



9.3 Log ( Import (2) of IBC Goodwin )

10. ONE IBC SLG REPEAT PASS 1 @10DEG X 6IN  
@0PSI [5:100]

10.1 Integration Summary

10.2 Software Version

10.3 Composite Summary

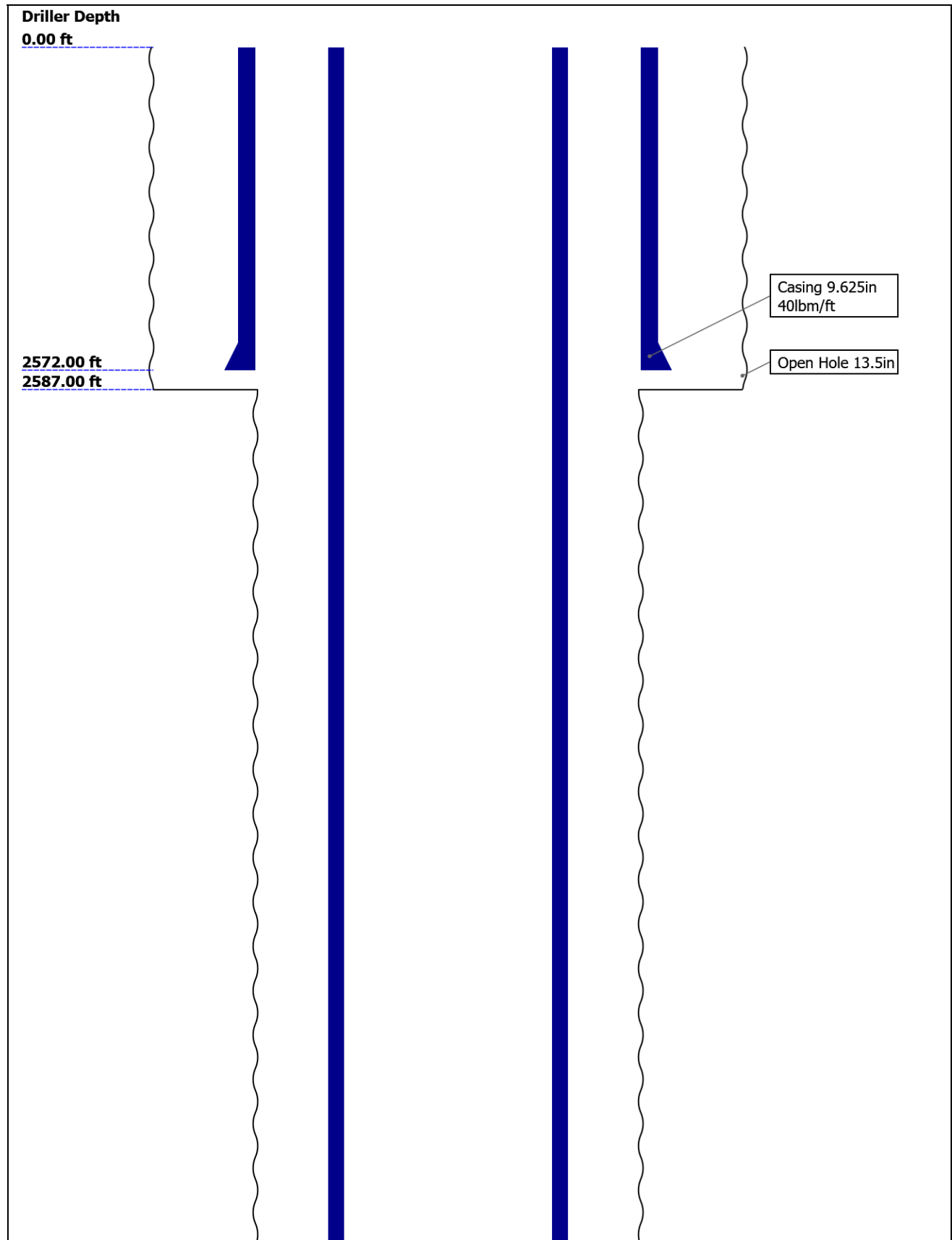
10.4 Log ( Import (2) of IBC SLG )

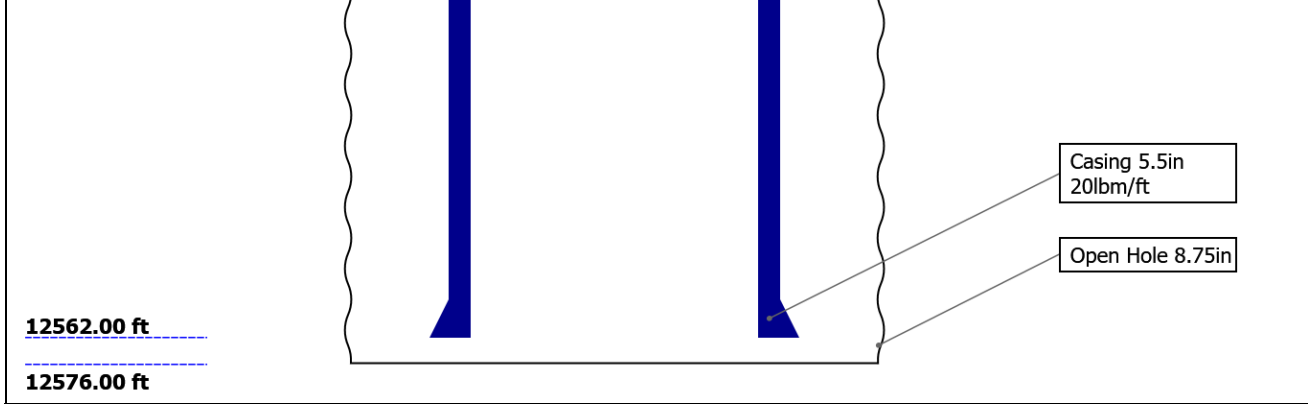
16.3 Composite Summary

16.4 Log ( Import (2) of IBC SLG )

16.5 Parameter Listing

## Well Sketch



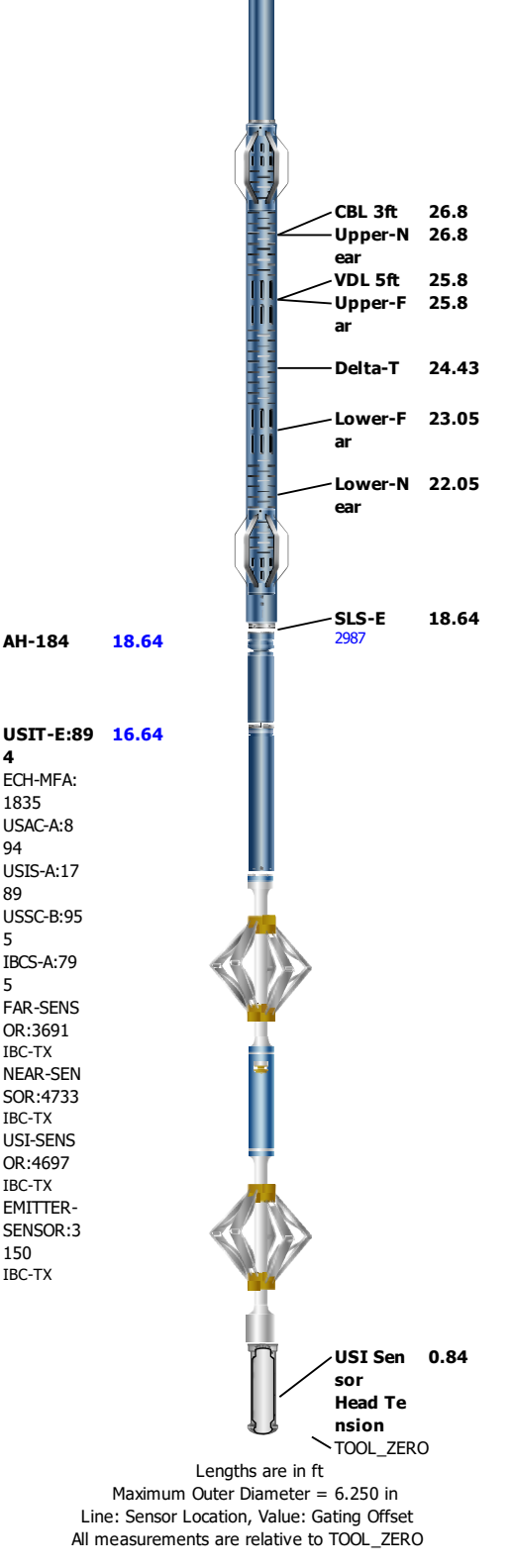


## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.75				
Top Driller ( ft )	0	2587				
Top Logger ( ft )	0	2587				
Bottom Driller ( ft )	2587	12576				
Bottom Logger ( ft )	2587	12576				
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 )	2572	12562				
Bottom Logger ( ft )	2572	12562				

## 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	49.27			Tool string run as per tool sketch and client logging program.	
LEH-QT				All passes run under 0 PSI.	
<b>EDTC-B:8</b>	<b>45.78</b>			Toolstring run with 4 5" gemcos, in-lines with small hole kit and booster kit for centralization.	
EDTH-B:81				Logging Resolution: 10 deg 6 in.	
EDTG-A:7				Annular Fluid: 10.5 ppg OBM	
7301				Lead Cement: 12.5 ppg	
EDTC-B:83					
24					
<b>DSLT-H:8</b>	<b>39.28</b>				
154					
ECH-KH:8					
401					
DSLCH:81					
54					
SLS-E:122					
9					



## Depth Summary

ONE			
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

## Tension Device

Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		






ONE:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.
Rig Up Length At Surface		IDW used as primary depth control device.
Rig Up Length At Bottom		Z chart used as secondary depth control device.
Rig Up Length Correction		Log Correlated to down Log.
Stretch Correction		
Tool Zero Check At Surface		

IBC SLG COMPOSITE MAIN PASS @10DEG X 6IN @0PSI [2:100]

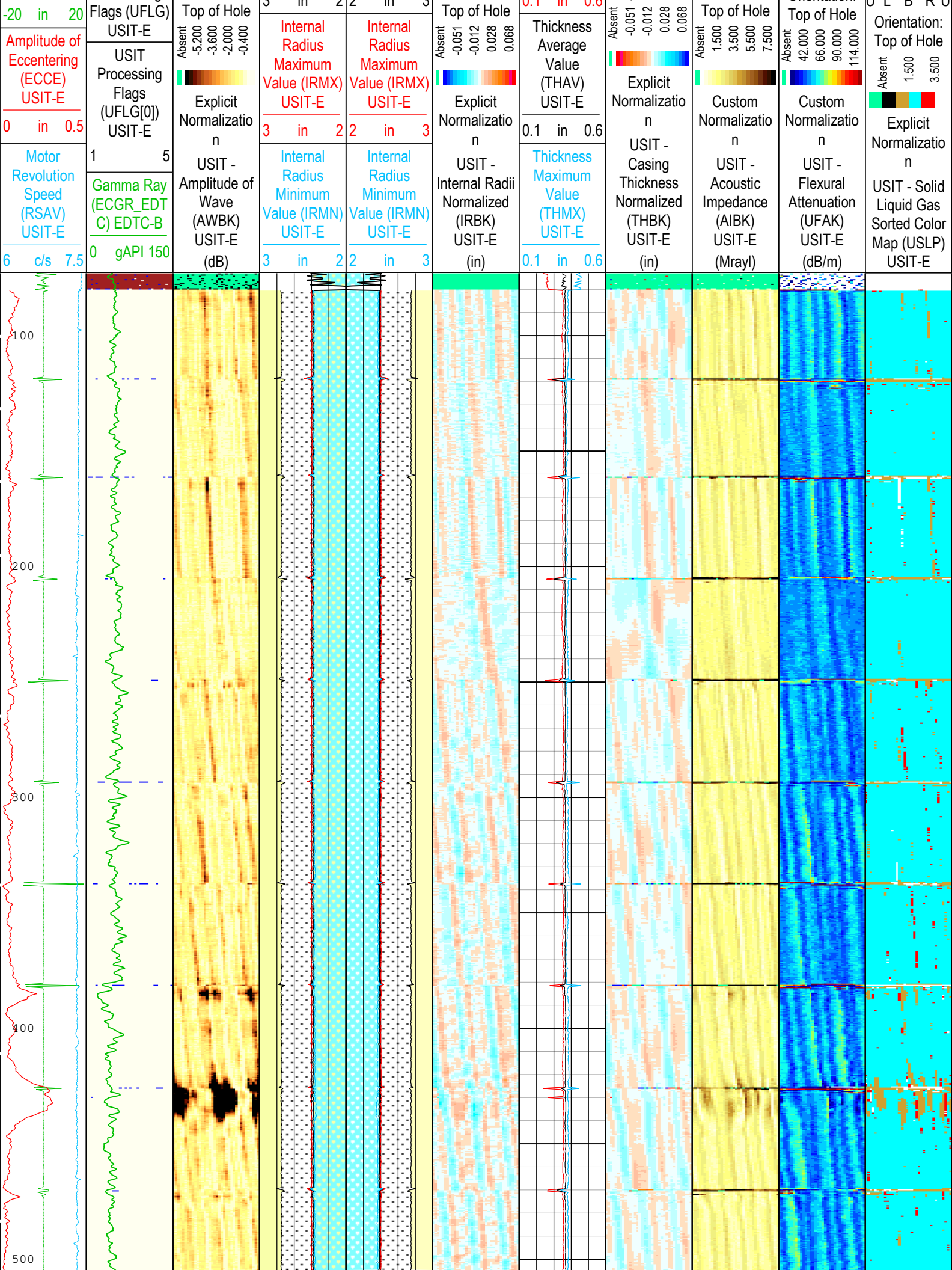
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	73.54 ft	7406.14 ft	16-Nov-2019 9:01:21 AM	16-Nov-2019 10:42:40 AM	ON	5.86 ft	Yes

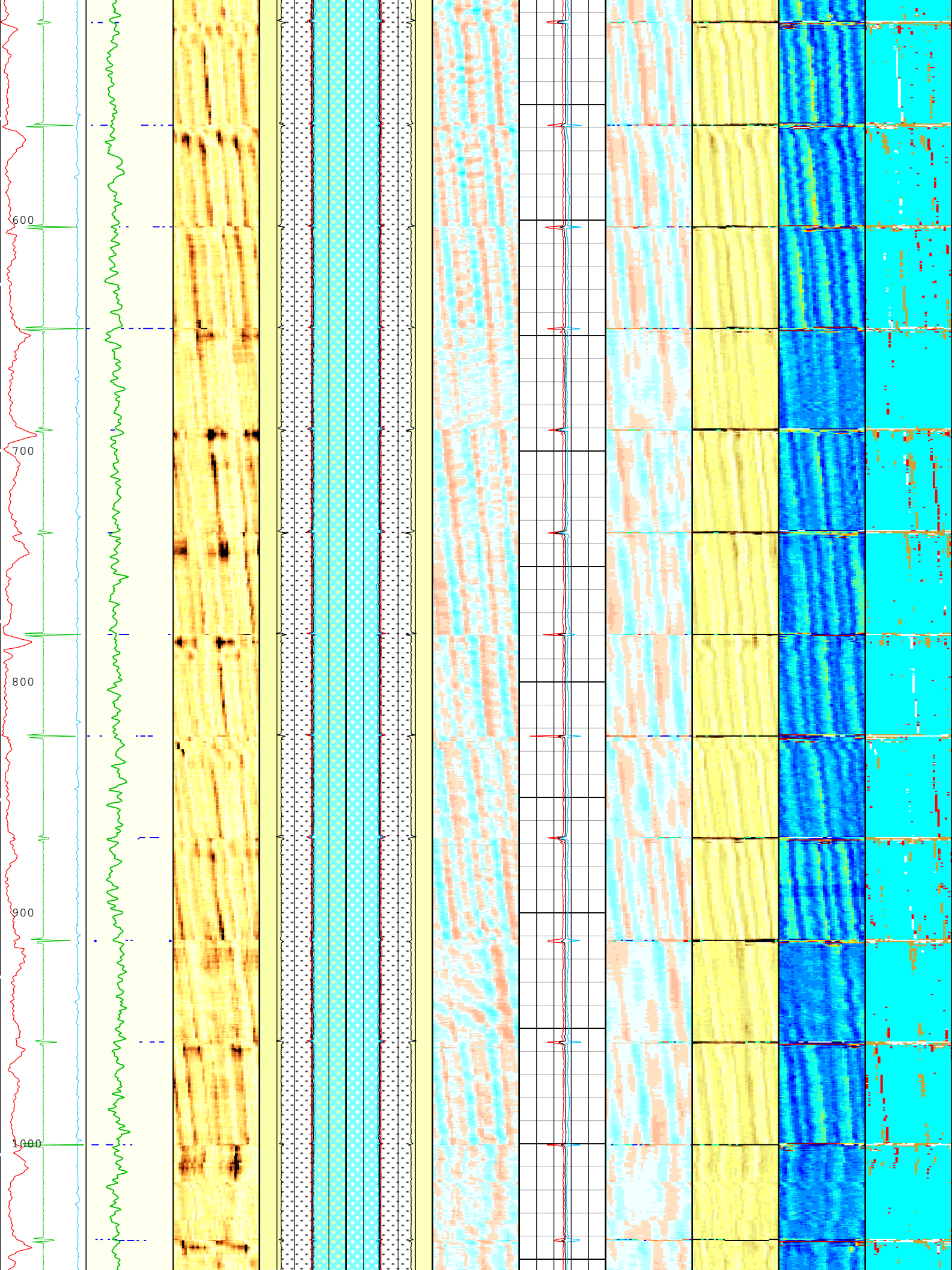
Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HINGLEY 1J-18H-A167
		ONE: Log[4]:Up:S008

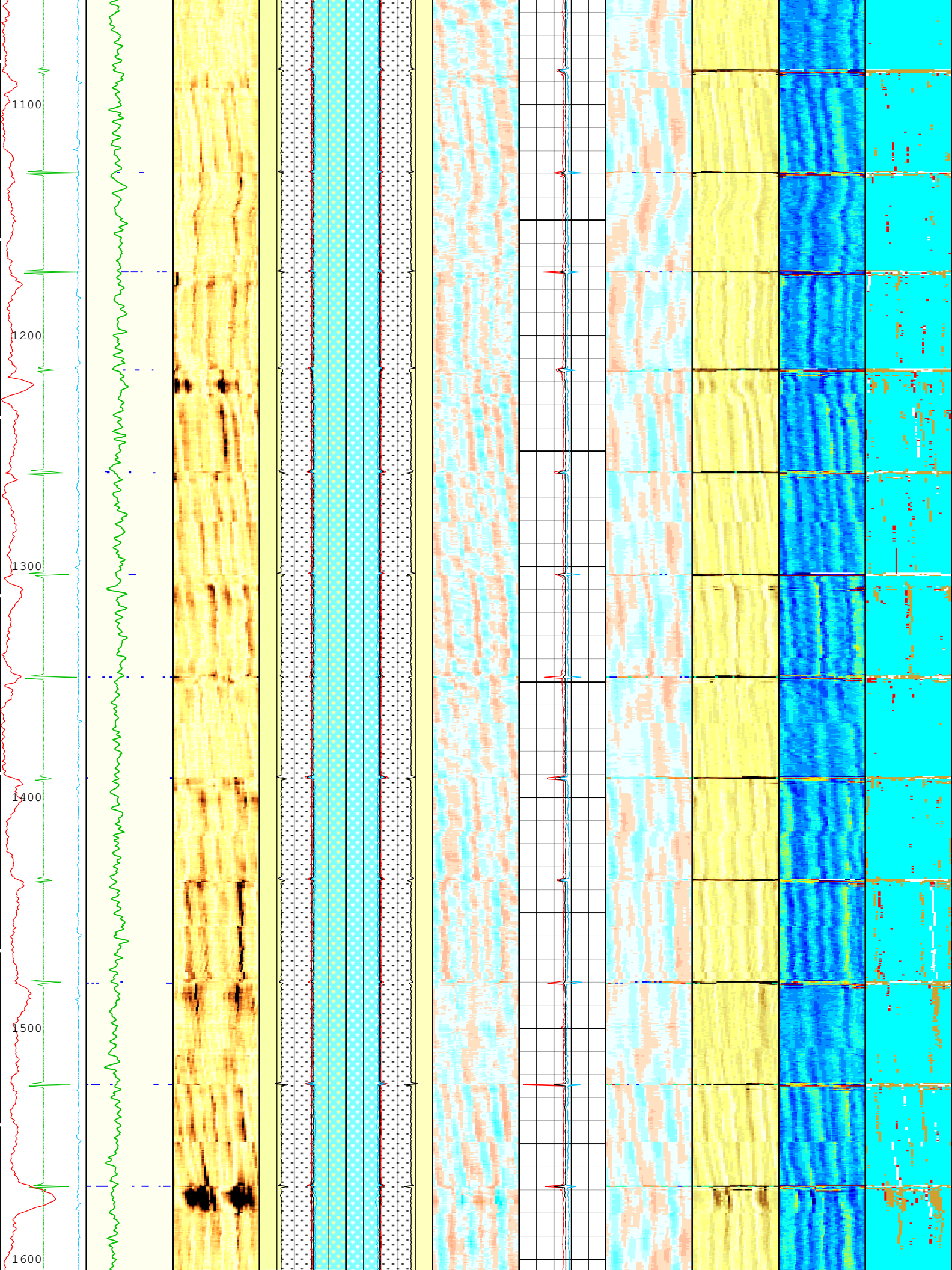
TIME\_1900 - Time Marked every 60.00 (s)

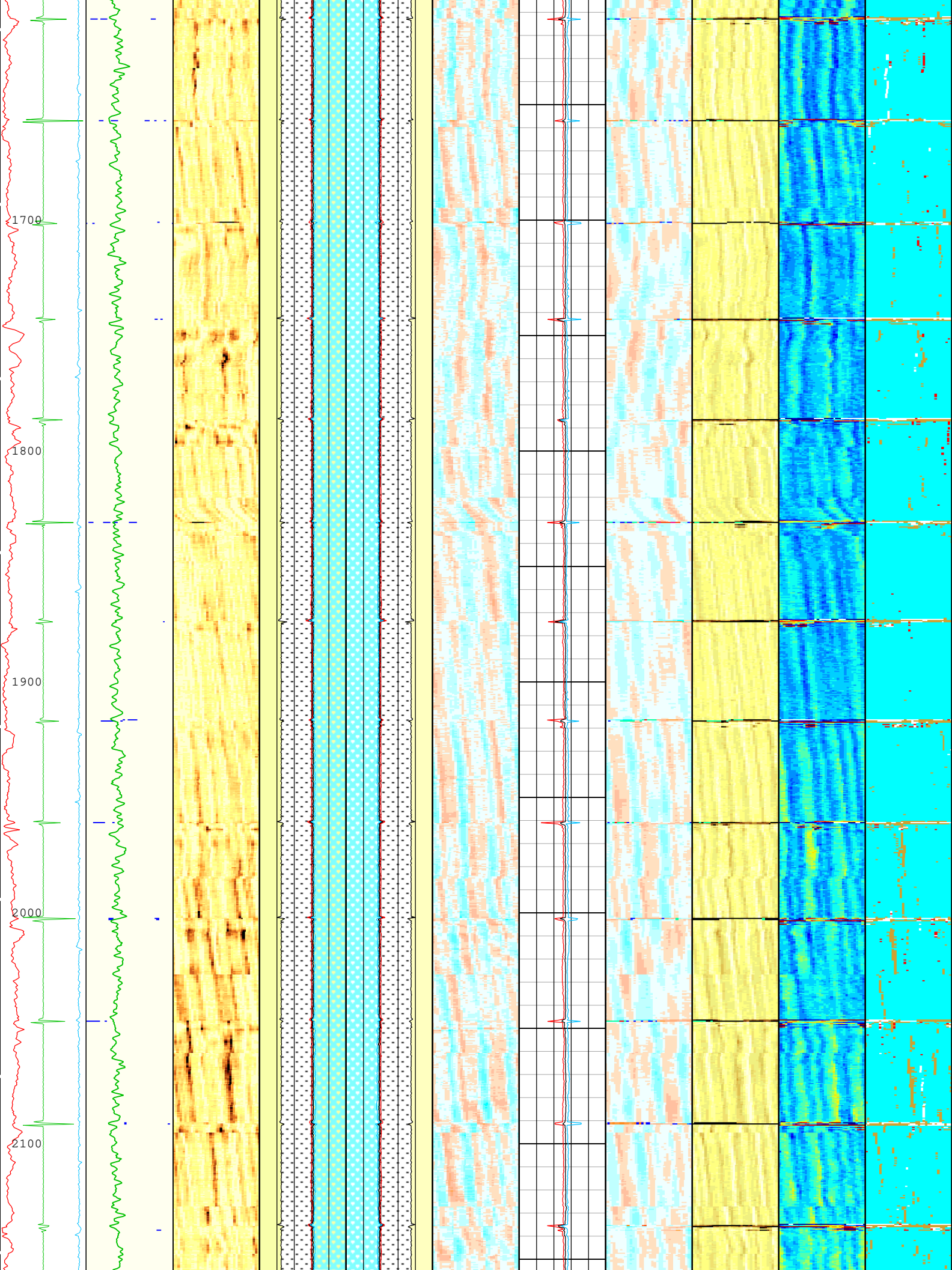
1 - UFLG 1 Value within [0.0 - 1.5] - :	 UTIM Error
2 - UFLG 2 Value within [1.5 - 2.5] - :	 Pulse Origin Not Detected
3 - UFLG 3 Value within [2.5 - 3.5] - :	 WINLEN Error
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	 Casing Thickness Error
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ]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

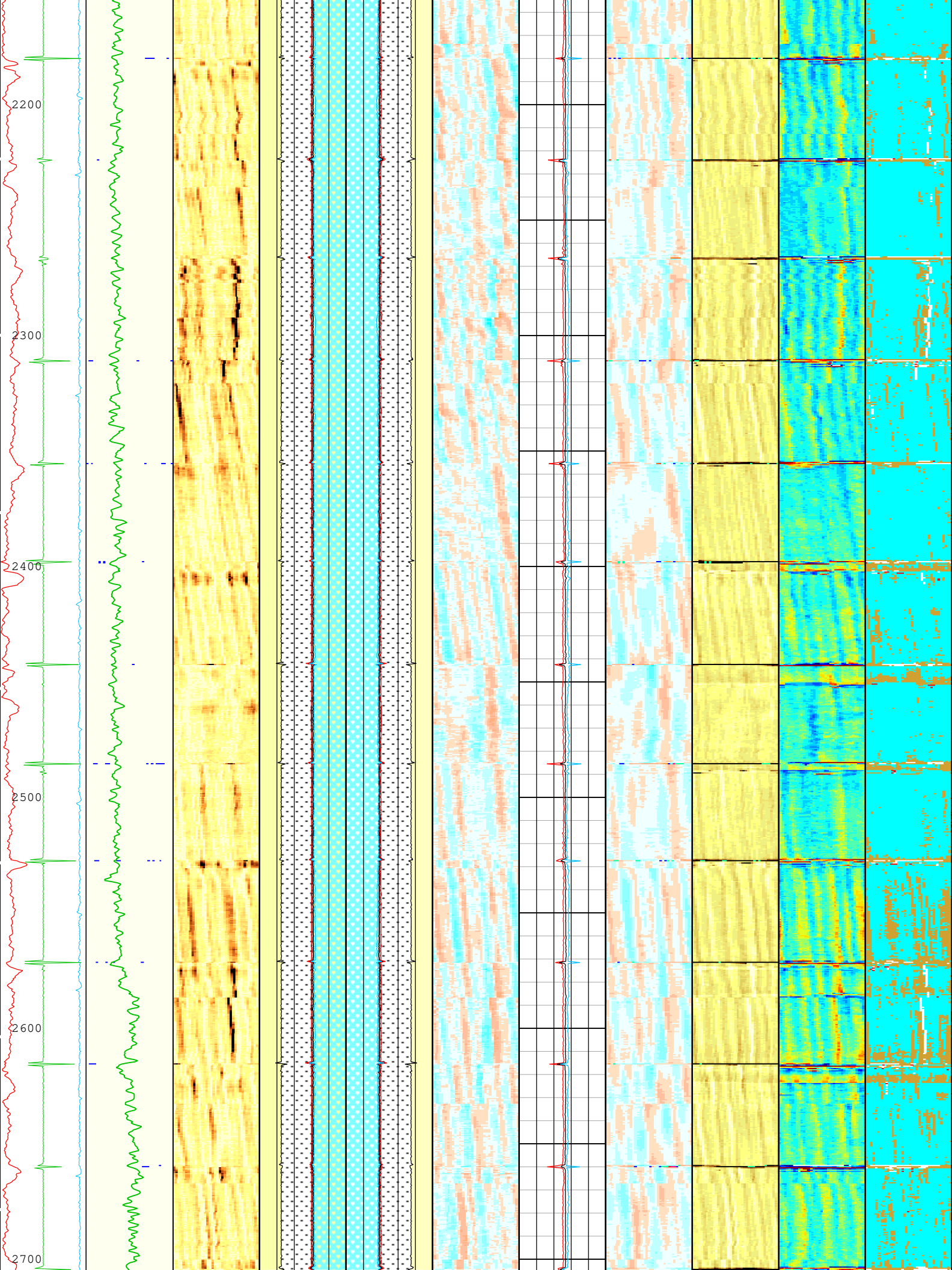
[illegible]

