

Company: Noble Energy Inc

Well: Wells Ranch AE19-626  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld		<b>USI-LITE (2500 psi)</b>					
Field: Wattenberg							
Location: NWSW Sec. 20 T6N R62W							
Well: Wells Ranch AE19-626							
Company: Noble Energy Inc							
LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:	GL KB KB	Elev: K.B. 4816.0 F G.L. 4786.0 F D.F. 4815.0 F			
API Serial No. 05-123-39634-0000					Section 20	Township 6N	Range 62W
Logging Date 07-Feb-2015							
Run Number Run 1							
Depth Driller 6937.0 F							
Schlumberger Depth 6810.0 F							
Bottom Log Interval 6810.0 F							
Top Log Interval 30.0 F							
Casing Fluid Level 8.0 F							
Salinity							
Density 8.70 LB/G							
Fluid Level 8.0 F							
BIT/CASING/TUBING STRING							
Bit Size 8.750 IN							
From 6810.0 F							
To -999.2 F							
Casing Size 7.00 IN							
Weight 26.00 LB/F							
Grade P110							
From 30.0 F							
To 6932.0 F							
Max Recorded Temp 228.8							
Logger on bottom (date) 07-Feb-2015							
Location Fort Morgan CO							
Recorded By Keri Ondrus							
Witnessed By							

DEPTH SUMMARY LISTING

DEPTH SYSTEM EQUIPMENT

Depth Measuring Device	Tension Device	Logging Cable
Type: Serial Number: Calibration Date: Calibration Cable Type: Wheel Correction 1: Wheel Correction 2:	Type: Serial Number: 1109 Calibration Date: Calibrator Serial Number: Number Of Calibration Points: Calibration RMS: Calibration Peak Error:	Serial Number: F713384 Length: 14000.00098

DISCLAIMER

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0 PSI repeat pass and 2500 PSI main pass.

Top of Cement seen @ 125'. Expected TOC @ 30'.

11.5 PPG tuned spacer and 13.6 PPG single slurry cement.

During cement job casing tested to 3000 PSI for 15 min. Floats good.

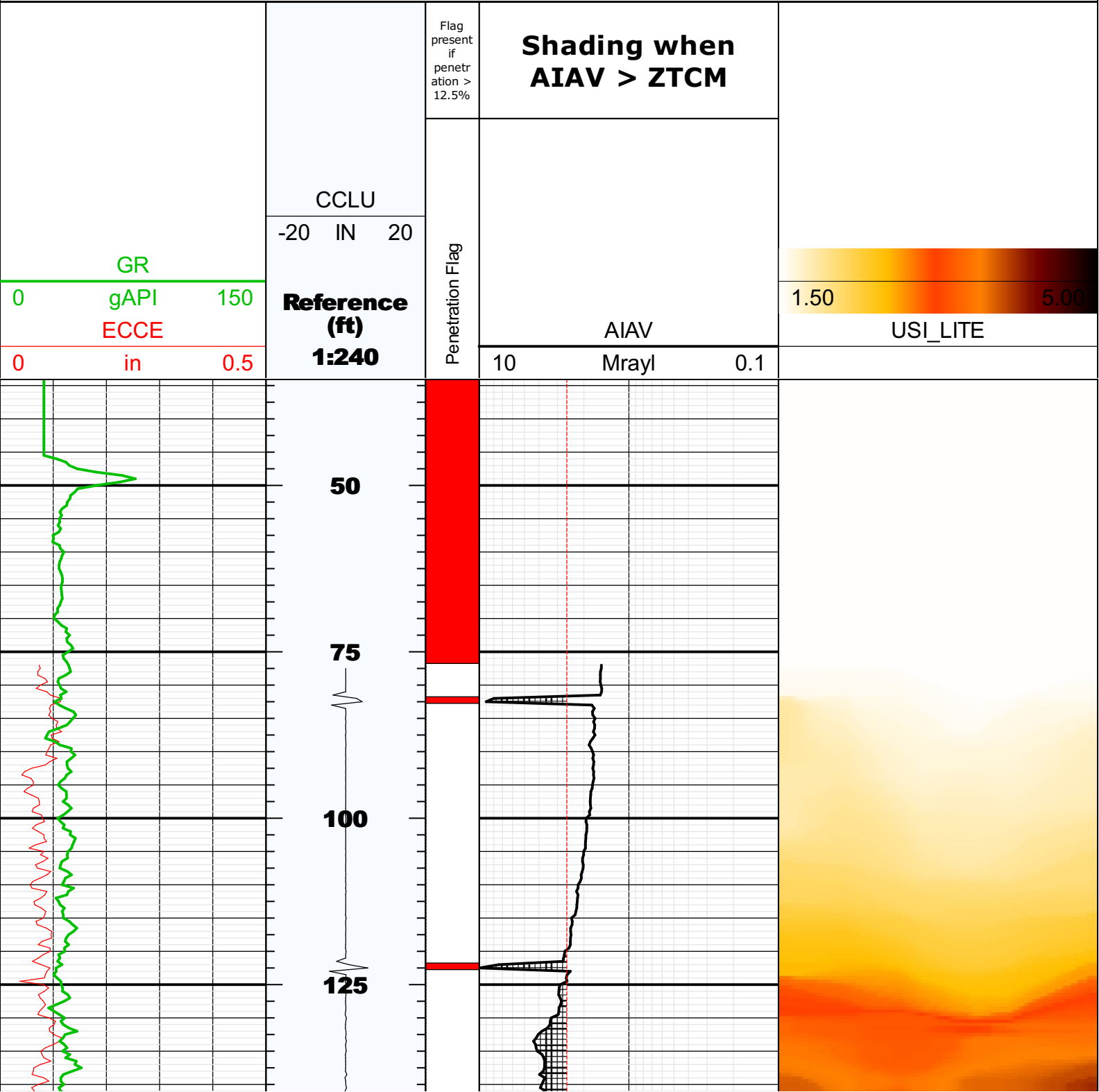
Top of 4.5 liner at 6821.5'.

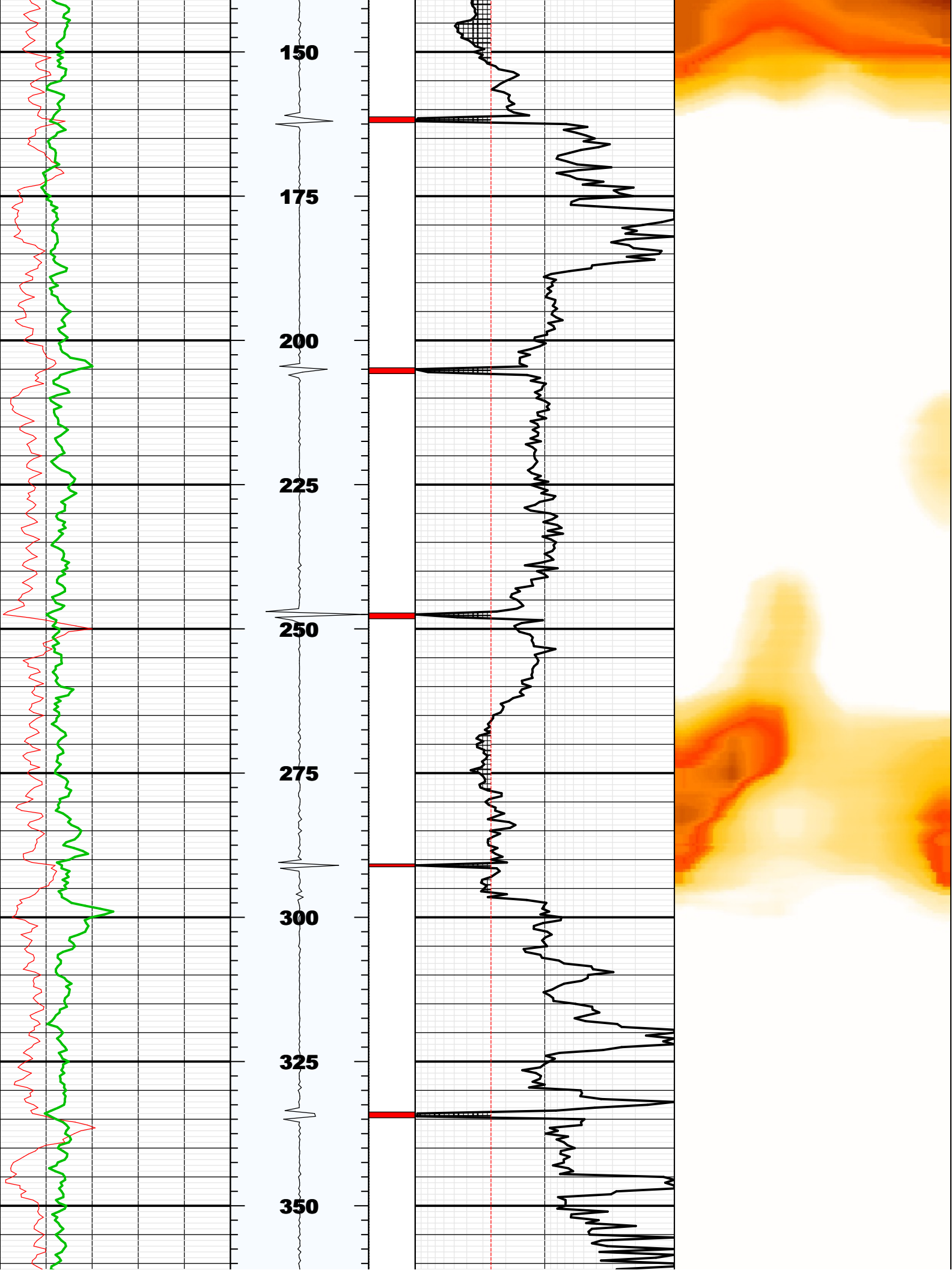
Bottom log interval at 6810' to maintain distance from top of liner.

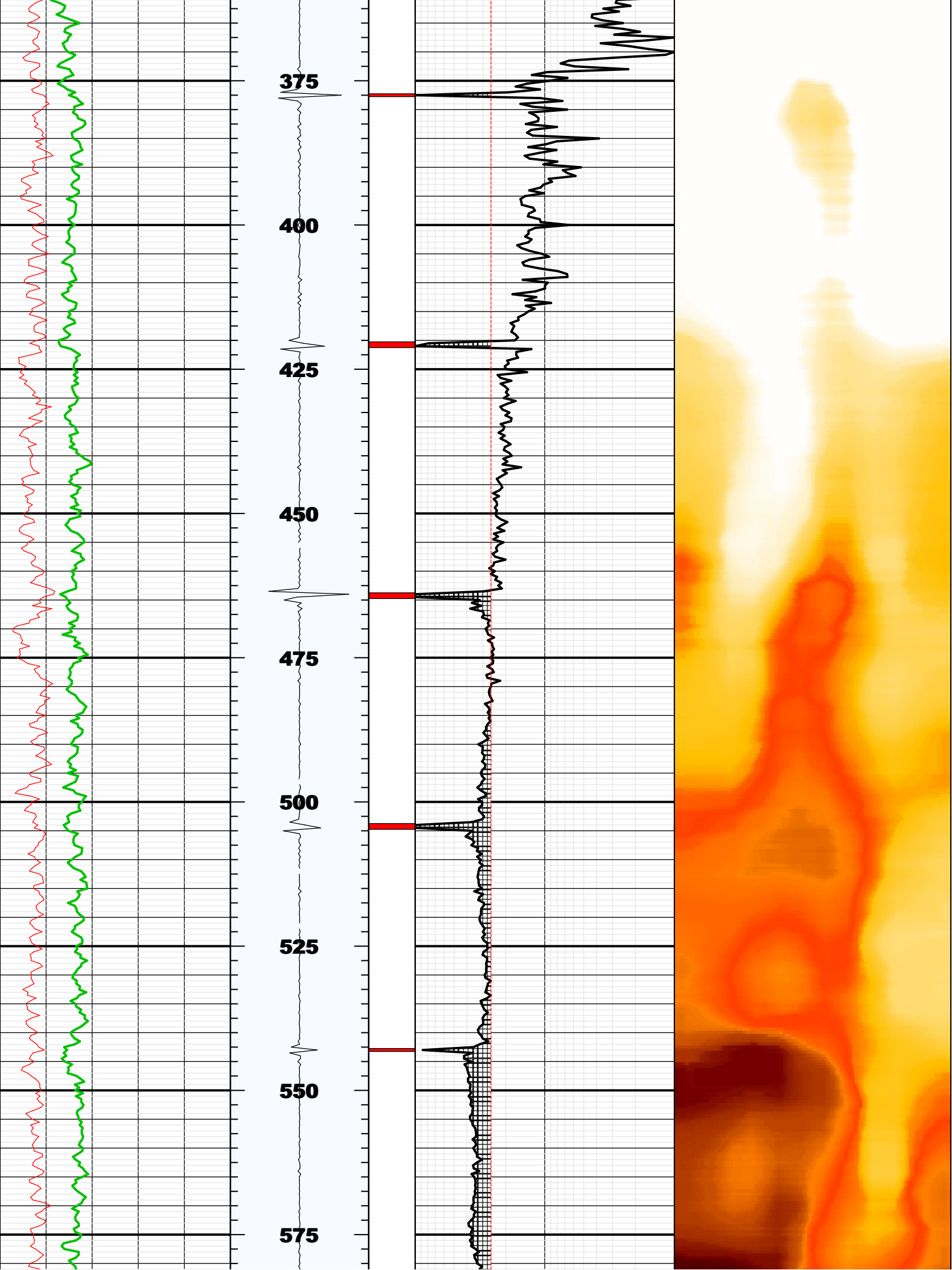
Bottom hole temperature was 229 degF measured at depth.

