

Company: NOBLE ENERGY INC

Well: Mackinaw A19-79HNA  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld		<b>USI-LITE</b>					
Field: Wattenberg							
Location: NENE Sec.24 T6N R65W							
Well: Mackinaw A19-79HNA							
Company: NOBLE ENERGY INC							
LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:	GL KB KB	Elev: K.B. 4708.0 F G.L. 4684.0 F D.F. 4707.0 F			
API Serial No. 05-123-38147-00					Section 24	Township 6N	Range 65W
Logging Date	26-Jul-2014						
Run Number	Run 1						
Depth Driller	11144.0 F						
Schlumberger Depth	11144.0 F						
Bottom Log Interval	6995.0 F						
Top Log Interval	50.0 F						
Casing Fluid Level	64.0 F						
Salinity							
Density	8.40 LB/G						
Fluid Level	64.0 F						
BIT/CASING/TUBING STRING							
Bit Size	8.750 IN						
From	807.0 F						
To	11144.0 F						
Casing Size	7.00 IN						
Weight	26.00 LB/F						
Grade	P110						
From	0.0 F						
To	7220.0 F						
Max Recorded Temp	228.8						
Logger on bottom (date)	26-Jul-2014						
Location	Fl. Morgan CO						
Recorded By	Aleksei Bekhterev						
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: 2858 Calibration Date: Calibrator Serial Number: Number Of Calibration Points: Calibration RMS: Calibration Peak Error:	Serial Number: 0710190 Length: 18331.00000

DISCLAIMER

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Toolstring run as per tool sketch

12.5 ppg lead cement

13.8 ppg tail cement

0 PSI Repeat Pass

2500 PSI Main Pass

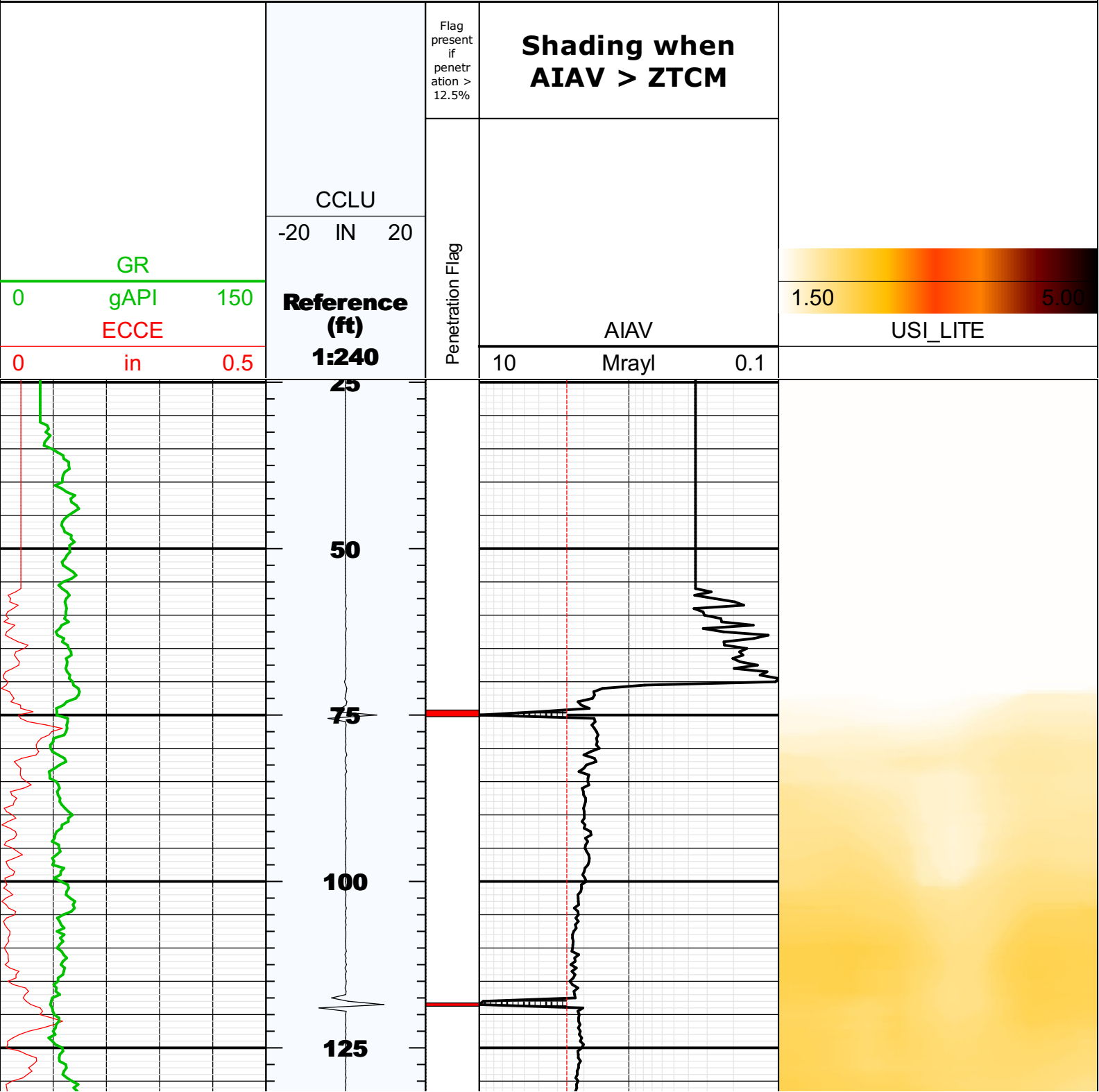
Bottom Log Temperature 228.8 degF

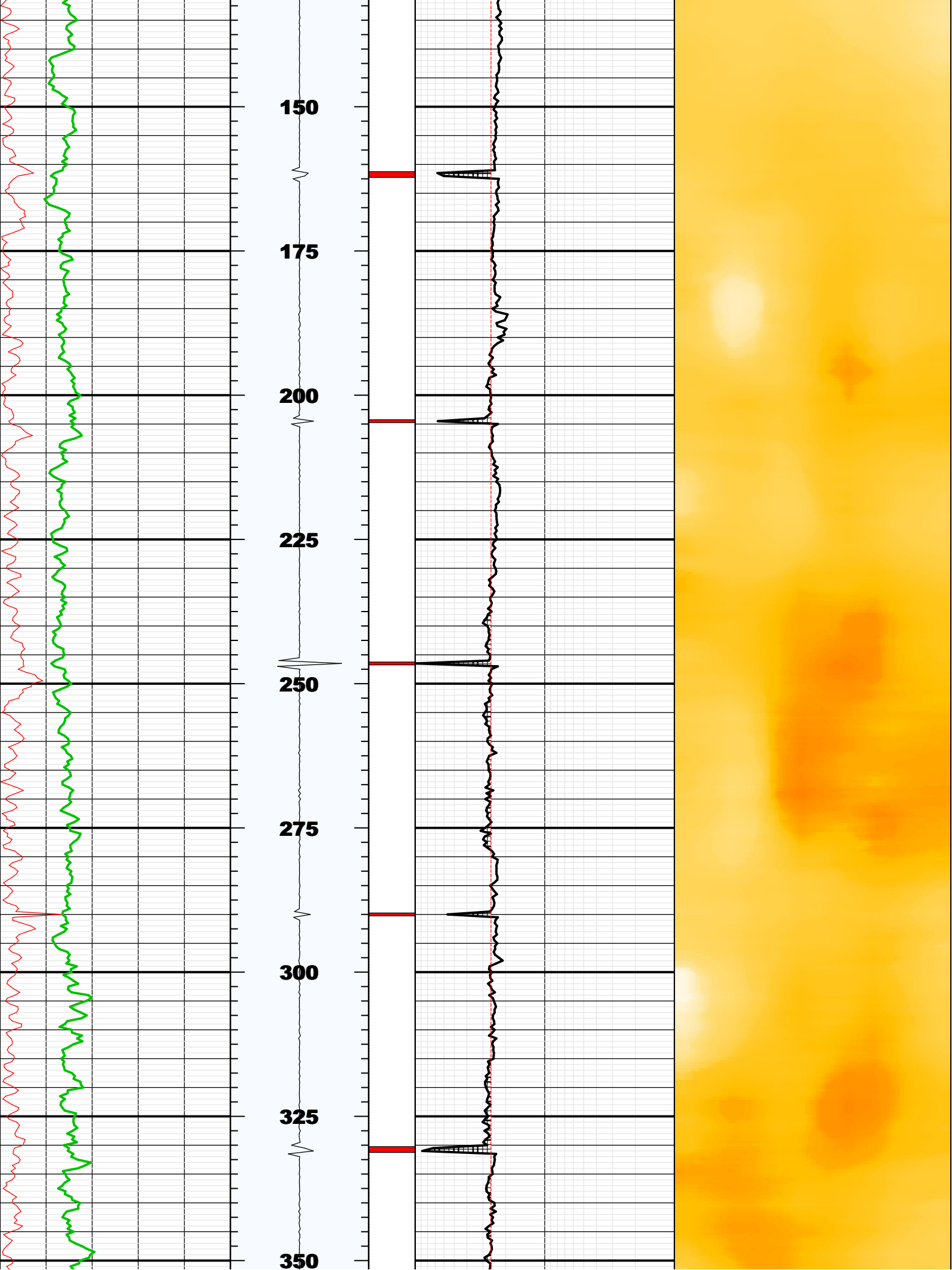
Top of Cement 143.5 ft.

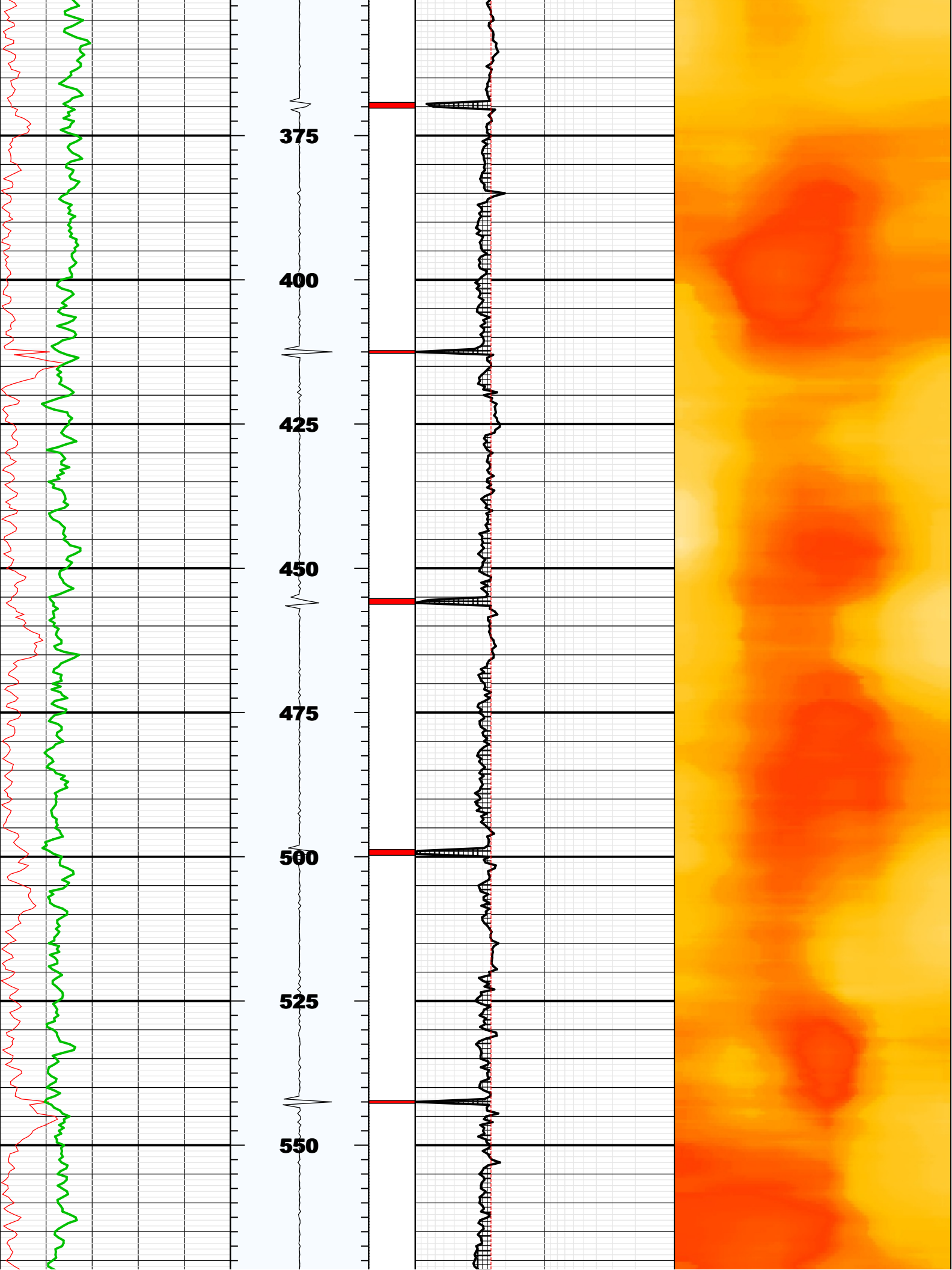
Crew Josh Strand Gary Lapp Nolan Welsh Aleksei Bekhterev

