

Company: Noble Energy Inc

Well: Wells Ranch State AA21-69-1HN
Field: Wattenberg
County: Weld State: Colorado

County: Weld						
Field: Wattenberg						
Location: Sec. 21 T6N R63W						
Well: Wells Ranch State AA21-69-1HN						
Company: Noble Energy Inc						
USI-LITE	LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:	Ground Level Kelly Bushing Kelly Bushing	Elev: K.B. G.L. D.F.	4745.0 F 4721.0 F 4720.0 F
	API Serial No.					
	05-123-37702-0000					
	28-Mar-2014					
	Run Number					
	1					
	Depth Driller					
	11169.0 F					
	Schlumberger Depth					
Bottom Log Interval						
0.0 F						
Top Log Interval						
0.0 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						
635.0 F						
To						
7208.0 F						
Casing Size						
7.00 IN						
Weight						
26.00 LB/F						
Grade						
P-110						
From						
0.0 F						
To						
7198.0 F						
Max Recorded Temp						
Logger on bottom (date)						
28-Mar-2014						
Location						
Casper WY						
Recorded By						
Allison Johnston						
Witnessed By						

DEPTH SUMMARY LISTING

DEPTH SYSTEM EQUIPMENT

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 6404 Calibration Date: Calibration Cable Type: 7-39P-LXS Wheel Correction 1: -4 Wheel Correction 2: -4	Type: CMTD-B/A Serial Number: 2858 Calibration Date: 27-Feb-2014 Calibrator Serial Number: 44135 Number Of Calibration Points: 10 Calibration RMS: 13.00000 Calibration Peak Error: 24.00000	Serial Number: Length: 18240

DISCLAIMER

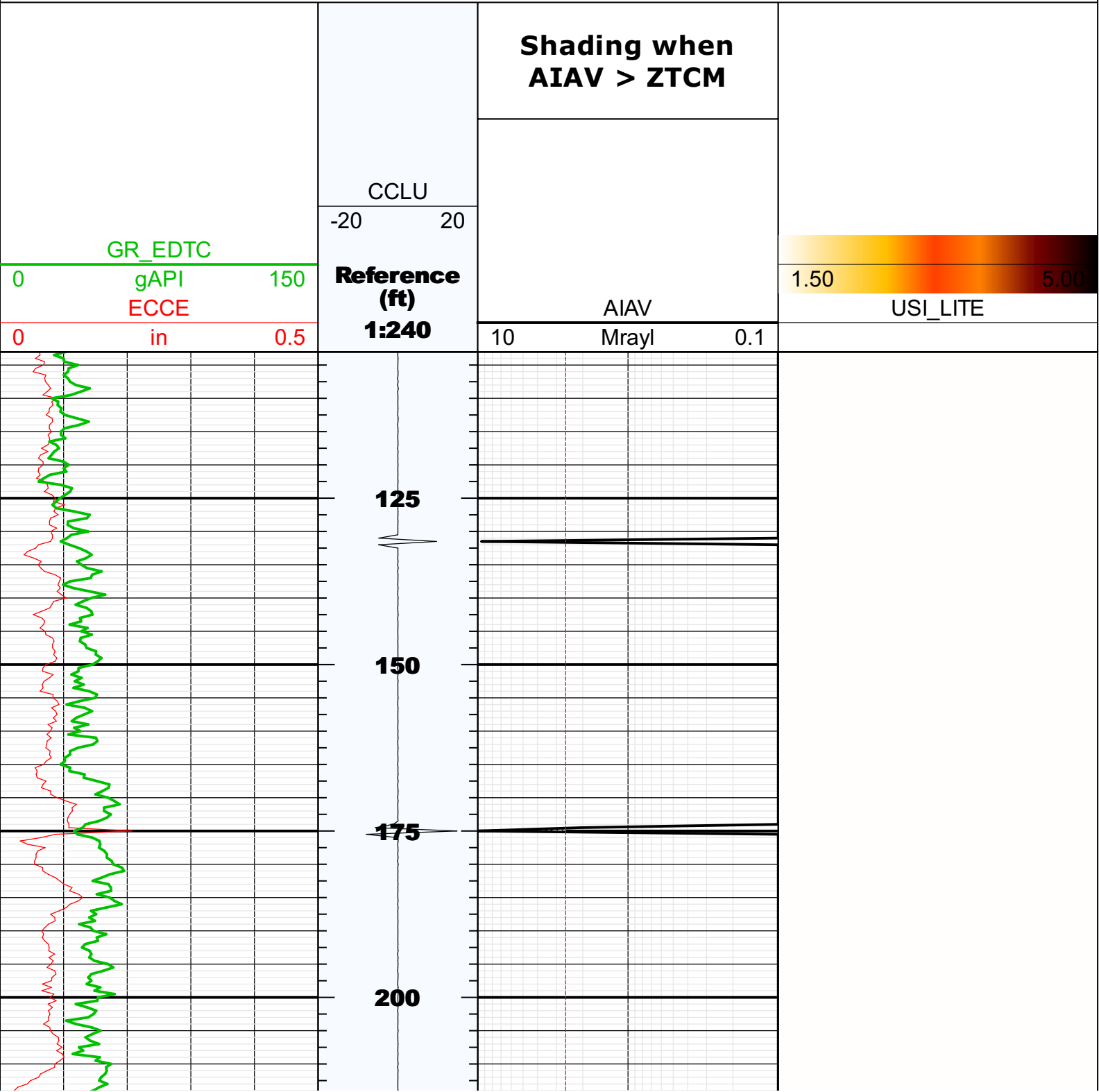
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIIONS ON USE OF THE RECORDED-DATA (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF ANR RELIANCE UPN THE RECORDED-DATA; AND (c)CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISIONS MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA

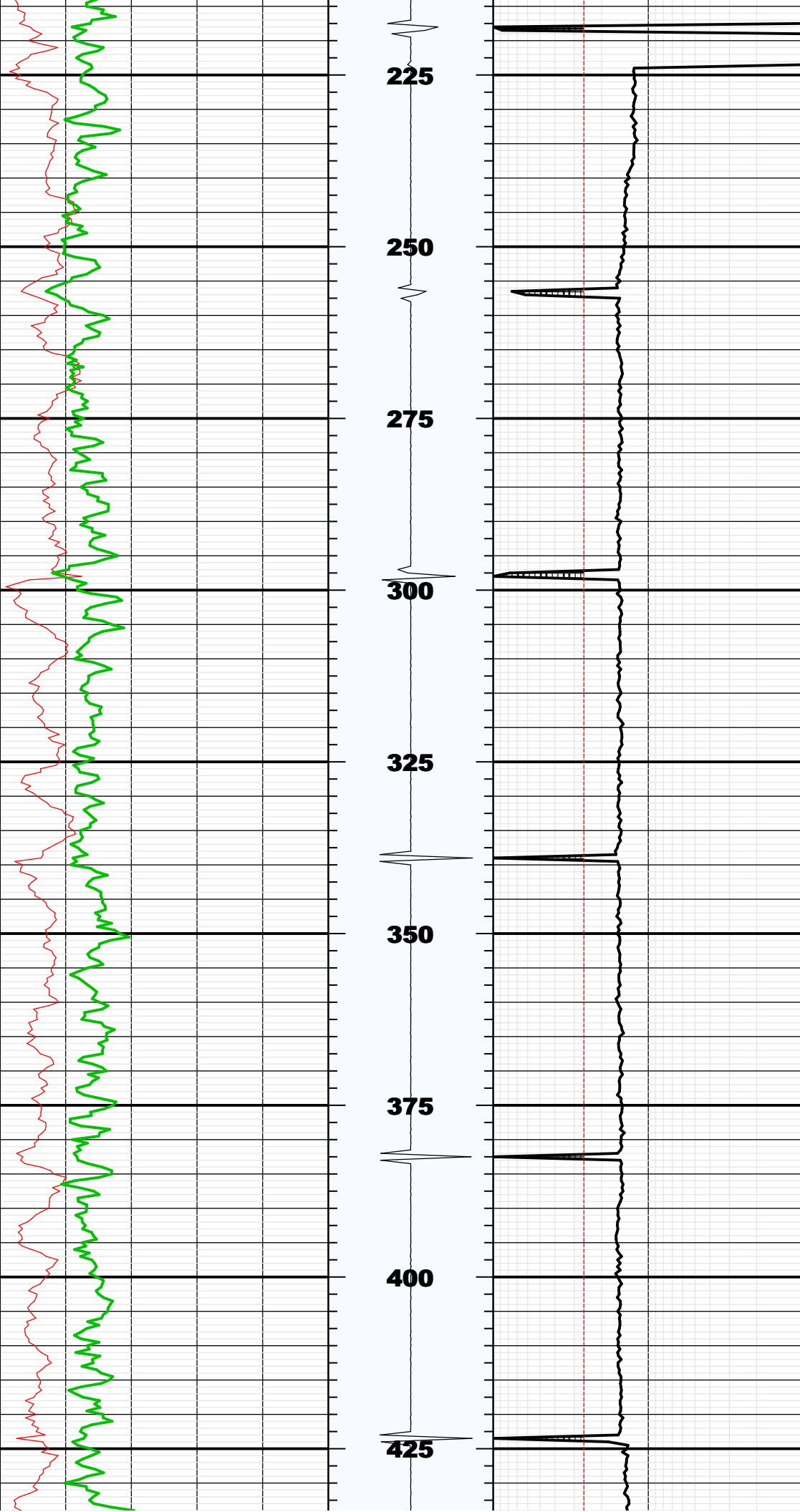
- 1) Toolstring run as per tool sketch.
- 2) Logging Objective cement evaluation
- 3) .
- 4) Well cemented with 13.8 ppg Expandacem tail and 12.5 ppg Varicem lead.
11.5 ppg tuned spacer used.
- 5)

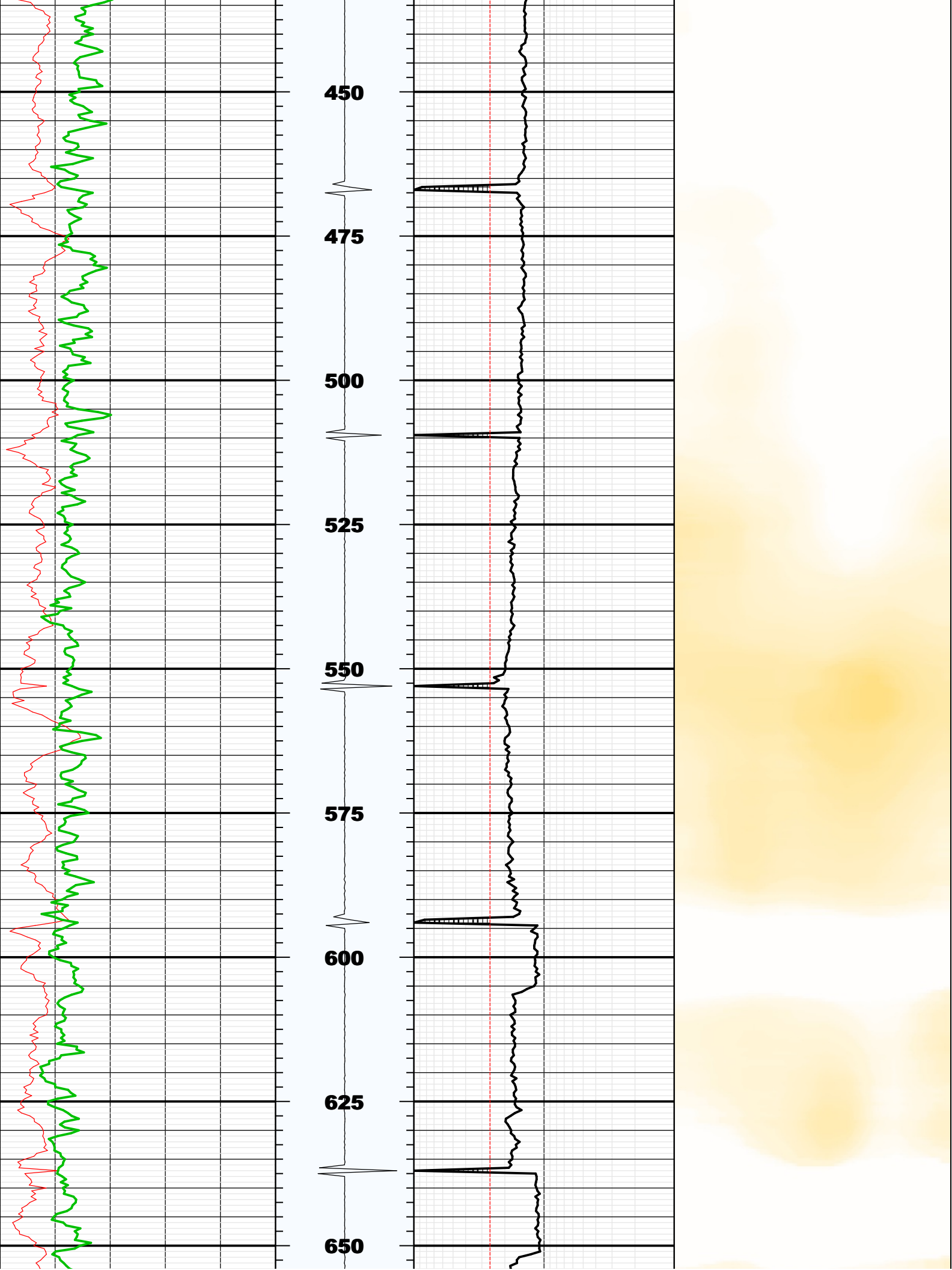
Schlumberger Crew Josh Strand and Aaron Weber

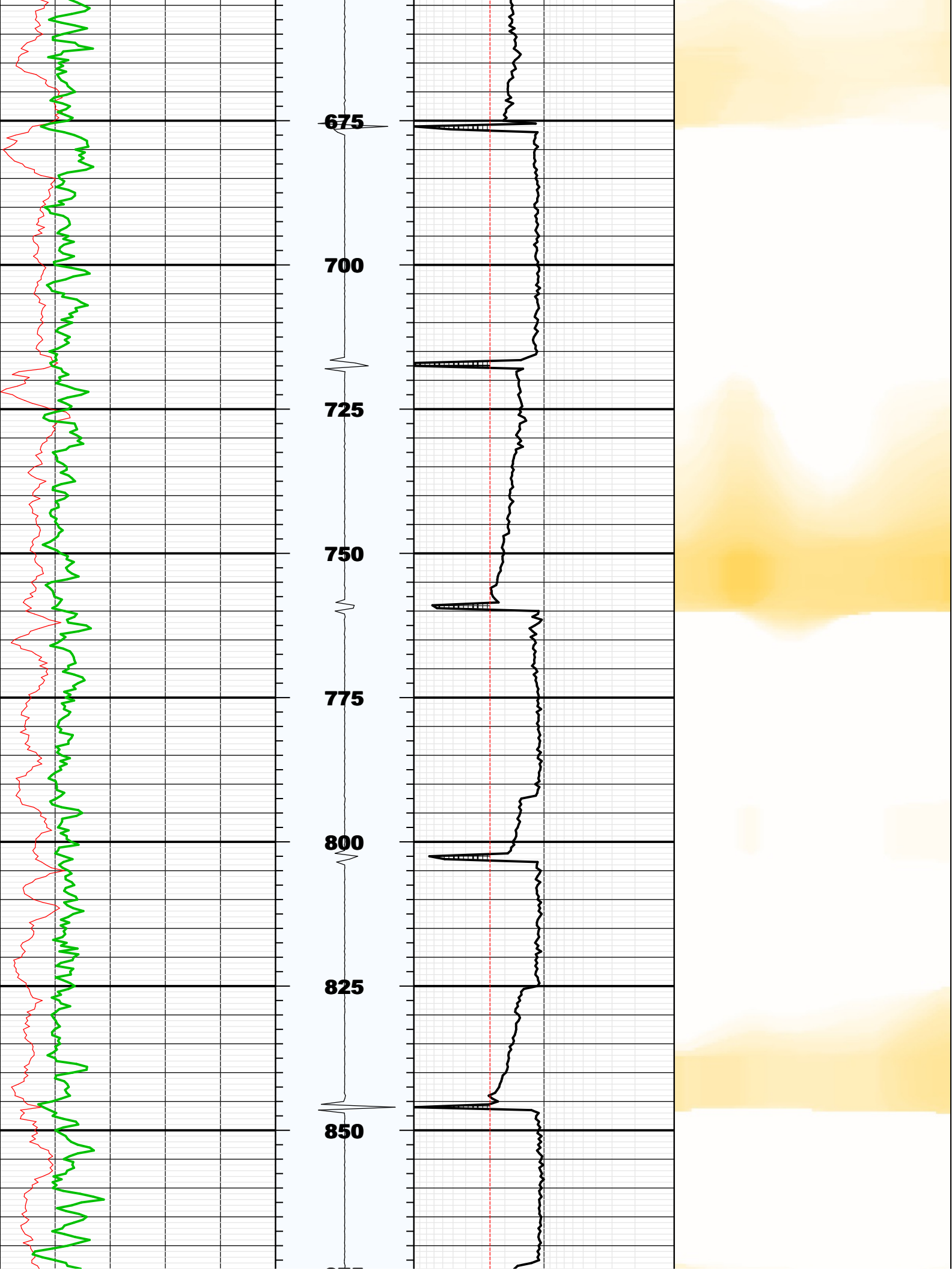
Main Pass

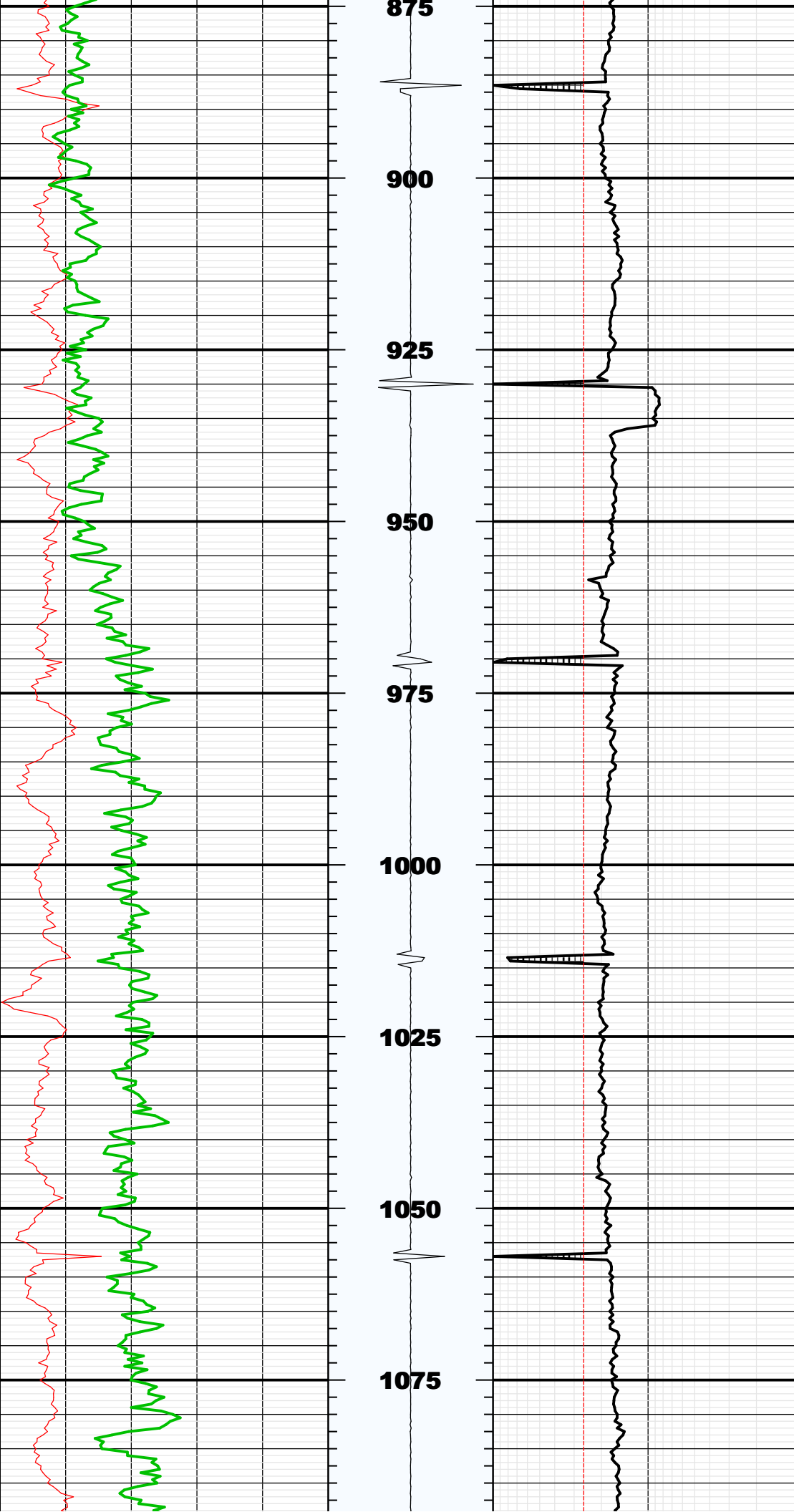
Company: Noble Energy Inc
Well: Wells Ranch State AA21-69-1HN
Field: Wattenberg

