



Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Field: HAMBERT

County: WELD

State: COLORADO

County: WELD

Field: HAMBERT

Location: 770FNL&1035FWL

Well: PEAKS K26-77-1HN

Company: NOBLE ENERGY INC

ULTRASONIC IMAGER TOOL

GAMMA RAY

LOCATION

770FNL&1035FWL
1650FWL&75FNL

Elev.: K.B. 4811.00 ft
G.L. 4787.00 ft
D.F.

Permanent Datum: _____
Log Measured From: KELLY BUSHING
Drilling Measured From: _____

GROUND LEVEL _____
Elev.: _____
above Perm. Datum _____

API Serial No.
0512338238

Section
35

Township
4N

Range
66W

PVT DATA			Run 1	Run 2	Run
Oil Density					
Water Salinity					
Gas Gravity					
Bo					
Bw					
1/Bg					
Bubble Point Pressure					
Bubble Point Temperature					
Solution GOR					
Maximum Deviation					
CEMENTING DATA					
Primary/Squeeze	Primary				
Casing String No					
Lead Cement Type	LIGHT				
Volume					
Density	12.5 lbm/gal				
Water Loss					
Additives					
Tail Cement Type					
Volume					
Density	13.8 lbm/gal				
Water Loss					
Additives					
Expected Cement Top					

Logging Date10-Mar-2013

Run Number3

Depth Driller12100 ft

Schlumberger Depth7300 ft

Bottom Log Interval7300 ft

Top Log Interval200 ft

Casing Fluid TypeFRESH WATER

Salinity

Density8.4 lbm/gal

Fluid Level

BIT/CASING/TUBING STRING

Bit Size8.750 in

From0 ft

To7532 ft

Casing/Tubing Size7.000 in

Weight26 lbm/ft

GradeP-110

From0 ft

To7532 ft

Maximum Recorded Temperatures

Logger On Bottom10-Mar-2013

Unit Number2379

Recorded ByW PONGTEPUPATHUM

Witnessed ByTODD WOLF

Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Fluid Type				
Salinity				
Density				
Fluid Level				
BIT/CASING/TUBING STRING				