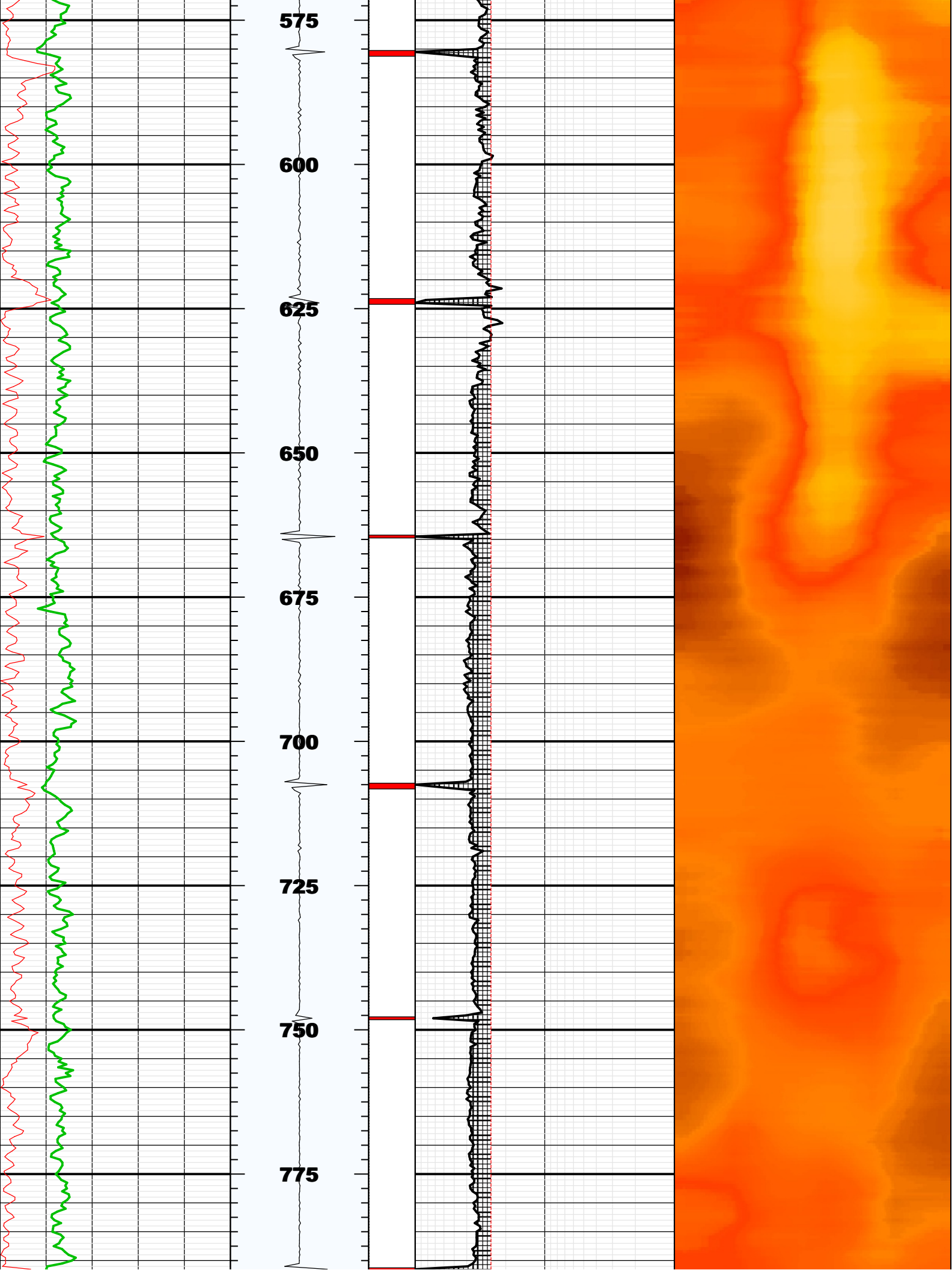
Main Pass

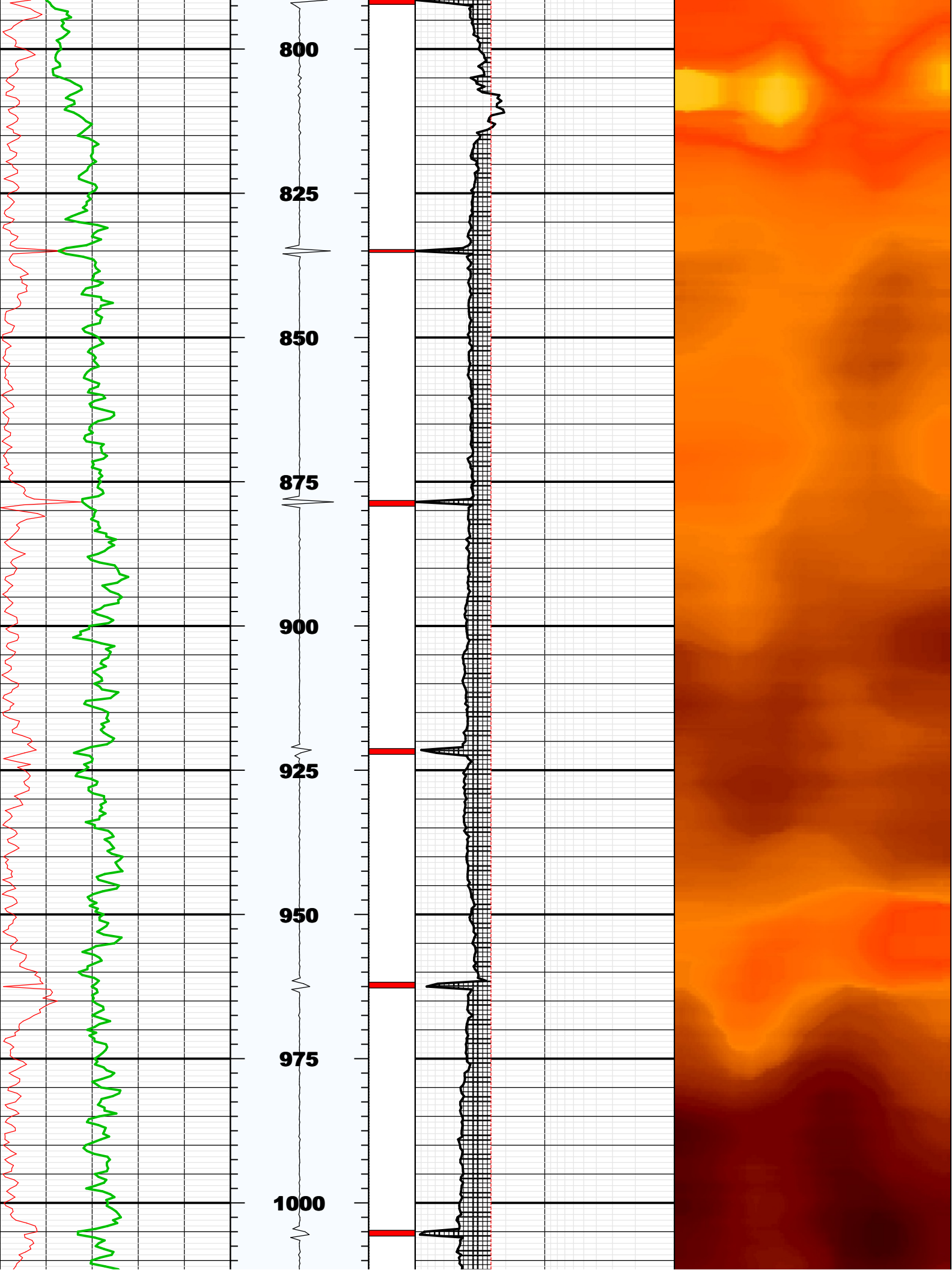
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Well: Mackinaw A19-79HNA  
Field: Wattenberg



