



**Radial Cement Bond Log
Variable Density Log
Gamma/CCL/Temp**

Company Antero Resources
Well Cider Run 2H
Field Marchellus
County Tyler
State WV
Country USA

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Well Cider Run 2H
Field Marchellus
County Tyler
State WV
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Location: API #: 47-095-028400000
SEC TWP RGE Ed Yost Pad
Permanent Datum GL Elevation
Log Measured From KB
Drilling Measured From KB
Other Services: None
Elevation: K.B. 30', D.F. N/A, G.L. N/A

| | | | | | |
|------------------------|----------------|---------|--|--|--|
| Run Number | 10/May/2023 | One | | | |
| Depth Driller | 25.152' | 7.212' | | | |
| Depth Logger | 7.200' | Surface | | | |
| Bottom Logged Interval | 7" 7/8 | Water | | | |
| Open Hole Size | 8.3# | 148 F | | | |
| Fluid Type | 5,051' | 11:30 | | | |
| Viscosity | 12:30 | 104 | | | |
| Recorded Temp. | Charleroi, PA | | | | |
| Estimated Cement Top | Blaine | | | | |
| Well Ready | Mr. Mike Szabo | | | | |
| Well Logger on Bottom | | | | | |
| Equipment Number | | | | | |
| Location | | | | | |
| Recorded By | | | | | |
| Witnessed By | | | | | |

| Borehole Record | | Tubing Record | | | | | |
|-----------------|-----|---------------|----|------|--------|------|----|
| Run Number | Bit | From | To | Size | Weight | From | To |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Logging Record | | Size | | Wg/Ft | | Top | | Bottom | |
|----------------|---------------|--------|--------|-------|-----|---------|---------|---------|-----------|
| Log String | Offset String | 9" 5/8 | 5" 1/2 | 36# | 23# | Surface | Surface | 330.96' | 3,479.99' |
| | | | | | | | | | |
| | | | | | | | | | |

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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 Correlated to Marker Joint (6,173'- 6,183') Per Well Schematic
 Depth Shift of +9'
 Free Pipe = 71.9m
 Bond Pipe = 3.4m
 ETOC = 5,051'
 Thank You For Choosing Nine Energy Service

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| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|-------------|-------------|-----------|--------------------------|-------------|-----------|-------------|
| Centralizer | 32.54 | | CABLE_HEADS-TITAN_1_7/16 | 1.04 | 1.44 | 4.00 |
| CABLE_HEADS | 23.79 | | | | | |
| Centralizer | 22.75 | | | | | |

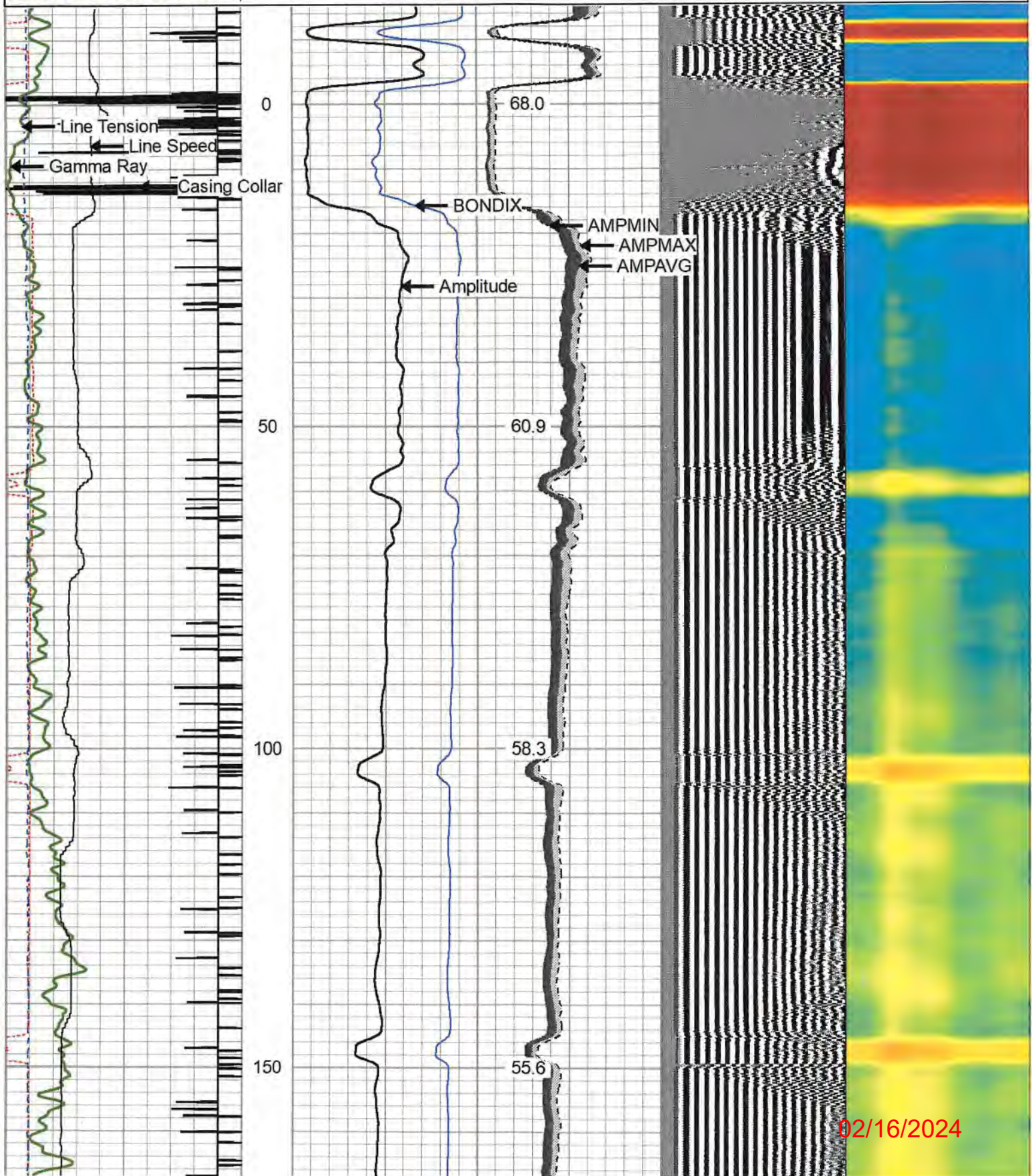
| | | | | | | |
|-----------------|----------------|--|---|------|------|-------|
| | | | Centralizer-Titan_2.75 Bowspring Centralizer | 2.86 | 2.75 | 35.00 |
| RBT HeadVolt | 19.89 19.83 | | | | | |
| Temp | 16.98 | | | | | |
| | | | RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub | 9.39 | 2.75 | 90.00 |
| WVFS8 | 14.75 | | | | | |
| WVFS7 | 14.75 | | | | | |
| WVFS6 | 14.75 | | | | | |
| WVFS5 | 14.75 | | | | | |
| WVFS4 | 14.75 | | | | | |
| WVFS3 | 14.75 | | | | | |
| WVFS2 | 14.75 | | | | | |
| WVFS1 | 14.75 | | | | | |
| WVF3FT | 14.75 | | | | | |
| WVF5FT | 13.75 | | | | | |
| Centralizer | 10.50 | | | | | |
| WVFCAL | 10.50 | | Centralizer-Titan_2.75 Bowspring Centralizer | 2.86 | 2.75 | 35.00 |
| HEADVOLT | 10.50 | | | | | |
| GR | 7.64 | | | | | |
| CCL | 6.73 | | | | | |
| GR | 5.40 | | GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray | 4.78 | 2.75 | 57.00 |
| Centralizer | 2.86 | | | | | |
| | | | Centralizer-Titan_2.75 Bowspring Centralizer | 2.86 | 2.75 | 35.00 |

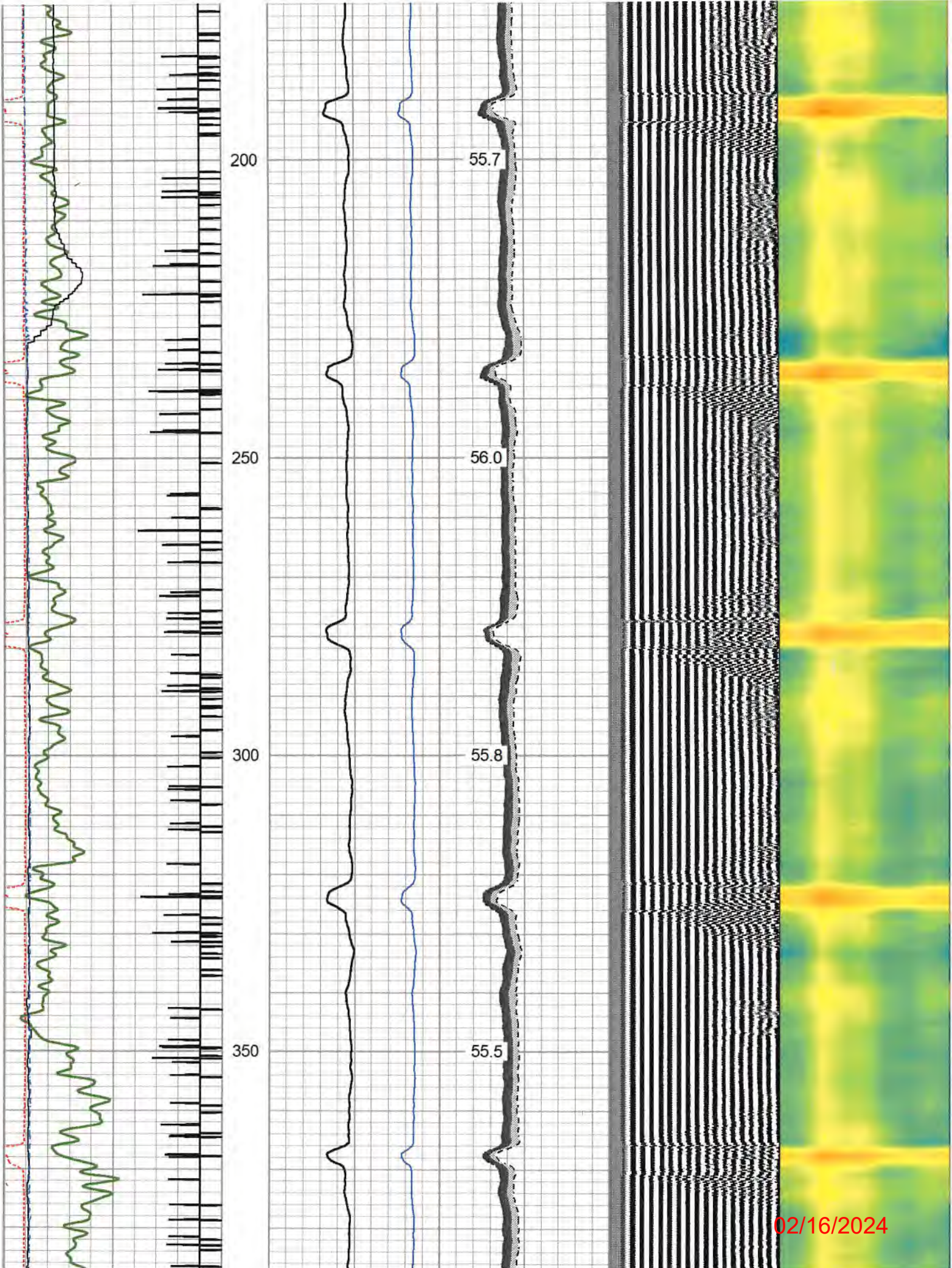
Dataset: antero_ed_yost_cider-run_2h_rcbl_may-10-2023.db: field/well/main/pass1
 Total length: 23.79 ft
 Total weight: 261.00 lb
 O.D.: 3.12 in

| | | |
|------------|--------------------|------|
| 265 | Travel Time (usec) | 165 |
| 9 | Casing Collar | -1 |
| 0 | Gamma Ray (GAPI) | 150 |
| Line Speed | | |
| -100 | (ft/min) | 100 |
| 0 | Line Tension (lb) | 2000 |

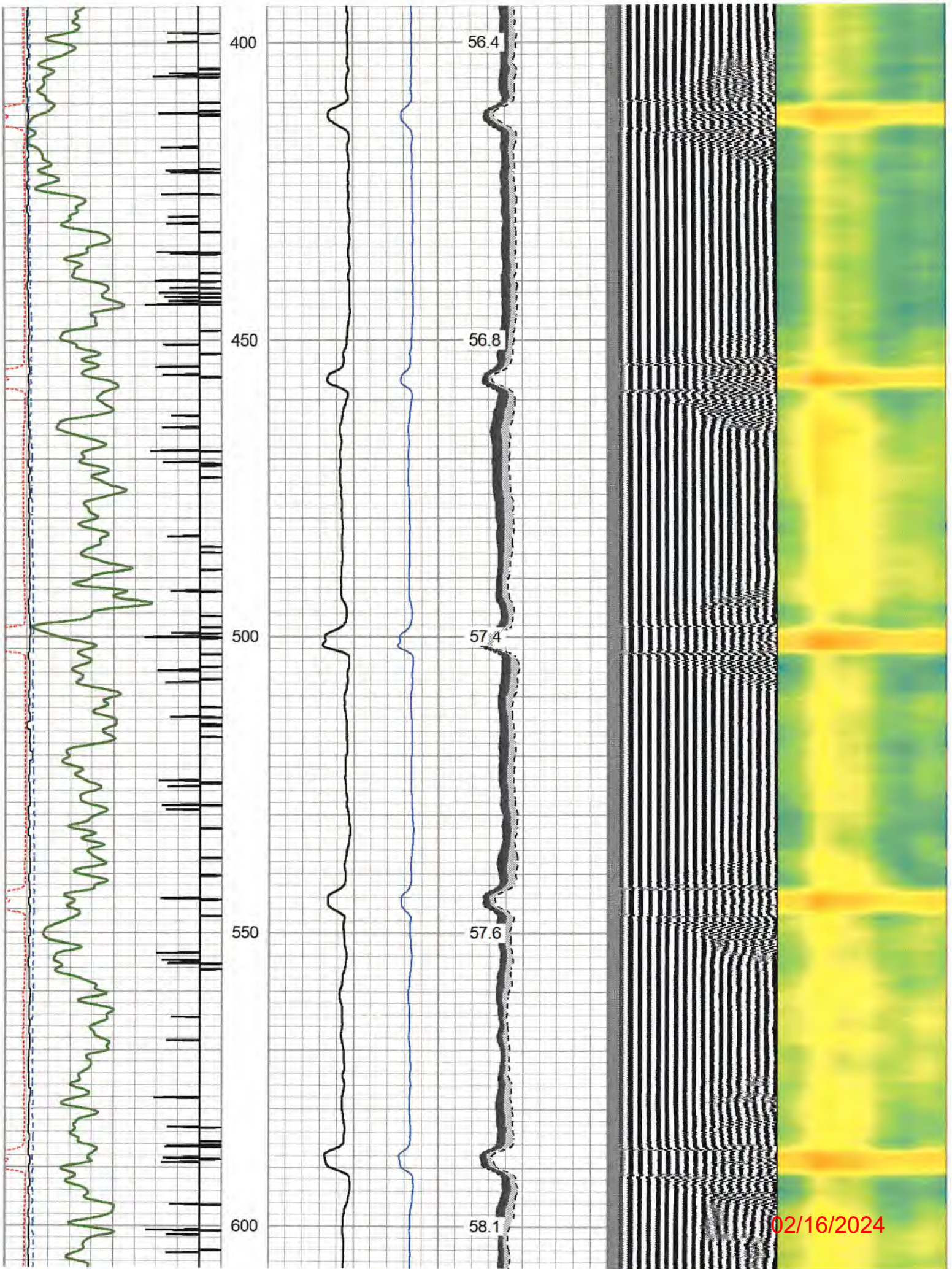
| | | | | | |
|--------|----------------|-----|----|--------|-----|
| 0 | Amplitude (mV) | 100 | -5 | AMPMIN | 150 |
| 1 | BONDIX | 0 | -5 | AMPMAX | 150 |
| | | | -5 | AMPAVG | 150 |
| TEMP | | | | | |
| (degF) | | | | | |

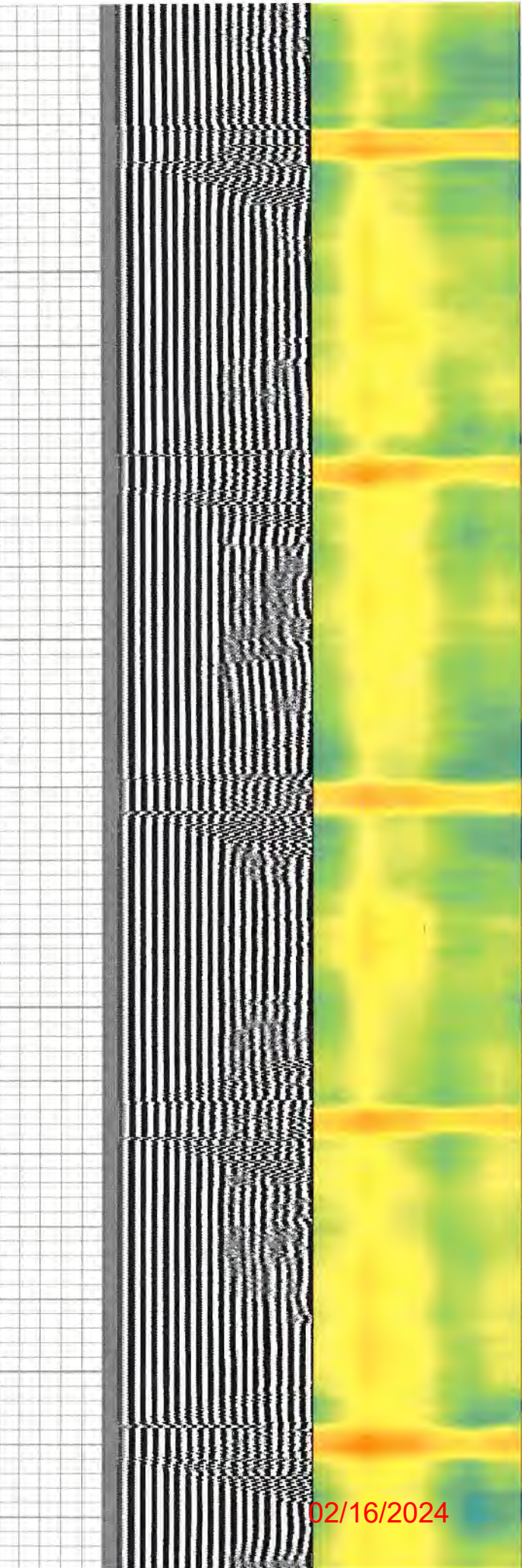
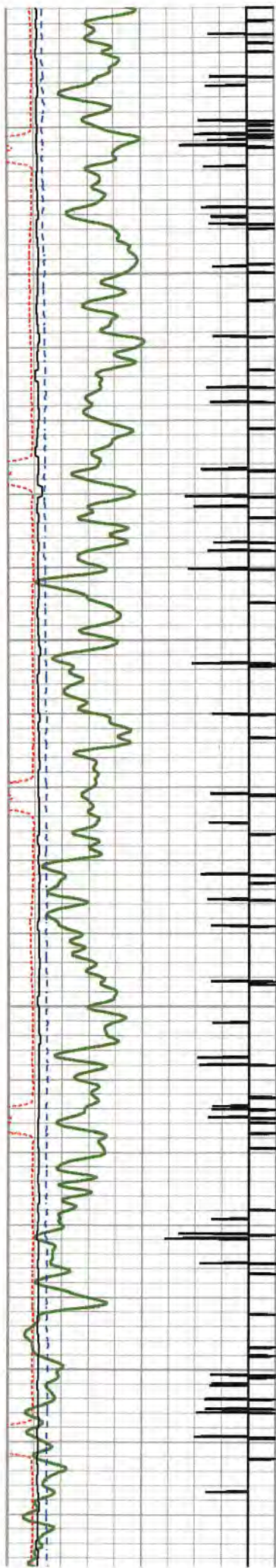
| | | | |
|------------------|--------|------------|---|
| Variable Density | 1 | Cement Map | 8 |
| 300 | (usec) | 1200 | |



