



# RADIAL ANALYSIS BOND LOG

Baker Atlas

|                                                    |                                                                                   |                             |             |
|----------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------|-------------|
| File No:                                           | Company                                                                           | WILLIAMS PRODUCTION COMPANY |             |
| API No:                                            | Well                                                                              | PA 344-17                   |             |
| 05045181080000                                     | Field                                                                             | PARACHUTE                   |             |
|                                                    | County                                                                            | GARFIELD                    | State       |
|                                                    |                                                                                   | COLORADO                    |             |
| S17 T6S R95W<br>PAD: DOE 2-W-20<br>RIG: NABORS 577 | Location                                                                          | Other Services              |             |
|                                                    | SHL: 1275' FNL & 828' FEL, S20 T6S R95W<br>BHL: 492' FSL & 656' FEL, S17 T6S R95W | NONE                        |             |
|                                                    | SEC 17 TWP 6S RGE 9SW                                                             |                             |             |
| Permanent Datum                                    | GL                                                                                | Elevation                   | 6426 ft     |
| Log Measured From                                  | KB                                                                                | 26 ft                       | Above P. D. |
| Drill Measured From                                | KELLY BUSHING                                                                     | KB                          | 6452 ft     |
|                                                    |                                                                                   | DF                          | 6451 ft     |
|                                                    |                                                                                   | GL                          | 6426 ft     |

|                              |                           |
|------------------------------|---------------------------|
| Date                         | 31/AUG/10                 |
| Run                          | ONE                       |
| Service Order                | 575240                    |
| Depth Driller                | 9323 ft                   |
| Depth Logger                 | 9234 ft                   |
| Bottom Logged Interval       | 9234 ft                   |
| Top Logged Interval          | SURFACE                   |
| Time Started                 | 12:00                     |
| Time Finished                | 17:00                     |
| Operator Rig Time            | 5 hrs                     |
| Type of Fluid in Hole        | WATER                     |
| Fluid Density                | N/A                       |
| Salinity                     | N/A                       |
| Fluid Level                  | FULL                      |
| Logged Cement Top            | N/A                       |
| Wellhead Pressure            | 0 psi                     |
| Maximum Hole Deviation       | N/A                       |
| Nominal Logging Speed        | 45 fpm                    |
| Maximum Recorded Temperature | 248 degF                  |
| Reference Log                | BAKER ATLAS OPEN HOLE LOG |
| Reference Log Date           | 08/AUG/10                 |
| Equipment No.                | 4214                      |
| Recorded By                  | J. WIESER                 |
| Witnessed By                 | MR. TED VONFELDT          |

- 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         | SURFACE | 937 ft  |
| 7.875 In        | 937 ft  | 9323 ft |

| Casing Record |             |       |         |         |
|---------------|-------------|-------|---------|---------|
| Size          | Weight      | Grade | From    | To      |
| 9.625 In      | 36 lbm/ft   | N/A   | SURFACE | 937 ft  |
| 4.5 In        | 11.6 lbm/ft | P-110 | SURFACE | 9323 ft |

|                                                |
|------------------------------------------------|
| Remarks                                        |
| LOG WAS TIED INTO A BAKER ATLAS OPEN HOLE LOG. |
| WELL WAS LOGGED WITH 0 psi AT THE WELLHEAD.    |
| SHORT JOINT @ 5575' - 5596'.                   |
| BHT = 248 degF.                                |

Equipment Data

| Run | Trip | Tool       | Series Number | Serial Number | Position    |
|-----|------|------------|---------------|---------------|-------------|
| 1   | 1    | VDL        | 1426XA        | NONE          | CENTRALIZED |
| 1   | 1    | GR/CCL/TEL | 2459XA        | 10404544      | CENTRALIZED |

## *MAIN SECTION PRIMARY PRESENTATION*

| MEASUREMENT TYPE | PARAMETER             | VALUE   | UNITS   | TOP   | BOTTOM   |
|------------------|-----------------------|---------|---------|-------|----------|
| RAL              | Amp Gate Start Far    | 316.900 | usec    | 8.762 | 9236.000 |
| RAL              | Amp Gate Start Near   | 200.391 | usec    | 8.762 | 9236.000 |
| RAL              | Amp Gate Start Radial | 200.391 | usec    | 8.762 | 9236.000 |
| RAL              | Amp Gate Width Far    | 30.000  | usec    | 8.762 | 9236.000 |
| RAL              | Amp Gate Width Near   | 30.000  | usec    | 8.762 | 9236.000 |
| RAL              | Amp Gate Width Radial | 30.000  | usec    | 8.762 | 9236.000 |
| RAL              | casing od             | 4.500   | inches  | 8.762 | 9236.000 |
| RAL              | casing wt             | 11.600  | lbm/ft  | 8.762 | 9236.000 |
| RAL              | FB Start Far          | 291.900 | usec    | 8.762 | 9236.000 |
| RAL              | FB Start Near         | 175.391 | usec    | 8.762 | 9236.000 |
| RAL              | FB Start Radial       | 175.391 | usec    | 8.762 | 9236.000 |
| RAL              | FB Thresh Far         | 15.000  | mv      | 8.762 | 9236.000 |
| RAL              | FB Thresh Near        | 10.000  | mv      | 8.762 | 9236.000 |
| RAL              | FB Thresh Radial      | 10.000  | mv      | 8.762 | 9236.000 |
| RAL              | Fluid Travel Time     | 200.000 | usec/ft | 8.762 | 9235.918 |

### DEPTH OFFSETS

(for Acquired Curves)

| SERIES | DEPTH OFFSET | ACQUIRED CURVES |      |      |      |      |      |
|--------|--------------|-----------------|------|------|------|------|------|
| 1426XA | -15.360      | ACAL            | ANR  | AR1  | AR2  | AR3  | AR4  |
|        |              | AR5             | AR6  | AR7  | AR8  | CHV  | FPR2 |
|        |              | FPR3            | FPR5 | TT3  | TTR1 | TTR2 | TTR3 |
|        |              | TTR4            | TTR5 | TTR6 | TTR7 | TTR8 | XAMP |
|        |              | TT5             |      |      |      |      |      |
| 1426XA | -14.360      | AFAR            | SIG  | TT5  |      |      |      |
| 2459XA | -7.250       | CCL             |      |      |      |      |      |
| 2459XA | -5.700       | CD              |      |      |      |      |      |

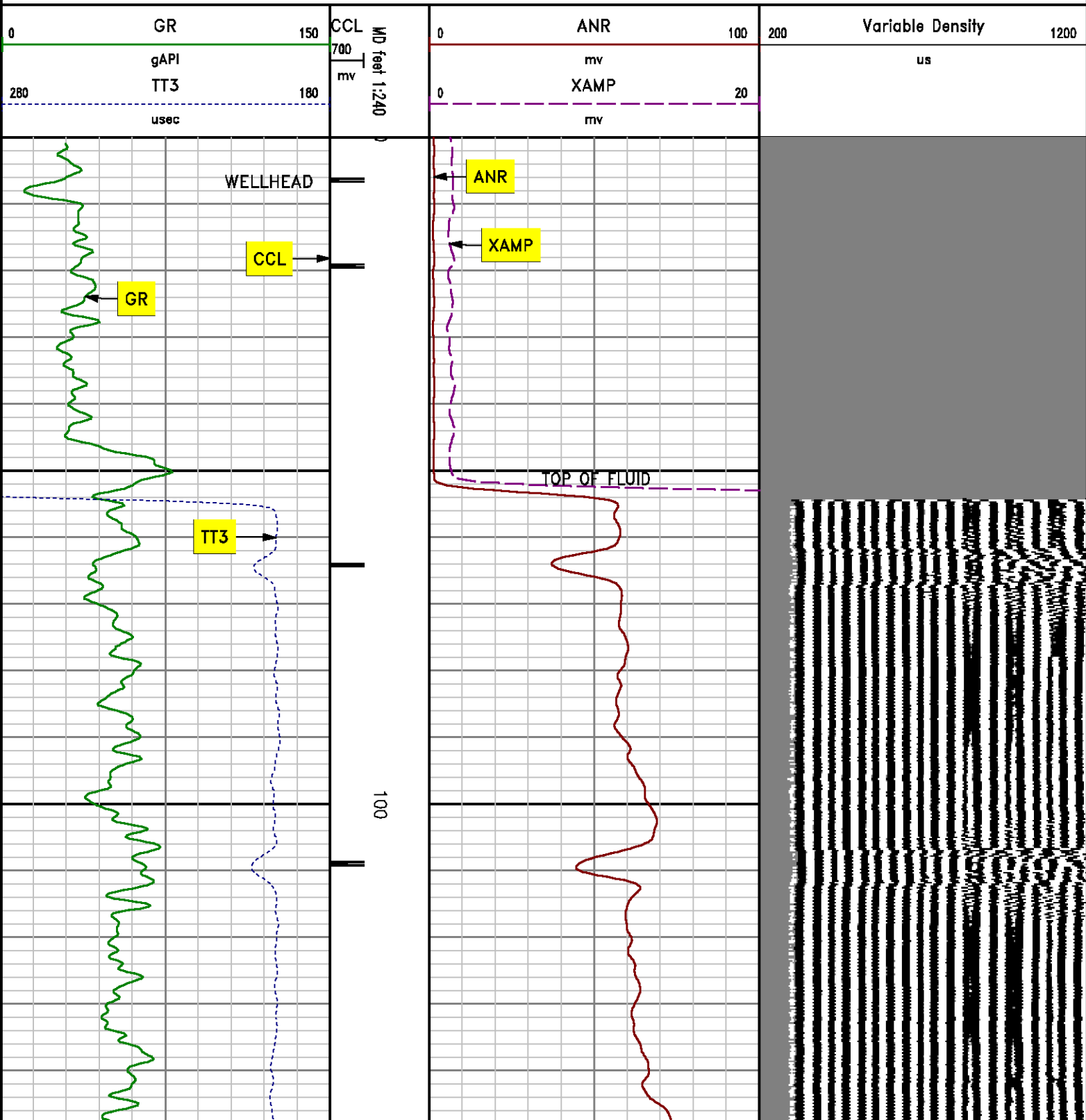
2459XA  
2459XA

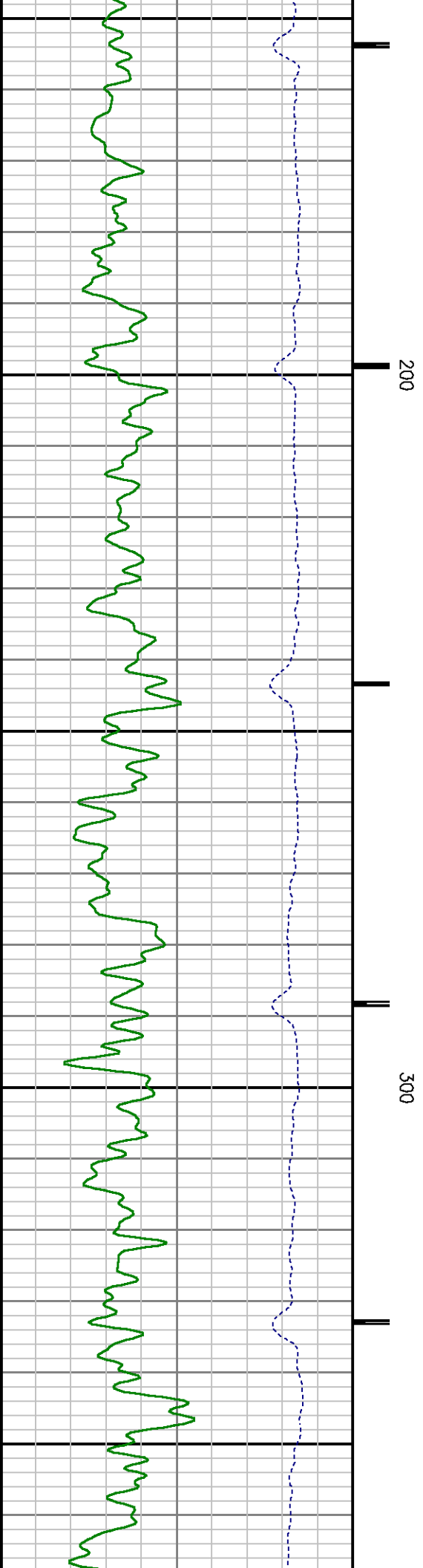
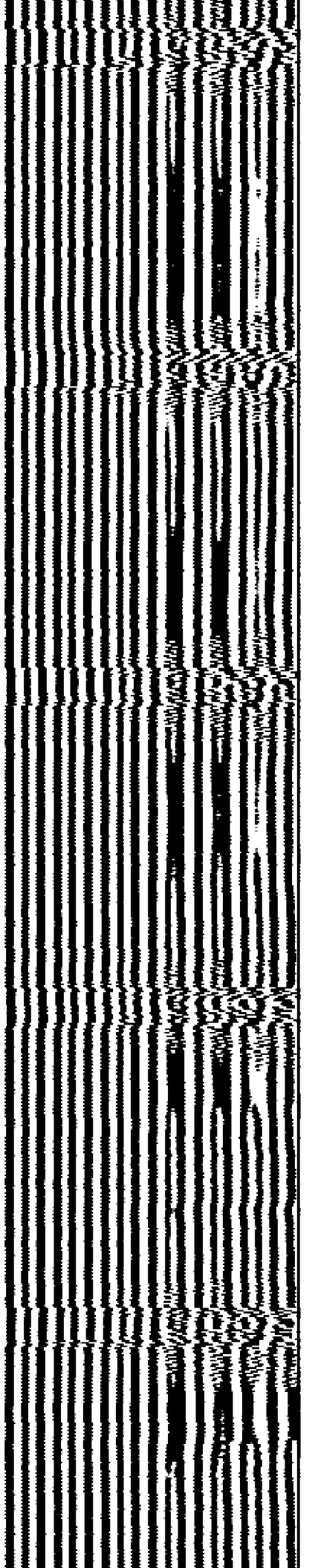
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0.000

GR  
NEU

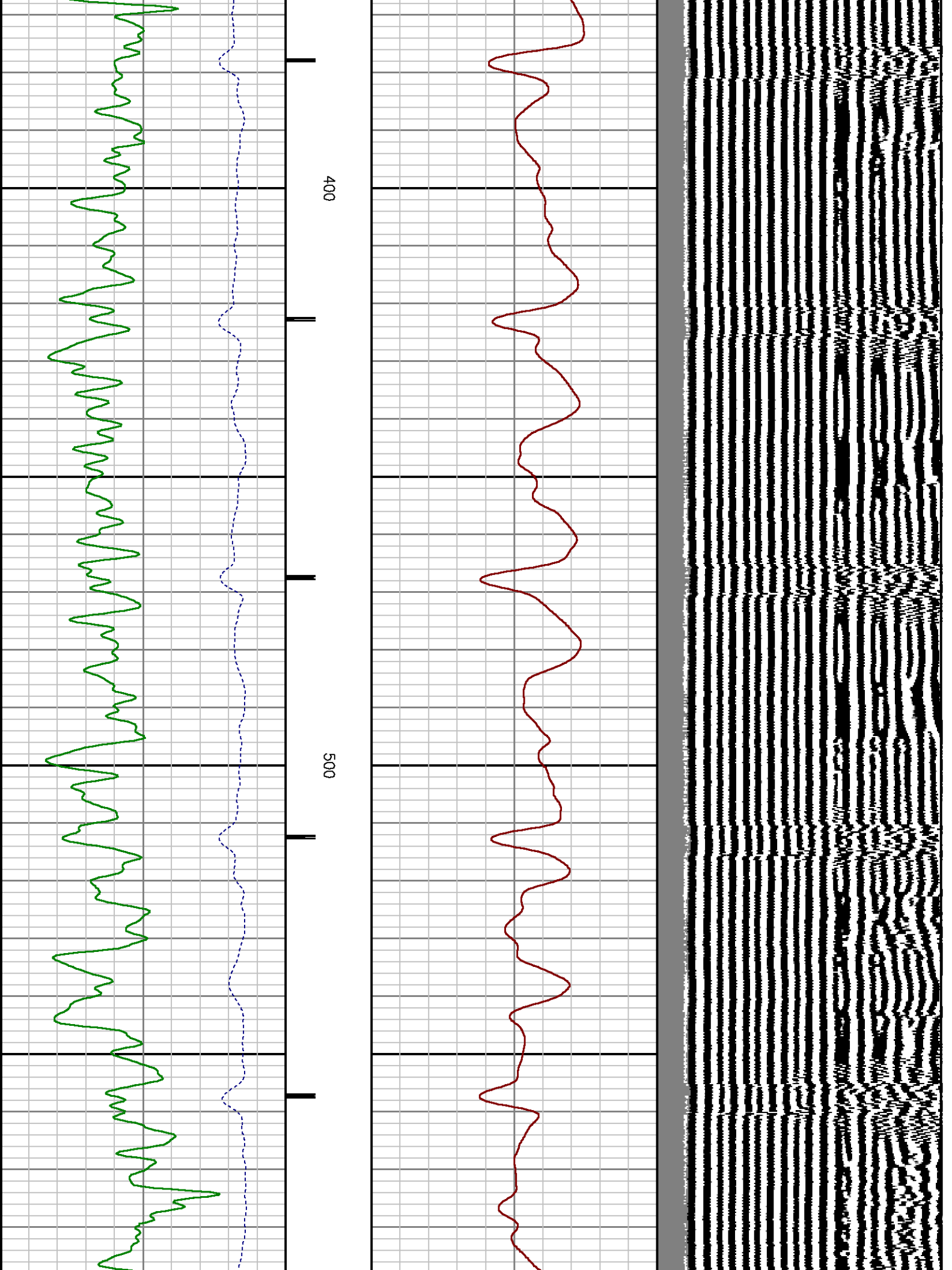
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Plotted by : PlotMgr, v5.4.504

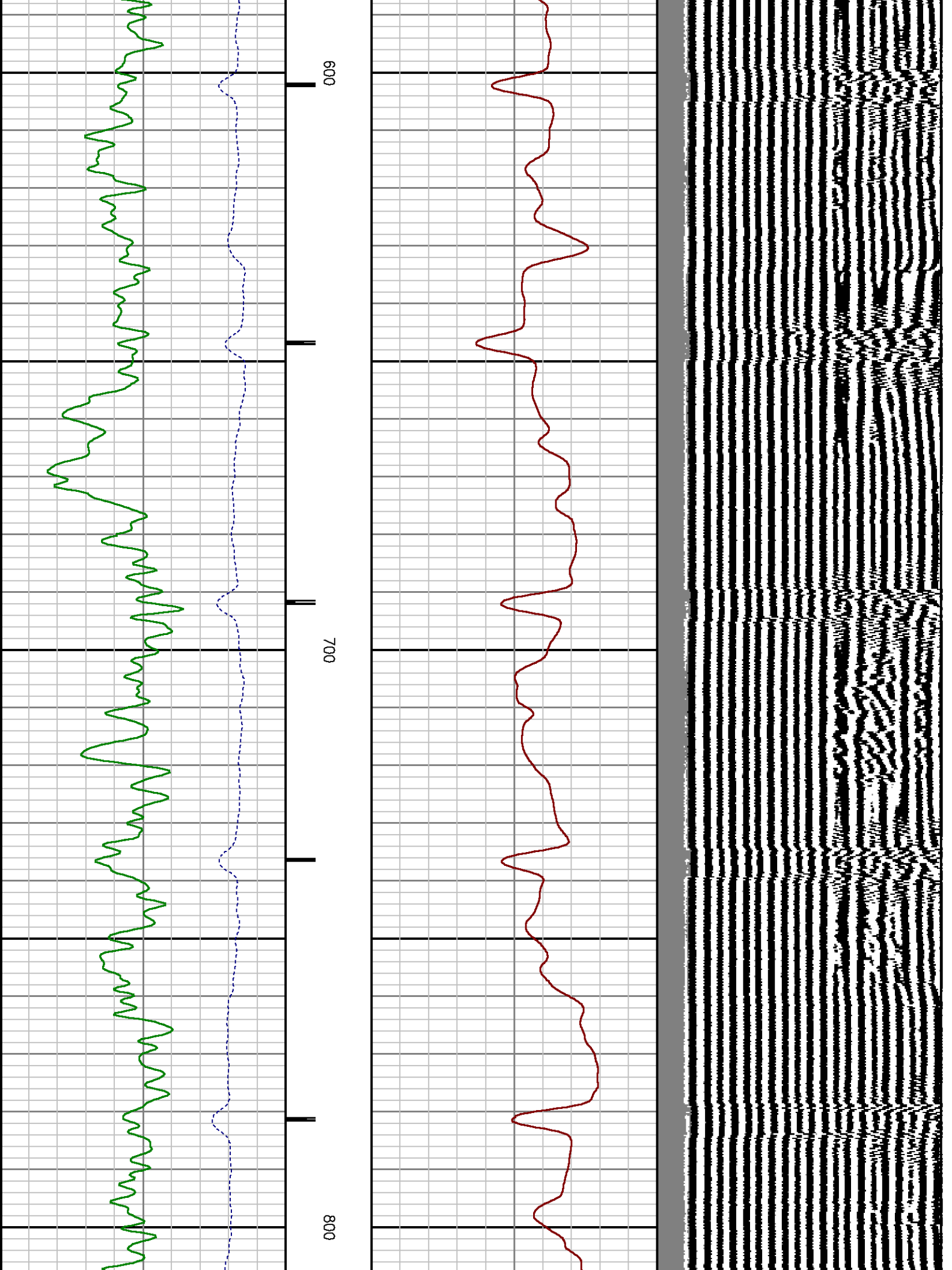
Company : WILLIAMS PRODUCTION COMPANY  
Well : PA 344-17  
File Name : d:\welldata\344cbl\cbl\_main.xtf  
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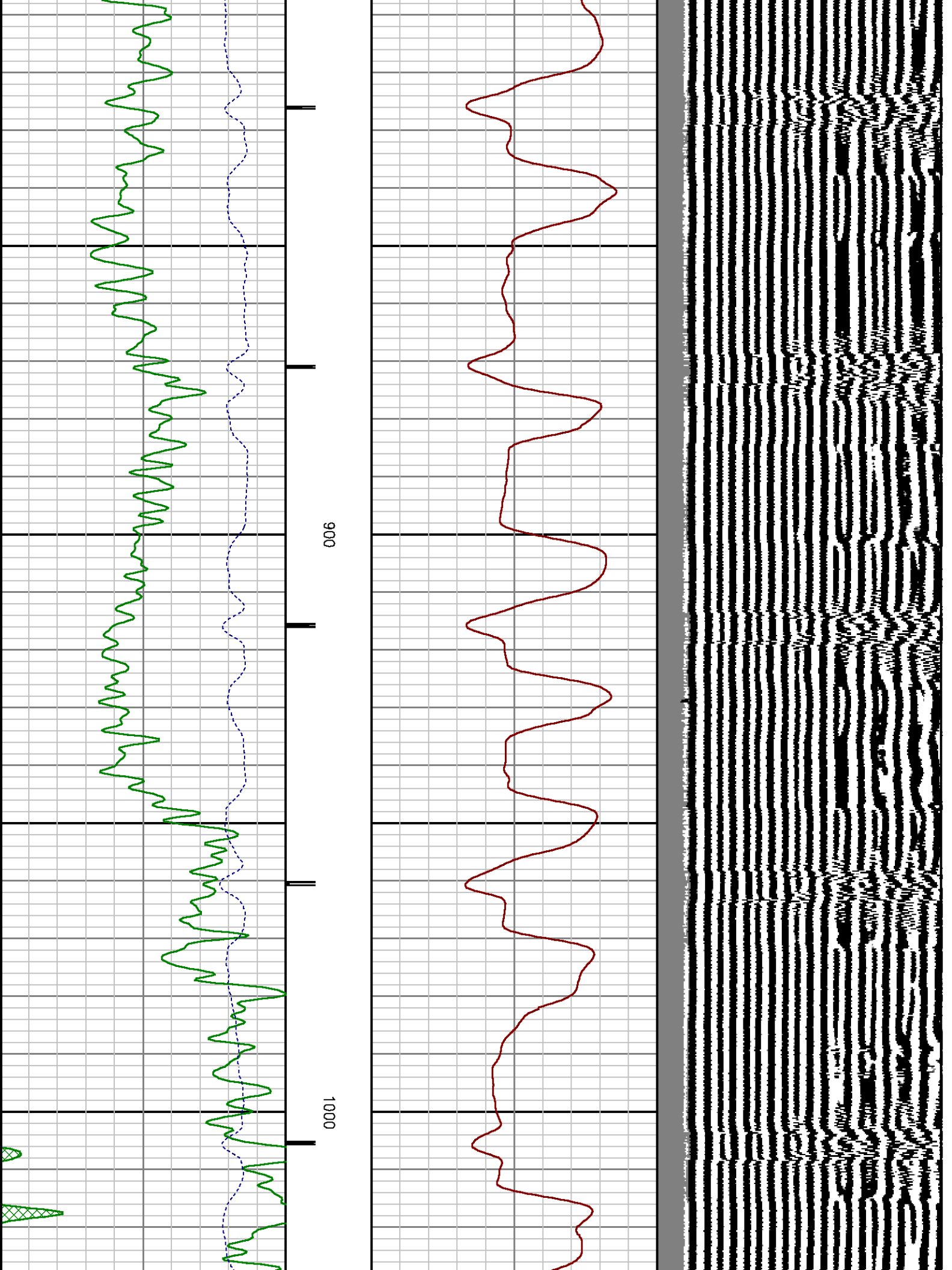