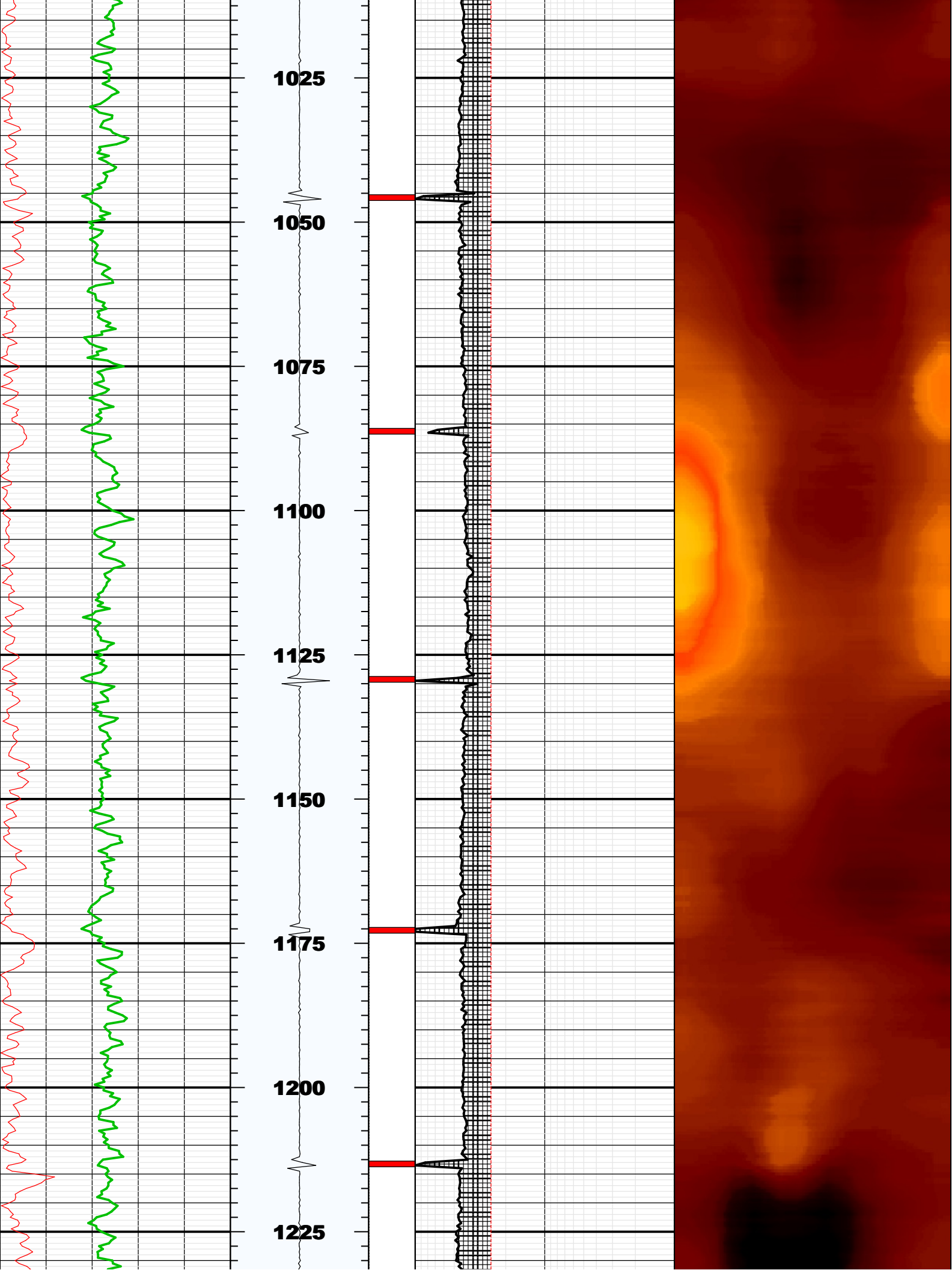




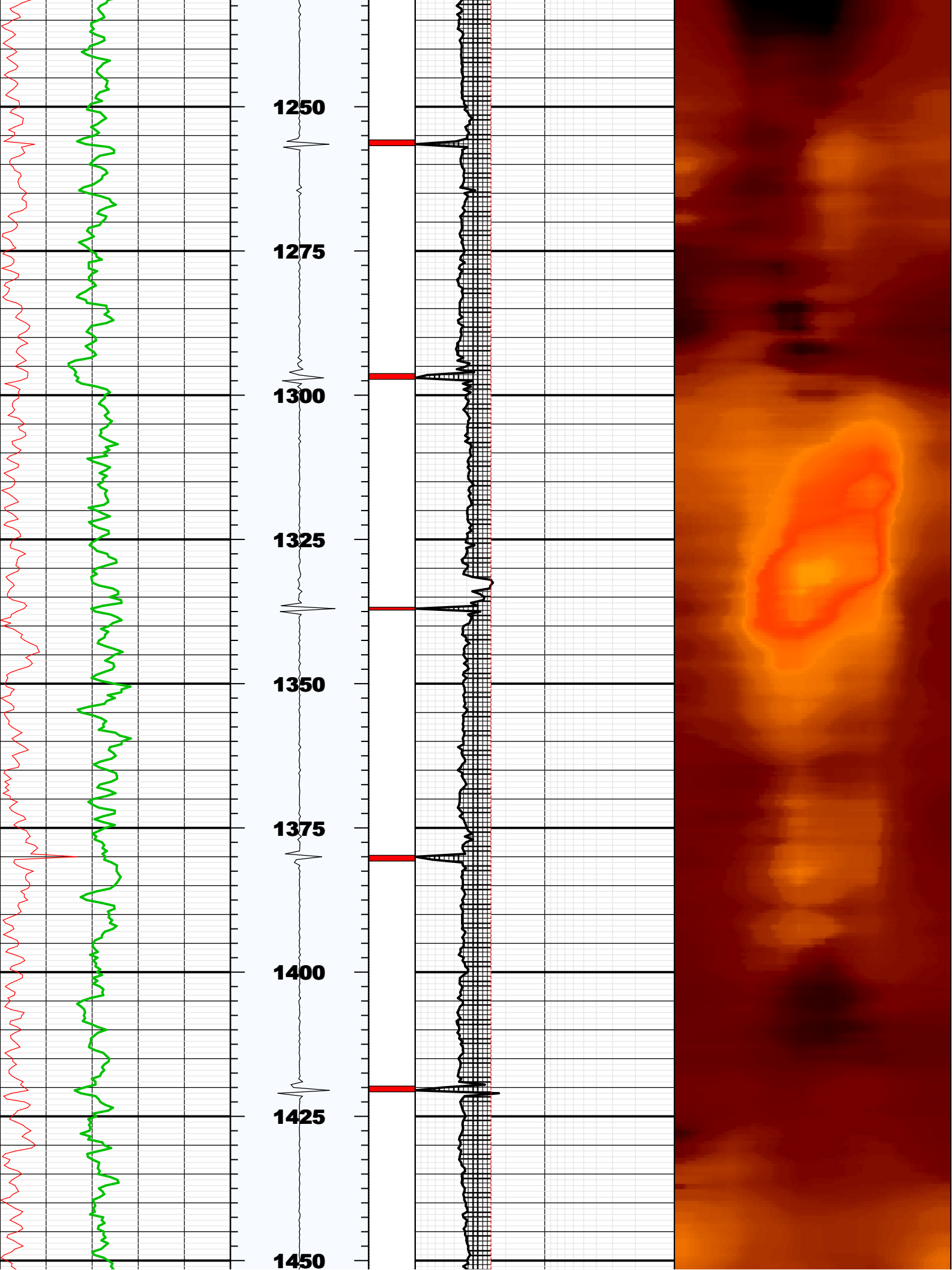


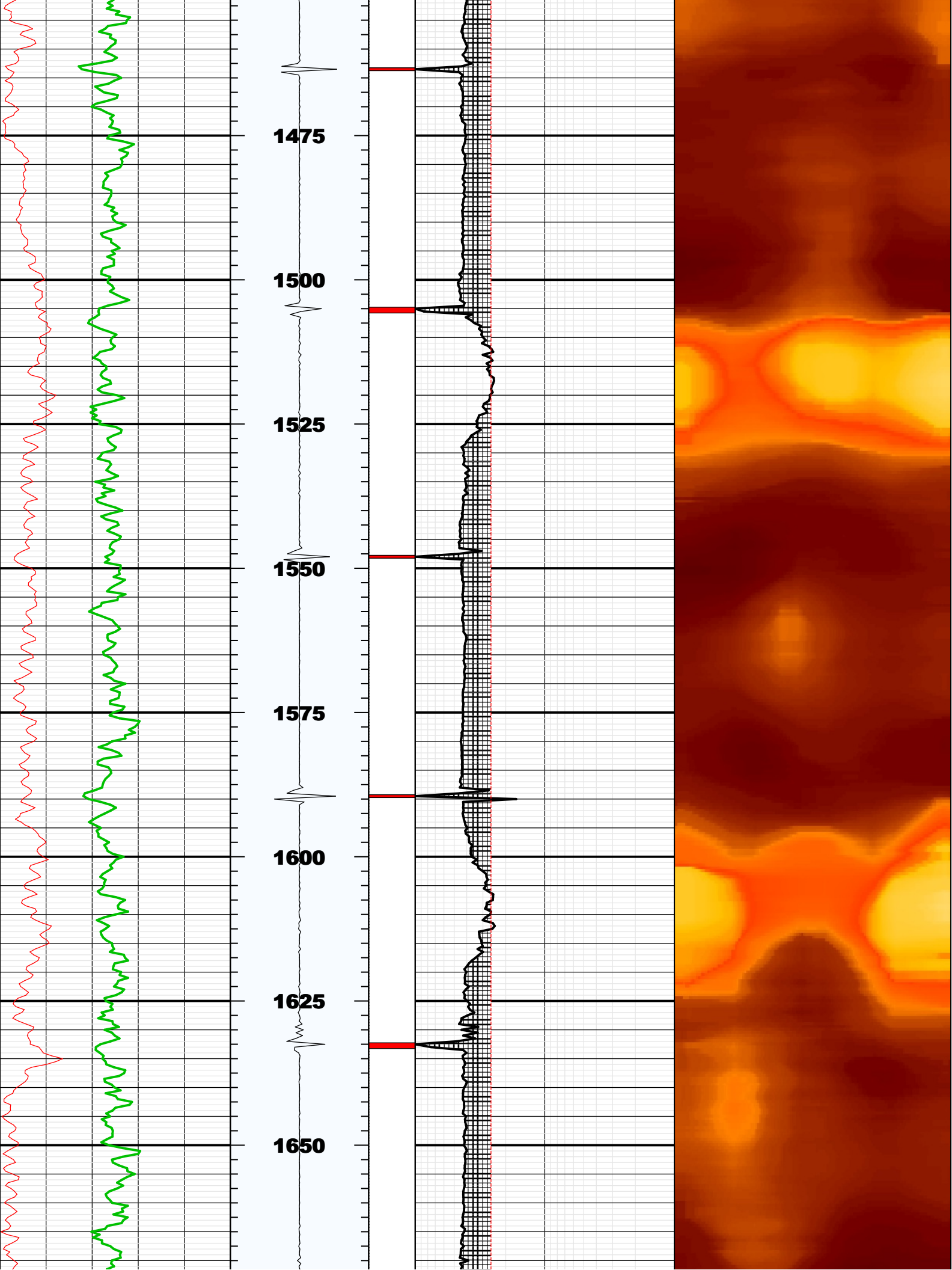


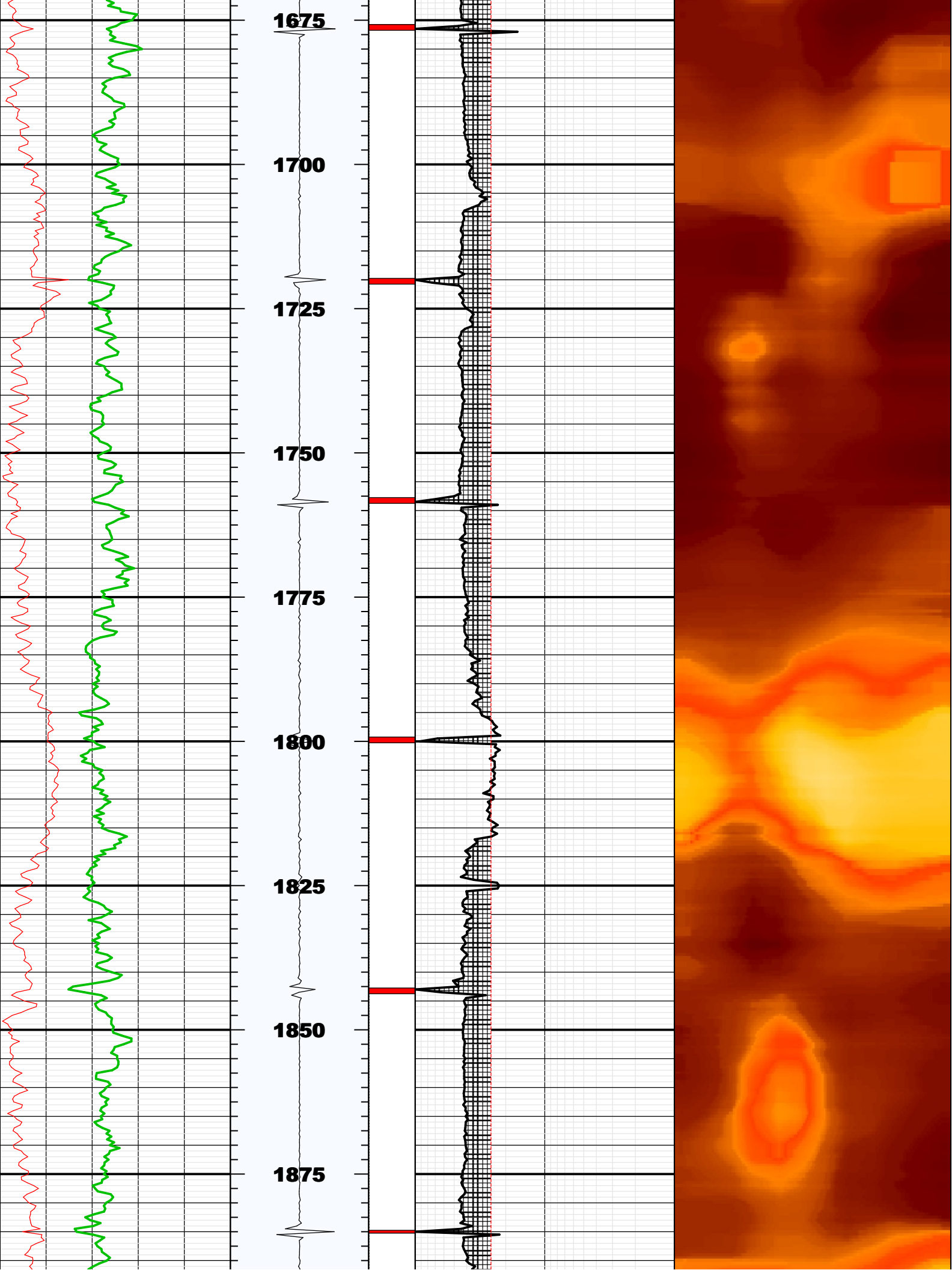


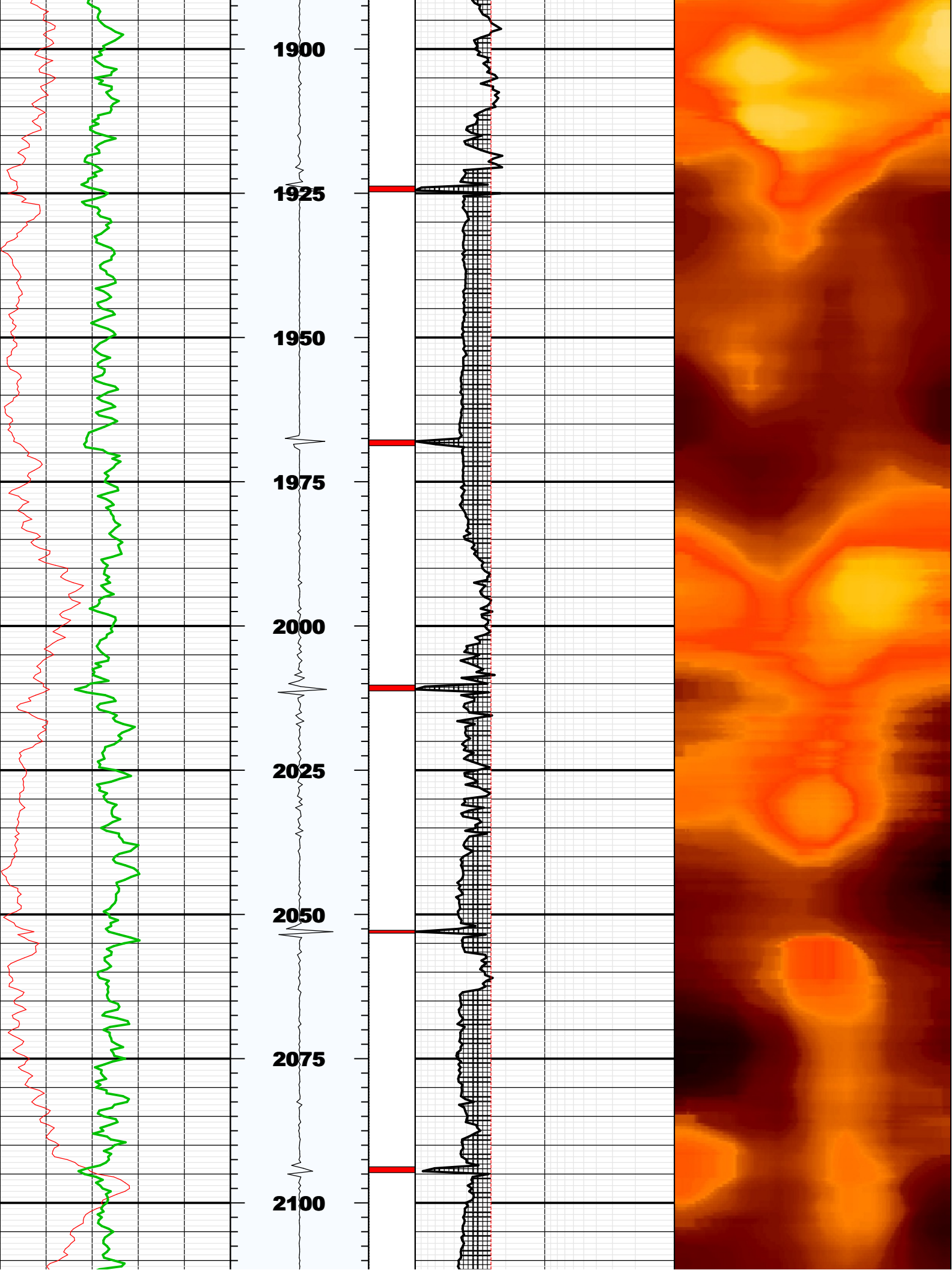




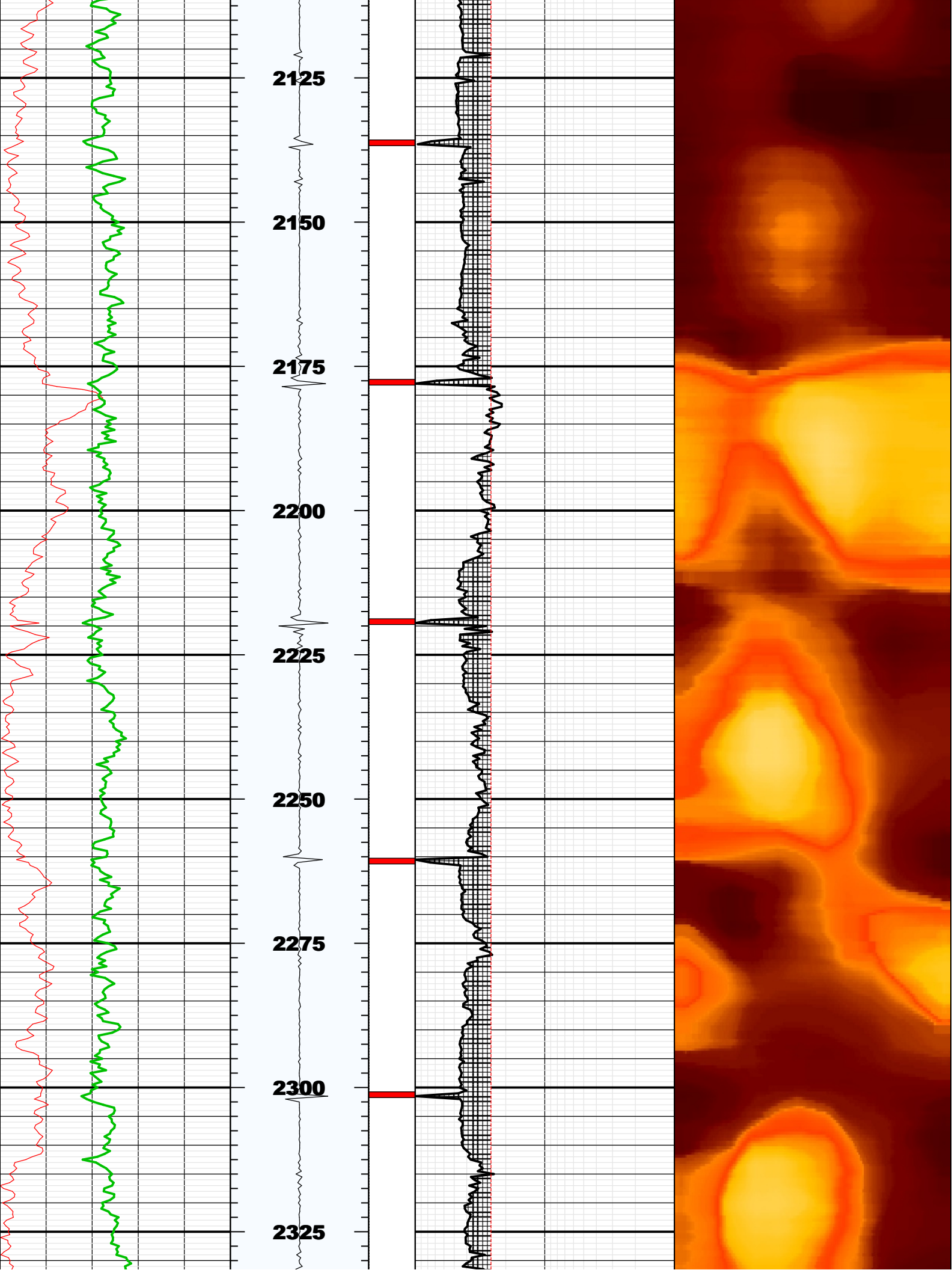


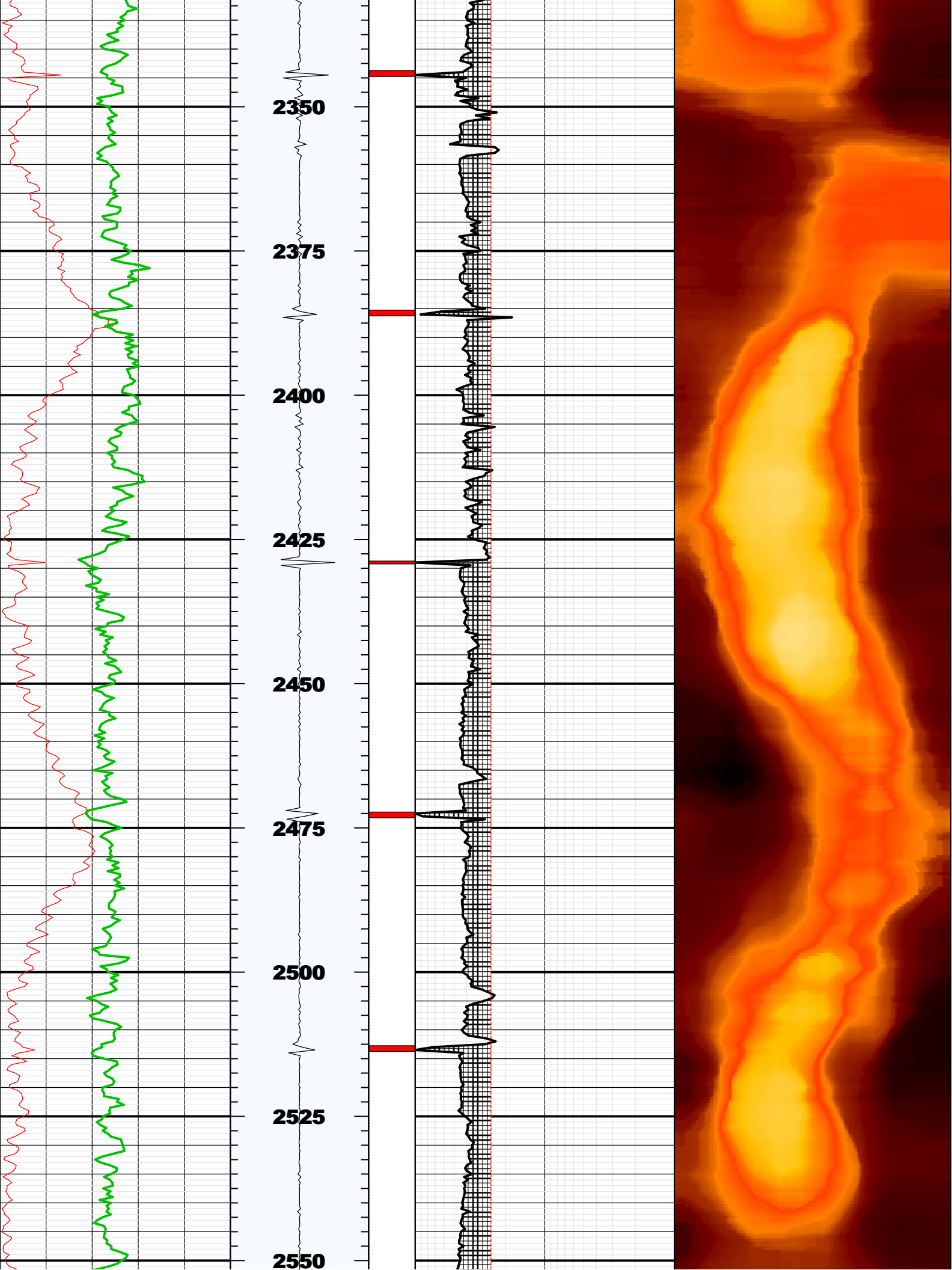


