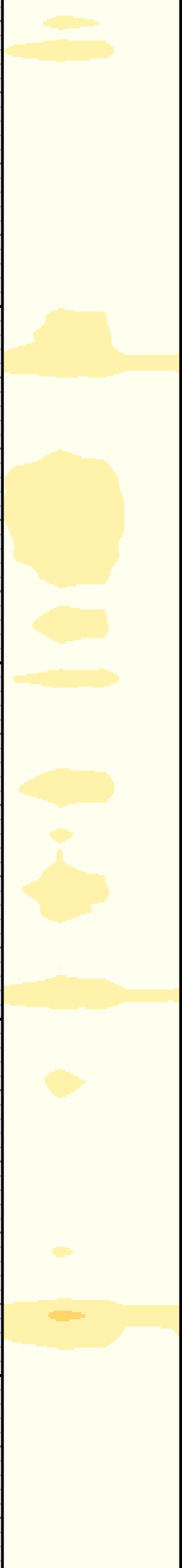


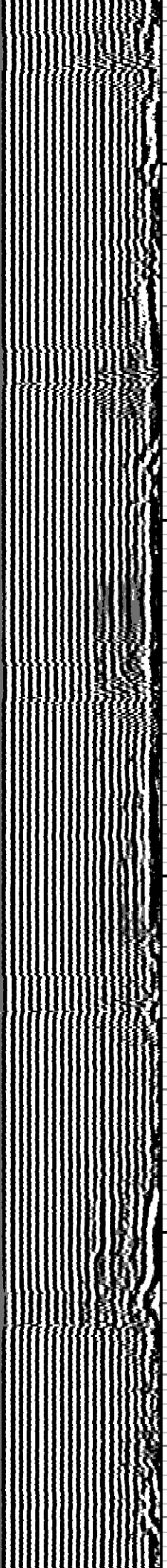
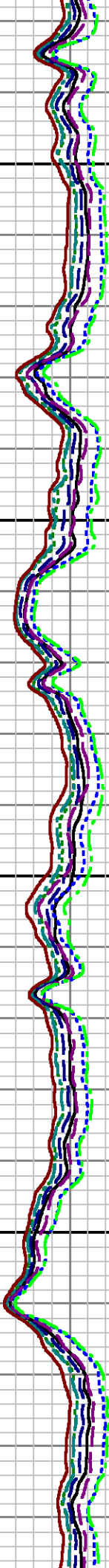
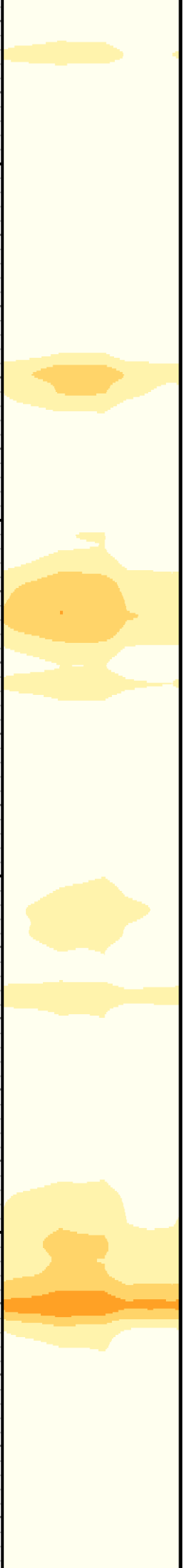






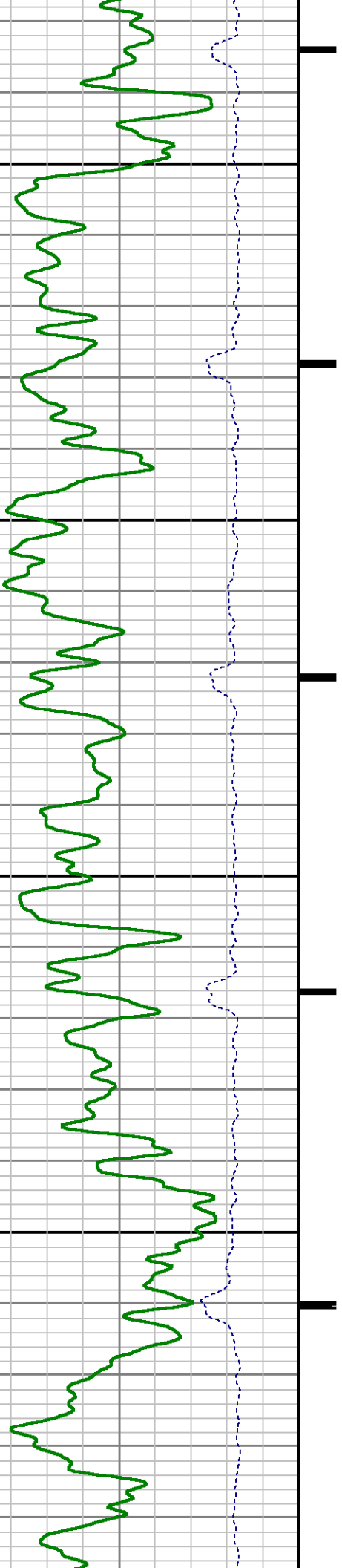


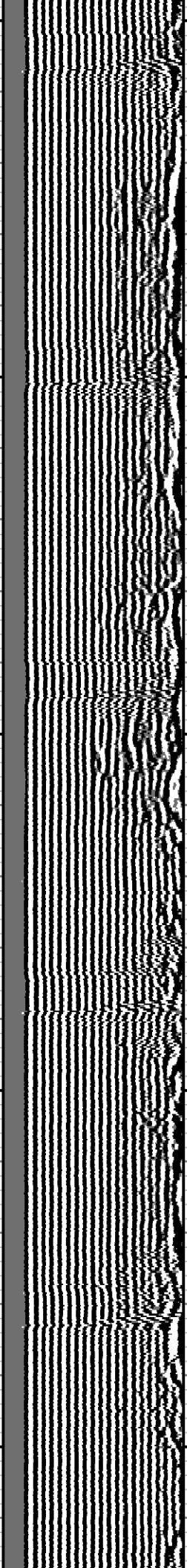
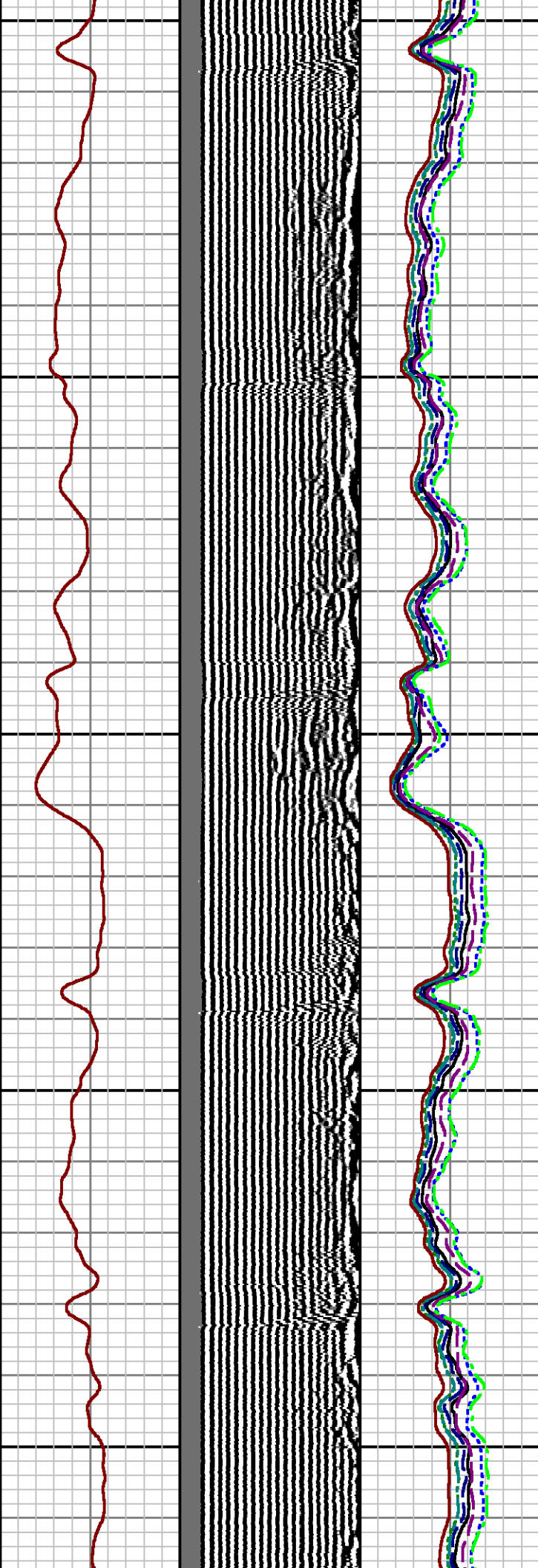
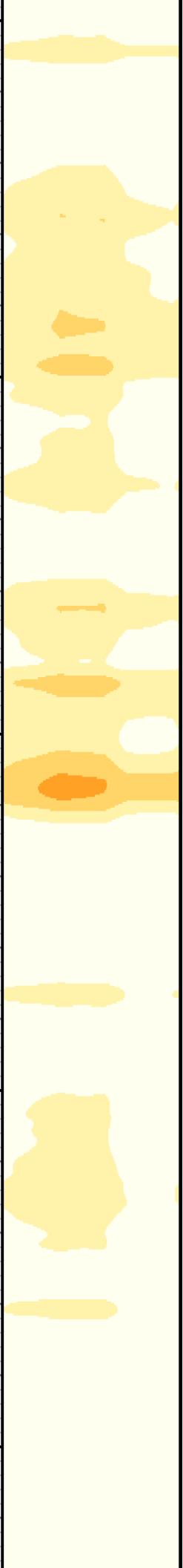




2000

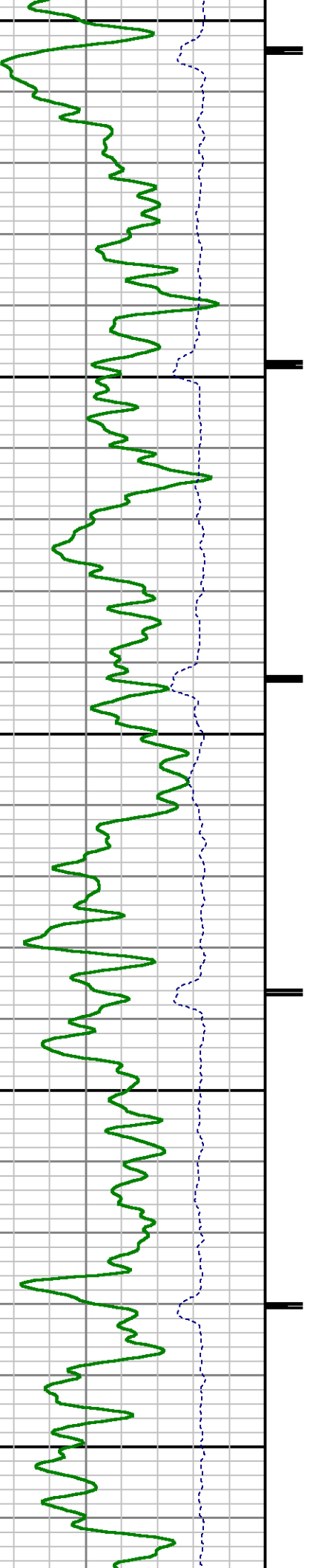
2100

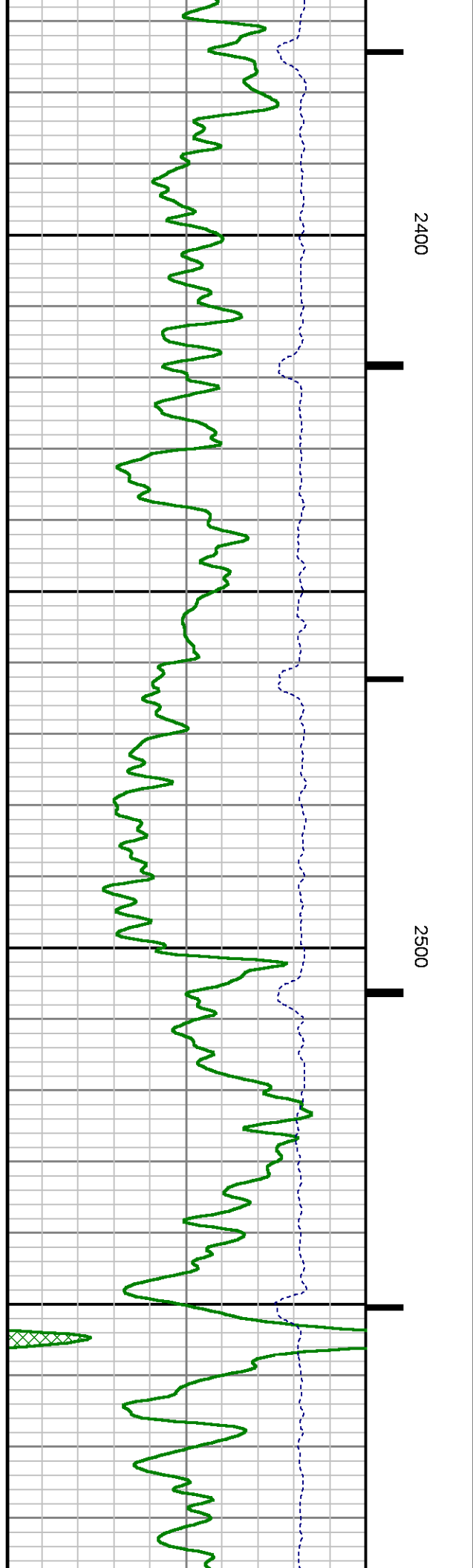
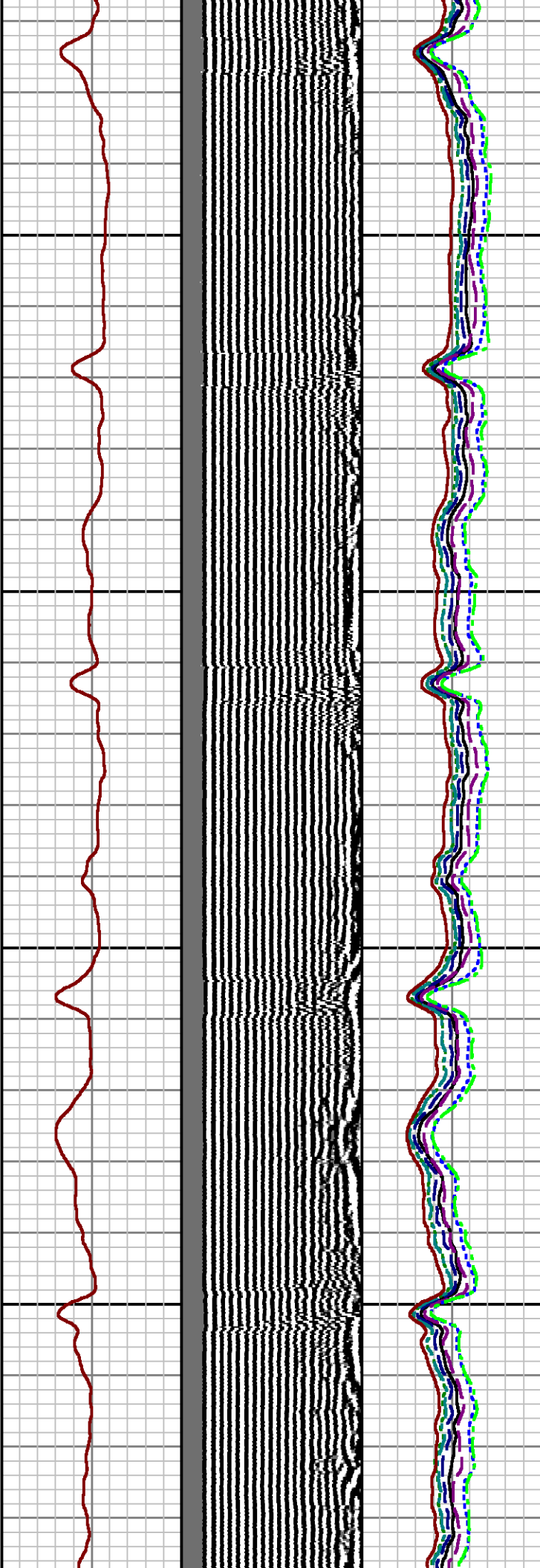
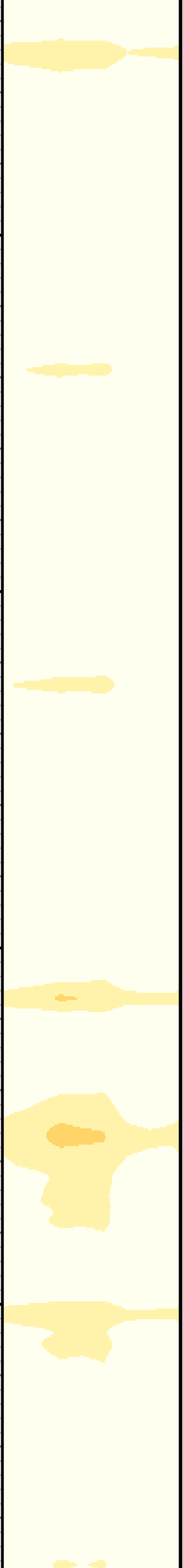




