

Company: Noble Energy Inc

Well: Reliance E23-65-1HC  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld			
Field: Wattenberg			
Location: NESE Sec.23 T6N R65W			
Well: Reliance E23-65-1HC			
Company: Noble Energy Inc			
USI-LITE	LOCATION		
	Permanent Datum: Log Measured From: Drilling Measured From:		
	GL KB KB		
	Elev: K.B. 4725.0 F G.L. 4695.0 F D.F. 4724.0 F		
	API Serial No. 05-123-37603-00		
	Section 23		
	Township 6N		
	Range 65W		
	Logging Date 28-Apr-2015		
	Run Number Run 1		
Depth Driller 7481.0 F			
Schlumberger Depth 7481.0 F			
Bottom Log Interval 7133.0 F			
Top Log Interval 15.0 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 819.0 F			
To 7481.0 F			
Casing Size 7.00 IN			
Weight 26.00 LB/F			
Grade P110			
From 0.0 F			
To 7470.6 F			
Max Recorded Temp 250.5			
Logger on bottom (date) 28-Apr-2015			
Location Ft. Morgan CO			
Recorded By Aleksei Bekhterev			
Witnessed By Luke Hinrichs			

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: 17200.00000

DISCLAIMER

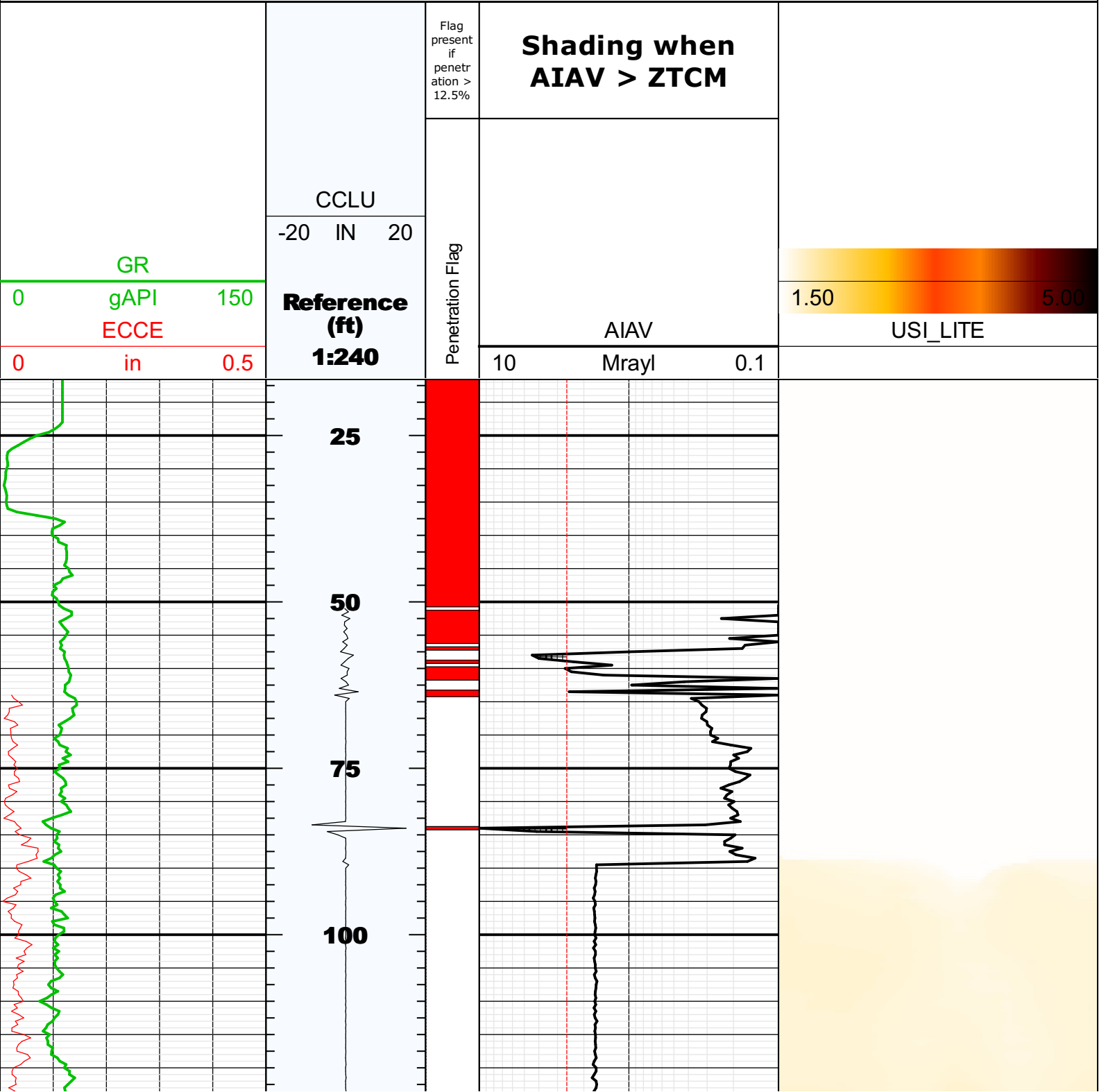
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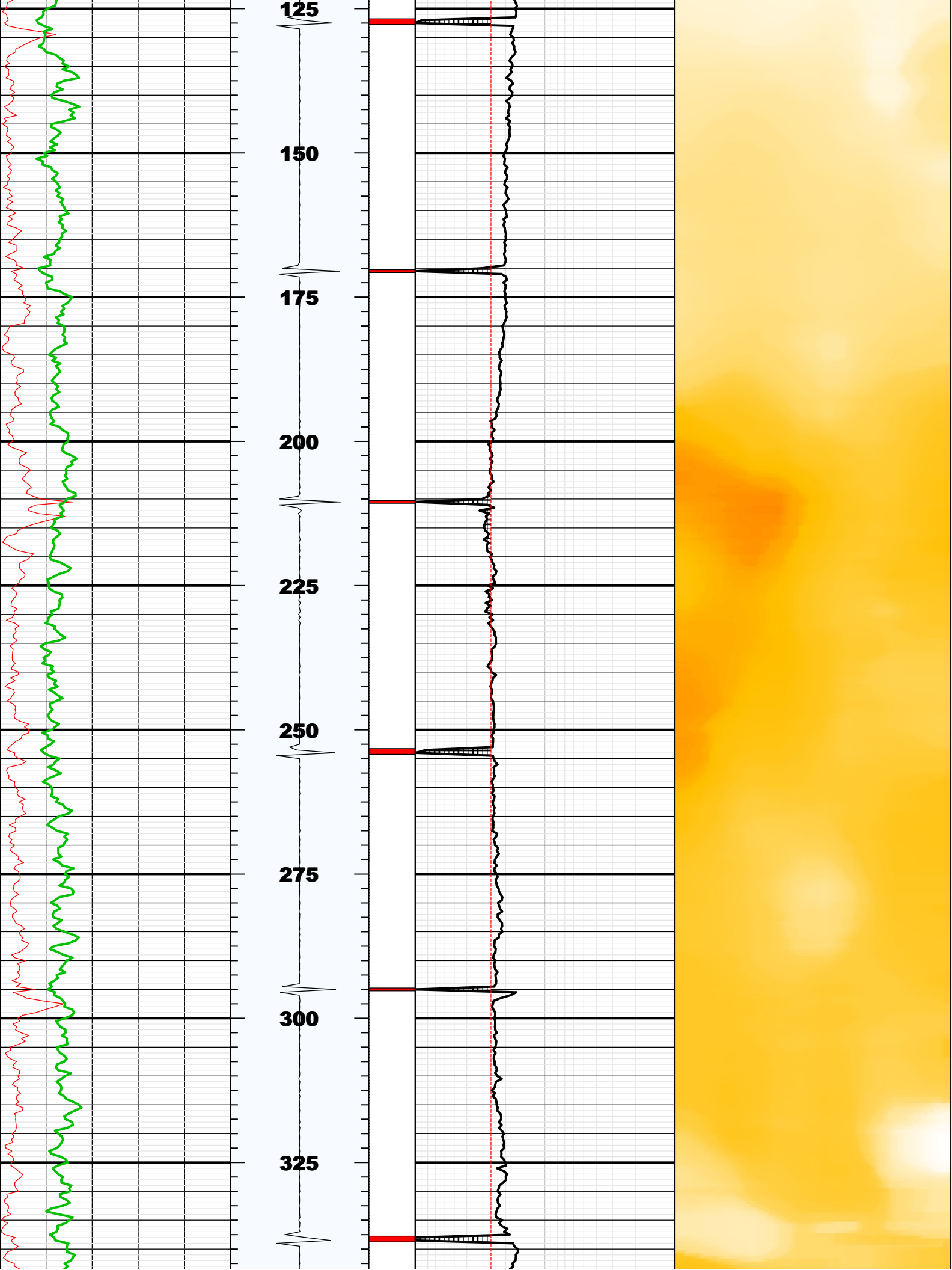
Toolstring ran as per tool sketch  
13.5 single slurry cement  
Repeat pass is done with no pressure  
Main pass is done under 2500 psi (maintained by rig pumps)  
Unable to go deeper than 7133 ft - confirmed with client to start the log from 7133'  
Temperature at the bottom 250.5 degF  
Top of the cement 1290 ft

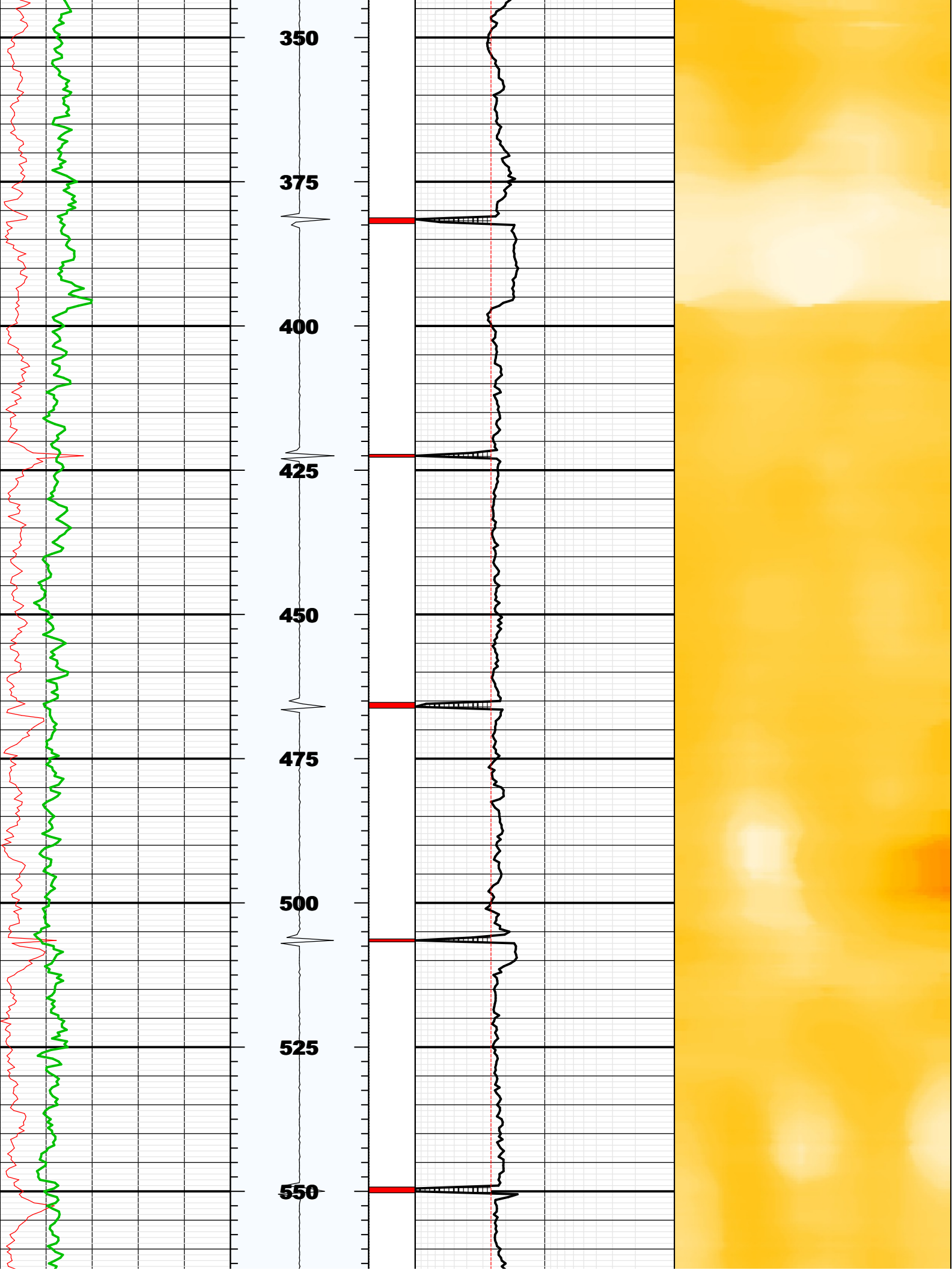
Crew Tim Ludgate Jay Musgrave Ian Derry  
Thank you for choosing Schlumberger Wireline!

