

**Company: Noble Energy Inc**

**Well: Morton State LD01 78 1AHN**  
**Field: Wildcat**  
**County: Weld** **State: Colorado**

**USI-LITE (2500 psi)**

County: Weld  
 Field: Wildcat  
 Location: SWSW 1 9N 58W  
 Well: Morton State LD01 78 1AHN  
 Company: Noble Energy Inc

|                          |                |                                |              |                |              |
|--------------------------|----------------|--------------------------------|--------------|----------------|--------------|
| Logging Date             | 08-Jan-2015    | API Serial No.<br>05-123-39896 | Section<br>1 | Township<br>9N | Range<br>58W |
| Run Number               | Run 1          |                                |              |                |              |
| Depth Driller            | 5880.0 F       |                                |              |                |              |
| Schlumberger Depth       | 5880.0 F       |                                |              |                |              |
| Bottom Log Interval      | 5704.0 F       |                                |              |                |              |
| Top Log Interval         | 49.0 F         |                                |              |                |              |
| Casing Fluid Level       | 8.0 F          |                                |              |                |              |
| Salinity                 |                |                                |              |                |              |
| Density                  | 8.40 LB/G      |                                |              |                |              |
| Fluid Level              | 8.0 F          |                                |              |                |              |
| BIT/CASING/TUBING STRING |                |                                |              |                |              |
| Bit Size                 | 8.750 IN       |                                |              |                |              |
| From                     | 1212.0 F       |                                |              |                |              |
| To                       | 5880.0 F       |                                |              |                |              |
| Casing Size              | 7.00 IN        |                                |              |                |              |
| Weight                   | 26.00 LB/F     |                                |              |                |              |
| Grade                    | P110           |                                |              |                |              |
| From                     | 0.0 F          |                                |              |                |              |
| To                       | 5870.0 F       |                                |              |                |              |
| Max Recorded Temp        | 210.0          |                                |              |                |              |
| Logger on bottom (date)  | 08-Jan-2015    |                                |              |                |              |
| Location                 | Fort Morgan    |                                |              |                |              |
| Recorded By              | Tezla Hayduk   |                                |              |                |              |
| Witnessed By             | Bill Mansfield |                                |              |                |              |

|                         |    |       |          |          |
|-------------------------|----|-------|----------|----------|
| LOCATION                |    | Elev: | K.B.     | 4671.0 F |
| Permanent Datum:        |    | G.L.  | 4655.0 F |          |
| Log Measured From:      | GL | D.F.  | 4655.0 F |          |
| Drilling Measured From: | KB |       |          |          |
|                         | KB |       |          |          |

**DEPTH SUMMARY LISTING**

**DEPTH SYSTEM EQUIPMENT**

| Depth Measuring Device                                                                                                | Tension Device                                                                                                                                                 | Logging Cable                         |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Type:<br>Serial Number:<br>Calibration Date:<br>Calibration Cable Type:<br>Wheel Correction 1:<br>Wheel Correction 2: | Type:<br>Serial Number: 1109<br>Calibration Date:<br>Calibrator Serial Number:<br>Number Of Calibration Points:<br>Calibration RMS:<br>Calibration Peak Error: | Serial Number:<br>Length: 16500.00000 |

**DISCLAIMER**

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2500psi main pass 0psi repeat pass

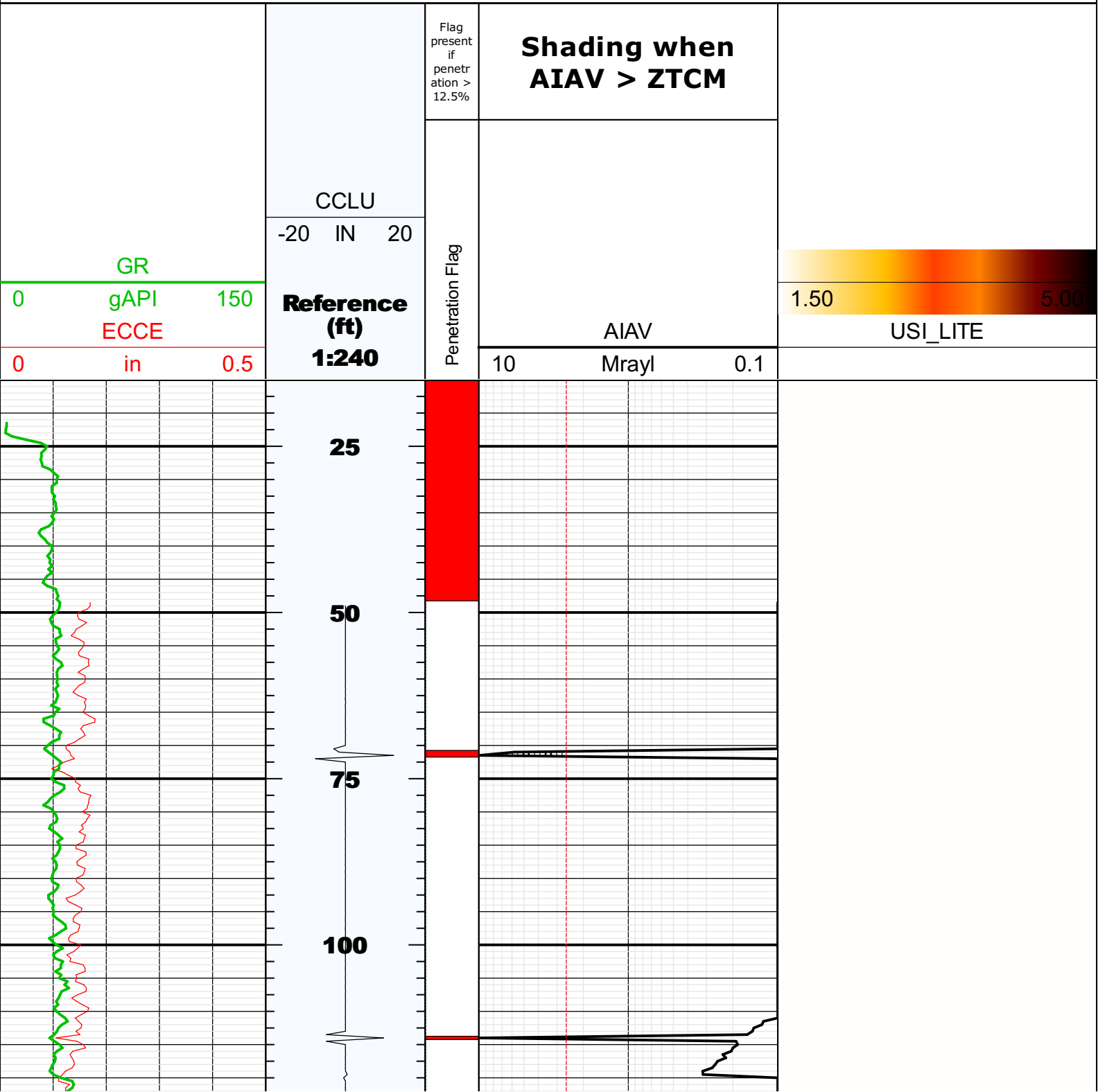
Top of cement @ 995ft

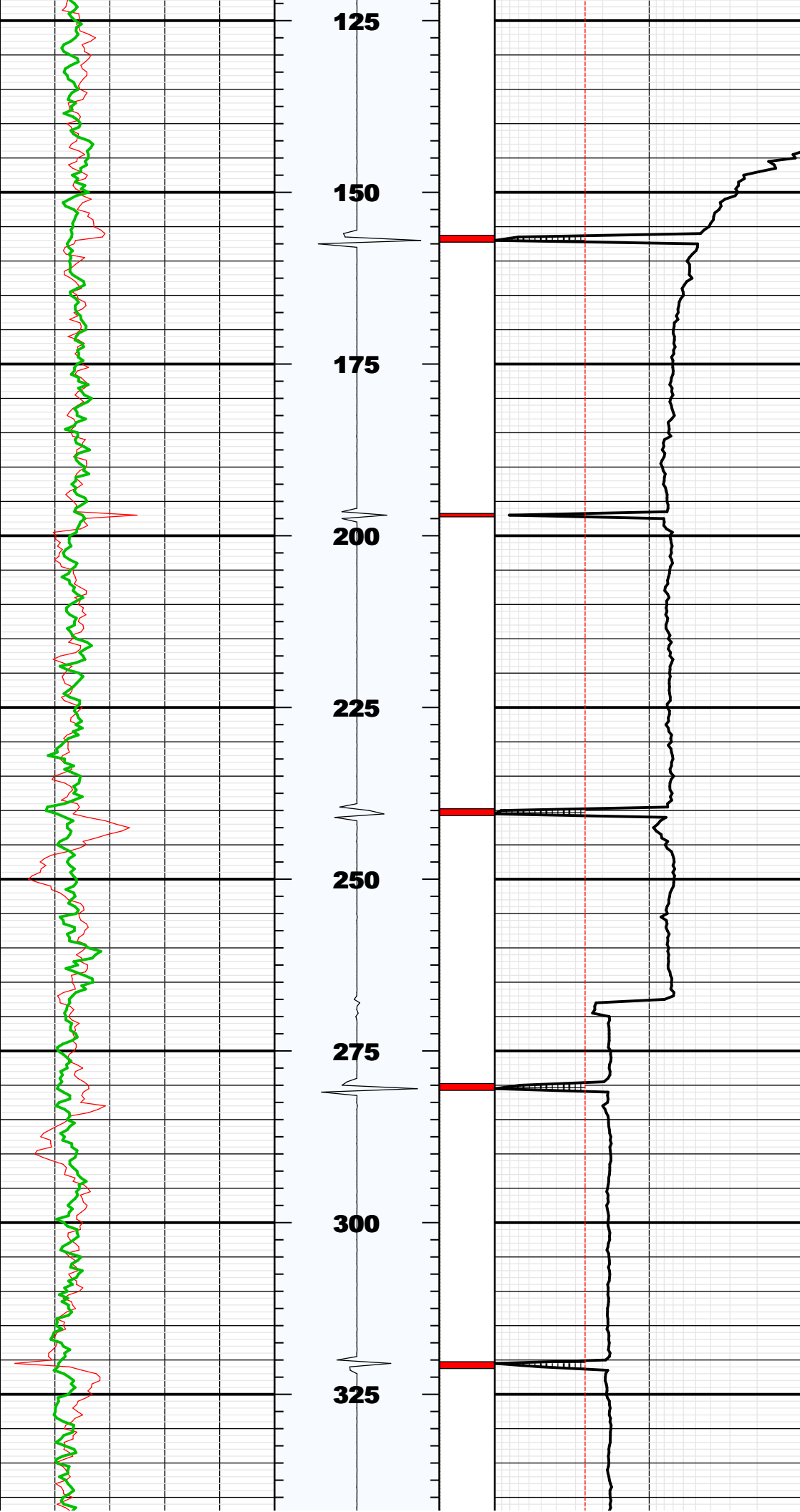
Logged from top of liner to surface

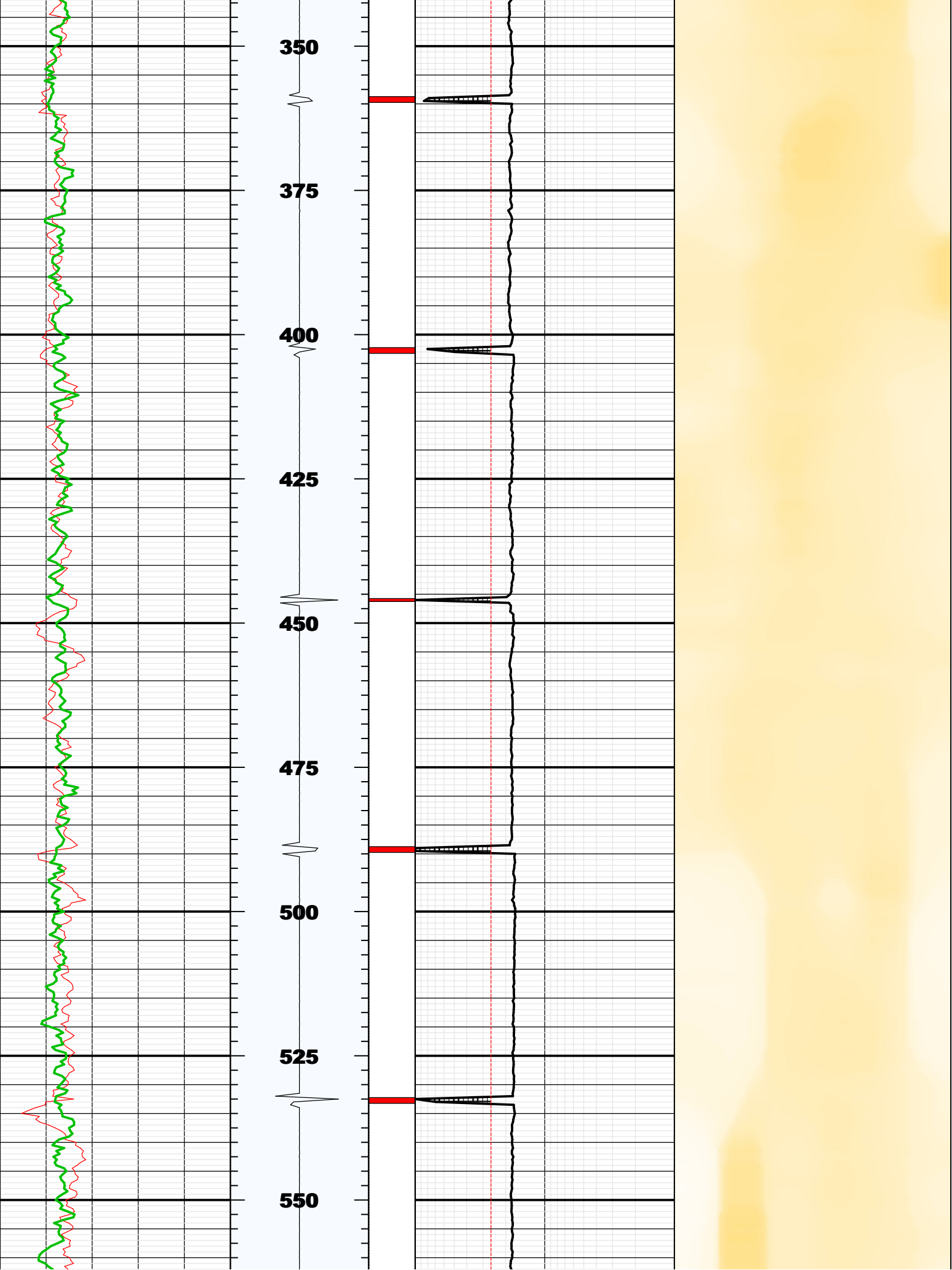
Bottom hole temperature = 210F measured at depth