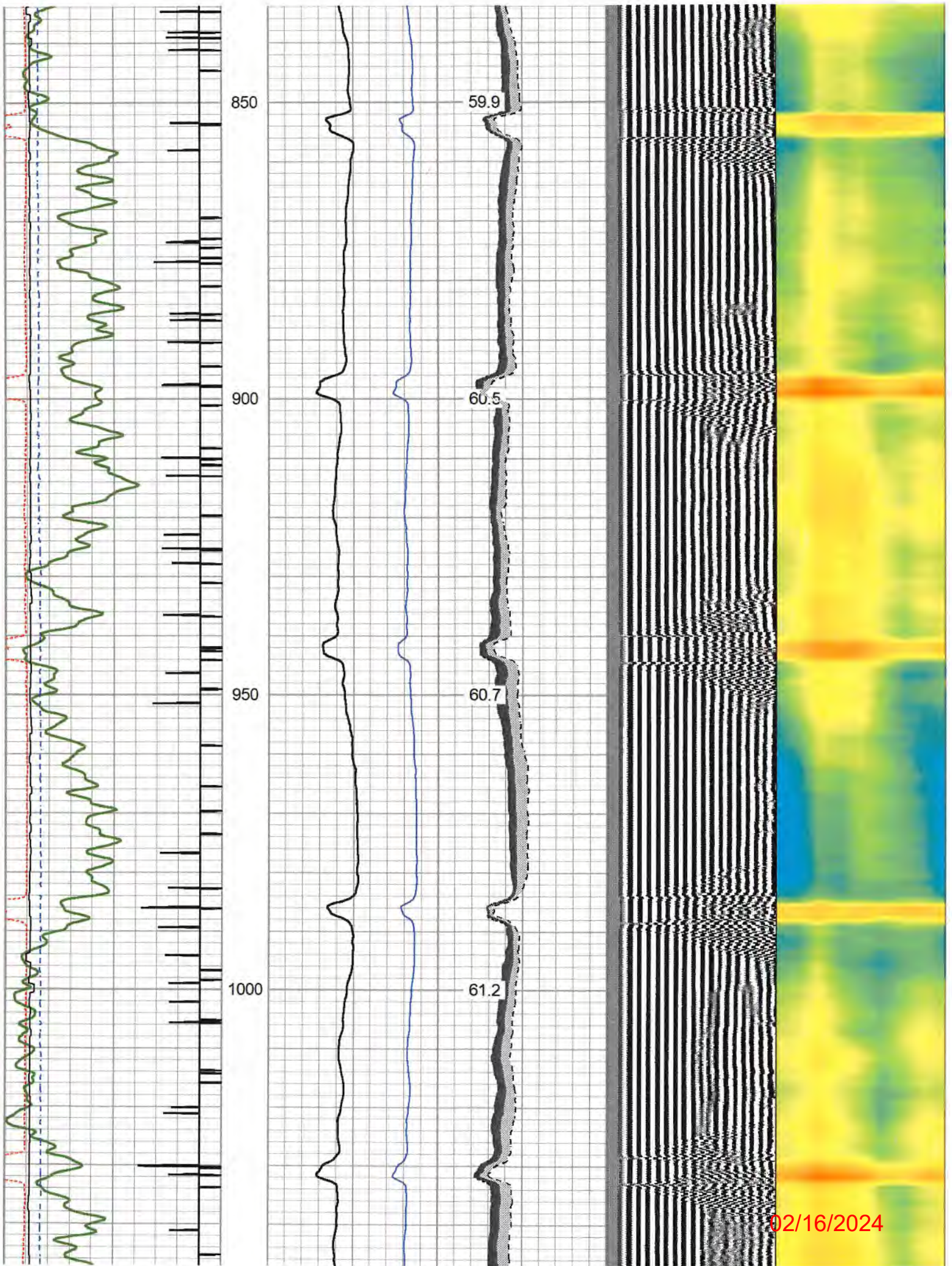


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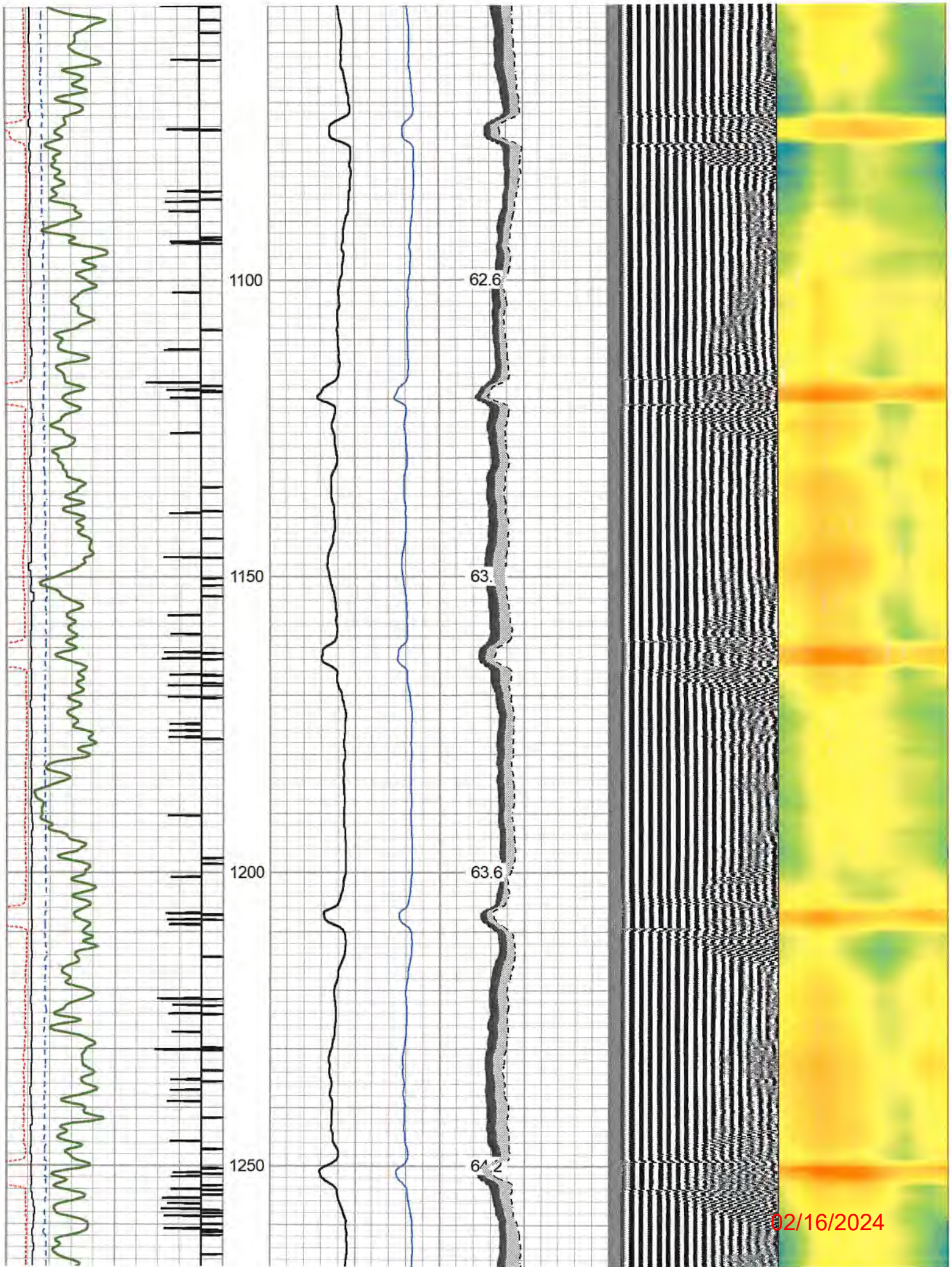


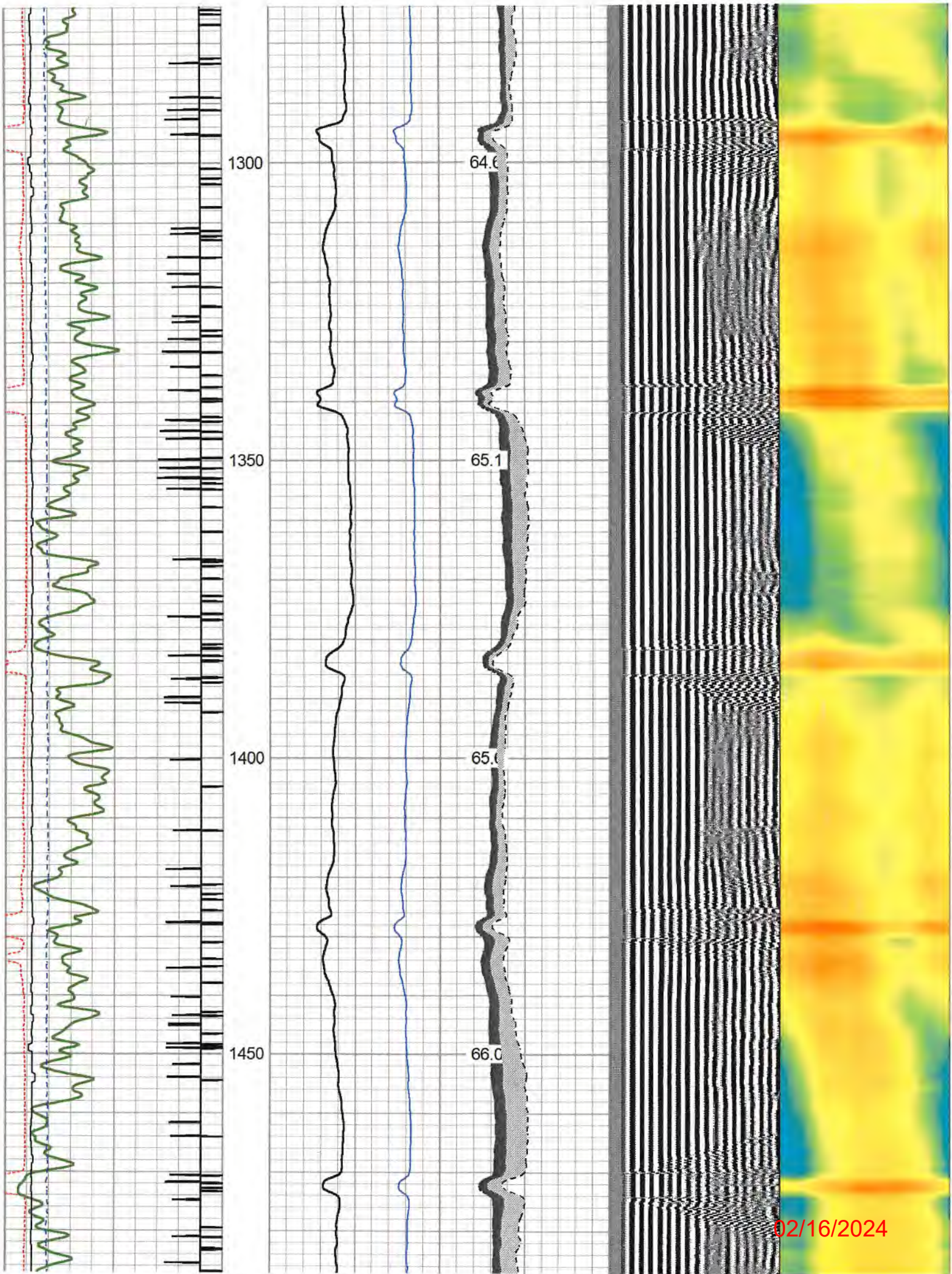


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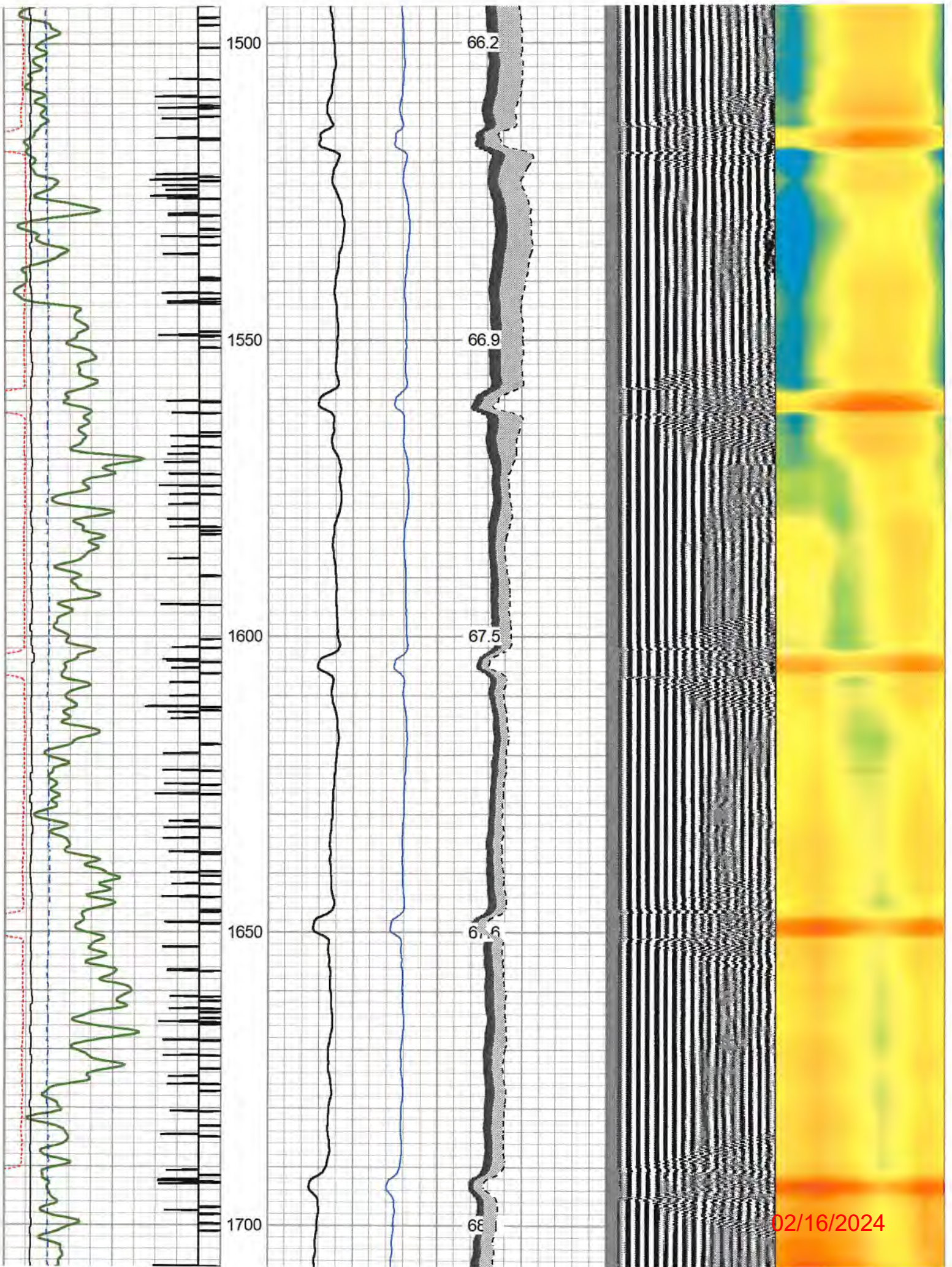


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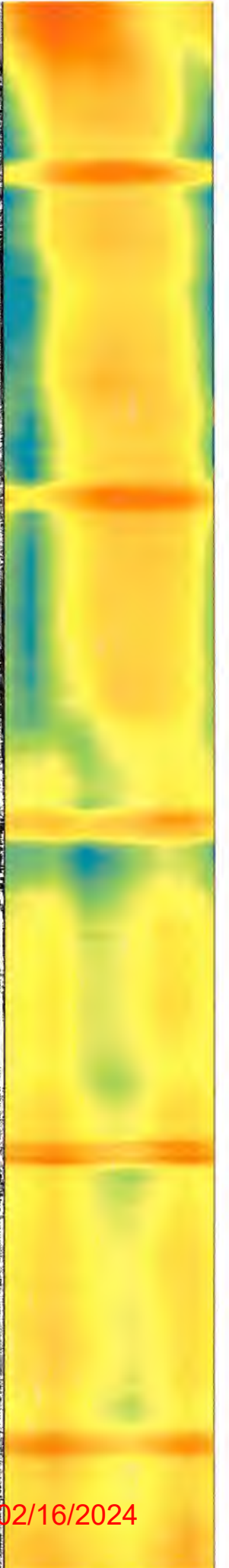
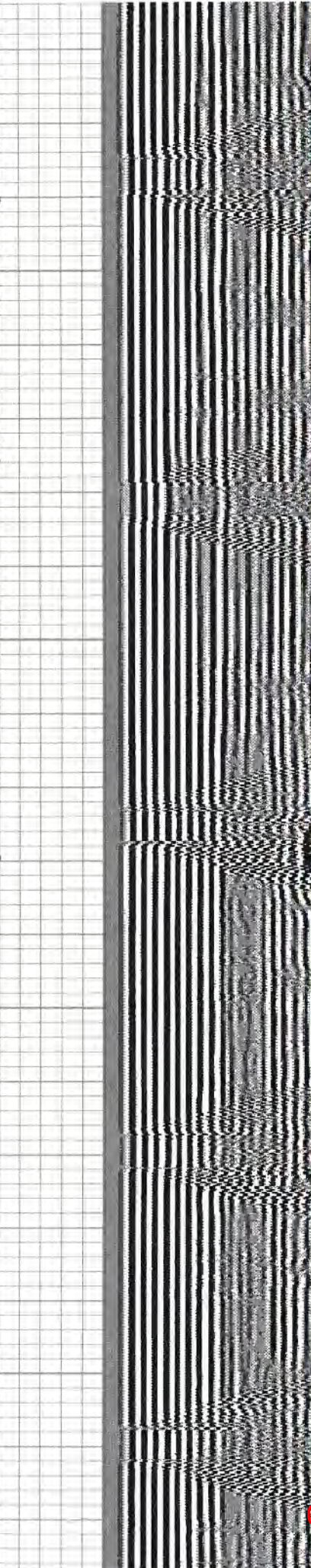
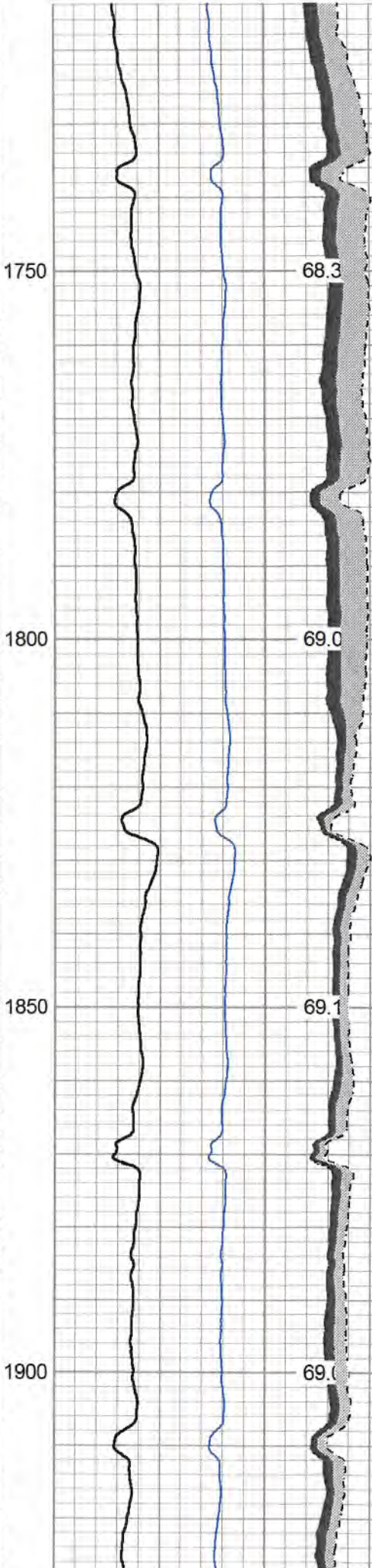
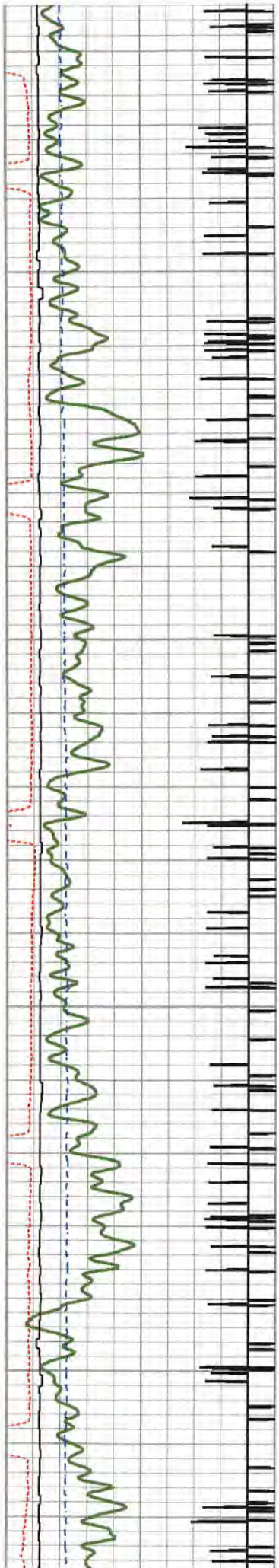




