



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Papa Jo 2-25 28N-8HZ
Field Wattenberg
County Weld
State Colorado

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Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-45501
SEC 8 TWP 1N RGE 68W
Permanent Datum Ground Level Elevation 5063'
Log Measured From Kelly Bushing 26 FT
Drilling Measured From Kelly Bushing
Other Services
JBGR
RBP
RCBL 0 Pres
Elevation
K.B. 5089'
D.F. ---
G.L. 5063'

| | | | | |
|------------------------|-------------|-----------------|---------|---------|
| Date | 30-MAR-2018 | Four | | |
| Run Number | | 13559 FT | | |
| Depth Driller | | 7212 FT | | |
| Depth Logger | | 7210 FT | | |
| Bottom Logged Interval | | Surface | | |
| Top Log Interval | | 7 875" | | |
| Open Hole Size | | Water | | |
| Type Fluid | | 8.34 lb/gal | | |
| Density / Viscosity | | 220°F | | |
| Max. Recorded Temp. | | See Log | | |
| Estimated Cement Top | | ROA | | |
| Time Well Ready | | 14.45 | | |
| Time Logger on Bottom | | HD-363 | | |
| Equipment Number | | Fort Lupton, CO | | |
| Location | | M. Hayes | | |
| Recorded By | | John McCarthy | | |
| Witnessed By | | | | |
| Borehole Record | | | | |
| Run Number | Bit | From | To | Size |
| | | | | Weight |
| | | | | From |
| | | | | To |
| Tubing Record | | | | |
| Casing Record | Size (in) | Wgt (lbs/ft) | Grade | Top |
| Surface Casing | 9 5/8 | 36 | J-55 | Surface |
| Intermediate #1 | 5 1/2 | 17 | HCP-110 | Surface |
| Intermediate #2 | | | | |
| Inner | | | | |

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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 Marker Joint from Casing Tally at 7118 FT
Adjusted +3 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 8195 FT with no debris
Log ran with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations
Thank you for choosing Reliance Oilfield Services, LLC!!

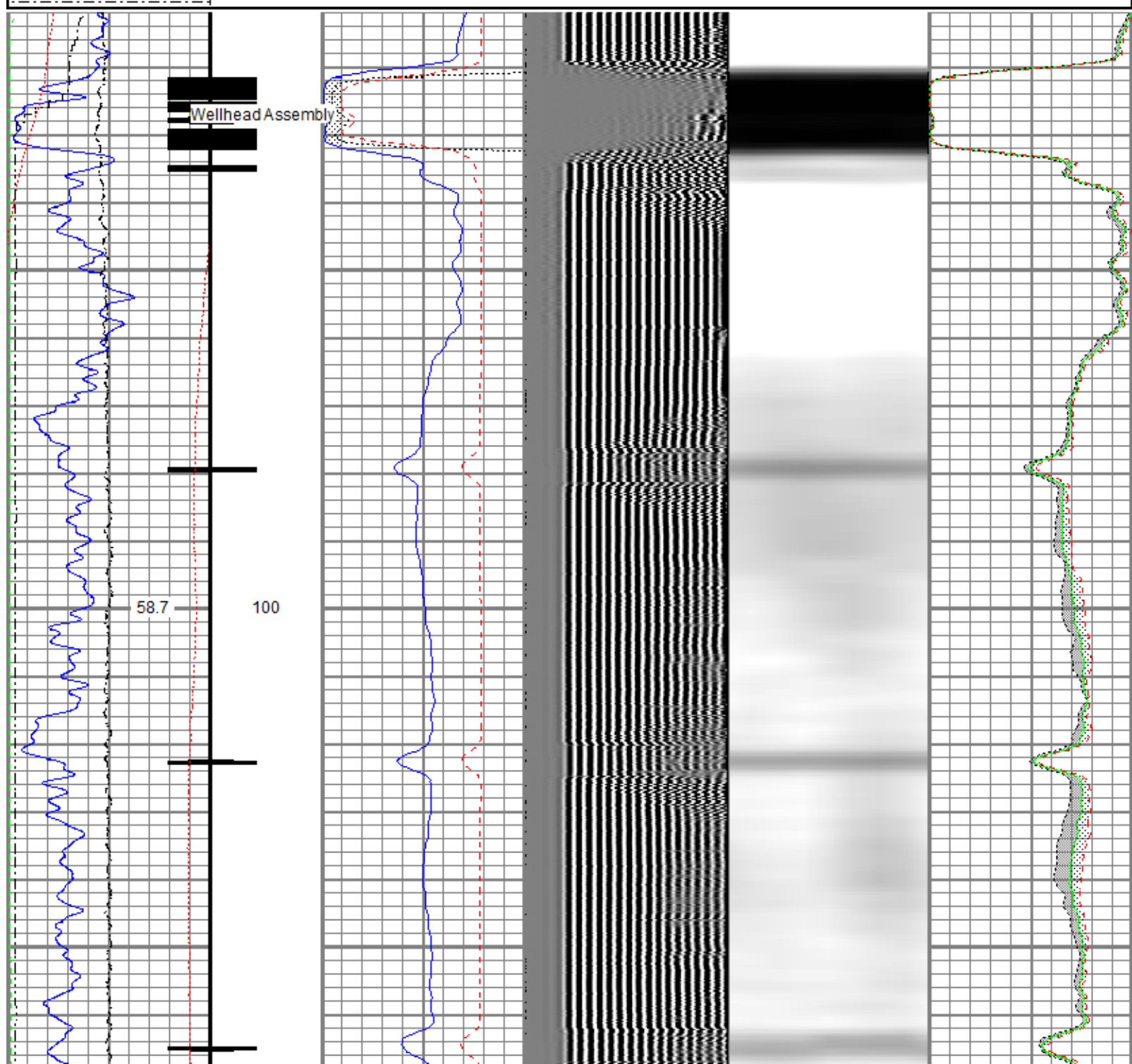
Main Pass

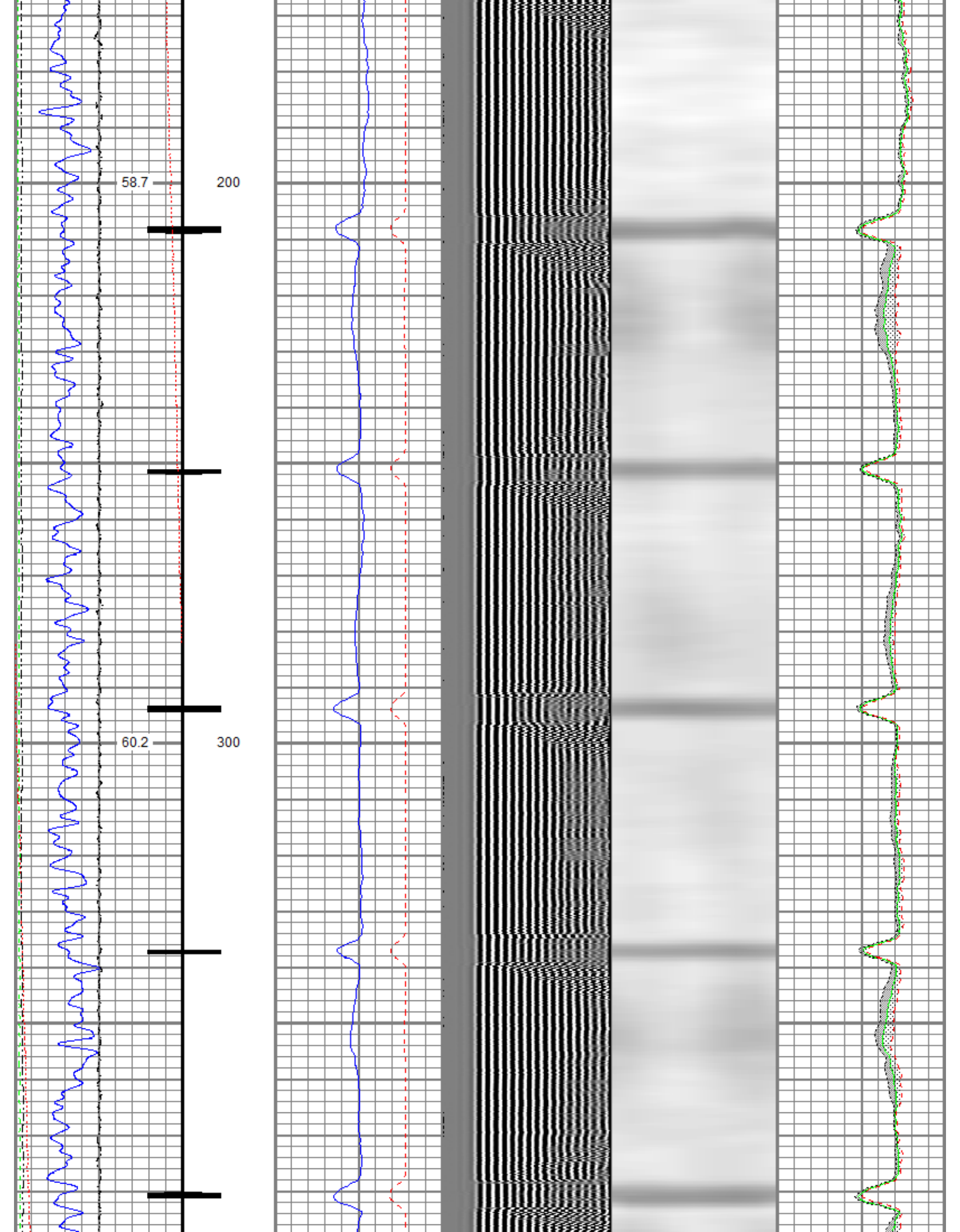


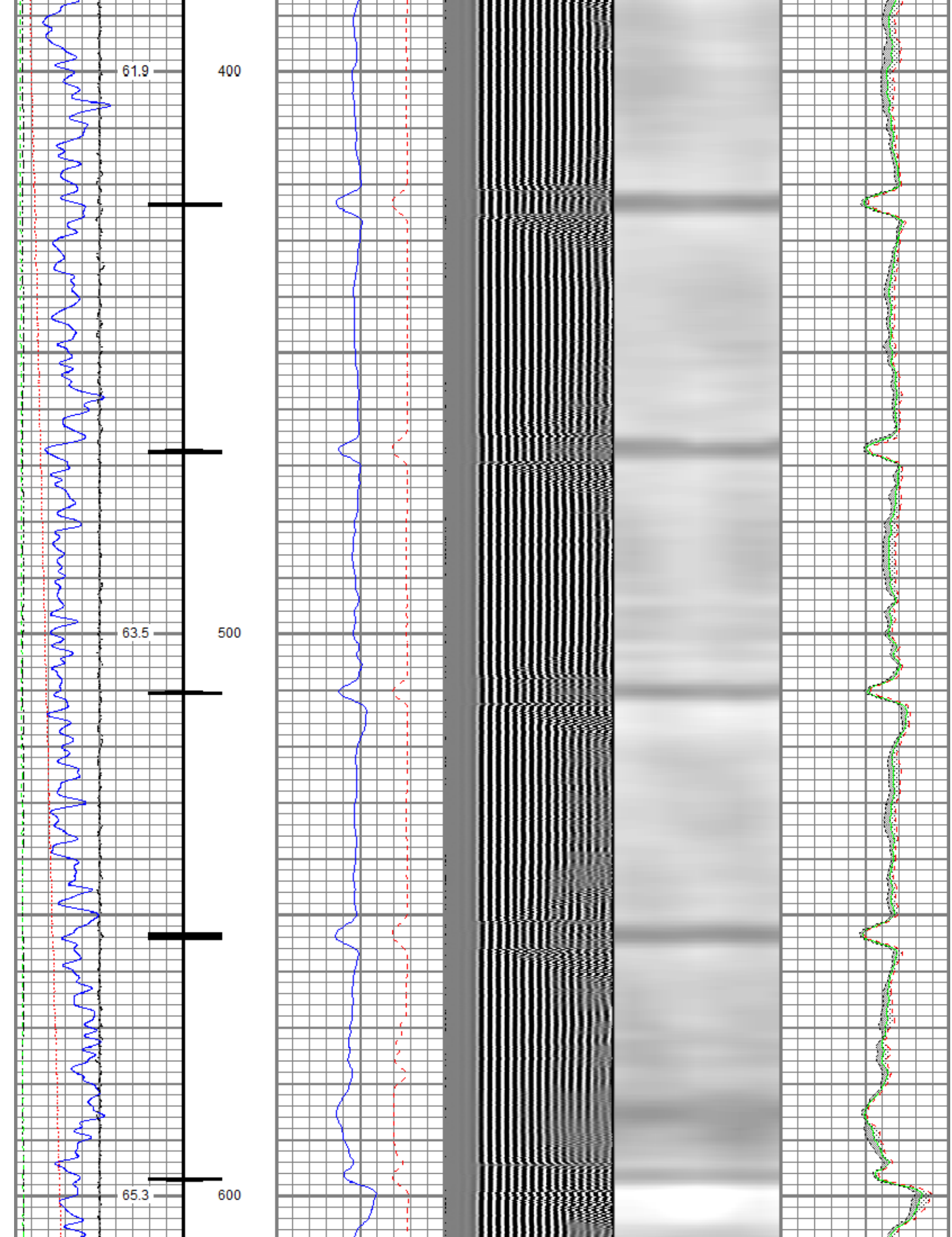
Recorded With 2800 PSI Surface Induced Pressure

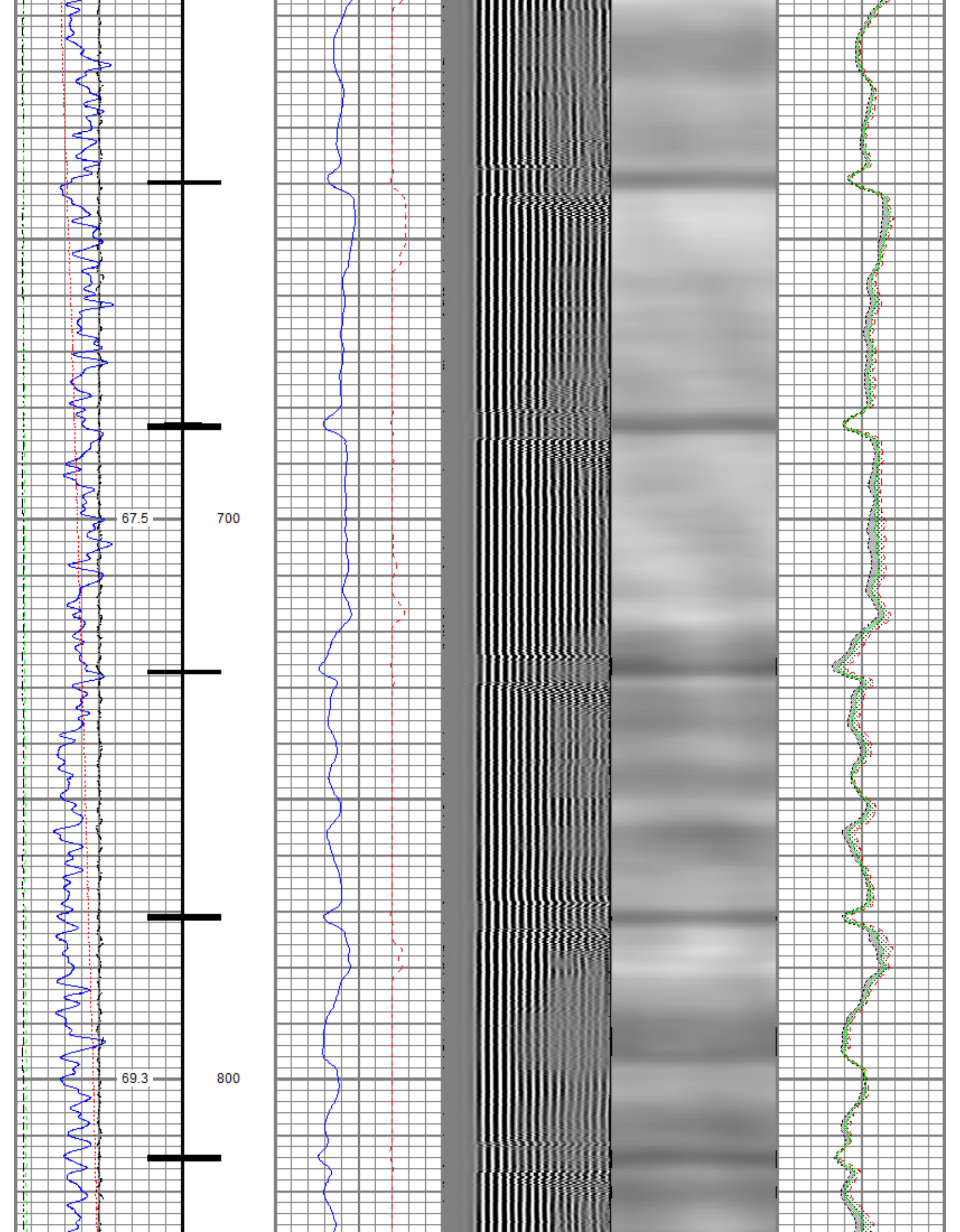
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 Dataset Pathname pass4.2
 Presentation Format ros_radri
 Dataset Creation Sun Apr 01 12:50:03 2018
 Charted by Depth in Feet scaled 1:240

