



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company SRC Energy Inc
Well Harvesters State 30N-16B-M
Field Wattenberg
County Weld
State Colorado

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County Weld State Colorado

Location: API #: 05-123-46354
SEC 15 TWP 6N RGE 66W
Permanent Datum Ground Level Elevation 4802'
Log Measured From Ground Level 0 FT
Drilling Measured From Kelly Bushing
Other Services
Elevation
K.B. 4822'
D.F. ---
G.L. 4802'

| | | | | |
|------------------------|-------------|-----------------|-------|---------|
| Date | 20-JUN-2018 | One | | |
| Run Number | | 14975 FT (GL) | | |
| Depth Driller | | 6613 FT | | |
| Depth Logger | | 6598 FT | | |
| Bottom Logged Interval | | Surface | | |
| Top Log Interval | | --- | | |
| Open Hole Size | | Water | | |
| Type Fluid | | 8.34 lb/gal | | |
| Density / Viscosity | | 208°F | | |
| Max. Recorded Temp. | | See Log | | |
| Estimated Cement Top | | ROA | | |
| Time Well Ready | | 12.25 | | |
| Time Logger on Bottom | | HD-361 | | |
| Equipment Number | | Fort Lupton, CO | | |
| Location | | Greg Lueck | | |
| Recorded By | | Nate Brehmer | | |
| 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 | --- | Surface |
| Intermediate #1 | 5 1/2 | 20 | --- | Surface |
| Intermediate #2 | | | | |
| Inner | | | | |

<<< 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
Log measured from Ground Level at 0 FT
Depth referenced to Casing Tally reported Marker Joint at 6532 FT
Adjusted -12 FT to correlate with Marker Joint
Log ran from 50 FT above RBP @ 6660 FT
Log ran with 2500 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

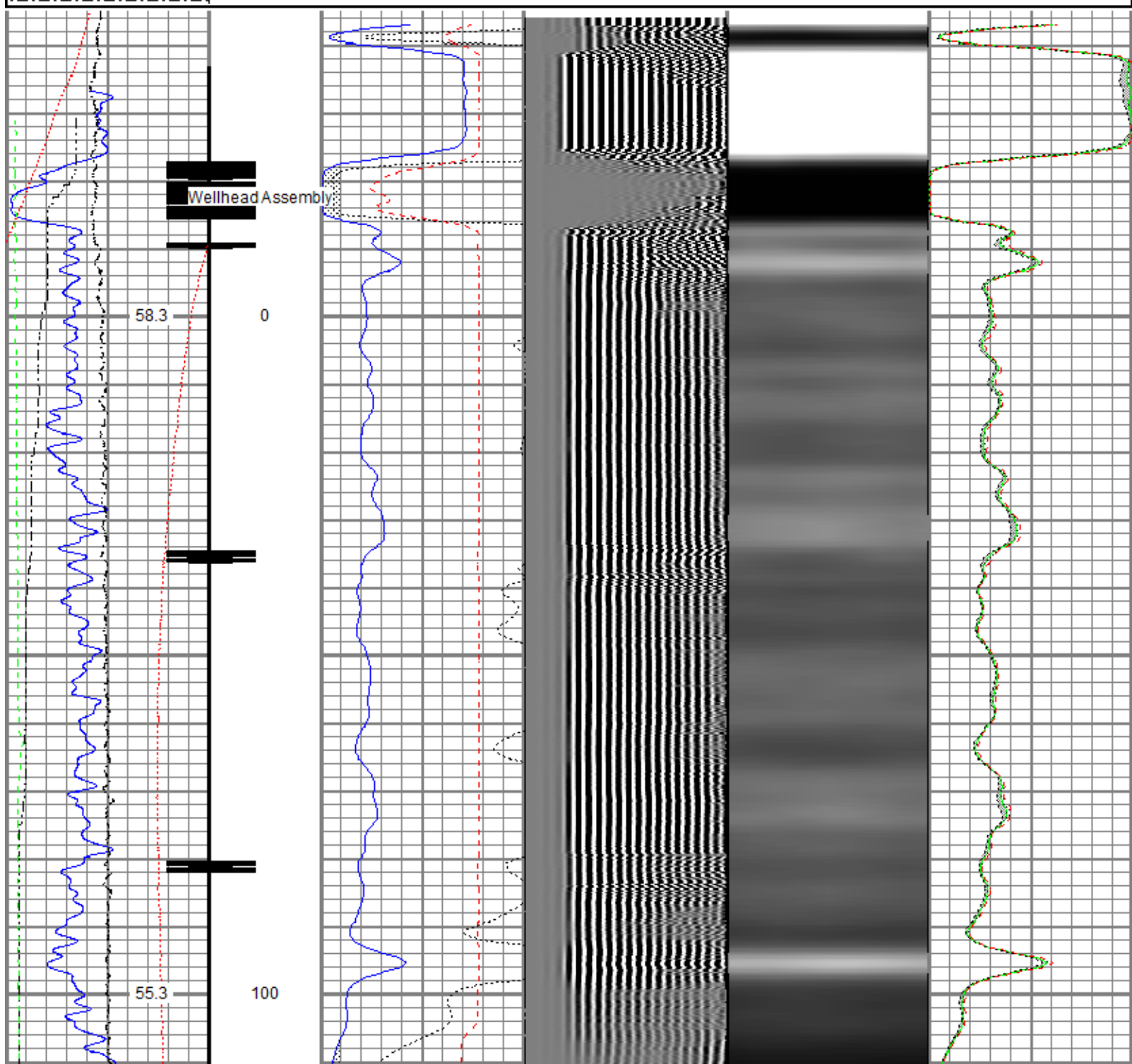
Main Pass

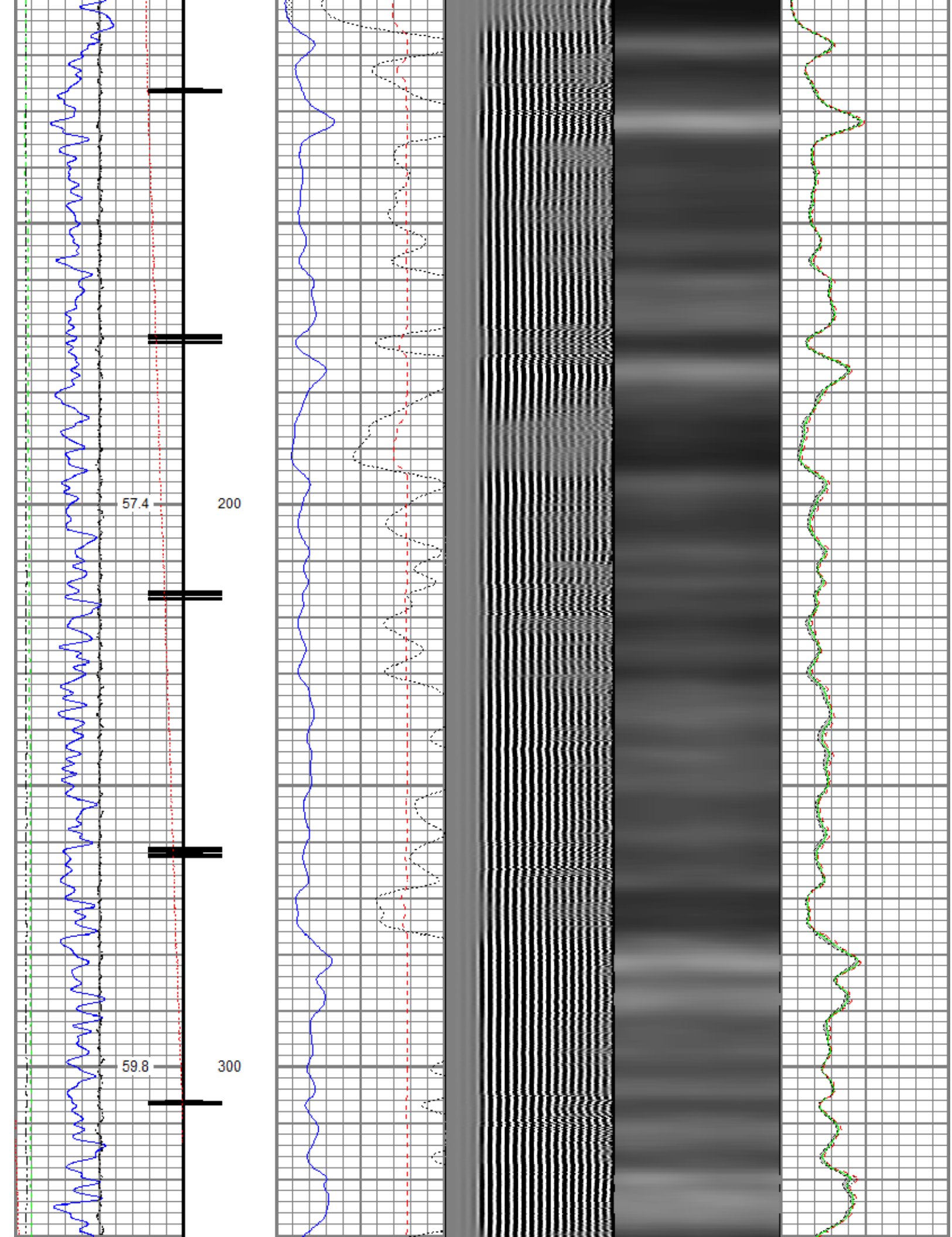


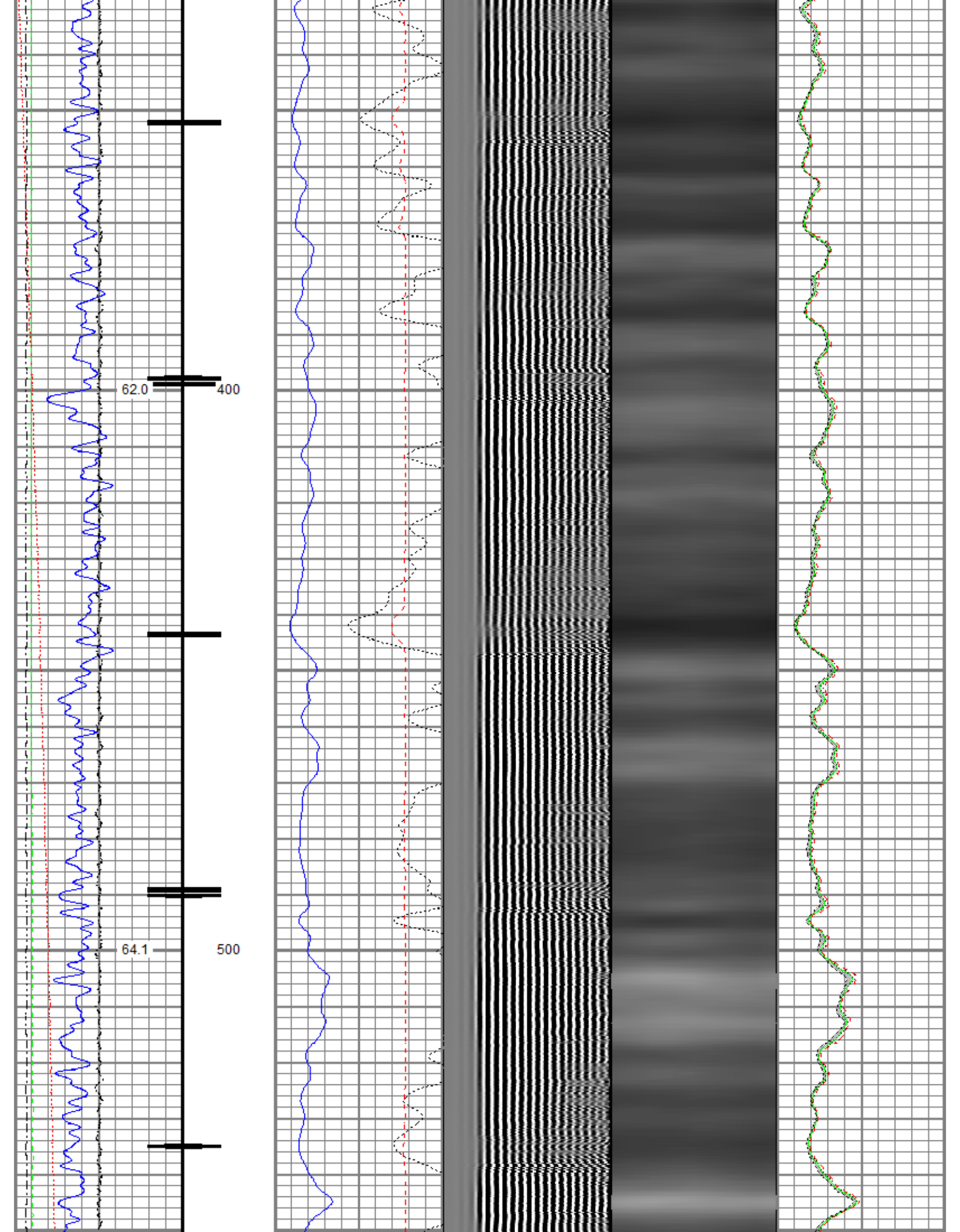
Recorded With 2500 PSI Surface Induced Pressure

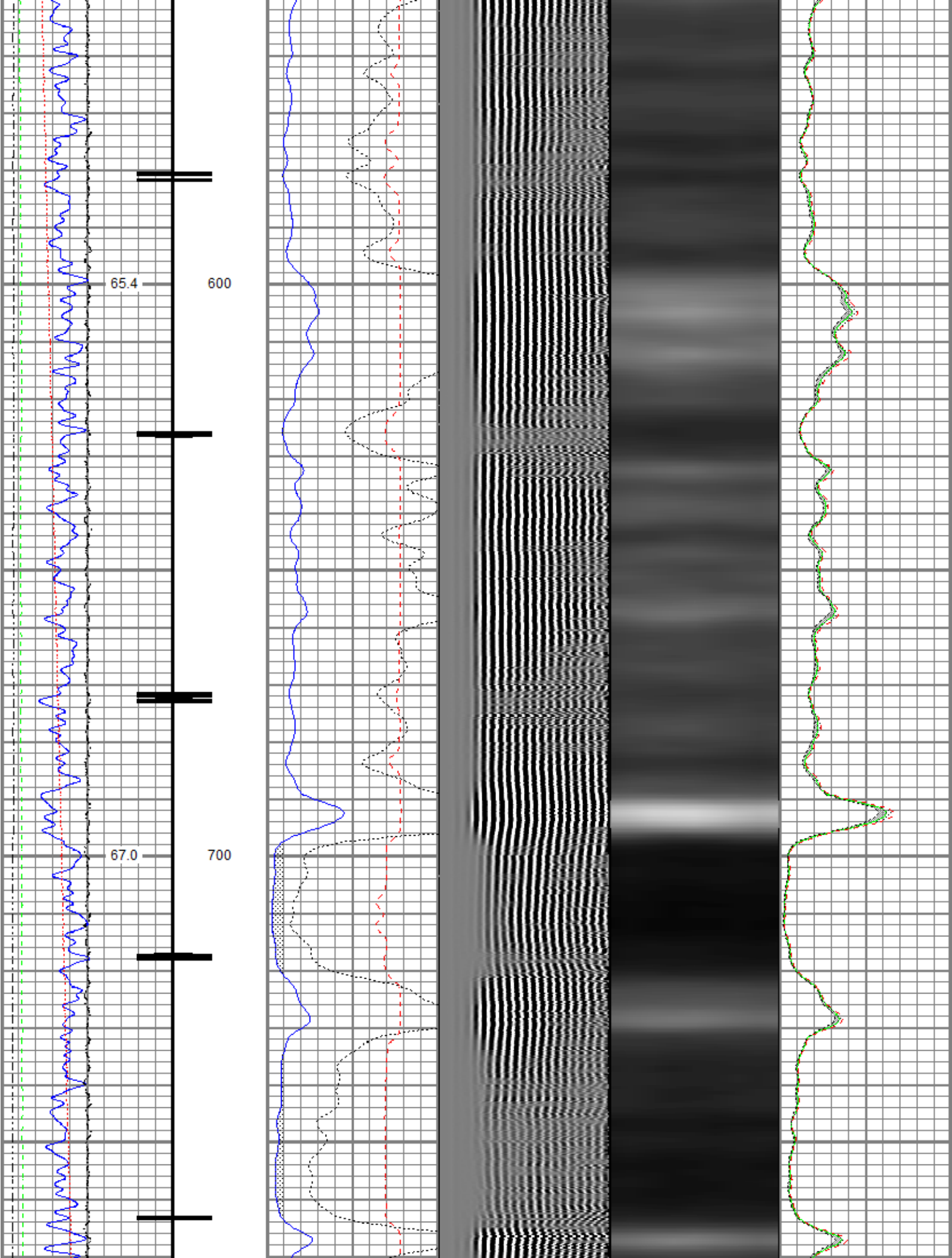
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 Dataset Pathname pass4.1
 Presentation Format ros_radrii
 Dataset Creation Wed Jun 20 13:28:52 2018
 Charted by Depth in Feet scaled 1:240

