

Company: Crestone Peak Resources and Operating LLC

Well: Echeverria 2E-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 2E-2H-D267
Company:	Crestone Peak Resources and Operating LLC
Location:	
NWNW Sec. 2, T2N, R67W	Elev.: K.B. 4905.00 ft
SHL: 898' FNL & 599' FWL	G.L. 4882.00 ft
Lat/Long: 40.172032 \ -104.864828	D.F. 4905.00 ft
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 2
05-123-48765	Township: 2N
	Range: 67W

Logging Date	22-May-2019
Run Number	One
Depth Driller	12146.00 ft
Schlumberger Depth	12146.00 ft
Bottom Log Interval	6960.00 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	2339.00 ft
To	12146.00 ft
Casing/Tubing Size	5.5 in
Weight	20 lbm/ft
Grade	N/A
From	0.00 ft
To	12135.00 ft
Max Recorded Temperatures	203 degF
Logger on Bottom	22-May-2019 04:12:00
Unit Number	9111
Recorded By	Alan Moreno/ Alkhaili Alkindi
Witnessed By	John Ansbor

Disclaimer

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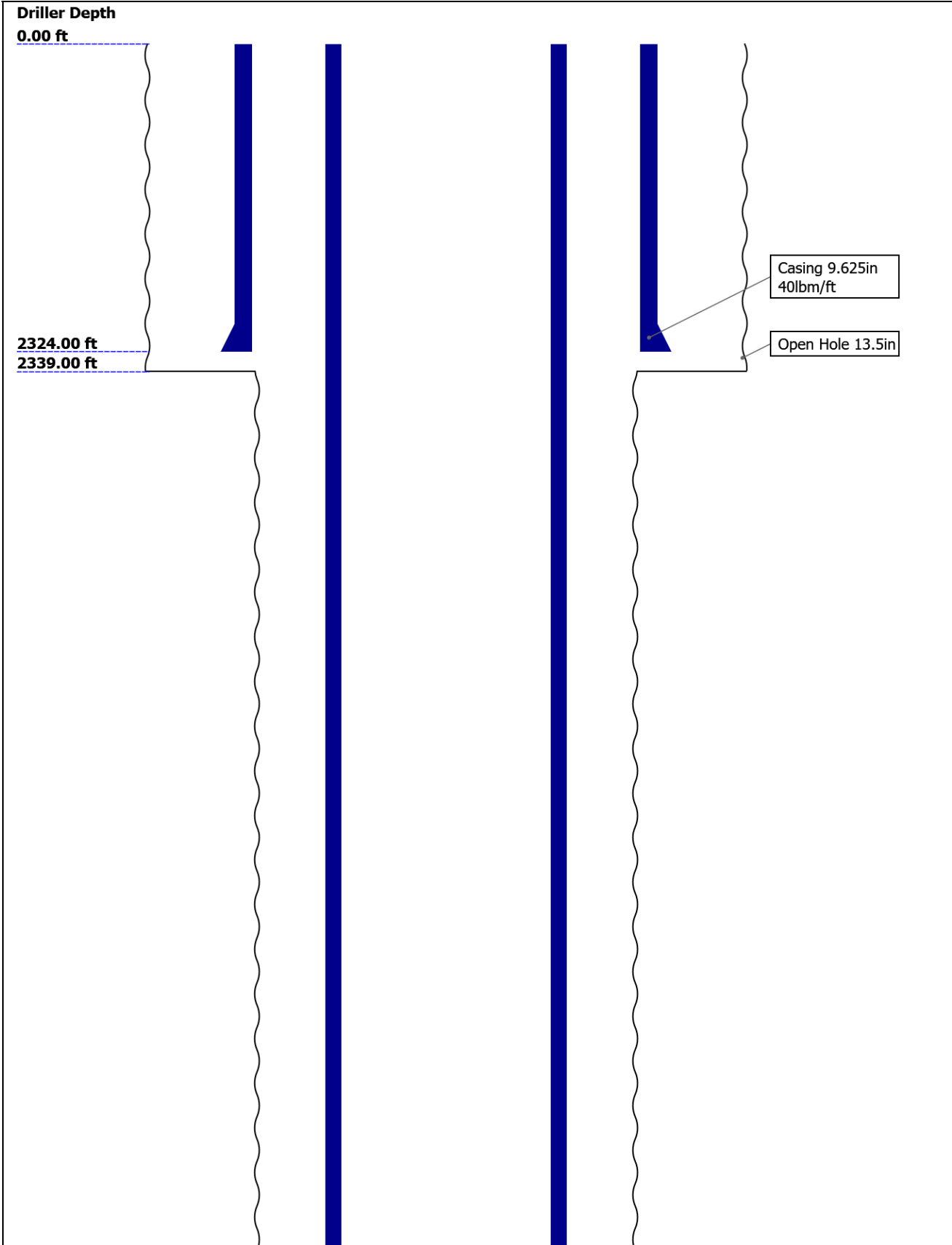
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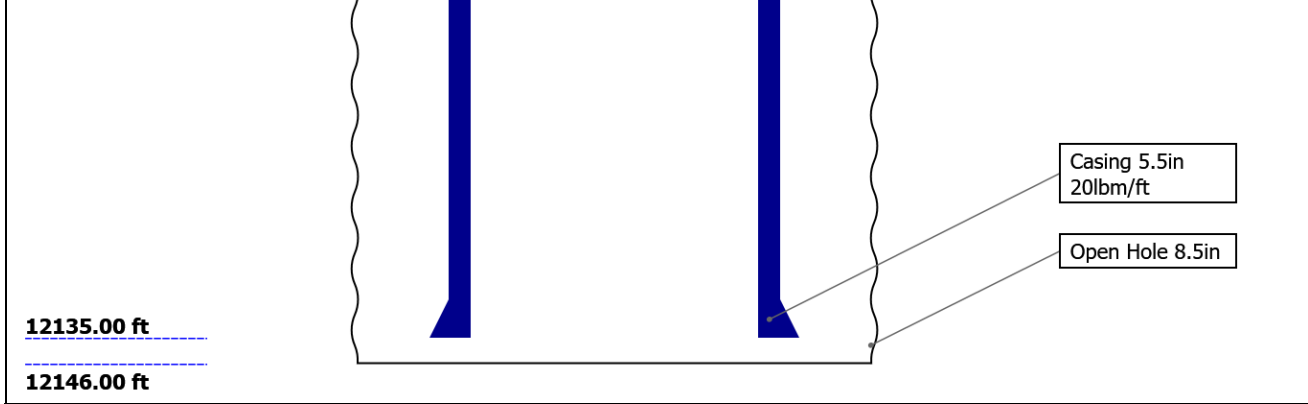
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Well Sketch





12135.00 ft

12146.00 ft

Casing 5.5in  
20lbm/ft

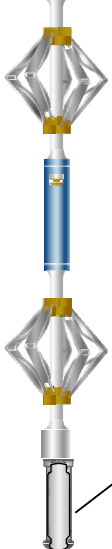
Open Hole 8.5in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.5				
Top Driller ( ft )	0	2339				
Top Logger ( ft )	0	2339				
Bottom Driller ( ft )	2339	12146				
Bottom Logger ( ft )	2339	12146				
Casing						
Size ( in )	9.625	5.5				
Weight ( lbm/ft )	40	20				
Inner Diameter ( in )	8.835	4.778				
Grade	N/A	N/A				
Top Driller ( ft )	0	0				
Top Logger ( ft )	0	0				
Bottom Driller ( ft )	2324	12135				
Bottom Logger ( ft )	2324	12135				

Remarks and Equipment Summary

One: Toolstring				One: Remarks	
Equip name	Length	MP name	Offset	Thank you for choosing Schlumberger!	
LEH-QT	30.73			Toolstring run centralized as per toolsketch	
LEH-QT				Two 5" Gemco and in-line centralizers with small hole kit and booster kit used for centraliz	
EDTC-B:8	27.24			Log run under 0 psi	
324				Annular Fluid: 10.5 ppg OBM	
EDTH-B:81				Lead Cement 12.5 ppg	
01				Tail Cement Density: 13.5 ppg	
EDTG-A:7				Spacer Density: 11 ppg	
7301				Crew: Alex Schaab	
EDTC-B:83					
24					
AH-184[	20.74				
2]:3763					
AH-184[	18.74				
1]:4812					
USIT-E:98	16.74				
1					
ECH-MFA:					
1923					
USAC-A:9					
81					
USIT-A:10					

USIS-A:18 67 USSC-B:75 5 IBCS-A:83 5 FAR-SENS OR:4495 IBC-TX NEAR-SEN SOR:4715 IBC-TX USI-SENS OR:3601 IBC-TX EMITTER- SENSOR:4 612 IBC-TX	 <p>USI Sensor Head Tension TOOL_ZERO</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>	
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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 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[1]:Up	2412	2081.91

Fluid Velocity = "Automatic".  
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Mud Impedance = "FreePipe Norm."  
Free Pipe normalization zone is : 686.07m(2250.88ft) to 687.78m(2256.50ft)  
MUD\_N\_FRP = 1.20  
DFD = 1.01g/cm3(8.40lbm/gal)  
CZMD median computed in free pipe normalization interval = 1.75 MRayl

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

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2018 SP2	8.2.104493.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	19.99 ft	6975.36 ft	22-May-2019 3:12:57 PM	22-May-2019 5:02:45 PM	ON	5.29 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC      Well:Echeverria 2E-2H-D267 One: Log[3]:Up:S009
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Description: USI IBC SLG    Format: Log ( IBC SLG )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 23-May-2019 00:42:15

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 ] - :