Bit Size				
From				
To				
Casing/Tubing Size				
Weight				
Grade				
From				
To				
Maximum Recorded Temperatures				
Logger On Bottom				
Unit Number				
Recorded By				
Witnessed By				

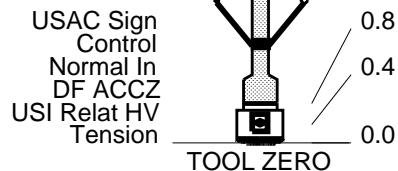
Date Created: 10-MAR-2014 20:30:15

<div> <div>RUN 1</div> <div> <div>SERVICE ORDER #:</div> <div>PROGRAM VERSION:</div> <div>FLUID LEVEL:</div> </div> <div> <div>CRH7-00014</div> <div>19C2-270</div> </div> </div>			<div> <div>RUN 2</div> <div> <div>SERVICE ORDER #:</div> <div>PROGRAM VERSION:</div> <div>FLUID LEVEL:</div> </div> </div>		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT	
WITM (EDTS)-A	

DOWNHOLE EQUIPMENT		
LEH-QT LEH-QT		32.8
EDTC-B EDTH-B 8187 EDTC-B EDTG-A/B	MDSB_EDTC Mud Tempe	29.8
	CTEM	26.3
	Gamma Ray EFTB DIAG TelStatus EDTCB Ele	24.5 23.3
AH-107 AH-107 3918		23.3
AH-107 AH-107 2765		21.3
AH-inline AH-inline		19.3
USIT-E ECH-MFA USAC-A 1759 USIS-A 1832		15.5



MAXIMUM STRING DIAMETER 7.50 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN FEET

Schlumberger

USI COMPOSITE 3000 PSI MAIN

MAXIS Field Log

Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Input DLIS Files

DEFAULT	USI_051PUP	FN:50	PRODUCER	10-Mar-2014 19:09	7336.0 FT	234.0 FT
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Output DLIS Files

DEFAULT	USI_052PUP	FN:51	PRODUCER	10-Mar-2014 19:26	7336.0 FT	234.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

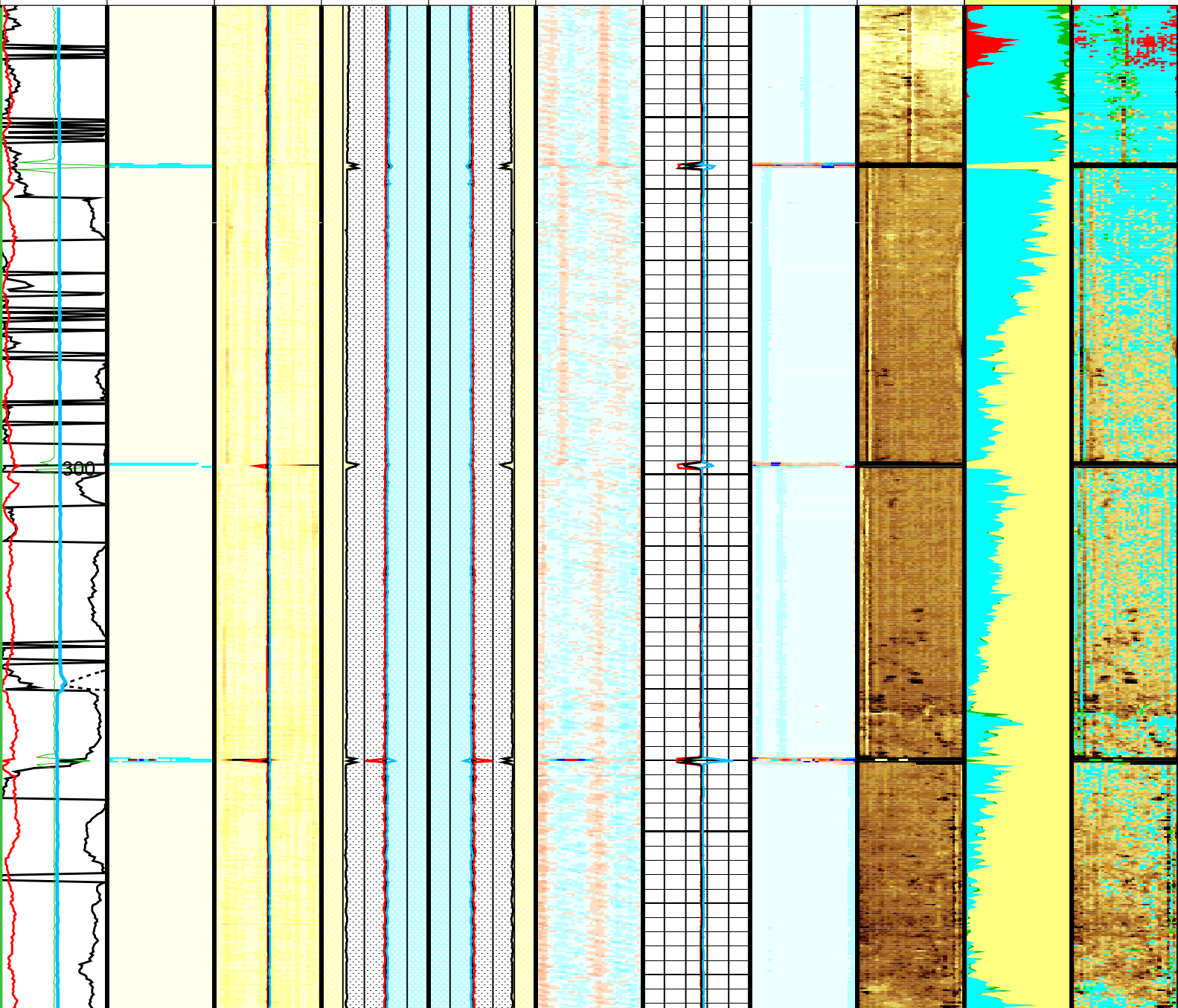
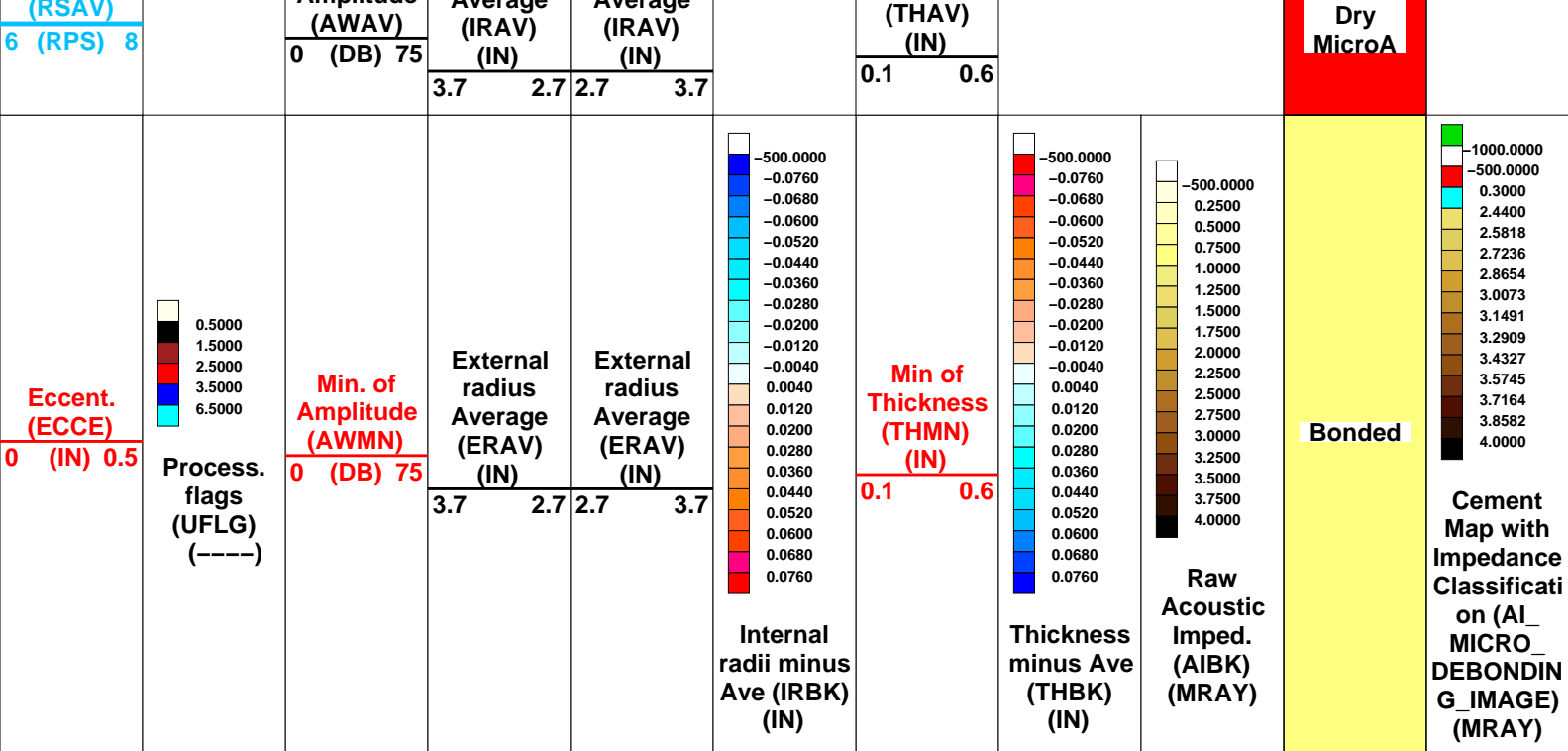
USIT-E	19C2-270	EDTC-B	19C2-270
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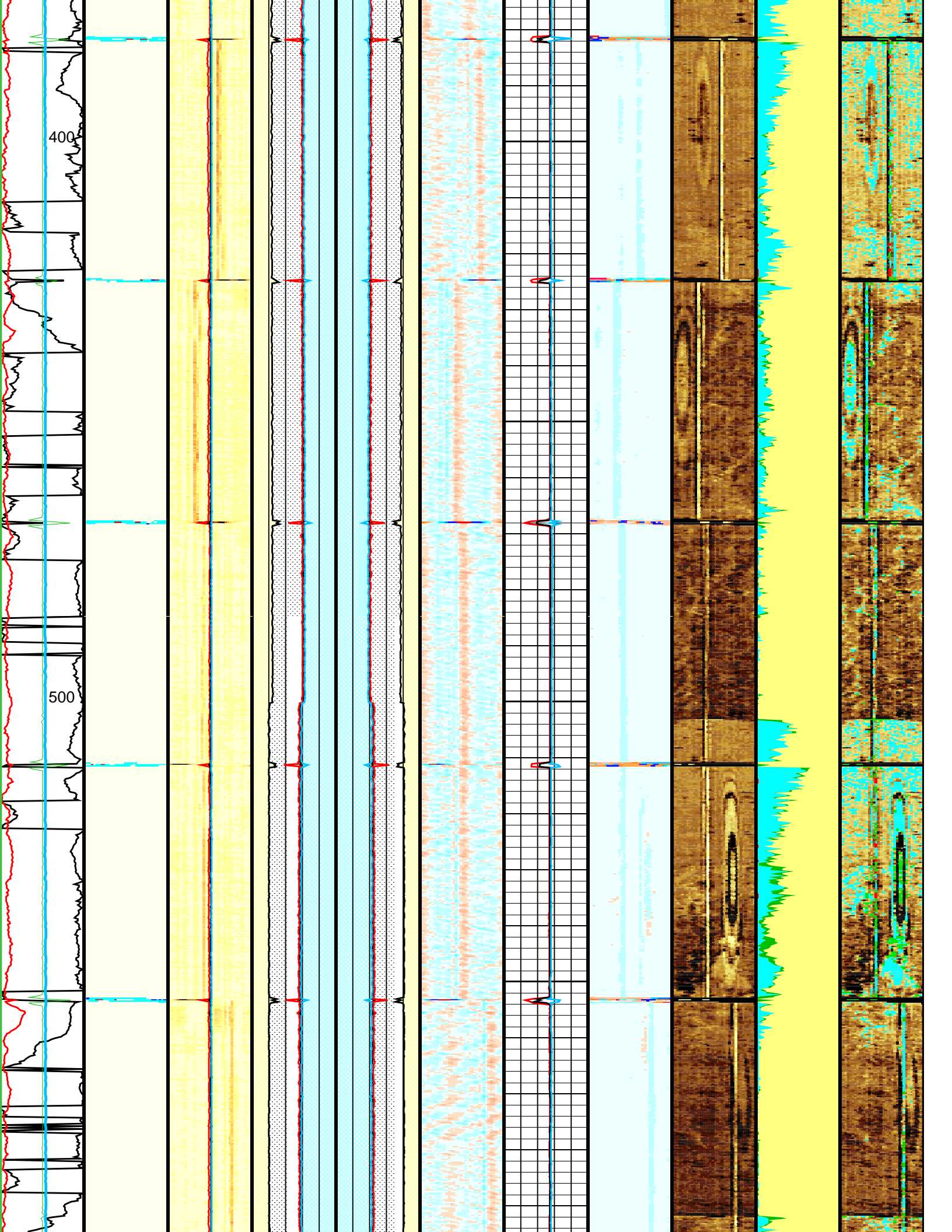
Zoning of Mud Parameters