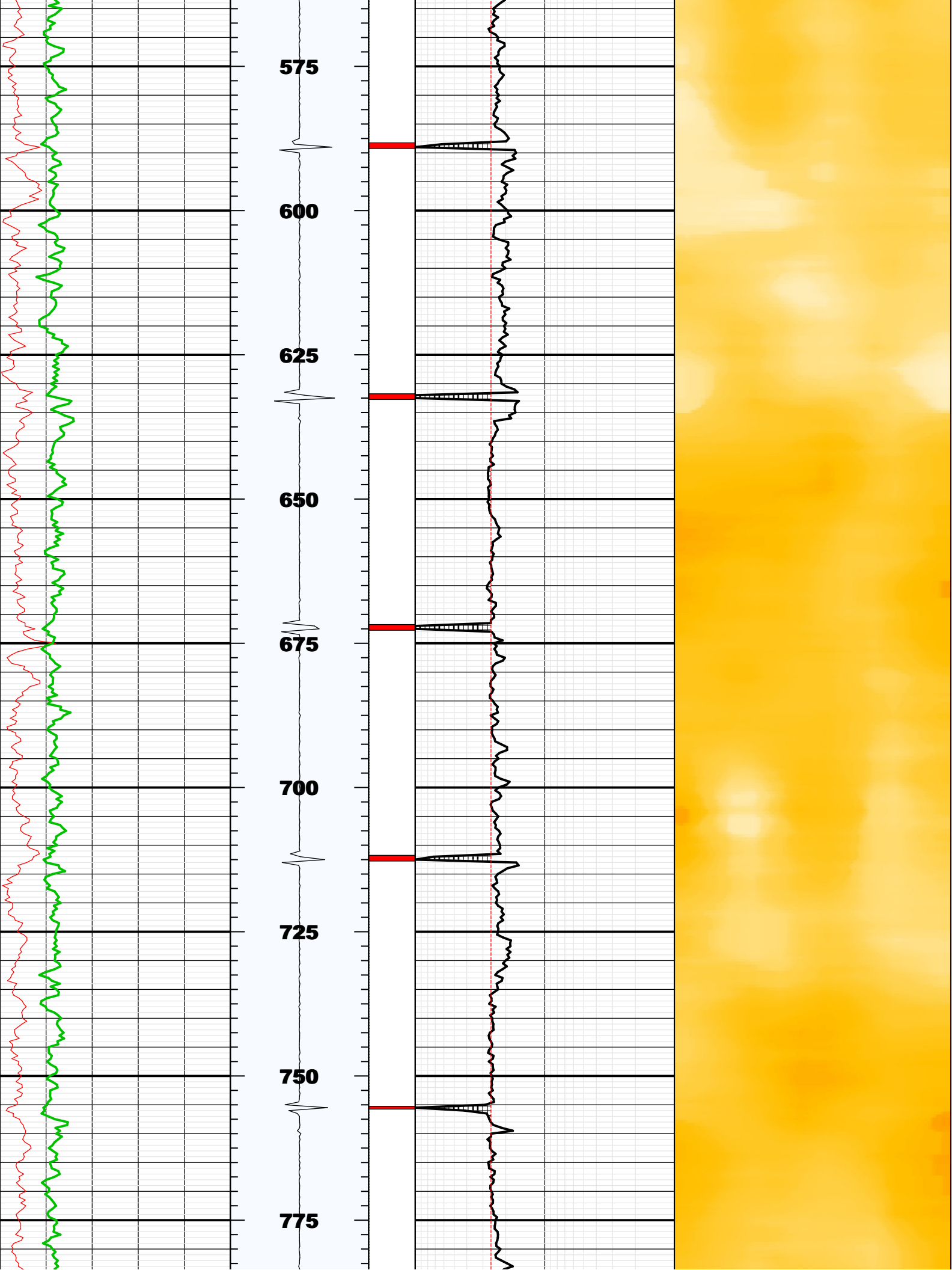
Main Pass

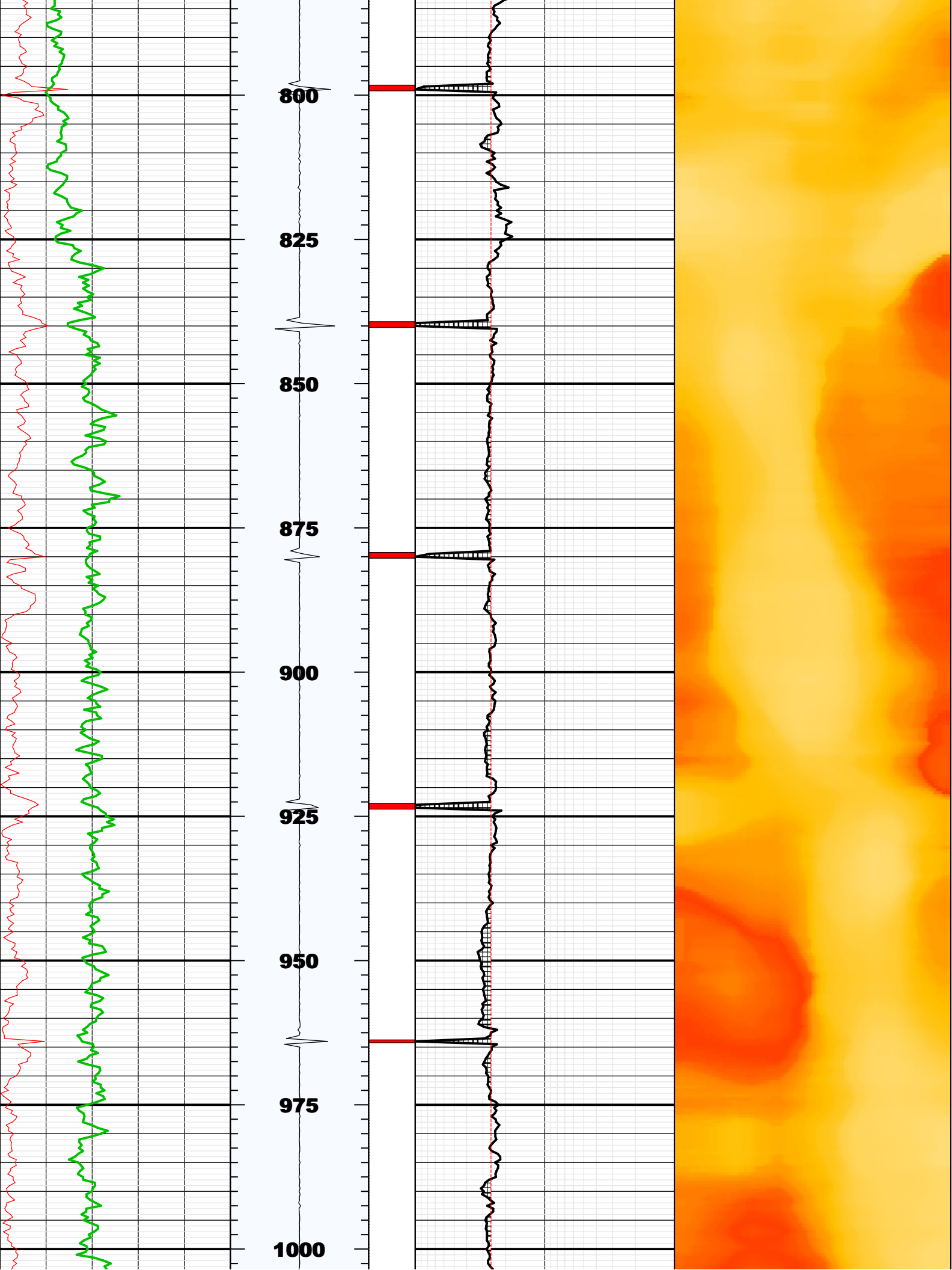
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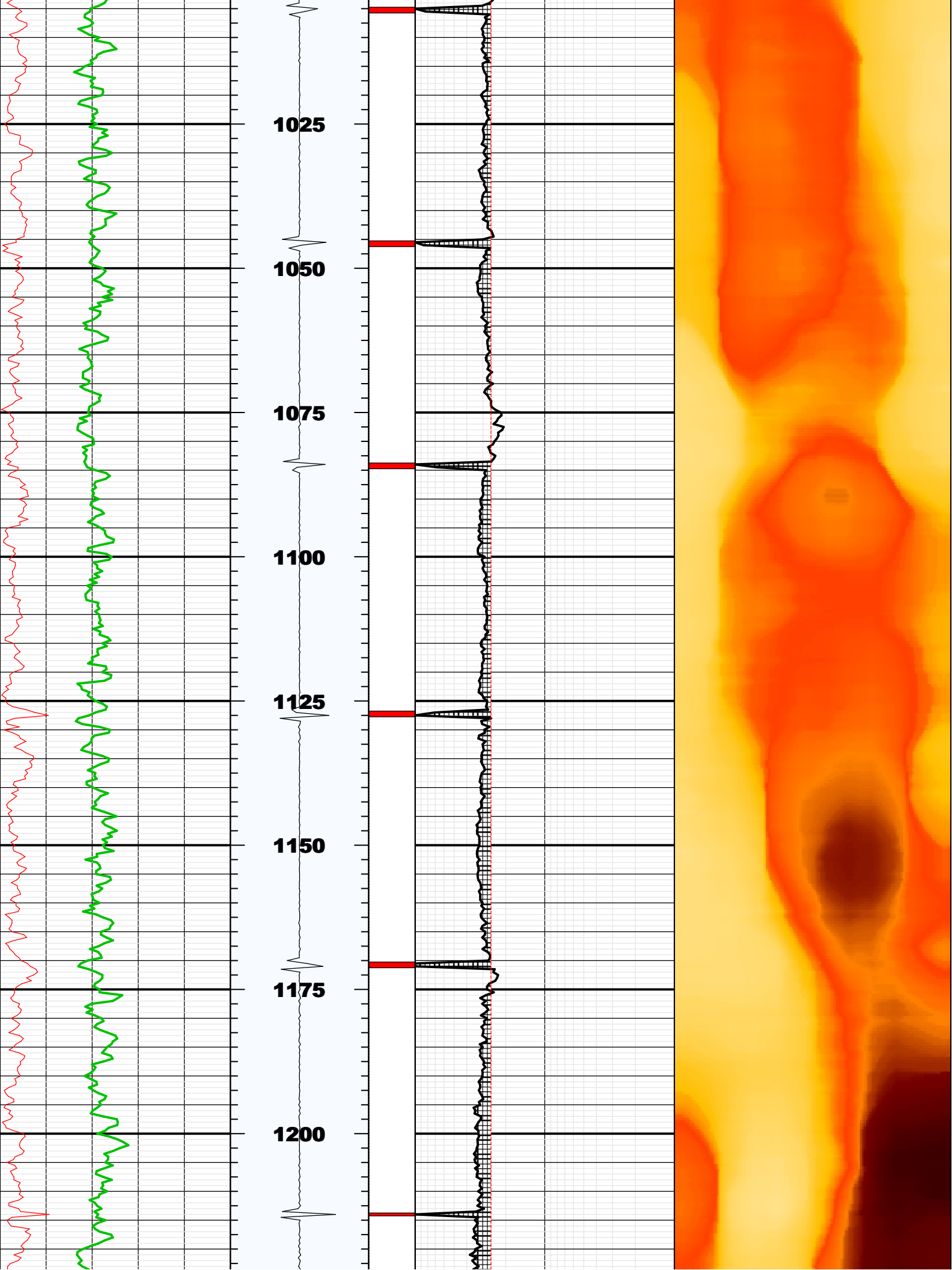