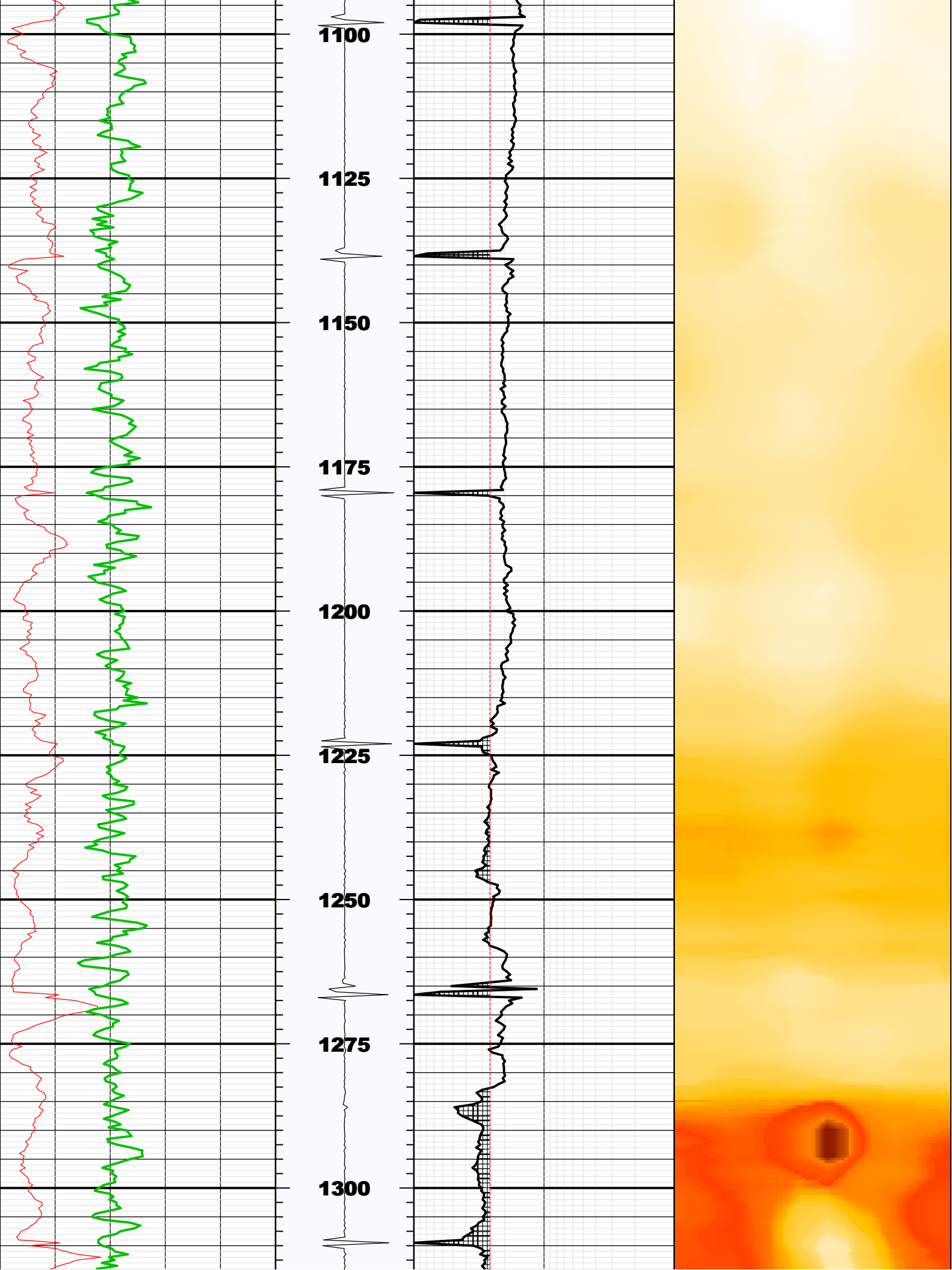


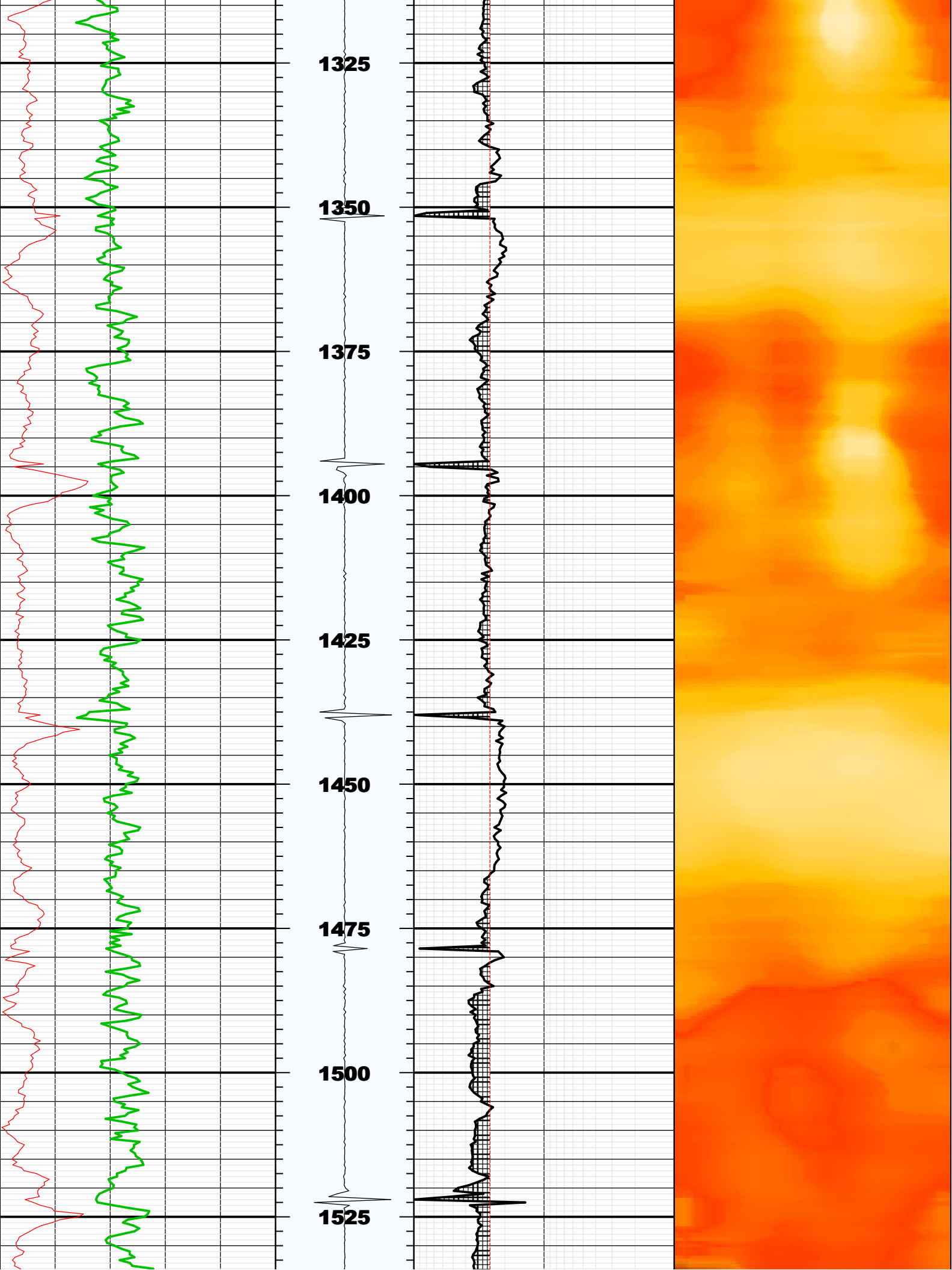


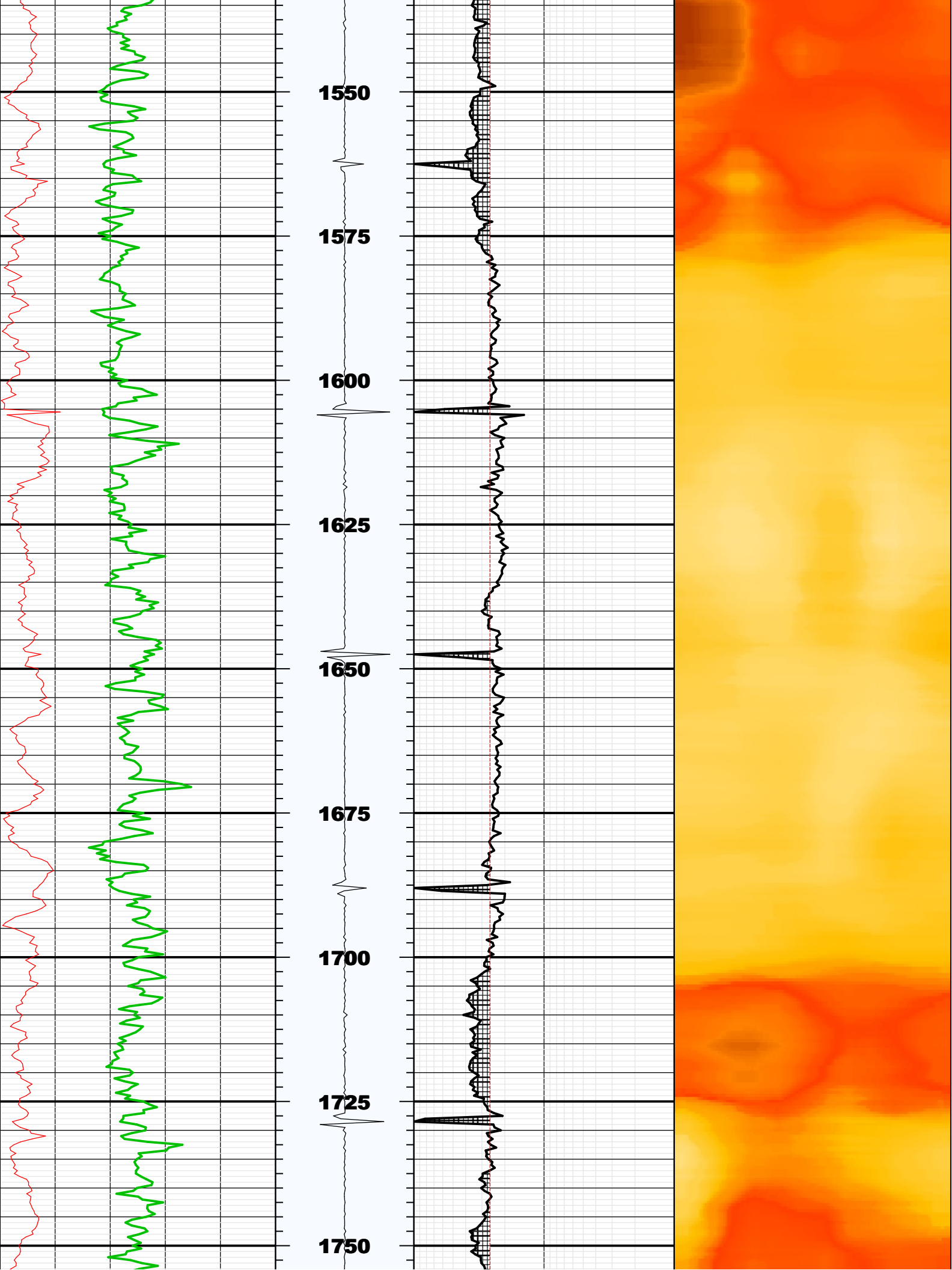


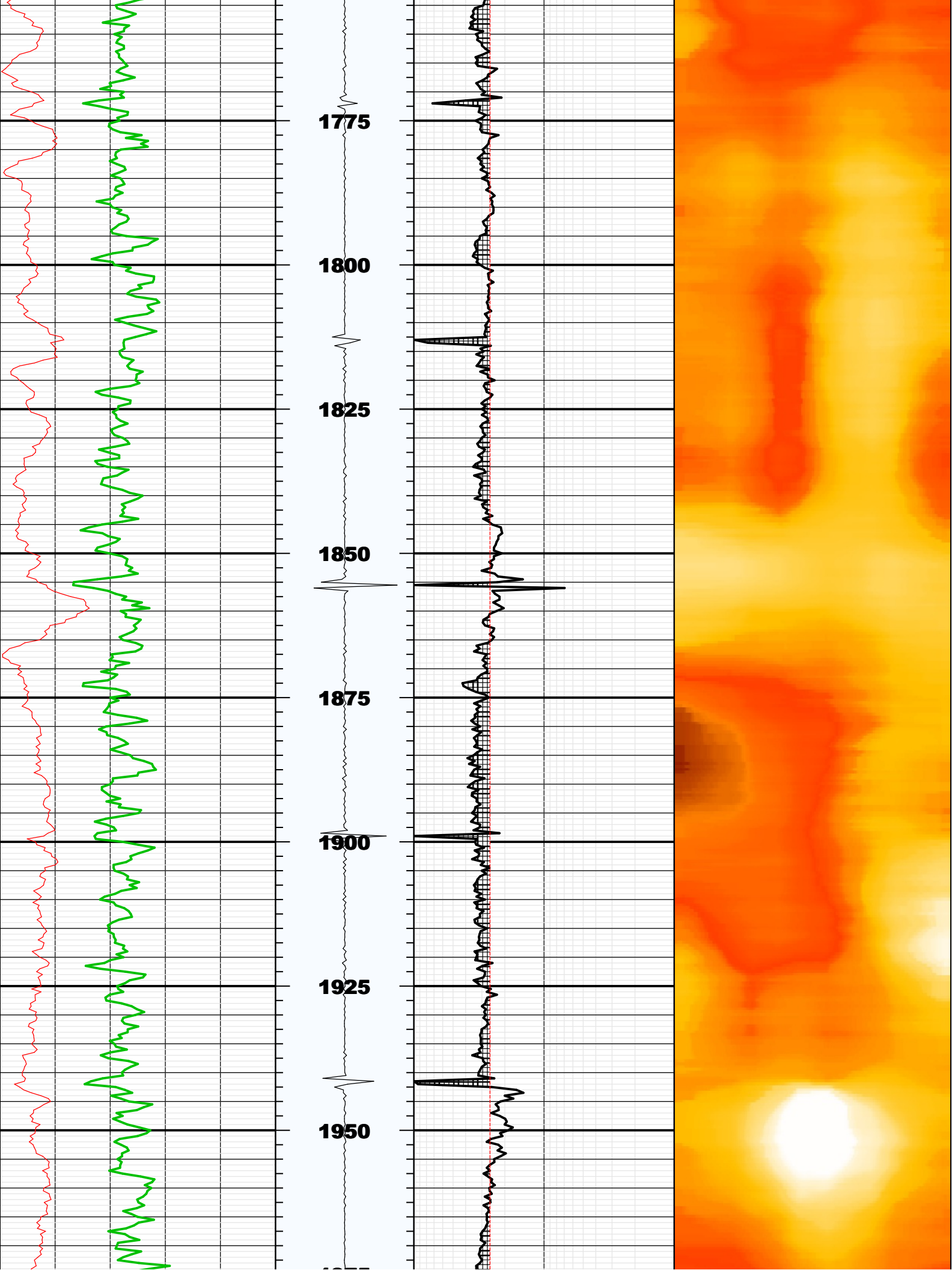


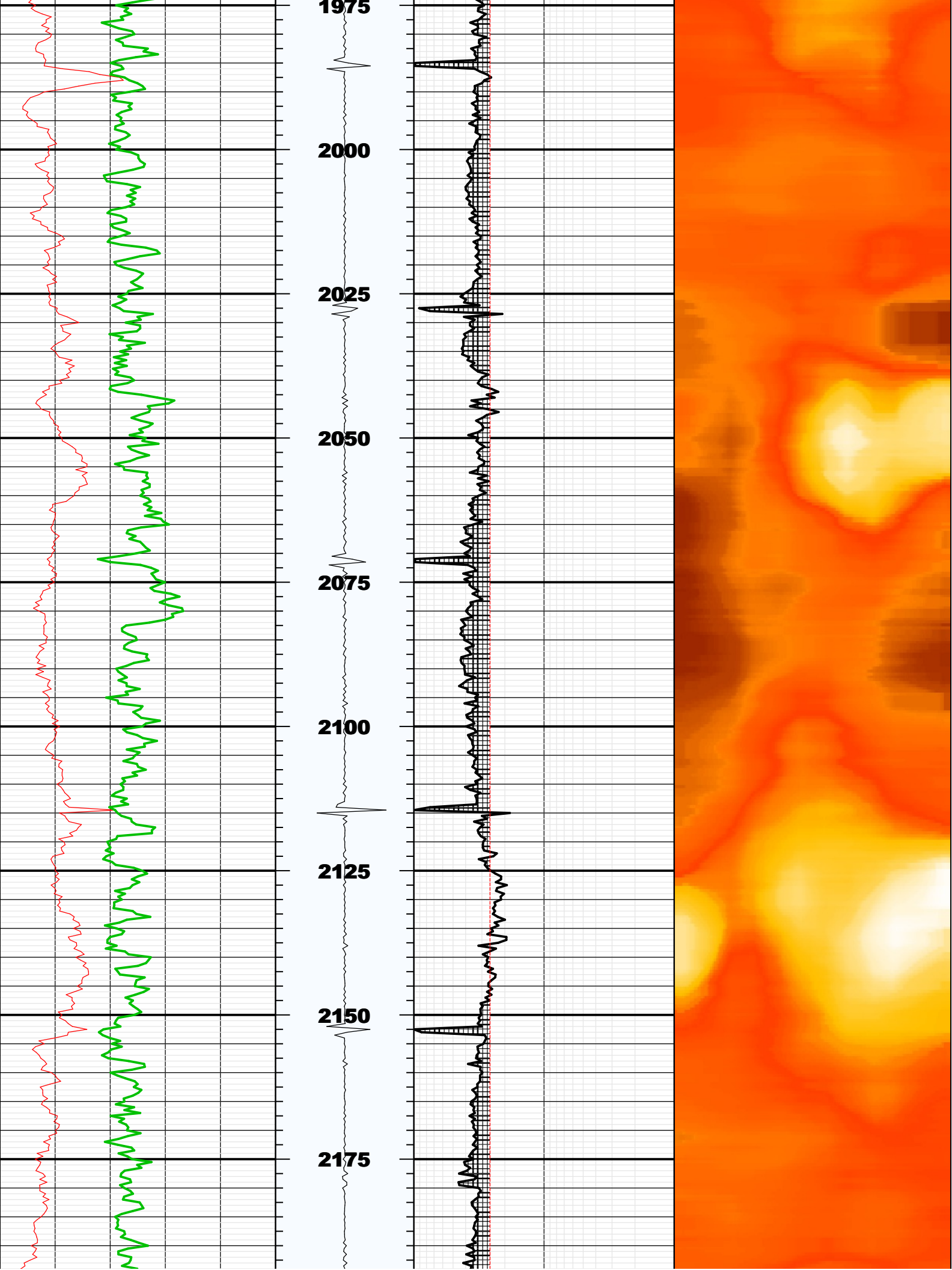