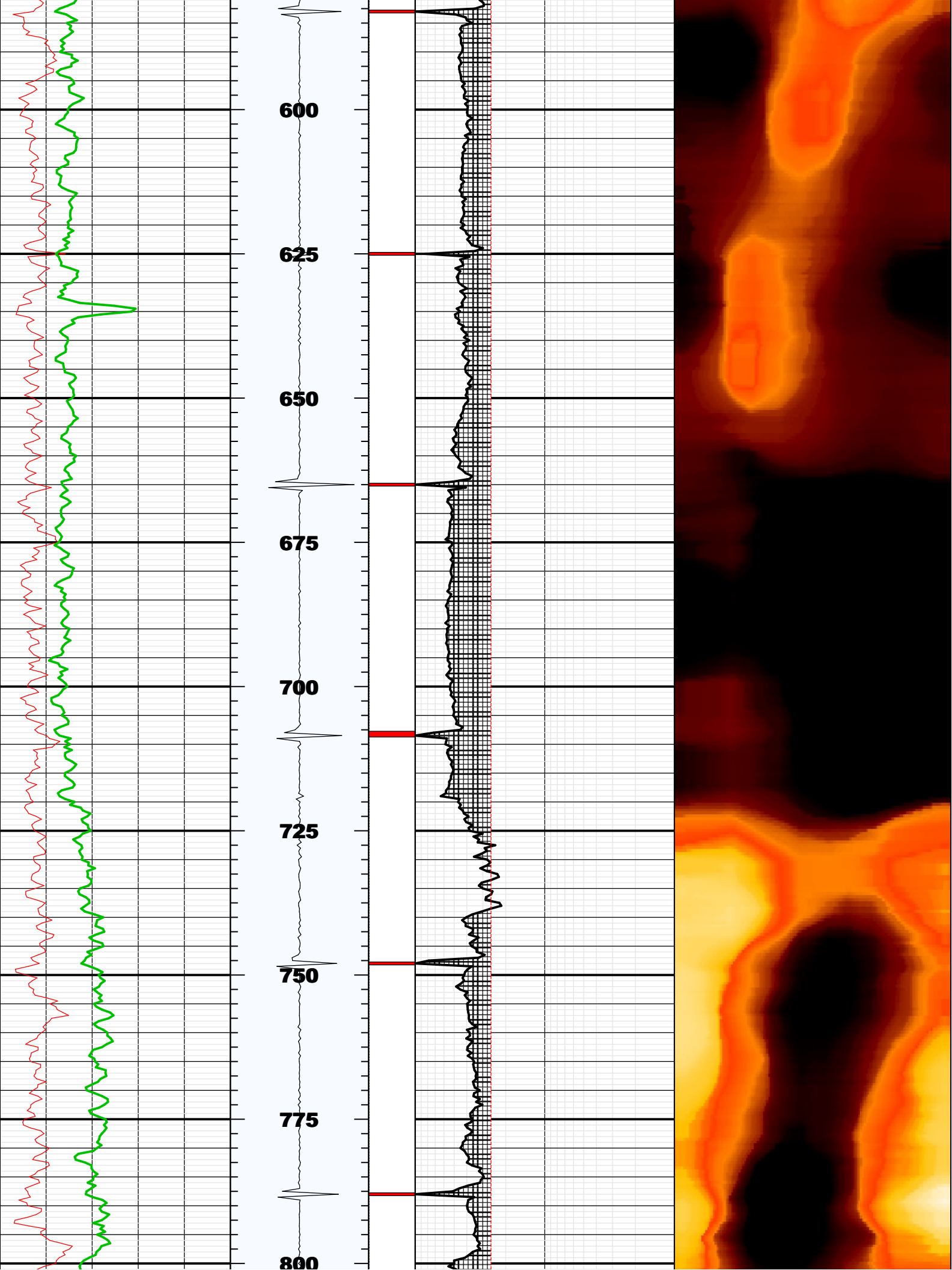
Main Pass

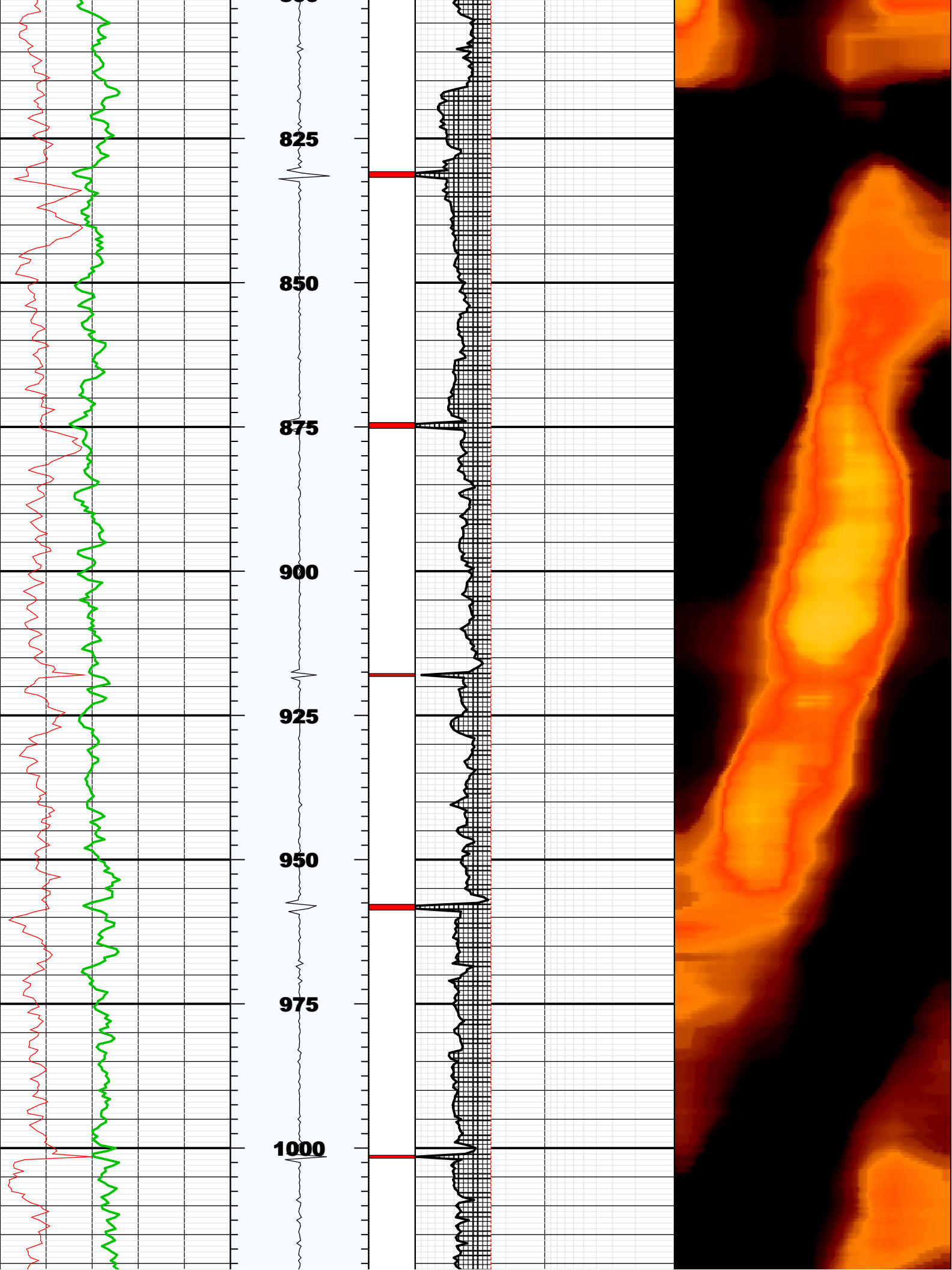
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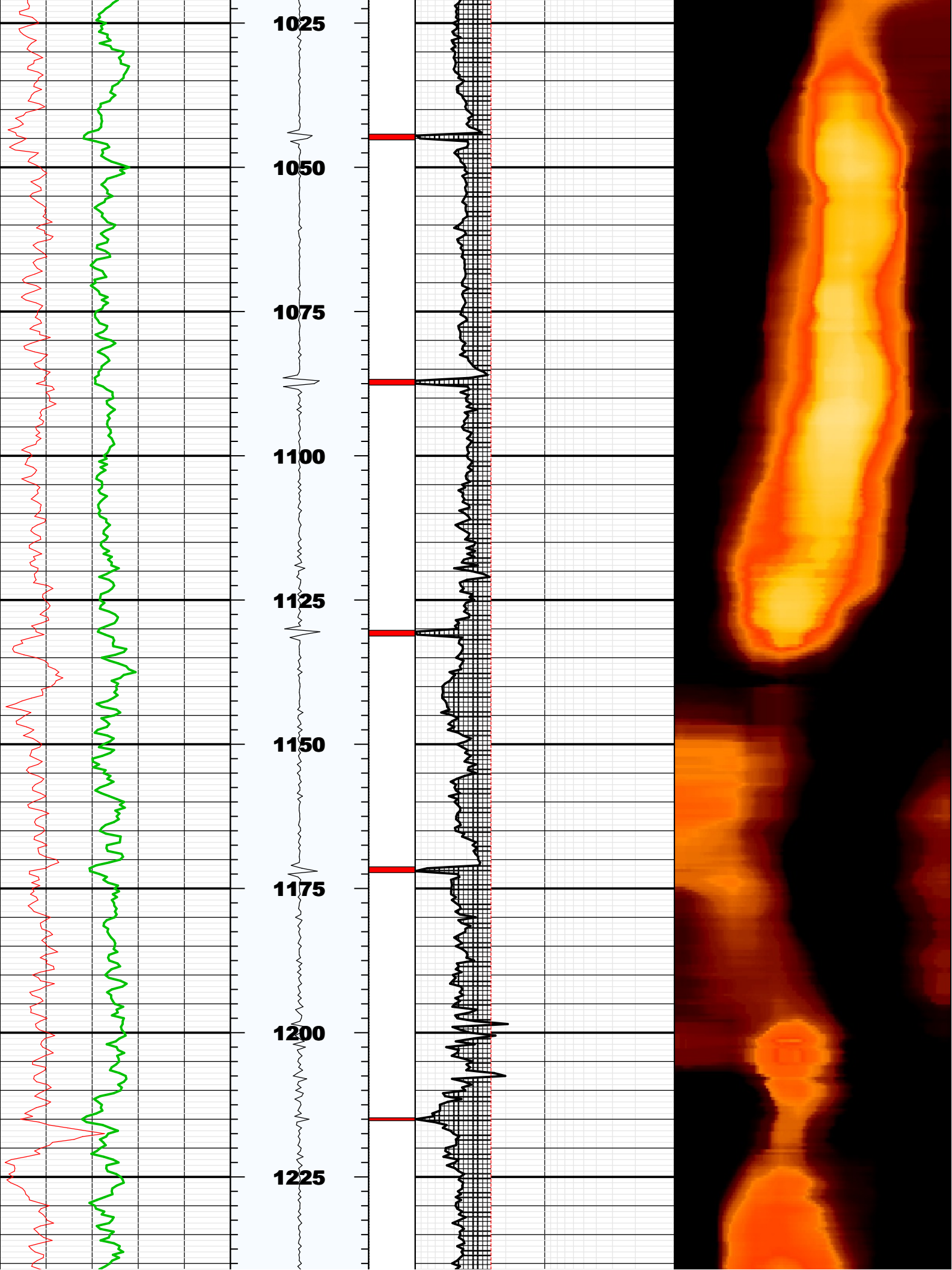




