



Radial Cement Bond
Gamma Ray
Casing Collar Log

| | | | | | |
|------------------------|------------------------------------|----------------------|--|-------|------------------------------|
| Company | Kerr-McGee Oil & Gas Onshore, L.P. | | | | |
| Well | Powers 34G-22HZ | | | | |
| Field | Wattenberg | | | | |
| County | Weld | | | | |
| State | Colorado | | | | |
| Location: | | API # : 05-123-41903 | | | Other Services Gauge Ring |
| SEC 22 TWP 2N RGE 65W | | | | | |
| Permanent Datum | Ground Level | Elevation | | 4884' | |
| Log Measured From | Kelly Bushing | 20 FT | | | |
| Drilling Measured From | Kelly Bushing | | | | G.L. 4884' |

| | | | |
|------------------------|-----------------|--|--|
| Date | 08-Dec-2015 | | |
| Run Number | Two | | |
| Depth Driller | 12939 FT | | |
| Depth Logger | 7406 FT | | |
| Bottom Logged Interval | 7401 FT | | |
| Top Log Interval | Surface | | |
| Open Hole Size | 7.875" | | |
| Type Fluid | Water | | |
| Density / Viscosity | 8.34 lbm/gal | | |
| Max. Recorded Temp. | 234°F | | |
| Estimated Cement Top | Surface | | |
| Time Well Ready | ROA | | |
| Time Logger on Bottom | 1145 | | |
| Equipment Number | HD-0324 | | |
| Location | Fort Lupton, CO | | |
| Recorded By | J. Amidei | | |
| Witnessed By | Mario Torres | | |

| | | | | | | | |
|-----------------|-----------|--------------|----------------|---------------|----------|------|----|
| Borehole Record | | | | Tubing Record | | | |
| Run Number | Bit | From | To | Size | Weight | From | To |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Casing Record | Size (in) | Wgt (lbs/ft) | Grade | Top | Bottom | | |
| Surface Casing | 9 5/8 | 36 | J-55 8RD LTC | Surface | 1878 FT | | |
| Intermediate #1 | 5 1/2 | 17 | P-110, HCP-110 | Surface | 12928 FT | | |
| Intermediate #2 | | | | | | | |
| Liner | | | | | | | |

<<<< Fold Here >>>>

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

Comments

Log ran as per customer request
Depth referenced to Casing Tally reported Marker Joint at 6651 FT
Adjusted Log -10 FT to correlate with Marker Joint
Log ran from as deep as possible in heel to surface
Recorded with 2800 PSI surface induced pressure

Thank you for choosing FMC Technologies Surface Integrated Services.



Main Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\0512341903_anadarko_powers 34g-22hz_12-08-15_rbl\0512341903_anadarko_powe

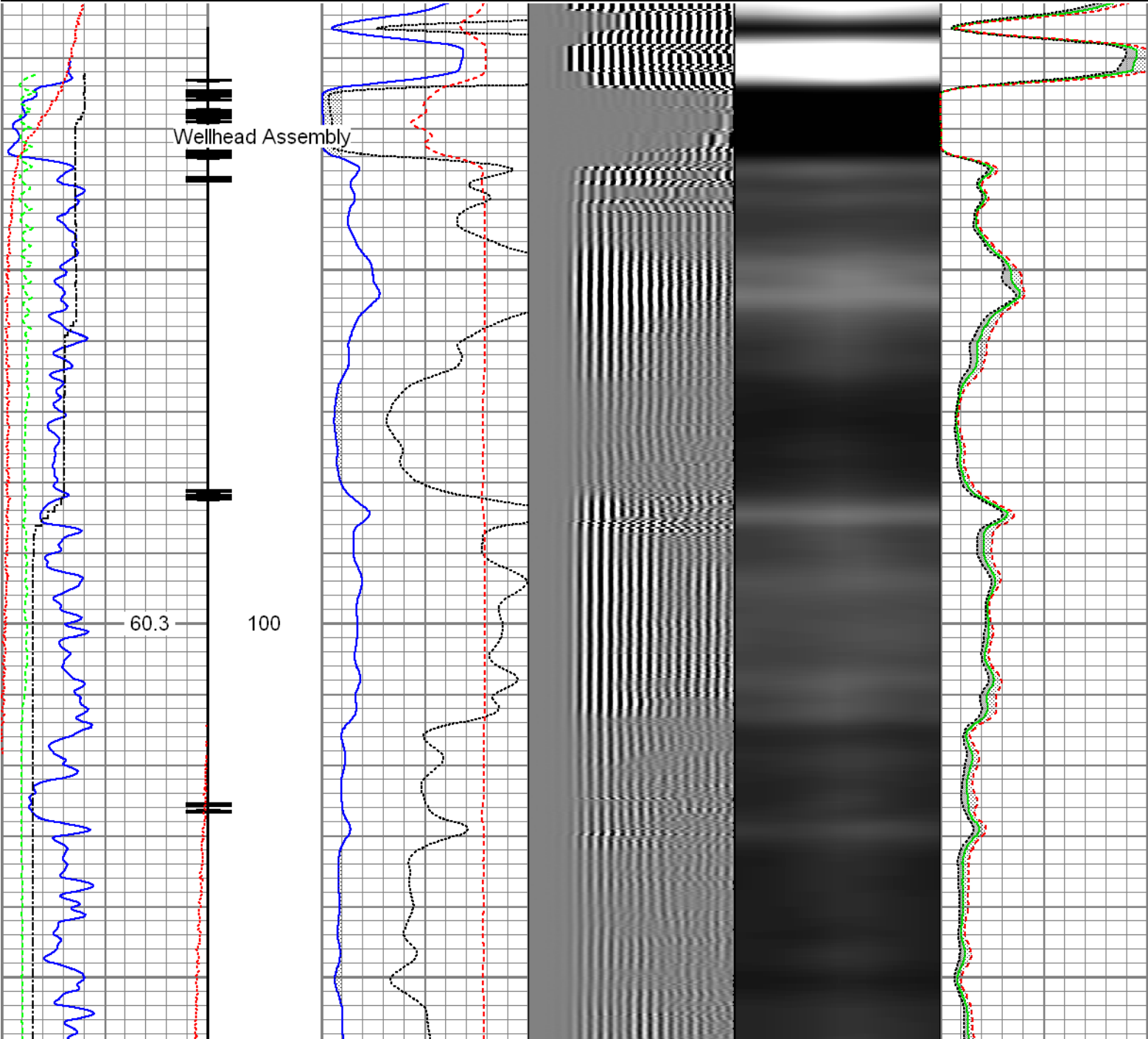
Dataset Pathname: pass6

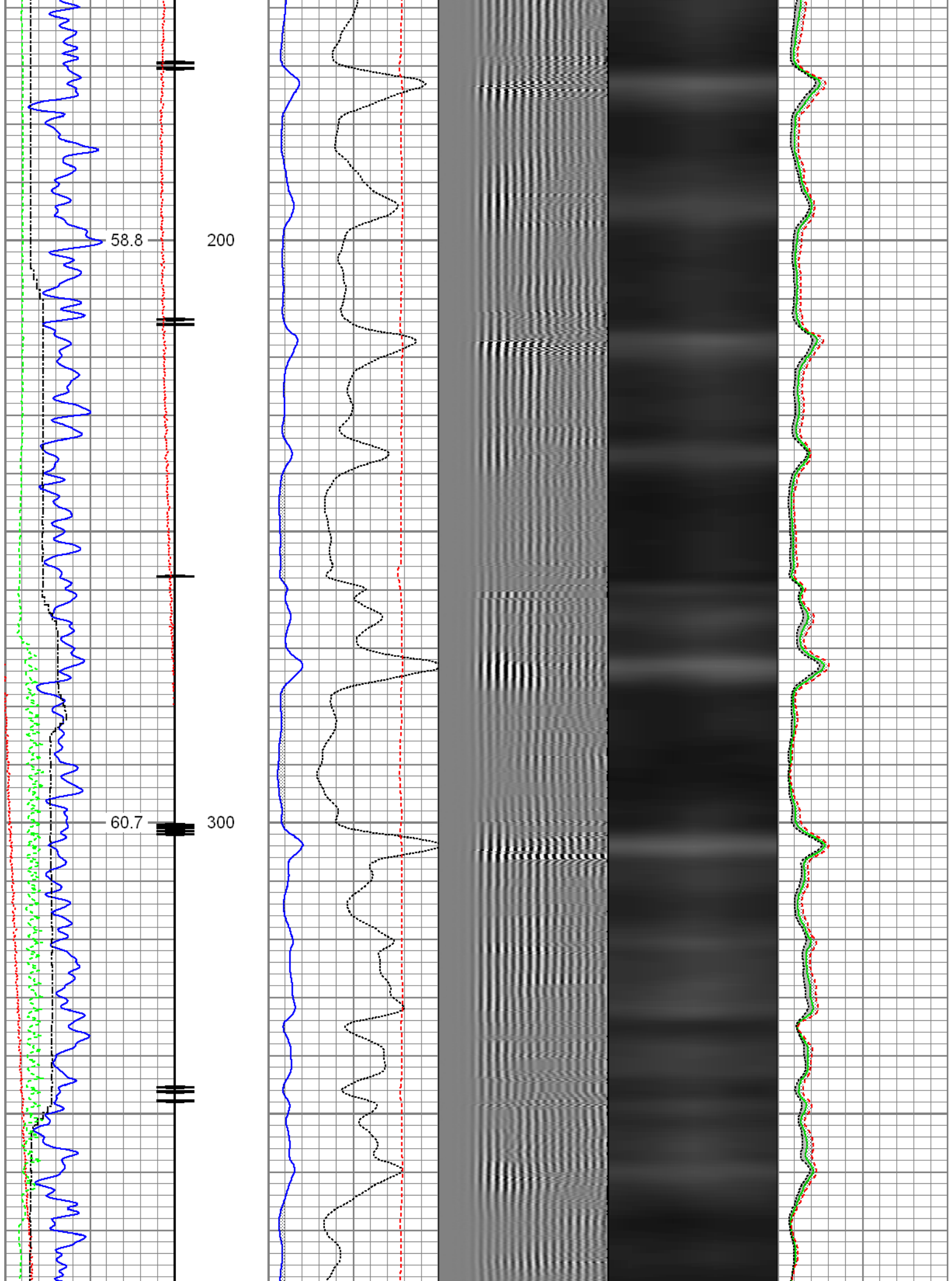
Presentation Format: radii

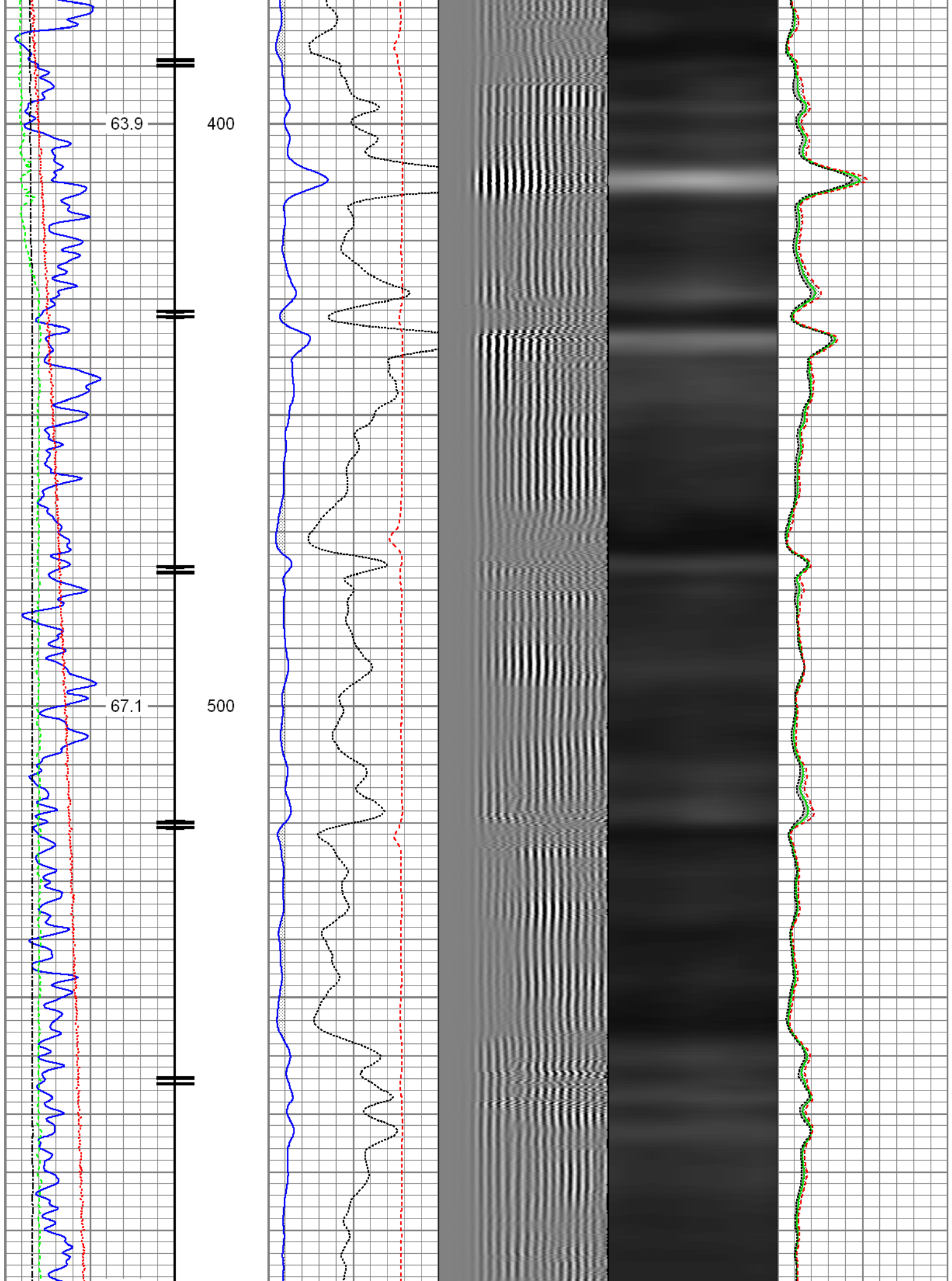
Dataset Creation: Tue Dec 08 11:54:47 2015 by Log 7.0 B1