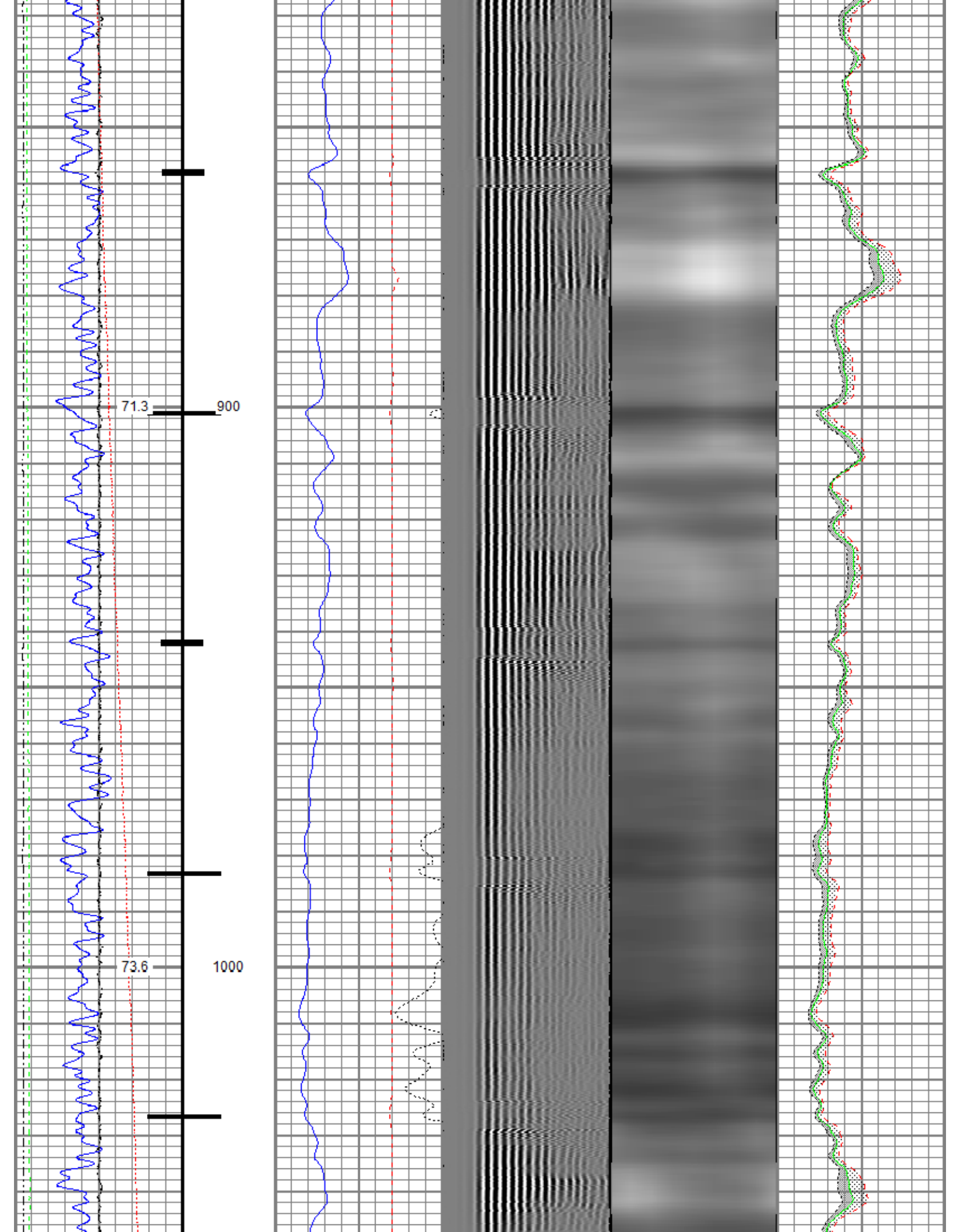
| | | | | | | |
|--------------------------|-----|-----------------------|-------------------------|------------|---|-----------------------|
| Gamma Ray | 0 | 3' Amplitude (mV) 100 | 5' Variable Density Log | Sector Map | 0 | Average Amplitude 100 |
| (GAPI) 120 | | 3' Amplitude x 5 | 200 | | | Minimum Amplitude |
| Casing Collar Locator | 0 | (mV) 20 | | | 0 | 100 |
| Temperature (degF) 20 | | 3' Travel Time | | | | Maximum Amplitude |
| Line Speed | 650 | (usec) 150 | | | 0 | 100 |
| (ft/min) 150 | | | | | | |
| Line Tension (lb) 2000 | | | | | | |
| Differential Temperature | | | | | | |
| (degF) 2 | | | | | | |