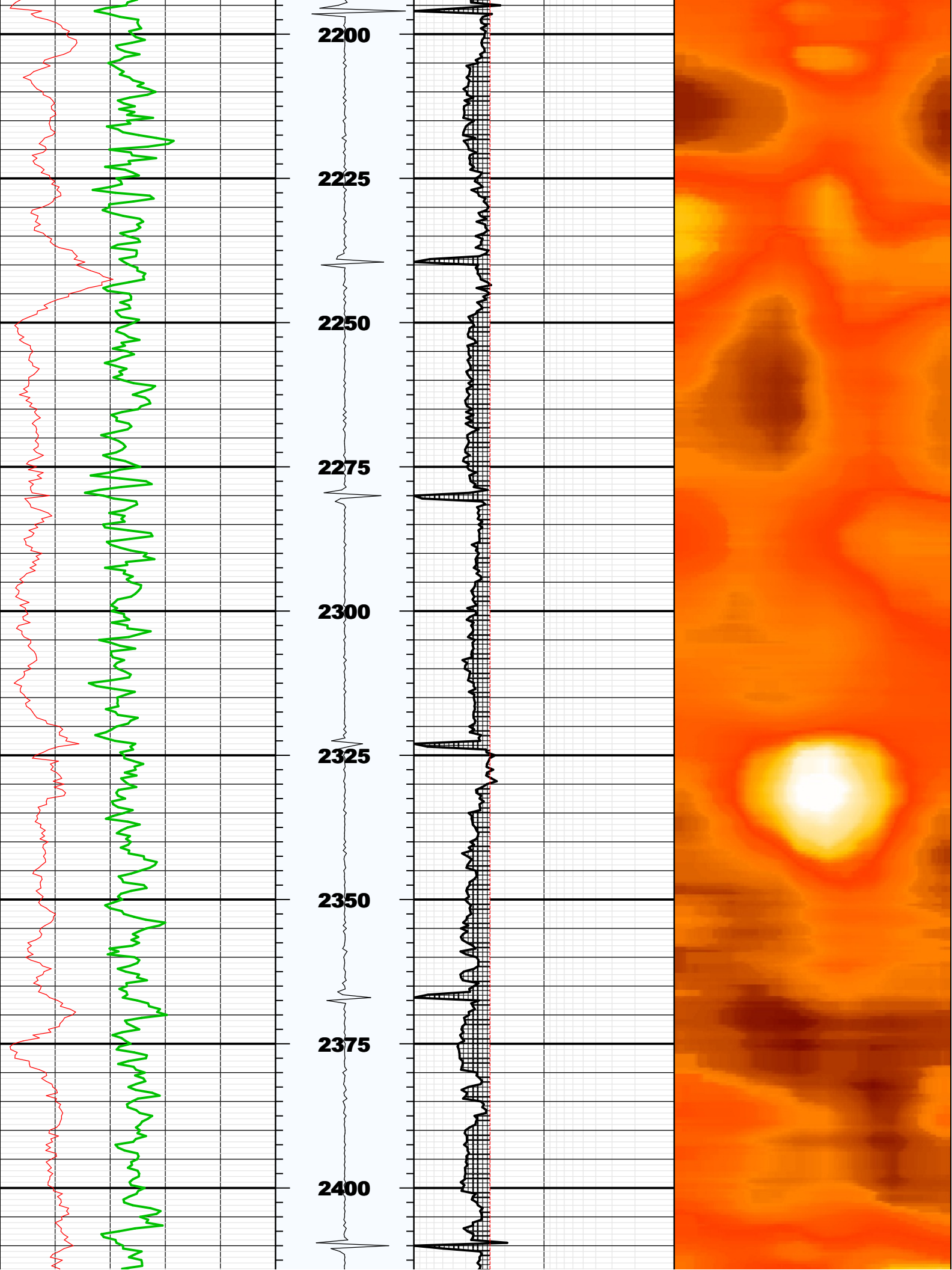


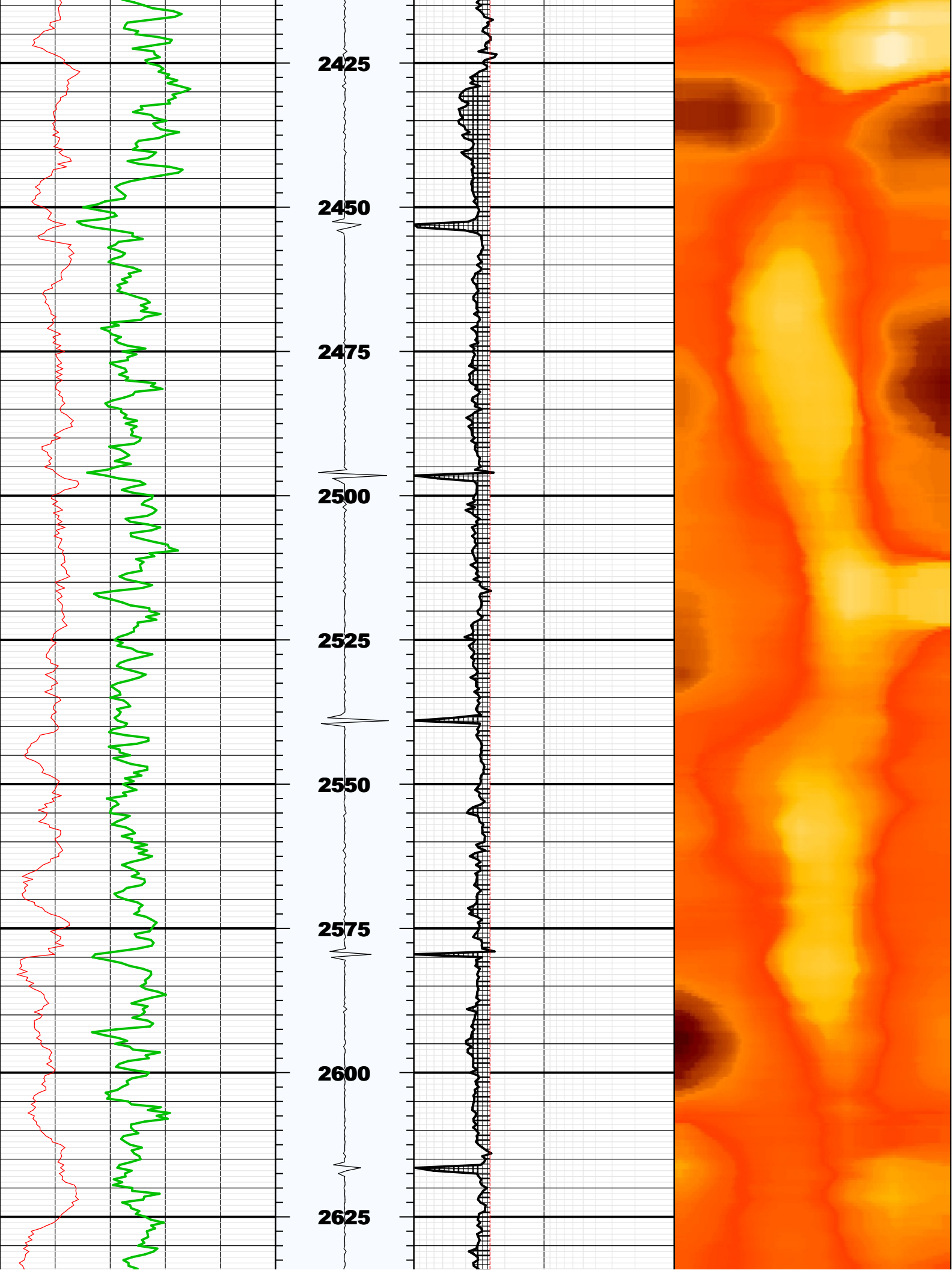


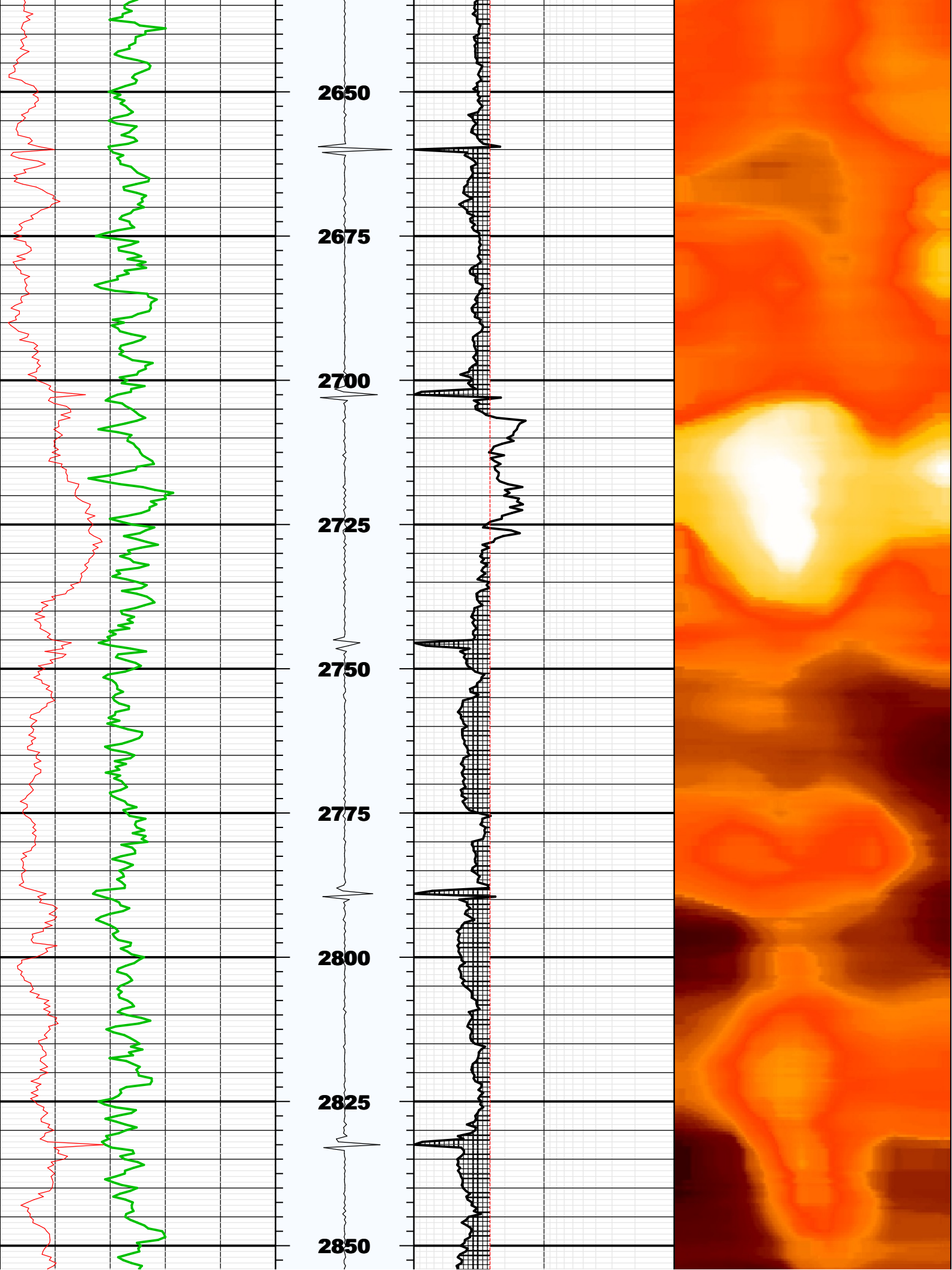


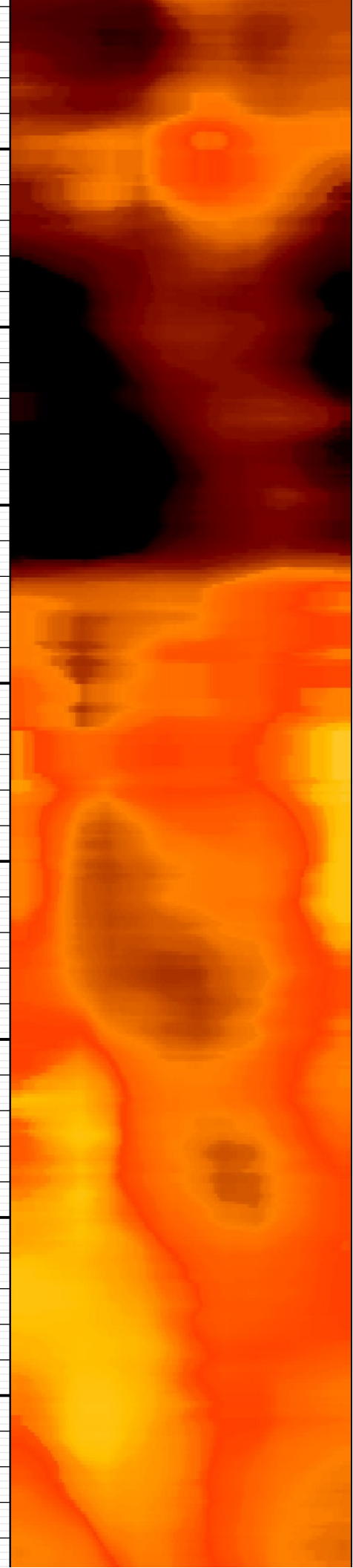
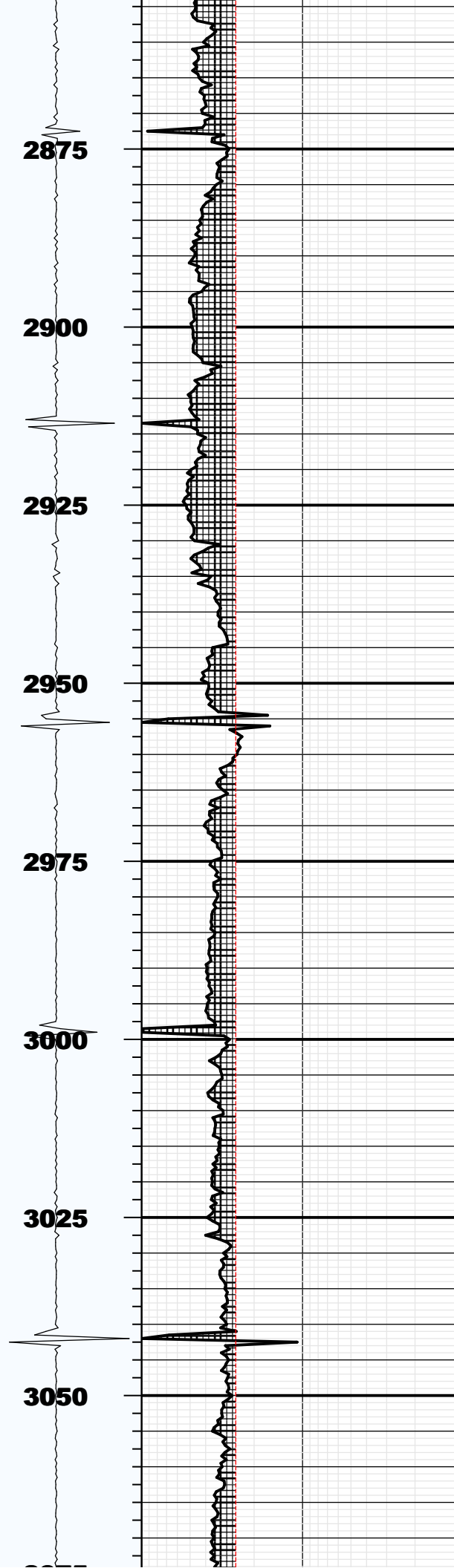
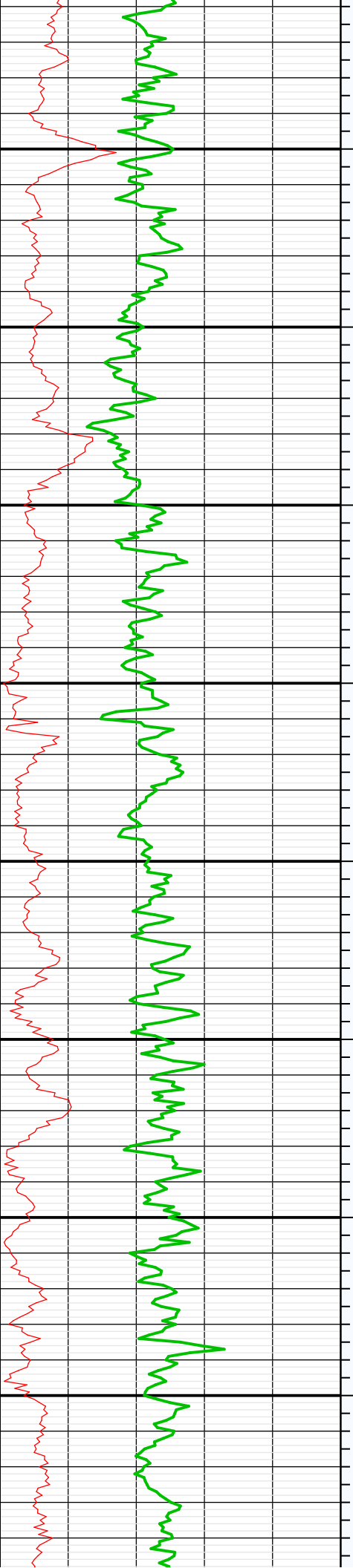