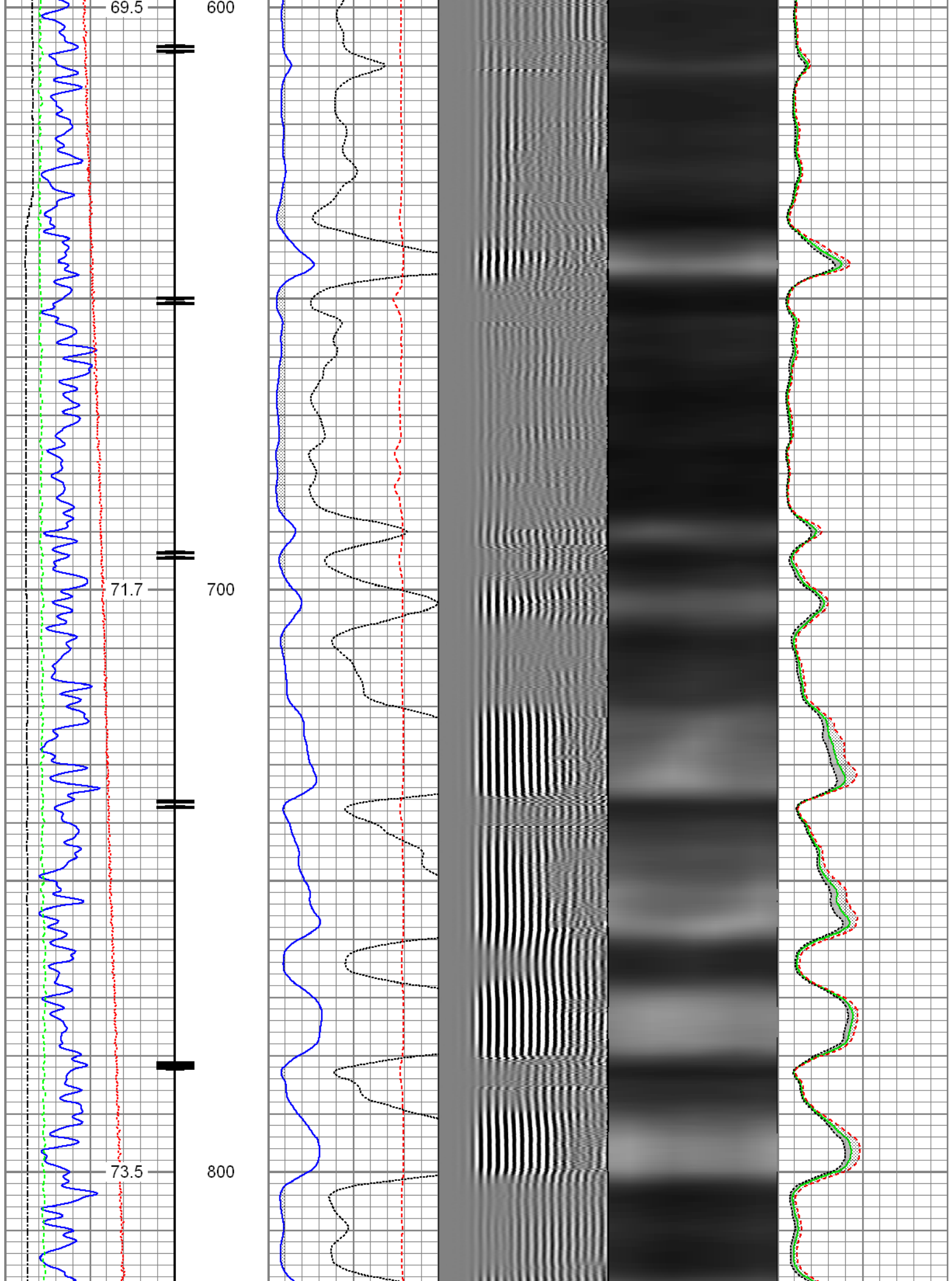
Charted by: Depth in Feet scaled 1:240

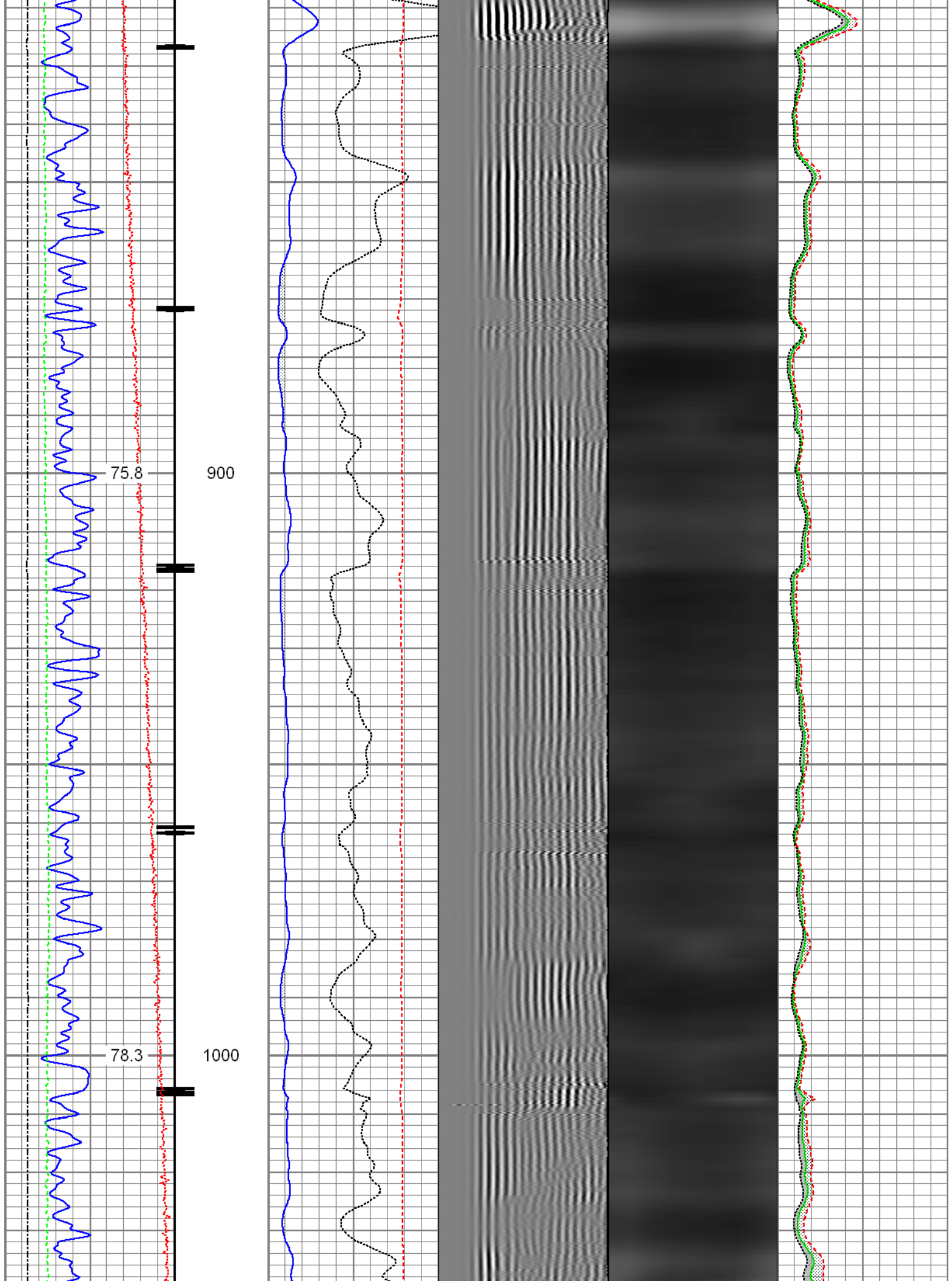
| | | | | |
|-----------------------|------------------|-------------------------|------------|-------------------|
| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
| 0 (GAPI) 120 | 0 (mV) 100 | 200 1200 | | 0 100 |
| Casing Collar Locator | 3' Amplitude x 5 | | | Minimum Amplitude |
| Temperature | 0 (mV) 20 | | | 0 100 |
| 0 (degF) 20 | 3' Travel Time | | | Maximum Amplitude |
| Line Speed | 650 (usec) 150 | | | 0 100 |
| -150 (ft/min) 150 | | | | |
| Line Tension | | | | |
| 0 (lb) 2000 | | | | |

