

**Noble Energy Inc.**

**Upchurch State LD02-77-1BHN  
Wildcat  
Weld**

<b>USI-LITE (2500 psi)</b>					
		Elev:	K.B.	4772.0 F	
			G.L.	4742.0 F	
			D.F.	4771.0 F	
LOCATION					
Permanent Datum:		GL			
Log Measured From:		KB			
Drilling Measured From:		KB			
API Serial No. 05-123-39817	Section 2	Township 9N	Range 58W		
Logging Date 29-Jan-2015					
Run Number	Run 1				
Depth Driller	6030.0 F				
Schlumberger Depth	6030.0 F				
Bottom Log Interval	5850.0 F				
Top Log Interval	50.0 F				
Casing Fluid Level	0.0 F				
Salinity					
Density	8.40 LB/G				
Fluid Level	0.0 F				
BIT/CASING/TUBING STRING					
Bit Size	8.750 IN				
From	-999.2 F				
To	6030.0 F				
Casing Size	7.00 IN				
Weight	26.00 LB/F				
Grade	P110				
From	0.0 F				
To	6020.0 F				
Max Recorded Temp	207.0				
Logger on bottom (date)	29-Jan-2015				
Location	Fort Morgan CO				
Recorded By	Max Pace				
Witnessed By	Bill Mansfield				

## 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: Length: 16500.00000

## DISCLAIMER

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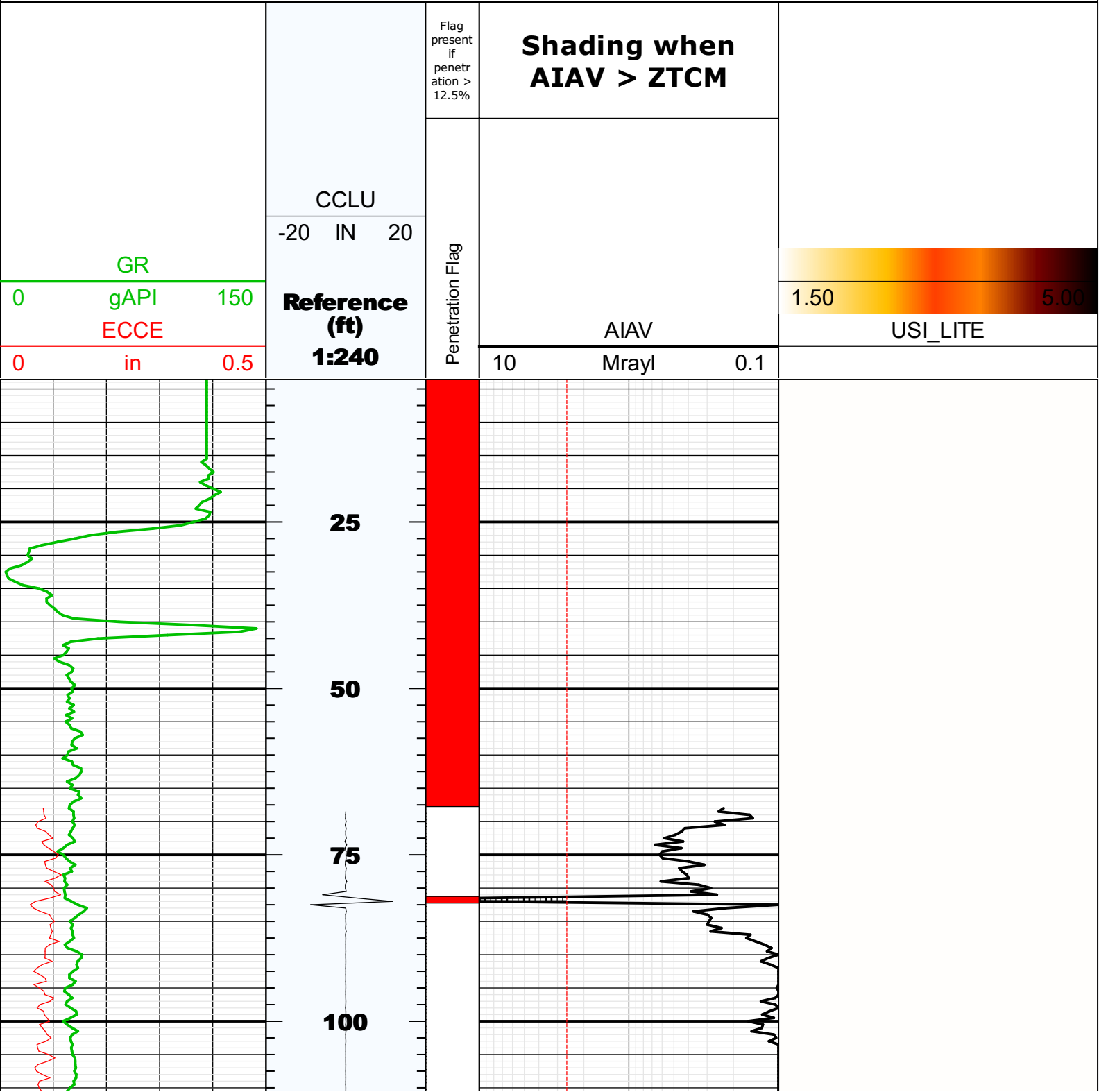
Repeat ran with 0 psi, Main ran with 2500 psi

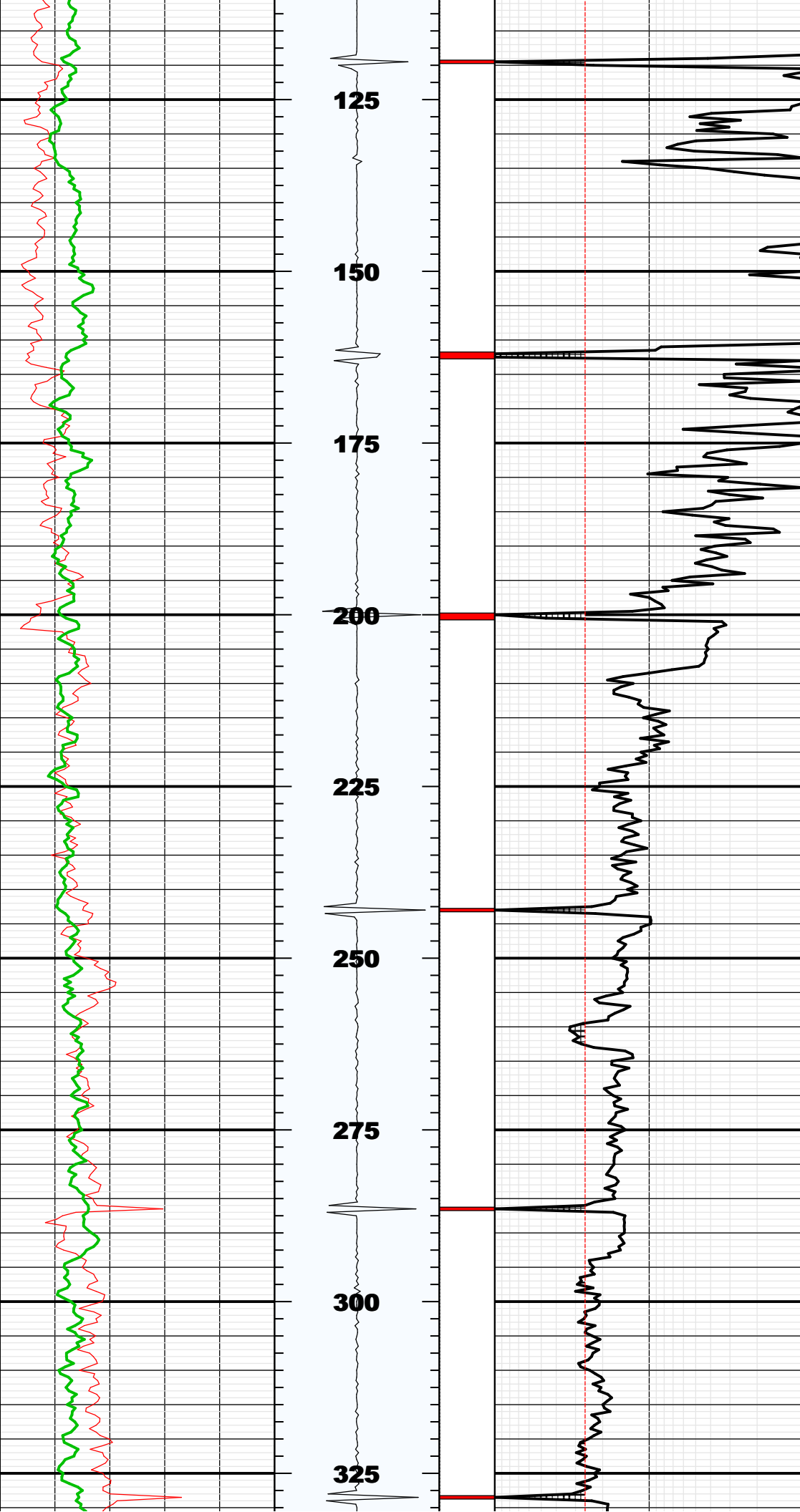
Top of cement seent at 935'

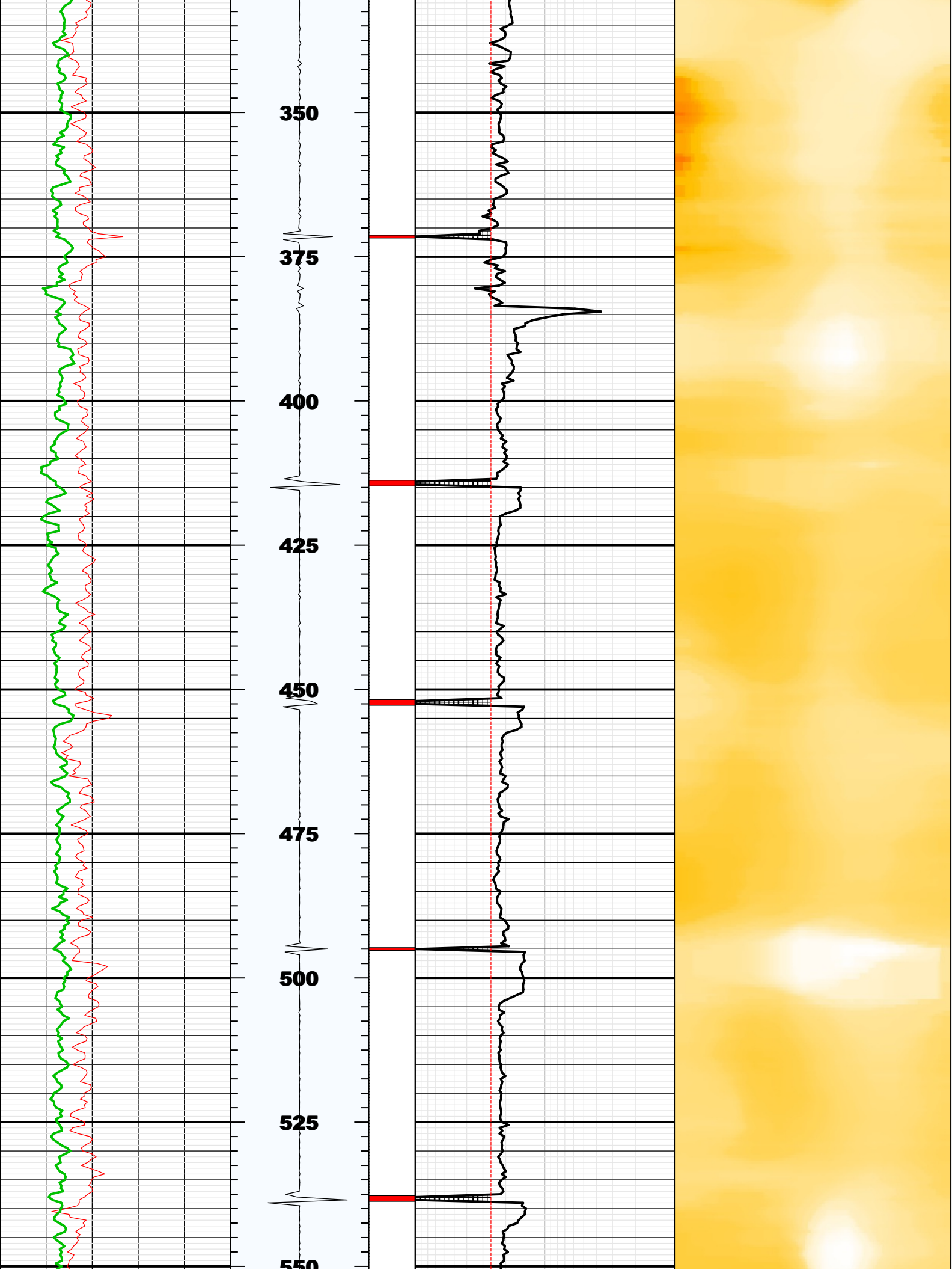
Temperature was 207 degF measured at depth.