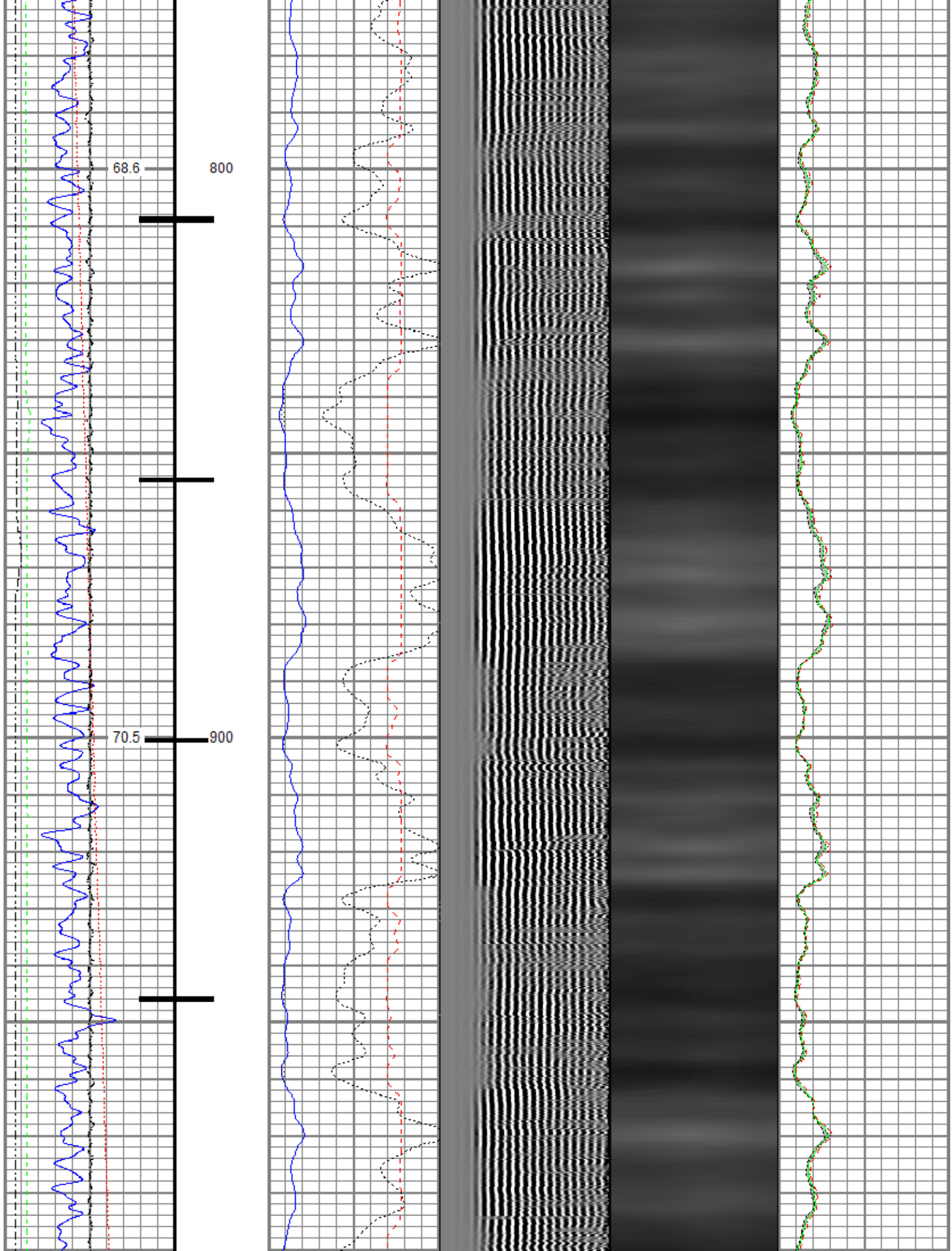
| | | | | | | |
|--------------------------|-----|-----------------------|-------------------------|------------|---|-----------------------|
| Gamma Ray | 0 | 3' Amplitude (mV) 100 | 5' Variable Density Log | Sector Map | 0 | Average Amplitude 100 |
| (GAPI) 120 | | 3' Amplitude x 5 | 200 (usec) 1200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

