

Company: CRESTONE PEAK RESOURCES OPERATING LLC

Well: HWY 52 4H-32H-O268

Field: WATTENBERG

County: WELD State: COLORADO

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL Log

County:	WELD				
Field:	WATTENBERG				
Location:	598' FSL & 2054' FEL				
Well:	HWY 52 4H-32H-O268				
Company:	CRESTONE PEAK RESOURCES OPERATING LLC				
Location:	598' FSL & 2054' FEL	Elev.:	K.B.	5005.00 ft	
			G.L.	4992.00 ft	
			D.F.	5005.00 ft	
Permanent Datum:		Ground Level			
Log Measured From:		Kelly Bushing	13.00 ft	above Perm.Datum	
Drilling Measured From:		Kelly Bushing			
API Serial No.		Section:		Township:	Range:
05-123-38269		32		2N	68W
Logging Date	24-Oct-2017				

Run Number	ONE	
Depth Driller	13693.00 ft	
Schlumberger Depth	13693.00 ft	
Bottom Log Interval	7550.00 ft	
Top Log Interval	75.00 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	0.00 ft	
To	13693.00 ft	
Casing/Tubing Size	5.5 in	
Weight	20 lbm/ft	
Grade	P110	
From	0.00 ft	
To	13693.00 ft	
Max Recorded Temperatures		
Logger on Bottom	24-Oct-2017	08:30:00
Unit Number	2132	MOORE
Recorded By	MEGAN LEONE	
Witnessed By	CALEB BREWER	

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

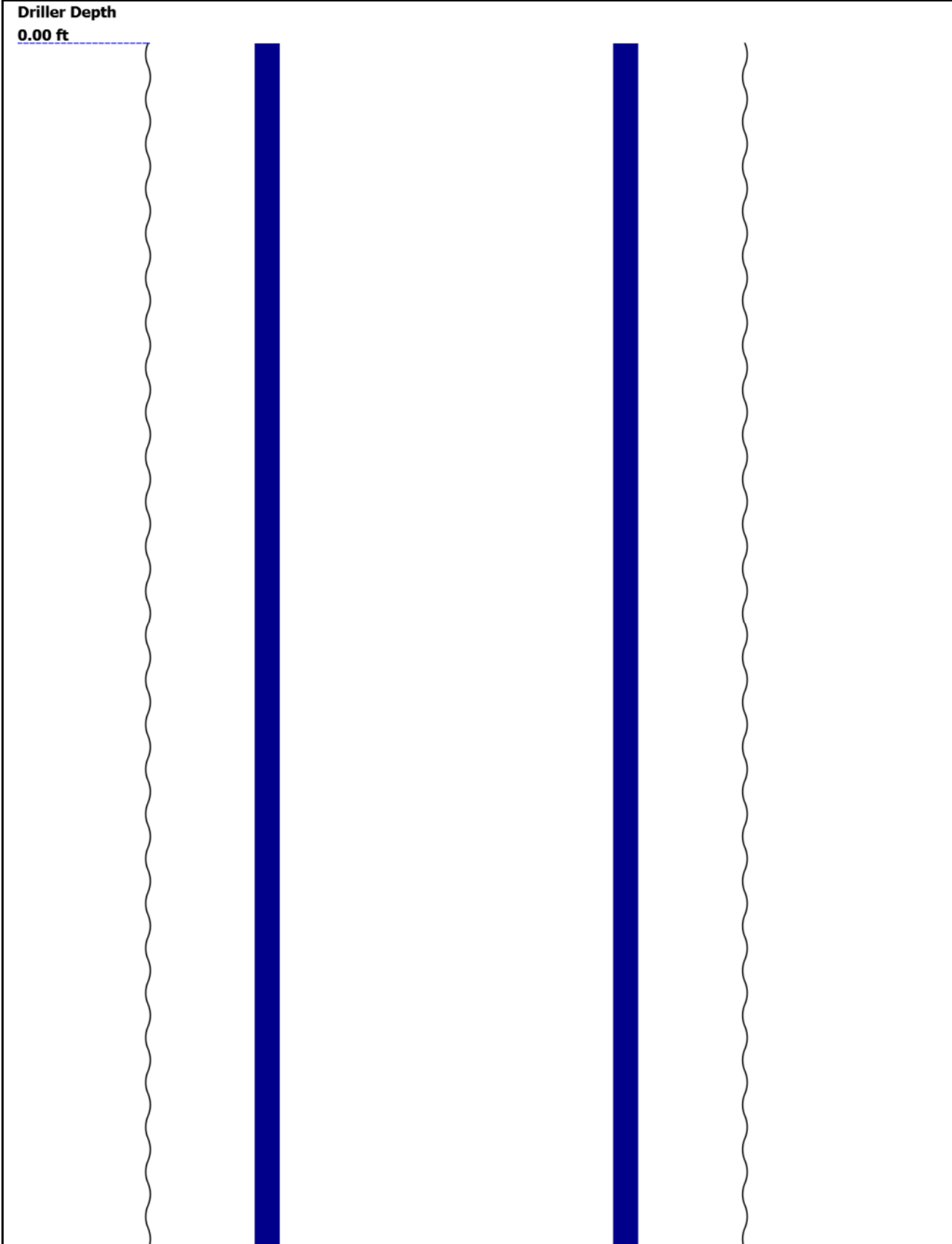
- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. IBC Fluid Properties Measurement
- 8. ONE IBC SLG
 - 8.1 Integration Summary
 - 8.2 Software Version
 - 8.3 Composite Summary
 - 8.4 Log (IBC SLG)
 - 8.5 Parameter Listing
- 9. ONE IBC SLG Composite
 - 9.1 Integration Summary
 - 9.2 Composite Summary
 - 9.3 Log (IBC SLG Composite)

in)
13. Tail

9.4 Parameter Listing

- 10. ONE IBC Goodwin Compressed
 - 10.1 Integration Summary
 - 10.2 Composite Summary
 - 10.3 Log (IBC Goodwin)
- 11. XYZ (IBC Fluid Acoustic Slowness vs Depth 6.0 in)
- 12. XYZ (IBC Acoustic Impedance of Mud vs Depth 6.0

Well Sketch






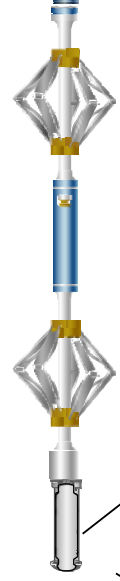
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	8.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	13693					
Bottom Logger (ft)	13693					
Casing						
Size (in)	5.5					
Weight (lbm/ft)	20					
Inner Diameter (in)	4.778					
Grade	P110					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	13693					
Bottom Logger (ft)	13693					

Remarks and Equipment Summary

ONE: Toolstring			ONE: Remarks	
<div><div><div>Equip nameLength</div><div>LEH-QT30.16</div><div>LEH-QT</div></div><div><div>EDTC-B:927.24</div><div>045</div><div>EDTH-B:92</div><div>EDTG-A:77998</div><div>EDTC-B:9045</div></div><div><div>AH-184[2]20.74</div><div>AH-184[1]18.74</div><div>USIT-E:87116.74</div><div>ECH-MFA:1775</div><div>USAC-A:871</div><div>USIT-A:88</div></div></div> <div></div> <div><div>MP nameOffset</div><div>CTEM23.74</div><div>ACCZ0.00</div><div>HV0.00</div><div>Gamma Ray21.87</div><div>TelStatu s20.74</div></div>	THANK YOU FOR CHOOSING SCHLUMBERGER			
	TOOLSTRING RUN AS PER TOOLSKETCH			
	GEMCO'S AND IN-LINE CENTRALIZERS USED FOR CENTRALIZATION			
	ALL PASSES RUN UNDER 0 PSI			
	LEAD 11 PPG			
	TAIL 13.5 PPG			

USIS-A:98
5
USSC-B:18
03
IBCS-A:87
1
FAR-SENS
OR
IBC-TX
NEAR-SEN
SOR
IBC-TX
USI-SENS
OR
IBC-TX
EMITTER-
SENSOR
IBC-TX



USI Sen 0.84
sor
Head Te
nsion
TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 6.250 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[3]:Up	7555.47	27.26

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

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

Mud Impedance = "Inversion Norm."
IBC Inversion normalization zone is : 468.81m(1538.10ft) to 472.67m(1550.77ft)
MUD_N_INV = 1.18
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in inversion normalization interval = 1.72 MRayl

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

ONE

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2018	8.0.93964.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	27.26 ft	7555.47 ft	24-Oct-2017 8:34:28 AM	24-Oct-2017 10:27:35 AM	ON	6.77 ft	No

All depths are referenced to toolstring zero

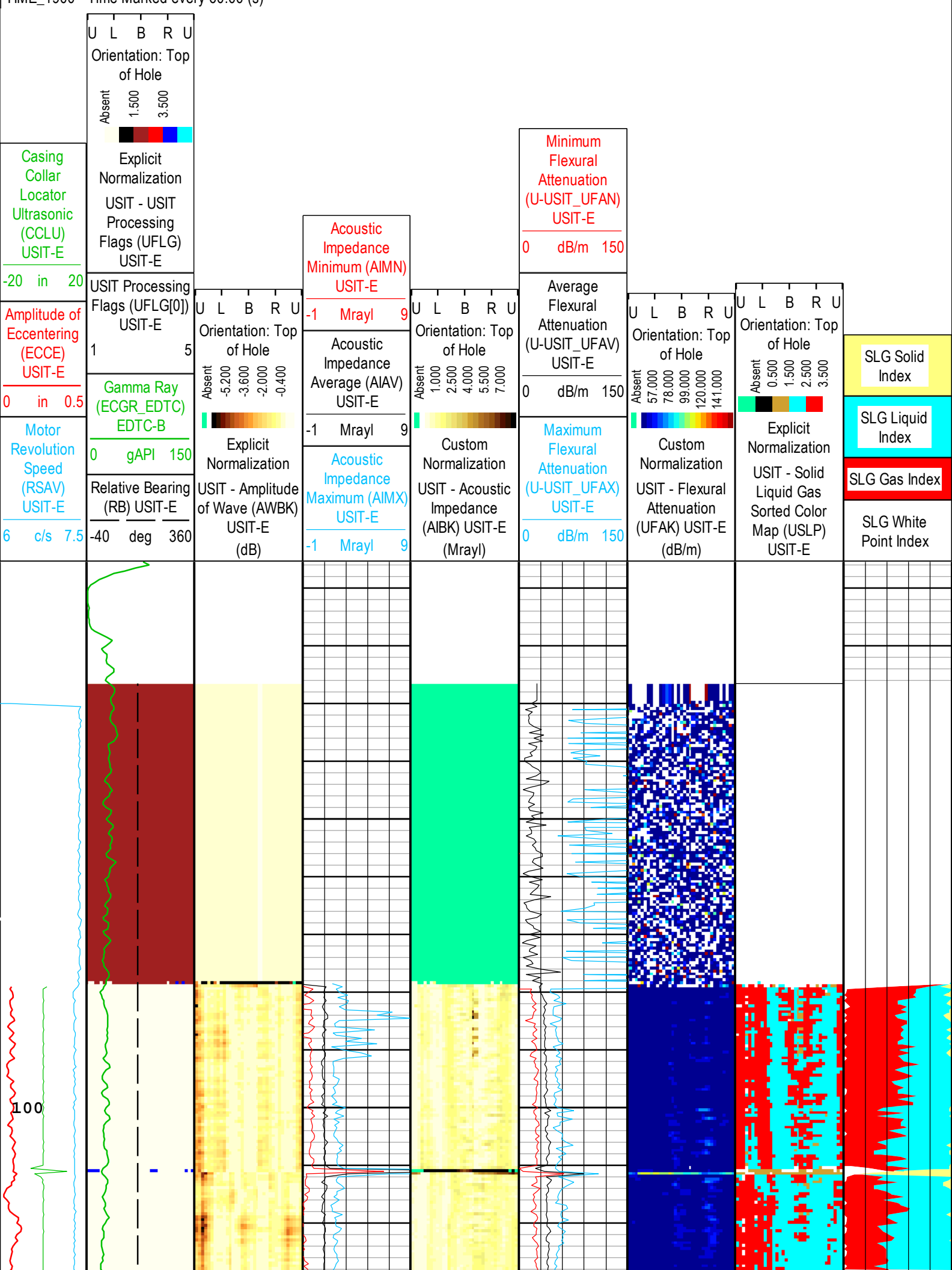
Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HWY 52 4H-32H-O268
		ONE: Log[3]:Up:S003

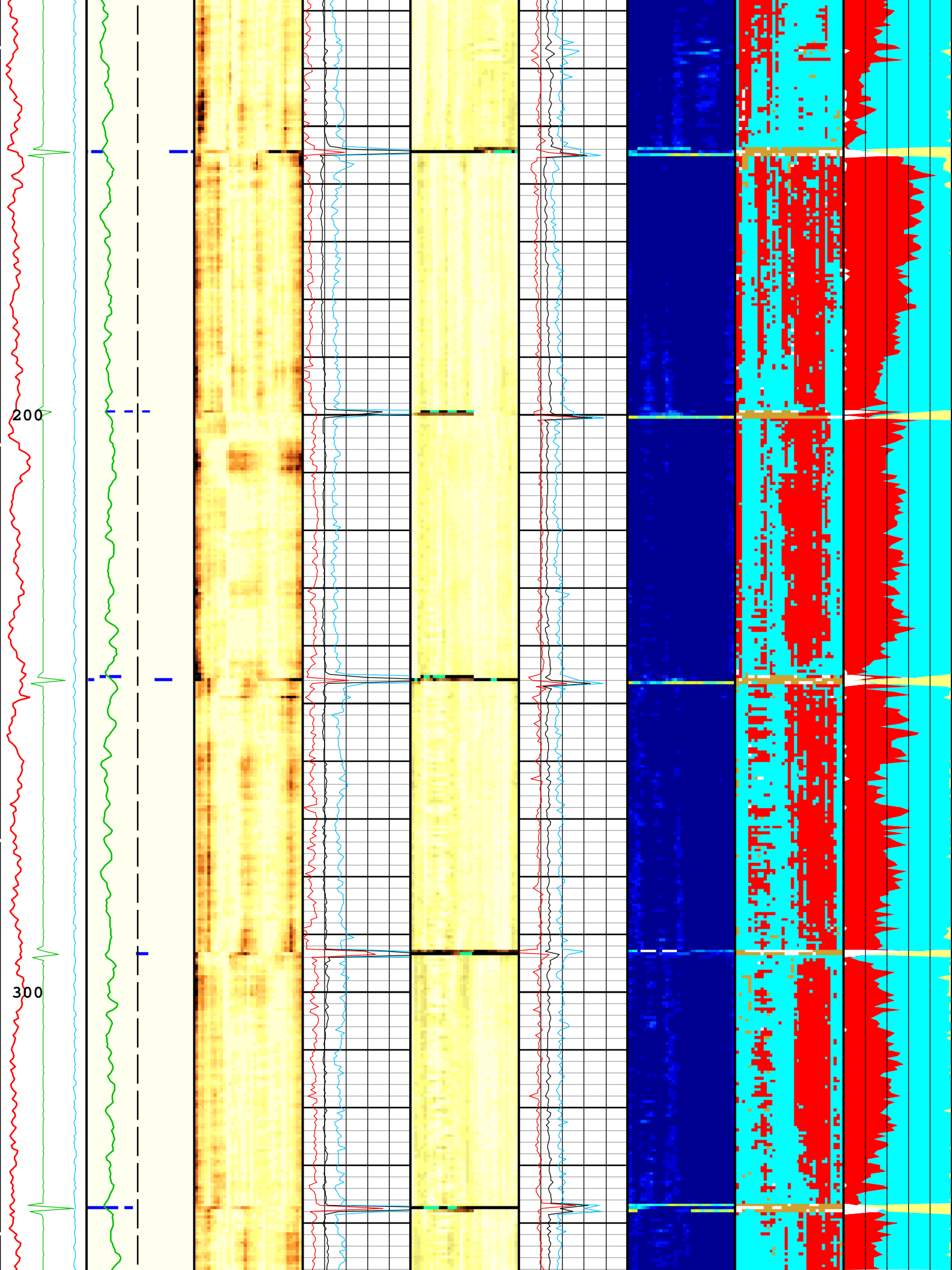
Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Oct-2017 10:43:55

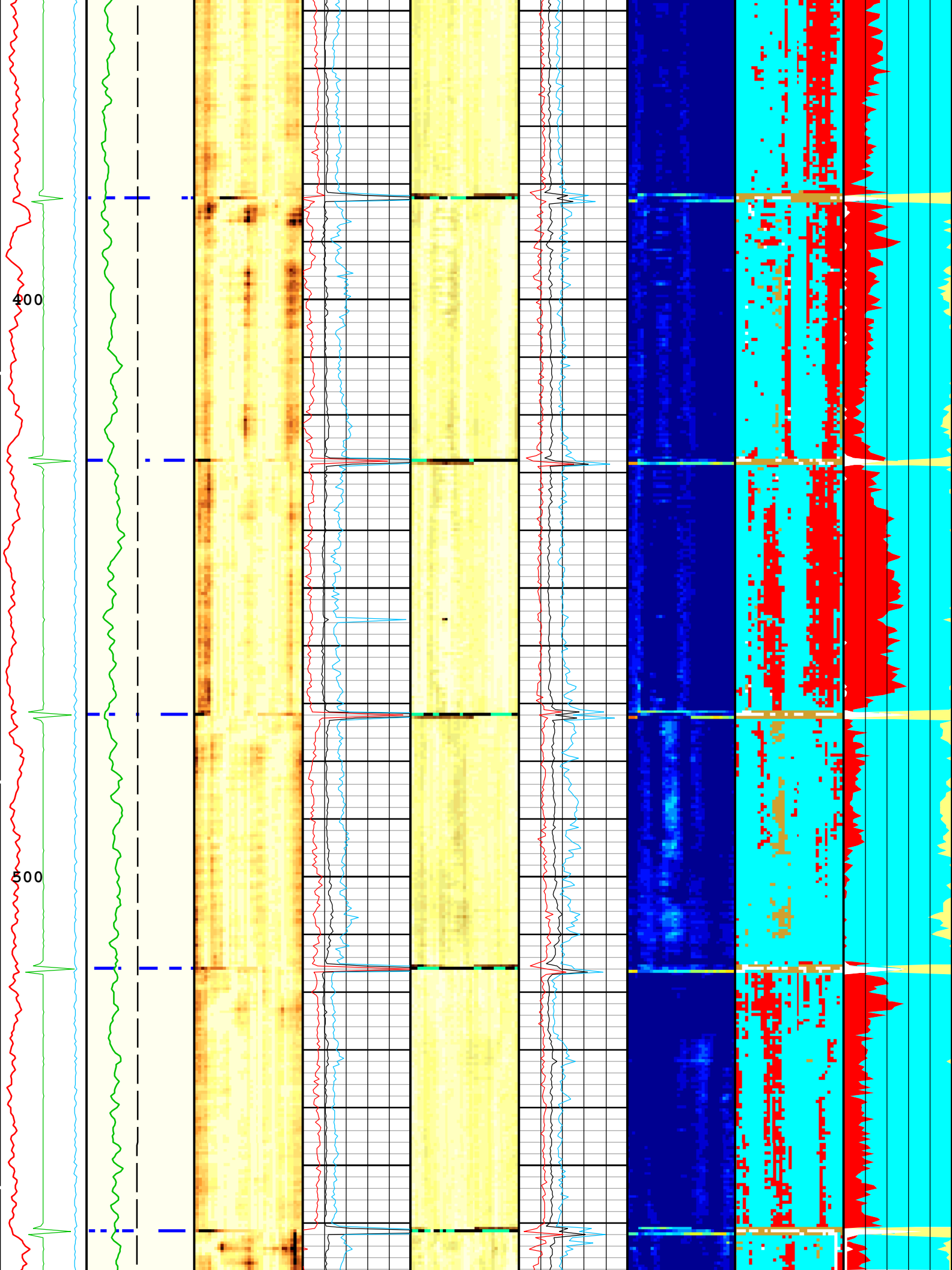
USIT Processing Flags (UFLG[0]) USIT-E

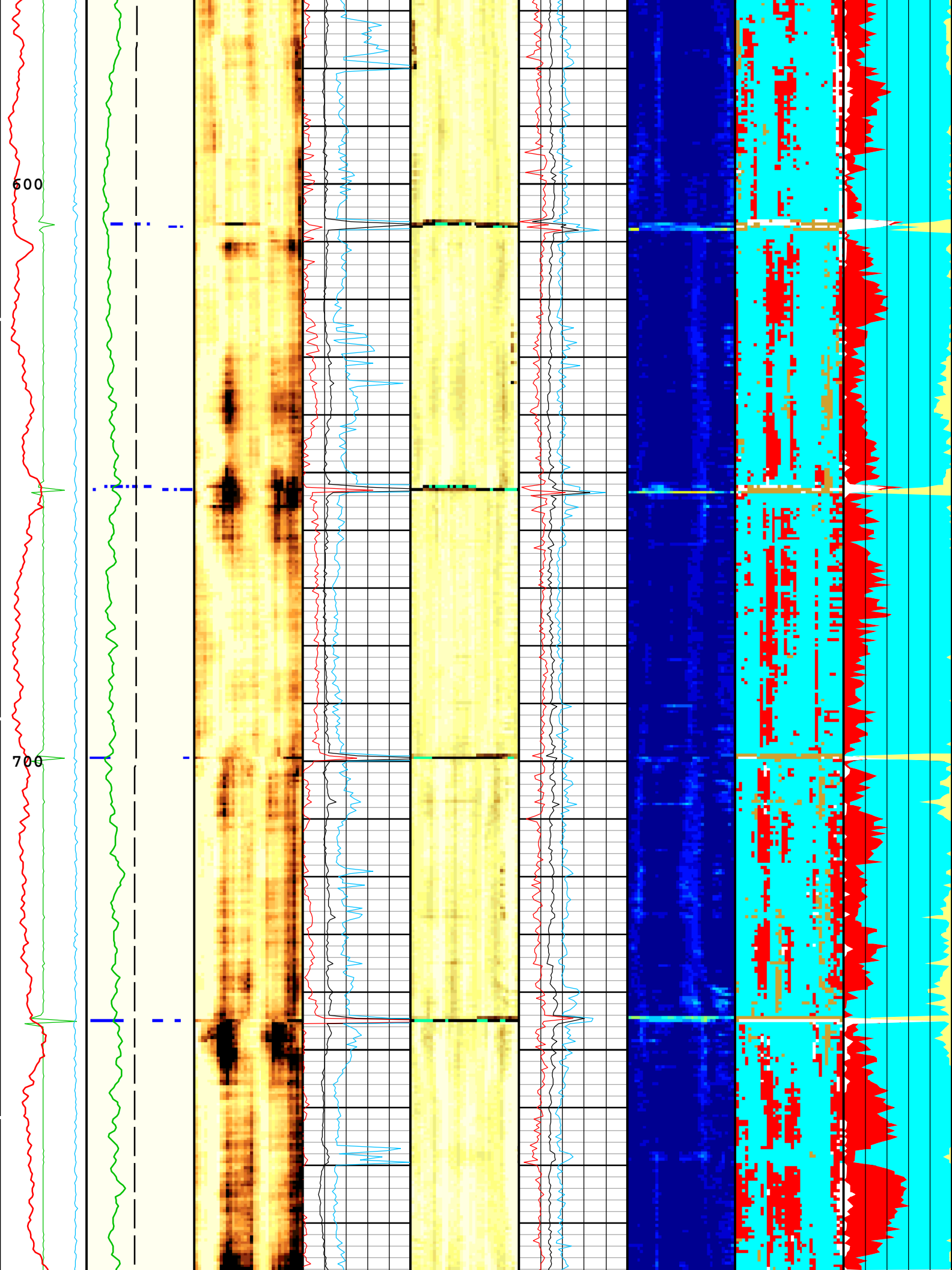
- | | |
|---|---------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.5] - : | Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - : | WINLEN Error |
| 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | Casing Thickness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

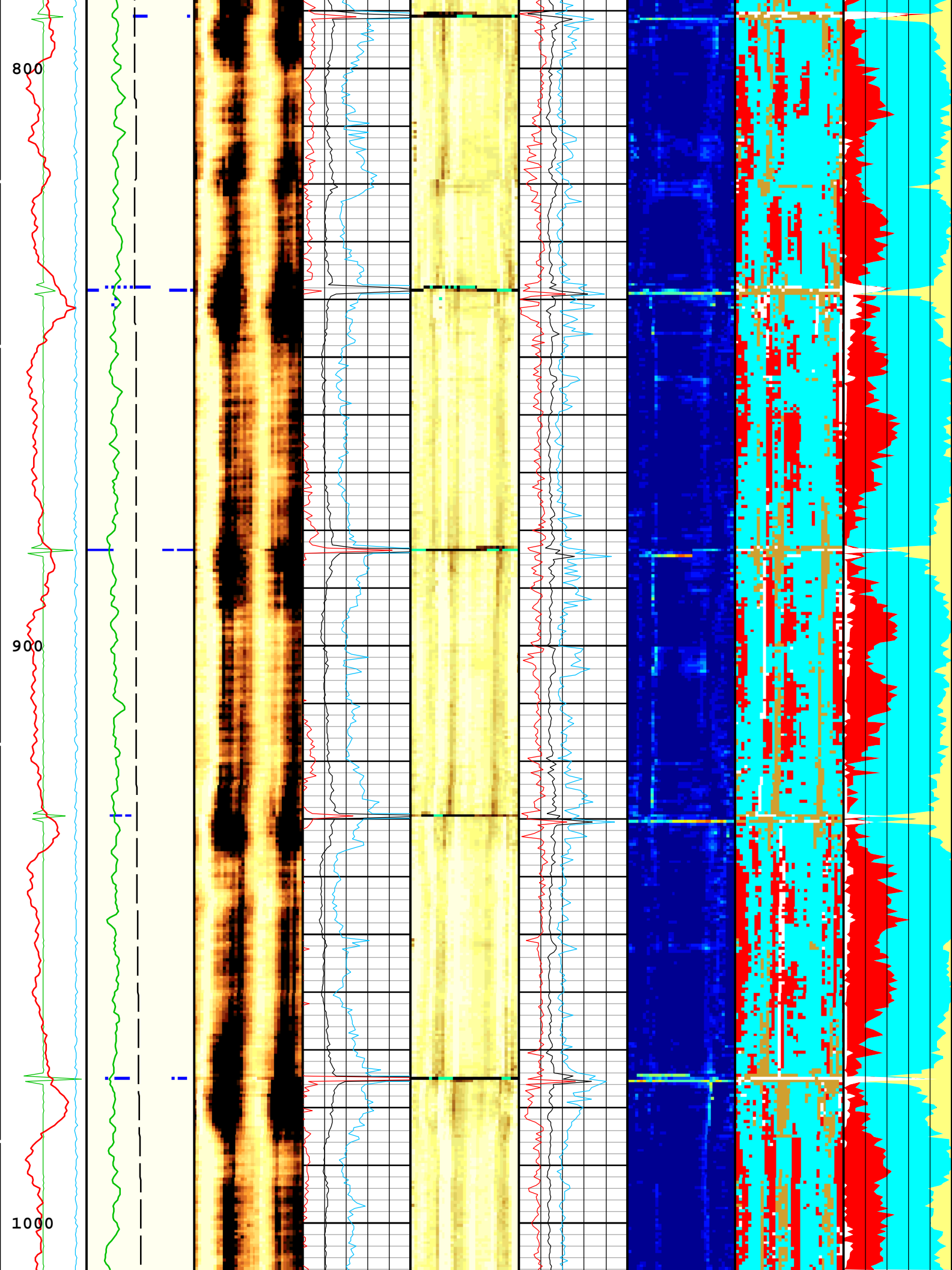
TIME 1900 - Time Marked every 60.00 (s)

