

Company: Crestone Peak Resources and Operating LLC

Well: Echeverria 2L-2H-D267

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner  
Cement Evaluation  
Gamma Ray - CCL Log

County: Weld

Field: Wattenberg

Location: NWNW Sec. 2, T2N, R67W

Well: Echeverria 2L-2H-D267

Company: Crestone Peak Resources and Operating LLC

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log

Location:		NWNW Sec. 2, T2N, R67W		Elev.:	K.B.	4904.00 ft
SHL: 897' FNL & 669' FWL		Lat/Long: 40.172031 \ -104.864577			G.L.	4881.00 ft
Permanent Datum:		Ground Level		Elev.:	4881.00 f	
Log Measured From:		Kelly Bushing		23.00 ft	above Perm.Datum	
Drilling Measured From:		Kelly Bushing				
API Serial No.	Section:	Township:	Range:			
05-123-487460	2	2N	67W			

Logging Date		18-May-2019		
Run Number		One		
Depth Driller		12588.00 ft		
Schlumberger Depth		12588.00 ft		
Bottom Log Interval		7320.00 ft		
Top Log Interval		100.00 ft		
Casing Fluid Type		Brine		
Salinity				
Density		8.4 lbm/gal		
Fluid Level		8.00 ft		
BIT/CASING/TUBING STRING				
Bit Size		8.50 in		
From		2377.00 ft		
To		12588.00 ft		
Casing/Tubing Size		5.5 in		
Weight		20 lbm/ft		
Grade		P110		
From		0.00 ft		
To		12578.00 ft		
Max Recorded Temperatures		199 degF		
Logger on Bottom		18-May-2019 21:34:00		
Unit Number	Location:	9111	Fort Morgan	
Recorded By	A. Blochowicz/ A. Alkindi			
Witnessed By	John Ansbor			

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE 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) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

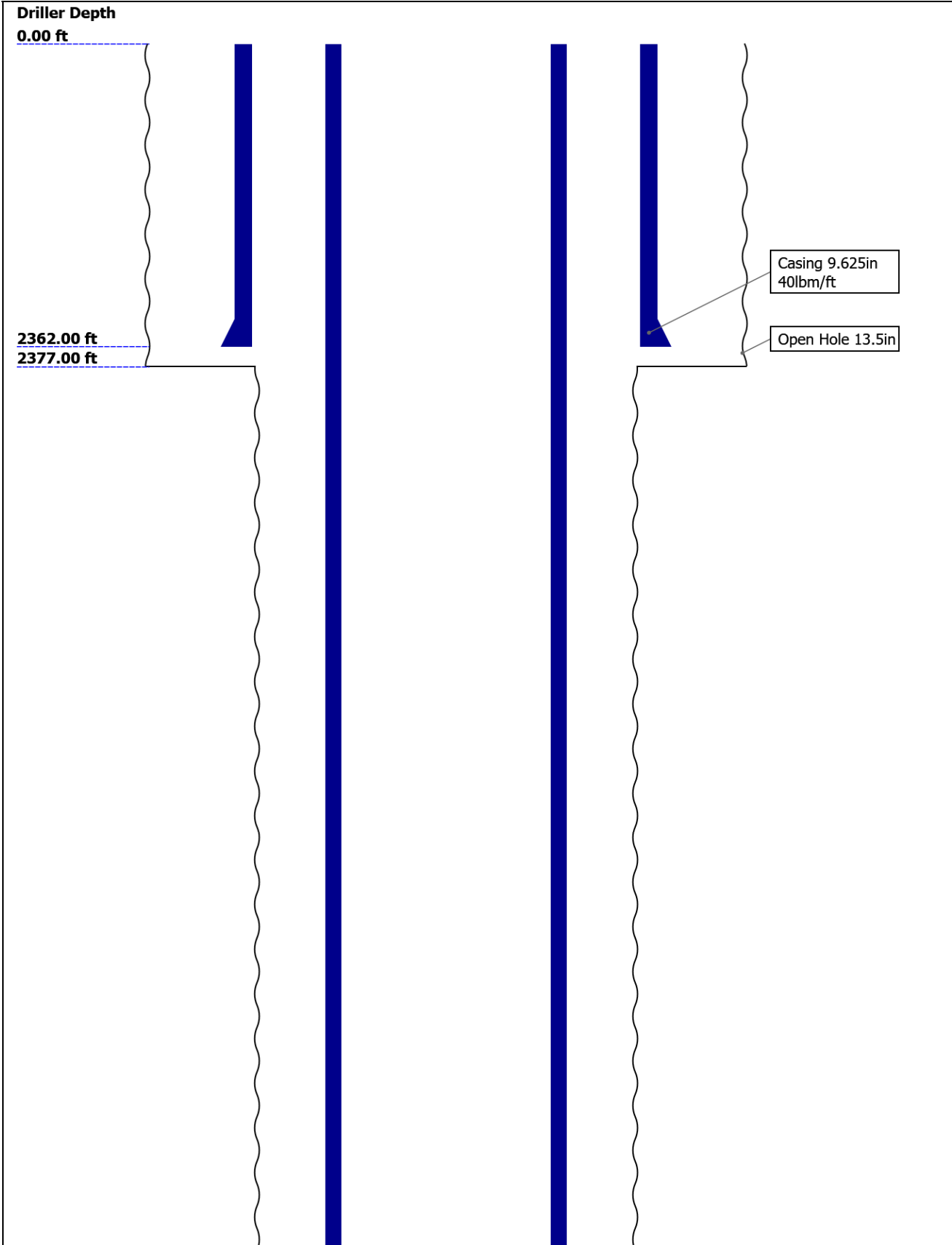
Contents

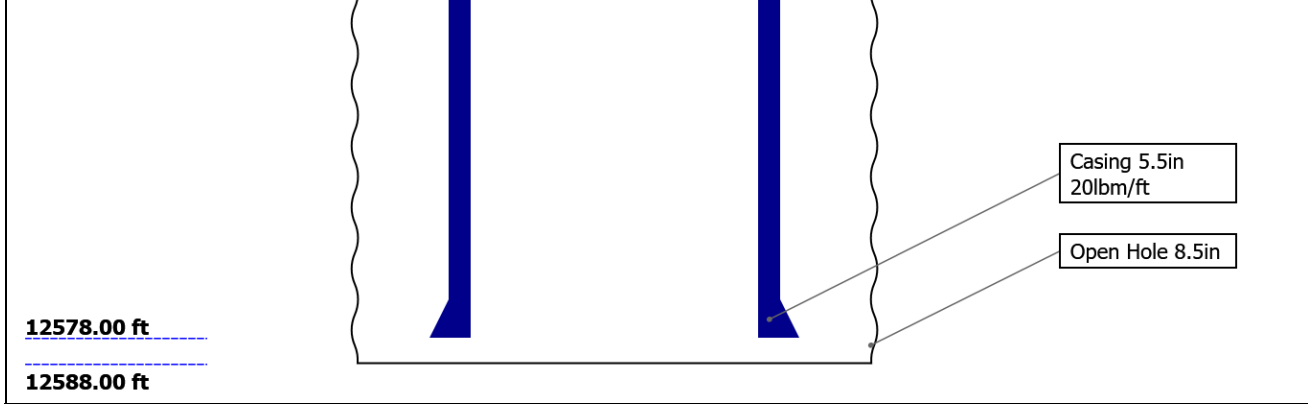
- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. IBC Fluid Properties Measurement
- 9. One IBC SLG
  - 9.1 Integration Summary
  - 9.2 Software Version
  - 9.3 Composite Summary
  - 9.4 Log ( IBC SLG )
  - 9.5 Parameter Listing
- 10. One IBC SLG Composite
  - 10.1 Integration Summary
  - 10.2 Composite Summary

- 12.1 Integration Summary
- 12.2 Software Version
- 12.3 Composite Summary
- 12.4 Log ( IBC SLG )
- 12.5 Parameter Listing
- 13. One IBC SLG Composite
  - 13.1 Integration Summary
  - 13.2 Composite Summary
  - 13.3 Log ( IBC SLG Composite )
  - 13.4 Parameter Listing
- 14. XYZ ( IBC Fluid Acoustic Slowness vs Depth 6.0 in )
- 15. XYZ ( IBC Acoustic Impedance of Mud vs Depth 6.0 in )
- 16. Tail

- 10.3 Log ( IBC SLG Composite )
- 10.4 Parameter Listing
- 11. One IBC Goodwin Compressed
  - 11.1 Integration Summary
  - 11.2 Composite Summary
  - 11.3 Log ( IBC Goodwin )
- 12. One IBC SLG

Well Sketch



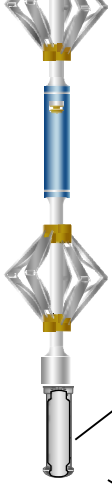


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.5				
Top Driller ( ft )	0	2377				
Top Logger ( ft )	0	2377				
Bottom Driller ( ft )	2377	12588				
Bottom Logger ( ft )	2377	12588				
Casing						
Size ( in )	9.625	5.5				
Weight ( lbm/ft )	40	20				
Inner Diameter ( in )	8.835	4.778				
Grade	J55	P110				
Top Driller ( ft )	0	0				
Top Logger ( ft )	0	0				
Bottom Driller ( ft )	2362	12578				
Bottom Logger ( ft )	2362	12578				

Remarks and Equipment Summary

One: Toolstring				One: Remarks	
<b>Equip name</b>	<b>Length</b>	<b>MP name</b>	<b>Offset</b>	Thank you for choosing Schlumberger!	
LEH-QT	28.62			Two 5" Gemco and in-line centralizers with small hole kit and booster kit used for centraliz	
LEH-QT				Log run under 0 psi	
<b>EDTC-B:8</b>	<b>25.14</b>			Annular Fluid: 10.5 ppg OBM	
324				Lead Cement 12.5 ppg	
EDTH-B:81				Tail Cement Density: 13.5 ppg	
01				Spacer Density: 11 ppg	
EDTG-A:7				Crew: Scotty Strickland	
7301					
EDTC-B:83					
24					
<b>AH-184:3</b>	<b>18.64</b>				
763					
<b>USIT-E:98</b>	<b>16.64</b>				
1					
ECH-MFA:					
1923					
USAC-A:9					
81					
USIS-A:17					
39					
USSC-B					
IBCS-A:83					
5					

<div>  <p><b>USI Sensor Head Tension</b></p> <p><b>TOOL_ZERO</b></p> <p>Lengths are in ft Maximum Outer Diameter = 5.000 in Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO</p> </div>		
--	--	--

Depth Summary			
	One		
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6241		
Calibration Date	30-Apr-2019		
Calibrator Serial Number	IDWC-C-57		
Calibration Cable Type	7-46 PXS		
Wheel Correction 1	-1		
Wheel Correction 2	-2		
Tension Device			
Type	CMTD-B/A		
Serial Number	161		
Calibration Date	13-May-2019		
Calibrator Serial Number	1148		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	10		
Logging Cable			
Type	7-46P-XS		
Serial Number	U712020		
Length	23245.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		
One:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	All Schlumberger depth control procedures were followed	
Rig Up Length At Surface		IDW used as primary depth control.	
Rig Up Length At Bottom		Z-chart used as secondary depth control	
Rig Up Length Correction		Depth correlated to the down pass	
Stretch Correction			
Tool Zero Check At Surface			

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[4]:Up	7326.38	76.40

Fluid Velocity = "Automatic".  
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
-----------------	----------------	--------------------	------------------

Mud Impedance = "FreePipe Norm."  
Free Pipe normalization zone is : 54.07m(177.39ft) to 55.04m(180.58ft)  
MUD\_N\_FRP = 1.17  
DFD = 1.01g/cm3(8.40lbm/gal)  
CZMD median computed in free pipe normalization interval = 1.63 MRayl

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
-----------------	----------------	--------------------	------------------

One

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	76.40 ft	7326.38 ft	18-May-2019 8:34:25 PM	18-May-2019 10:18:24 PM	ON	5.85 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC      Well:Echeverria 2L-2H-D267 One: Log[4]:Up:S011
-----	--

Description: USI IBC SLG    Format: Log ( IBC SLG )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 19-May-2019 16:18:12

USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4    UFLG 5    UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7    UFLG 8    UFLG 9 Value within [6.5 - 10 ] - :

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E

Amplitude of Eccentering (ECCE) USIT-E

Motor Revolution Speed (RSAV) USIT-E

Orientation: Top of Hole

USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E

Gamma Ray (ECGR\_EDTC) EDTC-B

Orientation: Top of Hole

USIT - Amplitude of Wave (AWBK) USIT-F

Acoustic Impedance Minimum (AIMN) USIT-E

Acoustic Impedance Average (AIAV) USIT-E

Acoustic Impedance Maximum (AIMX) USIT-E

Orientation: Top of Hole

USIT - Acoustic Impedance (AIRK) USIT-F

Minimum Flexural Attenuation (U-USIT\_UFAN) USIT-E

Average Flexural Attenuation (U-USIT\_UFAV) USIT-E

Maximum Flexural Attenuation (U-USIT\_UFAX) USIT-E

Orientation: Top of Hole

USIT - Flexural Attenuation (UFAK) USIT-F

Orientation: Top of Hole

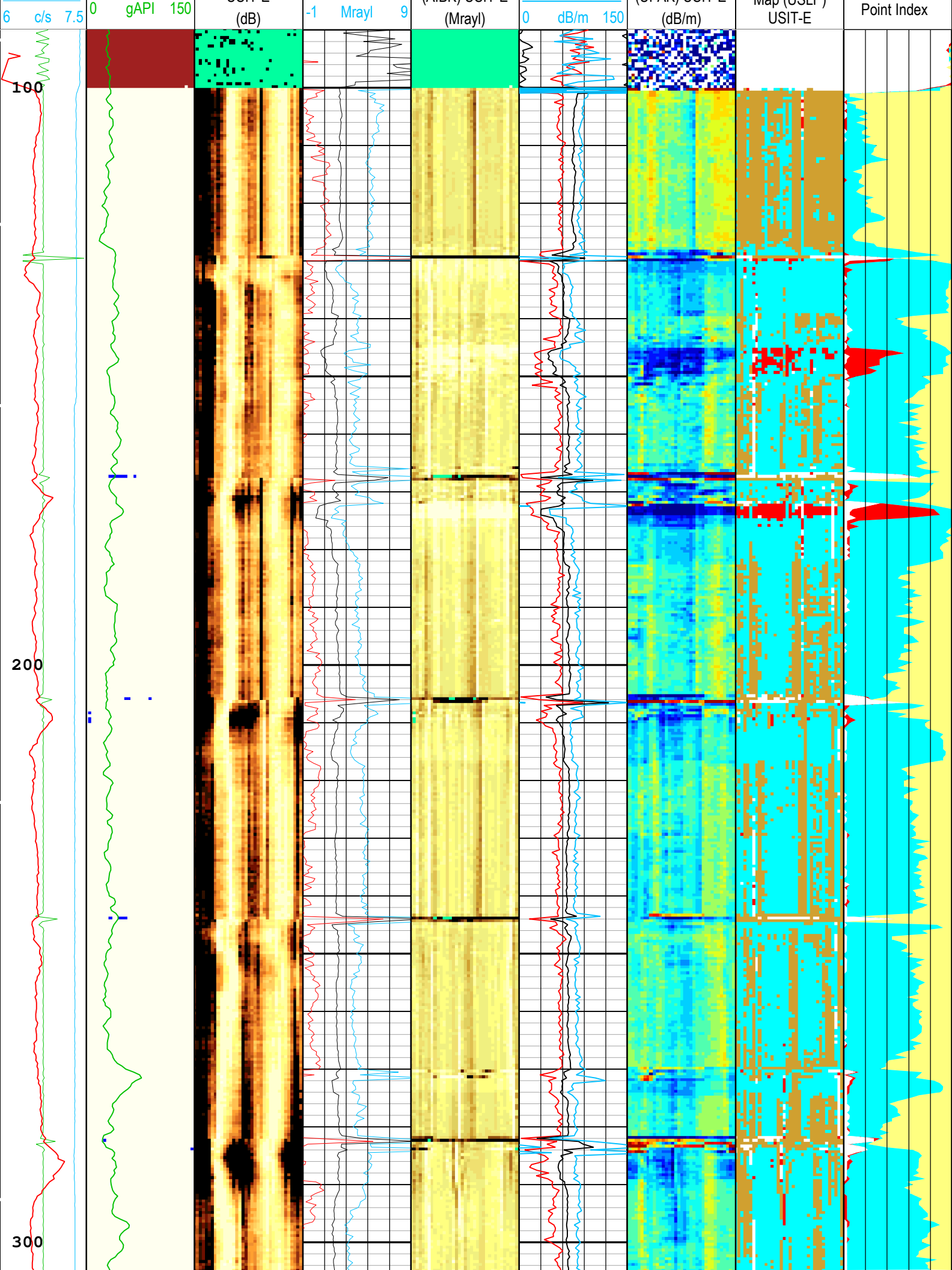
USIT - Solid Liquid Gas Sorted Color Map (USLP)