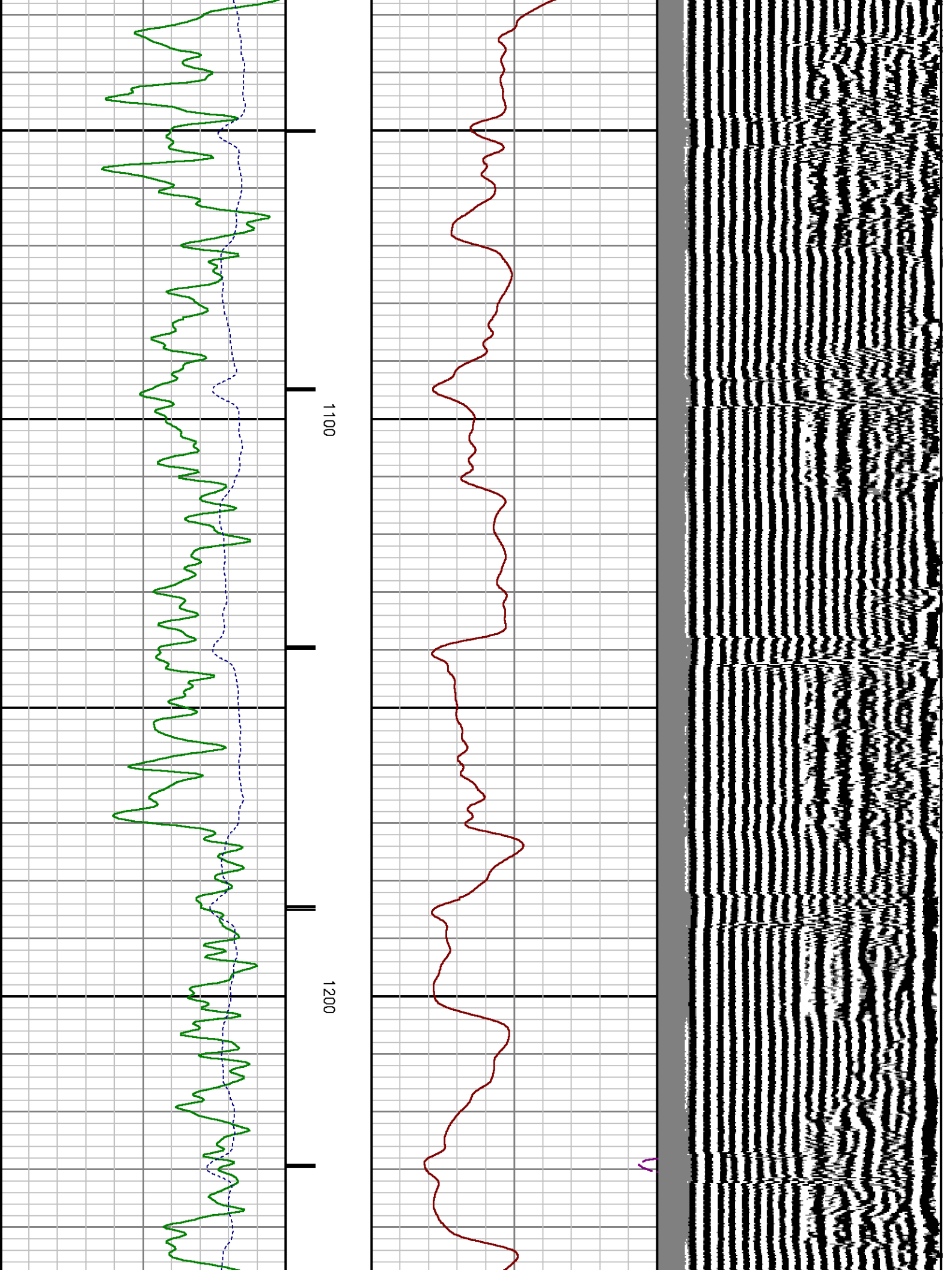


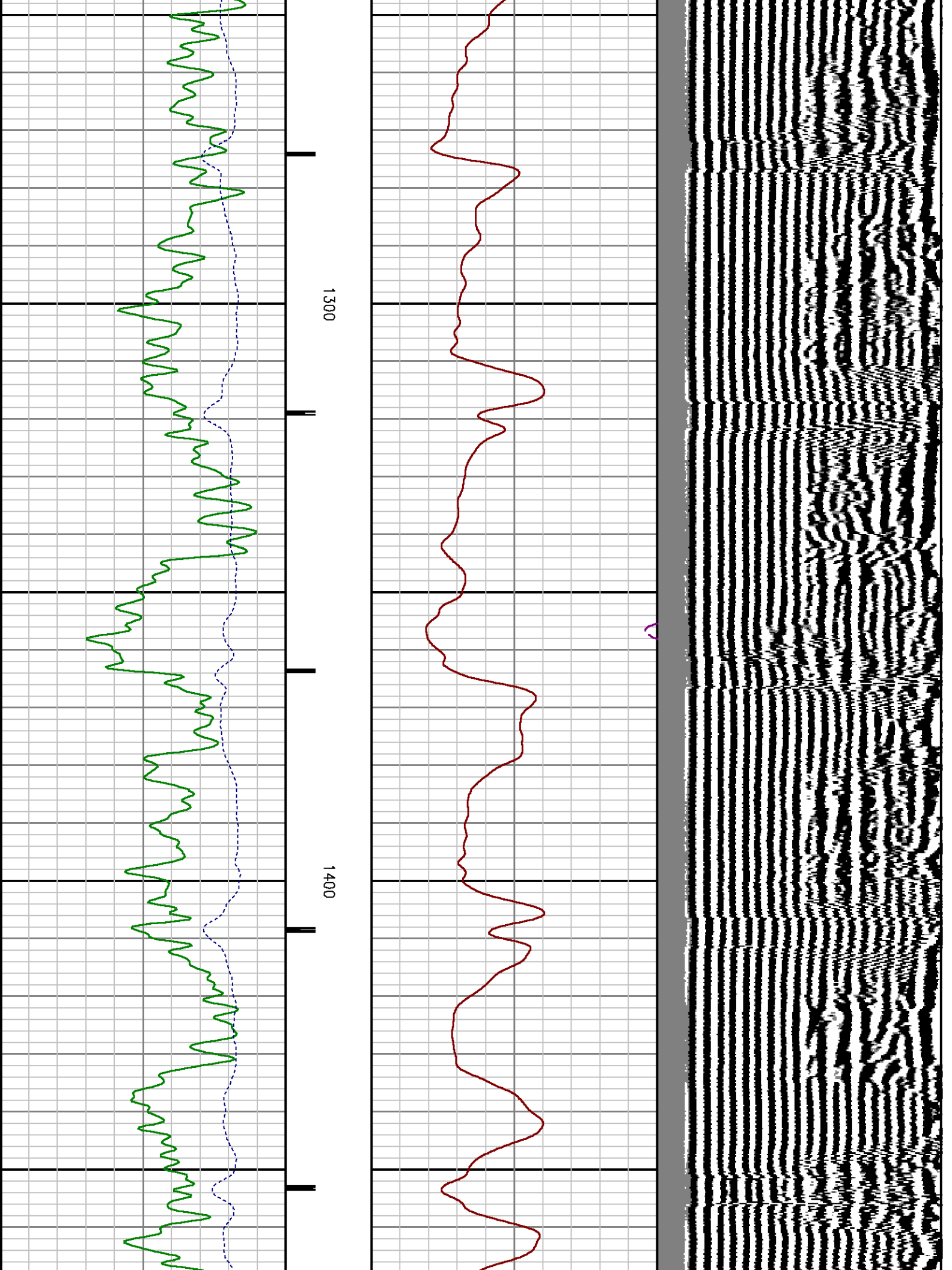


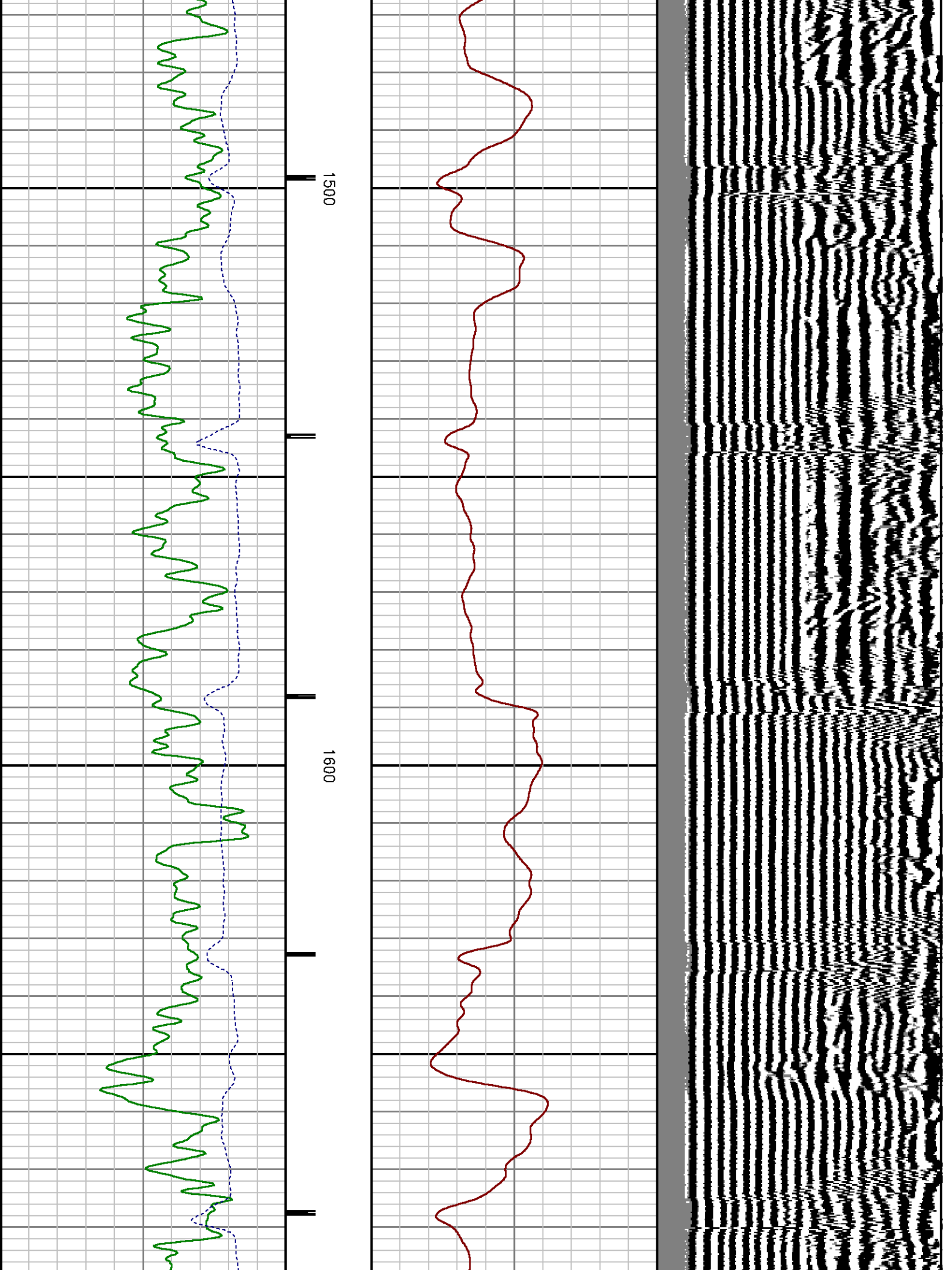




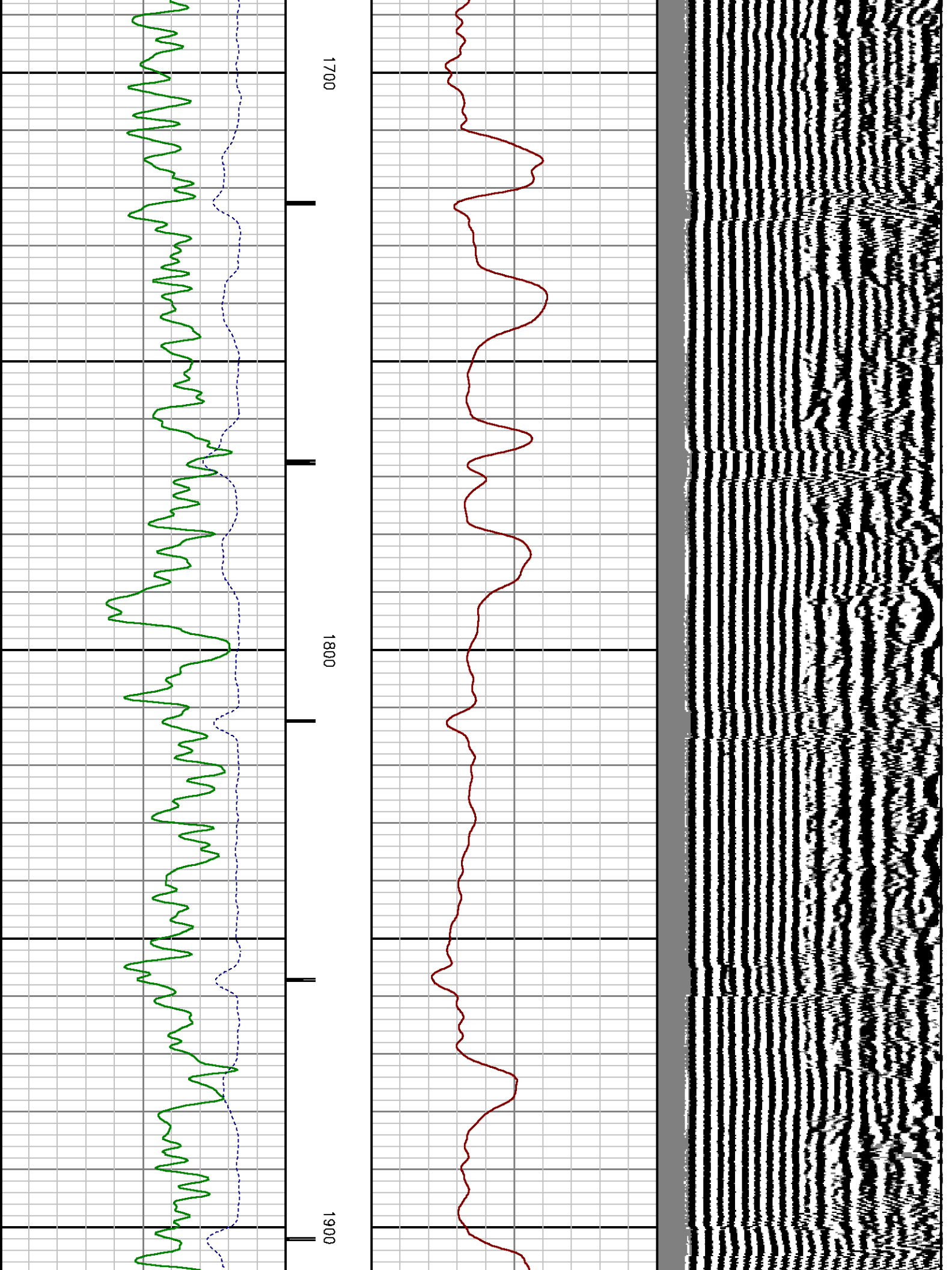


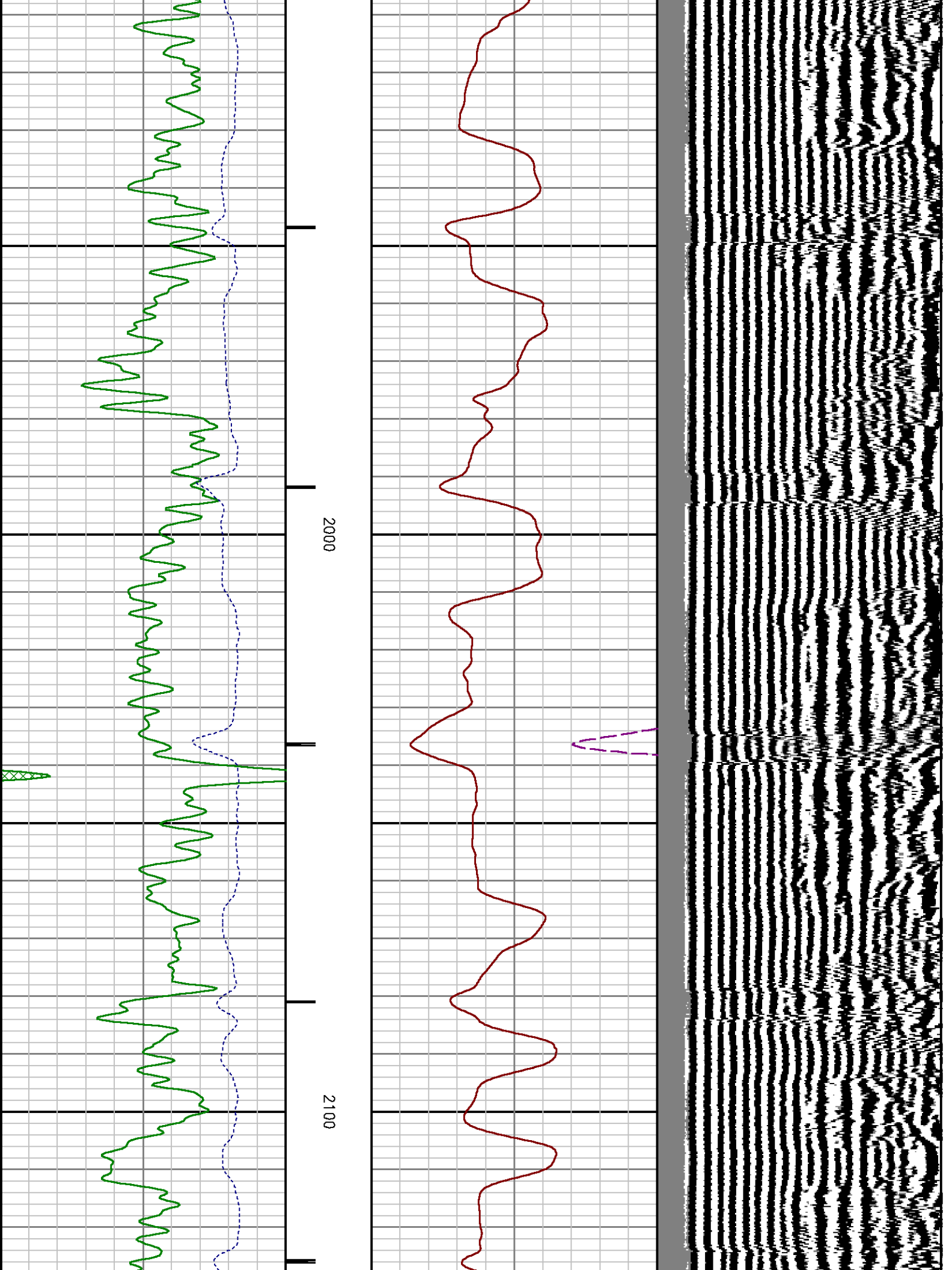




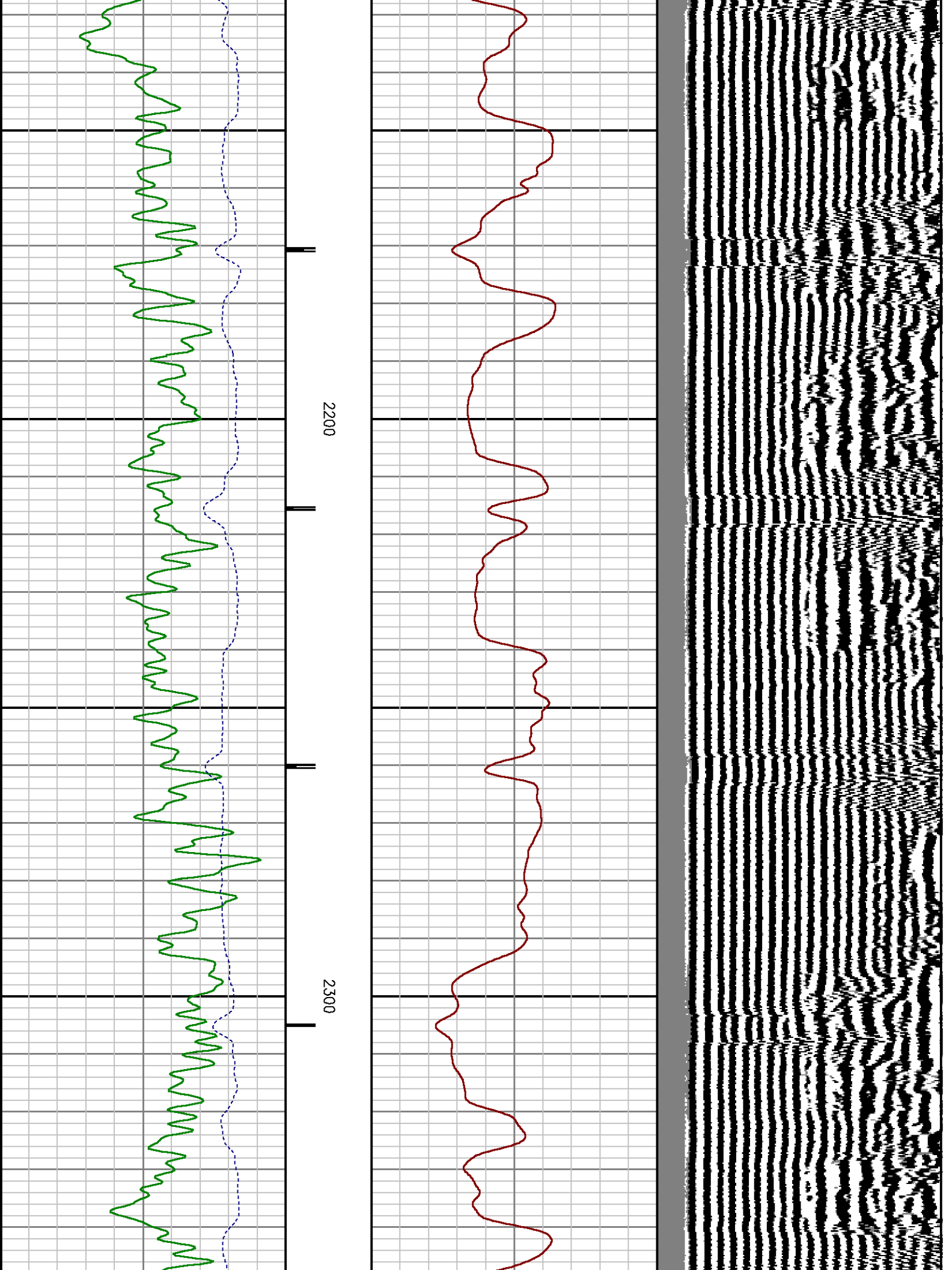


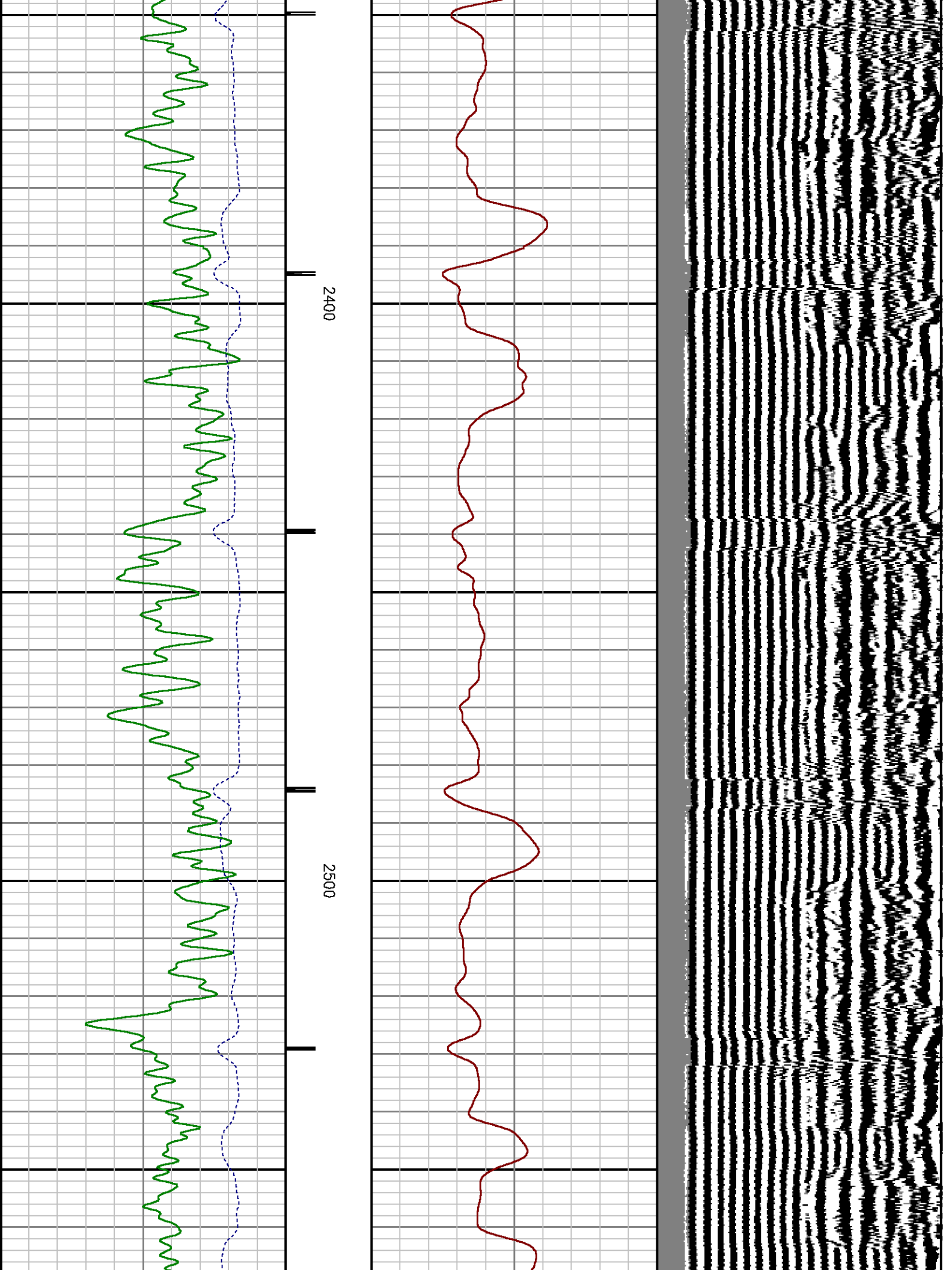


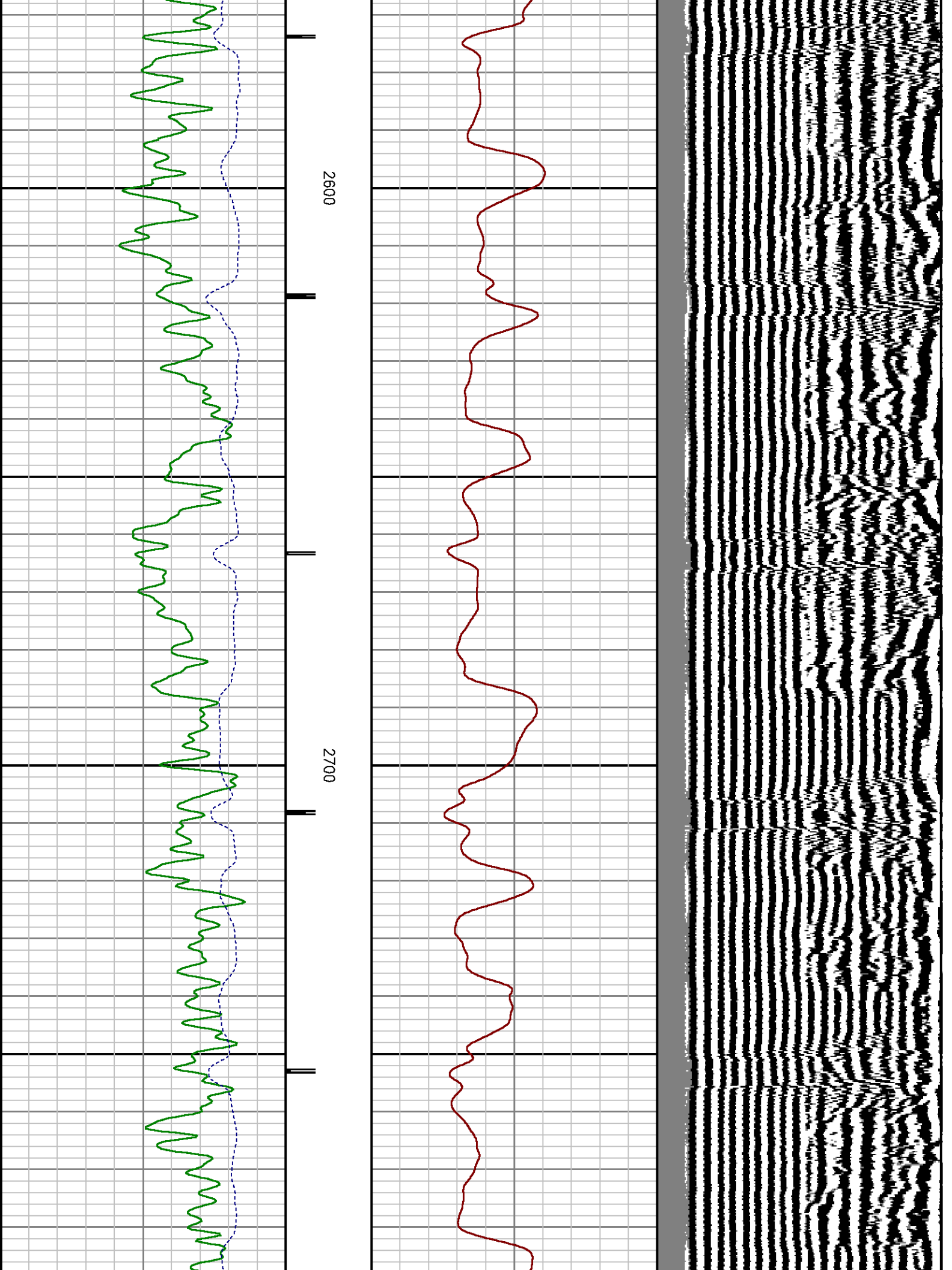


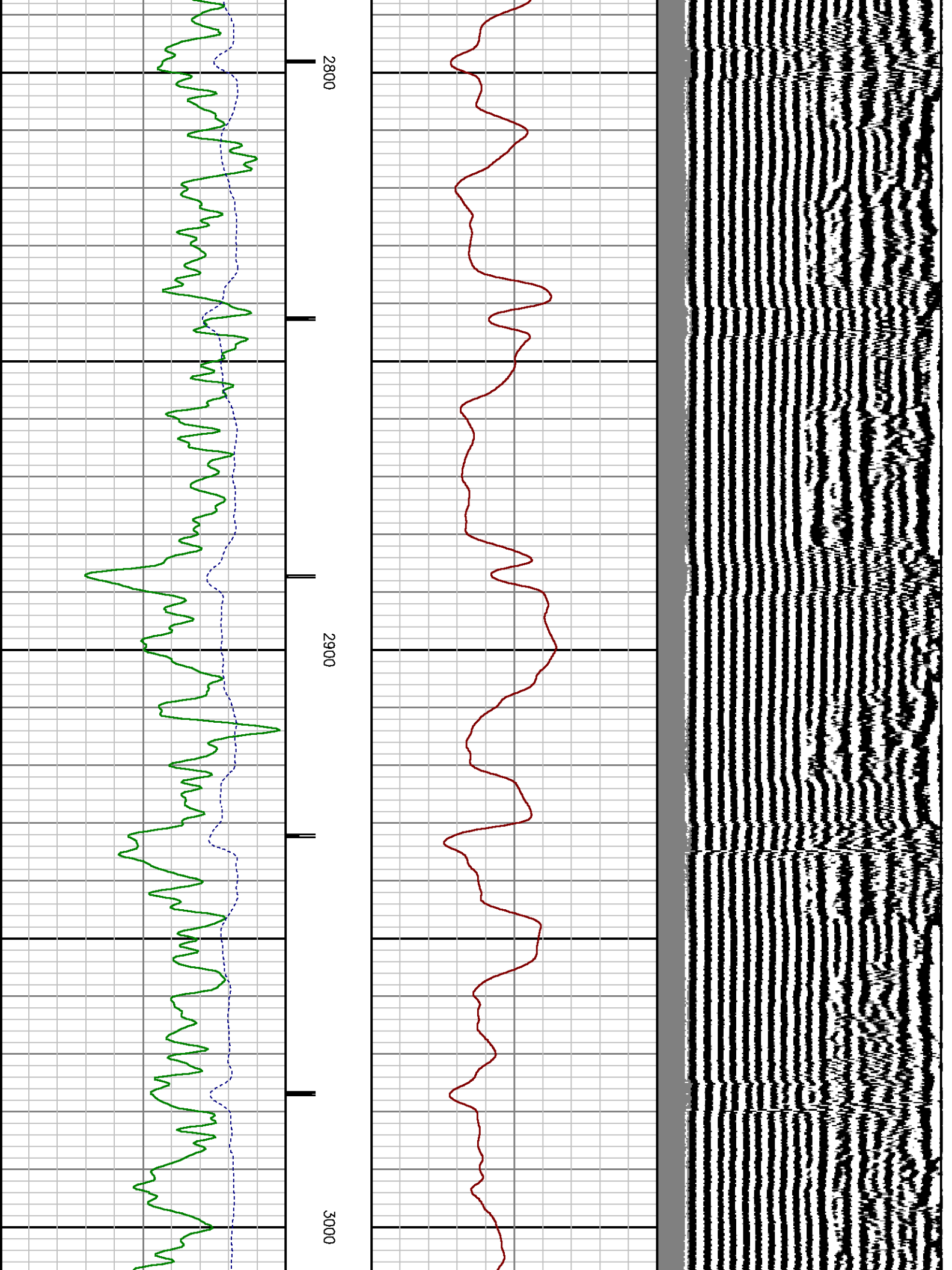


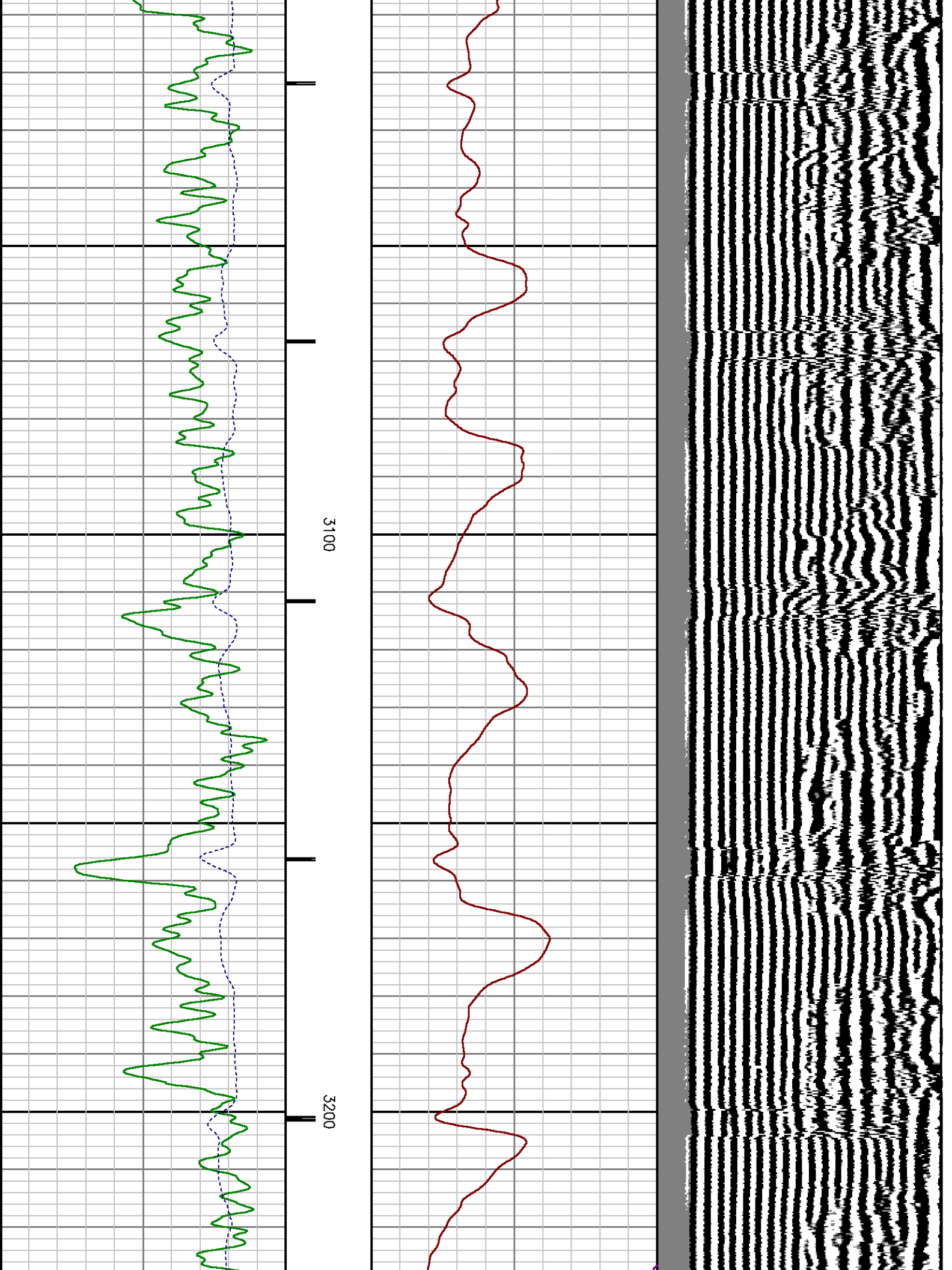




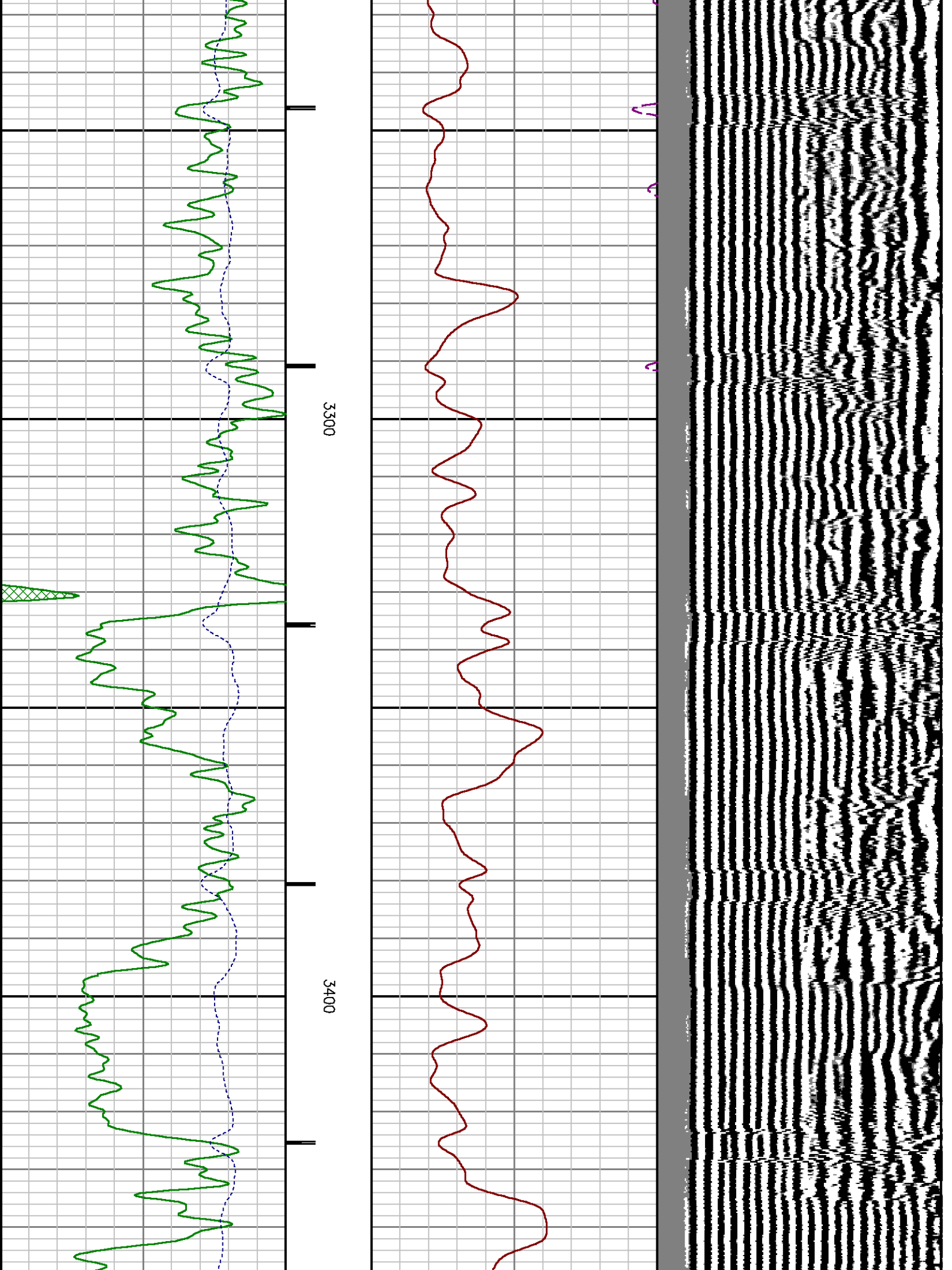


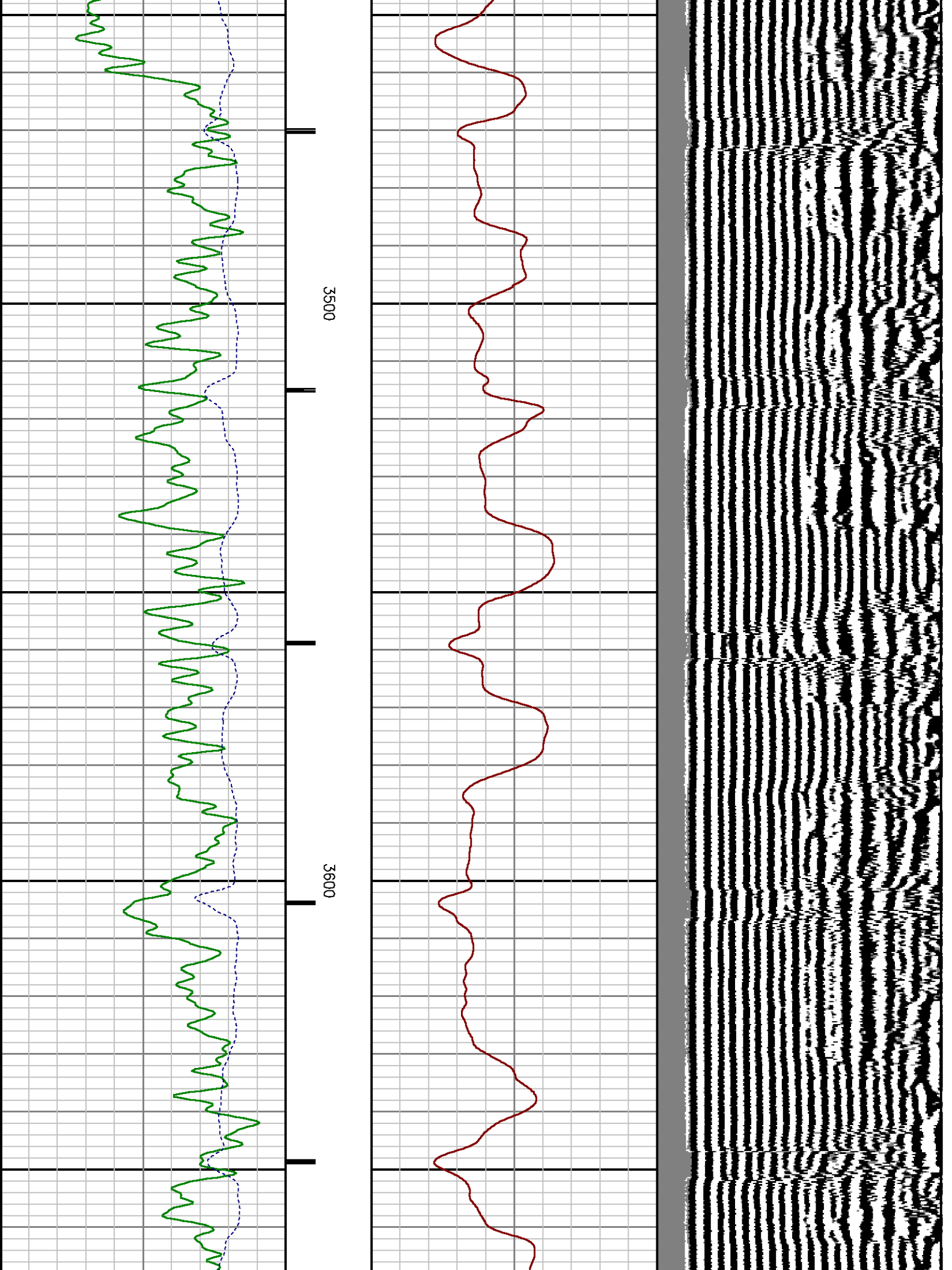


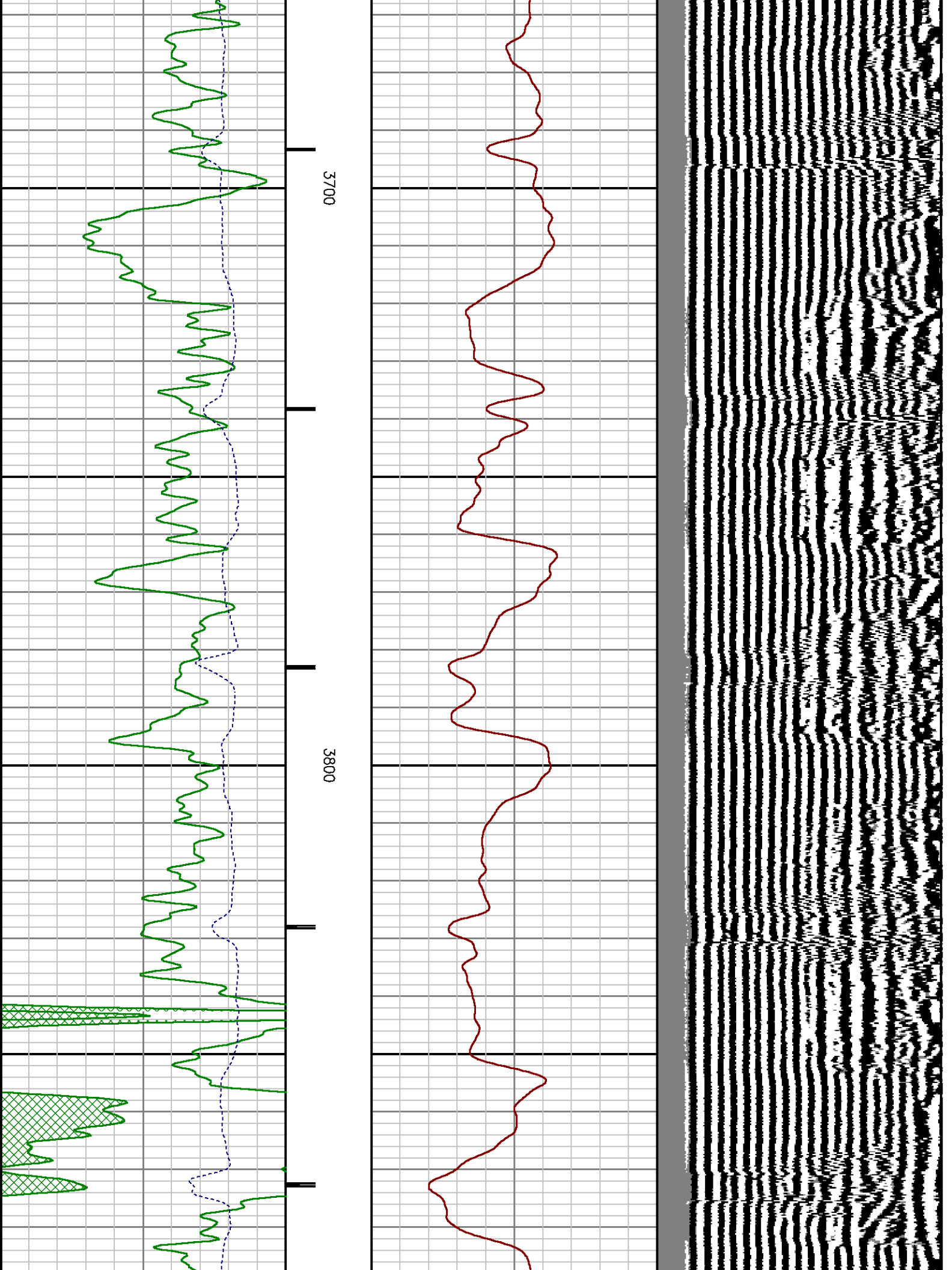




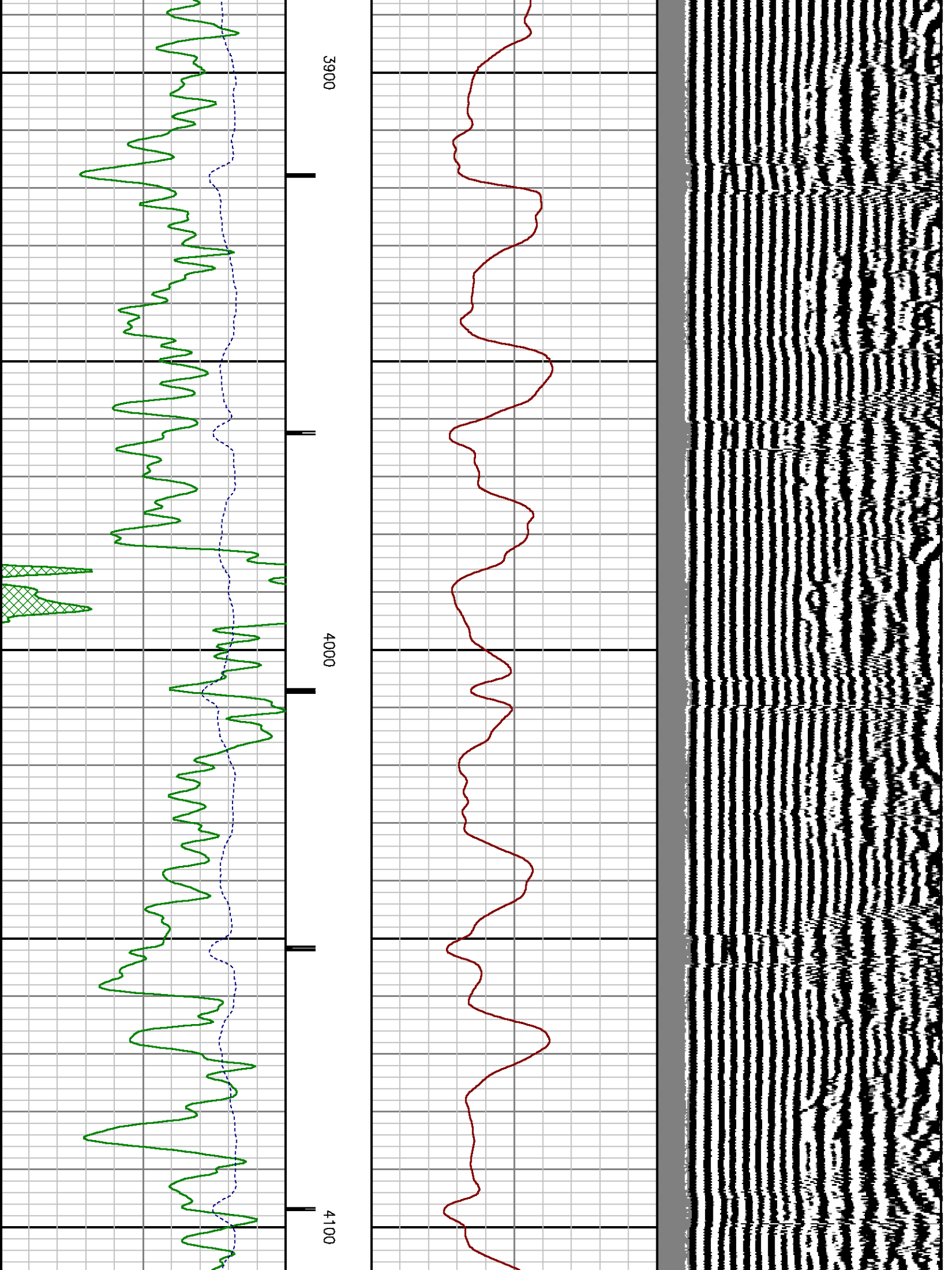


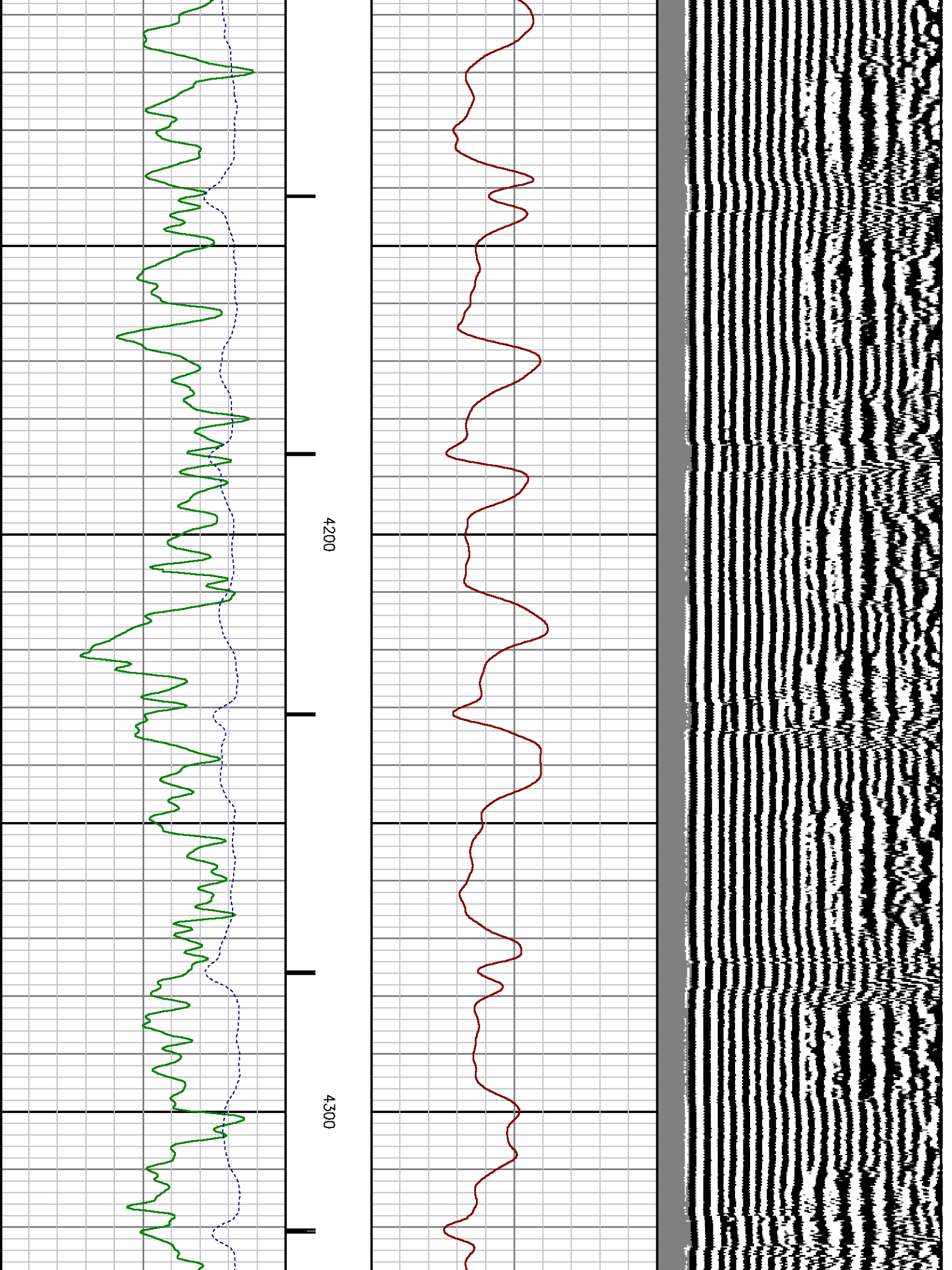


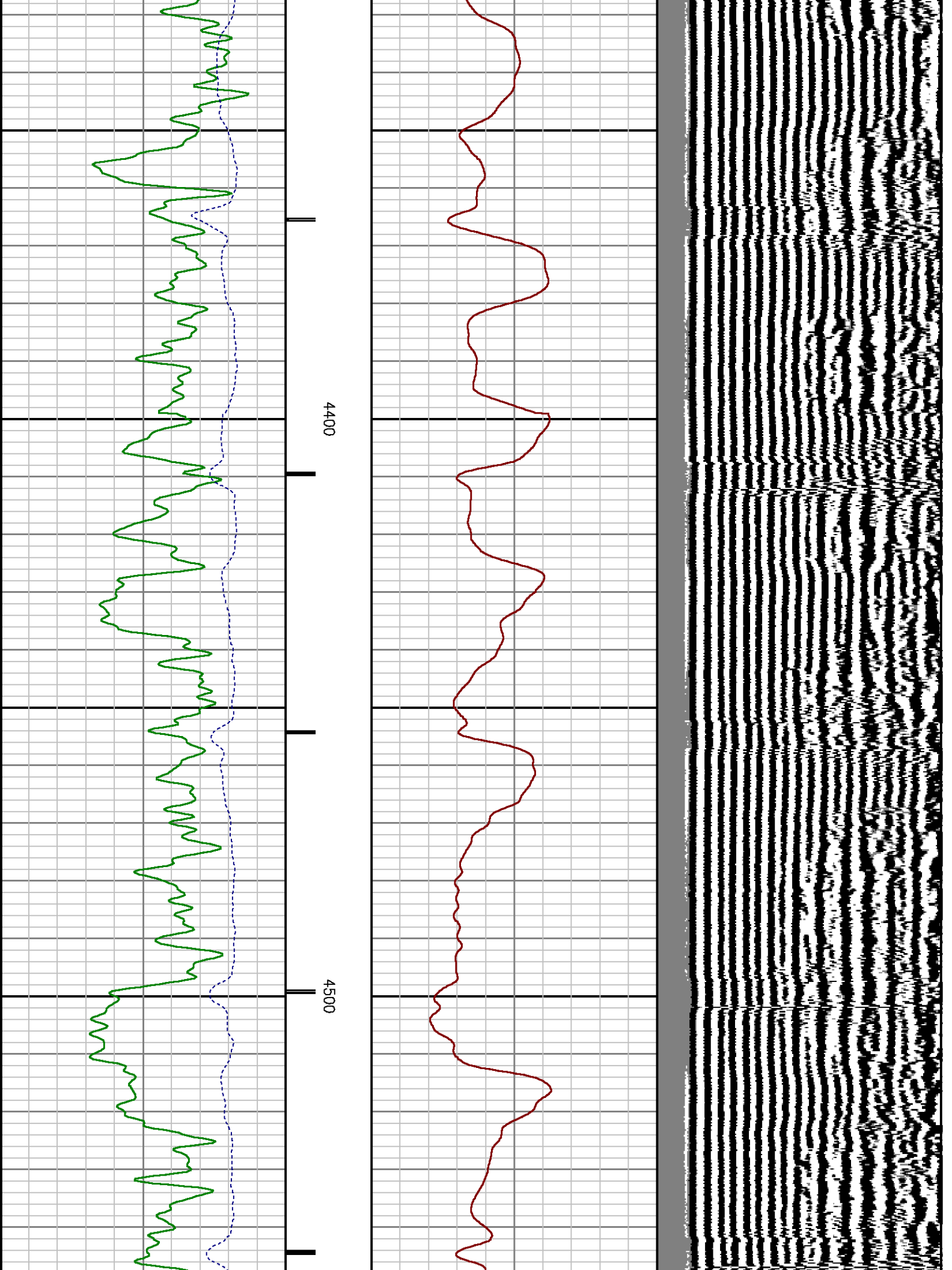


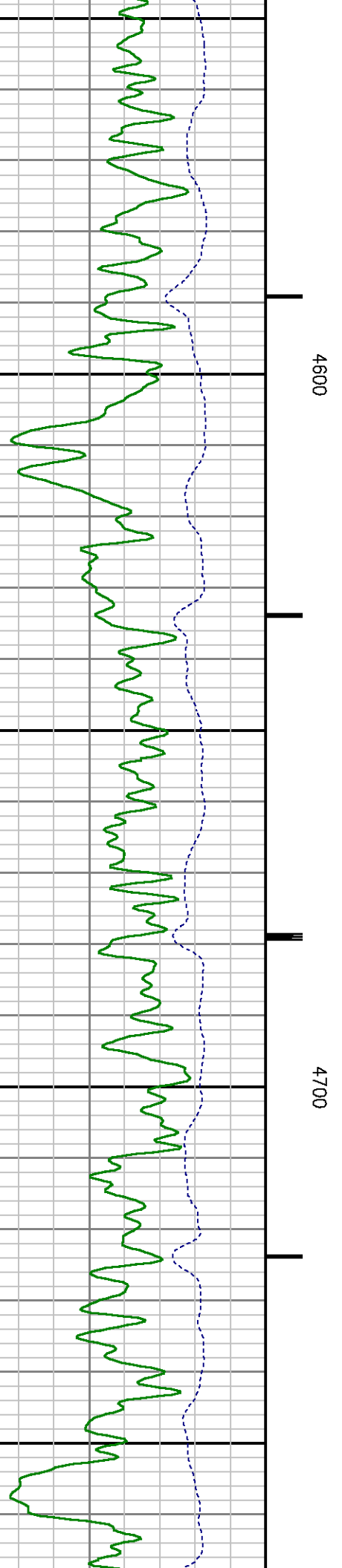
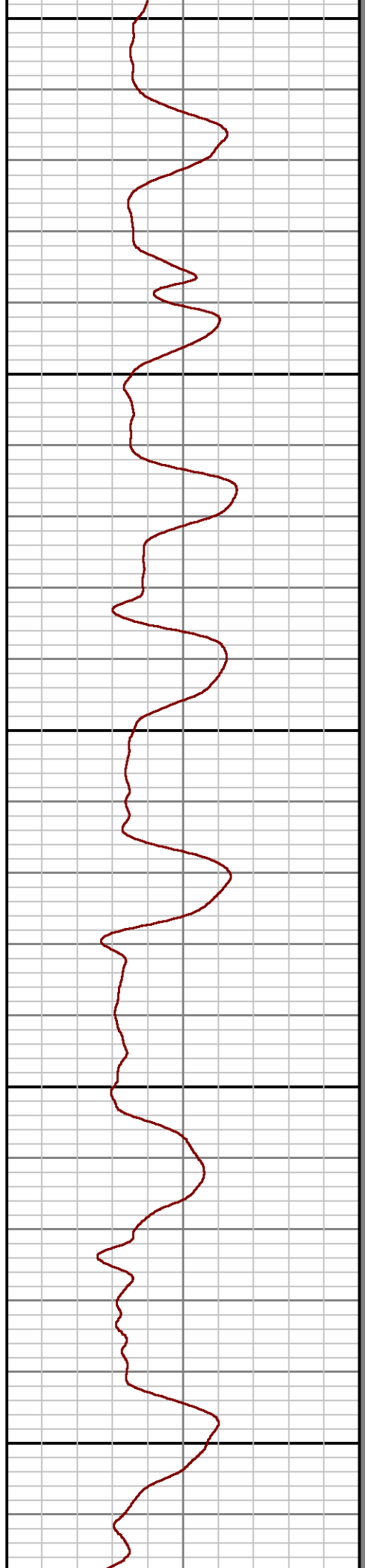
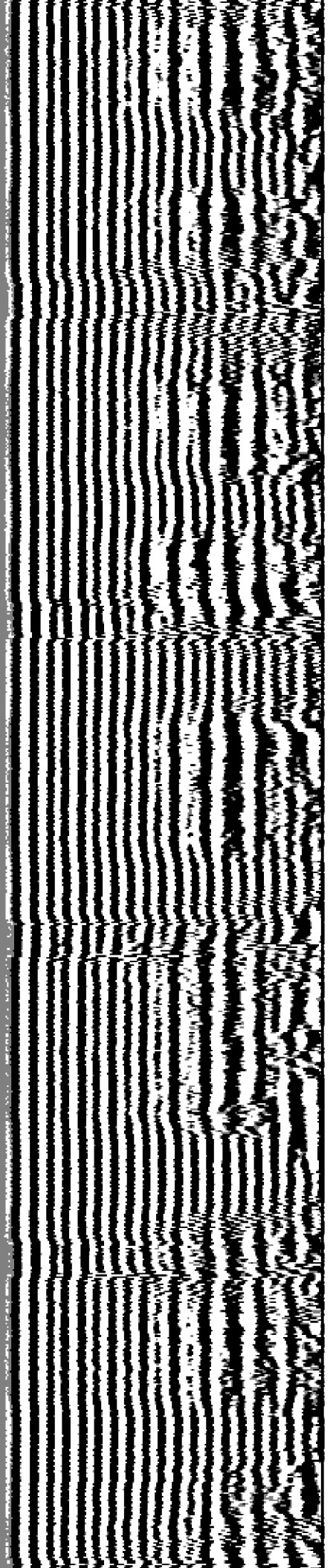