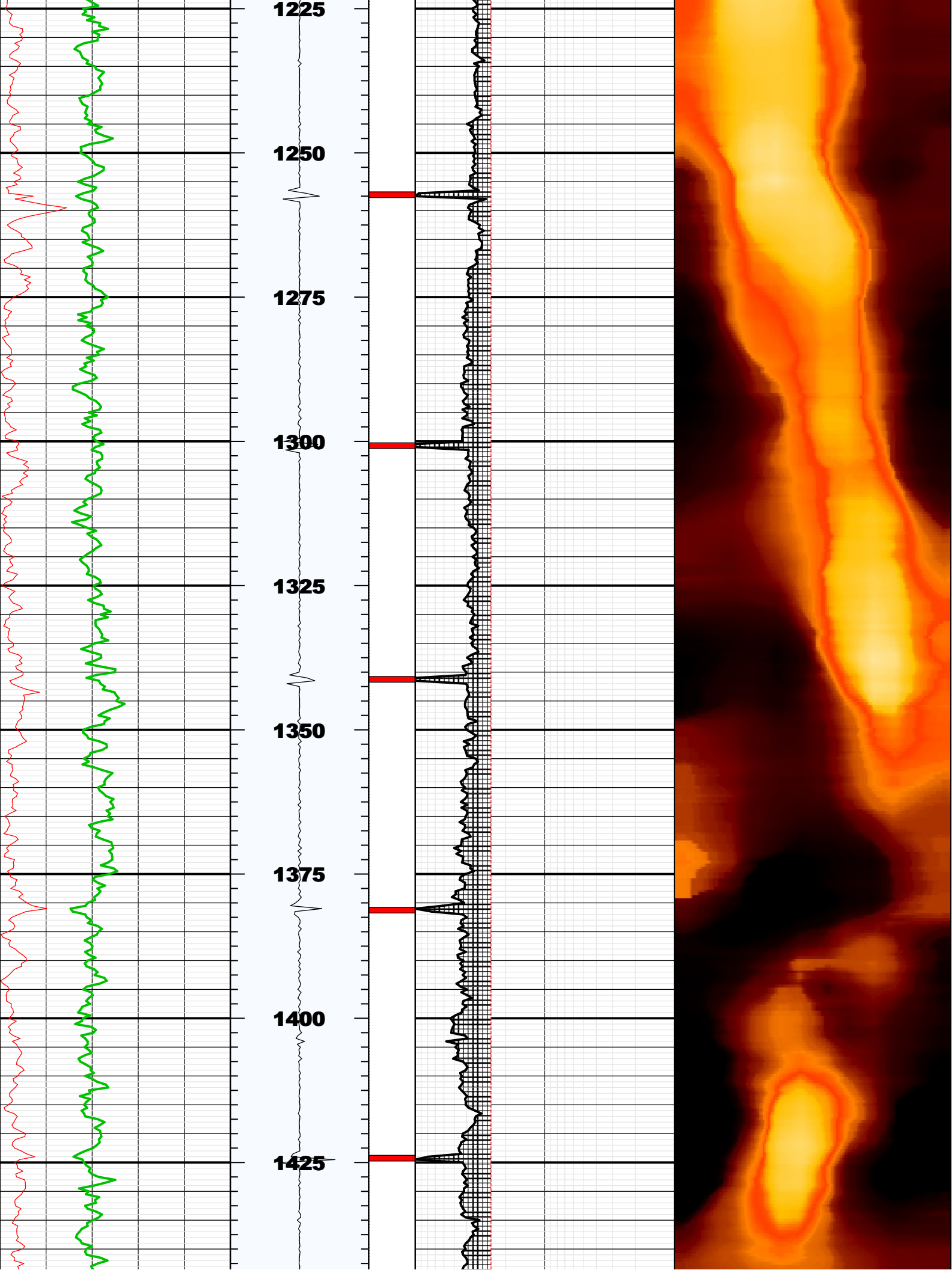


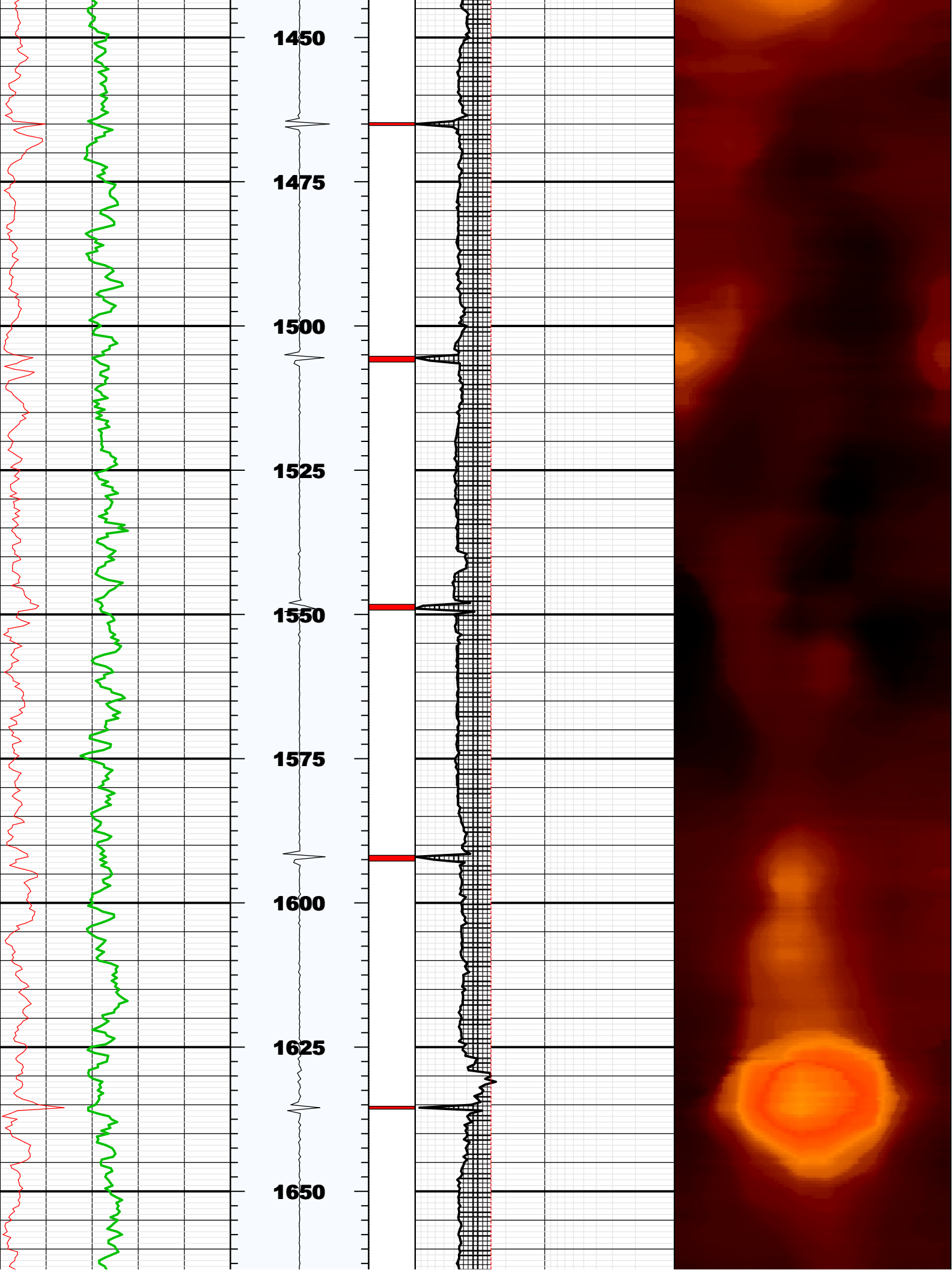


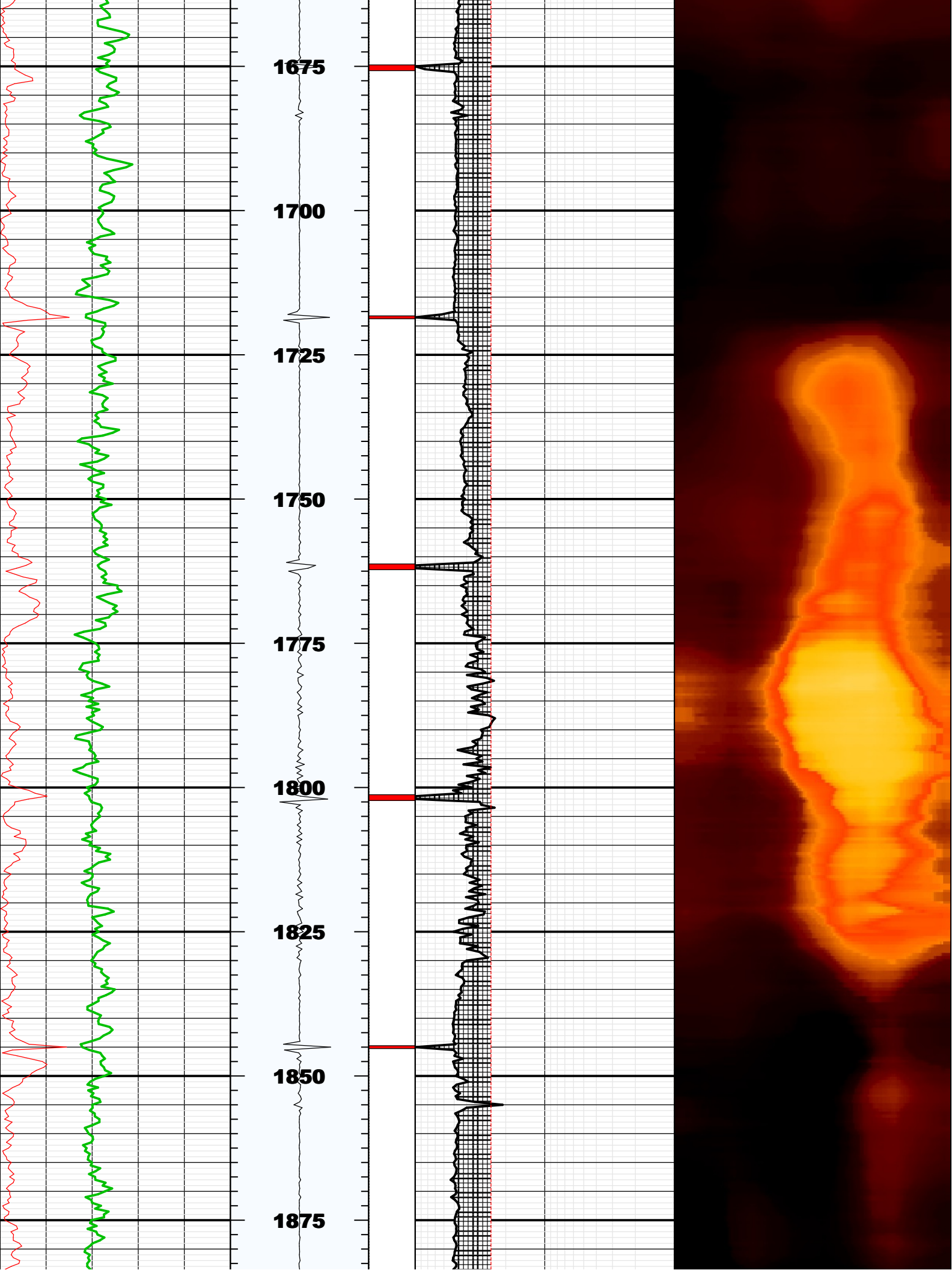


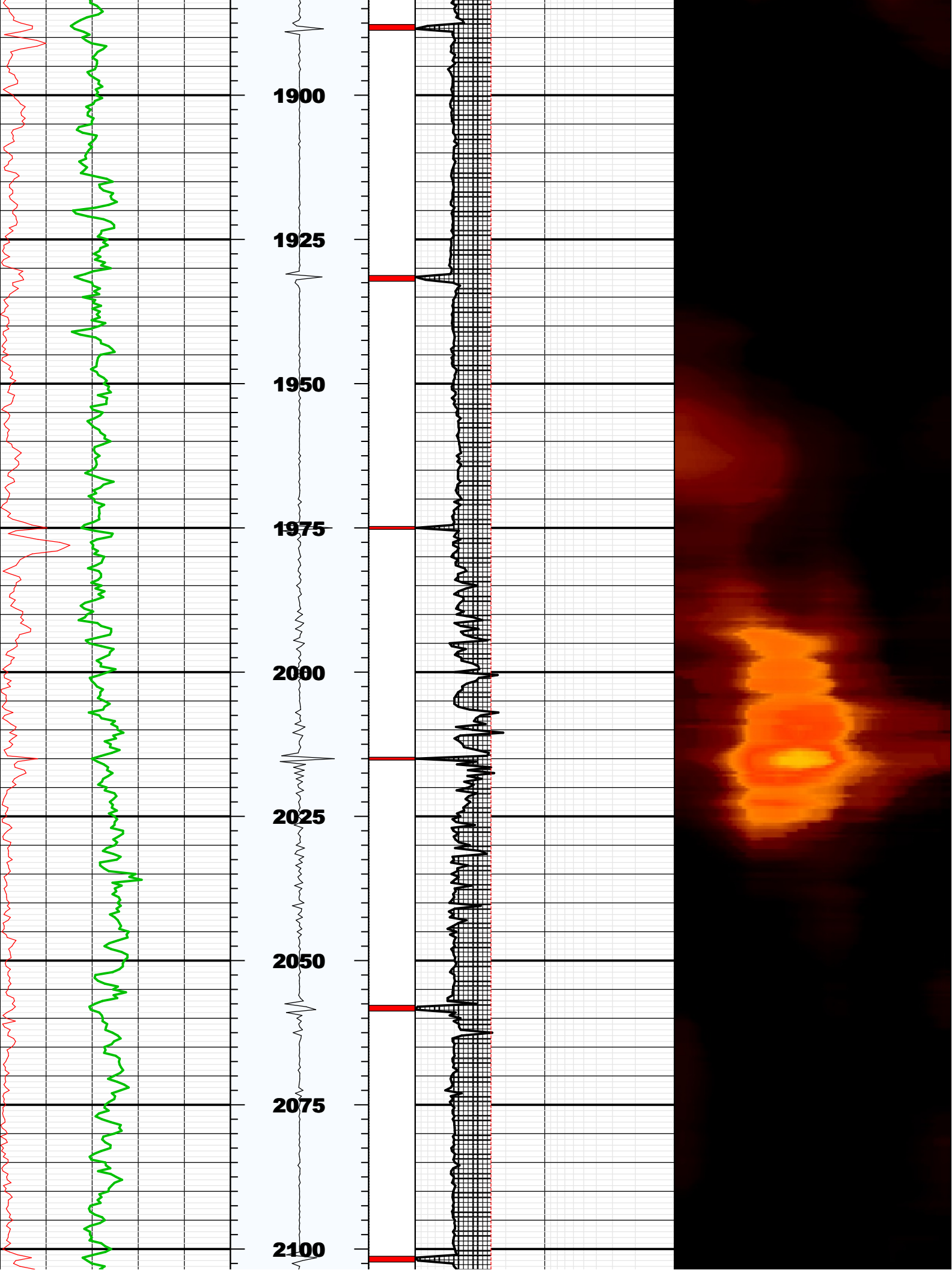


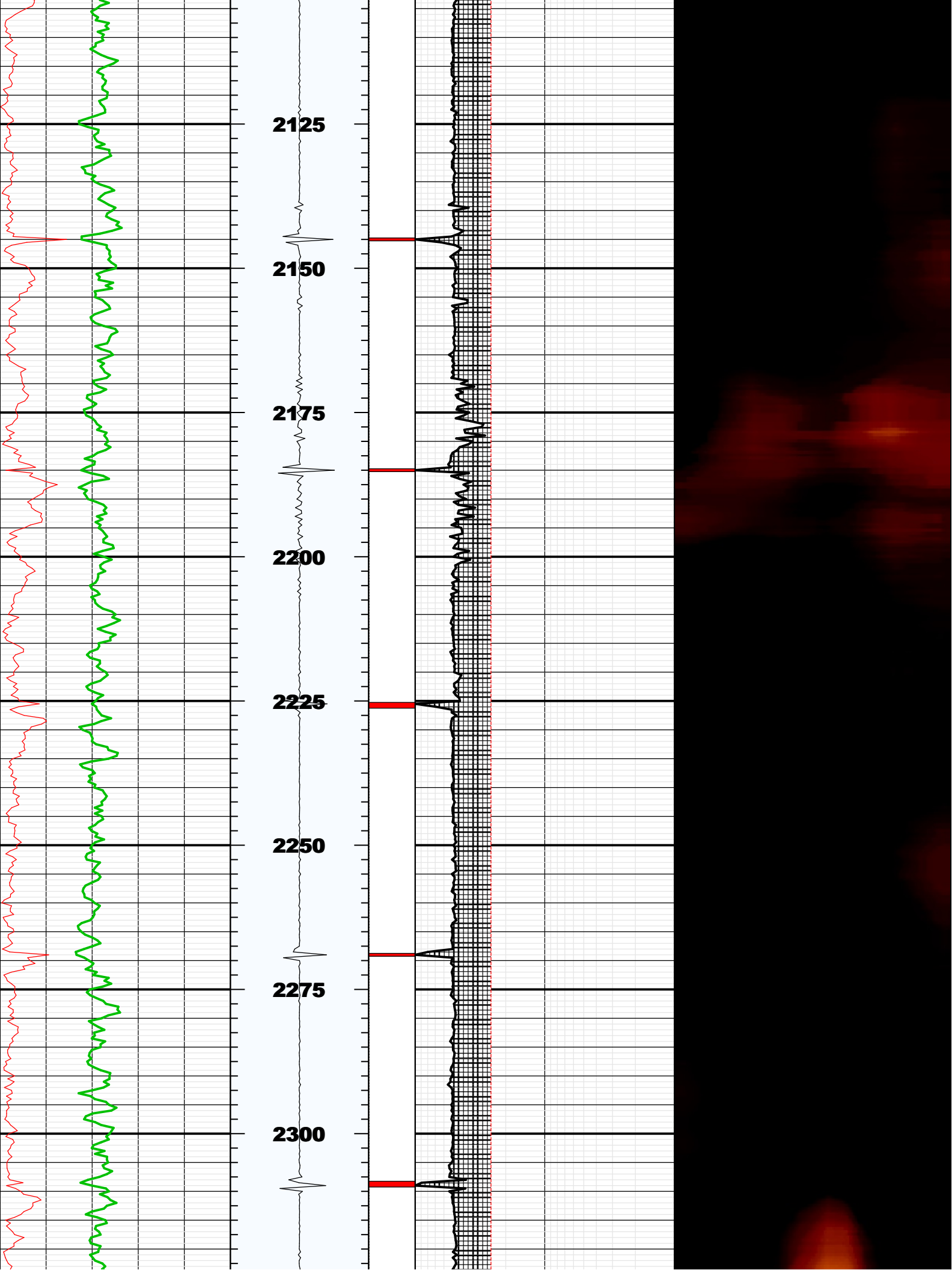




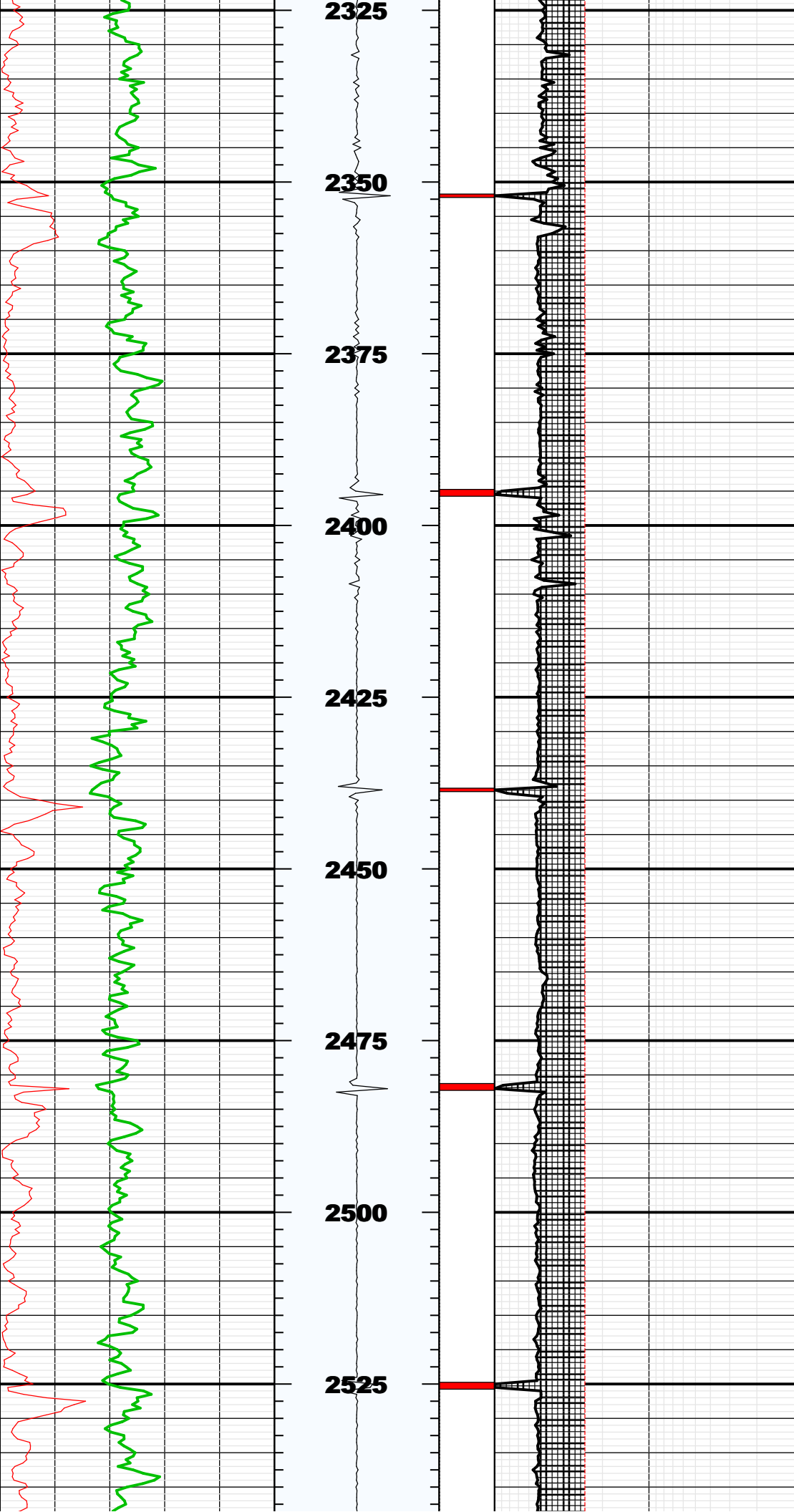


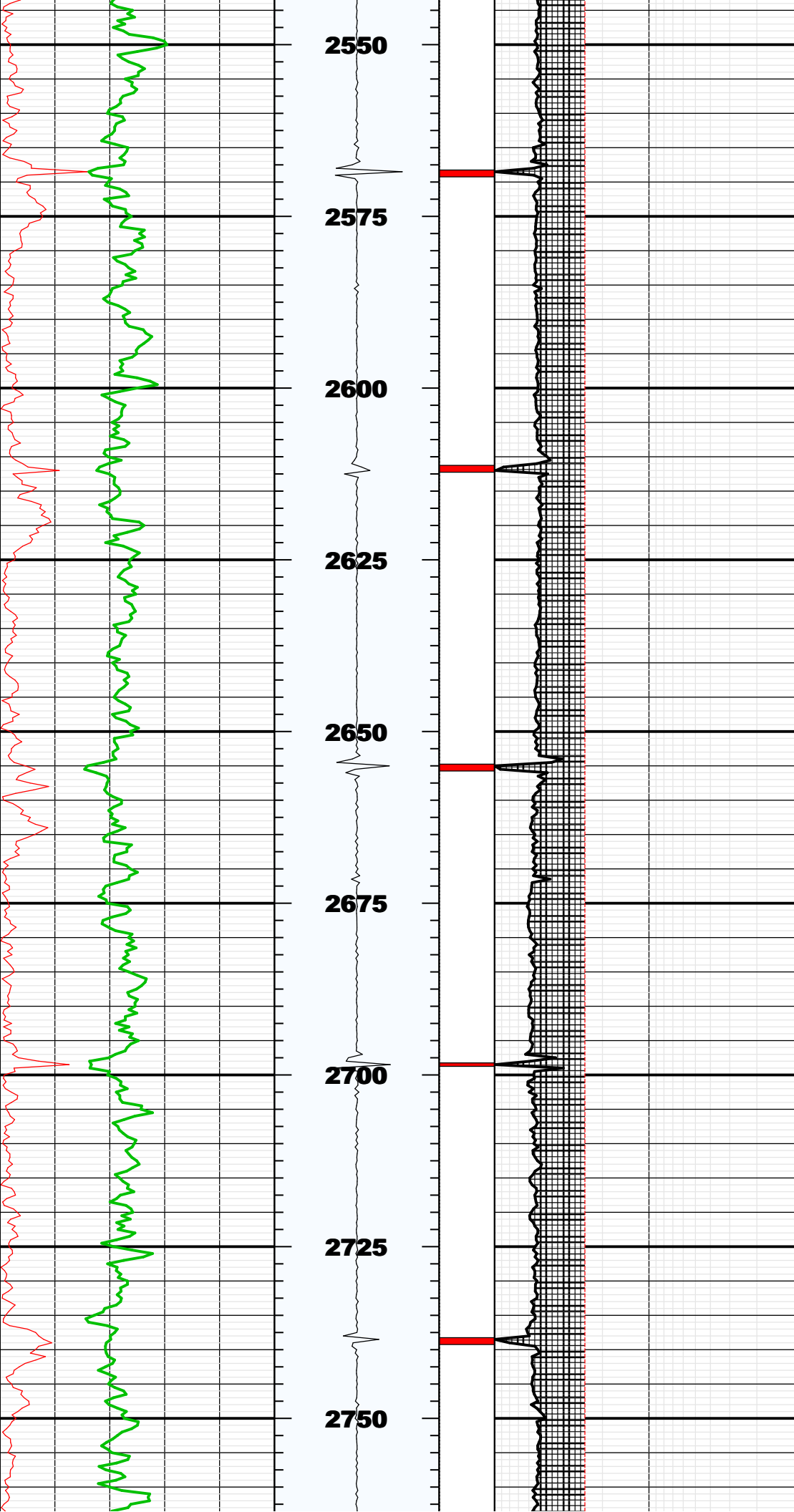