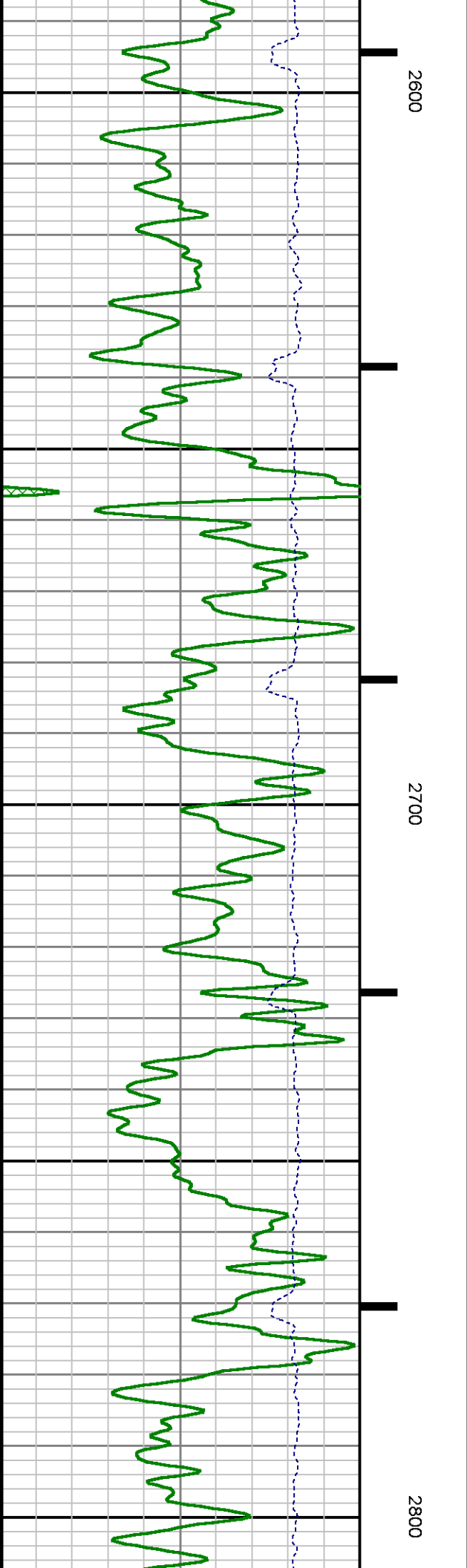
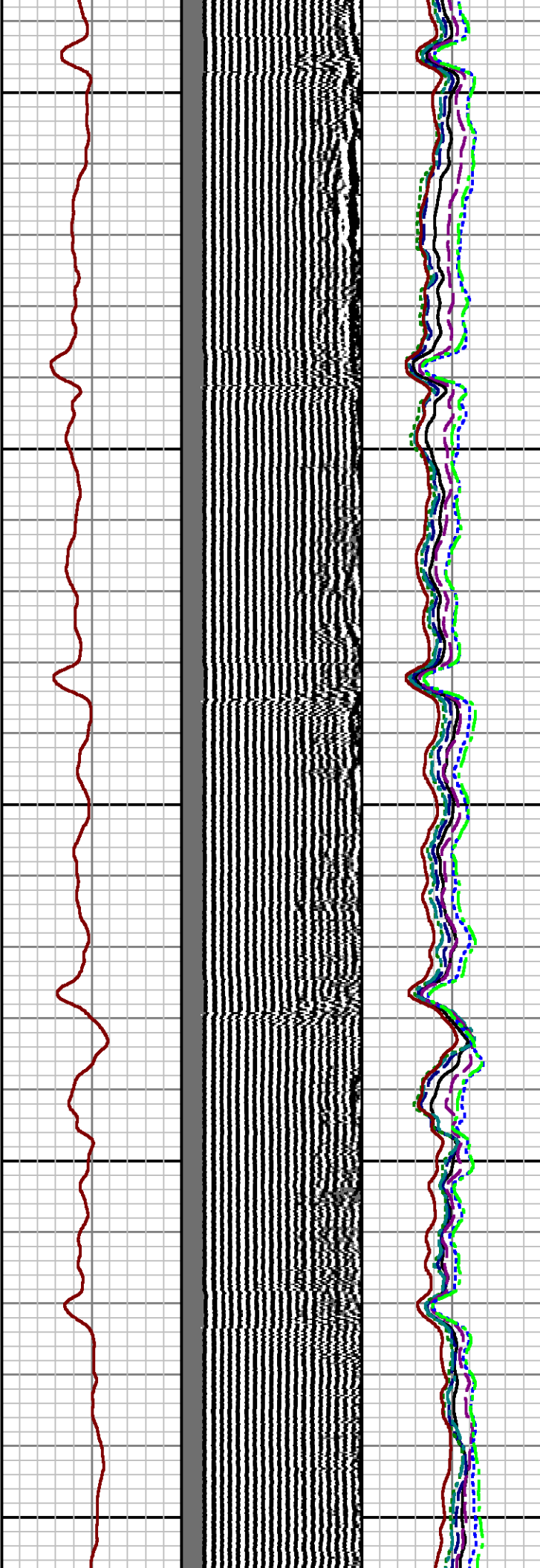
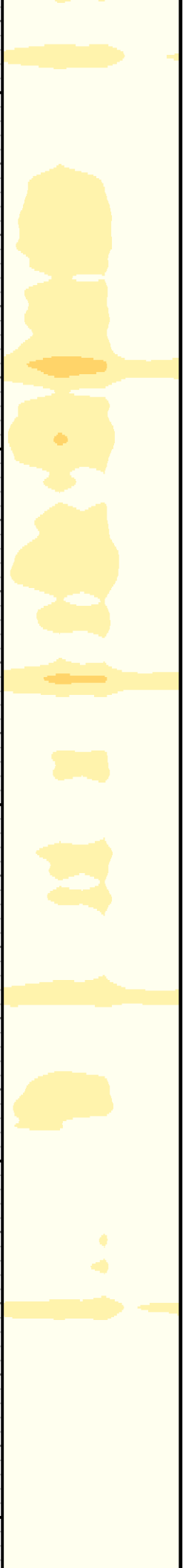
2200

2300

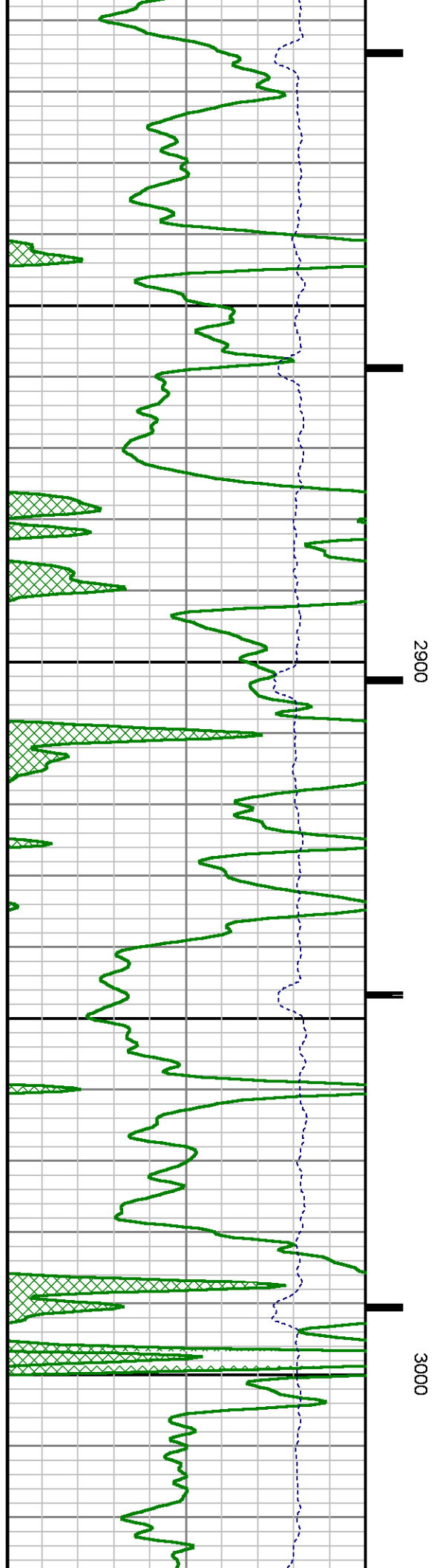
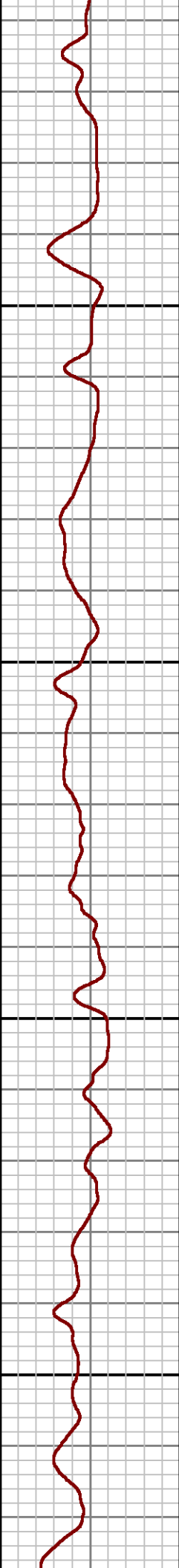
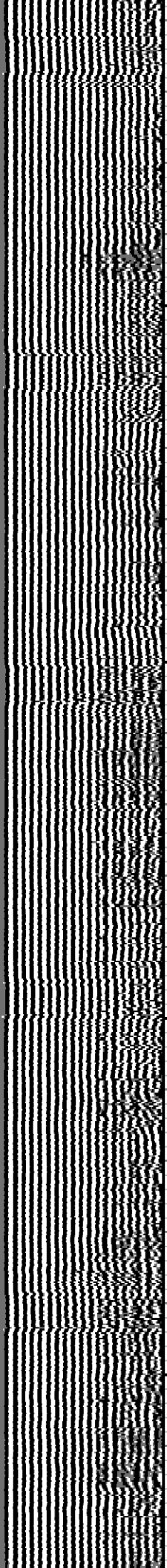
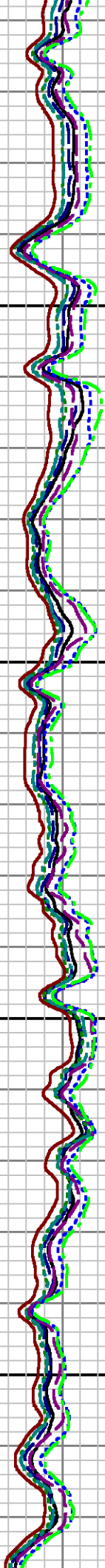
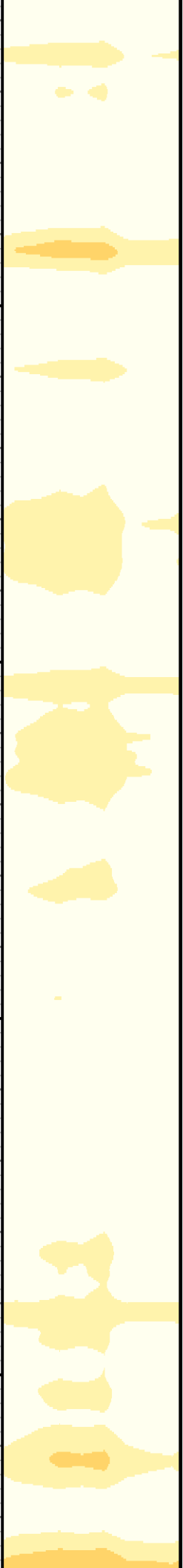


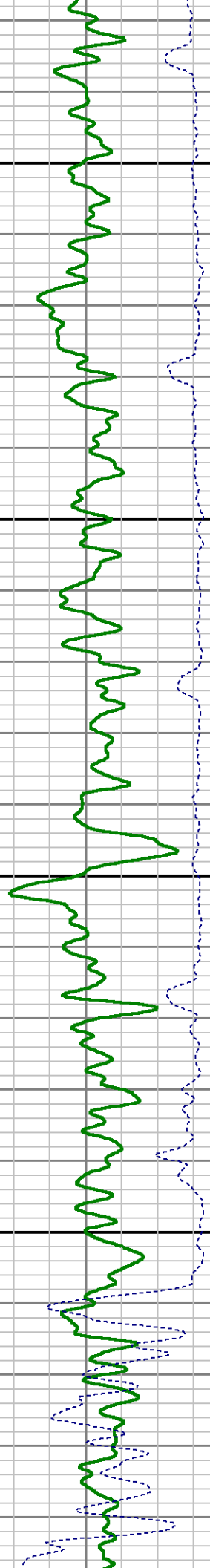
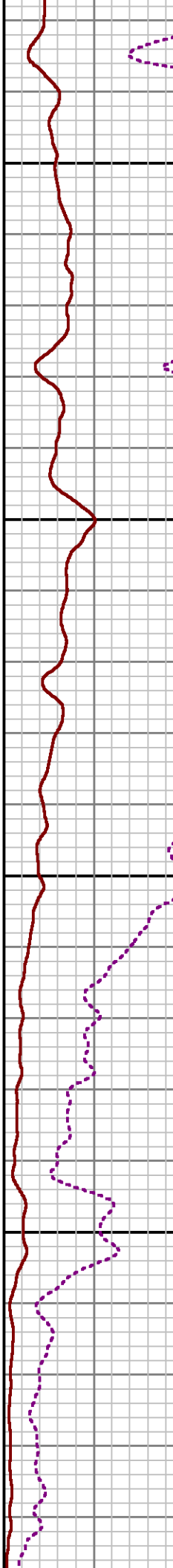
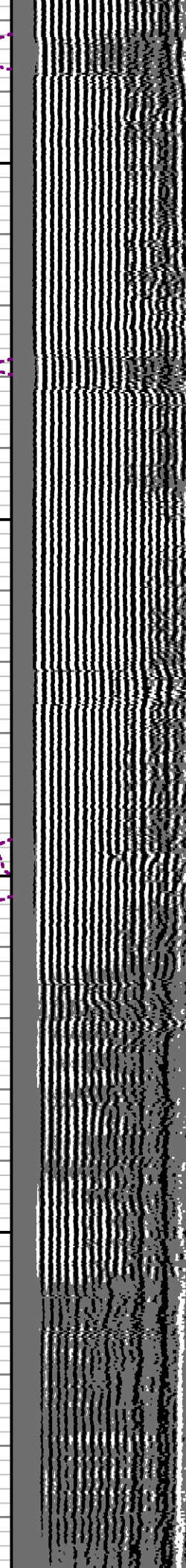
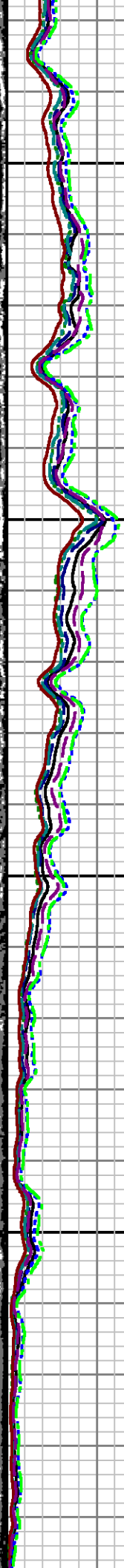
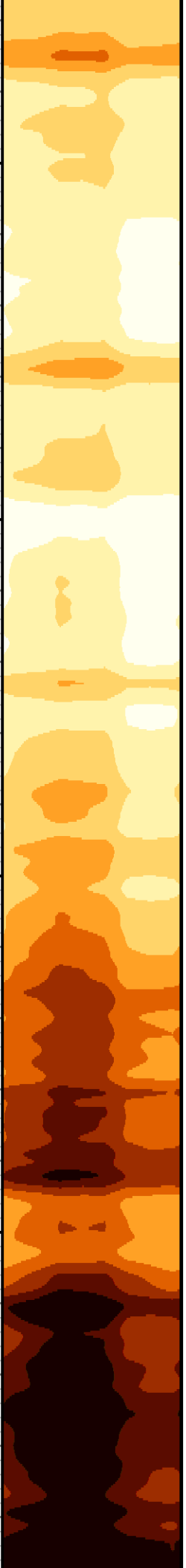