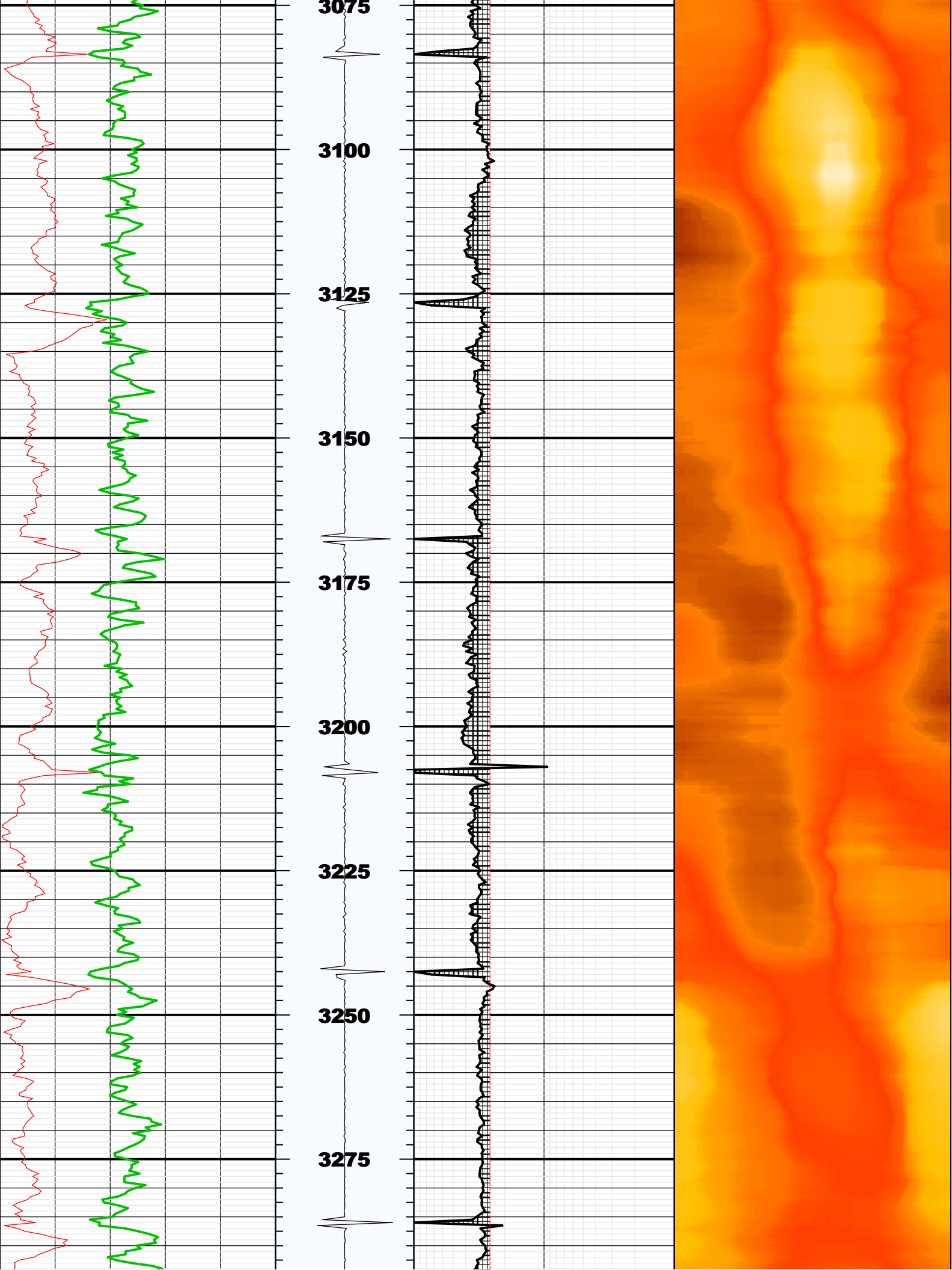


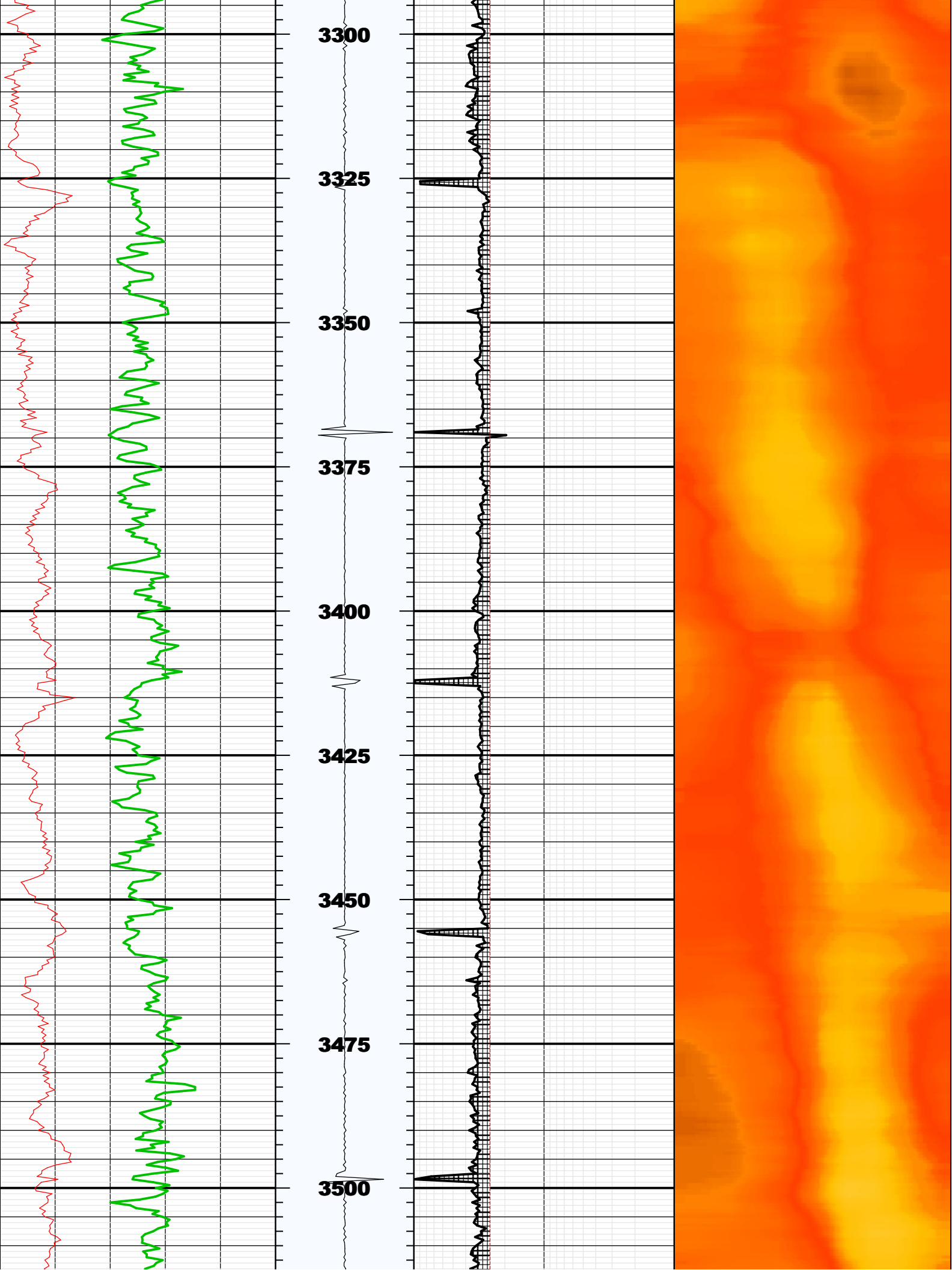


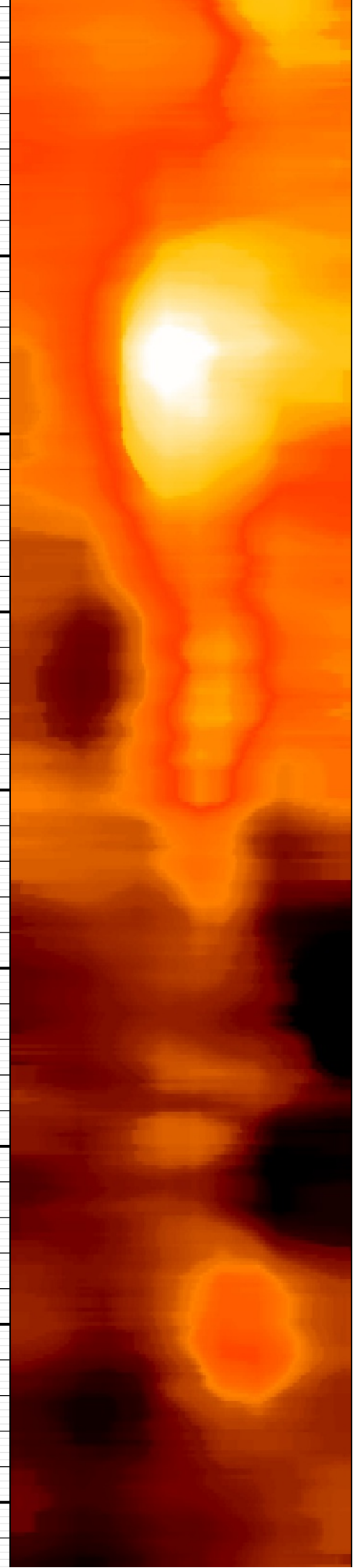
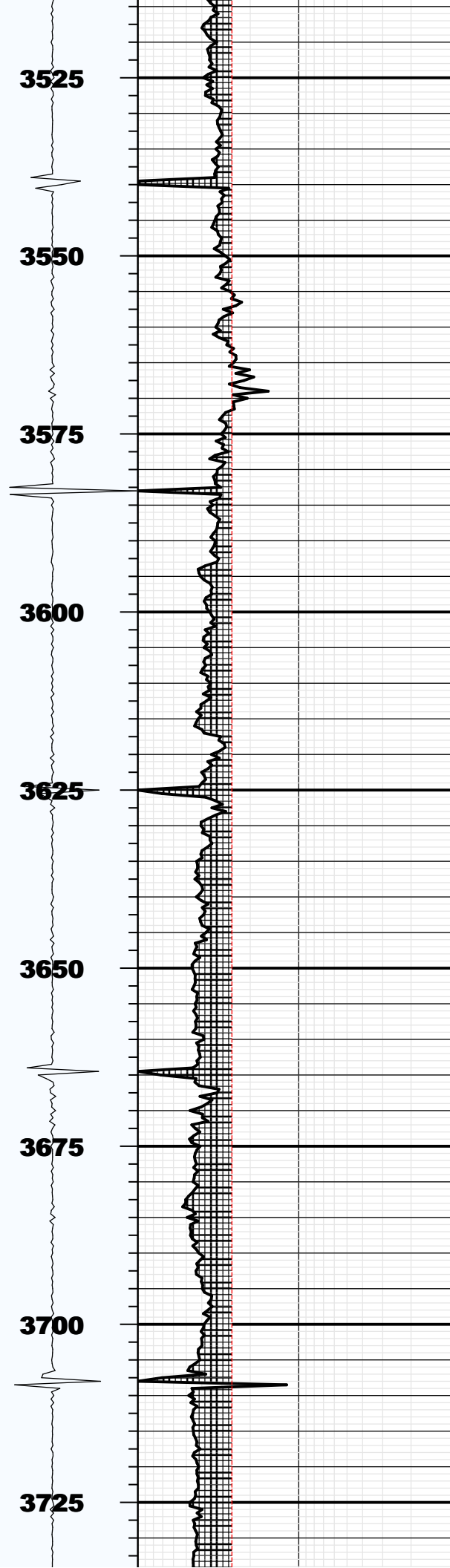
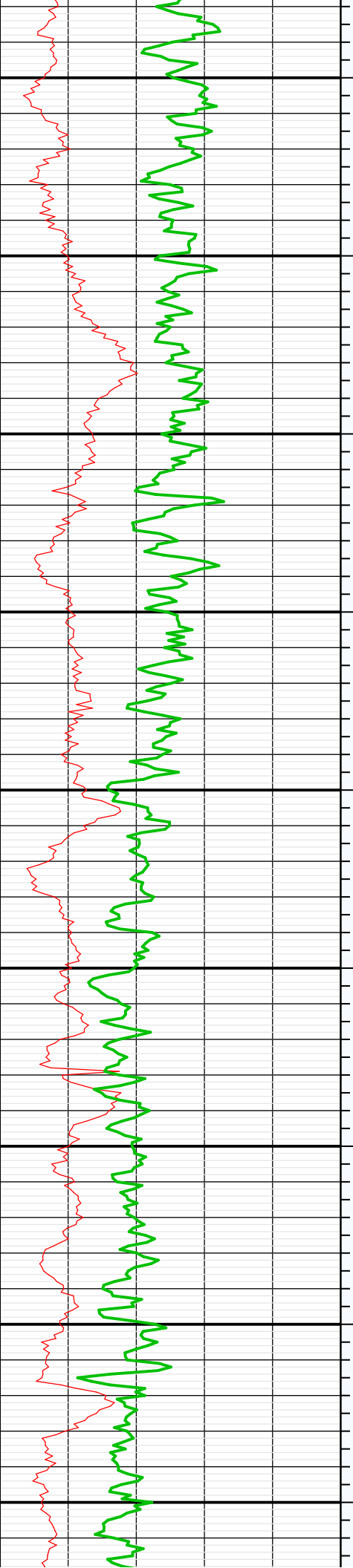