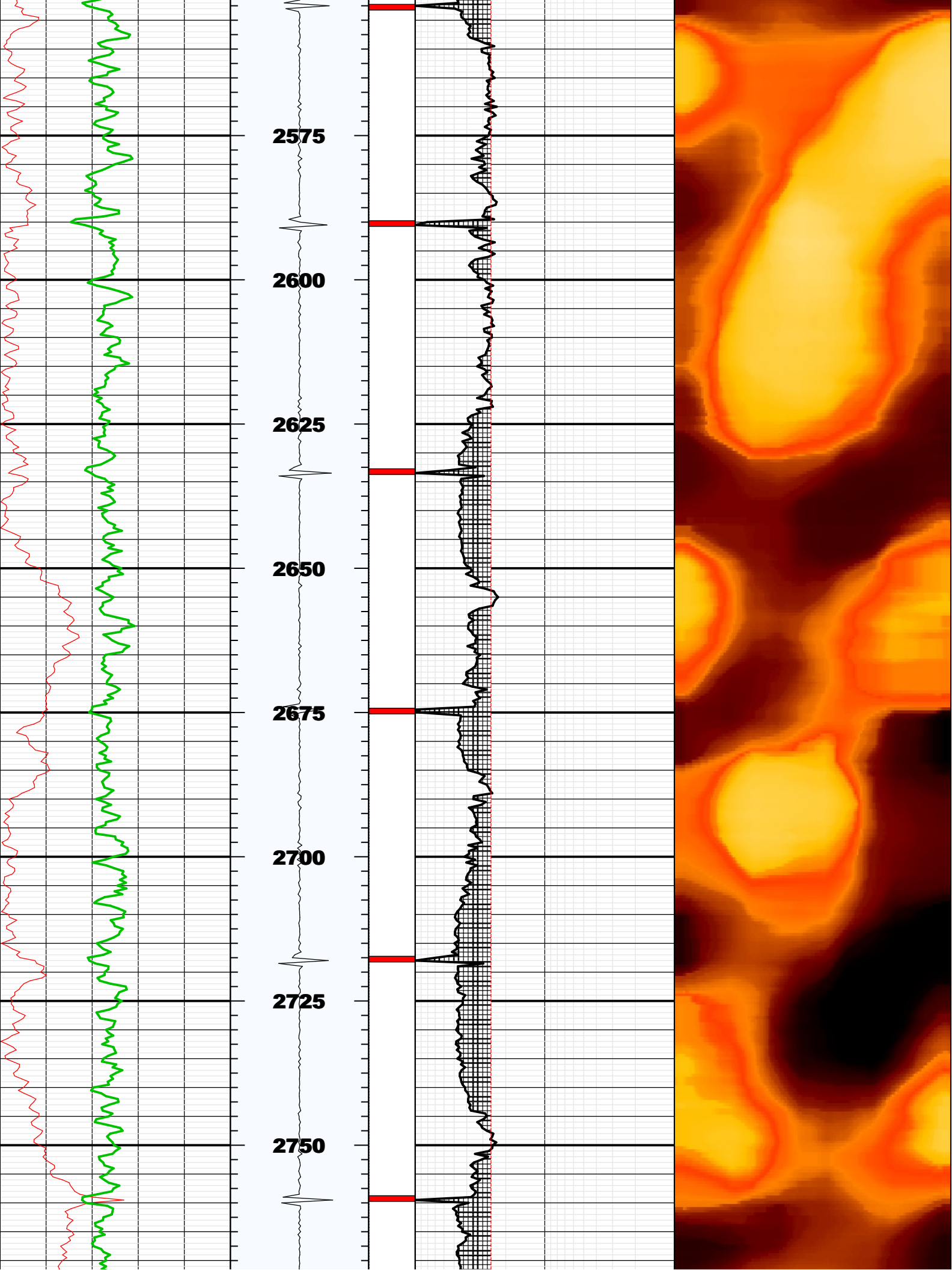




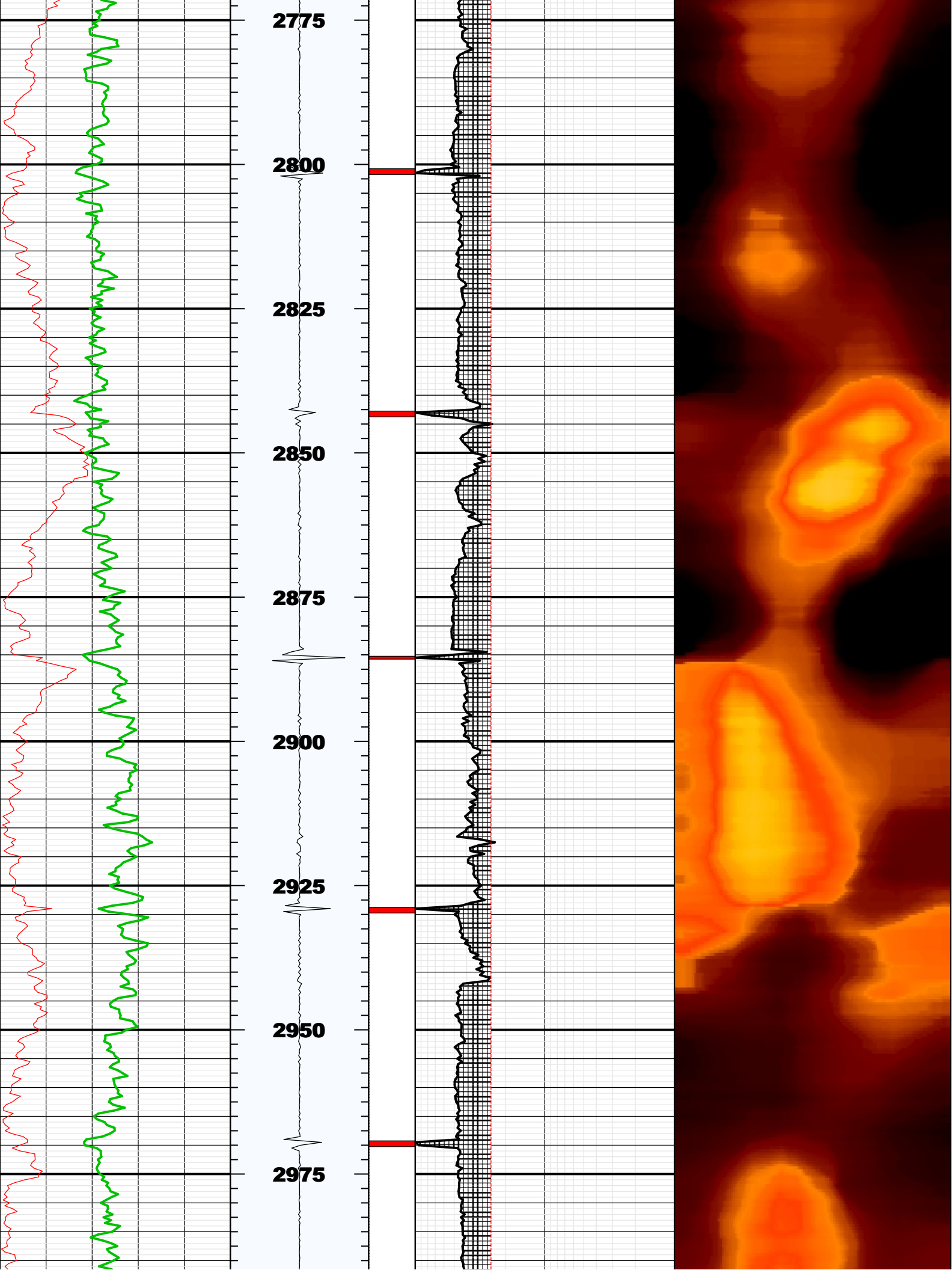


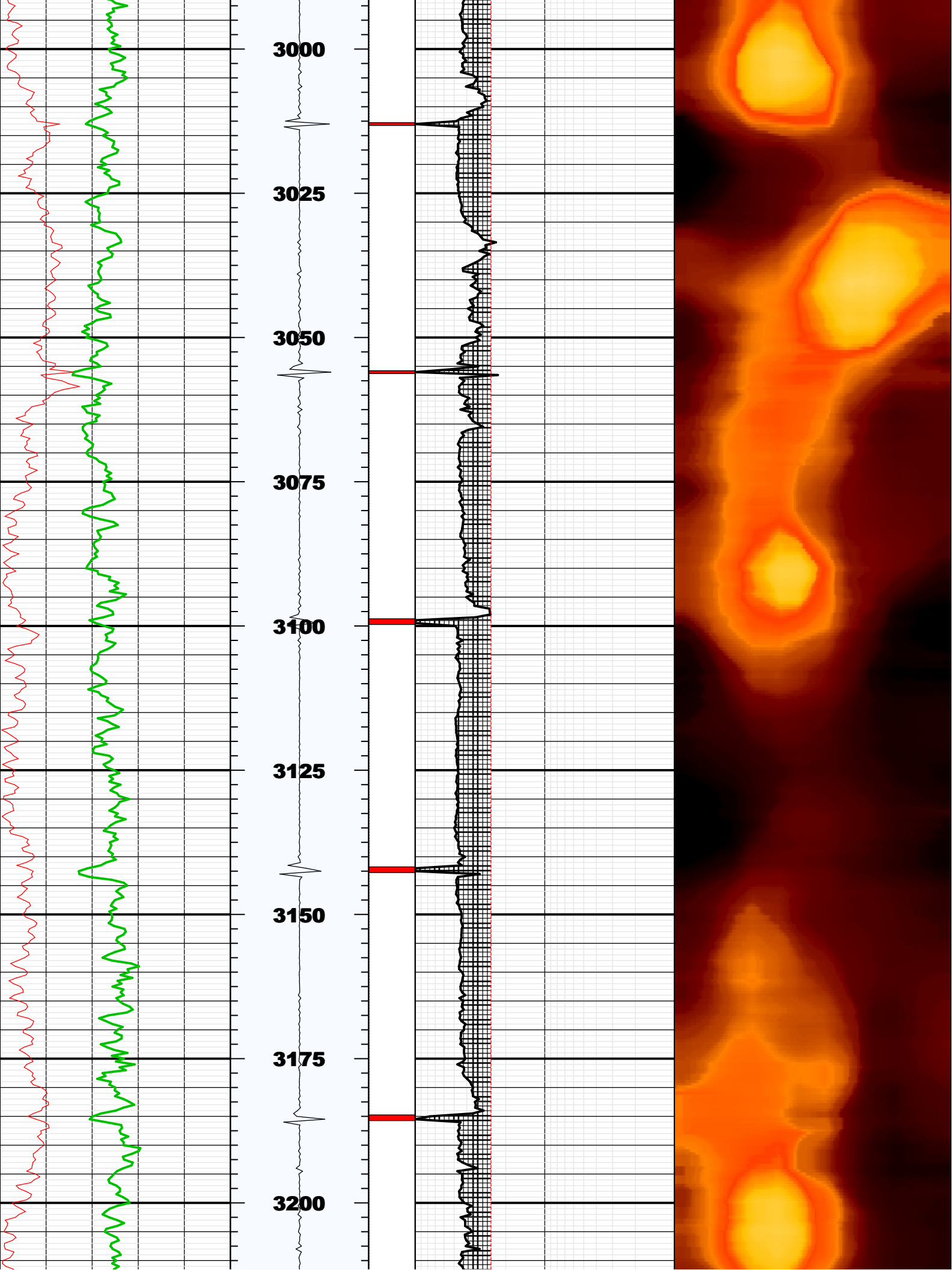


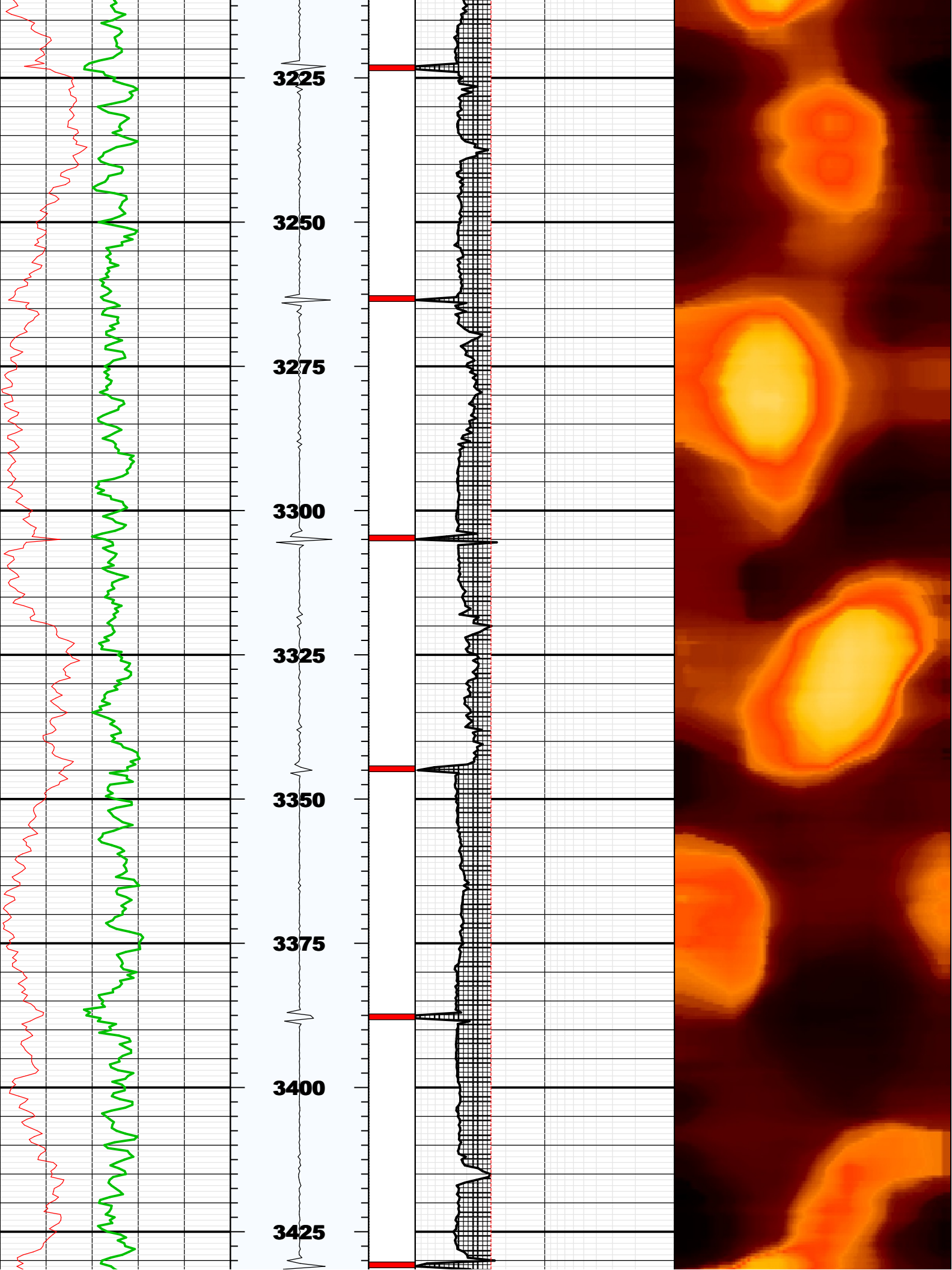




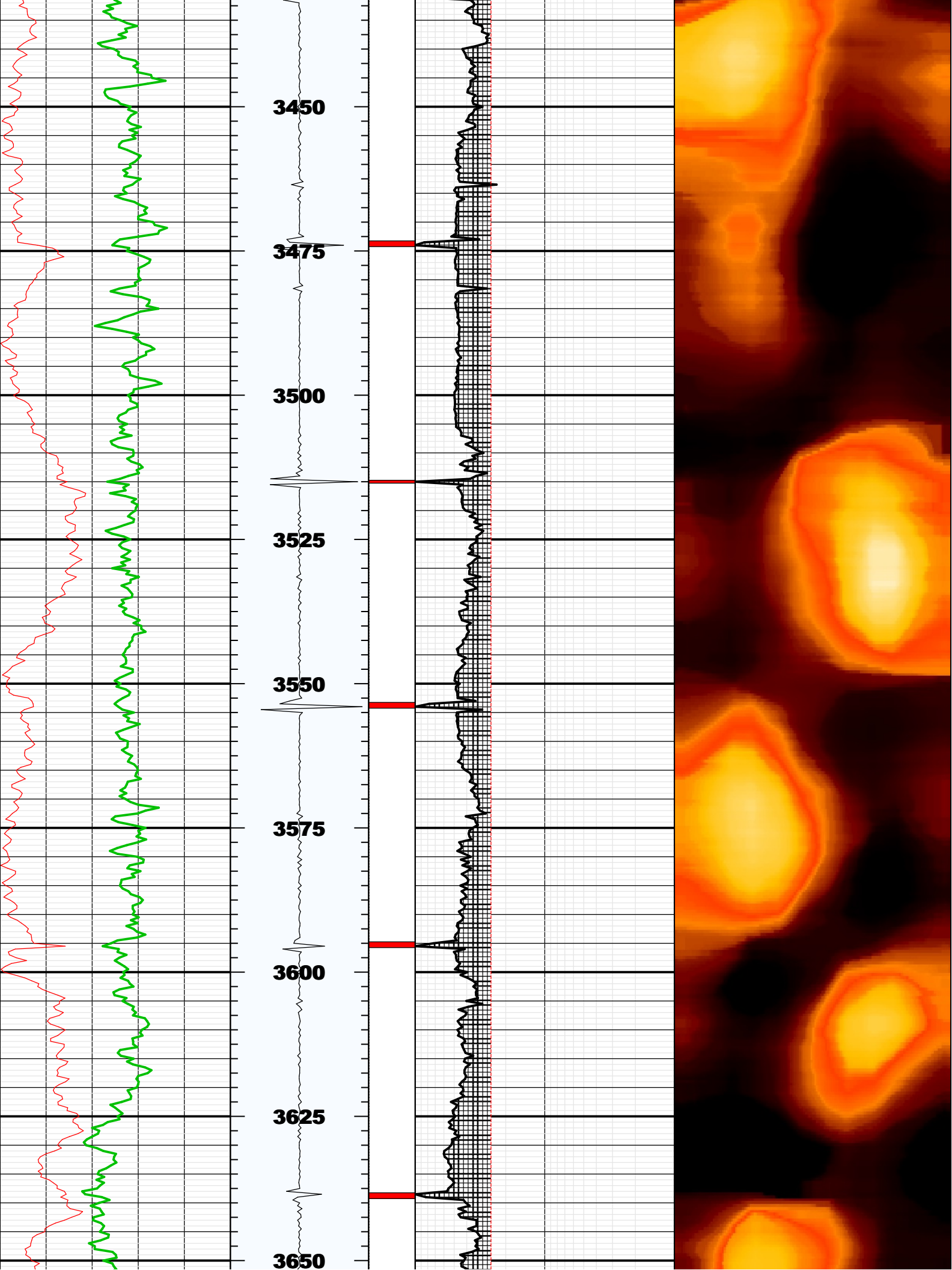


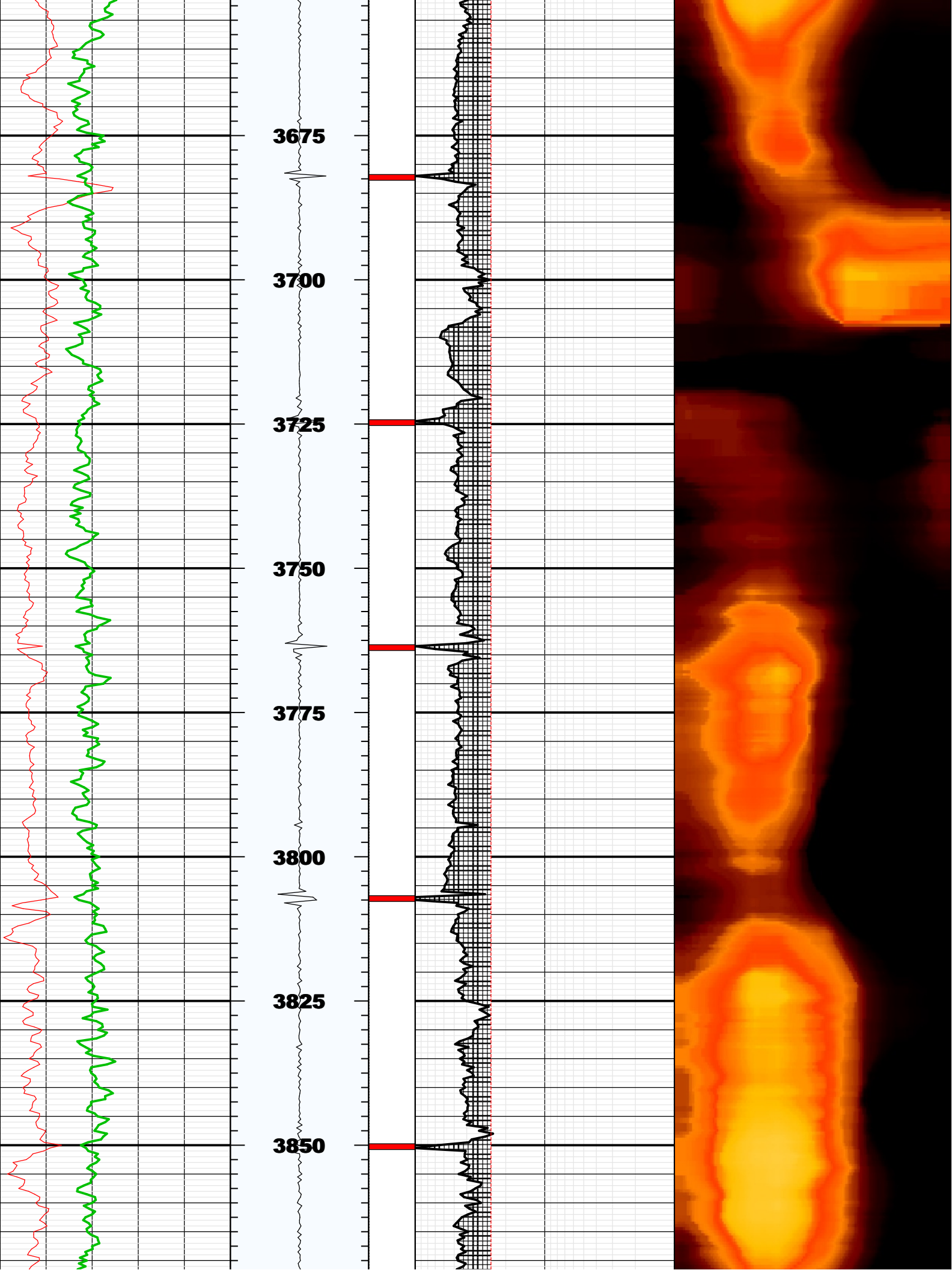


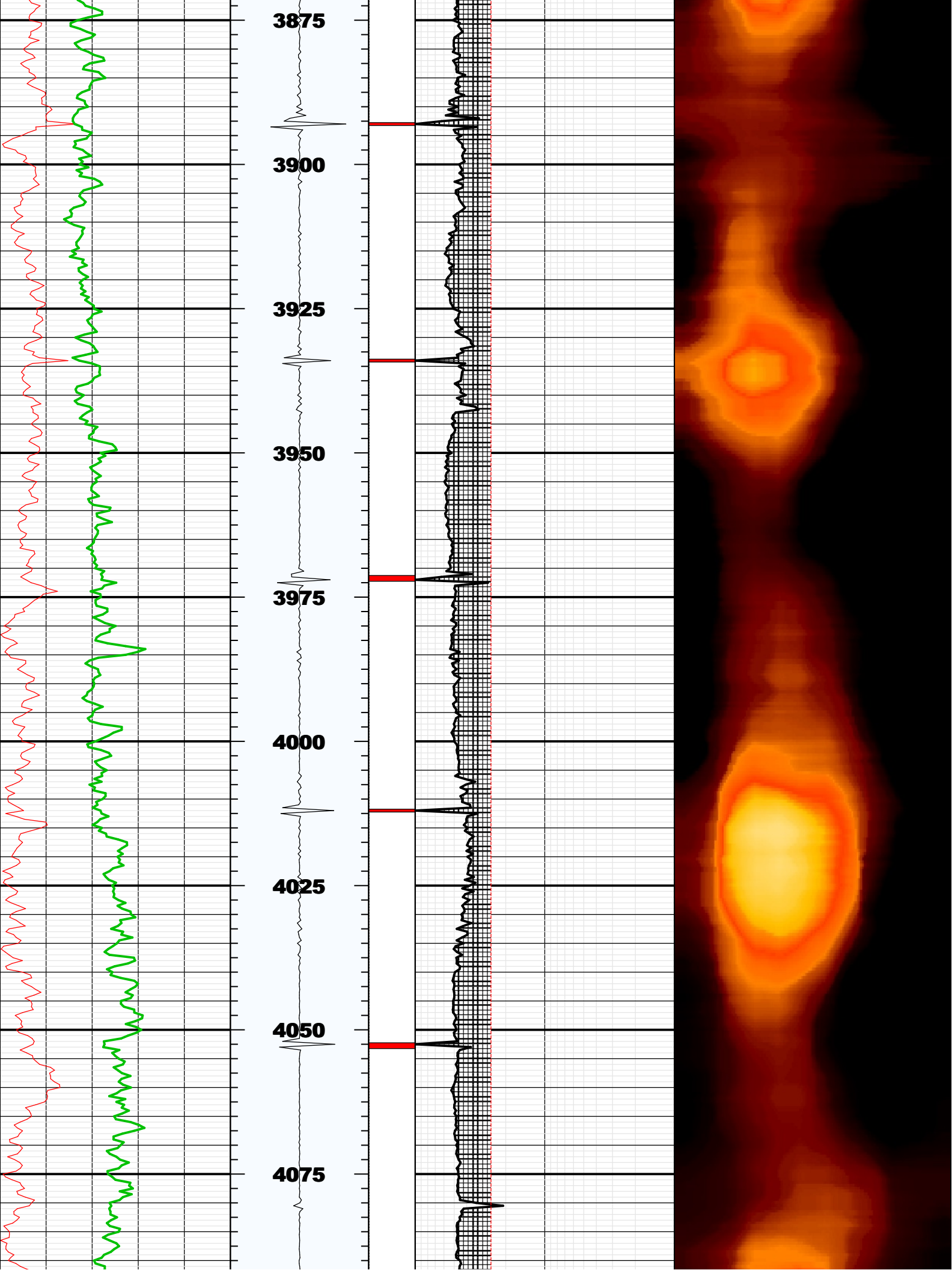