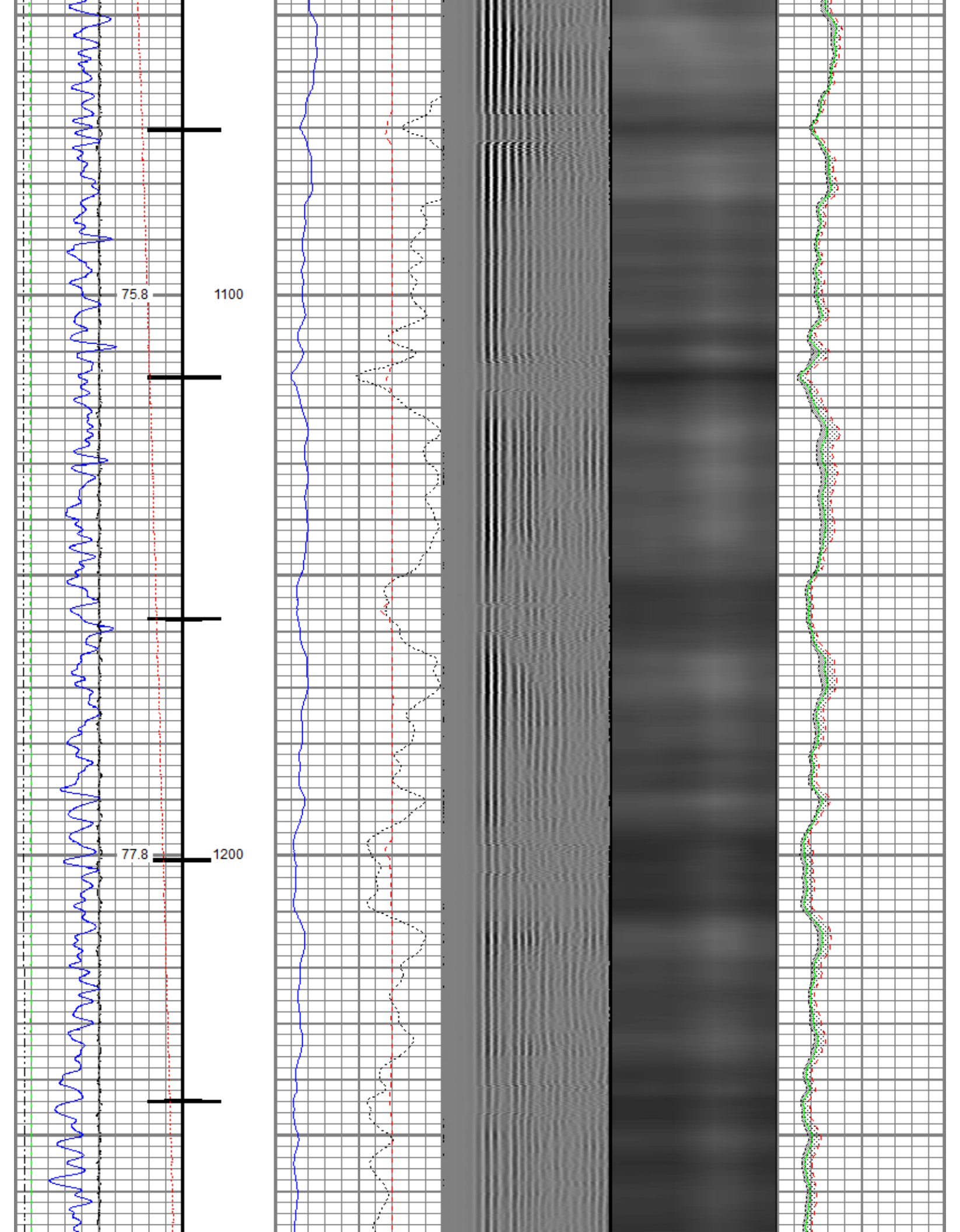


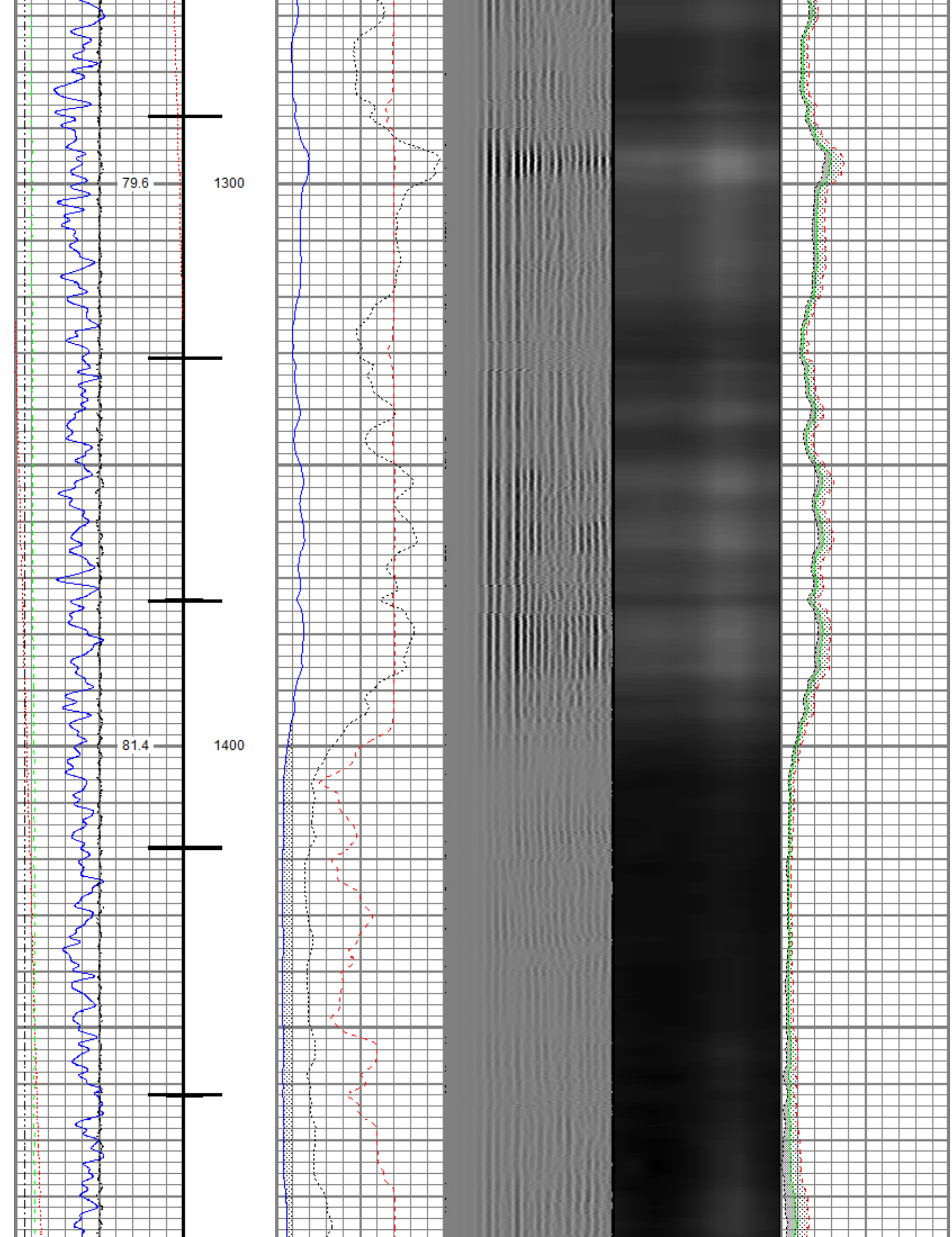


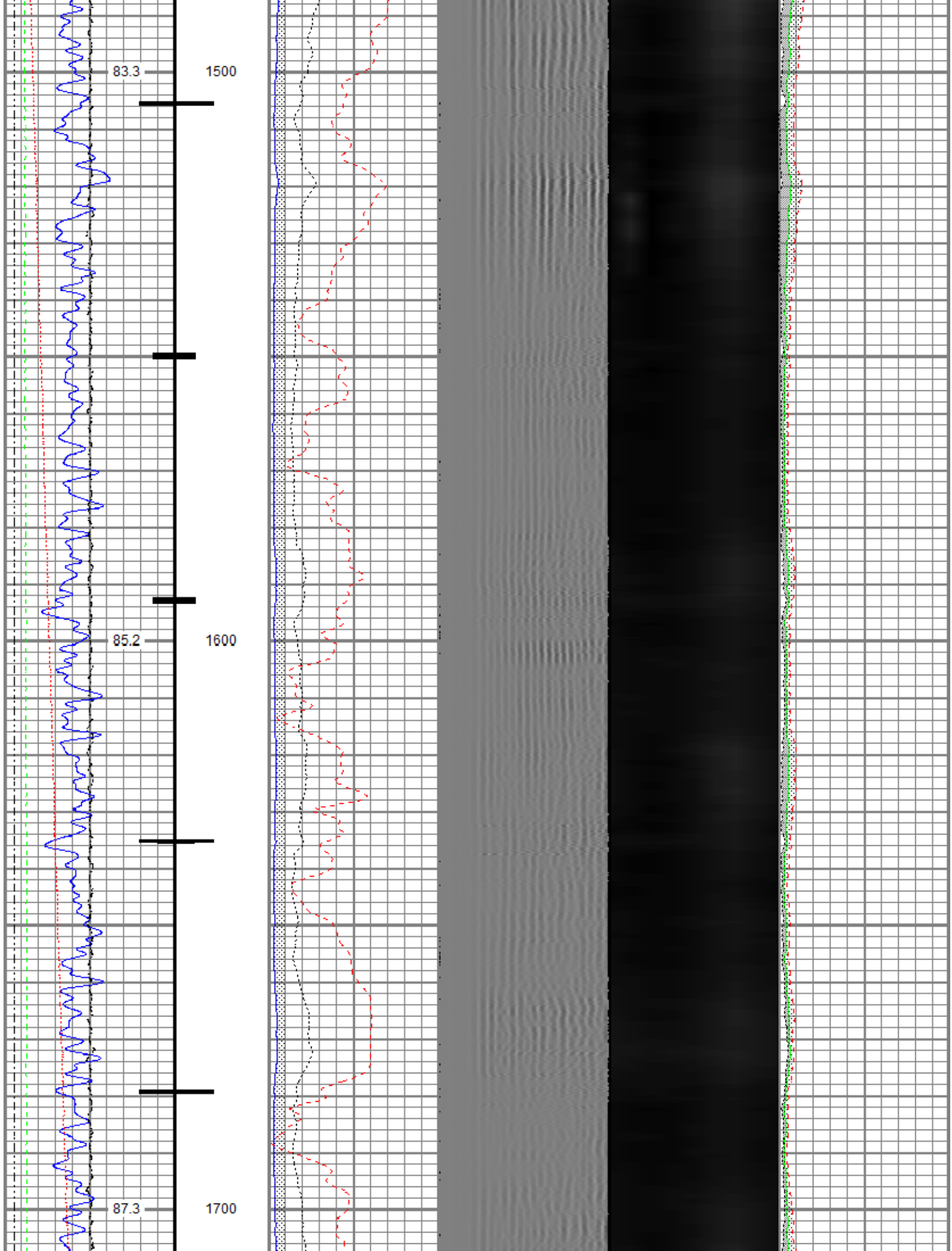


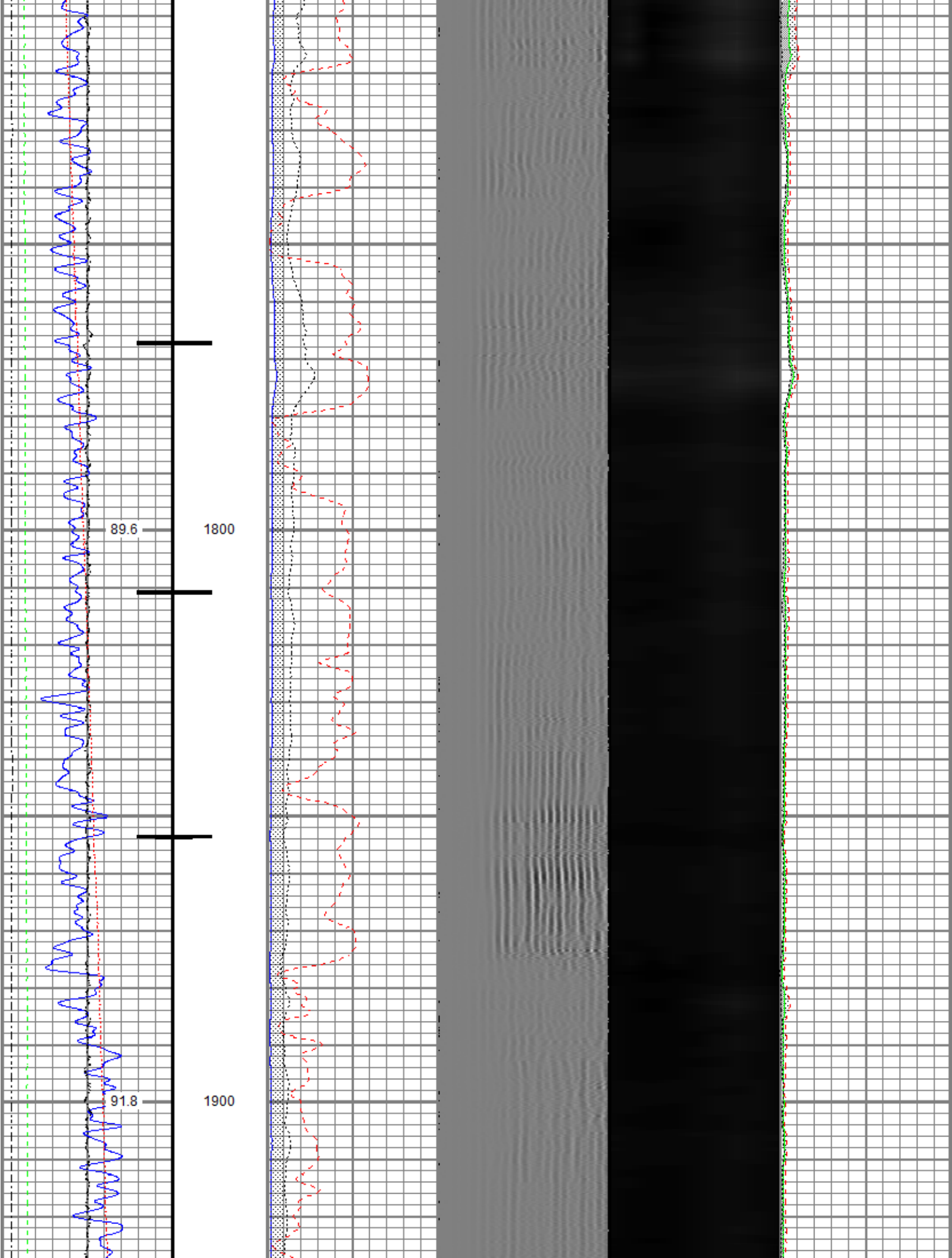


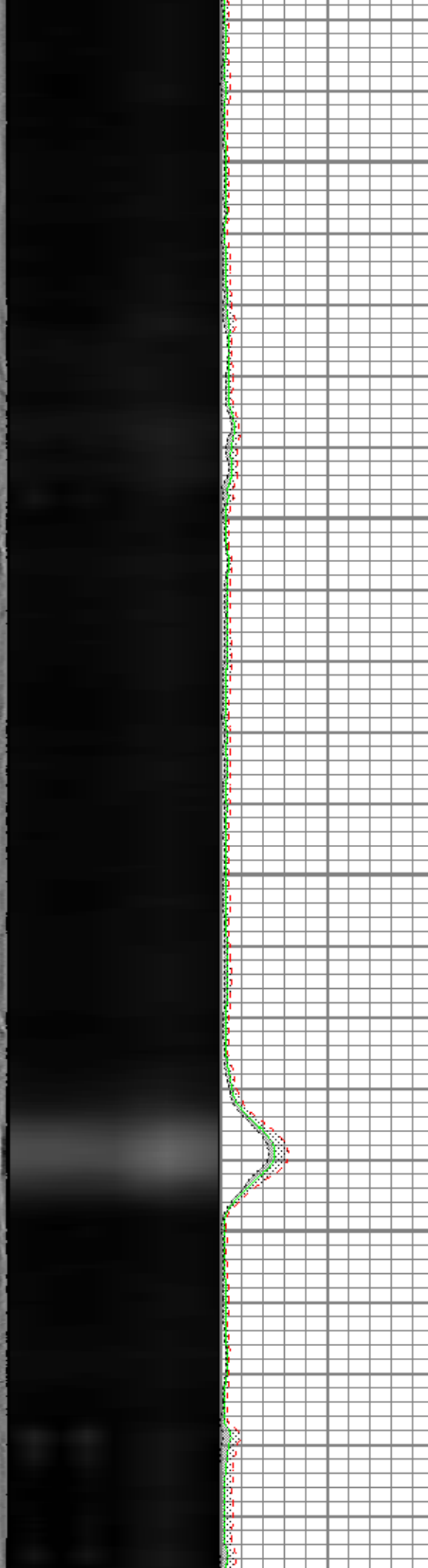
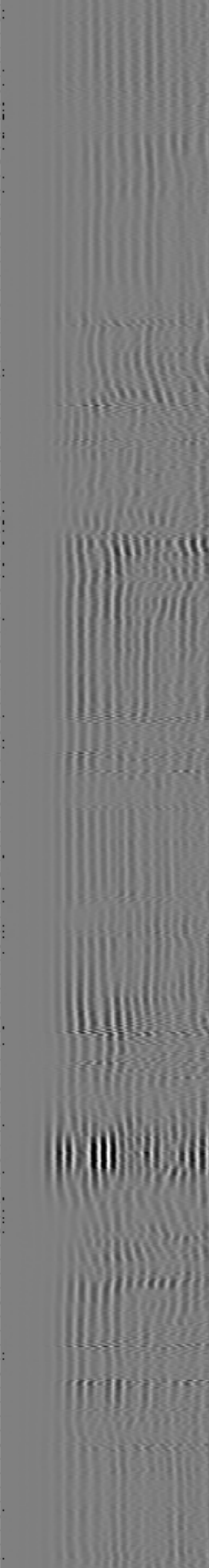
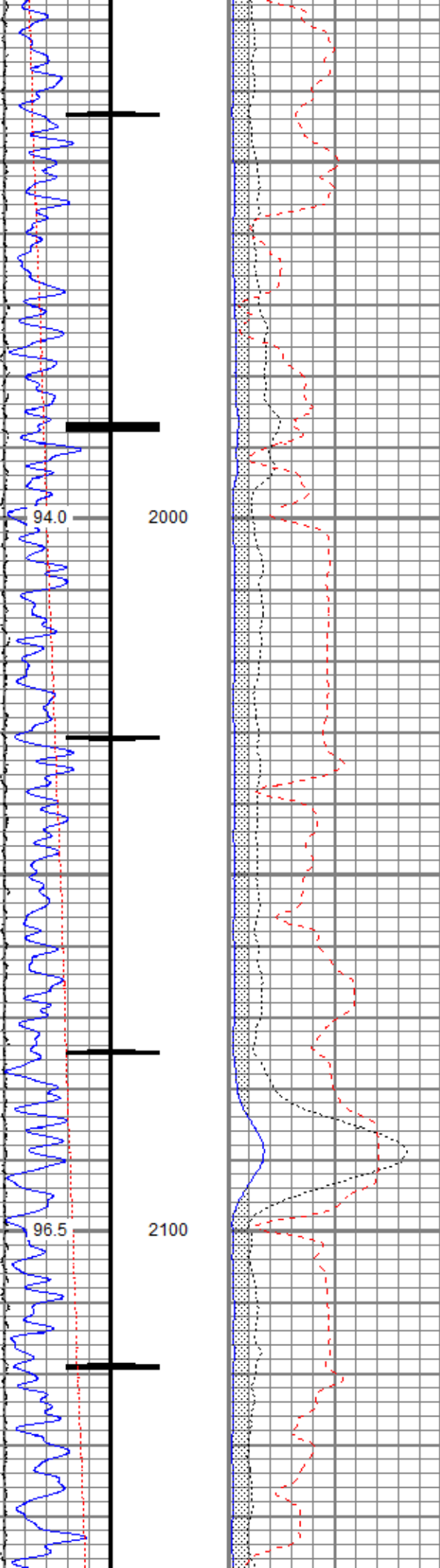