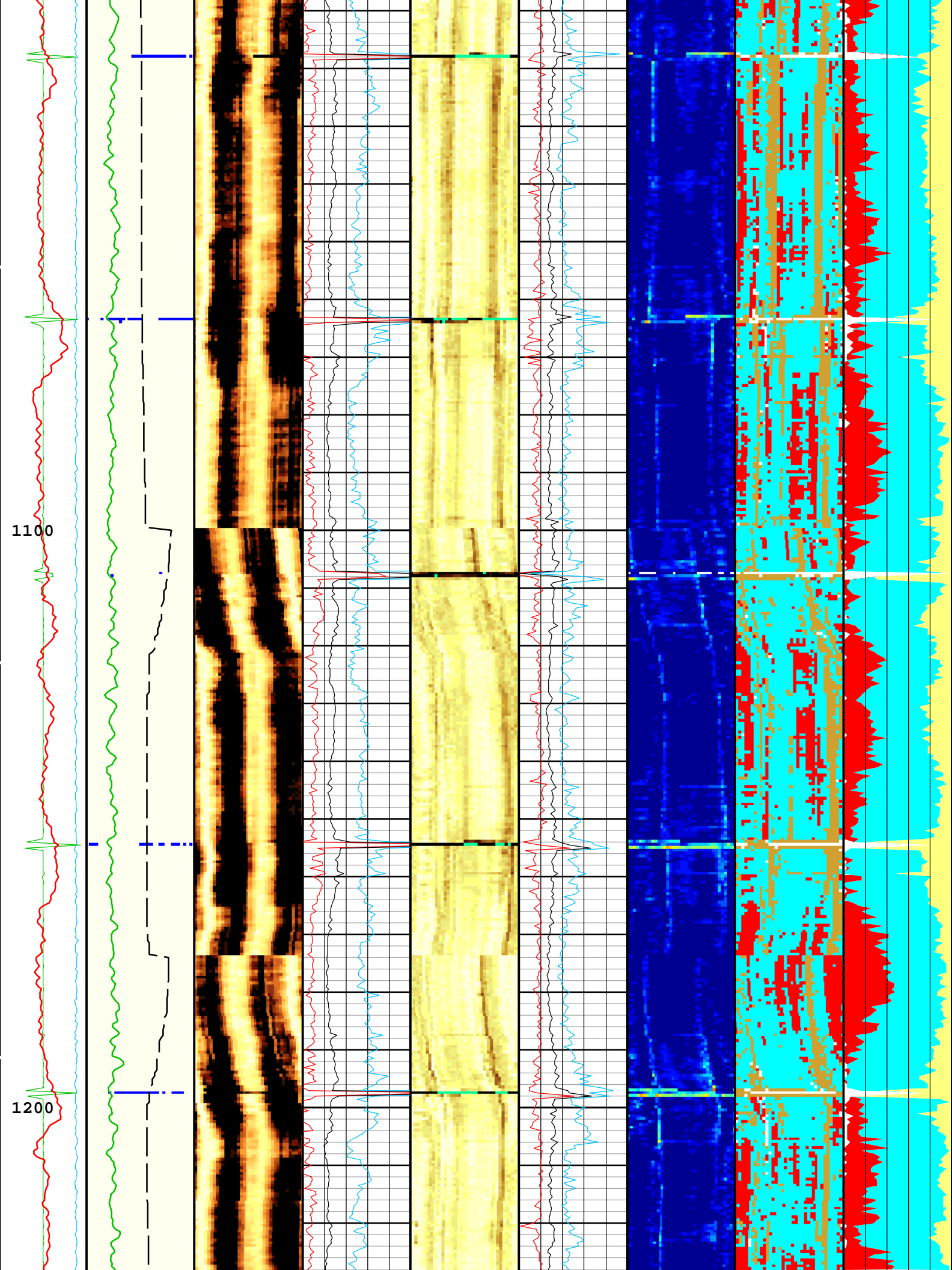


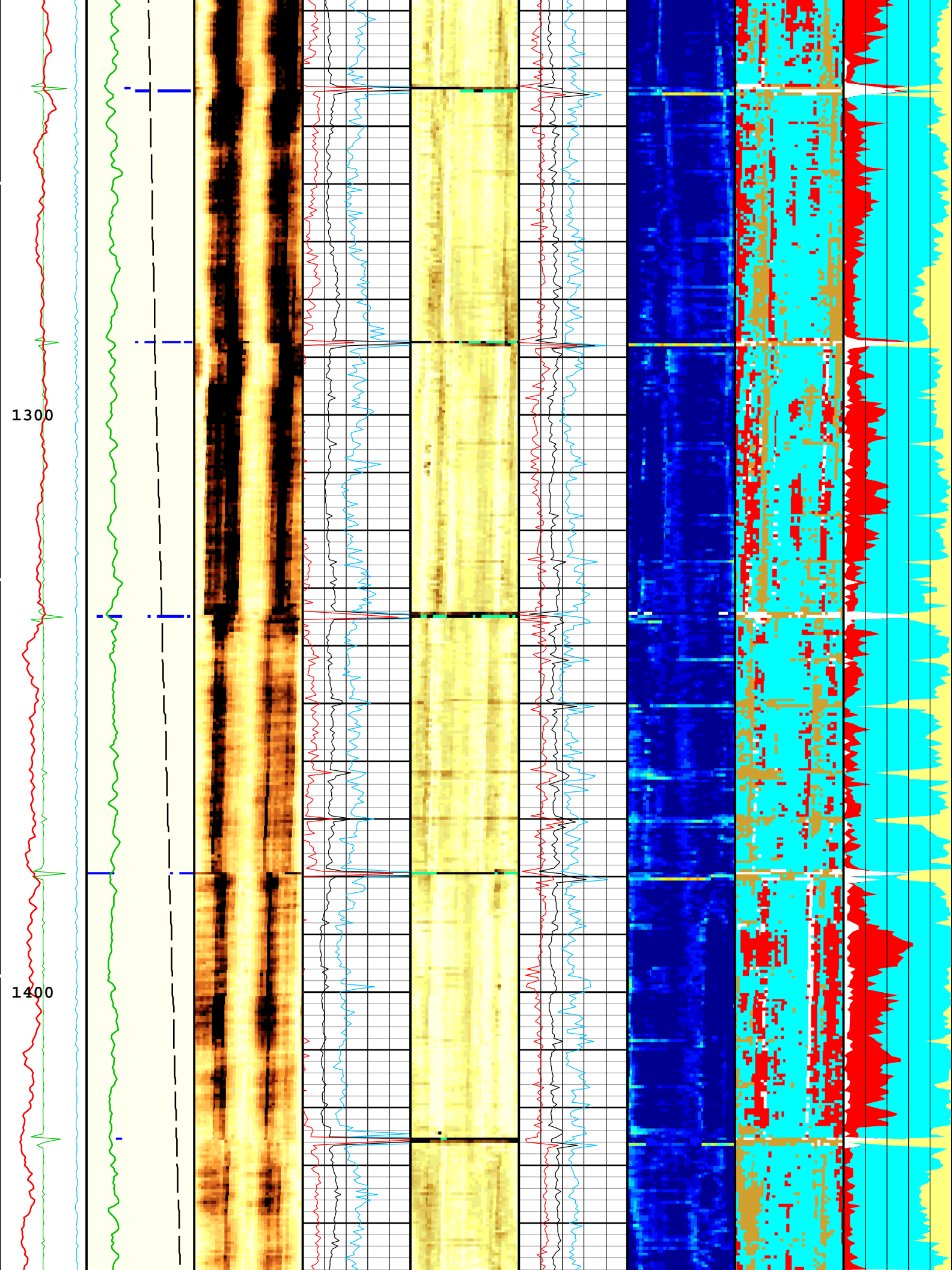


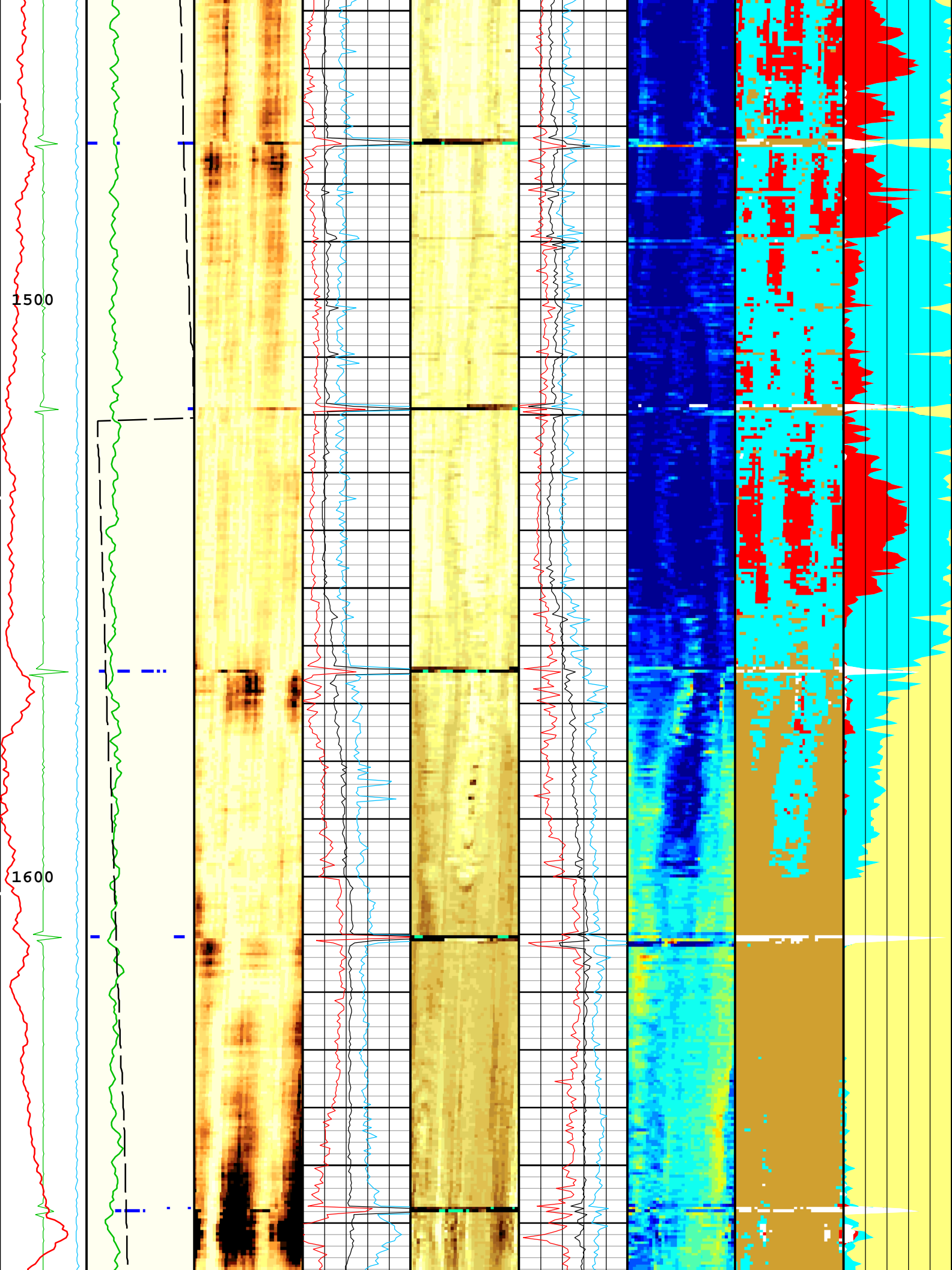


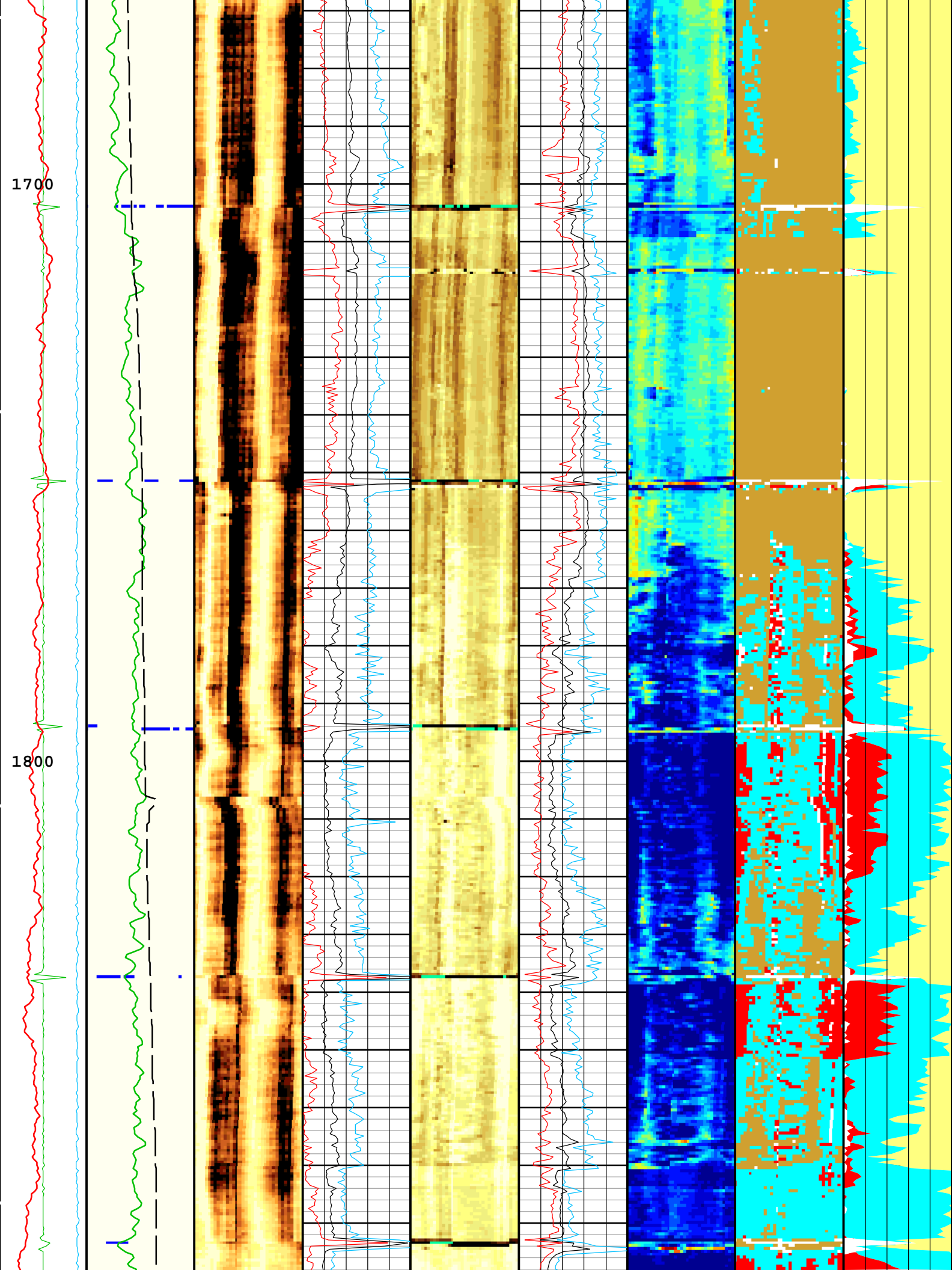


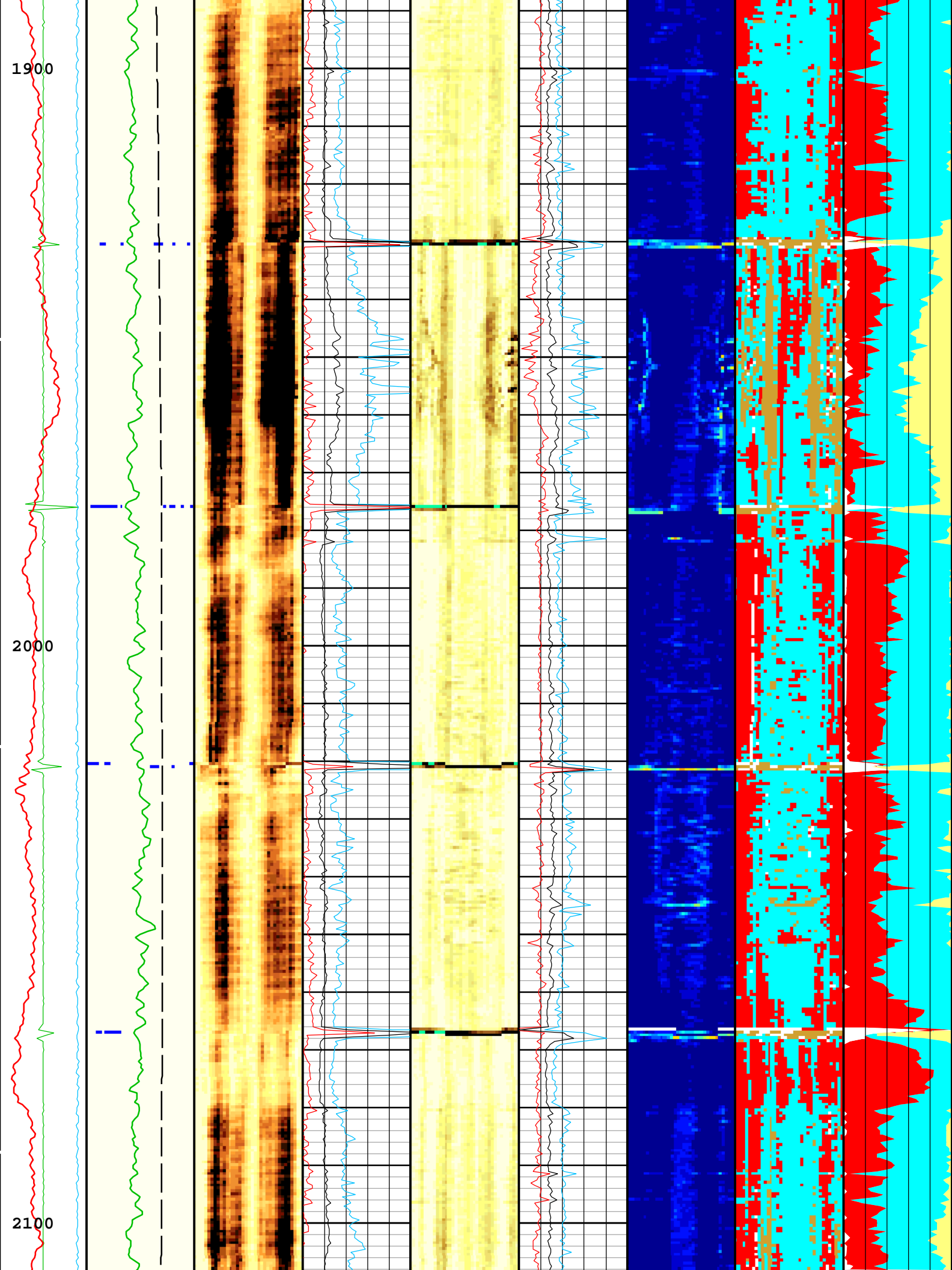


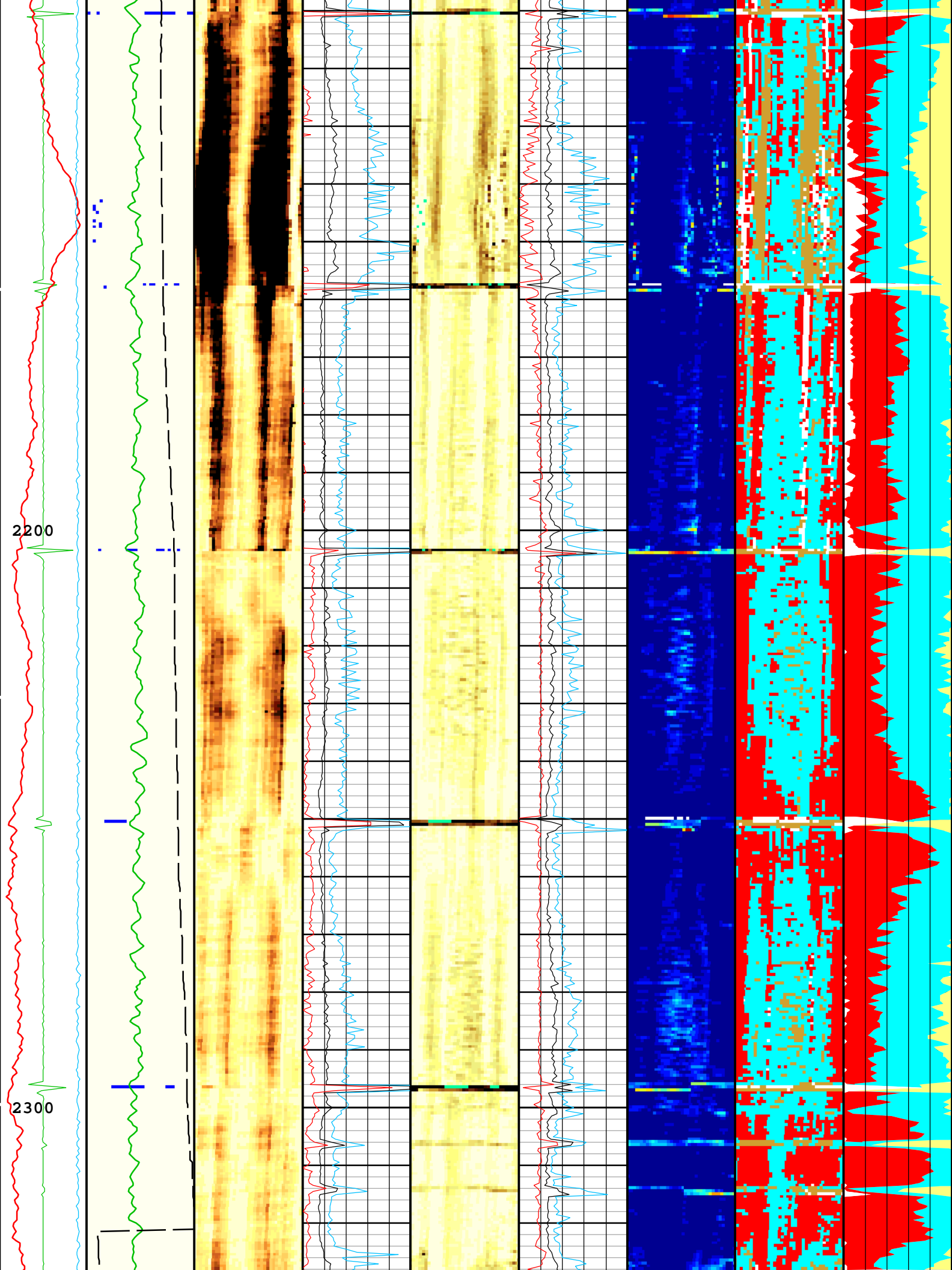


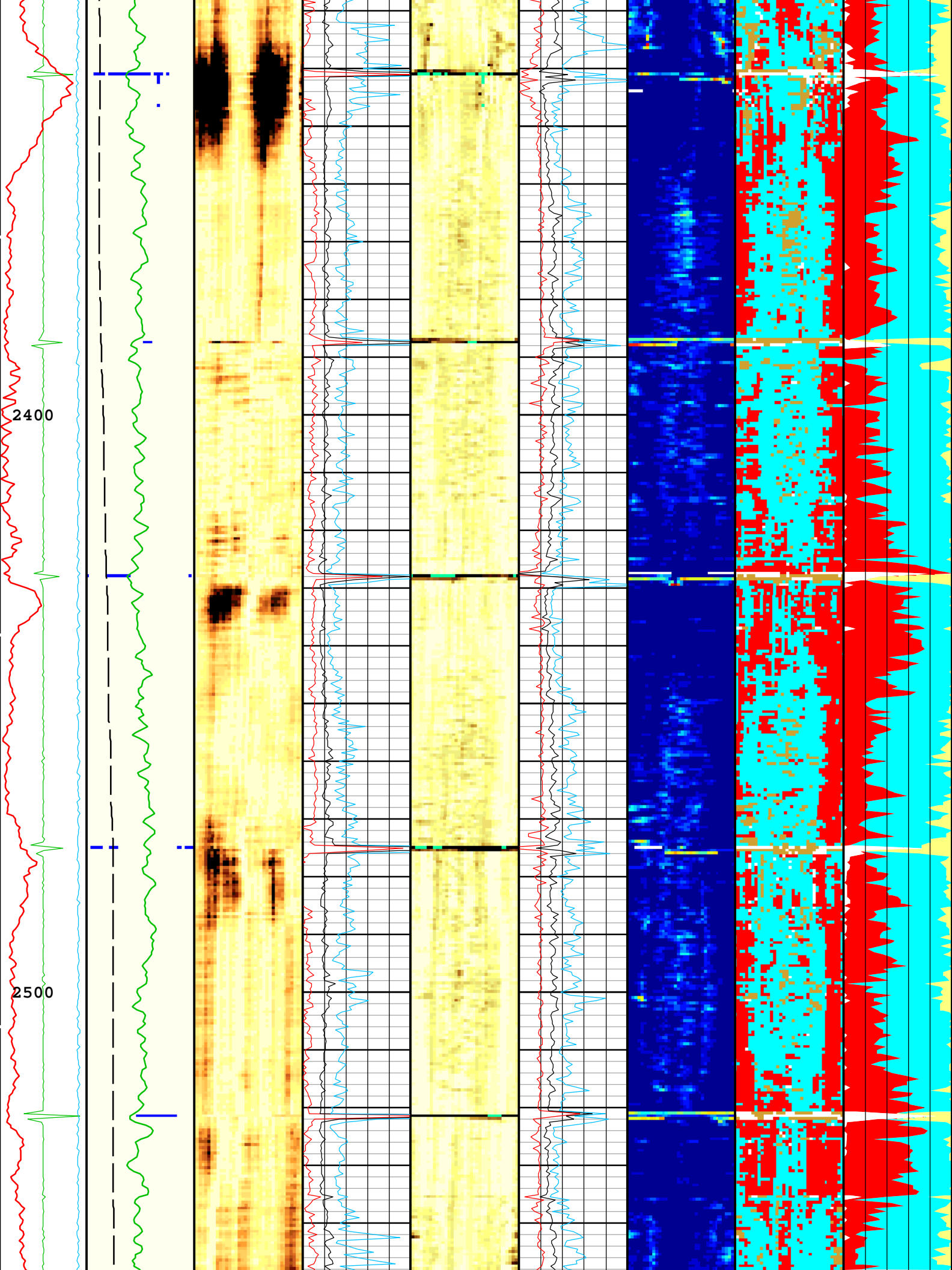


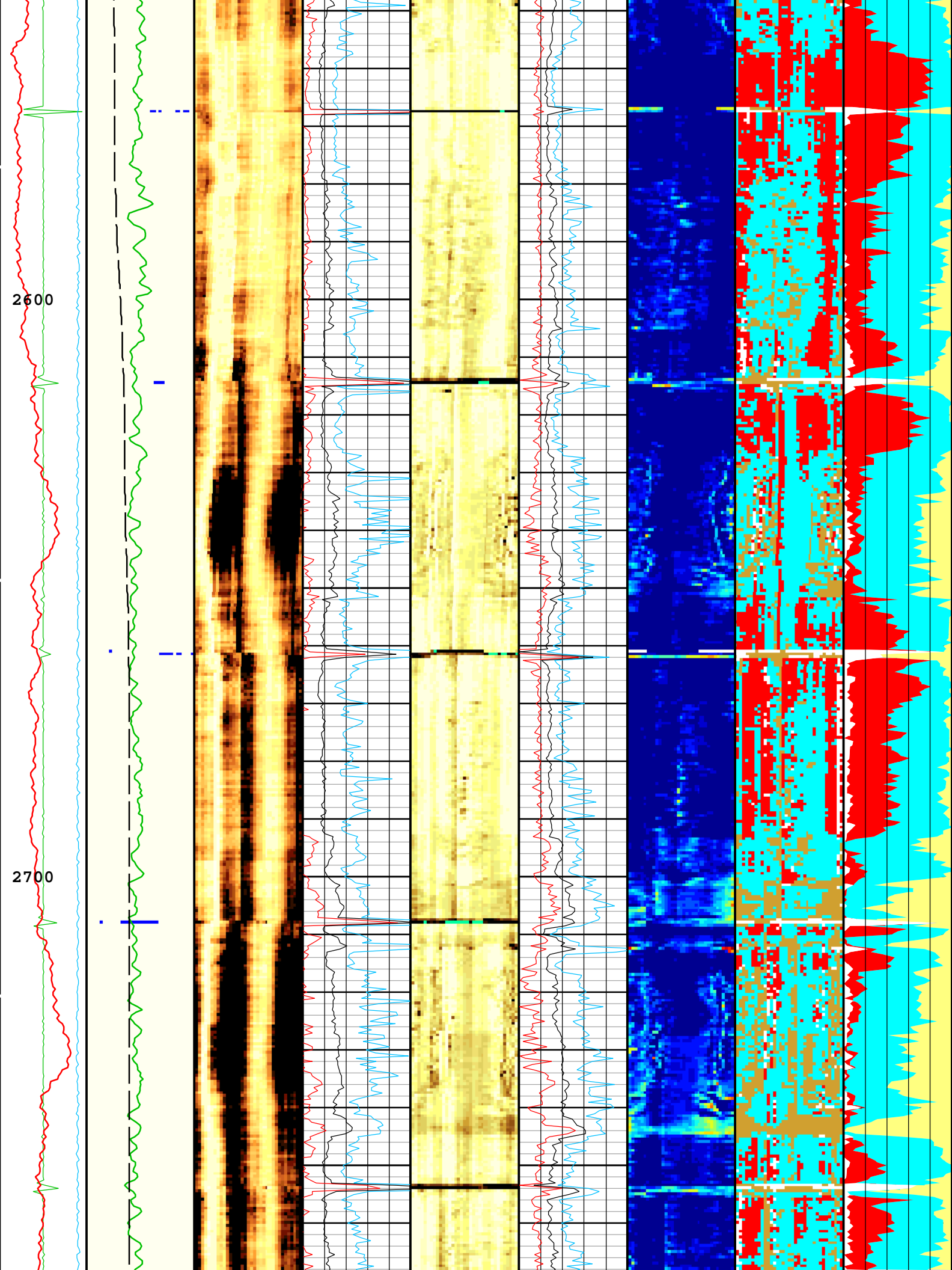


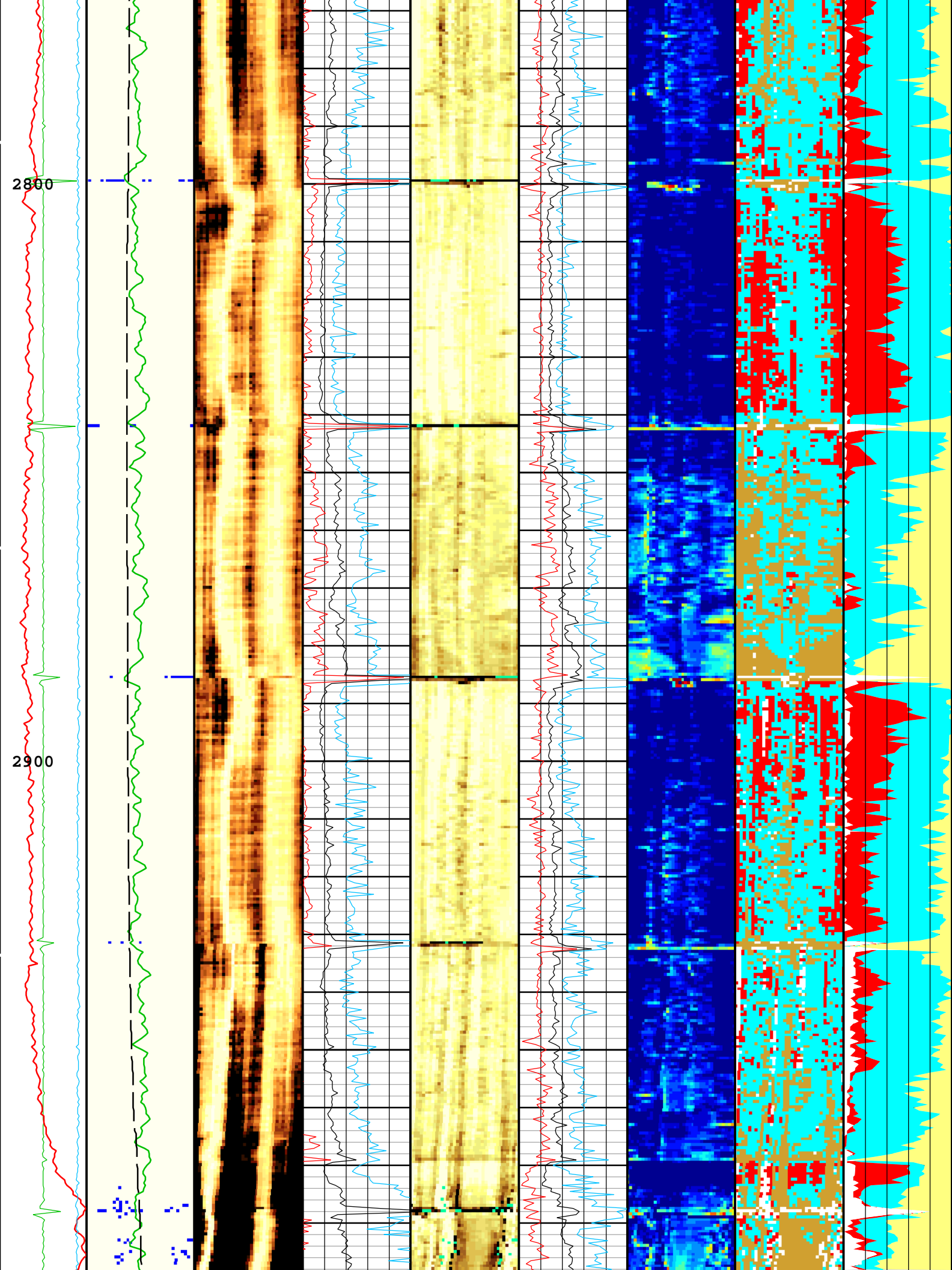


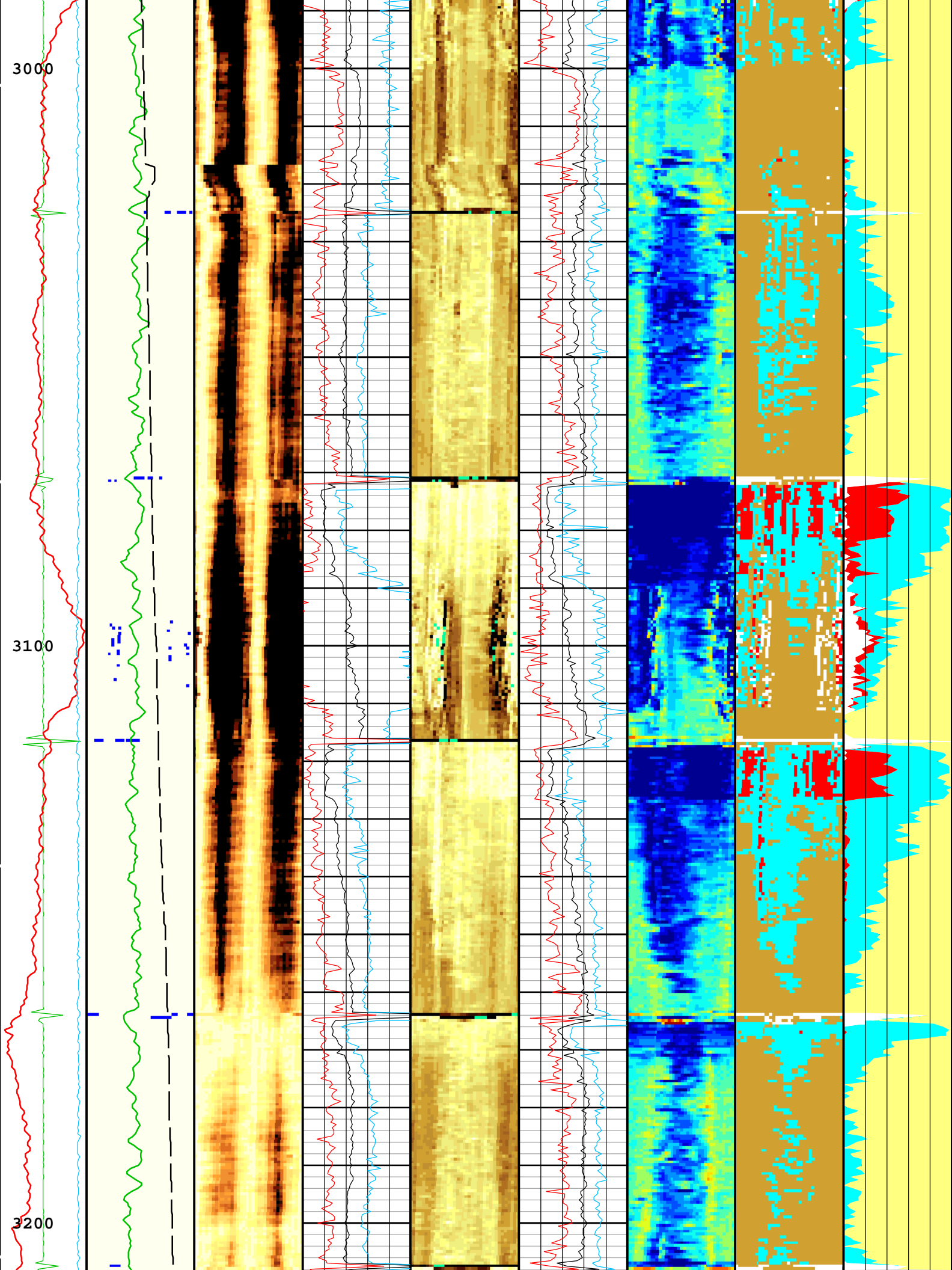


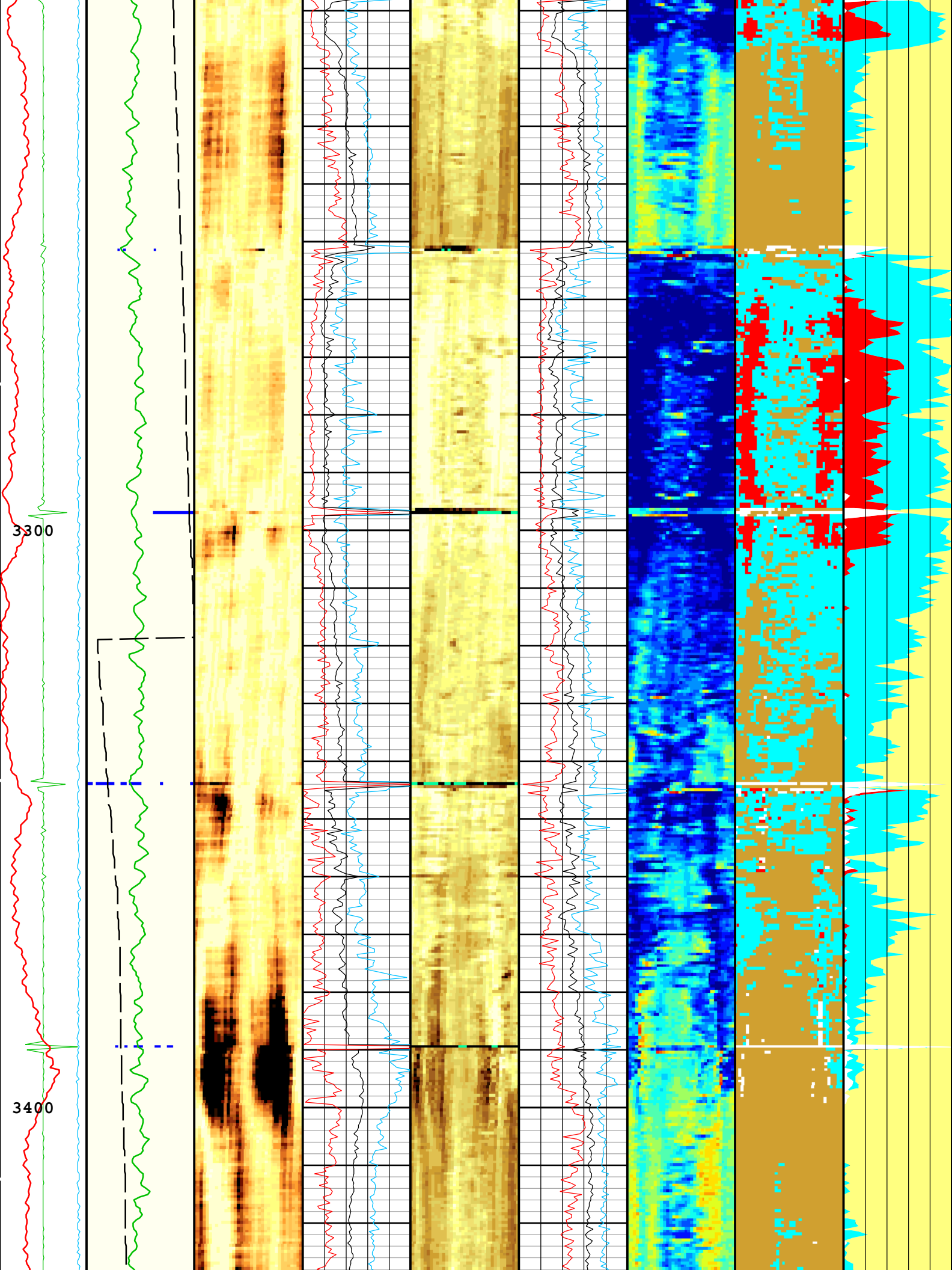


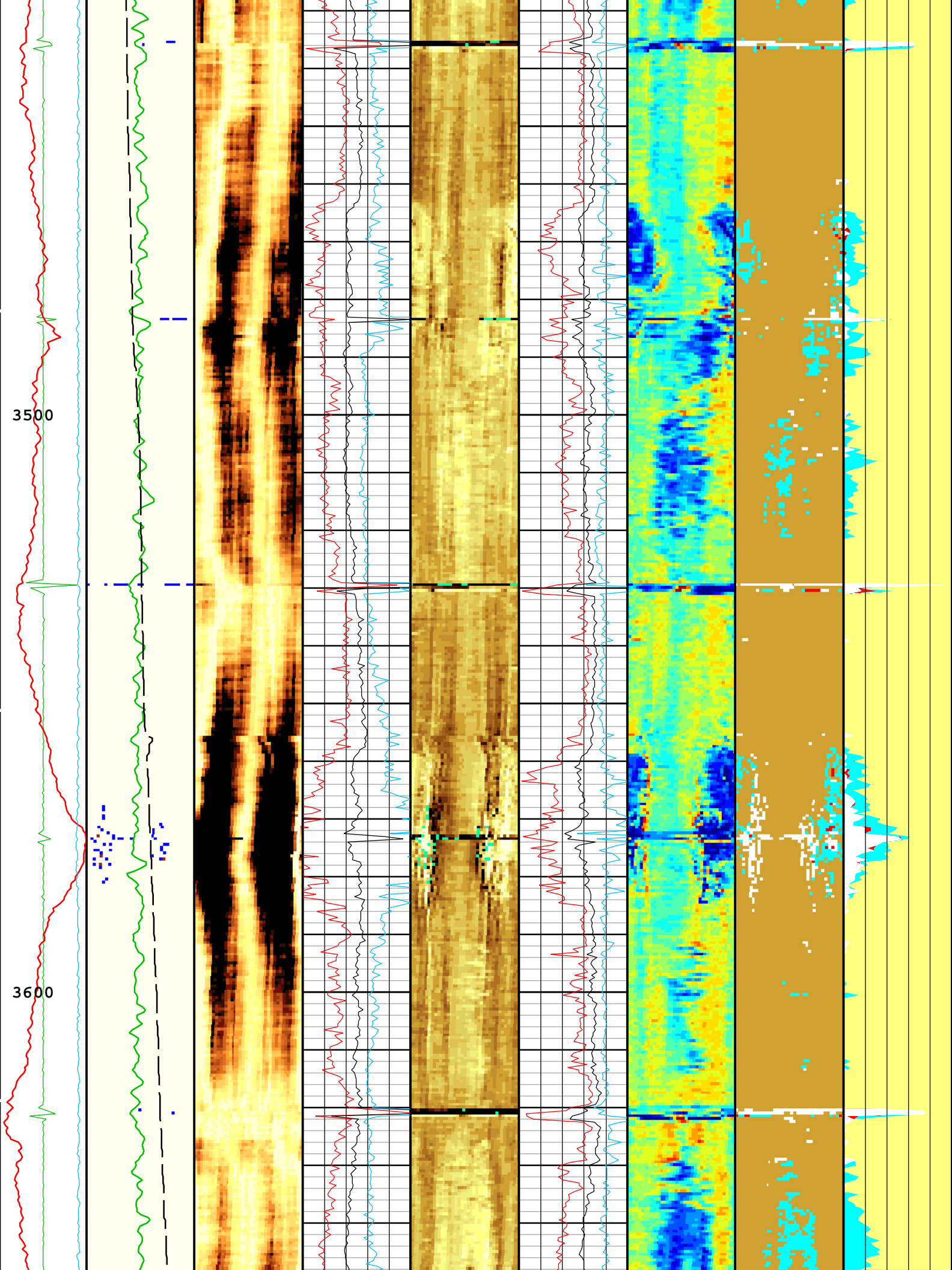


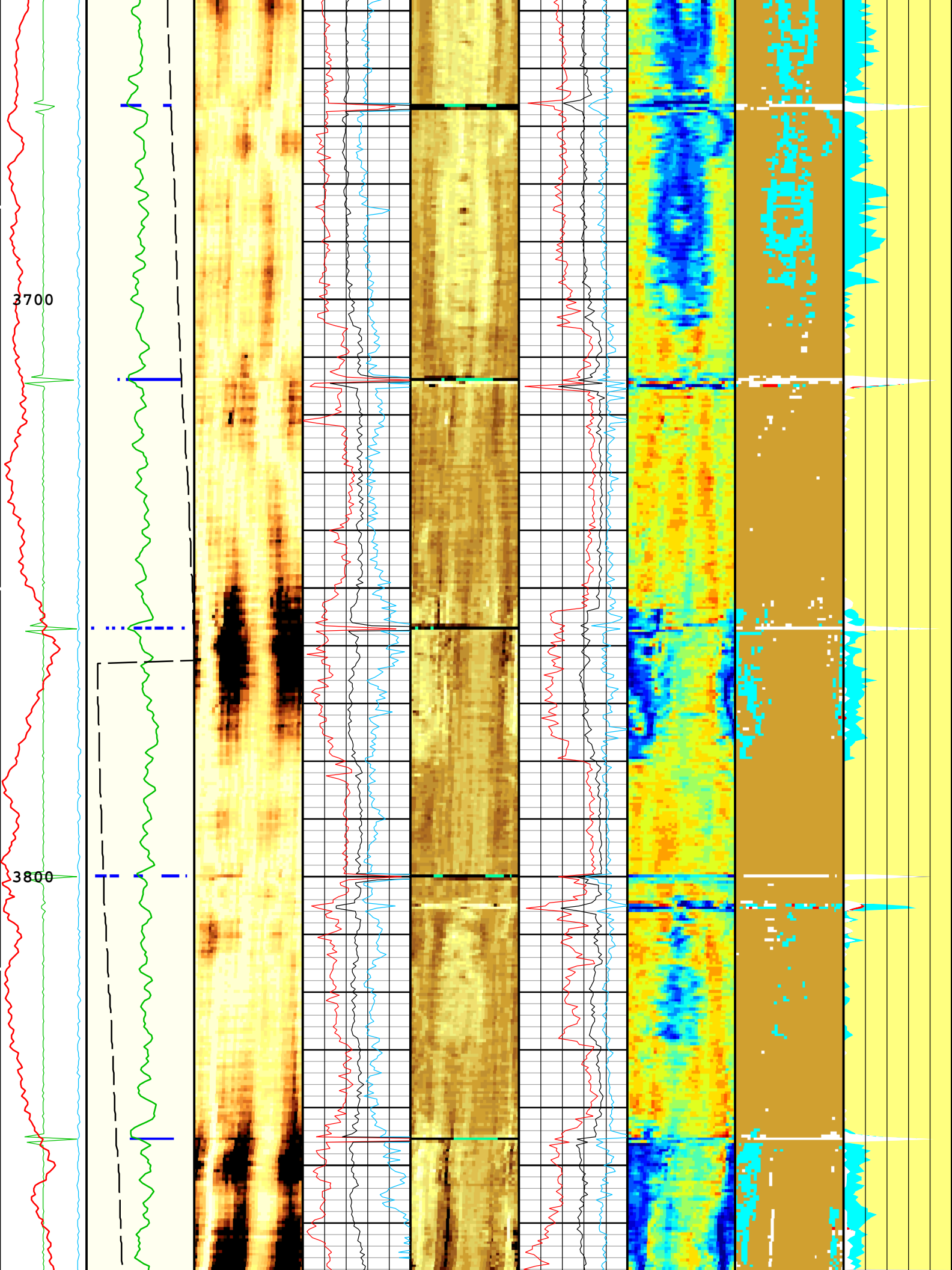


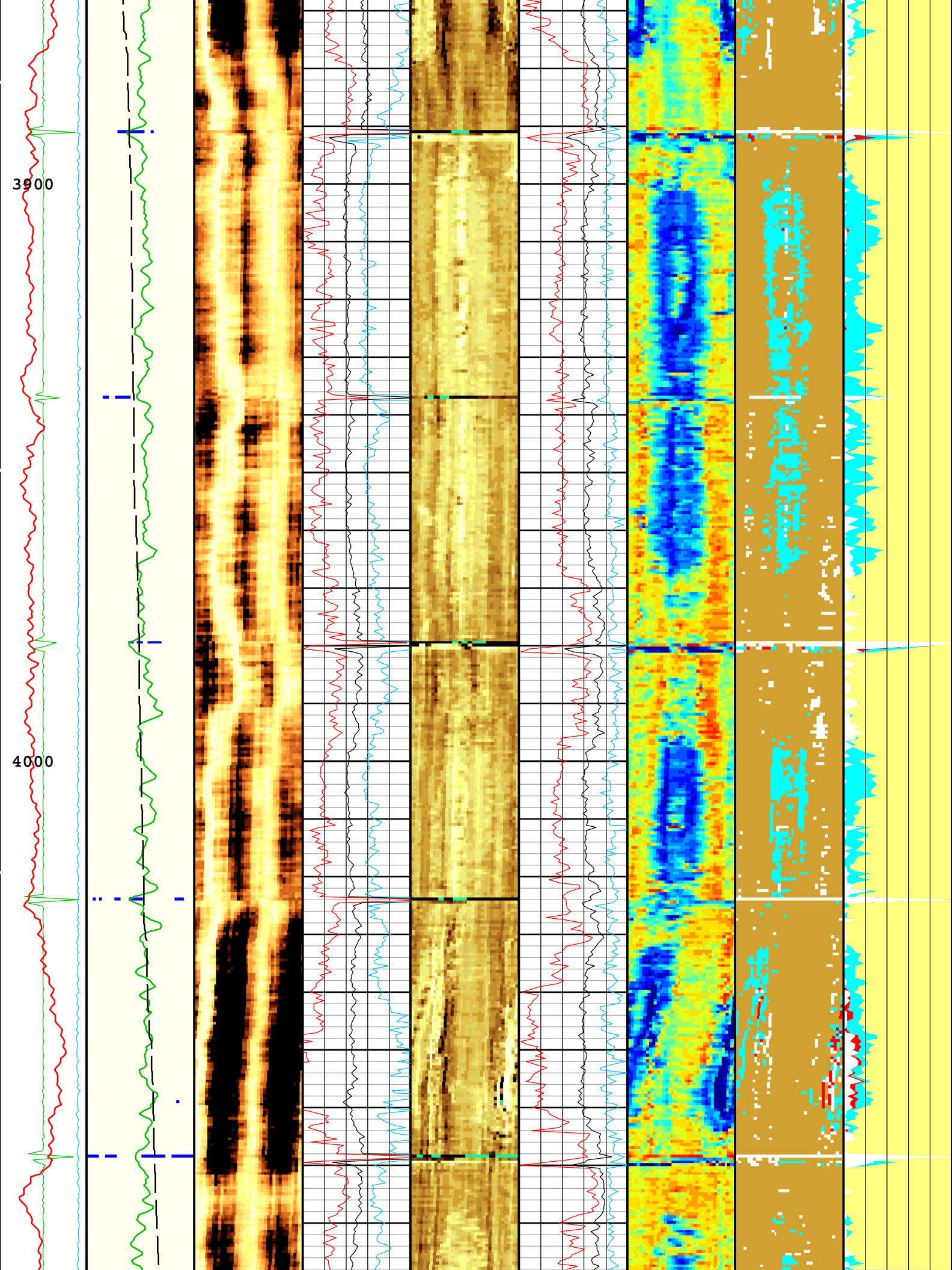


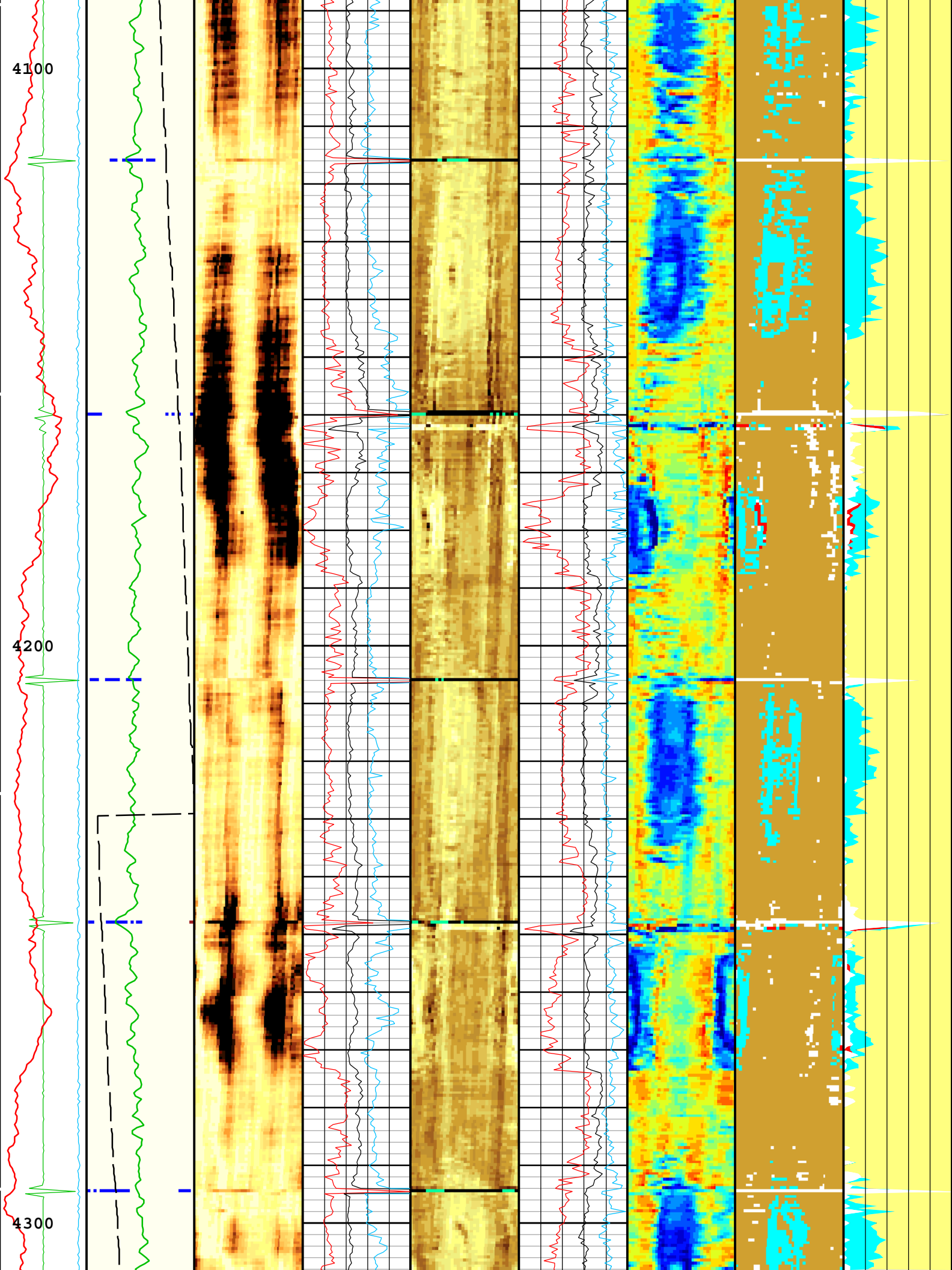


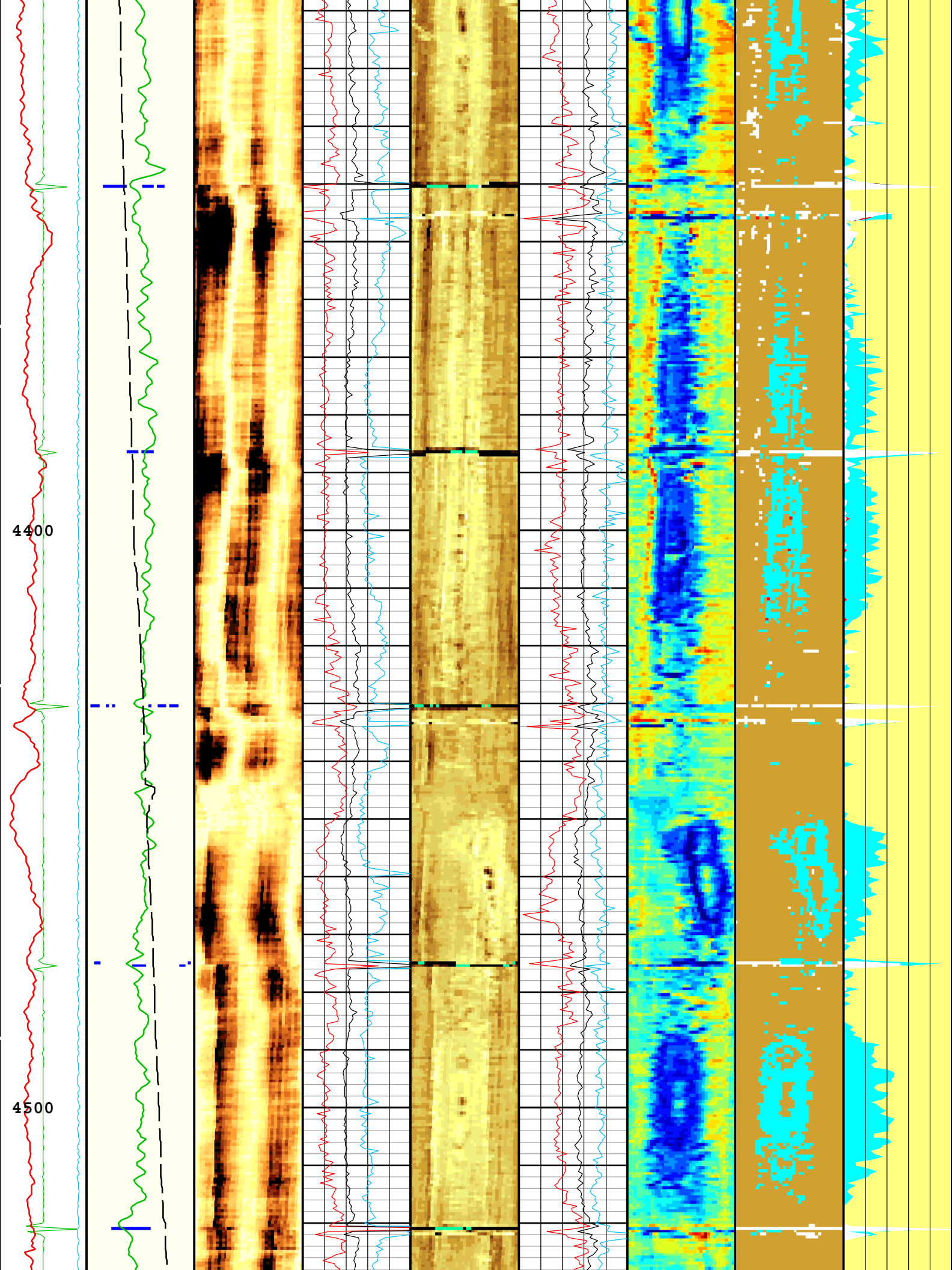


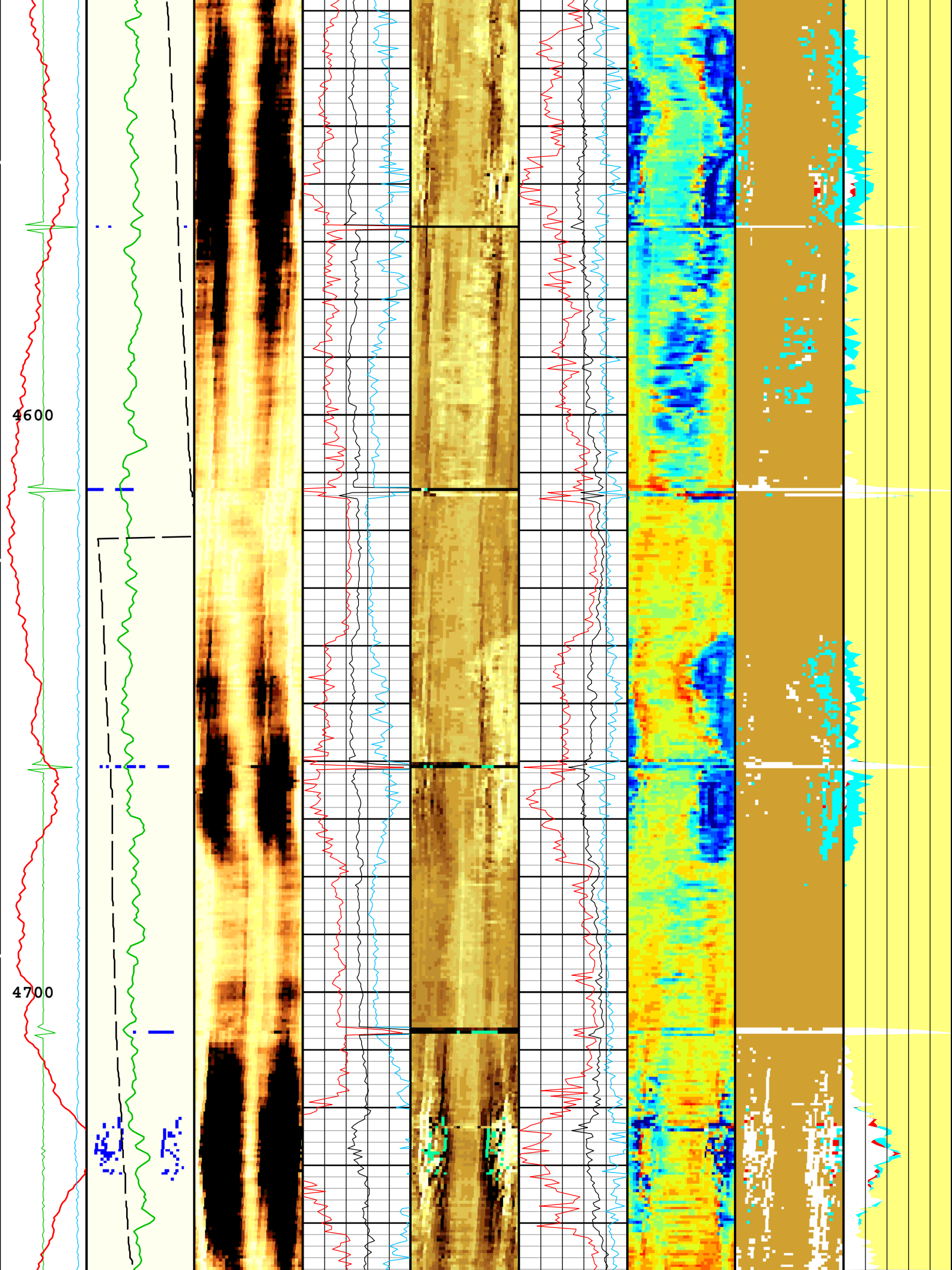


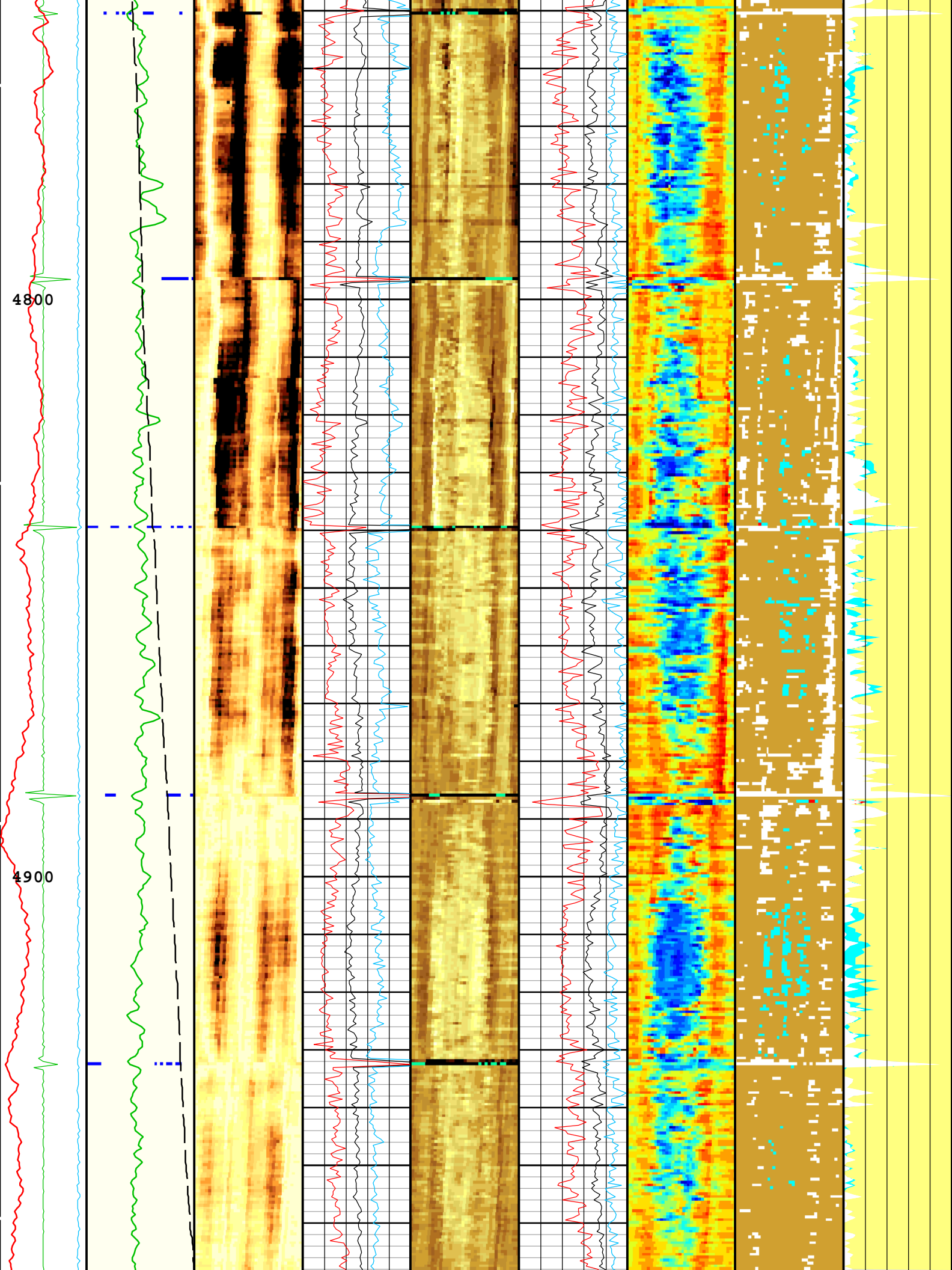


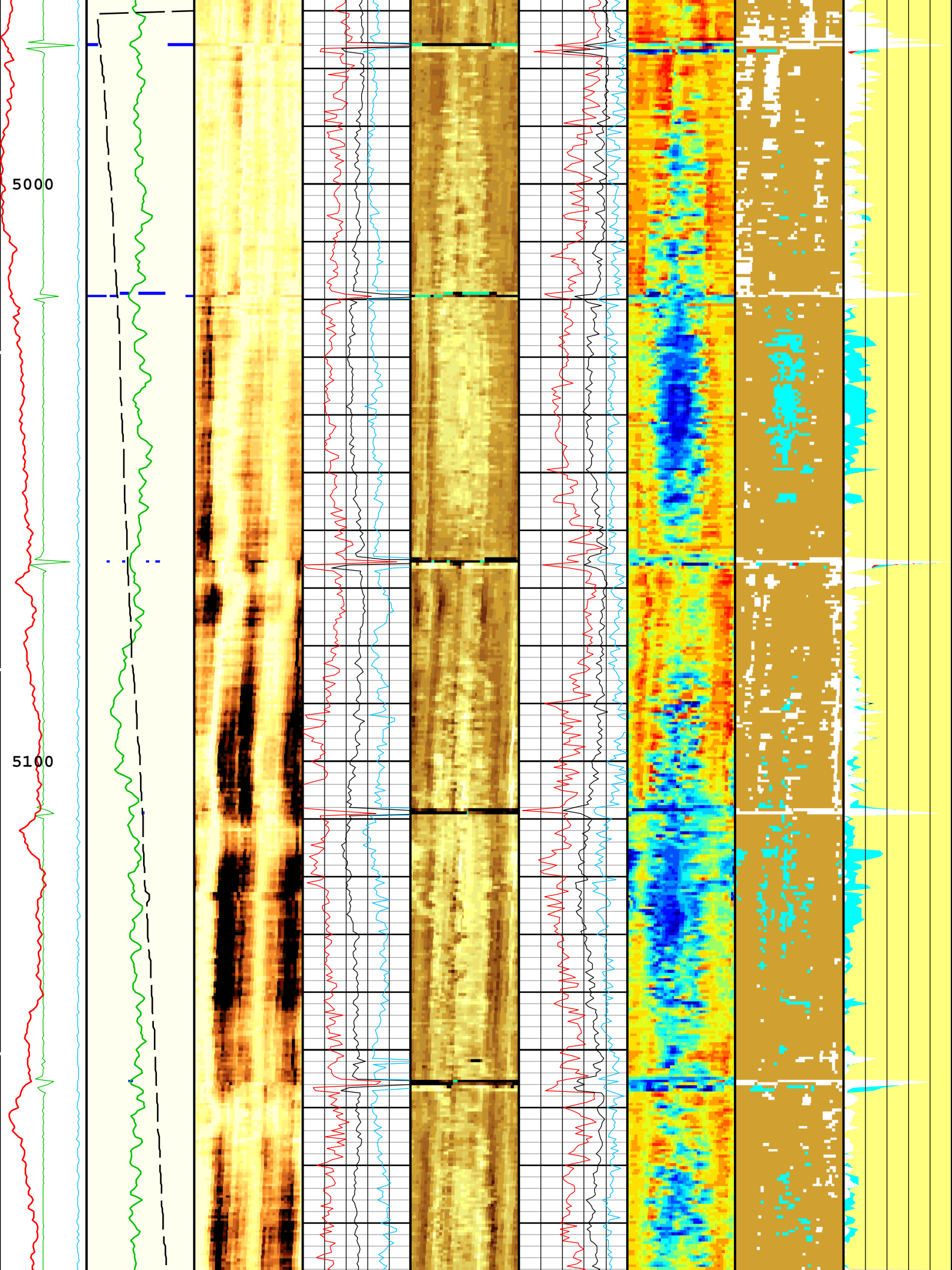


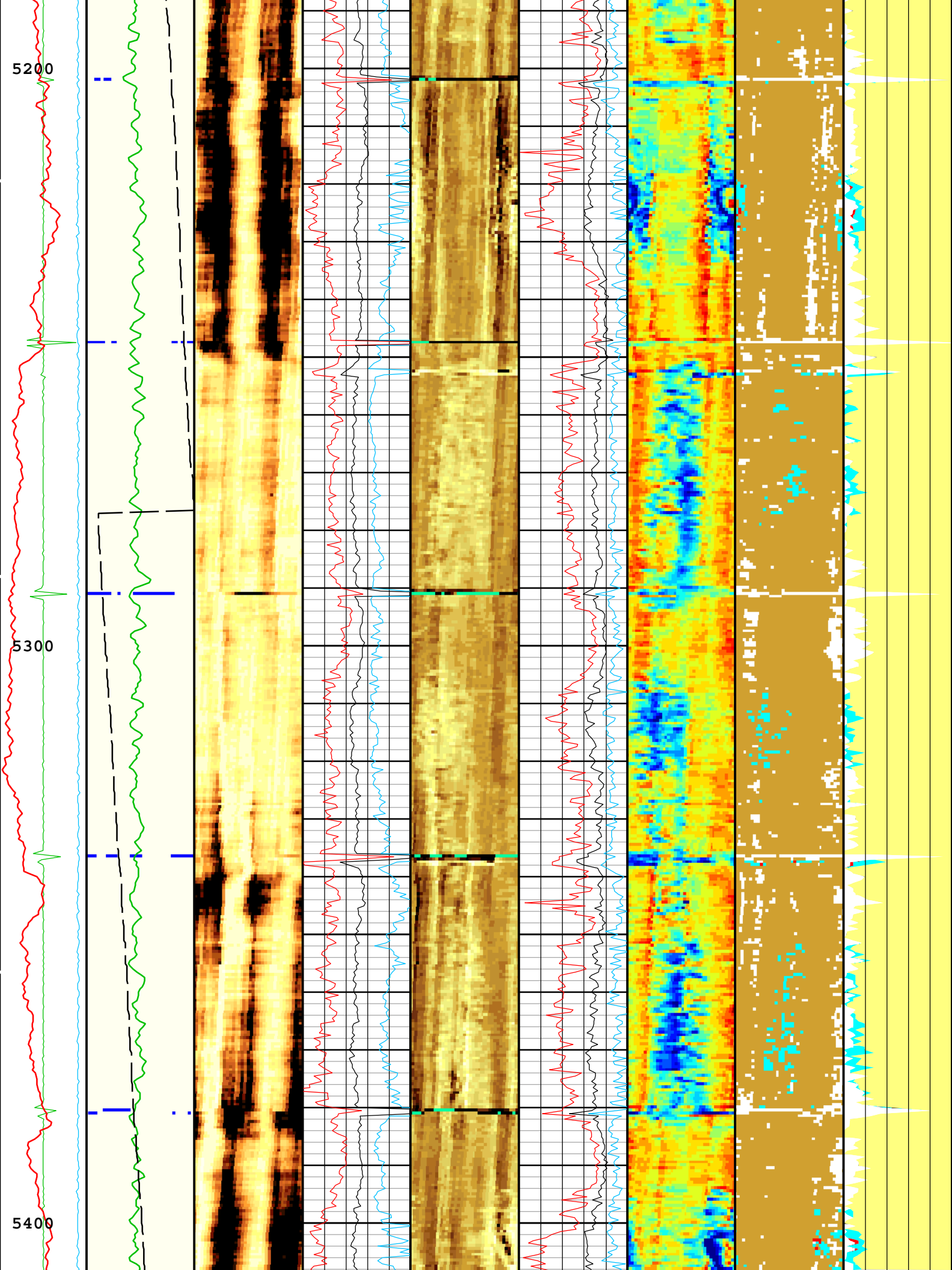


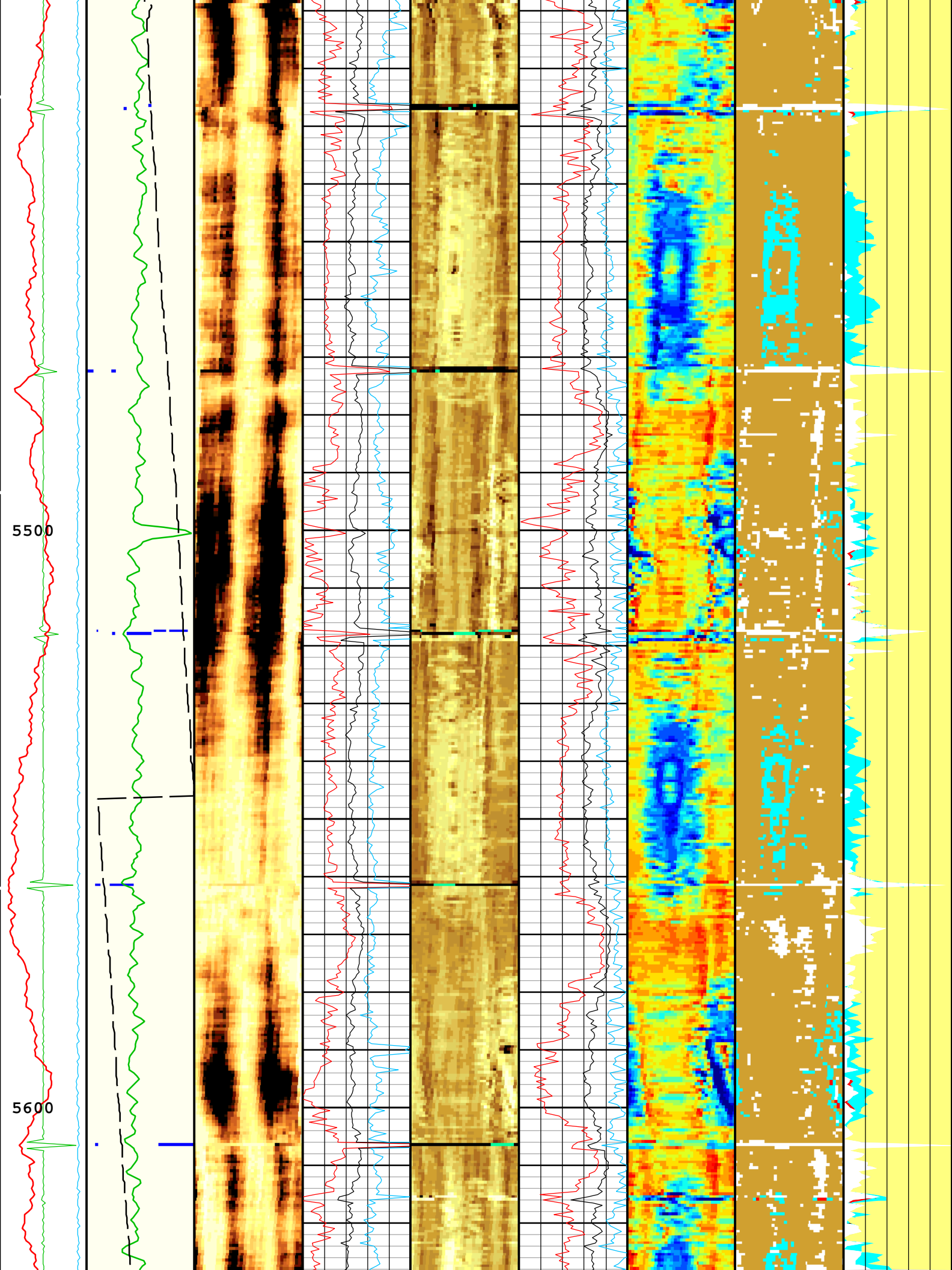


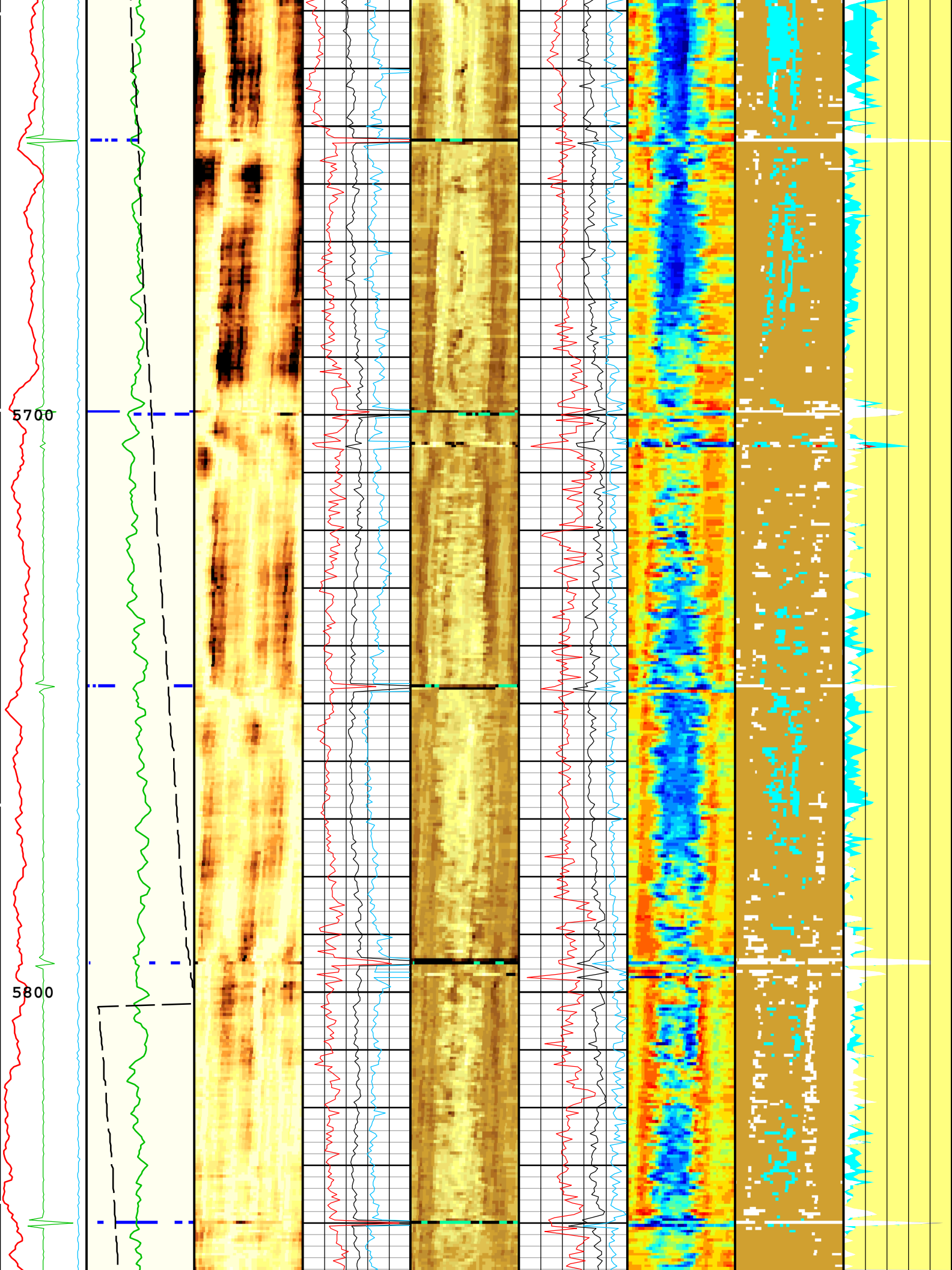


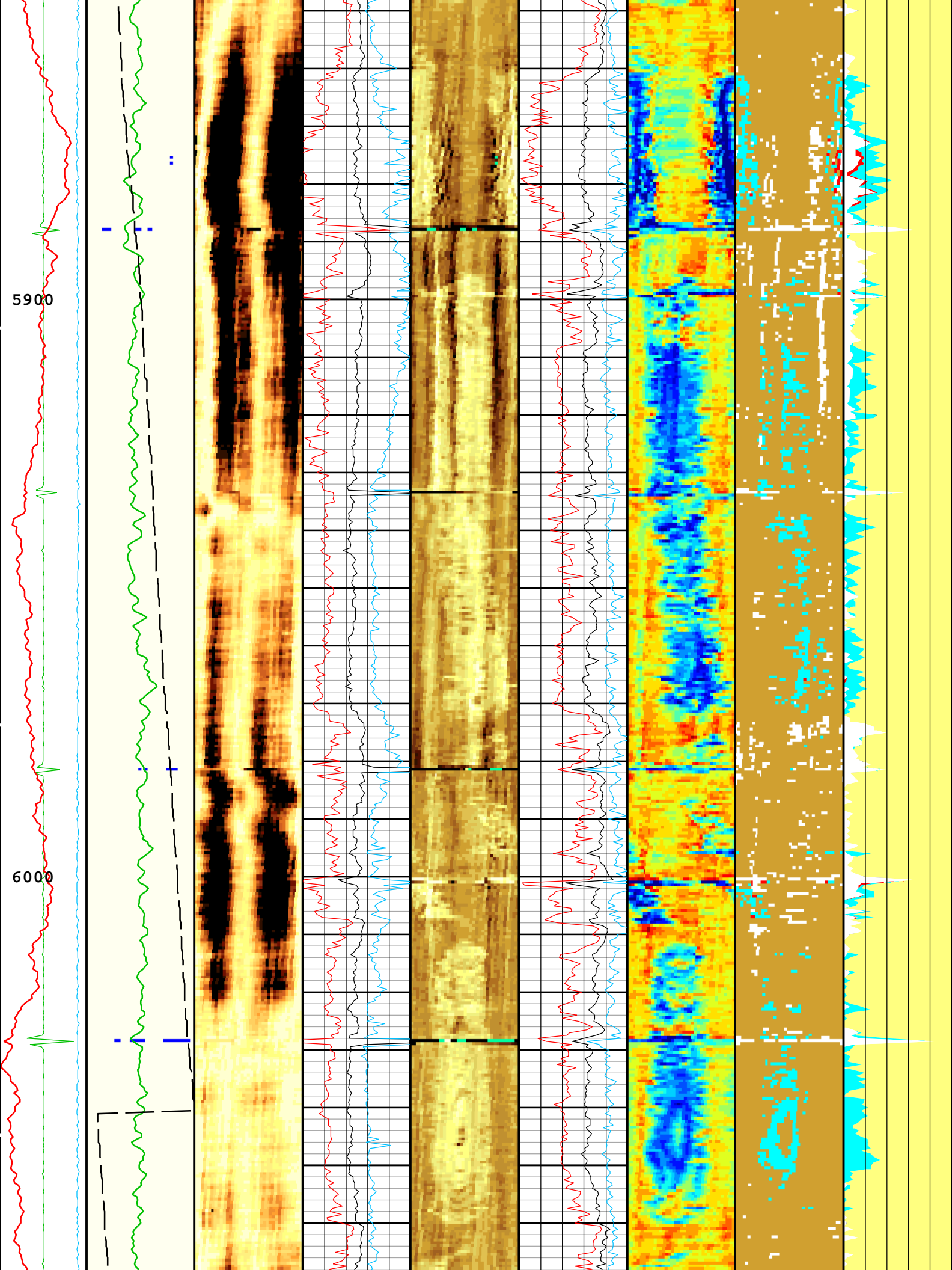


