



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

|                        |  |                        |  |              |  |
|------------------------|--|------------------------|--|--------------|--|
| Company                |  | TEP Rocky Mountain LLC |  |              |  |
| Well                   |  | Federal RWF 512-17     |  |              |  |
| Field                  |  | Rulison                |  |              |  |
| County                 |  | Garfield               |  |              |  |
| State                  |  | Colorado               |  |              |  |
| Company                |  | TEP Rocky Mountain LLC |  |              |  |
| Well                   |  | Federal RWF 512-17     |  |              |  |
| Field                  |  | Rulison                |  |              |  |
| County                 |  | Garfield               |  |              |  |
| State                  |  | Colorado               |  |              |  |
| Location:              |  | API # : 05-045-24038   |  |              |  |
| SEC 17 TWP 6S RGE 94W  |  | Other Services         |  |              |  |
| Permanent Datum        |  | Ground Level           |  | Elevation    |  |
| Log Measured From      |  | Kelly Bushing          |  | 24 FT        |  |
| Drilling Measured From |  | Kelly Bushing          |  | G.L. 6175'   |  |
| Date                   |  | 24-JUN-2019            |  |              |  |
| Run Number             |  | One                    |  |              |  |
| Depth Driller          |  | 8973 FT                |  |              |  |
| Depth Logger           |  | 8908 FT                |  |              |  |
| Bottom Logged Interval |  | 8894 FT                |  |              |  |
| Top Log Interval       |  | Surface                |  |              |  |
| Open Hole Size         |  | 8.750"                 |  |              |  |
| Type Fluid             |  | Fresh Water            |  |              |  |
| Density / Viscosity    |  | 8.34 lb/gal            |  |              |  |
| Max. Recorded Temp.    |  | 237°F                  |  |              |  |
| Estimated Cement Top   |  | See Log                |  |              |  |
| Time Well Ready        |  | ROA                    |  |              |  |
| Time Logger on Bottom  |  | 01:05                  |  |              |  |
| Equipment Number       |  | HD-0331                |  |              |  |
| Location               |  | Grand Junction, CO     |  |              |  |
| Recorded By            |  | A. Ellsworth           |  |              |  |
| Witnessed By           |  | Dustin Welsh           |  |              |  |
| Run Number             |  | Bit                    |  | From         |  |
| To                     |  | Size                   |  | Weight       |  |
| From                   |  | To                     |  | From         |  |
| Casing Record          |  | Size (in)              |  | Wgt (lbs/ft) |  |
| Surface Casing         |  | 9.5/8                  |  | 36           |  |
| Intermediate #1        |  | 4 1/2                  |  | 11.6         |  |
| Intermediate #2        |  |                        |  | P-110        |  |
| Inner                  |  |                        |  | Surface      |  |
|                        |  |                        |  | Bottom       |  |
|                        |  |                        |  | 1137 FT      |  |
|                        |  |                        |  | 8932 FT      |  |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Log ran as per customer request  
Depth referenced to Kelly Bushing at 24 FT  
Marker Joint logged from 4889-4911 FT  
Log ran with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!!

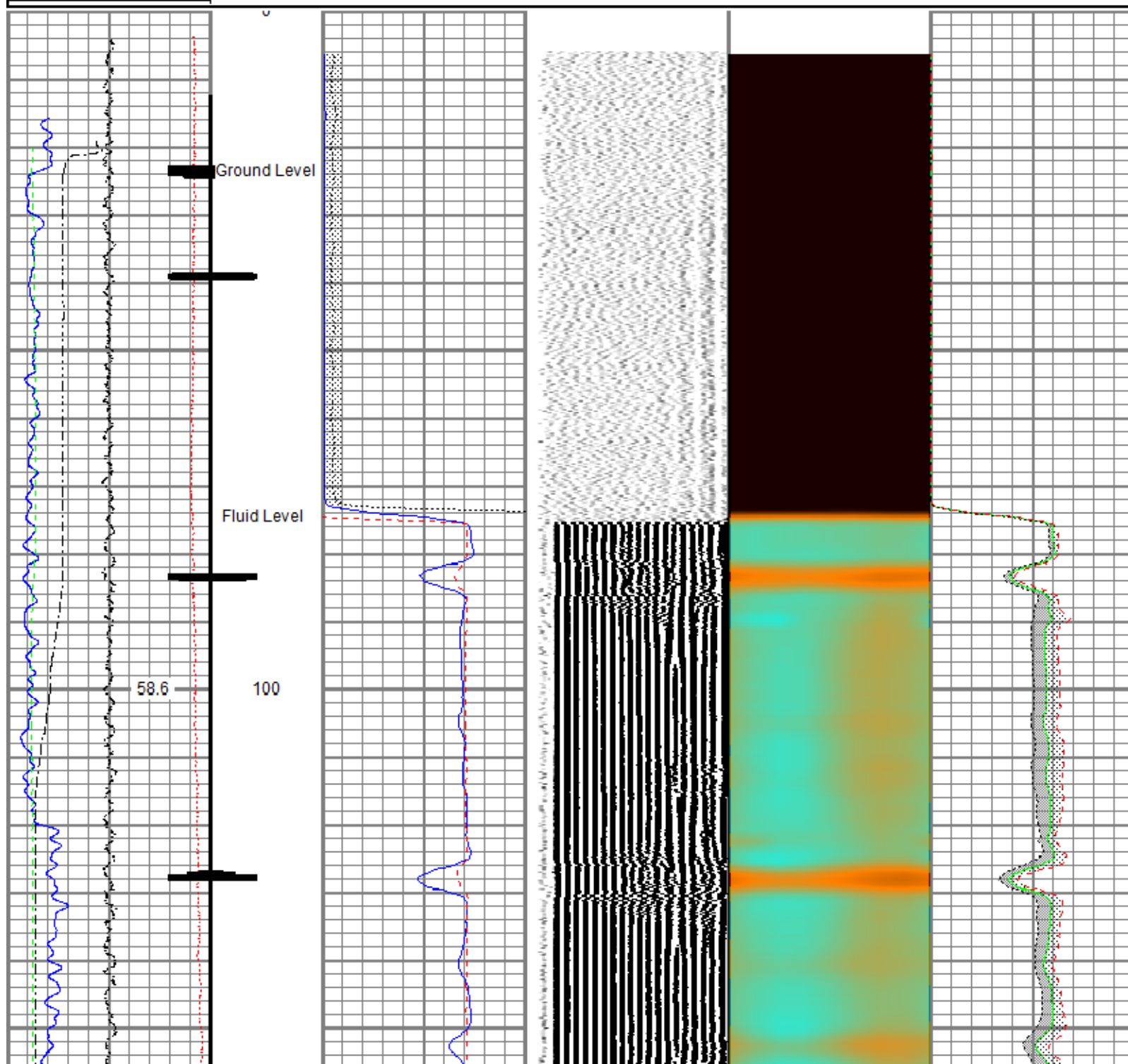


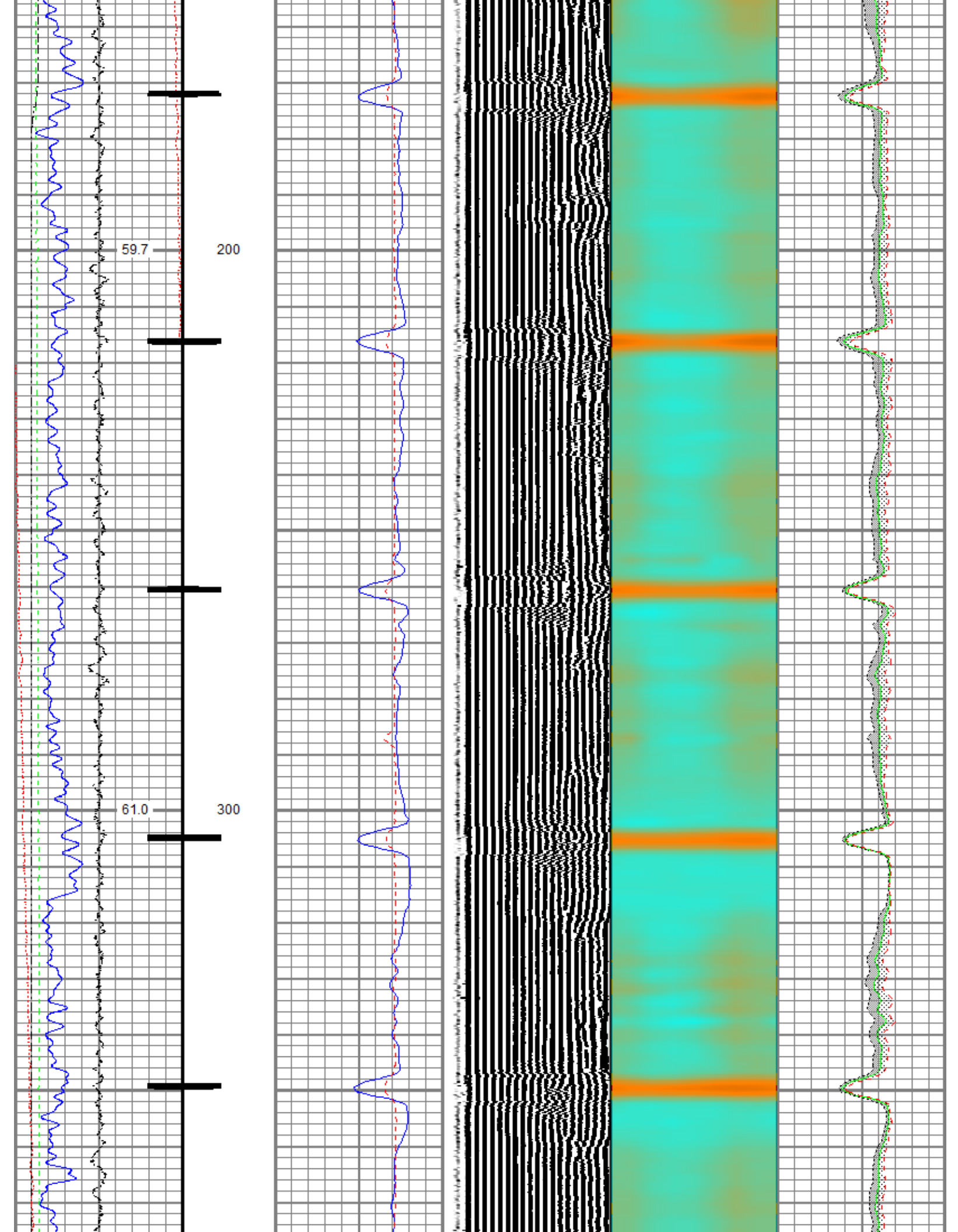
Main Pass

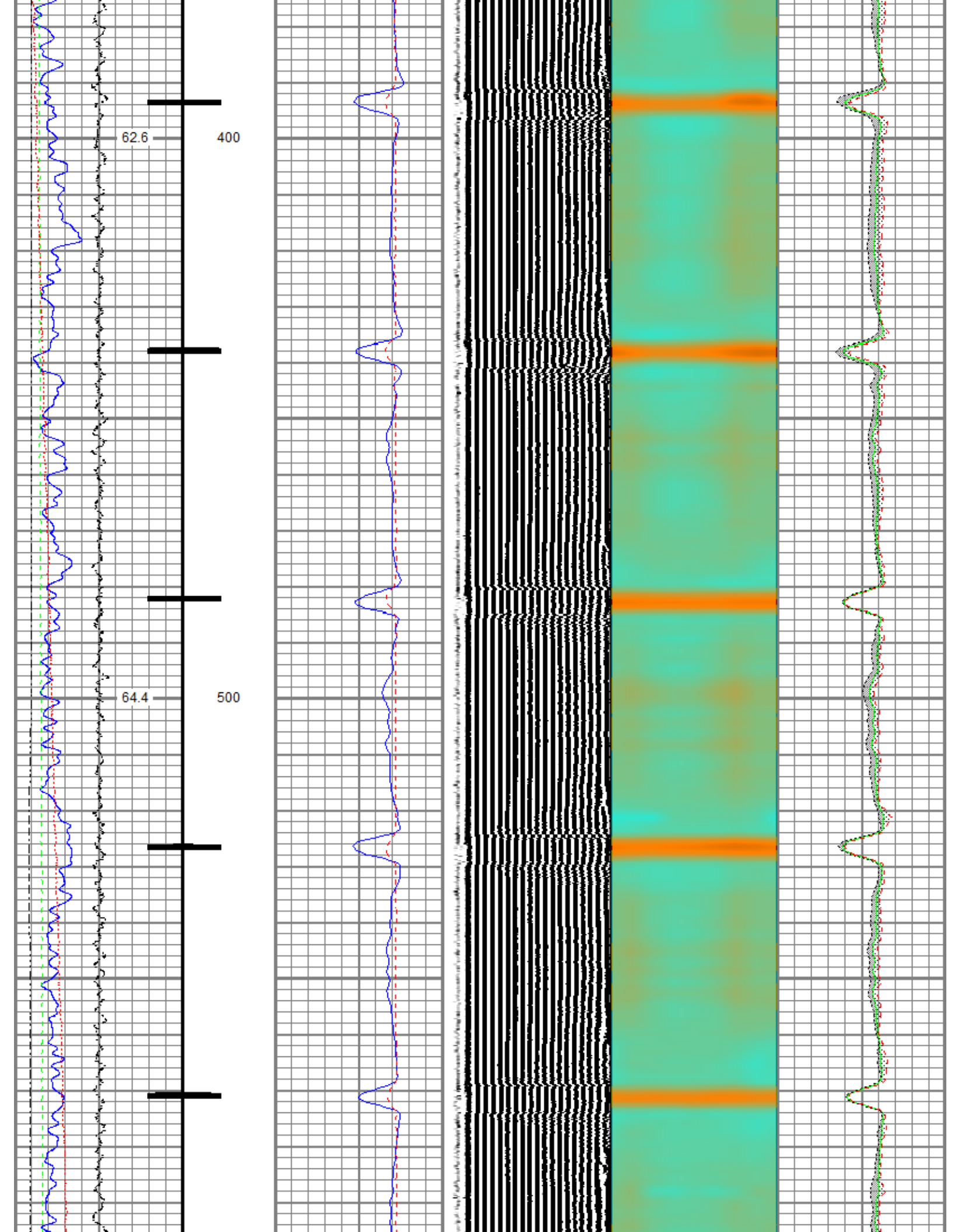
Recorded With 0 PSI Surface Induced Pressure

Database File tep\tep\_federal rwf 512-17\_rbl\_06-24-19\processed\_tep\_federal rwf 512-17\_rbl\_06-24-19.db  
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 Presentation Format ros\_rbt004\_tep  
 Dataset Creation Mon Jun 24 13:07:01 2019  
 Charted by Depth in Feet scaled 1:240

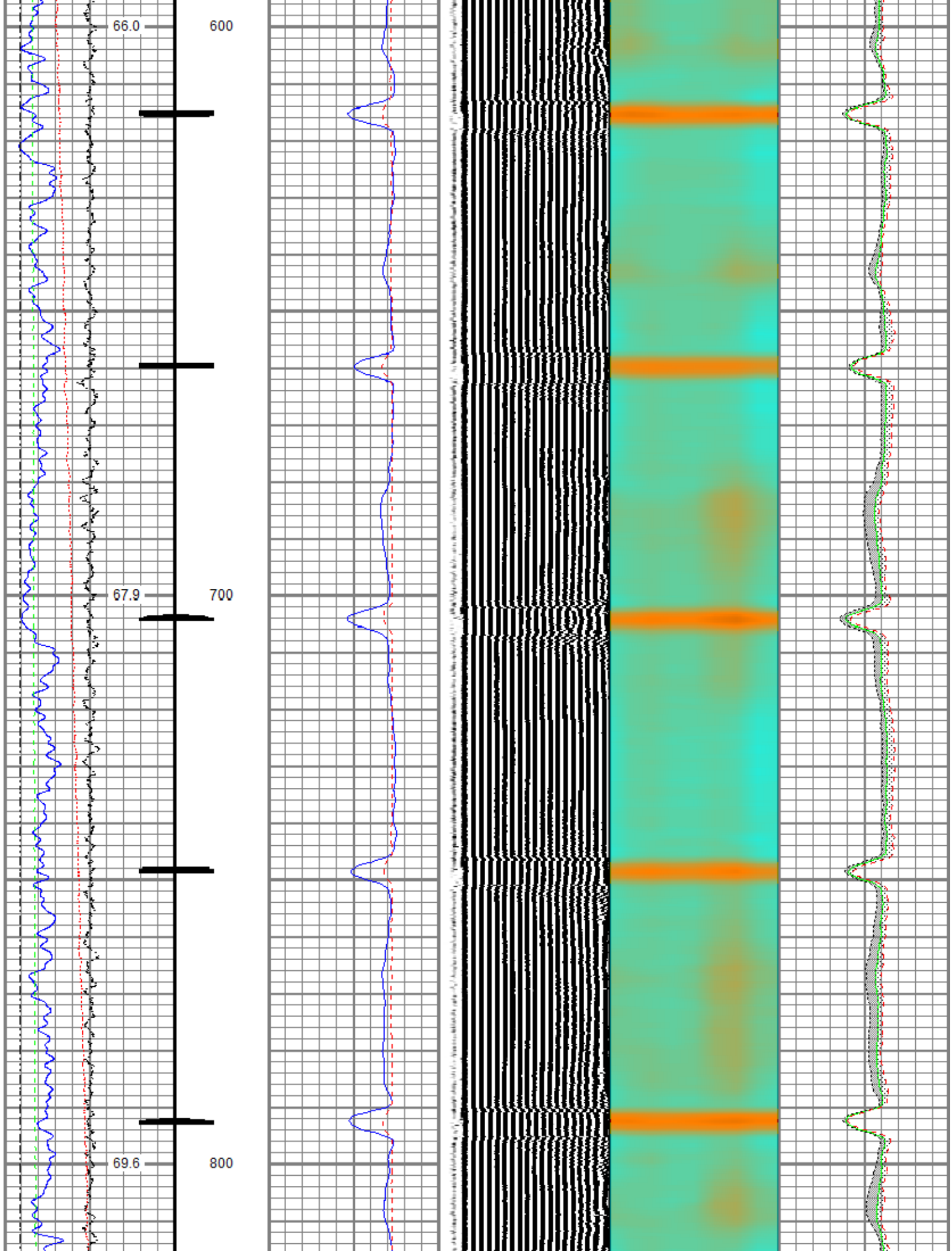
|                          |   |                       |                         |            |   |                       |
|--------------------------|---|-----------------------|-------------------------|------------|---|-----------------------|
| Gamma Ray                | 0 | 3' Amplitude (mV) 100 | 5' Variable Density Log | Sector Map | 0 | Average Amplitude 150 |
| (GAPI) 200               |   | 3' Amplitude x 5      | 200                     | 10         |   | Minimum Amplitude     |
| Line Speed               |   | (mV) 20               | 1200                    |            |   | 0                     |
| -150 (ft/min) 150        |   | 3' Travel Time        |                         |            |   | Maximum Amplitude     |
| 0 Line Tension (lb) 2000 |   | 300 (usec) 200        |                         |            |   | 0                     |
| Differential Temperature |   |                       |                         |            |   | 150                   |
| -2 (degF) 2              |   |                       |                         |            |   |                       |
| 0 Temperature (degF) 20  |   |                       |                         |            |   |                       |
| 10 CCL 0                 |   |                       |                         |            |   |                       |