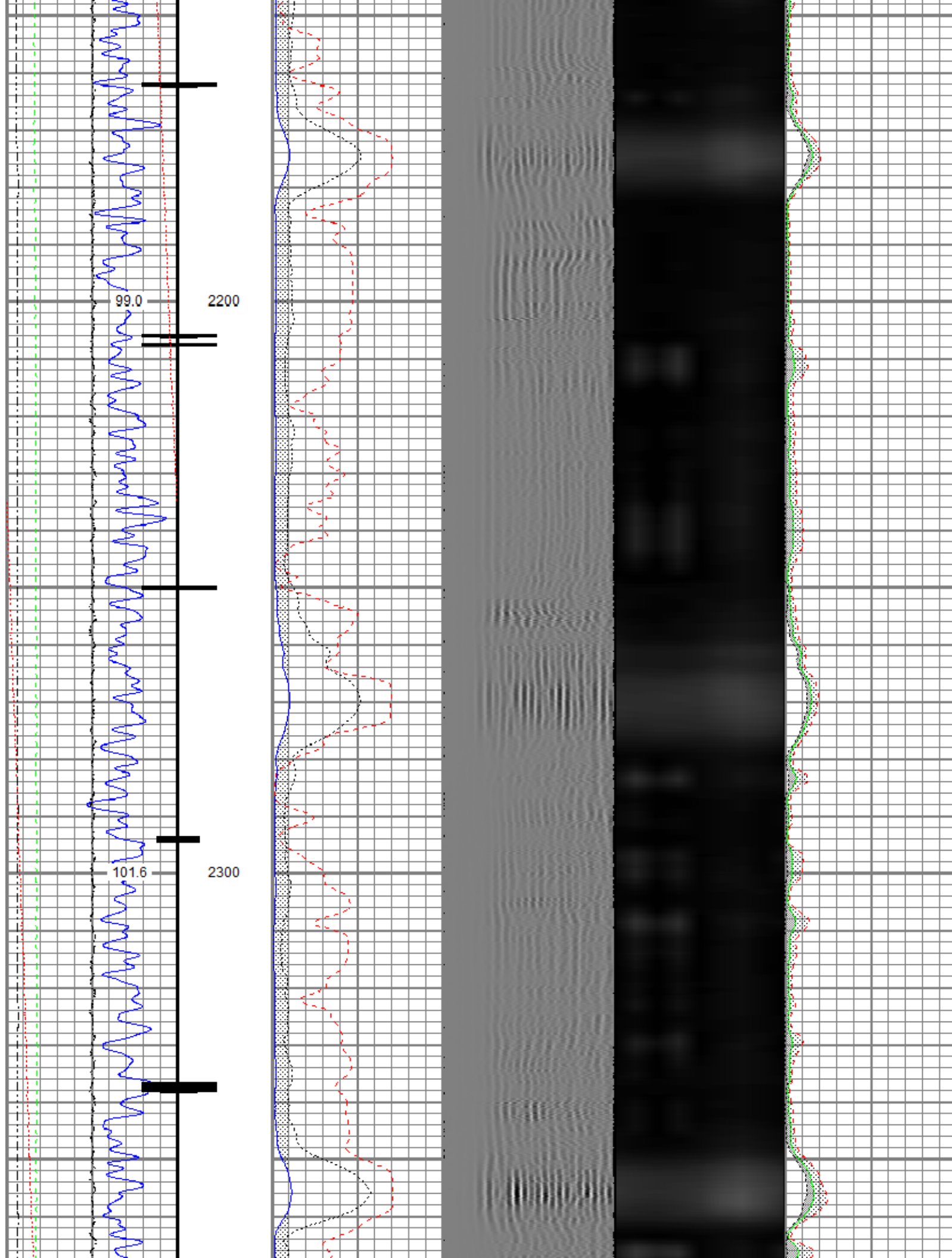


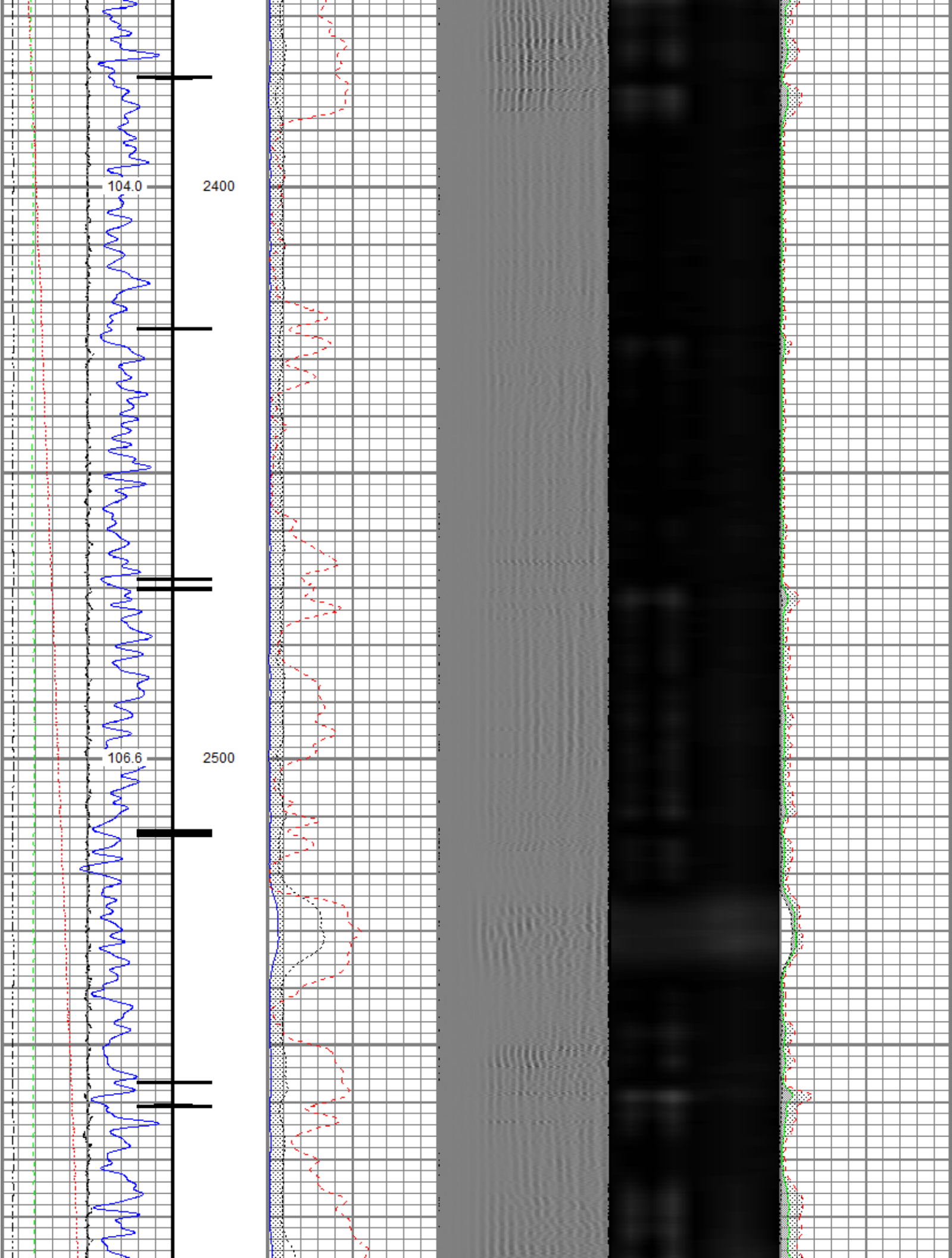


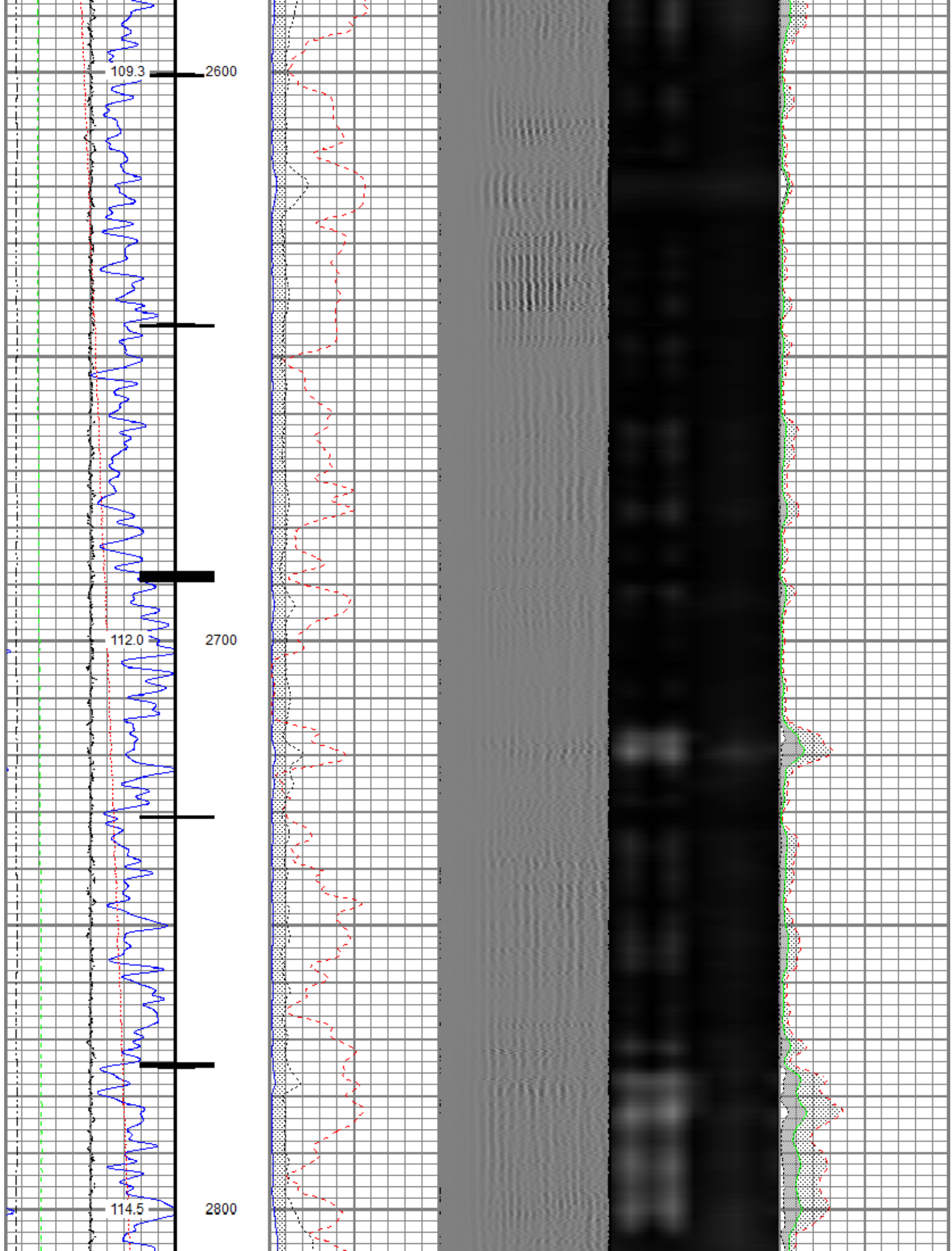


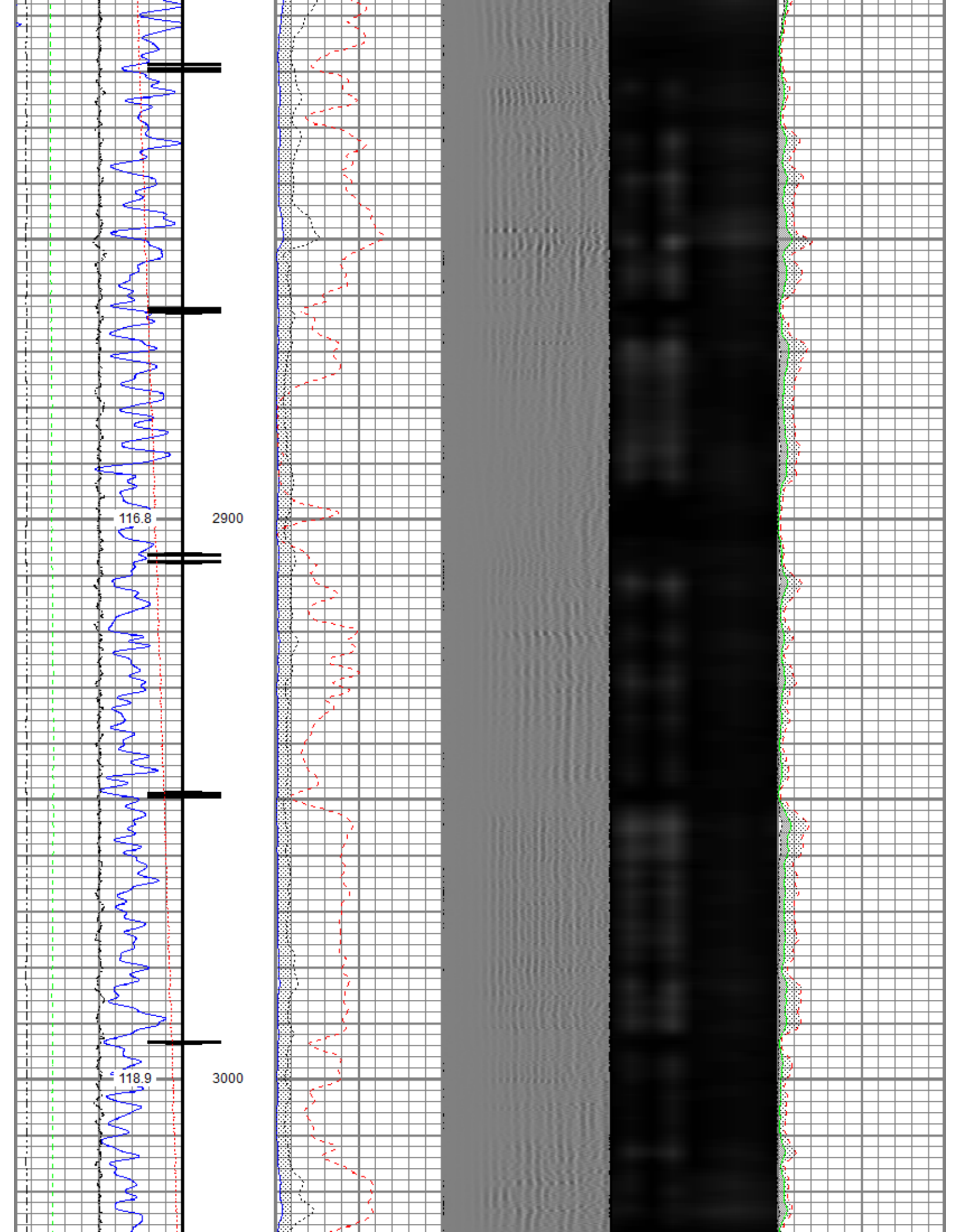


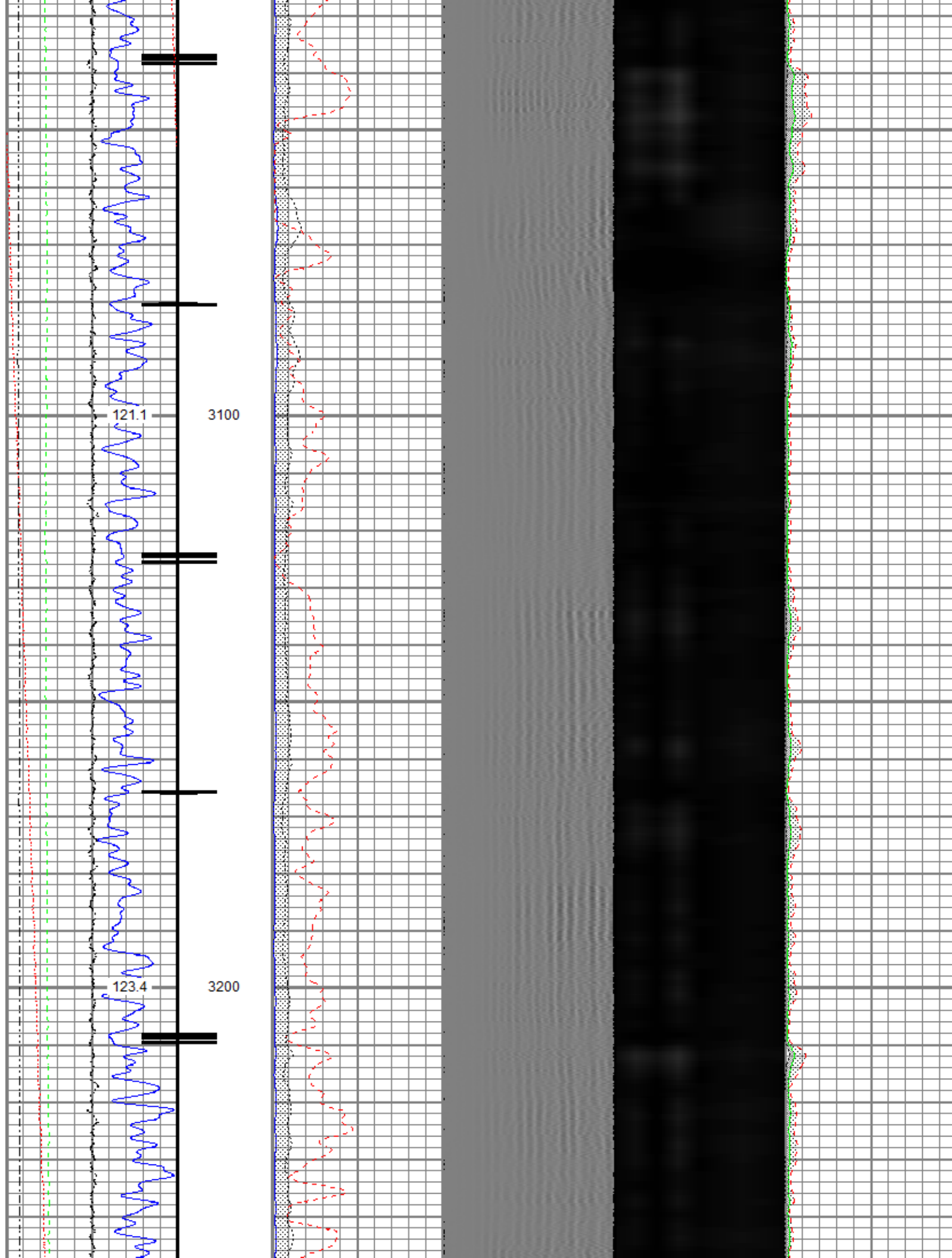