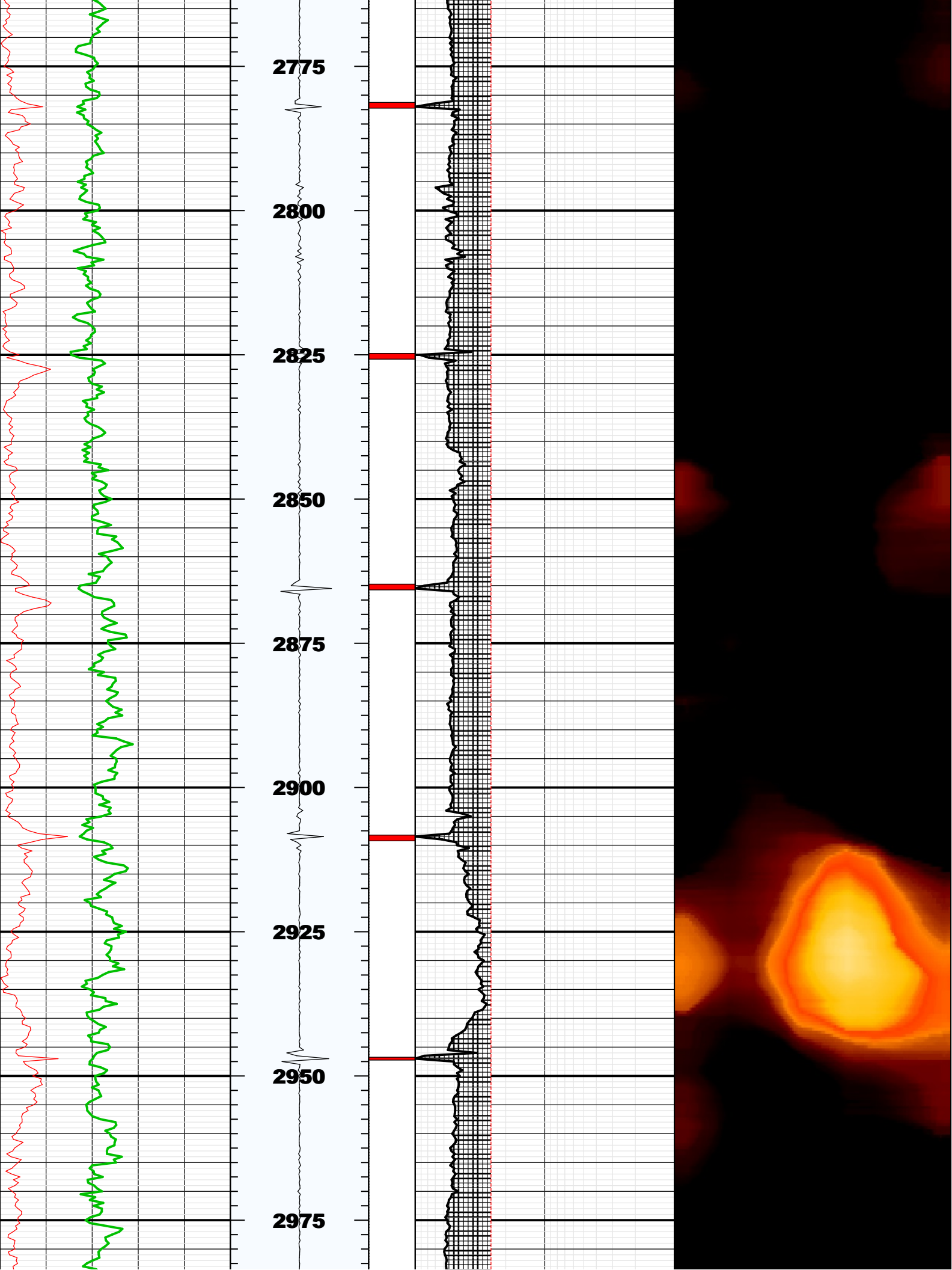


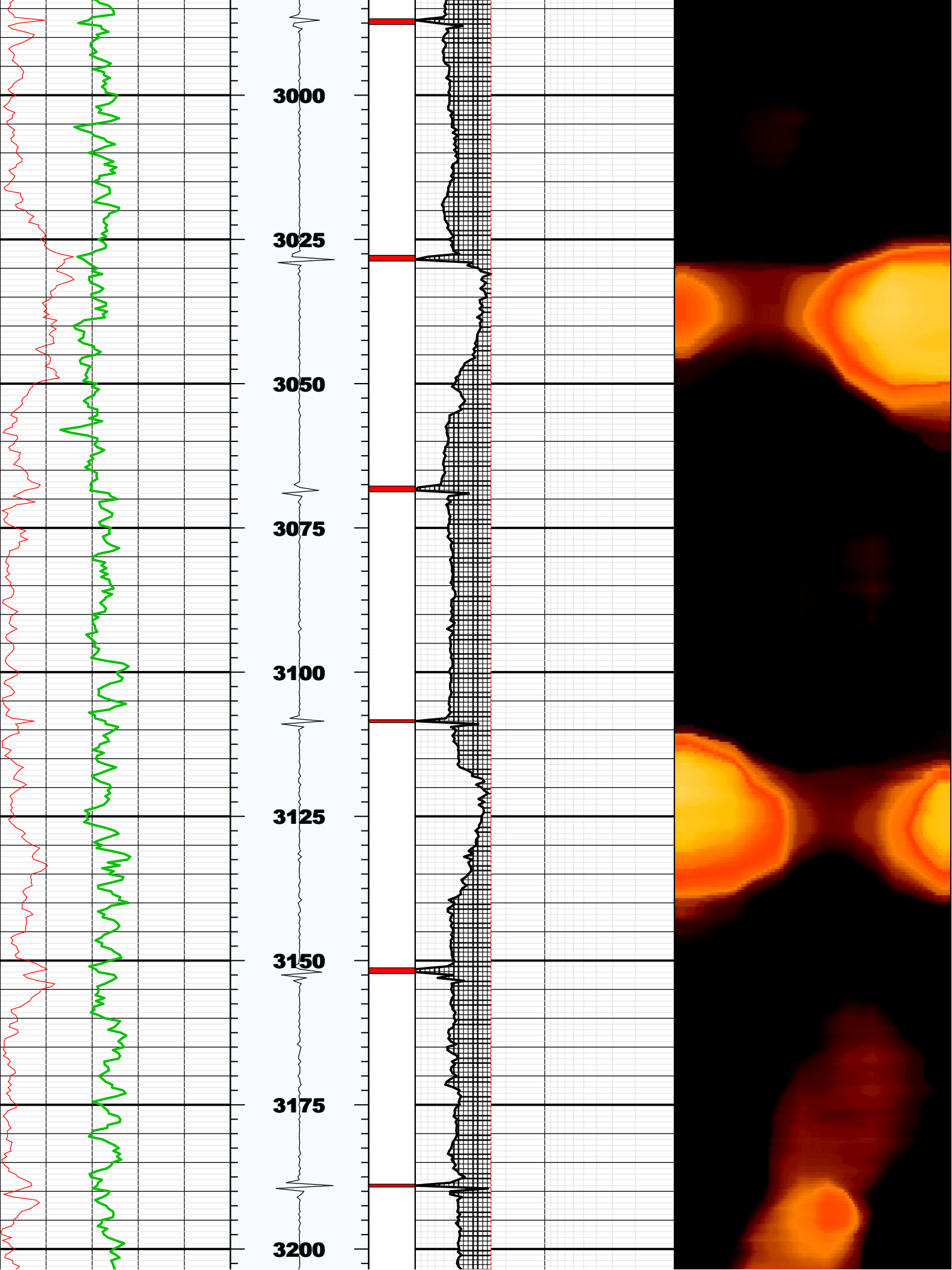


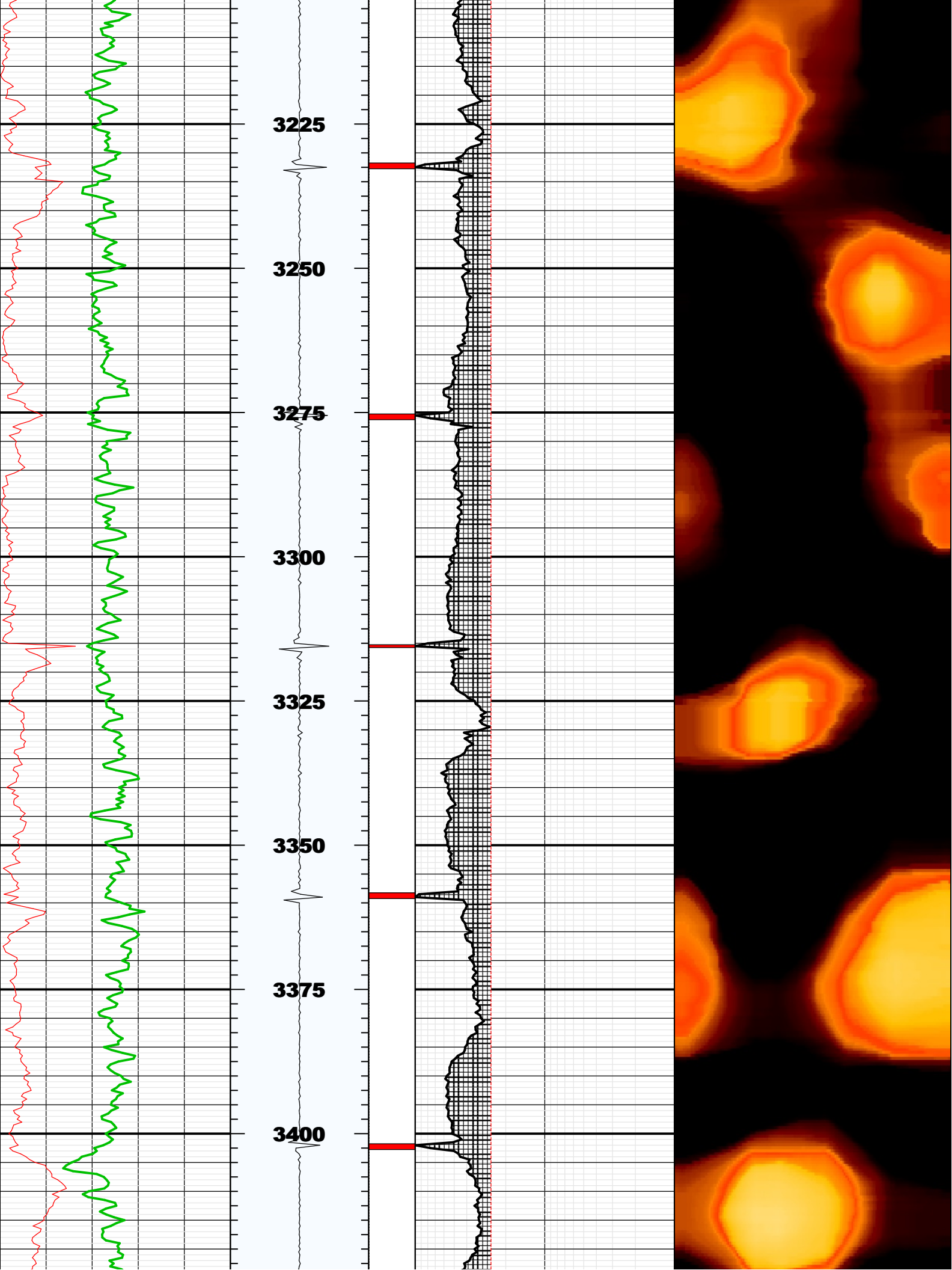


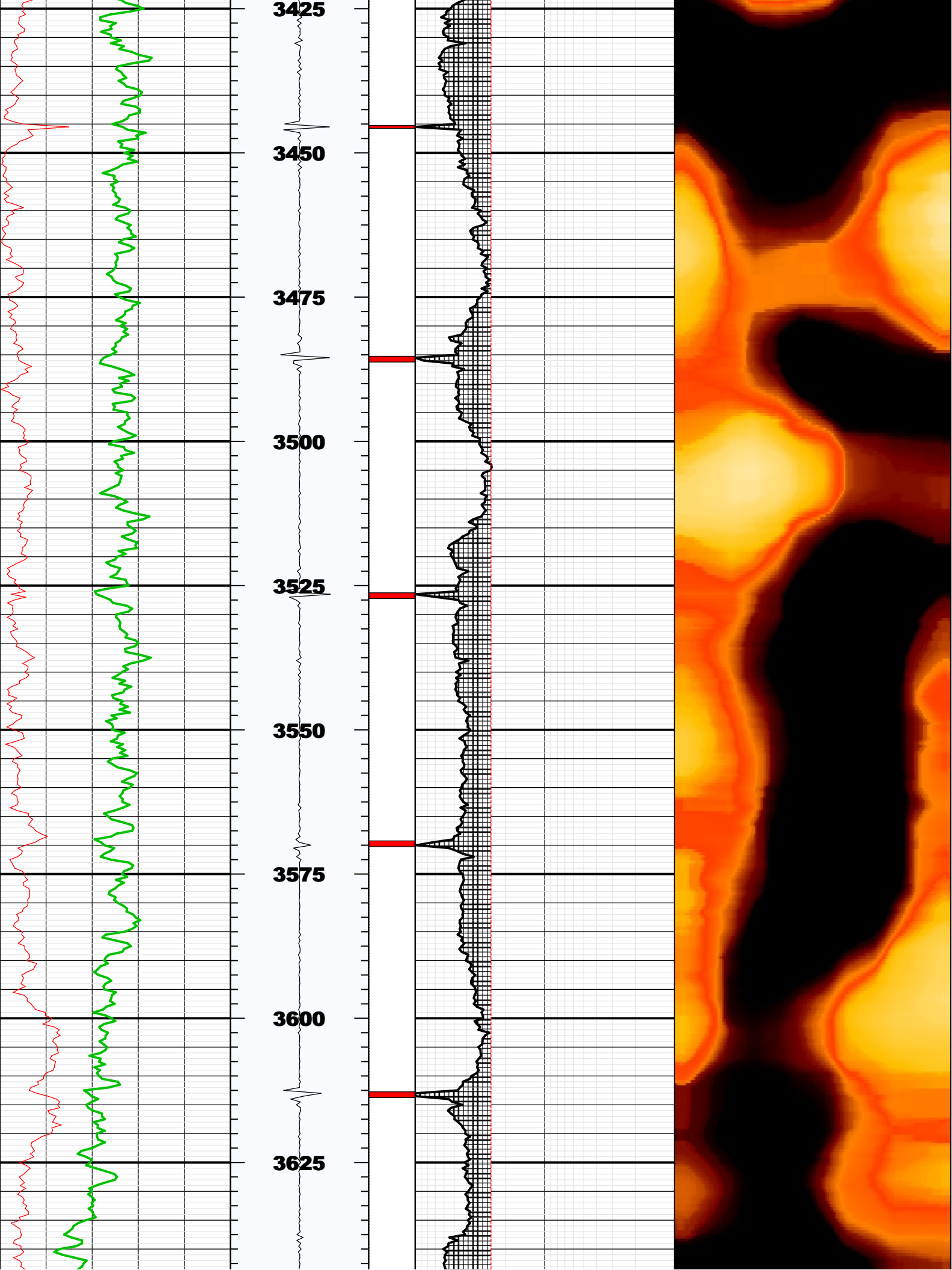


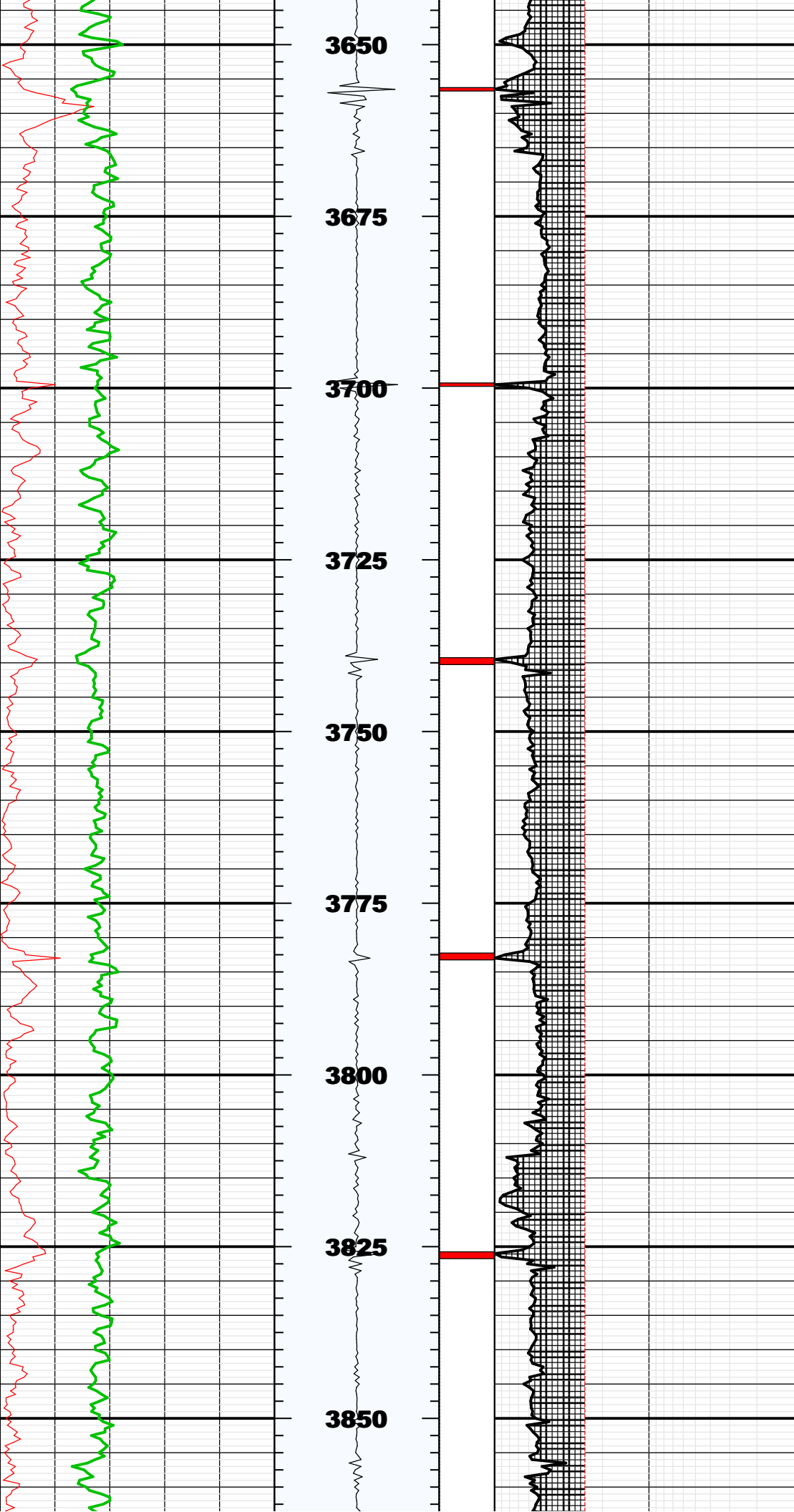




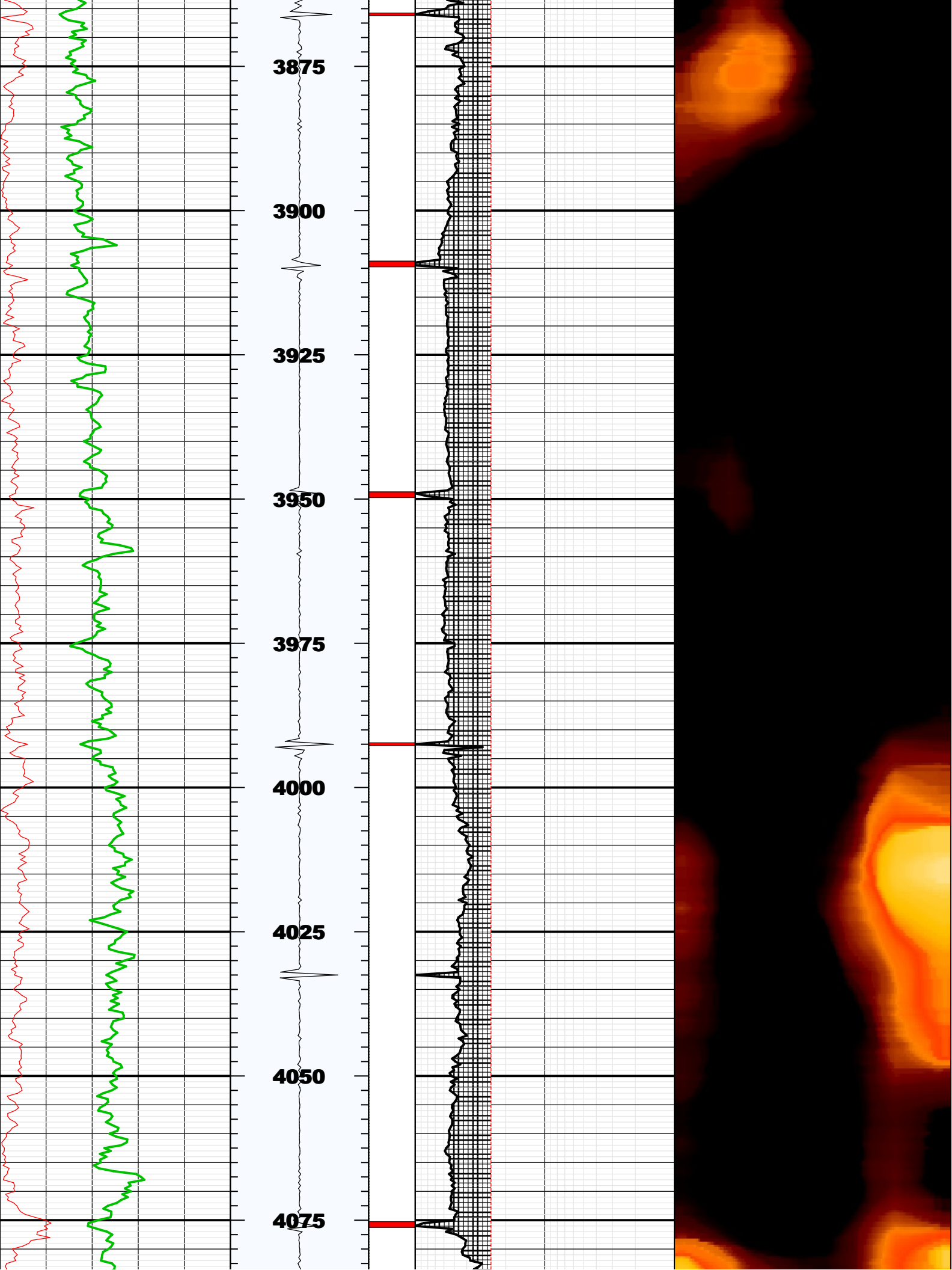


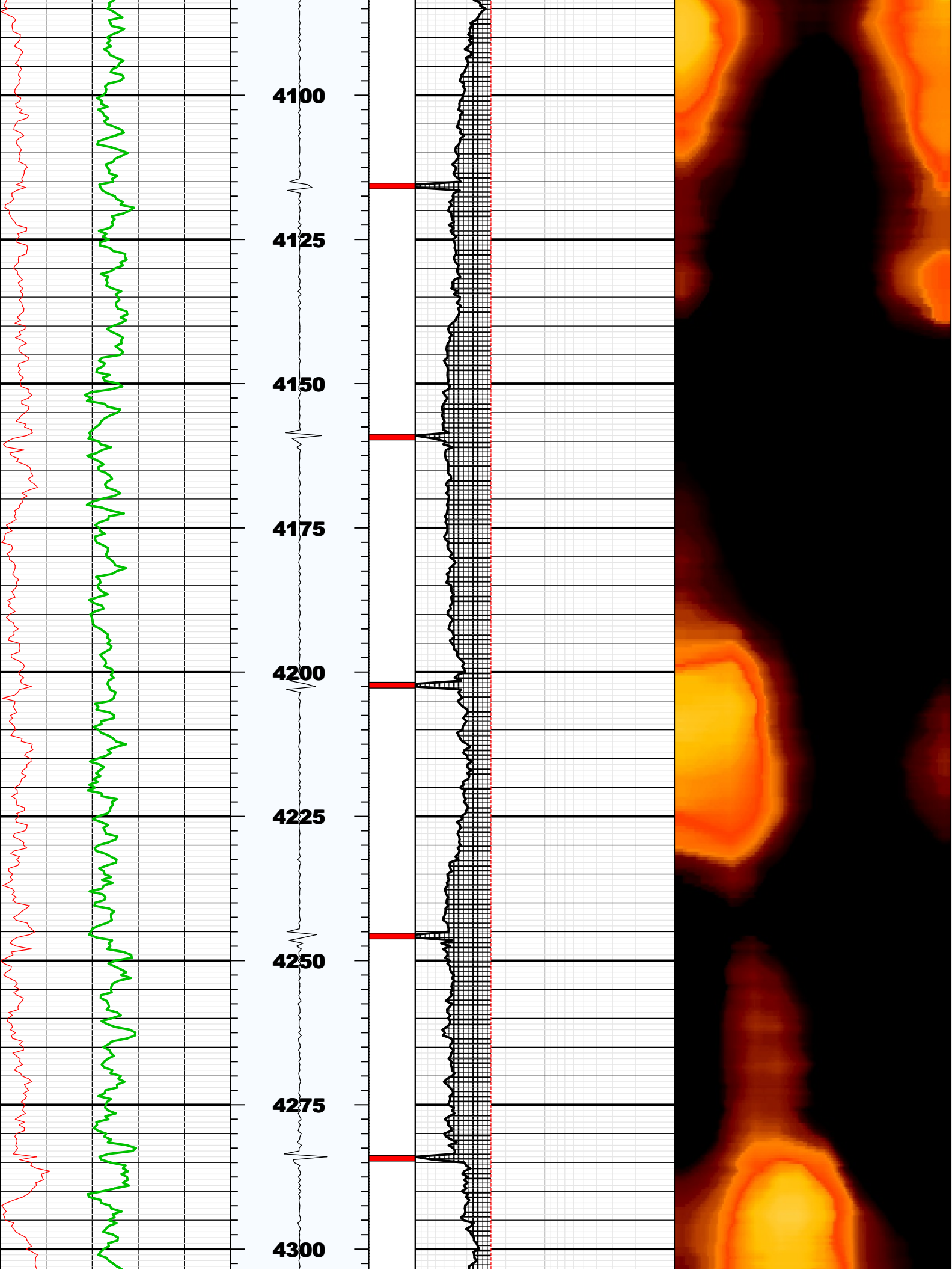




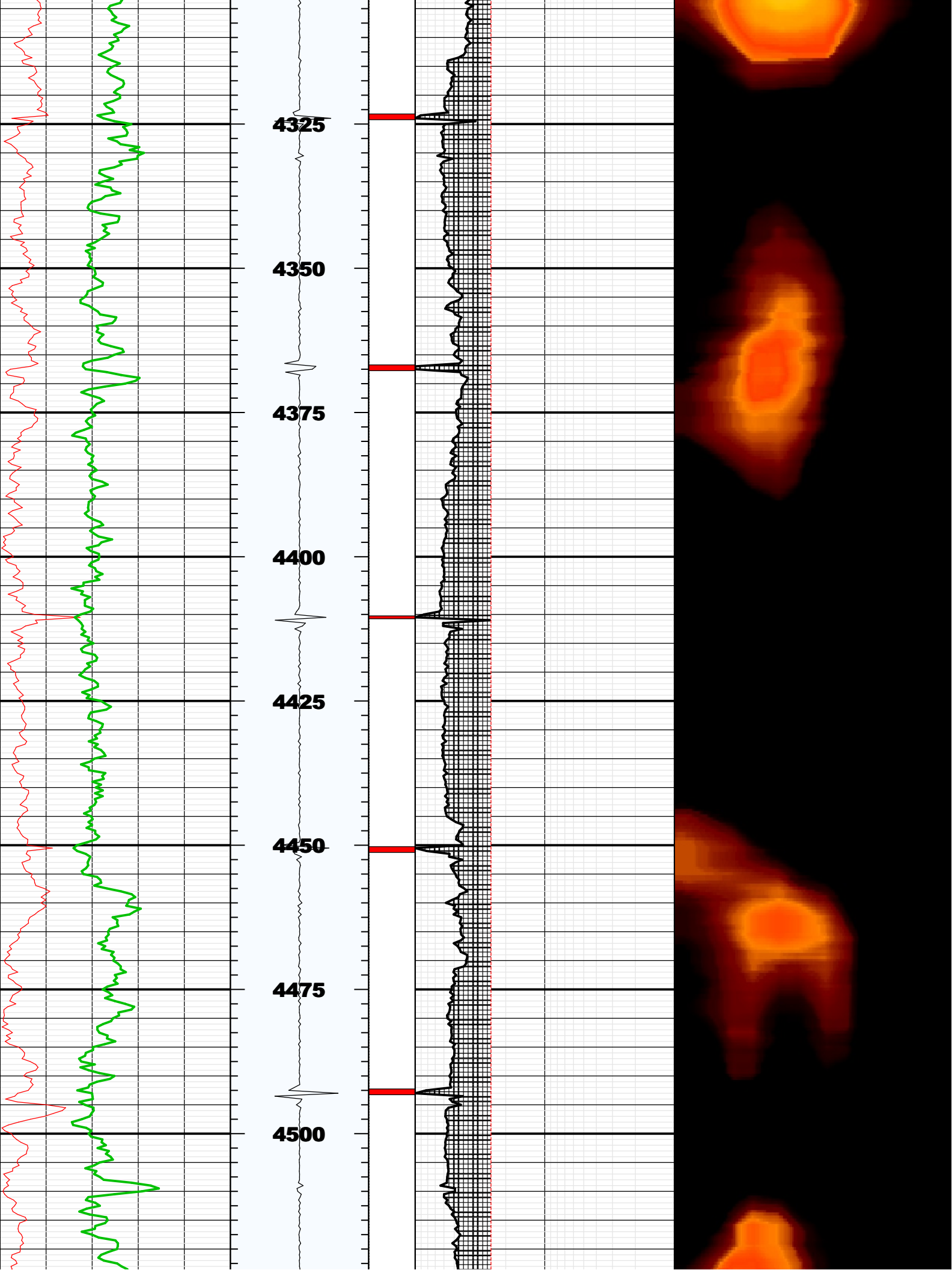