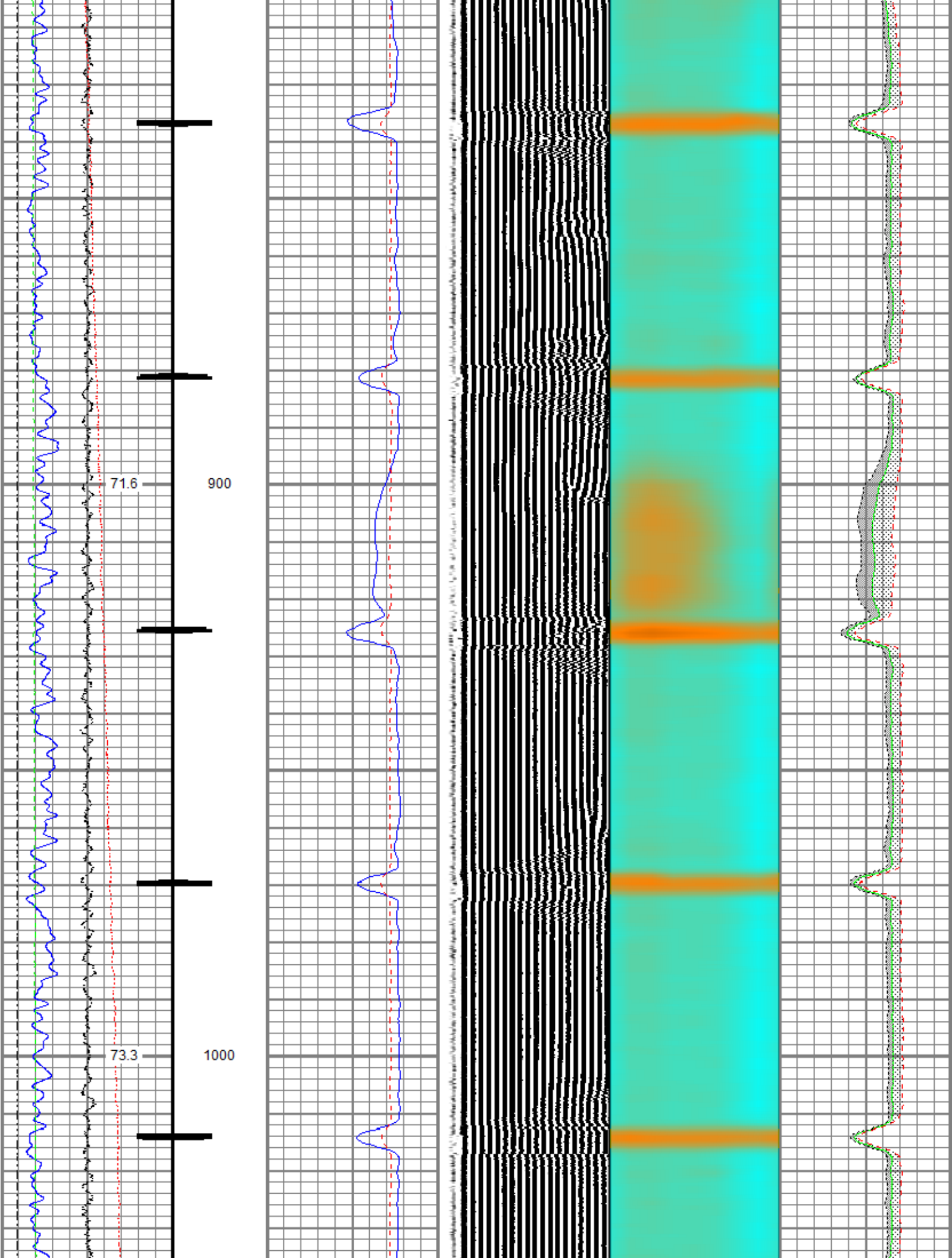


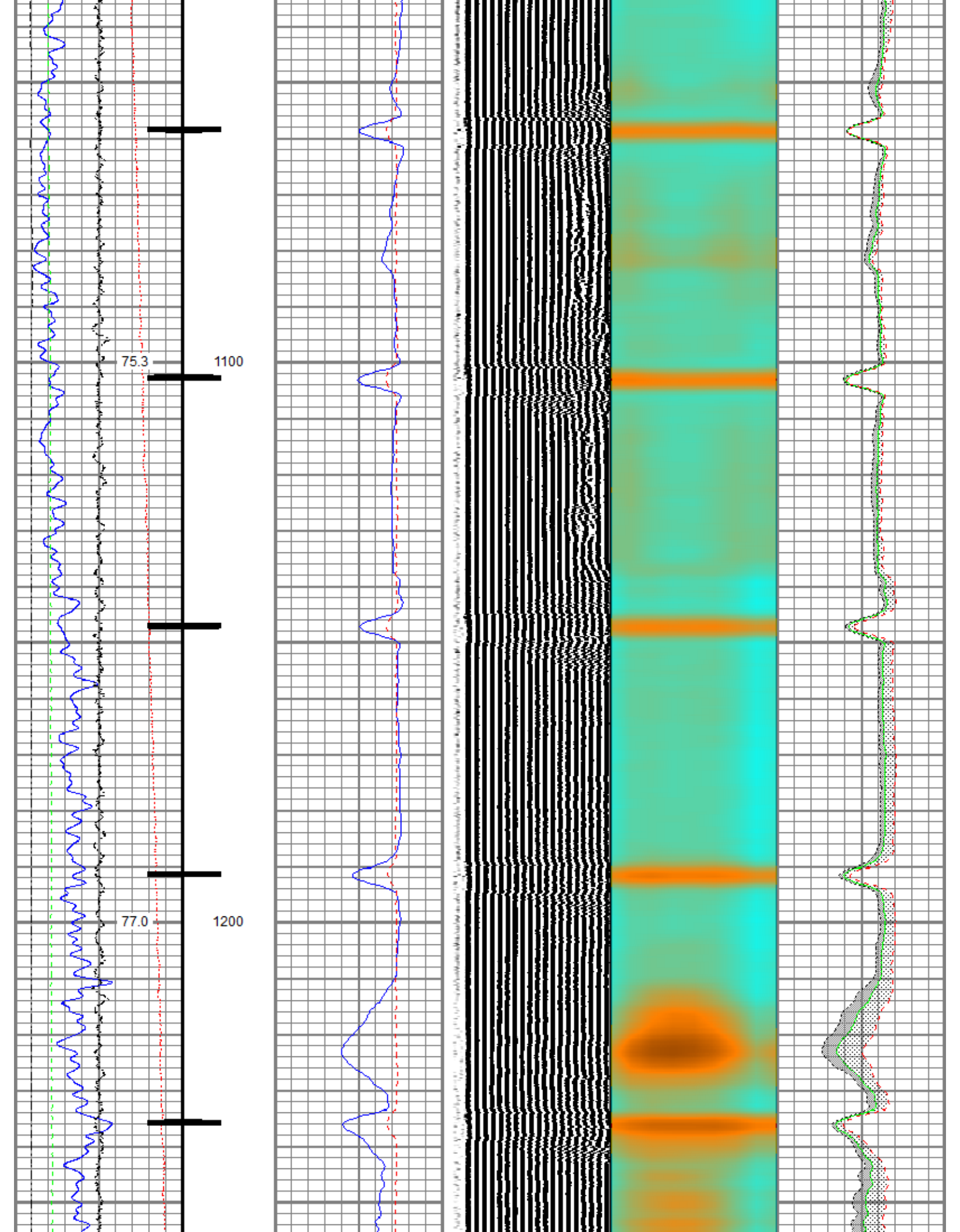


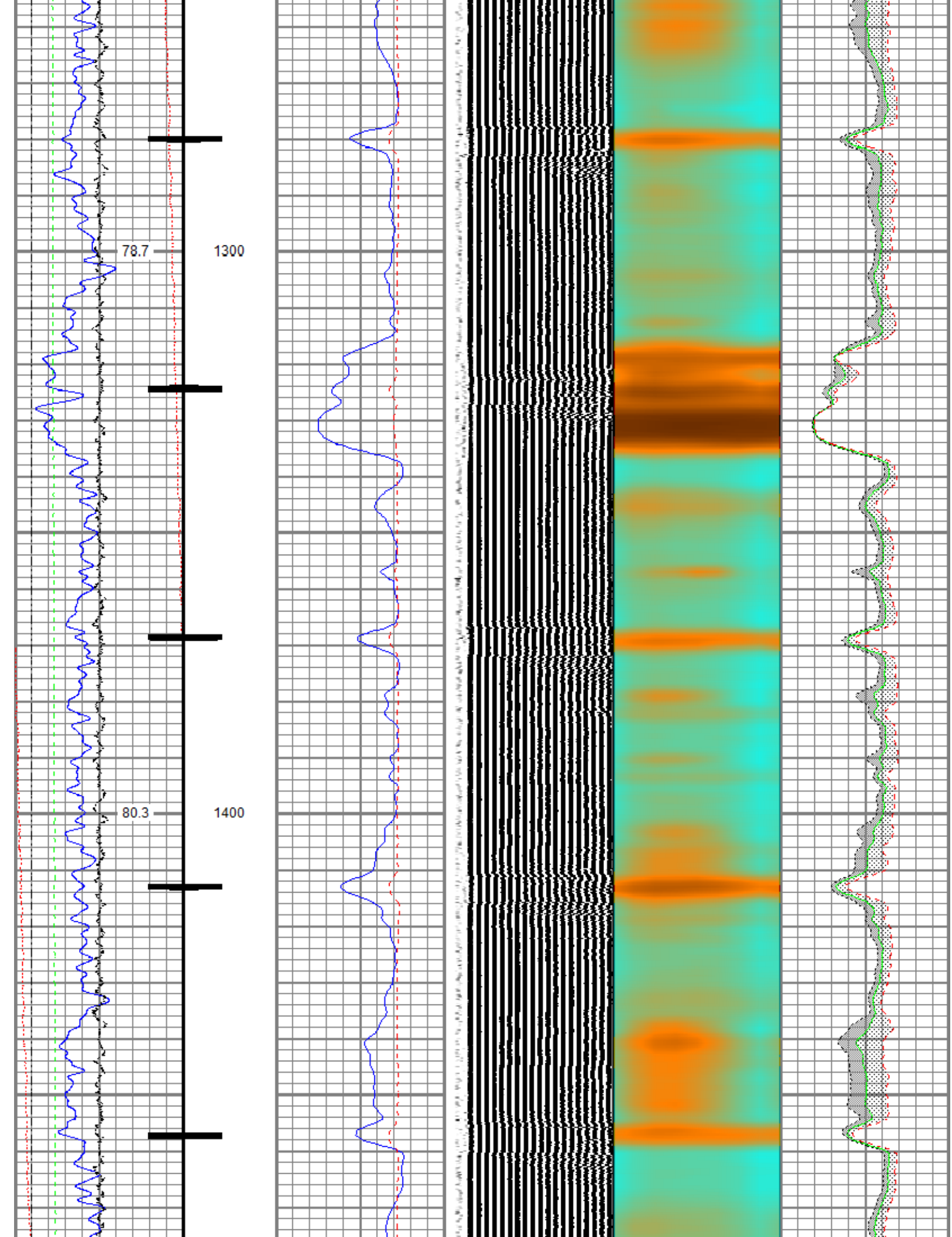




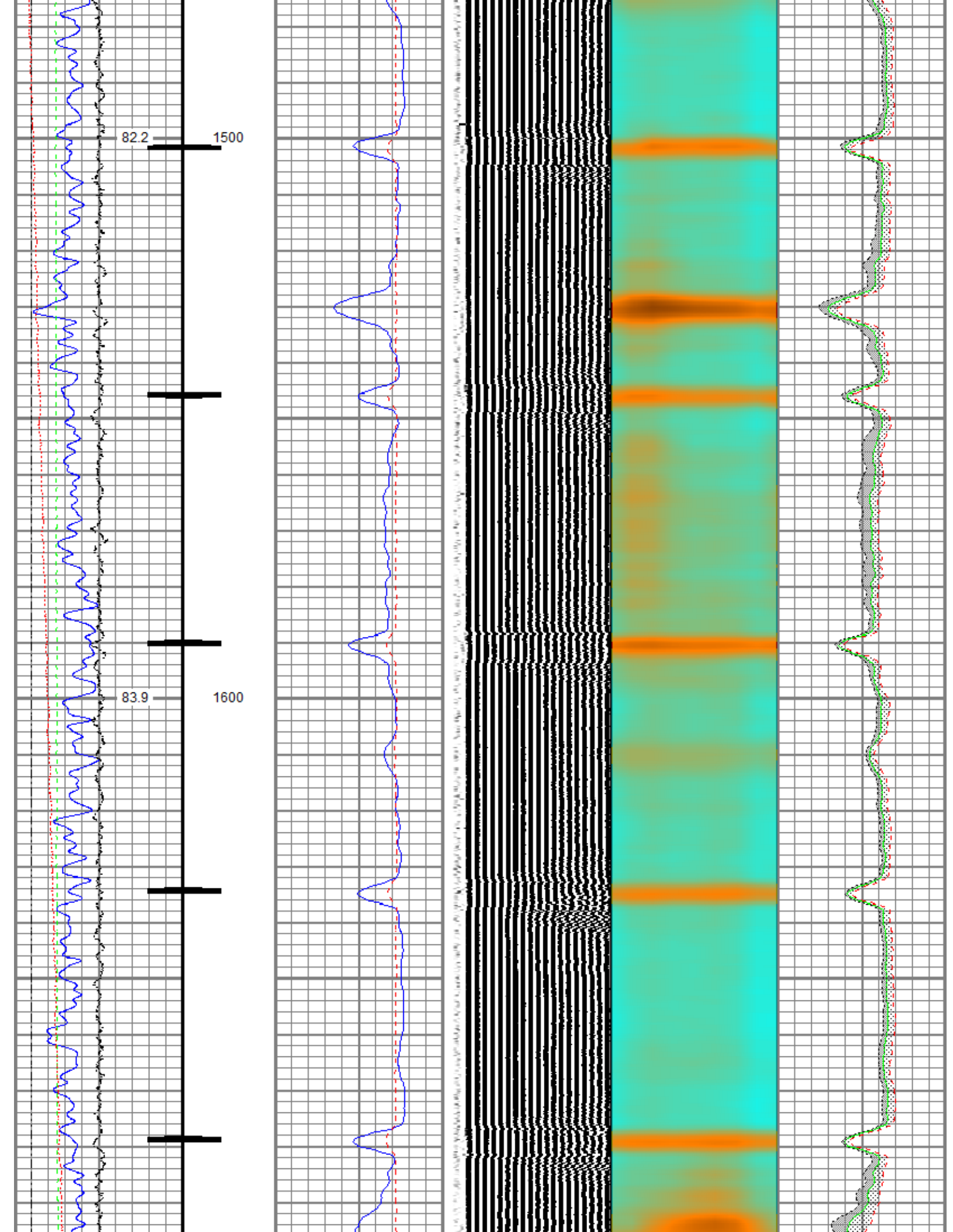


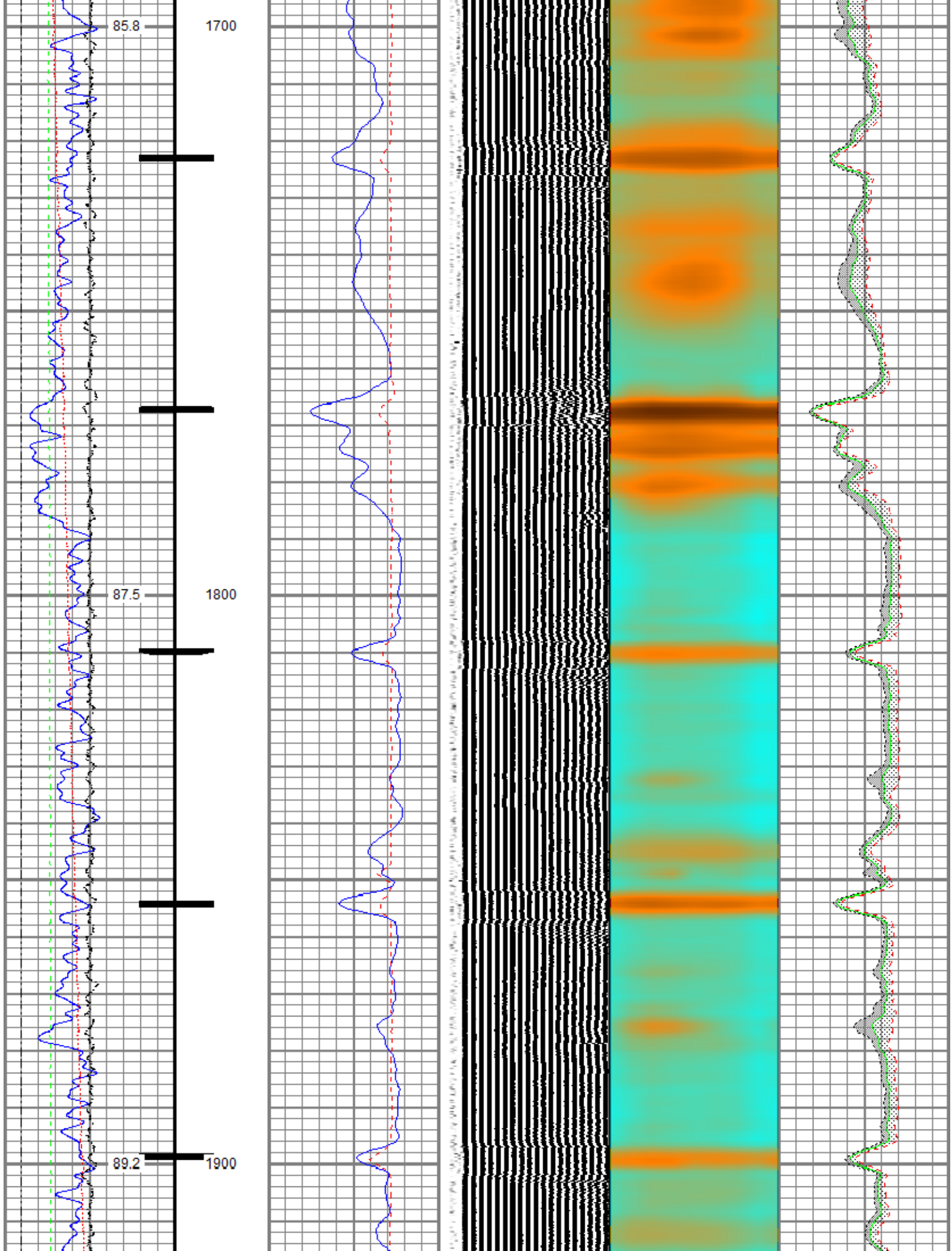


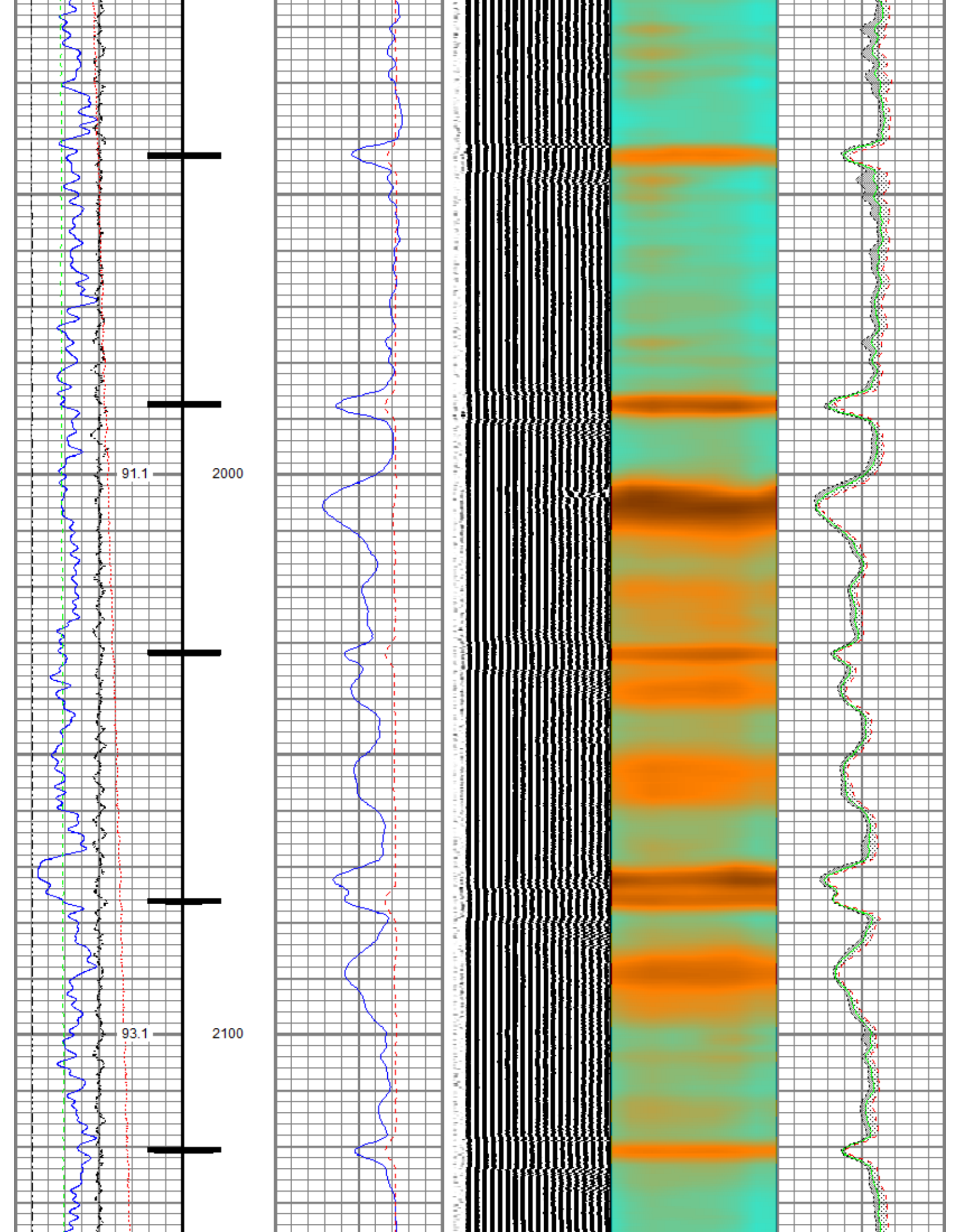