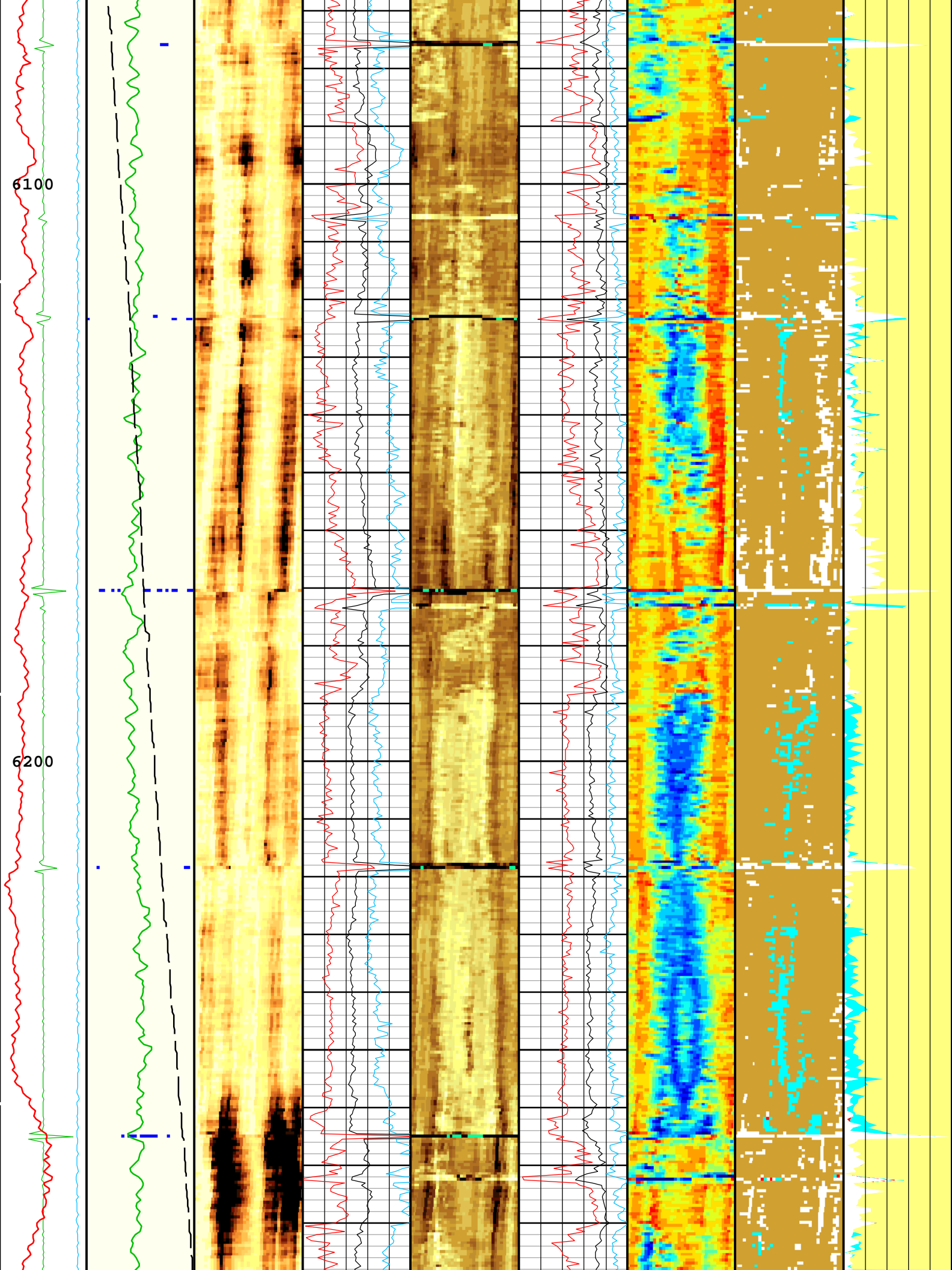


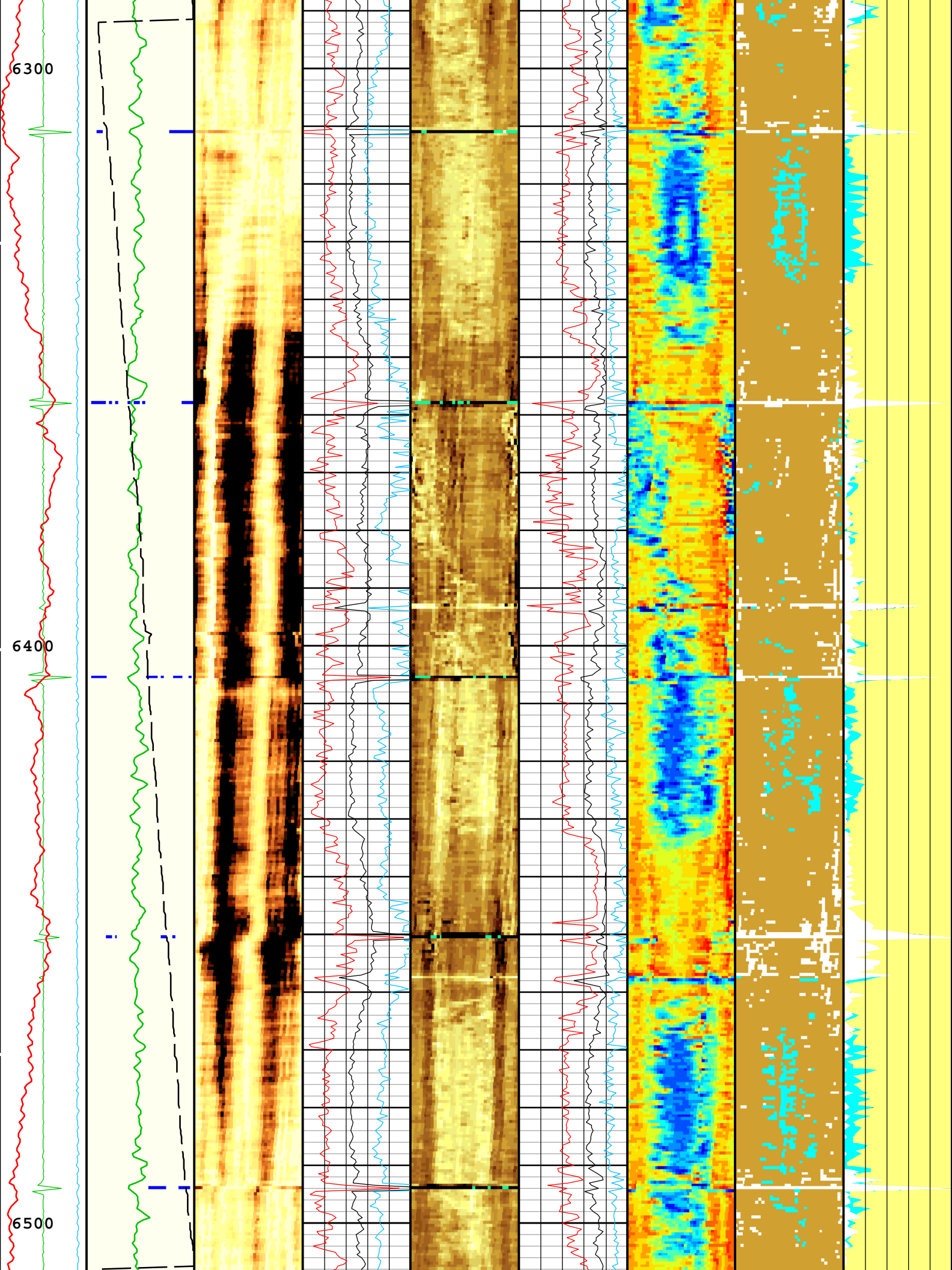


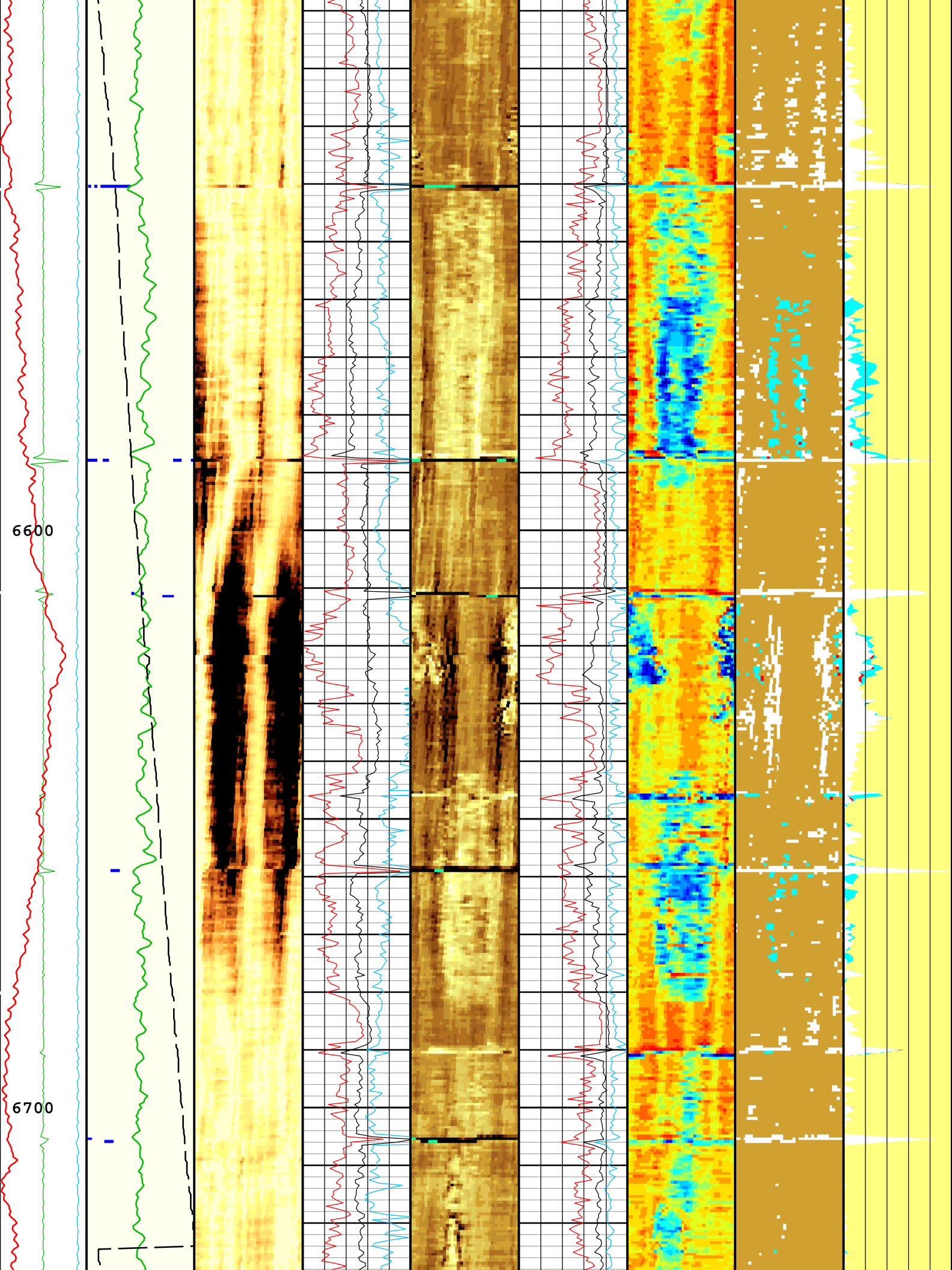


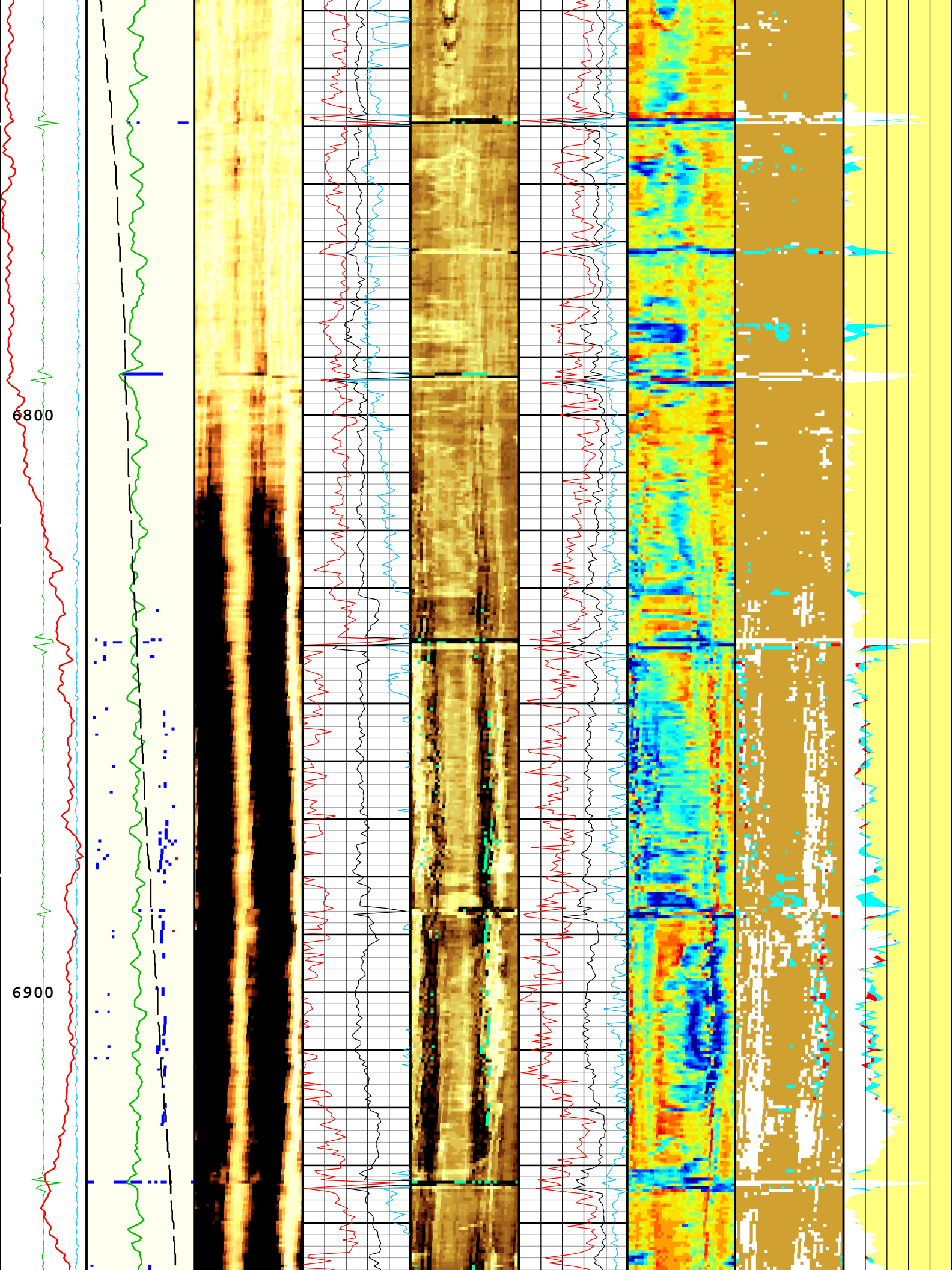


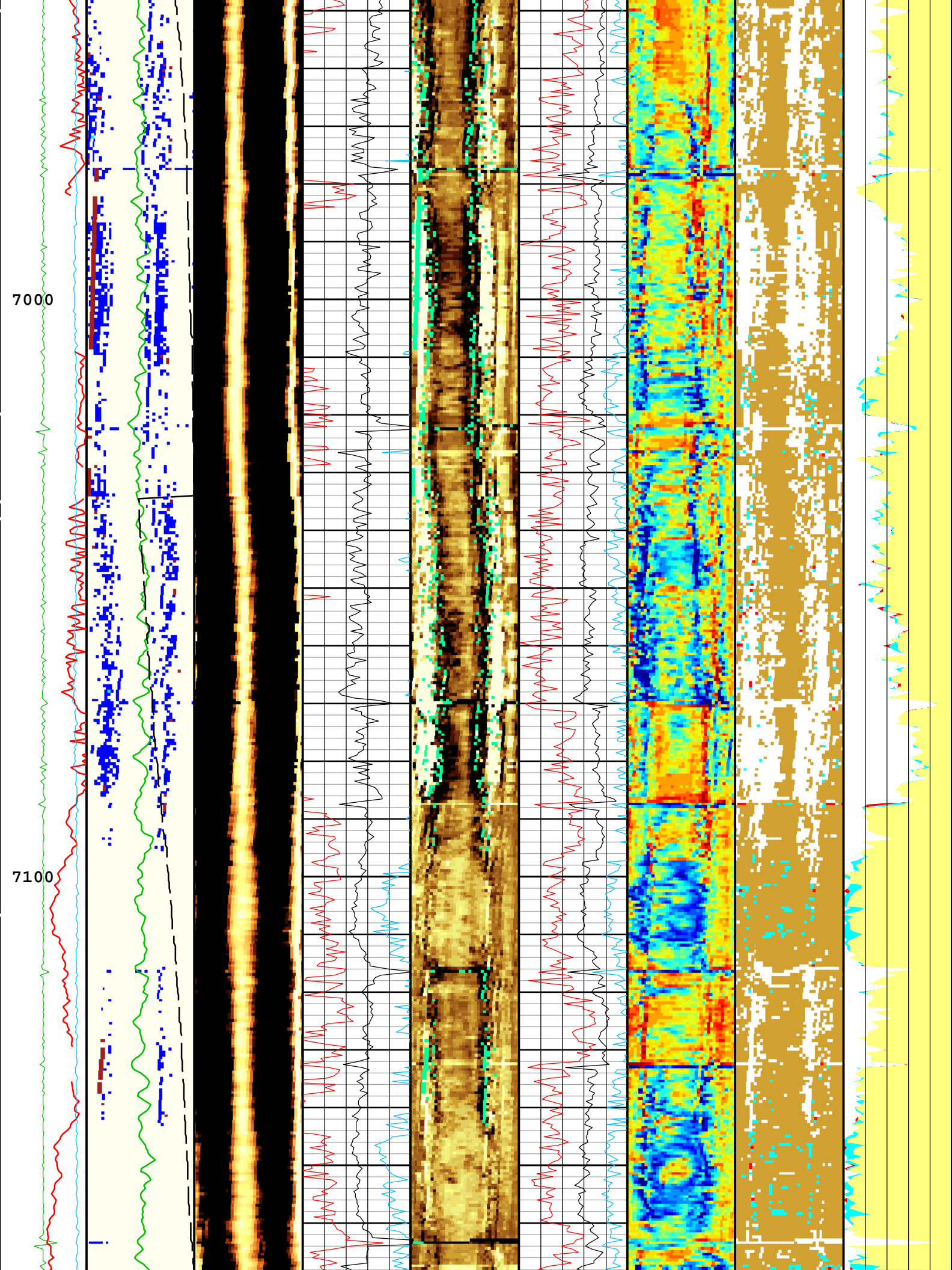


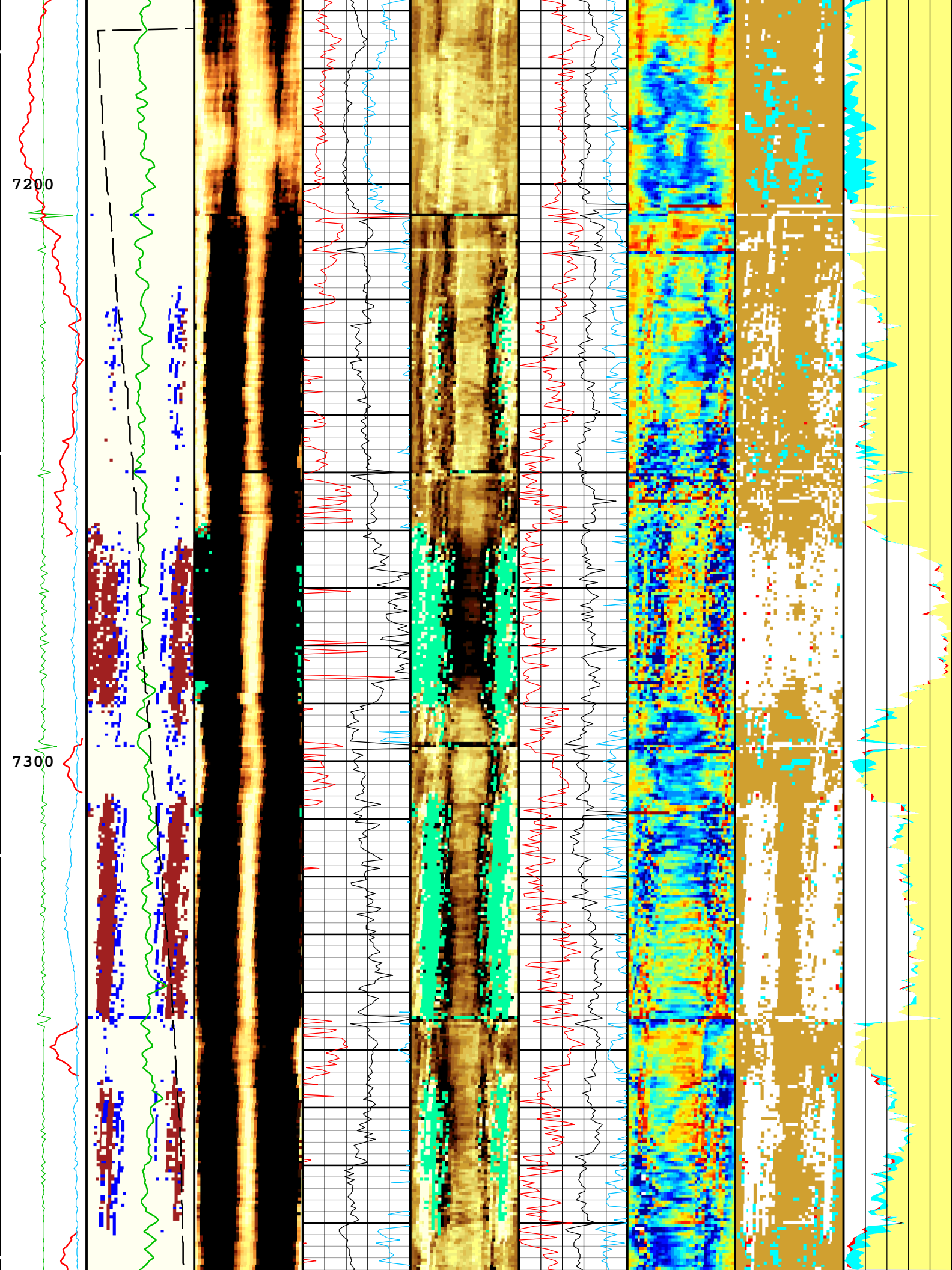


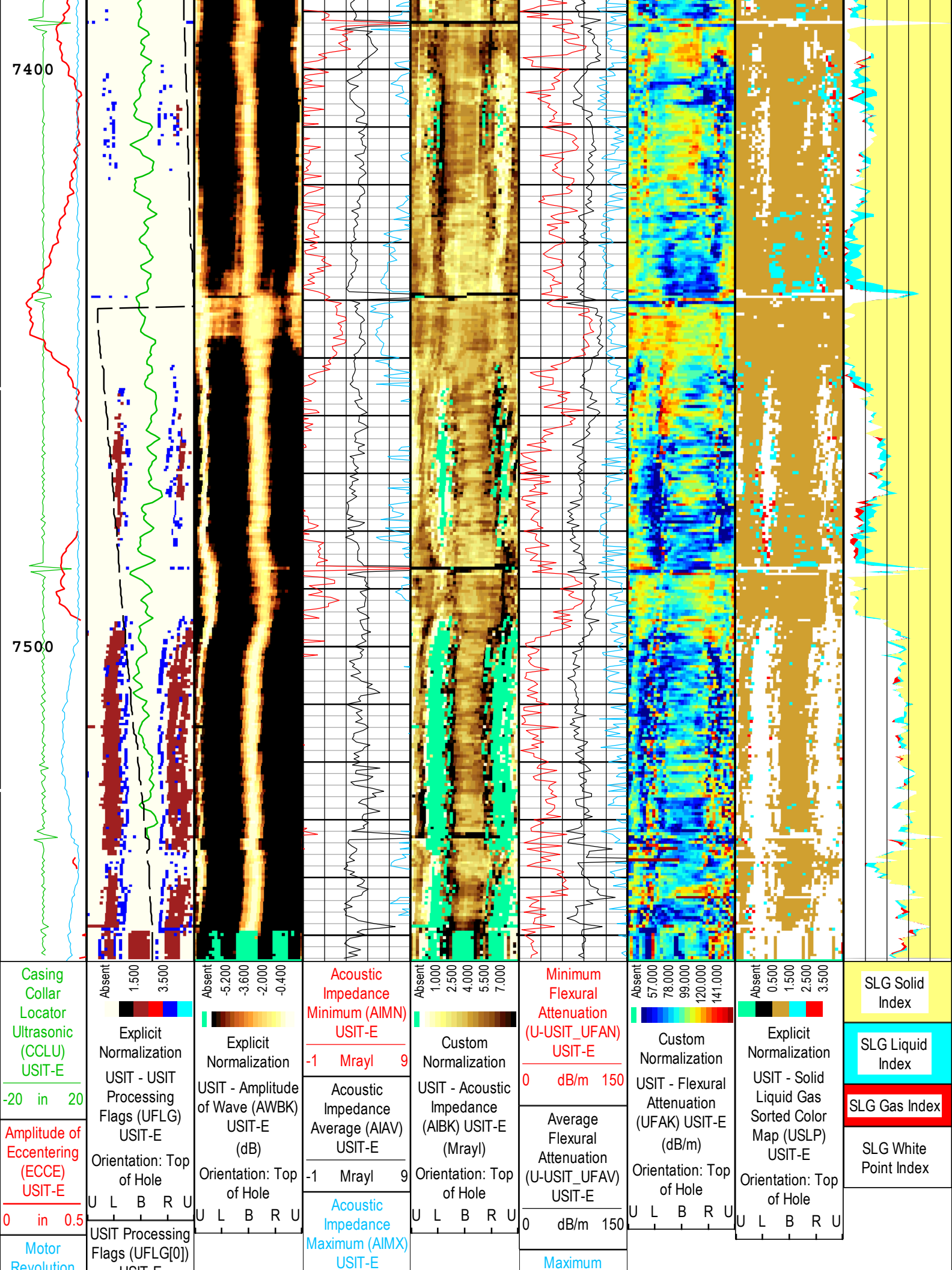












Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	13693	ft
CDEN	Cement Density	USIT-E	11	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	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	0	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	Inversion 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_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
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
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	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	1.07	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
USI_RPLUS	Ultrasonic R+ Processing	USIT-E	No	
