

Company: Noble Energy Inc

Well: Rainbow LC28-79-1HNA  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld		<b>USI-LITE</b>		
Field: Wattenberg				
Location: SWSW Sec. 28 T9N R59W				
Well: Rainbow LC28-79-1HNA				
Company: Noble Energy Inc				
LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:	GL KB KB	Elev: K.B. 4884.0 F G.L. 4854.0 F D.F. 4883.0 F
API Serial No. 05-123-38853-0000				
Section 28				
Township 59W Range 59W				
Logging Date	21-Sep-2014			
Run Number	Run1 USIT			
Depth Driller	10108.0 F			
Schlumberger Depth	10108.0 F			
Bottom Log Interval	6375.0 F			
Top Log Interval	-999.2 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	10108.0 F			
Casing Size	7.00 IN			
Weight	26.00 LB/F			
Grade	P110			
From	0.0 F			
To	6501.0 F			
Max Recorded Temp	230.0			
Logger on bottom (date)	21-Sep-2014			
Location	Ft. Morgan CO			
Recorded By	Tim Hoffman			
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: 11800.00000

DISCLAIMER

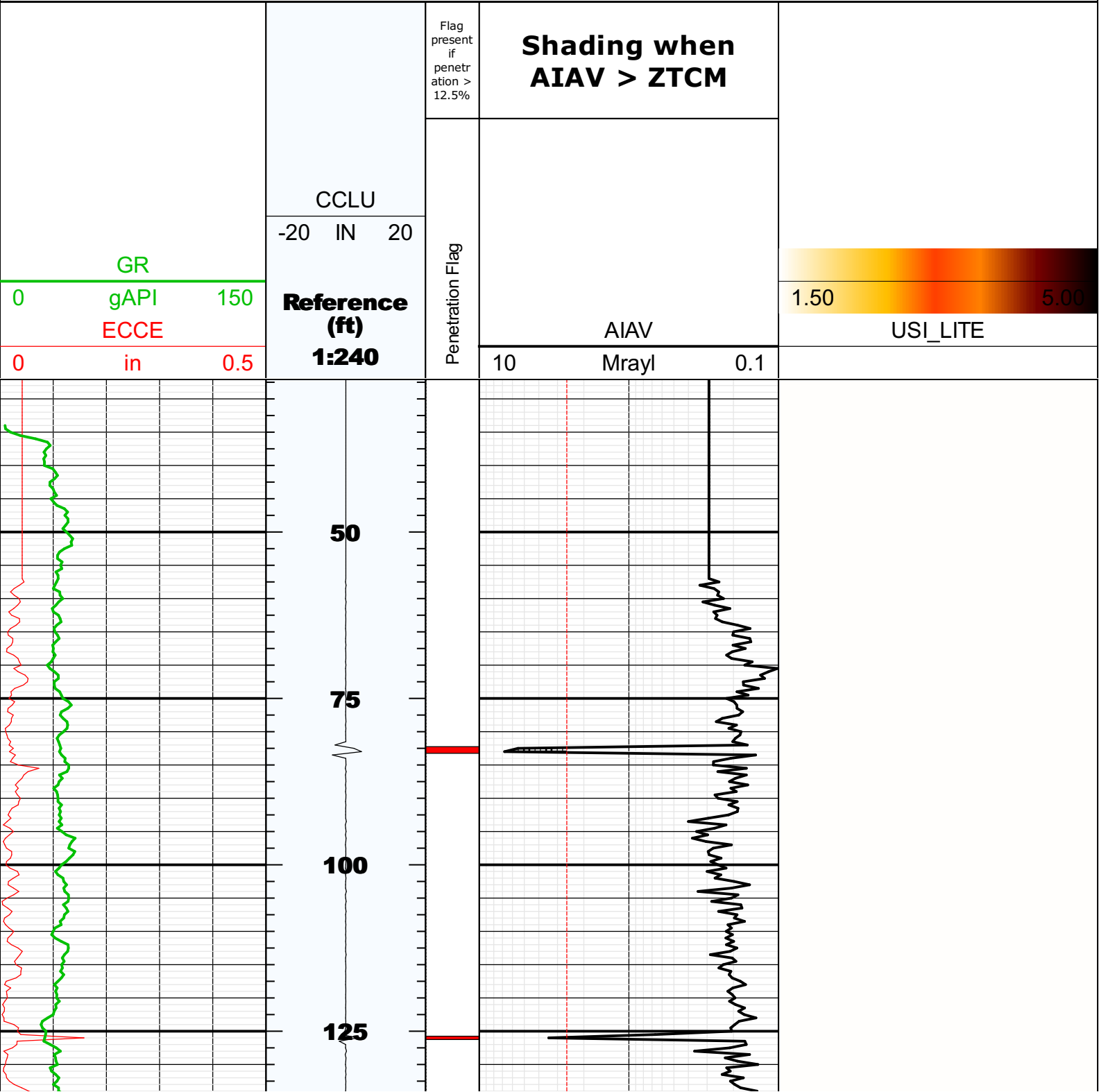
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIIONS ON USE OF THE RECORDED-DATA (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

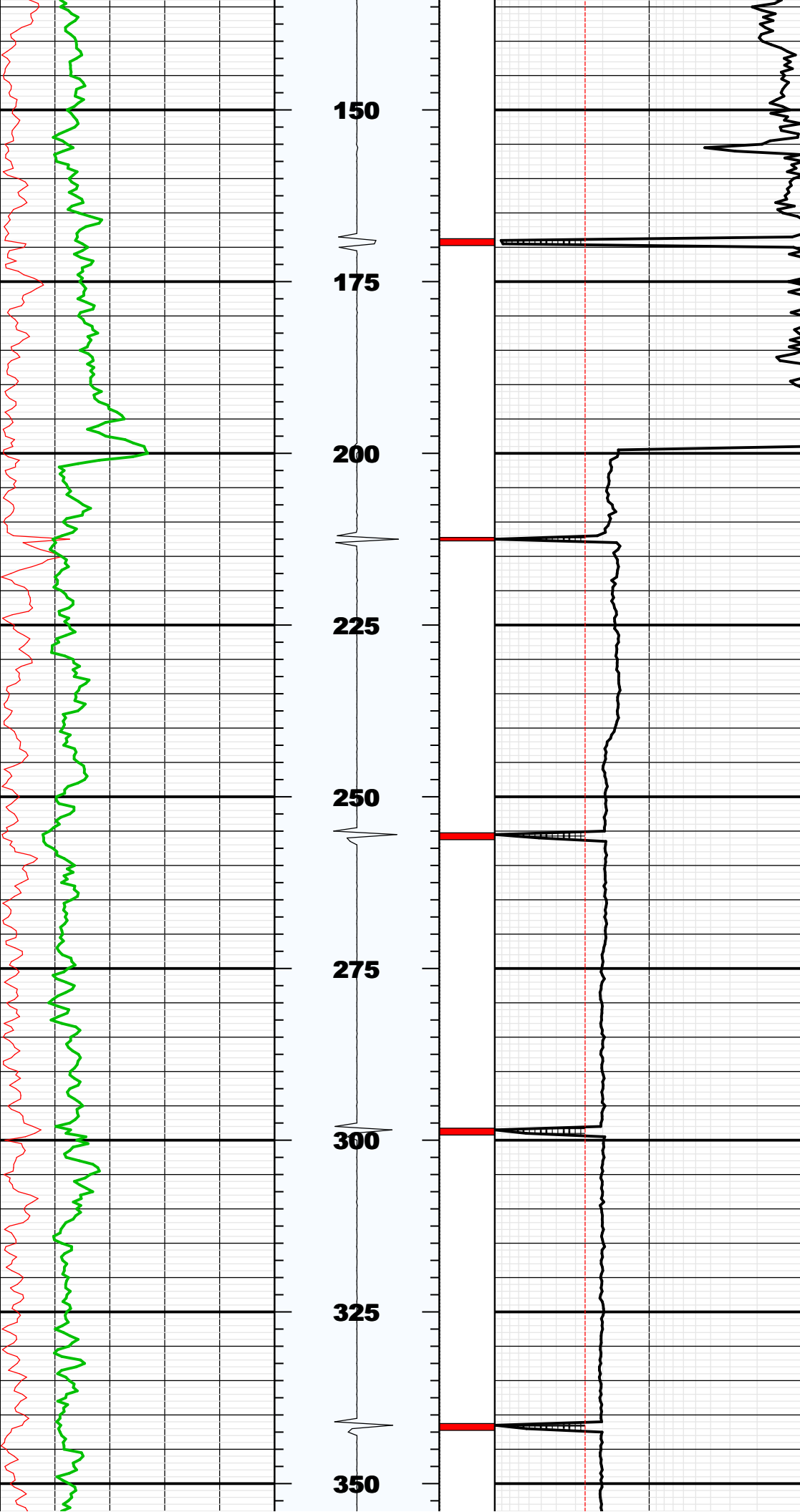
This is the first run in hole  
Toolstring run as per tool sketch  
12.5 ppg lead cement  
13.8 ppg tail cement  
0 PSI repeat pass  
2500 PSI main pass

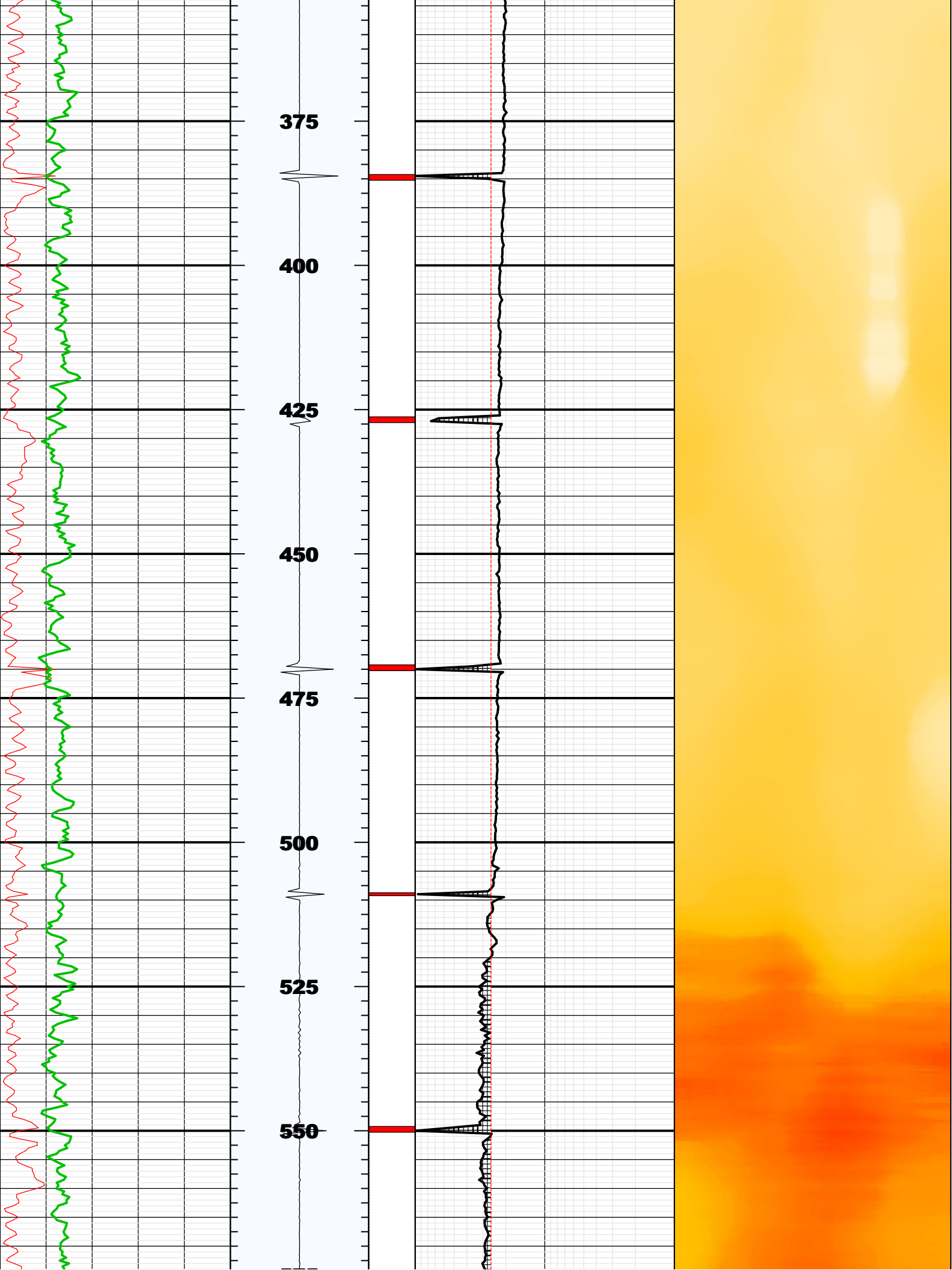
Bottom log temperature 230 degF  
Top of cement 500 ft  
Crew Jay Musgrave Ian Derry