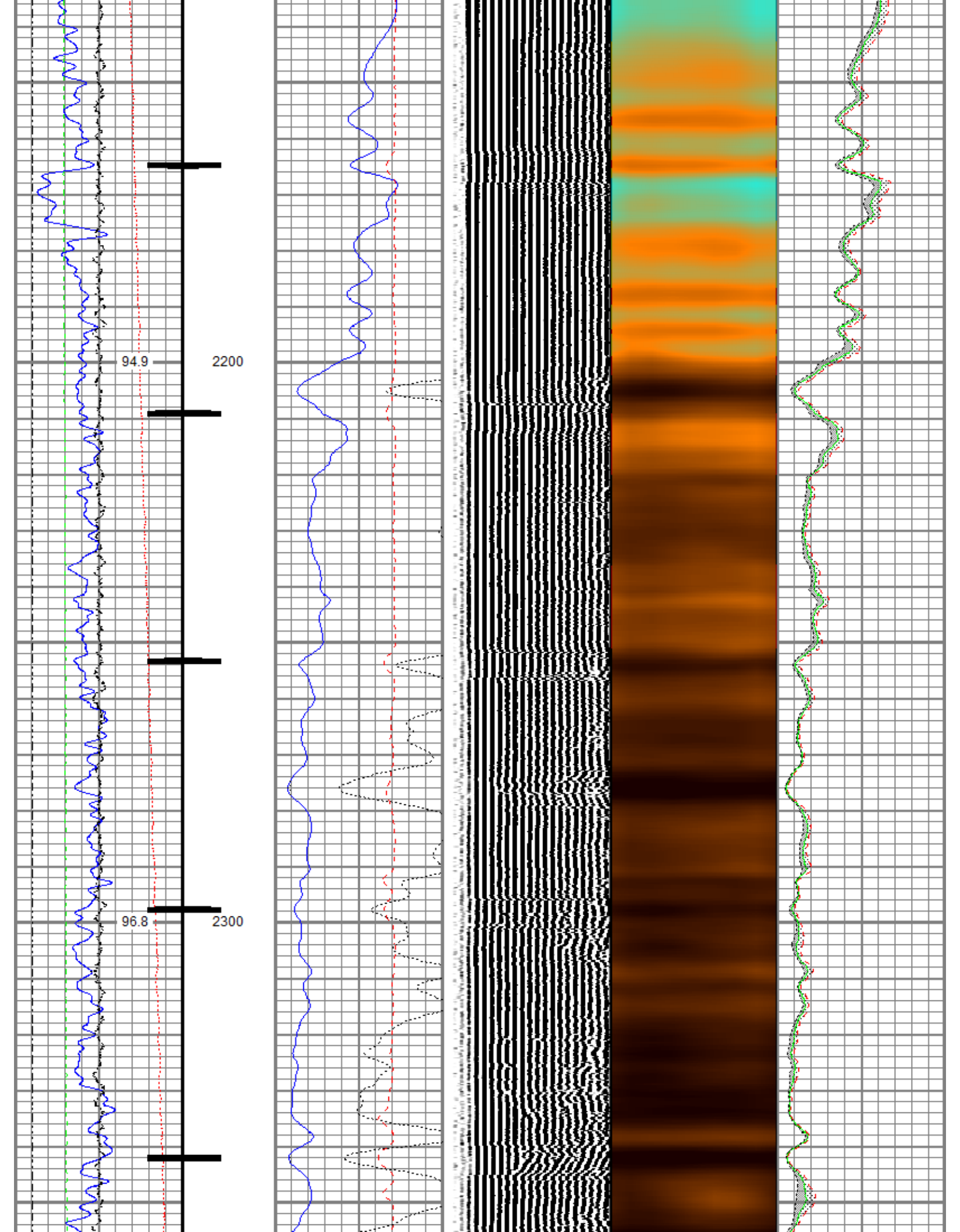




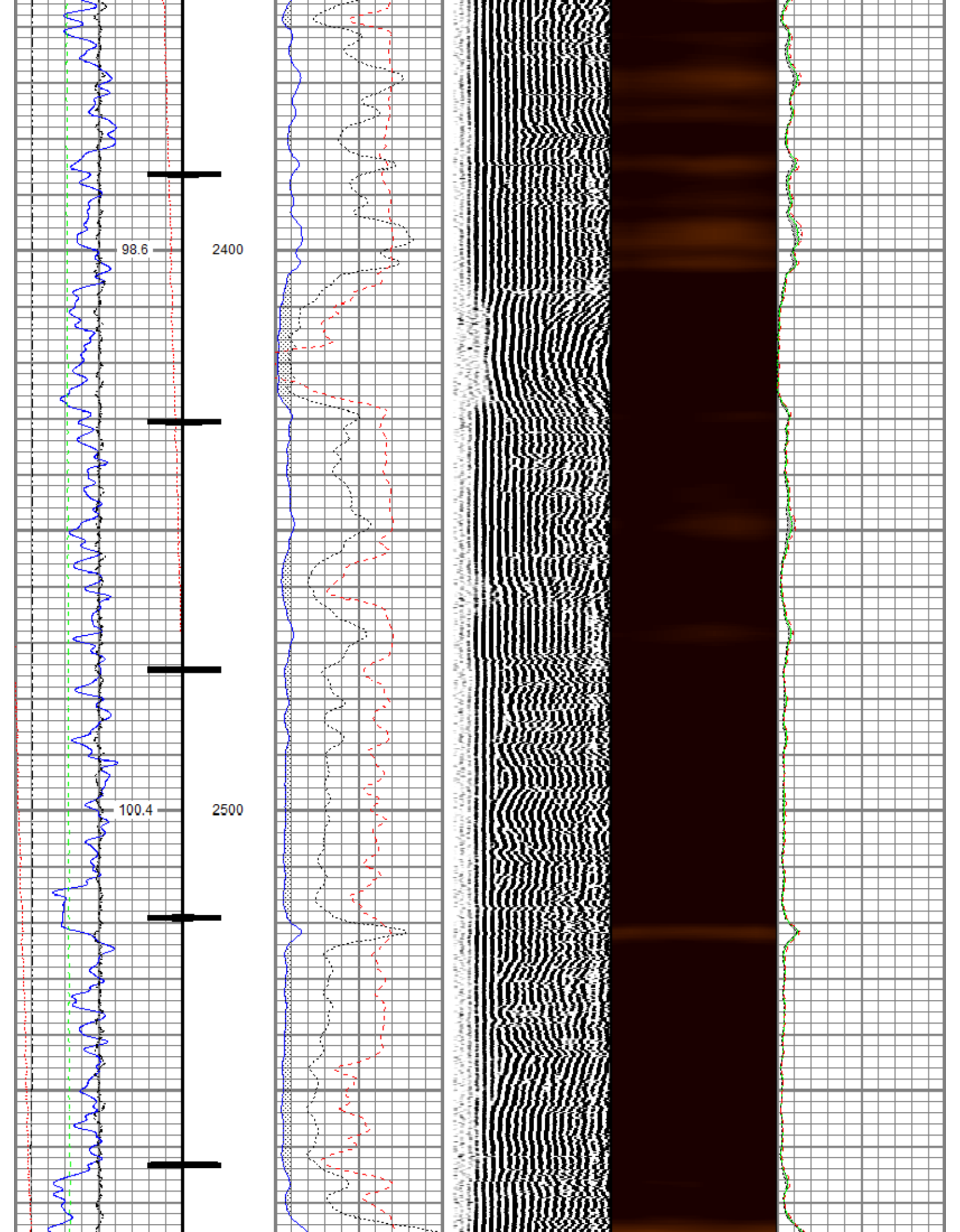


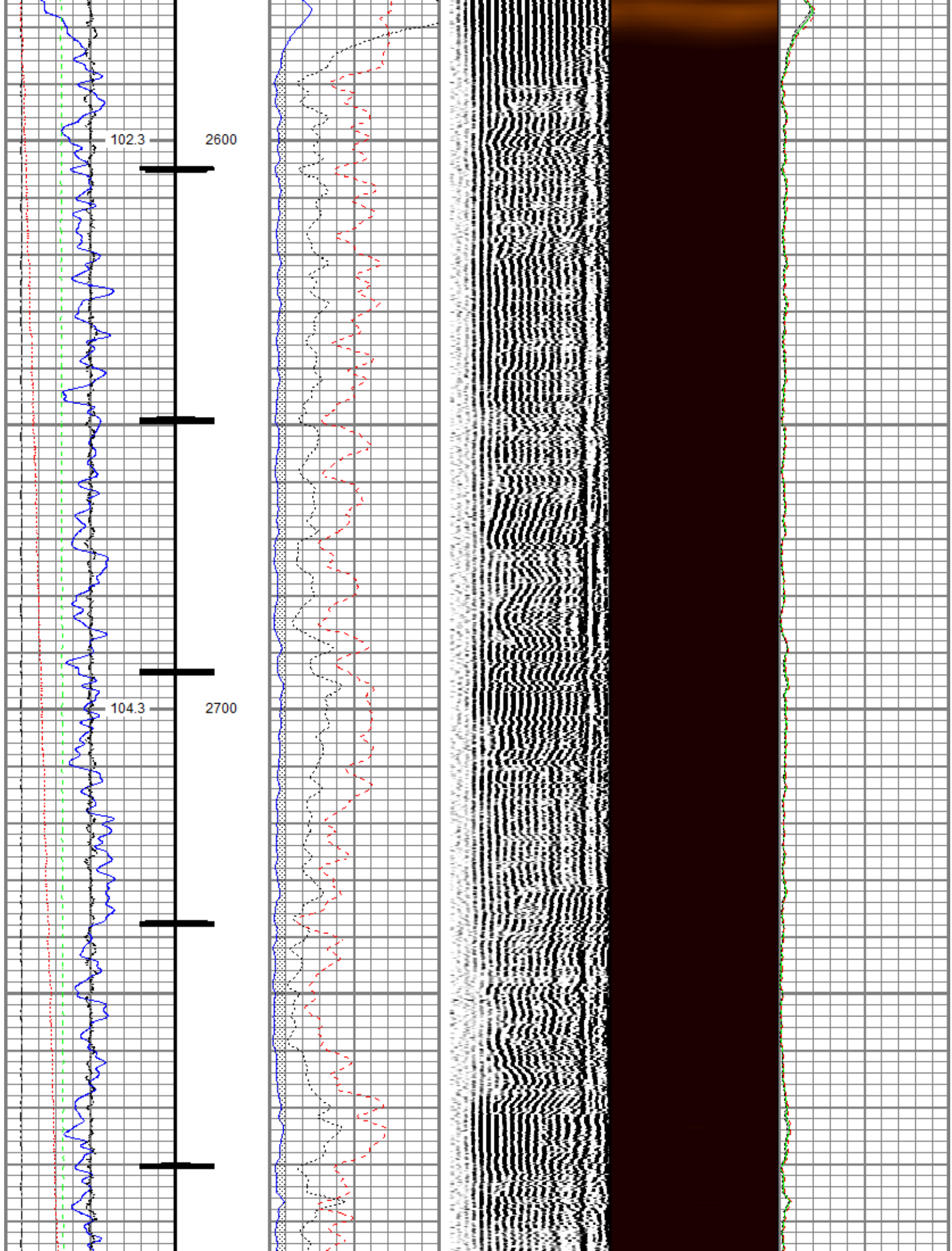


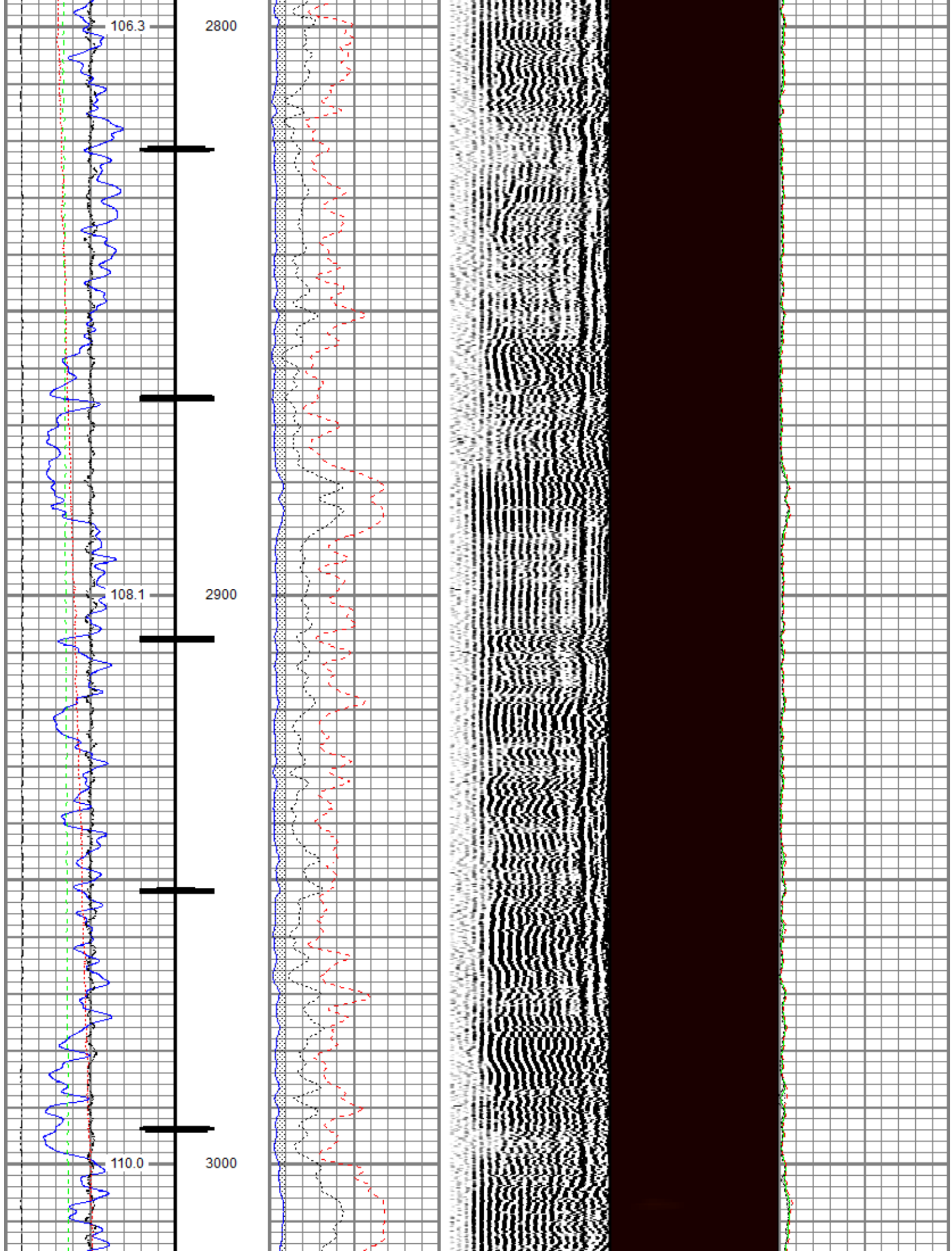




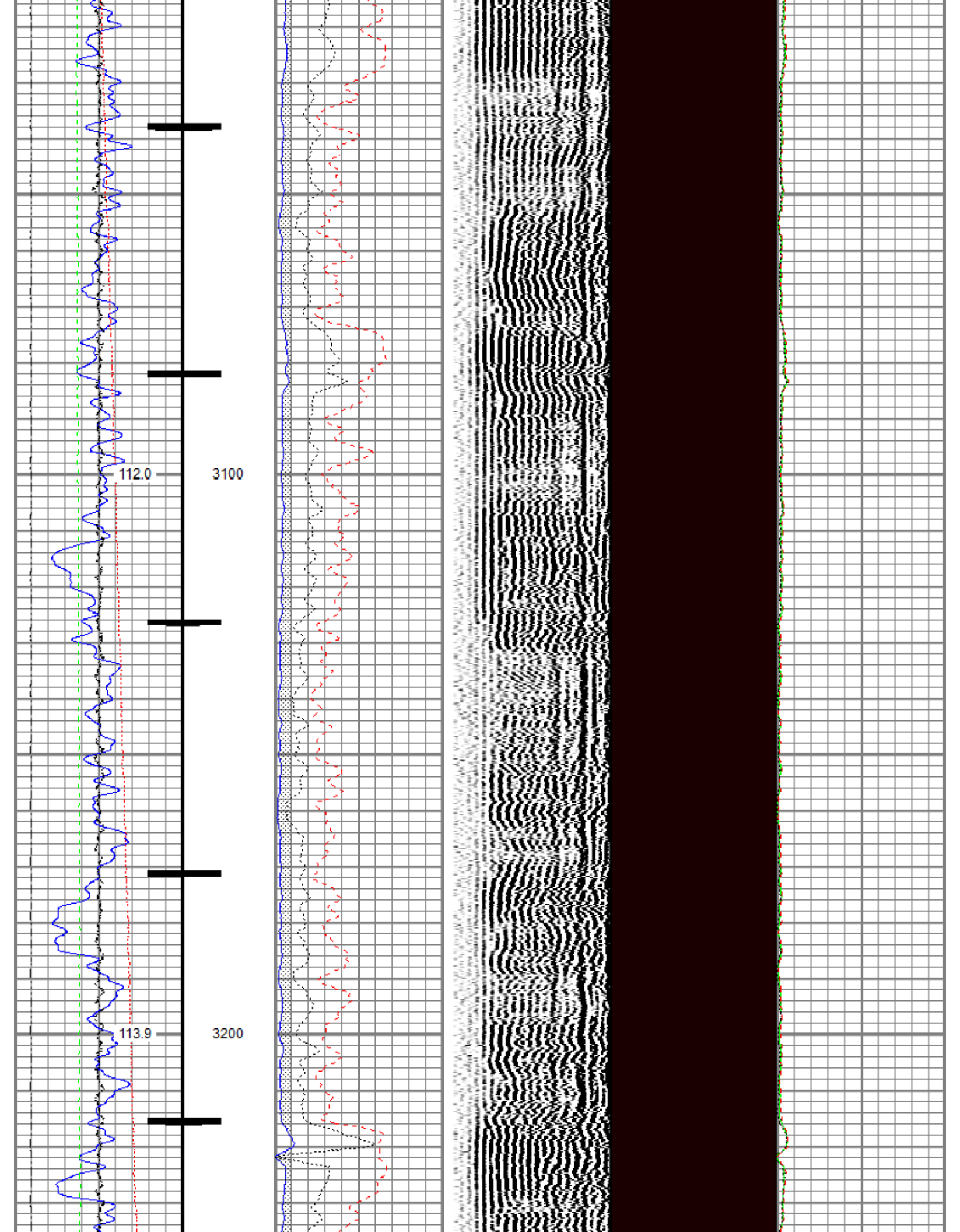




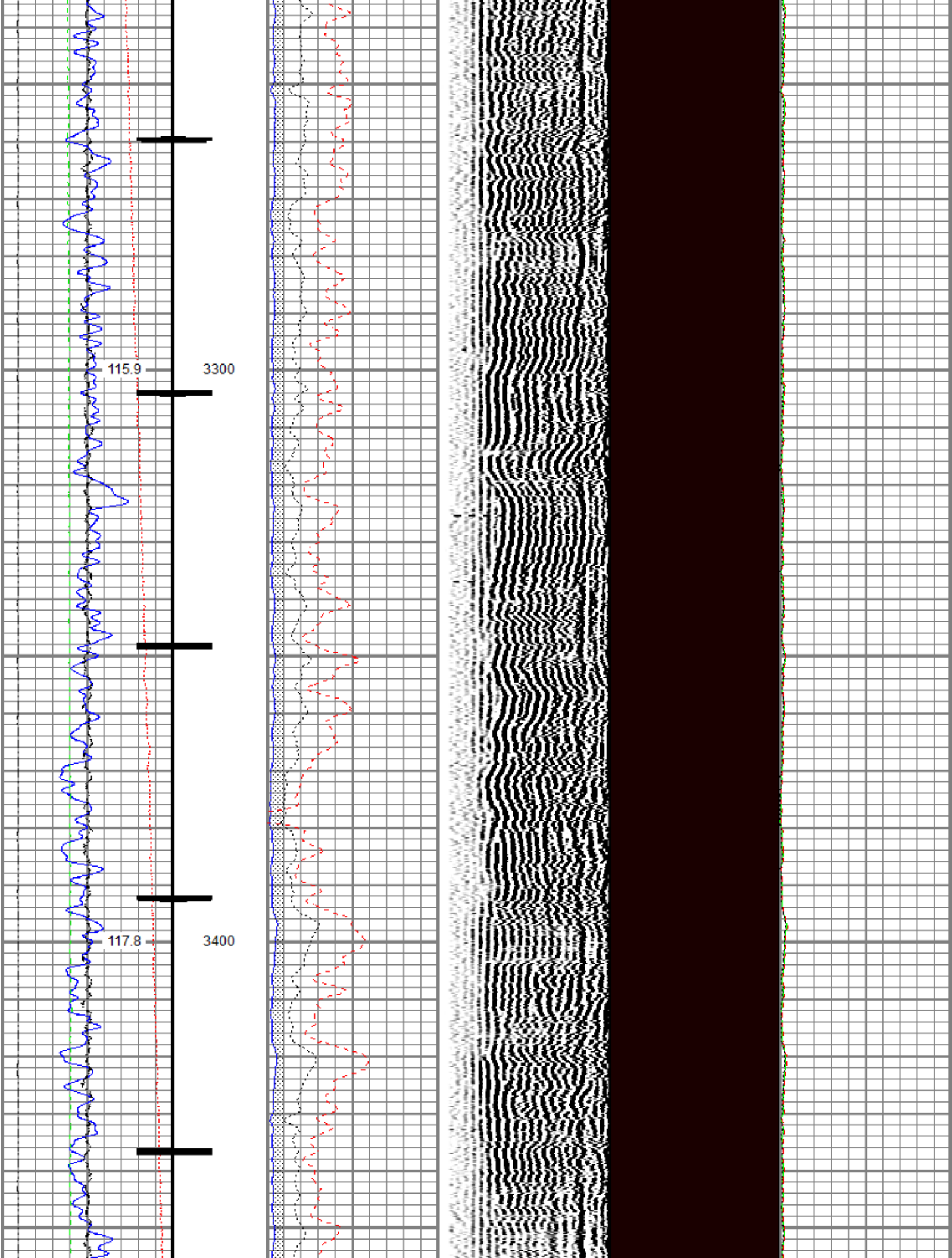