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	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.3	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	18	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	Time Zoned	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	Time Zoned	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	Time Zoned	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)
EMXV	125	24-Oct-2017 08:34:28	24-Oct-2017 08:49:02	7555.47	6746.52
EMXV	80	24-Oct-2017 08:49:02	24-Oct-2017 08:54:05	6746.52	6393.63

EMXV	100	24-Oct-2017 08:54:05	24-Oct-2017 08:55:16	6393.63	6311.32
EMXV	80	24-Oct-2017 08:55:16	24-Oct-2017 08:55:55	6311.32	6264.69
EMXV	100	24-Oct-2017 08:55:55	24-Oct-2017 08:58:25	6264.69	6085.92
EMXV	80	24-Oct-2017 08:58:25	24-Oct-2017 09:29:56	6085.92	3953.38
EMXV	60	24-Oct-2017 09:29:56	24-Oct-2017 10:27:35	3953.38	27.26
U-USIT_UFWB	137	24-Oct-2017 08:34:28	24-Oct-2017 08:34:42	7555.47	7545.01
U-USIT_UFWB	103.25	24-Oct-2017 08:34:42	24-Oct-2017 08:34:44	7545.01	7542.96
U-USIT_UFWB	108.48	24-Oct-2017 08:34:44	24-Oct-2017 10:27:35	7542.96	27.26
U-USIT_UNWB	106	24-Oct-2017 08:34:28	24-Oct-2017 08:34:40	7555.47	7547.75
U-USIT_UNWB	84.41	24-Oct-2017 08:34:40	24-Oct-2017 10:27:35	7547.75	27.26
U-USIT_UNWE	146	24-Oct-2017 08:34:28	24-Oct-2017 08:35:10	7555.47	7512.73
U-USIT_UNWE	148.24	24-Oct-2017 08:35:10	24-Oct-2017 10:27:35	7512.73	27.26
WINB	31.88	24-Oct-2017 08:34:28	24-Oct-2017 08:34:37	7555.47	7549.96
WINB	22	24-Oct-2017 08:34:37	24-Oct-2017 08:34:50	7549.96	7536.18
WINB	19.69	24-Oct-2017 08:34:50	24-Oct-2017 08:35:08	7536.18	7515.67
WINB	16.62	24-Oct-2017 08:35:08	24-Oct-2017 08:37:54	7515.67	7323.18
WINB	15.09	24-Oct-2017 08:37:54	24-Oct-2017 10:27:35	7323.18	27.26
WINE	71.88	24-Oct-2017 08:34:28	24-Oct-2017 08:35:26	7555.47	7494.61
WINE	73.41	24-Oct-2017 08:35:26	24-Oct-2017 08:38:04	7494.61	7310.59
WINE	68.04	24-Oct-2017 08:38:04	24-Oct-2017 08:38:24	7310.59	7287.98
WINE	66.51	24-Oct-2017 08:38:24	24-Oct-2017 08:38:41	7287.98	7268.21