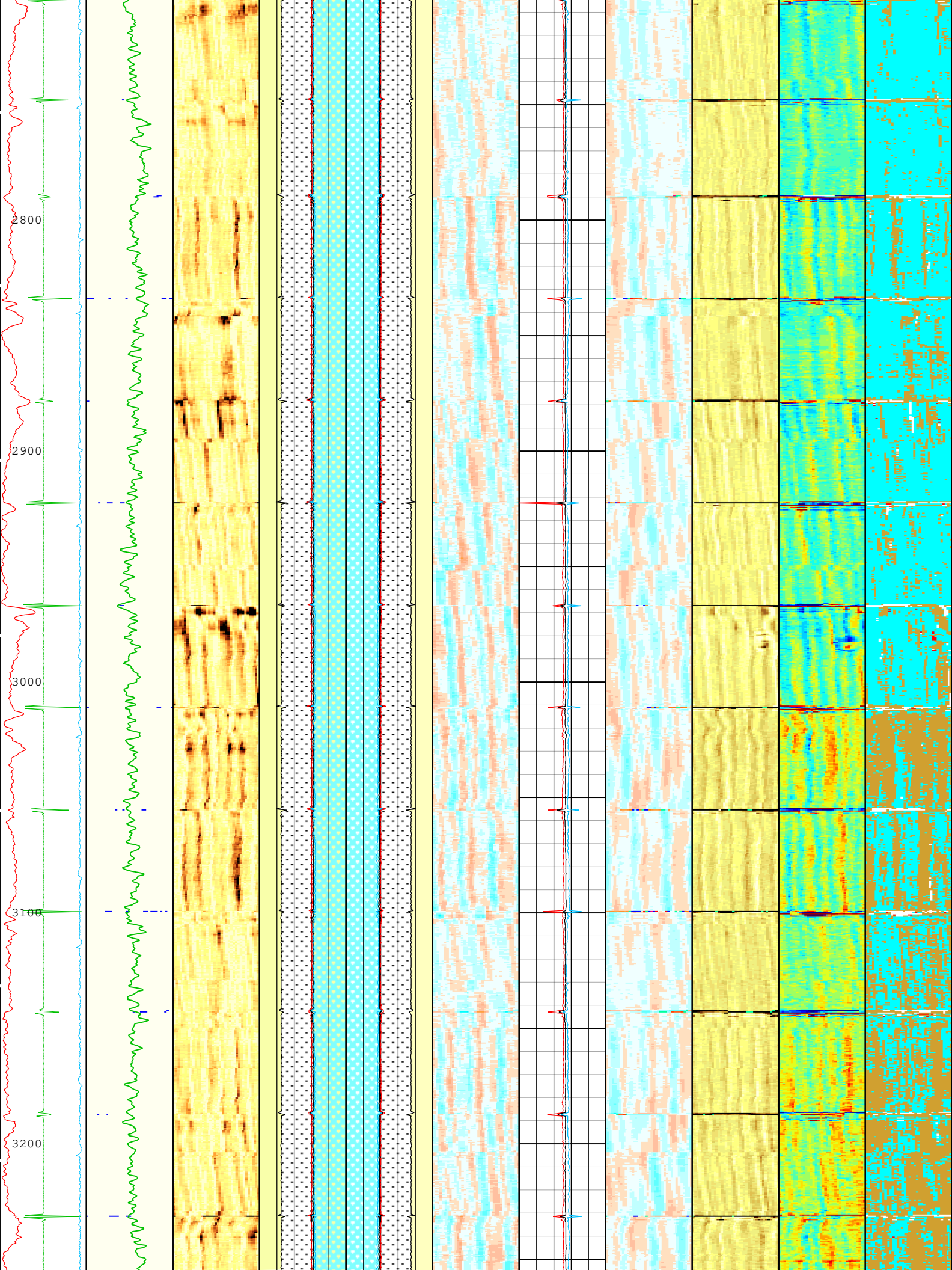


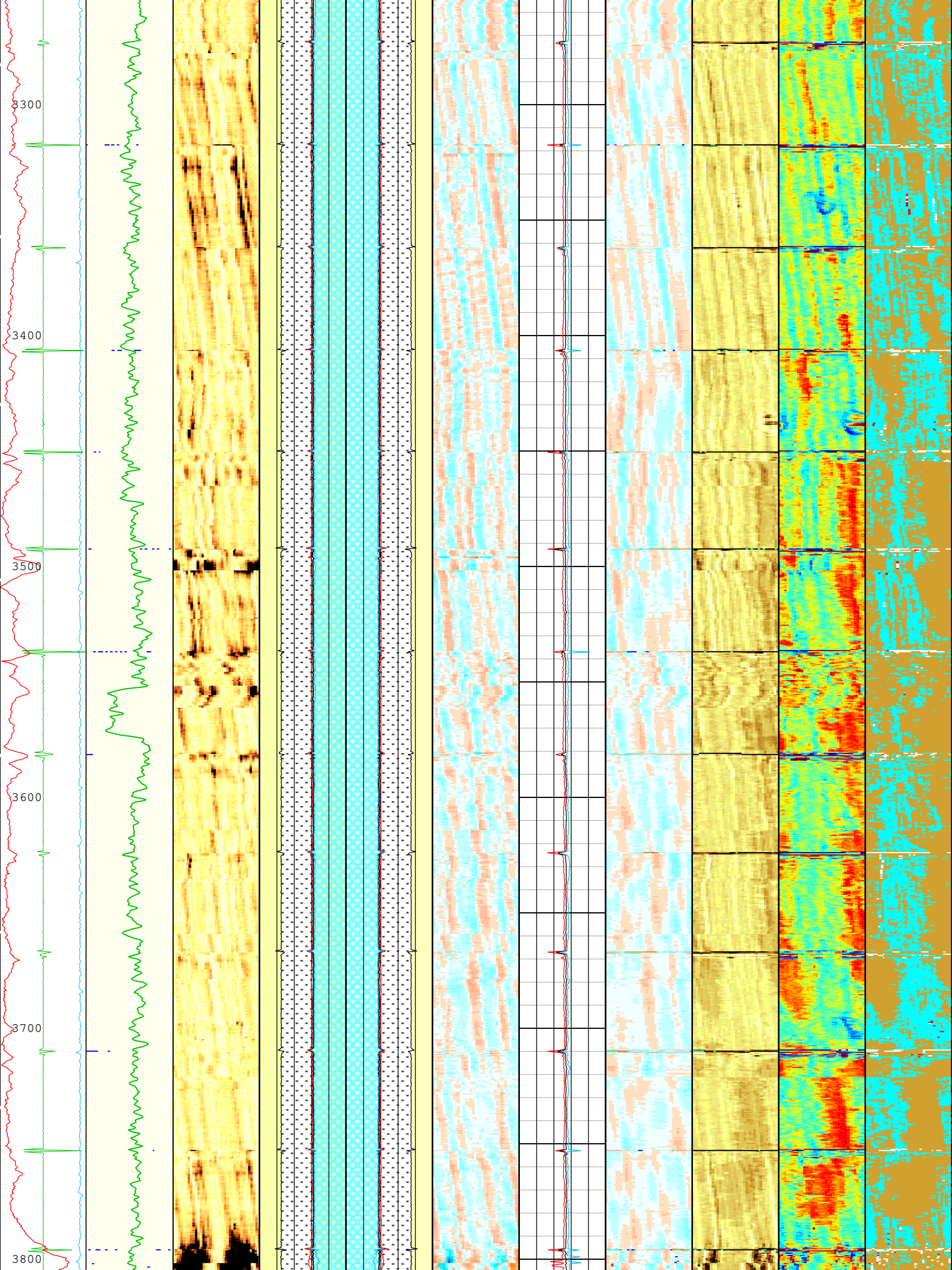


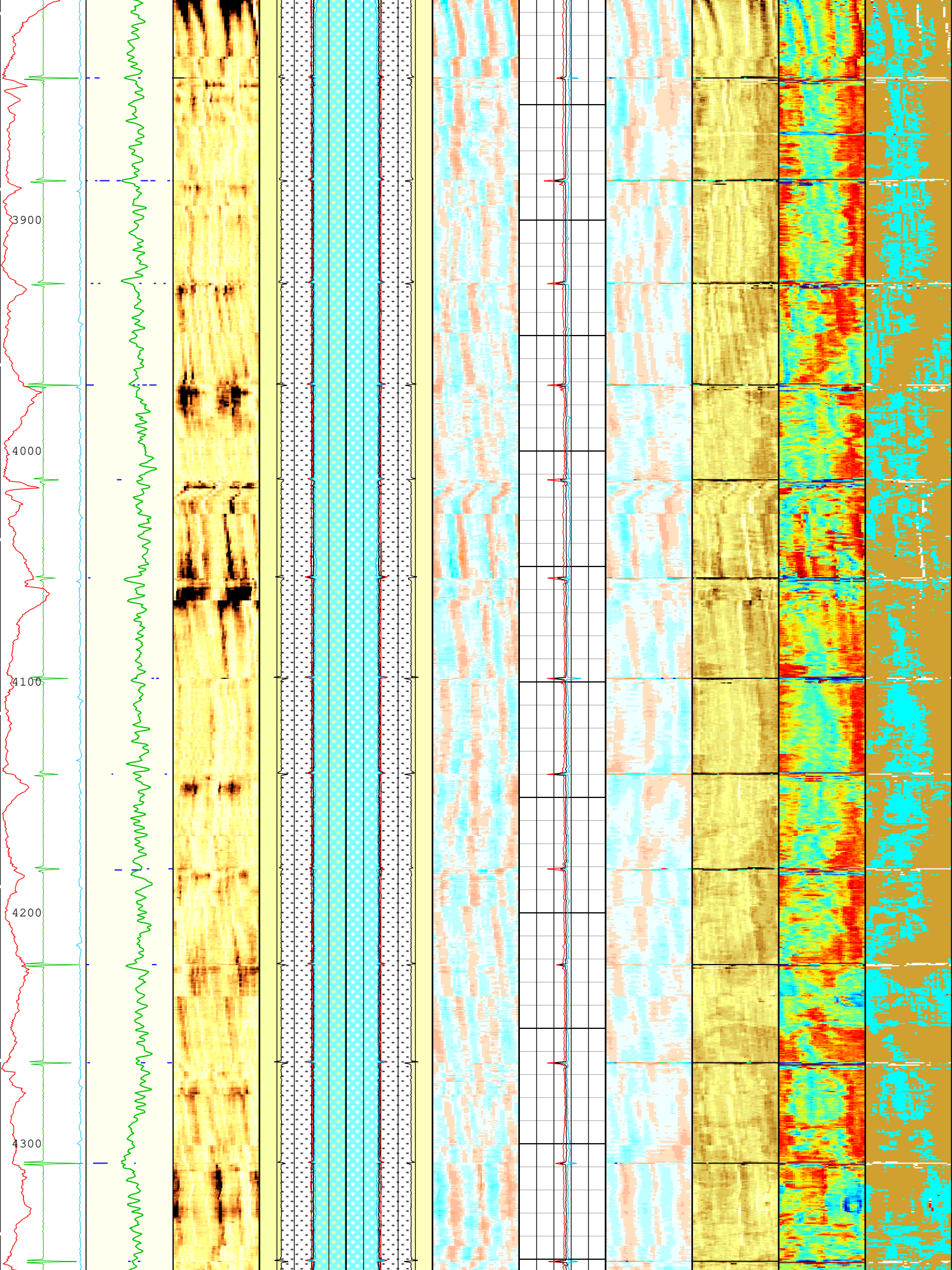


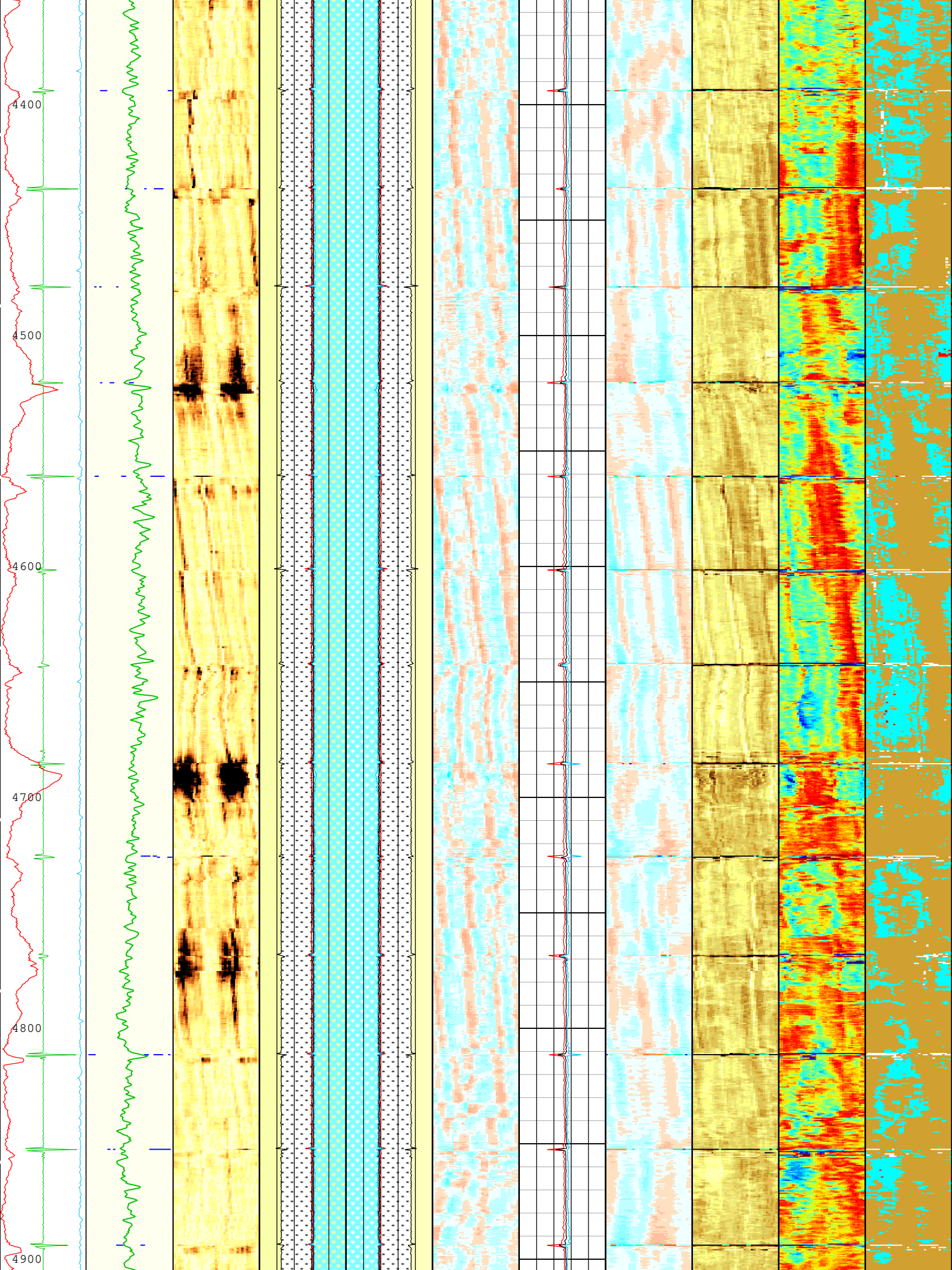


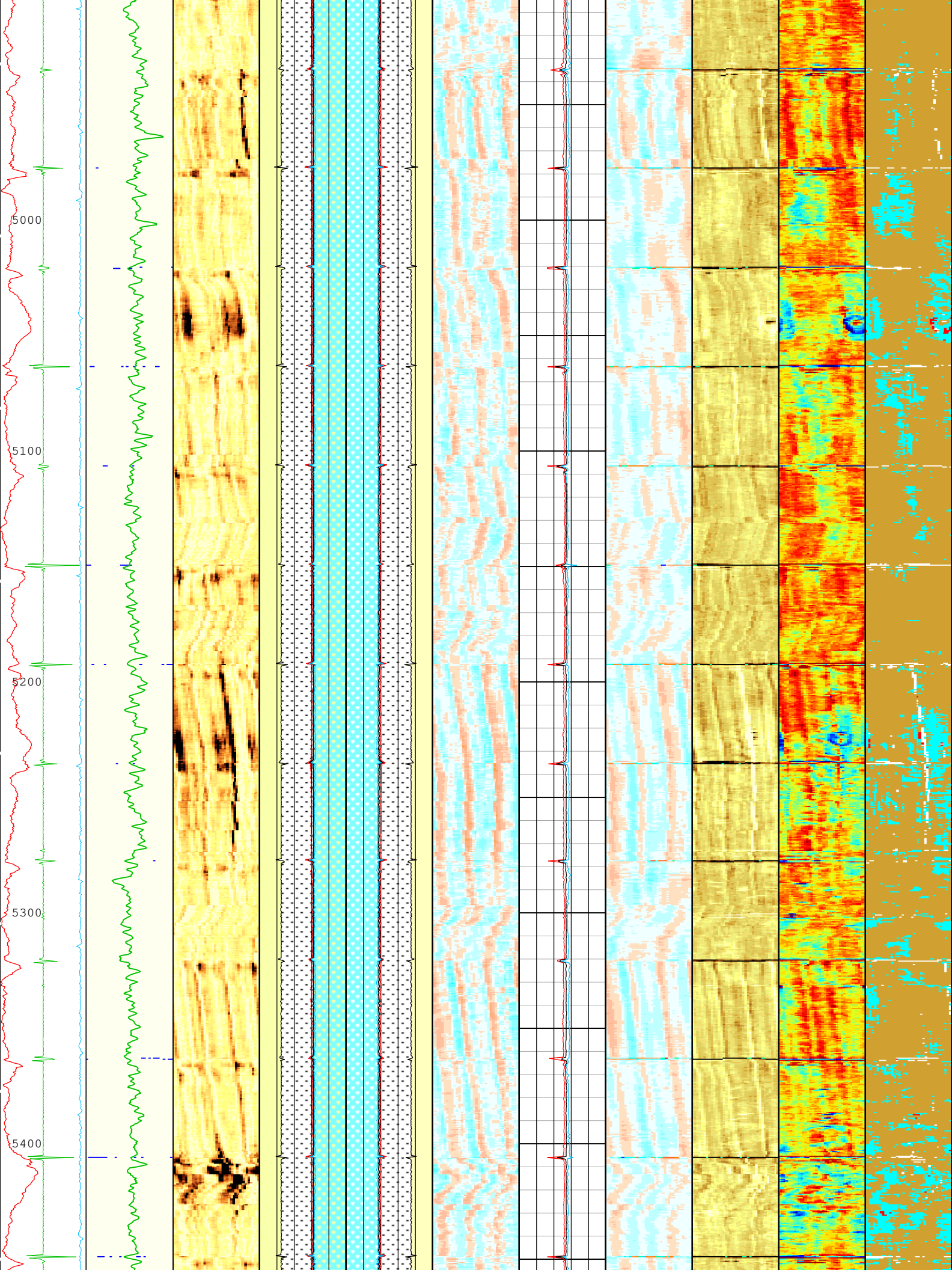


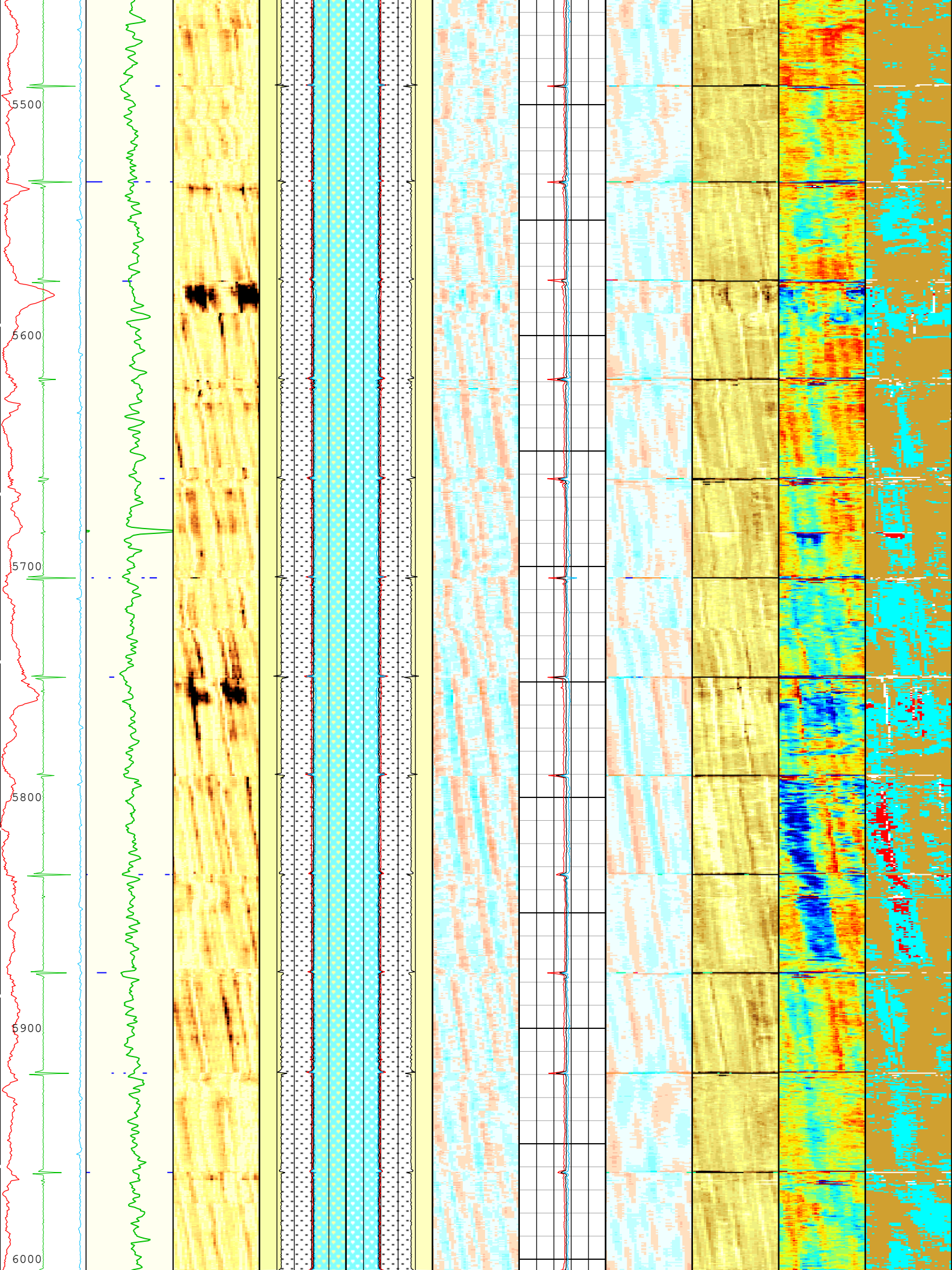


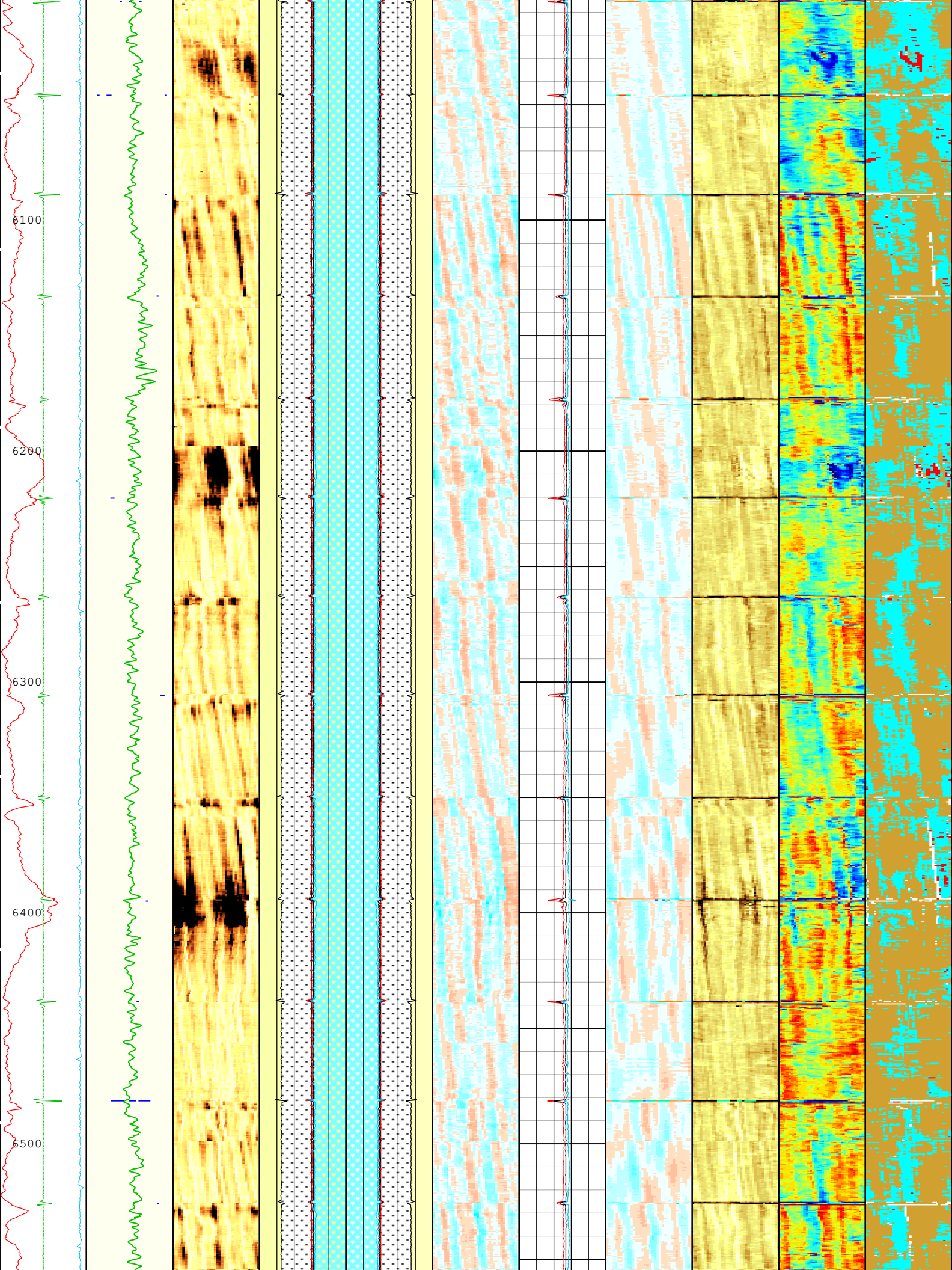


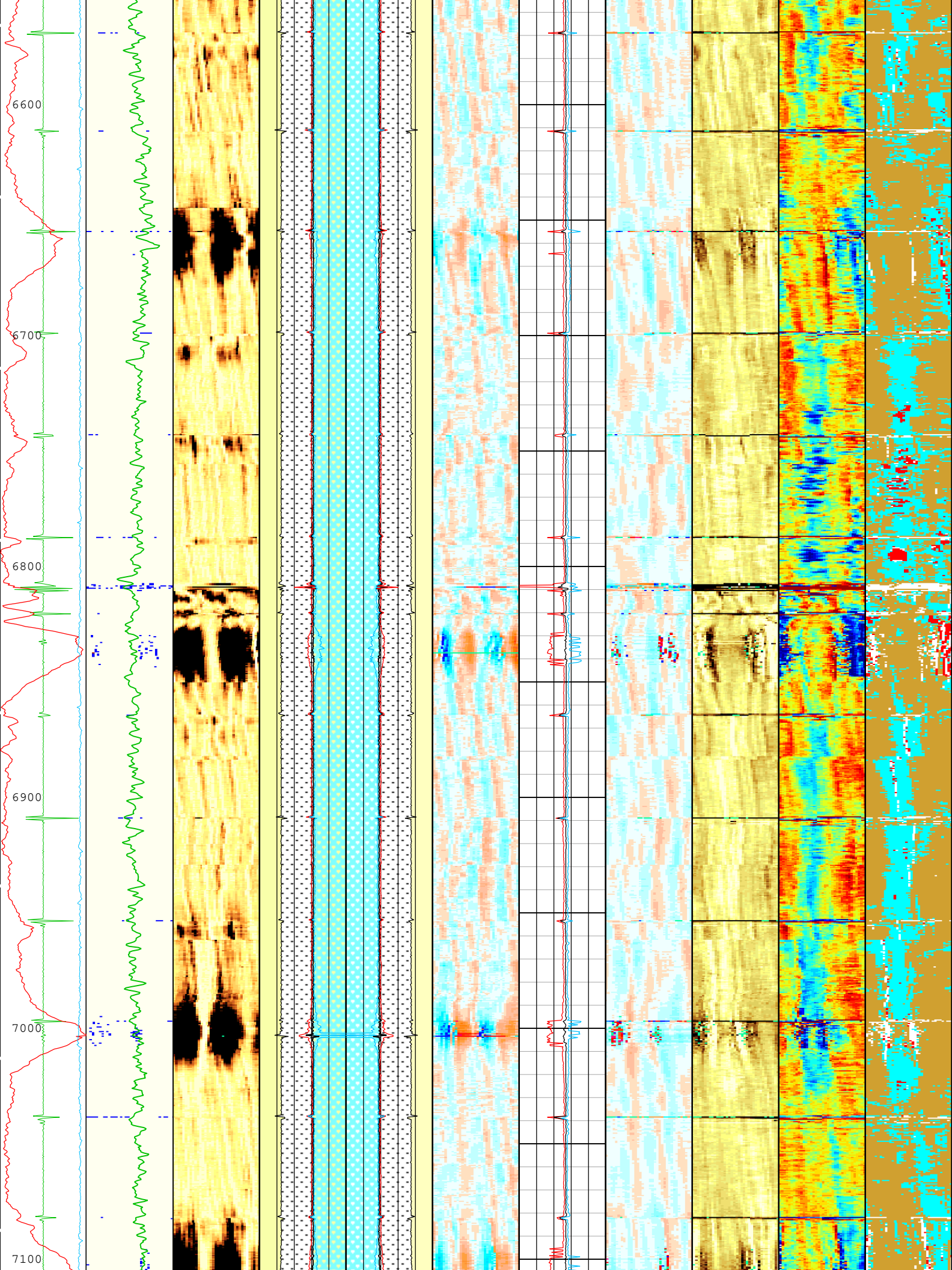


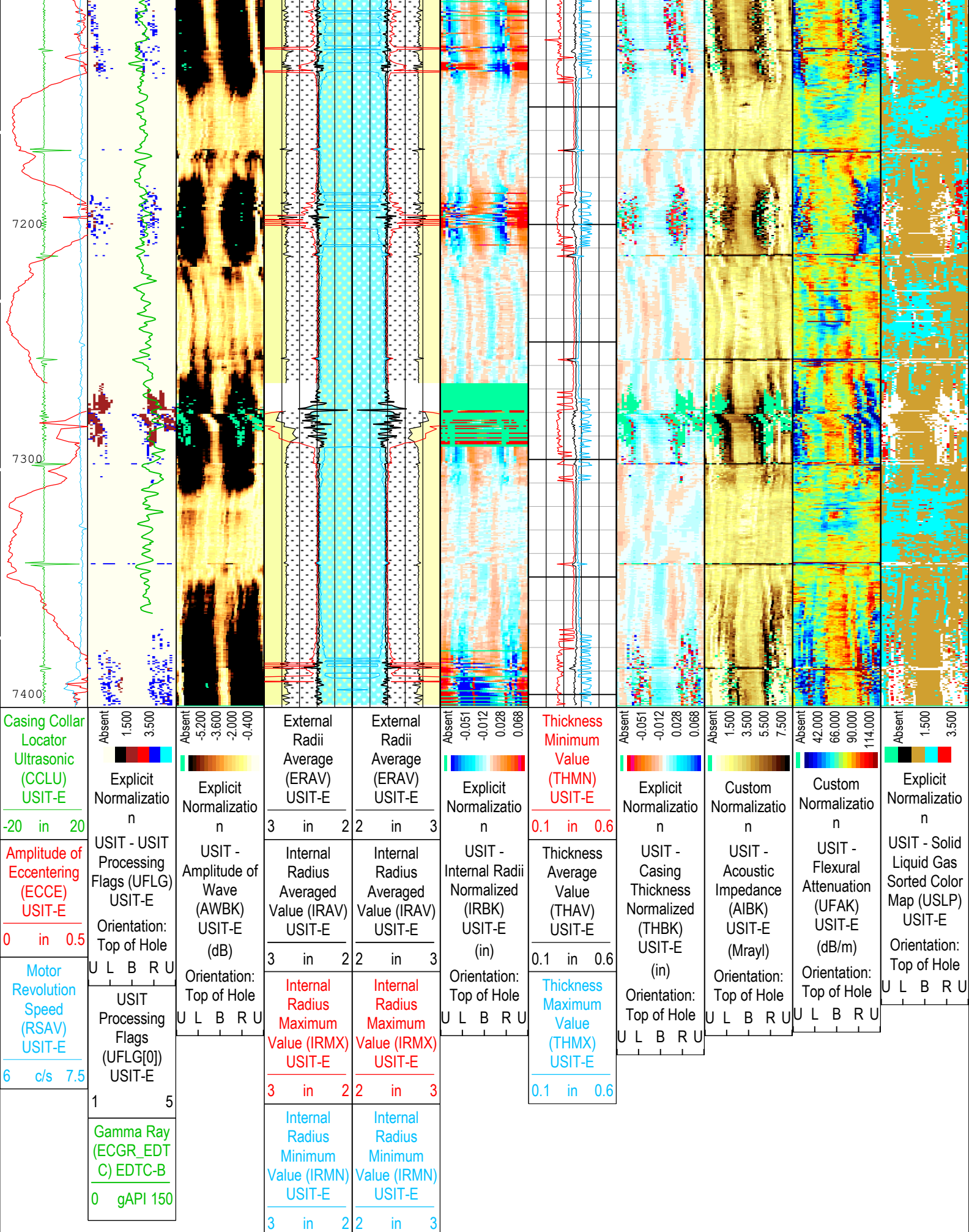
















USIT Processing Flags (UFLG[0]) USIT-E

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)

