

Company: Noble Energy Inc

Well: Rainbow LC28-78-1HNA
Field: Wattenberg
County: Weld State: Colorado

County: Weld		Field: Wattenberg		Location: SESW Sec. 28 T9N R59W		Well: Rainbow LC28-78-1HNA		Company: Noble Energy Inc	
Logging Date		LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:		GL KB KB		Elev: K.B. 4883.0 F G.L. 4853.0 F D.F. 4882.0 F	
Run Number		API Serial No.		Section		Township		Range	
Depth Driller		05-123-38848-0000		28		9N		59W	
Schlumberger Depth		20-Sep-2014							
Bottom Log Interval		Run# USIT							
Top Log Interval		10339.0 F							
Casing Fluid Level		10339.0 F							
Salinity		6302.0 F							
Density		-999.2 F							
Fluid Level		8.0 F							
BIT/CASING/TUBING STRING		8.40 LB/G							
Bit Size		8.0 F							
To		8.750 IN							
Casing Size		630.0 F							
Weight		6432.0 F							
Grade		7.00 IN							
To		26.00 LB/F							
Max Recorded Temp		P110							
Logger on bottom (date)		0.0 F							
Location		6422.0 F							
Recorded By		224.0							
Witnessed By		20-Sep-2014							
		Ft. Morgan CO							
		Danielle Maniere							
		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: 11800.00000

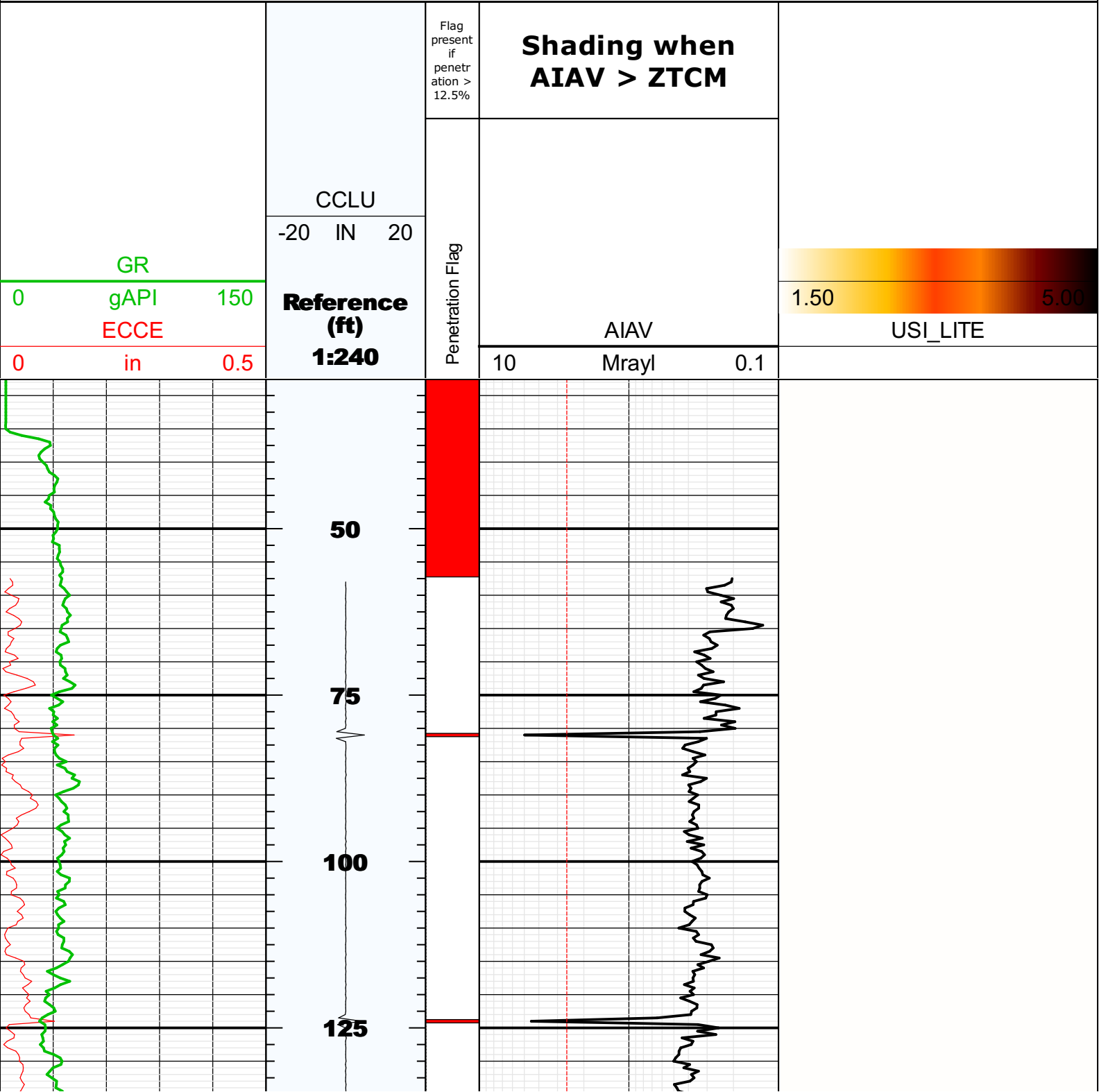
DISCLAIMER

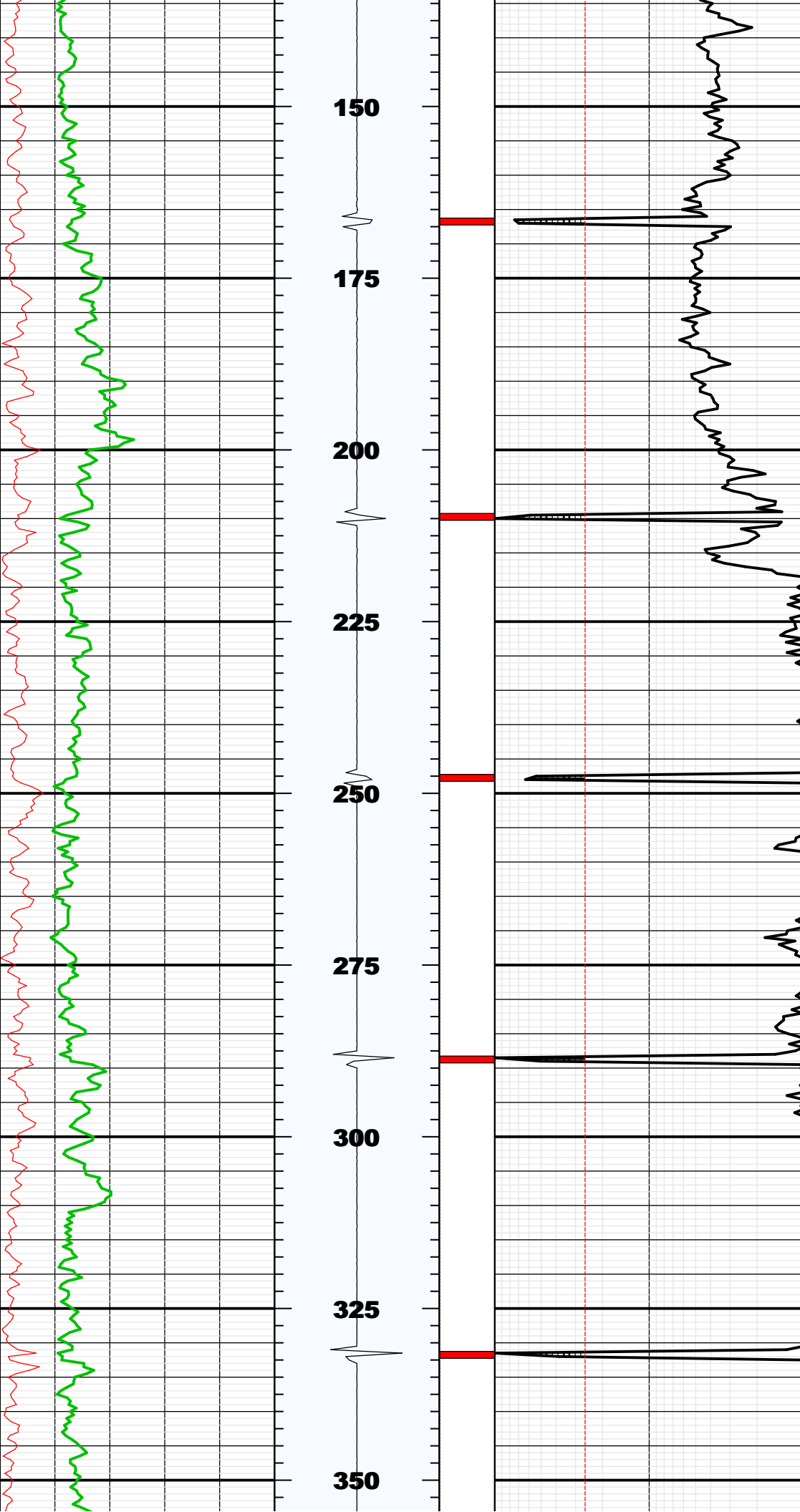
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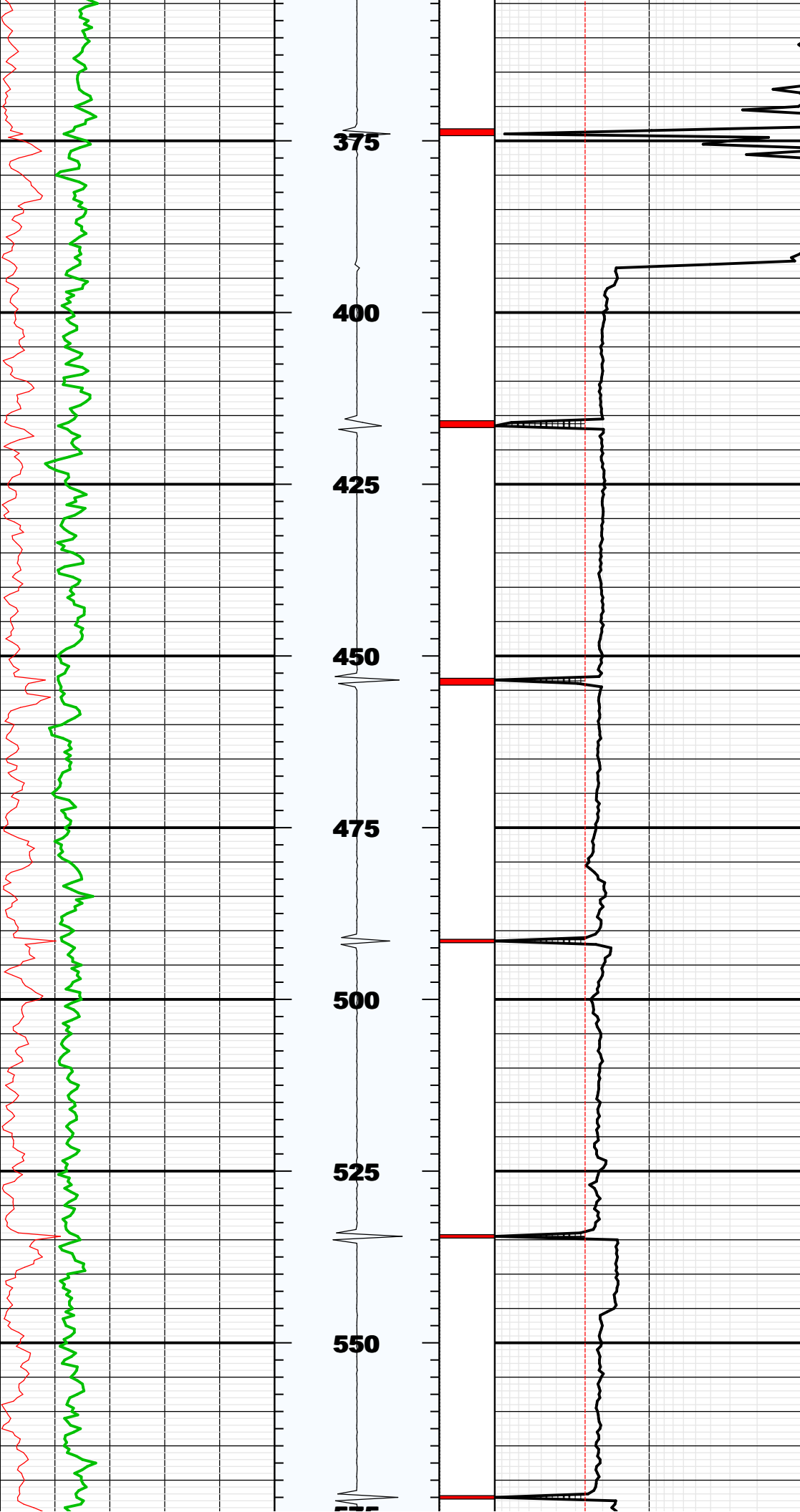
This is the first run in hole
12.5 ppg lead cement
13.8 ppg tail cement
0 PSI repeat pass
2500 PSI main pass
Bottom log temperature 224 degF
Top of Cement
Crew Jay Musgrave Jake Jump