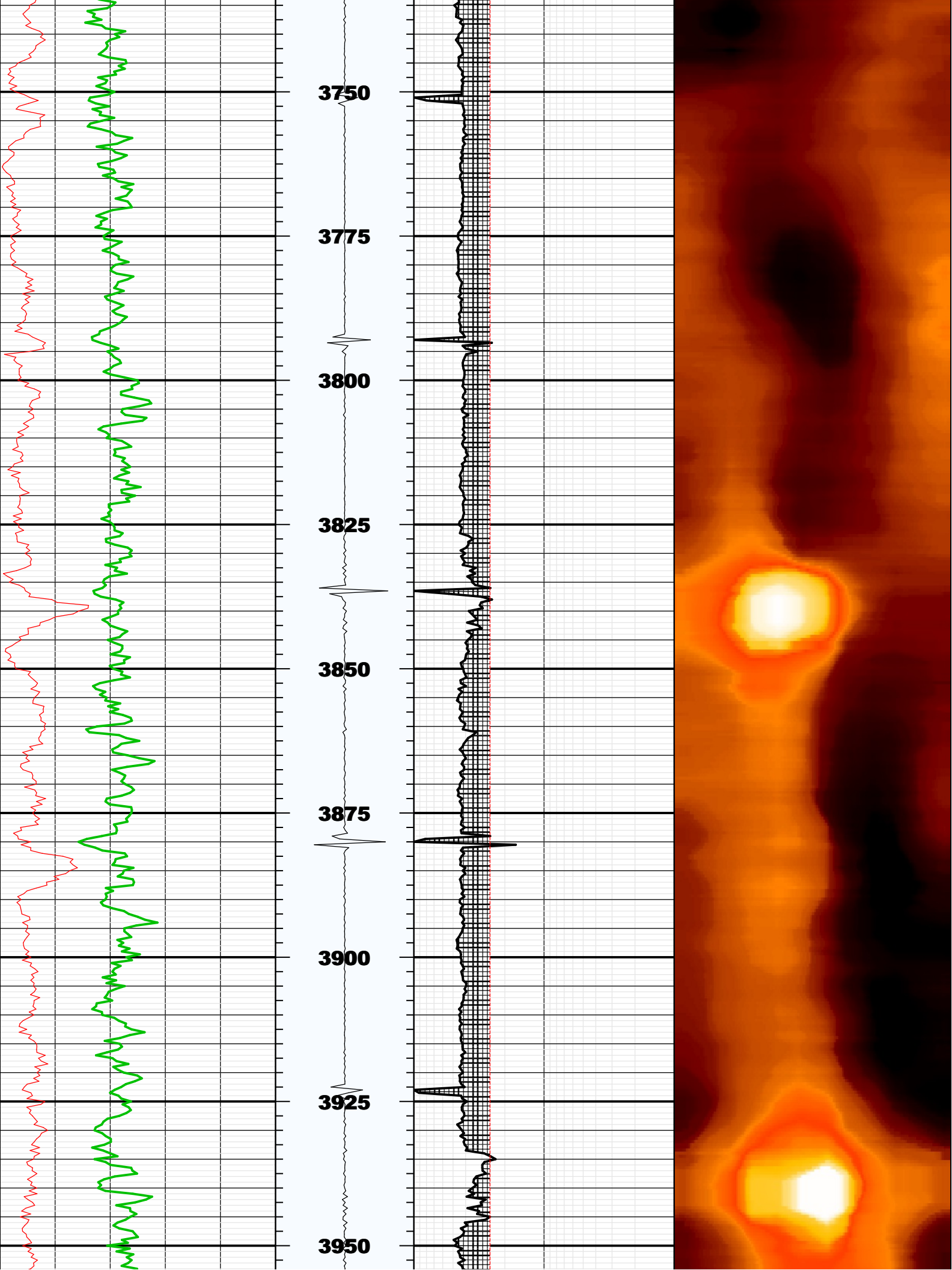


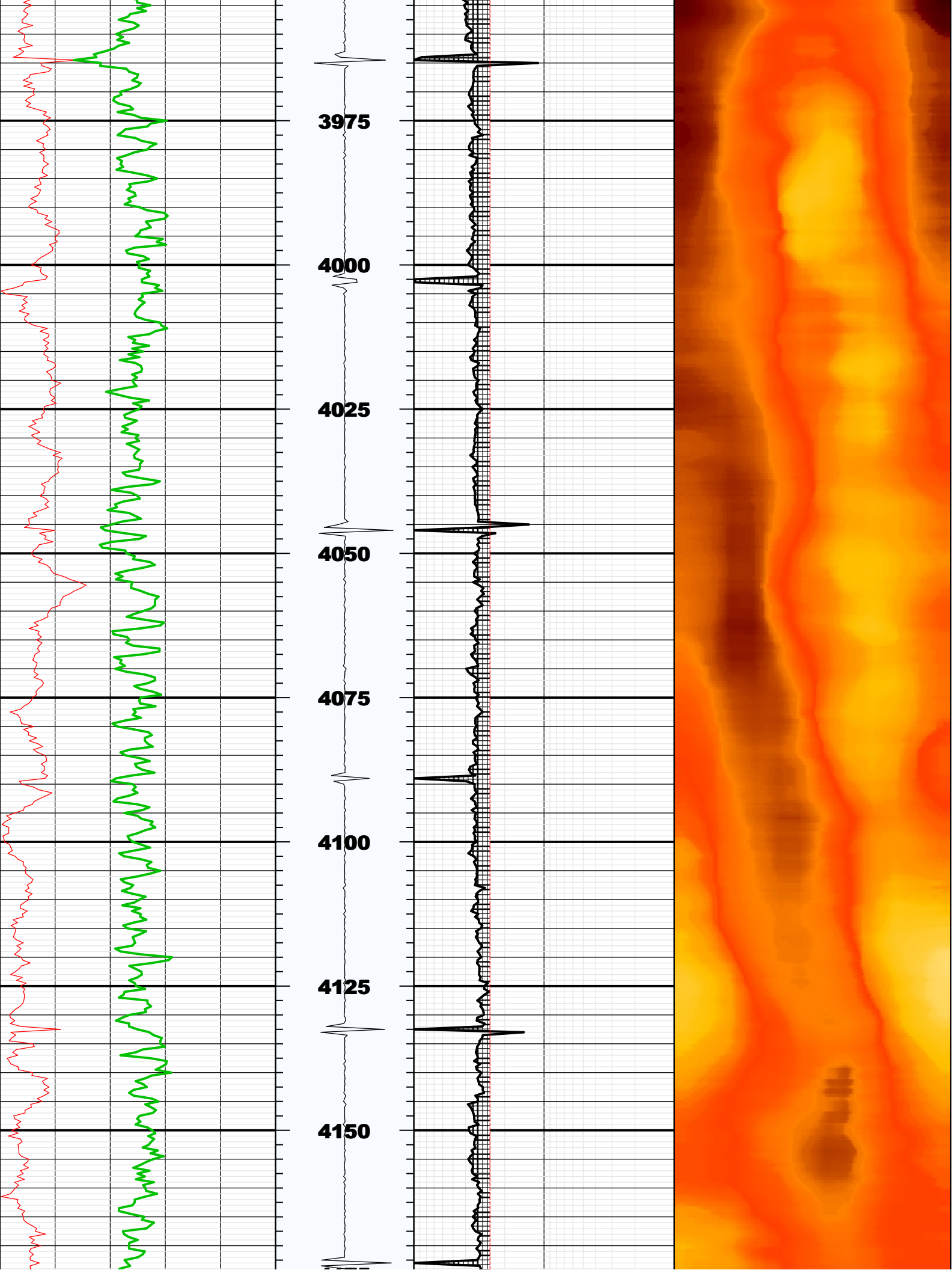


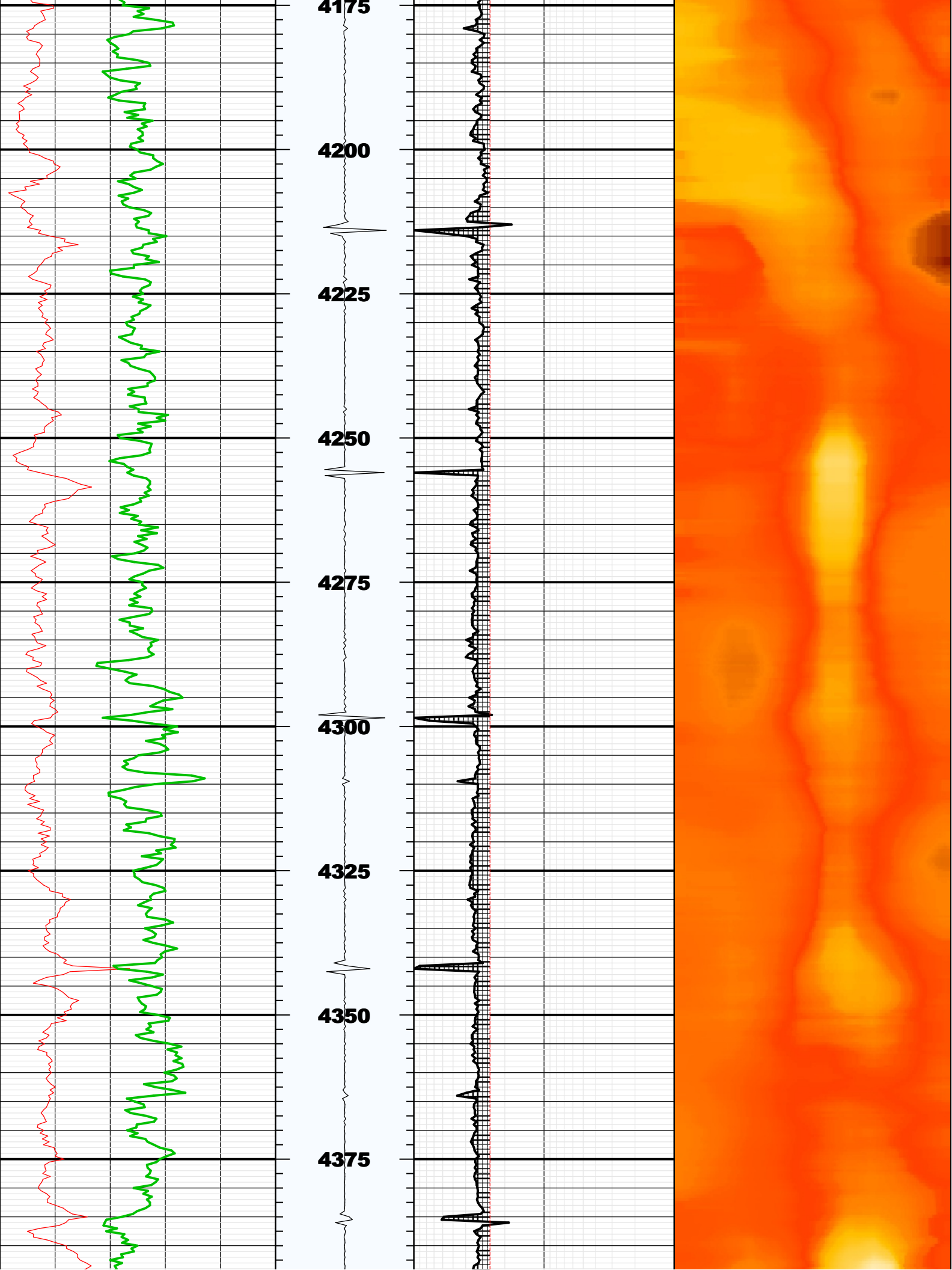


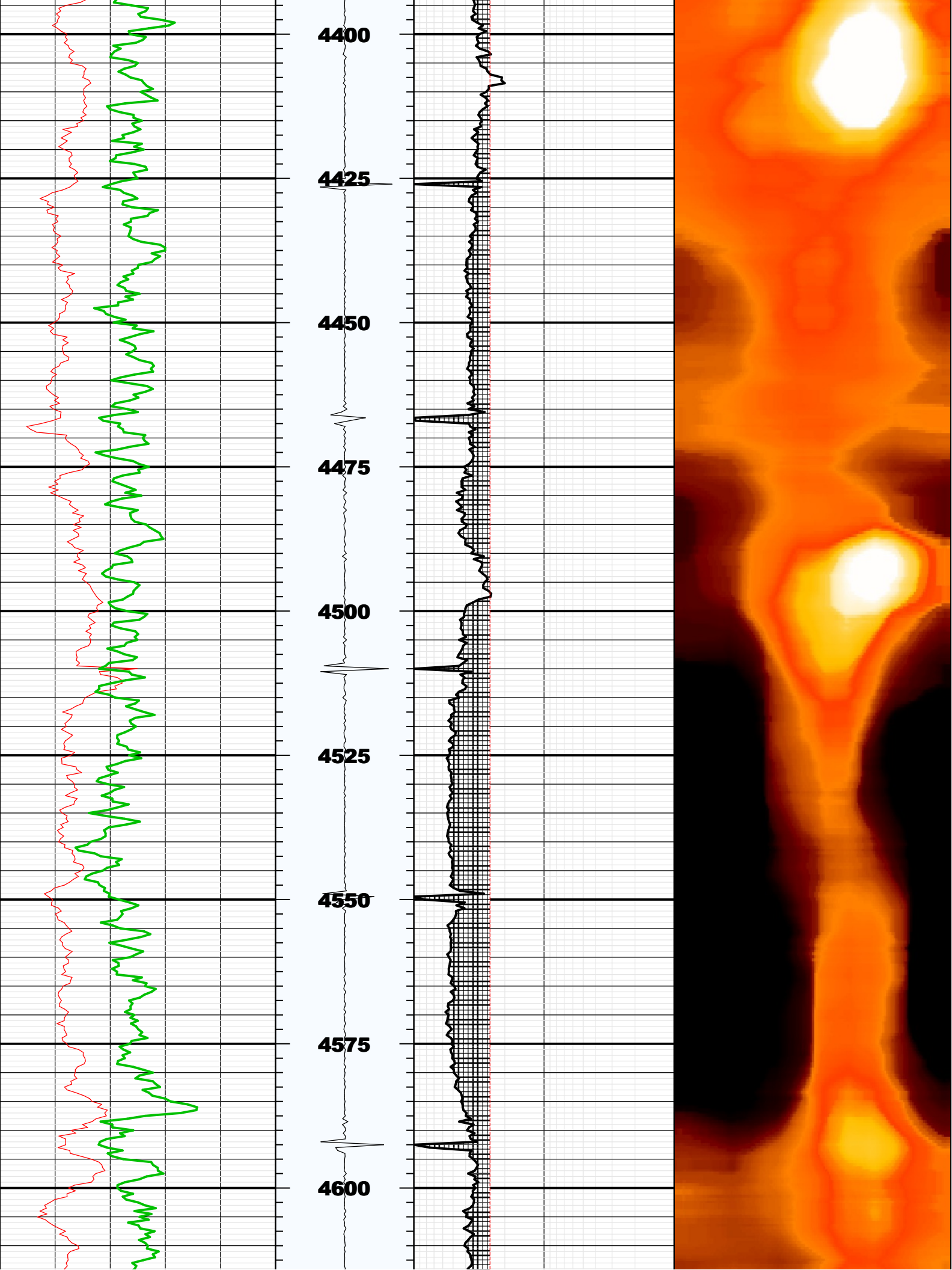


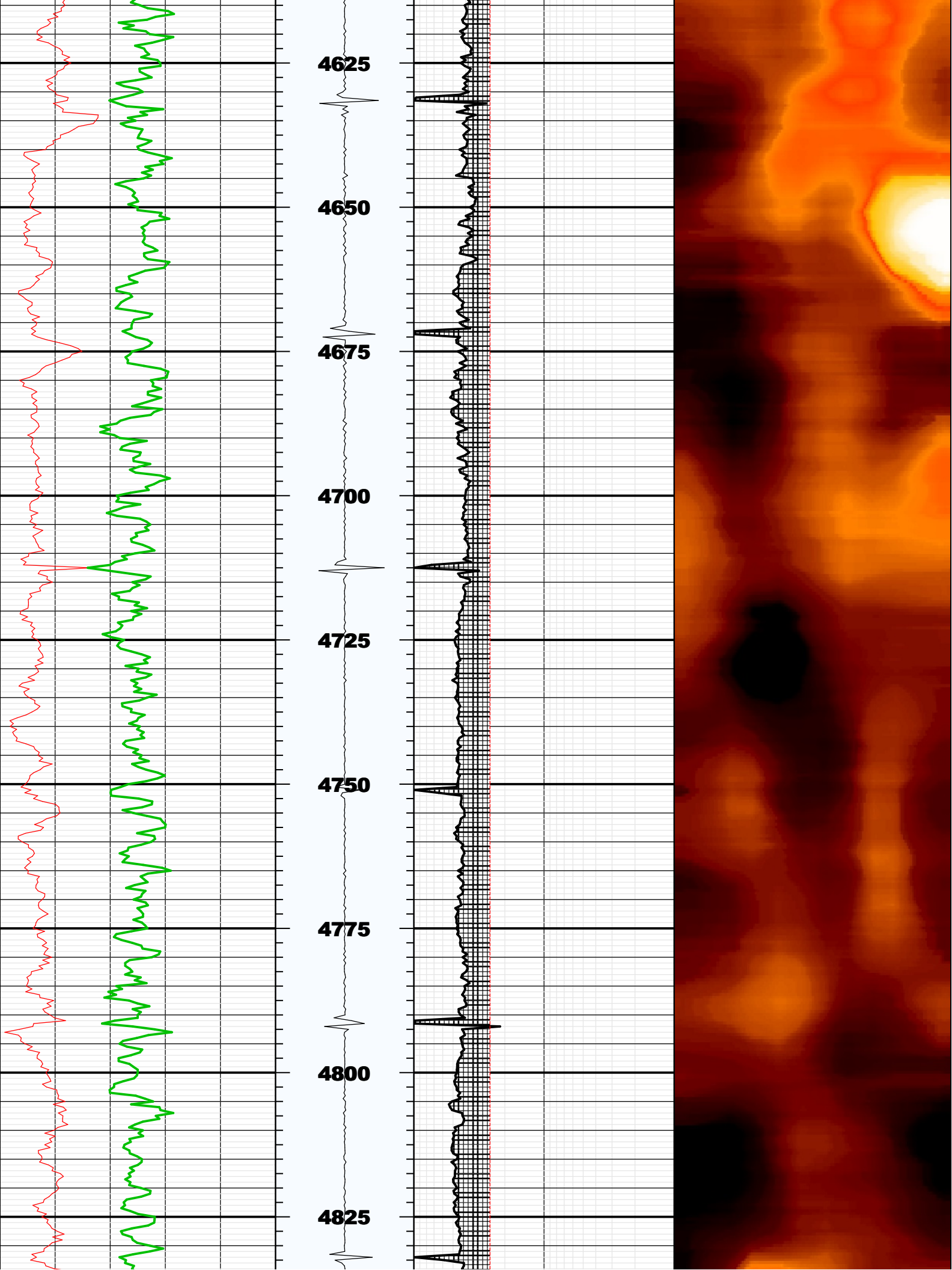


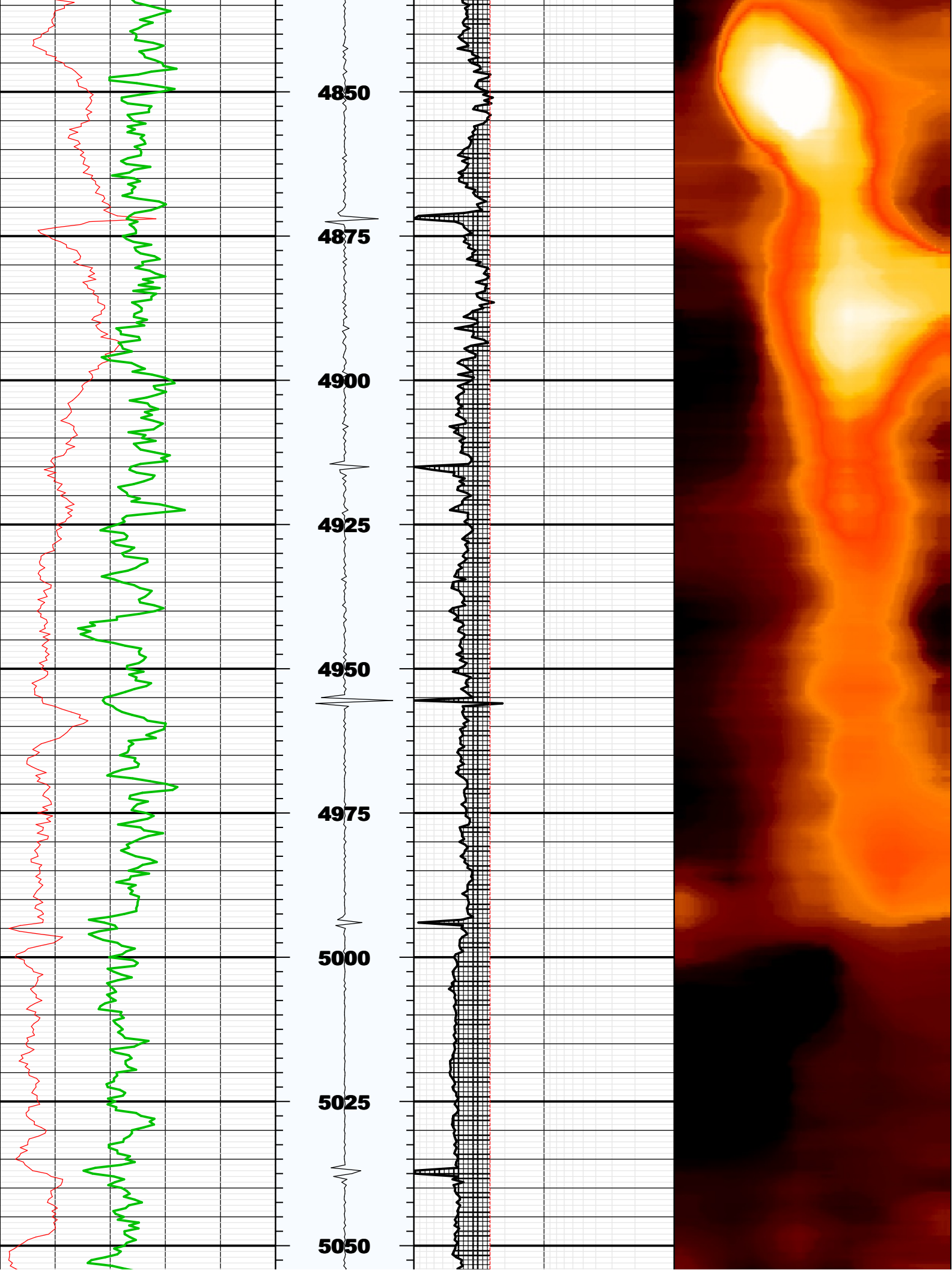


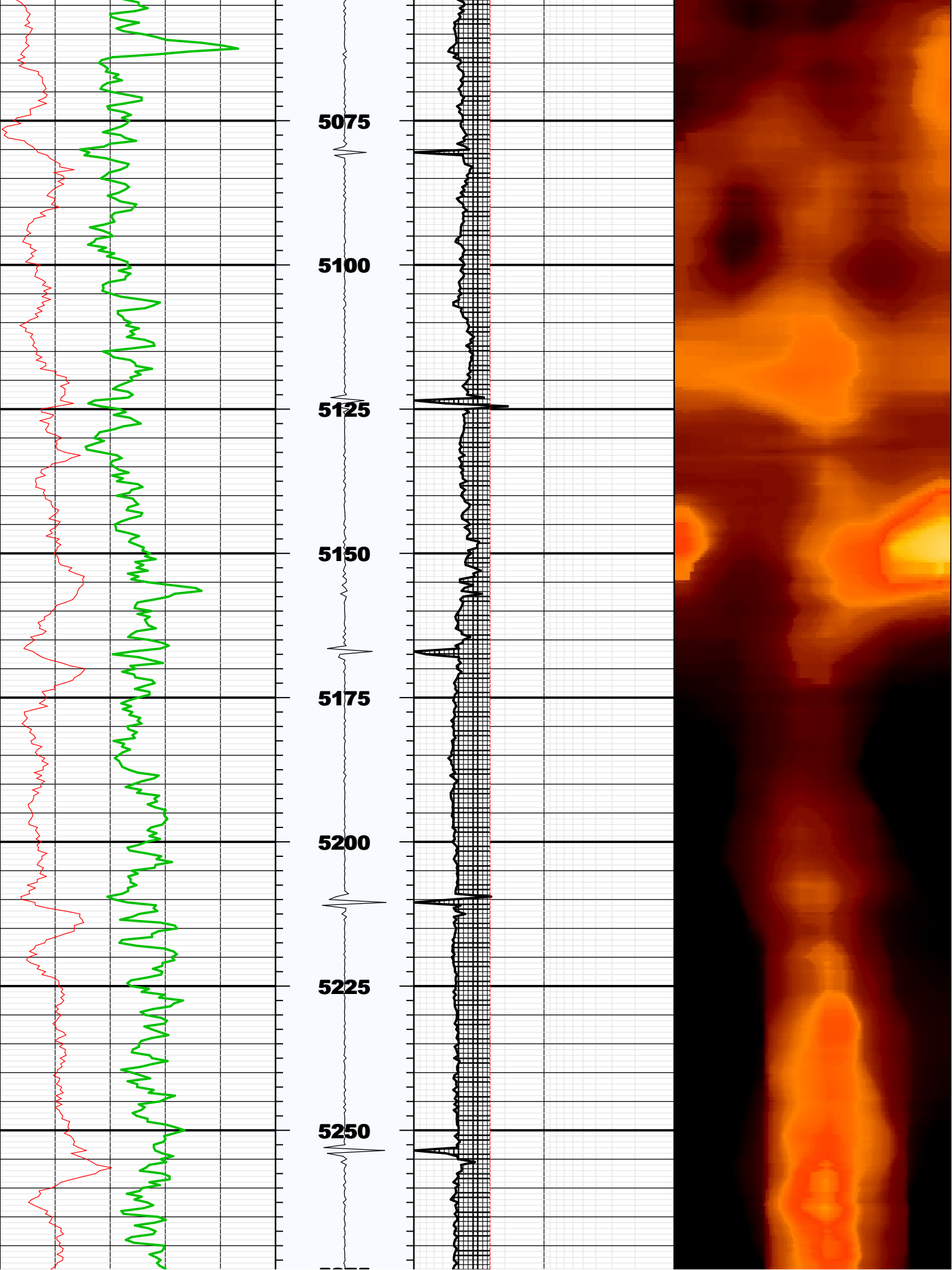


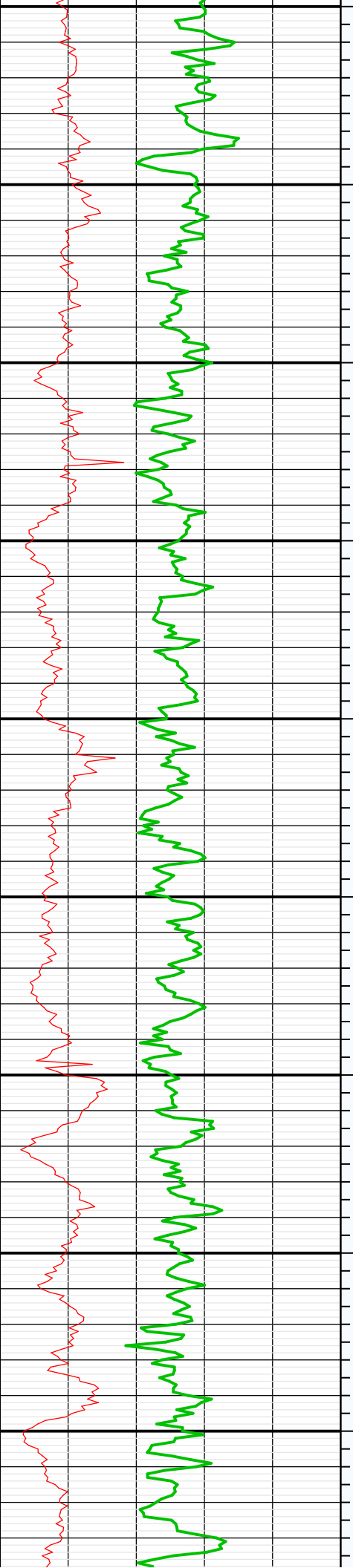












5275

5300

5325

5350

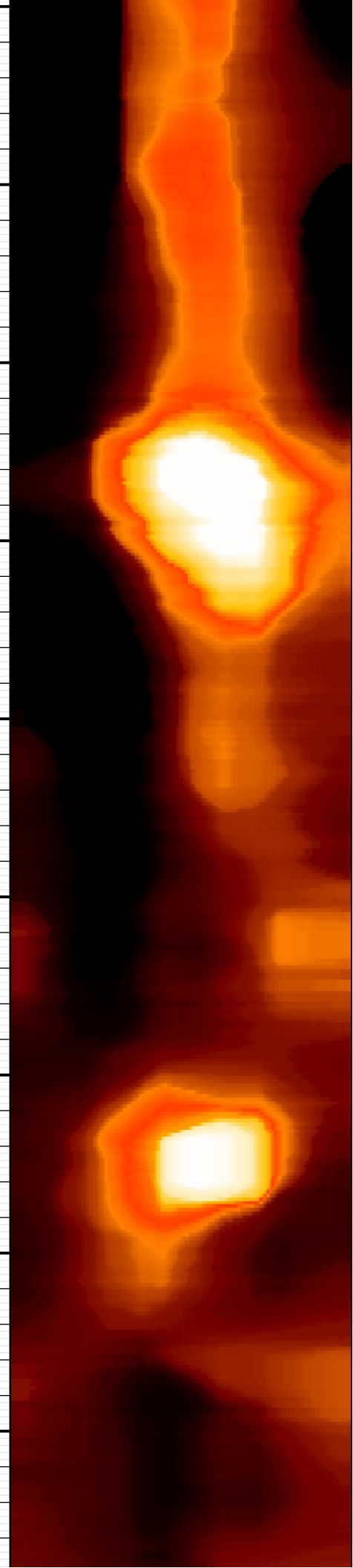
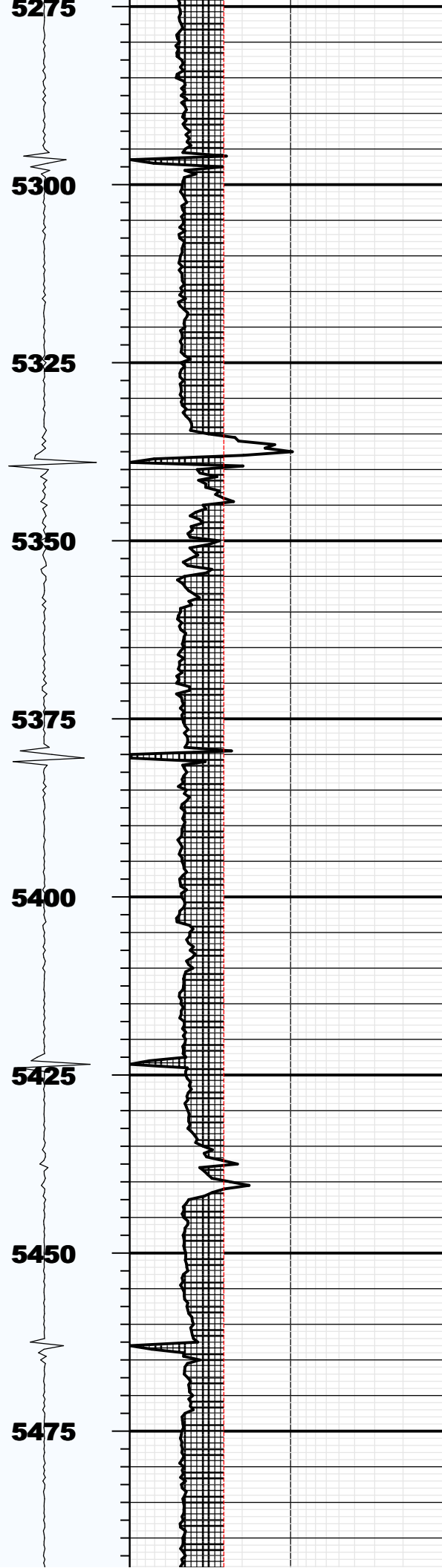
5375

