

Company: Crestone Peak Resources Operating LLC

Well: Davis 1S-9H-G266

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner  
Cement Evaluation  
Gamma Ray - CCL Log

County: Weld  
Field: Wattenberg  
Location: SWSE Sec. 9, T2N, R66W  
Well: Davis 1S-9H-G266  
Company: Crestone Peak Resources Operating LLC

Location:		SWSE Sec. 9, T2N, R66W SHL: 2039' FNL & 1468' FEL Lat/Long: 40.154225, -104.778053	Elev.: K.B. 4940.00 ft G.L. 4917.00 ft D.F. 4940.00 ft
Permanent Datum:		Ground Level	Elev.: 4917.00 f
Log Measured From:		Kelly Bushing	23.00 ft above Perm.Datum
Drilling Measured From:		Kelly Bushing	
API Serial No.	Section:	Township:	Range:
05-123-46513	9	2N	66W

Logging Date 23-Sep-2018

Run Number ONE

Depth Driller 14816.00 ft

Schlumberger Depth 14816.00 ft

Bottom Log Interval 6815.00 ft

Top Log Interval 74.00 ft

Casing Fluid Type Water

Salinity

Density 8.4 lbm/gal

Fluid Level 0.00 ft

BIT/CASING/TUBING STRING

Bit Size 9.63 in

From 2137.00 ft

To 14816.00 ft

Casing/Tubing Size 5.5 in

Weight 20 lbm/ft

Grade P110

From 0.00 ft

To 14816.00 ft

Max Recorded Temperatures 195.2 degF

Logger on Bottom 23-Sep-2018 14:46:00

Unit Number 9108 Location: Fort Morgan, CO

Recorded By A.BLOCHOWICZ

Witnessed By DUANE DUNN

Disclaimer

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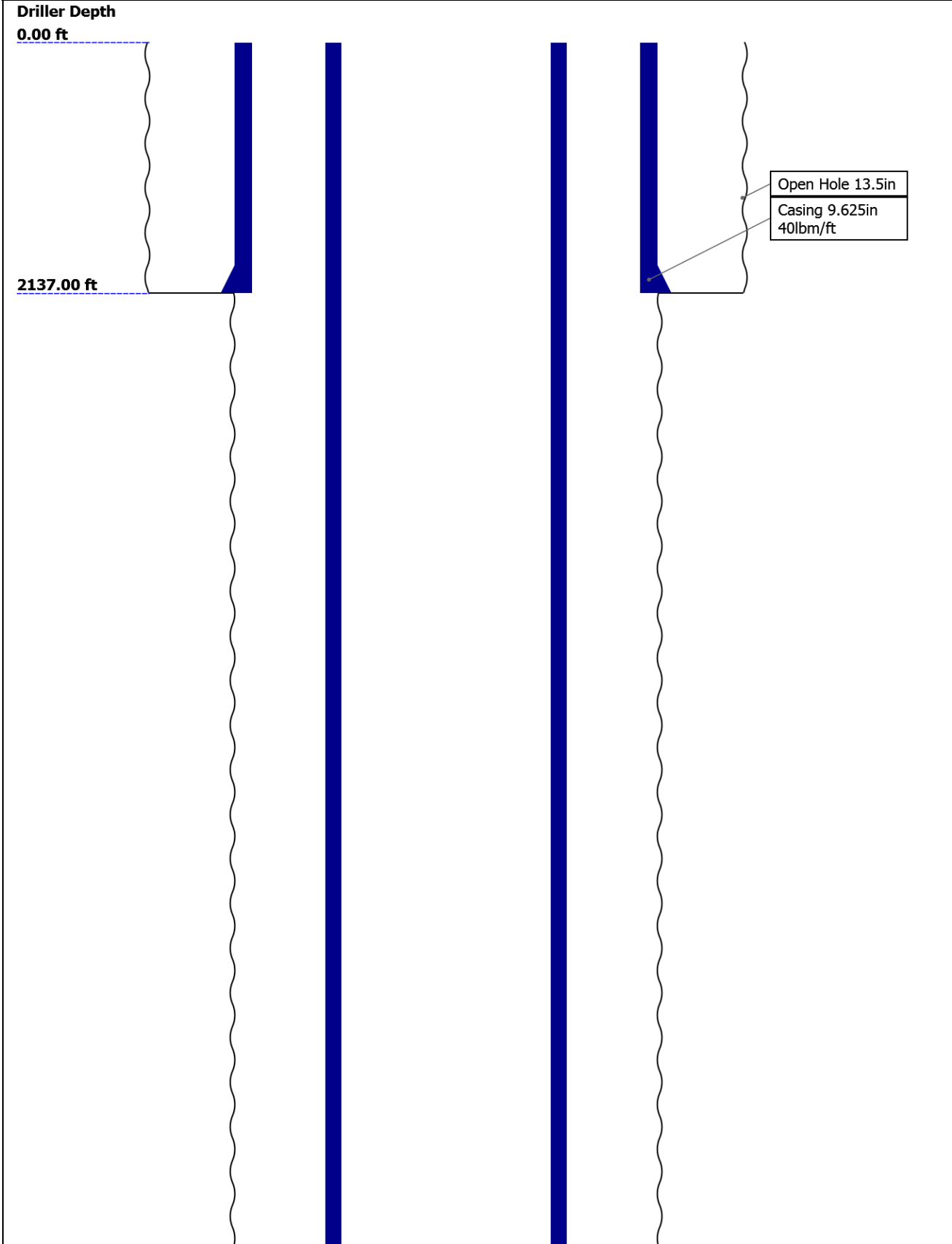
14. XYZ ( IBC Fluid Acoustic Slowness vs Depth 6.0 in )

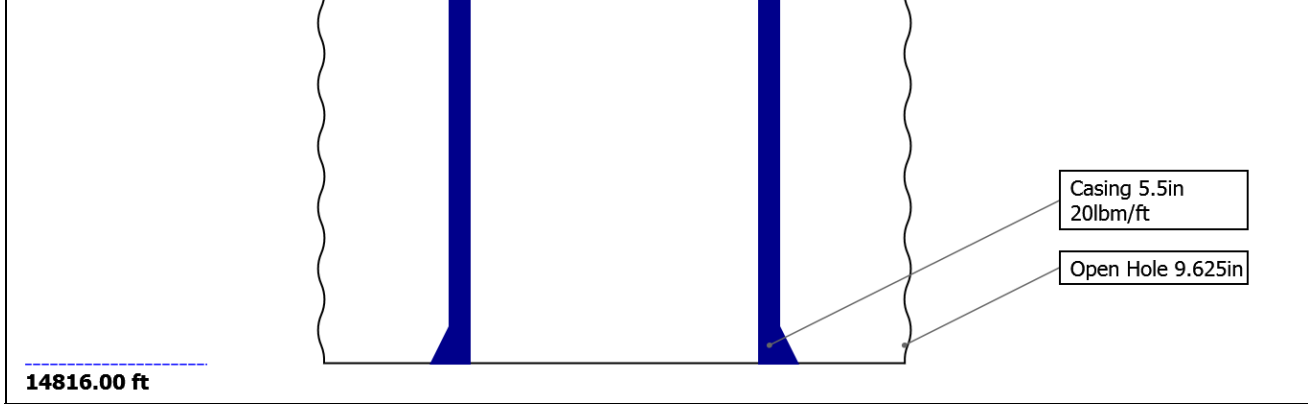
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Well Sketch

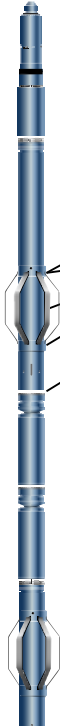


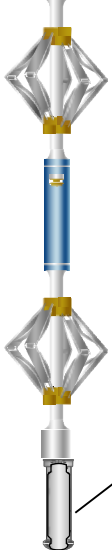


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	9.625				
Top Driller ( ft )	0	2137				
Top Logger ( ft )	0	2137				
Bottom Driller ( ft )	2137	14816				
Bottom Logger ( ft )	2137	14816				
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 )	2137	14816				
Bottom Logger ( ft )	2137	14816				

Remarks and Equipment Summary

ONE: Toolstring			ONE: Remarks	
<div><div><div>Equip nameLength</div><div>LEH-QT30.73</div><div>LEH-QT</div></div><div><div>EDTC-B:827.24</div><div>473M</div><div>EDTH-B:8624</div><div>EDTG-A:77434</div><div>EDTC-B:8473M</div></div><div><div>AH-184[2]:5941</div><div>AH-184[1]:5965</div><div>USIT-E:1716.74</div><div>25</div><div>ECH-MFA:1991</div><div>USAC-A:1725</div><div>USIT-A:10</div></div></div> <div><div><div>CTEM23.74</div><div>ACCZ0.00</div><div>HV0.00</div><div>Gamma21.87</div><div>Ray</div><div>TelStatu20.74</div><div>s</div></div></div>	MP name	Offset	Thank you for choosing Schlumberger!	
			Tool string run as per tool sketch and client logging program.	
			5" Gemcos and in-line centralizers with small hole kit used for centralization.	
			All passes run under 0 PSI	
			Lead: 12.5 ppg Tail: 13.5 ppg Spacer: 12 ppg	
		High deviation (18 deg) and dogleg severity affected data throughout the well.		

USIS-A:18 32 USSC-B:17 78 IBCS-A:75 3 FAR-SENS OR:3636 IBC-TX NEAR-SEN SOR:4784 IBC-TX USI-SENS OR:4615 IBC-TX EMITTER- SENSOR:4 495 IBC-TX	 <p><b>USI Sen 0.84 sor Head Te nsion</b></p> <p>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	6455		
Calibration Date	26-JUL-2018		
Calibrator Serial Number	IDWC-C-57		
Calibration Cable Type	7-32 ASXS		
Wheel Correction 1	-1		
Wheel Correction 2	1		
Tension Device			
Type	CMTD-B/A		
Serial Number	1703		
Calibration Date	29-Jul-2018		
Calibrator Serial Number	88310A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	9		
Logging Cable			
Type	7-32AS-XS		
Serial Number	U718001		
Length	20000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane USA		
ONE:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	All Schlumberger depth control policies followed.	
Rig Up Length At Surface		IDW used as primary depth reference.	
Rig Up Length At Bottom		Z-chart used as secondary depth reference.	
Rig Up Length Correction			

Stretch Correction  
Tool Zero Check At Surface

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[6]:Up	6820.21	66.82

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 : 39.69m(130.22ft) to 46.93m(153.97ft)  
MUD\_N\_FRP = 1.19  
DFD = 1.01g/cm3(8.40lbm/gal)  
CZMD median computed in free pipe normalization interval = 1.68 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[6]:Up	Up	66.82 ft	6820.21 ft	23-Sep-2018 2:46:04 PM	23-Sep-2018 4:25:38 PM	ON	6.50 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating LLC      Well:Davis 1S-9H-G266 ONE: Log[6]:Up:S004
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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-Sep-2018 17:12:03

TIME\_1900 - Time Marked every 60.00 (s)

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

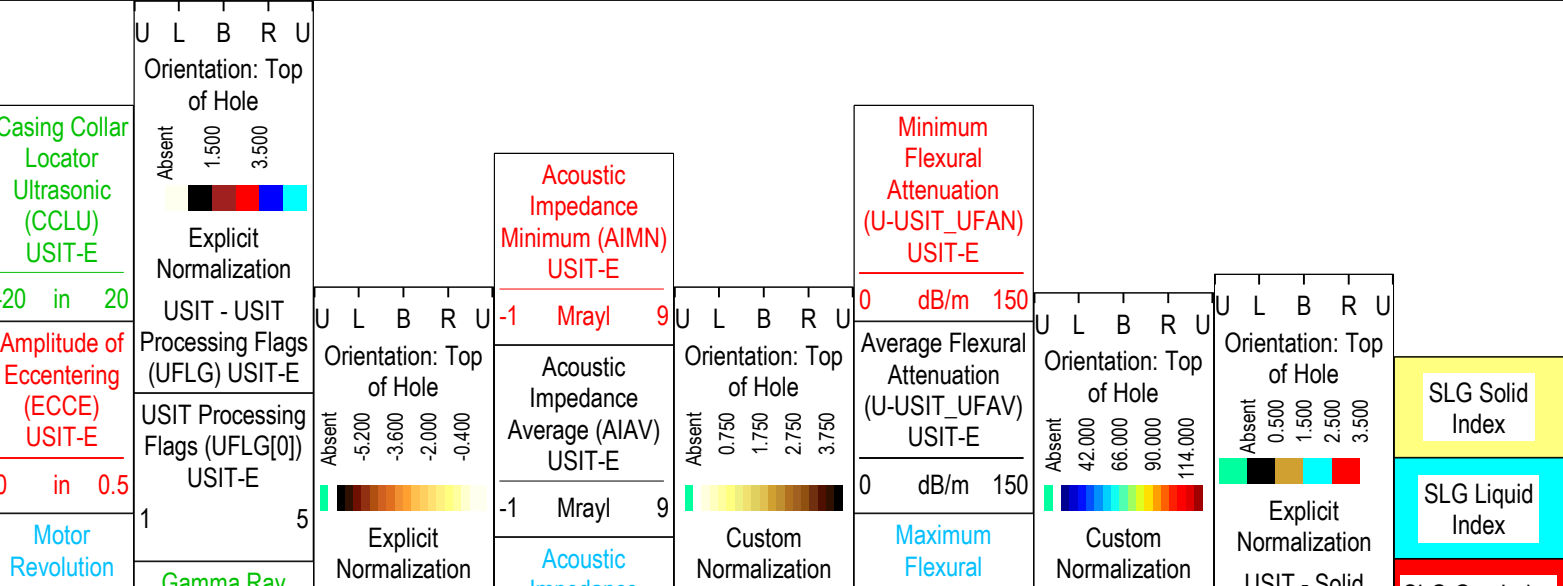
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  
2 - UFLG 2 Value within [1.5 - 2.5] - :  
3 - UFLG 3 Value within [2.5 - 3.5] - :  
4 - UFLG 4    UFLG 5    UFLG 6 Value within [3.5 - 6.5] - :  
5 - UFLG 7    UFLG 8    UFLG 9 Value within [6.5 - 10 ] - :
- UTIM Error