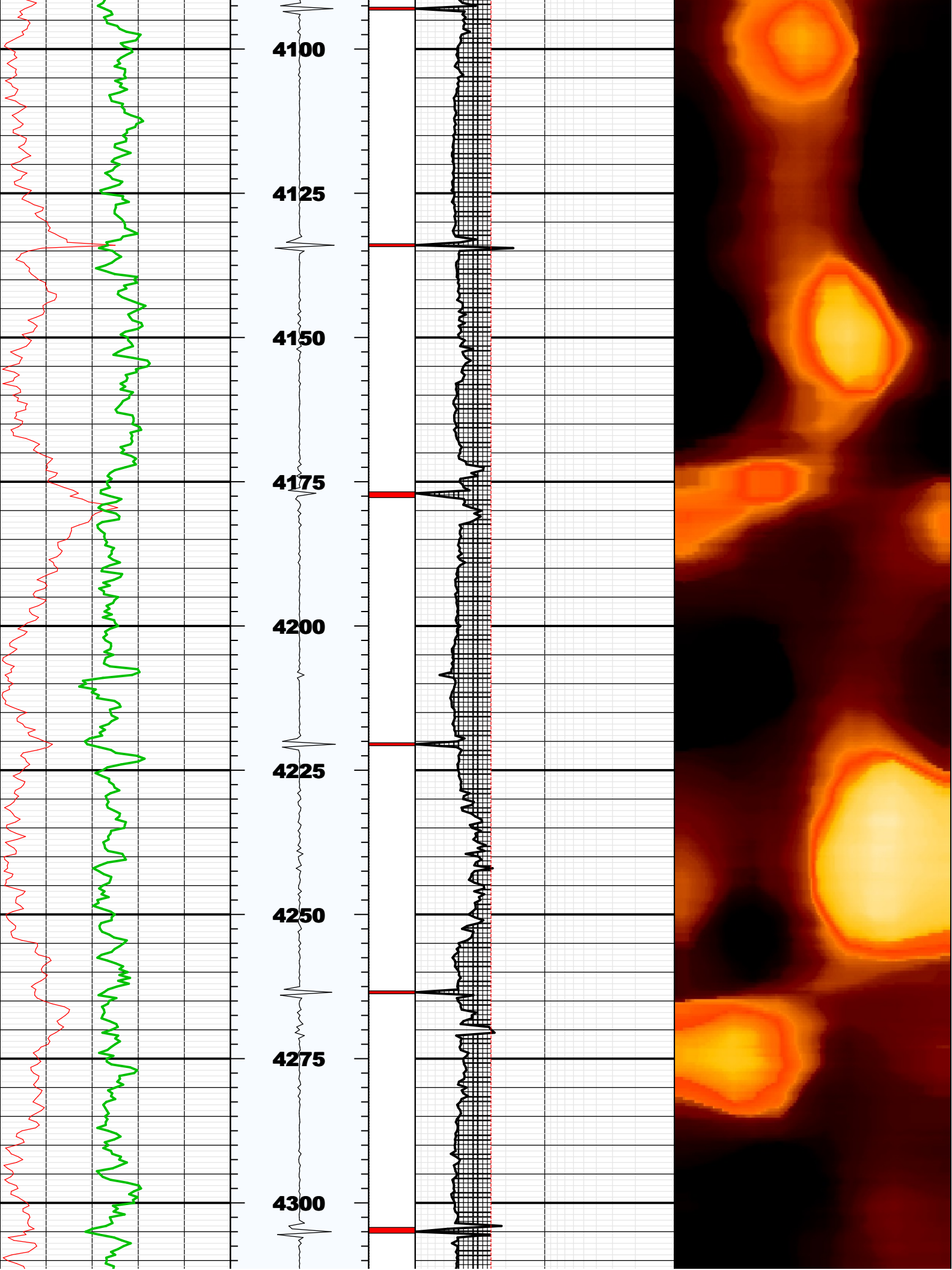




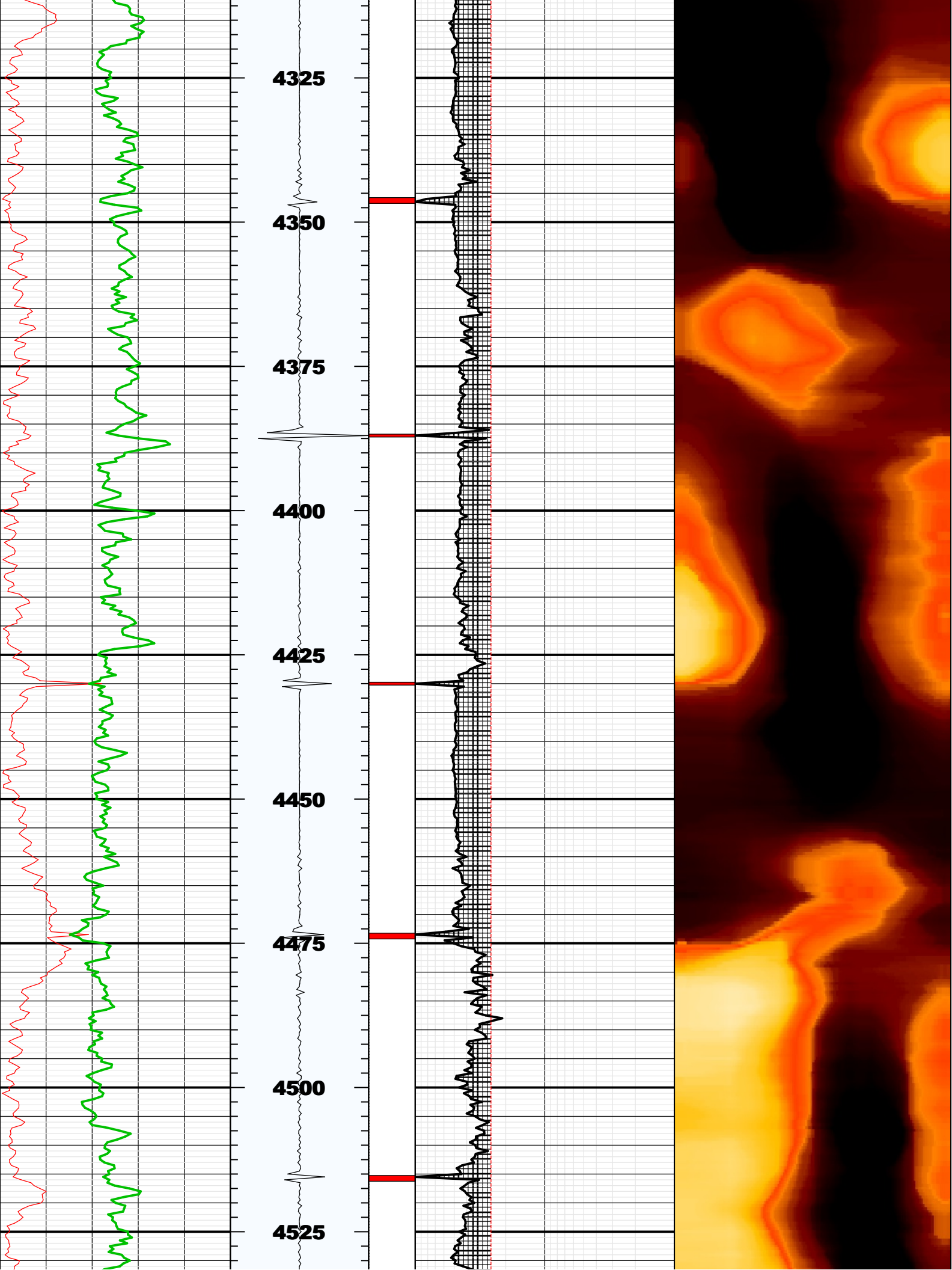


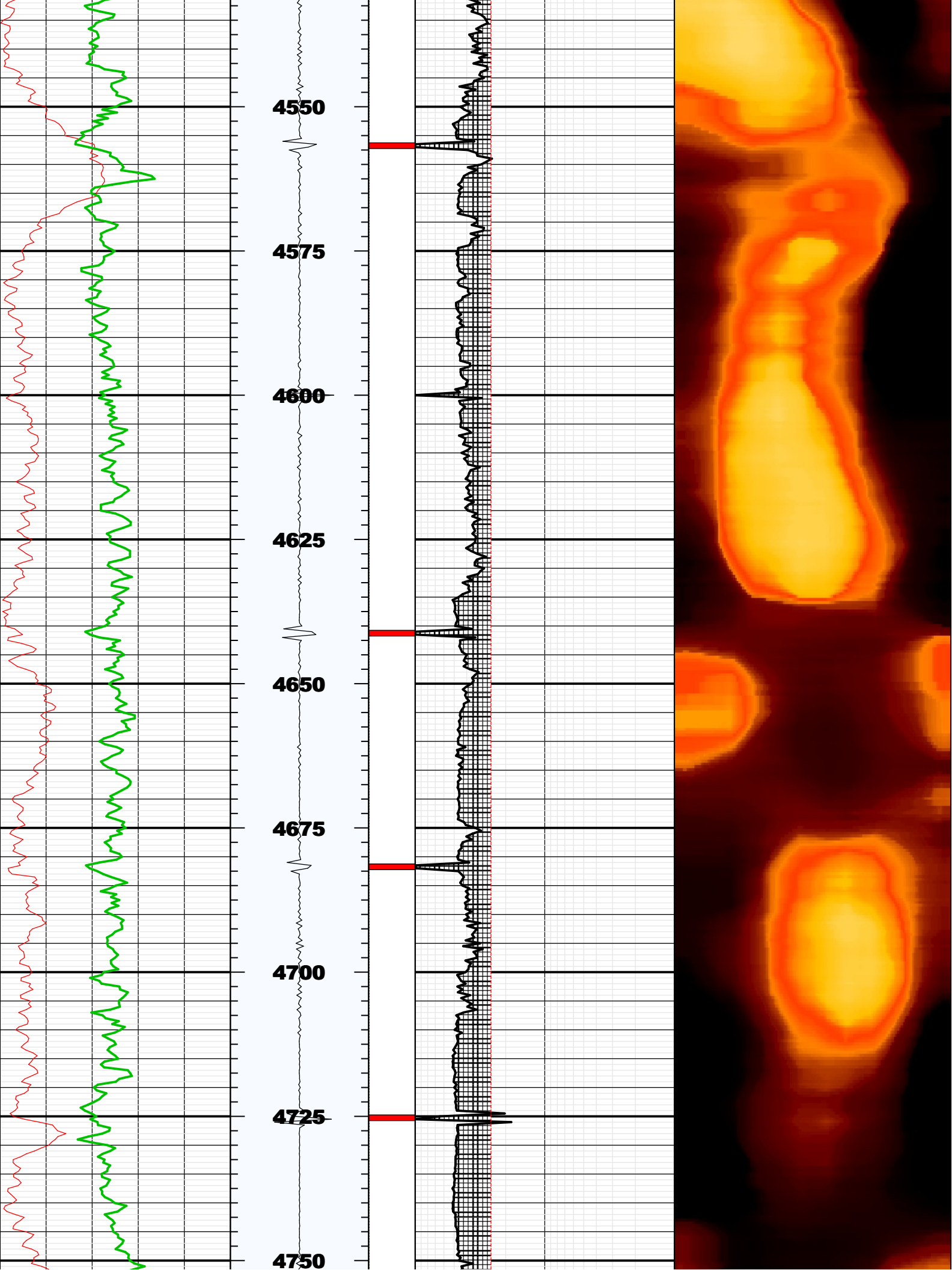


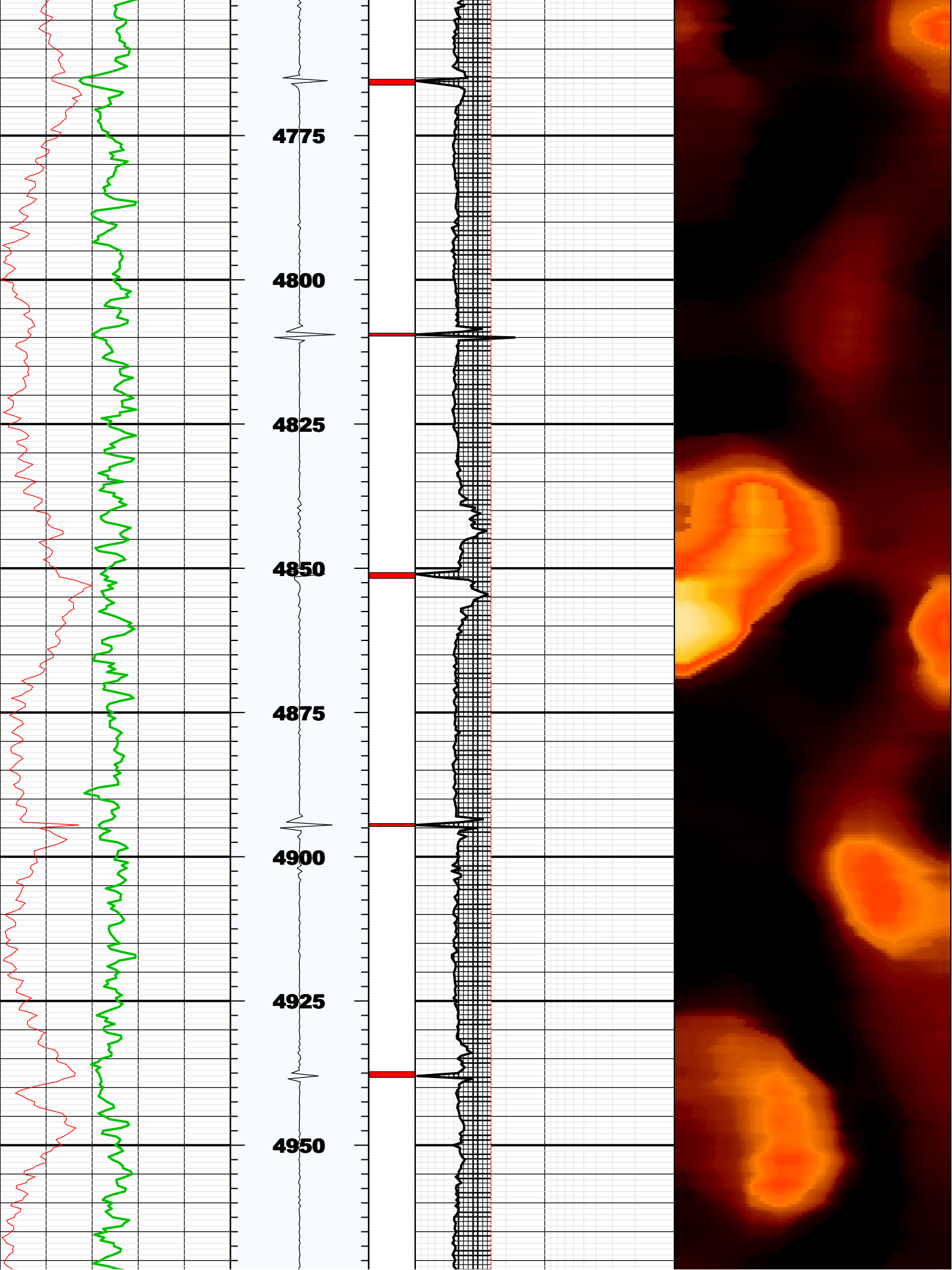


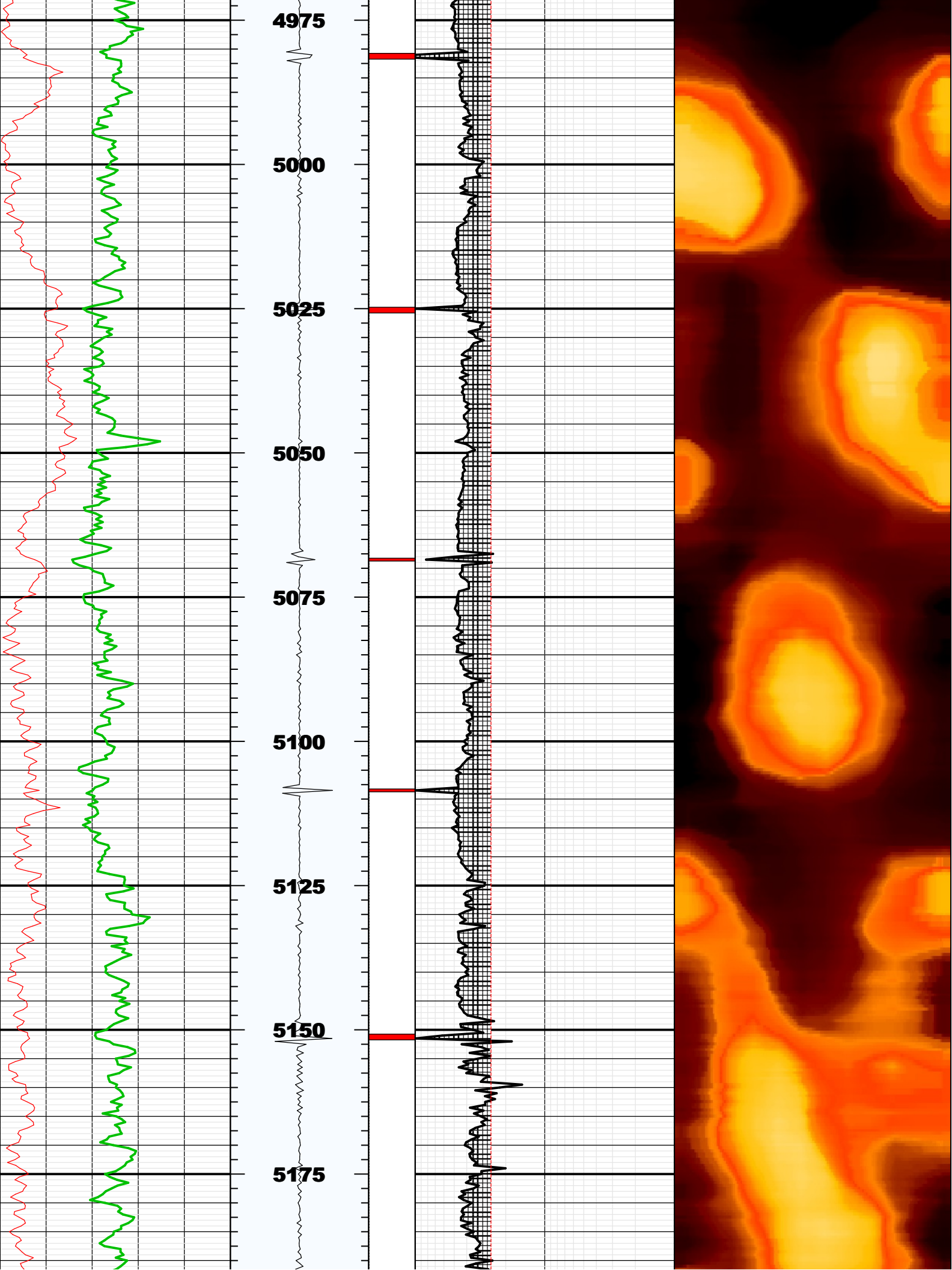




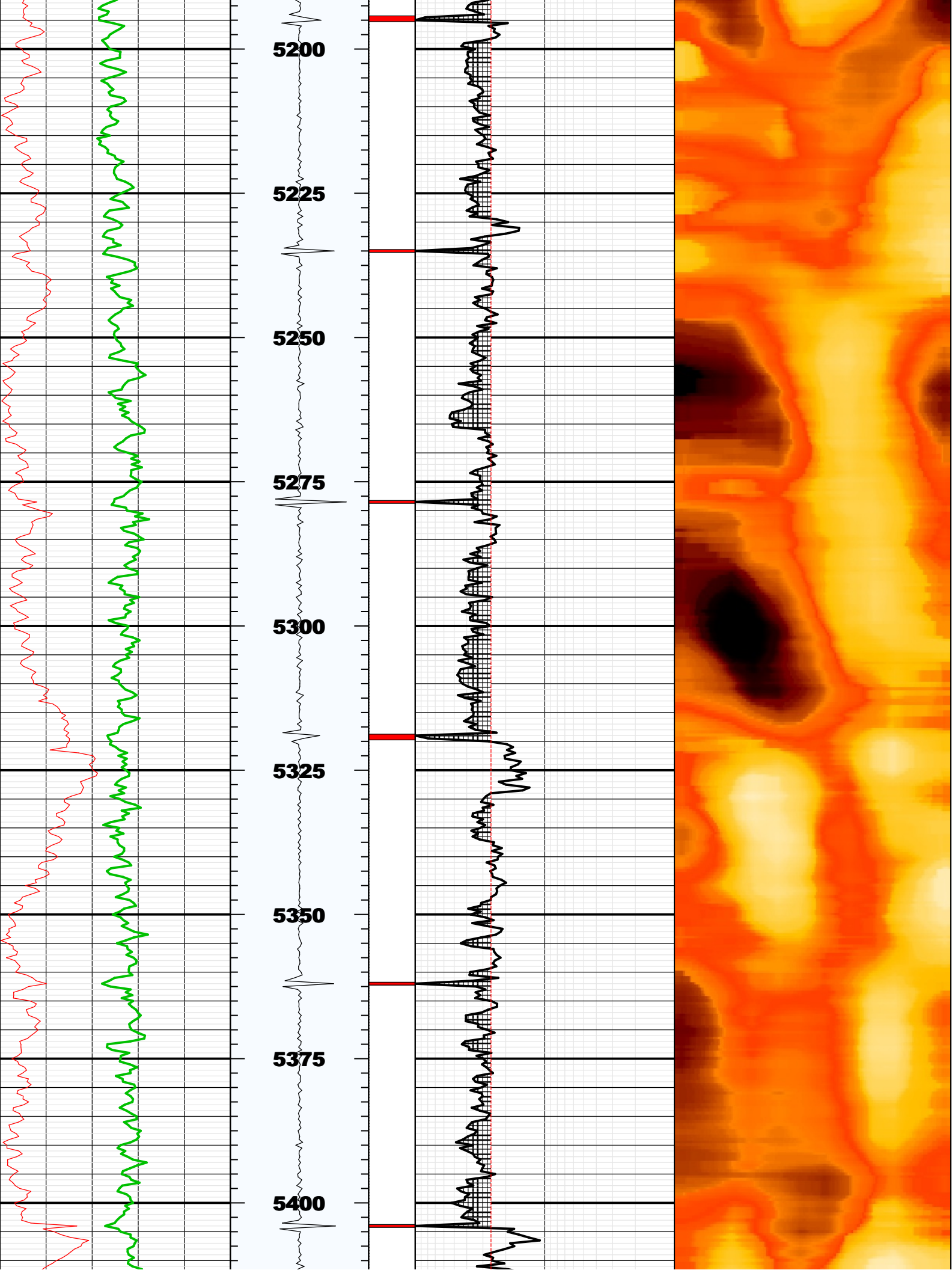


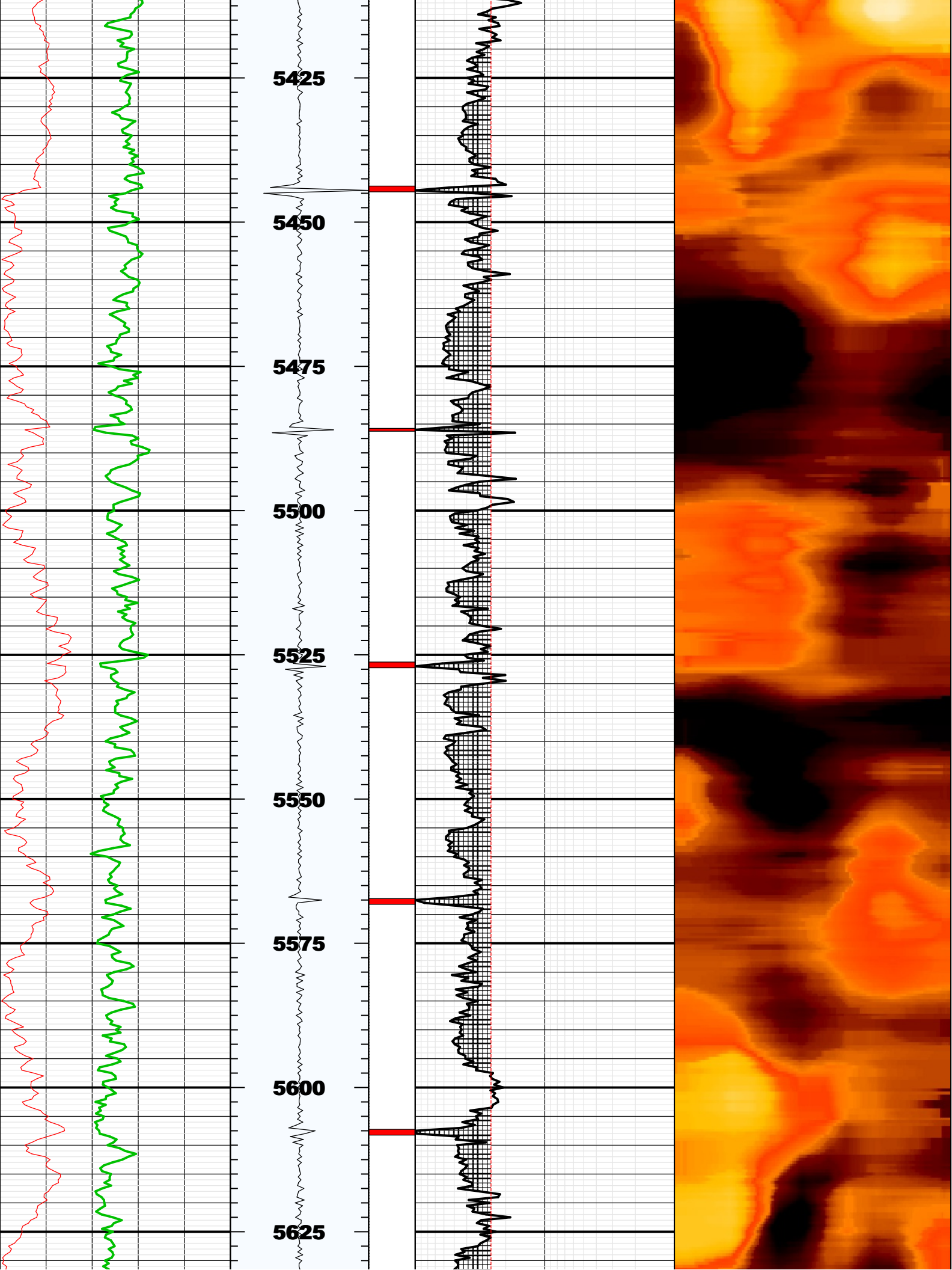