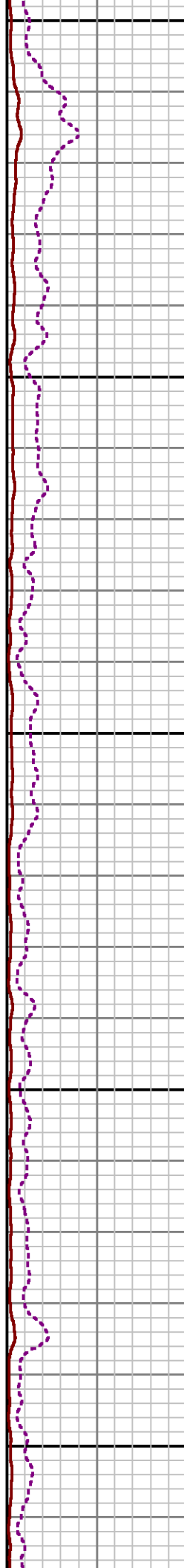
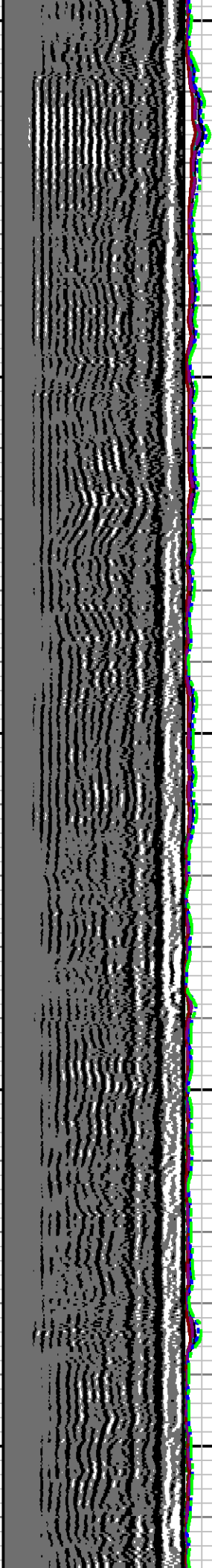
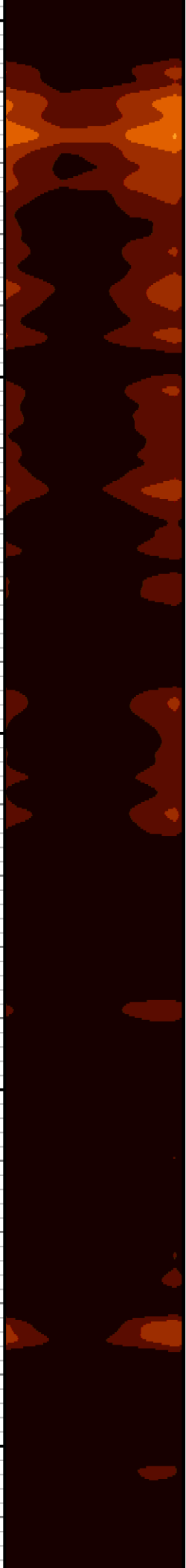






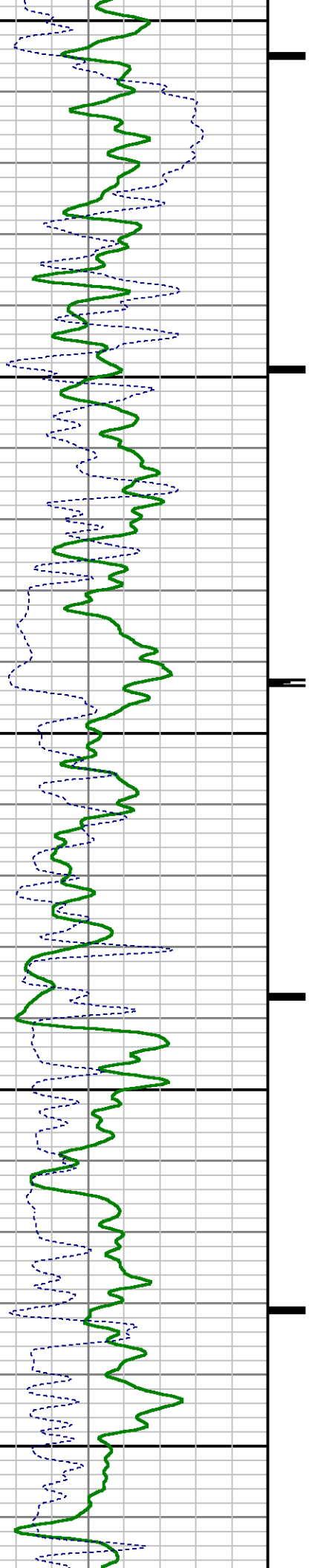


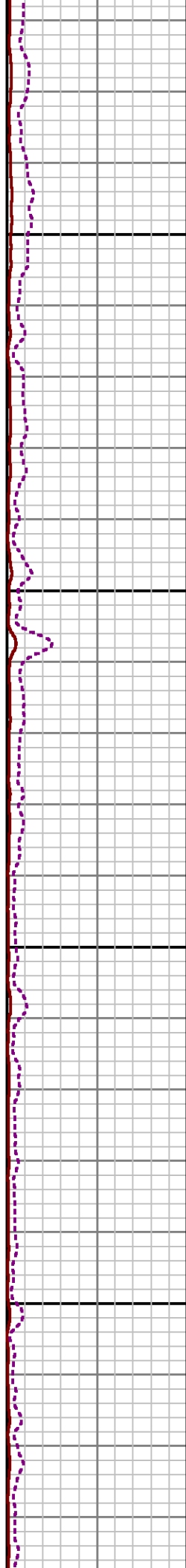
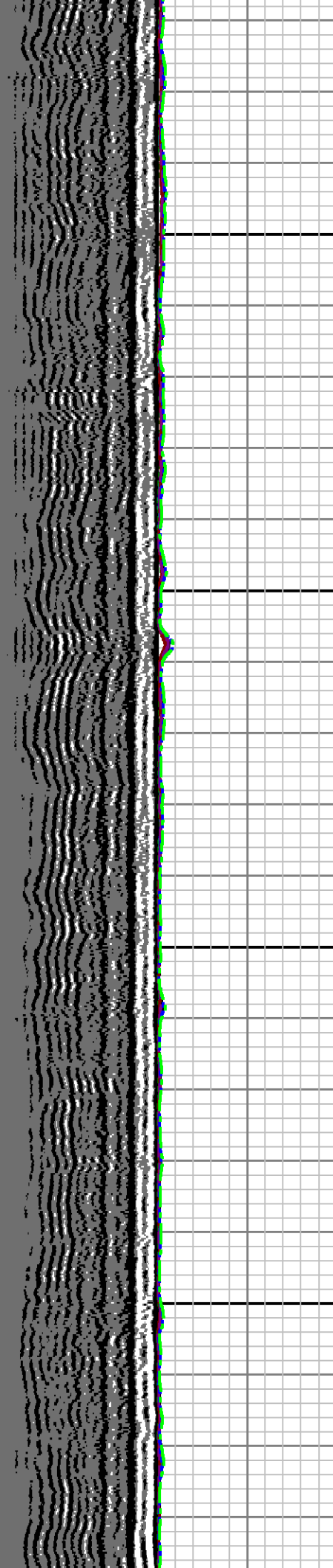