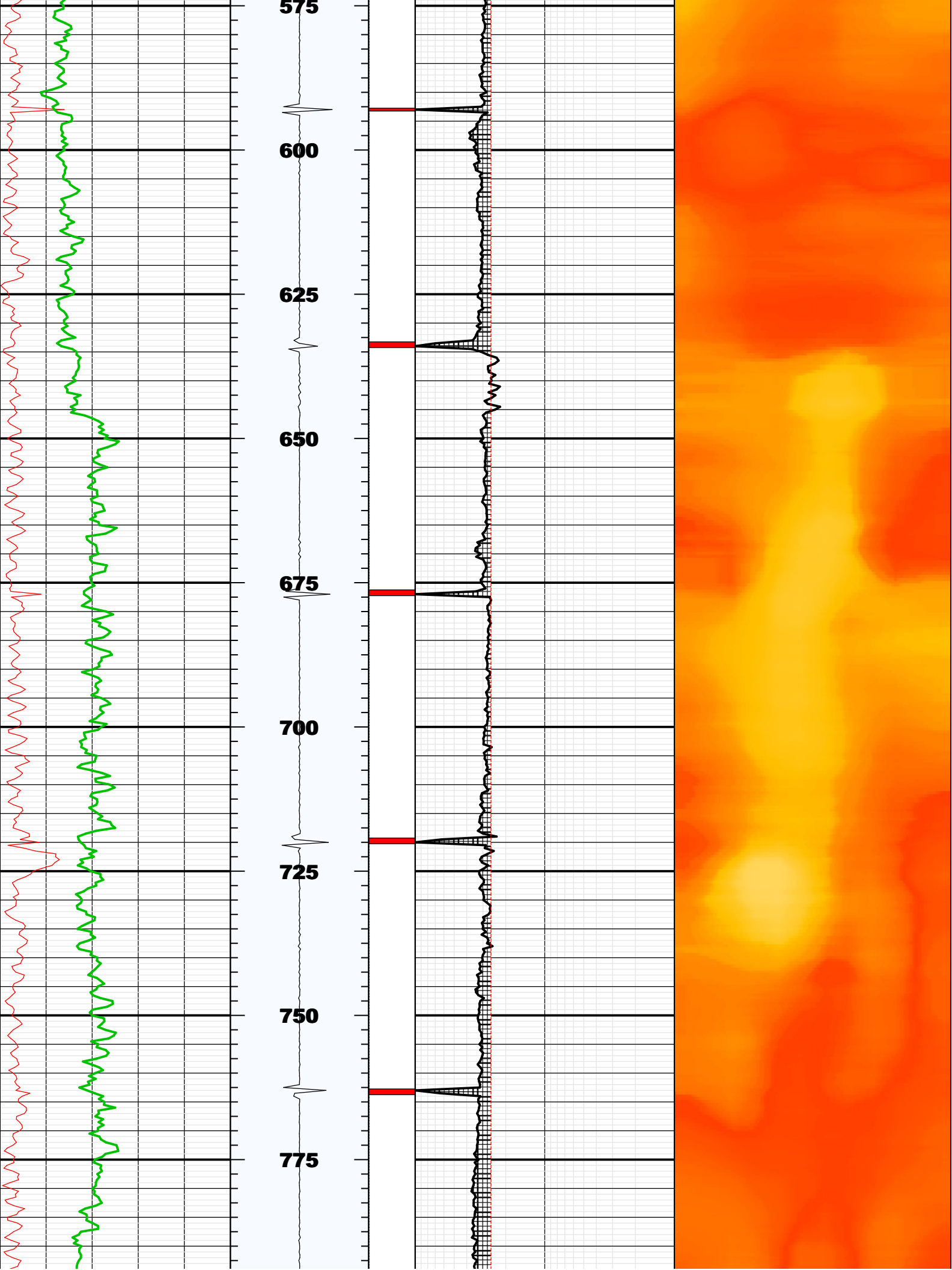
## Main Pass

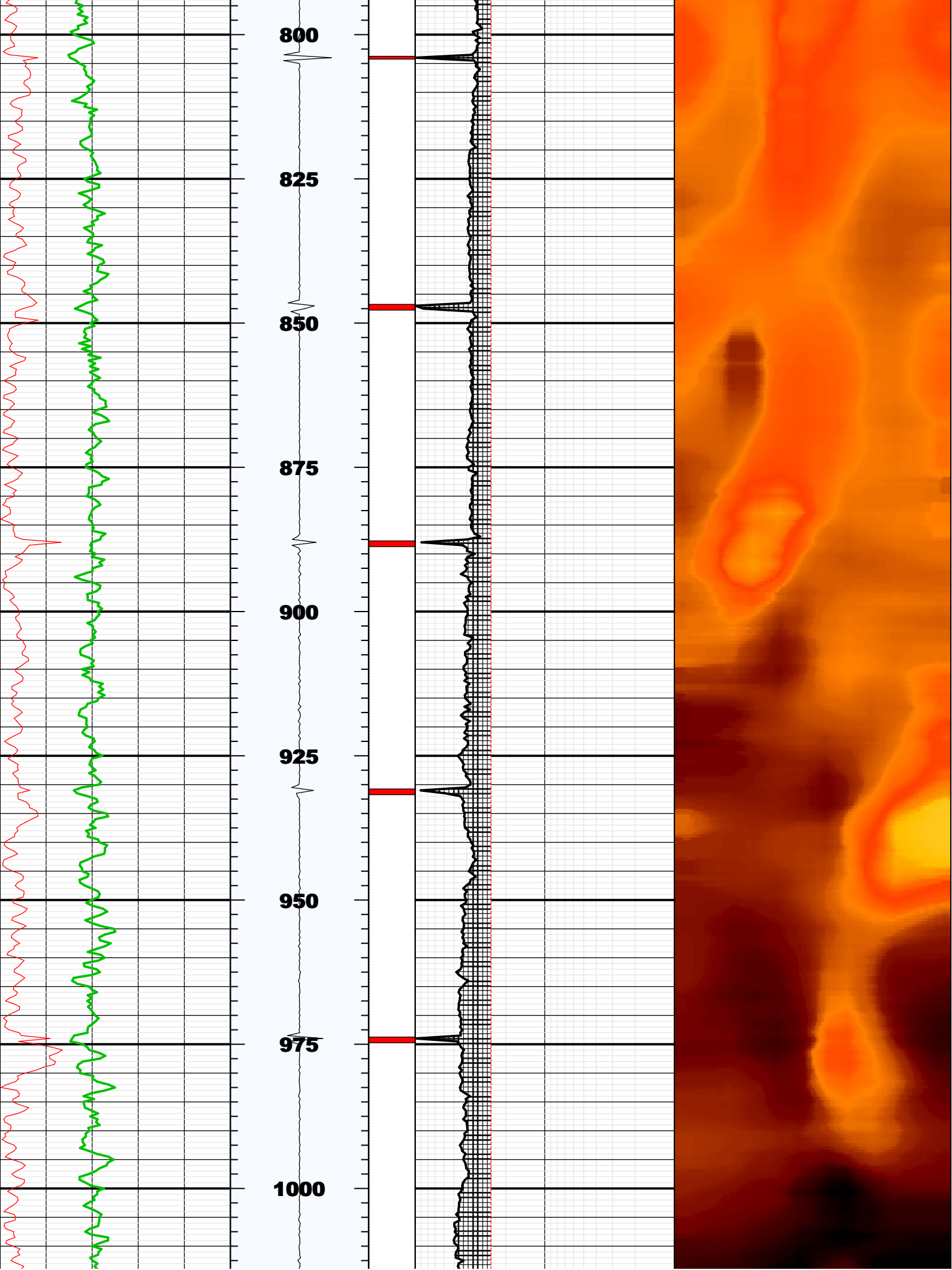
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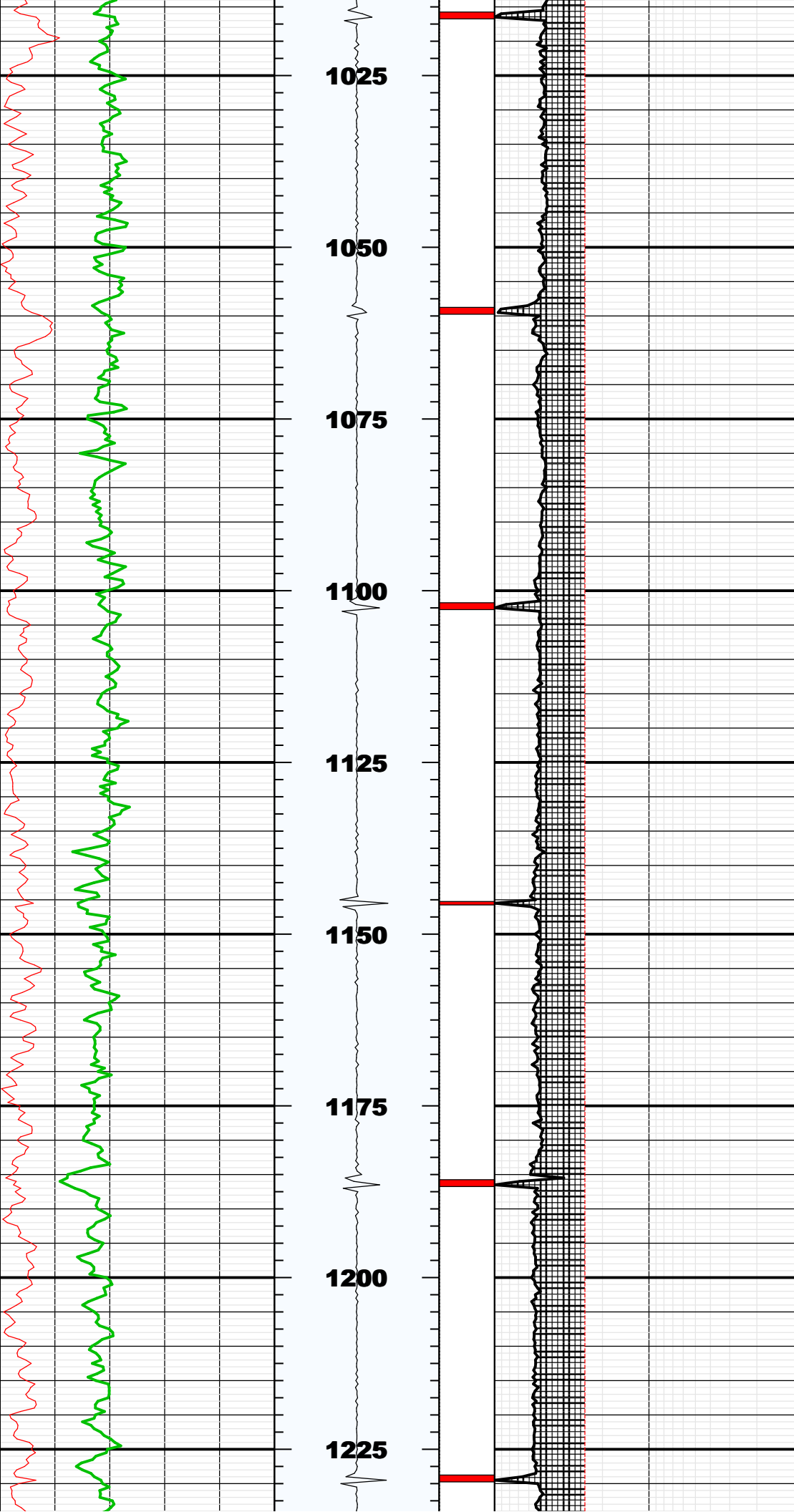