Description: USI IBC SLG Composite    Format: Log ( Import (2) of IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured  
Depth    Creation Date: 16-Nov-2019 12:48:08

## Channel Processing Parameters

### ONE: Parameters

Parameter	Description	Tool	Value	Unit
BAR(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	12562	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	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	203	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_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	Theoretical	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.08	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-28.91	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	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

### Depth Zone Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	73	2587
BS	8.75	2587	7405.5

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	20	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	131.18	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	101.14	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	152.92	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 )
U-USIT_UFWE	176	16-Nov-2019 09:01:21	16-Nov-2019 09:04:53	7406.14	7168.39
U-USIT_UFWE	176.74	16-Nov-2019 09:04:53	16-Nov-2019 09:05:00	7168.39	7160.9
U-USIT_UFWE	177.78	16-Nov-2019 09:05:00	16-Nov-2019 10:42:40	7160.9	73.54
WINB	27.08	16-Nov-2019 09:01:21	16-Nov-2019 09:03:06	7406.14	7296.59
WINB	19.49	16-Nov-2019 09:03:06	16-Nov-2019 09:03:19	7296.59	7280.62
WINB	15.69	16-Nov-2019 09:03:19	16-Nov-2019 09:04:02	7280.62	7229.63
WINB	21.77	16-Nov-2019 09:04:02	16-Nov-2019 10:42:40	7229.63	73.54
WINE	87.08	16-Nov-2019 09:01:21	16-Nov-2019 09:02:24	7406.14	7346.15
WINE	84.8	16-Nov-2019 09:02:24	16-Nov-2019 09:03:02	7346.15	7301.64
WINE	77.21	16-Nov-2019 09:03:02	16-Nov-2019 09:03:12	7301.64	7290.01
WINE	68.85	16-Nov-2019 09:03:12	16-Nov-2019 09:03:51	7290.01	7242.5
WINE	74.17	16-Nov-2019 09:03:51	16-Nov-2019 09:03:55	7242.5	7237.72
WINE	81.01	16-Nov-2019 09:03:55	16-Nov-2019 09:04:14	7237.72	7215.2
WINE	82.52	16-Nov-2019 09:04:14	16-Nov-2019 09:04:22	7215.2	7205.52
WINE	87.08	16-Nov-2019 09:04:22	16-Nov-2019 10:42:40	7205.52	73.54

All depth are at tool zero.

## ONE

## IBC GOODWIN MAIN PASS @10DEG X 6IN @0PSI [0.1:100]

### Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	73.54 ft	7406.14 ft	16-Nov-2019 9:01:21 AM	16-Nov-2019 10:42:40 AM	ON	5.86 ft	Yes

All depths are referenced to toolstring zero

<b>Log</b>	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HINGLEY 1J-18H-A167
		ONE: Log[4]:Up:S008

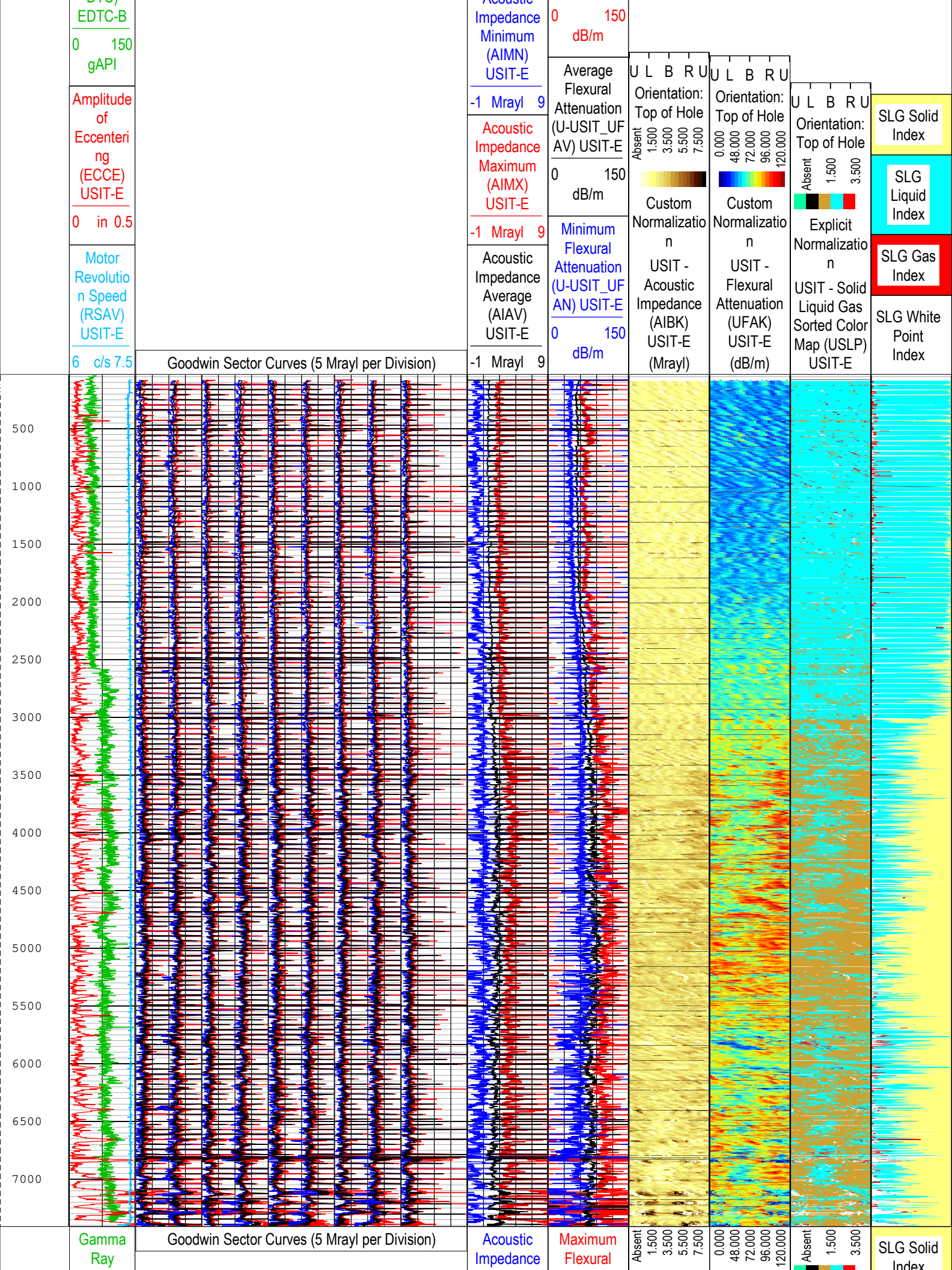
Description: USI Goodwin   Format: Log ( Import (2) of IBC Goodwin )   Index Scale: 0.1 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 16-Nov-2019 12:48:29

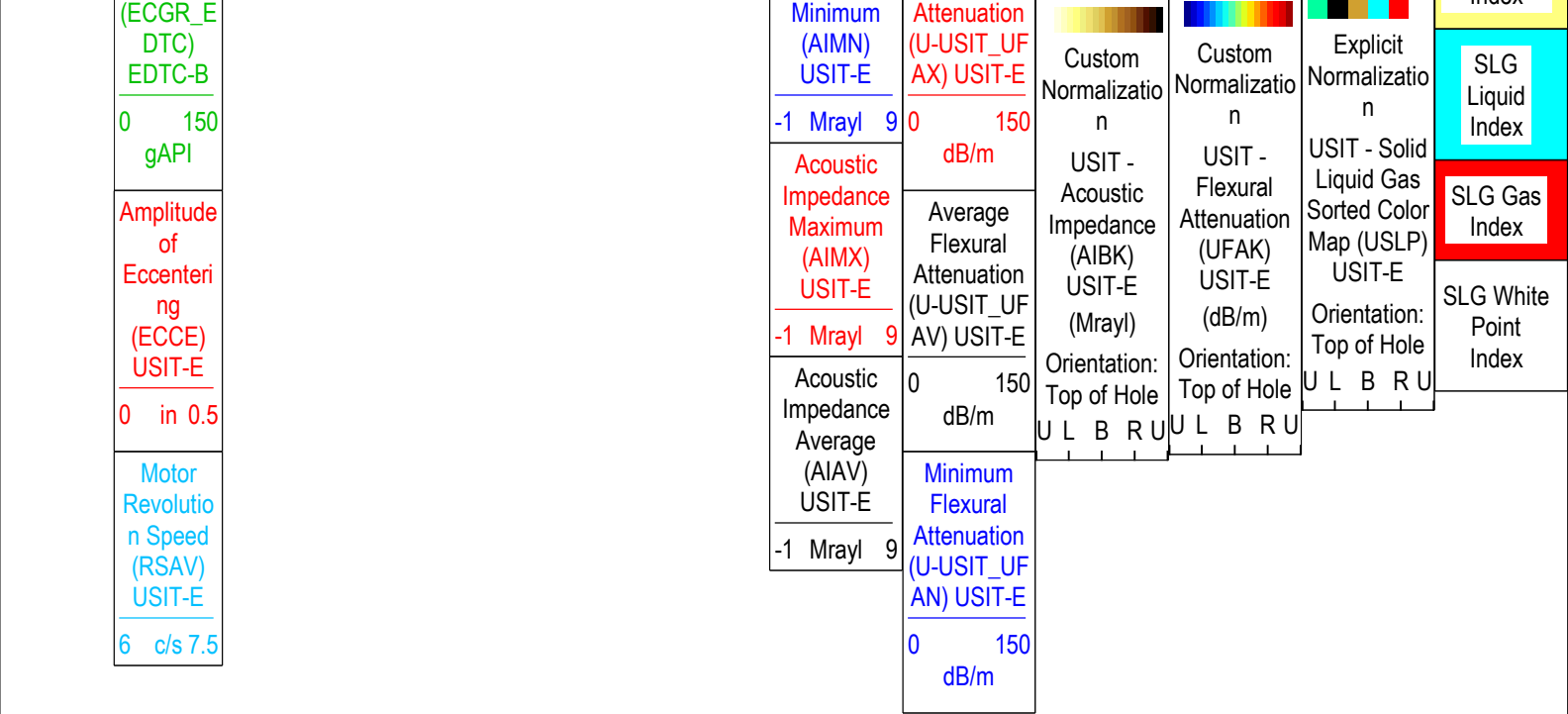
TIME\_1900 - Time Marked every 60.00 (s)

Gamma  
Ray  
(ECGR\_E  
DTC)

Acoustic

Maximum  
Flexural  
Attenuation  
(U-USIT\_UF  
AX) USIT-E





Description: USI Goodwin    Format: Log ( Import (2) of IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 16-Nov-2019 12:48:29

ONE									
IBC SLG REPEAT PASS 1 @10DEG X 6IN @0PSI [5:100]									
Software Version									
Acquisition System						Version			
Maxwell 2019.2						9.2.113335.3100			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	7075.29 ft	7405.29 ft	16-Nov-2019 8:53:07 AM	16-Nov-2019 8:58:14 AM	ON	5.05 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC					Well:HINGLEY 1J-18H-A167			
	ONE: Log[3]:Up:S008								

Description: USI IBC SLG    Format: Log ( Import (2) of IBC SLG )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 16-Nov-2019 12:48:40

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 ] - :

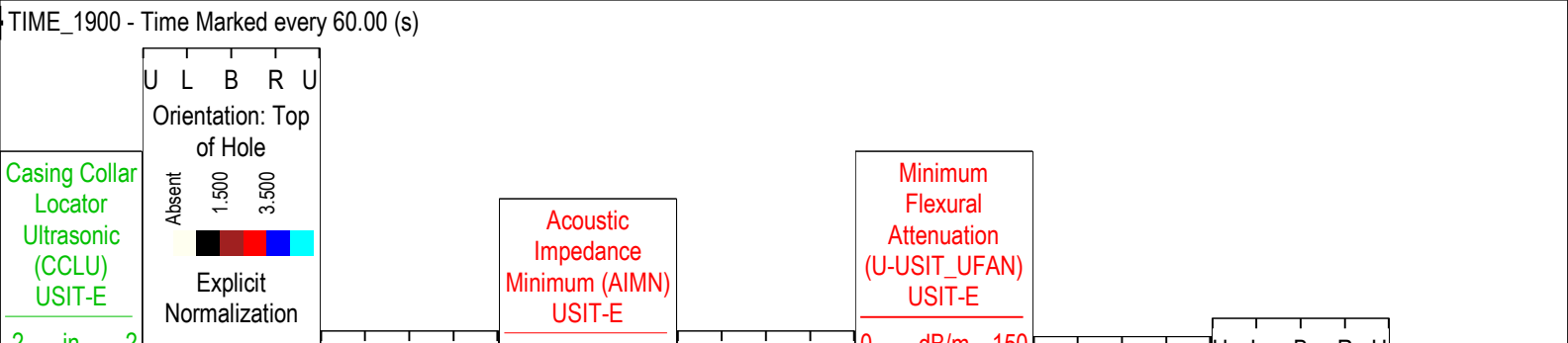
UTIM Error

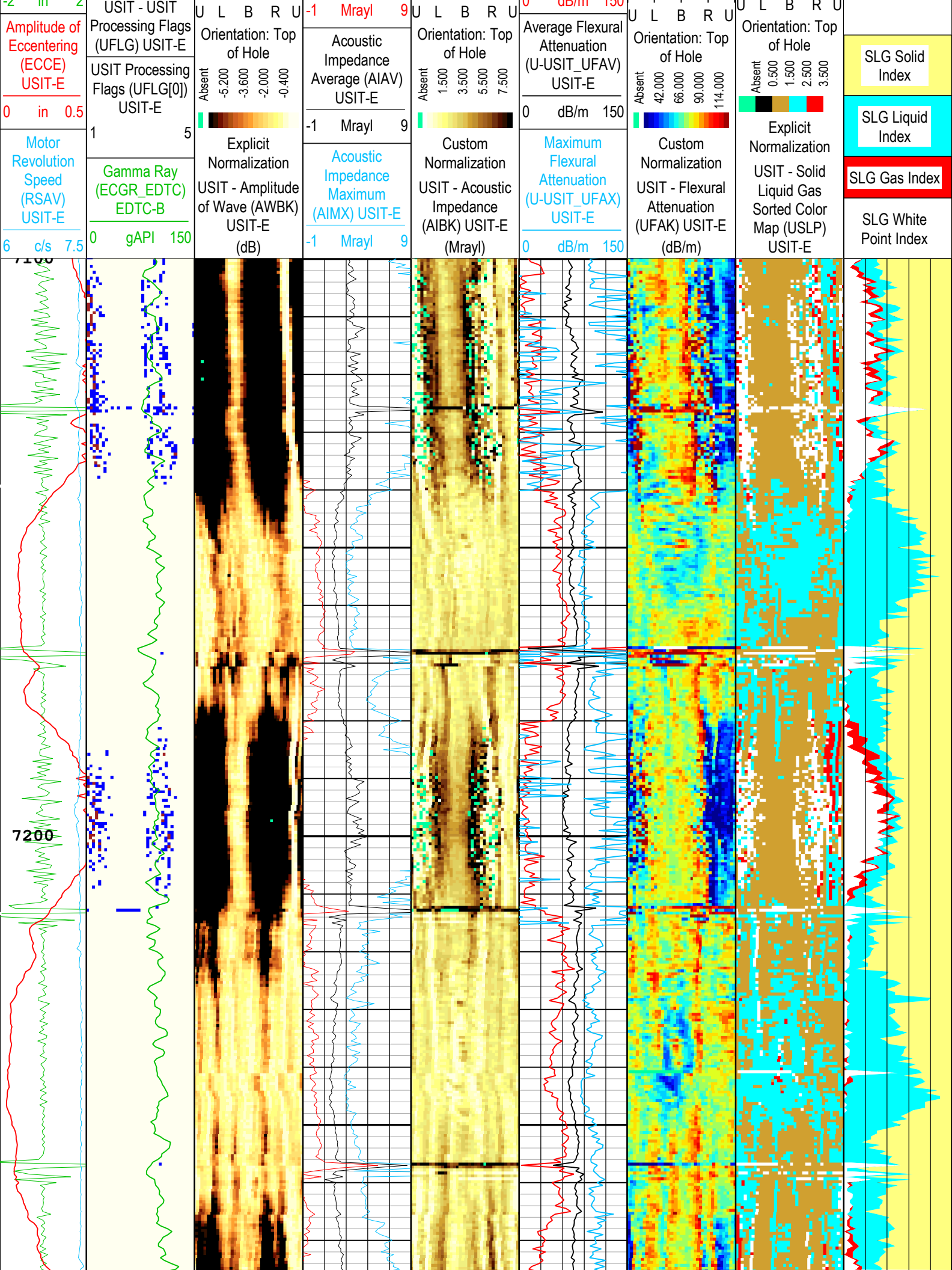
Pulse Origin Not Detected

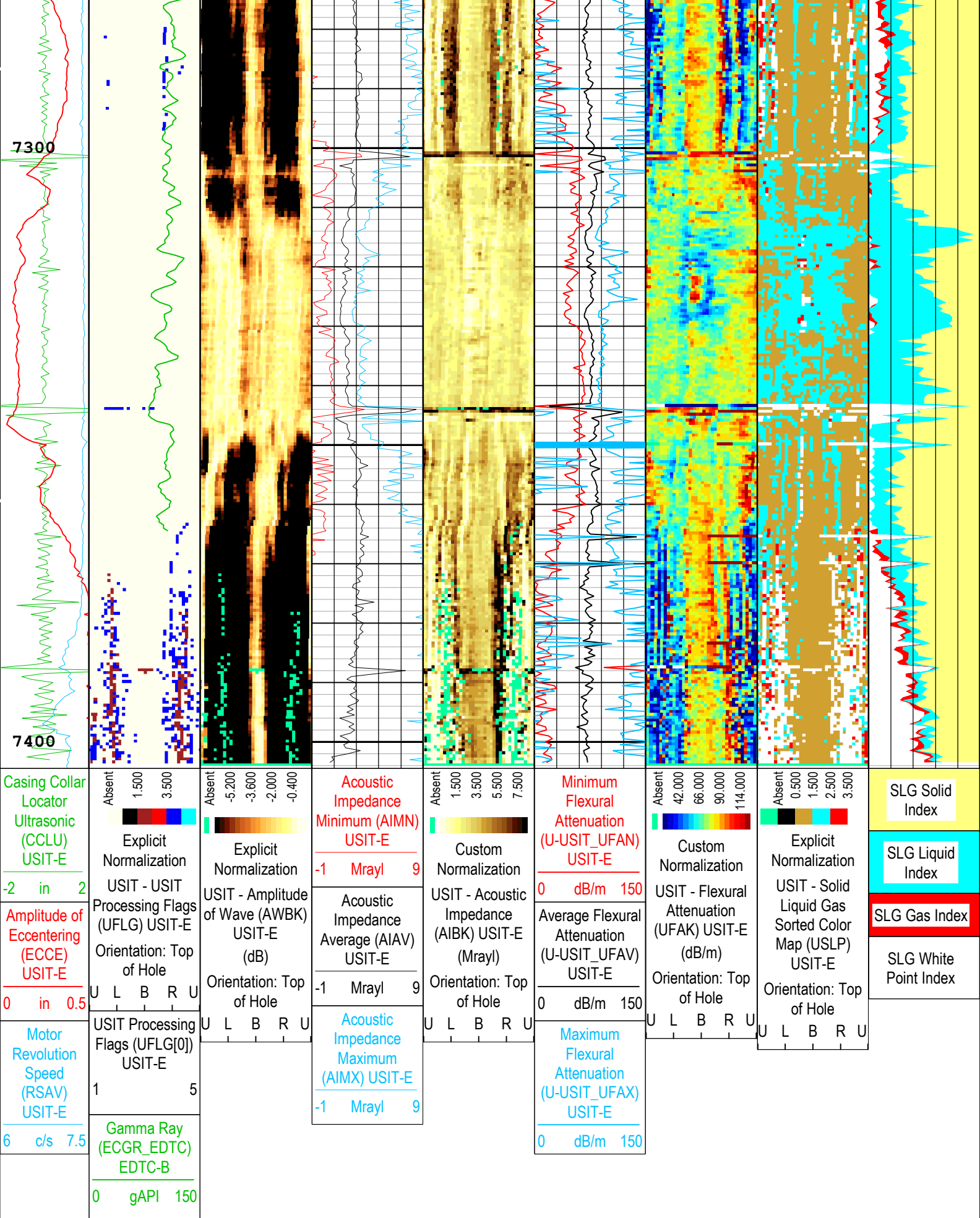
WINLEN Error

Casing Thickness Error

Loop Processing Error







Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BAR(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	8.75	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	12562	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	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	203	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	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	Theoretical	
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_THE	Theoretical Mud Normalization Factor	USIT-E	1.08	
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	-28.91	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

	Acoustic Impedance of Cement	USIT-E	10.22	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	2.6	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	20	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	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176	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 )
U-USIT_UFWB	136	16-Nov-2019 08:53:07	16-Nov-2019 08:54:24	7405.29	7330.1
U-USIT_UFWB	131.18	16-Nov-2019 08:54:24	16-Nov-2019 08:58:14	7330.1	7075.29
U-USIT_UNWB	105	16-Nov-2019 08:53:07	16-Nov-2019 08:54:17	7405.29	7338.15
U-USIT_UNWB	103.21	16-Nov-2019 08:54:17	16-Nov-2019 08:55:45	7338.15	7231.19
U-USIT_UNWB	101.14	16-Nov-2019 08:55:45	16-Nov-2019 08:58:14	7231.19	7075.29
U-USIT_UNWE	145	16-Nov-2019 08:53:07	16-Nov-2019 08:53:42	7405.29	7380.12
U-USIT_UNWE	152.92	16-Nov-2019 08:53:42	16-Nov-2019 08:58:14	7380.12	7075.29
WINB	31.12	16-Nov-2019 08:53:07	16-Nov-2019 08:54:06	7405.29	7351.49
WINB	27.08	16-Nov-2019 08:54:06	16-Nov-2019 08:58:14	7351.49	7075.29
WINE	71.12	16-Nov-2019 08:53:07	16-Nov-2019 08:53:32	7405.29	7392.52
WINE	80.25	16-Nov-2019 08:53:32	16-Nov-2019 08:53:39	7392.52	7384.68
WINE	84.04	16-Nov-2019 08:53:39	16-Nov-2019 08:53:49	7384.68	7371.82
WINE	89.36	16-Nov-2019 08:53:49	16-Nov-2019 08:53:53	7371.82	7366.91
WINE	99.99	16-Nov-2019 08:53:53	16-Nov-2019 08:54:30	7366.91	7323.01

WINE	92.4	16-Nov-2019 08:54:30	16-Nov-2019 08:55:36	7323.01	7242.22
WINE	84.8	16-Nov-2019 08:55:36	16-Nov-2019 08:57:40	7242.22	7088.17
WINE	87.08	16-Nov-2019 08:57:40	16-Nov-2019 08:58:14	7088.17	7075.29

All depth are at tool zero.

ONE

## IBC SLG COMPOSITE REPEAT PASS 1 @10DEG X 6IN @0PSI [2:100]

### Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	7075.29 ft	7405.29 ft	16-Nov-2019 8:53:07 AM	16-Nov-2019 8:58:14 AM	ON	5.05 ft	Yes

All depths are referenced to toolstring zero

### Log

Company:CRESTONE PEAK RESOURCES OPERATING LLC






Well:HINGLEY 1J-18H-A167

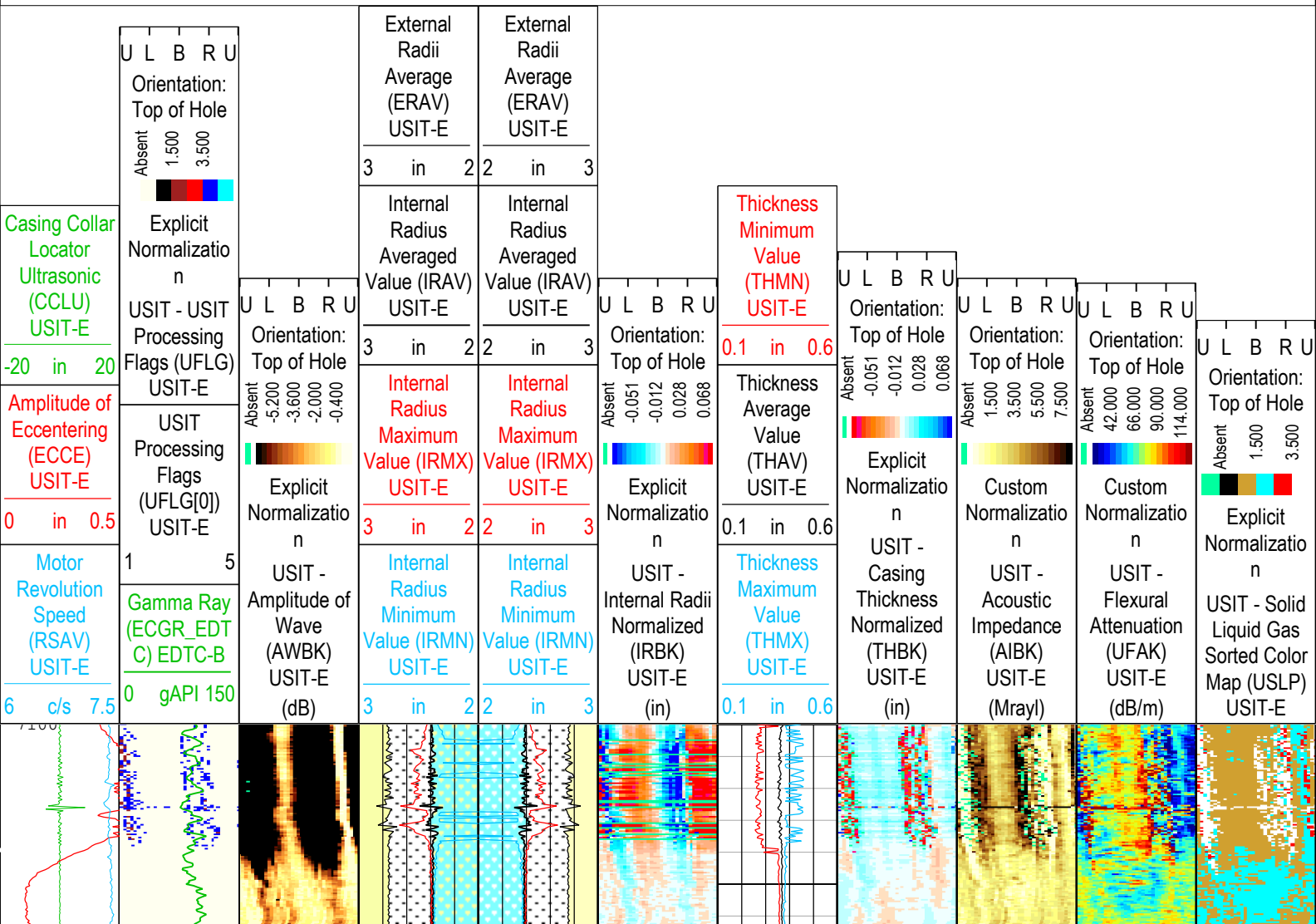
ONE: Log[3]:Up:S008

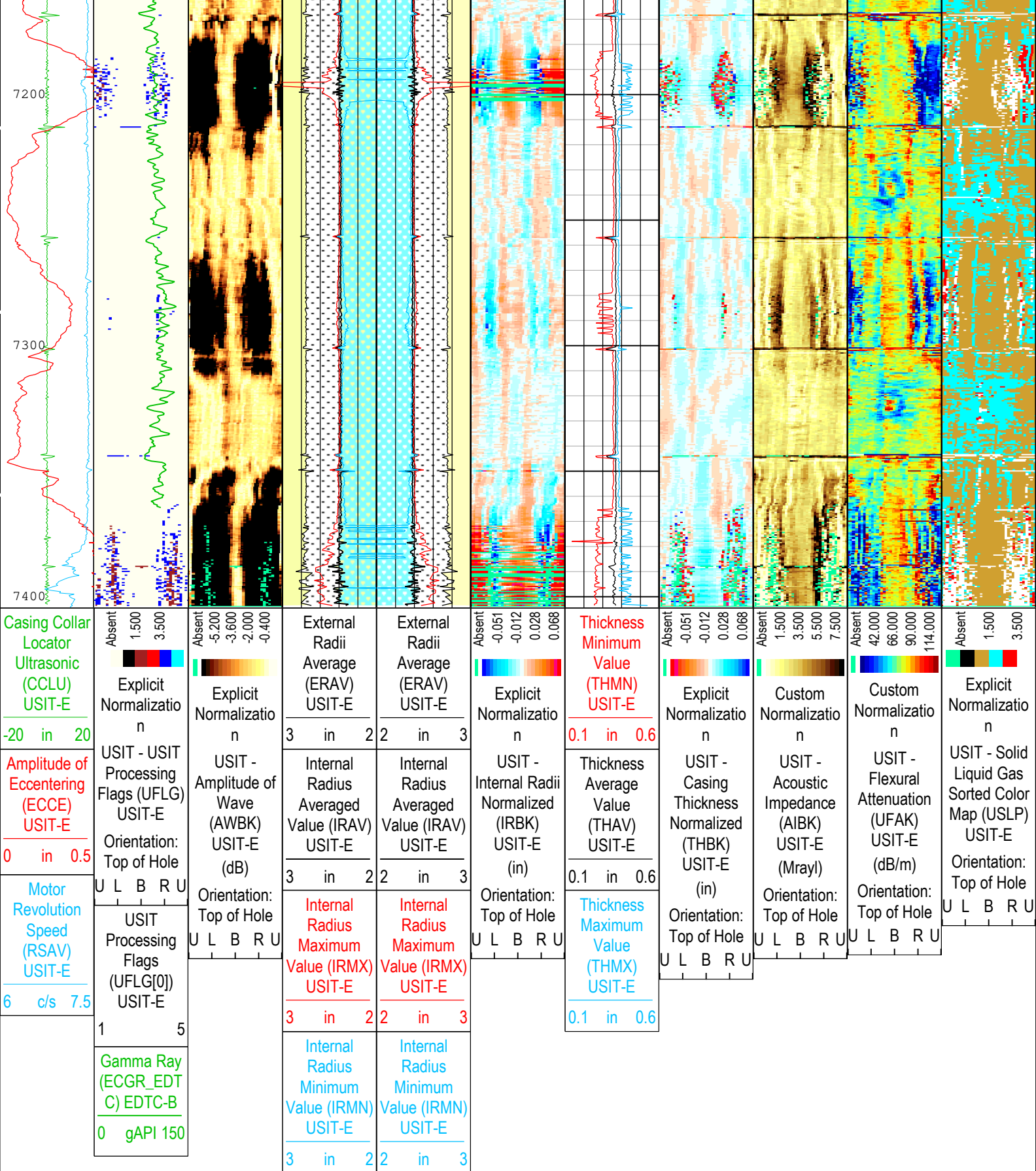
Description: USI IBC SLG Composite    Format: Log ( Import (2) of IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured  
Depth    Creation Date: 16-Nov-2019 12:48:50