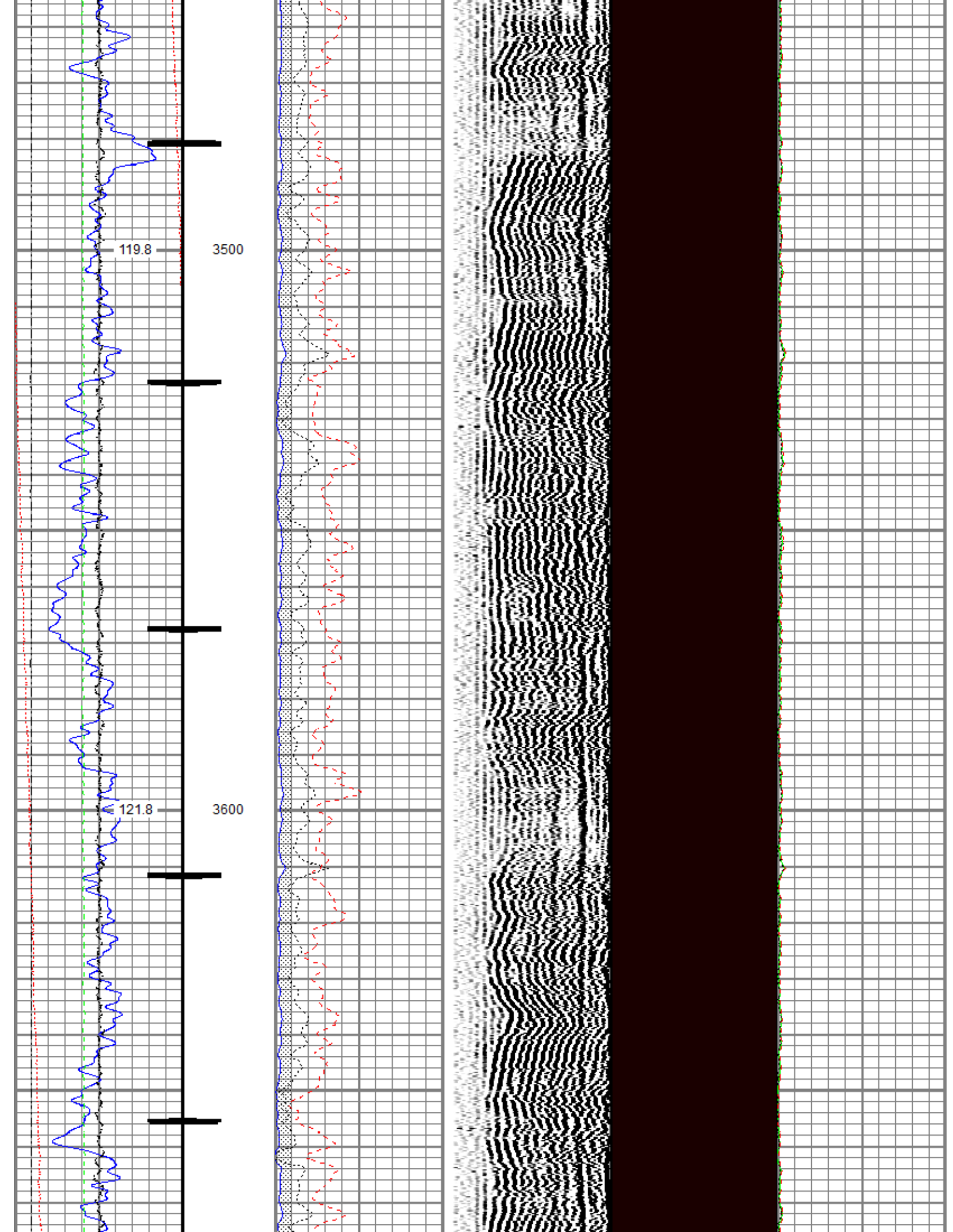


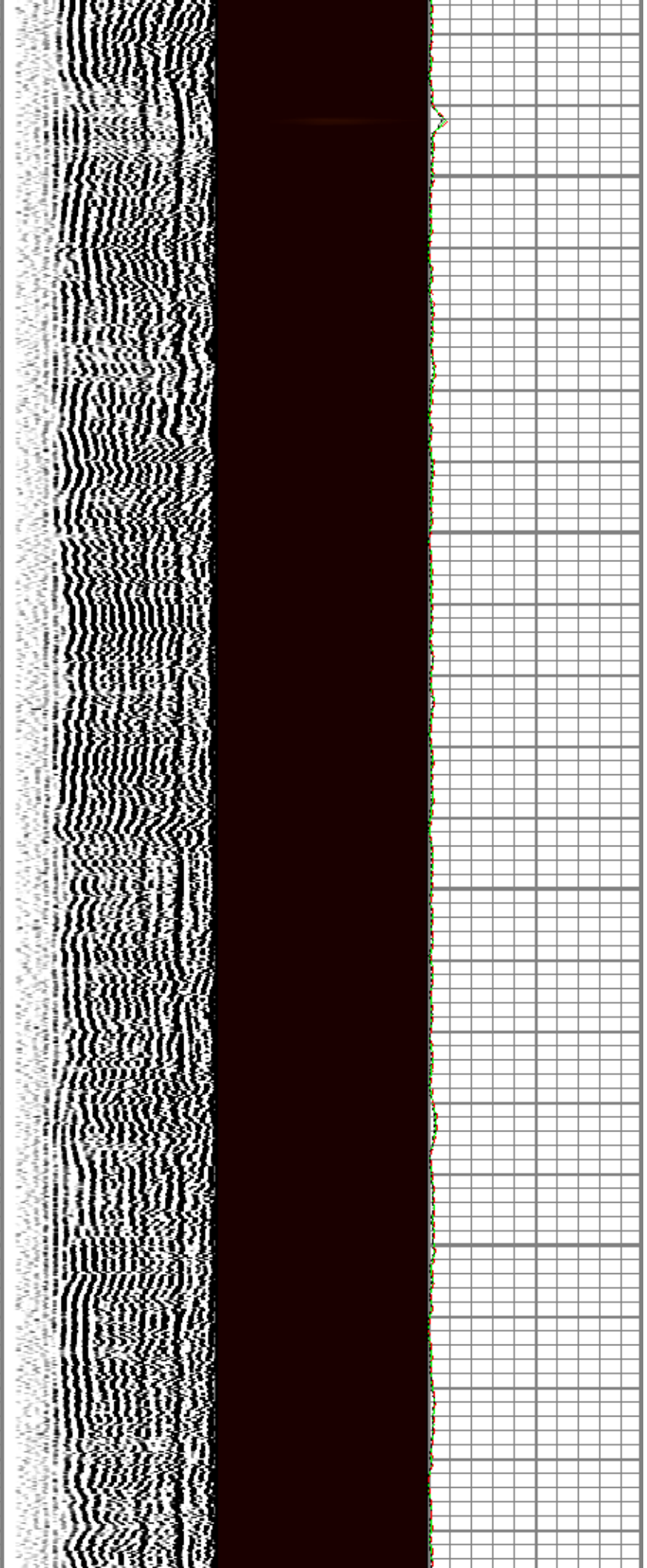
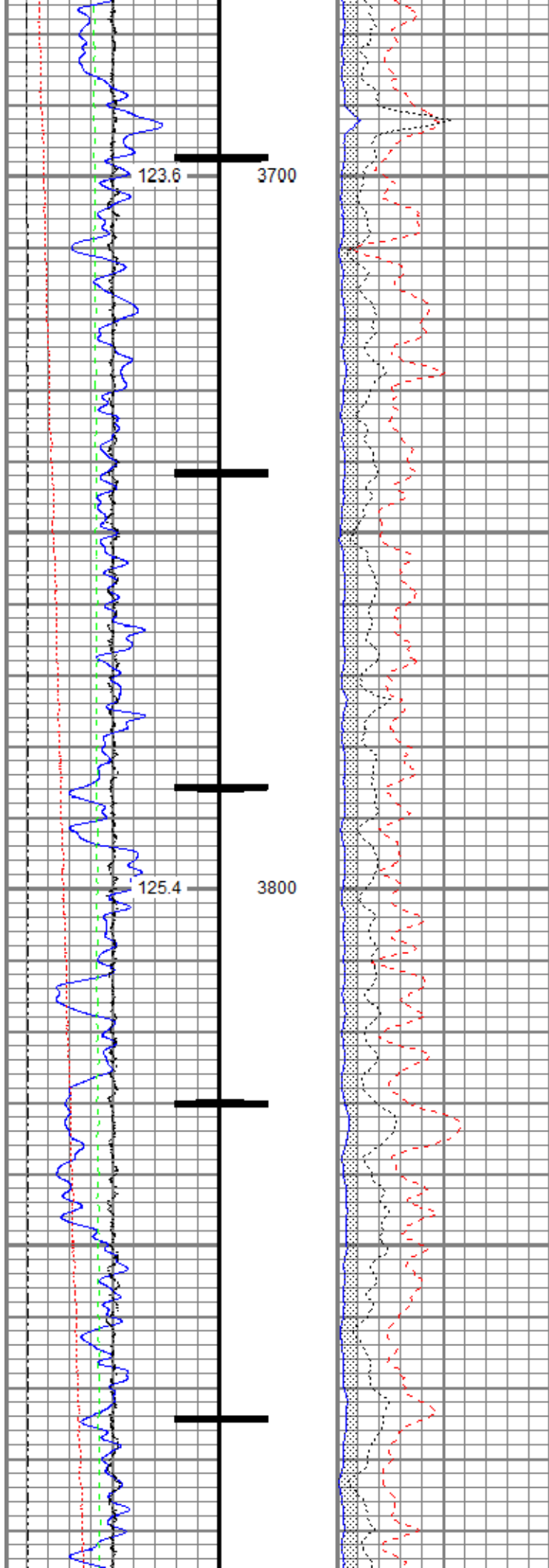




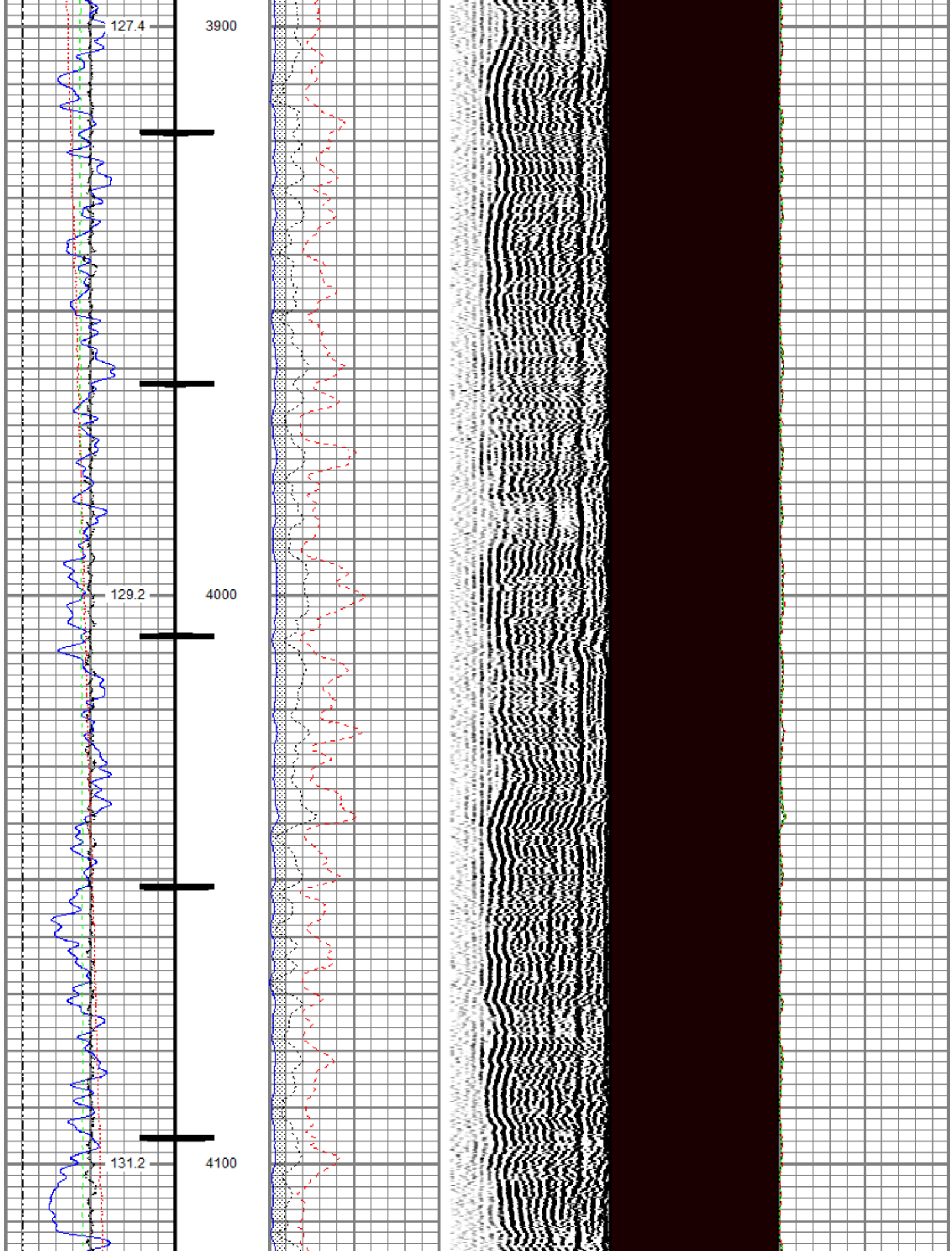




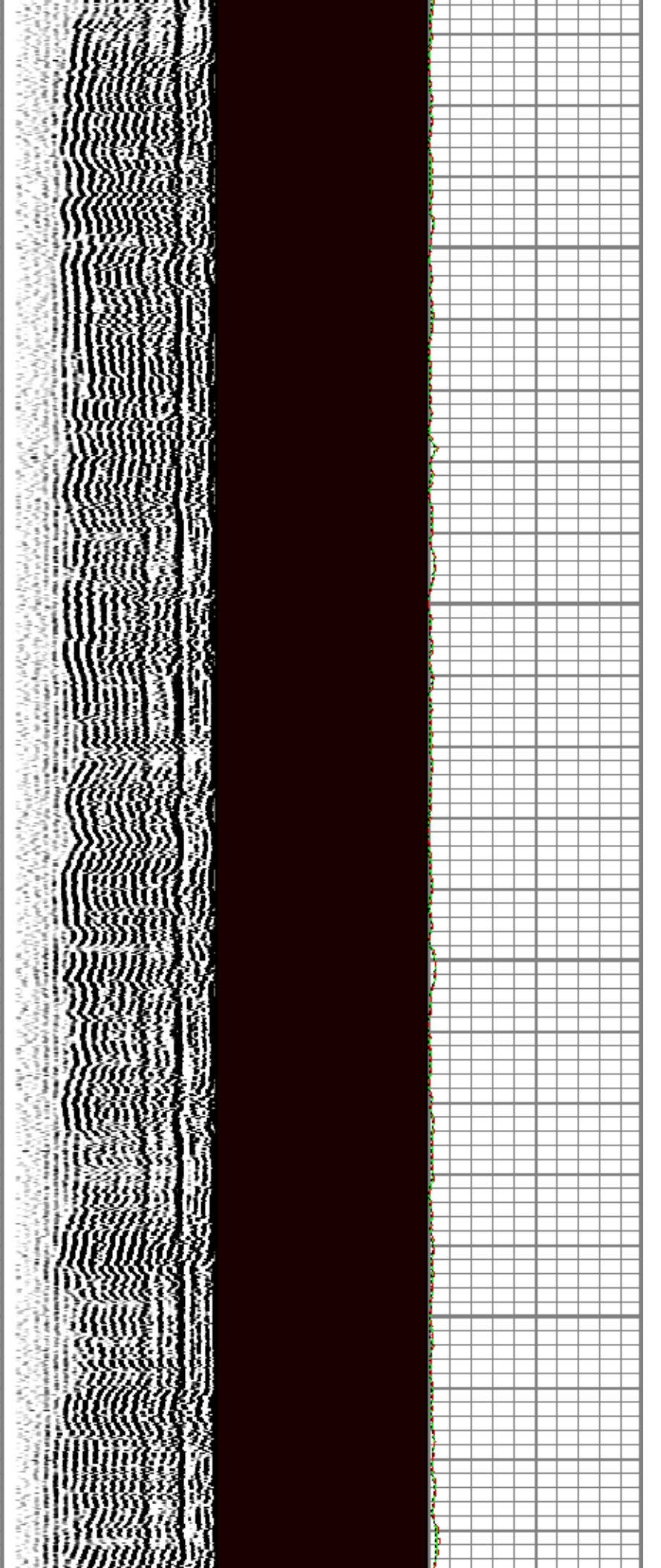
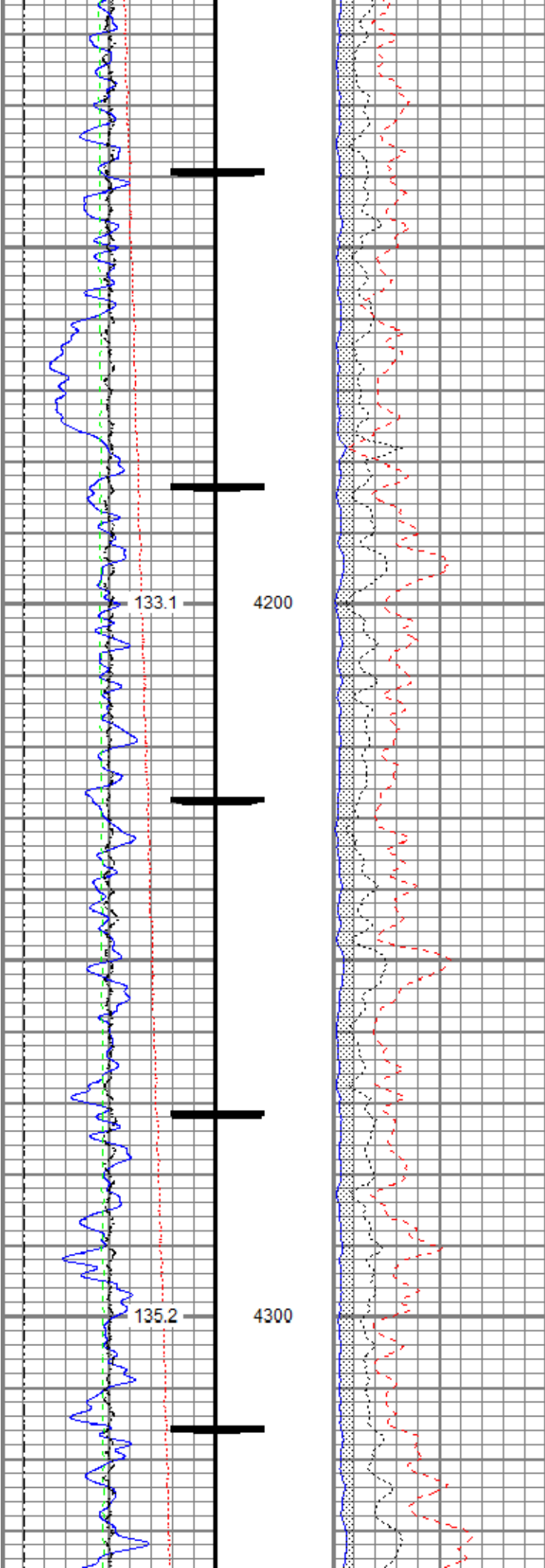