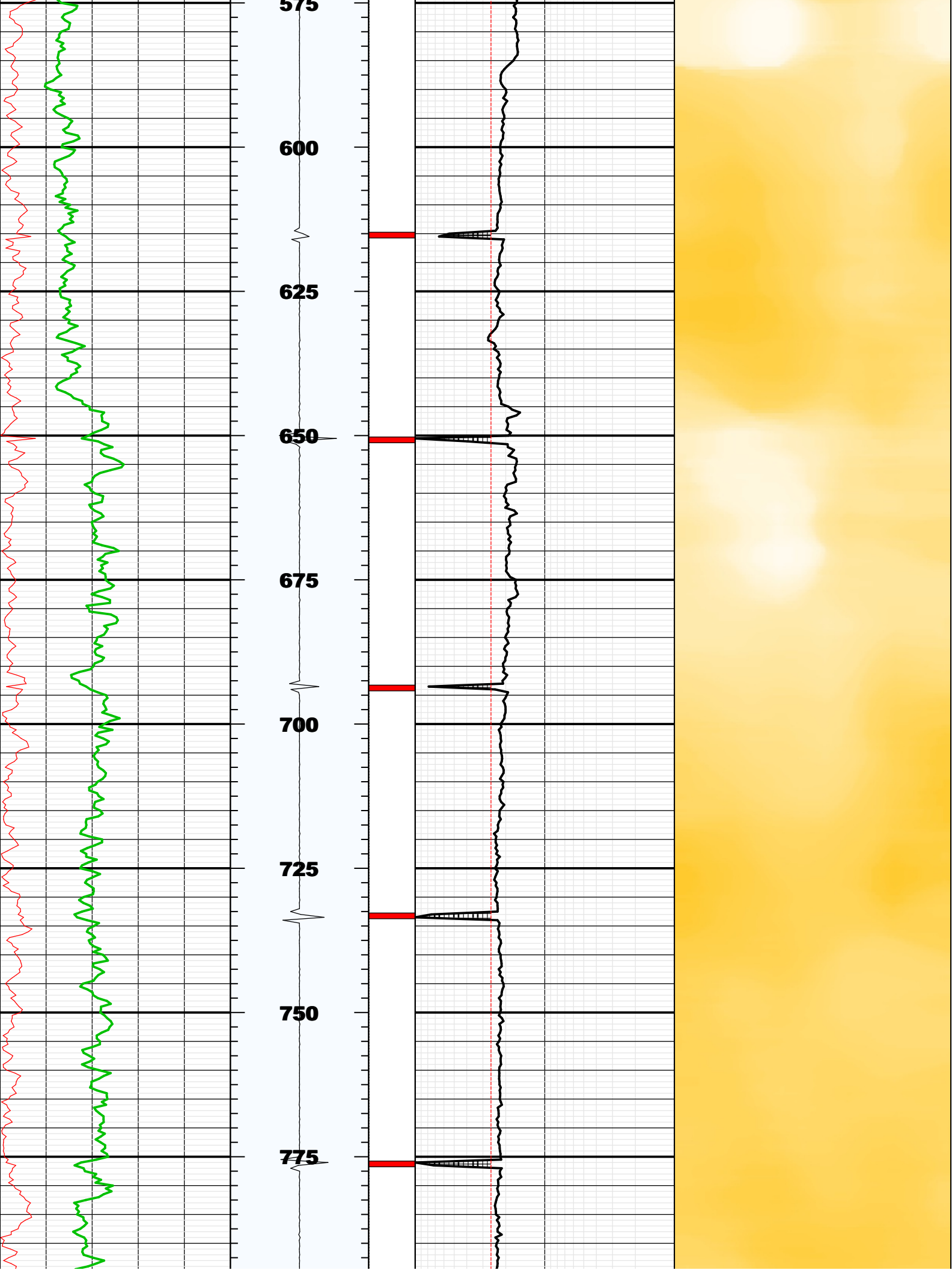
Main Pass

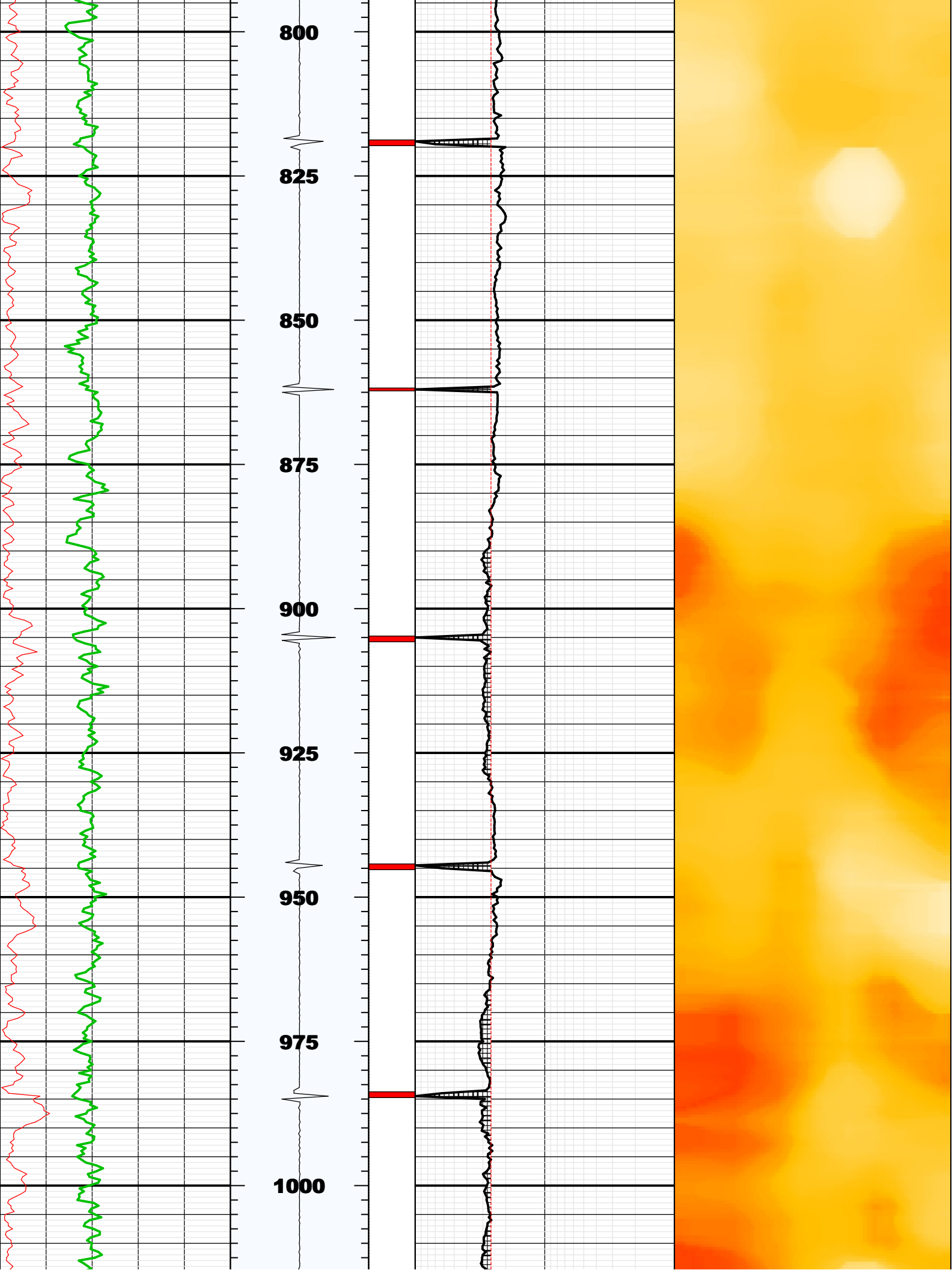
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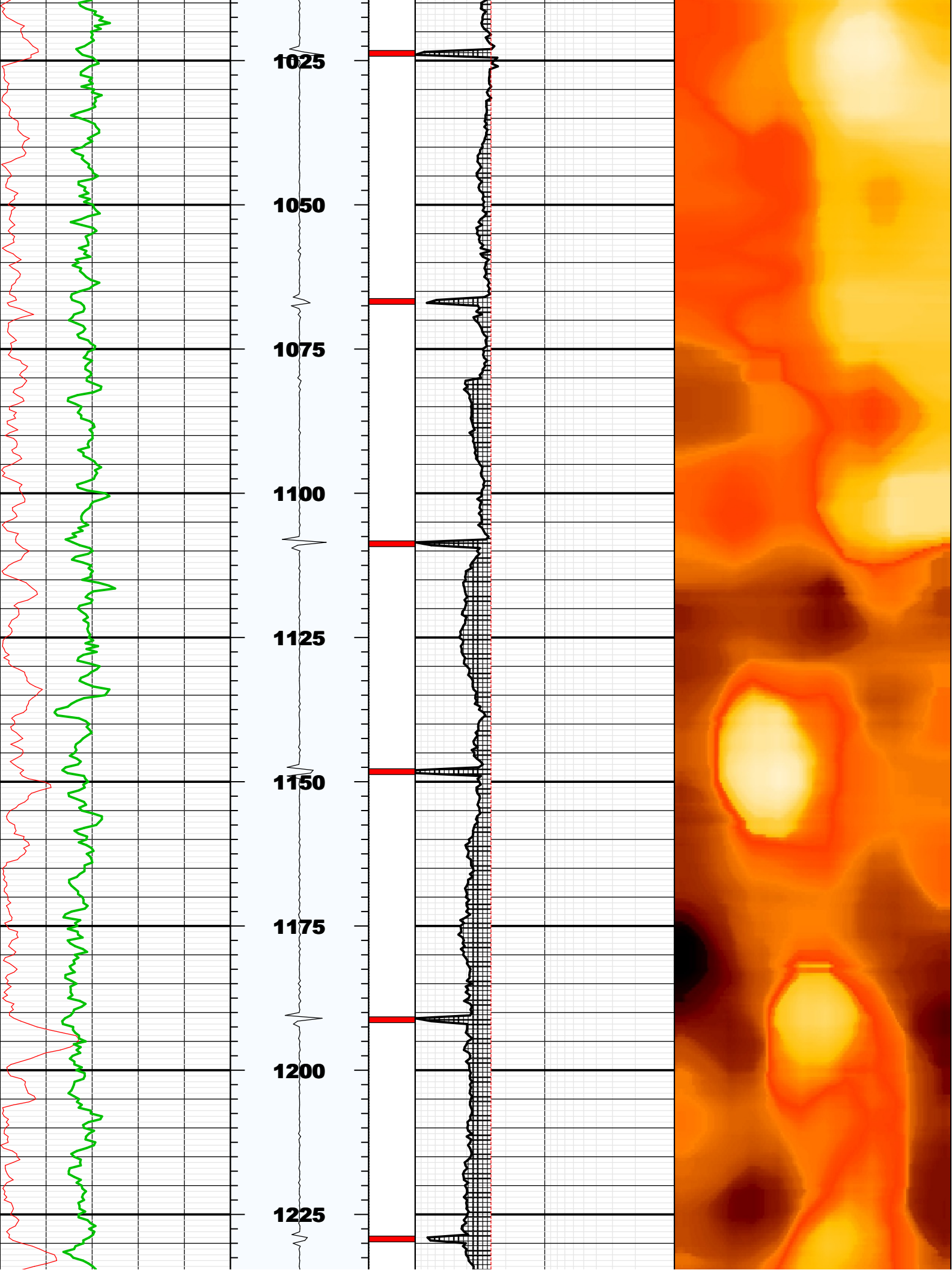