3300

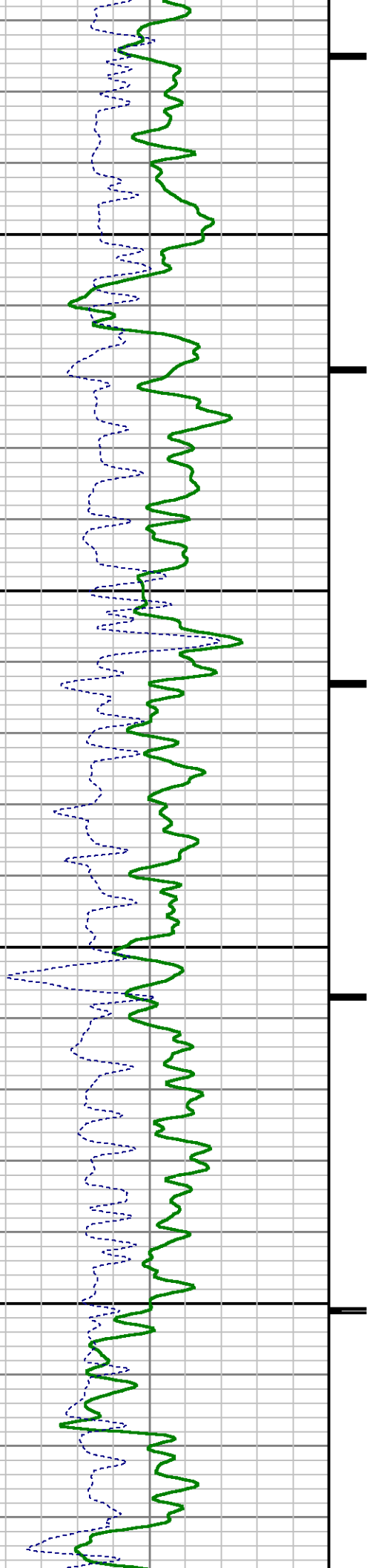
3400

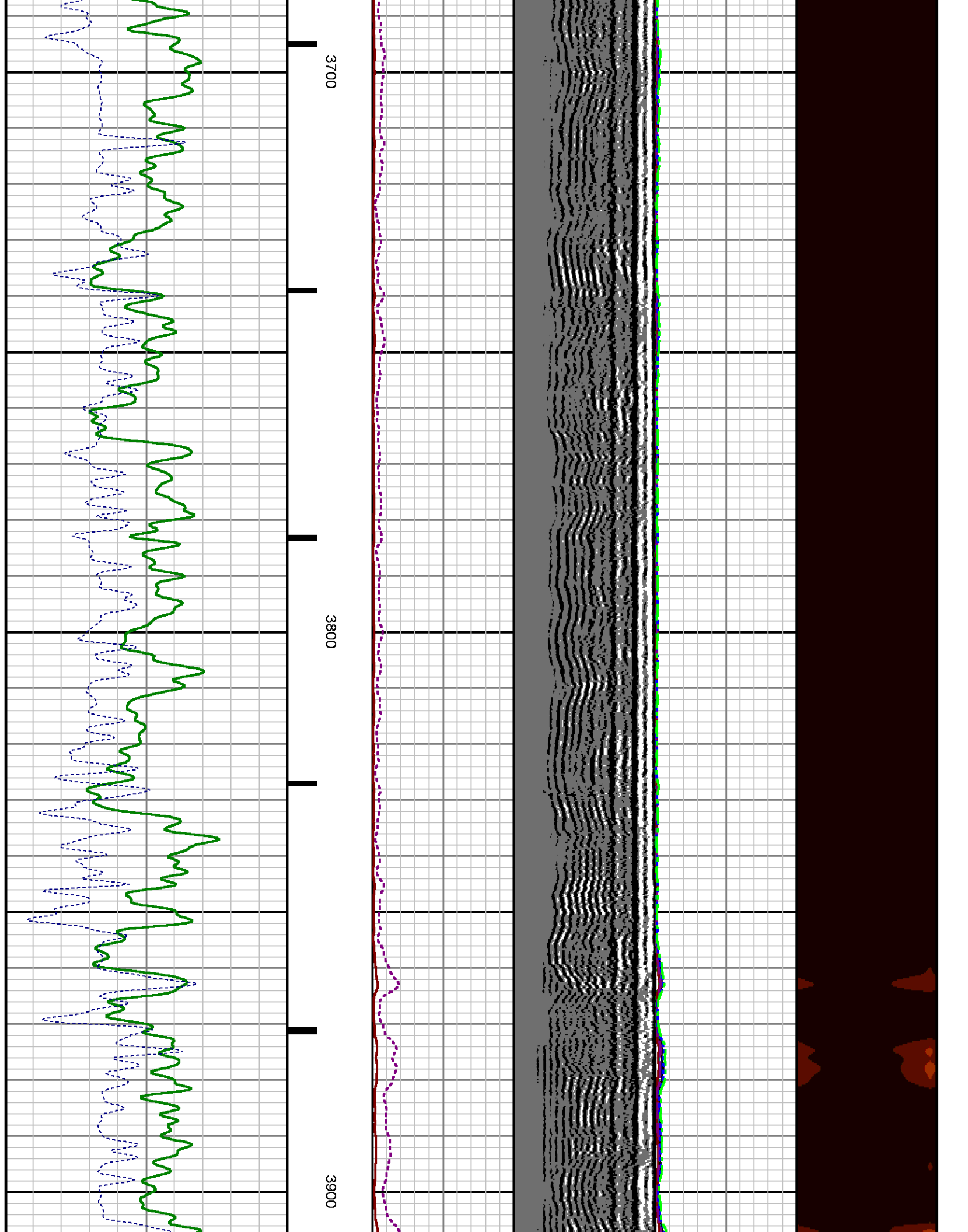


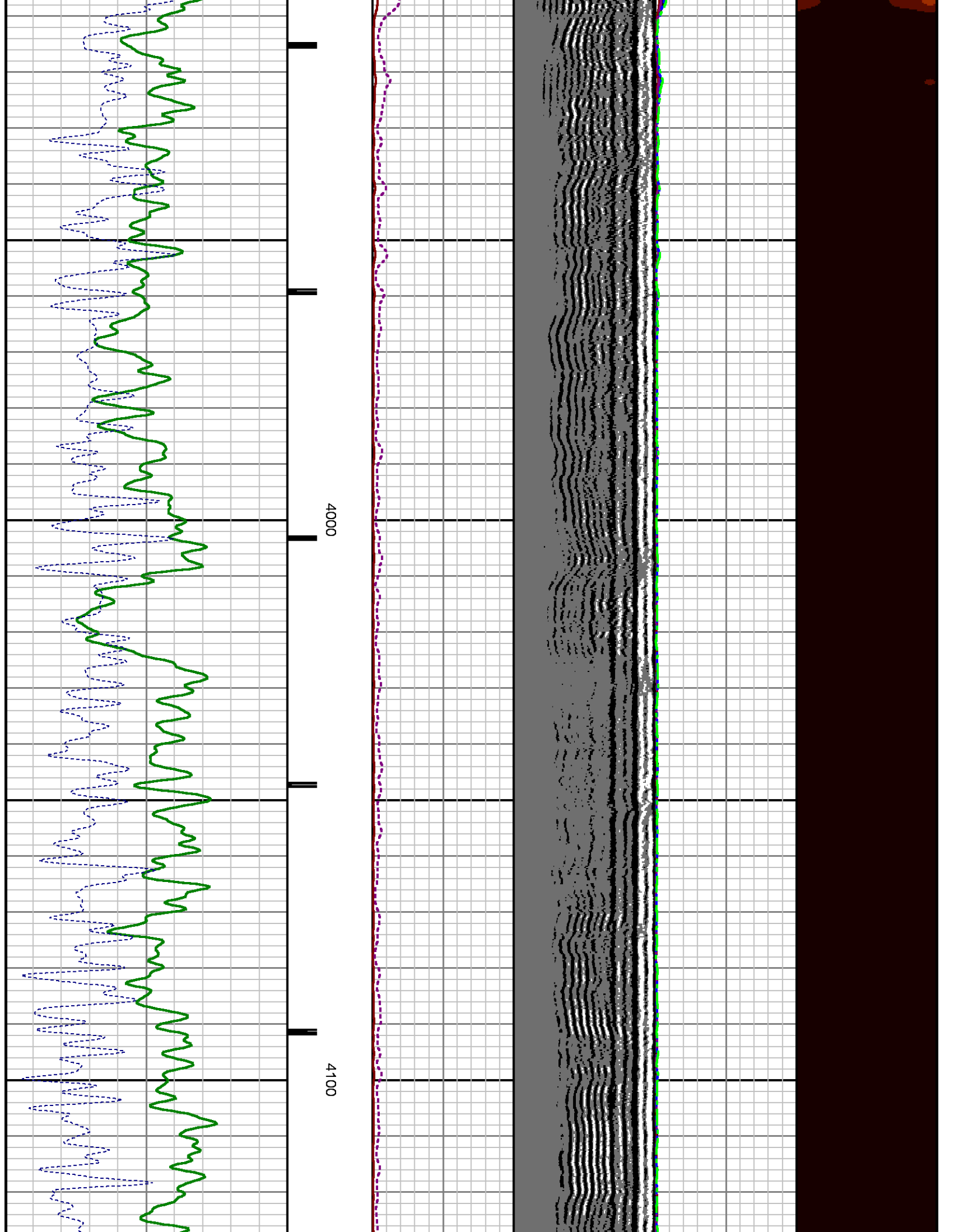


3500

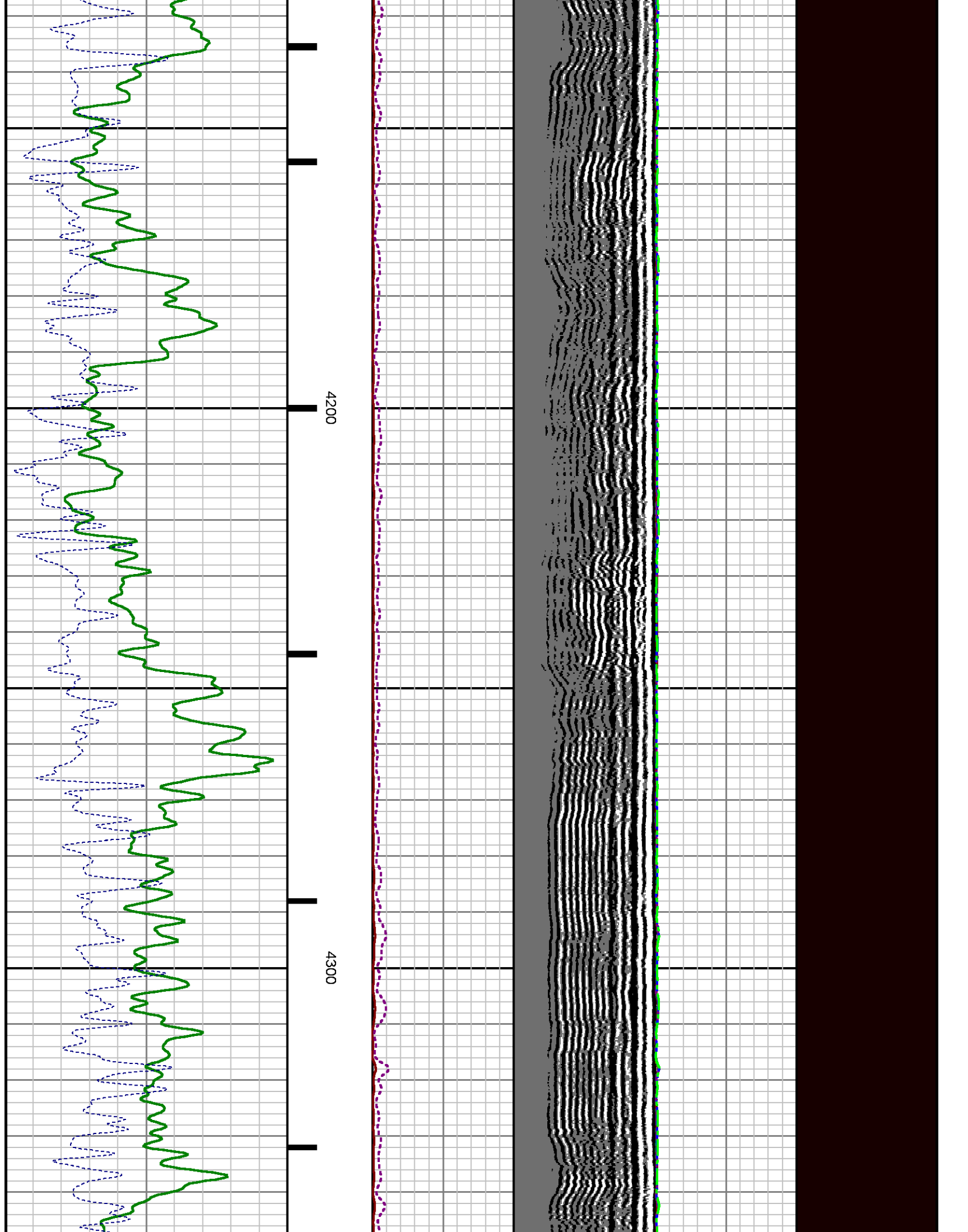
3600

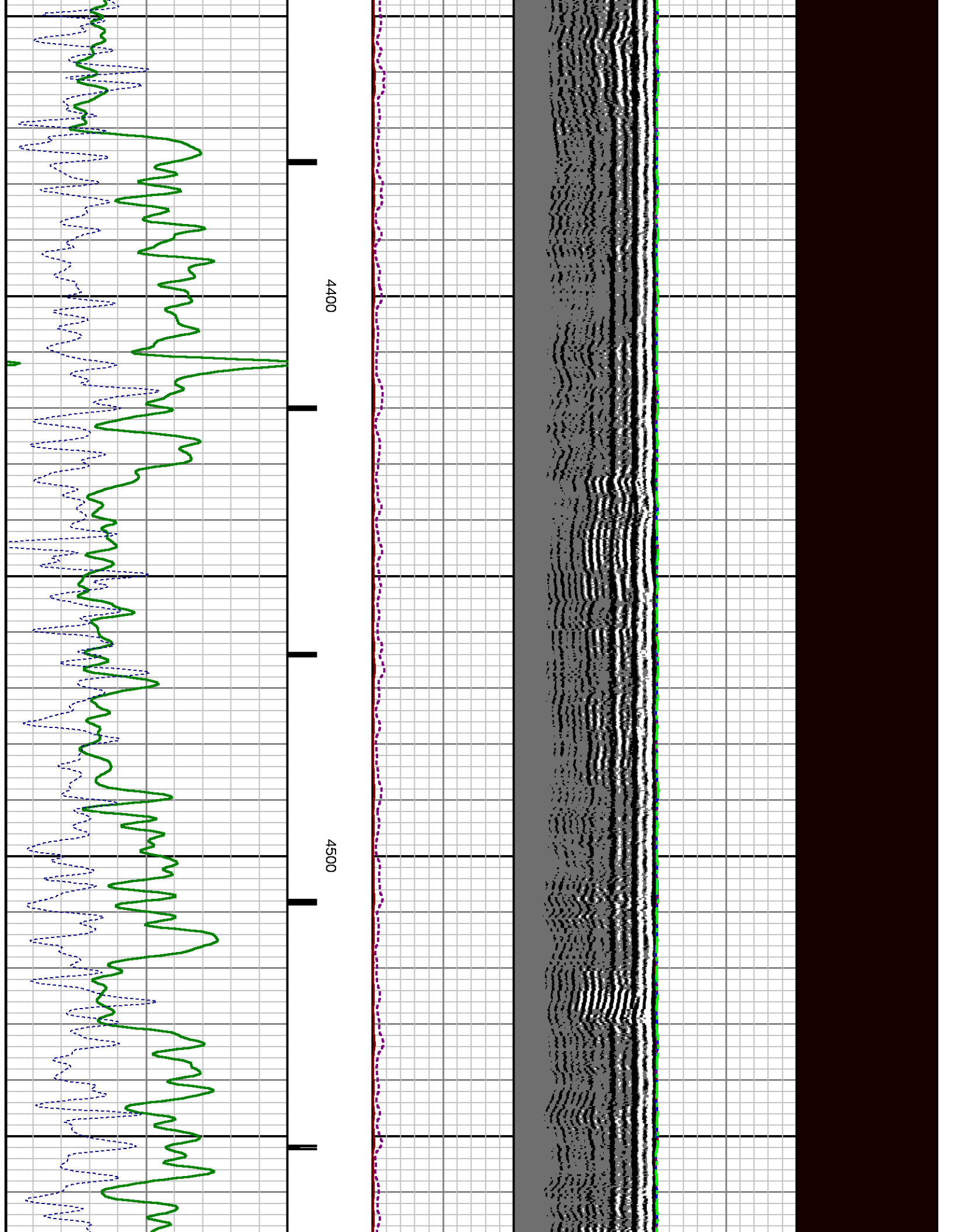


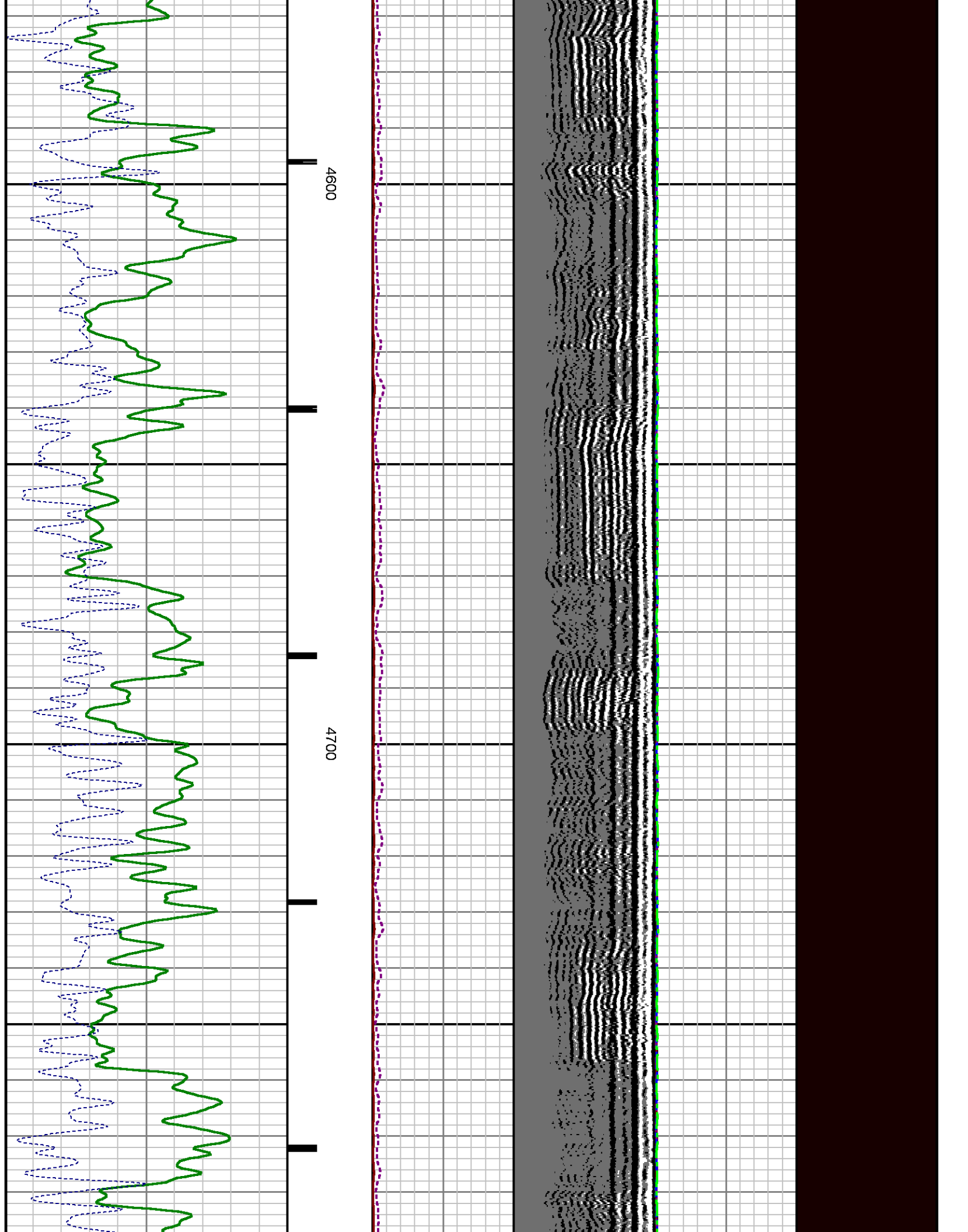