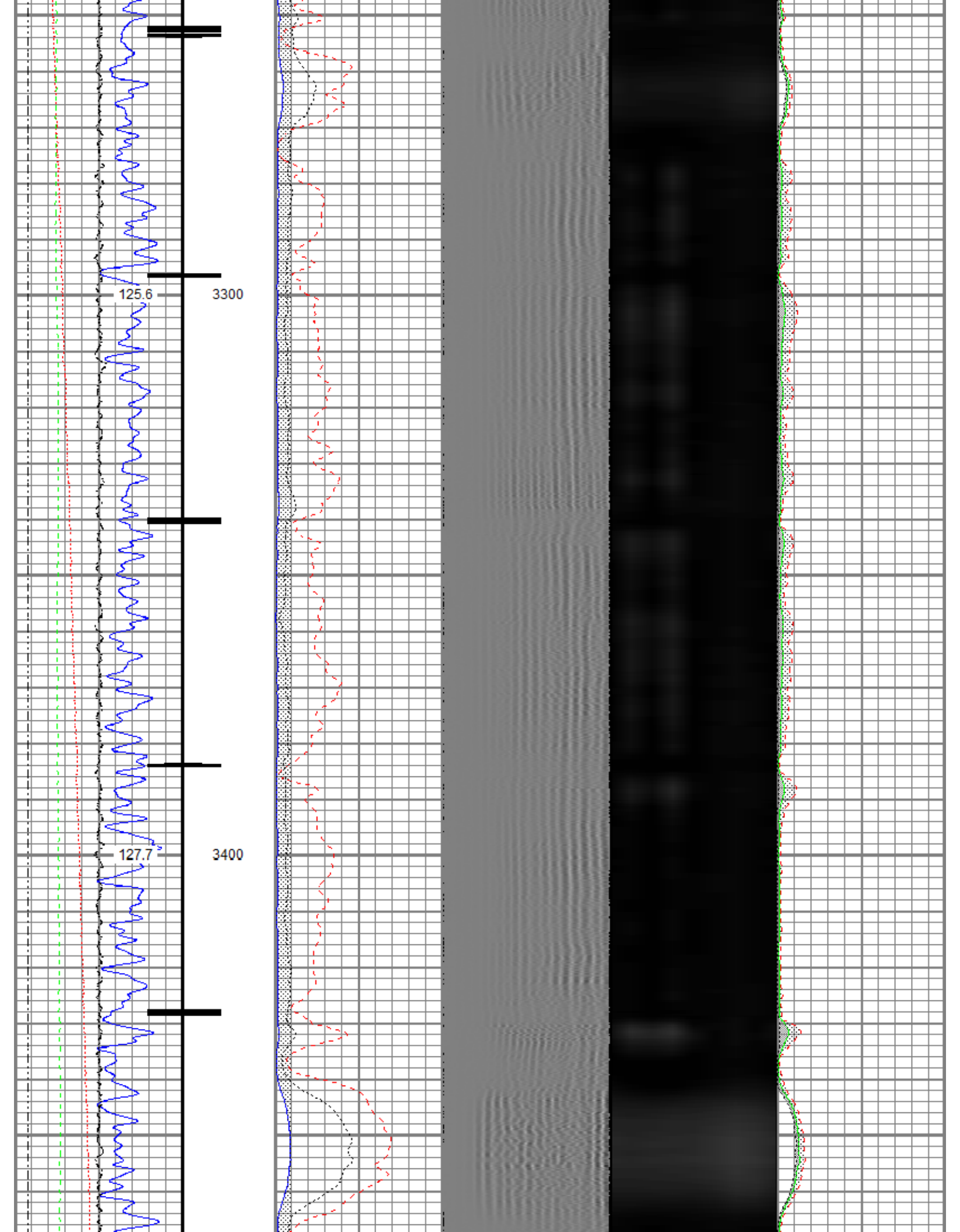


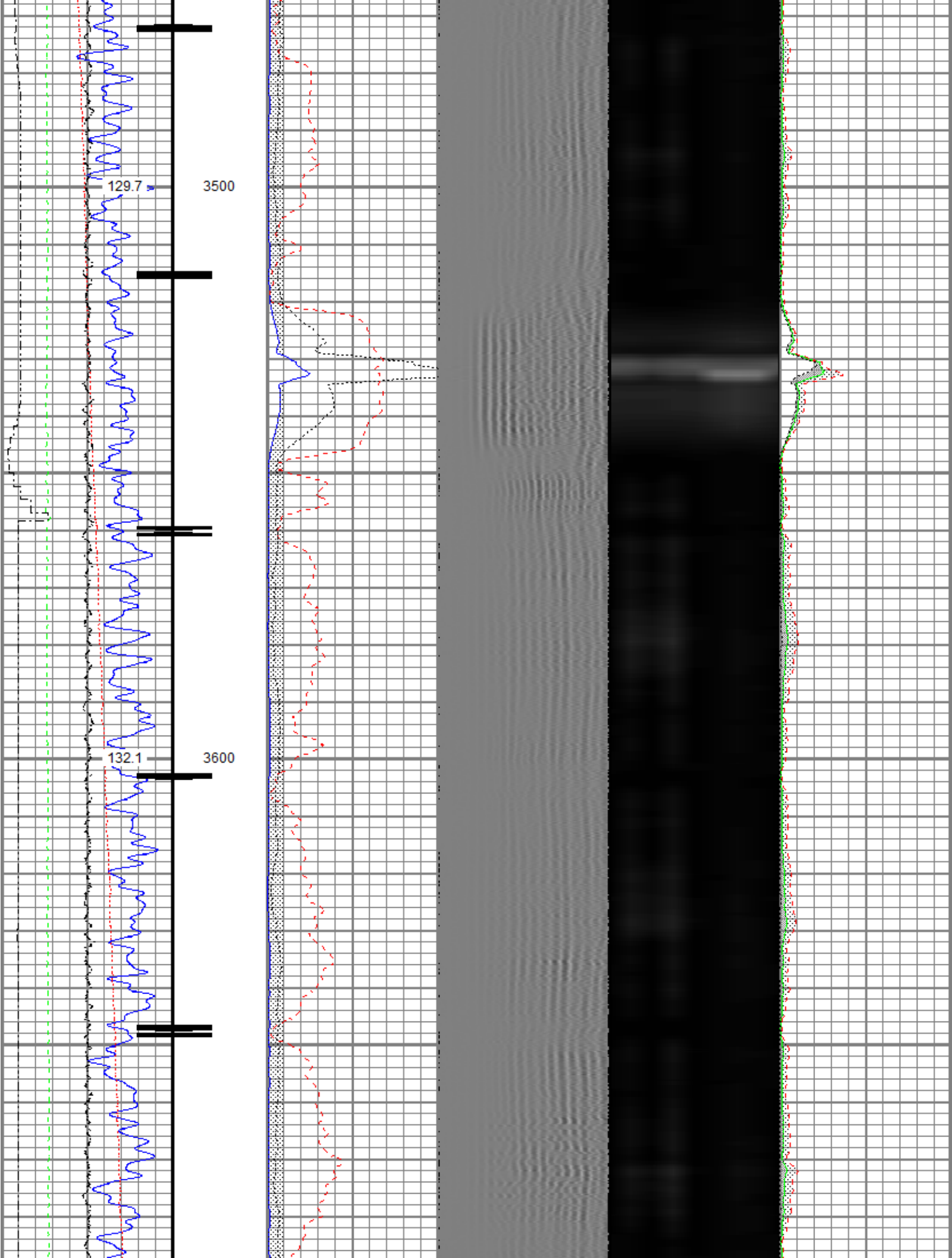


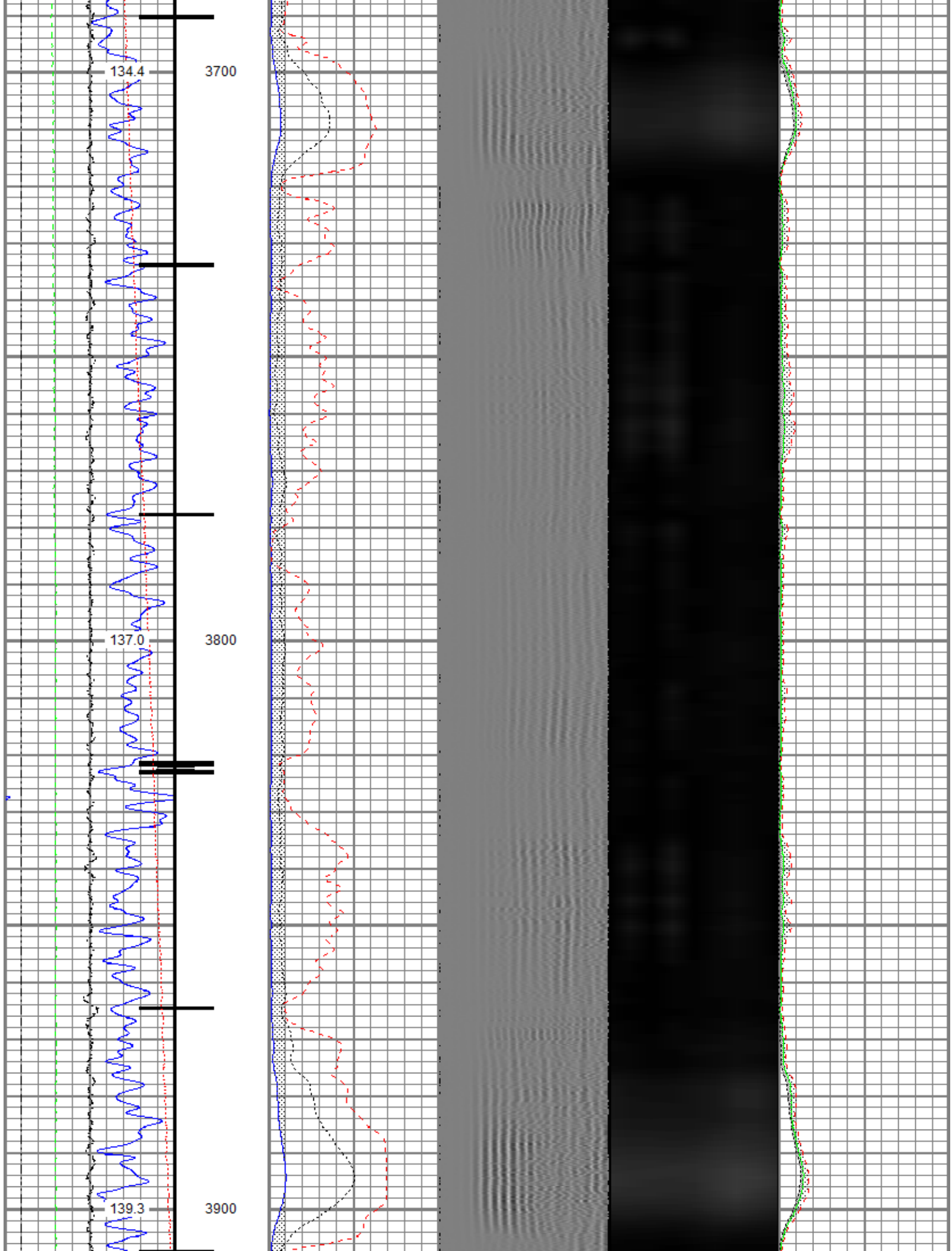


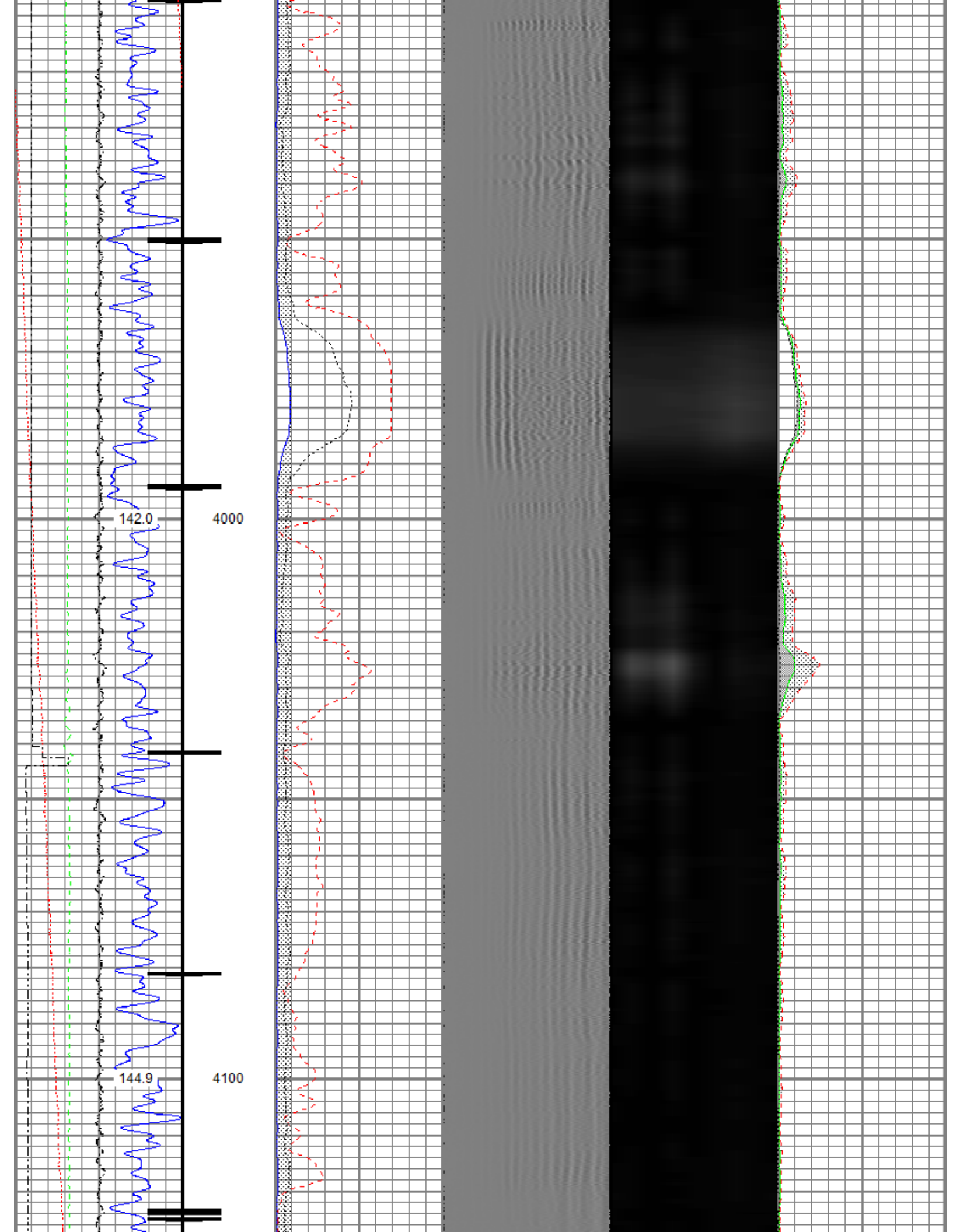


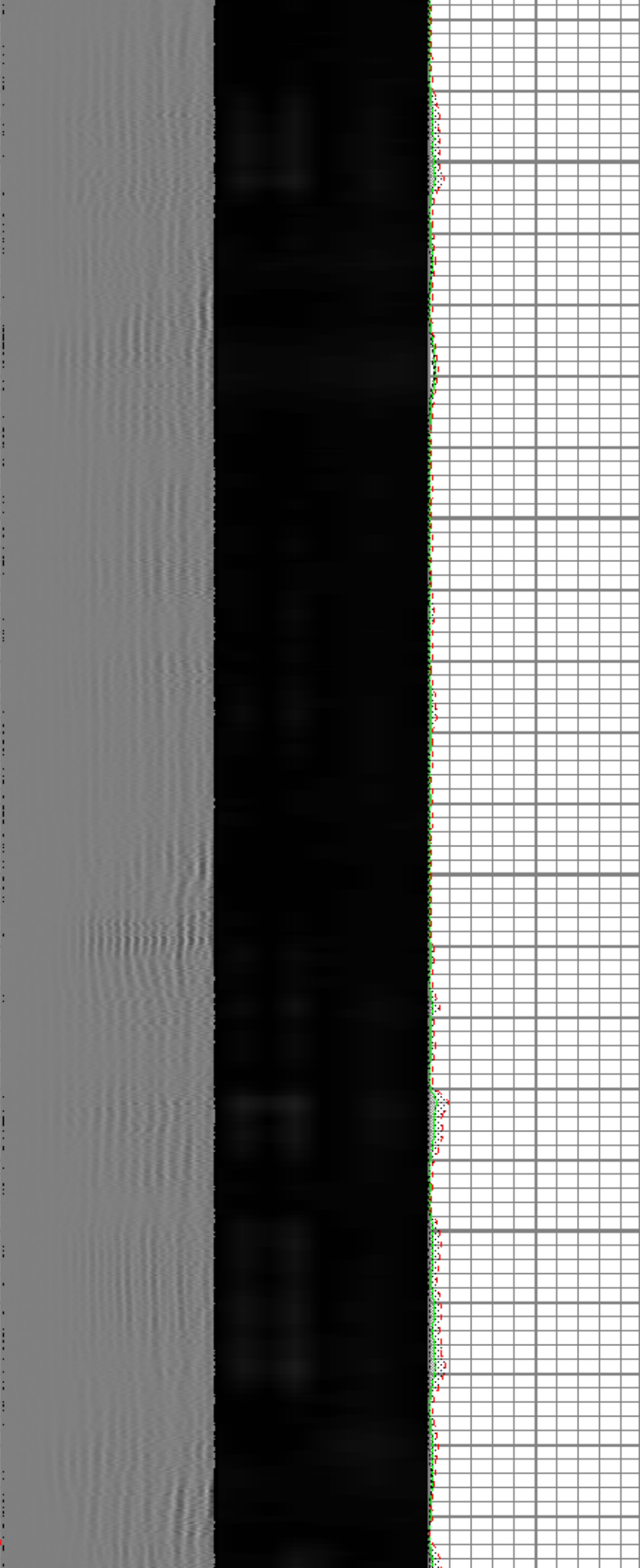
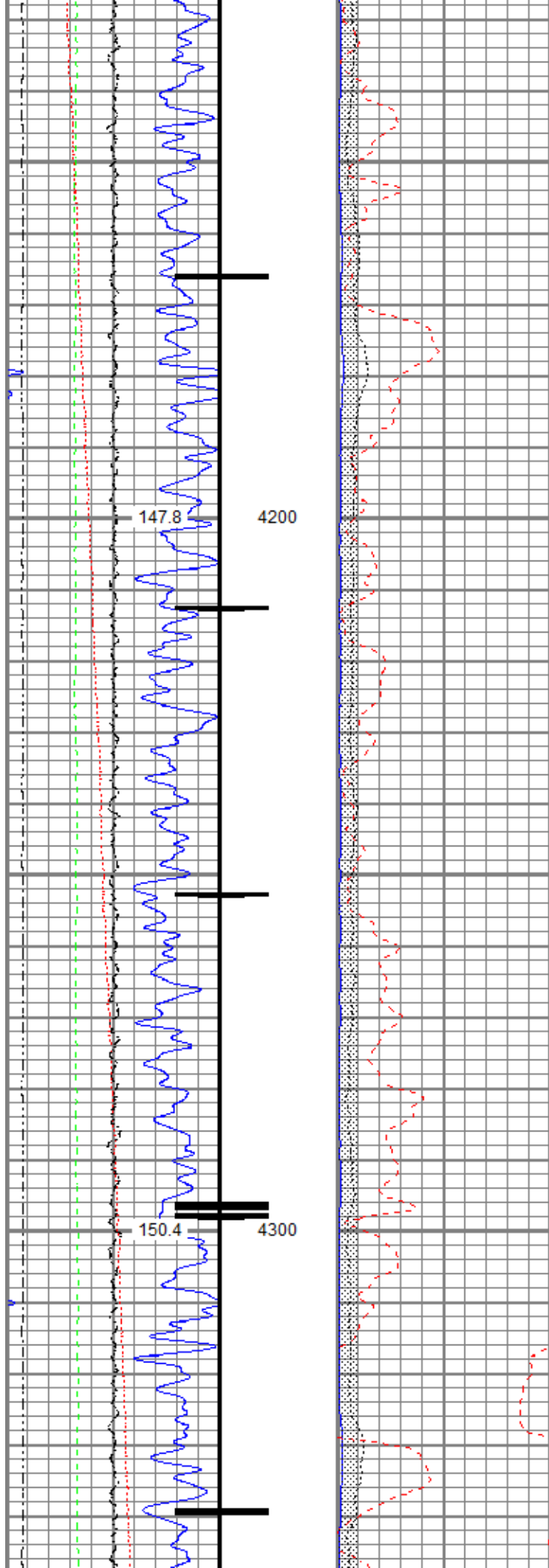