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





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)

## Channel Processing Parameters

### ONE: Parameters

Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.75	in
CBLO	Casing Bottom (Logger)	WLSESSION	12562	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	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	203	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_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	Theoretical	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.08	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-28.91	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	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

## Tool Control Parameters

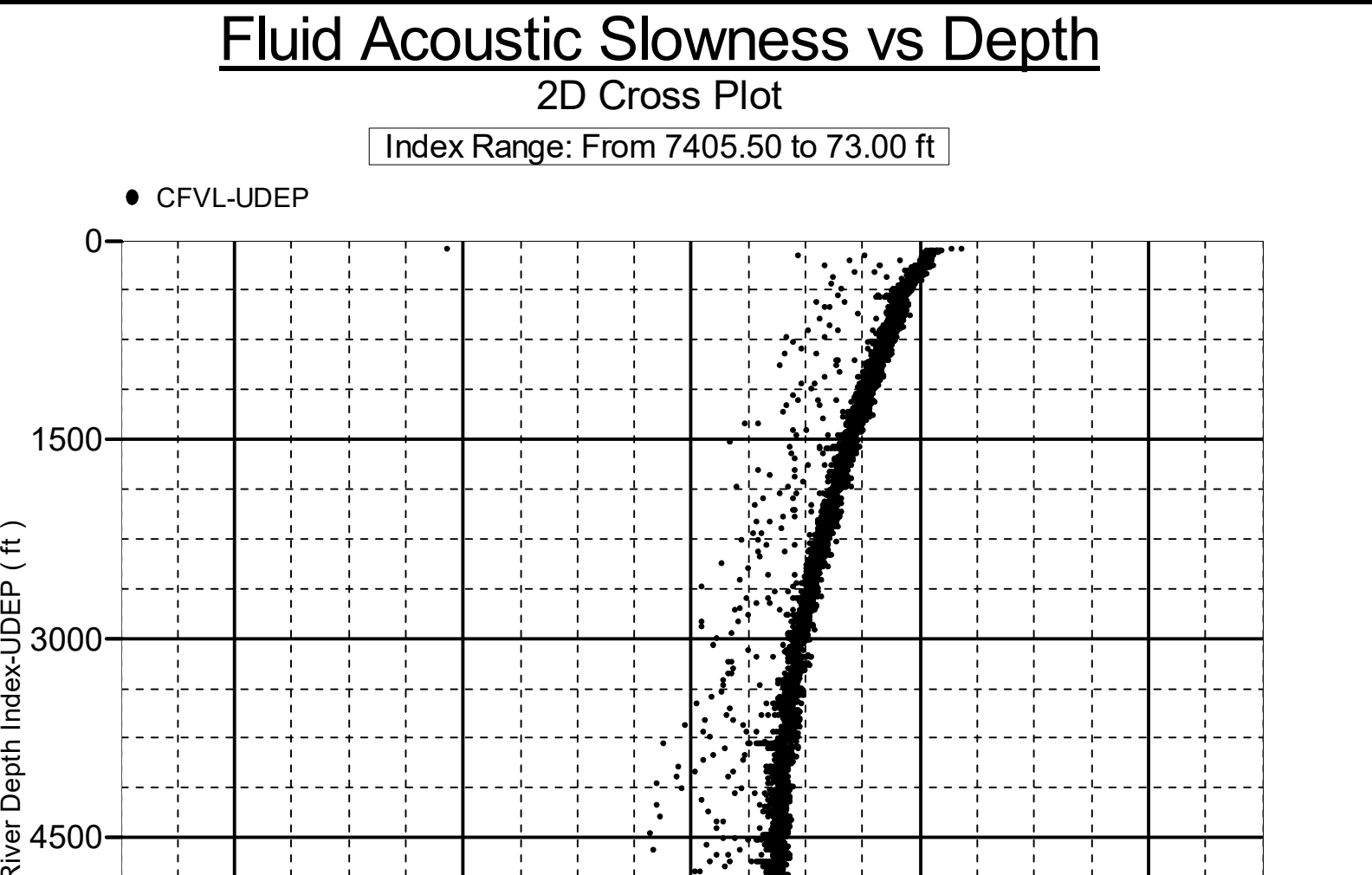
### ONE: Parameters

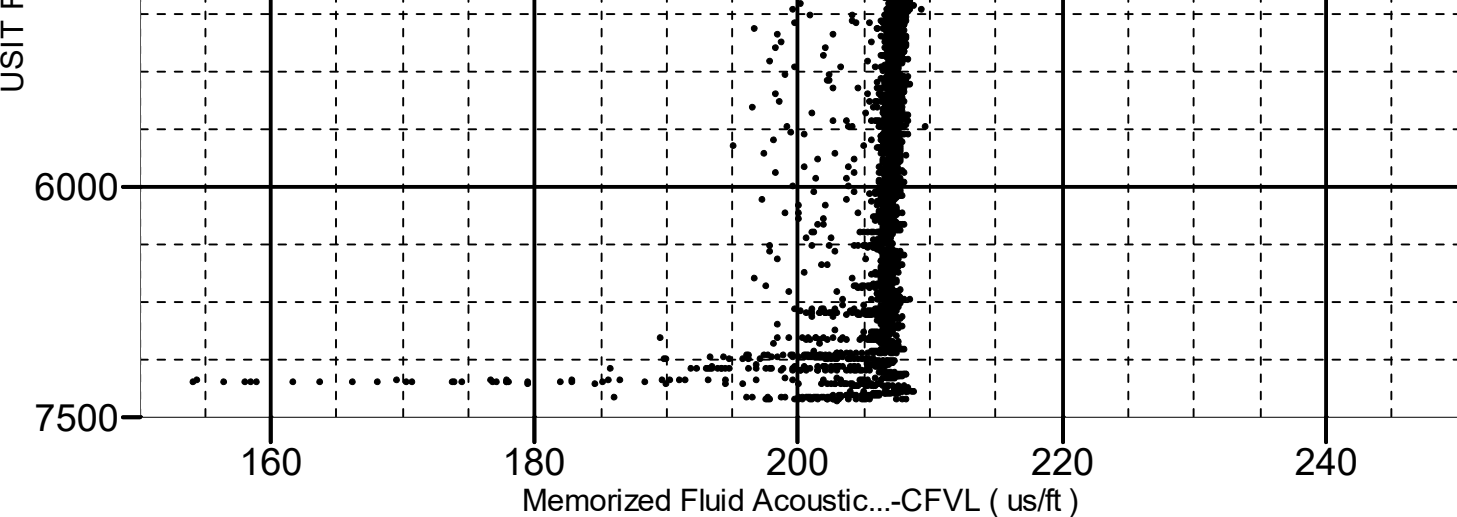
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	20	dB
EMXV	EMEX Voltage	USIT-E	120	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176	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 )
U-USIT_UFWB	136	16-Nov-2019 08:53:07	16-Nov-2019 08:54:24	7405.29	7330.1
U-USIT_UFWB	131.18	16-Nov-2019 08:54:24	16-Nov-2019 08:58:14	7330.1	7075.29
U-USIT_UNWB	105	16-Nov-2019 08:53:07	16-Nov-2019 08:54:17	7405.29	7338.15
U-USIT_UNWB	103.21	16-Nov-2019 08:54:17	16-Nov-2019 08:55:45	7338.15	7231.19
U-USIT_UNWB	101.14	16-Nov-2019 08:55:45	16-Nov-2019 08:58:14	7231.19	7075.29
U-USIT_UNWE	145	16-Nov-2019 08:53:07	16-Nov-2019 08:53:42	7405.29	7380.12
U-USIT_UNWE	152.92	16-Nov-2019 08:53:42	16-Nov-2019 08:58:14	7380.12	7075.29
WINB	31.12	16-Nov-2019 08:53:07	16-Nov-2019 08:54:06	7405.29	7351.49
WINB	27.08	16-Nov-2019 08:54:06	16-Nov-2019 08:58:14	7351.49	7075.29
WINE	71.12	16-Nov-2019 08:53:07	16-Nov-2019 08:53:32	7405.29	7392.52
WINE	80.25	16-Nov-2019 08:53:32	16-Nov-2019 08:53:39	7392.52	7384.68
WINE	84.04	16-Nov-2019 08:53:39	16-Nov-2019 08:53:49	7384.68	7371.82
WINE	89.36	16-Nov-2019 08:53:49	16-Nov-2019 08:53:53	7371.82	7366.91
WINE	99.99	16-Nov-2019 08:53:53	16-Nov-2019 08:54:30	7366.91	7323.01
WINE	92.4	16-Nov-2019 08:54:30	16-Nov-2019 08:55:36	7323.01	7242.22
WINE	84.8	16-Nov-2019 08:55:36	16-Nov-2019 08:57:40	7242.22	7088.17
WINE	87.08	16-Nov-2019 08:57:40	16-Nov-2019 08:58:14	7088.17	7075.29
All depth are at tool zero.					

XYZ	Company:CRESTONE PEAK RESOURCES OPERATING LLC Well:HINGLEY 1J-18H-A167 ONE: Log[4]:Up:S008
-----	---





XYZ

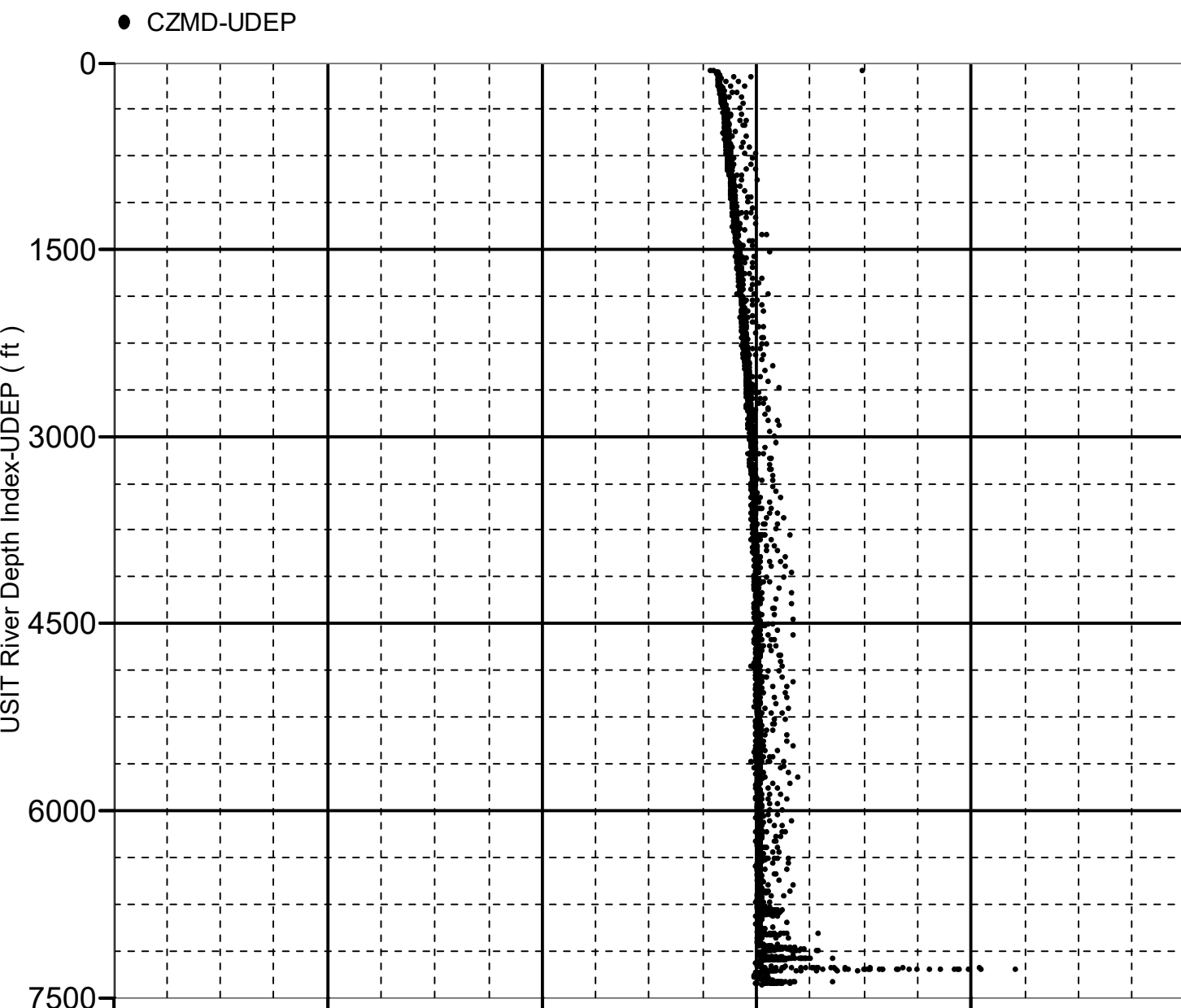
Company:CRESTONE PEAK RESOURCES OPERATING LLC Well:HINGLEY 1J-18H-A167

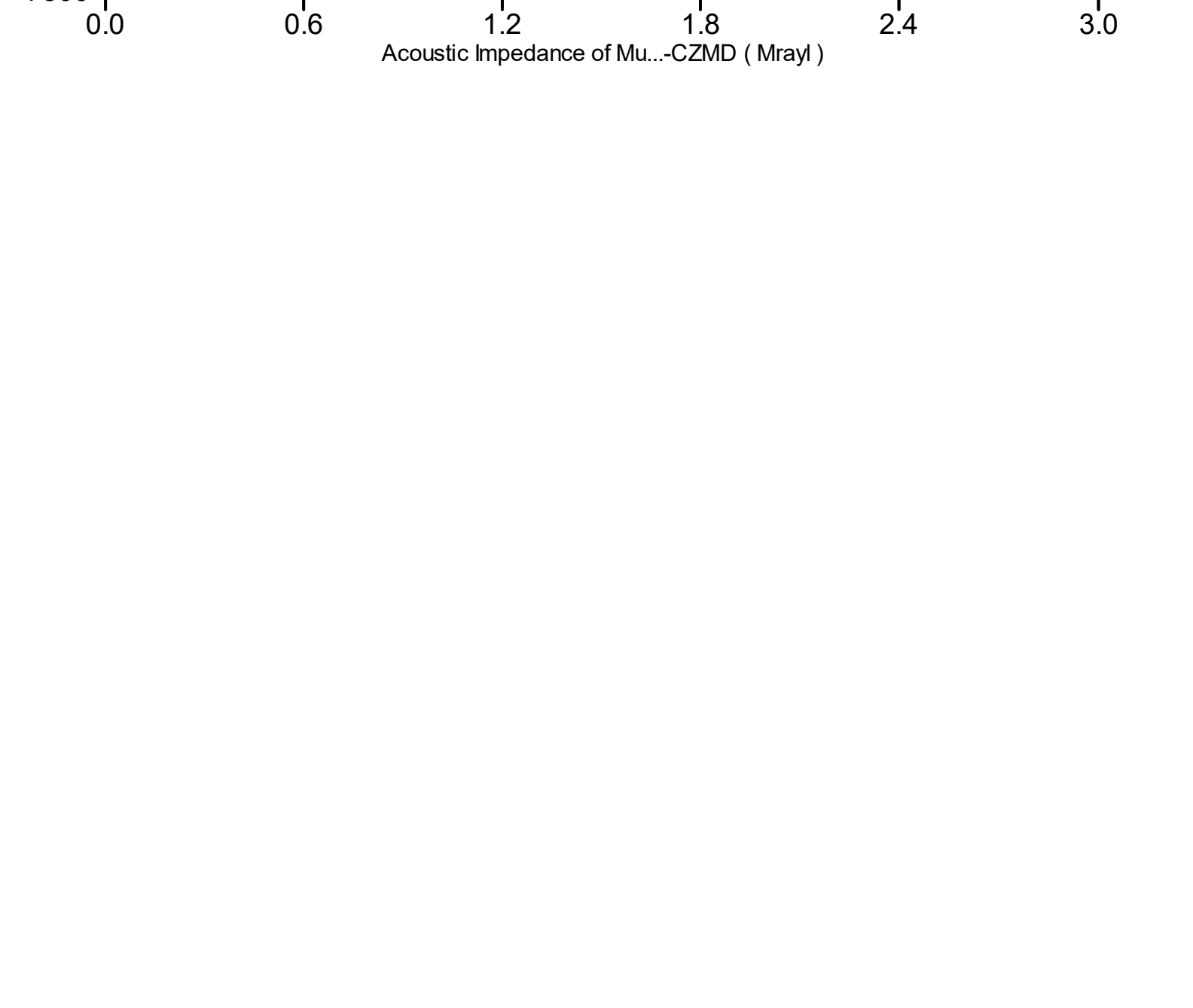
ONE: Log[4]:Up:S008

## Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7405.50 to 73.00 ft





0.0      0.6      1.2      1.8      2.4      3.0  
Acoustic Impedance of Mu...-CZMD ( Mrayl )

Company:

CRESTONE PEAK RESOURCES OPERATING LLC

Schlumberger

Well:

HINGLEY 1J-18H-A167

Field:

WATTENBERG

County:

WELD

State:

COLORADO

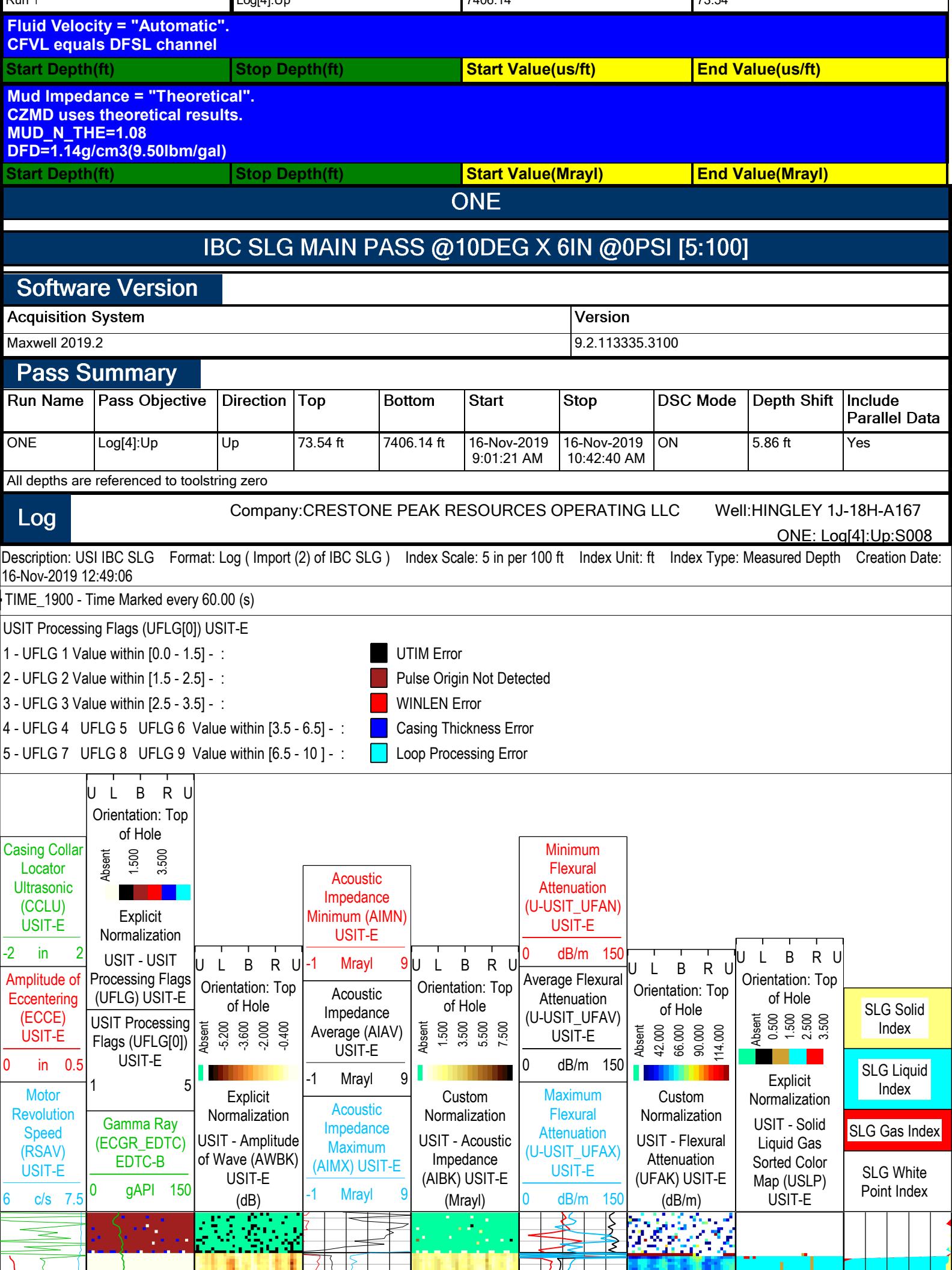
ISOLATION SCANNER

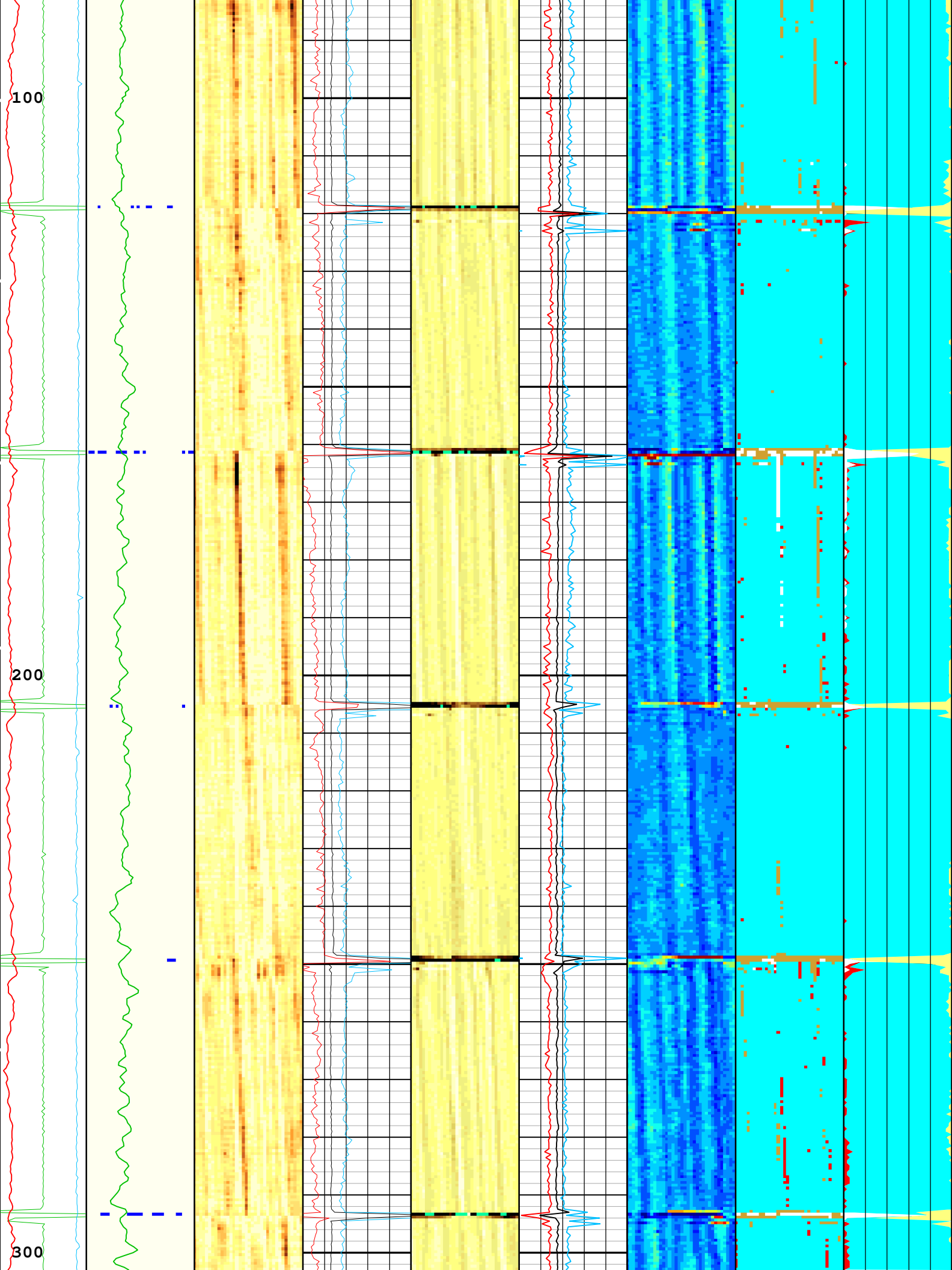
CEMENT EVALUATION

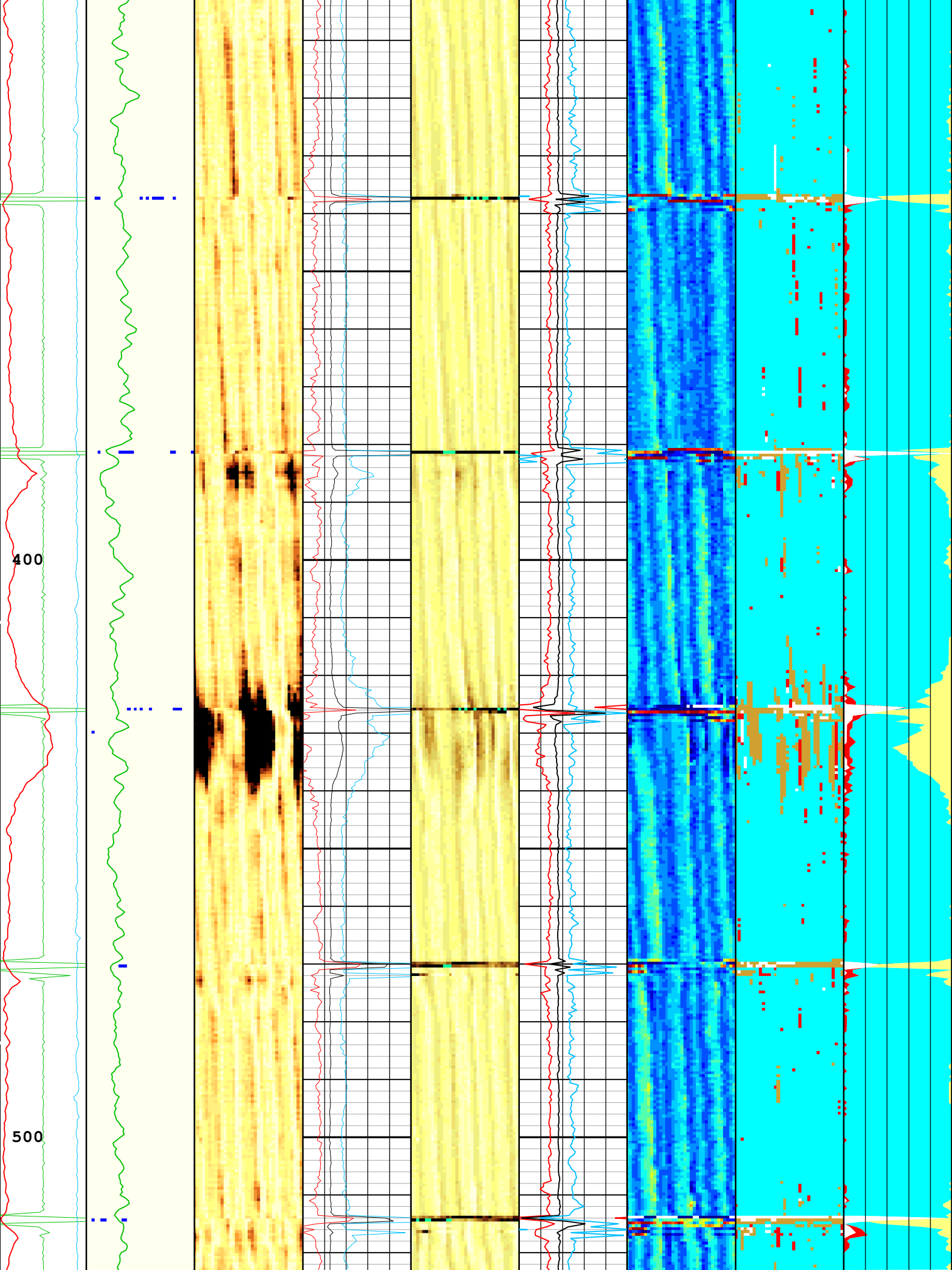
GAMMA RAY - COLLAR LOCATOR LOG

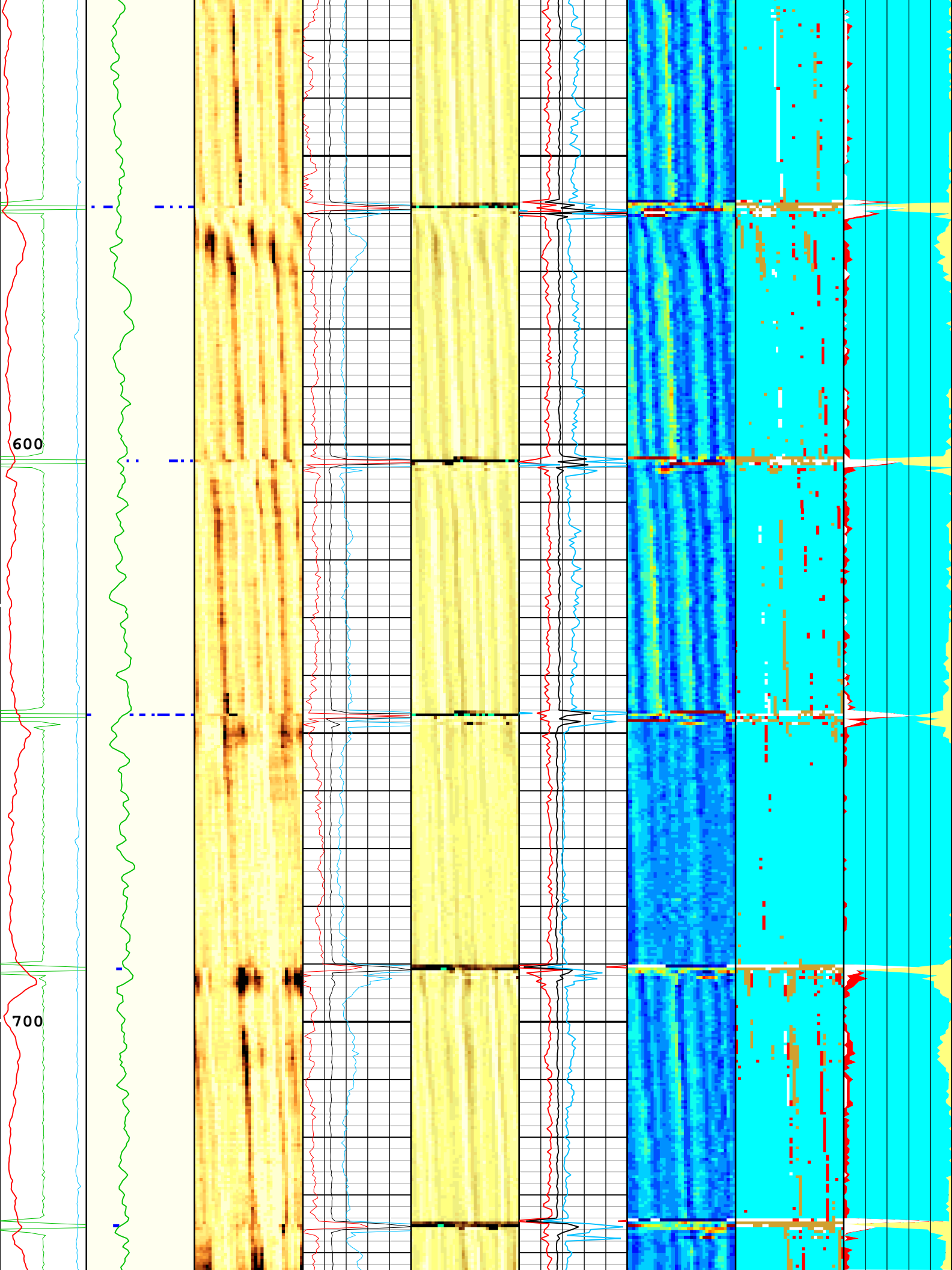
USIT - Fluid Properties Measurement

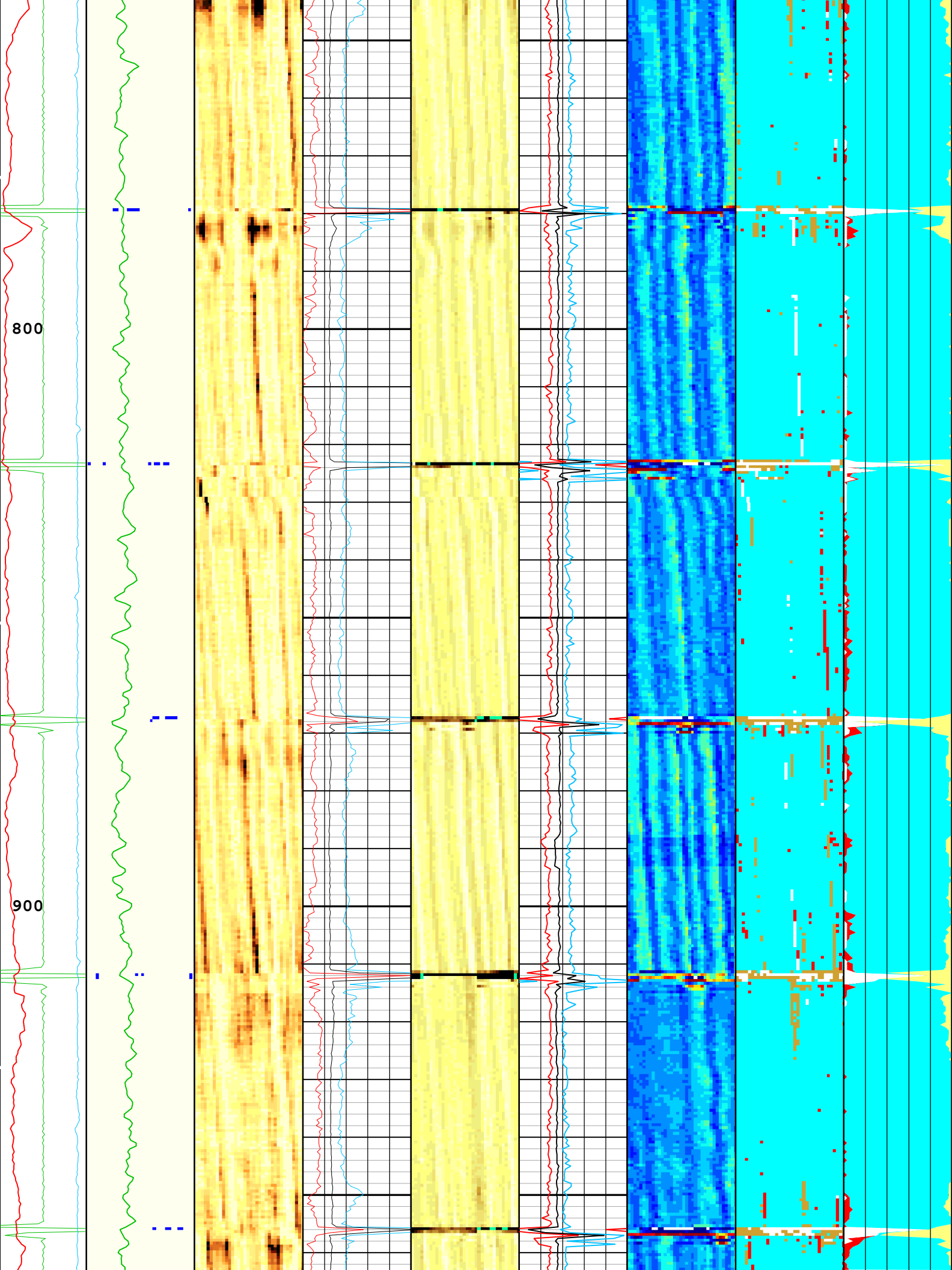
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log411-Ln	7406.14	73.54