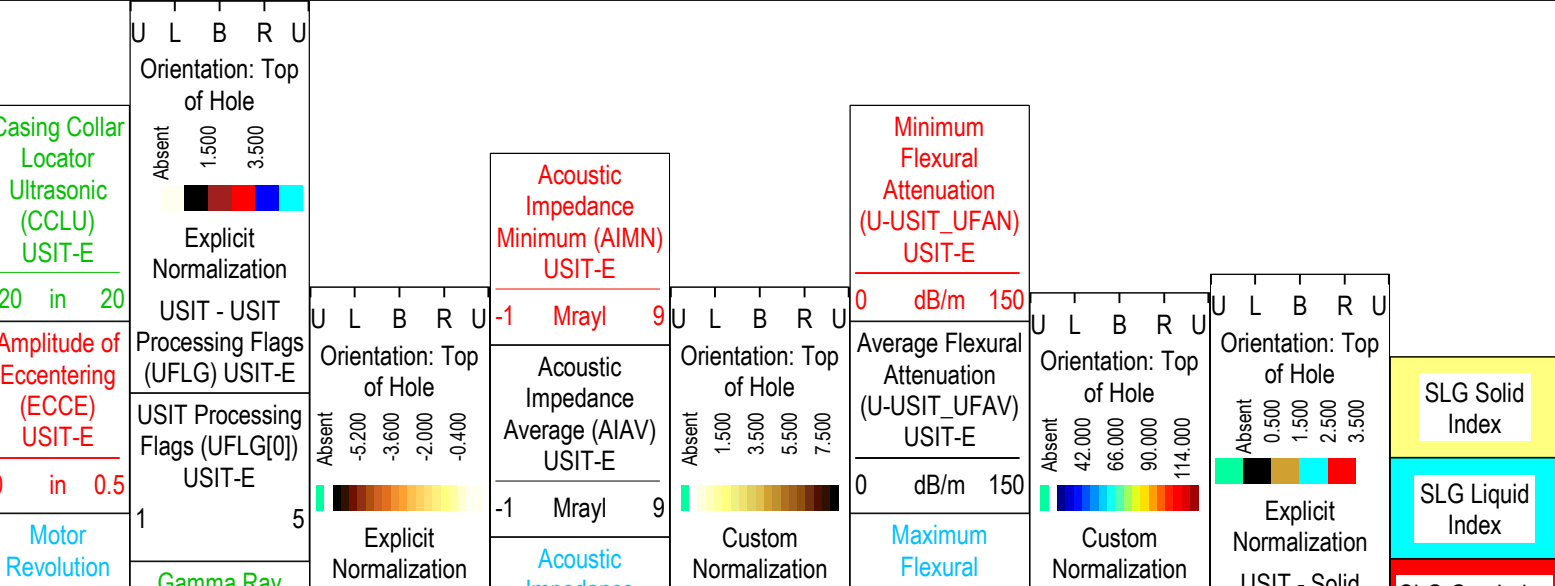
UTIM Error

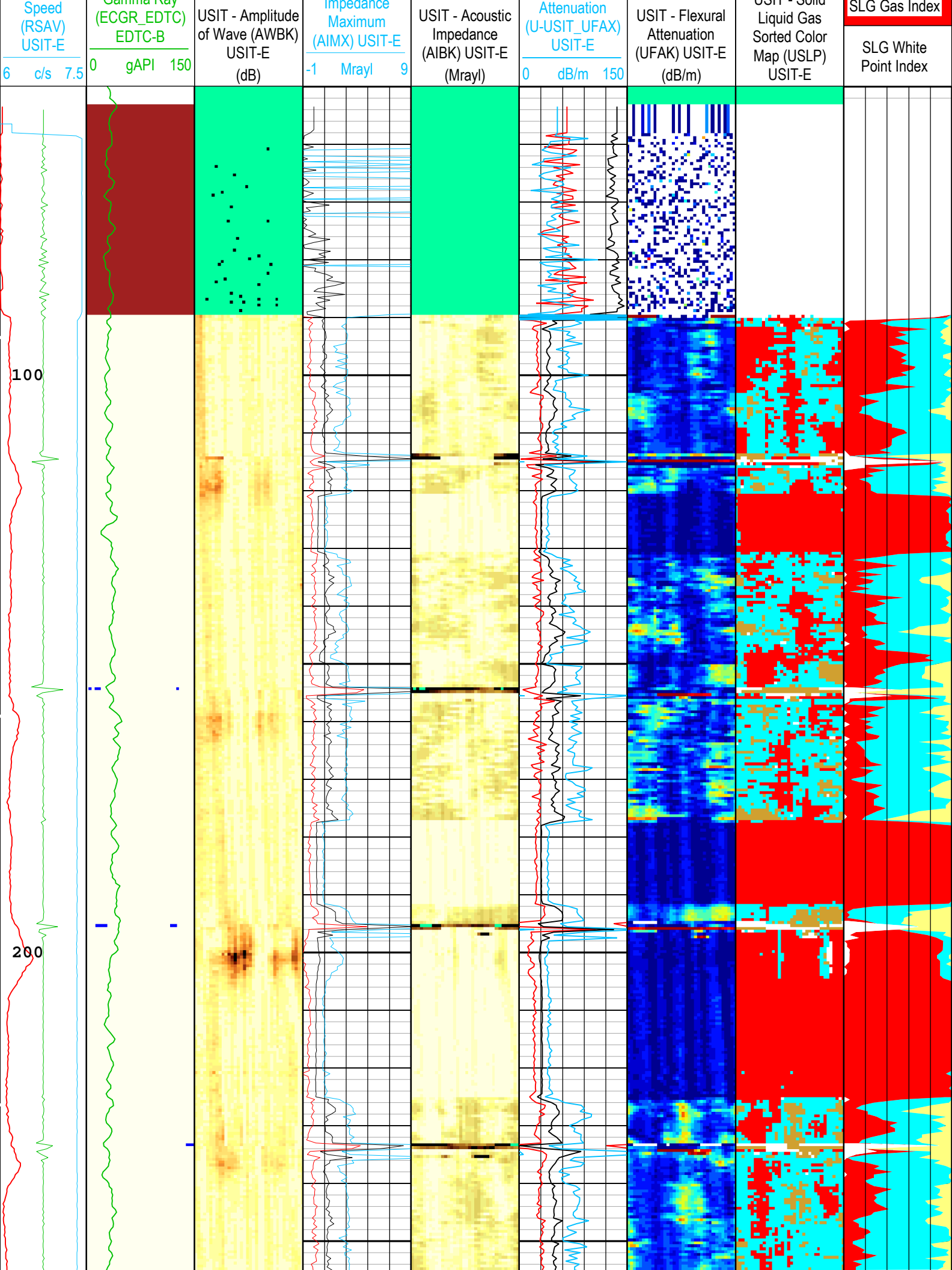
Pulse Origin Not Detected

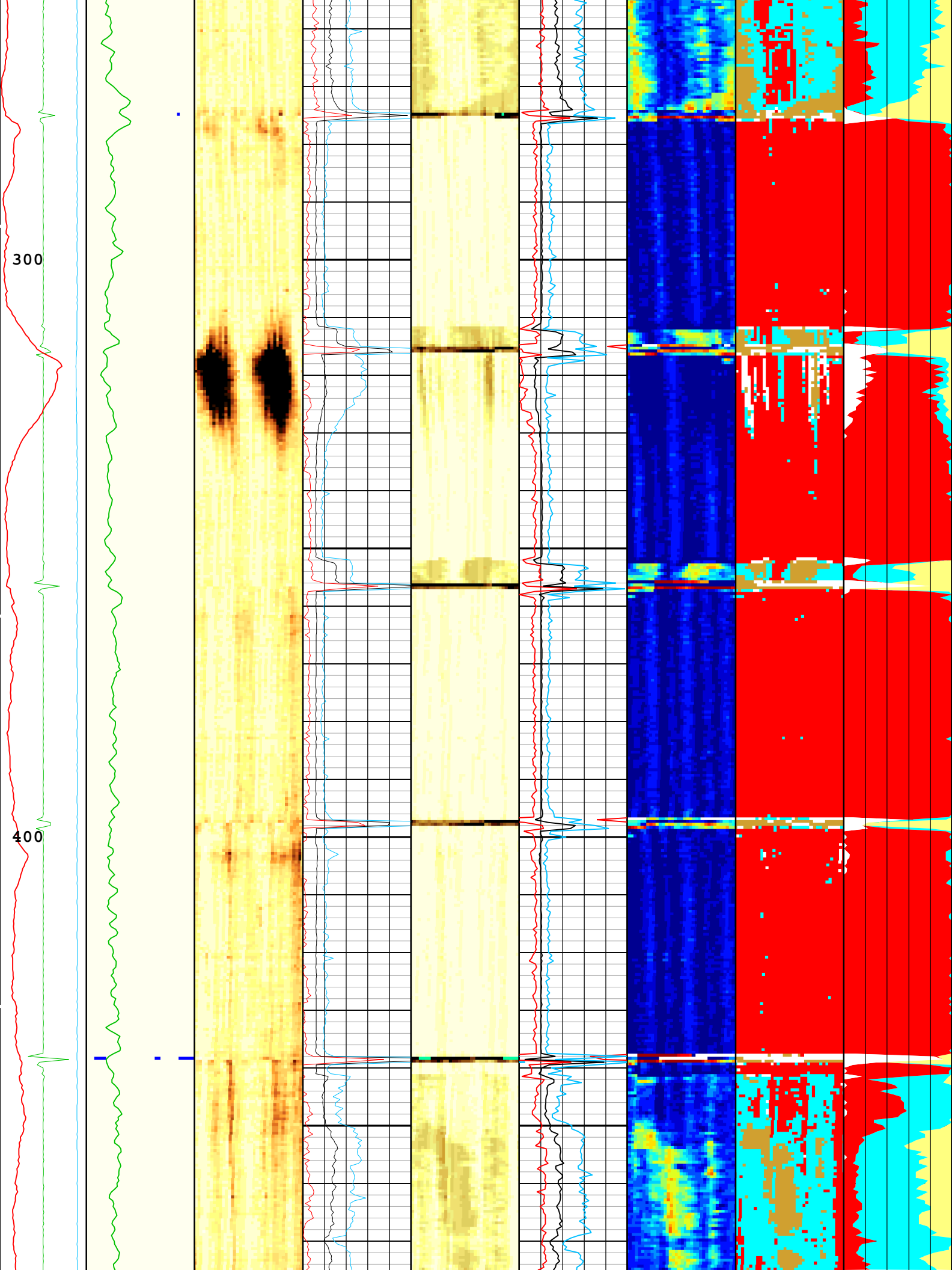
WINLEN Error

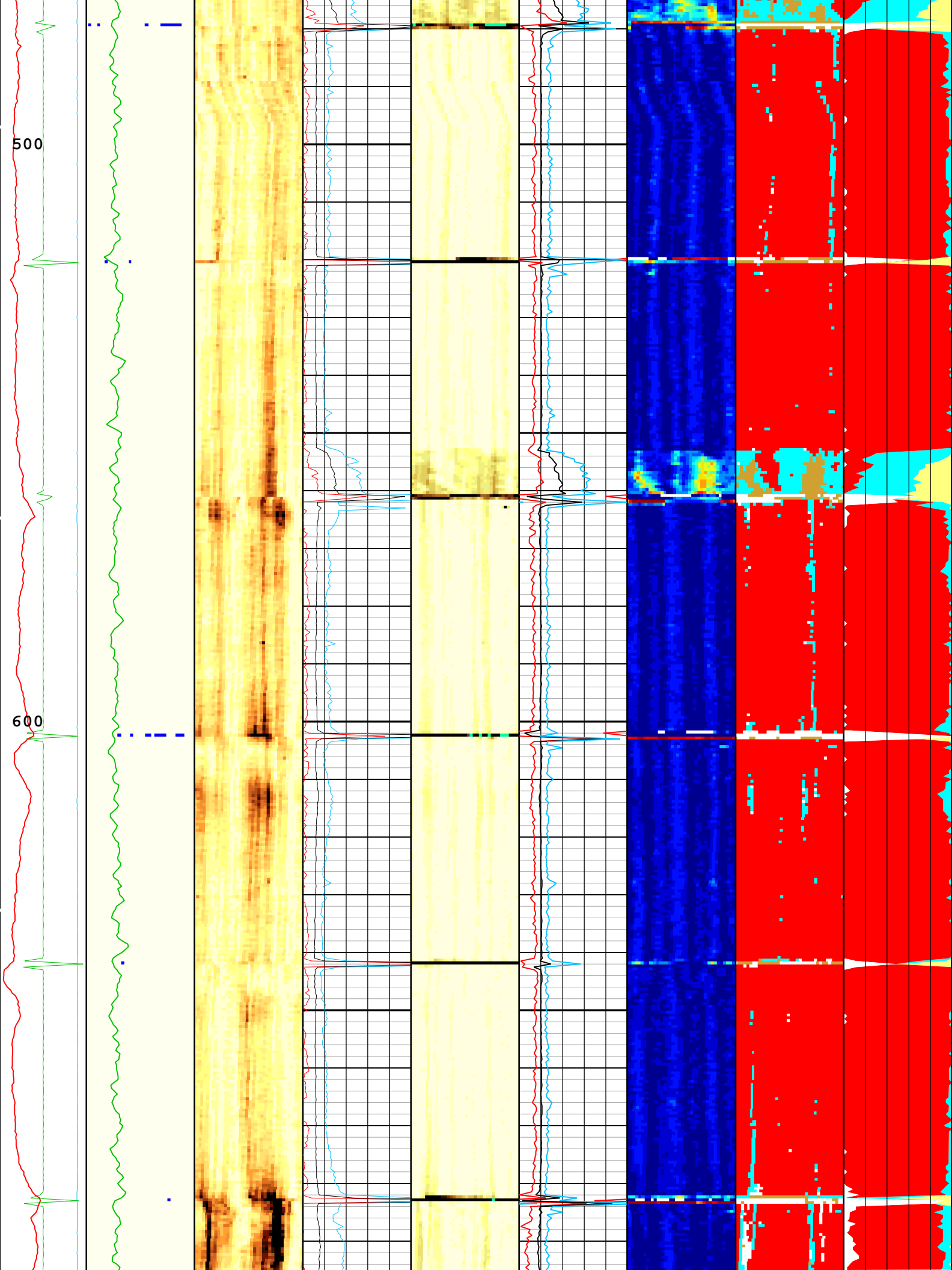
Casing Thickness Error

Loop Processing Error

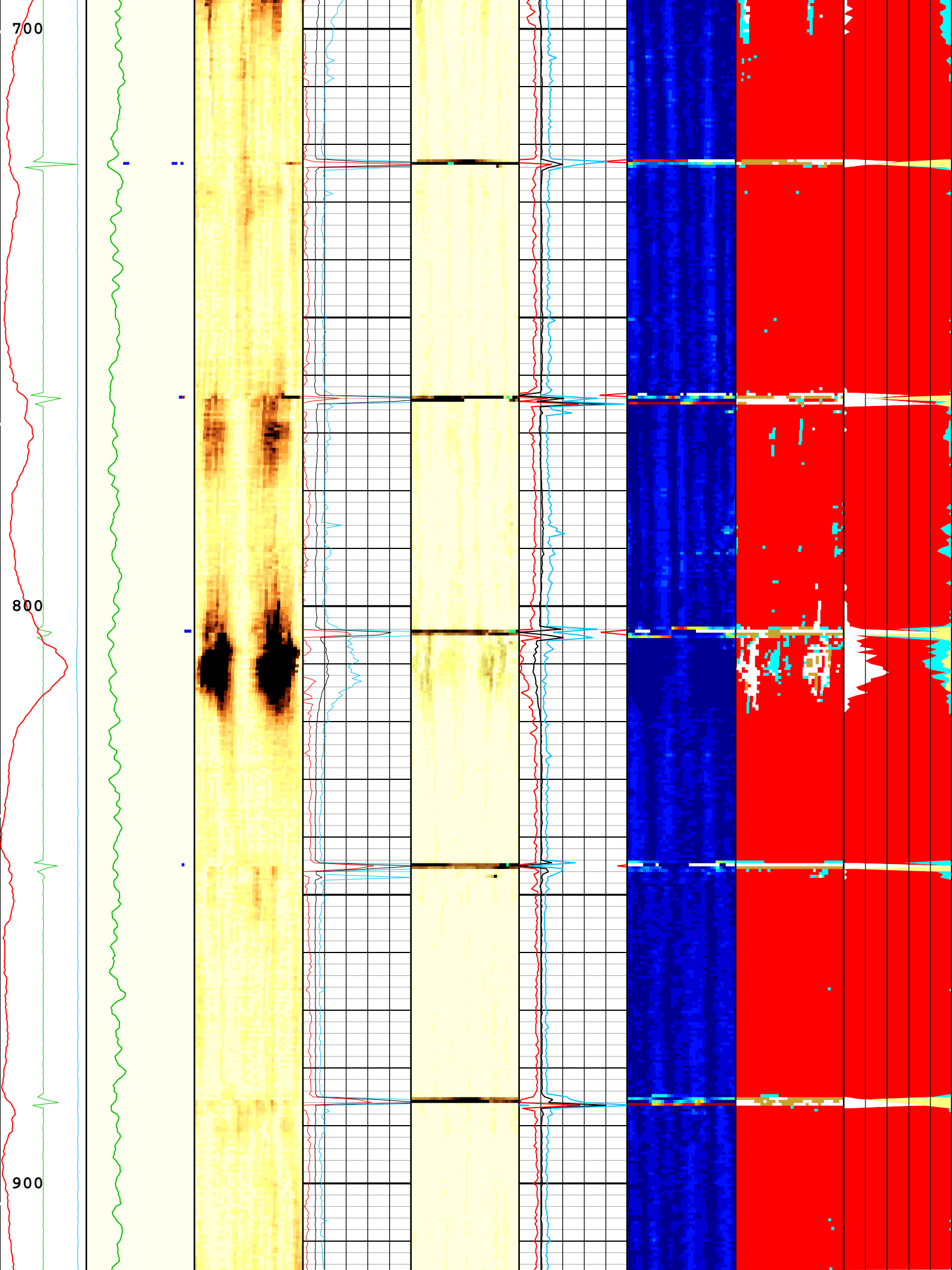


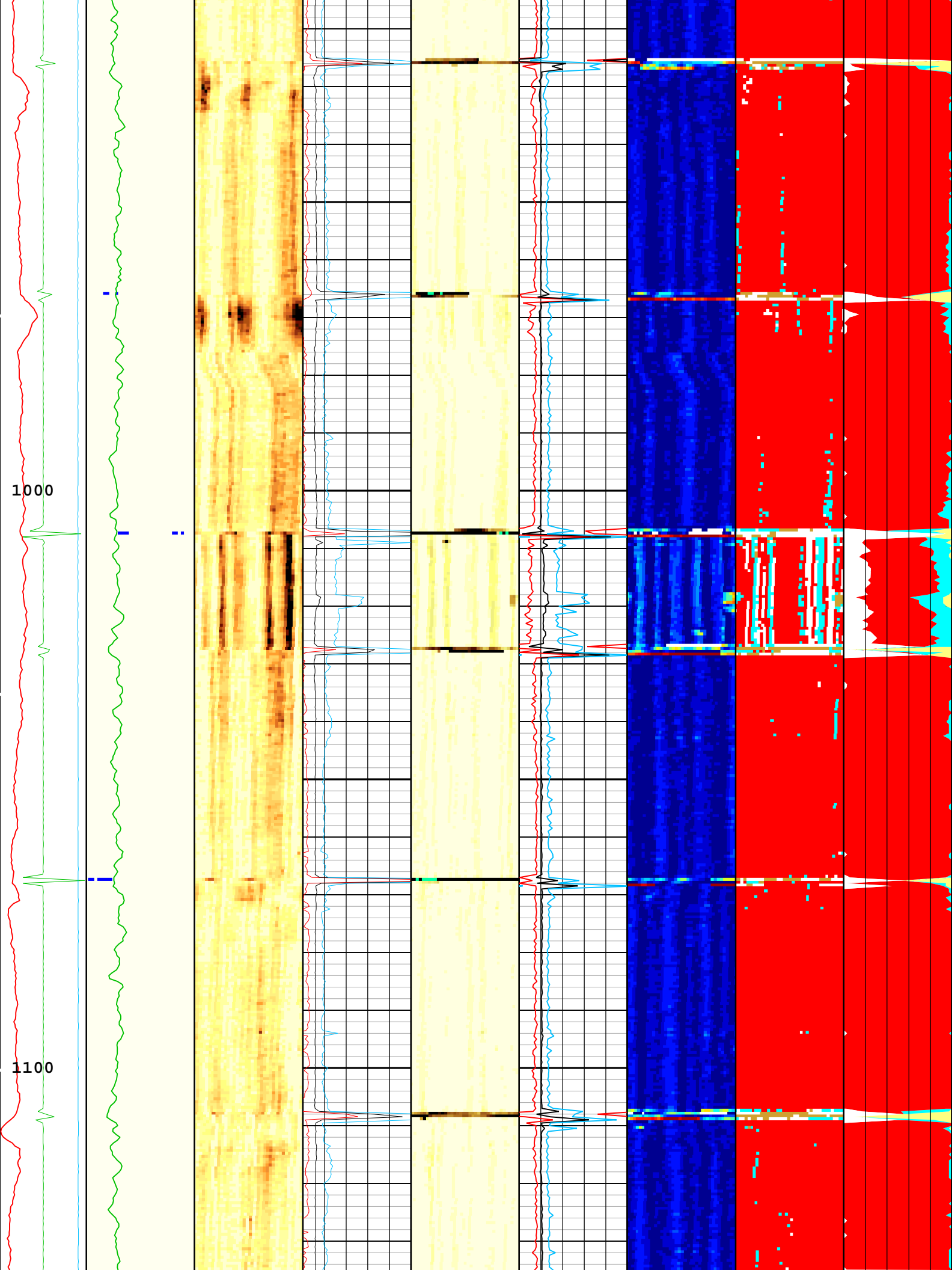


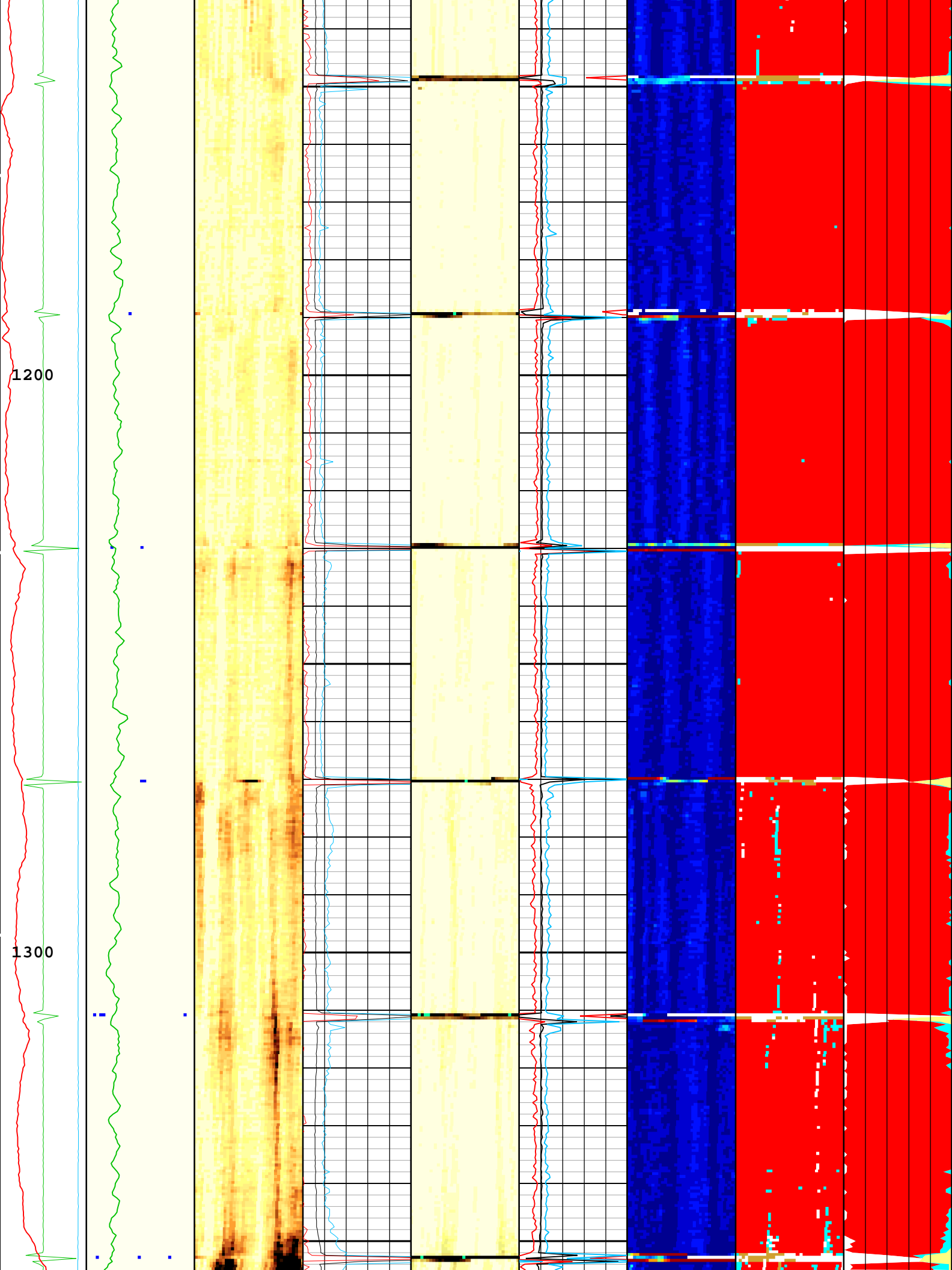


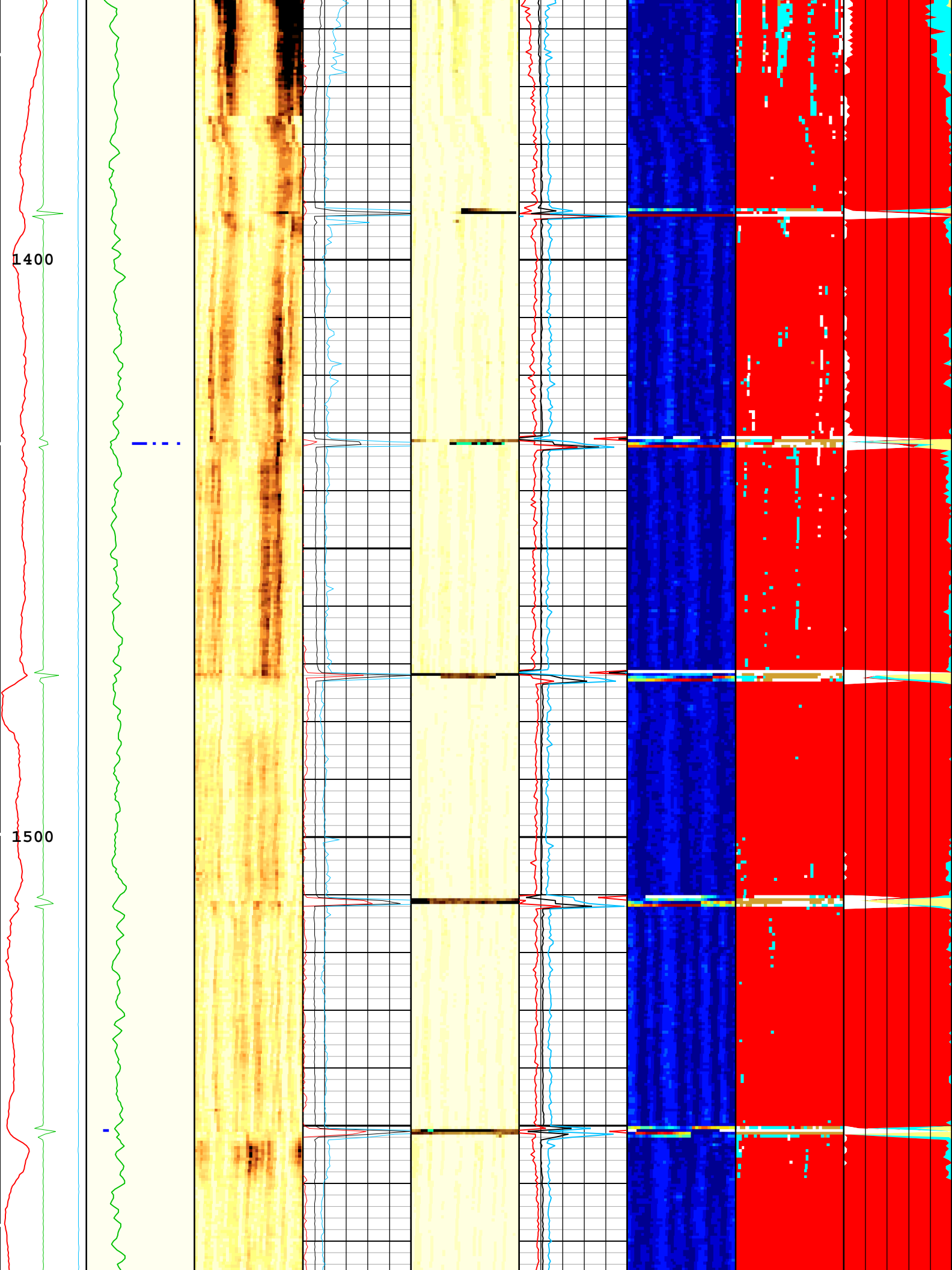


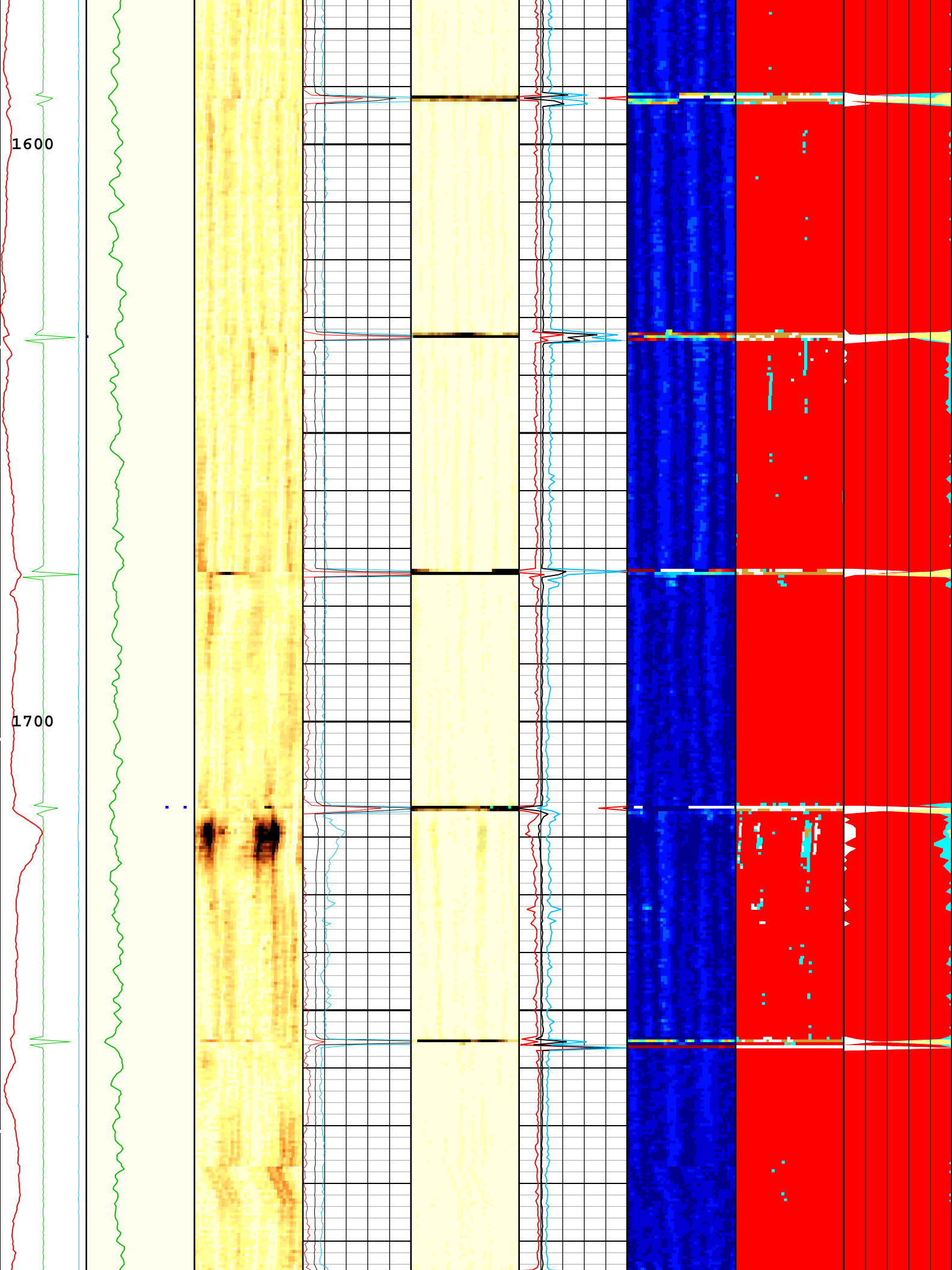


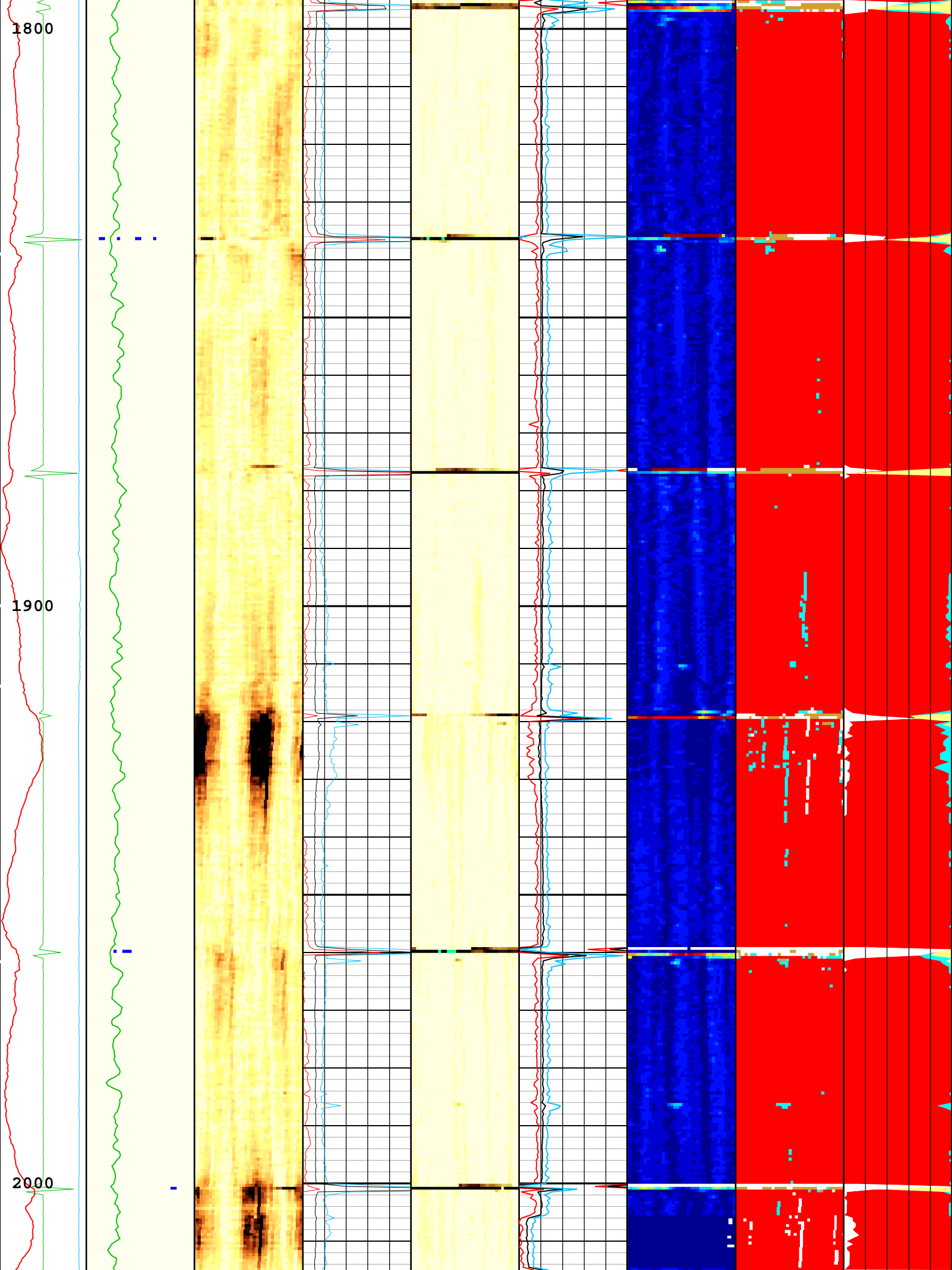


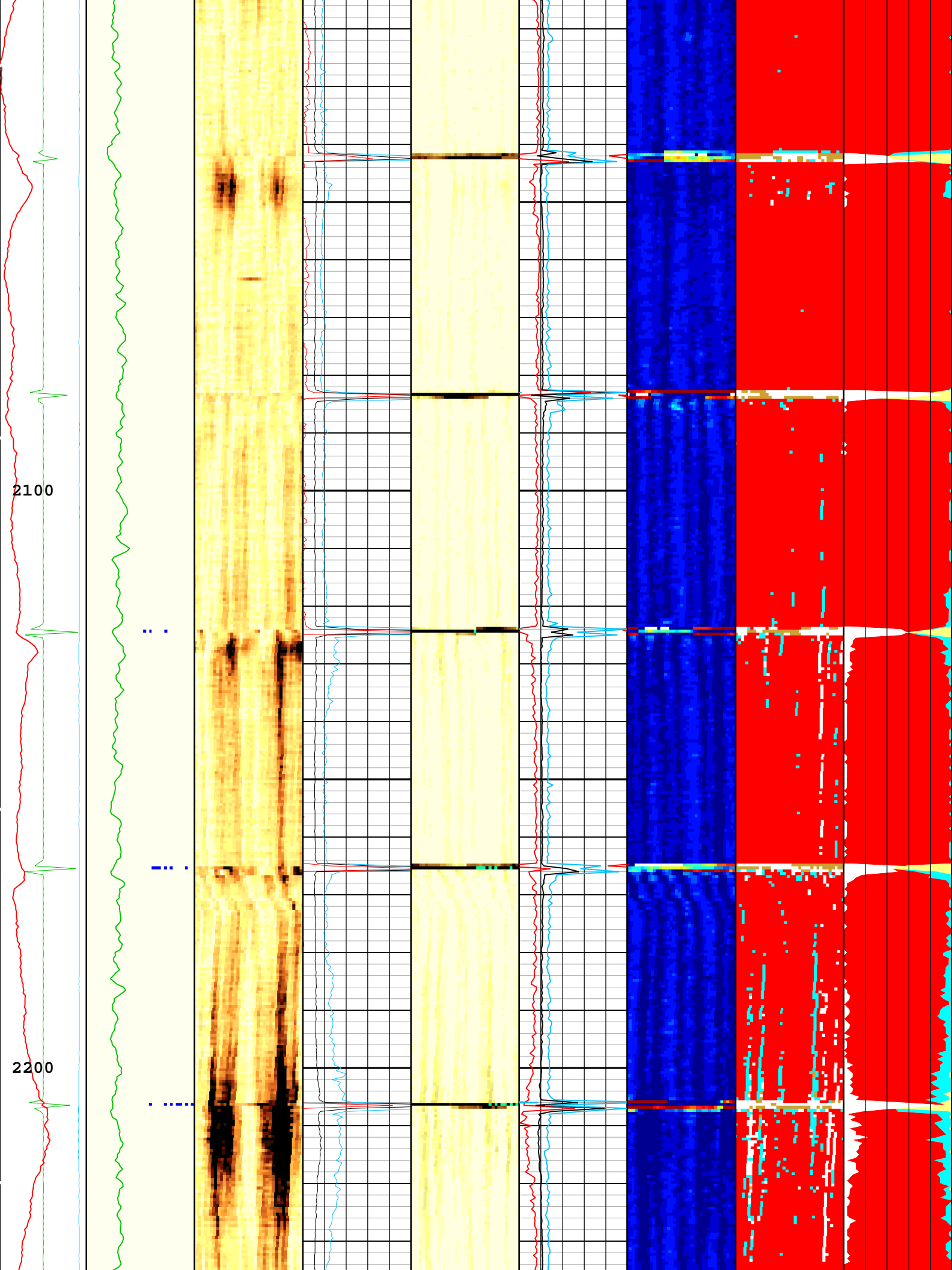


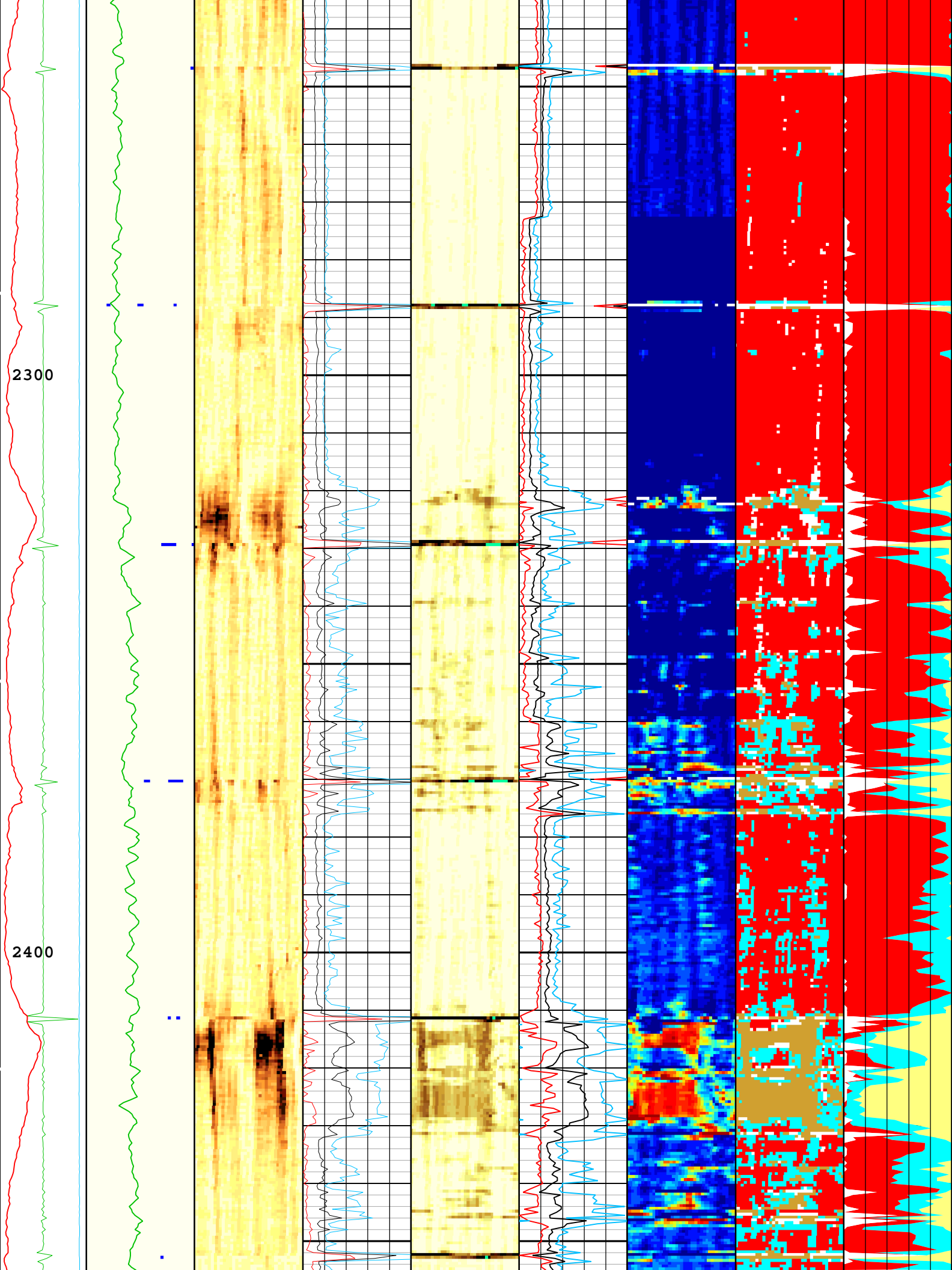




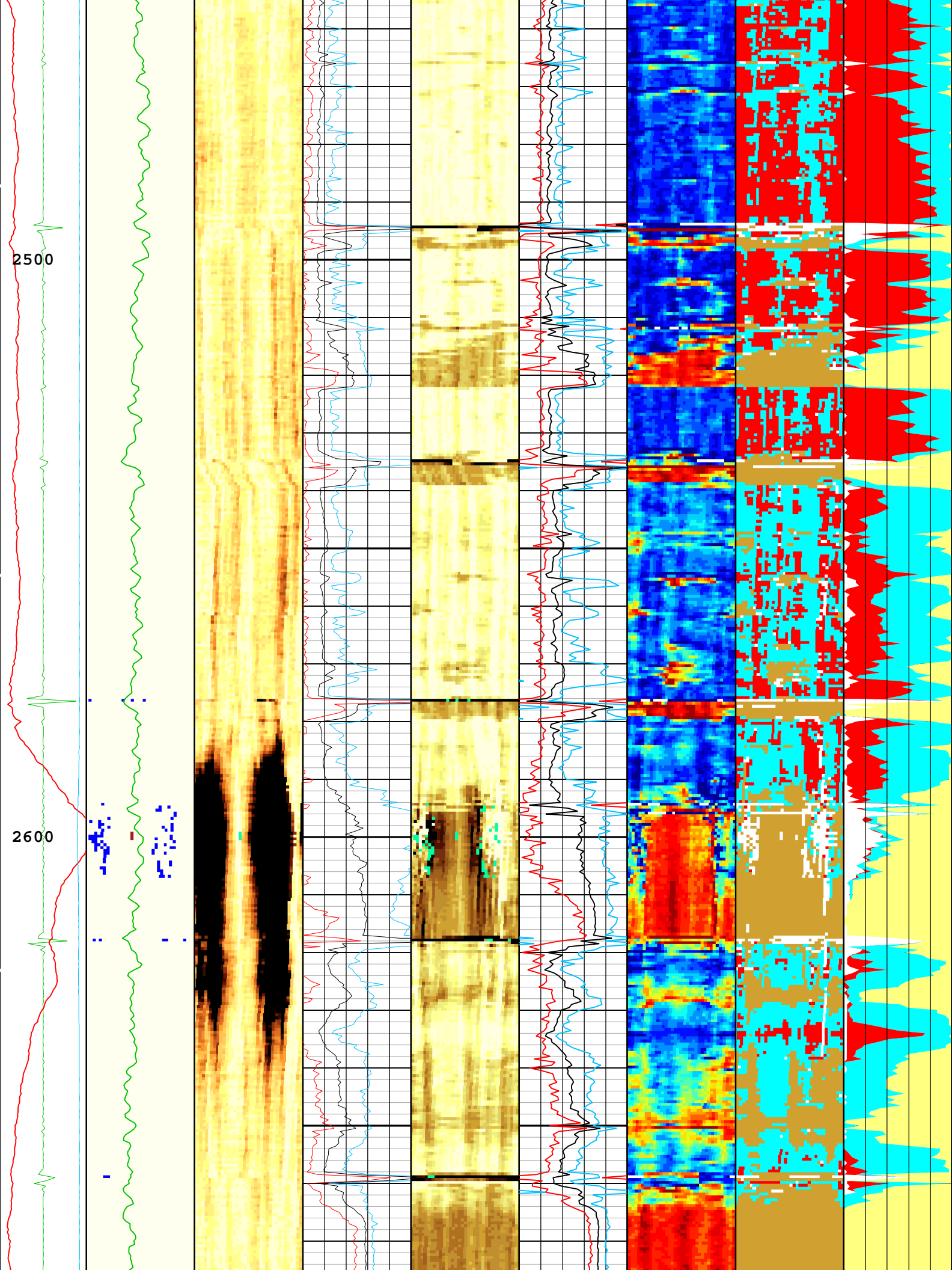


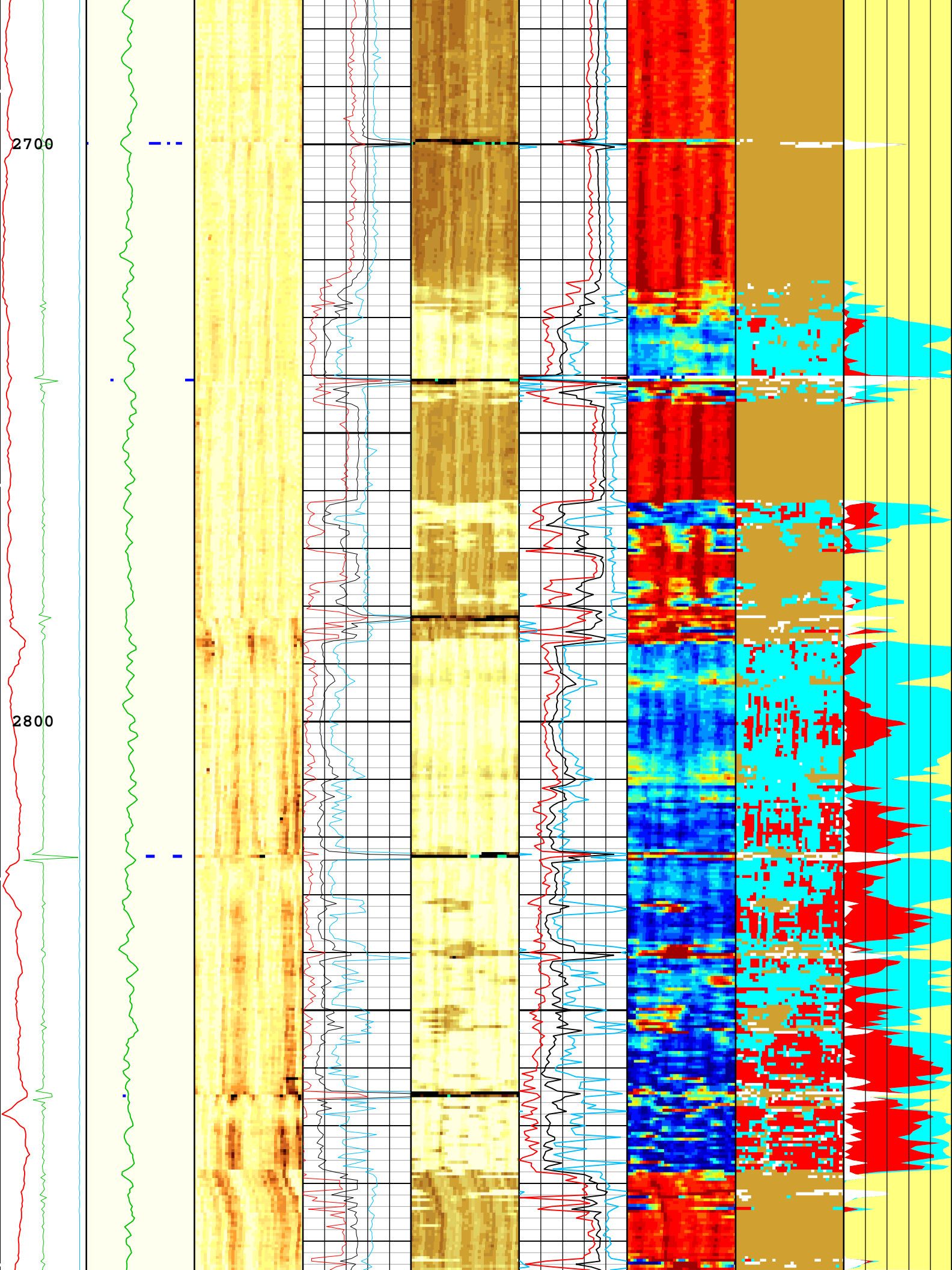


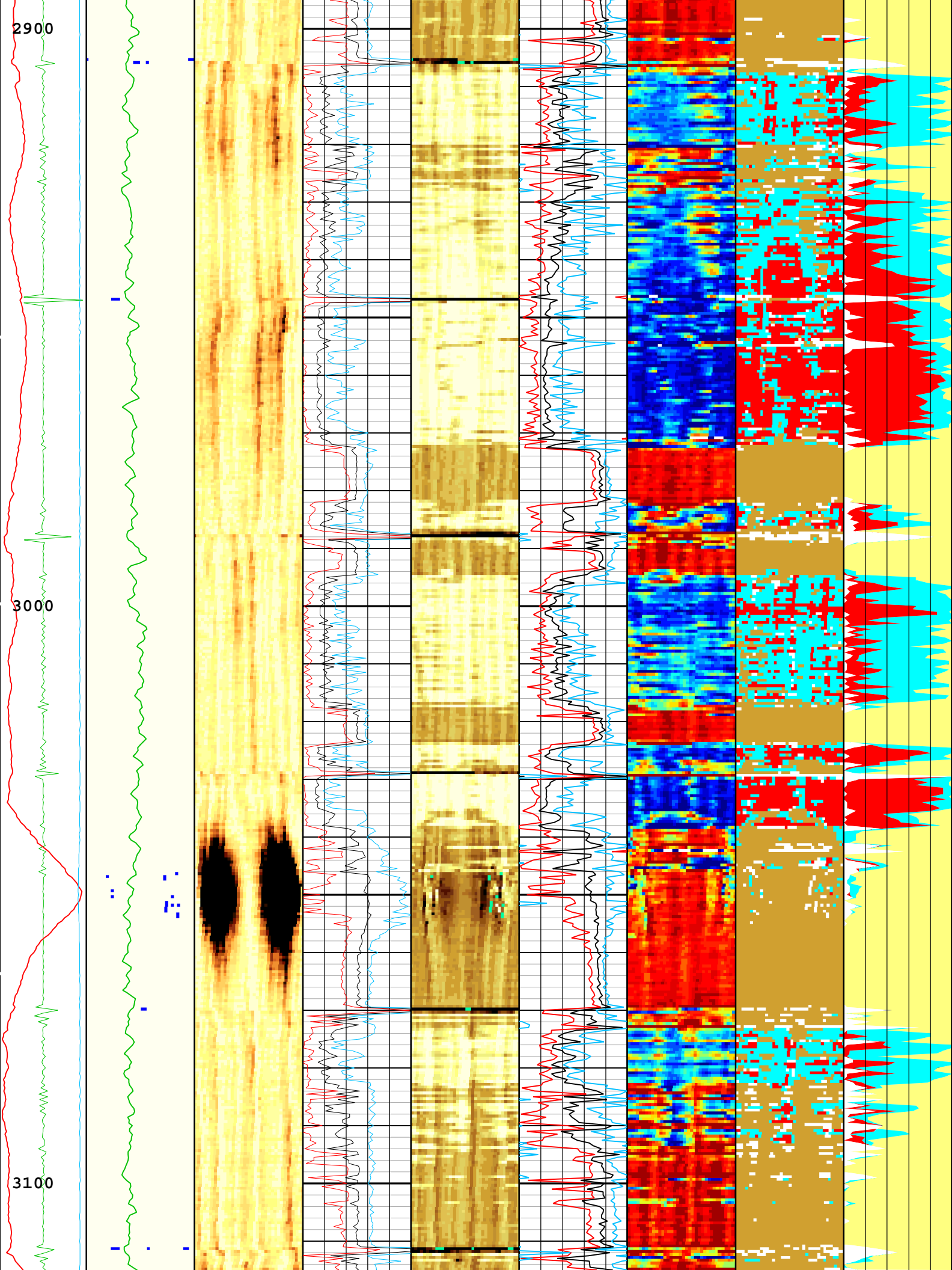


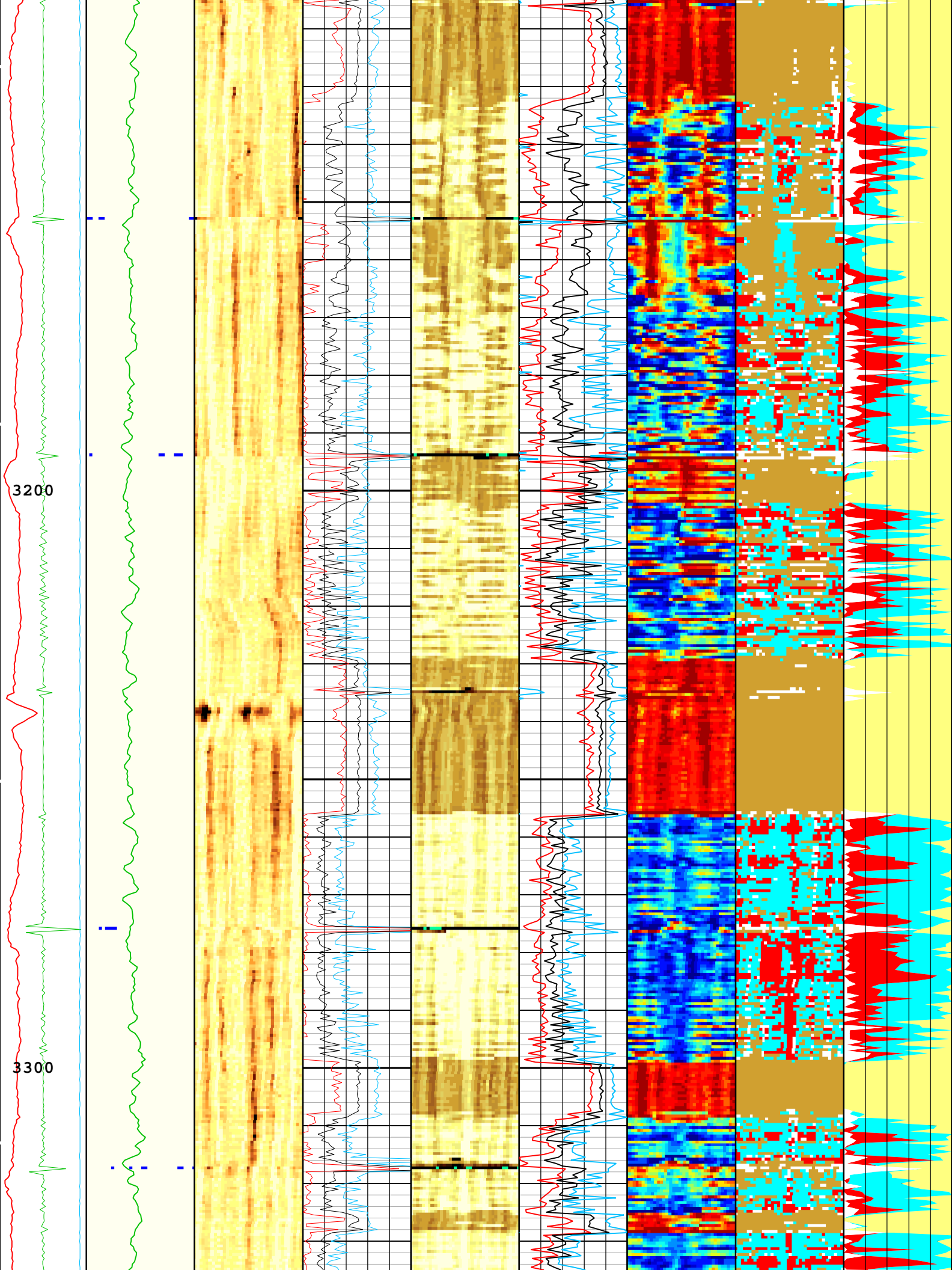




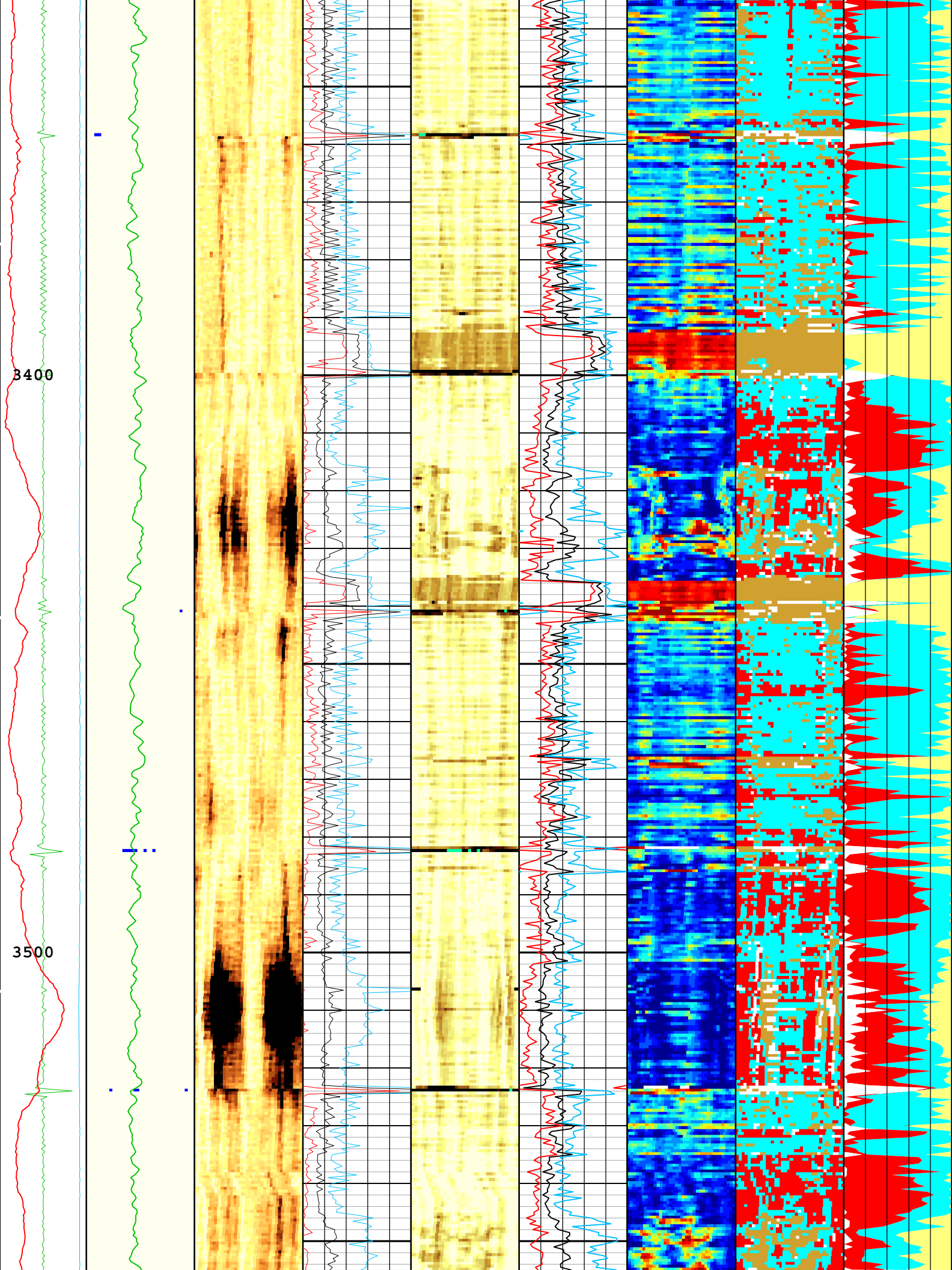