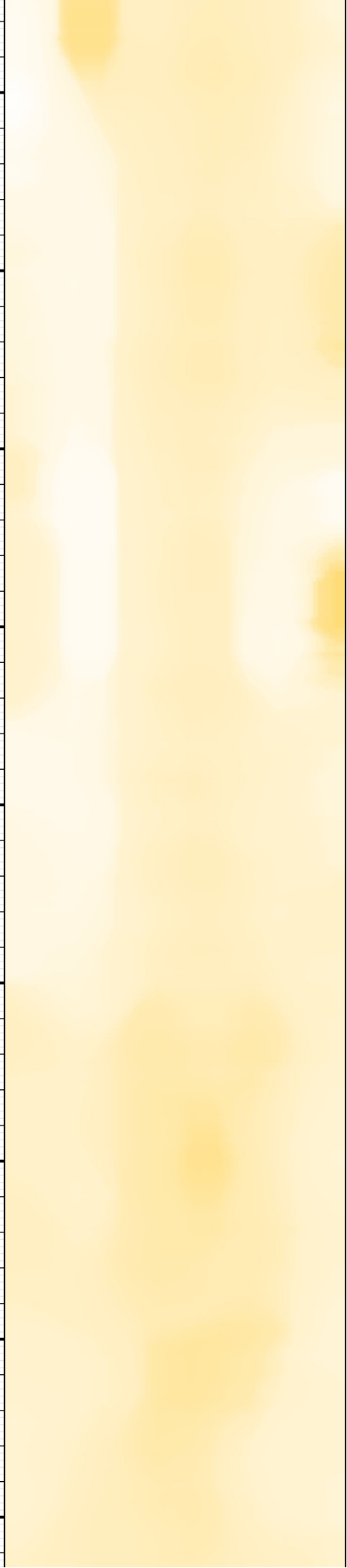
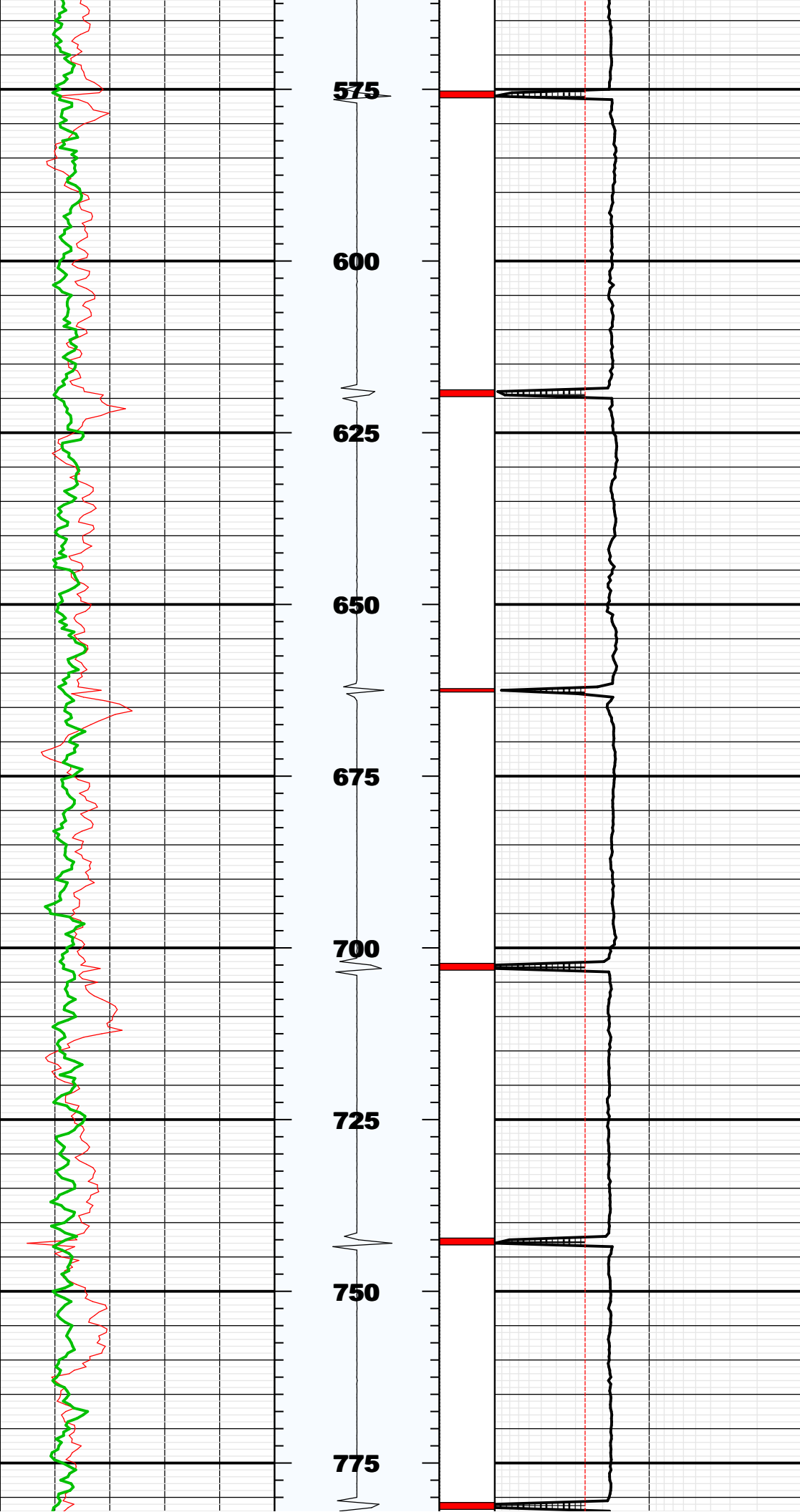
# Main Pass

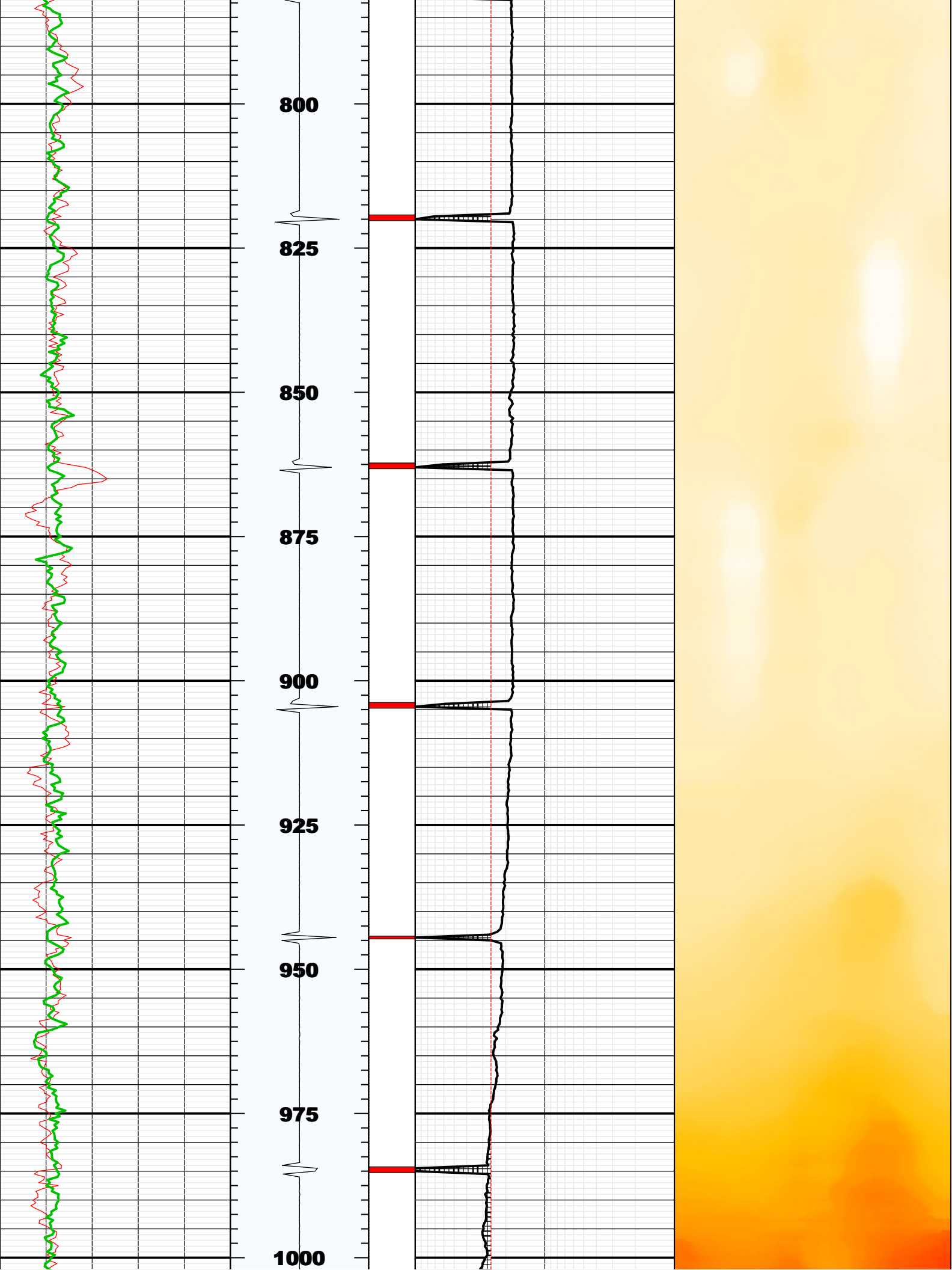
Company: Noble Energy Inc  
 Well: Morton State LD01 78 1AHN  
 Field: Wildcat