WINE	63.44	24-Oct-2017 08:38:41	24-Oct-2017 08:38:51	7268.21	7256.4
WINE	74.18	24-Oct-2017 08:38:51	24-Oct-2017 08:39:35	7256.4	7205.15
WINE	79.55	24-Oct-2017 08:39:35	24-Oct-2017 10:27:35	7205.15	27.26

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[3]:Up	Up	27.26 ft	7555.47 ft	24-Oct-2017 8:34:28 AM	24-Oct-2017 10:27:35 AM	ON	6.77 ft	No

All depths are referenced to toolstring zero

Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HWY 52 4H-32H-O268
		ONE: Log[3]:Up:S003

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: 24-Oct-2017 10:44:08

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

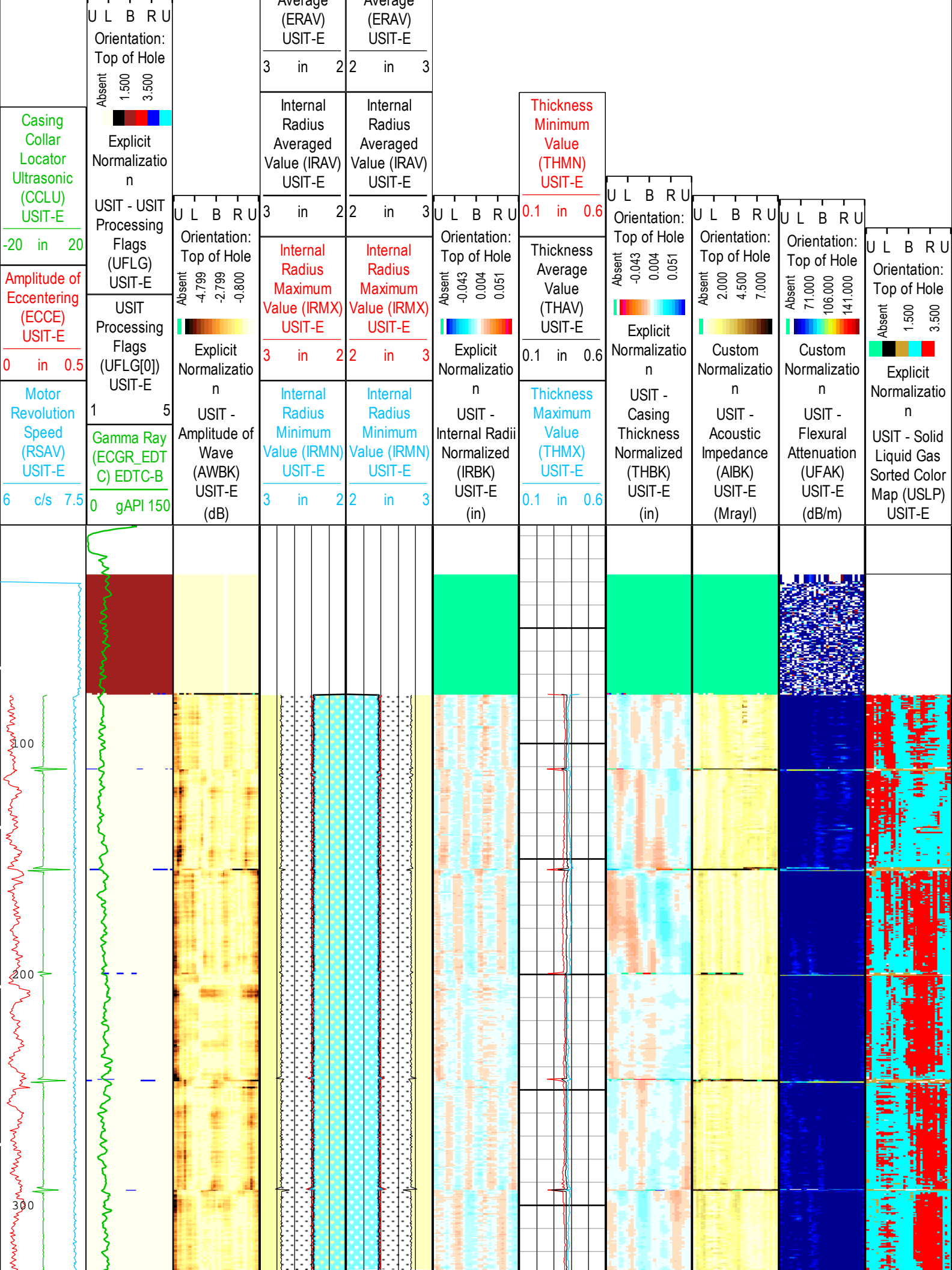
WINLEN Error

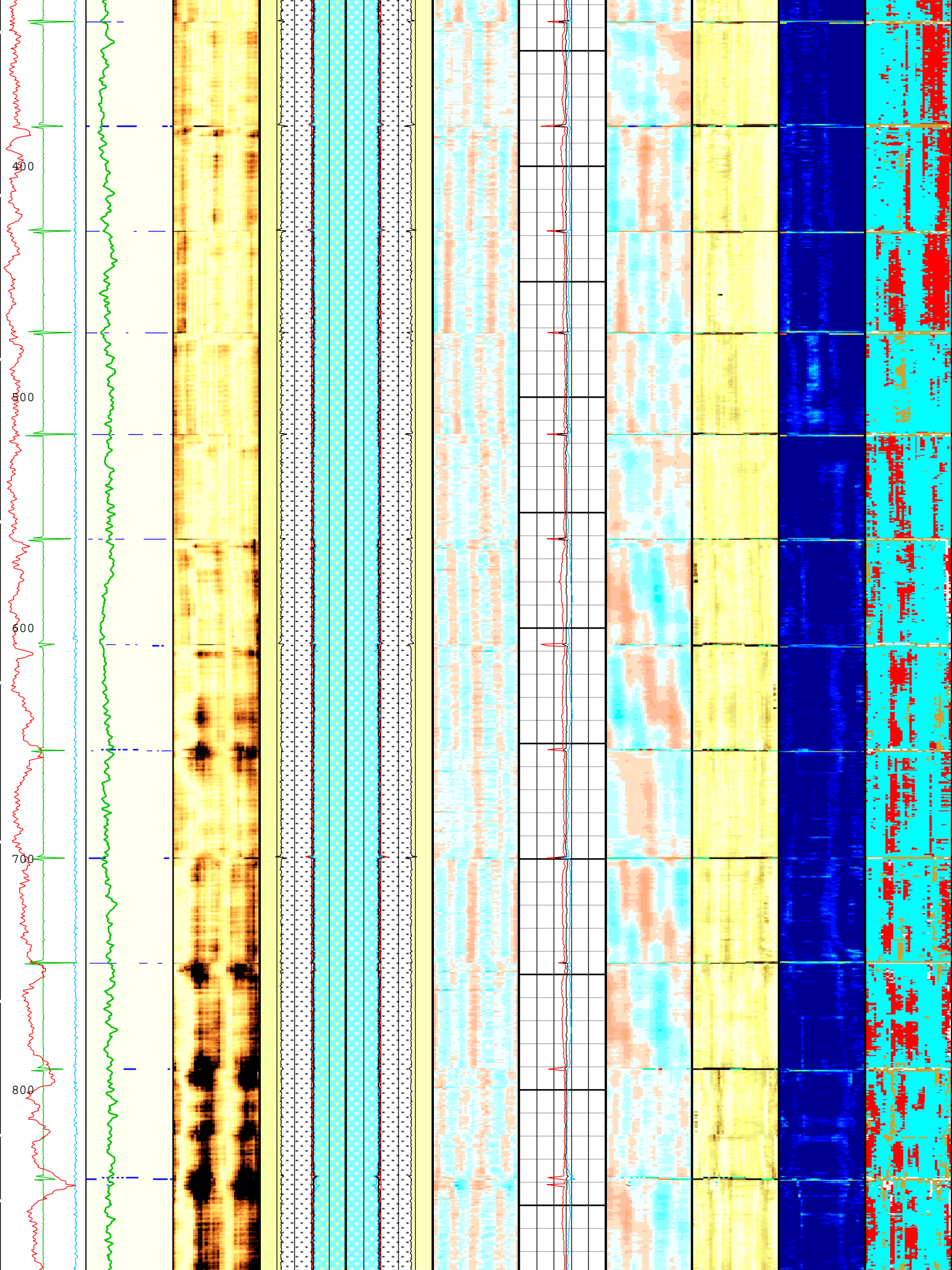
Casing Thickness Error

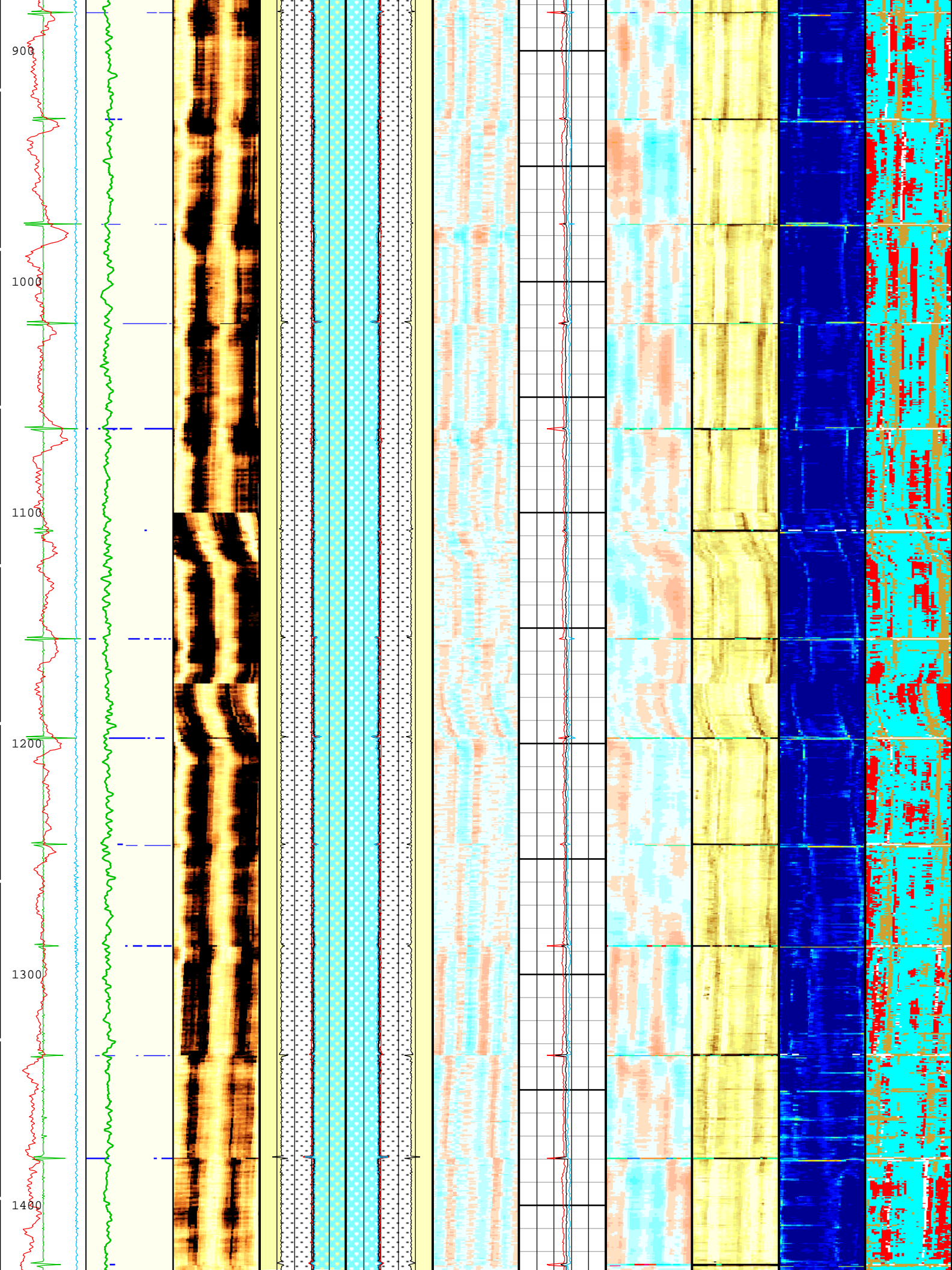
Loop Processing Error

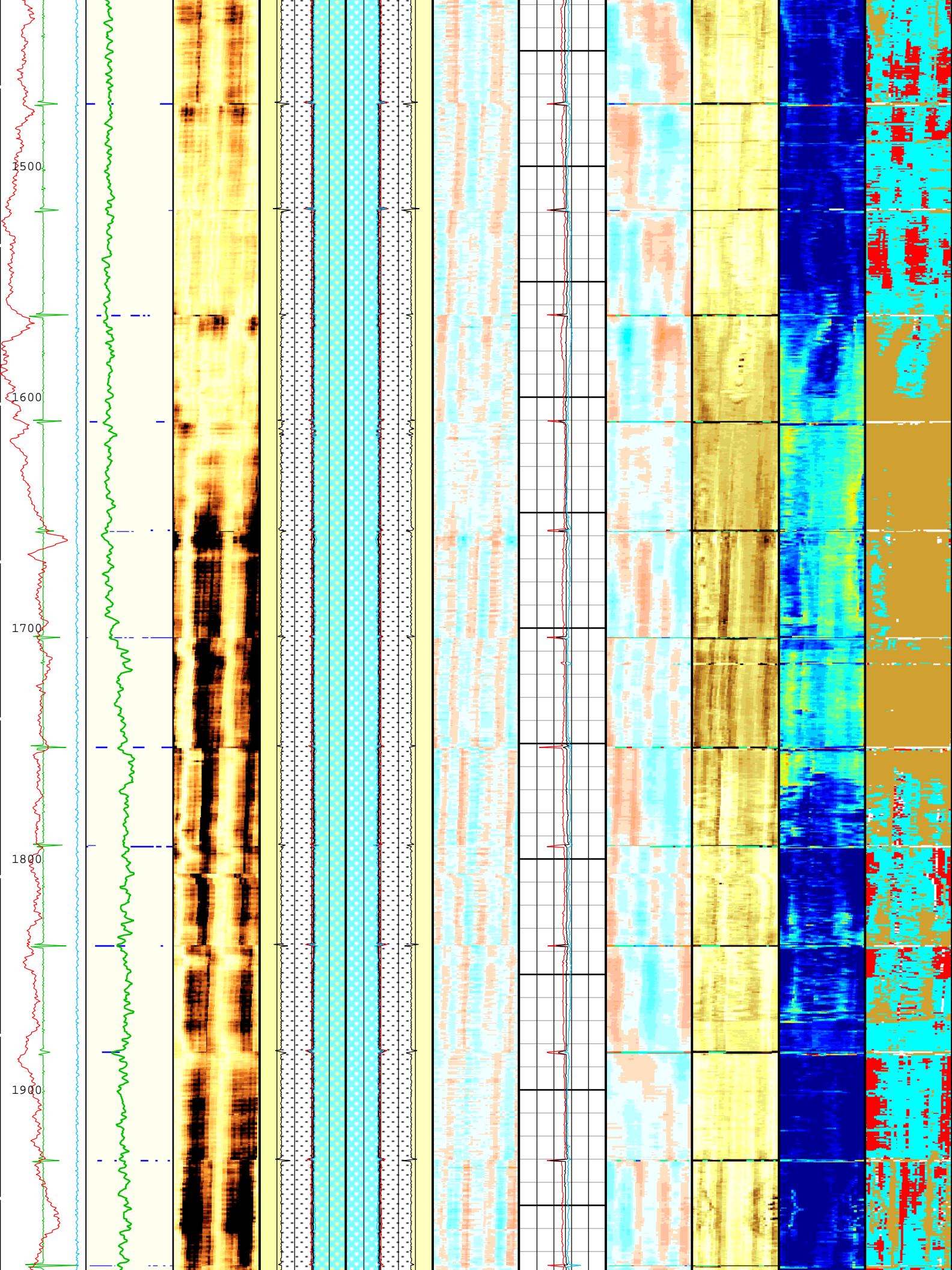
TIME_1900 - Time Marked every 60.00 (s)

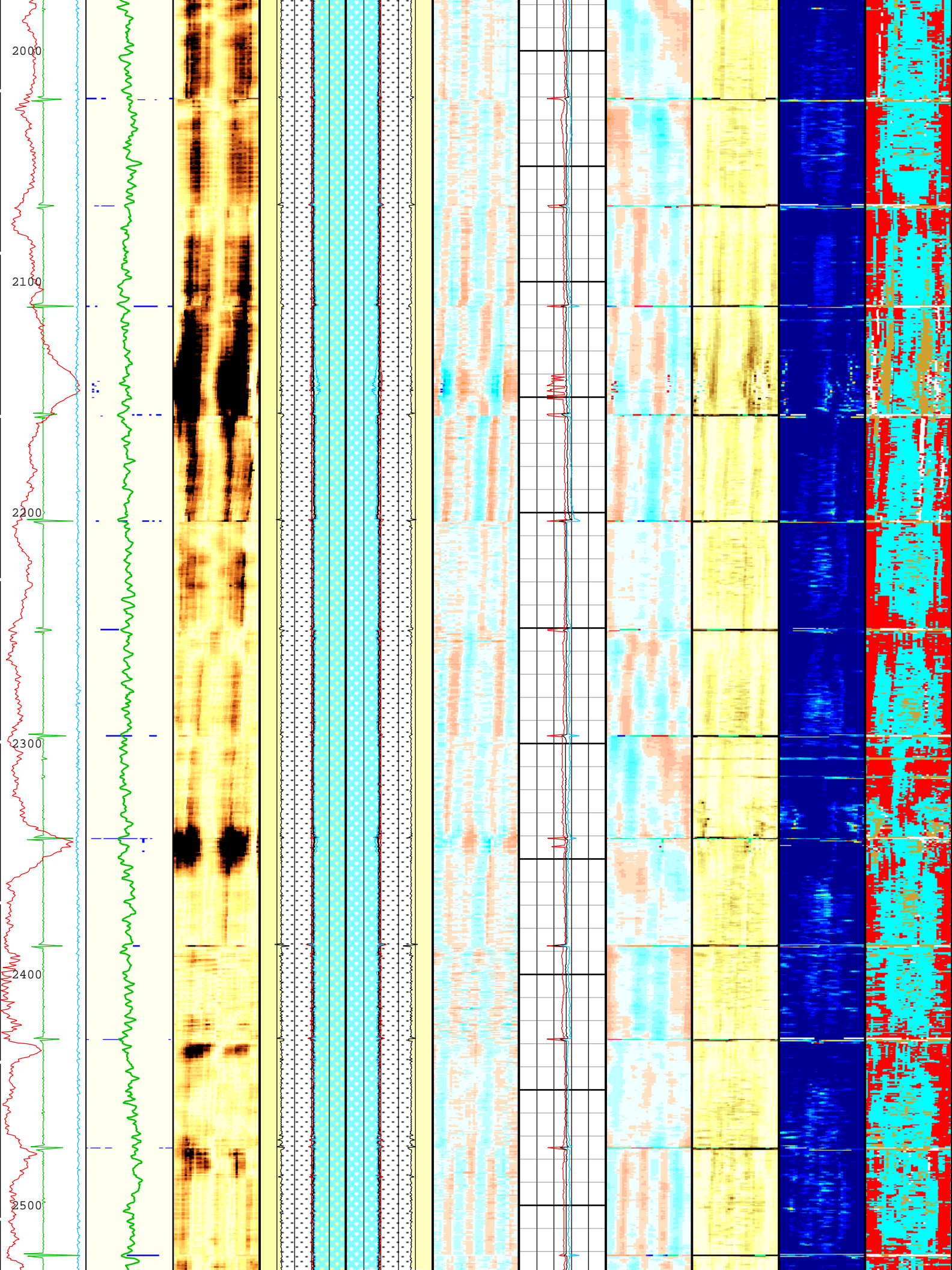
	External Radii Average	External Radii Average