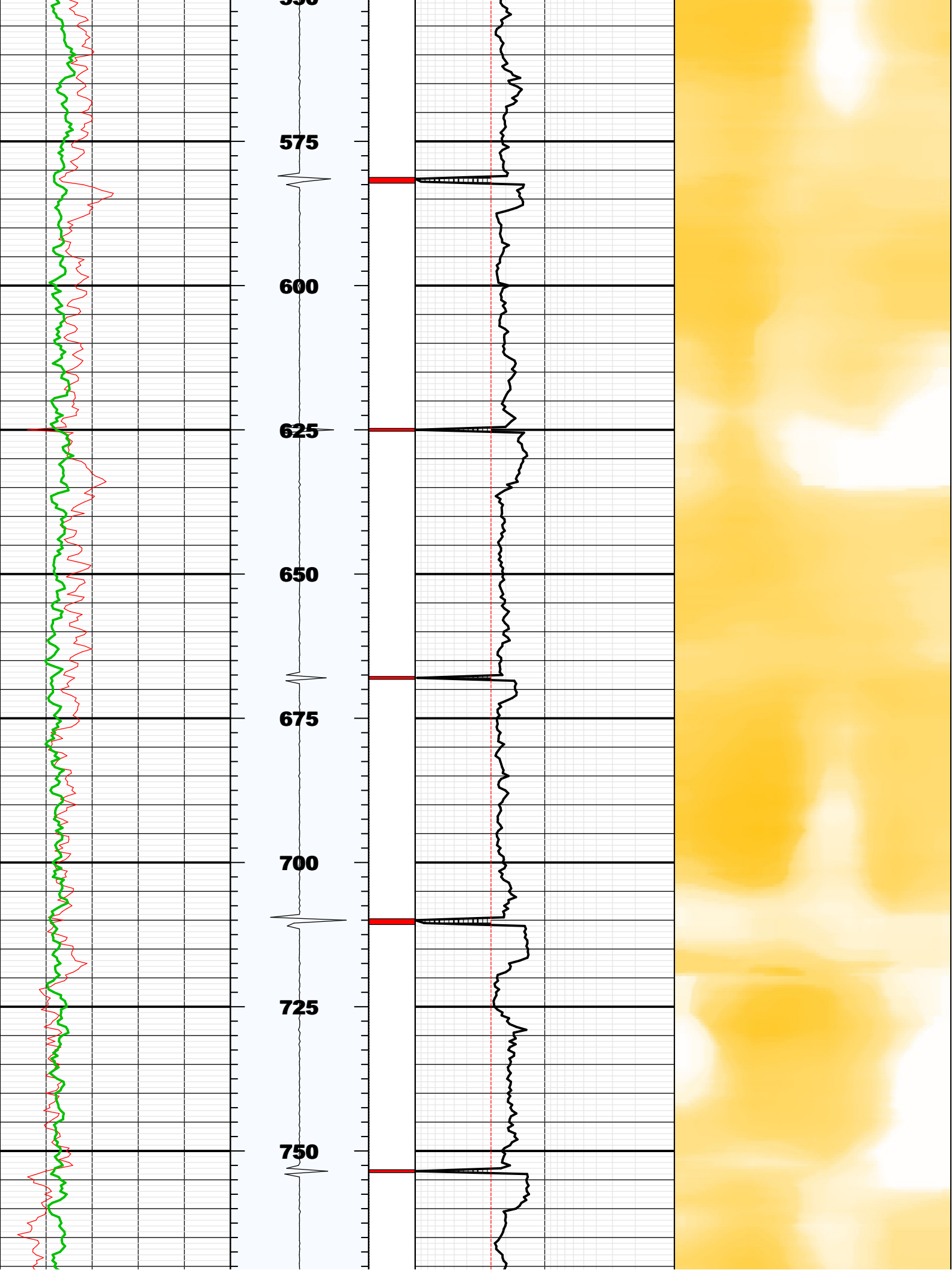
Main Pass

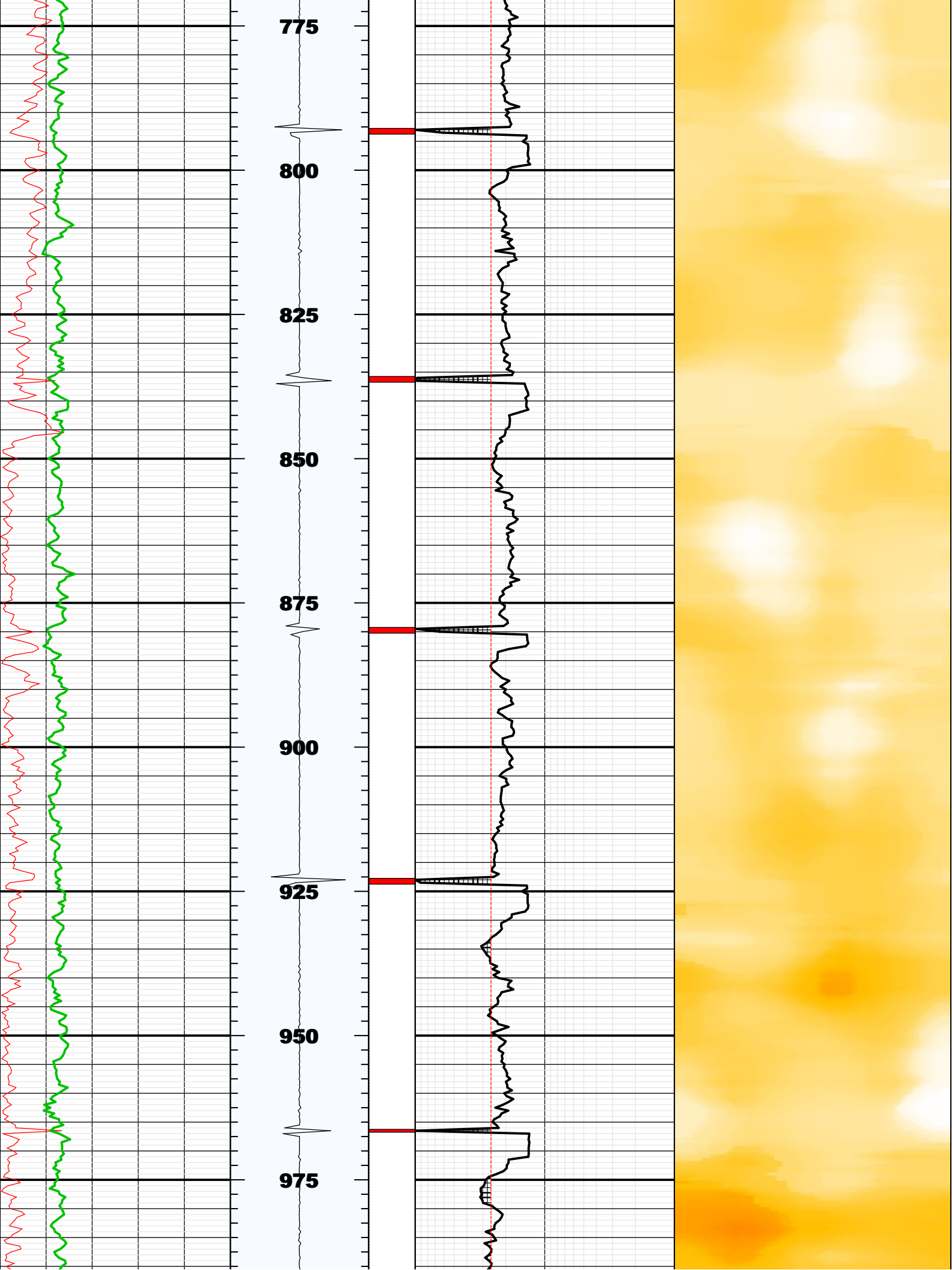
Company: Noble Energy Inc.  
Well: Upchurch State LD02-77-1BHN  
Field: Wildcat