Pulse Origin Not Detected

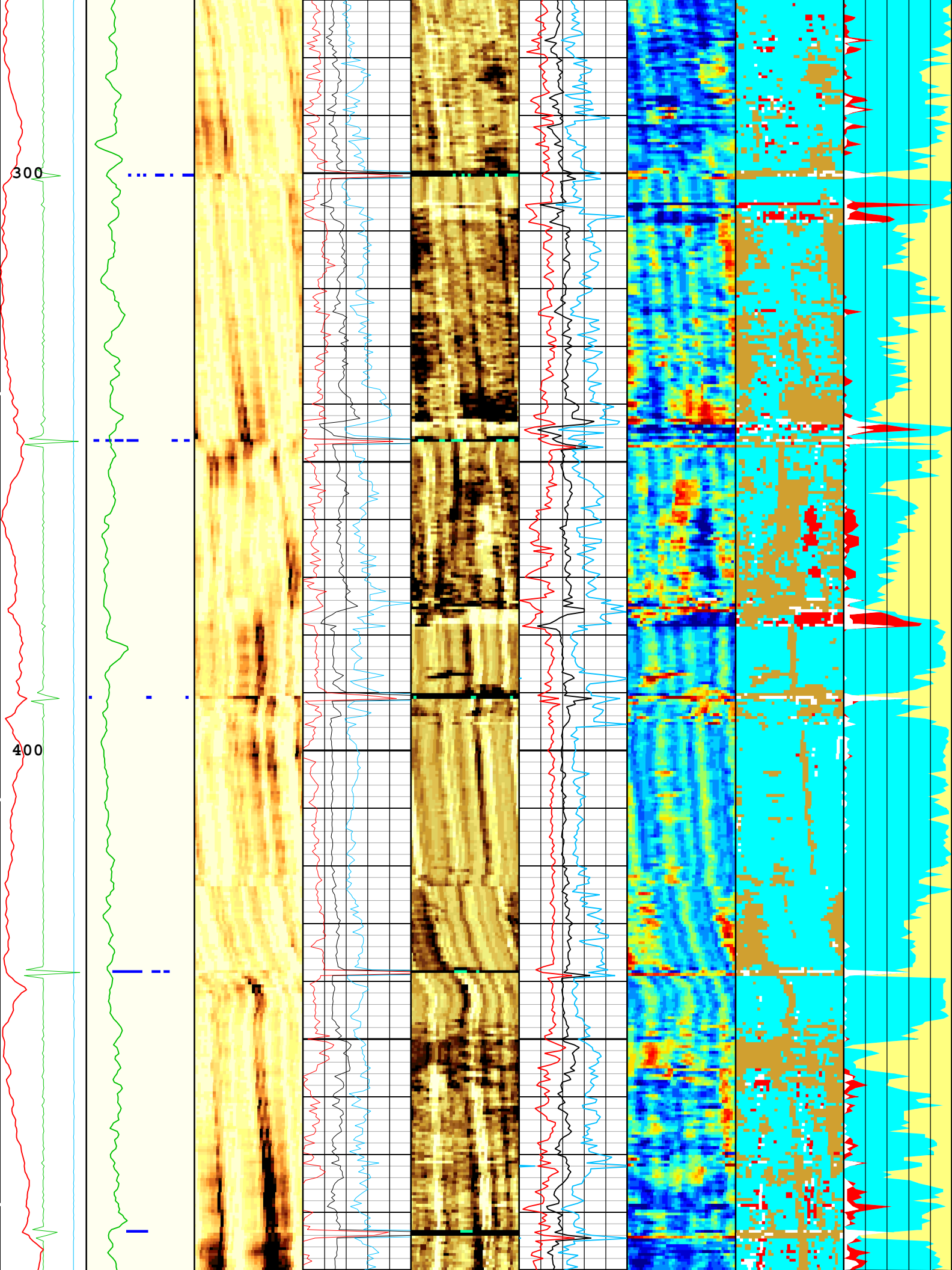
WINLEN Error

Casing Thickness Error

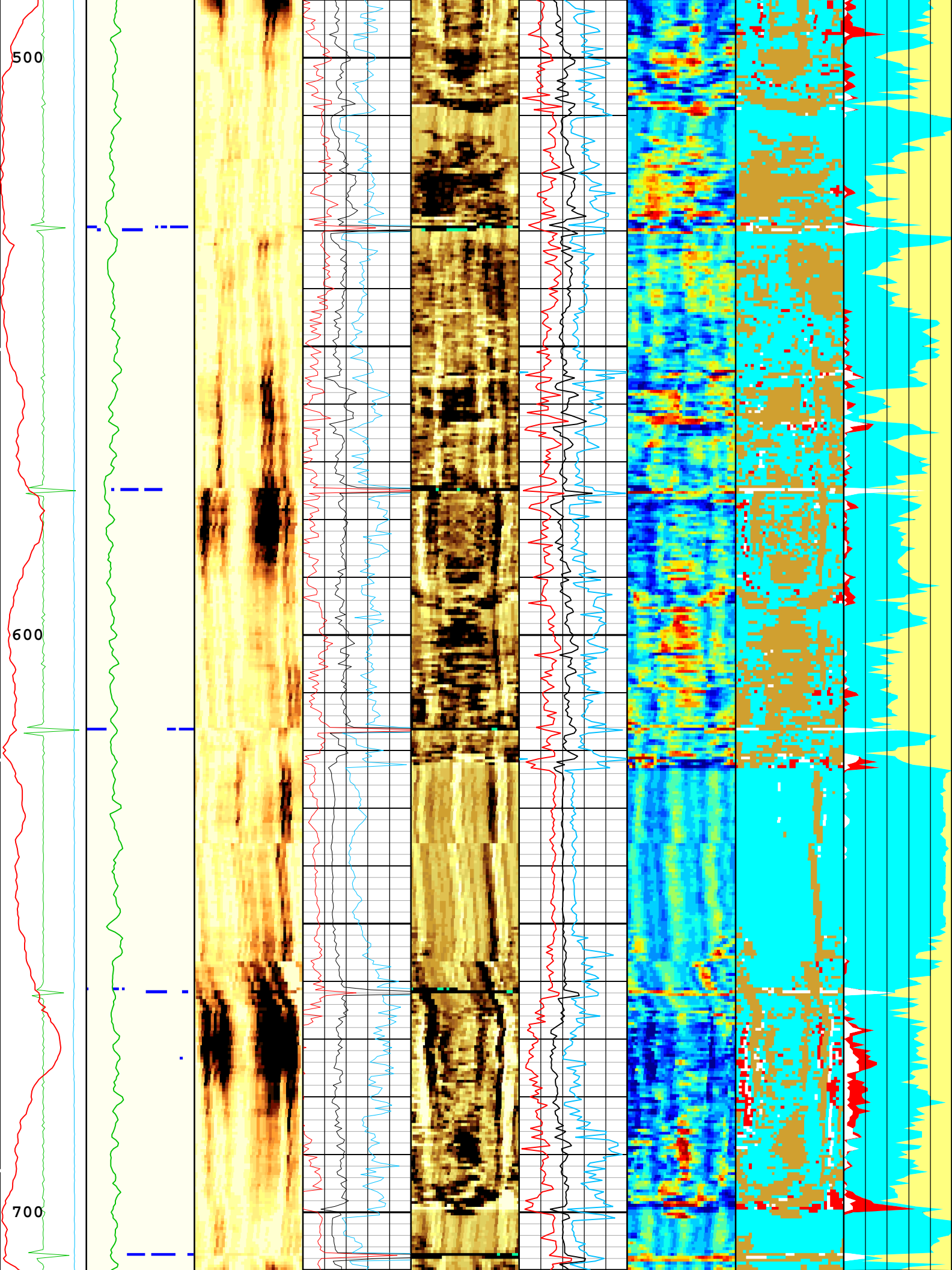
Loop Processing Error



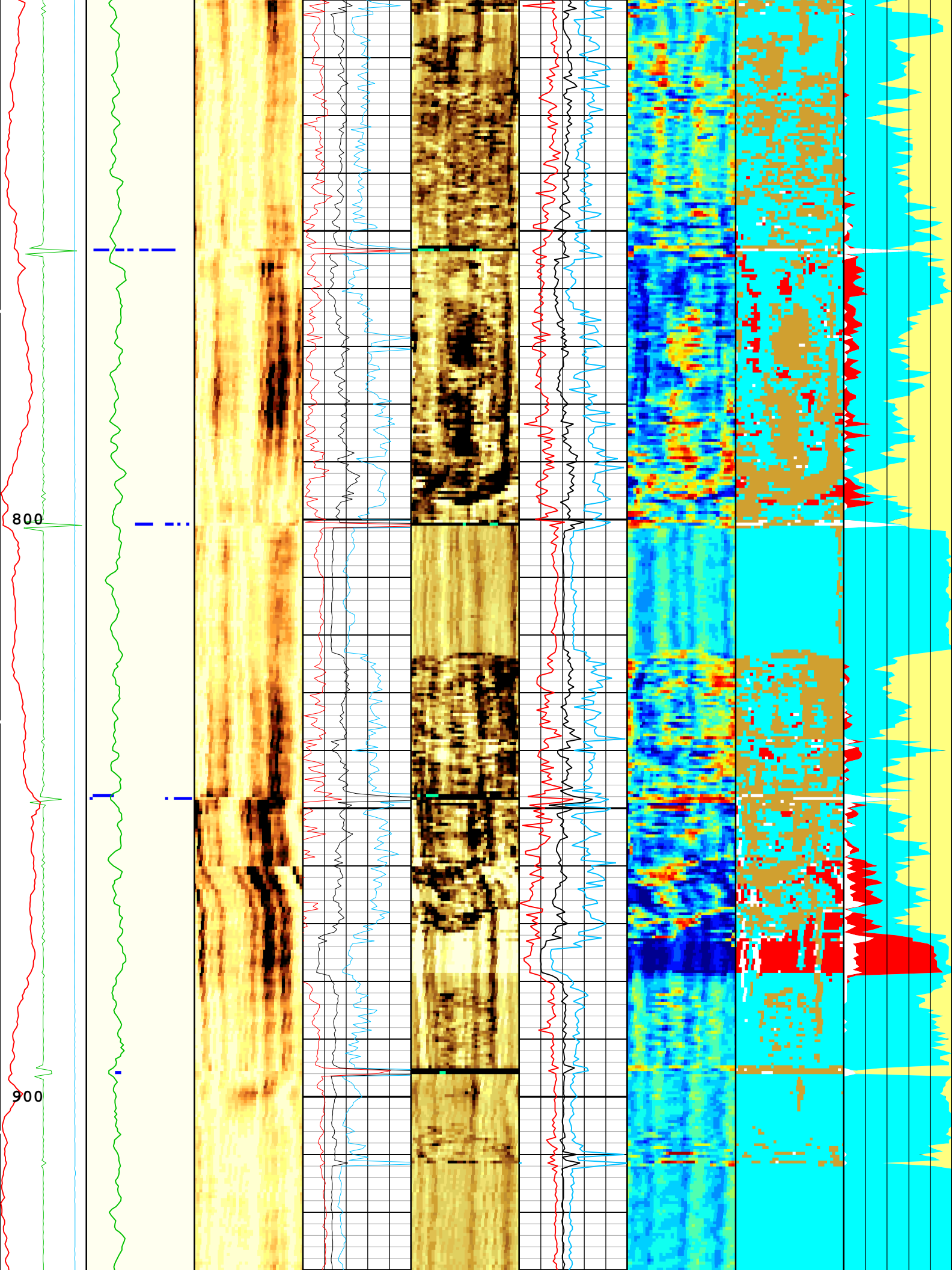


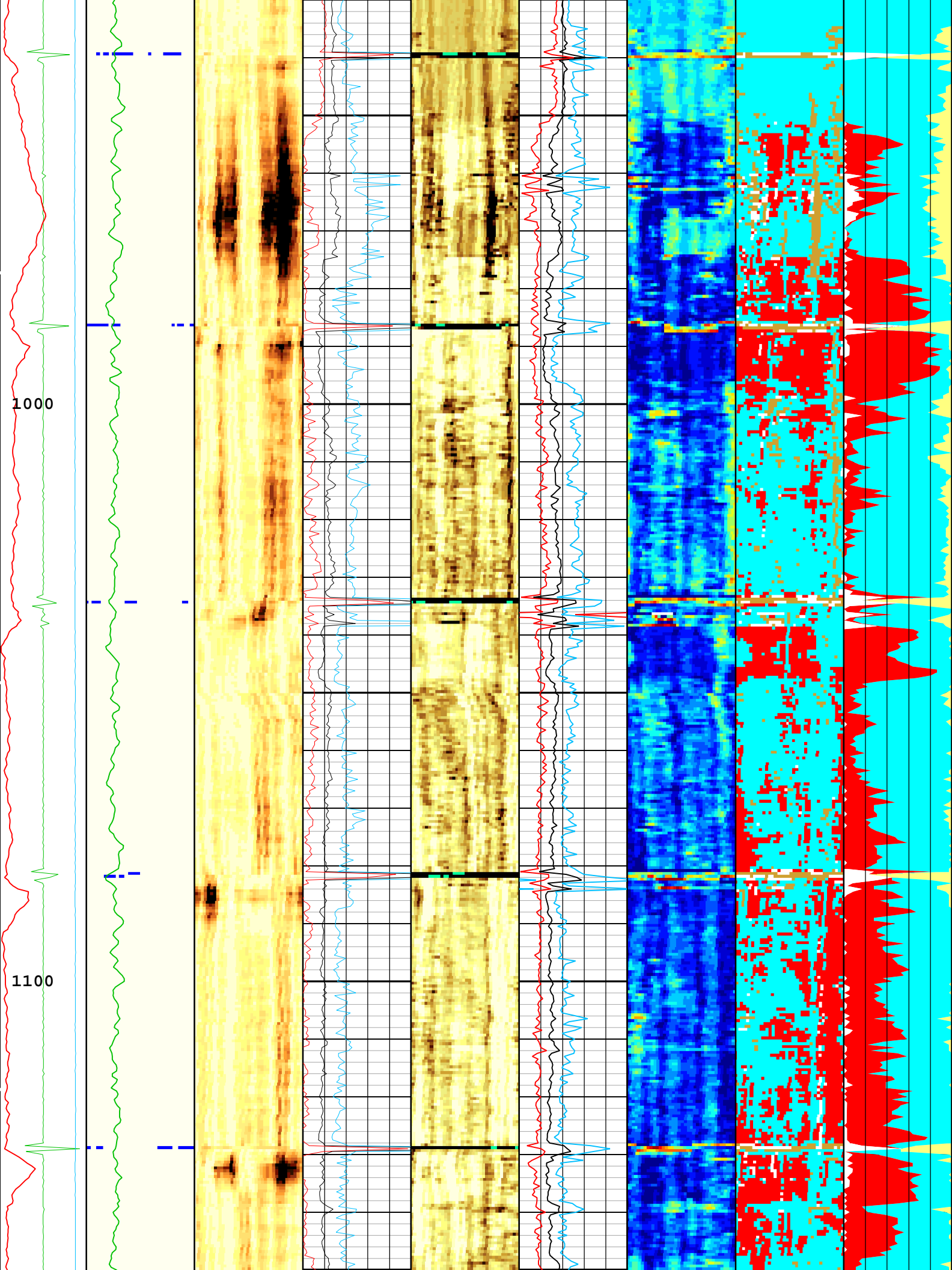


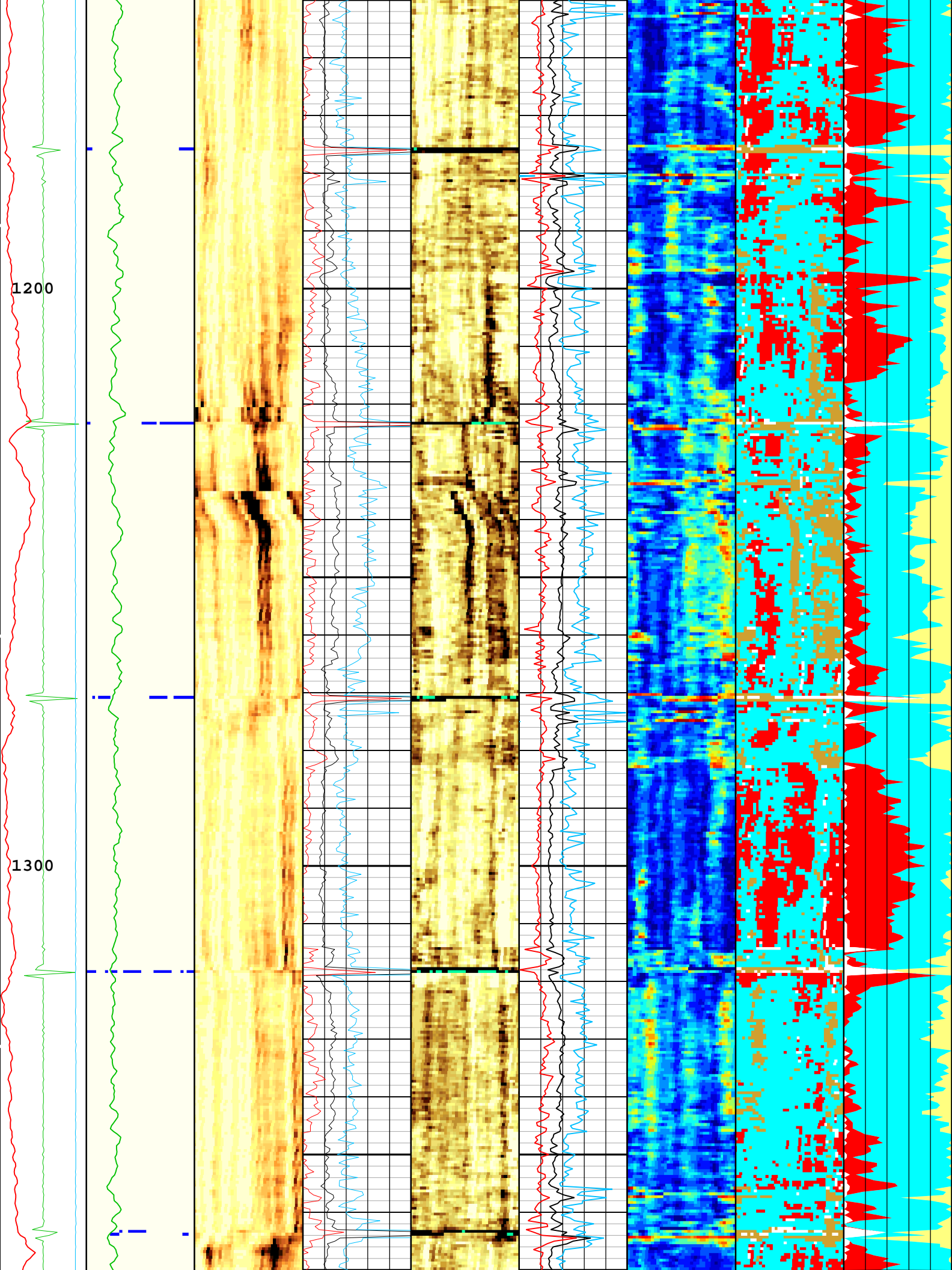


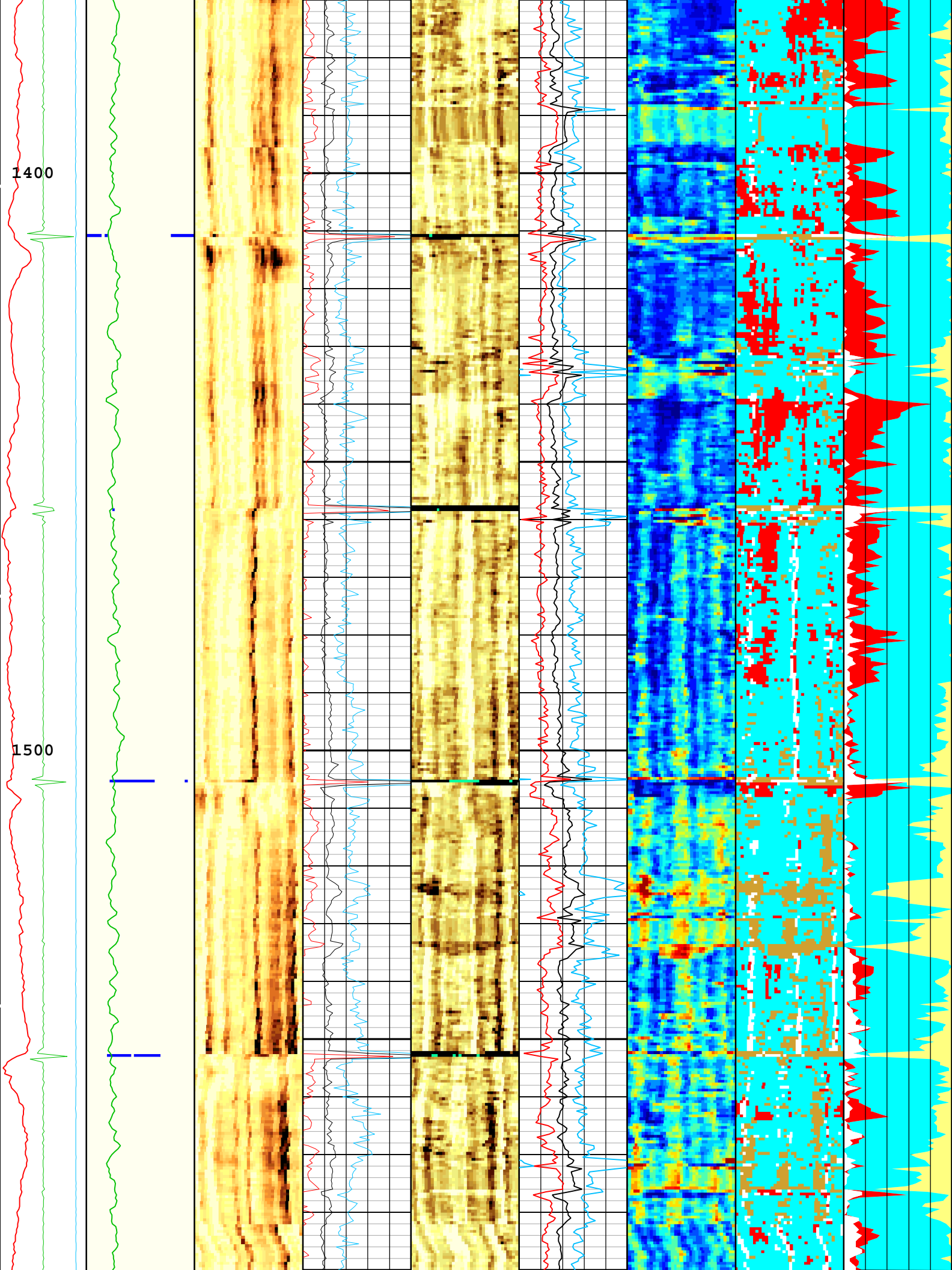




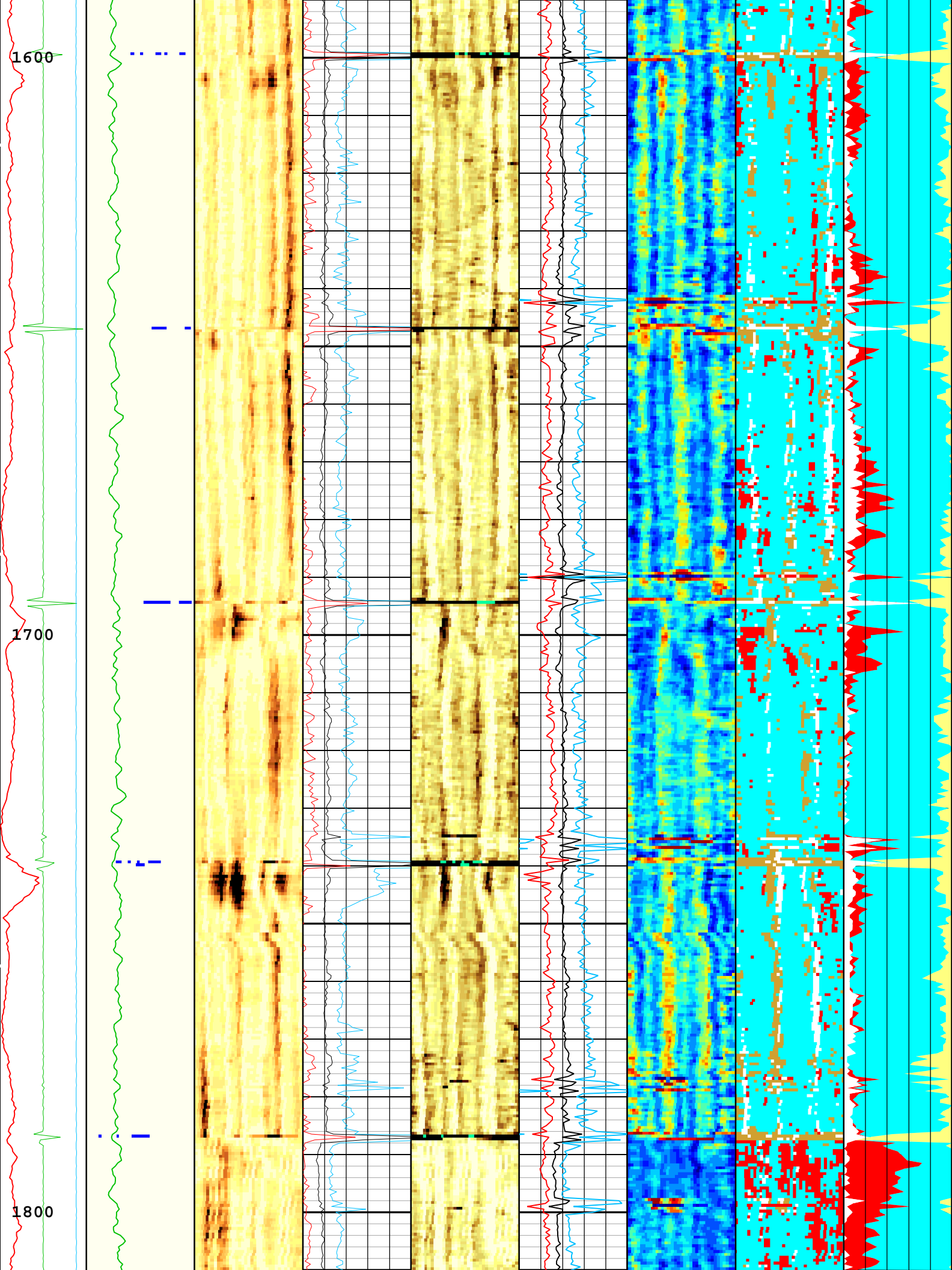


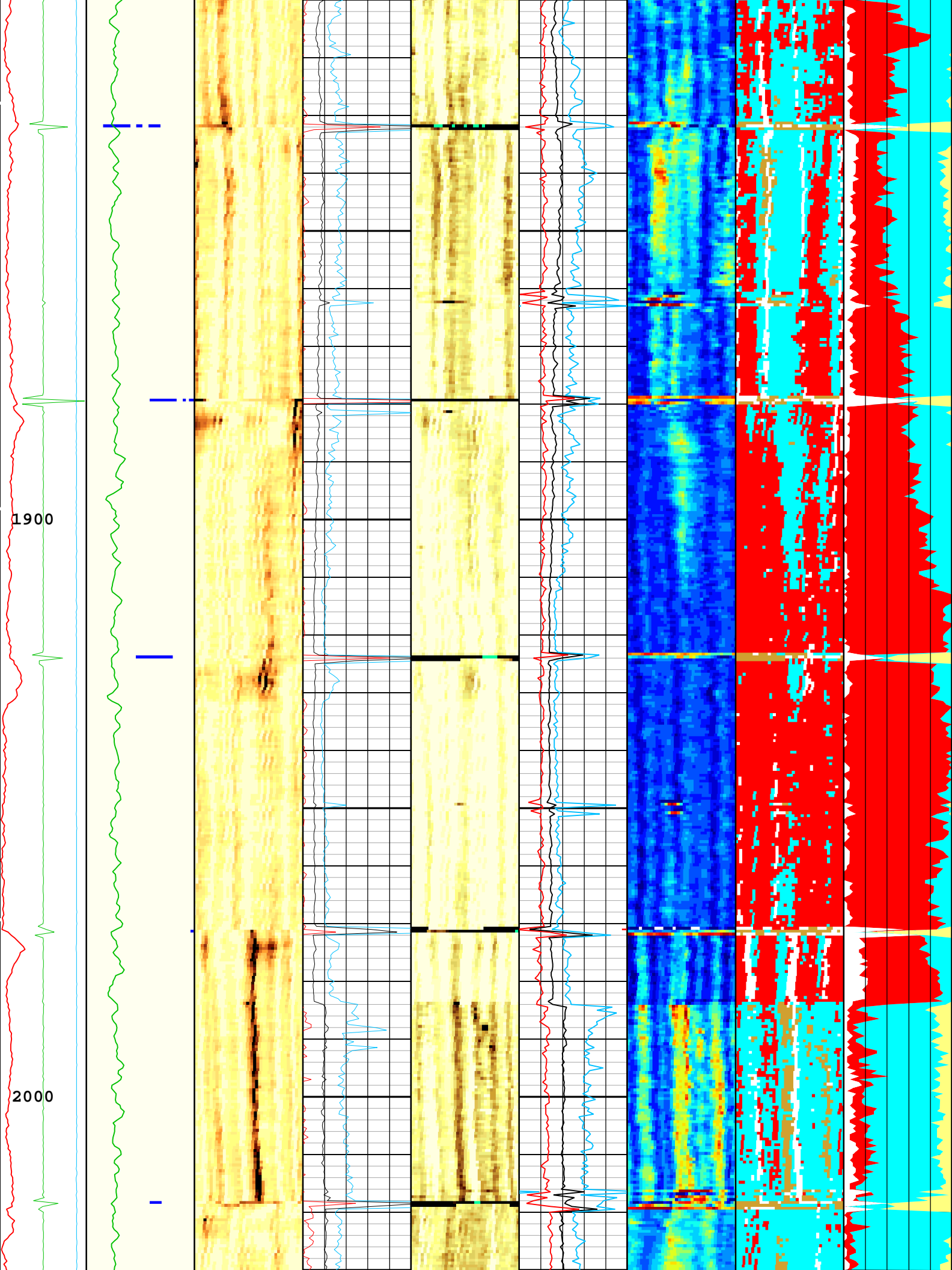


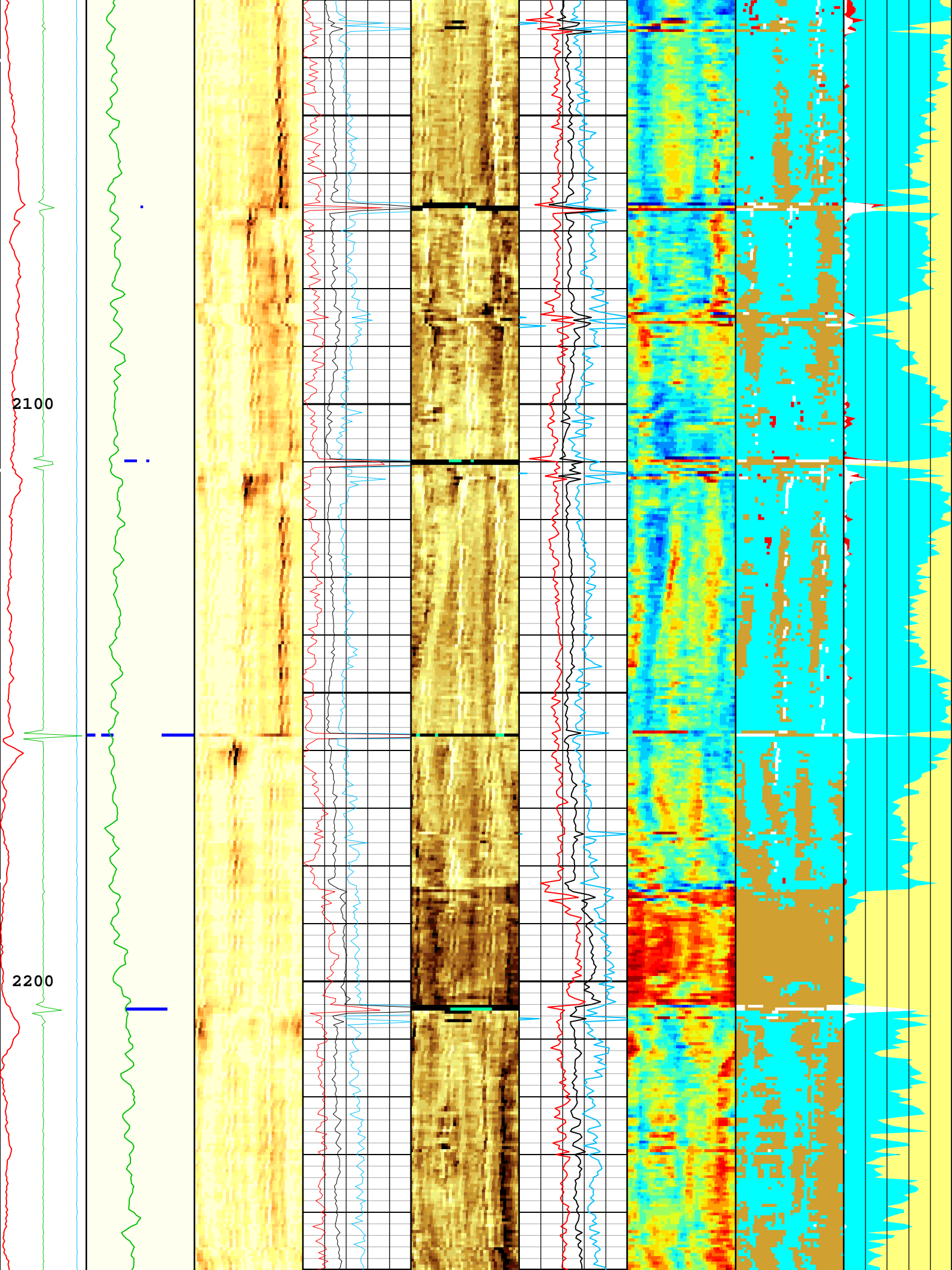




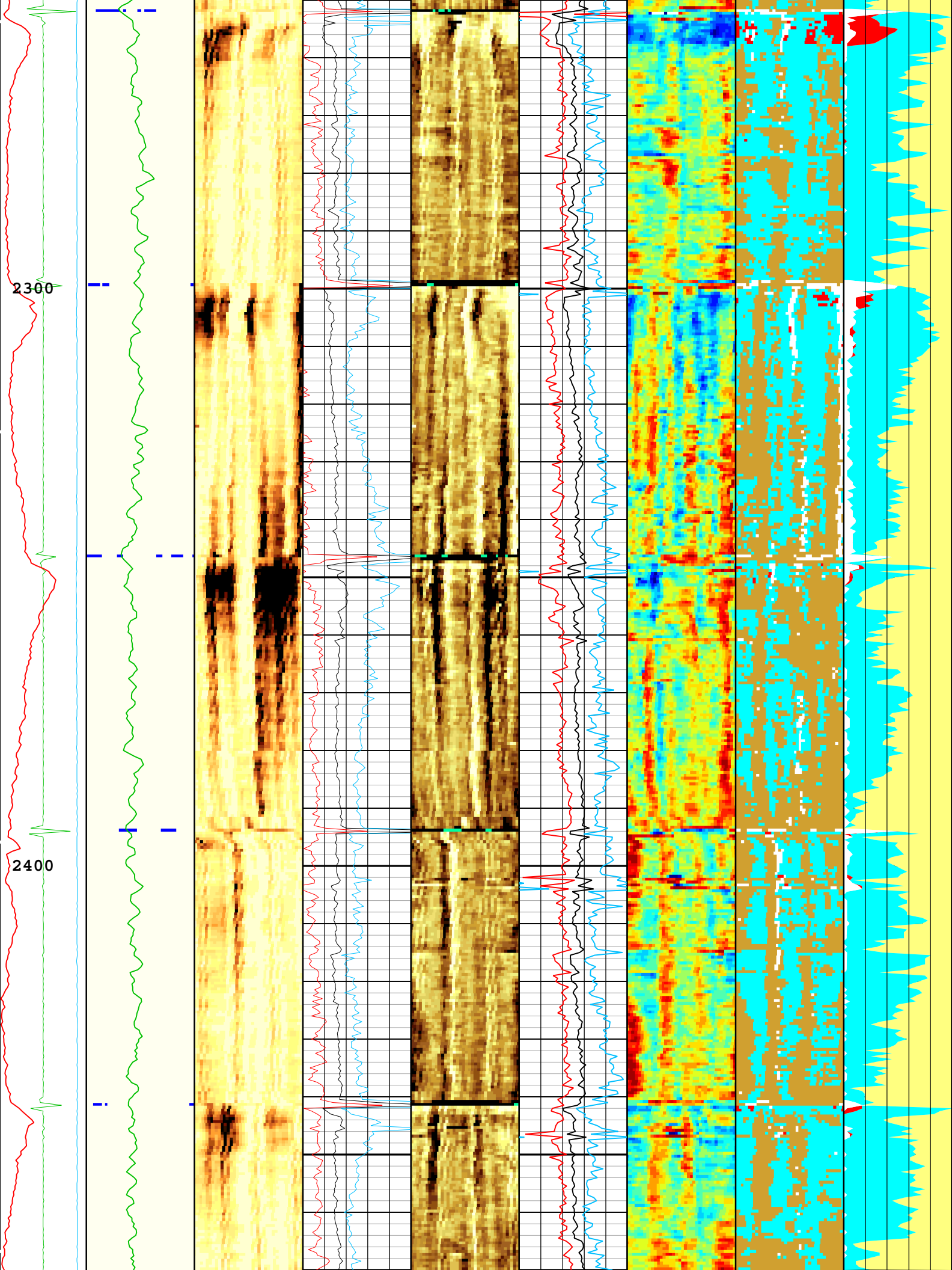


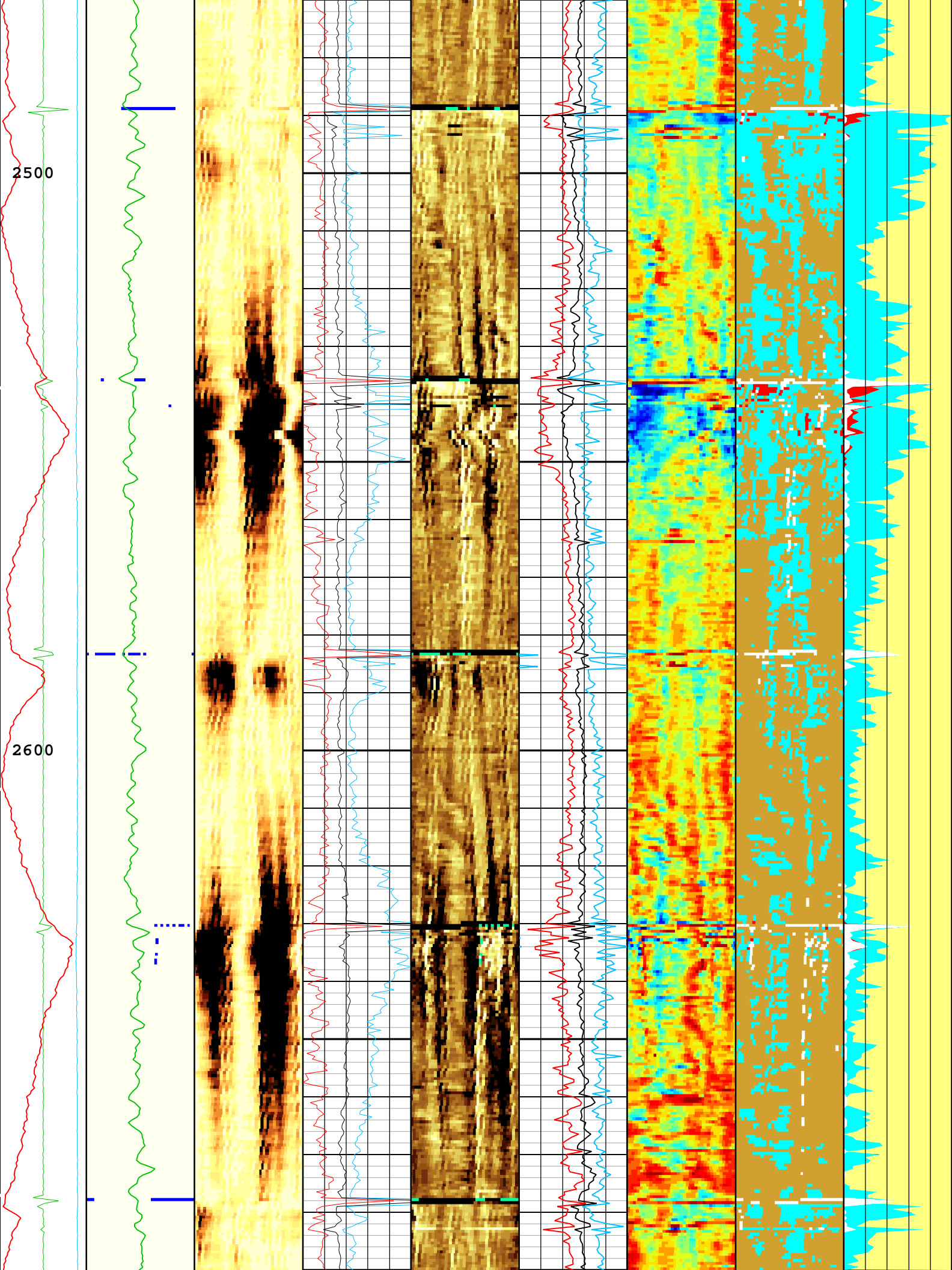


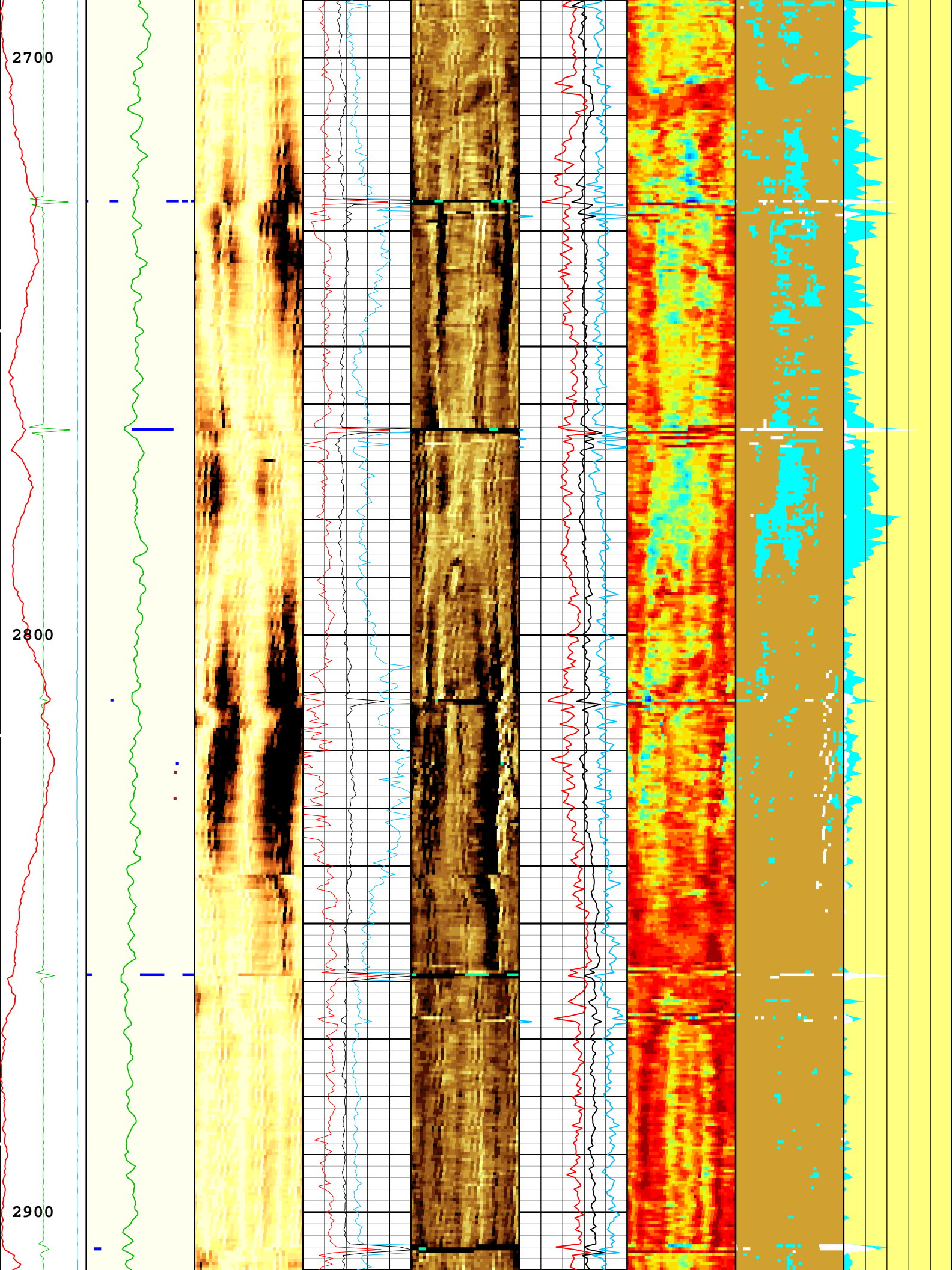


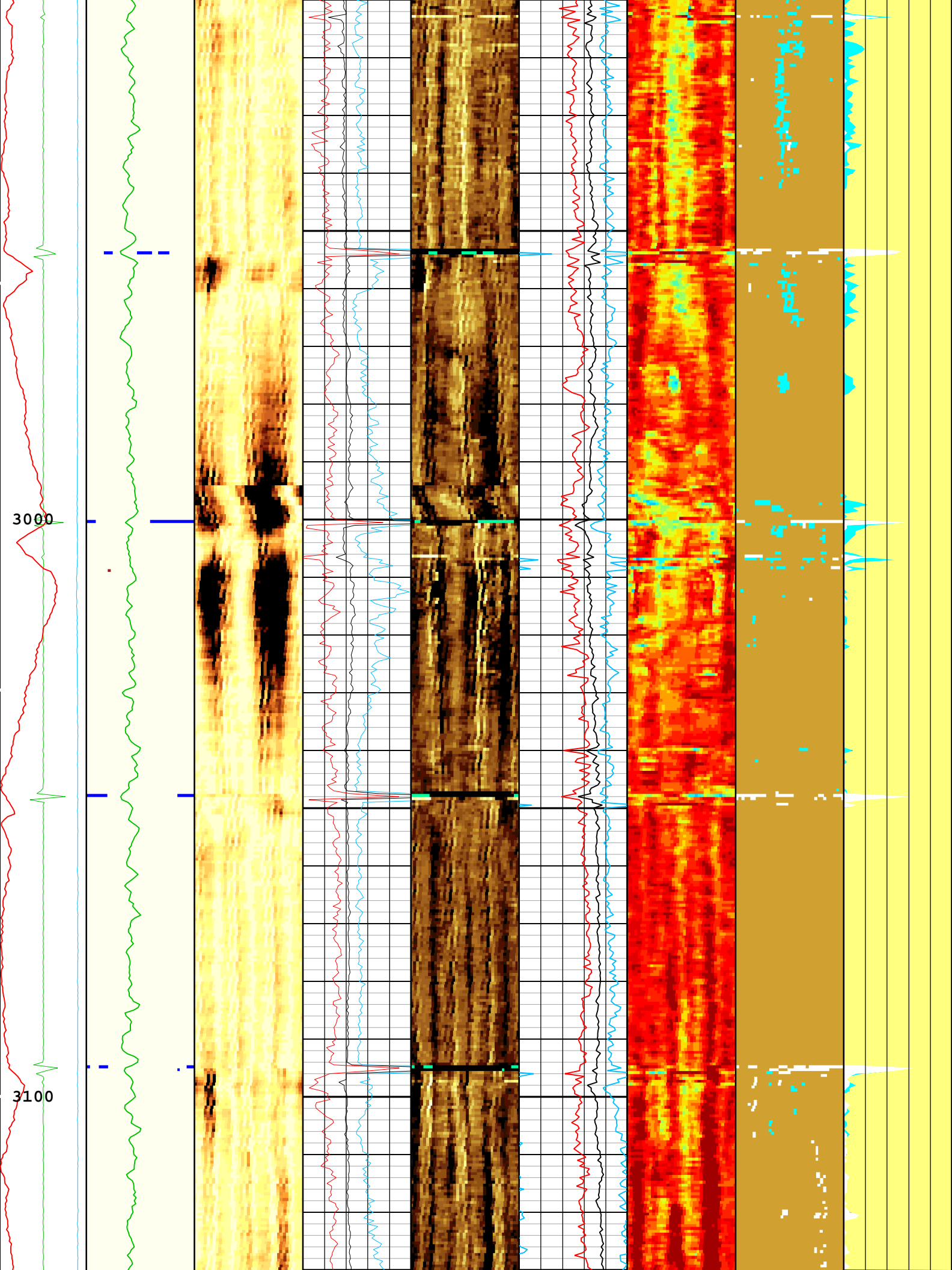


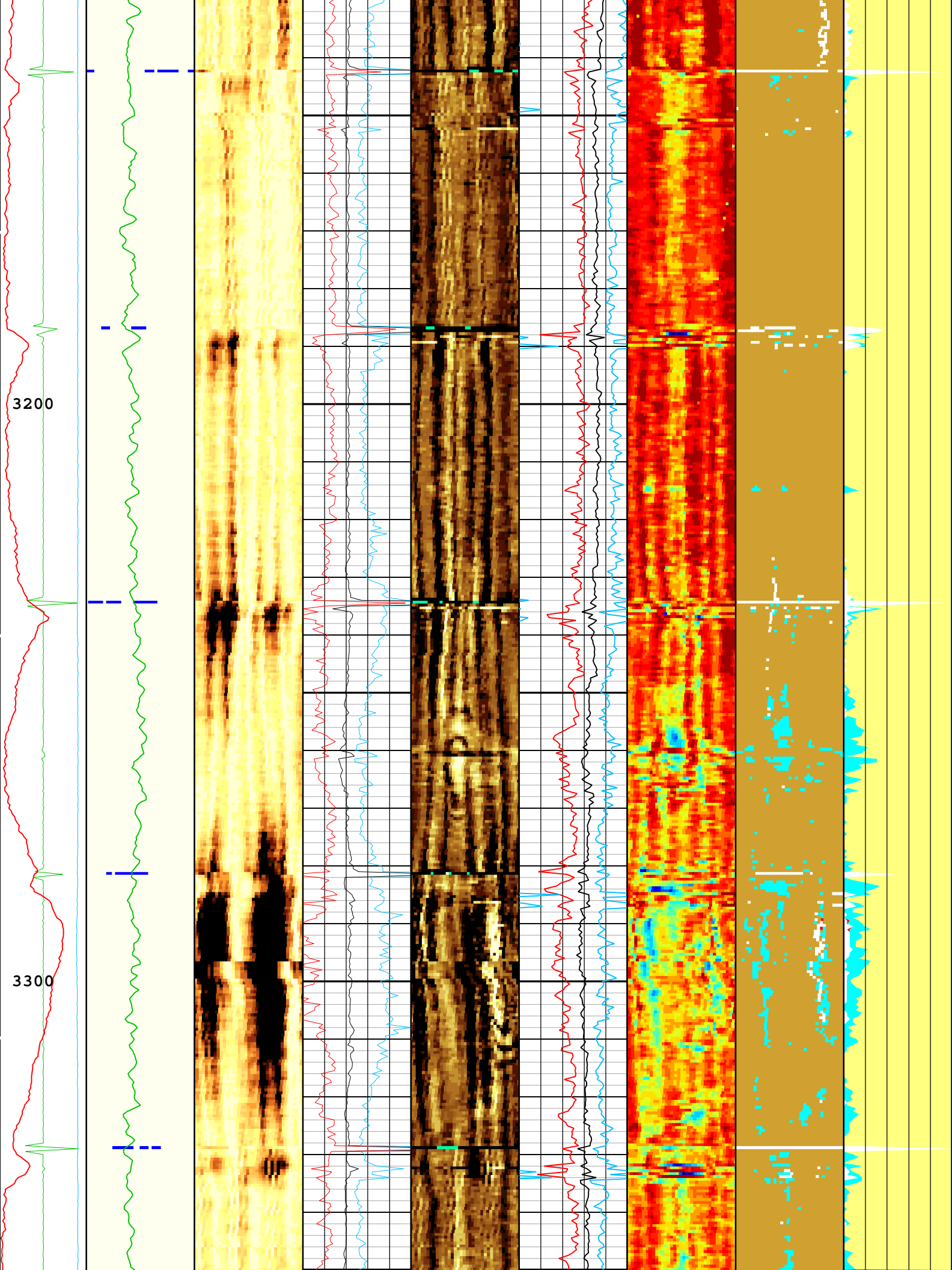




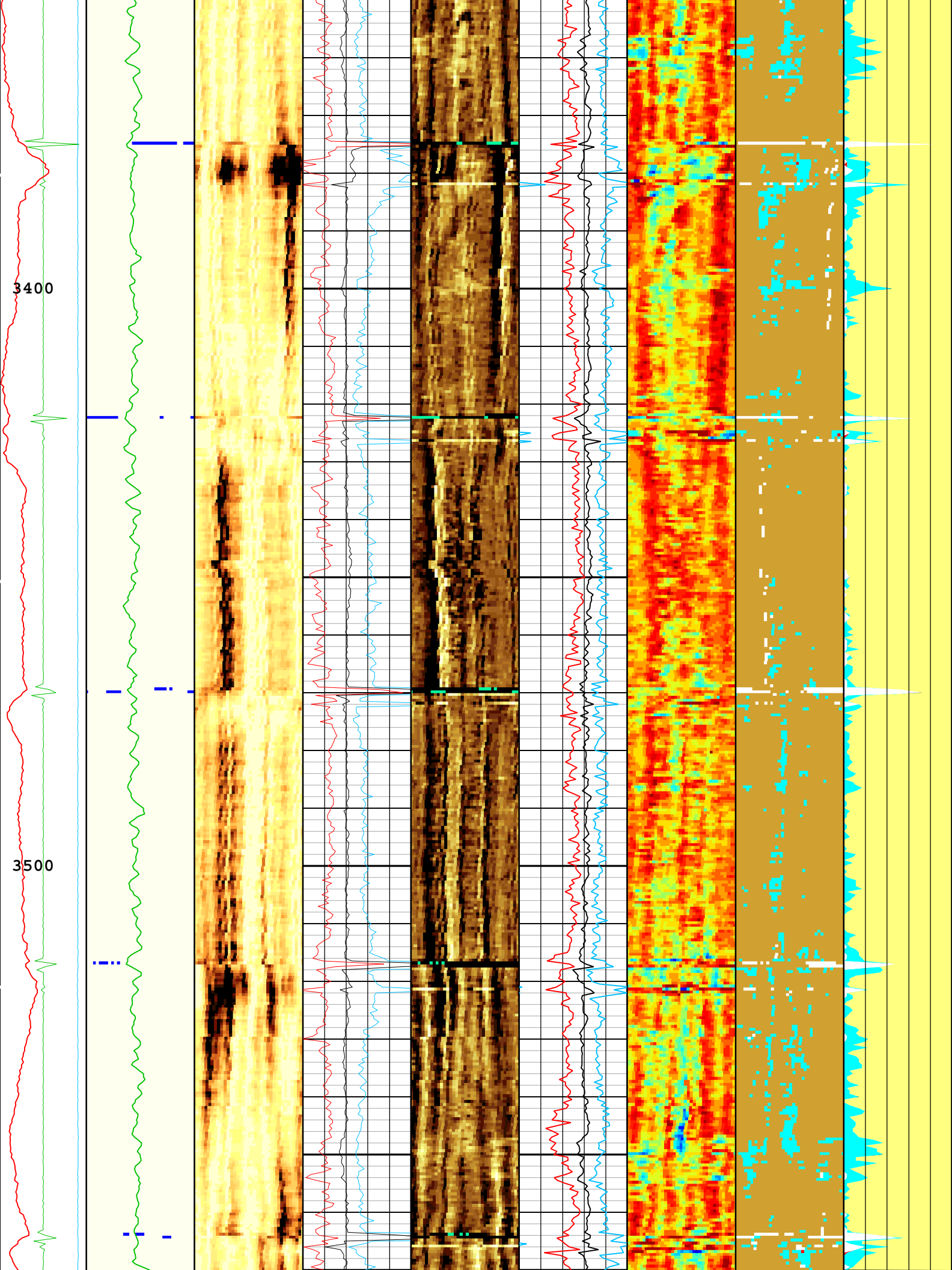


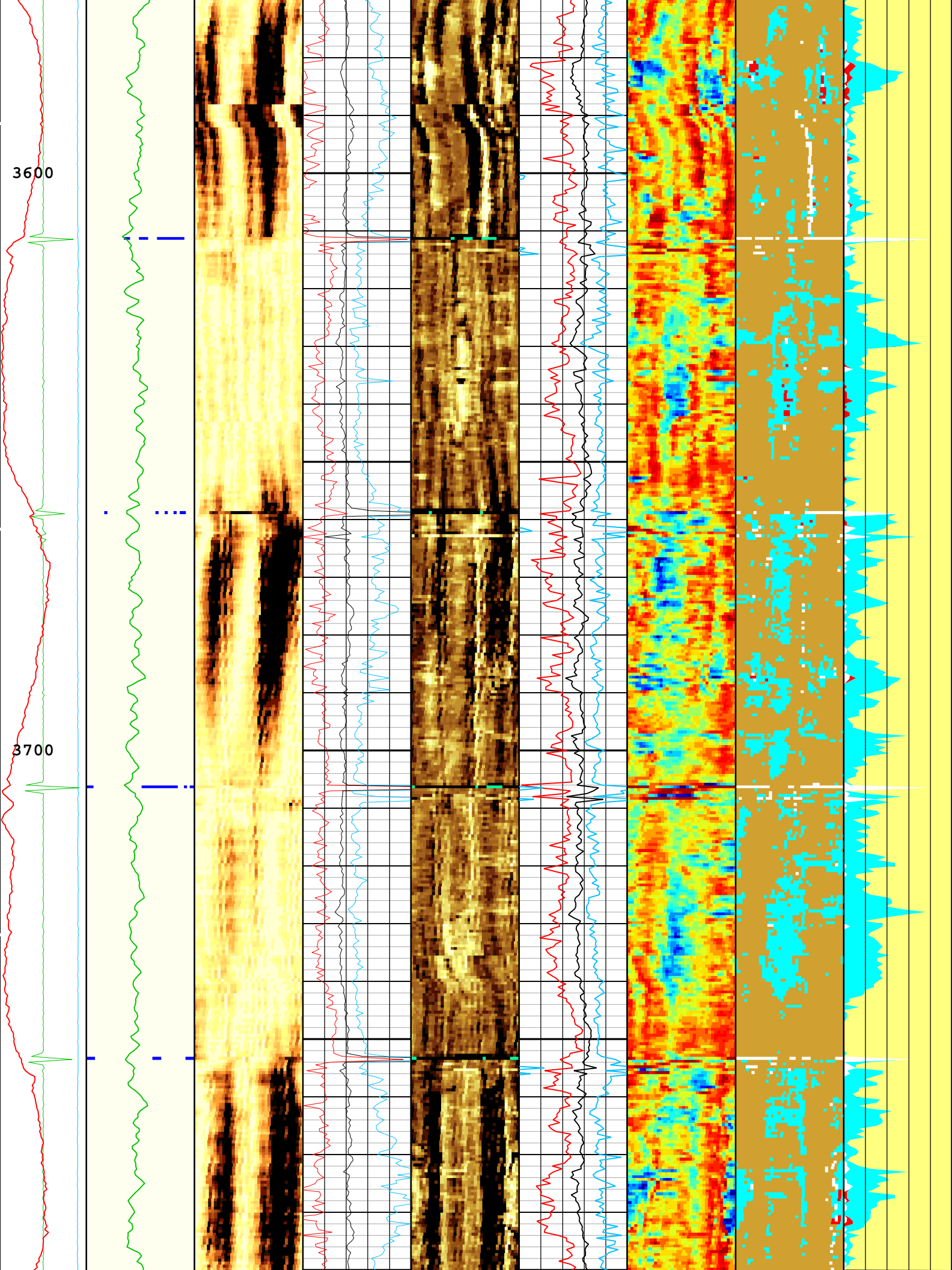




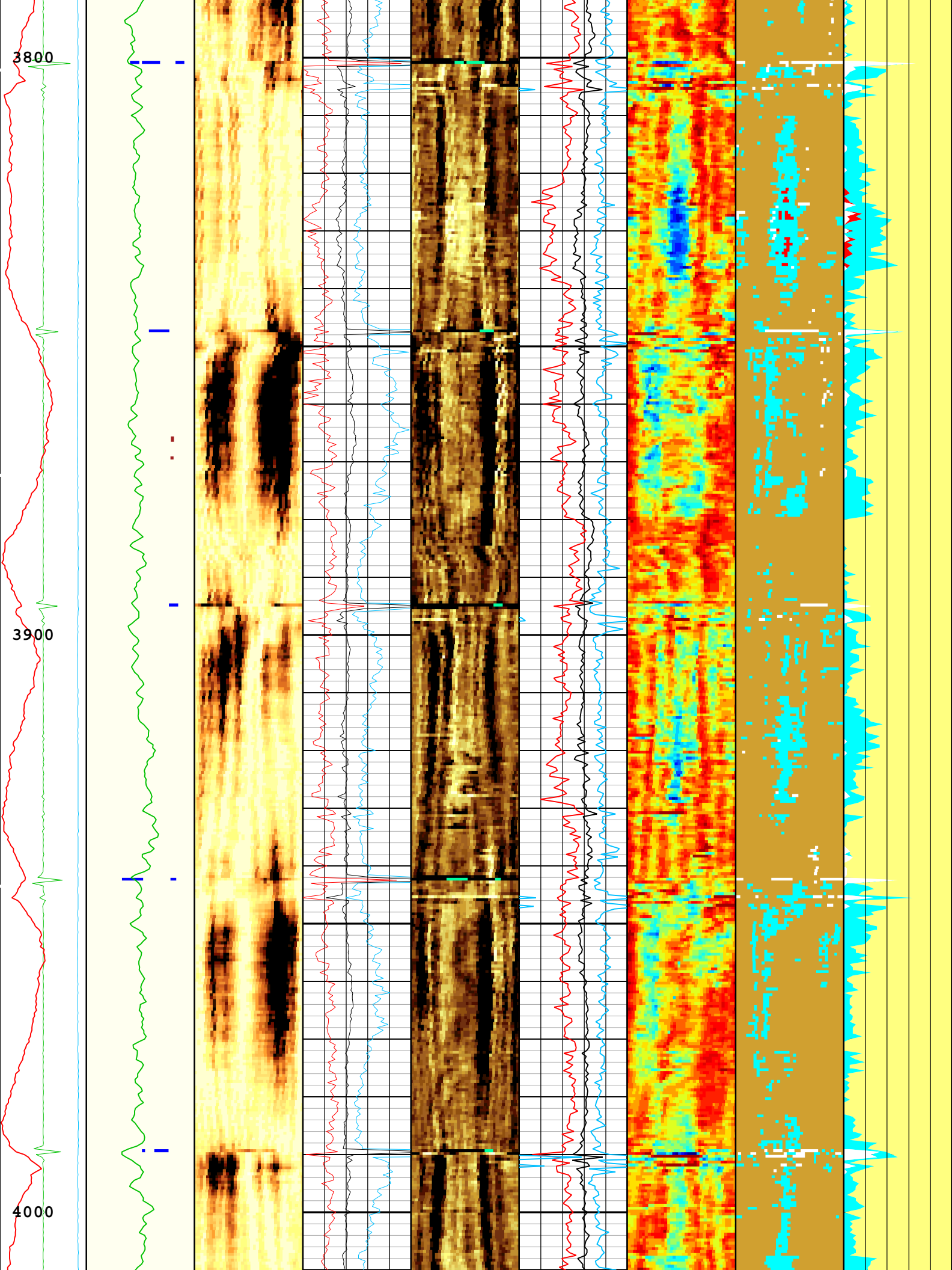


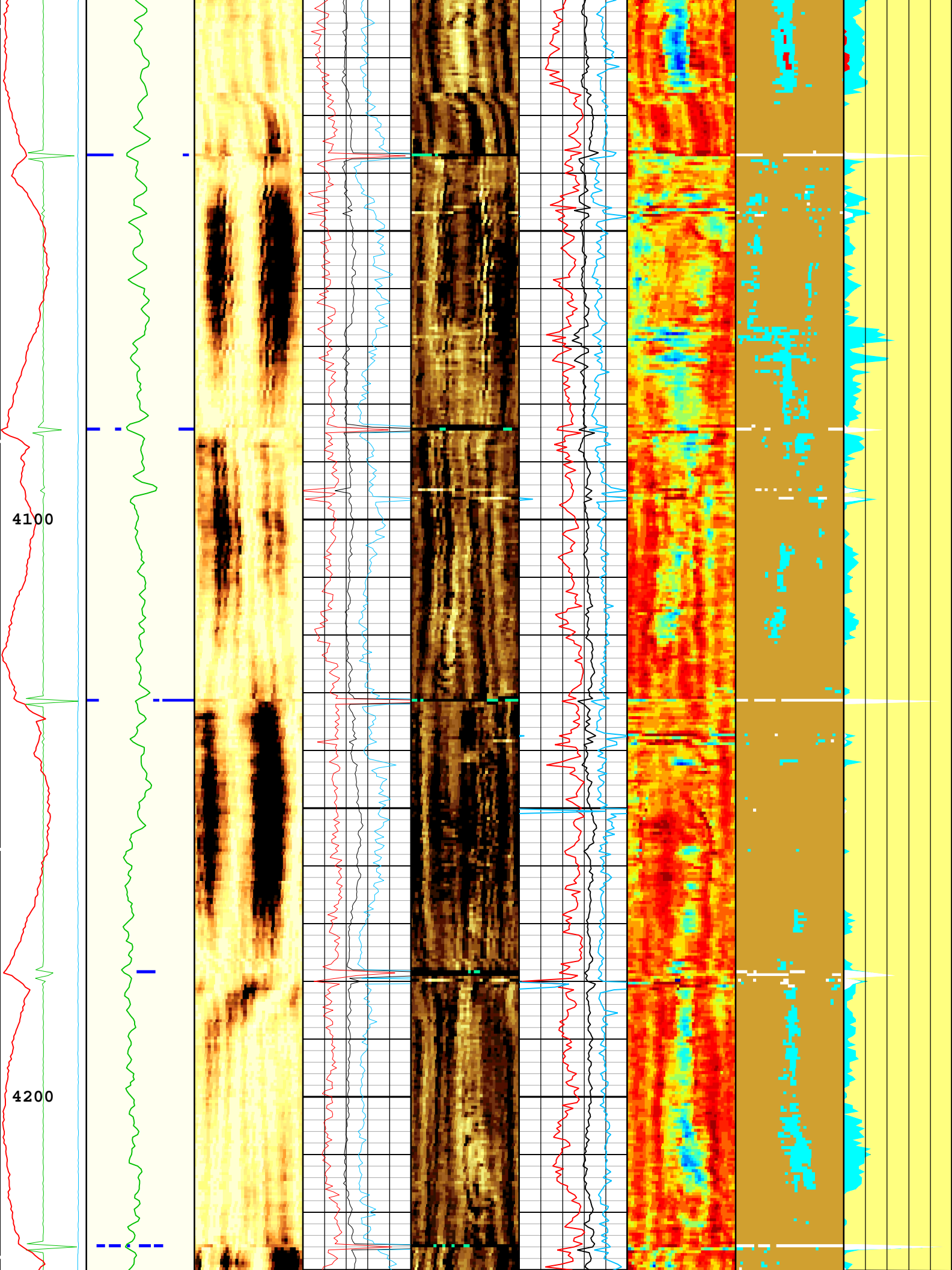


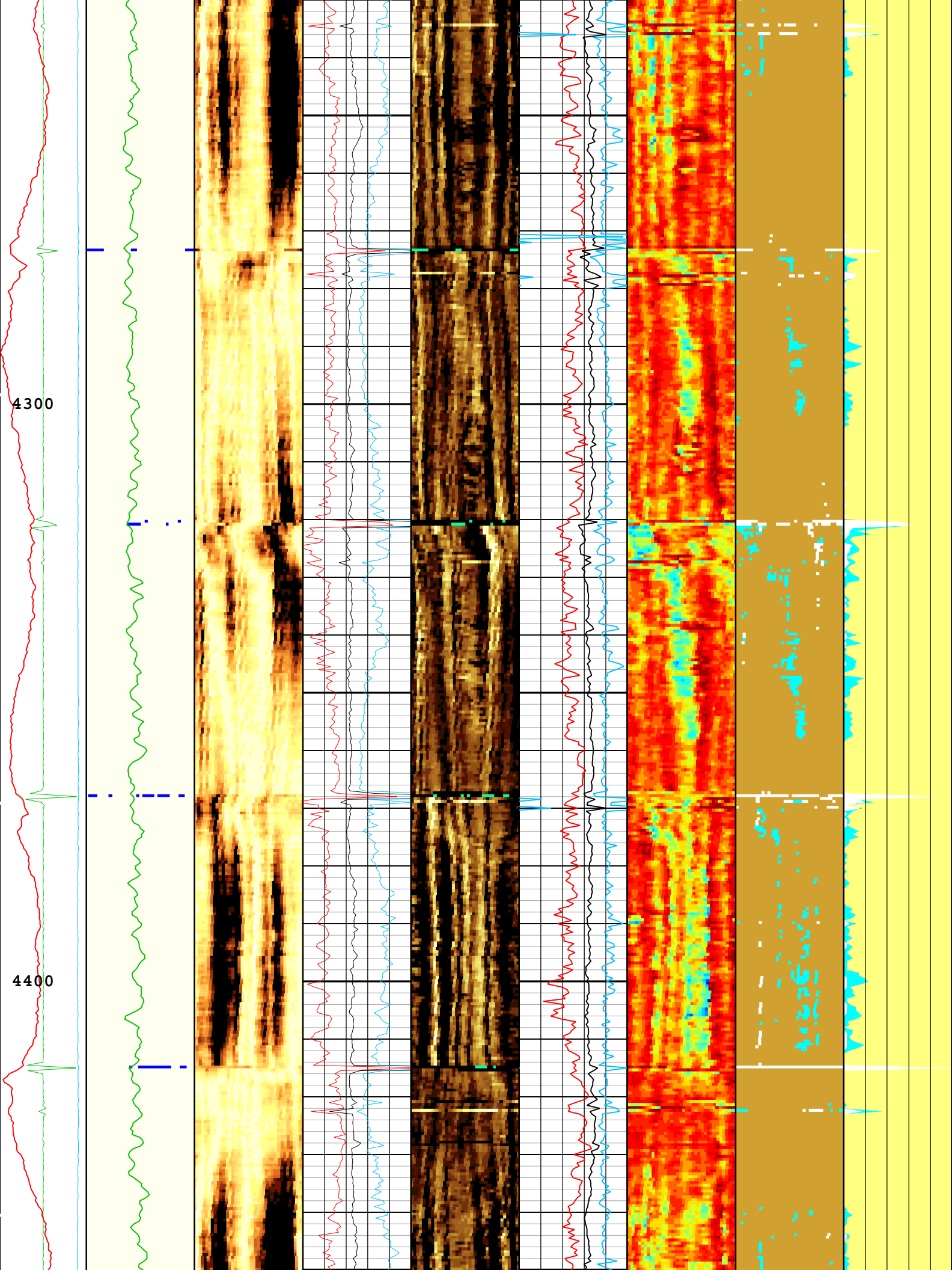


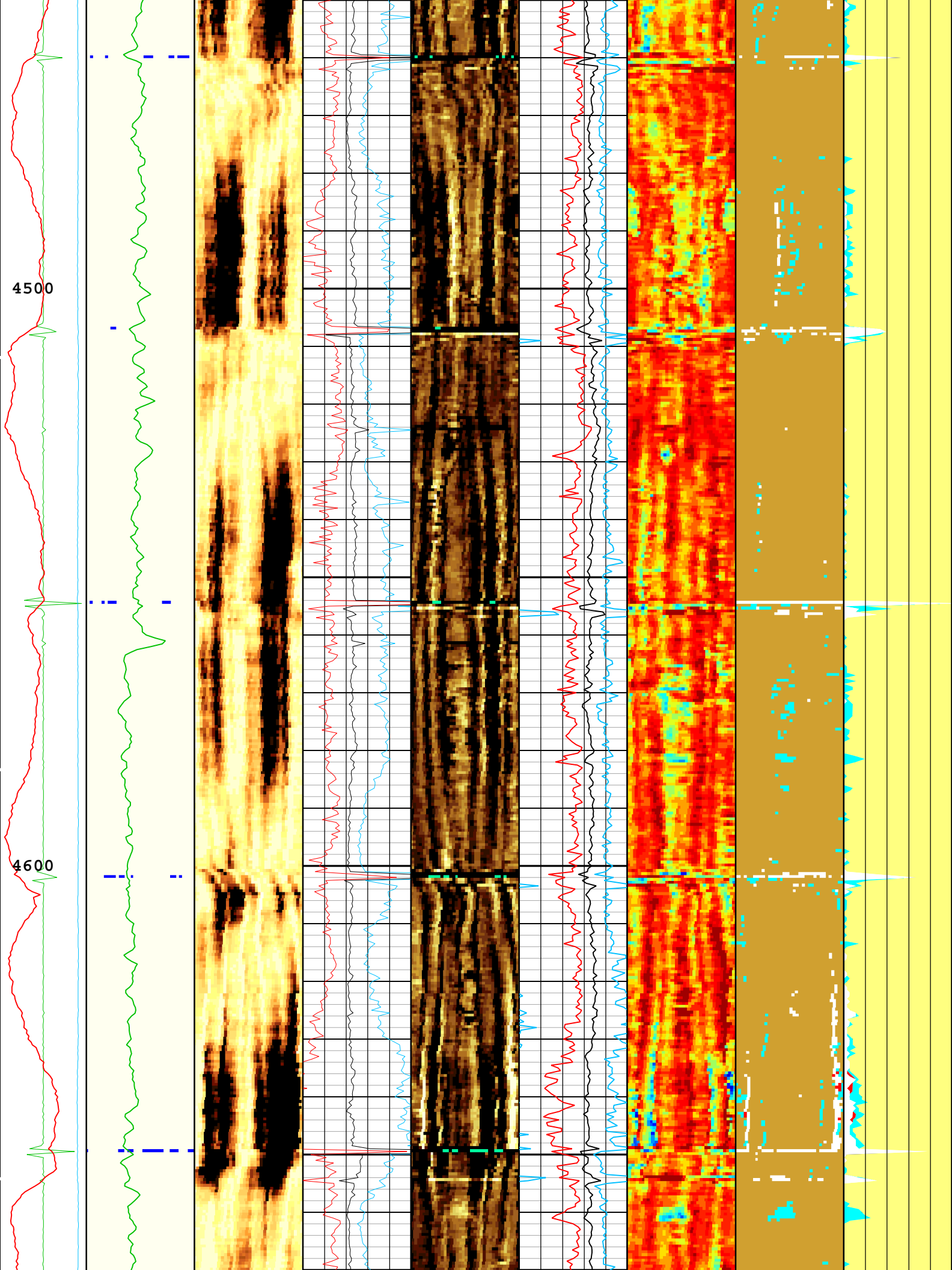


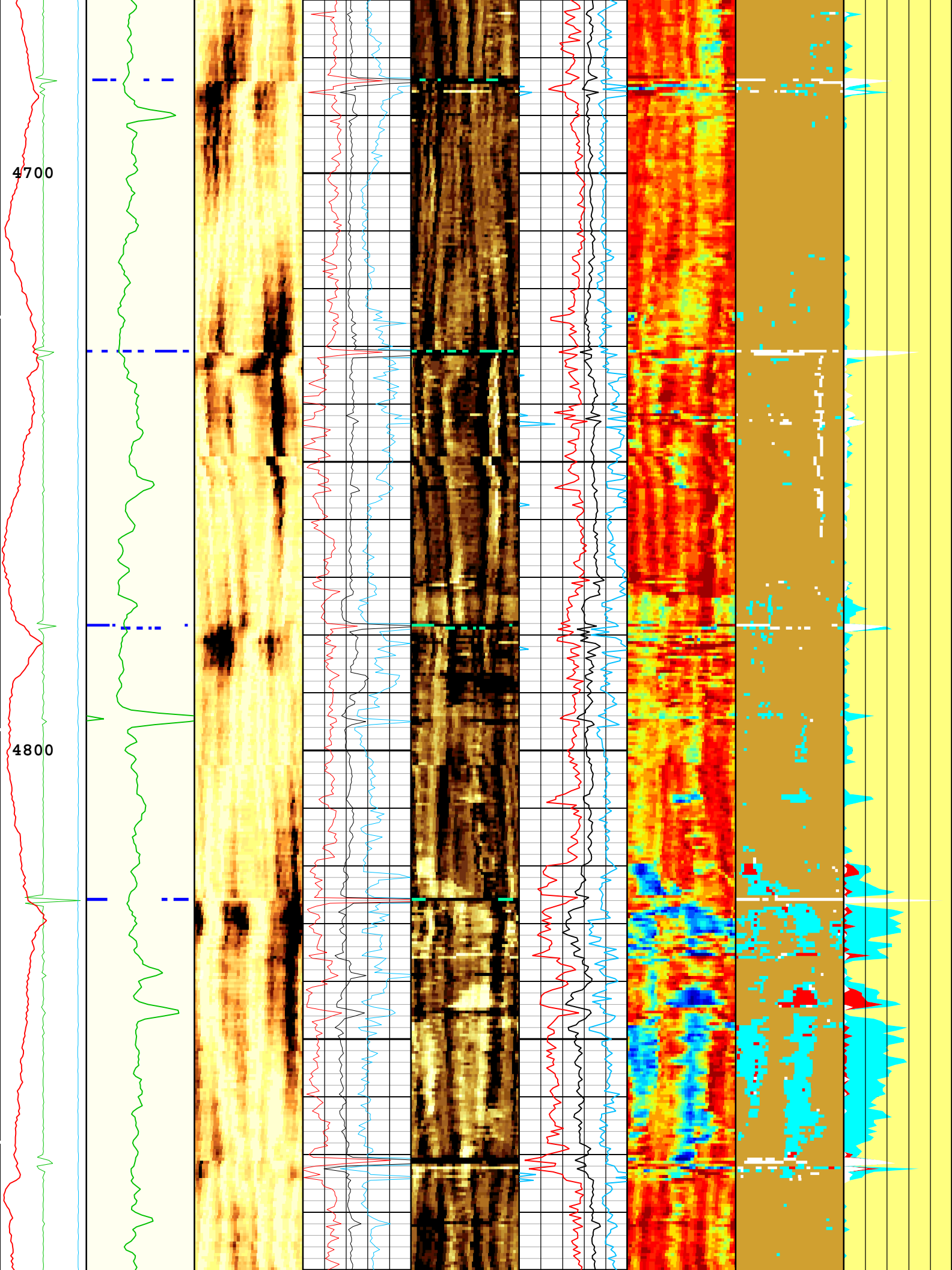