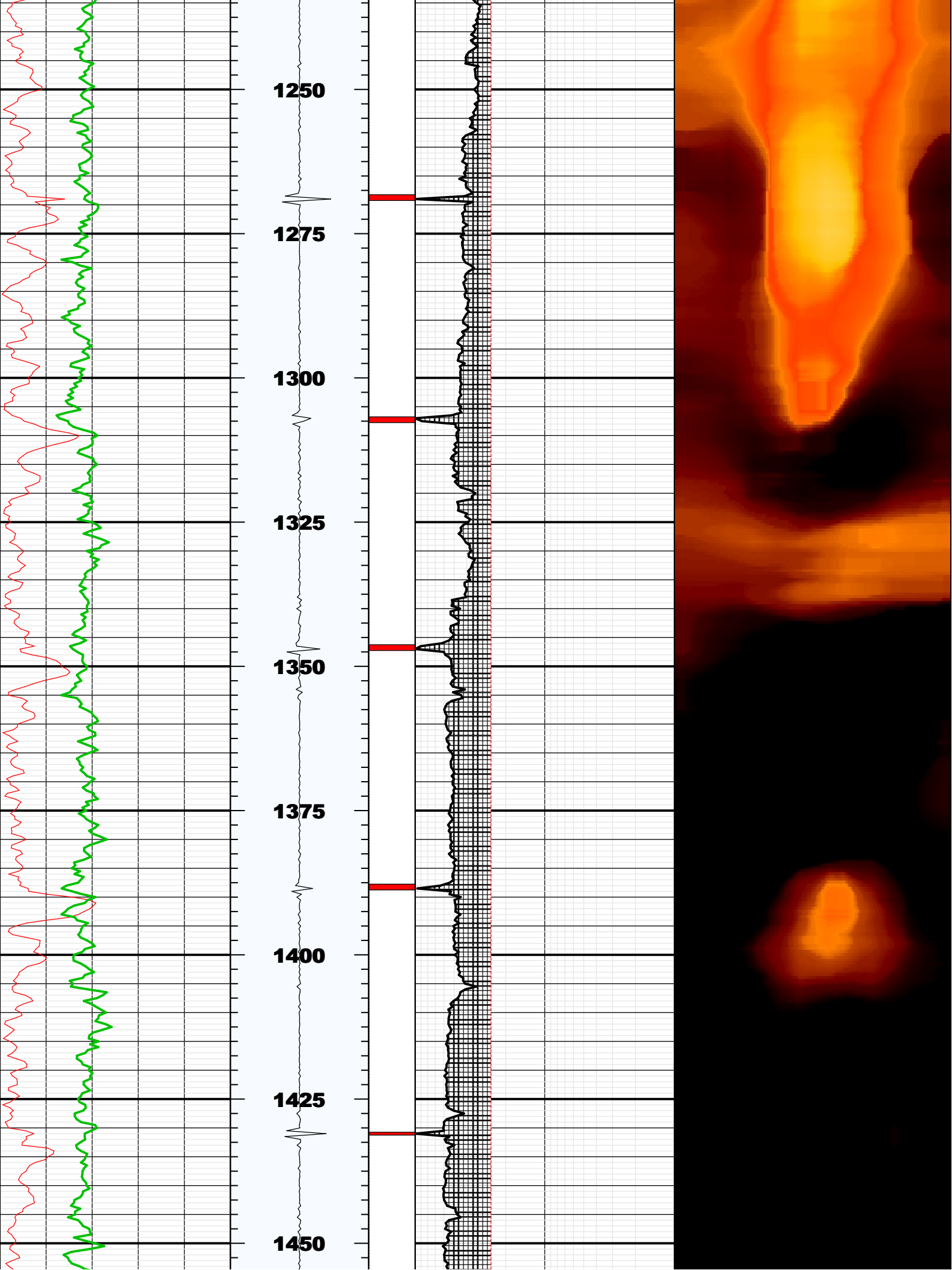


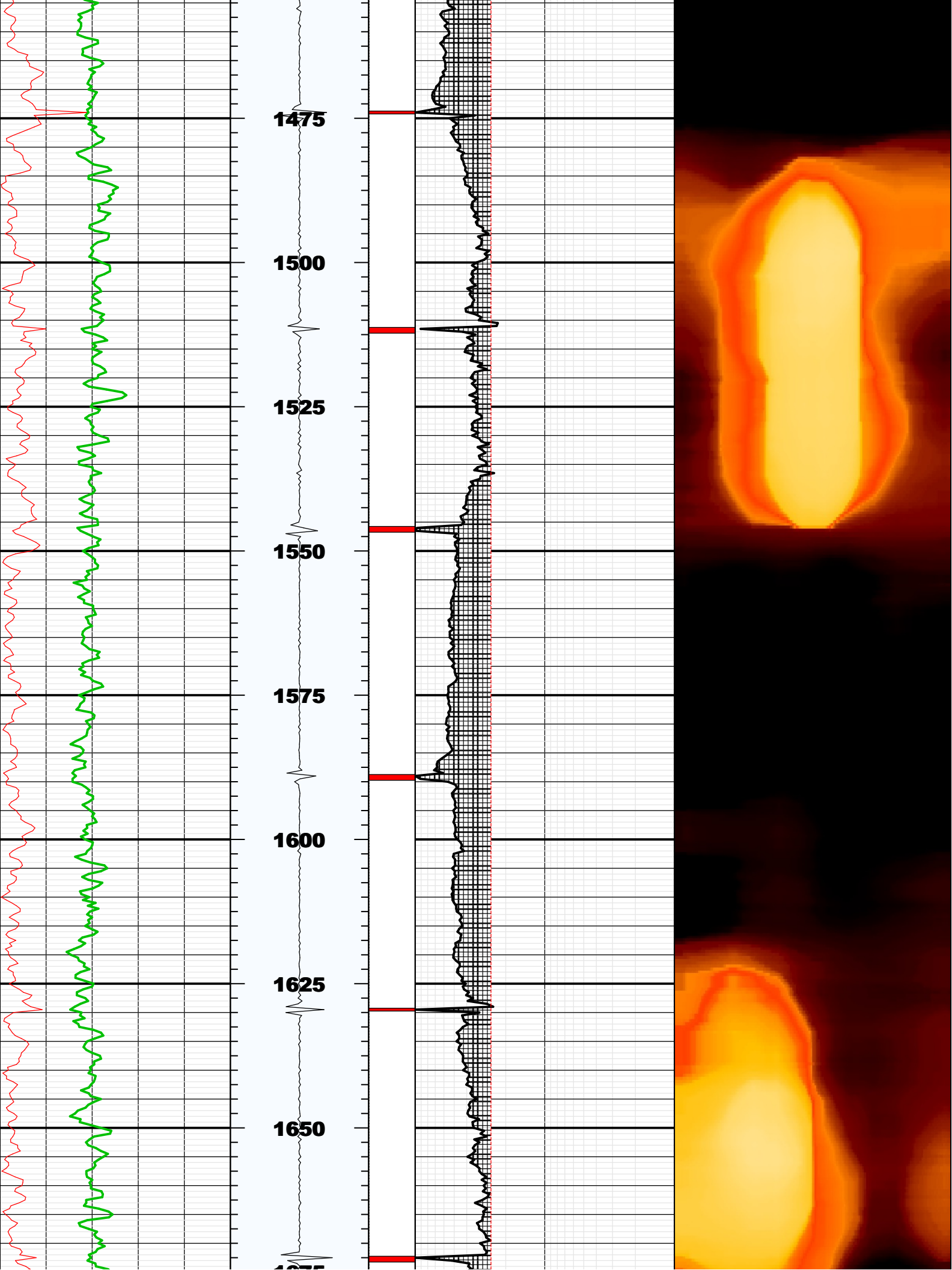


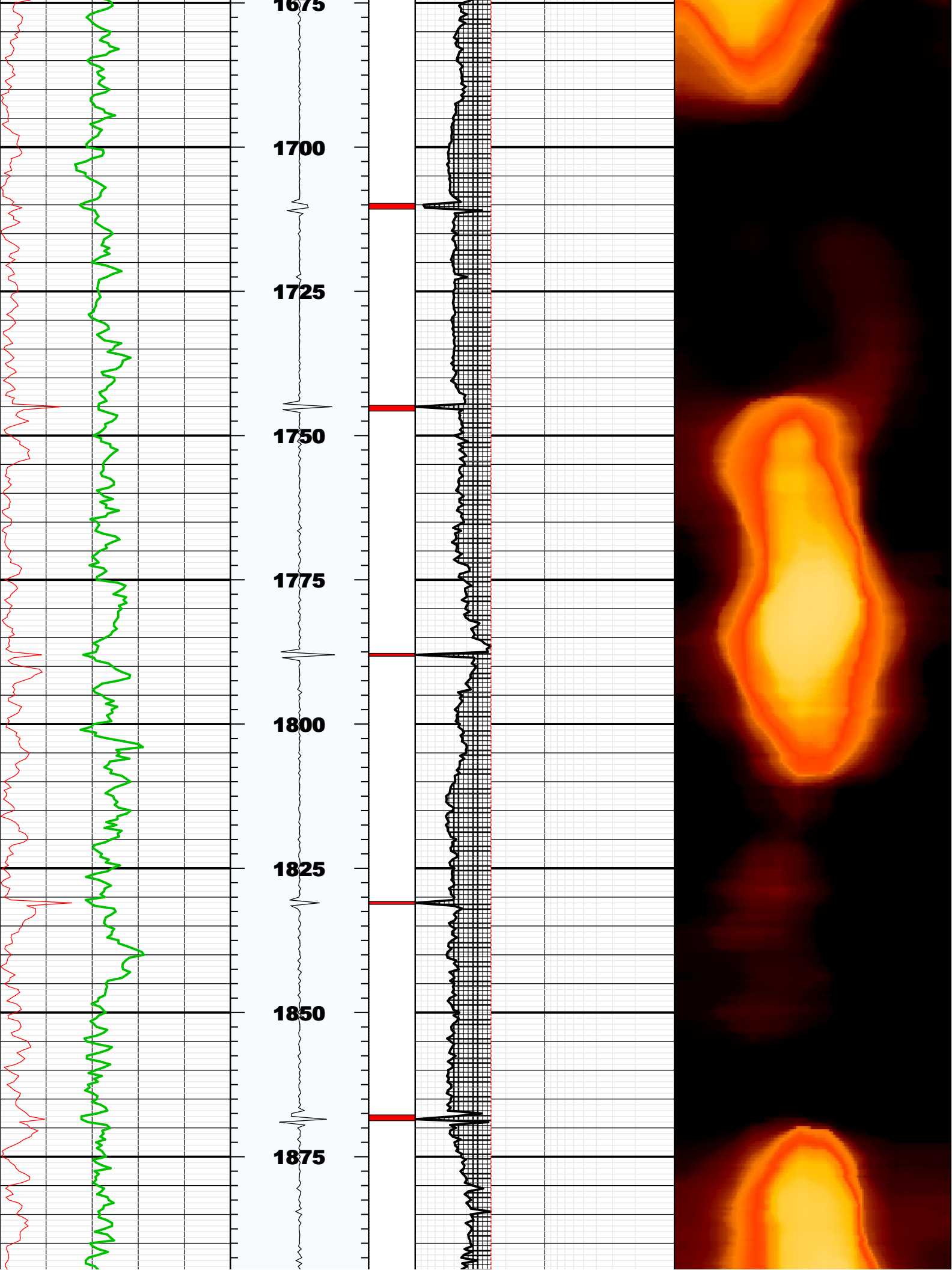


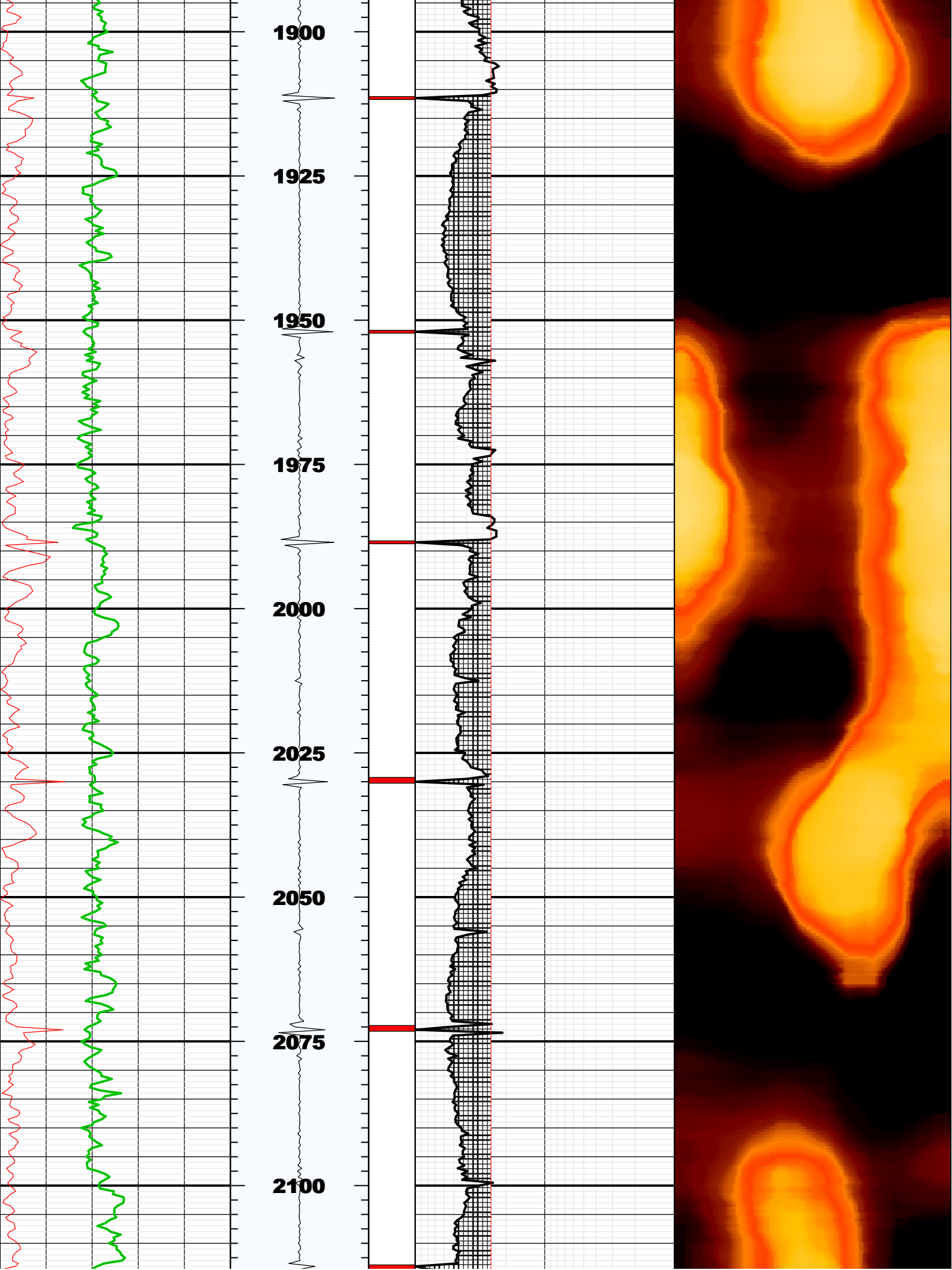


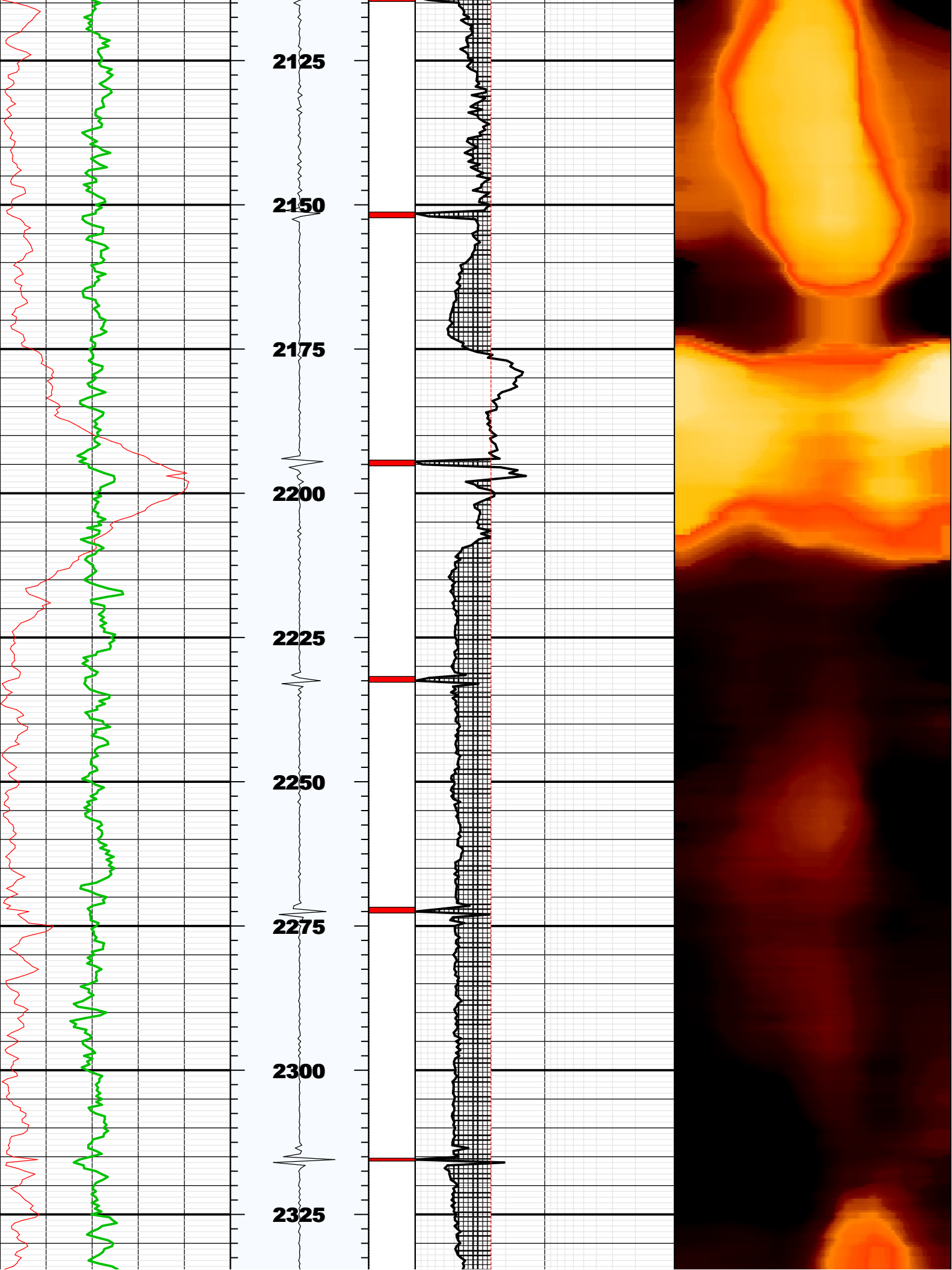


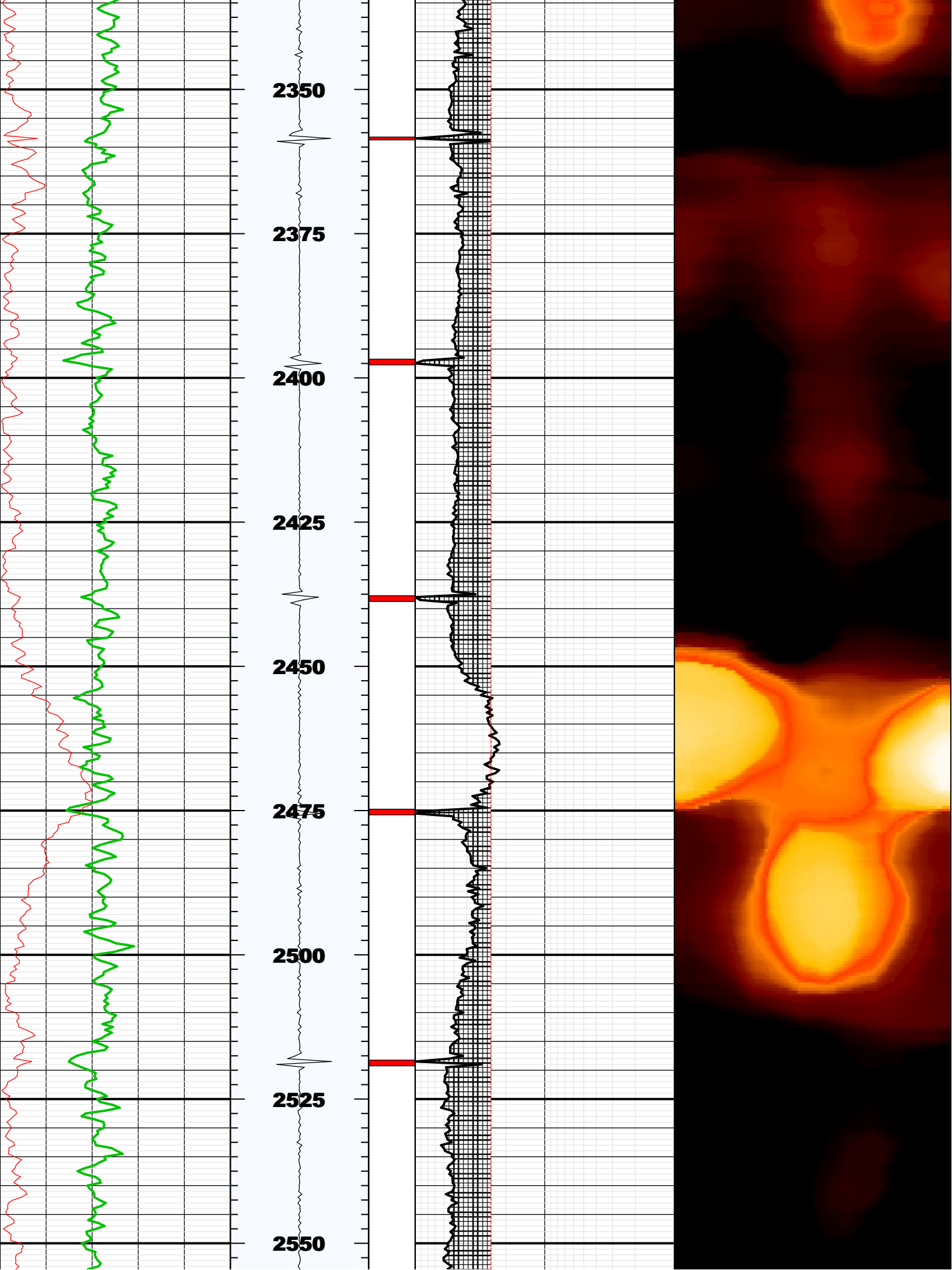