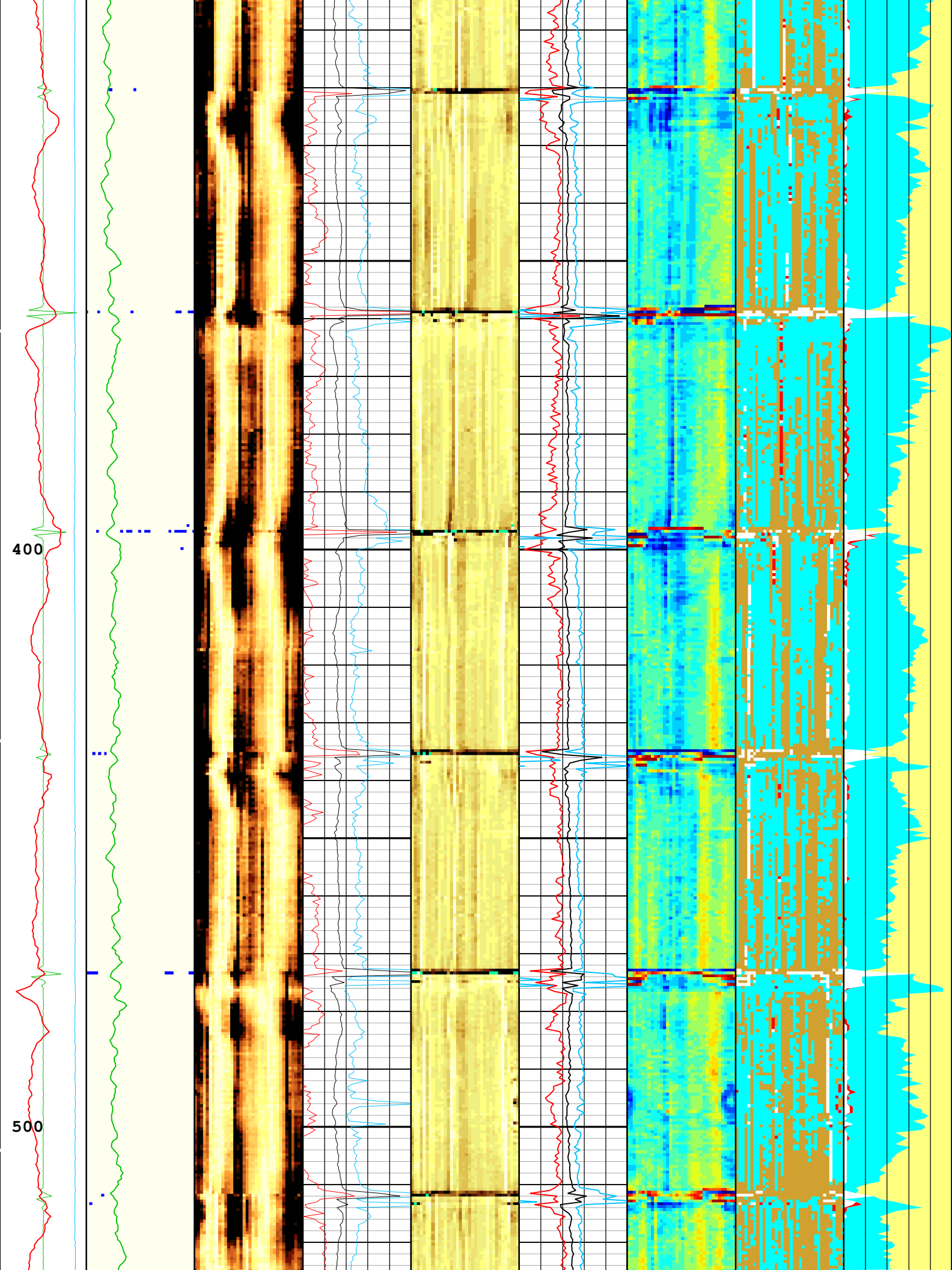
SLG Solid Index

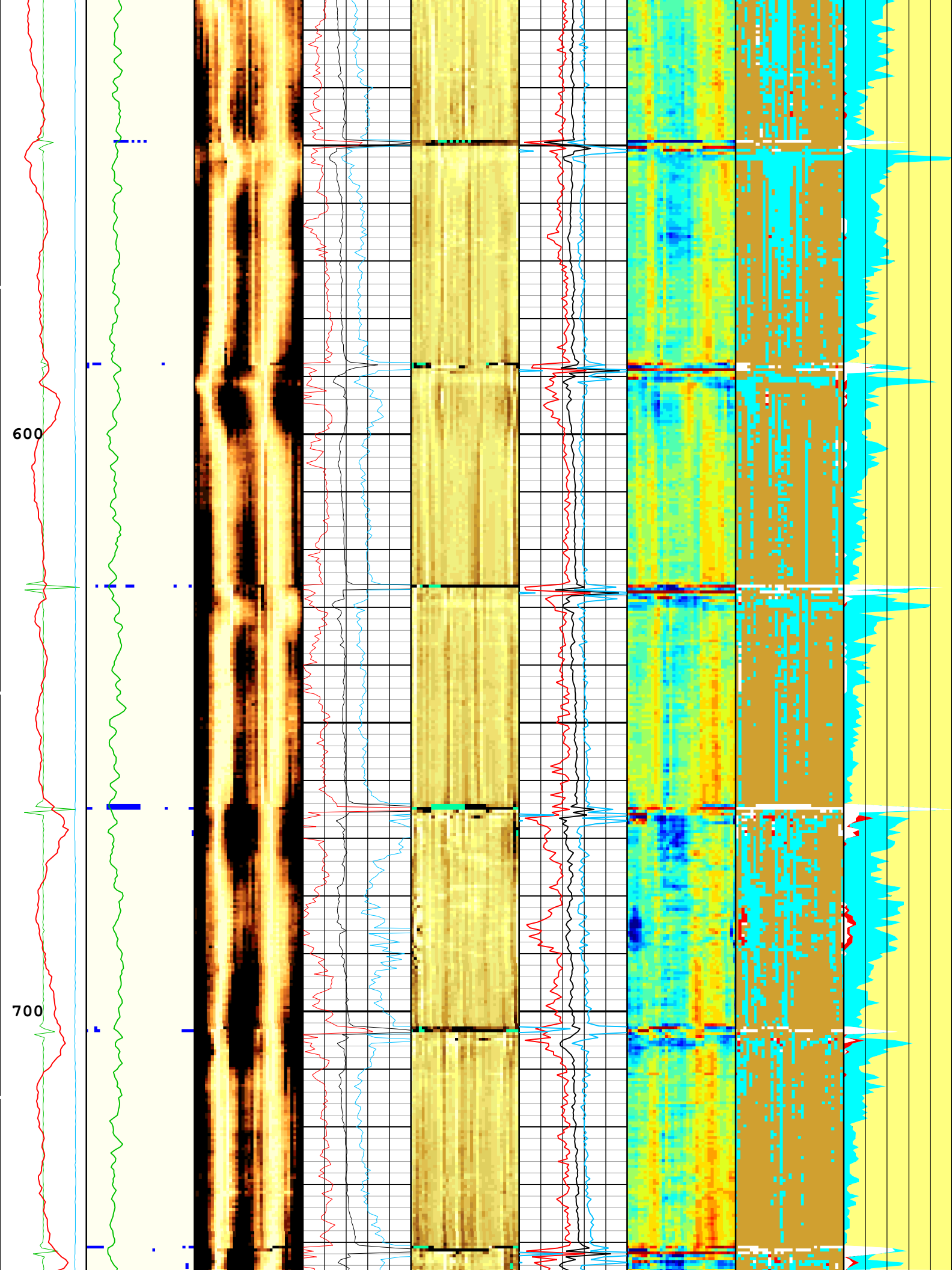
SLG Liquid Index

SLG Gas Index

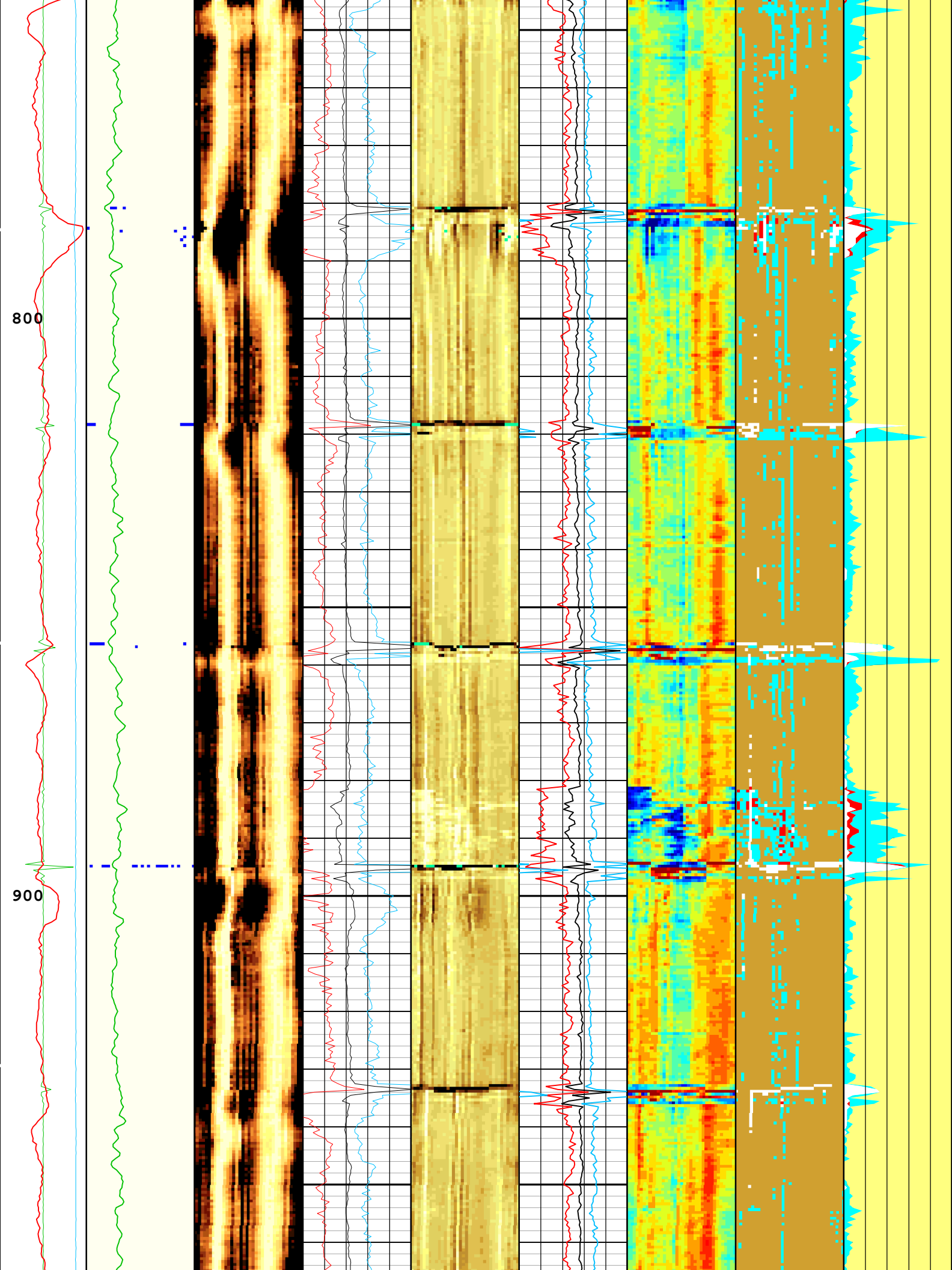
SLG White

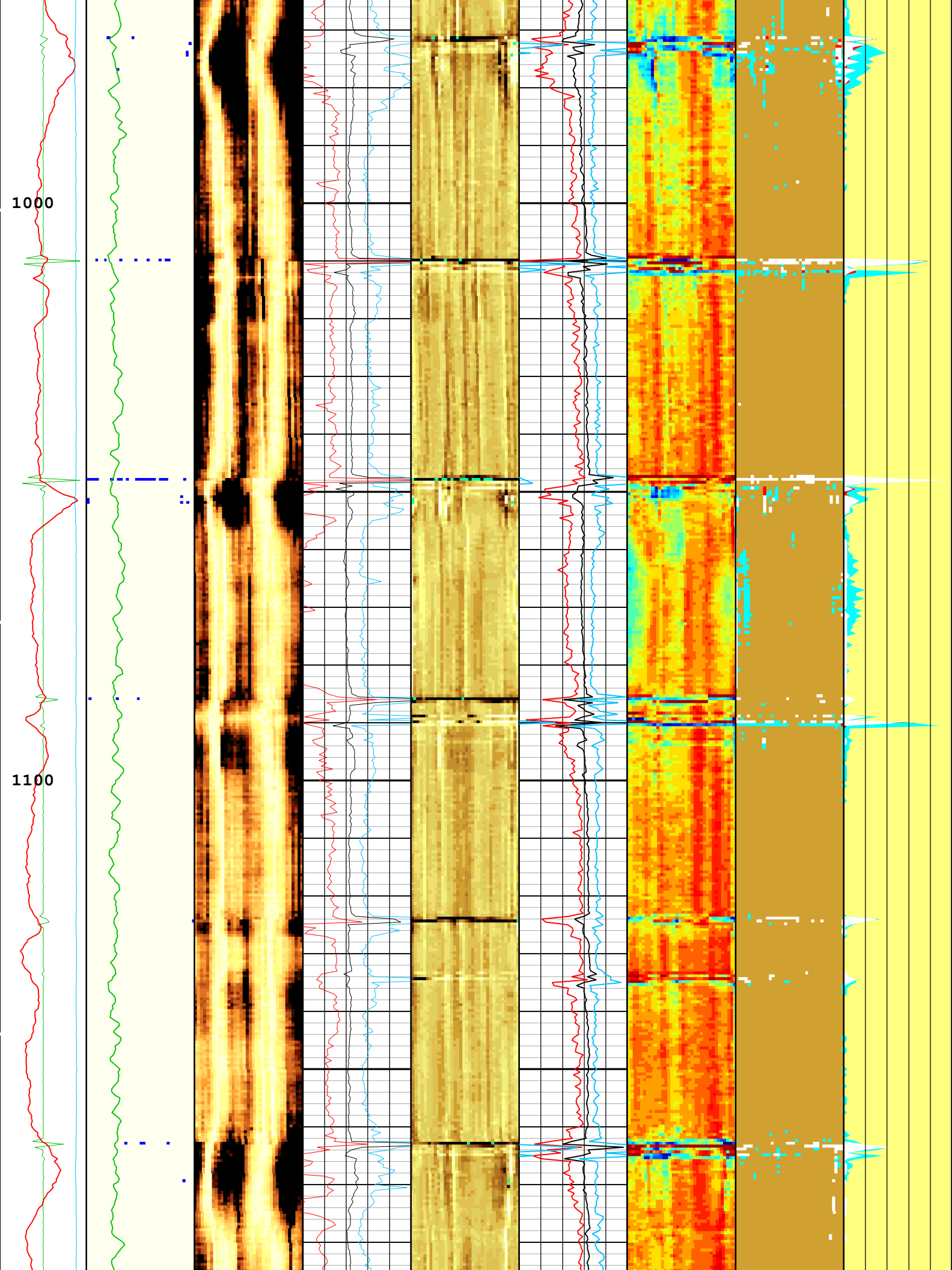


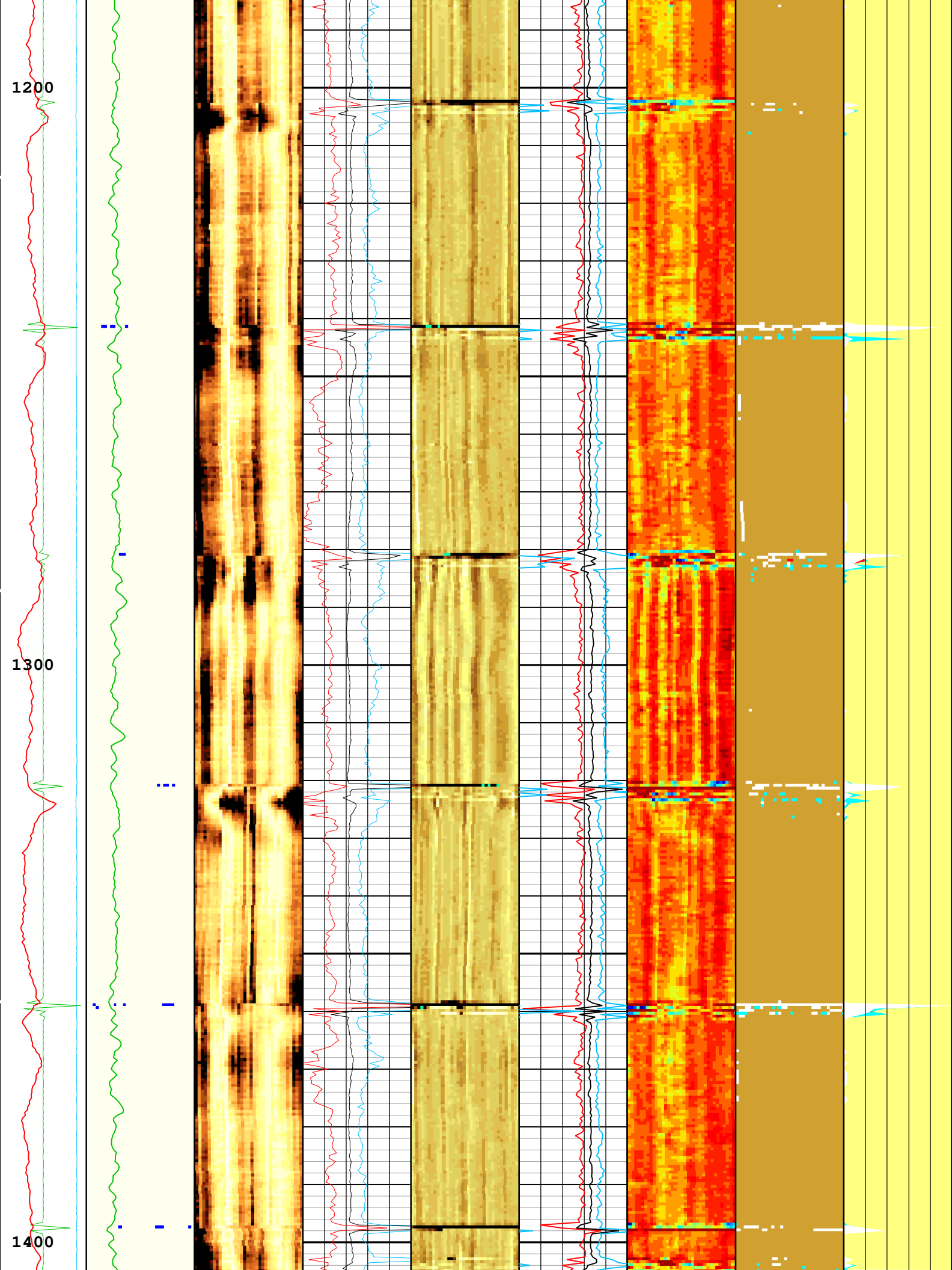


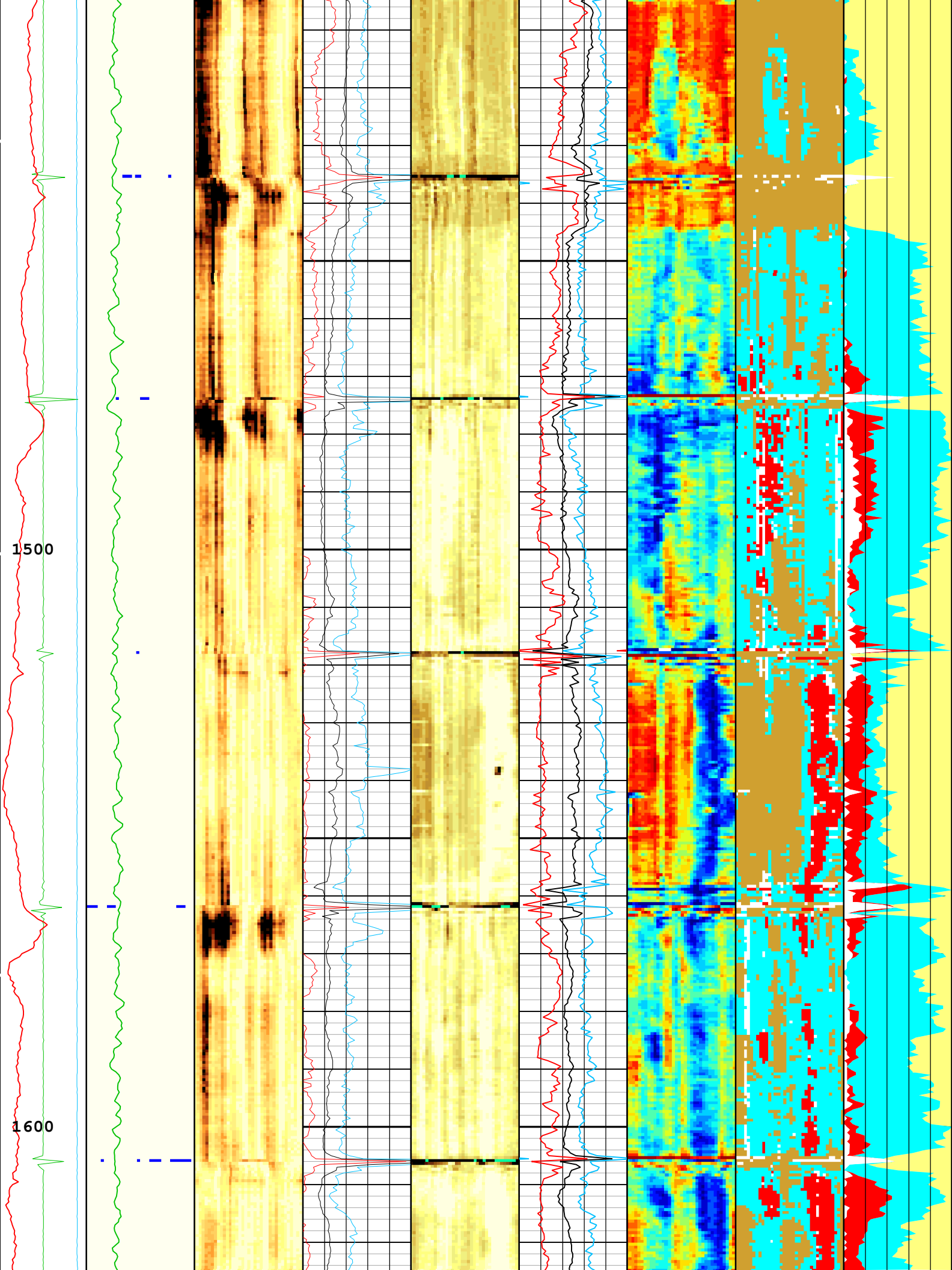


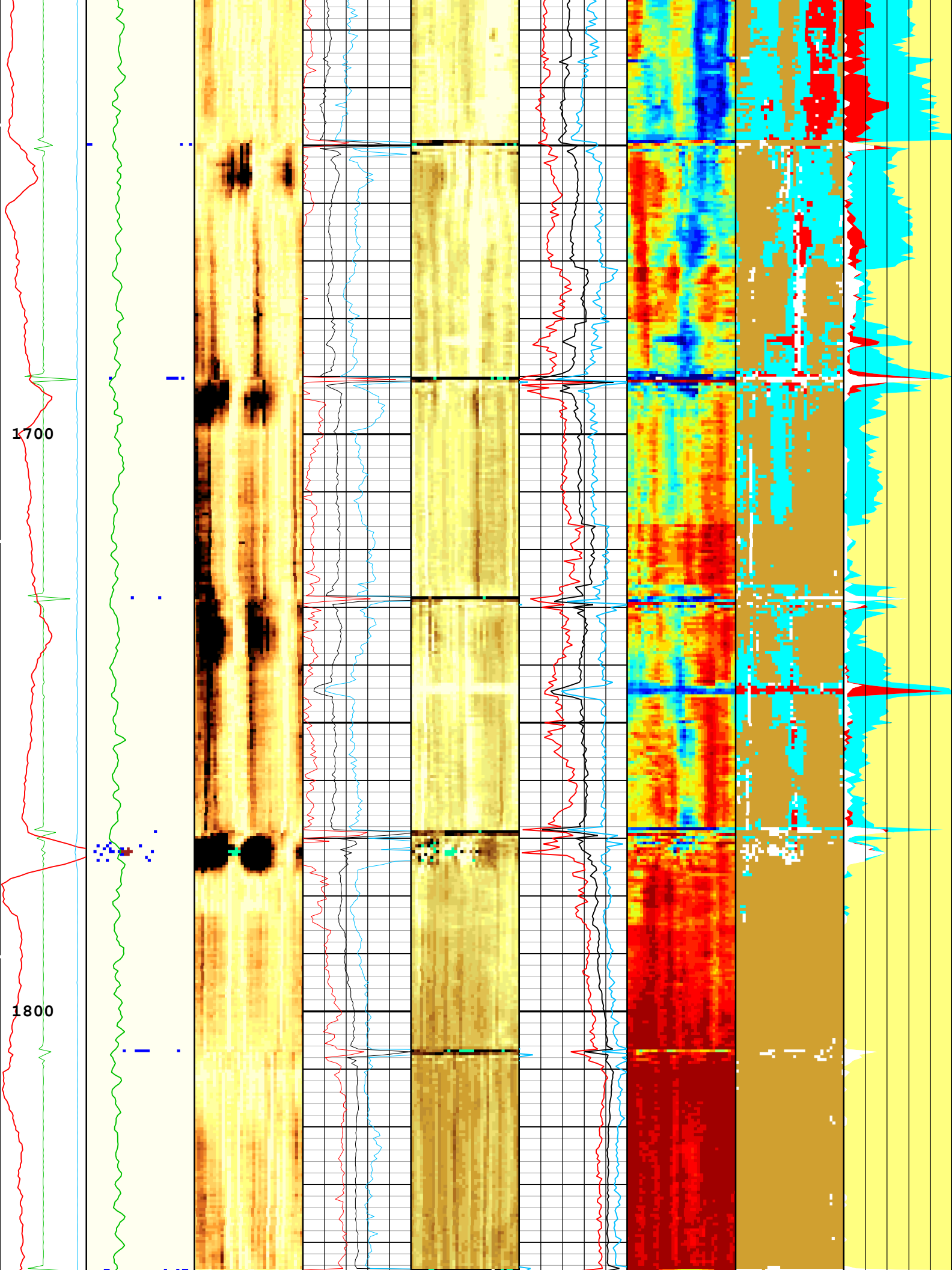


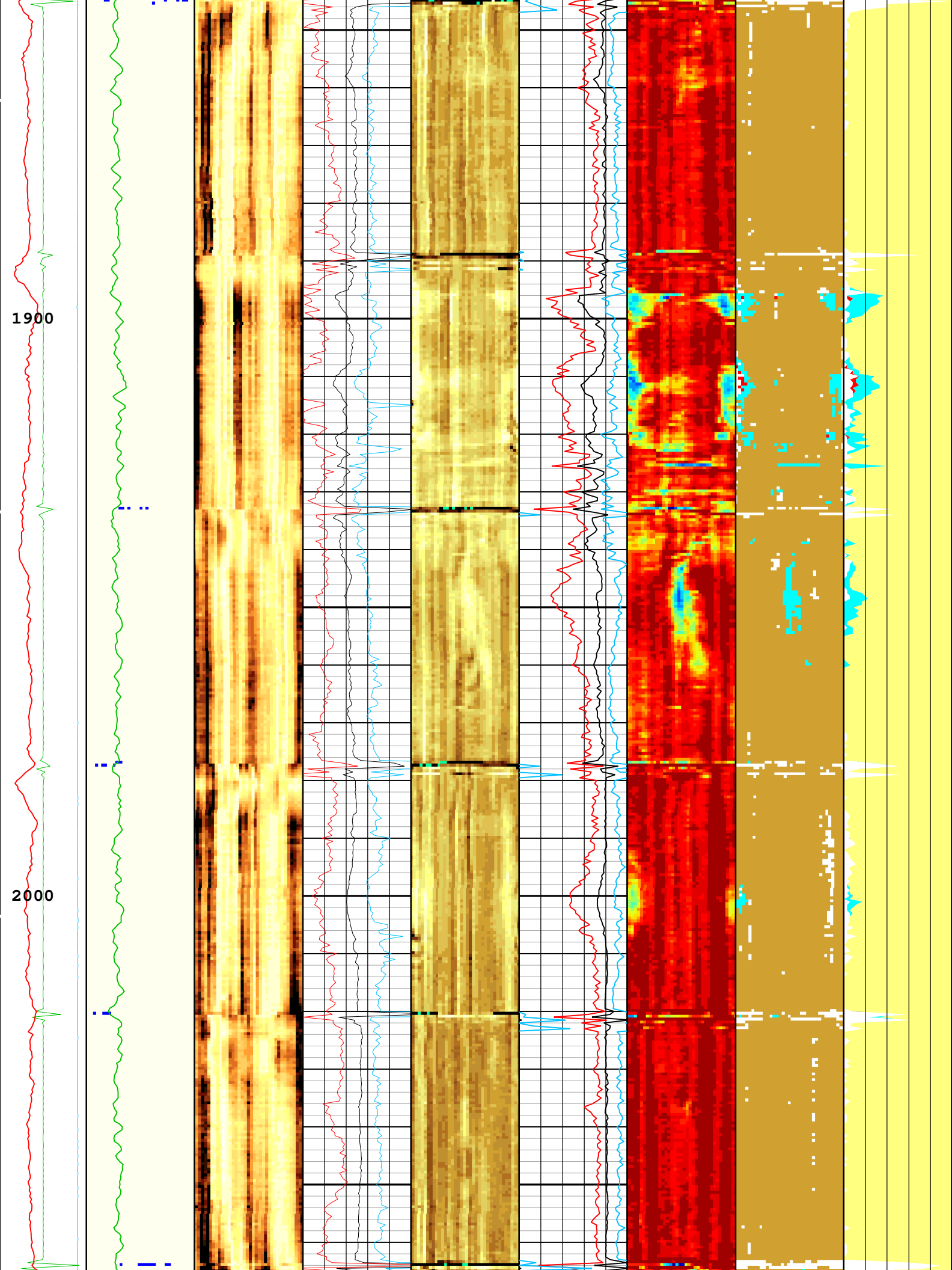




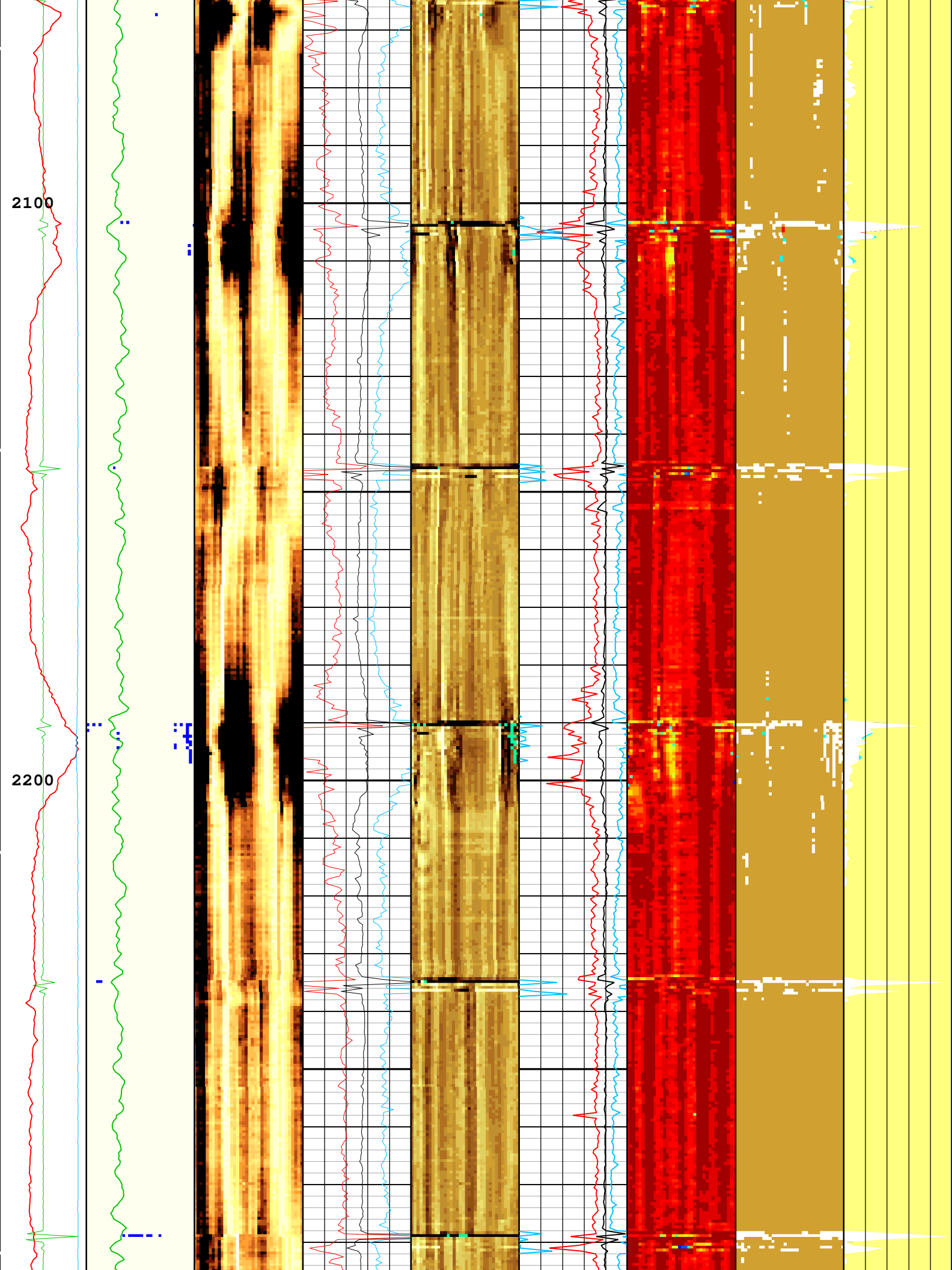


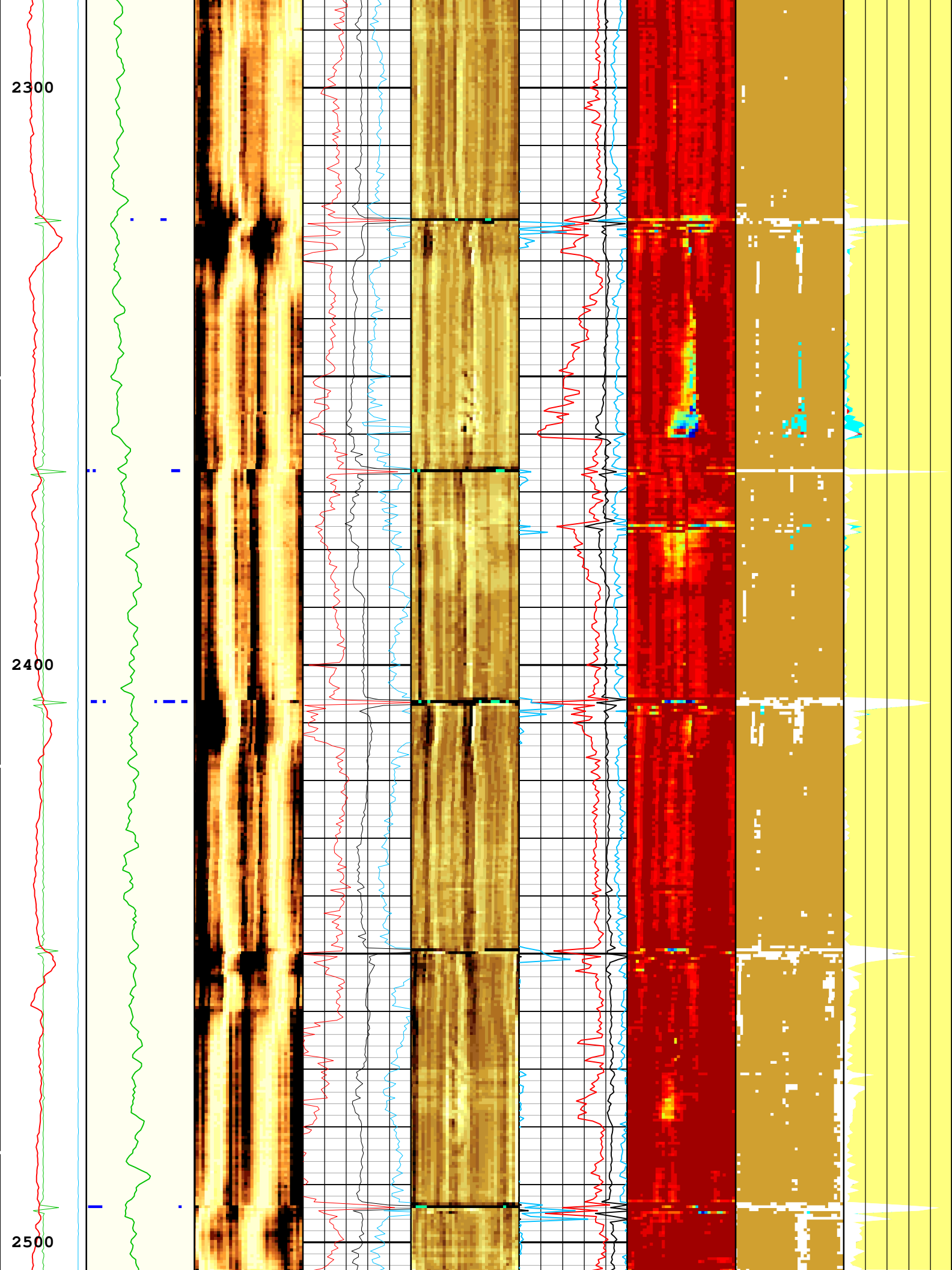




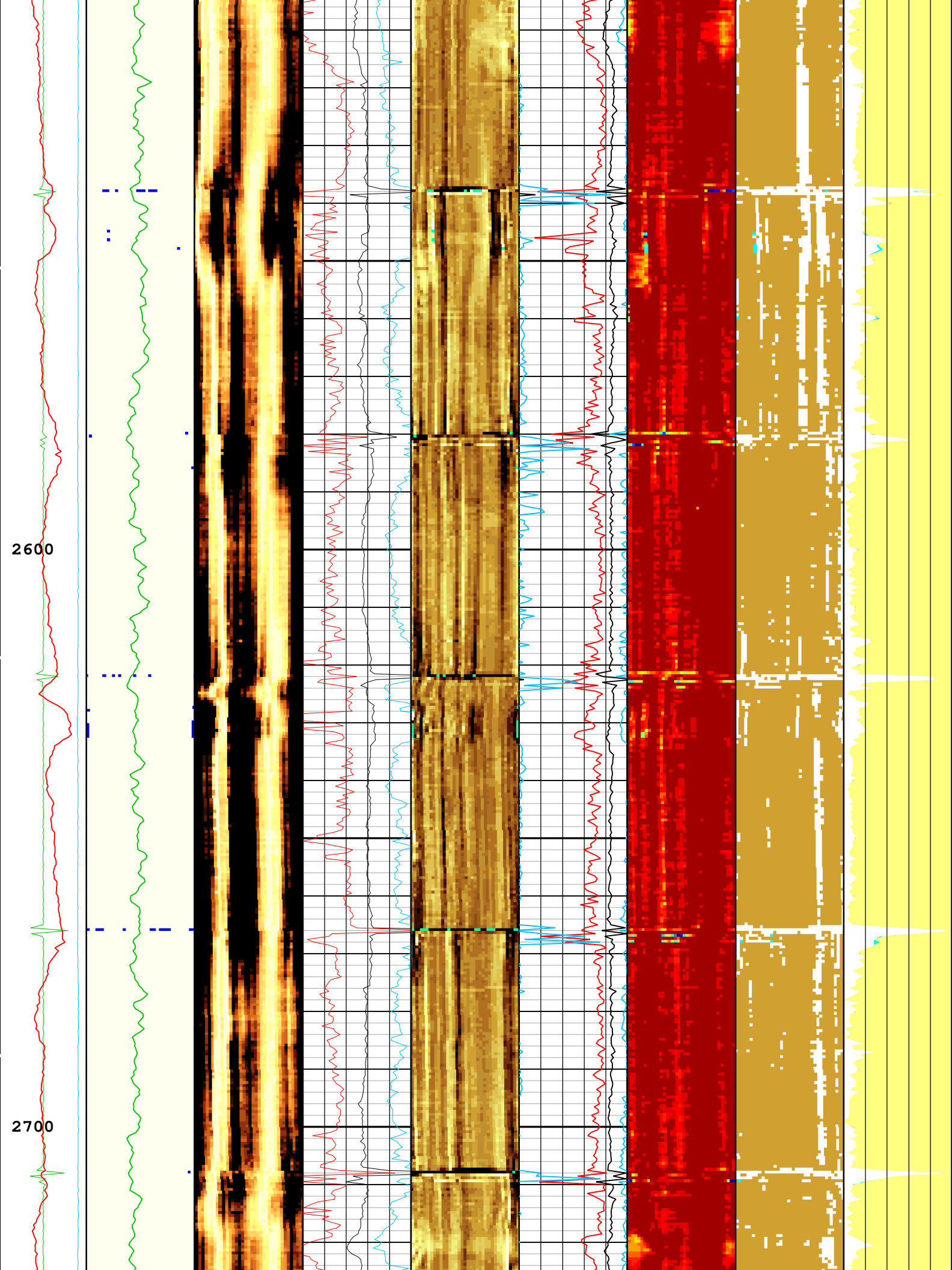


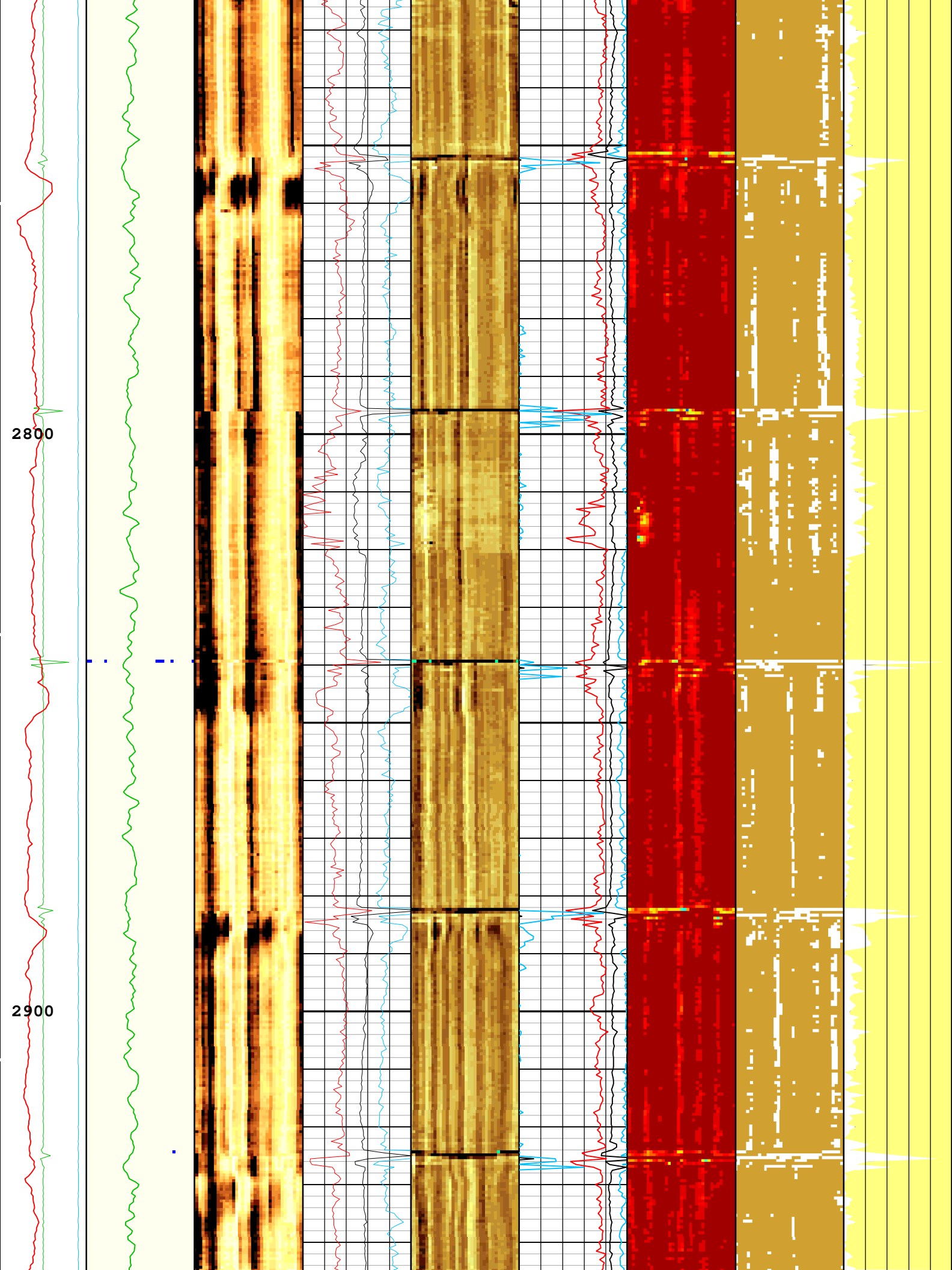


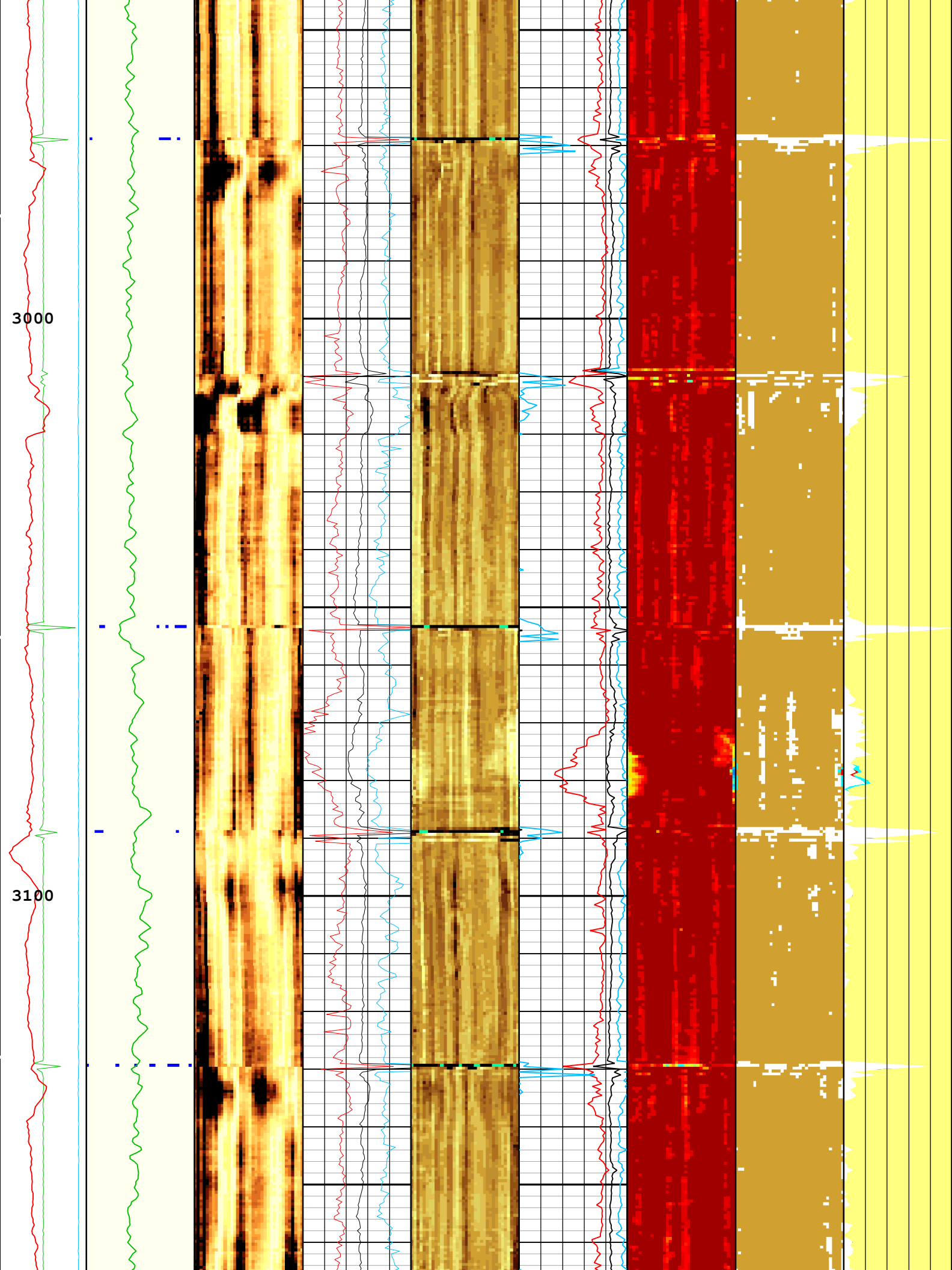


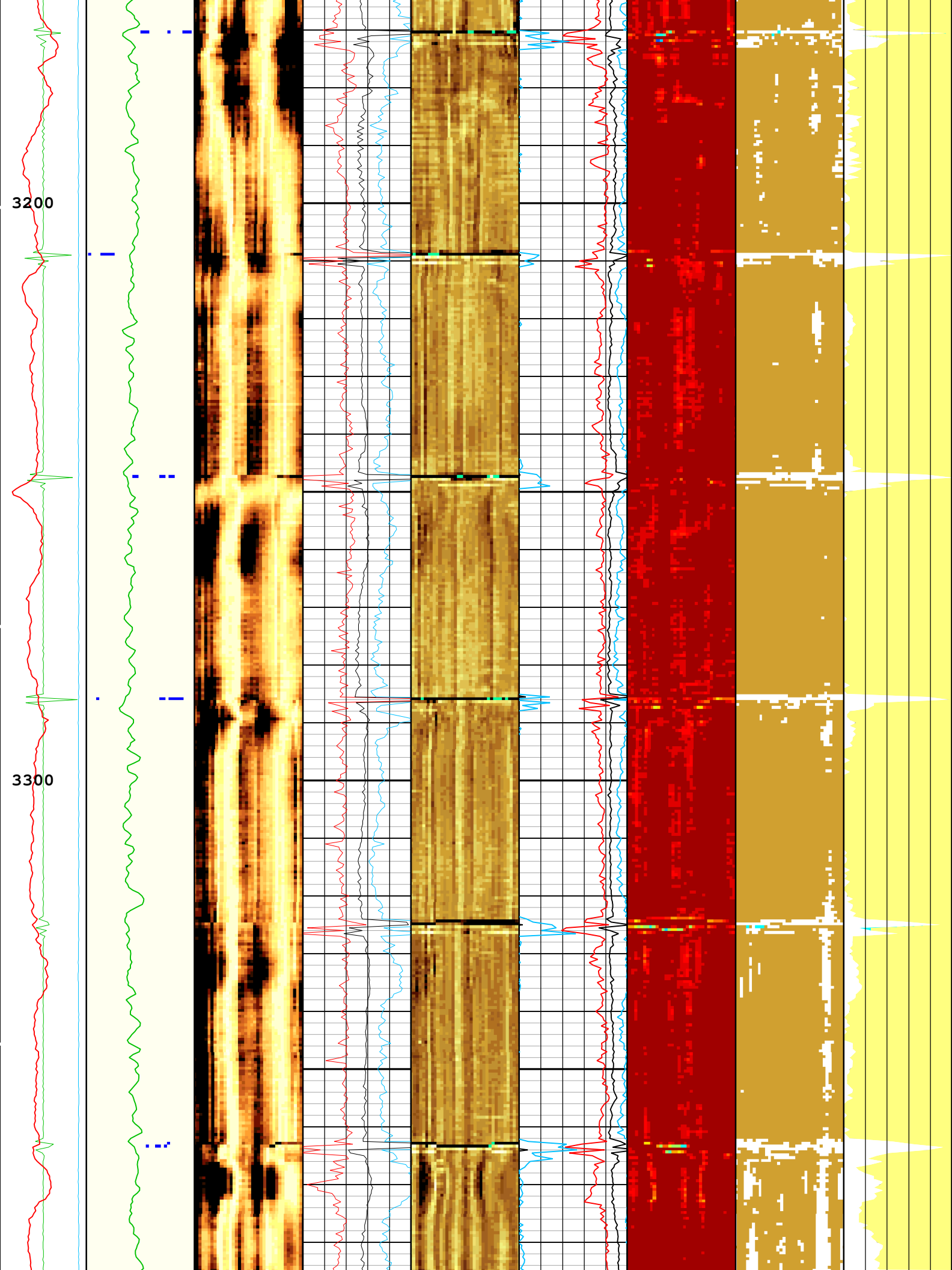


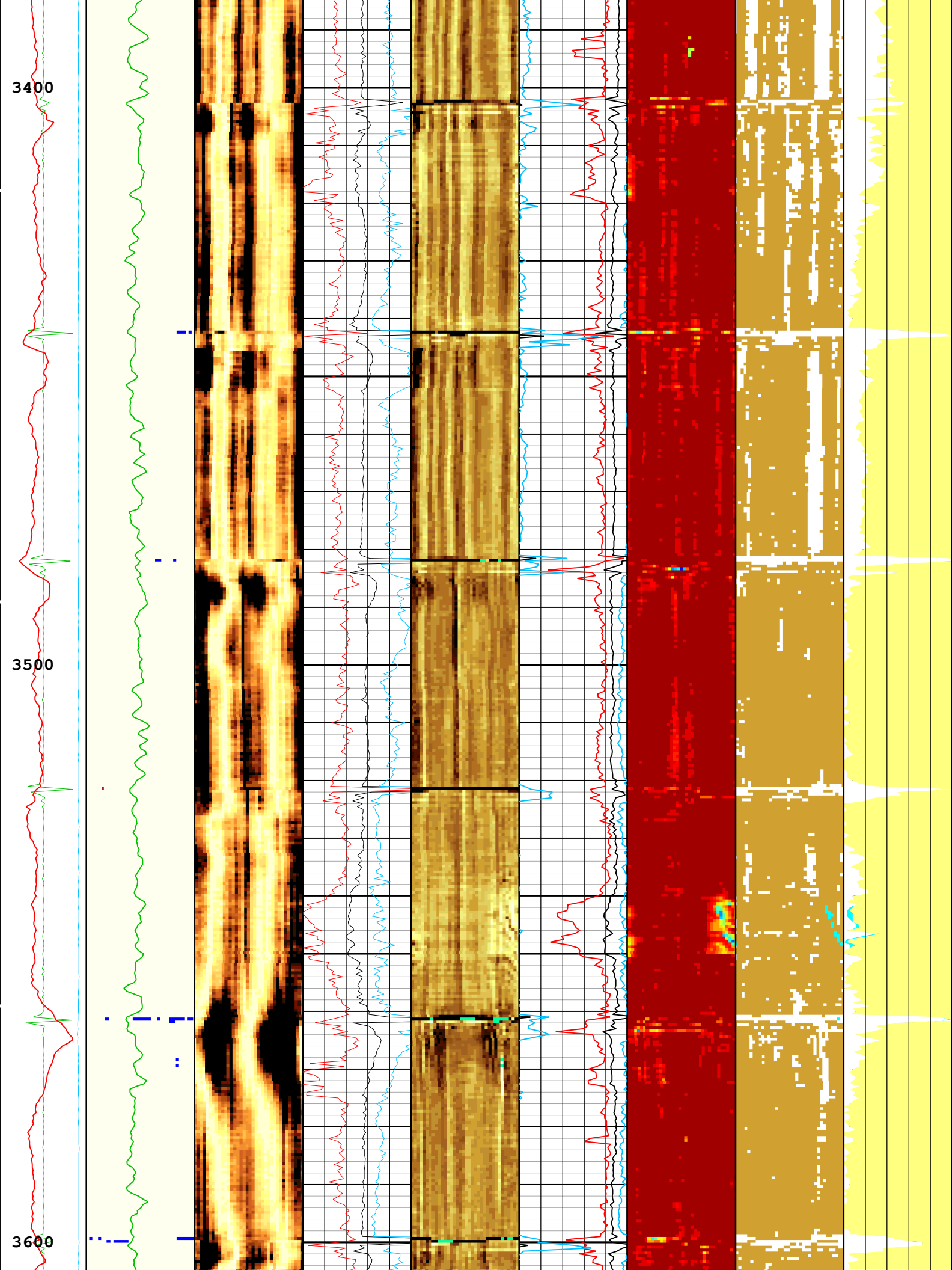


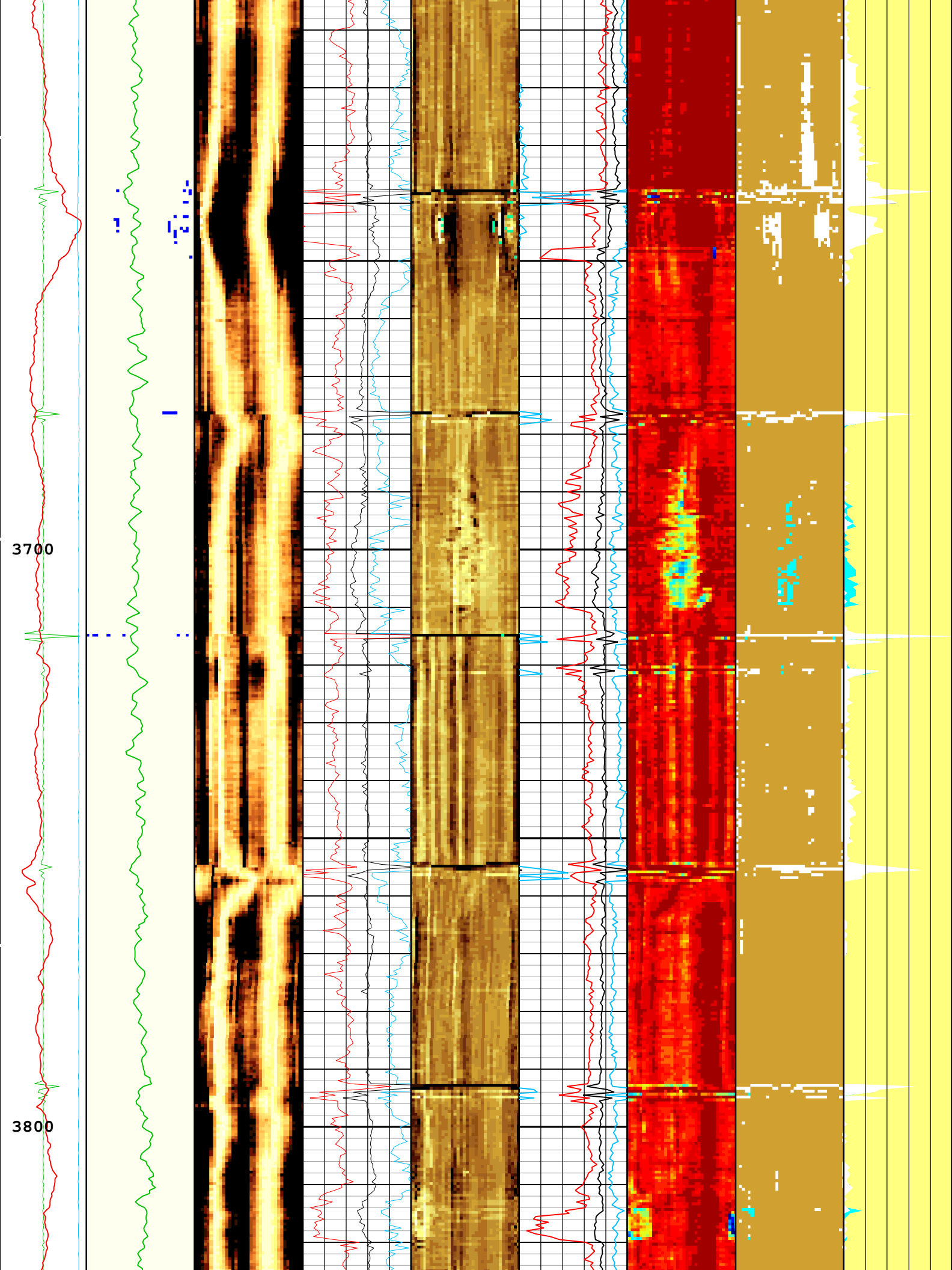




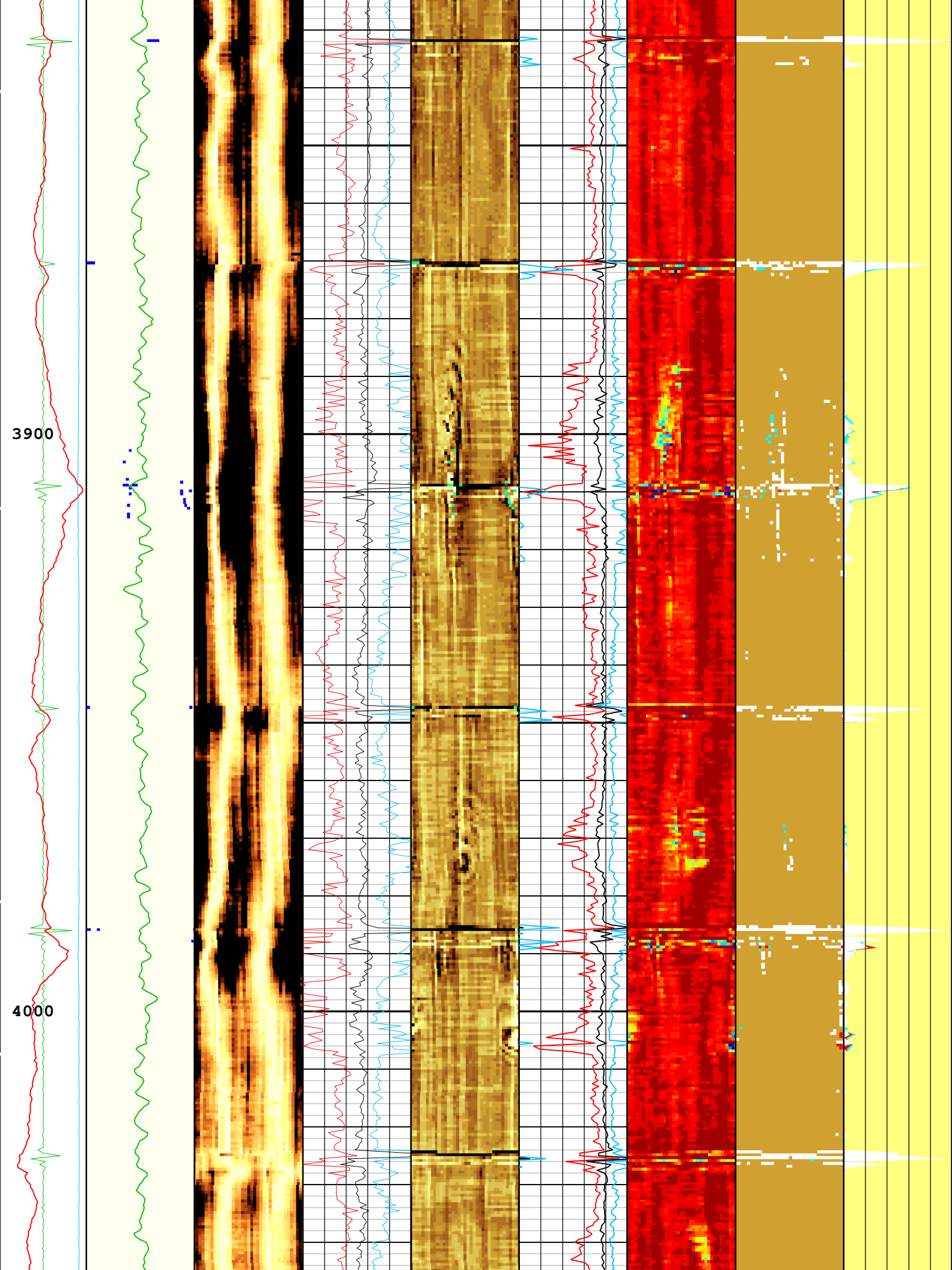