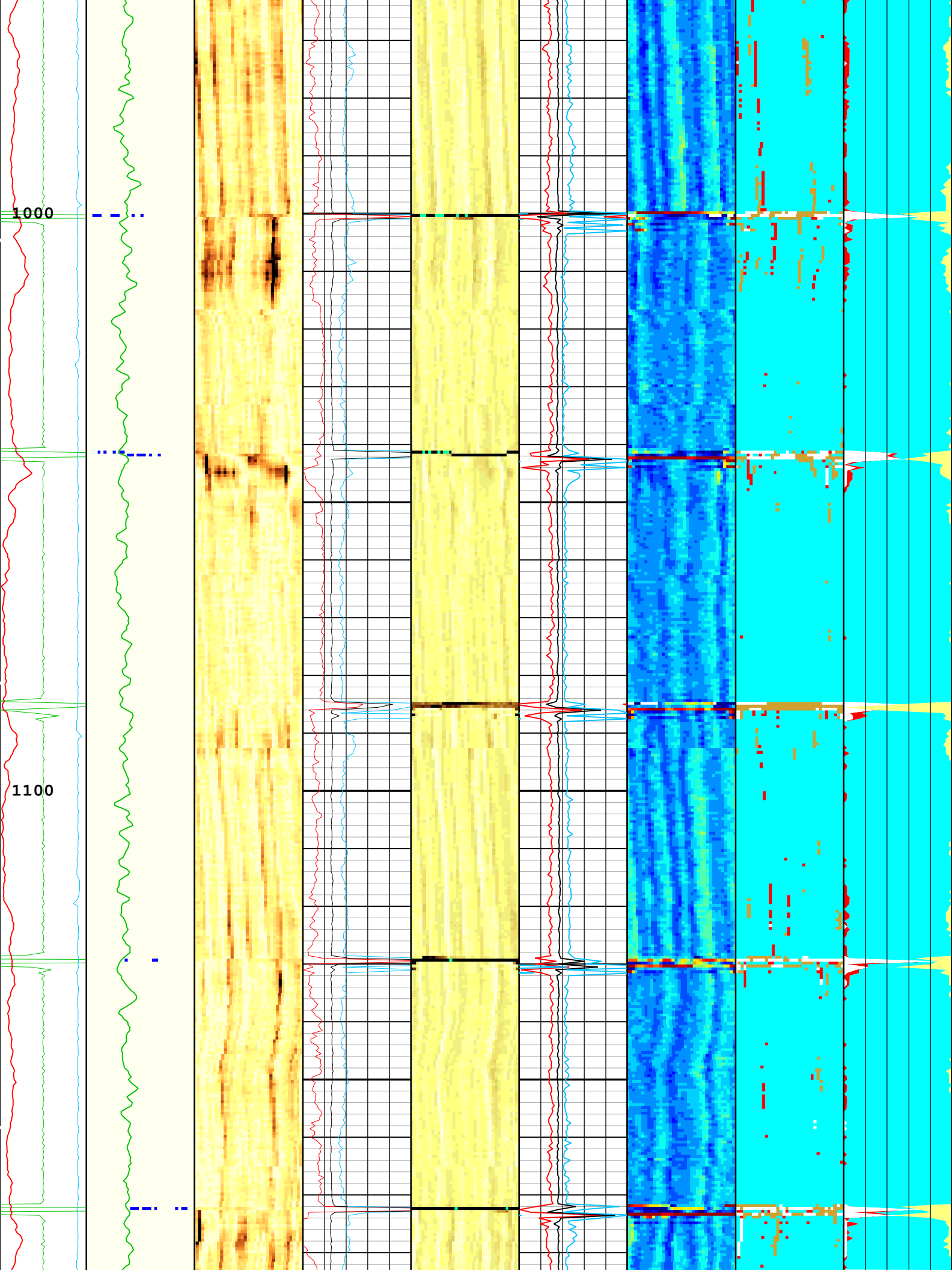


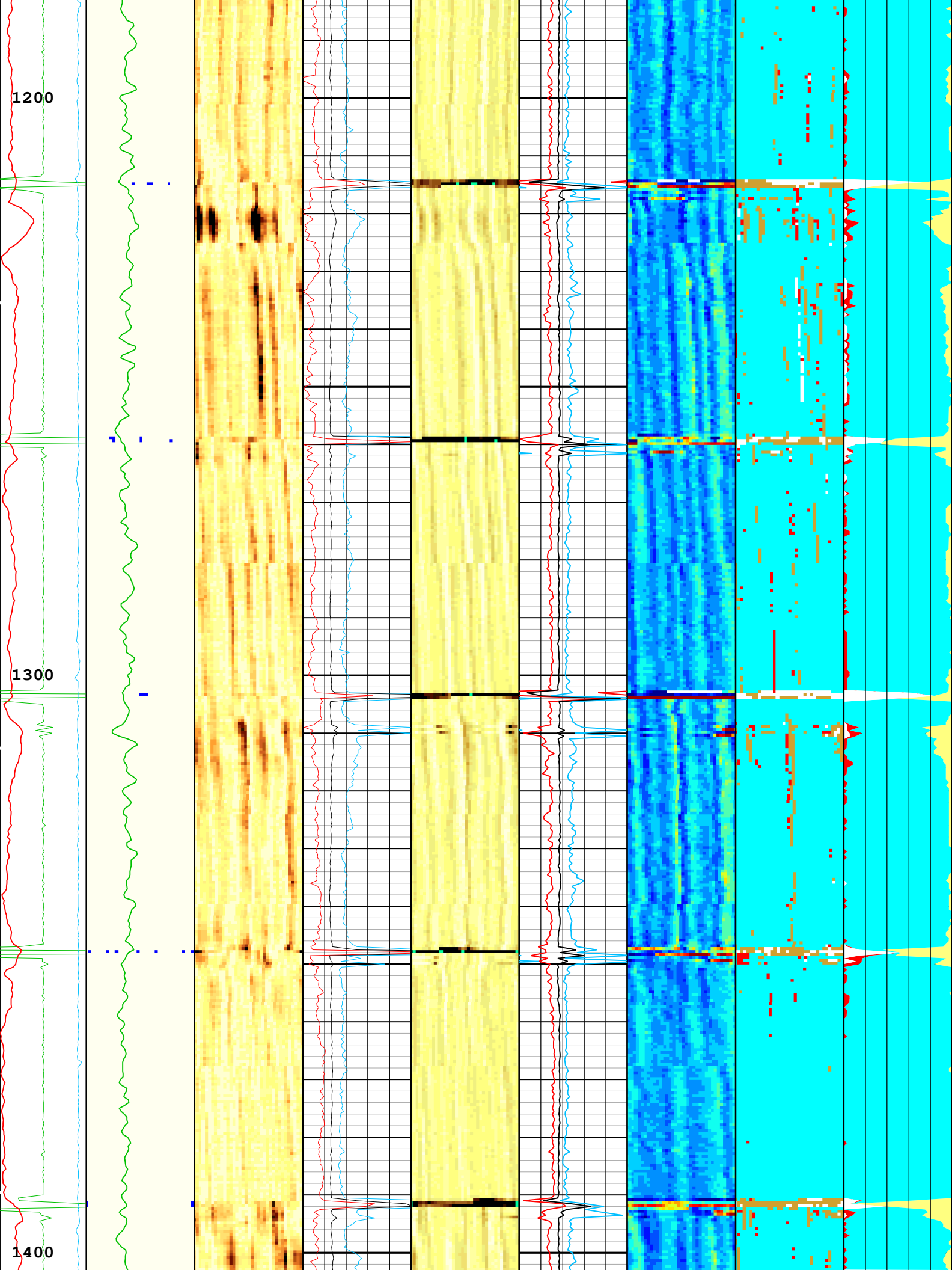


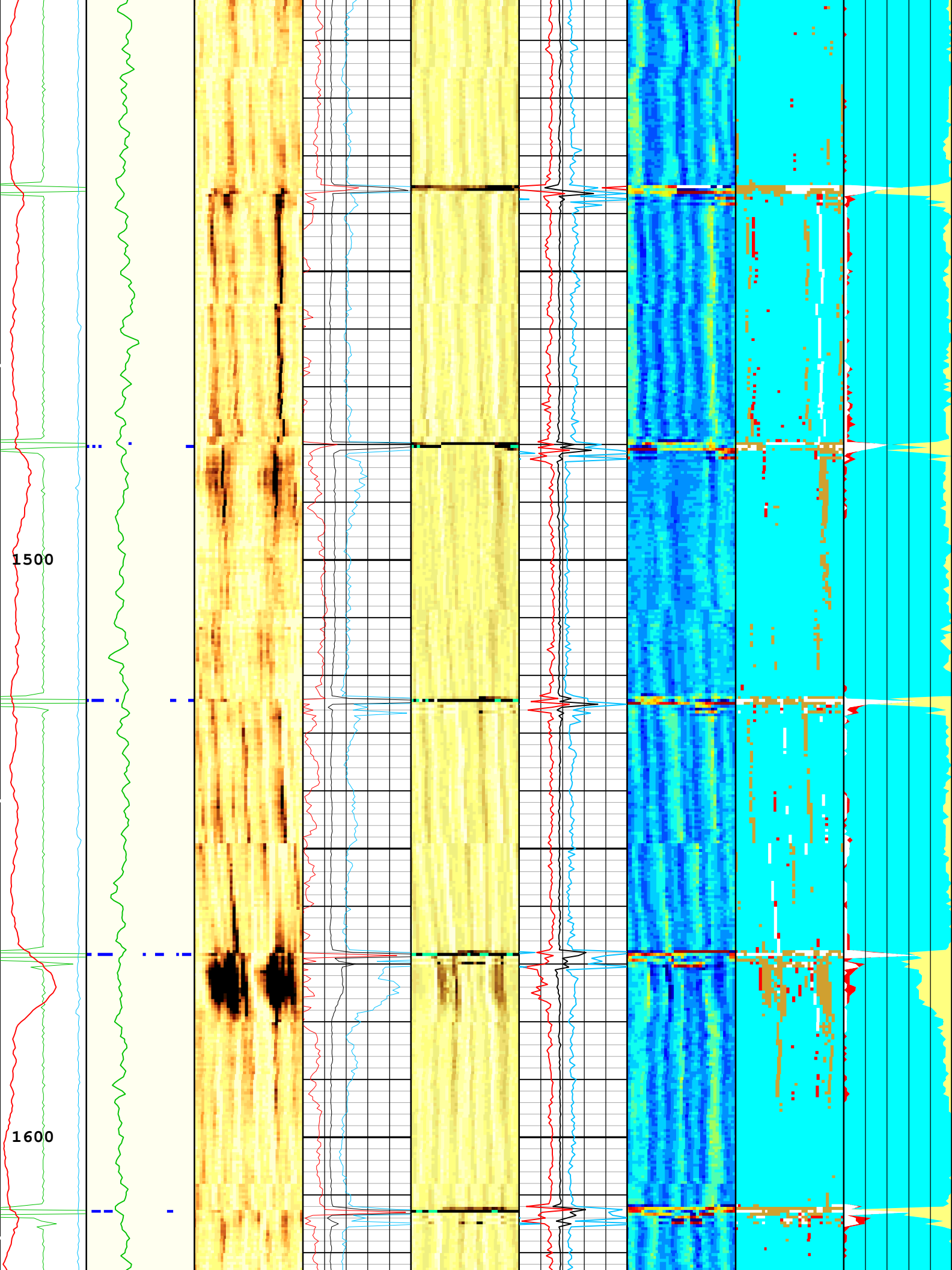


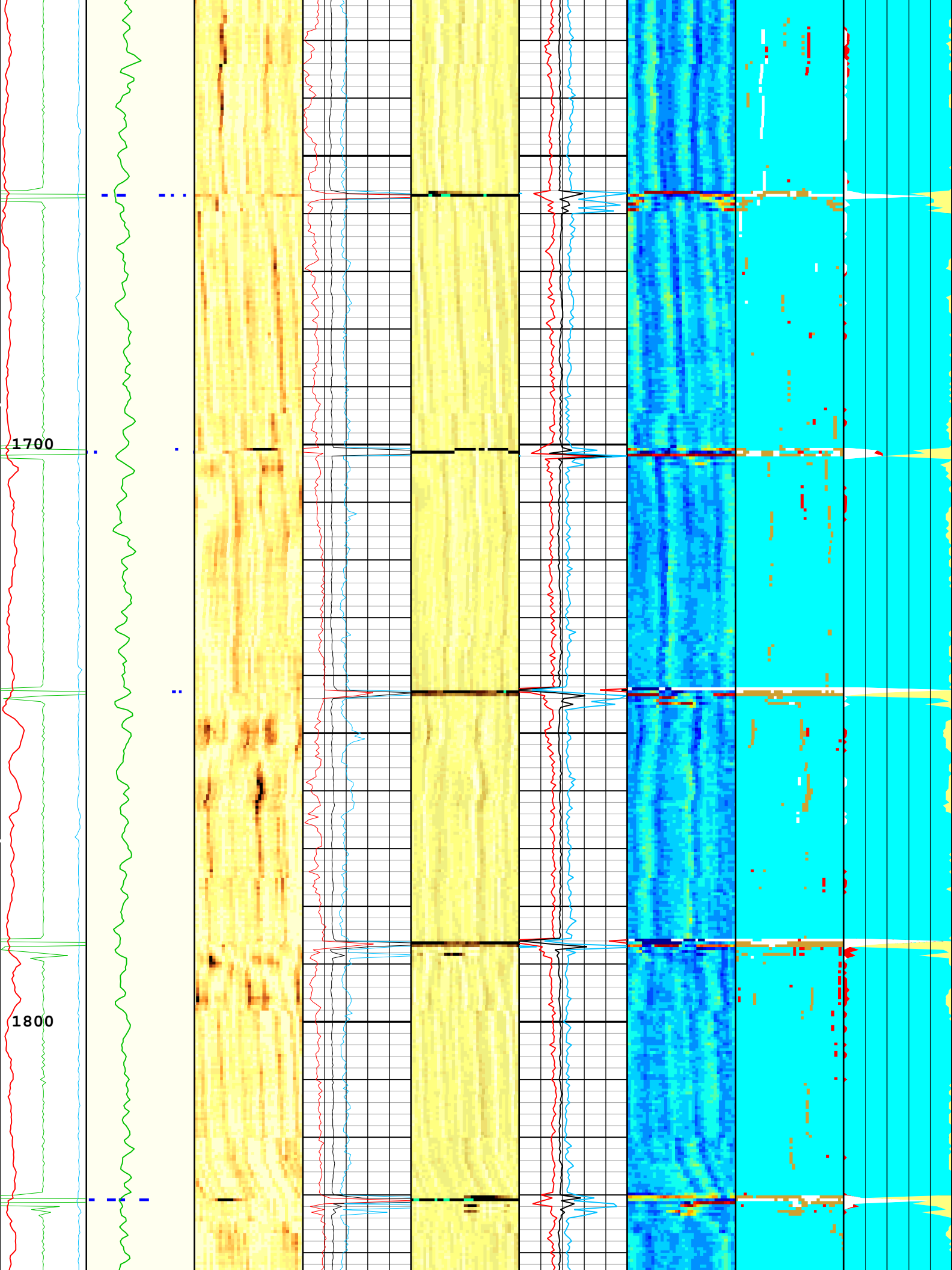


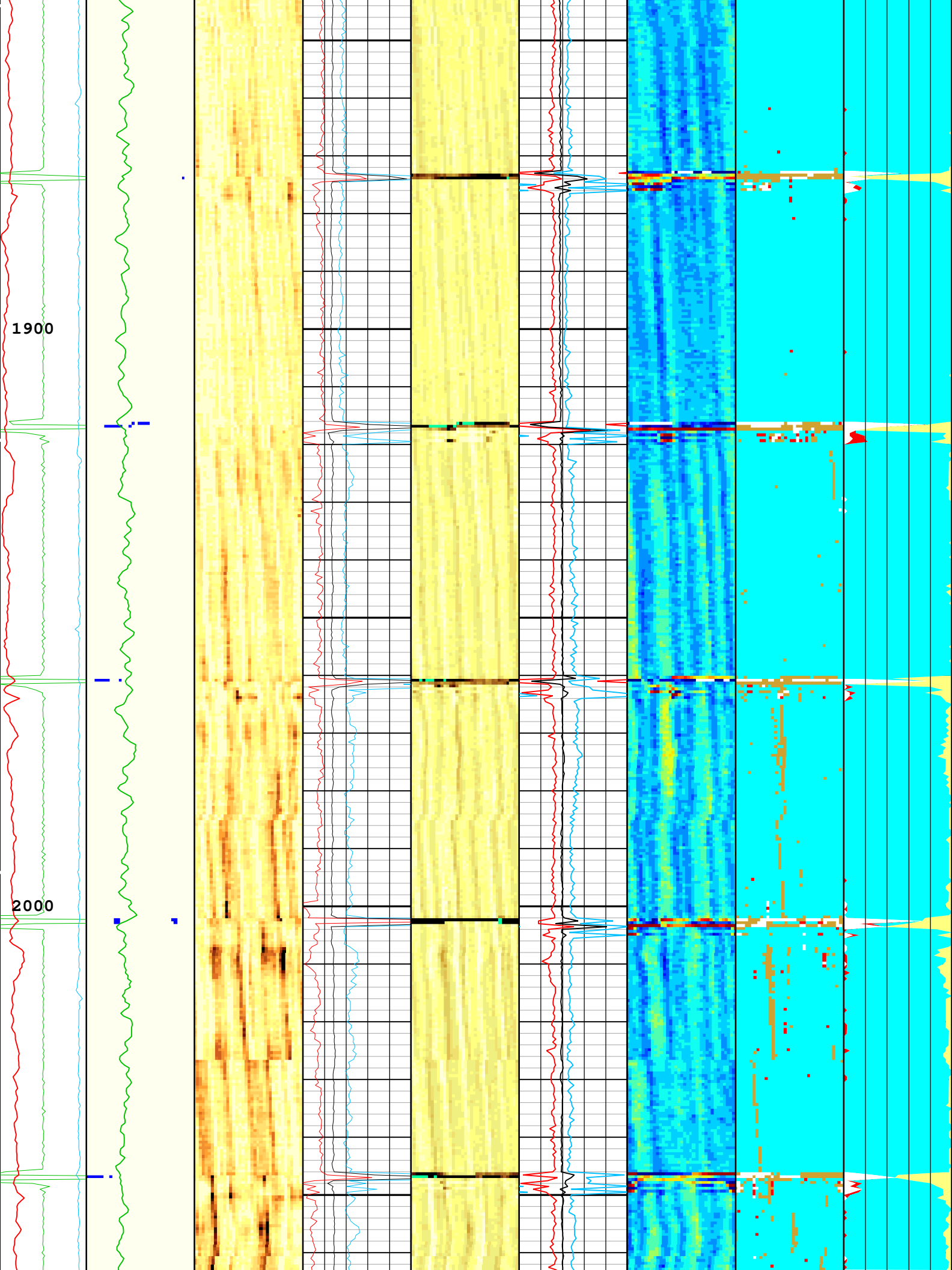


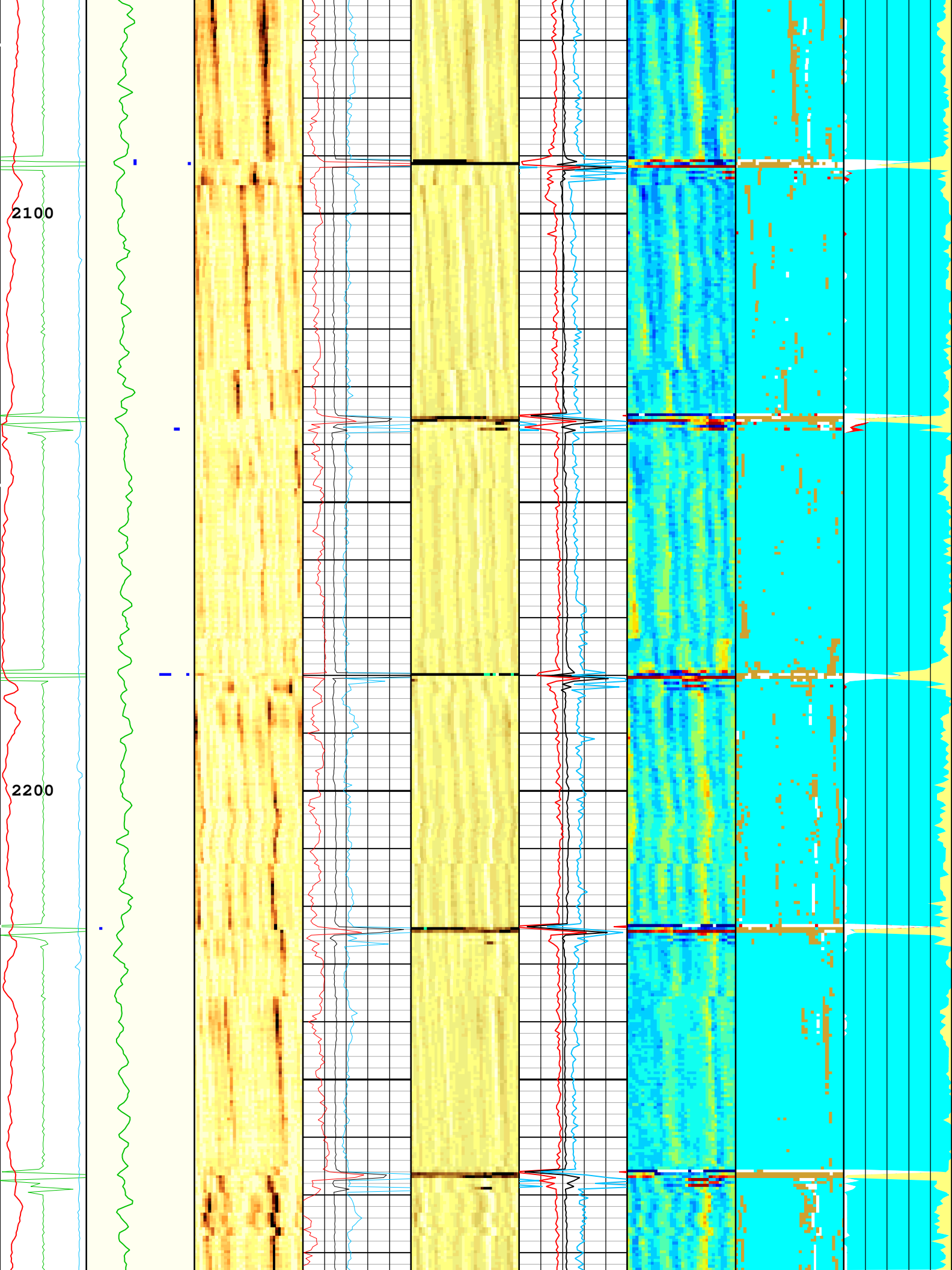


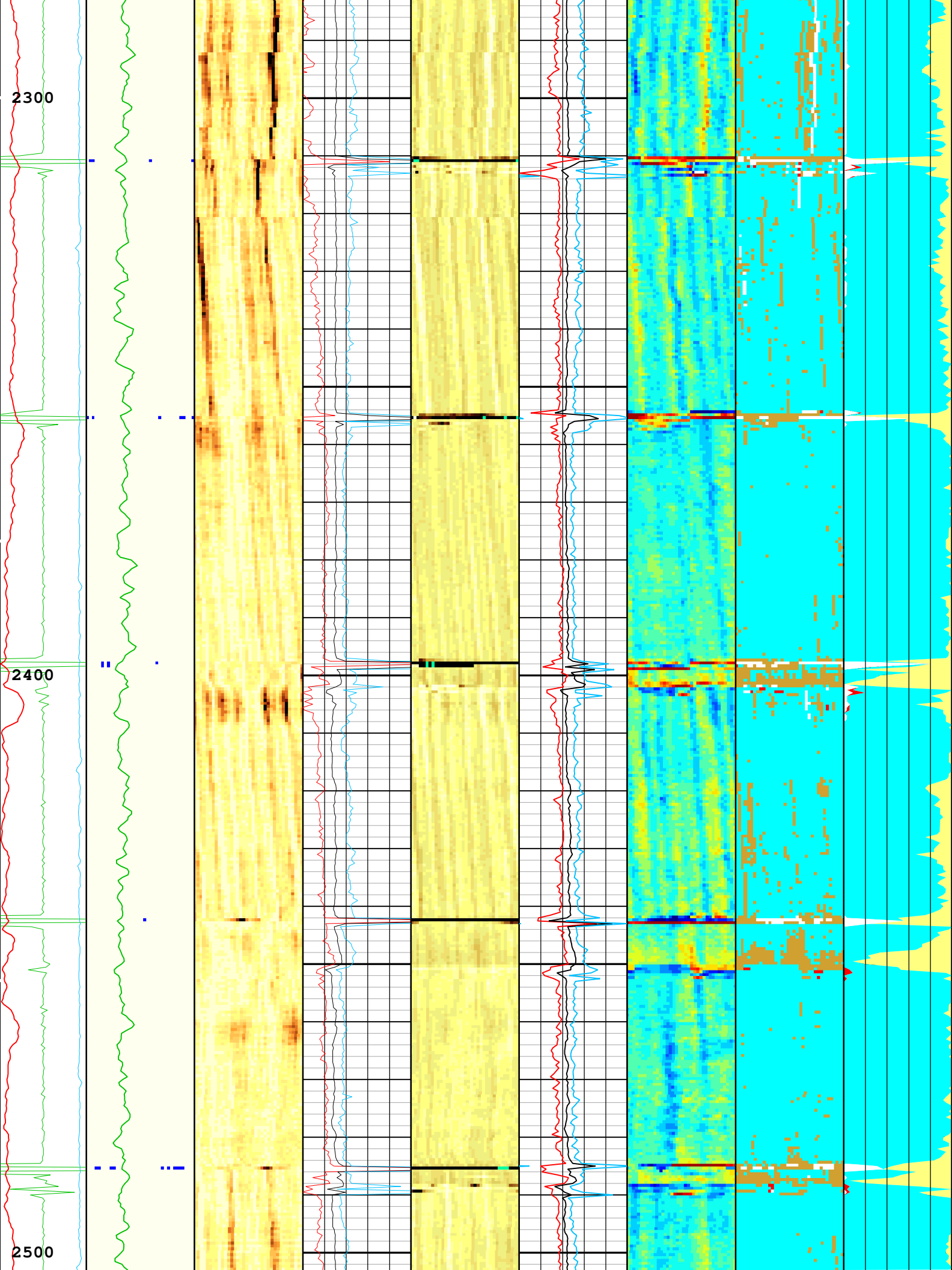


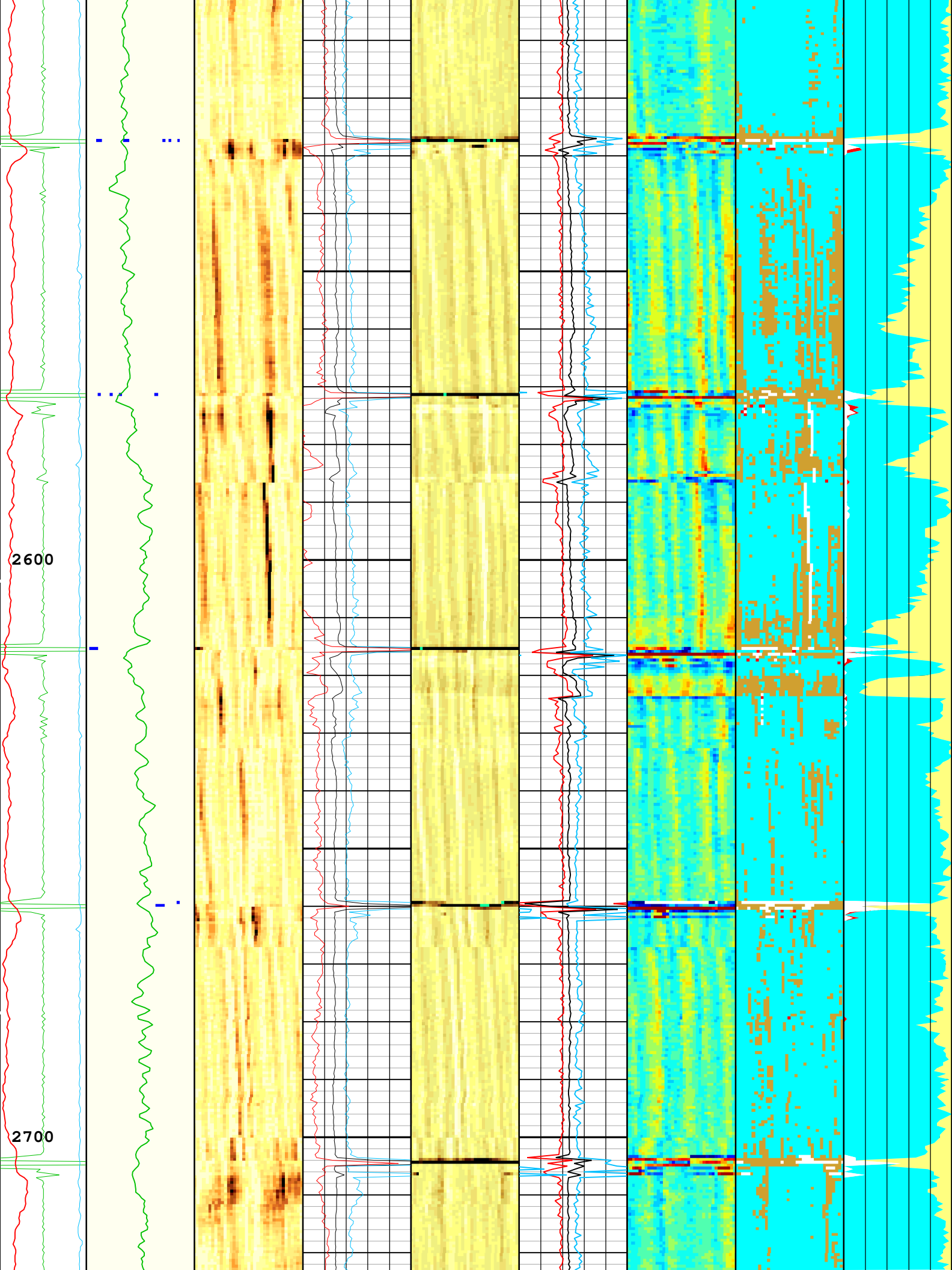


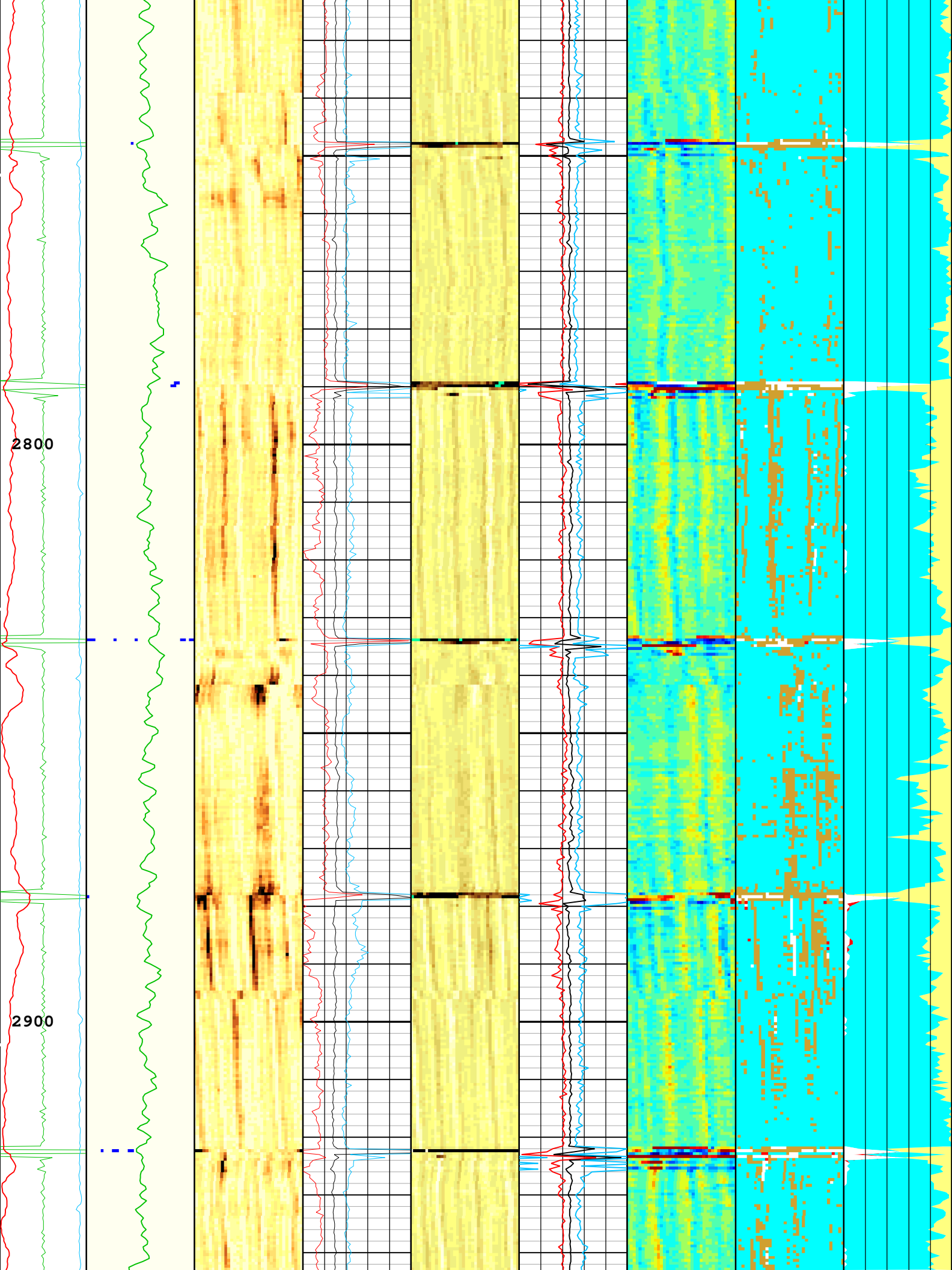


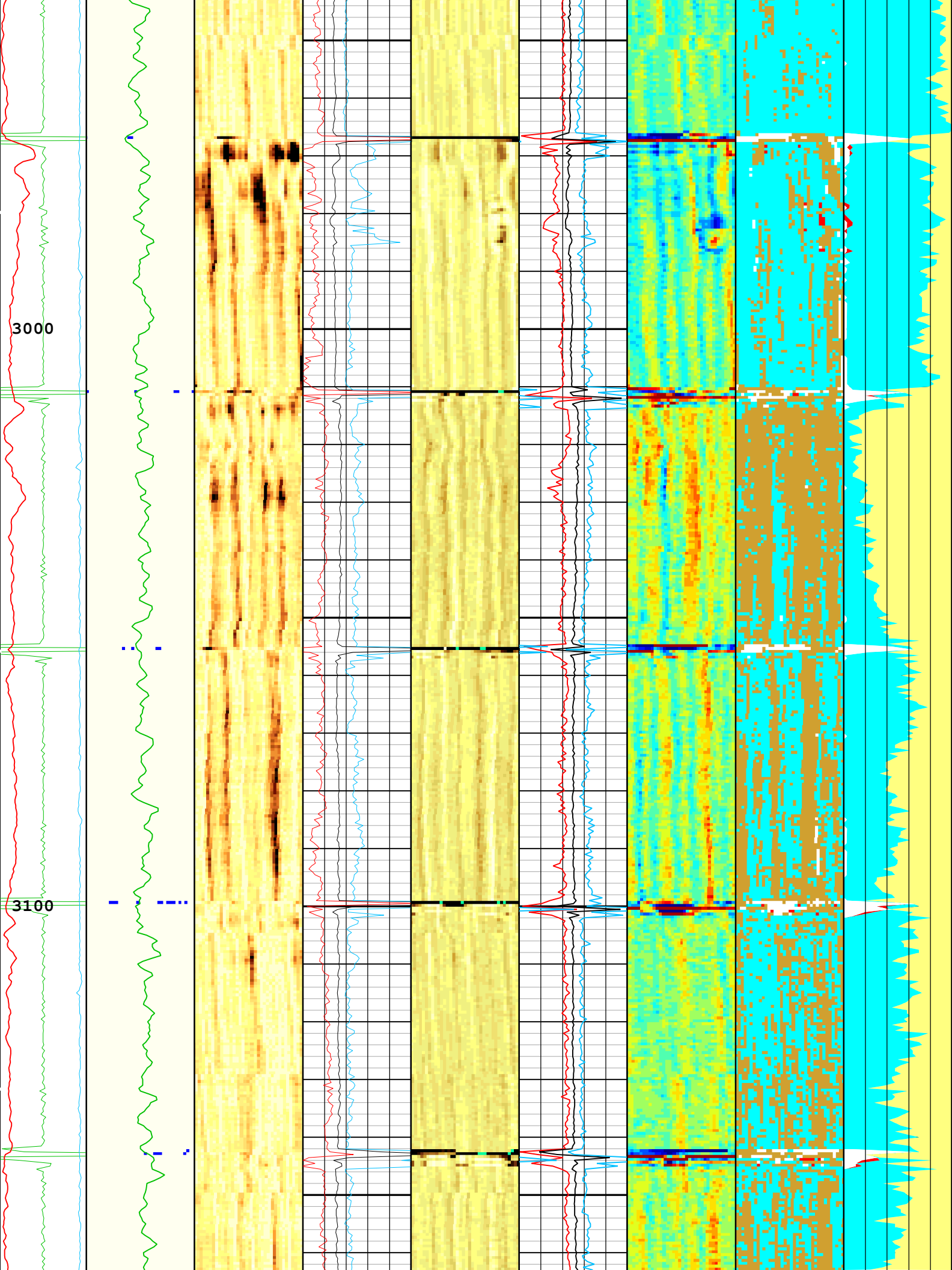


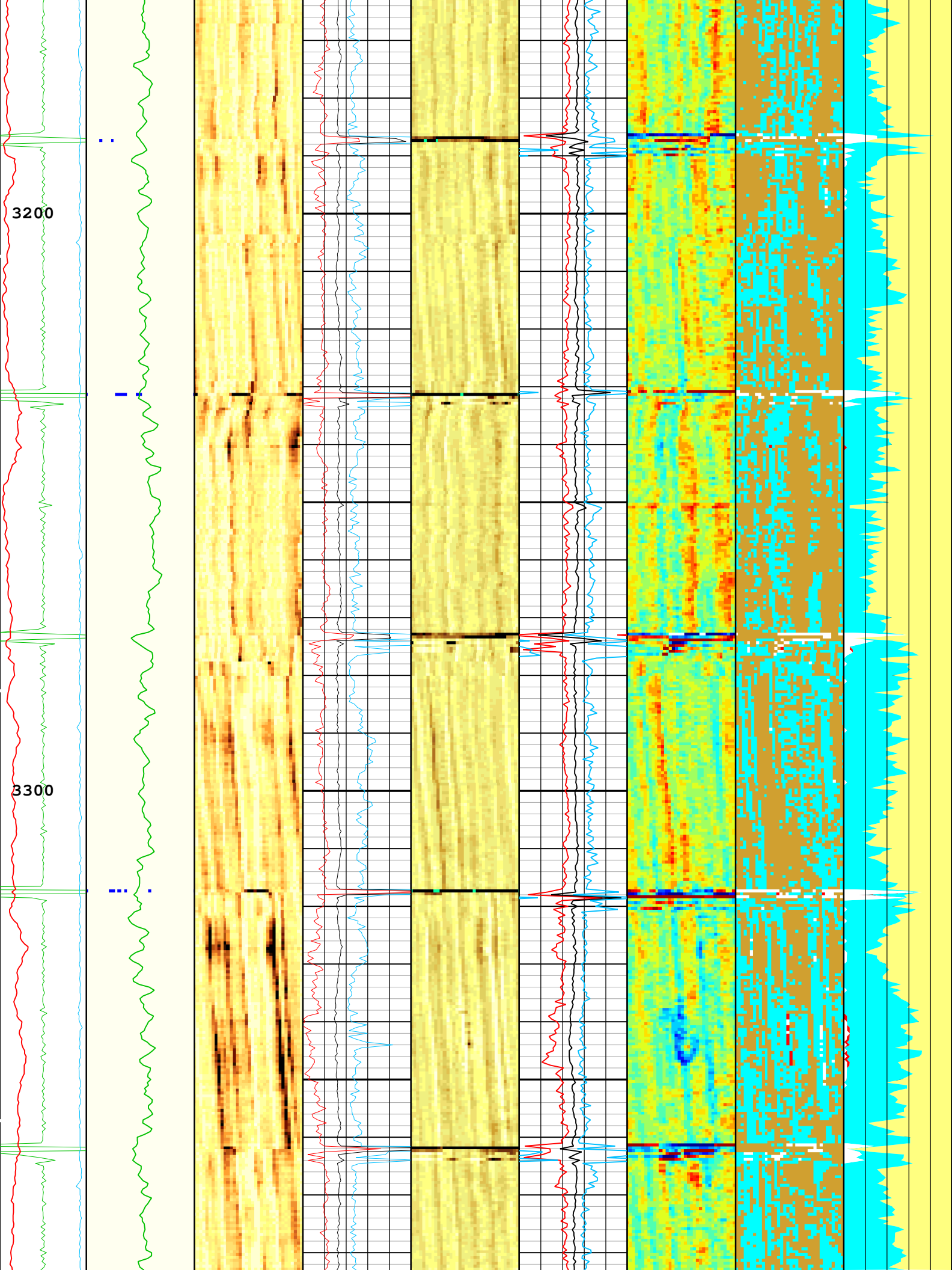


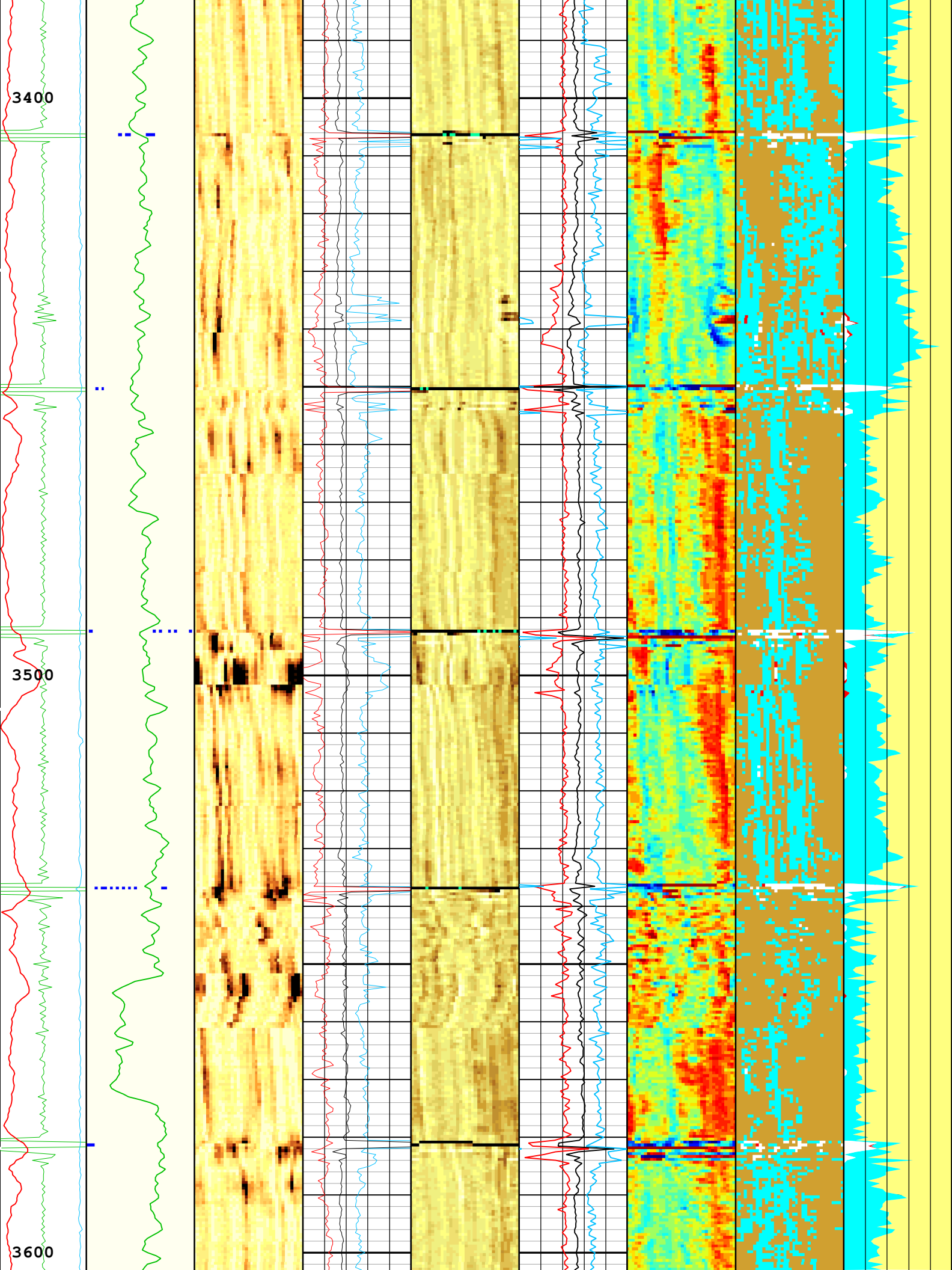


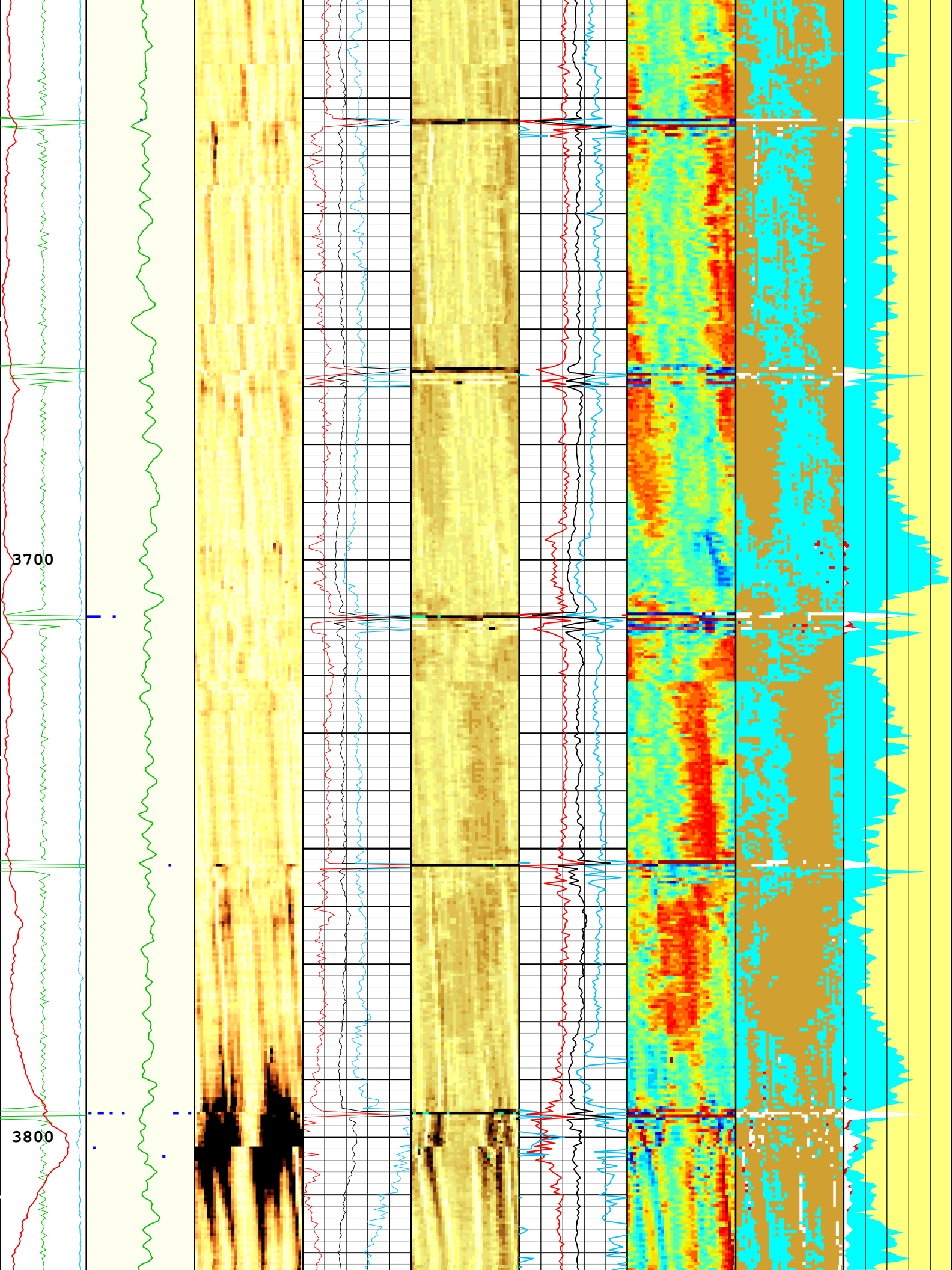


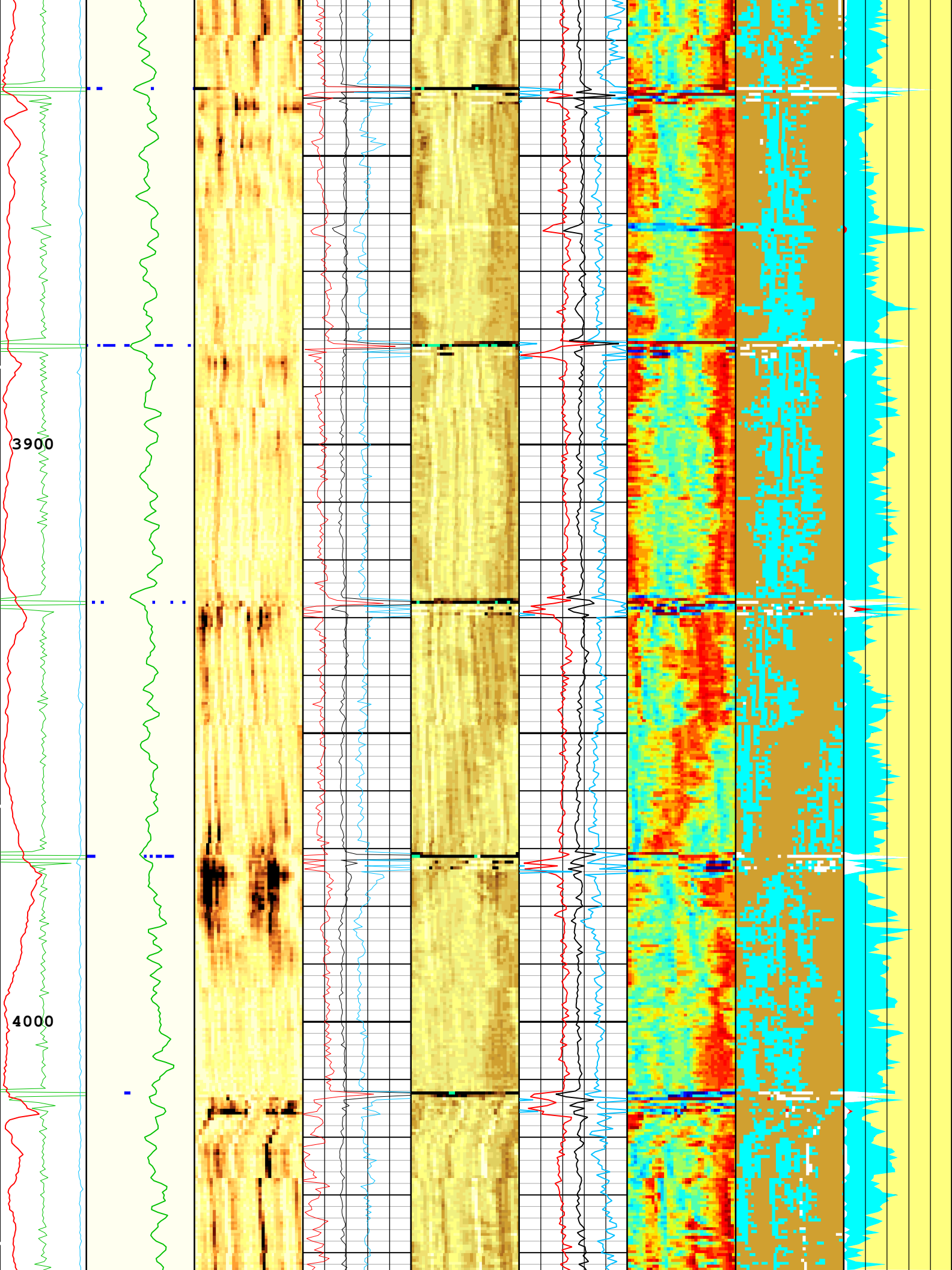


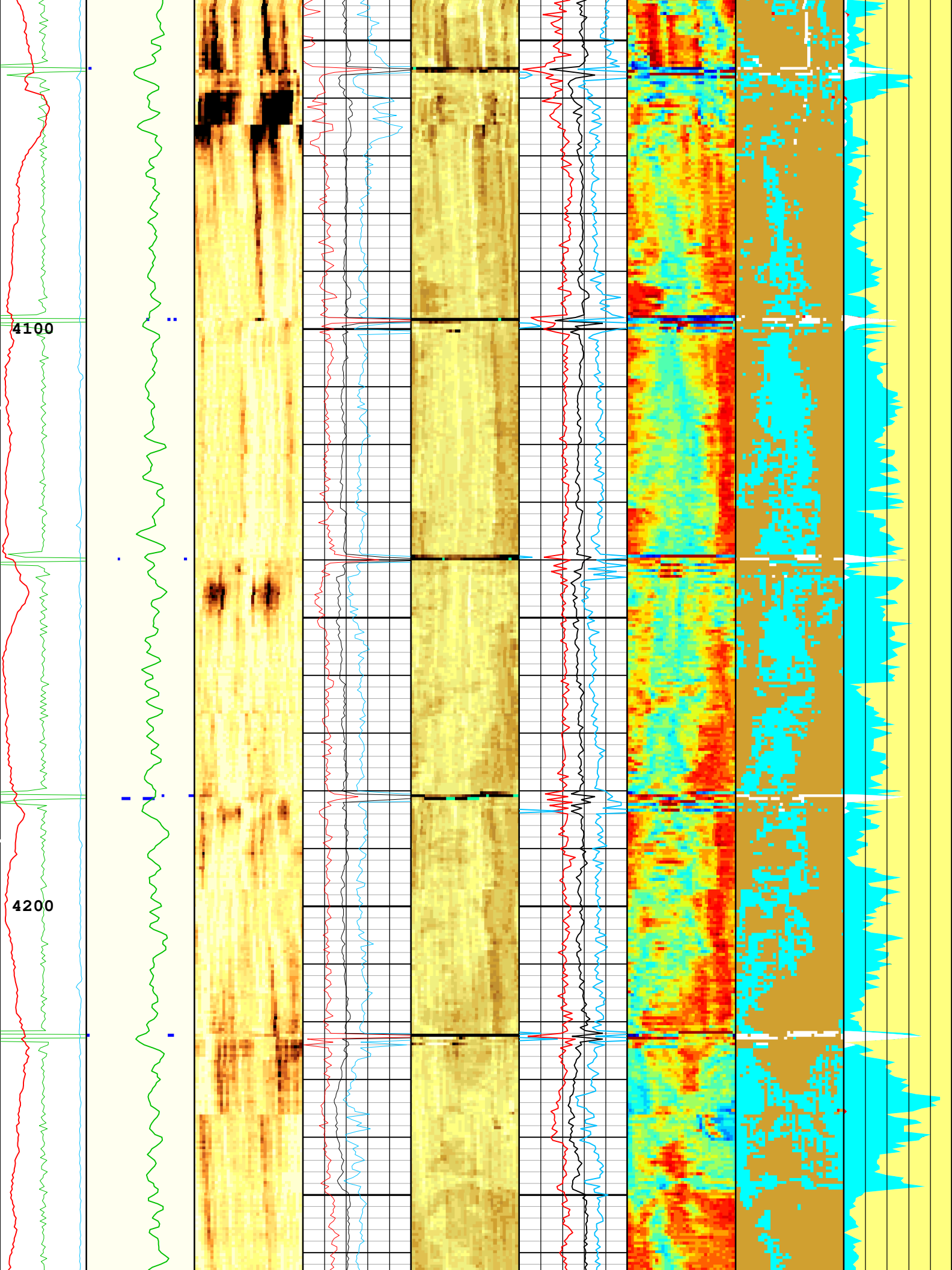


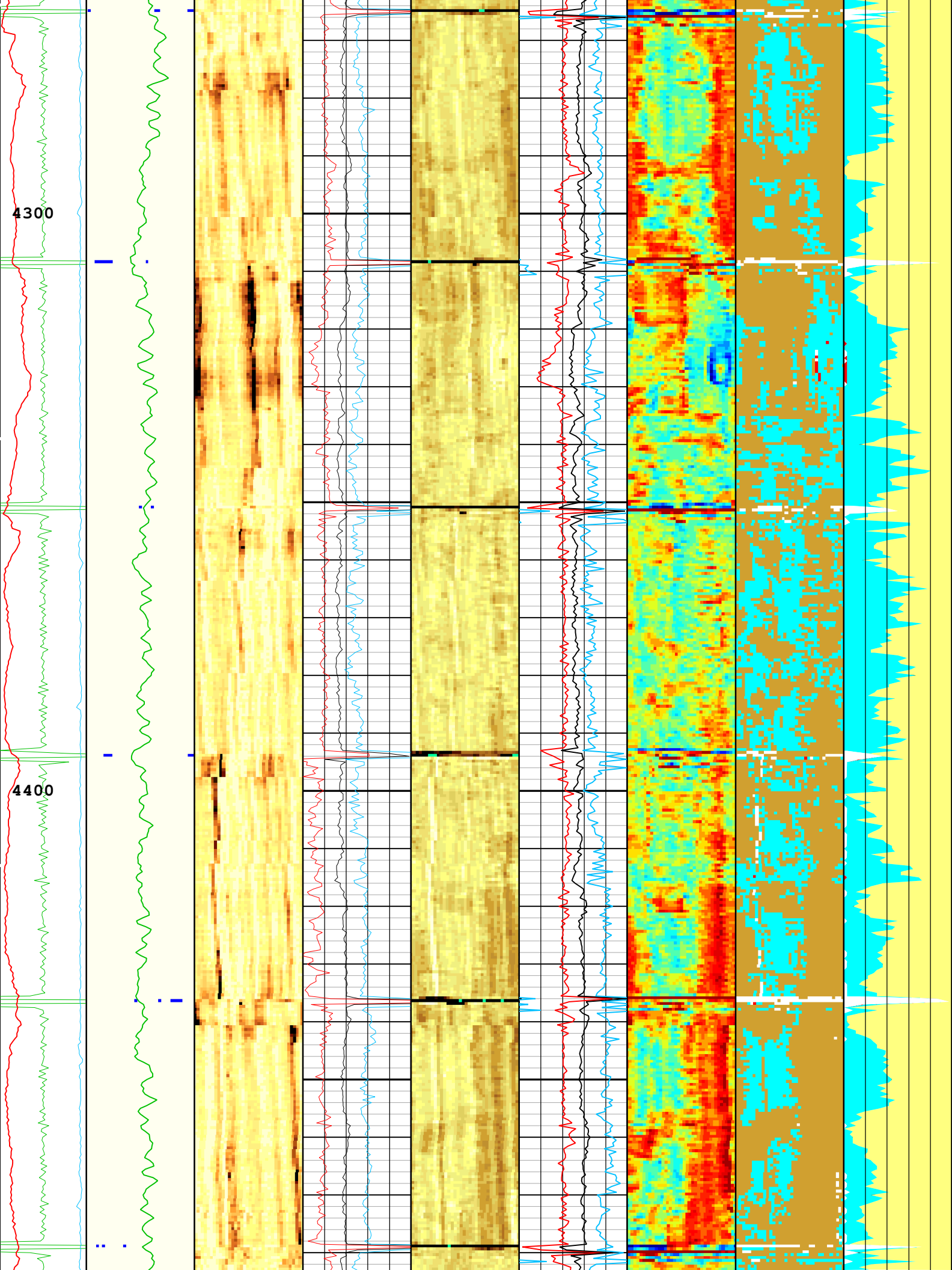


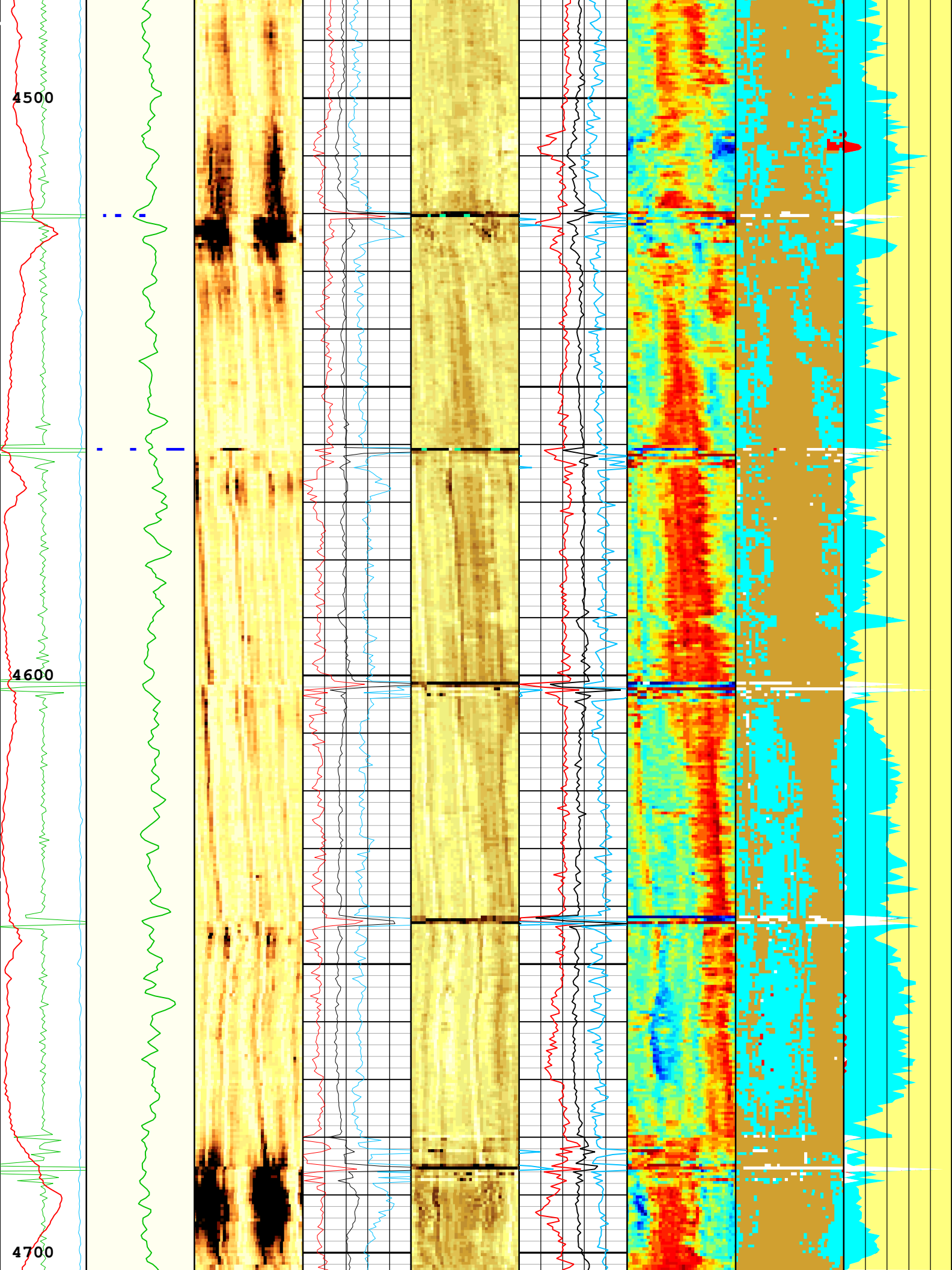


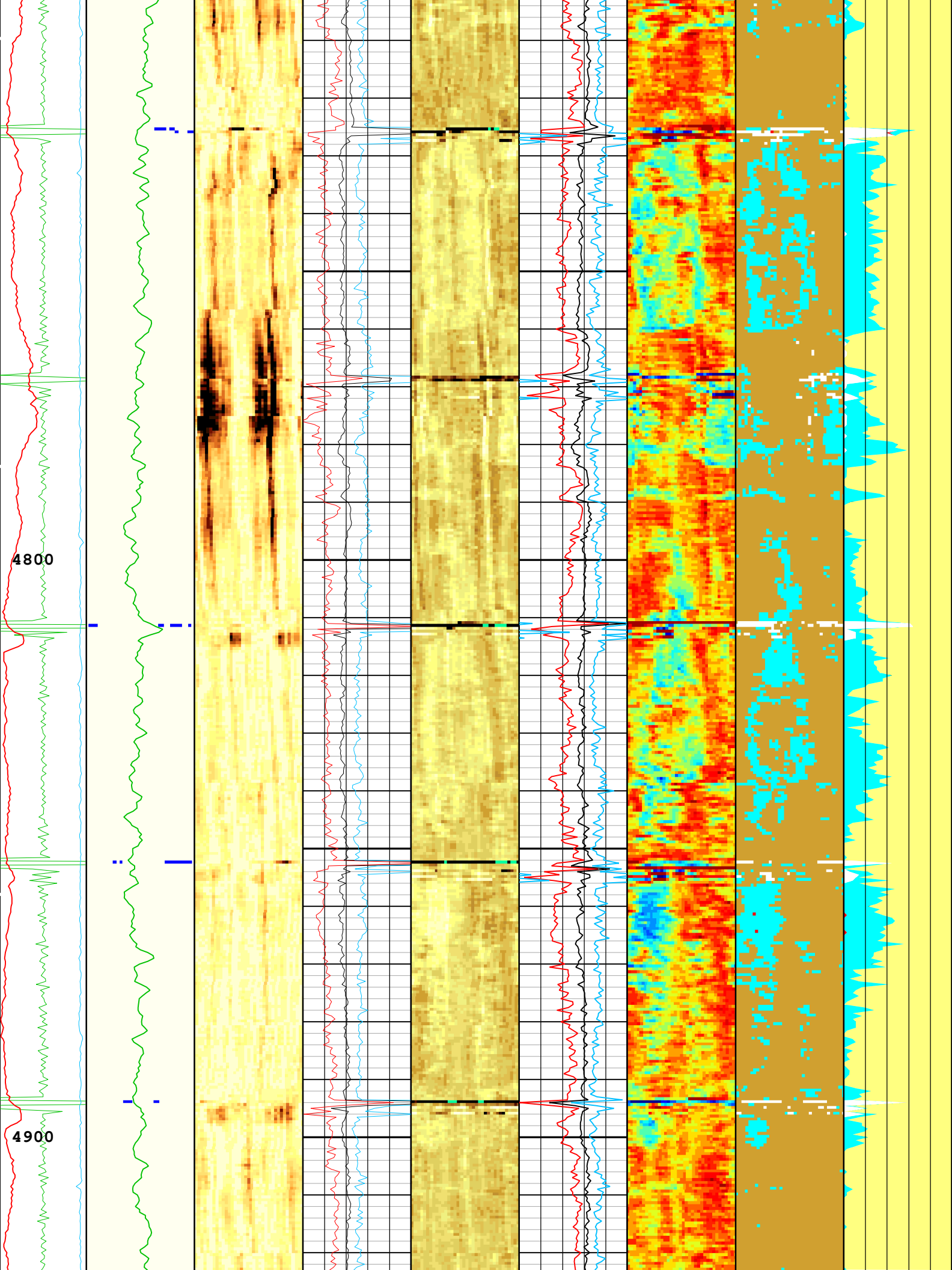


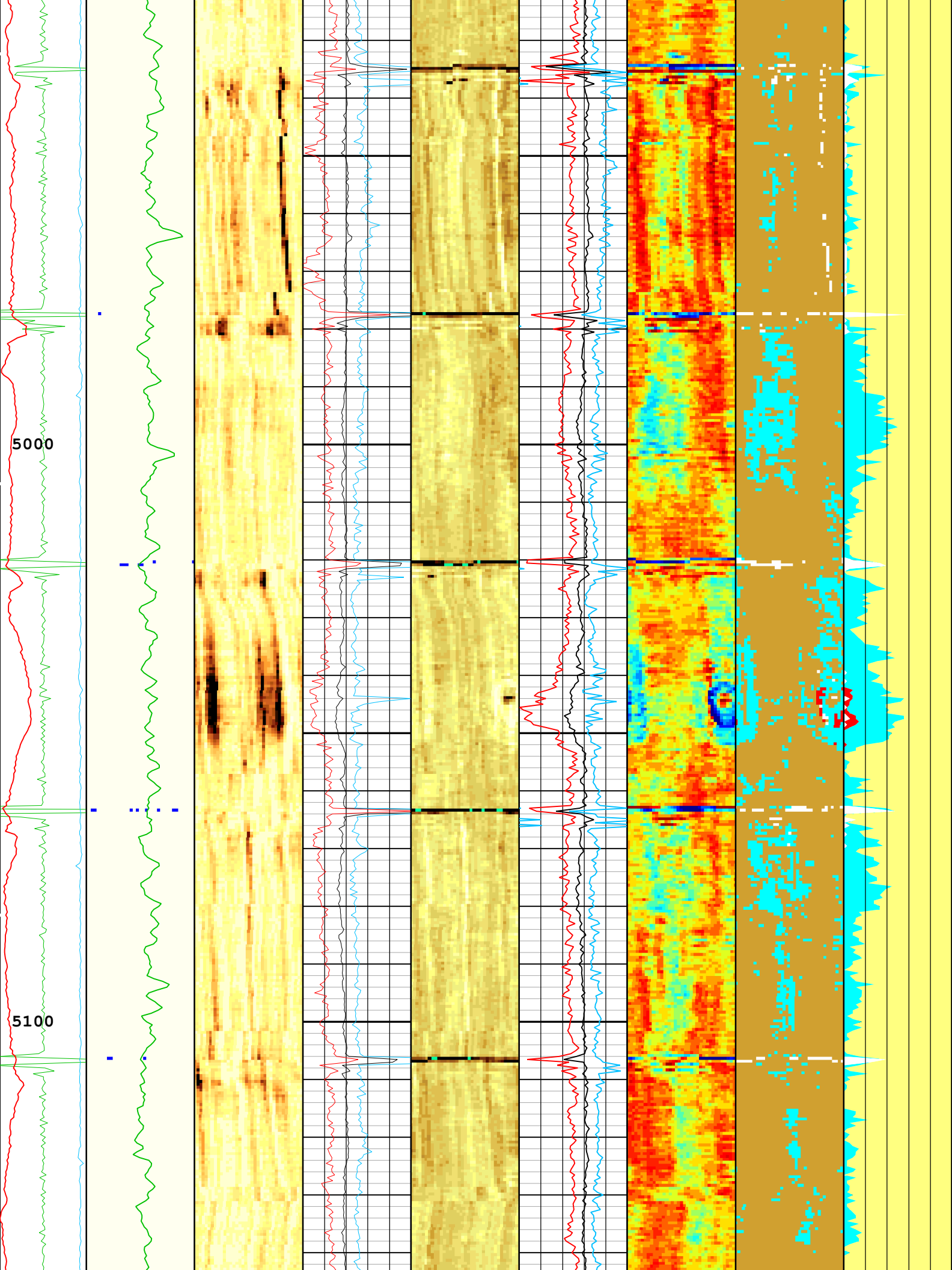


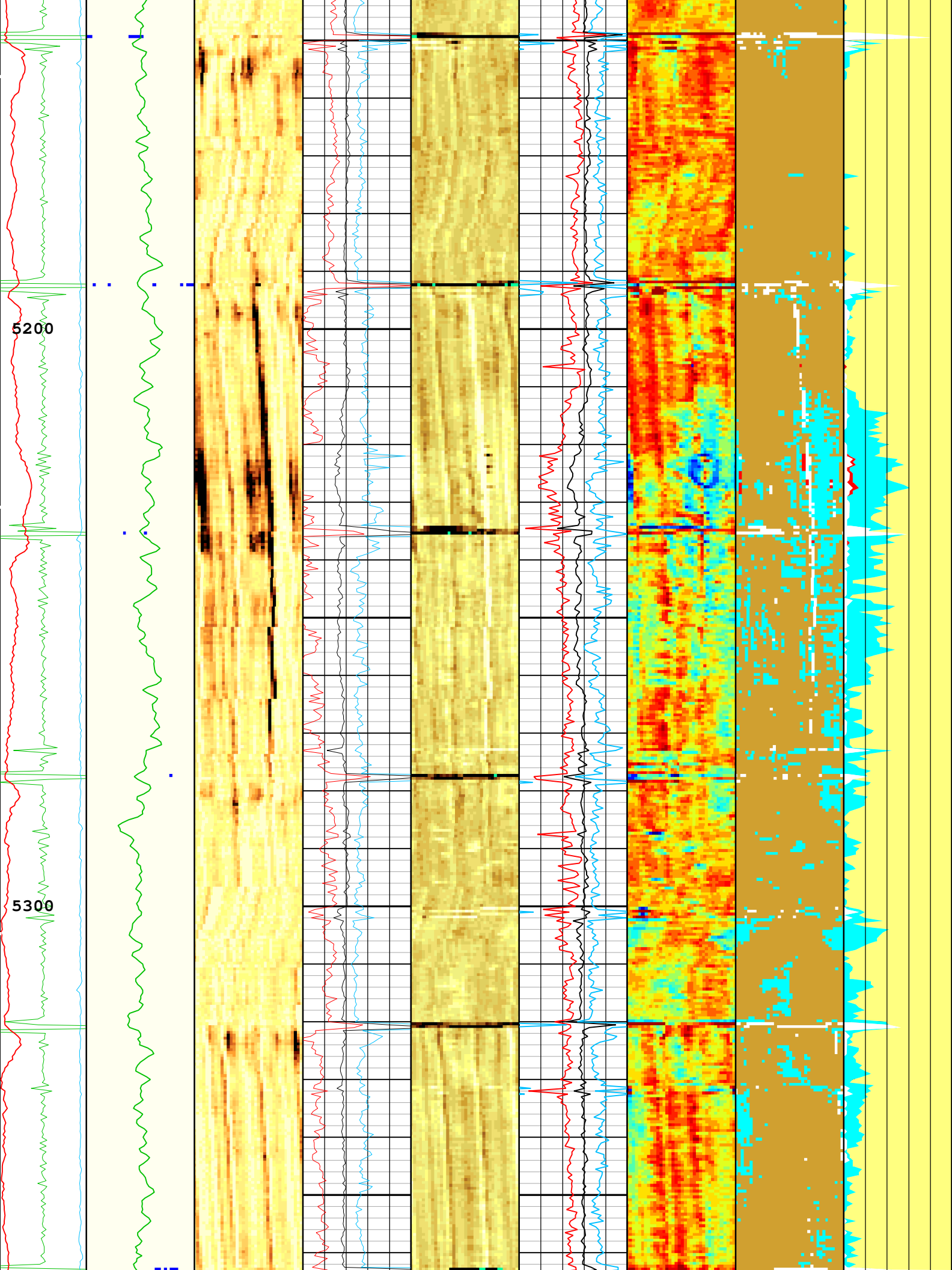


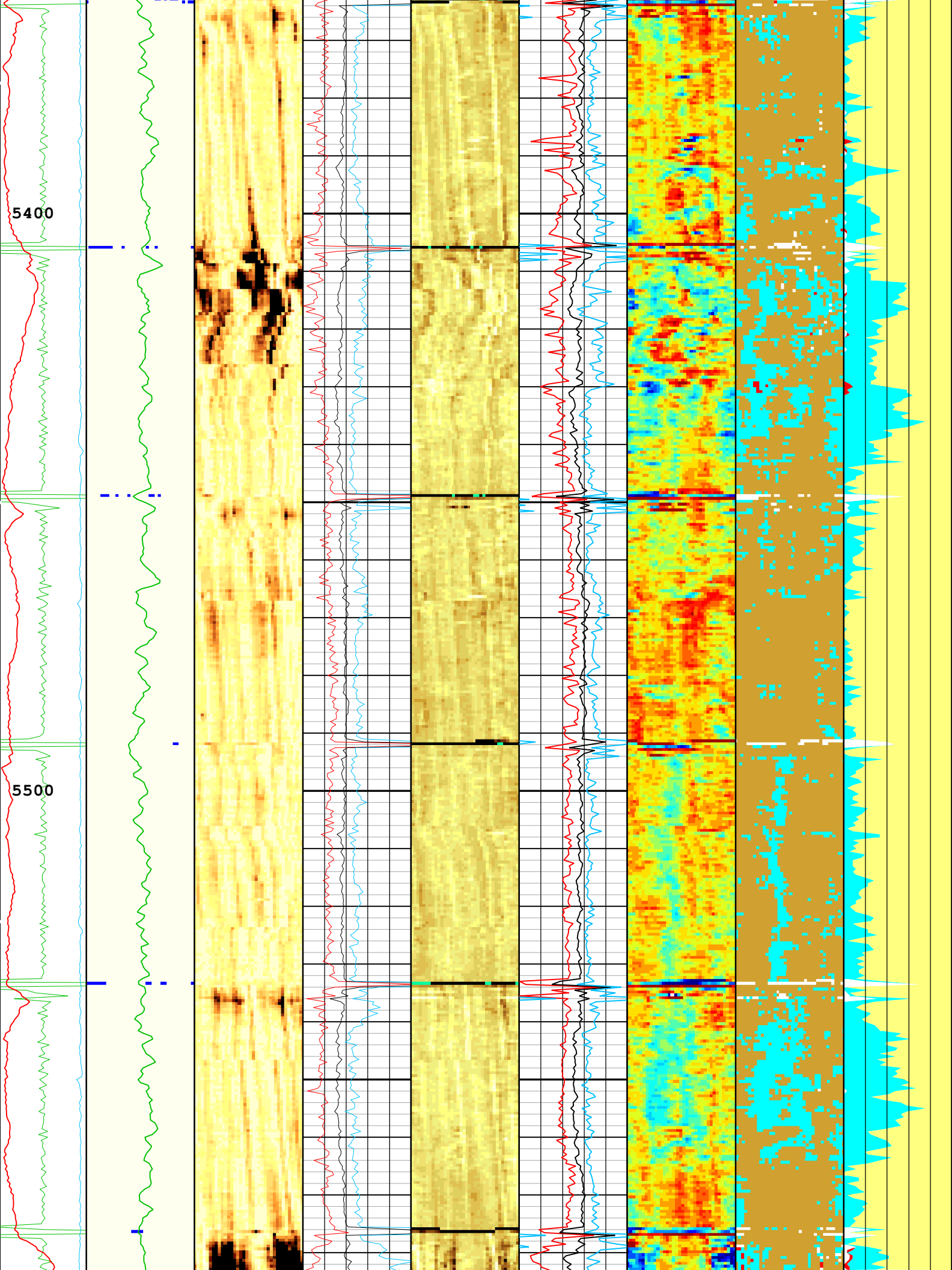


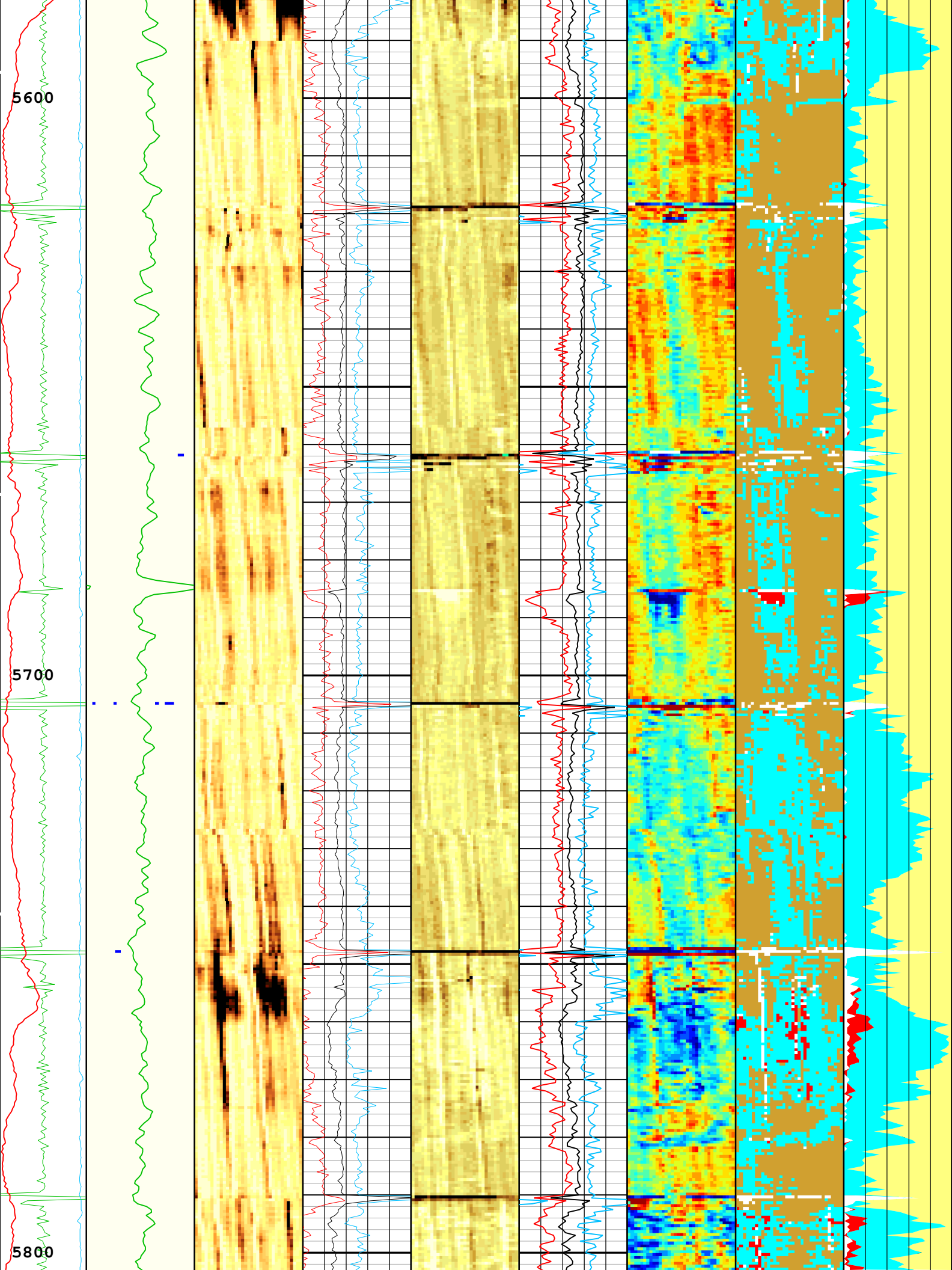


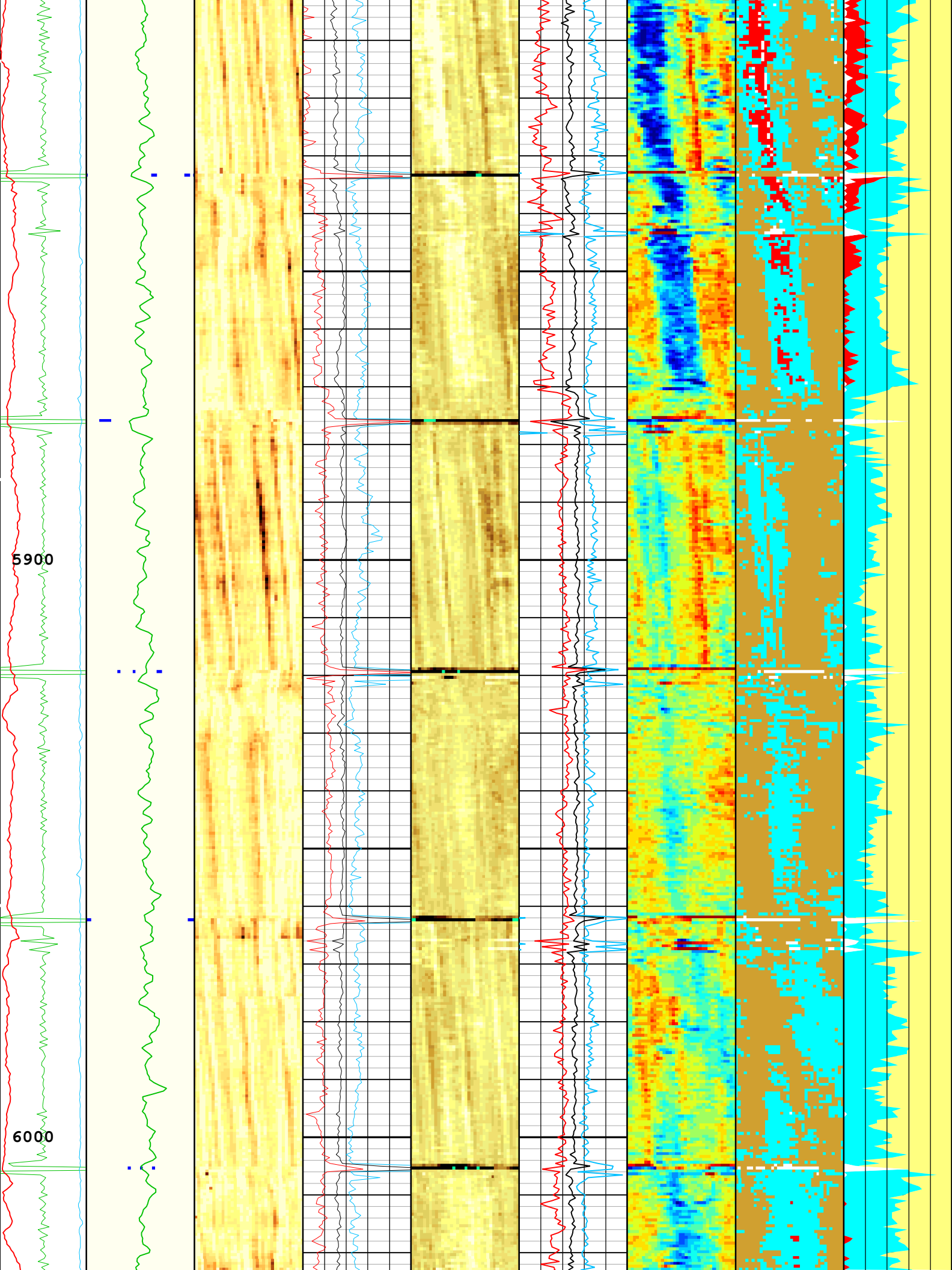


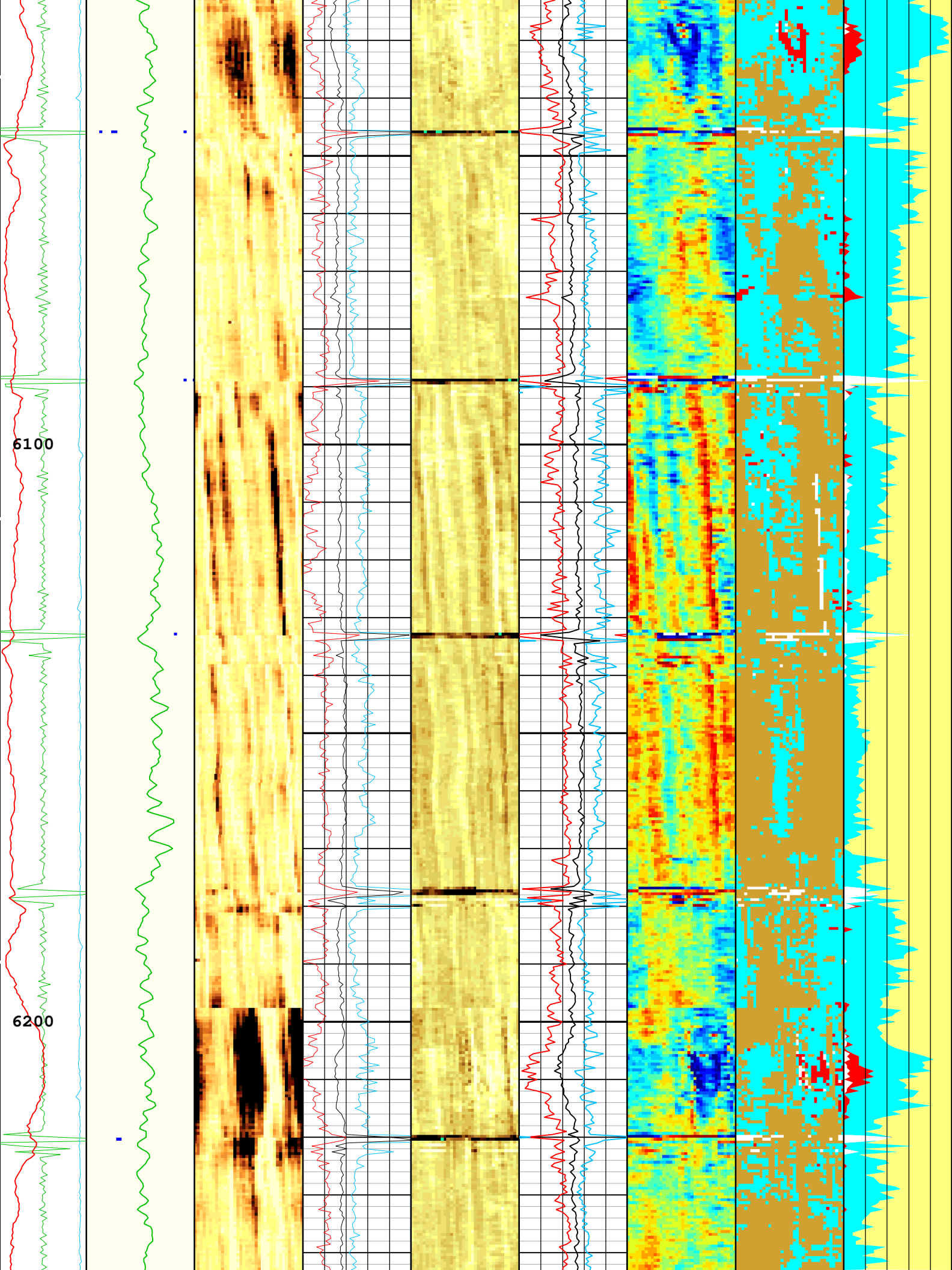


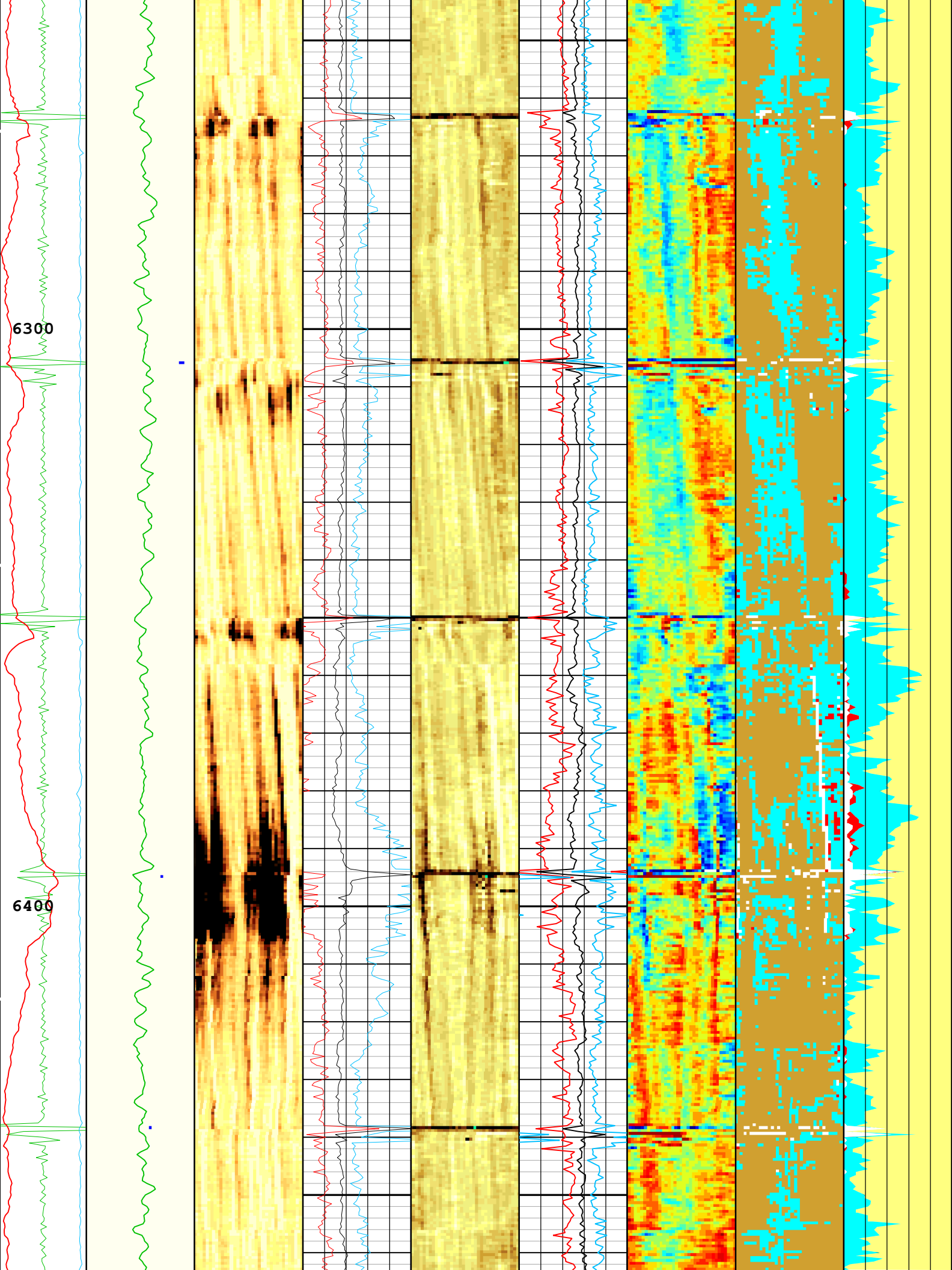