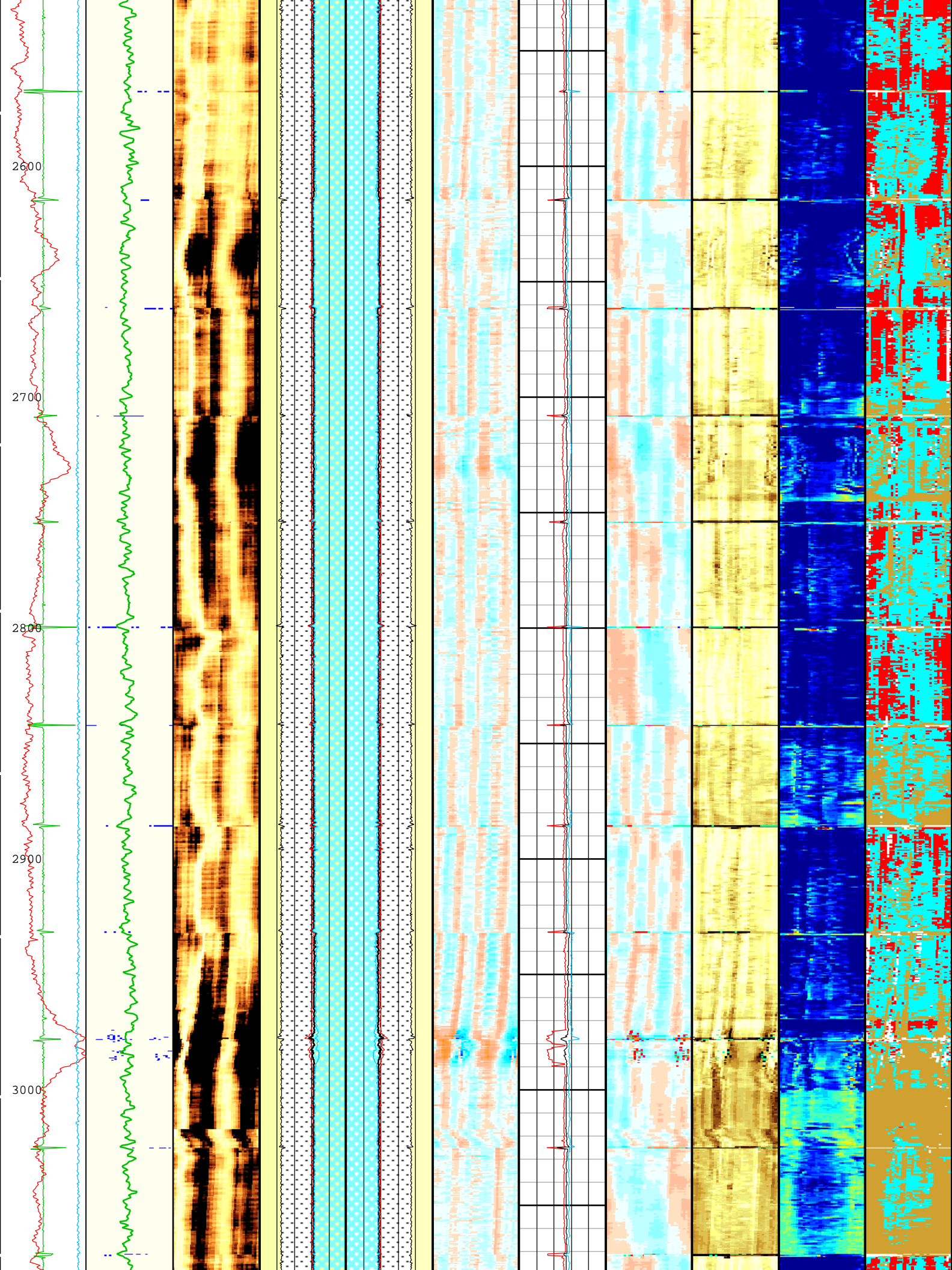


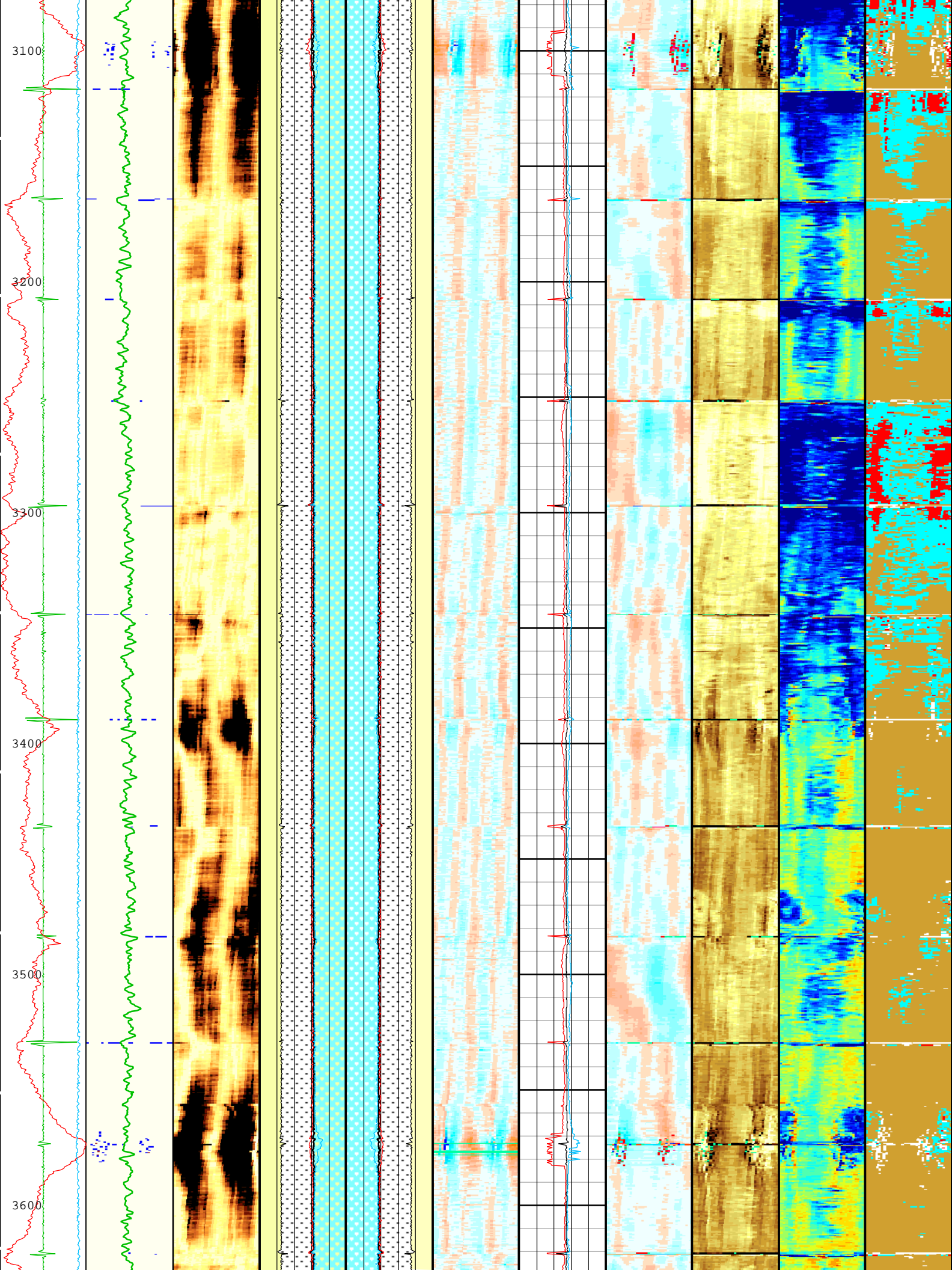


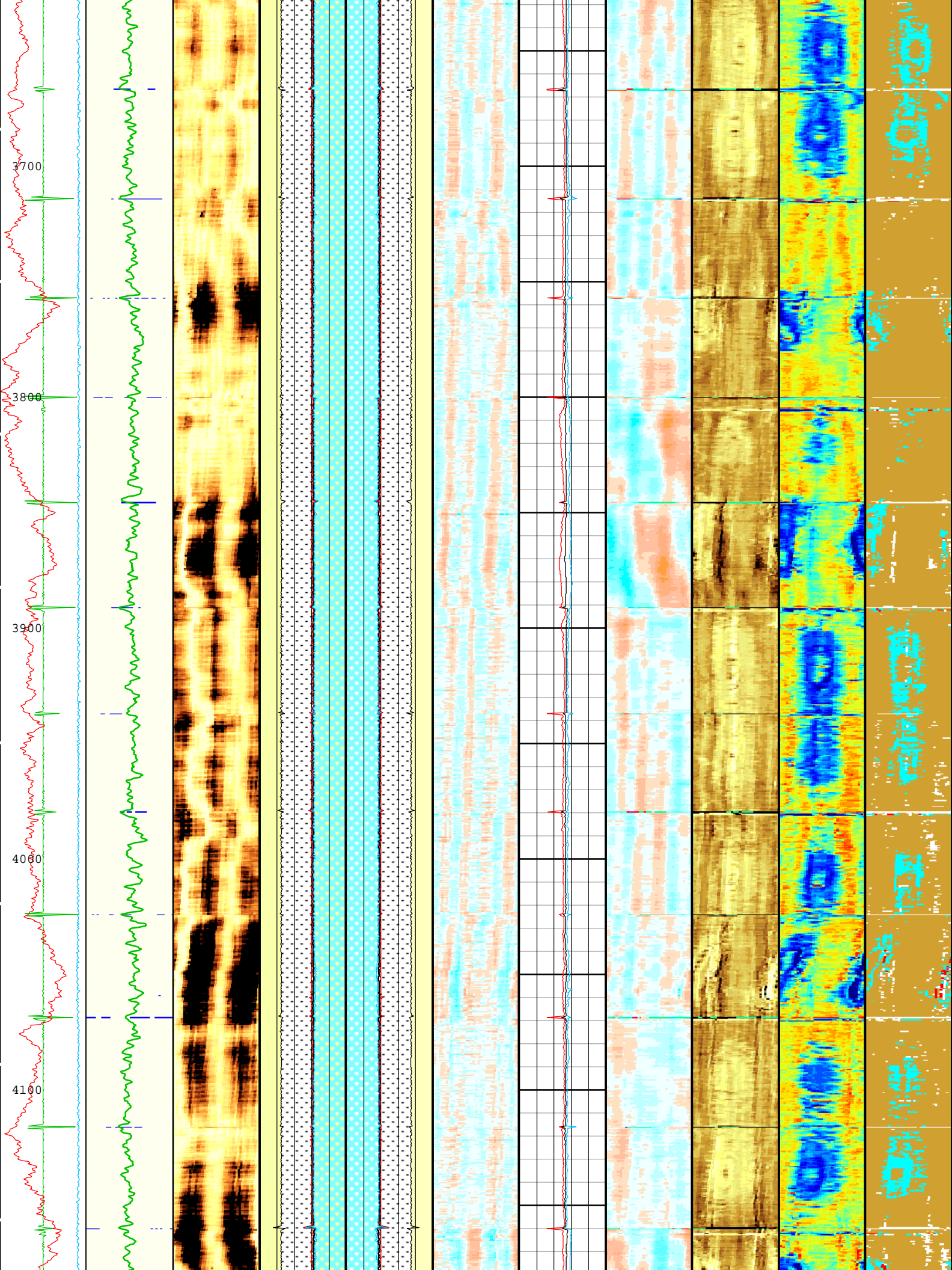


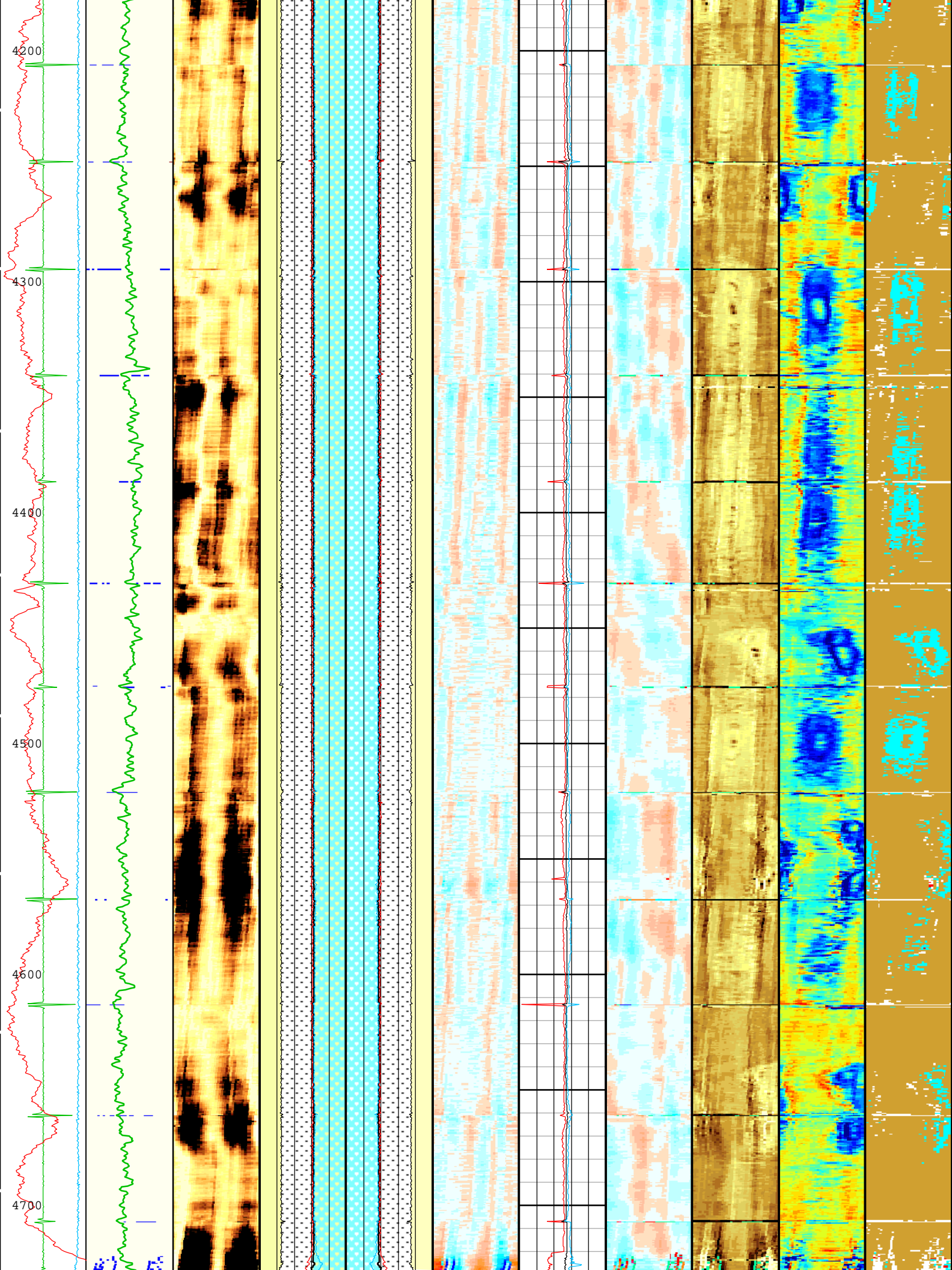


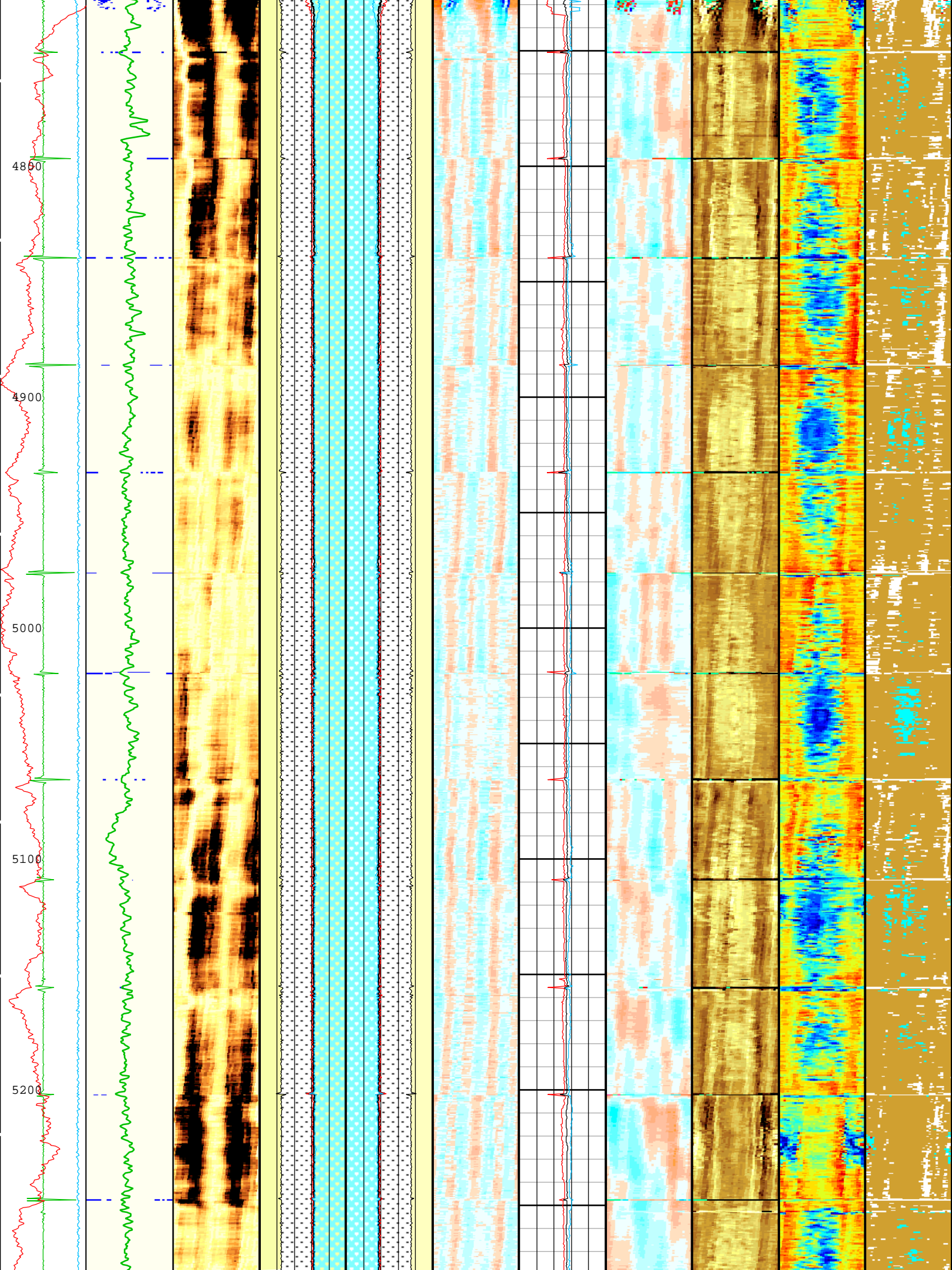


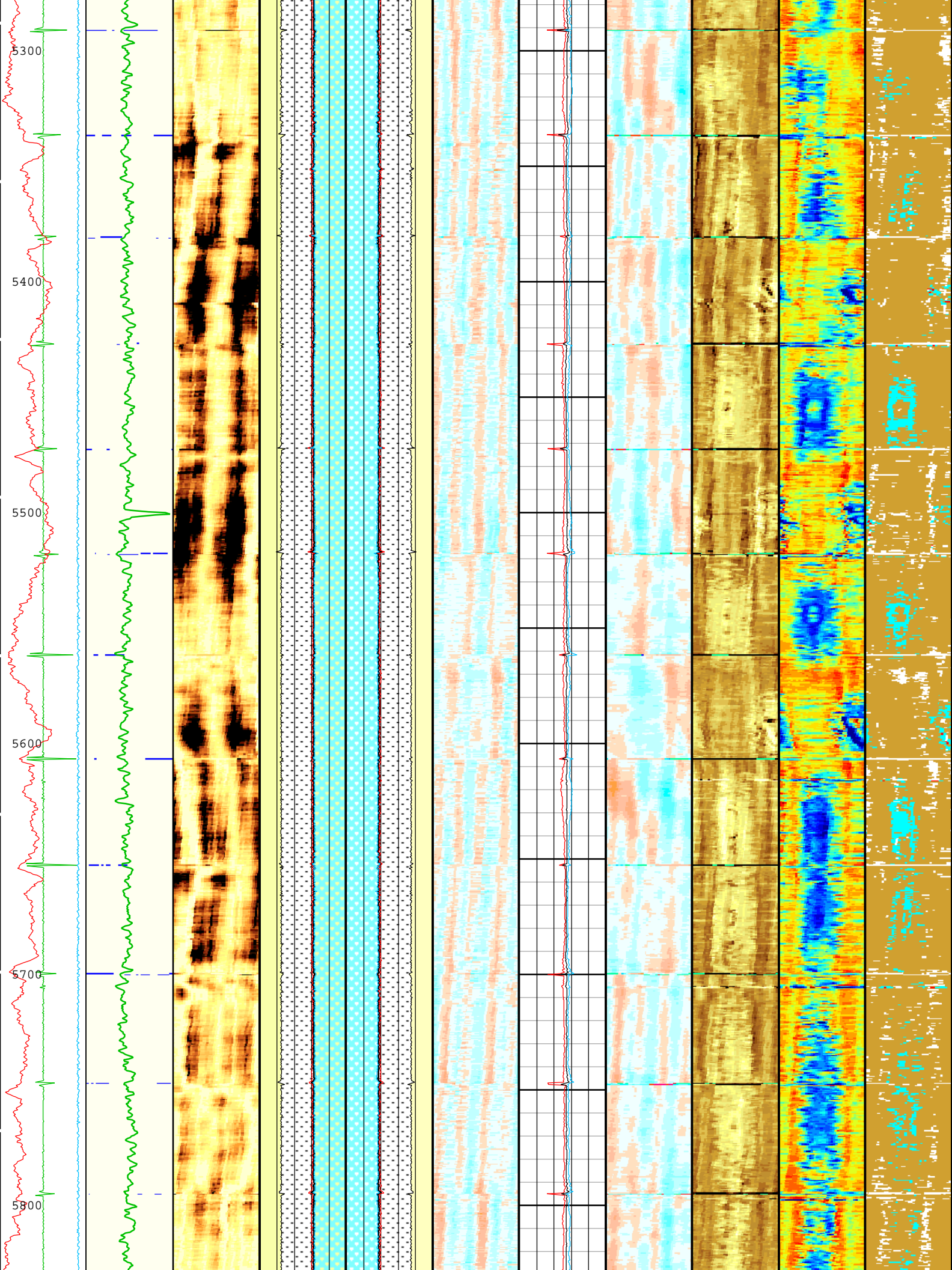


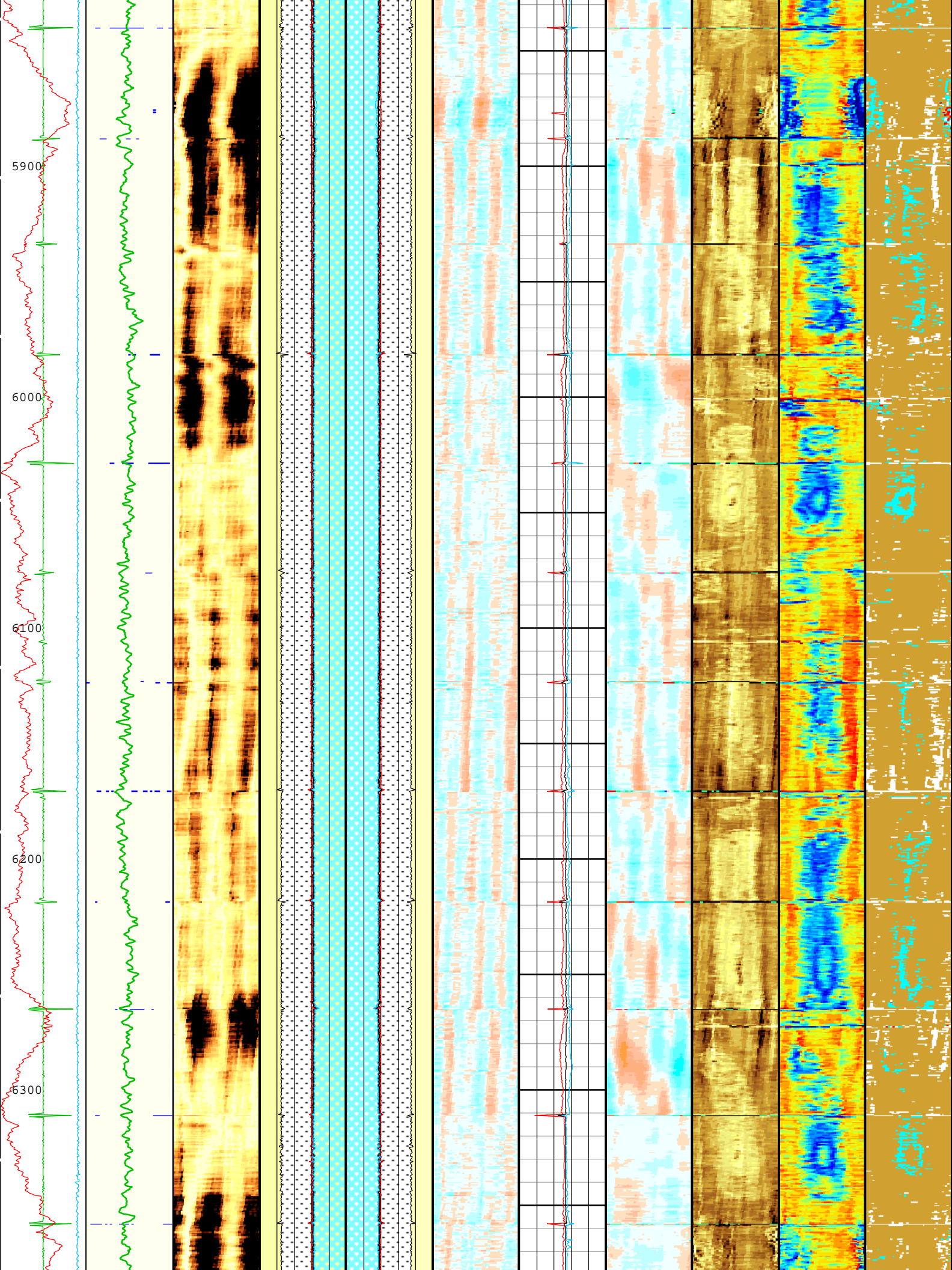


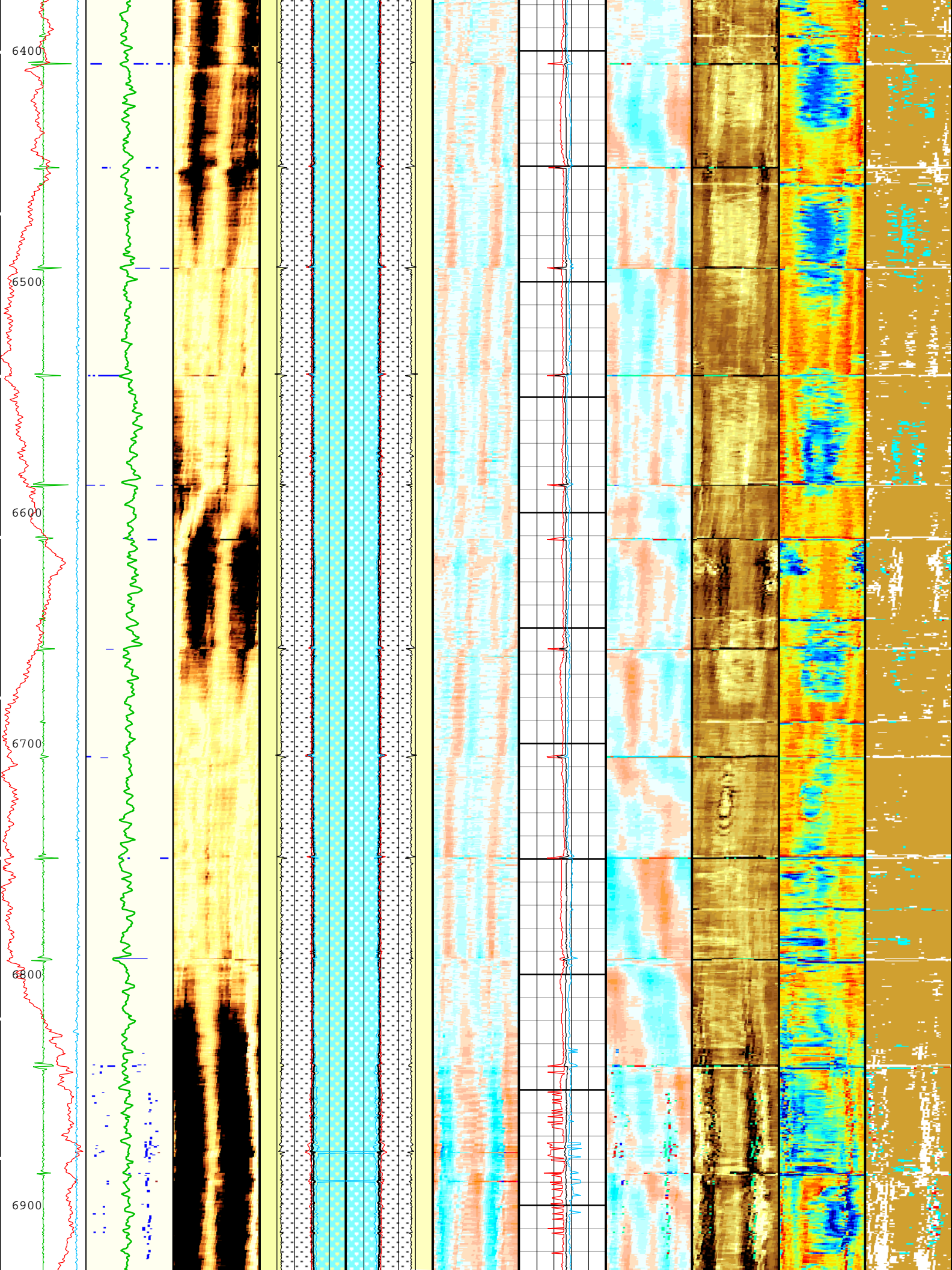


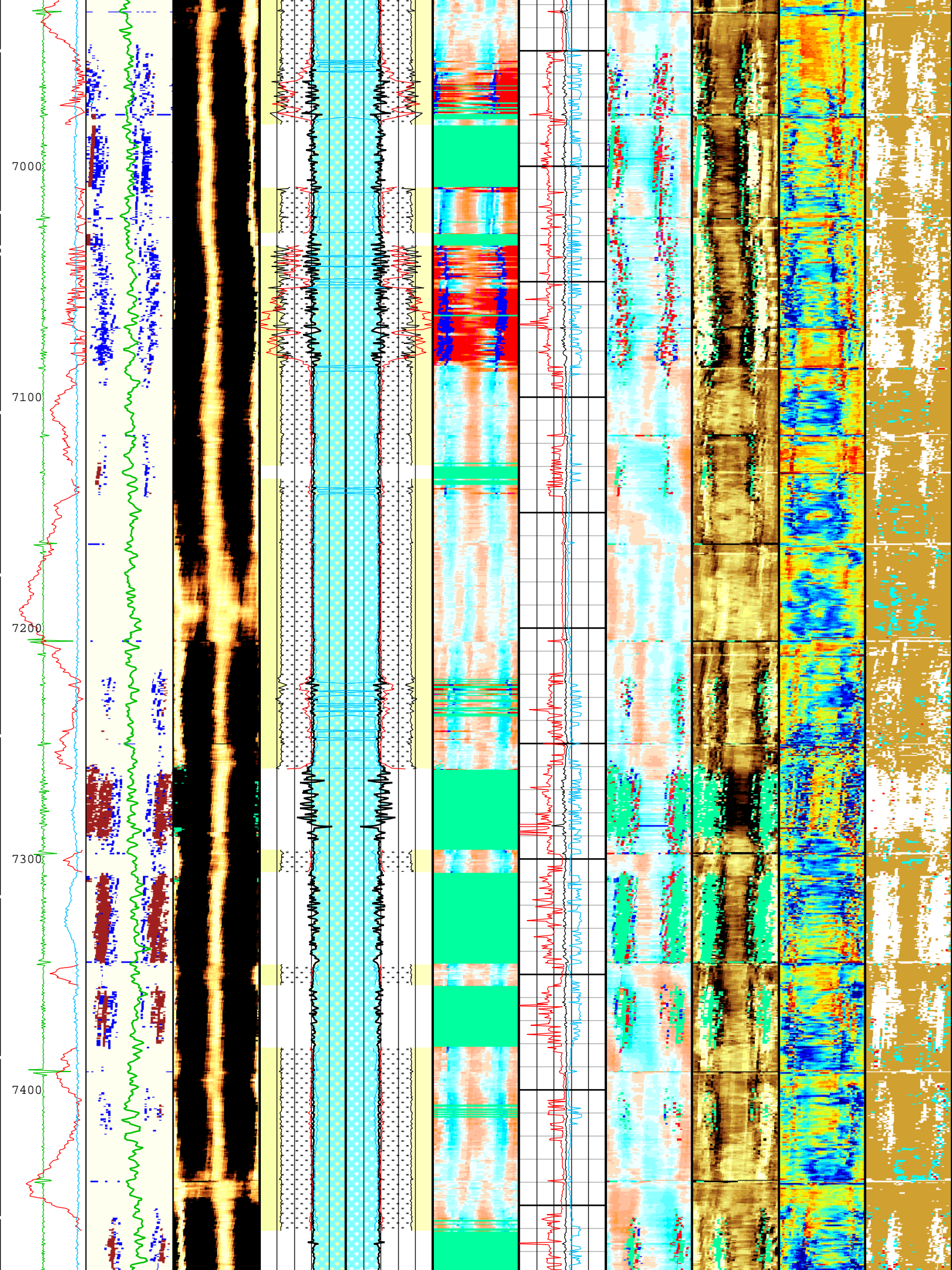


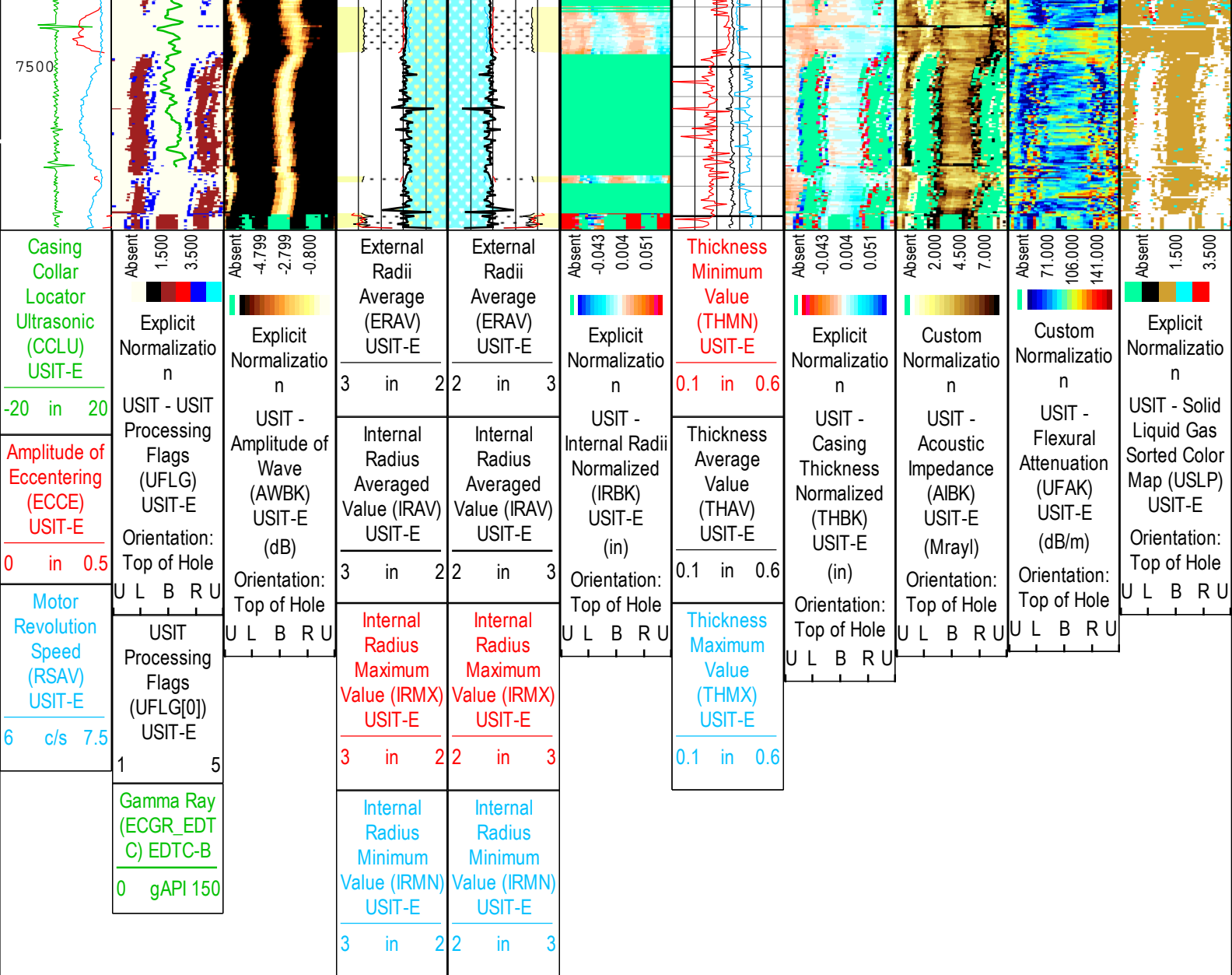












TIME_1900 - Time Marked every 60.00 (s)

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: 24-Oct-2017 10:44:08

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	13693	ft
CDEN	Cement Density	USIT-E	11	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

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	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_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	Inversion 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_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.18	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	1.07	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.3	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	18	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	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	Time Zoned	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	Time Zoned	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)
EMXV	125	24-Oct-2017 08:34:28	24-Oct-2017 08:49:02	7555.47	6746.52
EMXV	80	24-Oct-2017 08:49:02	24-Oct-2017 08:54:05	6746.52	6393.63
EMXV	100	24-Oct-2017 08:54:05	24-Oct-2017 08:55:16	6393.63	6311.32
EMXV	80	24-Oct-2017 08:55:16	24-Oct-2017 08:55:55	6311.32	6264.69
EMXV	100	24-Oct-2017 08:55:55	24-Oct-2017 08:58:25	6264.69	6085.92
EMXV	80	24-Oct-2017 08:58:25	24-Oct-2017 09:29:56	6085.92	3953.38
EMXV	60	24-Oct-2017 09:29:56	24-Oct-2017 10:27:35	3953.38	27.26

U-USIT_UFWB	137	24-Oct-2017 08:34:28	24-Oct-2017 08:34:42	7555.47	7545.01
U-USIT_UFWB	103.25	24-Oct-2017 08:34:42	24-Oct-2017 08:34:44	7545.01	7542.96
U-USIT_UFWB	108.48	24-Oct-2017 08:34:44	24-Oct-2017 10:27:35	7542.96	27.26
U-USIT_UNWB	106	24-Oct-2017 08:34:28	24-Oct-2017 08:34:40	7555.47	7547.75
U-USIT_UNWB	84.41	24-Oct-2017 08:34:40	24-Oct-2017 10:27:35	7547.75	27.26
U-USIT_UNWE	146	24-Oct-2017 08:34:28	24-Oct-2017 08:35:10	7555.47	7512.73
U-USIT_UNWE	148.24	24-Oct-2017 08:35:10	24-Oct-2017 10:27:35	7512.73	27.26
WINB	31.88	24-Oct-2017 08:34:28	24-Oct-2017 08:34:37	7555.47	7549.96
WINB	22	24-Oct-2017 08:34:37	24-Oct-2017 08:34:50	7549.96	7536.18
WINB	19.69	24-Oct-2017 08:34:50	24-Oct-2017 08:35:08	7536.18	7515.67
WINB	16.62	24-Oct-2017 08:35:08	24-Oct-2017 08:37:54	7515.67	7323.18