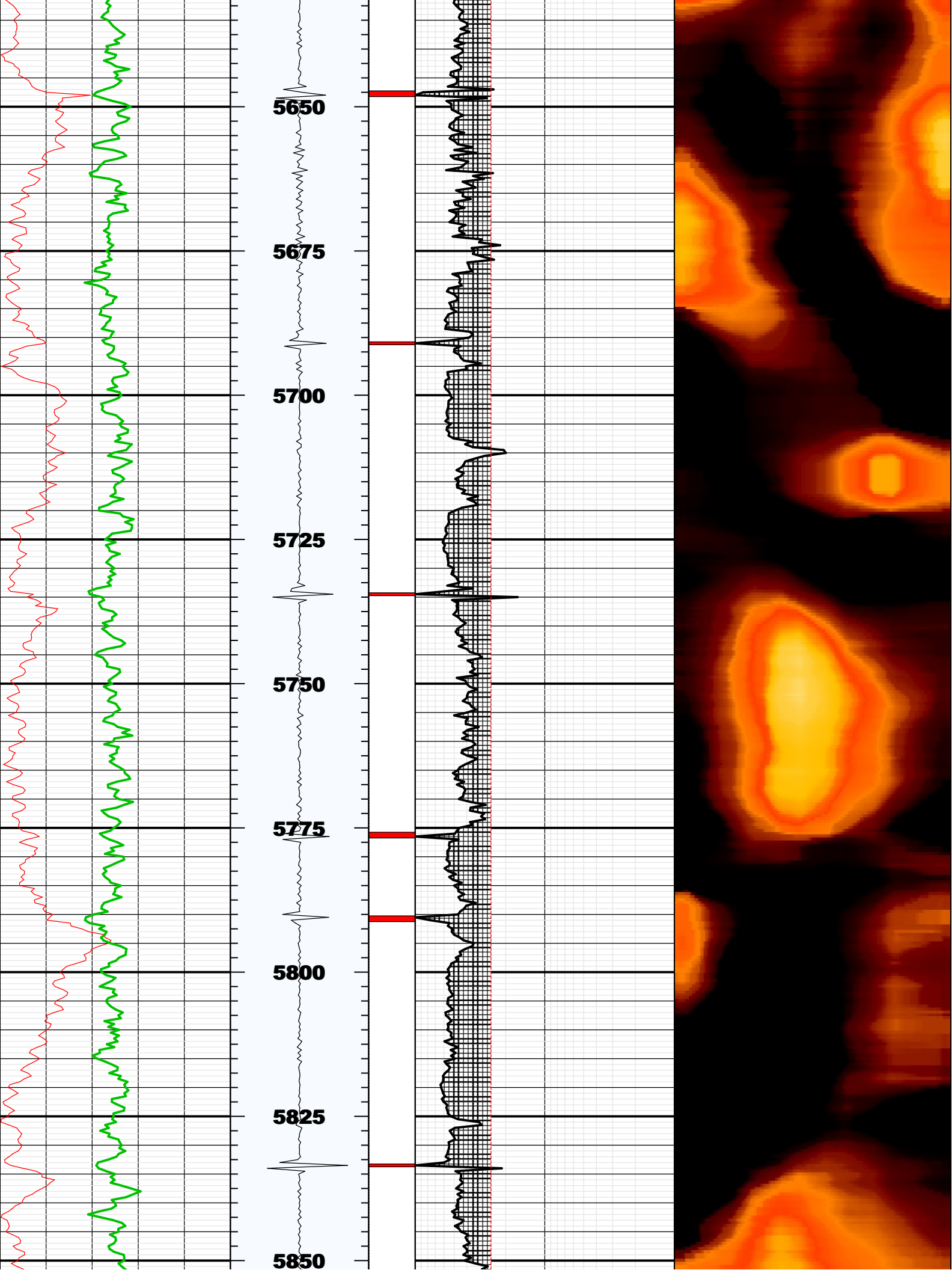




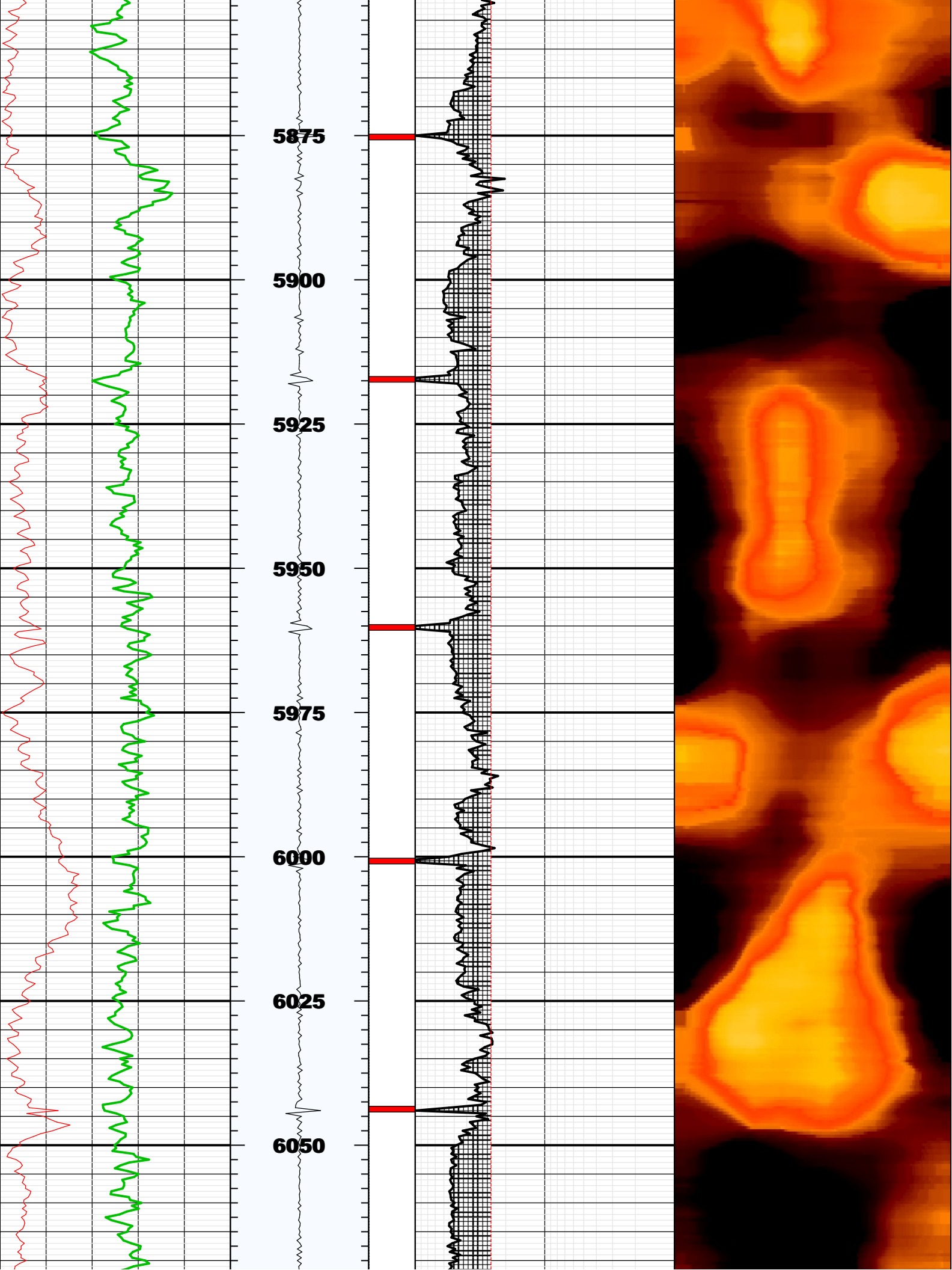


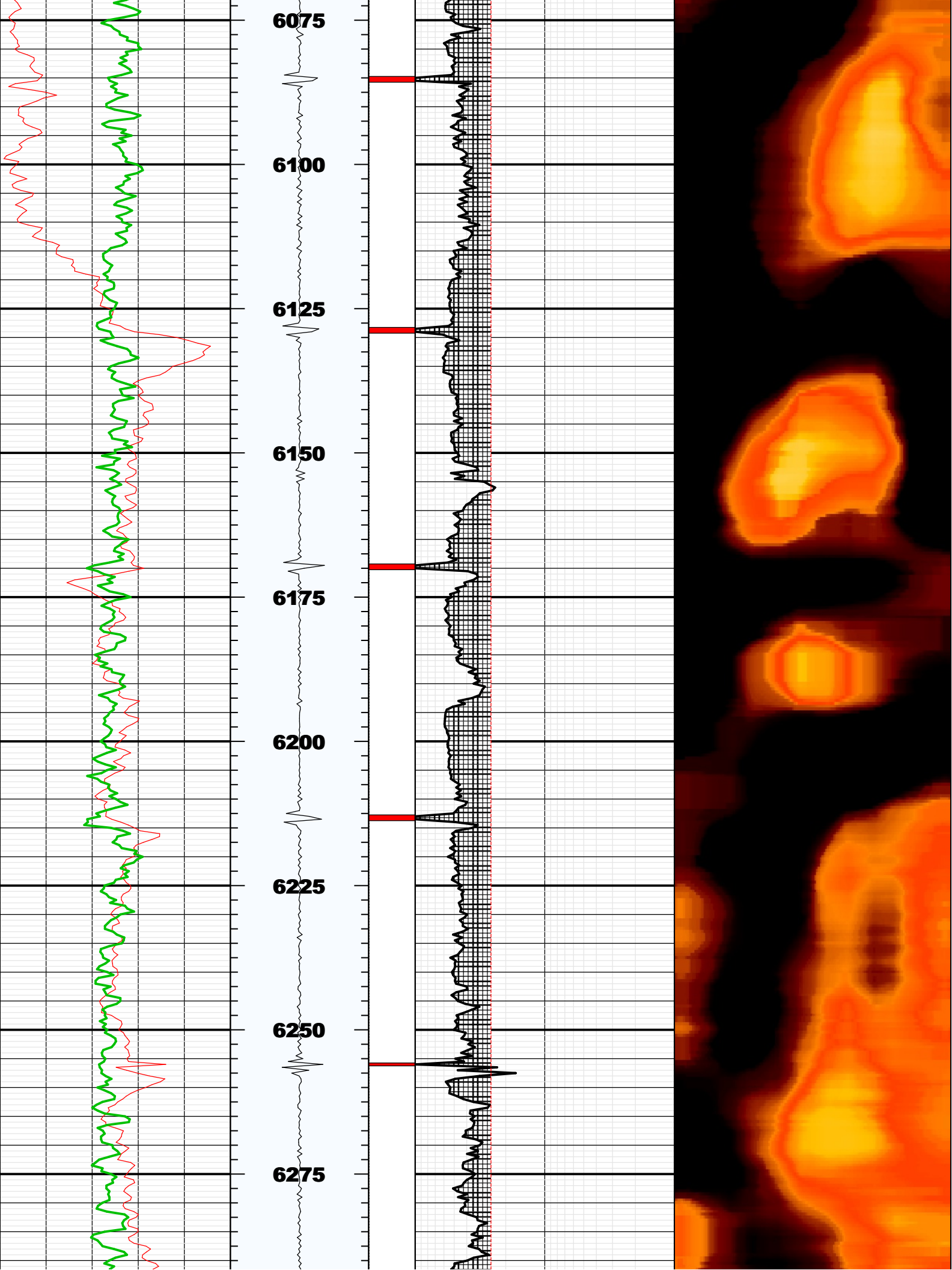


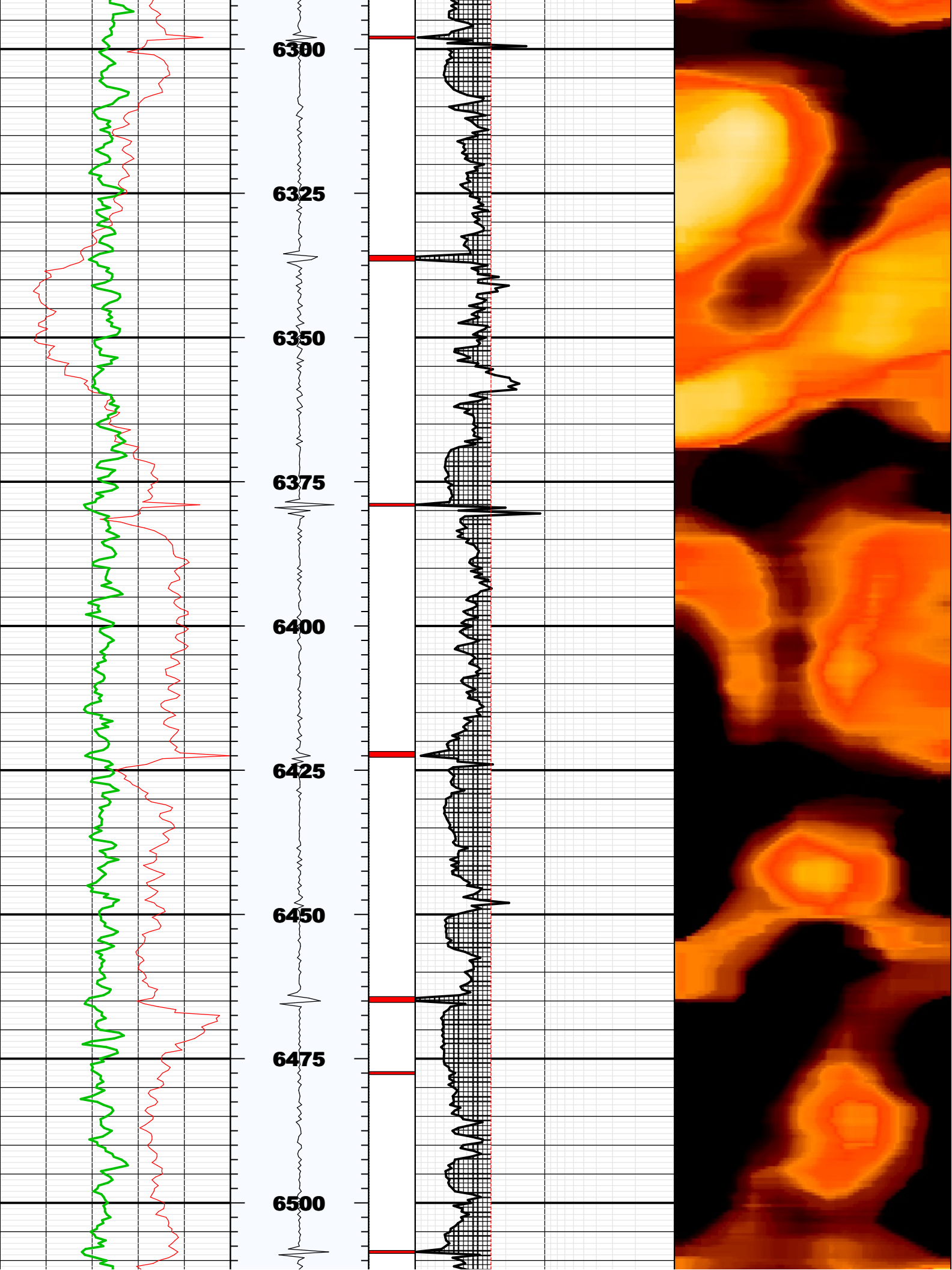




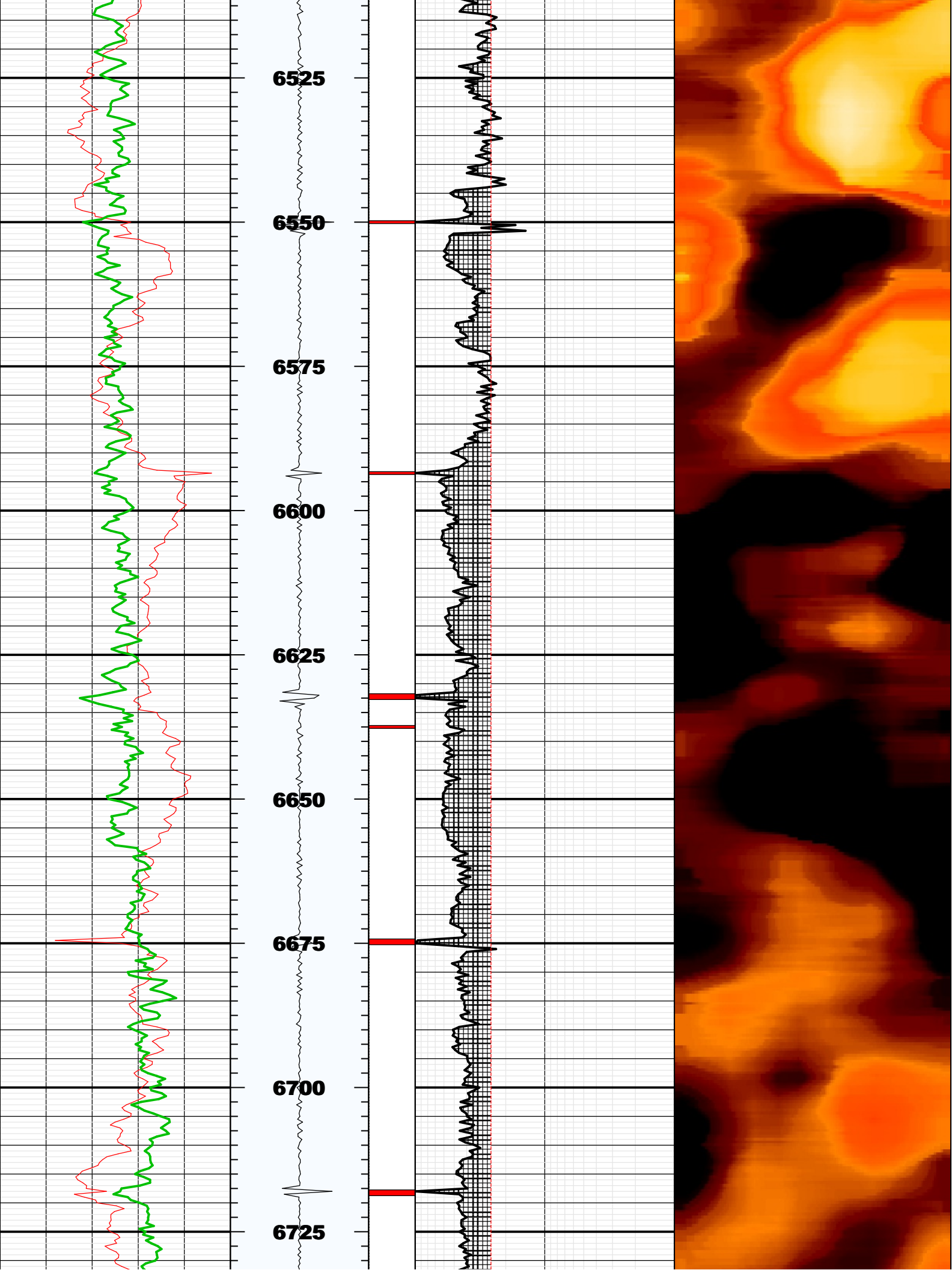


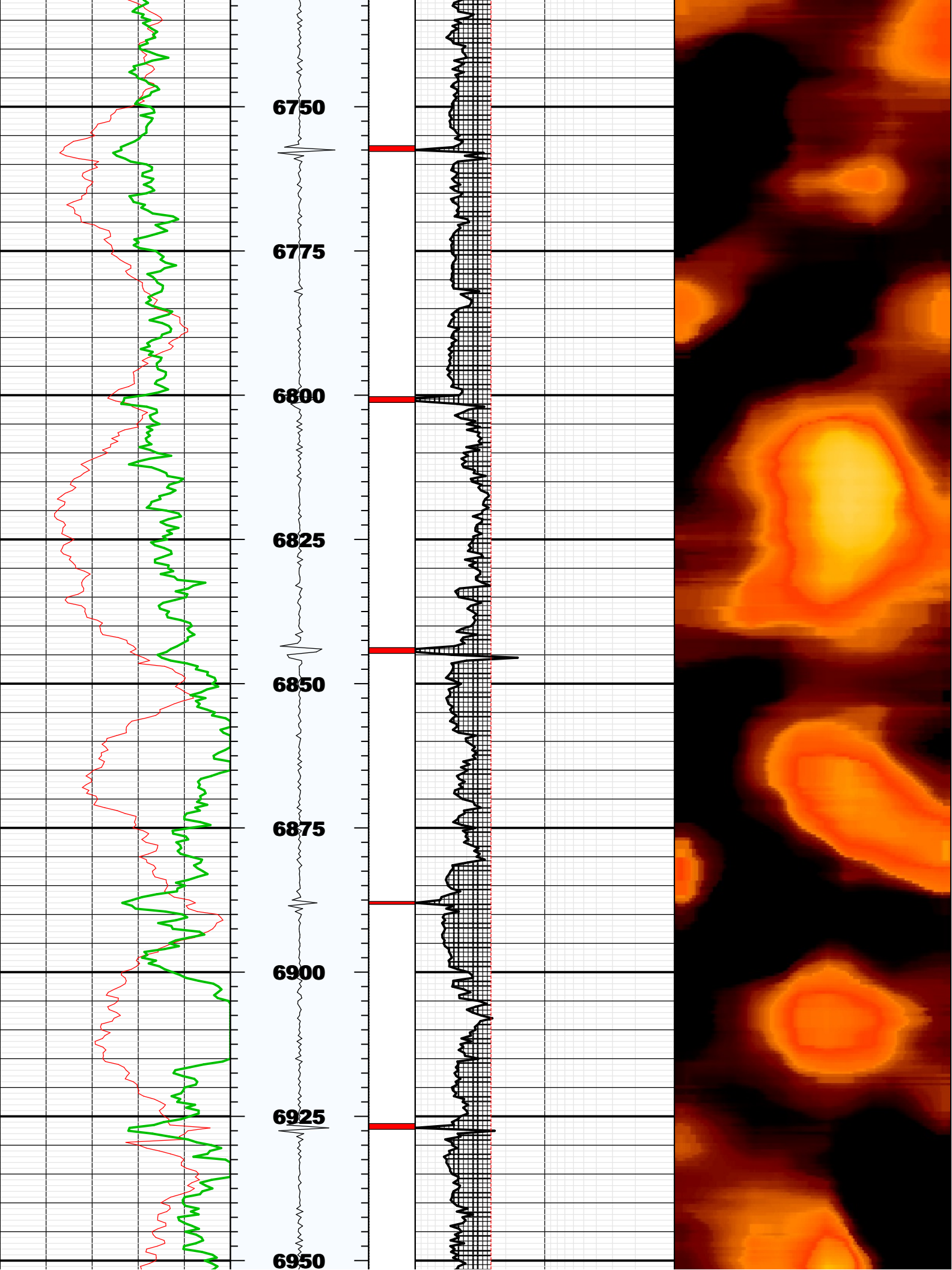


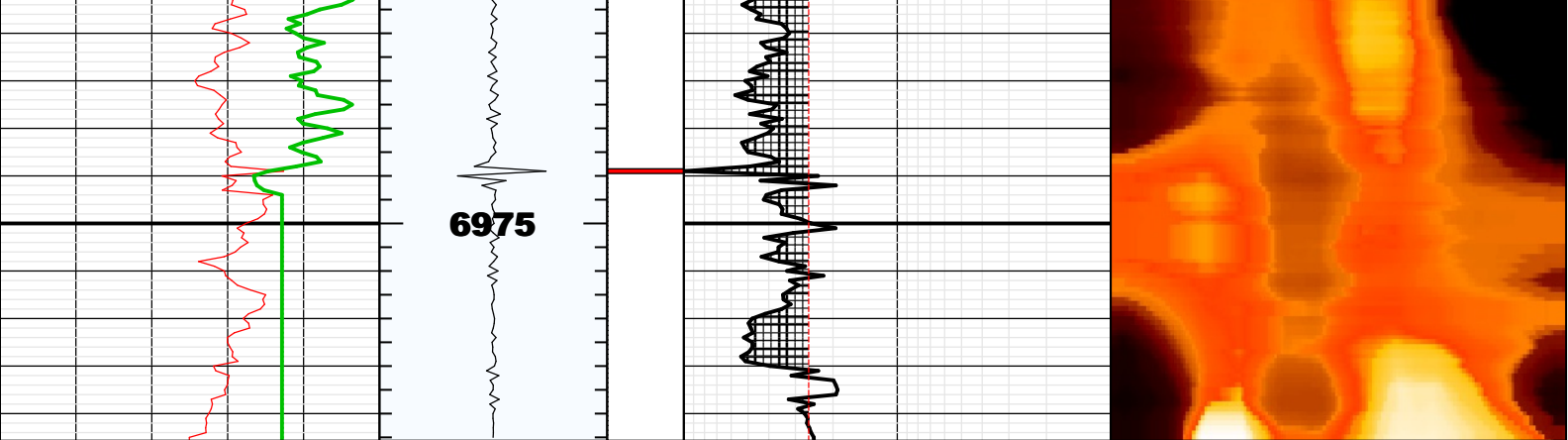