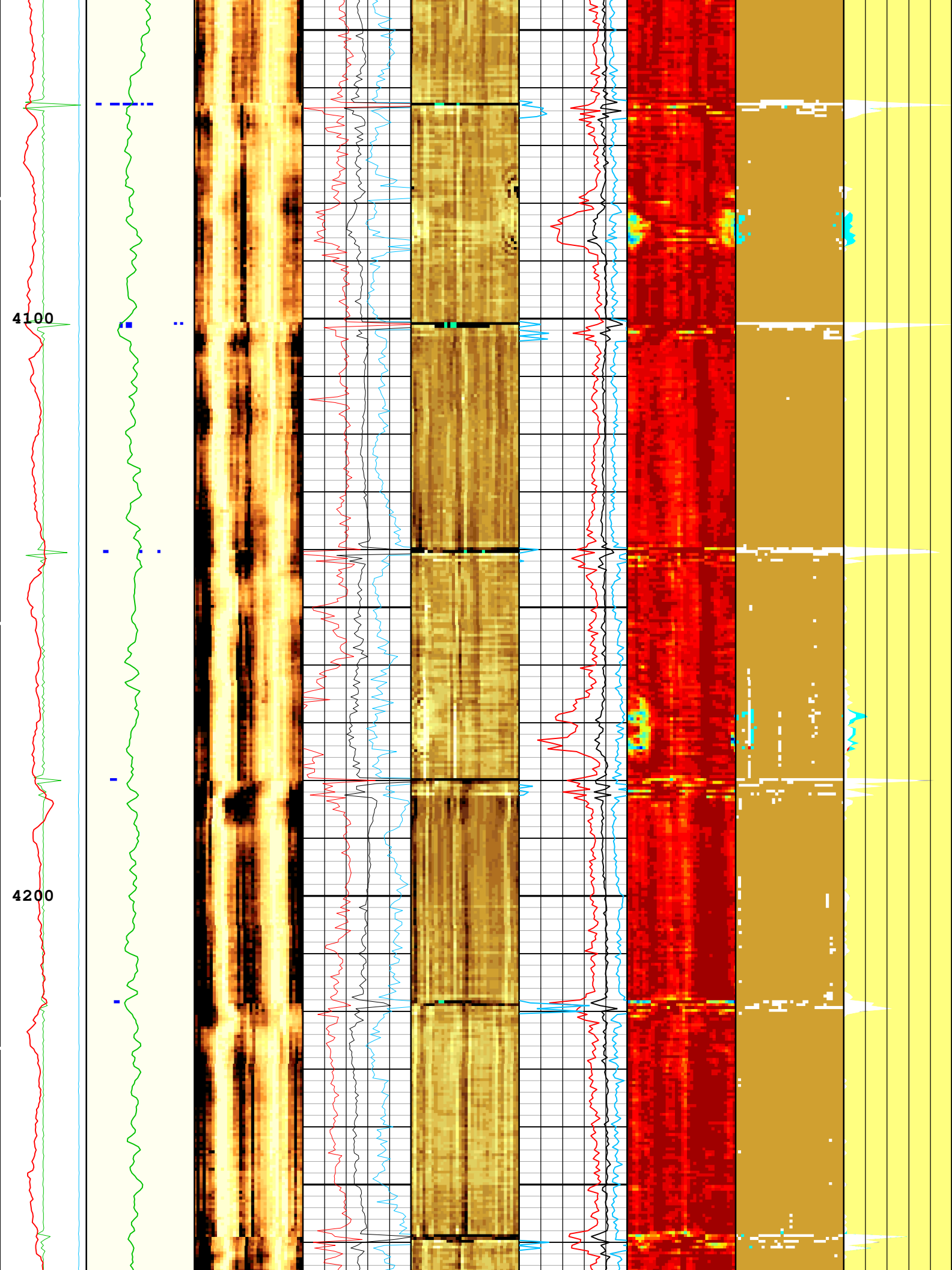




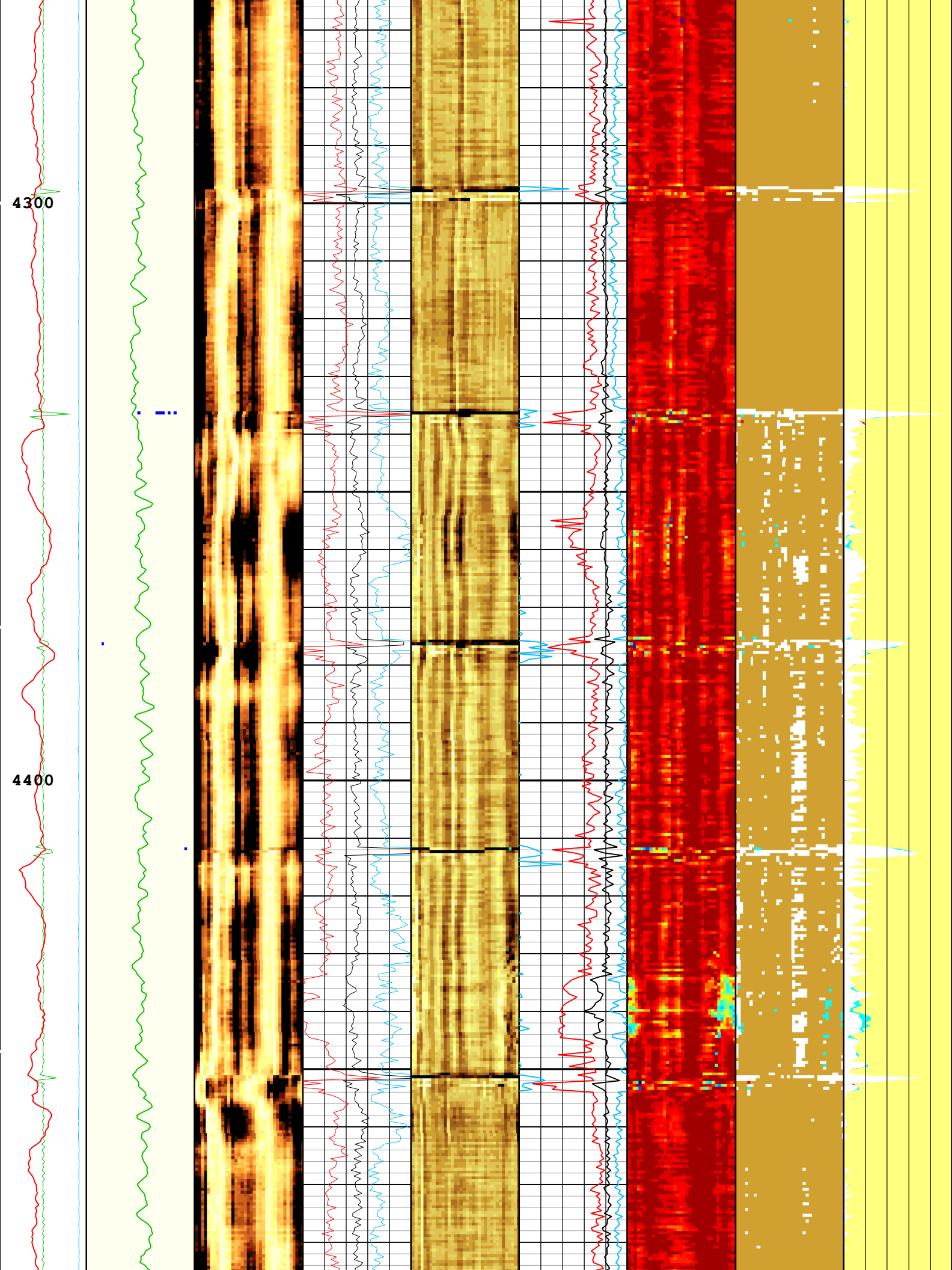


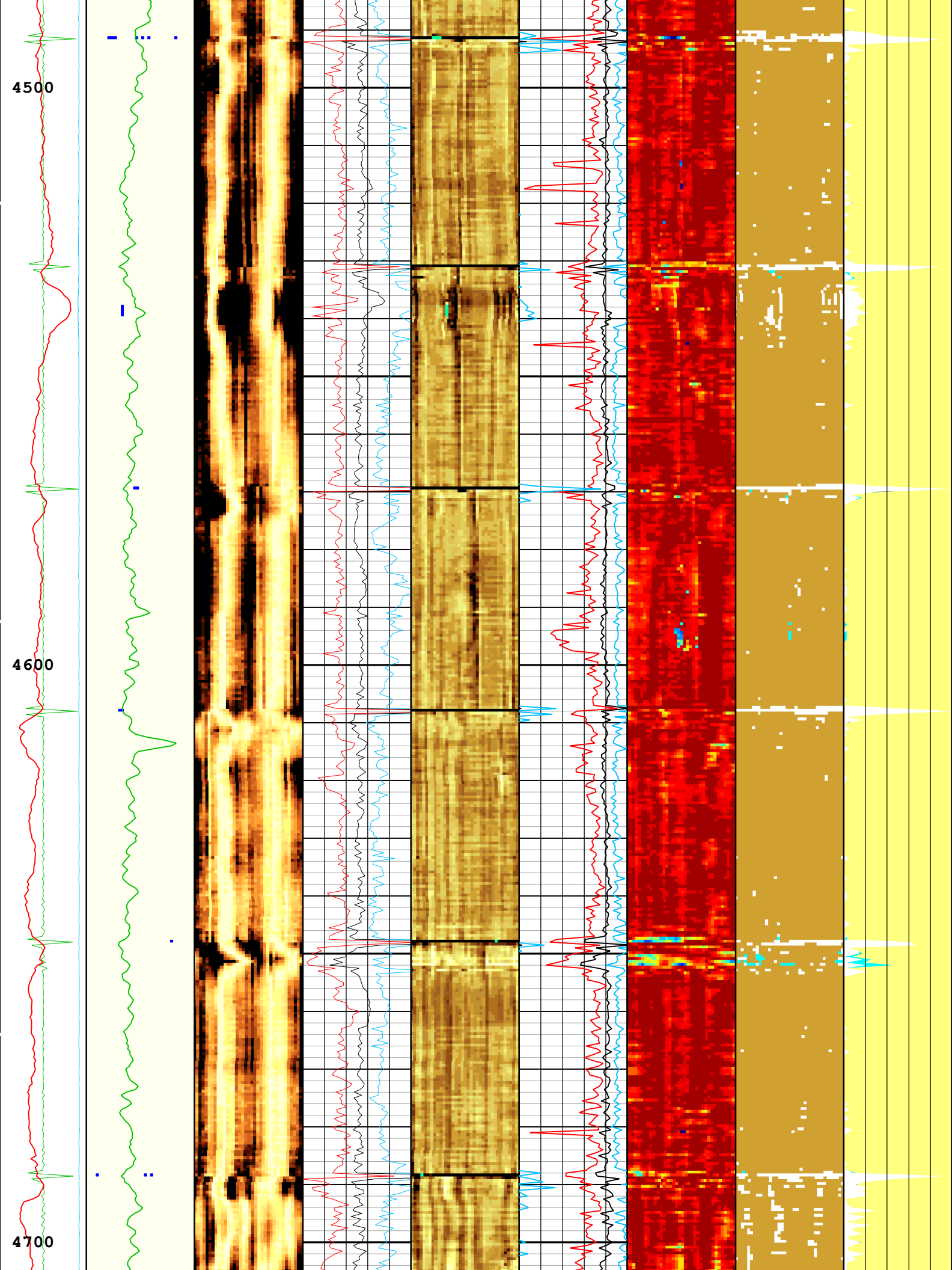


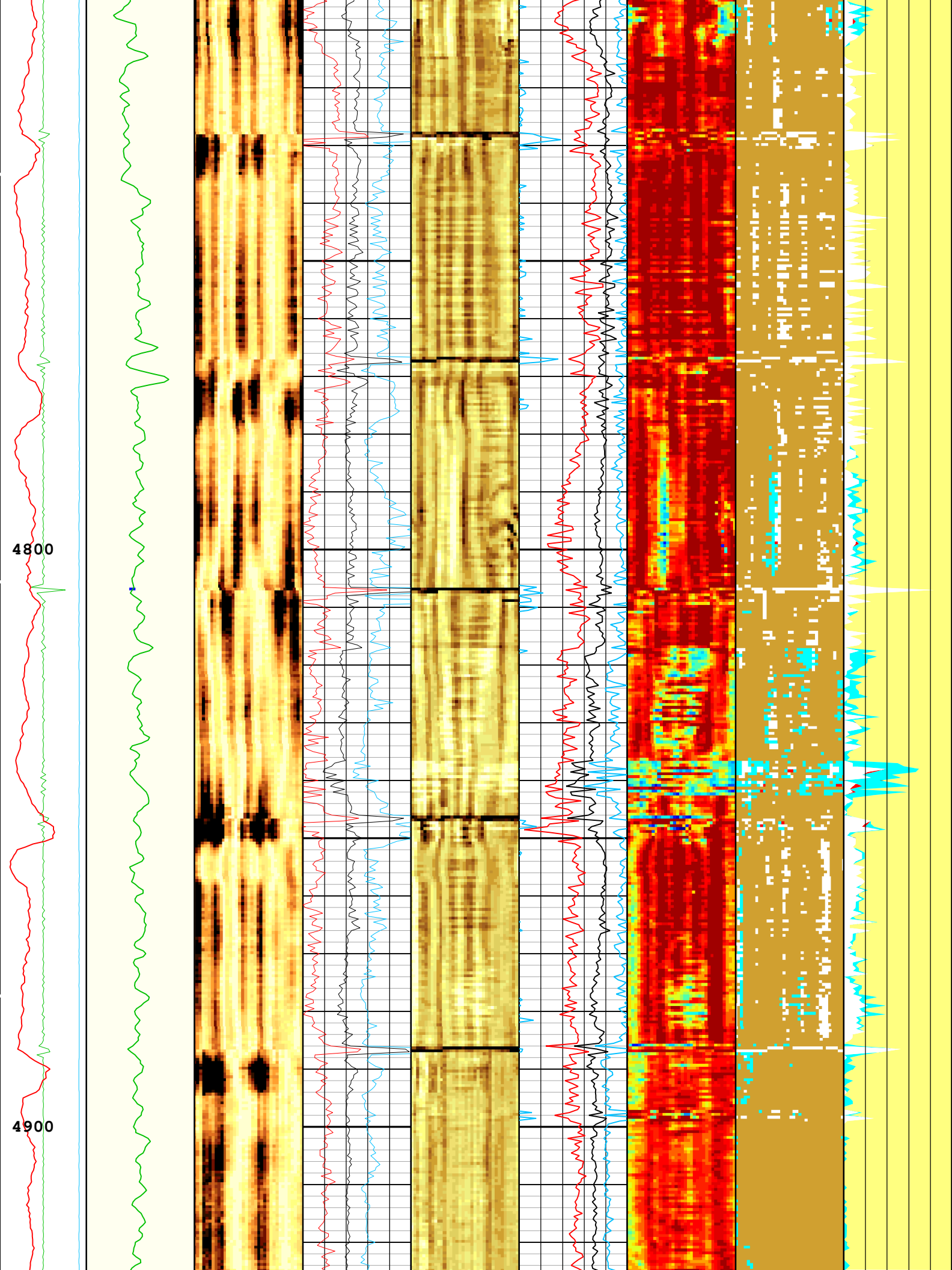


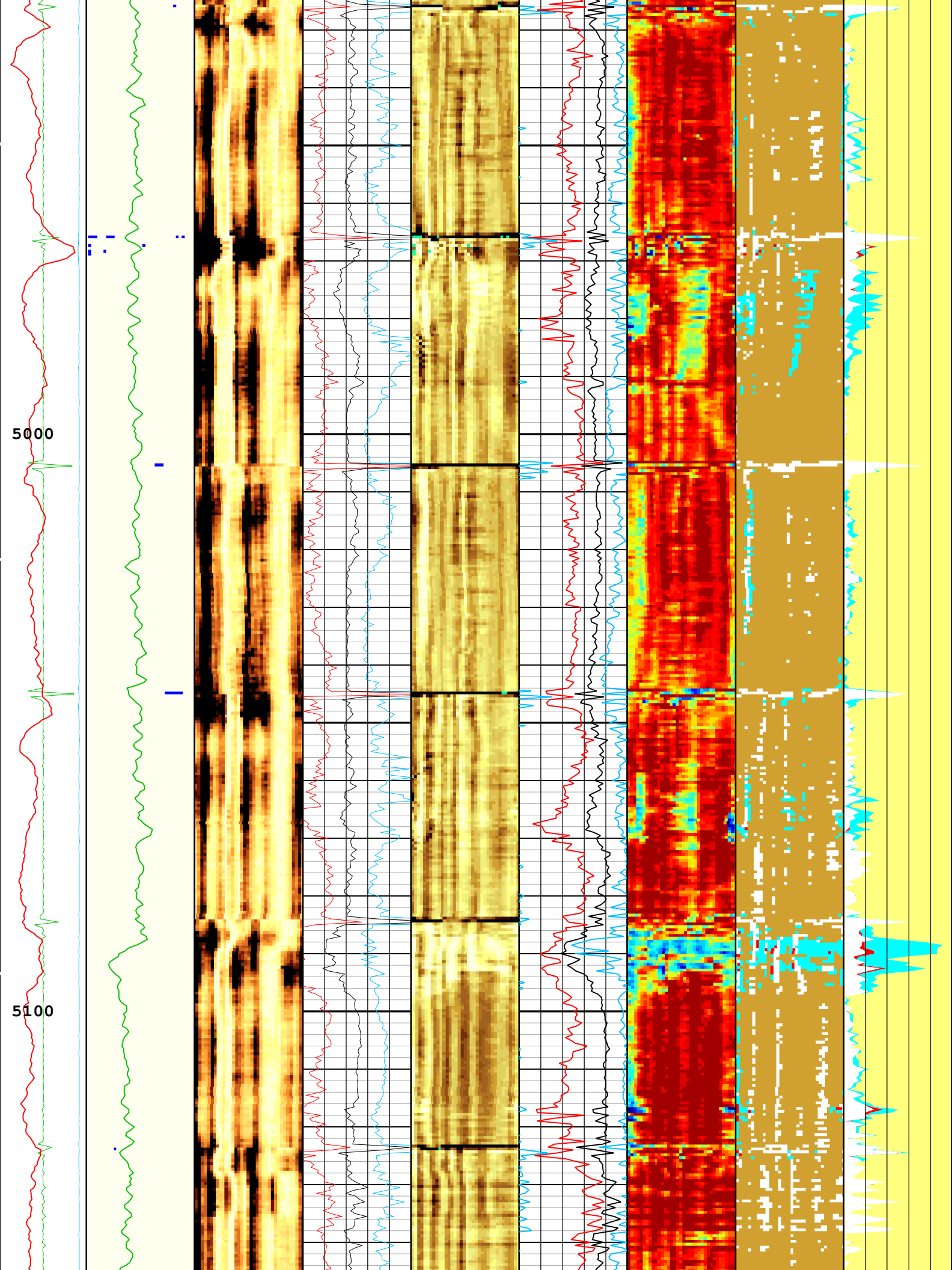


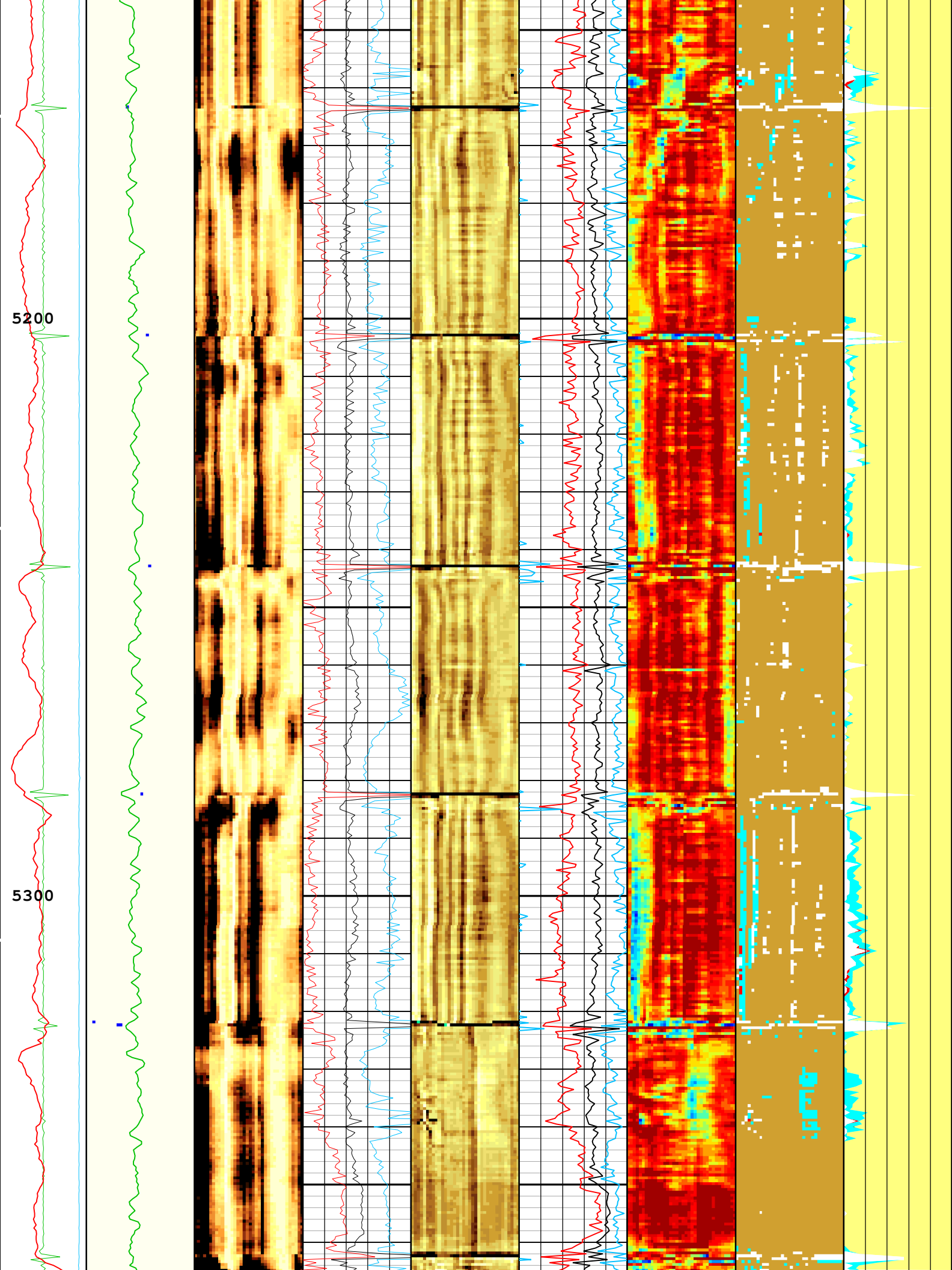




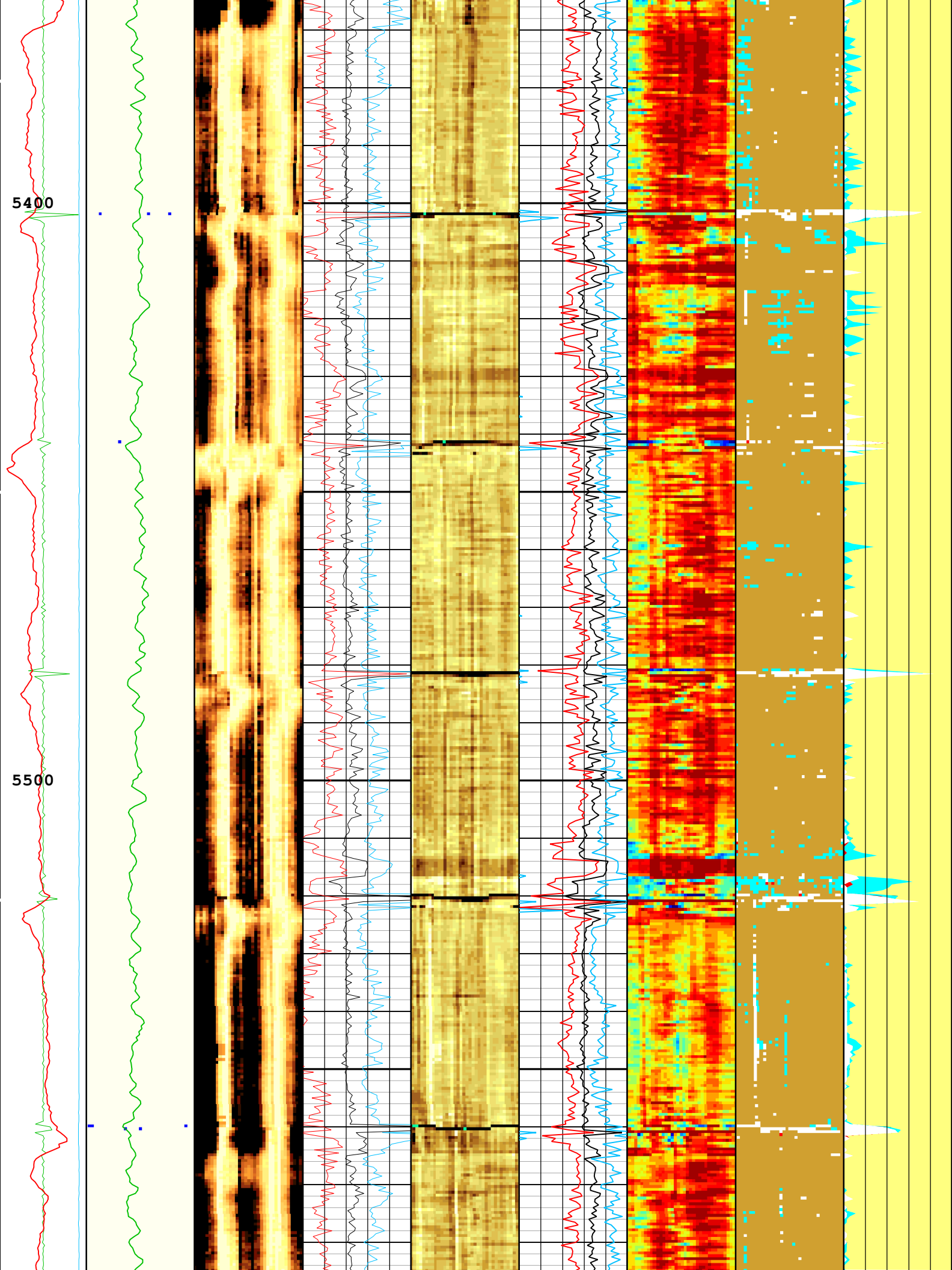


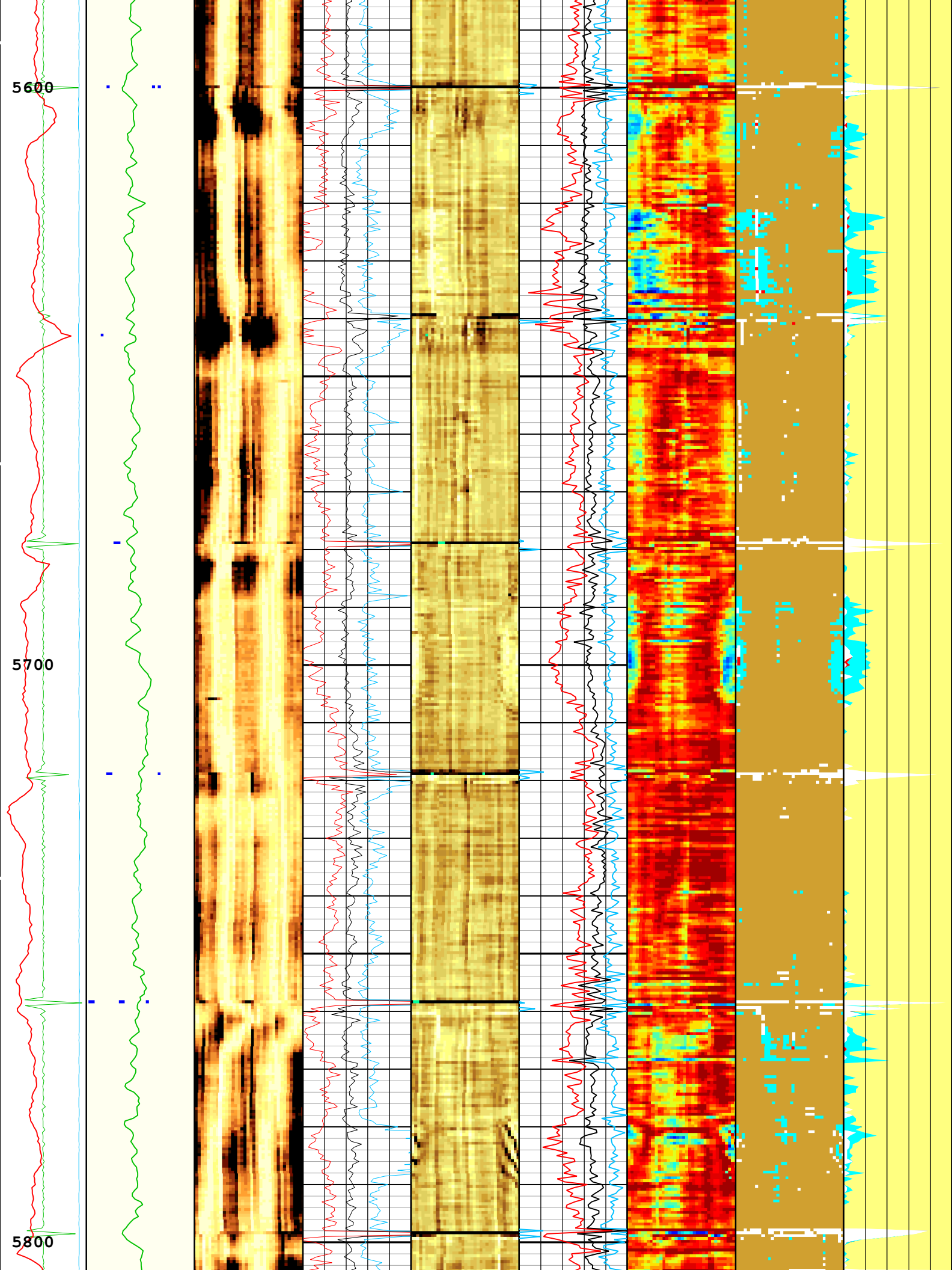


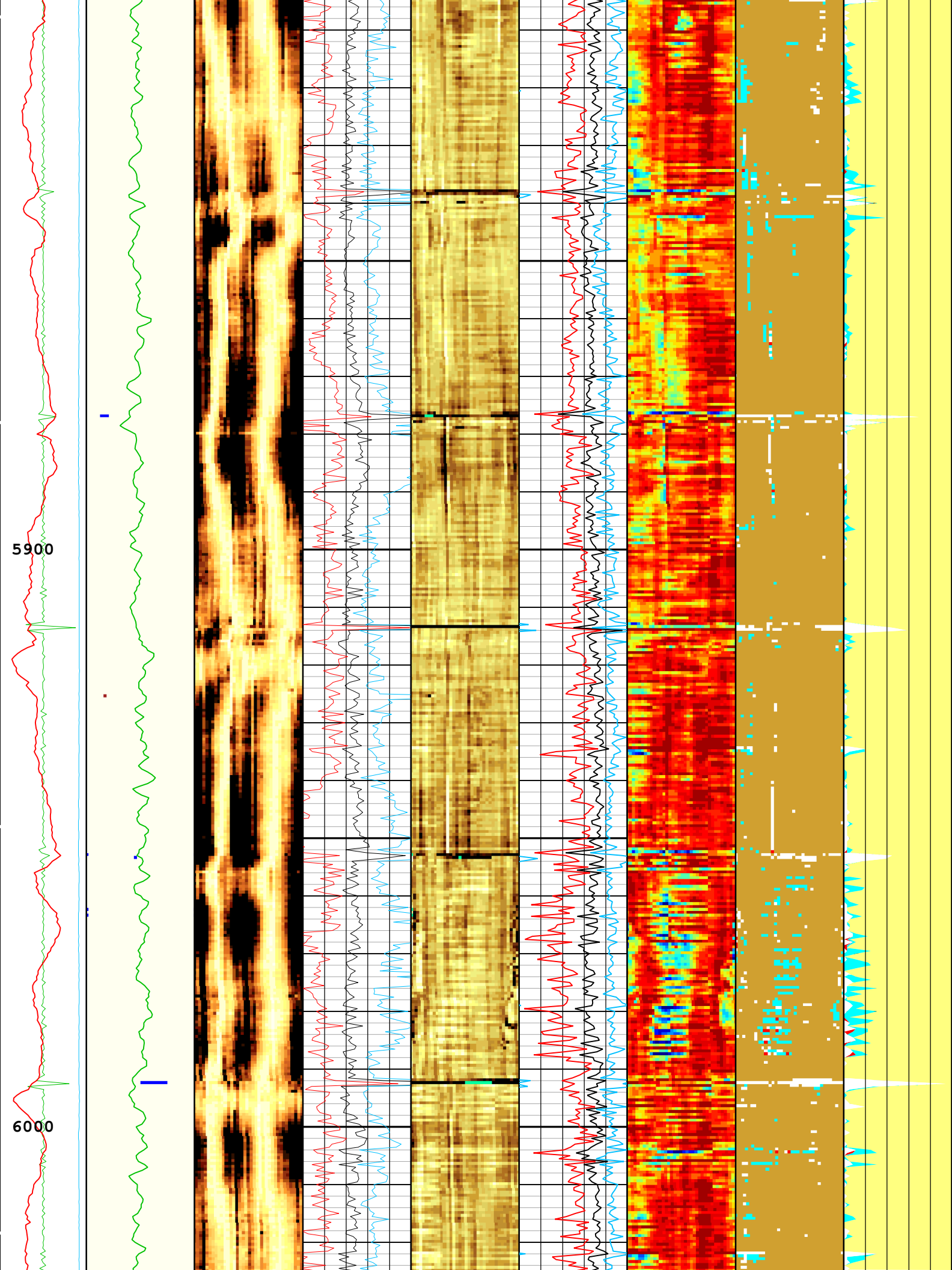




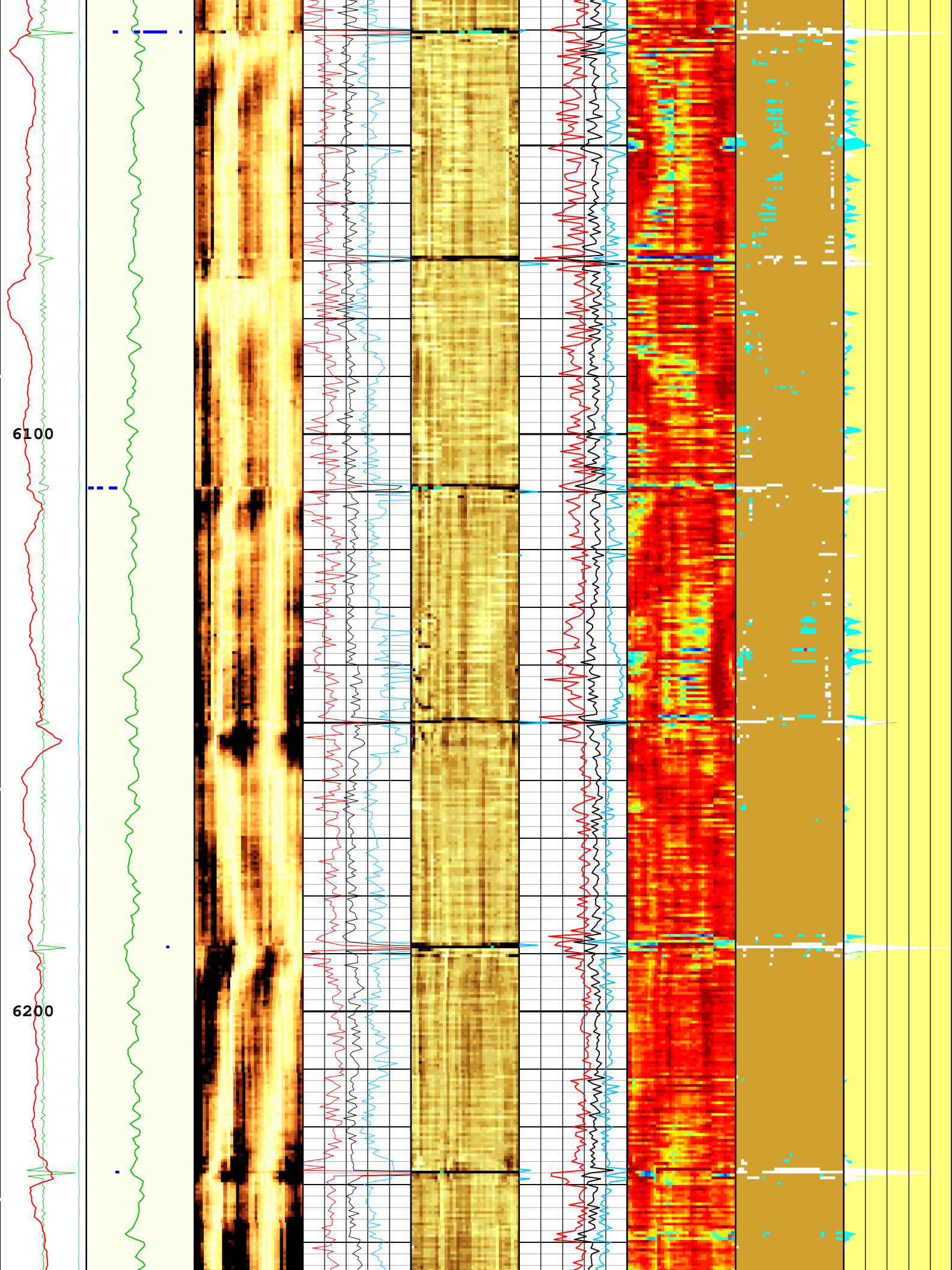


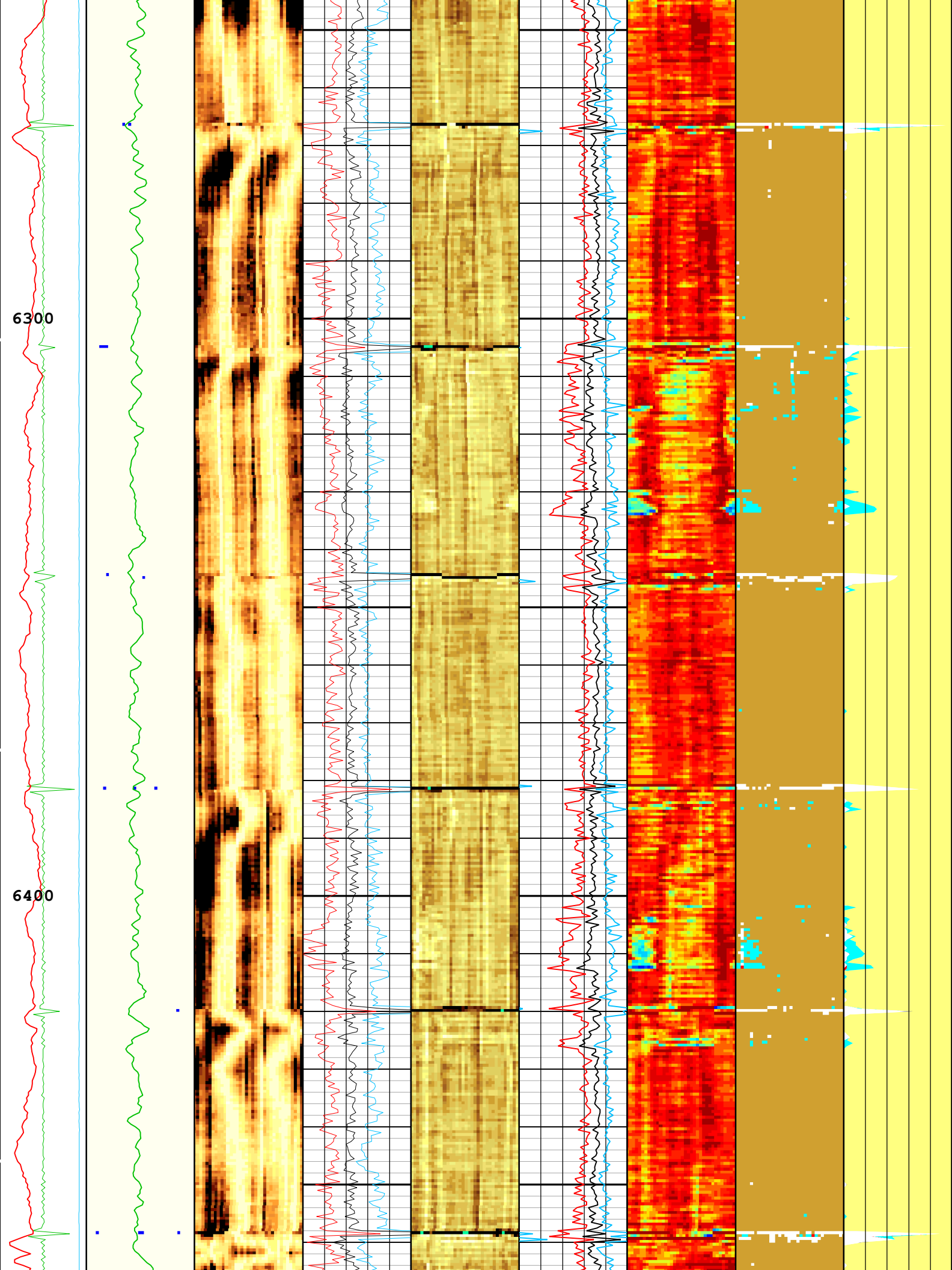


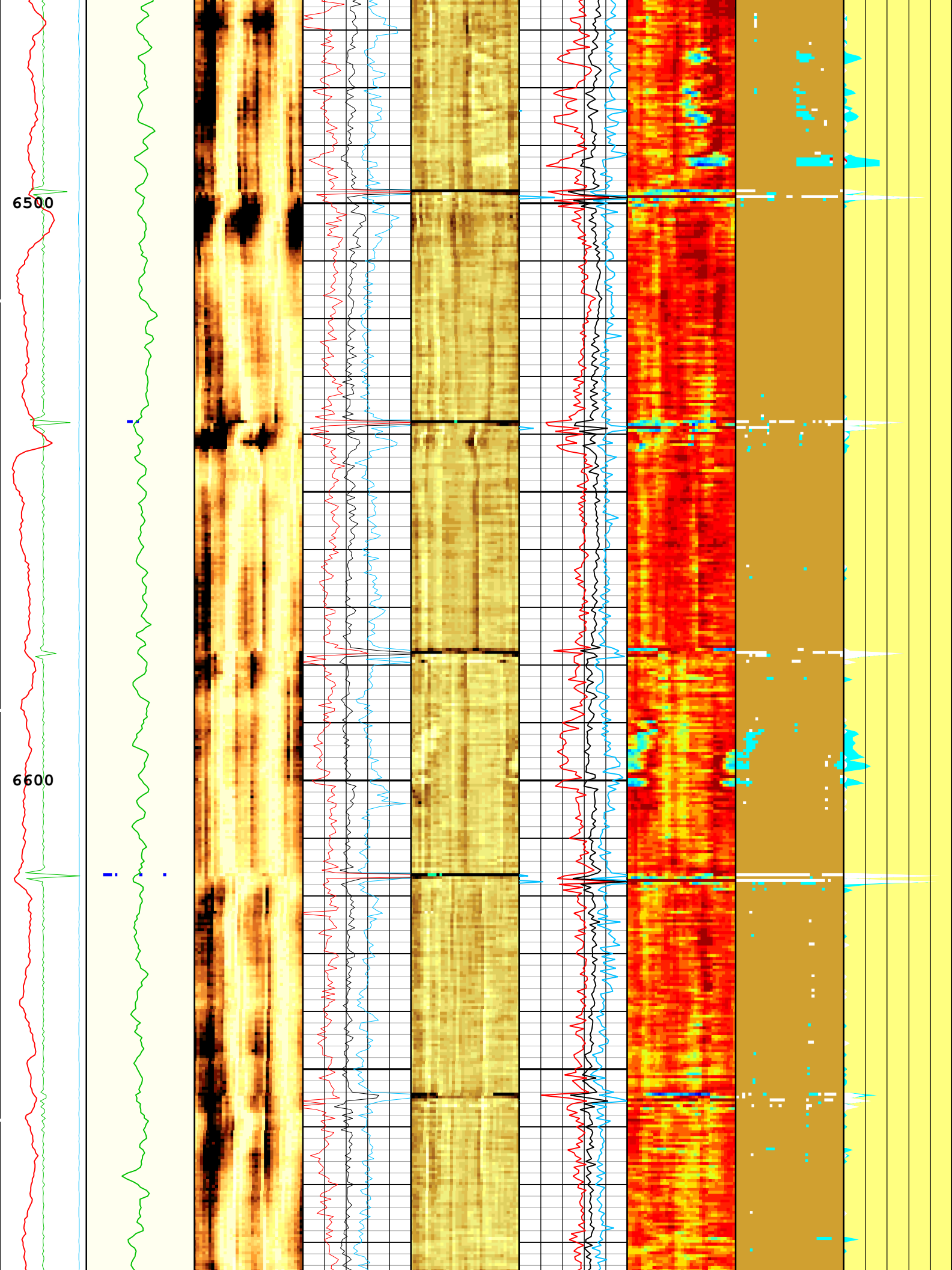


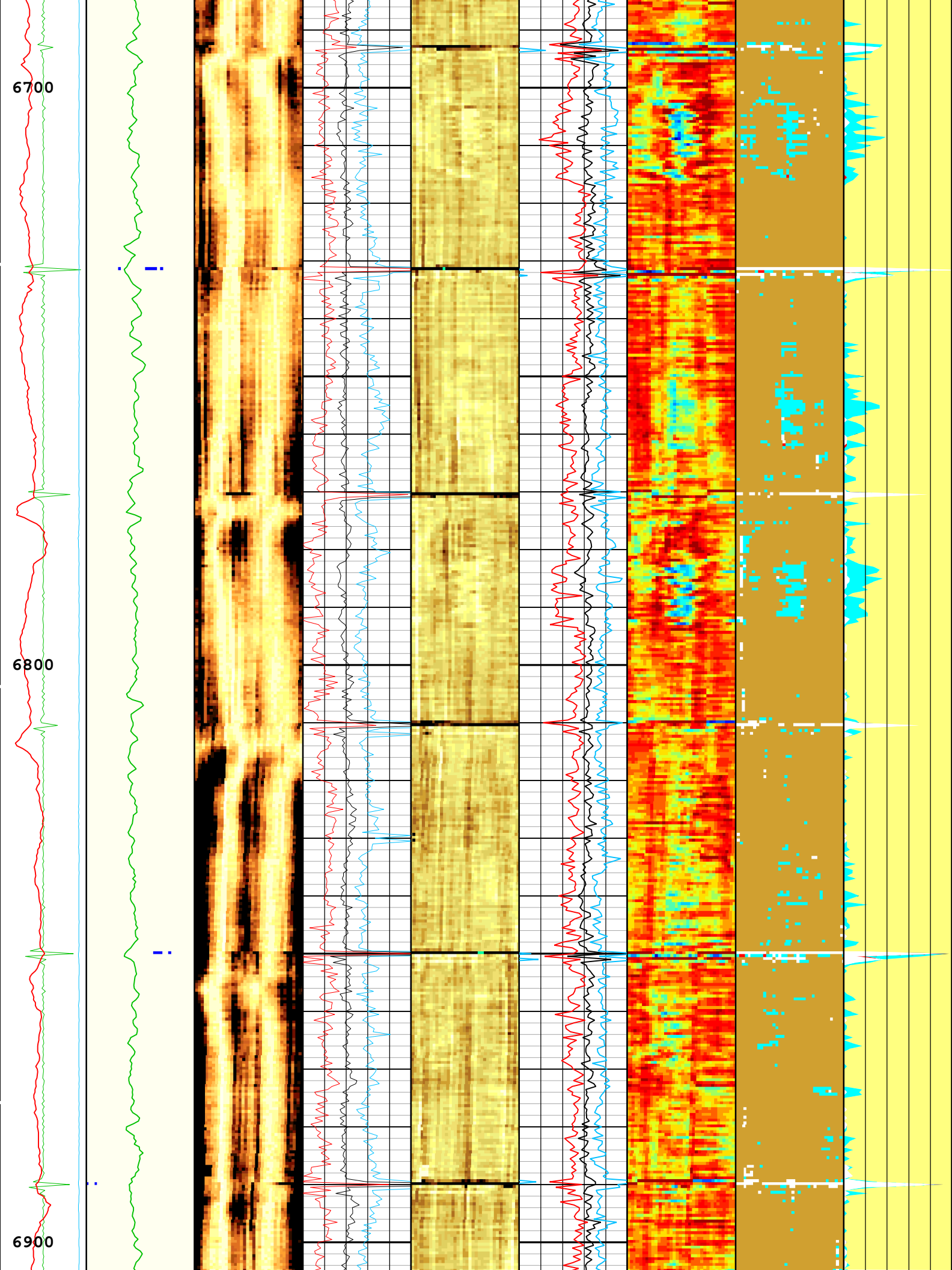


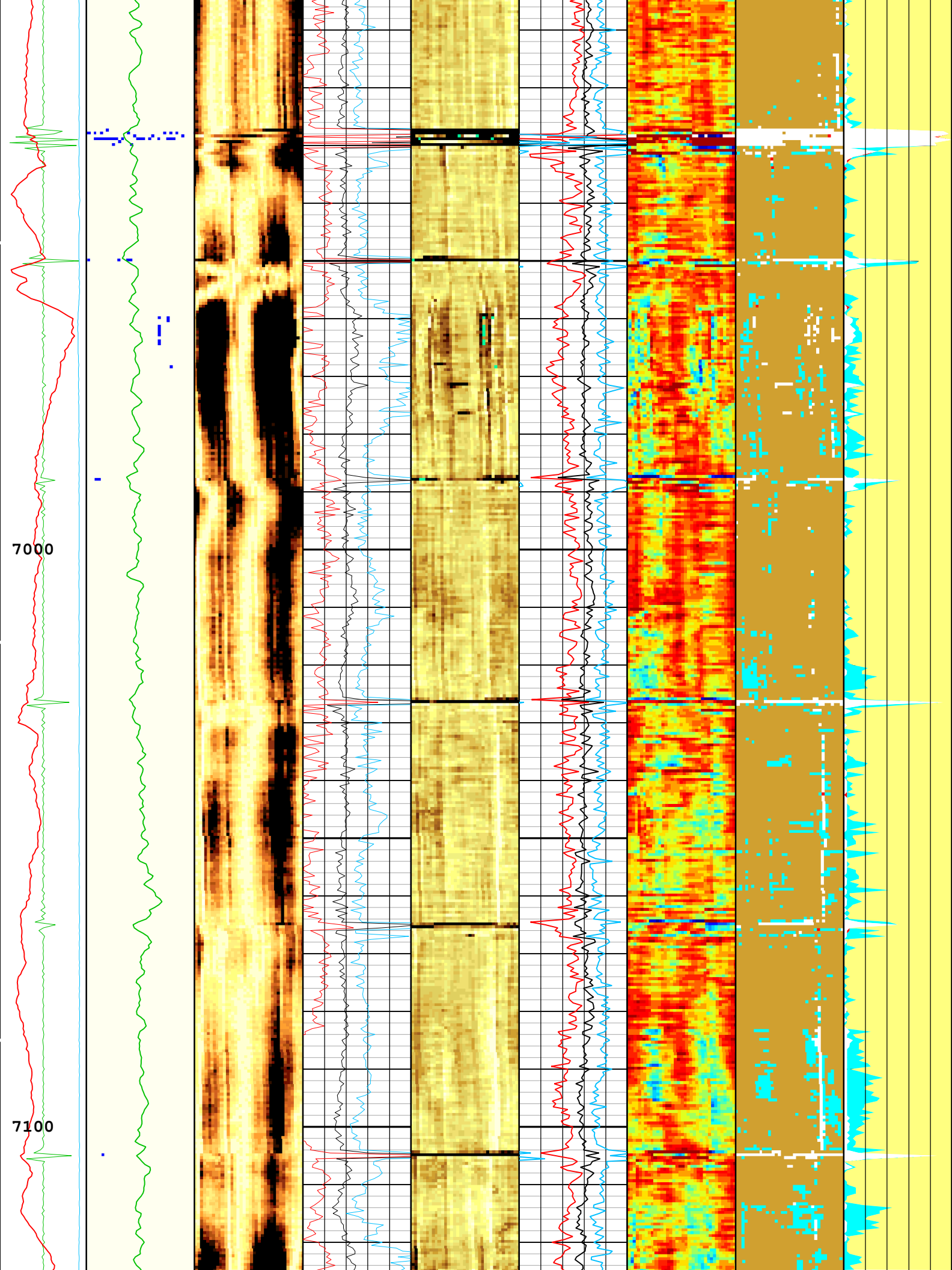




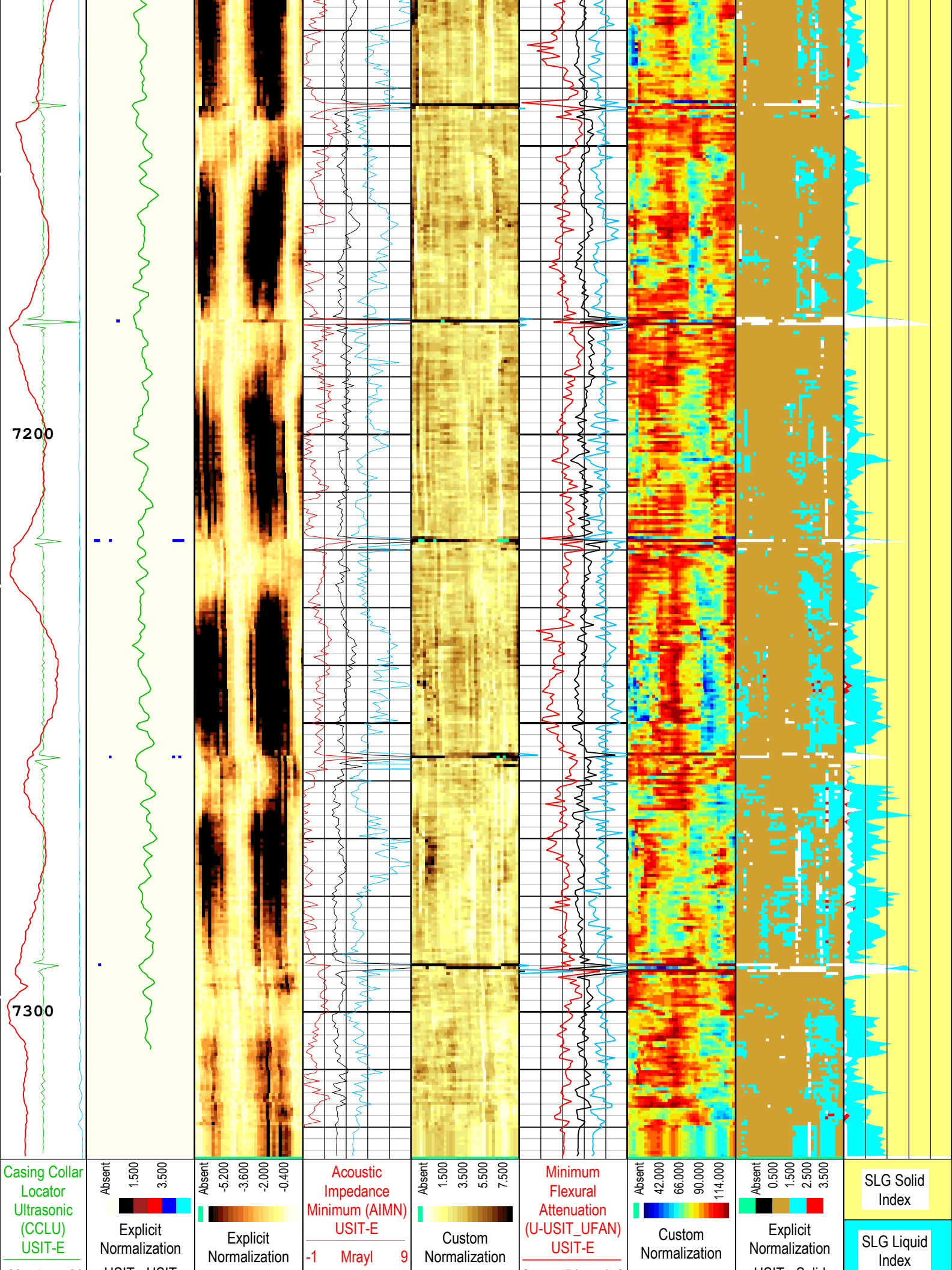












20 in 20	USIT - USIT	USIT - Amplitude of Wave (AWBK) USIT-E	Acoustic Impedance Average (AIAV) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E	