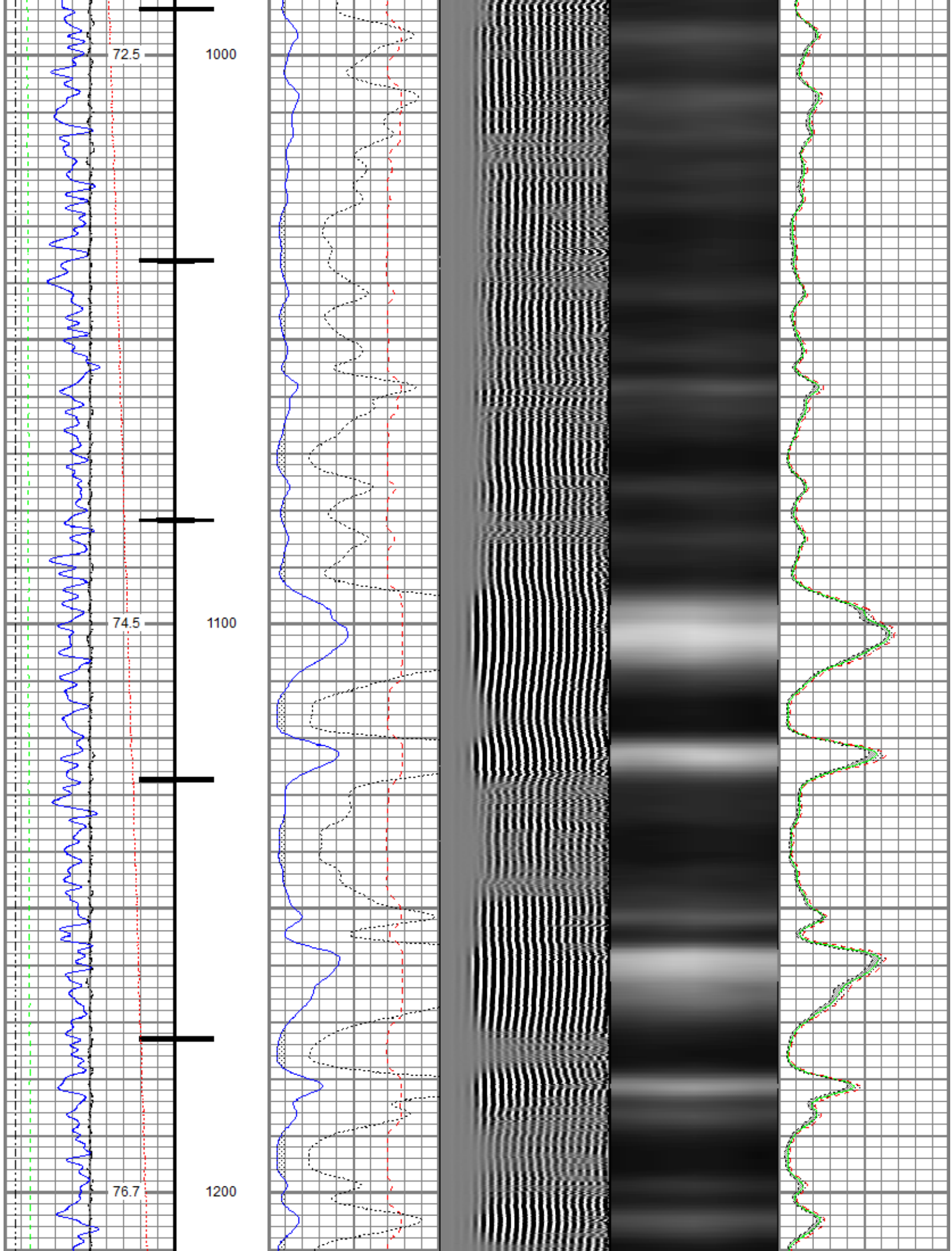


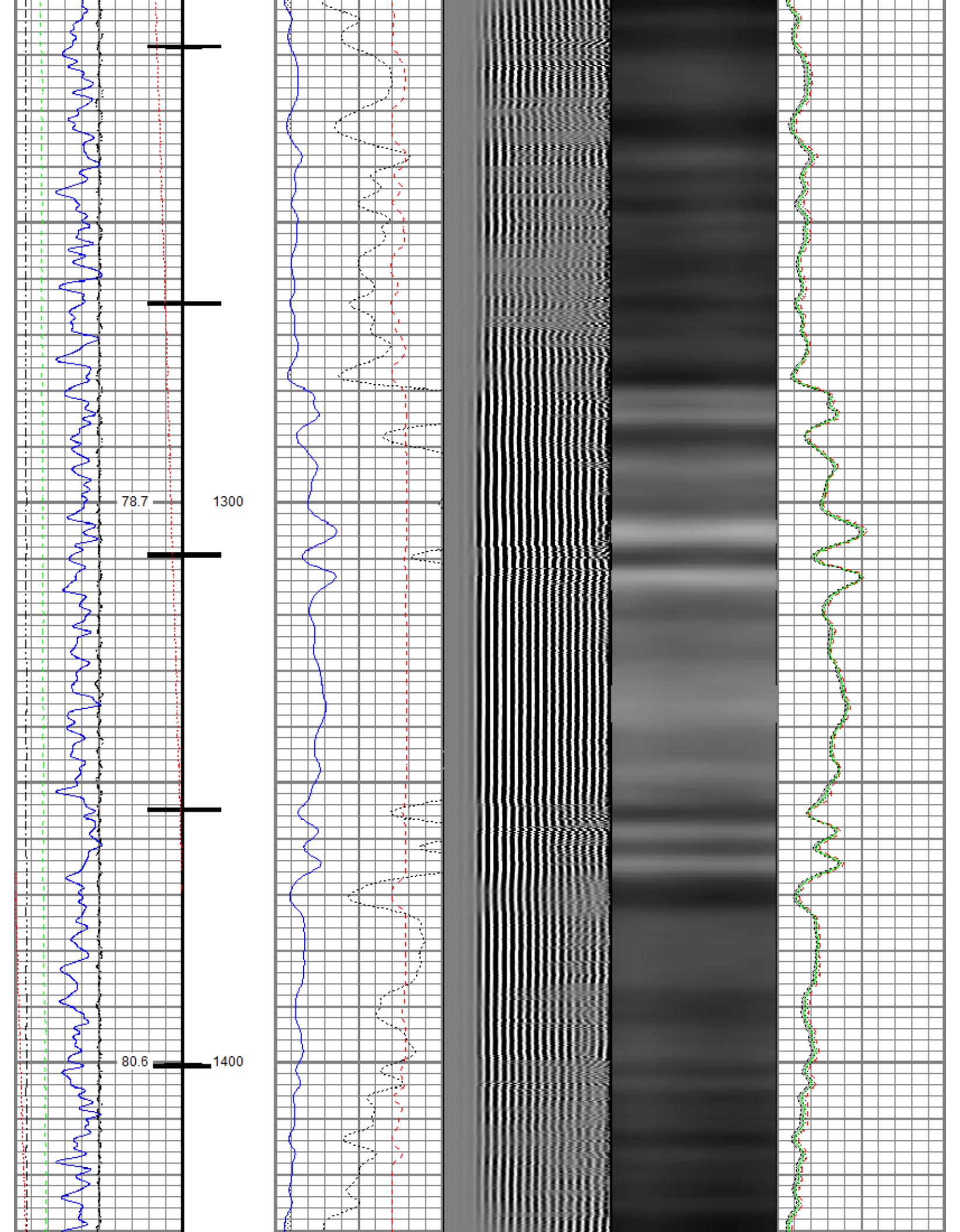


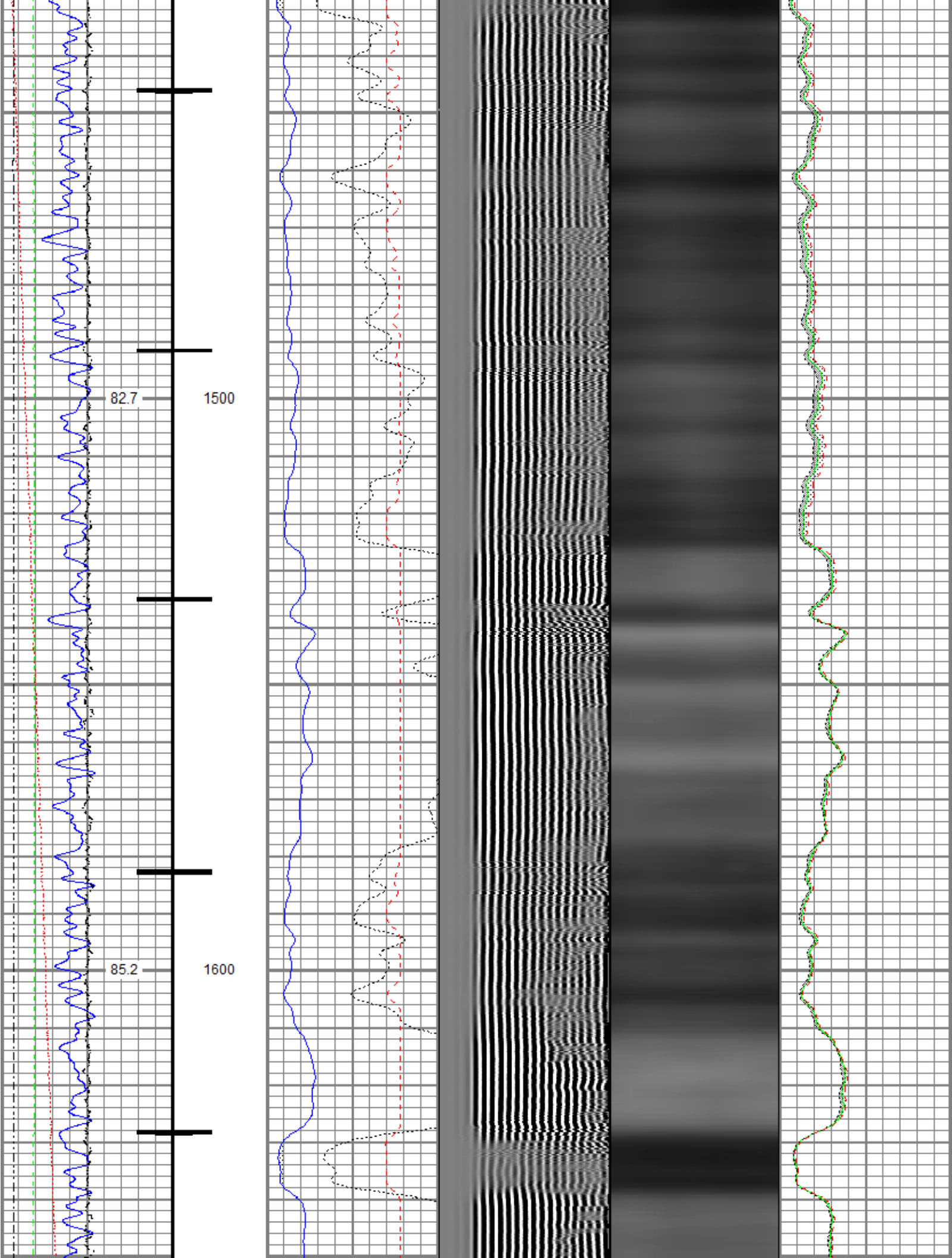


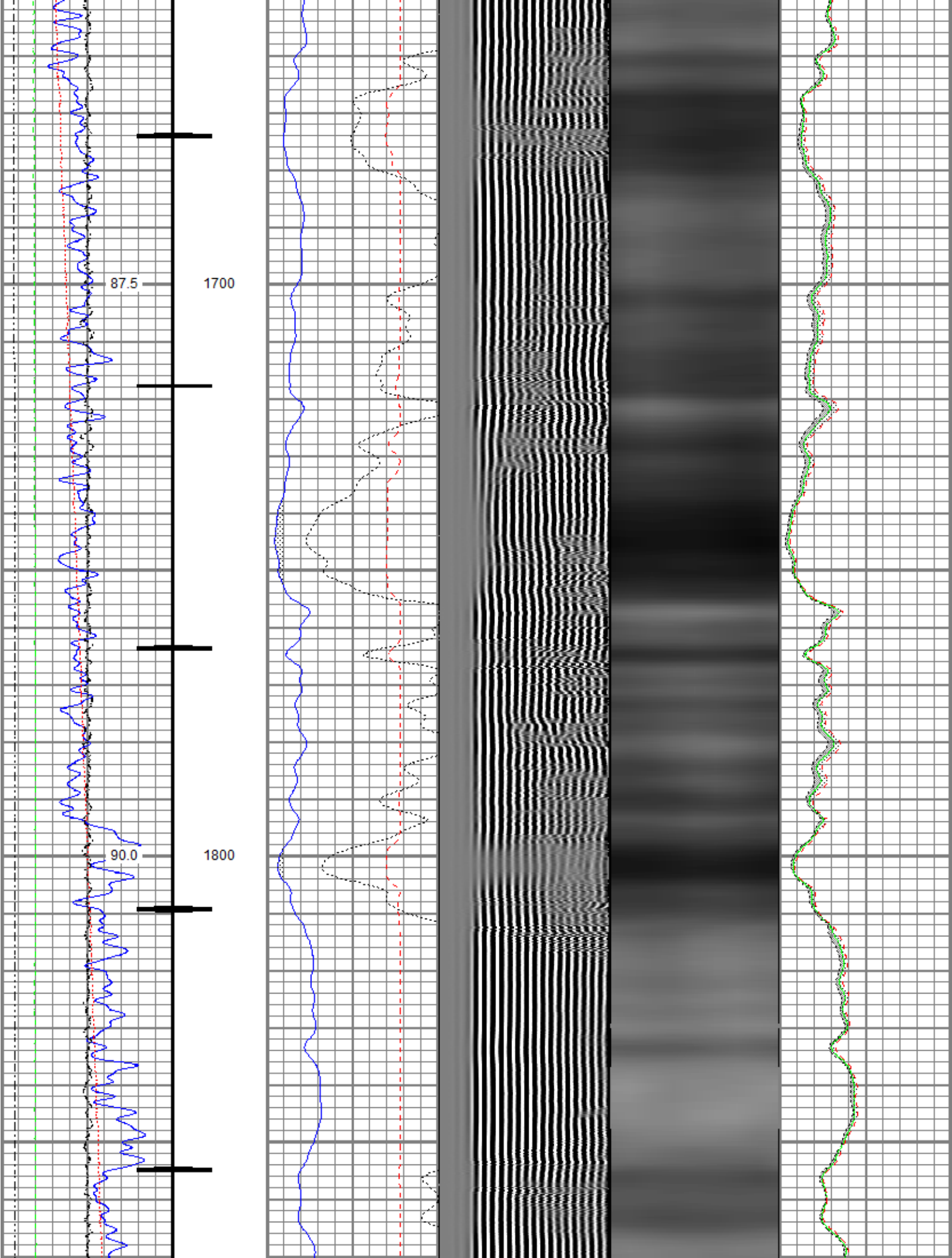


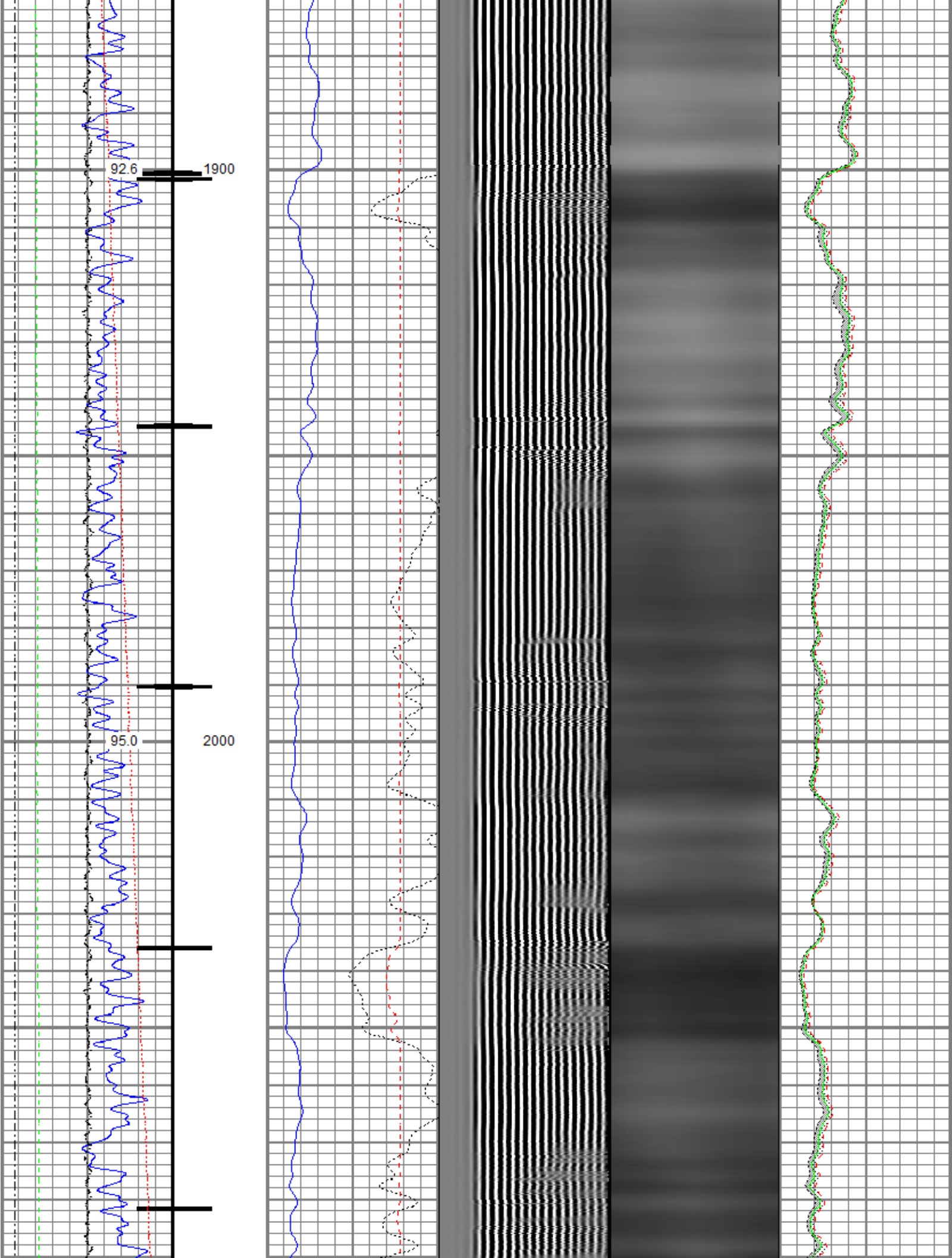


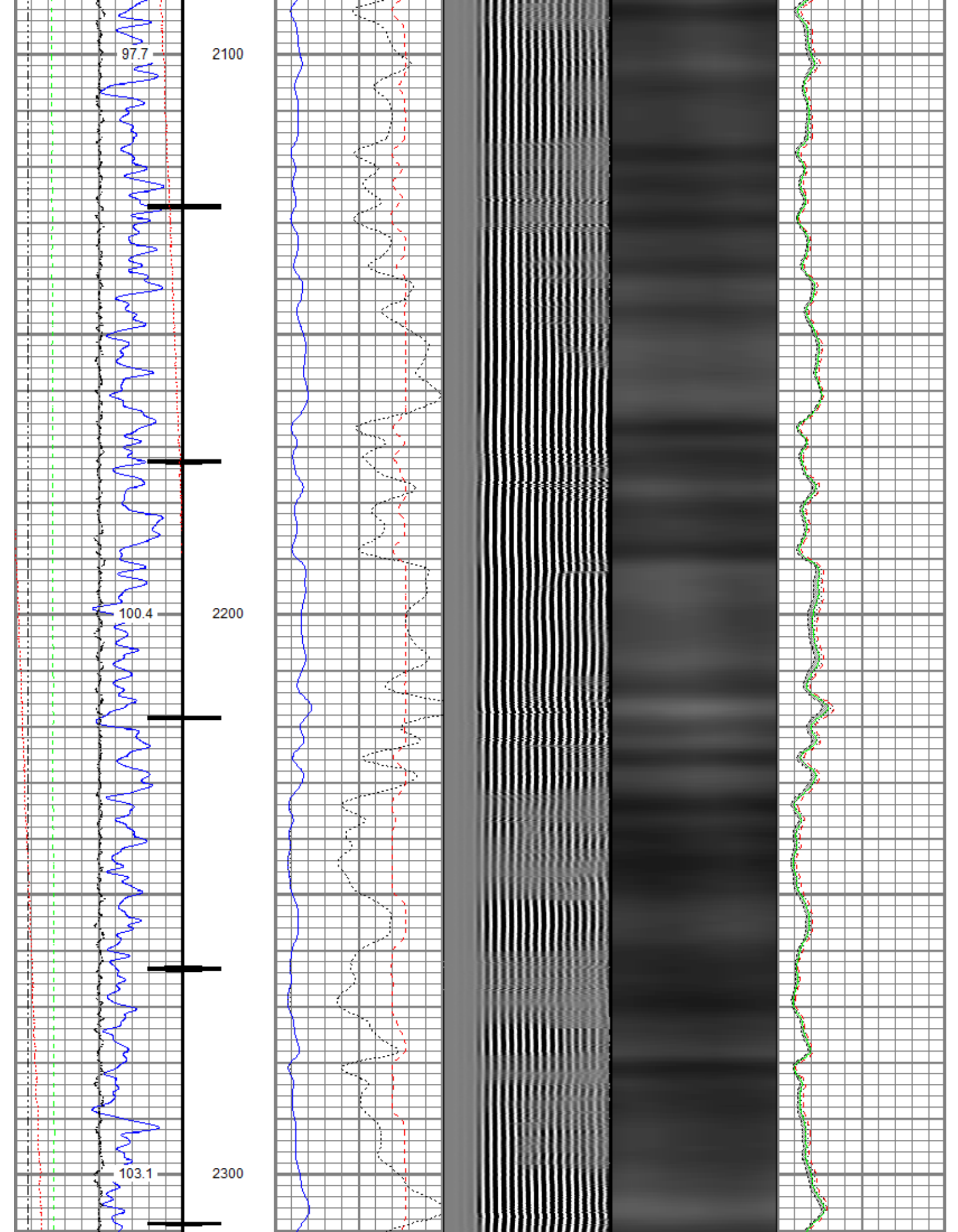


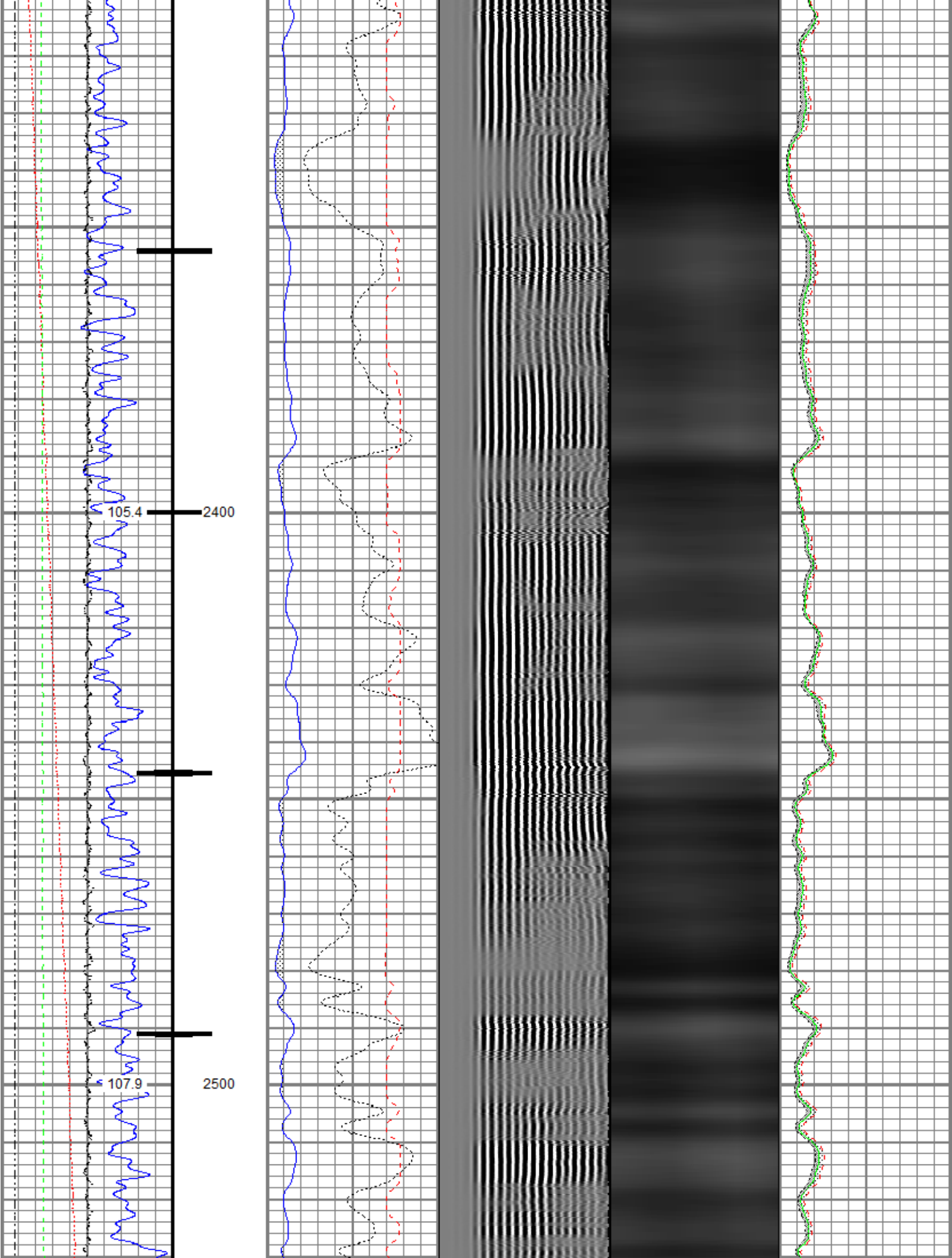


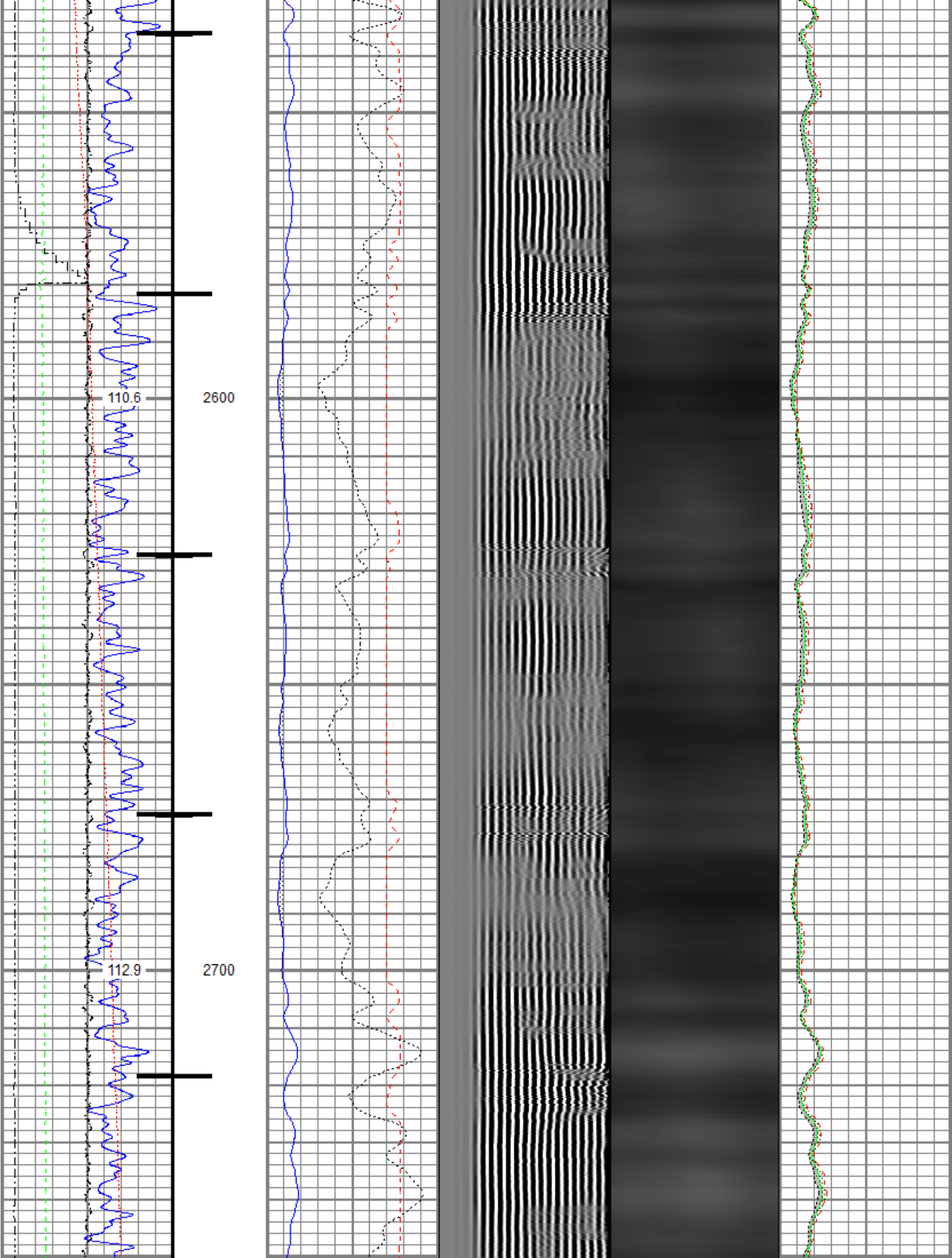


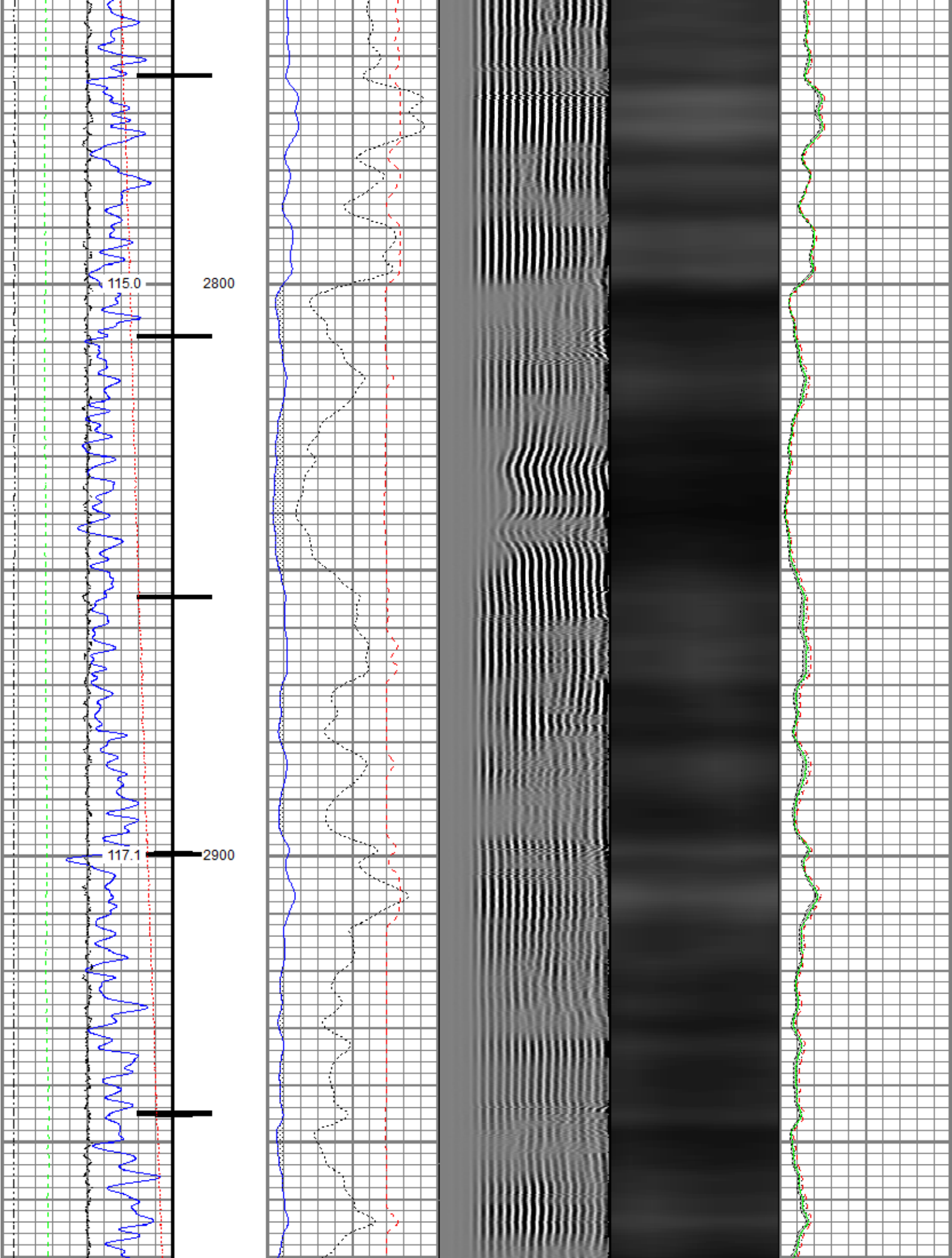


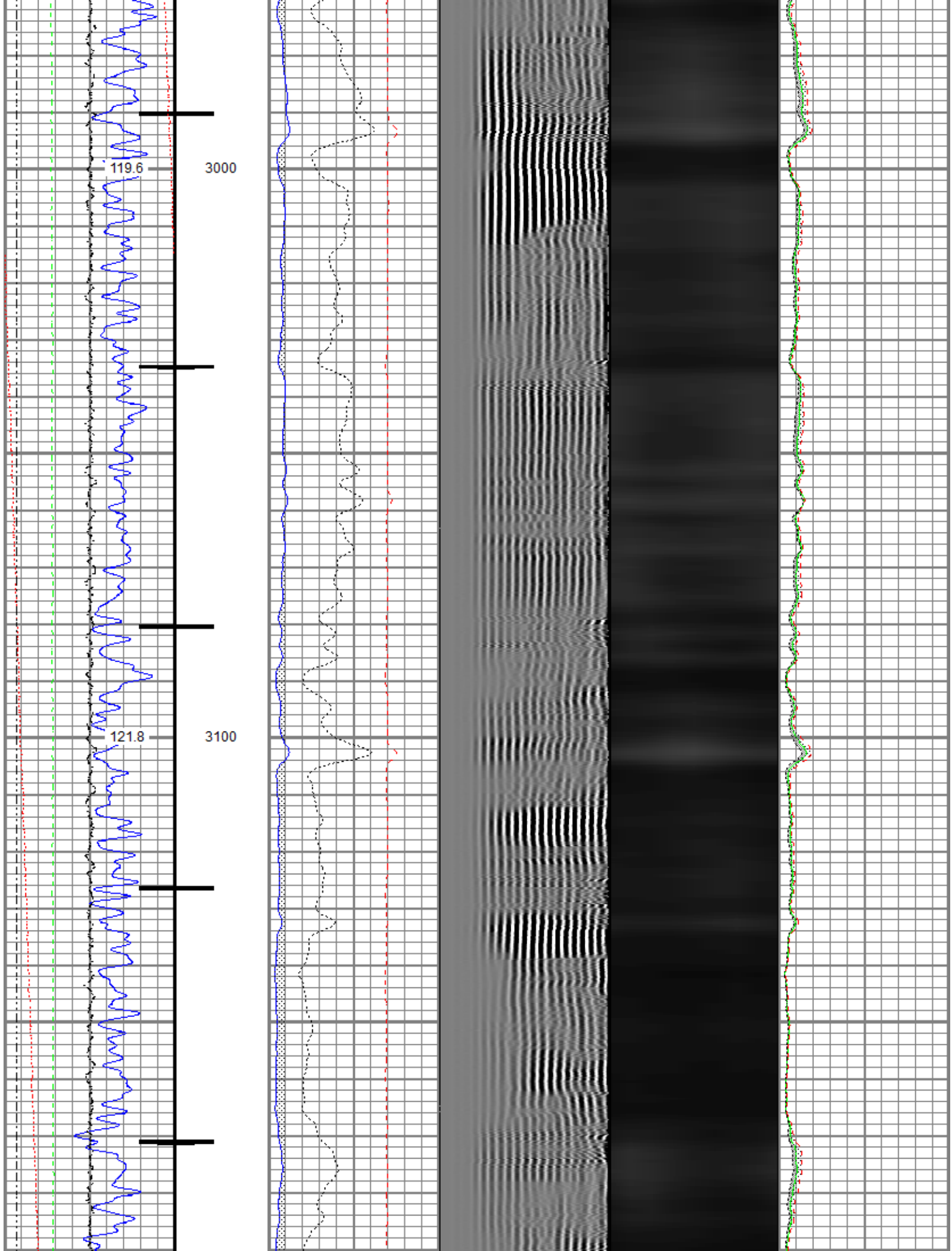


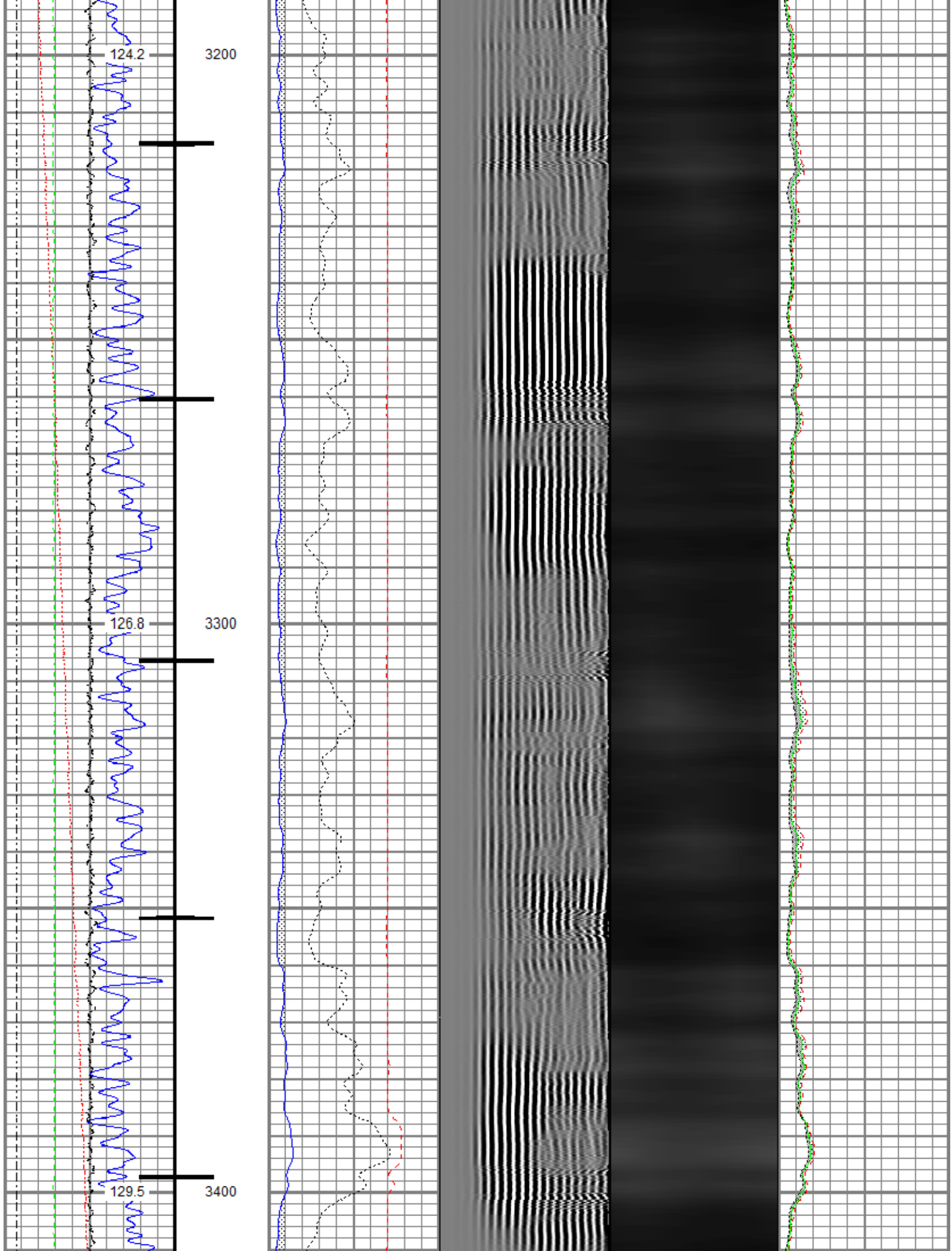


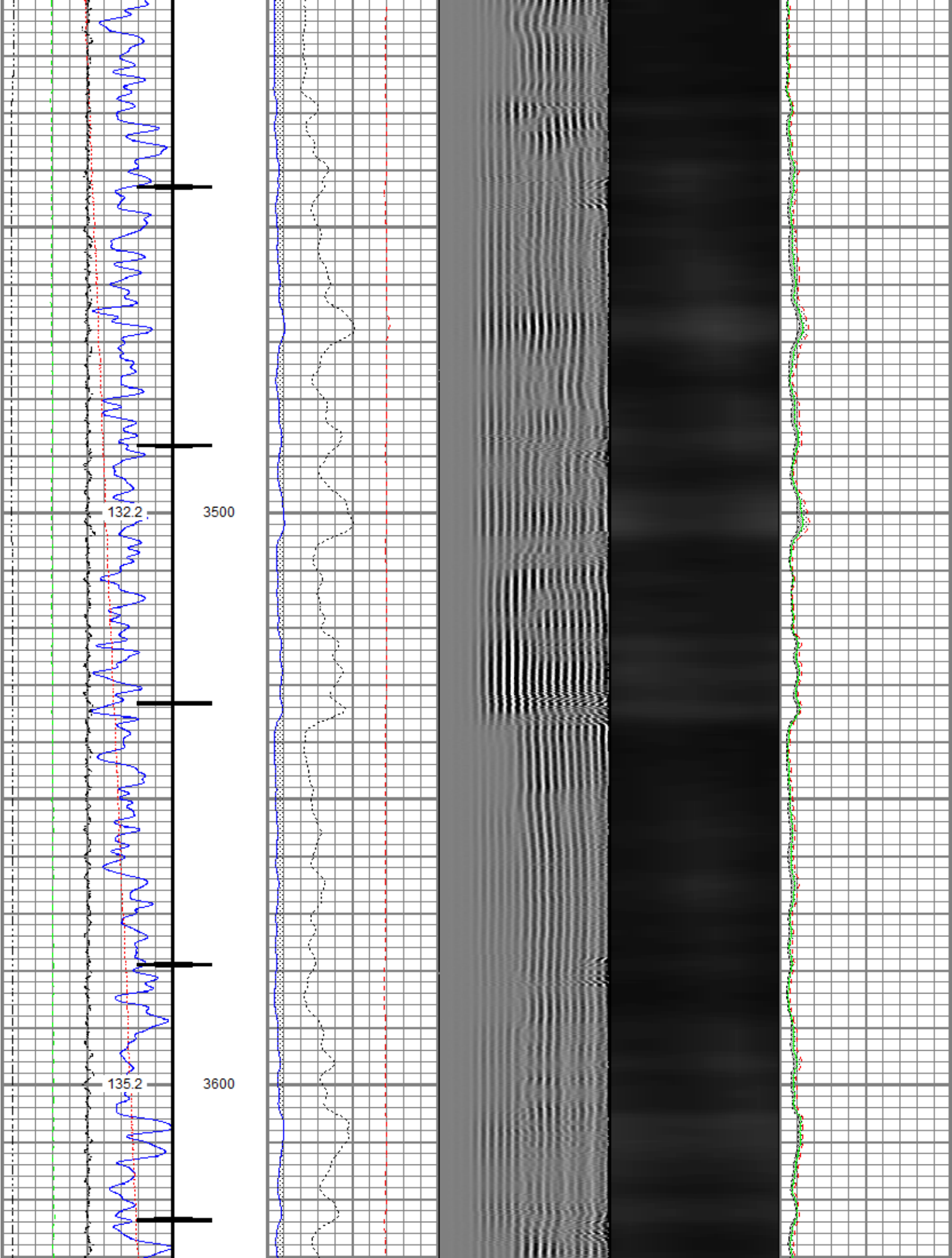


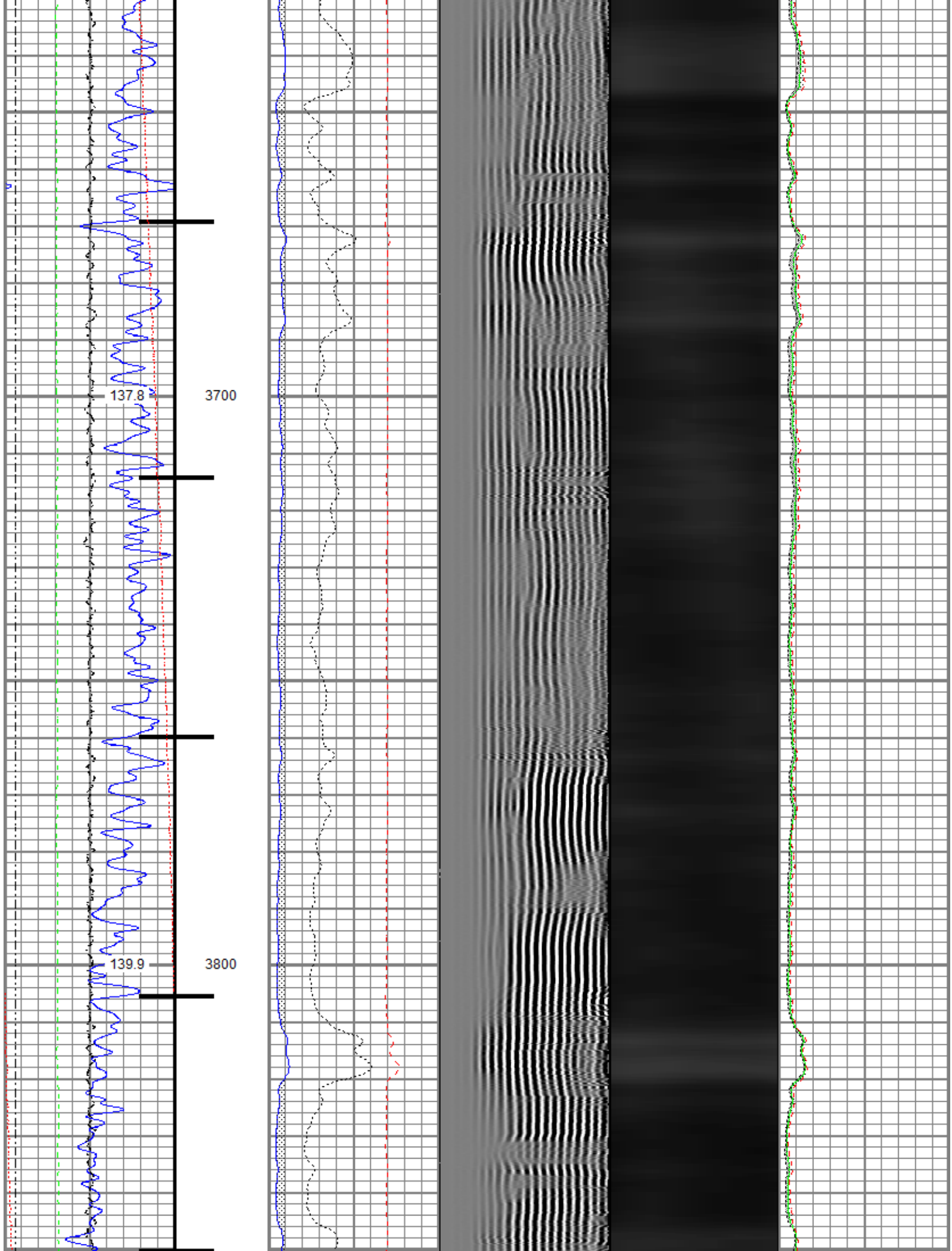


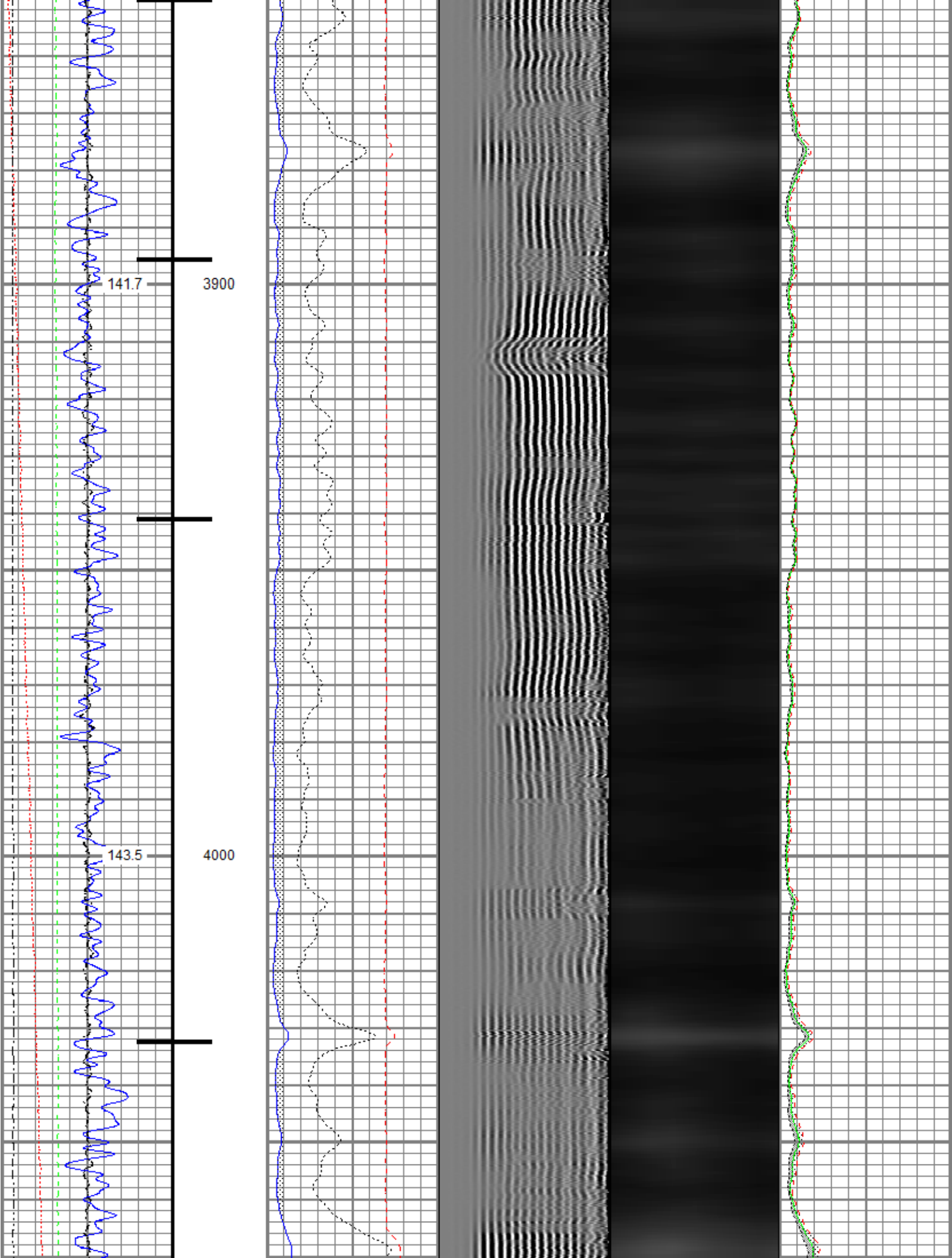


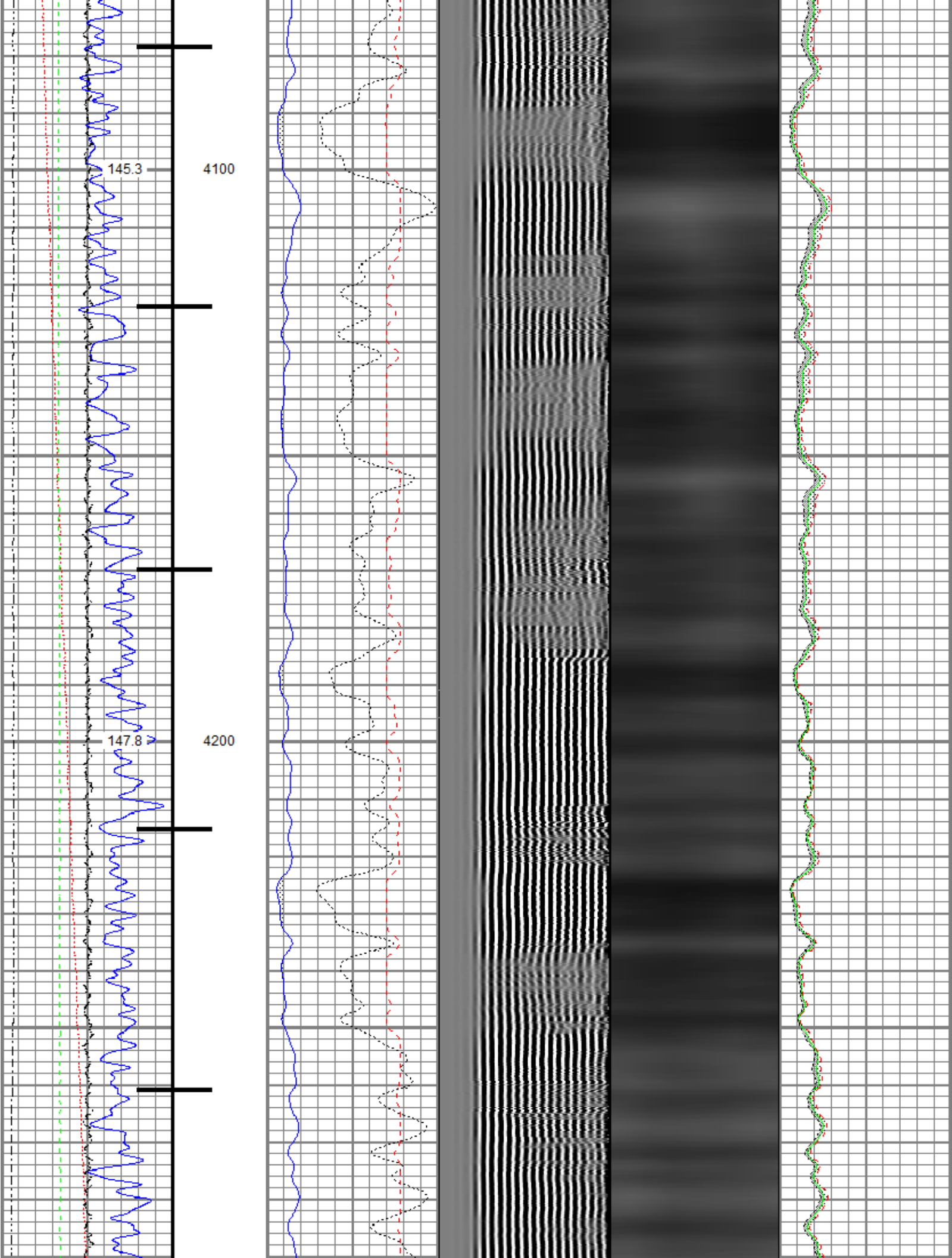


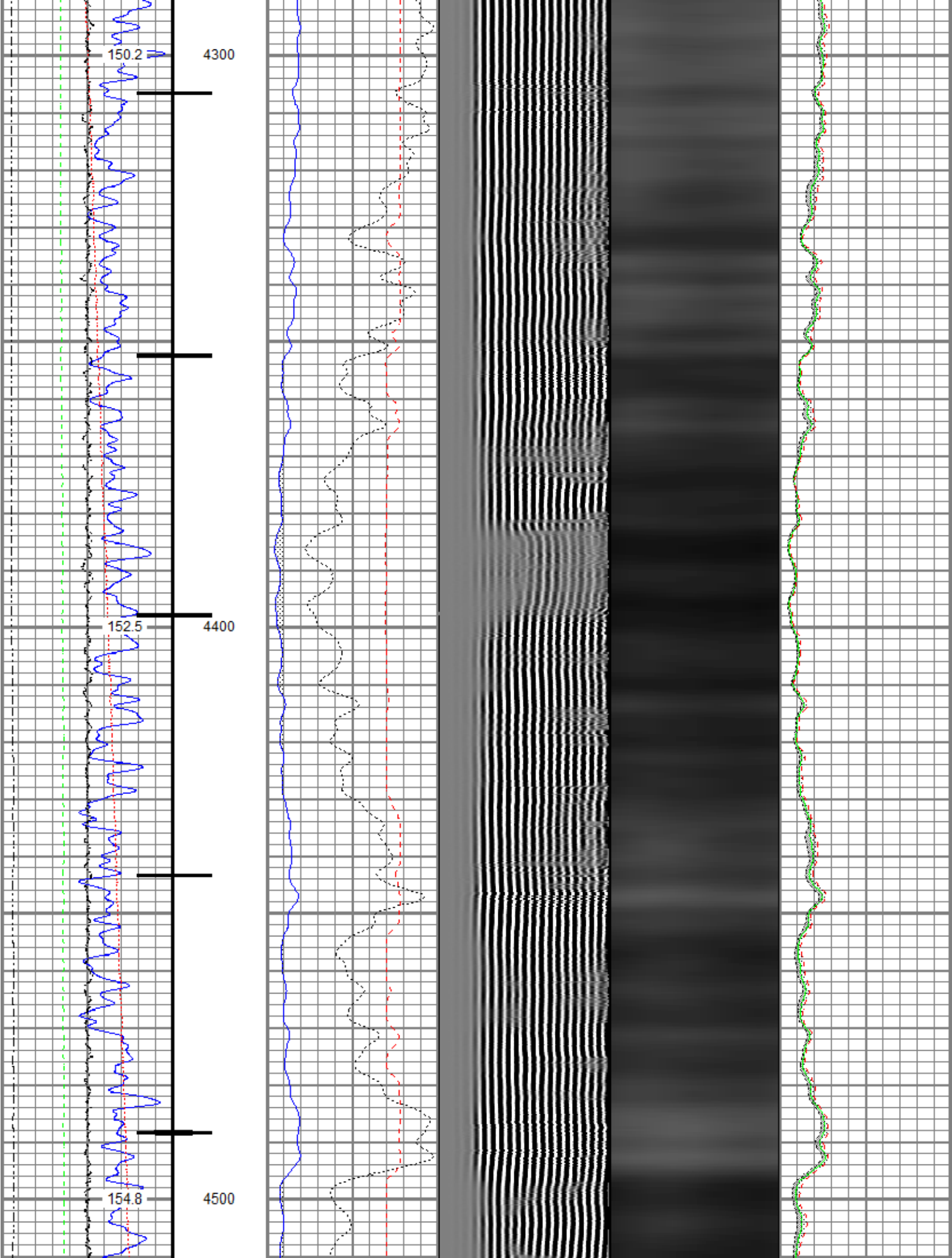


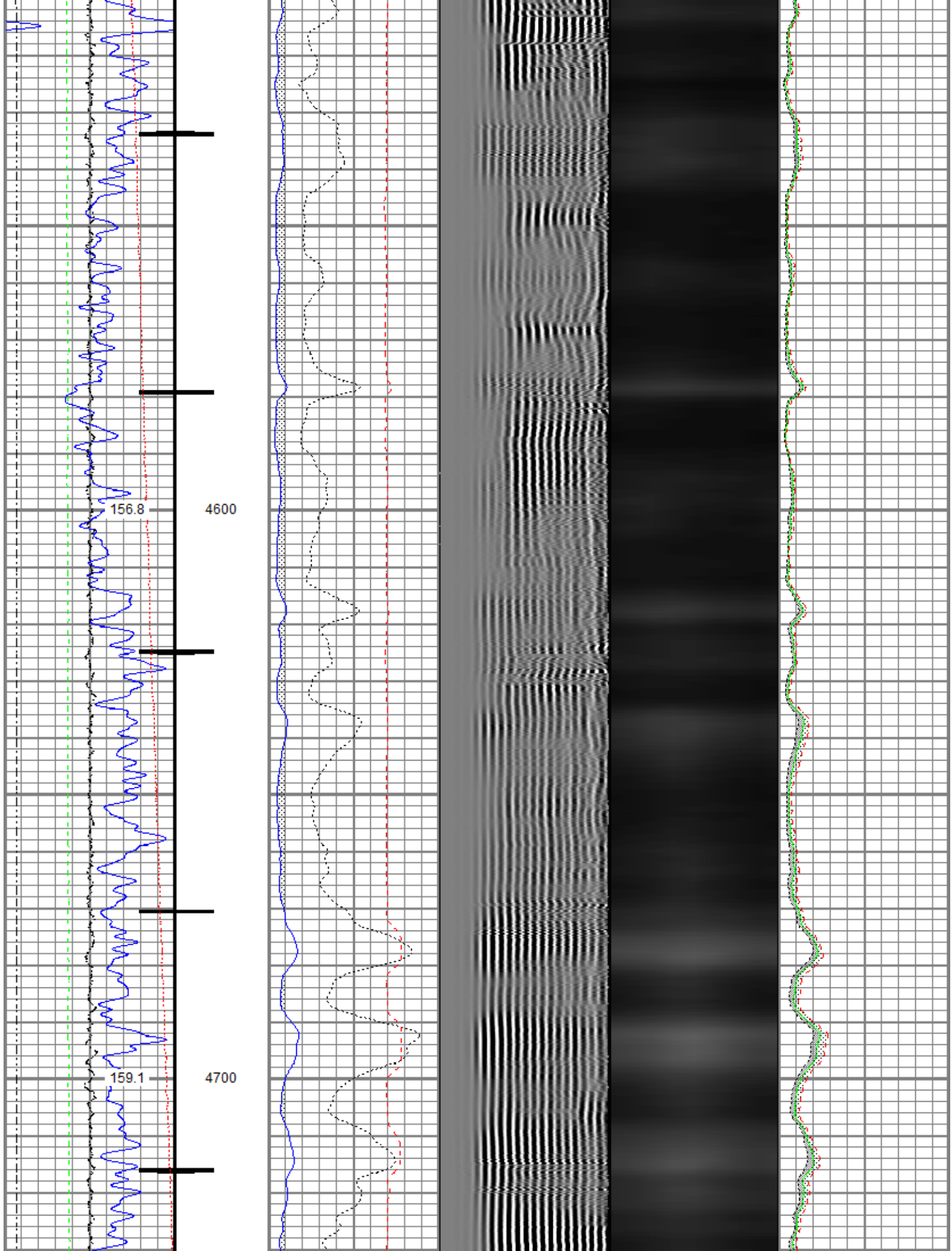


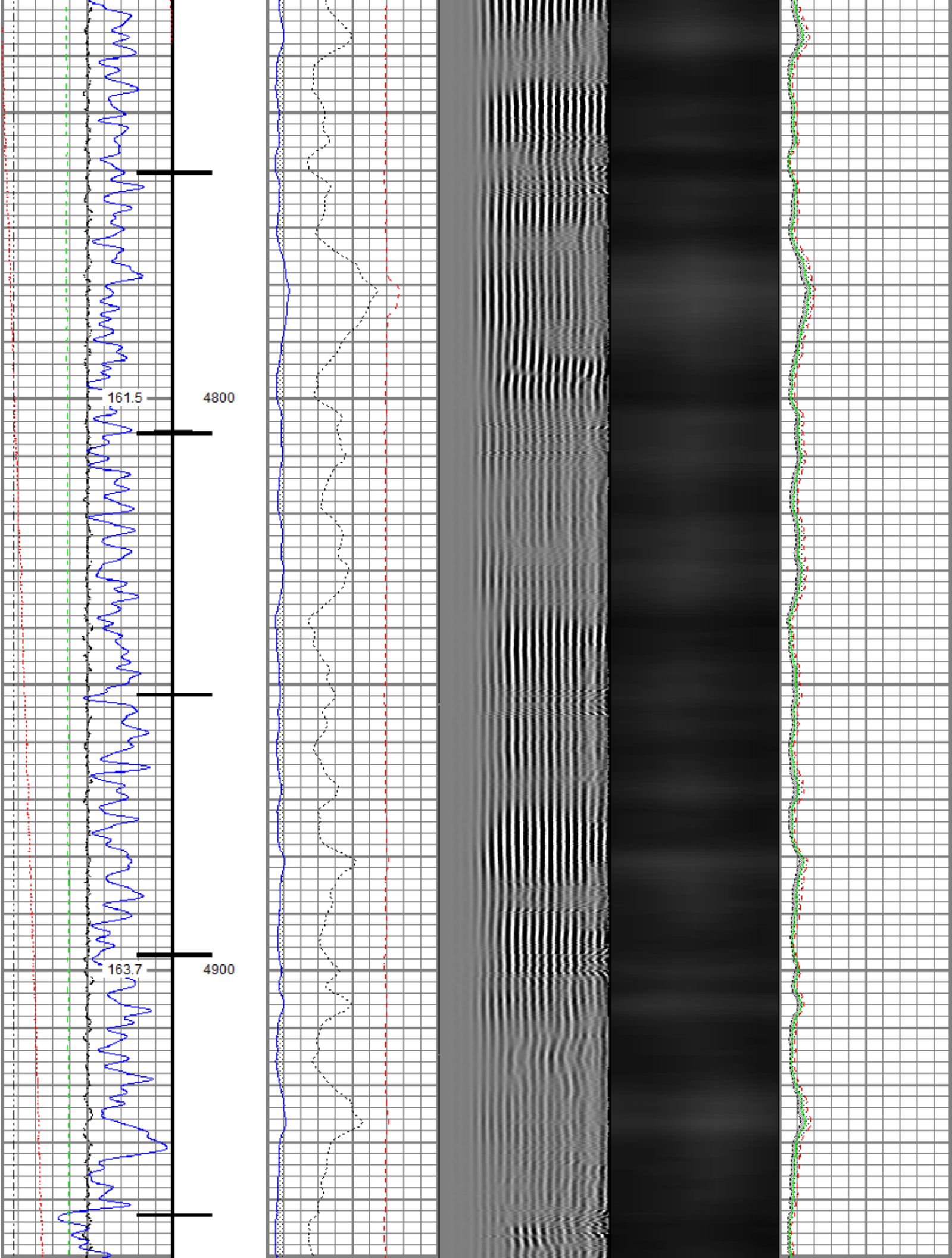


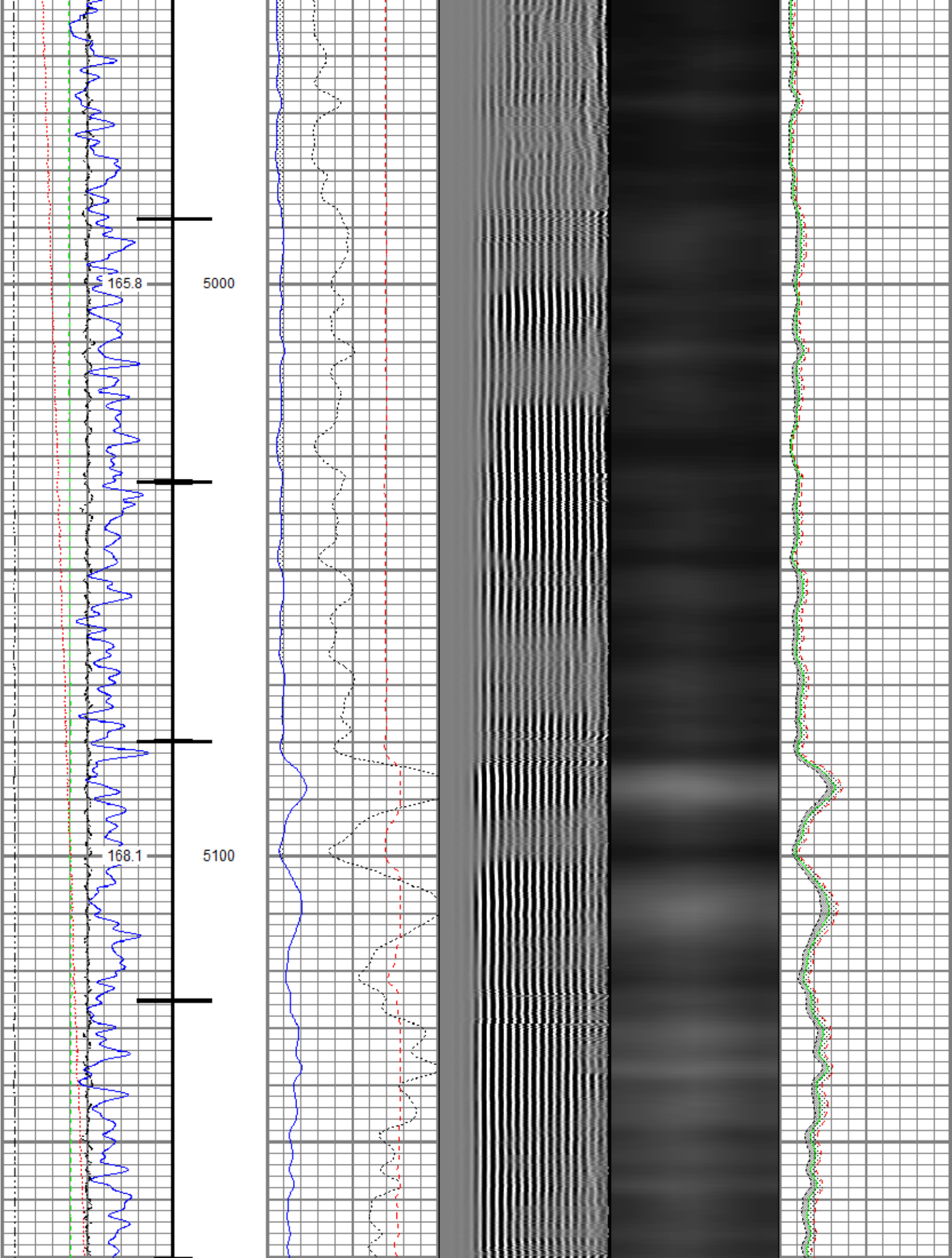


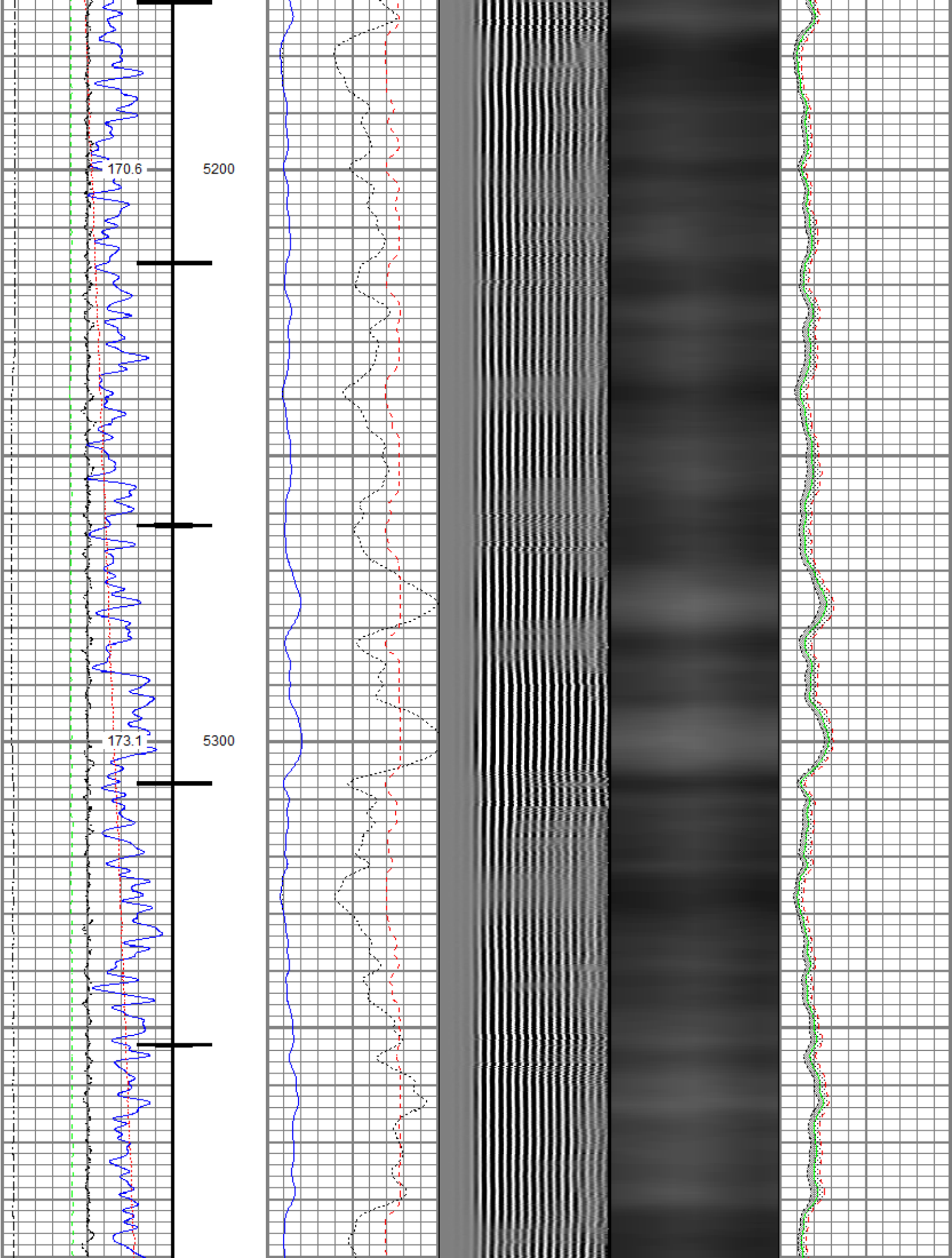