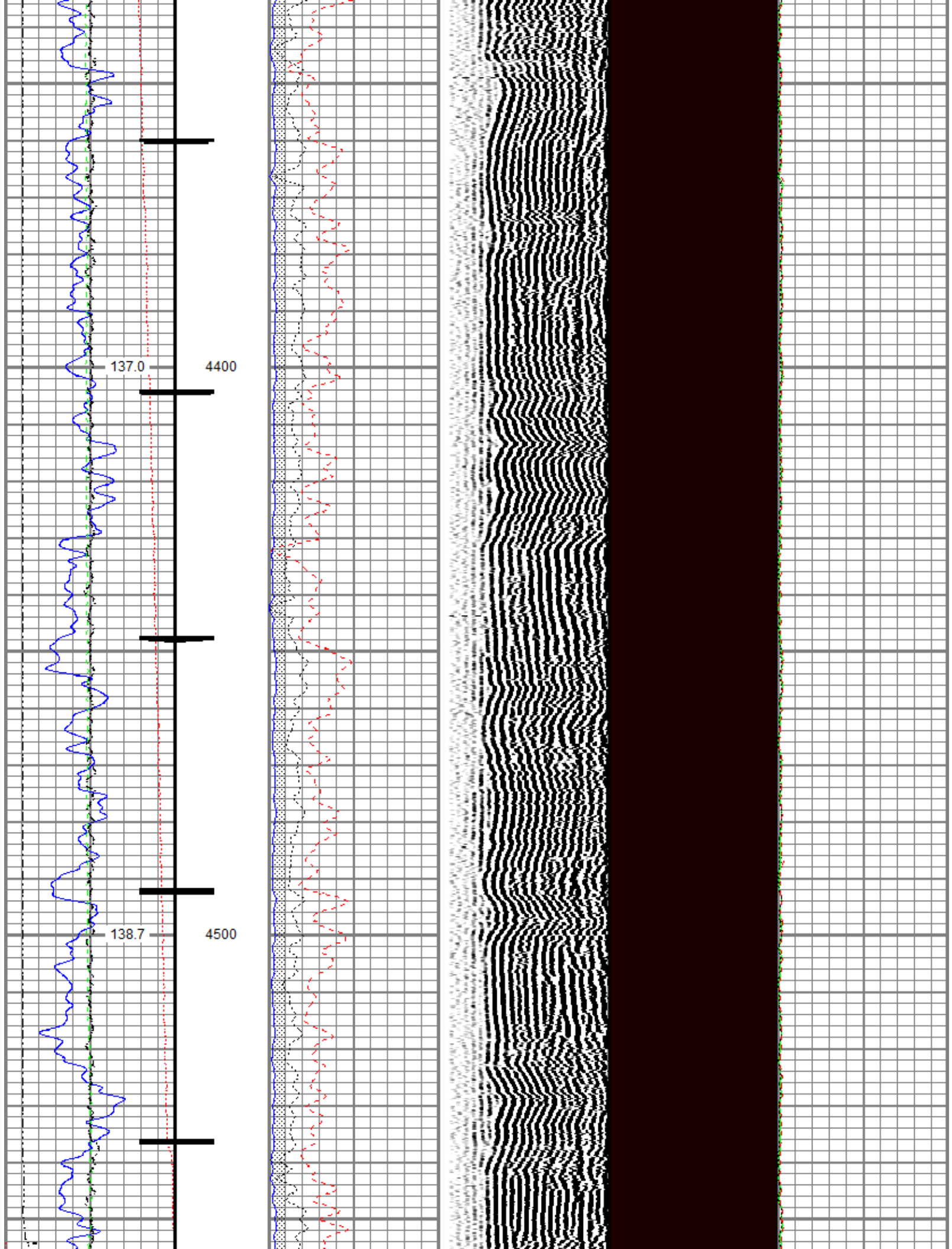


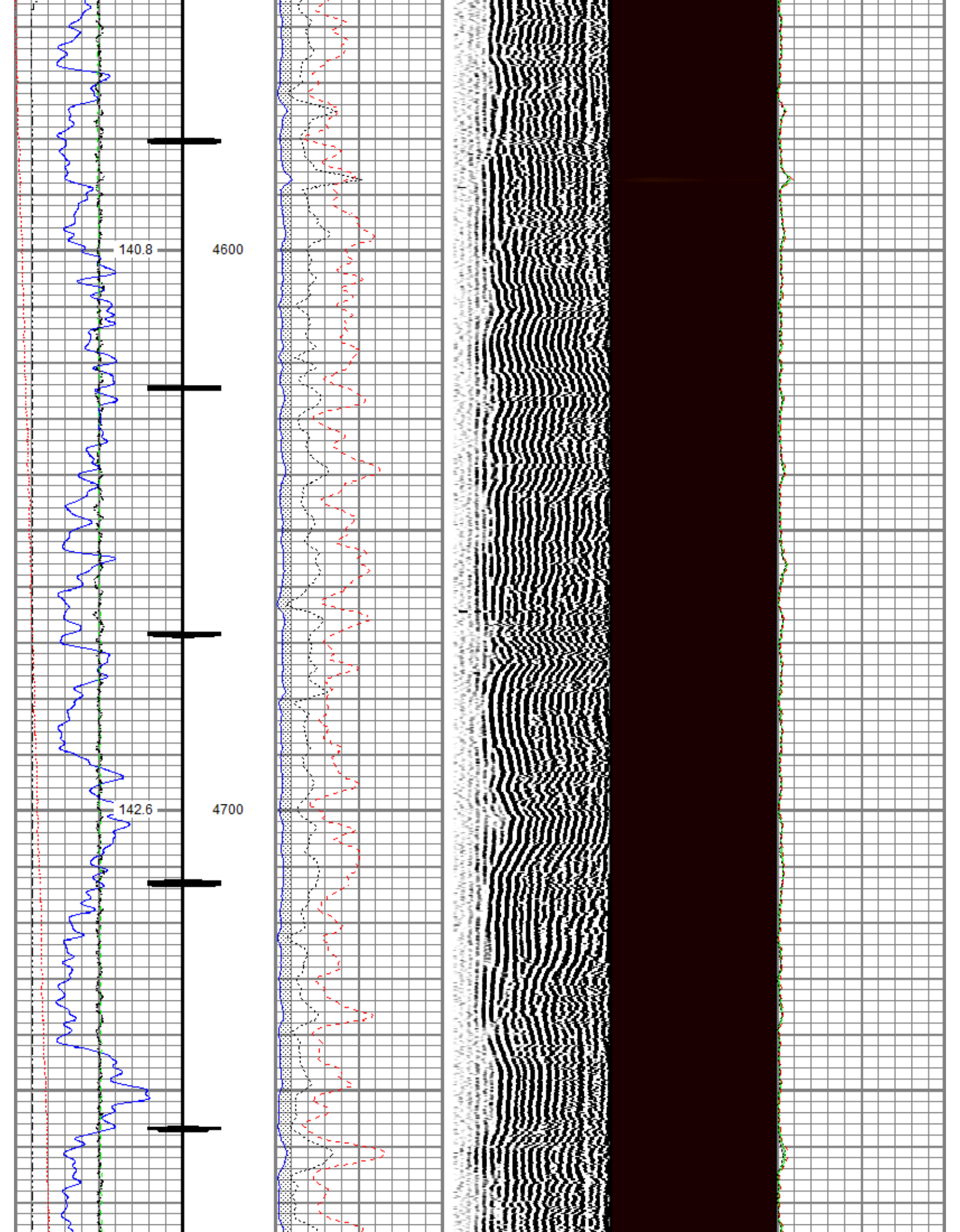










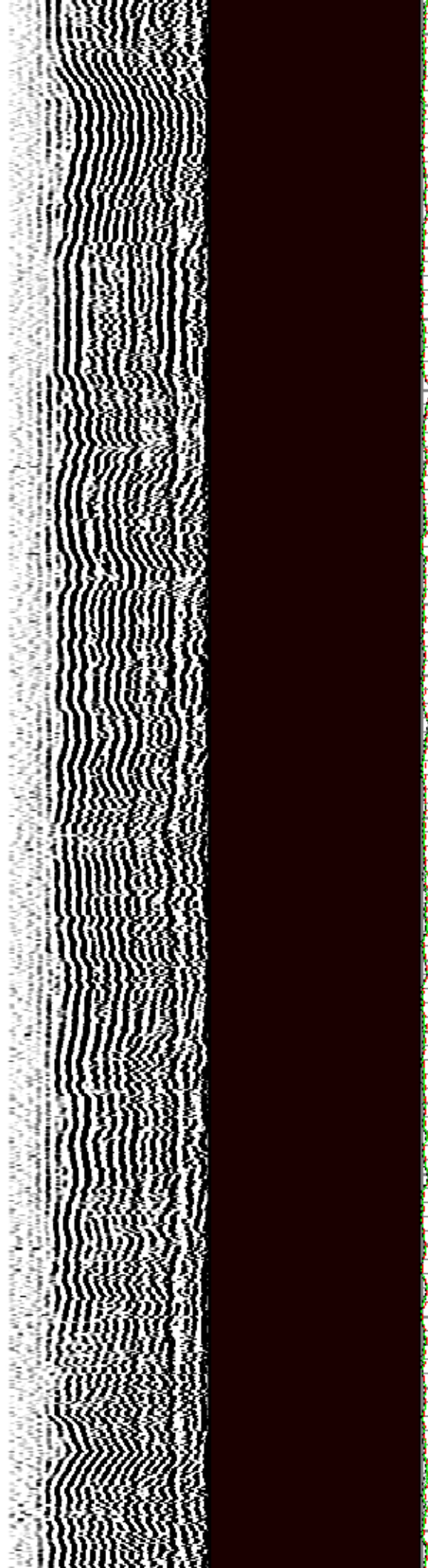




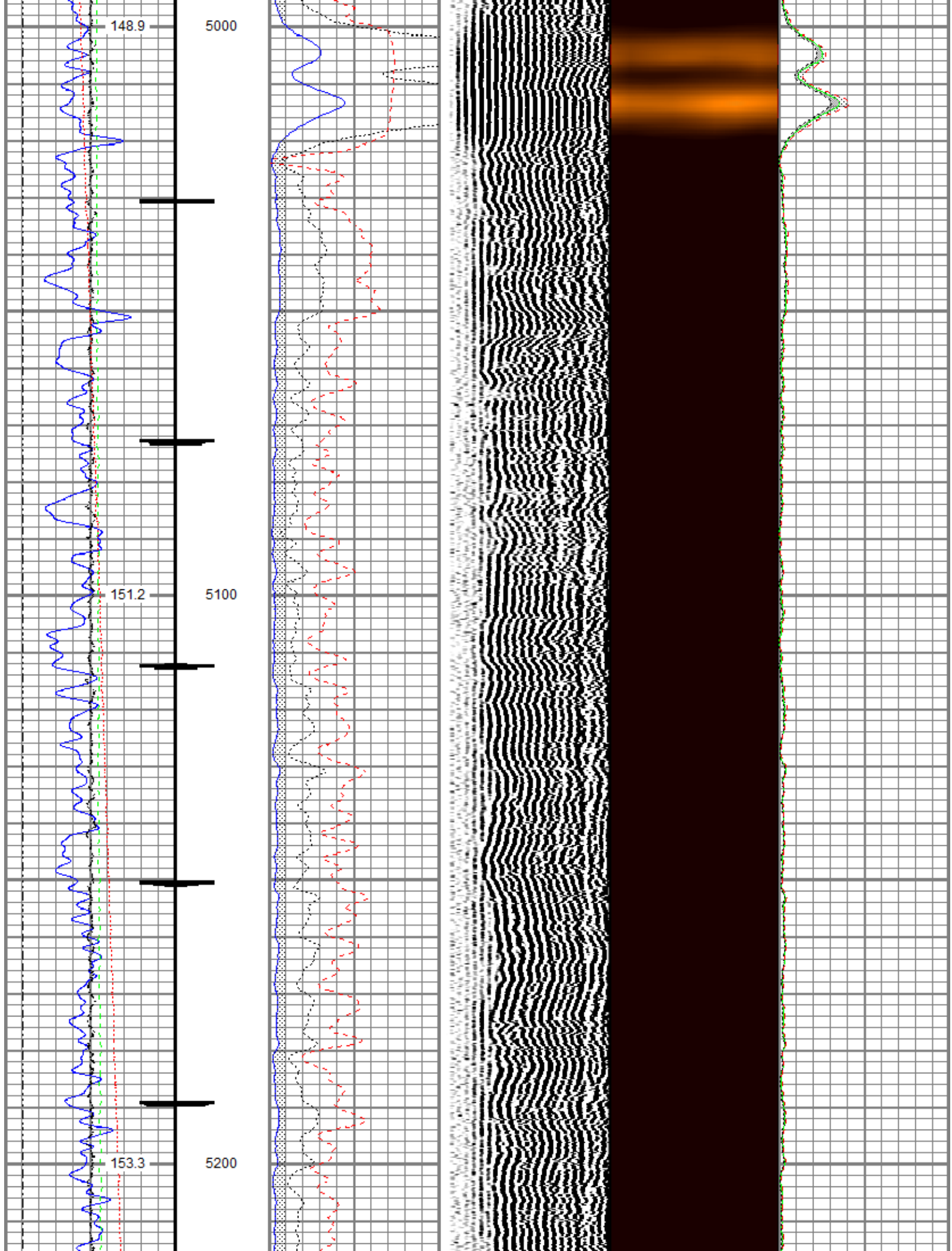
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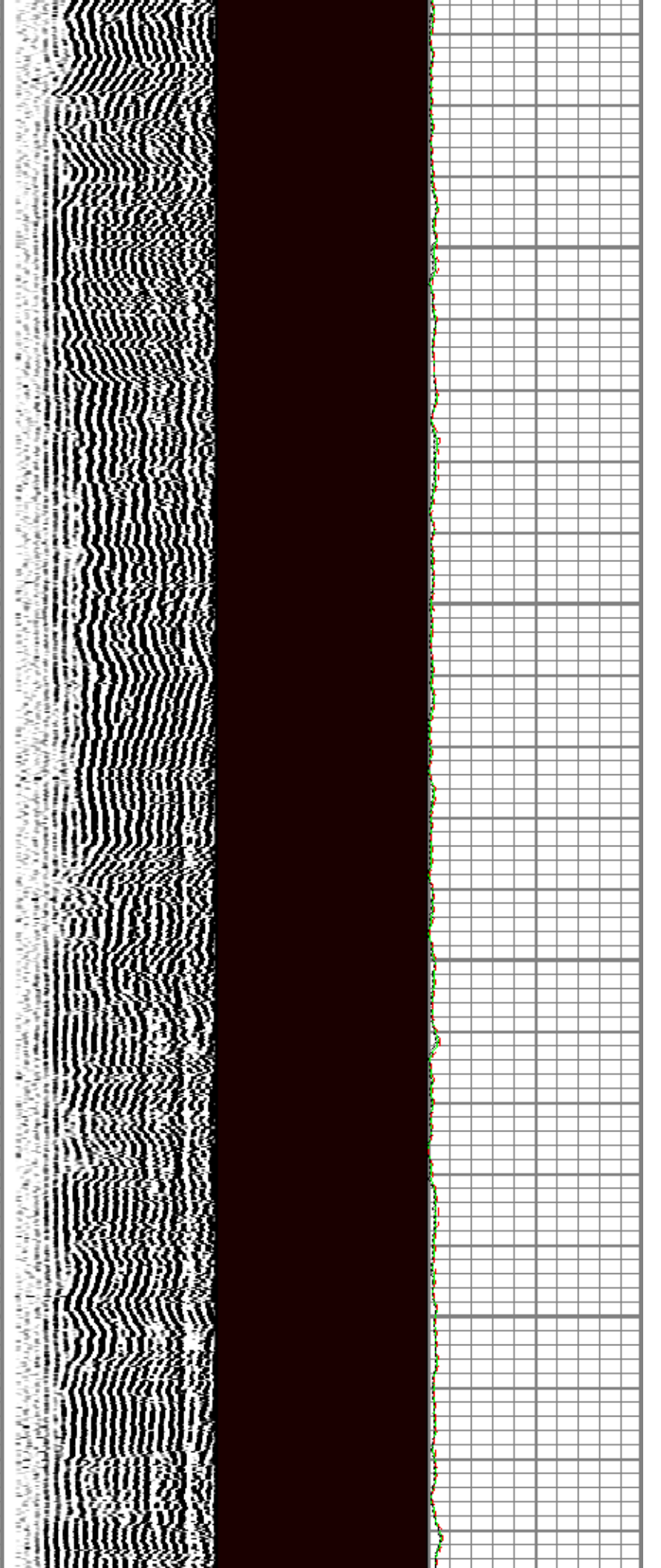
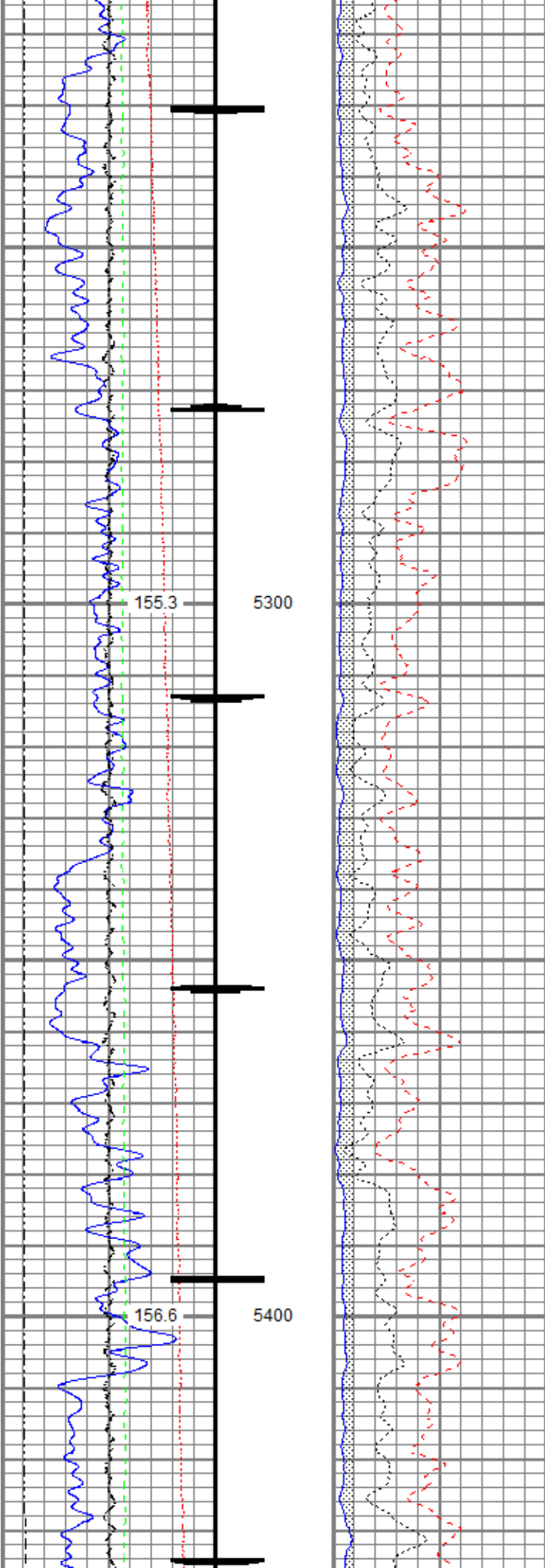
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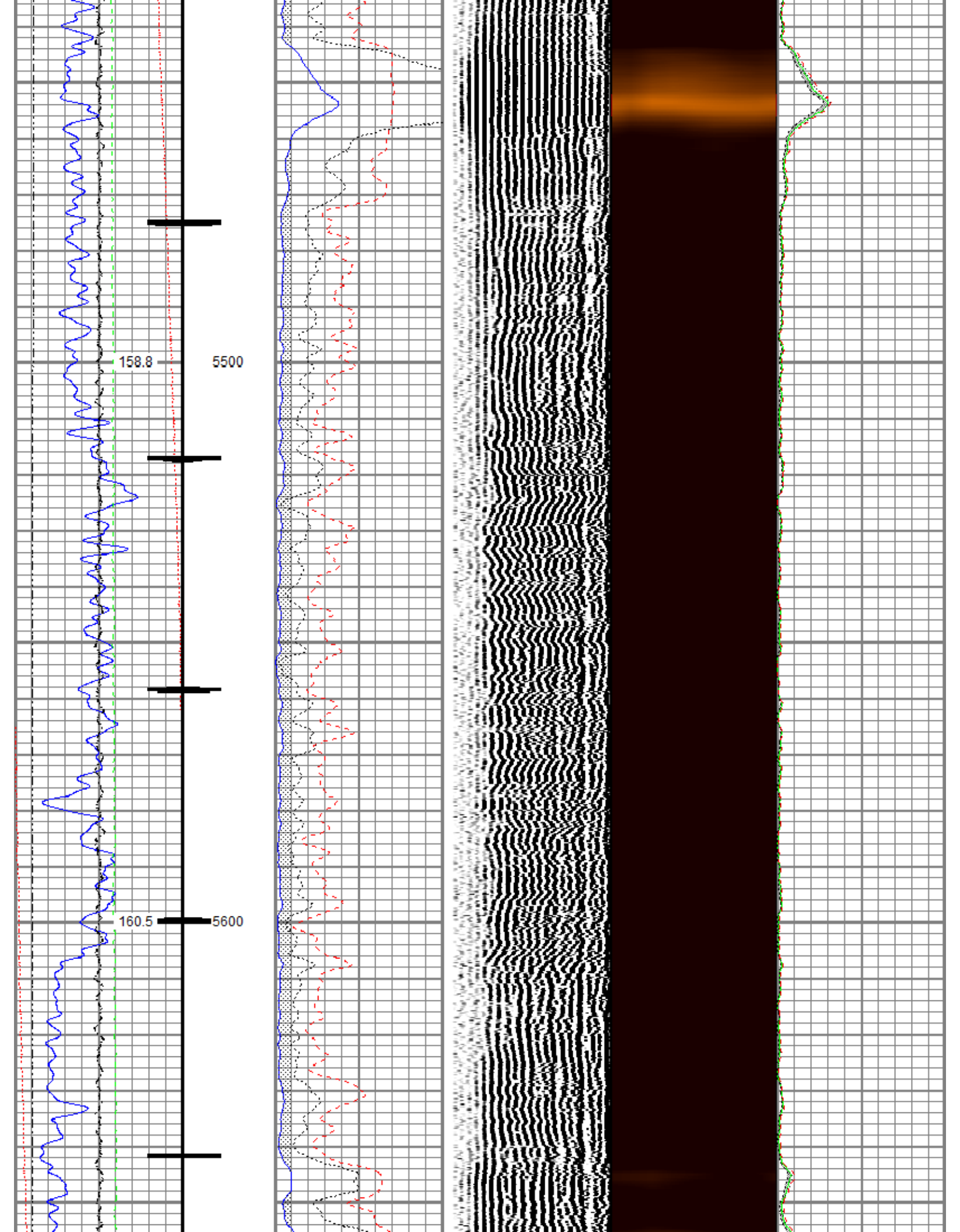
Marker Joint