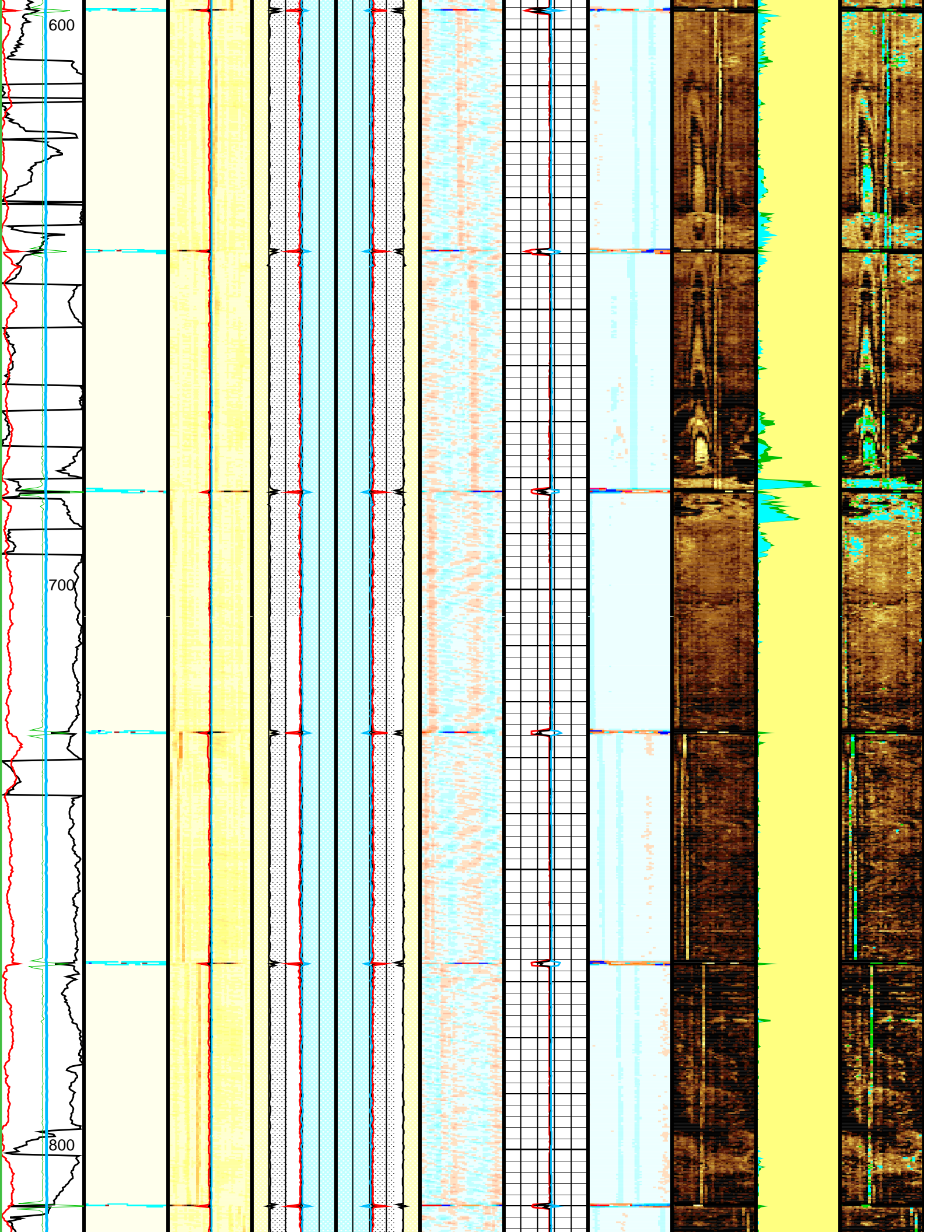
Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
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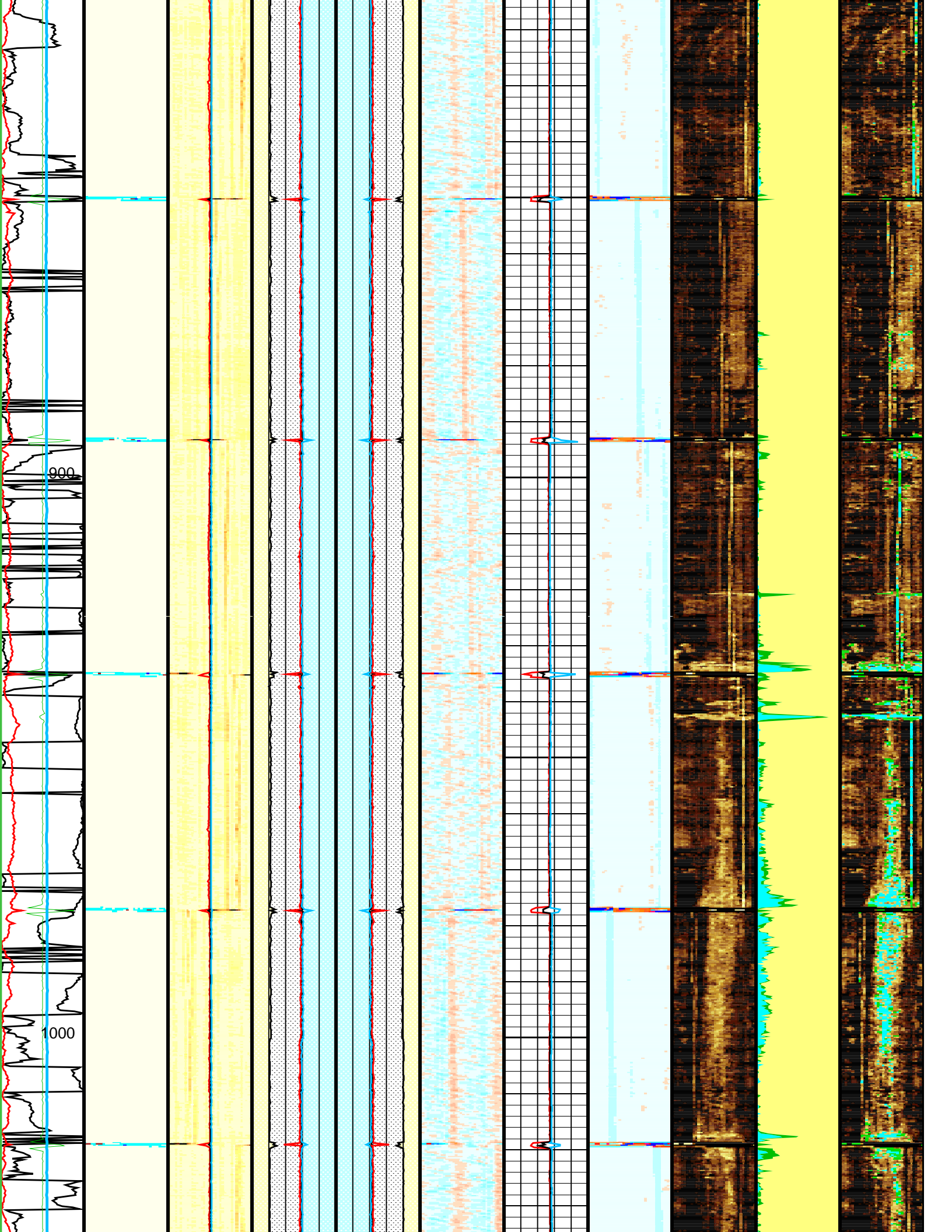
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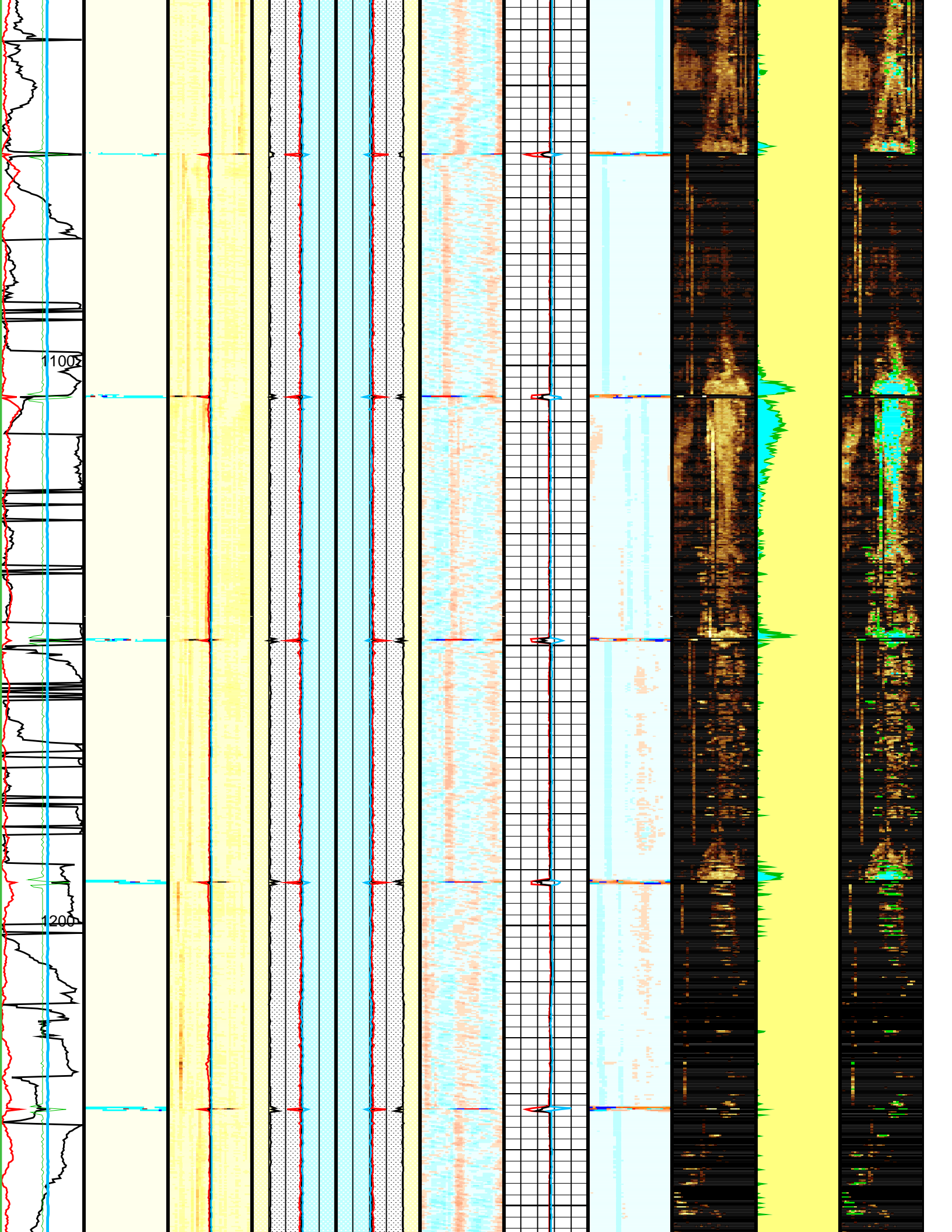
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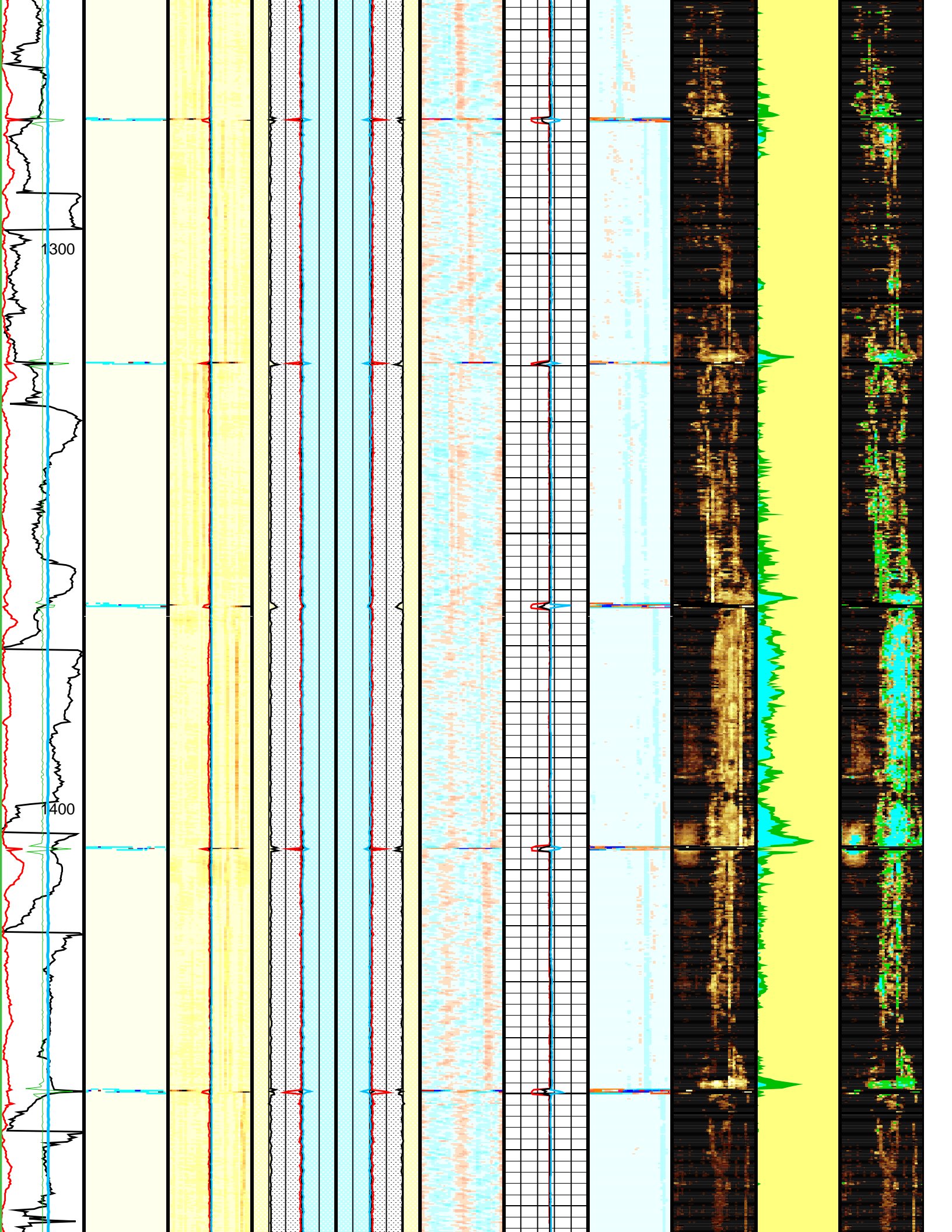