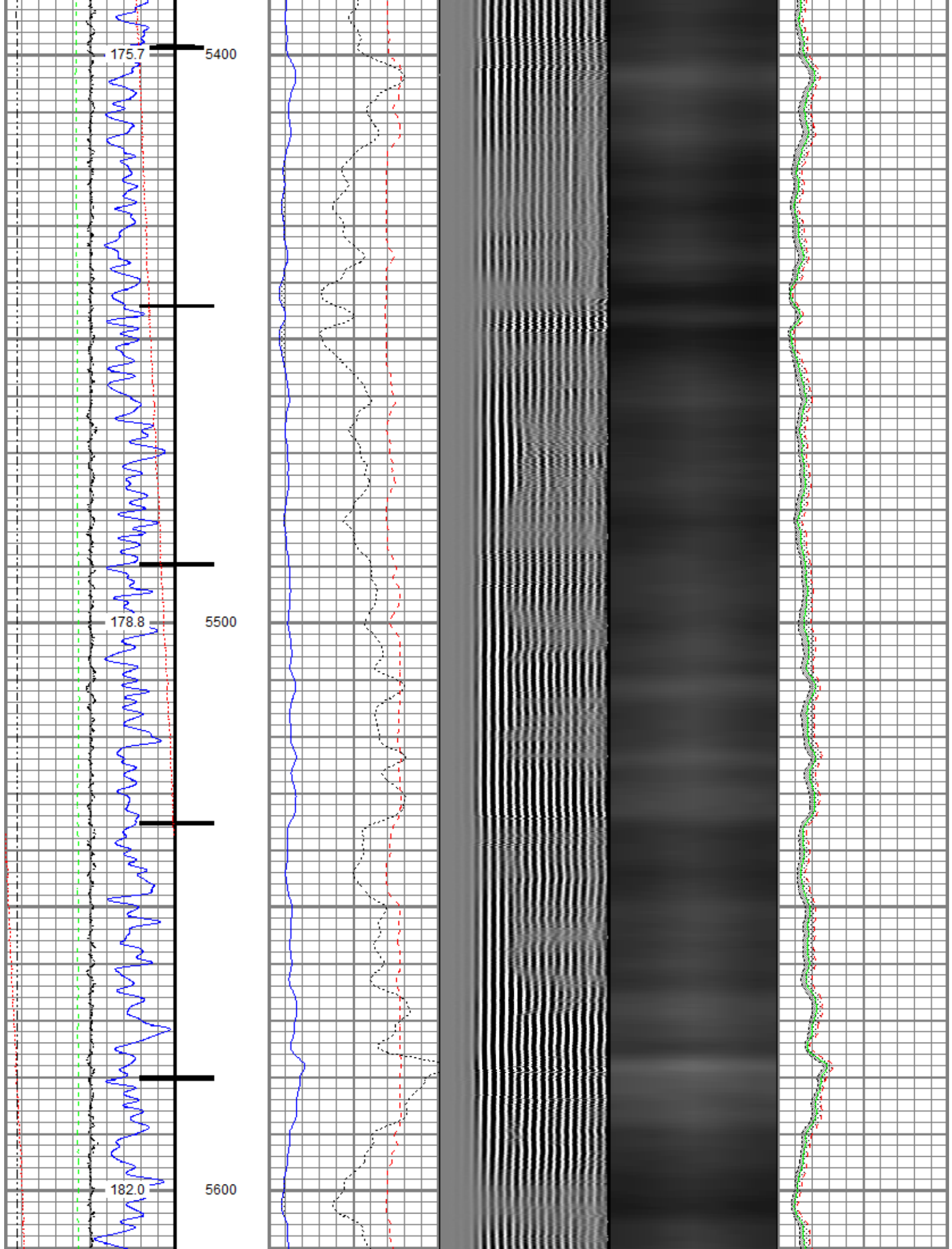


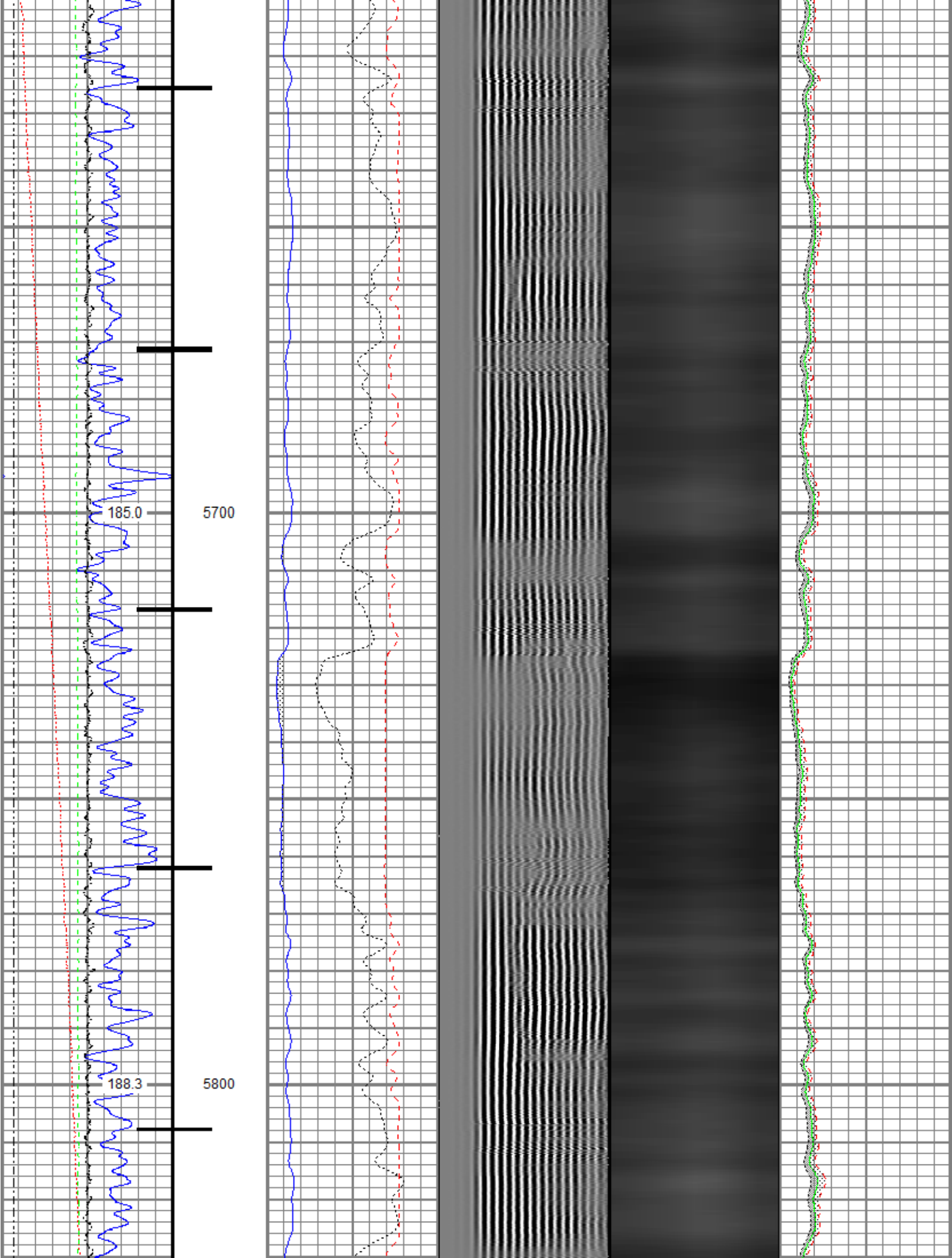


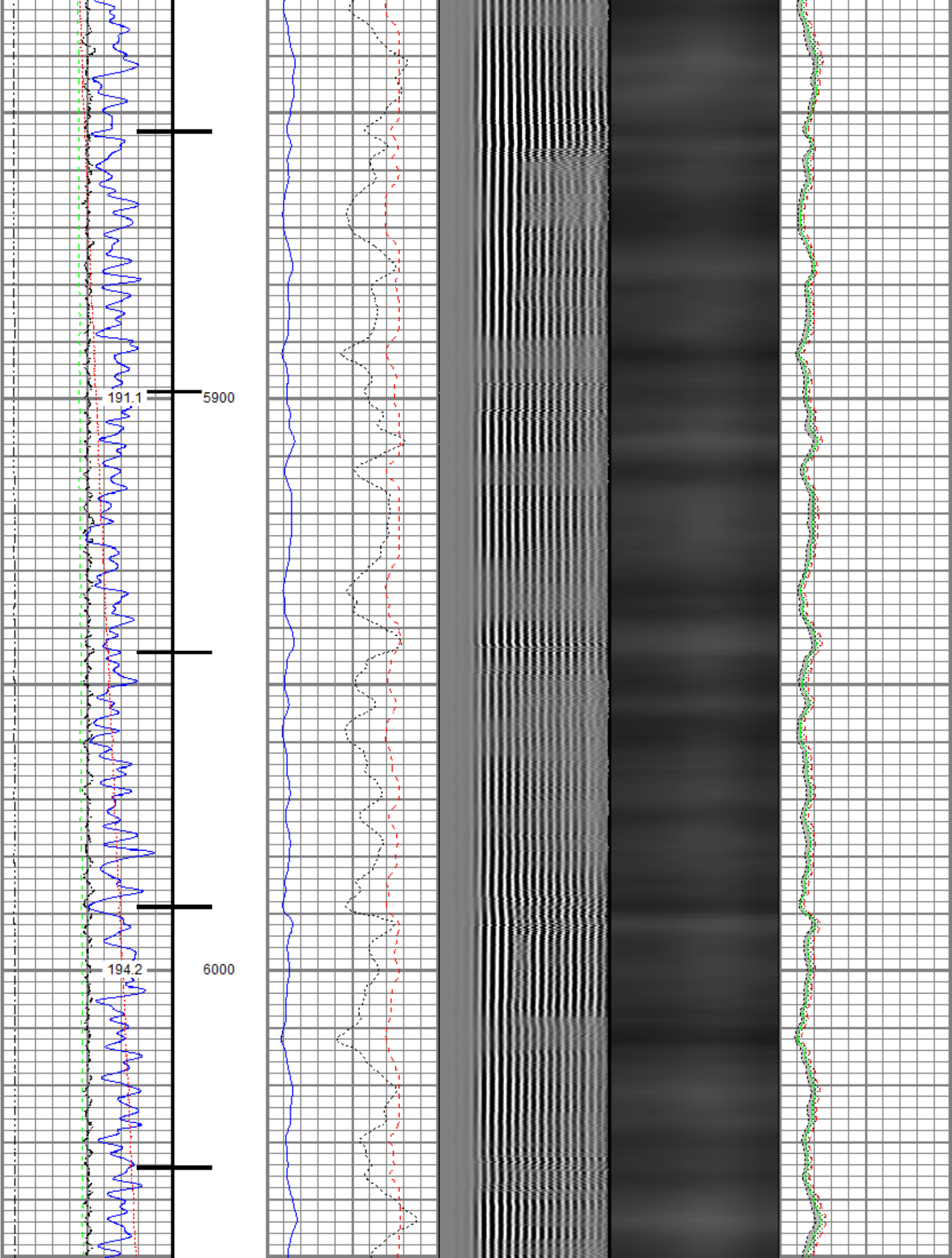


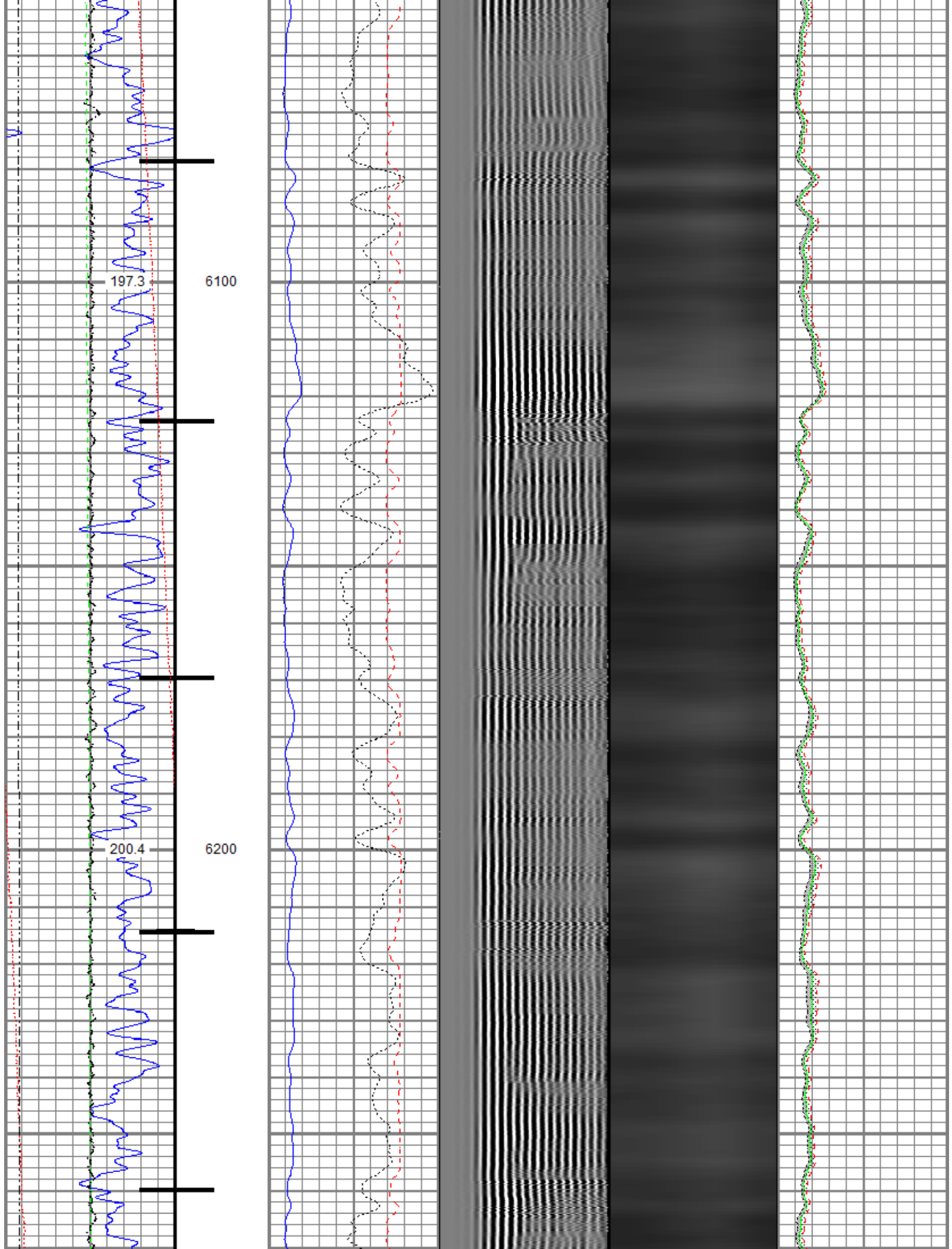


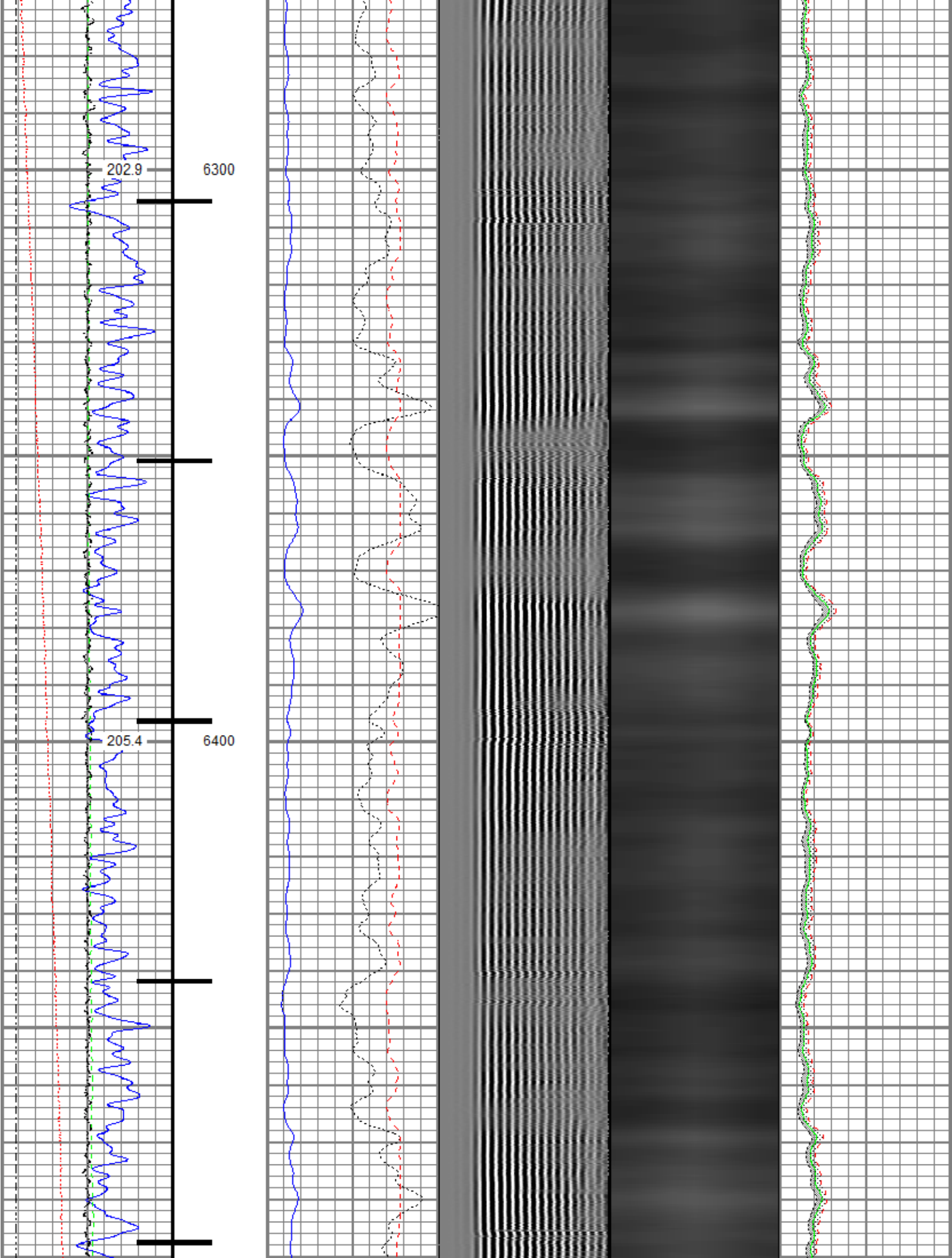


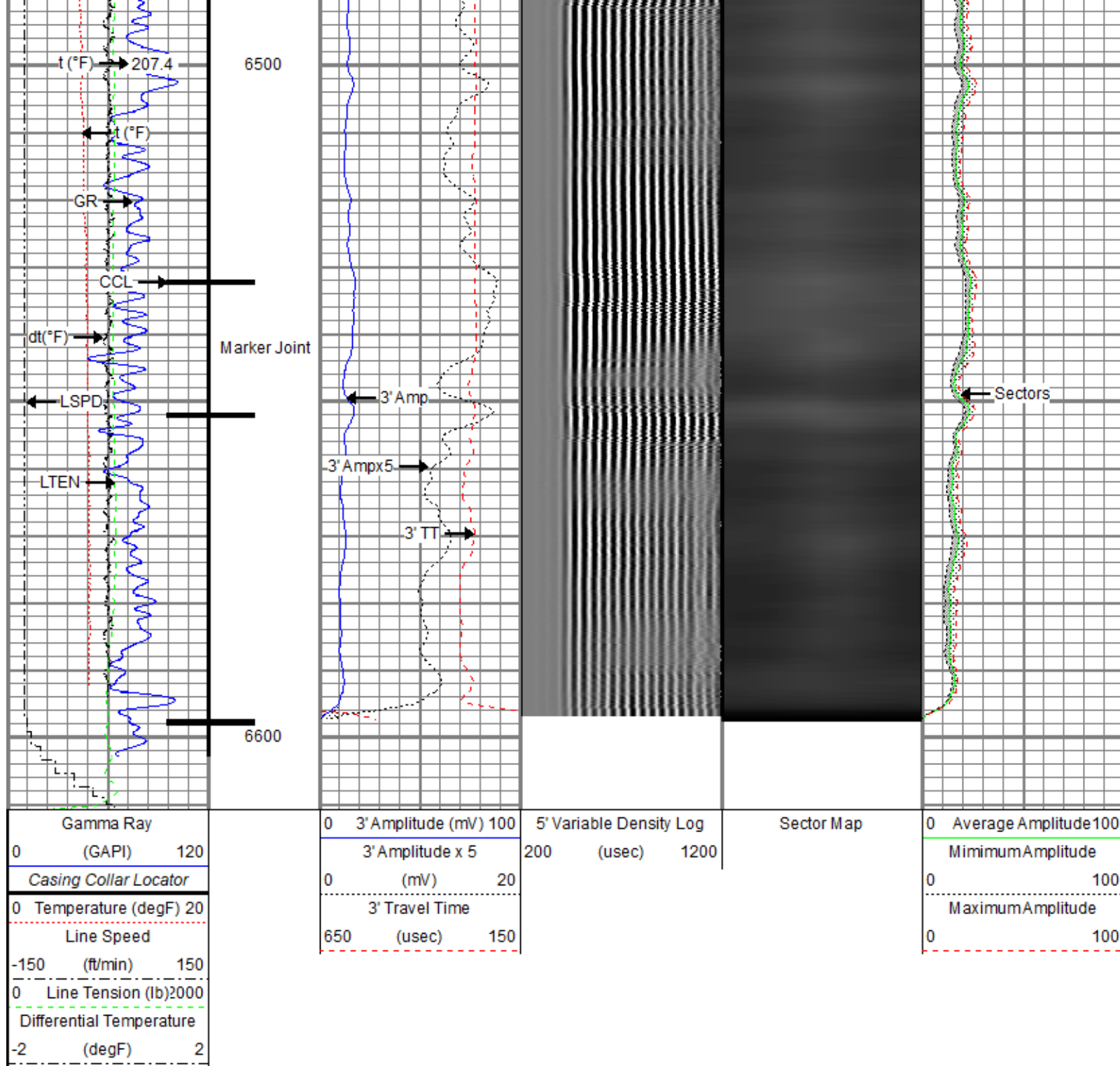








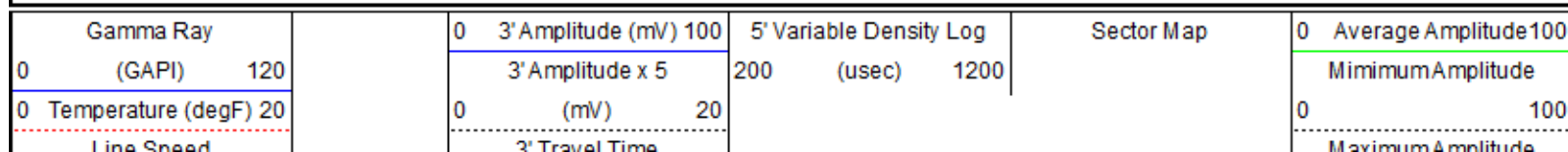




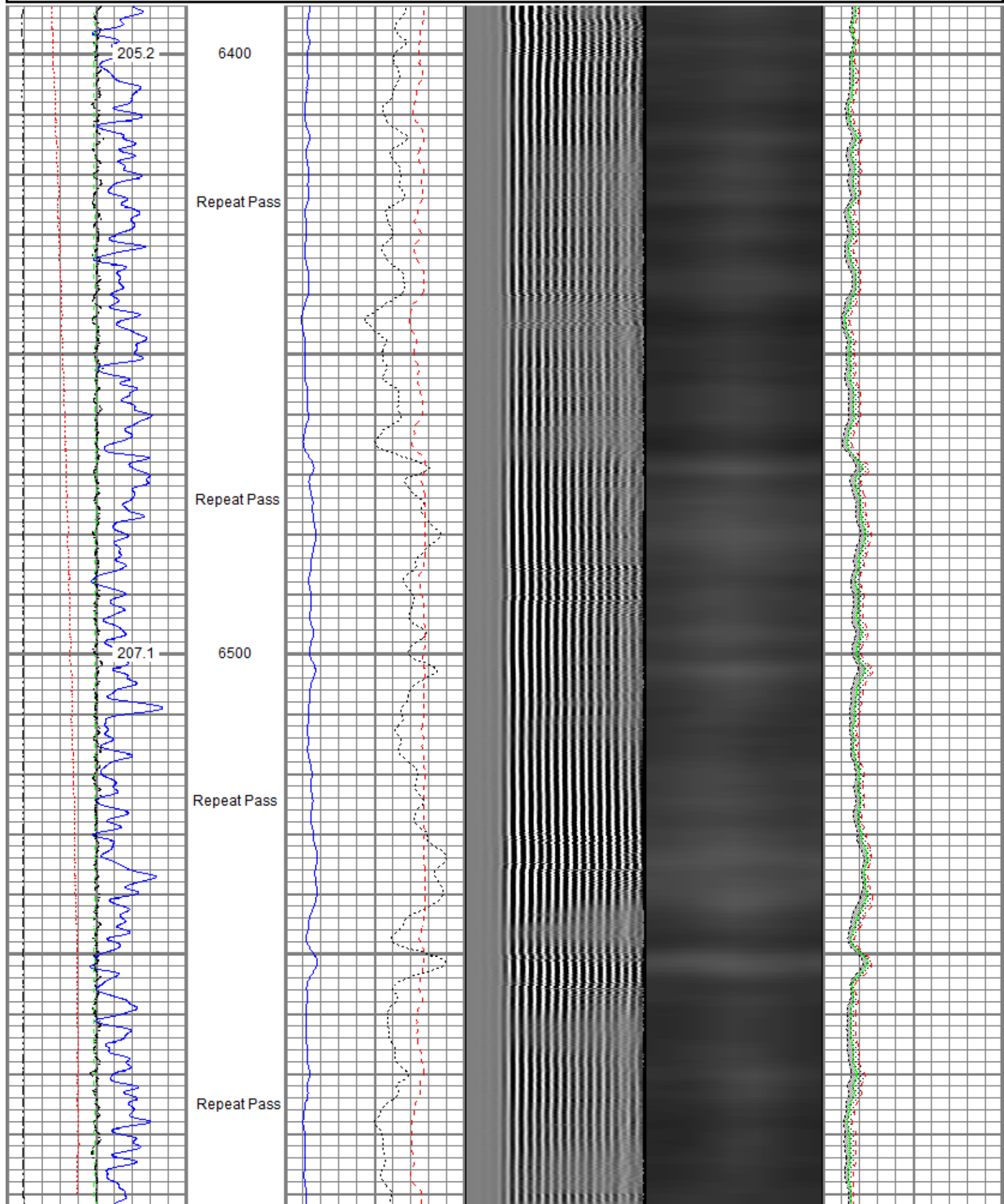
Repeat Pass

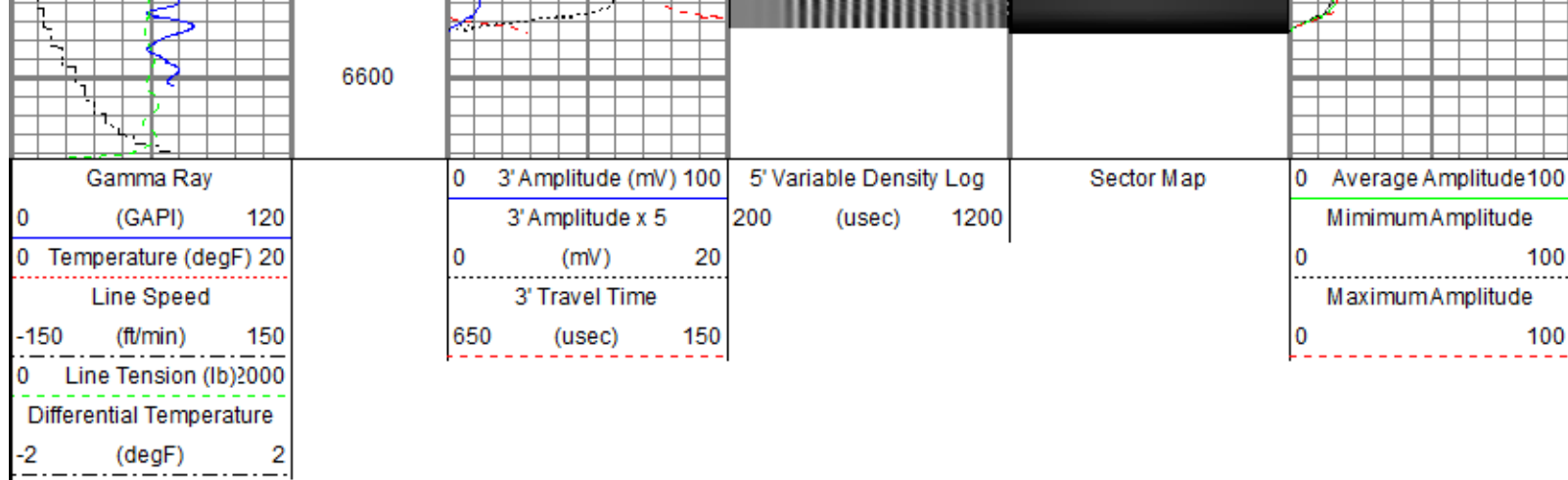
Recorded With 2500 PSI Surface Induced Pressure

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 Presentation Format ros_radrii
 Dataset Creation Thu Jun 21 16:33:36 2018
 Charted by Depth in Feet scaled 1:240

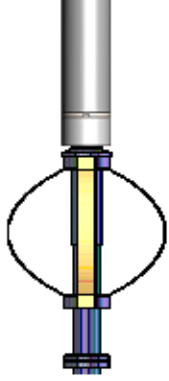


| | | | | | | | | |
|--------------------------|----------|-----|-------------|--------|-----|-------------------|--|-----|
| Line Speed | | | S-Wave Time | | | Maximum Amplitude | | |