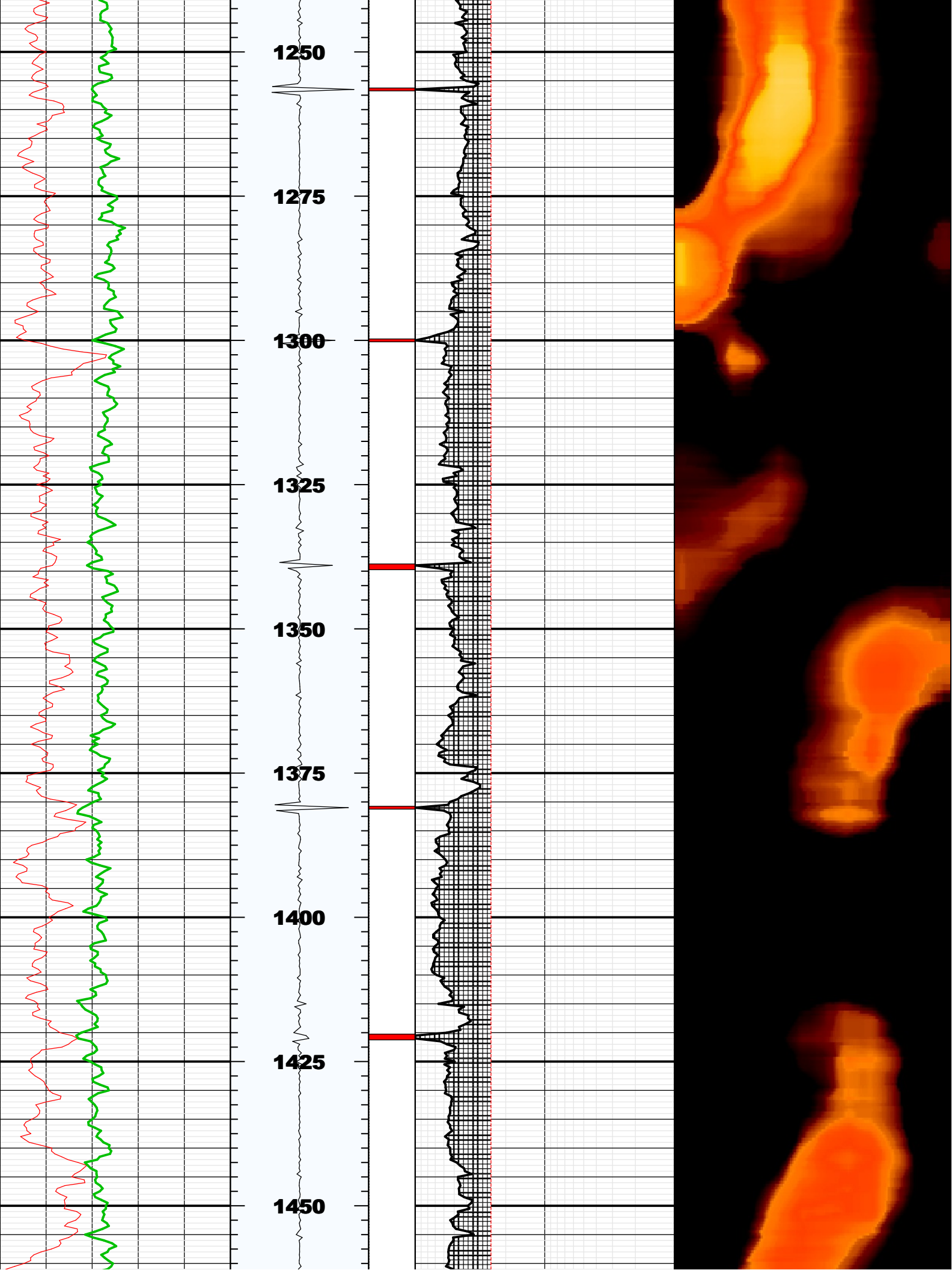


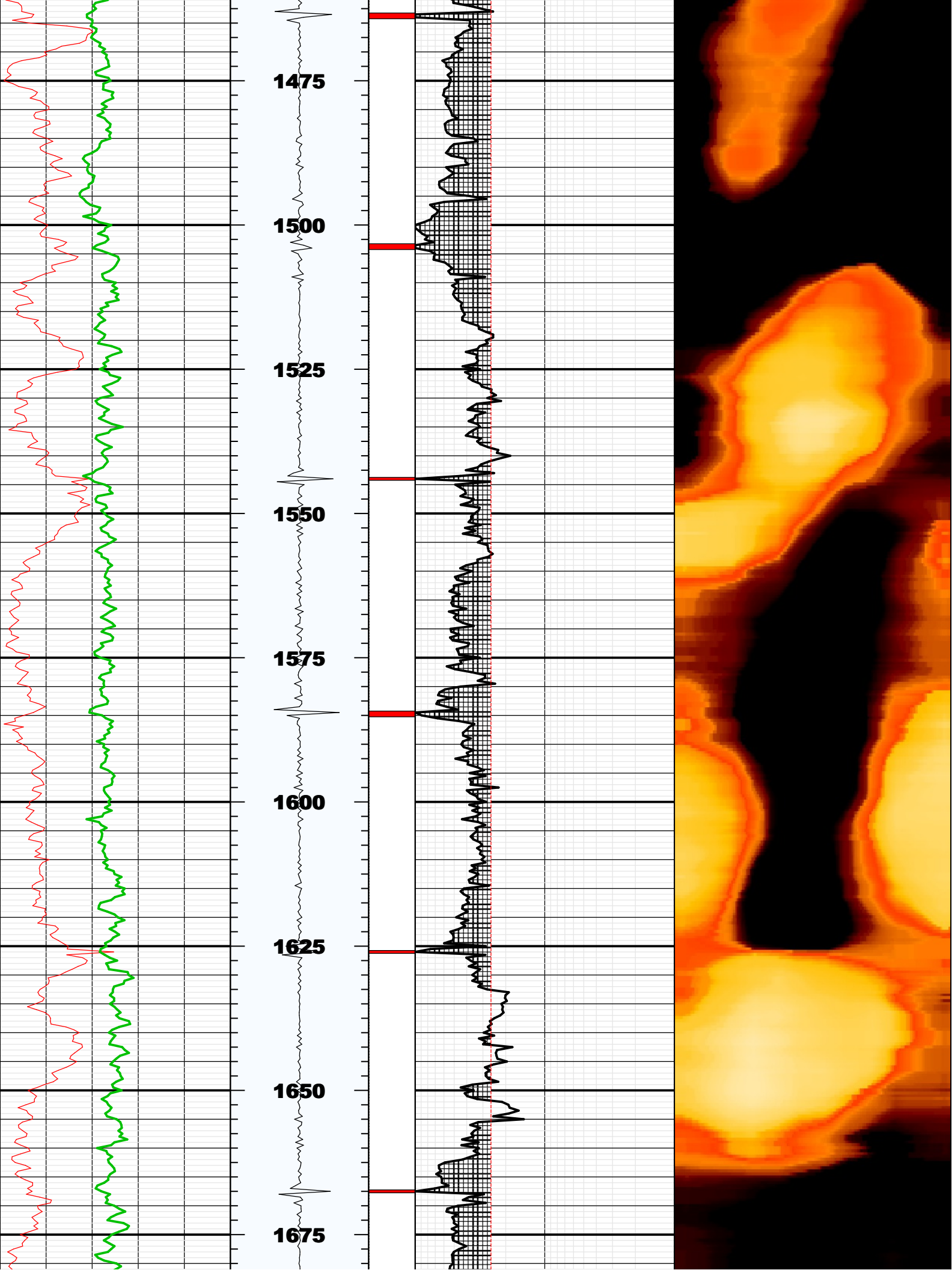


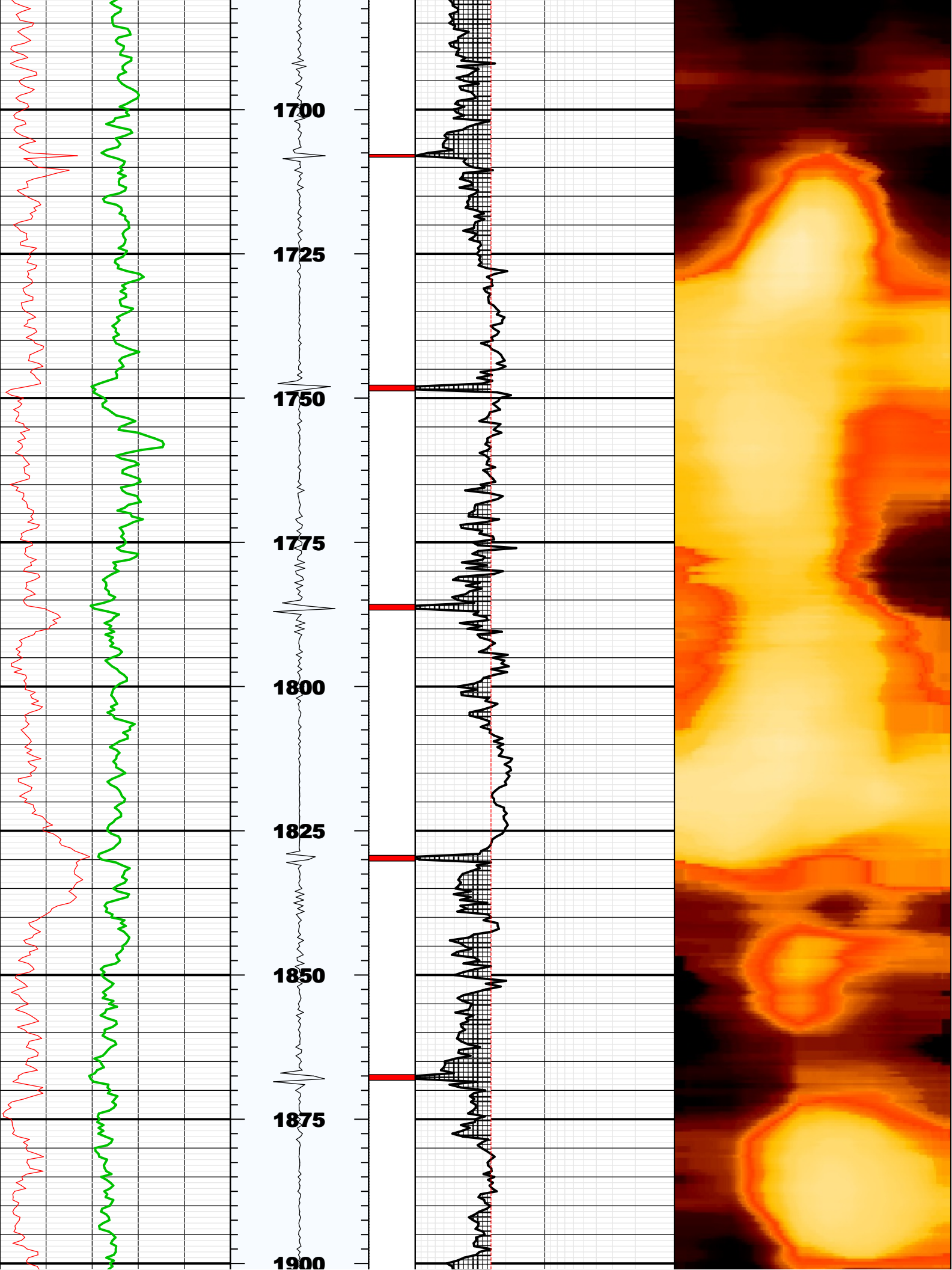


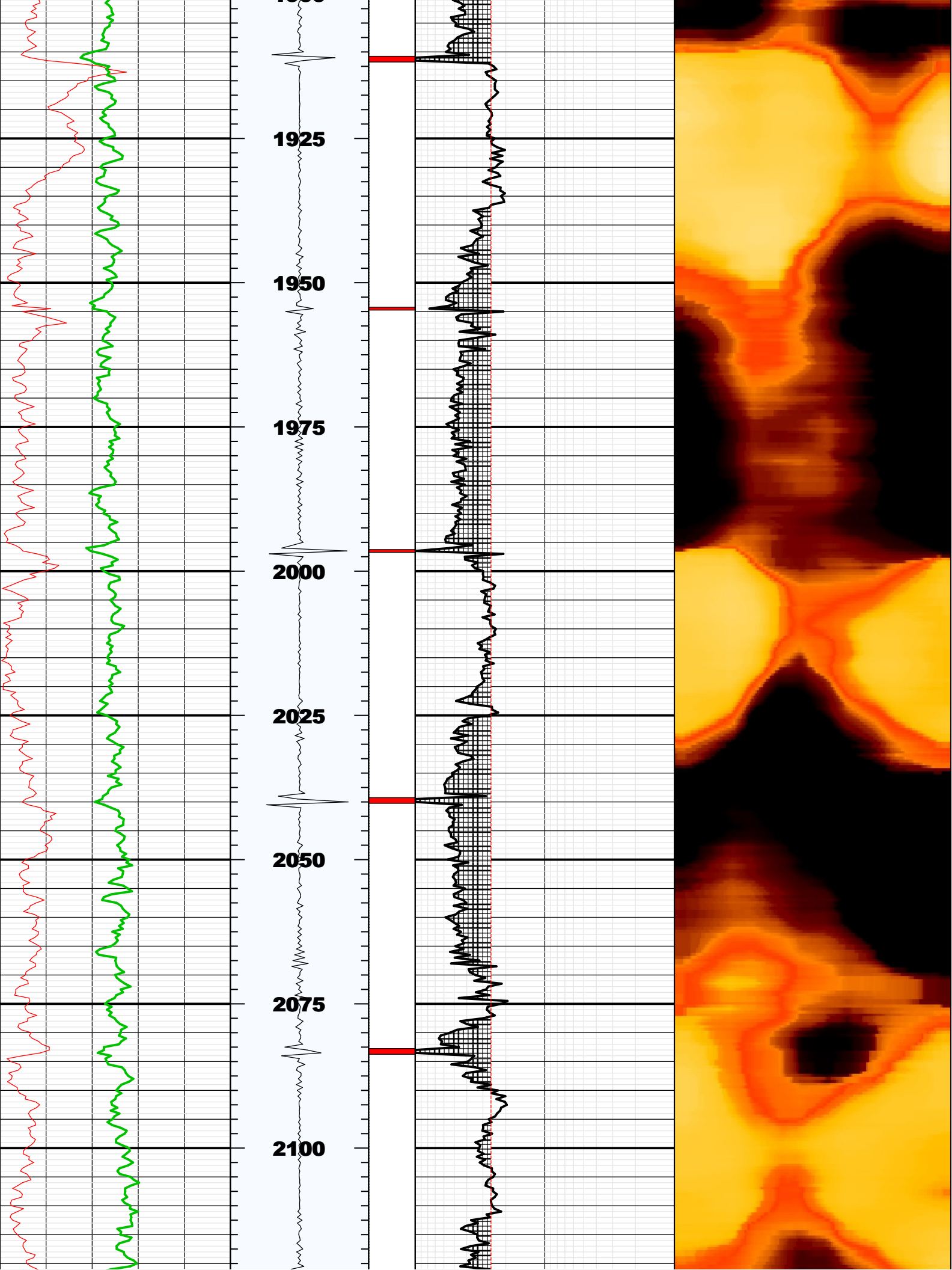




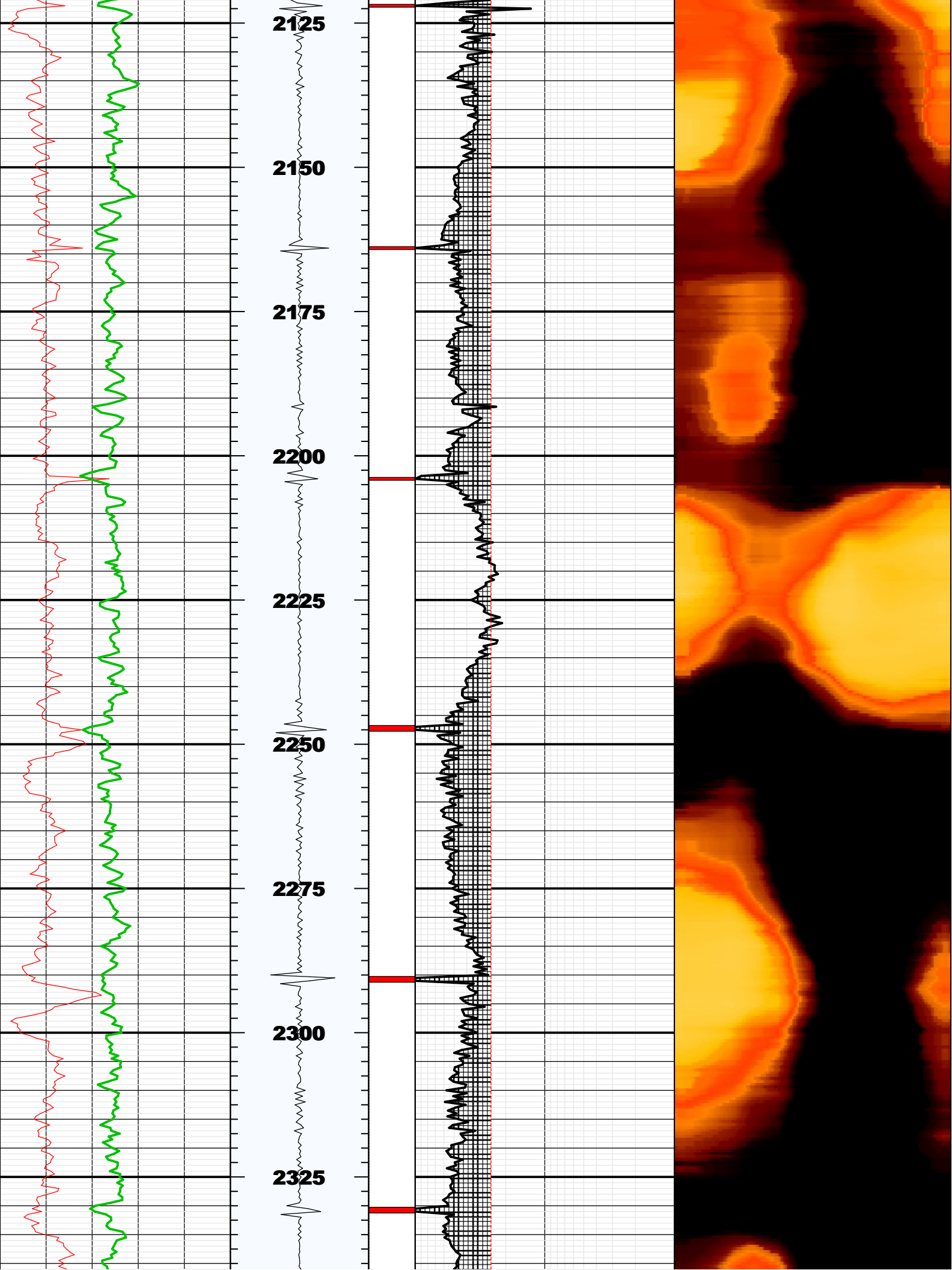


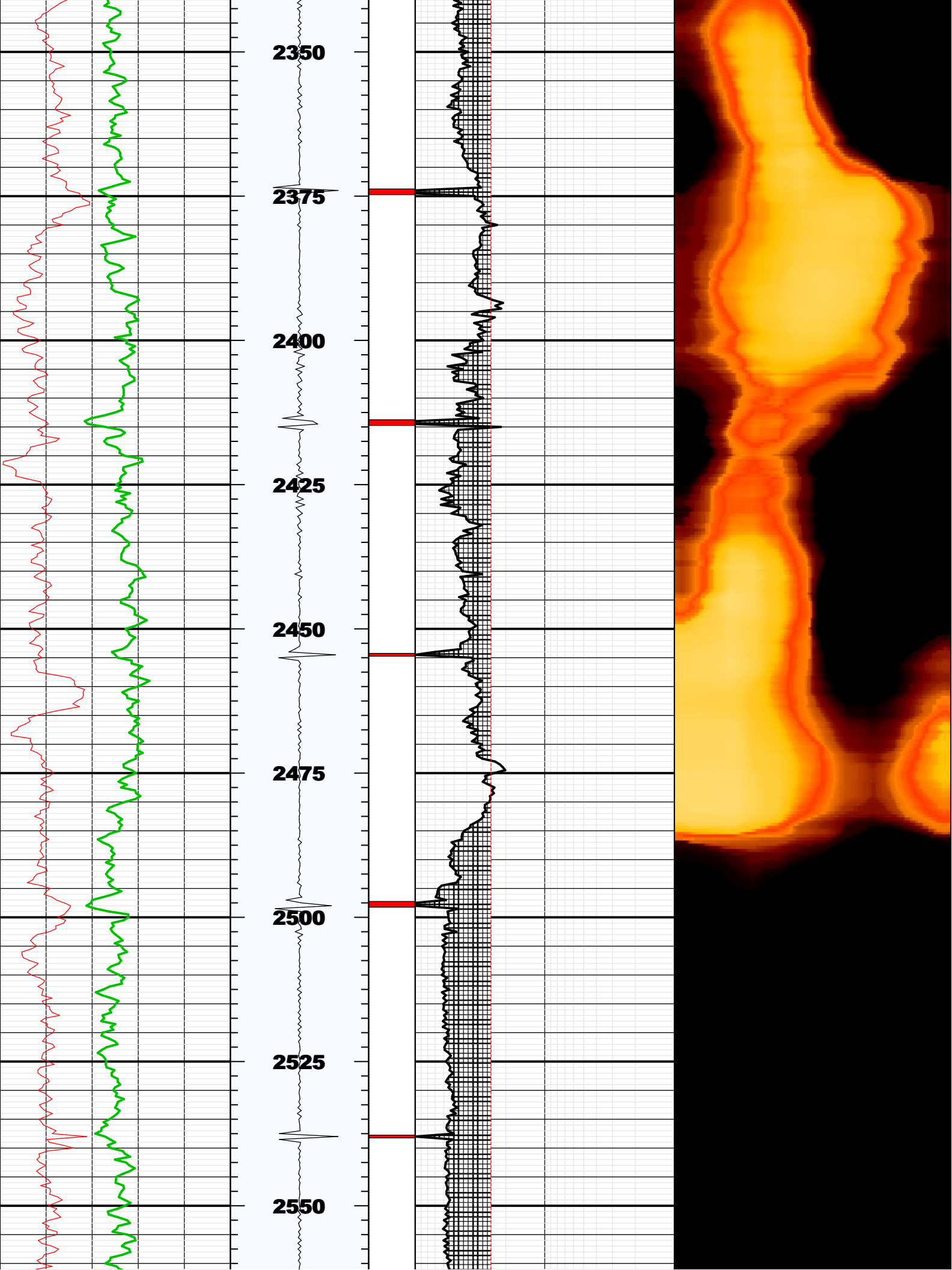




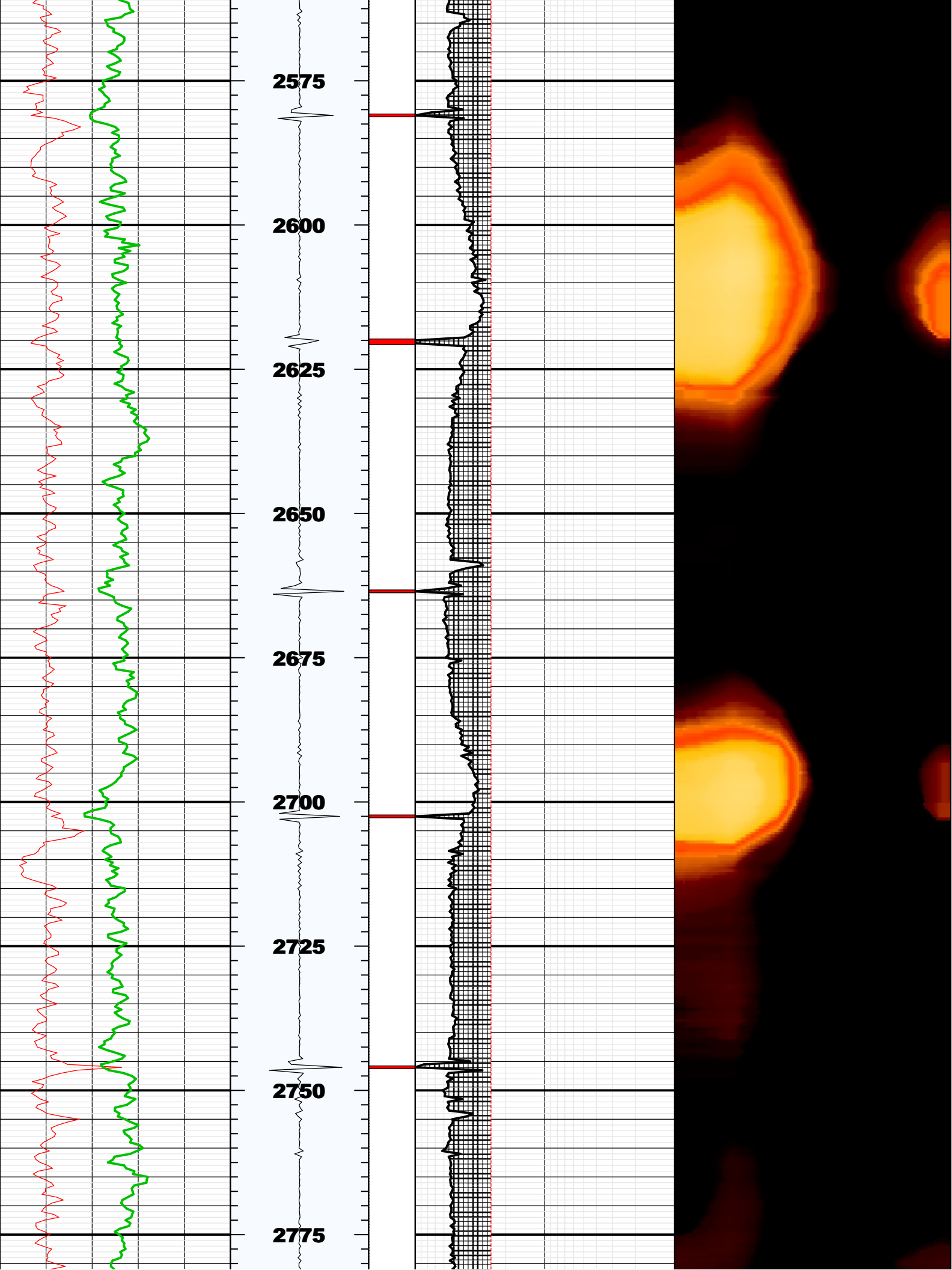