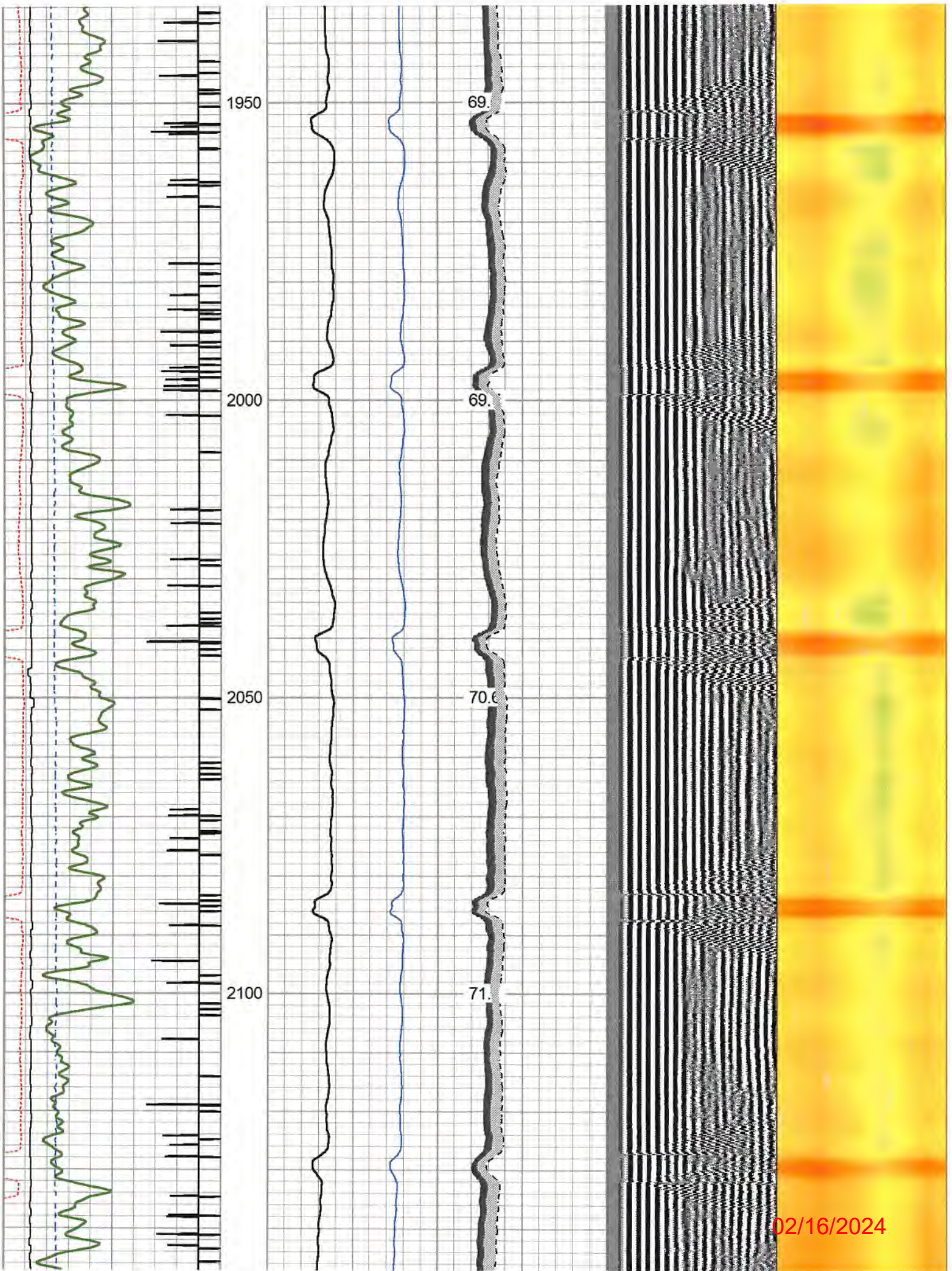
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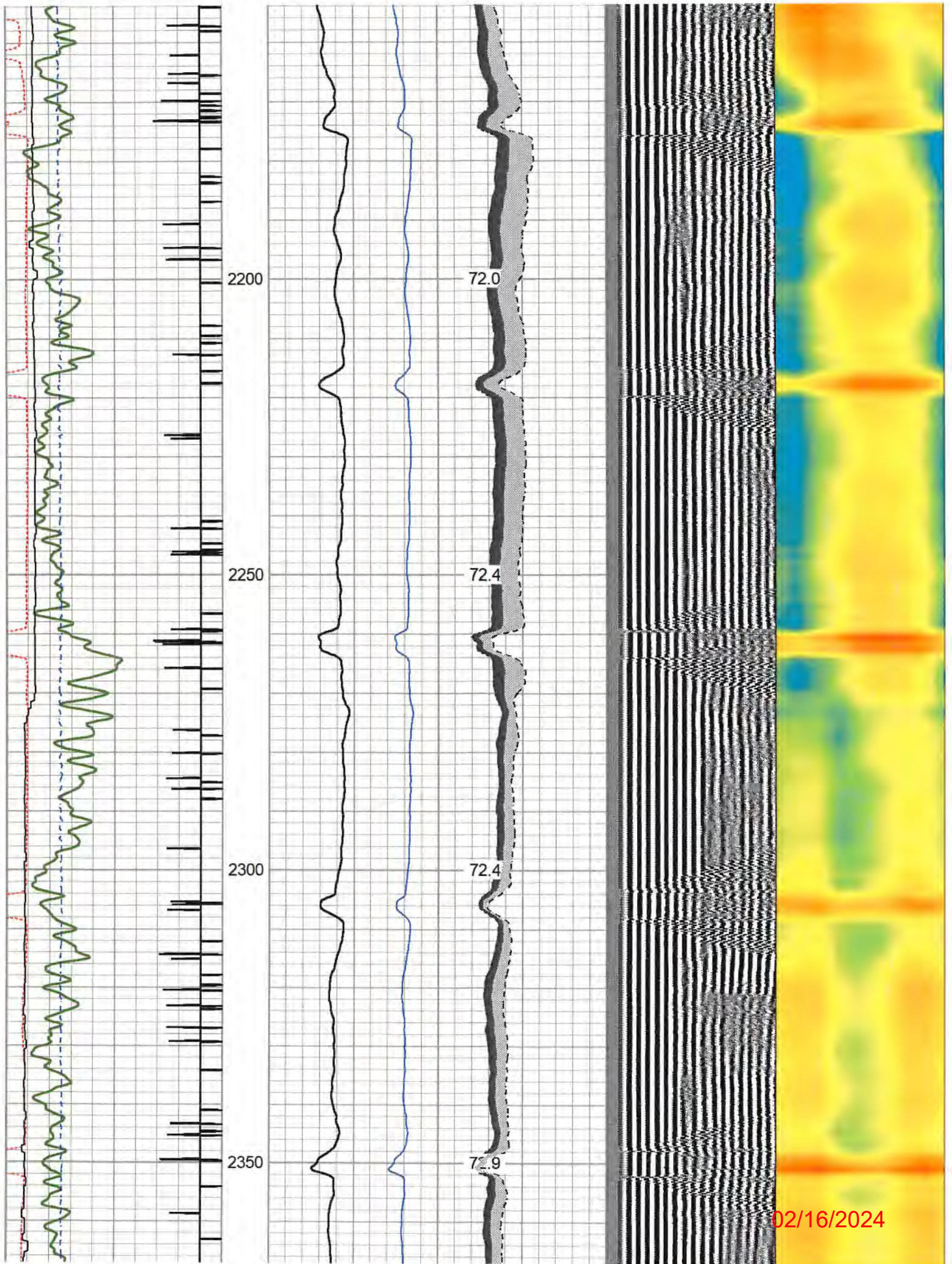


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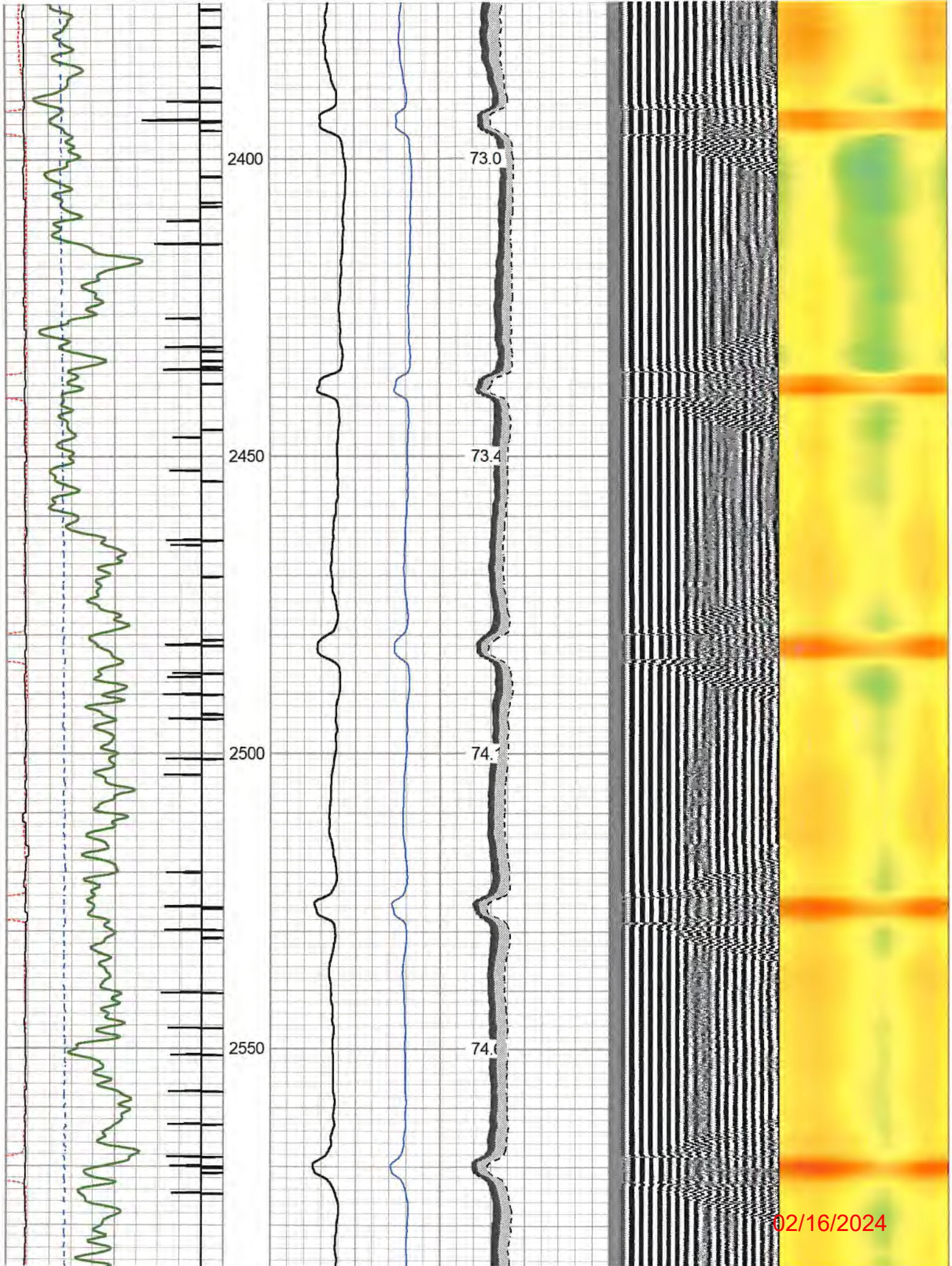


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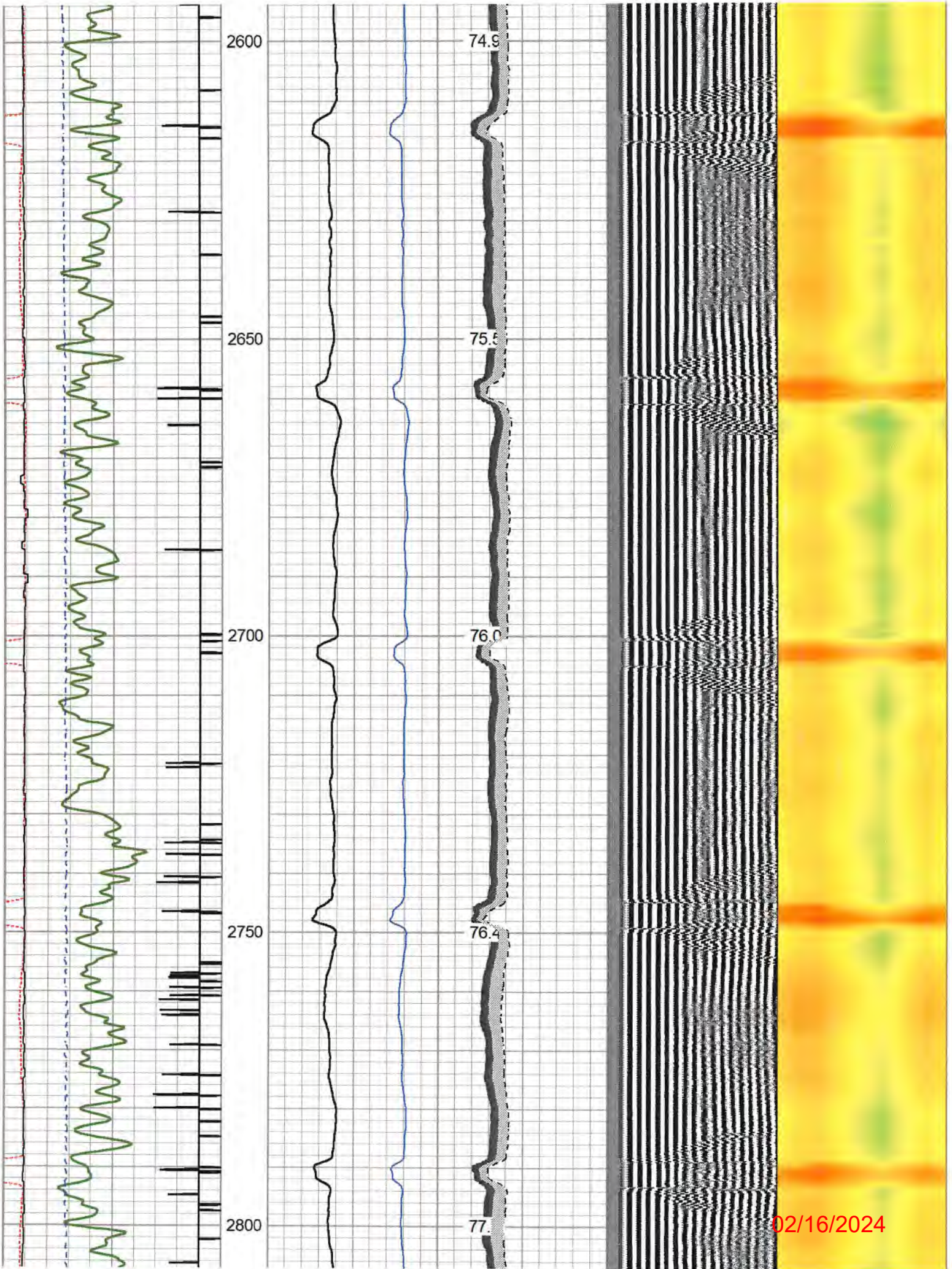


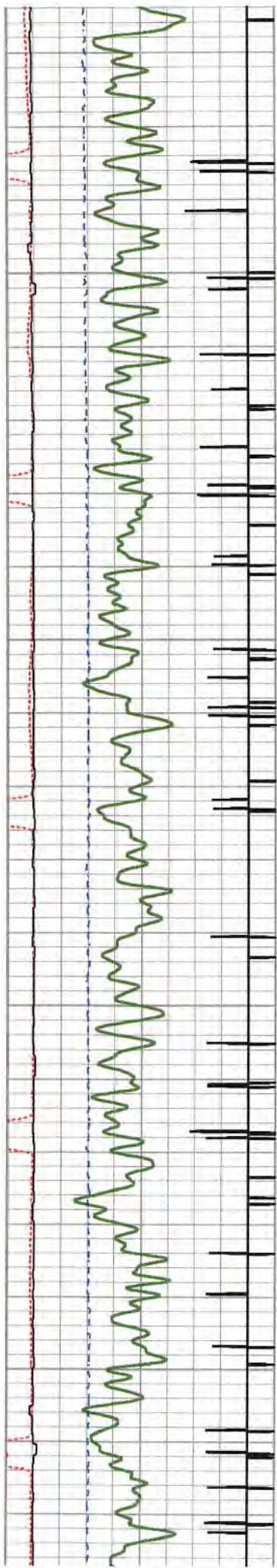


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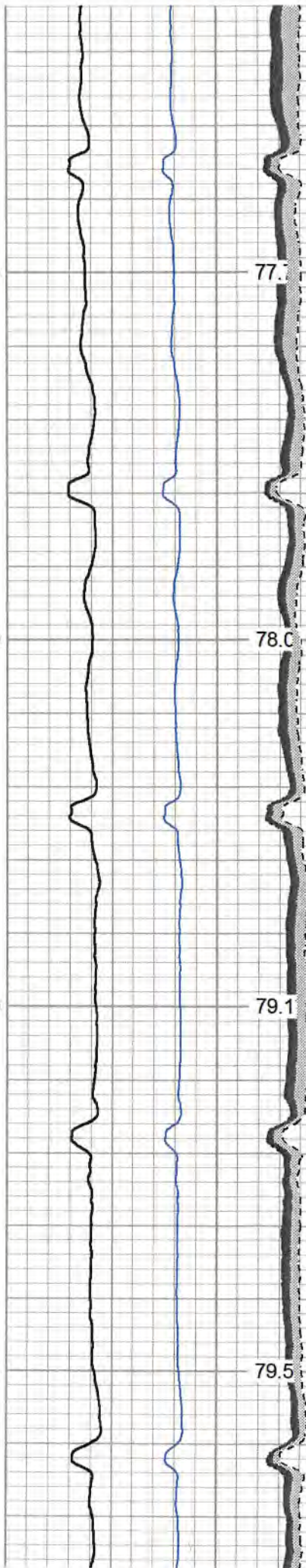


2850

2900

2950

3000

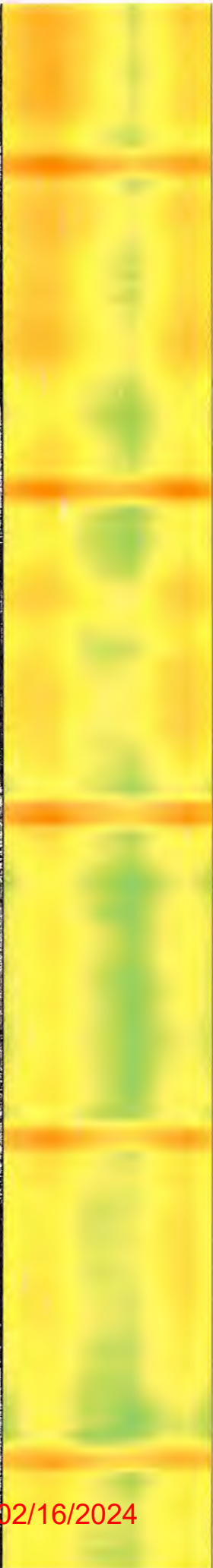
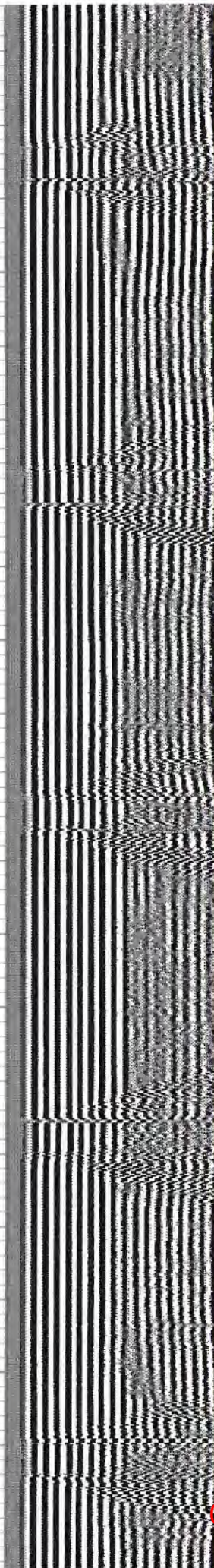