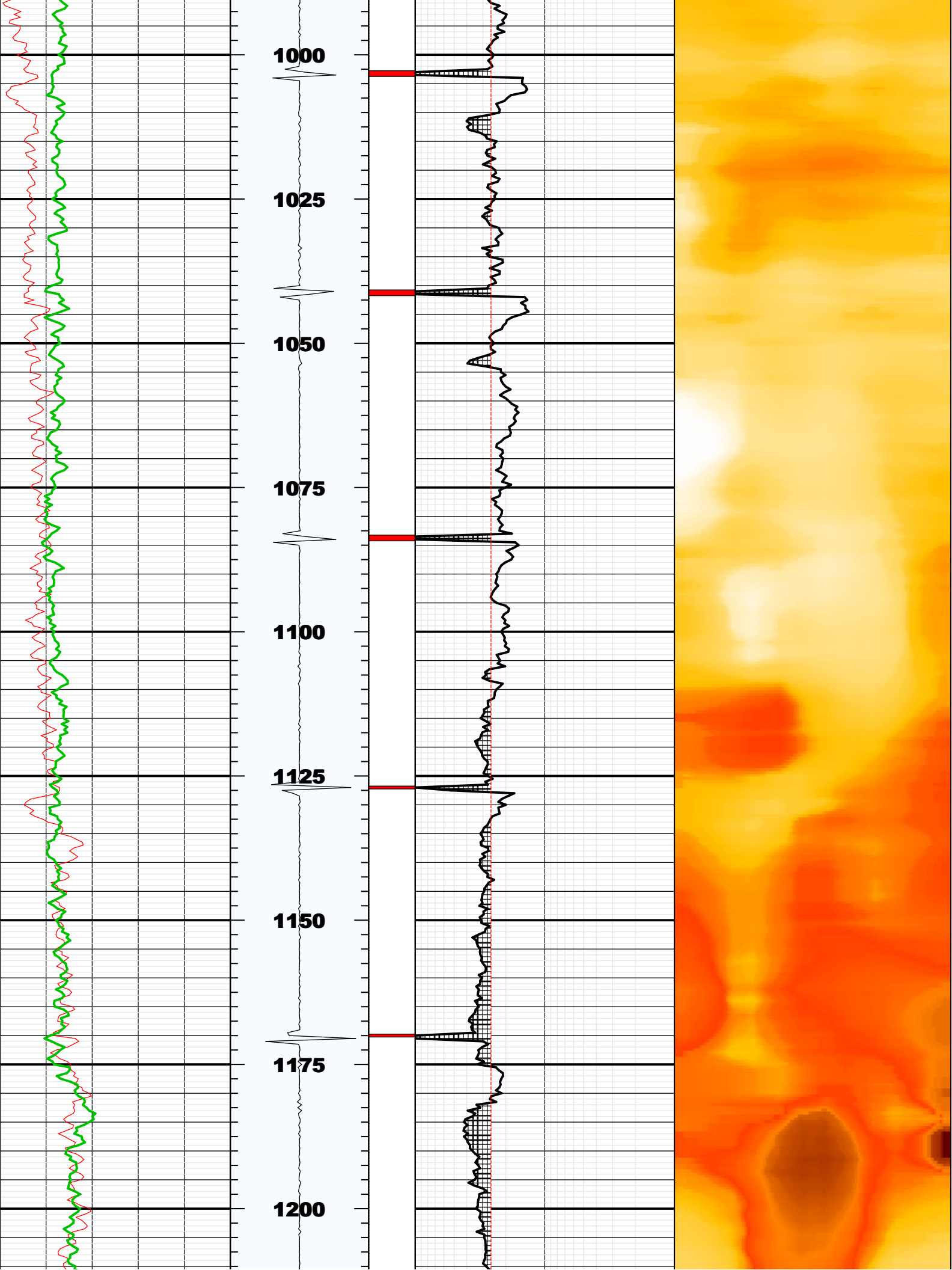




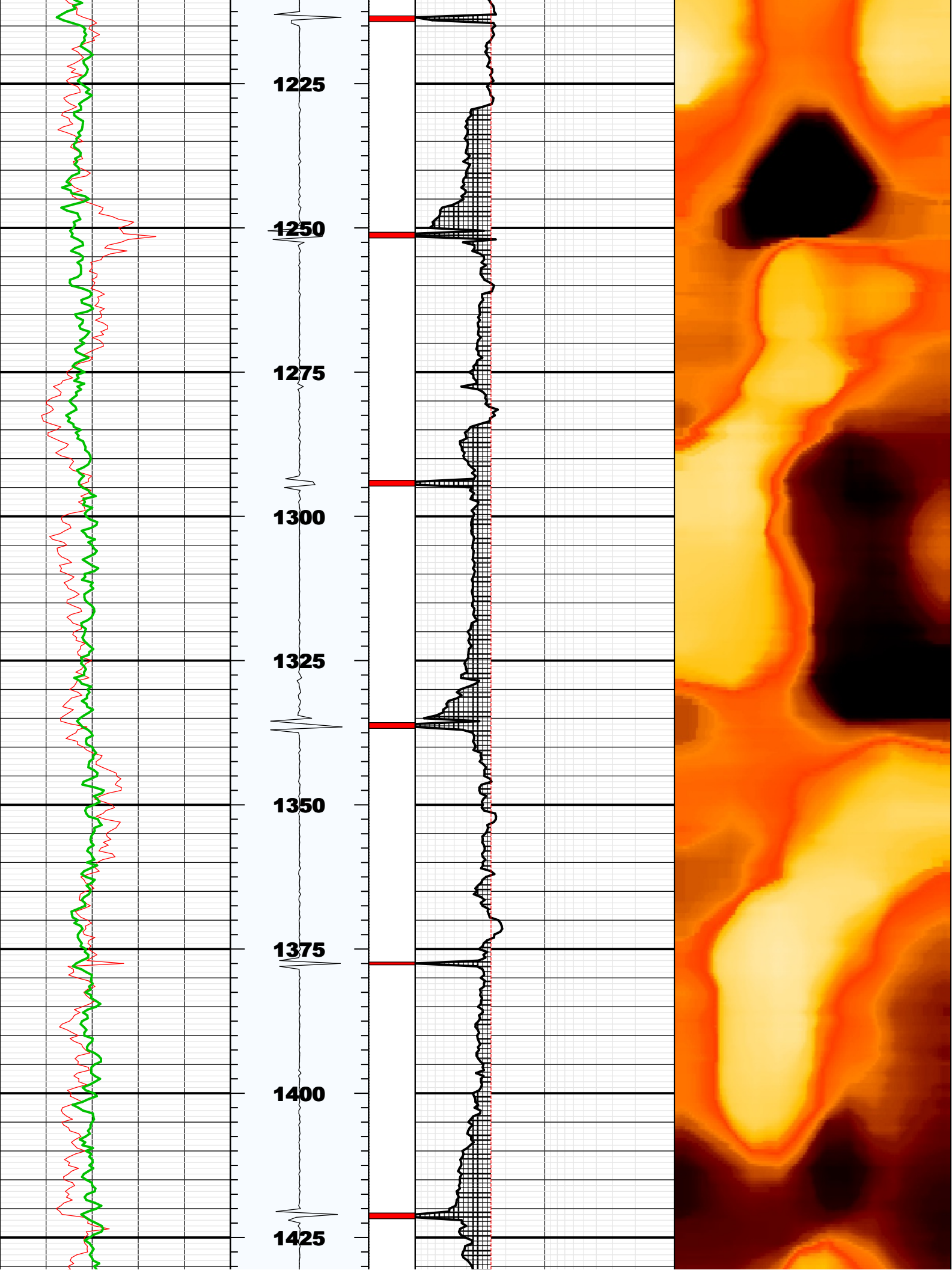


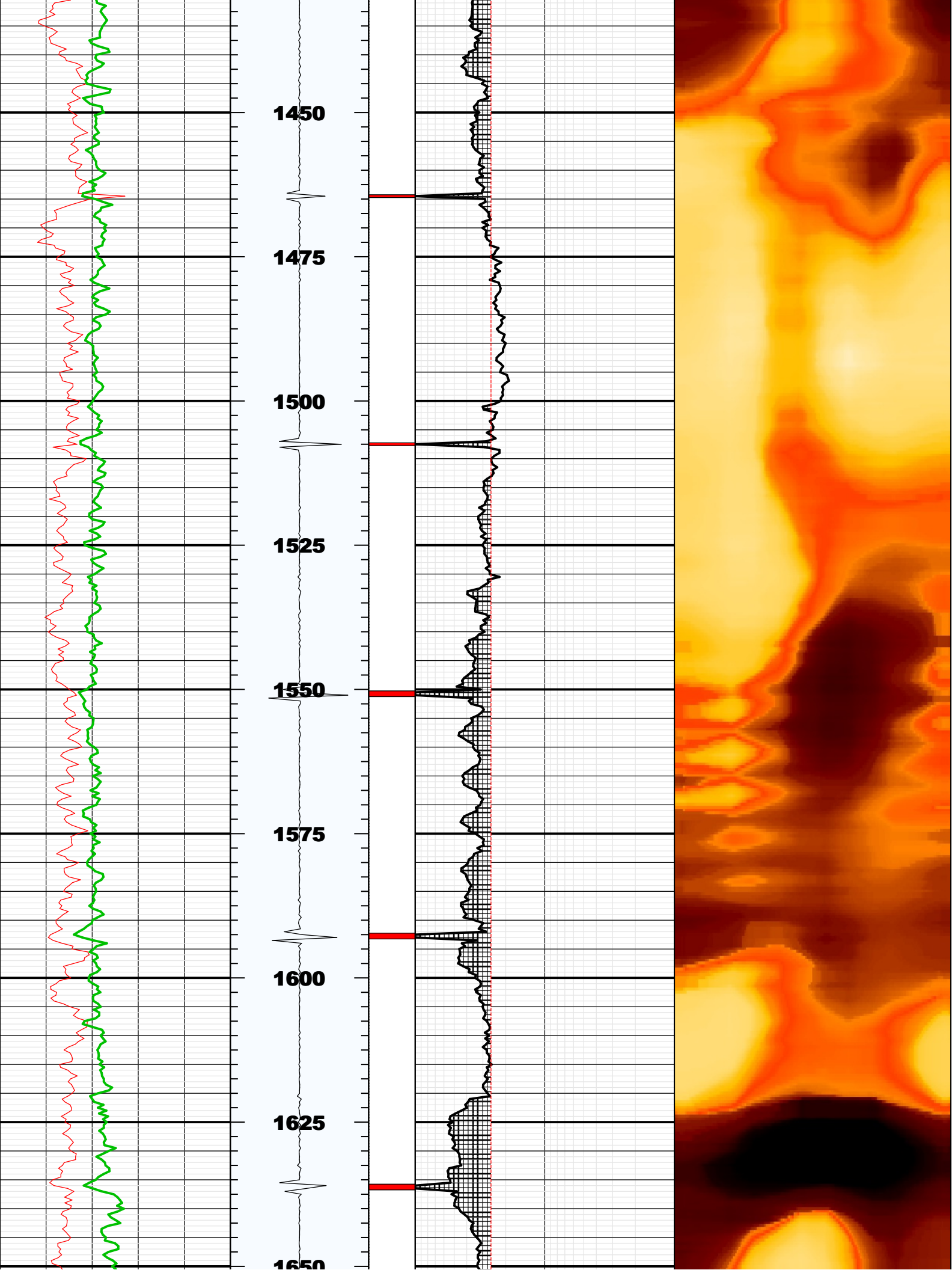


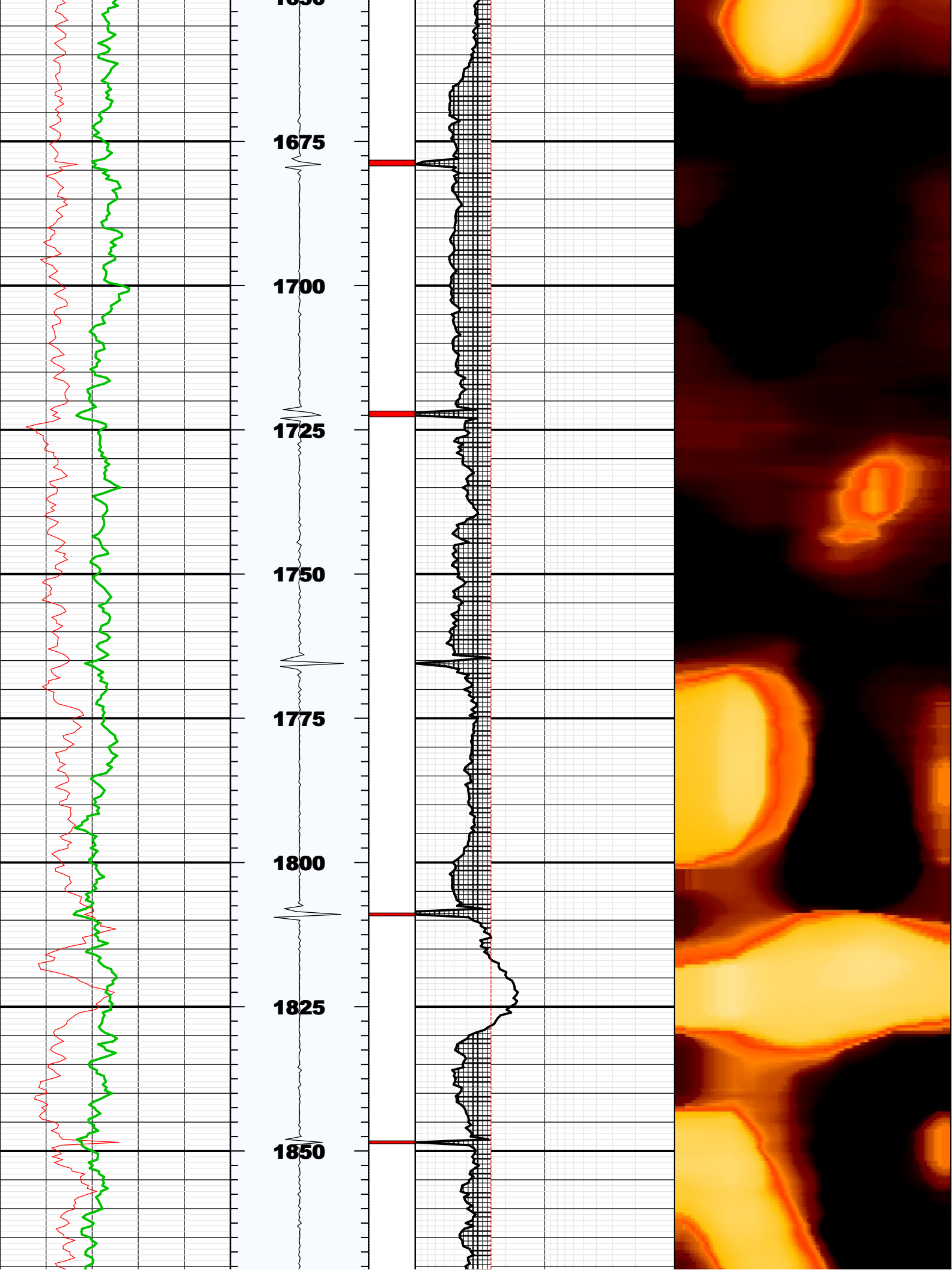


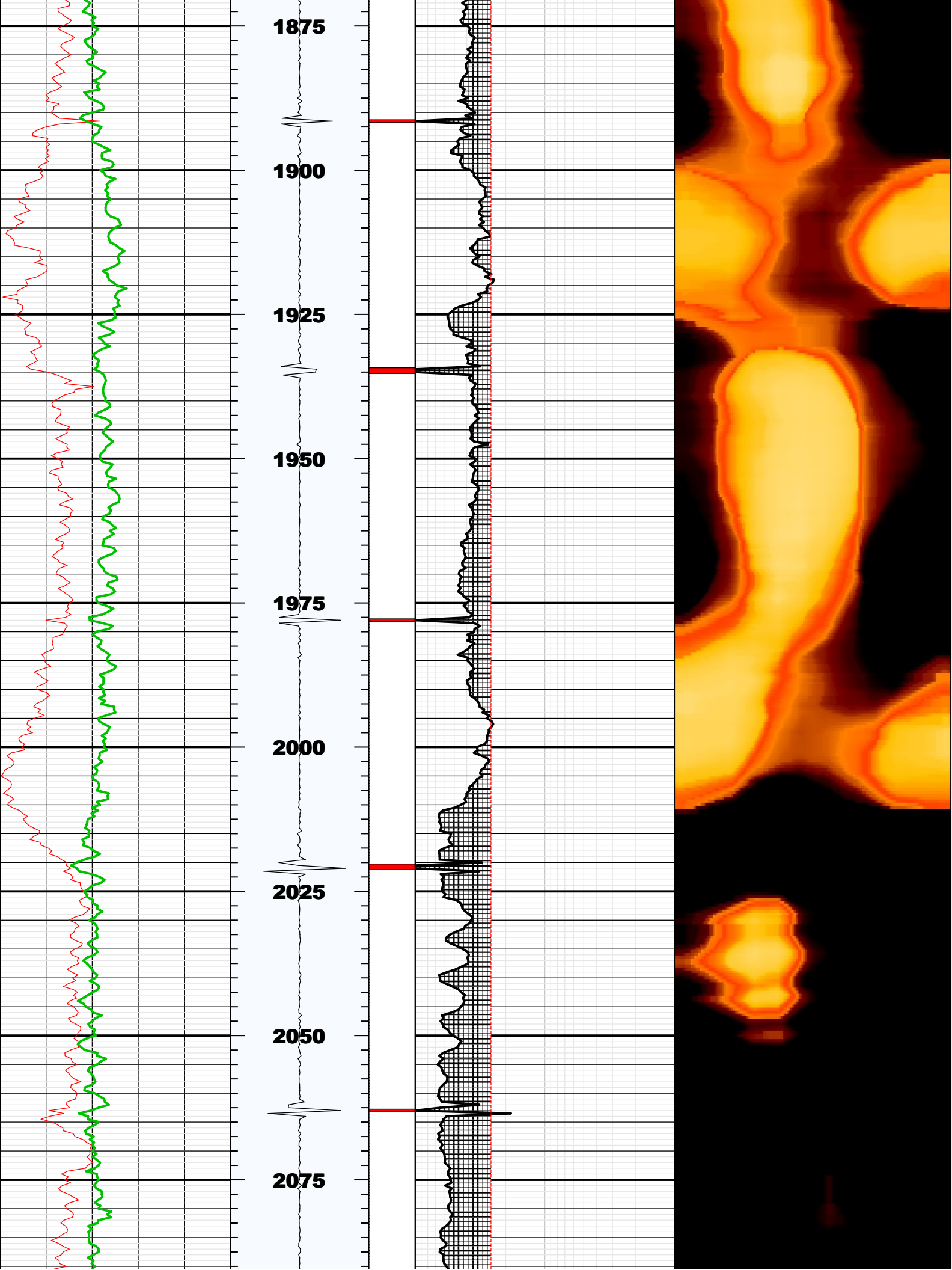




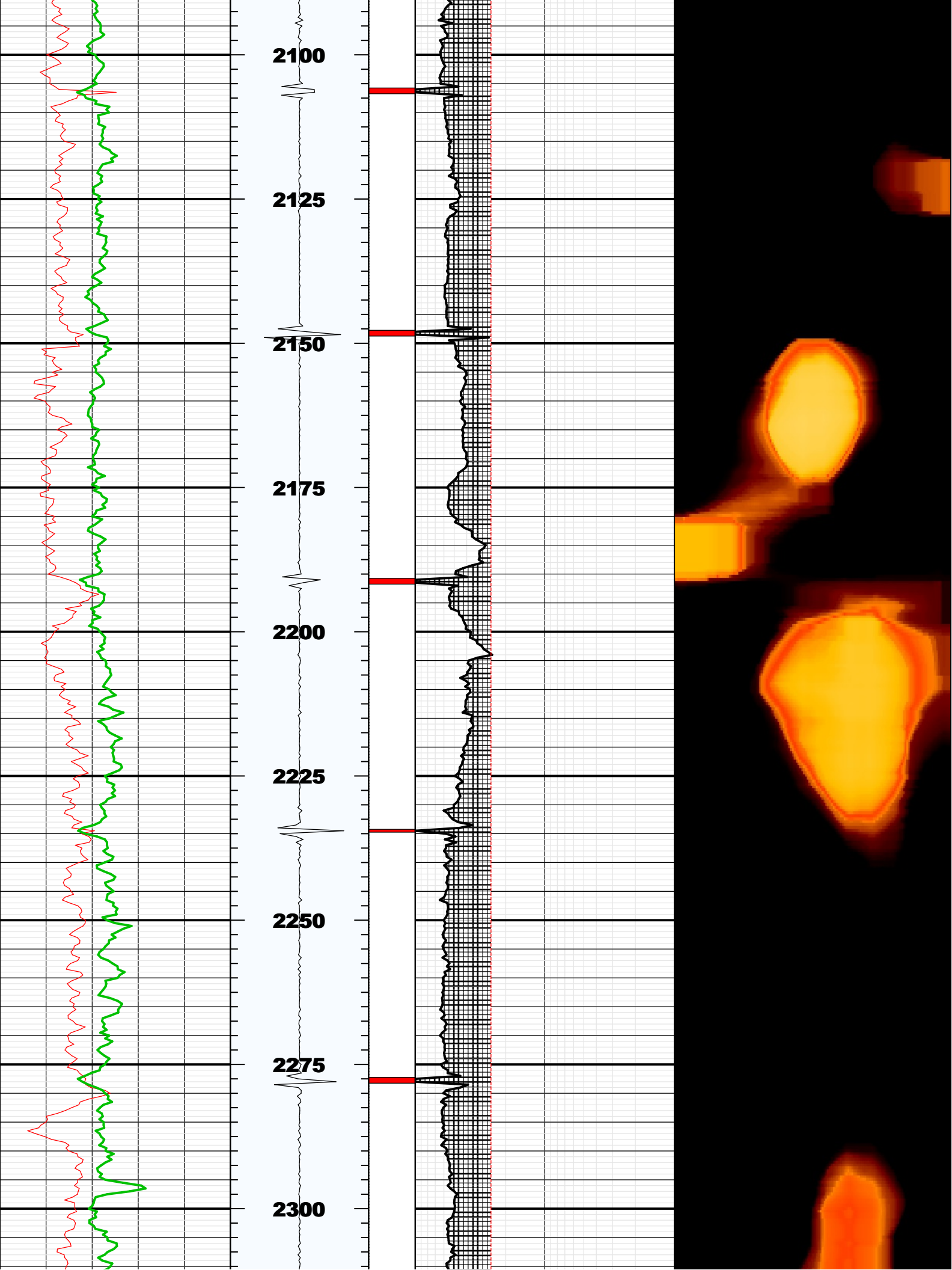


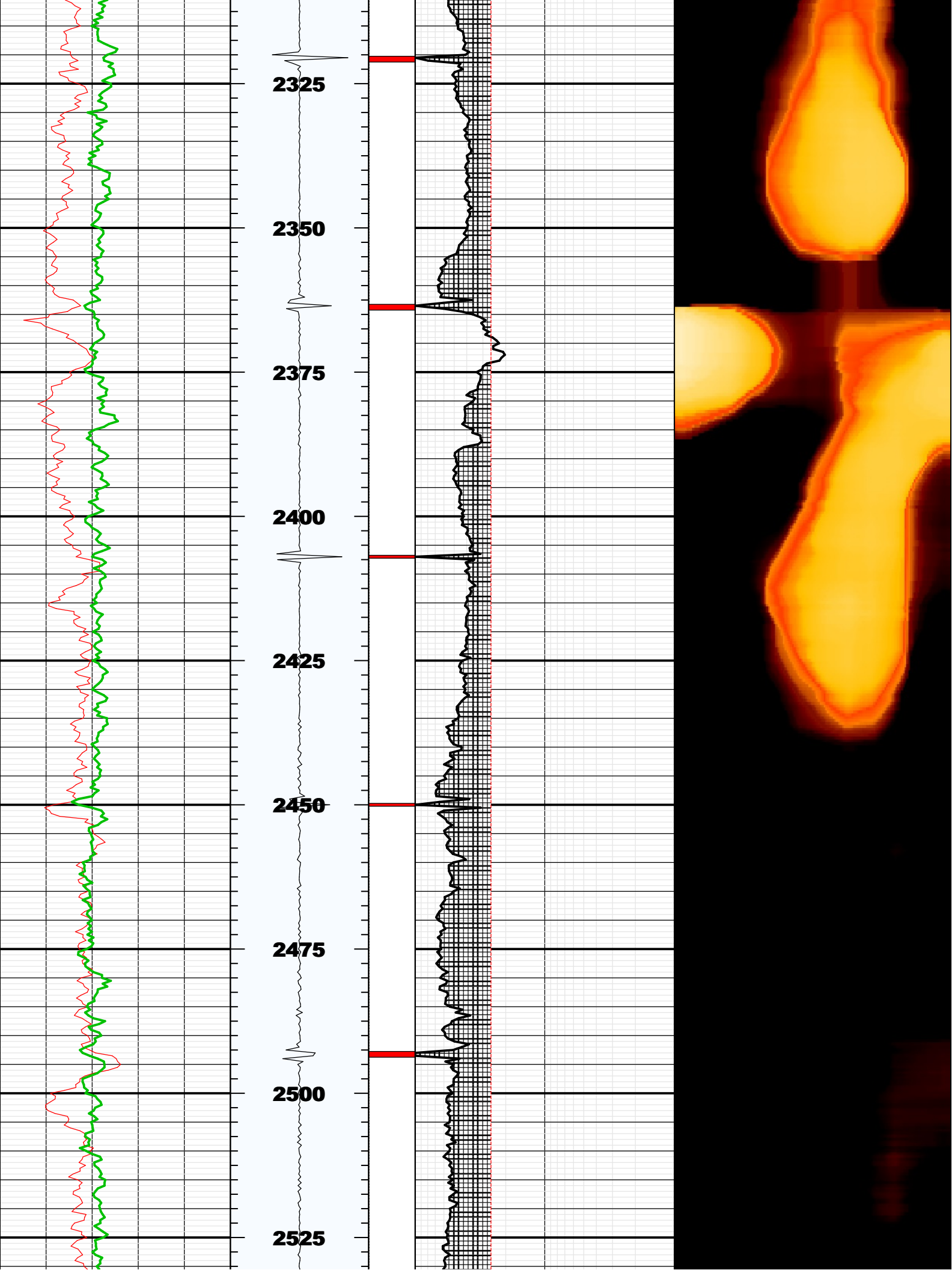