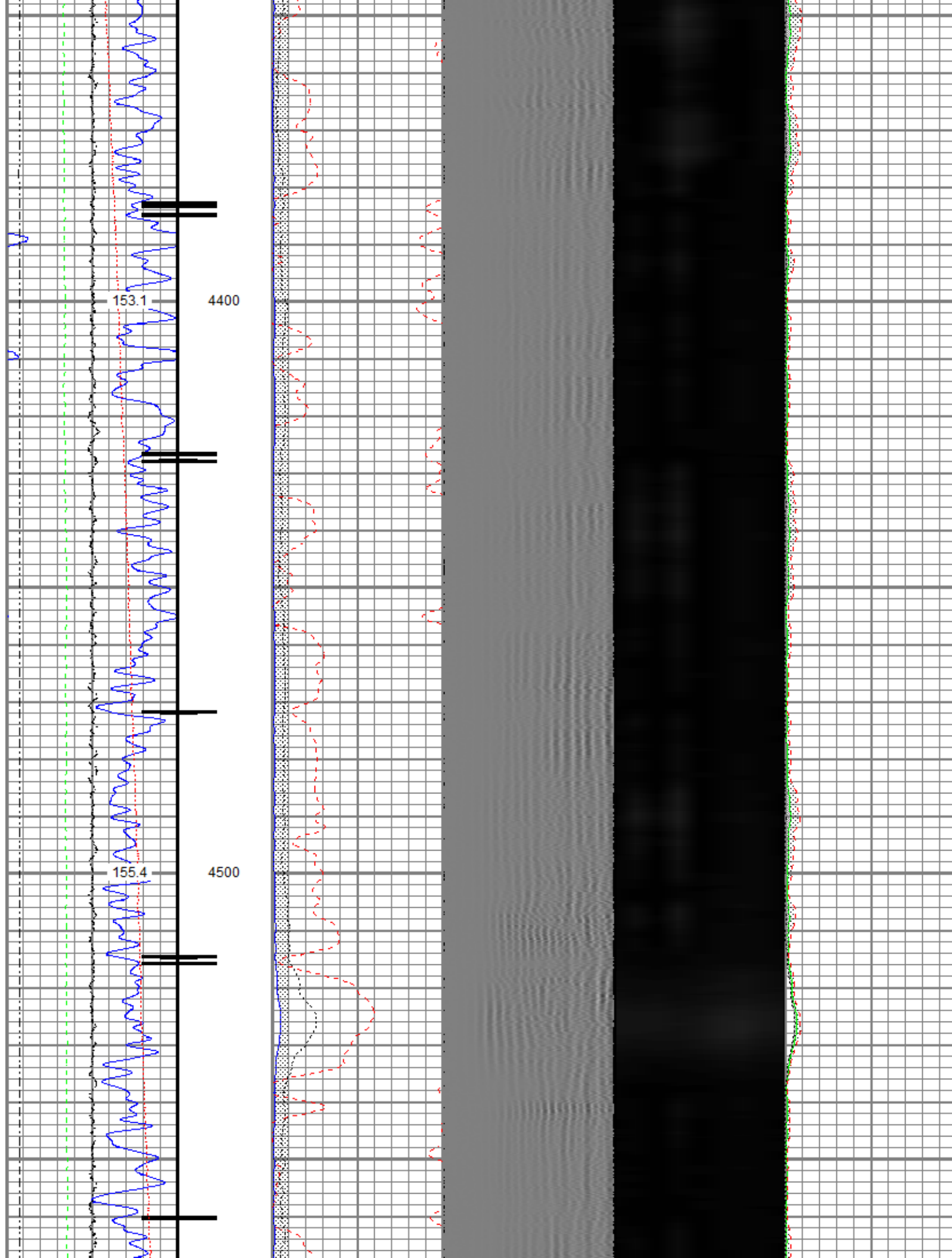


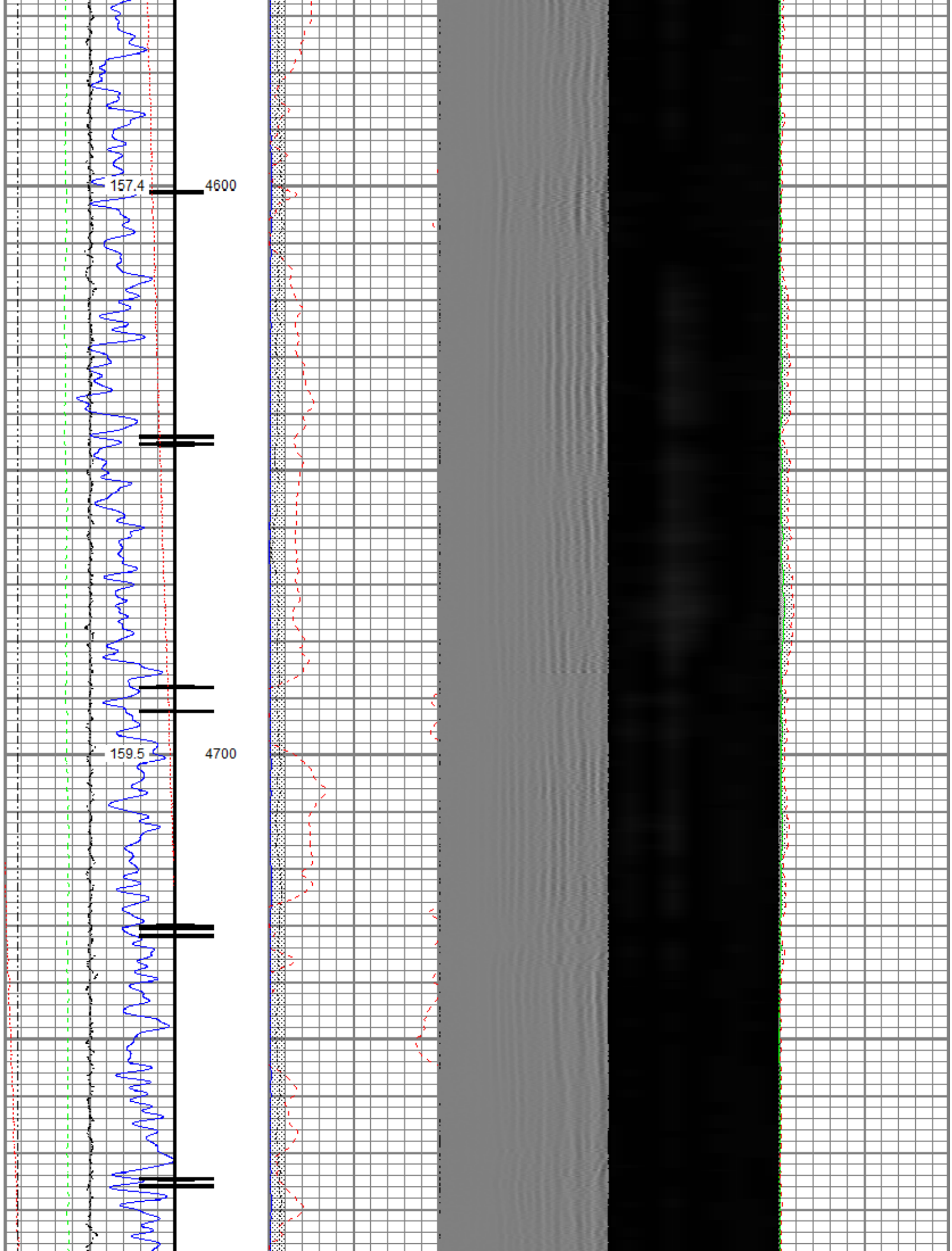


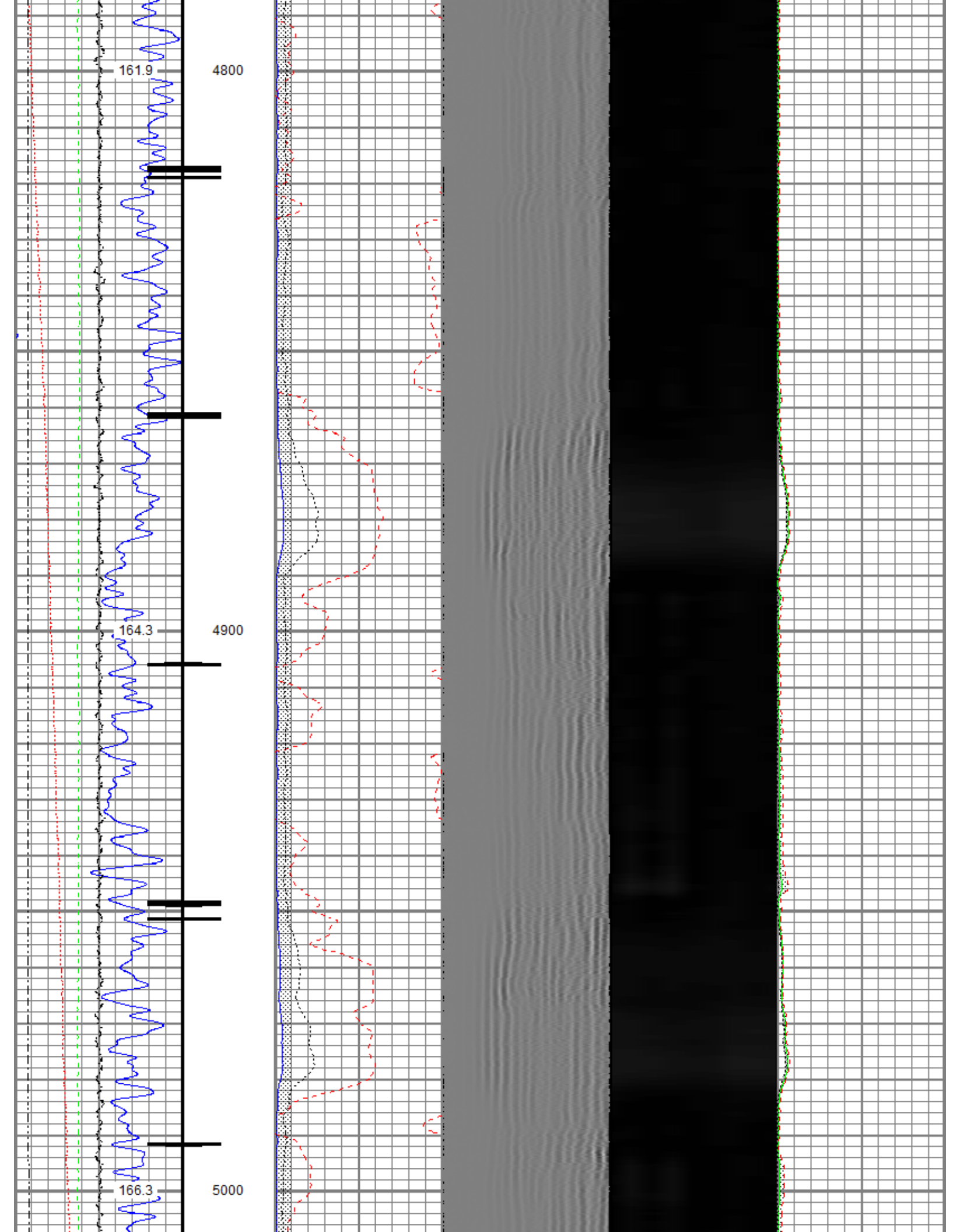


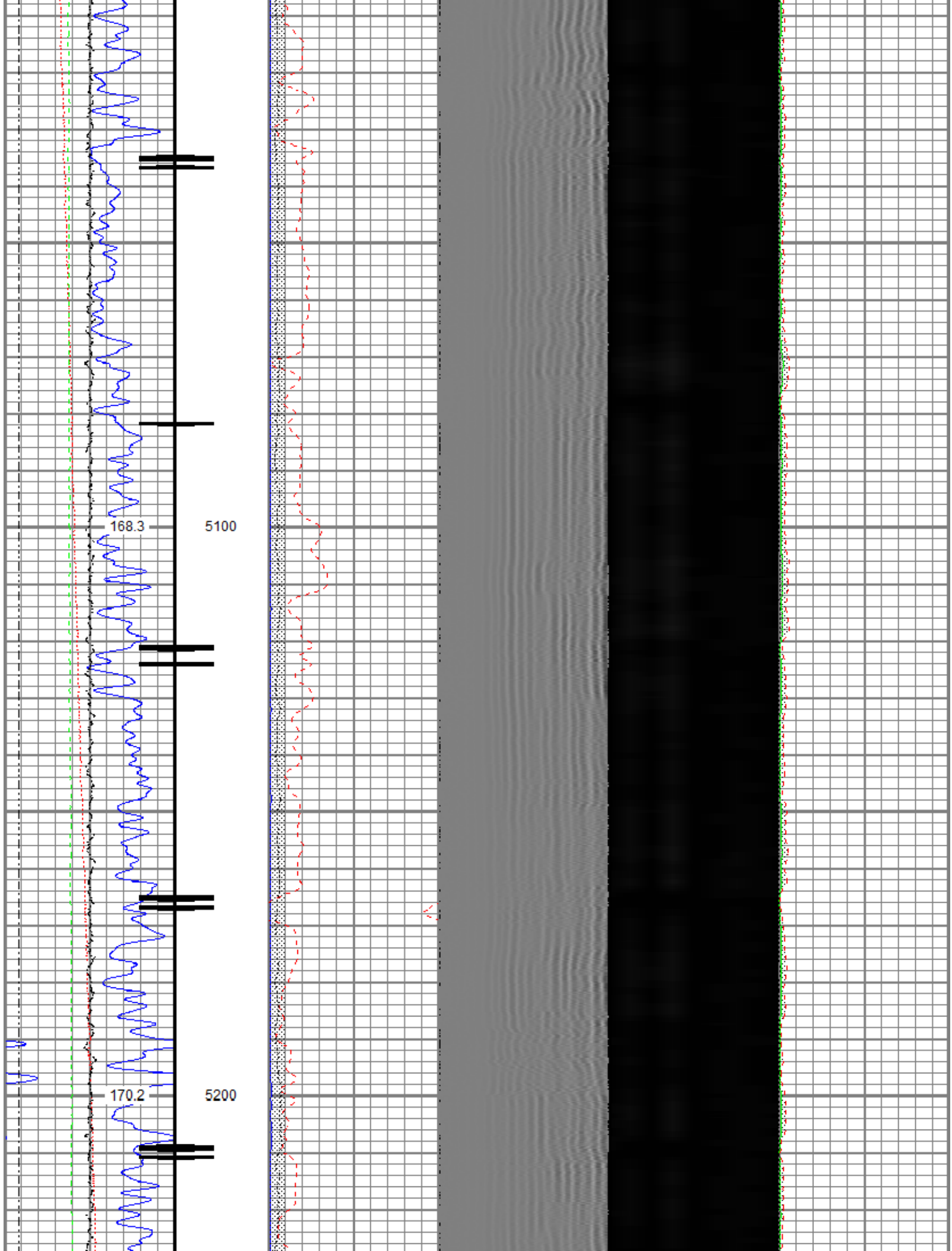


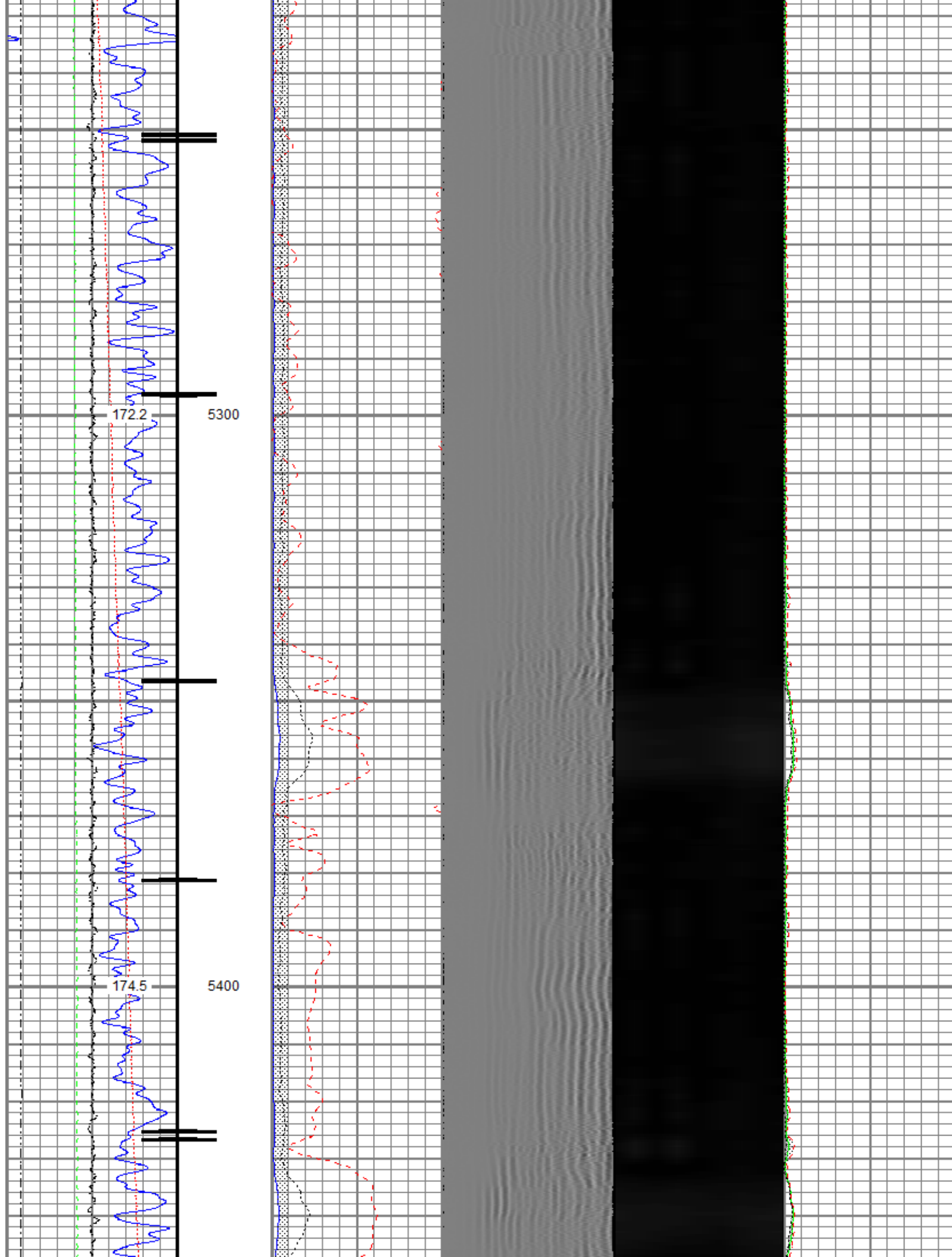


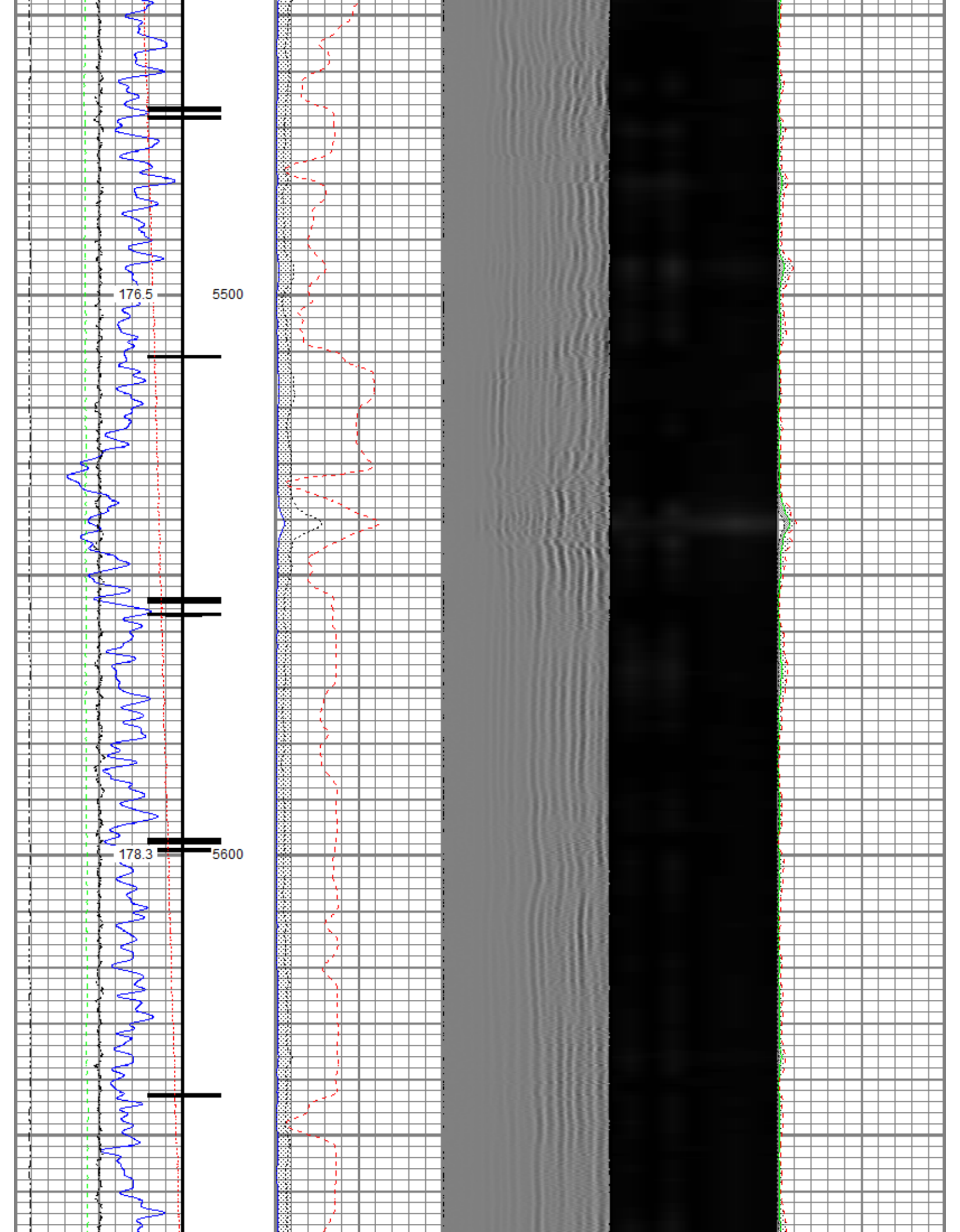


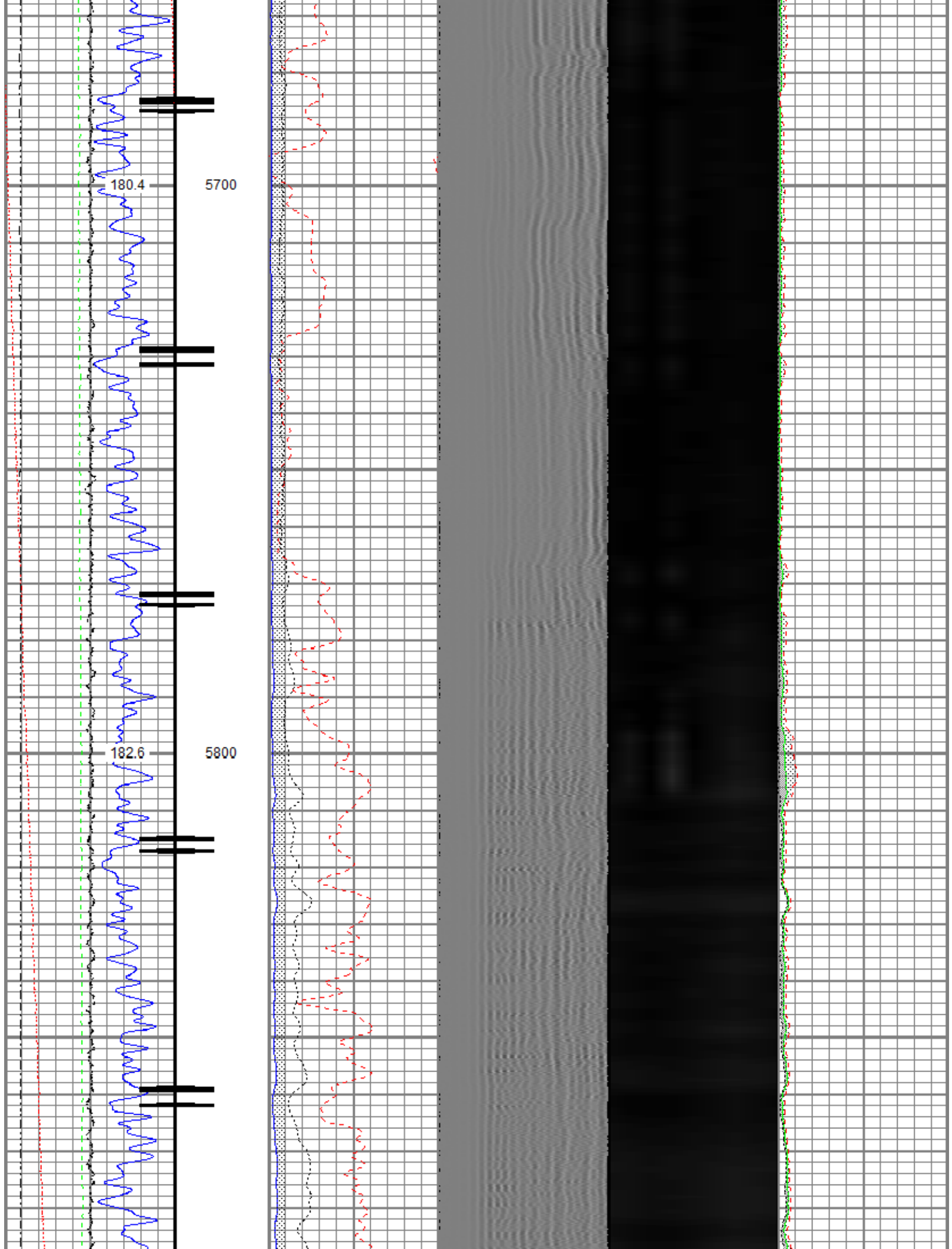


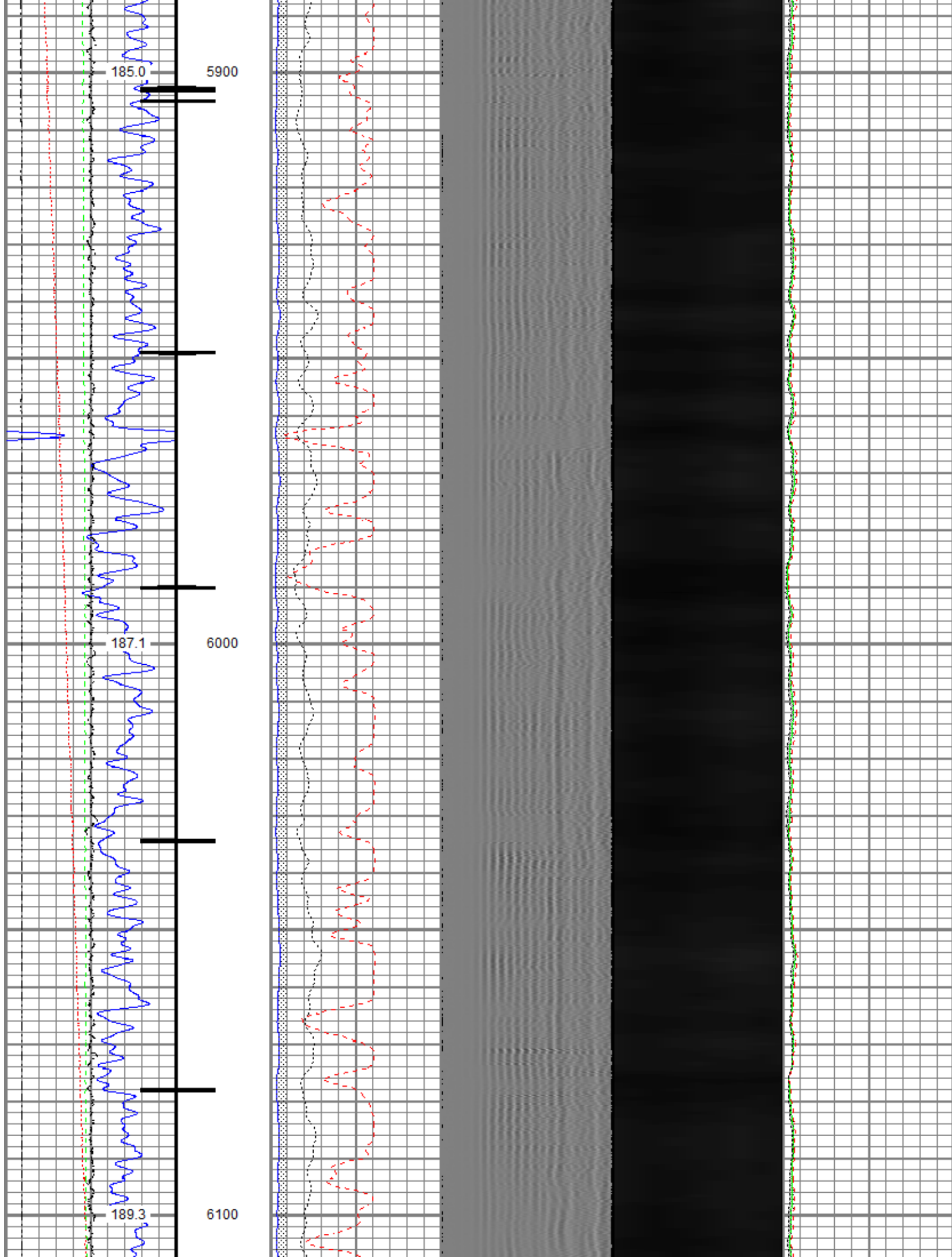


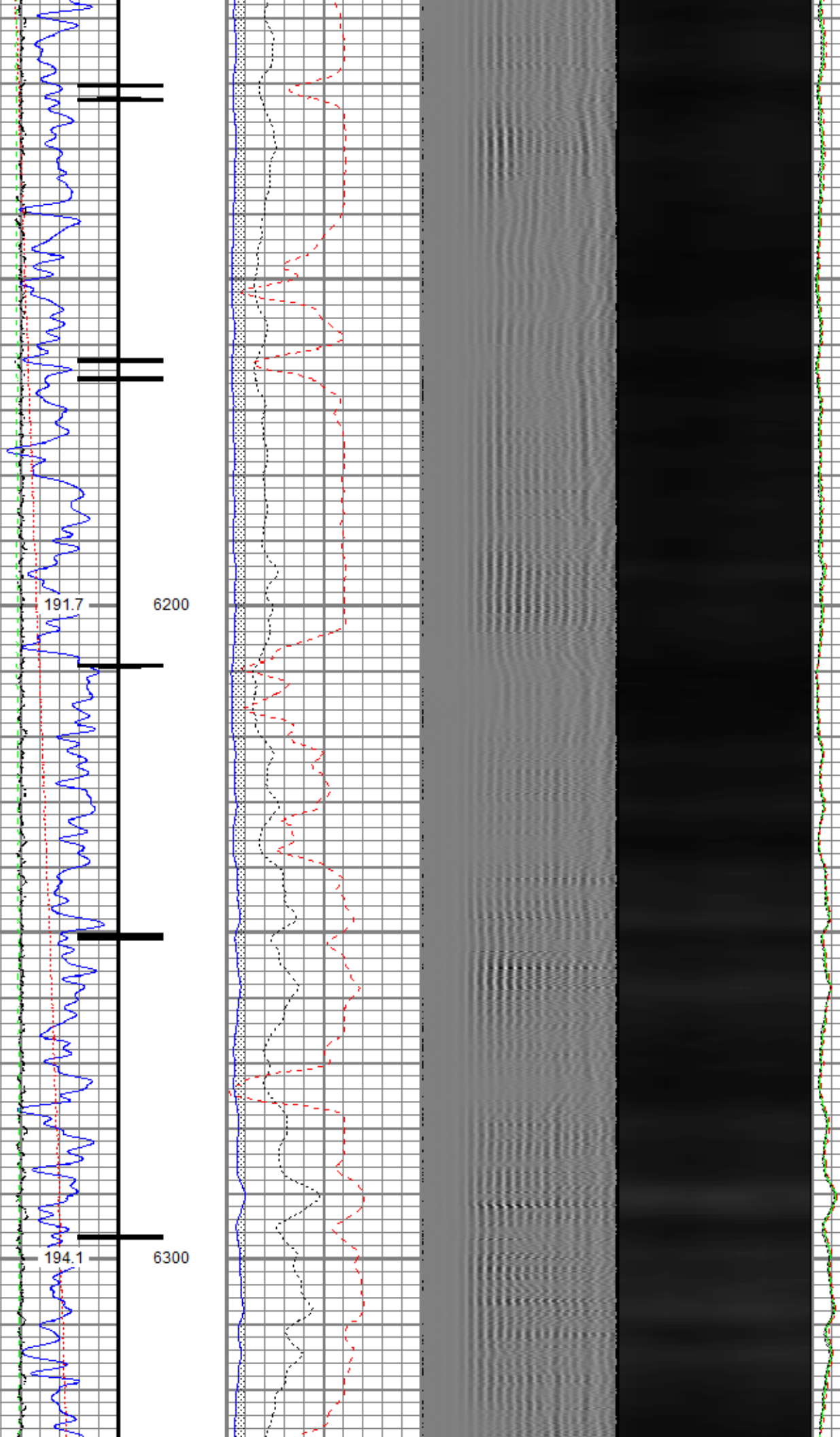


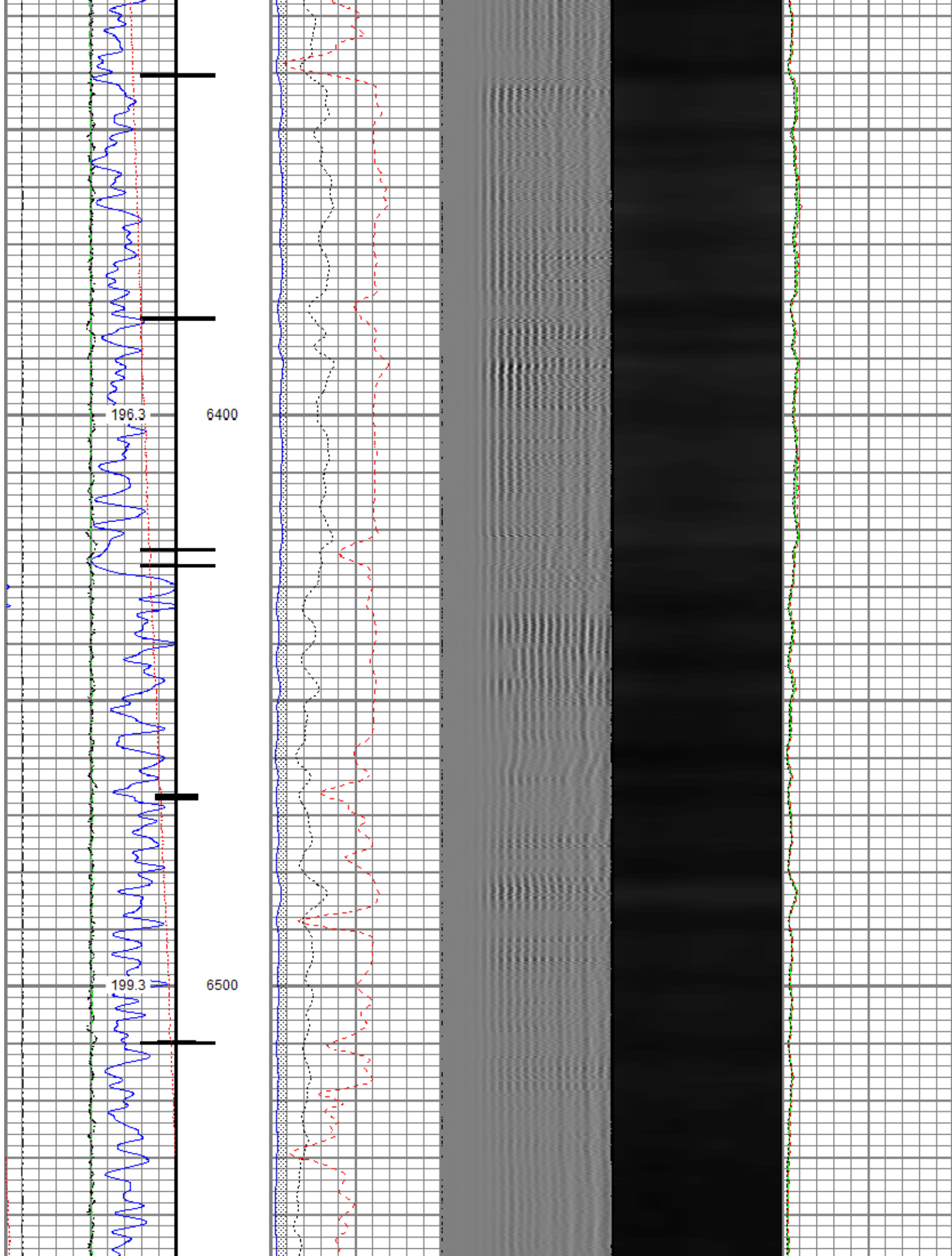


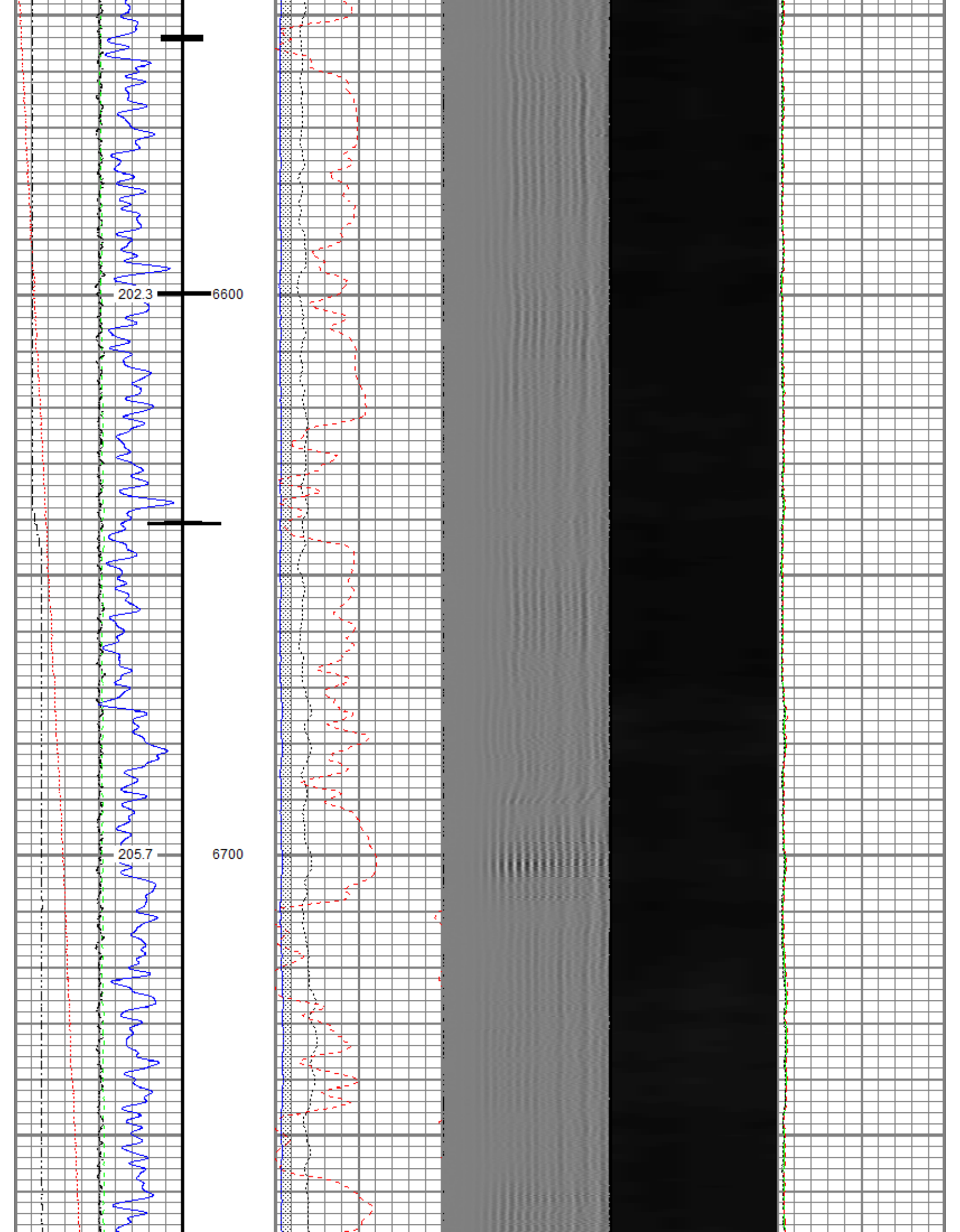


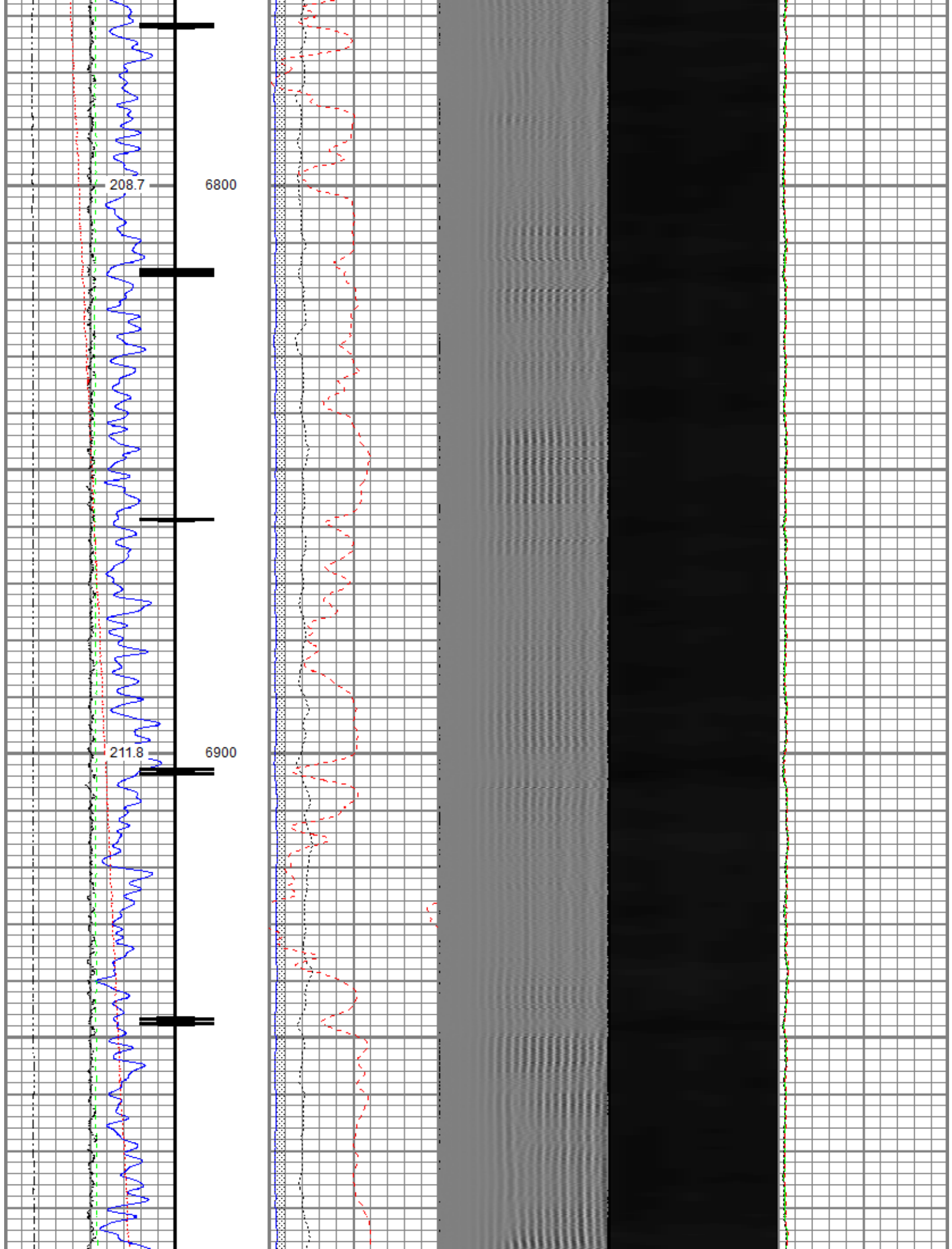


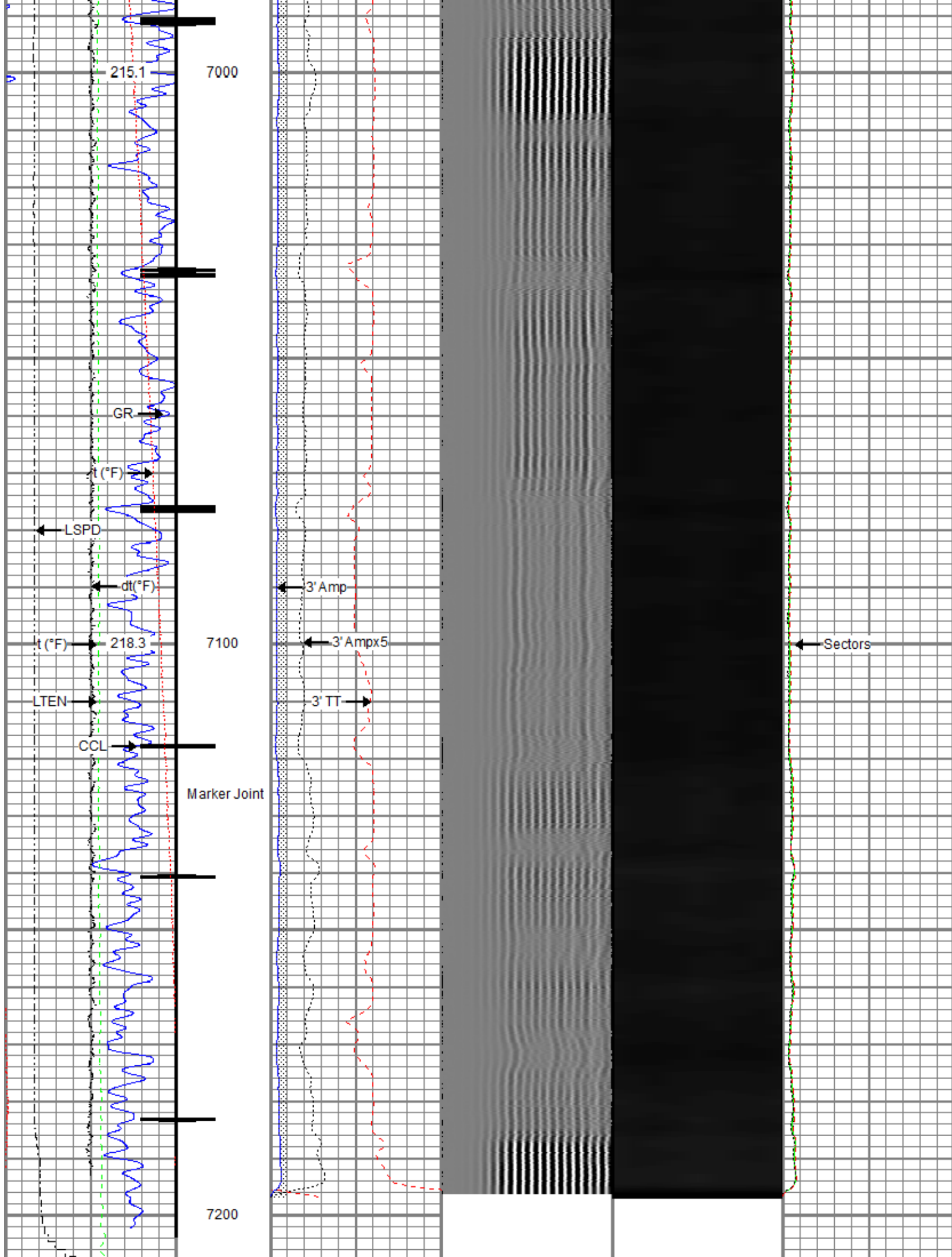












| | | | | | | |
|--------------------------|-----|-----------------------|-------------------------|------------|---|-----------------------|
| Gamma Ray | 0 | 3' Amplitude (mV) 100 | 5' Variable Density Log | Sector Map | 0 | Average Amplitude 100 |
| (GAPI) 120 | | 3' Amplitude x 5 | 200 | 1200 | | Minimum Amplitude |
| Casing Collar Locator | 0 | (mV) 20 | | | 0 | 100 |
| Temperature (degF) 20 | | 3' Travel Time | | | | Maximum Amplitude |
| Line Speed | 650 | (usec) 150 | | | 0 | 100 |
| (ft/min) 150 | | | | | | |
| Line Tension (lb) 2000 | | | | | | |
| Differential Temperature | | | | | | |
| (degF) 2 | | | | | | |

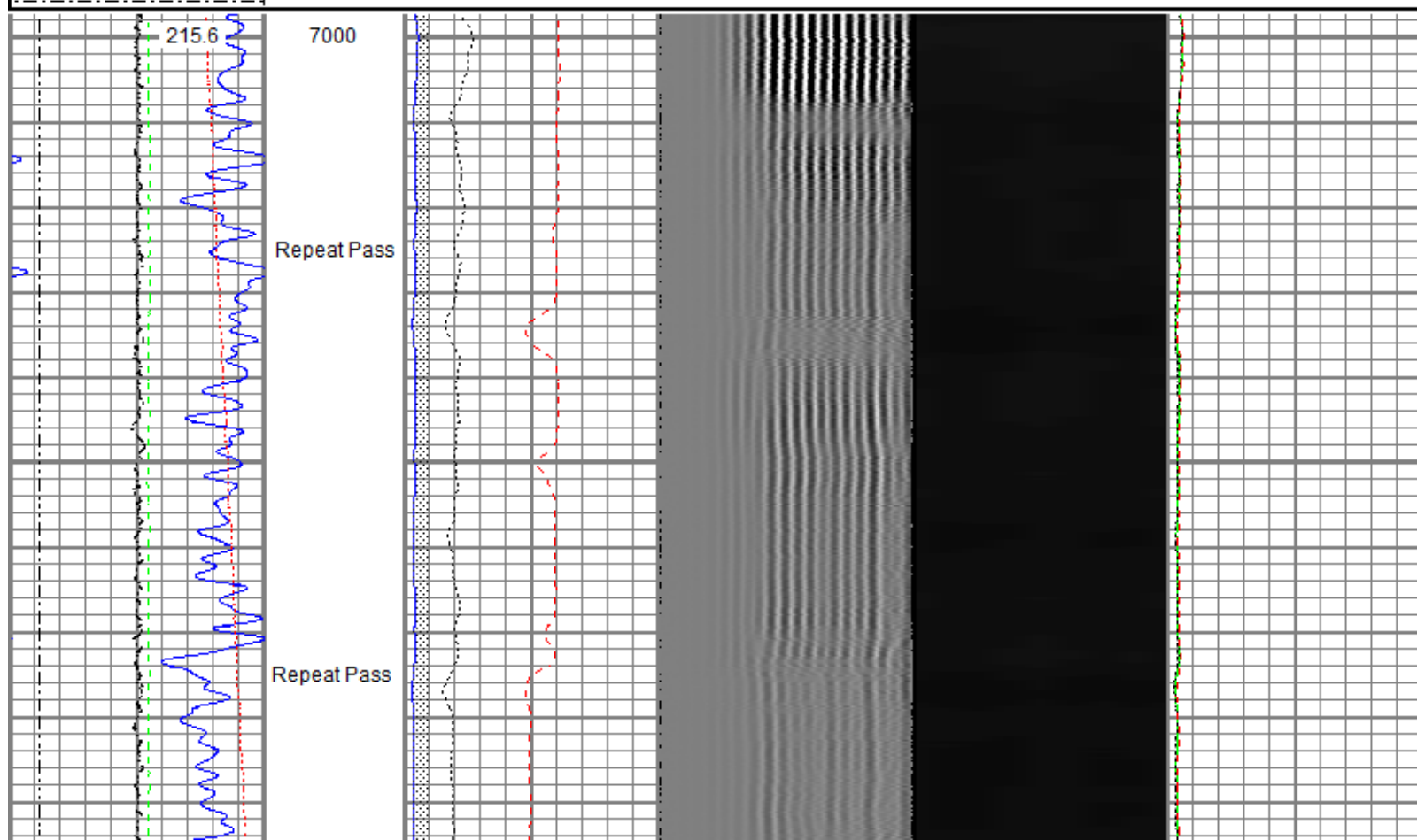


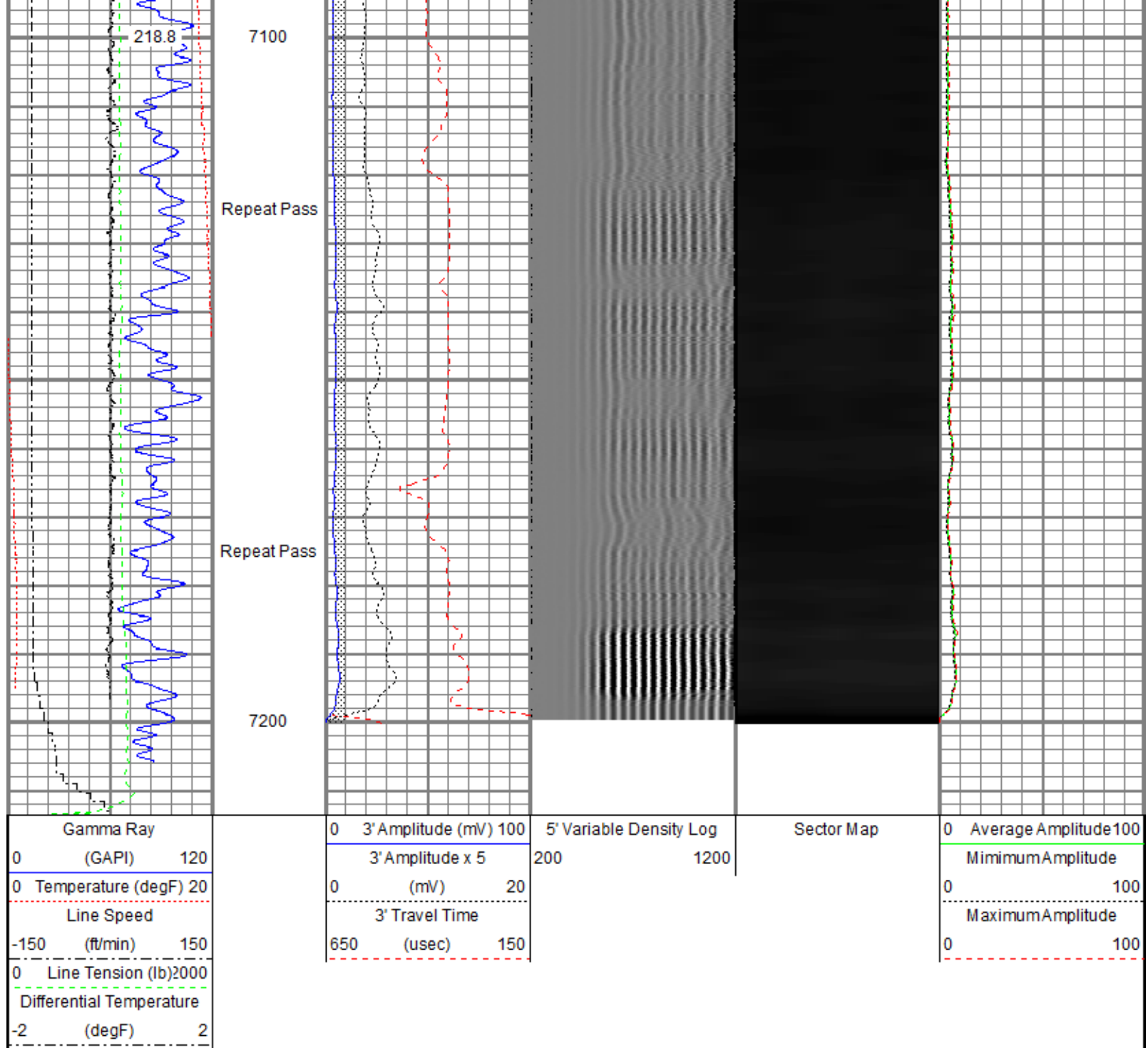
Repeat Pass

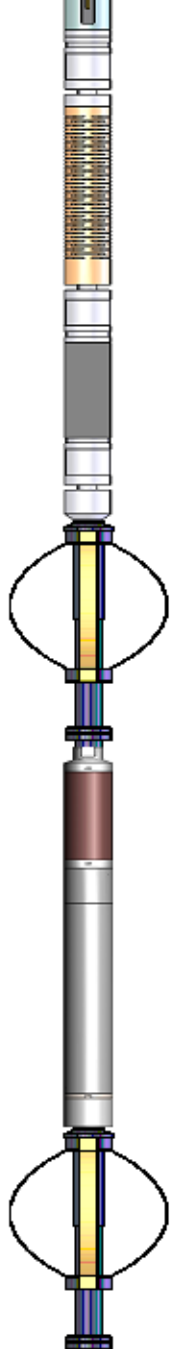
Recorded With 2800 PSI Surface Induced Pressure

Database File new folder\0512345501_anadarko_papa jo 2-25 28n-8hz_rbl_03-30-18_2800 psi.db
Dataset Pathname pass2.1
Presentation Format ros_radri
Dataset Creation Sun Apr 01 12:56:06 2018
Charted by Depth in Feet scaled 1:240

| | | | | | | |
|--------------------------|------|-----------------------|-------------------------|------------|---|-----------------------|
| Gamma Ray | 0 | 3' Amplitude (mV) 100 | 5' Variable Density Log | Sector Map | 0 | Average Amplitude 100 |
| (GAPI) 120 | | 3' Amplitude x 5 | 200 | 1200 | | Minimum Amplitude |
| Temperature (degF) 20 | 0 | (mV) 20 | | | 0 | 100 |
| Line Speed | | 3' Travel Time | | | | Maximum Amplitude |
| (ft/min) 150 | -150 | (usec) 150 | | | 0 | 100 |