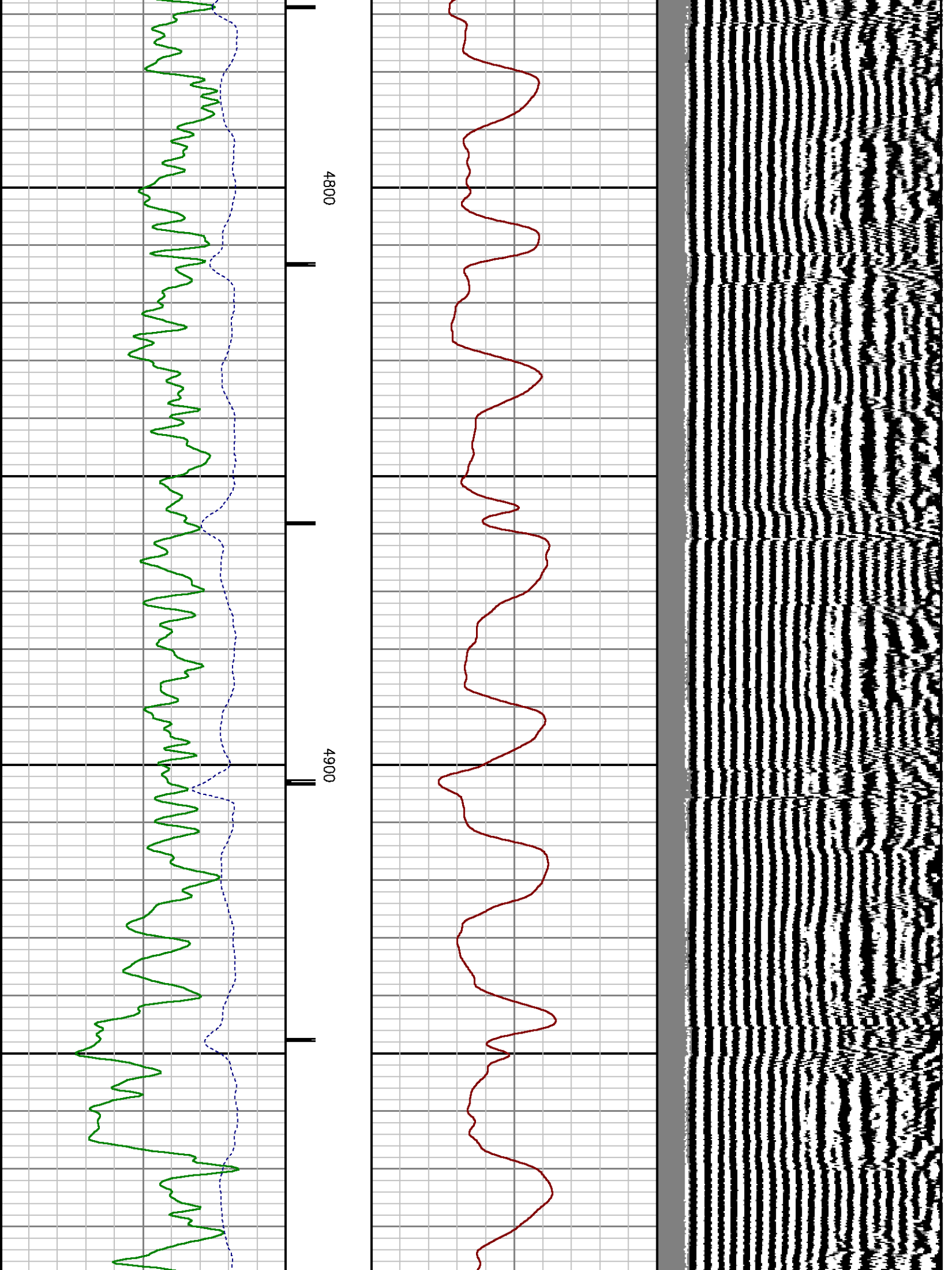




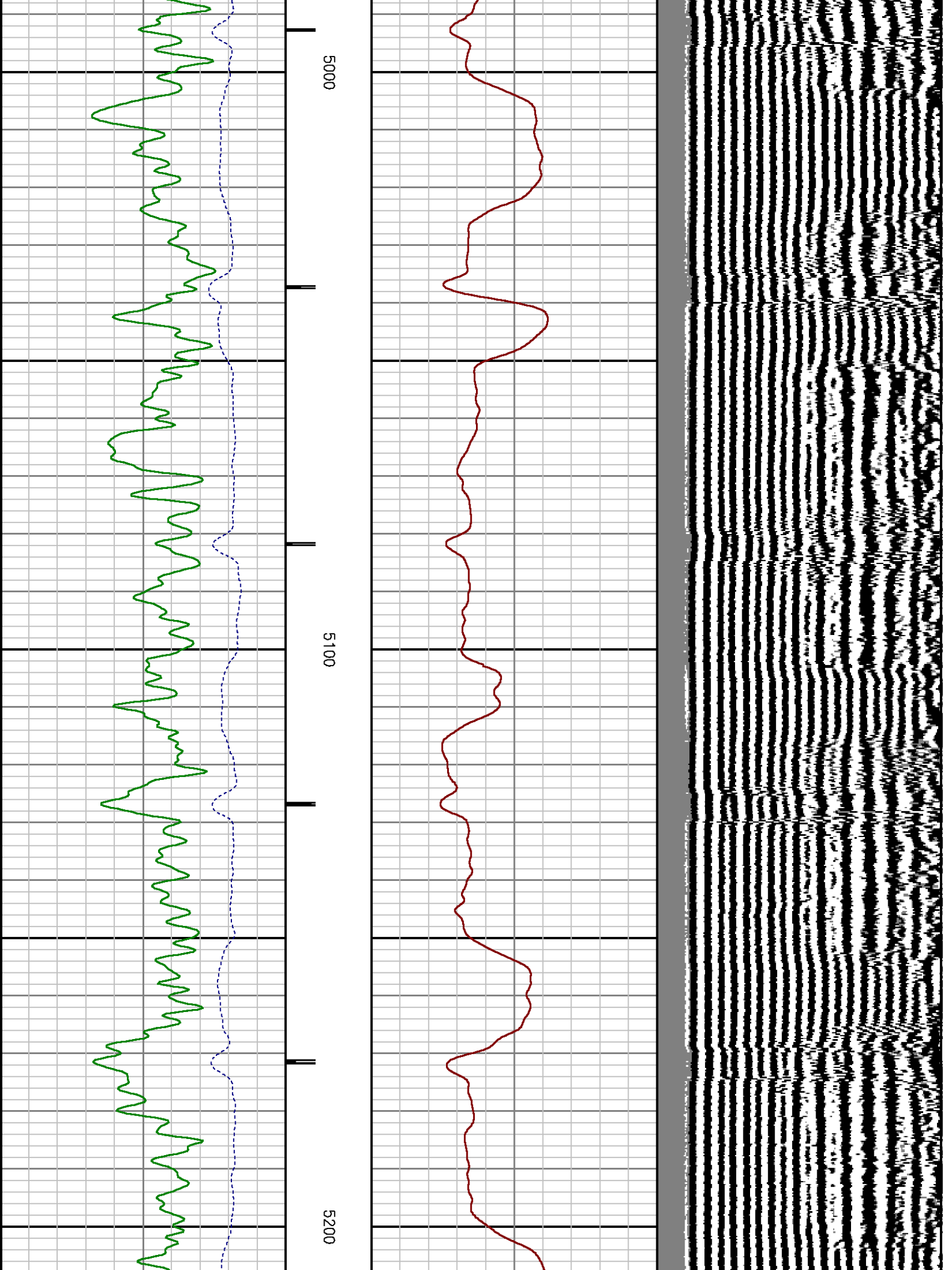


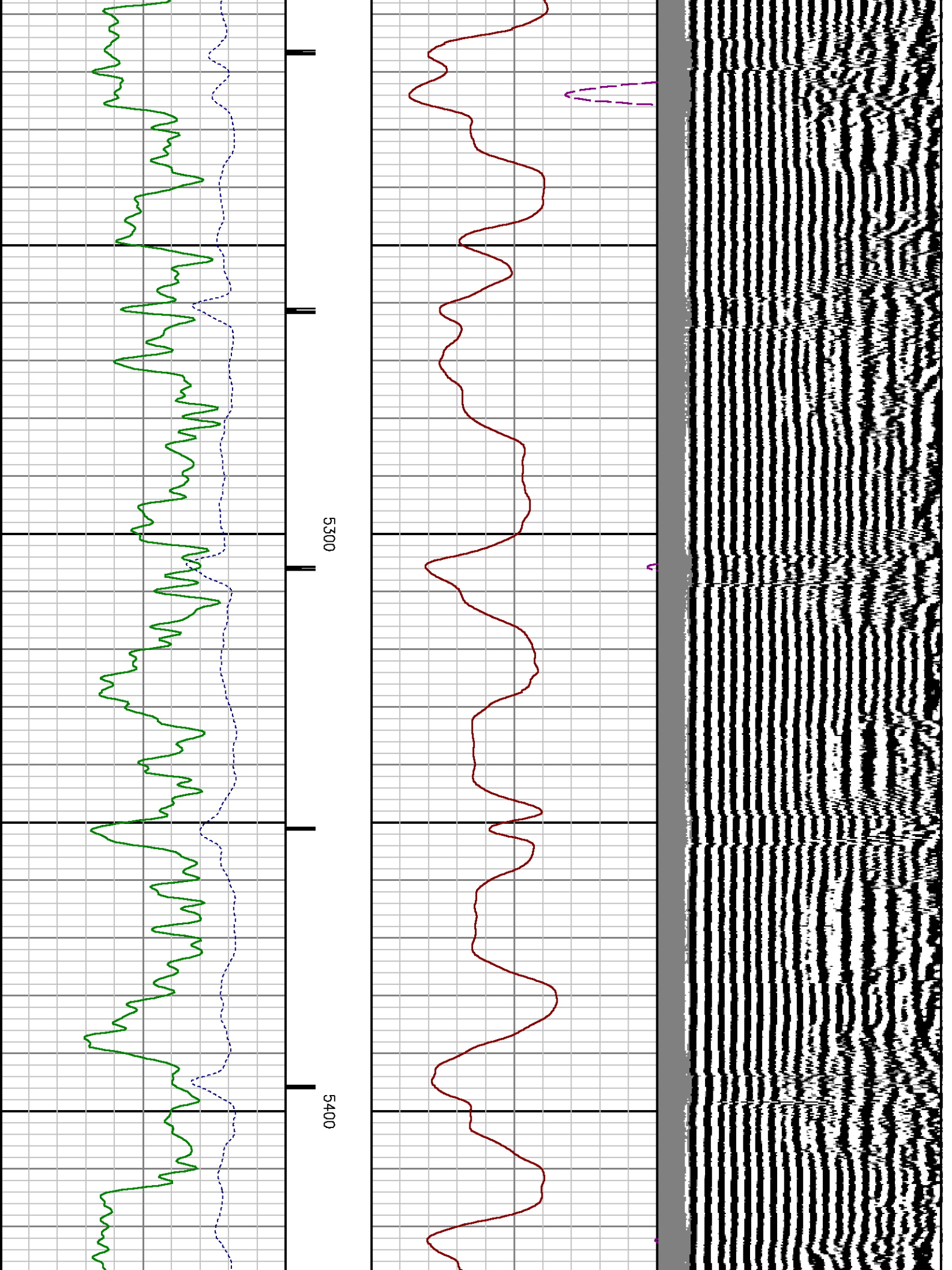


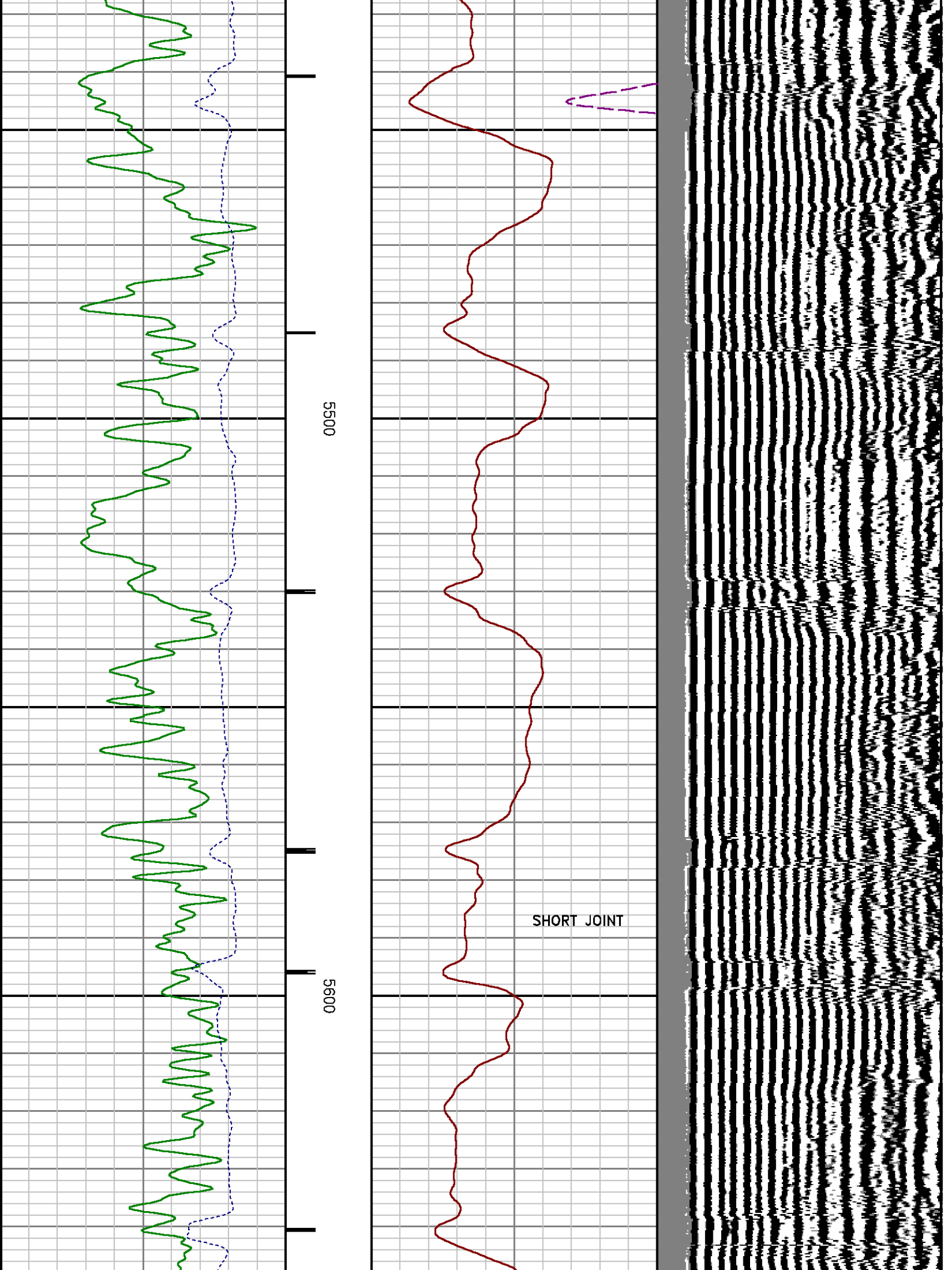




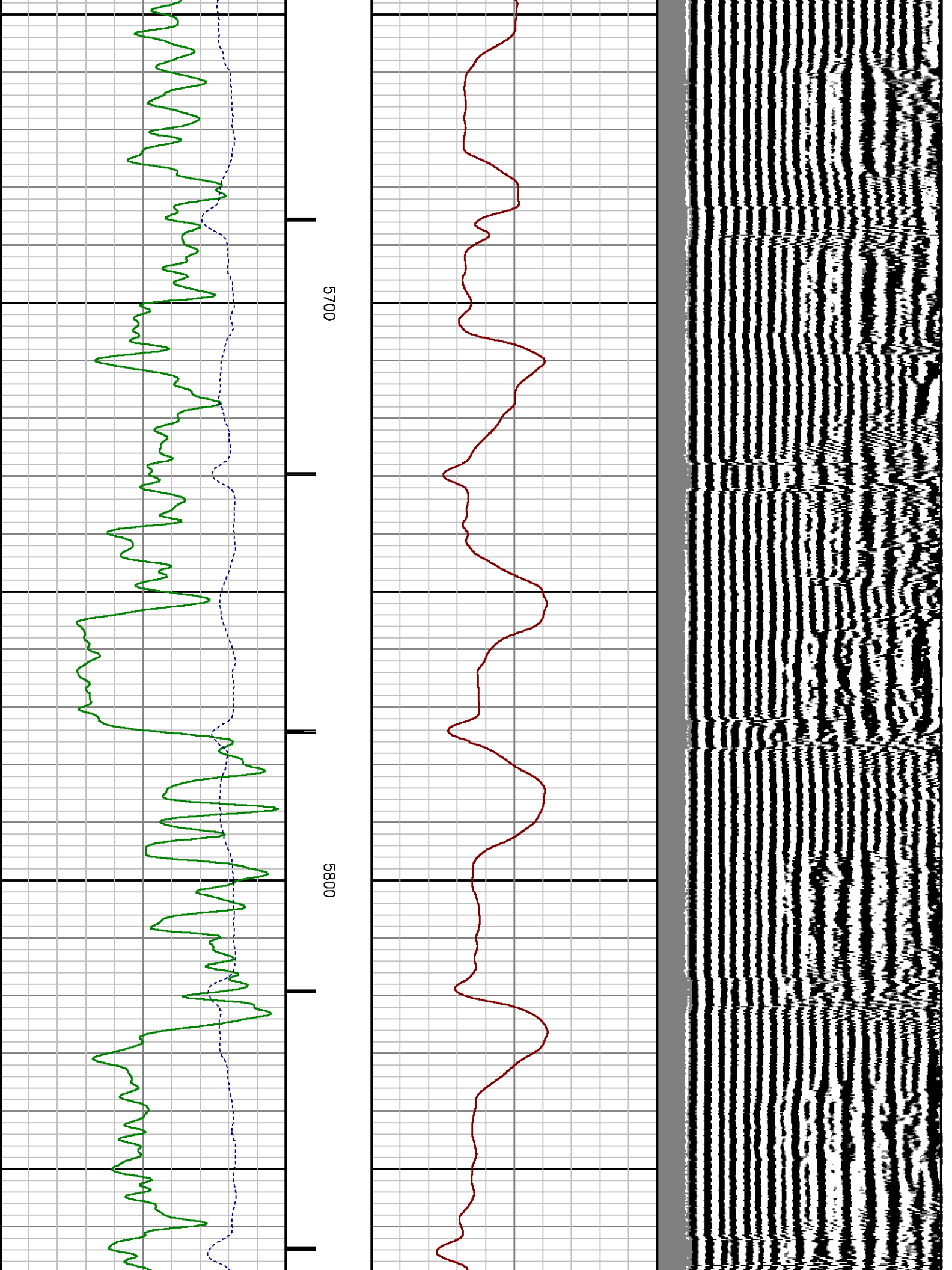


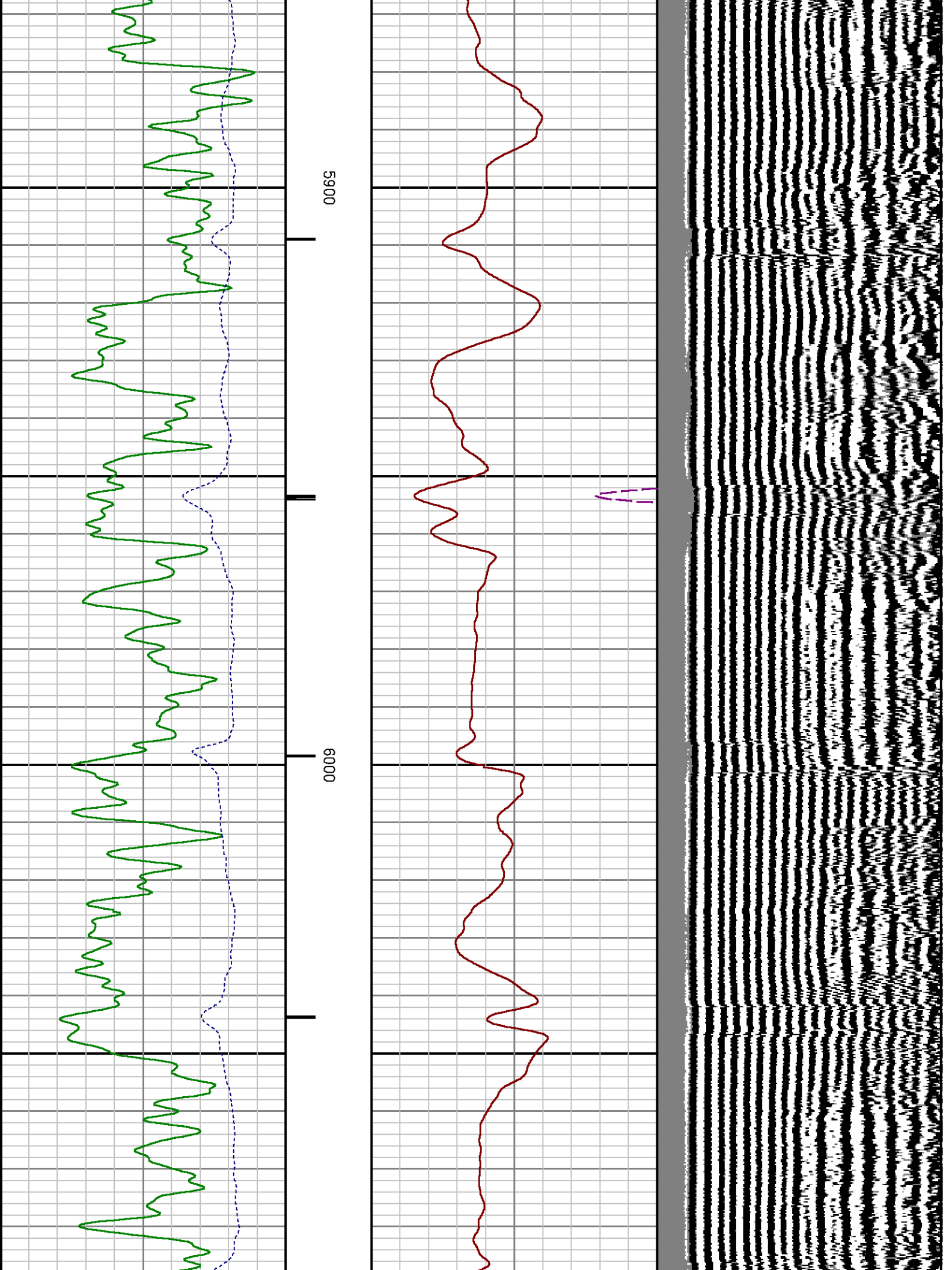


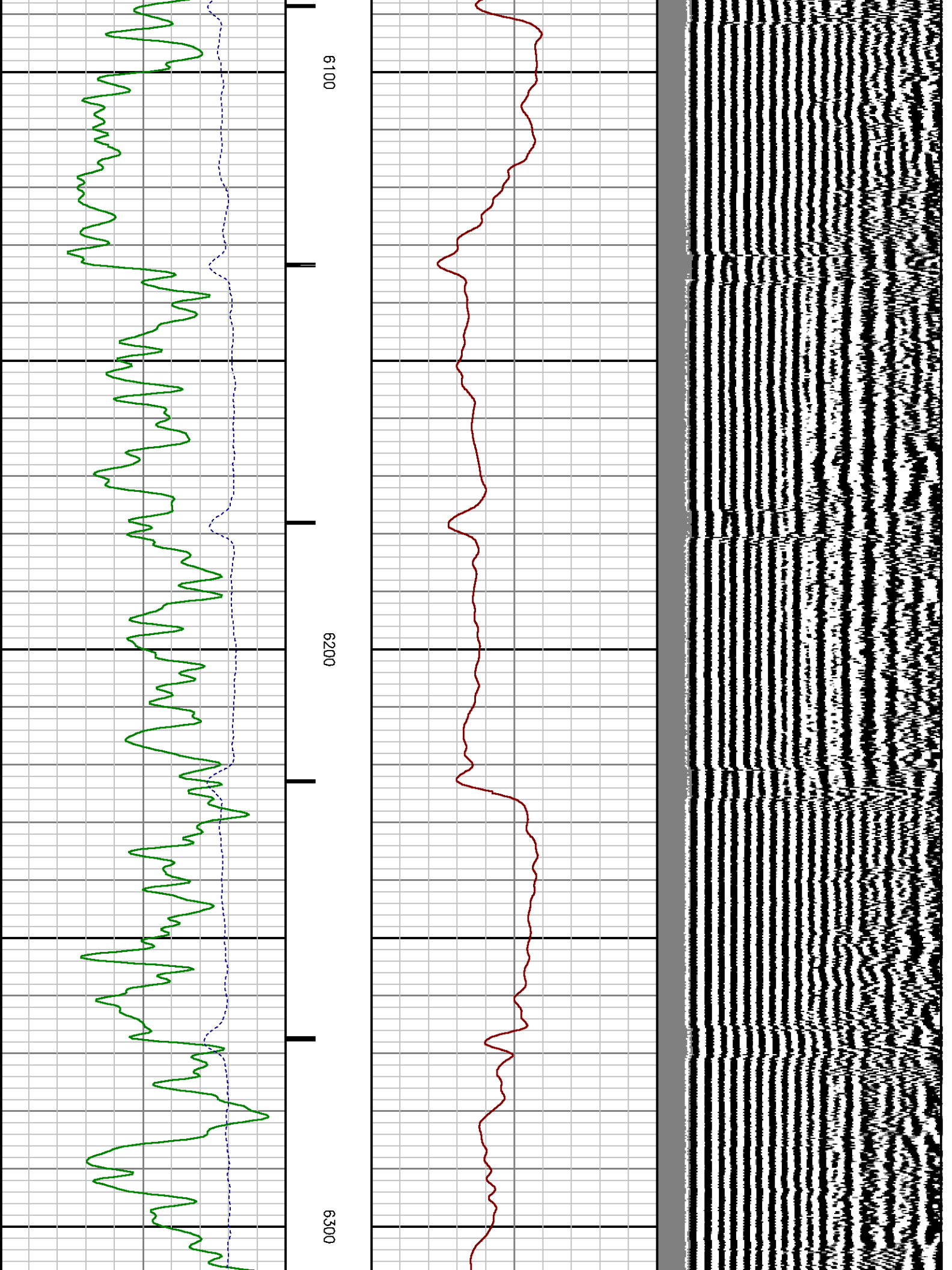


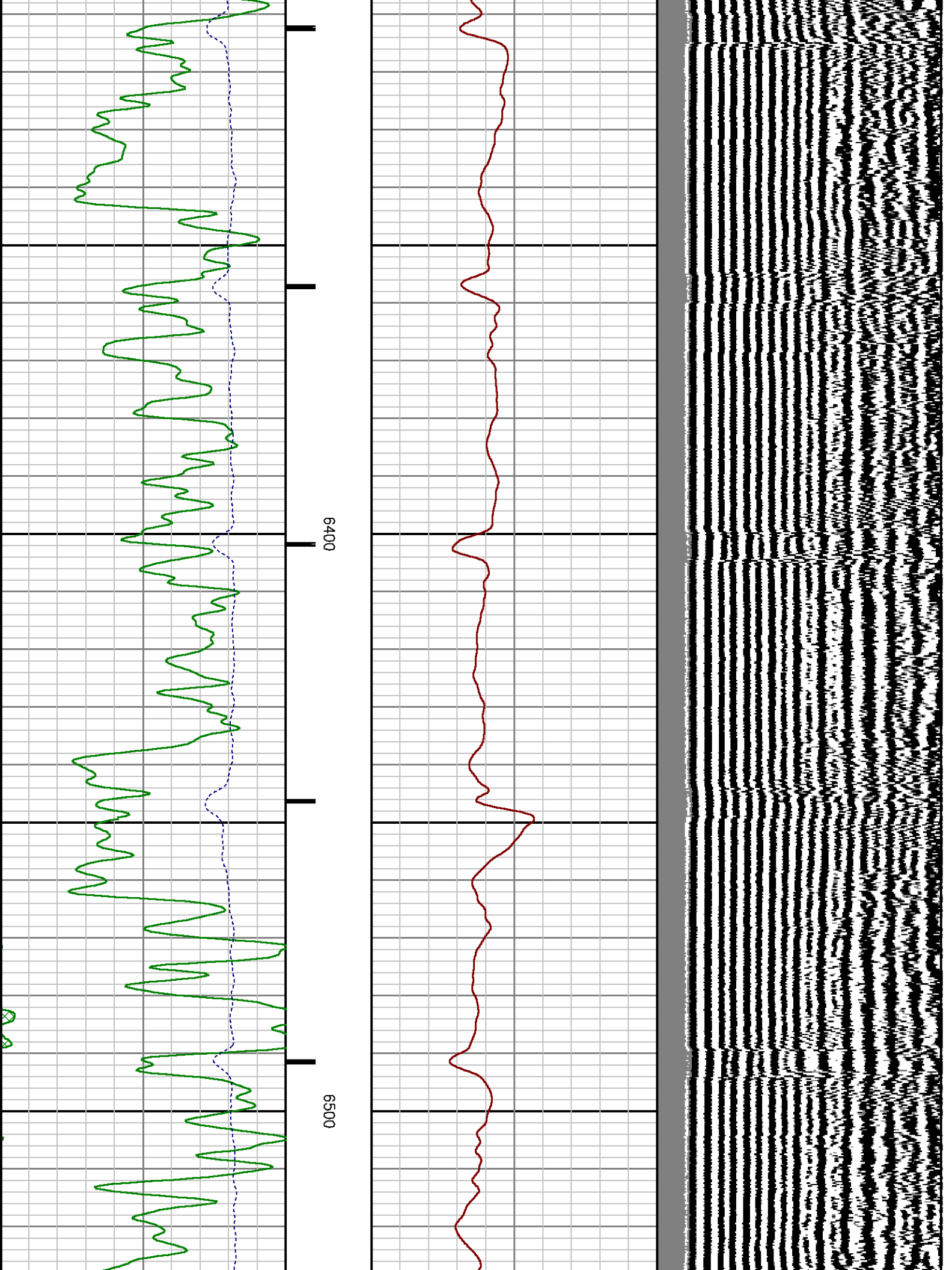


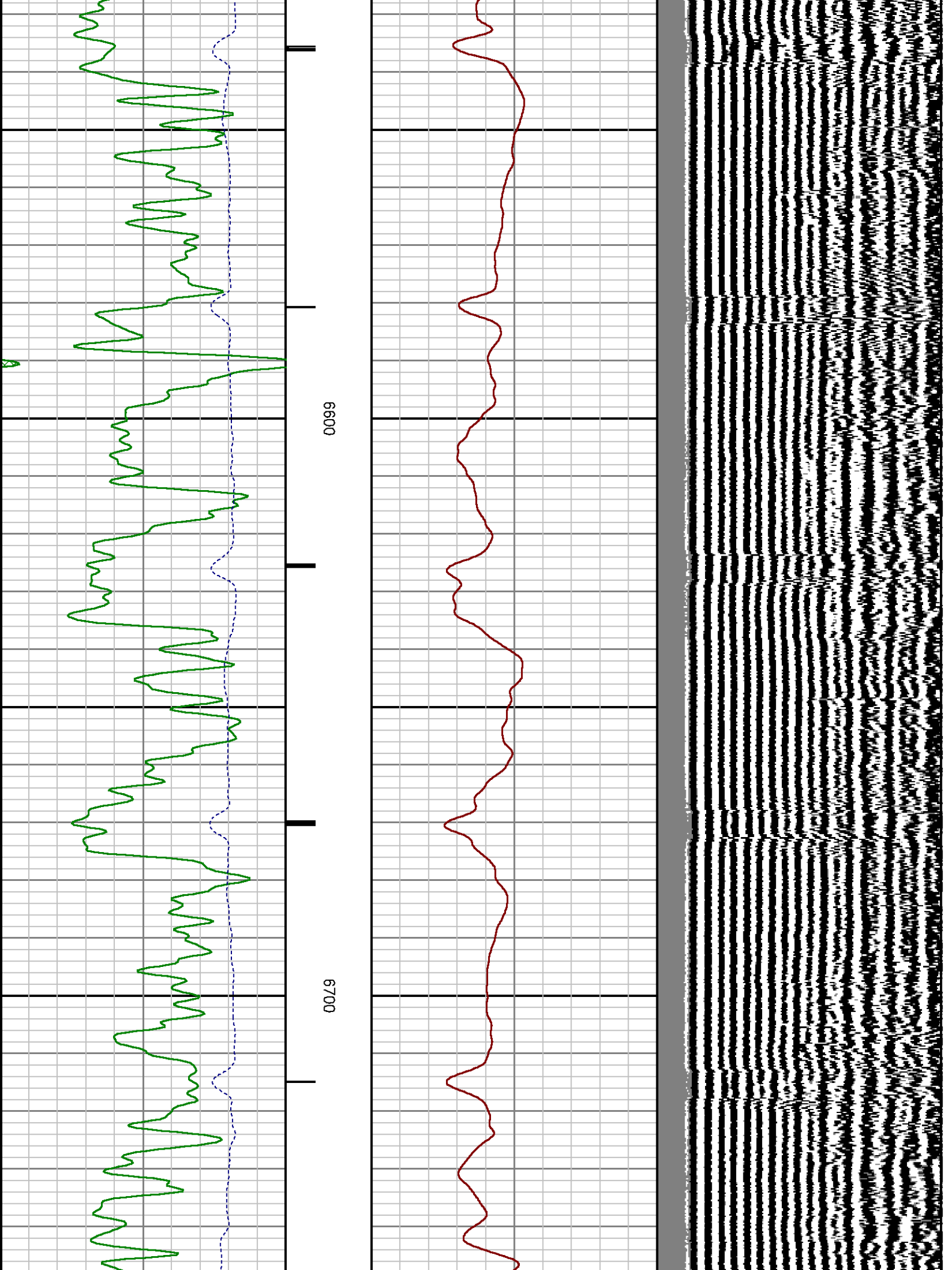




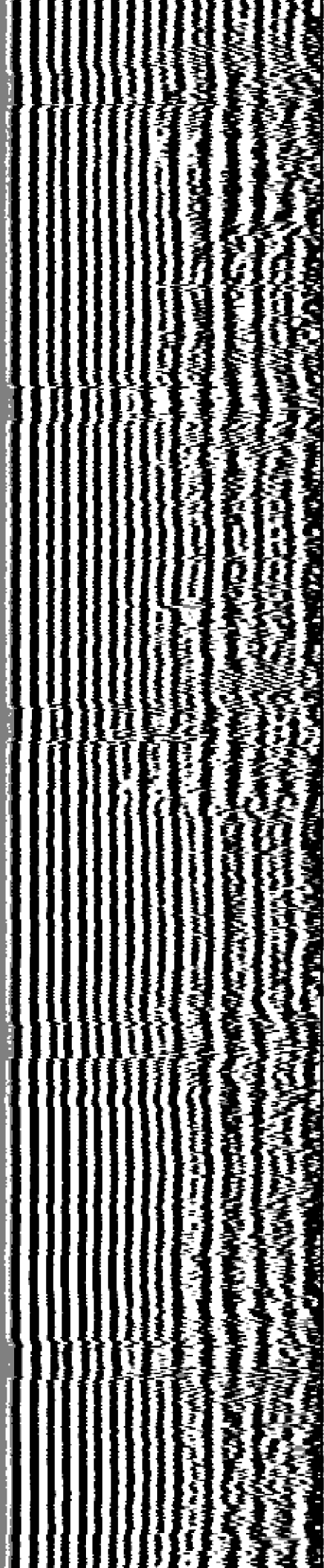
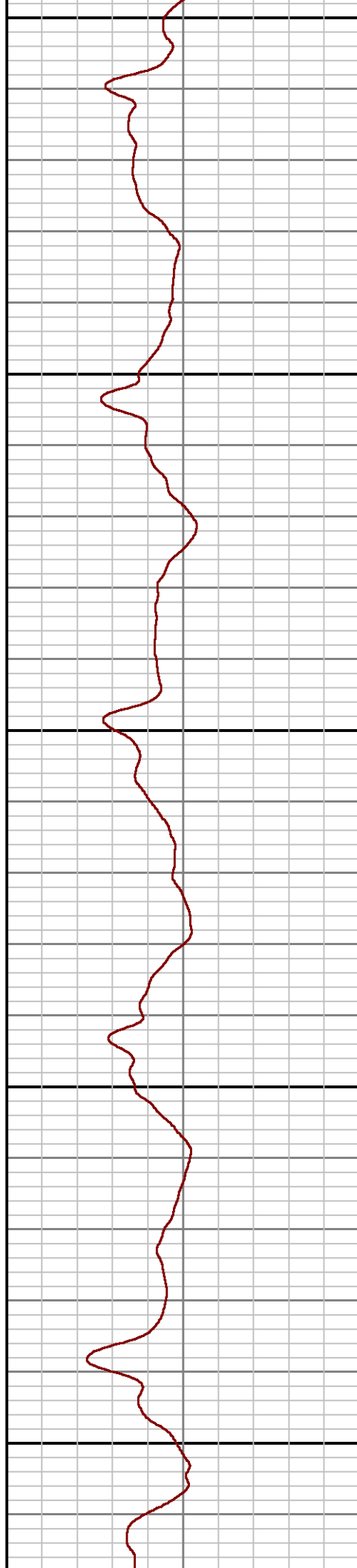
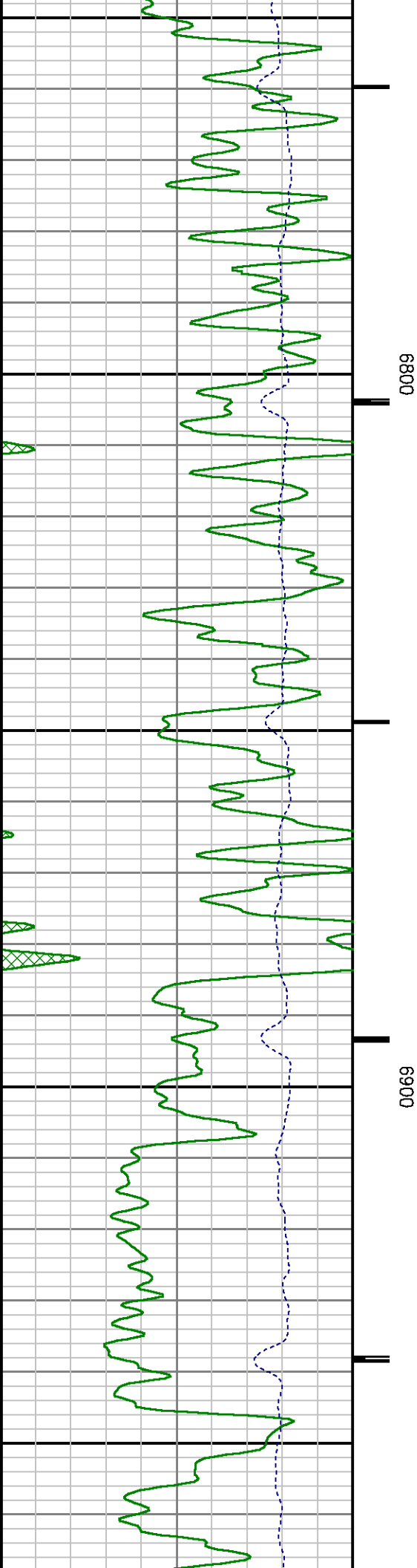