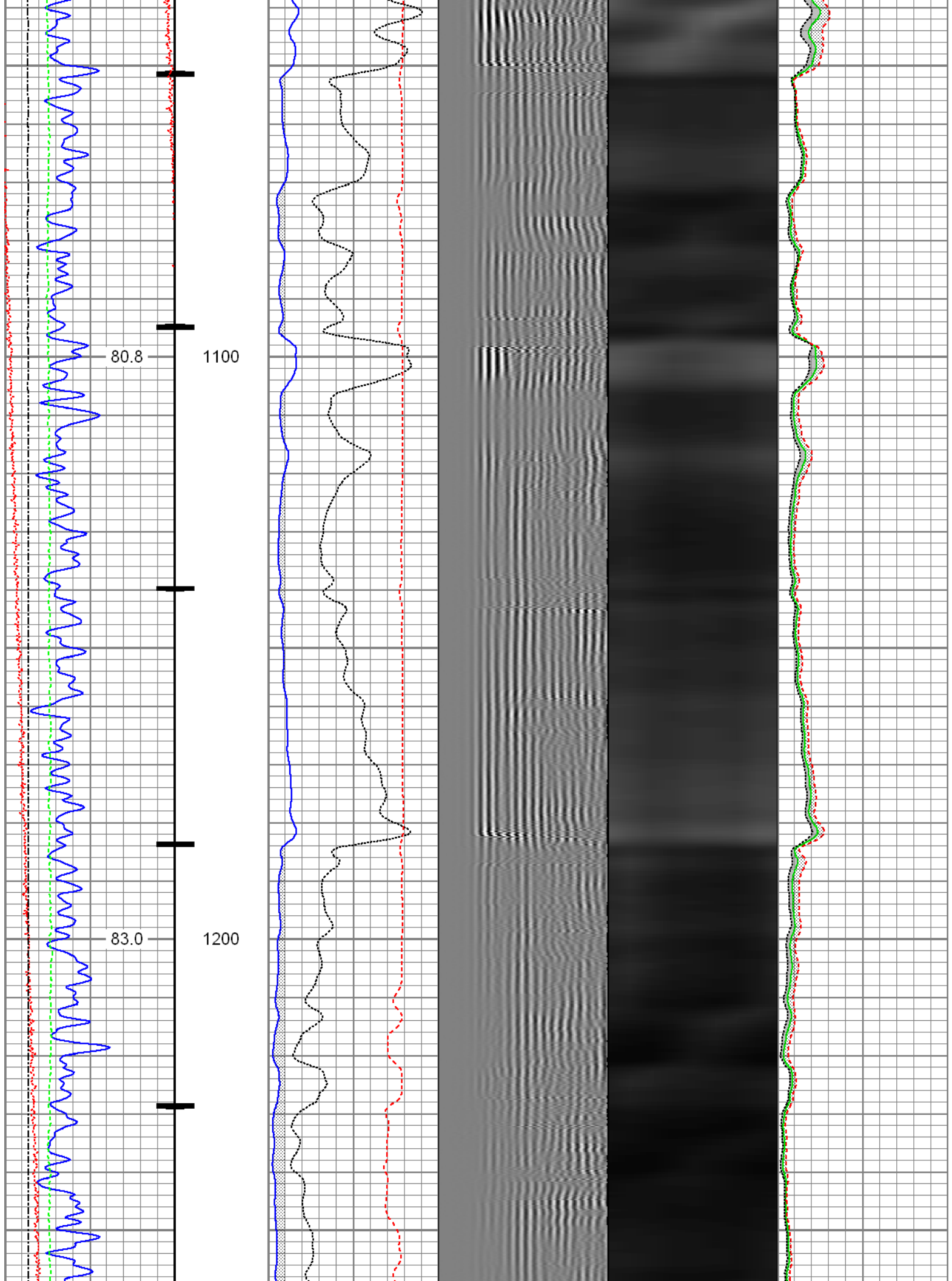


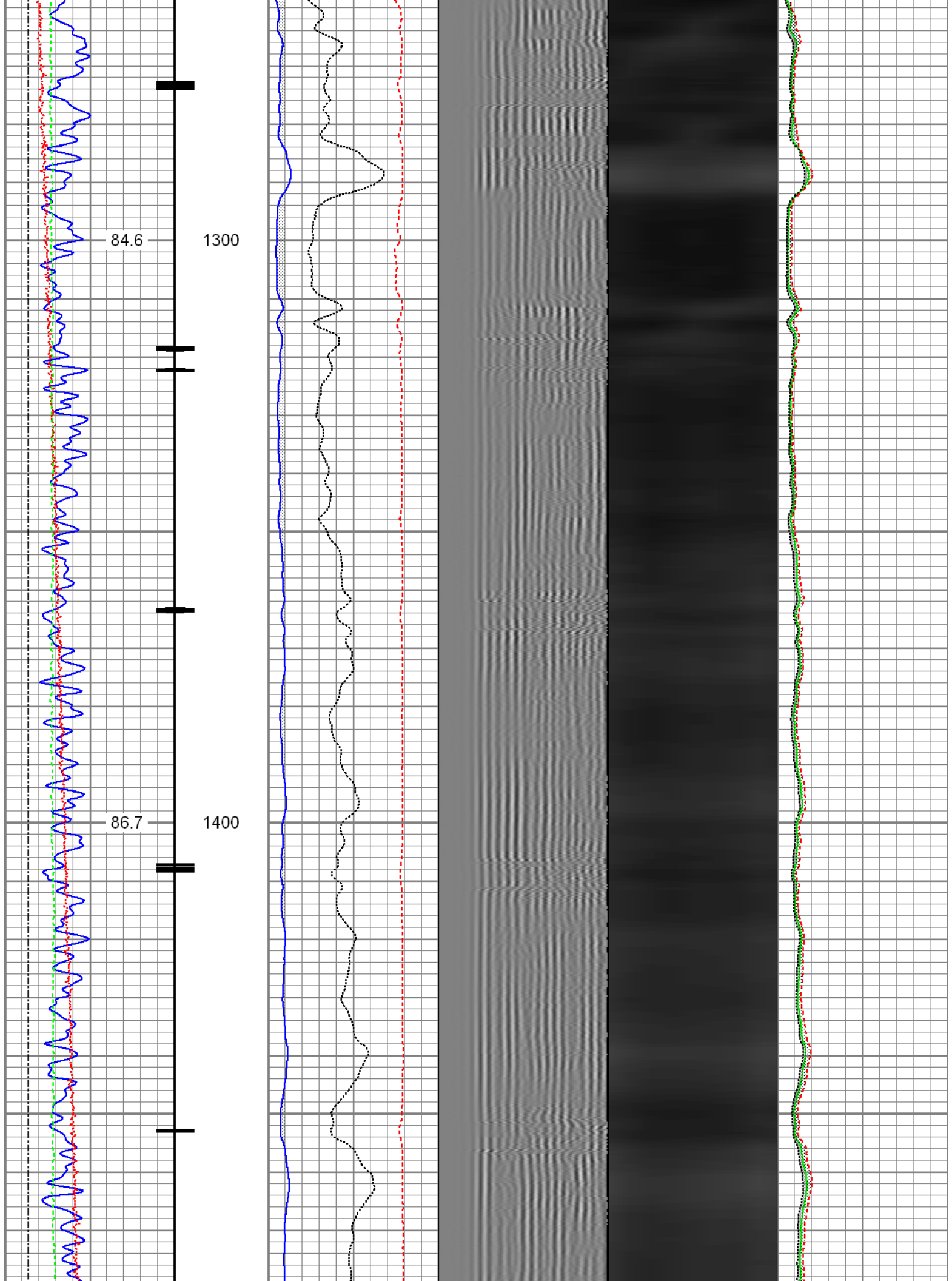


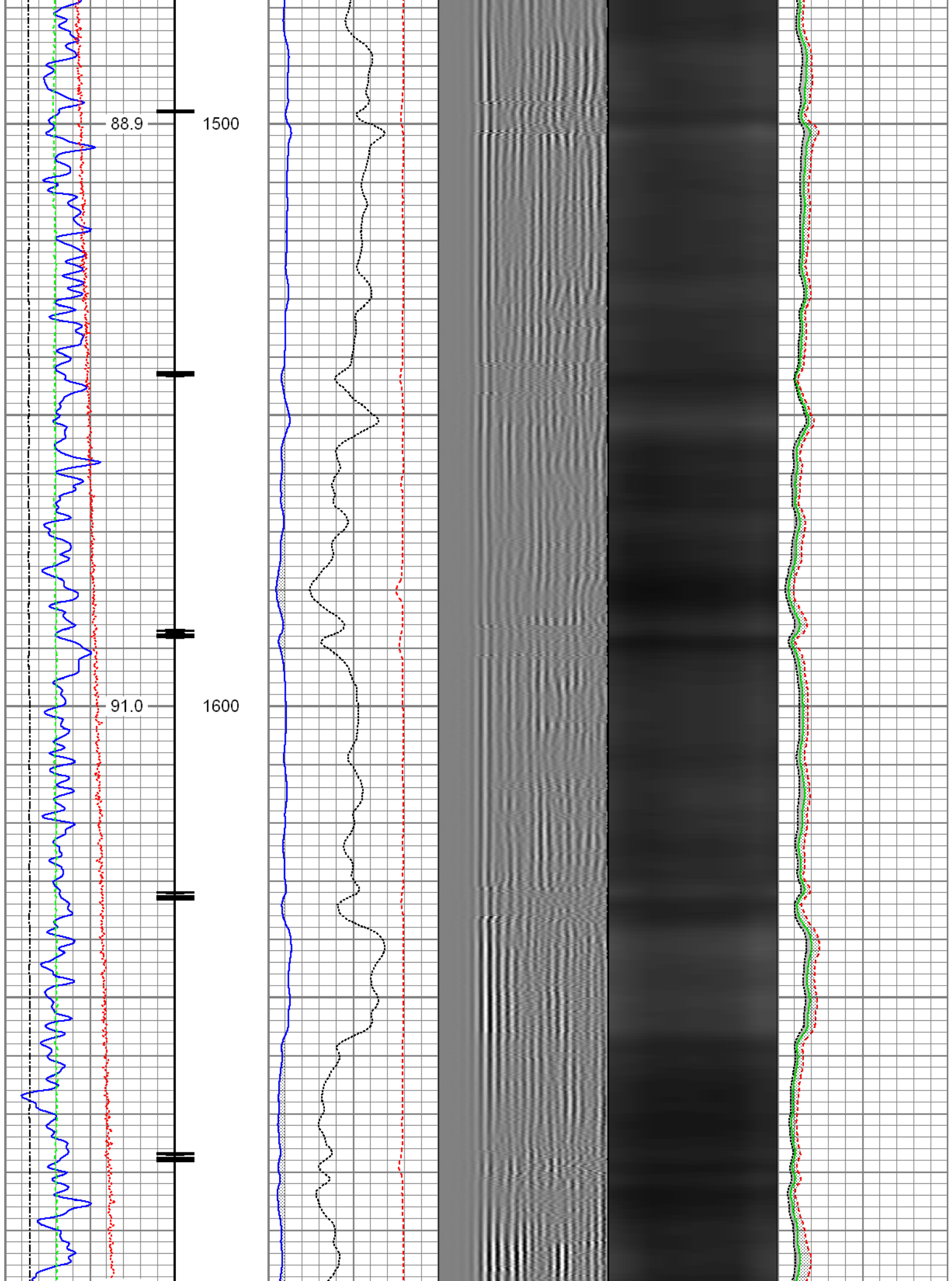


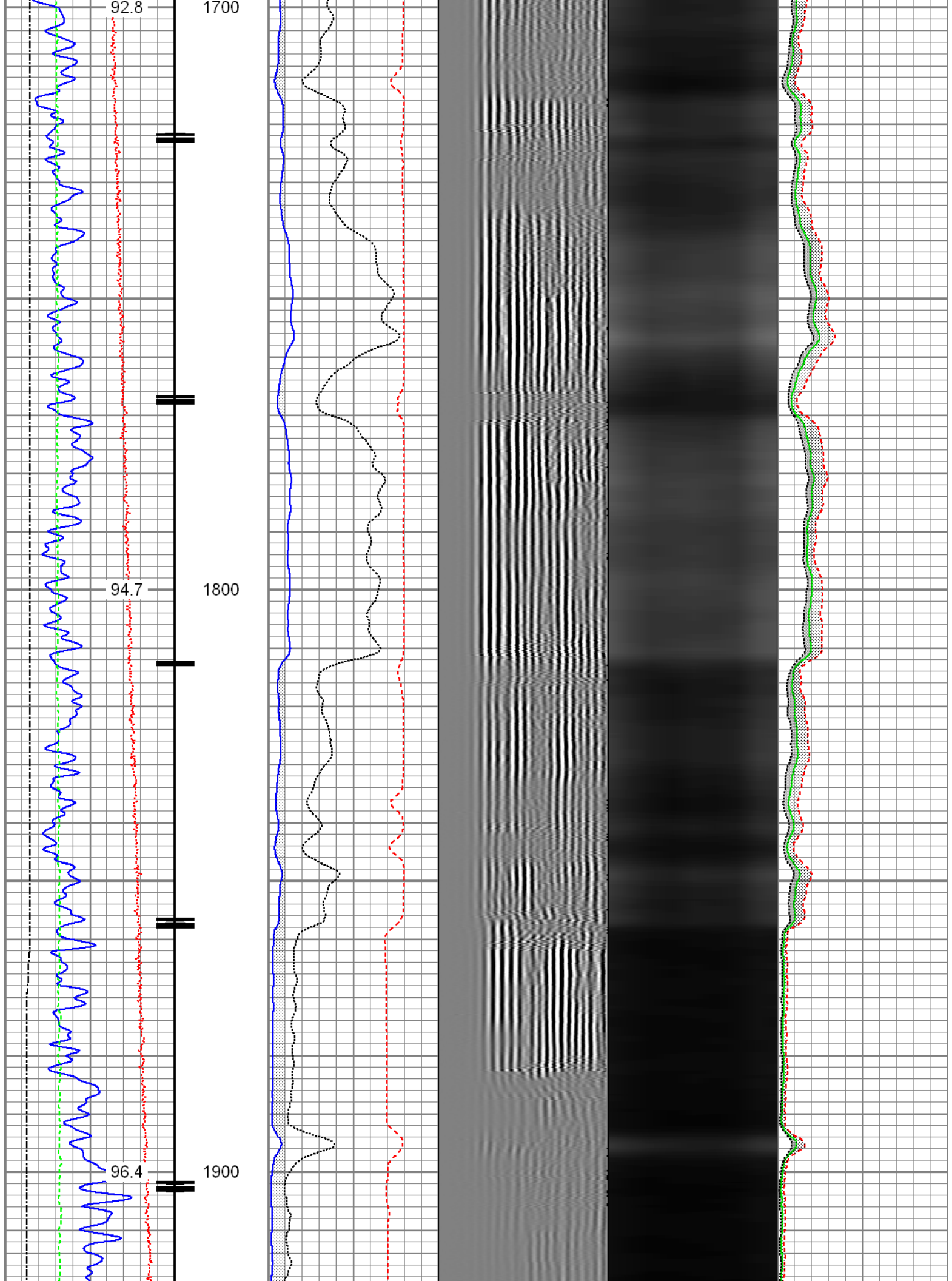


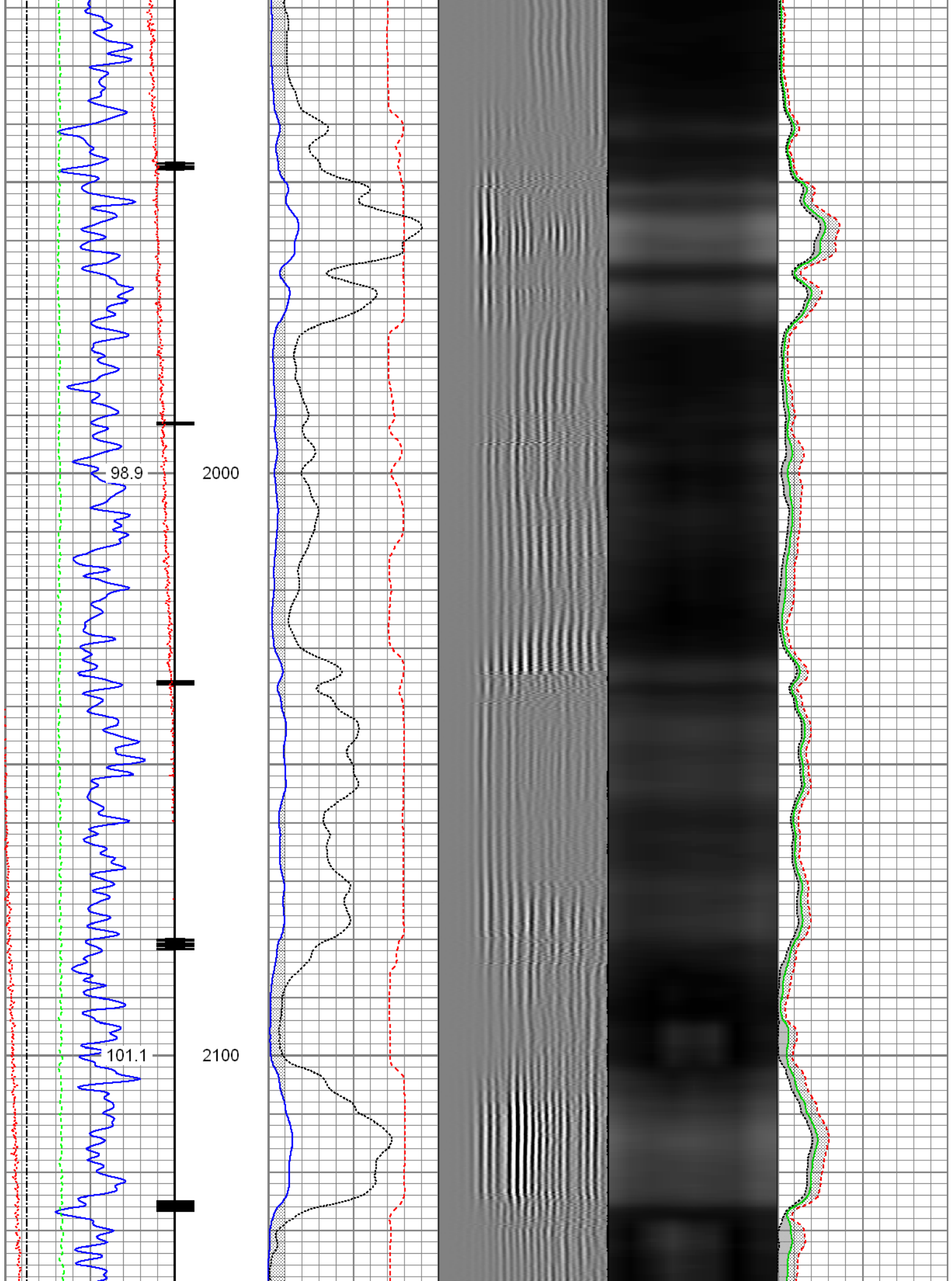


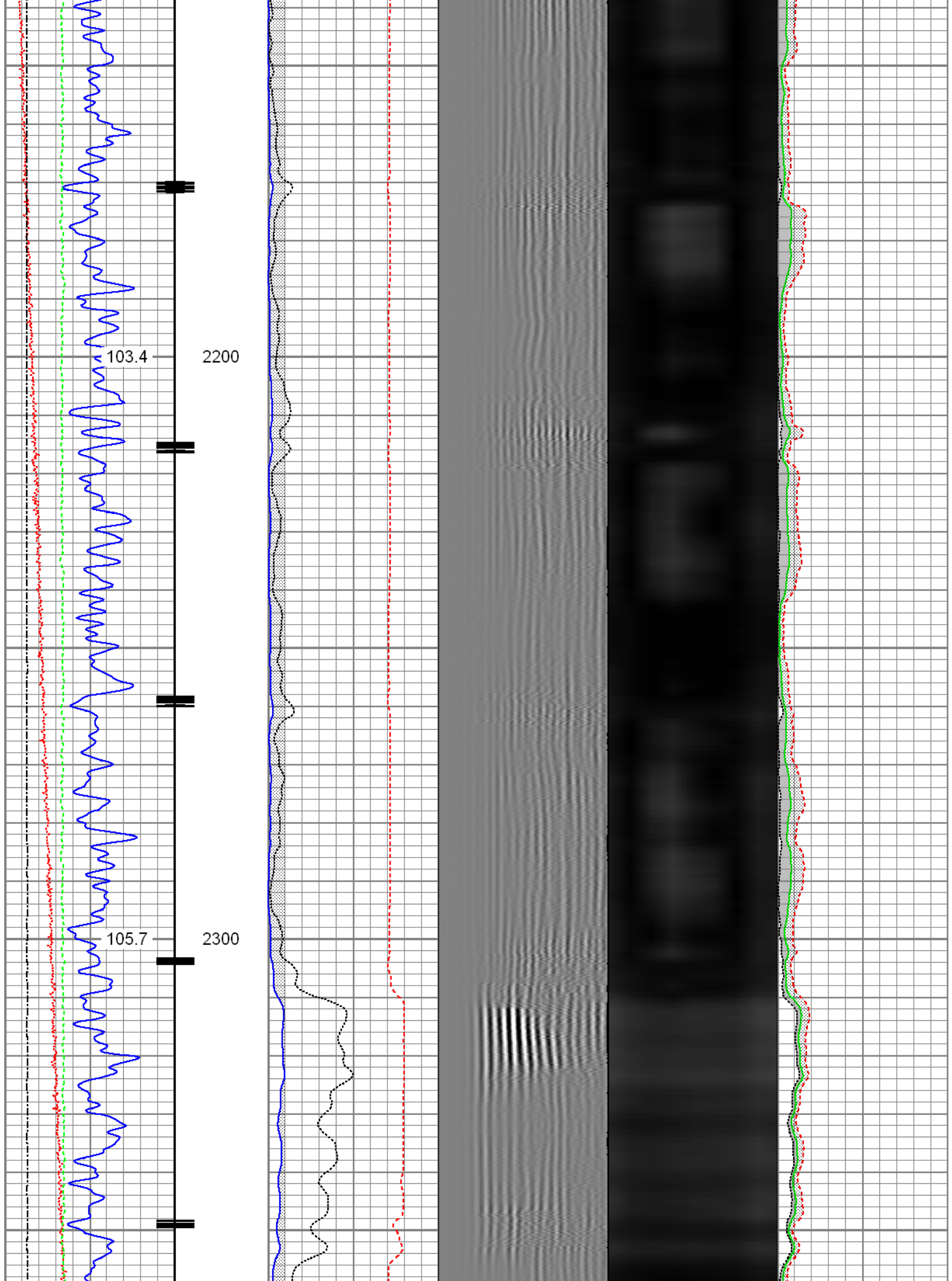


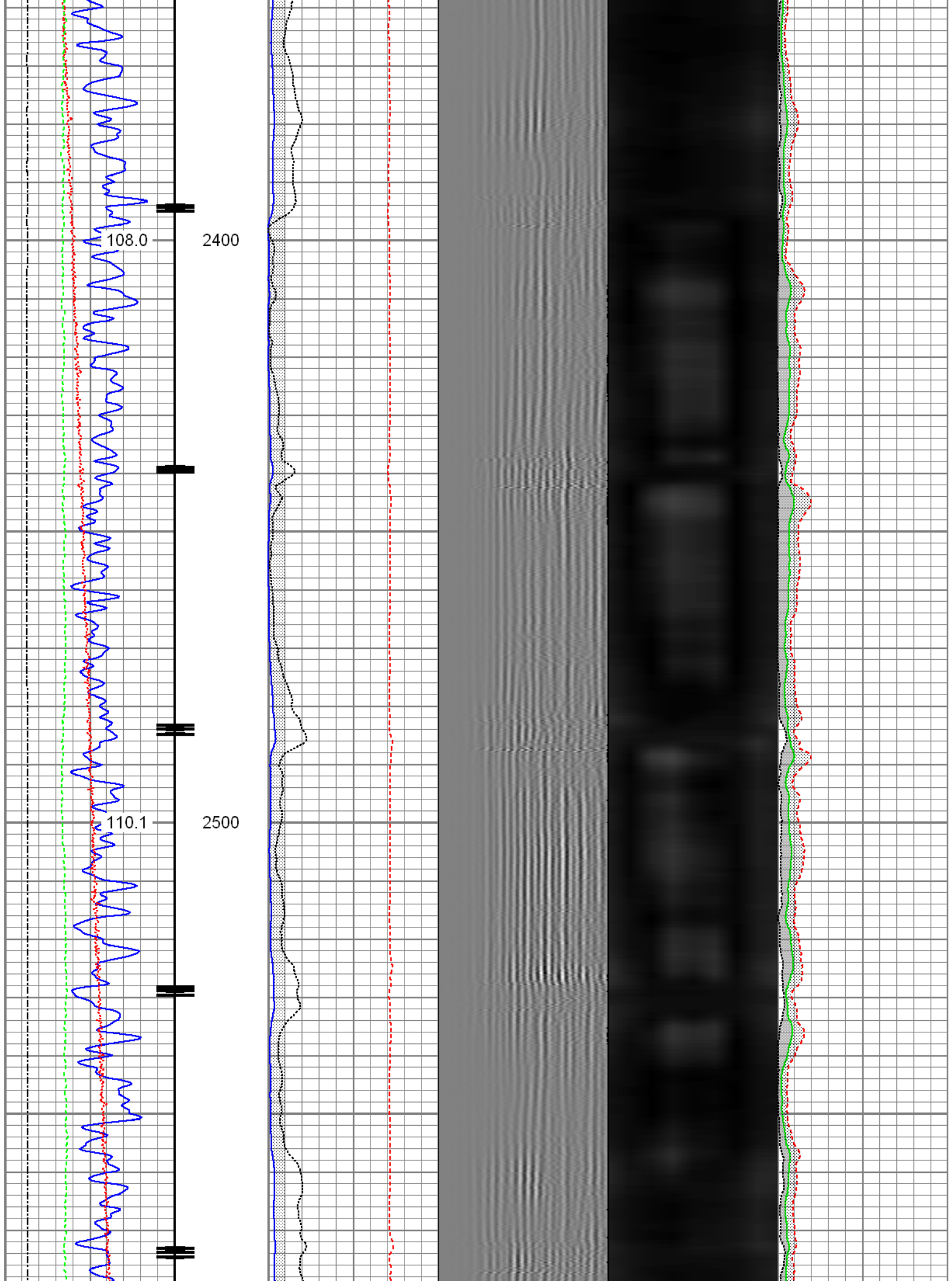


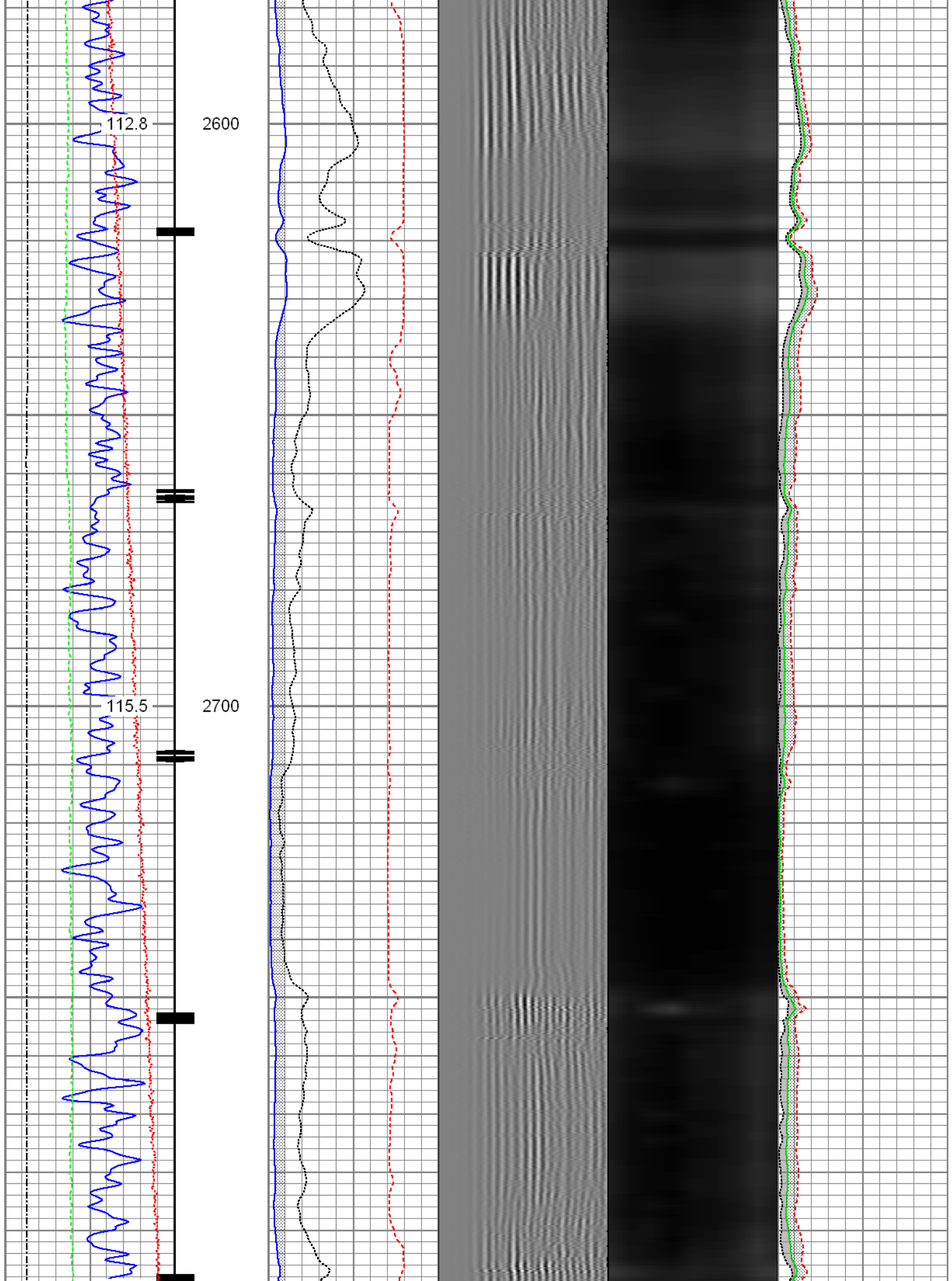


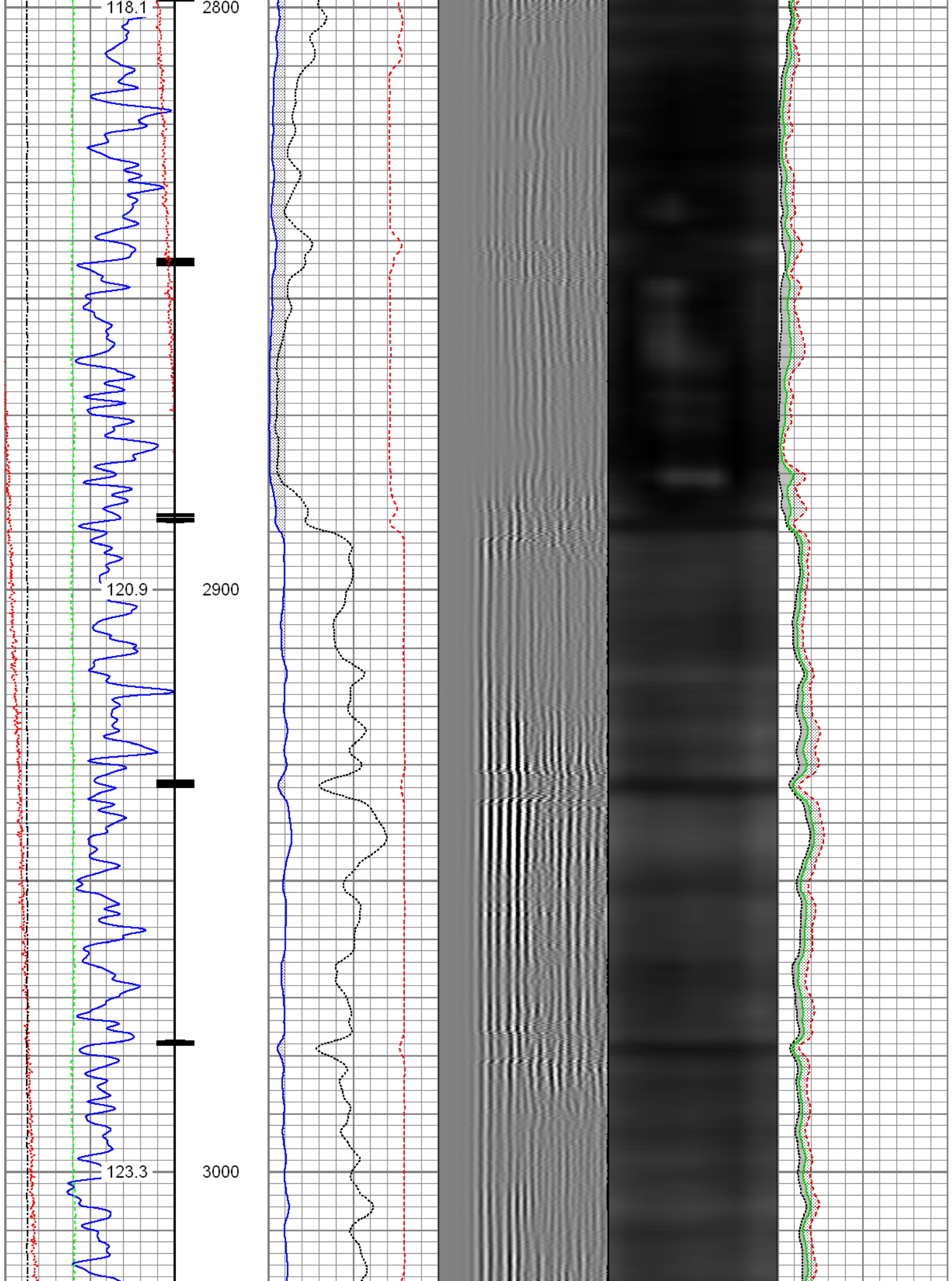


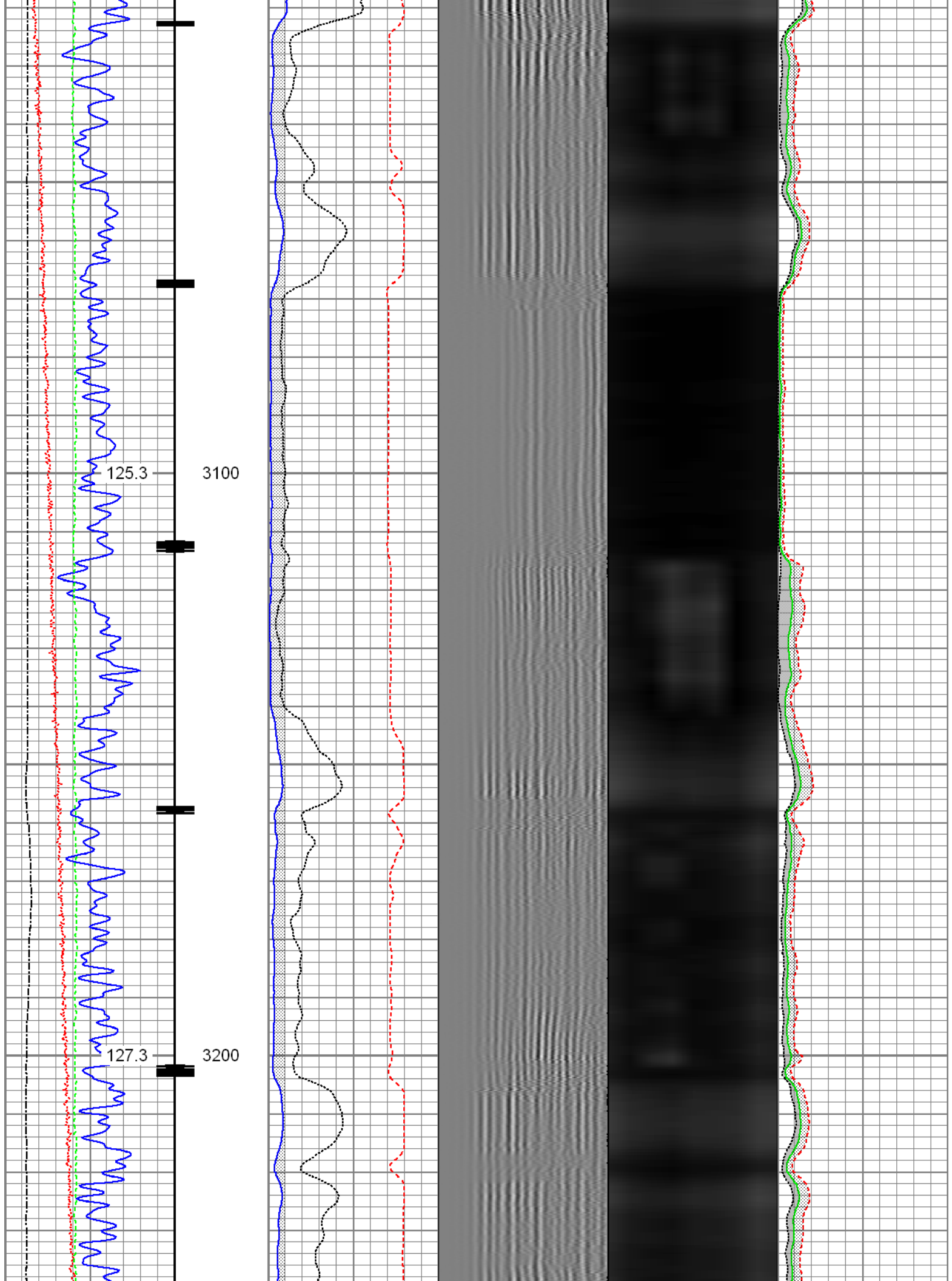


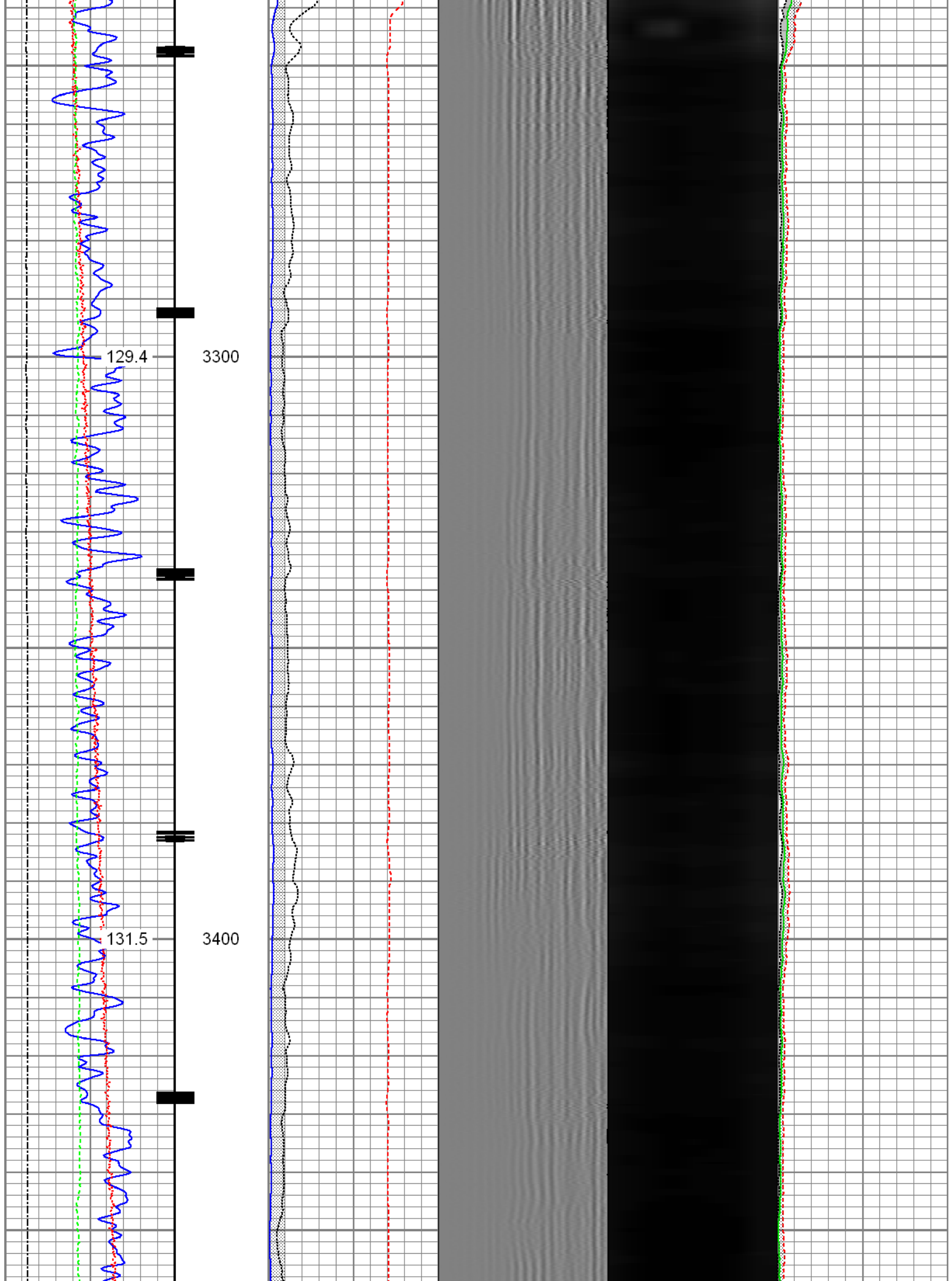


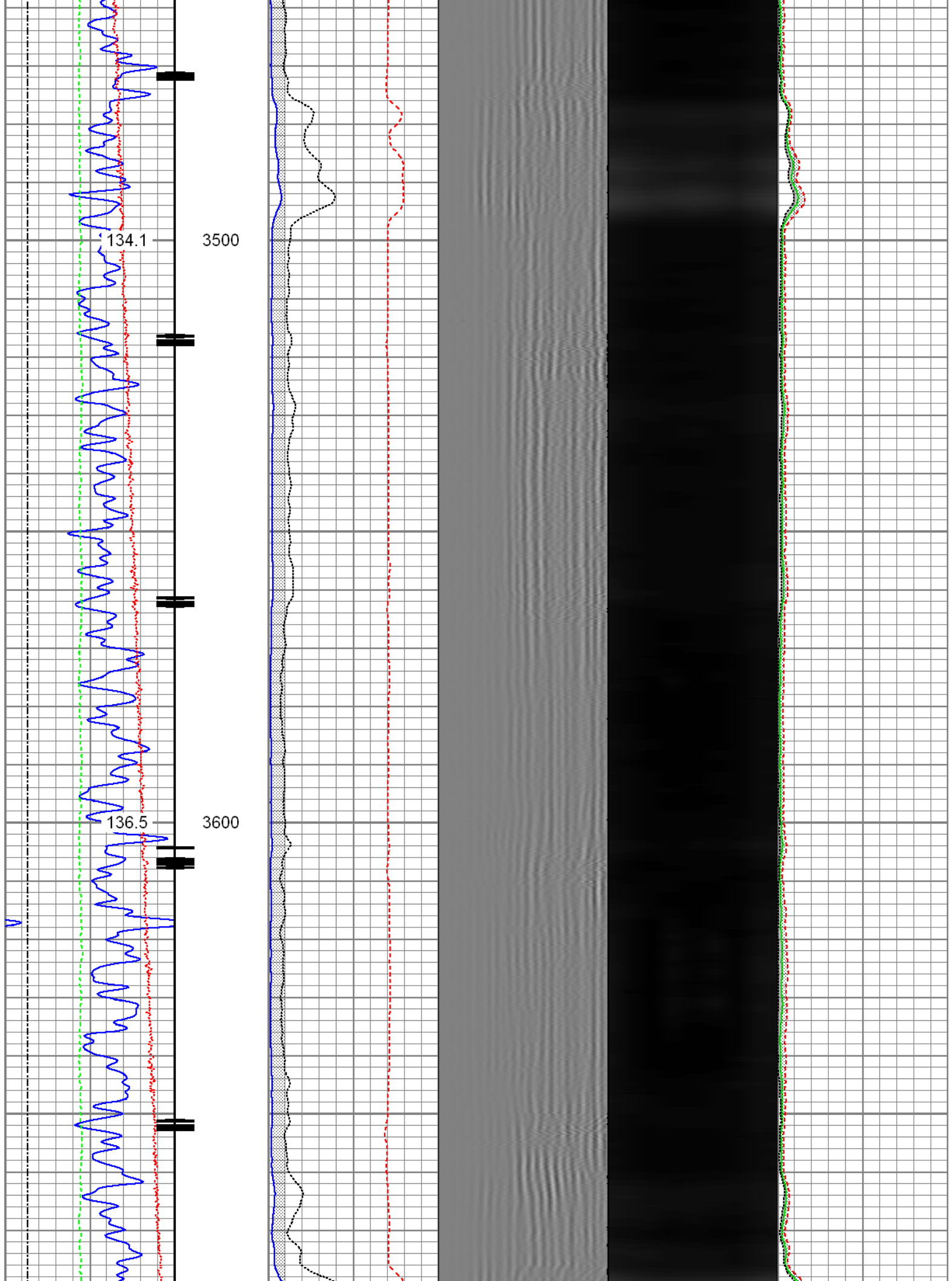


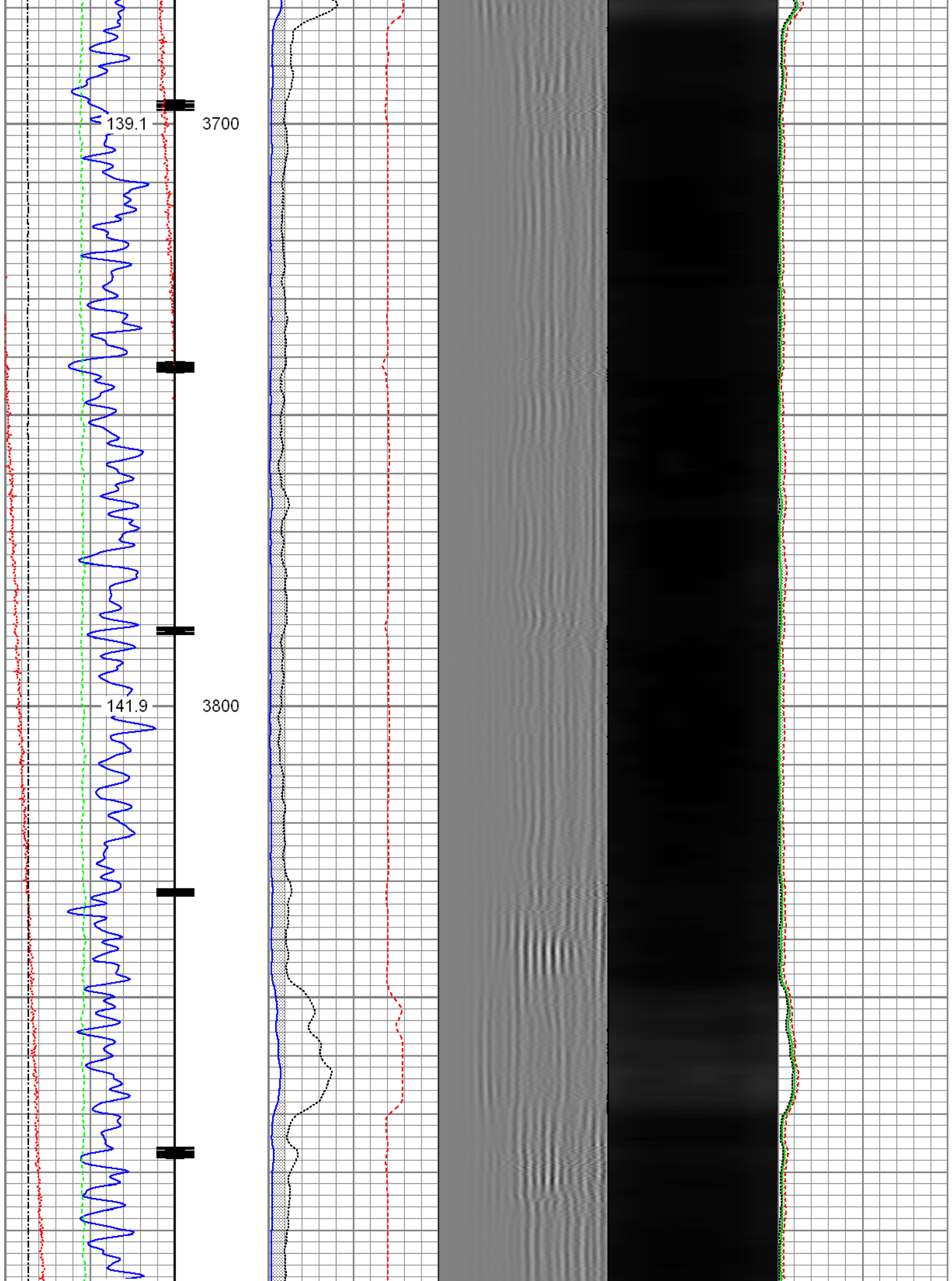


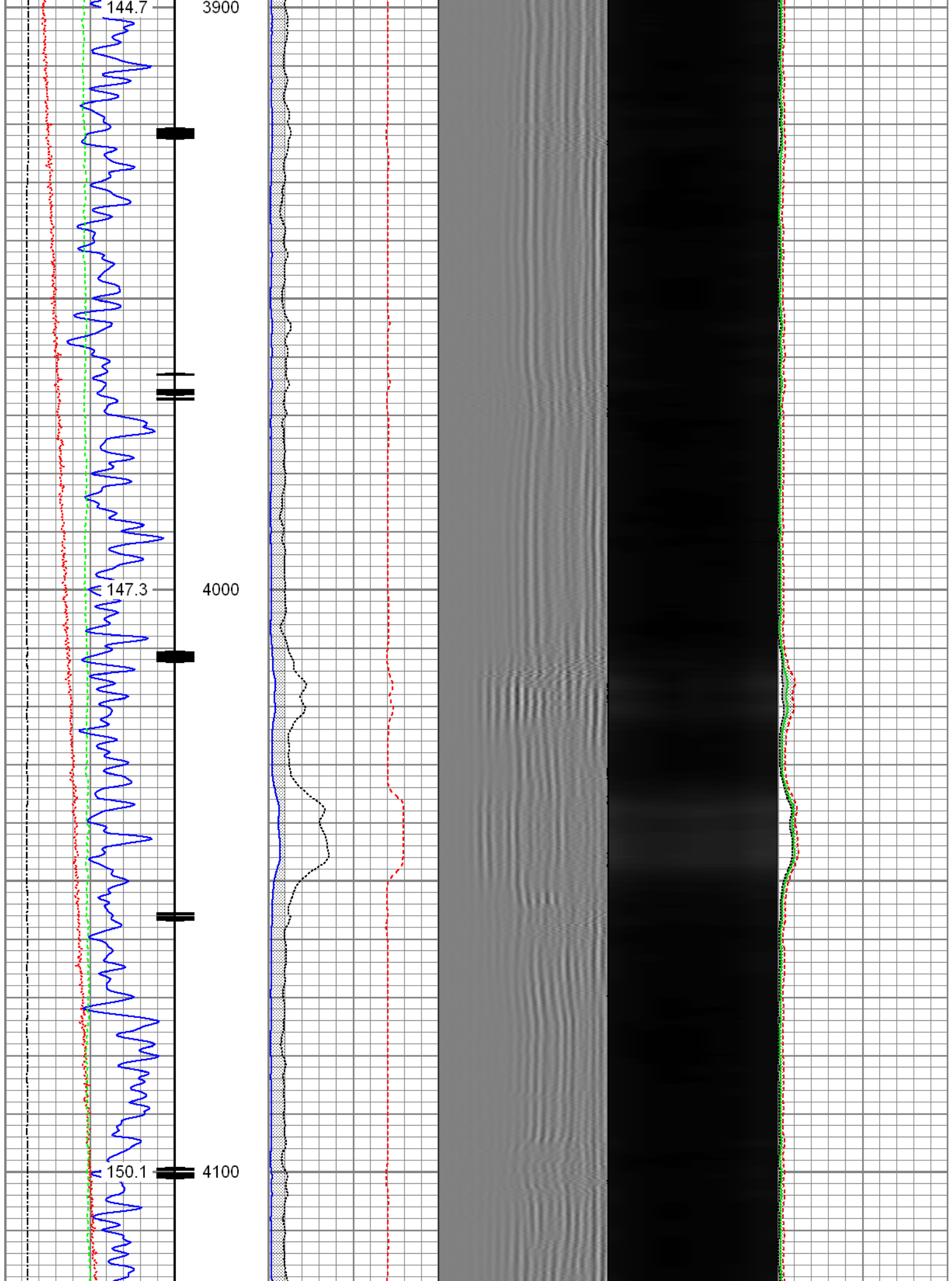


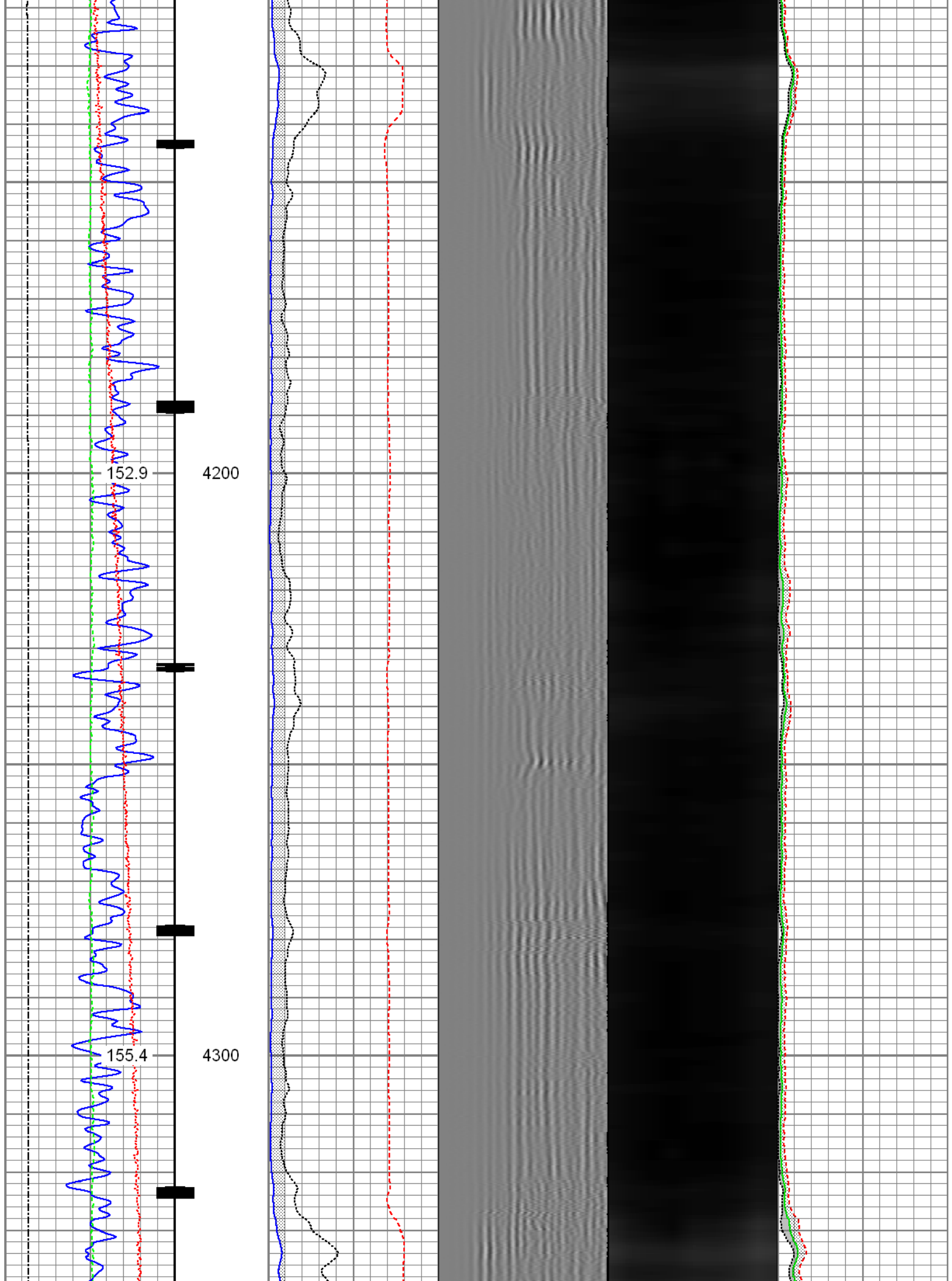


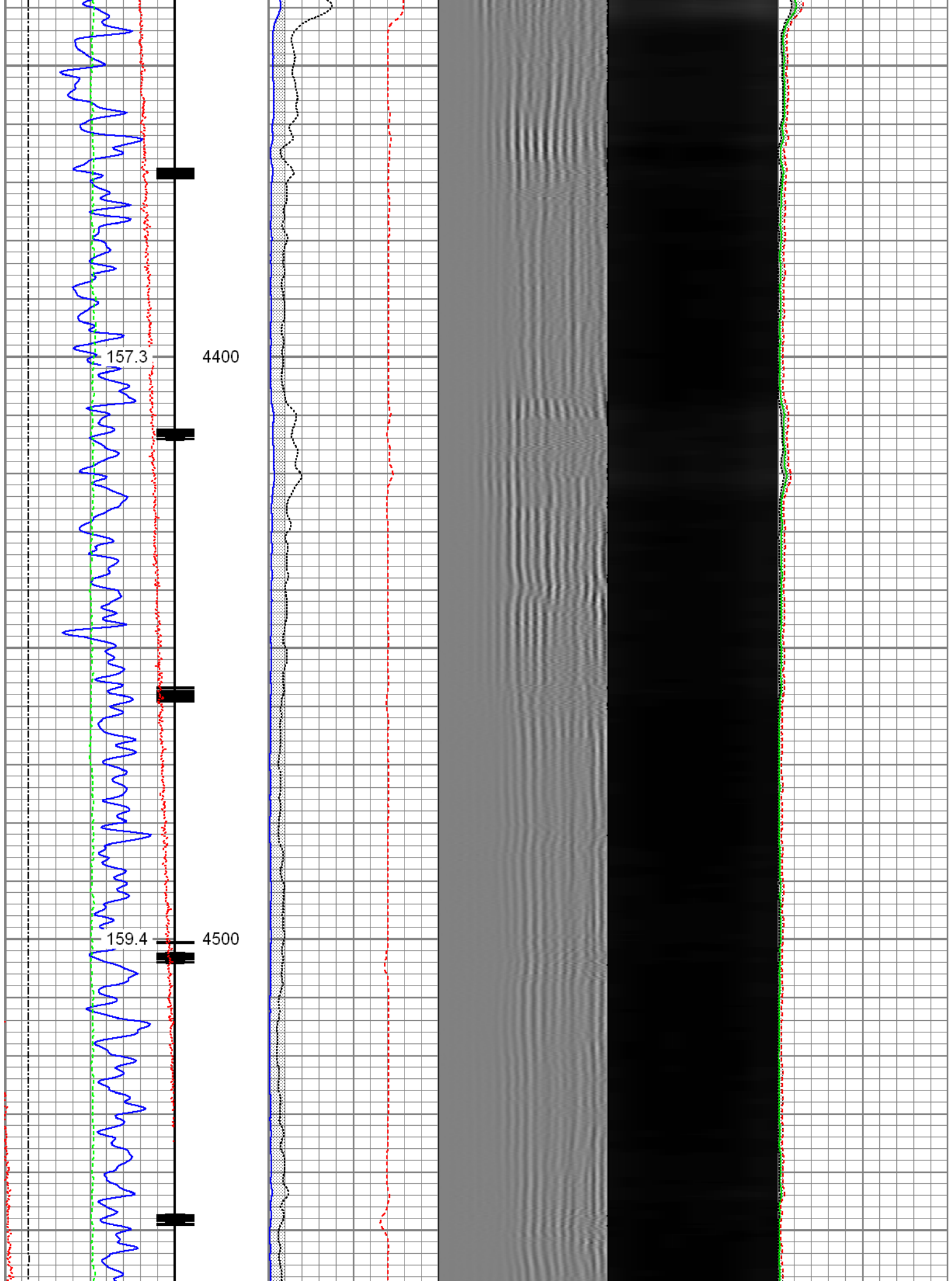


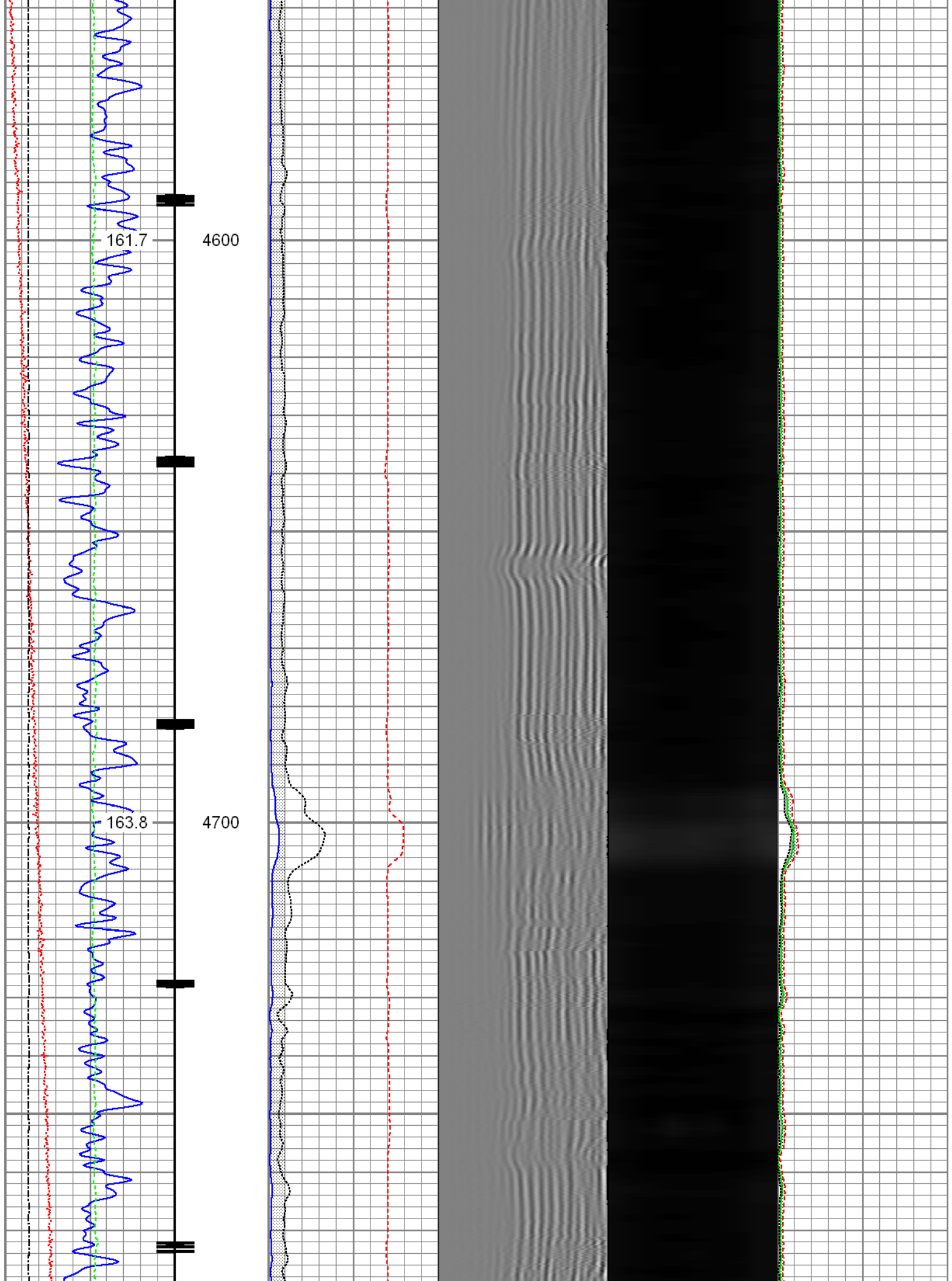


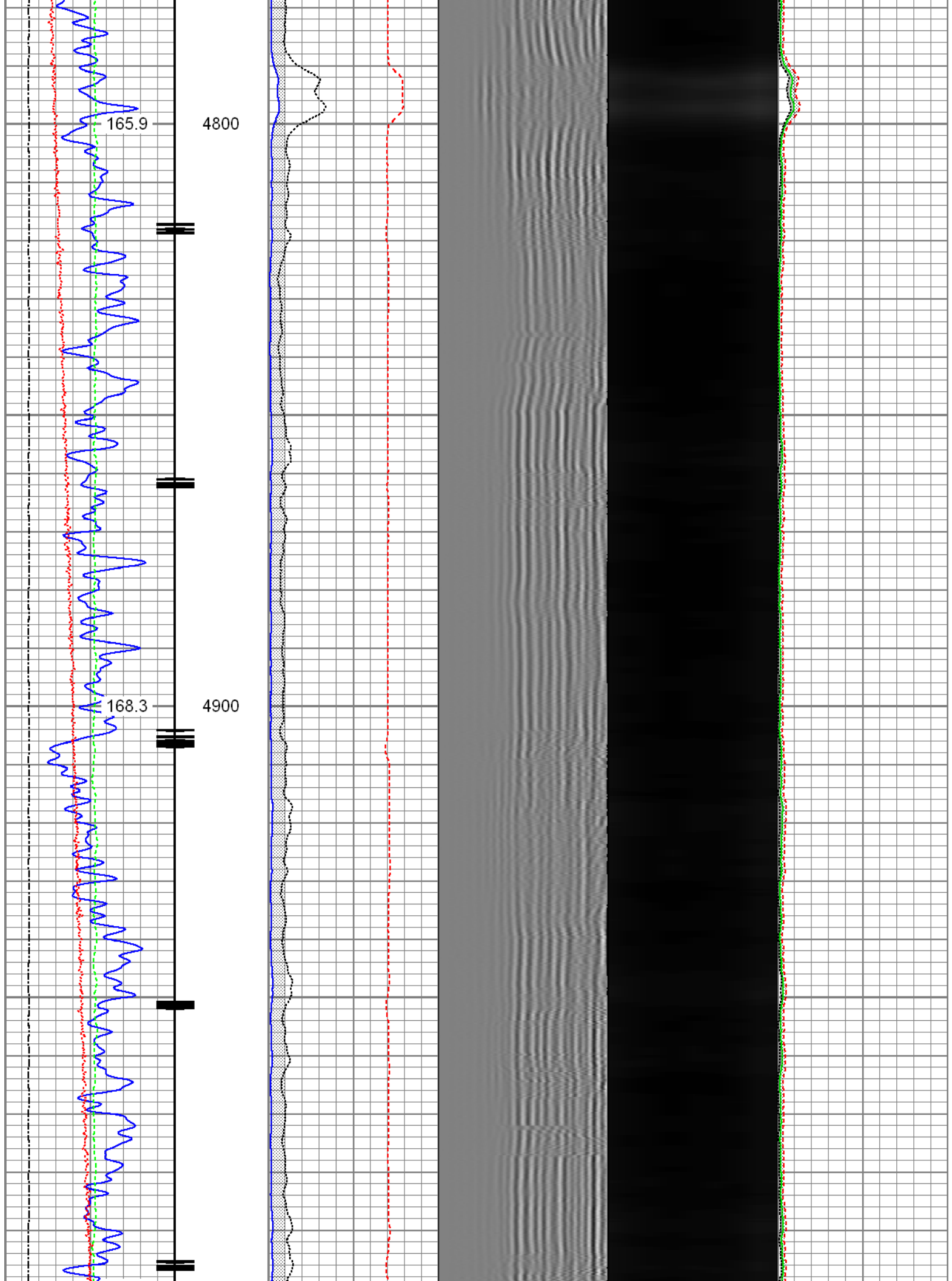


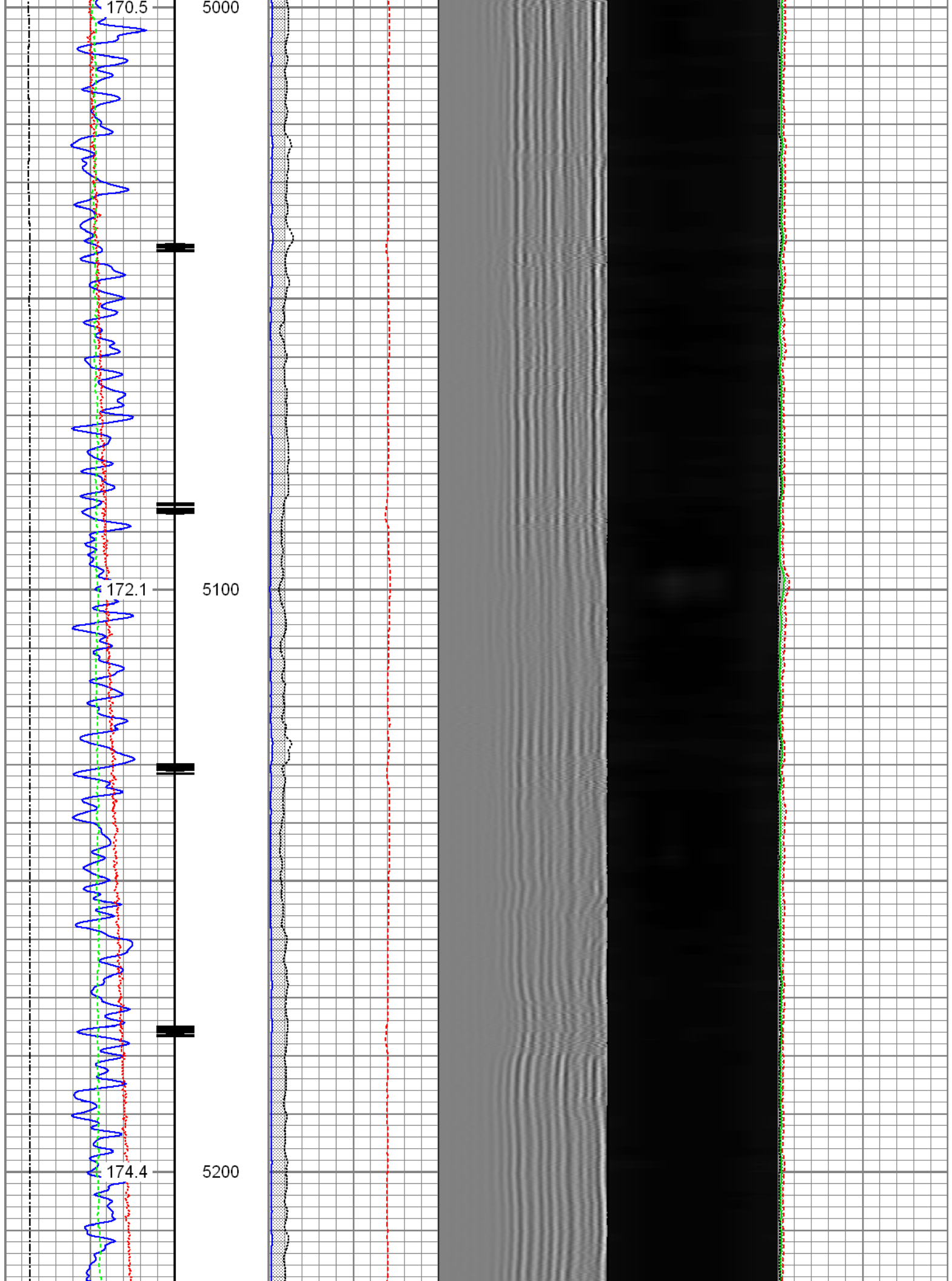


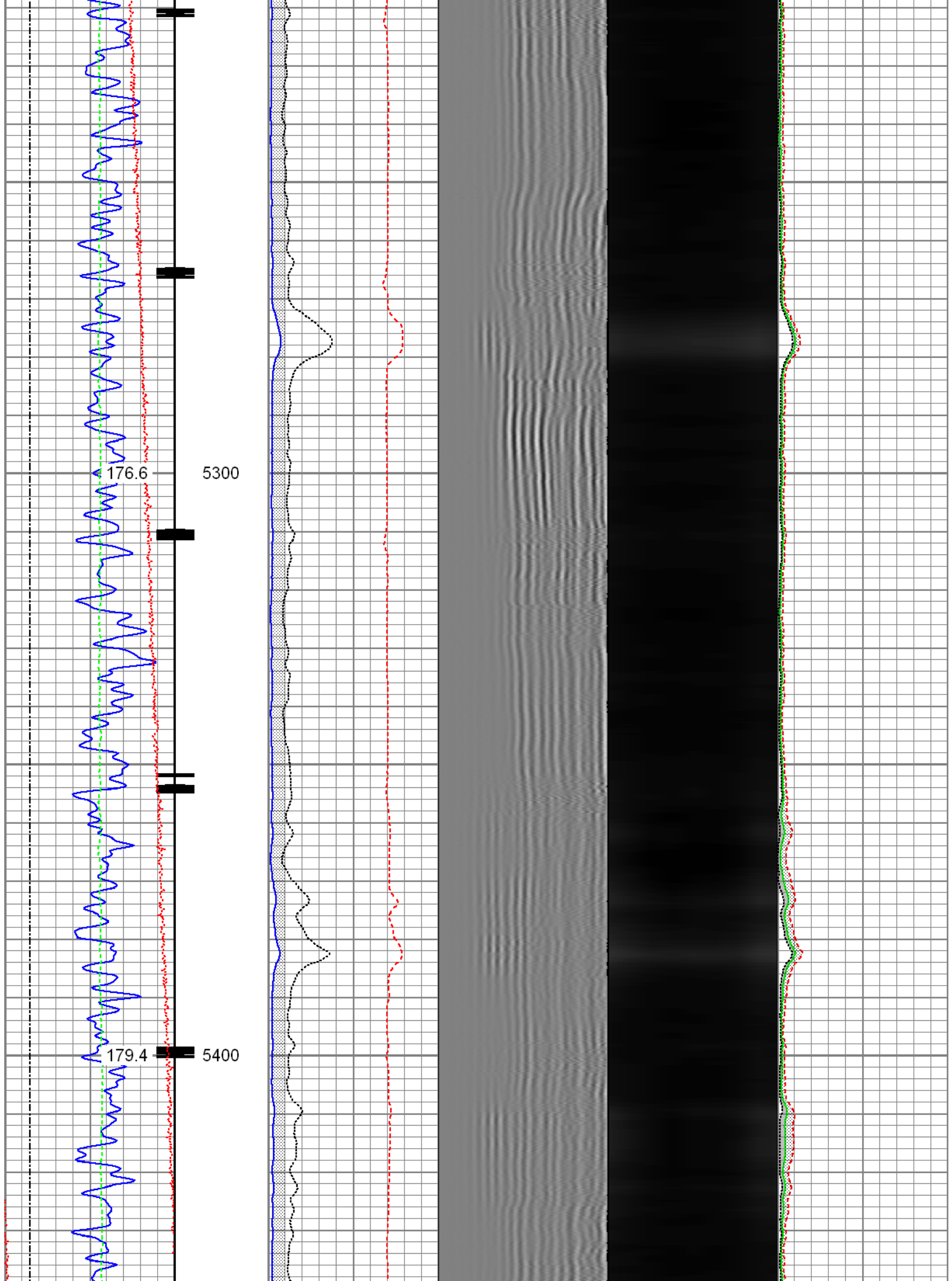


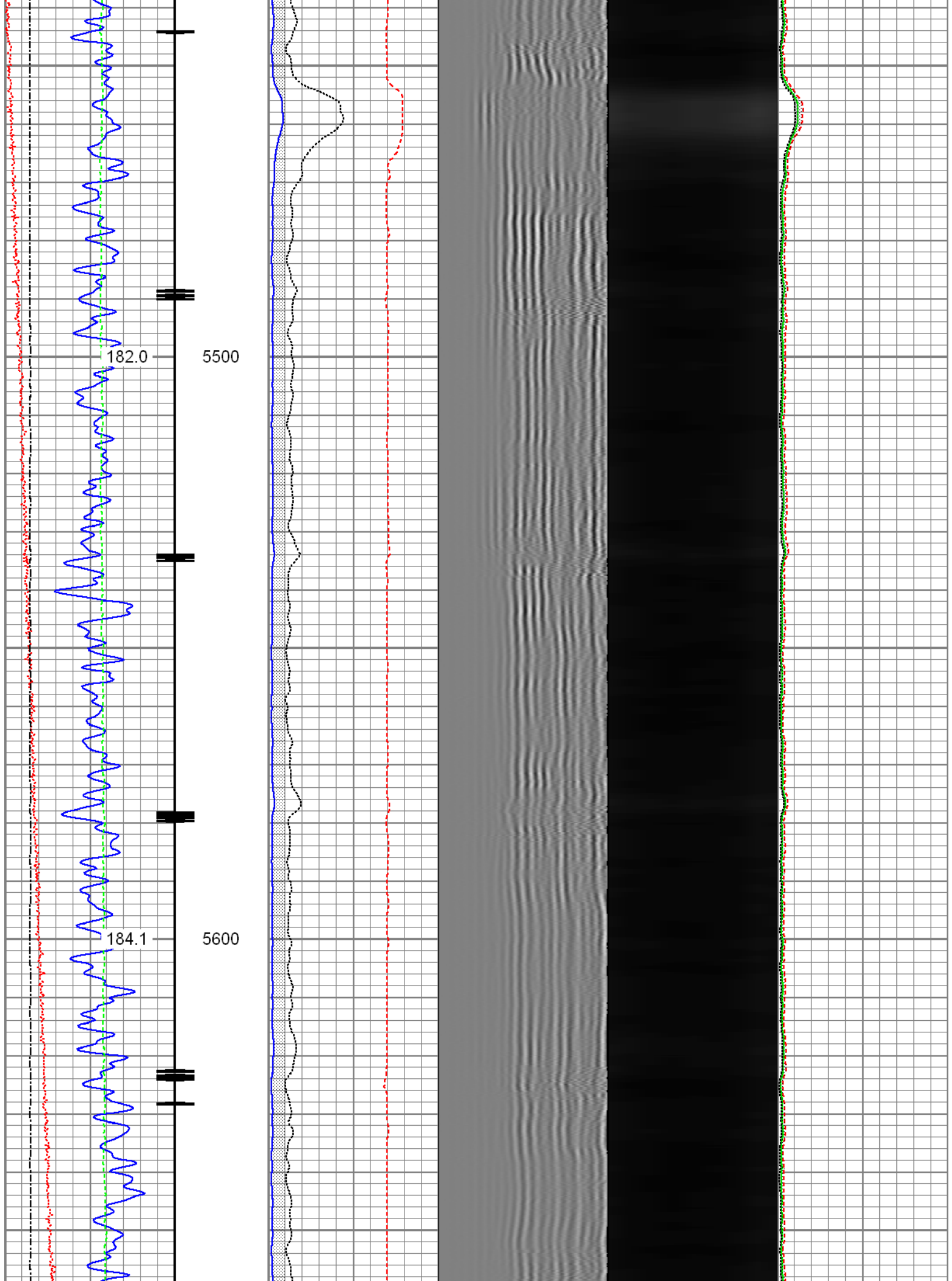