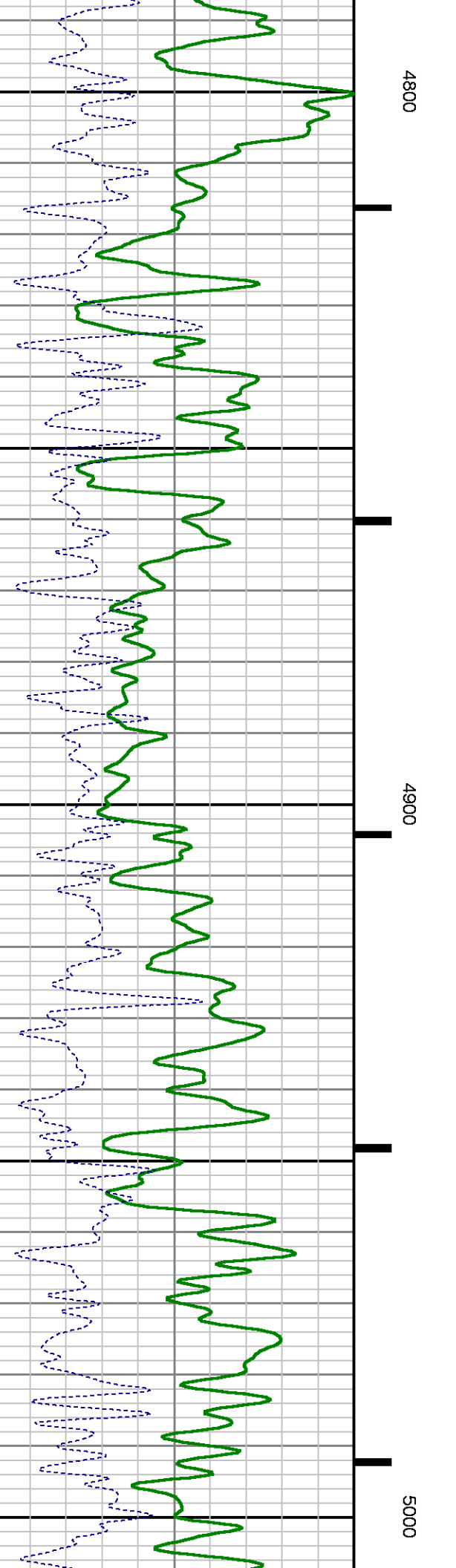
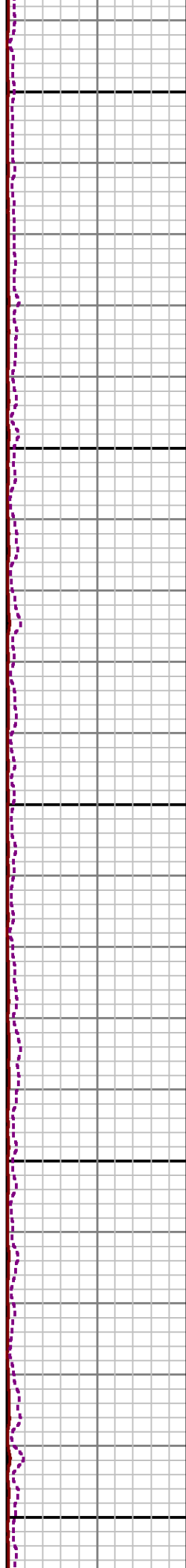
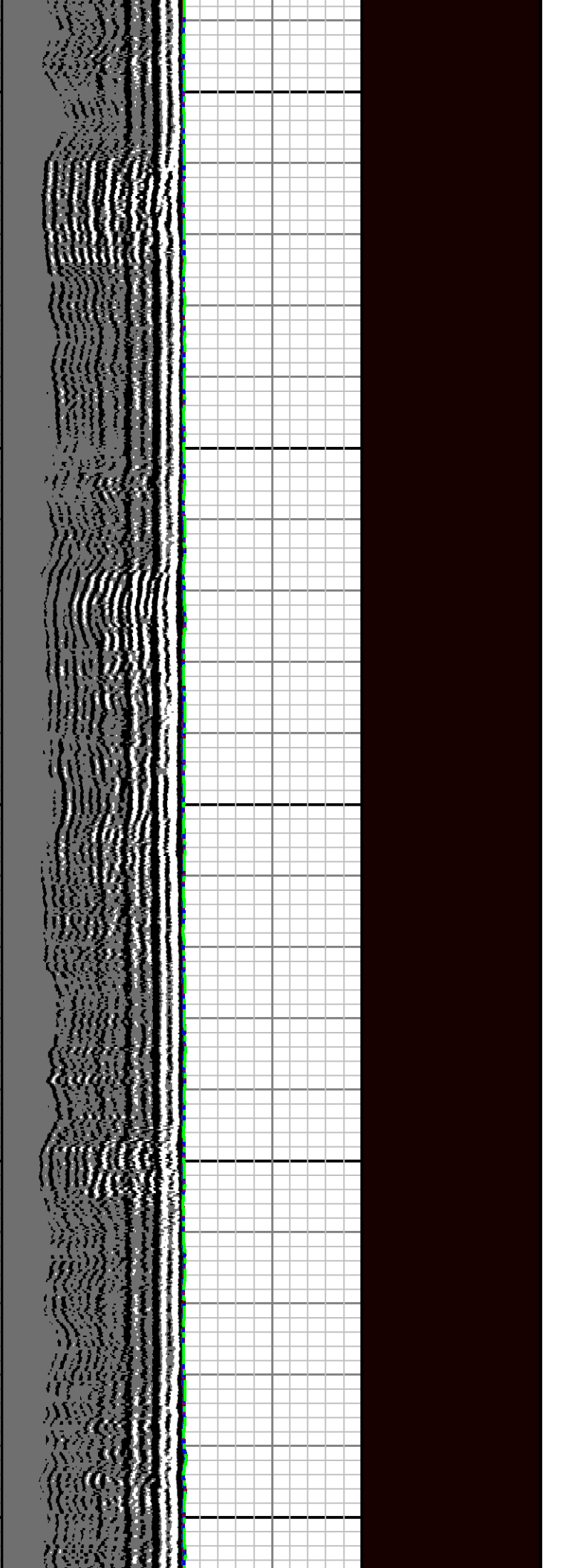


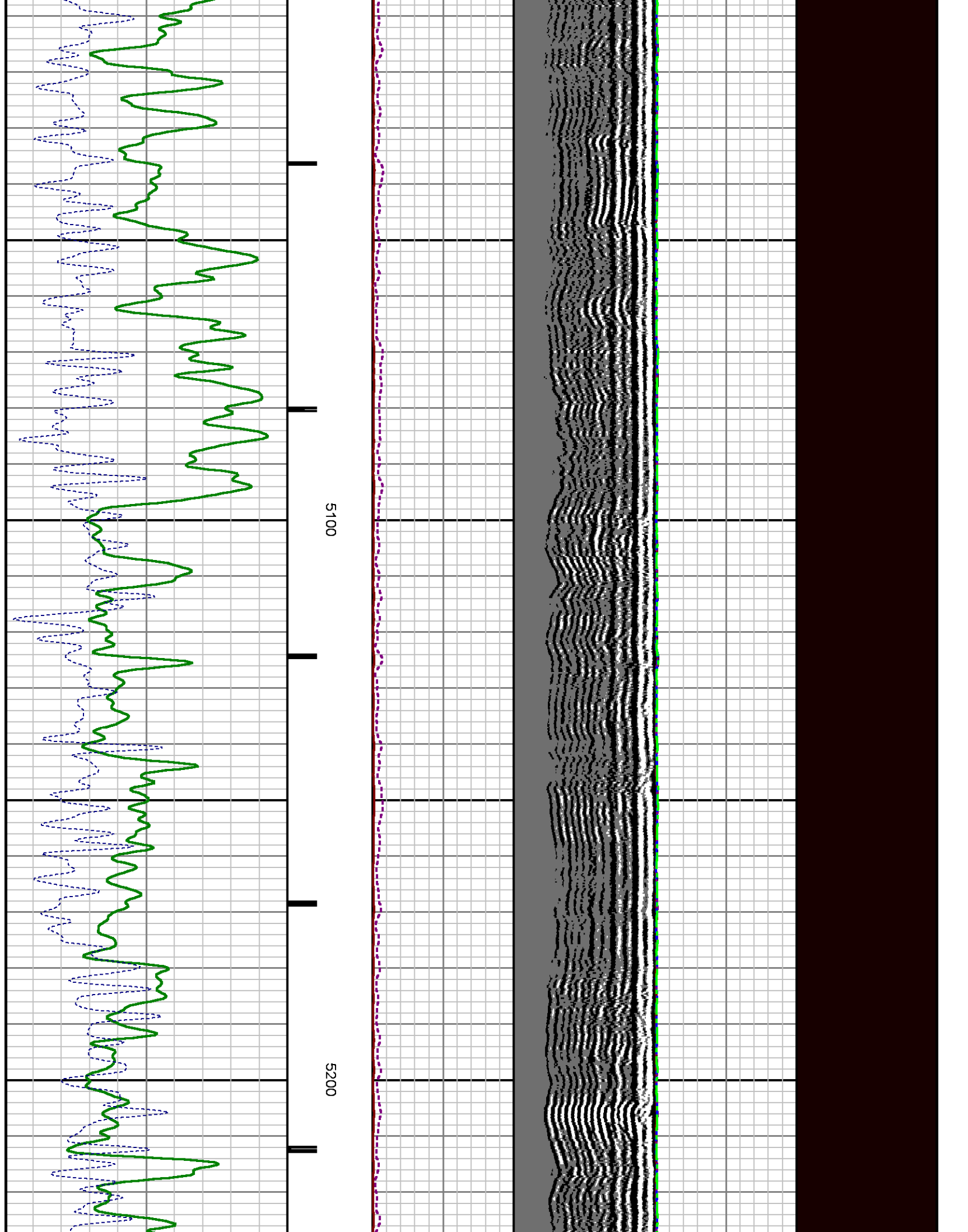


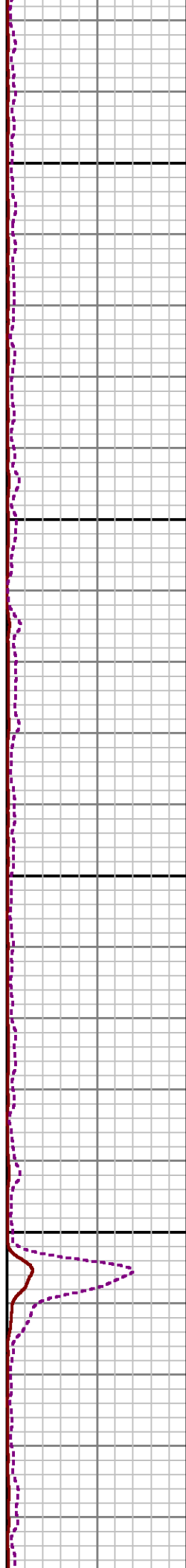
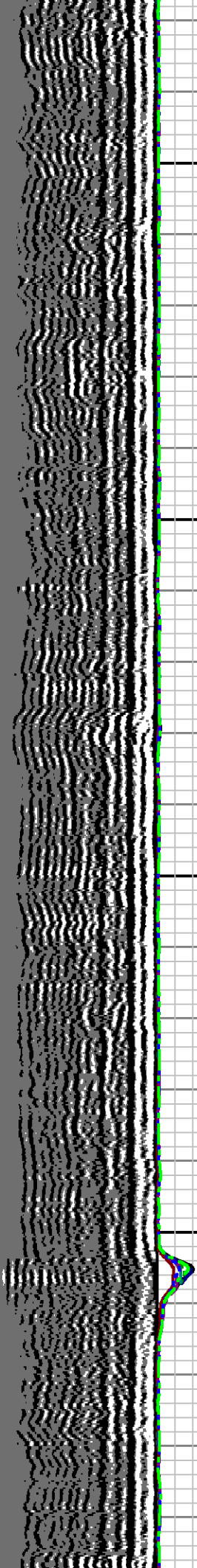