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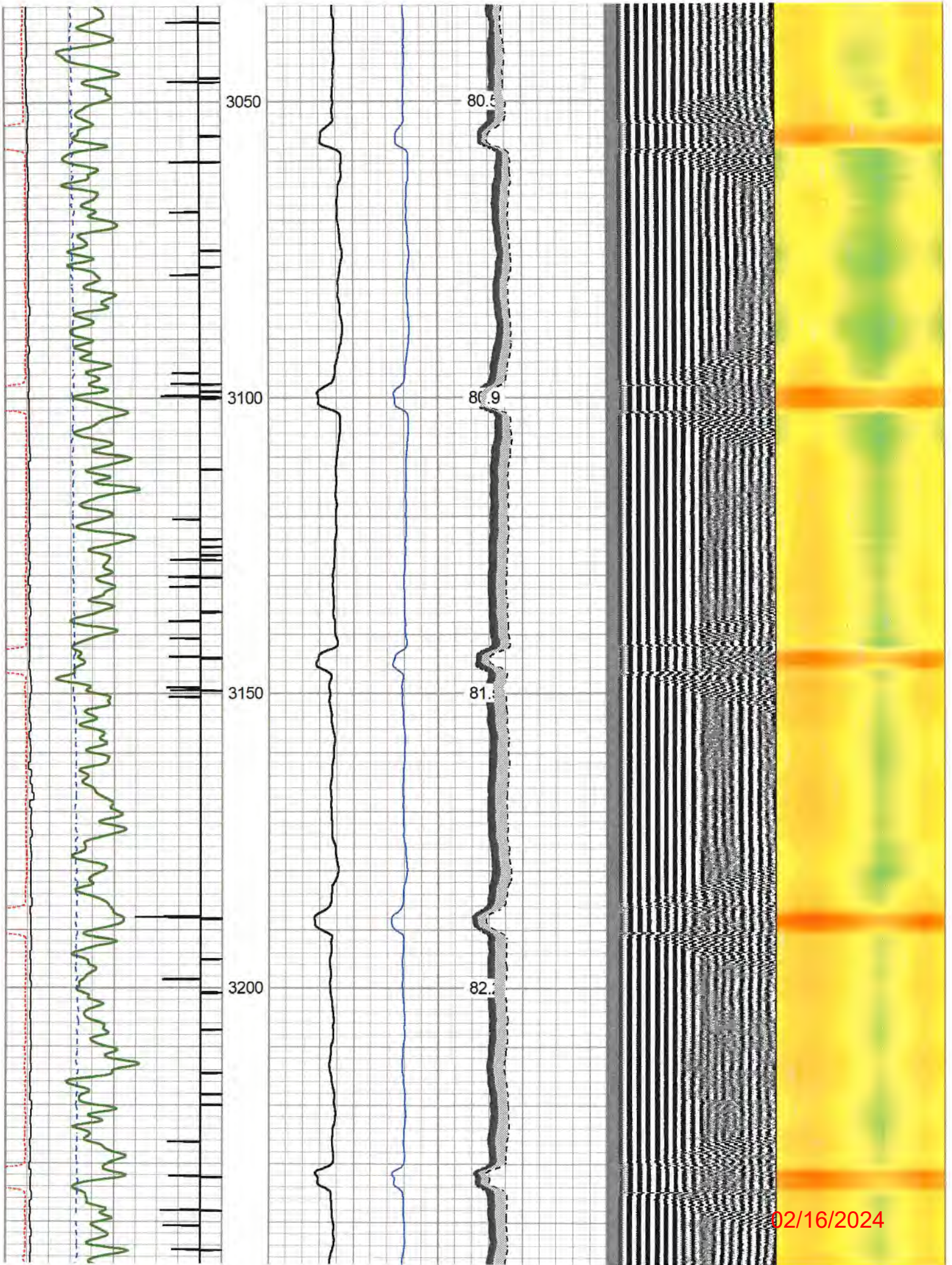
78.0

79.1

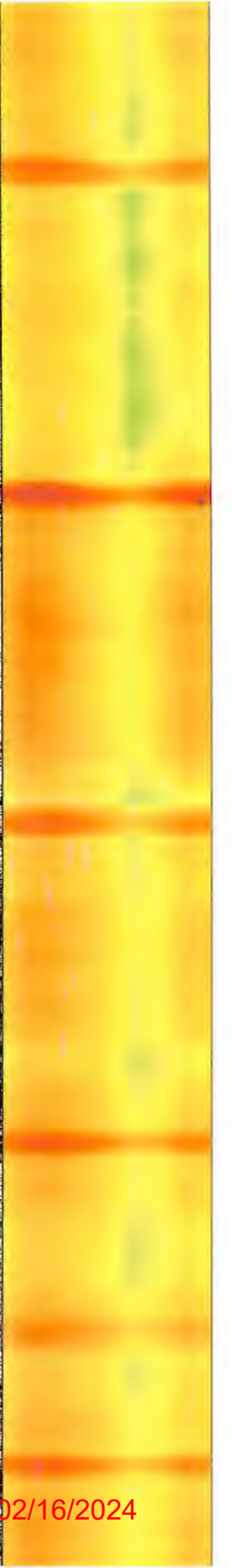
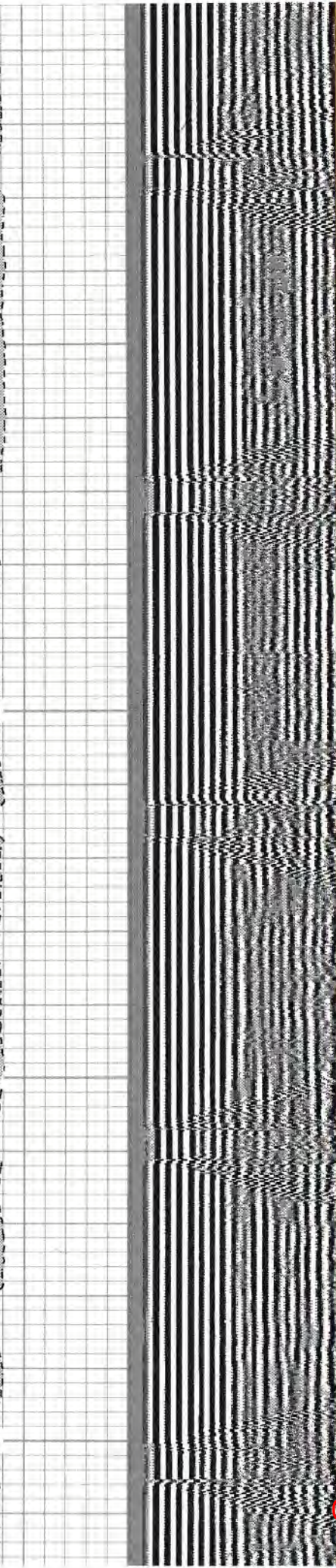
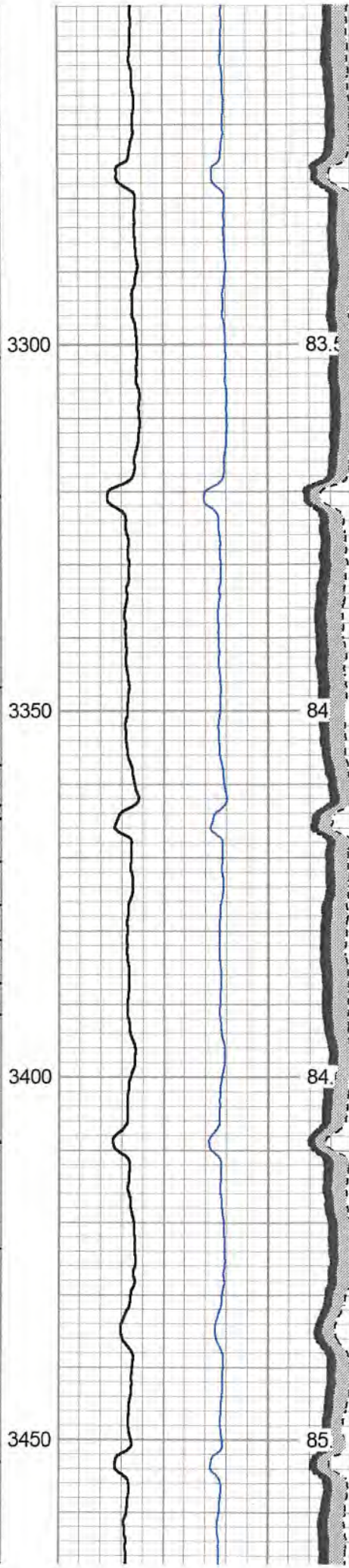
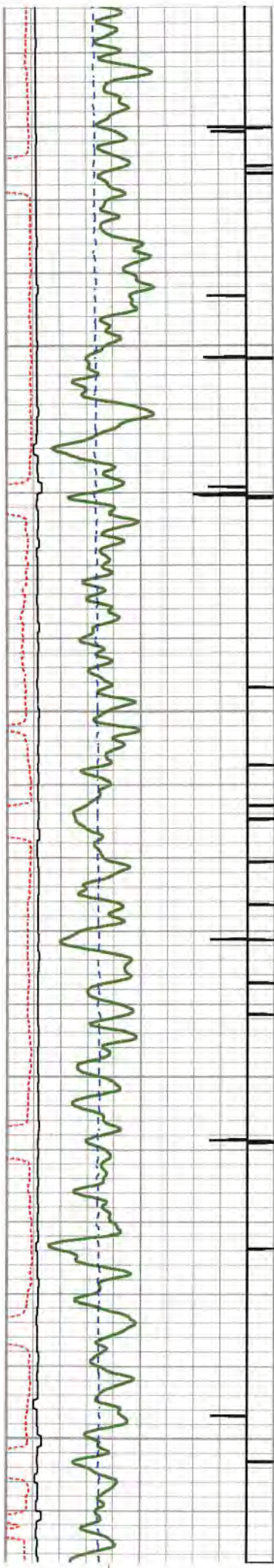
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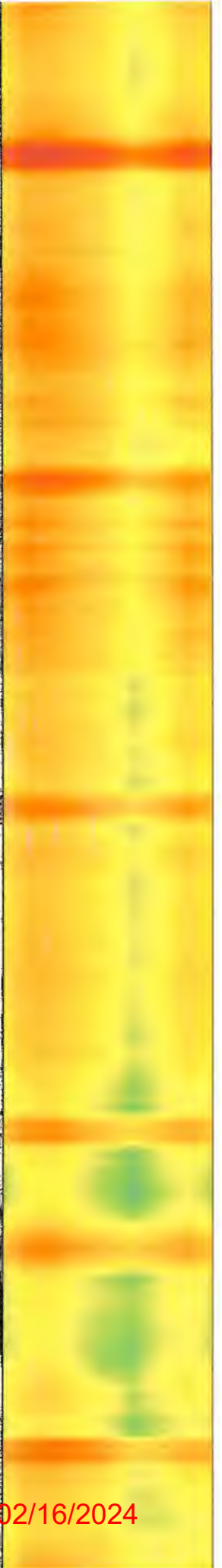
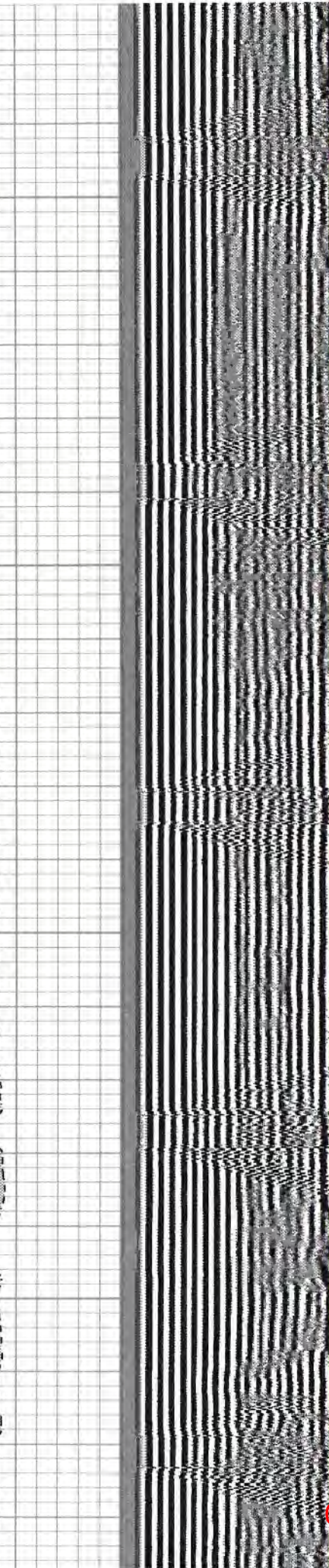
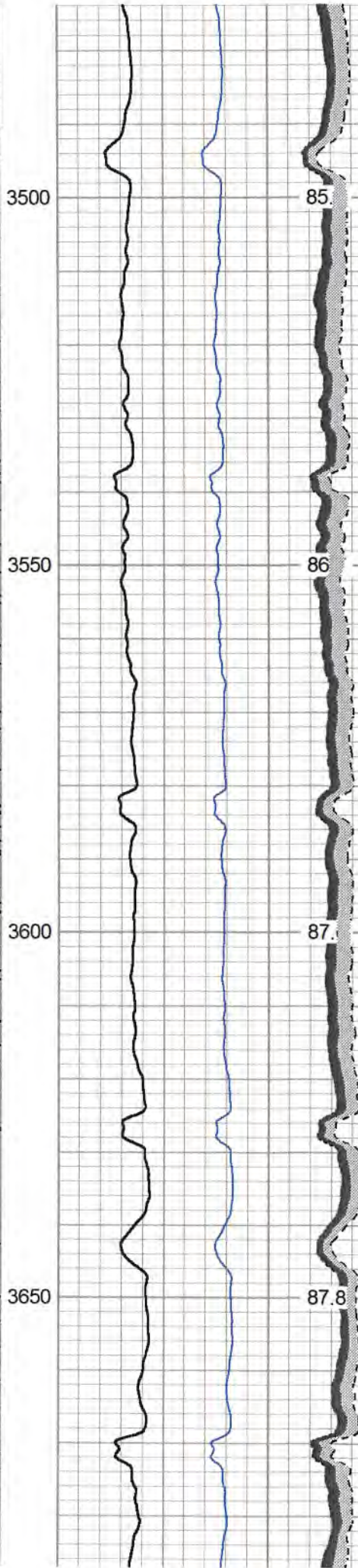