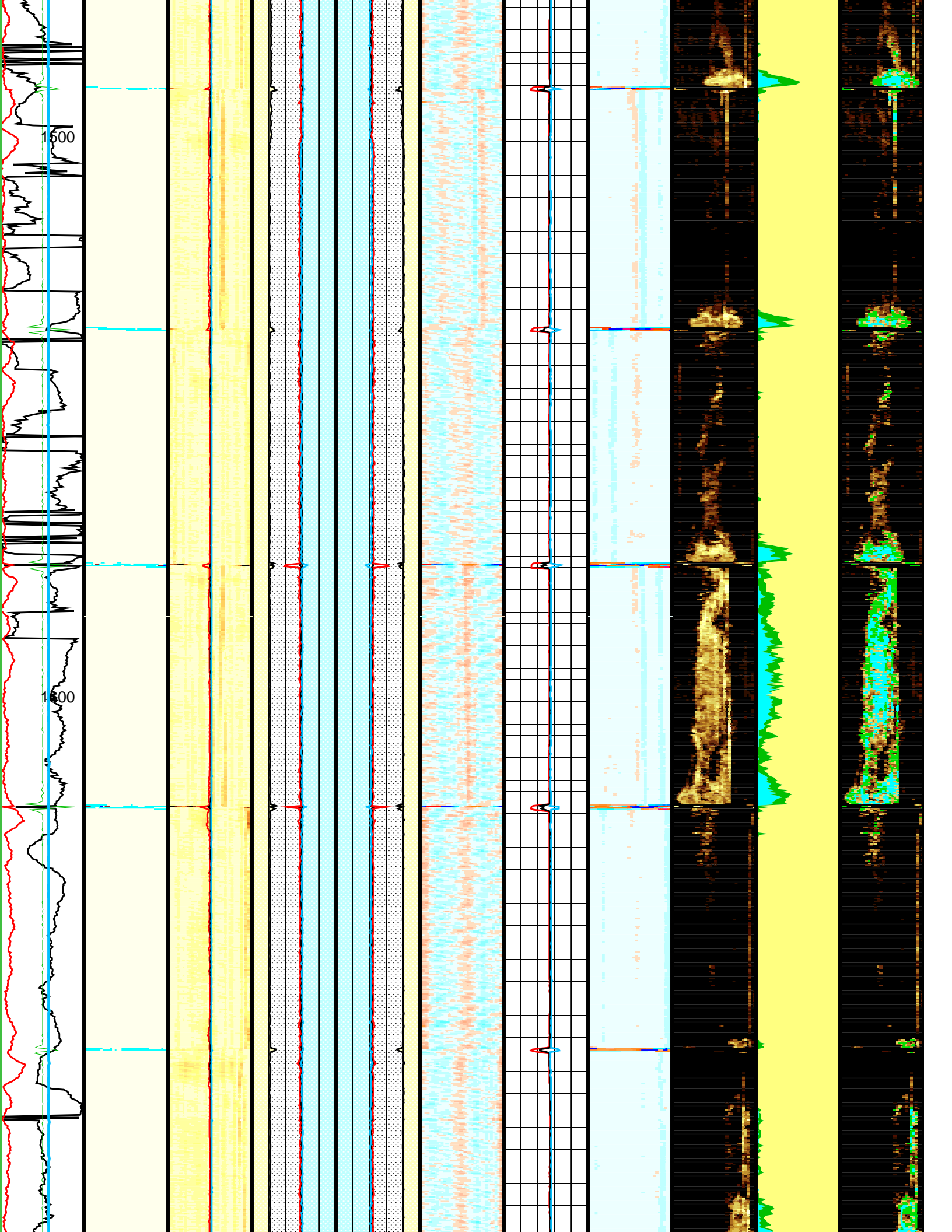


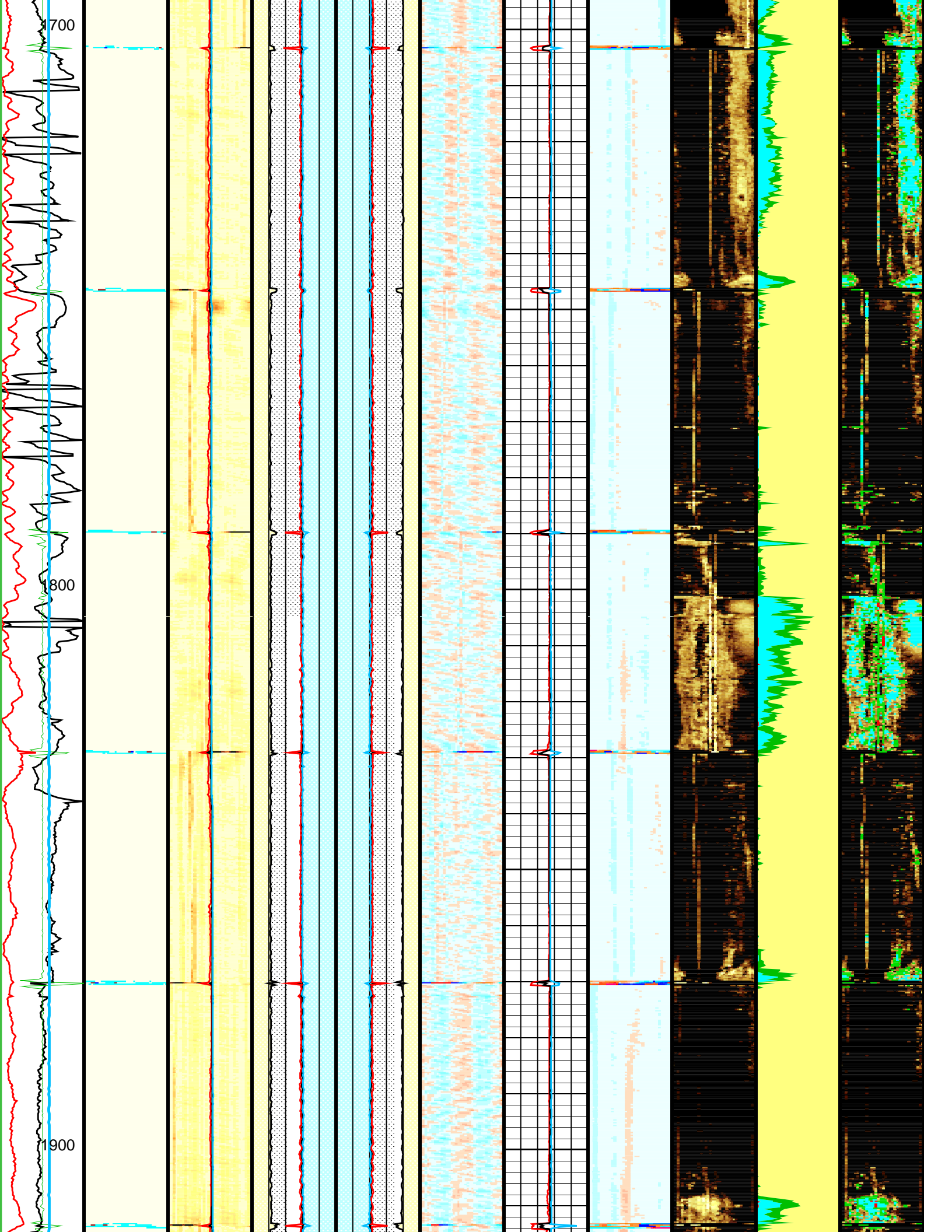


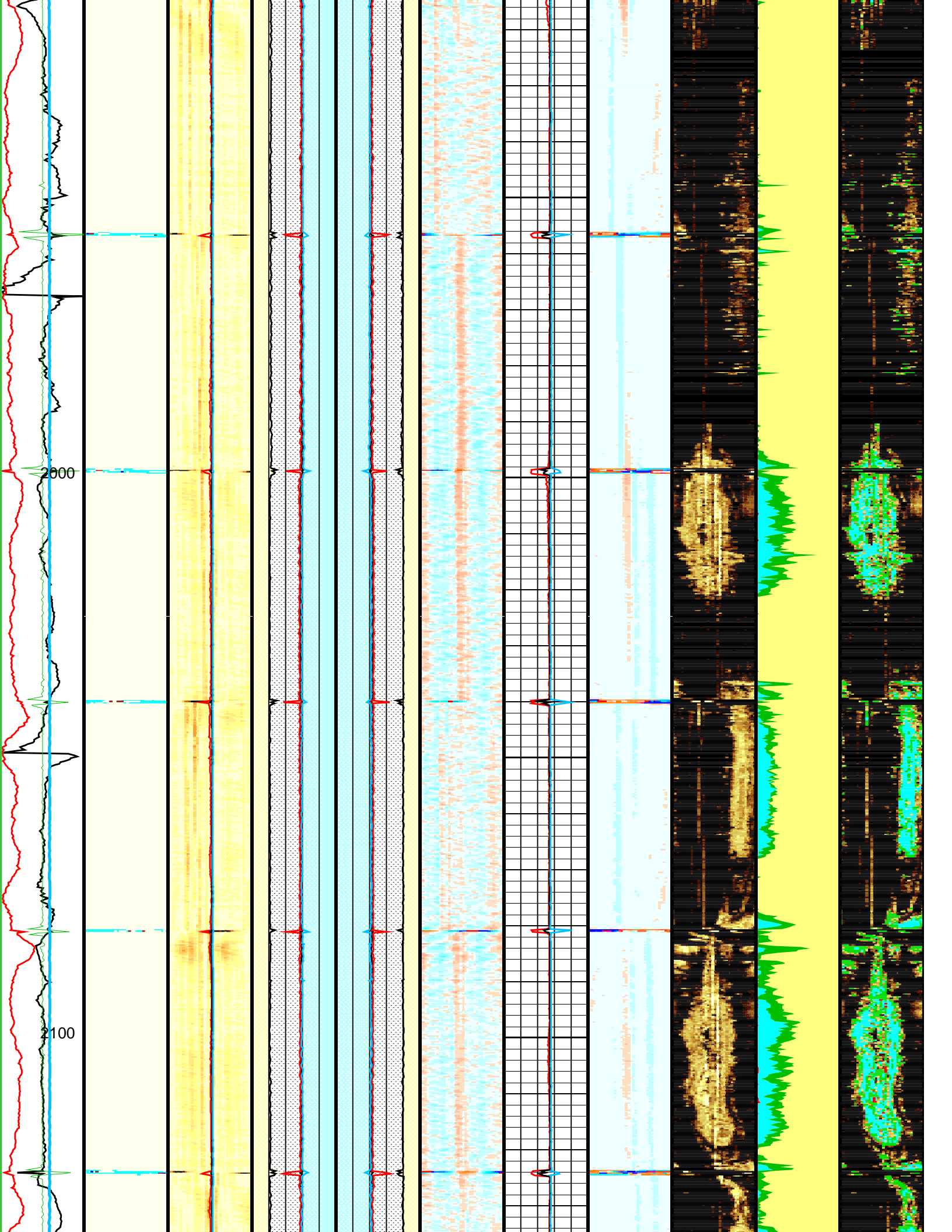