| Line Tension (lb) 2000 | | | | | | |
| Differential Temperature | | | | | | |
| (degF) 2 | -2 | | | | | |





| | | | | | | | |
|---|-------|--|--|---|------|------|--------|
| TEMP | 17.04 | | | | | | |
| WVFS8 | 14.81 | |  | Probe Radii-2750 RBT (FW1308-091) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub | 9.39 | 2.75 | 105.00 |
| WVFS7 | 14.81 | | | | | | |
| WVFS6 | 14.81 | | | | | | |
| WVFS5 | 14.81 | | | | | | |
| WVFS4 | 14.81 | | | | | | |
| WVFS3 | 14.81 | | | | | | |
| WVFS2 | 14.81 | | | | | | |
| WVFS1 | 14.81 | | | | | | |
| WVFCAL | 14.81 | | | | | | |
| WVF3FT | 14.81 | | | | | | |
| WVF5FT | 13.81 | | | | | | |
| | | | | Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer | 2.88 | 2.75 | 20.00 |
| CCL\$2 | 6.80 | | | Probe GR-CCL-2750 6PB (FW1304-132) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT | 4.80 | 2.75 | 55.00 |
| CCL\$1 | 6.80 | | | | | | |
| GR | 5.46 | | | | | | |
| | | | | Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer | 2.88 | 2.75 | 20.00 |
| Dataset: 0512345501_Anadarko_Papa Jo 2-25 28N-8HZ_RBL_03-30-18_2800 PSI.db: field/well/run1/pass4.2 Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in | | | | | | | |

| Calibration Report | | |
|------------------------------|--|----------|
| Database File | C:\ProgramData\Warrior\Data\New folder\0512345501_Anadarko_Papa Jo 2-25 28N-8HZ_RBL_03-30-18_2800 PSI.db | |
| Dataset Pathname | pass4.2 | |
| Dataset Creation | Sun Apr 01 12:50:03 2018 | |
| Gamma Ray Calibration Report | | |
| Serial Number: | FW1304-132 | |
| Tool Model: | 2750 6PB | |
| Performed: | Tue Nov 28 11:17:11 2017 | |
| Calibrator Value: | 637.0 | GAPI |
| Background Reading: | 109.1 | cps |
| Calibrator Reading: | 1009.7 | cps |
| Sensitivity: | 0.7072 | GAPI/cps |

Segmented Cement Bond Log Calibration Report

Serial Number: FW1308-091
 Tool Model: 2750 RBT
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 12.282 ft

Master Calibration, performed Fri Mar 30 13:04:14 2018:

| | Raw (v) | | Calibrated (mv) | | Results | |