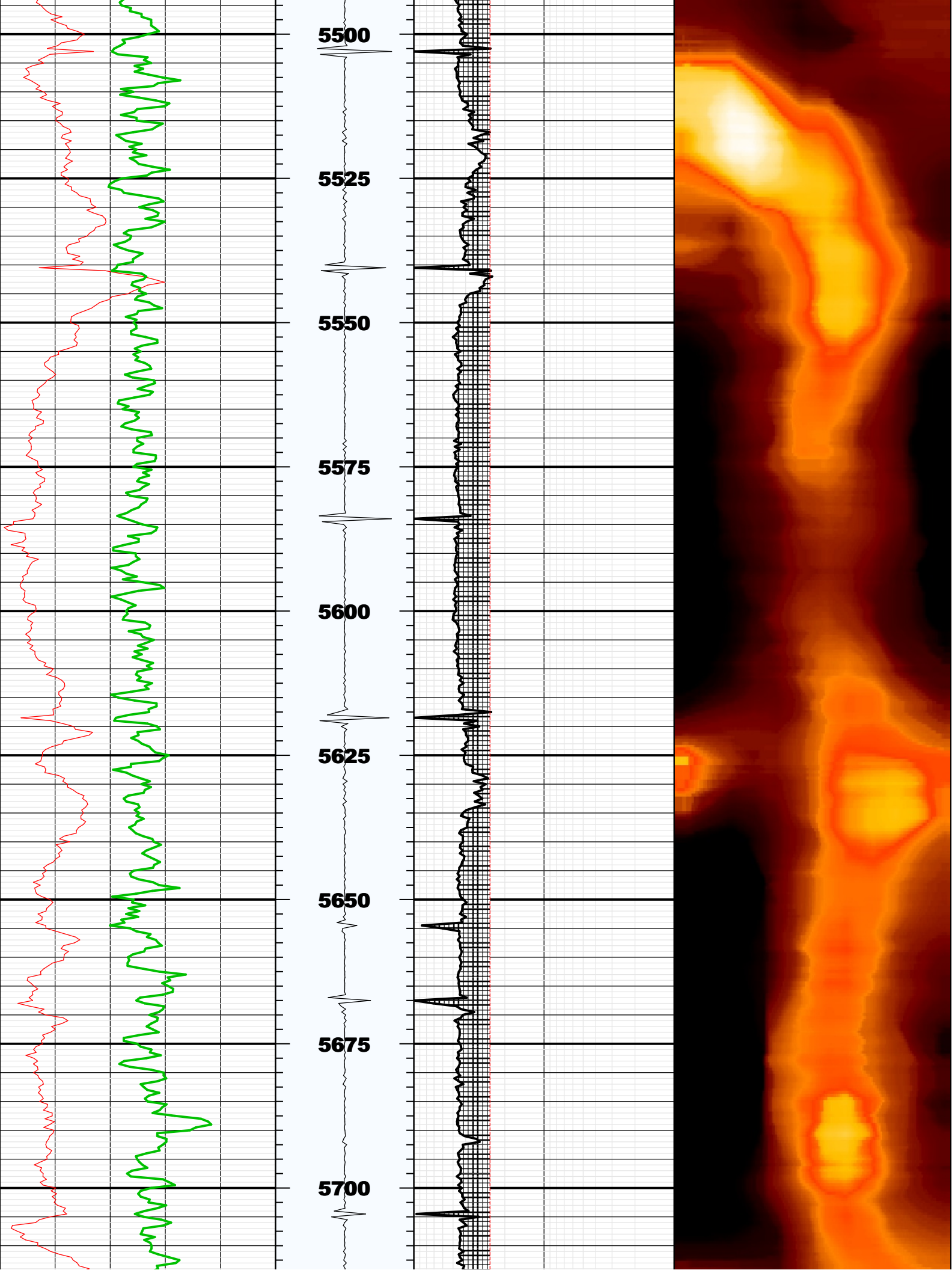
5400

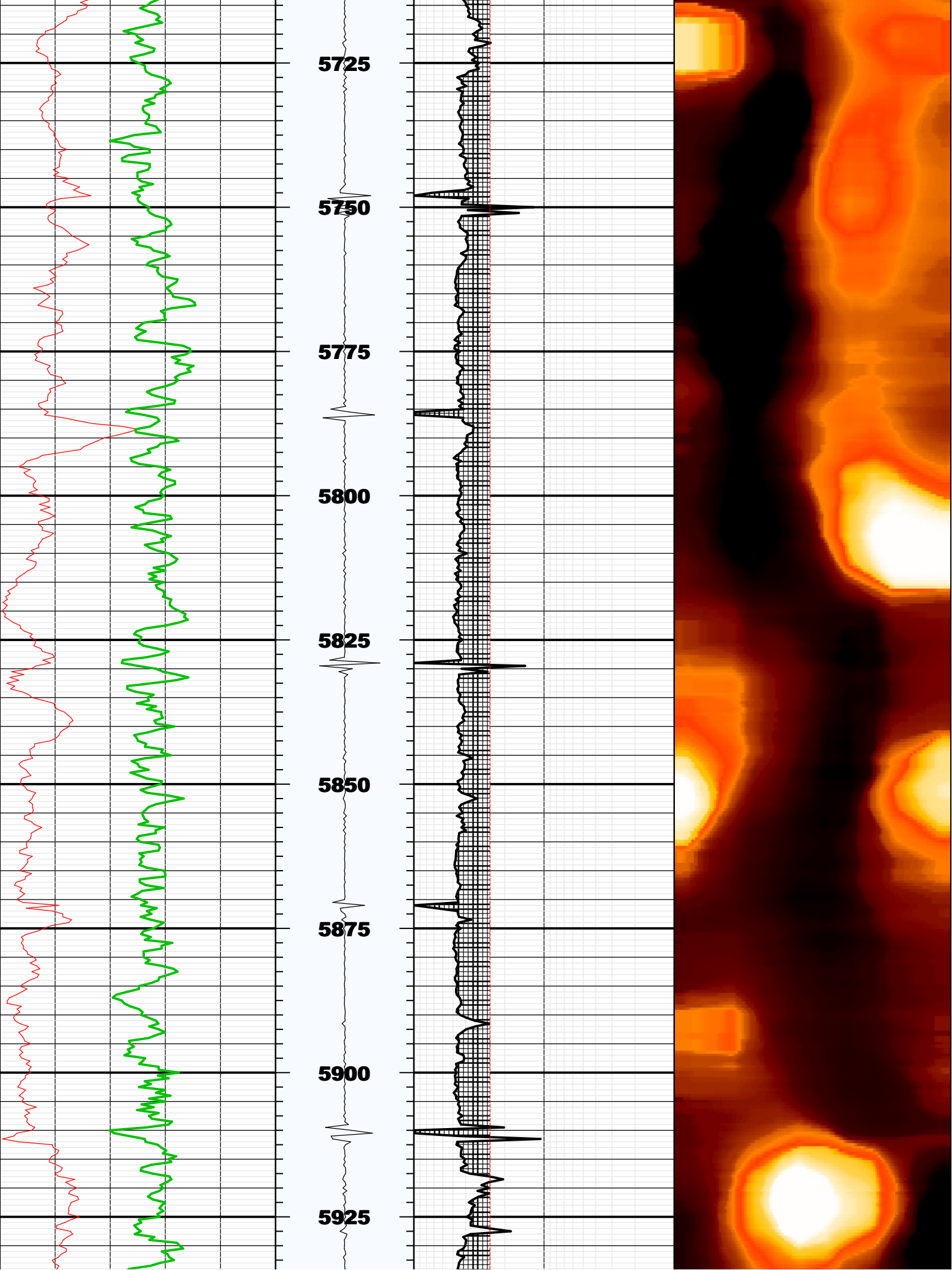
5425

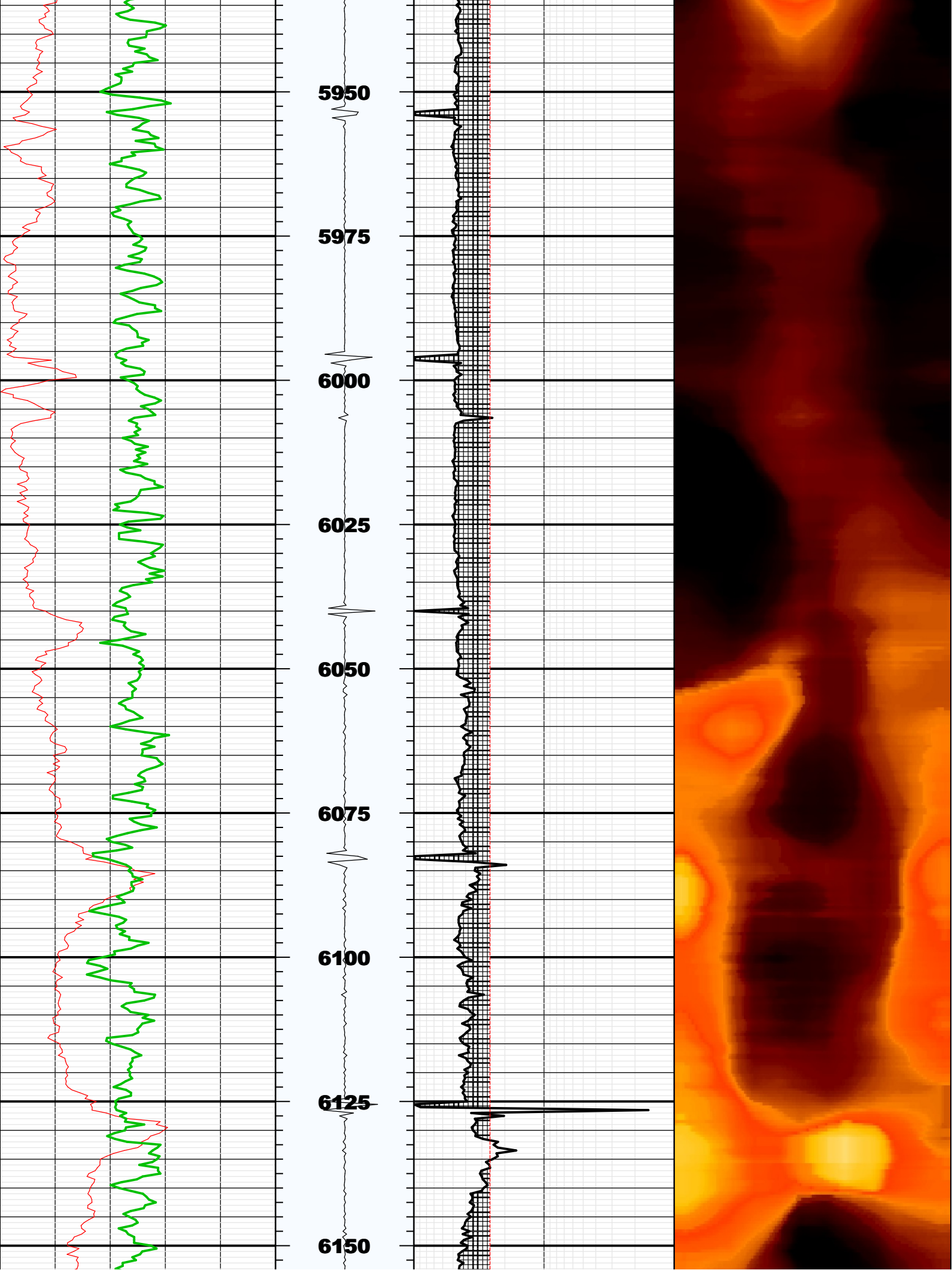
5450

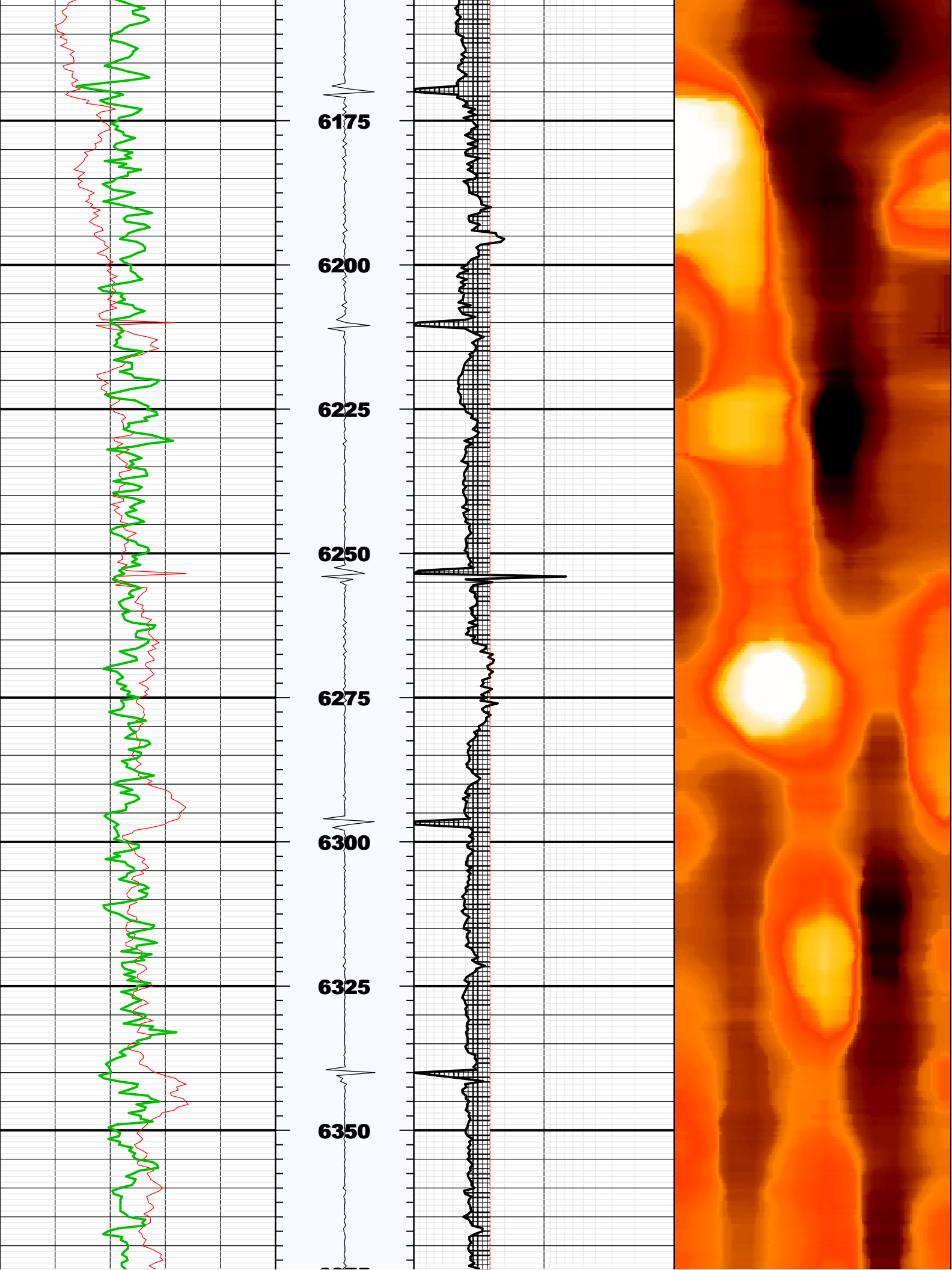
5475

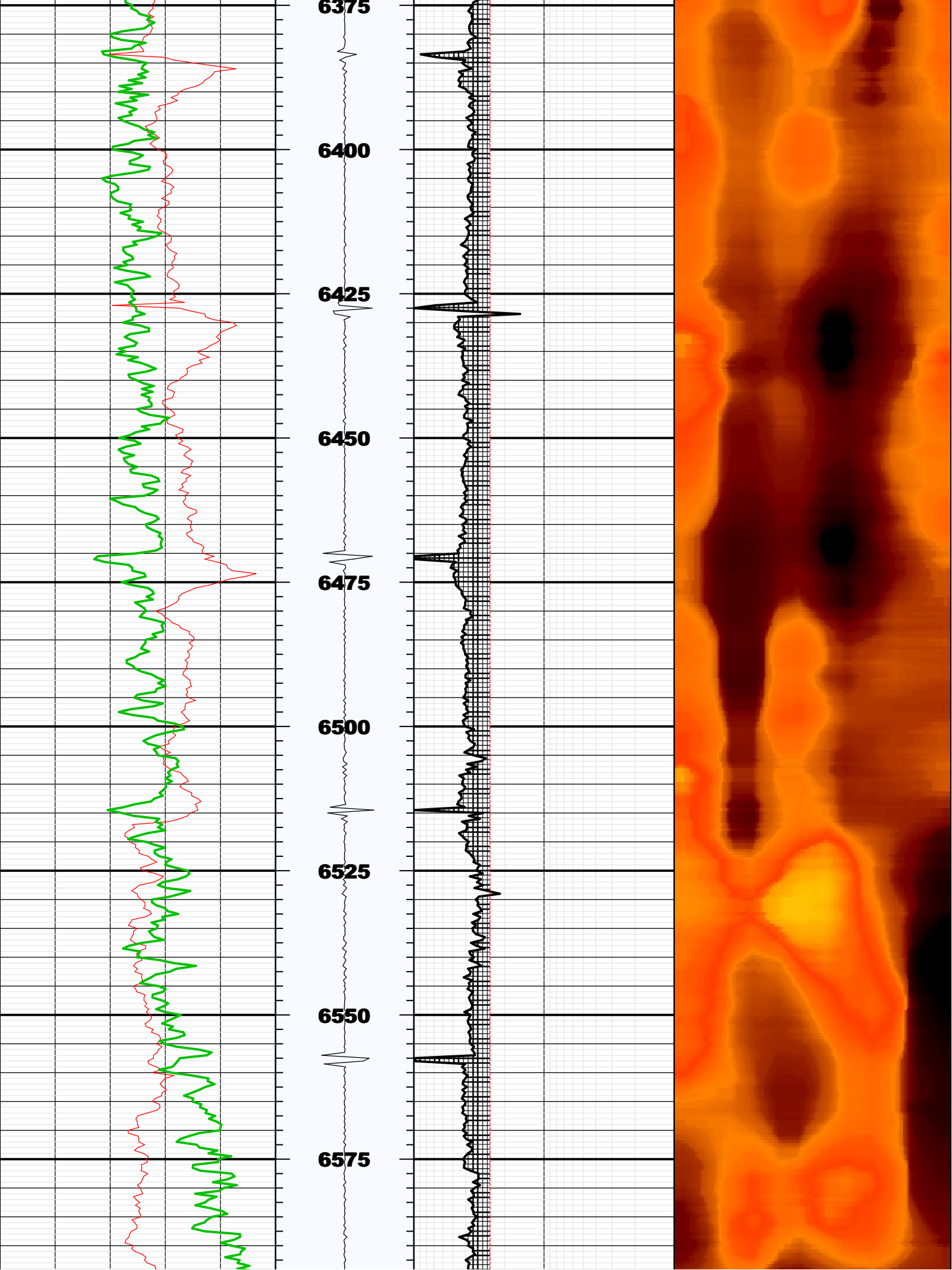


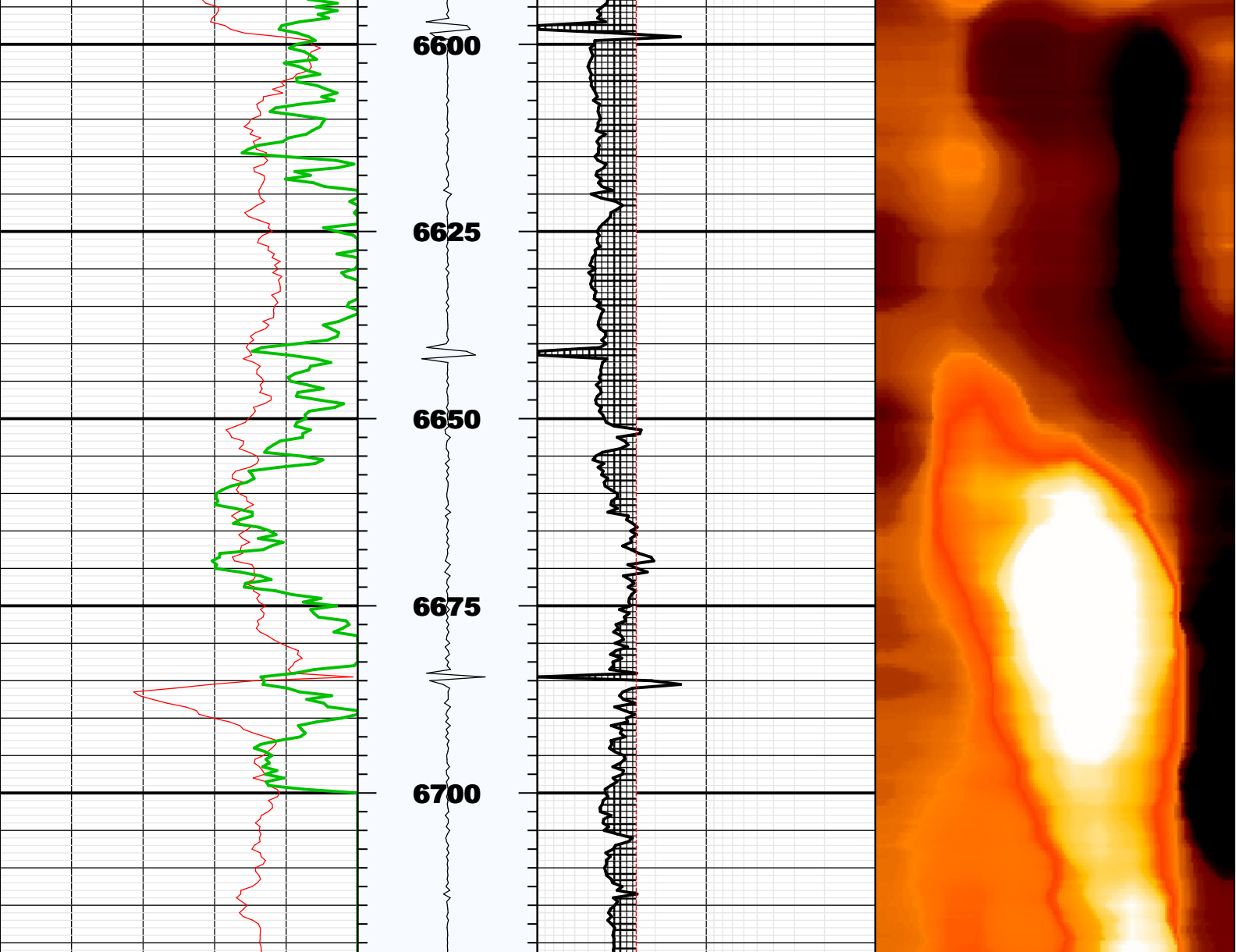








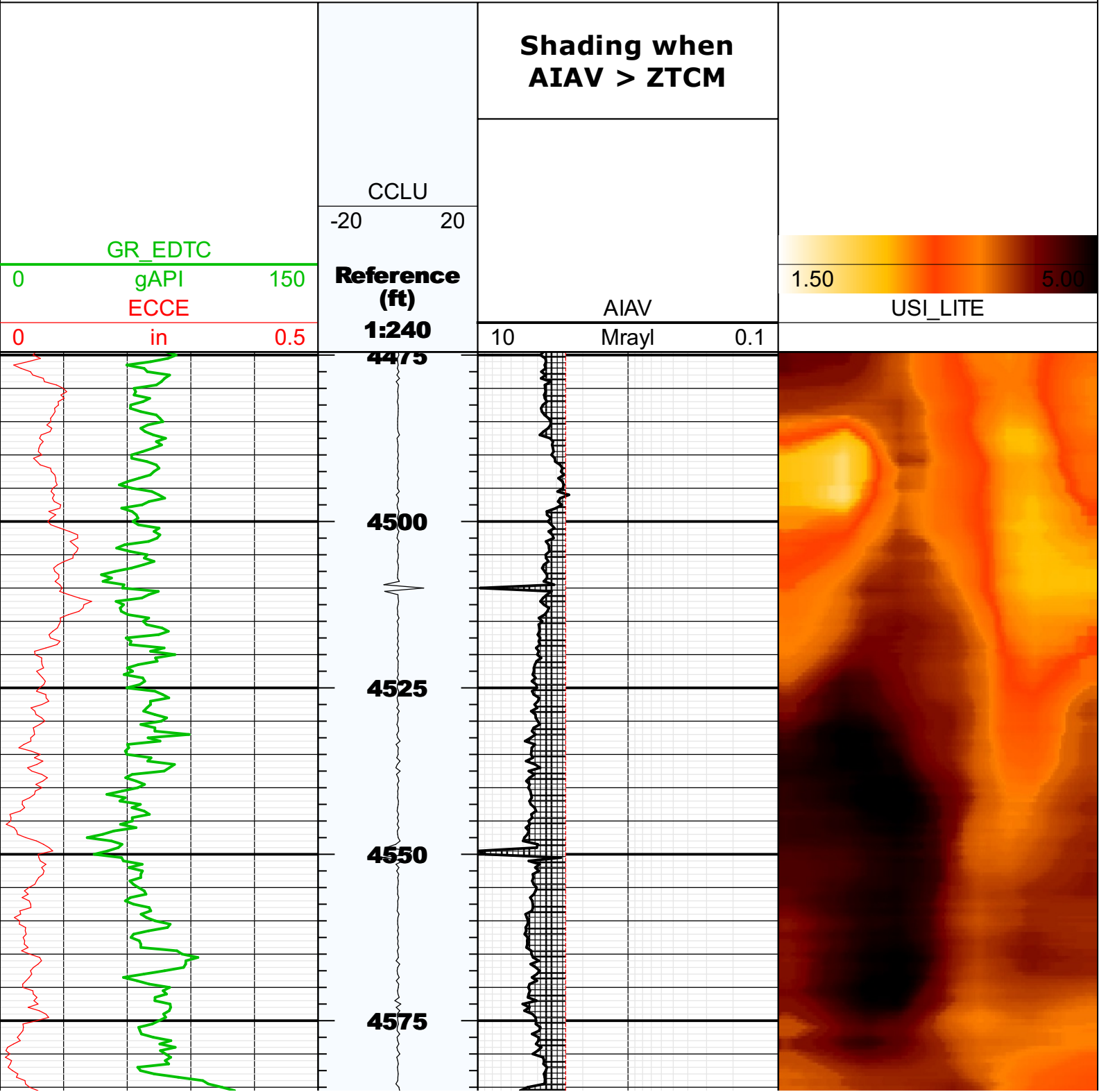


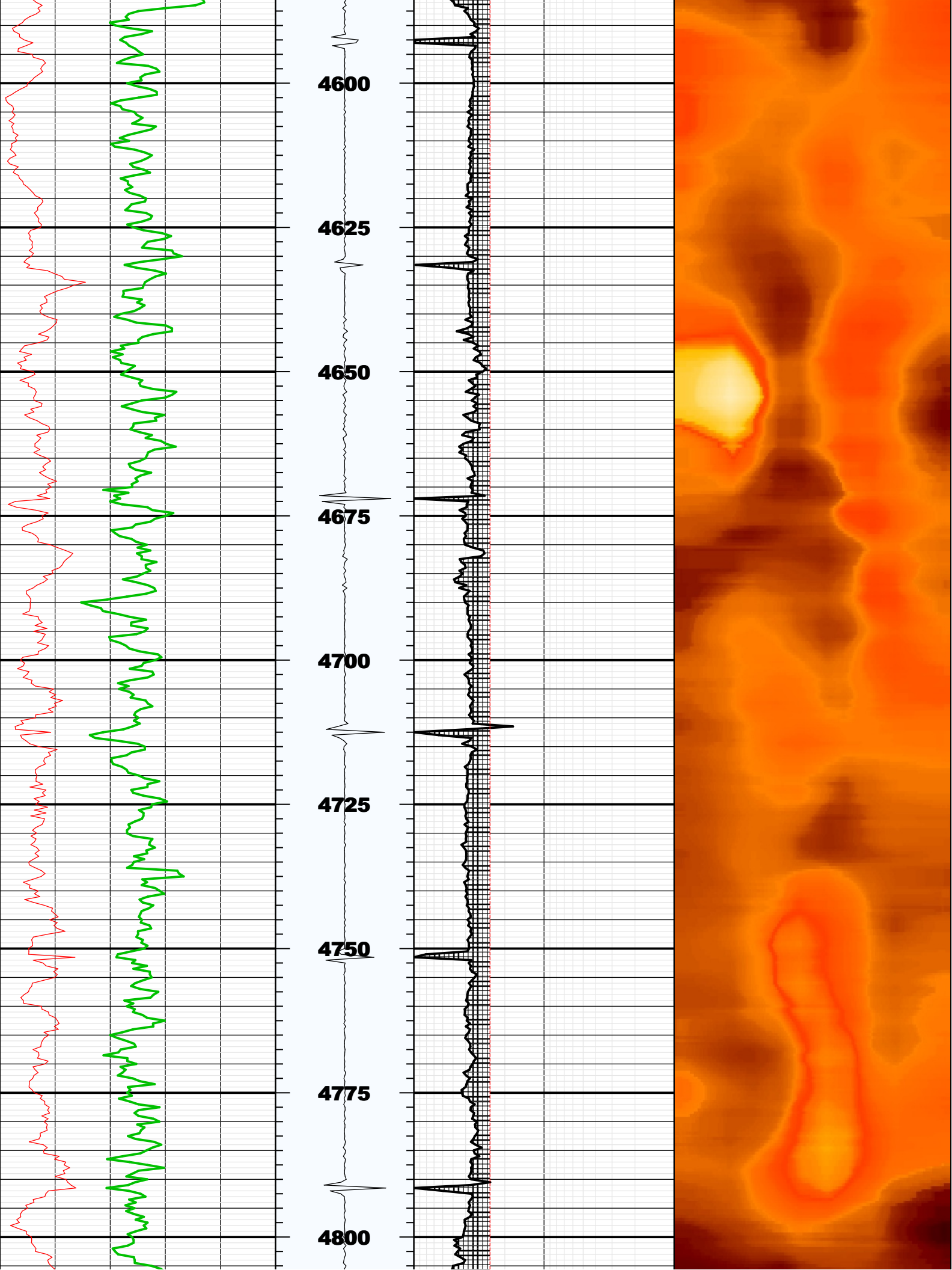


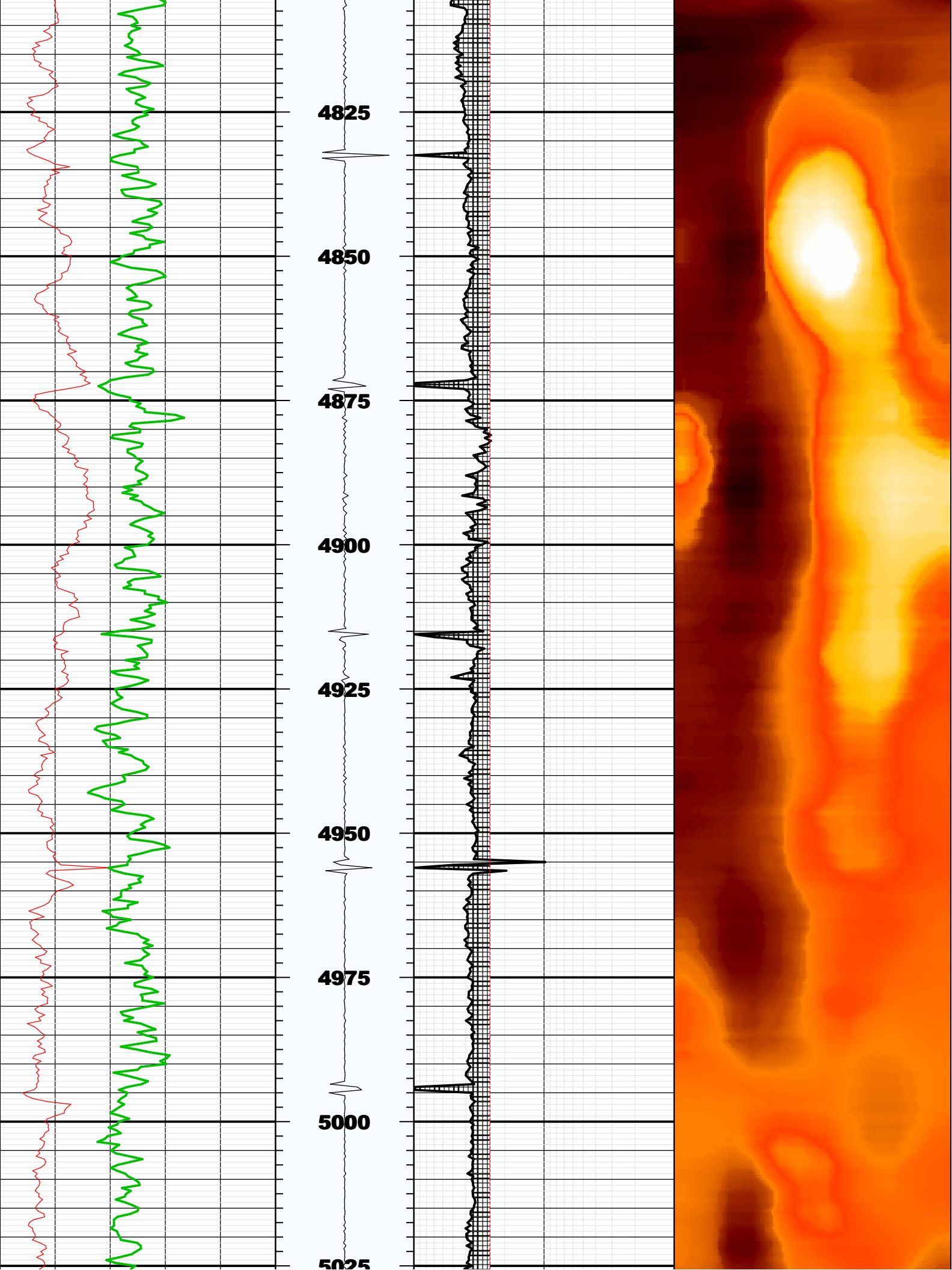
BS	8.75000	IN	Bit Size
CASG	P-110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	196.00000	US/F	Default Fluid Velocity
DO	3.00000	F	Depth Offset for Playback
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	70	V	EMEX Voltage
FDII	0.00000	F	FPM Data Interpolation Interval
FSOD	0_OFF		Fluid Slowness Fits Casing Outer Diameter
LOGMODE	MEASURED_DEPTH		Depth Logging Mode