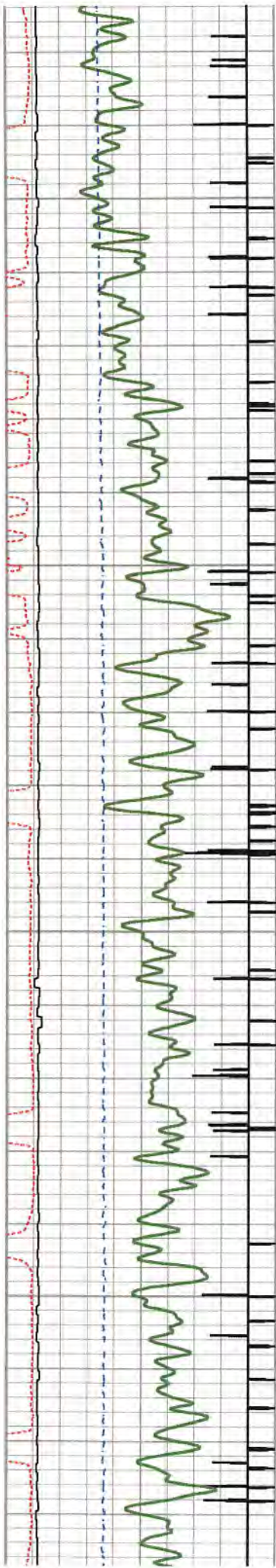
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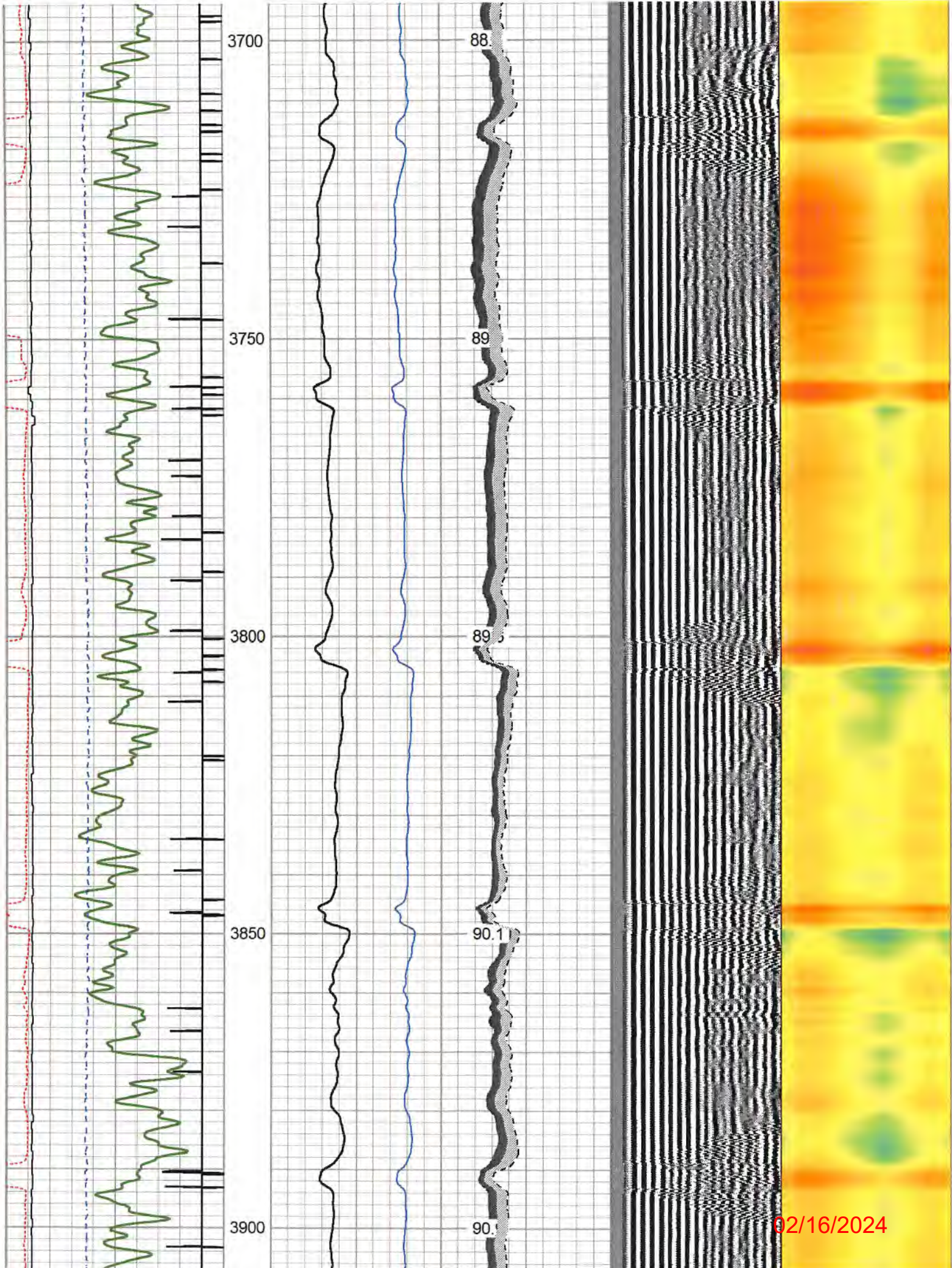
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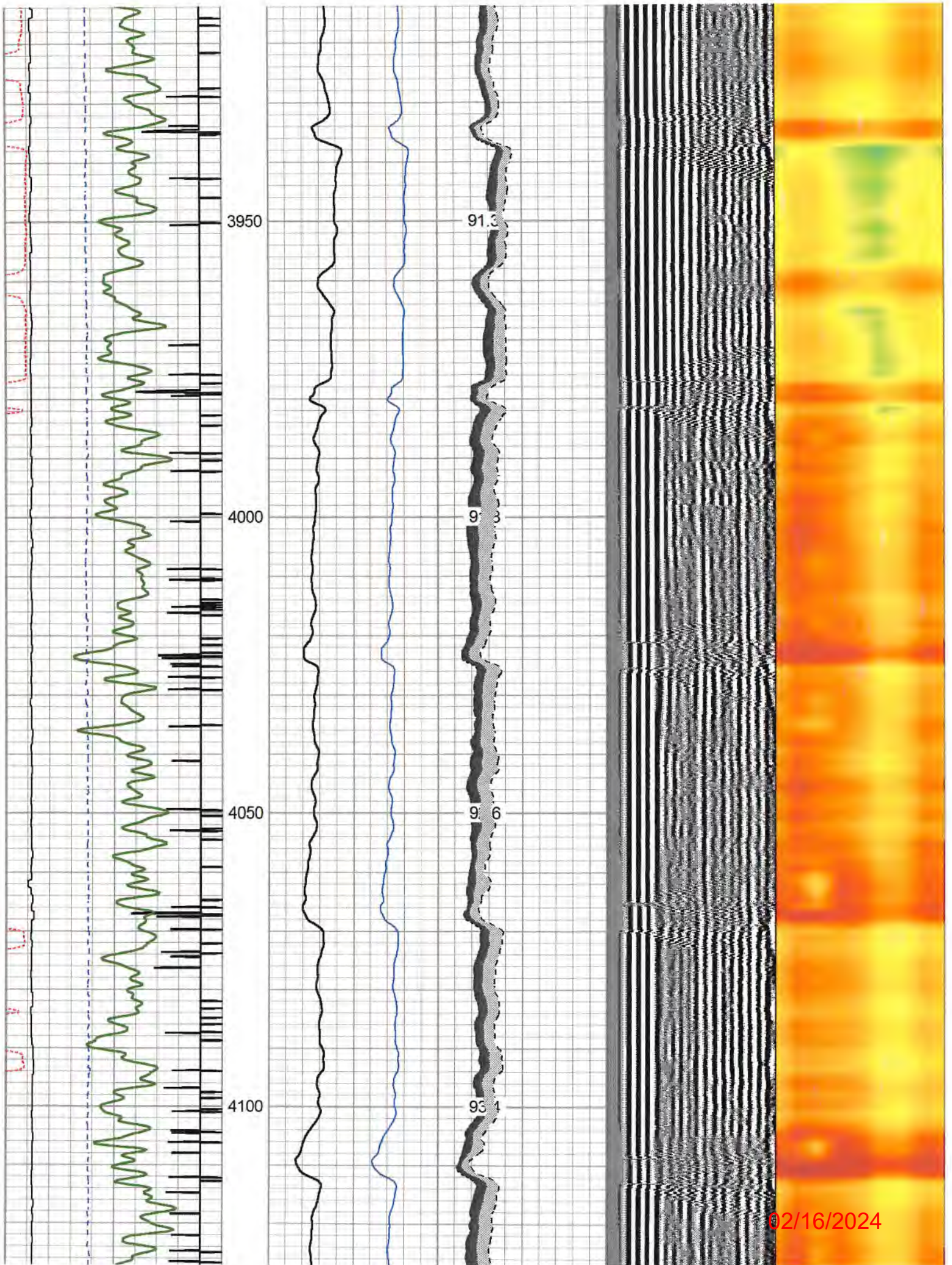
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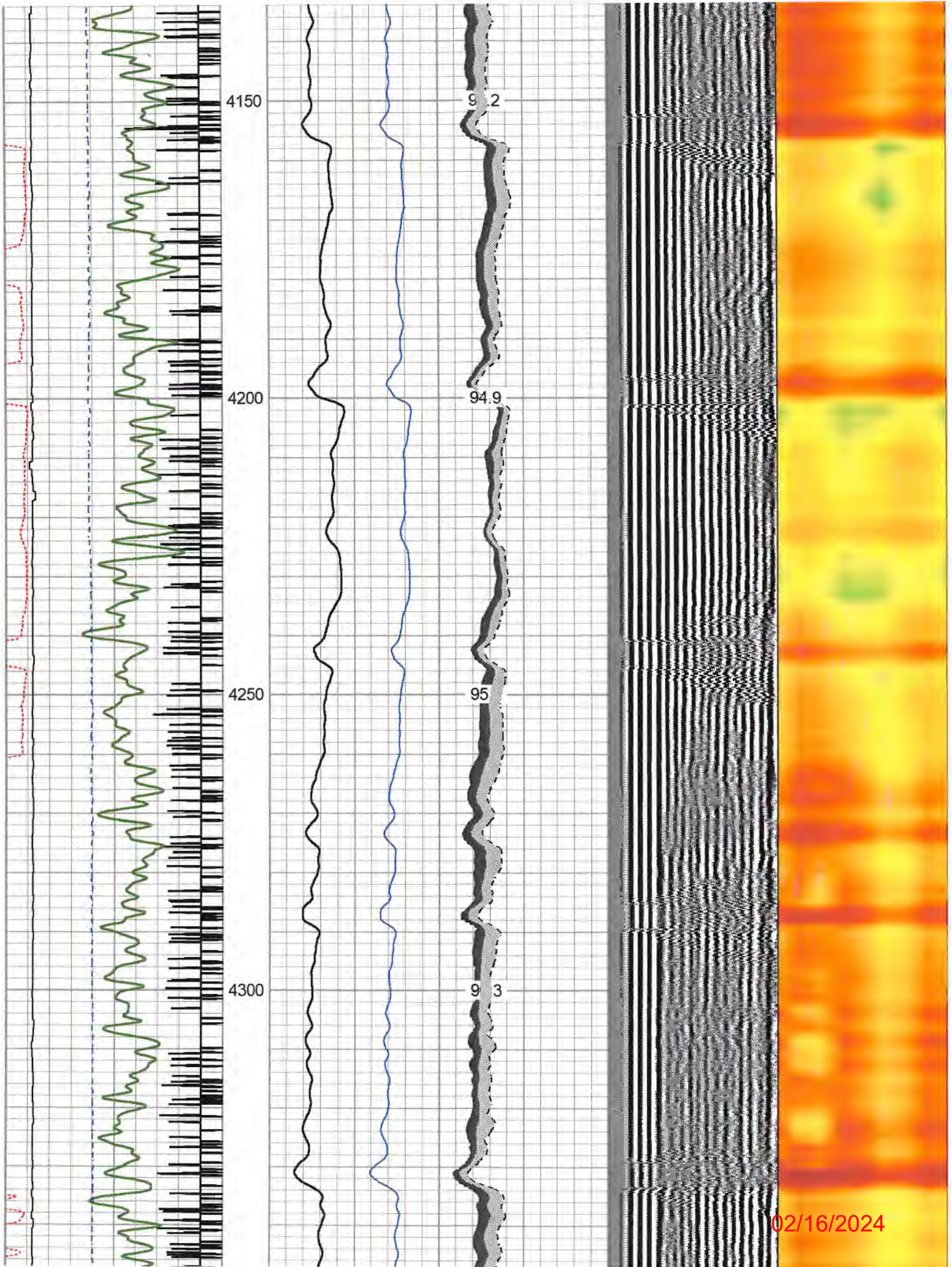
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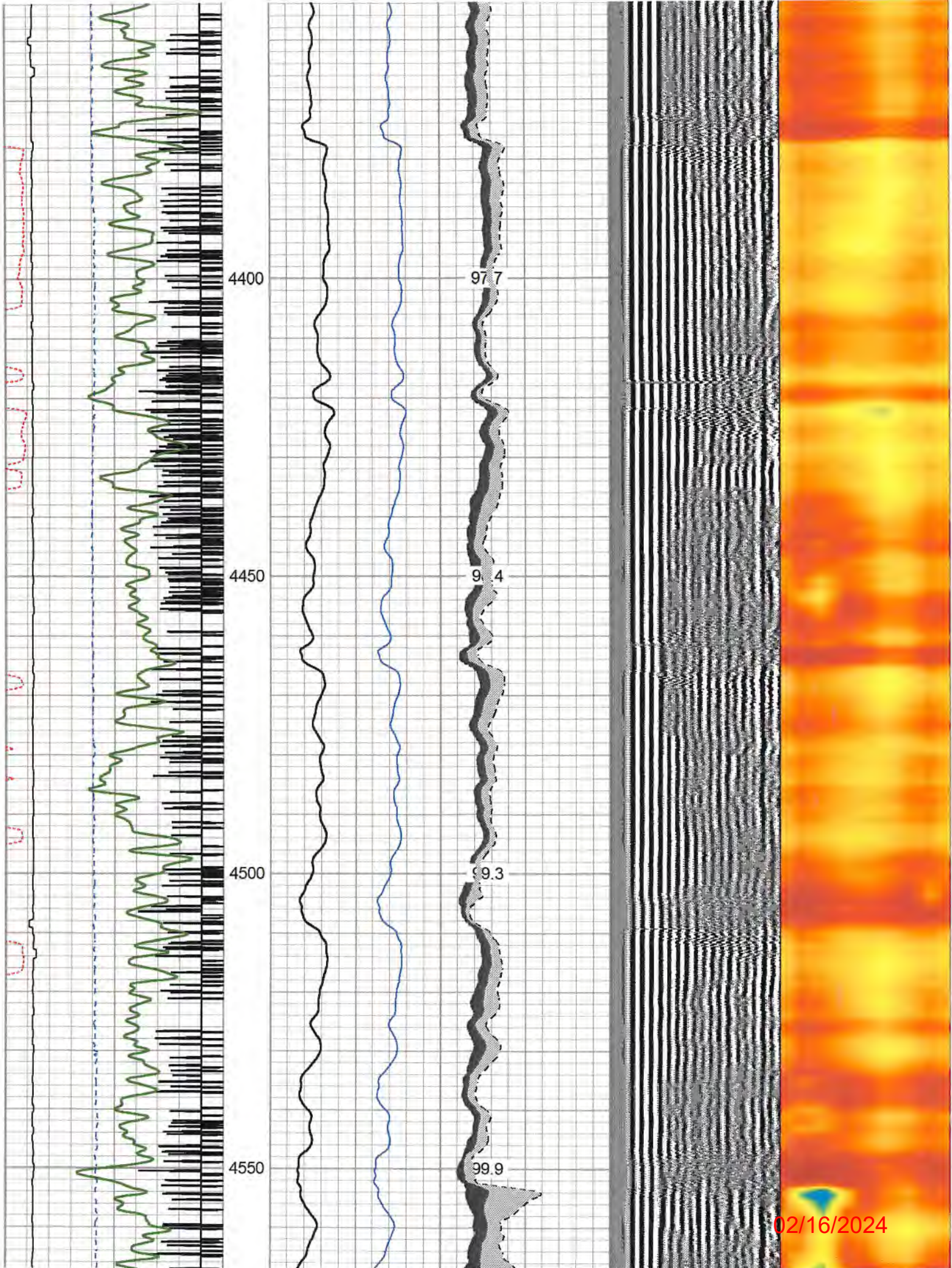