0 dB/m 150	USIT - Flexural Attenuation (UFAK) USIT-E	USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E	SLG Gas Index
Amplitude of Eccentering (ECCE) USIT-E	Processing Flags (UFLG) USIT-E	USIT-E (dB)						SLG White Point Index
0 in 0.5	Orientation: Top of Hole	Orientation: Top of Hole	-1 Mrayl 9	Orientation: Top of Hole	0 dB/m 150	Orientation: Top of Hole	Orientation: Top of Hole	
	U L B R U	U L B R U		U L B R U		U L B R U	U L B R U	
Motor Revolution Speed (RSAV) USIT-E	USIT Processing Flags (UFLG[0]) USIT-E		Acoustic Impedance Maximum (AIMX) USIT-E		Maximum Flexural Attenuation (U-USIT_UFAV) USIT-E			
6 c/s 7.5	1 5		-1 Mrayl 9		0 dB/m 150			
	Gamma Ray (ECGR_EDTC) EDTC-B							
	0 gAPI 150							

TIME\_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4   UFLG 5   UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7   UFLG 8   UFLG 9 Value within [6.5 - 10 ] - :
- UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI IBC SLG   Format: Log ( IBC SLG )   Index Scale: 5 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 19-May-2019 16:18:12

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	12578	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-45	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tool Bit Length Measurement	USIT-E	22.44	

MEAS_WLEN	1 cube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.17	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

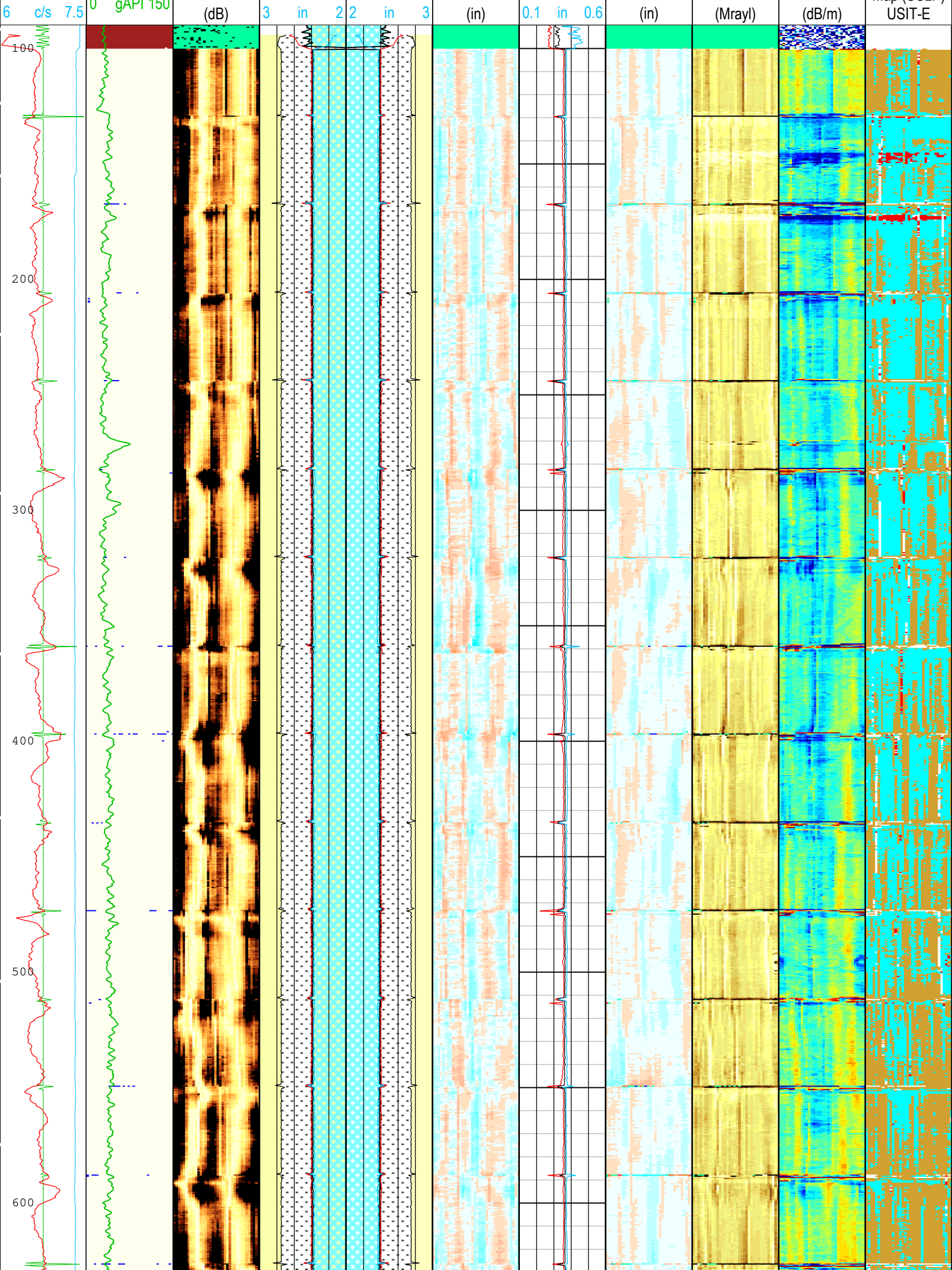
Depth Zone Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
BS	13.5	90	2377	
BS	8.5	2377	7325.5	
All depth are actual.				