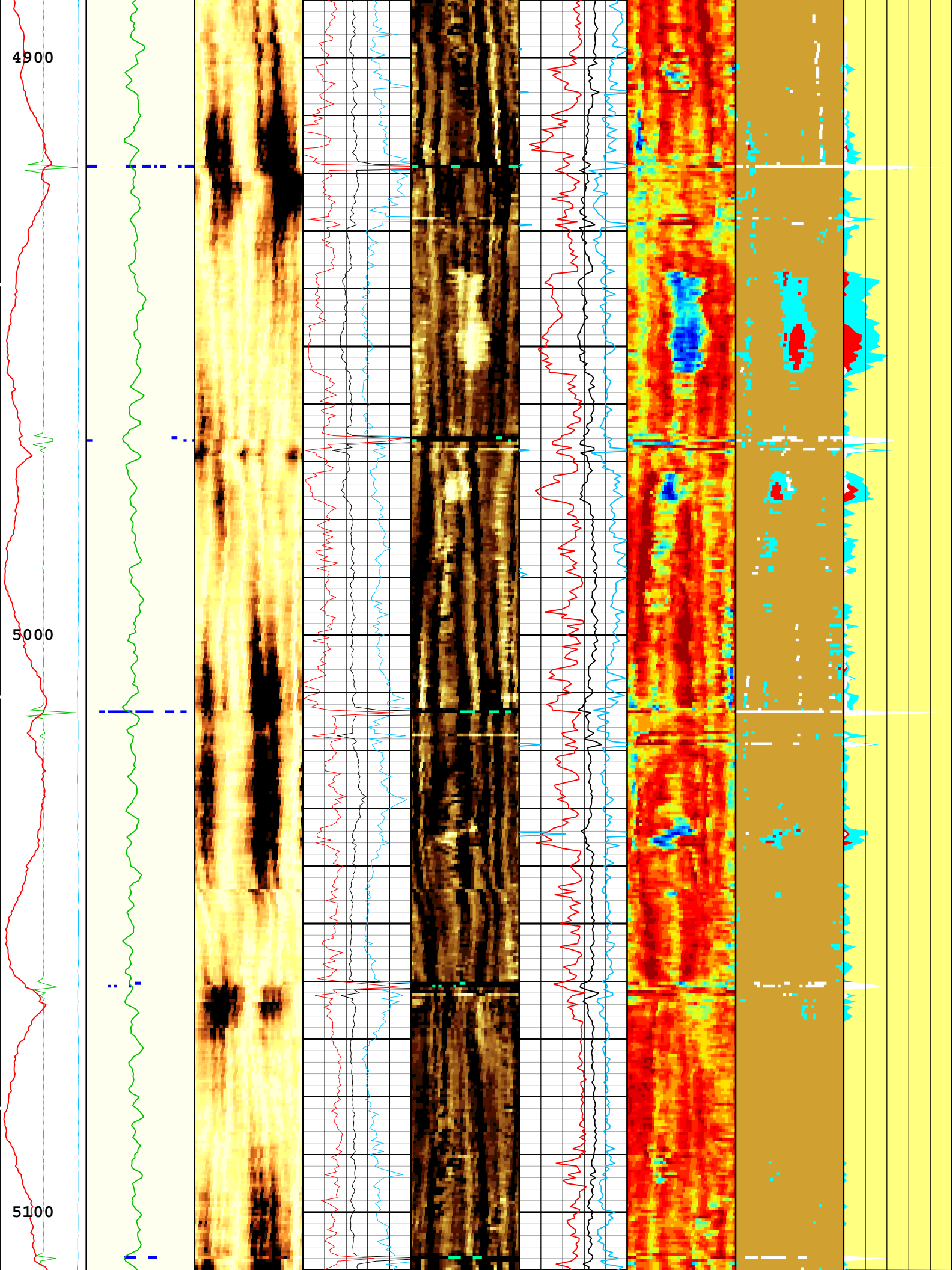


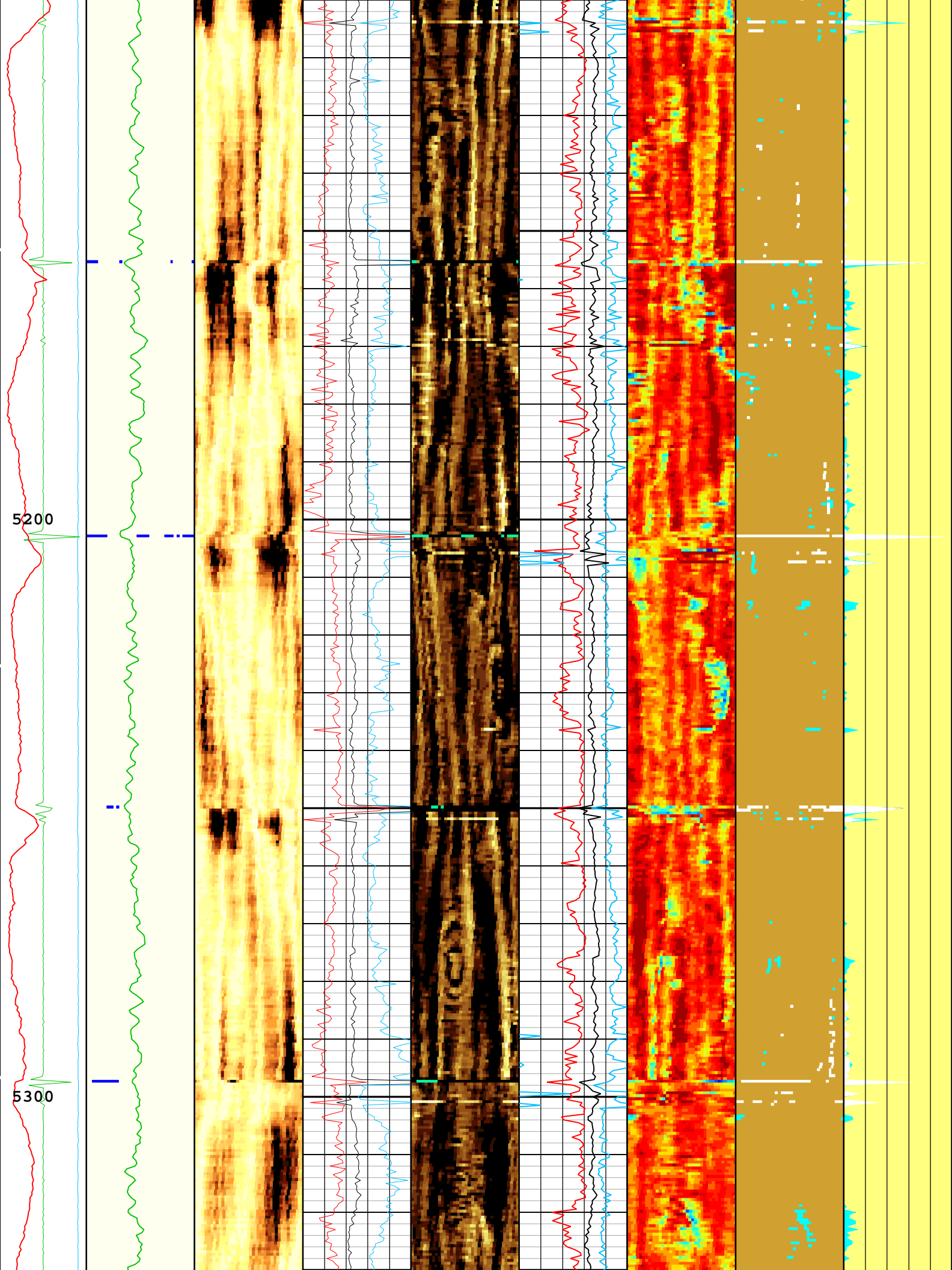




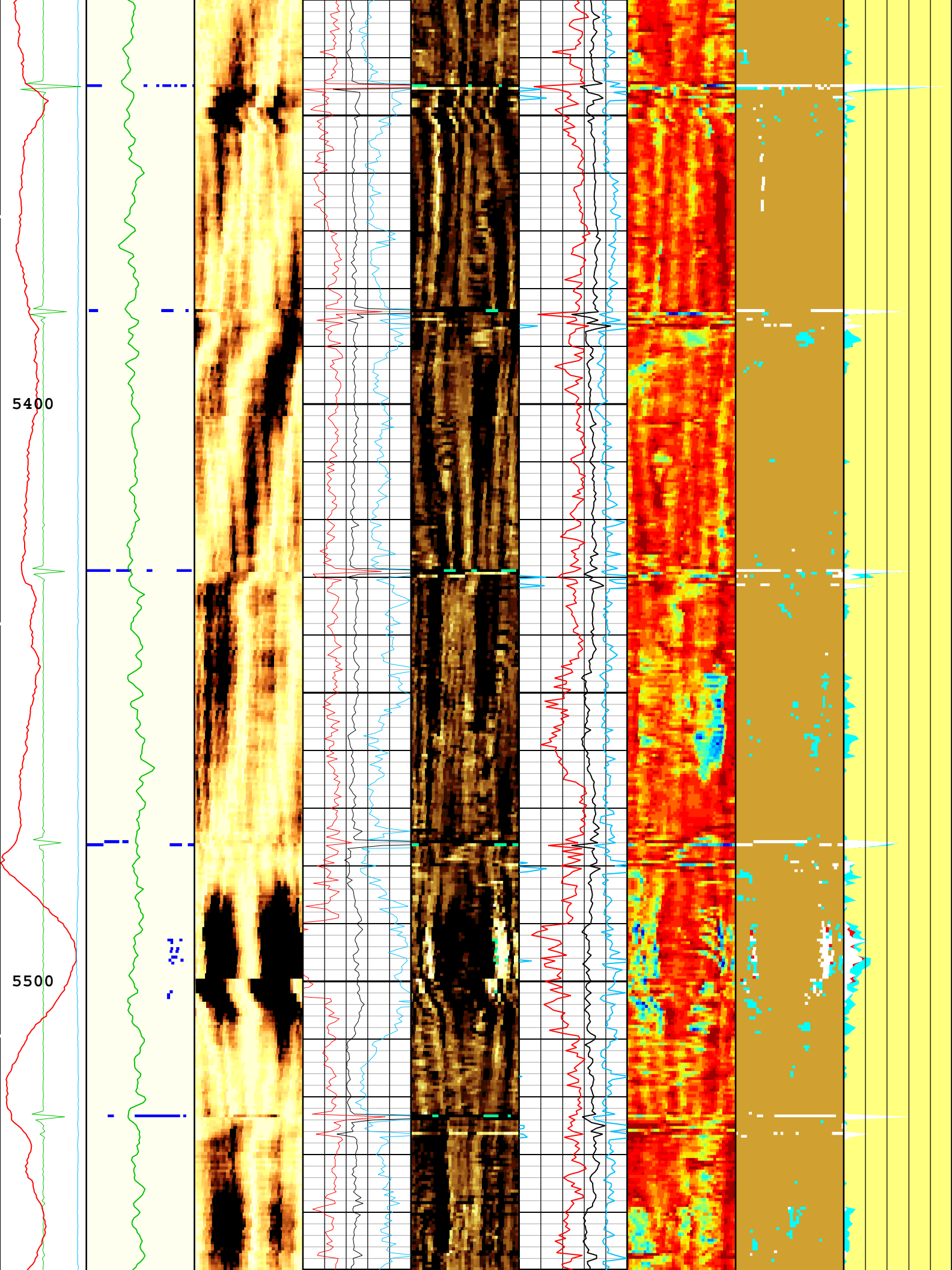


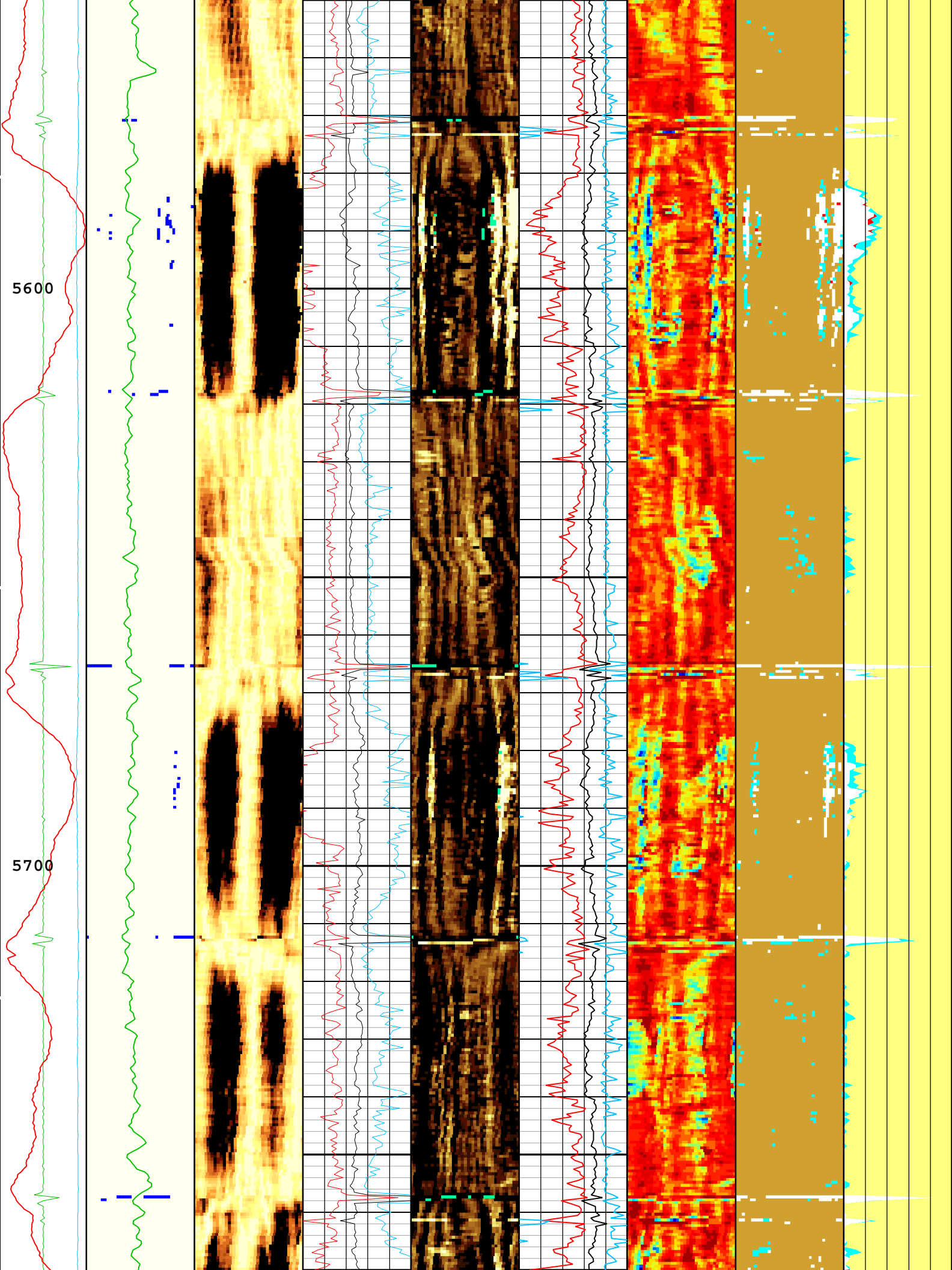


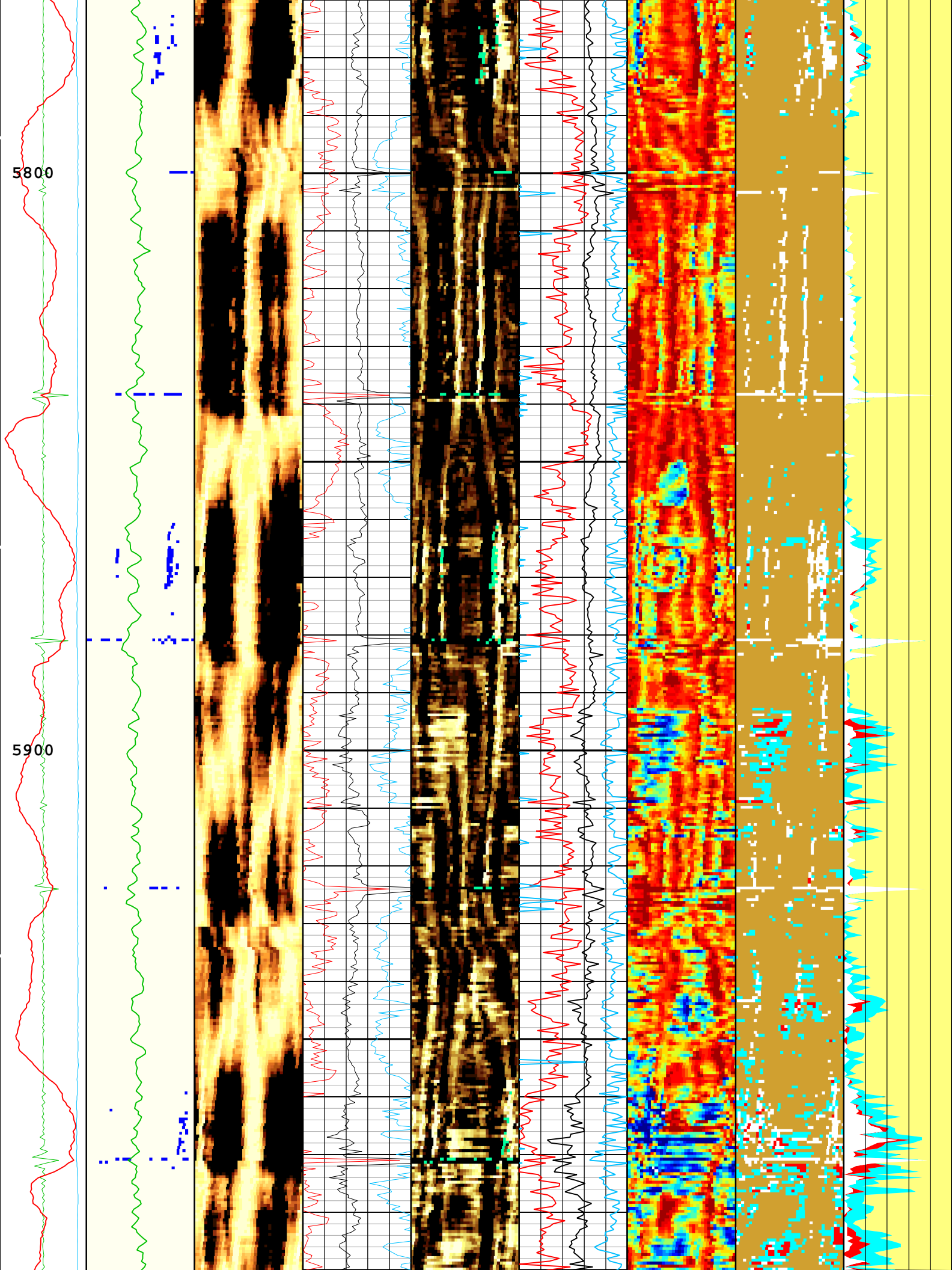


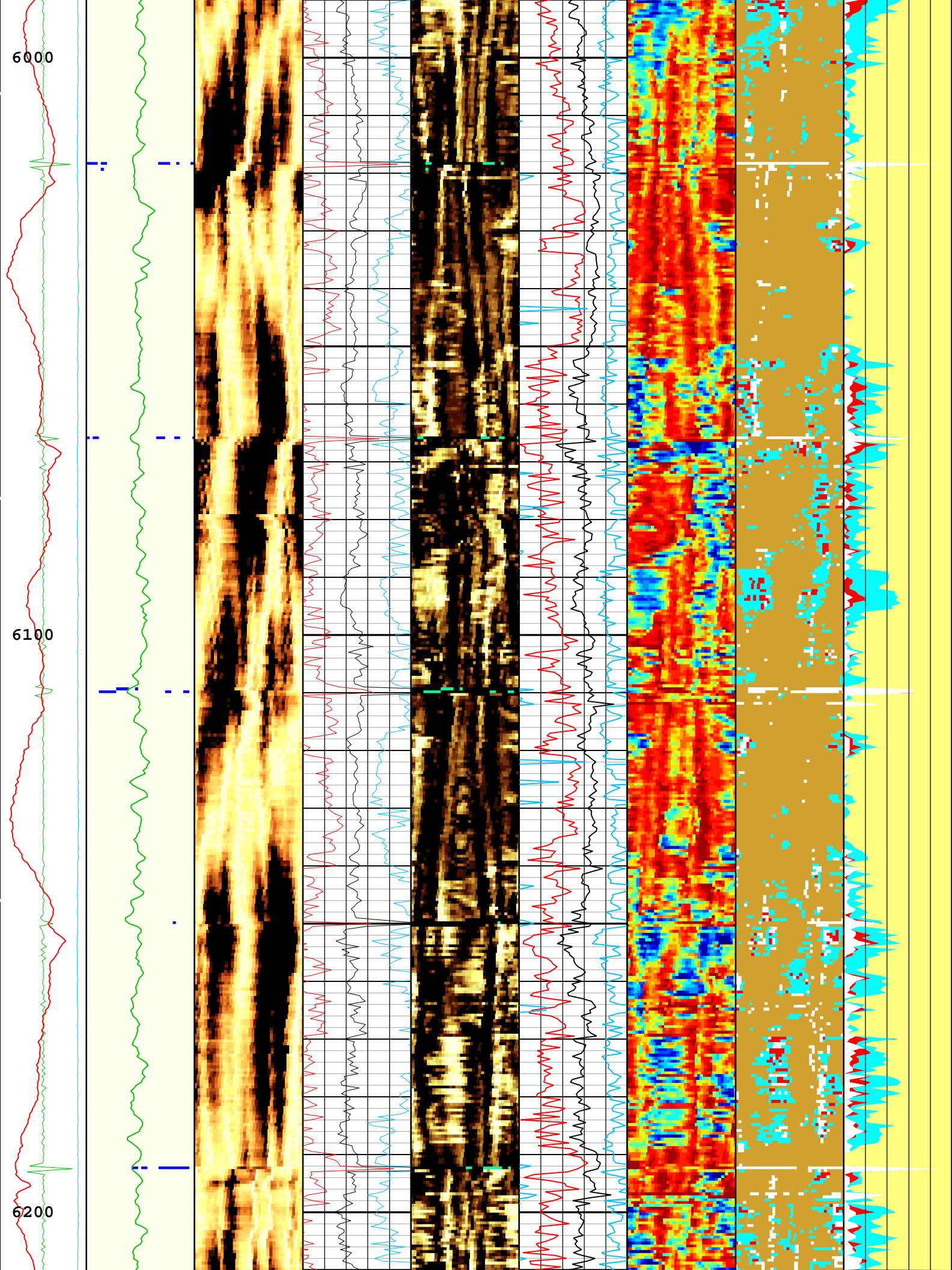




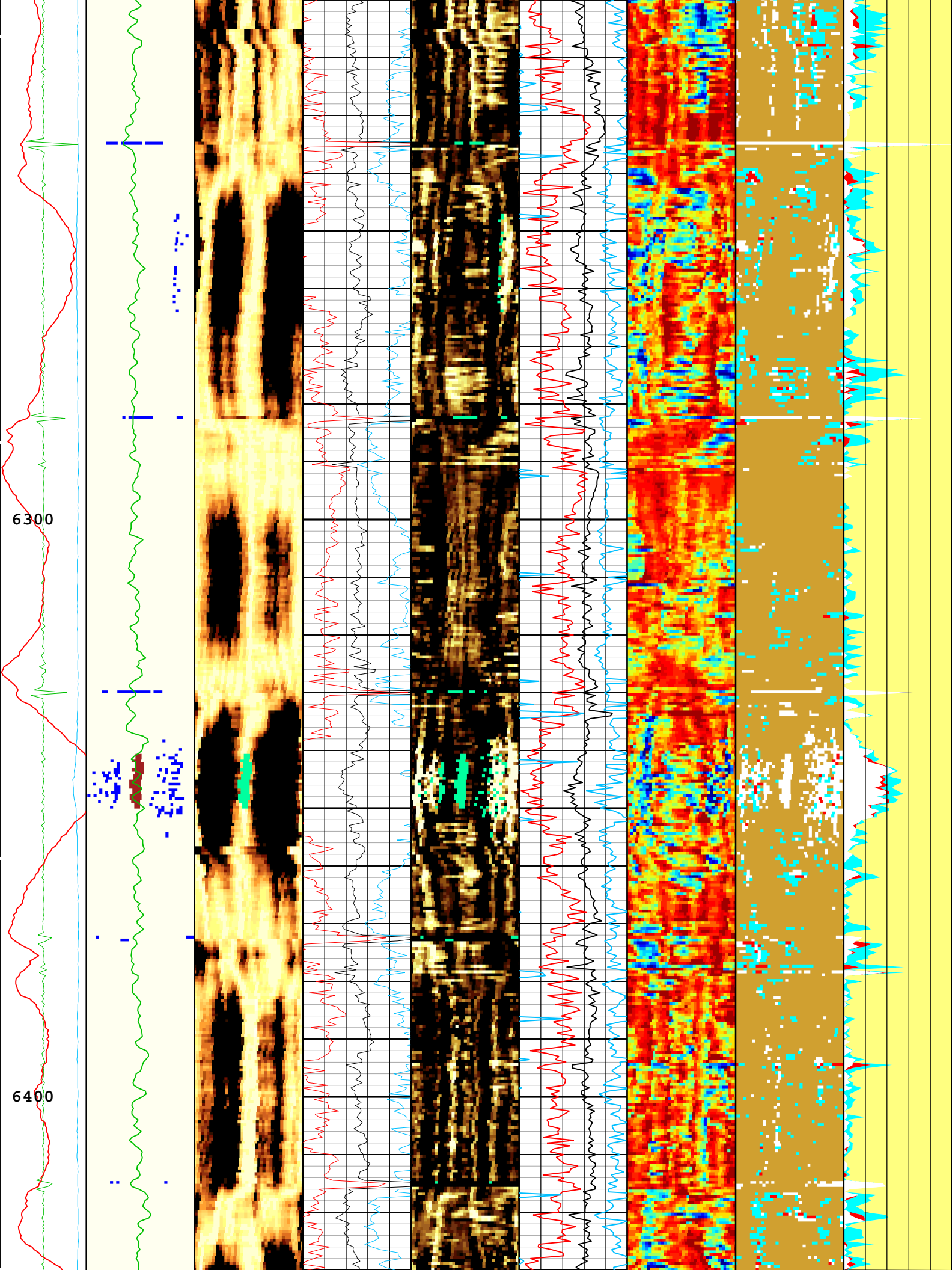


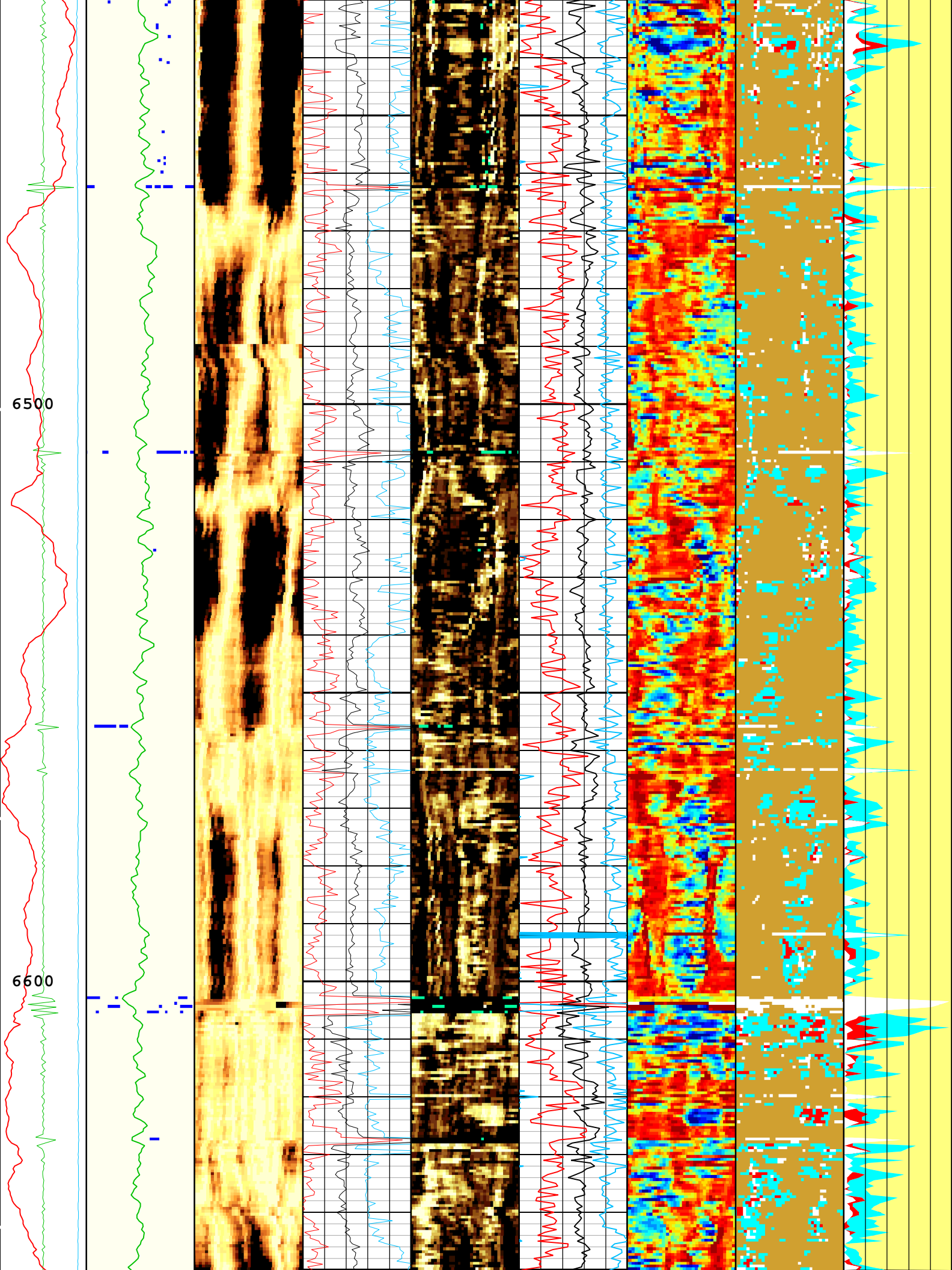


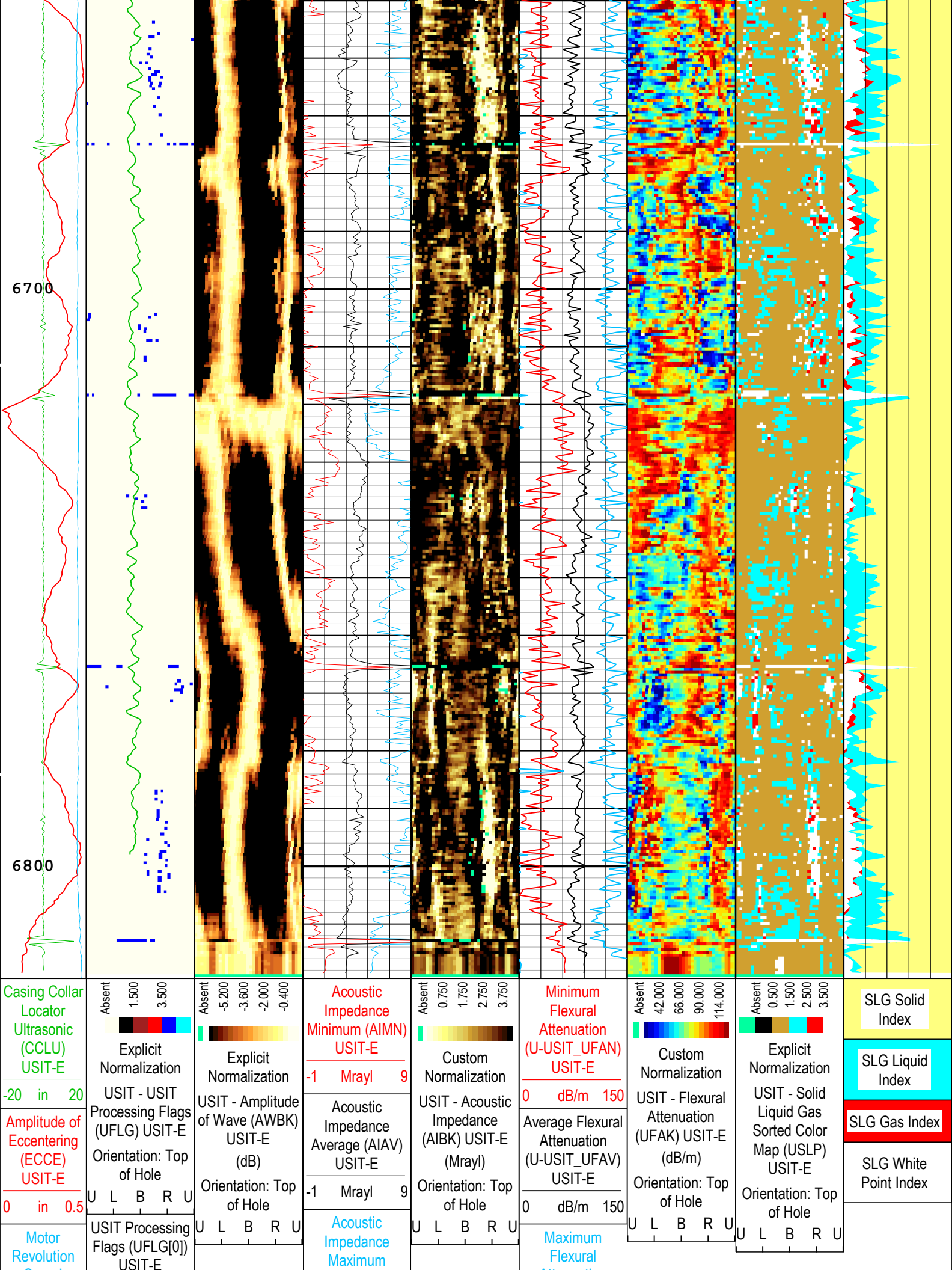



















Speed (RSAV) USIT-E	1	5	(AIMX) USIT-E -1    Mrayl    9	Attenuation (U-USIT_UFAX) USIT-E 0    dB/m    150
6    c/s    7.5	Gamma Ray (ECGR_EDTC) EDTC-B			
	0	gAPI    150		

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)
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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-Sep-2018 17:12:03
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Channel Processing Parameters	
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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	14816	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	Light 