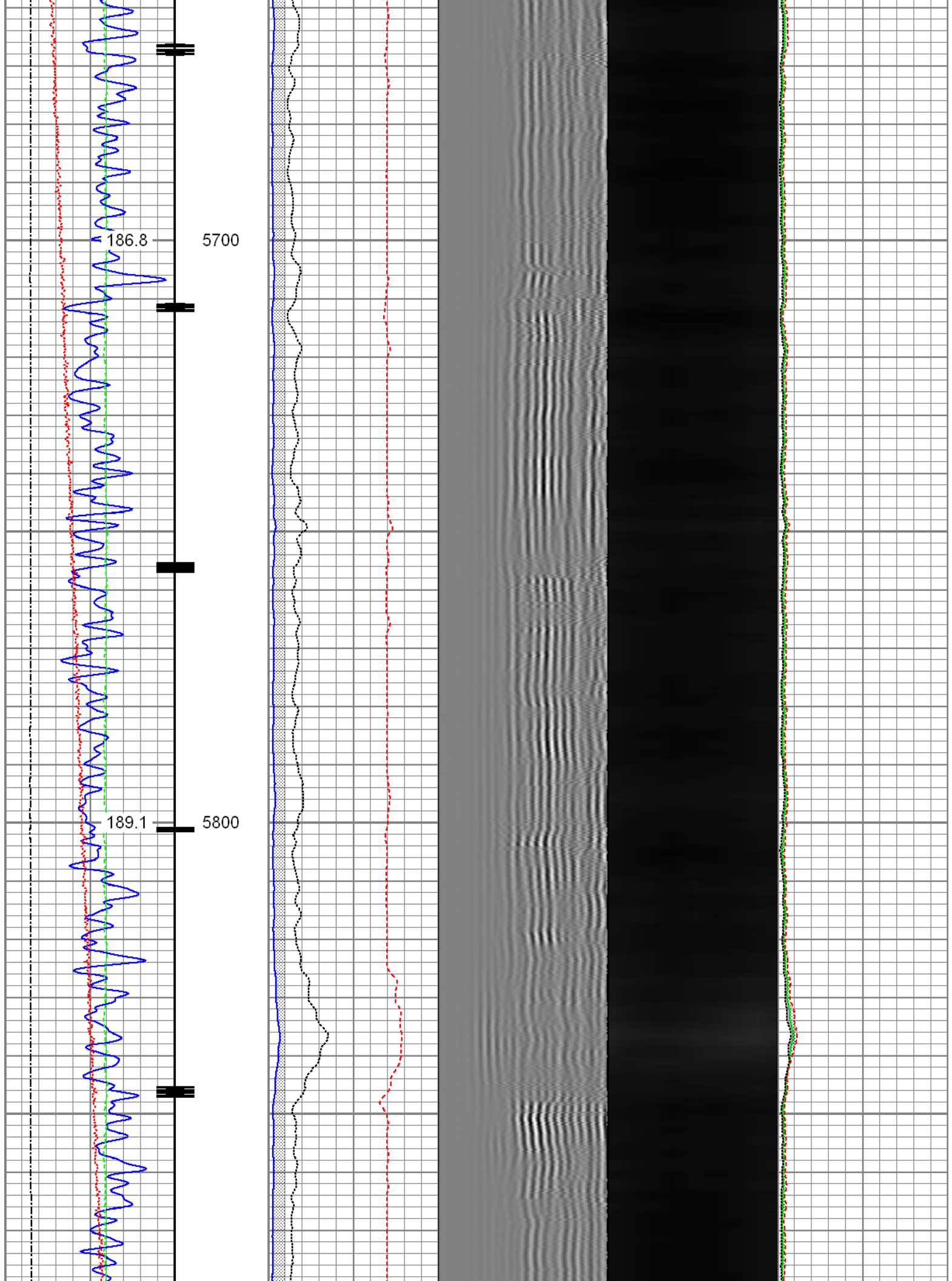


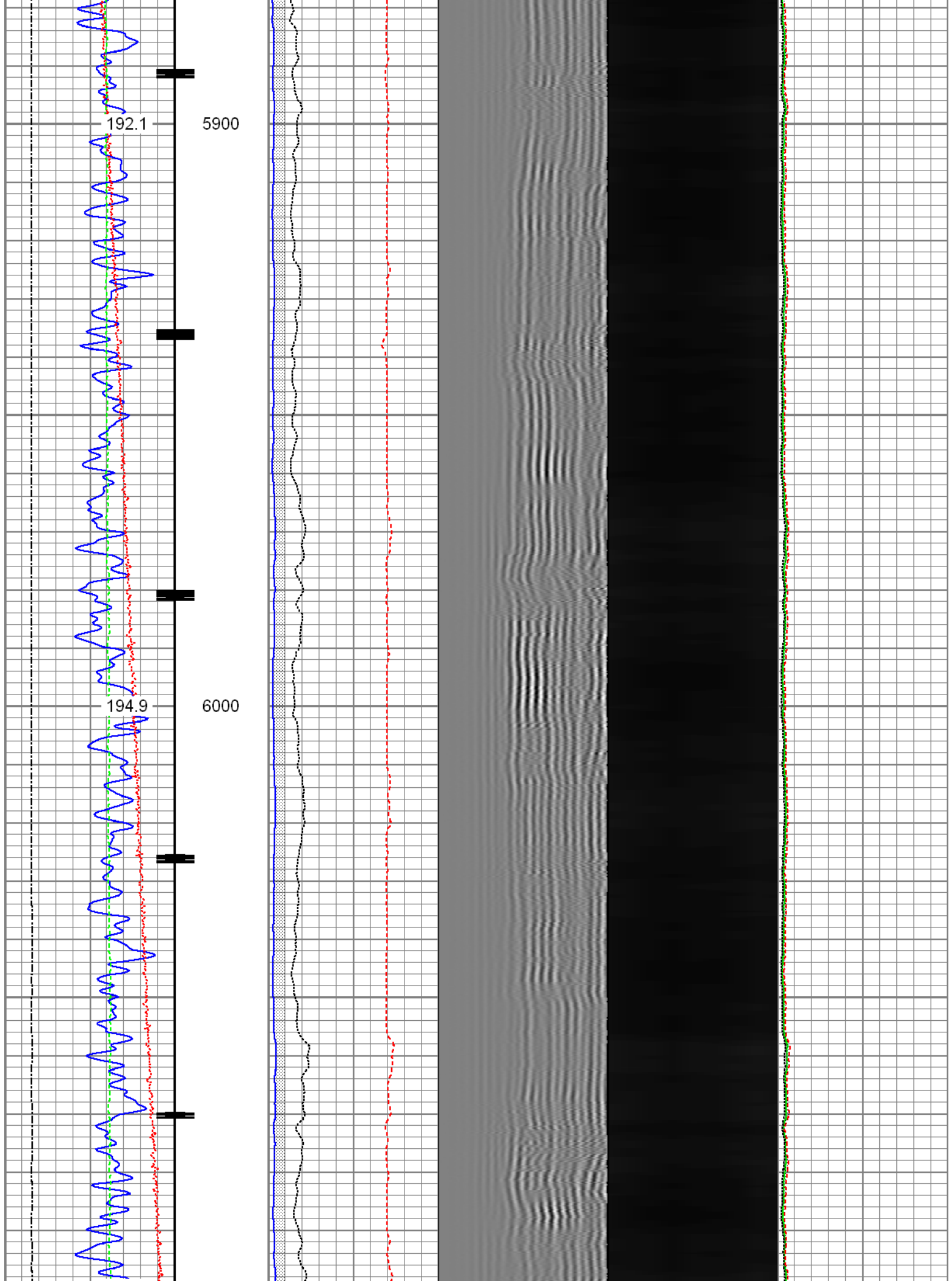


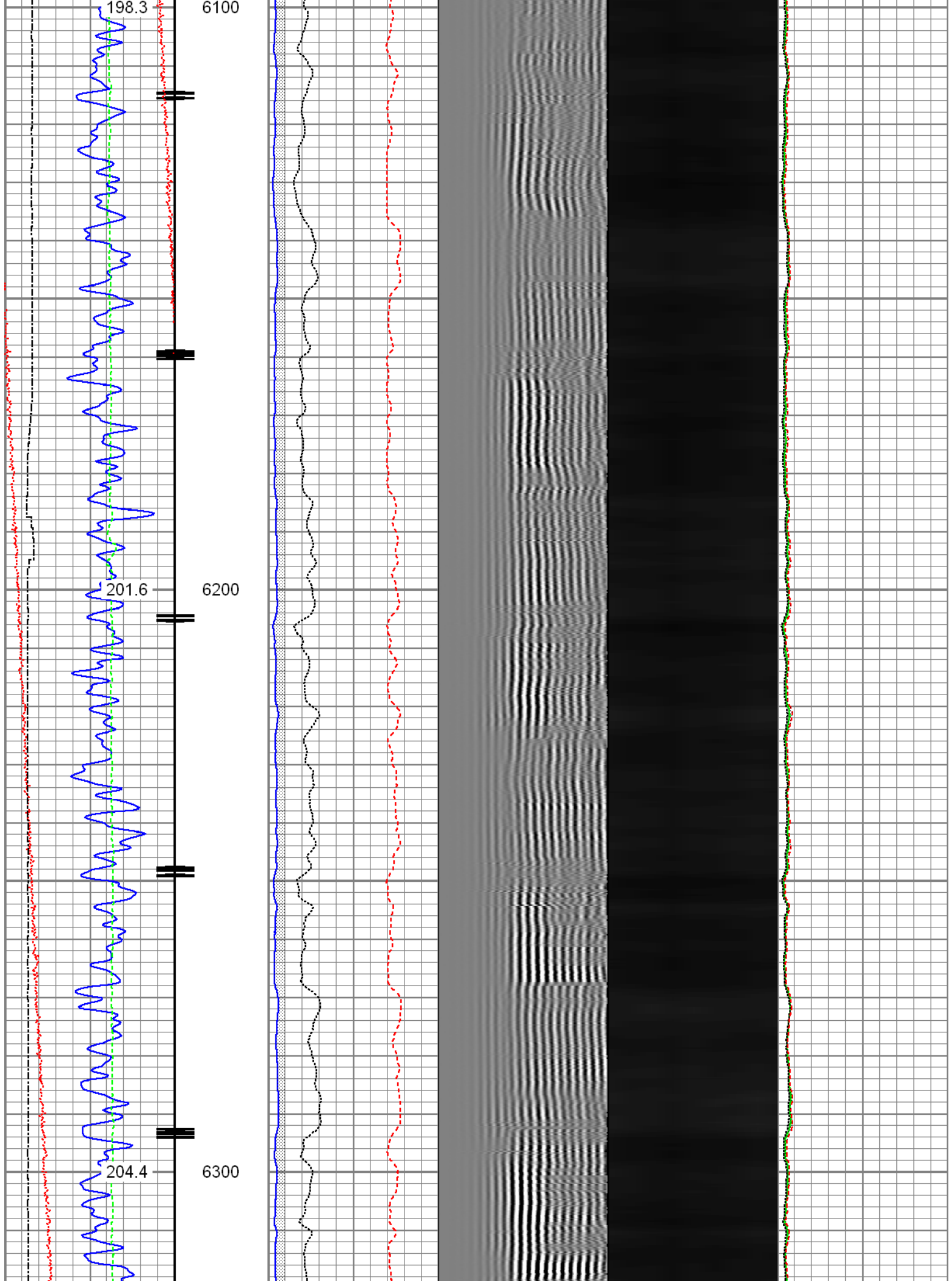


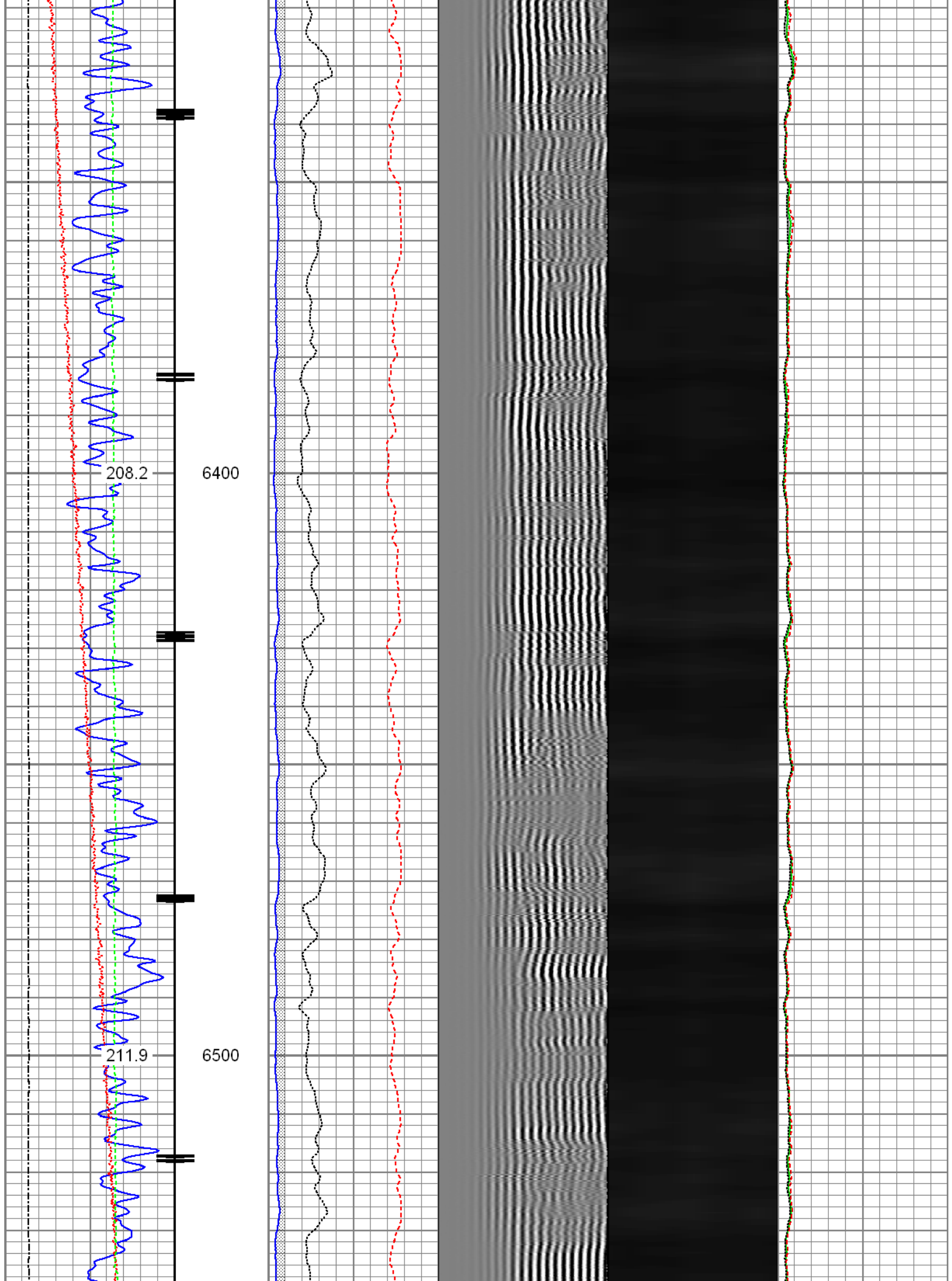


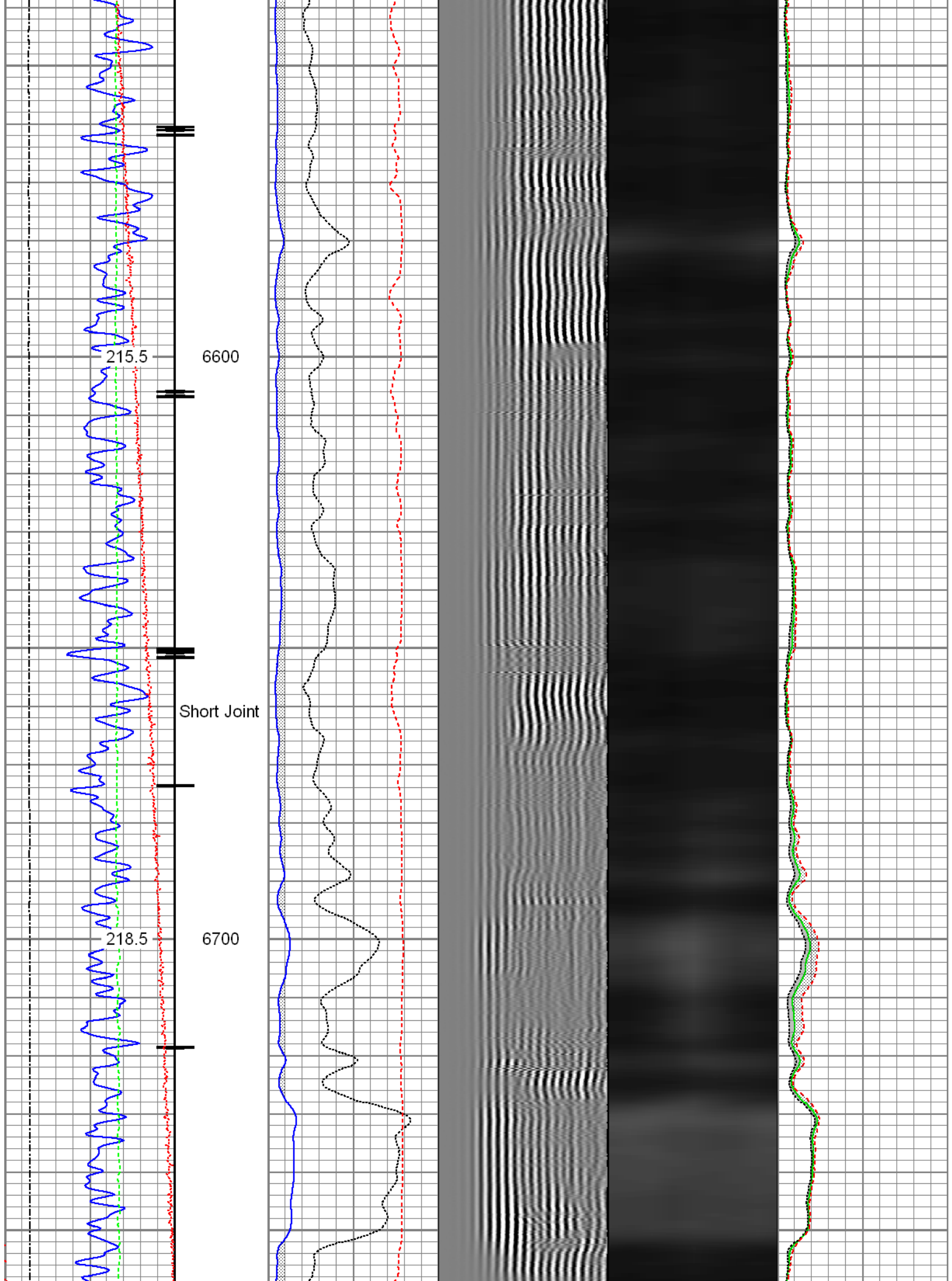


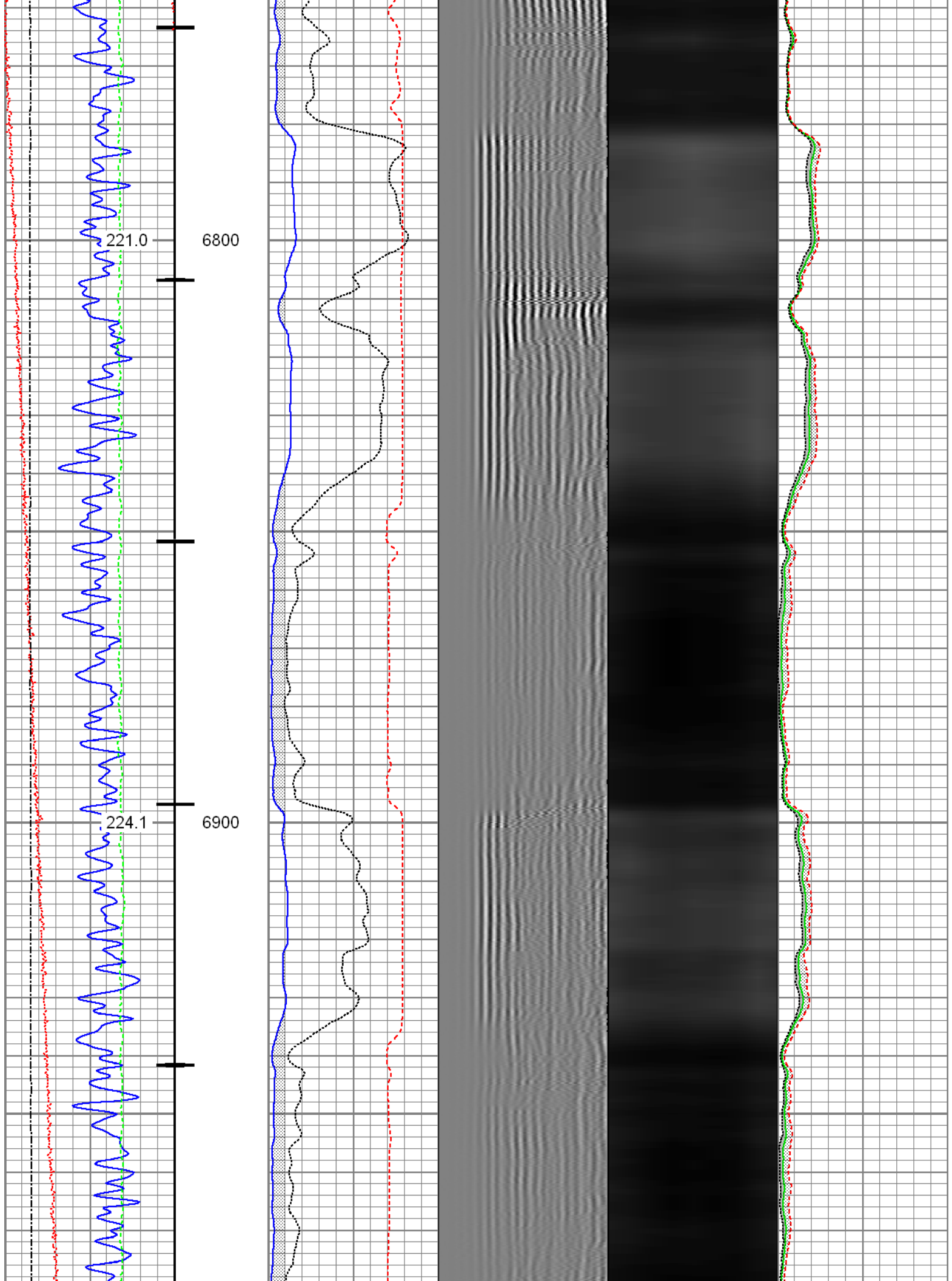


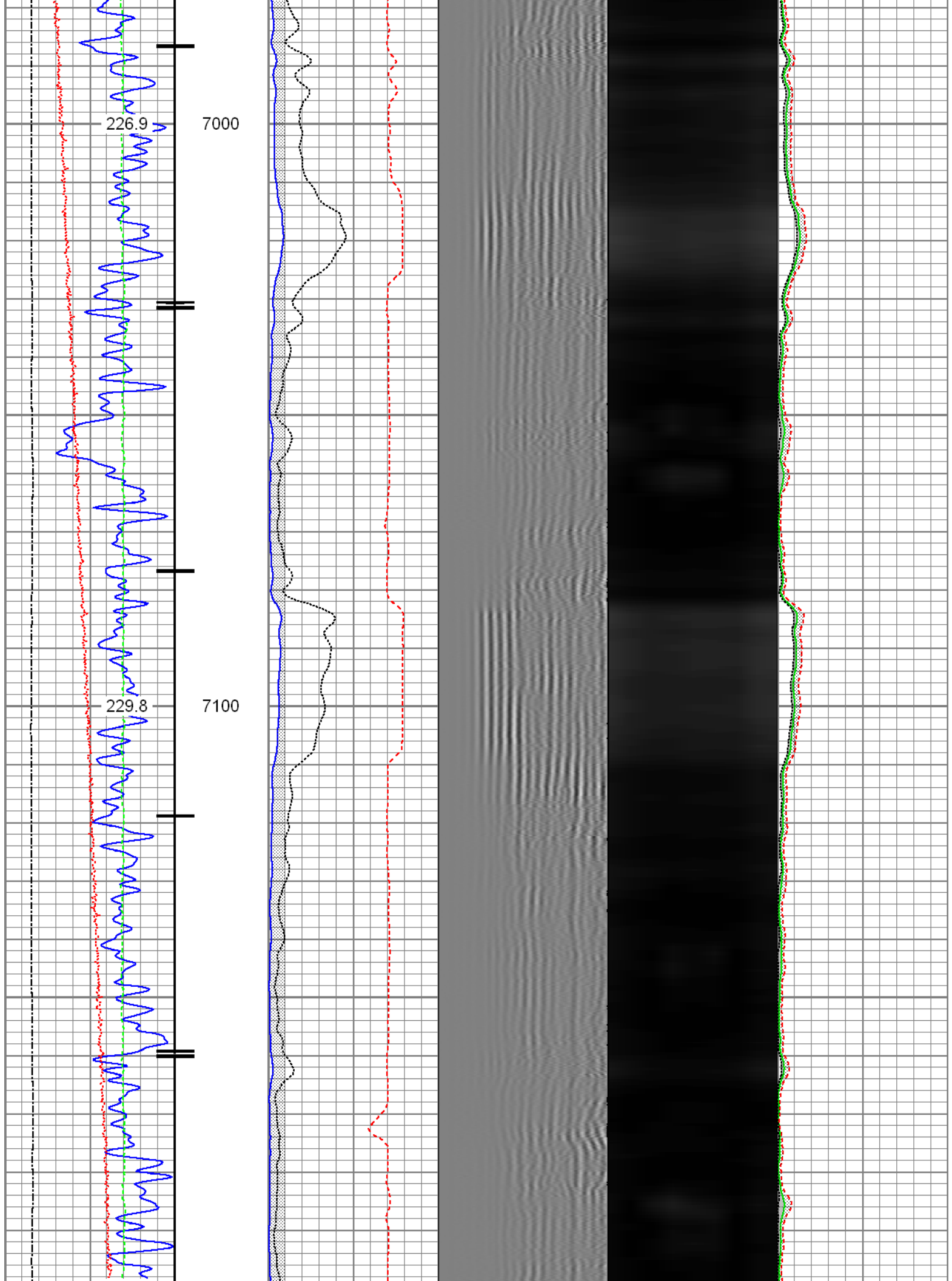


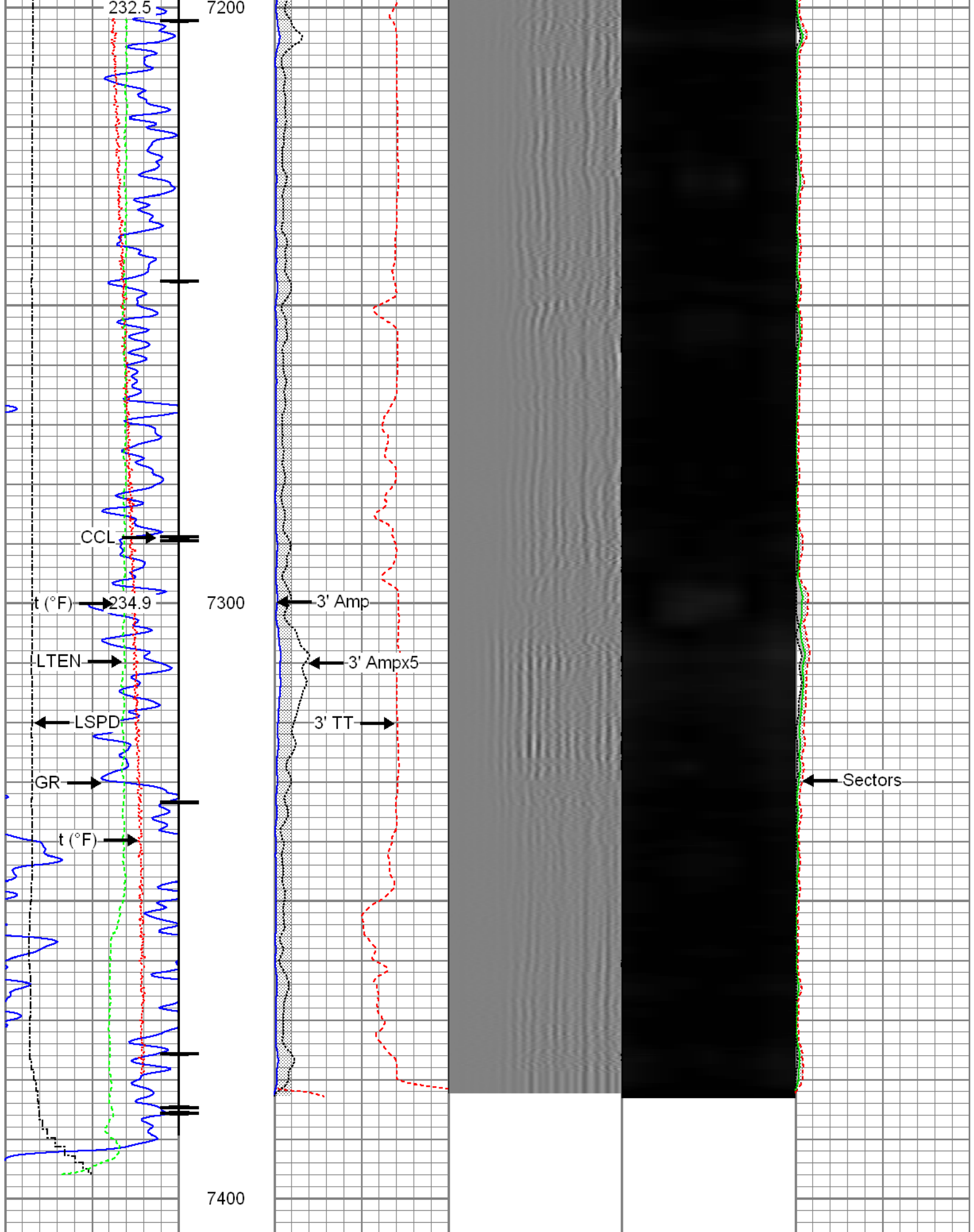









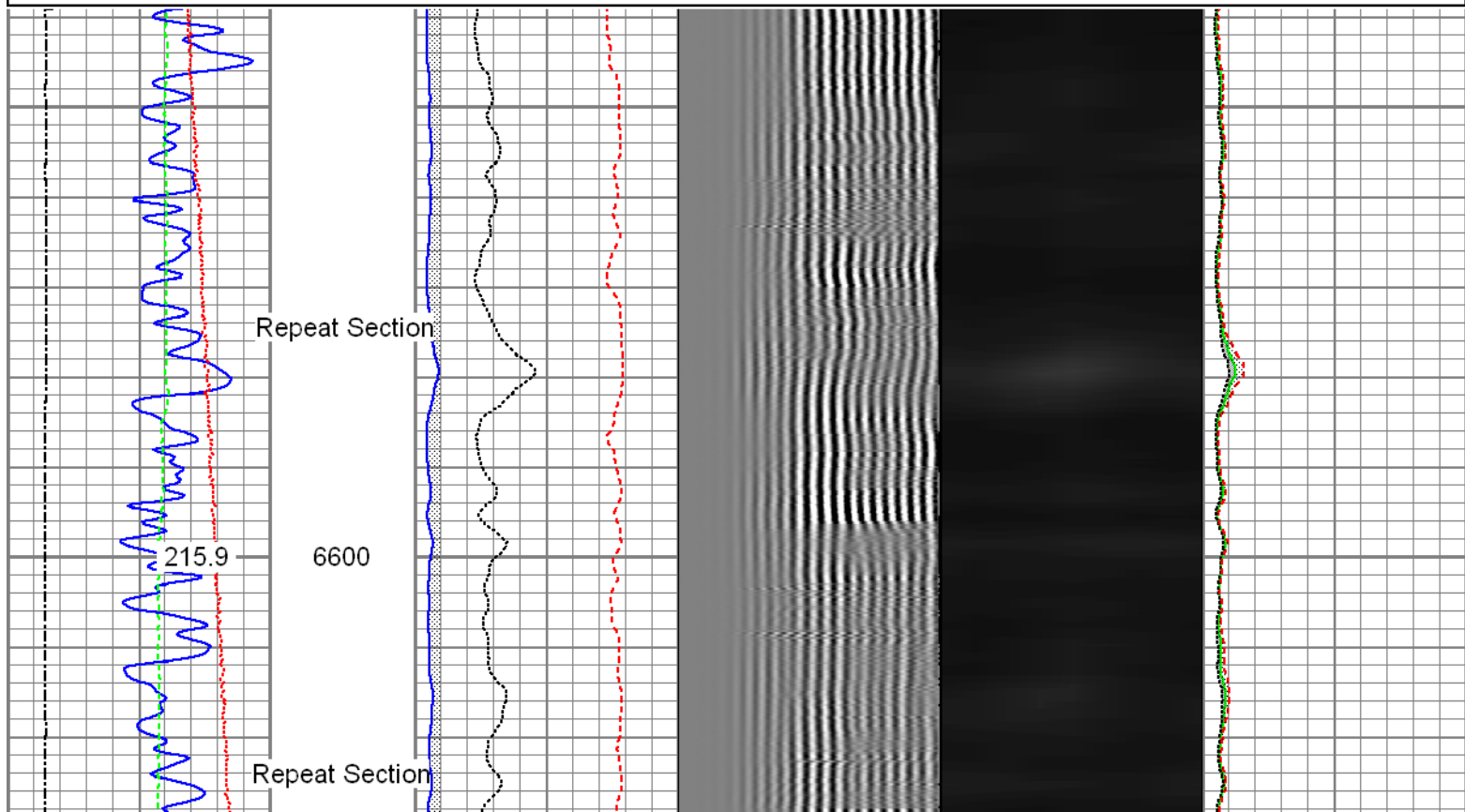


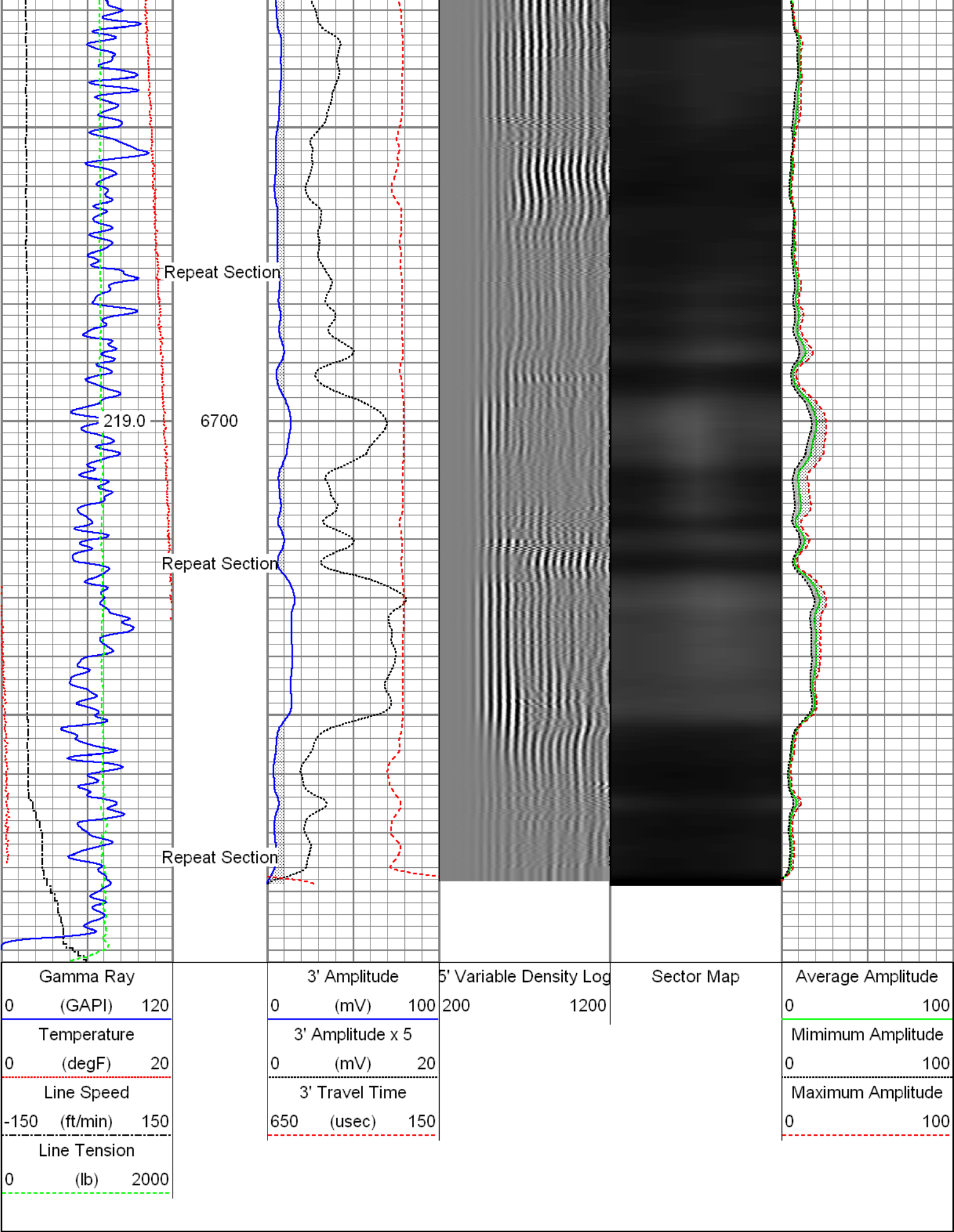


| | | | | |
|-----------------------|----------------------|-------------------------|------------|-------------------|
| Gamma Ray (GAPI) | 3' Amplitude (mV) | 5' Variable Density Log | Sector Map | Average Amplitude |
| 0 120 | 0 100 | 200 1200 | | 0 100 |
| Casing Collar Locator | 3' Amplitude x 5 | | | Minimum Amplitude |

| | | |
|-----------------------|------------------|-------------------|
| Leading Solar Locator | 3' Amplitude x 5 | Minimum Amplitude |
| Temperature | 0 (mV) 20 | 0 100 |