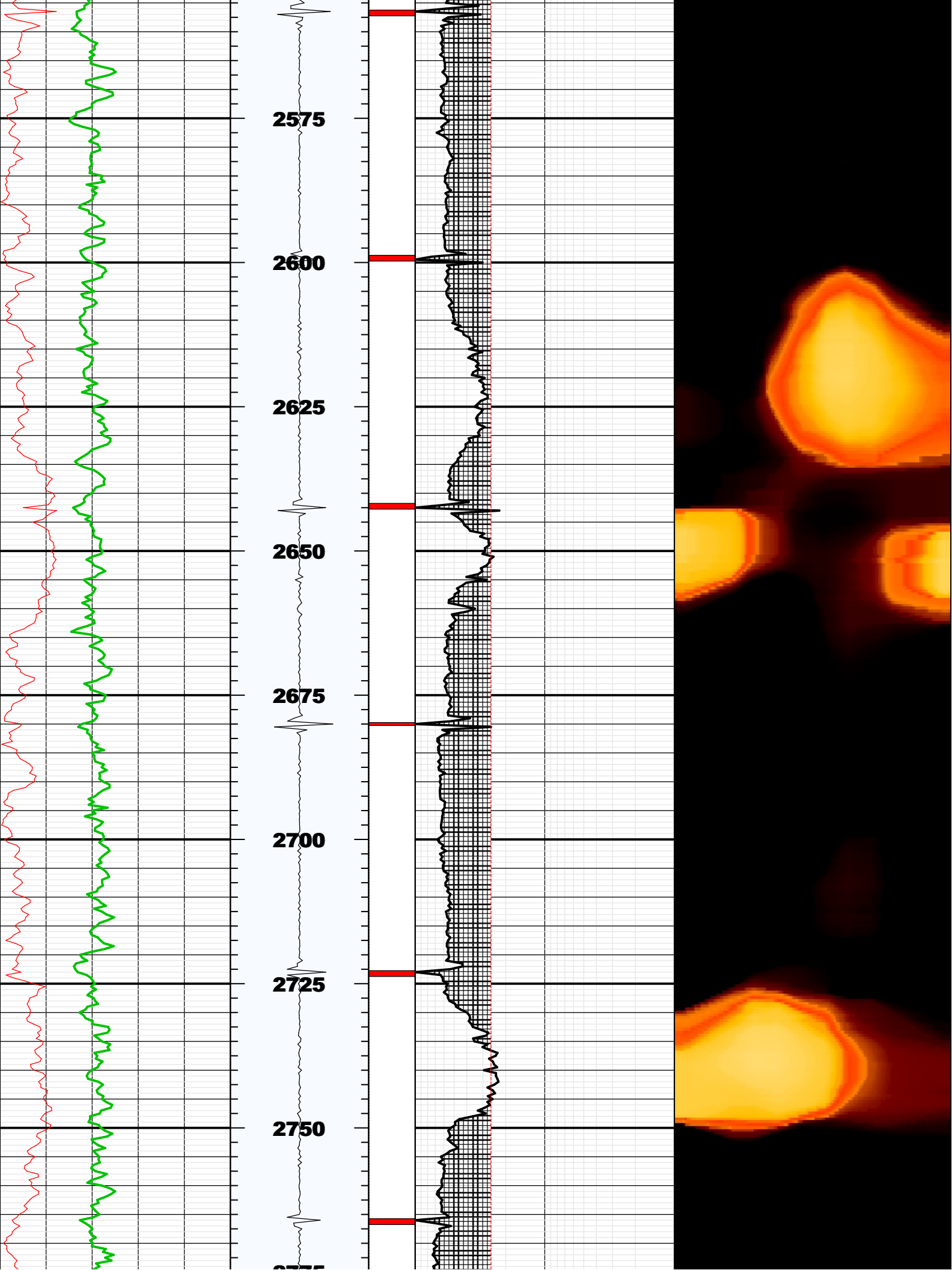


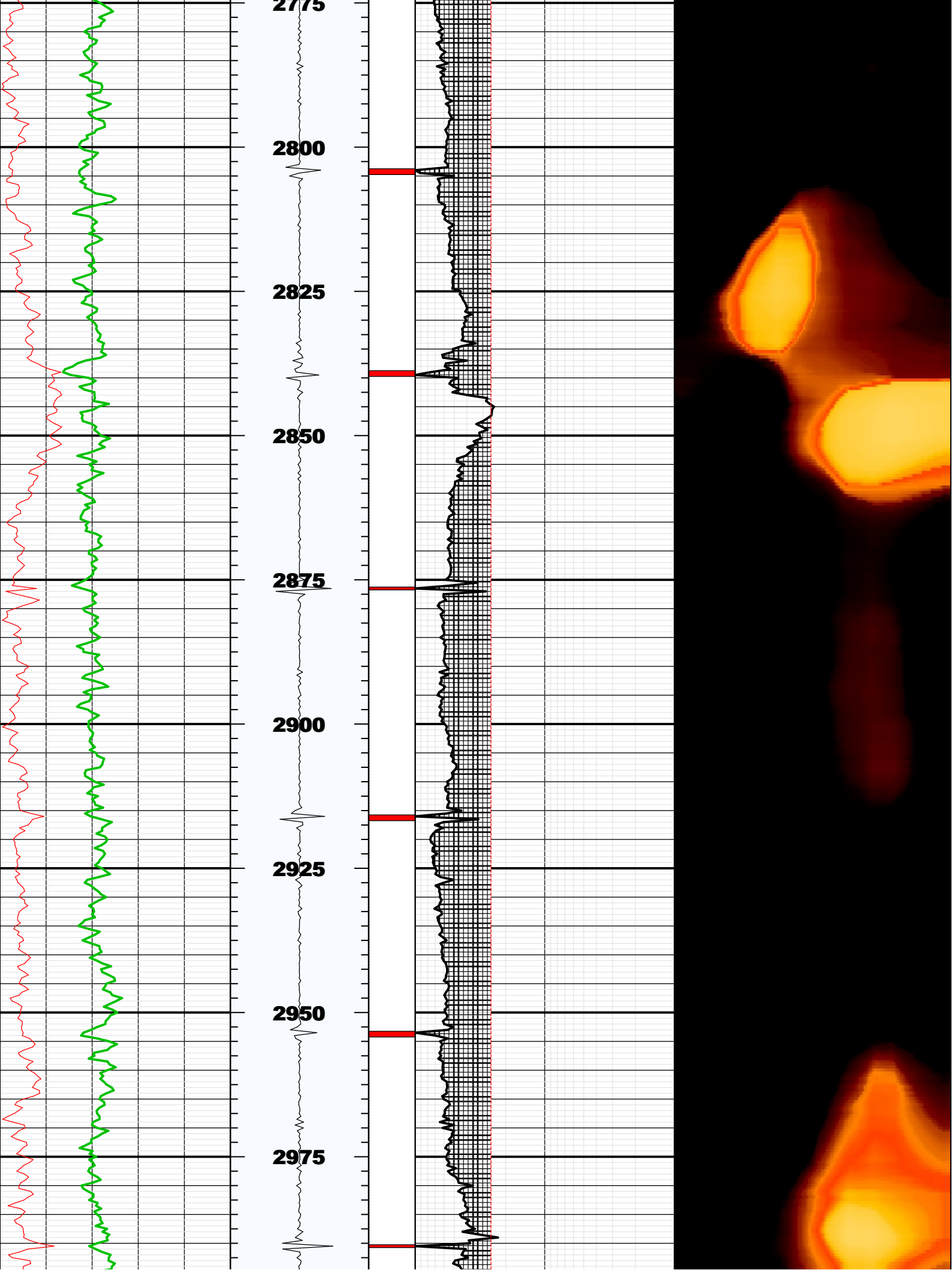


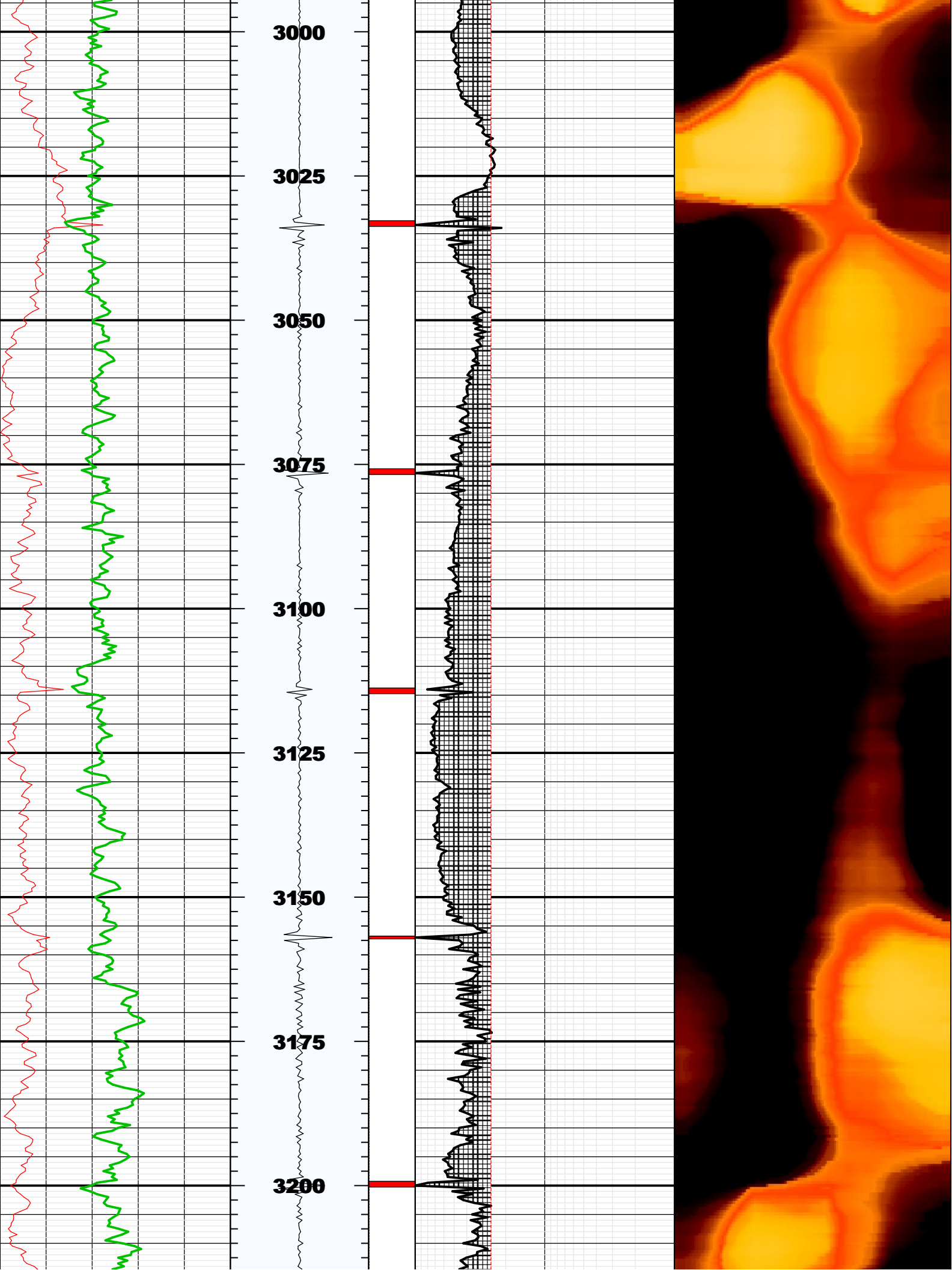


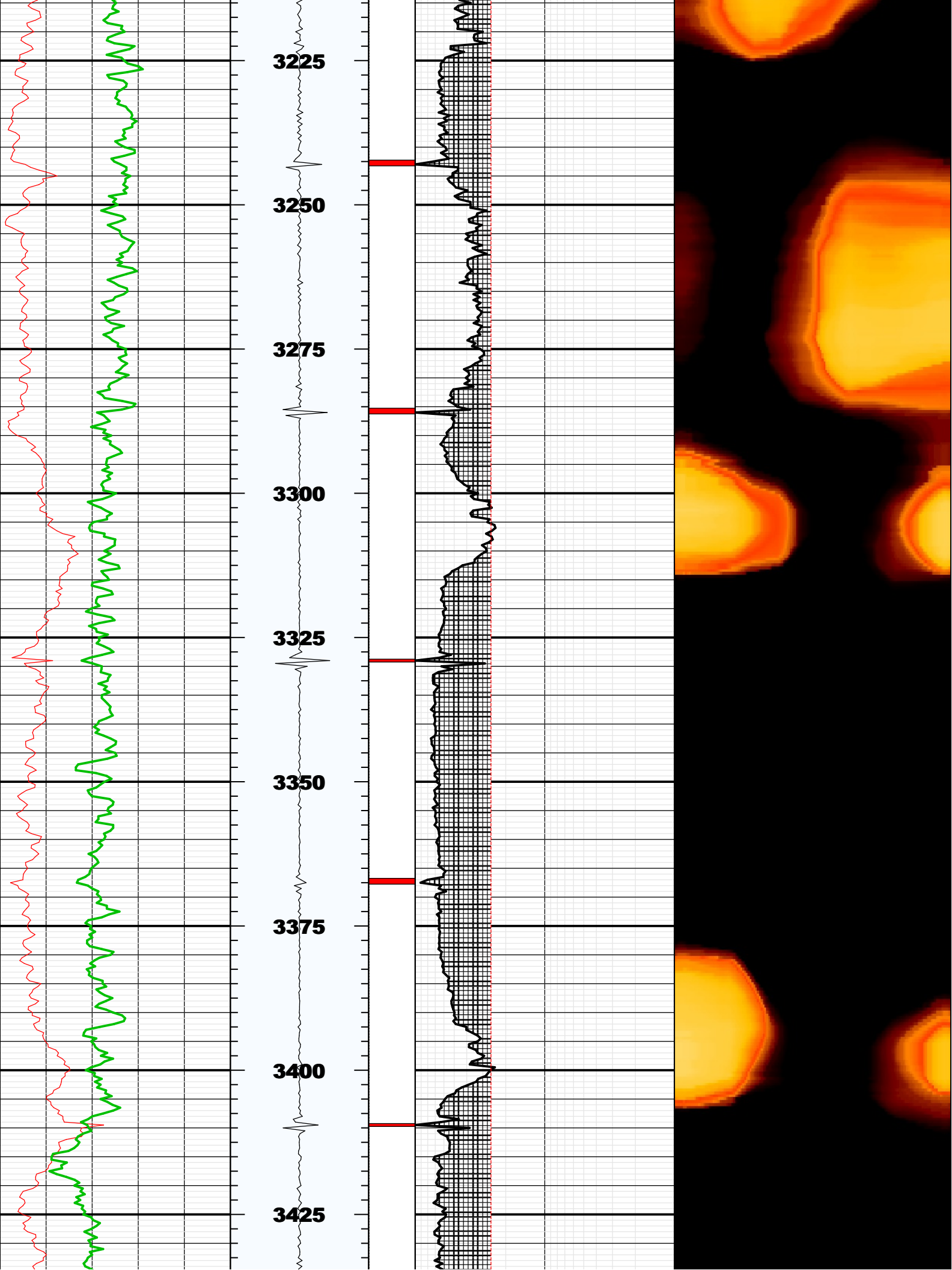


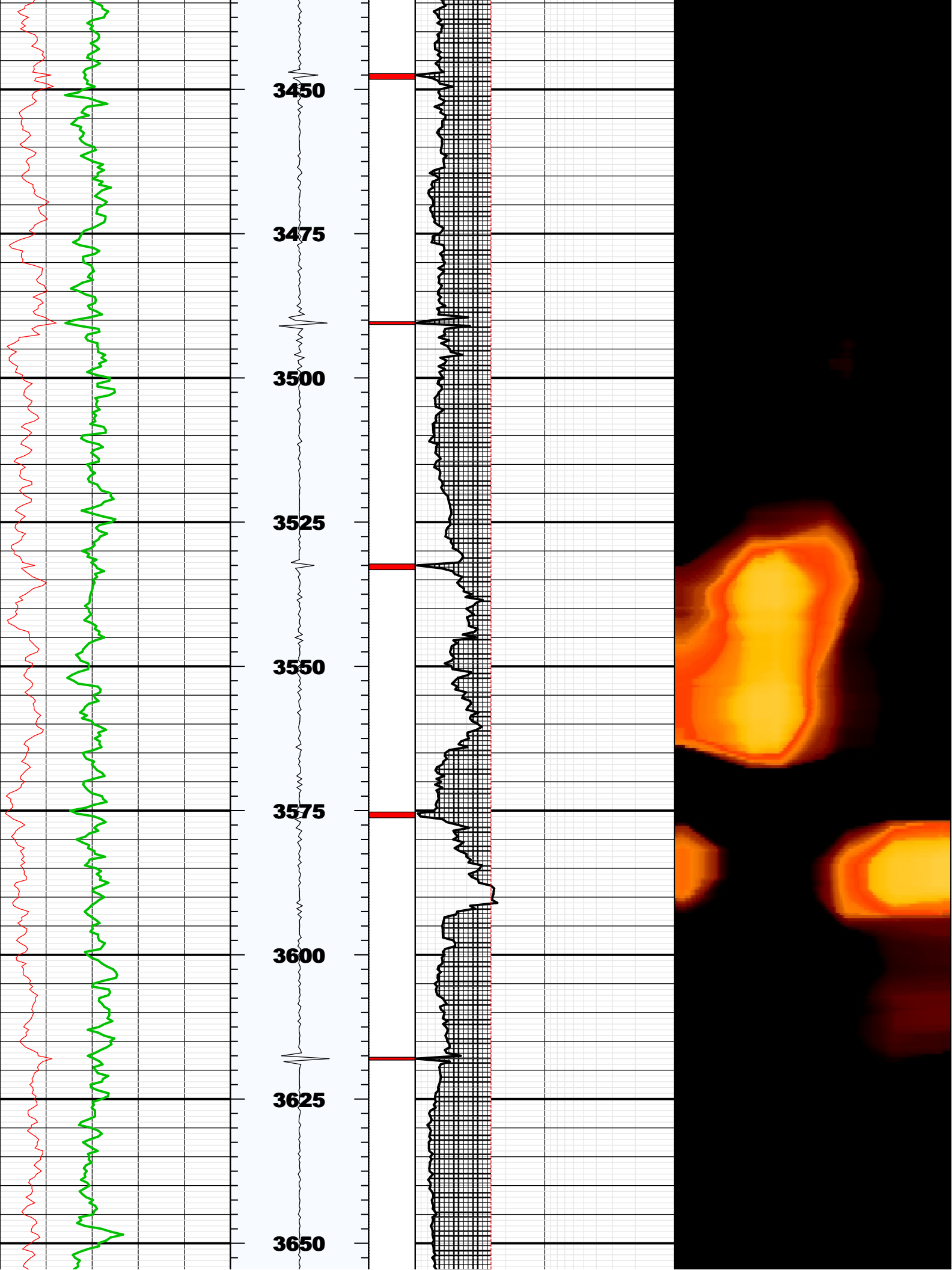


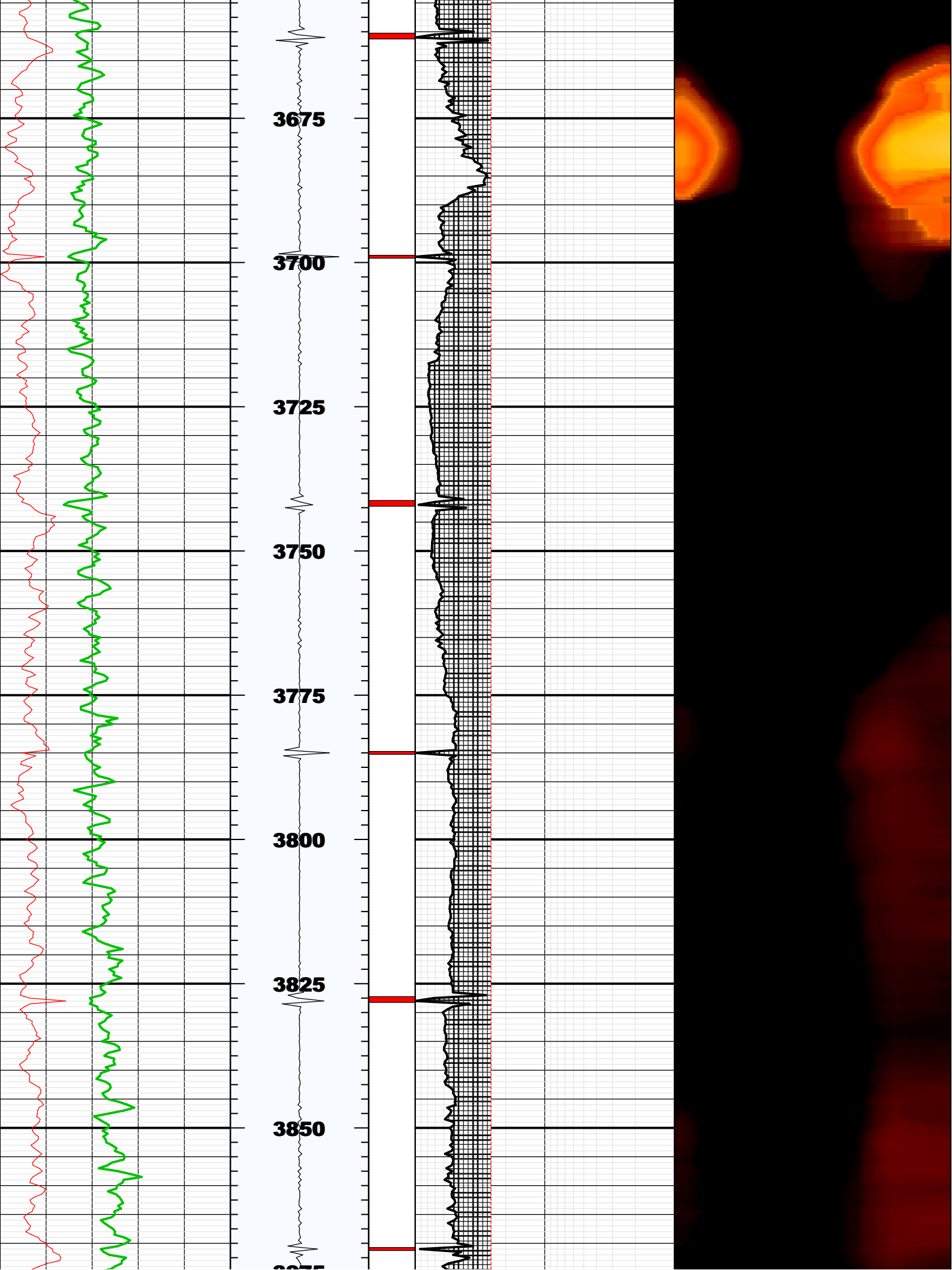


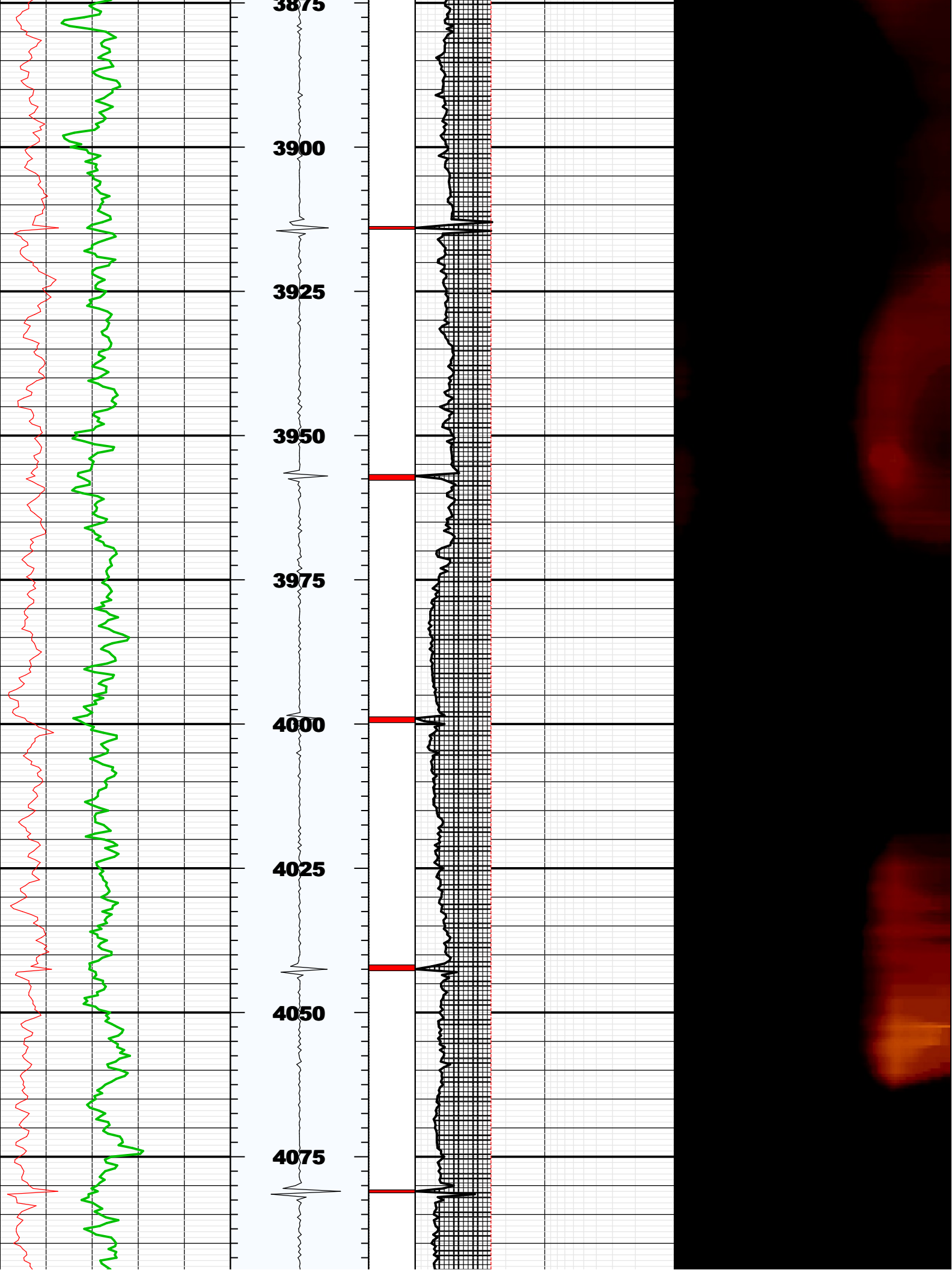