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	8.4	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	-29.62	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
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	

SOCCO	Standard 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	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-33.39	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	1.75	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	65	2137
BS	9.625	2137	6819.5

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	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	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	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	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	60	23-Sep-2018 14:46:04	23-Sep-2018 14:46:56	6820.21	6788.25

EMXV	70	23-Sep-2018 14:46:56	23-Sep-2018 15:51:50	6788.25	2193.94
EMXV	60	23-Sep-2018 15:51:50	23-Sep-2018 15:55:00	2193.94	1968.88
EMXV	70	23-Sep-2018 15:55:00	23-Sep-2018 16:25:38	1968.88	66.82
U-USIT_UFWE	177	23-Sep-2018 14:46:04	23-Sep-2018 15:55:07	6820.21	1960.89
U-USIT_UFWE	181.73	23-Sep-2018 15:55:07	23-Sep-2018 16:25:38	1960.89	66.82
WINB	31.88	23-Sep-2018 14:46:04	23-Sep-2018 14:59:07	6820.21	5926.63
WINB	29.67	23-Sep-2018 14:59:07	23-Sep-2018 16:25:38	5926.63	66.82
WINE	71.88	23-Sep-2018 14:46:04	23-Sep-2018 14:47:07	6820.21	6774.61
WINE	75.71	23-Sep-2018 14:47:07	23-Sep-2018 14:49:41	6774.61	6593.1
WINE	75.23	23-Sep-2018 14:49:41	23-Sep-2018 16:25:38	6593.1	66.82

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[6]:Up	Up	66.82 ft	6820.21 ft	23-Sep-2018 2:46:04 PM	23-Sep-2018 4:25:38 PM	ON	6.50 ft	Yes






All depths are referenced to toolstring zero

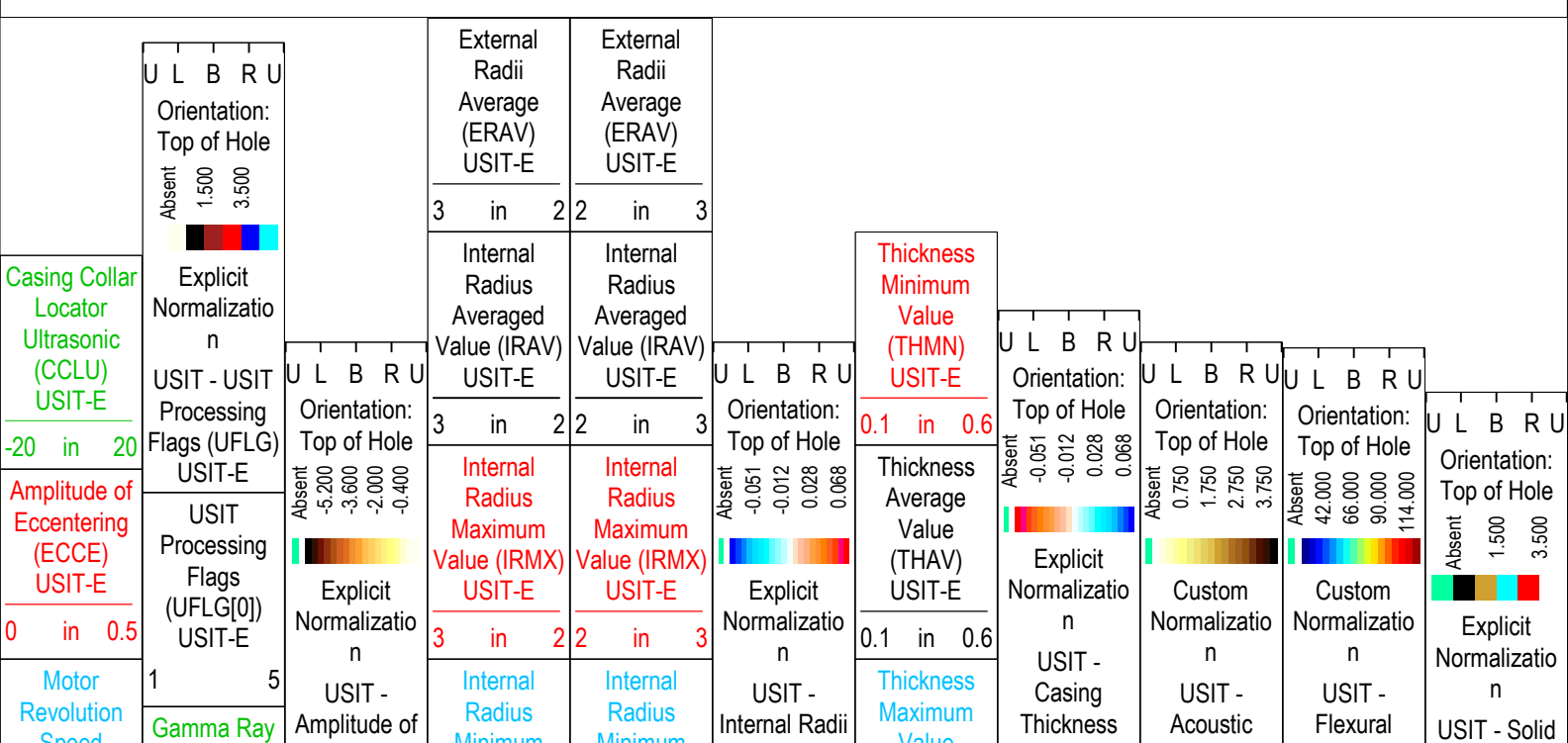
Log	Company:Crestone Peak Resources Operating LLC	Well:Davis 1S-9H-G266
		ONE: Log[6]:Up:S004

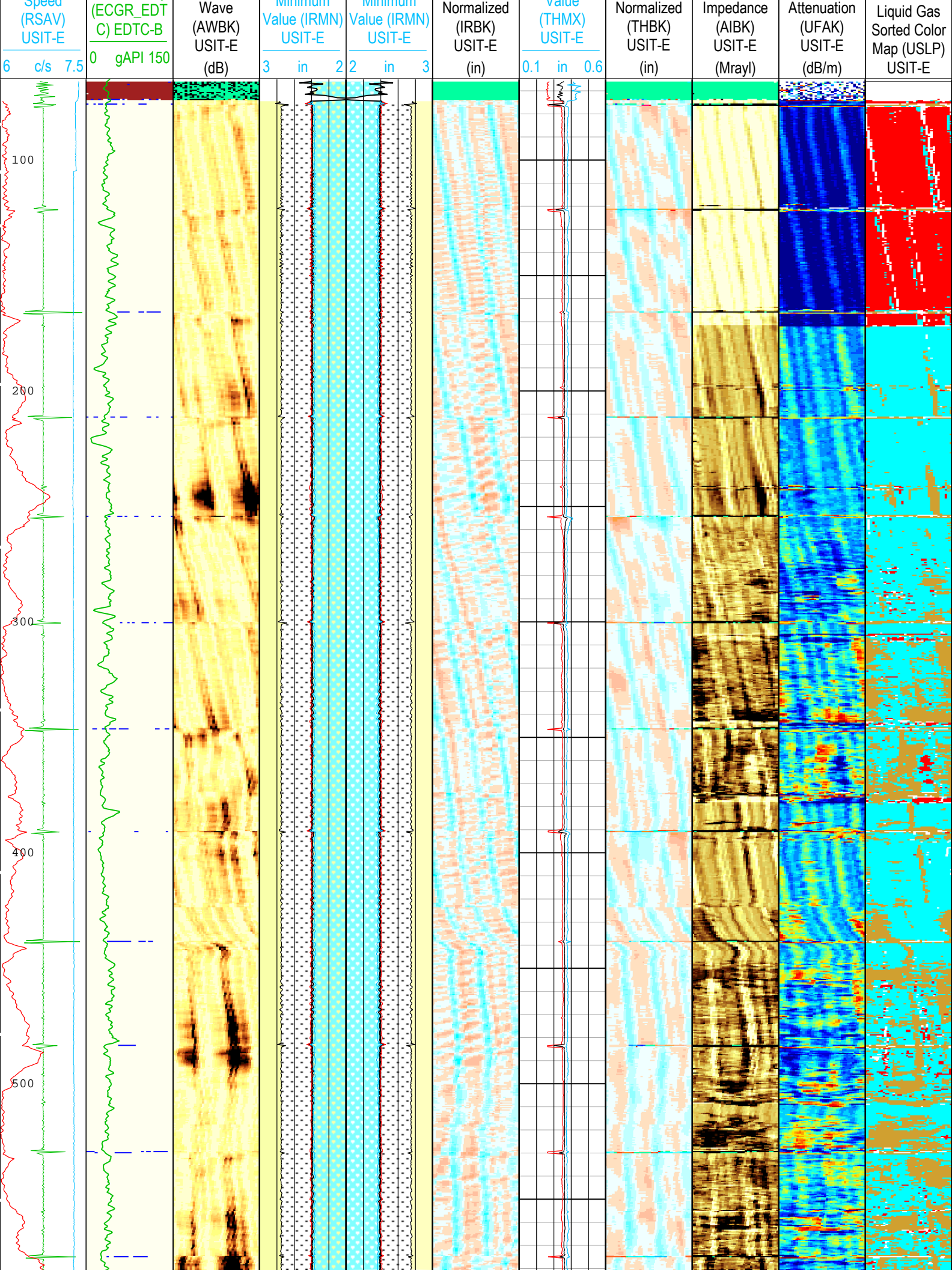
Description: USI IBC SLG Composite    Format: Log ( IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 23-Sep-2018 17:12:41