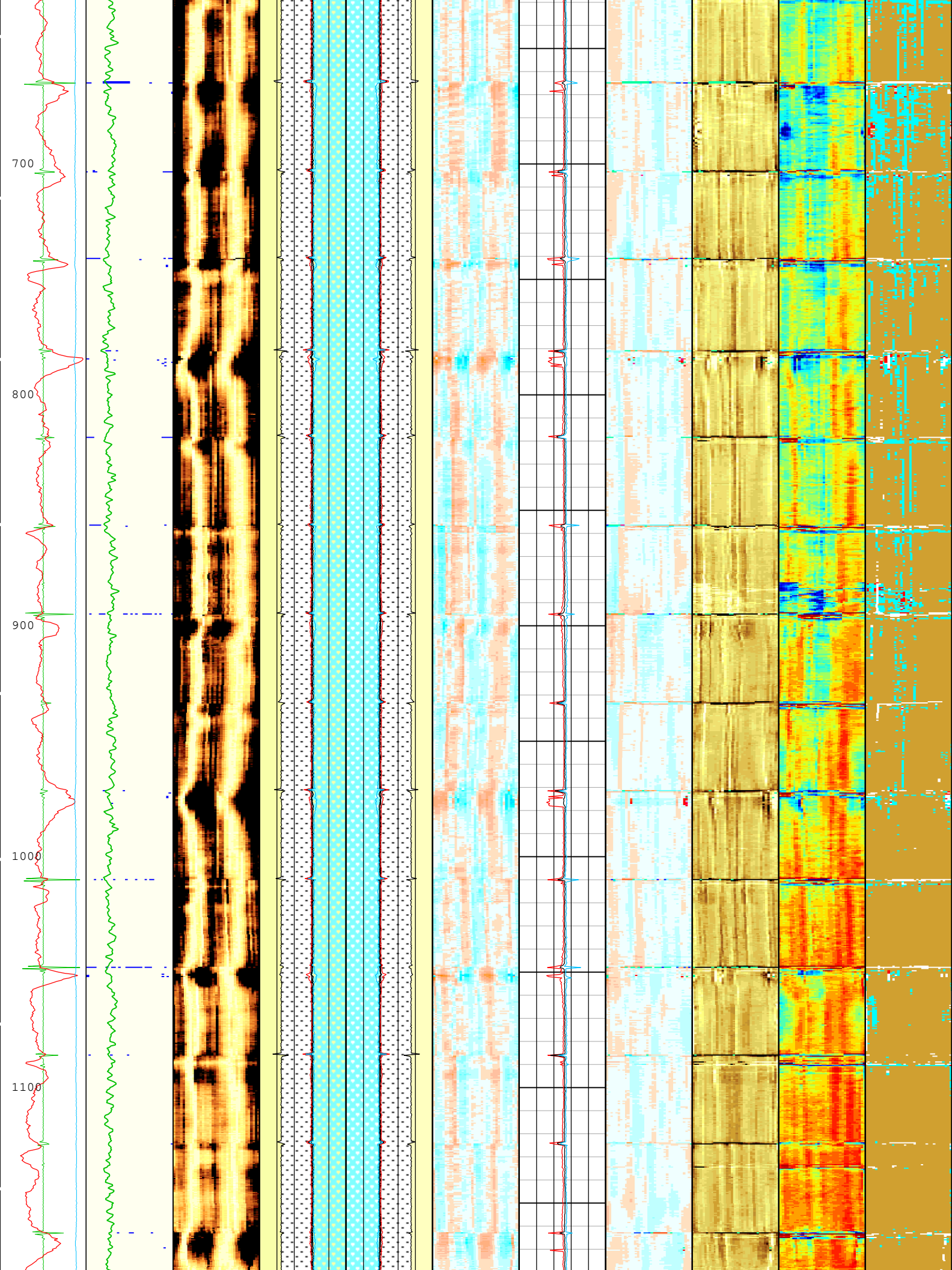
Tool Control Parameters				
-------------------------	--	--	--	--

One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	120	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	