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4400

97.7

4450

98.4

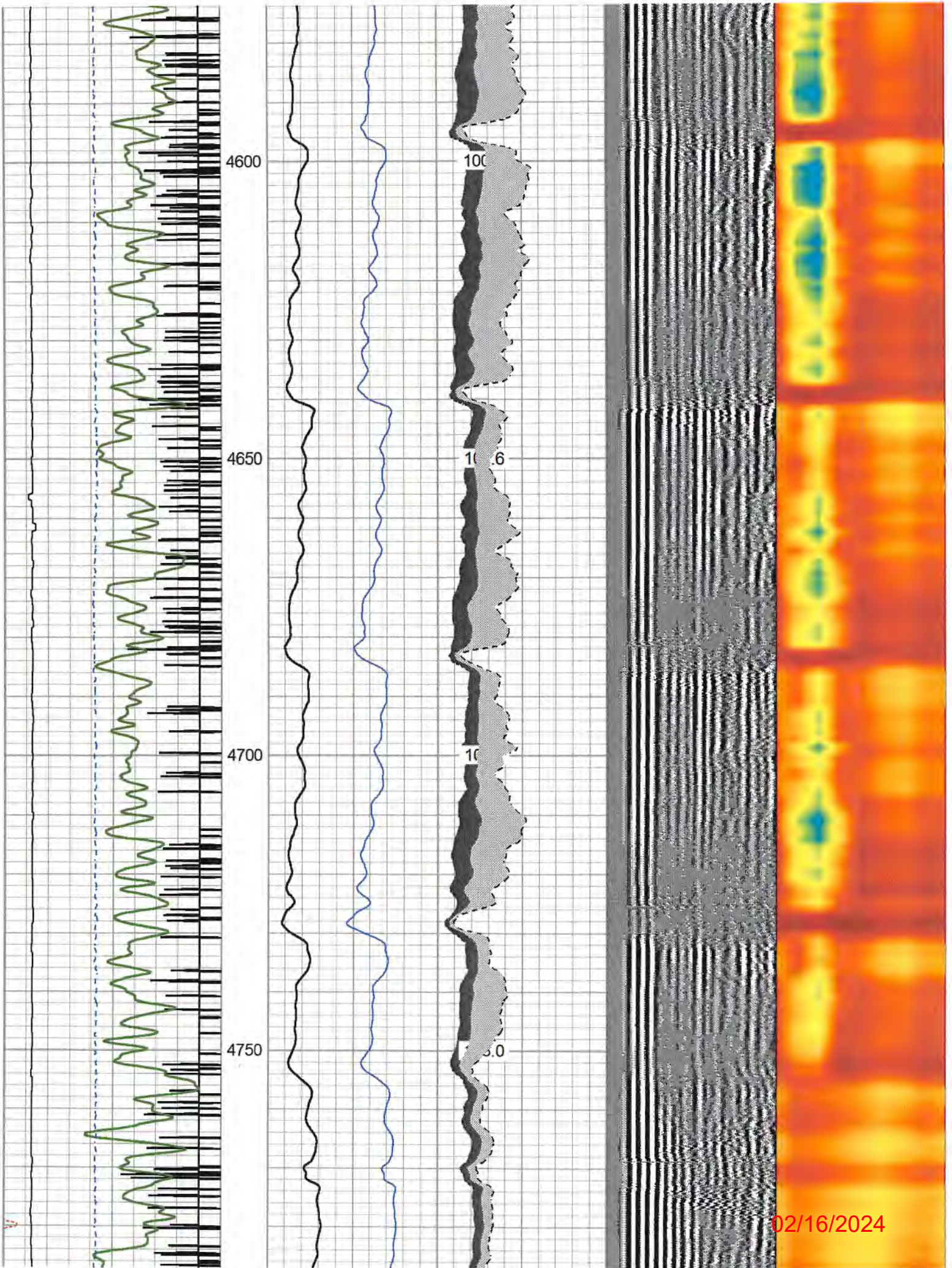
4500

99.3

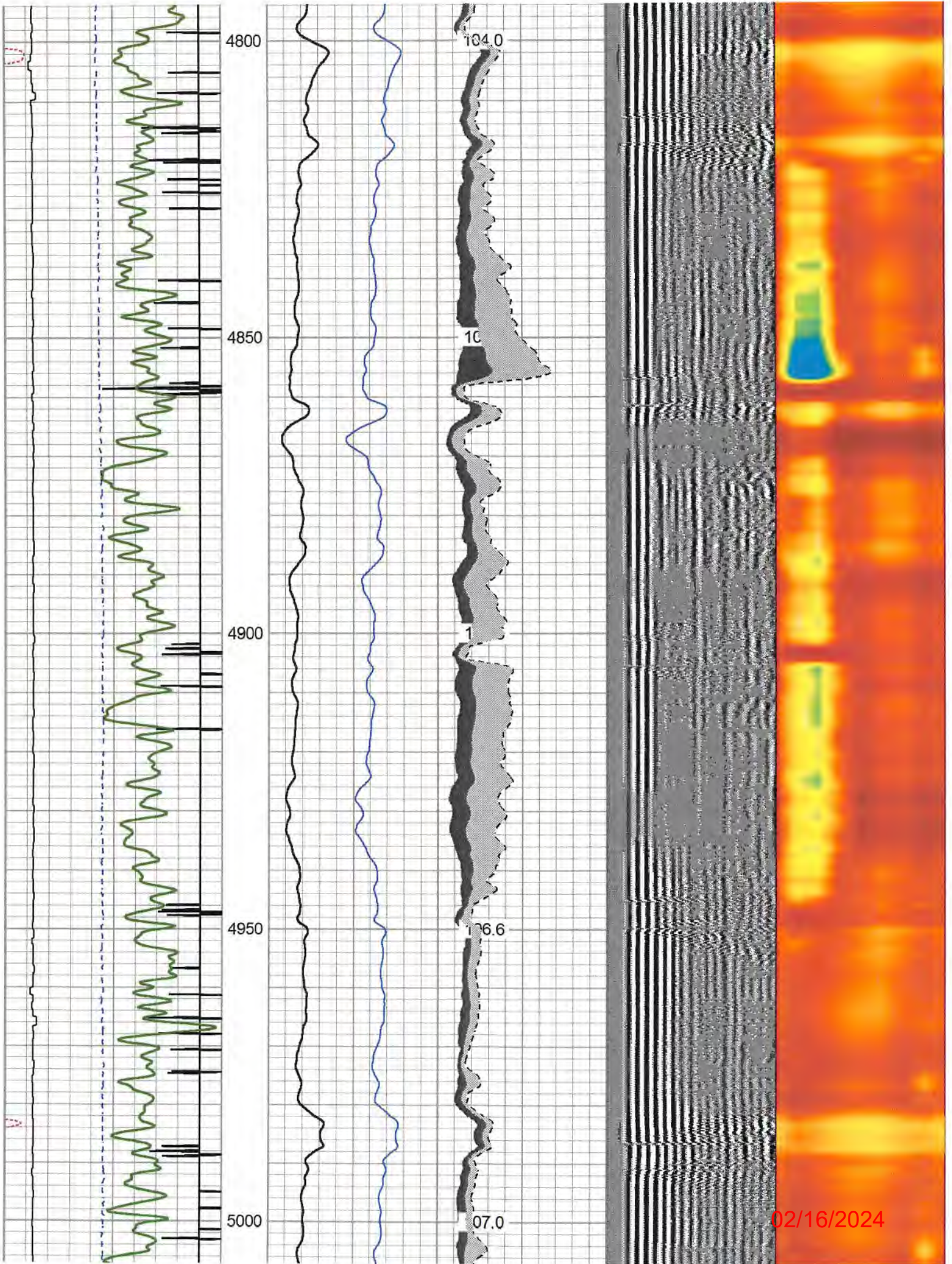
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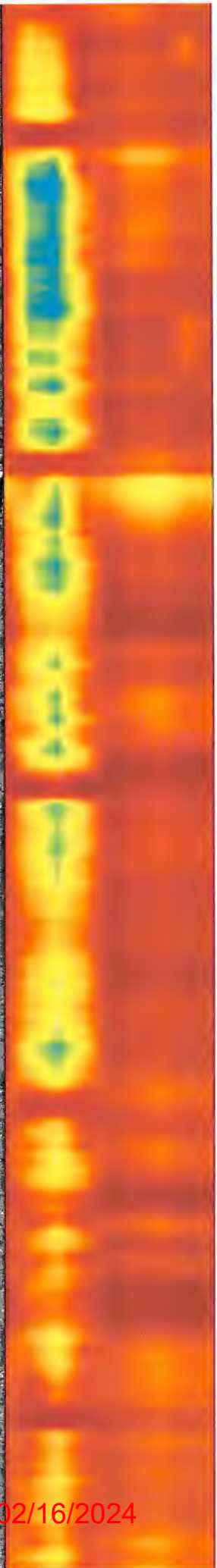
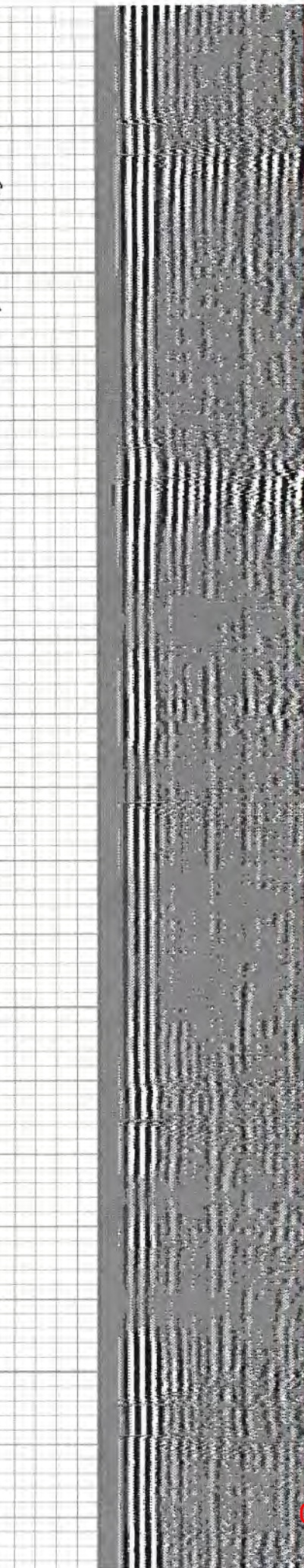
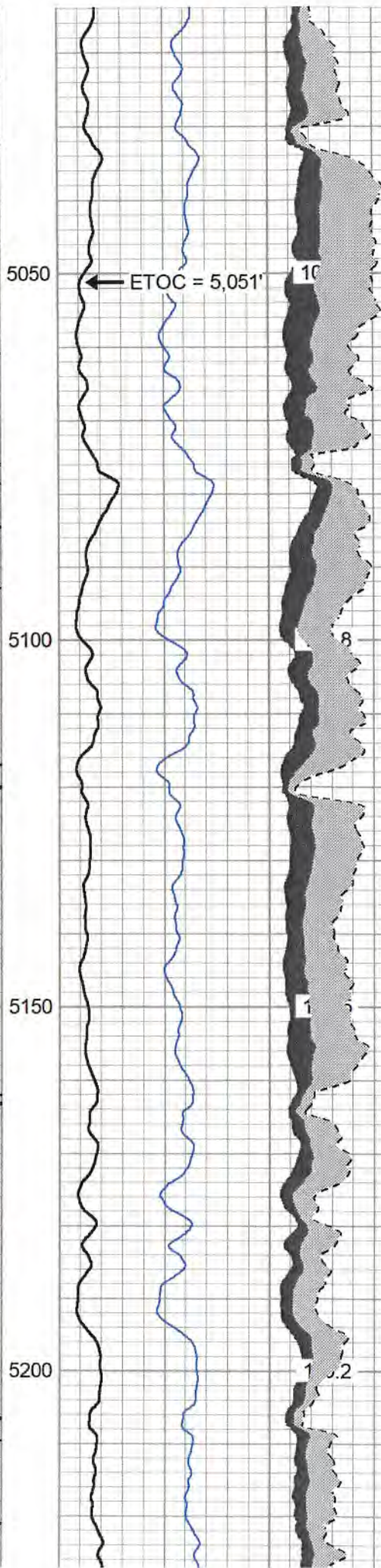
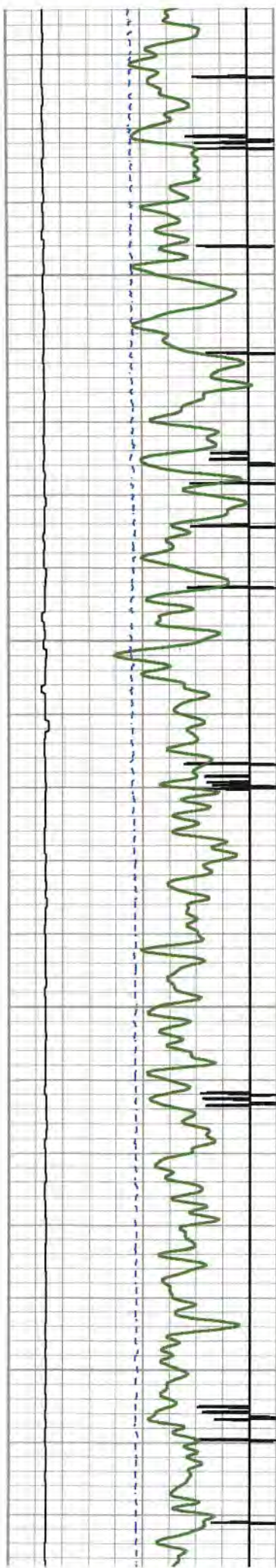
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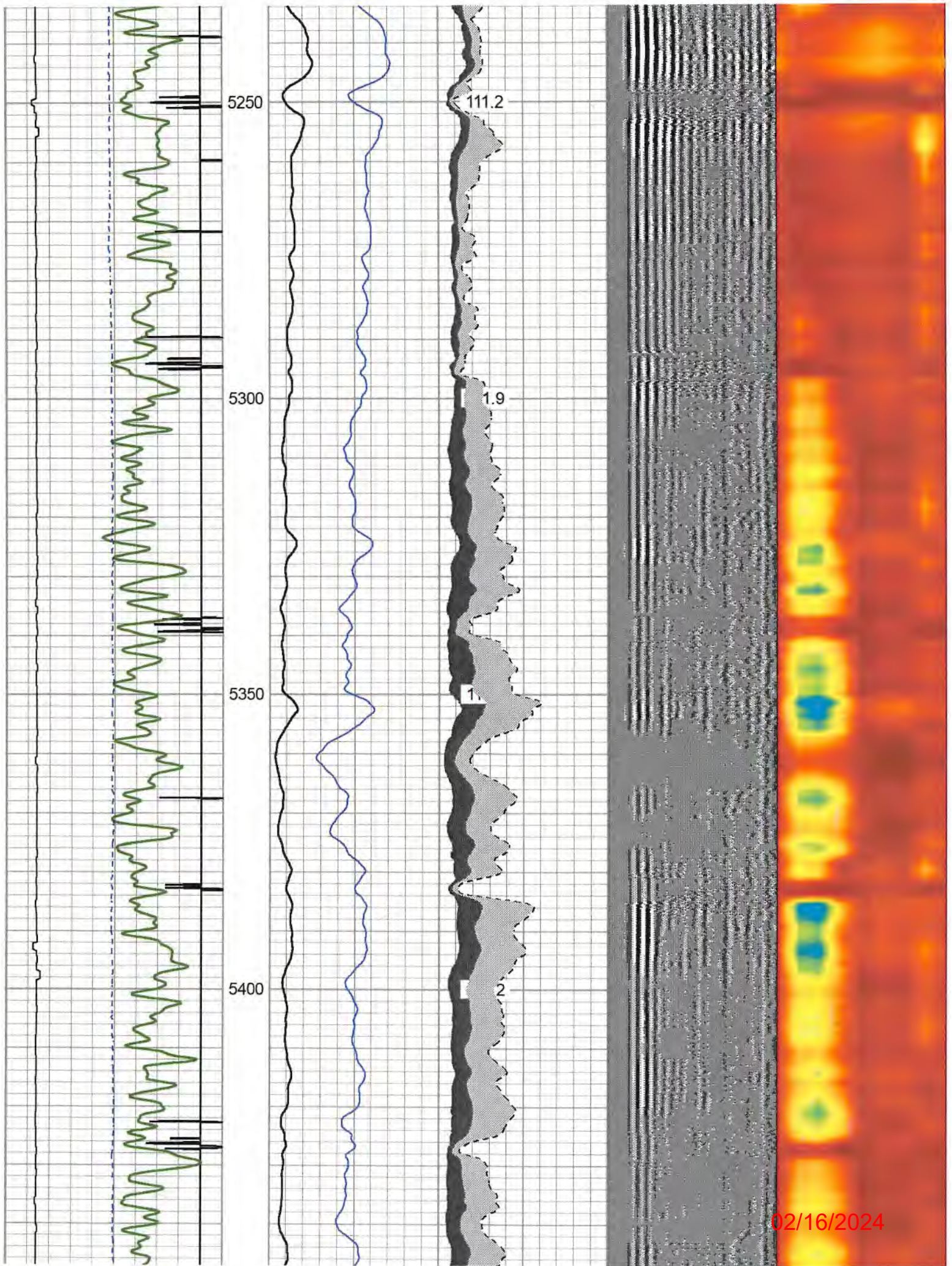


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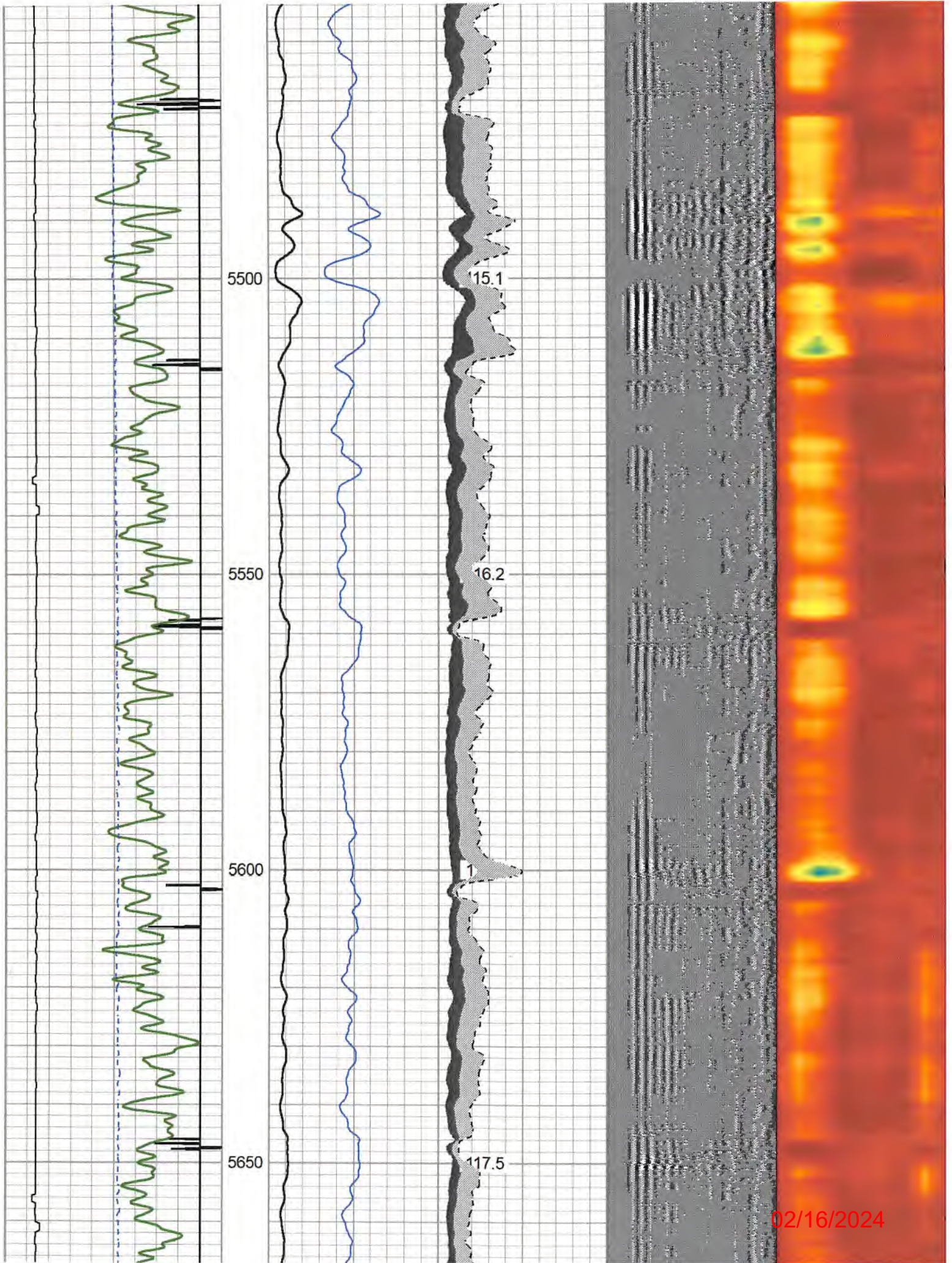


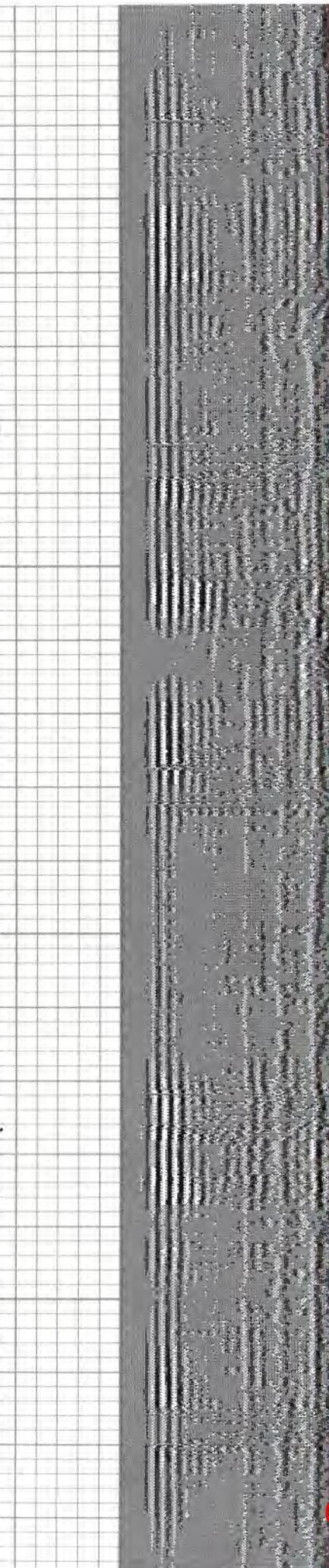
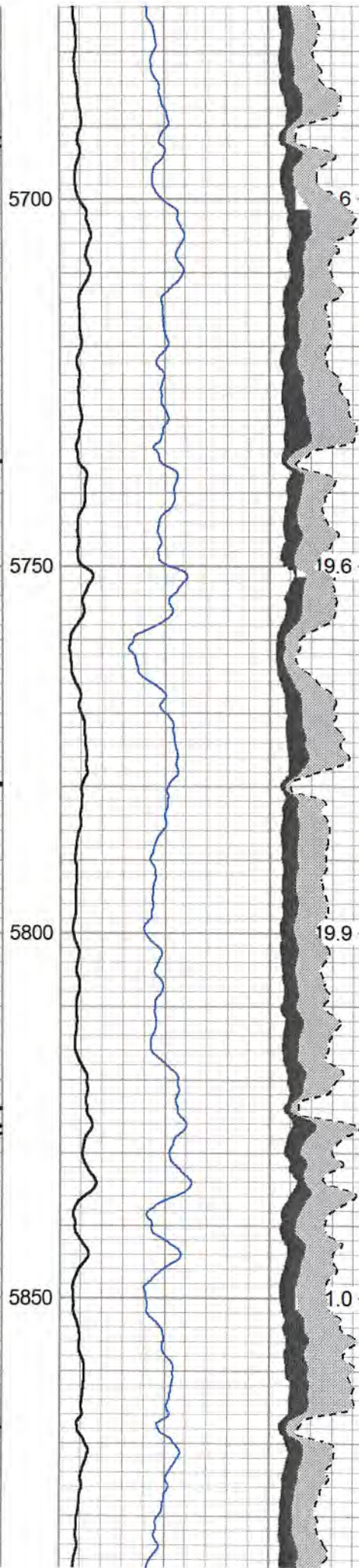
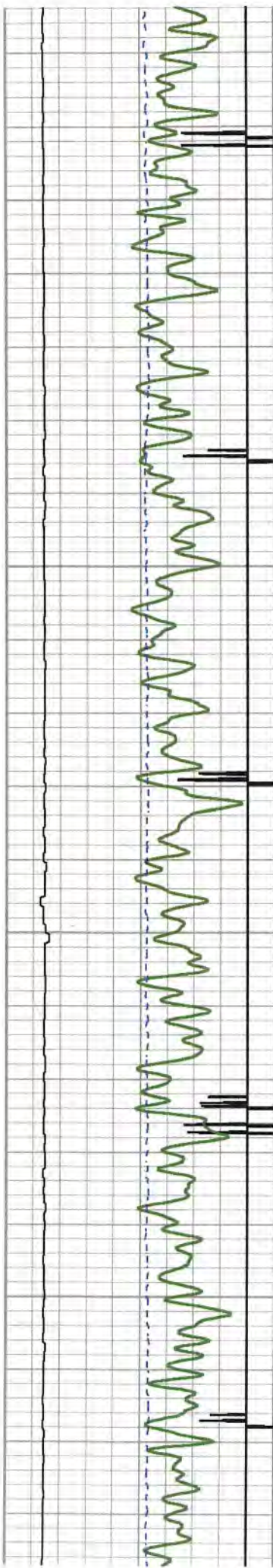


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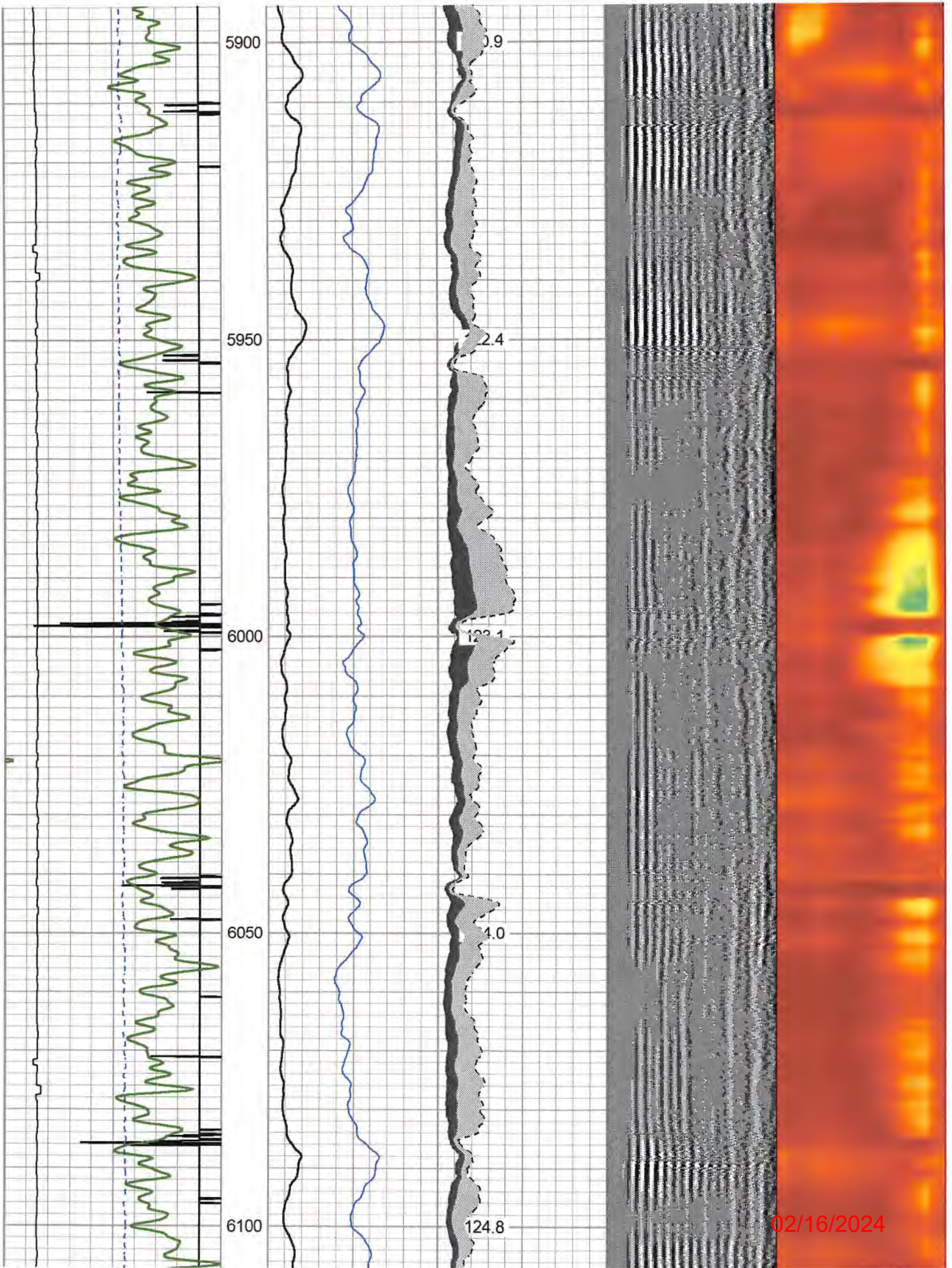