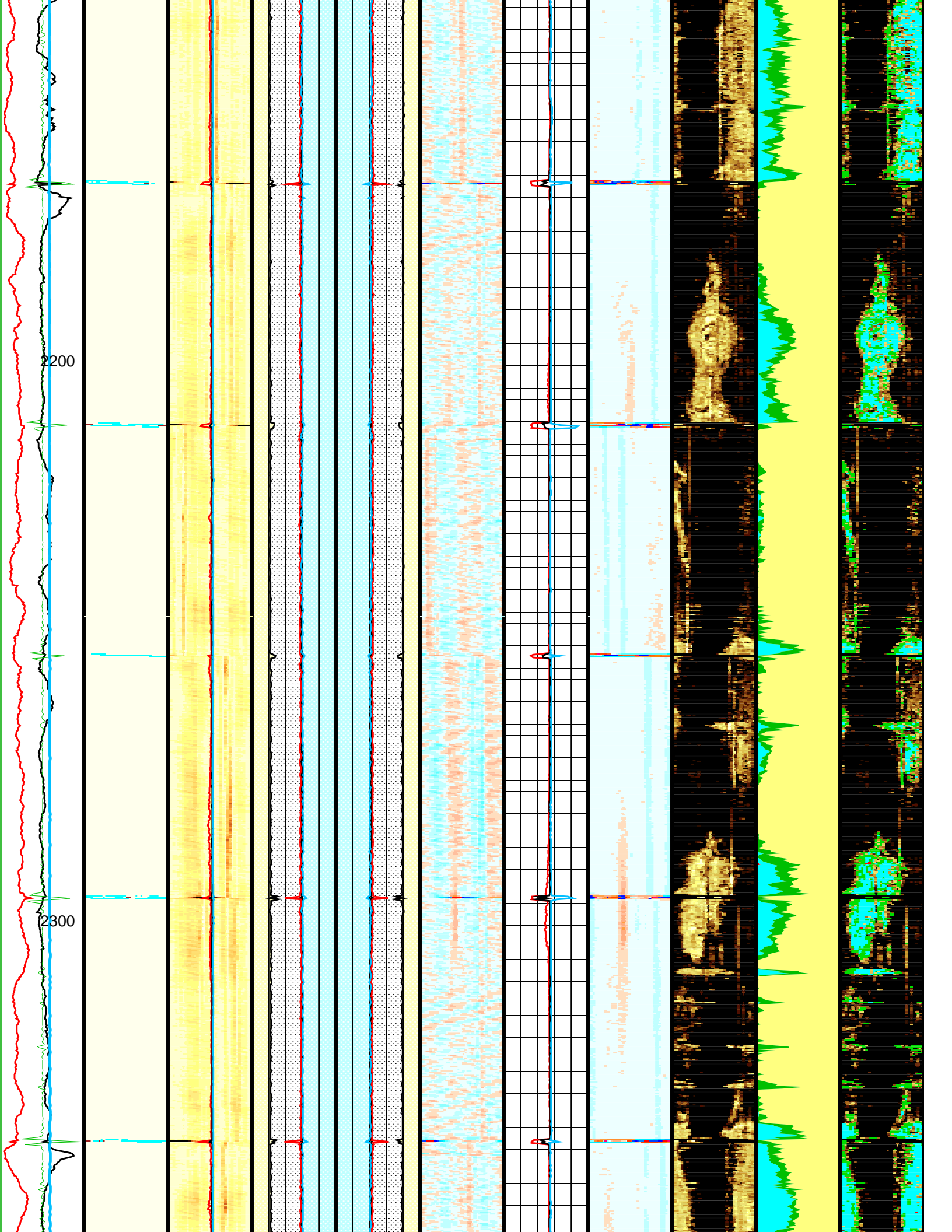


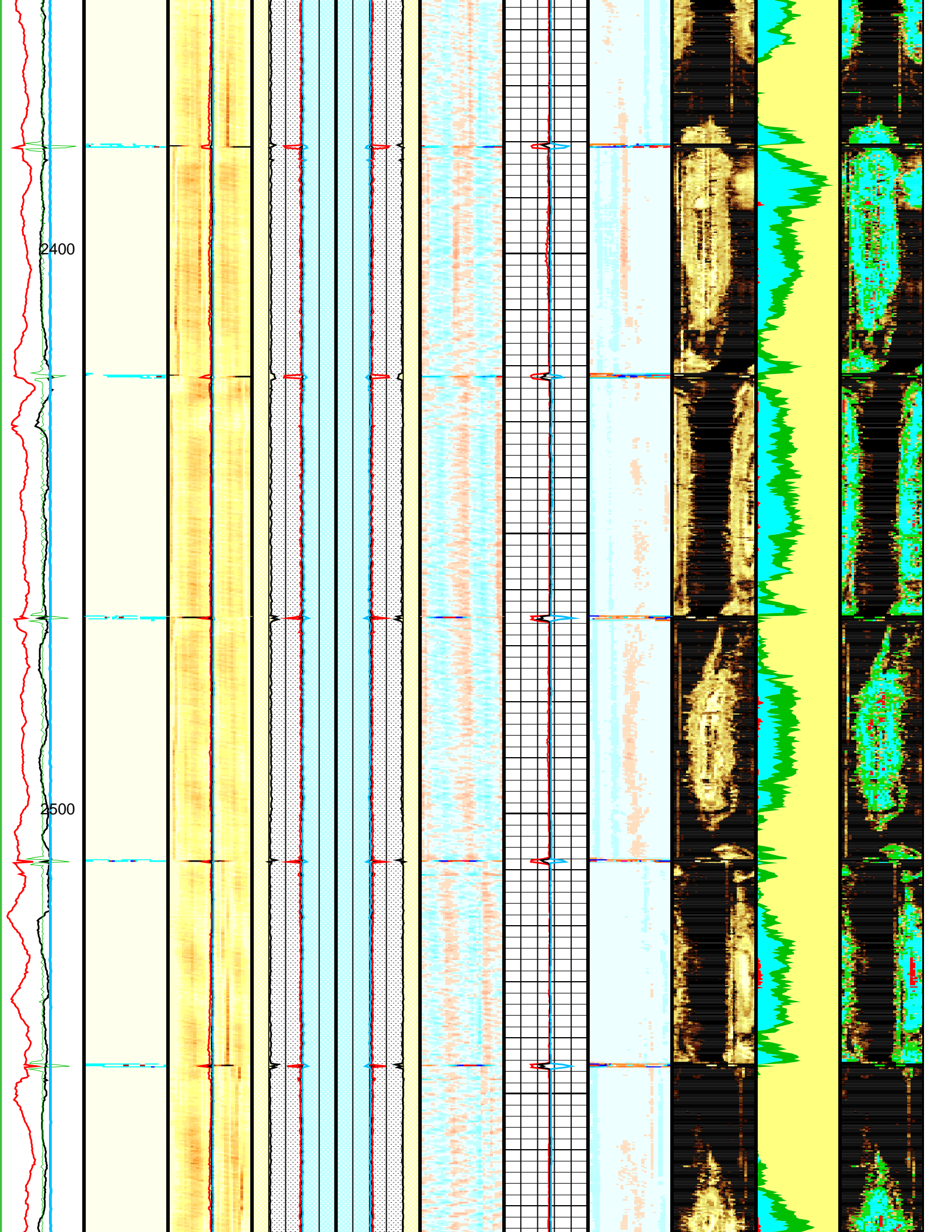


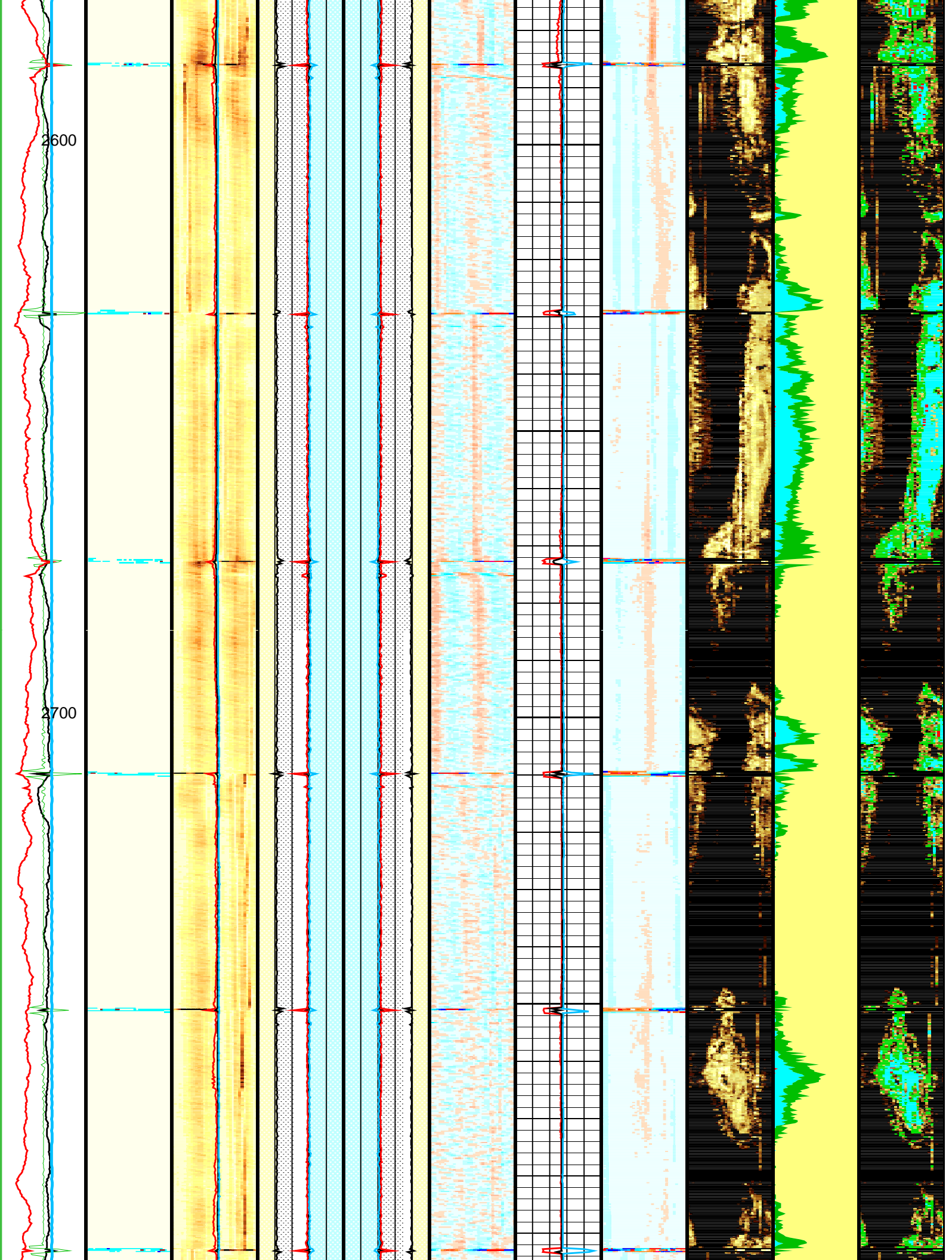