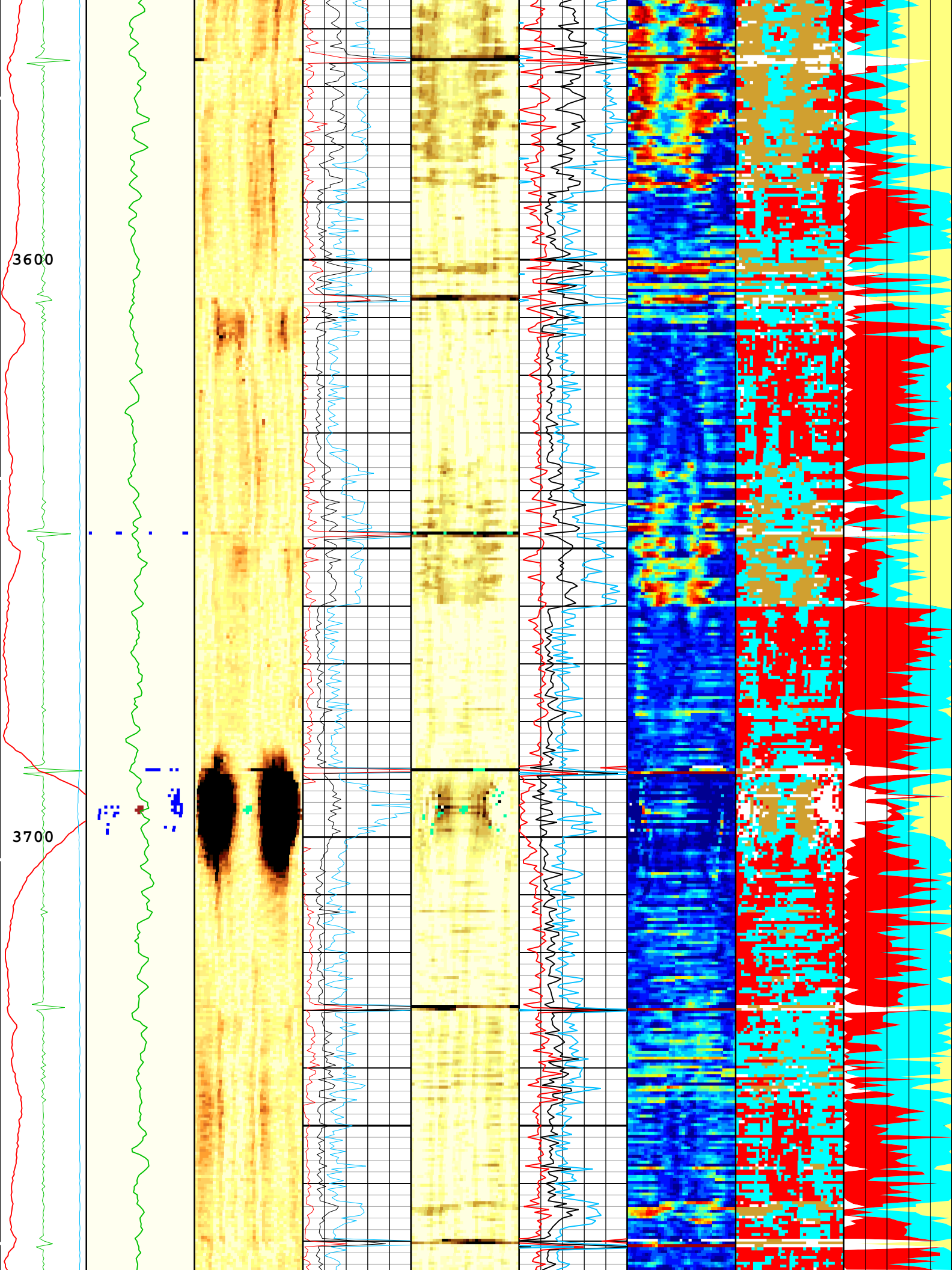


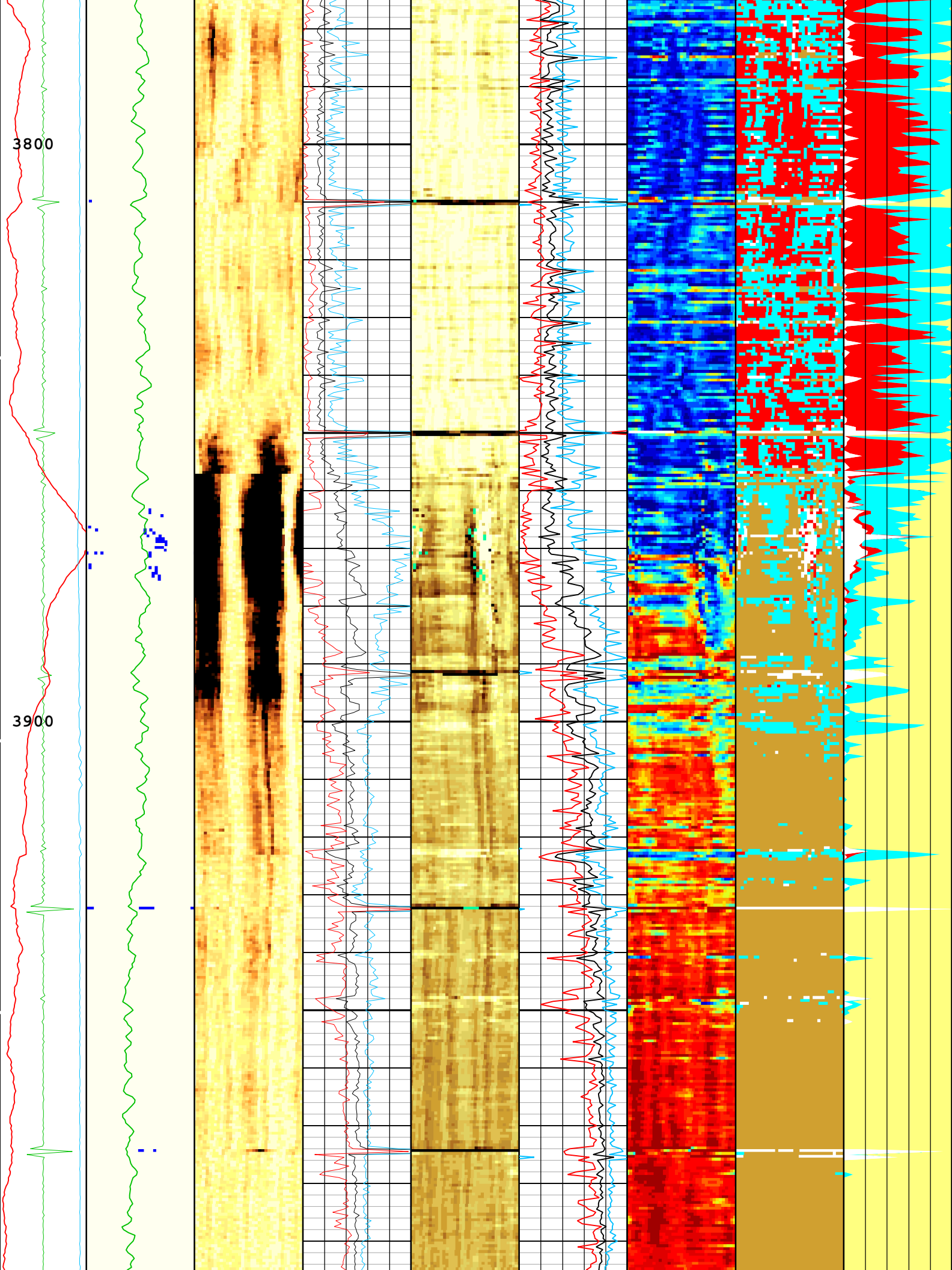


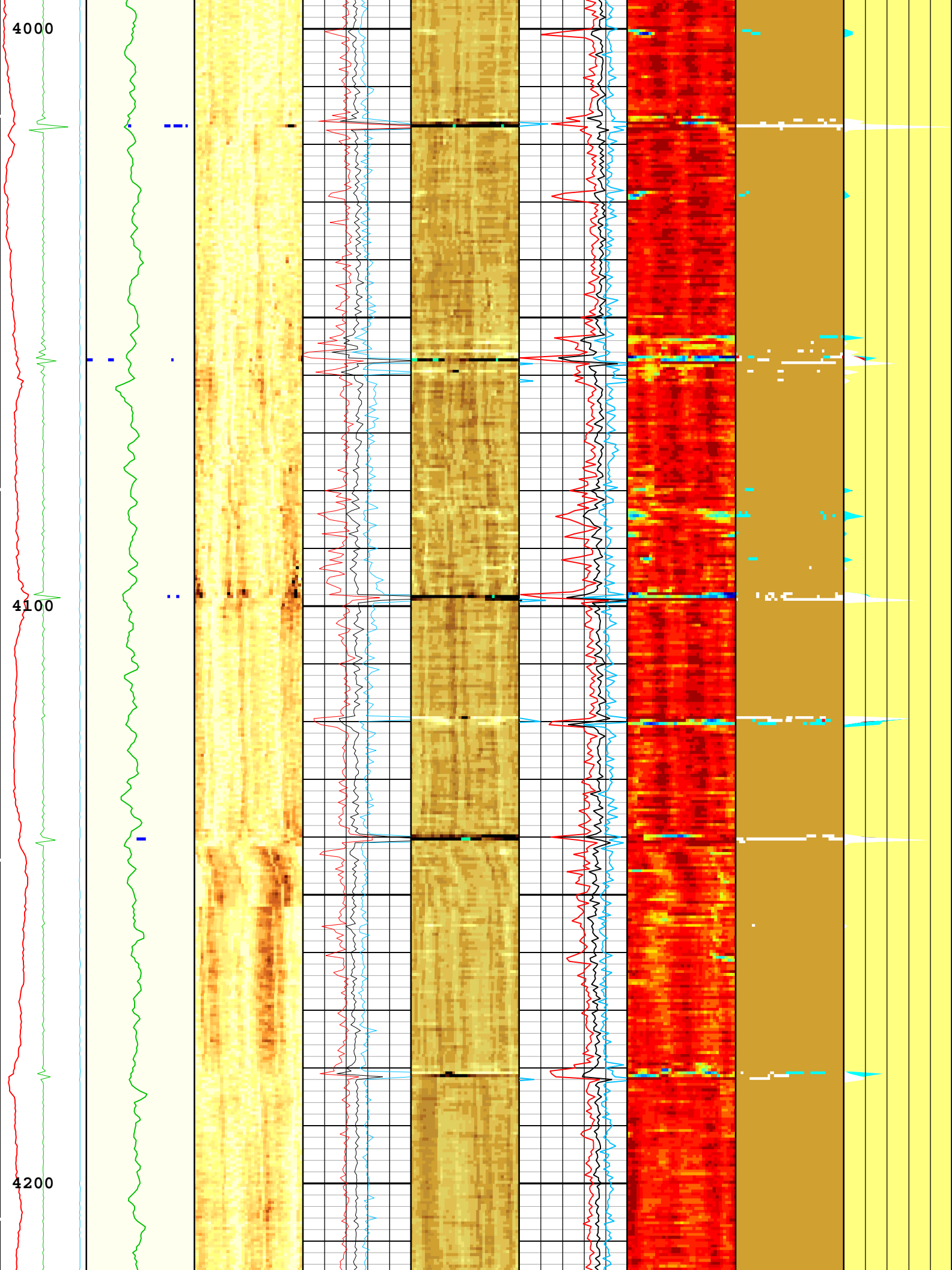




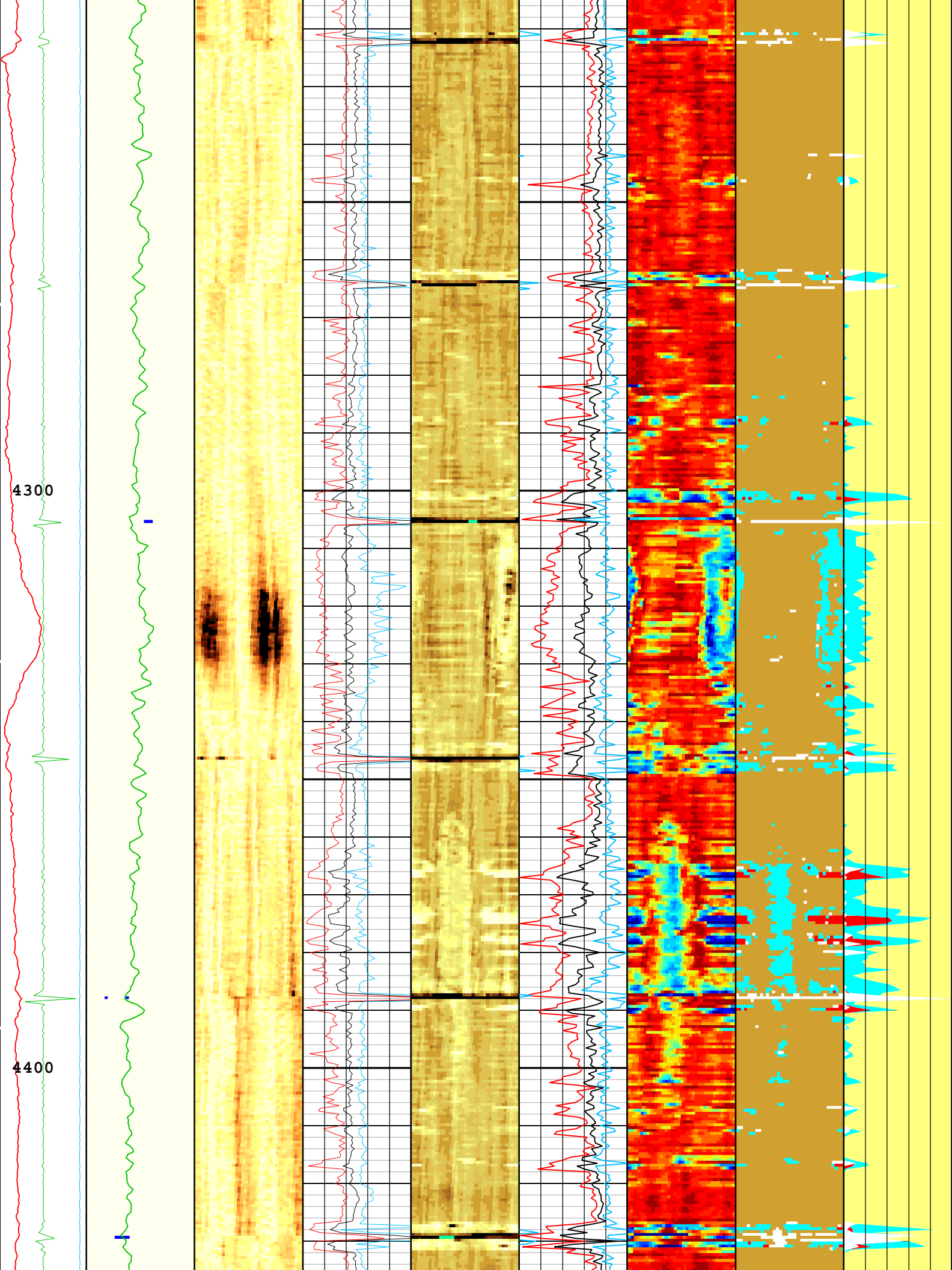


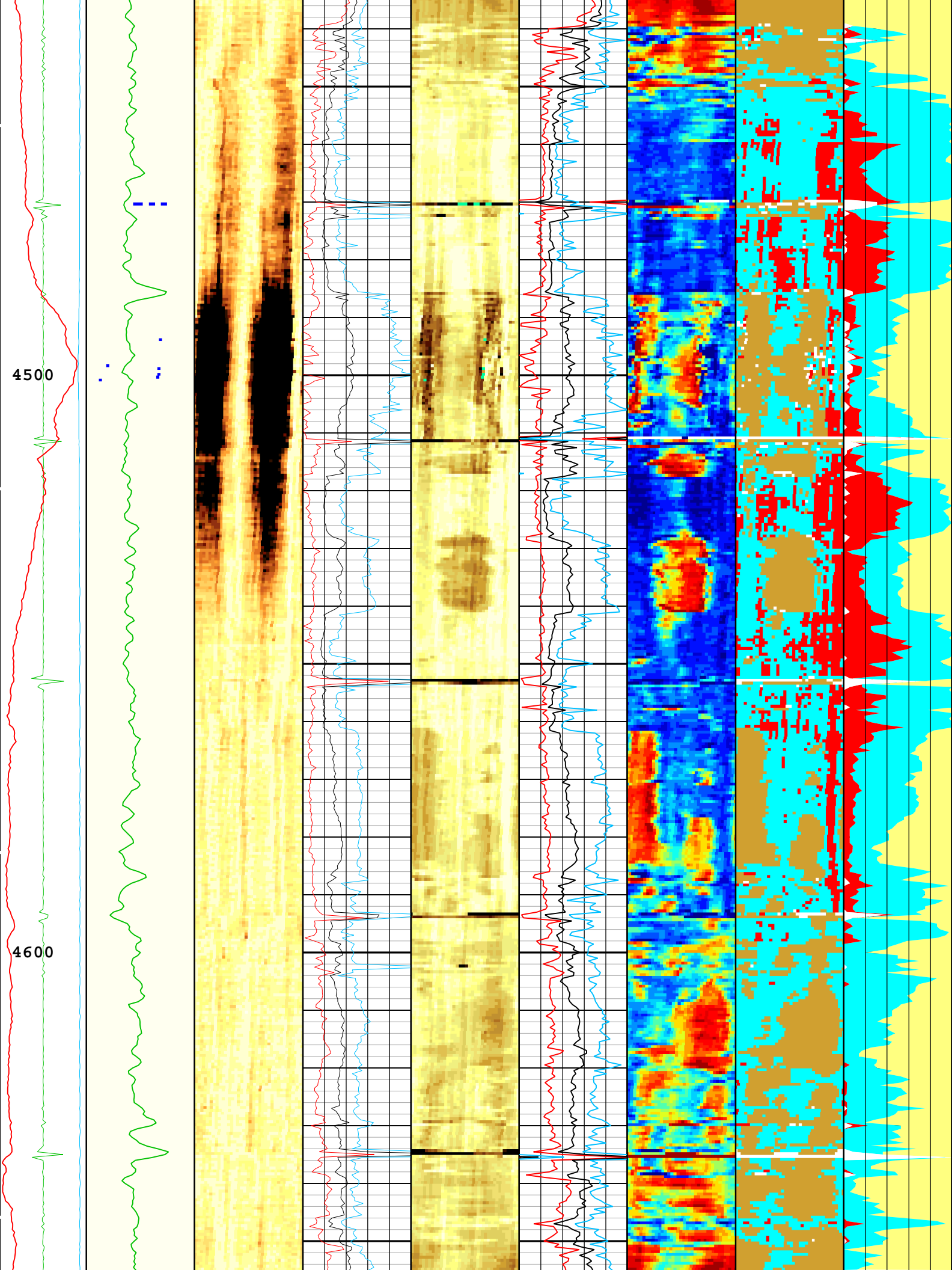


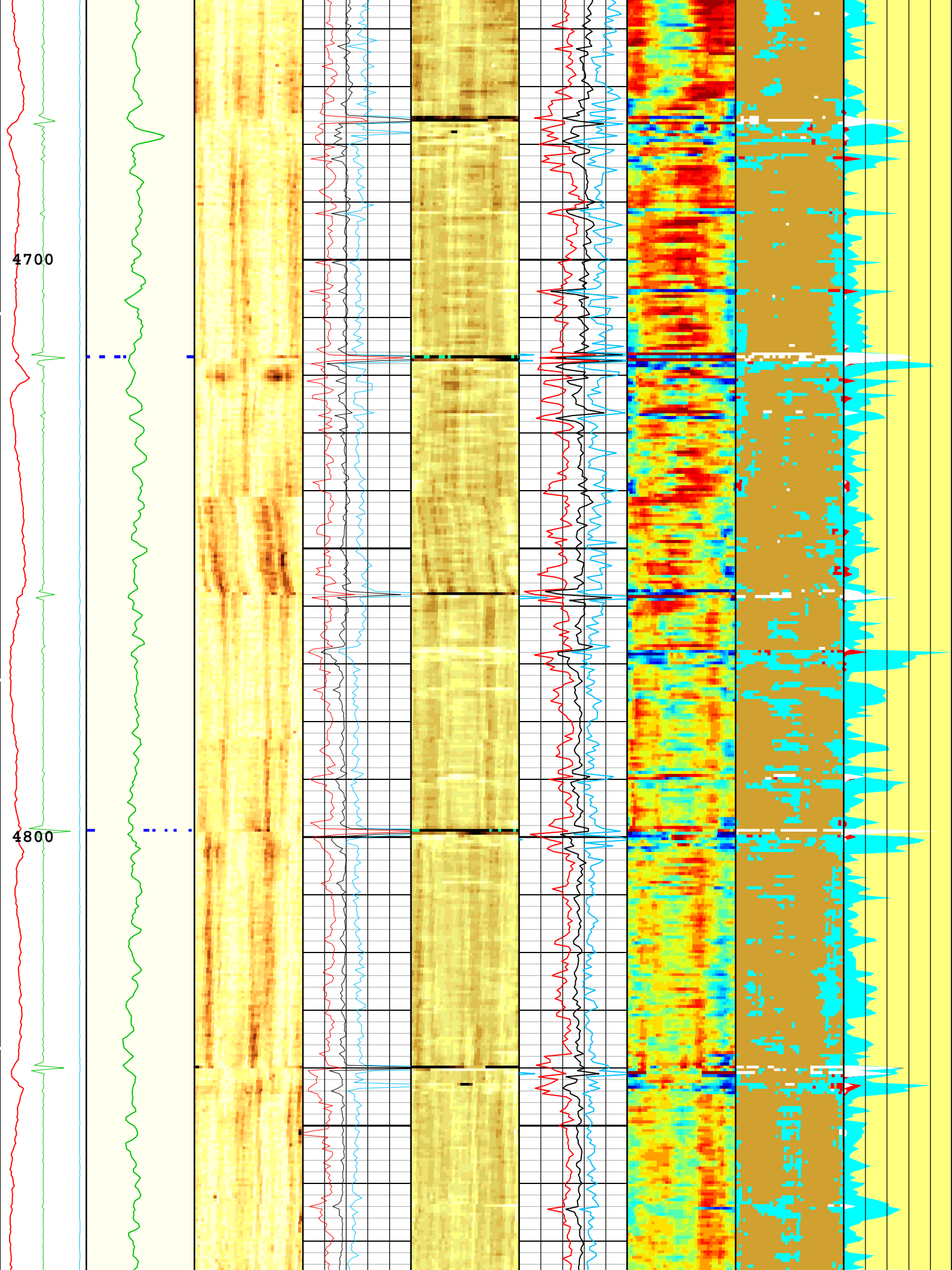


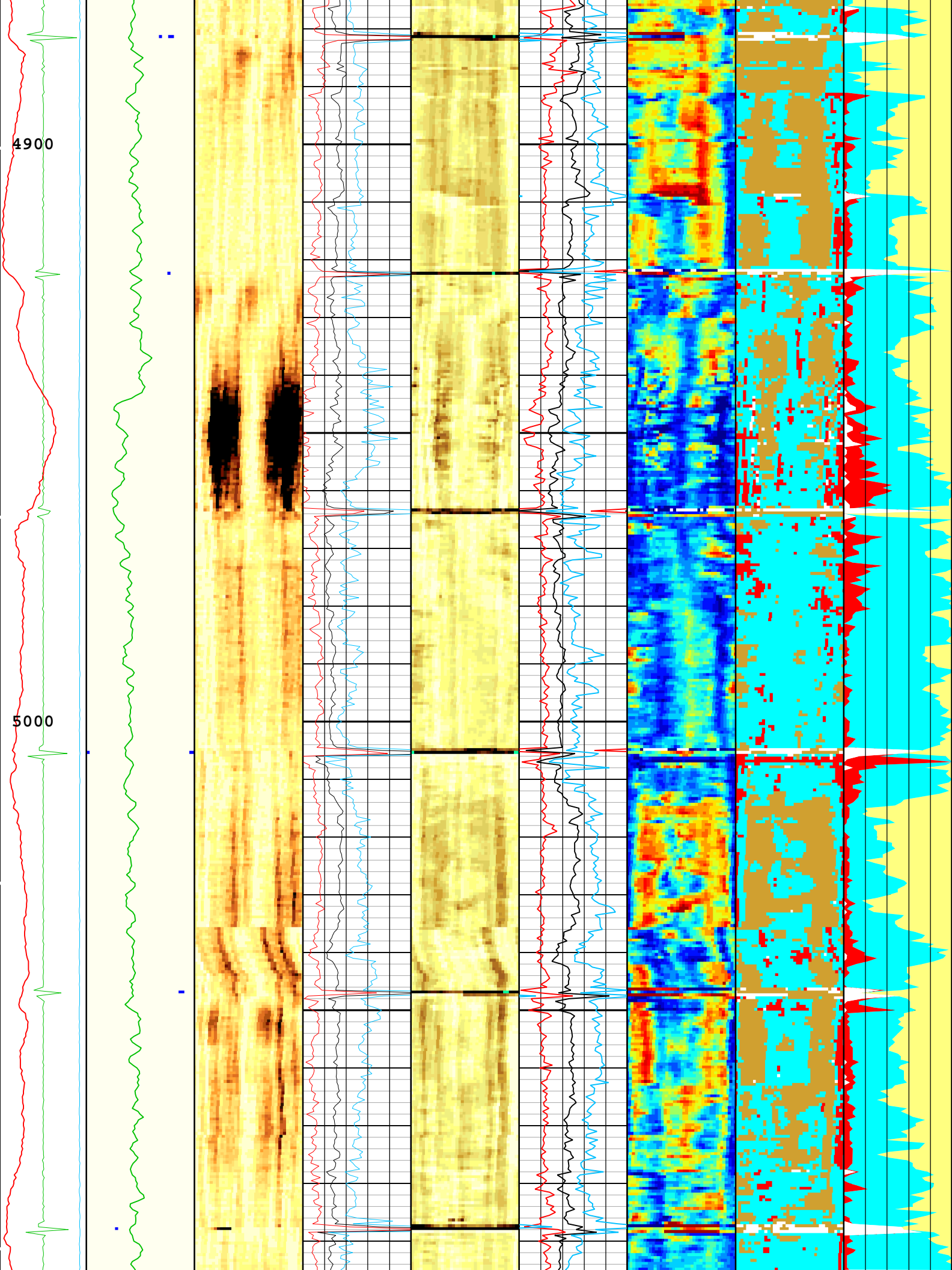


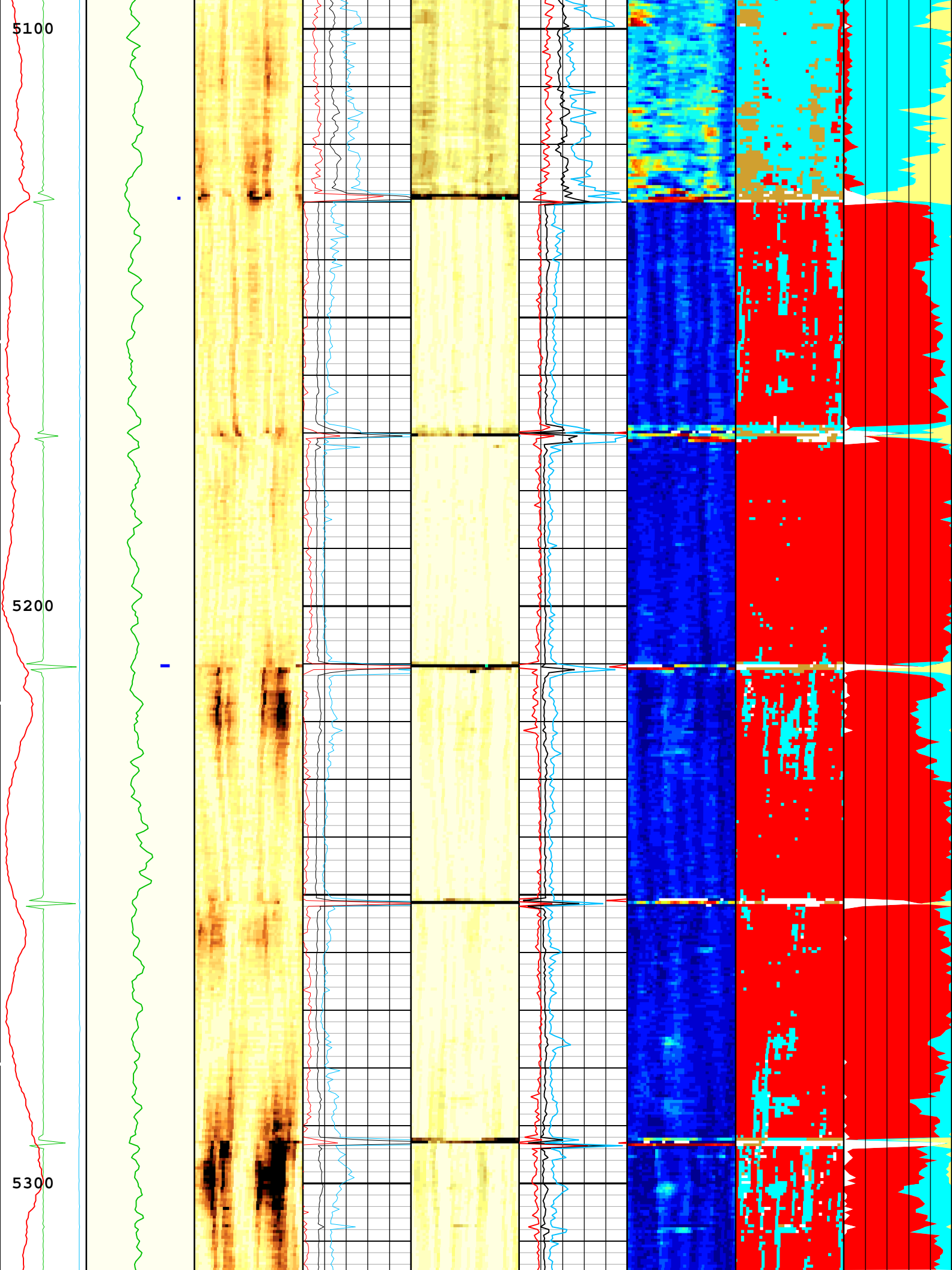




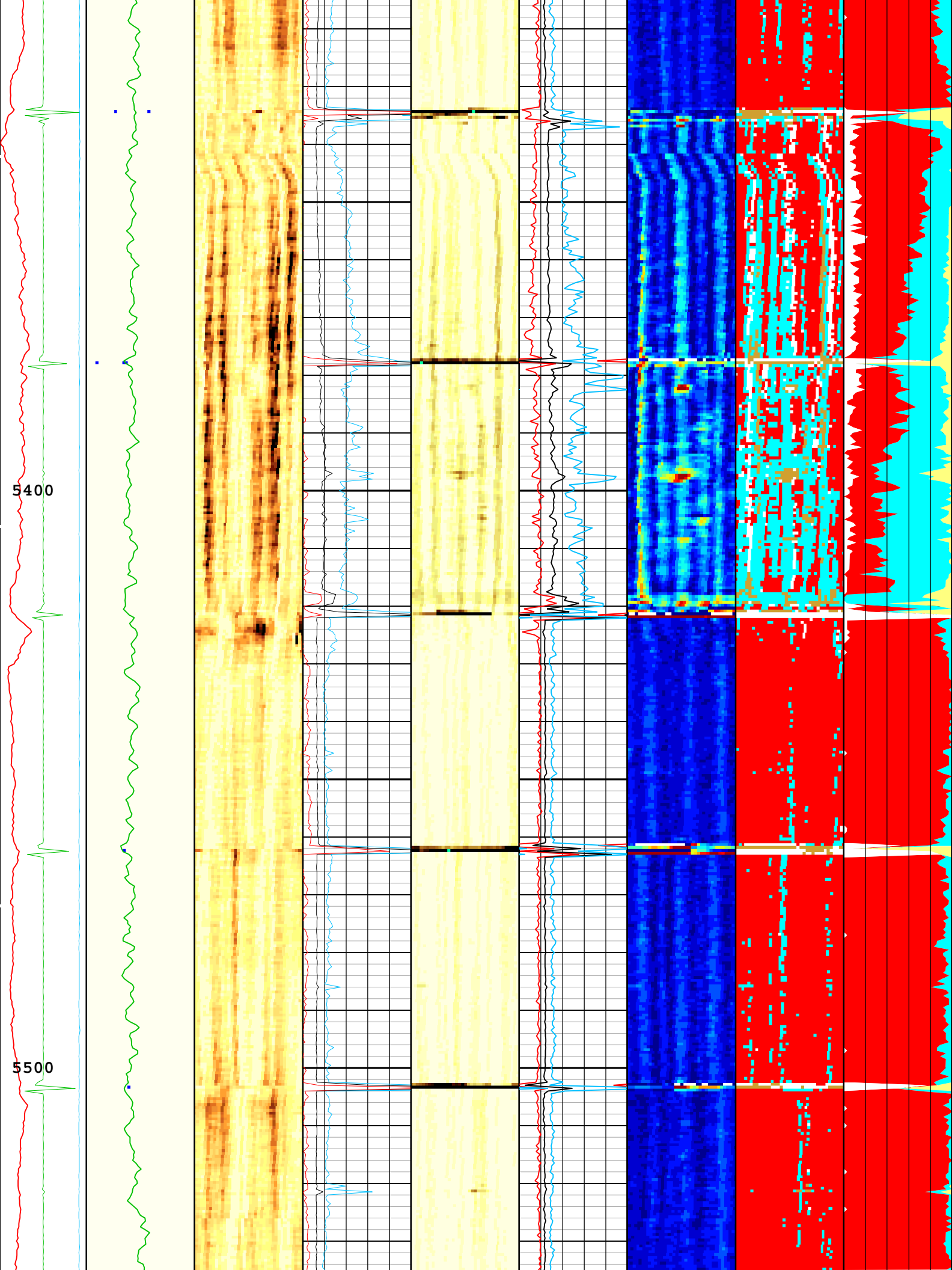


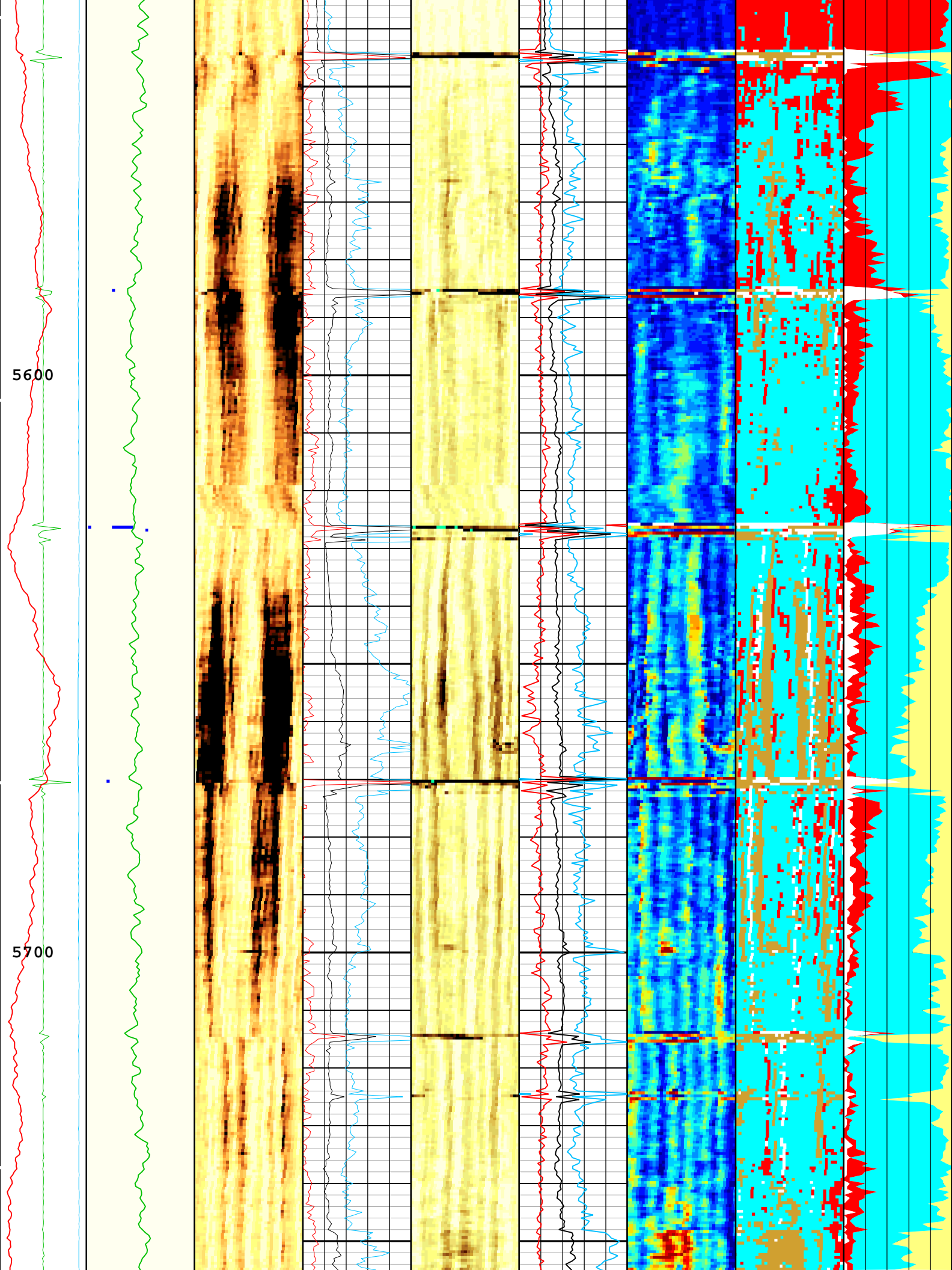


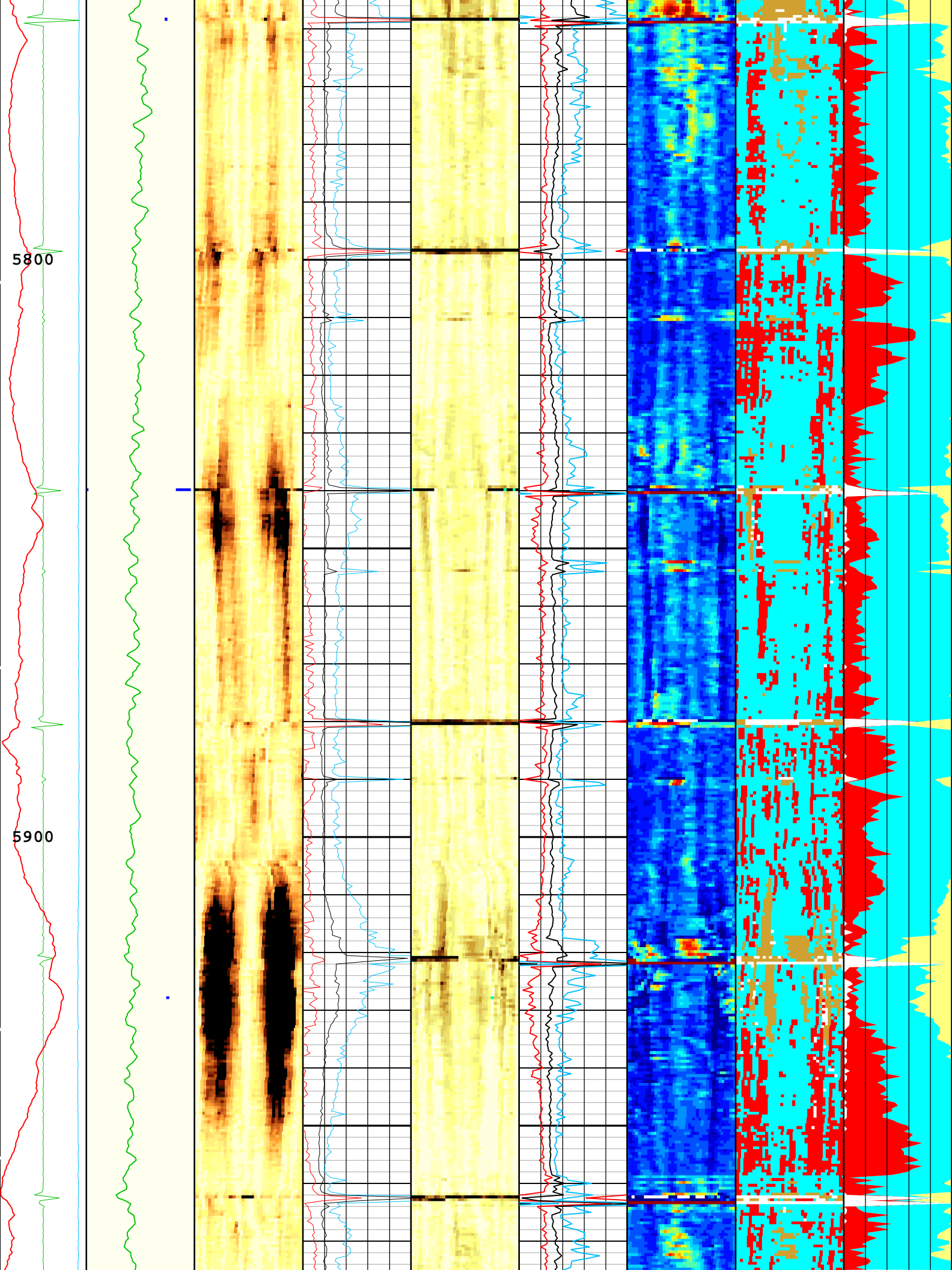




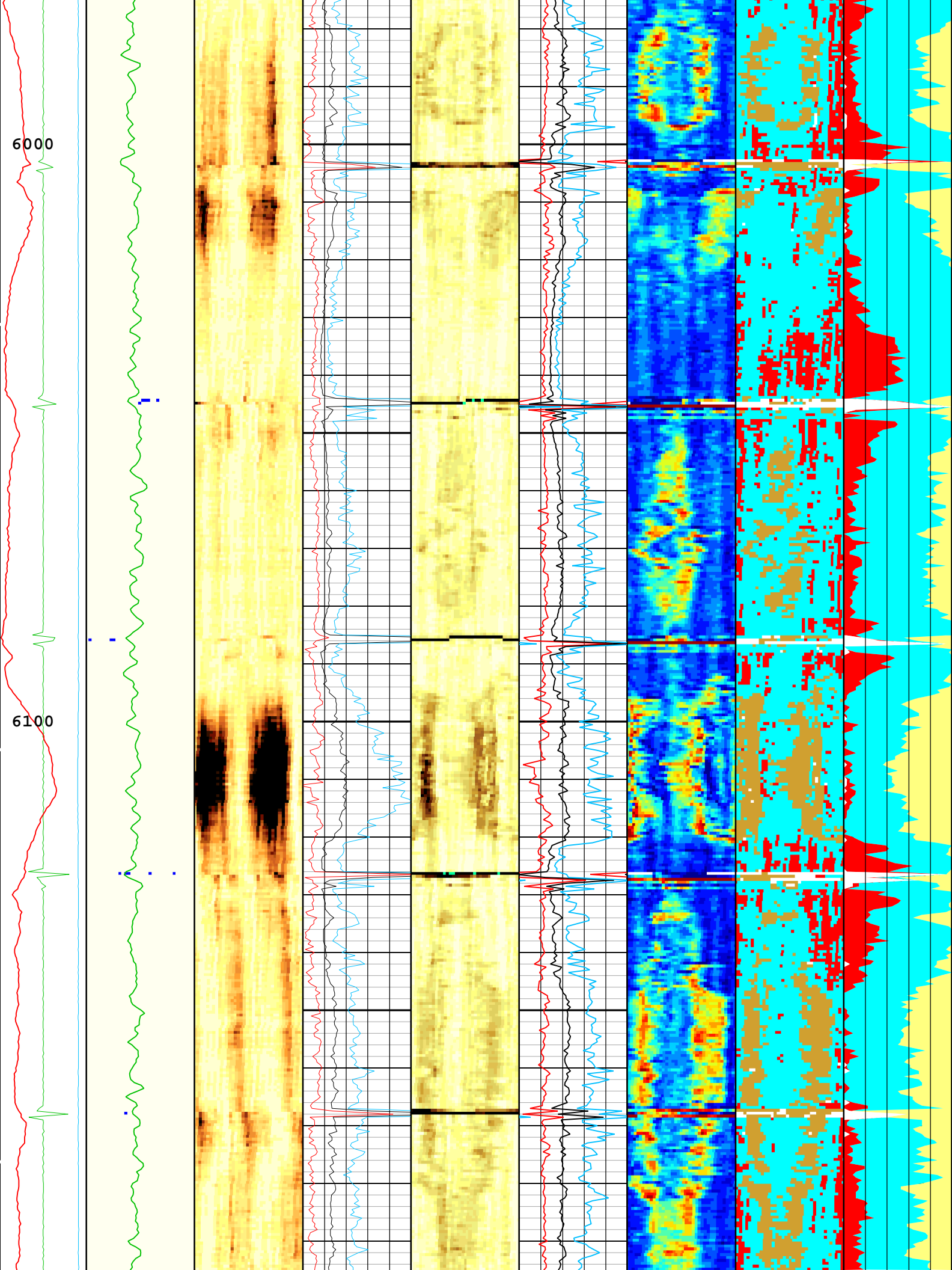


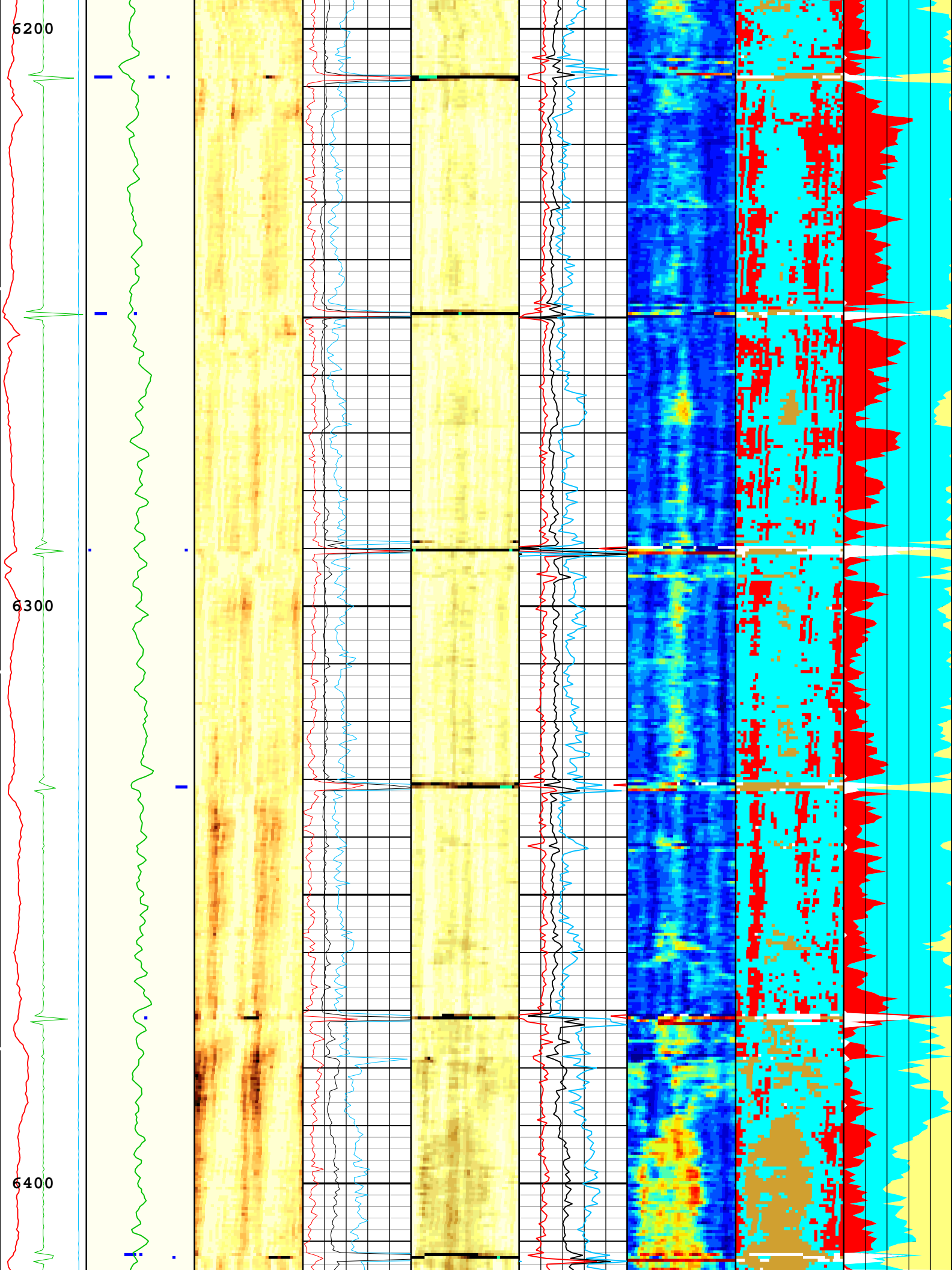


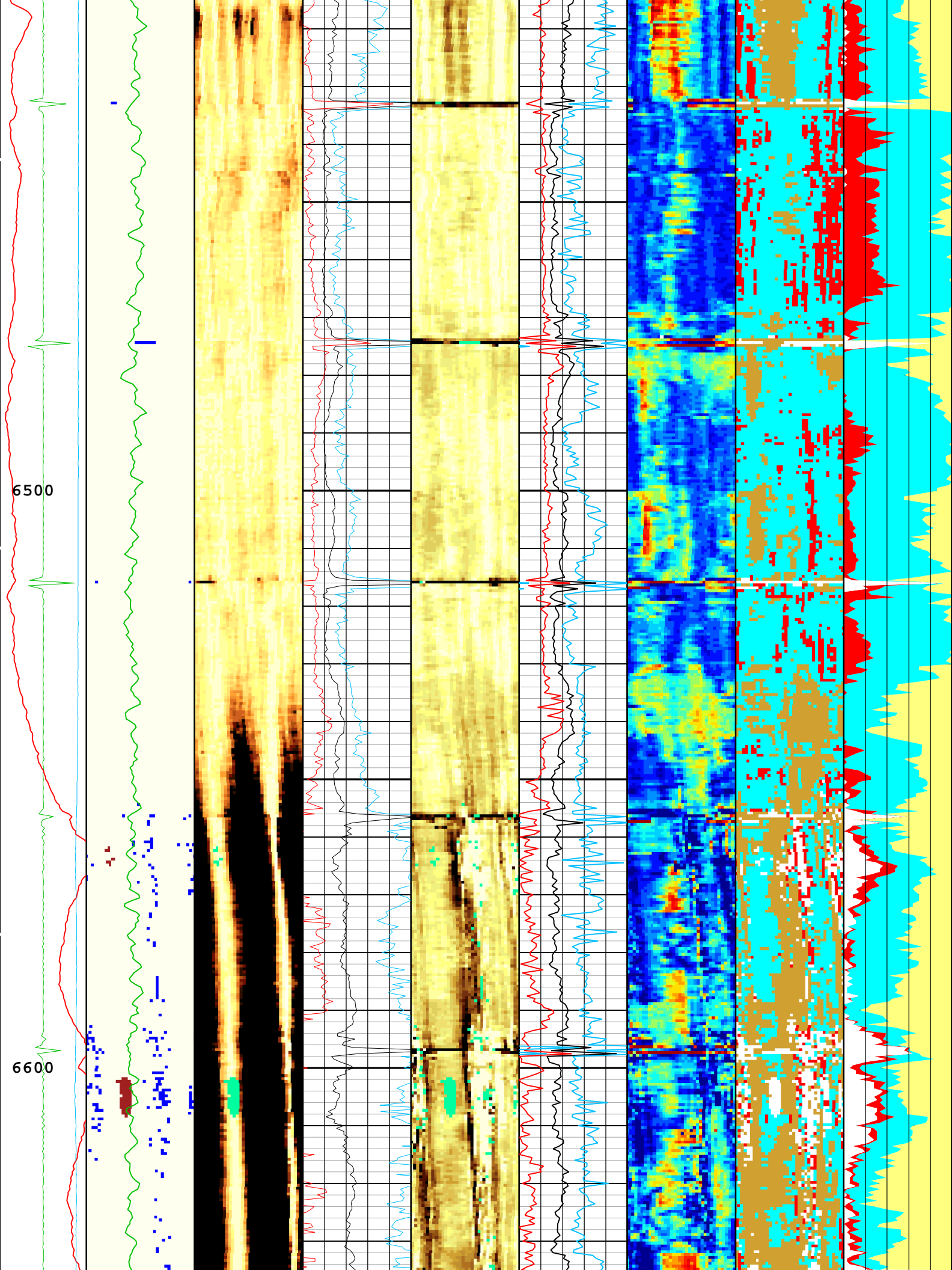


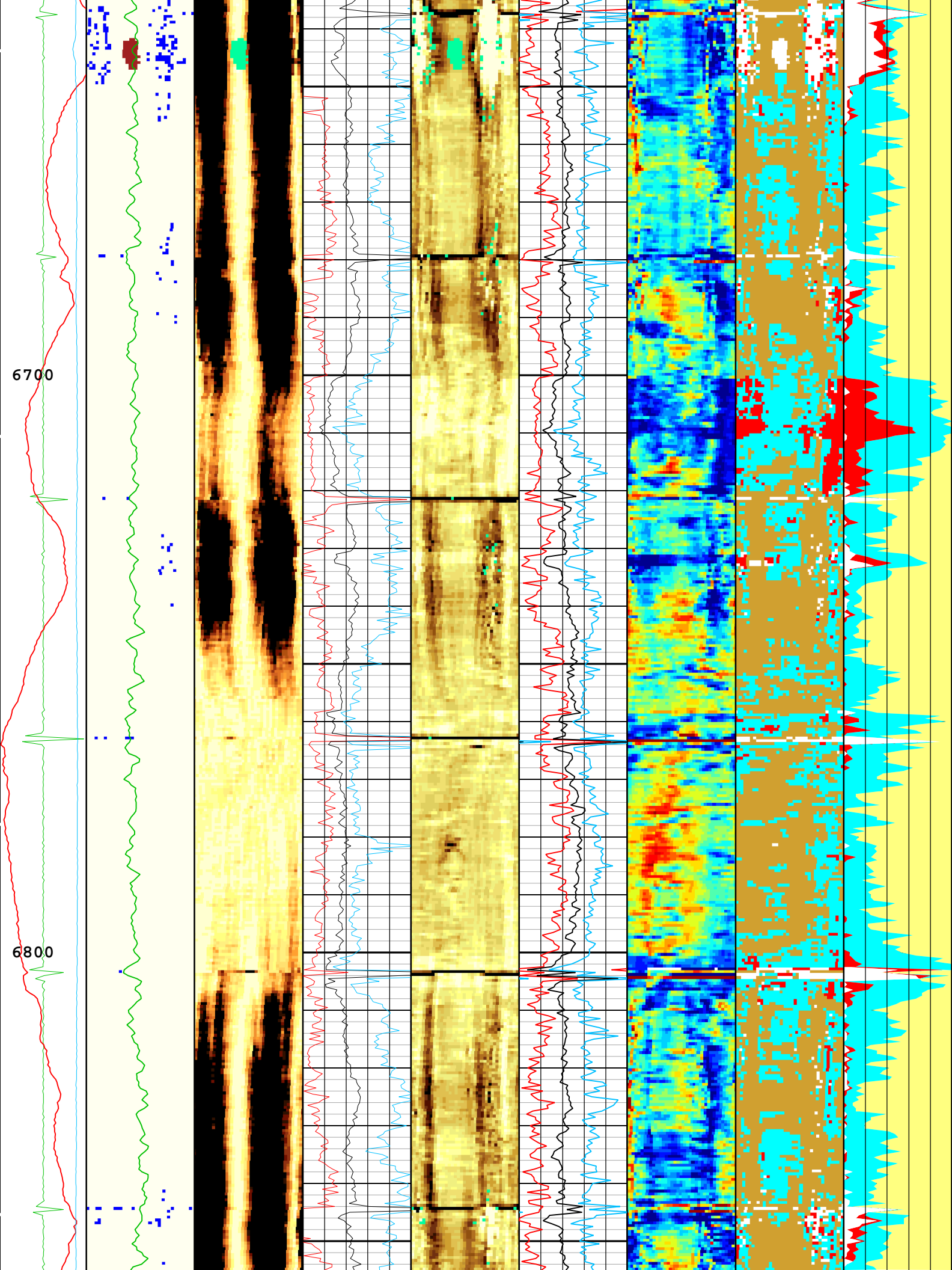
















Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	12135	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	-53.04	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