PP	RECOMPUTE		Playback Processing
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	BRI		Type of Mud
U-USIT_DT3P	C		Decimated Tcube Policy
UPAT	375K		Emission Pattern
USUB	7INC		Ultrasonic Subassembly Identifier
UWKM	D603010L		Ultrasonic Working Mode
VCAS	51.40000	US/F	Ultrasonic Transversal Velocity in Casing
WINB	35.00000	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	1.65000	MRAY	Acoustic Impedance of Mud
ZTCM	2.60000	MRAY	Acoustic Impedance Threshold for Cement
ZTGS	0.30000	MRAY	Acoustic Impedance Threshold for Gas
WLEN	21.70779	US	T^3 Processing Length

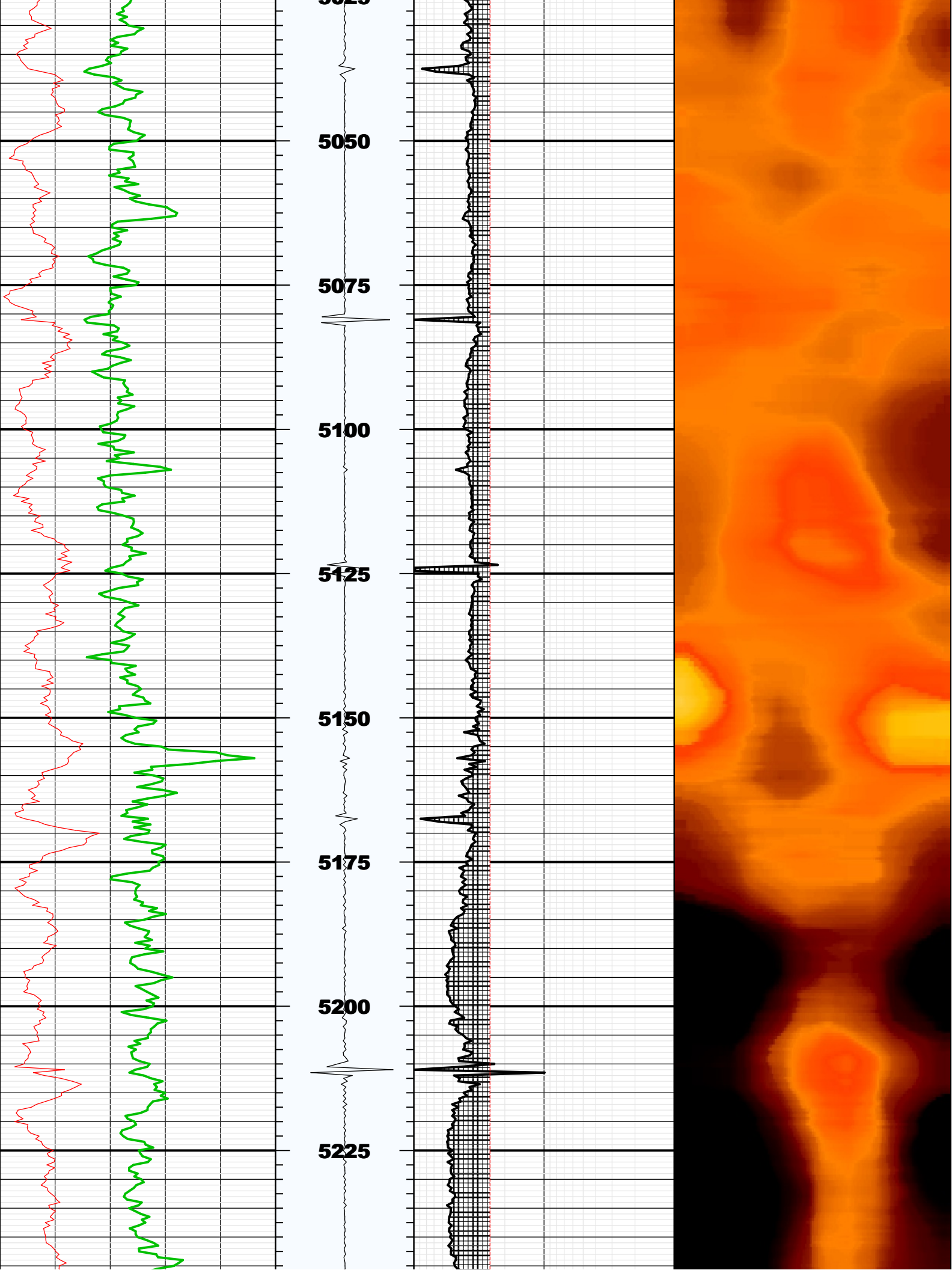
Repeat Pass

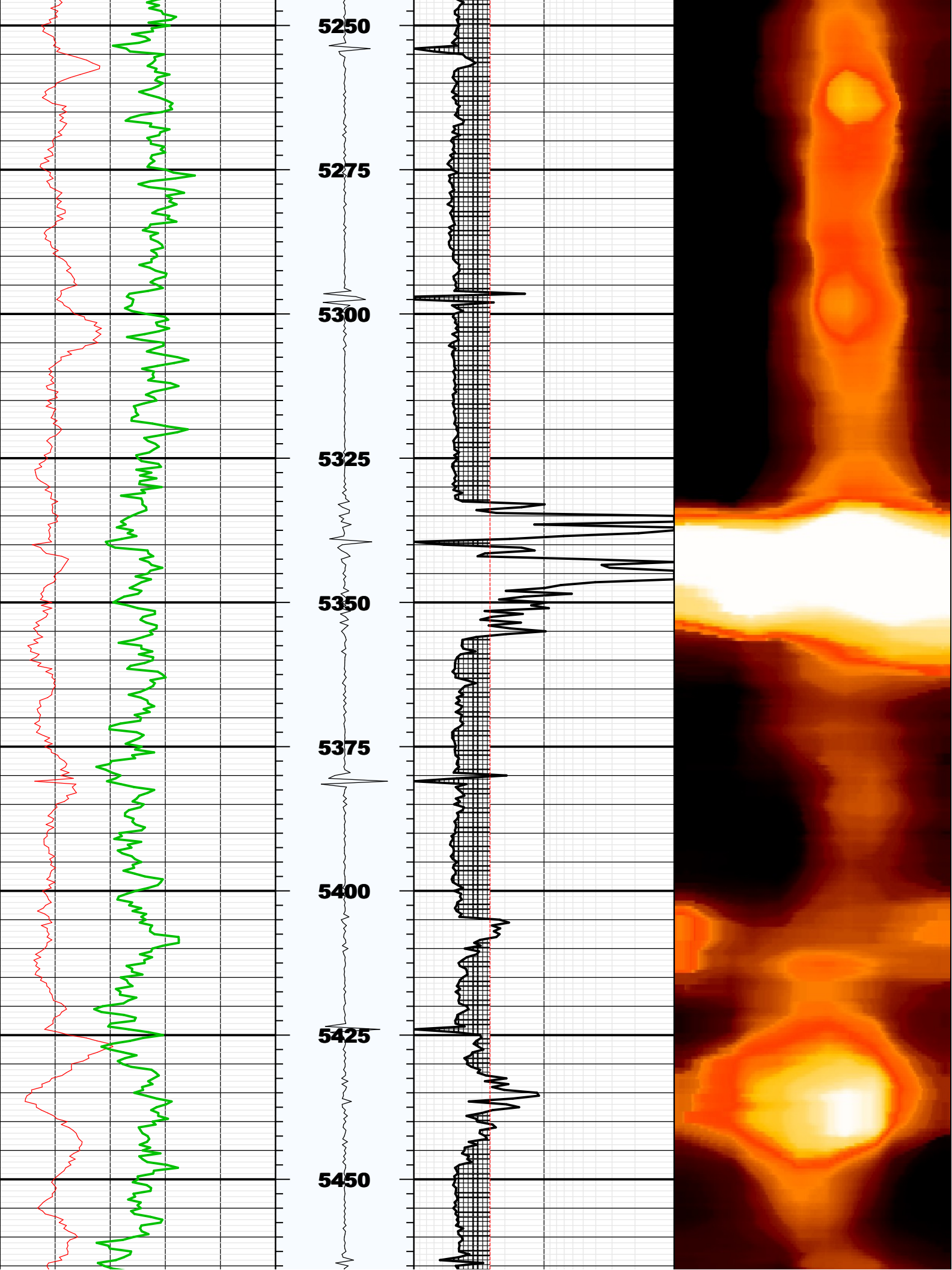
Company: Noble Energy Inc
Well: Wells Ranch State AA21-69-1HN
Field: Wattenberg