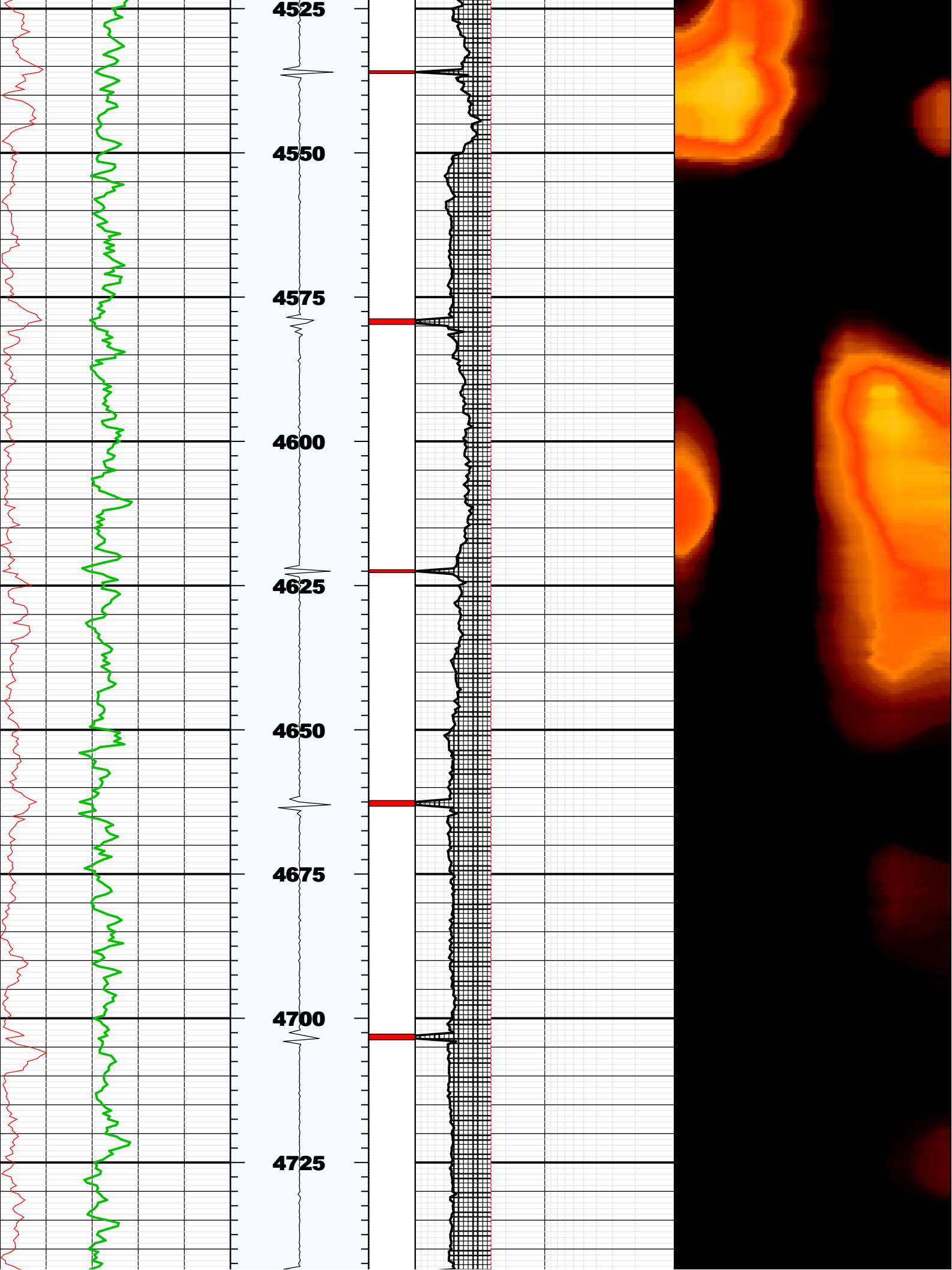


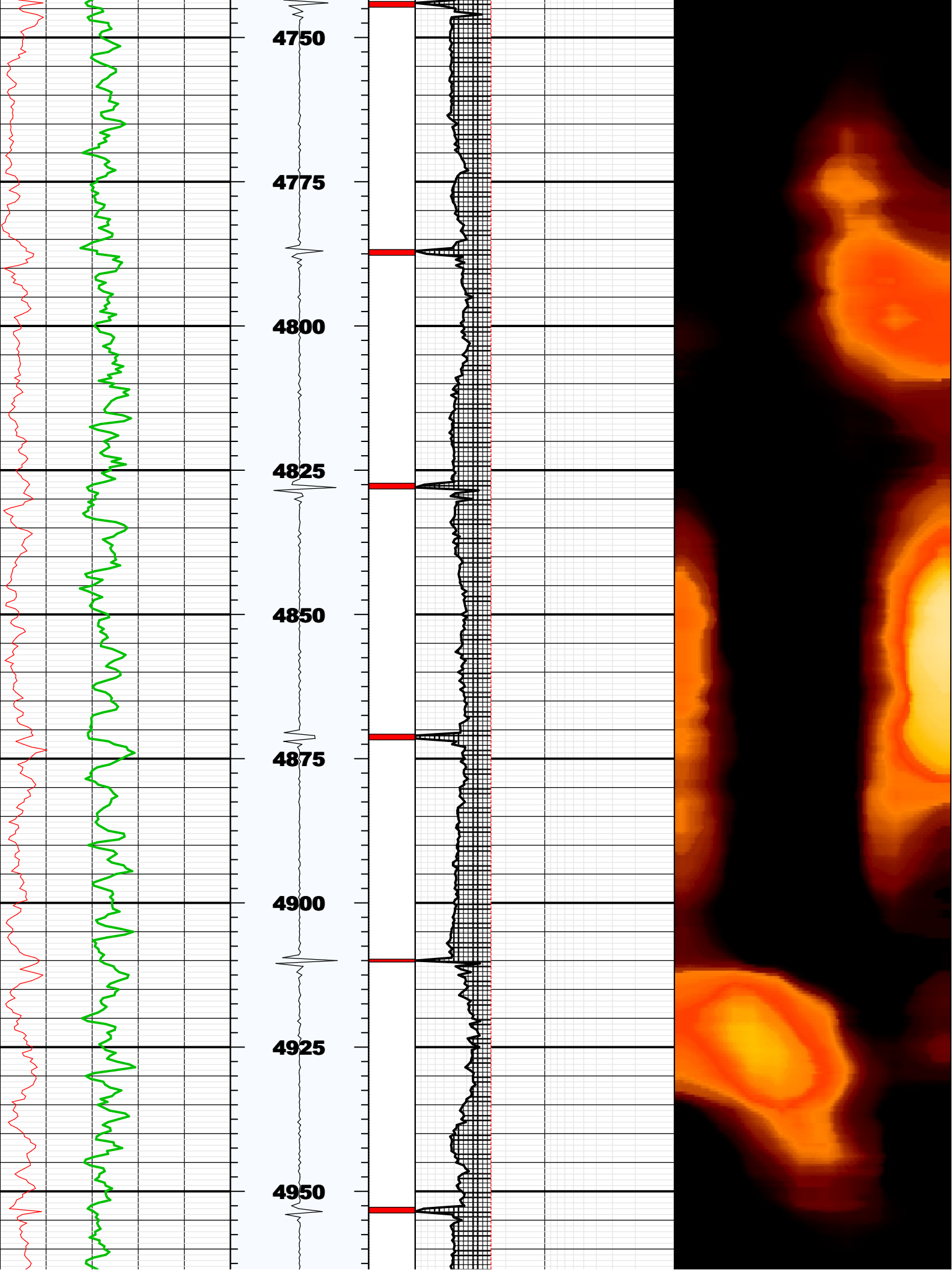


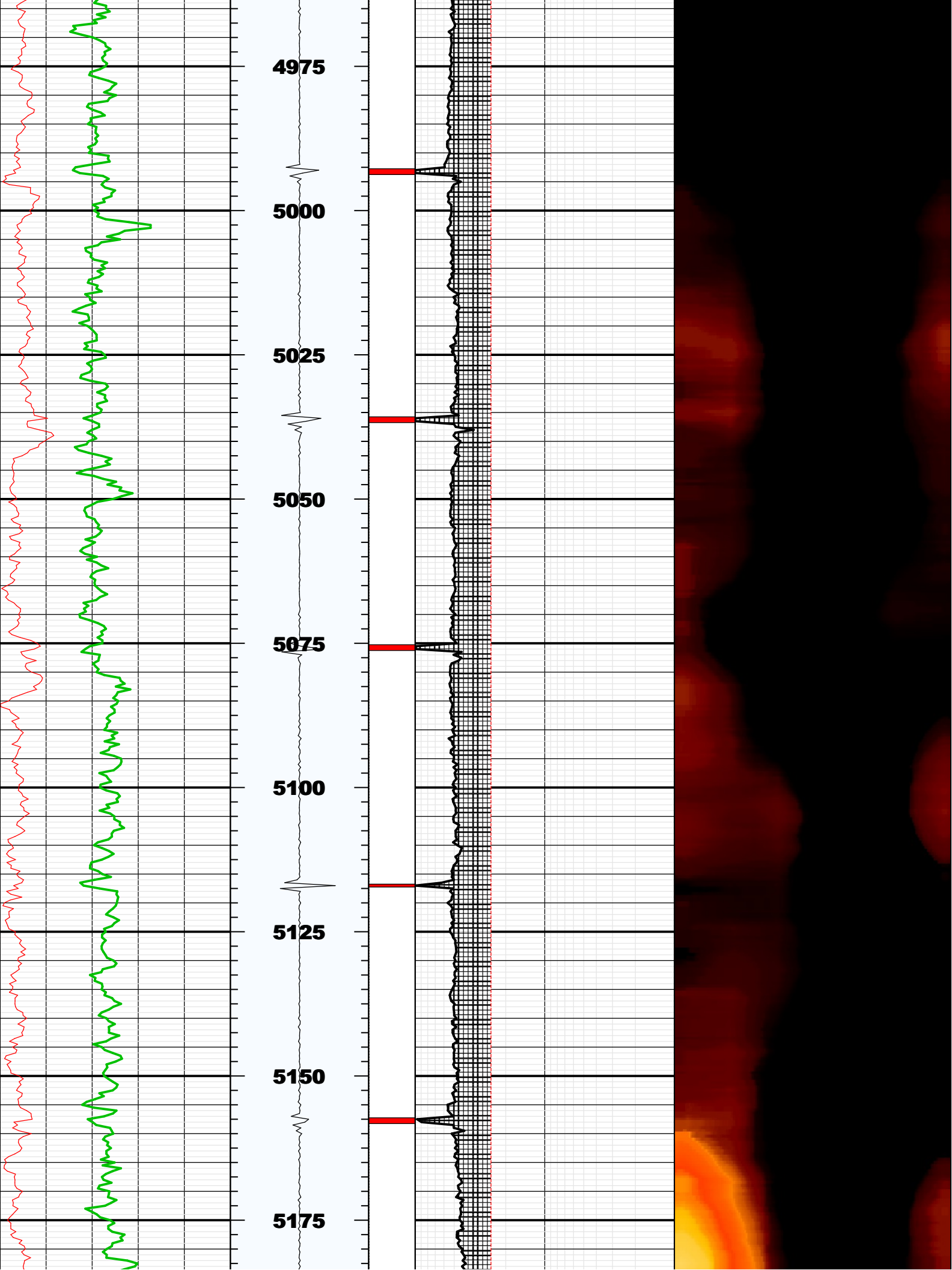


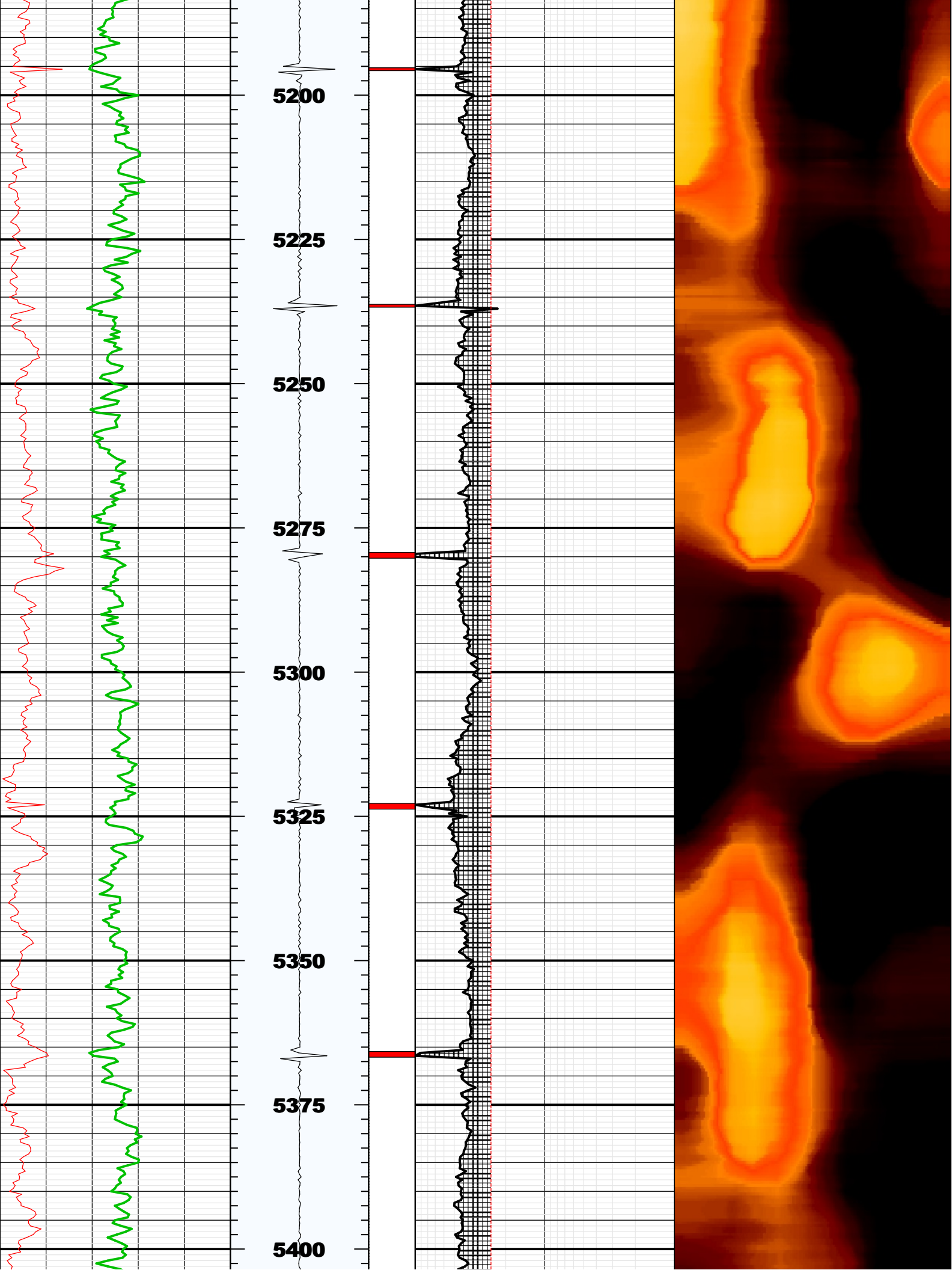




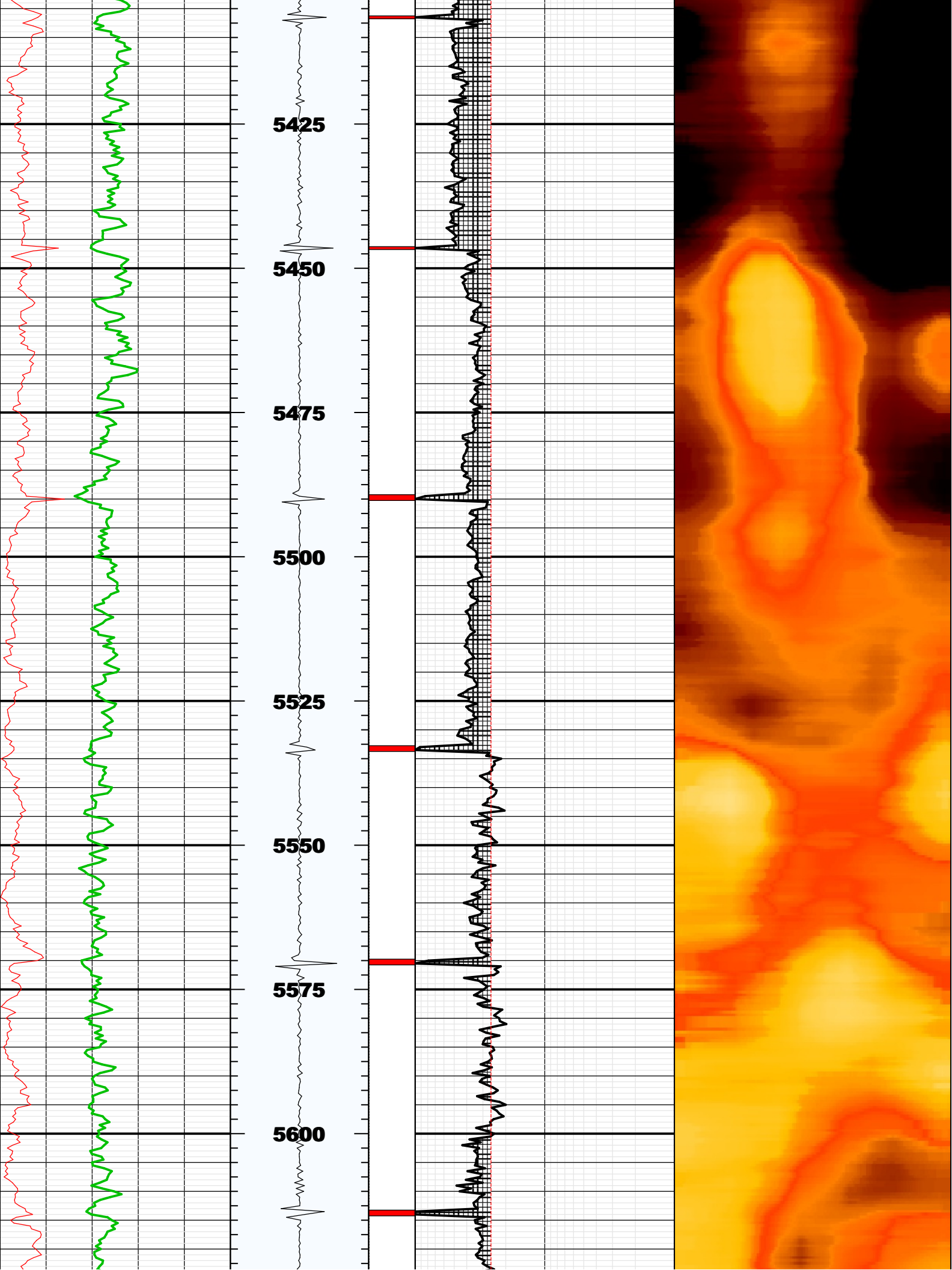


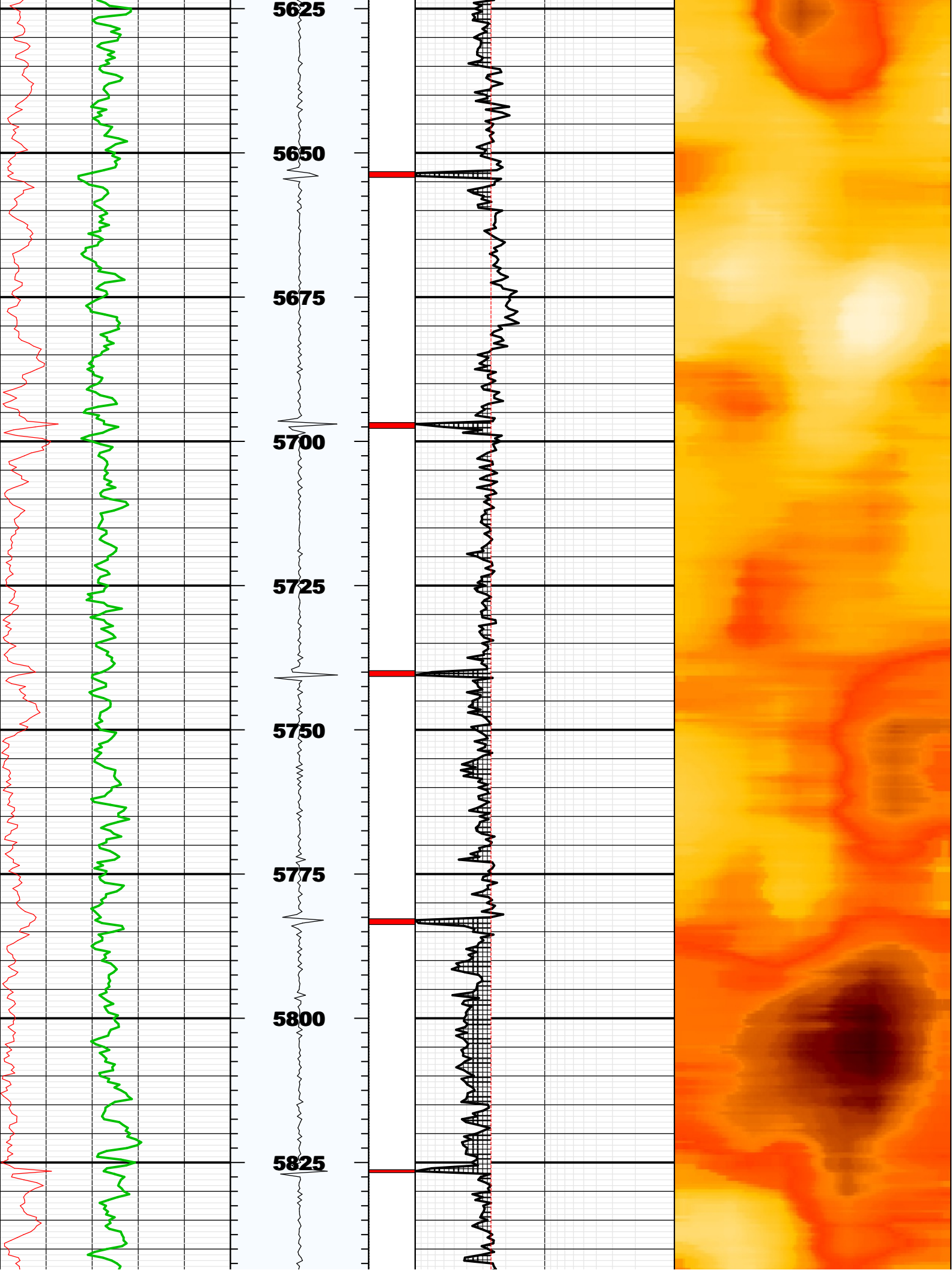




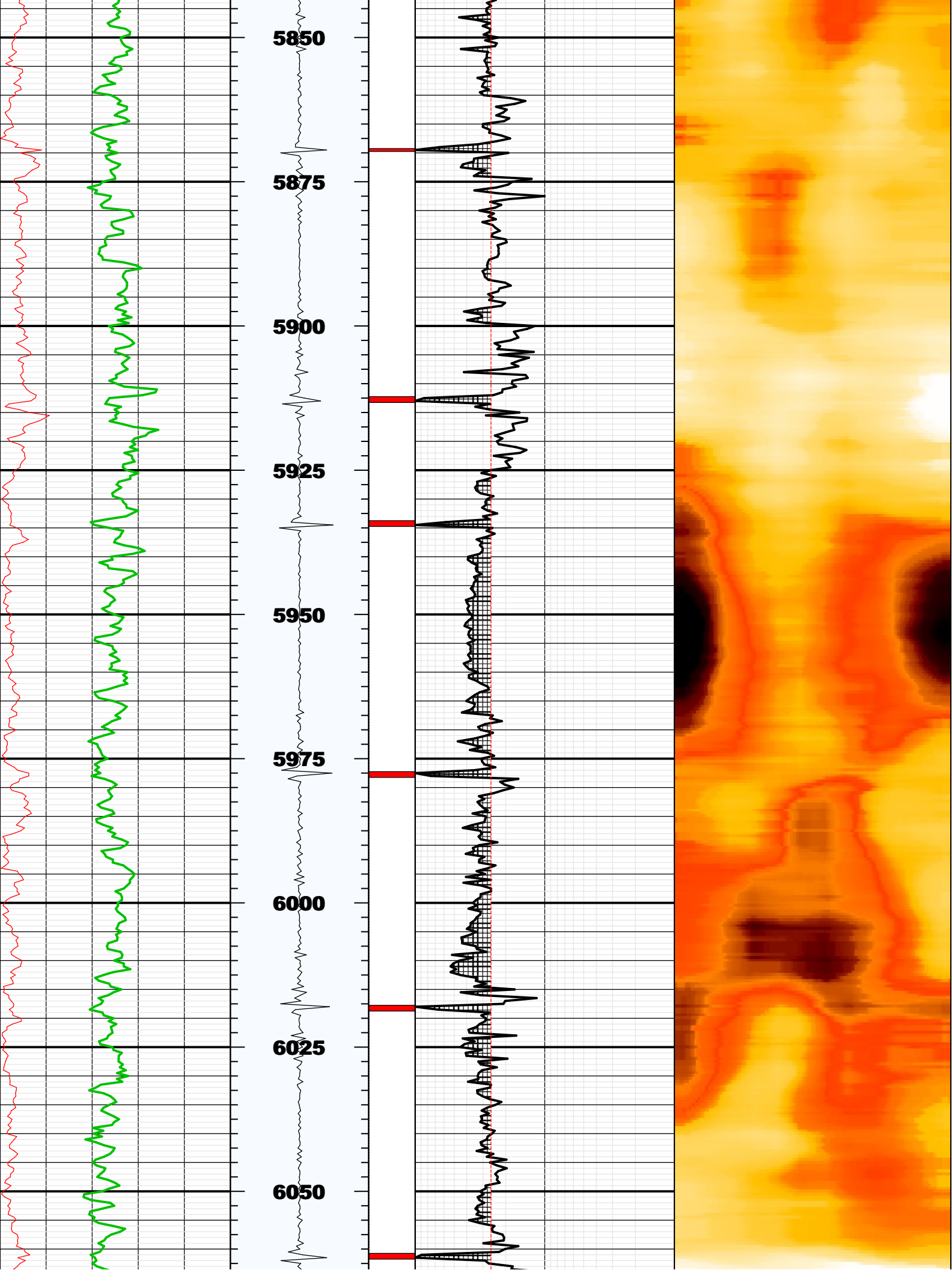