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	1.2	
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
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	
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	1.78	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	50	2339
BS	8.5	2339	6970

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	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	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	
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	Time Zoned	us

## Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	95	22-May-2019 15:12:57	22-May-2019 15:35:59	6975.36	5472.71
EMXV	85	22-May-2019 15:35:59	22-May-2019 15:38:18	5472.71	5322.62
EMXV	70	22-May-2019 15:38:18	22-May-2019 15:40:35	5322.62	5179.59
EMXV	65	22-May-2019 15:40:35	22-May-2019 15:40:49	5179.59	5165.44
EMXV	70	22-May-2019 15:40:49	22-May-2019 15:41:57	5165.44	5093.77
EMXV	75	22-May-2019 15:41:57	22-May-2019 15:47:09	5093.77	4762.68
EMXV	80	22-May-2019 15:47:09	22-May-2019 15:47:37	4762.68	4732.79
EMXV	85	22-May-2019 15:47:37	22-May-2019 17:02:45	4732.79	19.99
U-USIT_UFWB	137	22-May-2019 15:12:57	22-May-2019 15:28:09	6975.36	5943.61
U-USIT_UFWB	131.64	22-May-2019 15:28:09	22-May-2019 15:28:14	5943.61	5936.28
U-USIT_UFWB	123.96	22-May-2019 15:28:14	22-May-2019 17:02:45	5936.28	19.99
WINE	71.88	22-May-2019 15:12:57	22-May-2019 15:14:10	6975.36	6901.46

All depth are at tool zero.

## IBC SLG Composite

## Pass Summary






All depths are referenced to toolstring zero

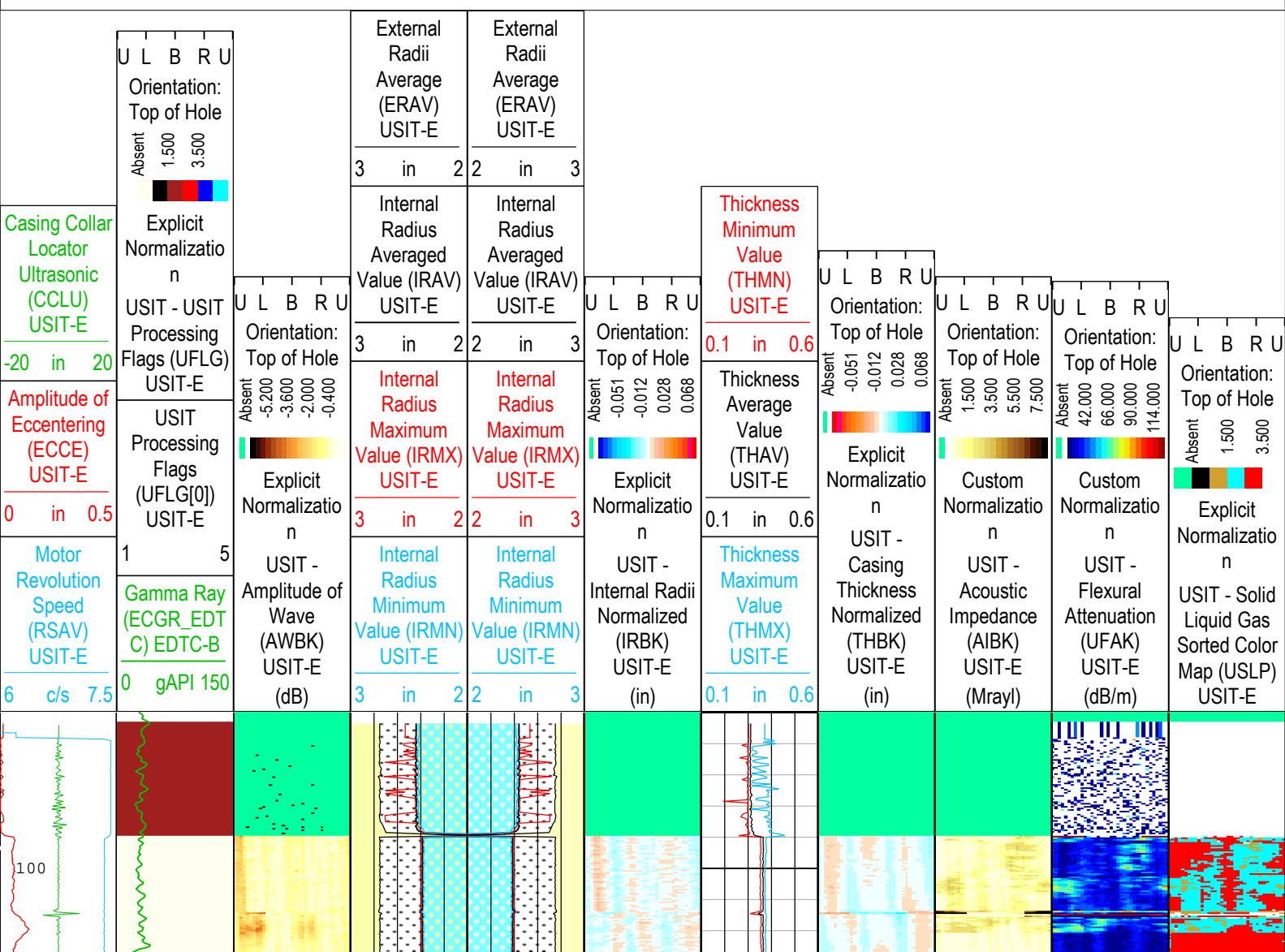
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Creation Date: 23-May-2019 00:42:30