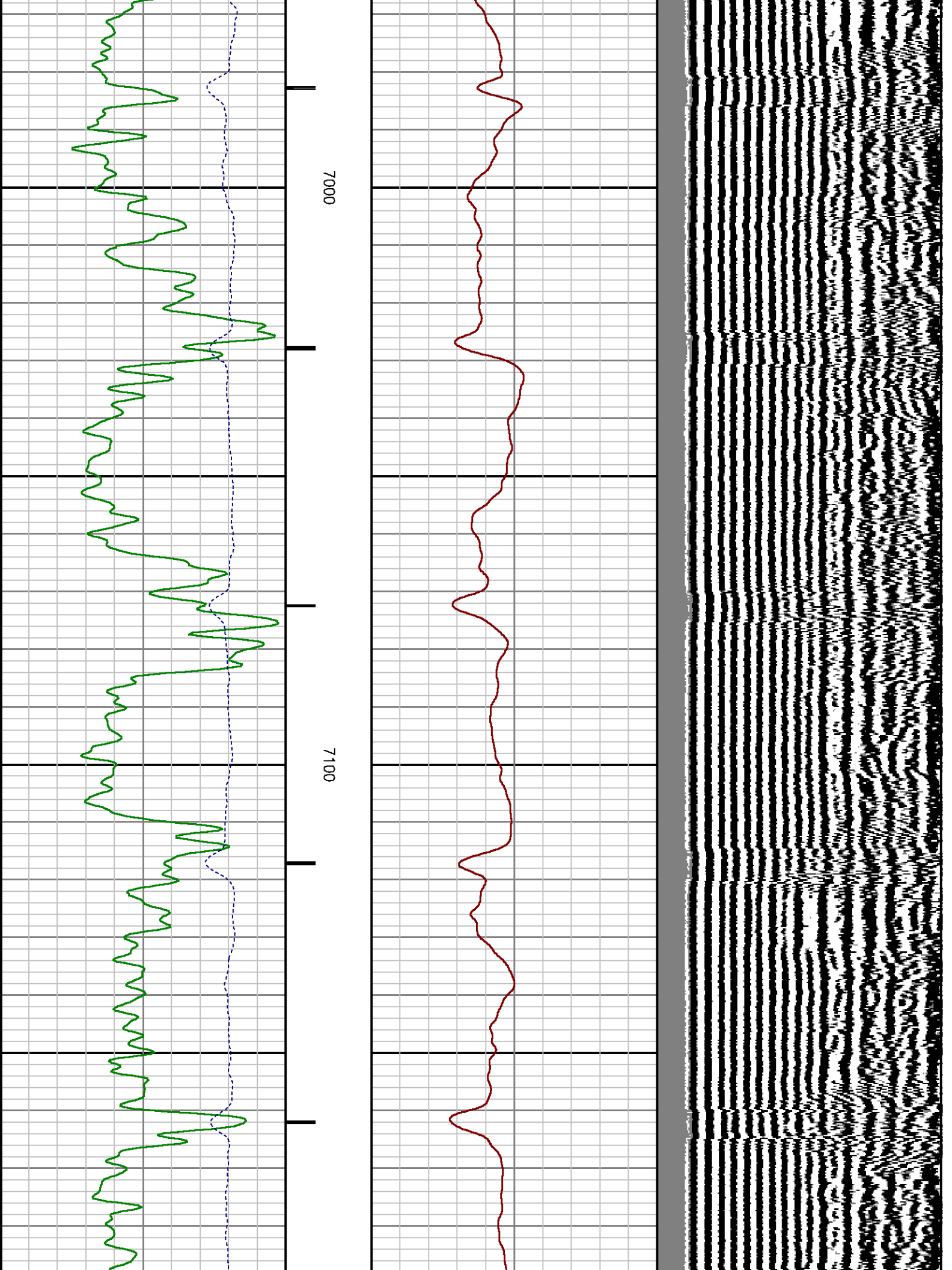


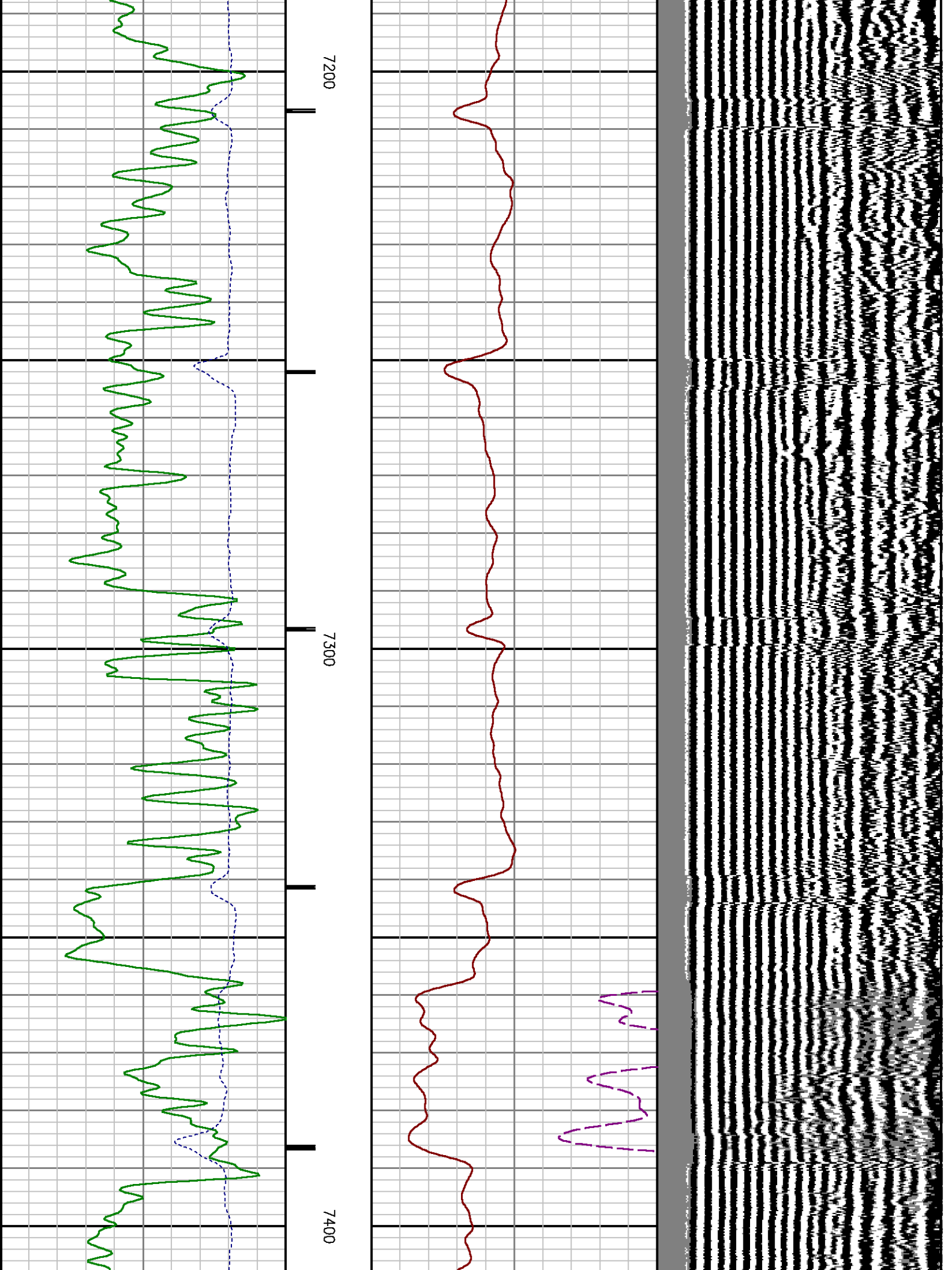




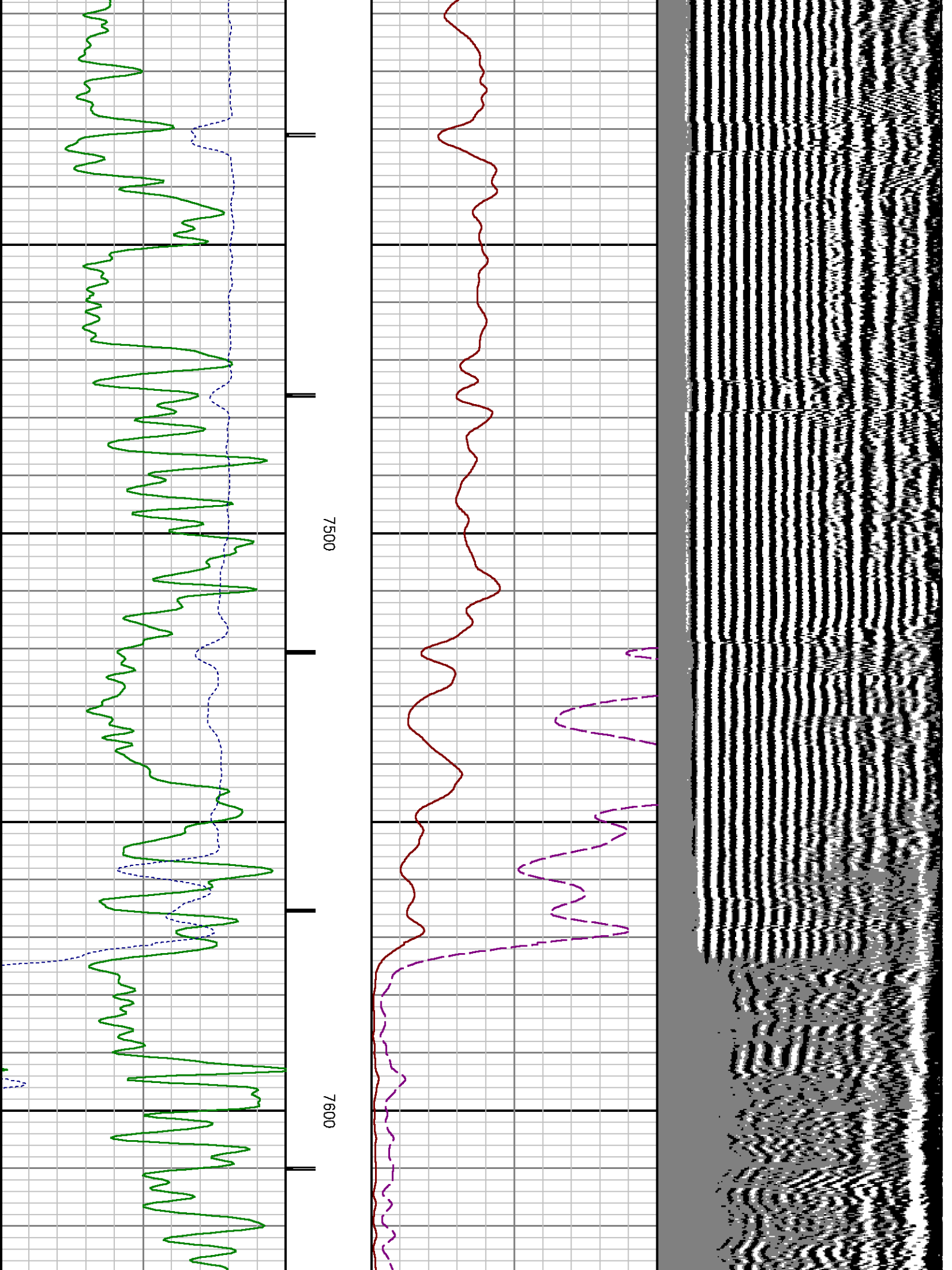


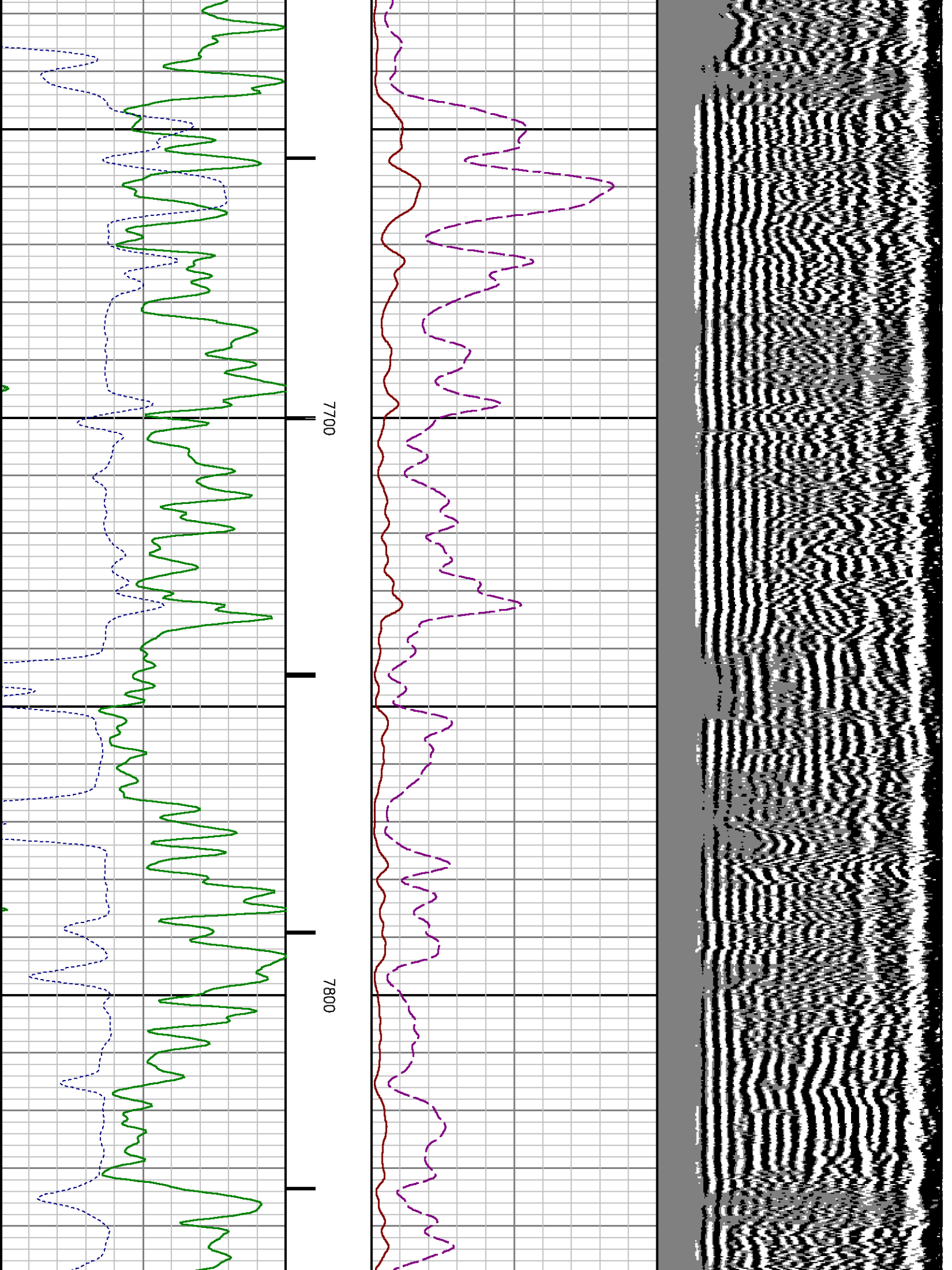


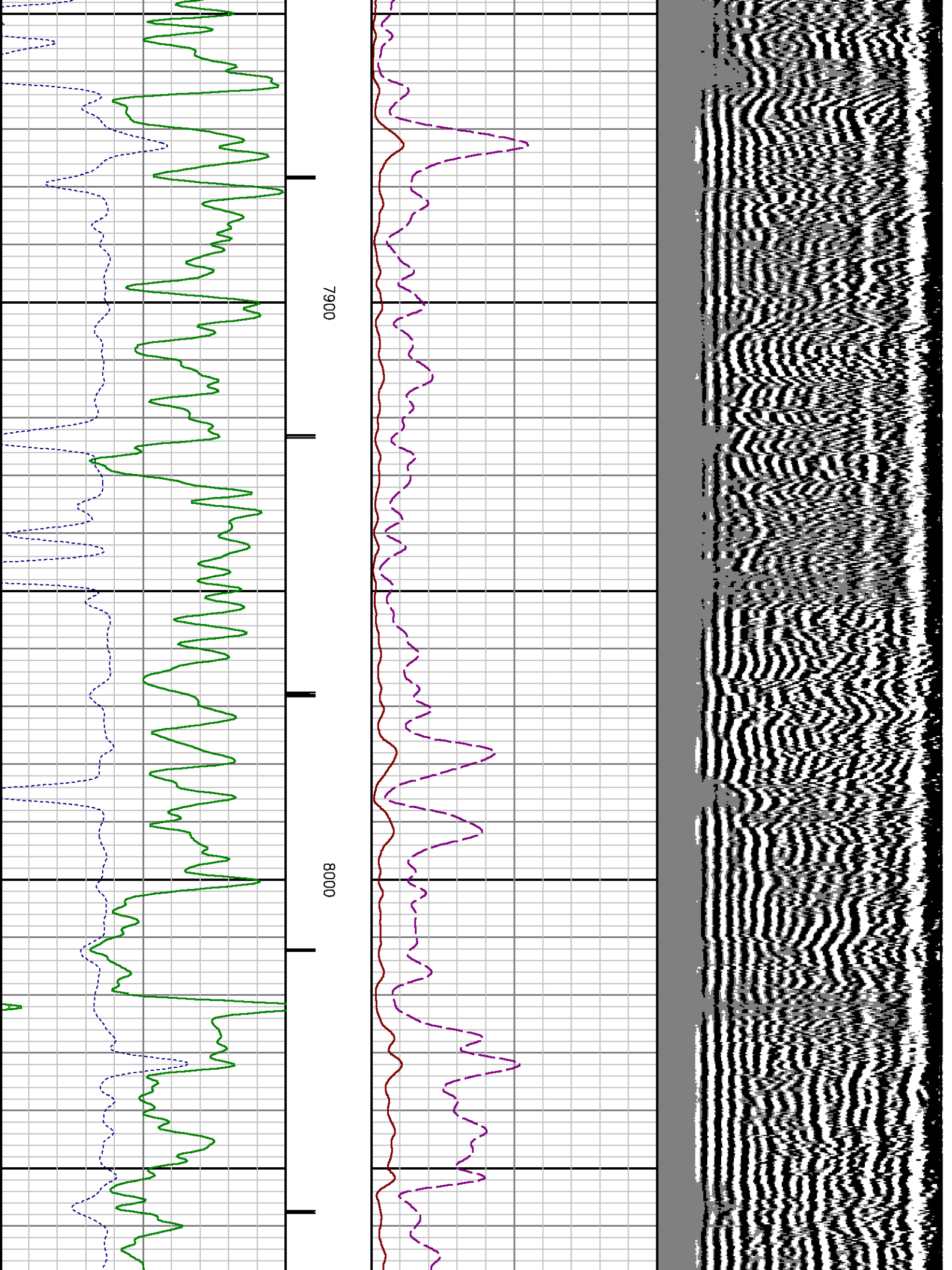


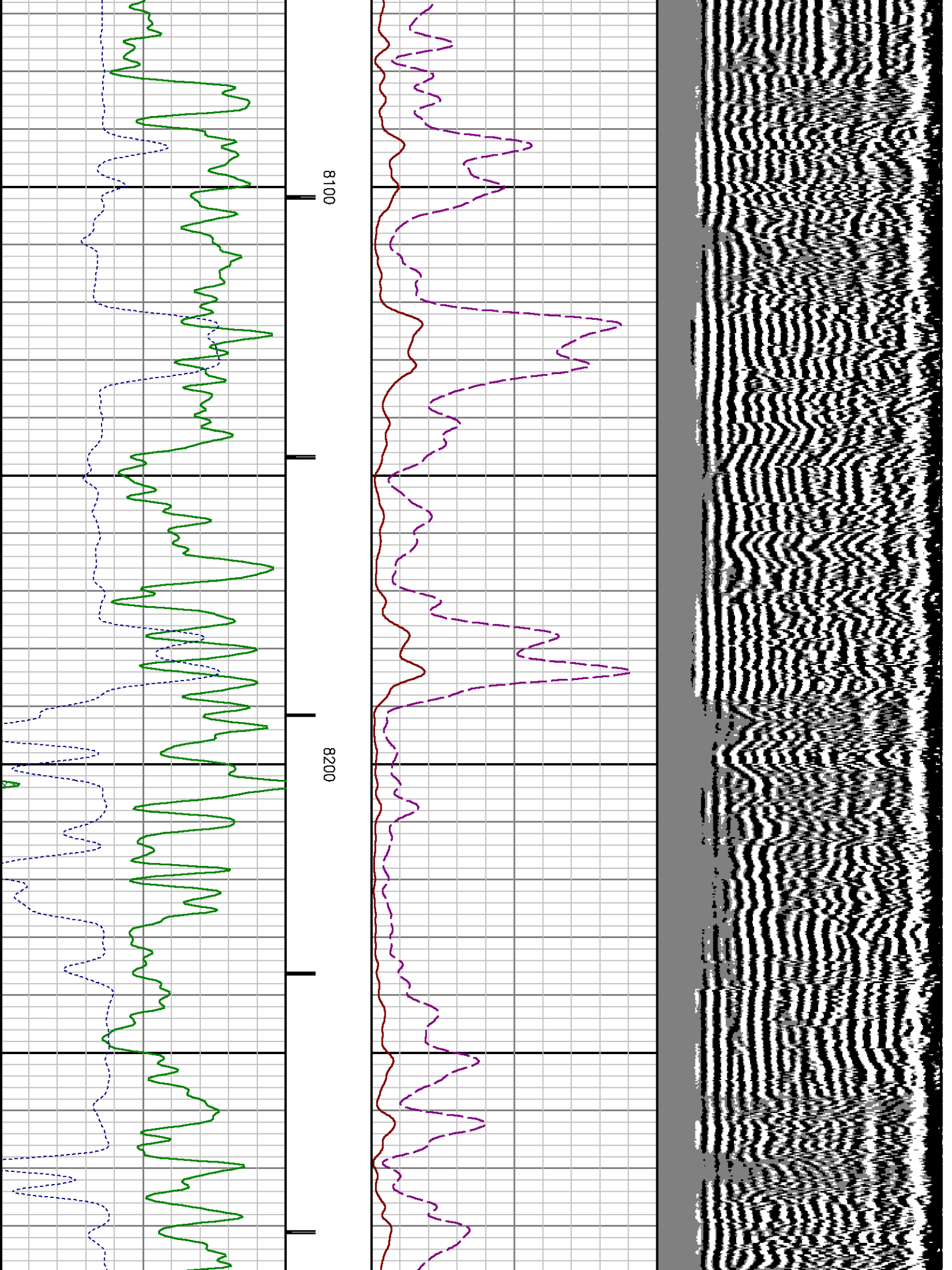


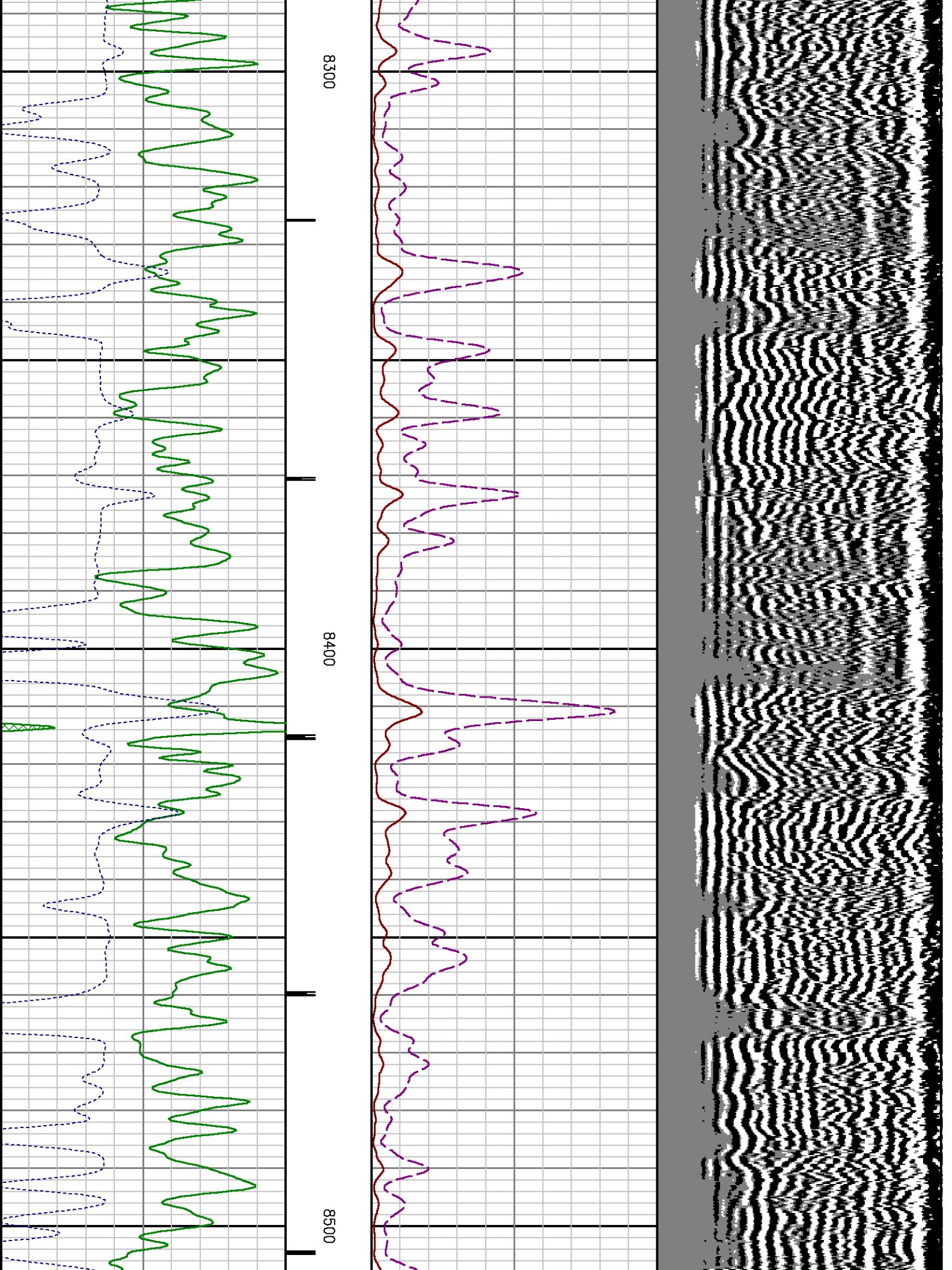




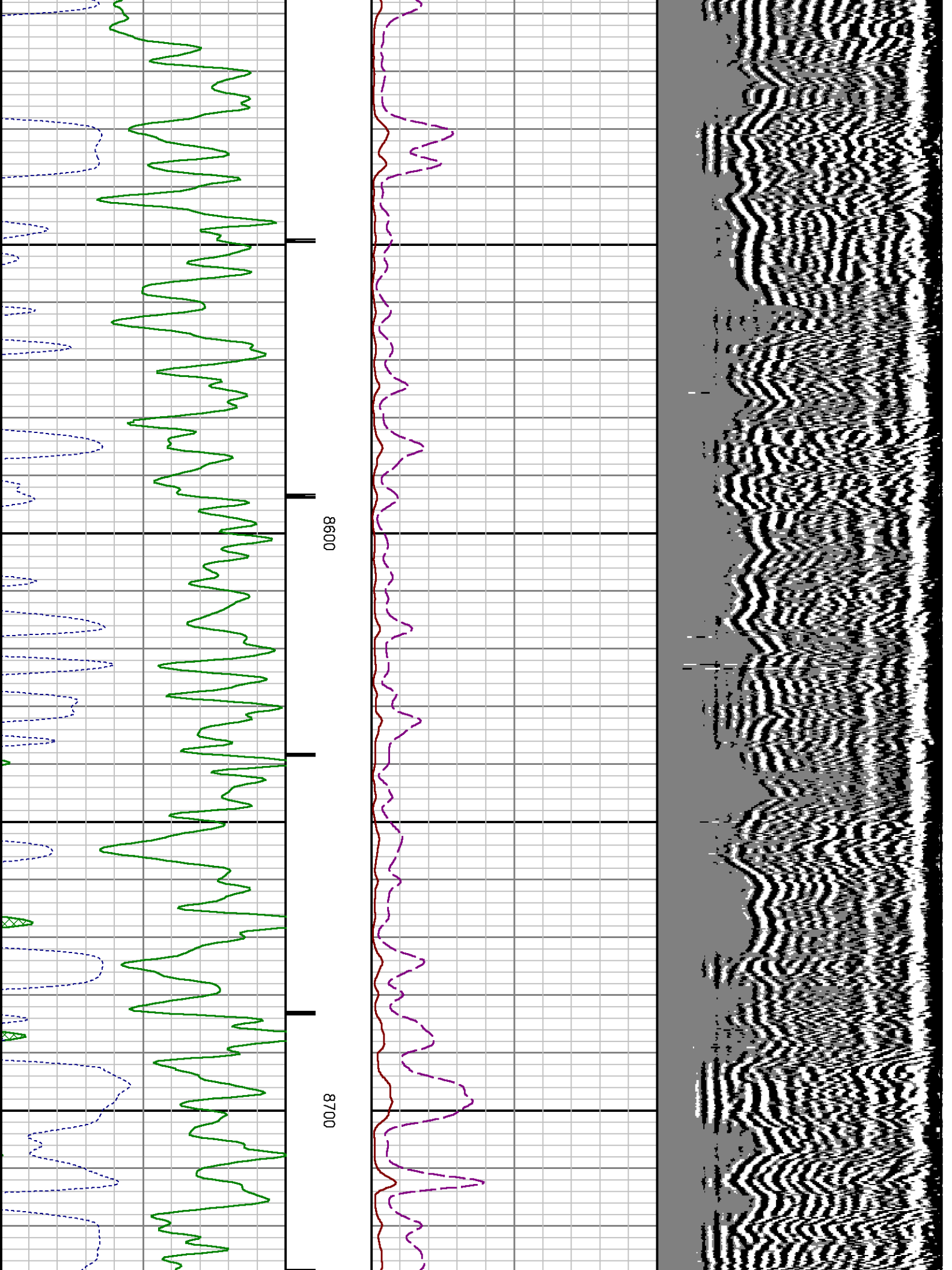




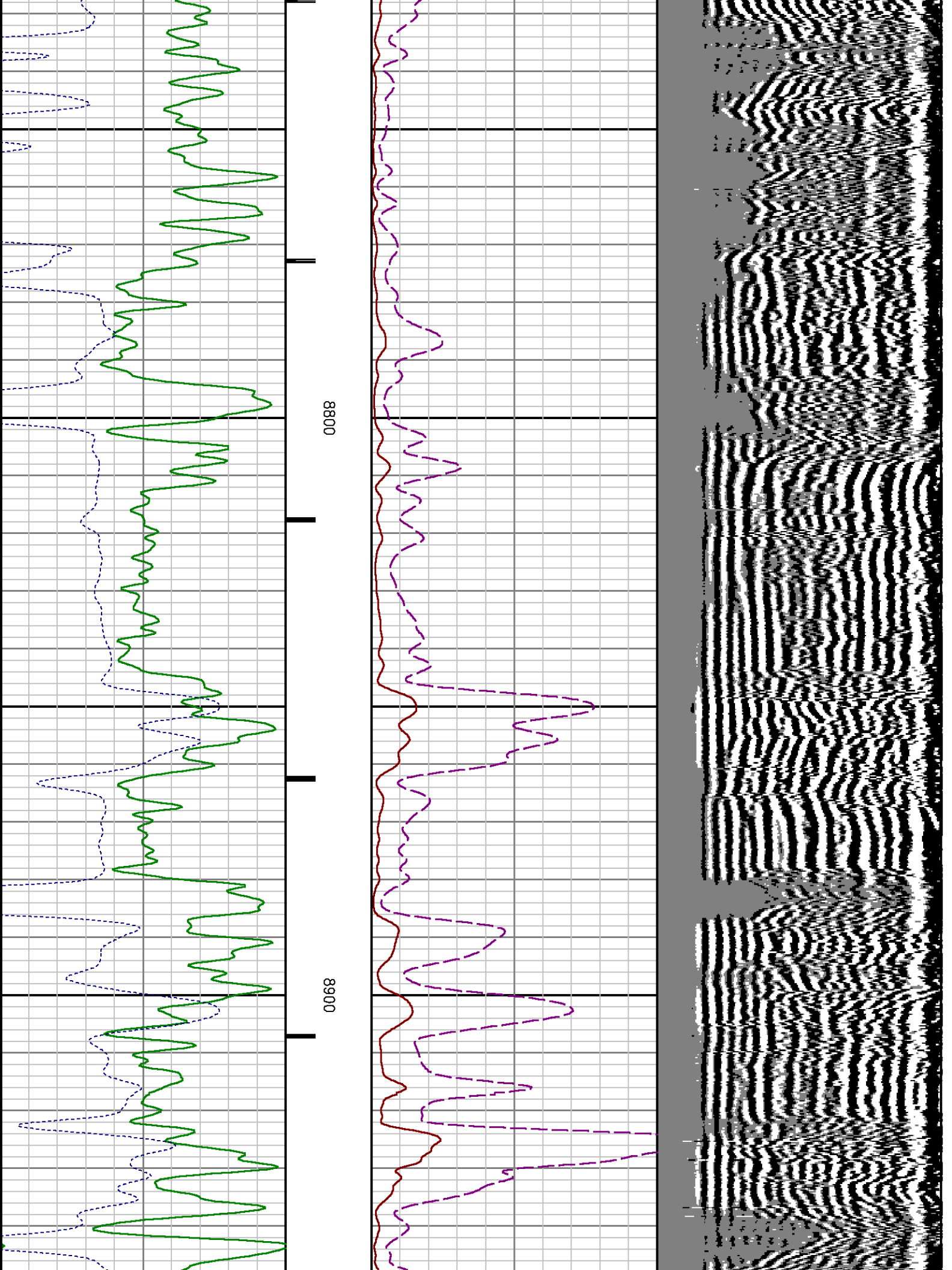


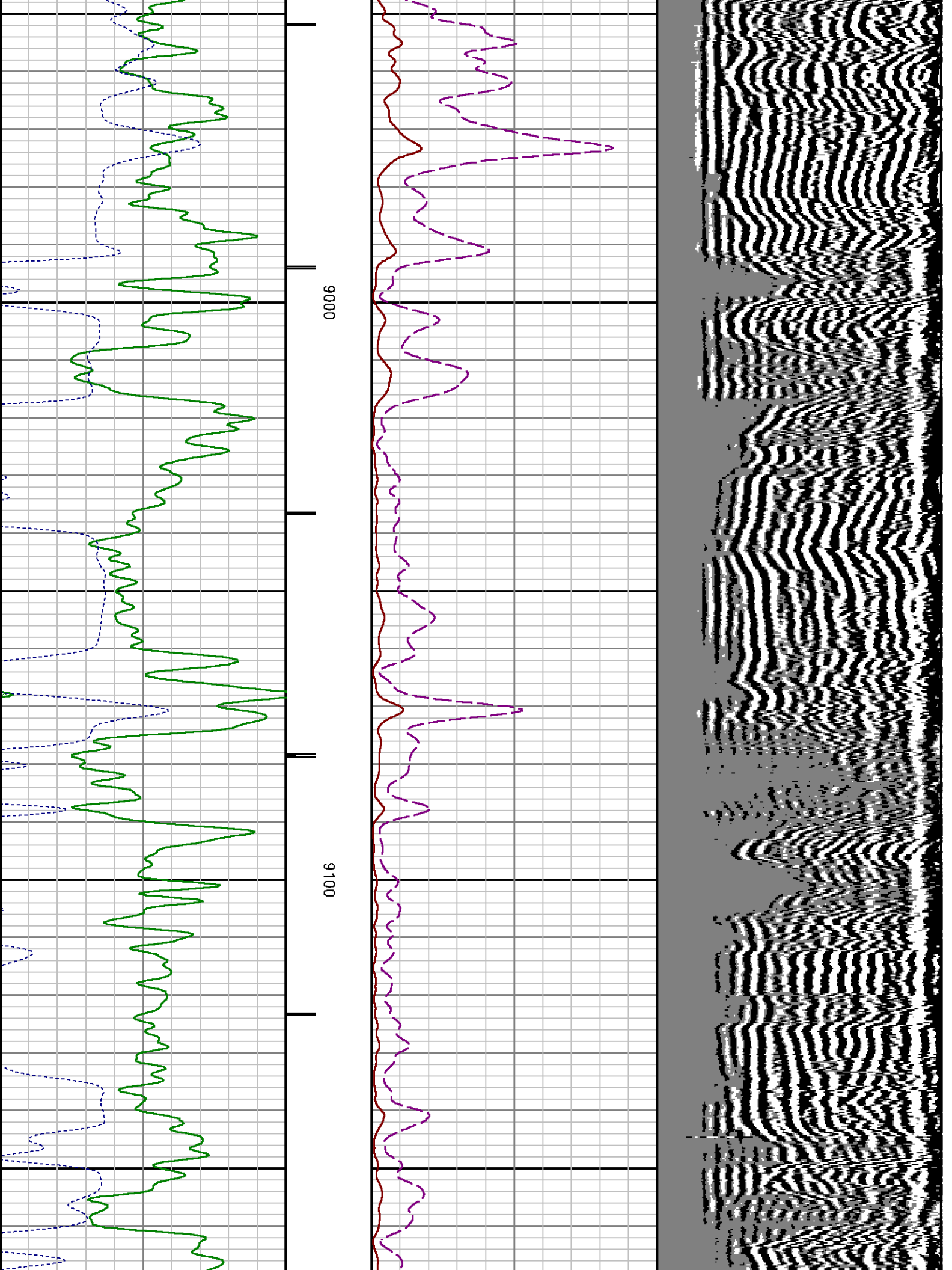


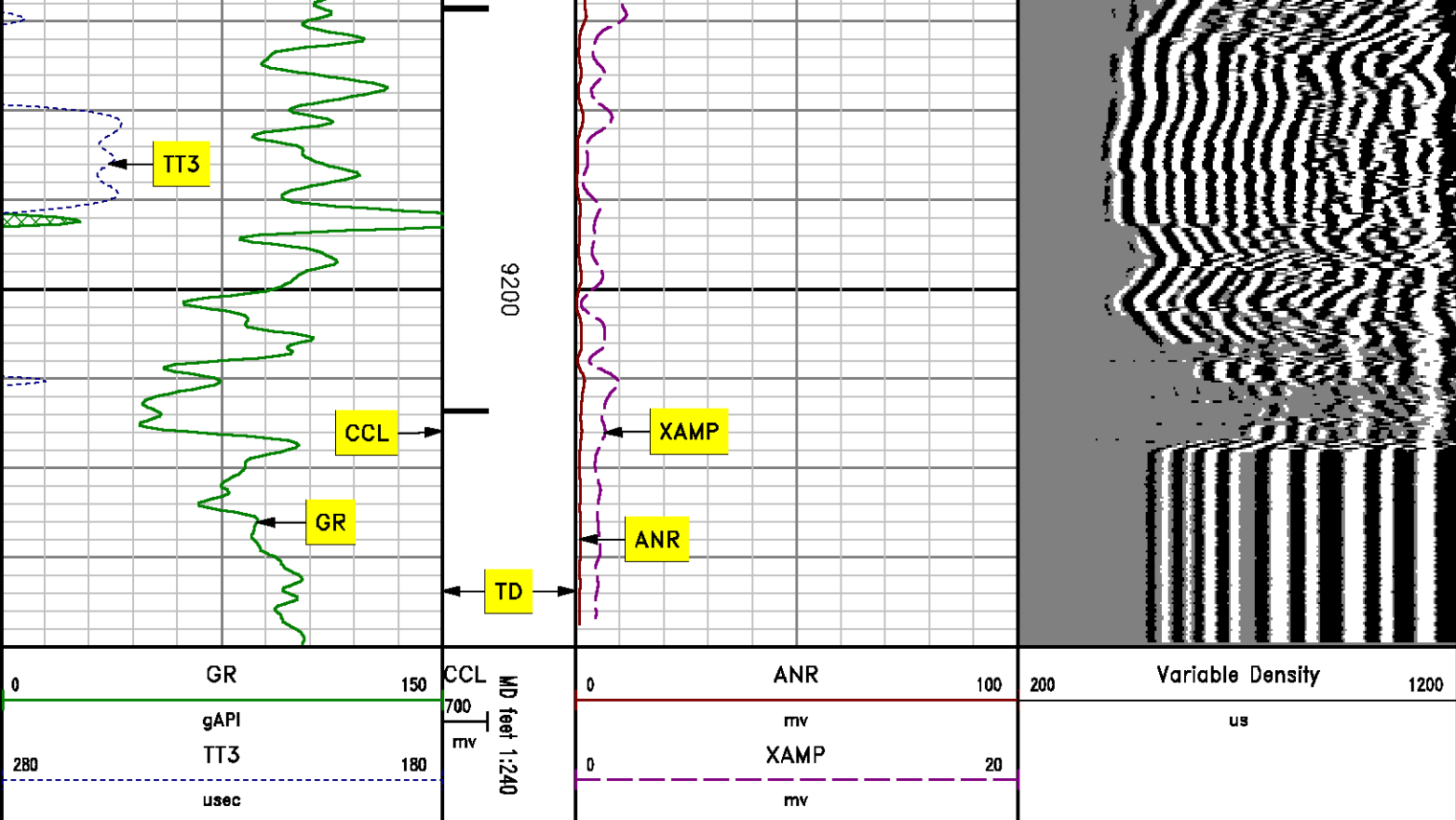












## MAIN SECTION SECONDARY PRESENTATION

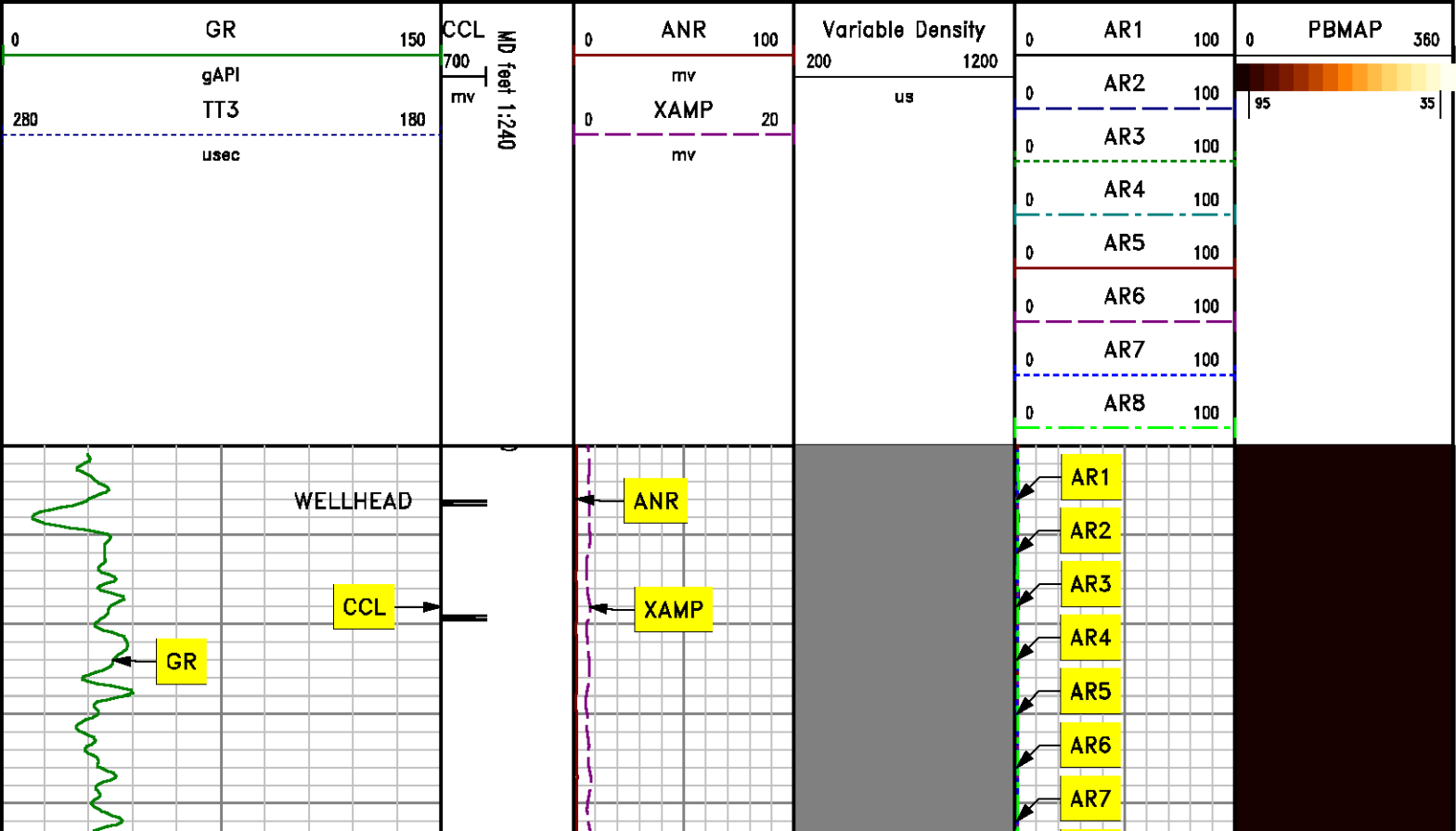
| MEASUREMENT TYPE | PARAMETER             | VALUE   | UNITS  | TOP   | BOTTOM   |
|------------------|-----------------------|---------|--------|-------|----------|
| RAL              | Amp Gate Start Far    | 316.900 | usec   | 8.762 | 9236.000 |
| RAL              | Amp Gate Start Near   | 200.391 | usec   | 8.762 | 9236.000 |
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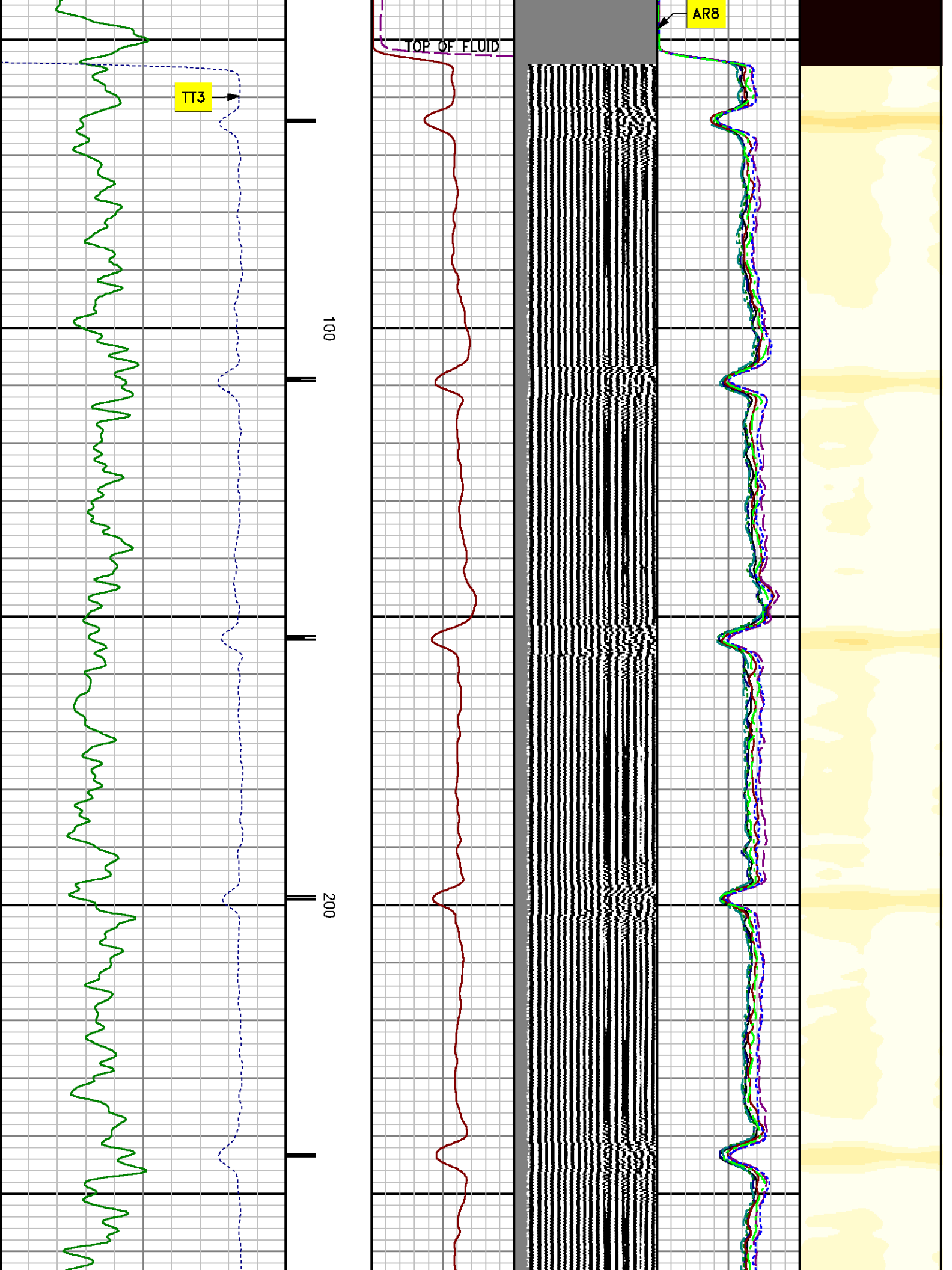
|     |                   |         |         |       |          |
|-----|-------------------|---------|---------|-------|----------|
| RAL | FB Thresh Radial  | 10.000  | mv      | 8.762 | 9236.000 |
| RAL | Fluid Travel Time | 200.000 | usec/ft | 8.762 | 9235.918 |