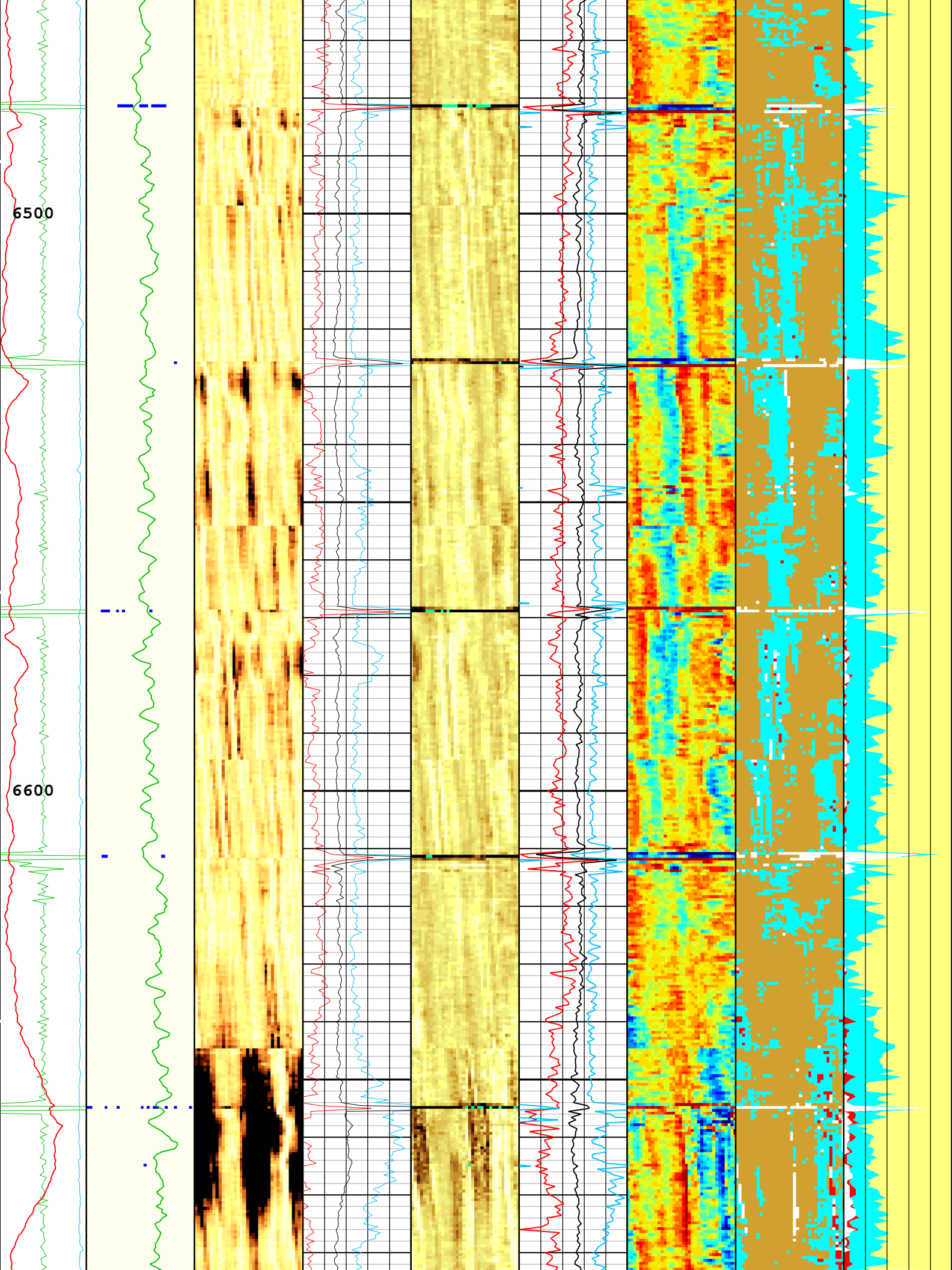


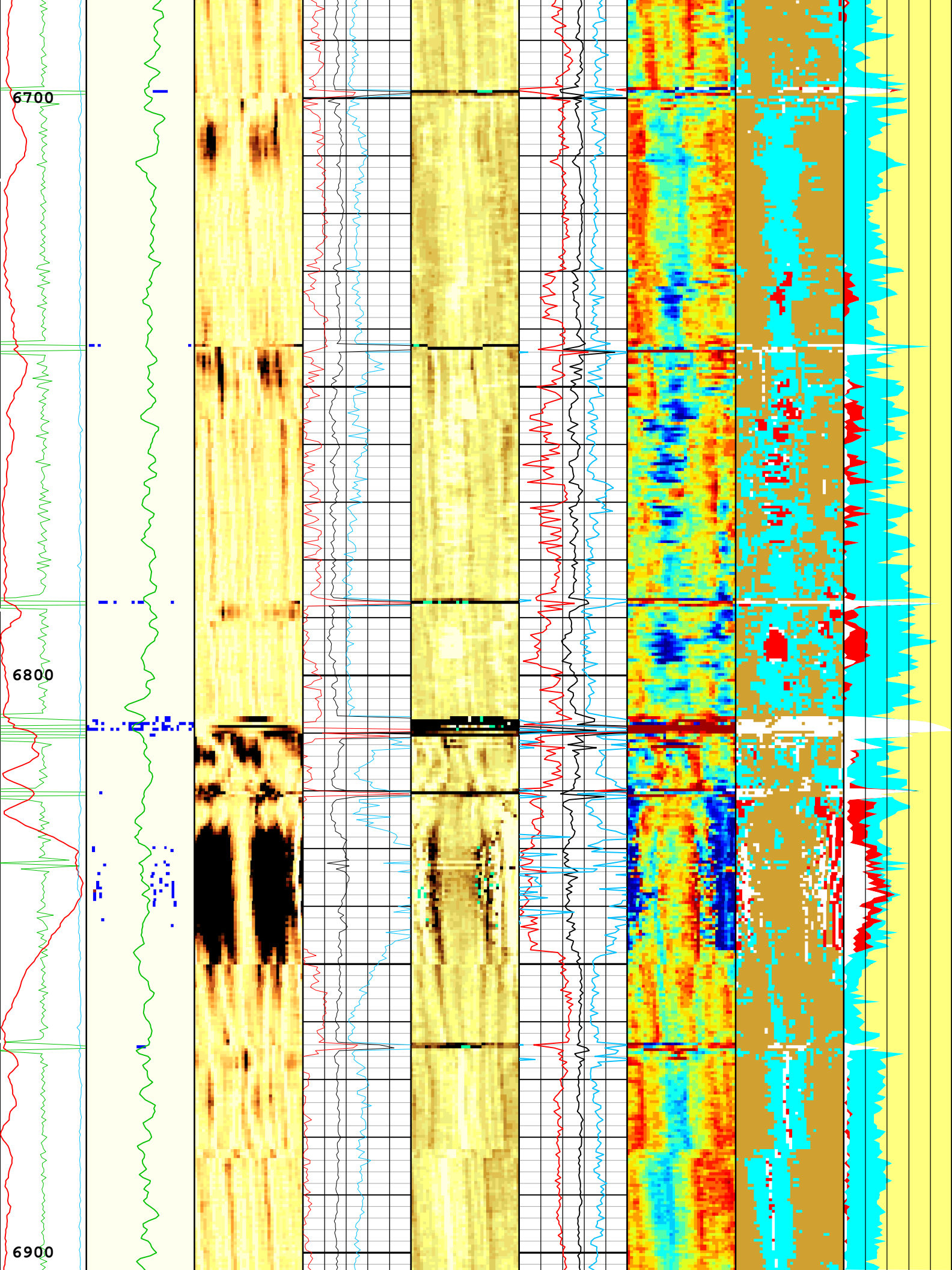


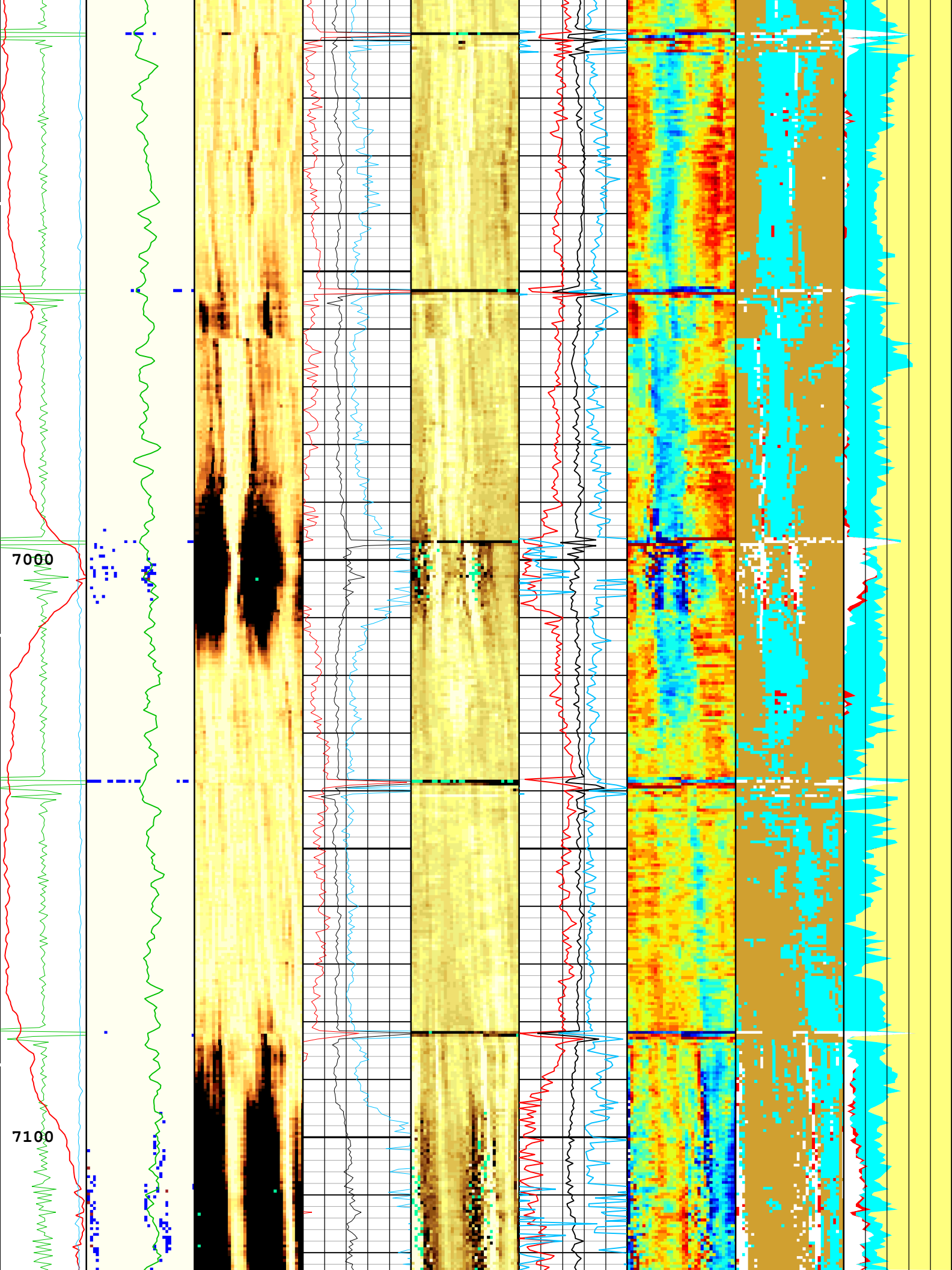


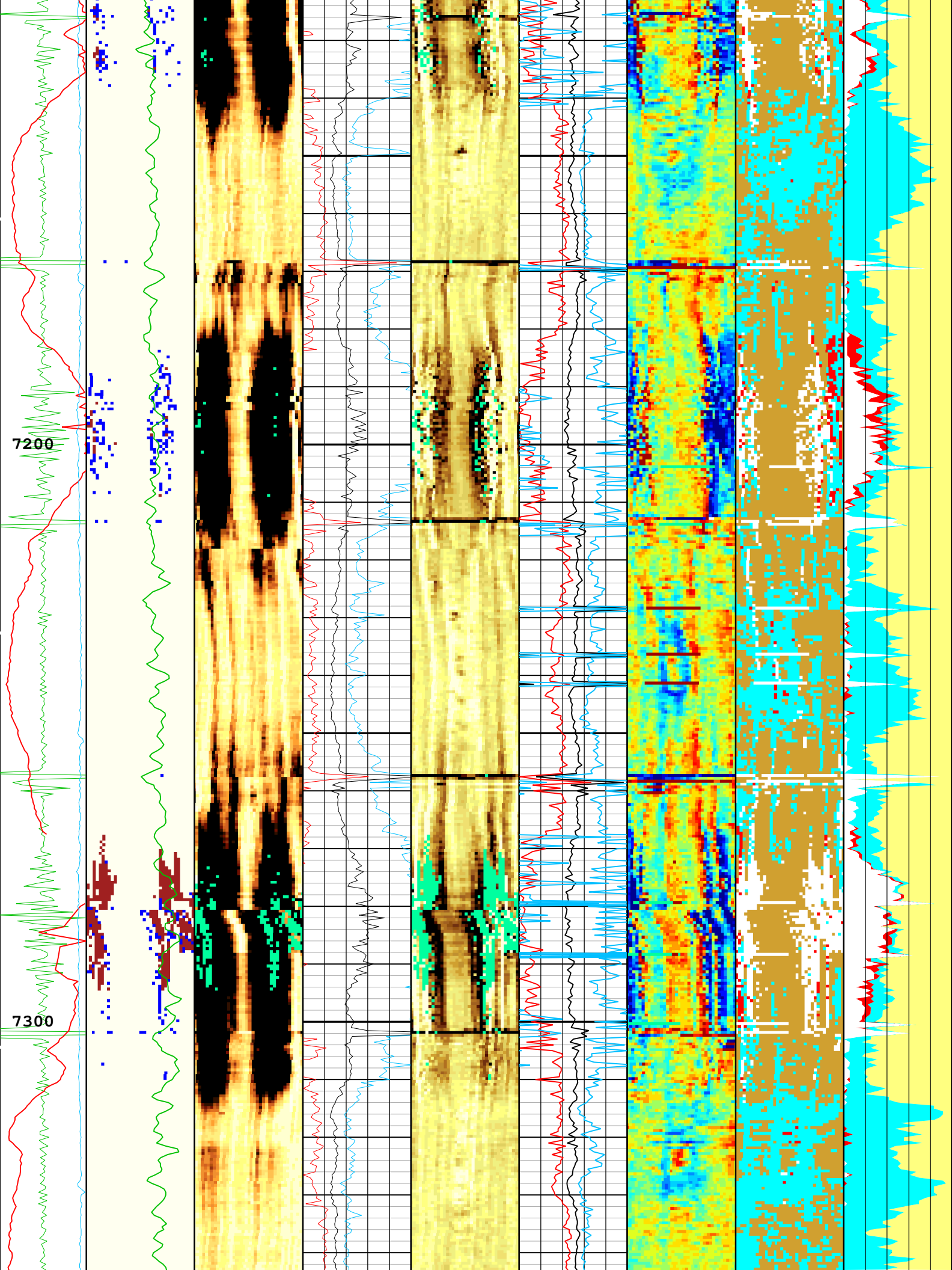














CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	203	us/ft
FD	Fluid Density	USIT-E	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	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	Theoretical	
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_THE	Theoretical Mud Normalization Factor	USIT-E	1.08	
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	-28.91	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	1.8	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	73	2587
BS	8.75	2587	7405.5

All depth are actual.

## Tool Control Parameters

### ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
ACMY	Maximum Gain of Cartridge	USIT-E	20	dB

AGMX	Maximum Gain of Cartridge	USIT-E	20	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	131.18	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	101.14	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	152.92	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 )