| 0 (degF) 20 | 3' Travel Time | Maximum Amplitude |
| Line Speed | 650 (usec) 150 | 0 100 |
| -150 (ft/min) 150 | | |
| Line Tension | | |
| 0 (lb) 2000 | | |

| | | | | | |
|--|------------------|--|------------|-------------------|--|
|  | | Repeat Pass | | | |
| | | Recorded With 2800 PSI Surface Induced Pressure | | | |
| Database File: | | c:\warrior\data\0512341903_anadarko_powers 34g-22hz_12-08-15_rb\0512341903_anadarko_powe | | | |
| Dataset Pathname: | | pass3 | | | |
| Presentation Format: | | radii | | | |
| Dataset Creation: | | Tue Dec 08 11:28:59 2015 by Log 7.0 B1 | | | |
| Charted by: | | Depth in Feet scaled 1:240 | | | |
| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude | |
| 0 (GAPI) 120 | 0 (mV) 100 | 200 1200 | | 0 100 | |
| Temperature | 3' Amplitude x 5 | | | Minimum Amplitude | |
| 0 (degF) 20 | 0 (mV) 20 | | | 0 100 | |
| Line Speed | 3' Travel Time | | | Maximum Amplitude | |
| -150 (ft/min) 150 | 650 (usec) 150 | | | 0 100 | |
| Line Tension | | | | | |
| 0 (lb) 2000 | | | | | |





| Sensor | Offset (ft) | Schematic | Description | Len (ft) | OD (in) | Wt (lb) |
|--------|-------------|-----------|-------------|----------|---------|---------|
|--------|-------------|-----------|-------------|----------|---------|---------|

Calibration Report

Database File: C:\Warrior\Data\0512341903_Anadarko_Powers 34G-22HZ_12-08-15_RBL\0512341903_Anadarko_P
 Dataset Pathname: pass6
 Dataset Creation: Tue Dec 08 11:54:47 2015 by Log 7.0 B1

Gamma Ray Calibration Report

Serial Number: FW1307-038
 Tool Model: 2.75"Digital
 Performed: Mon Dec 07 13:38:50 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6300 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1302-002
 Tool Model: 2-3/4"

Calibration Casing Diameter: 5.500 in
 Calibration Depth: -36.106 ft