| -150 | (ft/min) | 150 | 650 | (usec) | 150 | 0 | | 100 |
| 0 Line Tension (lb) | | | 2000 | | | | | |
| Differential Temperature | | | | | | | | |
| -2 | (degF) | 2 | | | | | | |





| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------|-------------|-----------|---|-------------|-----------|-------------|
| | | | Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck | 1.03 | 1.44 | 3.60 |
| | | | Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer | 2.88 | 2.75 | 20.00 |
| | | | Probe Radii-2750 RBT (FW1302-002) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub | 9.39 | 2.75 | 105.00 |
| TEMP | 17.04 | | | | | |
| WVFS8 | 14.81 | | | | | |
| 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 | 4.80 | 2.75 | 55.00 |
| CCL\$1 | 6.80 | | | | | |
| GR | 5.46 | | | | | |

| | | | | | | |
|---|--|---|---|------|------|-------|
| | |  | Ray/CCL Combined with 6 Pin Bottom for CNT | | | |
| | | | Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer | 2.88 | 2.75 | 20.00 |
| Dataset: SRC Energy_Harvesters State 30N-16B-M_RBL_06-20-18.db: field/well/run1/pass4.1 Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in | | | | | | |

| Calibration Report | |
|--------------------|--|
| Database File | C:\ProgramData\Warrior\Data\SRC\Harvesters State 30N-16B-M\SRC Energy_Harvesters State 30N-16B-M_RBL_06-20-18.db |
| Dataset Pathname | pass4.1 |
| Dataset Creation | Wed Jun 20 13:28:52 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: | FW1302-002 | |
| Tool Model: | 2750 RBT | |
| Calibration Casing Diameter: | 5.500 | in |
| Calibration Depth: | -13.468 | ft |

| Master Calibration, performed (Derived): | | | | | | |
|--|---------|-------|-----------------|---------|---------|--------|
| | Raw (v) | | Calibrated (mv) | | Results | |