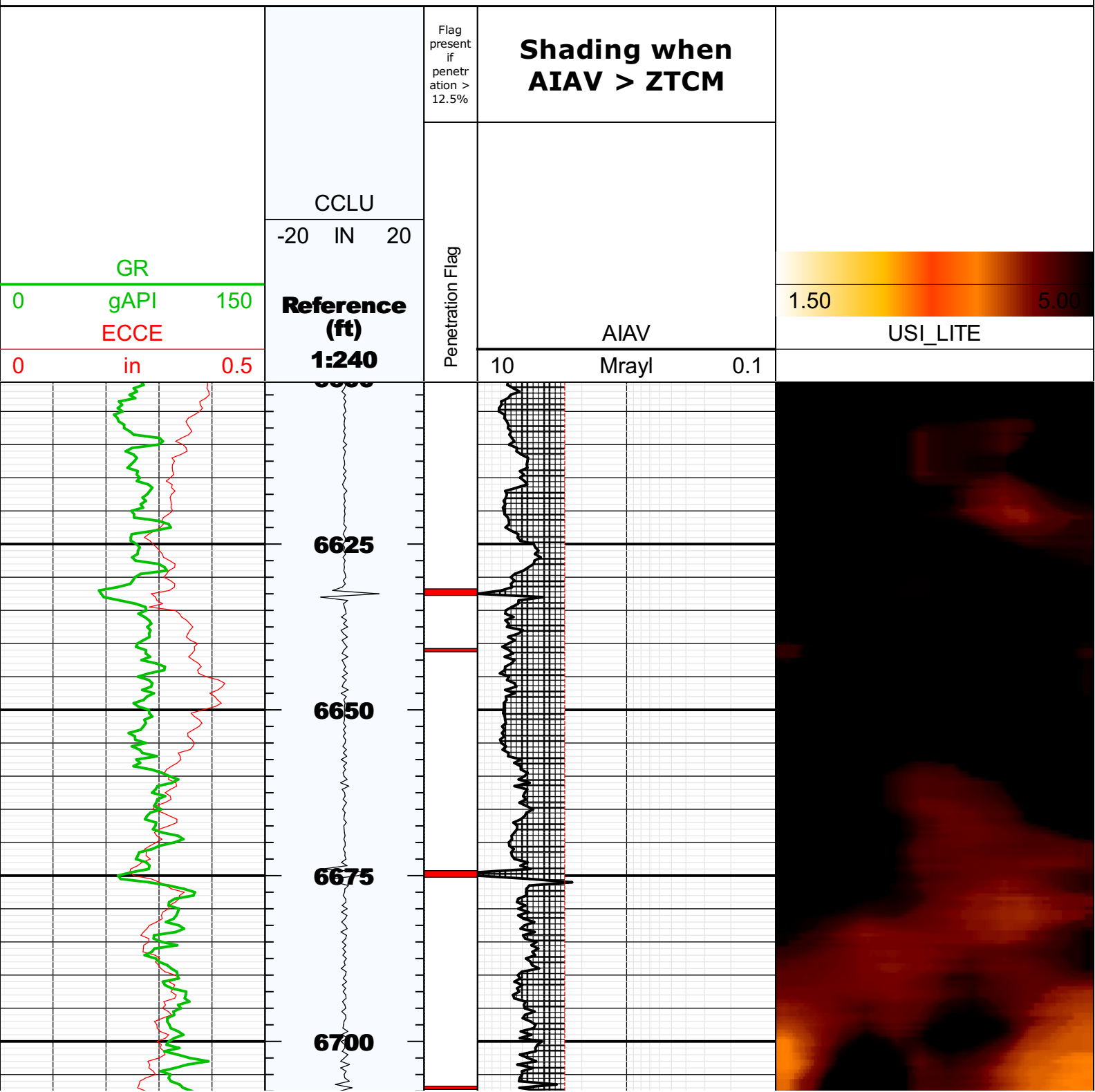


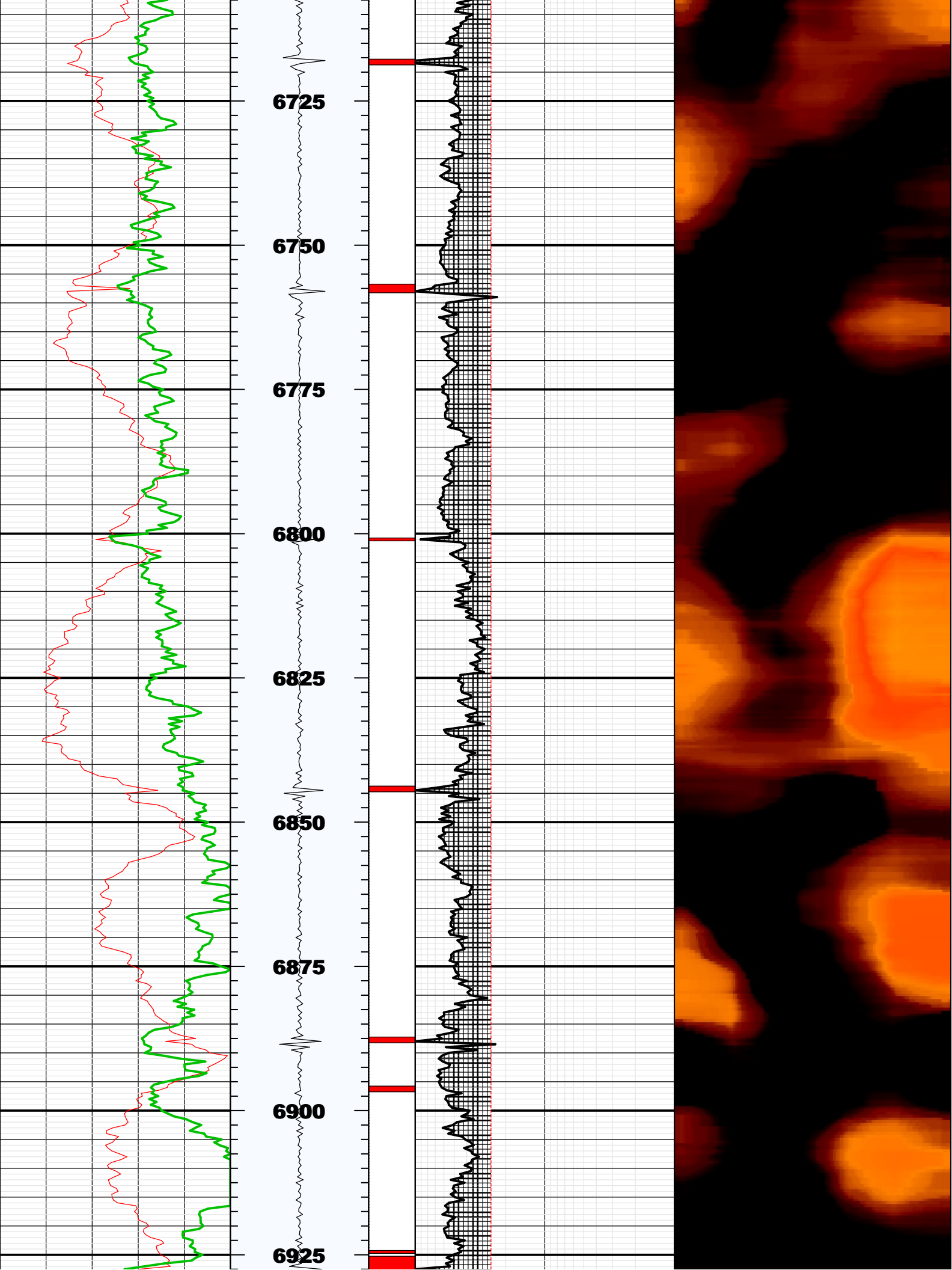
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID			
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	206.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	30	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	