Master Calibration, performed Tue Oct 20 09:04:32 2015:

| | Raw (v) | | Calibrated (mv) | | Results | |
|-----|---------|-------|-----------------|---------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.008 | 0.691 | 0.800 | 71.921 | 104.157 | -0.004 |
| CAL | 0.685 | 0.784 | | | | |
| 5' | 0.008 | 0.703 | 0.800 | 71.921 | 102.308 | 0.012 |
| SUM | | | | | | |
| S1 | 0.005 | 0.694 | 0.000 | 100.000 | 145.333 | -0.789 |
| S2 | 0.009 | 0.694 | 0.000 | 100.000 | 145.921 | -1.272 |
| S3 | 0.008 | 0.692 | 0.000 | 100.000 | 146.197 | -1.214 |
| S4 | 0.008 | 0.691 | 0.000 | 100.000 | 146.498 | -1.232 |
| S5 | 0.009 | 0.689 | 0.000 | 100.000 | 146.931 | -1.263 |
| S6 | 0.008 | 0.692 | 0.000 | 100.000 | 146.356 | -1.222 |
| S7 | 0.008 | 0.696 | 0.000 | 100.000 | 145.418 | -1.221 |
| S8 | 0.008 | 0.692 | 0.000 | 100.000 | 146.202 | -1.171 |


Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|-------|----------------|-------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.685 | 0.784 | 1.000 | 0.000 |

Air Zero Calibration, performed Tue Dec 08 08:58:55 2015:

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|--|----------------|--|---------|--|
| | Zero | | Zero | | Offset | |
| 3' | 0.008 | | 0.000 | | -0.000 | |
| 5' | 0.008 | | 0.000 | | -0.000 | |
| SUM | | | | | | |
| S1 | 0.004 | | 0.000 | | 0.004 | |

| | | | |
|----|-------|-------|-------|
| S1 | 0.004 | 0.000 | 0.001 |
| S2 | 0.008 | 0.000 | 0.001 |
| S3 | 0.008 | 0.000 | 0.000 |
| S4 | 0.008 | 0.000 | 0.000 |
| S5 | 0.008 | 0.000 | 0.000 |
| S6 | 0.008 | 0.000 | 0.000 |
| S7 | 0.008 | 0.000 | 0.000 |
| S8 | 0.008 | 0.000 | 0.000 |

| | | |
|--|---------|------------------------------------|
|  | Company | Kerr-McGee Oil & Gas Onshore, L.P. |
| | Well | Powers 34G-22HZ |
| | Field | Wattenberg |
| | County | Weld |
| | State | Colorado |