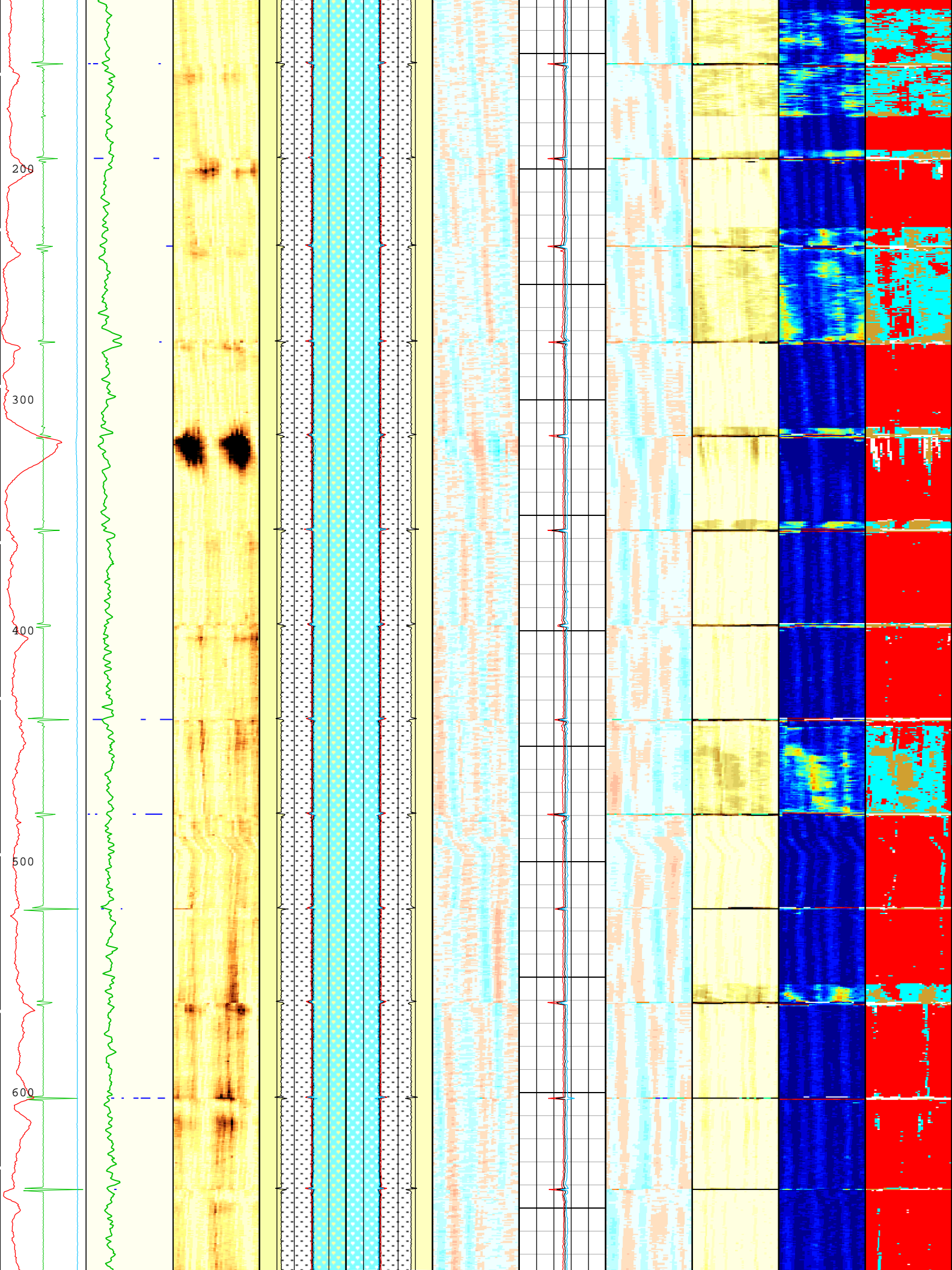
TIME 1900 - Time Marked every 60.00 (s)

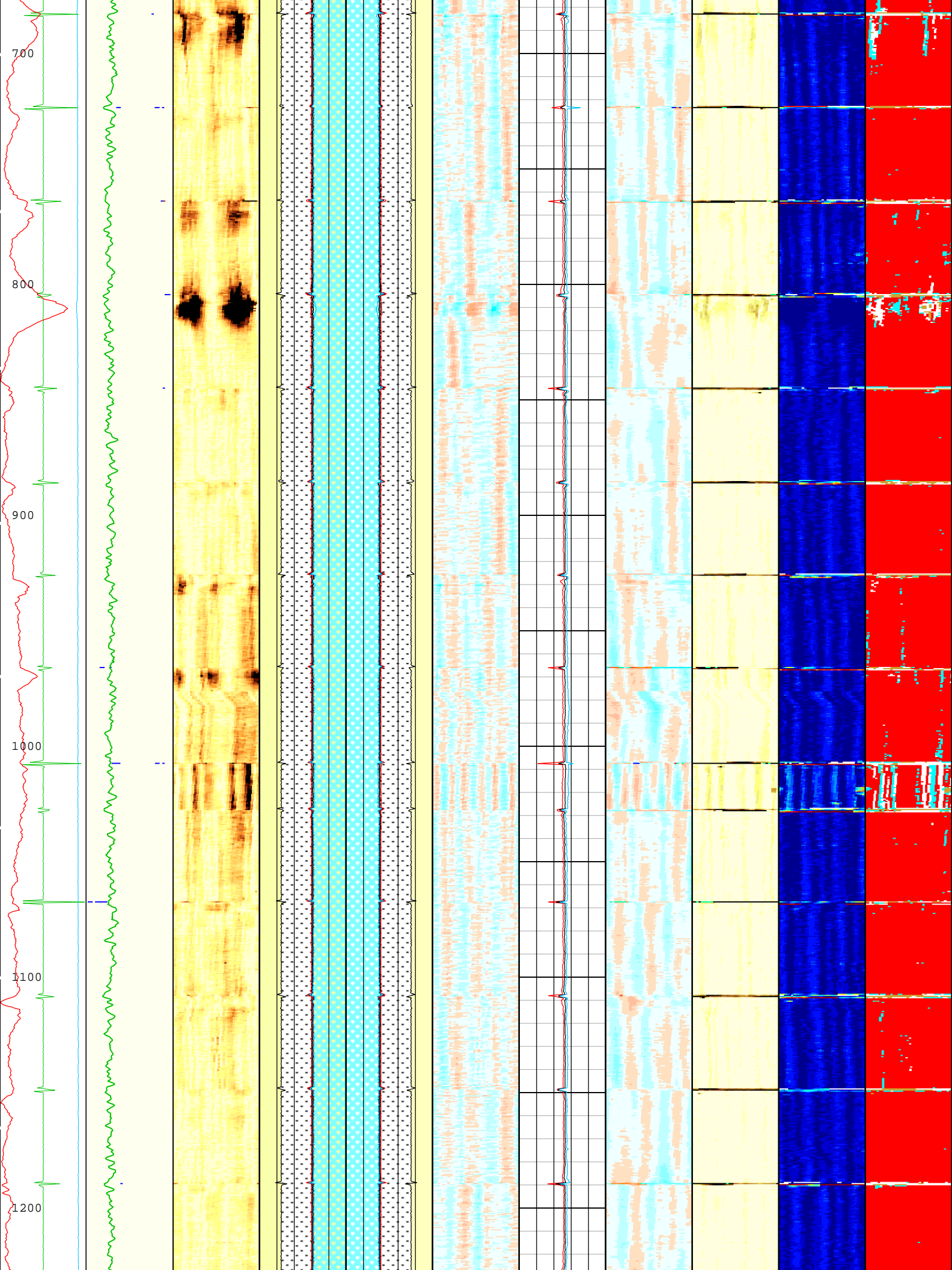
USIT Processing Flags (UFLG[0]) USIT-E

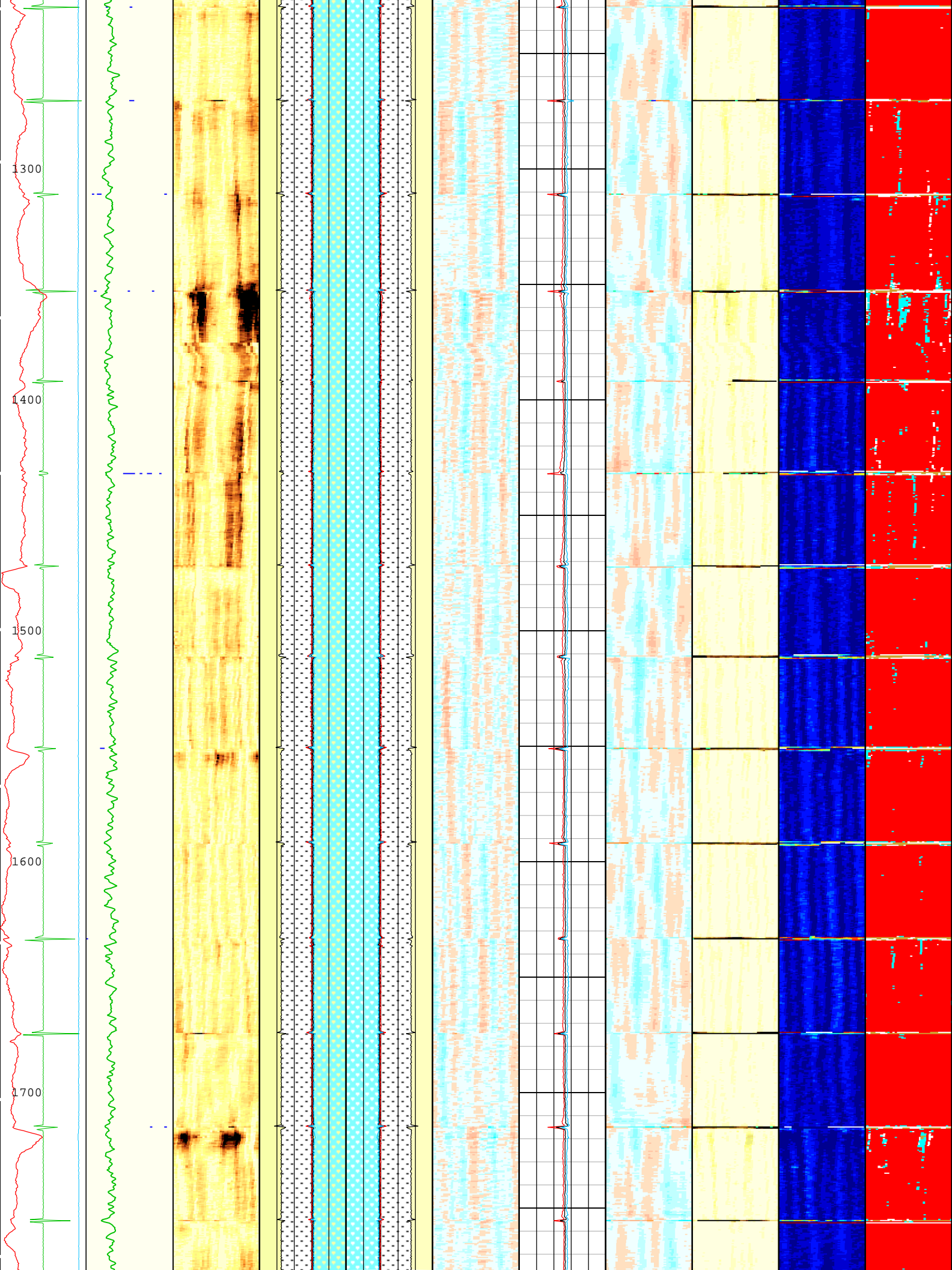
- |   |   |
|---|---|
| 1 - UFLG 1 Value within [0.0 - 1.5] - :               |  UTIM Error                |
| 2 - UFLG 2 Value within [1.5 - 2.5] - :               |  Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - :               |  WINLEN Error              |
| 4 - UFLG 4 UFLG 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     |