TIME\_1900 - Time Marked every 60.00 (s)

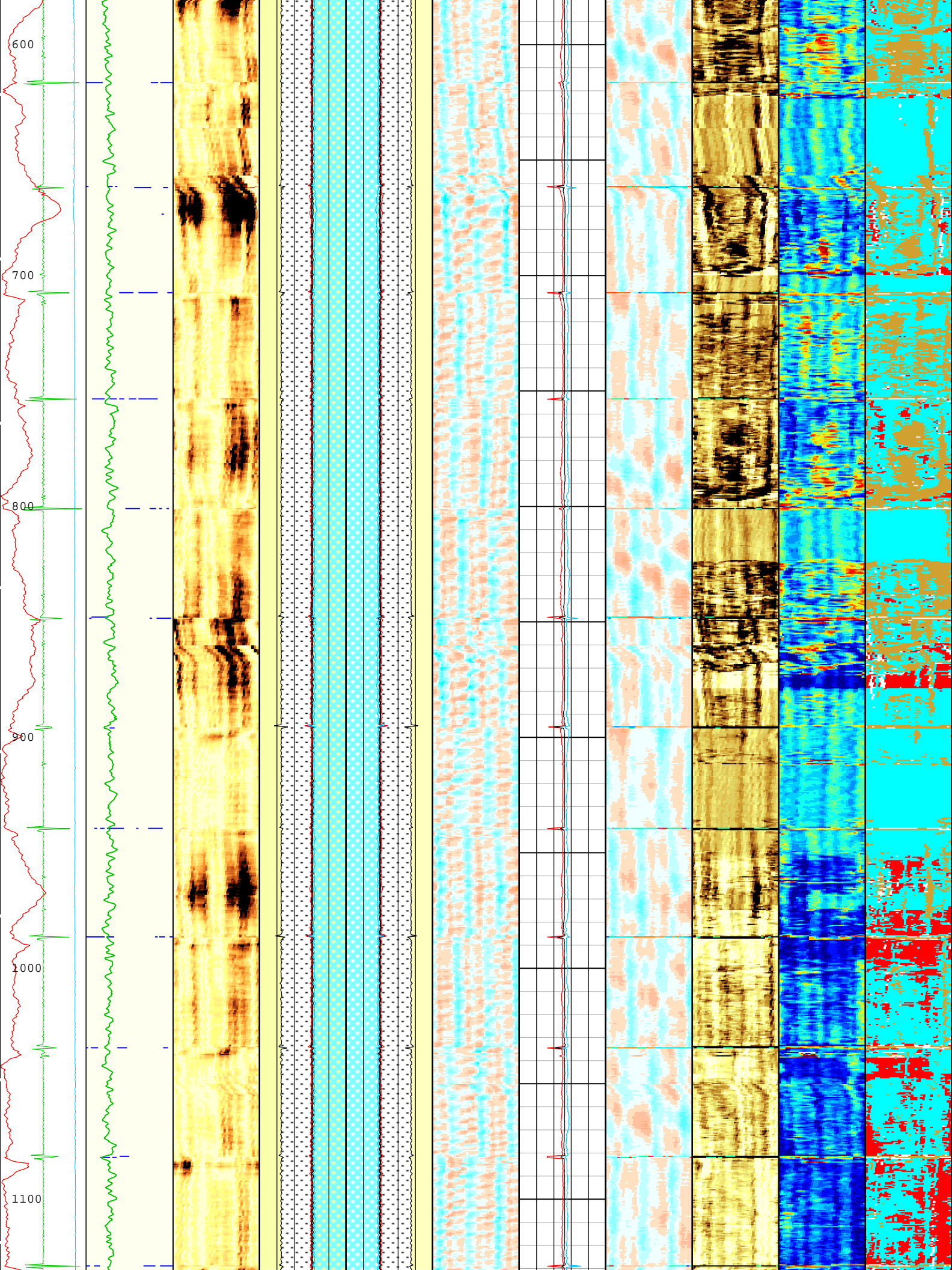
USIT Processing Flags (UFLG[0]) USIT-E

- 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

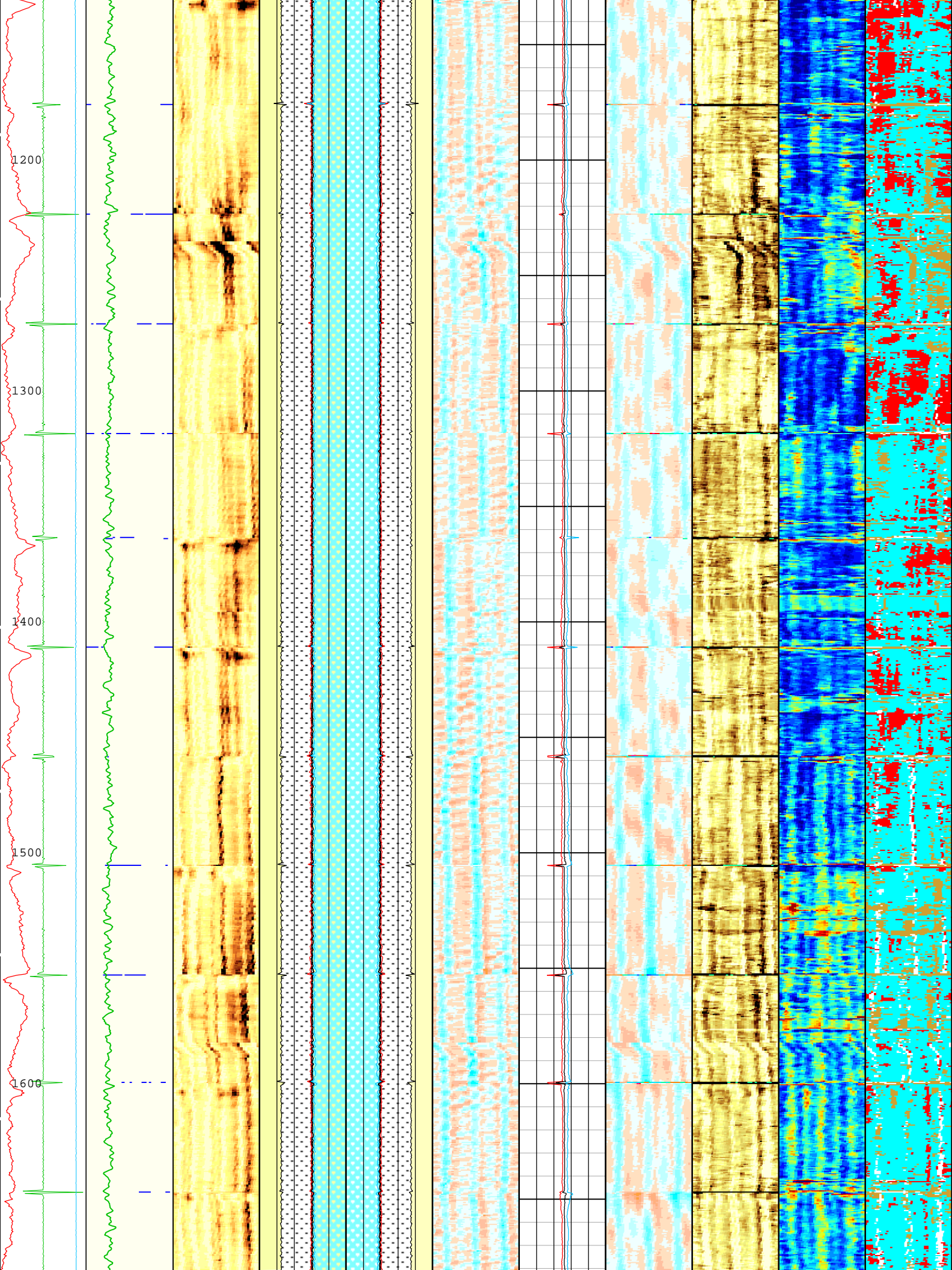


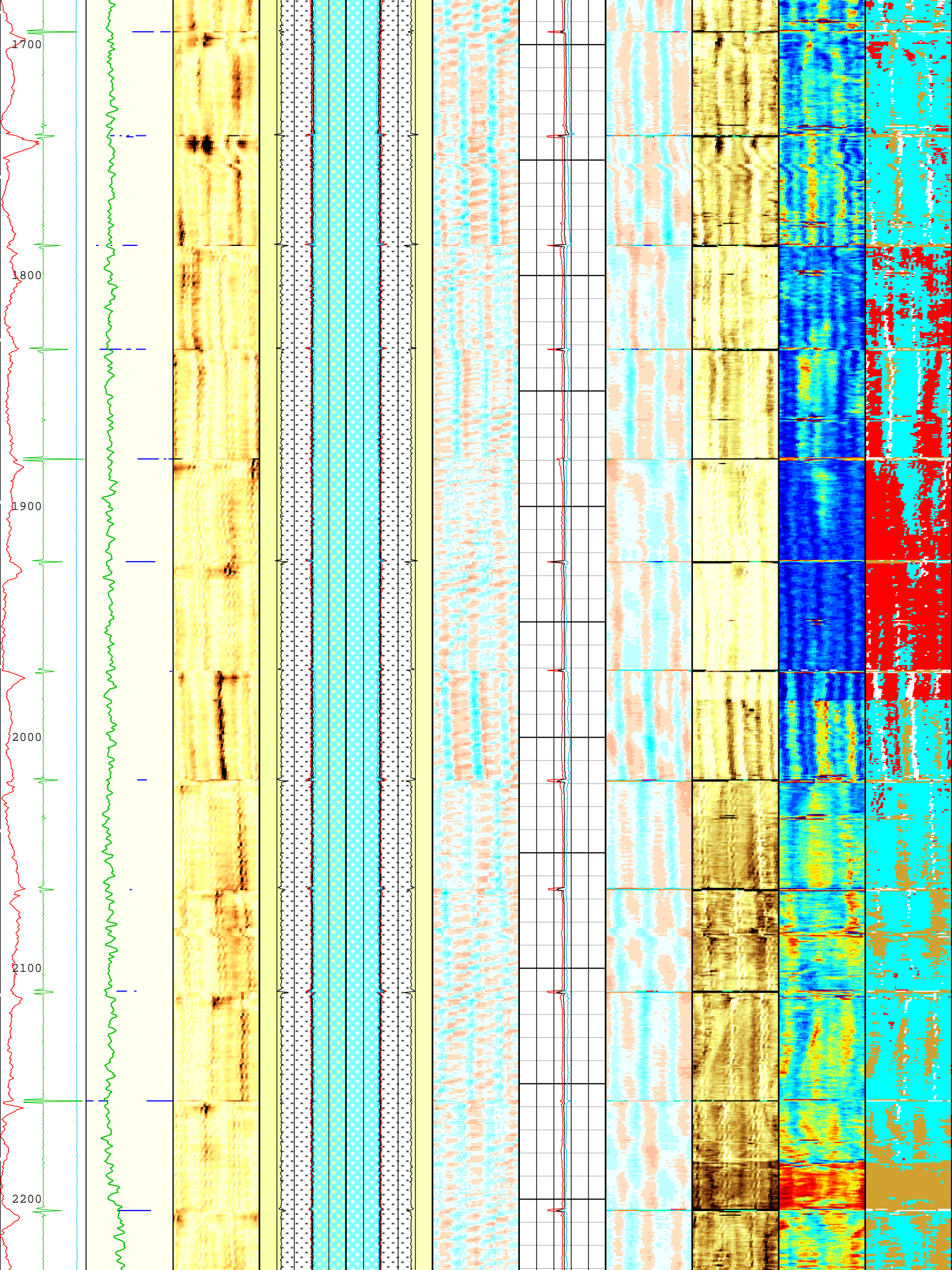




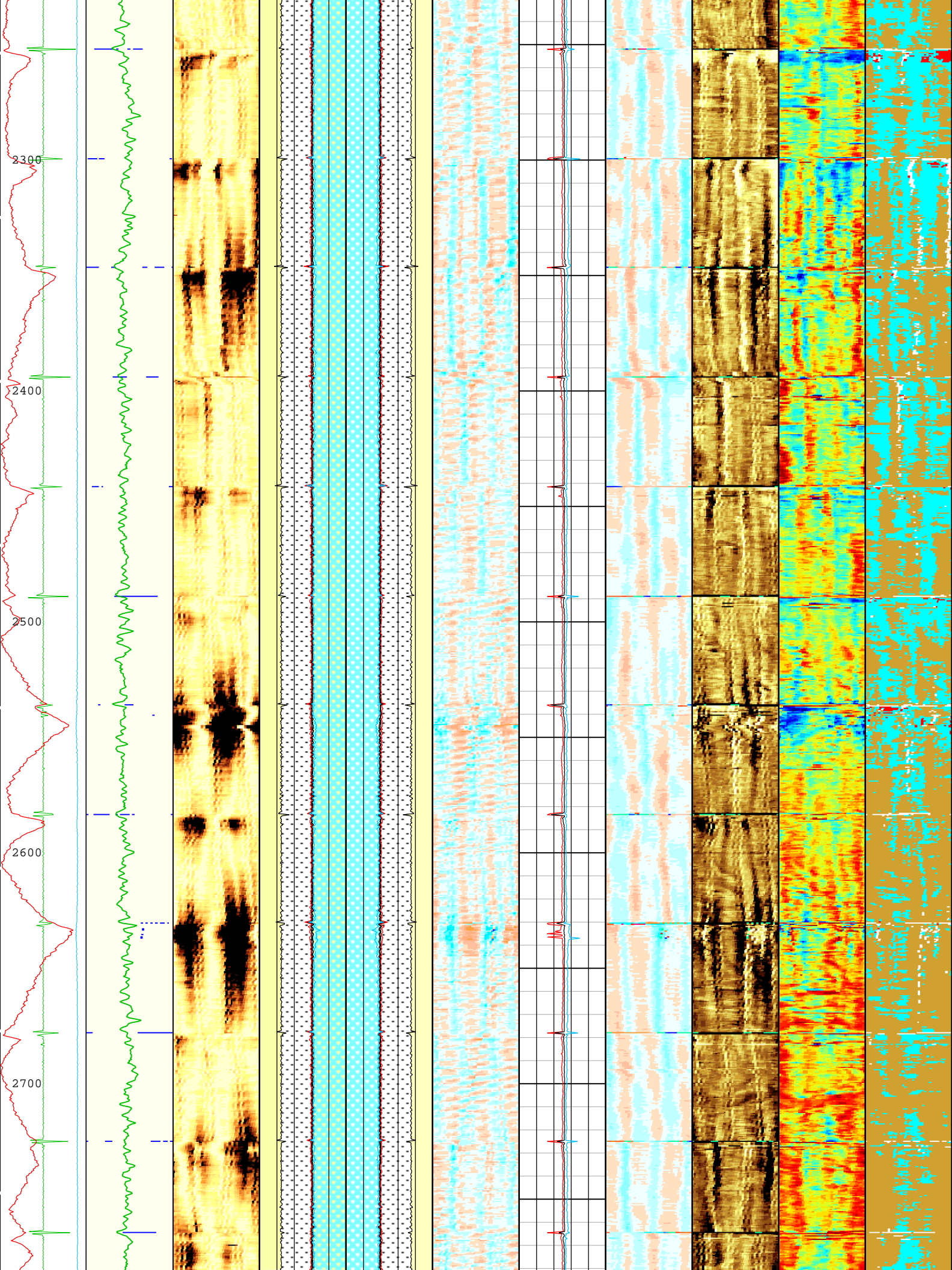


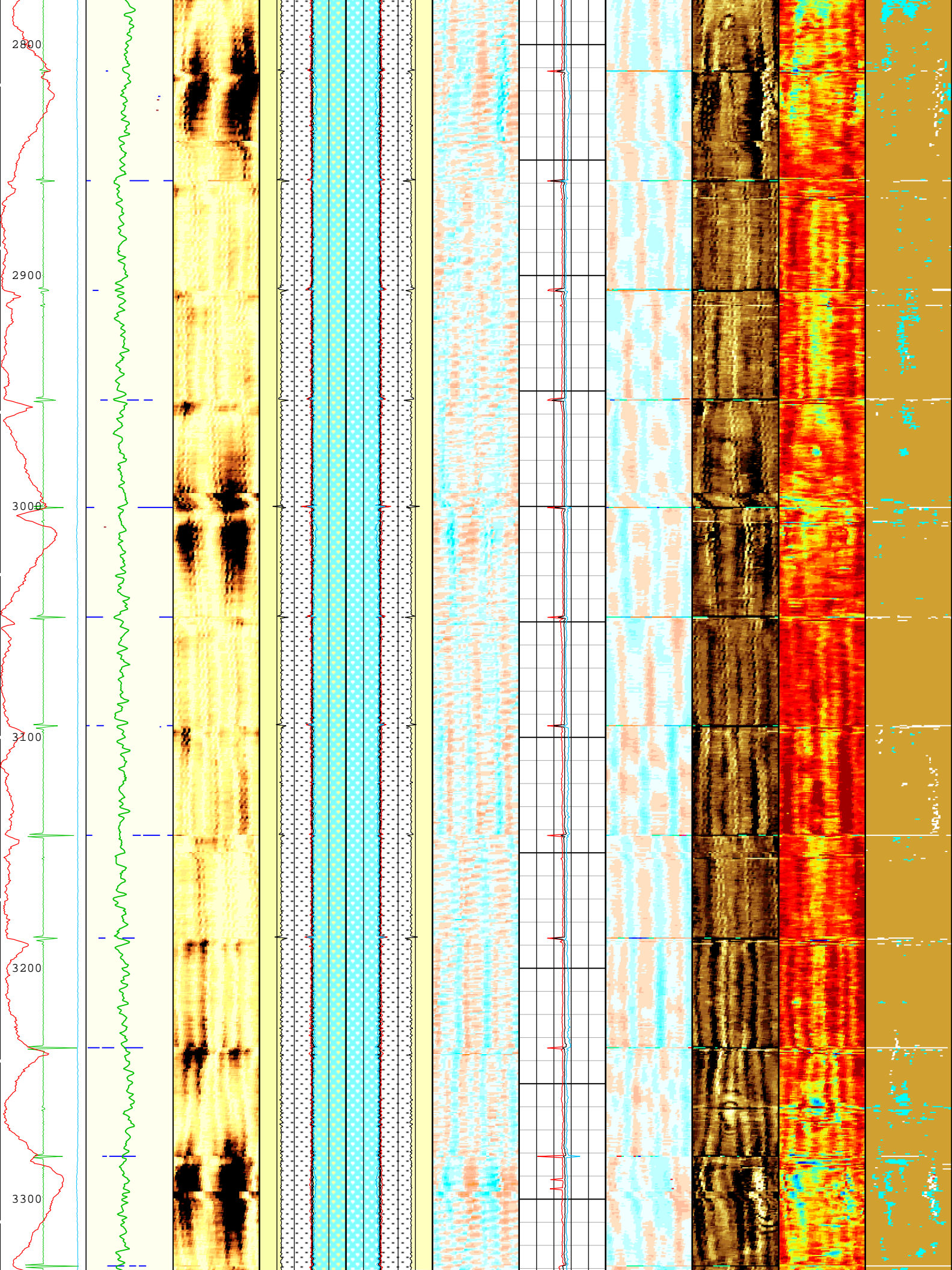




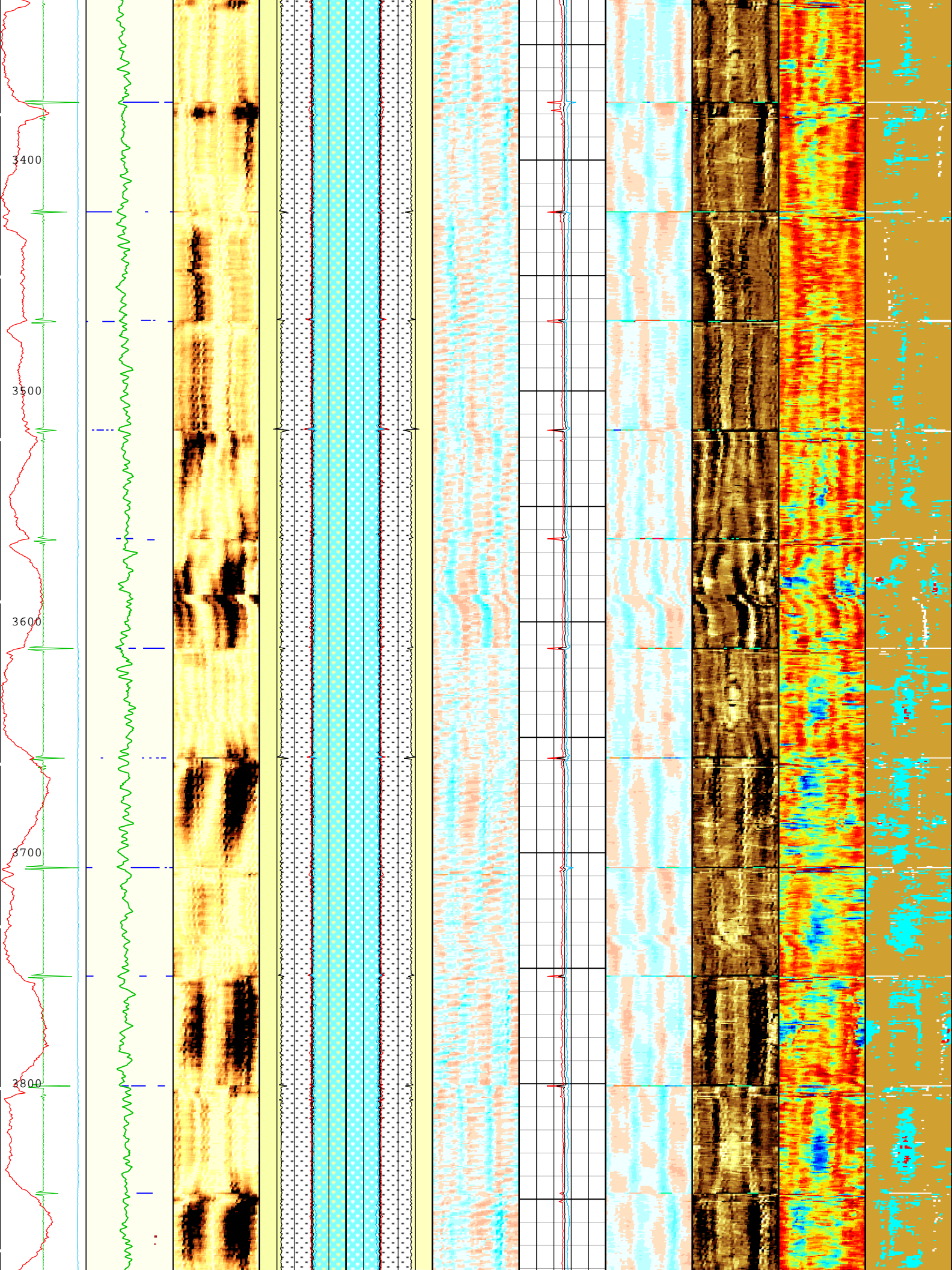




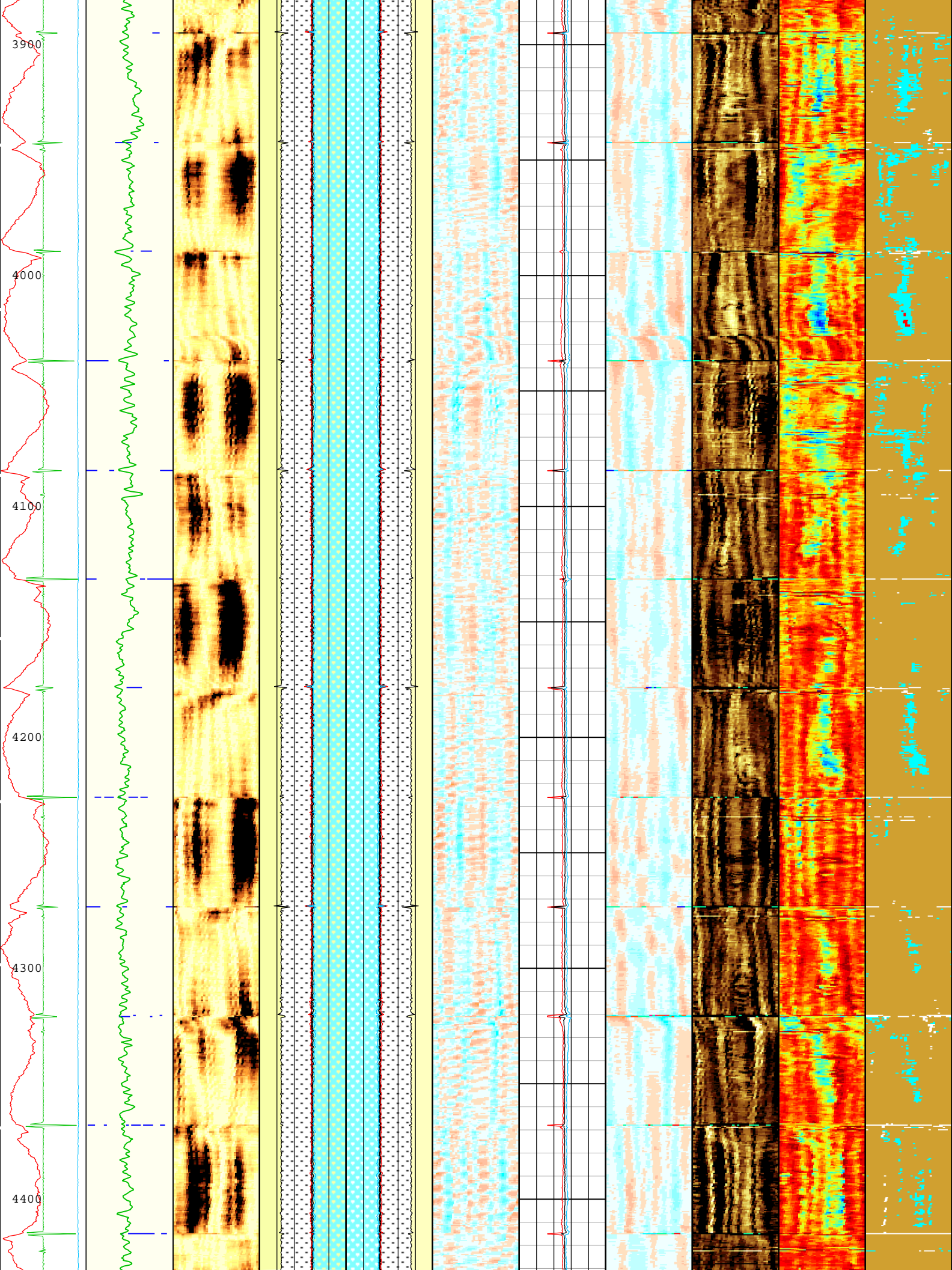


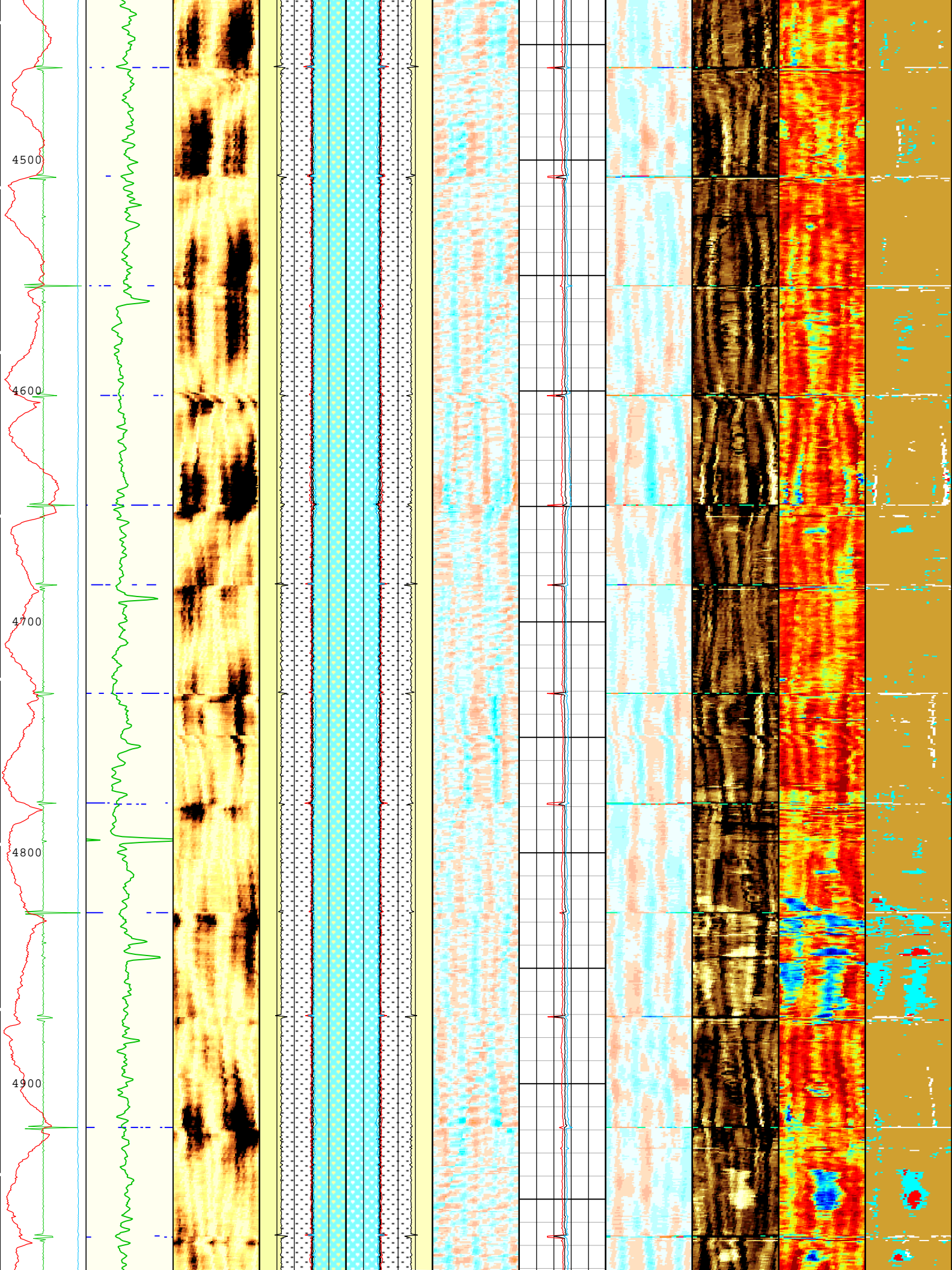




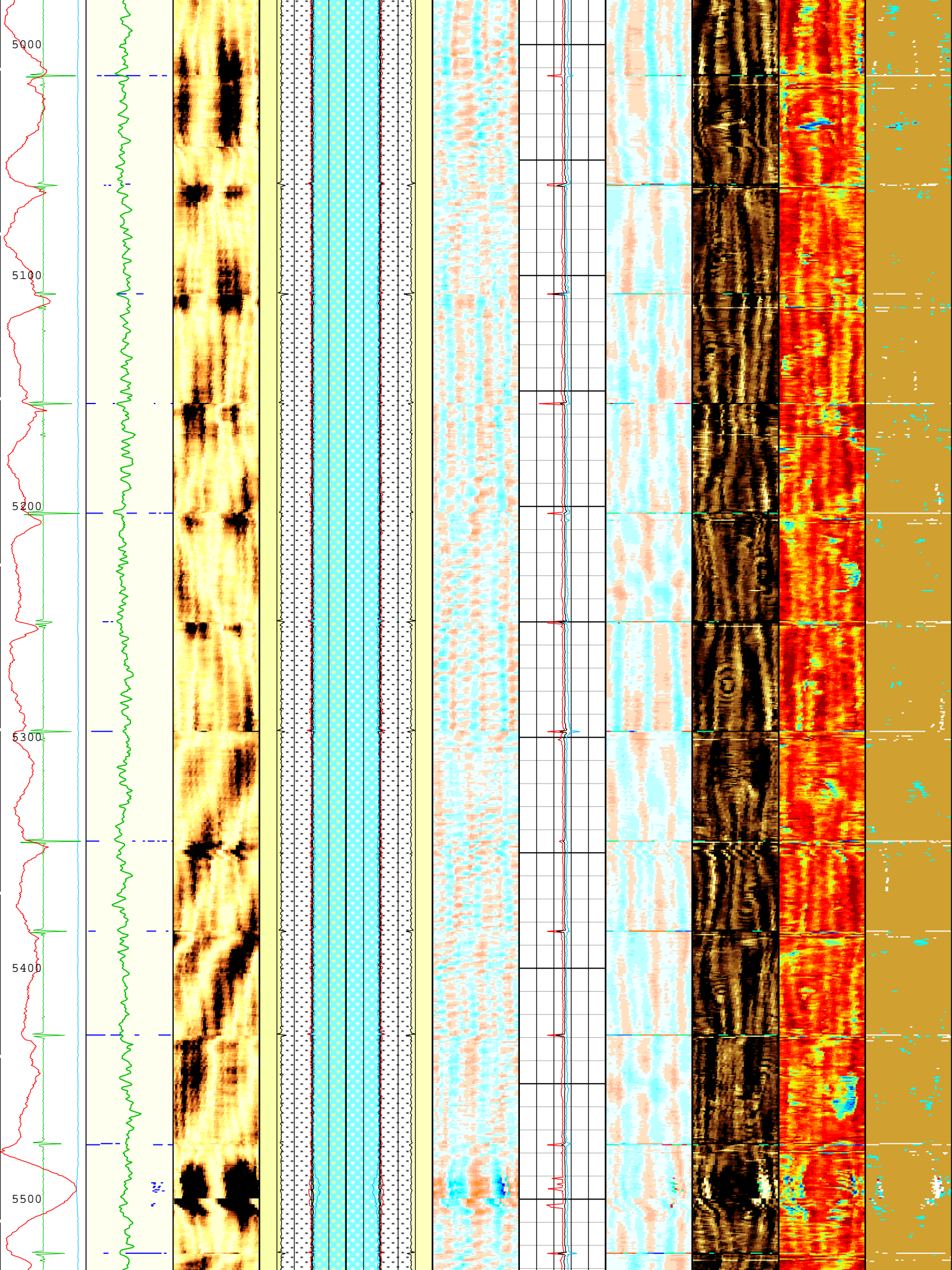


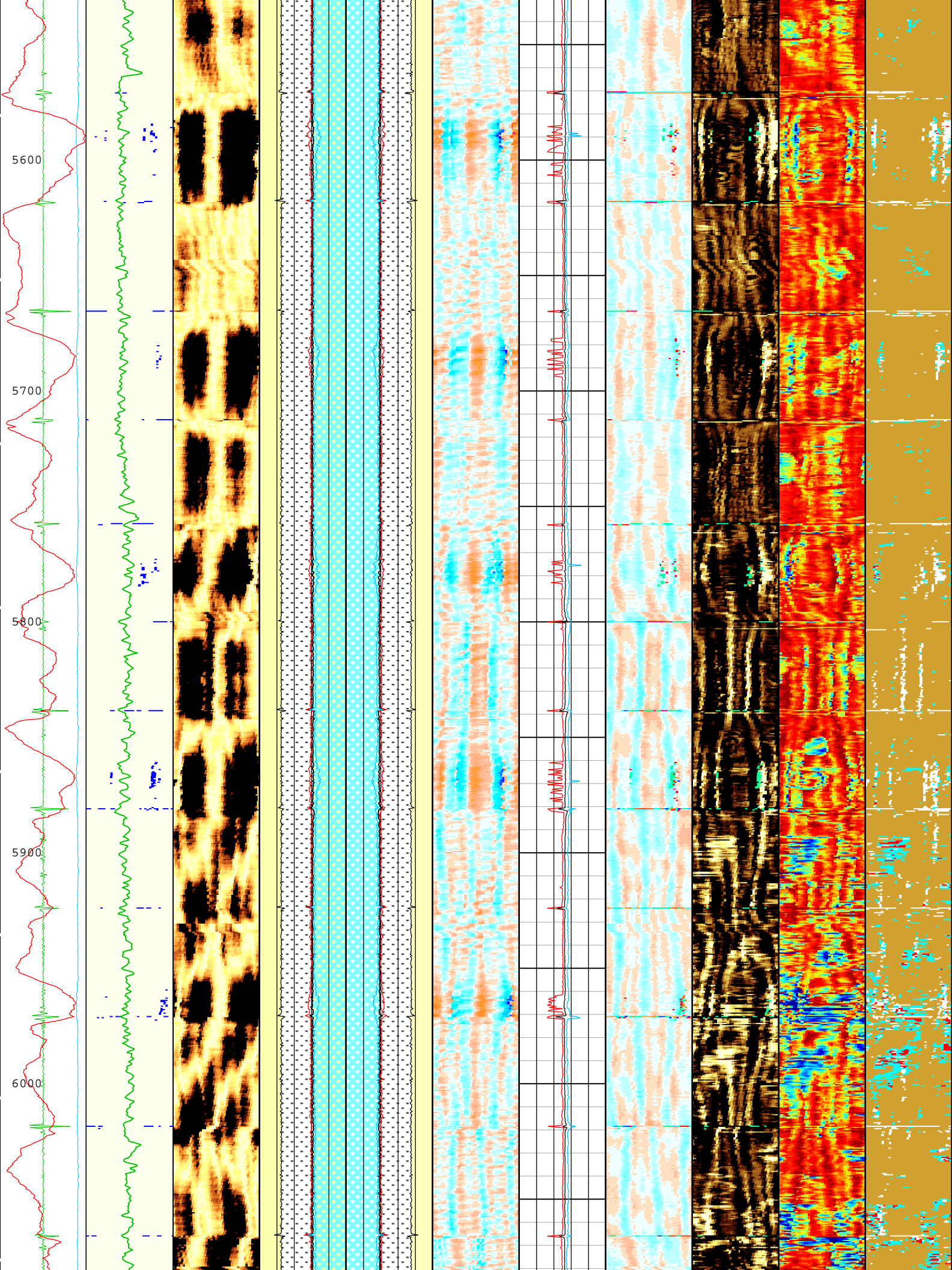




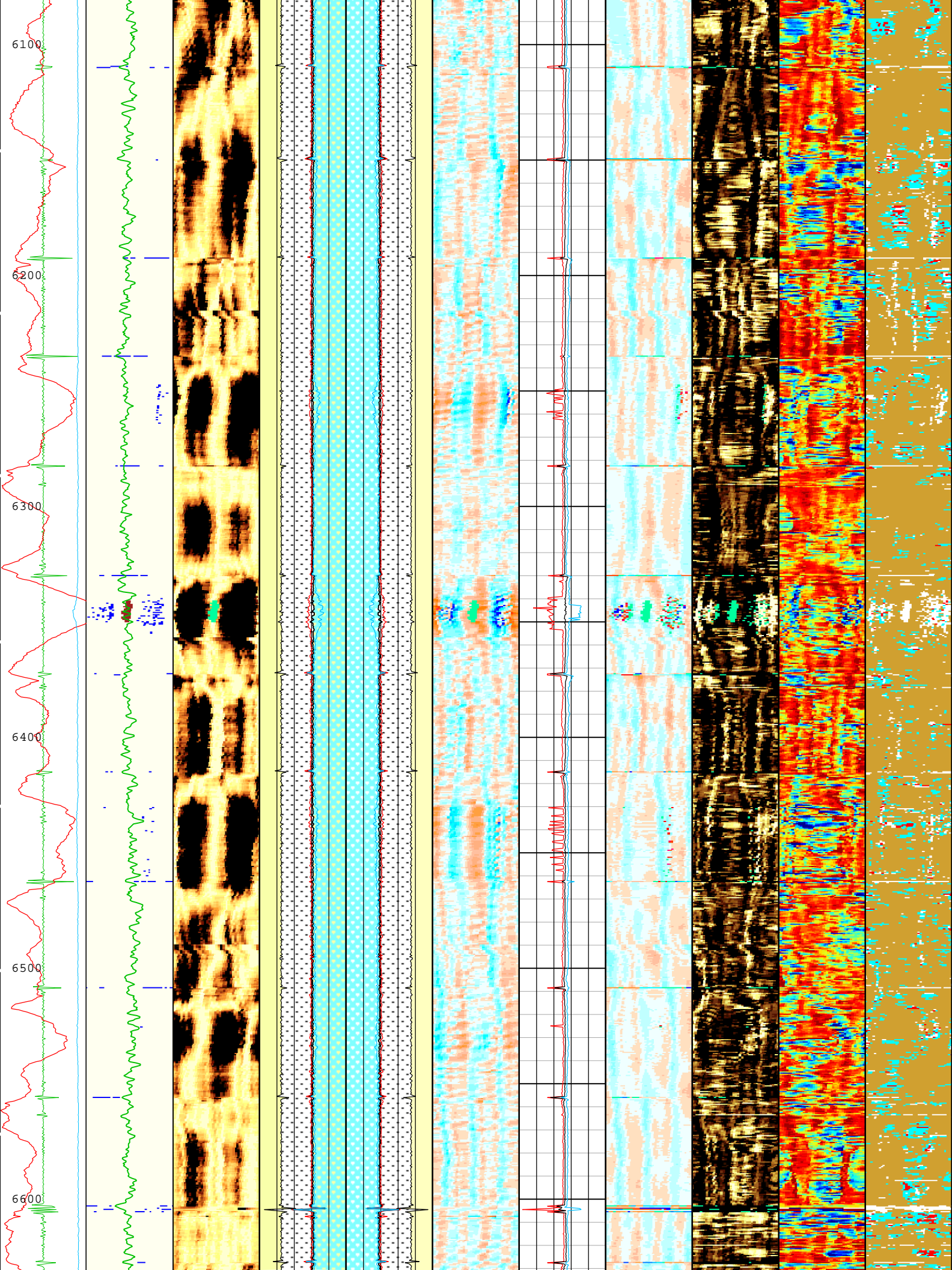




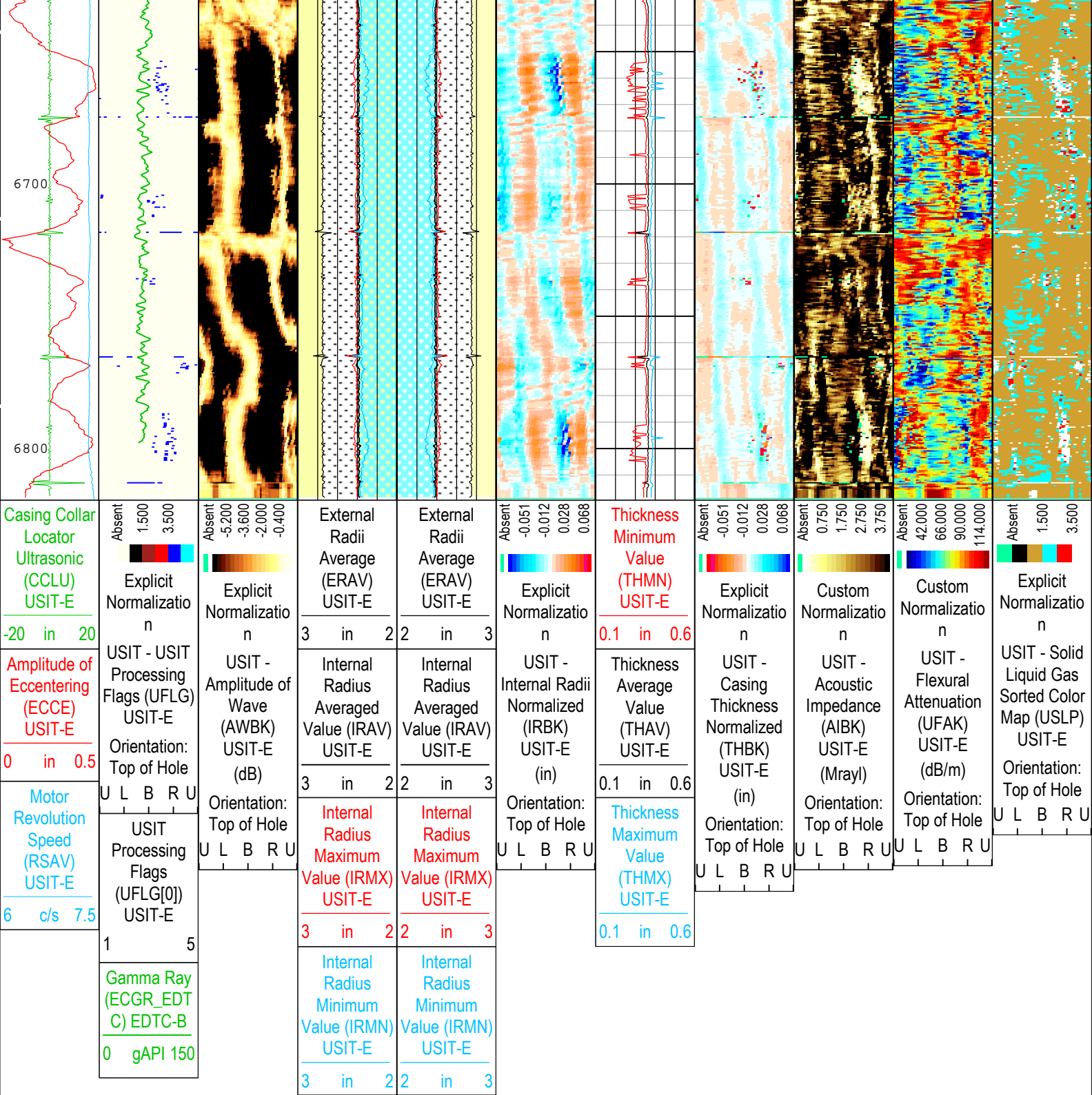












USIT Processing Flags (UFLG[0]) USIT-E

- 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)

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-Sep-2018 17:12:41

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	14816	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	Light 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	8.4	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	-29.62	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-33.39	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.75	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	65	2137
BS	9.625	2137	6819.5