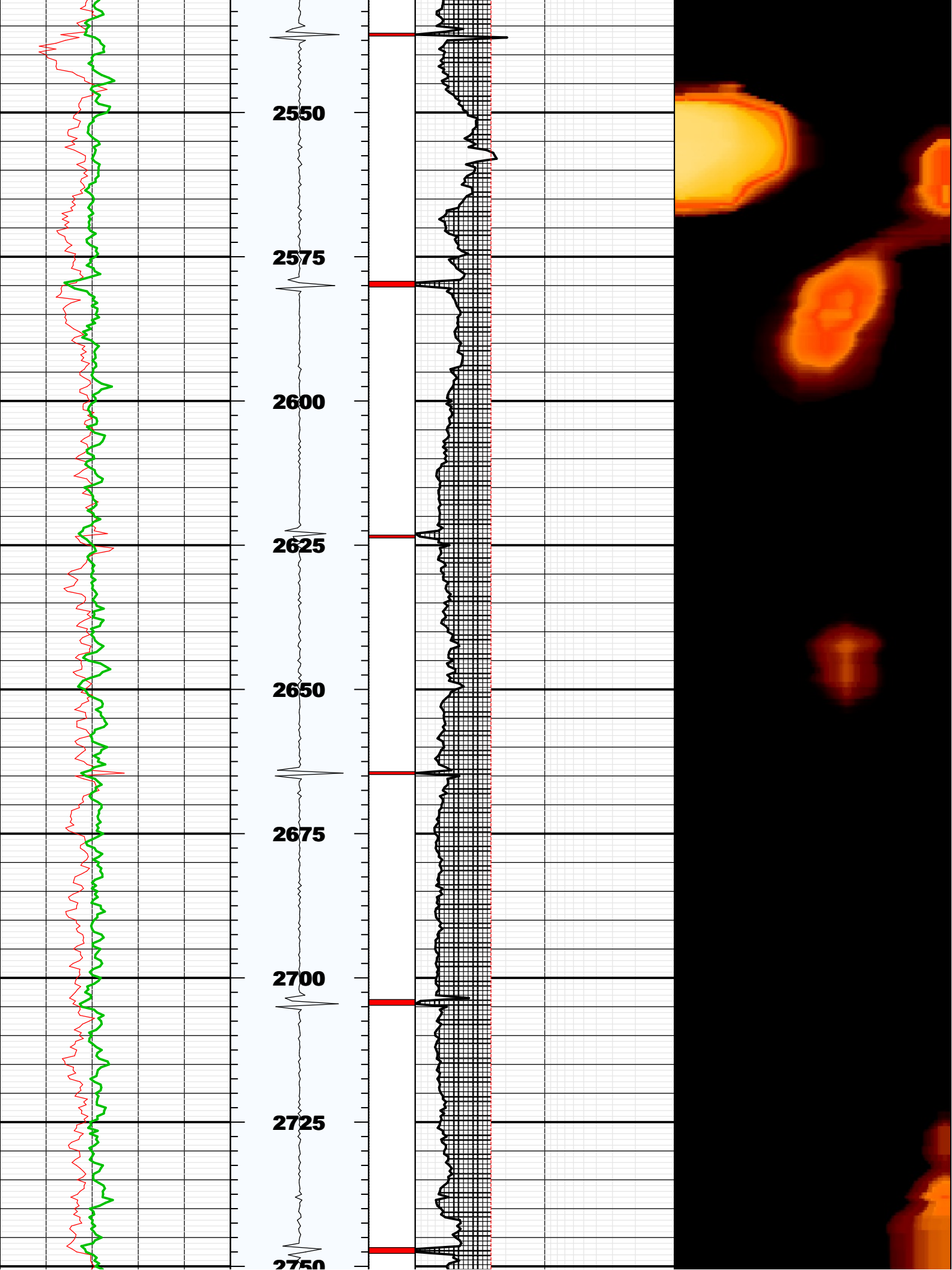


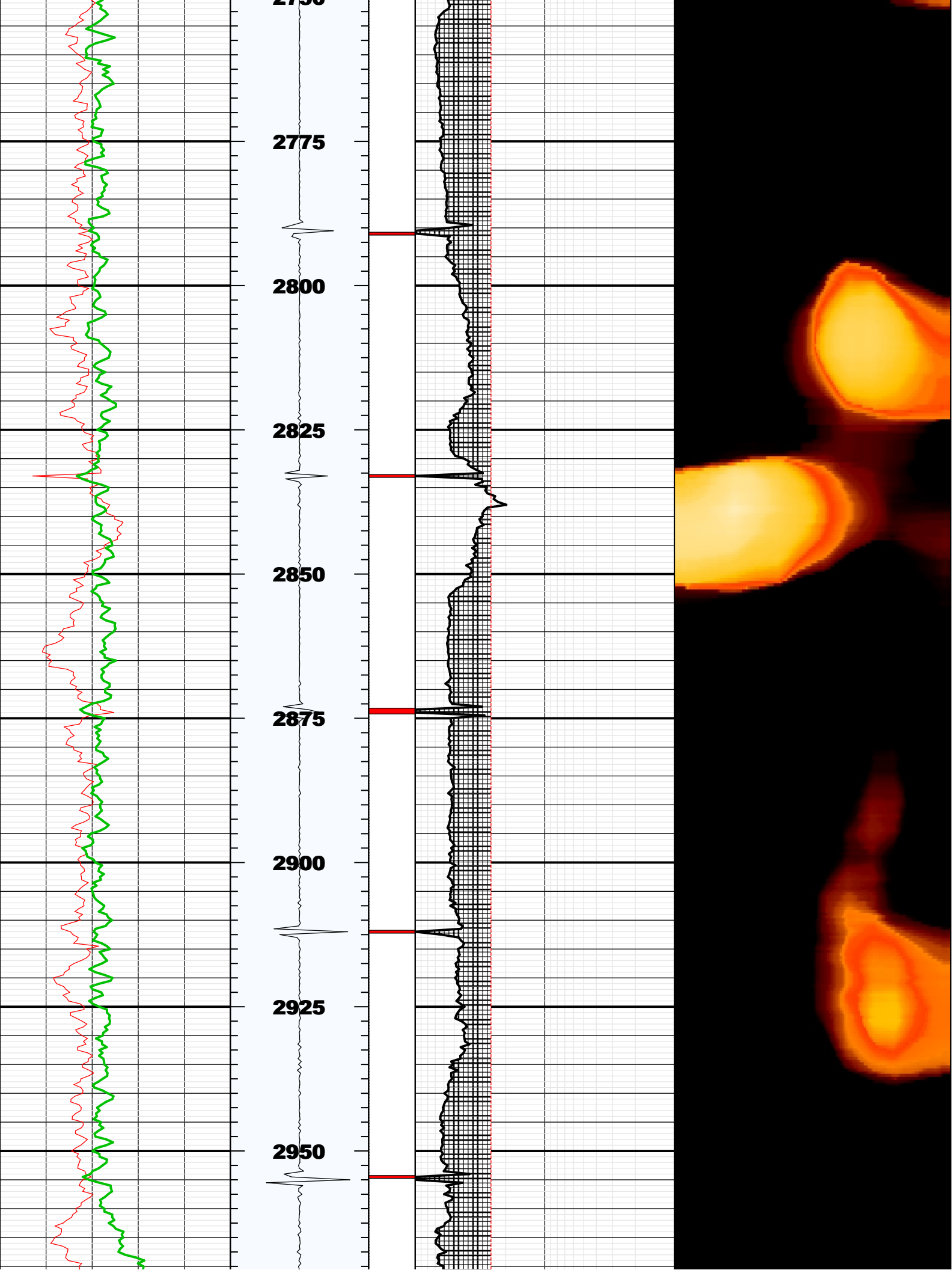




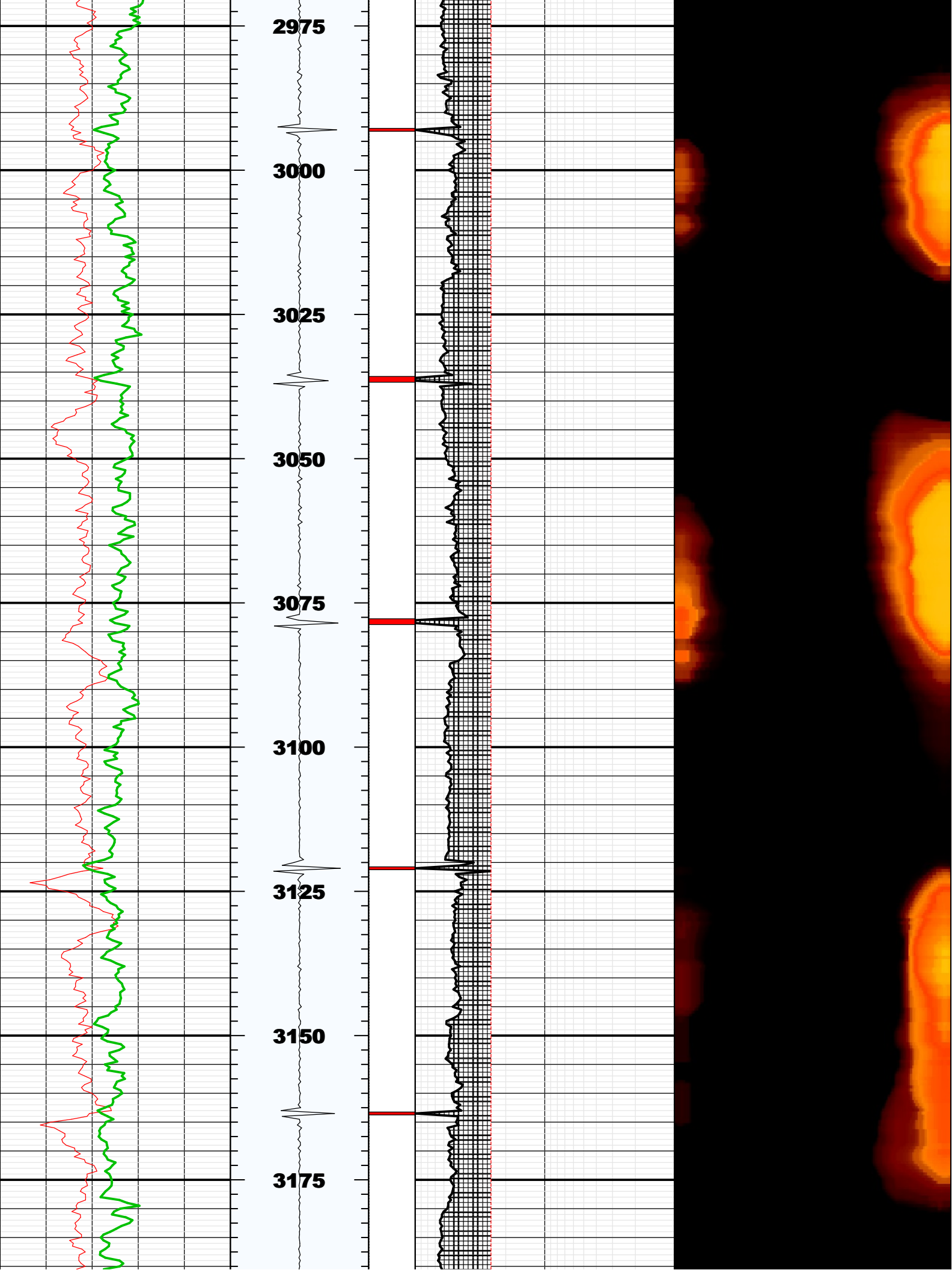


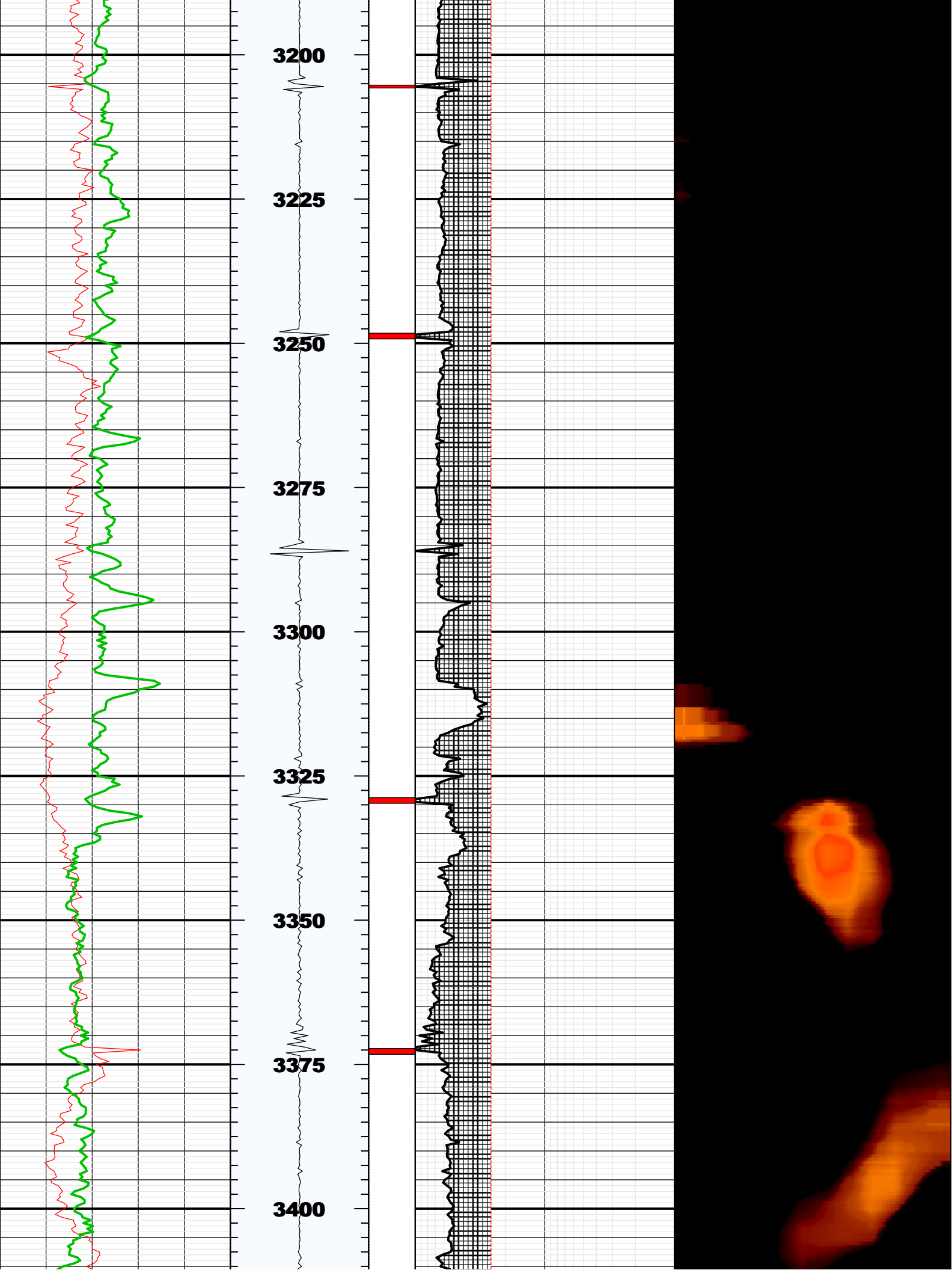


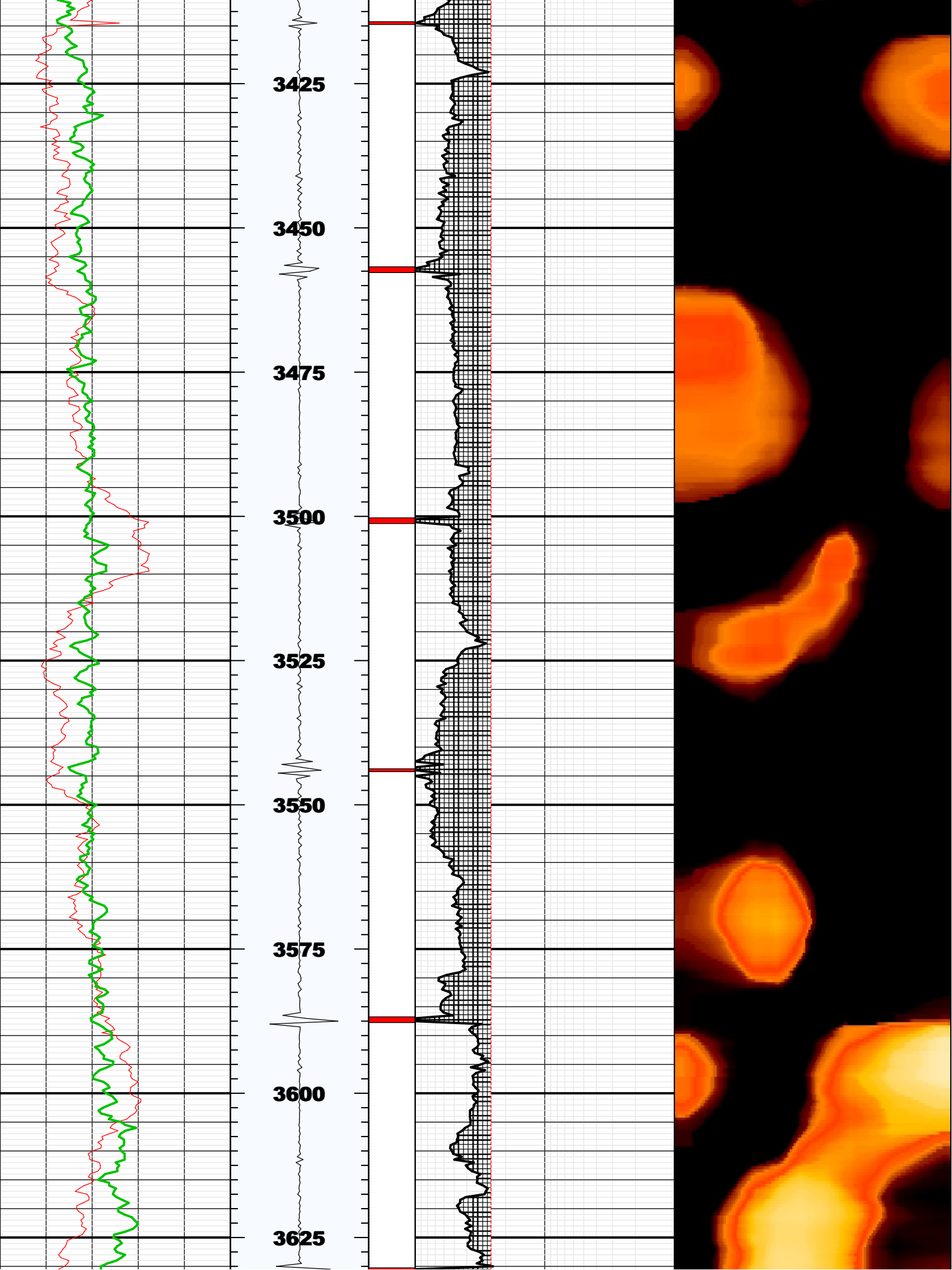


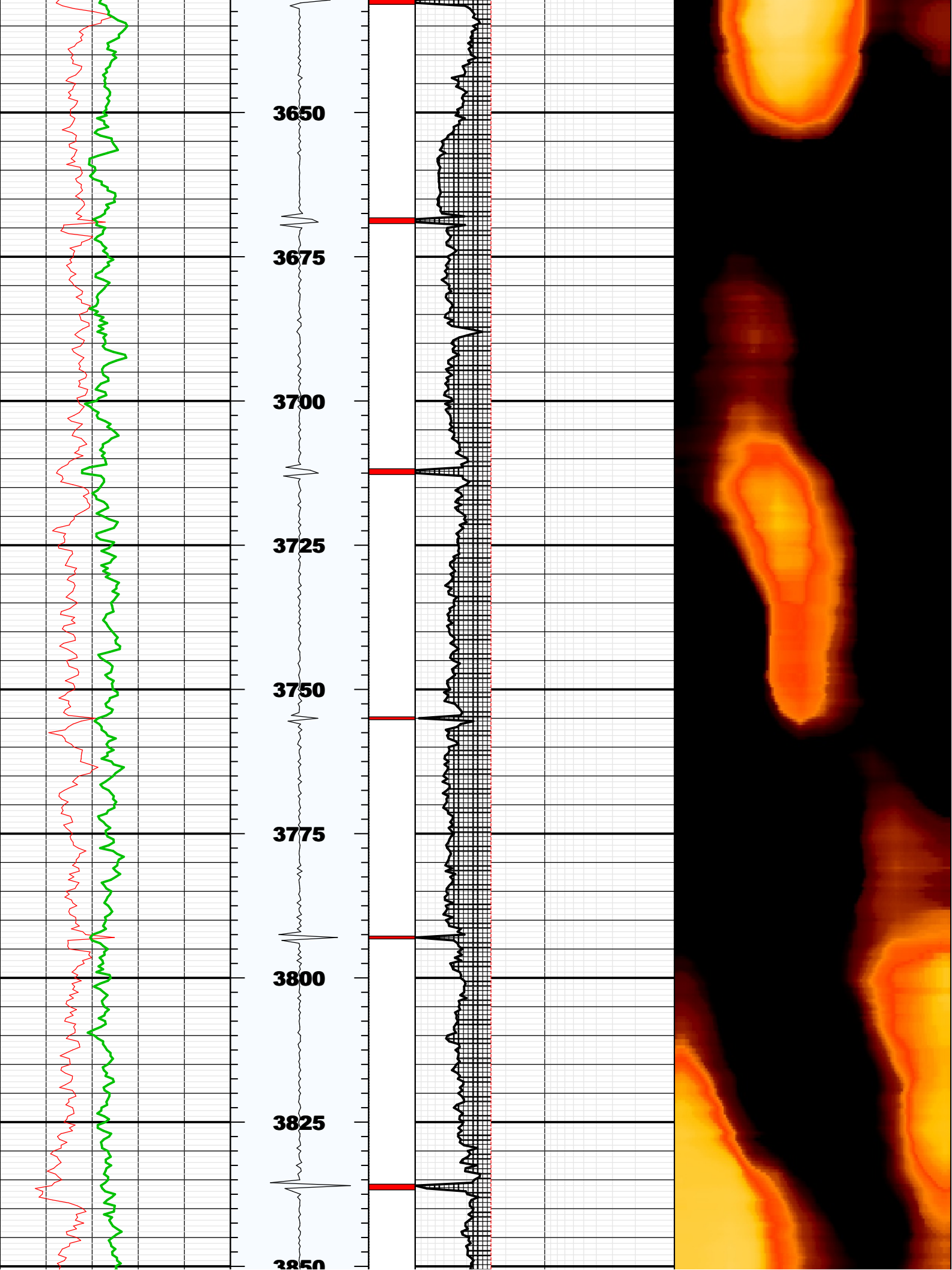