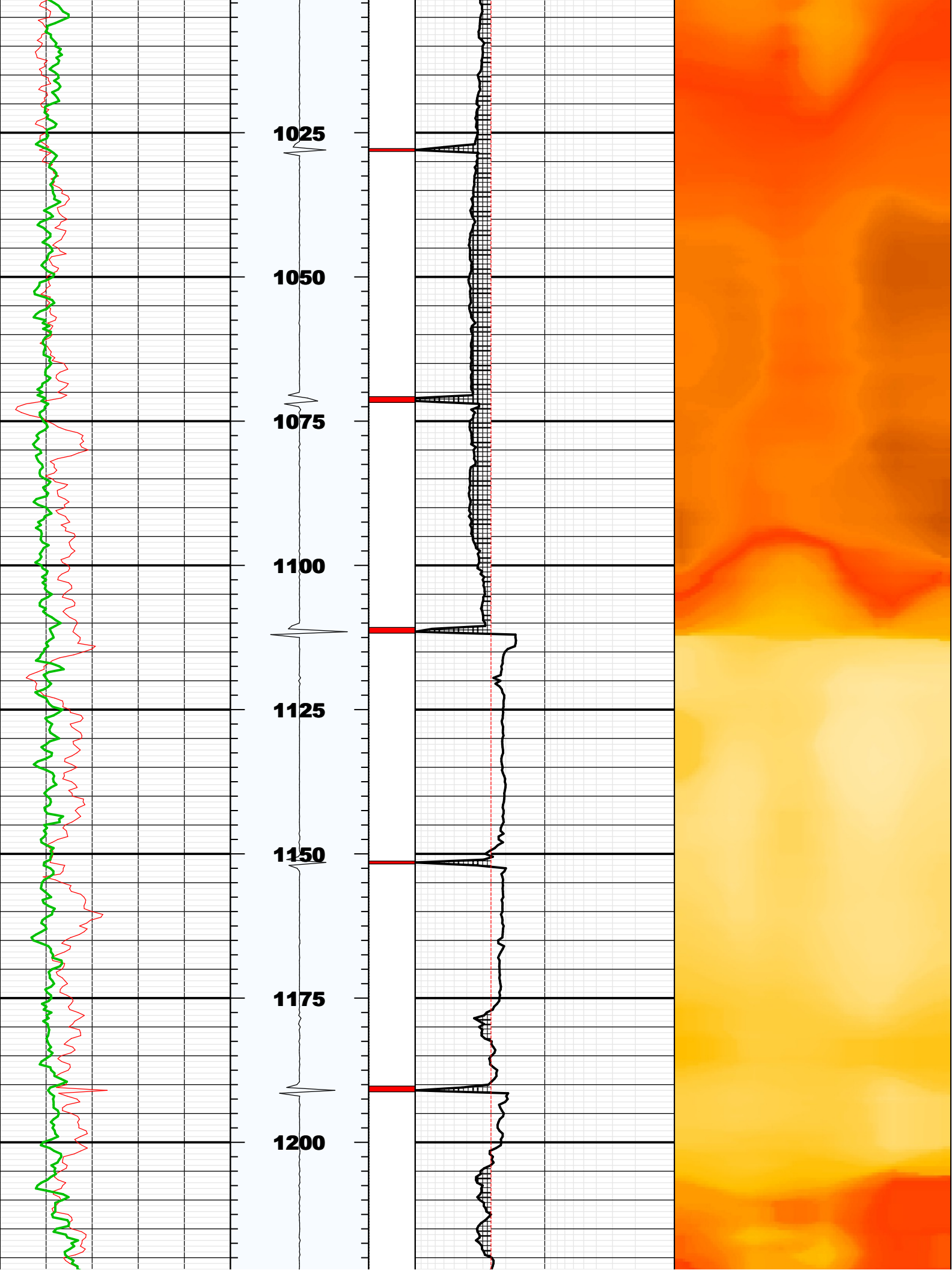


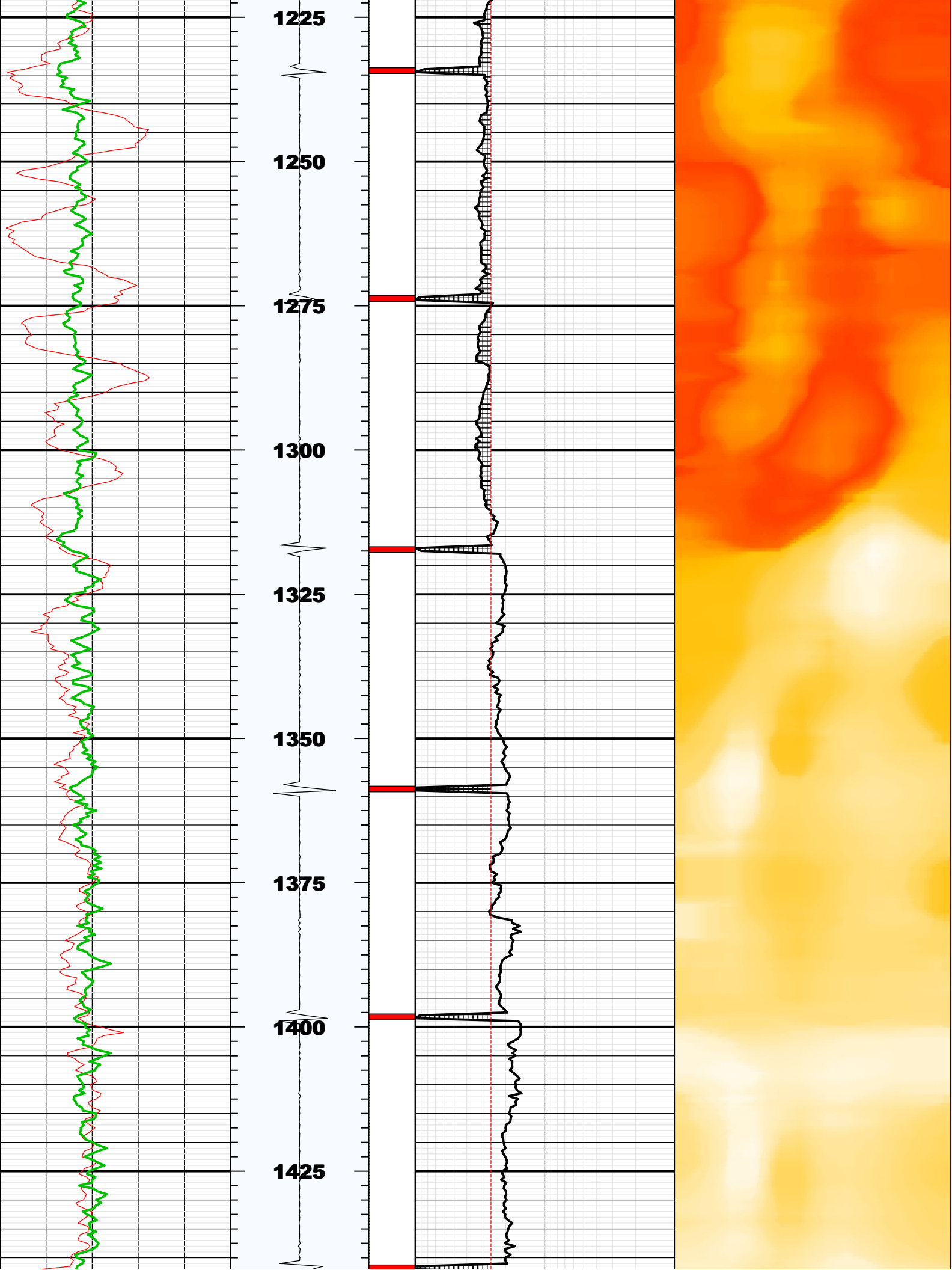


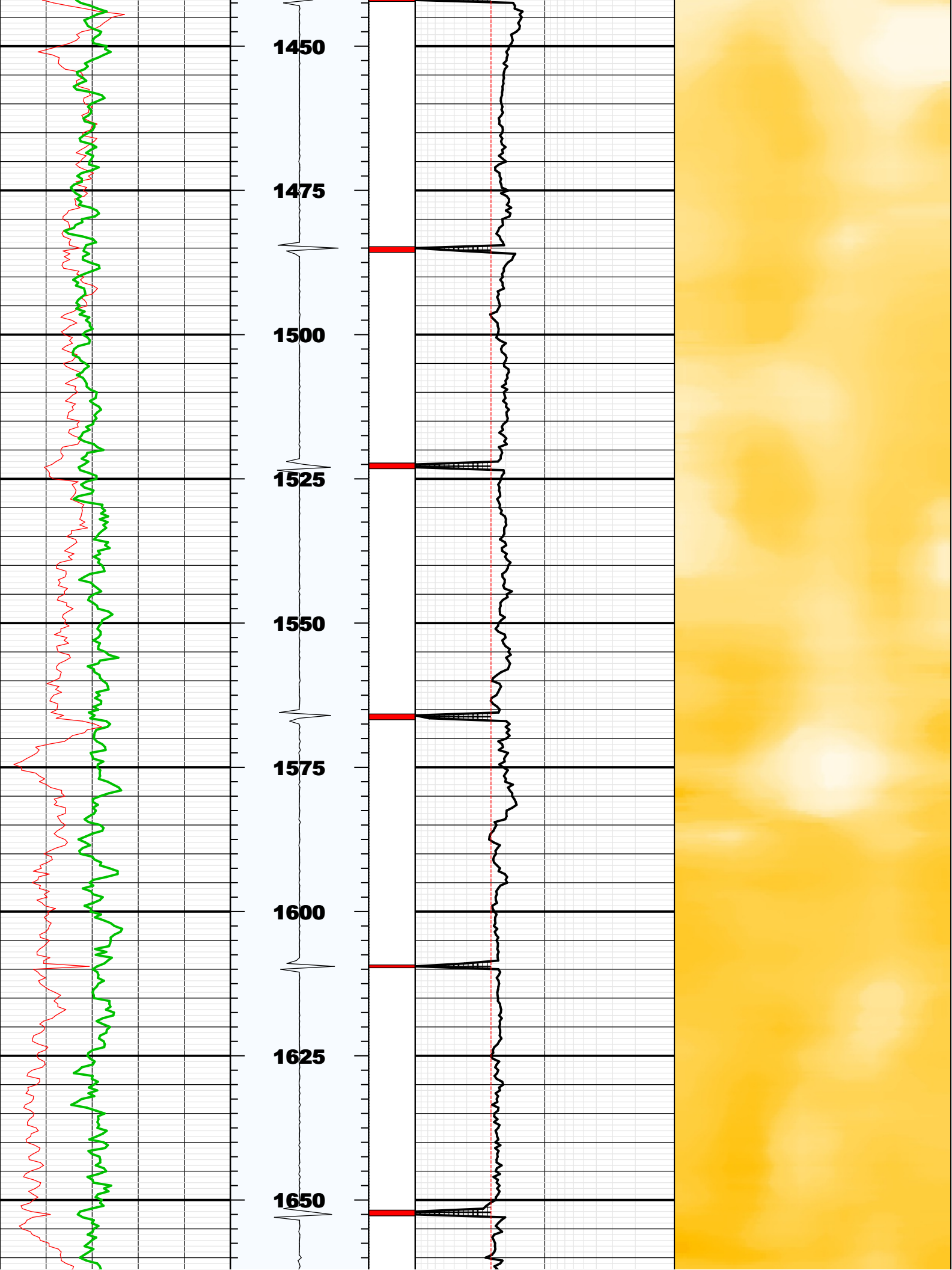


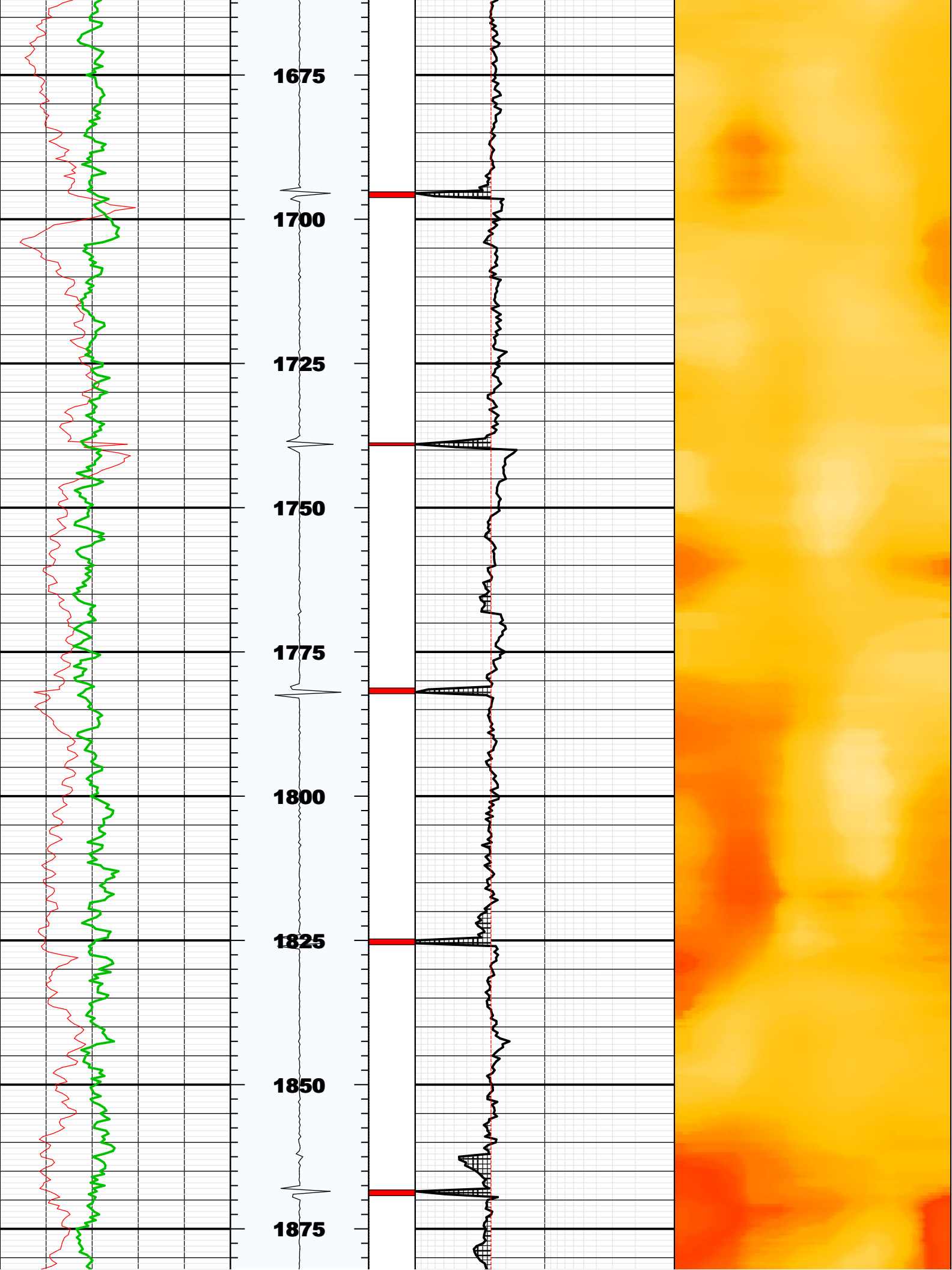


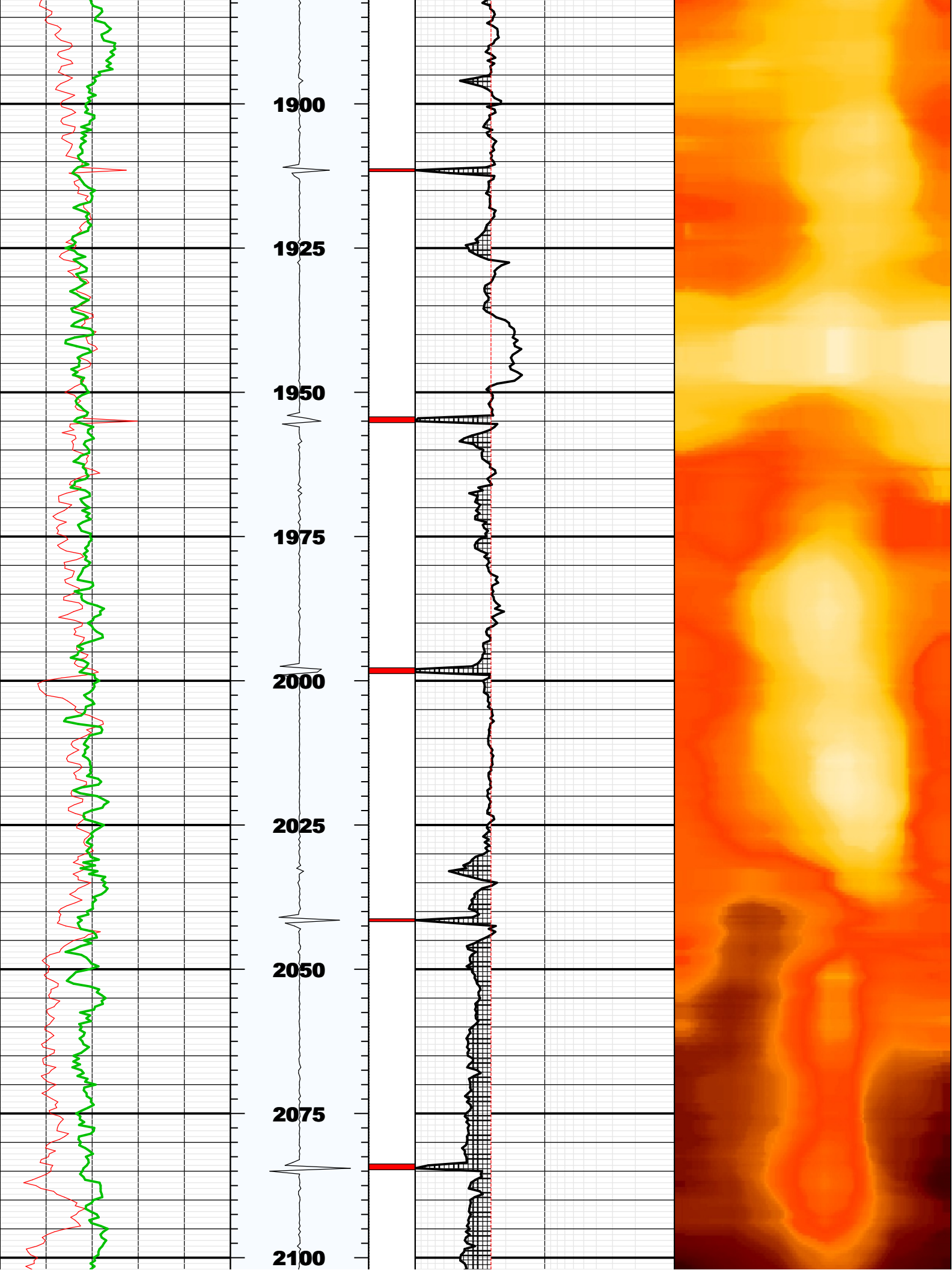


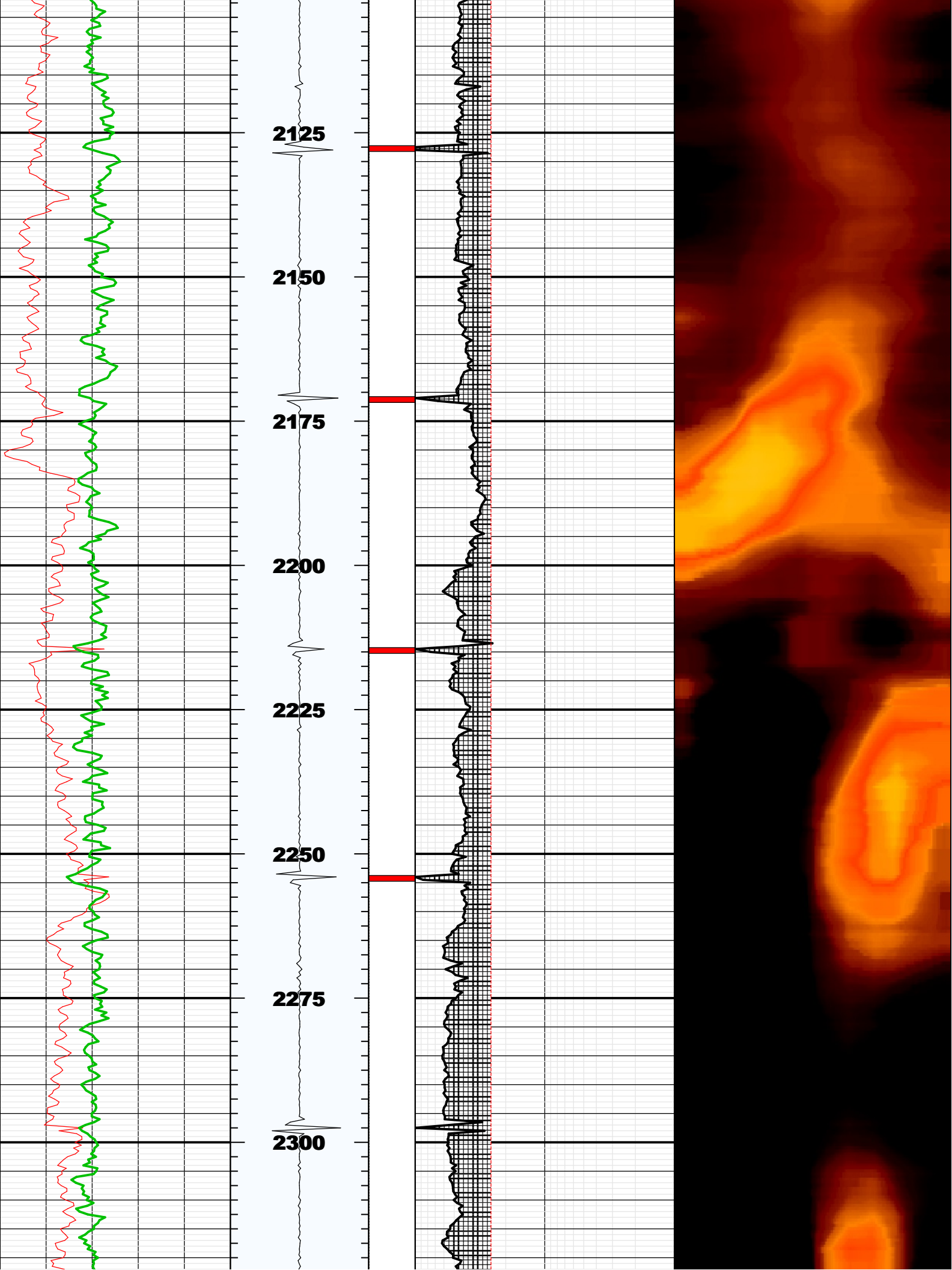


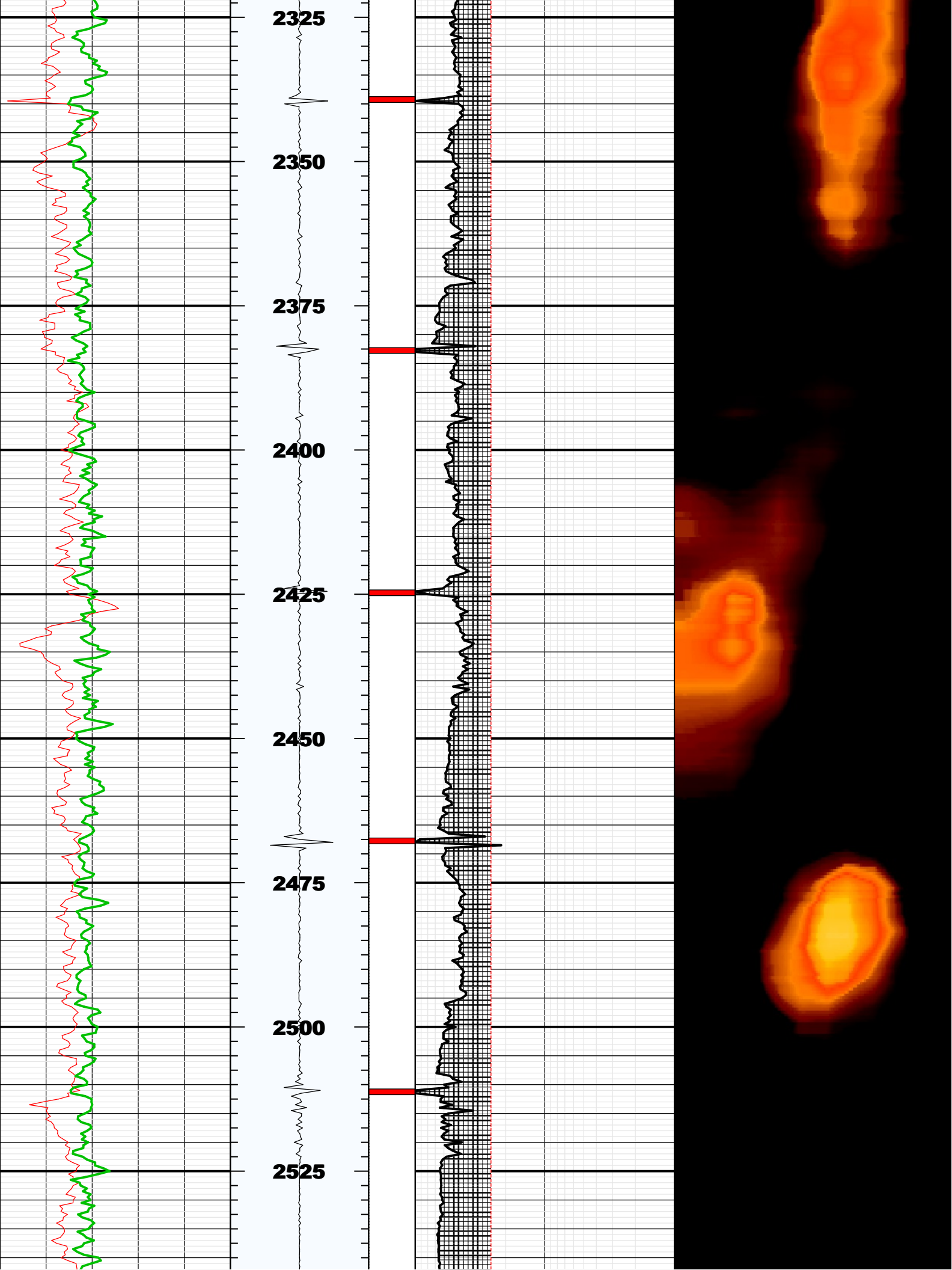


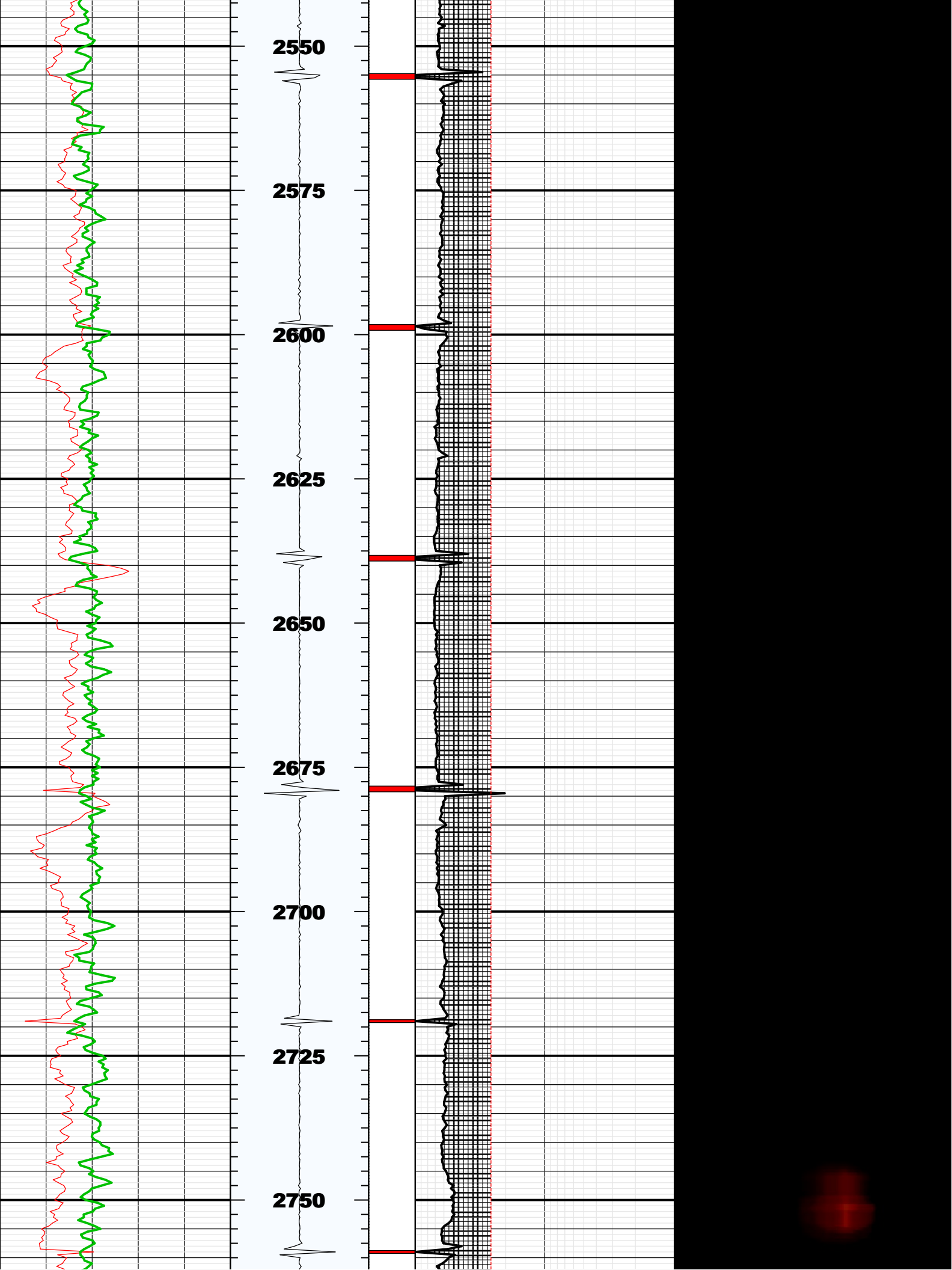


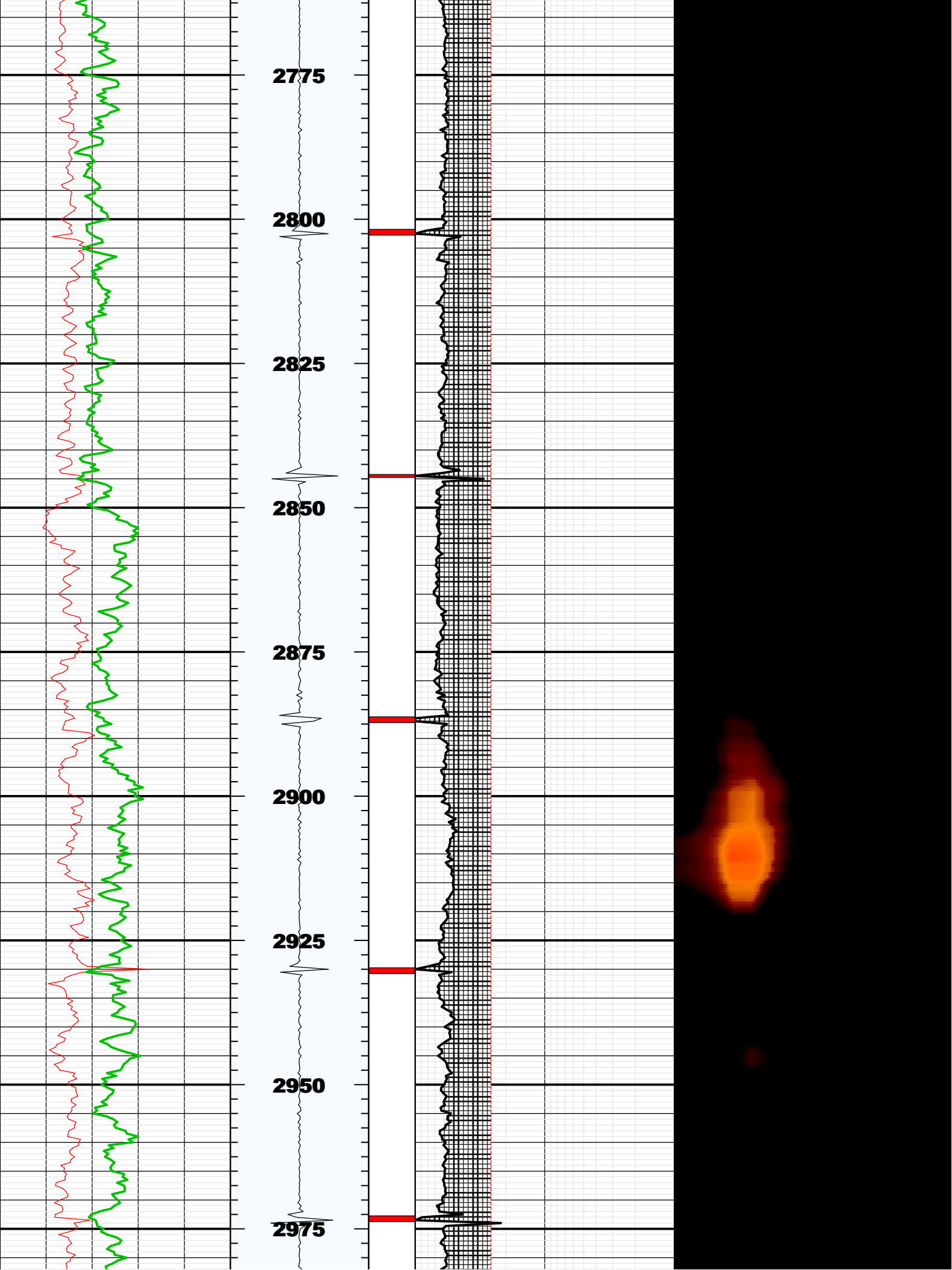


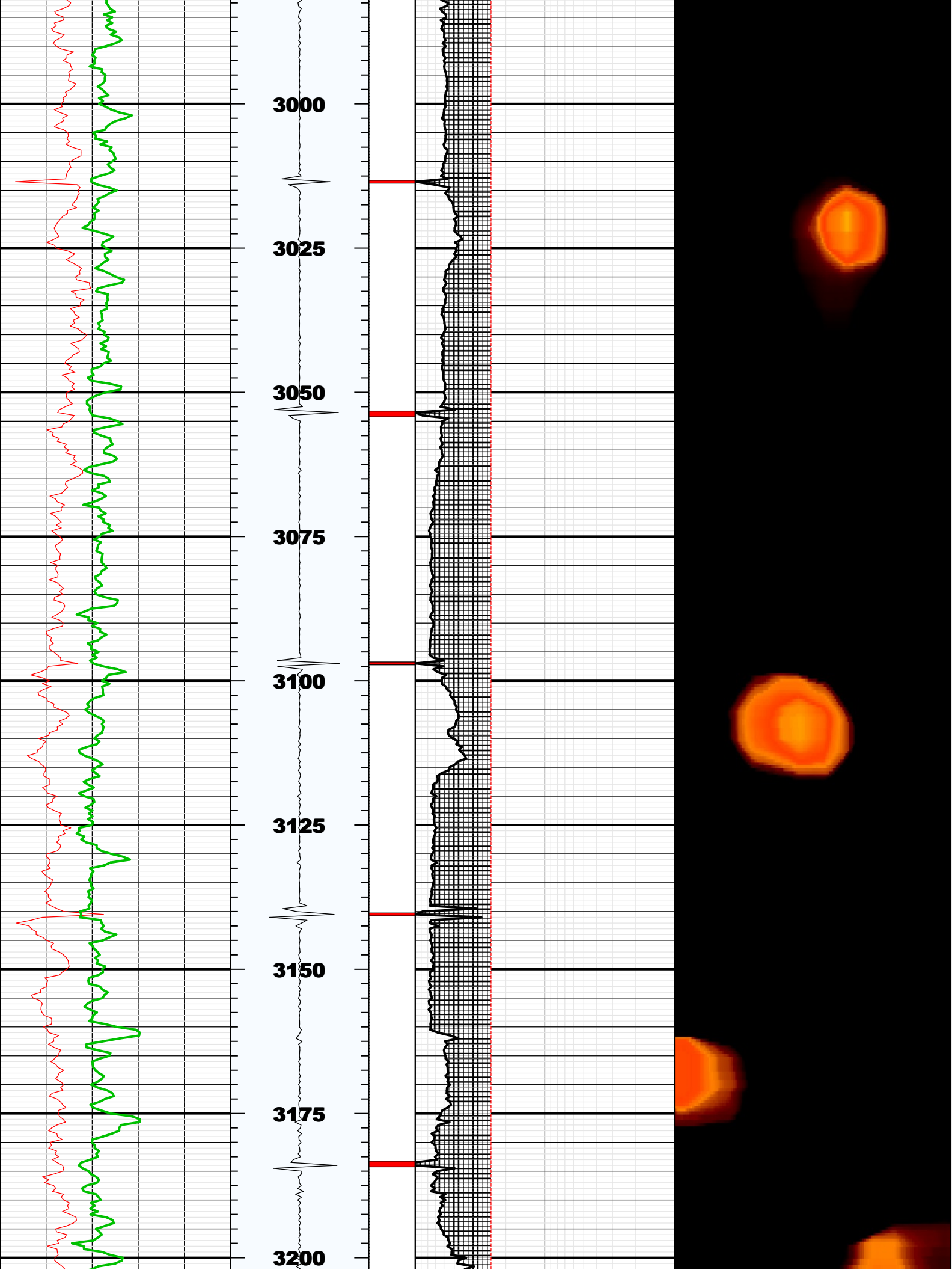


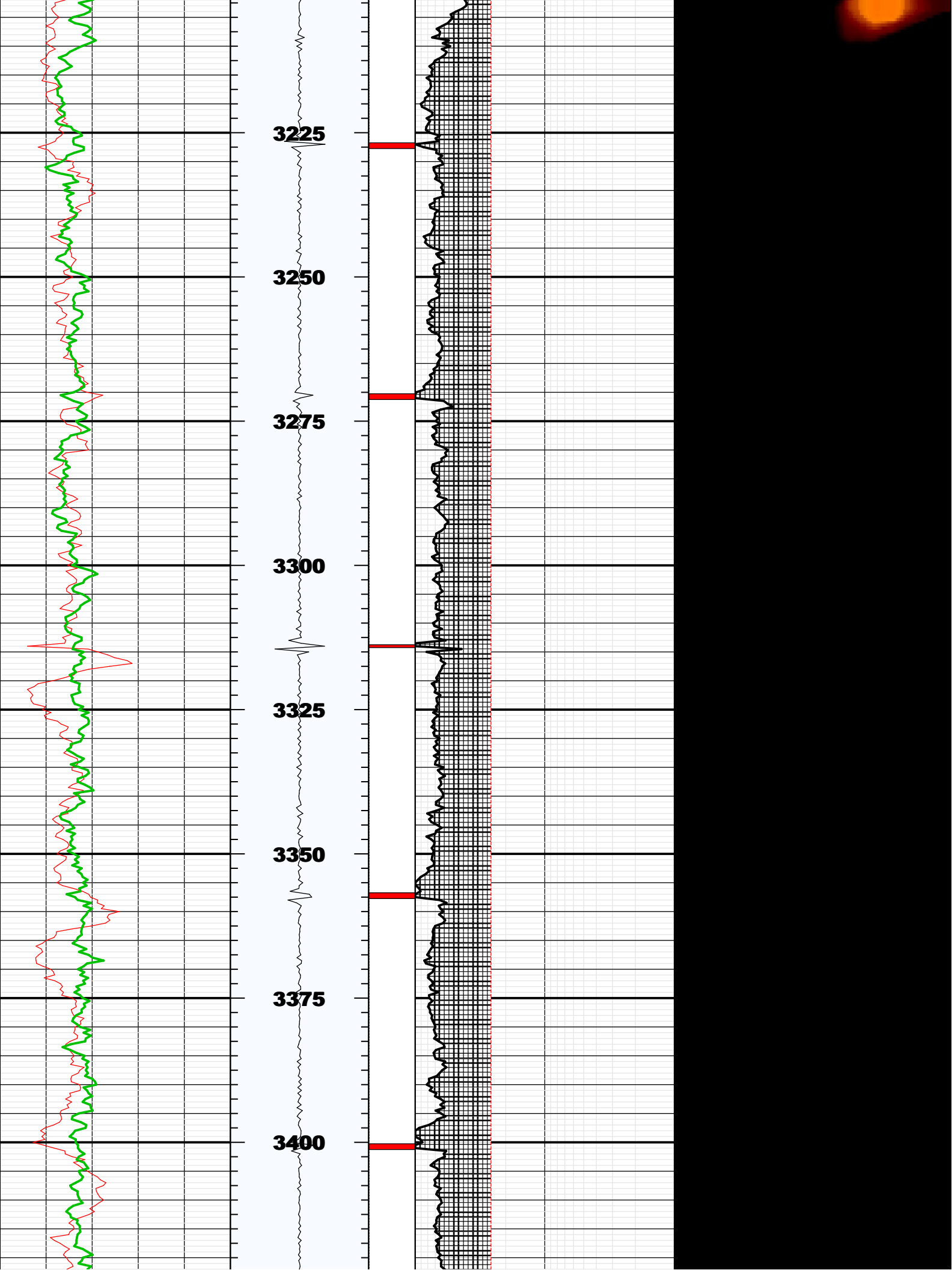


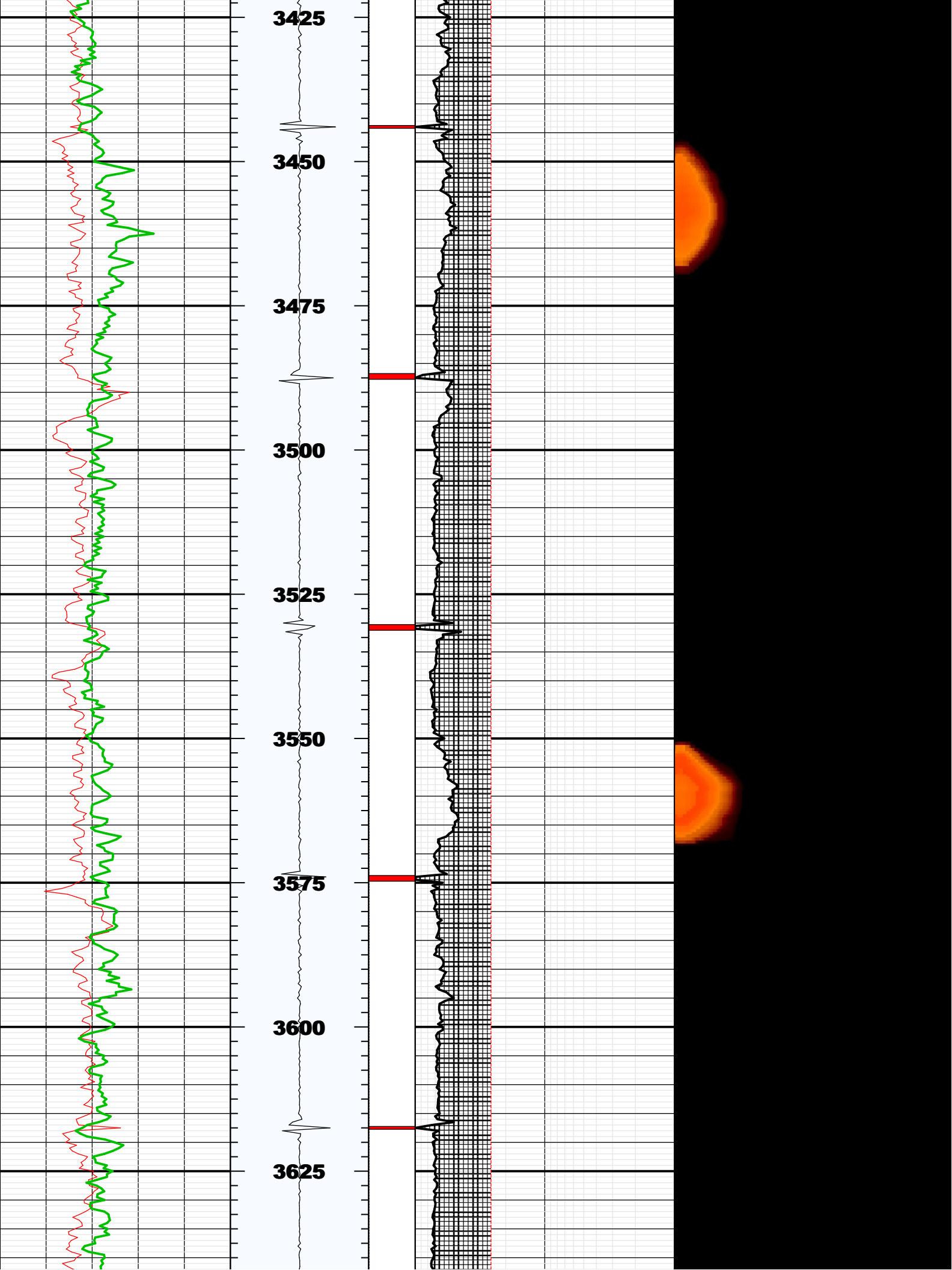


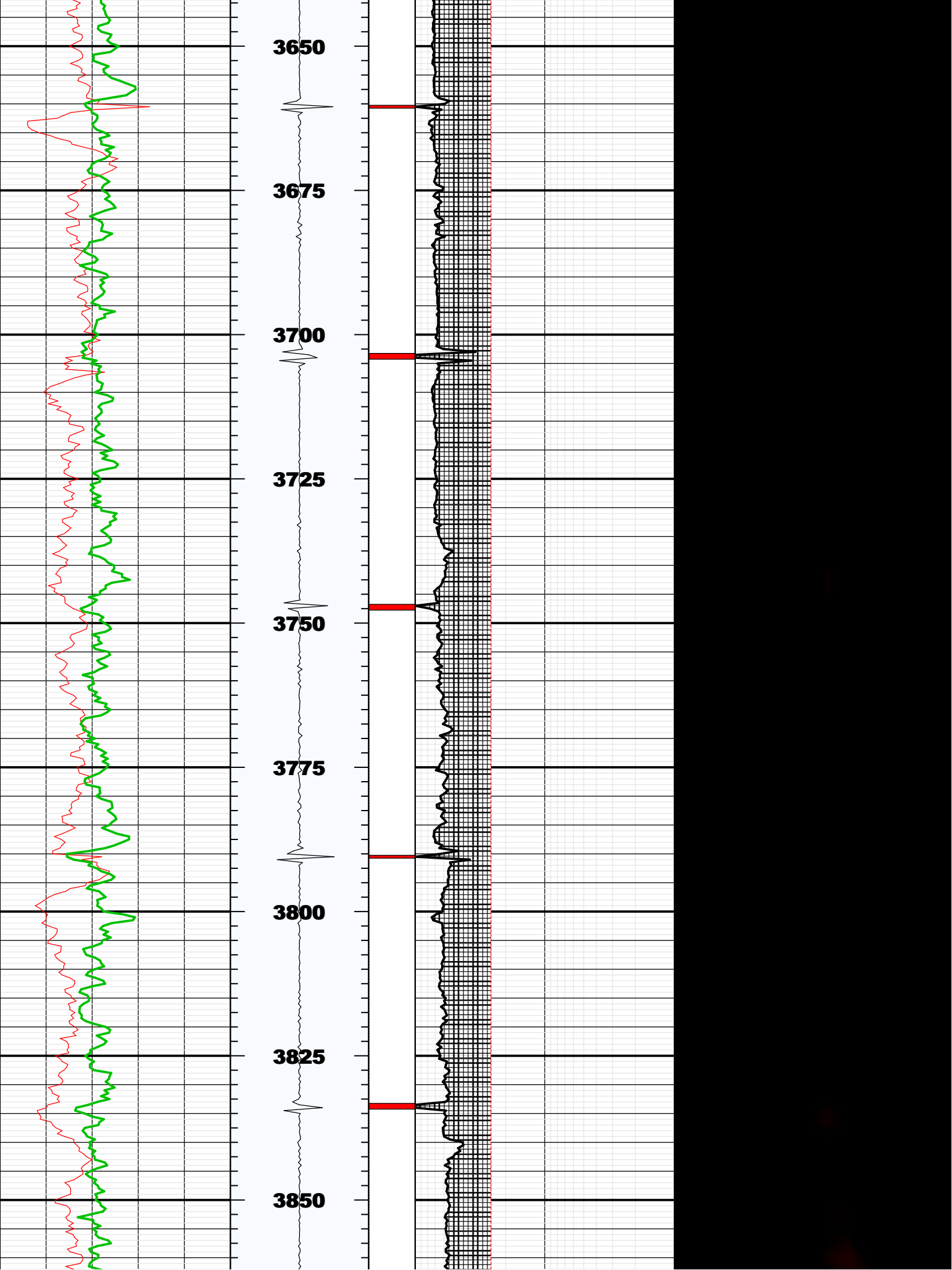


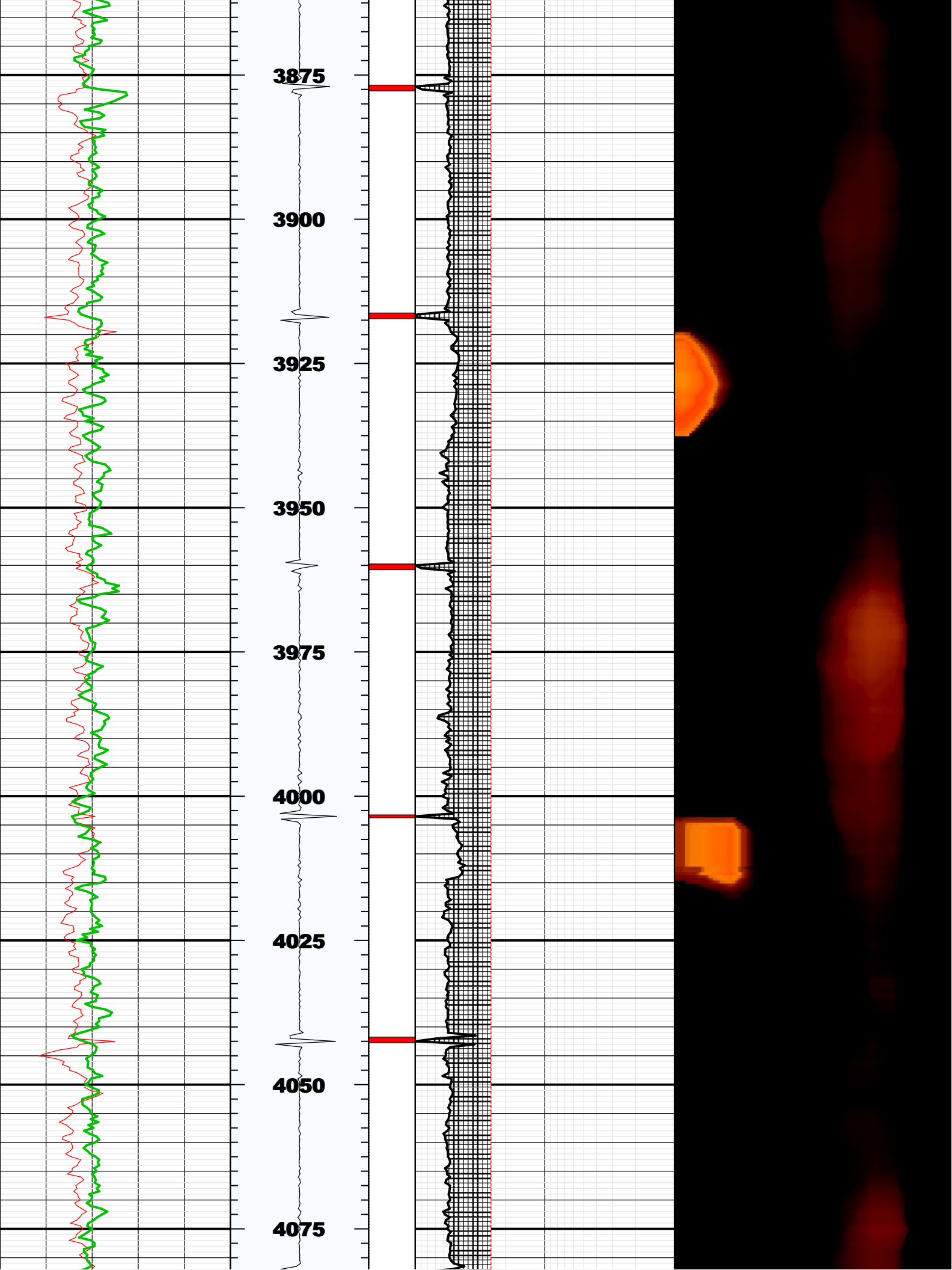


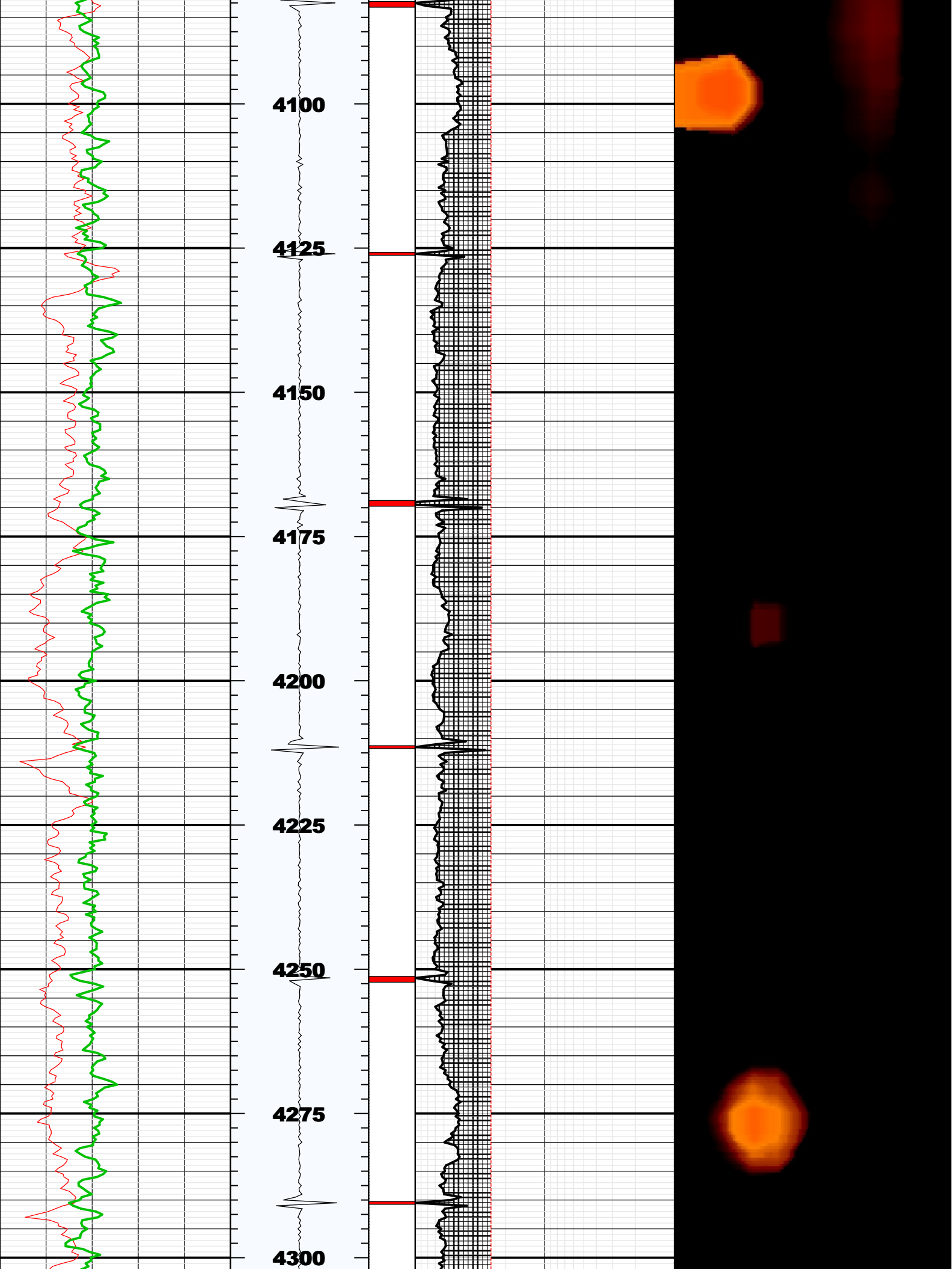


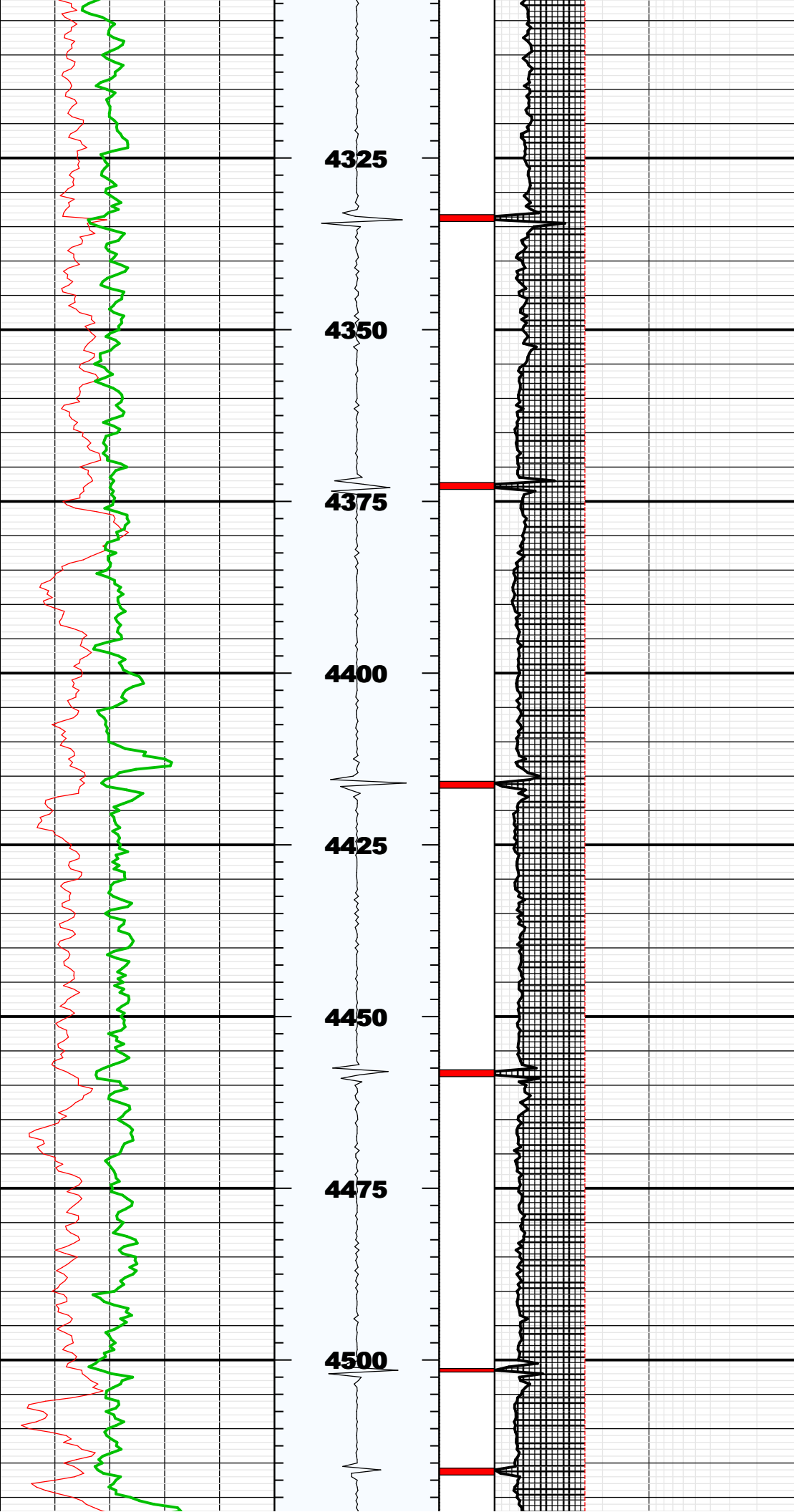


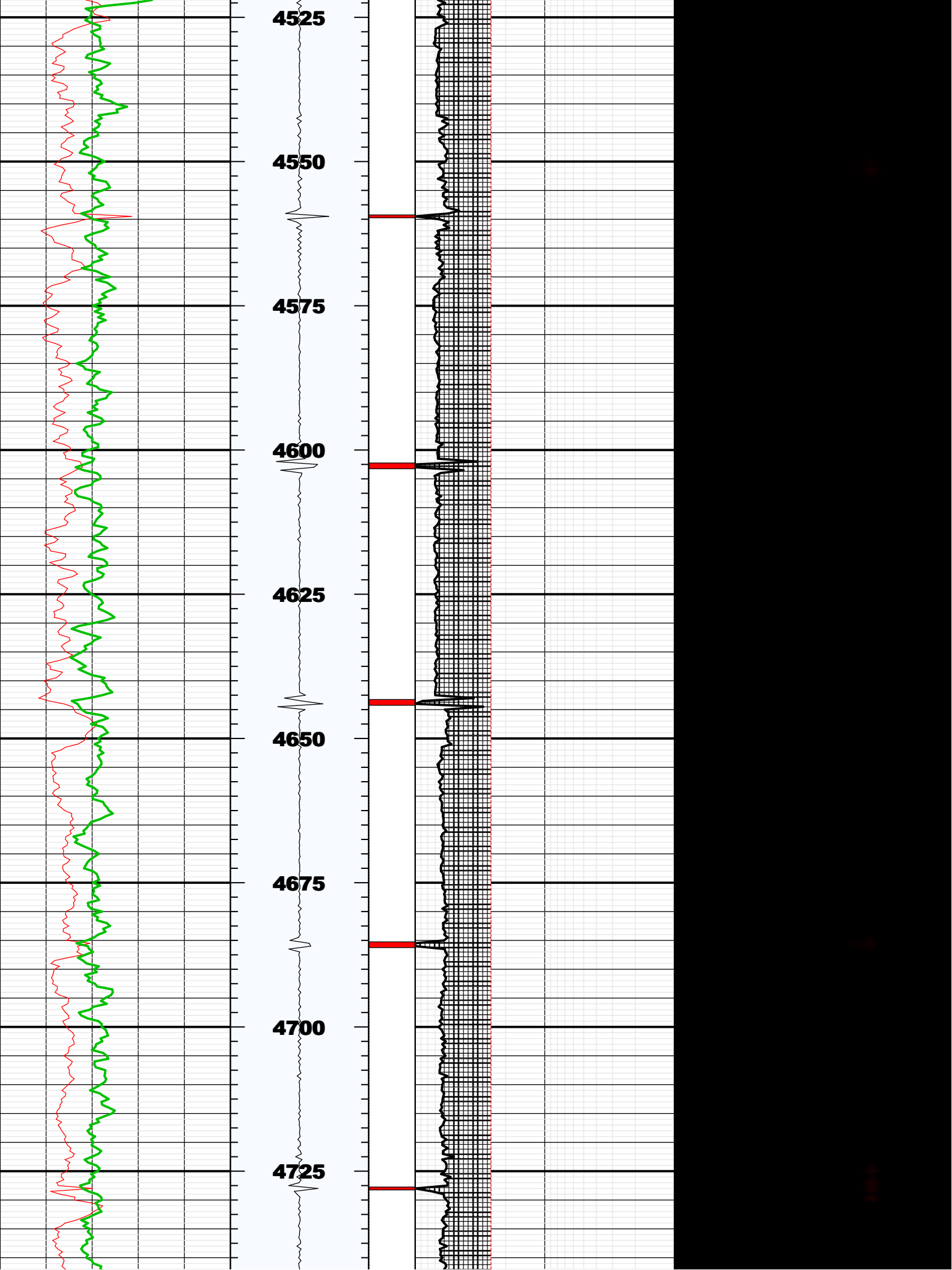


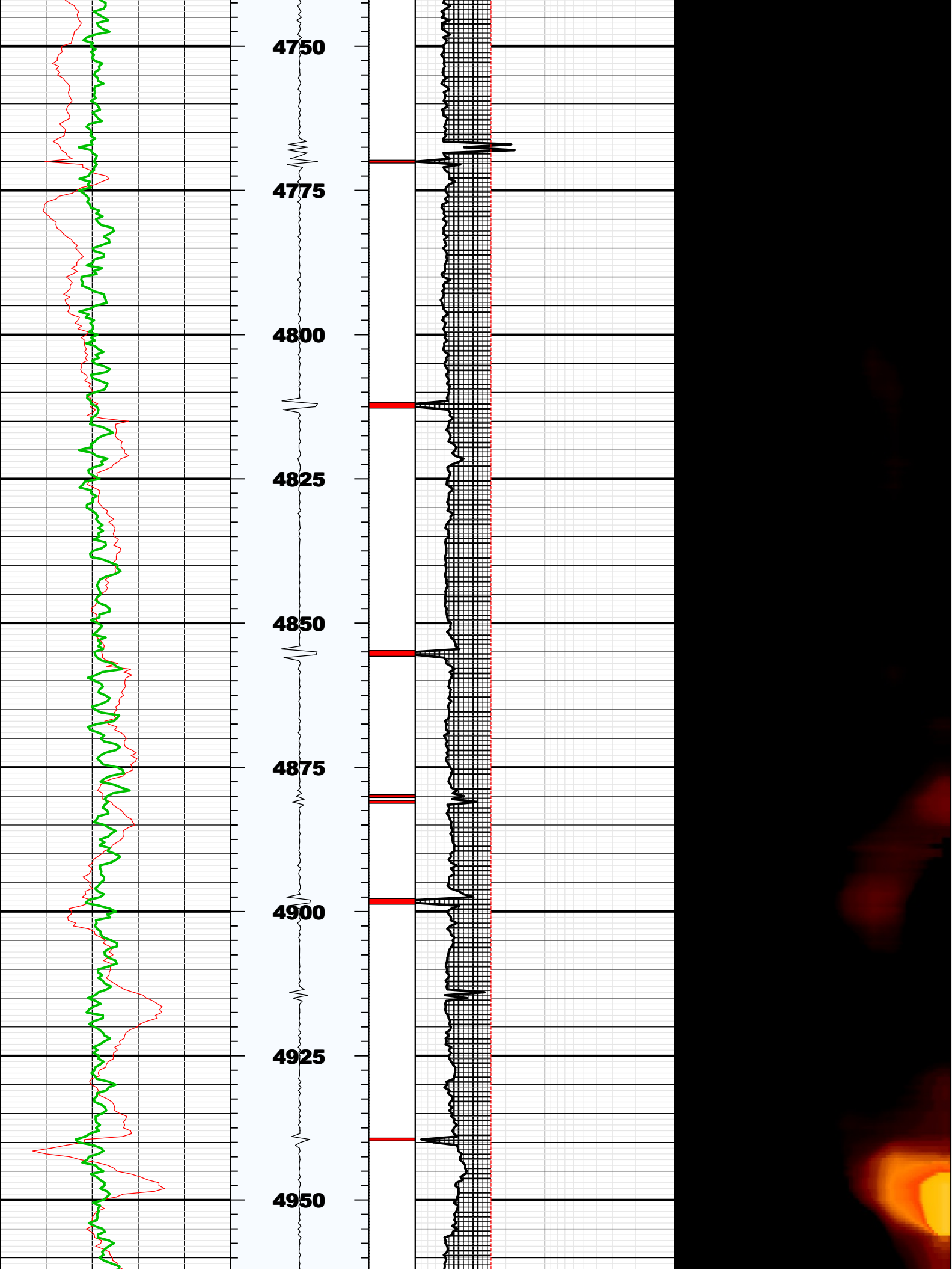