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.002 | 0.806 | 0.800 | 71.921 | 88.506 | 0.604 |
| CAL | 0.006 | 0.775 | | | | |
| 5' | -0.015 | 0.806 | 0.800 | 71.921 | 86.608 | 2.118 |
| SUM | | | | | | |
| S1 | 0.002 | 0.823 | 0.000 | 100.000 | 121.853 | -0.276 |
| S2 | 0.002 | 0.756 | 0.000 | 100.000 | 132.544 | -0.264 |
| S3 | 0.002 | 0.730 | 0.000 | 100.000 | 137.407 | -0.277 |
| S4 | 0.002 | 0.743 | 0.000 | 100.000 | 135.068 | -0.310 |
| S5 | 0.002 | 0.804 | 0.000 | 100.000 | 124.797 | -0.295 |
| S6 | 0.003 | 0.884 | 0.000 | 100.000 | 113.456 | -0.285 |
| S7 | 0.003 | 0.912 | 0.000 | 100.000 | 109.906 | -0.277 |
| S8 | 0.002 | 0.893 | 0.000 | 100.000 | 112.342 | -0.266 |

| Internal Reference Calibration, performed (Not Performed): | | | | | | |
|--|---------|-----|----------------|-----|---------|--------|
| | Raw (v) | | Calibrated (v) | | Results | |
| | Zero | Cal | Zero | Cal | Gain | Offset |

| | | | | | | |
|-----|-------|-------|-------|-------|-------|-------|
| CAL | 0.000 | 0.000 | 0.006 | 0.775 | 1.000 | 0.000 |
|-----|-------|-------|-------|-------|-------|-------|

Air Zero Calibration, performed Wed Jun 20 08:43:03 2018:

| | 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: FW1302-002
Tool Model: 2750 RBT
Performed: Sun Nov 12 13:28:07 2017

| | | |
|-----------------|-------------|-------------|
| | Reference | Reading |
| Low Reference: | 100.00 degF | 110.72 degF |
| High Reference: | 350.00 degF | 409.18 degF |
| Gain: | 0.84 | |
| Offset: | 7.26 | |
| Delta Spacing | 1 | |



| | |
|---------|----------------------------|
| Company | SRC Energy Inc |
| Well | Harvesters State 30N-16B-M |
| Field | Wattenberg |
| County | Weld |
| State | Colorado |