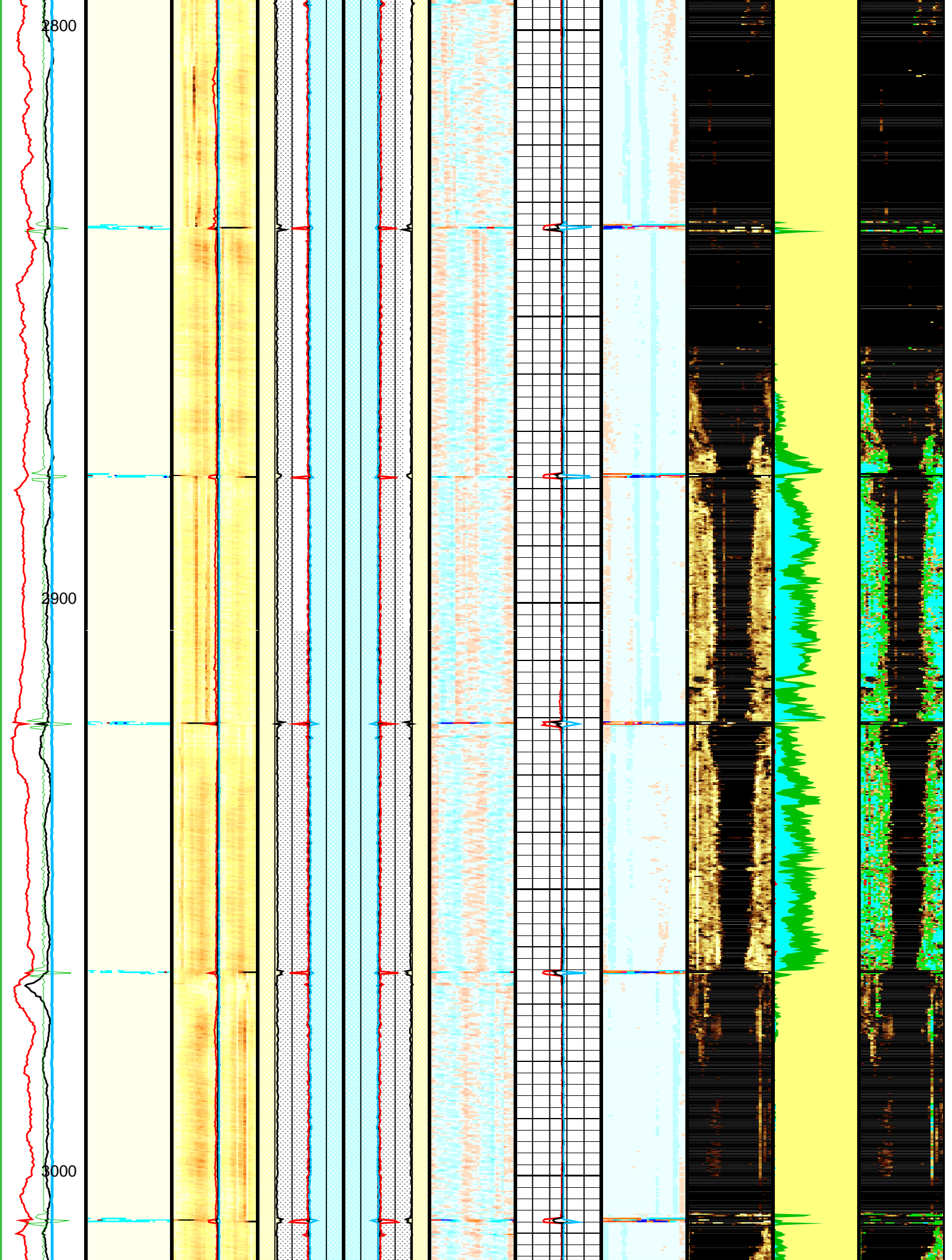


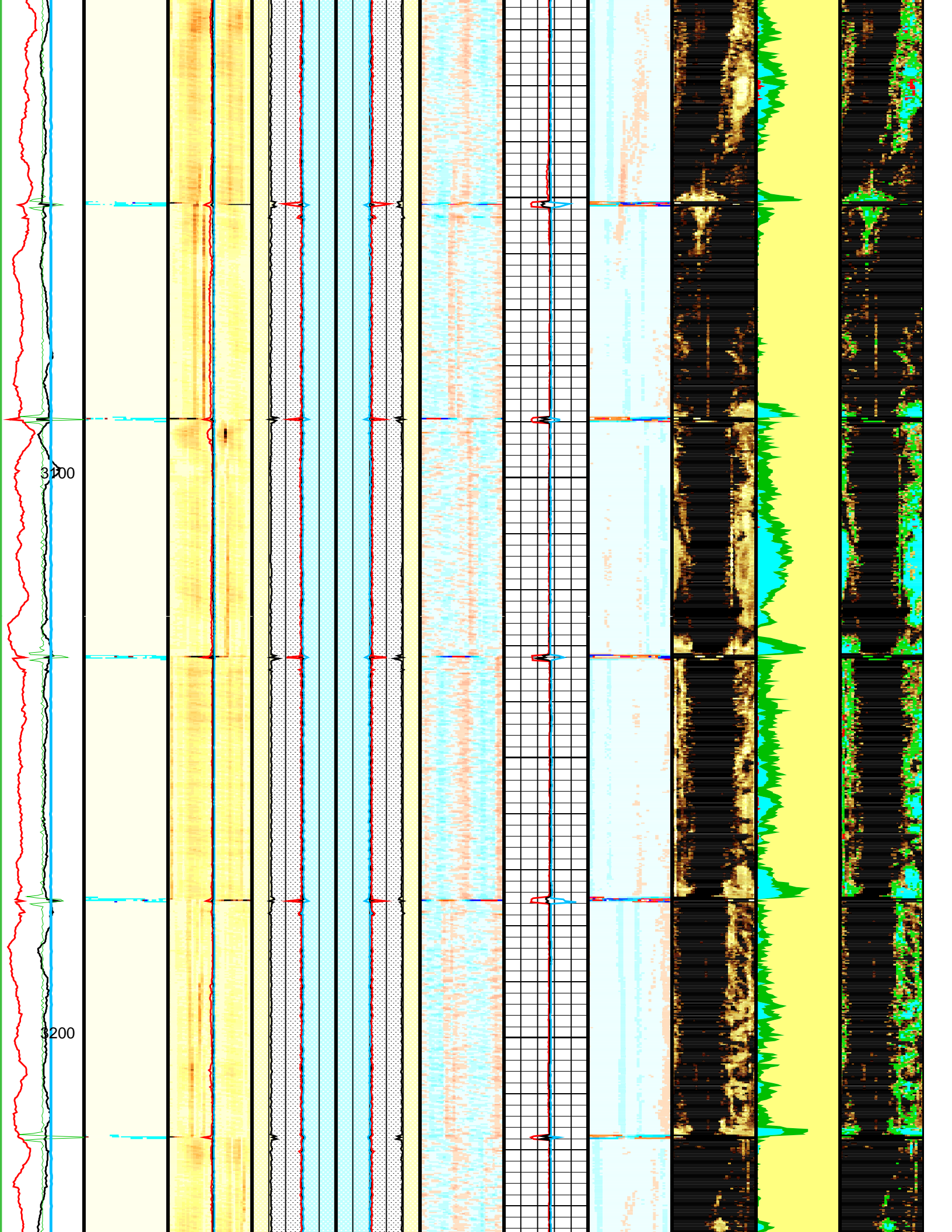


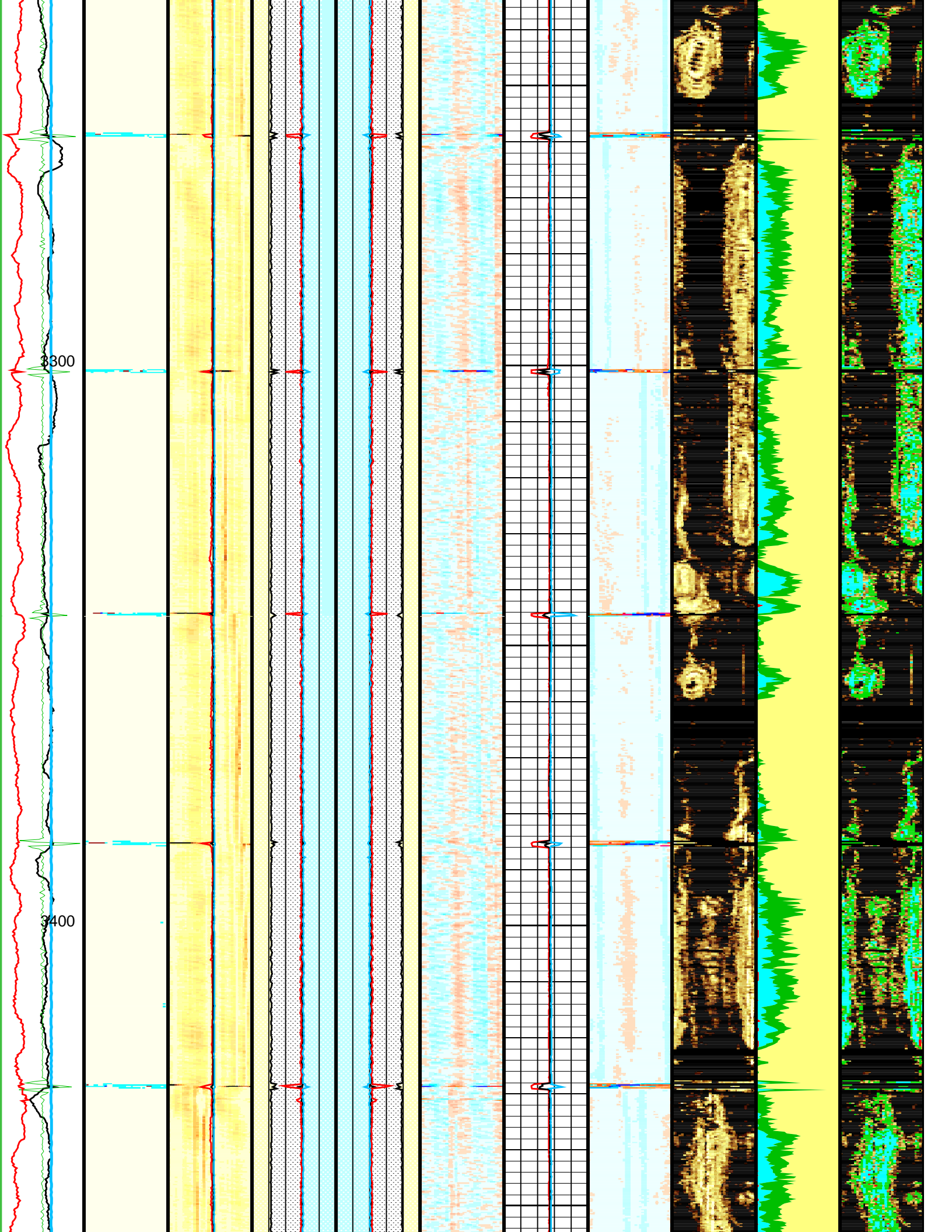


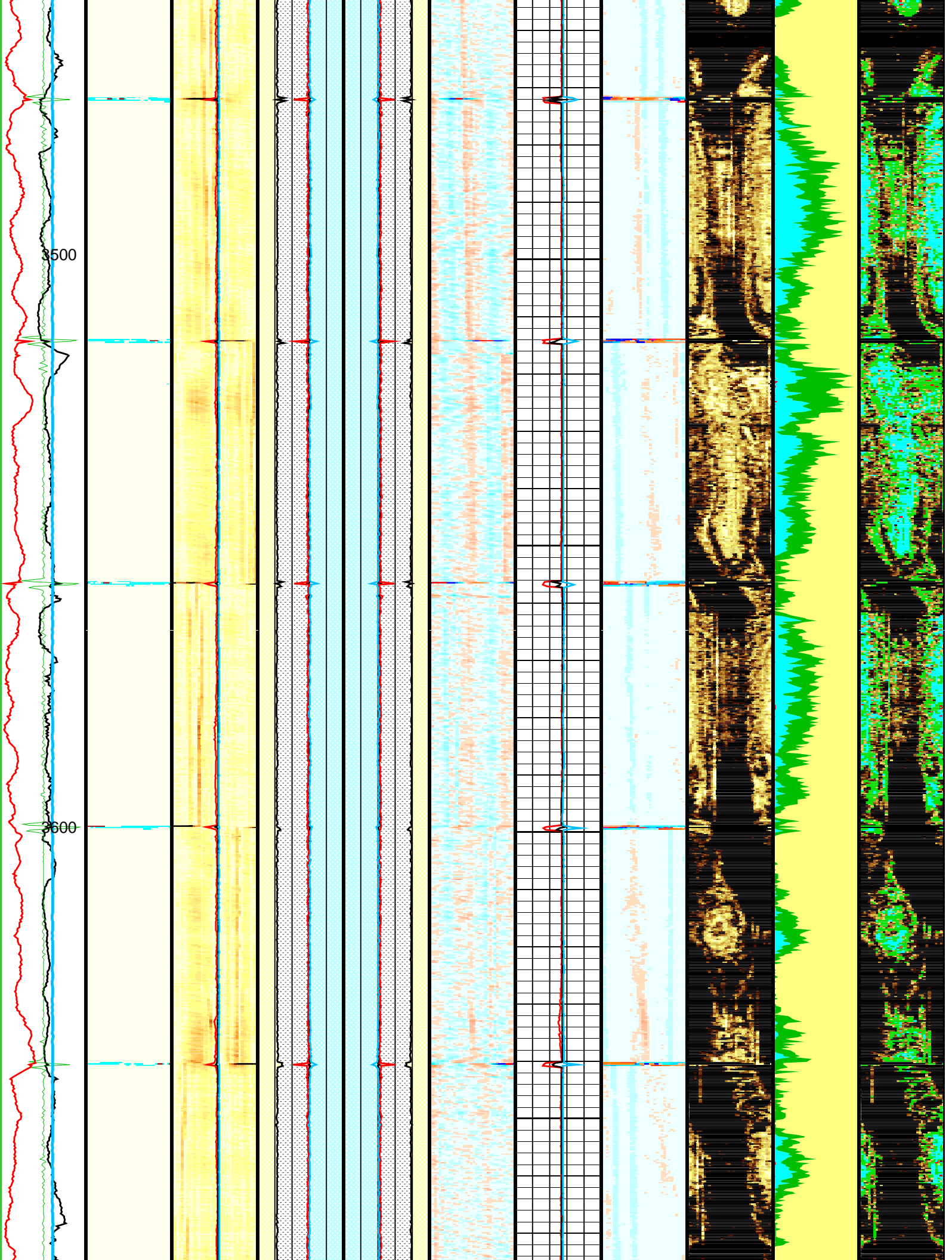