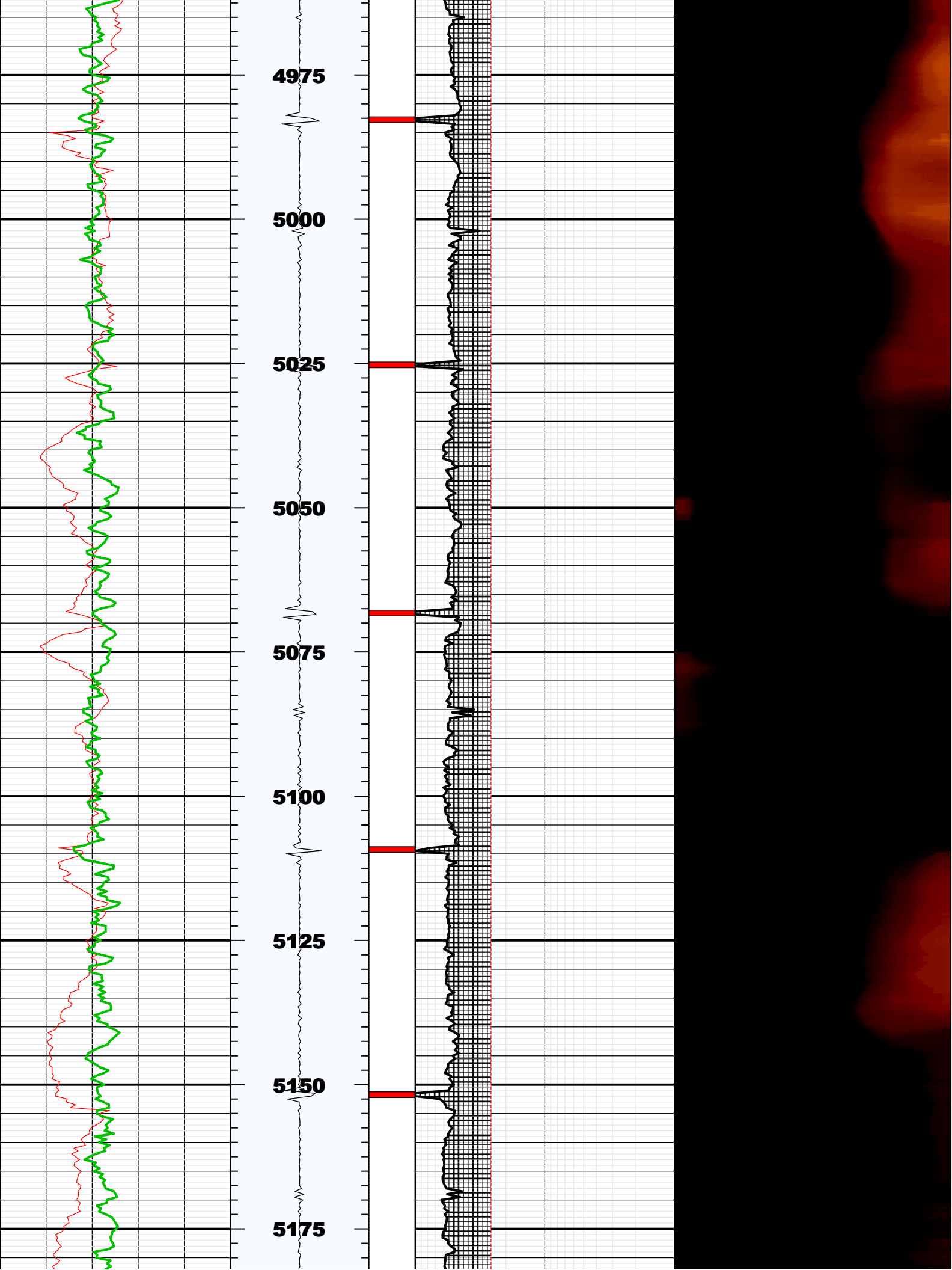


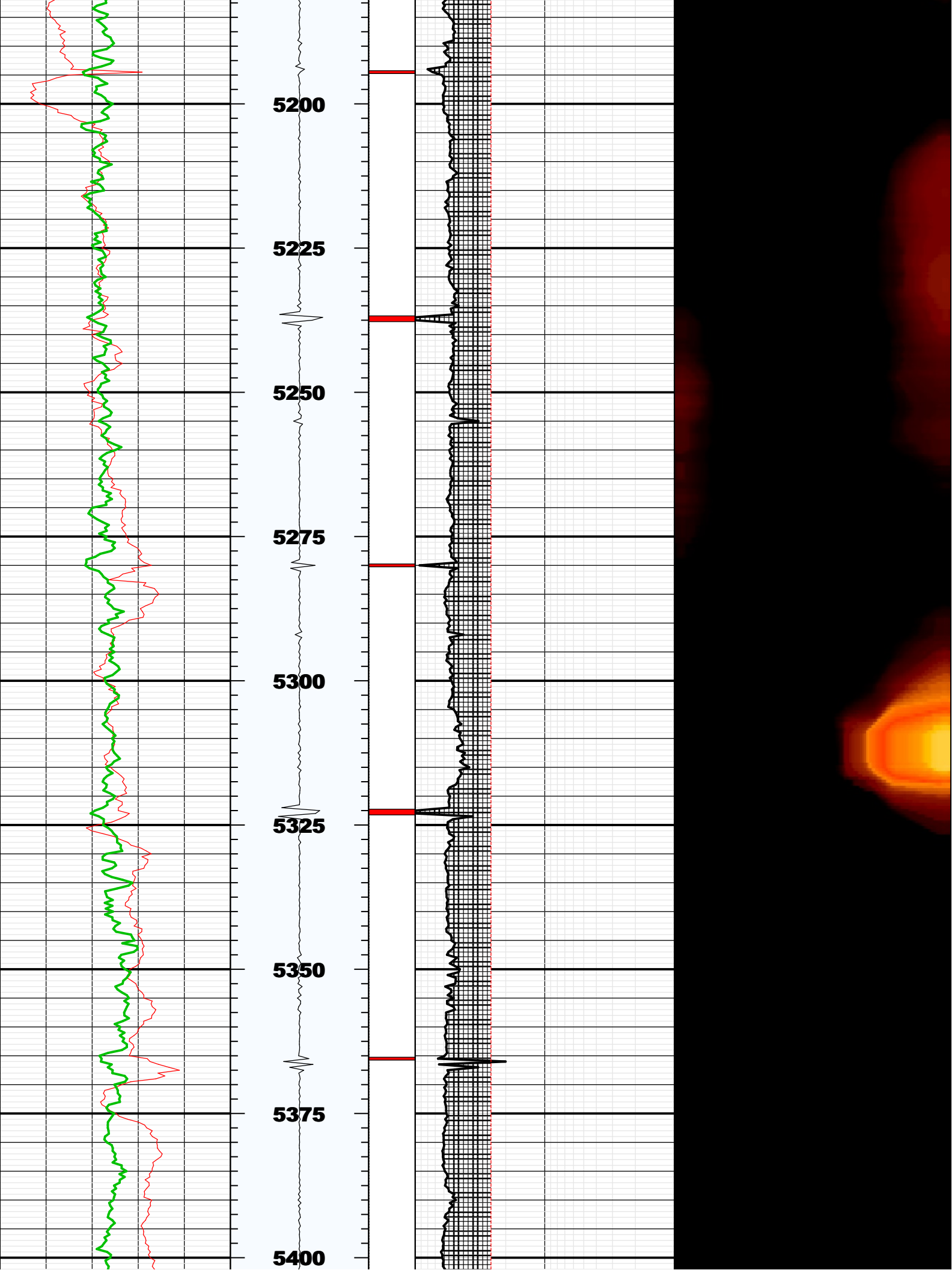


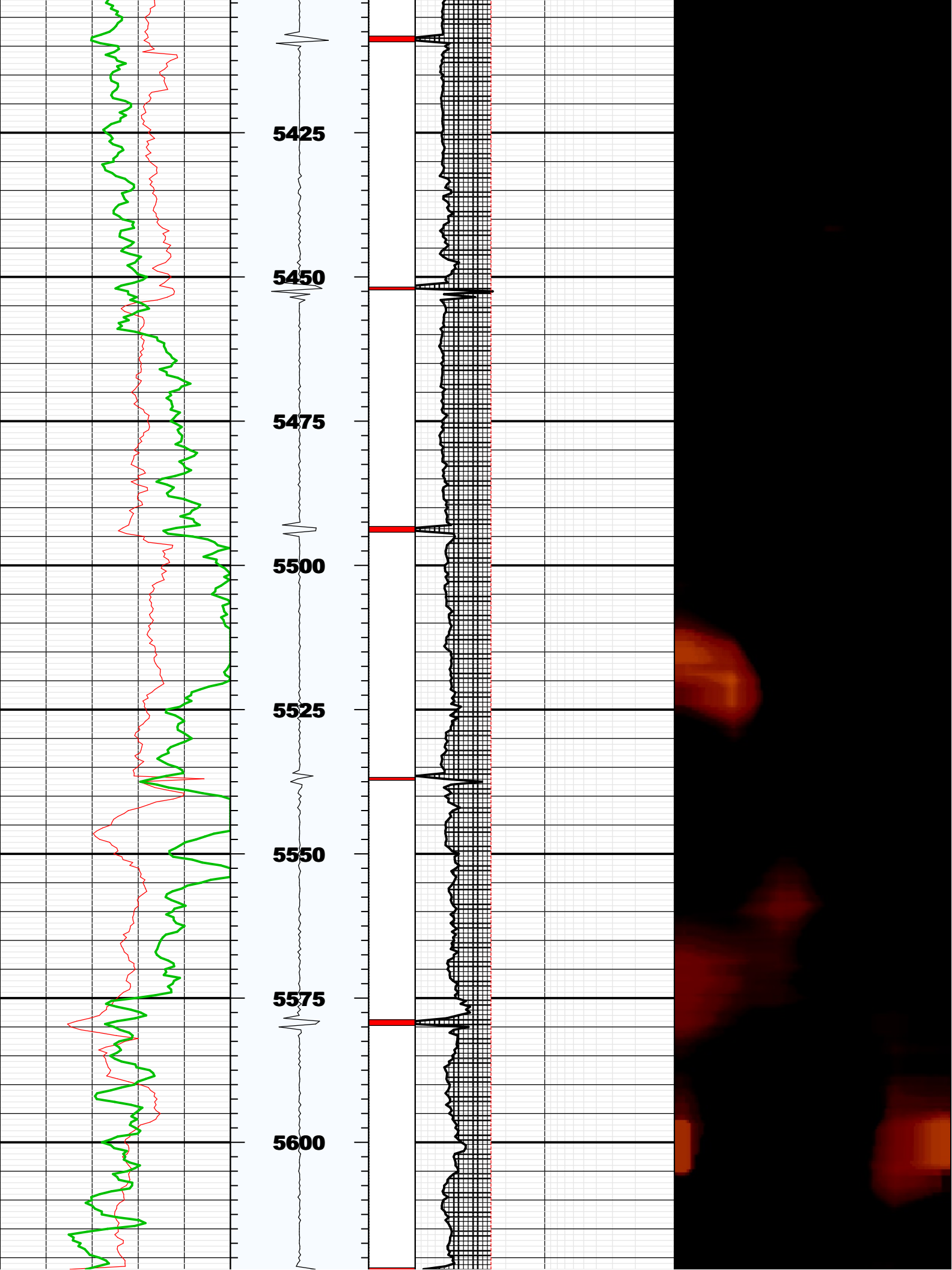


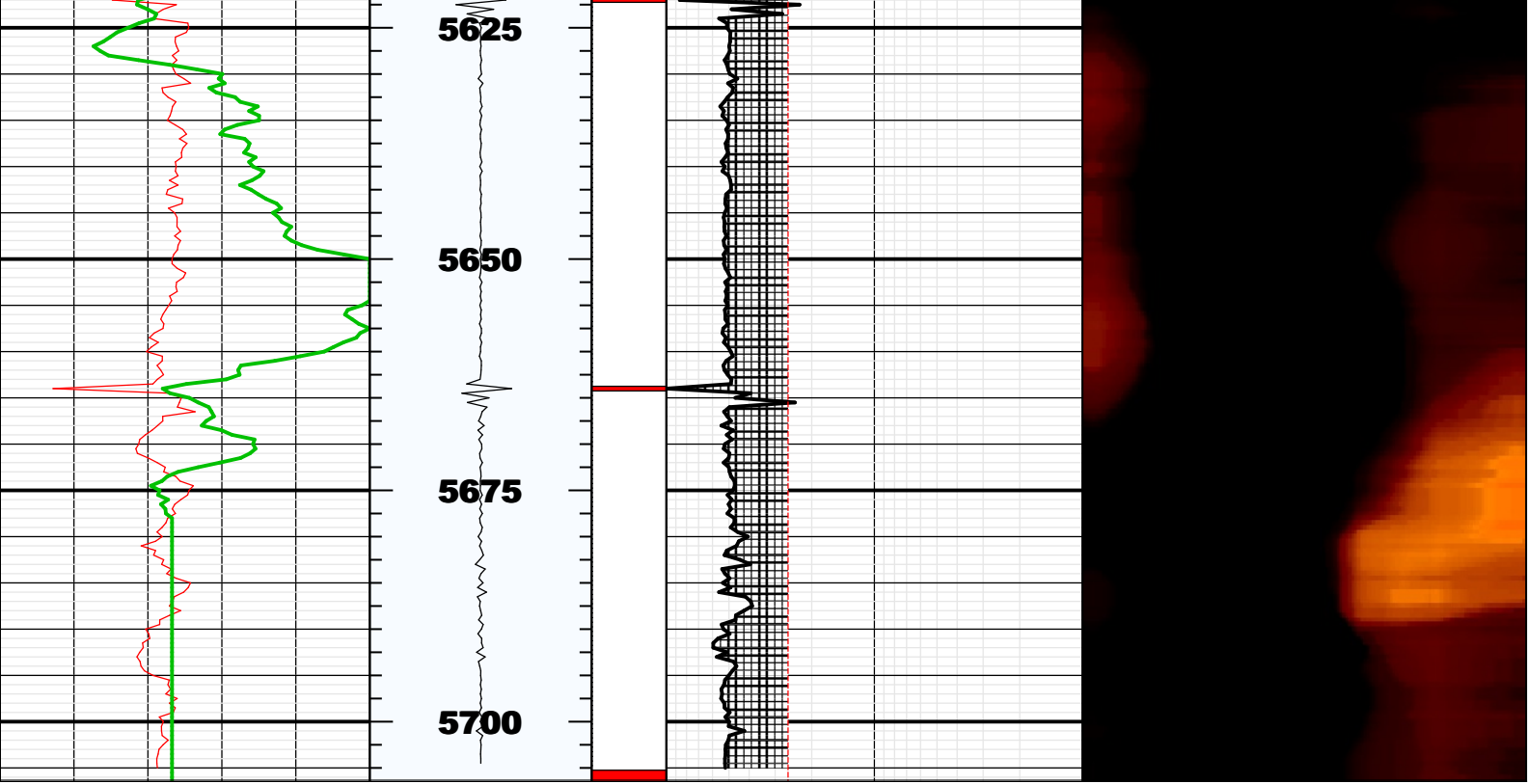








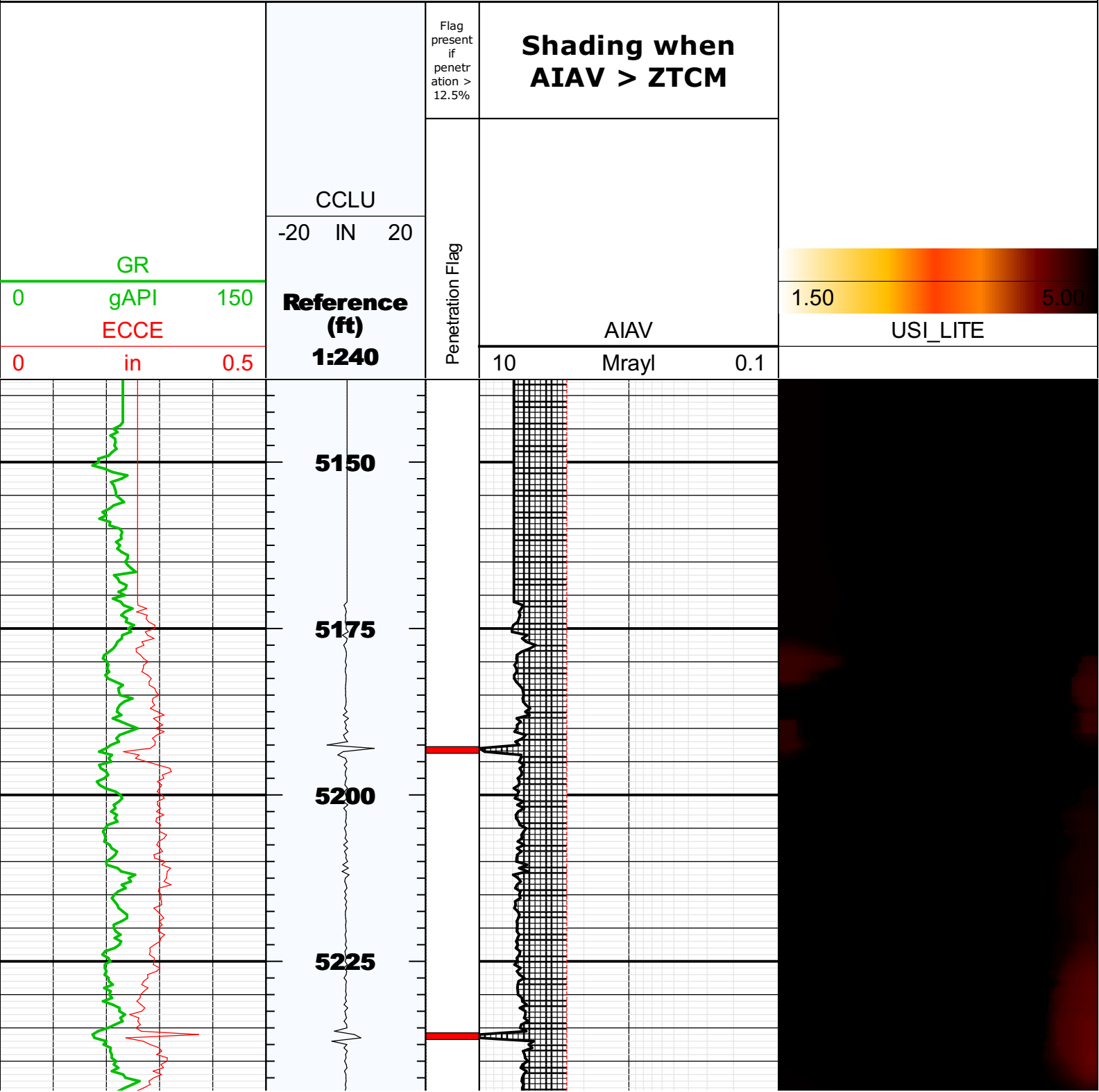


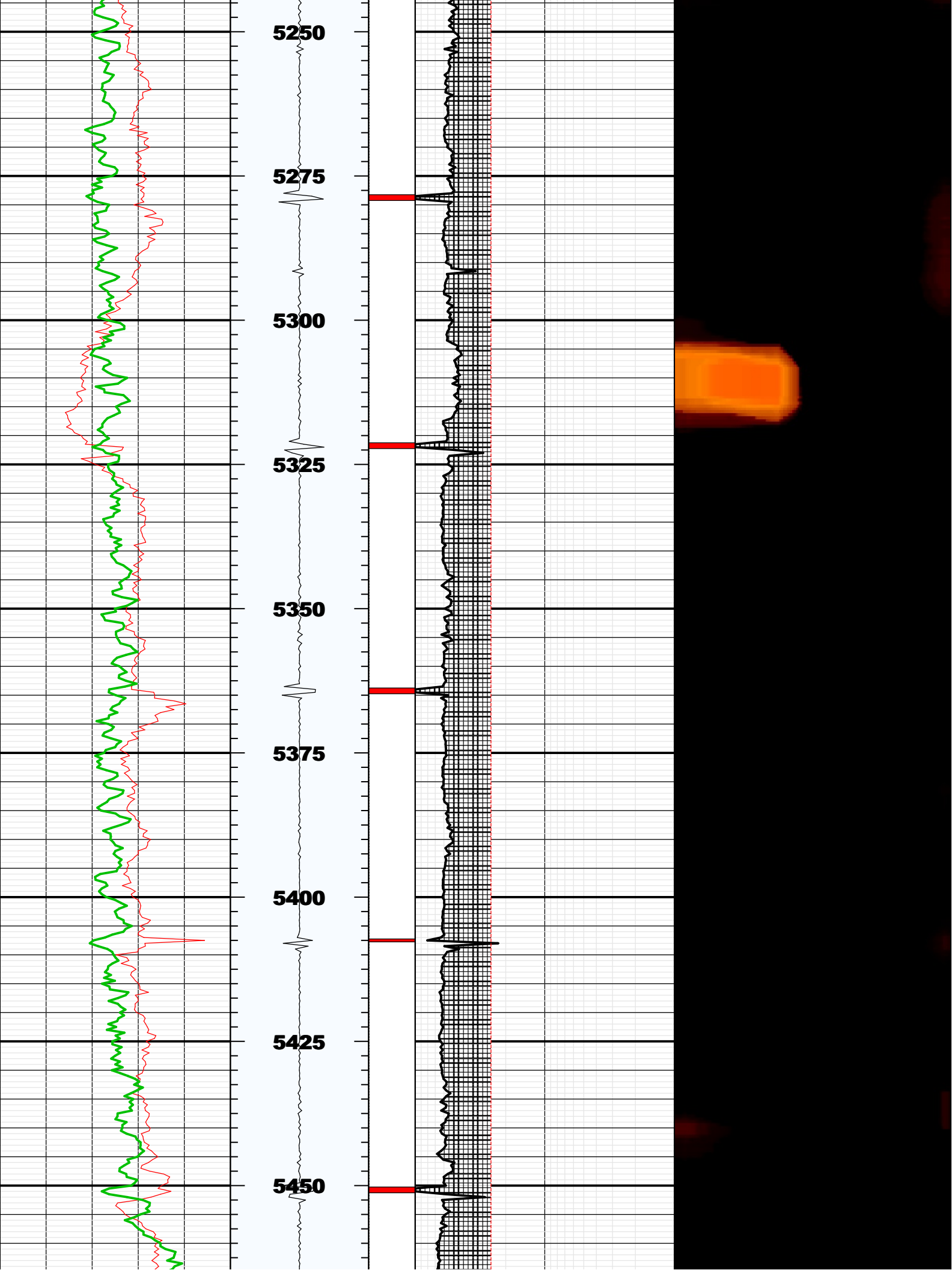


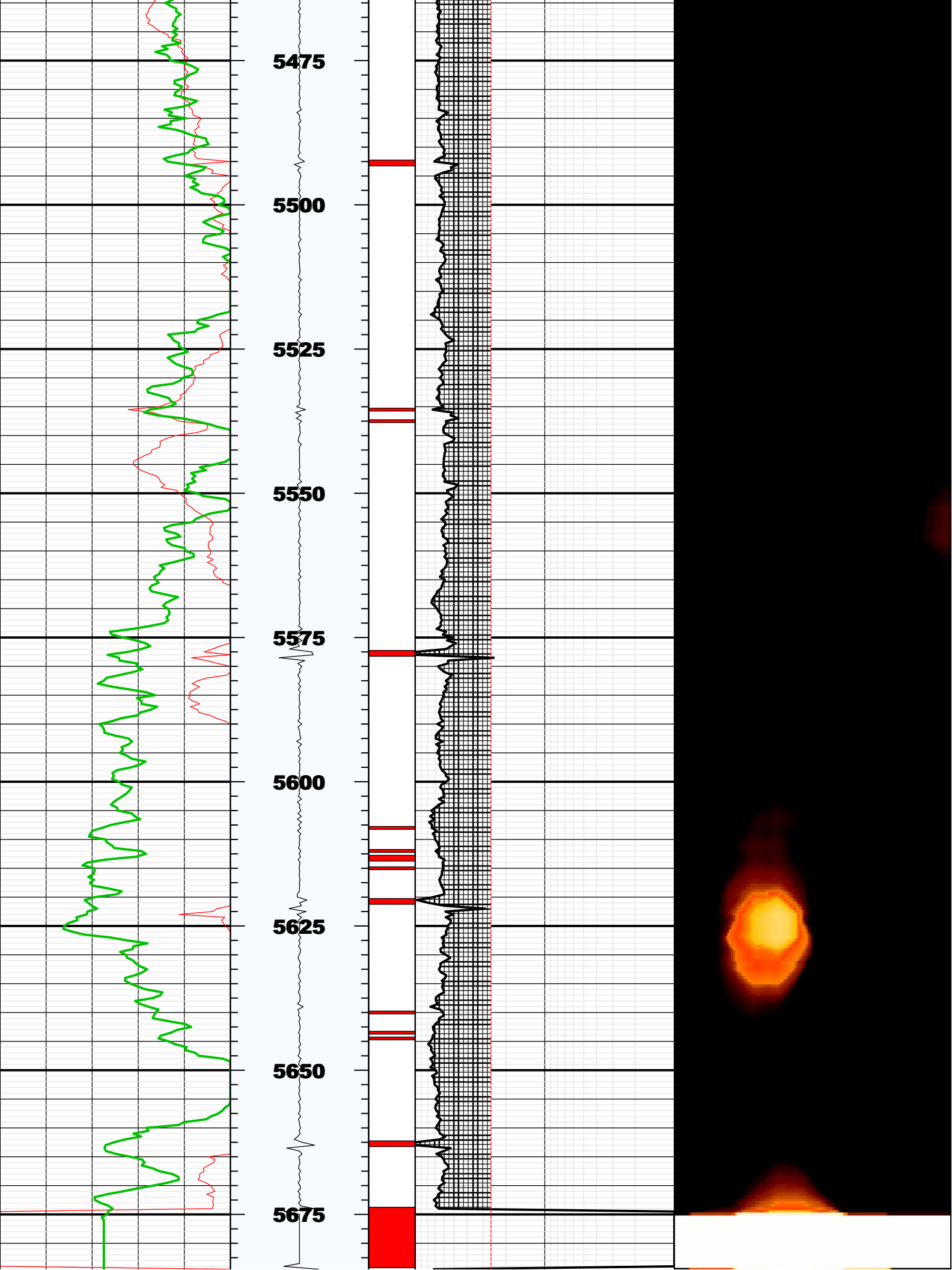
|             |             |      |                                                  |
|-------------|-------------|------|--------------------------------------------------|
| BS          | 8.75000     | IN   | Bit Size                                         |
| CASG        | P110        |      | Casing Grade                                     |
| CDIA        | 7.00000     | IN   | Casing Outer Diameter                            |