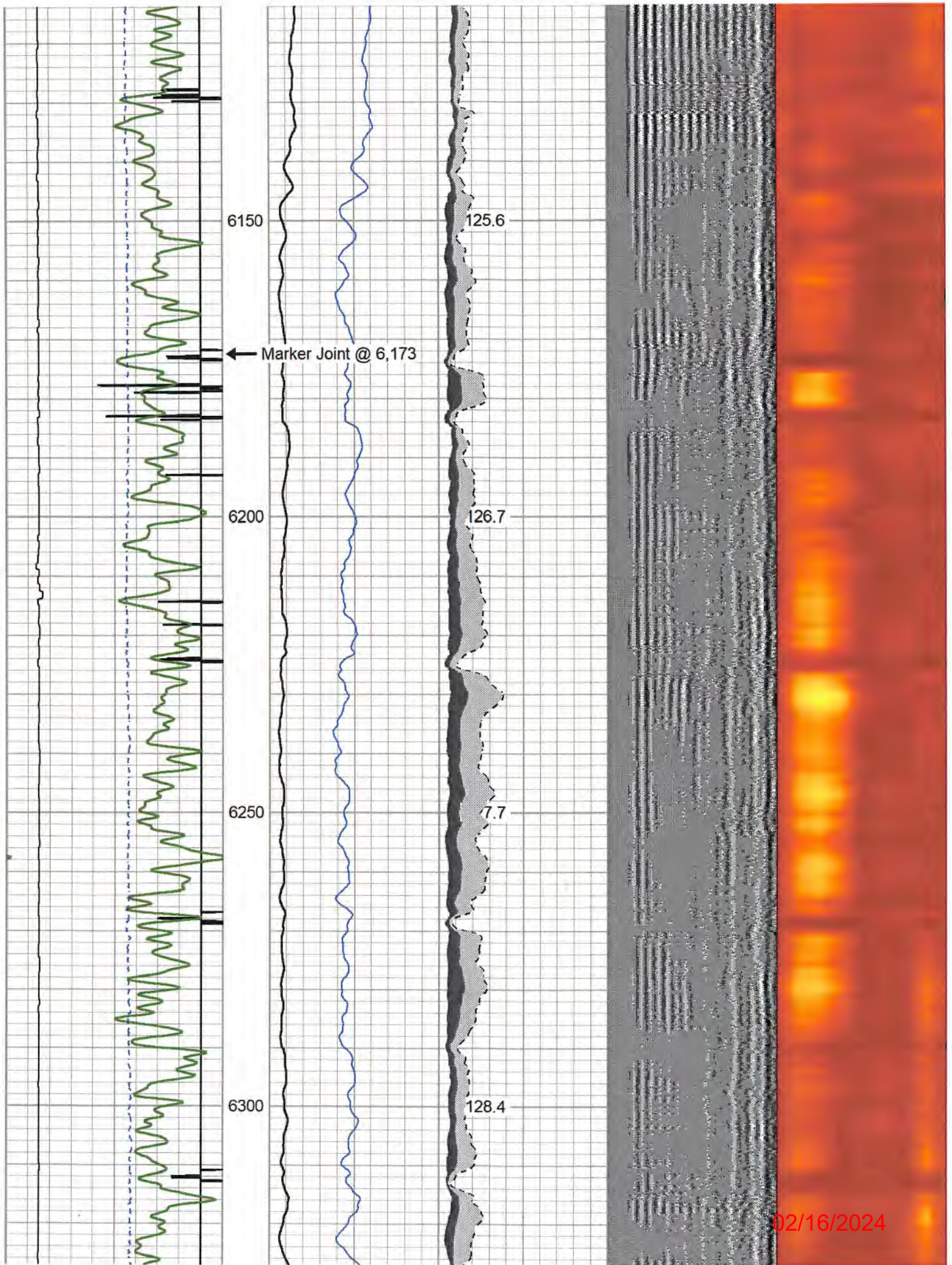
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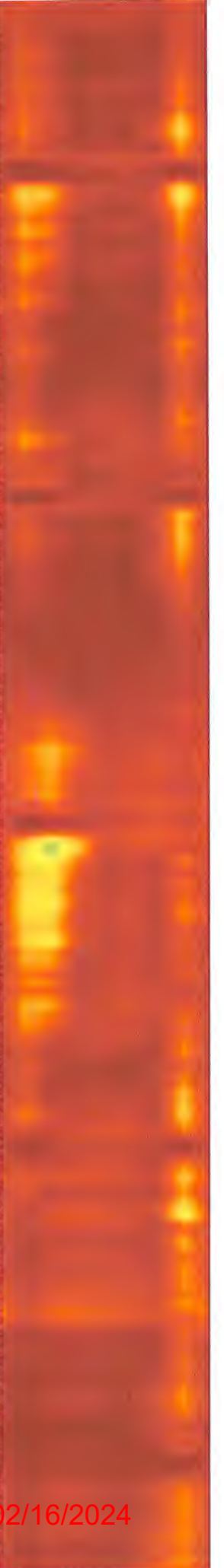
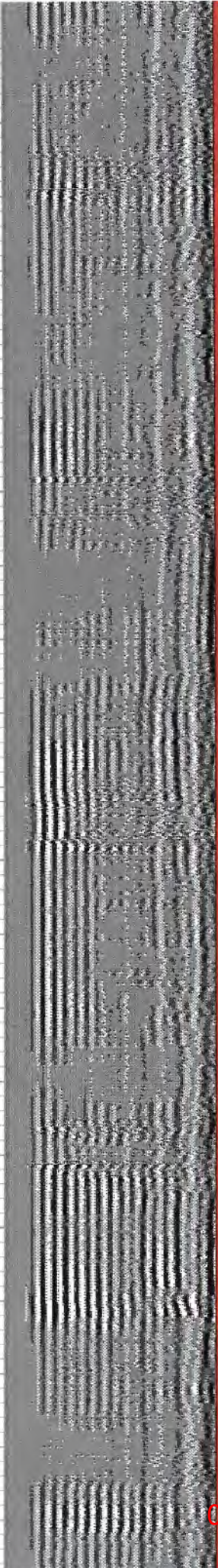
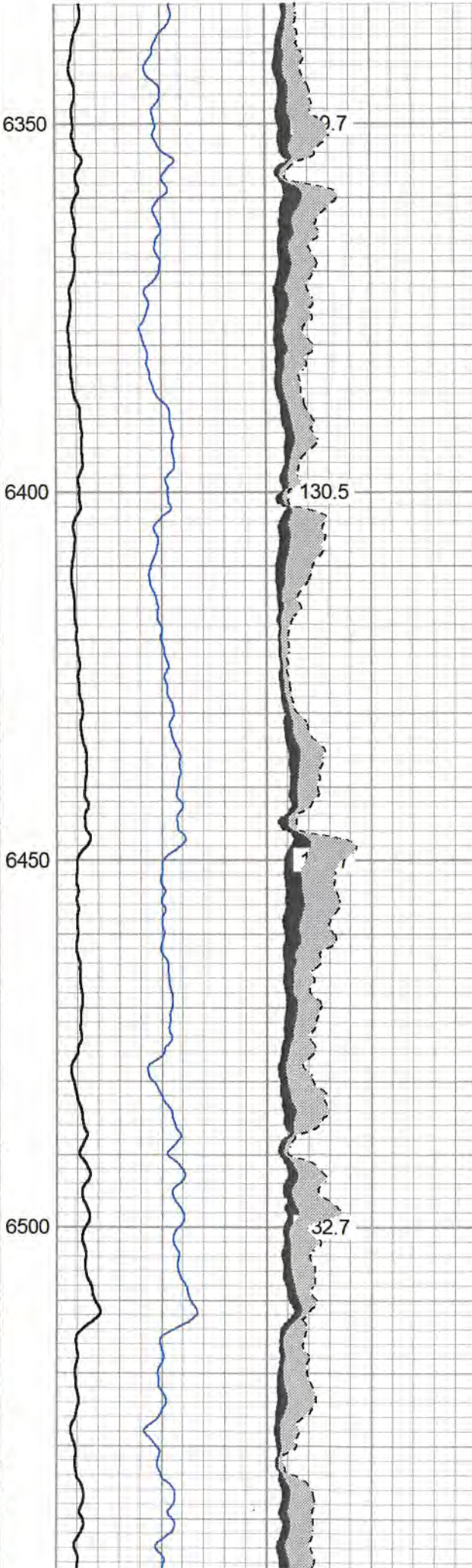
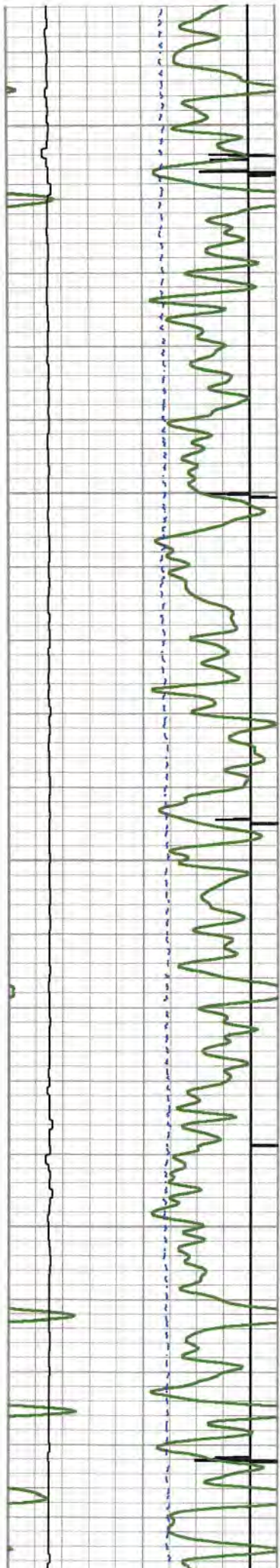




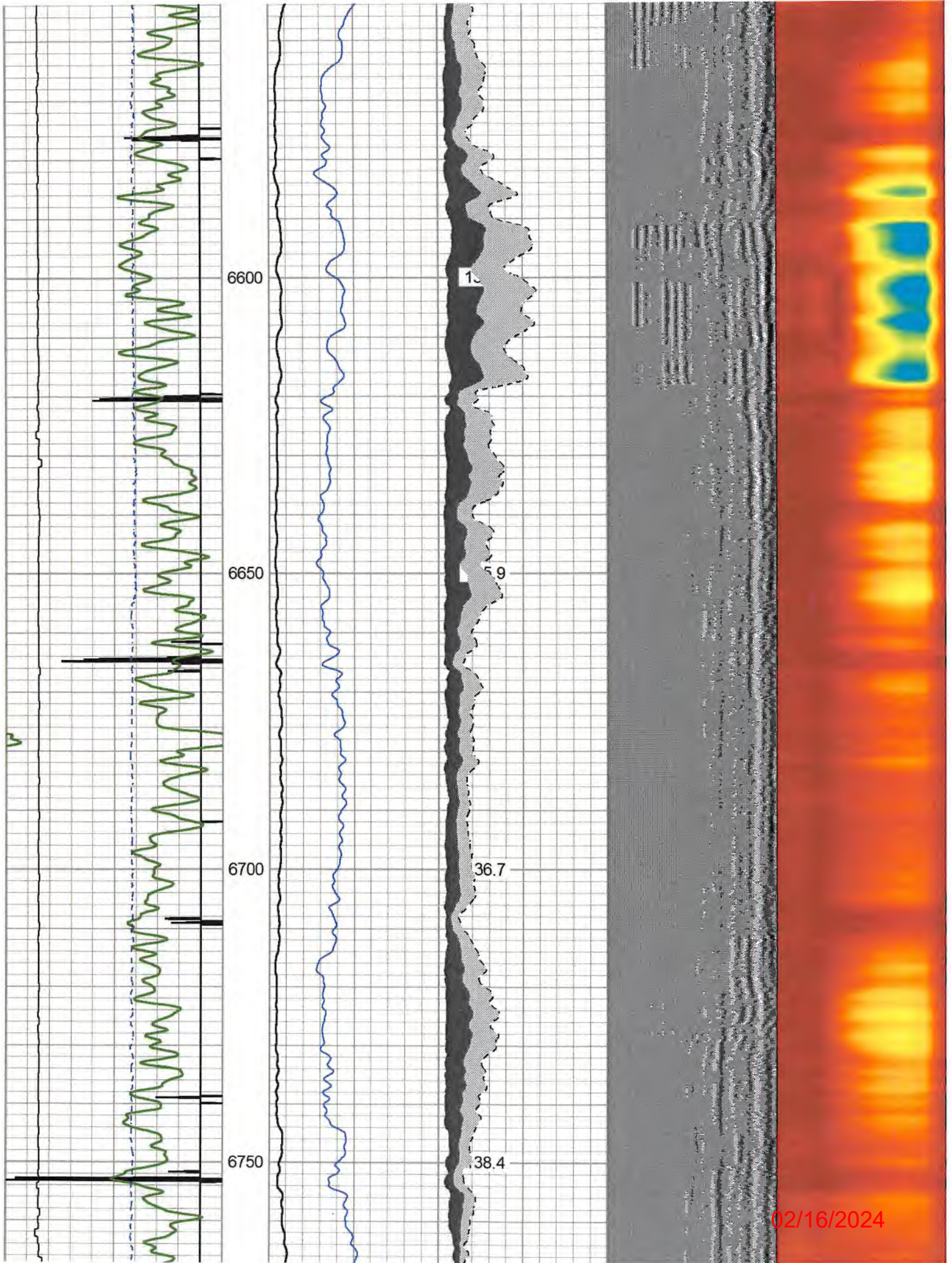
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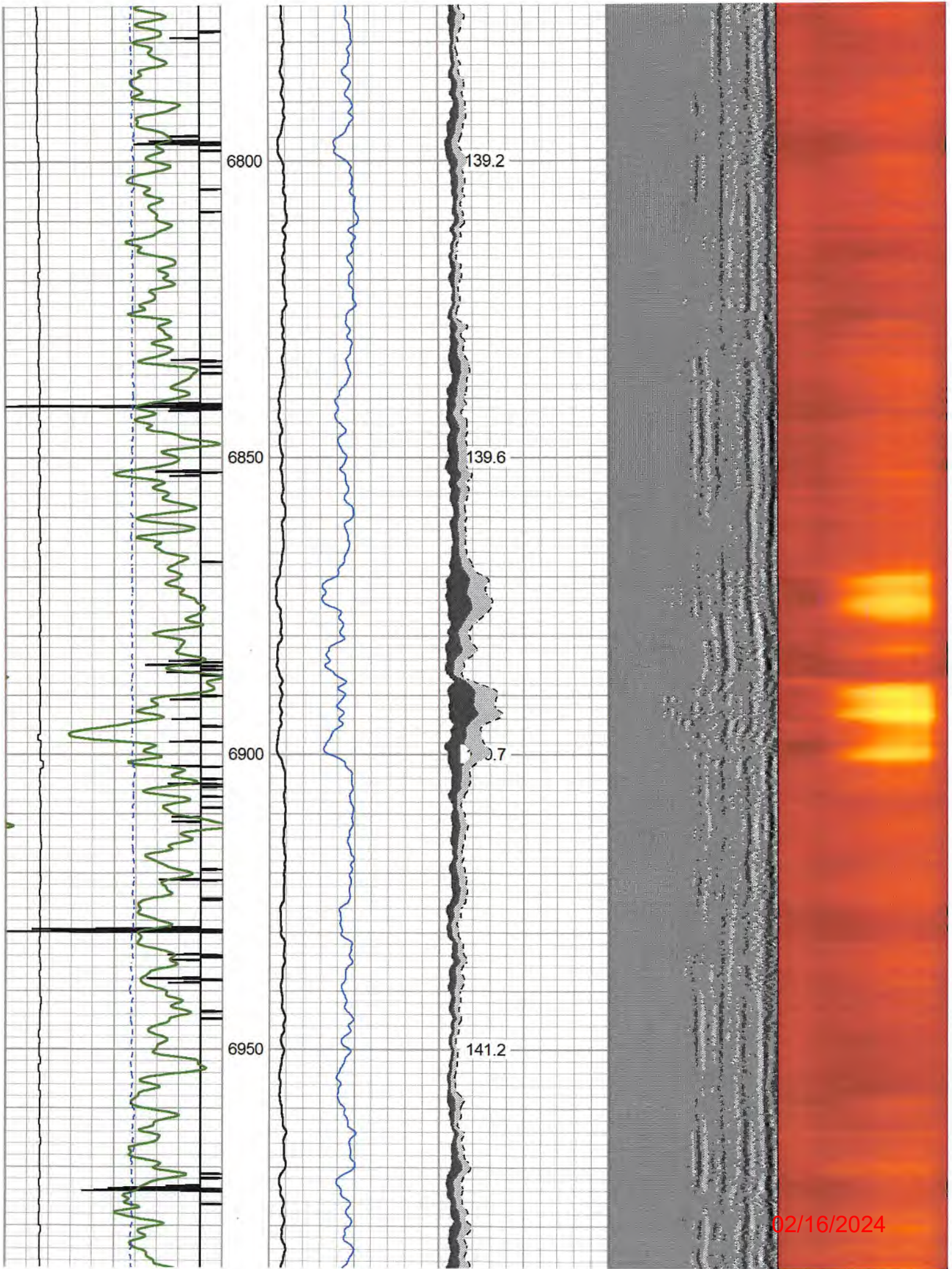