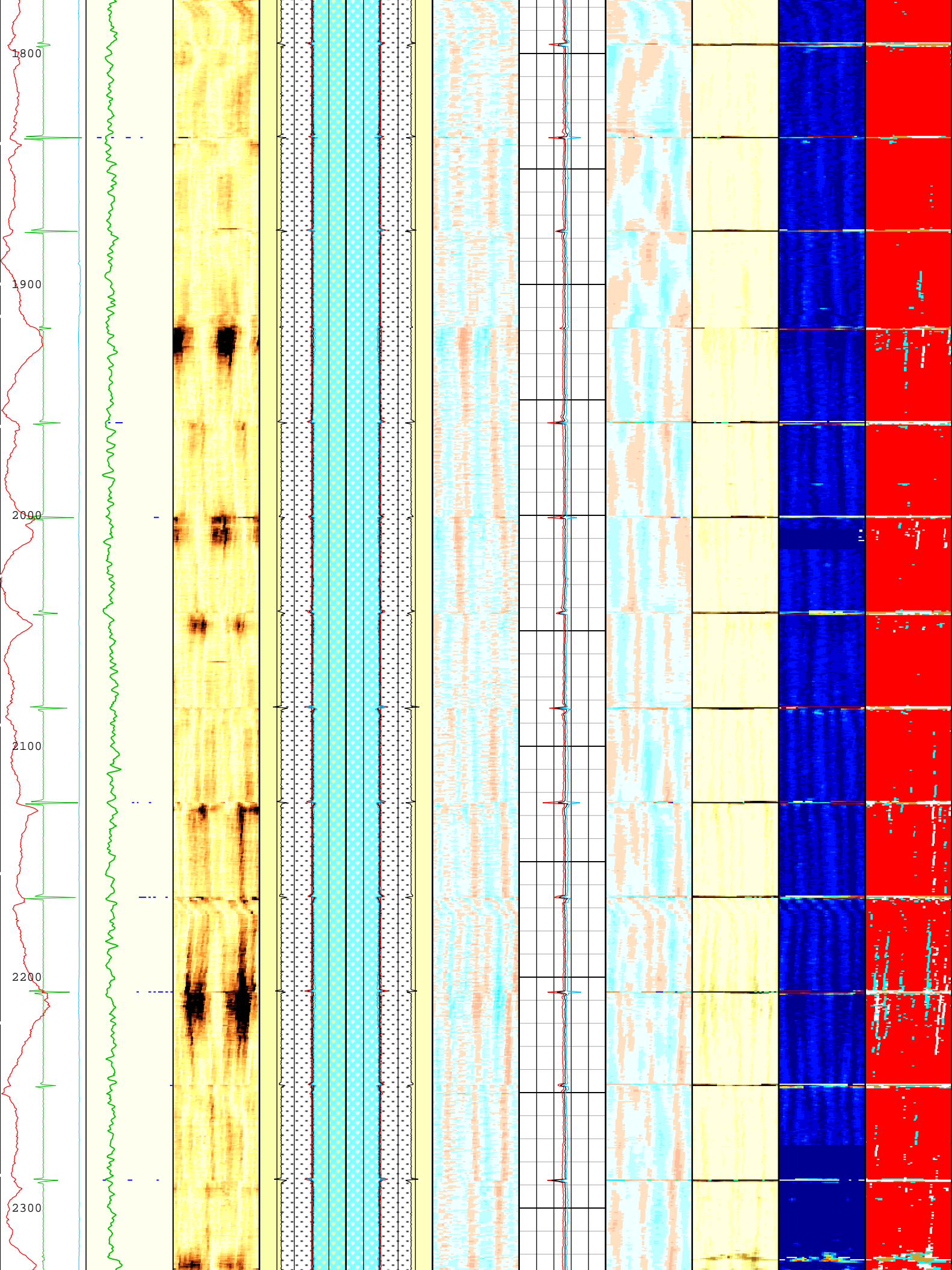


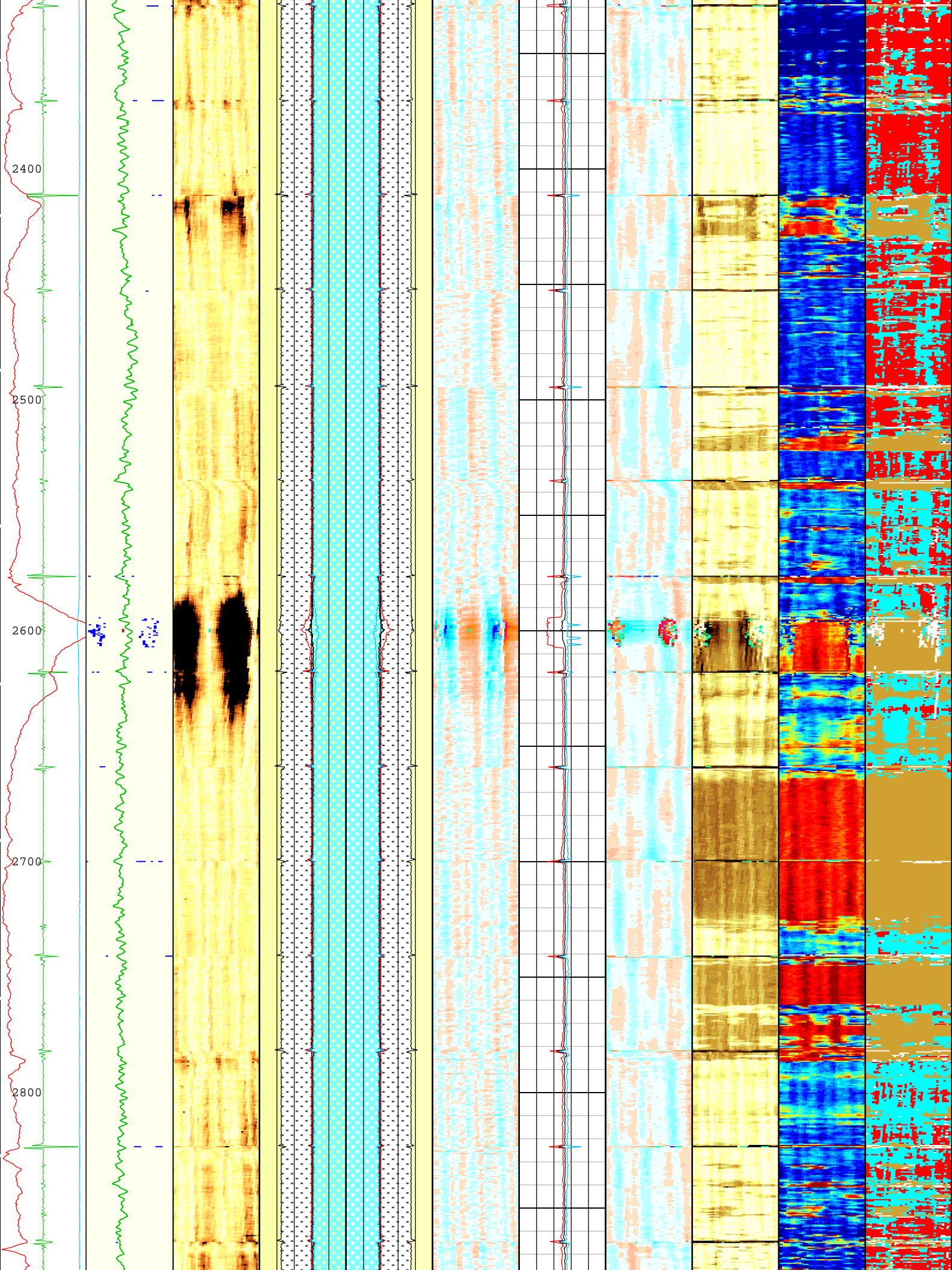




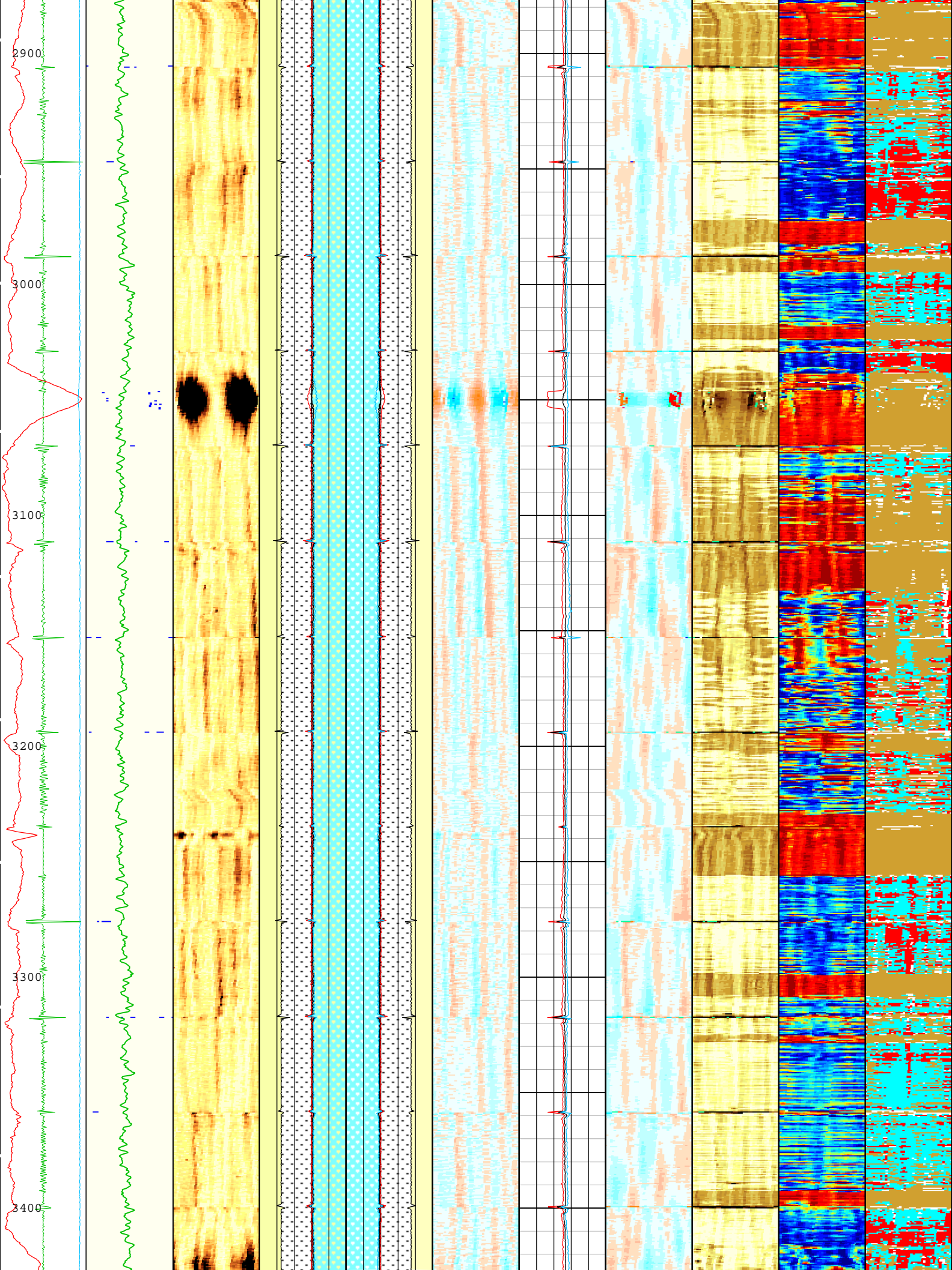




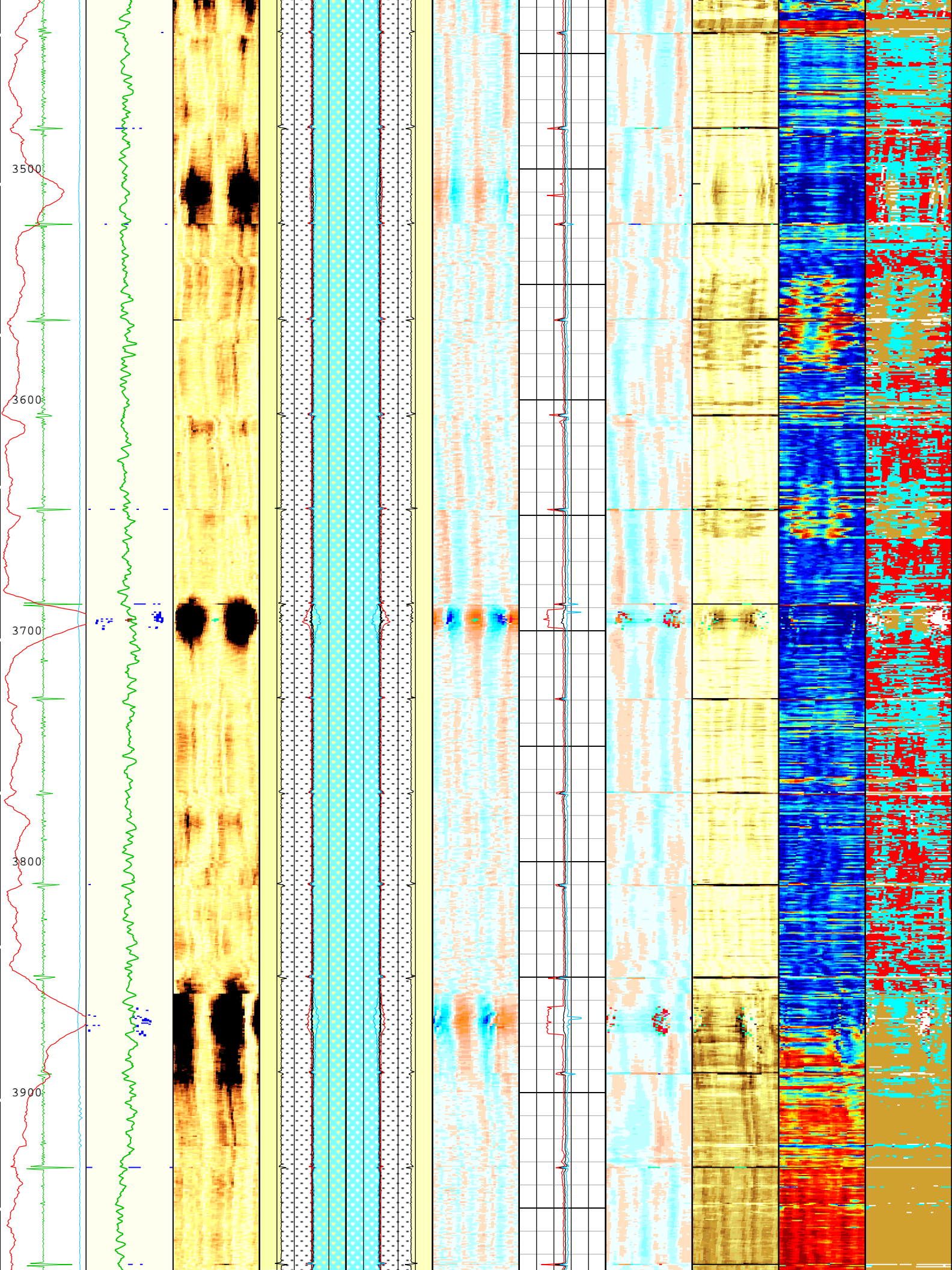


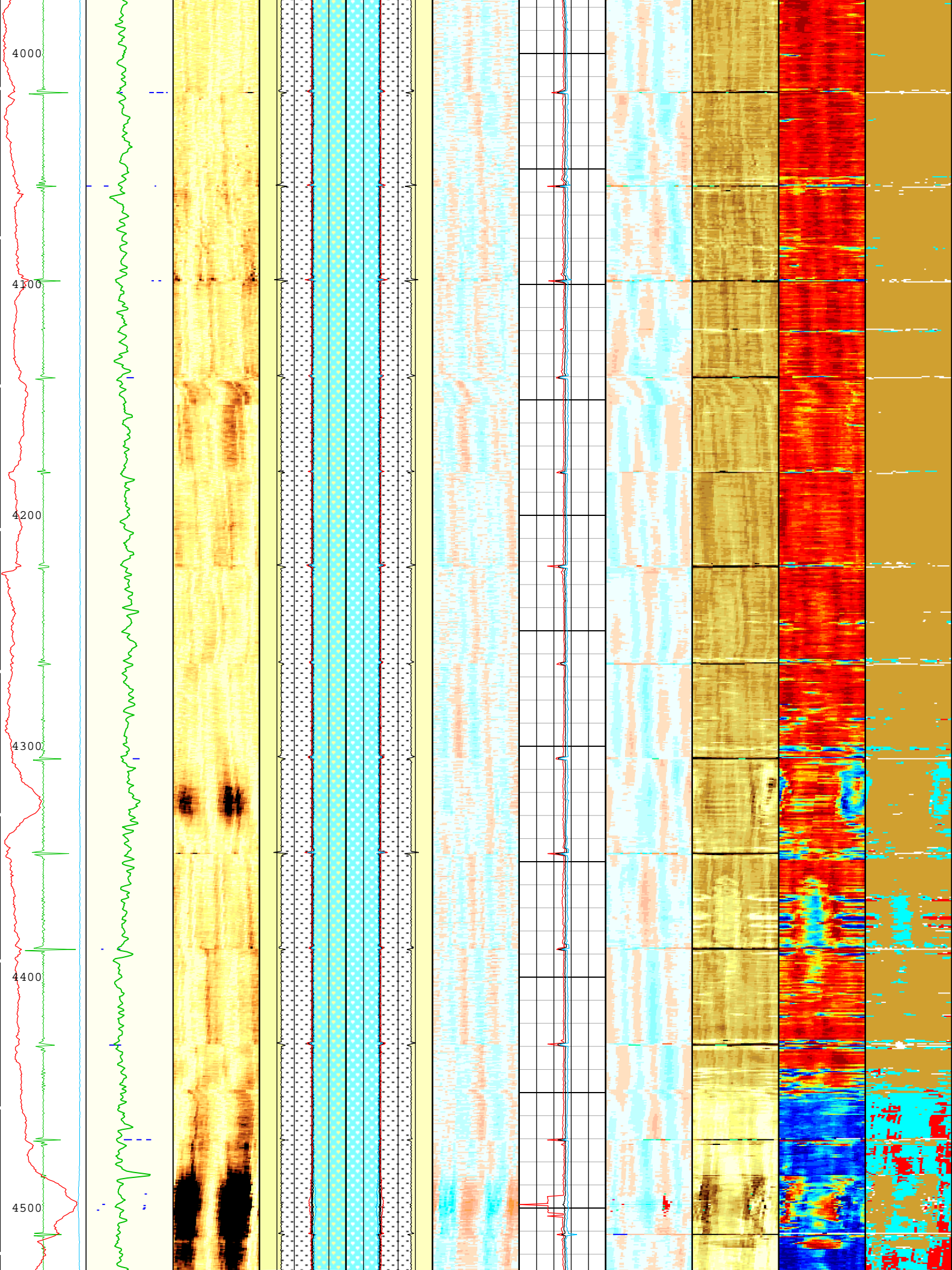




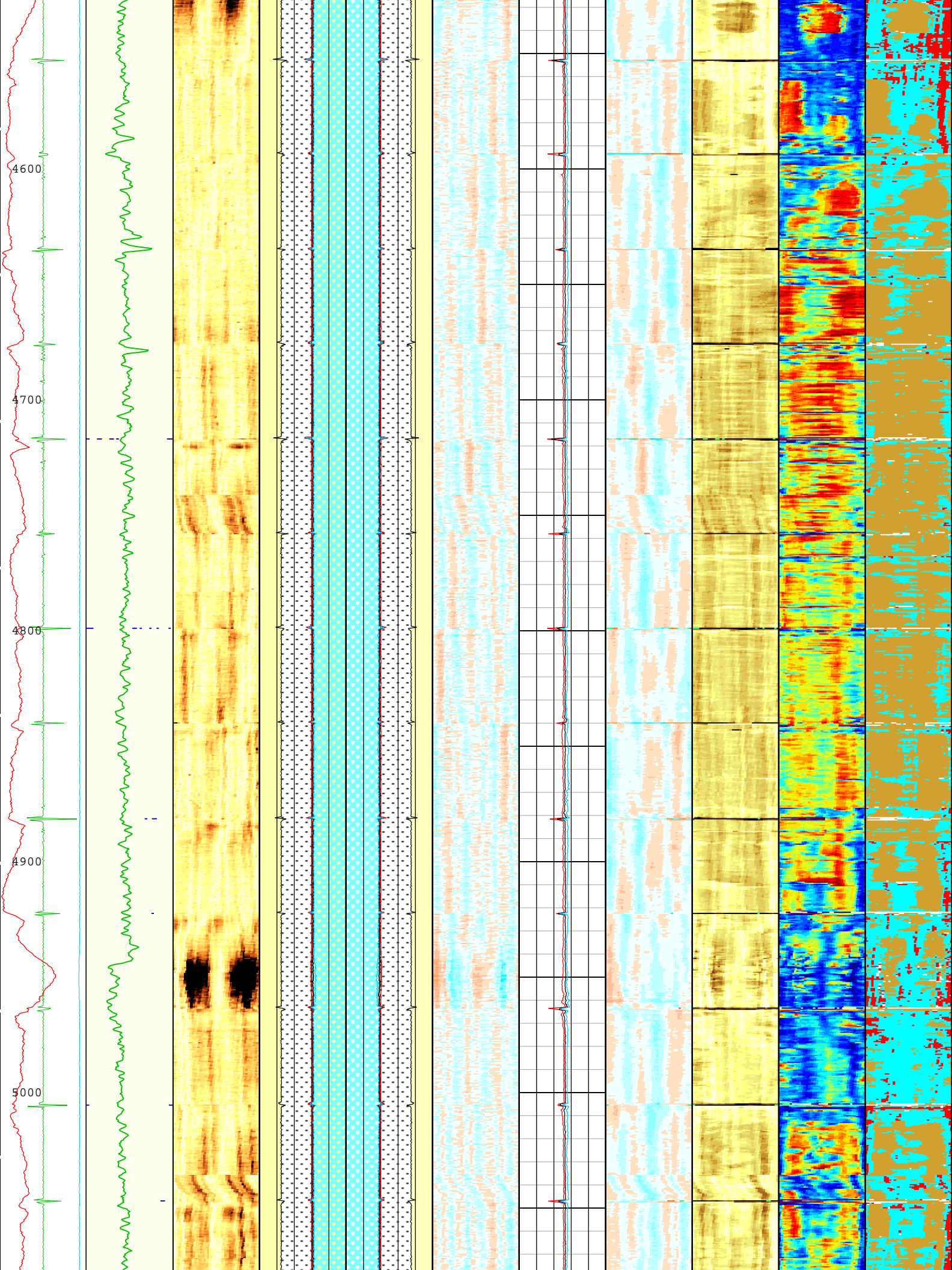


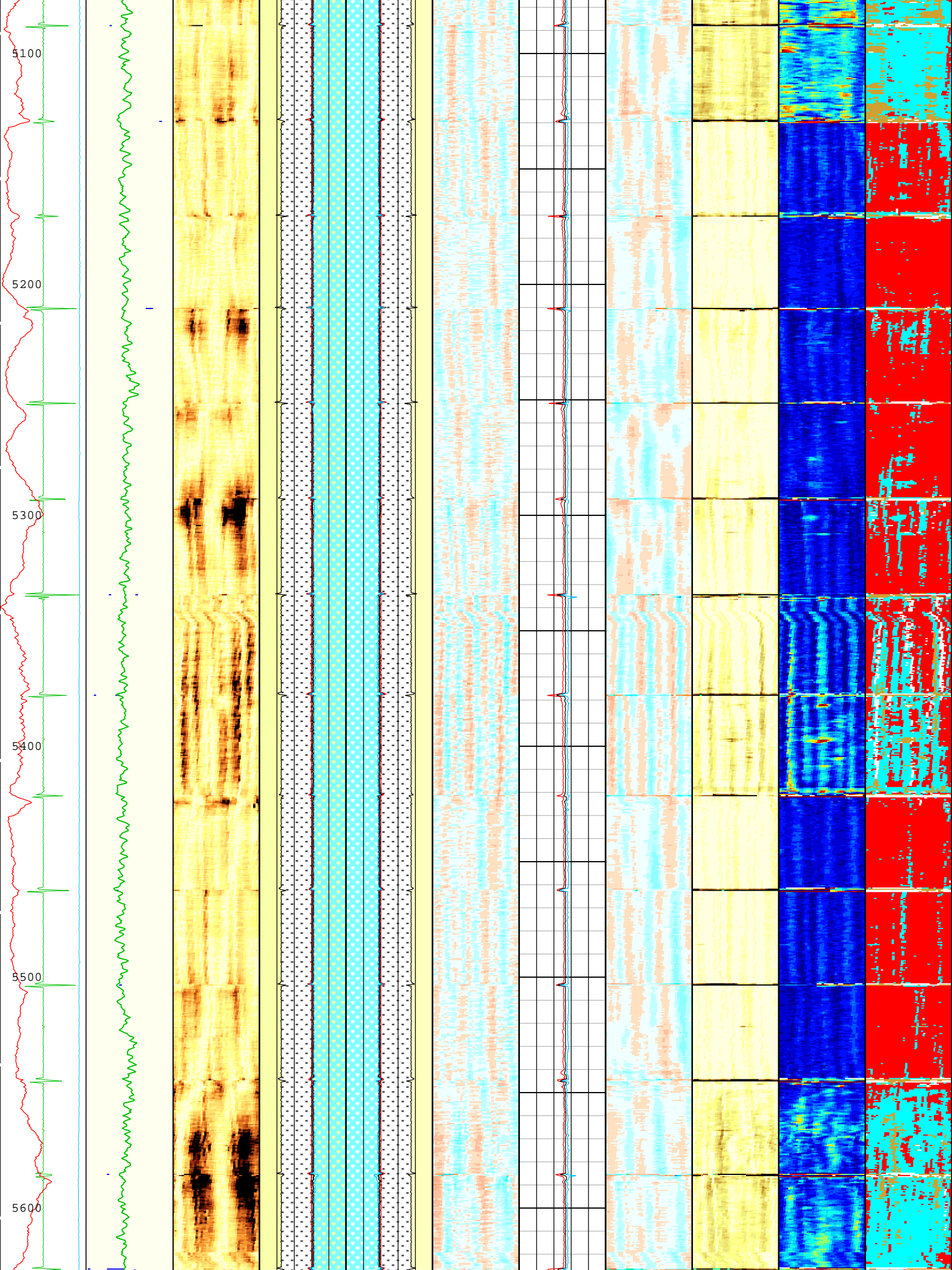




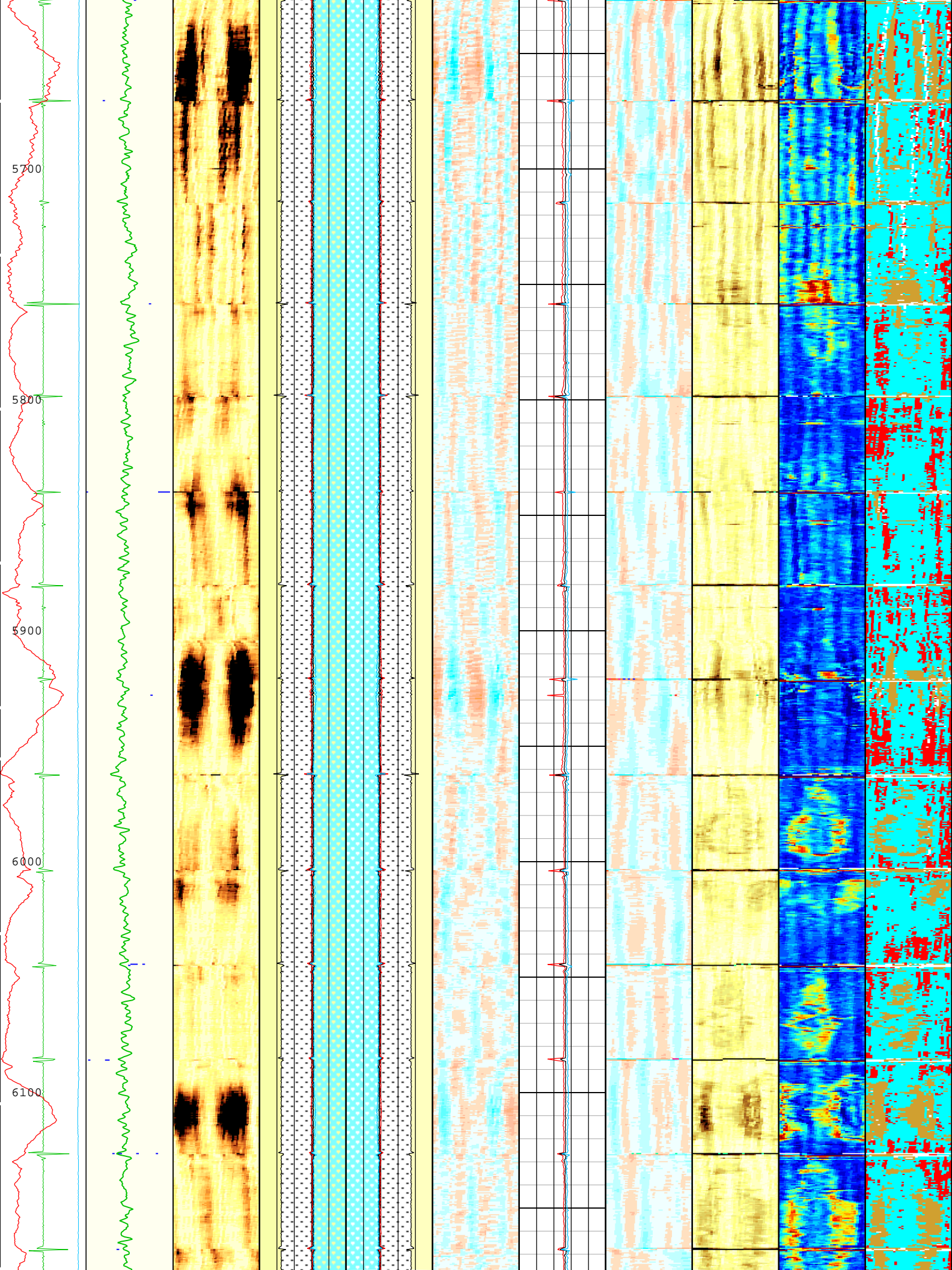


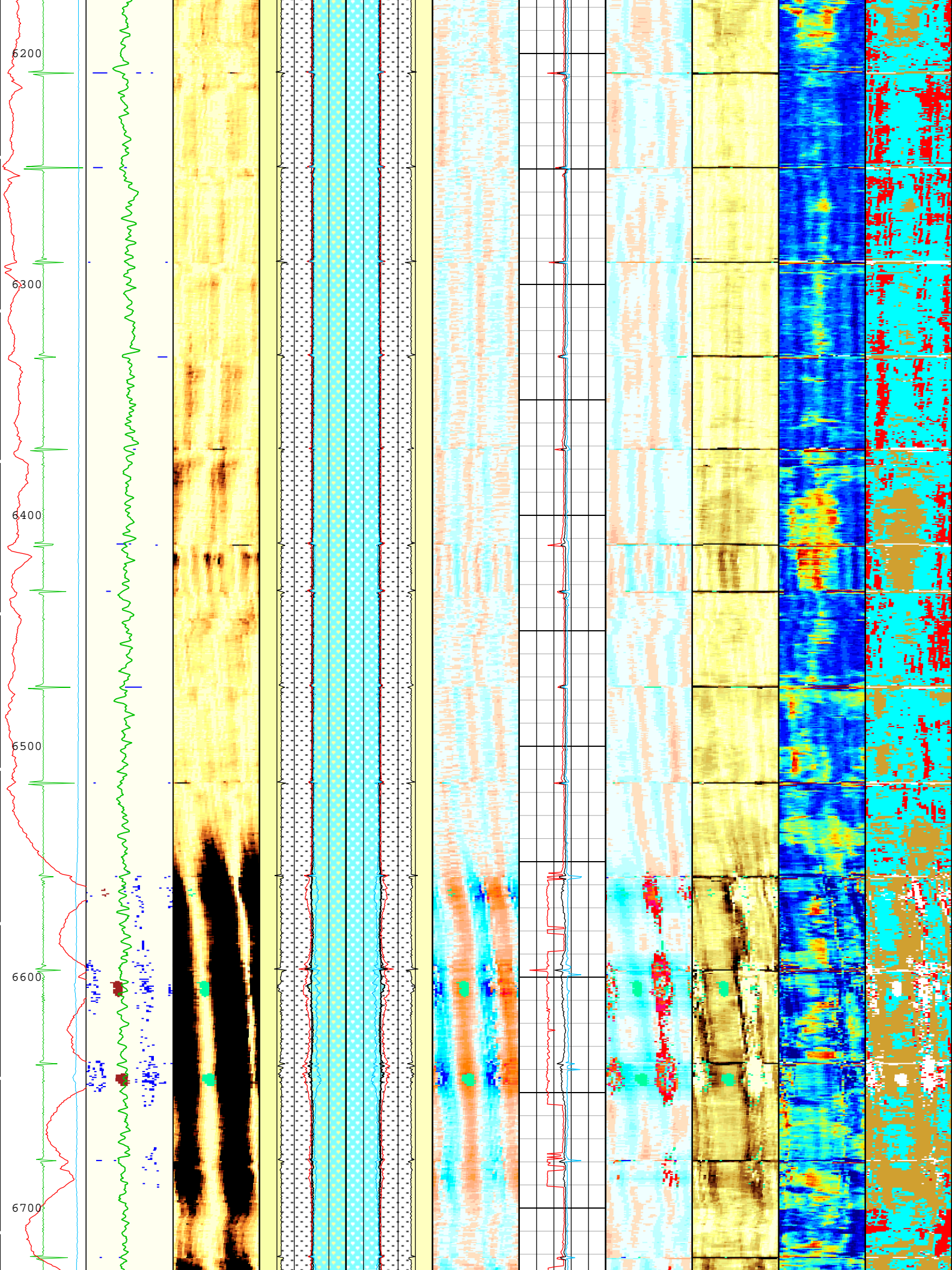




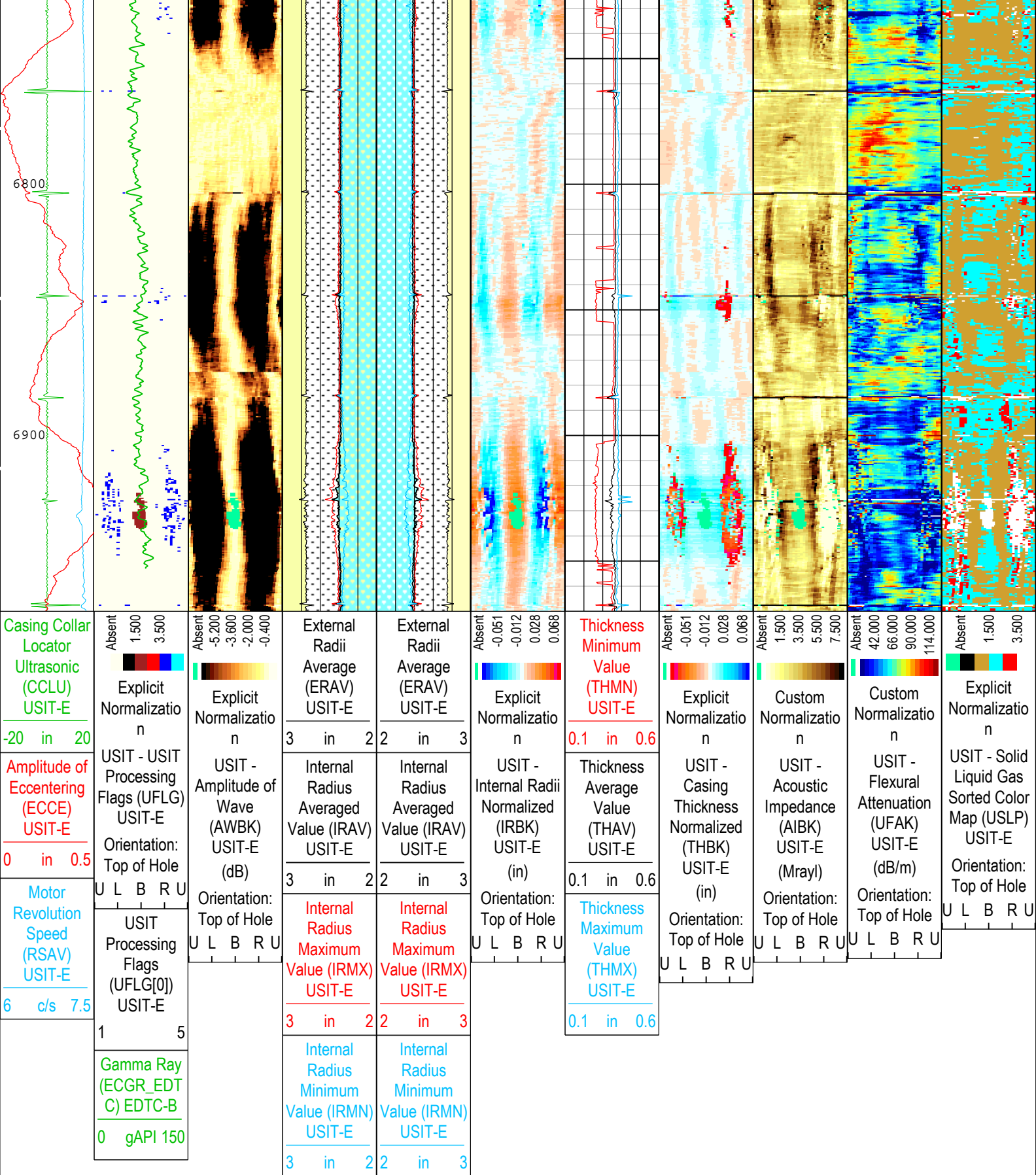












USIT Processing Flags (UFLG[0]) USIT-E

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

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	12135	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	-53.04	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
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	1.2	
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	50	2339
BS	8.5	2339	6970
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	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	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 )
EMXV	95	22-May-2019 15:12:57	22-May-2019 15:35:59	6975.36	5472.71
EMXV	85	22-May-2019 15:35:59	22-May-2019 15:38:18	5472.71	5322.62
EMXV	70	22-May-2019 15:38:18	22-May-2019 15:40:35	5322.62	5179.59
EMXV	65	22-May-2019 15:40:35	22-May-2019 15:40:49	5179.59	5165.44
EMXV	70	22-May-2019 15:40:49	22-May-2019 15:41:57	5165.44	5093.77
EMXV	75	22-May-2019 15:41:57	22-May-2019 15:47:09	5093.77	4762.68
EMXV	80	22-May-2019 15:47:09	22-May-2019 15:47:37	4762.68	4732.79
EMXV	85	22-May-2019 15:47:37	22-May-2019 17:02:45	4732.79	19.99
U-USIT_UFWB	137	22-May-2019 15:12:57	22-May-2019 15:28:09	6975.36	5943.61
U-USIT_UFWB	131.64	22-May-2019 15:28:09	22-May-2019 15:28:14	5943.61	5936.28
U-USIT_UFWB	123.96	22-May-2019 15:28:14	22-May-2019 17:02:45	5936.28	19.99
WINE	71.88	22-May-2019 15:12:57	22-May-2019 15:14:10	6975.36	6901.46
WINE	75.8	22-May-2019 15:14:10	22-May-2019 17:02:45	6901.46	19.99

All depth are at tool zero.

One

IBC Goodwin Compressed

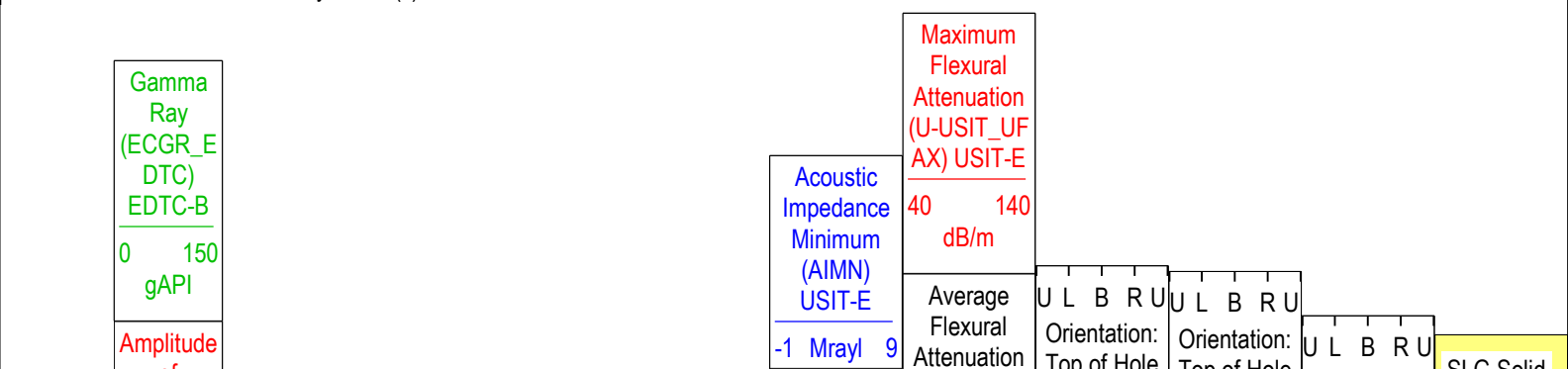
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	19.99 ft	6975.36 ft	22-May-2019 3:12:57 PM	22-May-2019 5:02:45 PM	ON	5.29 ft	Yes

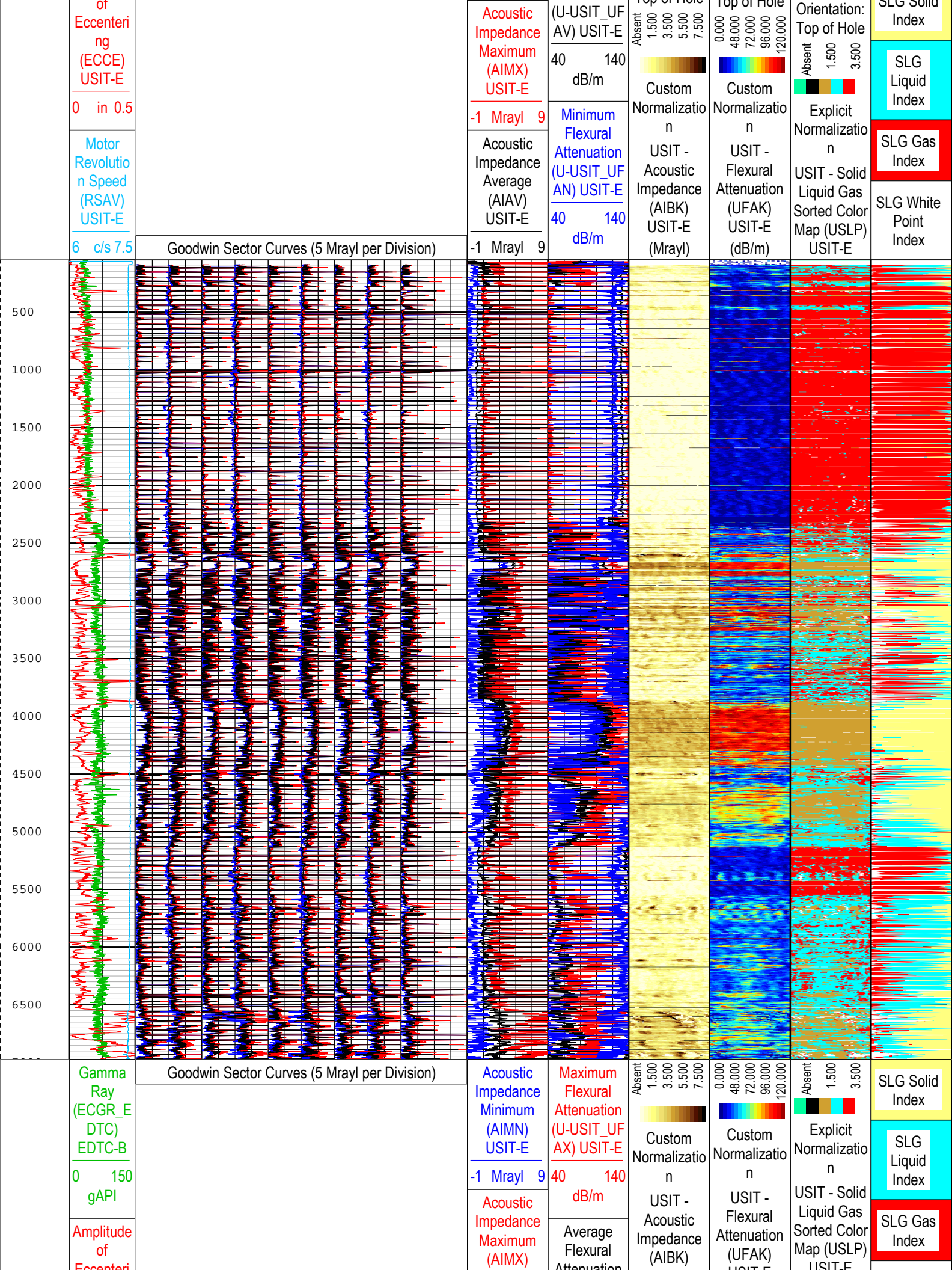
All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC	Well:Echeverria 2E-2H-D267
		One: Log[3]:Up:S009