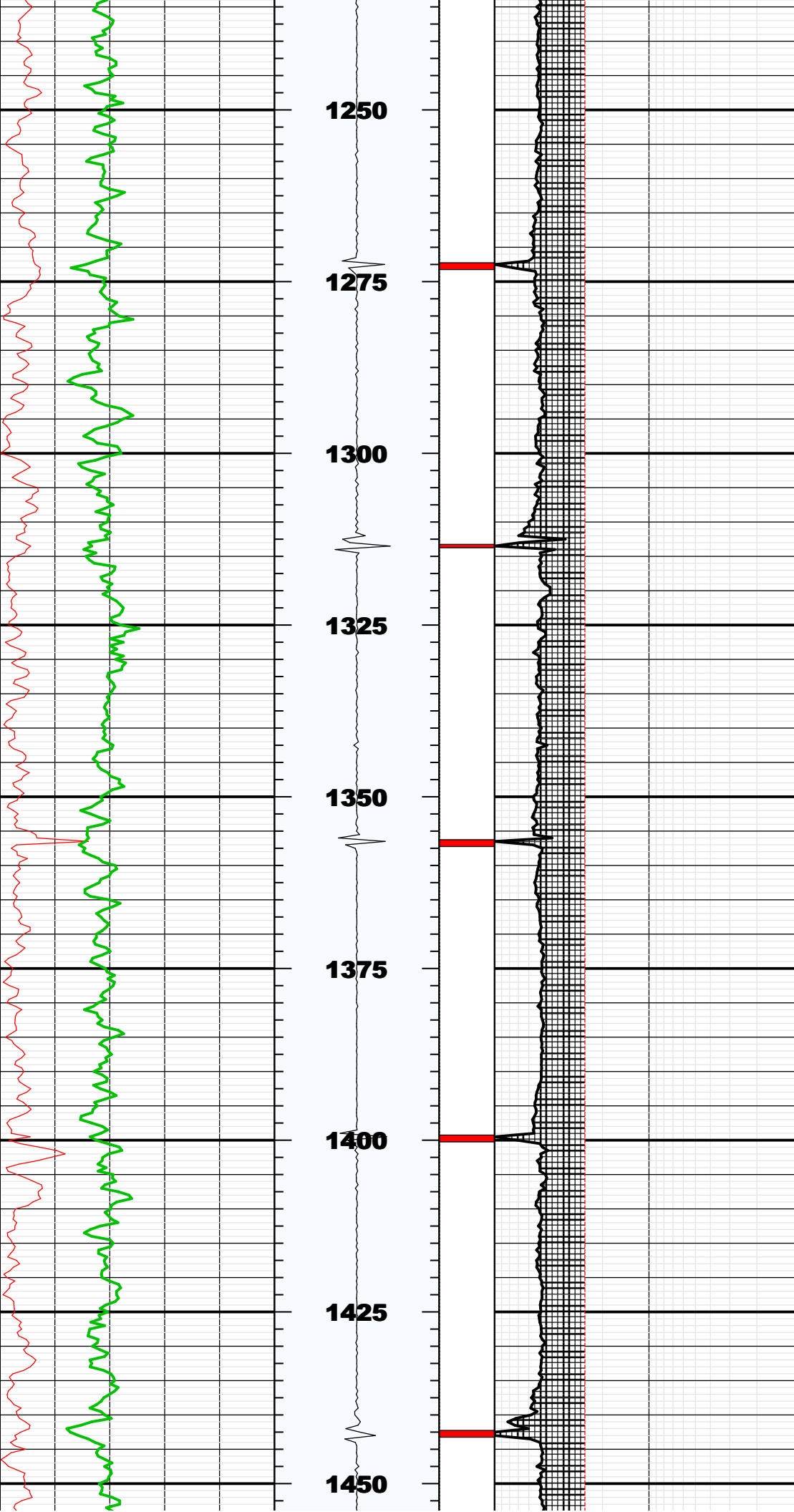


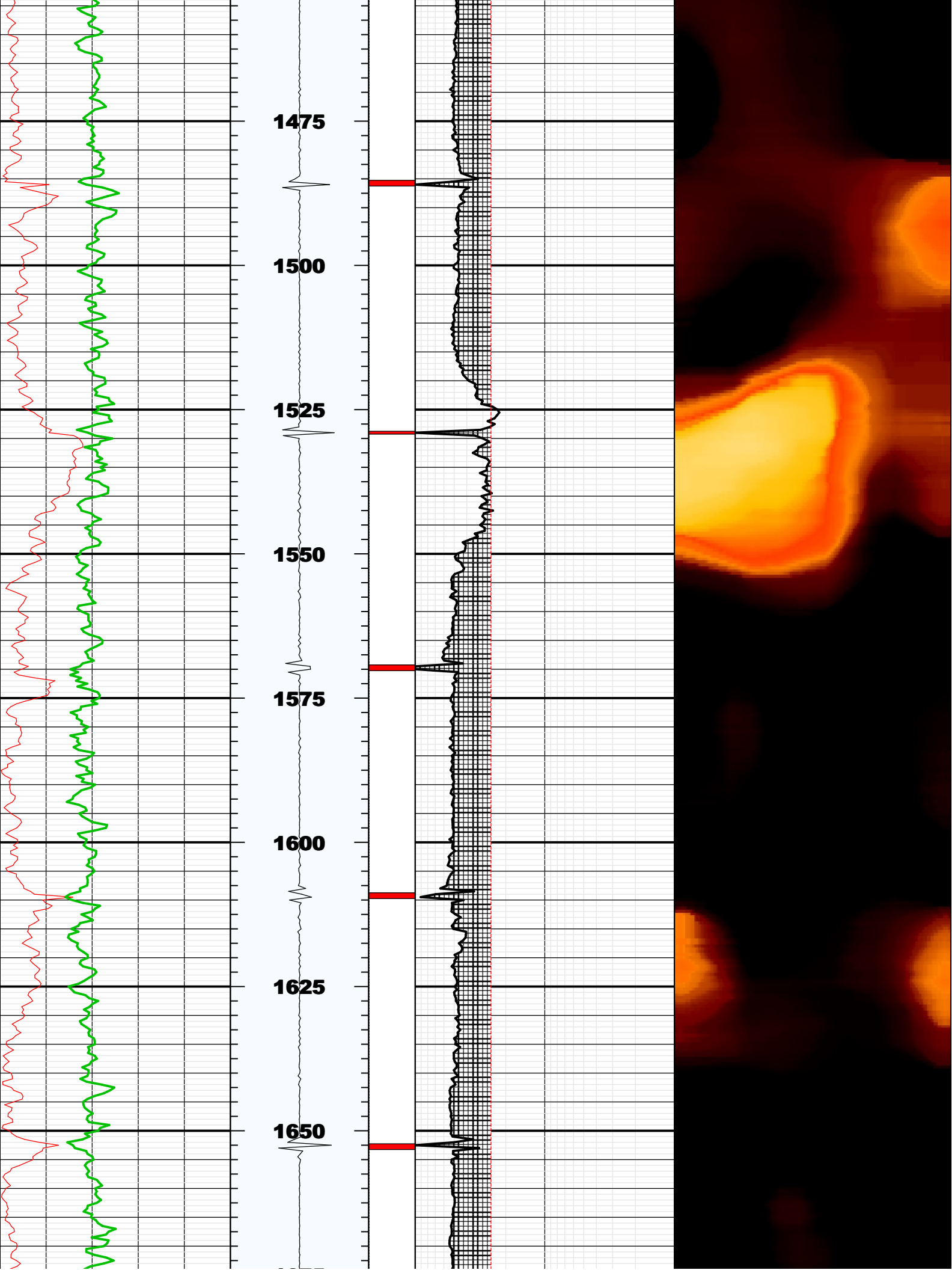


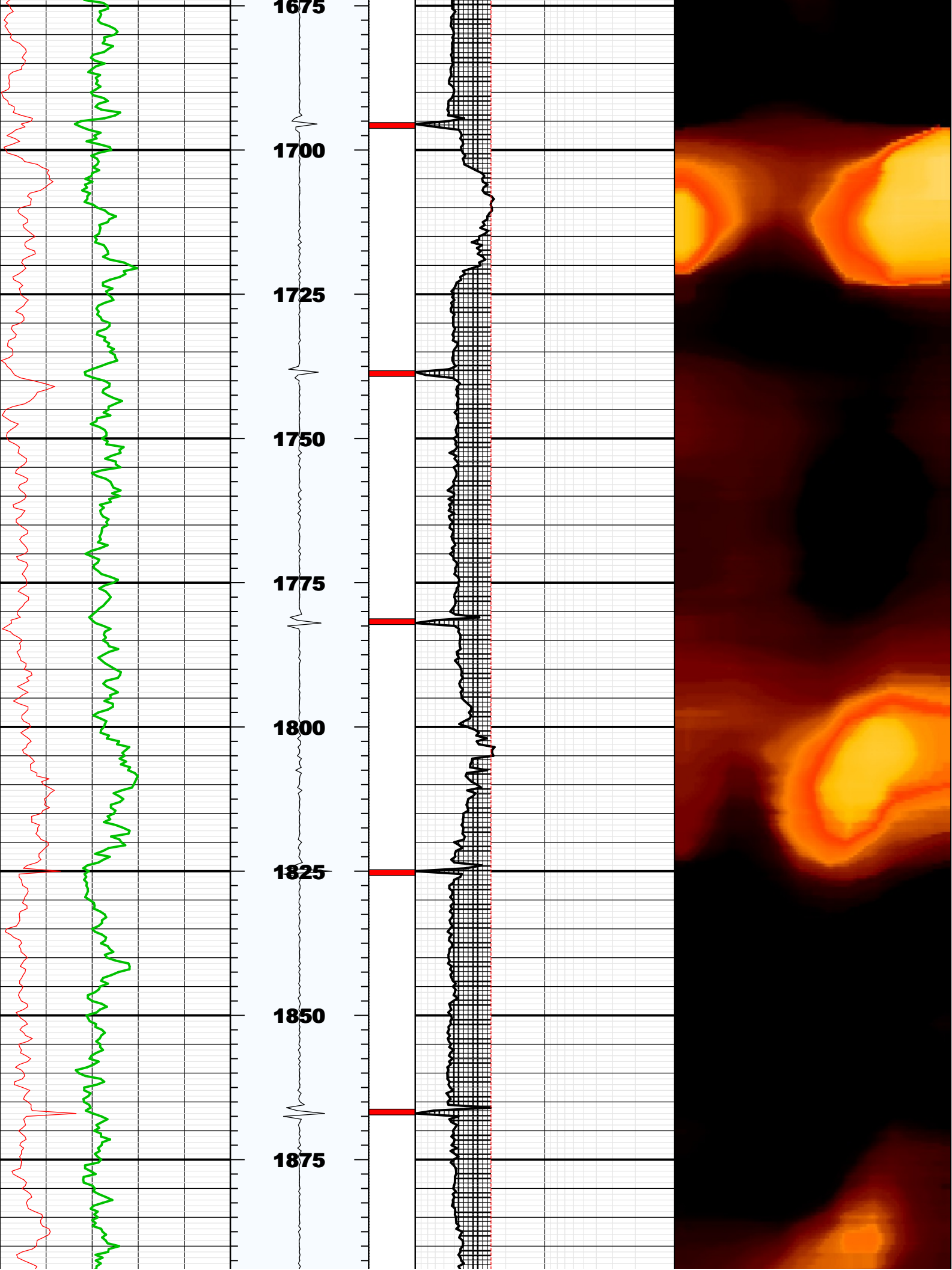


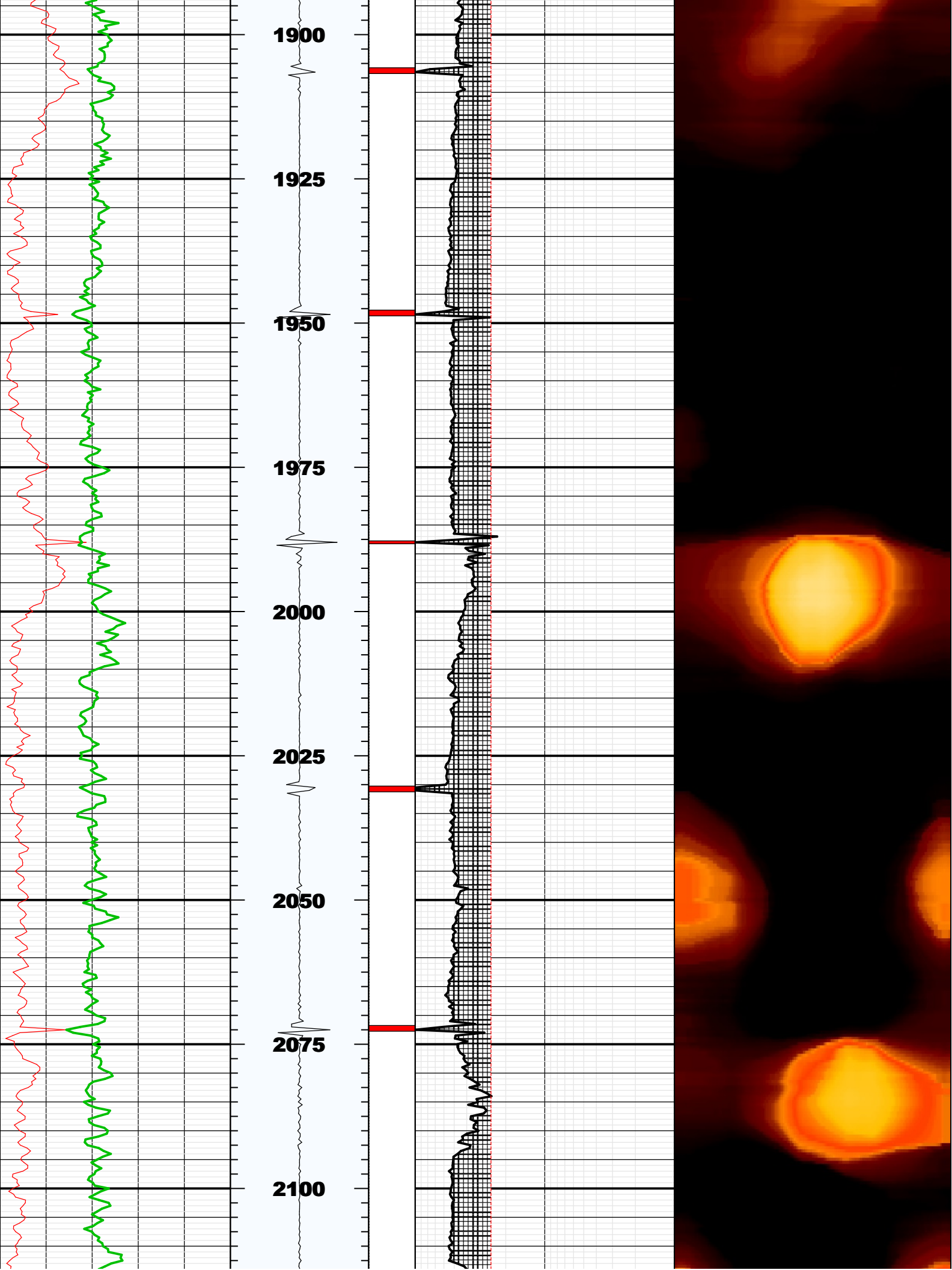


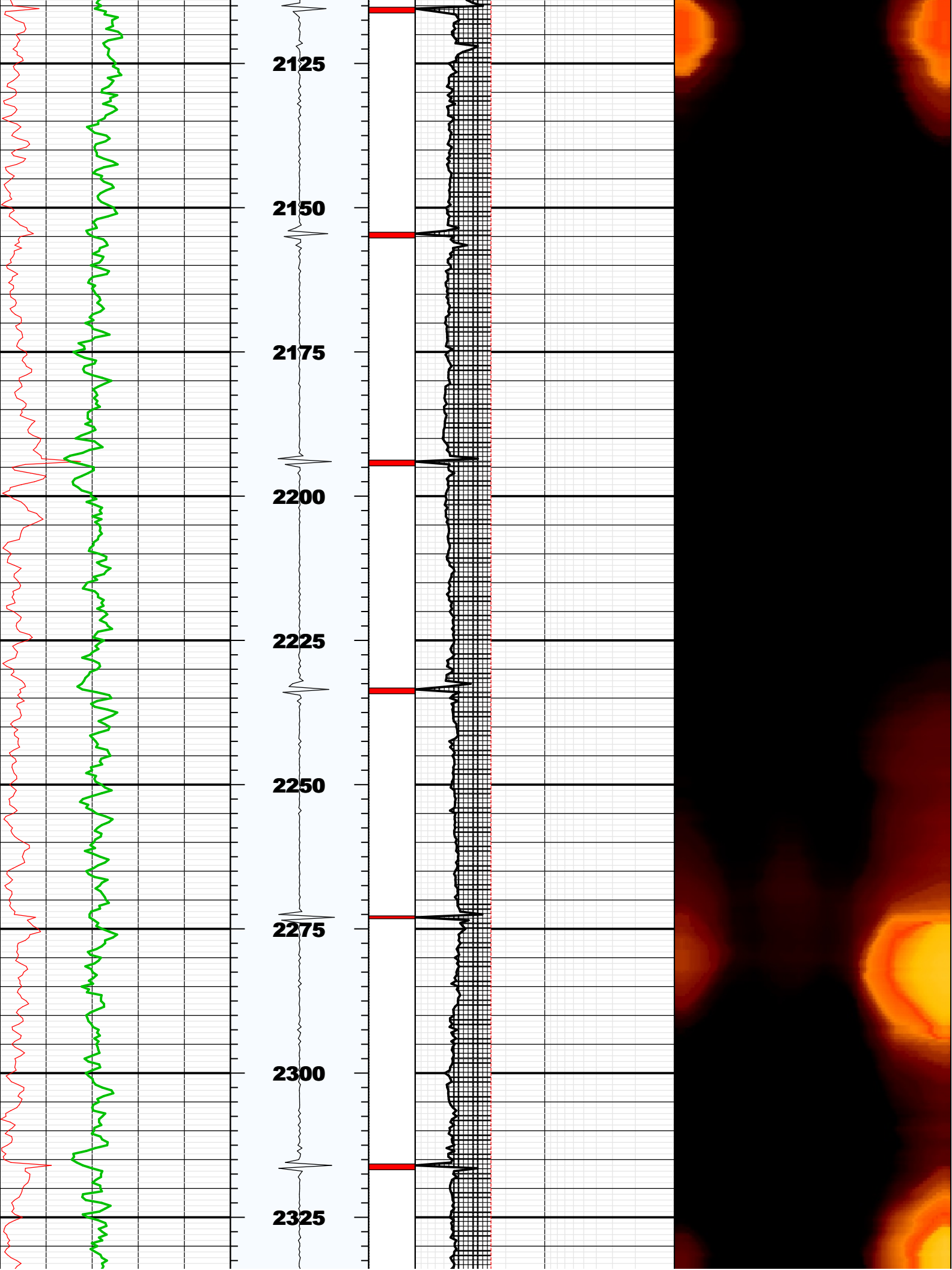


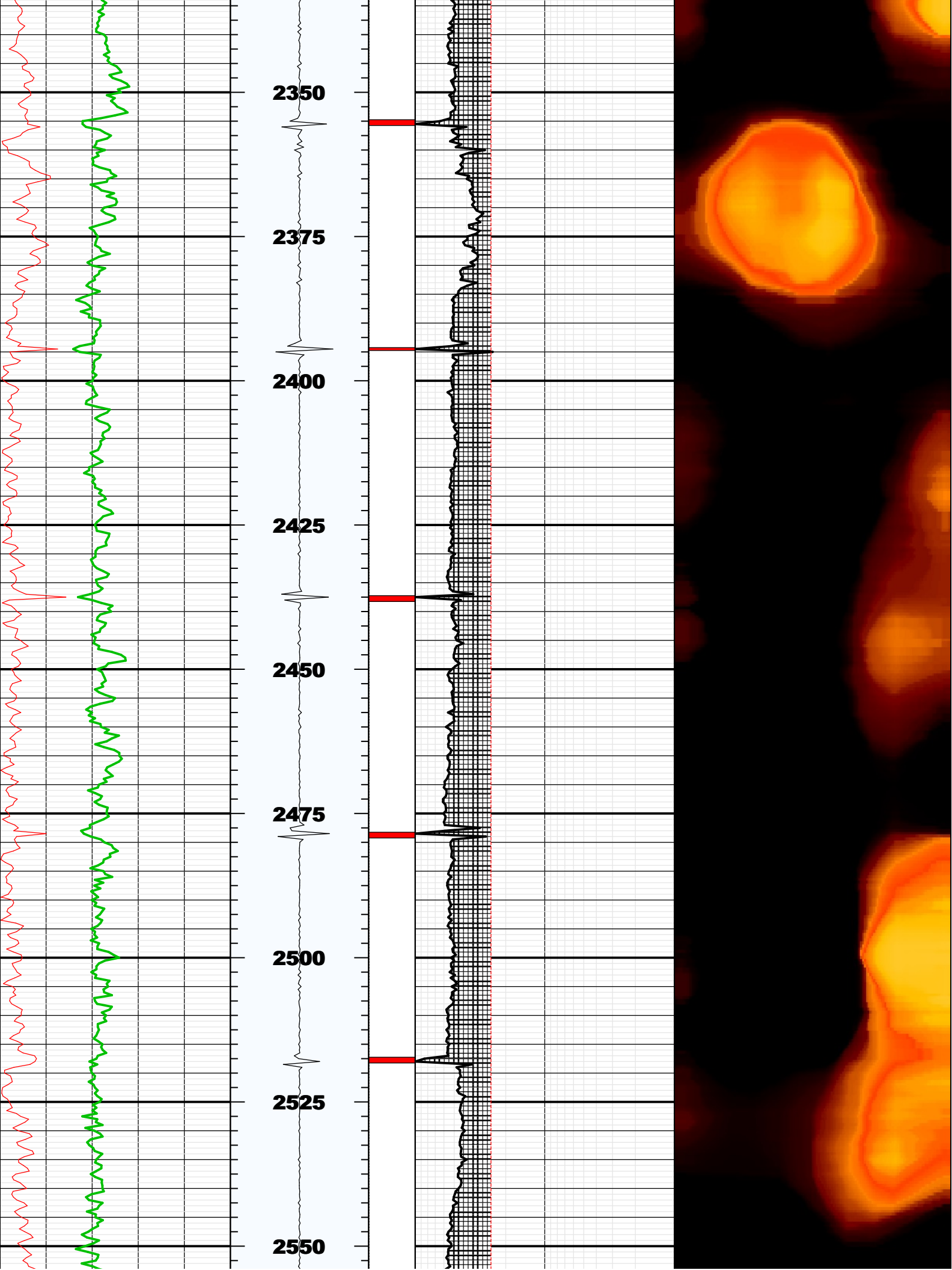