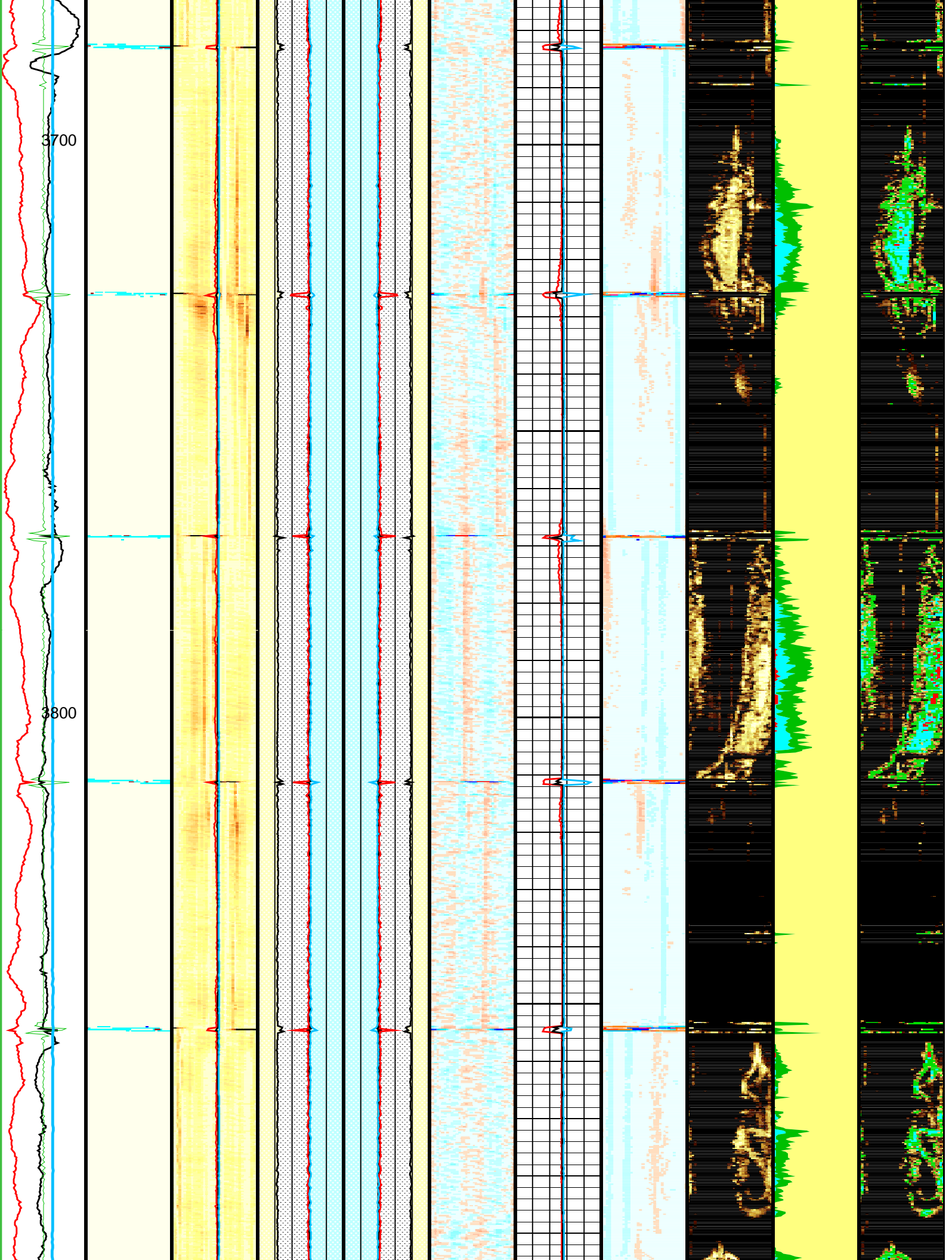


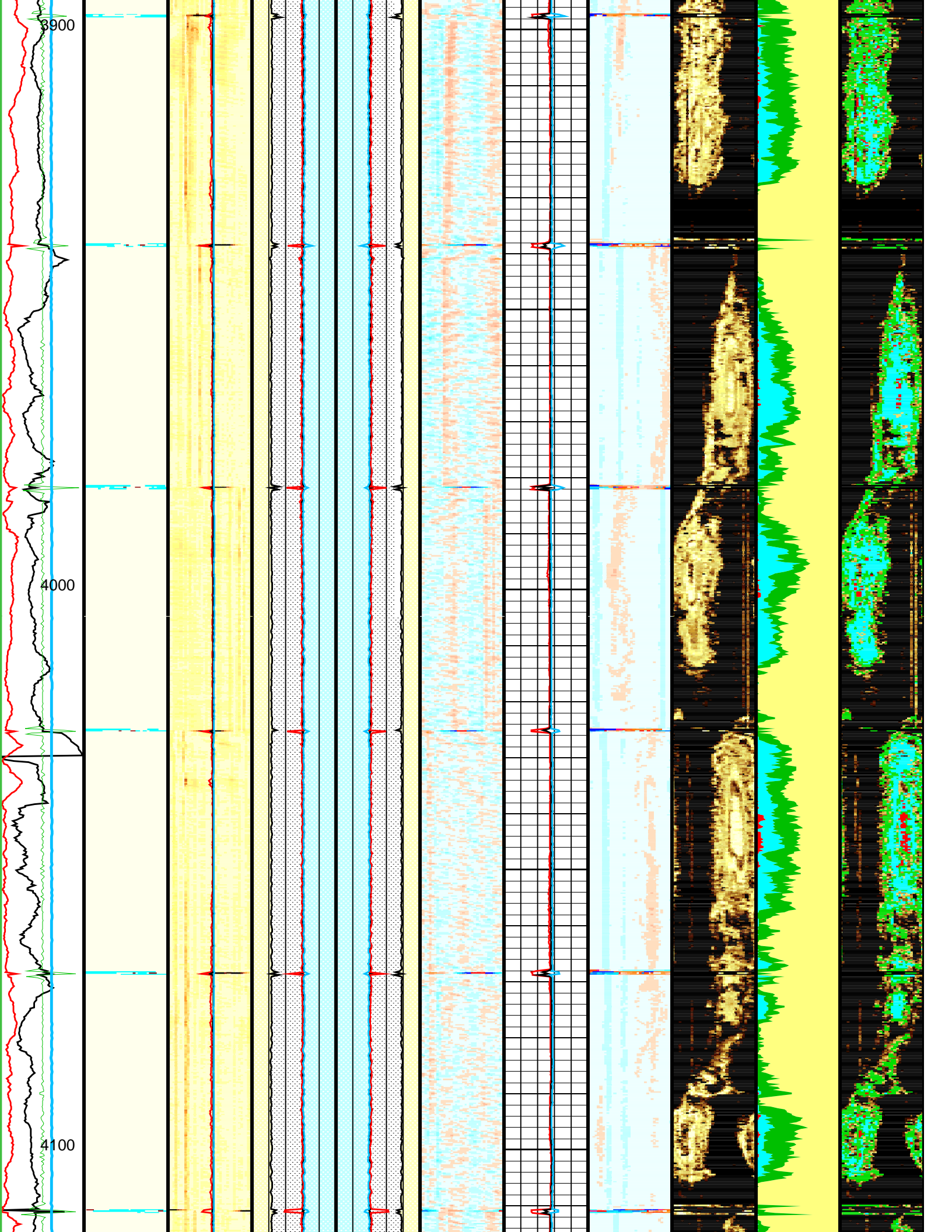


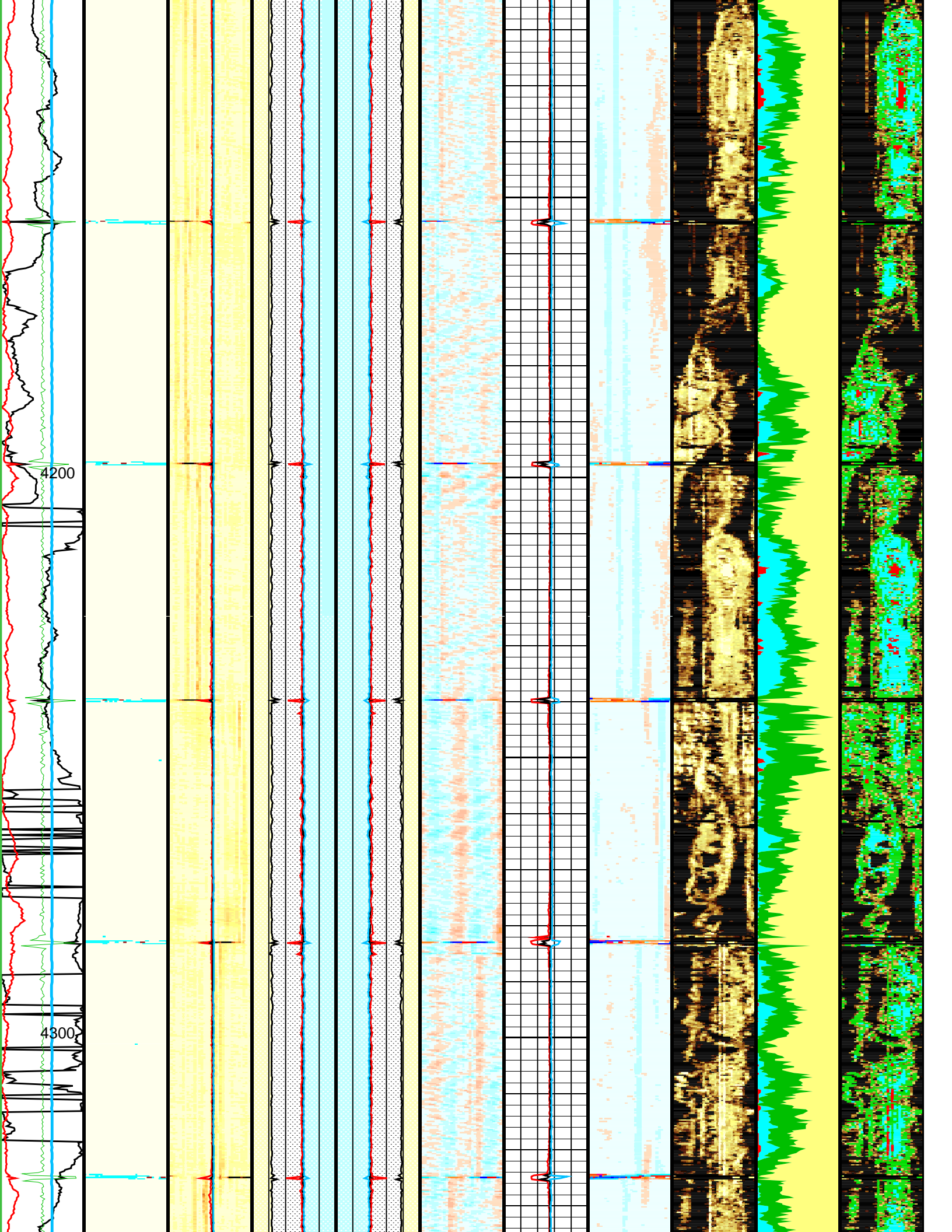