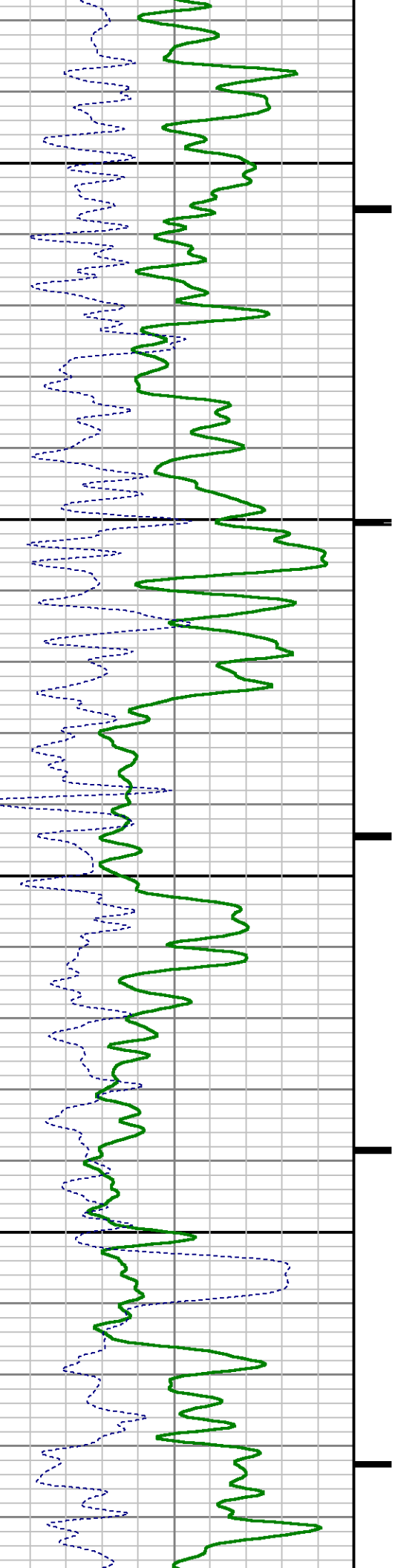




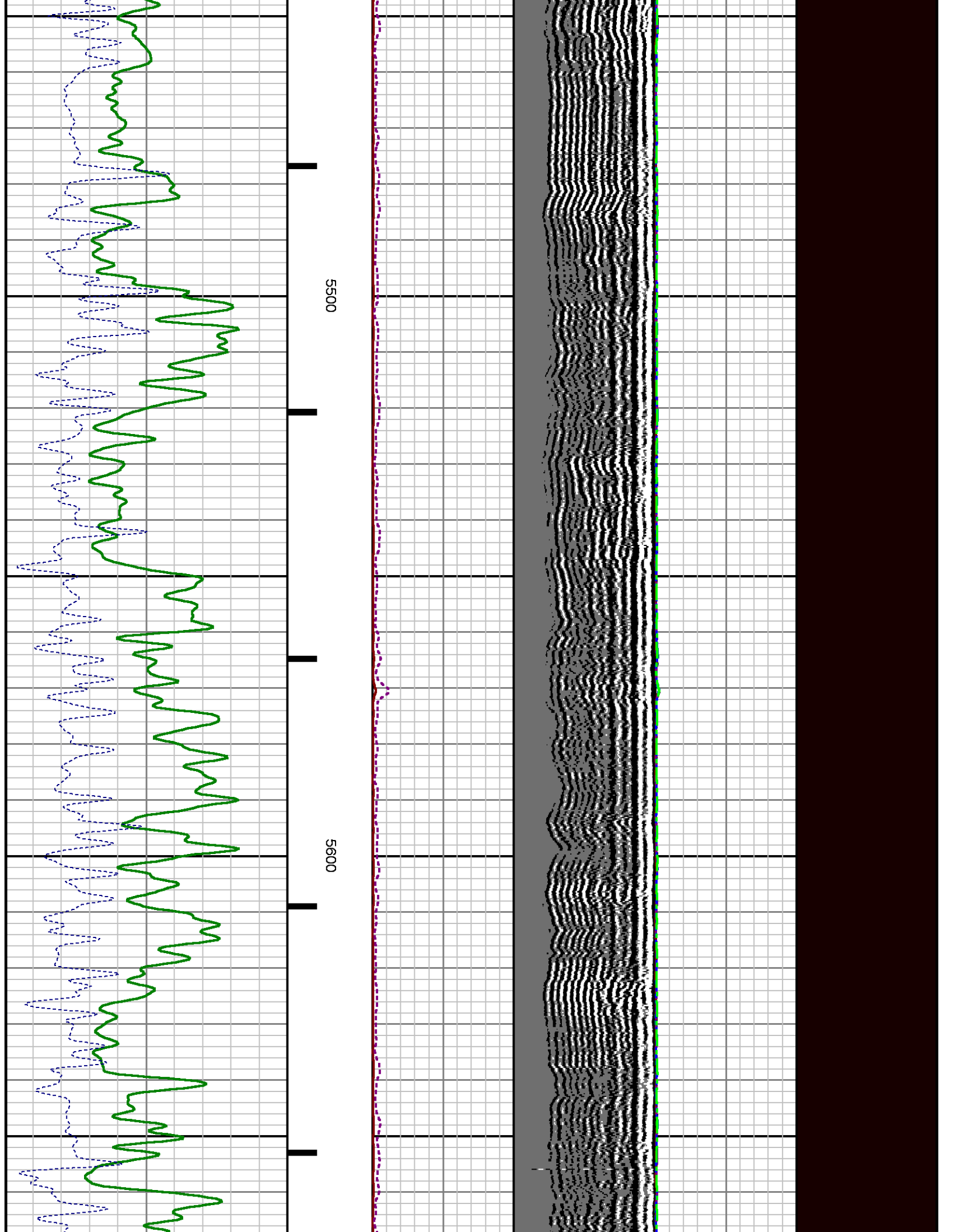


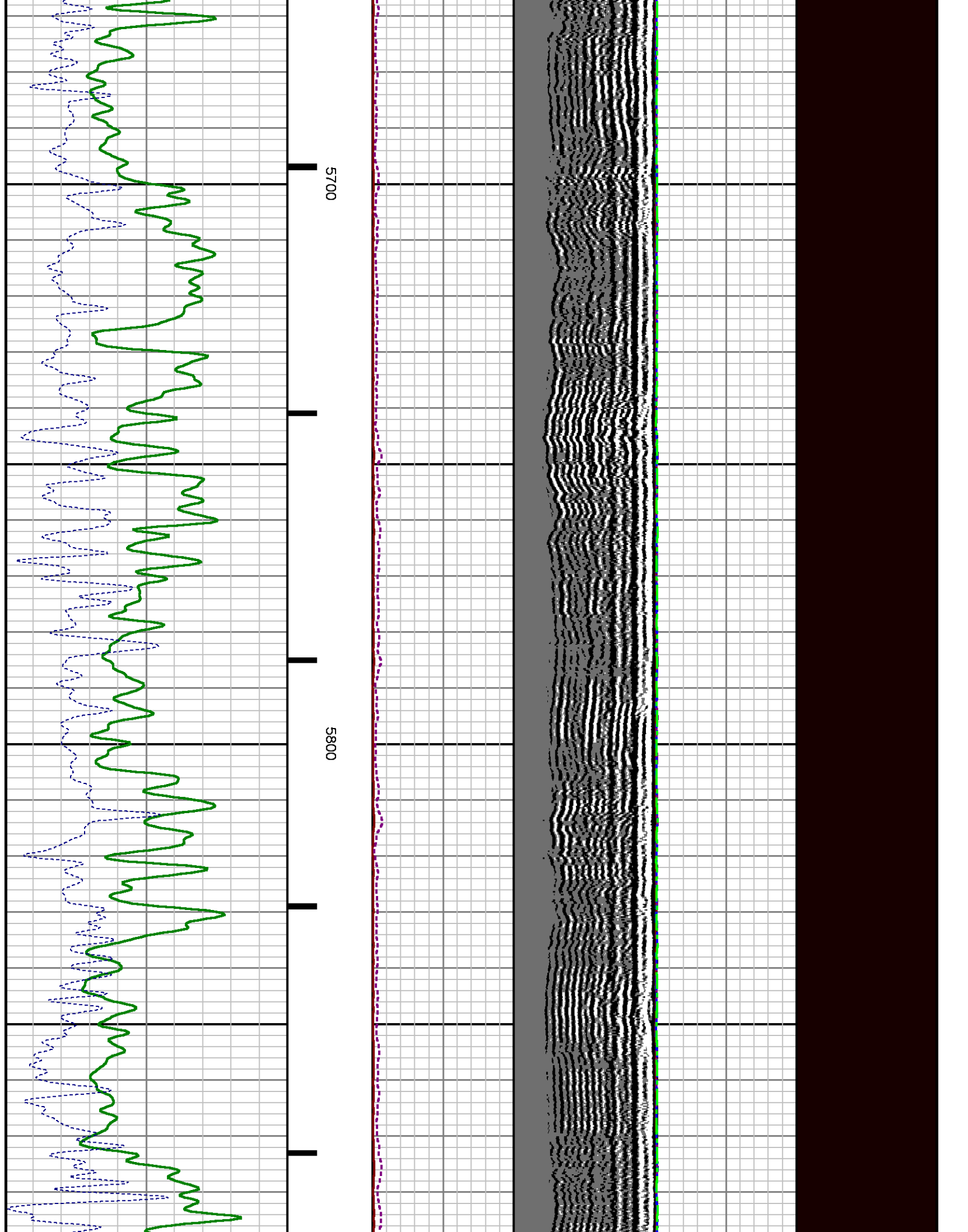
5300

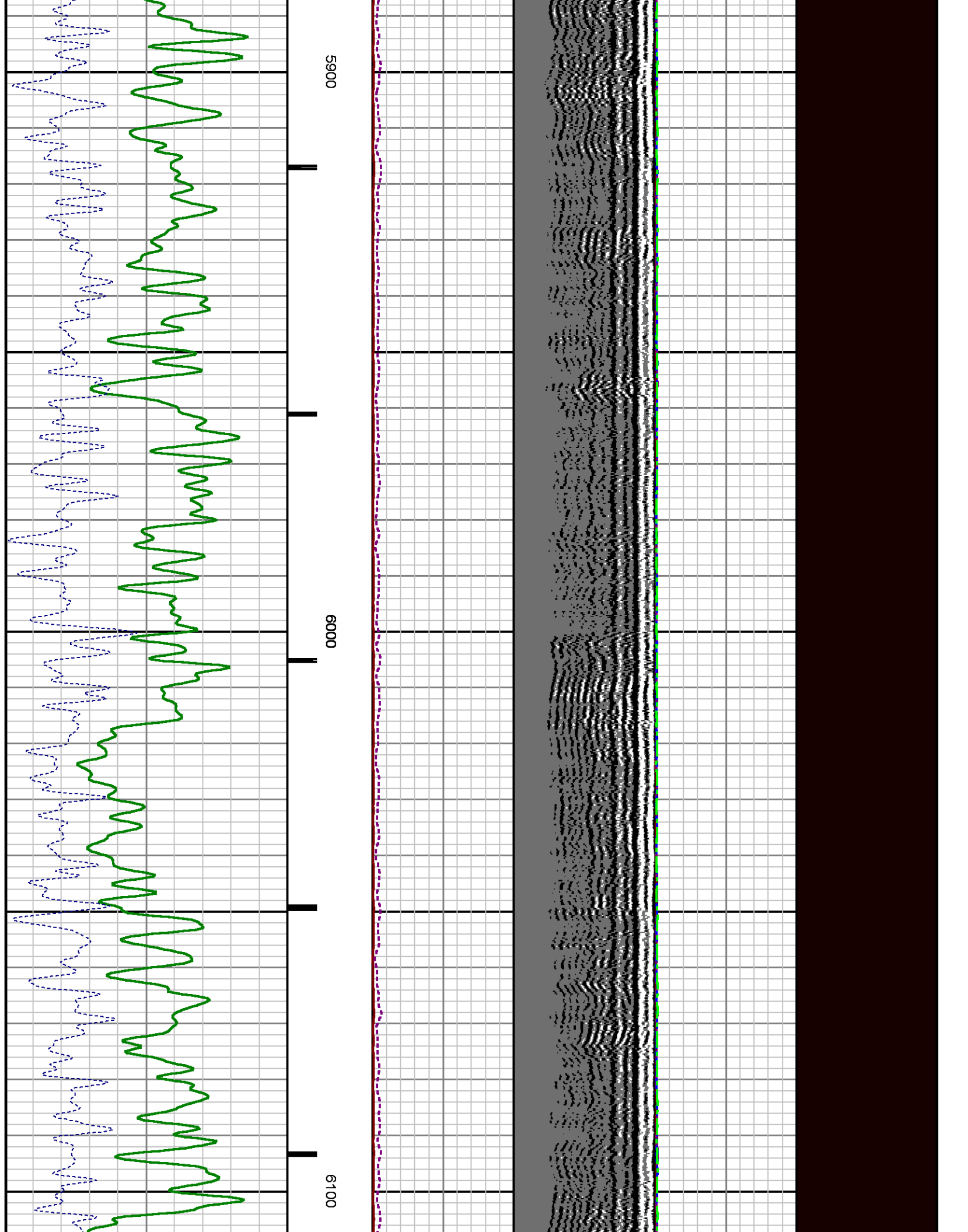
5400

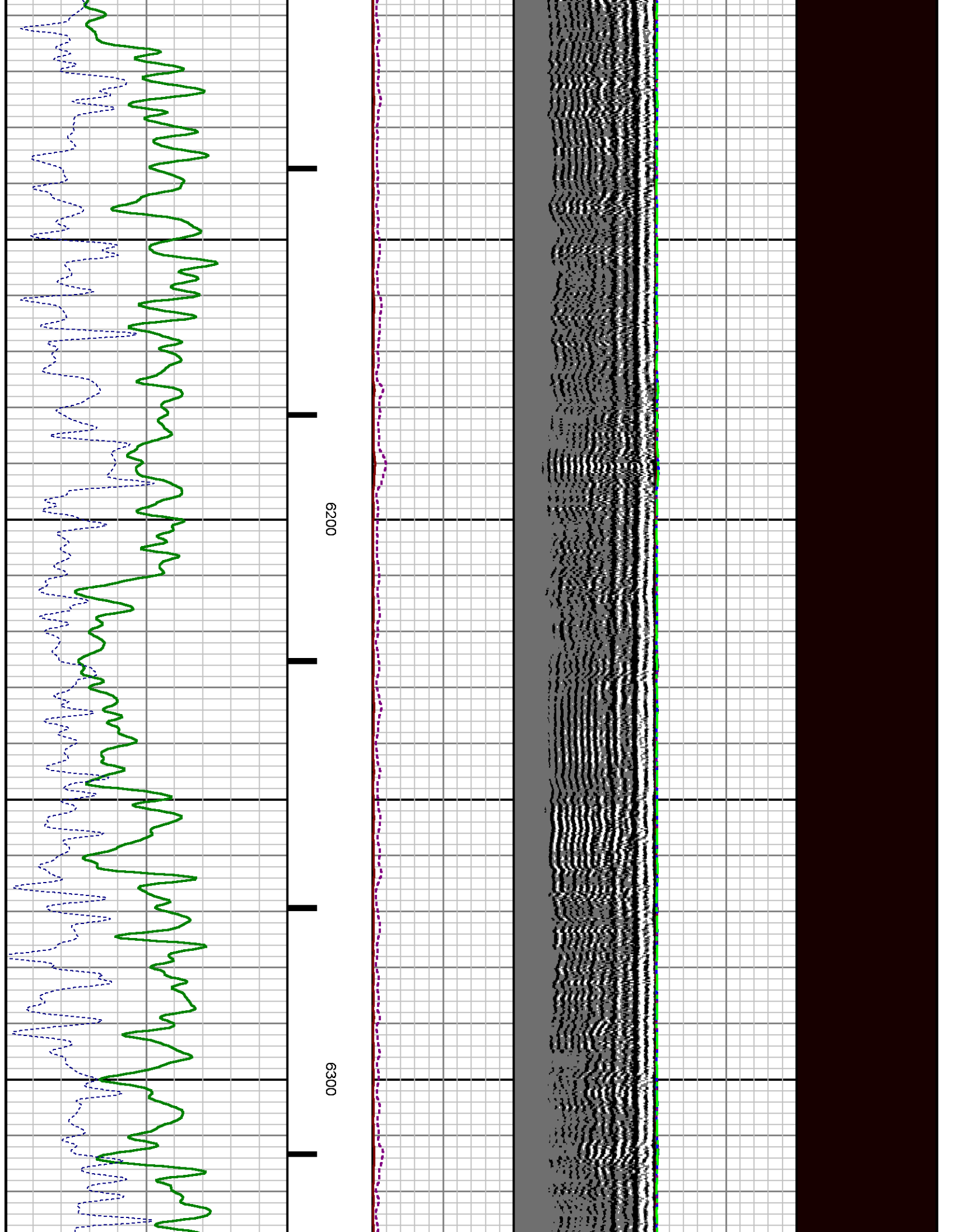


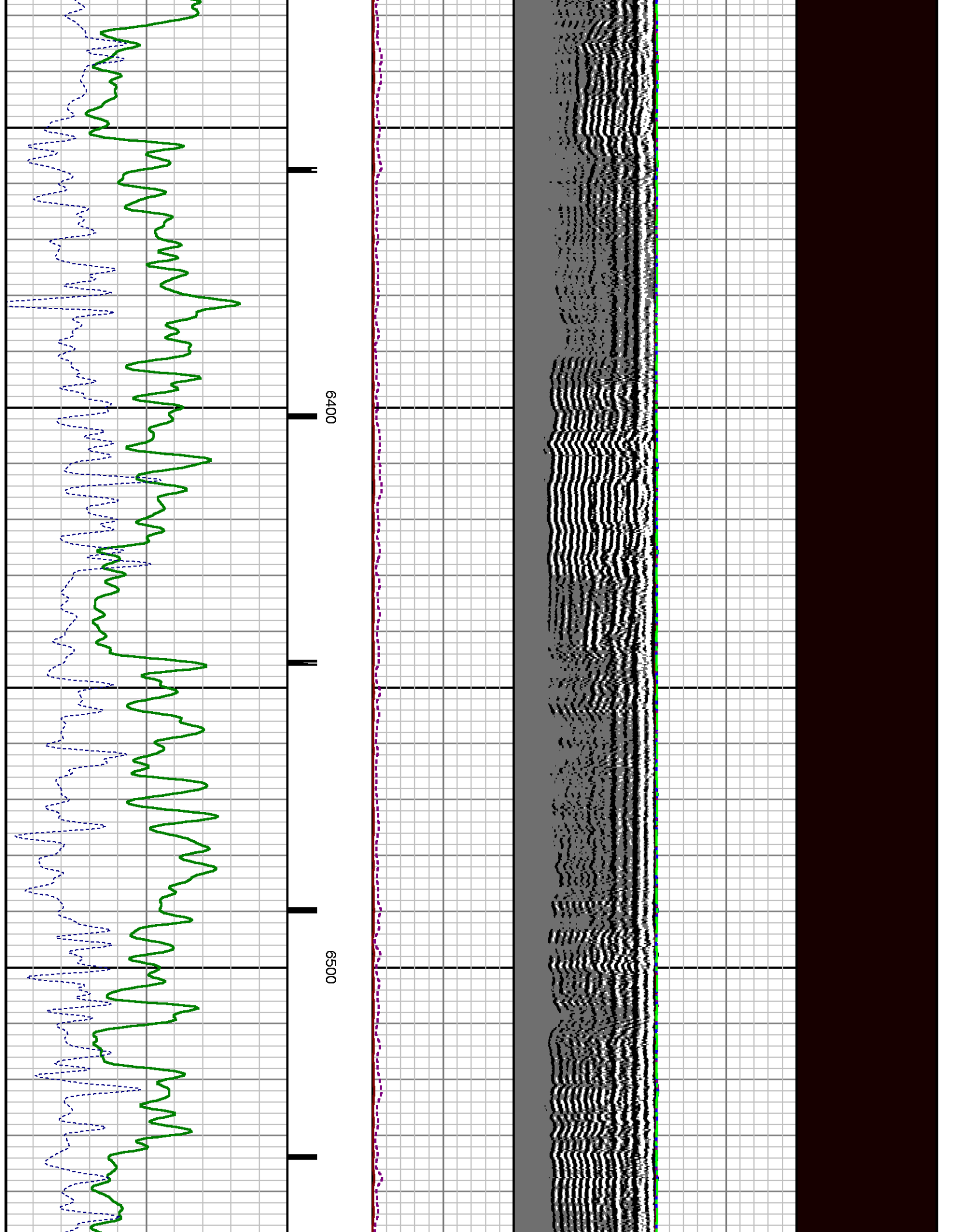


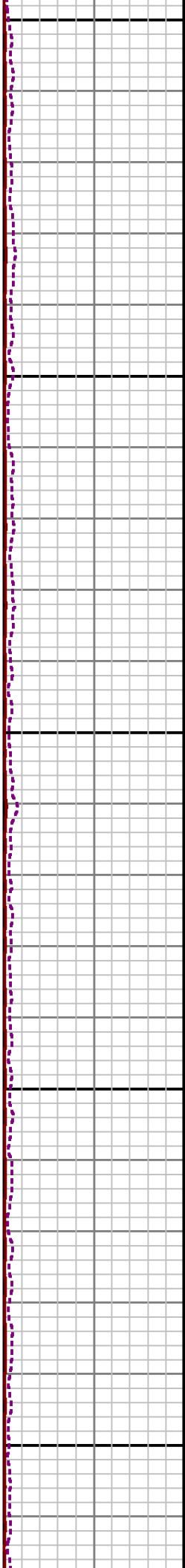
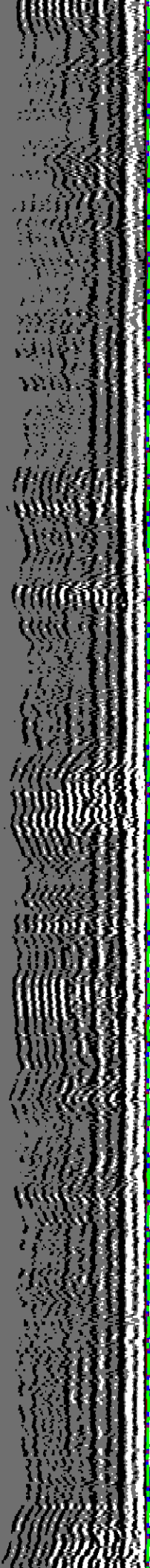