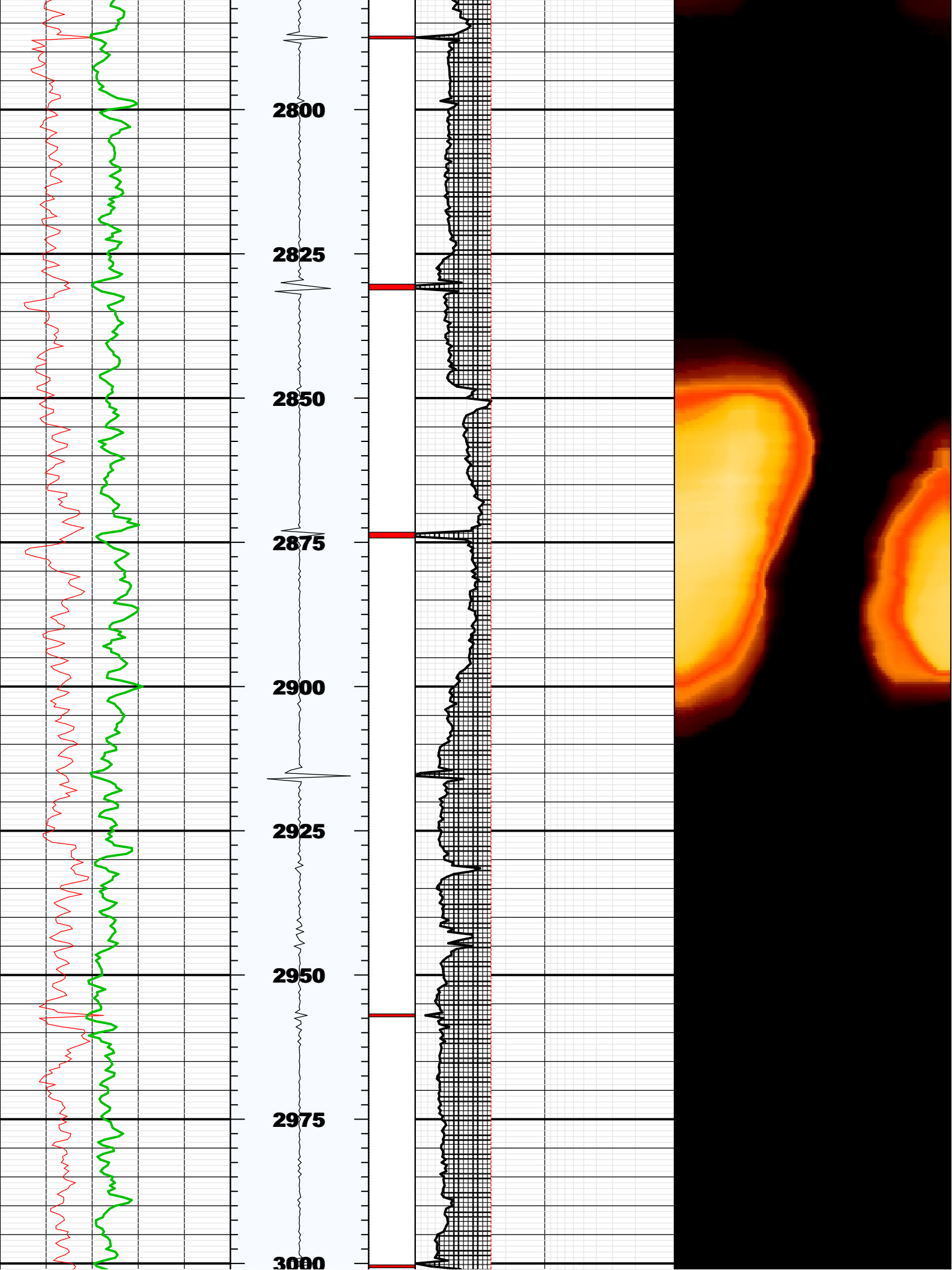


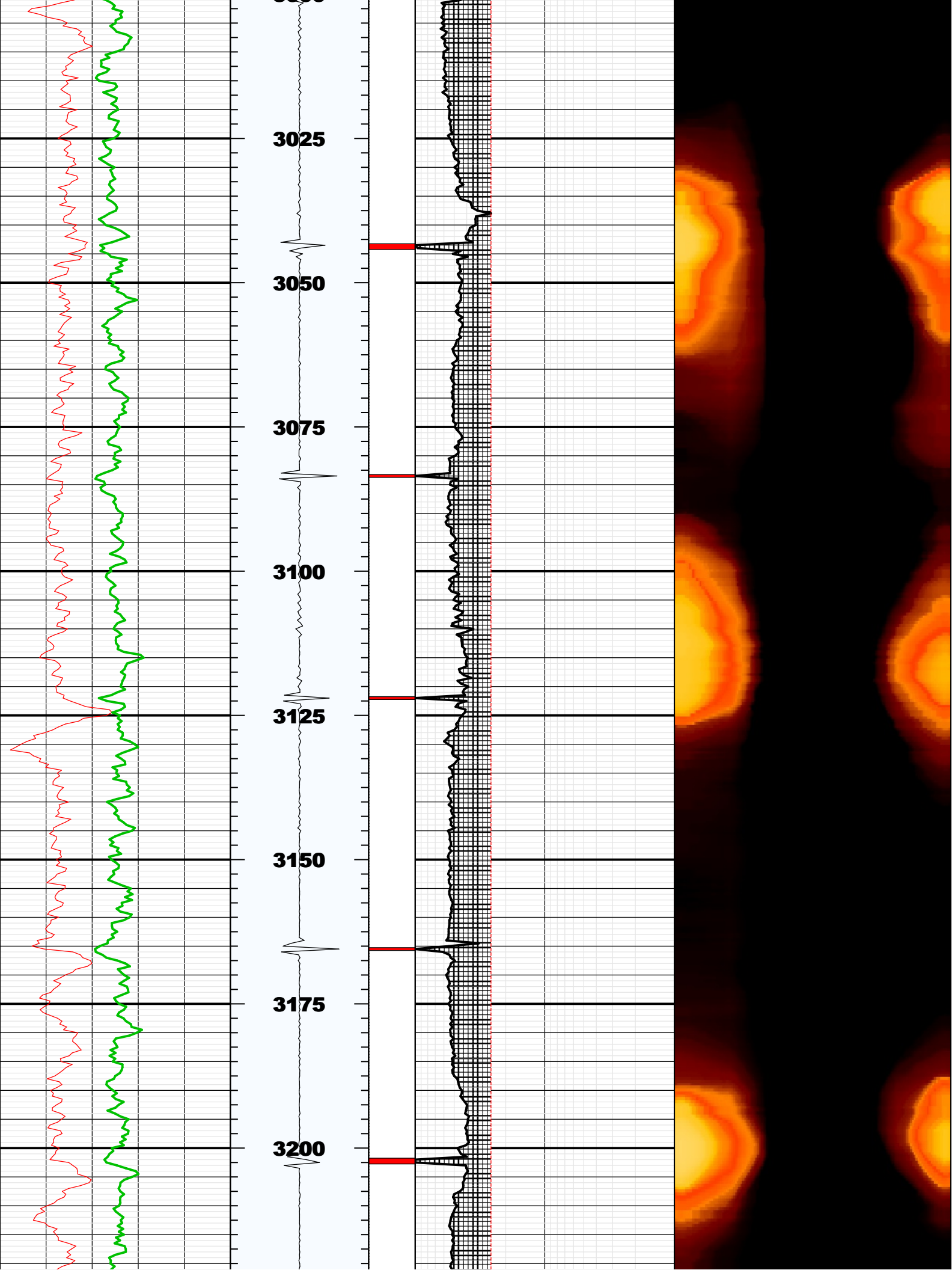


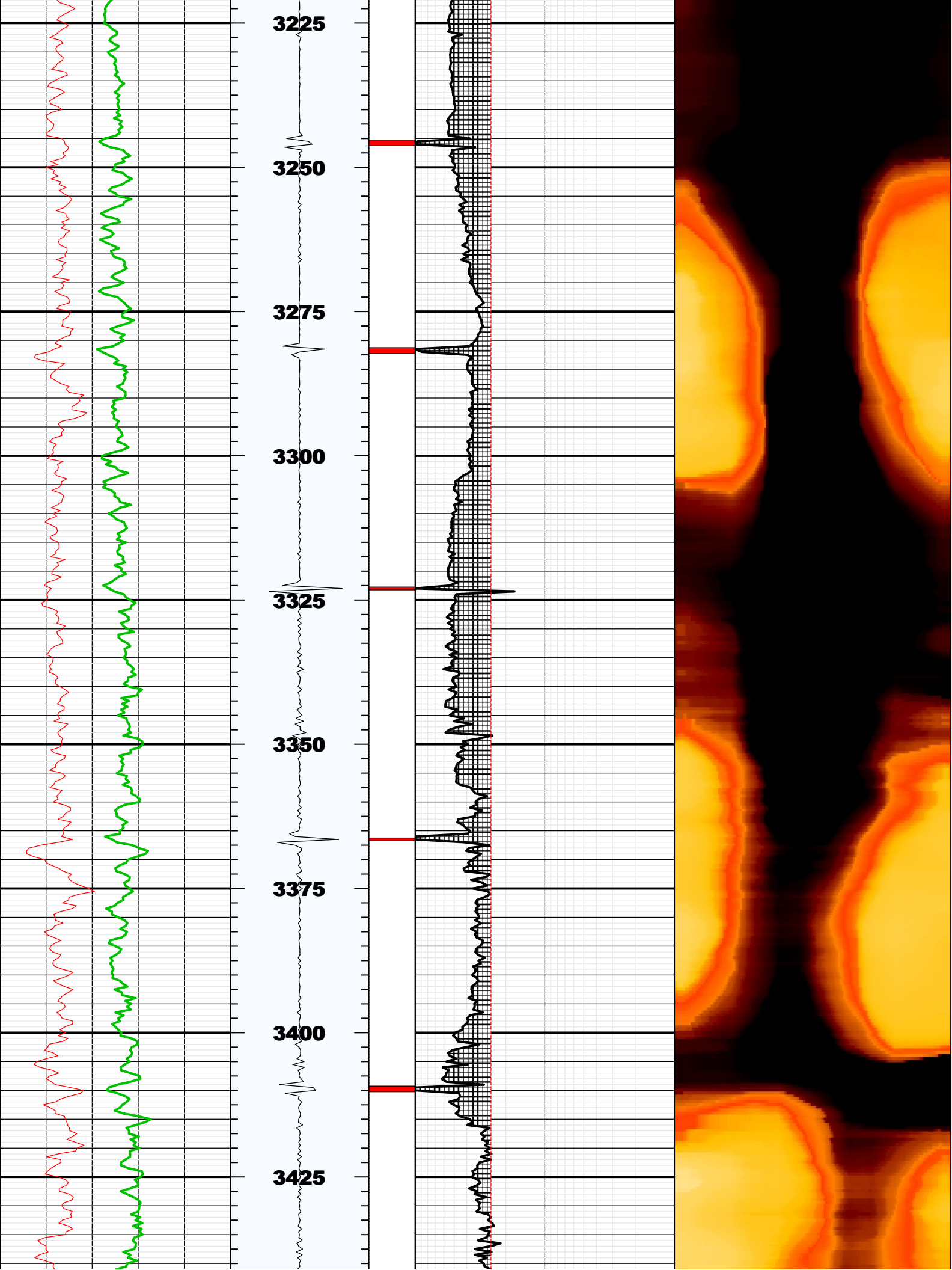


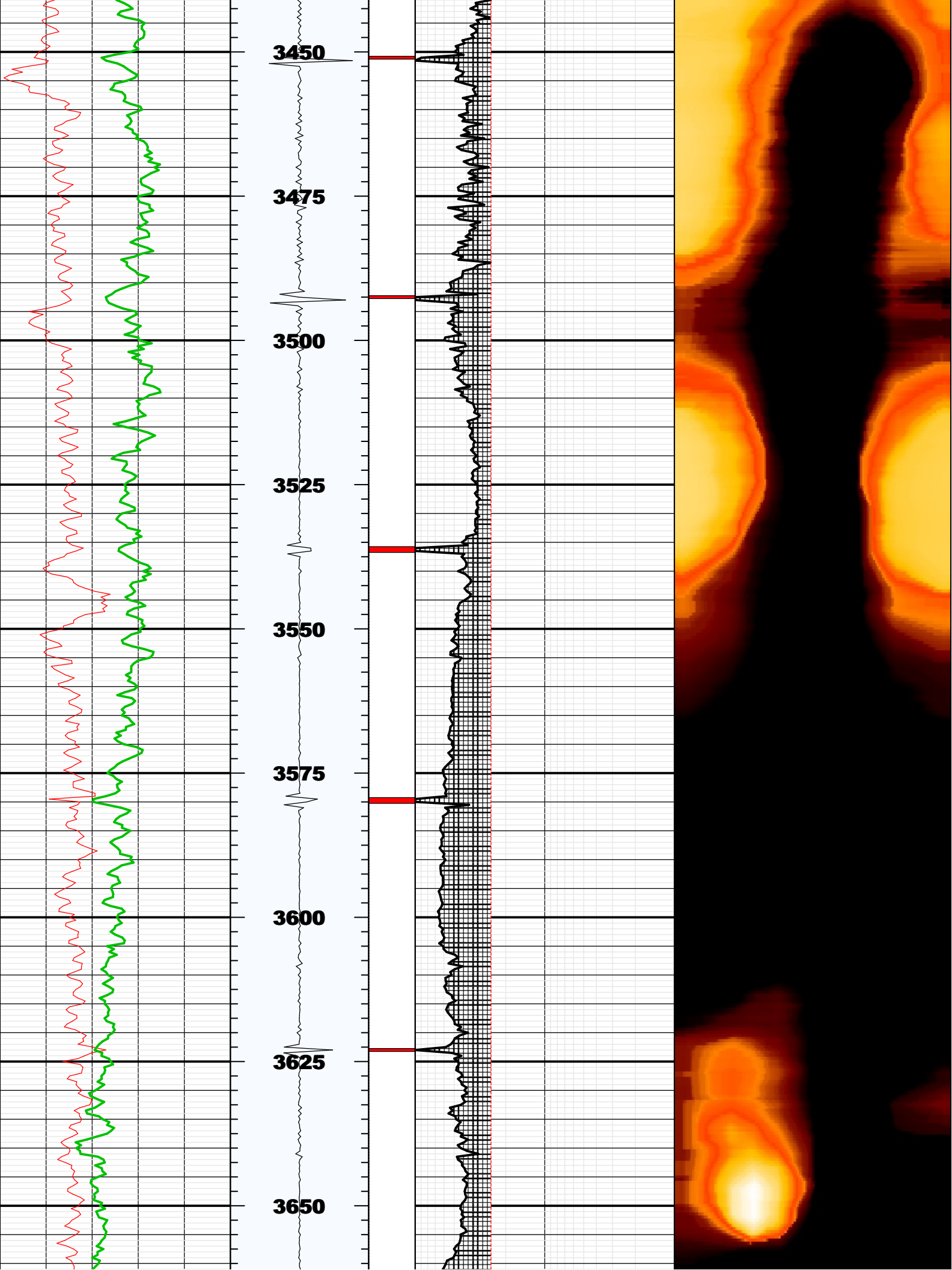




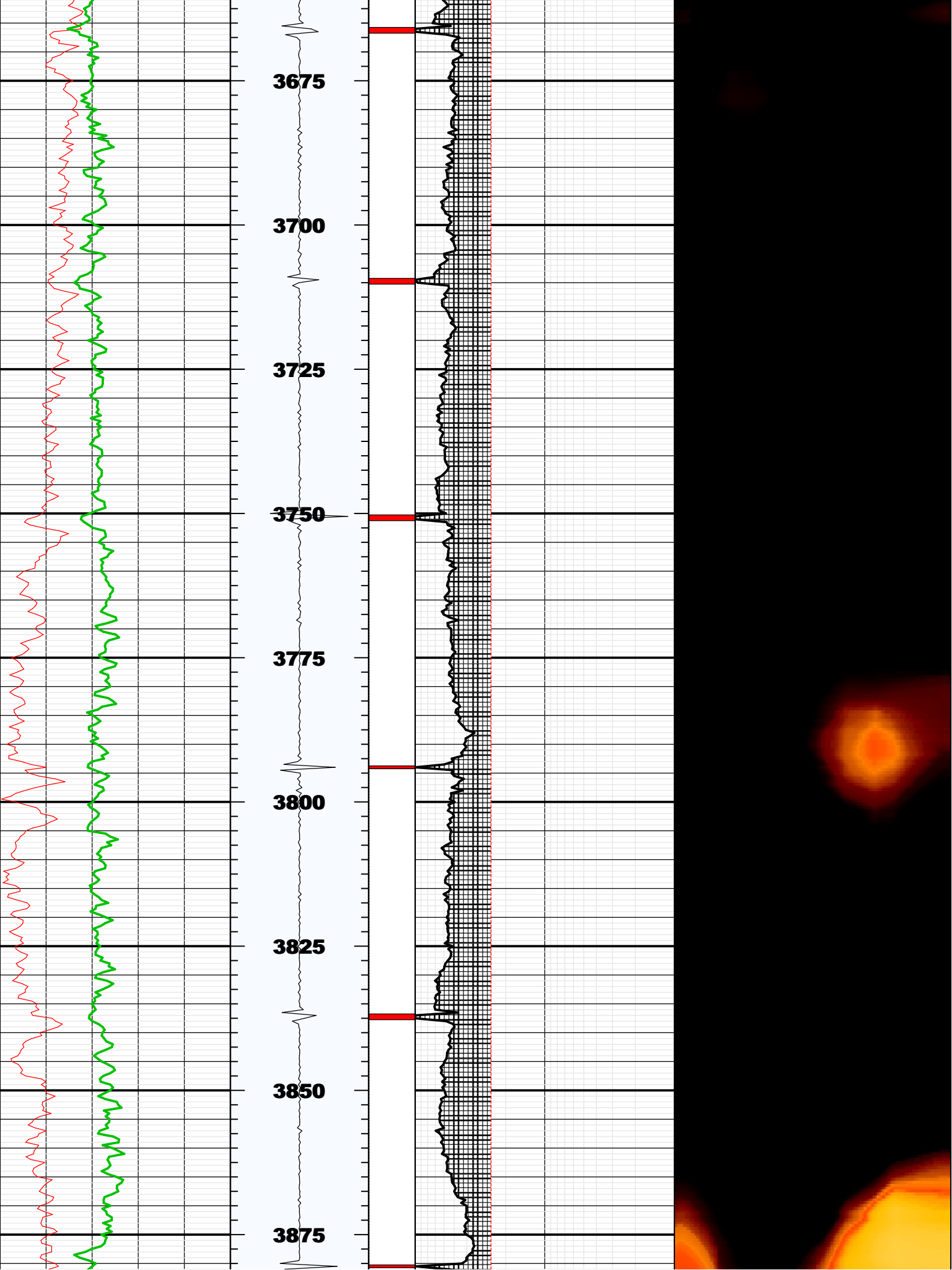




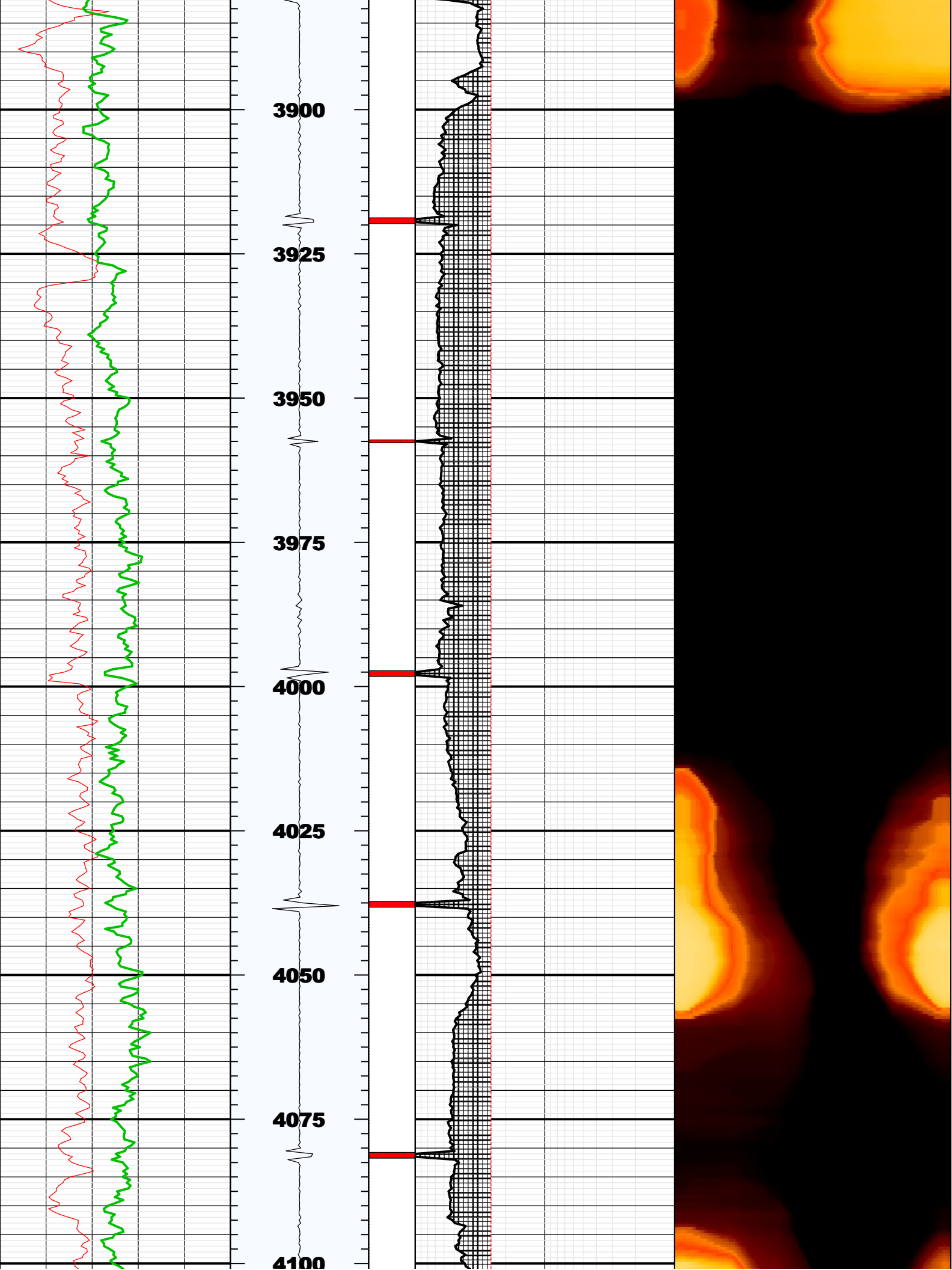


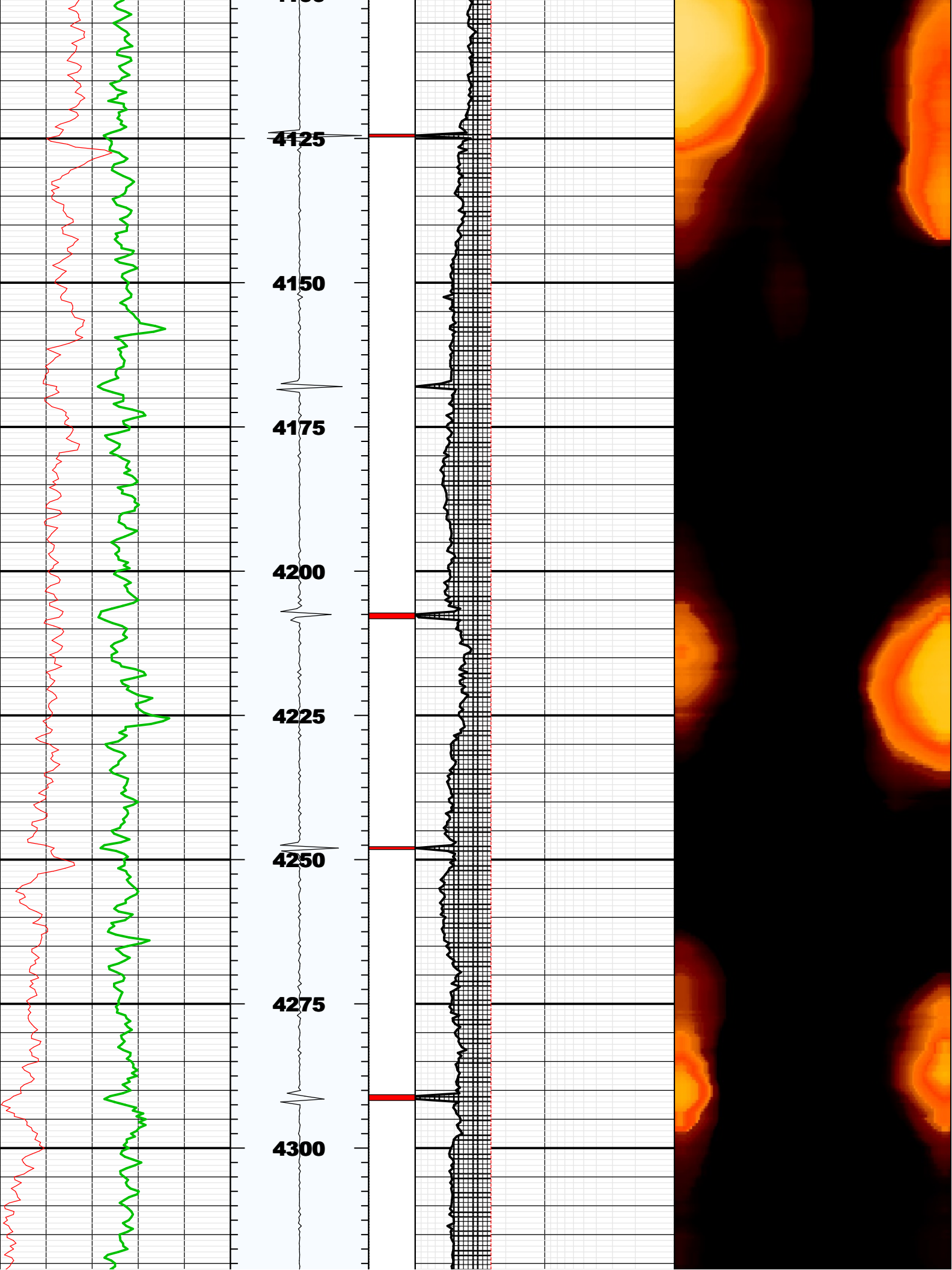