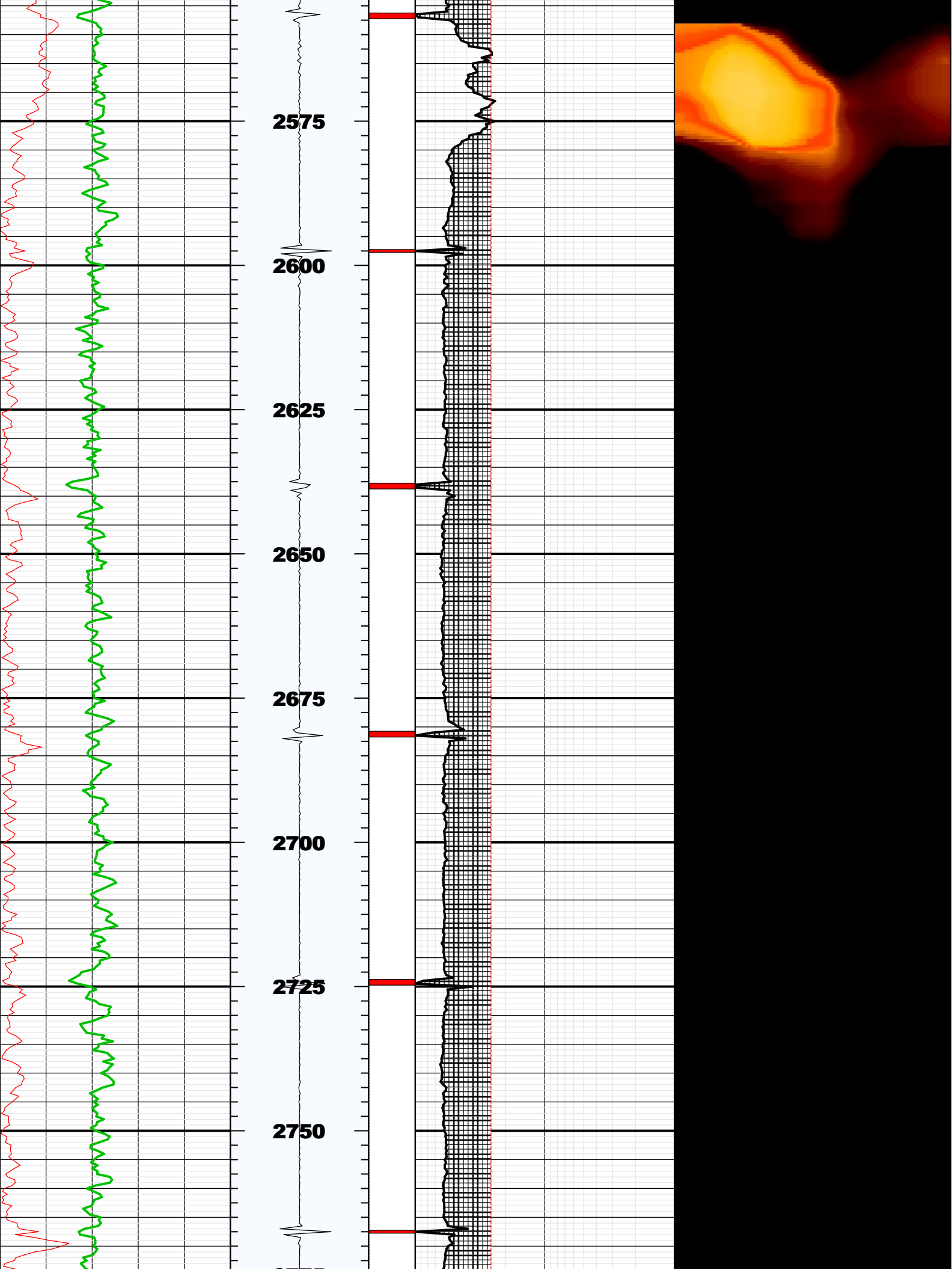


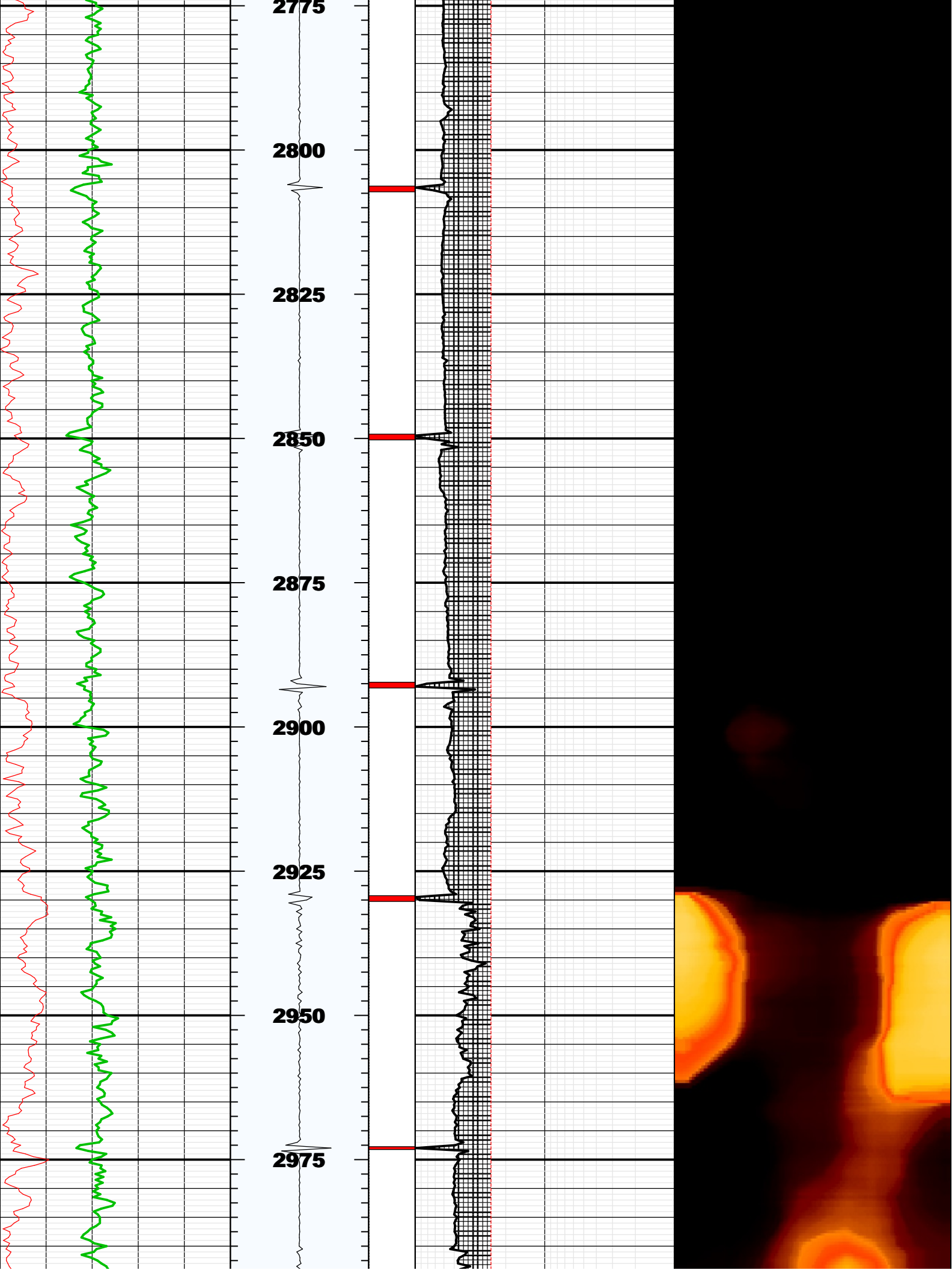


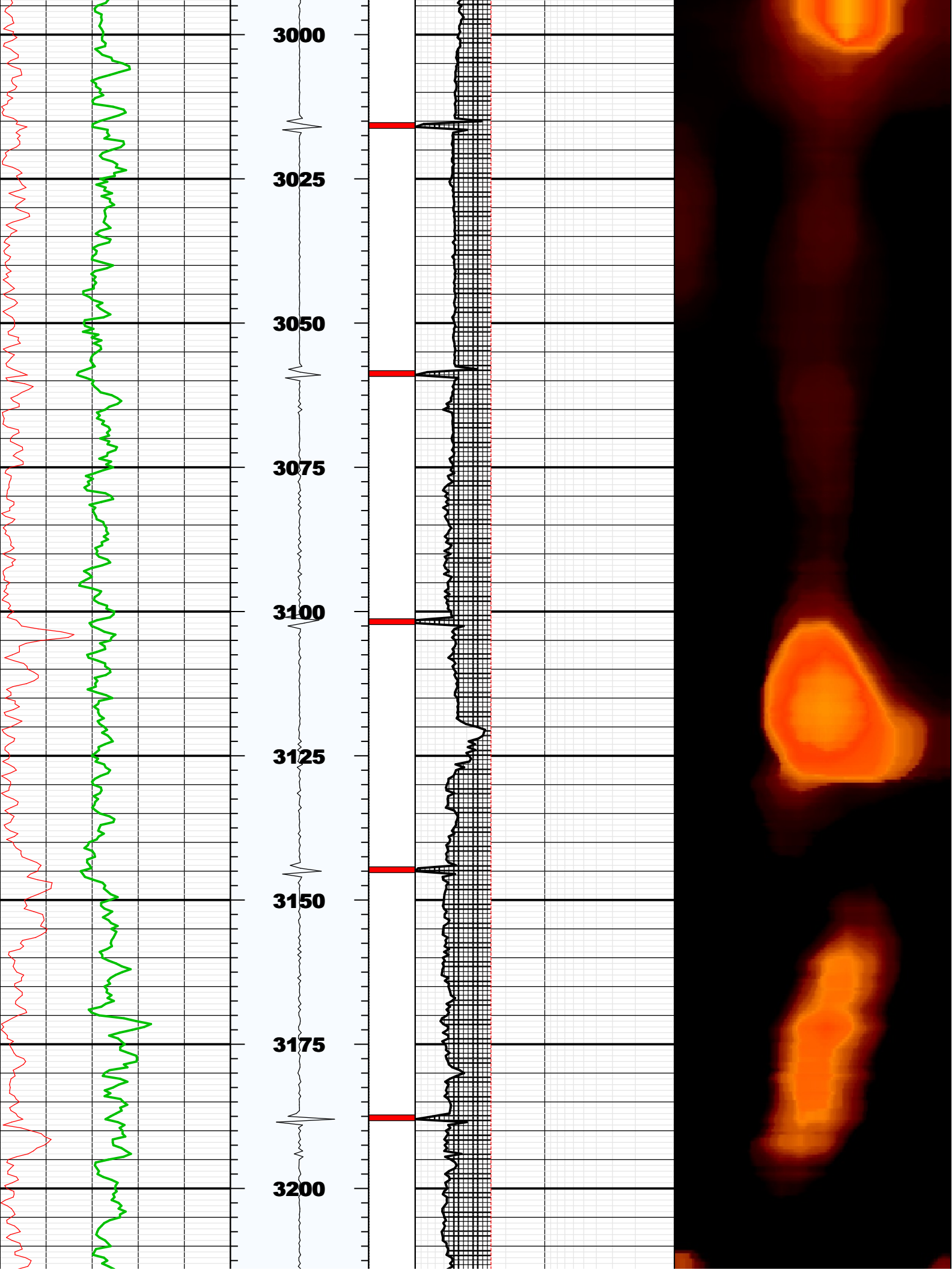


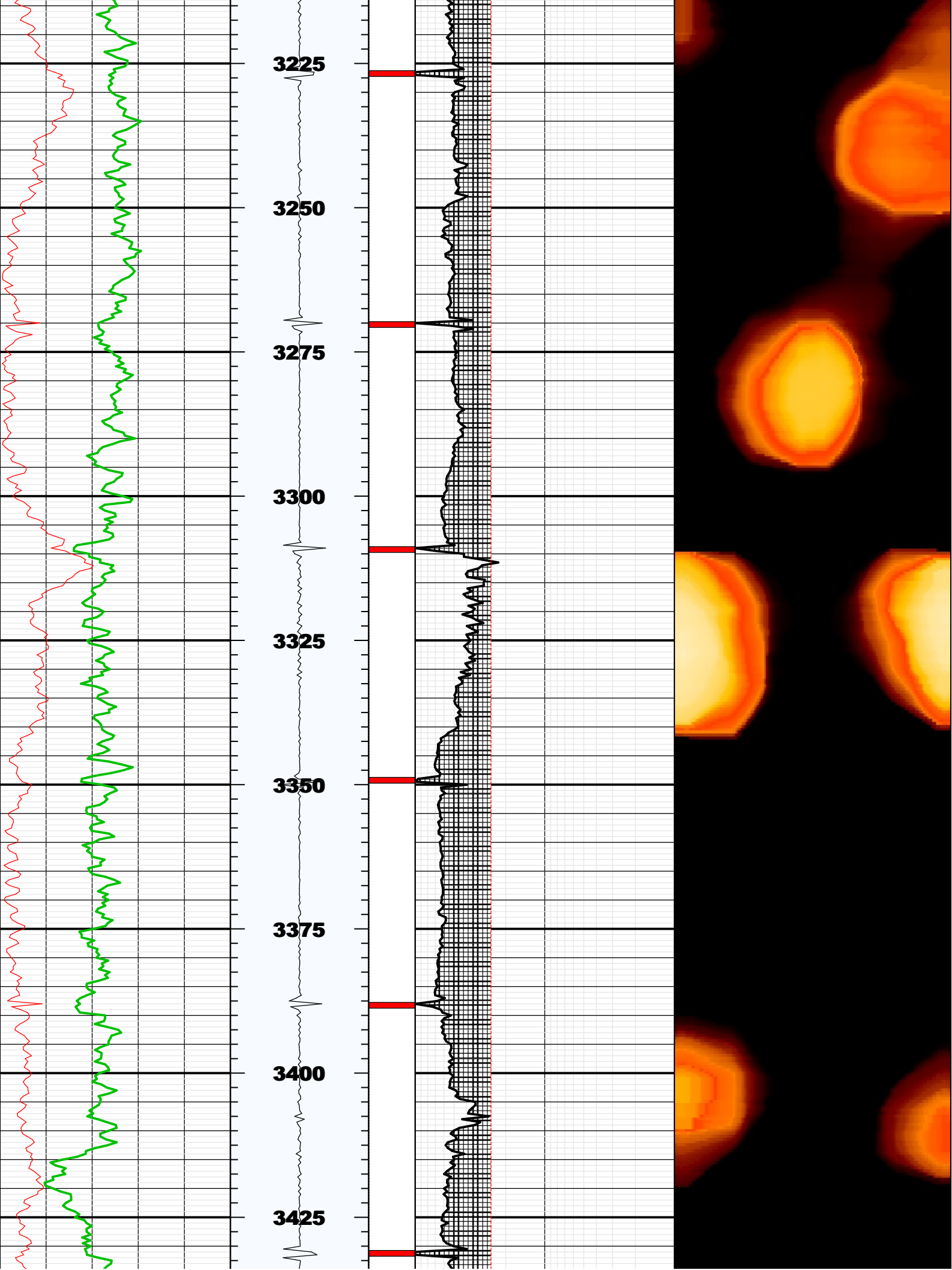


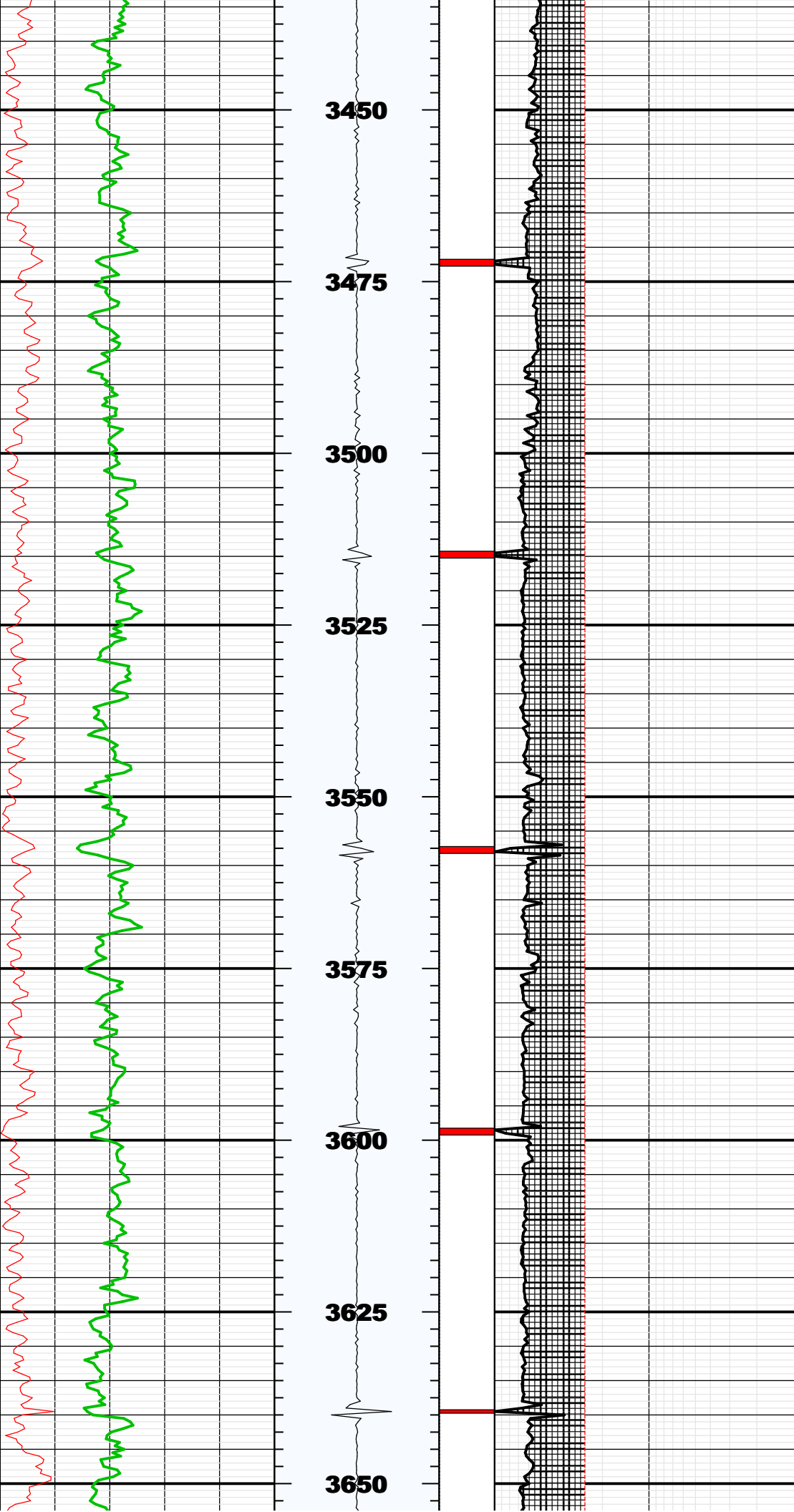


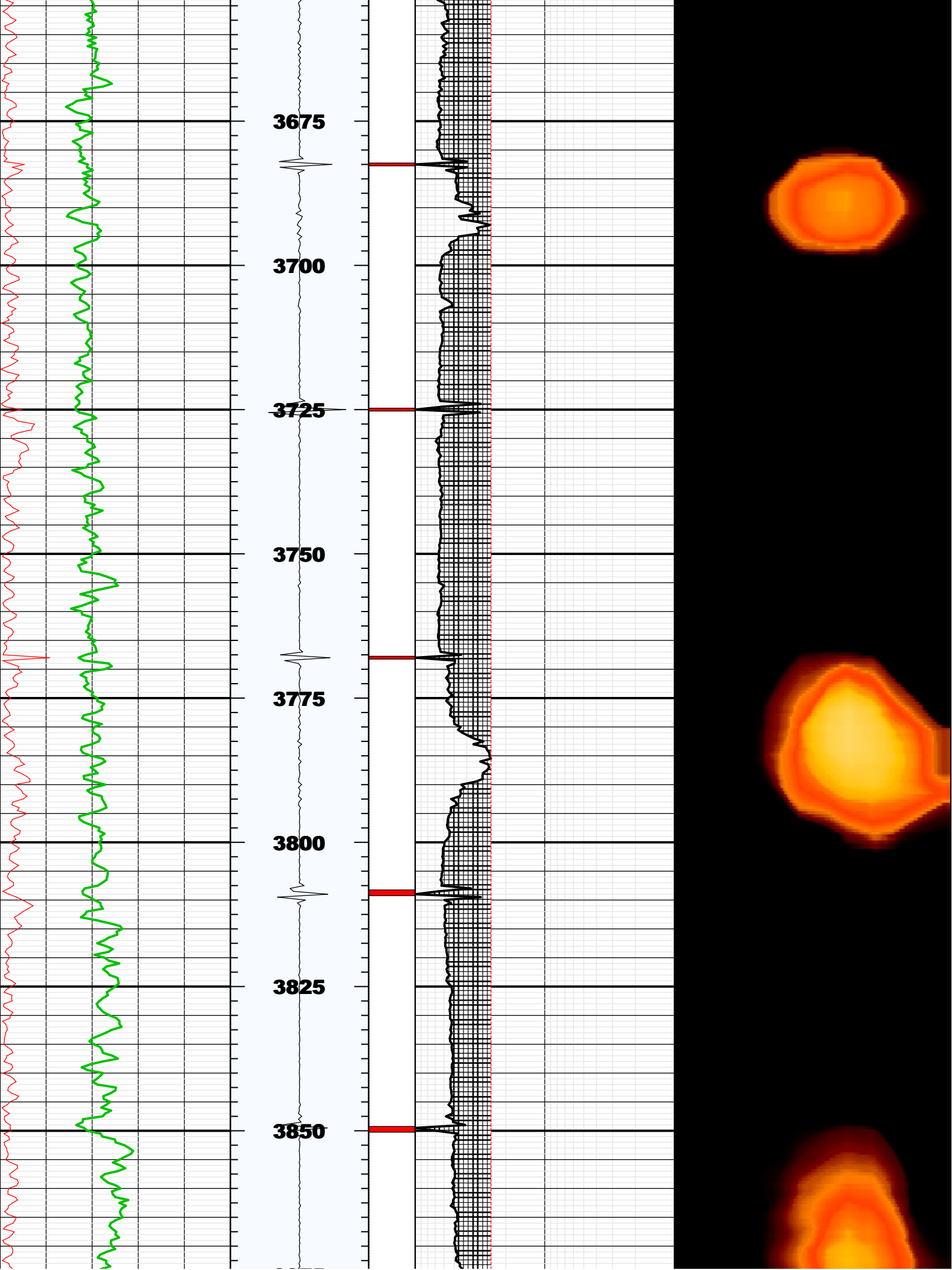


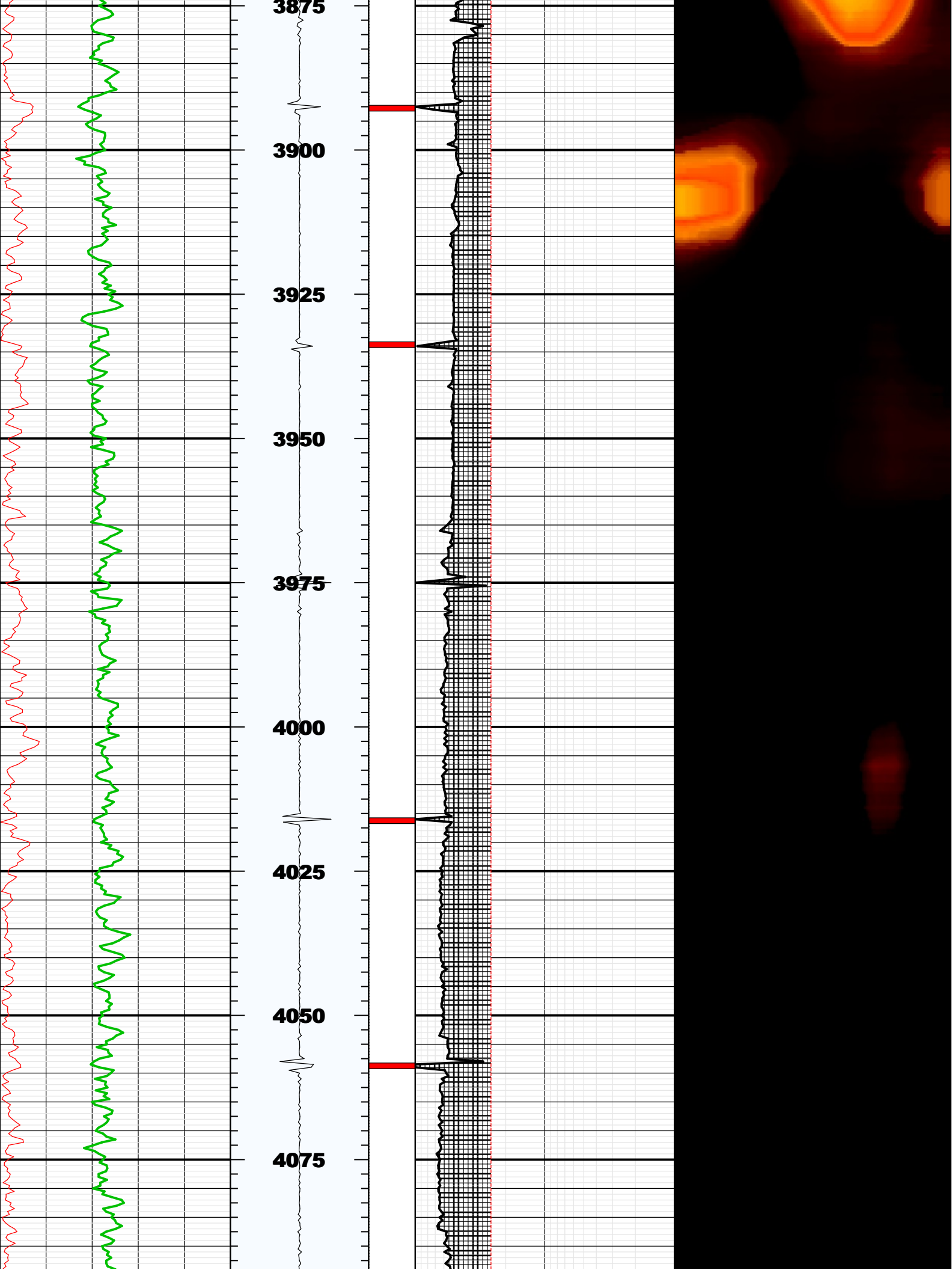