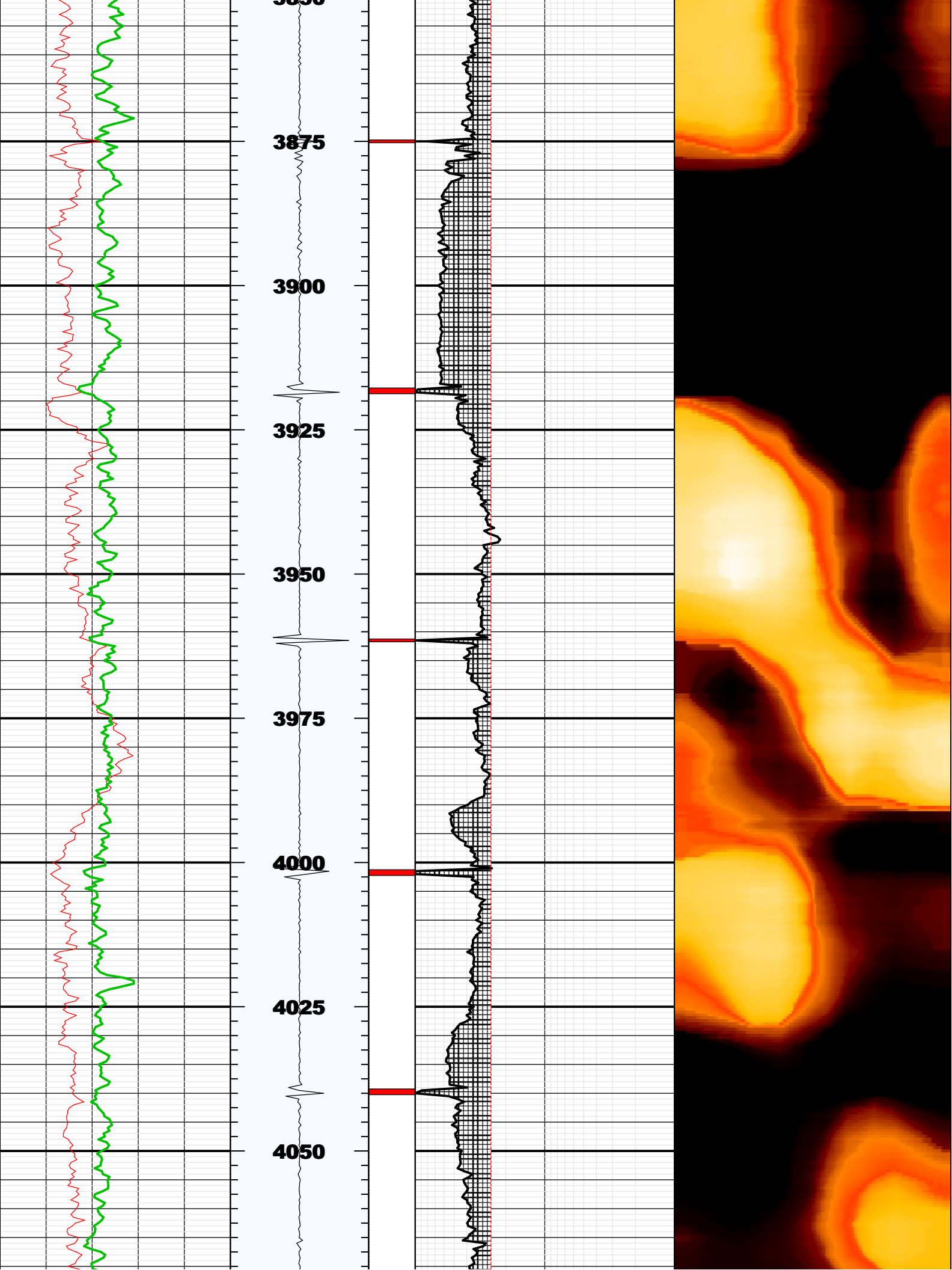




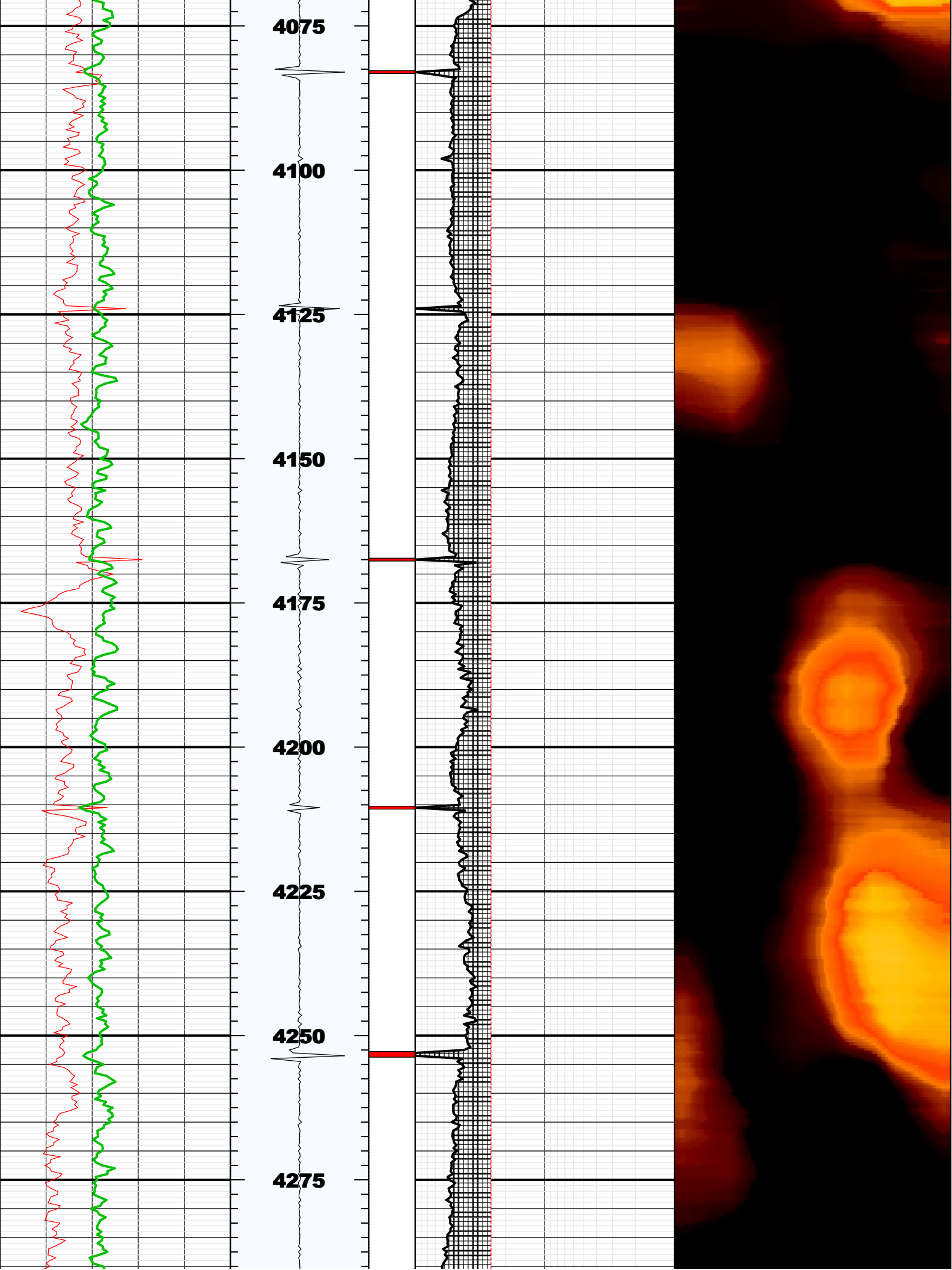


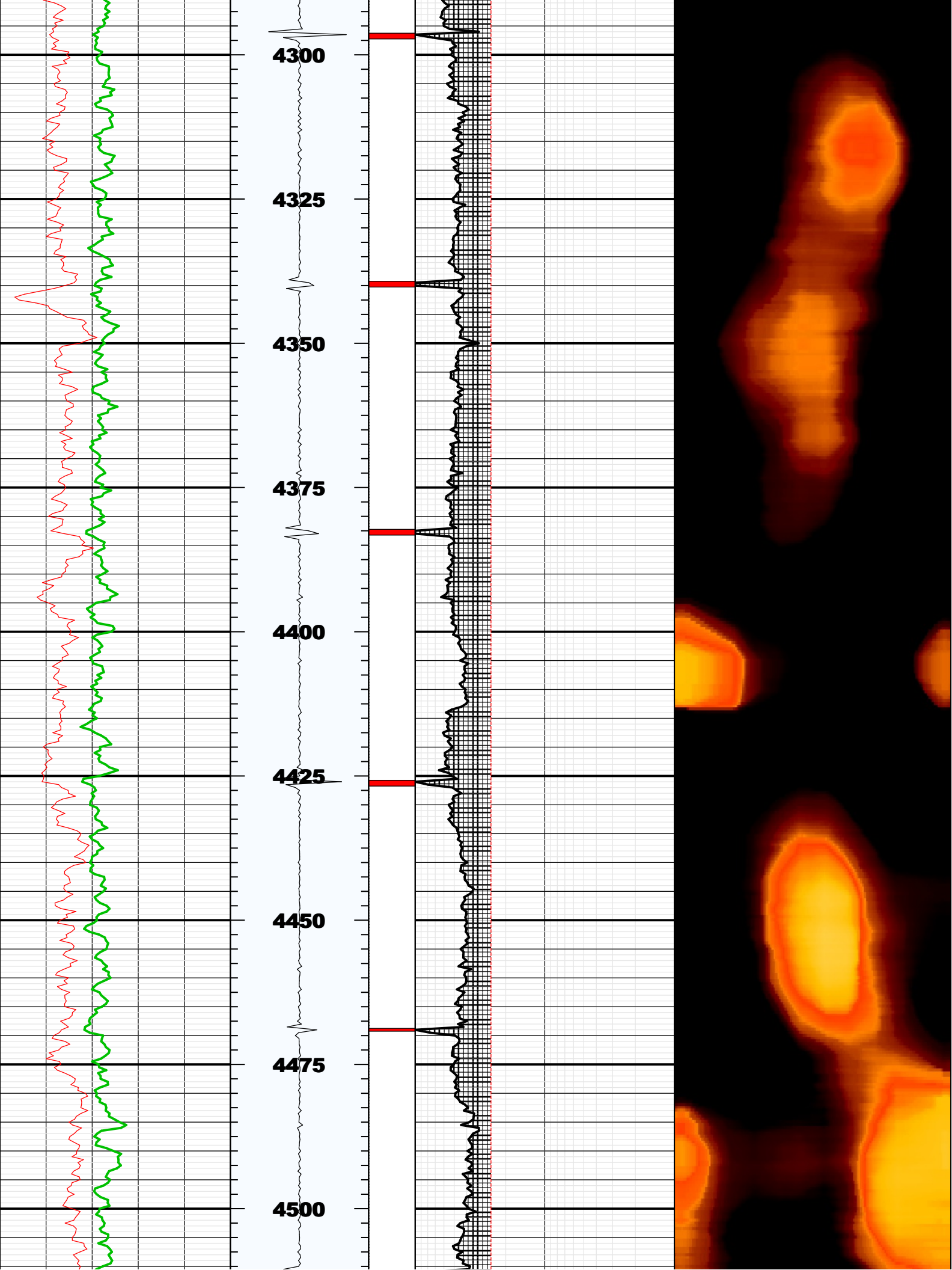


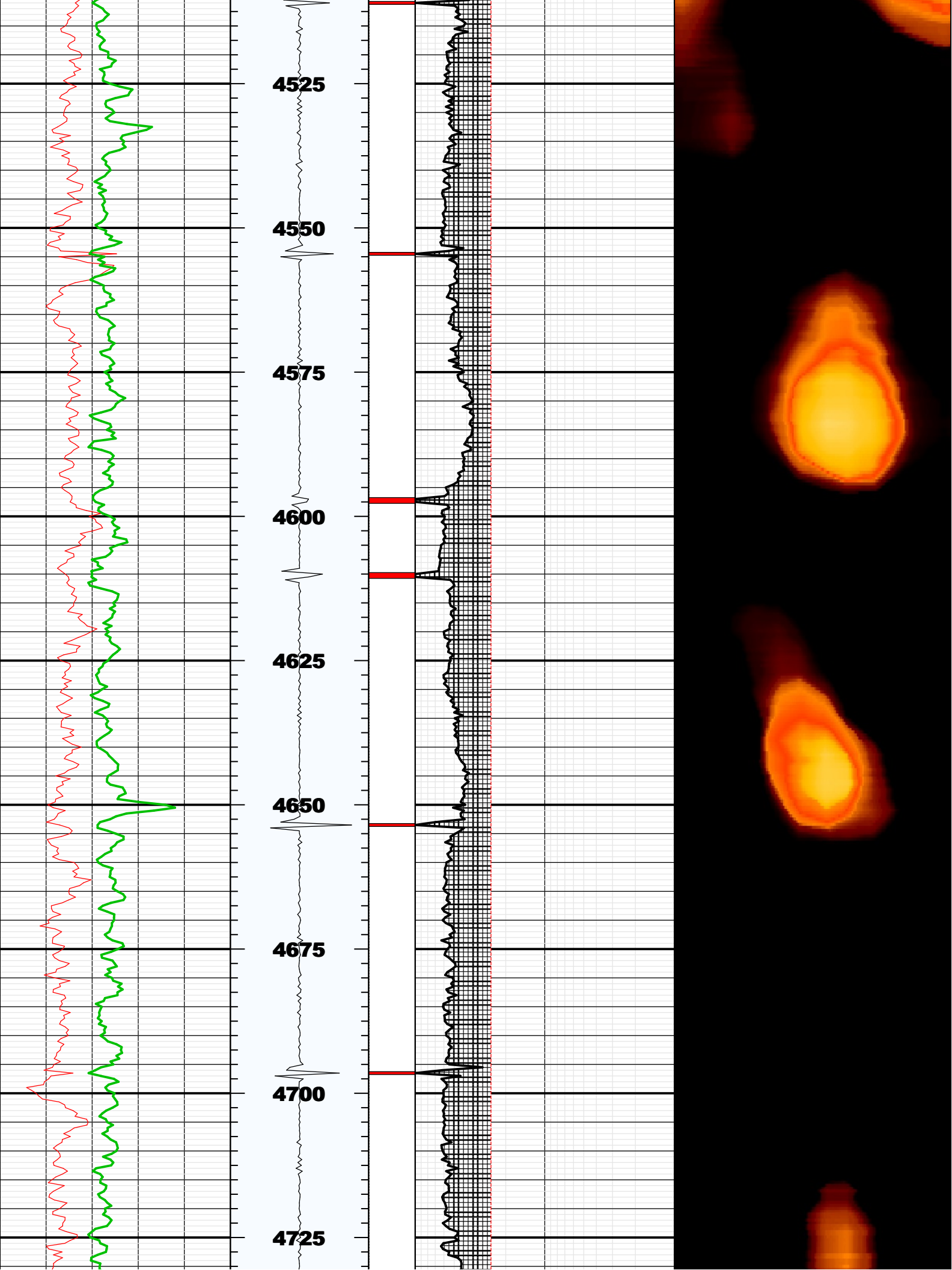




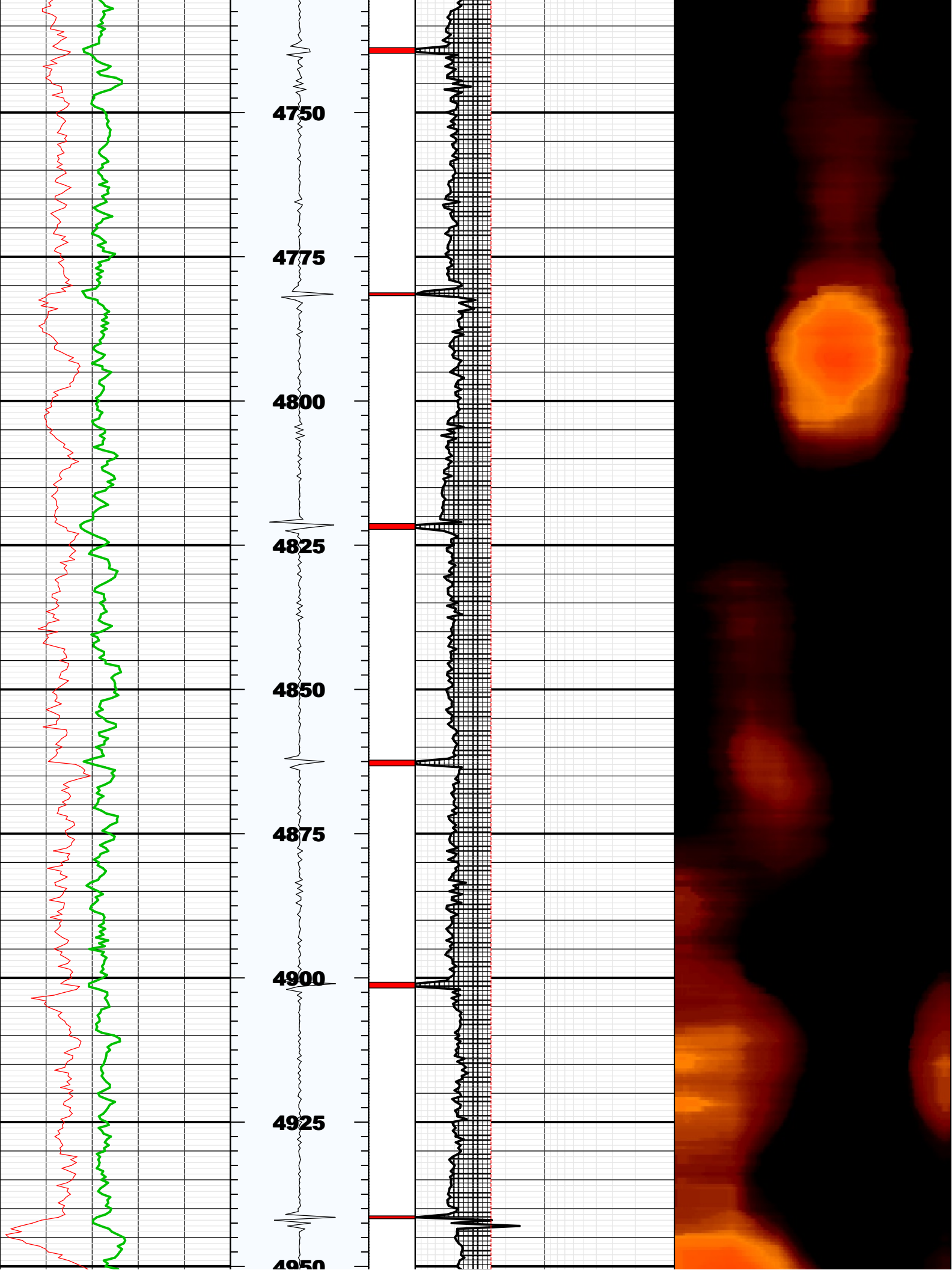


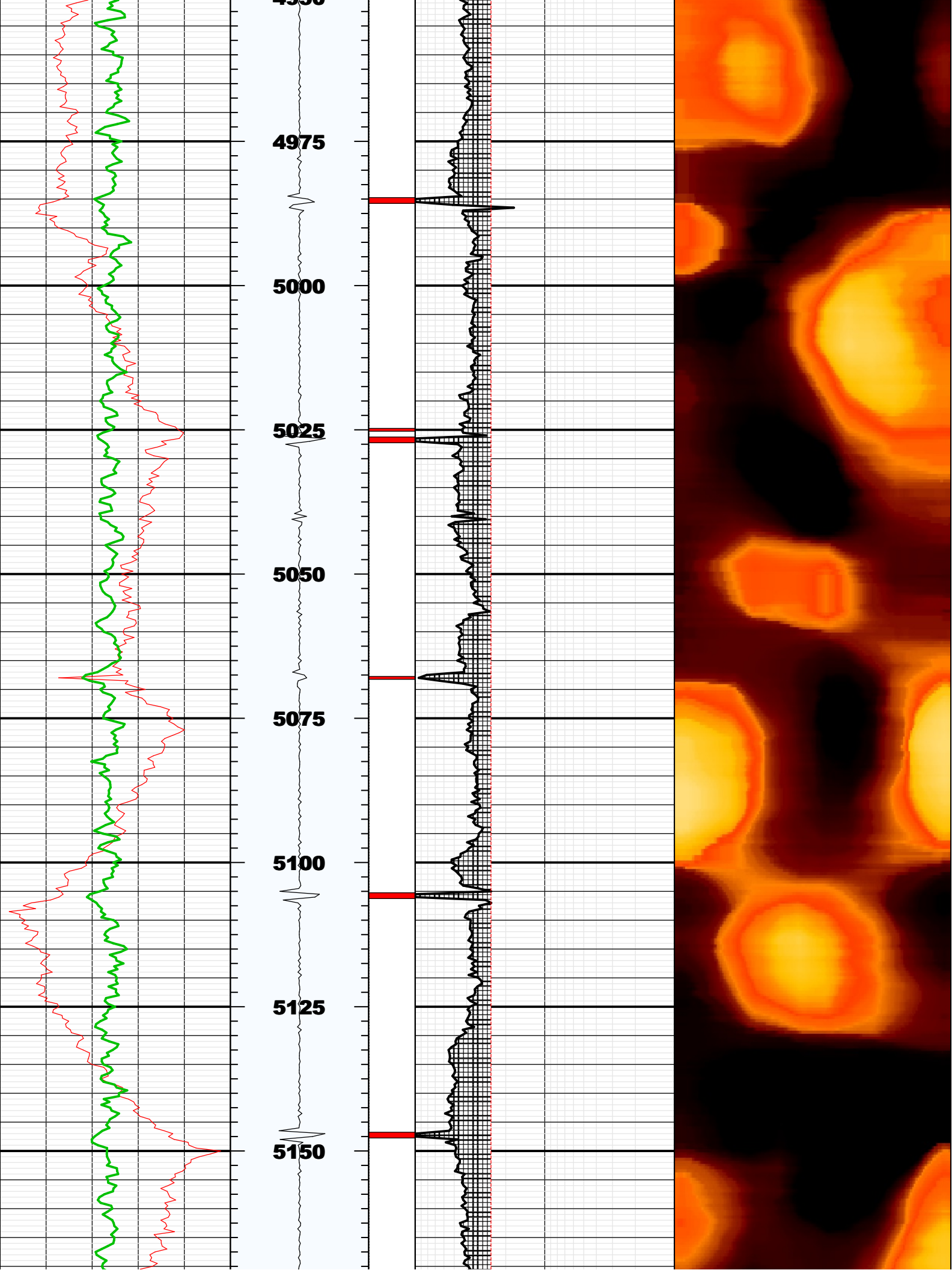


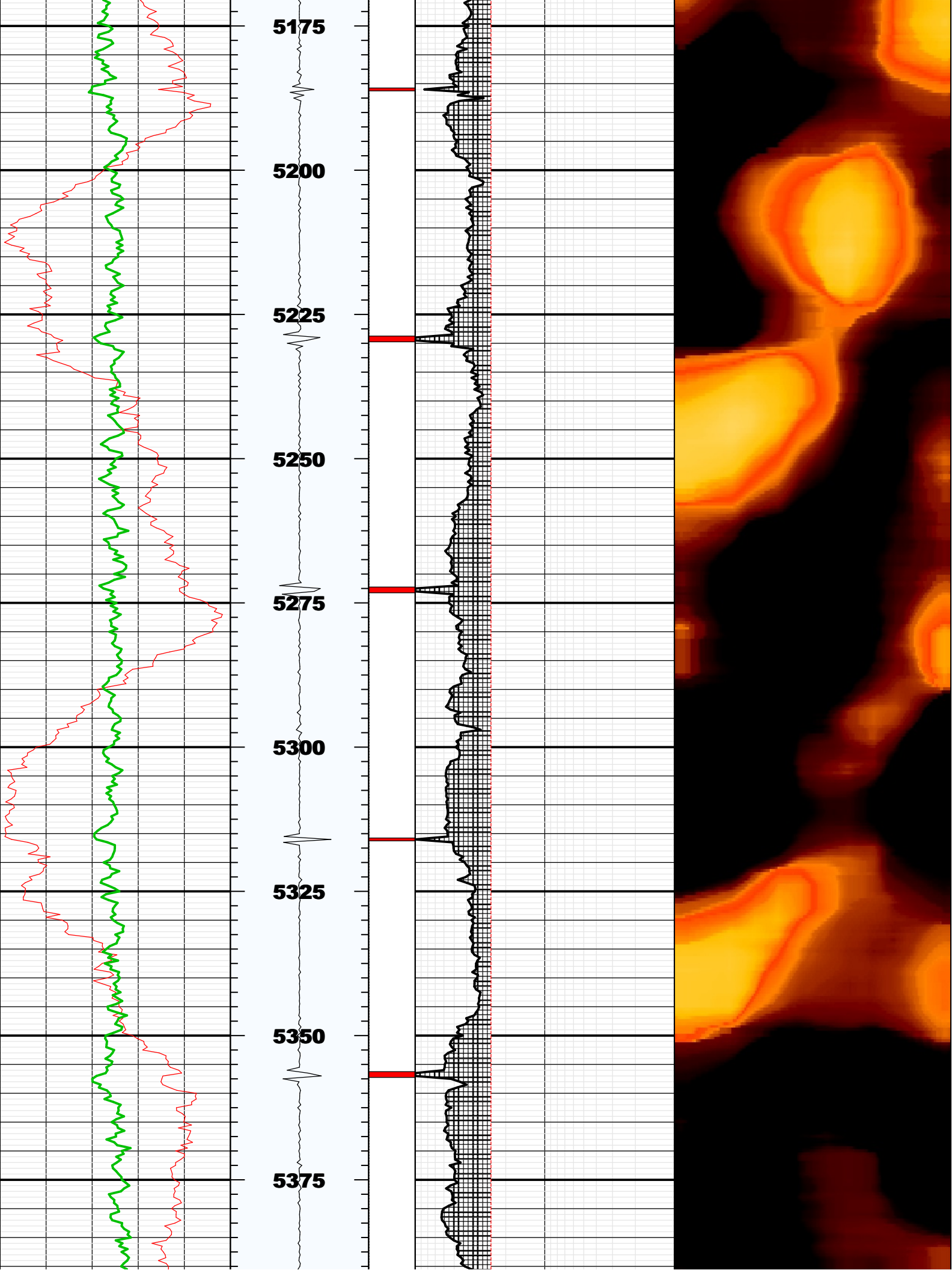