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	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	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	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	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	60	23-Sep-2018 14:46:04	23-Sep-2018 14:46:56	6820.21	6788.25
EMXV	70	23-Sep-2018 14:46:56	23-Sep-2018 15:51:50	6788.25	2193.94
EMXV	60	23-Sep-2018 15:51:50	23-Sep-2018 15:55:00	2193.94	1968.88
EMXV	70	23-Sep-2018 15:55:00	23-Sep-2018 16:25:38	1968.88	66.82
U-USIT_UFWE	177	23-Sep-2018 14:46:04	23-Sep-2018 15:55:07	6820.21	1960.89
U-USIT_UFWE	181.73	23-Sep-2018 15:55:07	23-Sep-2018 16:25:38	1960.89	66.82
WINB	31.88	23-Sep-2018 14:46:04	23-Sep-2018 14:59:07	6820.21	5926.63
WINB	29.67	23-Sep-2018 14:59:07	23-Sep-2018 16:25:38	5926.63	66.82
WINE	71.88	23-Sep-2018 14:46:04	23-Sep-2018 14:47:07	6820.21	6774.61
WINE	75.71	23-Sep-2018 14:47:07	23-Sep-2018 14:49:41	6774.61	6593.1
WINE	75.23	23-Sep-2018 14:49:41	23-Sep-2018 16:25:38	6593.1	66.82

All depth are at tool zero.					
ONE					
IBC Goodwin Compressed					

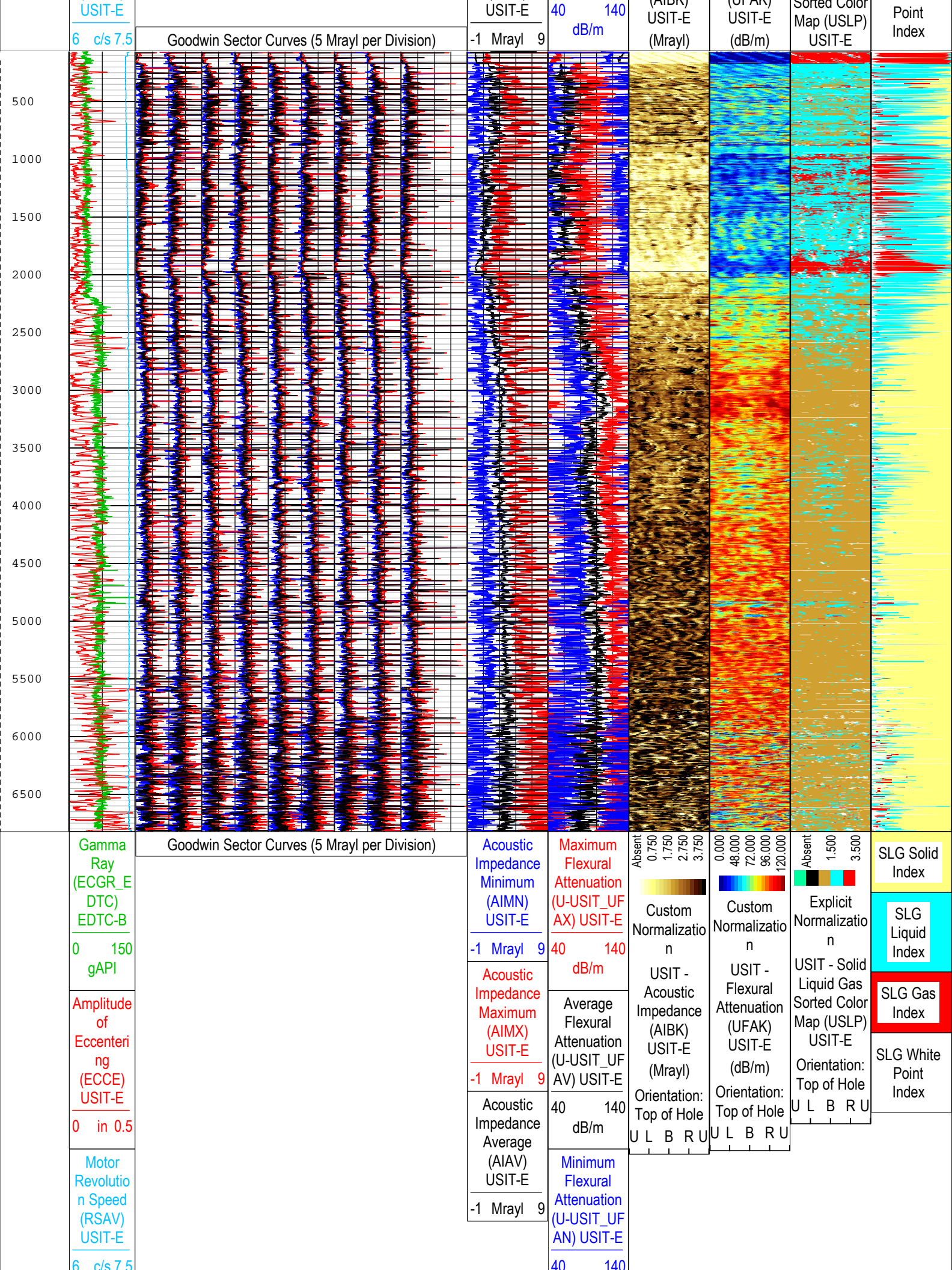
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[6]:Up	Up	66.82 ft	6820.21 ft	23-Sep-2018 2:46:04 PM	23-Sep-2018 4:25:38 PM	ON	6.50 ft	Yes

All depths are referenced to toolstring zero									
Log	Company:Crestone Peak Resources Operating LLC				Well:Davis 1S-9H-G266				
	ONE: Log[6]:Up:S004								