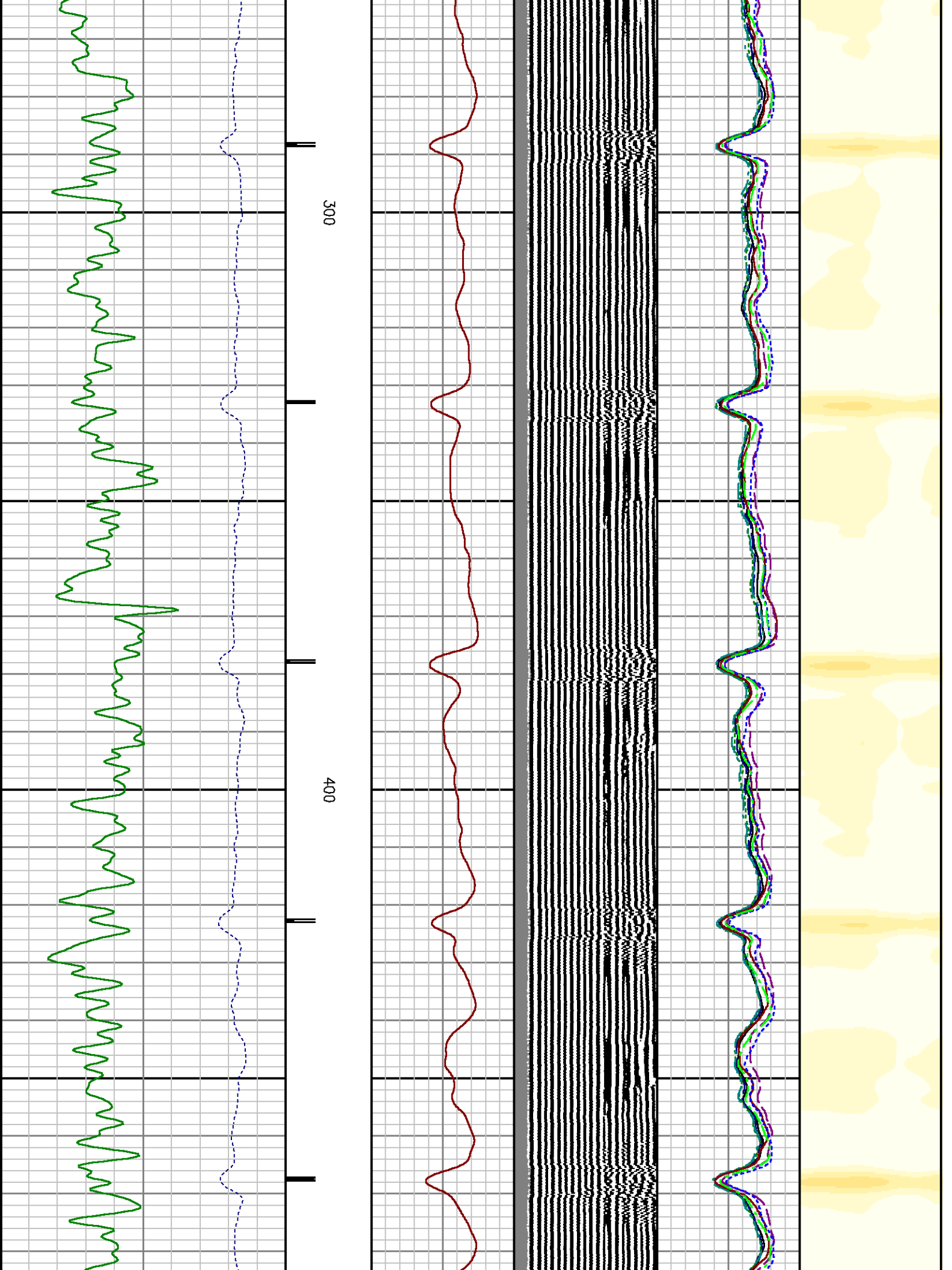
DEPTH OFFSETS  
(for Acquired Curves)

| SERIES | DEPTH OFFSET | ACQUIRED CURVES |      |      |      |      |      |  |  |
|--------|--------------|-----------------|------|------|------|------|------|--|--|
| 1426XA | -15.360      | 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 | -14.360      | AFAR            | SIG  | TT5  |      |      |      |  |  |
| 2459XA | -7.250       | CCL             |      |      |      |      |      |  |  |
| 2459XA | -5.390       | GR              |      |      |      |      |      |  |  |
| 2459XA | 0.000        | NEU             |      |      |      |      |      |  |  |

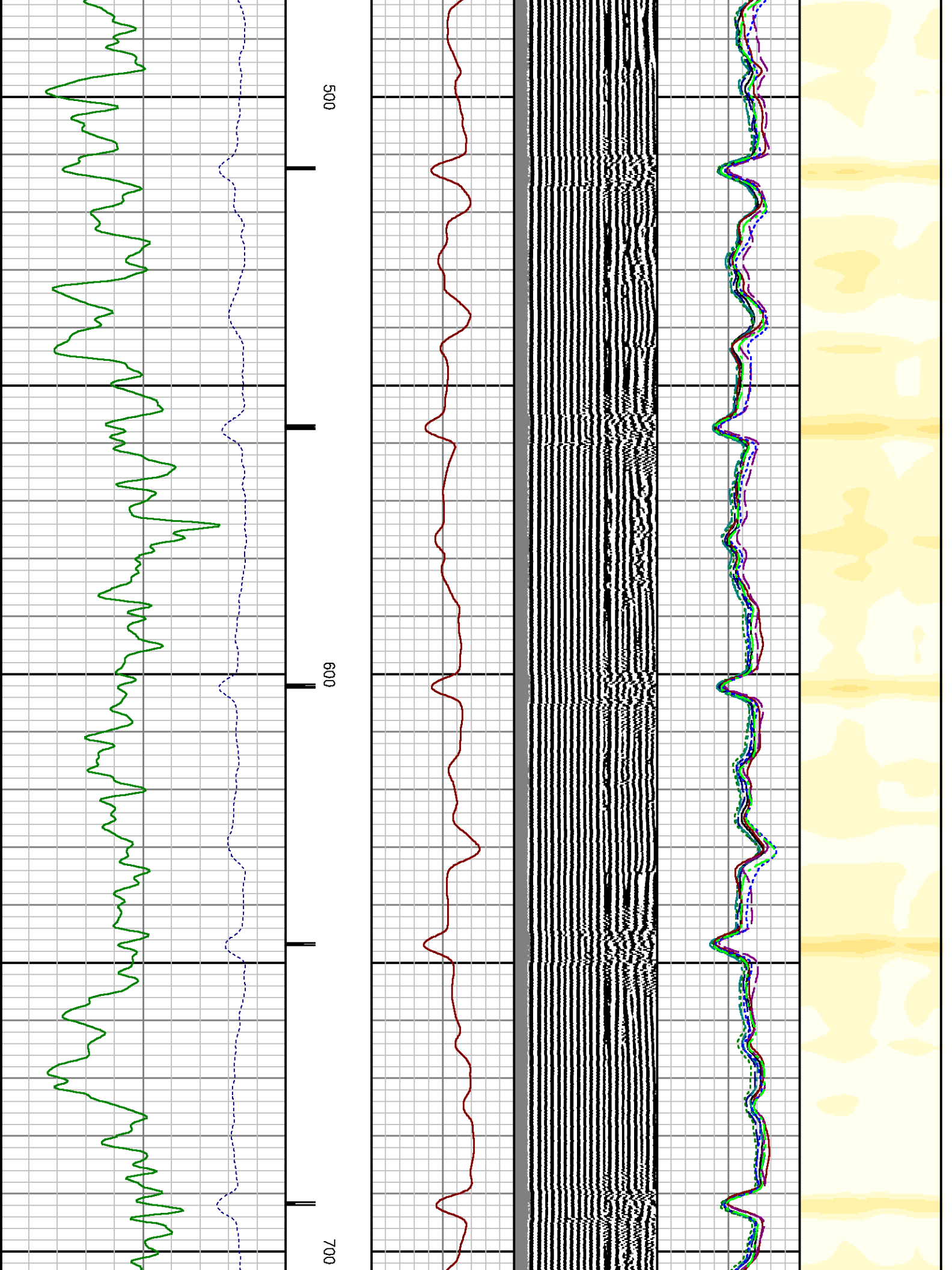
Created by : RAL, v4.8.008  
Plotted by : PlotMgr, v5.4.504  
Company : WILLIAMS PRODUCTION COMPANY  
Well : PA 344-17  
File Name : d:\welldata\344cbl\cbl\_main.xtf  
Mode : PlotMgr 5.4.504  
Interval : 0.00 - 9240.00 feet UP  
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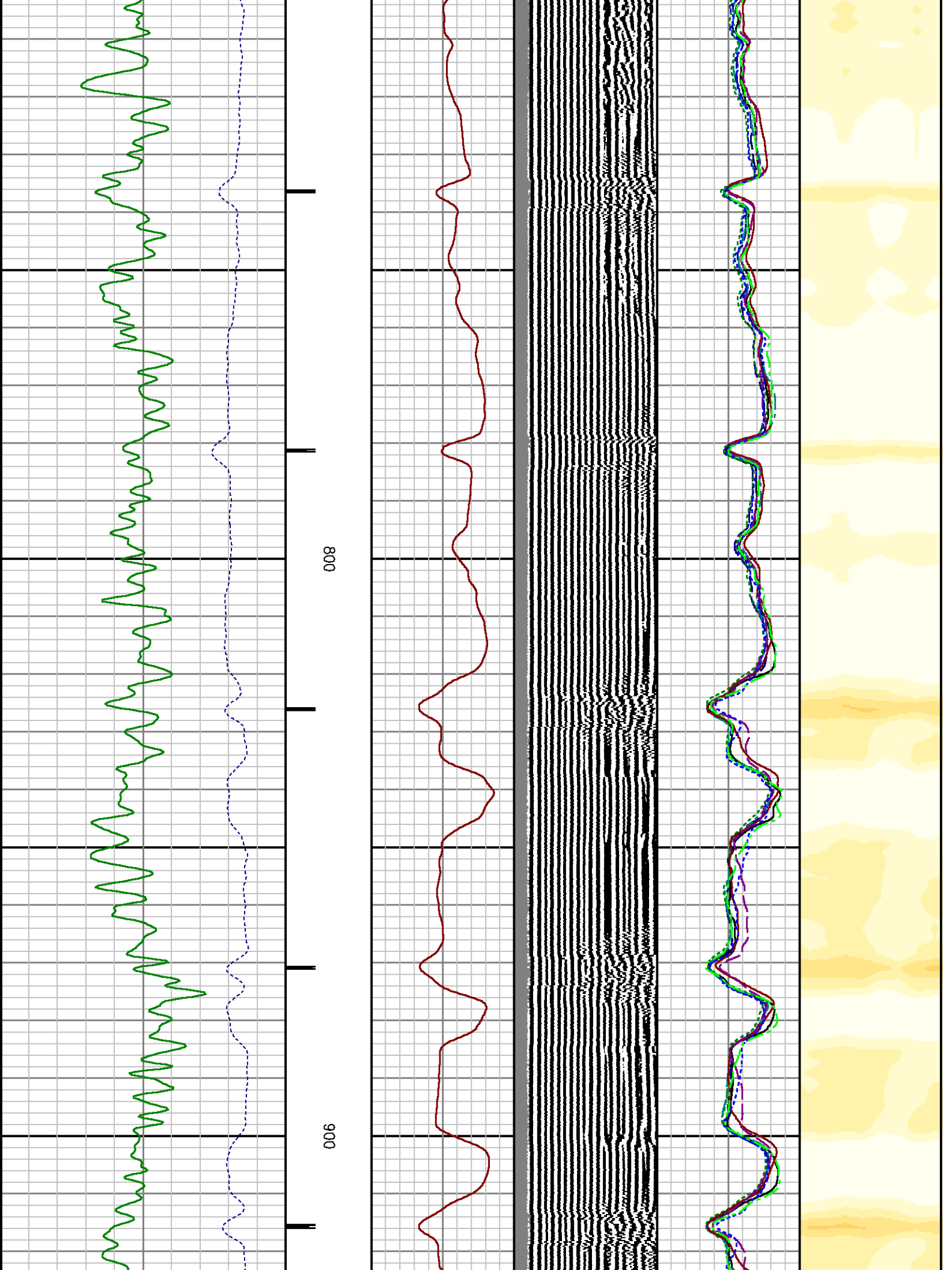


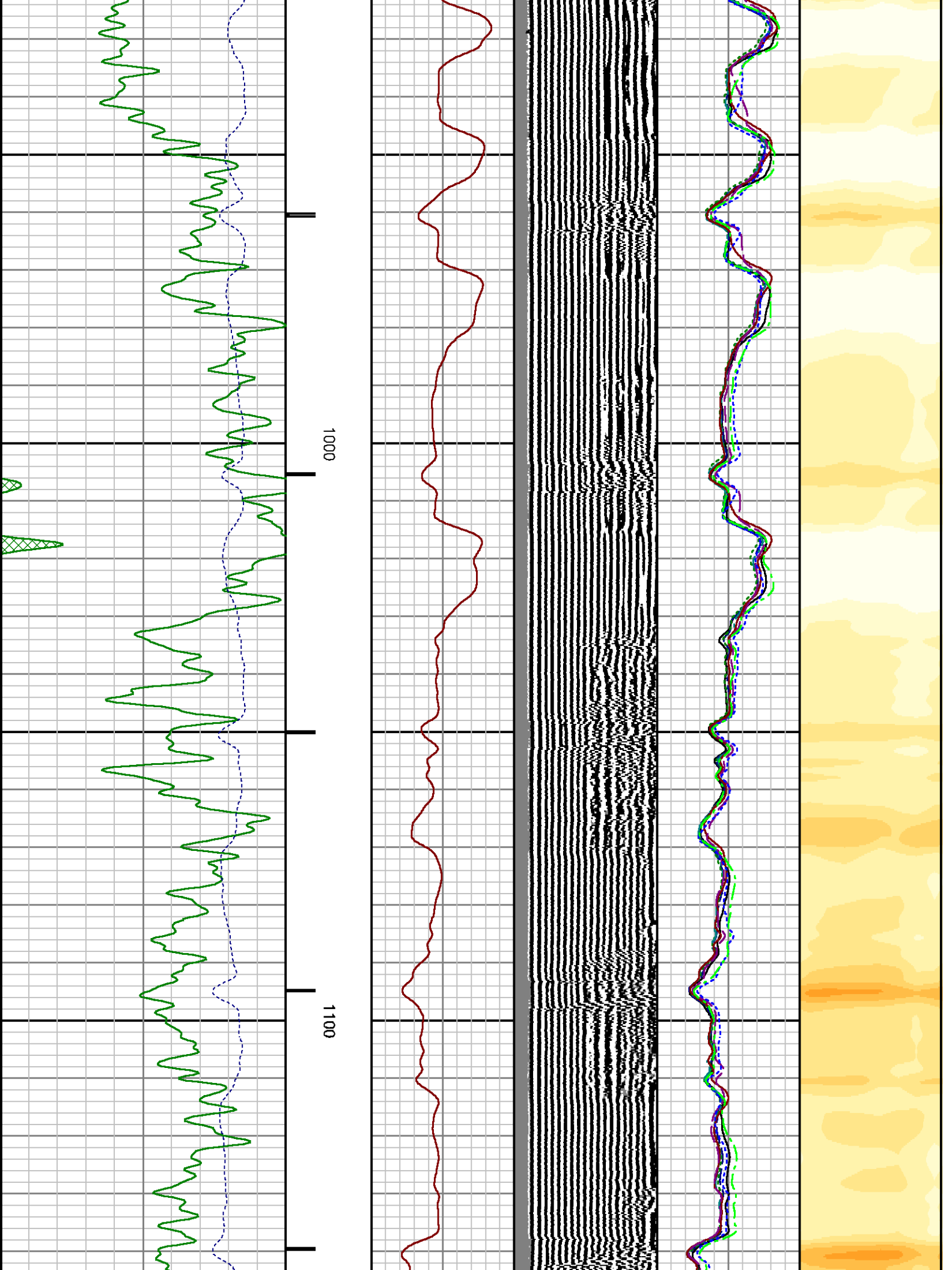


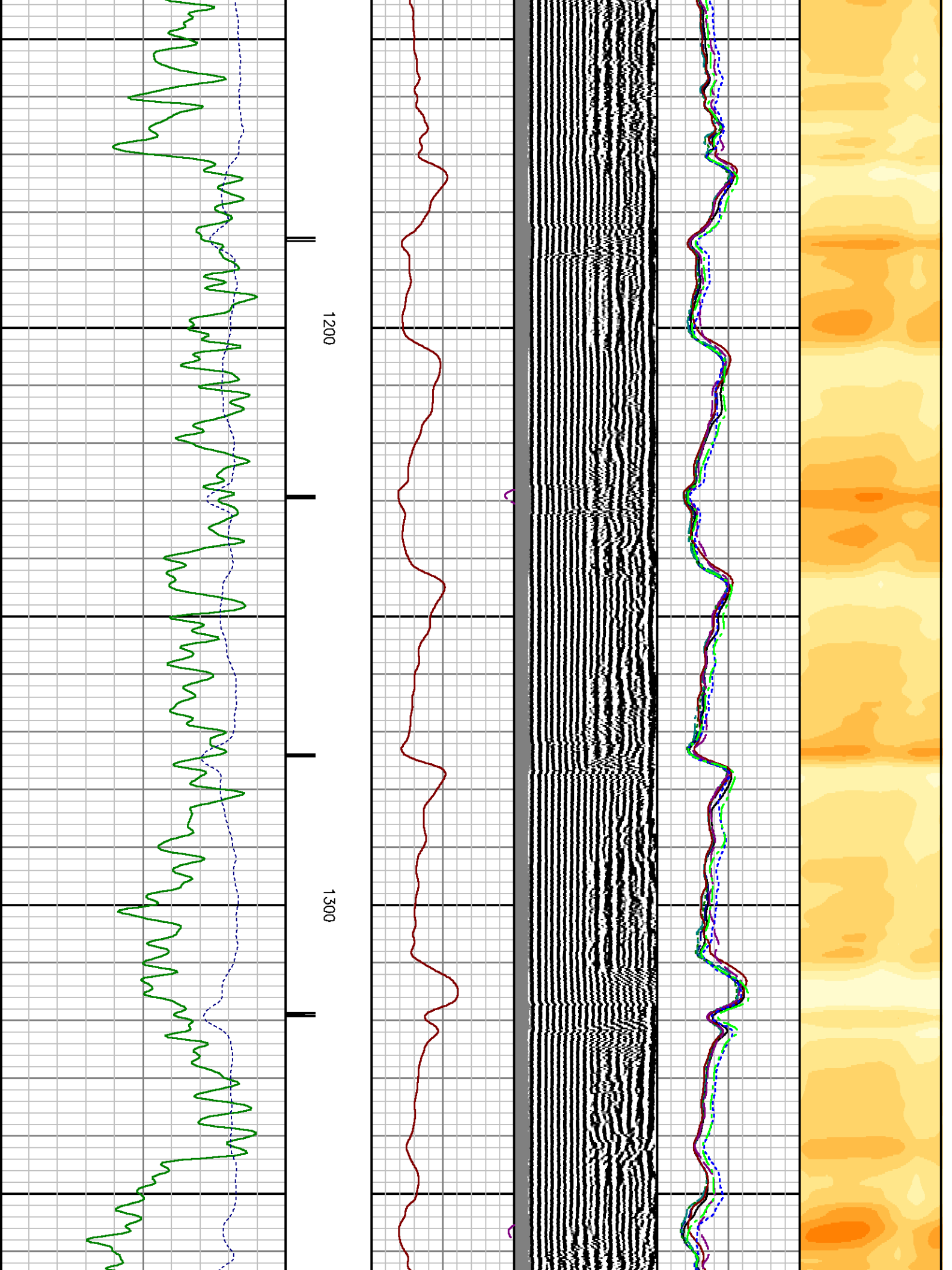


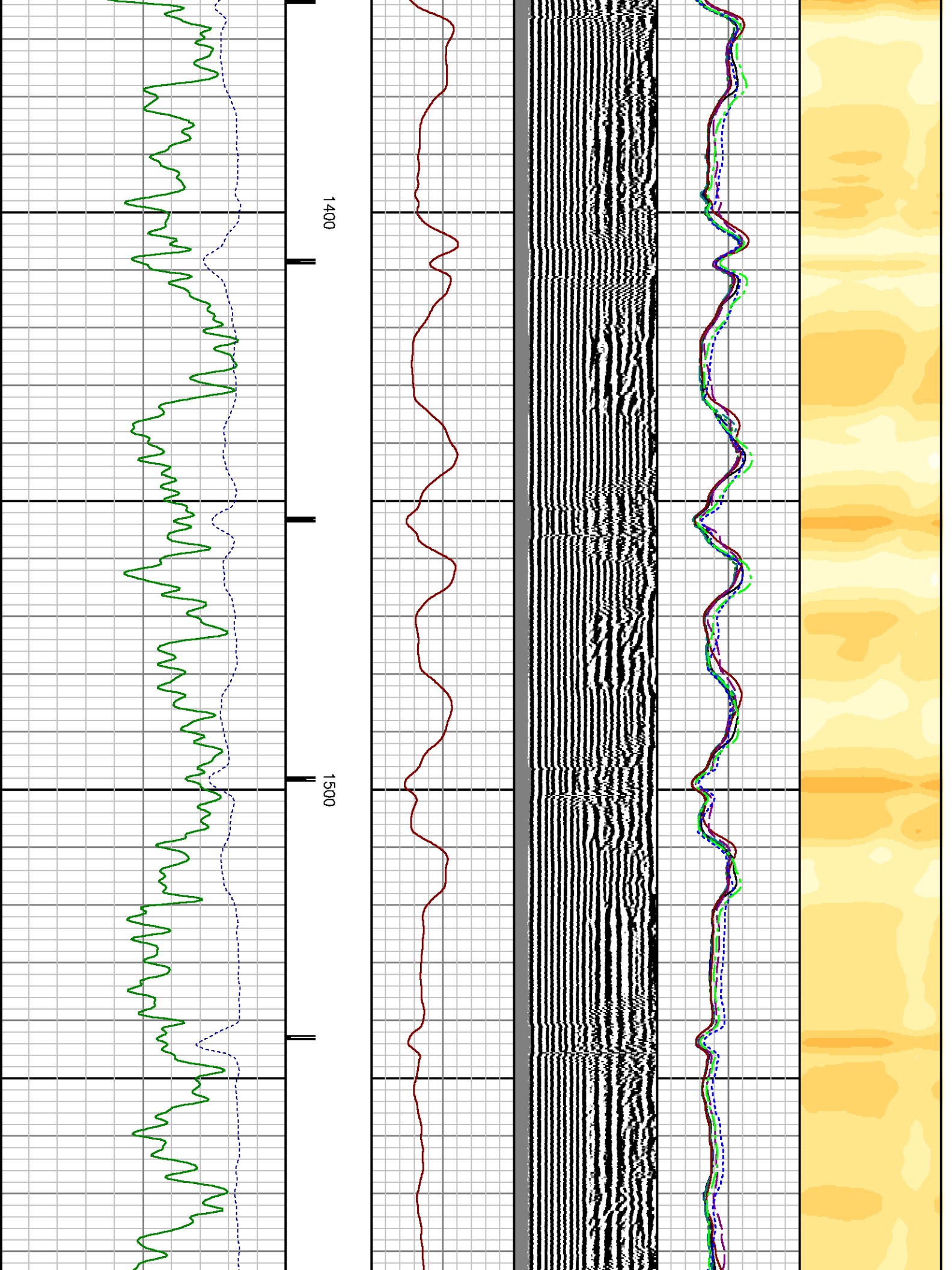




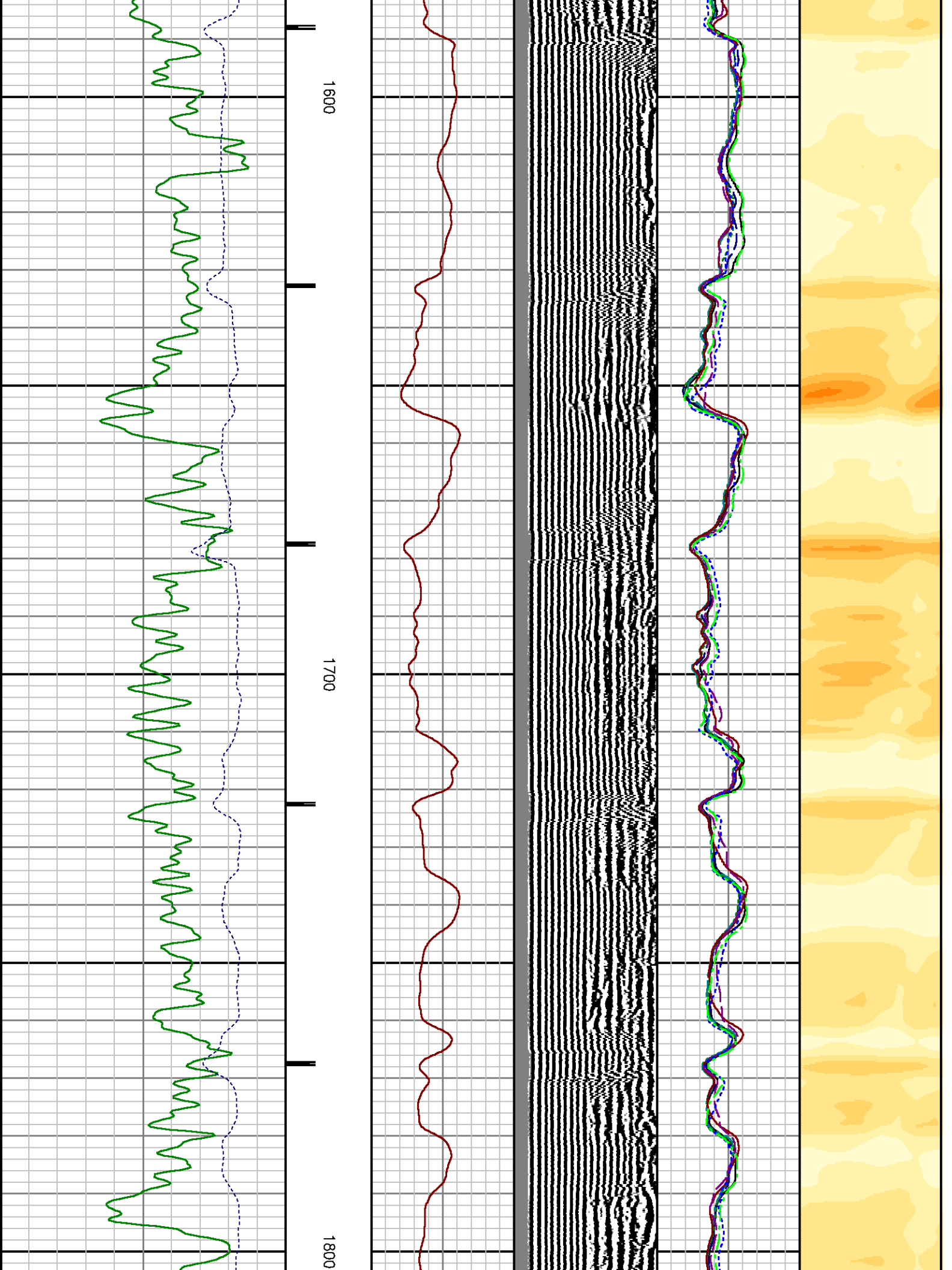




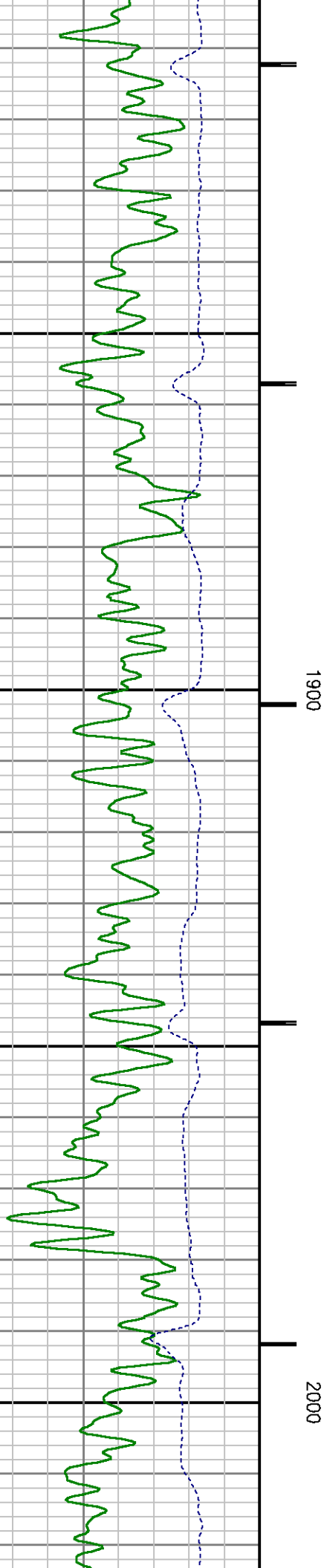
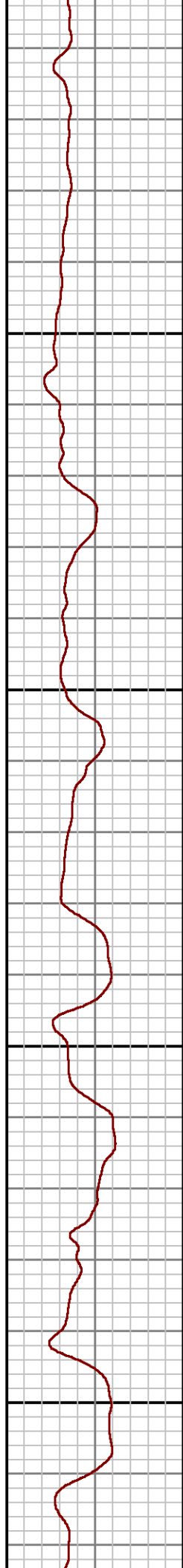
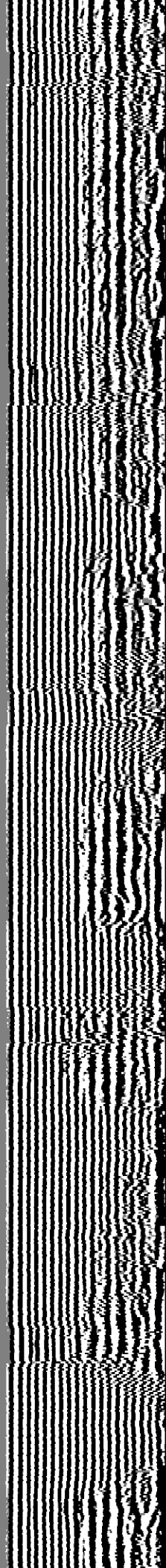
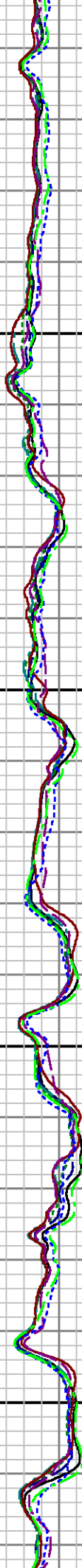
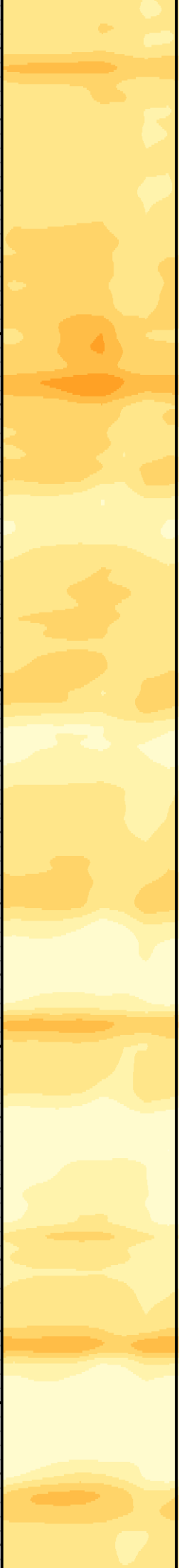