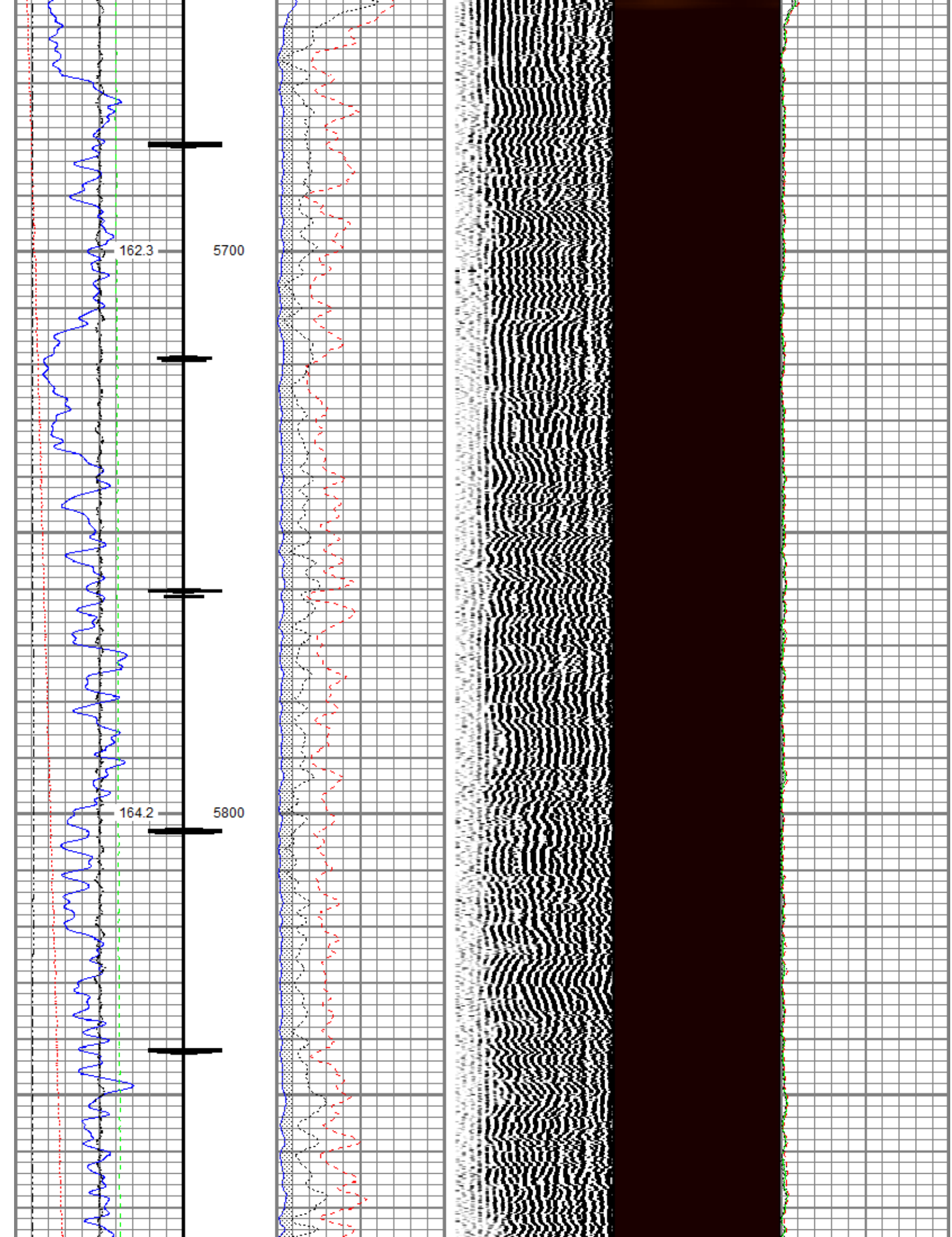


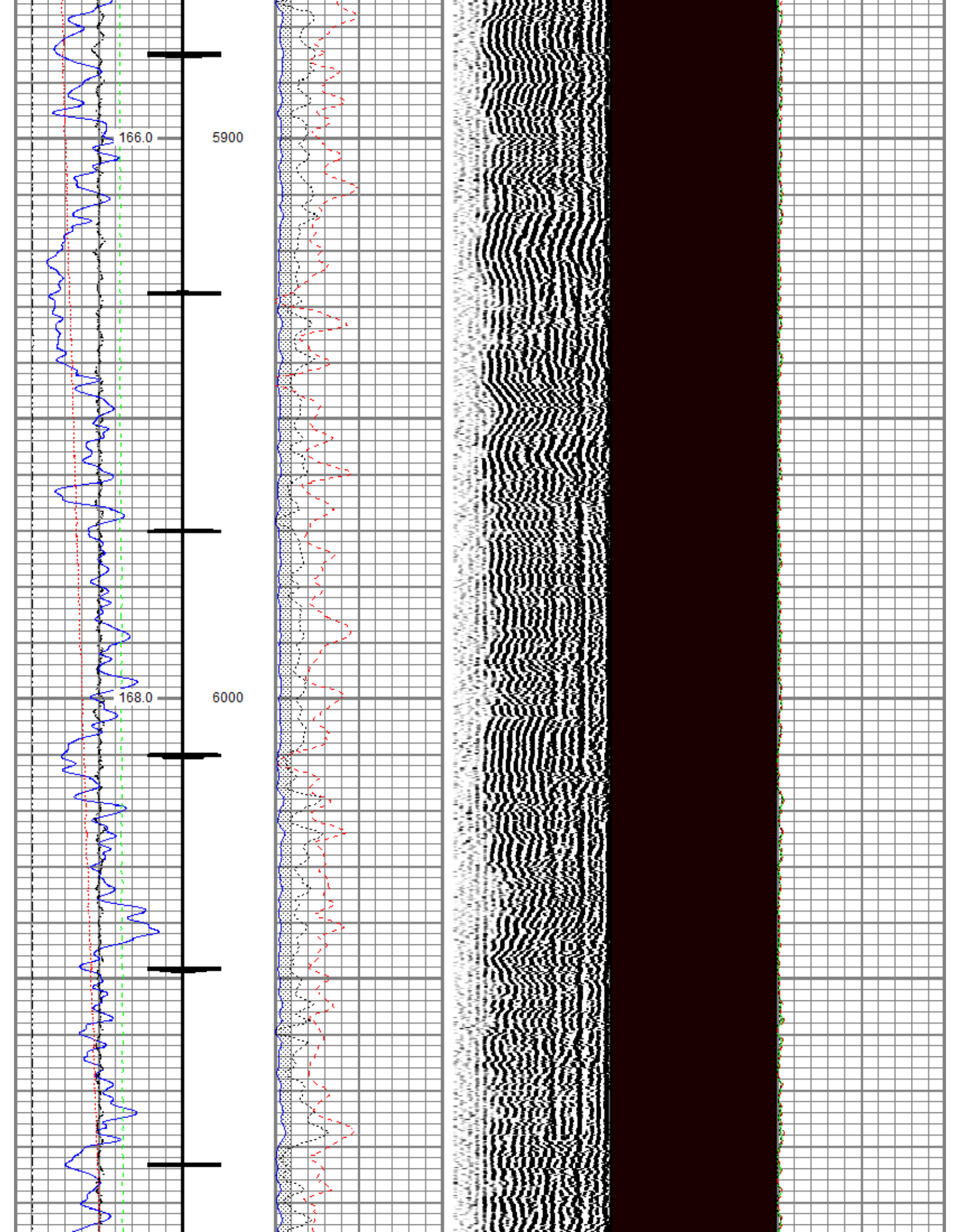


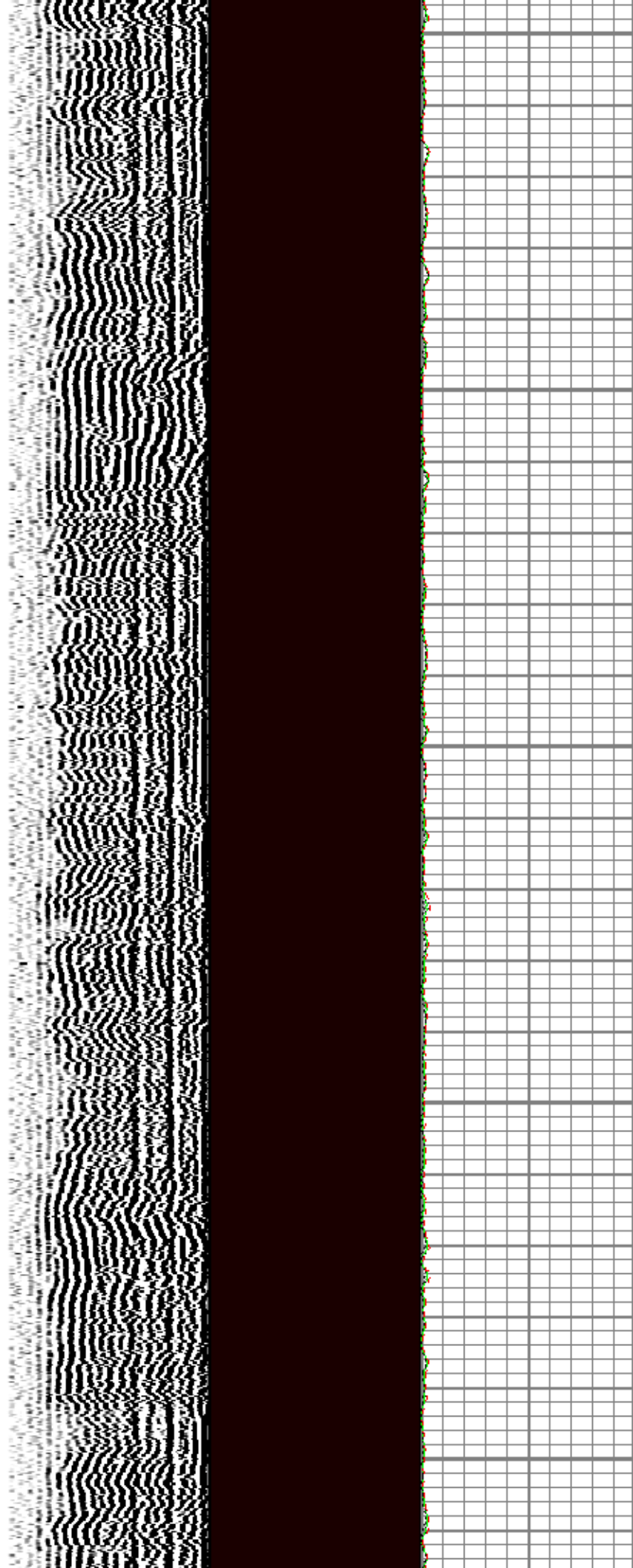
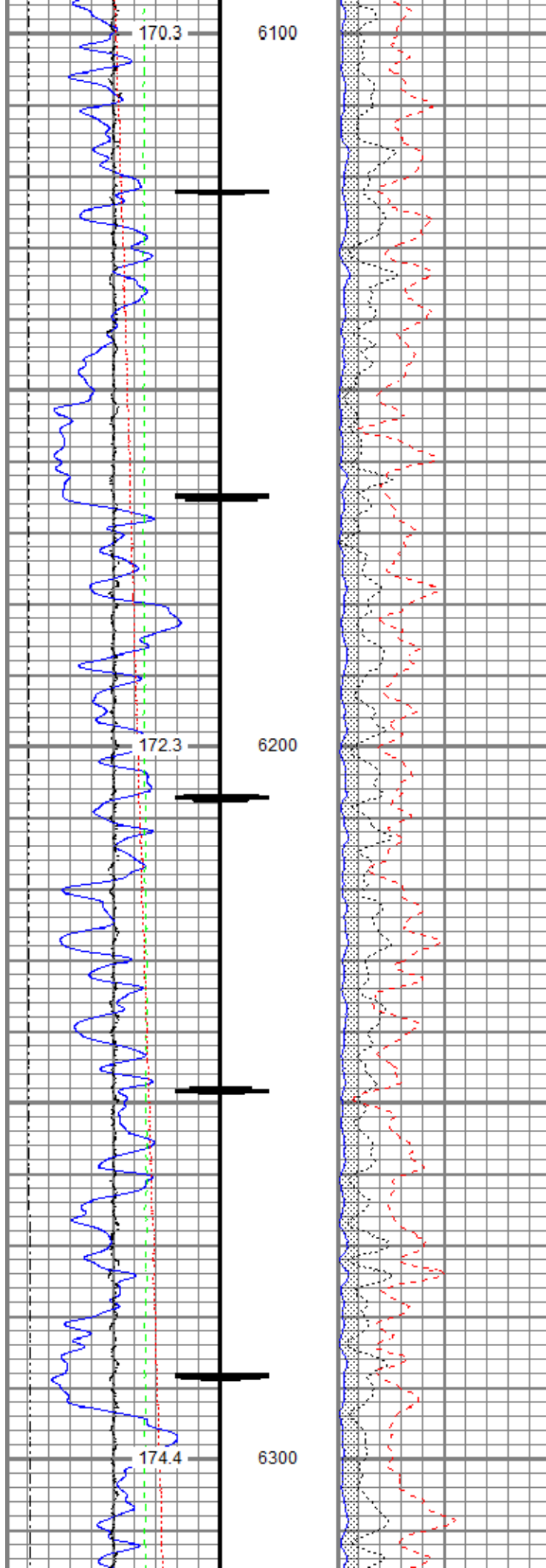




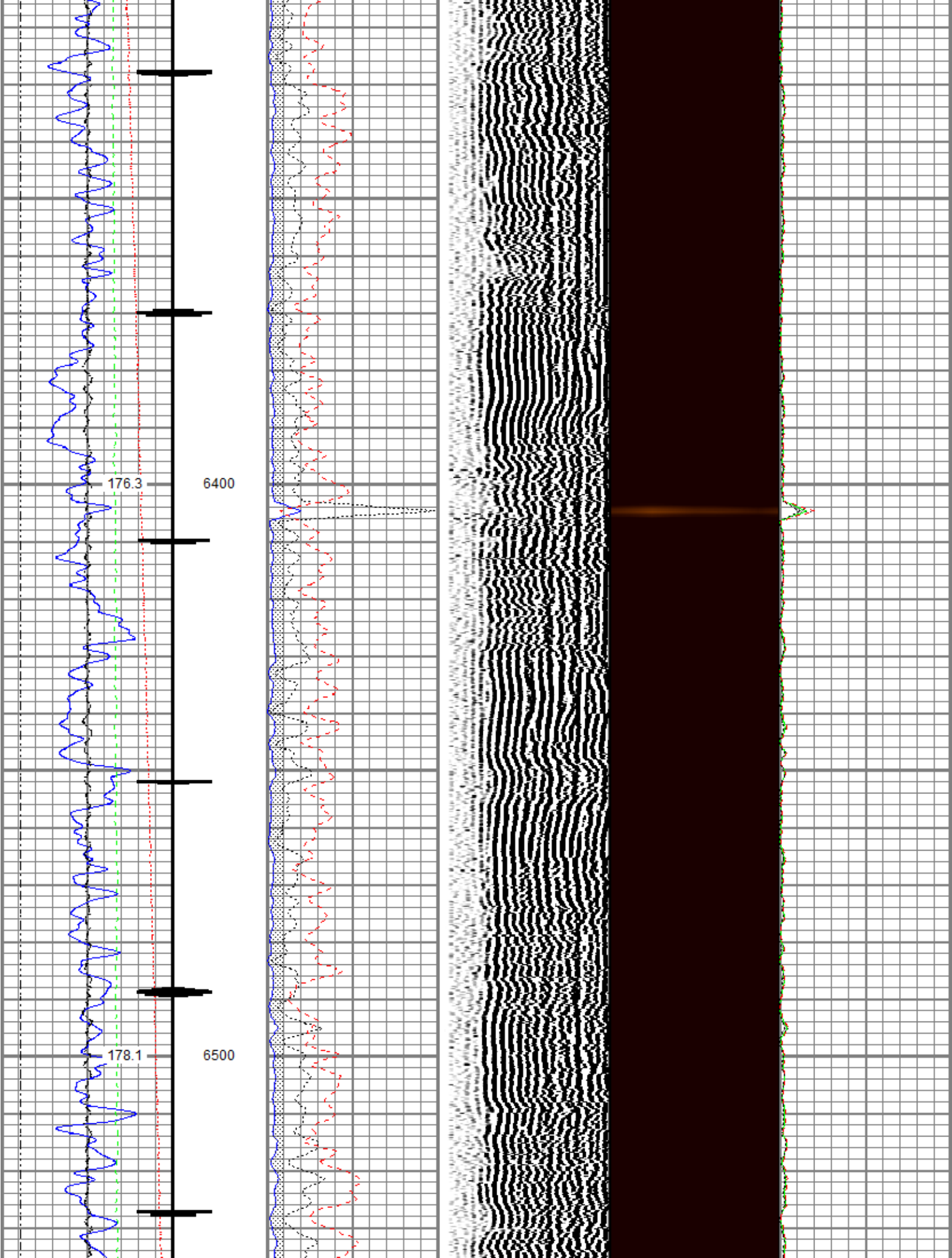


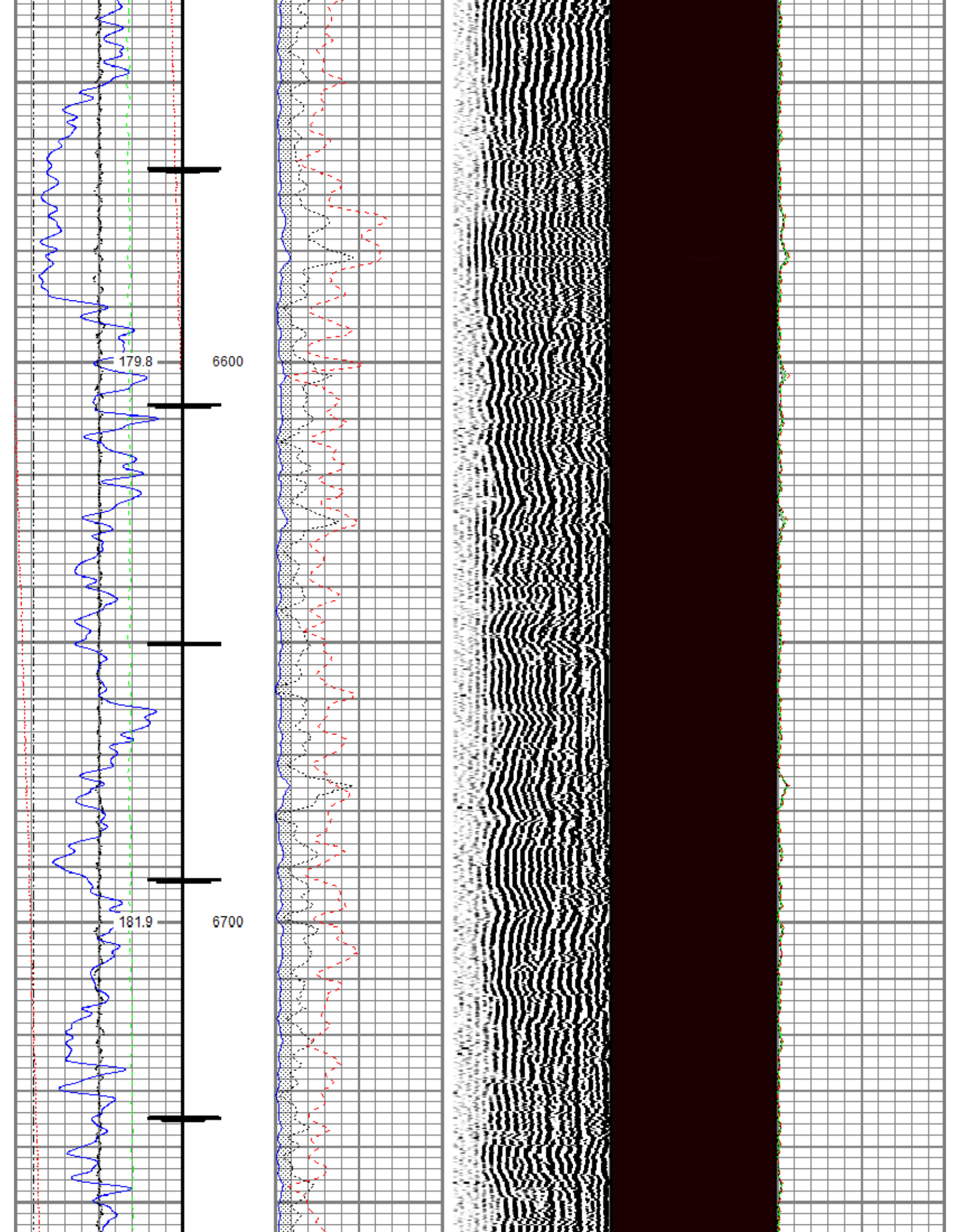


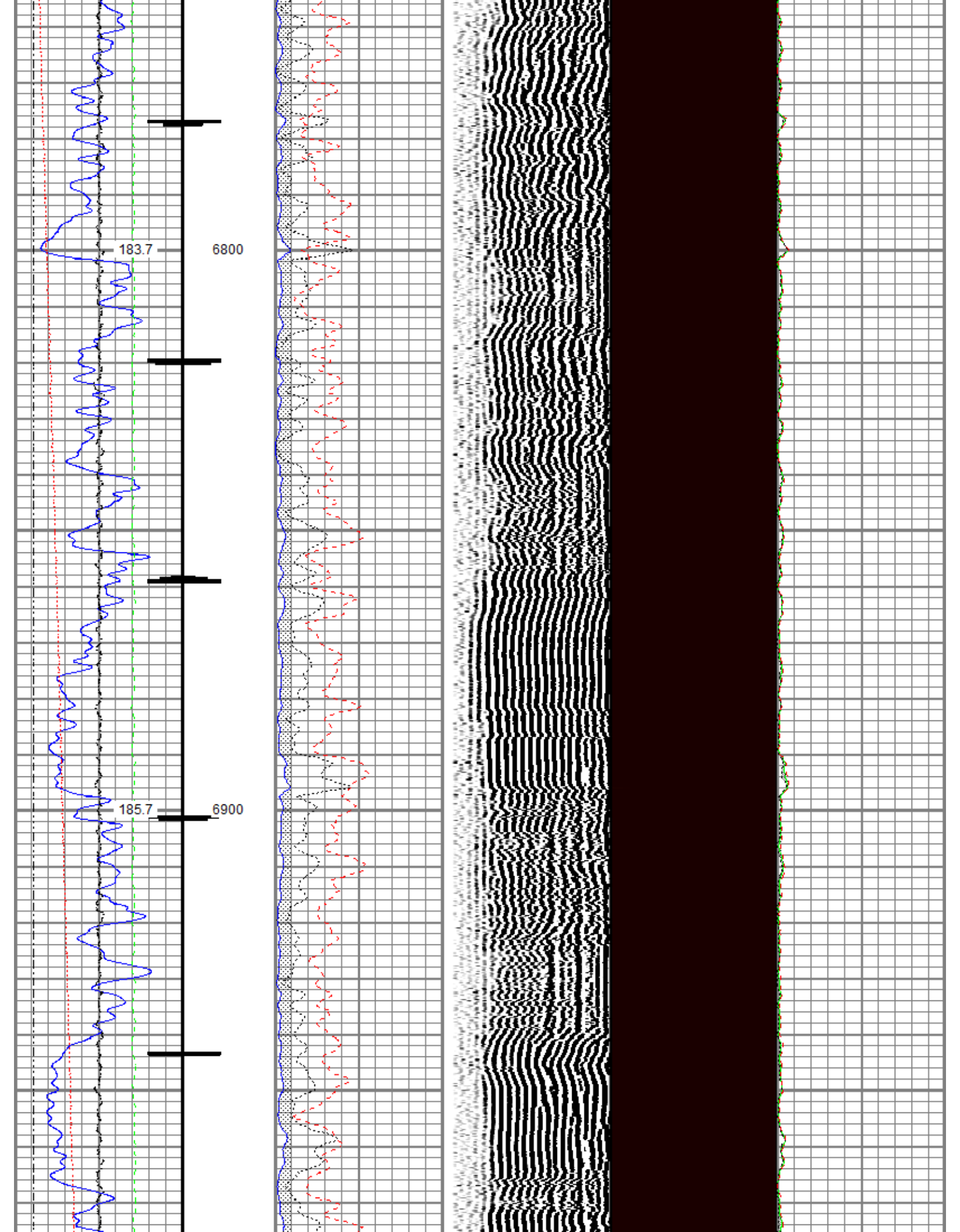




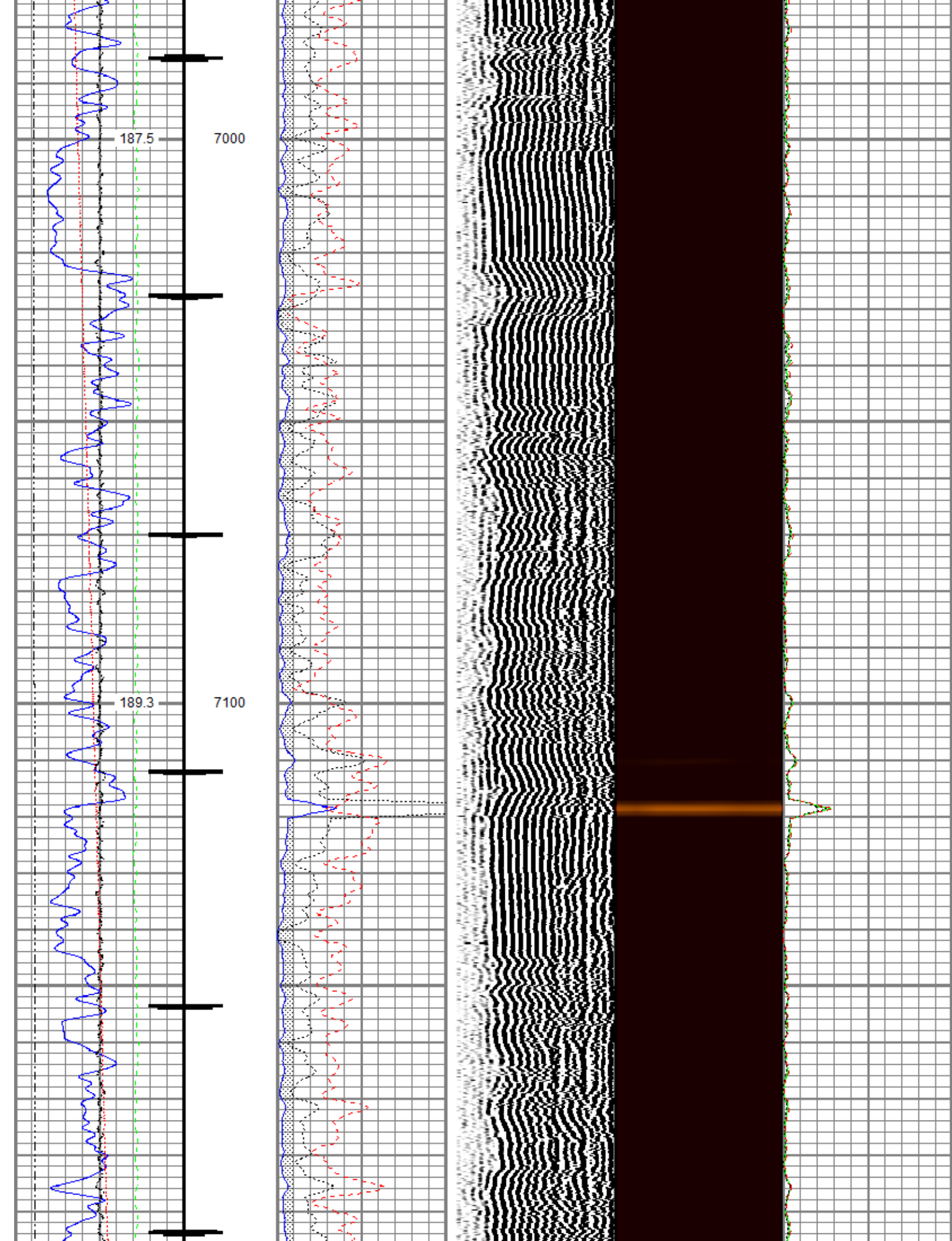


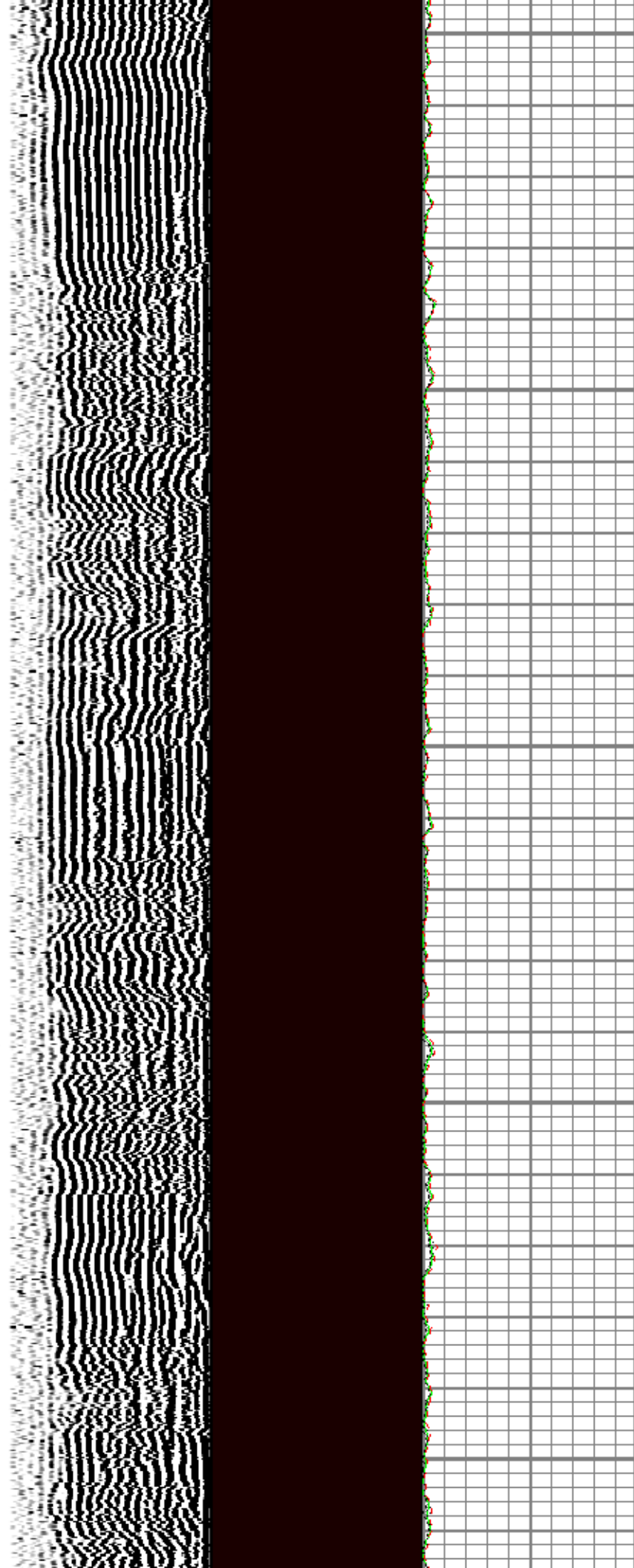
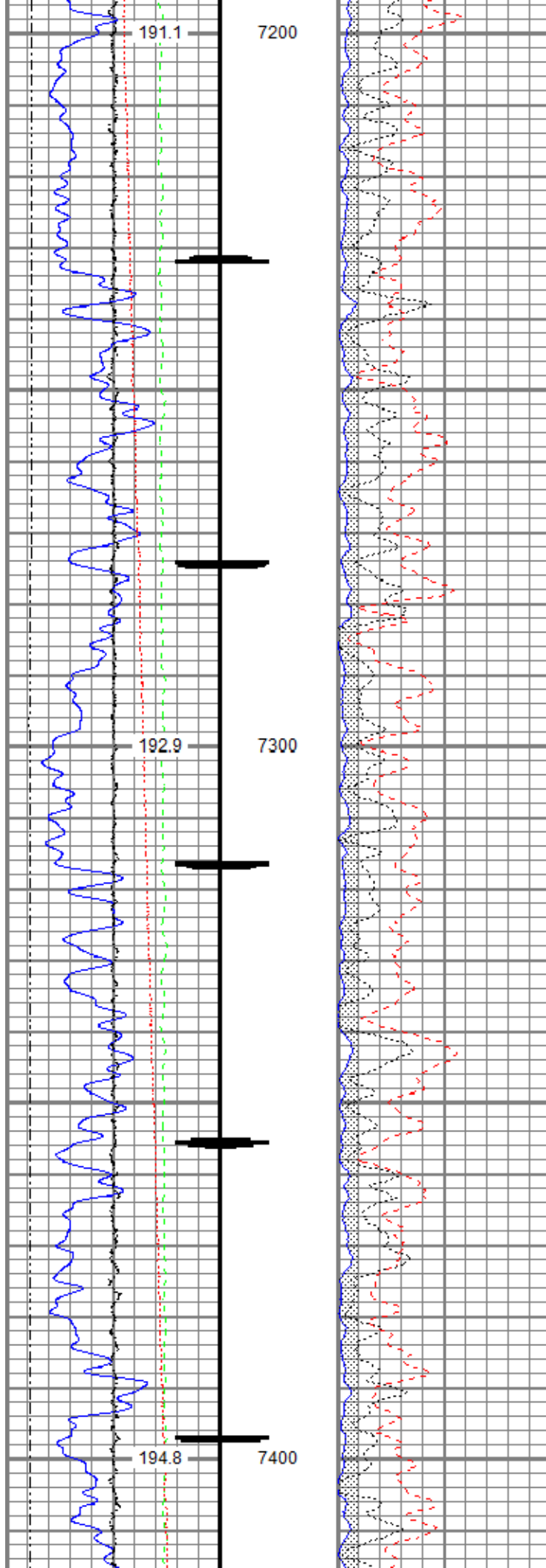