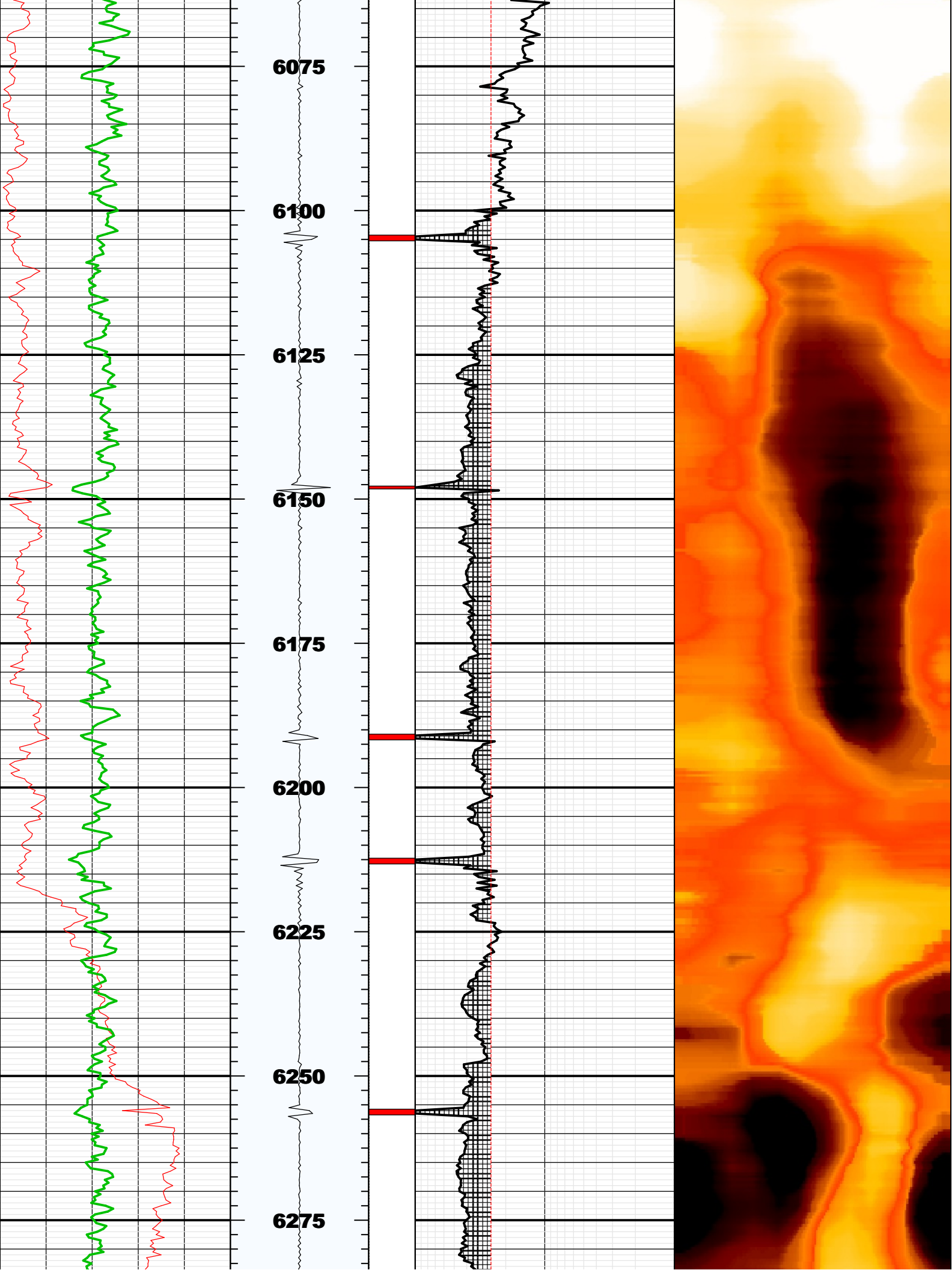


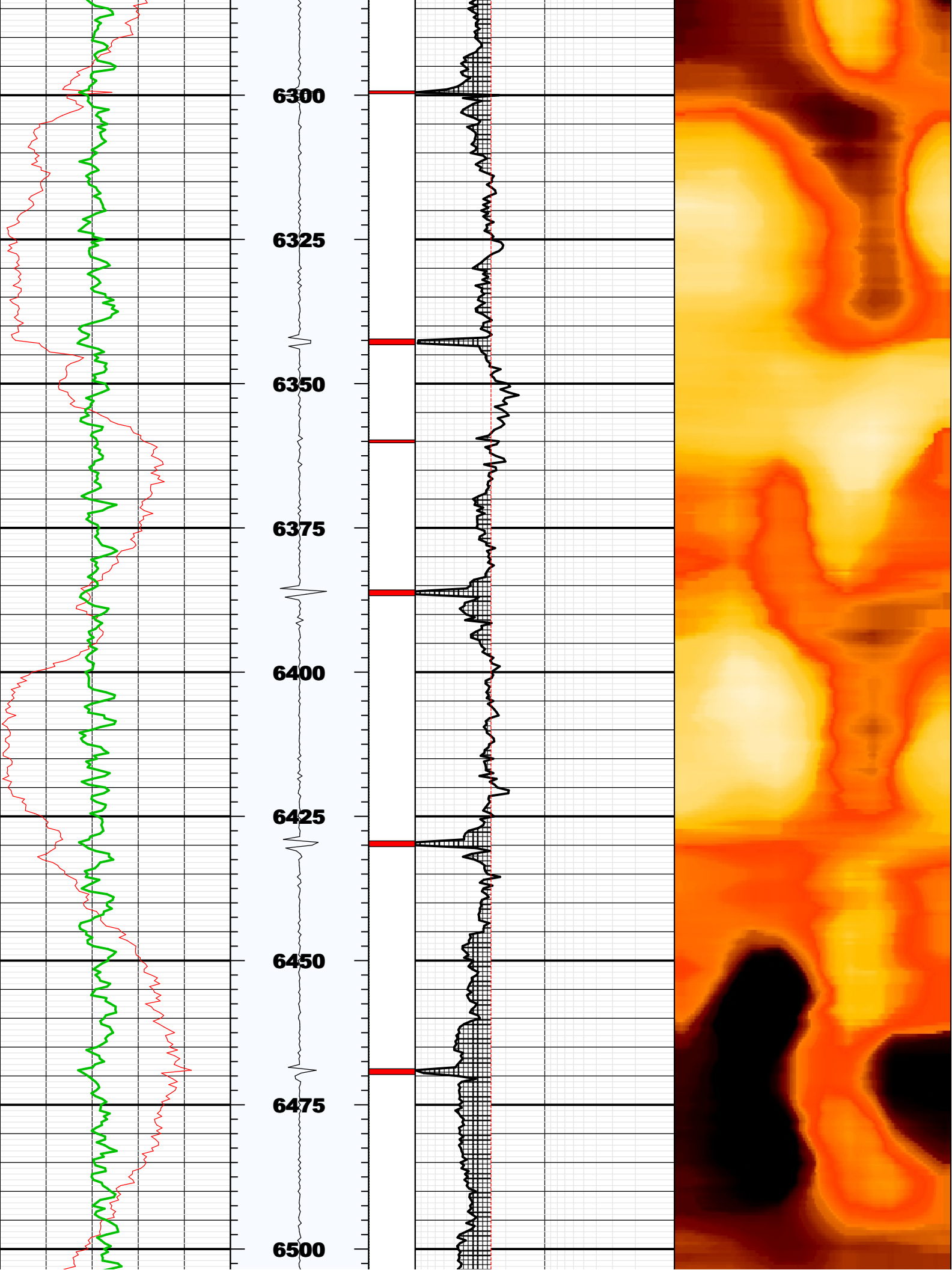




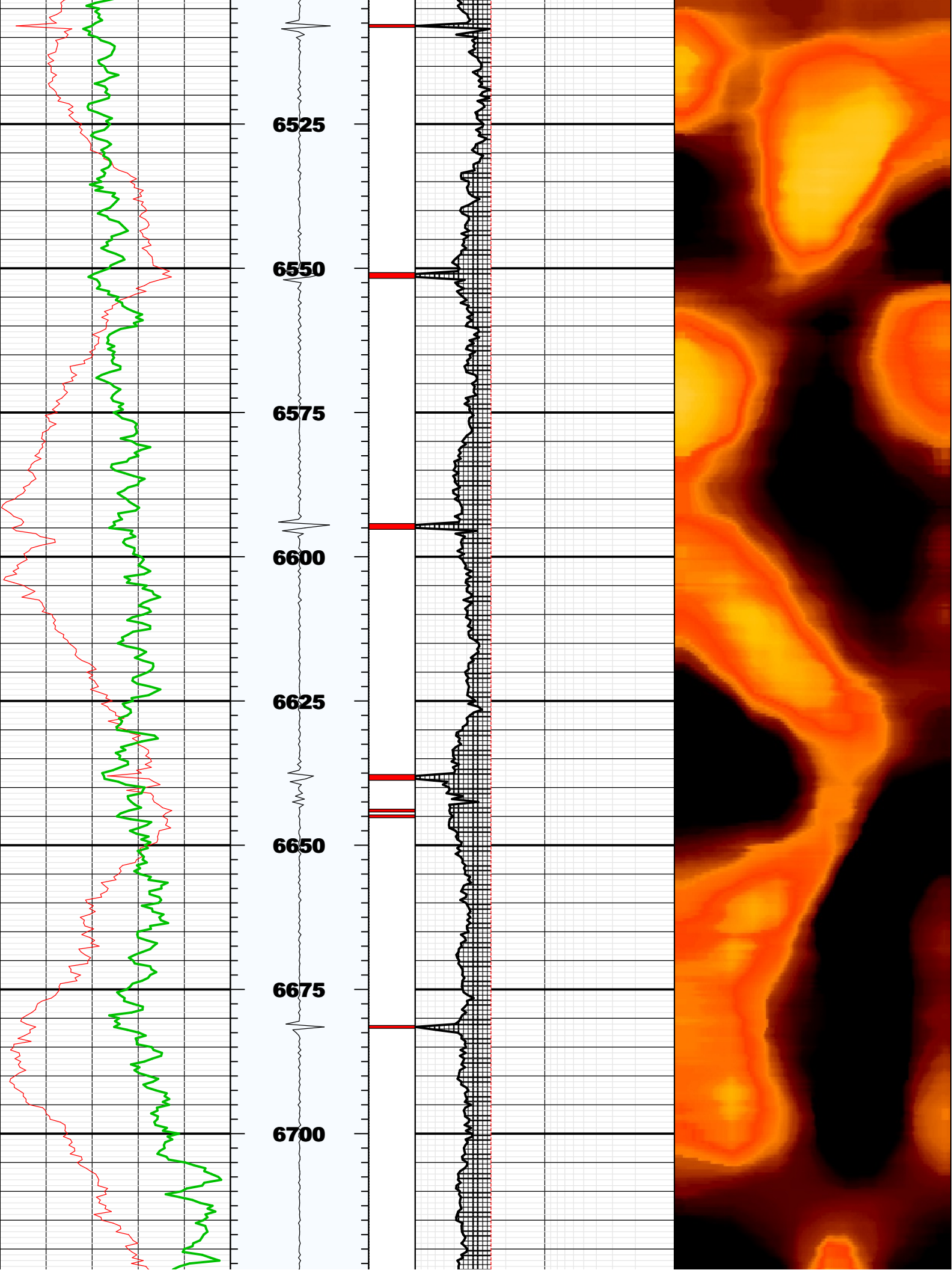


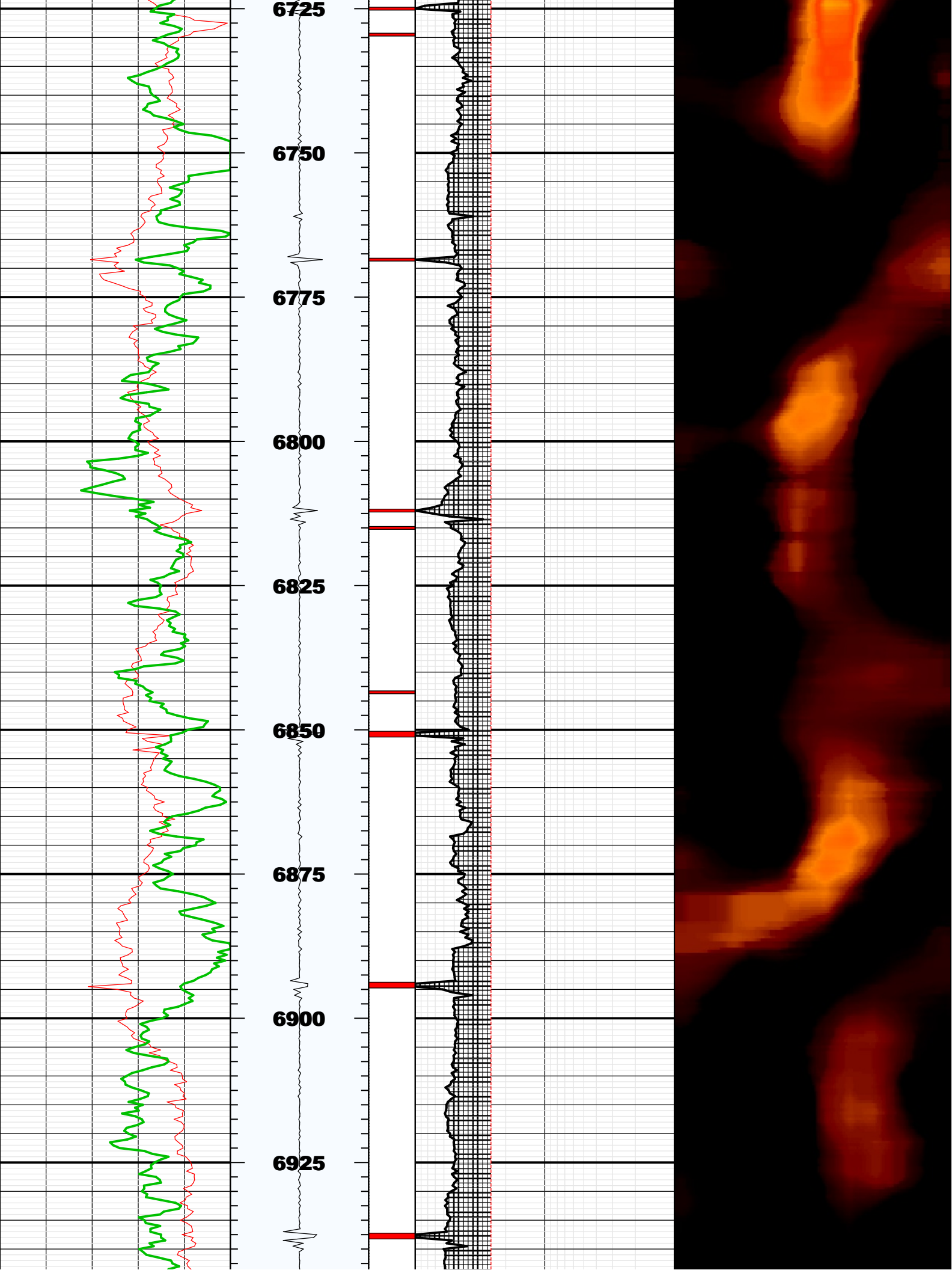


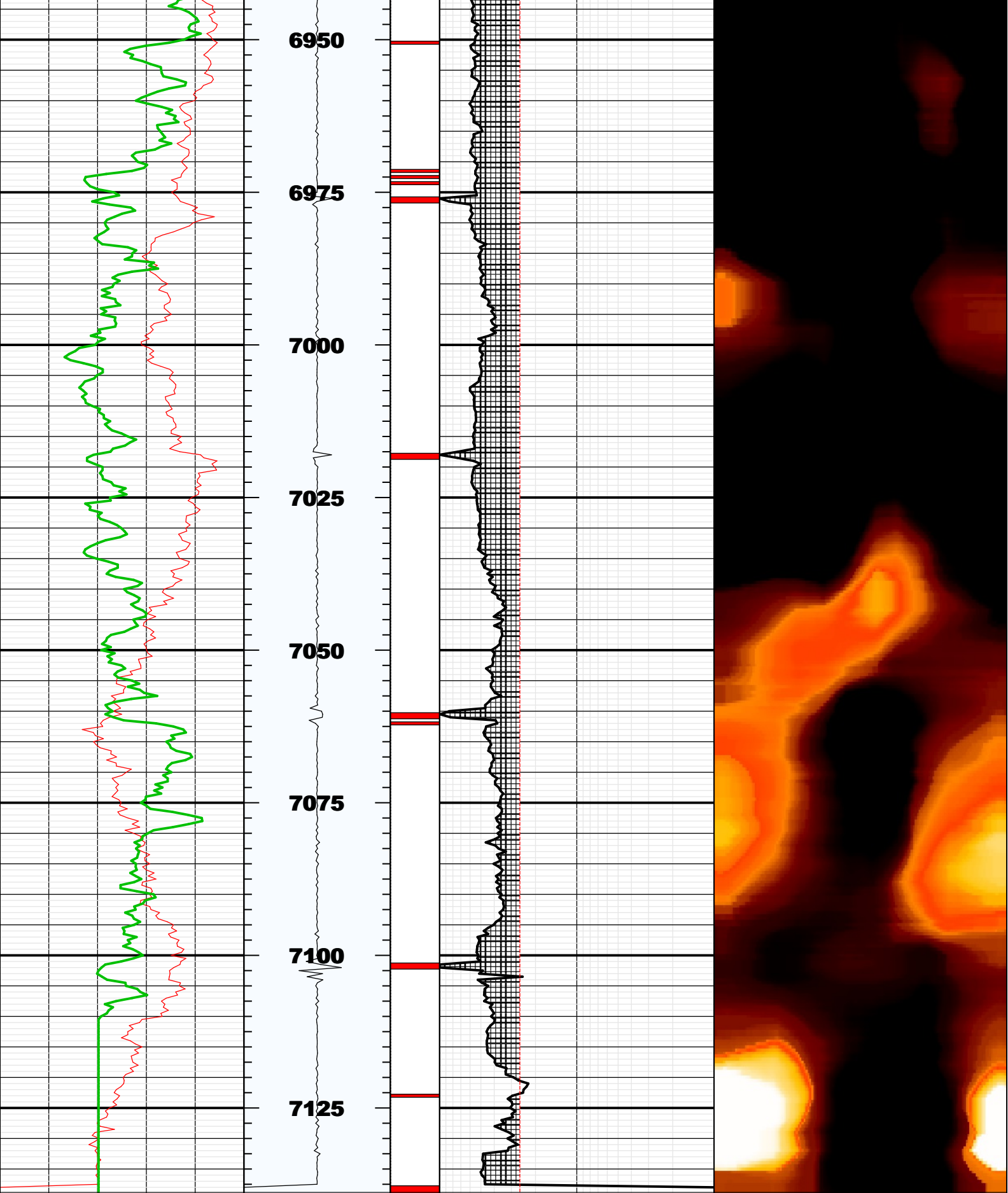










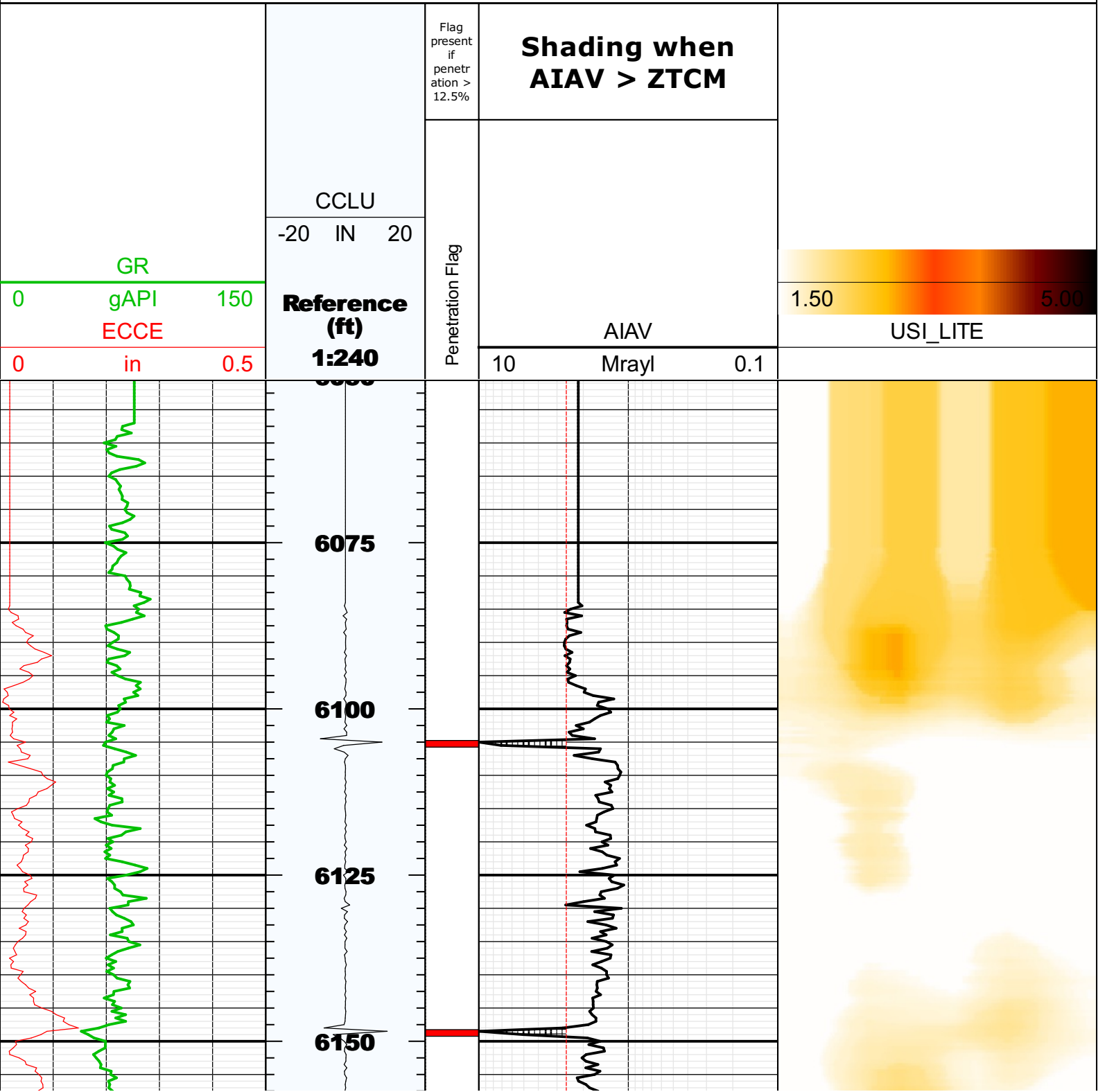


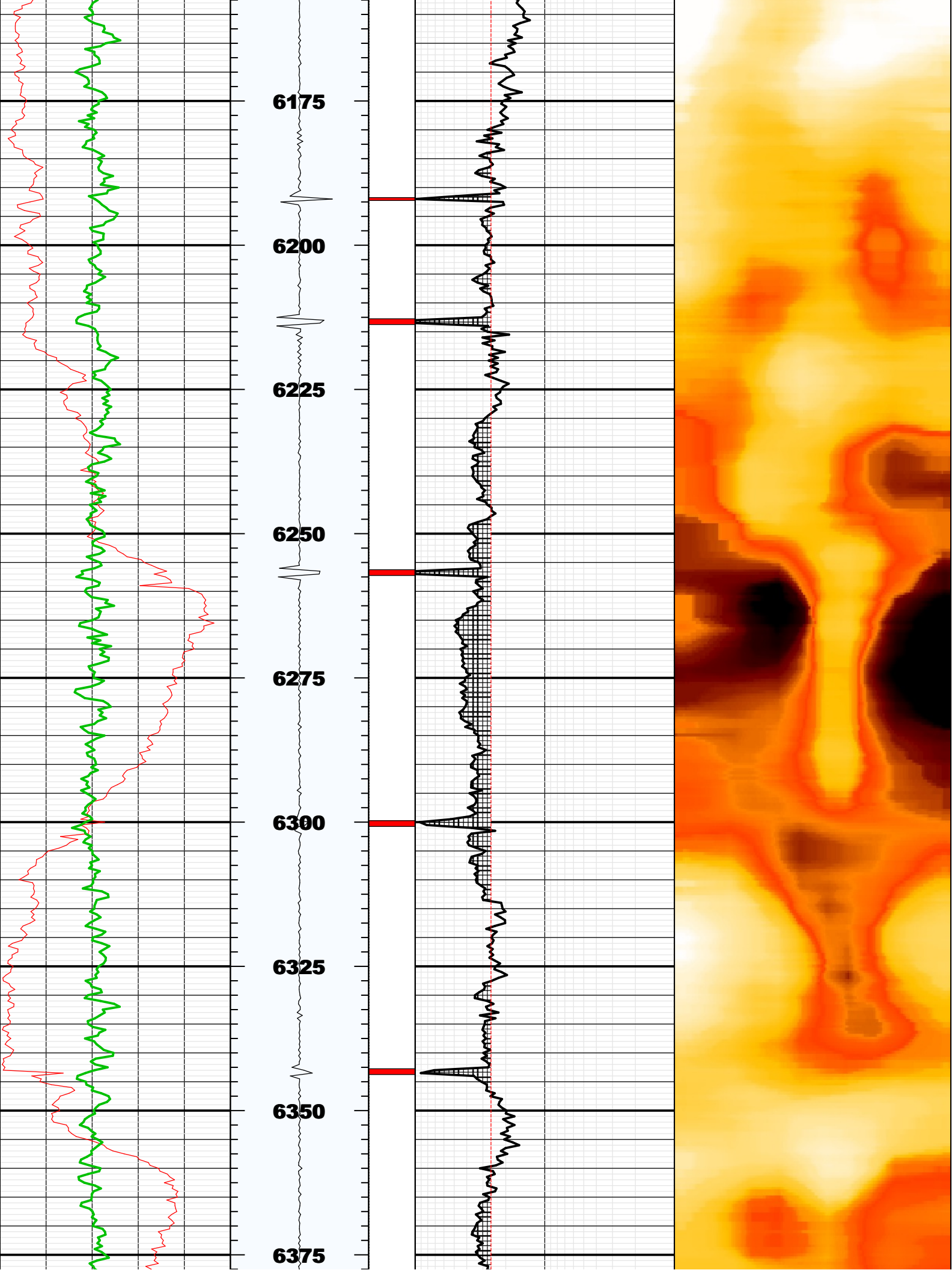