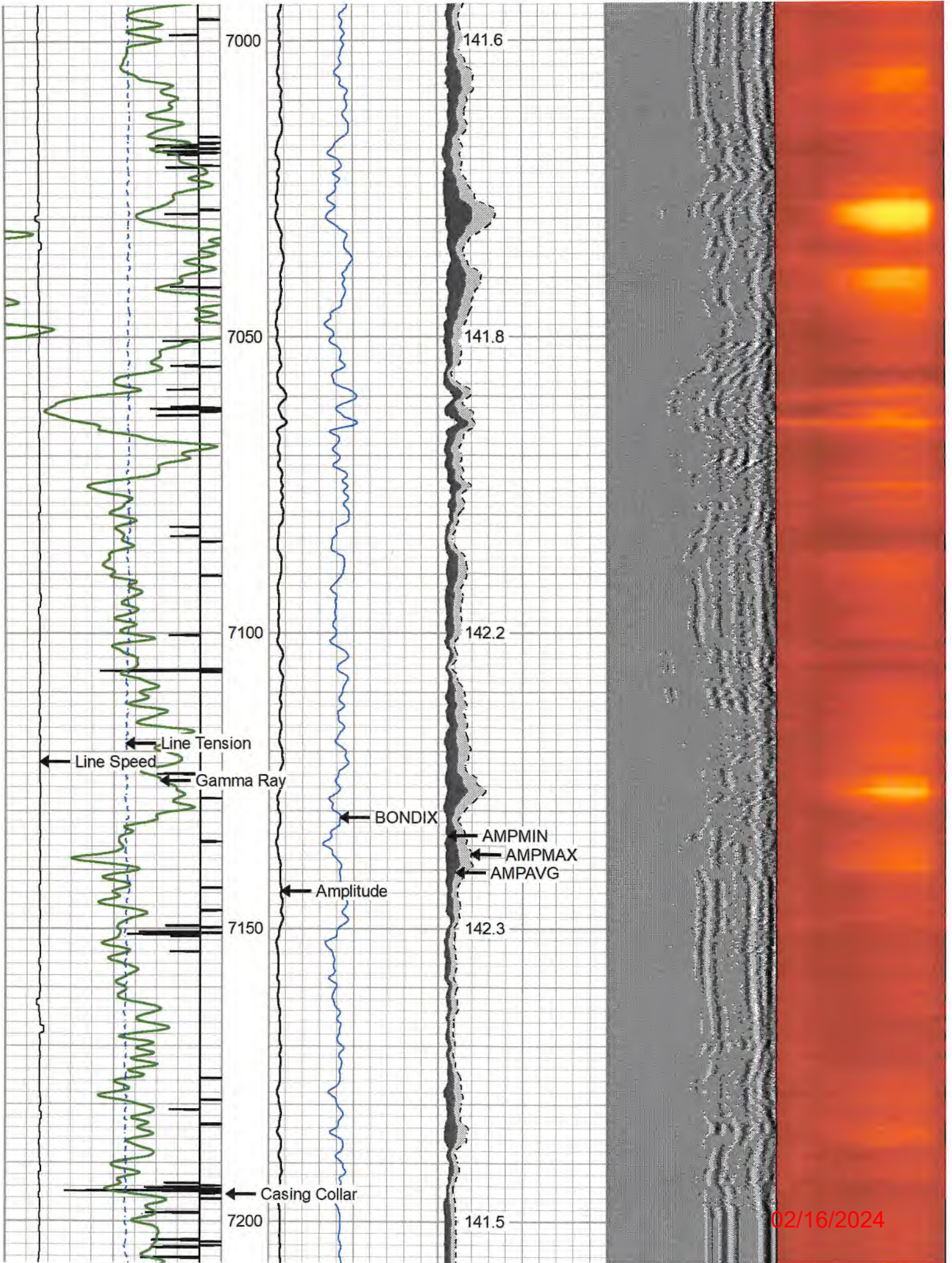


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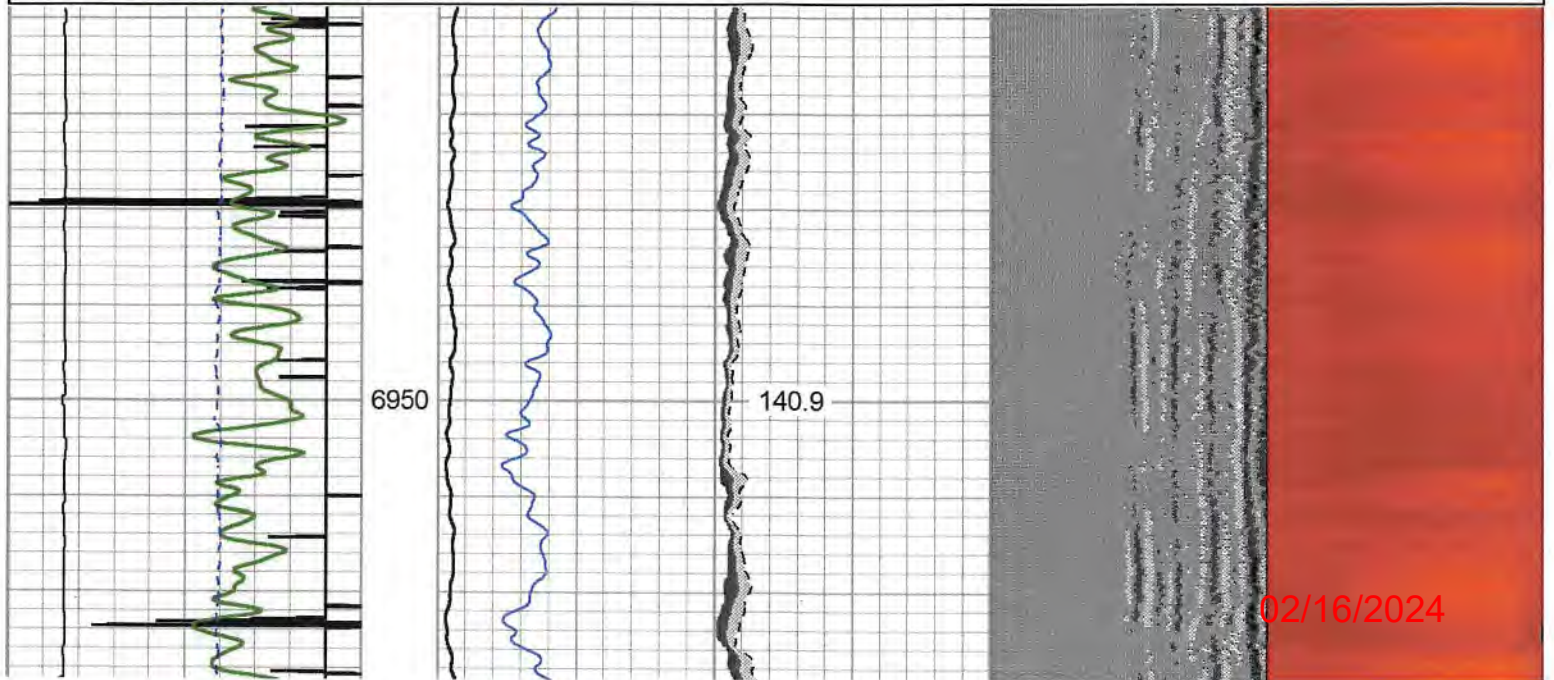
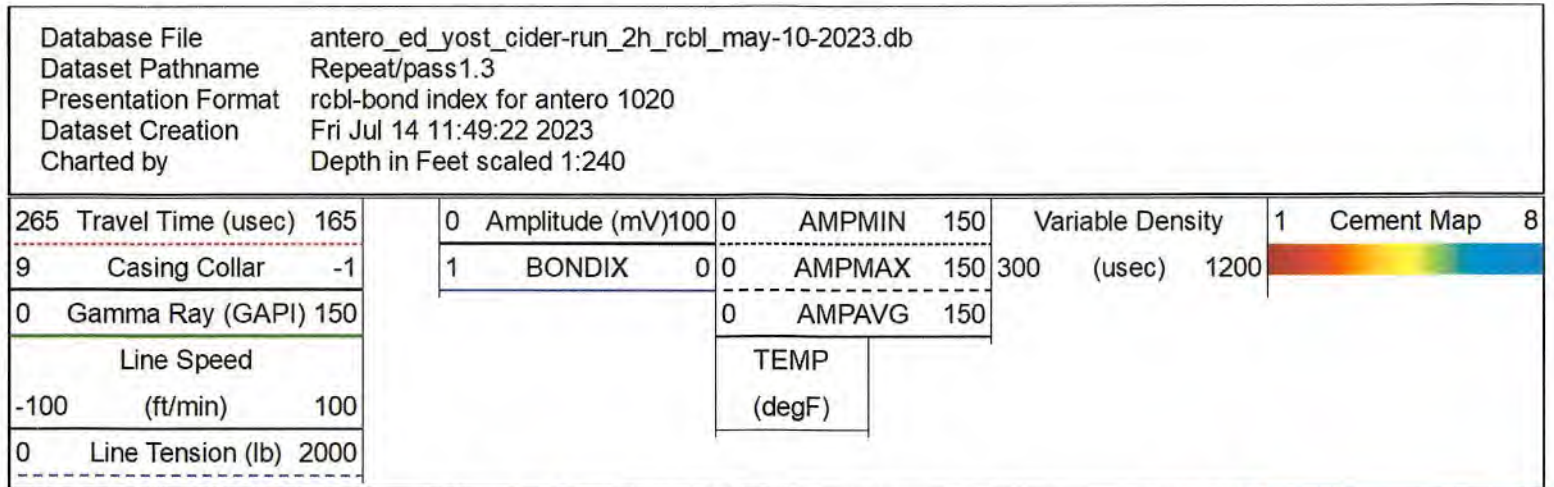
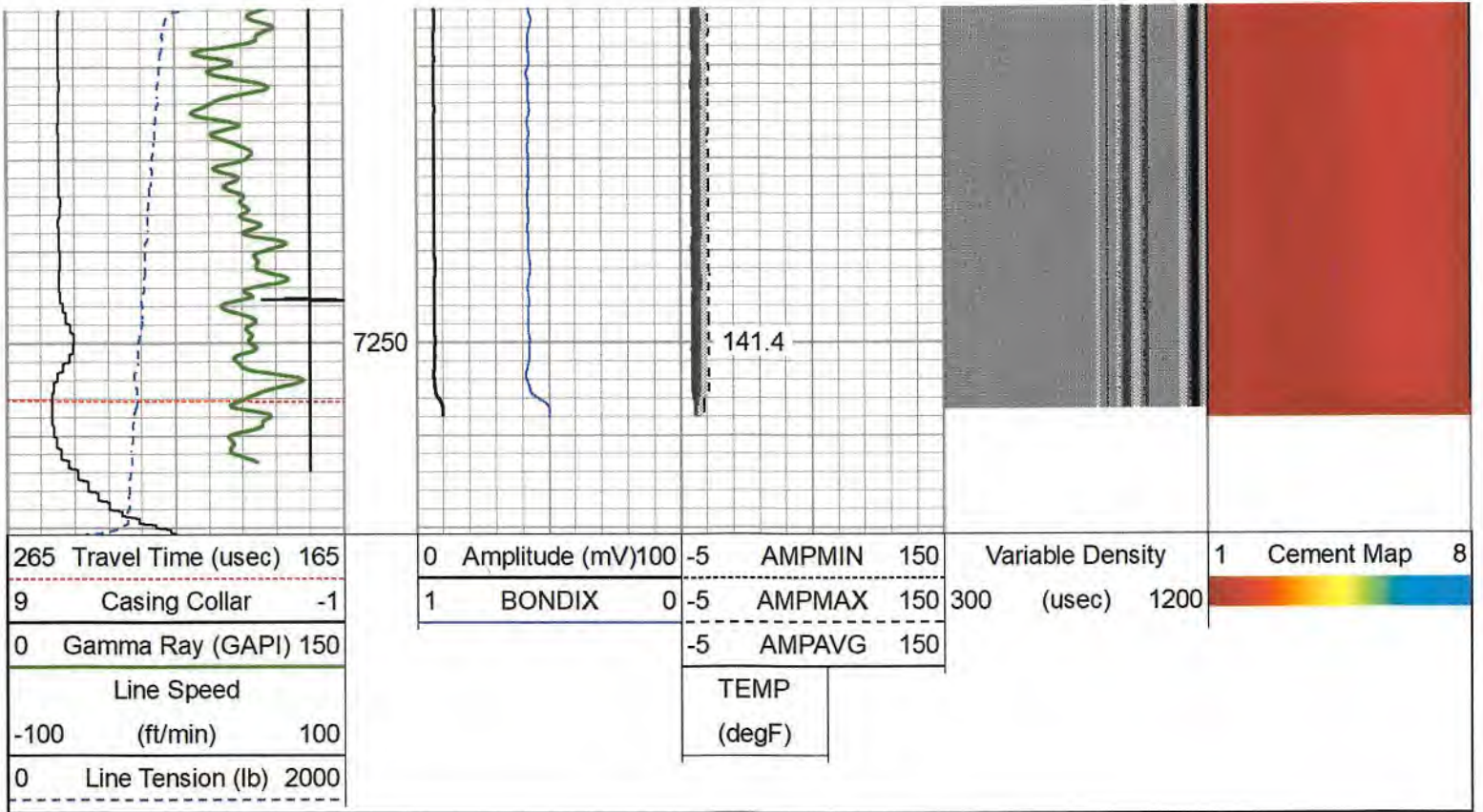


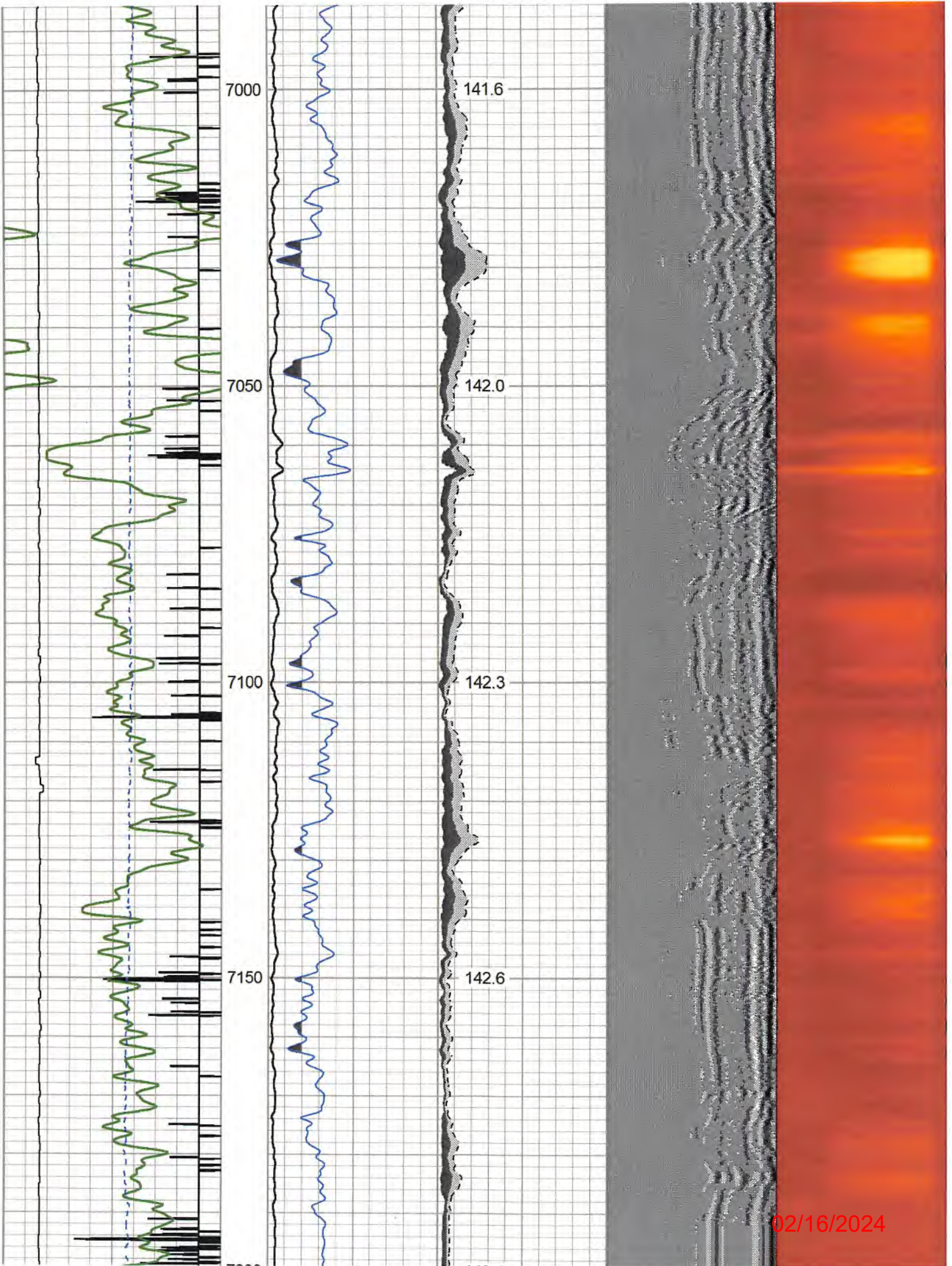


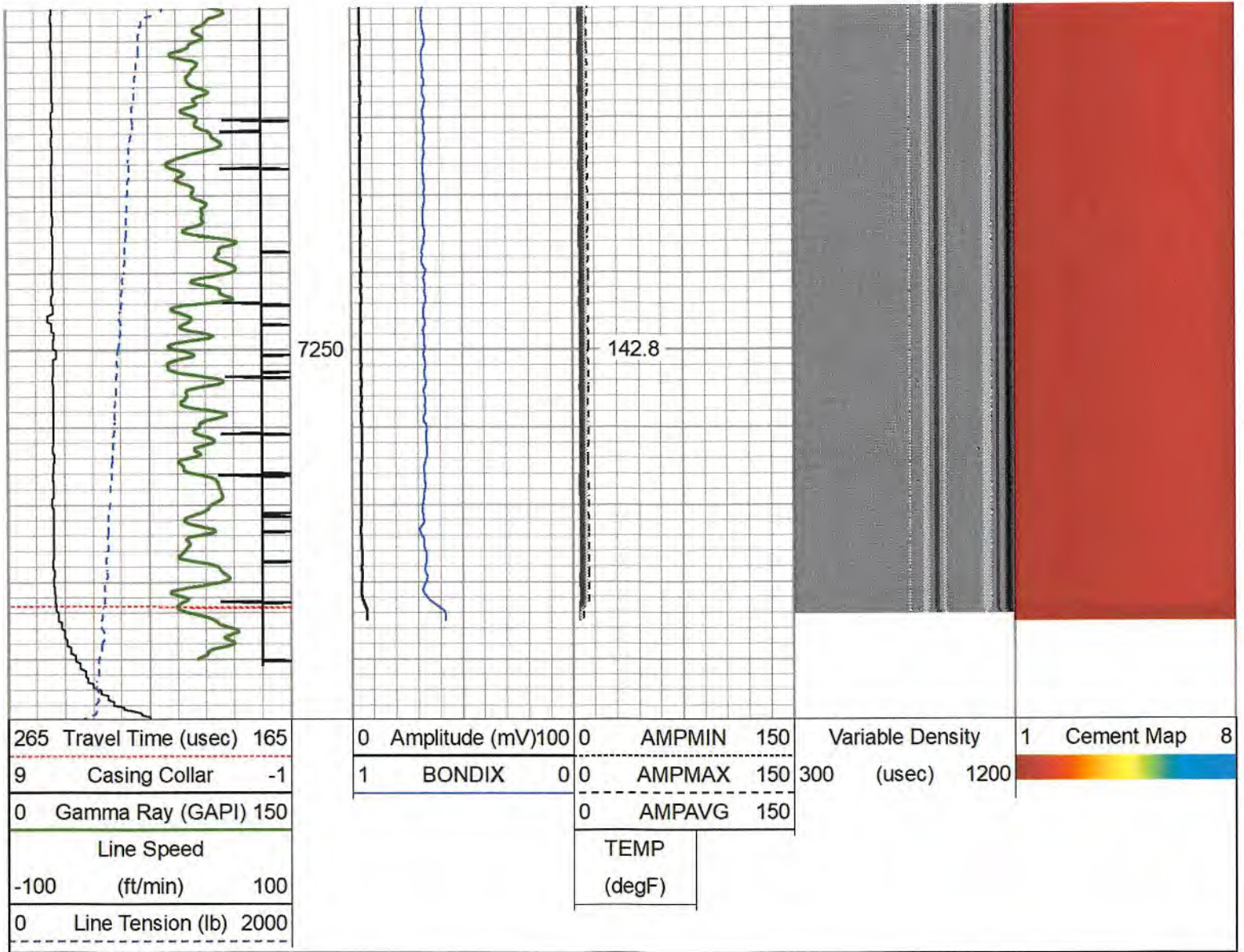
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Calibration Report

Database File antero_ed_yost_cider-run_2h_rcbl_may-10-2023.db
 Dataset Pathname main/pass1.1
 Dataset Creation Wed May 10 14:56:06 2023

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun Apr 02 14:15:39 2023
 Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.8000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T
 Calibration Casing Diameter: 139.700 mm
 Calibration Depth: 515.792 ft

02/16/2024

| | Raw (v) | | Calibrated (mv) | | Results | |
|-----|---------|-------|-----------------|---------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | -0.056 | 0.536 | 3.400 | 71.921 | 115.699 | 9.888 |
| CAL | -0.019 | 0.915 | | | | |
| 5' | 0.000 | 0.577 | 3.400 | 71.921 | 118.659 | 3.400 |
| SUM | | | | | | |
| S1 | -0.020 | 0.535 | 0.000 | 100.000 | 180.165 | 3.541 |
| S2 | -0.039 | 0.401 | 0.000 | 100.000 | 227.038 | 8.936 |
| S3 | -0.031 | 0.616 | 0.000 | 100.000 | 154.455 | 4.796 |
| S4 | -0.028 | 0.593 | 0.000 | 100.000 | 161.063 | 4.517 |
| S5 | -0.027 | 0.638 | 0.000 | 100.000 | 150.339 | 4.083 |
| S6 | -0.045 | 0.619 | 0.000 | 100.000 | 150.560 | 6.735 |
| S7 | -0.041 | 0.605 | 0.000 | 100.000 | 154.807 | 6.313 |
| S8 | -0.035 | 0.559 | 0.000 | 100.000 | 168.381 | 5.939 |

Internal Reference Calibration, performed (Not Performed):

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|-------|----------------|-------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | -0.019 | 0.915 | 1.000 | 0.000 |

Air Zero Calibration, performed Wed May 10 13:20:54 2023:

| | Raw (v) | | Calibrated (v) | | Results | |
|-----|---------|--|----------------|--|---------|--------|
| | Zero | | Zero | | Gain | 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 |

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Environmental Protection

Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_ed_yost_cider-run_2h_rcbl_may-10-2023.db
Dataset field/well/main/pass 1.1/_vars_

Top - Bottom

| BHTEMP_Src | BOREID | BOTTEMP | CASEOD | CASETHCK | CASEWGHT | MAXAMPL | MINAMPL |
|--------------|-------------|-------------|-----------|----------|-------------|------------|-----------|
| TEMP | in 7.875 | degF 142 | in 5.5 | in 0 | lb/ft 23 | mV 71.9 | mV 3.4 |
| MINATTN | PERFS | PPT | SRFTEMP | TDEPTH | | | |
| db/ft 0.8 | No | usec 0 | degF 0 | ft 0 | | | |

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time

02/16/2024

CASLWGT : Casing weight
MAXAMPL : Maximum Amplitude

TDLFTH : Total Depth



| | | |
|---------|------------------|-------------|
| Company | Antero Resources | |
| Well | Cider Run 2H | |
| Field | Marcellus | |
| County | Tyler | |
| State | WV | Country USA |

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