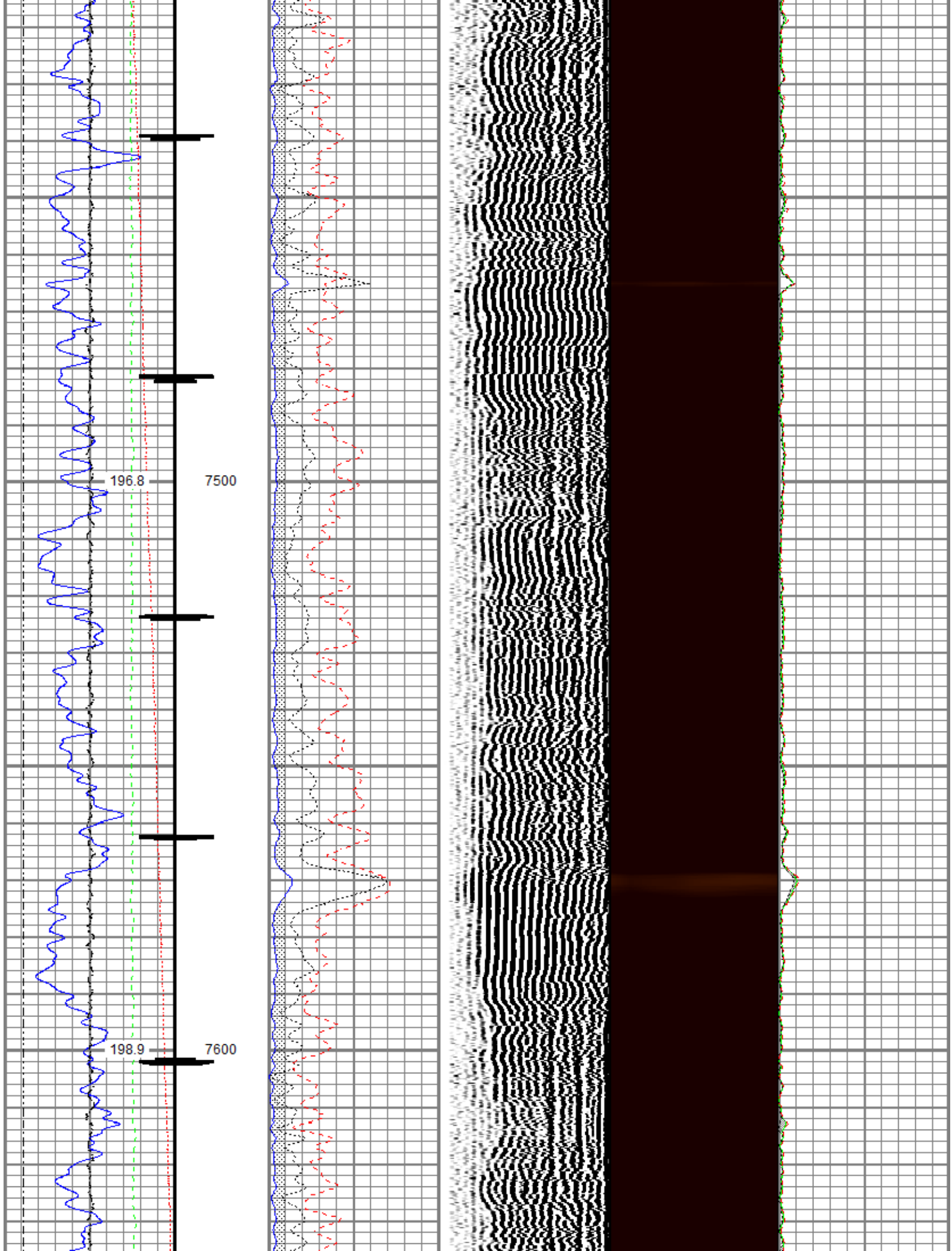




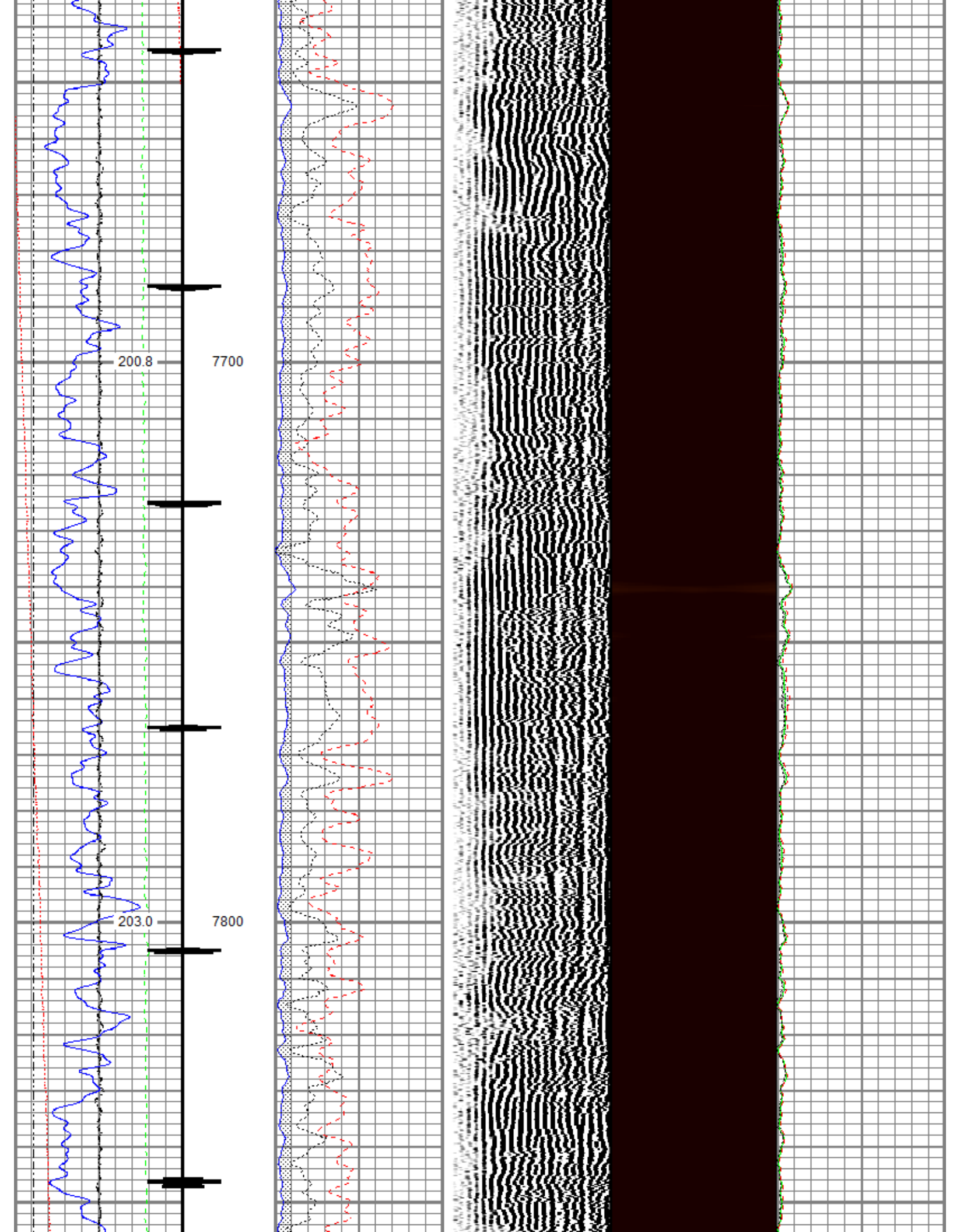


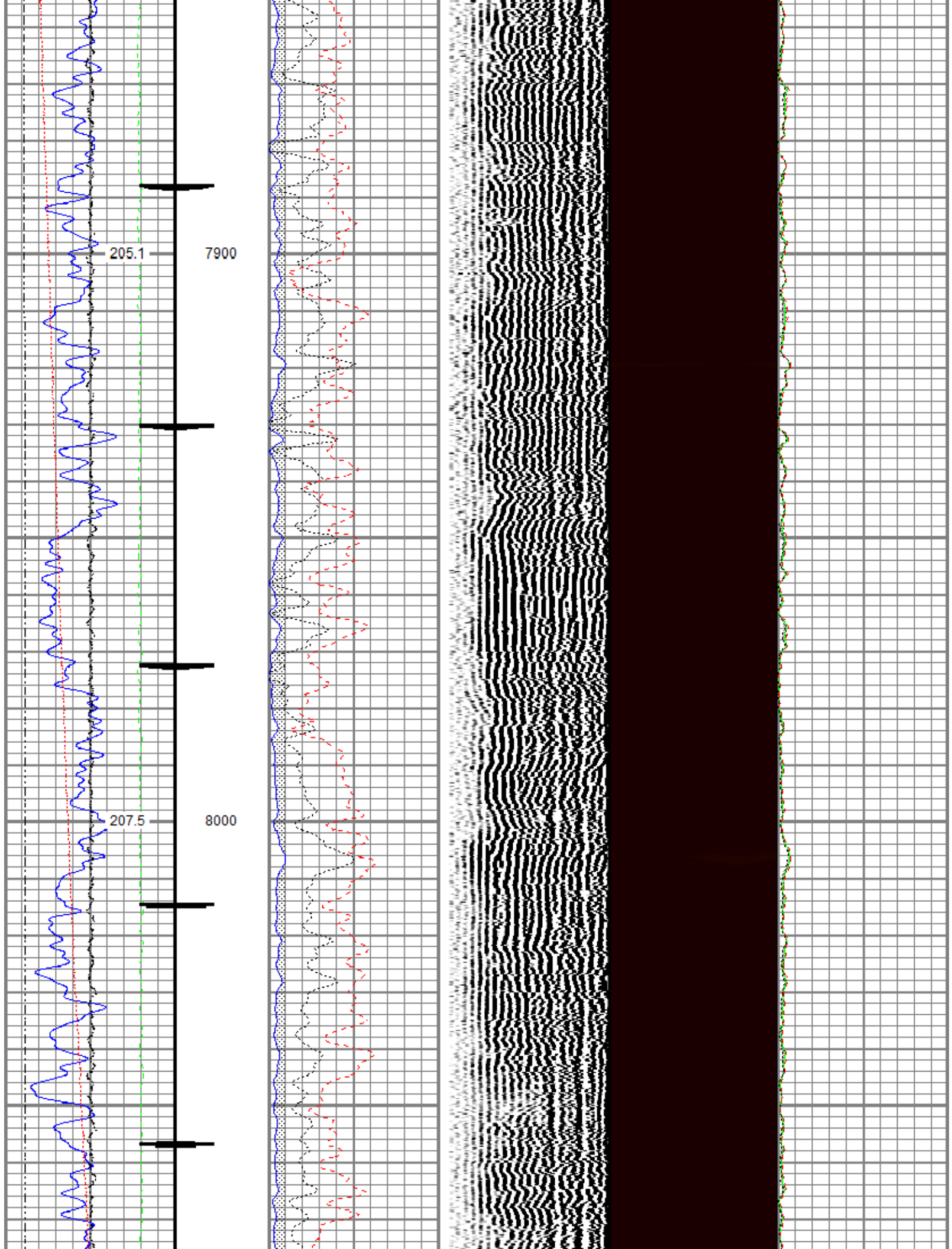


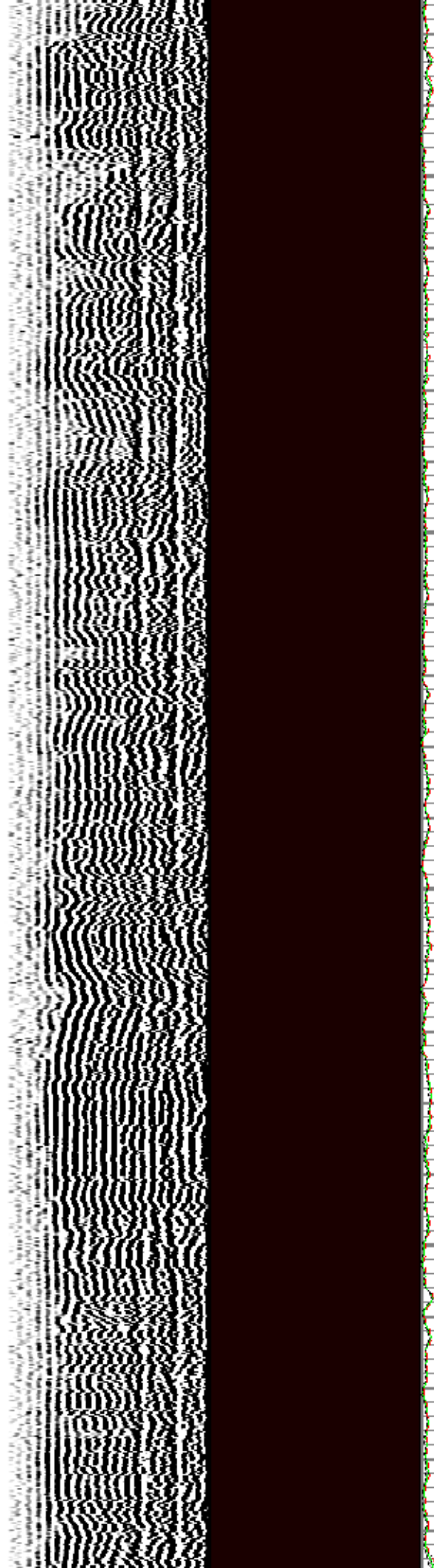
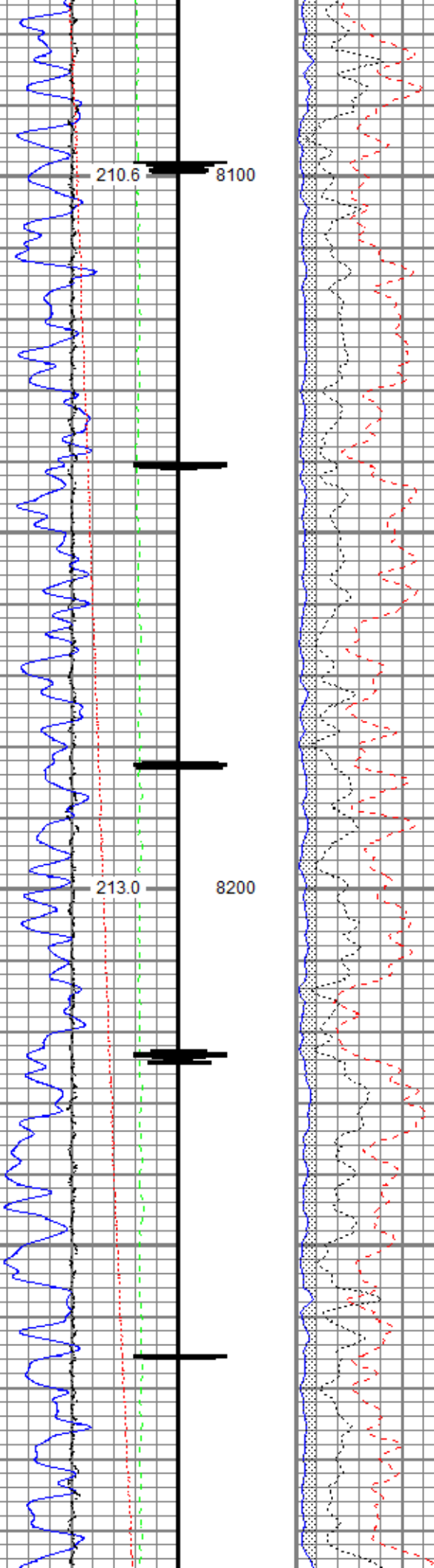