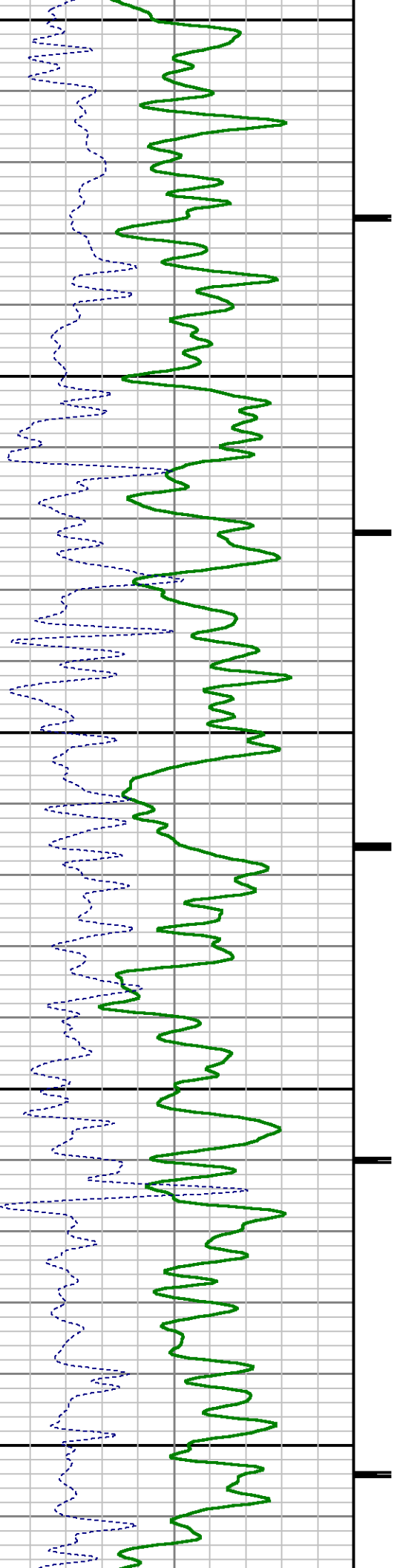




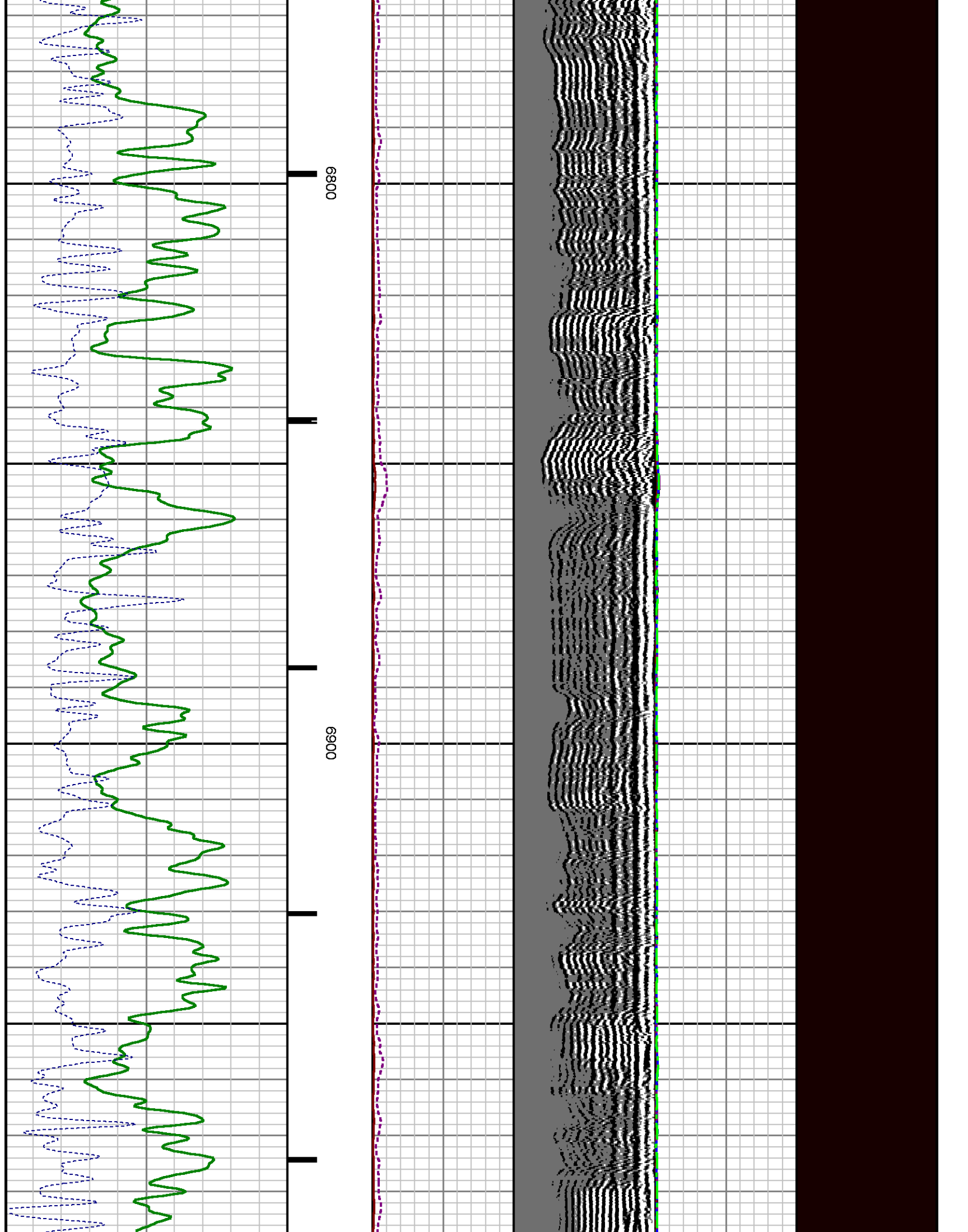


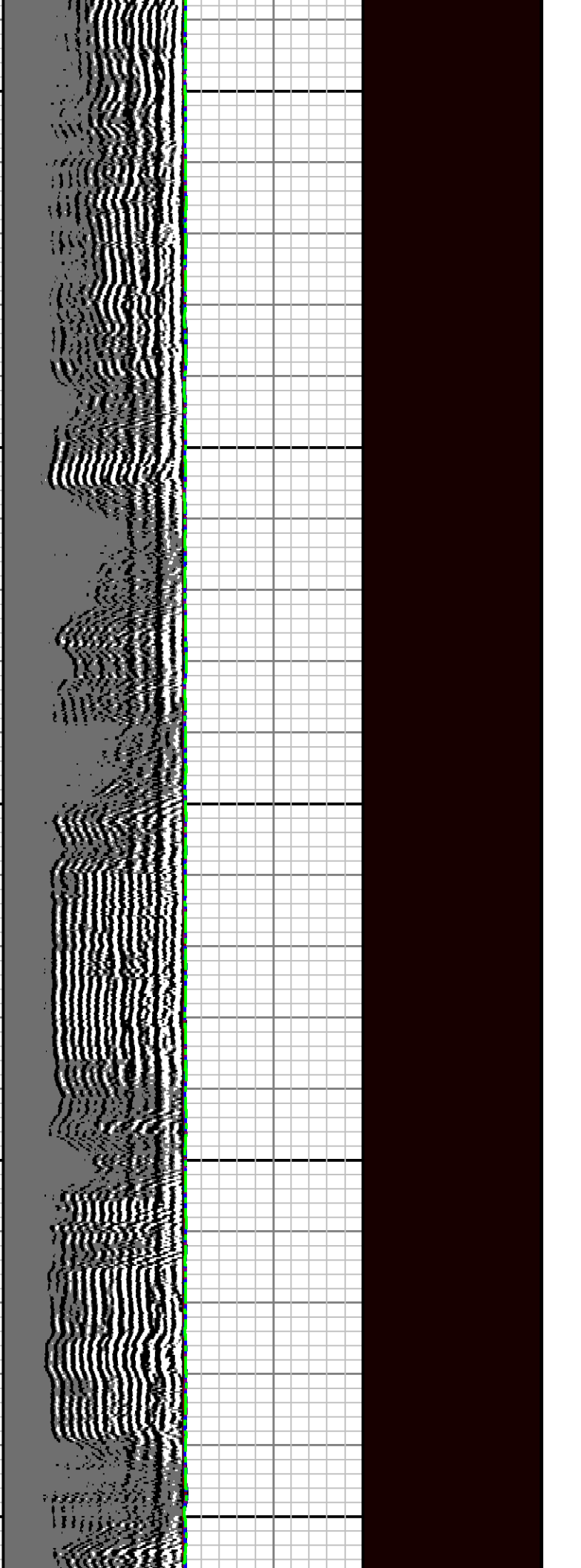
6600

6700





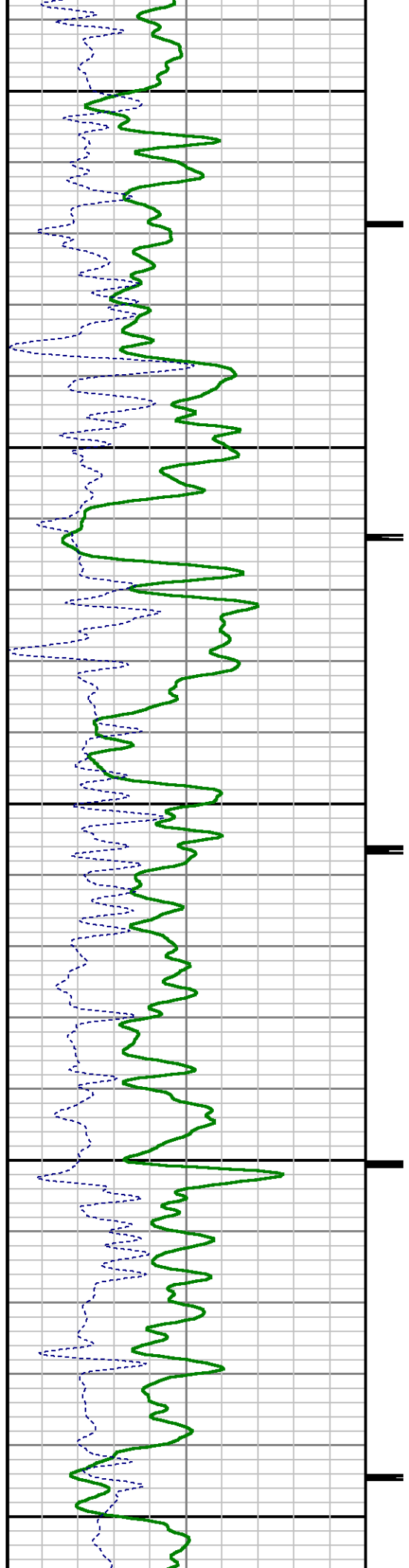


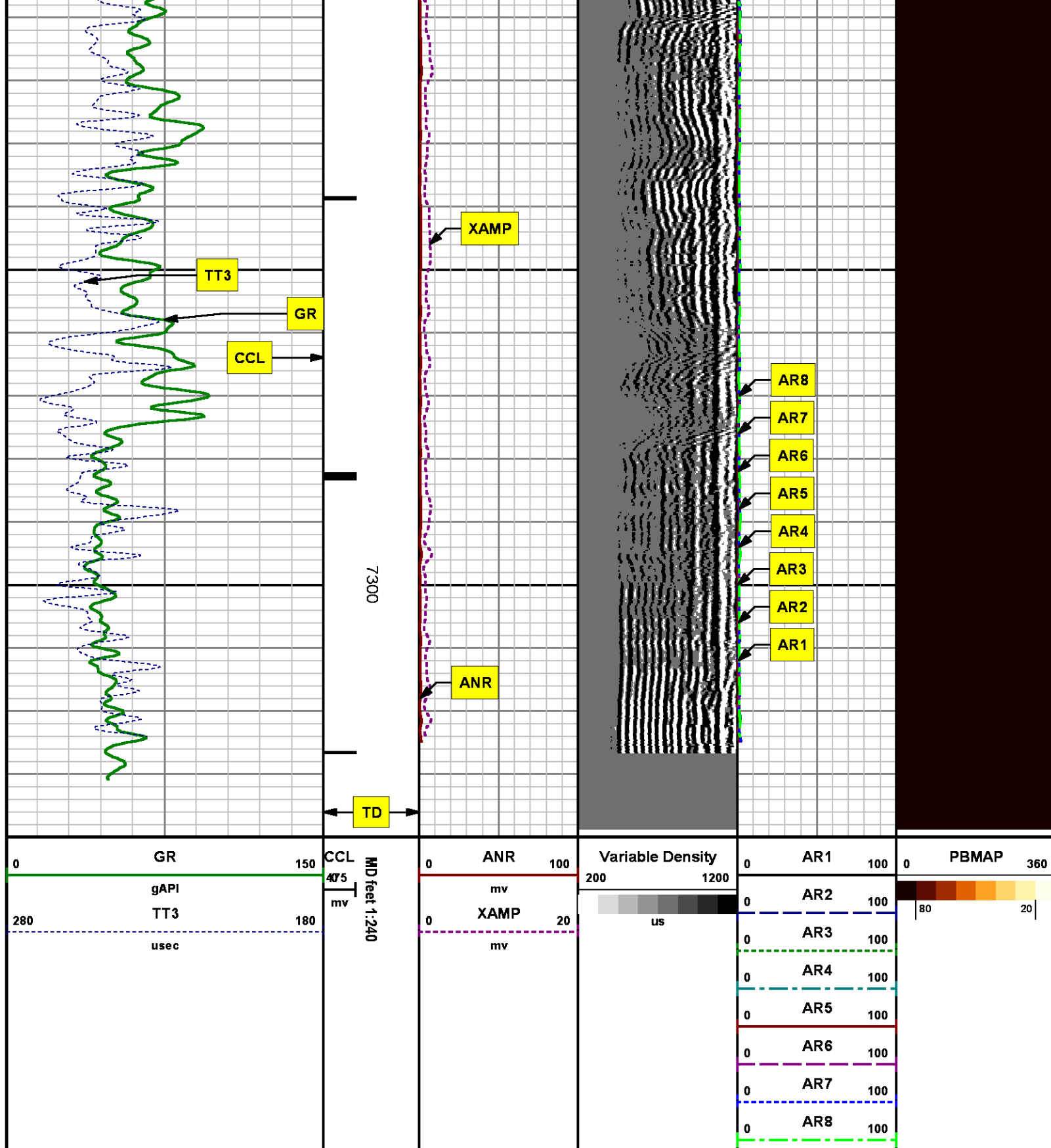


7000

7100

7200





REPEAT SECTION  
0 PSI

| MEASUREMENT TYPE | PARAMETER             | VALUE    | UNITS   | TOP      | BOTTOM   |
|------------------|-----------------------|----------|---------|----------|----------|
| RAL              | Amp Gate Start Far    | 305.000  | usec    | 7001.123 | 7337.280 |
| RAL              | Amp Gate Start Near   | 195.000  | usec    | 7001.123 | 7337.280 |
| RAL              | Amp Gate Start Radial | 195.000  | usec    | 7001.123 | 7337.280 |
| RAL              | Amp Gate Width Far    | 25.000   | usec    | 7001.123 | 7337.280 |
| RAL              | Amp Gate Width Near   | 25.000   | usec    | 7001.123 | 7337.280 |
| RAL              | Amp Gate Width Radial | 25.000   | usec    | 7001.123 | 7337.280 |
| RAL              | casing od             | 4.500    | inches  | 7001.123 | 7337.280 |
| RAL              | casing wt             | 11.600   | lbm/ft  | 7001.123 | 7337.280 |
| RAL              | FB Start Far          | 291.900  | usec    | 7001.123 | 7337.280 |
| RAL              | FB Start Near         | 180.000  | usec    | 7001.123 | 7337.280 |
| RAL              | FB Start Radial       | 1810.000 | usec    | 7001.123 | 7337.280 |
| RAL              | FB Thresh Far         | 10.000   | mv      | 7001.123 | 7337.280 |
| RAL              | FB Thresh Near        | 4.000    | mv      | 7001.123 | 7337.280 |
| RAL              | FB Thresh Radial      | 4.000    | mv      | 7001.123 | 7337.280 |
| RAL              | Fluid Travel Time     | 200.000  | usec/ft | 7001.123 | 7337.061 |