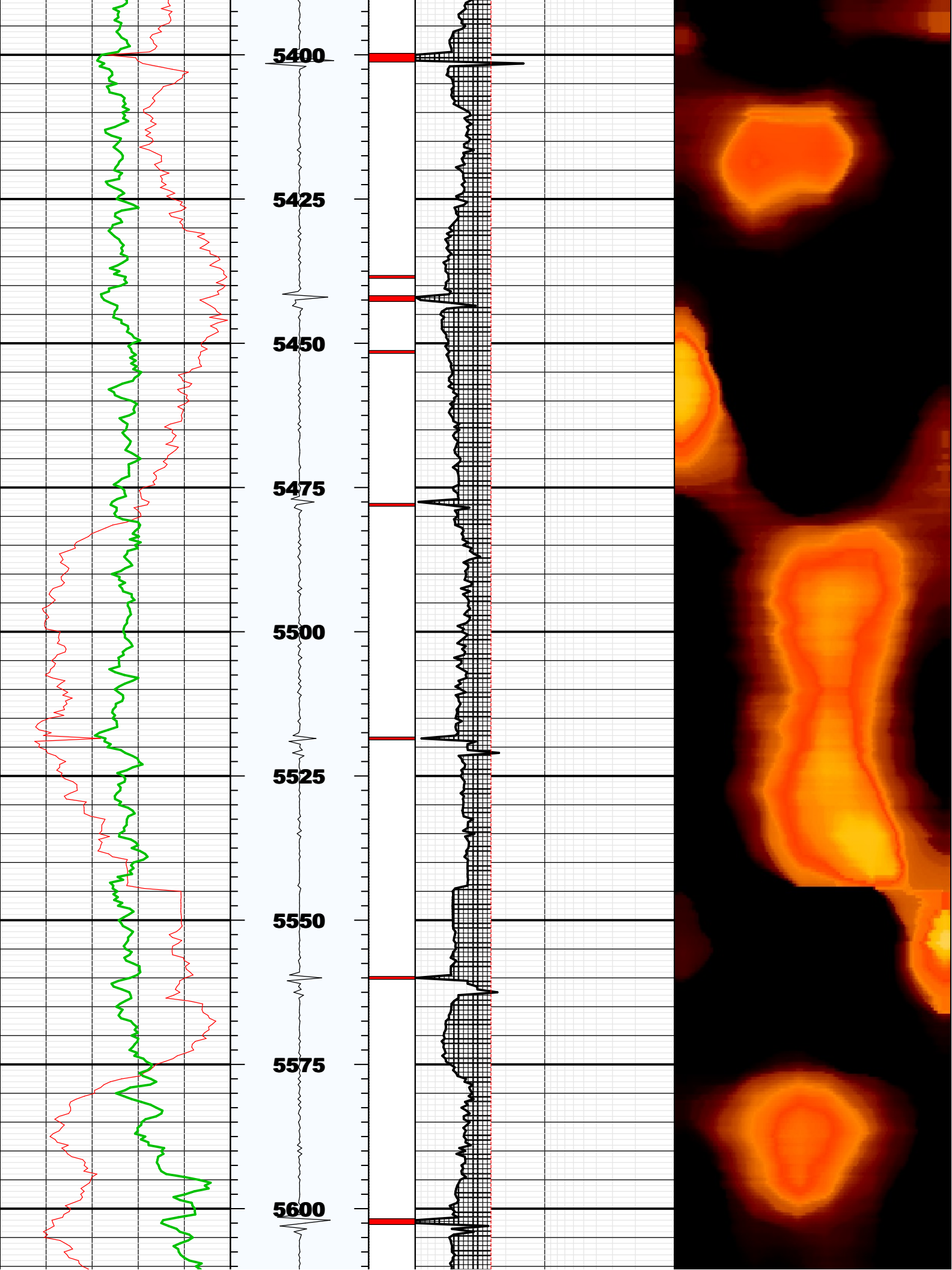




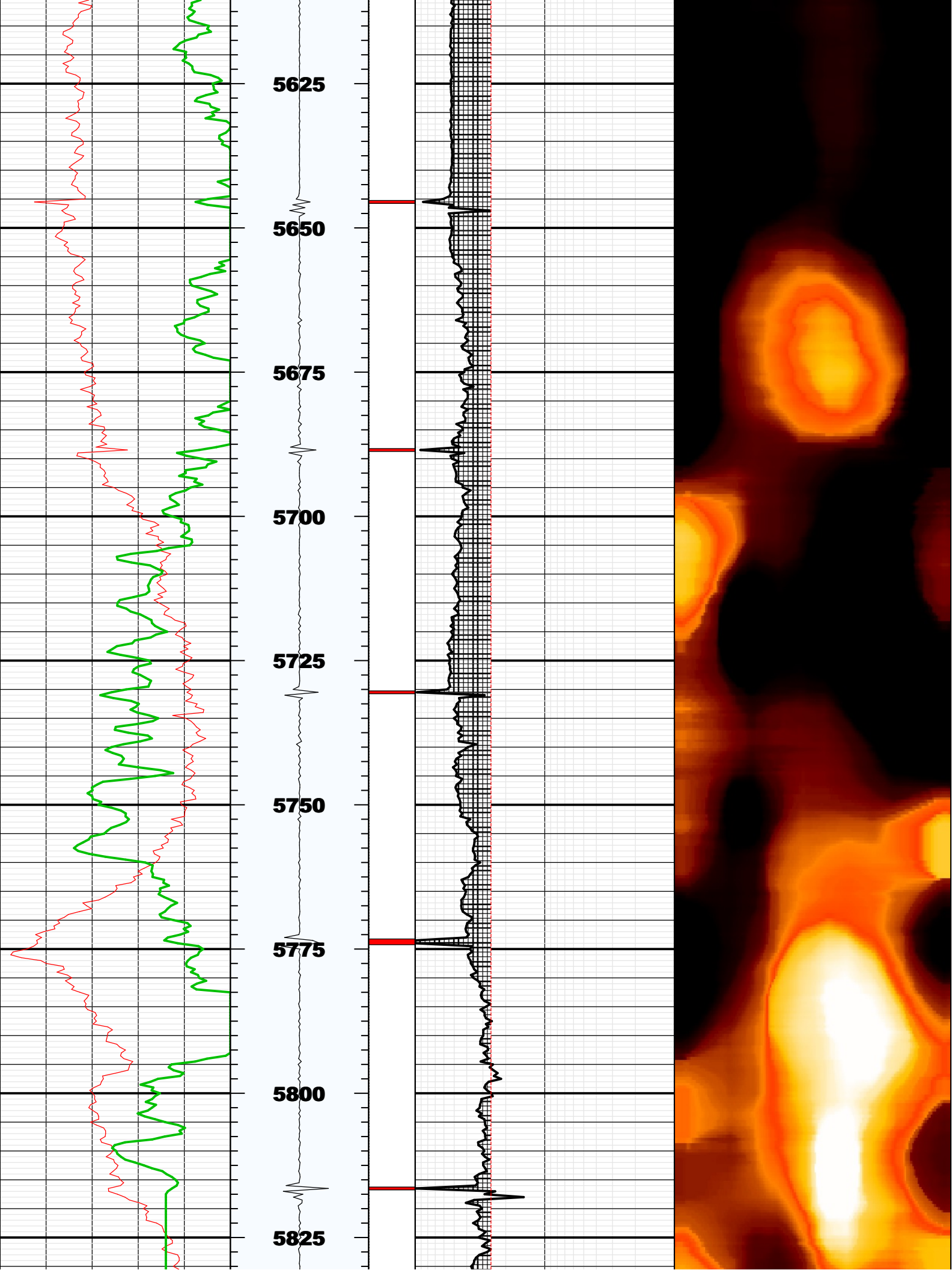


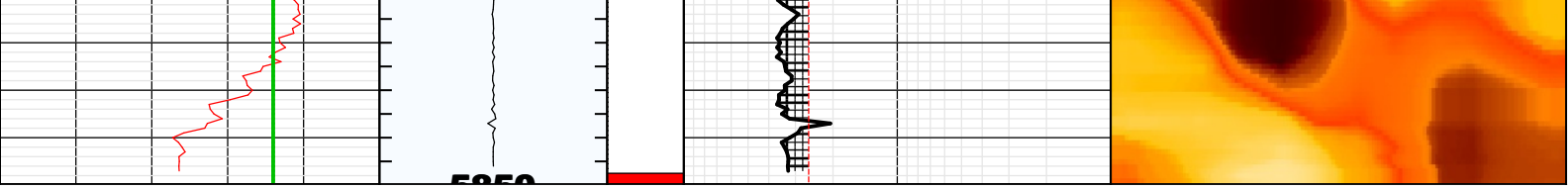








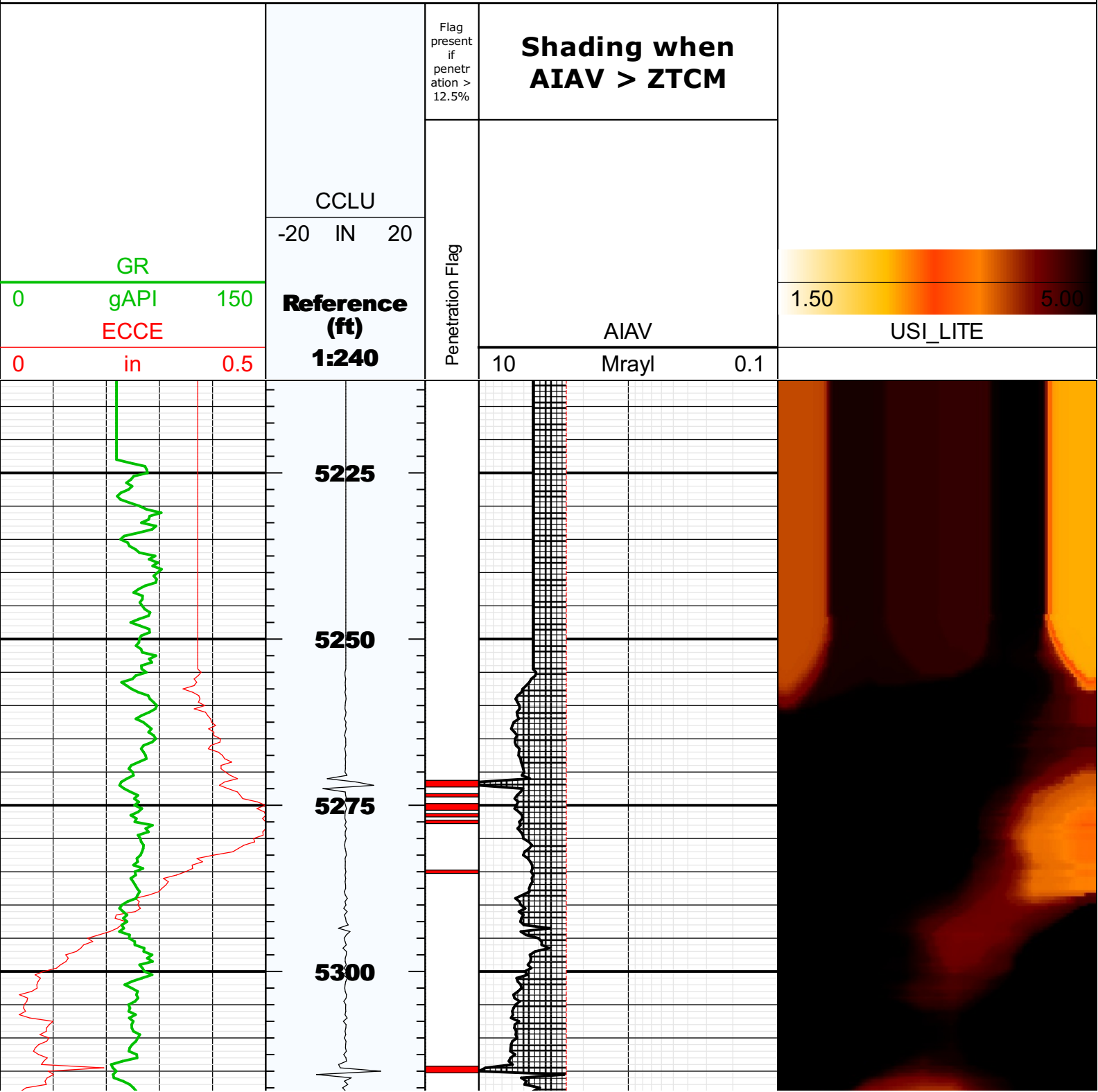




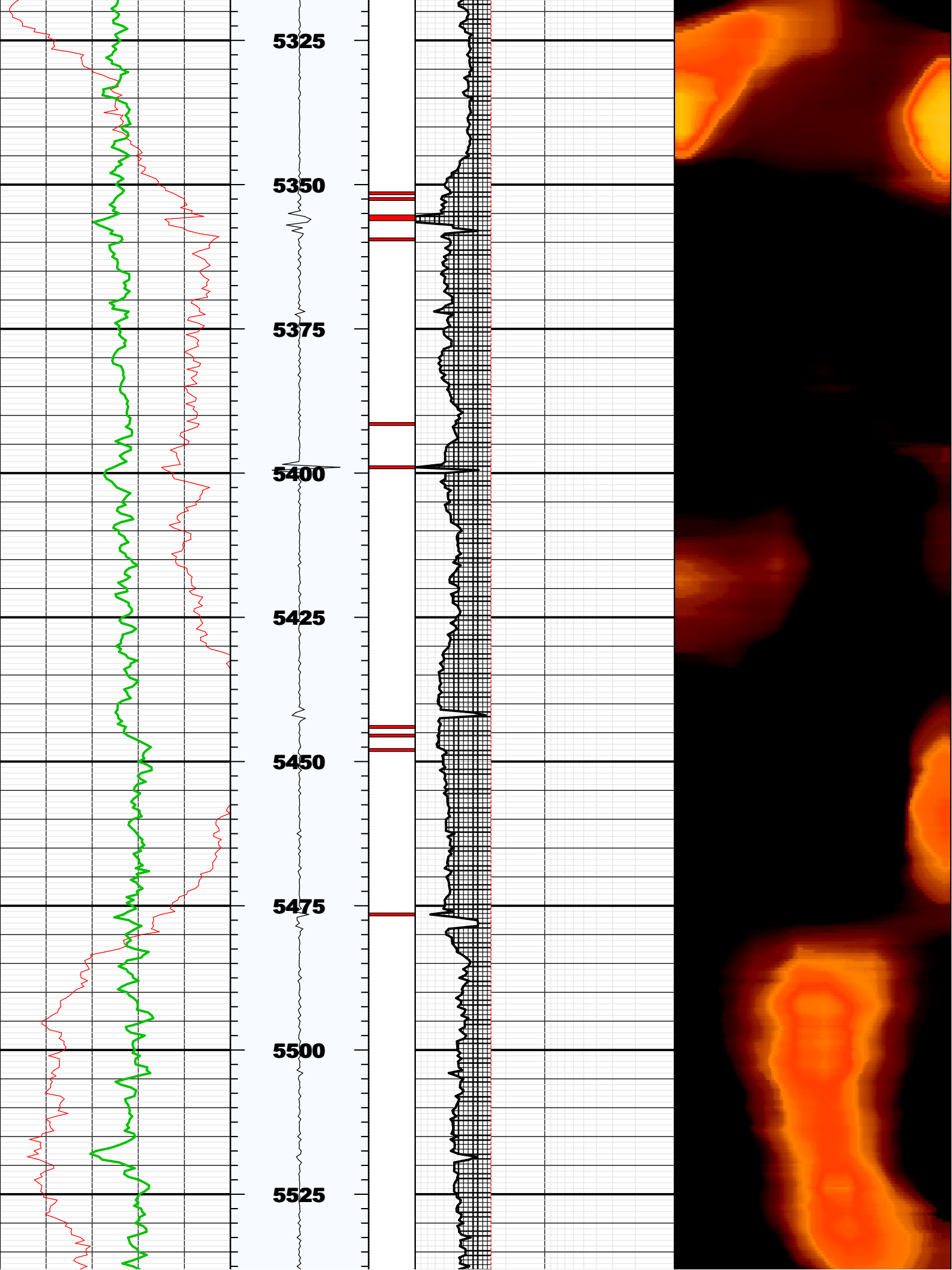
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	190.