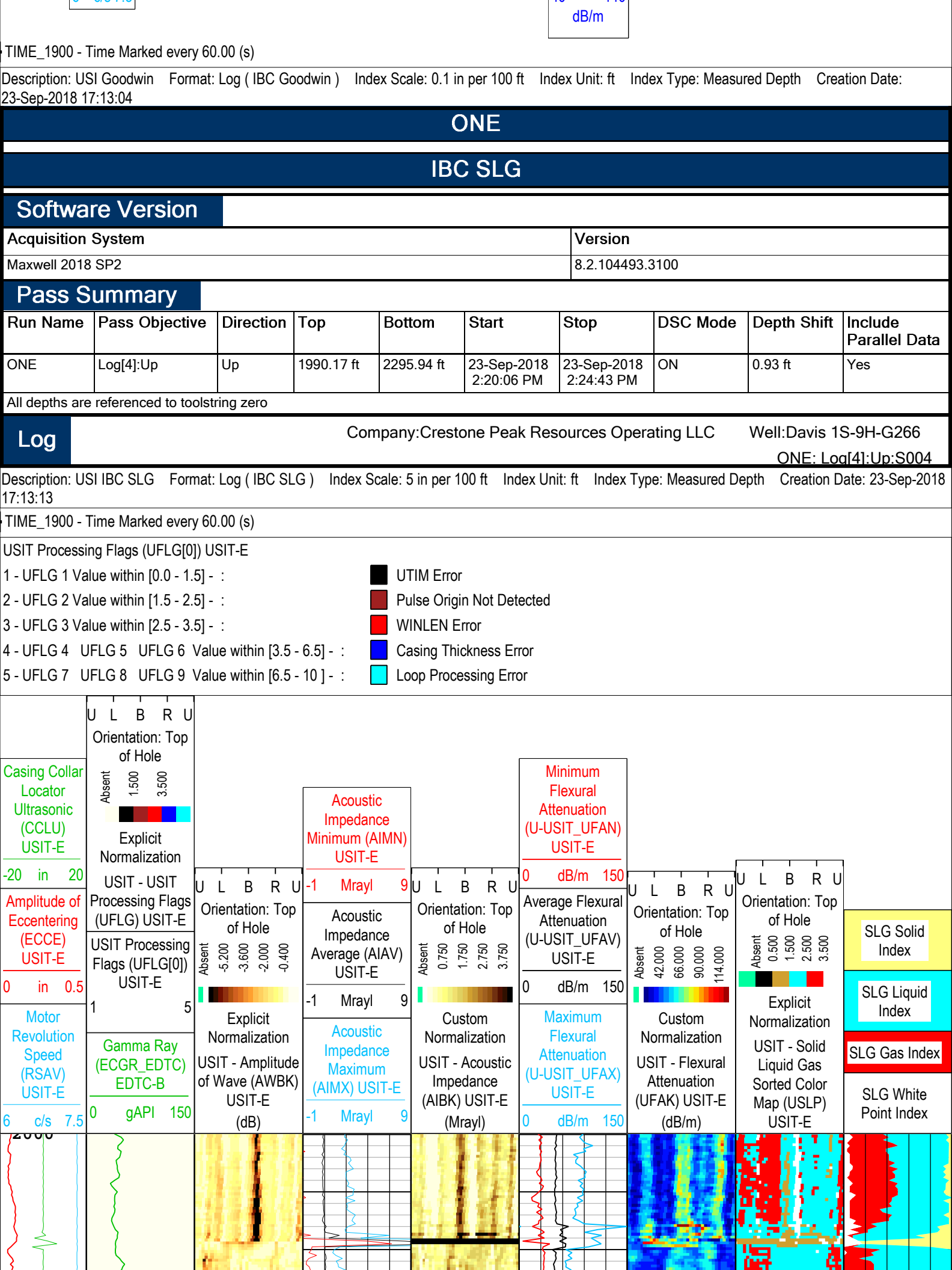
Description: USI Goodwin    Format: Log ( IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 23-Sep-2018 17:13:04

TIME\_1900 - Time Marked every 60.00 (s)

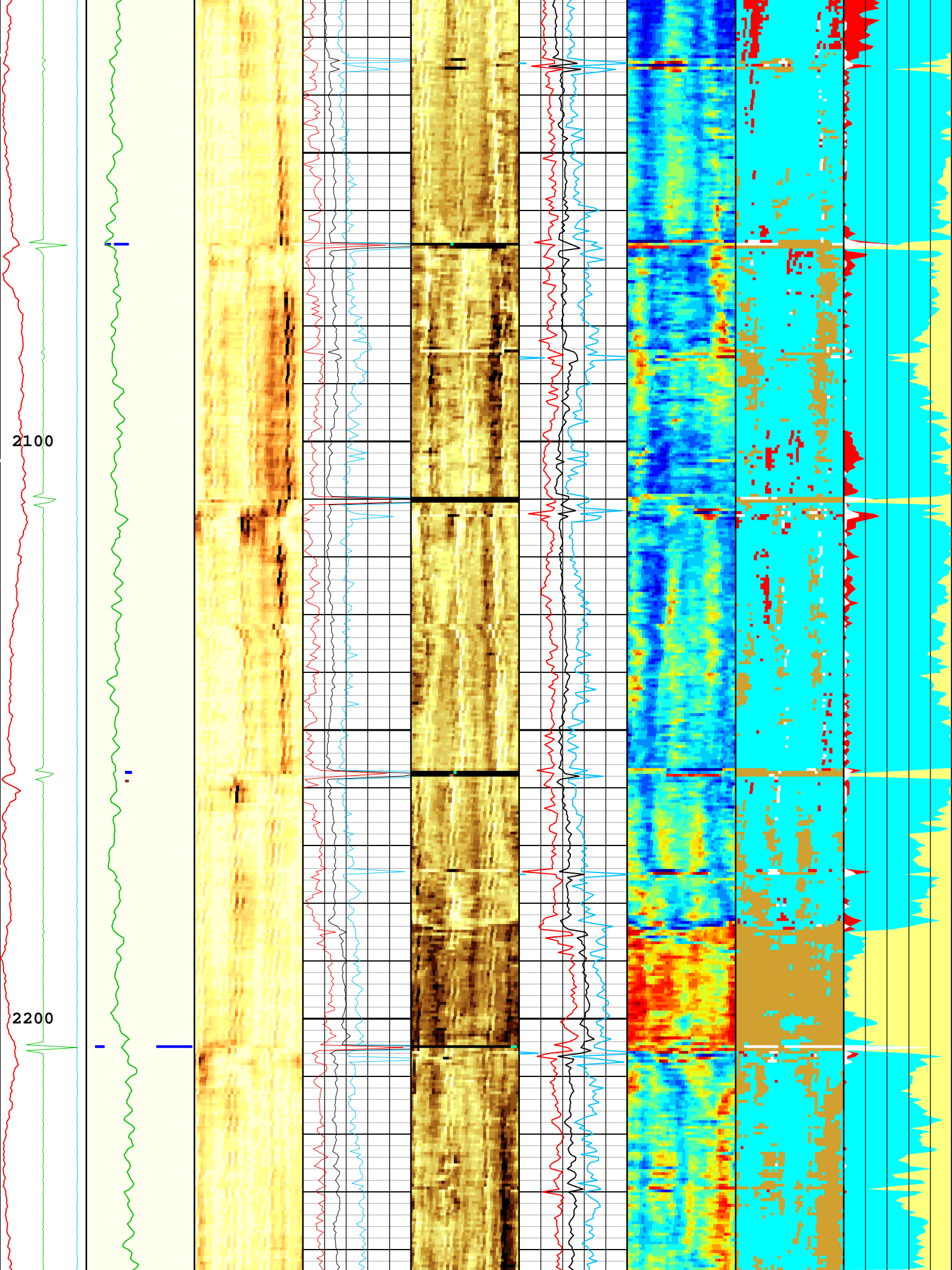
<div>Gamma Ray (ECGR_E DTC) EDTC-B</div> <div>0150 gAPI</div>	<div>Acoustic Impedance Minimum (AIMN) USIT-E</div> <div>-1 Mrayl9</div>	<div>Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E</div> <div>40140 dB/m</div>	<div>U L B R U</div> <div>Orientation: Top of Hole</div> <div>Absent0.7501.7502.7503.750</div> <div>Custom Normalization</div> <div>USIT - Acoustic Impedance (AIRK)</div>	<div>U L B R U</div> <div>Orientation: Top of Hole</div> <div>0.00048.00072.00096.000120.000</div> <div>Custom Normalization</div> <div>USIT - Flexural Attenuation (UEAK)</div>	<div>U L B R U</div> <div>Orientation: Top of Hole</div> <div>Absent1.5003.500</div> <div>Explicit Normalization</div> <div>USIT - Solid Liquid Gas</div>	<div>SLG Solid Index</div> <div>SLG Liquid Index</div> <div>SLG Gas Index</div> <div>SLG White</div>
<div>Amplitude of Eccentering (ECCE) USIT-E</div> <div>0in0.5</div>	<div>Acoustic Impedance Maximum (AIMX) USIT-E</div> <div>-1 Mrayl9</div>	<div>Average Flexural Attenuation (U-USIT_UFAV) USIT-E</div> <div>40140 dB/m</div>	<div>Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E</div>			
<div>Motor Revolution Speed (RSAV)</div>	<div>Acoustic Impedance Average (AIAV)</div>					

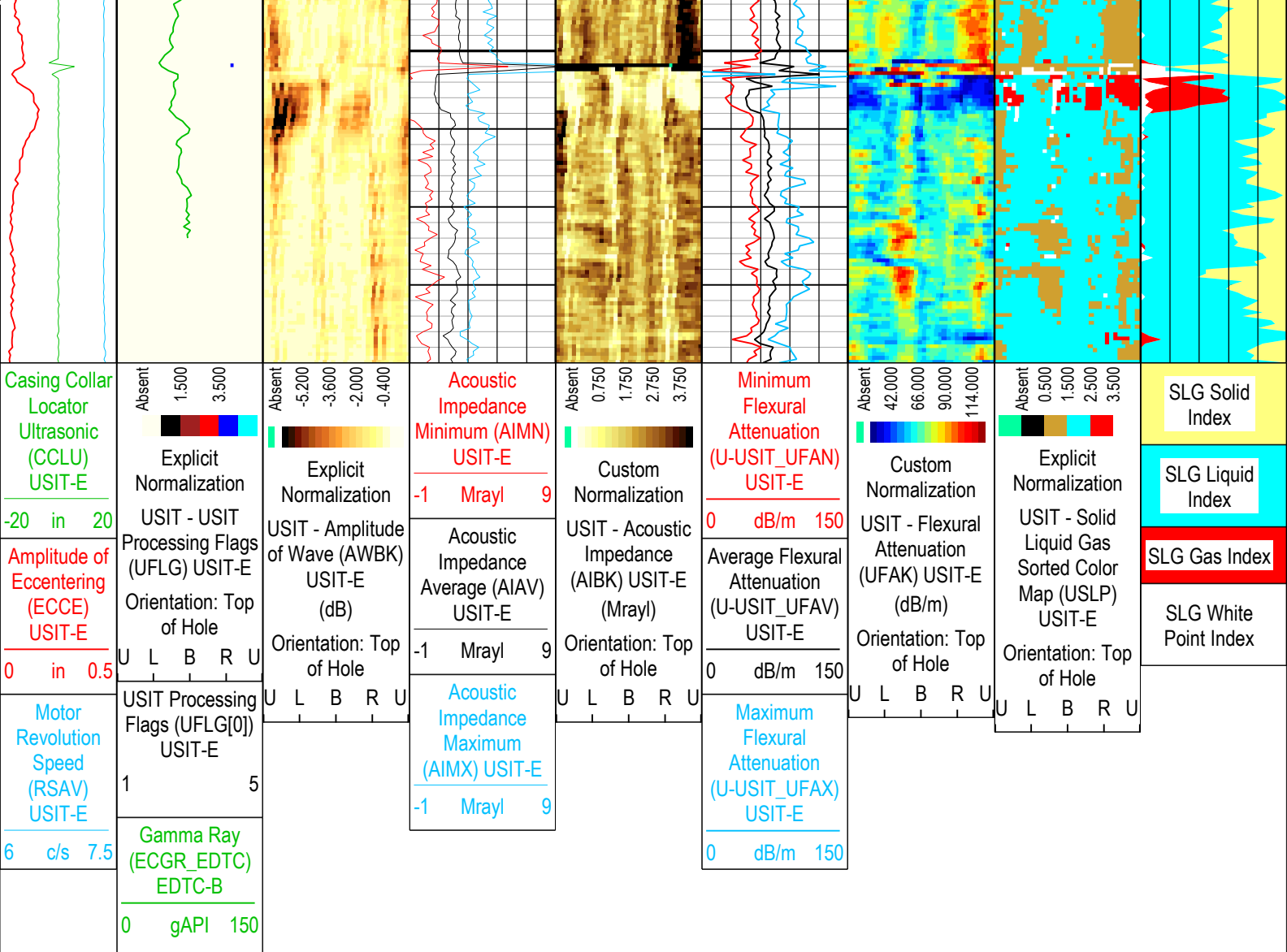












USIT Processing Flags (UFLG[0]) USIT-E

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 Format: Log ( IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-Sep-2018 17:13:13

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	14816	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	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal

DFTD	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	8.4	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	-29.62	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
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	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-33.39	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	1.75	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	2000	2137
BS	9.625	2137	2290

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	60	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[4]:Up	Up	1990.17 ft	2295.94 ft	23-Sep-2018 2:20:06 PM	23-Sep-2018 2:24:43 PM	ON	0.93 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC

Well:Davis 1S-9H-G266

ONE: Log[4]:Up:S004

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-Sep-2018 17:13:21

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

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

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

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

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

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

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

Casing Collar

Locator

Ultrasonic (CCLU)

USIT-E

-20 in 20

Amplitude of

U L B R U

Orientation: Top of Hole

Absent 1.500 3.500

Explicit Normalization

USIT - USIT Processing Flags (UFLG) USIT-E

ent 200 300 400

External Radii Average (ERAV) USIT-E

3 in 2

Internal Radius Averaged Value (IRAV) USIT-E

3 in 2

Internal Radius

Thickness Minimum Value (THMN) USIT-E

0.1 in 0.6

Thickness

U L B R U

Orientation: Top of Hole

Absent -0.051 -0.012 0.028 0.068

ent 750 750 750 750

U L B R U

Orientation: Top of Hole

ent 000 000 000 000

U L B R U

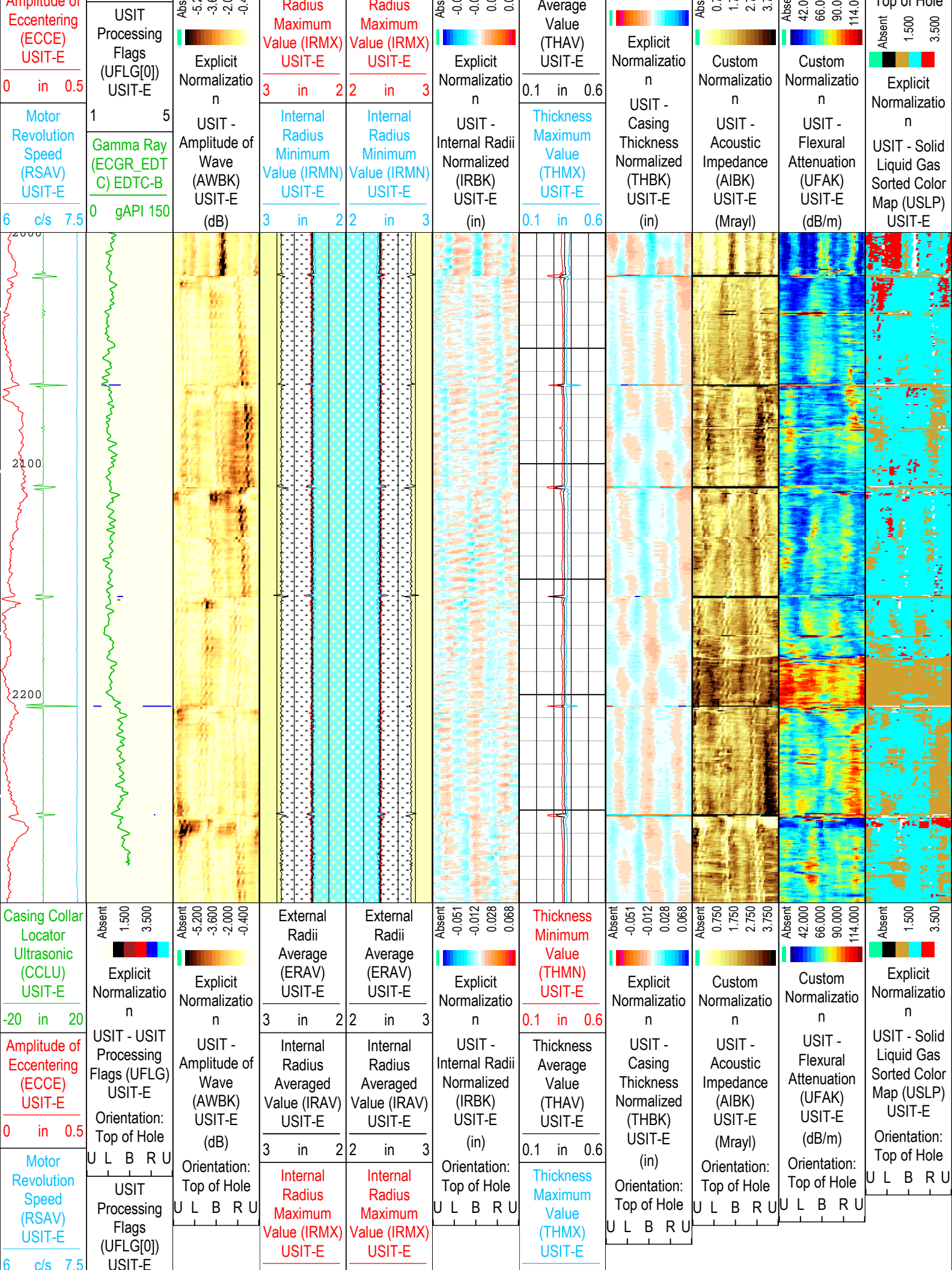
Orientation: Top of Hole

ent 000 000 000 000

U L B R U

Orientation: Top of Hole

ent 000 000 000 000





	1	5		3	in	2	2	in	3		0.1	in	0.6
	Gamma Ray (ECGR_EDT C) EDTC-B			Internal Radius Minimum Value (IRMN) USIT-E			Internal Radius Minimum Value (IRMN) USIT-E						
	0	gAPI 150		3	in	2	2	in	3				

TIME\_1900 - Time Marked every 60.00 (s)

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

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

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

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

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

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

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

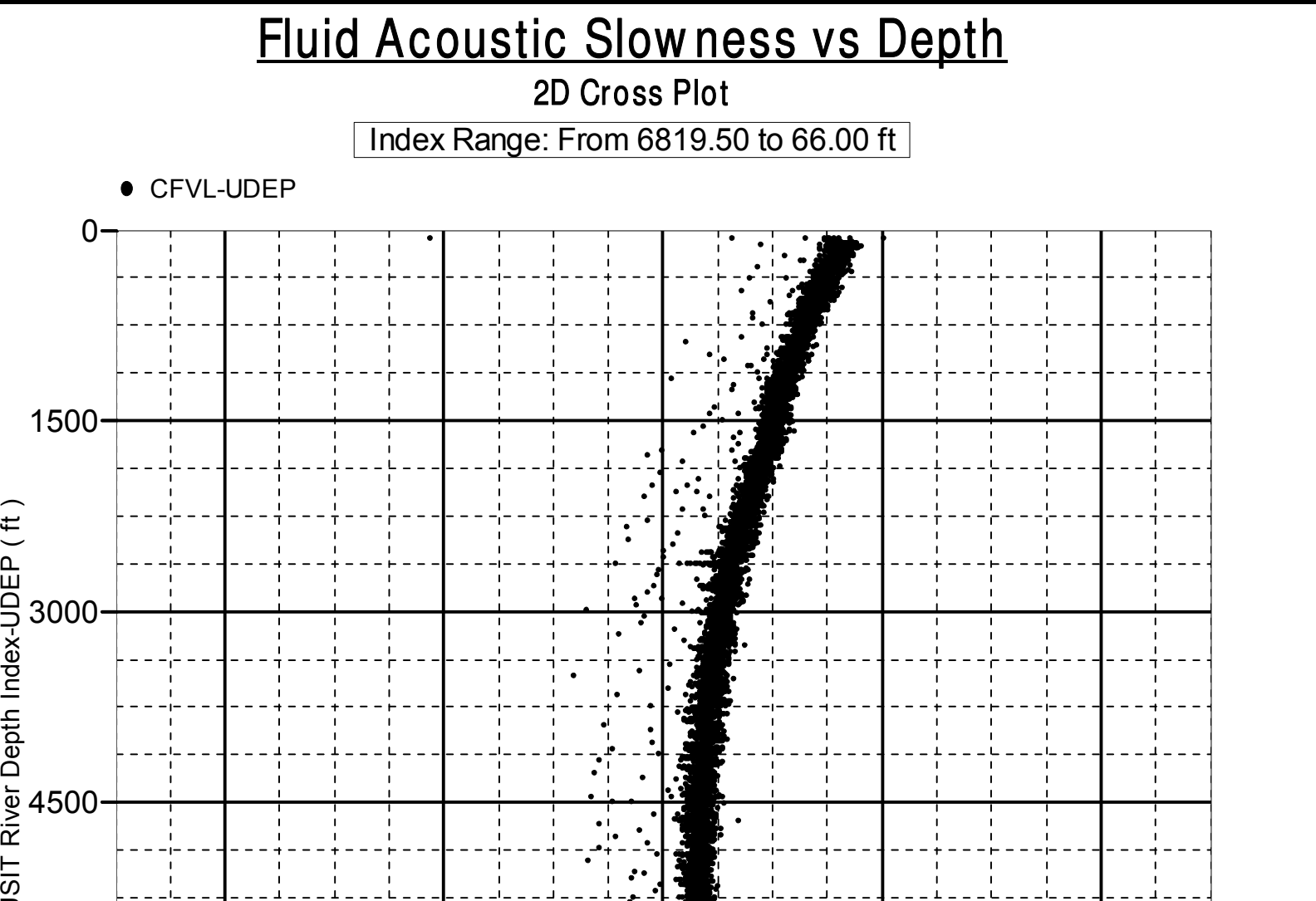
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Creation Date: 23-Sep-2018 17:13:21

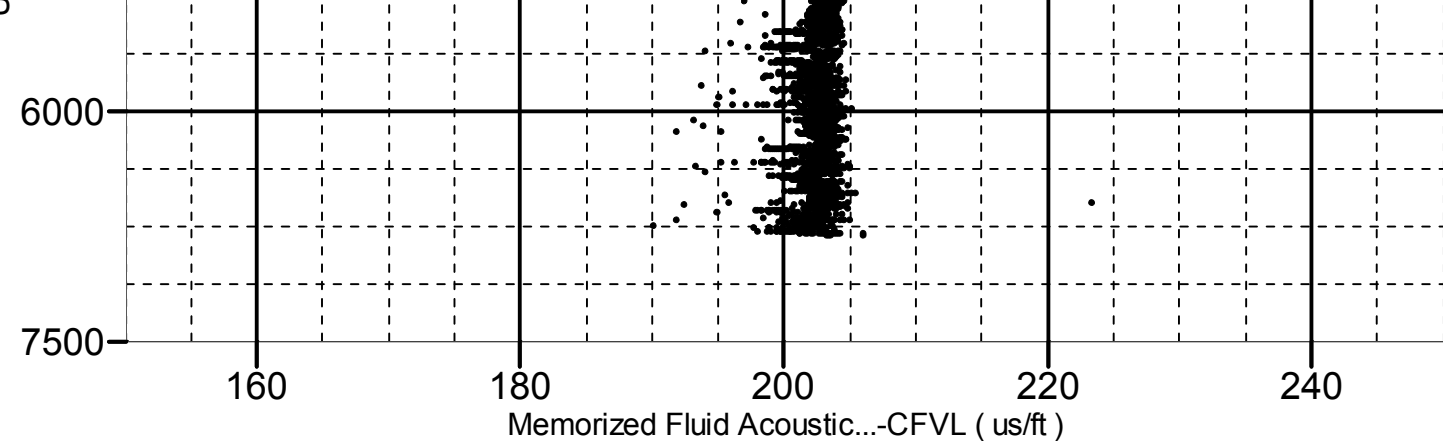
Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	14816	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light 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	8.4	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	-29.62	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-33.39	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.75	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	2000	2137

BS	9.625	2137	2290	
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	60	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 Operating LLC Well:Davis 1S-9H-G266			
	ONE: Log[6]:Up:S004			

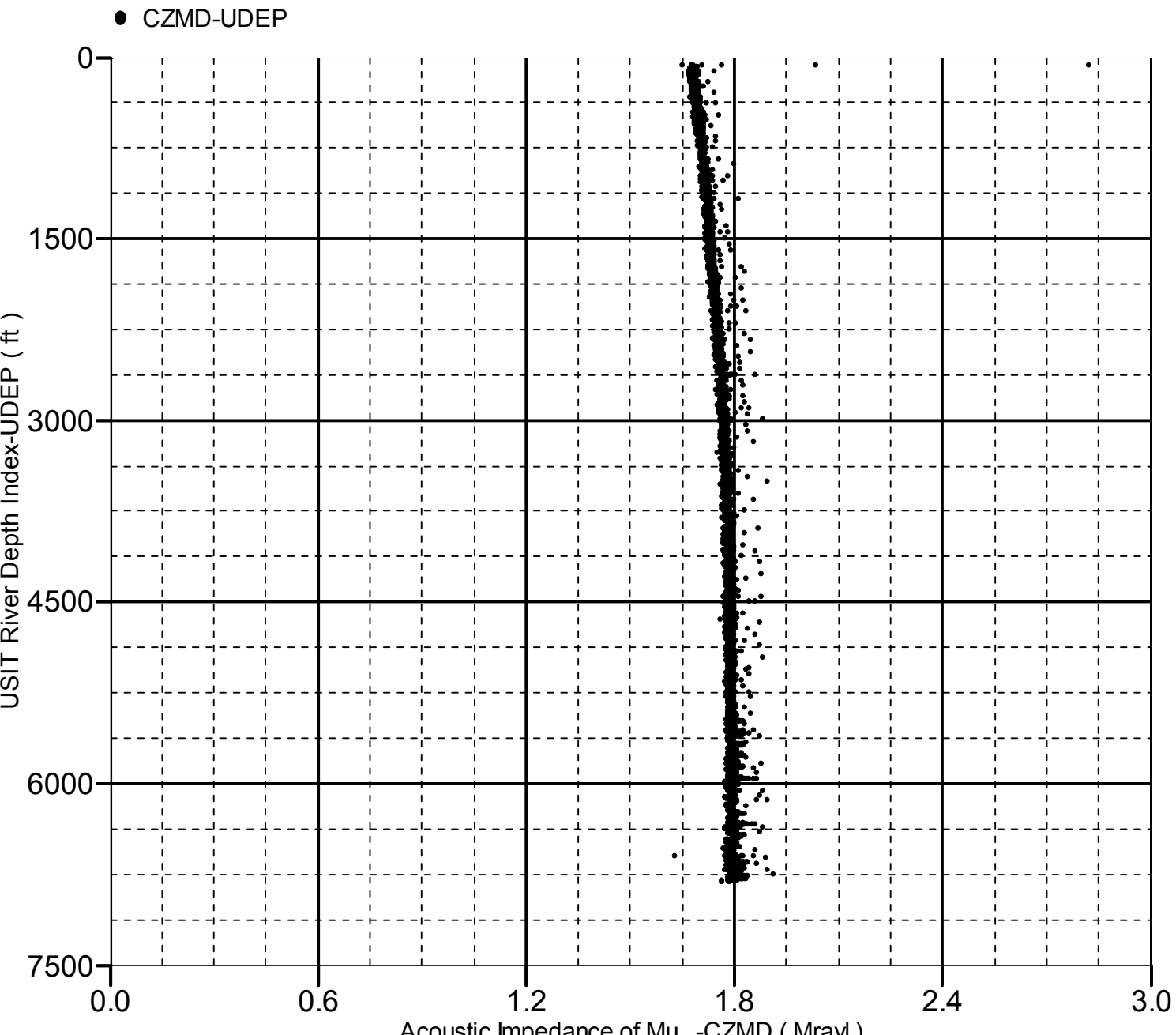




# Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6819.50 to 66.00 ft



Company:	Crestone Peak Resources Operating LLC	Schlumberger
Well:	Davis 1S-9H-G266	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Isolation Scanner		
Cement Evaluation		
Gamma Ray - CCL Log		