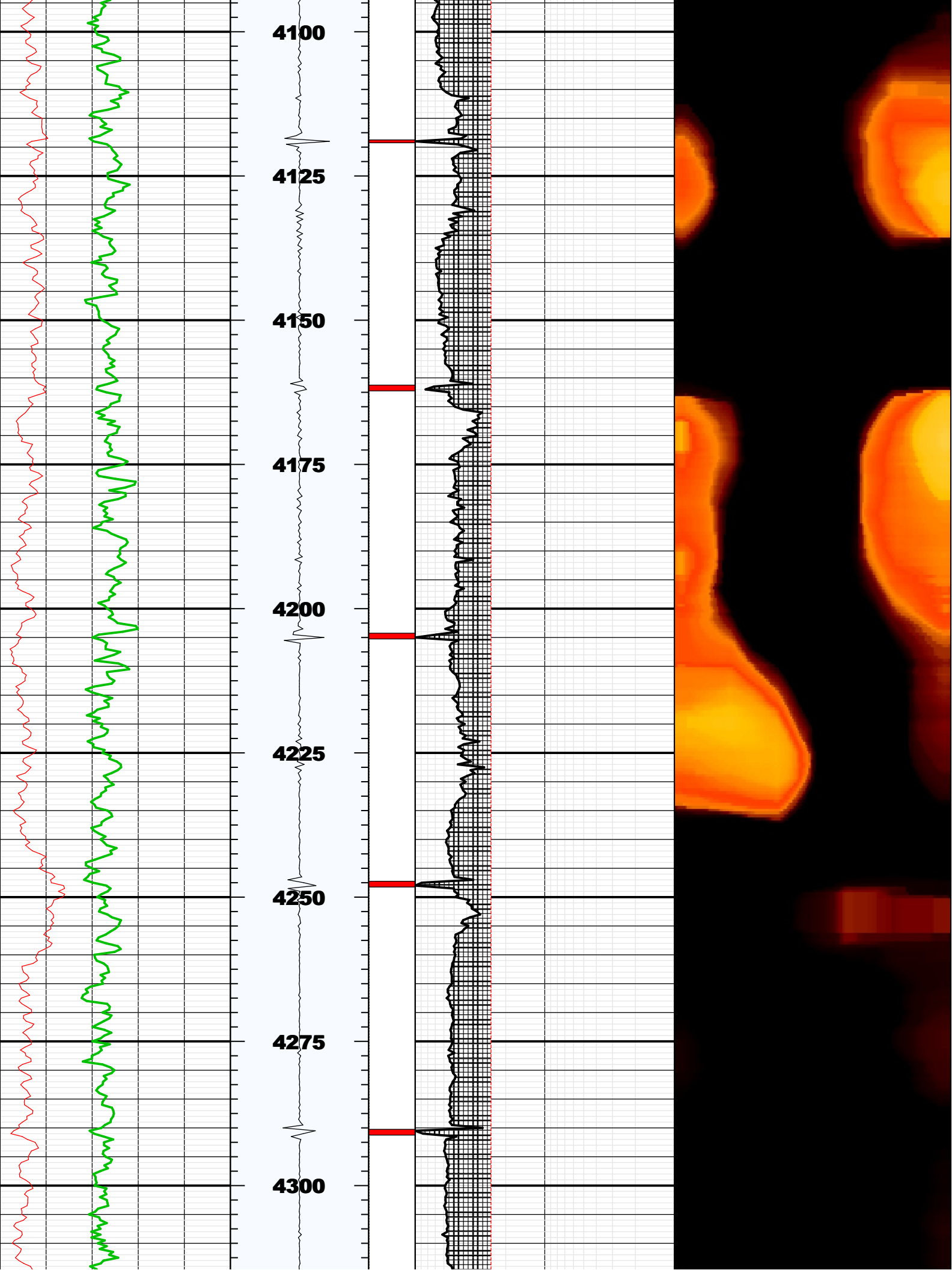


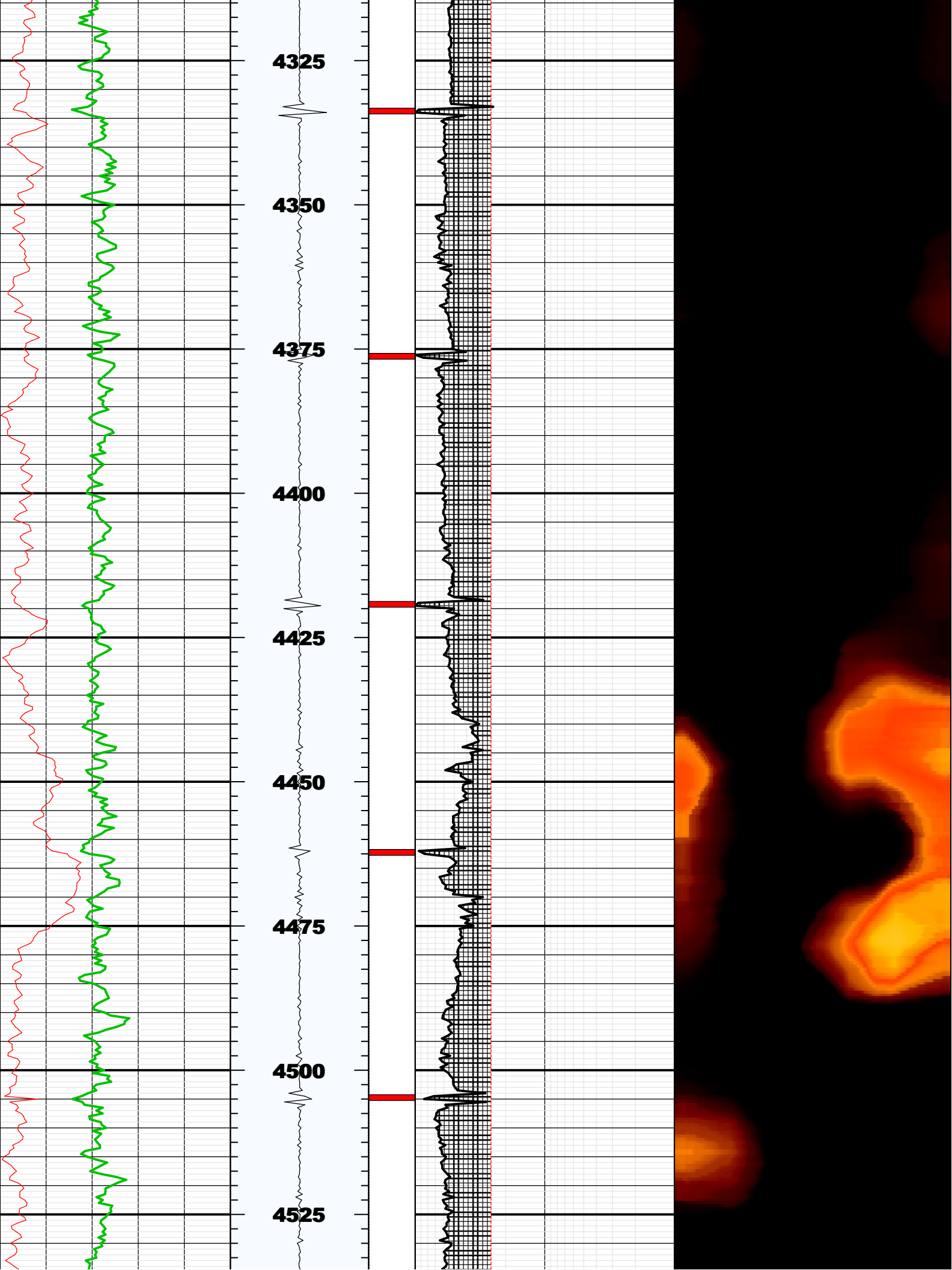


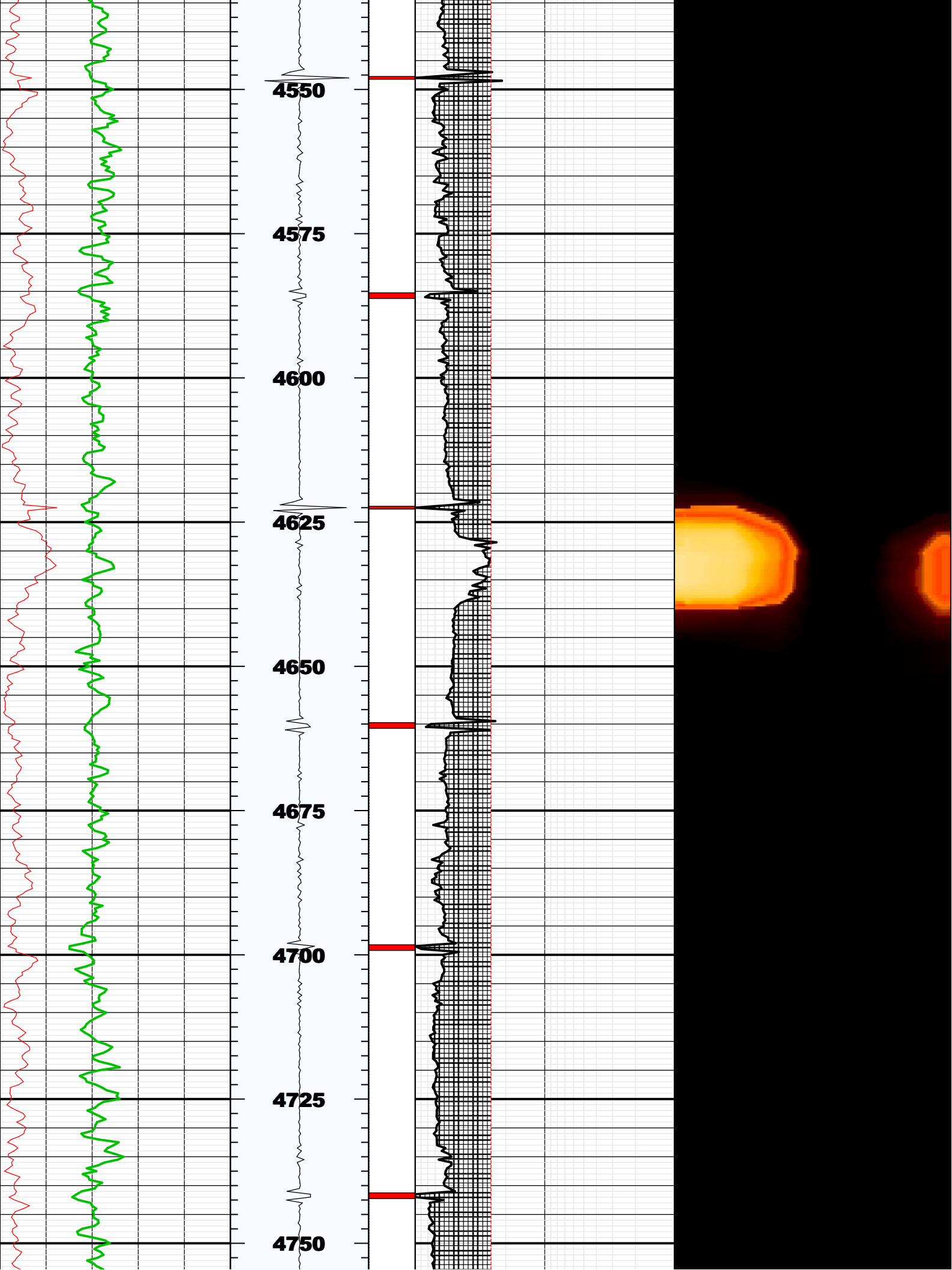


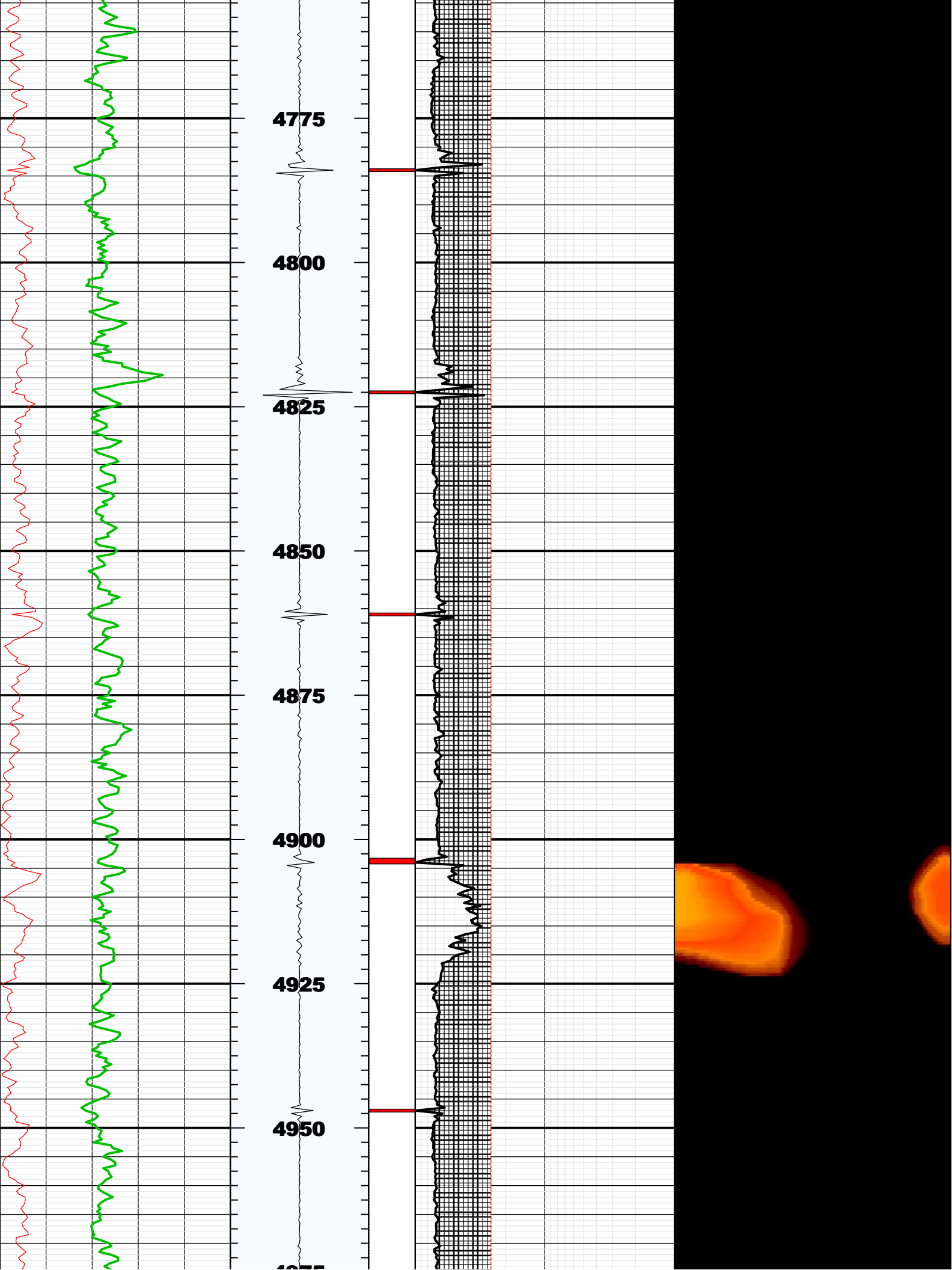


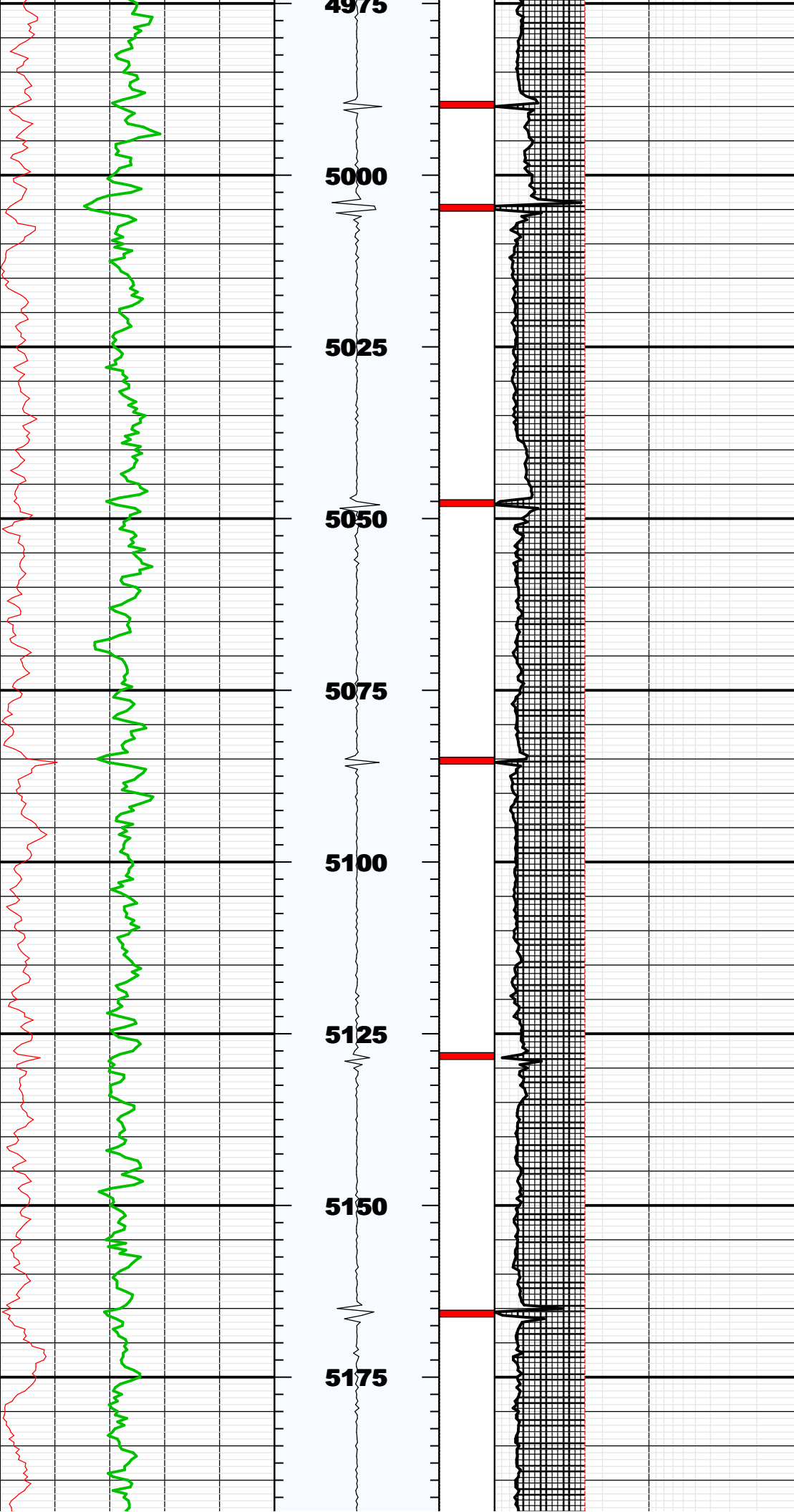


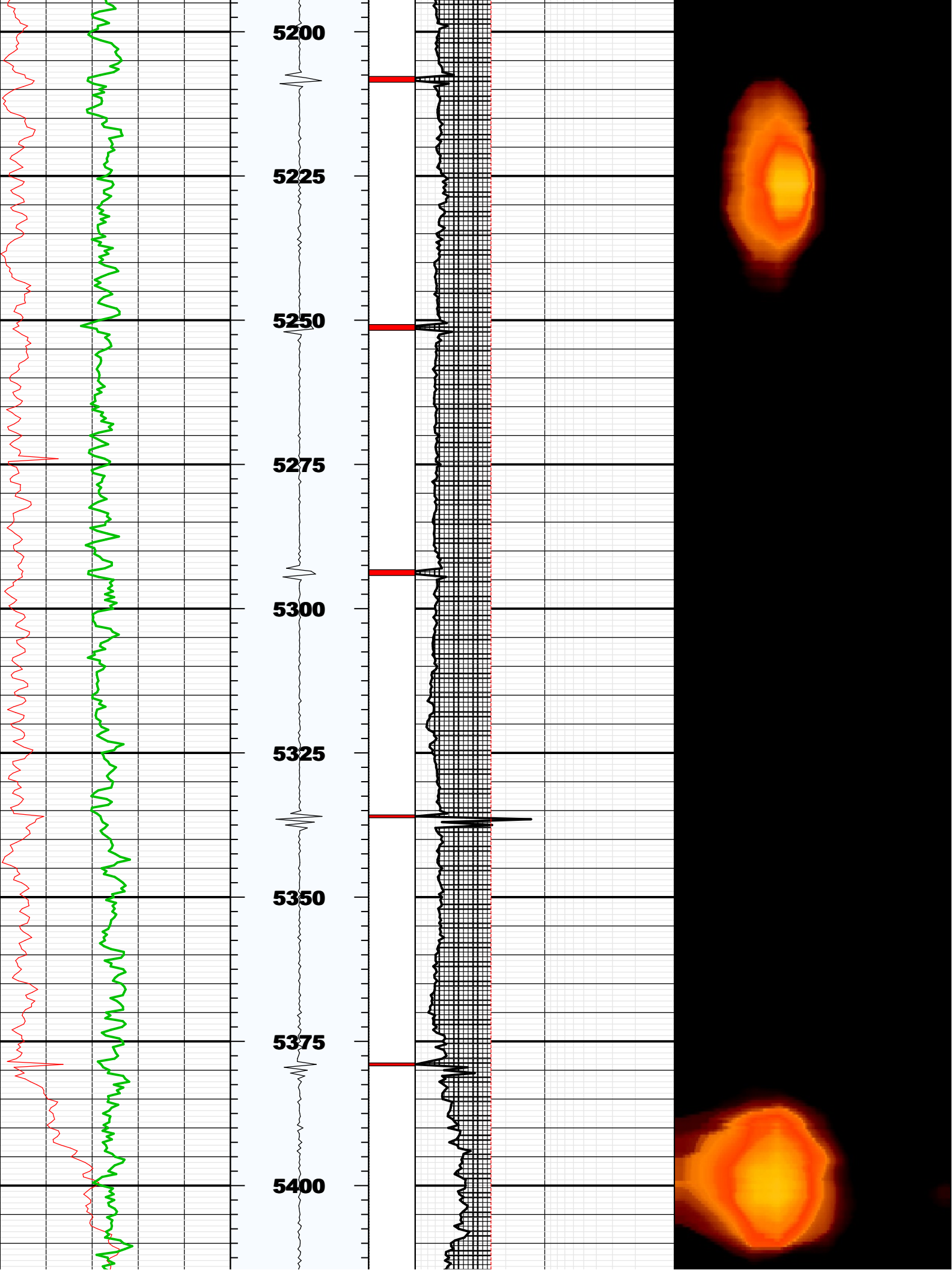