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	206.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	35	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	17.39069	US	Window Begin Time
WINE	81.85346	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.71000	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

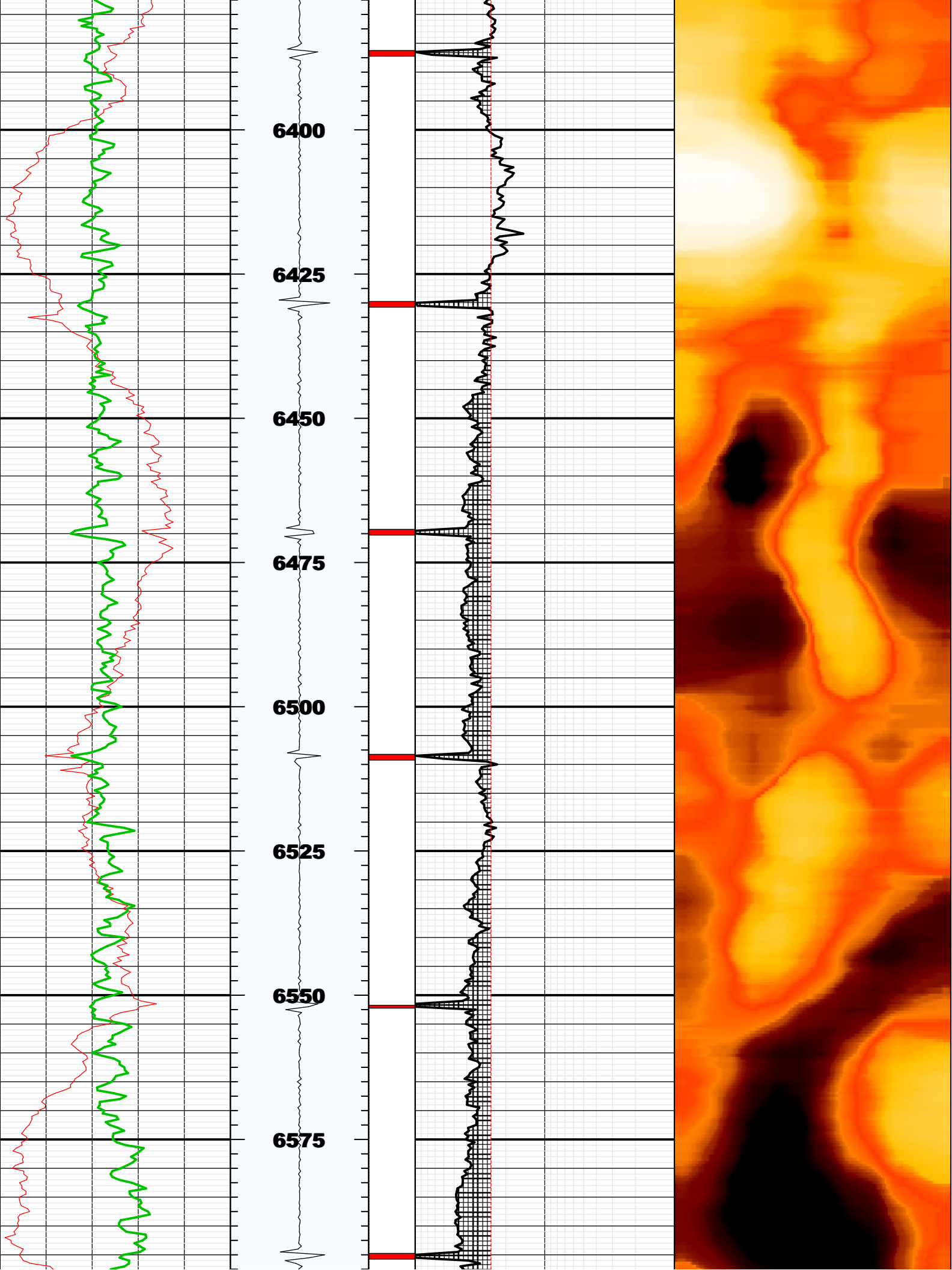


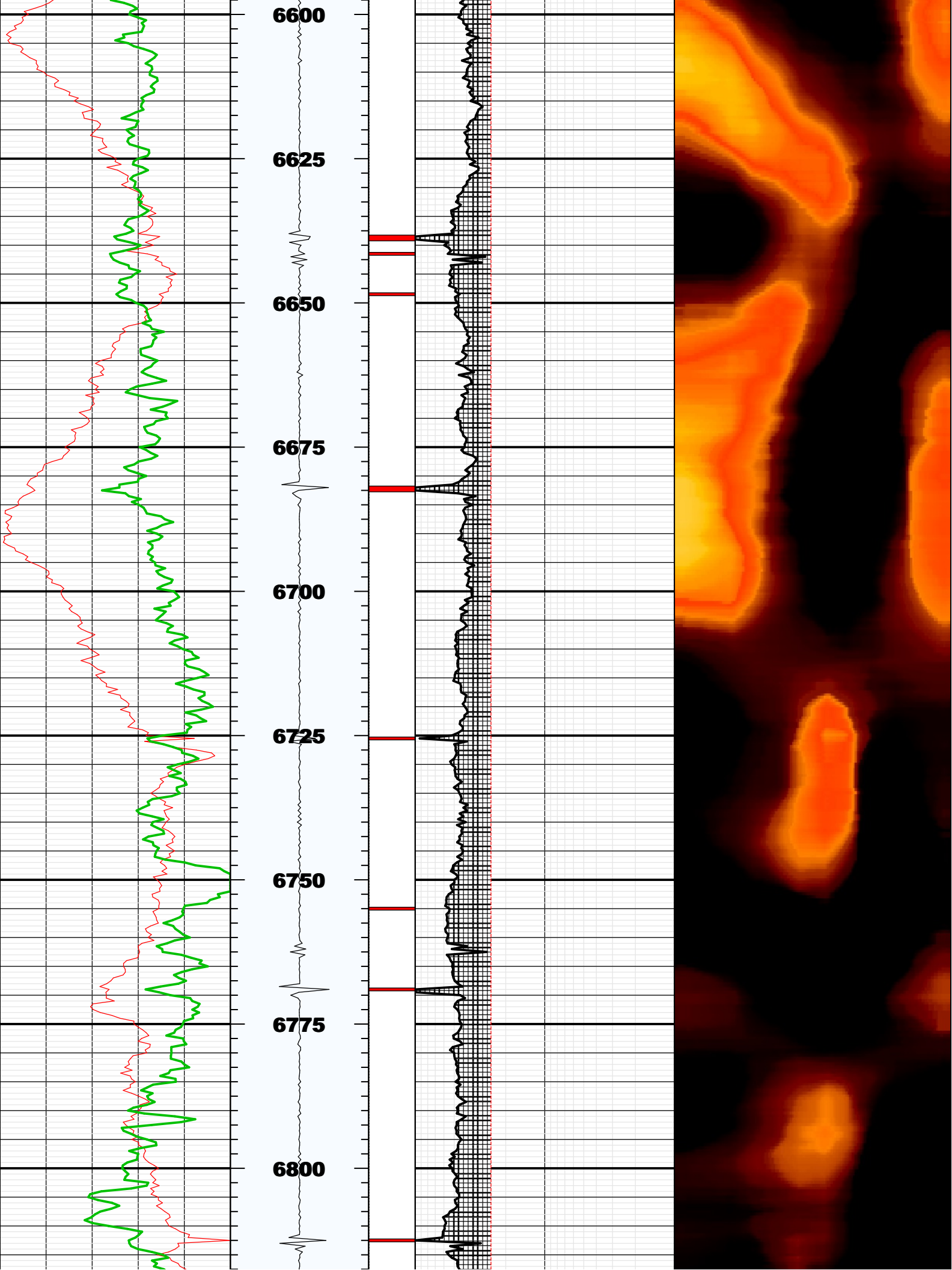
Repeat Pass

Company: Noble Energy Inc  
Well: Reliance E23-65-1HC  
Field: Wattenberg

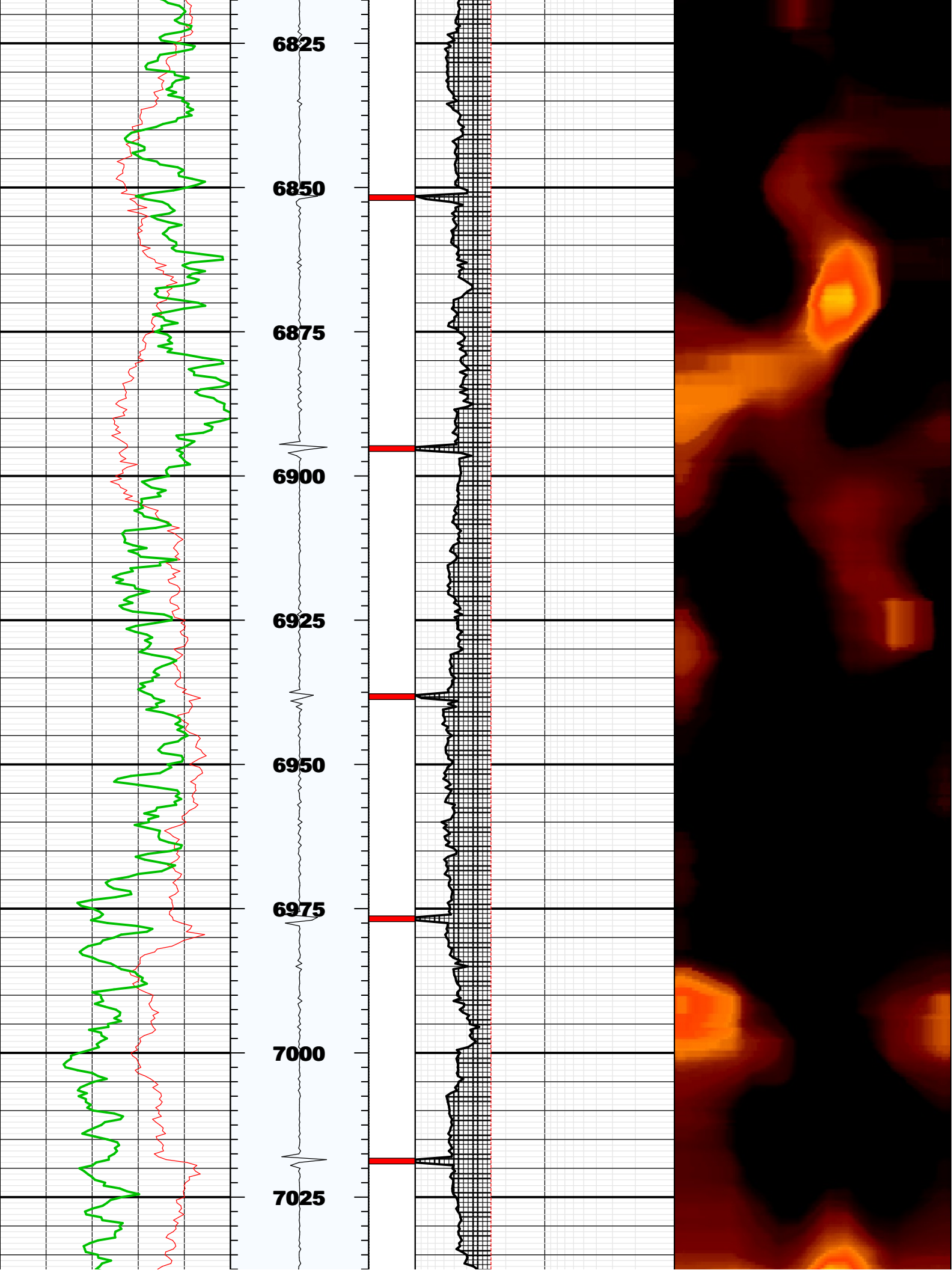




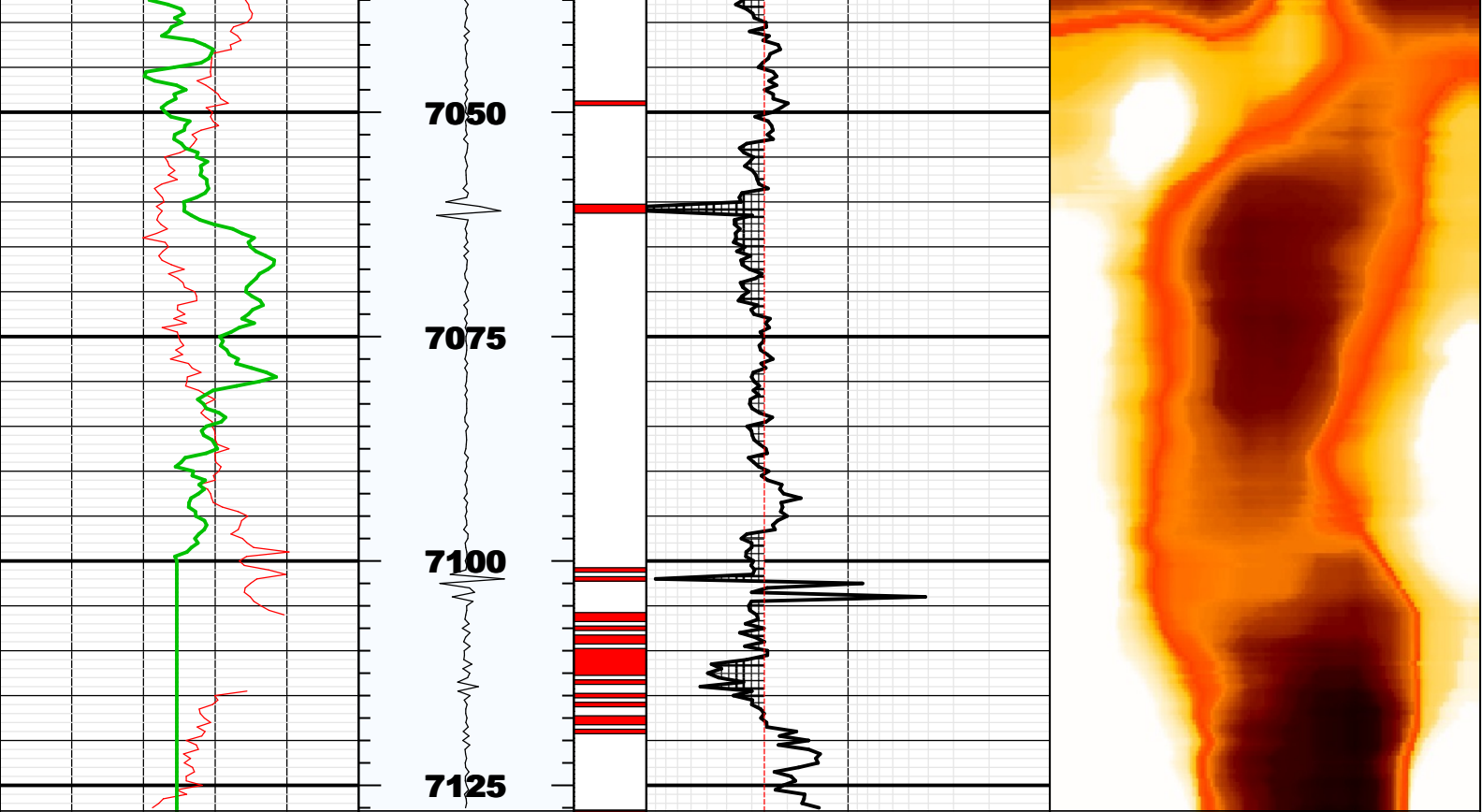












## Fluid Properties Used for Main Pass