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	40	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	BRINE		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	30.00000	US	Window Begin Time
WINE	80.00000	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

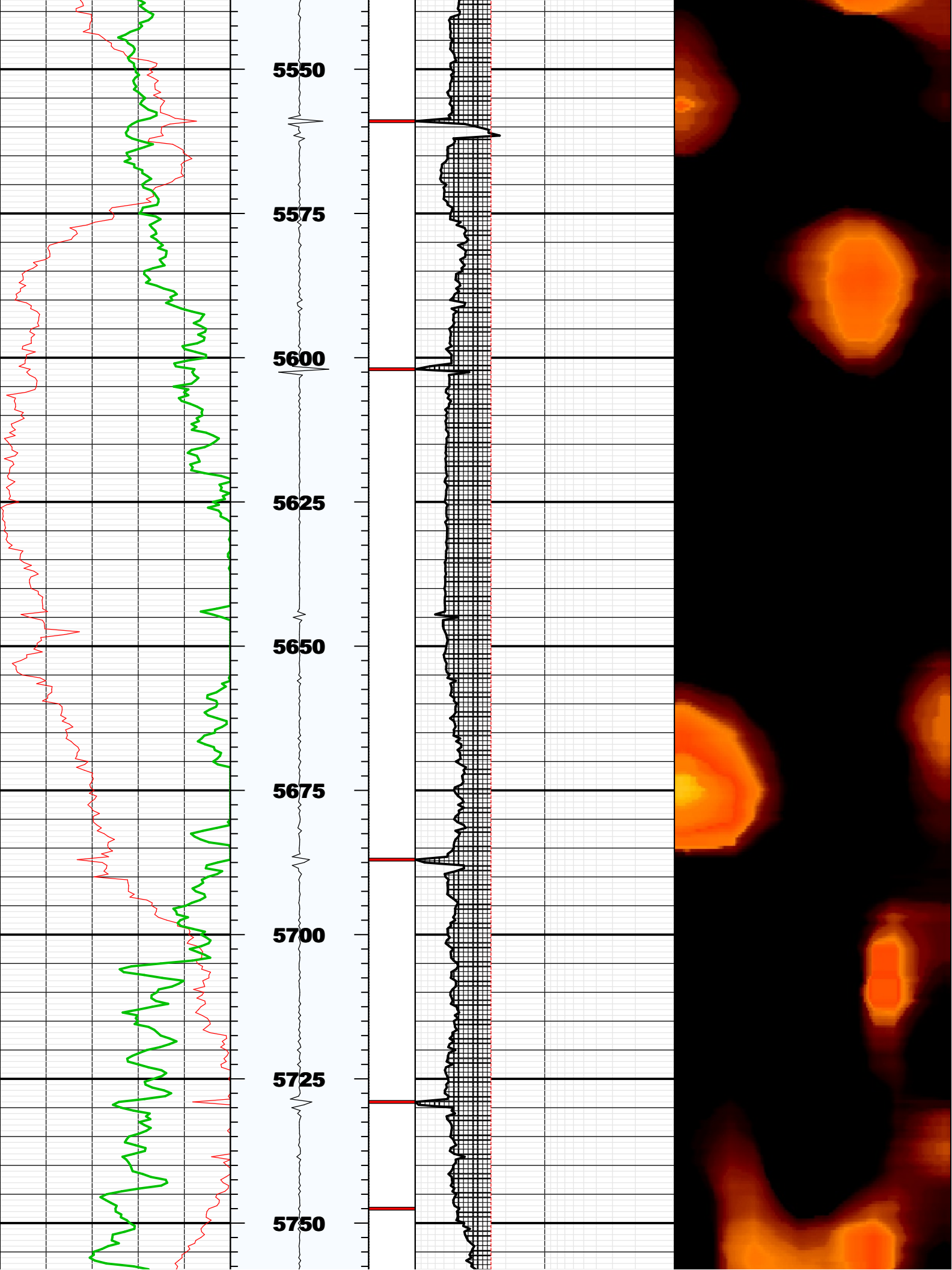
Repeat Pass

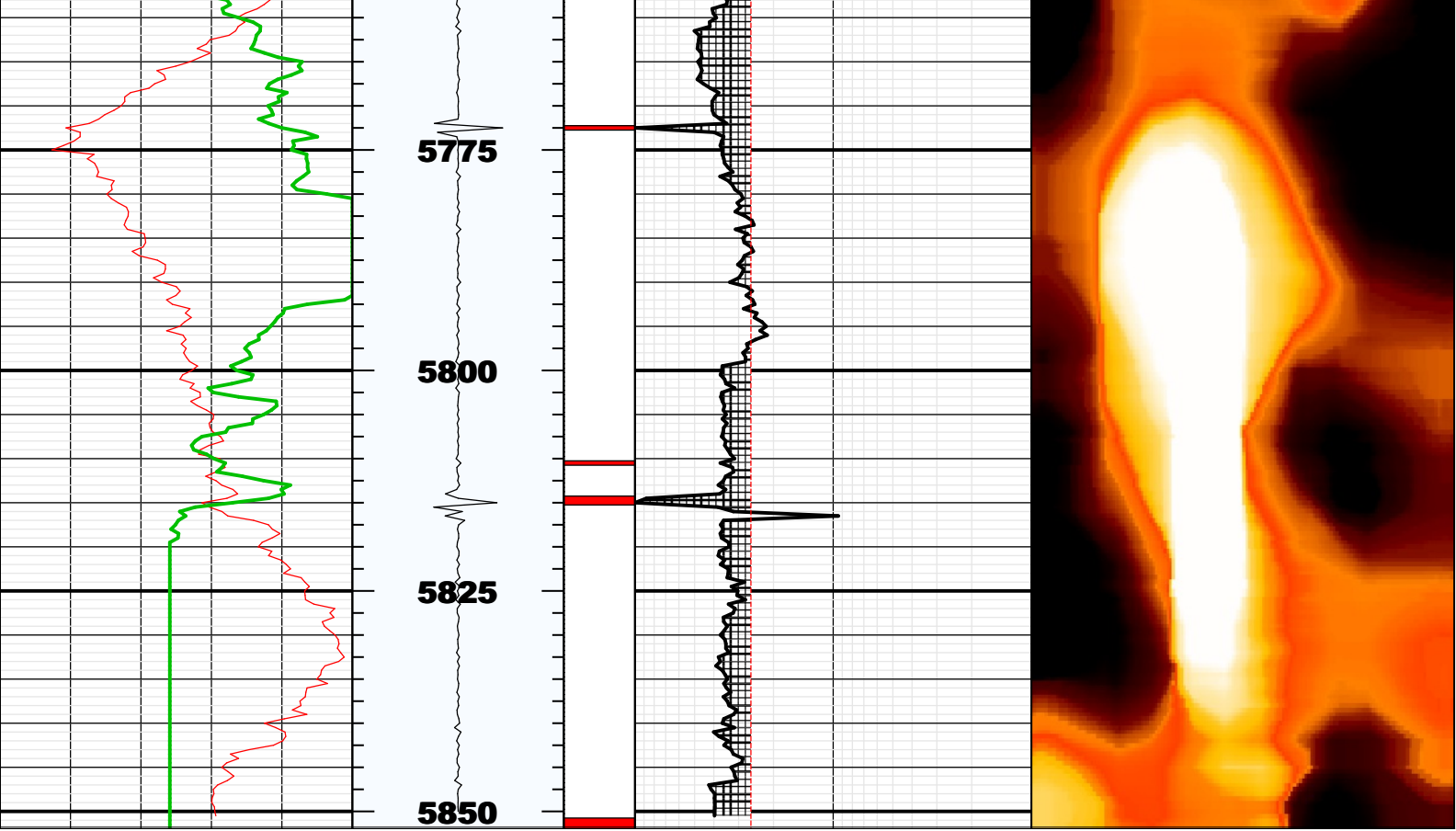
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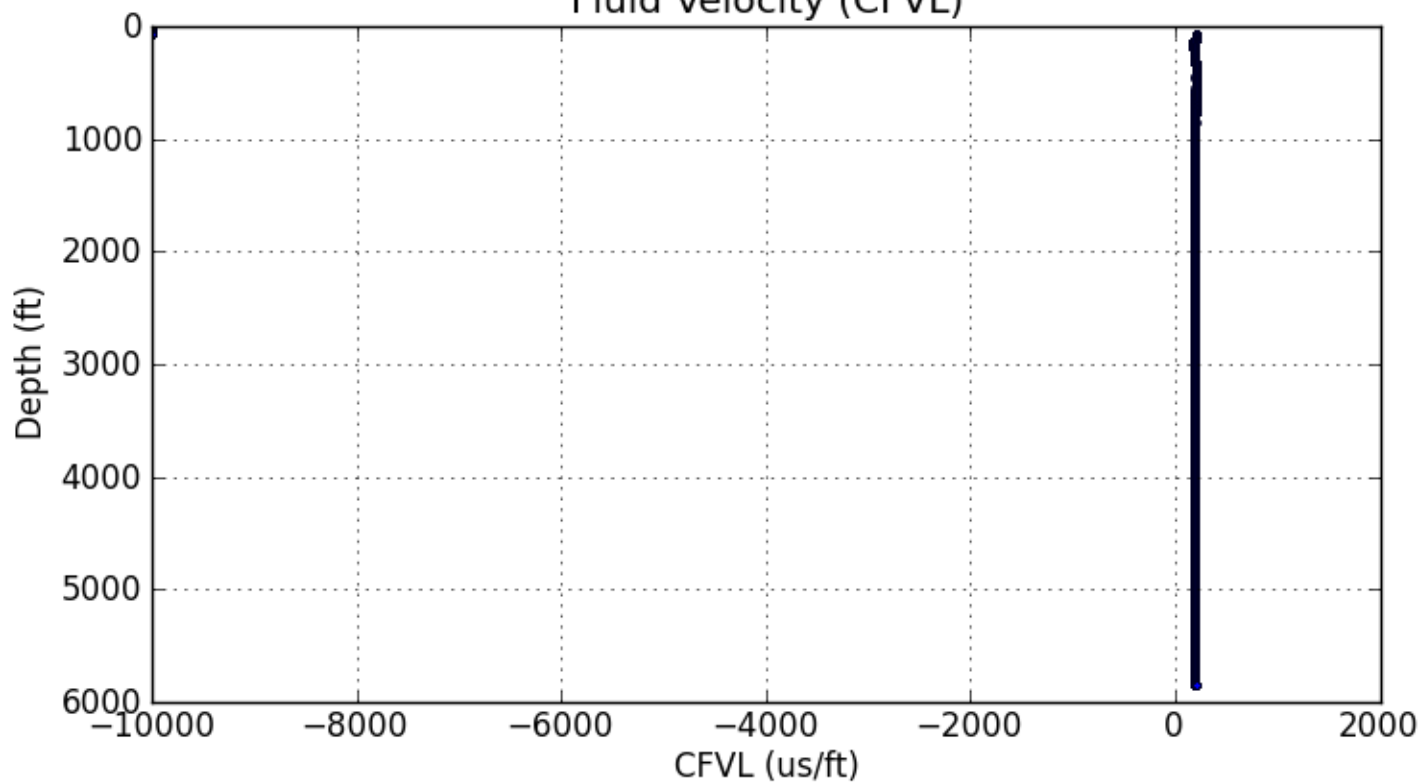






# Fluid Properties Used for Main Pass

## Fluid Velocity (CFVL)



## Acoustic Impedance of Mud (CZMD)