U-USIT_UFWE	176	16-Nov-2019 09:01:21	16-Nov-2019 09:04:53	7406.14	7168.39
U-USIT_UFWE	176.74	16-Nov-2019 09:04:53	16-Nov-2019 09:05:00	7168.39	7160.9
U-USIT_UFWE	177.78	16-Nov-2019 09:05:00	16-Nov-2019 10:42:40	7160.9	73.54
WINB	27.08	16-Nov-2019 09:01:21	16-Nov-2019 09:03:06	7406.14	7296.59
WINB	19.49	16-Nov-2019 09:03:06	16-Nov-2019 09:03:19	7296.59	7280.62
WINB	15.69	16-Nov-2019 09:03:19	16-Nov-2019 09:04:02	7280.62	7229.63
WINB	21.77	16-Nov-2019 09:04:02	16-Nov-2019 10:42:40	7229.63	73.54
WINE	87.08	16-Nov-2019 09:01:21	16-Nov-2019 09:02:24	7406.14	7346.15
WINE	84.8	16-Nov-2019 09:02:24	16-Nov-2019 09:03:02	7346.15	7301.64
WINE	77.21	16-Nov-2019 09:03:02	16-Nov-2019 09:03:12	7301.64	7290.01
WINE	68.85	16-Nov-2019 09:03:12	16-Nov-2019 09:03:51	7290.01	7242.5
WINE	74.17	16-Nov-2019 09:03:51	16-Nov-2019 09:03:55	7242.5	7237.72
WINE	81.01	16-Nov-2019 09:03:55	16-Nov-2019 09:04:14	7237.72	7215.2
WINE	82.52	16-Nov-2019 09:04:14	16-Nov-2019 09:04:22	7215.2	7205.52
WINE	87.08	16-Nov-2019 09:04:22	16-Nov-2019 10:42:40	7205.52	73.54

All depth are at tool zero.