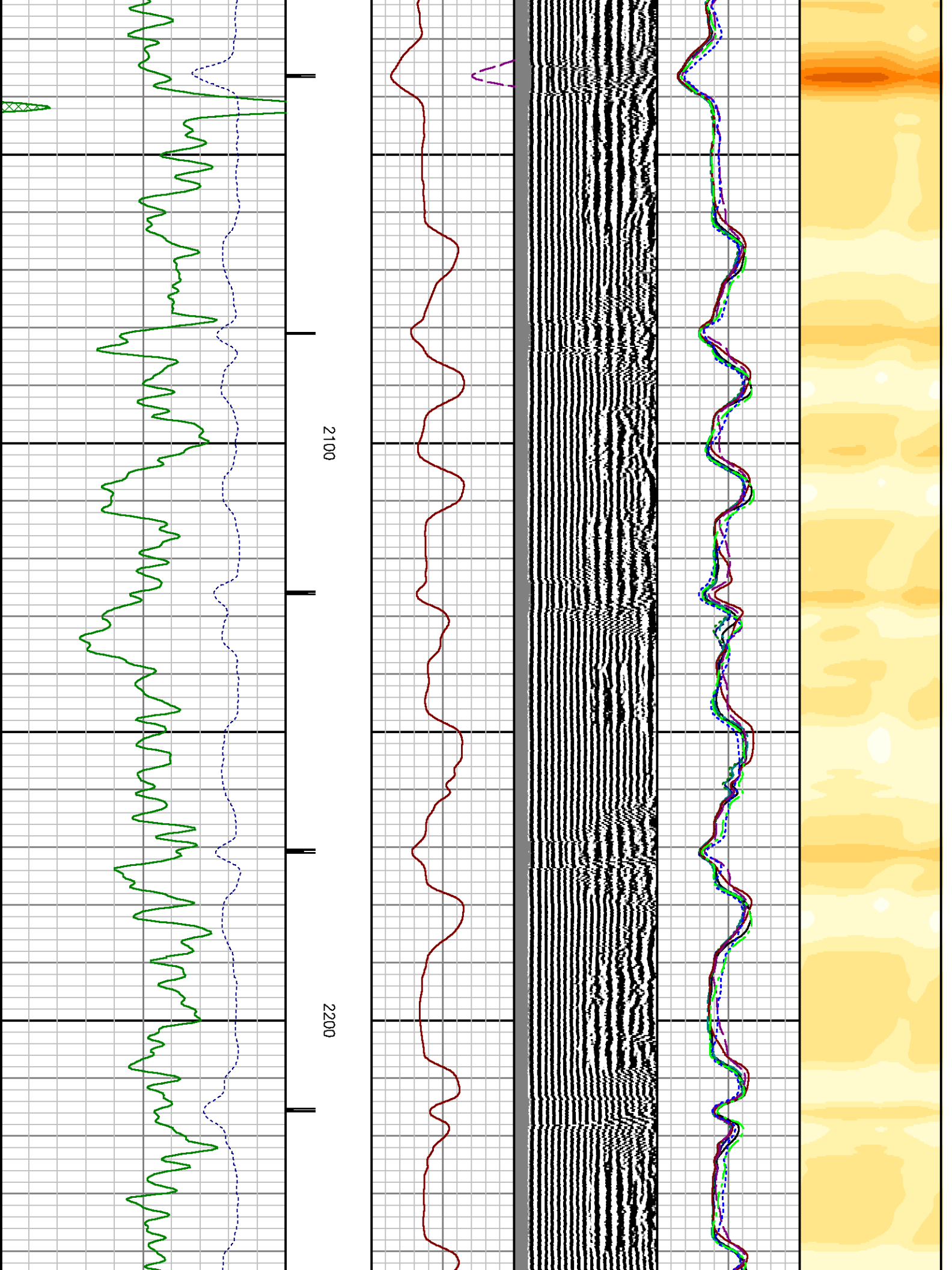


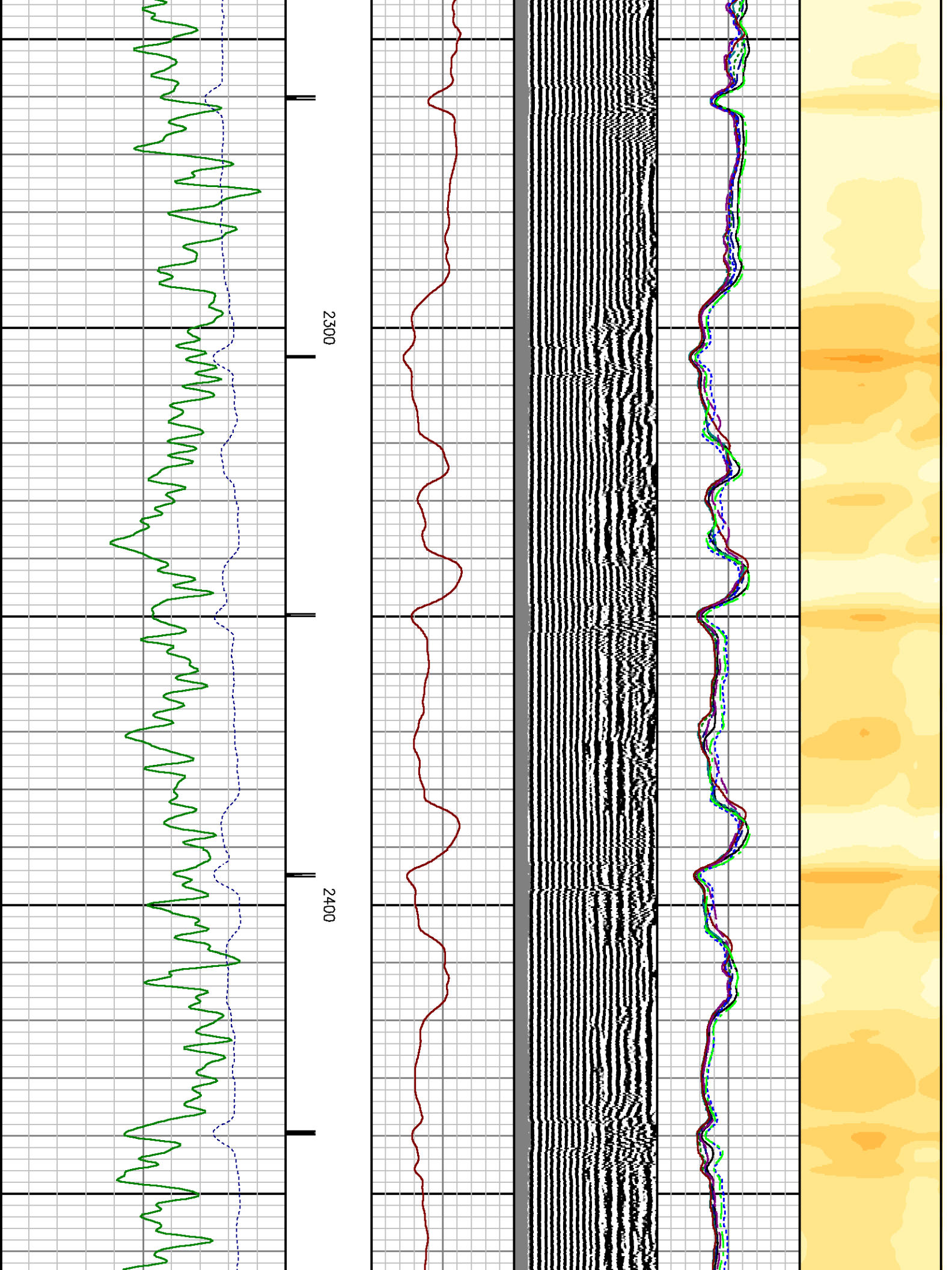


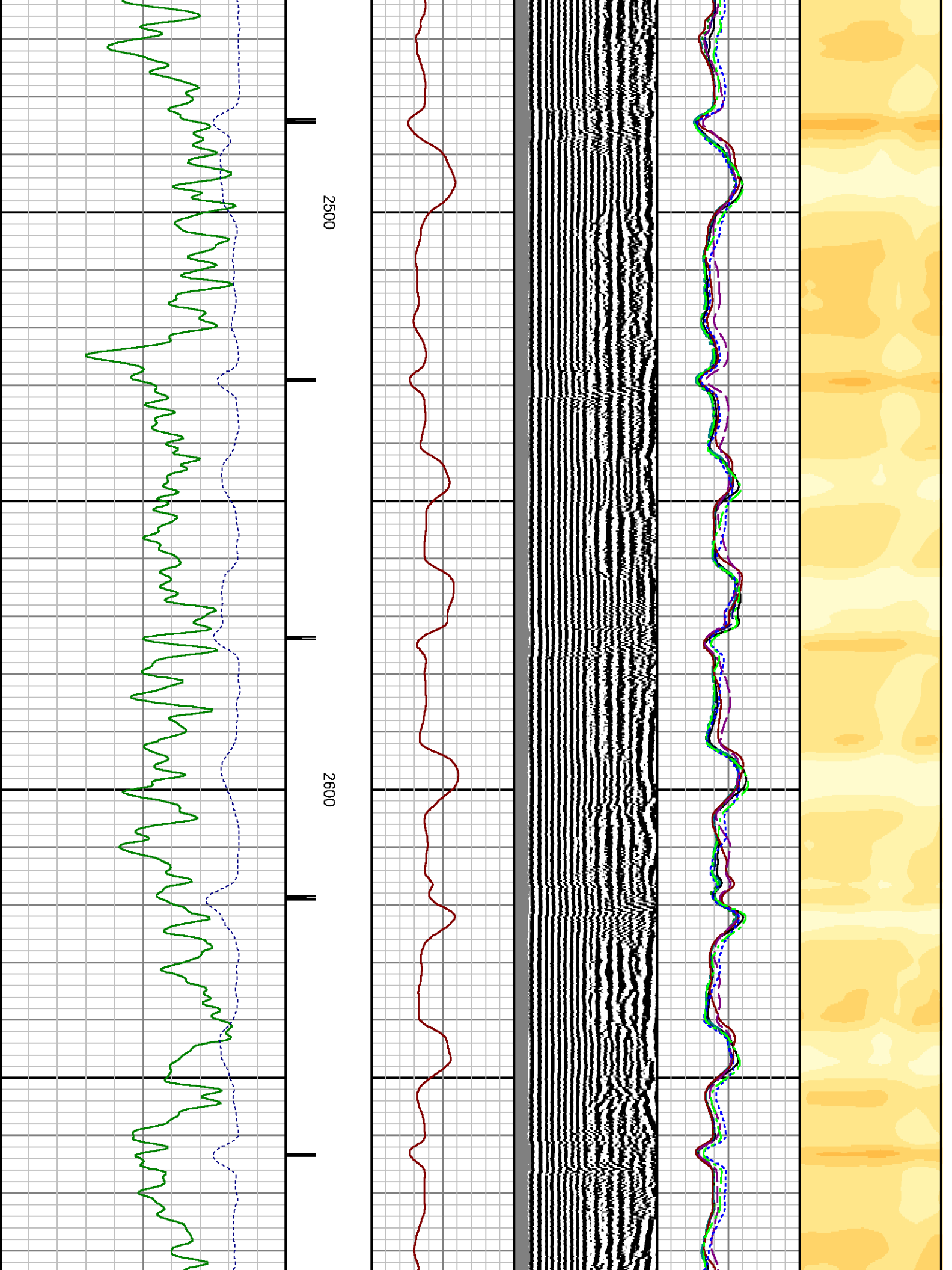


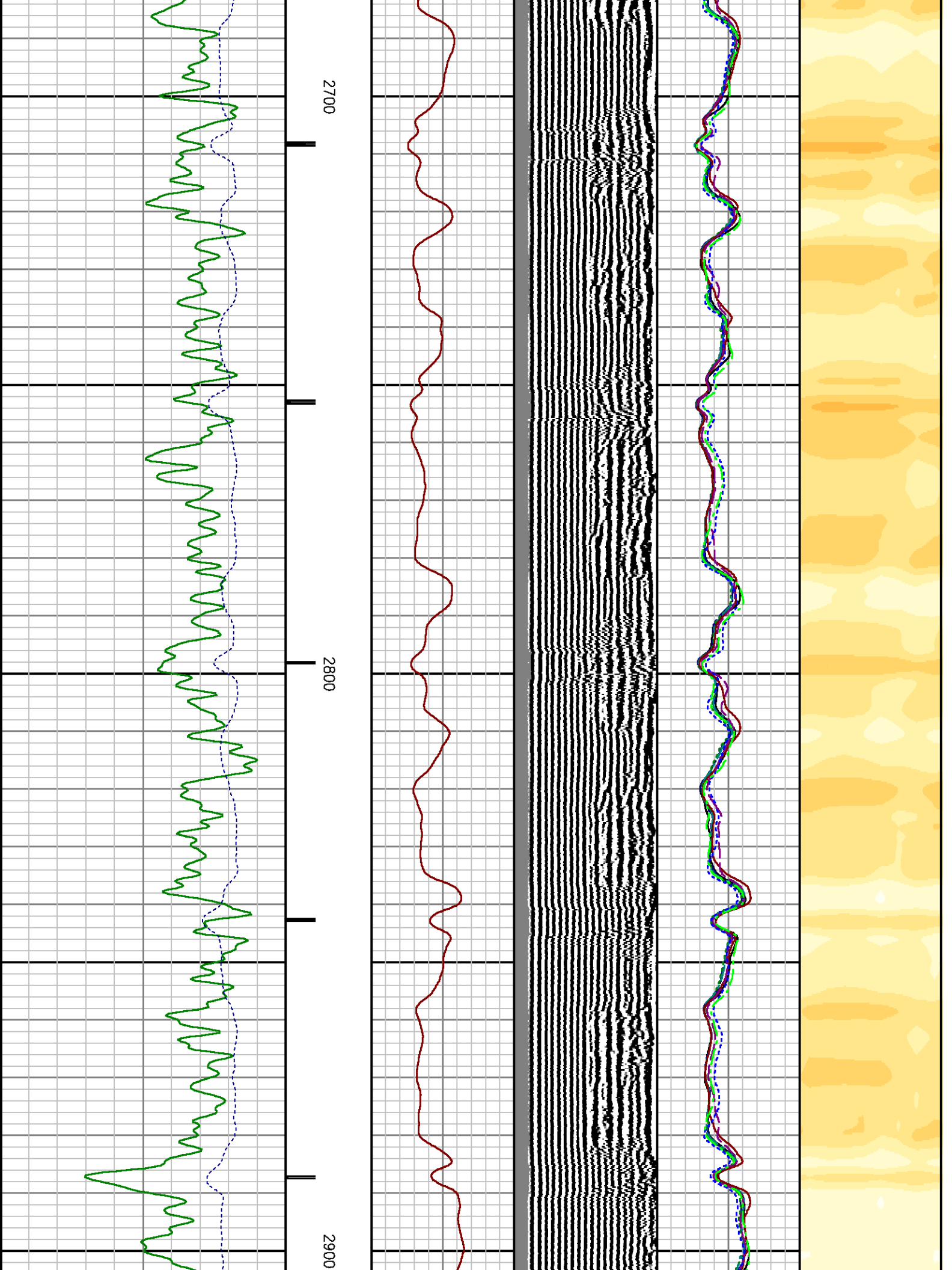




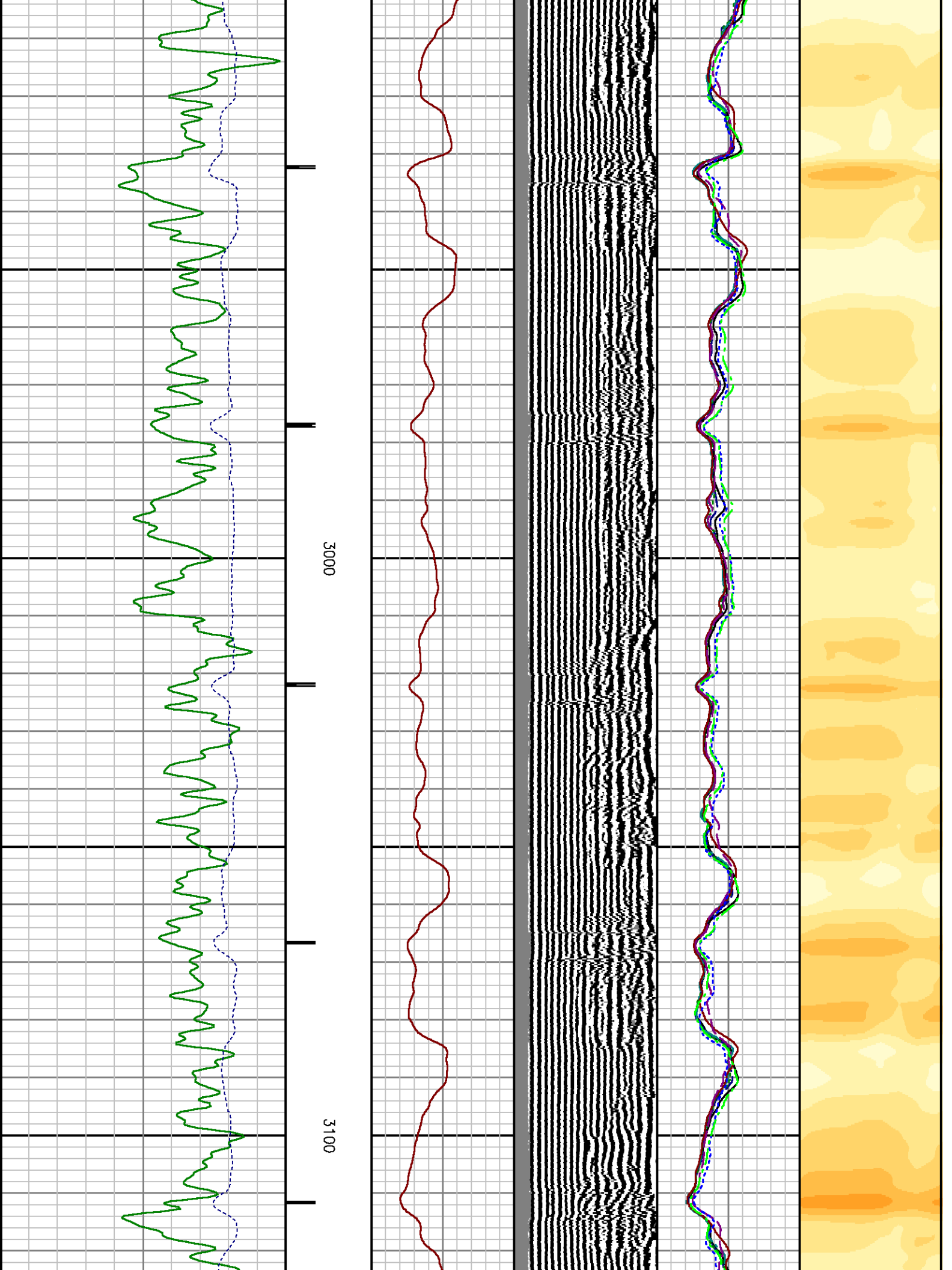




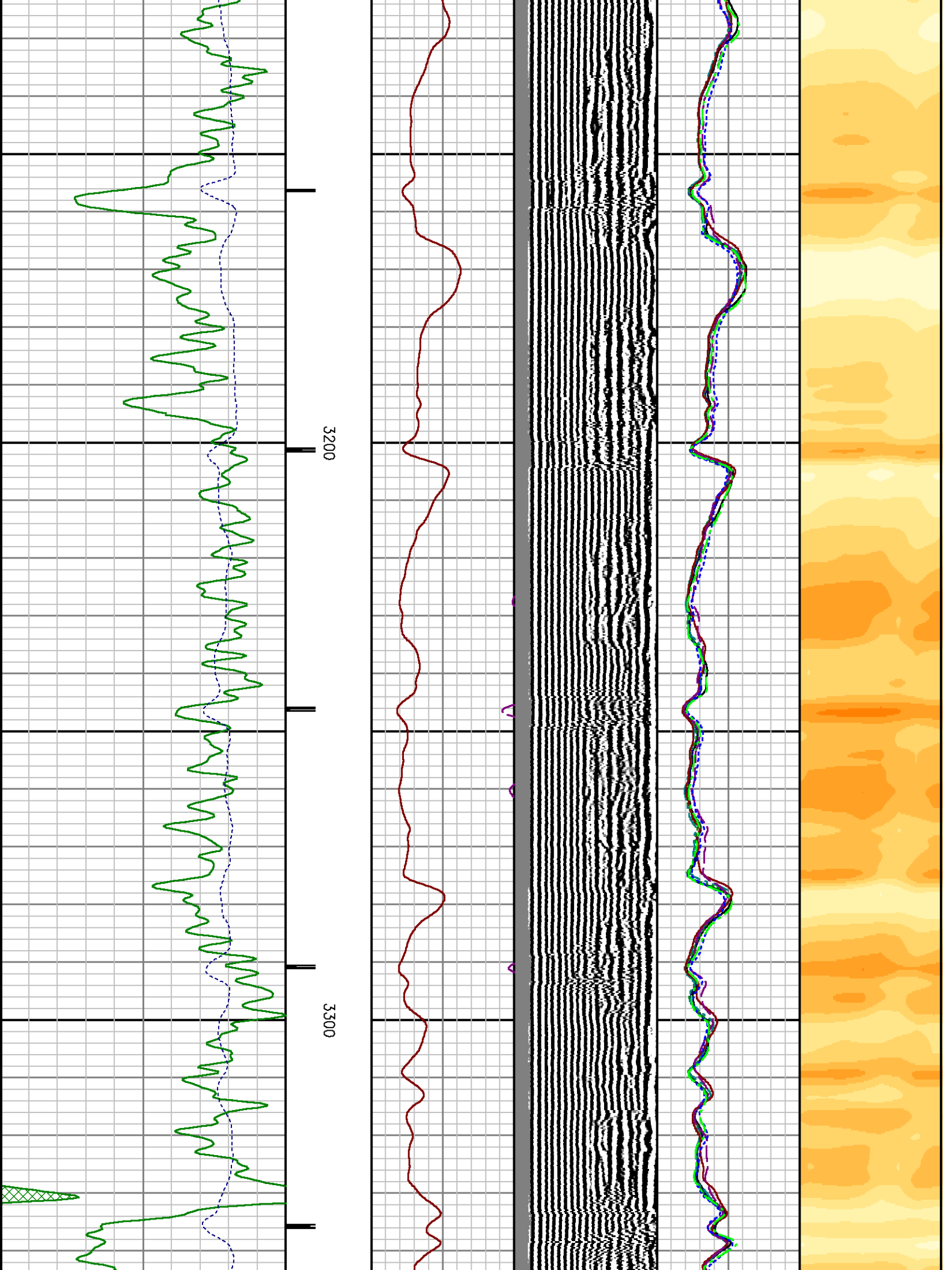


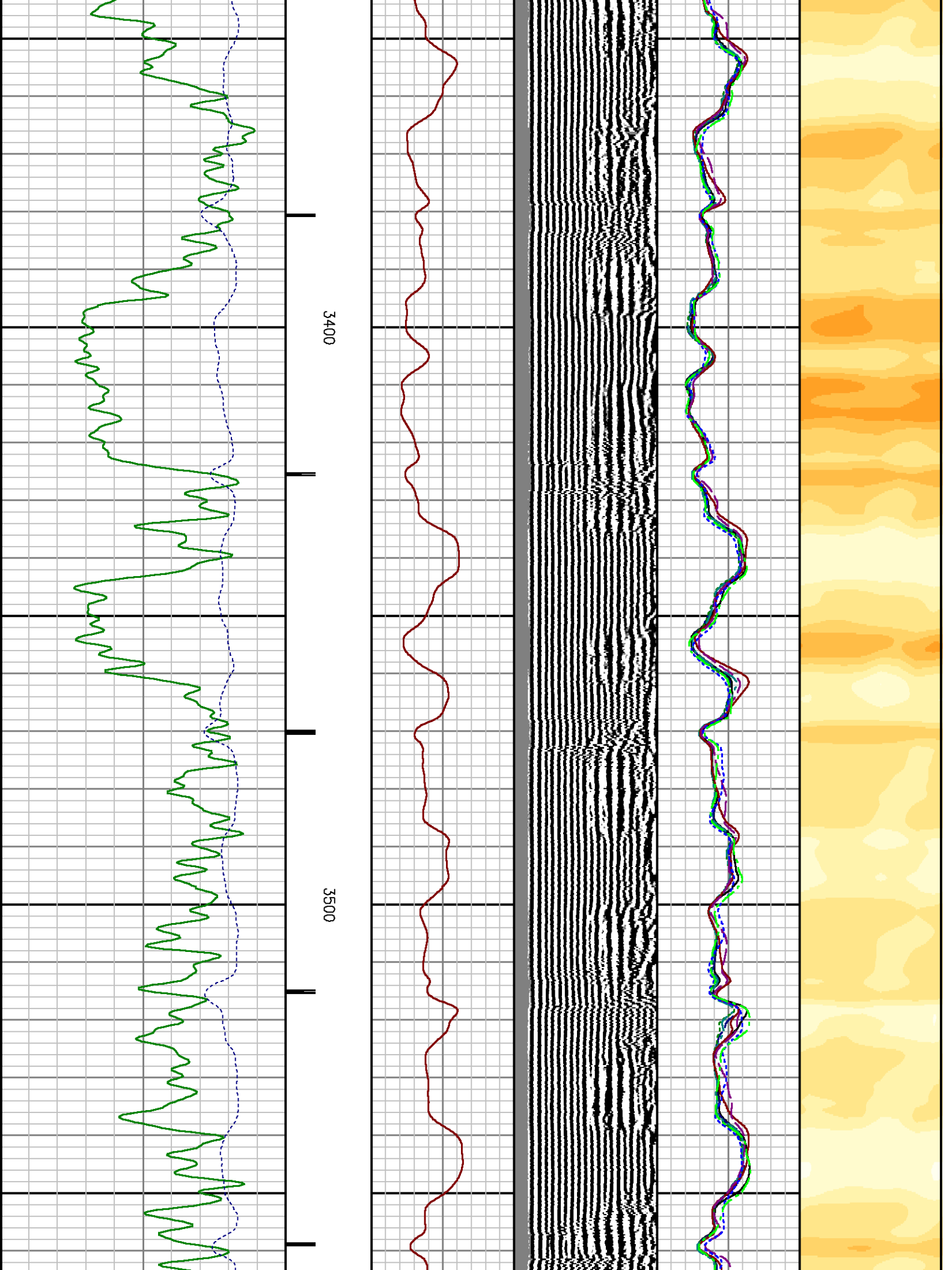


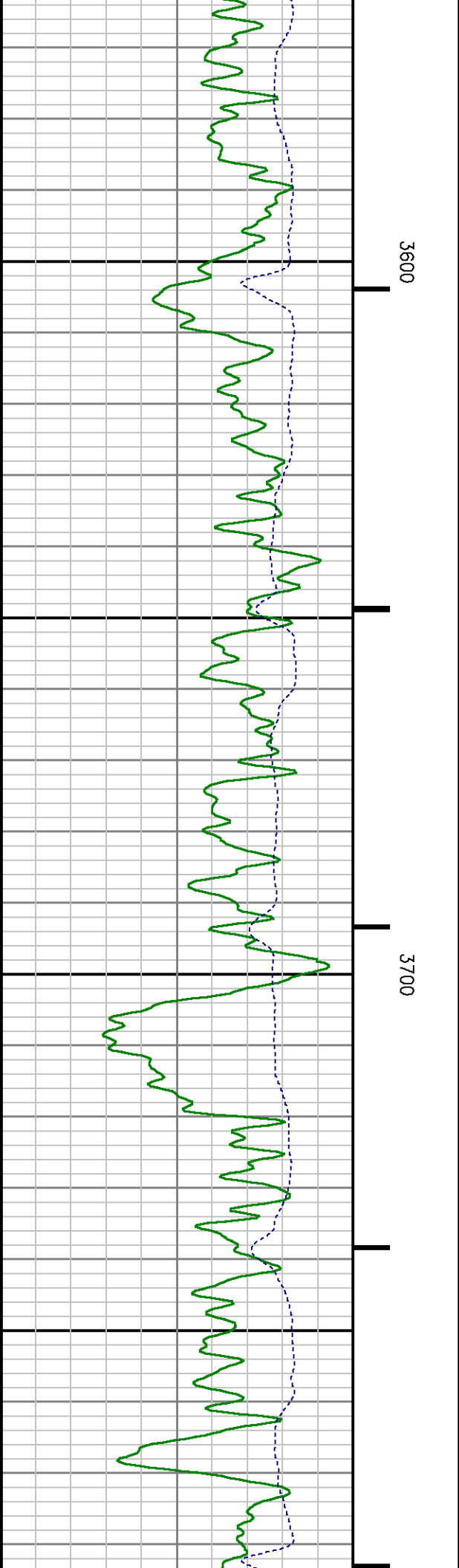
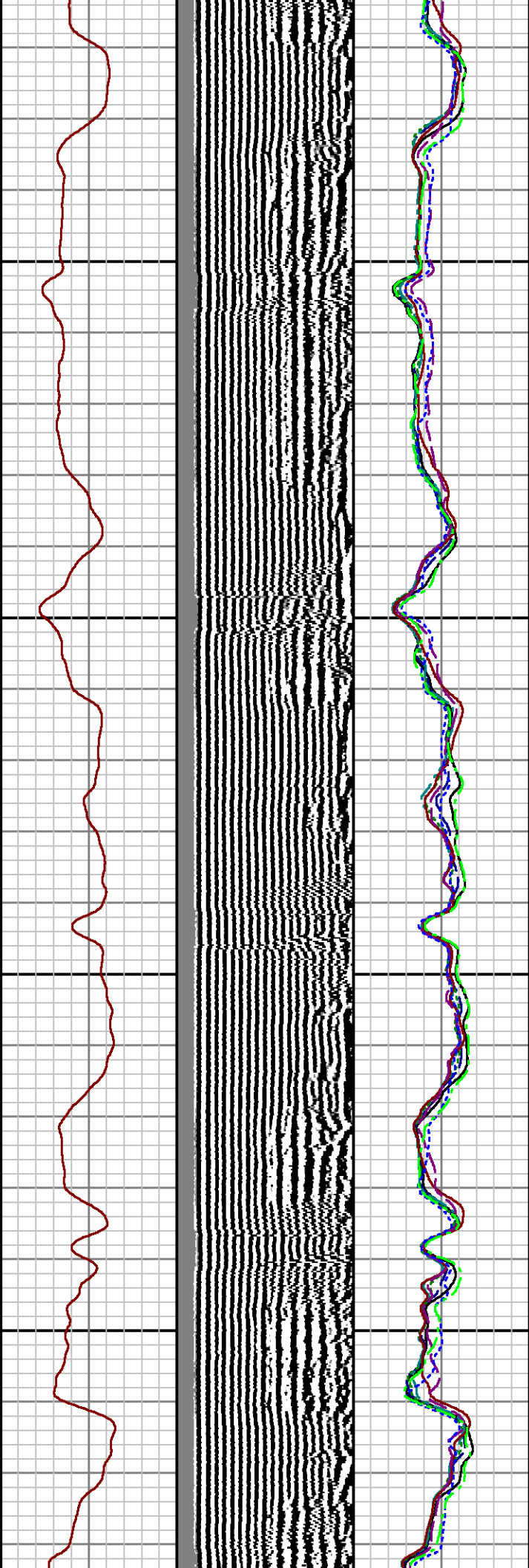
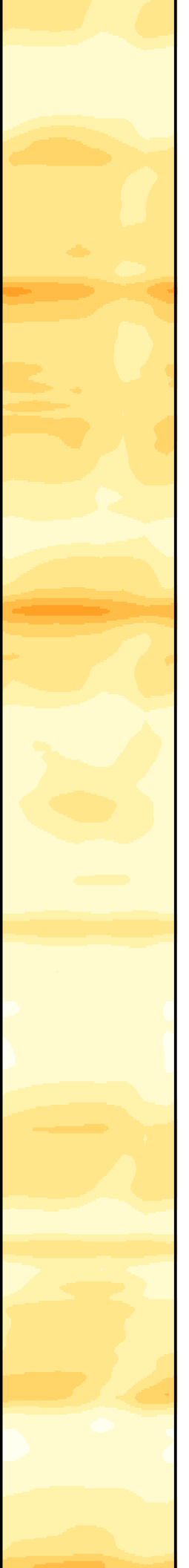