38.40100	US	Window Begin Time
WINE	78.40100	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

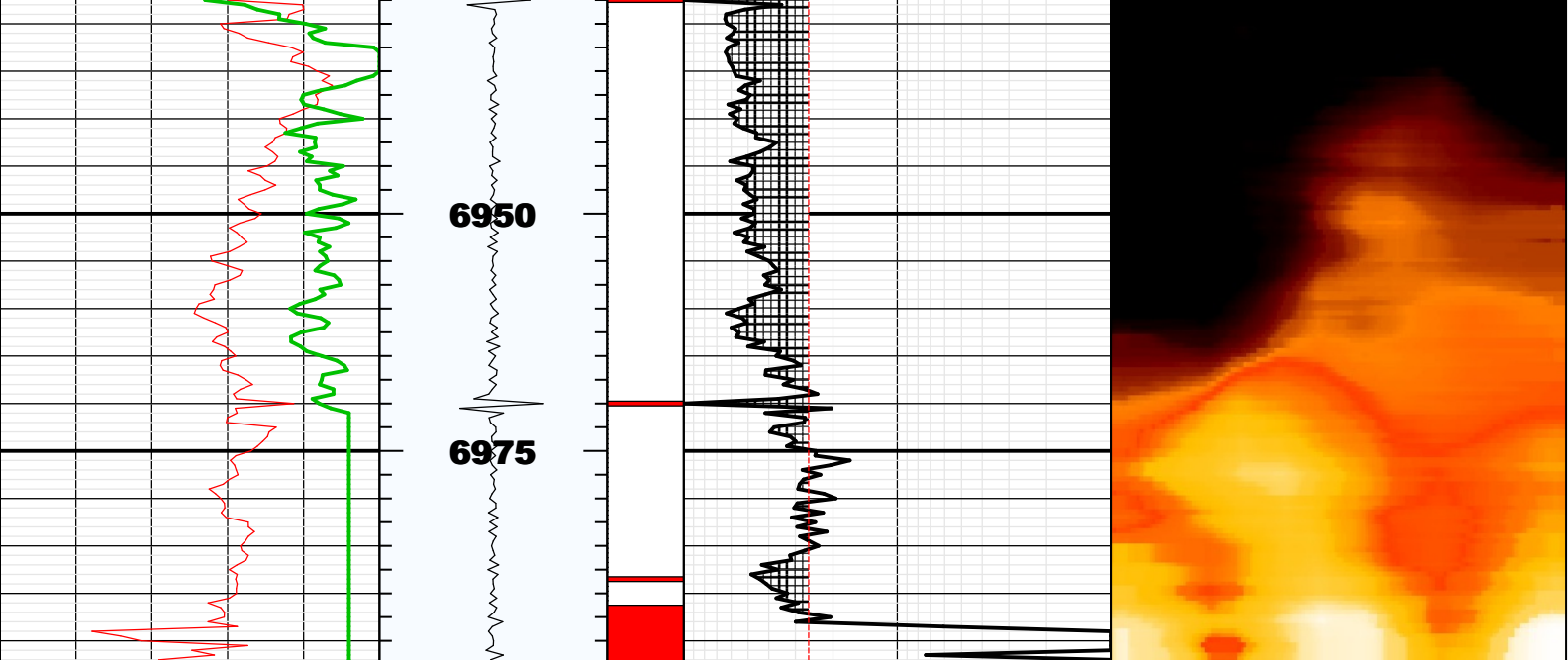


## Repeat Pass

Company: NOBLE ENERGY INC  
Well: Mackinaw A19-79HNA  
Field: Wattenberg







## Fluid Properties Used for Main Pass