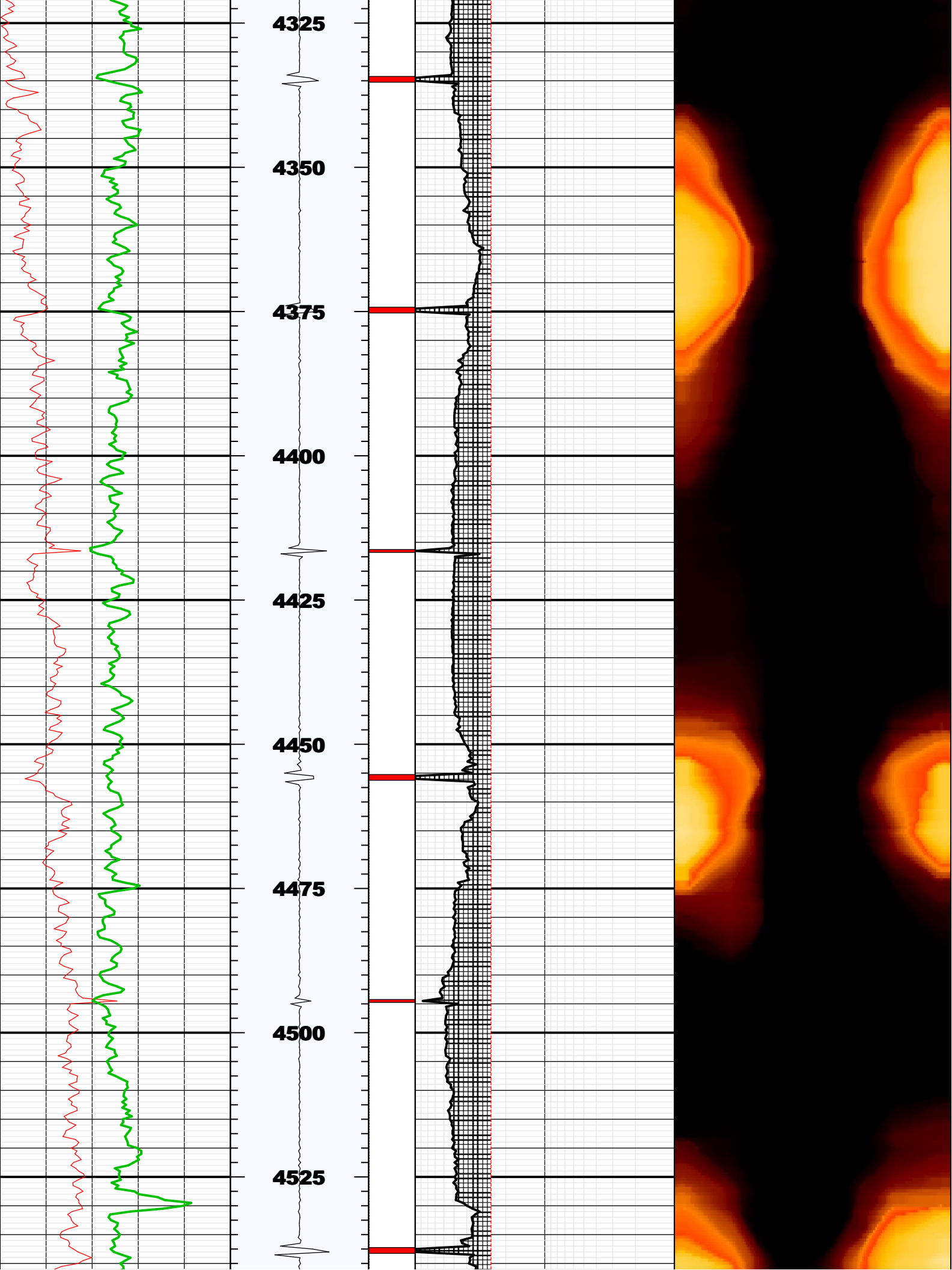


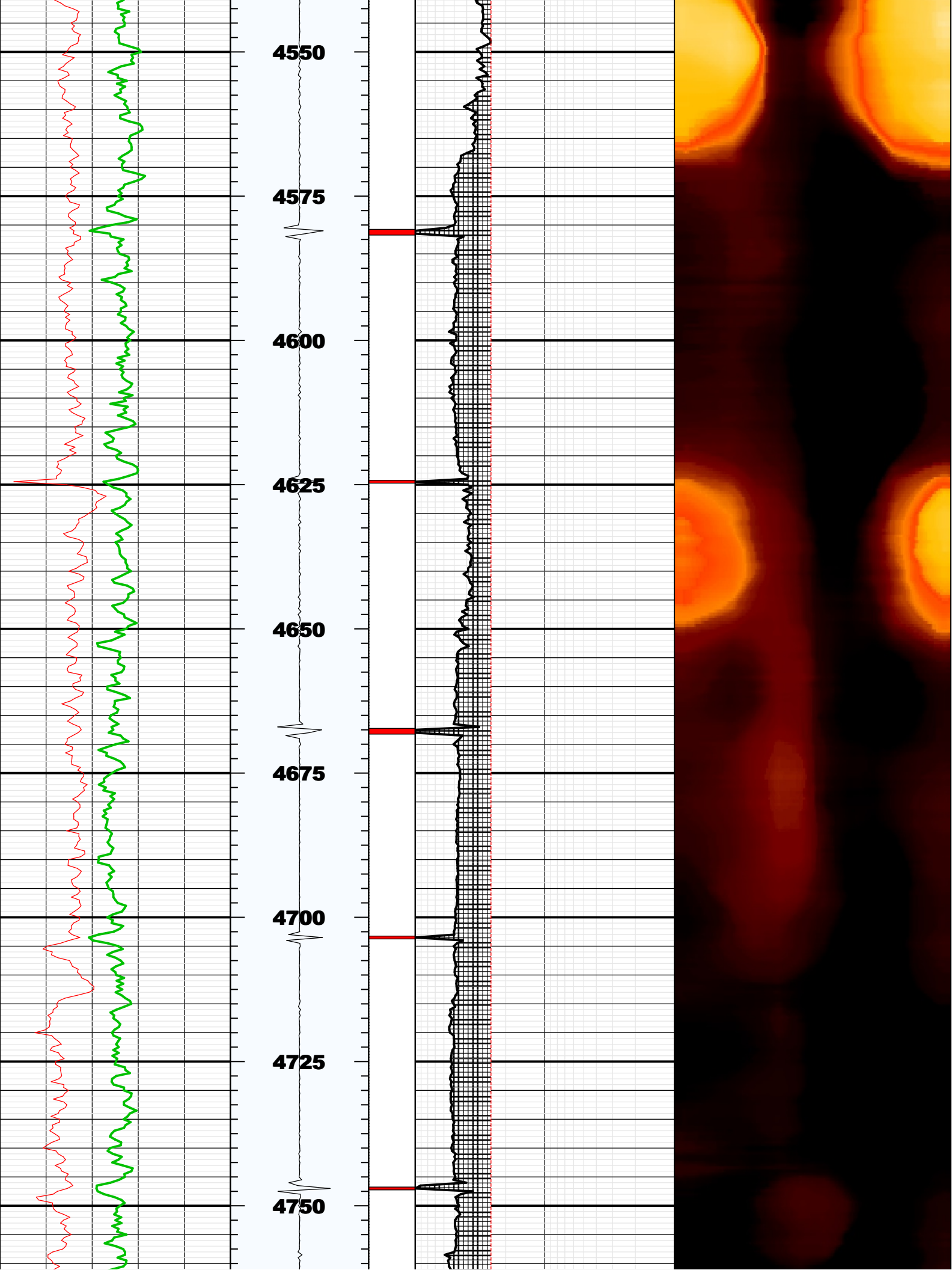


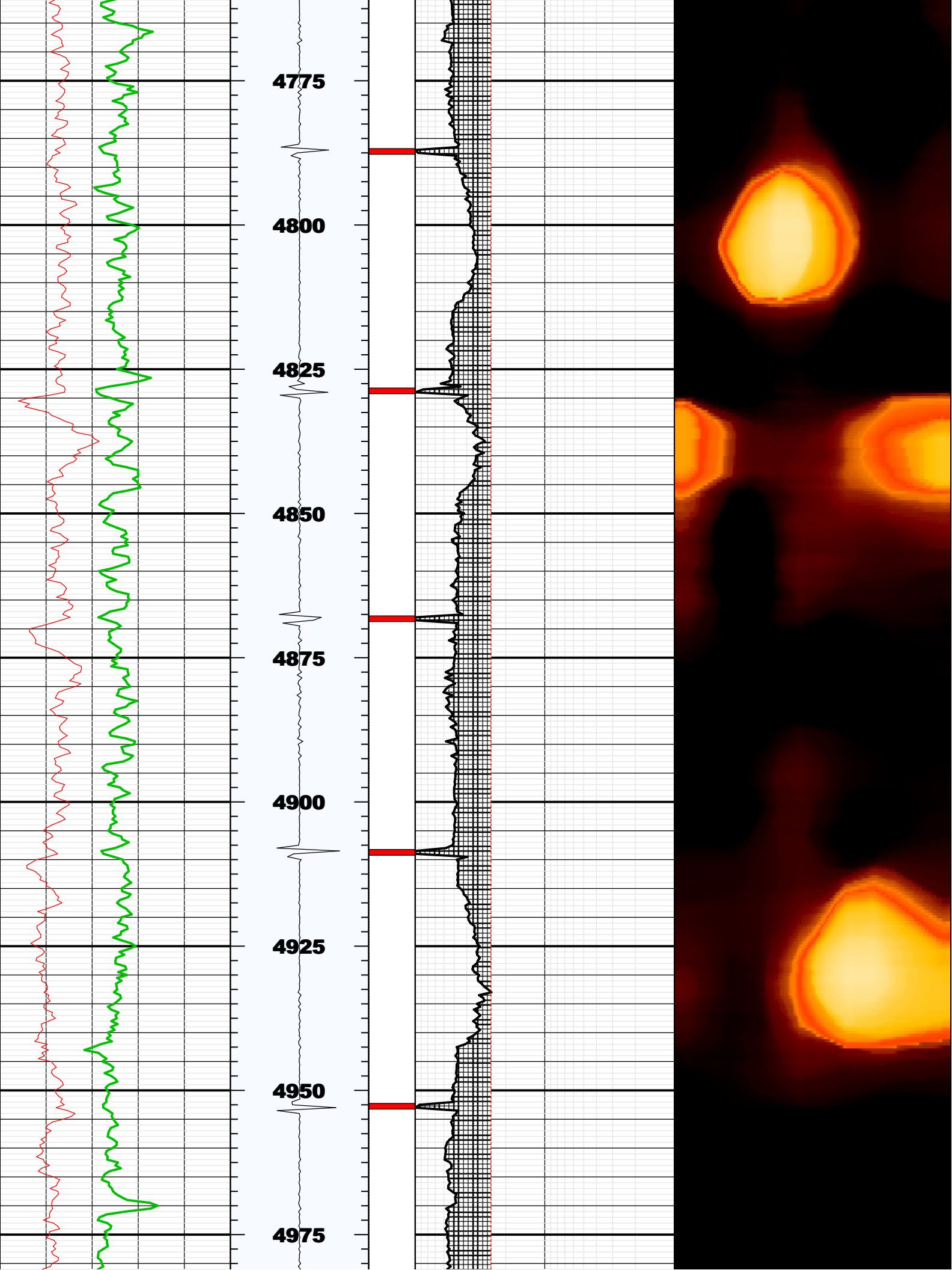




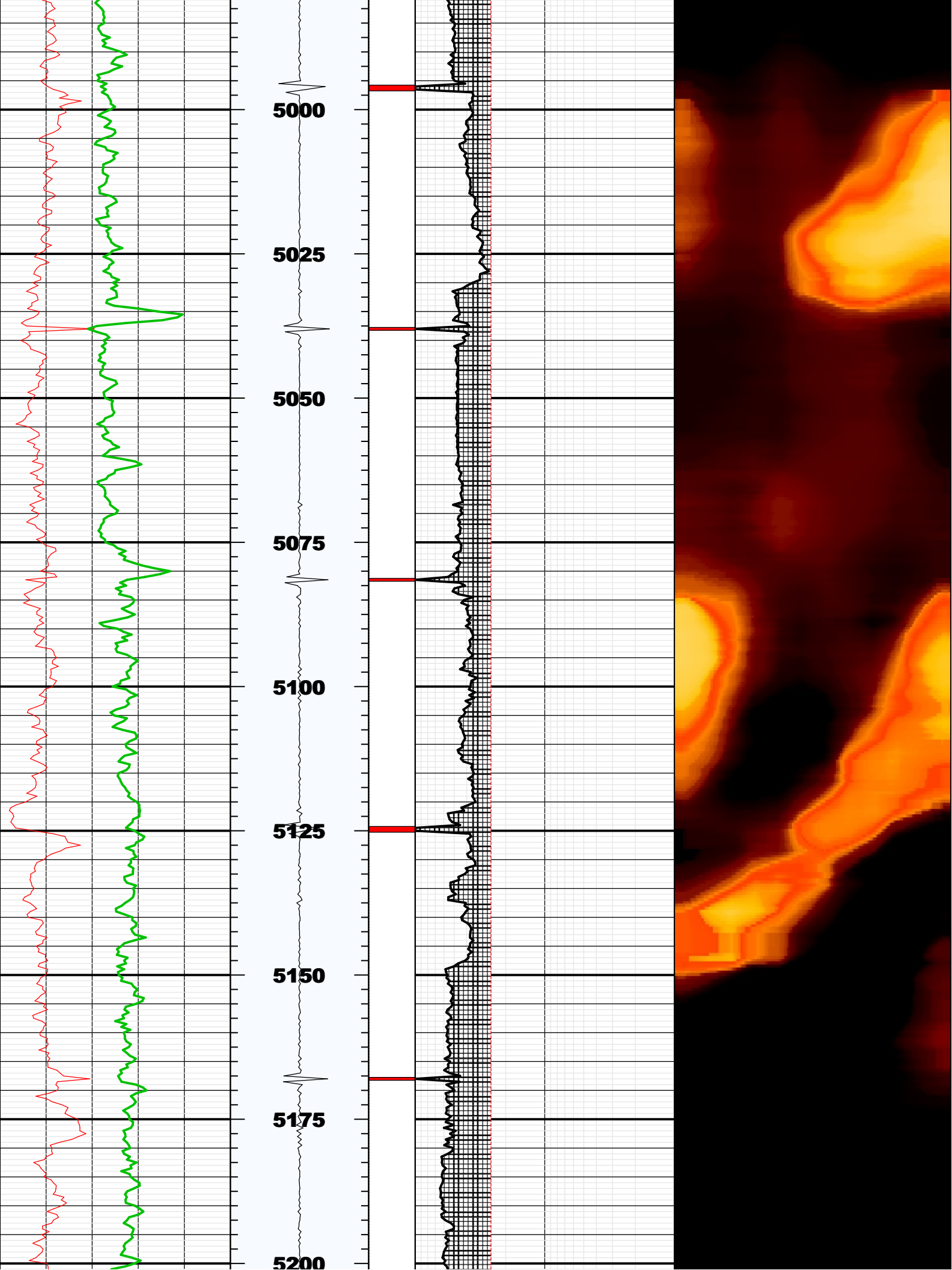




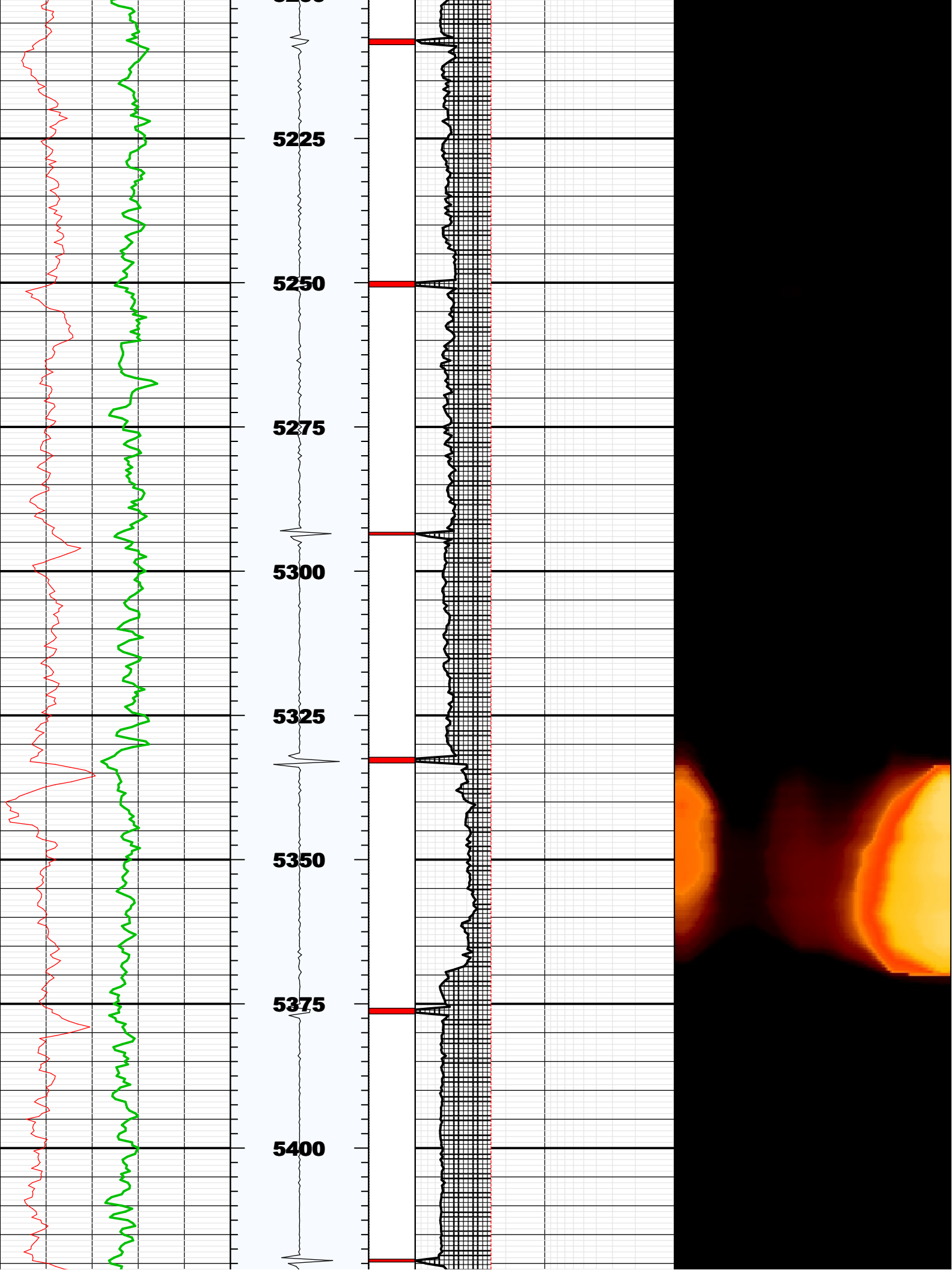


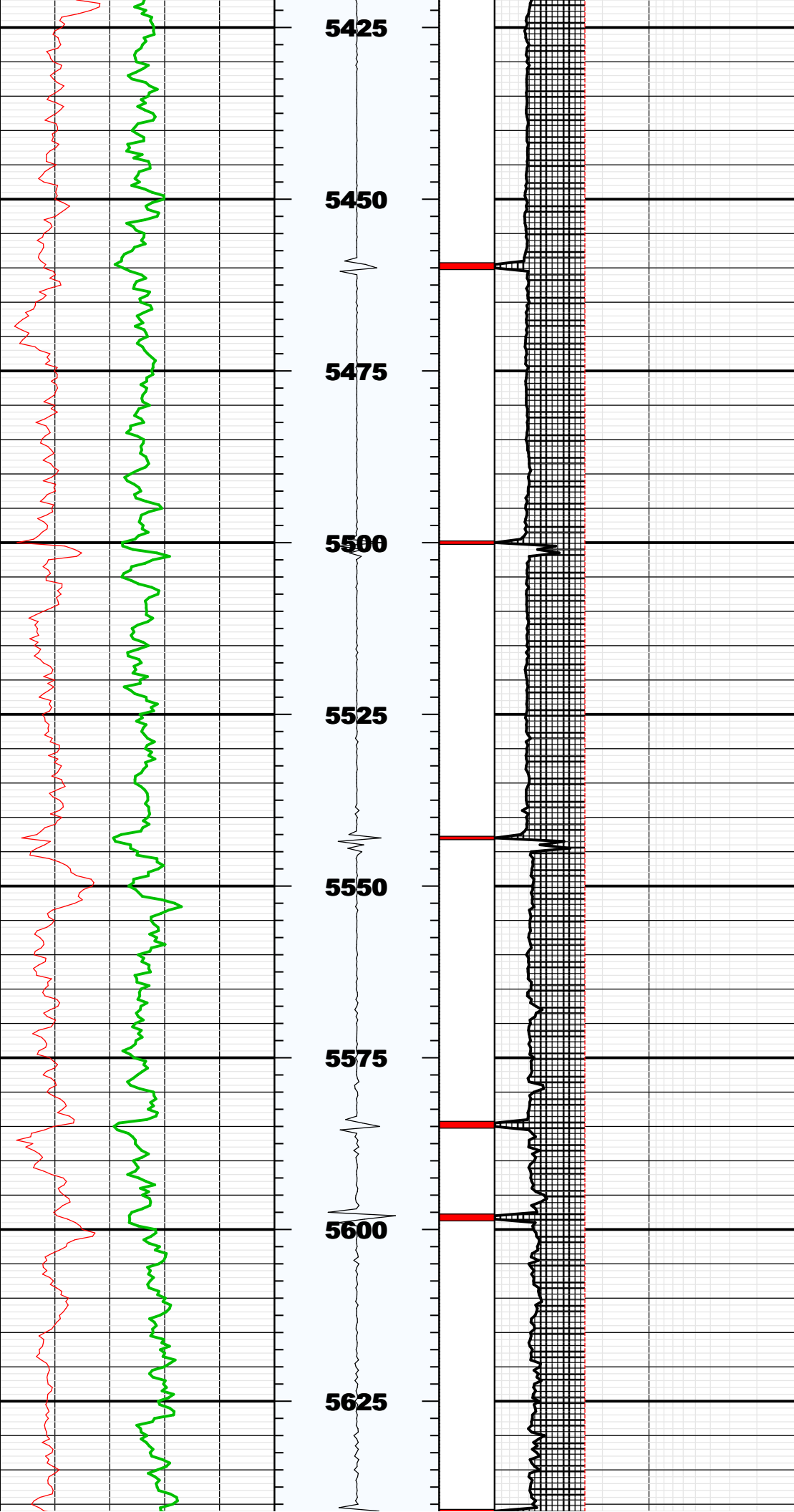


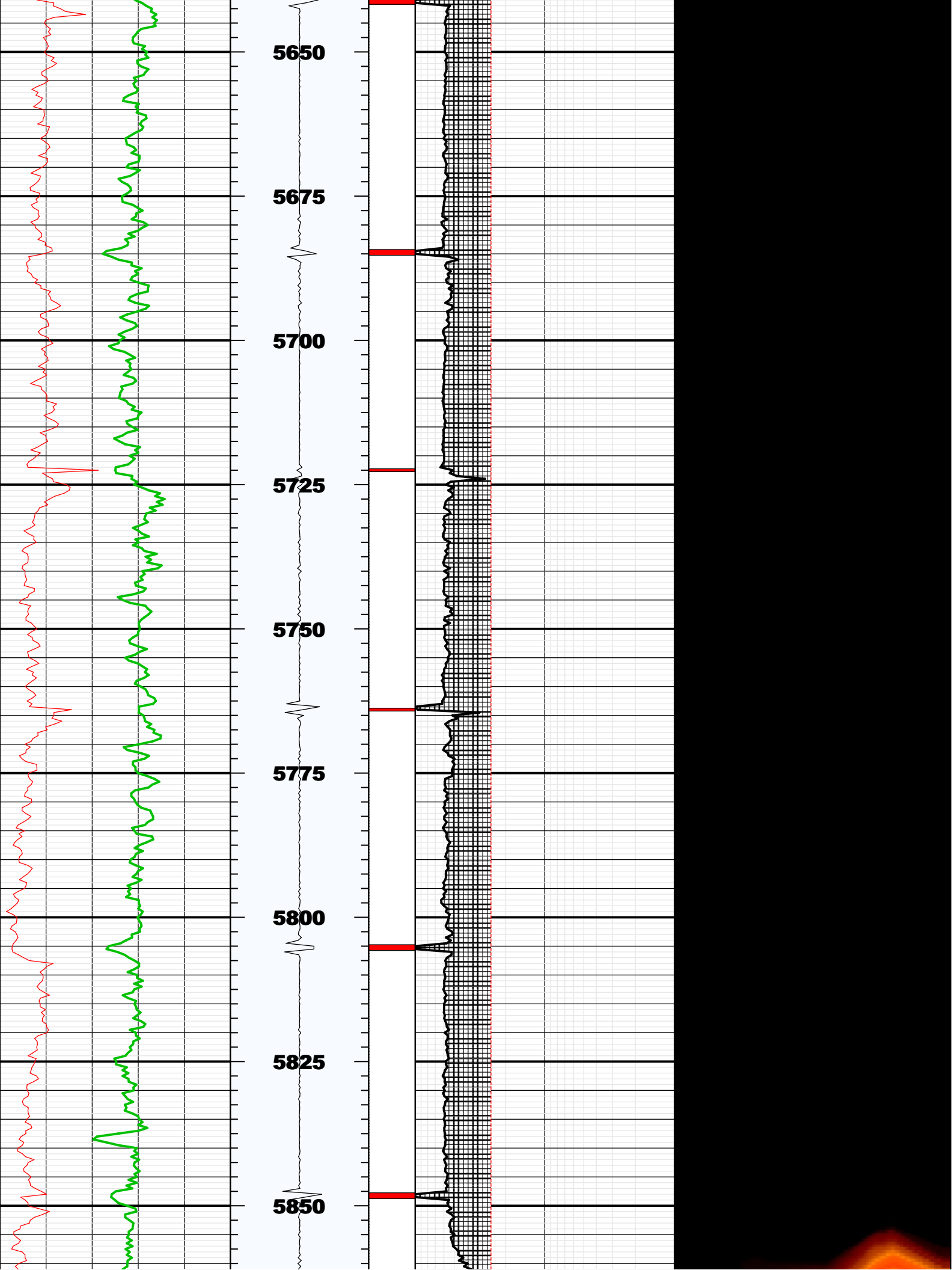