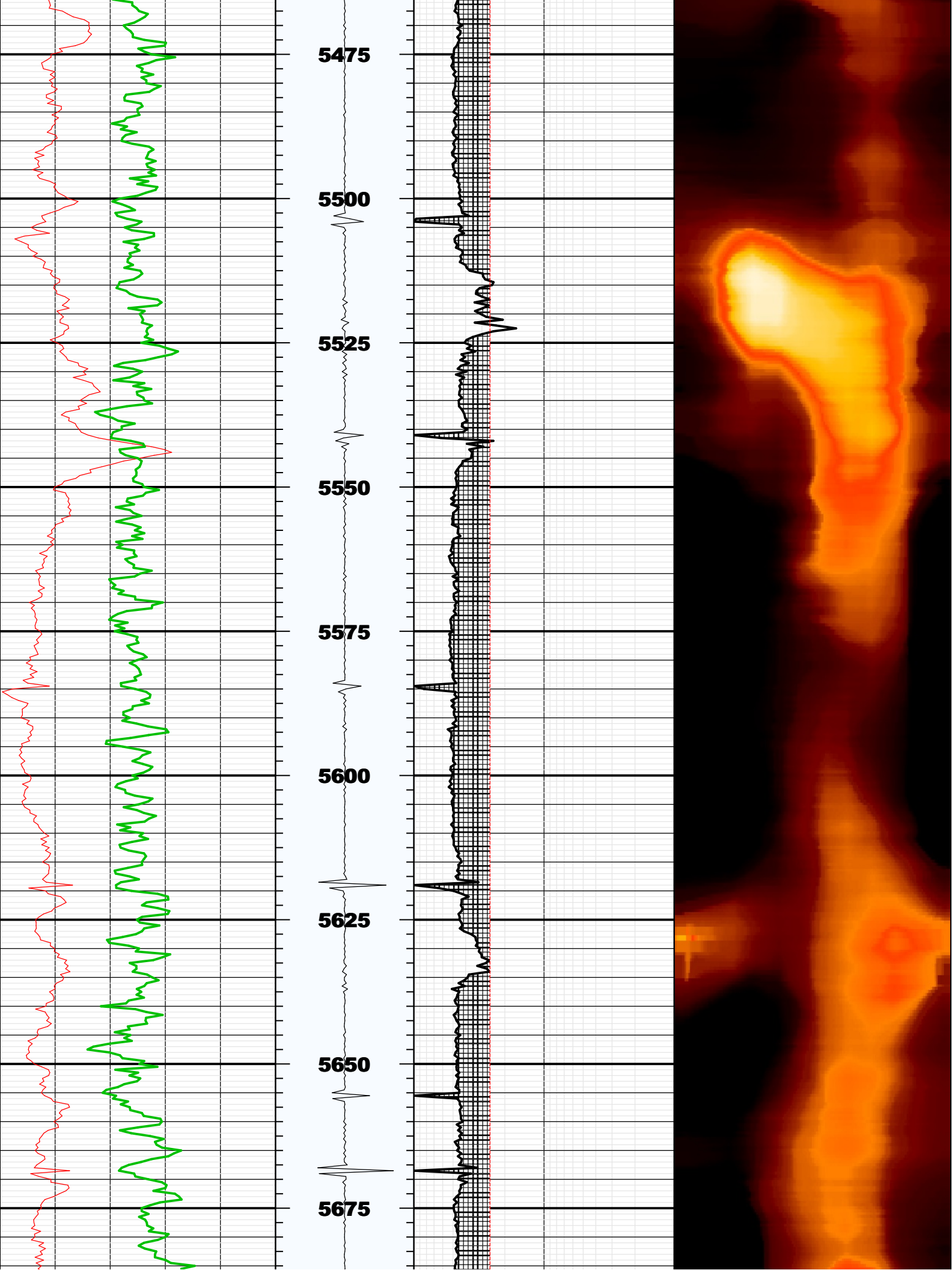


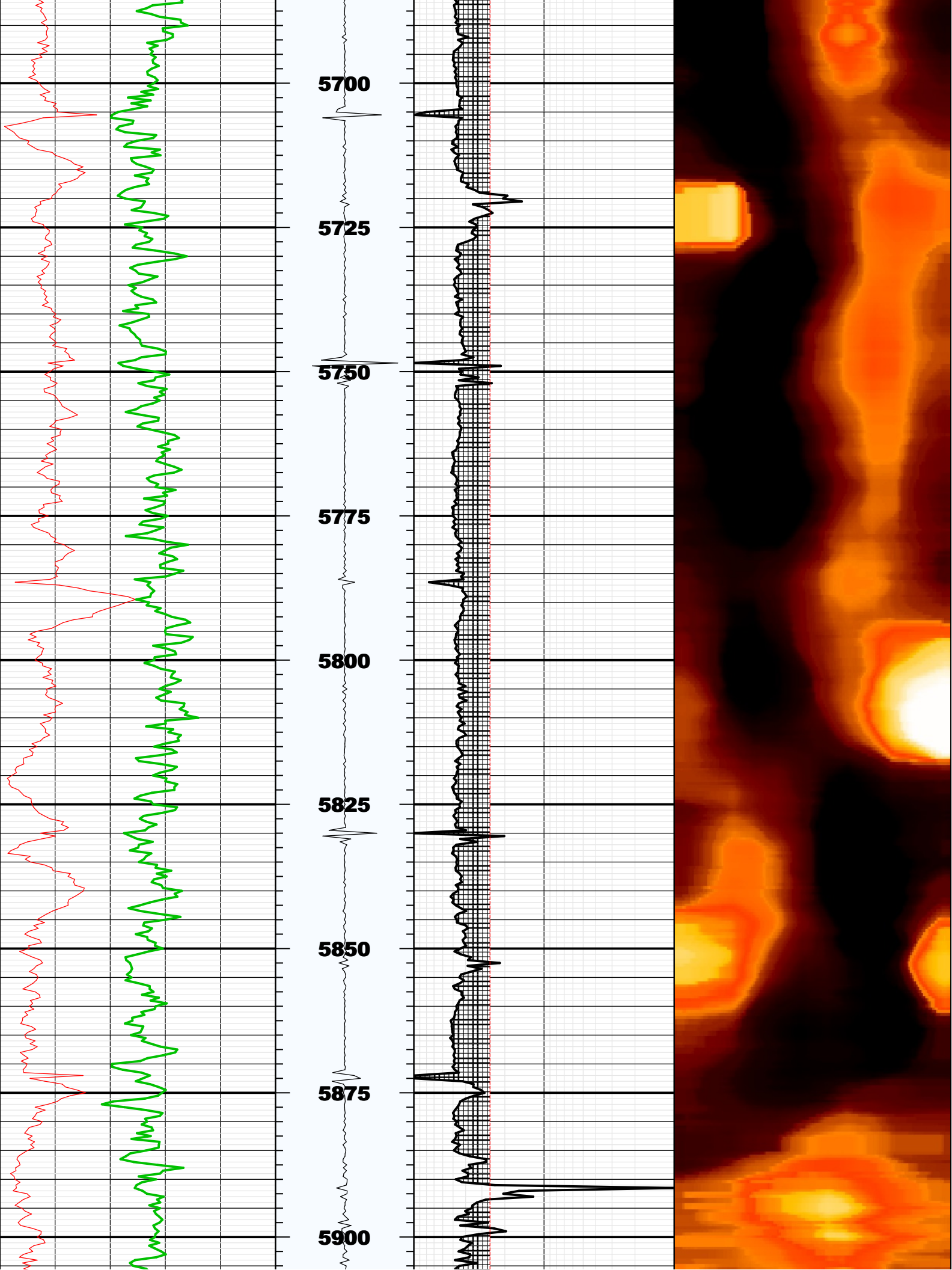


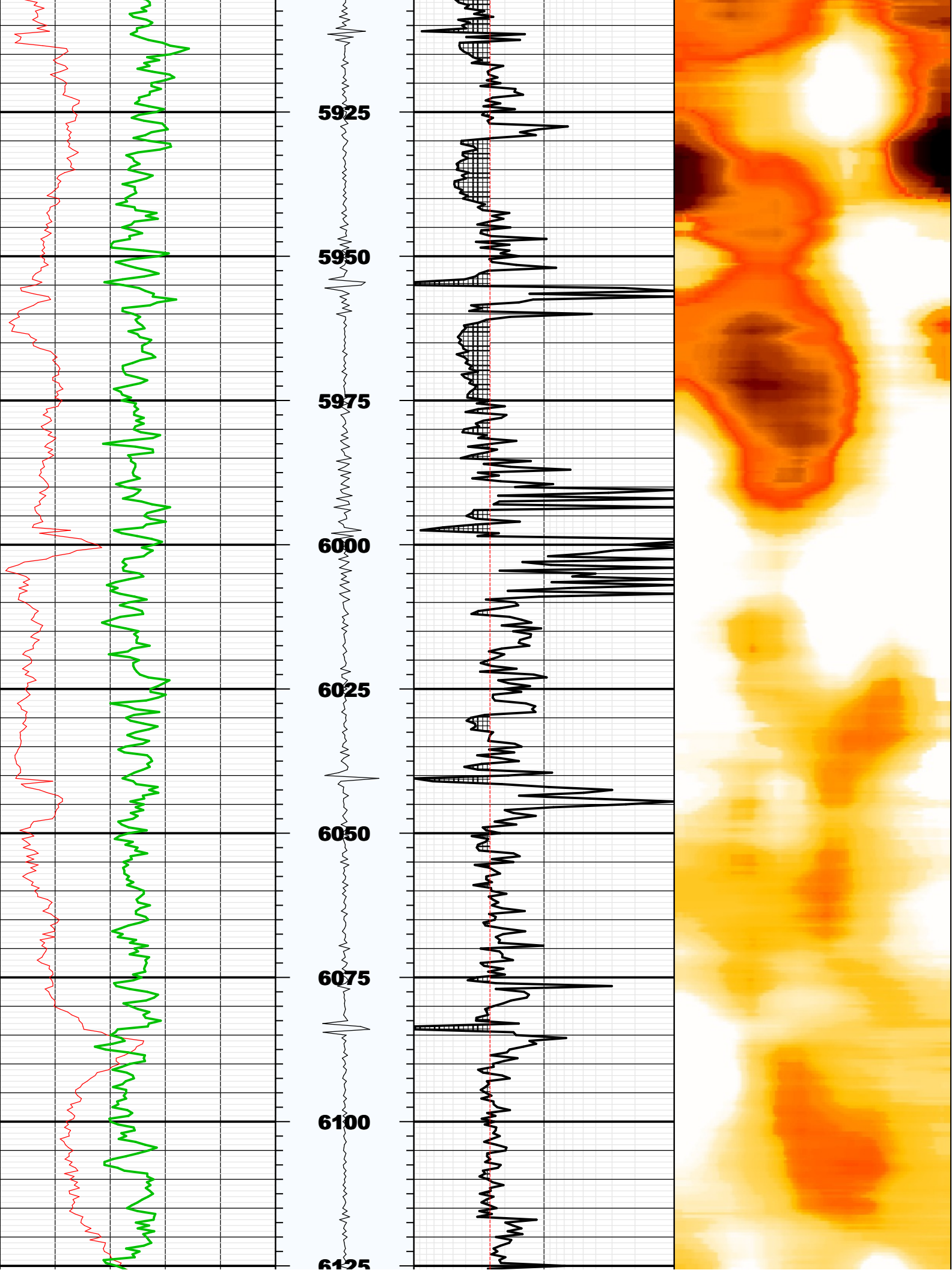


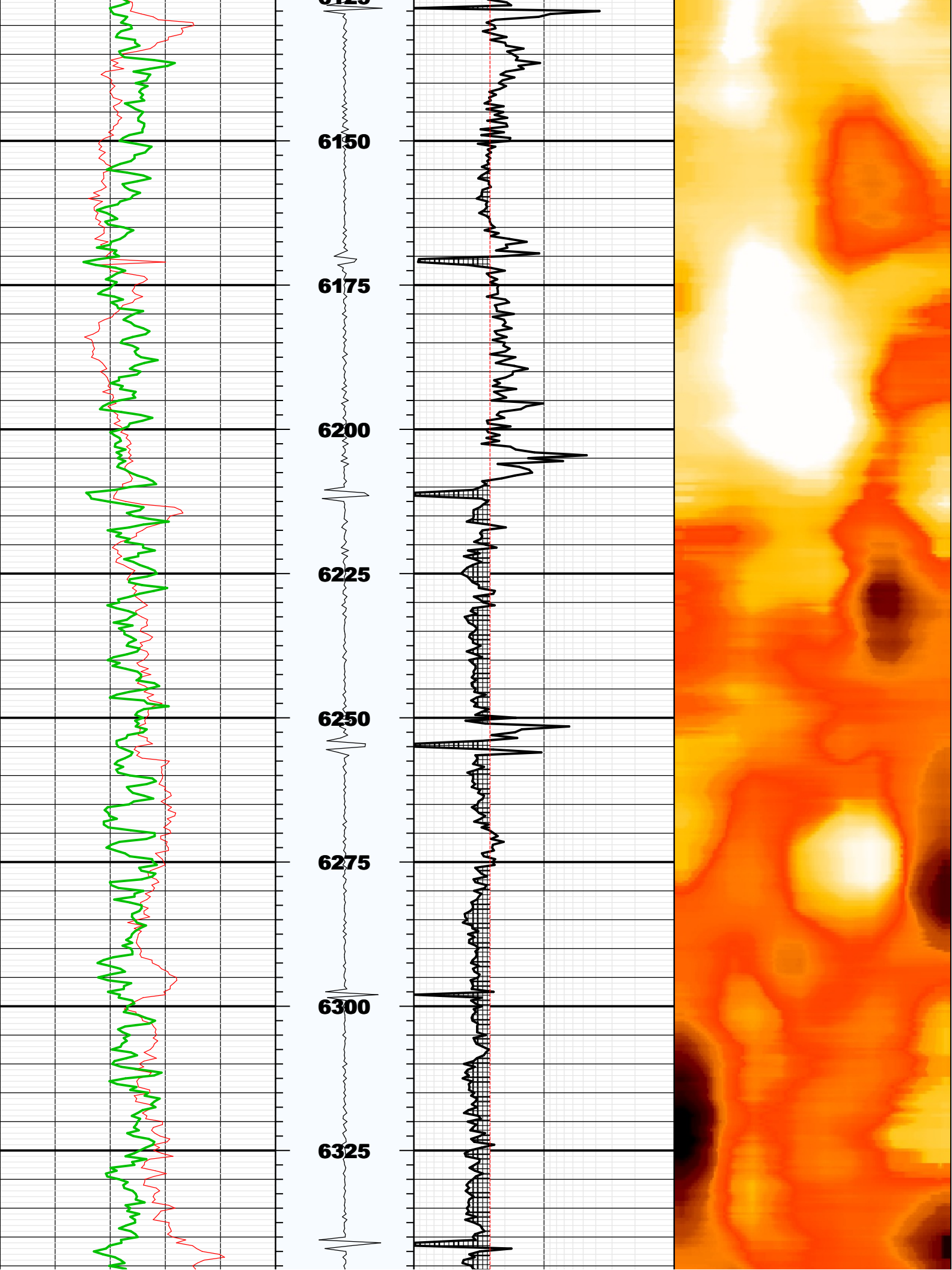


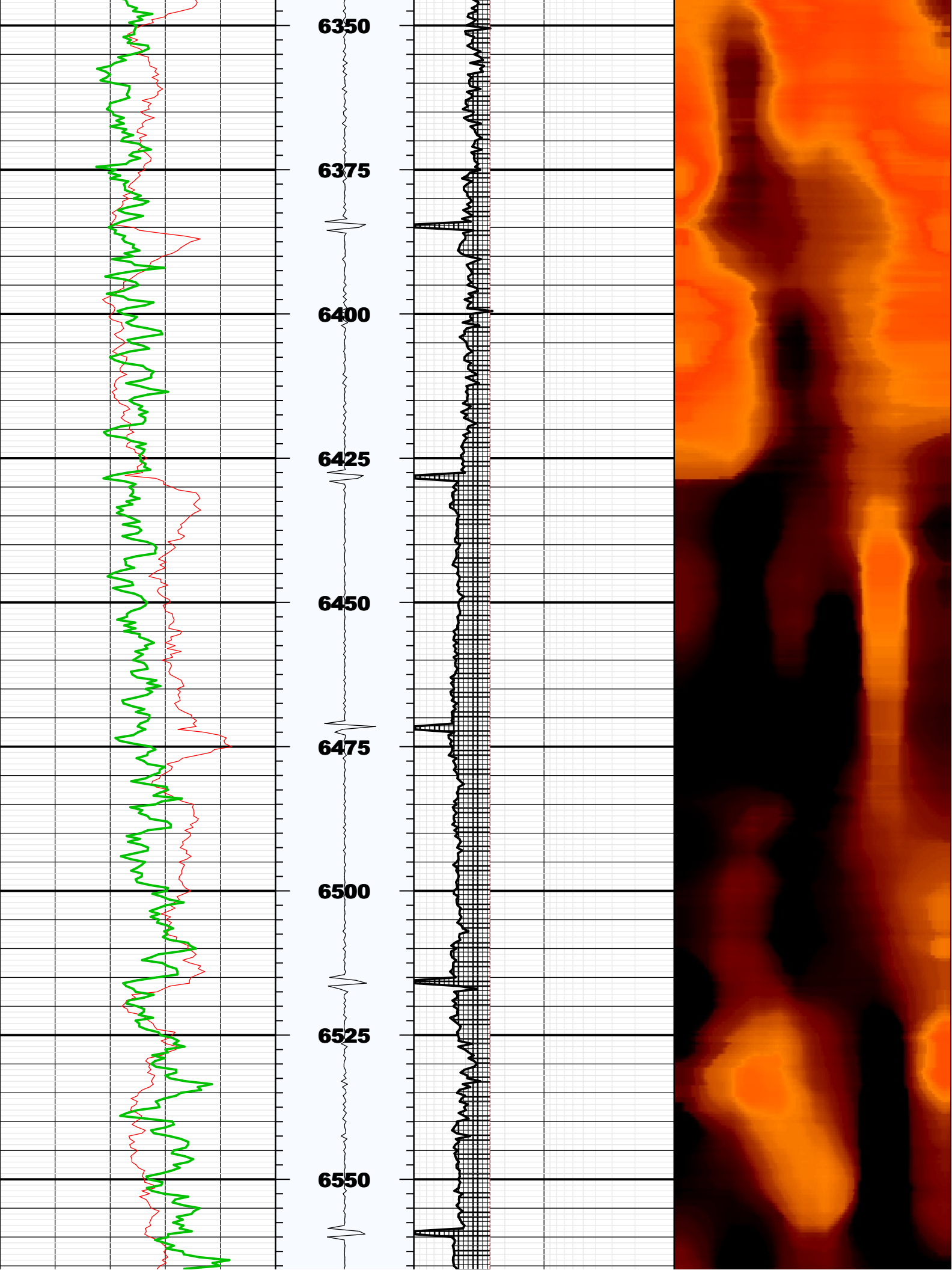


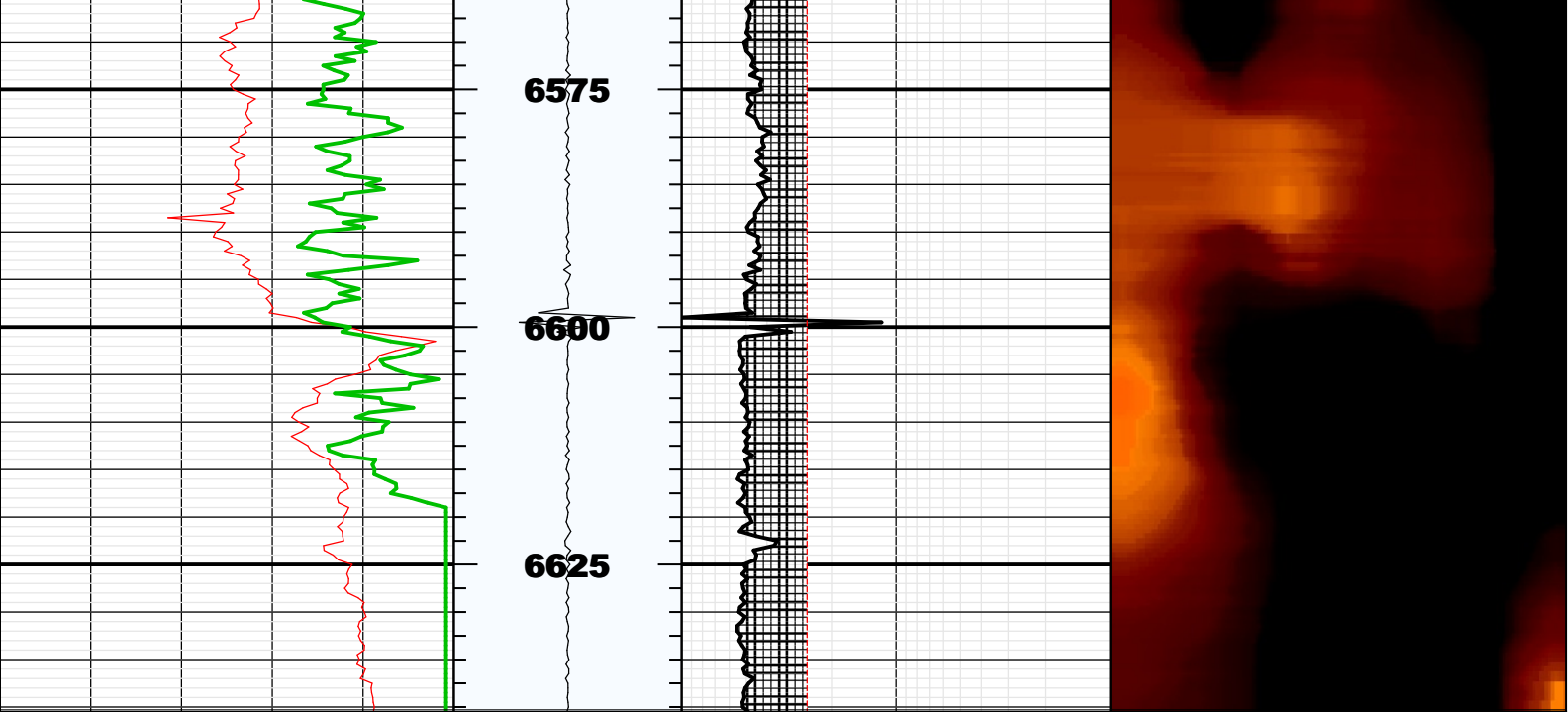












Fluid Properties Used for Main Pass