Description: USI Goodwin    Format: Log ( IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 23-May-2019 00:42:42

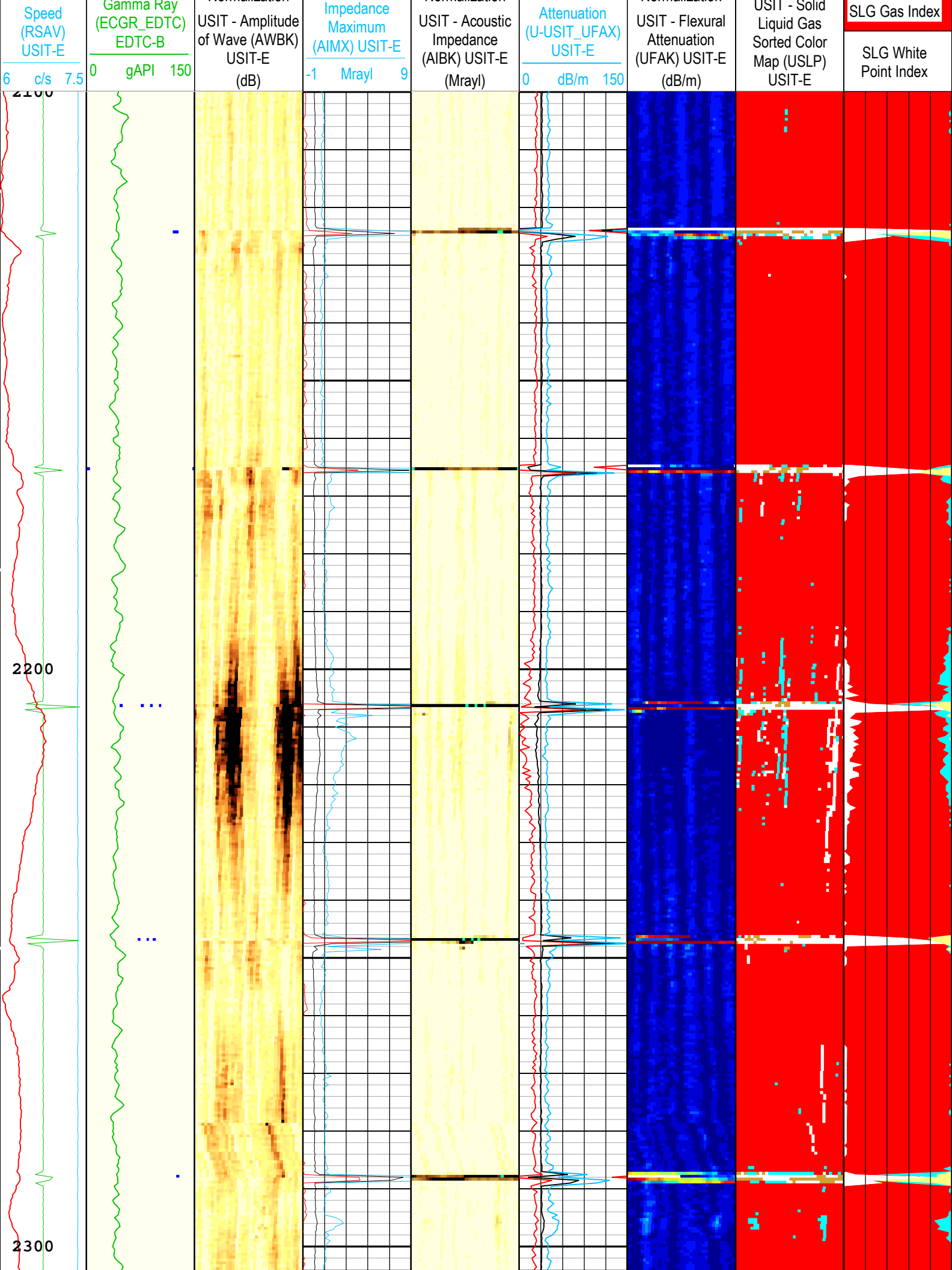
TIME\_1900 - Time Marked every 60.00 (s)



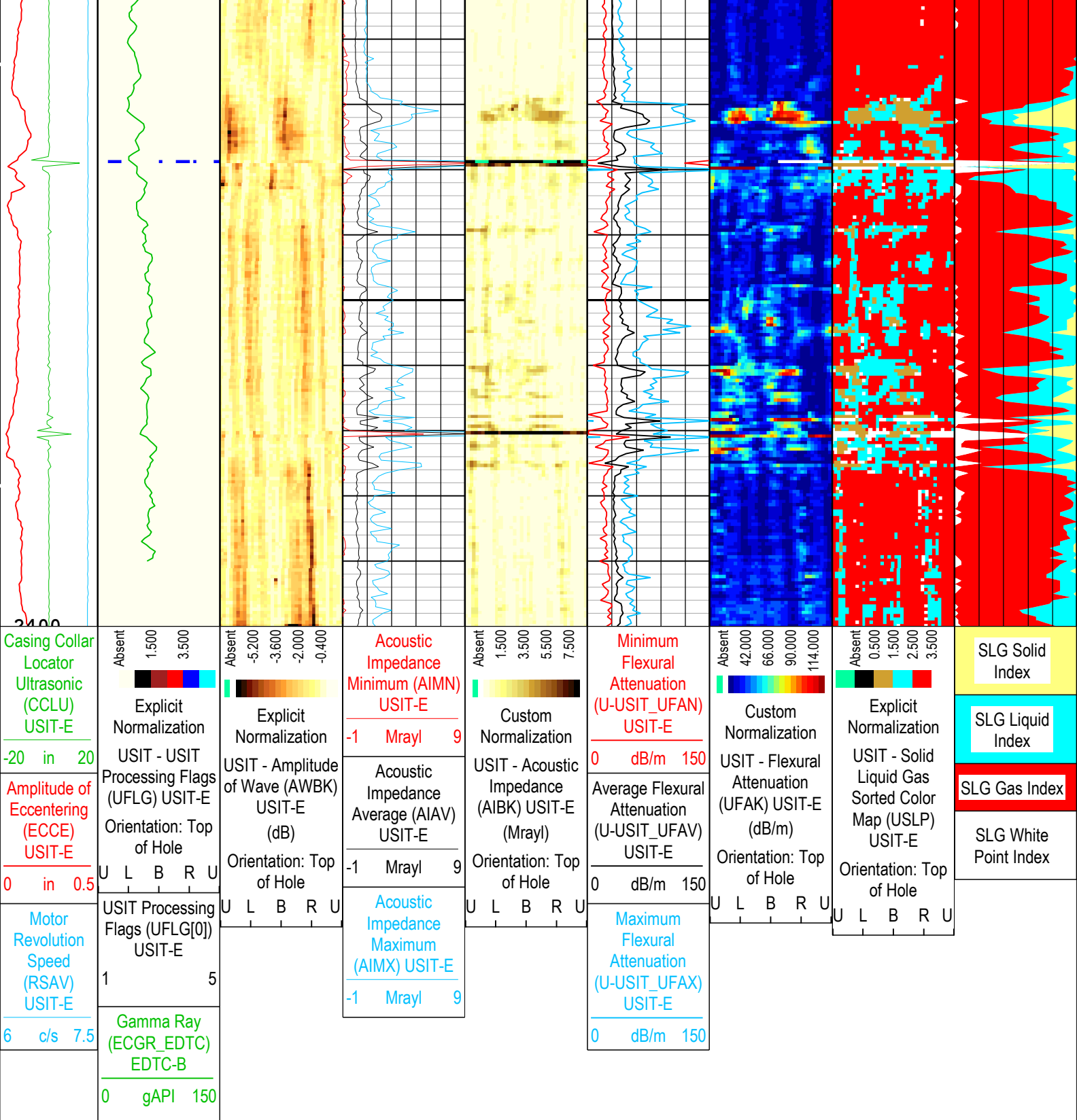












USIT Processing Flags (UFLG[0]) USIT-E												
1 - UFLG 1 Value within [0.0 - 1.5] - :												
2 - UFLG 2 Value within [1.5 - 2.5] - :												
3 - UFLG 3 Value within [2.5 - 3.5] - :												
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :												
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :												
6 - UFLG 10 Value within [10.0 - 15.0] - :												
7 - UFLG 11 Value within [15.0 - 20.0] - :												
8 - UFLG 12 Value within [20.0 - 25.0] - :												
9 - UFLG 13 Value within [25.0 - 30.0] - :												
10 - UFLG 14 Value within [30.0 - 35.0] - :												
11 - UFLG 15 Value within [35.0 - 40.0] - :												
12 - UFLG 16 Value within [40.0 - 45.0] - :												
13 - UFLG 17 Value within [45.0 - 50.0] - :												

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG    Format: Log ( IBC SLG )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 23-May-2019 00:42:48

## 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	12135	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	-53.04	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
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	1.2	
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
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	
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	1.78	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 )
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BS	13.5	2100	2339
BS	8.5	2339	2400

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	95	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	
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

One

IBC SLG Composite

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[1]:Up	Up	2081.91 ft	2412.00 ft	22-May-2019 2:38:22 PM	22-May-2019 2:43:32 PM	ON	3.50 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC

Well:Echeverria 2E-2H-D267

One: Log[1]:Up:S009

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: 23-May-2019 00:42:53

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 ] - :

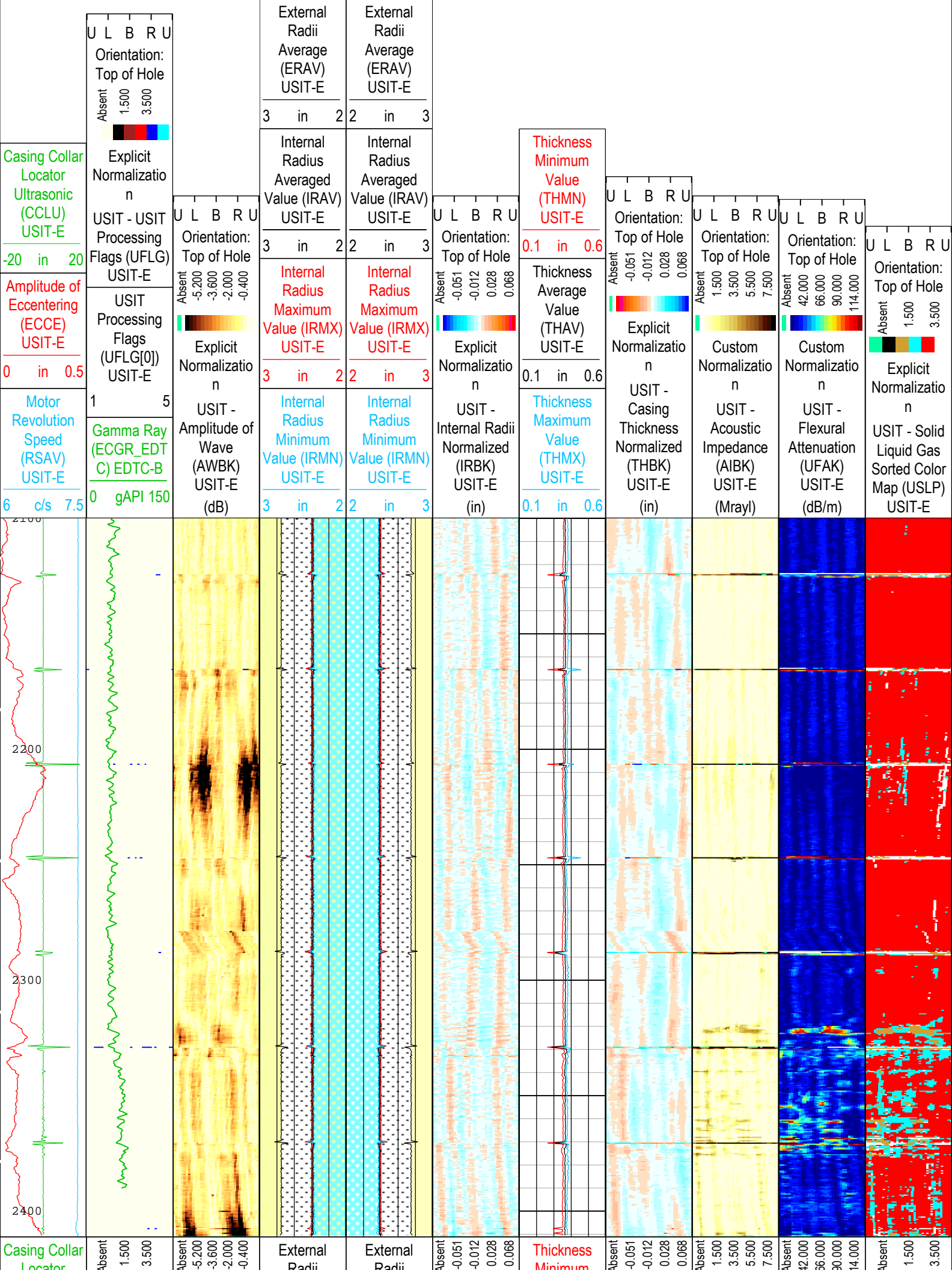
UTIM Error



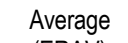
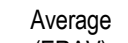

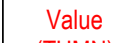


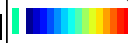

Pulse Origin Not Detected

WINLEN Error






Casing Thickness Error

Loop Processing Error



Locator Ultrasonic (CCLU) USIT-E	 Explicit Normalization	 Explicit Normalization	 Average (ERAV) USIT-E	 Average (ERAV) USIT-E	 Explicit Normalization	 Value (THMN) USIT-E	 Explicit Normalization	 Custom Normalization	 Custom Normalization	 Explicit Normalization
-20 in 20	USIT - USIT Processing Flags (UFLG) USIT-E	USIT - Amplitude of Wave (AWBK) USIT-E	3 in 2	2 in 3	USIT - Internal Radii Normalized (IRBK) USIT-E	0.1 in 0.6	USIT - Casing Thickness Normalized (THBK) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E	USIT - Flexural Attenuation (UFAK) USIT-E	USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
Amplitude of Eccentering (ECCE) USIT-E	Orientation: Top of Hole	Orientation: Top of Hole	3 in 2	2 in 3	(in)	0.1 in 0.6	(in)	Orientation: Top of Hole	Orientation: Top of Hole	Orientation: Top of Hole
0 in 0.5	U L B R U	U L B R U	Internal Radius Averaged Value (IRAV) USIT-E	Internal Radius Averaged Value (IRAV) USIT-E	Orientation: Top of Hole	Thickness Average Value (THAV) USIT-E	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		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						

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)

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: 23-May-2019 00:42:53

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	12135	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	-53.04	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
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	1.2	
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

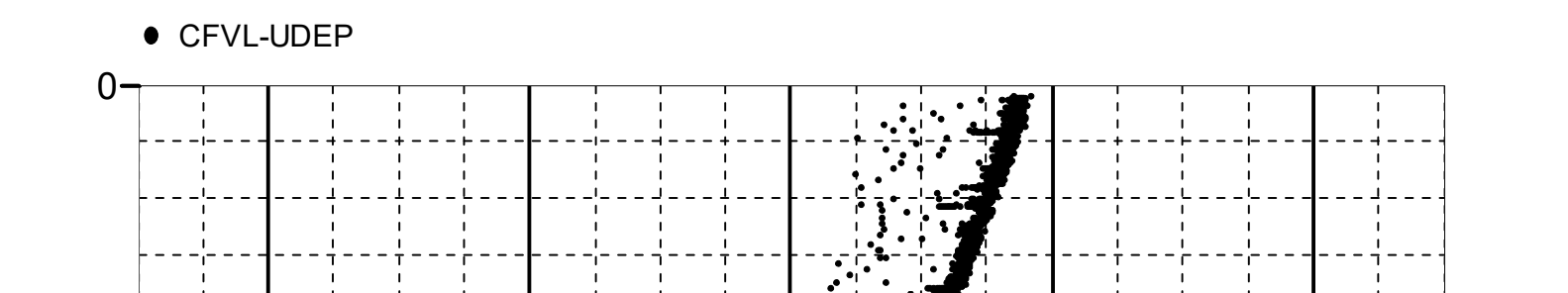
Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	2100	2339
BS	8.5	2339	2411
All depth are actual.			

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	95	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	71.88	us

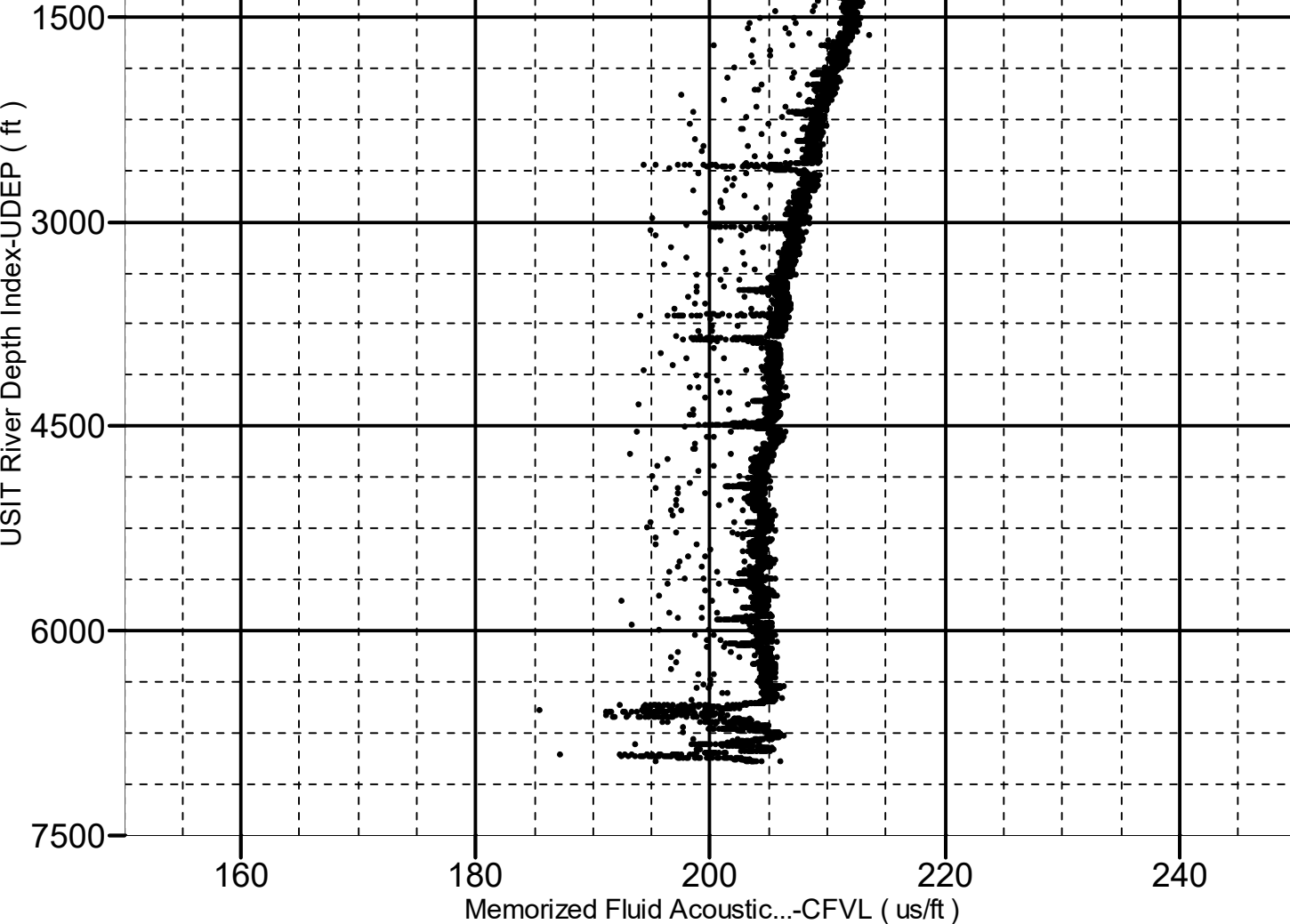
XYZ	Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2E-2H-D267 One: Log[3]:Up:S009
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# Fluid Acoustic Slowness vs Depth 2D Cross Plot

Index Range: From 6974.50 to 19.50 ft





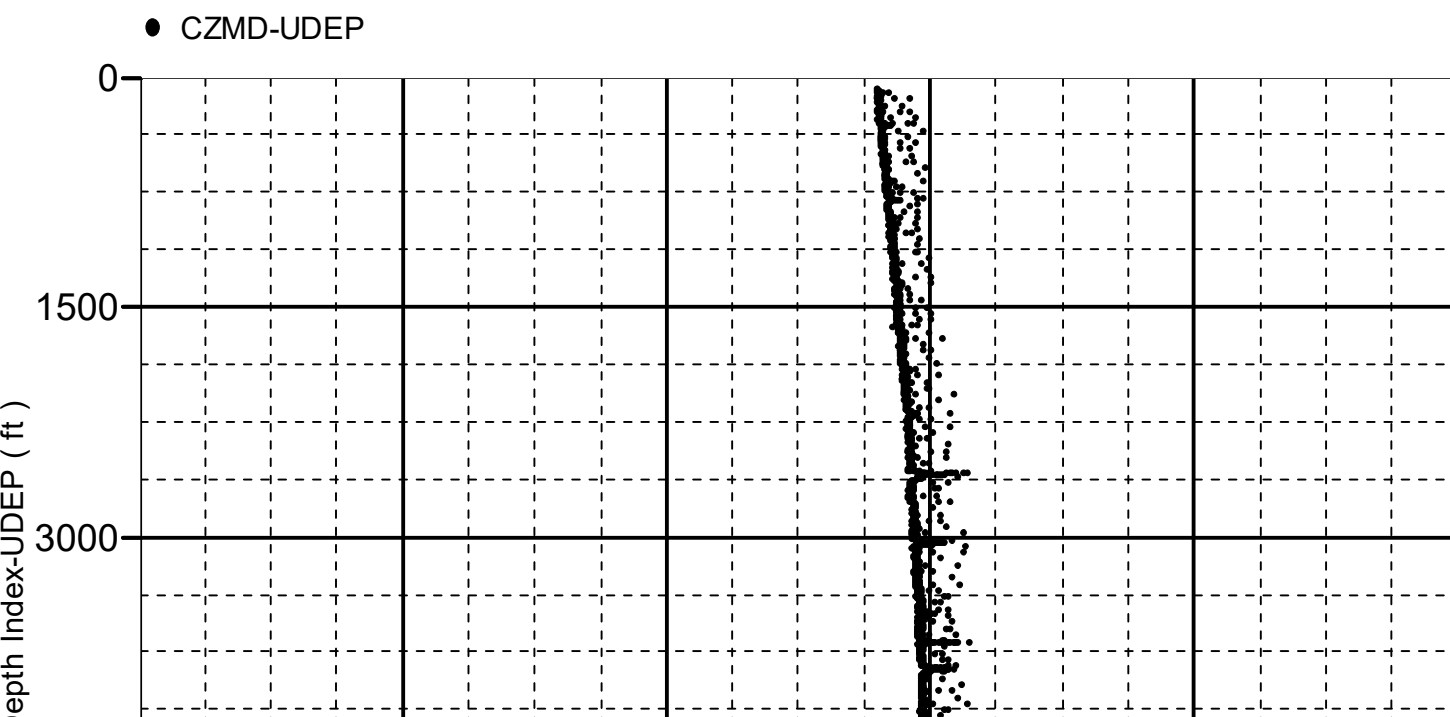


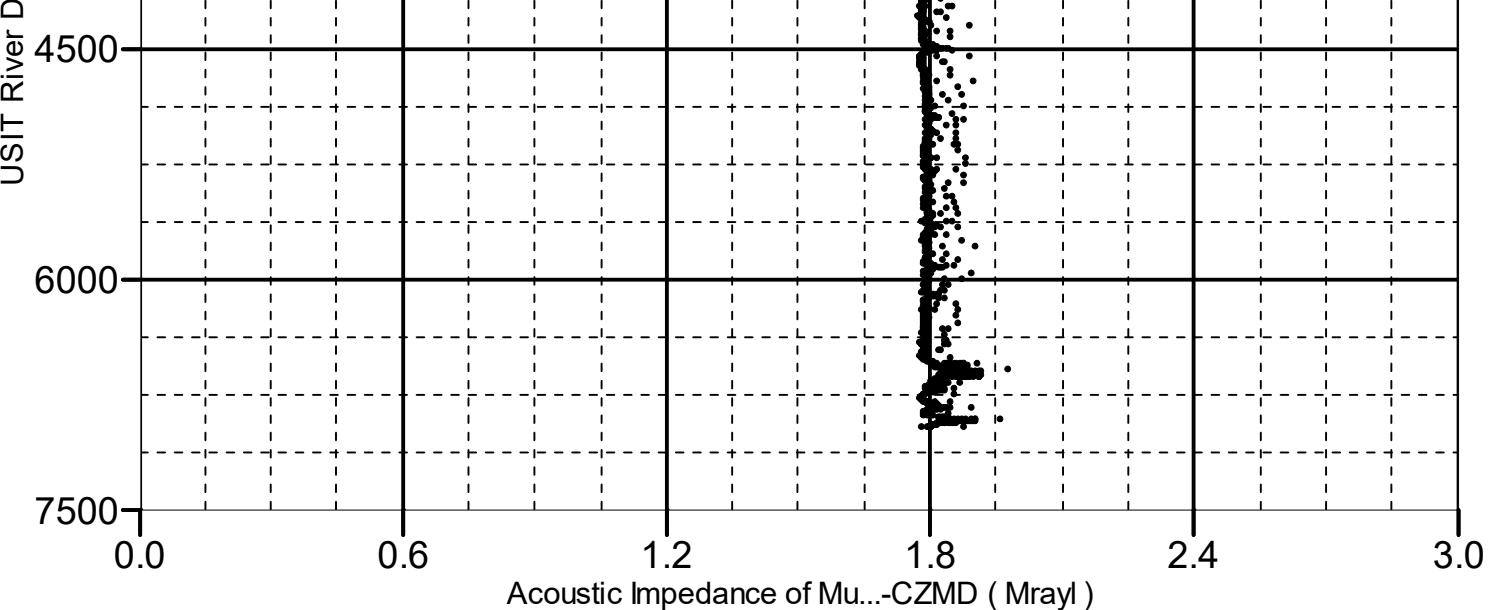
XYZ Company: Crestone Peak Resources and Operating LLC Well: Echeverria 2E-2H-D267 One: Log[3]:Up:S009

## Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6974.50 to 19.50 ft





Company: Crestone Peak Resources and Operating LLC

**Schlumberger**

Well: Echeverria 2E-2H-D267

Field: Wattenberg

County: Weld

State: Colorado

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log