WINB	15.09	24-Oct-2017 08:37:54	24-Oct-2017 10:27:35	7323.18	27.26
WINE	71.88	24-Oct-2017 08:34:28	24-Oct-2017 08:35:26	7555.47	7494.61
WINE	73.41	24-Oct-2017 08:35:26	24-Oct-2017 08:38:04	7494.61	7310.59
WINE	68.04	24-Oct-2017 08:38:04	24-Oct-2017 08:38:24	7310.59	7287.98
WINE	66.51	24-Oct-2017 08:38:24	24-Oct-2017 08:38:41	7287.98	7268.21
WINE	63.44	24-Oct-2017 08:38:41	24-Oct-2017 08:38:51	7268.21	7256.4
WINE	74.18	24-Oct-2017 08:38:51	24-Oct-2017 08:39:35	7256.4	7205.15
WINE	79.55	24-Oct-2017 08:39:35	24-Oct-2017 10:27:35	7205.15	27.26

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[3]:Up	Up	27.26 ft	7555.47 ft	24-Oct-2017 8:34:28 AM	24-Oct-2017 10:27:35 AM	ON	6.77 ft	No

All depths are referenced to toolstring zero

Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HWY 52 4H-32H-O268
		ONE: Log[3]:Up:S003

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Oct-2017 10:44:19

TIME_1900 - Time Marked every 60.00 (s)

Gamma Ray (ECGR_EDTC) EDTC-B

0150 gAPI

Amplitude of Eccentering (ECCE) USIT-E

0in 0.5

Motor

Acoustic Impedance Minimum (AIMN) USIT-E

-1 Mrayl9

Acoustic Impedance Maximum (AIMX) USIT-E

-1 Mrayl9

Acoustic

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E

40140 dB/m

Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E

40140 dB/m

Average Flexural

ULB RU

Orientation: Top of Hole

0.000

2.818

4.890

6.963

Custom Normalization

USIT - Acoustic Impedance With

ULB RU

Orientation: Top of Hole

0.000

78.000

113.000

148.000

Custom Normalization

ULB RU

Orientation: Top of Hole

Absent

1.500

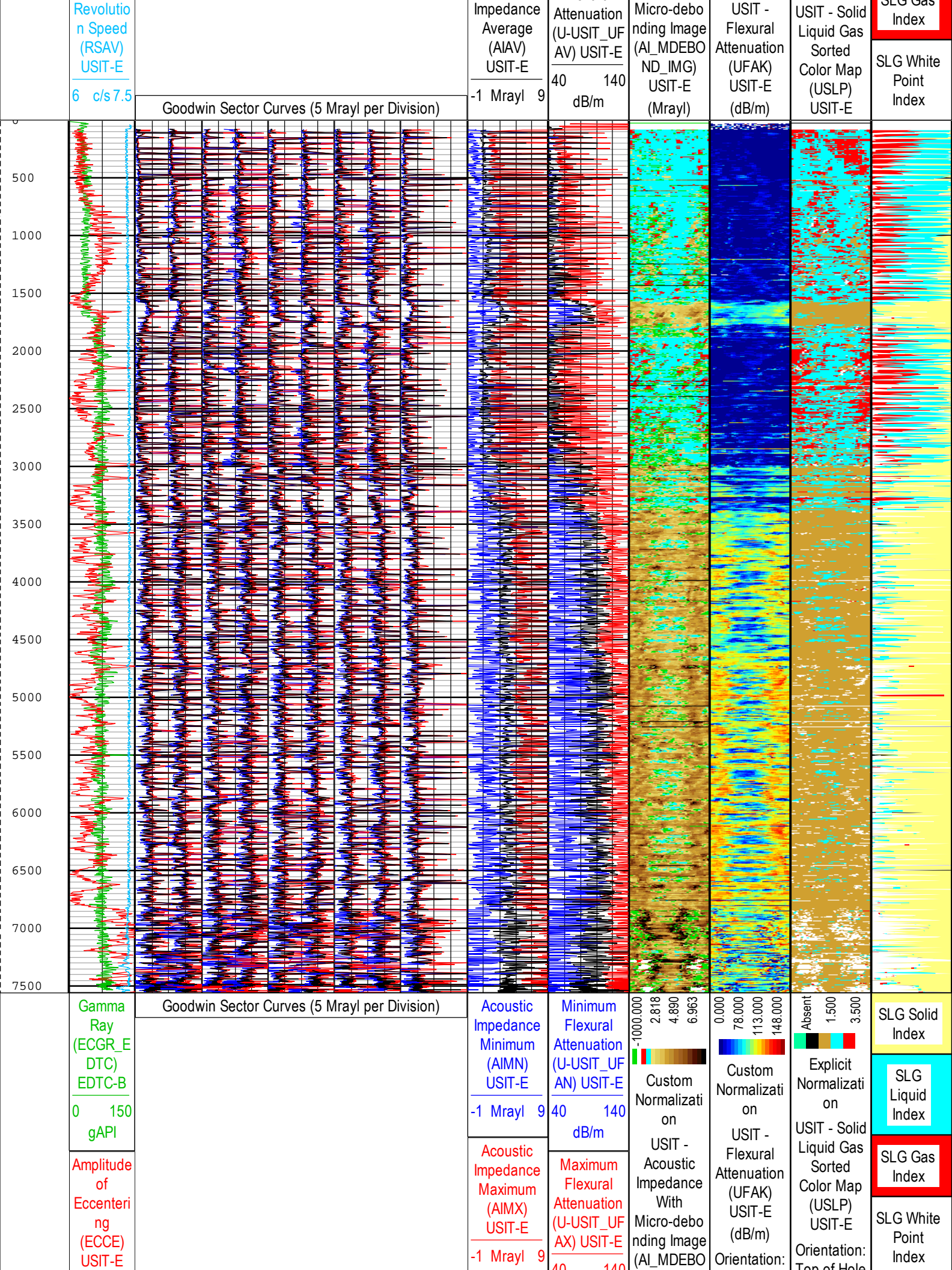
3.500

Explicit Normalization

SLG Solid Index

SLG Liquid Index

SLG Gas



0 in 0.5

Motor
Revolution Speed
(RSAV)
USIT-E

6 c/s 7.5

Acoustic
Impedance
Average
(AIAV)
USIT-E

-1 Mrayl 9

40 140
dB/m

Average
Flexural
Attenuation
(U-USIT_UF
AV) USIT-E

40 140
dB/m

ND_IMG)
USIT-E
(Mrayl)

Orientation:
Top of Hole
U L B R U

Top of Hole
U L B R U

Top of Hole
U L B R U

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: 24-Oct-2017 10:44:19

XYZ

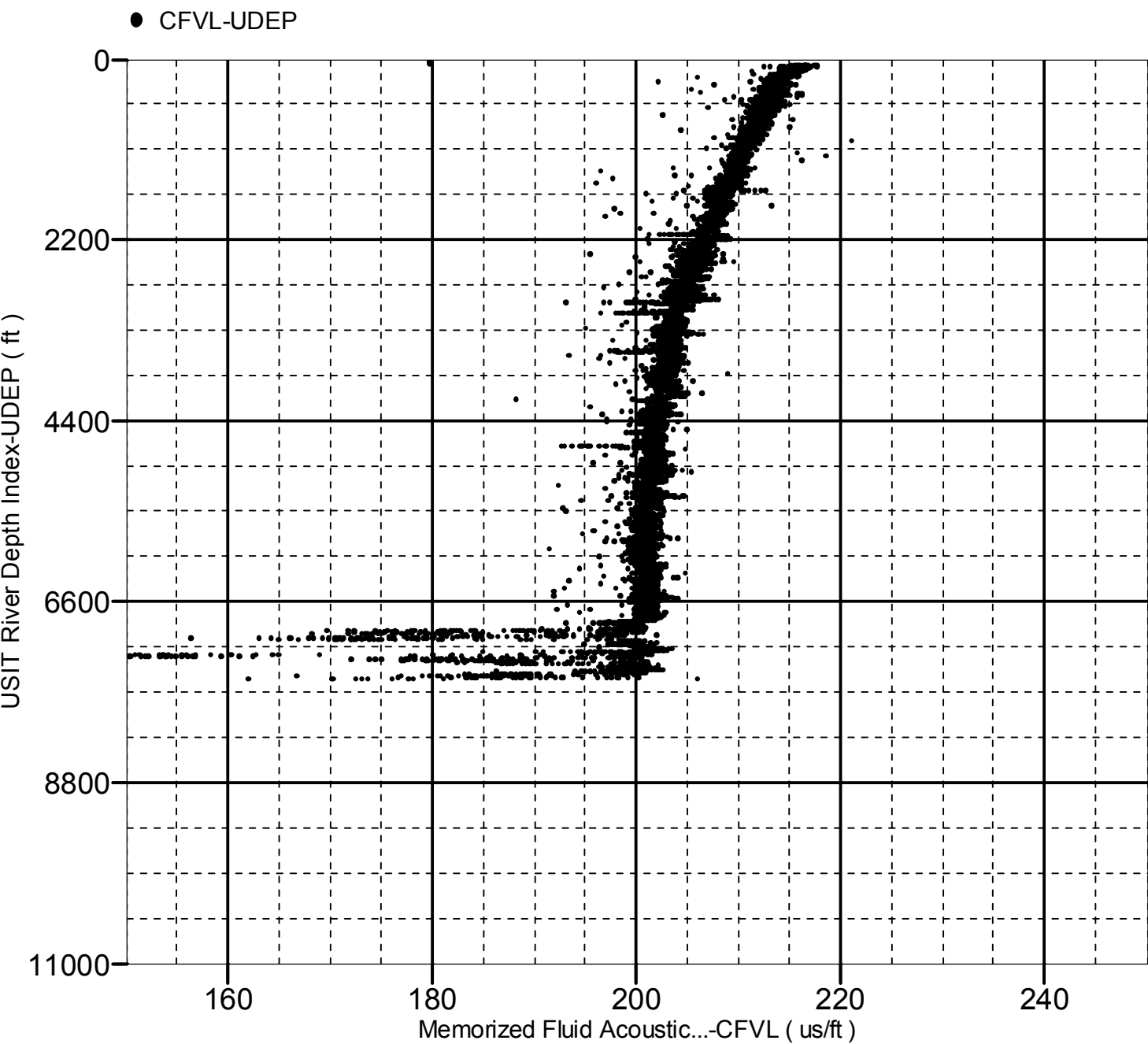
Company:CRESTONE PEAK RESOURCES OPERATING LLC Well:HWY 52 4H-32H-O268

ONE: Log[3]:Up:S003

Fluid Acoustic Slowness vs Depth

2D Cross Plot

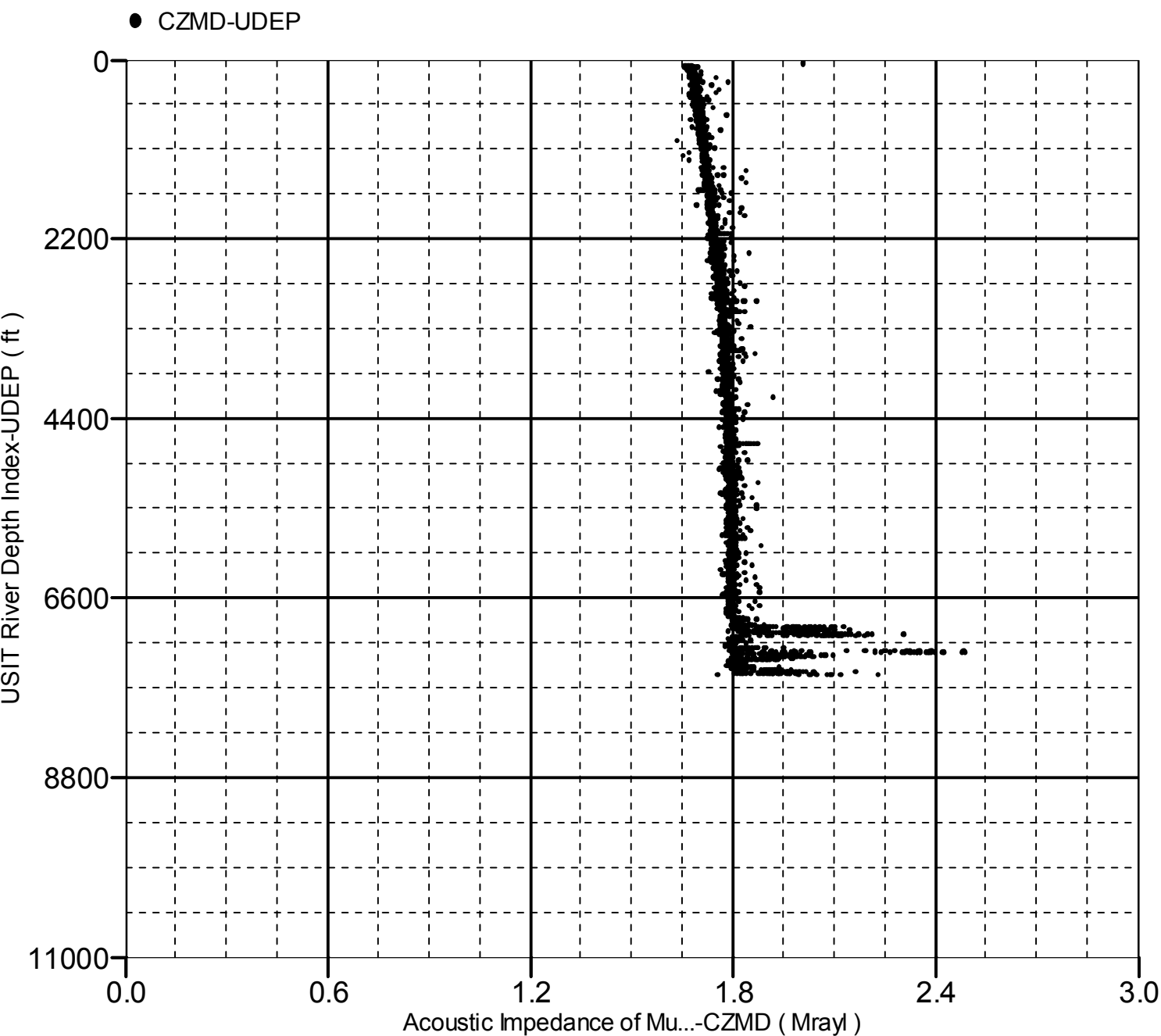
Index Range: From 7554.50 to 26.50 ft



Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7554.50 to 26.50 ft



Company:	CRESTONE PEAK RESOURCES OPERATING LLC	Schlumberger
Well:	HWY 52 4H-32H-O268	
Field:	WATTENBERG	
County:	WELD	
State:	COLORADO	
Isolation Scanner		
Cement Evaluation		
Gamma Ray - CCL Log		