| CSID        | 6.27600     | IN   | Casing Inner Diameter                            |
| CSIZ        | 7.00000     | IN   | Current Casing Size                              |
| CWEI        | 26.00000    | LB/F | Casing Weight                                    |
| DFD         | 8.40000     | LB/G | Drilling Fluid Density                           |
| DFVL        | 188.00000   | US/F | Default Fluid Velocity                           |
| DO          |             |      |                                                  |
| DOT         | 2.87400     | IN   | Diameter of Transducer Sensor                    |
| EMXV        | 100         | V    | EMEX Voltage                                     |
| FDII        | 0.00000     | F    | FPM Data Interpolation Interval                  |
| FSOD        | 0_OFF       |      | Fluid Slowness Fits Casing Outer Diameter        |
| LOGMODE     |             |      |                                                  |
| PP          |             |      |                                                  |
| STEP        | -0.5        | F    | STEP                                             |
| THDH        | 130.00000   | %    | Maximum Search Thickness (percentage of nominal) |
| THDL        | 70.00000    | %    | Minimum Search Thickness (percentage of nominal) |
| THDP        | Fundamental |      | Thickness Detection Policy                       |
| THNO        | 0.36200     | IN   | Nominal Thickness of Casing                      |
| TMUC        | WRM         |      | Type of Mud                                      |
| U-USIT_DT3P |             |      |                                                  |
| UPAT        | 375K        |      | Emission Pattern                                 |
| USUB        | 7INC        |      | USIT Sub Identifier                              |
| UWKM        | D603010L    |      | Working Mode                                     |
| VCAS        | 51.40000    | US/F | Ultrasonic Transversal Velocity in Casing        |
| WINB        | 33.50638    | US   | Window Begin Time                                |
| WINE        | 80.31863    | US   | Window End Time                                  |
| ZCAS        | 46.25000    | MRAY | Acoustic Impedance of Casing                     |