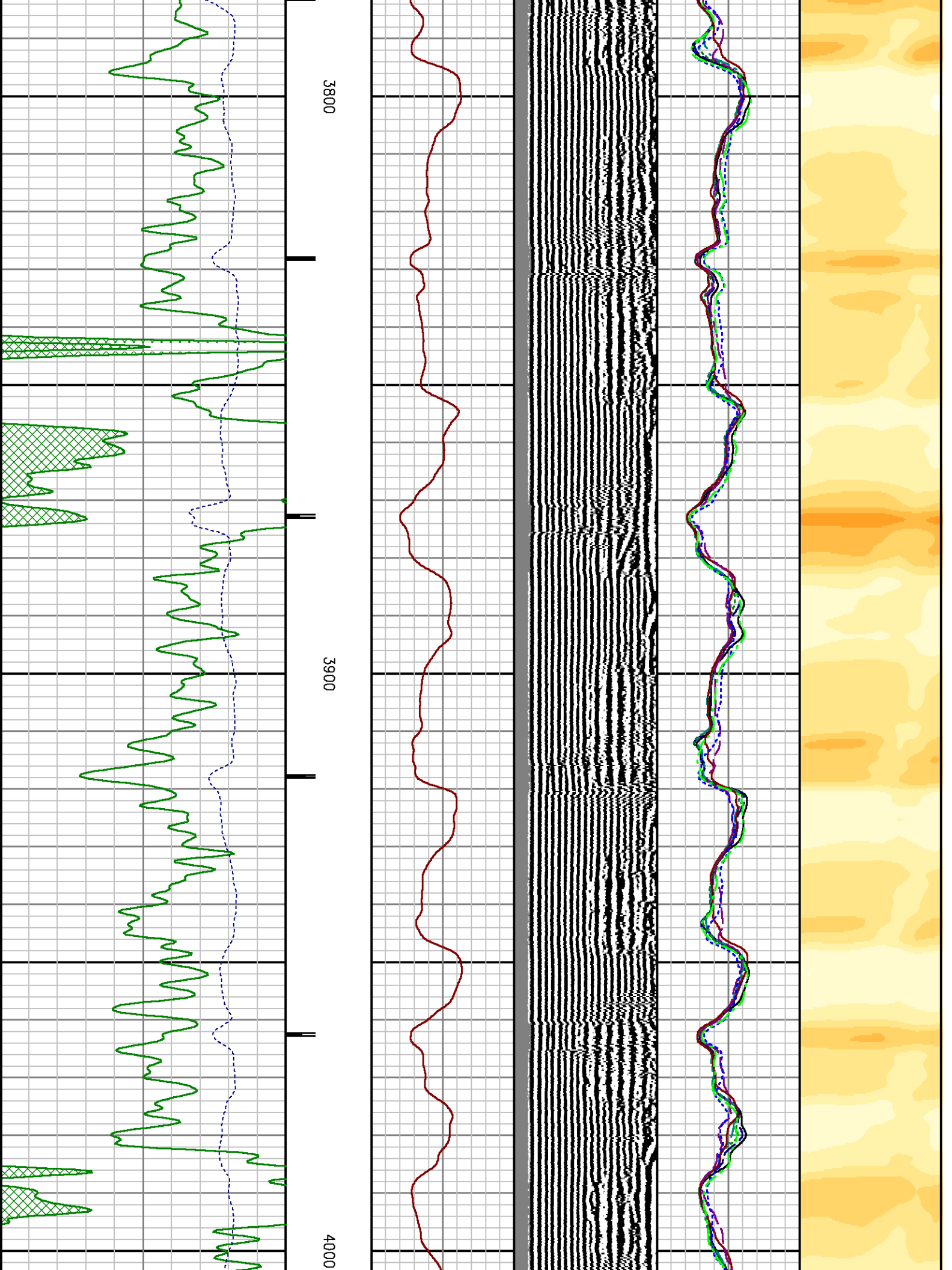


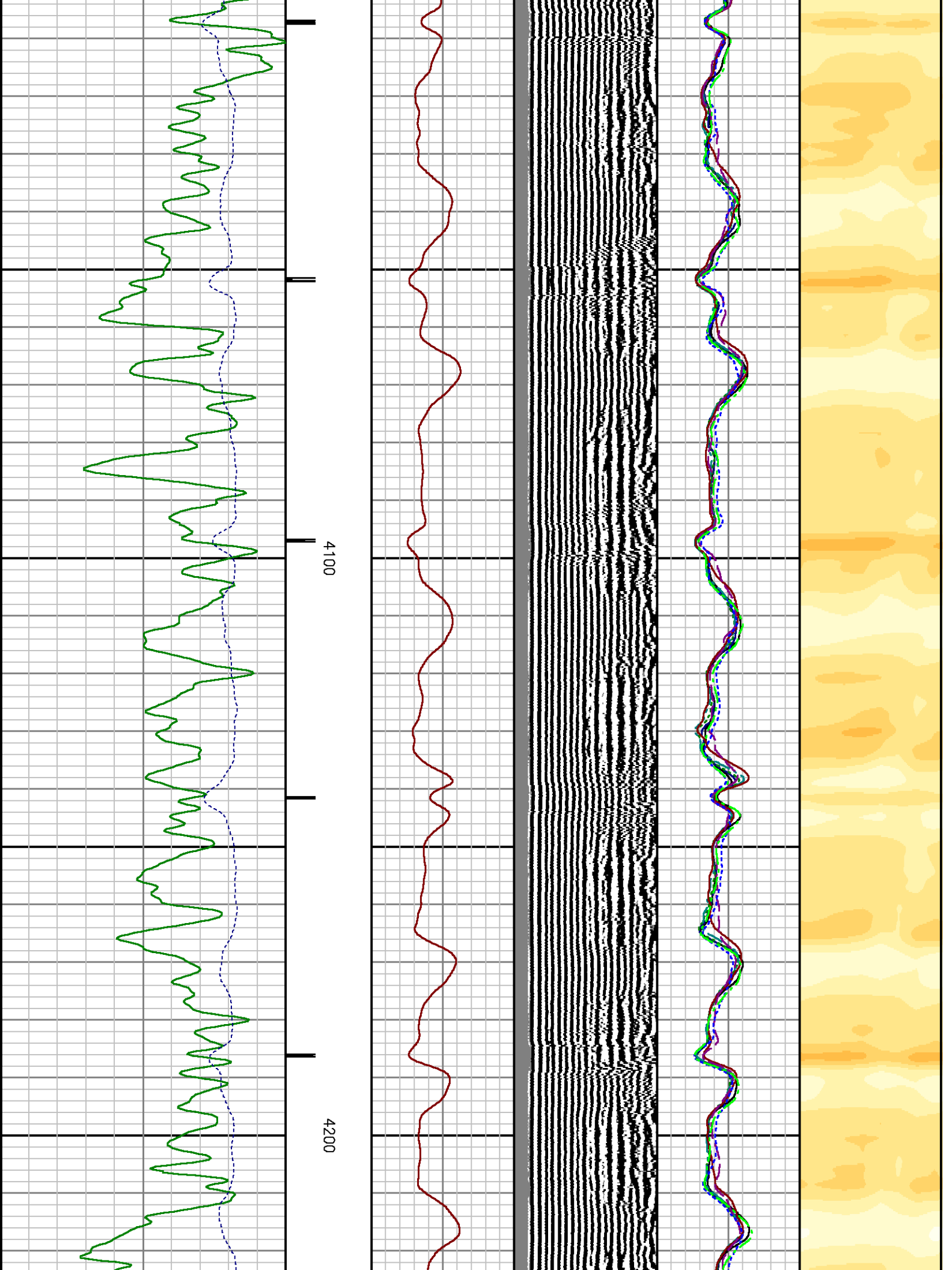




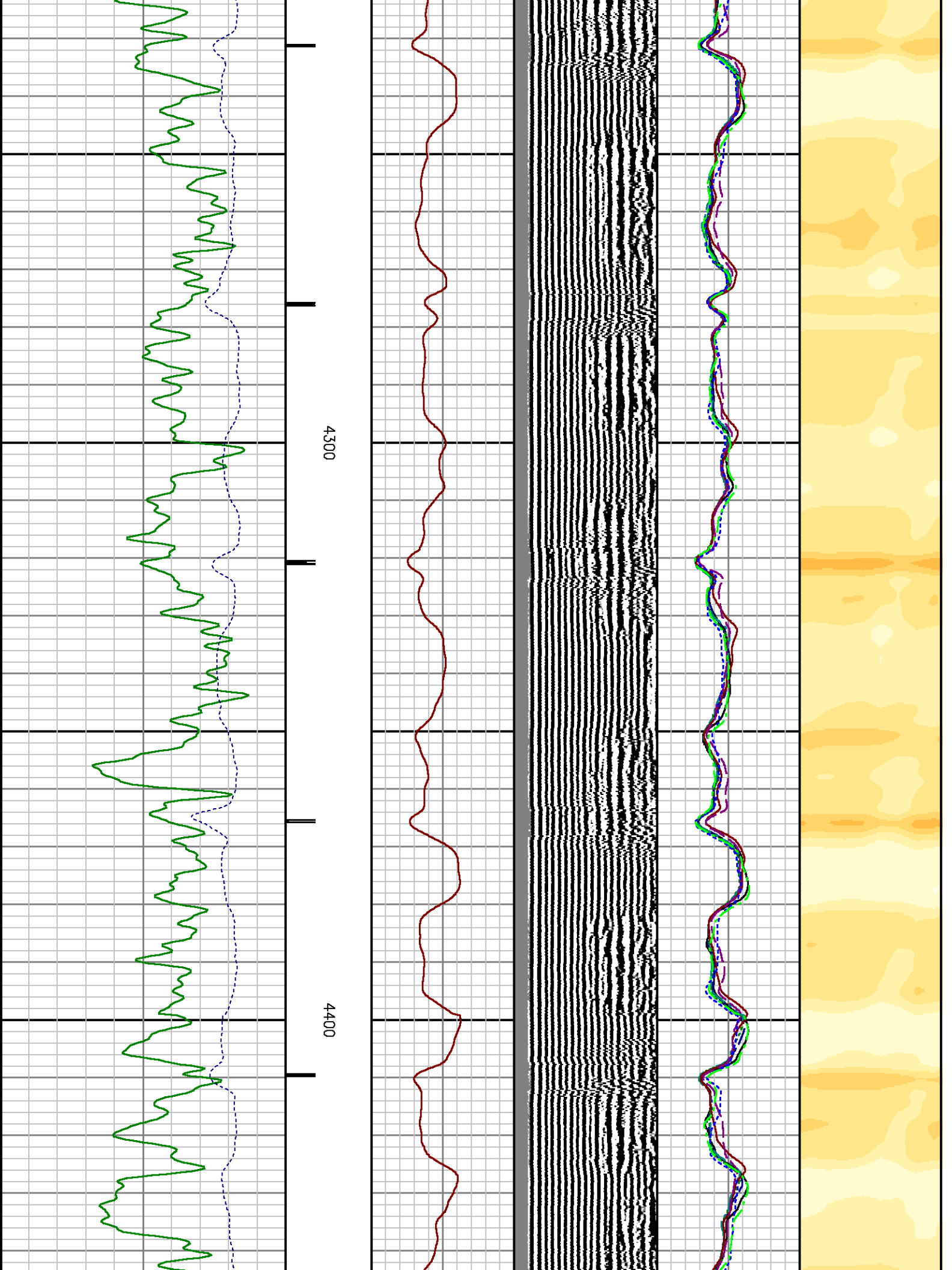




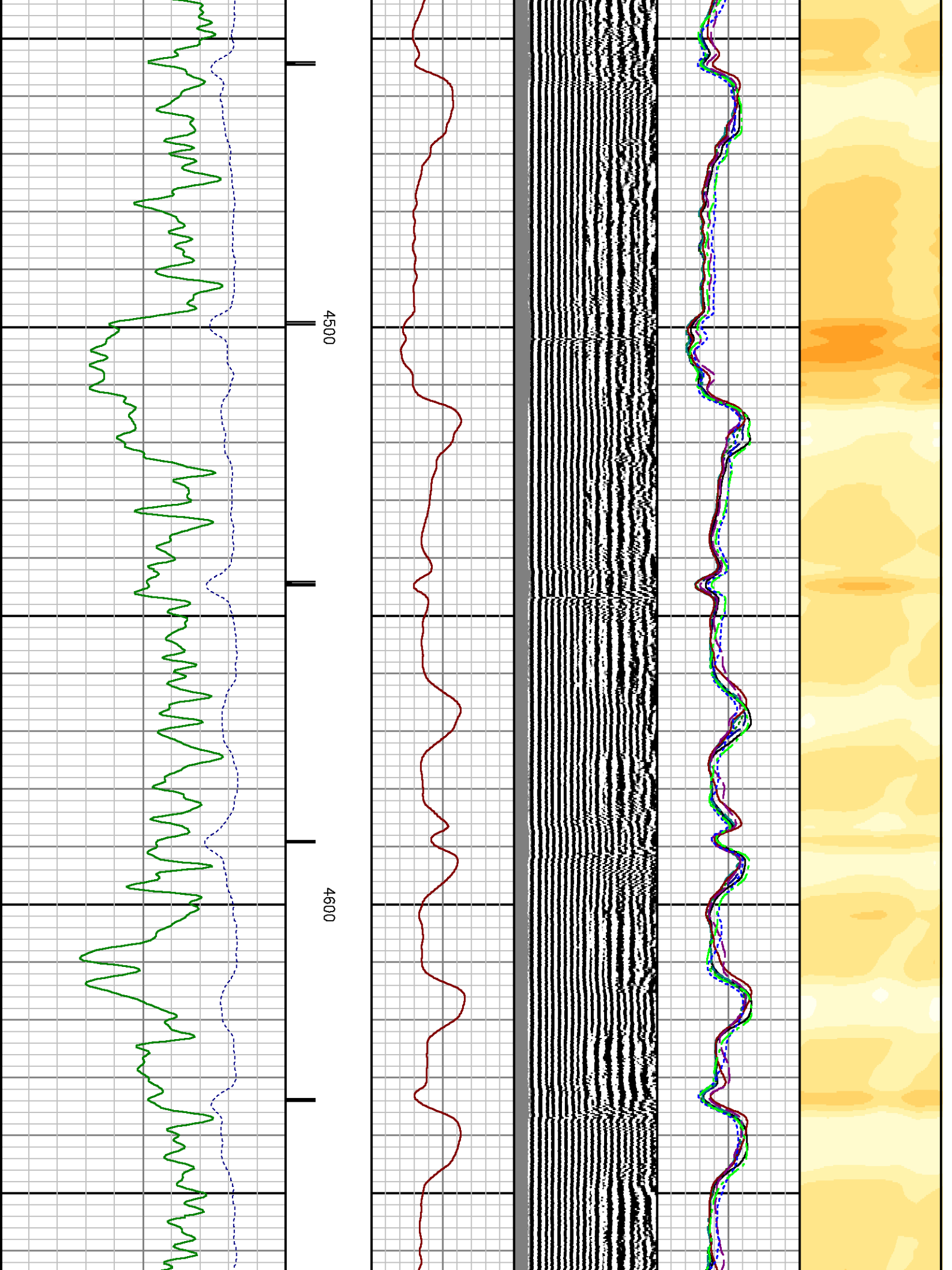


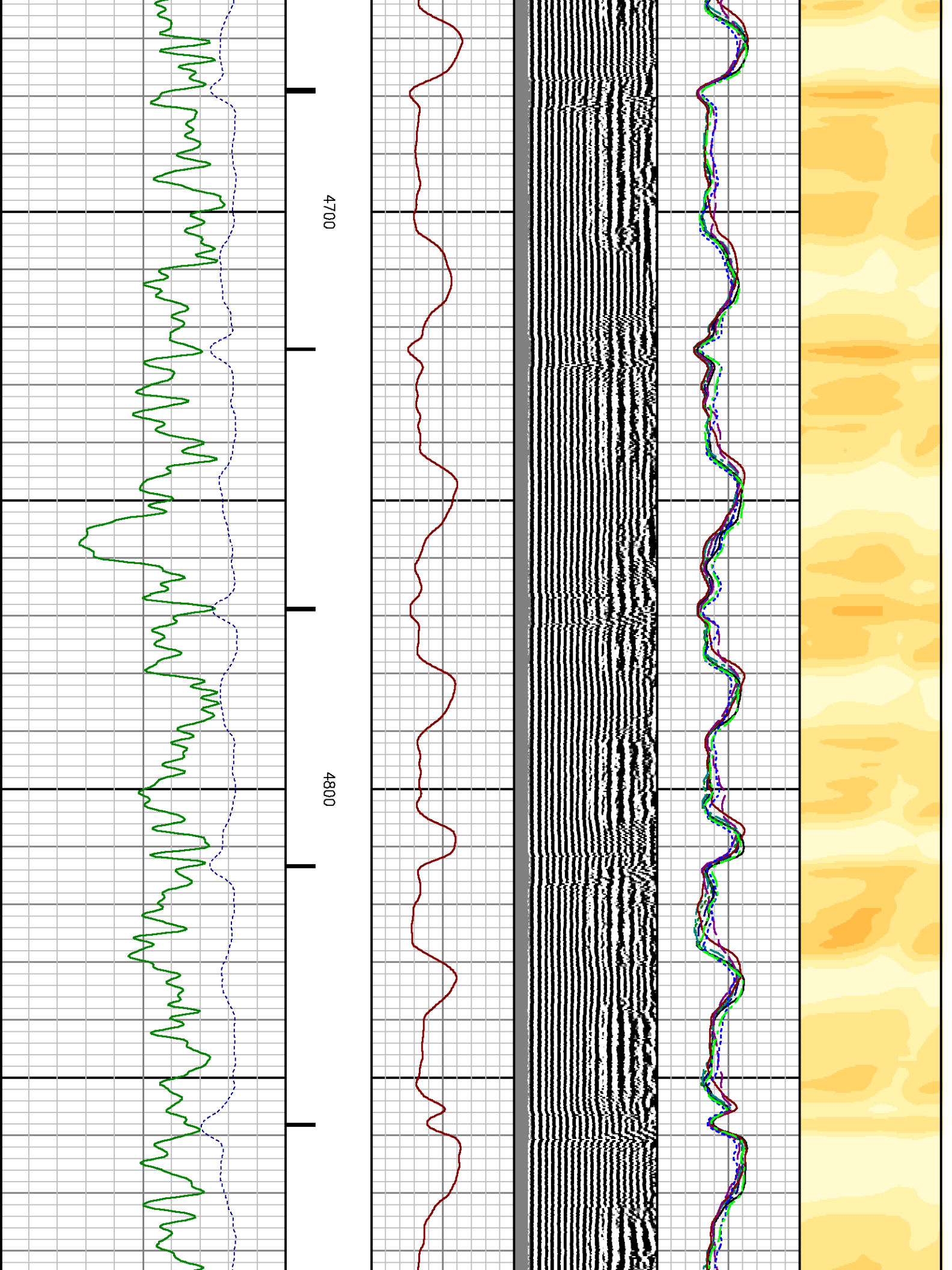


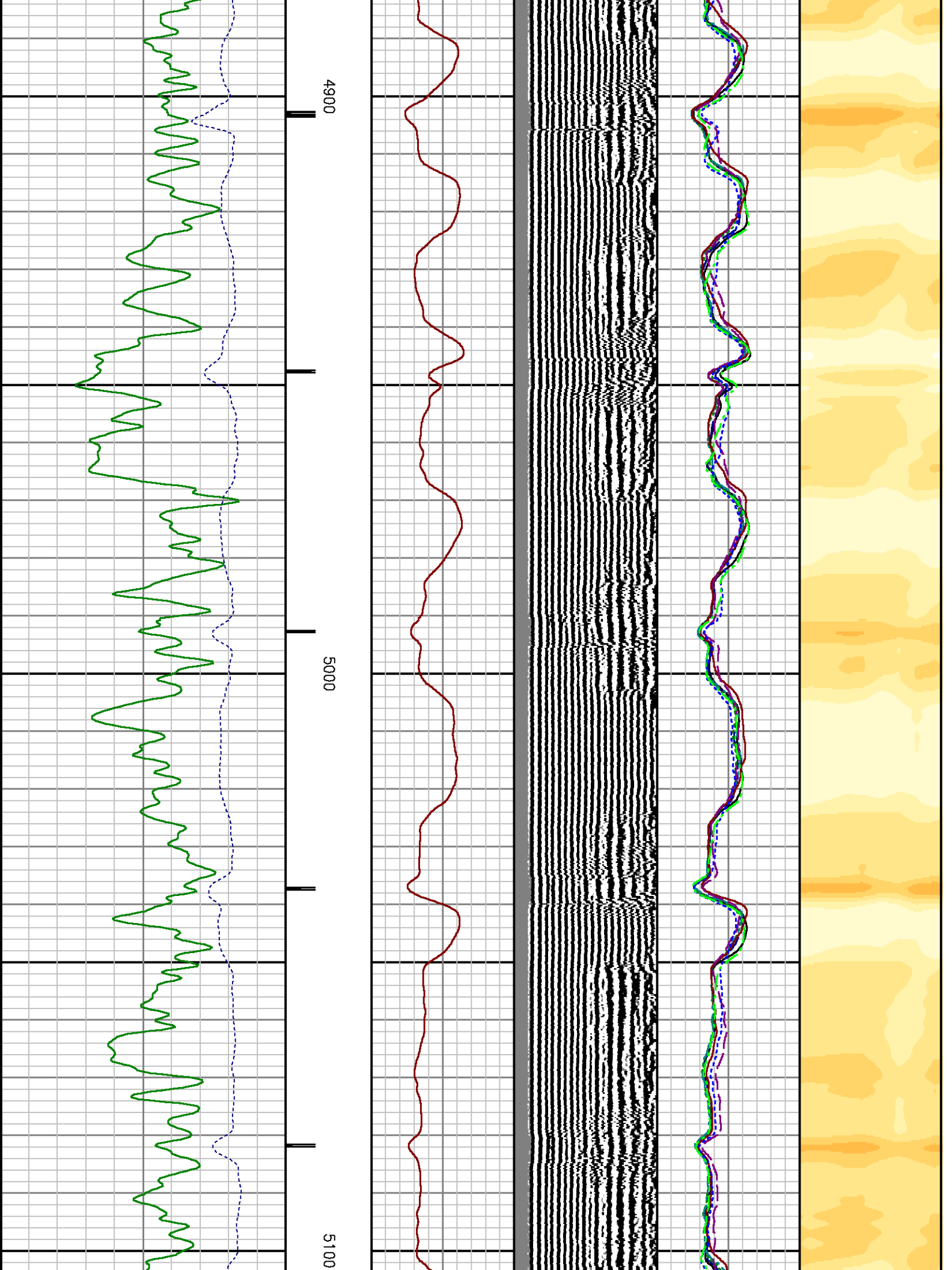


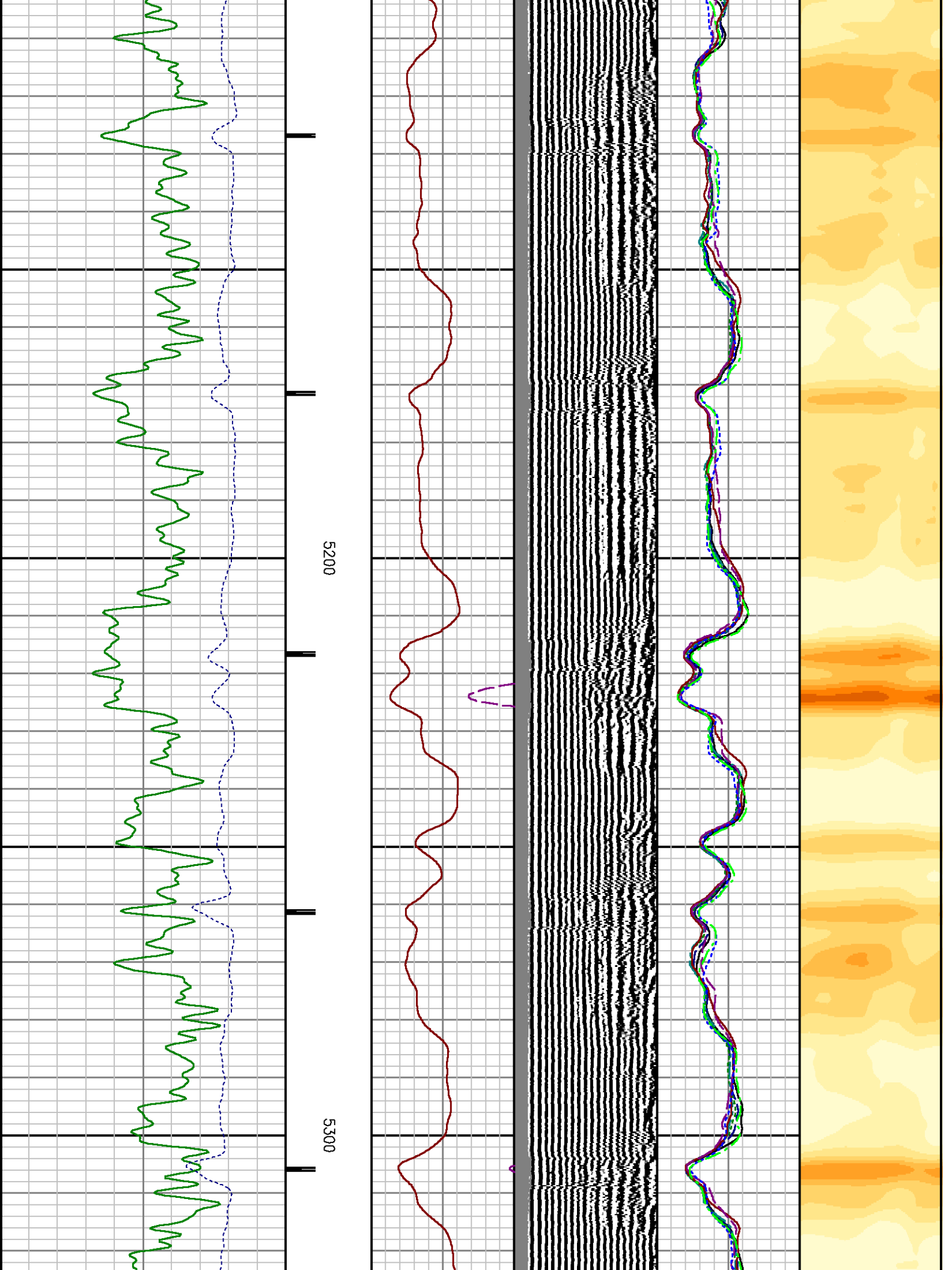


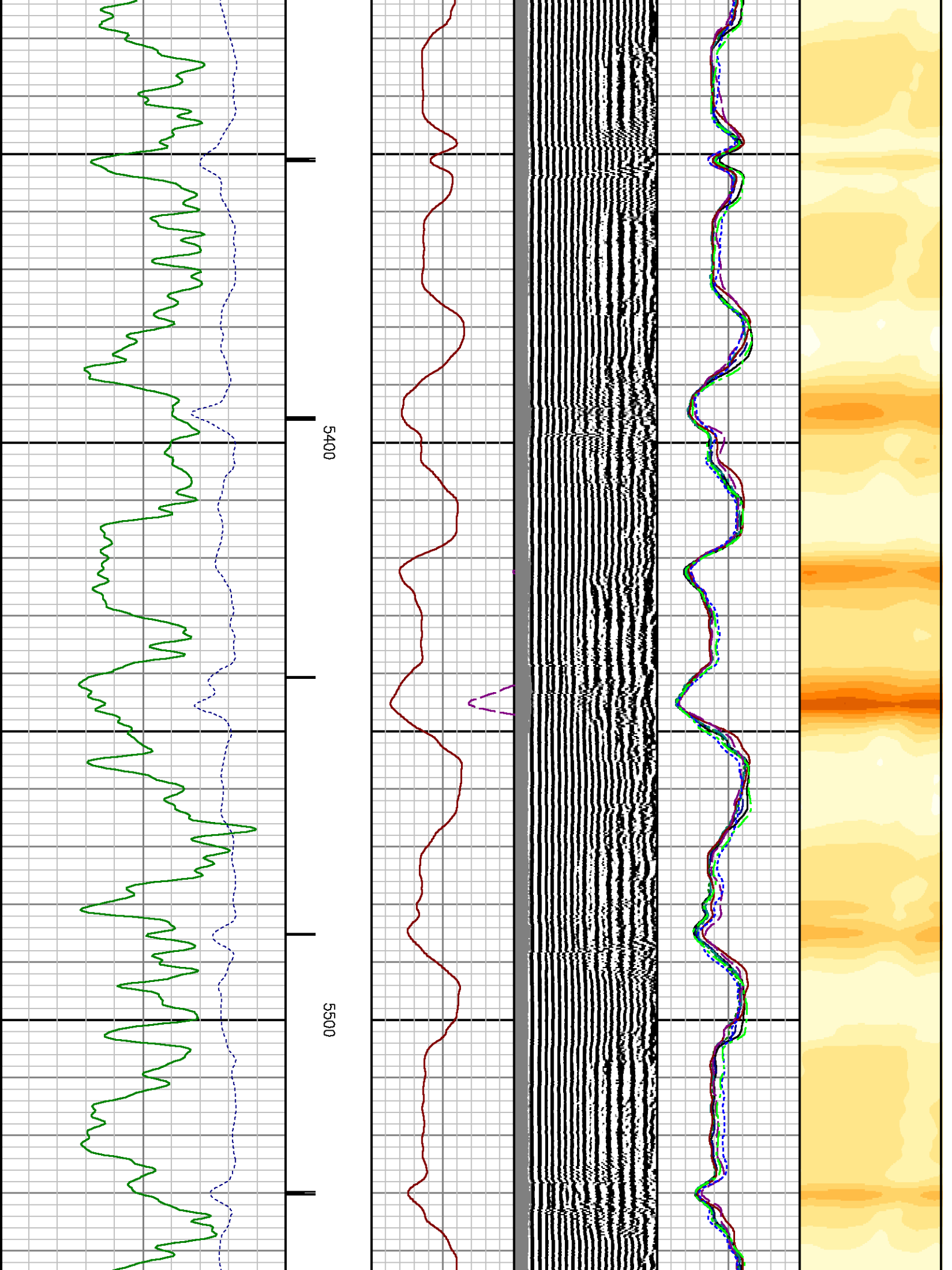




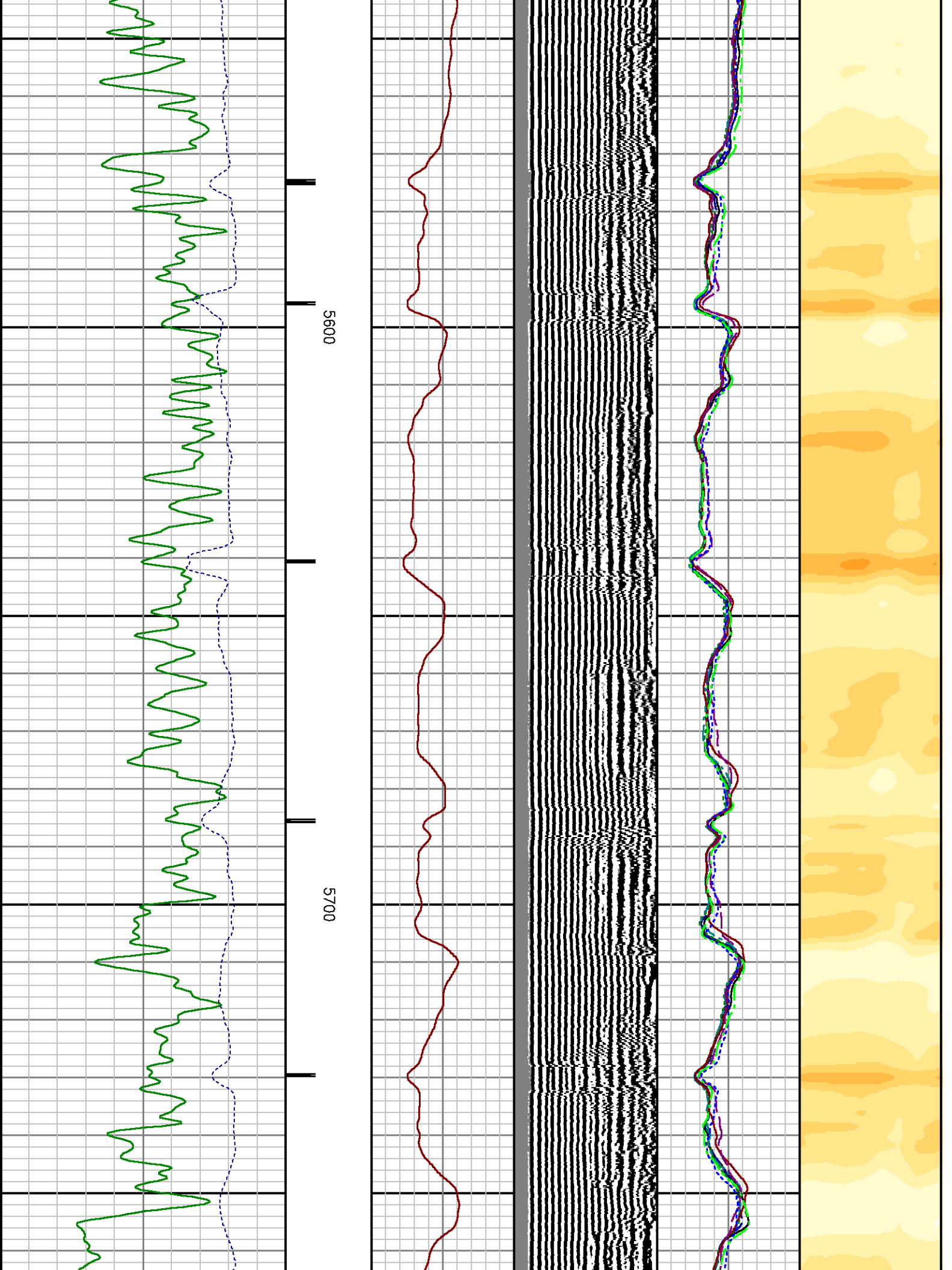




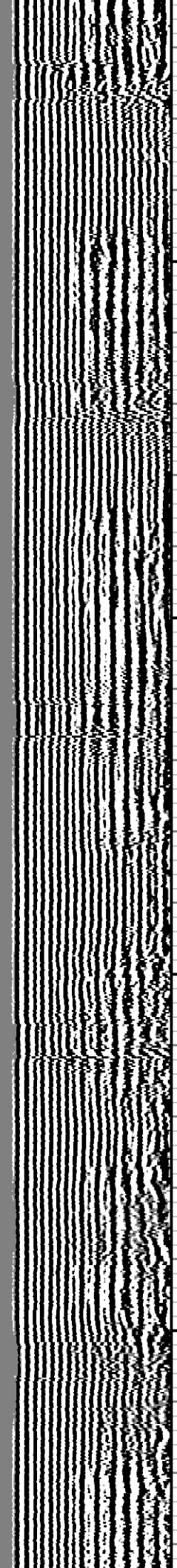
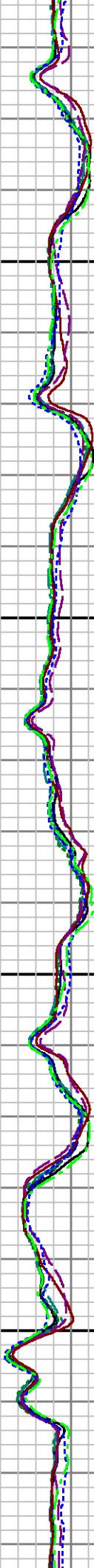
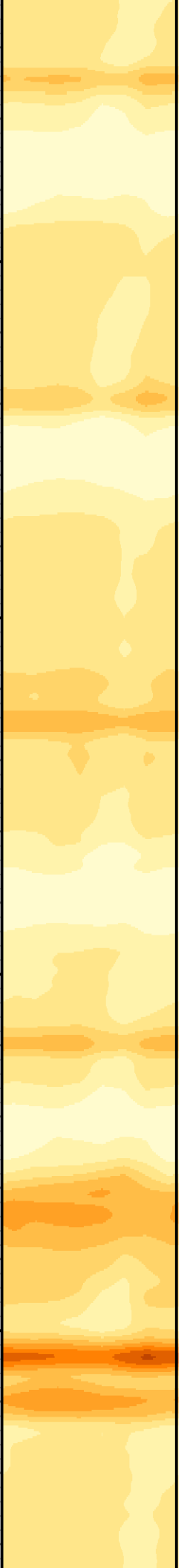






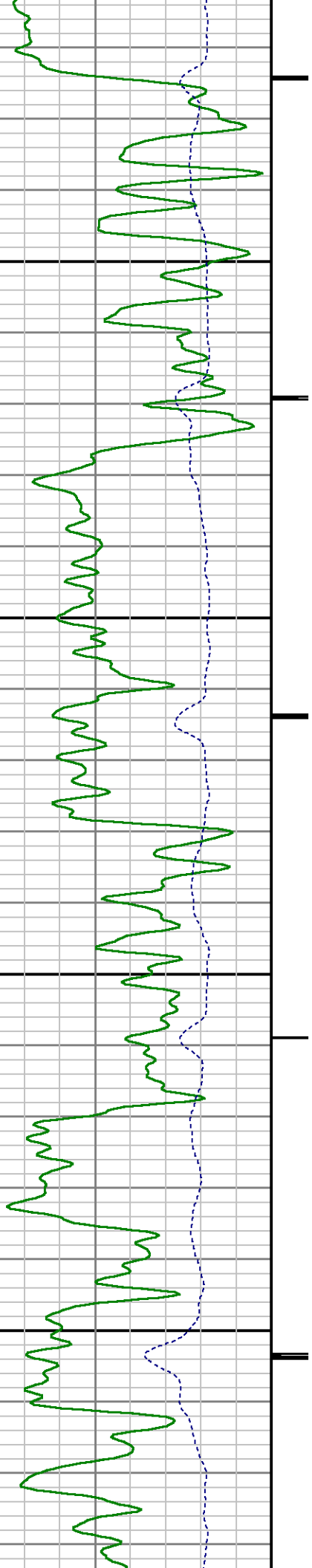


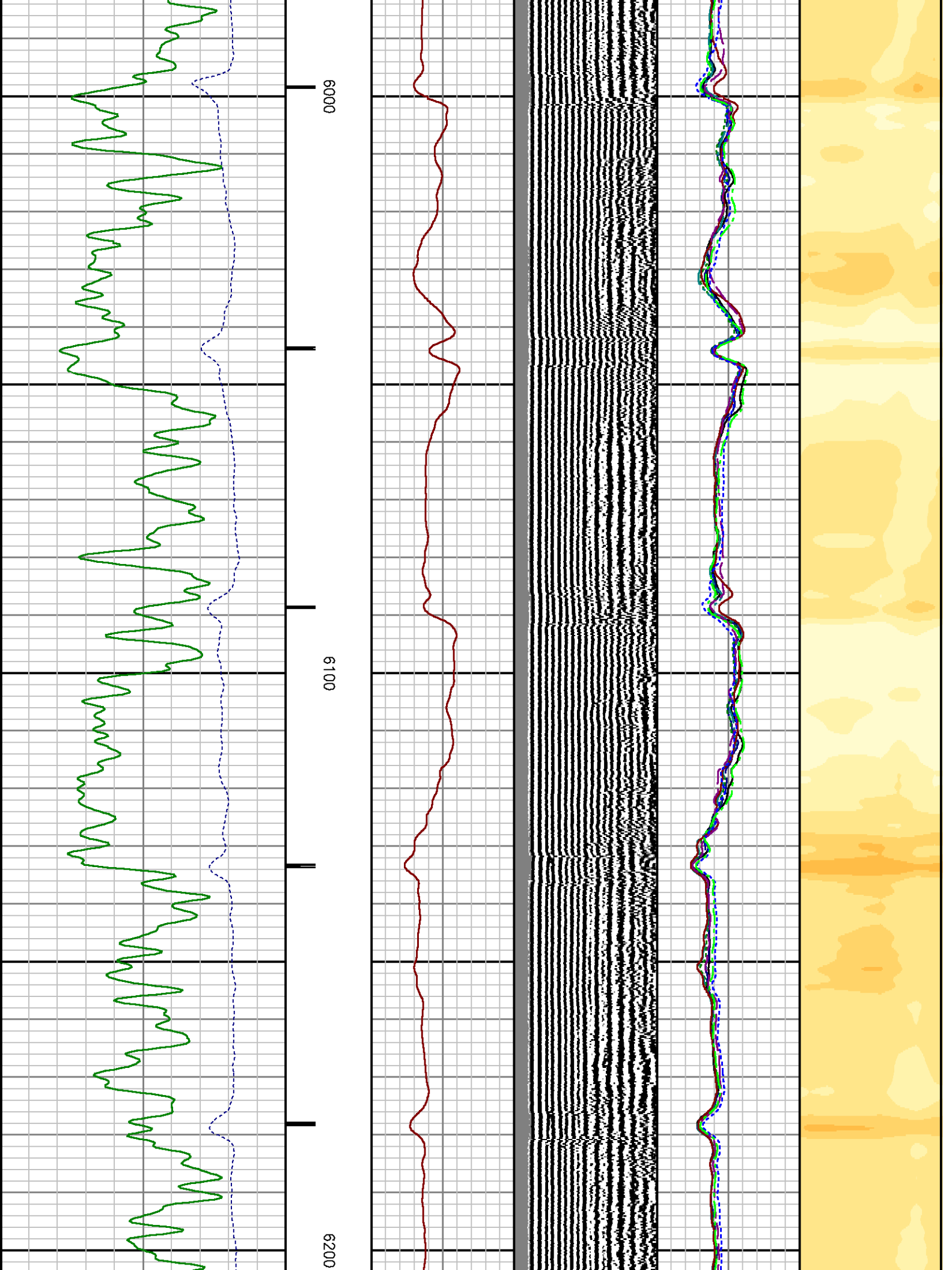


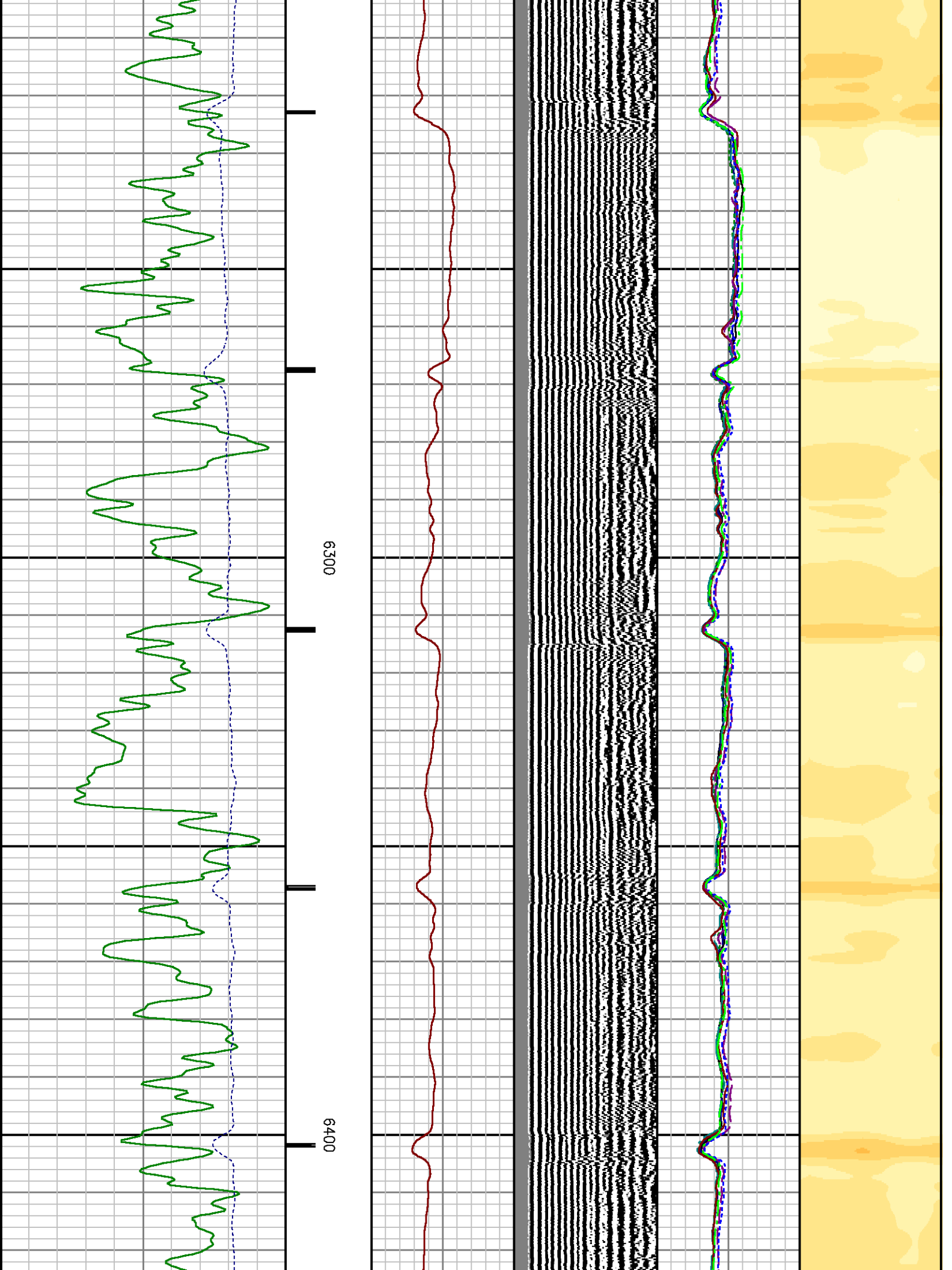


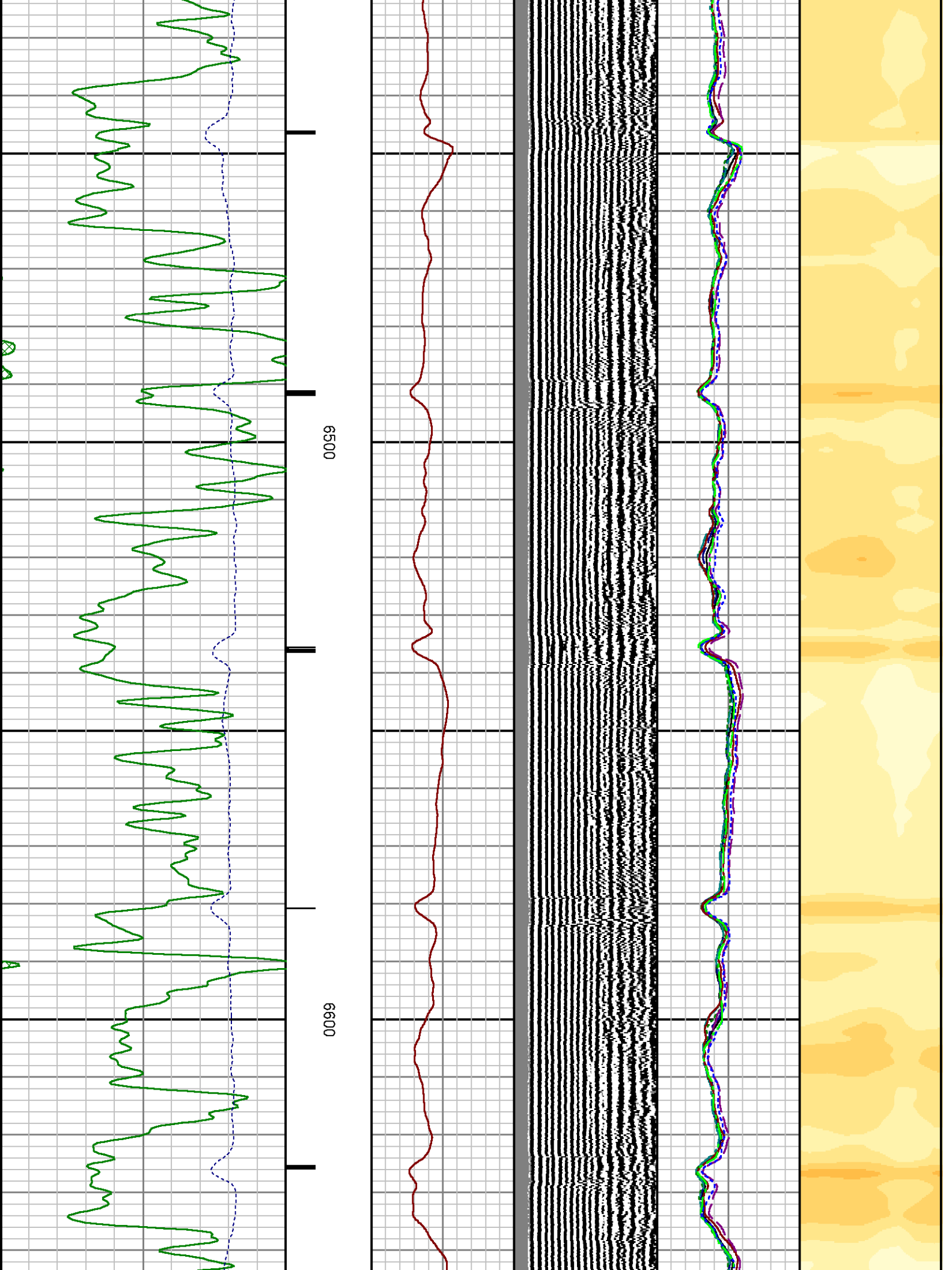
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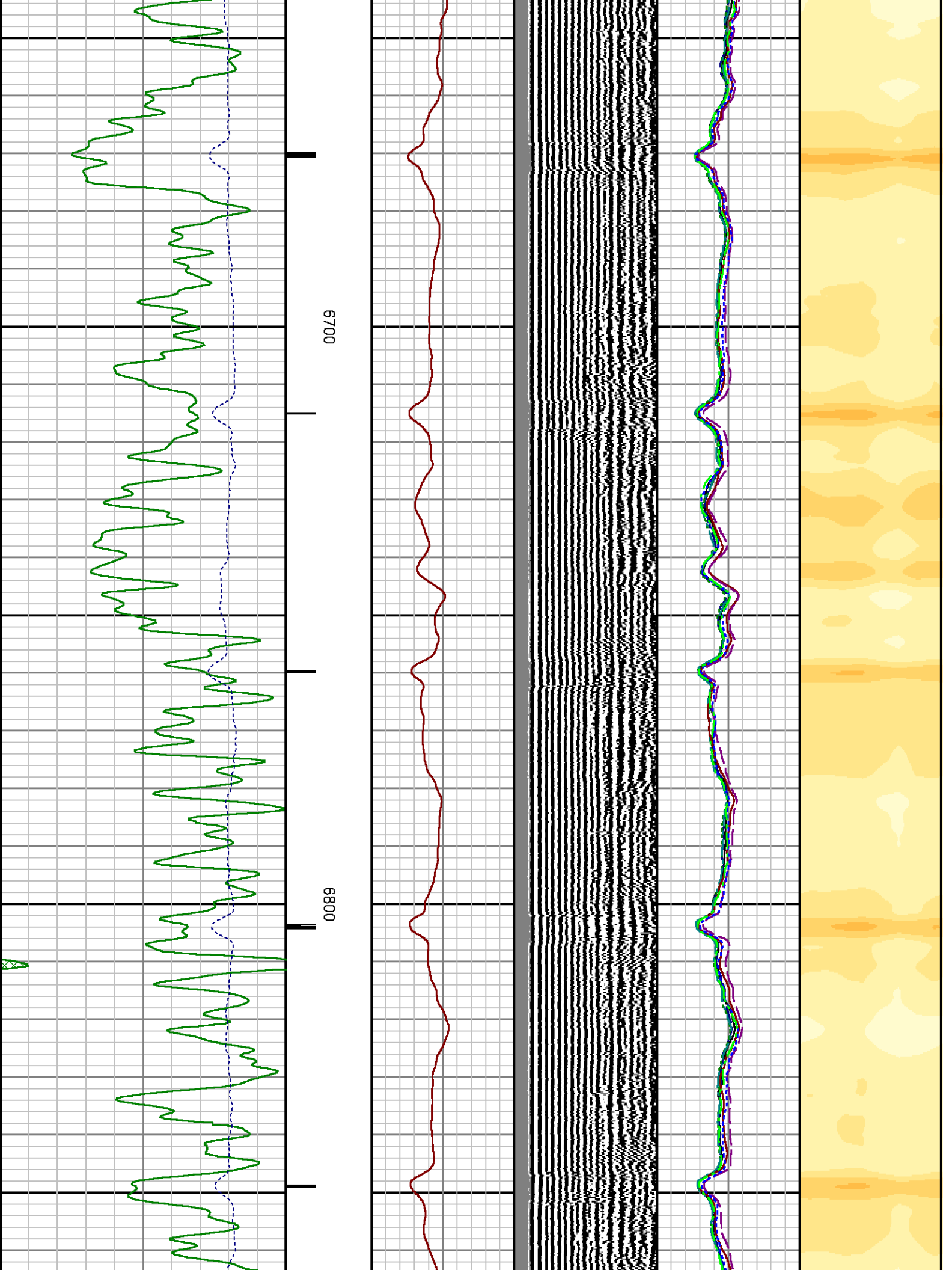
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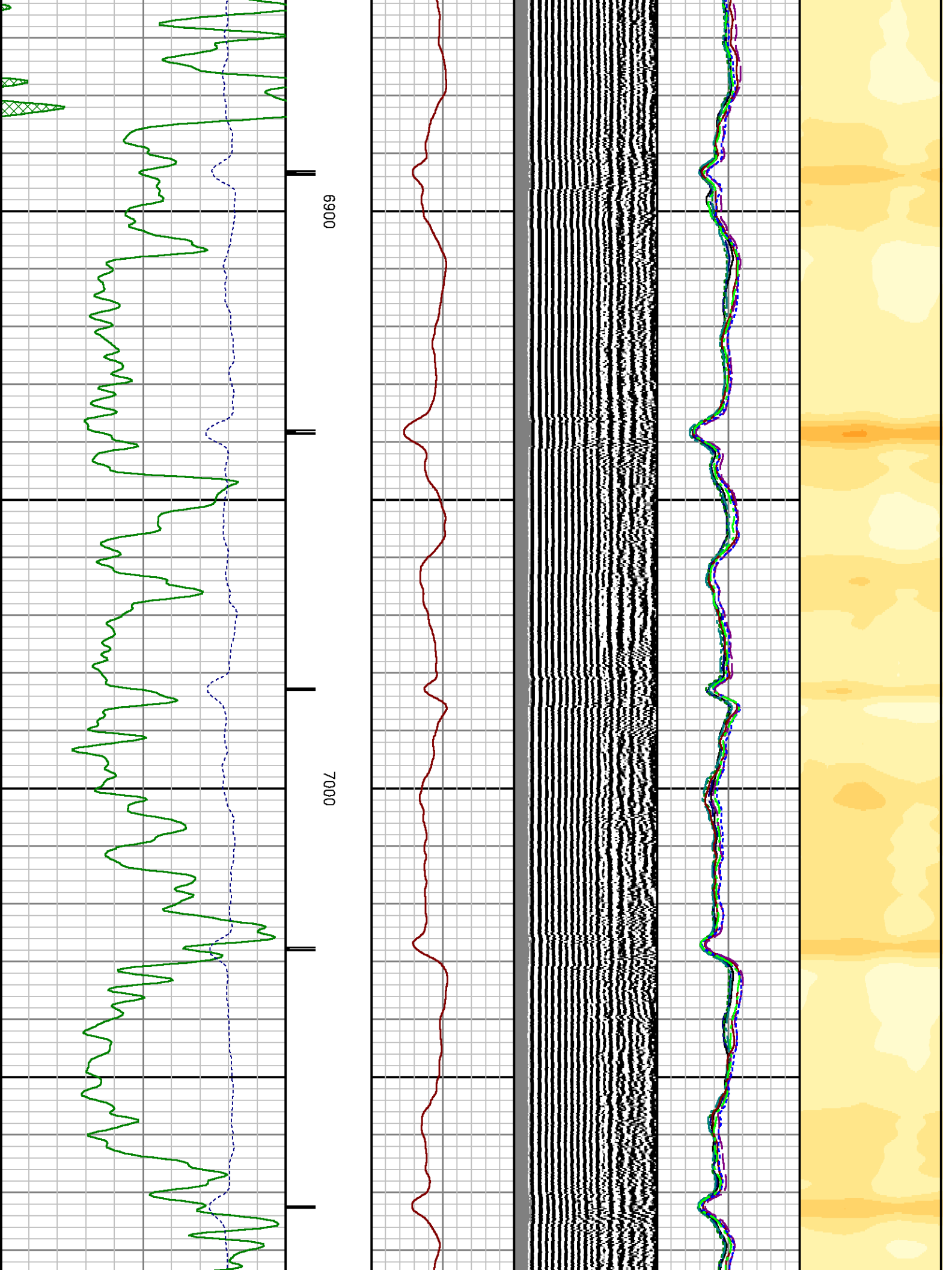