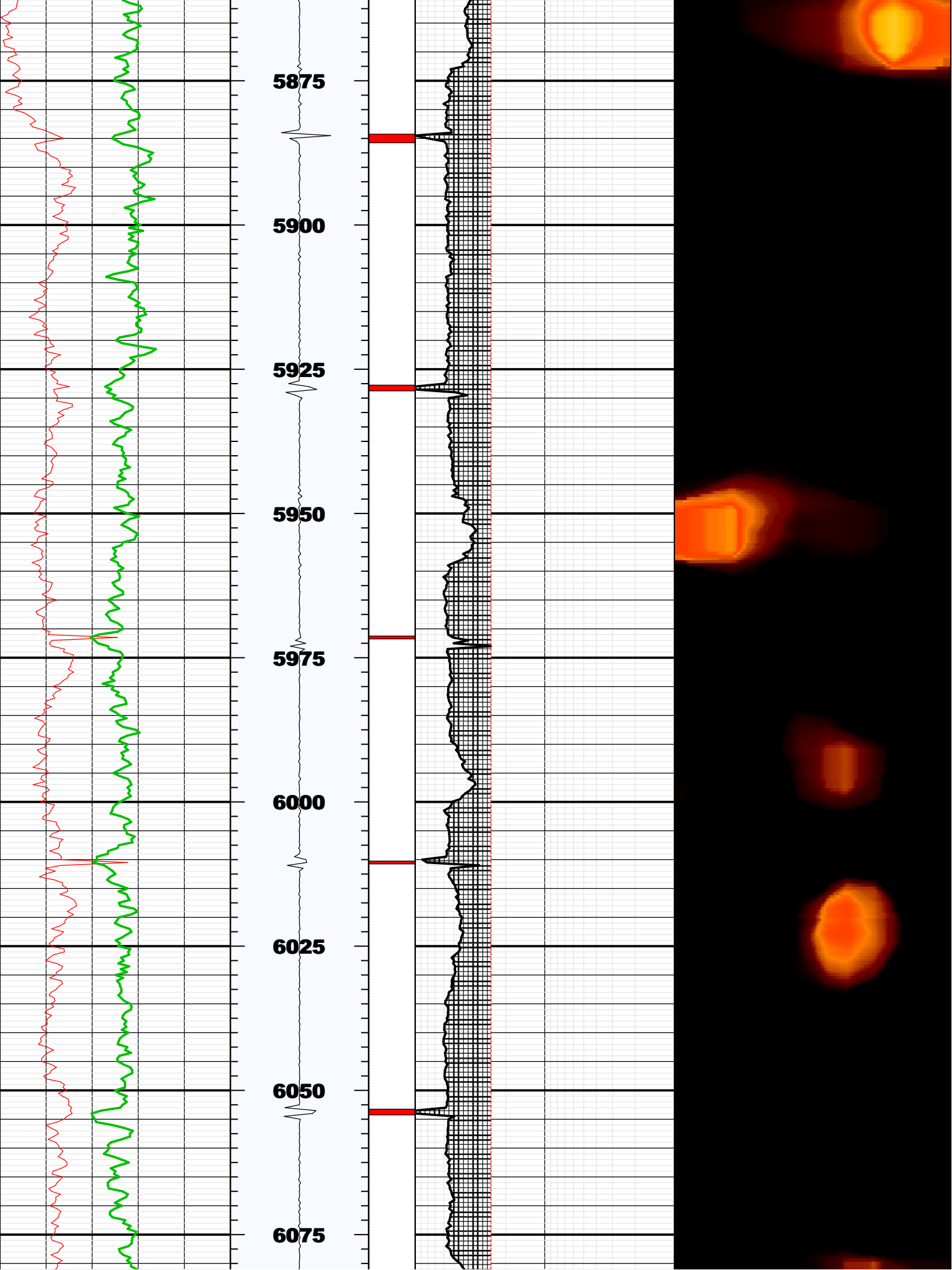


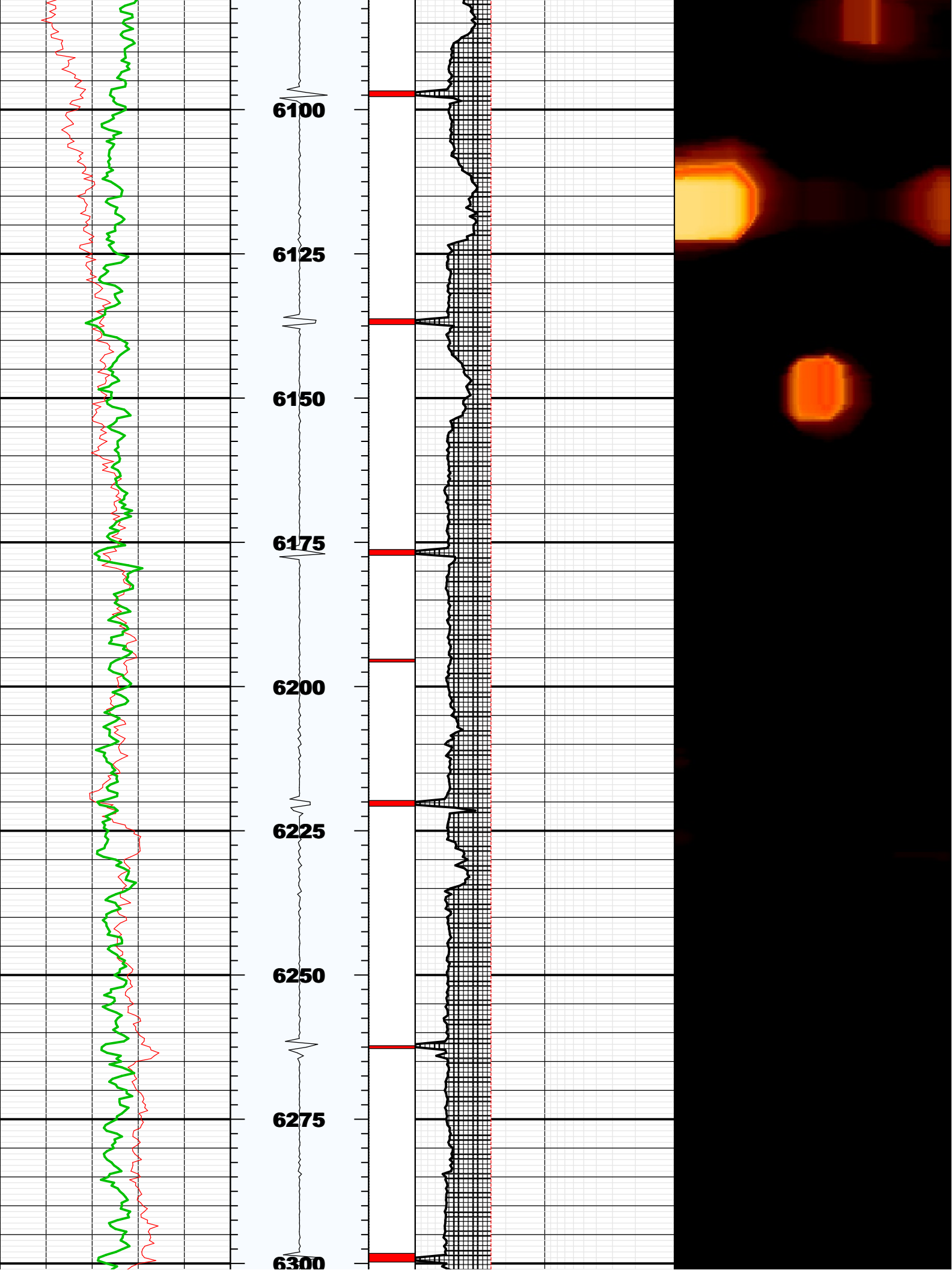


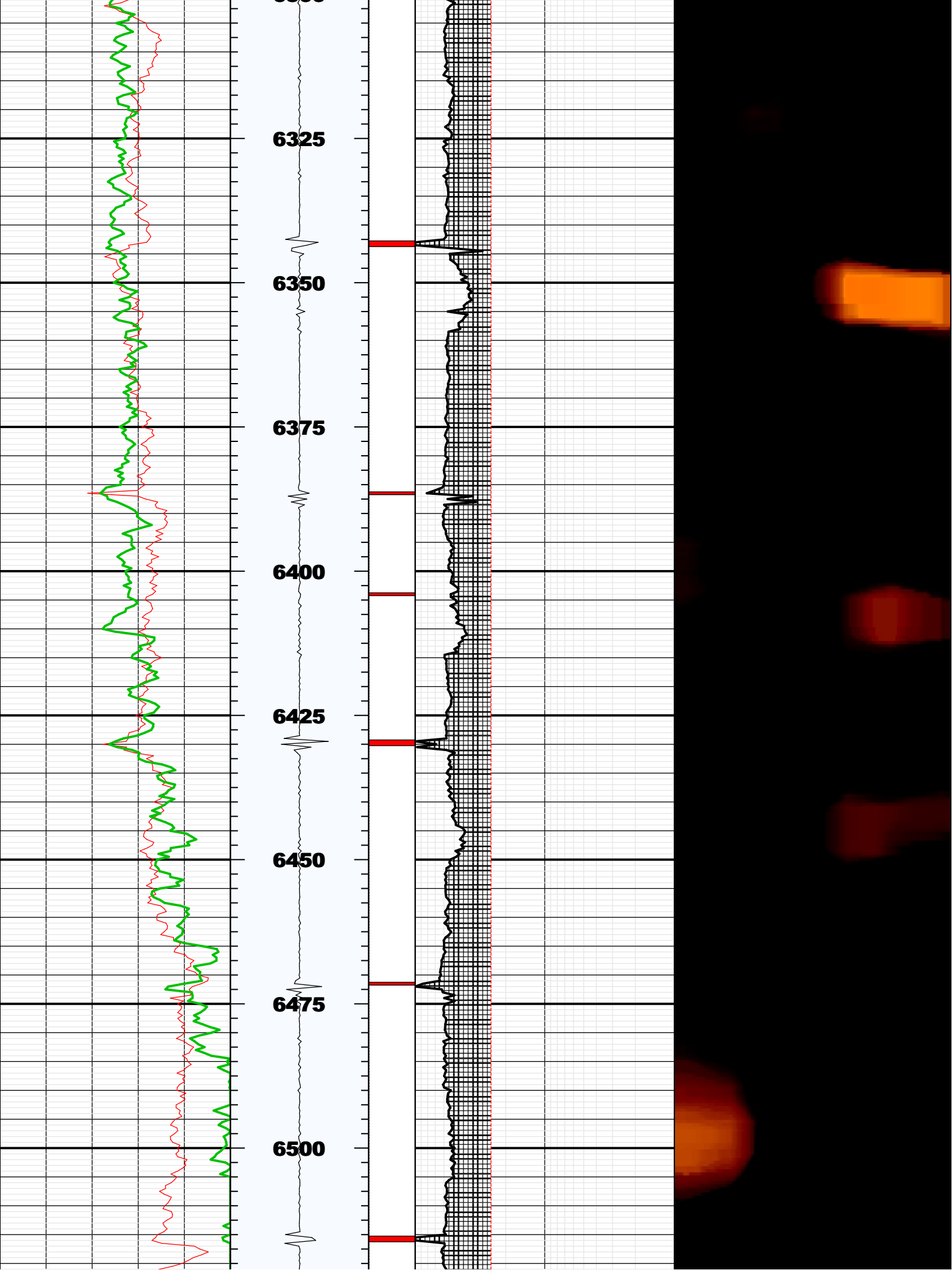




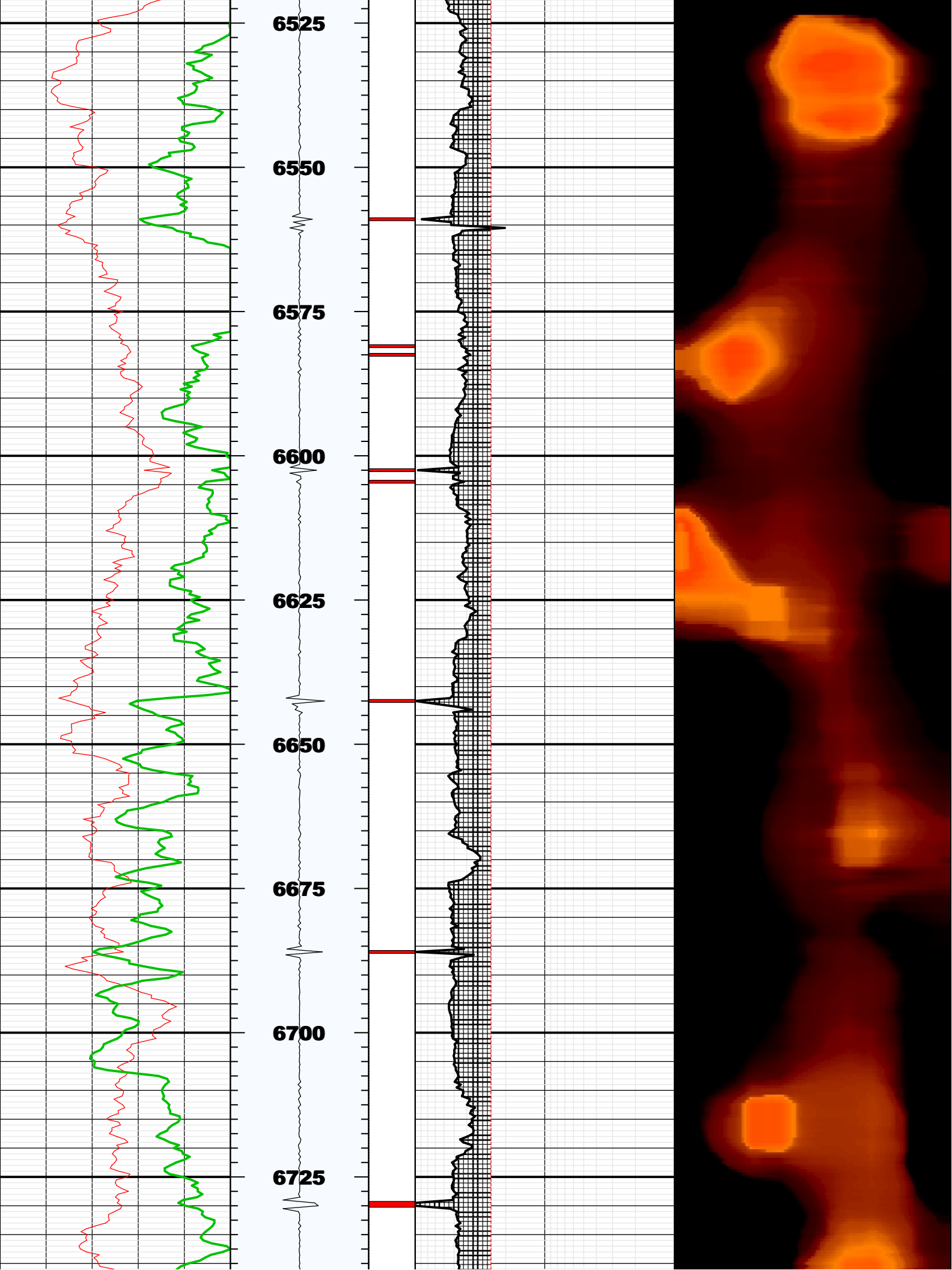


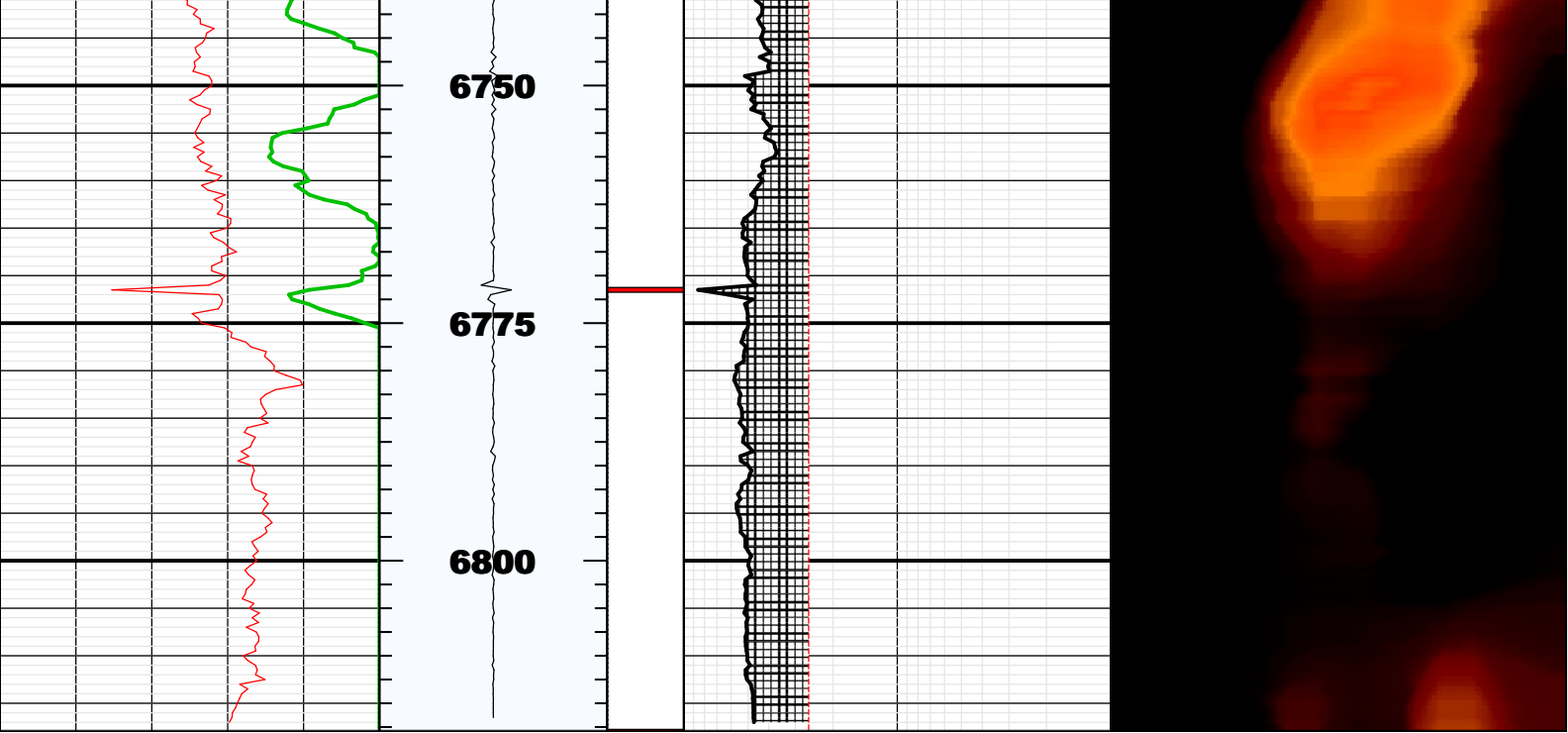








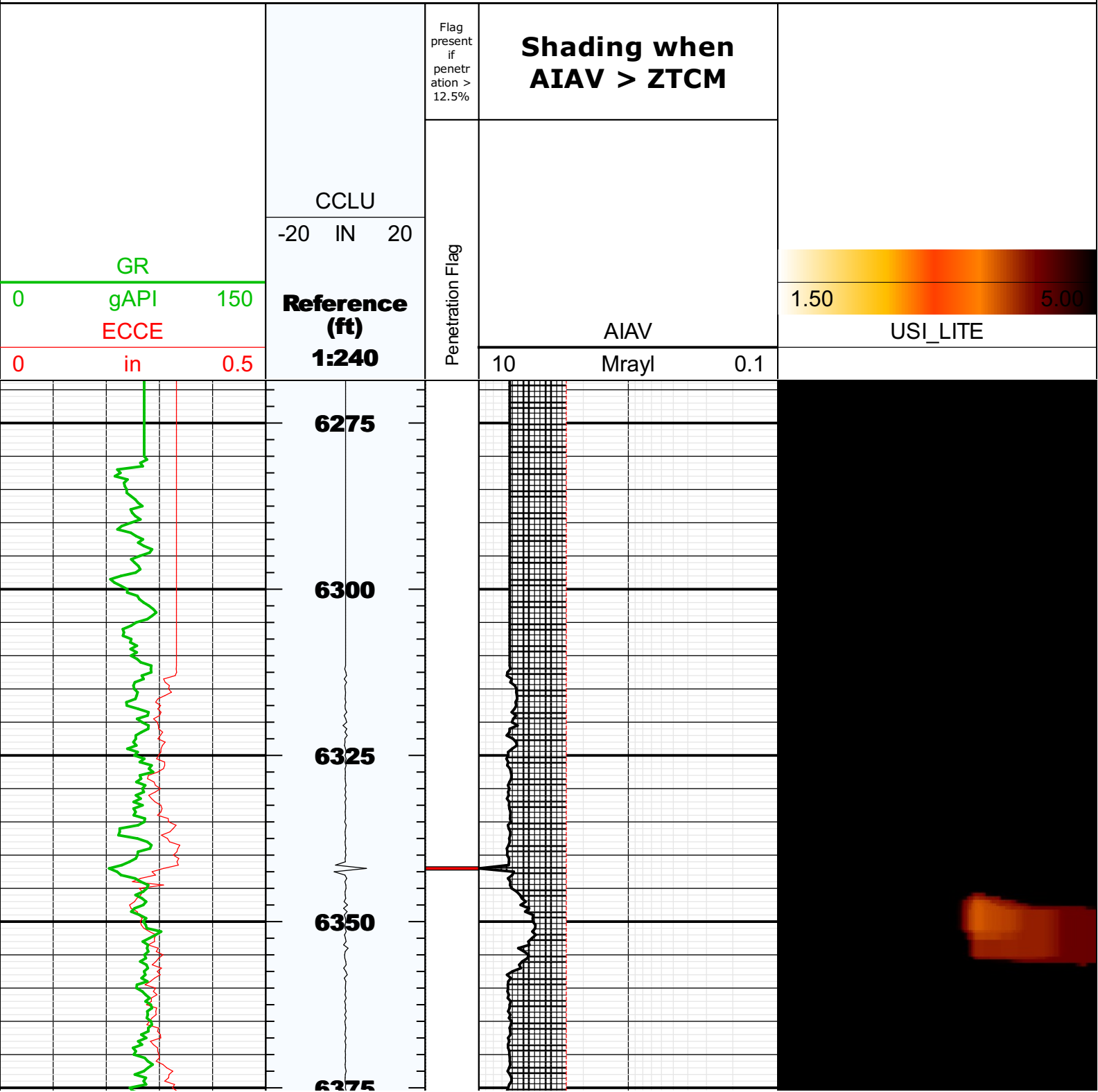