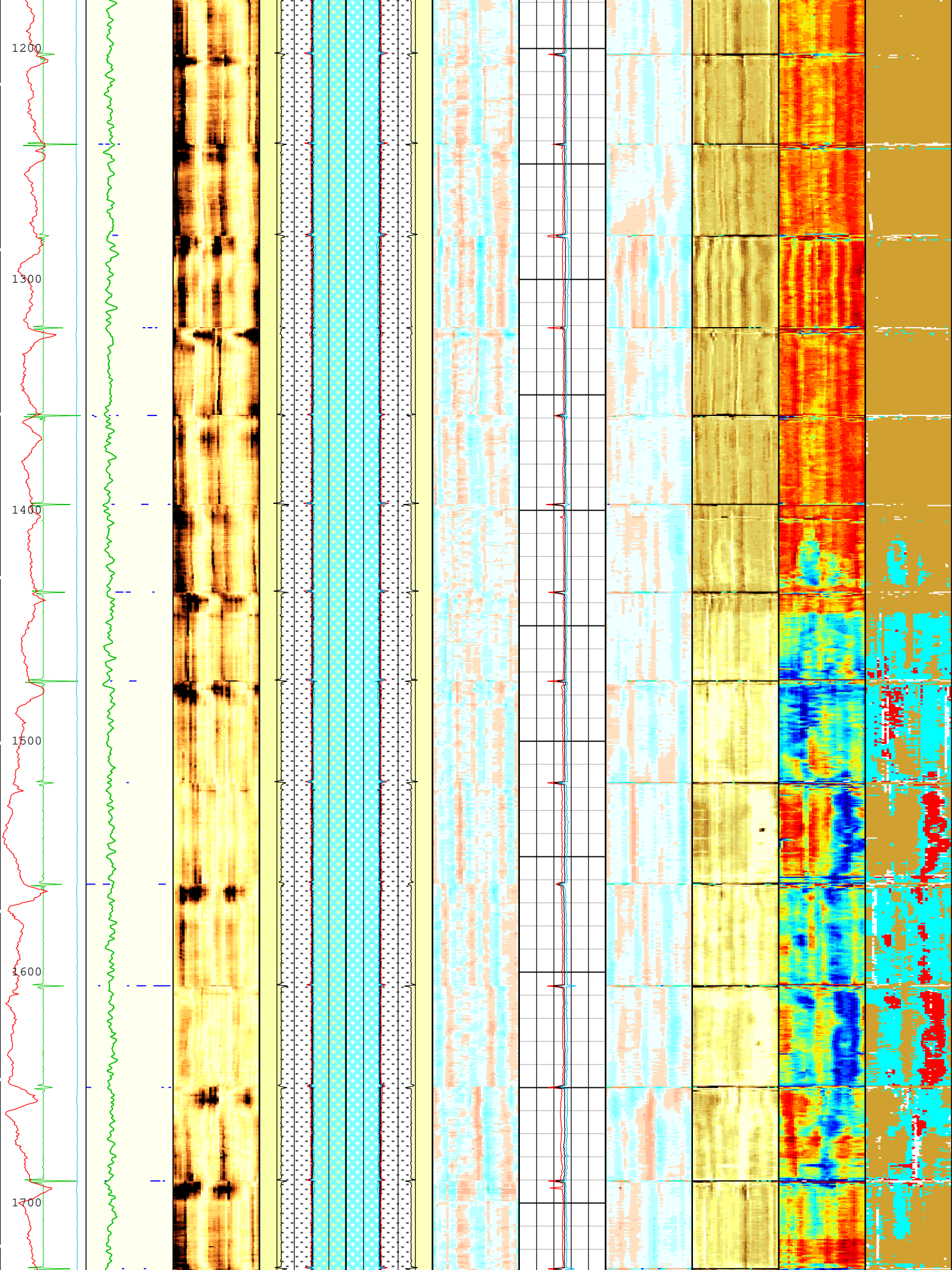


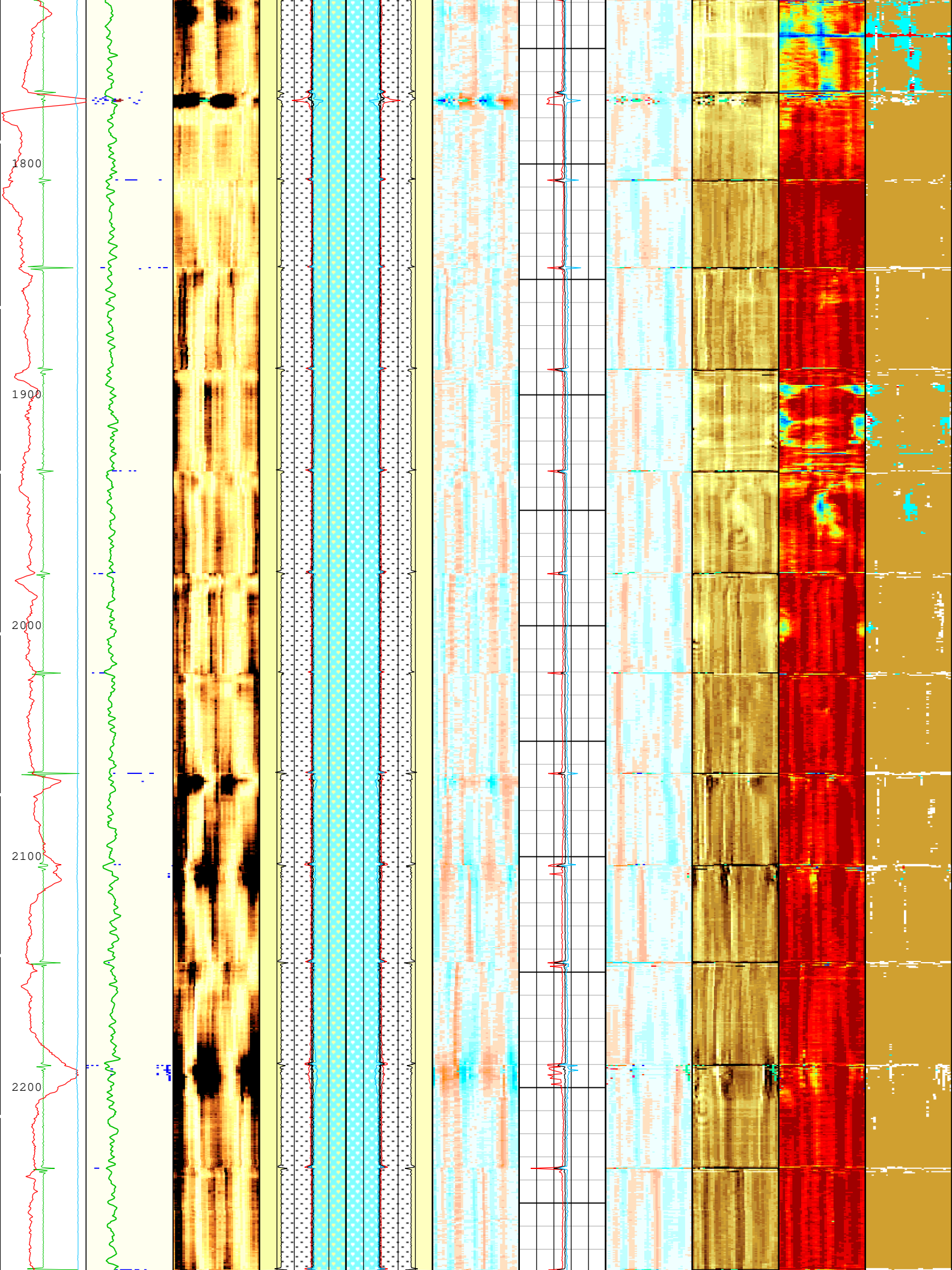


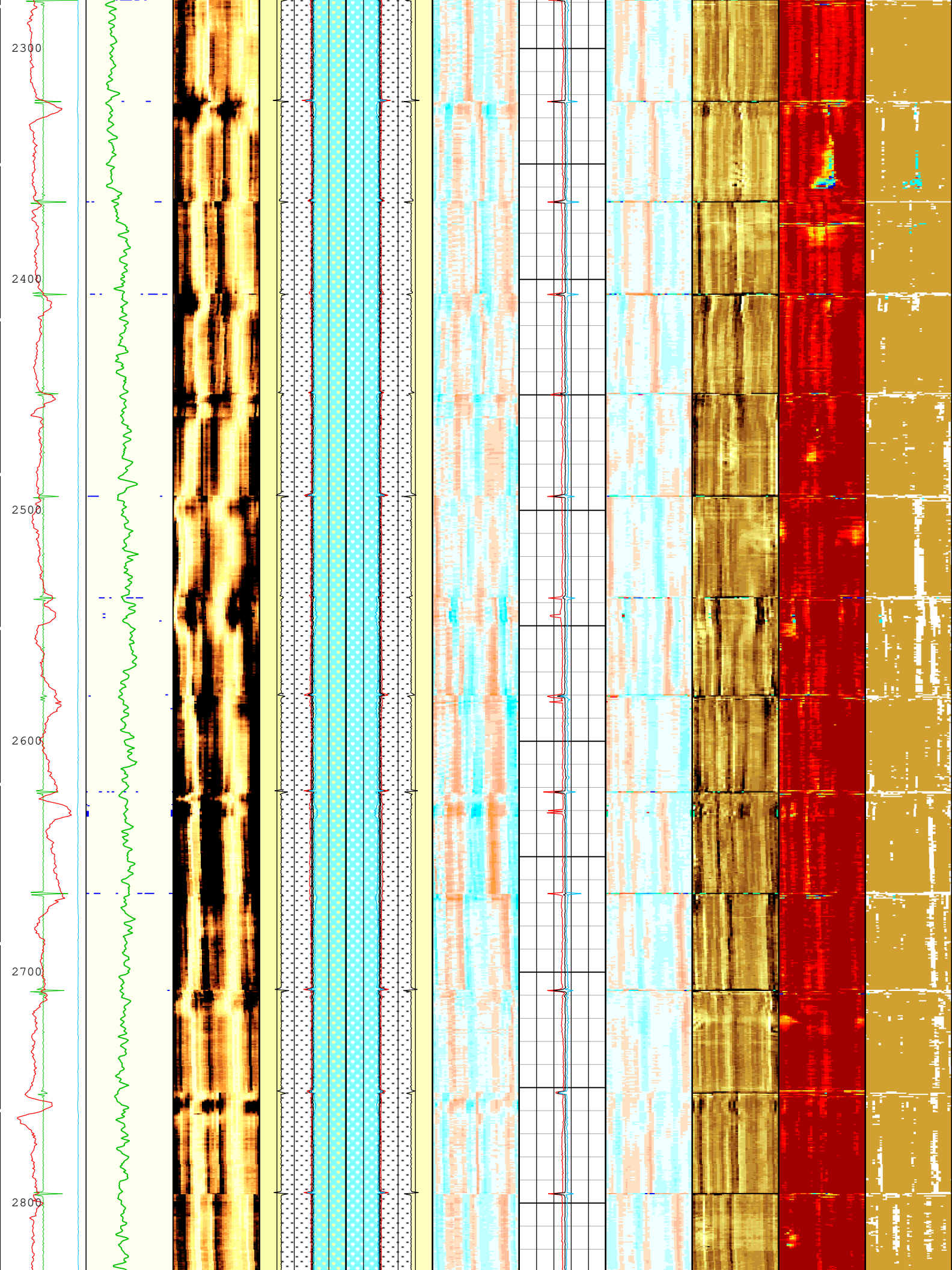




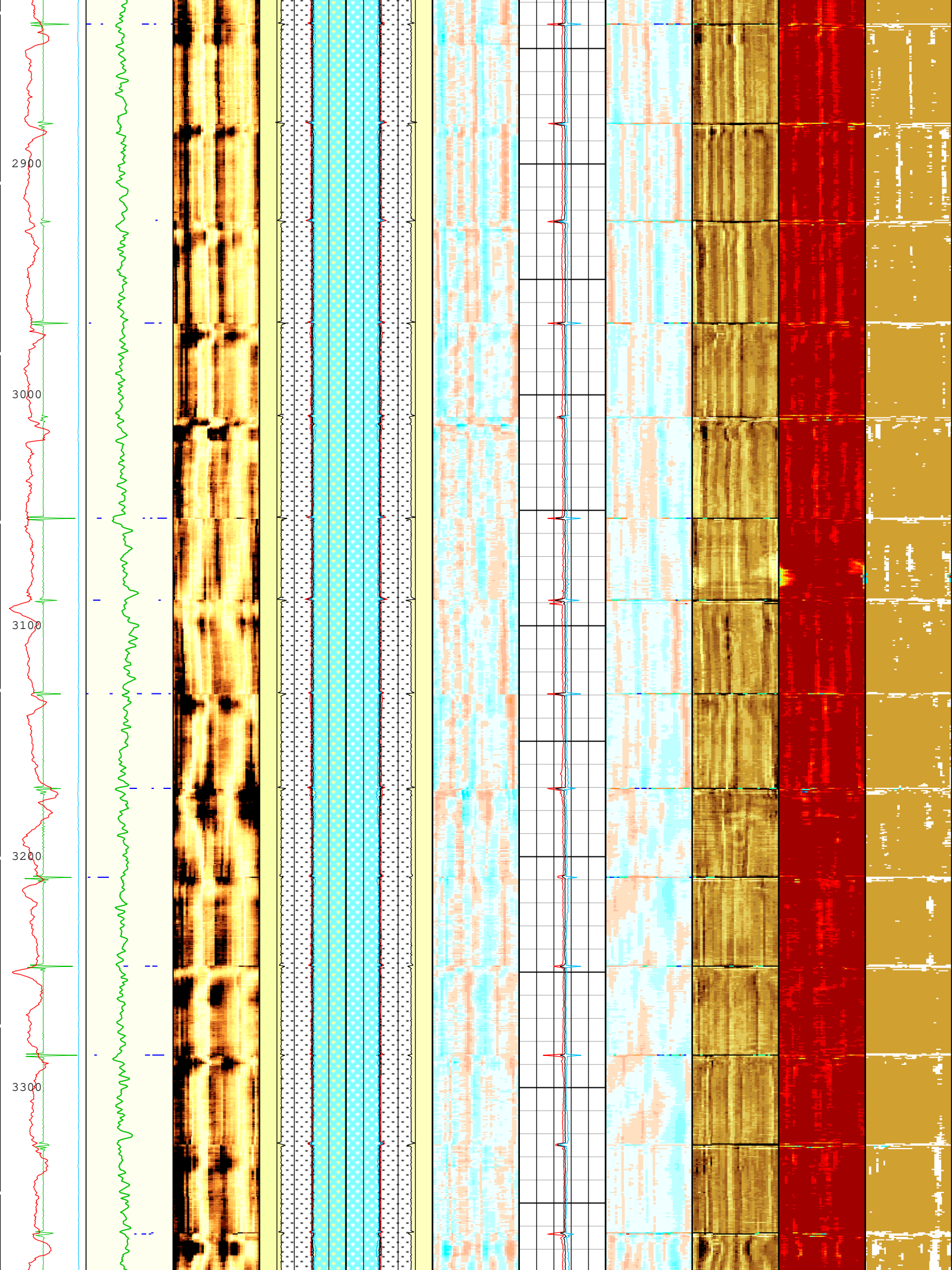


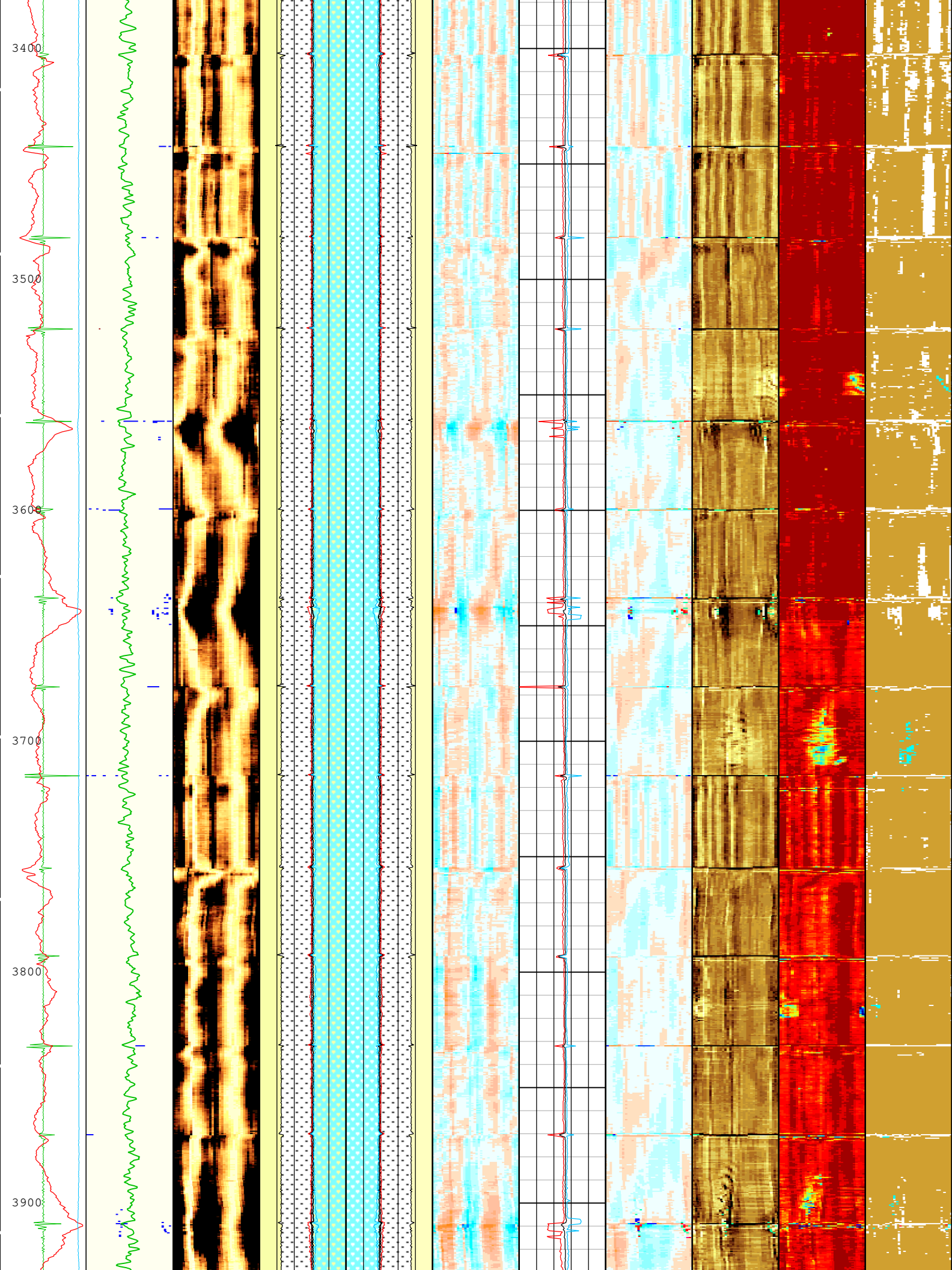


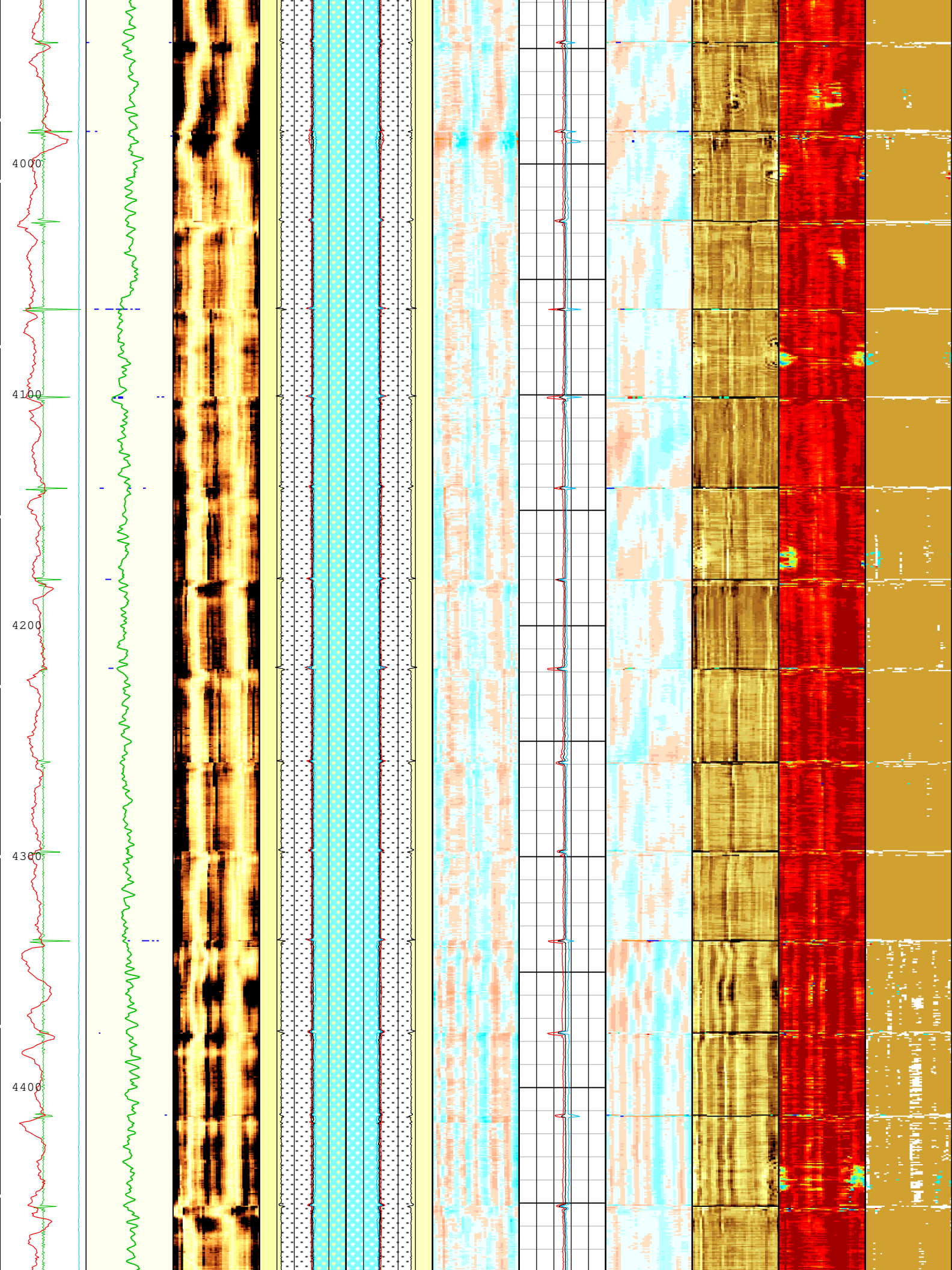




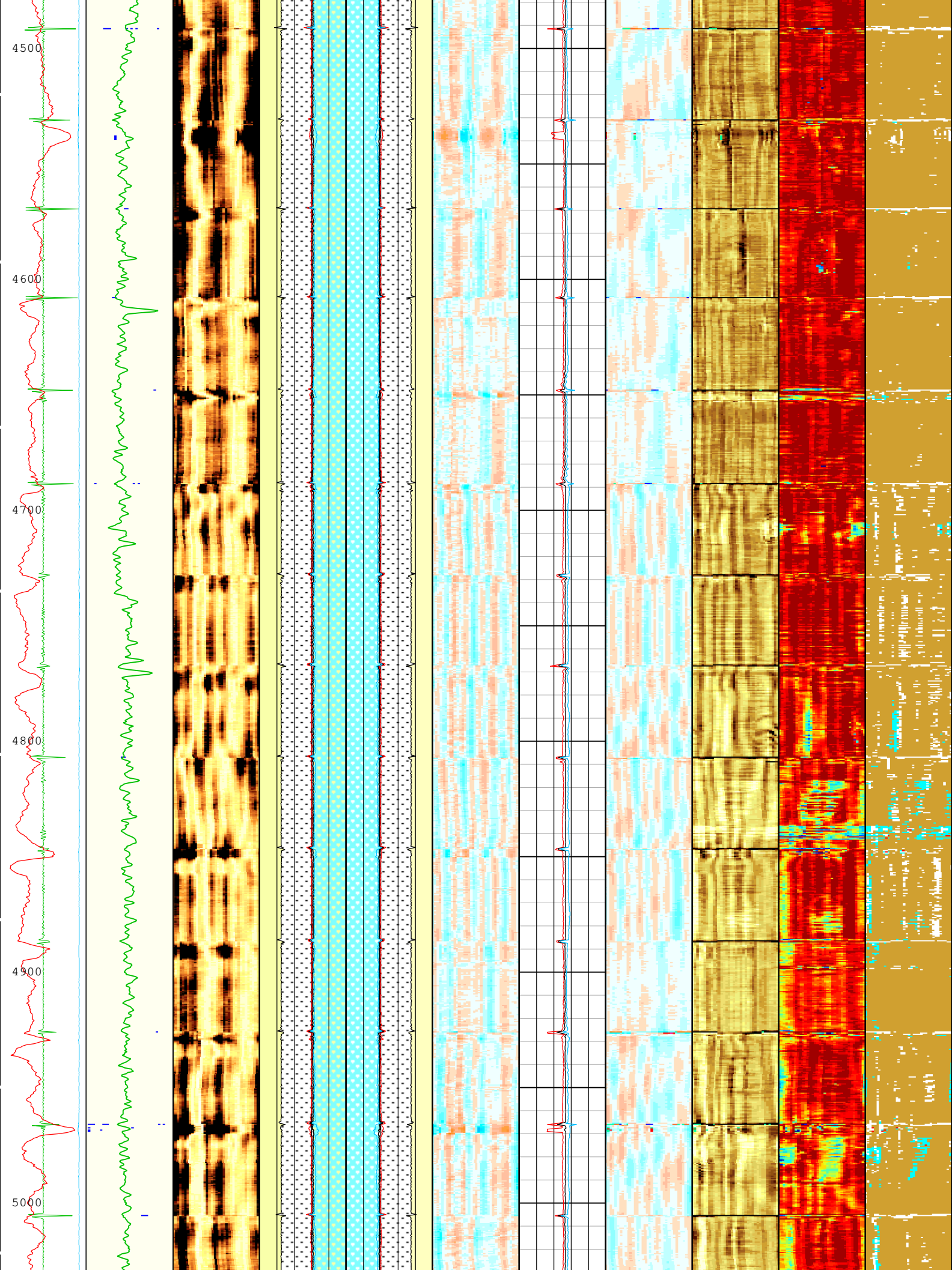


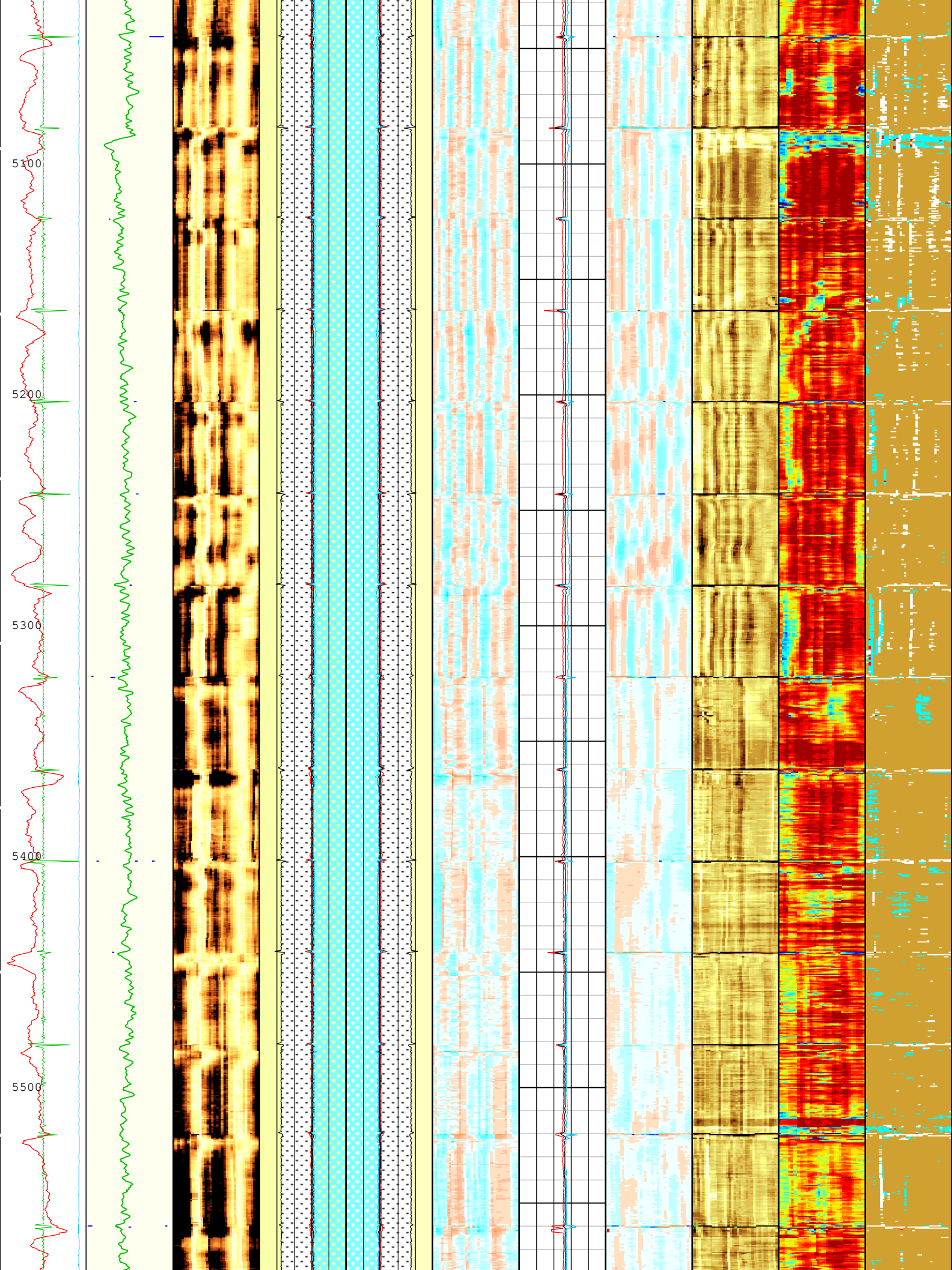




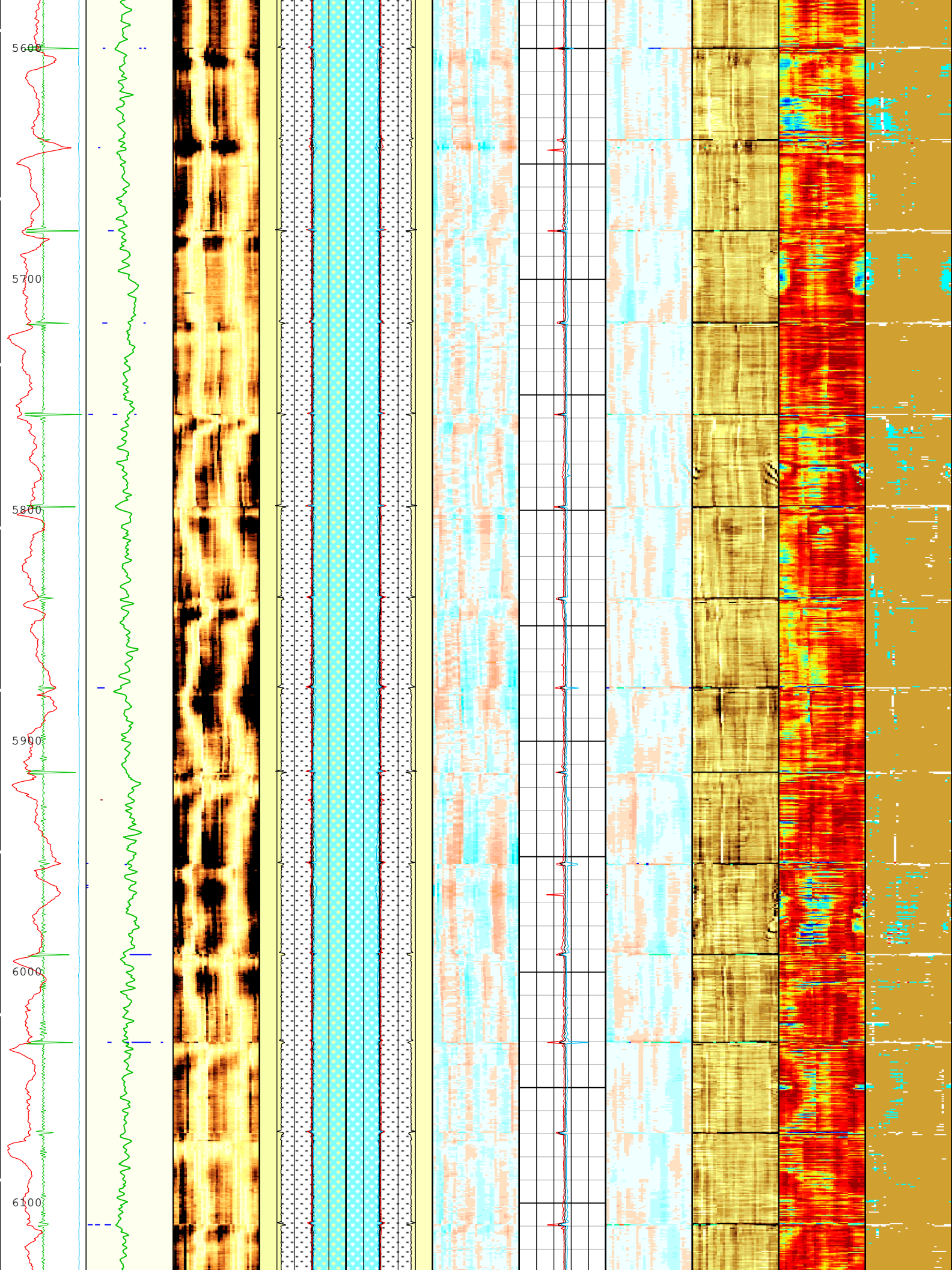




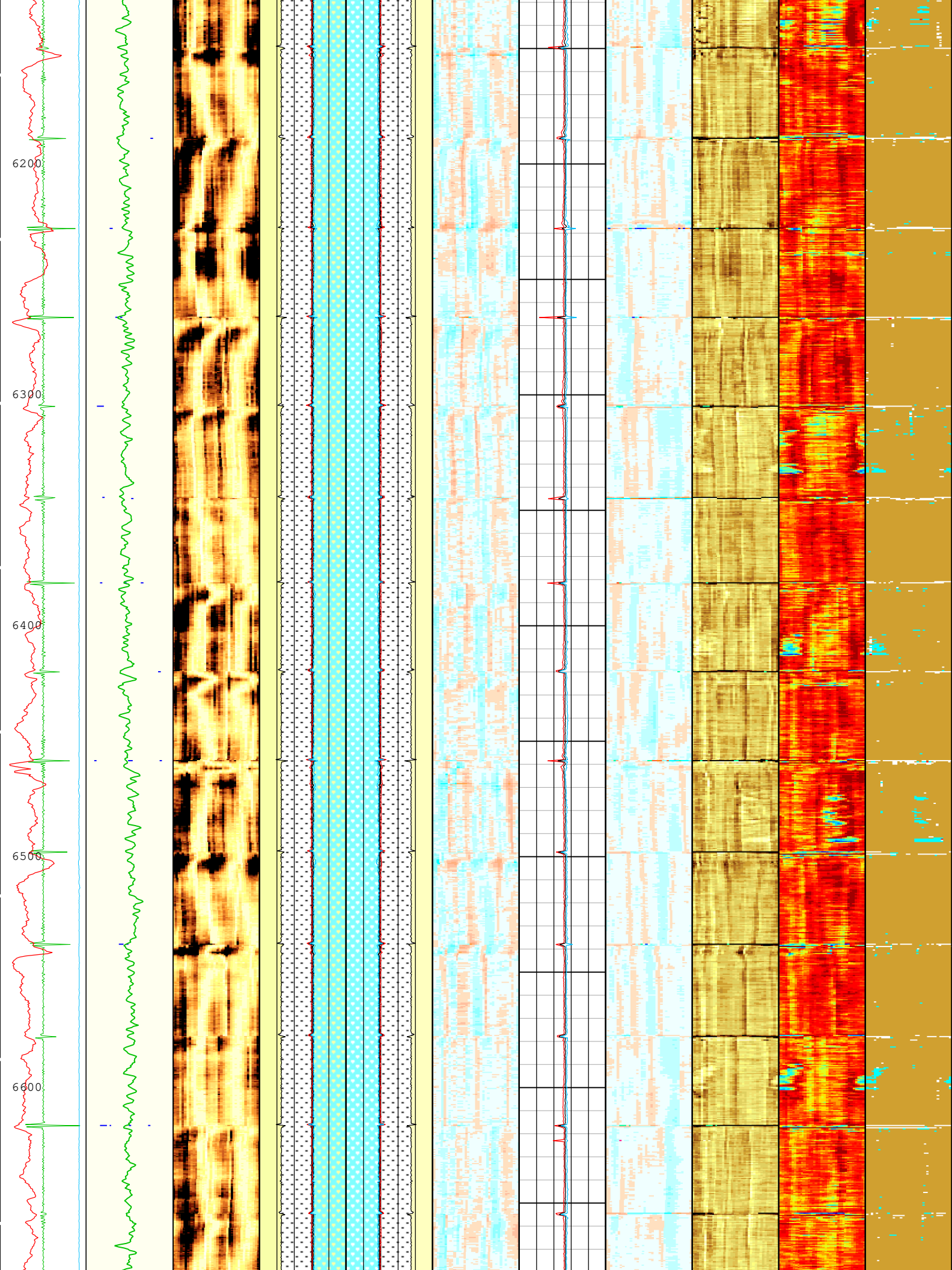


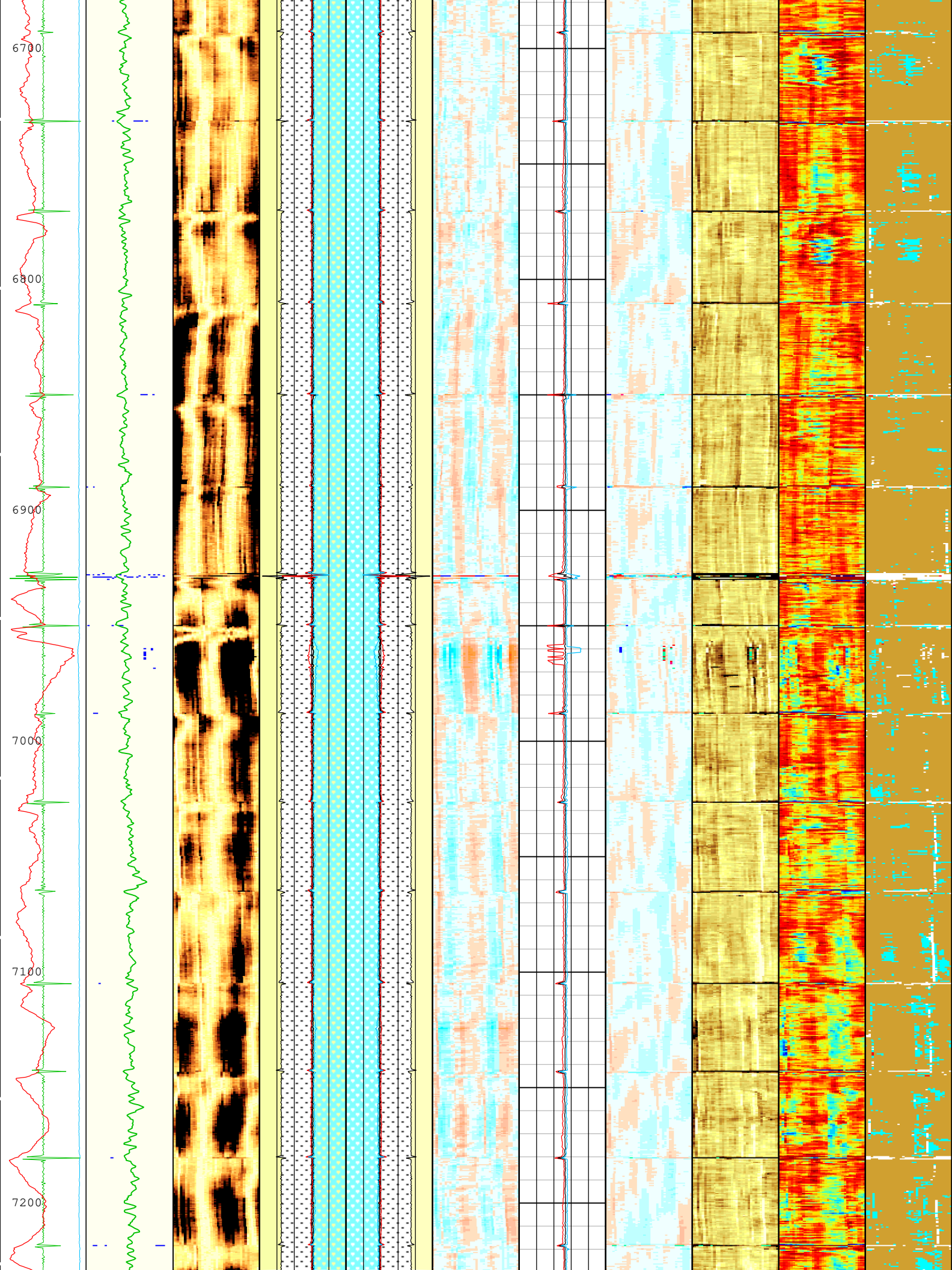


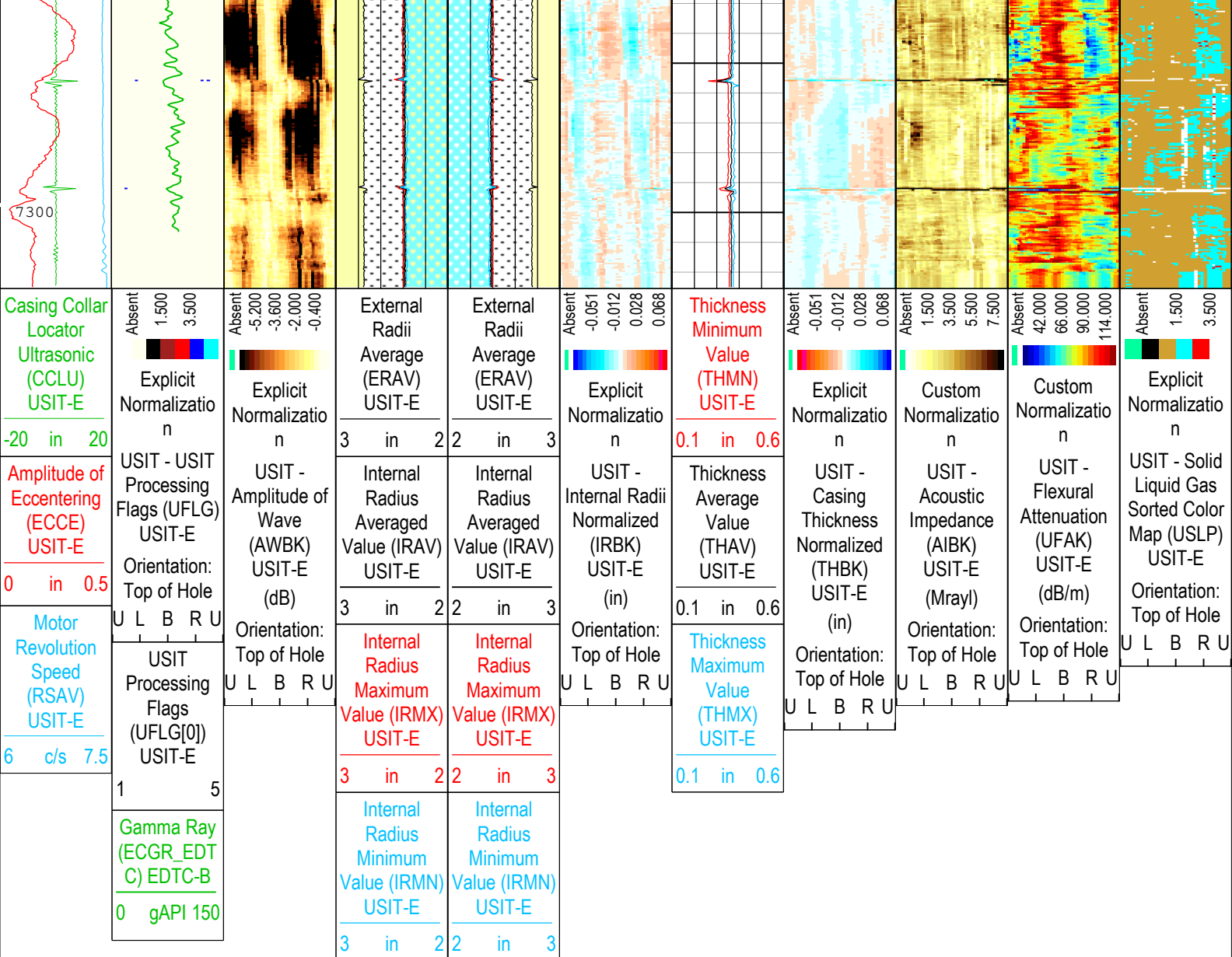












TIME\_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - : Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - : WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : Loop Processing Error

Description: USI IBC SLG Composite Format: Log ( IBC SLG Composite ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth  
Creation Date: 19-May-2019 16:18:30

## Channel Processing Parameters

### One: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	12578	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal



DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-45	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.17	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
BS	13.5	90	2377	
BS	8.5	2377	7325.5	
All depth are actual.				

Tool Control Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	120	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )

WINE	71.88	18-May-2019 20:34:25	18-May-2019 22:03:04	7326.38	1066.87
WINE	74.35	18-May-2019 22:03:04	18-May-2019 22:18:24	1066.87	76.4

All depth are at tool zero.

One

IBC Goodwin Compressed

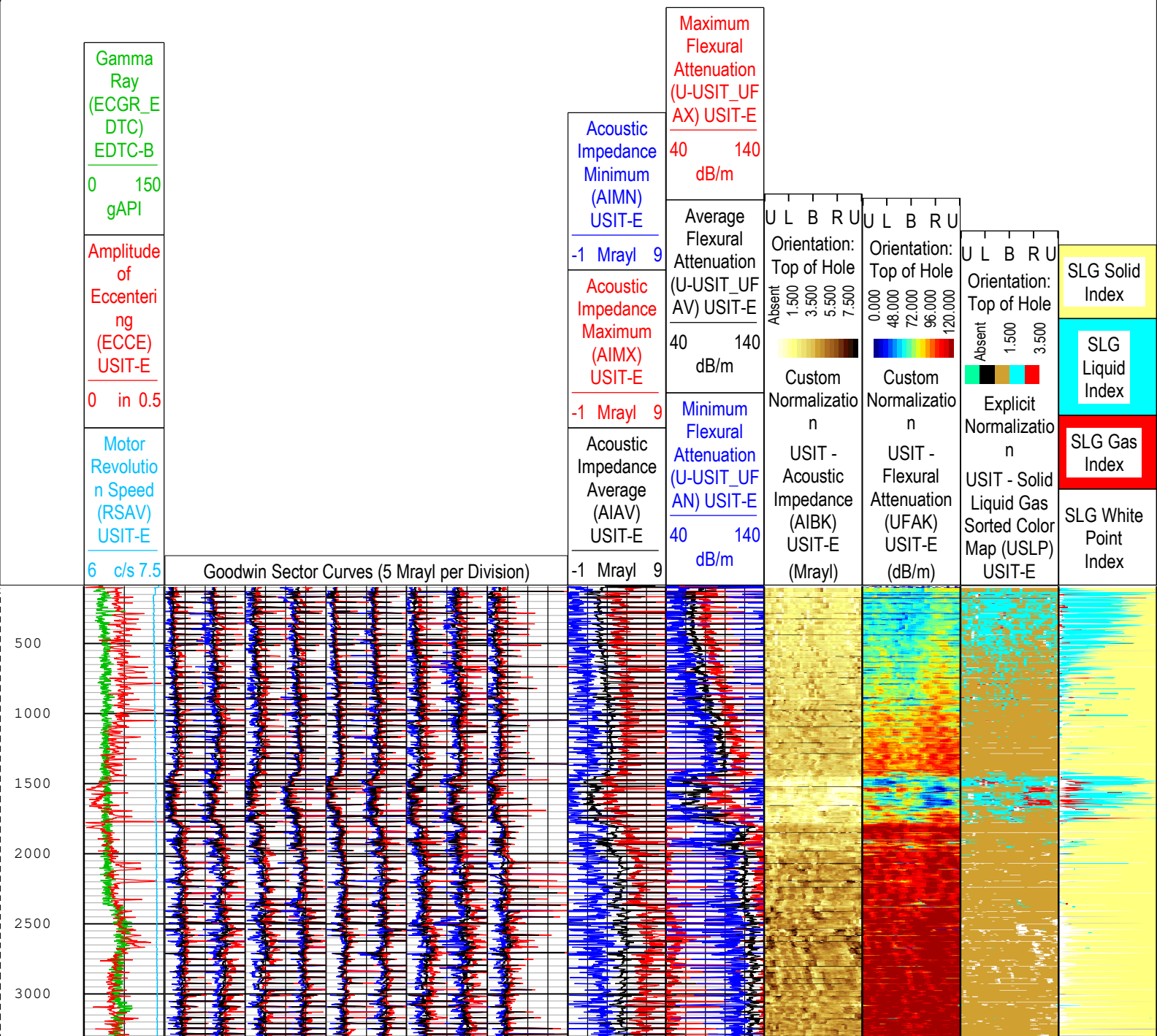
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	76.40 ft	7326.38 ft	18-May-2019 8:34:25 PM	18-May-2019 10:18:24 PM	ON	5.85 ft	Yes

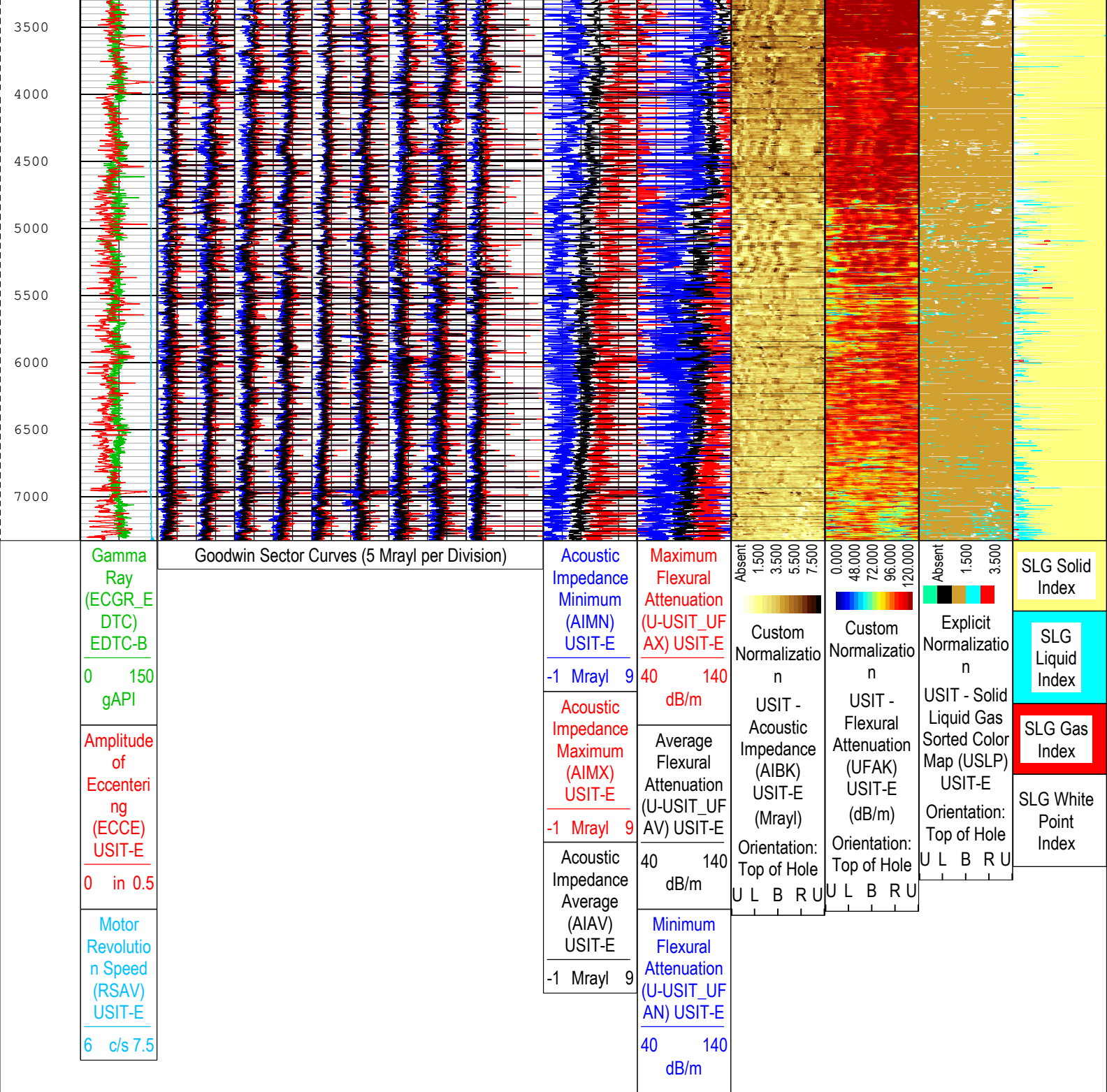
All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC	Well:Echeverria 2L-2H-D267
		One: Log[4]:Up:S011

Description: USI Goodwin   Format: Log ( IBC Goodwin )   Index Scale: 0.1 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 19-May-2019 16:18:43

TIME\_1900 - Time Marked every 60.00 (s)





TIME\_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin    Format: Log ( IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 19-May-2019 16:18:43

One									
IBC SLG									
Software Version									
Acquisition System						Version			
Maxwell 2019						9.0.106845.3100			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Lin	Lin	2084.75 ft	2418.21 ft	18-May-2019	18-May-2019	ON	3.38 ft	Yes