## DEPTH OFFSETS

(for Acquired Curves)

| SERIES | DEPTH OFFSET | ACQUIRED CURVES |      |      |      |      |      |
|--------|--------------|-----------------|------|------|------|------|------|
| 1426XA | -12.360      | ACAL            | ANR  | AR1  | AR2  | AR3  | AR4  |
|        |              | AR5             | AR6  | AR7  | AR8  | CHV  | FPR2 |
|        |              | FPR3            | FPR5 | TT3  | TTR1 | TTR2 | TTR3 |
|        |              | TTR4            | TTR5 | TTR6 | TTR7 | TTR8 | XAMP |
| 1426XA | -11.360      | AFAR            | SIG  | TT5  |      |      |      |
| 2459XA | -7.250       | CCL             |      |      |      |      |      |
| 2459XA | -5.390       | GR              |      |      |      |      |      |
| 2459XA | 0.000        | NEU             |      |      |      |      |      |

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

Well : CHEVRON GM 11-21

File Name : d:\welldata\wpx\gm 11-21\11ral\repeat.xtf

Mode : PlotMgr 5.4.504

Interval : 7001.28 - 7337.28 feet UP

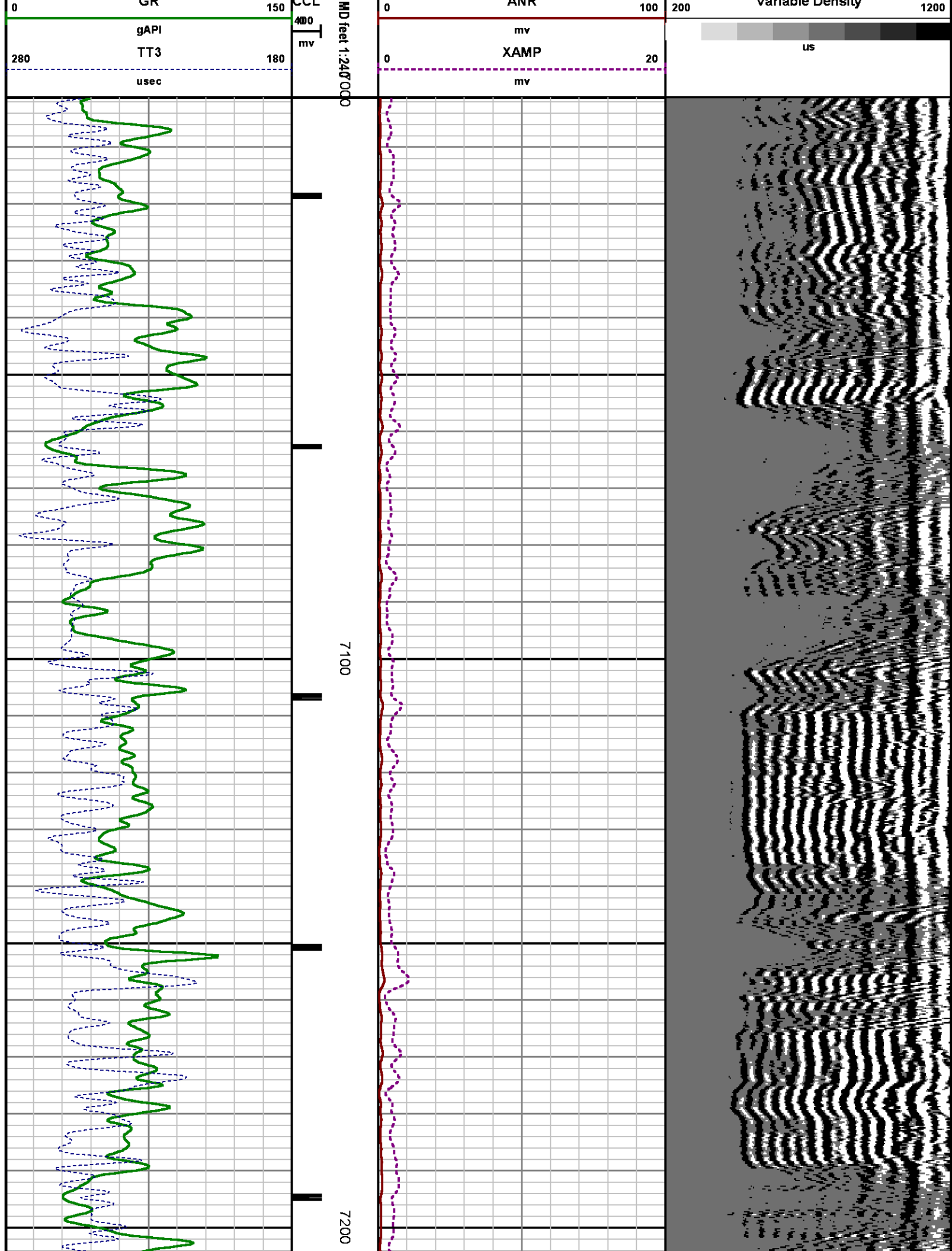
Created : 10/8/2014 9:48:18 AM

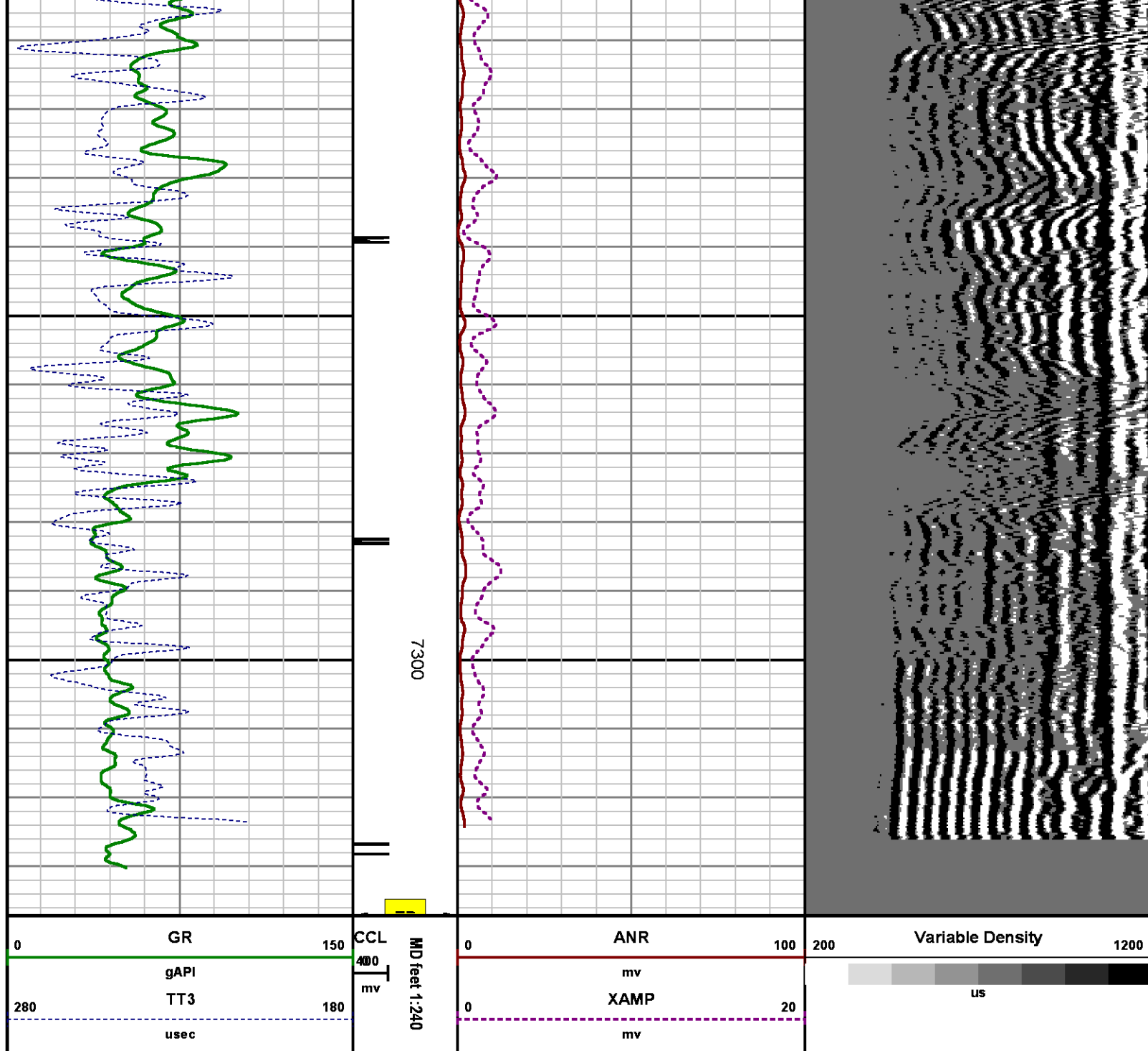
CP

CCL

ANR

Variable Density





## CALIBRATION SUMMARY

## GAMMA RAY



DATE/TIME PERFORMED: Wed Oct 08 09:03:02 2014

TOOL SERIES: 2459XA

ASSET: 503

SEQ: 08

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K WA612

110.22

393.29

0.654

72.04

257.04

185.00

Verification File:

C:\case\calver\GR\50308.VP

## PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Wed Oct 08 09:04:12 2014

TOOL SERIES: 2459XA

ASSET: 503

SEQ: 08

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K WA612

101.07

384.62

0.654

66.05

251.37

185.32

RALSHP

Shop Calibration:

C:\case\calver\RALSHP\539OCT08\_shp.cal

## SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Oct 08 09:07:46 2014

TOOL SERIES: 1426XA

ASSET: 539

SEQ: OCT08

Tool Delay  
[usec]

-56.00

Tank OD  
in

5.50

Tank Wt  
lbm/ft

15.50

Tank ID  
in

4.95

RECEIVER

Travel Time  
[usec]Amp. Gate  
Start  
[usec]Amp. Gate  
Width  
[usec]Zero Gate  
Start  
[usec]Zero Gate  
Width  
[usec]Zero Amp.  
[mV]Amp Ref.  
[mV]

Shop Factor

CAL Pulse

217

216

30

166

25

-0.405

100.00

0.26

3 Ft. Receiver

217

216

30

155

25

-0.013

100.00

0.26

5 Ft. Receiver

324

325

30

226

25

0.497

150.00

0.29

Radial #1

217

216

30

143

25

0.573

100.00

0.26

Radial #2

218

216

30

143

25

0.428

100.00

0.26

Radial #3

217

216

30

143

25

0.212

100.00

0.27

Radial #4

217

216

30

143

25

-0.258

100.00

0.26

Radial #5

216

216

30

143

25

-0.087

100.00

0.26

Radial #6

216

216

30

143

25

0.074

100.00

0.26

Radial #7

216

216

30

143

25

0.300

100.00

0.26

Radial #8

218

216

30

143

25

-0.015

100.00

0.26

RALFLD

Wellsite Calibration:

C:\case\calver\RALFLD\539OCT08 fld.cal

## WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Oct 08 09:13:57 2014

TOOL SERIES: 1426XA

ASSET: 539

SEQ: OCT08

Tool Delay  
[usec]

-56.00

Casing OD  
in

4.50

Casing Wt  
lbm/ft

11.60

Casing ID  
in

4.00

| RECEIVER       | Zero Gate<br>Start<br>[usec] | Zero Gate<br>Width<br>[usec] | Zero Amp.<br>[mV] | Full Amp.<br>[mV] | Wellsite Factor | Amp. Ref<br>[mV] |
|----------------|------------------------------|------------------------------|-------------------|-------------------|-----------------|------------------|
| CAL Pulse      | 166                          | 25                           | -0.230            | 0.000             | 1.00            | 100.000          |
| 3 Ft. Receiver | 195                          | 25                           | -5.077            |                   |                 |                  |
| 5 Ft. Receiver | 305                          | 25                           | -8.724            |                   |                 |                  |
| Radial #1      | 195                          | 25                           | -6.832            |                   |                 |                  |
| Radial #2      | 195                          | 25                           | -6.567            |                   |                 |                  |
| Radial #3      | 195                          | 25                           | -6.207            |                   |                 |                  |
| Radial #4      | 195                          | 25                           | -6.793            |                   |                 |                  |
| Radial #5      | 195                          | 25                           | -10.673           |                   |                 |                  |
| Radial #6      | 195                          | 25                           | -6.701            |                   |                 |                  |
| Radial #7      | 195                          | 25                           | -7.058            |                   |                 |                  |
| Radial #8      | 195                          | 25                           | -7.160            |                   |                 |                  |

## TOOL DIAGRAM

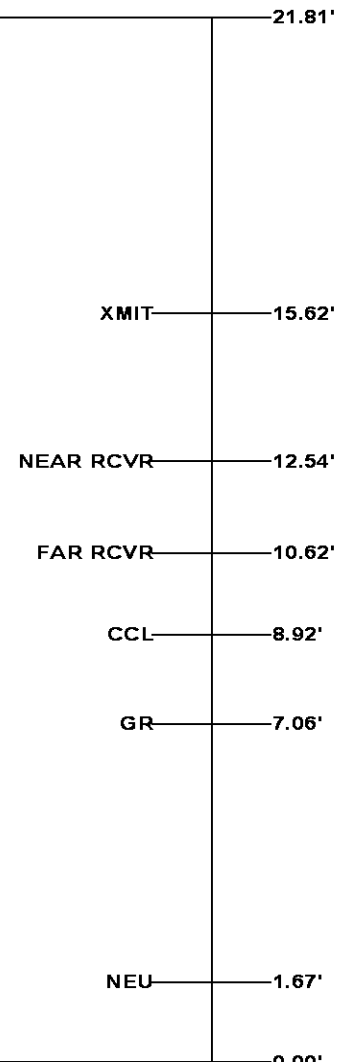
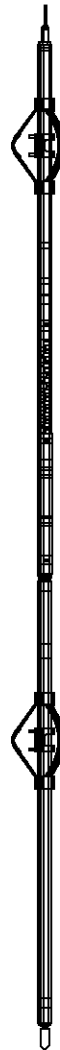
### OTA SHORT CABLE HEAD

#### PROBE 2 3/4 DUAL RECEIVER RADII

Series 1426XA  
 Mnemonic PROB  
 Diameter 2.75"  
 Length 11.17'  
   Measure Point 0.75' FAR RCVR  
   Measure Point 2.67' NEAR RCVR  
   Measure Point 5.75' XMIT  
 Temp Rating 350.00 °F  
 Press Rating 18000.00 PSI

#### Probe GR/CCL/NEU

Series 2459XA  
 Mnemonic PROB  
 Diameter 2.75"  
 Length 9.42'  
   Measure Point 1.21' NEU  
   Measure Point 6.60' GR  
   Measure Point 8.46' CCL



**Total Length: 21.81'**  
**Total Weight: Not Available**  
**Max Diameter: 0' 2.75"**



**Baker Atlas**

*CASE*

**Company**

**WPX ENERGY**

**Well**

**CHEVRON GM 11-21**

**Field**

**GRAND VALLEY**

**County**

**GARFIELD**

**State**

**COLORADO**

**File No:**

**CH090084**

**API No:**

**05045223540000**

**Location**

**SHL: 2012' FNL & 702' FEL (SEC 20)**

**BHL: 145' FNL & 569' FWL (SEC 21)**

**Elevations**

**KB 5596 ft**

**DF**

**GL 5575 ft**

**21 6S 96W**

**GM 442-20 PAD**

**CYCLONE 17**

**SEC 21 TWP 6S RGE 96W**