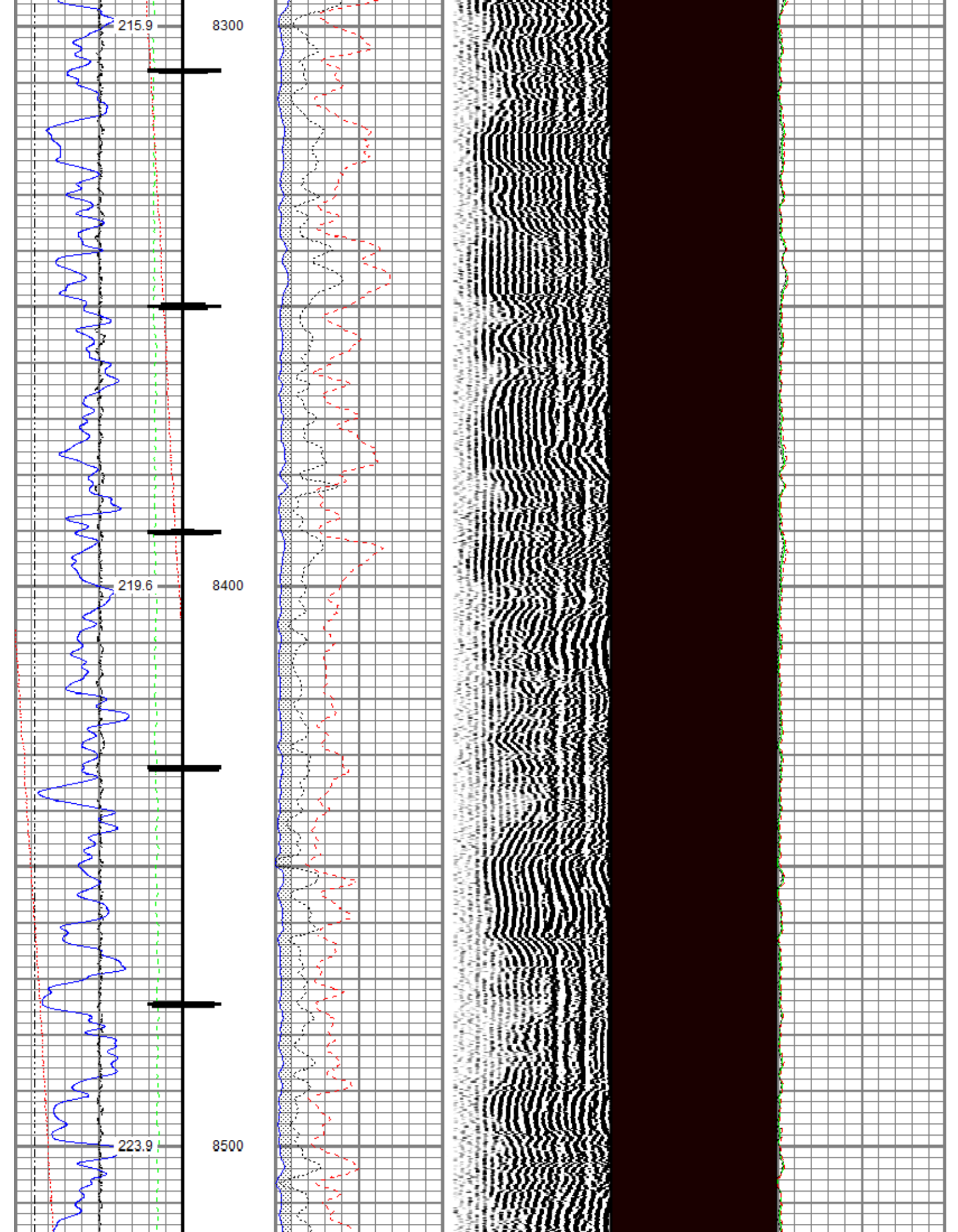


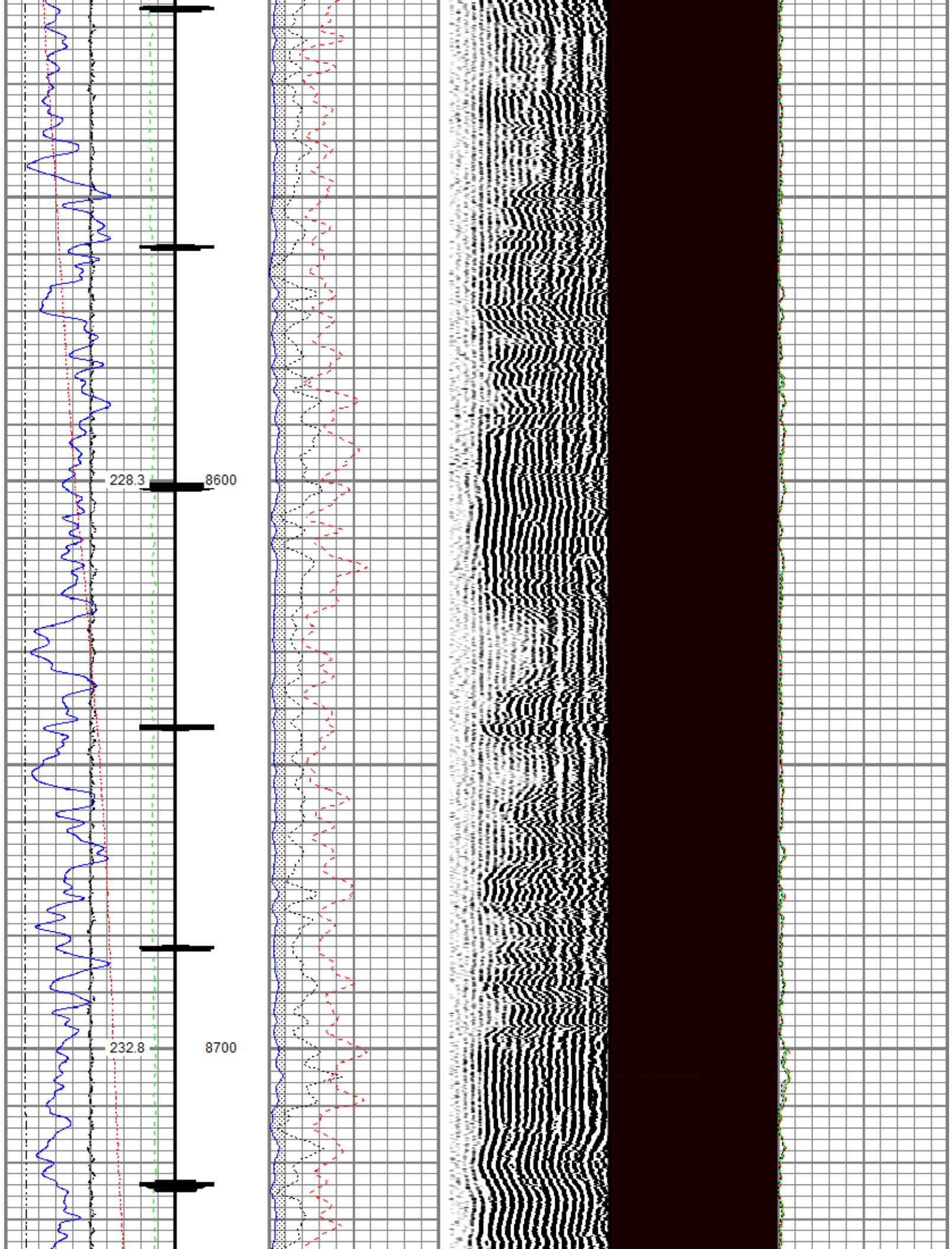


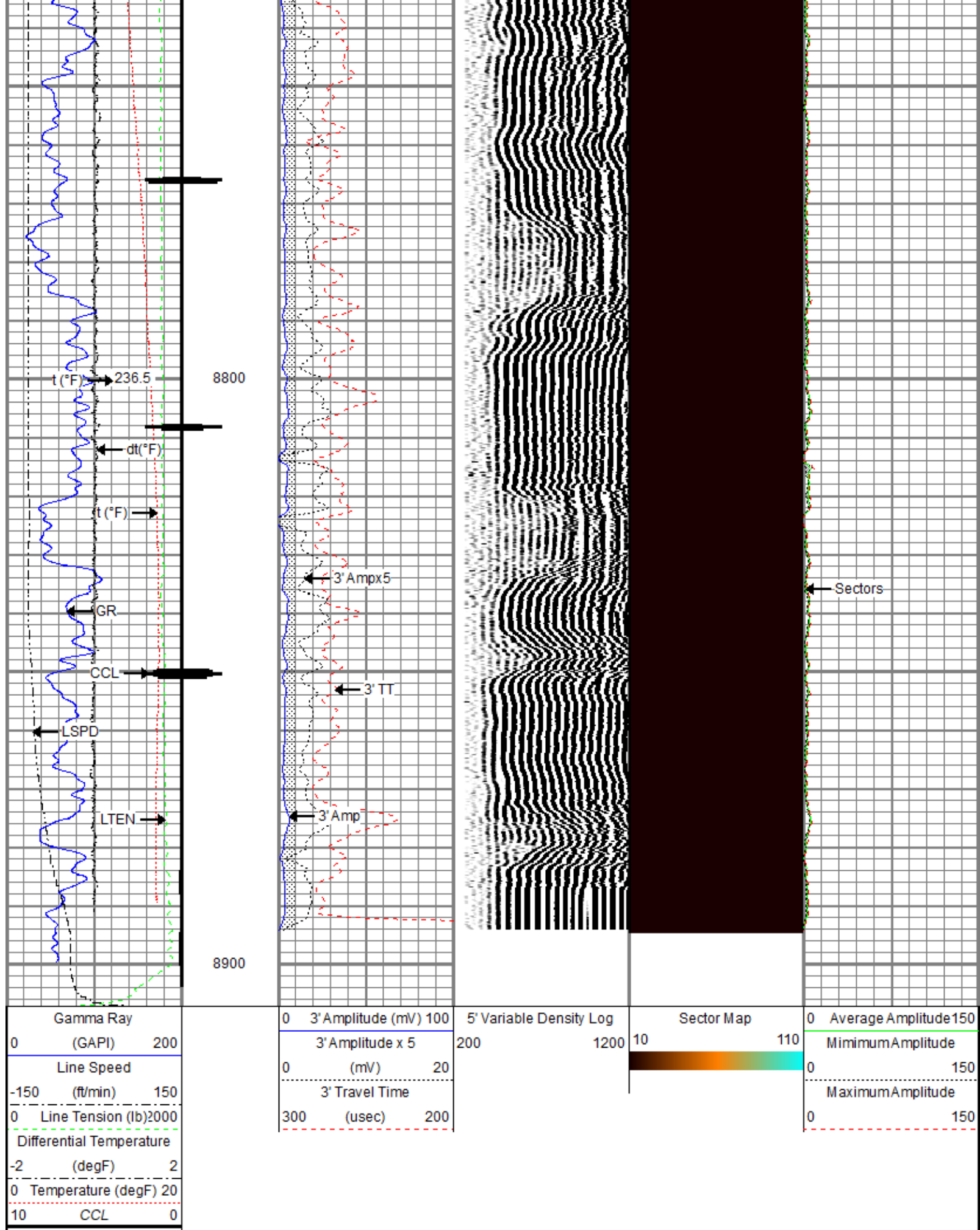








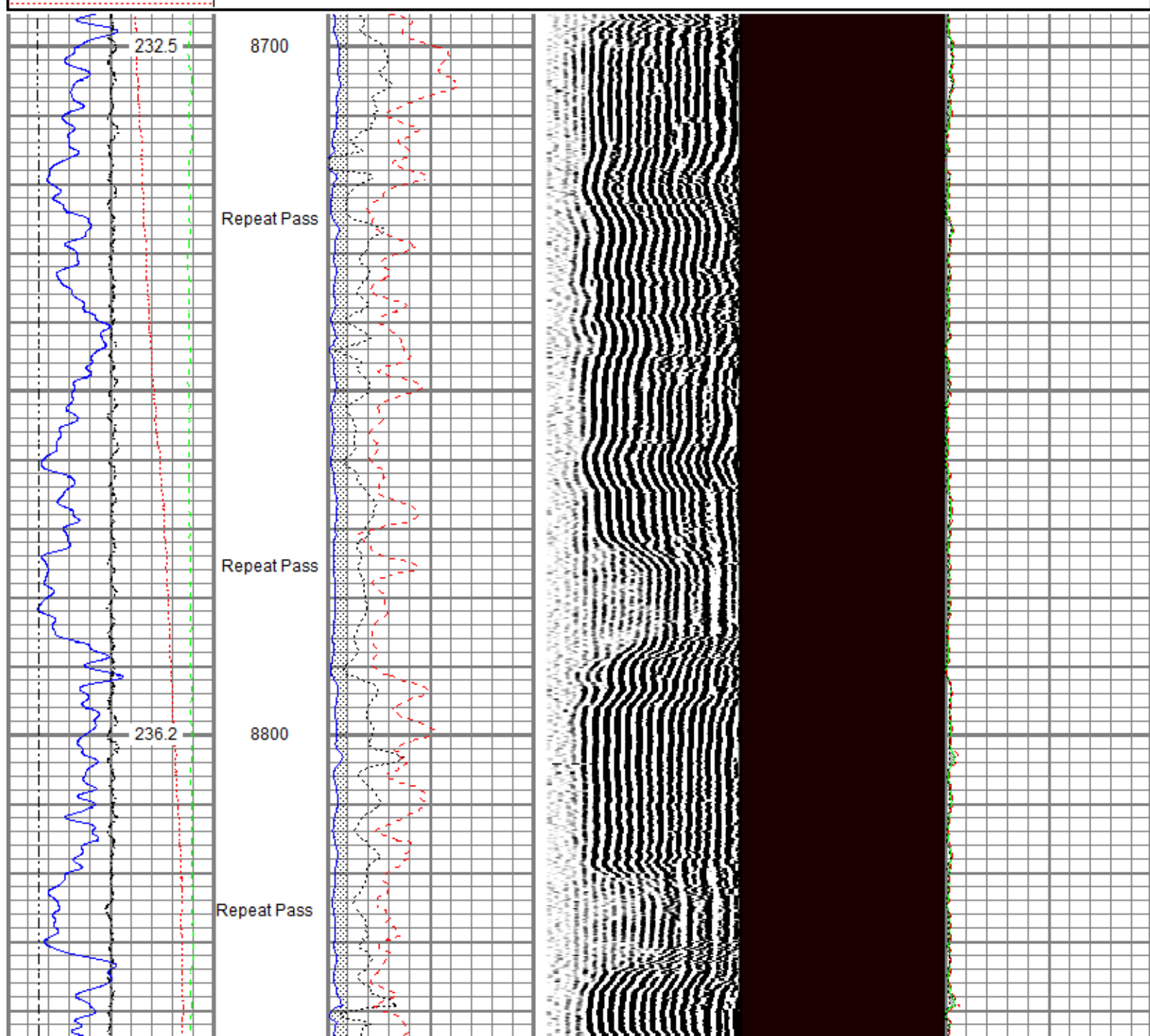


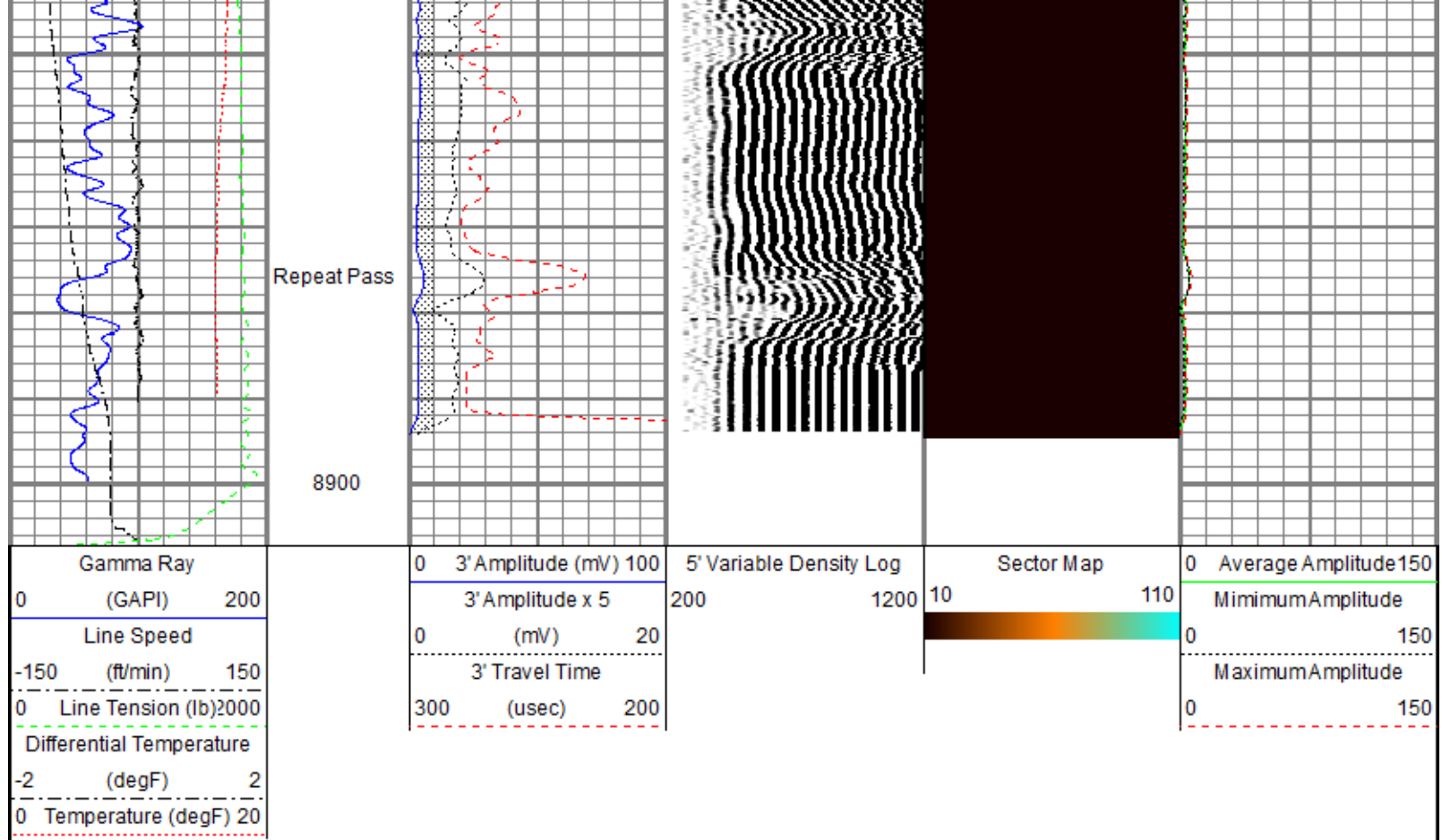


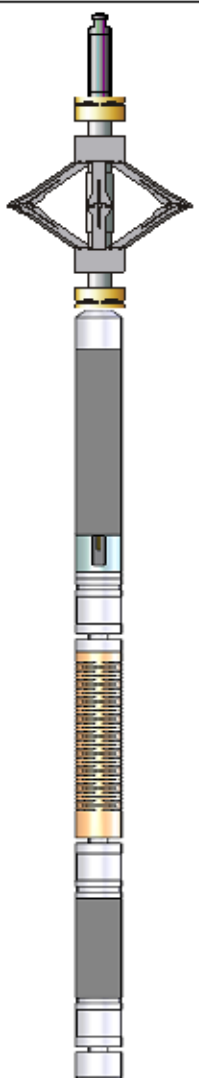
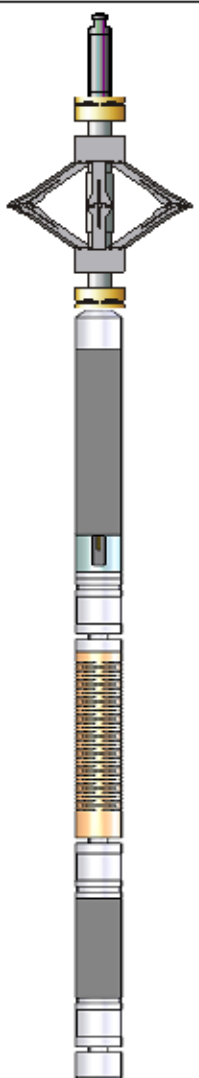


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 Dataset Pathname Repeat.2  
 Presentation Format ros\_rbt004\_tep  
 Dataset Creation Mon Jun 24 13:17:52 2019  
 Charted by Depth in Feet scaled 1:240

|                                      |                              |                         |            |                         |
|--------------------------------------|------------------------------|-------------------------|------------|-------------------------|
| Gamma Ray<br>(GAPI) 200              | 0 3' Amplitude (mV) 100      | 5' Variable Density Log | Sector Map | 0 Average Amplitude 150 |
| Line Speed<br>(ft/min) 150           | 3' Amplitude x 5<br>(mV) 20  | 200 1200                | 10 110     | Minimum Amplitude       |
| Line Tension (lb) 2000               | 3' Travel Time<br>(usec) 200 |                         |            | Maximum Amplitude       |
| Differential Temperature<br>(degF) 2 |                              |                         |            |                         |
| Temperature (degF) 20                |                              |                         |            |                         |





| Sensor  | Offset (ft) | Schematic   | Description  | Length (ft) | O.D. (in) | Weight (lb) |
|---------|-------------|---|--|-------------|-----------|-------------|
| TEMP    | 16.33       |  | Titan CHD-14375 GO   | 1.03        | 1.44      | 3.60        |
|         |             |   | Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck     |             |           |             |
|         |             |   | DSS RAC-2750 5A GO   | 2.55        | 2.75      | 32.00       |
|         |             |   | DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends                     |             |           |             |
|         |             |   | Probe Radii-2750 RBT (101013)                                      | 9.39        | 2.75      | 105.00      |
|         |             |   | Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub |             |           |             |
|         |             |   |  |             |           |             |
|         |             |   |  |             |           |             |
|         |             |   |  |             |           |             |
|         |             |   |  |             |           |             |
| WVFS8   | 14.10       |  |  |             |           |             |
| WVFS7   | 14.10       |   |  |             |           |             |
| WVFS6   | 14.10       |   |  |             |           |             |
| WVFS5   | 14.10       |   |  |             |           |             |
| WVFS4   | 14.10       |   |  |             |           |             |
| WVFS3   | 14.10       |   |  |             |           |             |
| WVFS2   | 14.10       |   |  |             |           |             |
| WVFS1   | 14.10       |   |  |             |           |             |
| WVFCAL  | 14.10       |   |  |             |           |             |
| WVFS2ET | 14.10       |   |  |             |           |             |

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|--------|-------|--|--|--|----|--|--|
| WVF5FT | 13.10 |  |  |  |    |  |  |
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|        |       |  |  |  |    |  |  |
| CCL\$2 | 6.42  |  |  |  |    |  |  |
| CCL\$1 | 6.42  |  |  |  |    |  |  |
| GR     | 5.18  |  |  |  |    |  |  |
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| Calibration Report |  |
|--------------------|--|
| Database File      | c:\programdata\warrior\data\tep\tep_federal rwf 512-17_rbl_06-24-19\processed_tep_federal rwf 512-17_rbl_06-24-19.db |
| Dataset Pathname   | Main.2   |
| Dataset Creation   | Mon Jun 24 13:07:01 2019   |

| Gamma Ray Calibration Report |                          |          |
|------------------------------|--------------------------|----------|
| Serial Number:               | FW1307-038               |          |
| Tool Model:                  | 2750 GOB                 |          |
| Performed:                   | Sun Nov 12 12:44:12 2017 |          |
| Calibrator Value:            | 637.0                    | GAPI     |
| Background Reading:          | 113.2                    | cps      |
| Calibrator Reading:          | 1022.4                   | cps      |
| Sensitivity:                 | 0.7007                   | GAPI/cps |

| Segmented Cement Bond Log Calibration Report |          |    |
|--|----------|----|
| Serial Number:                               | 101013   |    |
| Tool Model:                                  | 2750 RBT |    |
| Calibration Casing Diameter:                 | 4.500    | in |
| Calibration Depth:                           | 306.086  | ft |

| Master Calibration, performed (Derived): |         |       |                 |        |         |        |
|--|---------|-------|-----------------|--------|---------|--------|
|  | Raw (v) |       | Calibrated (mv) |        | Results |        |
|  | Zero    | Cal   | Zero            | Cal    | Gain    | Offset |
| 3'                                       | 0.003   | 0.631 | 0.800           | 81.196 | 128.093 | 0.404  |
| CAL                                      | 0.003   | 0.750 |                 |        |         |        |
| 5'                                       | 0.010   | 0.559 | 0.800           | 81.196 | 146.543 | -0.664 |



|     |       |       |       |         |         |        |
|-----|-------|-------|-------|---------|---------|--------|
| SUM |       |       |       |         |         |        |
| S1  | 0.006 | 0.743 | 0.000 | 100.000 | 135.754 | -0.825 |
| S2  | 0.004 | 0.686 | 0.000 | 100.000 | 146.644 | -0.658 |
| S3  | 0.005 | 0.601 | 0.000 | 100.000 | 167.841 | -0.807 |
| S4  | 0.006 | 0.561 | 0.000 | 100.000 | 180.295 | -1.064 |
| S5  | 0.004 | 0.570 | 0.000 | 100.000 | 176.490 | -0.664 |
| S6  | 0.004 | 0.590 | 0.000 | 100.000 | 170.558 | -0.642 |
| S7  | 0.008 | 0.637 | 0.000 | 100.000 | 158.941 | -1.204 |
| S8  | 0.006 | 0.706 | 0.000 | 100.000 | 142.900 | -0.915 |

Internal Reference Calibration, performed (Not Performed):

|     | Raw (v) |       | Calibrated (v) |       | Results |        |
|-----|---------|-------|----------------|-------|---------|--------|
|     | Zero    | Cal   | Zero           | Cal   | Gain    | Offset |
| CAL | 0.000   | 0.000 | 0.003          | 0.750 | 1.000   | 0.000  |

Air Zero Calibration, performed Sun Jun 23 17:36:45 2019:

|     | Raw (v) |  | Calibrated (v) |  | Results |
|-----|---------|--|----------------|--|---------|
|     | Zero    |  | Zero           |  | Offset  |
| 3'  | 0.000   |  | 0.000          |  | 0.000   |
| 5'  | 0.000   |  | 0.000          |  | 0.000   |
| SUM |         |  |                |  |         |
| S1  | 0.000   |  | 0.000          |  | 0.000   |
| S2  | 0.000   |  | 0.000          |  | 0.000   |
| S3  | 0.000   |  | 0.000          |  | 0.000   |
| S4  | 0.000   |  | 0.000          |  | 0.000   |
| S5  | 0.000   |  | 0.000          |  | 0.000   |
| S6  | 0.000   |  | 0.000          |  | 0.000   |
| S7  | 0.000   |  | 0.000          |  | 0.000   |
| S8  | 0.000   |  | 0.000          |  | 0.000   |

#### Temperature Calibration Report

Serial Number: 101013  
Tool Model: 2750 RBT  
Performed: Sun Nov 12 13:21:13 2017

|                 |             |             |
|-----------------|-------------|-------------|
|                 | Reference   | Reading     |
| Low Reference:  | 100.00 degF | 112.30 degF |
| High Reference: | 350.00 degF | 394.75 degF |

Gain: 0.89  
Offset: 0.60  
Delta Spacing: 1



Company: TEP Rocky Mountain LLC  
Well: Federal RWF 512-17  
Field: Rulison  
County: Garfield  
State: Colorado