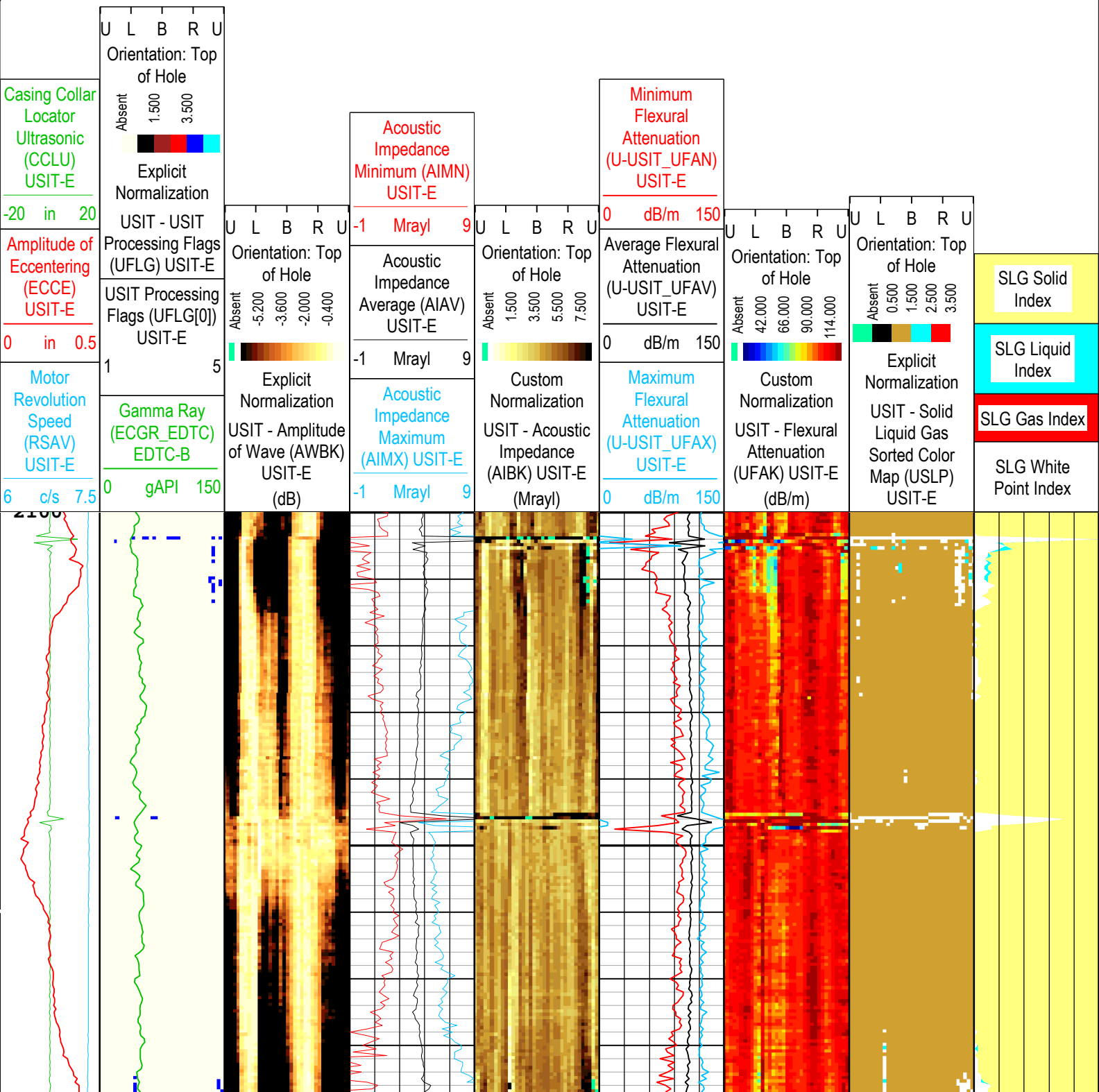
All depths are referenced to toolstring zero

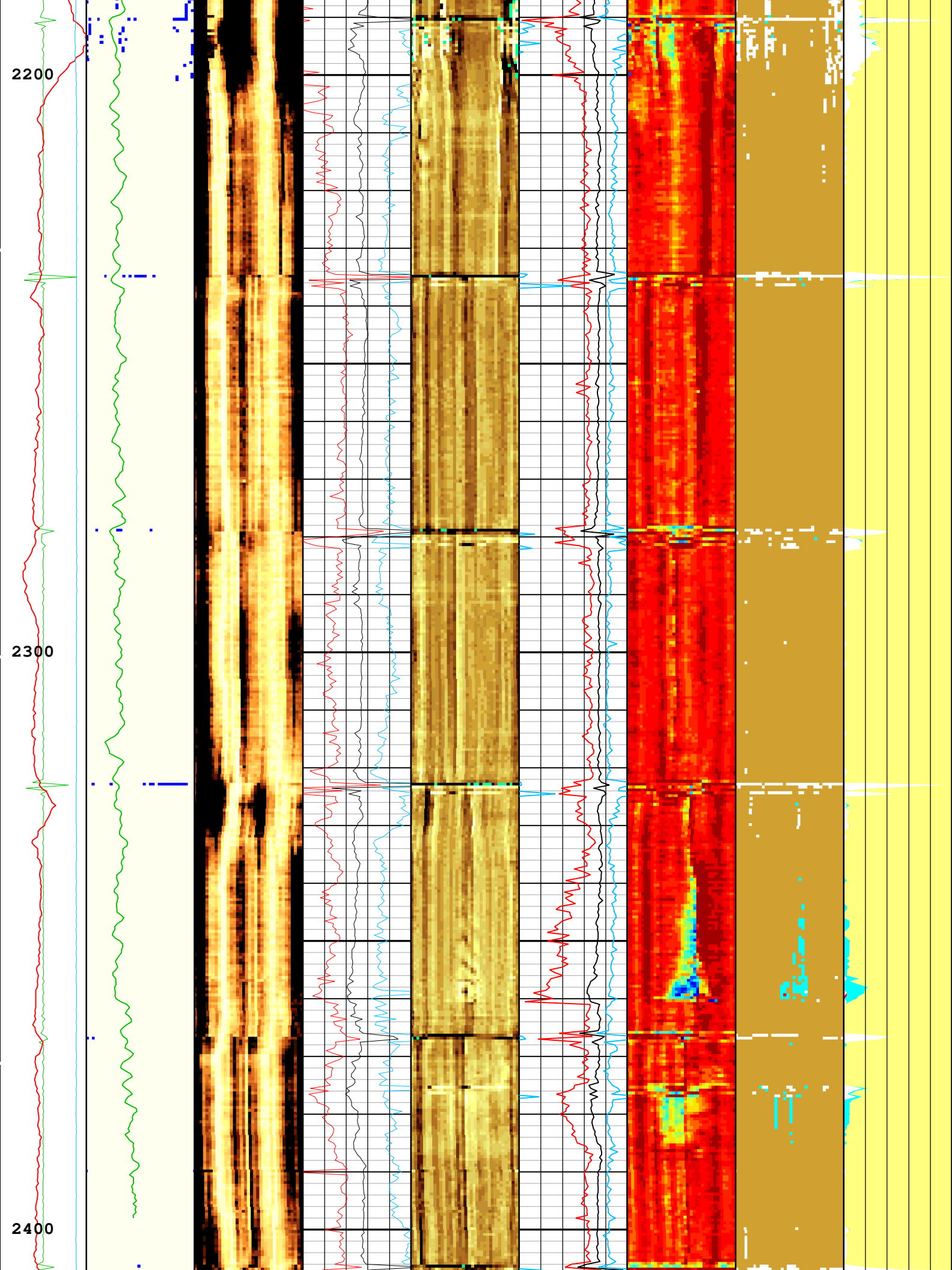
Description: USI IBC SLG Format: Log ( IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-May-2019 16:18:50

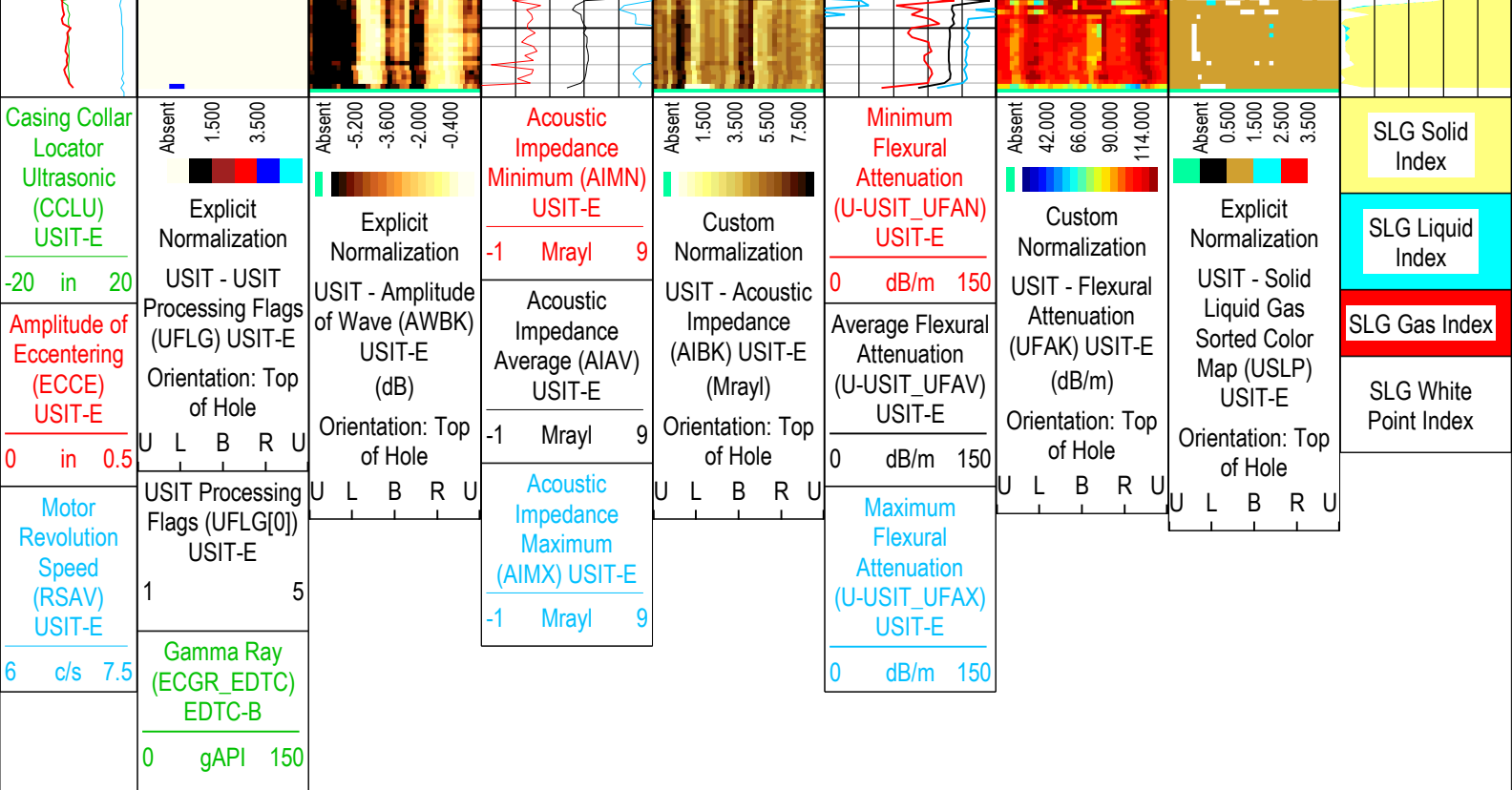
USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - : Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - : WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)












TIME\_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - :  Loop Processing Error

Description: USI IBC SLG Format: Log ( IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-May-2019 16:18:50

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	12578	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	

IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-45	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.17	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	2100	2377
BS	8.5	2377	2417.5

Tool Control Parameters				
-------------------------	--	--	--	--

One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	120	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	

U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
U-USIT_UNWB	106	18-May-2019 20:01:10	18-May-2019 20:02:07	2418.21	2361.99
U-USIT_UNWB	110.67	18-May-2019 20:02:07	18-May-2019 20:04:21	2361.99	2205.35
U-USIT_UNWB	108.77	18-May-2019 20:04:21	18-May-2019 20:04:32	2205.35	2191.7
U-USIT_UNWB	107.82	18-May-2019 20:04:32	18-May-2019 20:07:56	2191.7	2084.75
U-USIT_UNWE	146	18-May-2019 20:01:10	18-May-2019 20:02:08	2418.21	2360.82
U-USIT_UNWE	147.3	18-May-2019 20:02:08	18-May-2019 20:02:15	2360.82	2353.3
U-USIT_UNWE	144.45	18-May-2019 20:02:15	18-May-2019 20:07:56	2353.3	2084.75

All depth are at tool zero.

One

IBC SLG Composite

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Up	Up	2084.75 ft	2418.21 ft	18-May-2019 8:01:10 PM	18-May-2019 8:07:56 PM	ON	3.38 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC

Well:Echeverria 2L-2H-D267

One: Log[2]:Up:S011

Description: USI IBC SLG Composite

Format: Log ( IBC SLG Composite )

Index Scale: 2 in per 100 ft

Index Unit: ft

Index Type: Measured Depth

Creation Date: 19-May-2019 16:18:57

USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4   UFLG 5   UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7   UFLG 8   UFLG 9 Value within [6.5 - 10 ] - :

■

■

■

■

■

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

U L B R U

Orientation:  
Top of Hole

Absent

1.500

3.500

■

■

■

■

Explicit

Normalization

Casing Collar

Locator

External Radii

Average (ERAV)

USIT-E

3

in

2

External Radii

Average (ERAV)

USIT-E

2

in

3

Internal Radii

Average

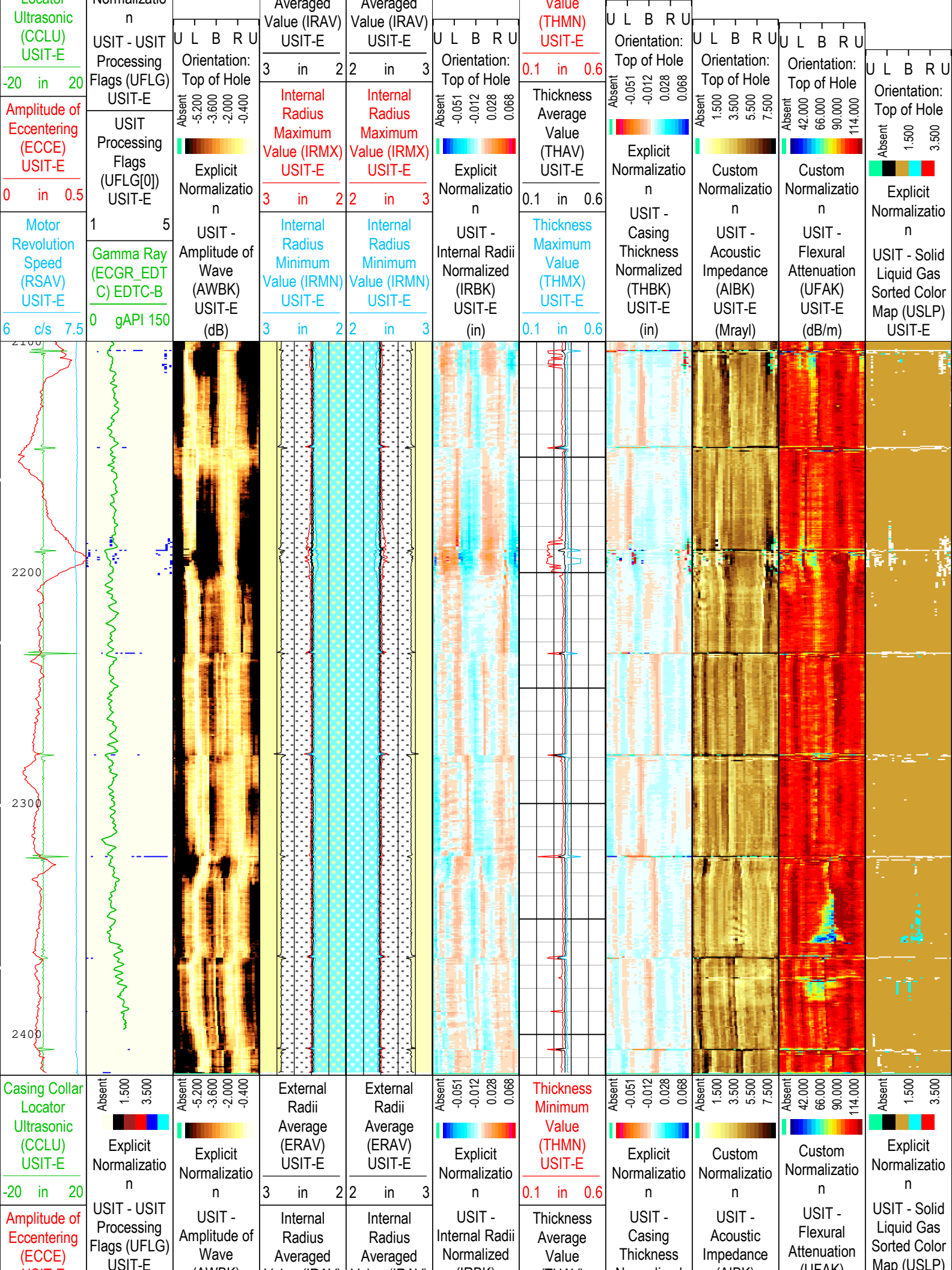
Internal Radii

Average

Thickness

Minimum

Value





USIT-E	Orientation: Top of Hole	(AWBK) USIT-E (dB)	Value (IRAV) USIT-E	Value (IRAV) USIT-E	(IRBK) USIT-E (in)	(THAV) USIT-E	Normalized (THBK) USIT-E (in)	(AIBK) USIT-E (Mrayl)	(OPAK) USIT-E (dB/m)	USIT-E
0 in 0.5	U L B R U	Orientation: Top of Hole	3 in 2	2 in 3	Orientation: Top of Hole	0.1 in 0.6	Orientation: Top of Hole	Orientation: Top of Hole	Orientation: Top of Hole	Orientation: Top of Hole
Motor Revolution Speed (RSAV) USIT-E	USIT Processing Flags (UFLG[0]) USIT-E	U L B R U	Internal Radius Maximum Value (IRMX) USIT-E	Internal Radius Maximum Value (IRMX) USIT-E	U L B R U	Thickness Maximum Value (THMX) USIT-E	U L B R U	U L B R U	U L B R U	U L B R U
6 c/s 7.5	1 5		3 in 2	2 in 3		0.1 in 0.6				
	Gamma Ray (ECGR_EDT C) EDTC-B		Internal Radius Minimum Value (IRMN) USIT-E	Internal Radius Minimum Value (IRMN) USIT-E						
	0 gAPI 150		3 in 2	2 in 3						

TIME\_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - :
- UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI IBC SLG Composite    Format: Log ( IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 19-May-2019 16:18:57

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	12578	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-45	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.17	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DES7	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl

U-USIT_DF3Z	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.66	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	2100	2377
BS	8.5	2377	2417.5
All depth are actual.			

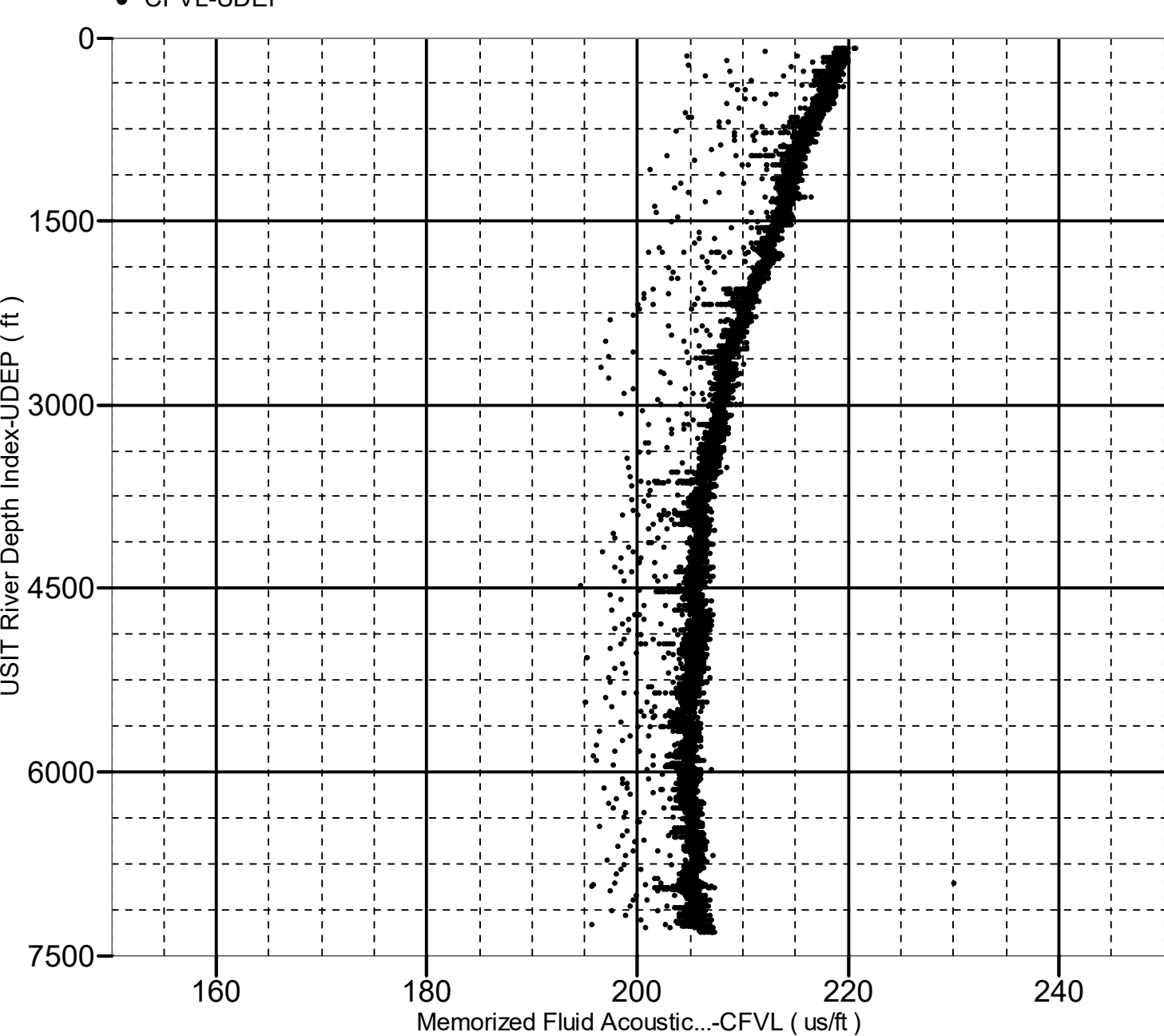
Tool Control Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	120	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
U-USIT_UNWB	106	18-May-2019 20:01:10	18-May-2019 20:02:07	2418.21	2361.99
U-USIT_UNWB	110.67	18-May-2019 20:02:07	18-May-2019 20:04:21	2361.99	2205.35
U-USIT_UNWB	108.77	18-May-2019 20:04:21	18-May-2019 20:04:32	2205.35	2191.7
U-USIT_UNWB	107.82	18-May-2019 20:04:32	18-May-2019 20:07:56	2191.7	2084.75
U-USIT_UNWE	146	18-May-2019 20:01:10	18-May-2019 20:02:08	2418.21	2360.82
U-USIT_UNWE	147.3	18-May-2019 20:02:08	18-May-2019 20:02:15	2360.82	2353.3
U-USIT_UNWE	144.45	18-May-2019 20:02:15	18-May-2019 20:07:56	2353.3	2084.75
All depth are at tool zero.					

XYZ	Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2L-2H-D267 One: Log[4]:Up:S011
-----	---

# Fluid Acoustic Slowness vs Depth 2D Cross Plot

Index Range: From 7325.50 to 76.00 ft

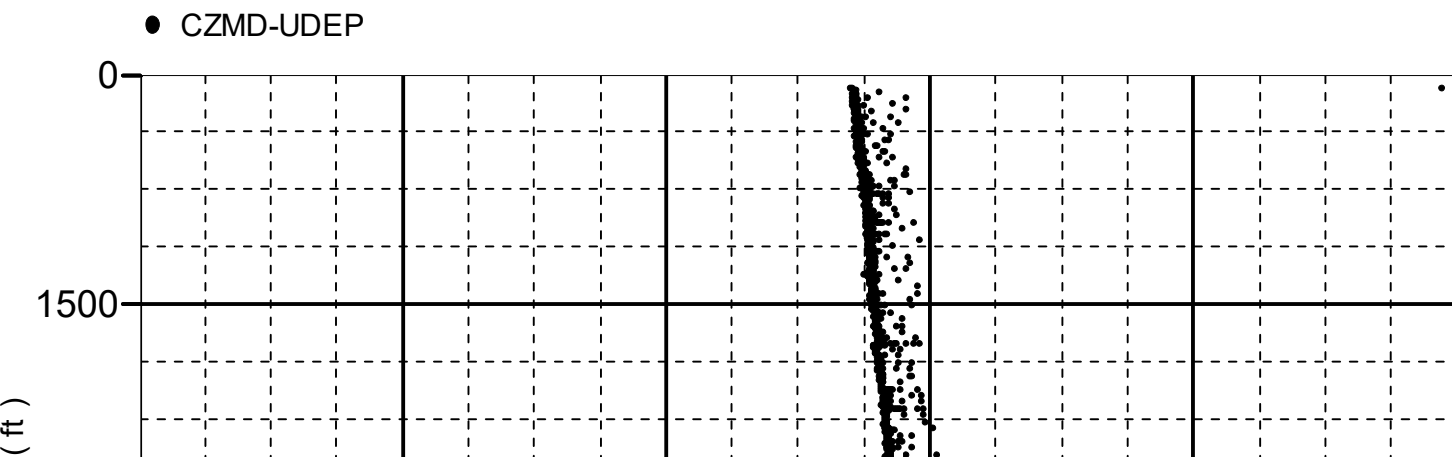


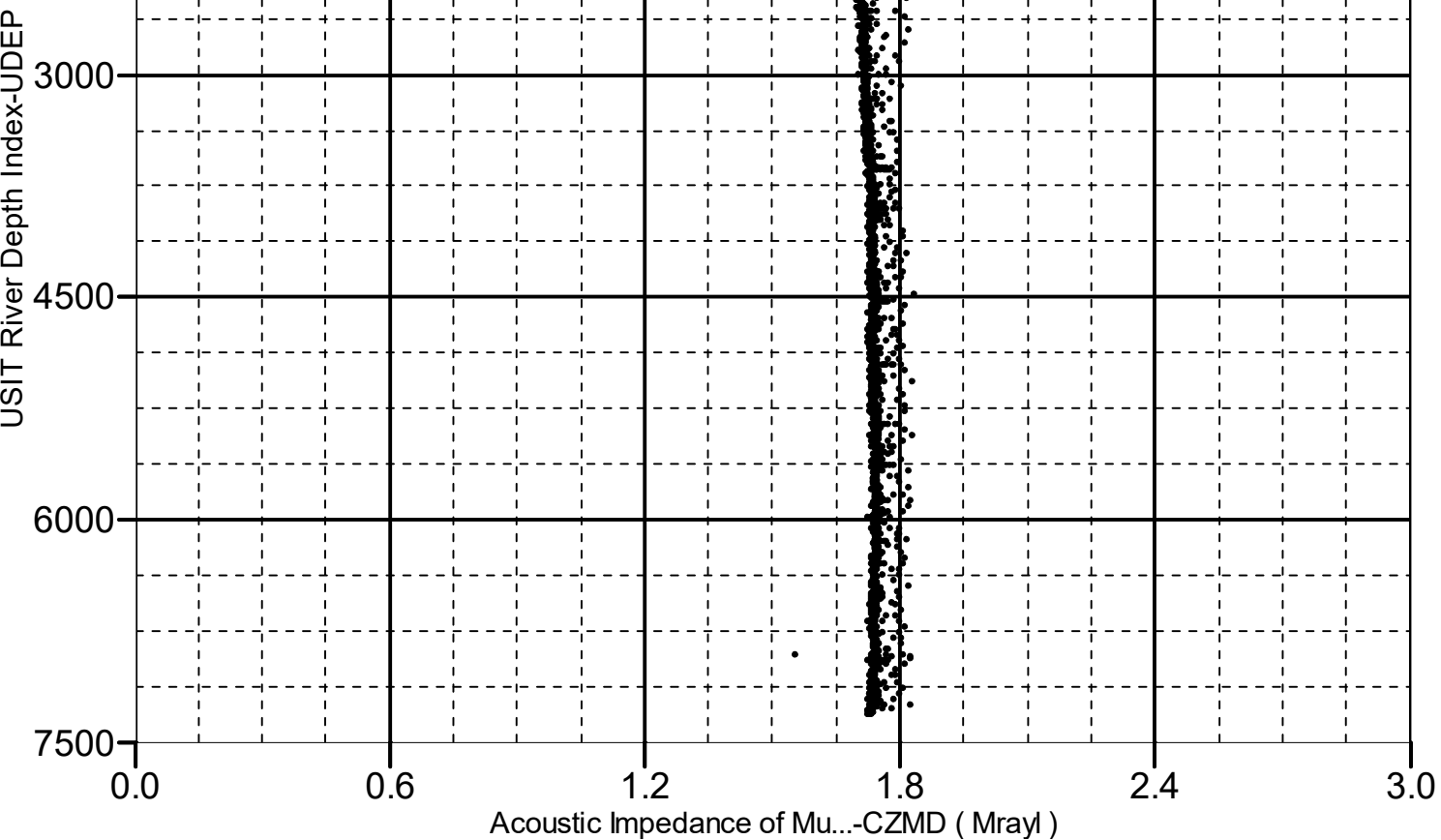
XYZ Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2L-2H-D267 One: Log[4]:Up:S011

## Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7325.50 to 76.00 ft





Company: Crestone Peak Resources and Operating LLC

**Schlumberger**

Well: Echeverria 2L-2H-D267

Field: Wattenberg

County:	Weld
State:	Colorado
Isolation Scanner	
Cement Evaluation	
Gamma Ray - CCL Log	