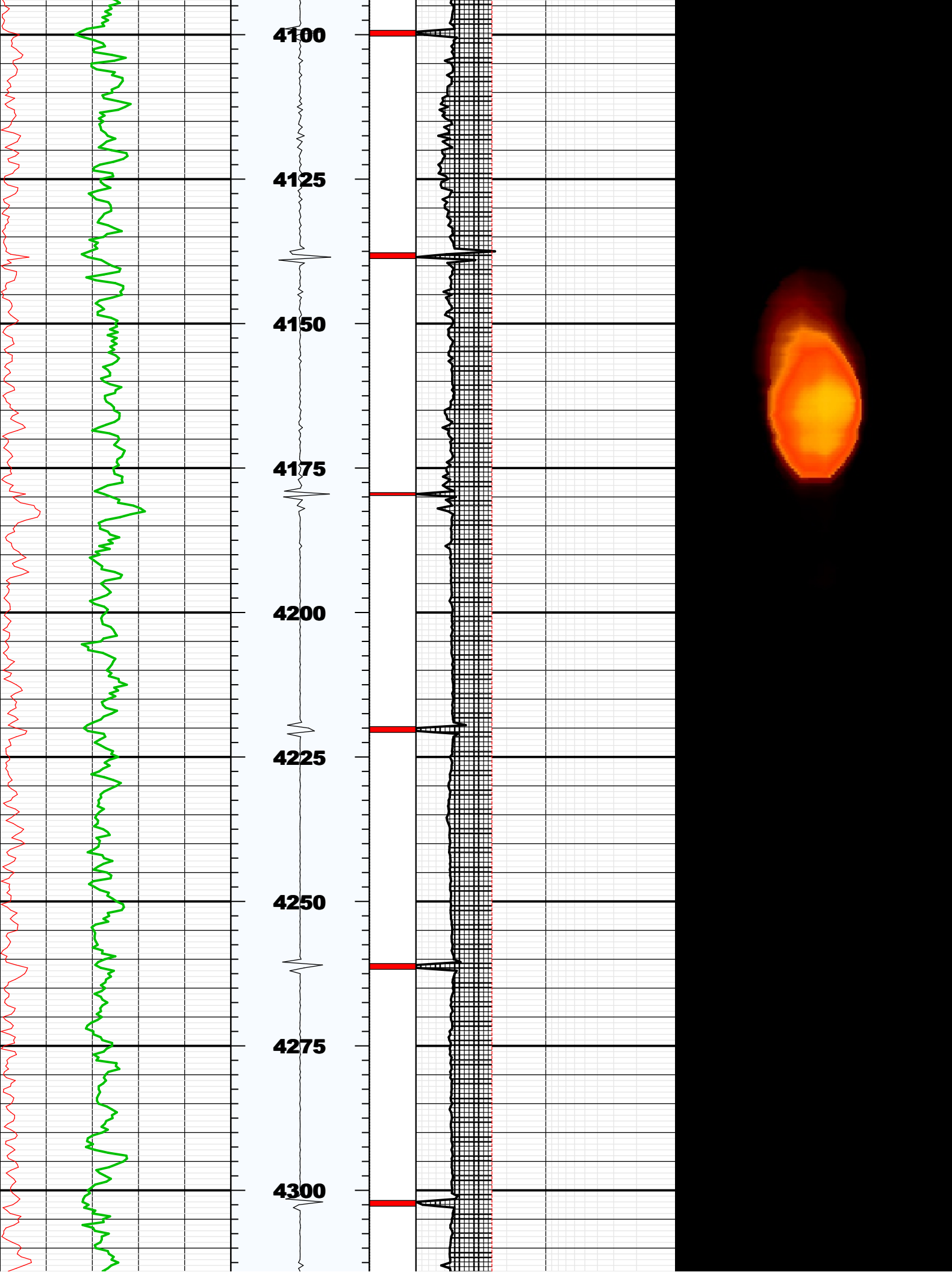


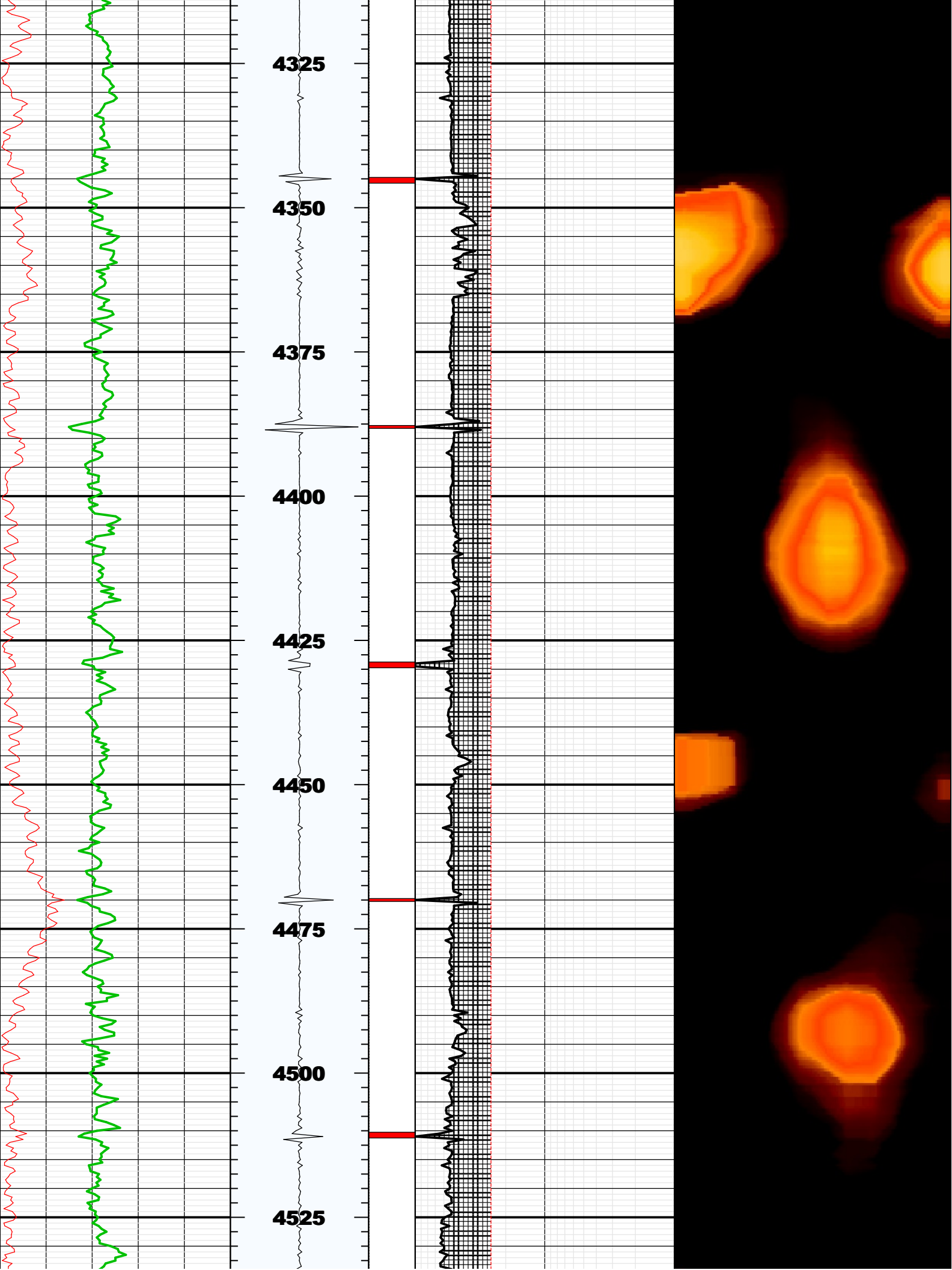


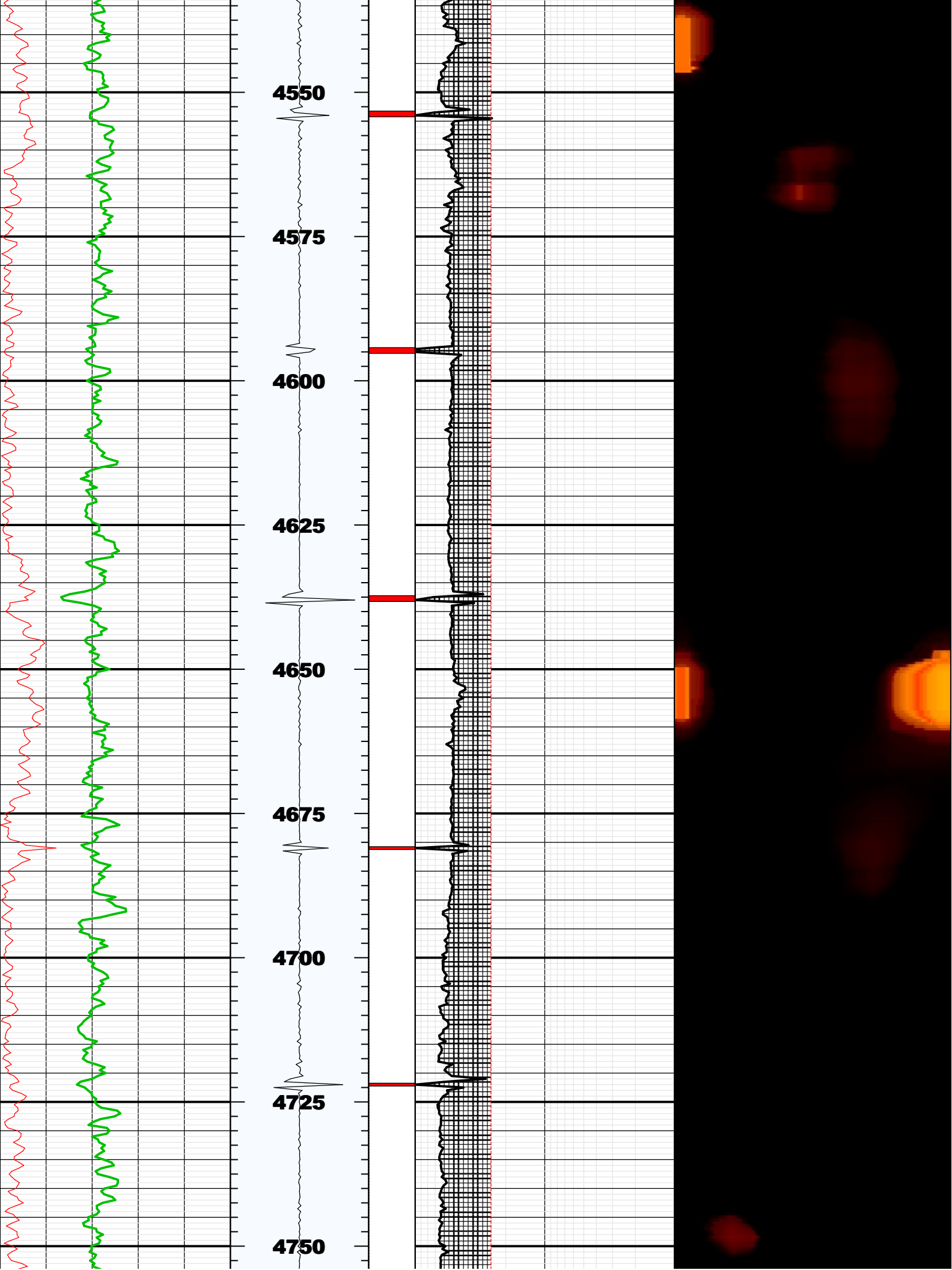


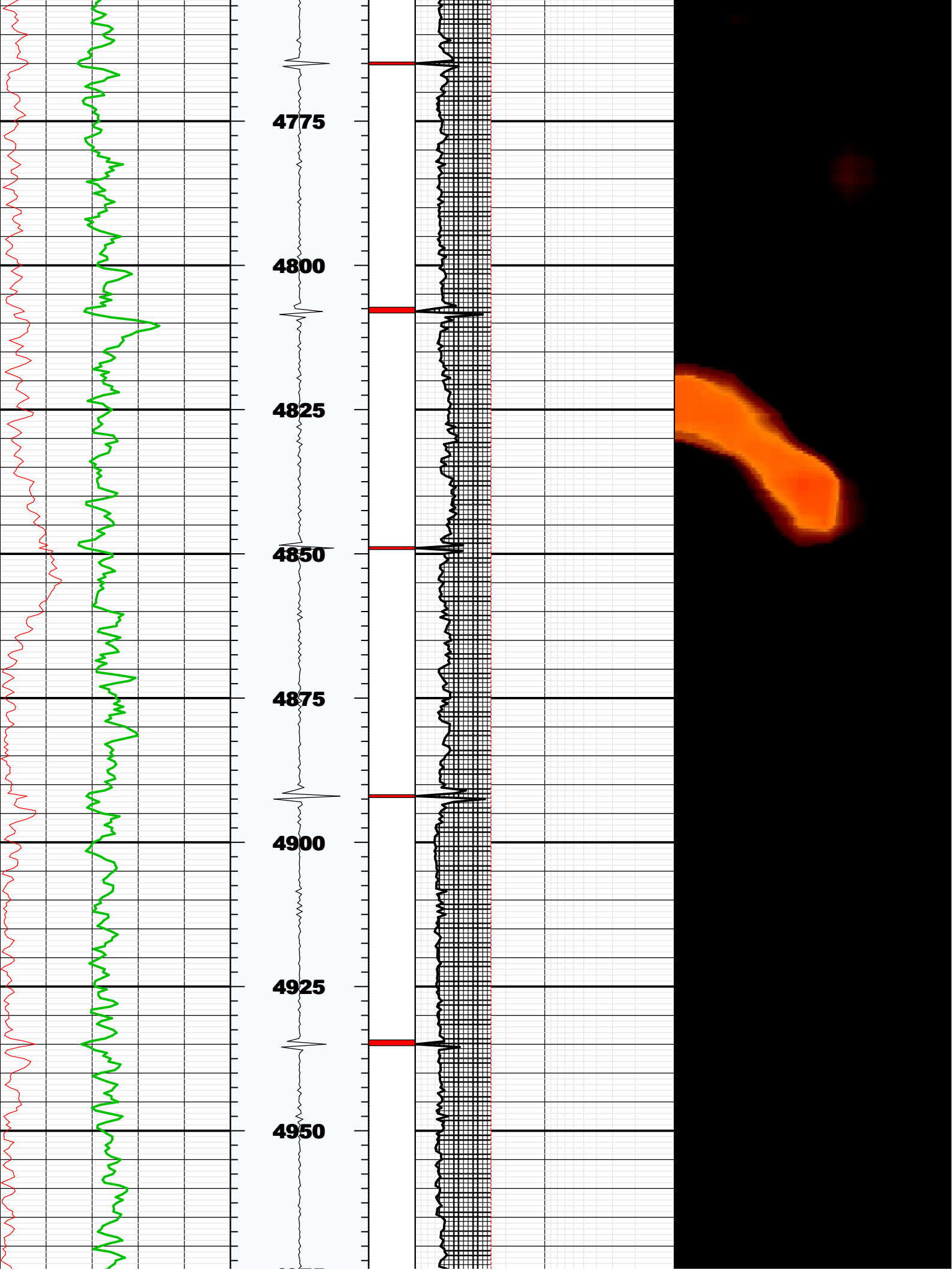


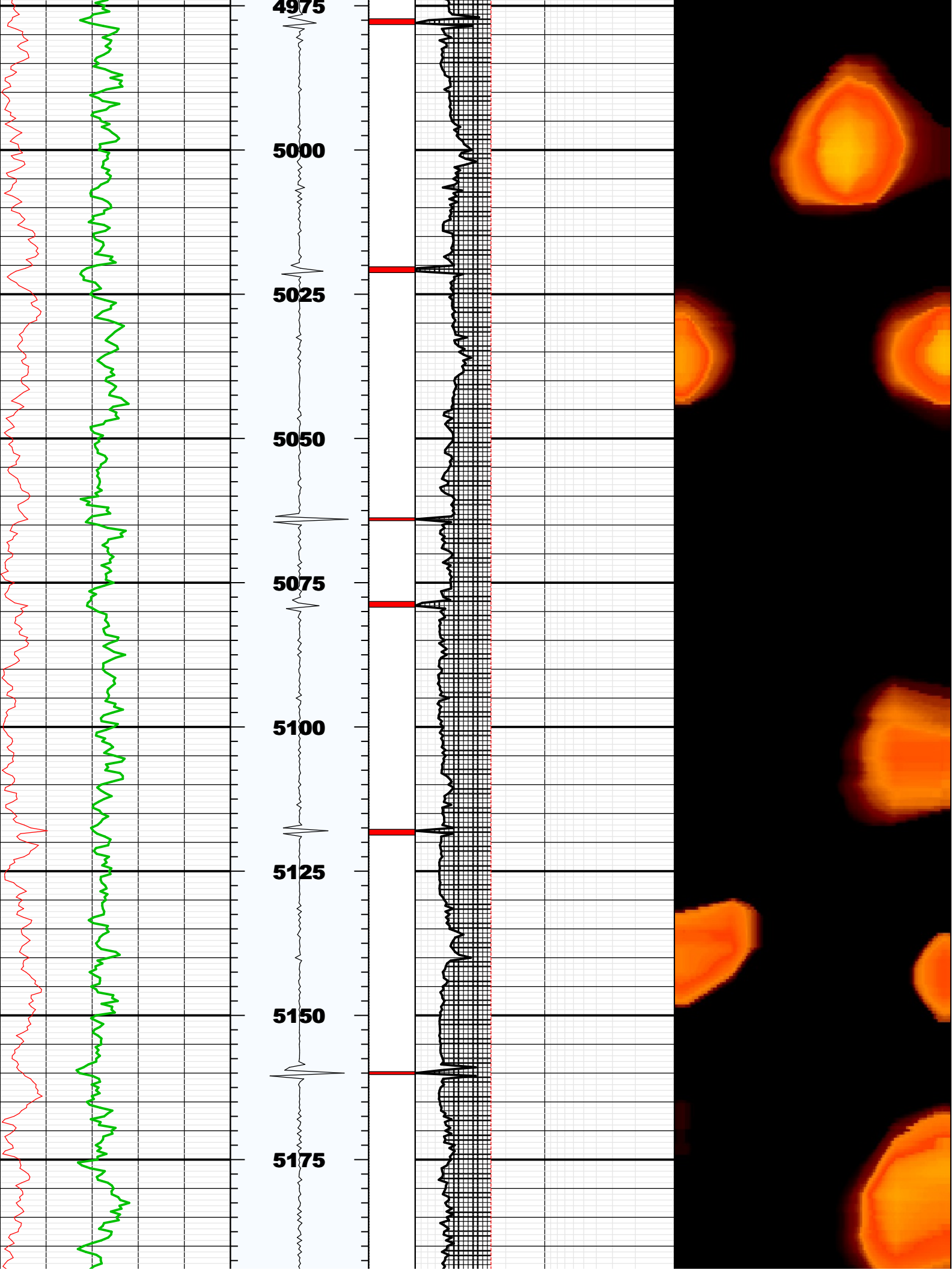


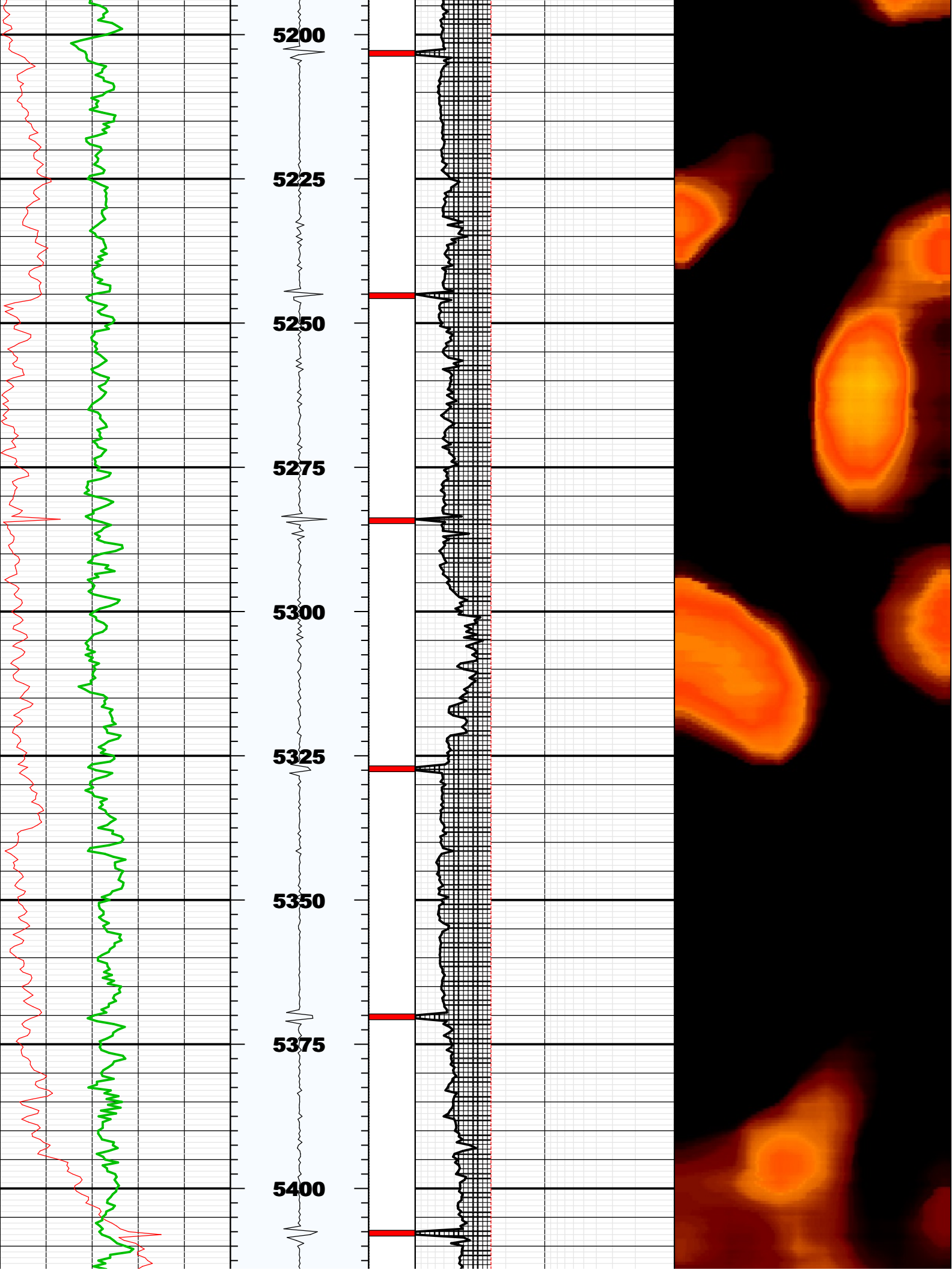