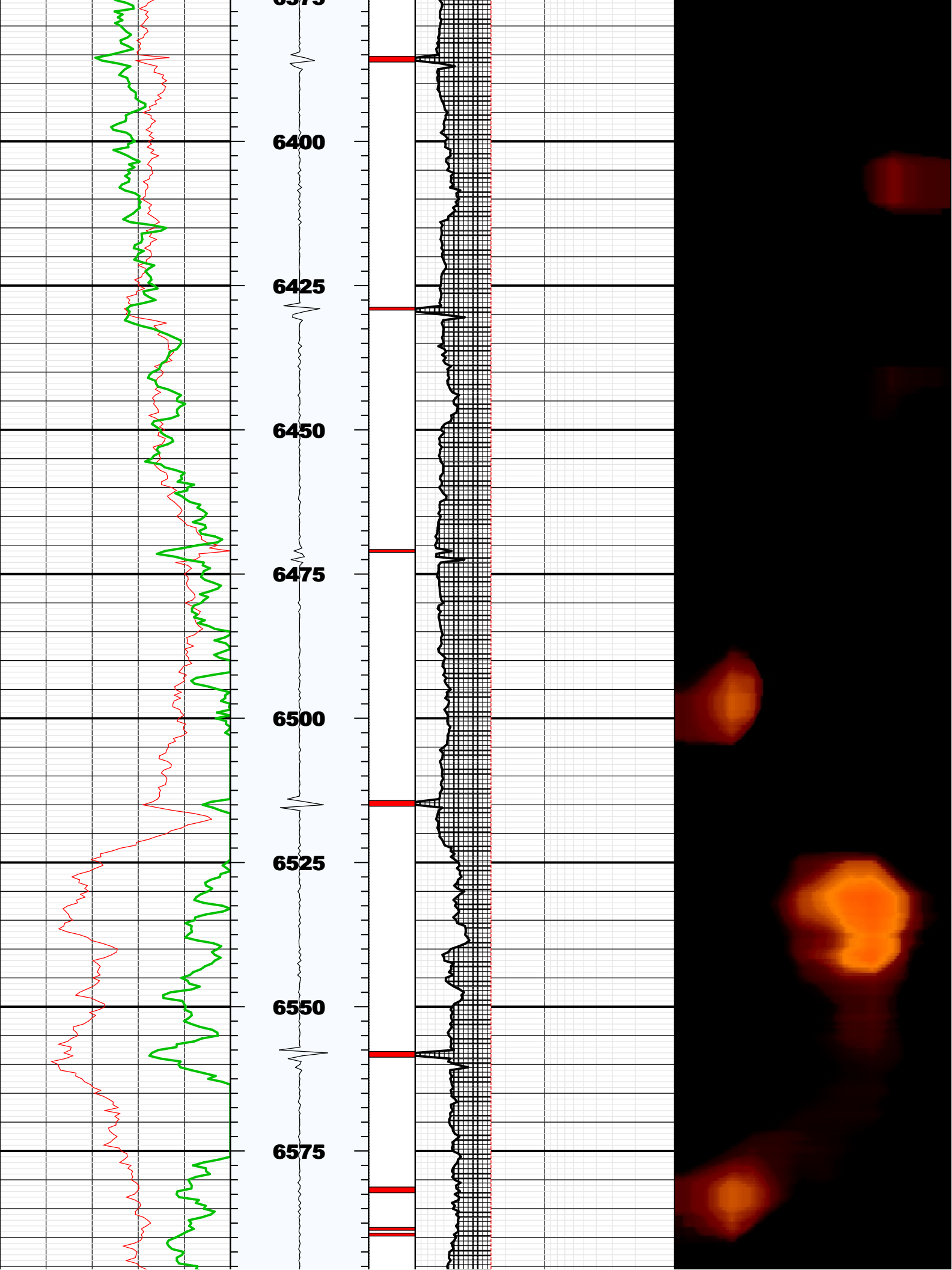


BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.70000	LB/G	Drilling Fluid Density
DFVL	206.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	64	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	26.79932	US	Window Begin Time