|-----|---------|-------|-----------------|---------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.005 | 0.359 | 0.800 | 71.921 | 200.608 | -0.167 |
| CAL | 0.004 | 0.593 | | | | |
| 5' | 0.005 | 0.363 | 0.800 | 71.921 | 199.097 | -0.273 |
| SUM | | | | | | |
| S1 | 0.004 | 0.347 | 0.000 | 100.000 | 291.509 | -1.139 |
| S2 | 0.005 | 0.354 | 0.000 | 100.000 | 286.638 | -1.412 |
| S3 | 0.005 | 0.356 | 0.000 | 100.000 | 285.233 | -1.461 |
| S4 | 0.005 | 0.354 | 0.000 | 100.000 | 286.658 | -1.340 |
| S5 | 0.004 | 0.364 | 0.000 | 100.000 | 277.560 | -1.096 |
| S6 | 0.004 | 0.372 | 0.000 | 100.000 | 271.754 | -1.083 |
| S7 | 0.004 | 0.368 | 0.000 | 100.000 | 275.069 | -1.149 |
| S8 | 0.004 | 0.365 | 0.000 | 100.000 | 276.871 | -1.119 |

Internal Reference Calibration, performed (Not Performed):

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|-------|----------------|-------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.004 | 0.593 | 1.000 | 0.000 |

Air Zero Calibration, performed Fri Mar 30 13:04:43 2018:

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|--|----------------|--|---------|--------|
| | Zero | | Zero | | Offset | |
| 3' | 0.003 | | 0.000 | | | -0.000 |
| 5' | 0.004 | | 0.000 | | | 0.000 |
| SUM | | | | | | |
| S1 | 0.004 | | 0.000 | | | 0.000 |
| S2 | 0.004 | | 0.000 | | | 0.000 |
| S3 | 0.004 | | 0.000 | | | -0.000 |
| S4 | 0.004 | | 0.000 | | | -0.000 |
| S5 | 0.004 | | 0.000 | | | -0.000 |
| S6 | 0.004 | | 0.000 | | | -0.000 |
| S7 | 0.004 | | 0.000 | | | -0.000 |
| S8 | 0.004 | | 0.000 | | | -0.000 |

Temperature Calibration Report

Serial Number: FW1308-091
 Tool Model: 2750 RBT
 Performed: Sun Nov 12 13:50:54 2017

| | Reference | Reading |
|-----------------|-------------|-------------|
| Low Reference: | 100.00 degF | 104.72 degF |
| High Reference: | 350.00 degF | 392.24 degF |
| Gain: | 0.87 | |
| Offset: | 8.94 | |
| Delta Spacing | 1 | |



| | |
|---------|------------------------------------|
| Company | Kerr-McGee Oil & Gas Onshore, L.P. |
| Well | Papa Jo 2-25 28N-8HZ |
| Field | Wattenberg |
| County | Weld |
| State | Colorado |