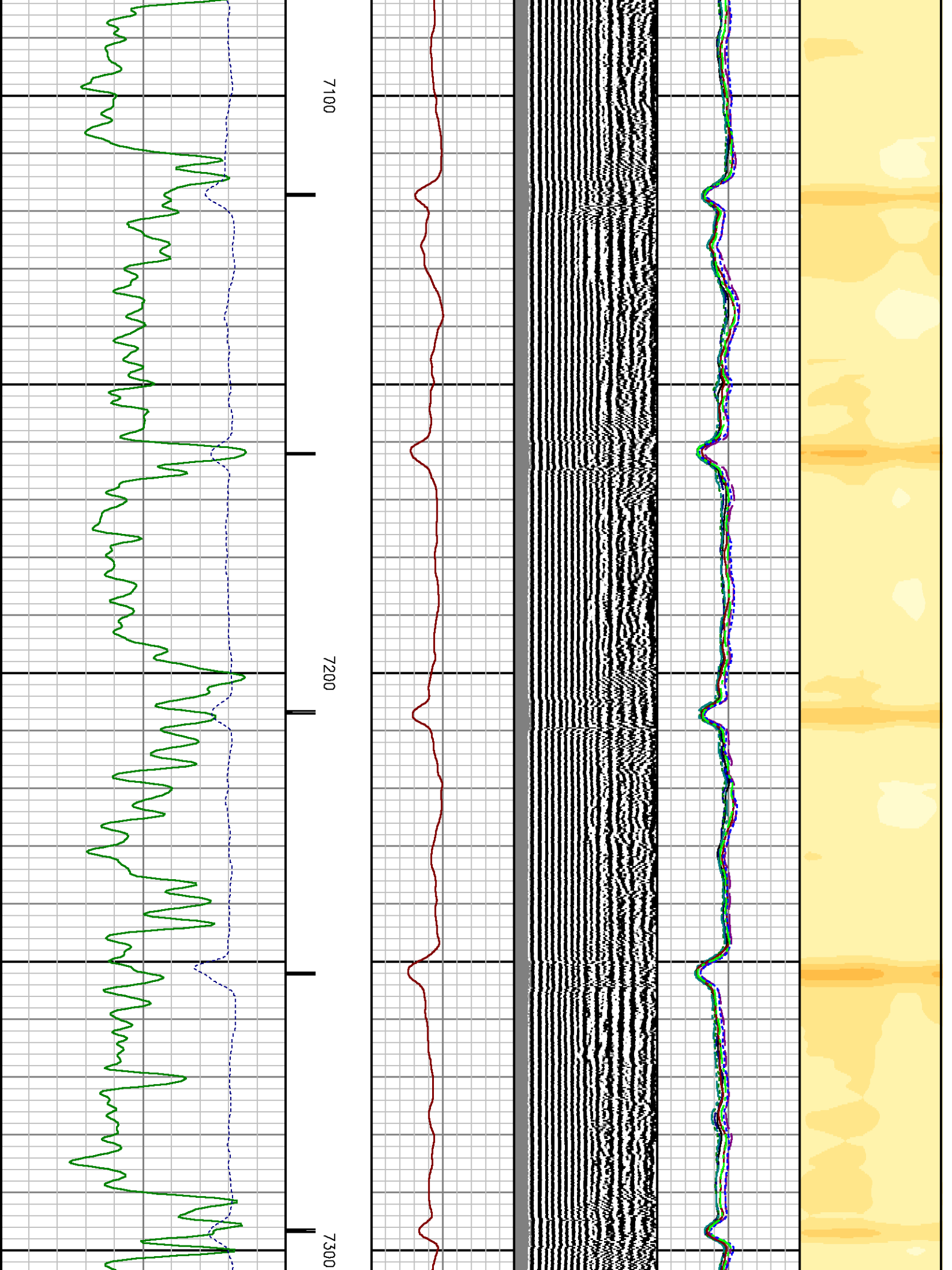


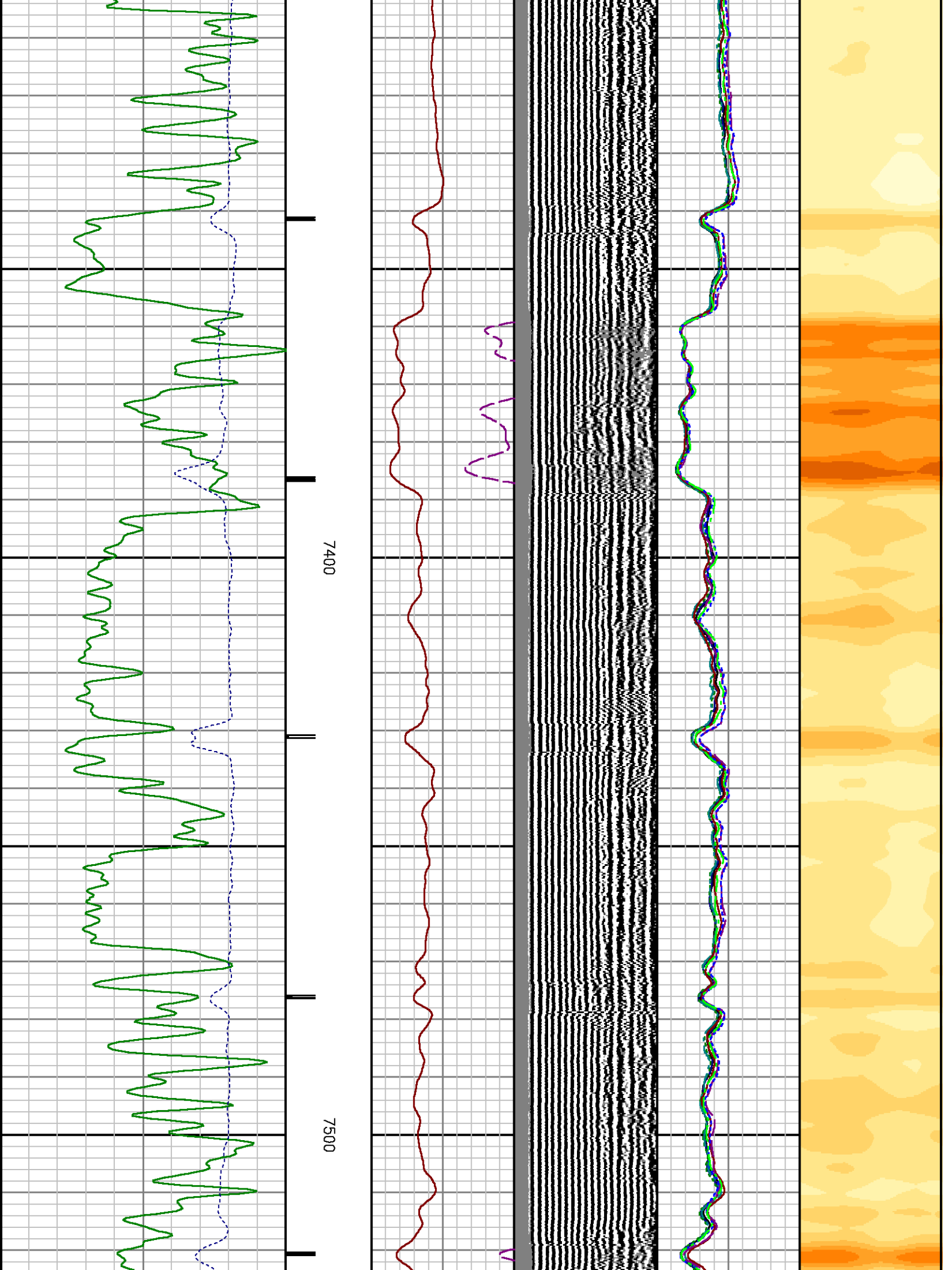


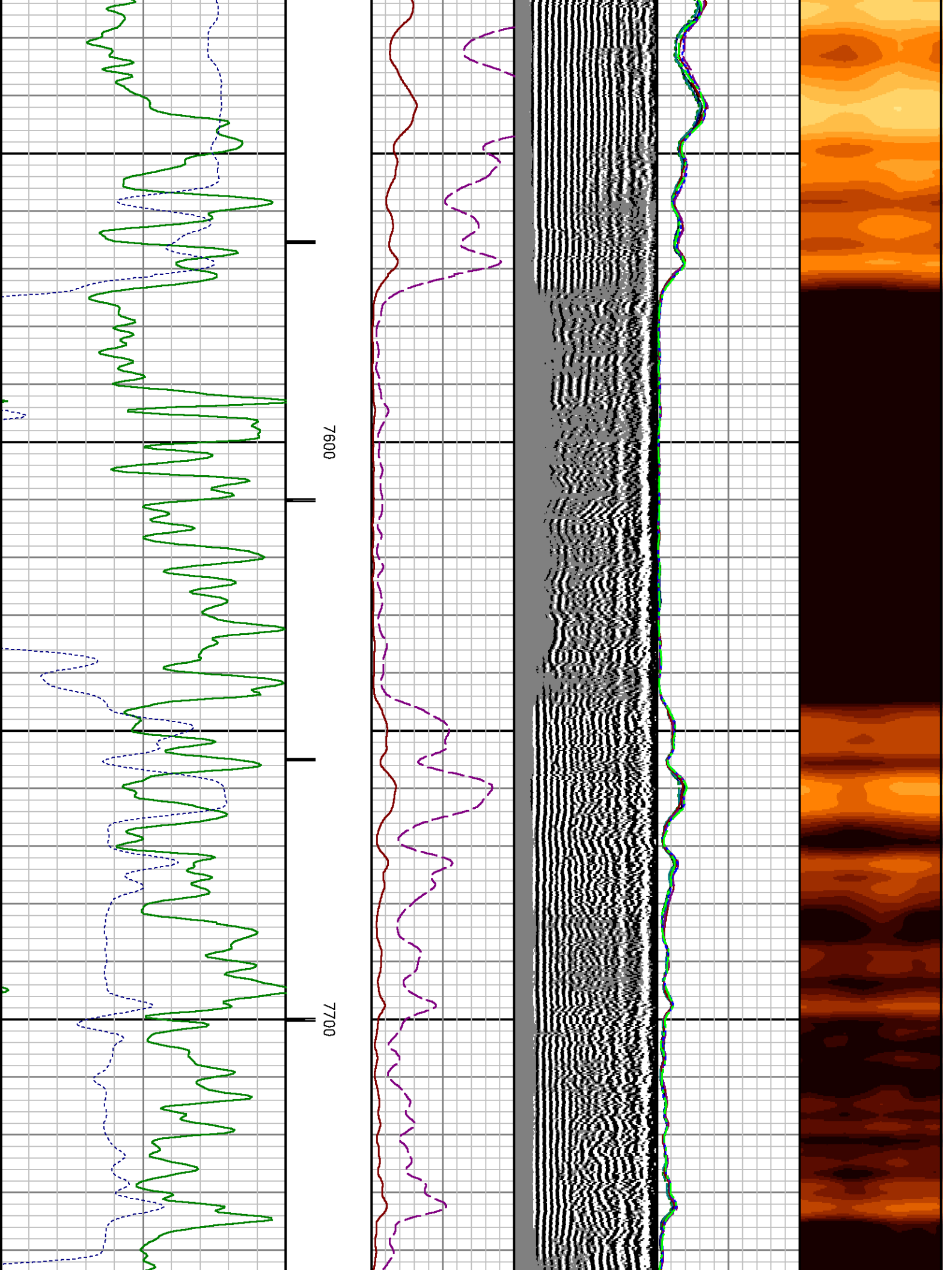


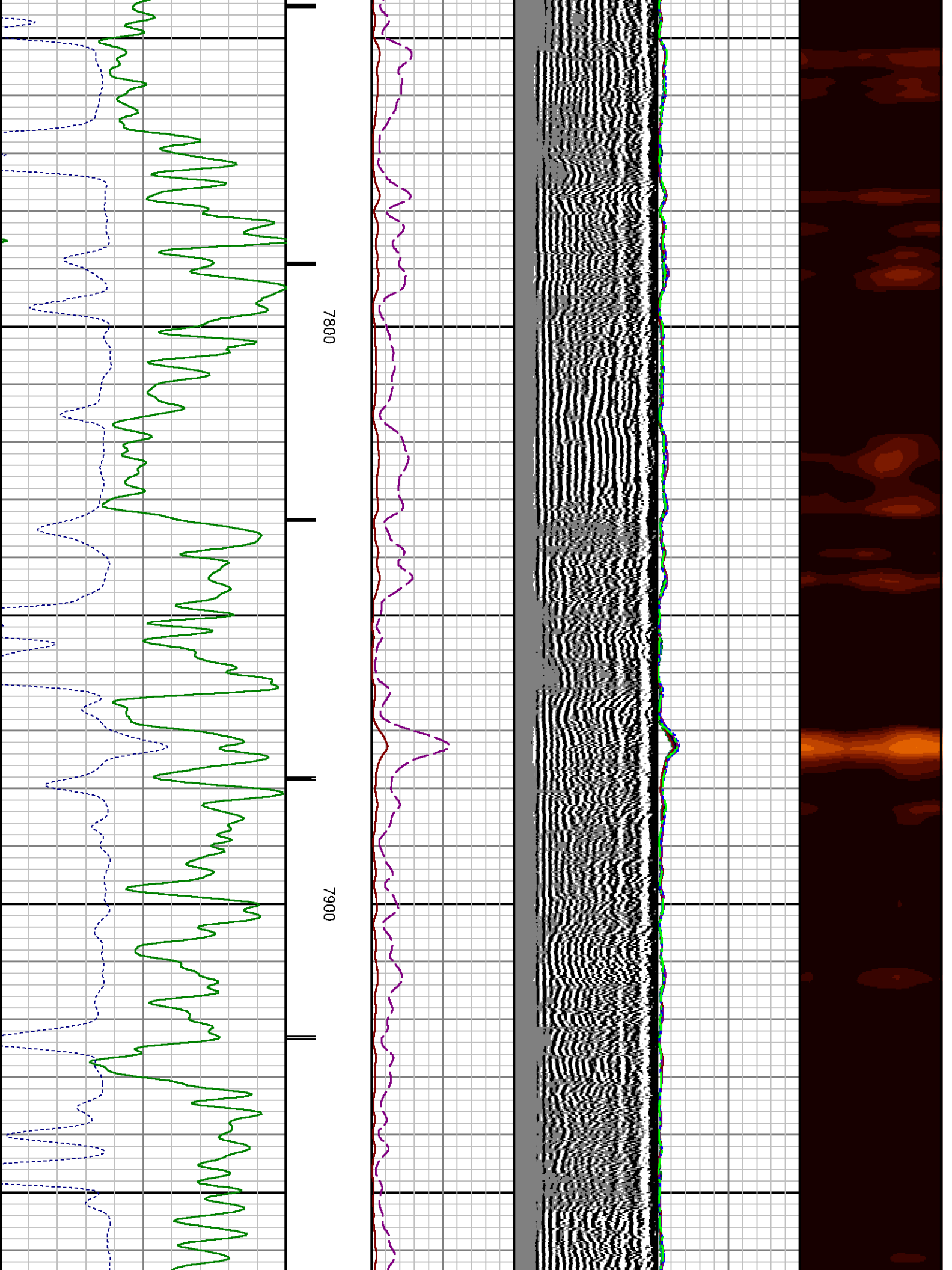


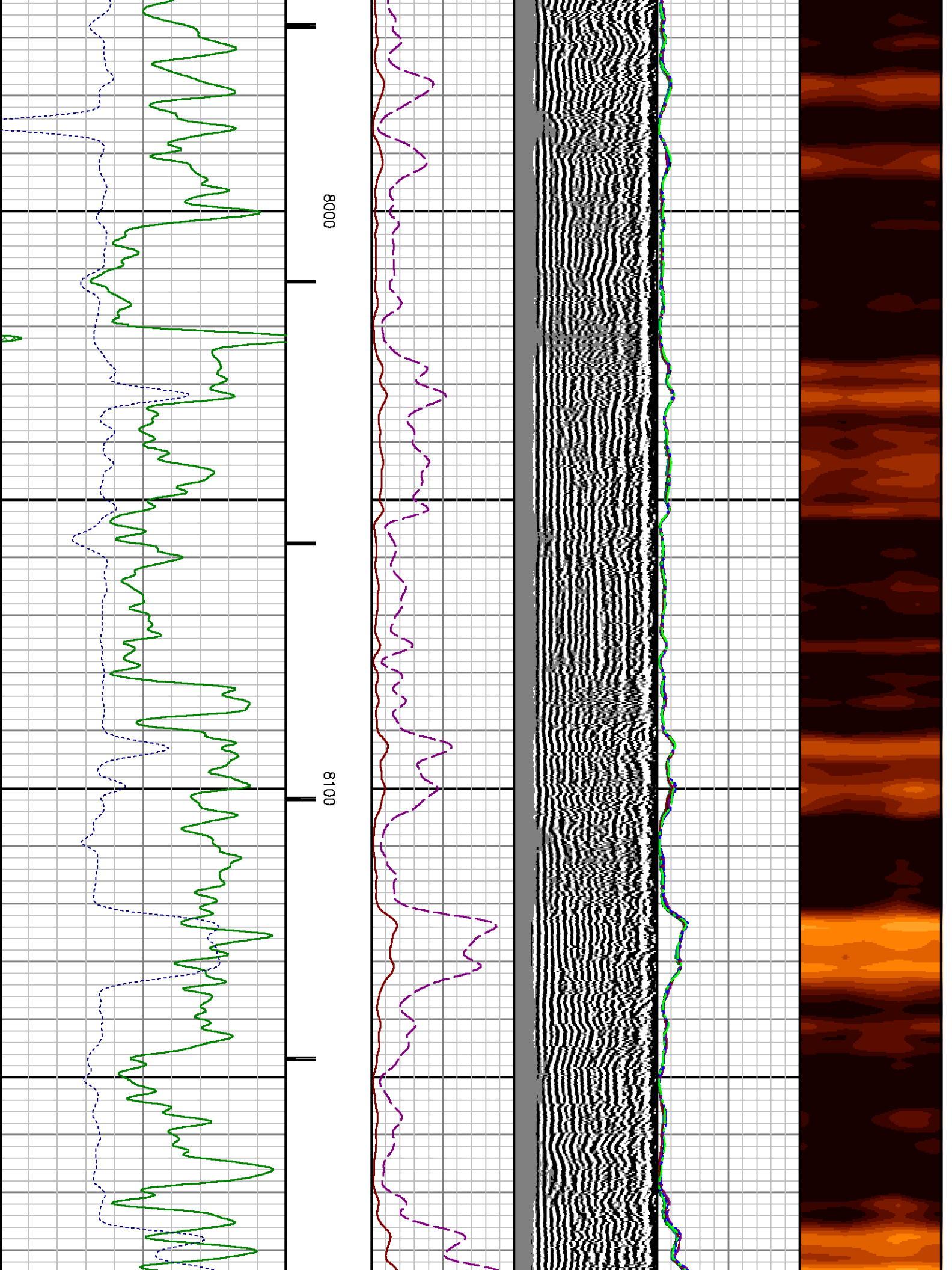




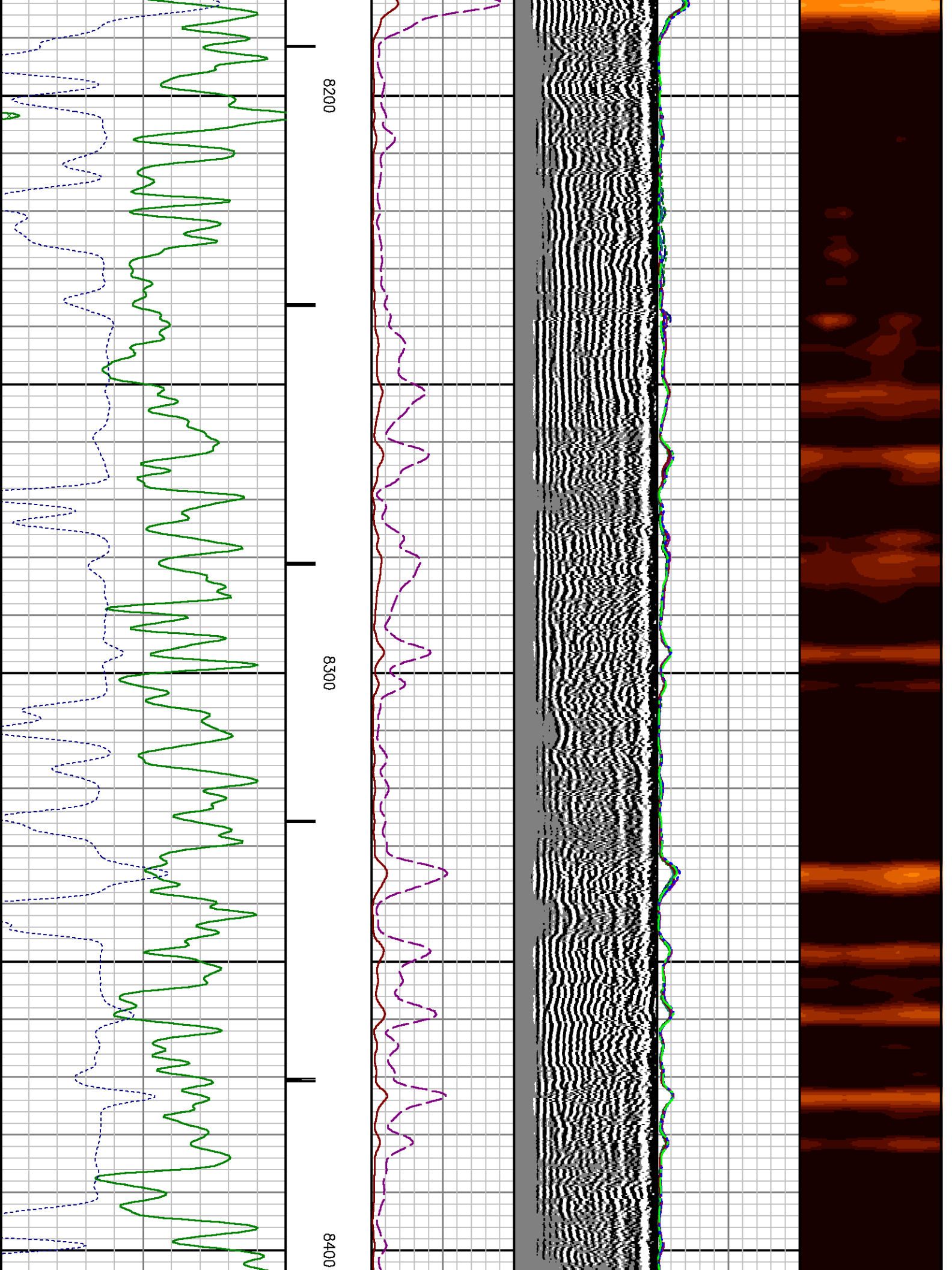




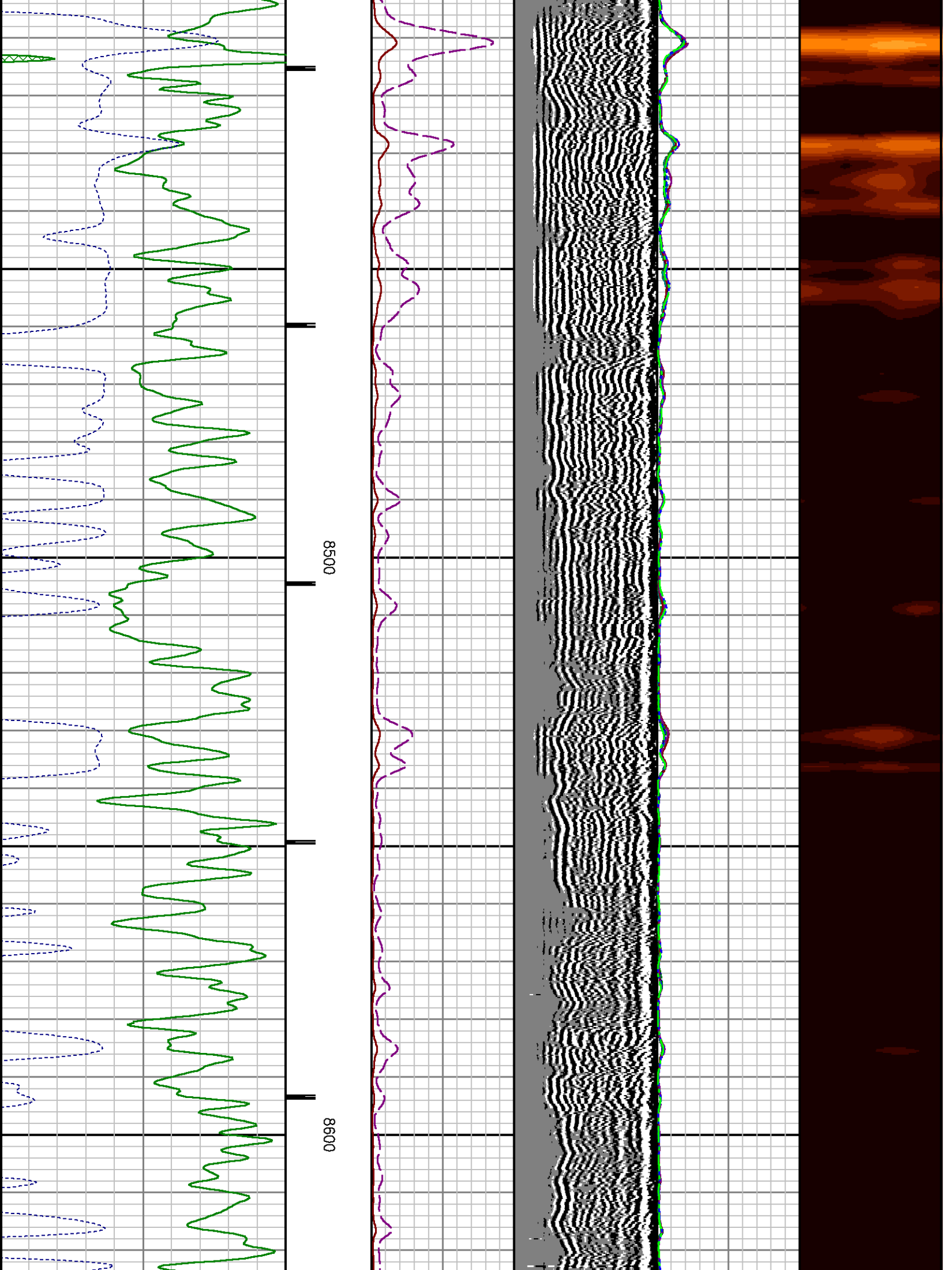


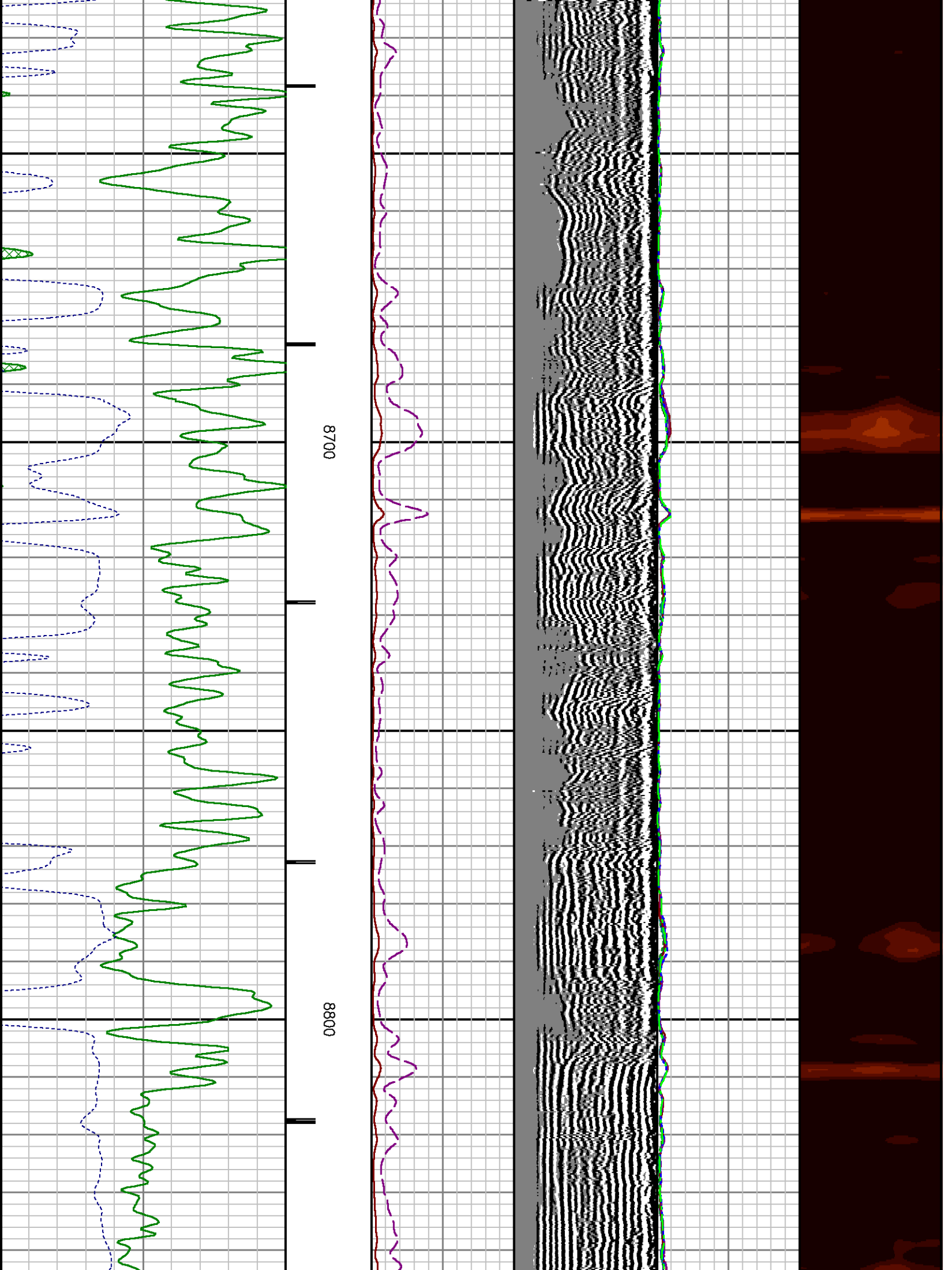


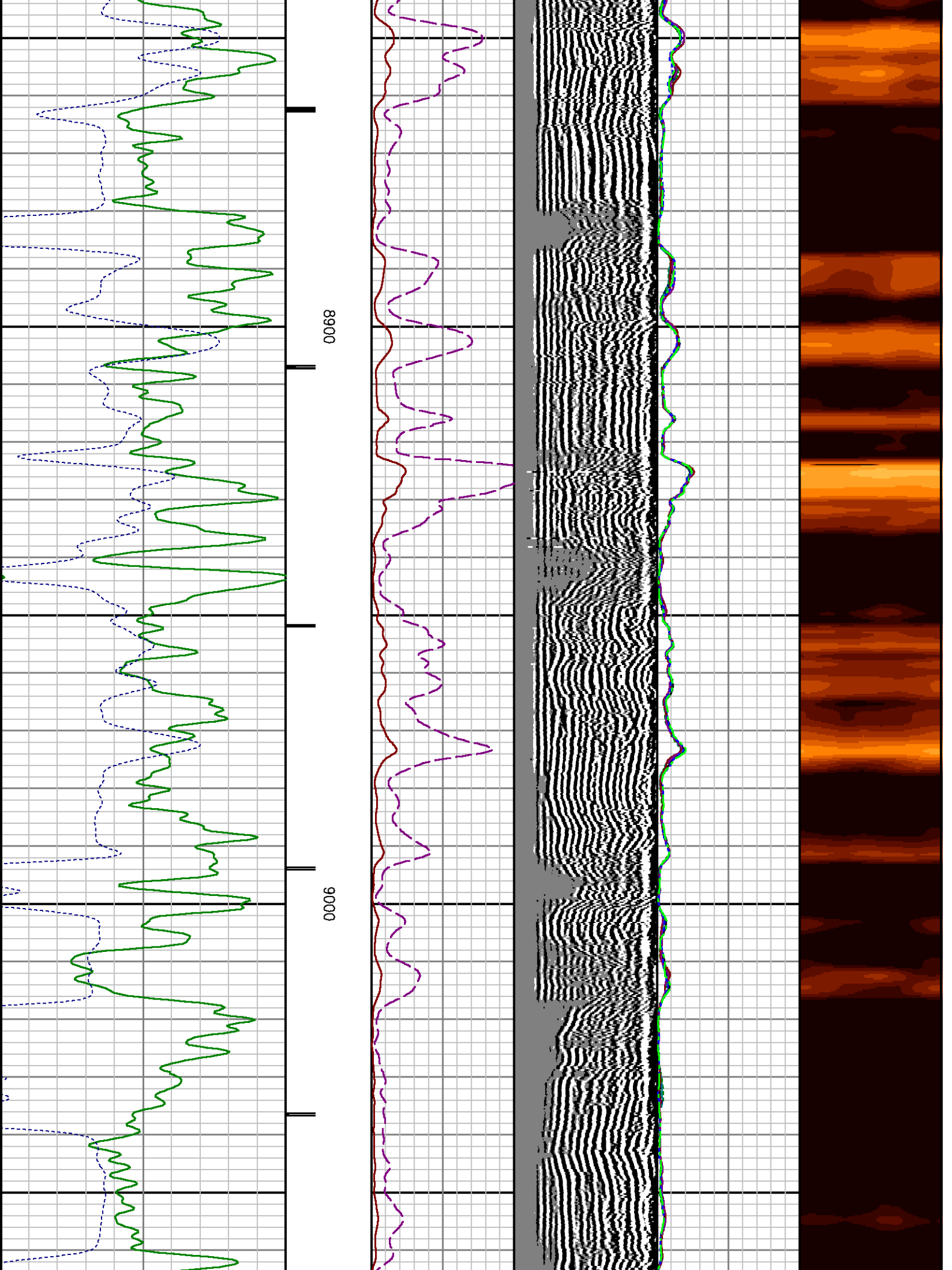


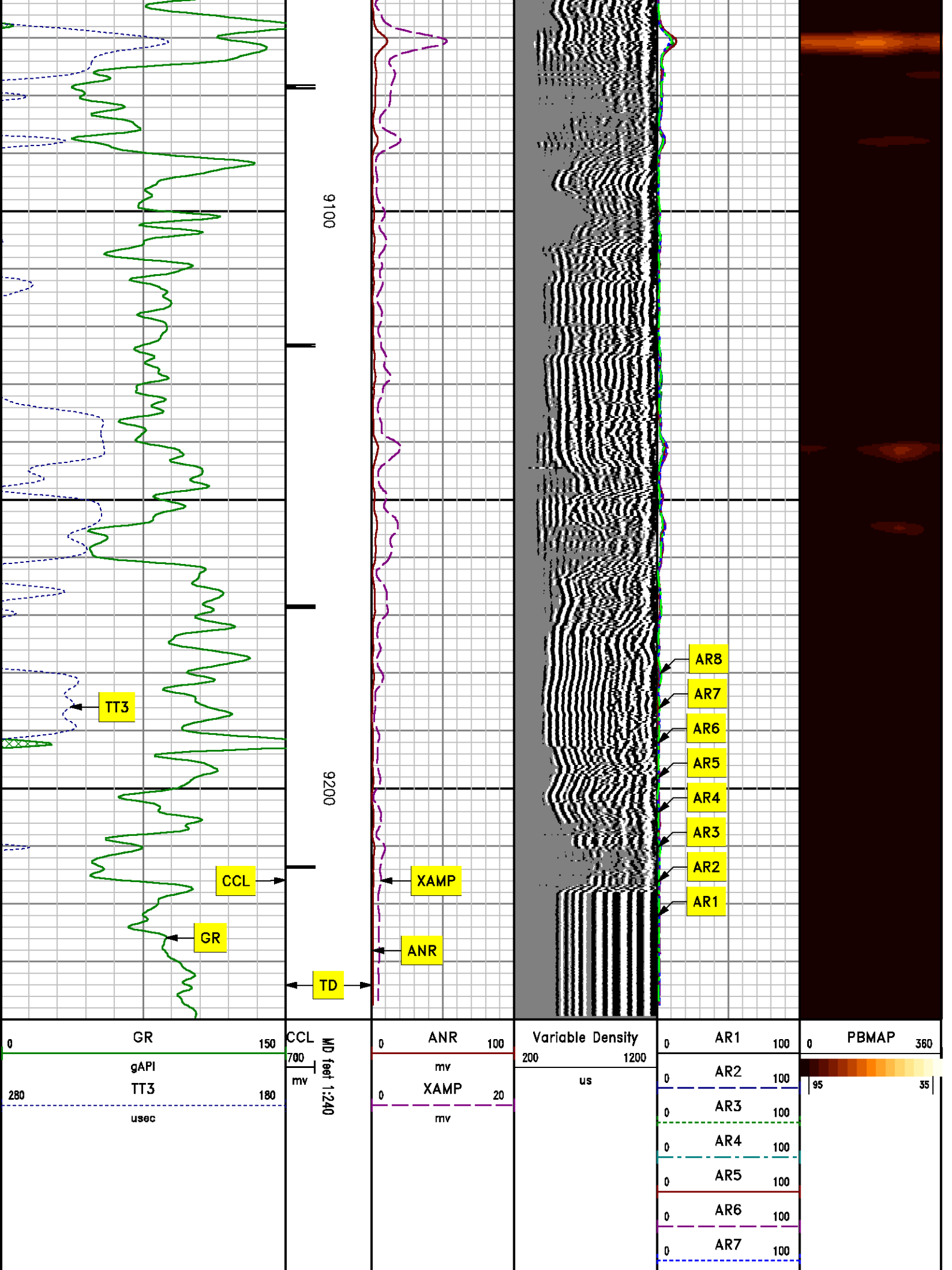












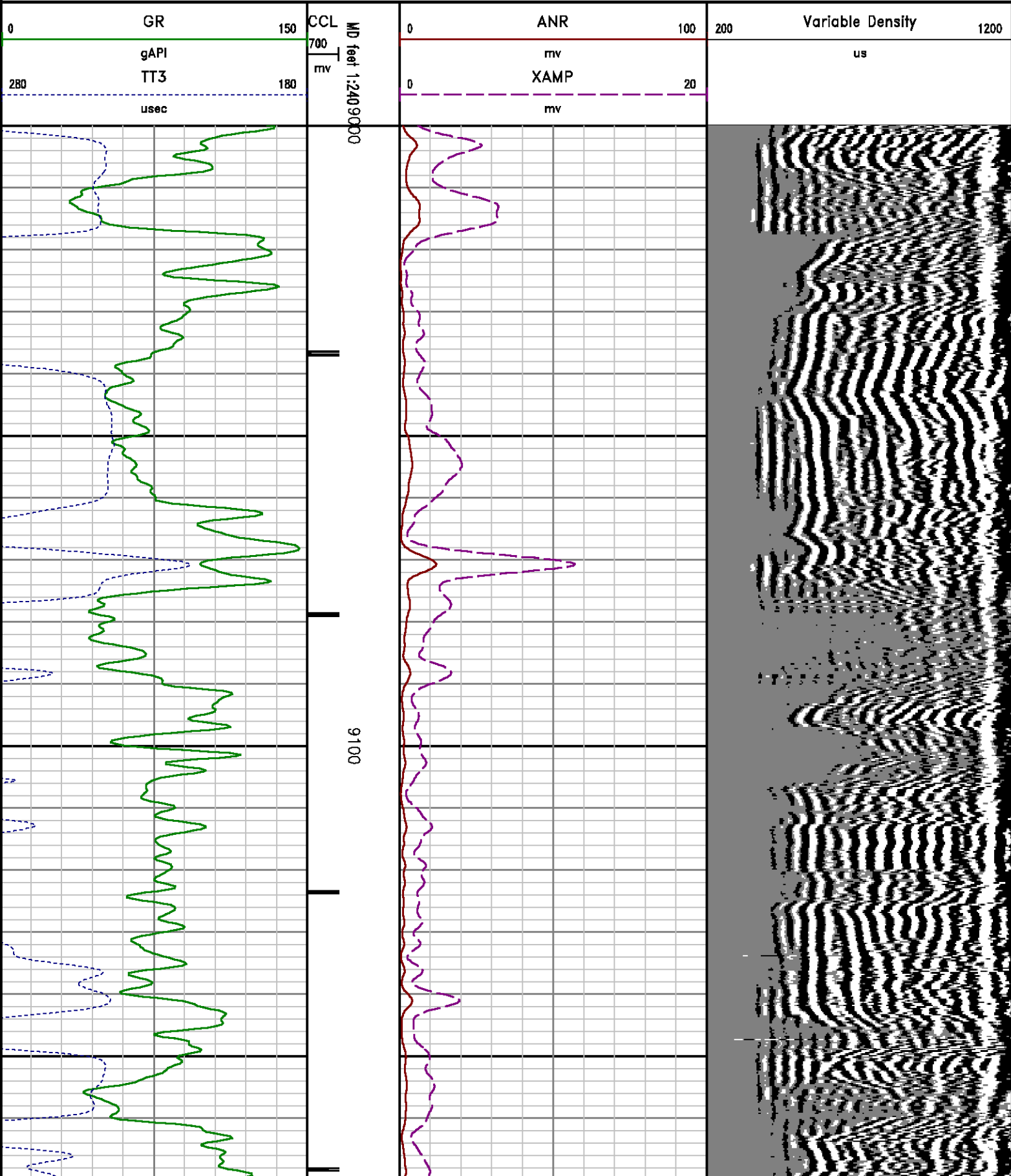
REPEAT SECTION

| MEASUREMENT TYPE | PARAMETER             | VALUE   | UNITS   | TOP      | BOTTOM   |
|------------------|-----------------------|---------|---------|----------|----------|
| RAL              | Amp Gate Start Far    | 316.900 | usec    | 8916.855 | 9258.000 |
| RAL              | Amp Gate Start Near   | 200.391 | usec    | 8916.855 | 9258.000 |
| RAL              | Amp Gate Start Radial | 200.391 | usec    | 8916.855 | 9258.000 |
| RAL              | Amp Gate Width Far    | 30.000  | usec    | 8916.855 | 9258.000 |
| RAL              | Amp Gate Width Near   | 30.000  | usec    | 8916.855 | 9258.000 |
| RAL              | Amp Gate Width Radial | 30.000  | usec    | 8916.855 | 9258.000 |
| RAL              | casing od             | 4.500   | inches  | 8916.855 | 9258.000 |
| RAL              | casing wt             | 11.600  | lbm/ft  | 8916.855 | 9258.000 |
| RAL              | FB Start Far          | 291.900 | usec    | 8916.855 | 9258.000 |
| RAL              | FB Start Near         | 175.391 | usec    | 8916.855 | 9258.000 |
| RAL              | FB Start Radial       | 175.391 | usec    | 8916.855 | 9258.000 |
| RAL              | FB Thresh Far         | 15.000  | mv      | 8916.855 | 9258.000 |
| RAL              | FB Thresh Near        | 10.000  | mv      | 8916.855 | 9258.000 |
| RAL              | FB Thresh Radial      | 10.000  | mv      | 8916.855 | 9258.000 |
| RAL              | Fluid Travel Time     | 200.000 | usec/ft | 8916.855 | 9258.000 |

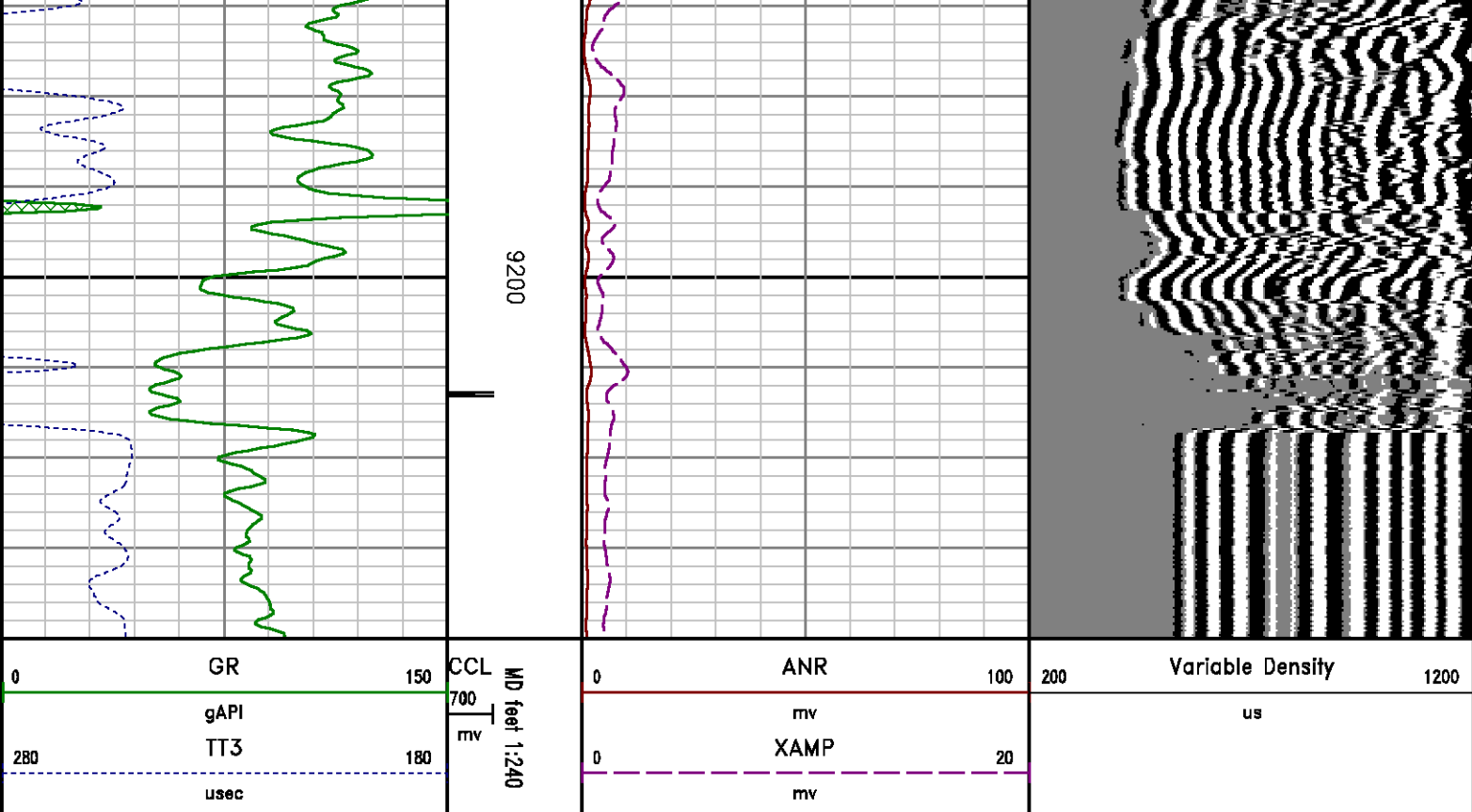
DEPTH OFFSETS

(for Acquired Curves)

| SERIES | DEPTH OFFSET | ACQUIRED CURVES |      |      |      |      |      |
|--------|--------------|-----------------|------|------|------|------|------|
| 1426XA | -15.360      | 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 | -14.360      | AFAR            | SIG  | TT5  |      |      |      |
| 2459XA | -7.250       | CCL             |      |      |      |      |      |
| 2459XA | -5.390       | GR              |      |      |      |      |      |
| 2459XA | 0.000        | NEU             |      |      |      |      |      |







## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\544A1.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sat Apr 10 23:34:27 2010 TOOL SERIES: 1426XA ASSET: 544 SEQ: A1

| Calibrator # | Background [cps] | Calibrator On [cps] | Multiplicative | Background [api] | Calibrator On [api] | Differential [api] |
|--------------|------------------|---------------------|----------------|------------------|---------------------|--------------------|
| S2K SHOP     | 46.84            | 215.11              | 1.099          | 51.50            | 236.50              | 185.00             |

Verification File: C:\case\calver\GR\544A1.VP

### PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Sat Apr 10 23:35:40 2010 TOOL SERIES: 1426XA ASSET: 544 SEQ: A1

| Calibrator # | Background [cps] | Calibrator On [cps] | Multiplicative | Background [api] | Calibrator On [api] | Differential [api] |
|--------------|------------------|---------------------|----------------|------------------|---------------------|--------------------|
| S2K SHOP     | 43.78            | 221.33              | 1.099          | 48.13            | 243.34              | 195.21             |

# RALSHP #2

Shop Calibration: C:\case\calver\RALSHP\057A31\_shp.cal

## SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Aug 31 12:56:44 2010 TOOL SERIES: 1426XA ASSET: 057 SEQ: A31

Tool Delay [usec] -54.00 Tank OD in 5.50 Tank Wt lbm/ft 15.50 Tank ID in 4.95

| RECEIVER       | Travel Time<br>[usec] | Amp. Gate<br>Start<br>[usec] | Amp. Gate<br>Width<br>[usec] | Zero Gate<br>Start<br>[usec] | Zero Gate<br>Width<br>[usec] | Zero Amp.<br>[mV] | Amp Ref.<br>[mV] | Shop Factor |
|----------------|-----------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------|------------------|-------------|
| CAL Pulse      | 219                   | 216                          | 30                           | 62                           | 108                          | -0.039            | 100.00           | 0.32        |
| 3 Ft. Receiver | 219                   | 216                          | 30                           | 57                           | 119                          | 0.005             | 100.00           | 0.32        |
| 5 Ft. Receiver | 326                   | 323                          | 30                           | 95                           | 171                          | 0.082             | 150.00           | 0.34        |
| Radial #1      | 218                   | 216                          | 30                           | 68                           | 113                          | -0.103            | 100.00           | 0.32        |
| Radial #2      | 219                   | 216                          | 30                           | 68                           | 113                          | -0.164            | 100.00           | 0.32        |
| Radial #3      | 219                   | 216                          | 30                           | 68                           | 113                          | -0.124            | 100.00           | 0.32        |
| Radial #4      | 218                   | 216                          | 30                           | 68                           | 113                          | -0.116            | 100.00           | 0.32        |
| Radial #5      | 217                   | 216                          | 30                           | 68                           | 113                          | -0.591            | 100.00           | 0.32        |
| Radial #6      | 217                   | 216                          | 30                           | 68                           | 113                          | -0.119            | 100.00           | 0.32        |
| Radial #7      | 216                   | 216                          | 30                           | 68                           | 113                          | 0.042             | 100.00           | 0.32        |
| Radial #8      | 219                   | 216                          | 30                           | 68                           | 113                          | -0.163            | 100.00           | 0.32        |

# RALFLD #2

Wellsite Calibration: C:\case\calver\RALFLD\057A31 fld.cal

## WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Aug 31 13:03:36 2010 TOOL SERIES: 1426XA ASSET: 057 SEQ: A31

Tool Delay [usec] -54.00 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      | 62                           | 108                          | 0.013             | 0.000             | 1.00            | 100.000          |
| 3 Ft. Receiver | 200                          | 30                           | -1.783            |                   |                 |                  |
| 5 Ft. Receiver | 317                          | 30                           | -1.753            |                   |                 |                  |
| Radial #1      | 200                          | 30                           | -1.995            |                   |                 |                  |
| Radial #2      | 200                          | 30                           | -1.783            |                   |                 |                  |
| Radial #3      | 200                          | 30                           | -1.898            |                   |                 |                  |
| Radial #4      | 200                          | 30                           | -1.969            |                   |                 |                  |
| Radial #5      | 200                          | 30                           | -1.981            |                   |                 |                  |
| Radial #6      | 200                          | 30                           | -2.017            |                   |                 |                  |
| Radial #7      | 200                          | 30                           | -2.049            |                   |                 |                  |
| Radial #8      | 200                          | 30                           | -1.867            |                   |                 |                  |

# TOOL DIAGRAM

## OTA SHORT CABLE HEAD

### CENTRALIZER

|          |          |
|----------|----------|
| Series   | RALCENT  |
| Mnemonic | CENT     |
| Diameter | 3.12"    |
| Weight   | 20.00 lb |

## 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    |

### CENTRALIZER

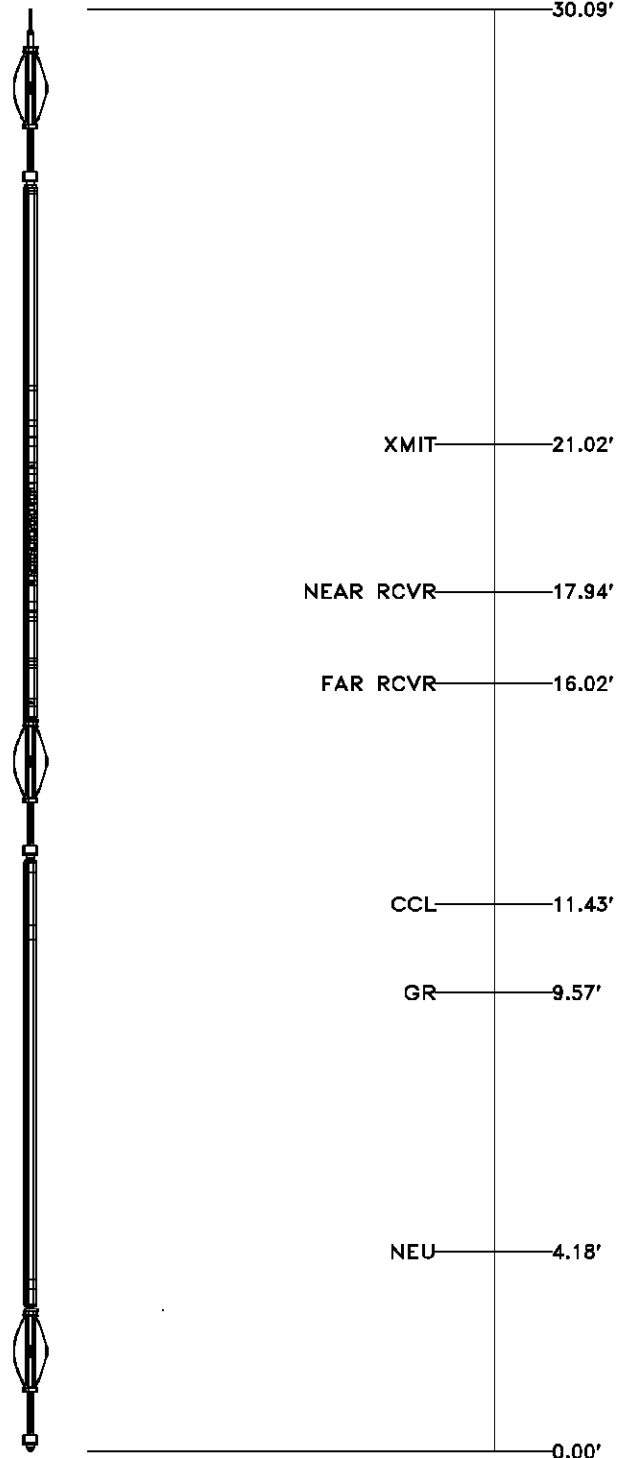
|          |          |
|----------|----------|
| Series   | RALCENT  |
| Mnemonic | CENT     |
| Diameter | 3.12"    |
| Weight   | 20.00 lb |

## 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 |

### CENTRALIZER

|          |          |
|----------|----------|
| Series   | RALCENT  |
| Mnemonic | CENT     |
| Diameter | 3.12"    |
| Weight   | 20.00 lb |



Total Length: 30.09'  
 Total Weight: Not Available  
 Max Diameter: 0' 3.12"



Baker Atlas



|         |                             |       |          |
|---------|-----------------------------|-------|----------|
| Company | WILLIAMS PRODUCTION COMPANY |       |          |
| Well    | PA 344-17                   |       |          |
| Field   | PARACHUTE                   |       |          |
| County  | GARFIELD                    | State | COLORADO |

|          |                |
|----------|----------------|
| File No: |                |
| API No:  | 05045181080000 |

Location

SHL: 1275' FNL & 828' FEL, S20 T6S R95W  
BHL: 492' FSL & 656' FEL, S17 T6S R95W

Elevations

KB 6452 ft  
DF 6451 ft  
GL 6426 ft

S17 T6S R95W  
PAD: DOE 2-W-20  
RIG: NABORS 577

SEC 17 TWP 6S RGE 9SW