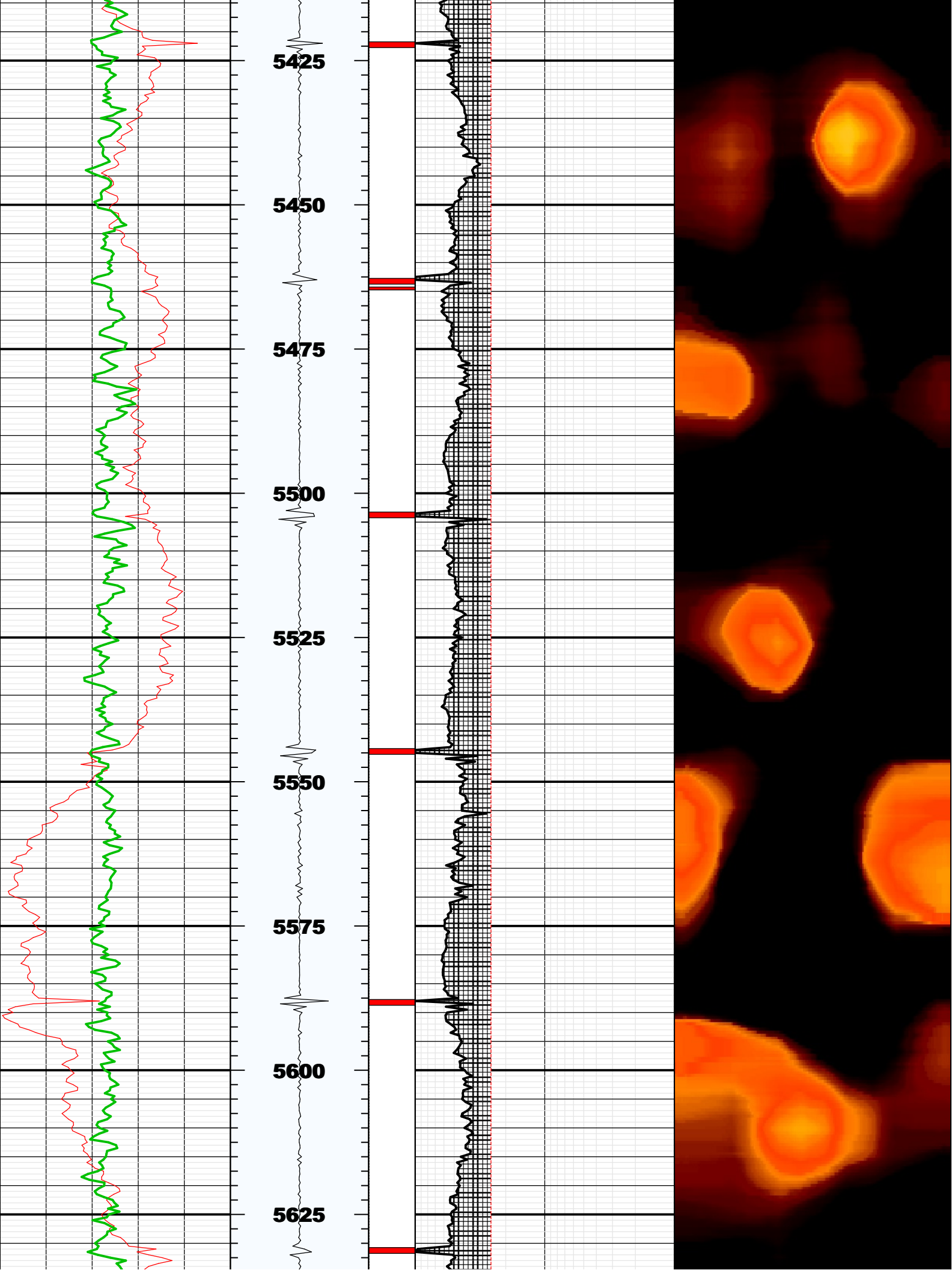


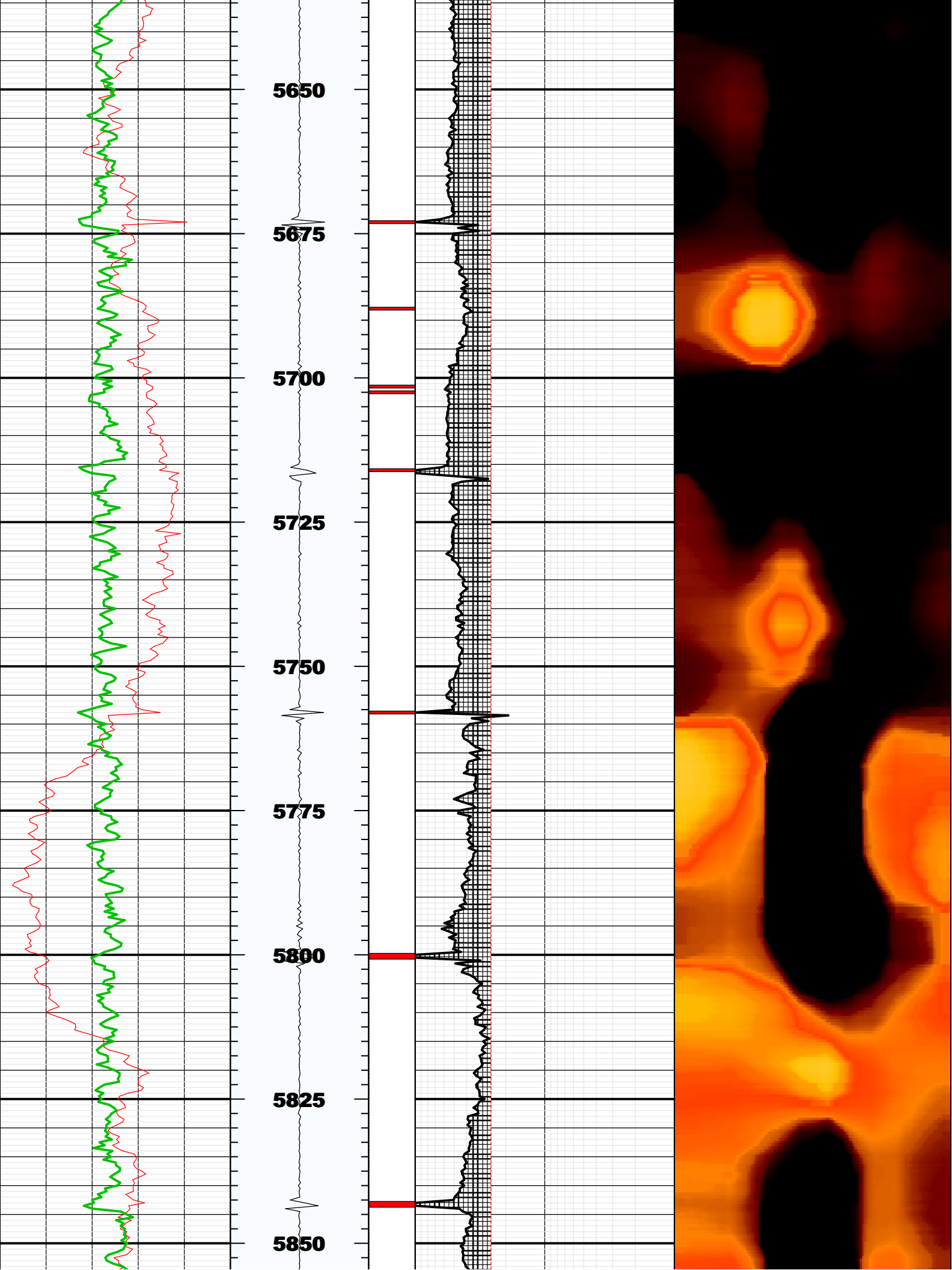


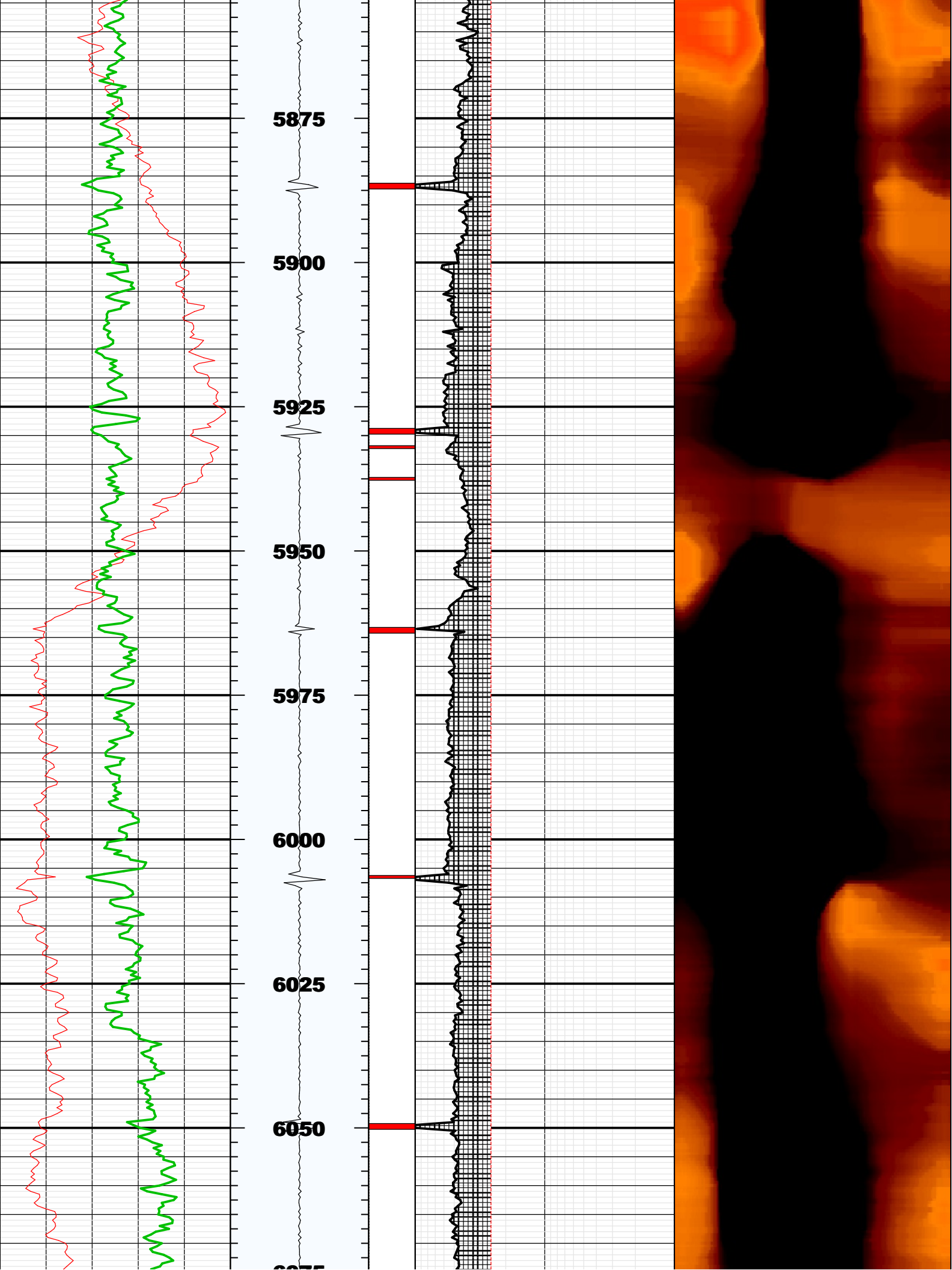


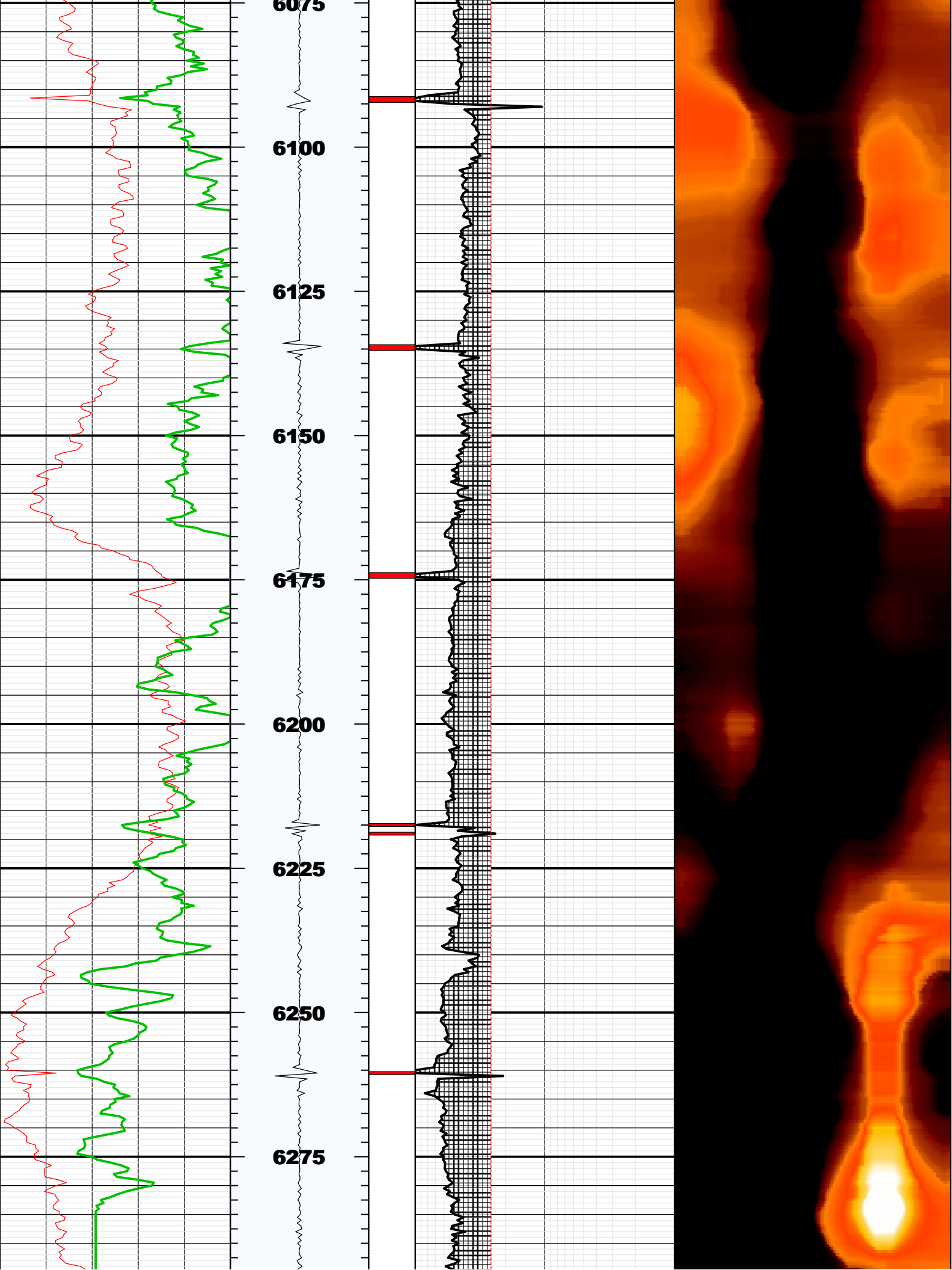










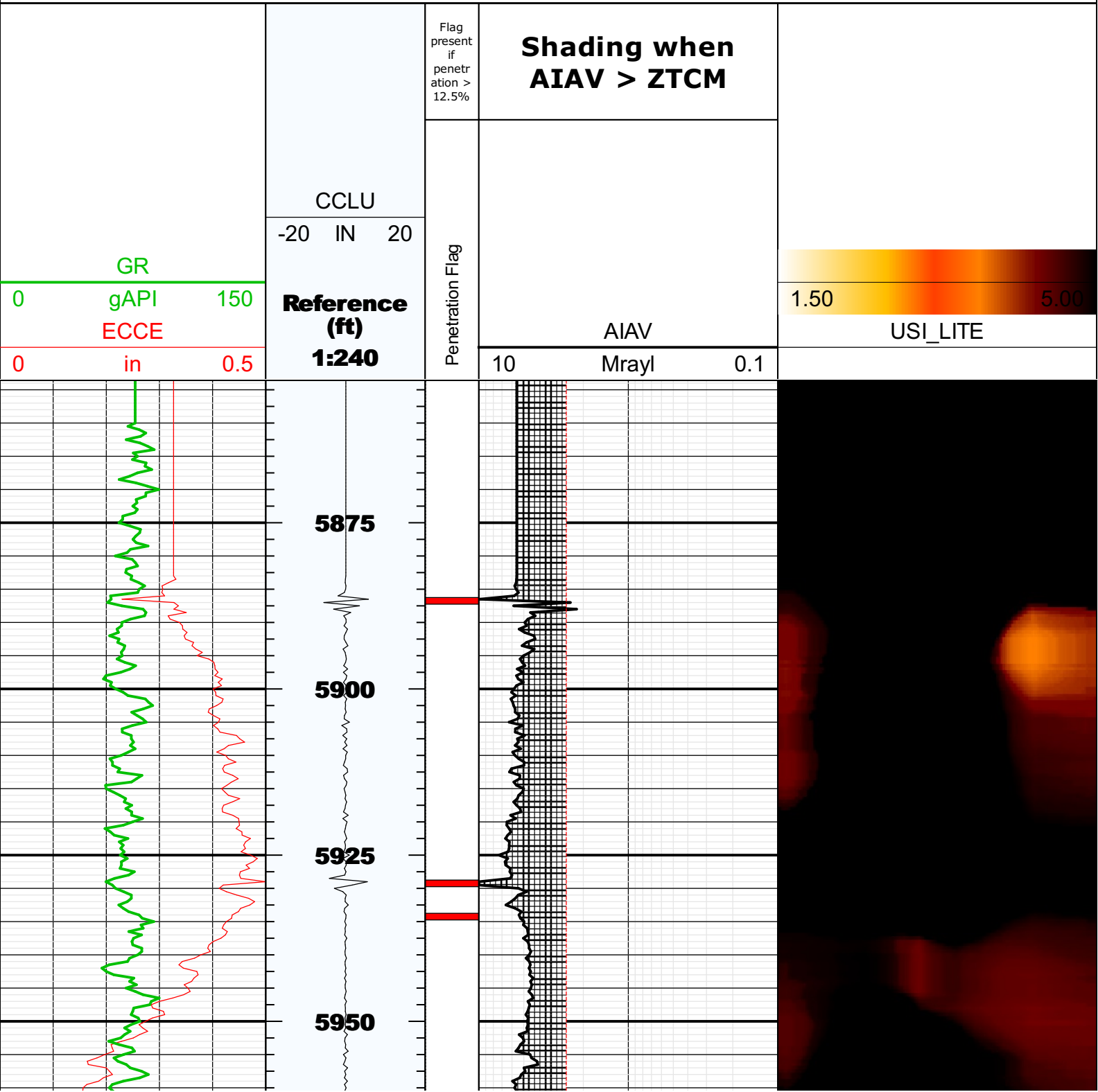


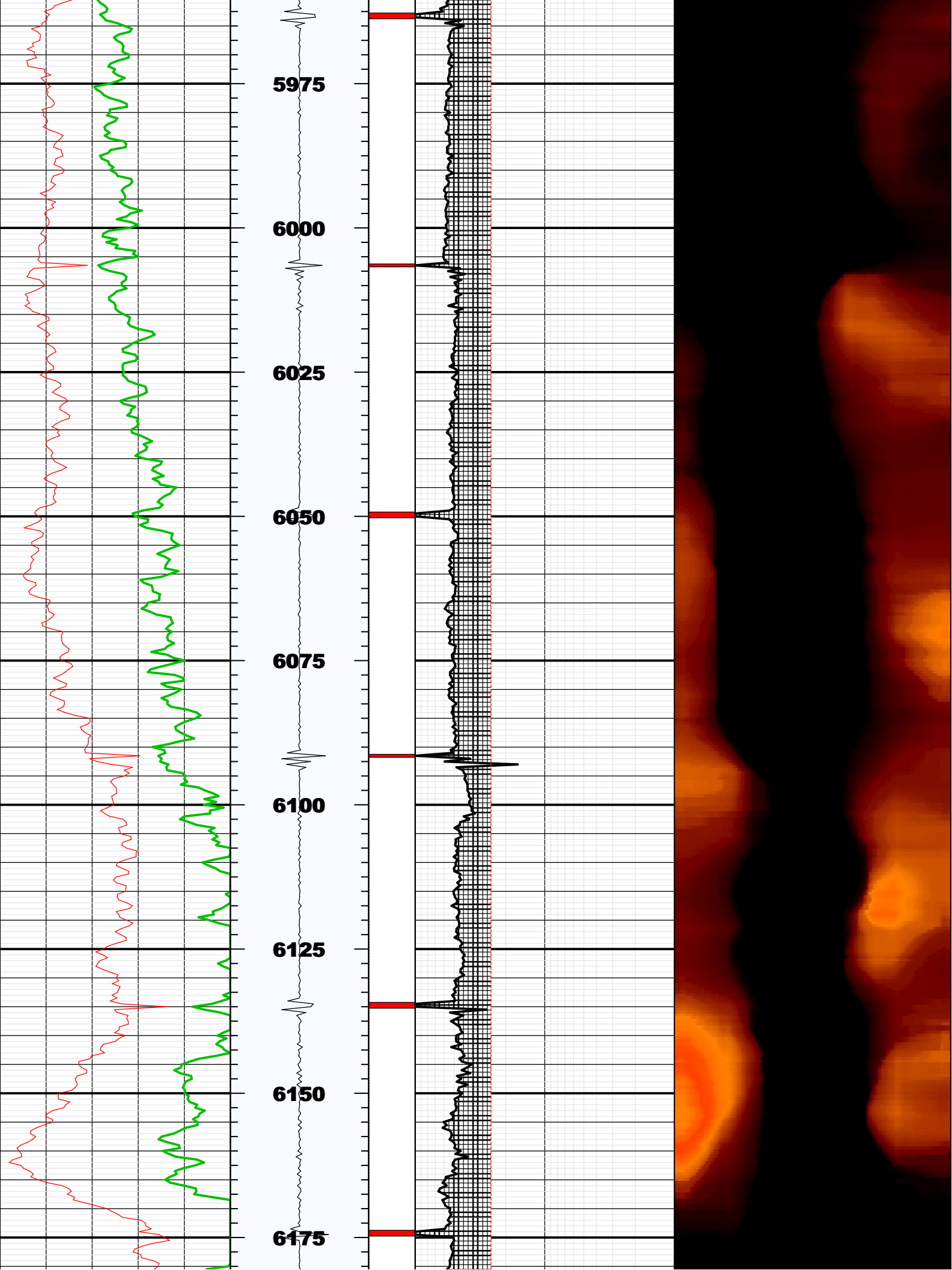


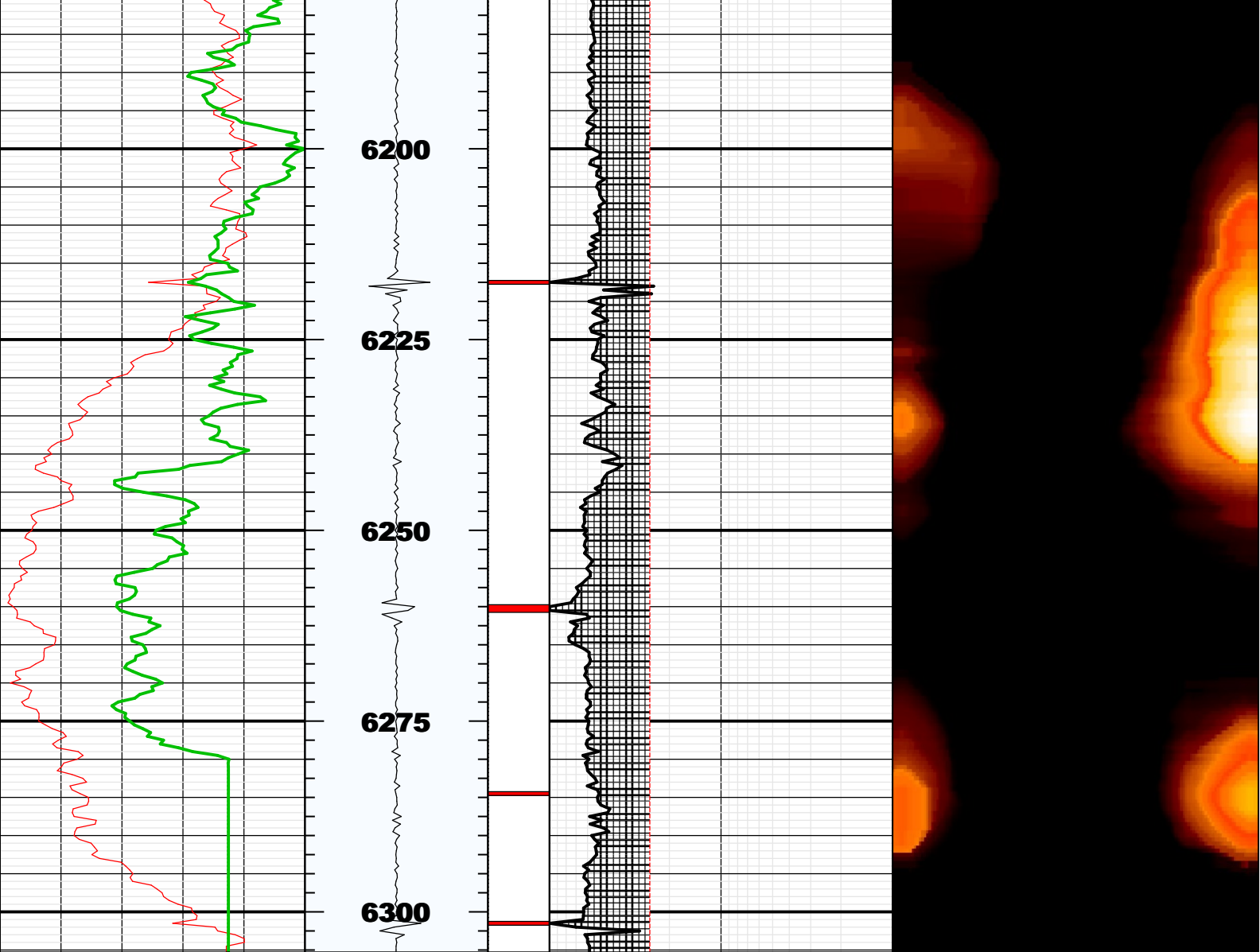
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID			
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	188.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	60	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	35.19585	US	Window Begin Time
WINE	68.79489	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.81000	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 ³ Processing Length

Repeat Pass

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Field: Wattenberg







Fluid Properties Used for Main Pass