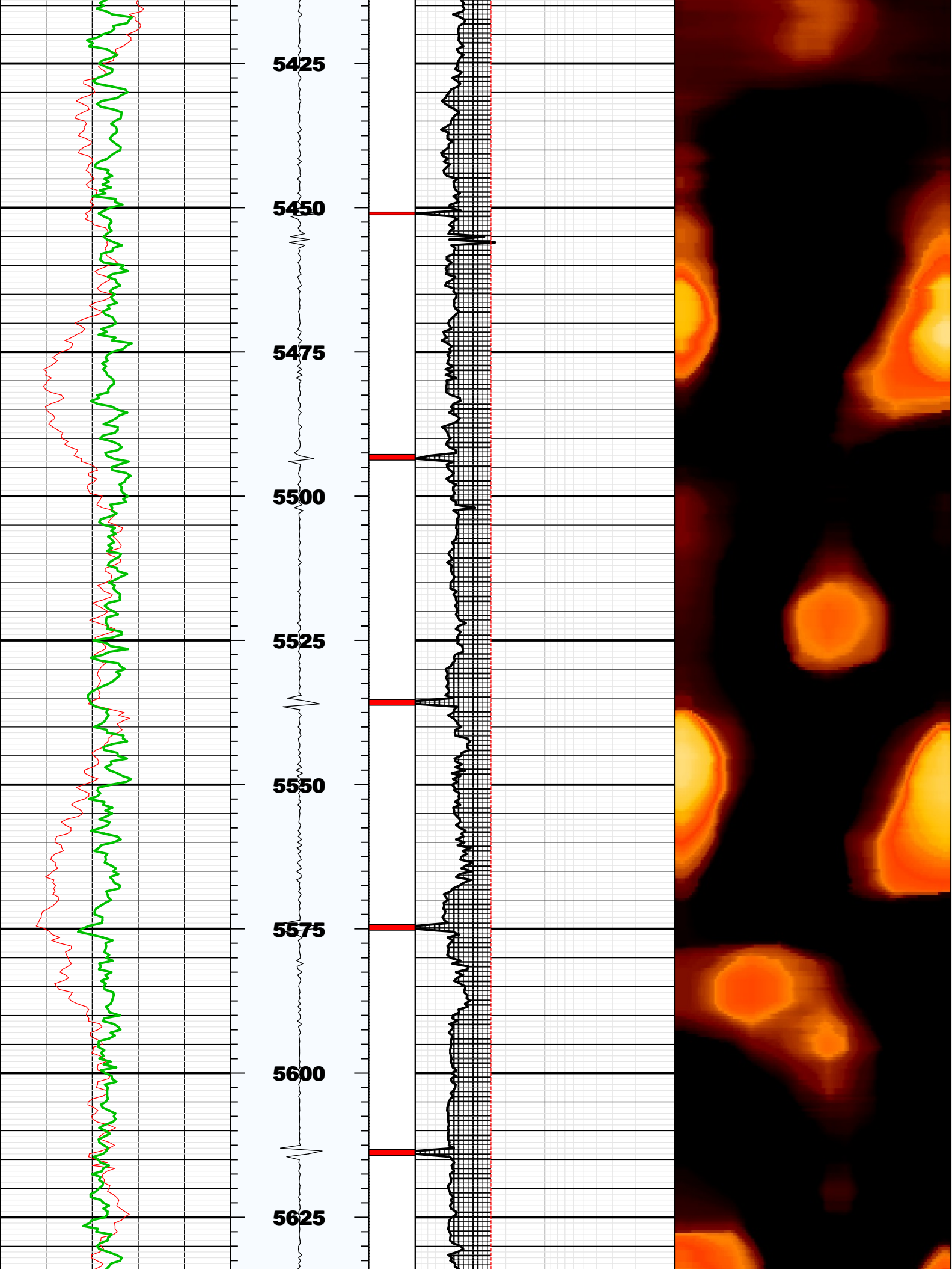


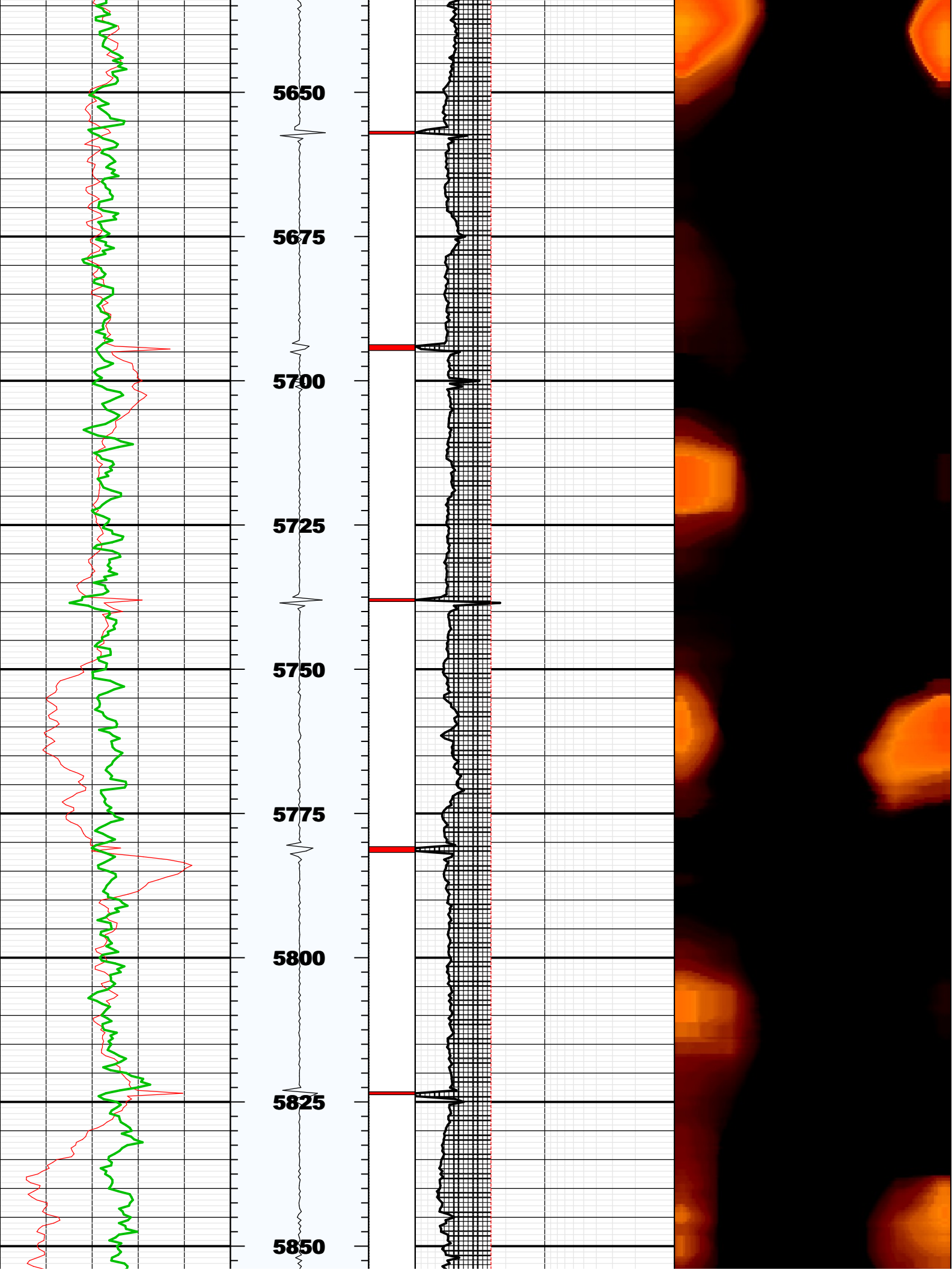


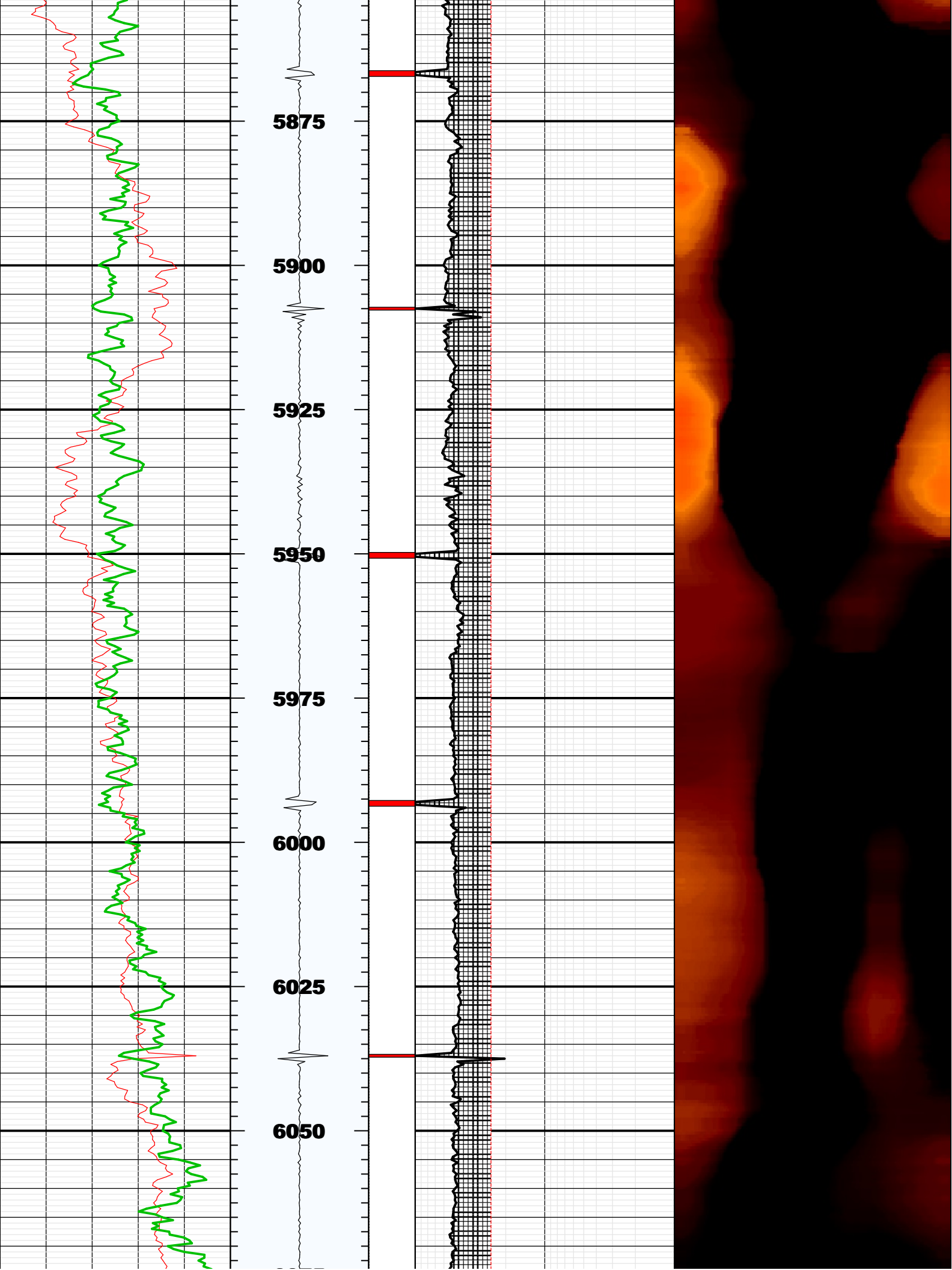


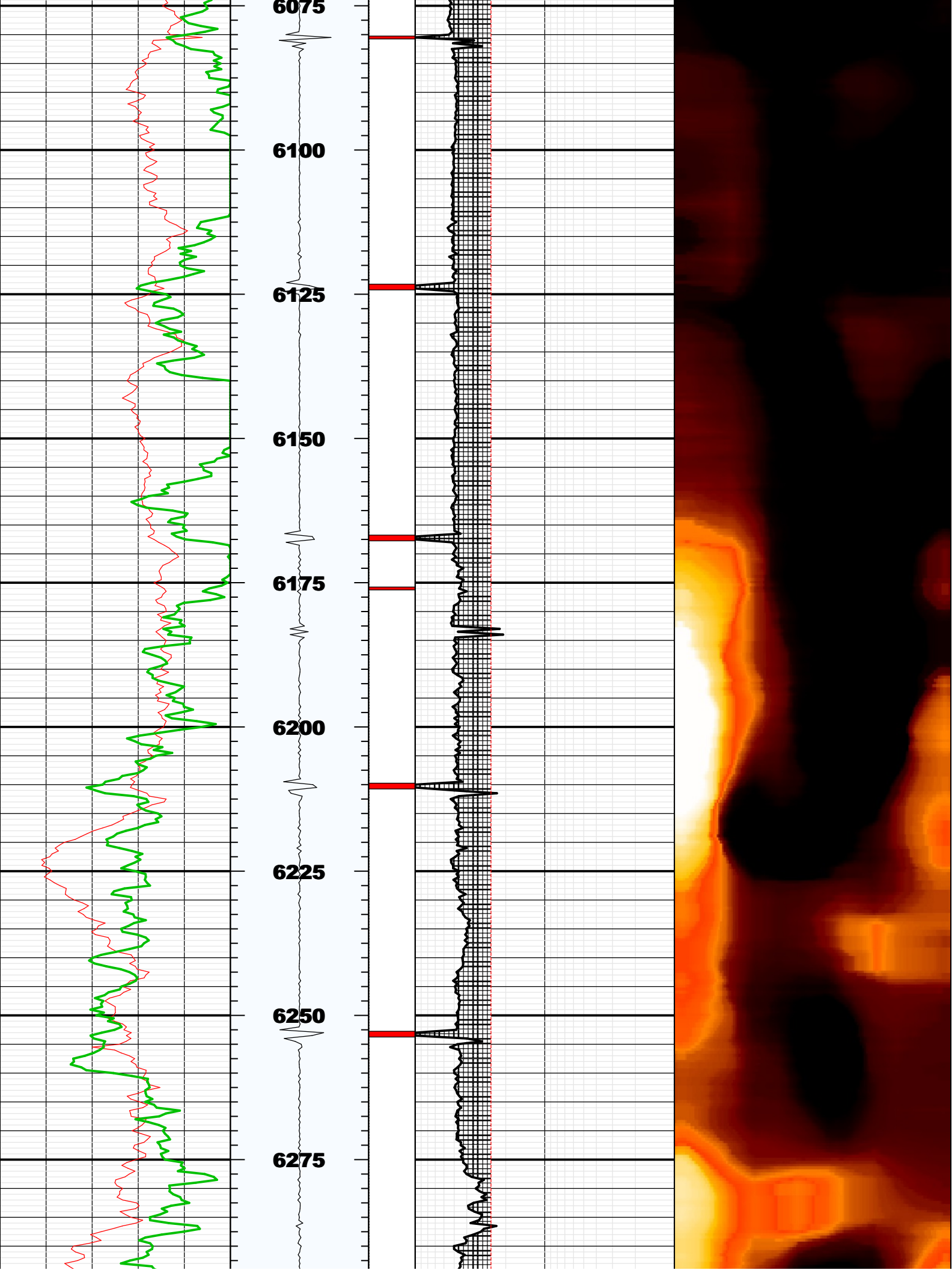


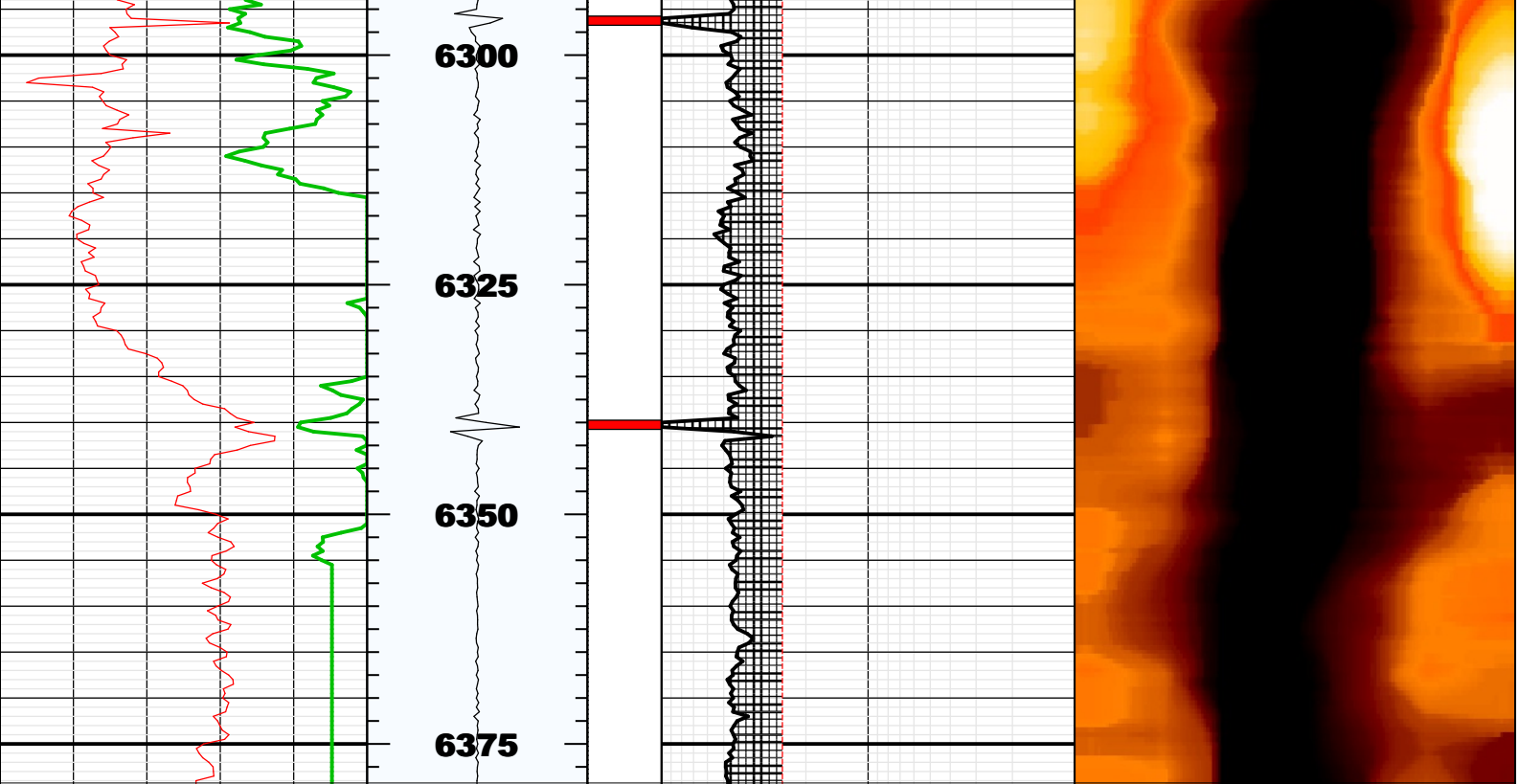








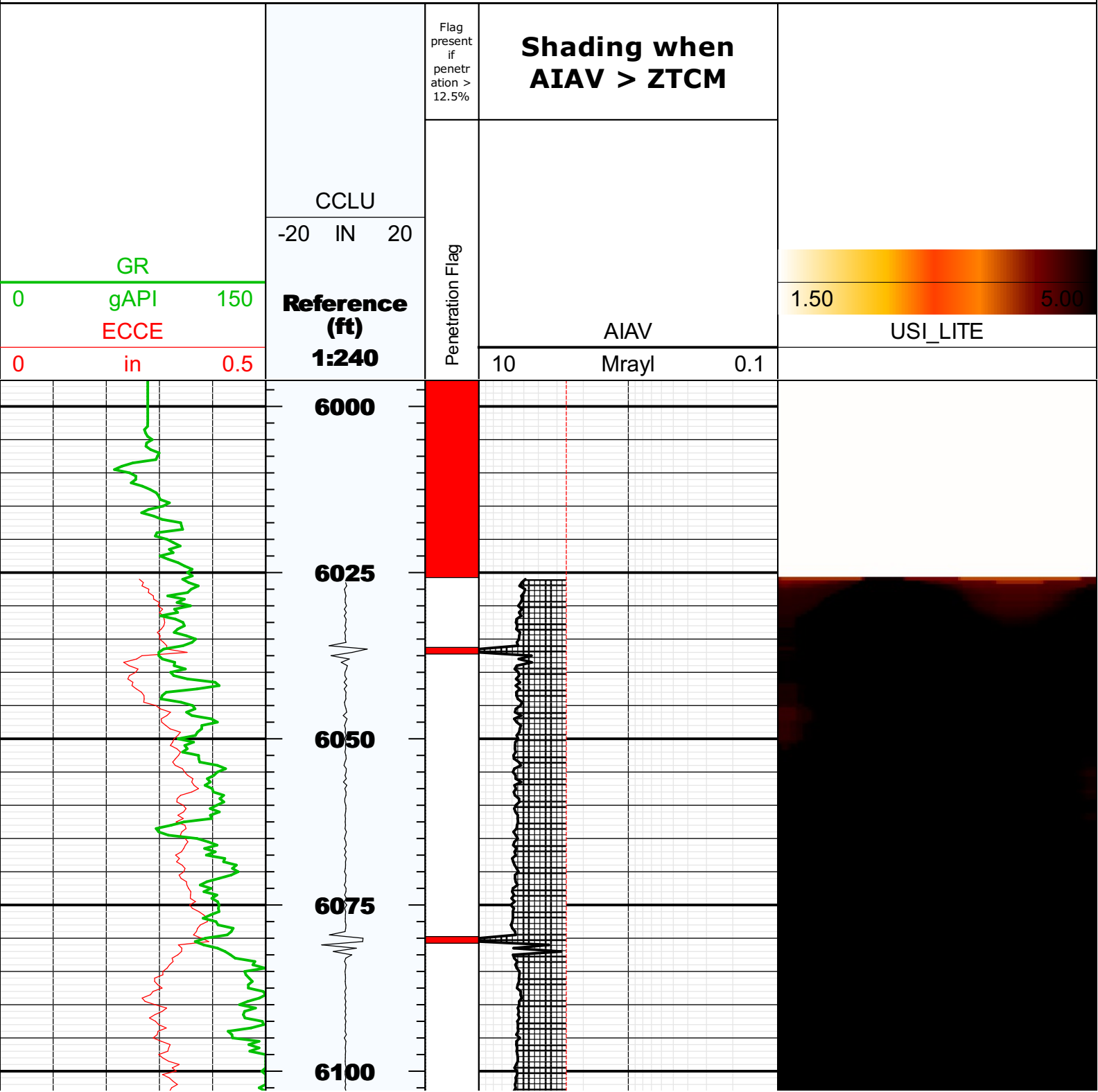