| ZINI        | -1.00000    | MRAY | Initial Estimate of Cement Impedance             |
| ZMUD        | 1.82000     | MRAY | Acoustic Impedance of Mud                        |
| ZTCM        | 2.60000     | MRAY | Acoustic Impedance Threshold for Cement          |
| ZTGS        | 0.30000     | MRAY | Acoustic Impedance Threshold for Gas             |
| WLEN        | 22.50350    | US   | T^3 Processing Length                            |

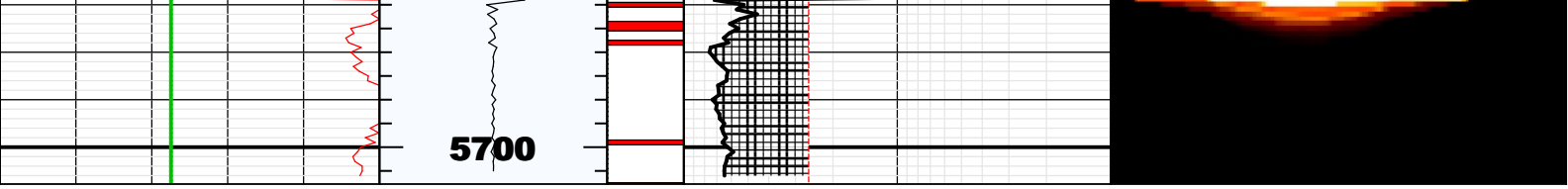
# Repeat Pass

Company: Noble Energy Inc  
 Well: Morton State LD01 78 1AHN  
 Field: Wildcat



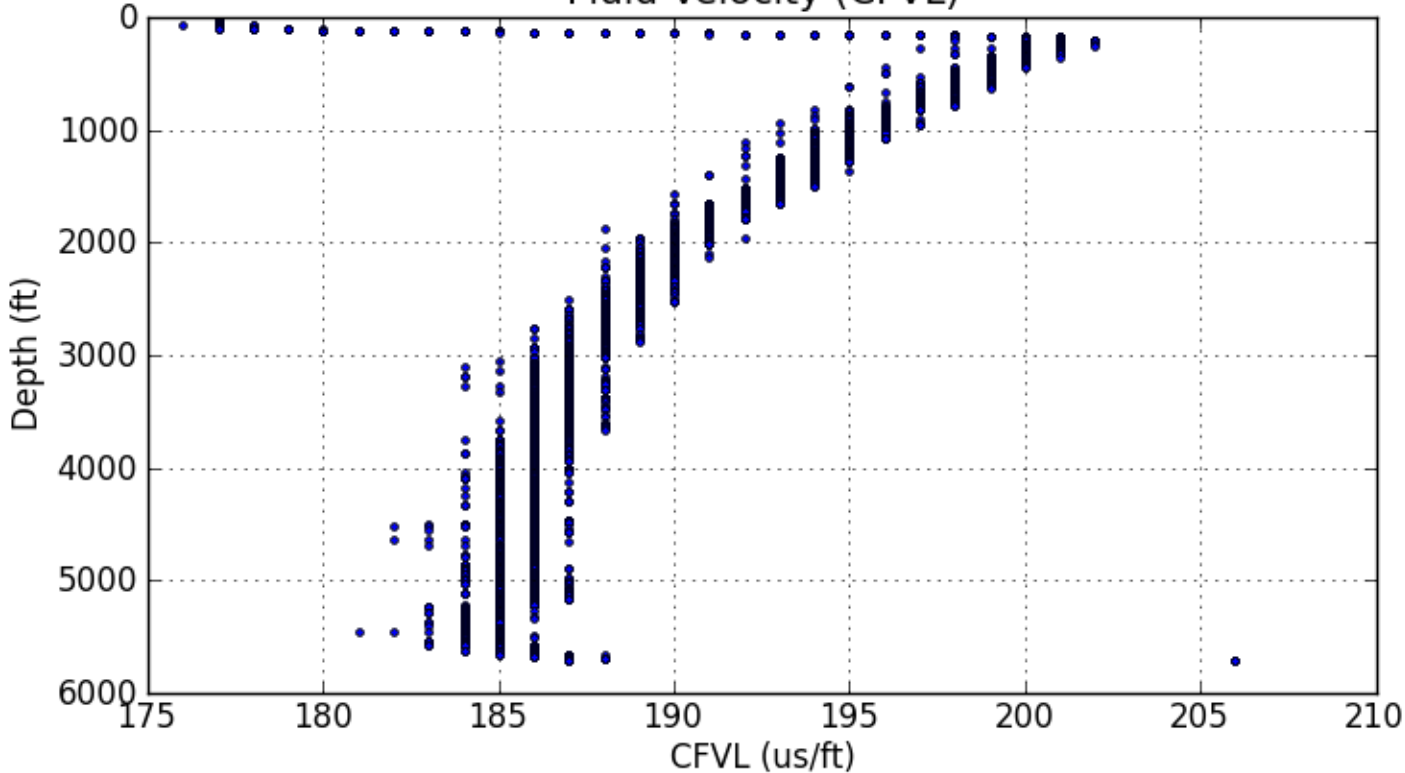






# Fluid Properties Used for Main Pass

## Fluid Velocity (CFVL)



## Acoustic Impedance of Mud (CZMD)