WINE	89.43414	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.79000	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 <sup>^</sup> 3 Processing Length

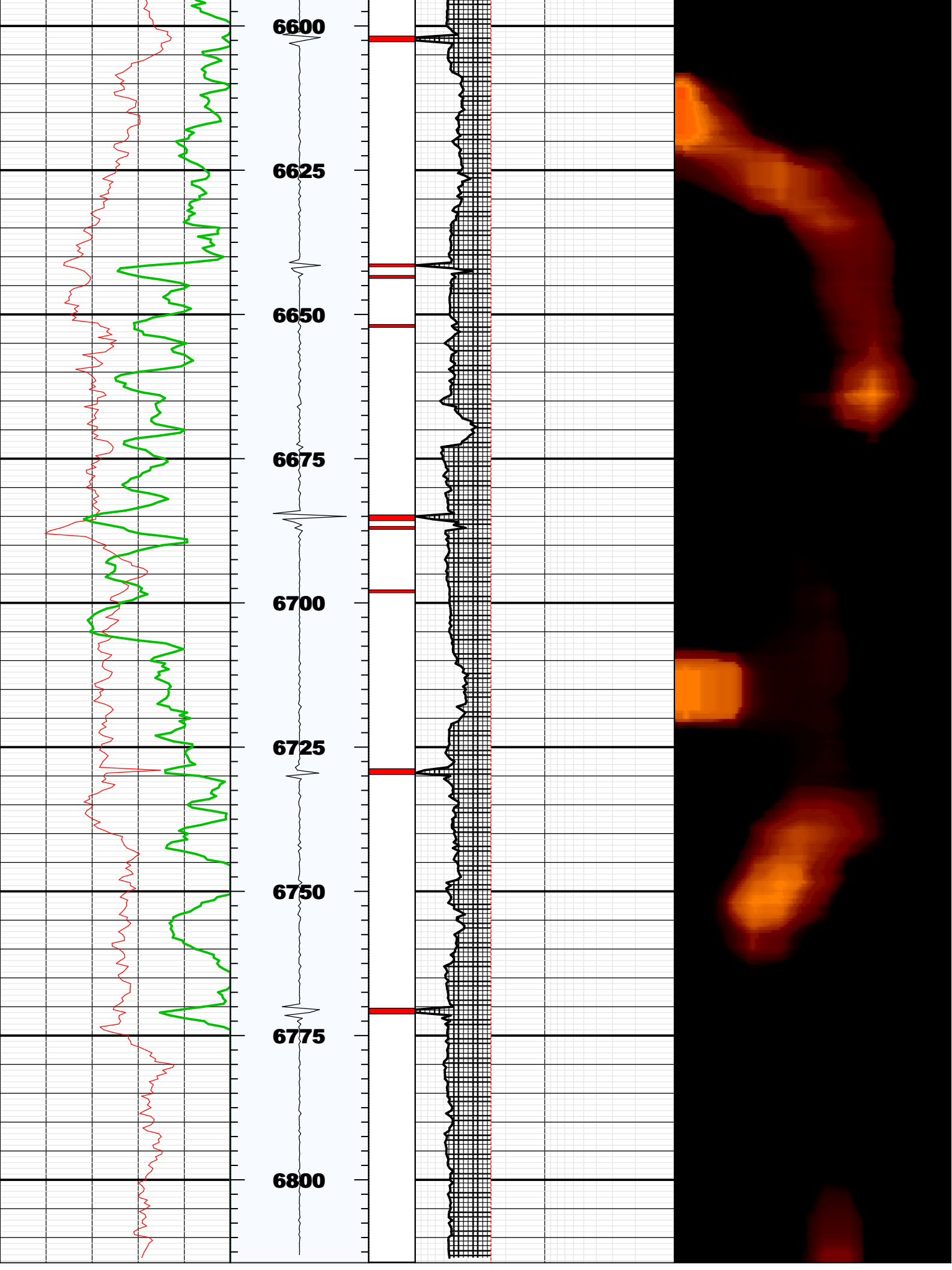
Repeat Pass

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Field: Wattenberg









## Fluid Properties Used for Main Pass