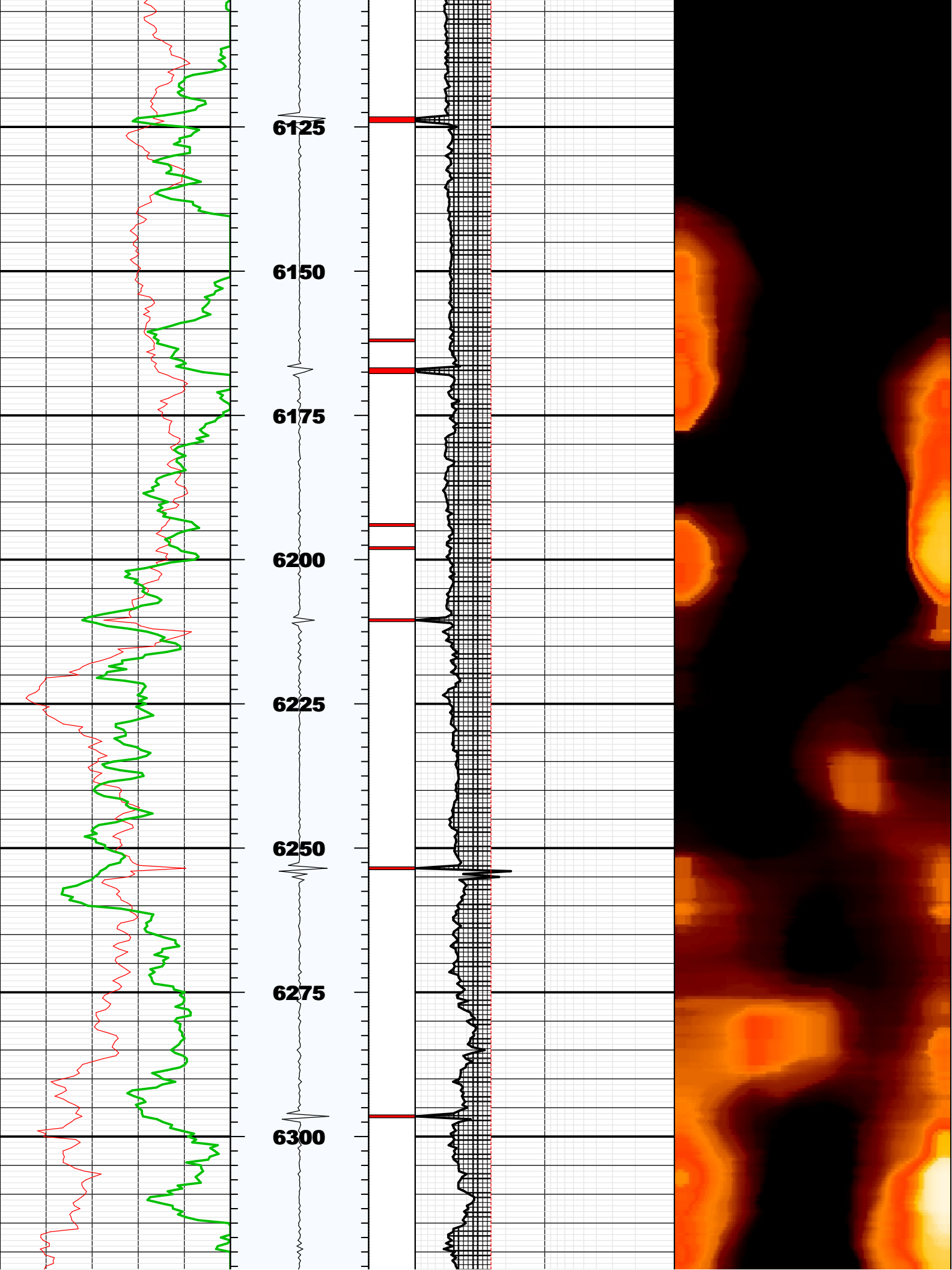


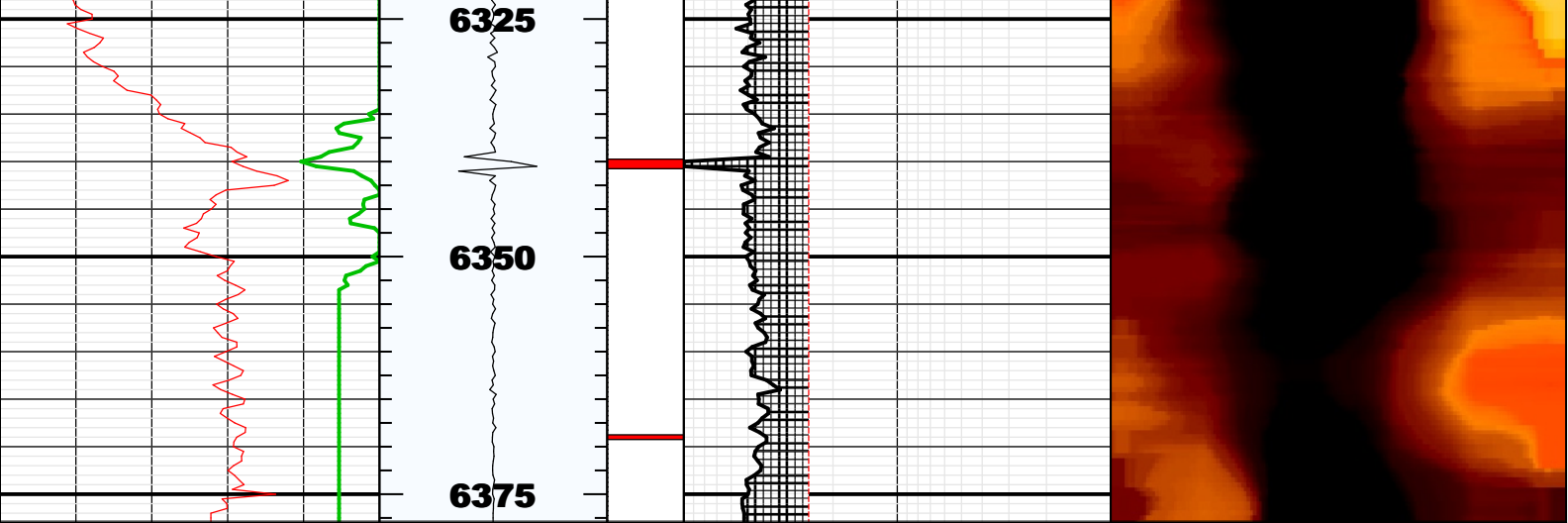
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID			
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	188.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	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	33.99588	US	Window Begin Time
WINE	73.59476	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.80000	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: Rainbow LC28-79-1HNA  
Field: Wattenberg







## Fluid Properties Used for Main Pass