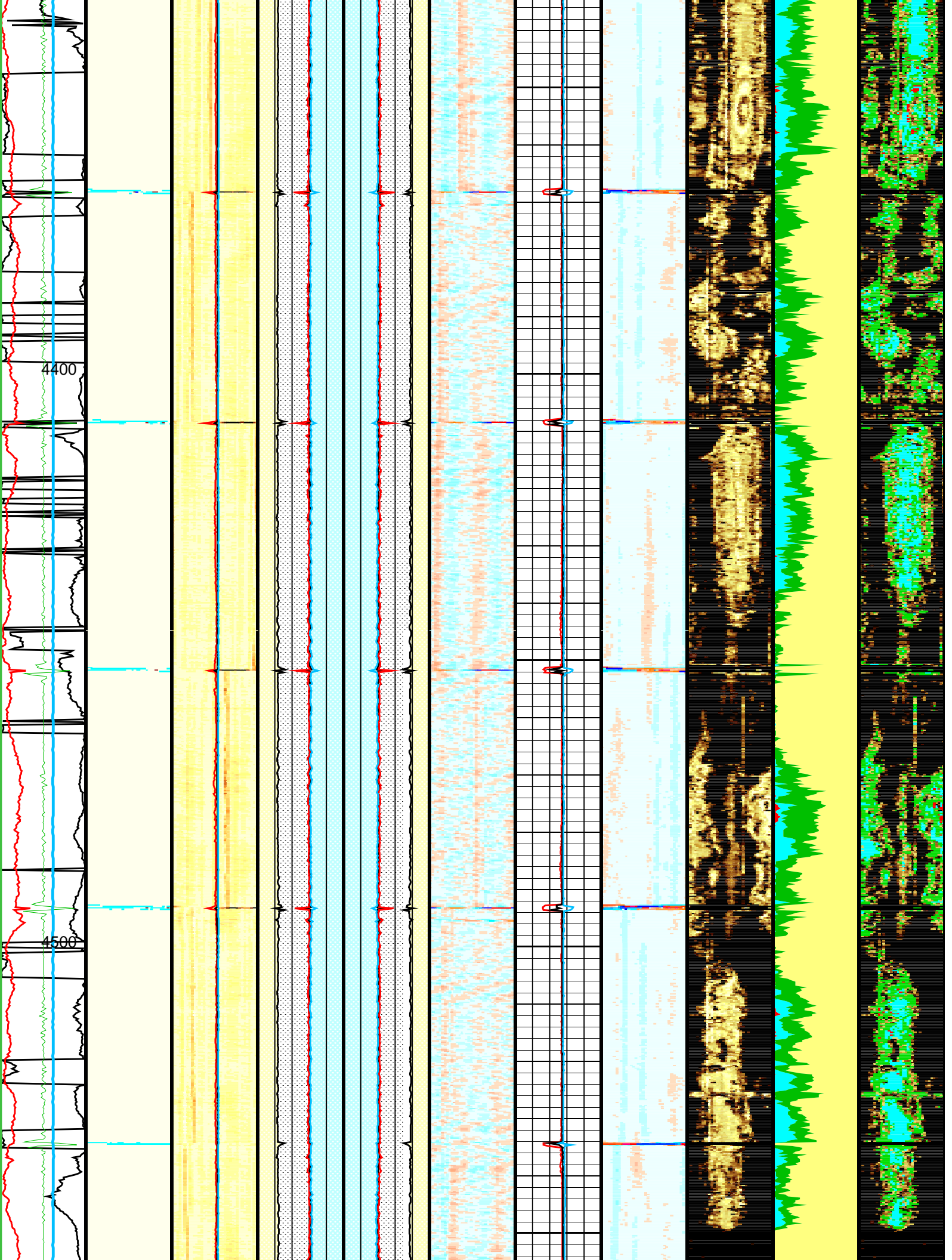


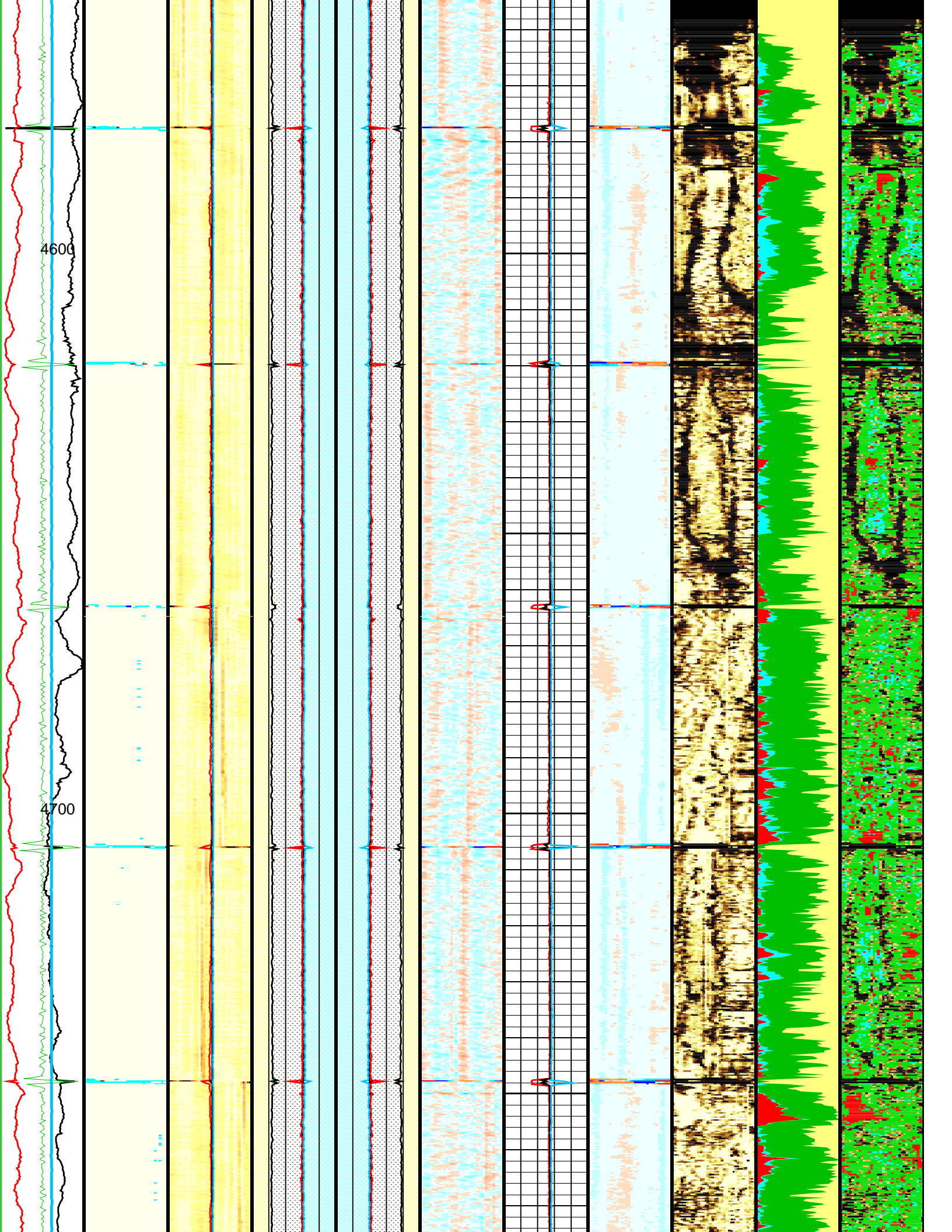


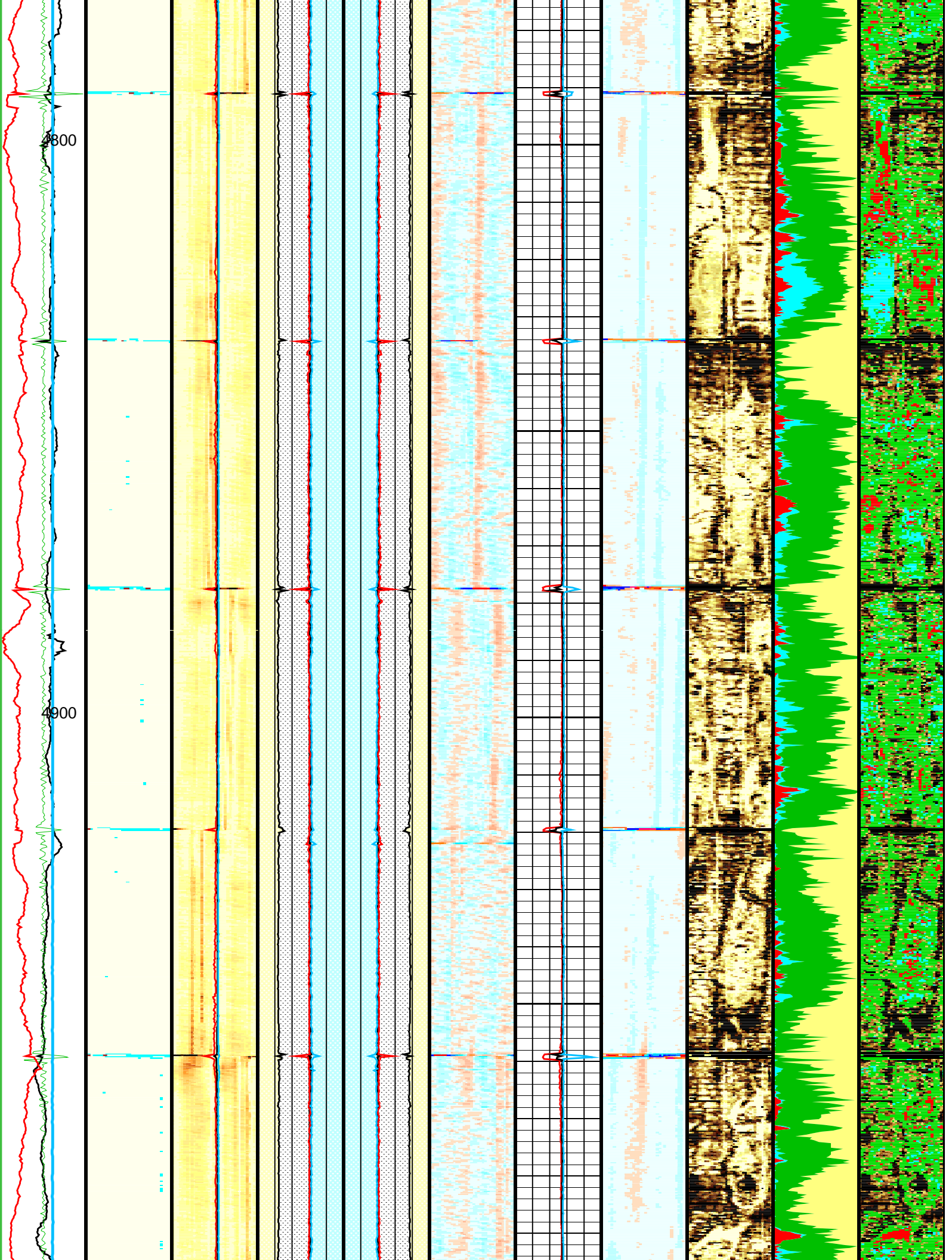


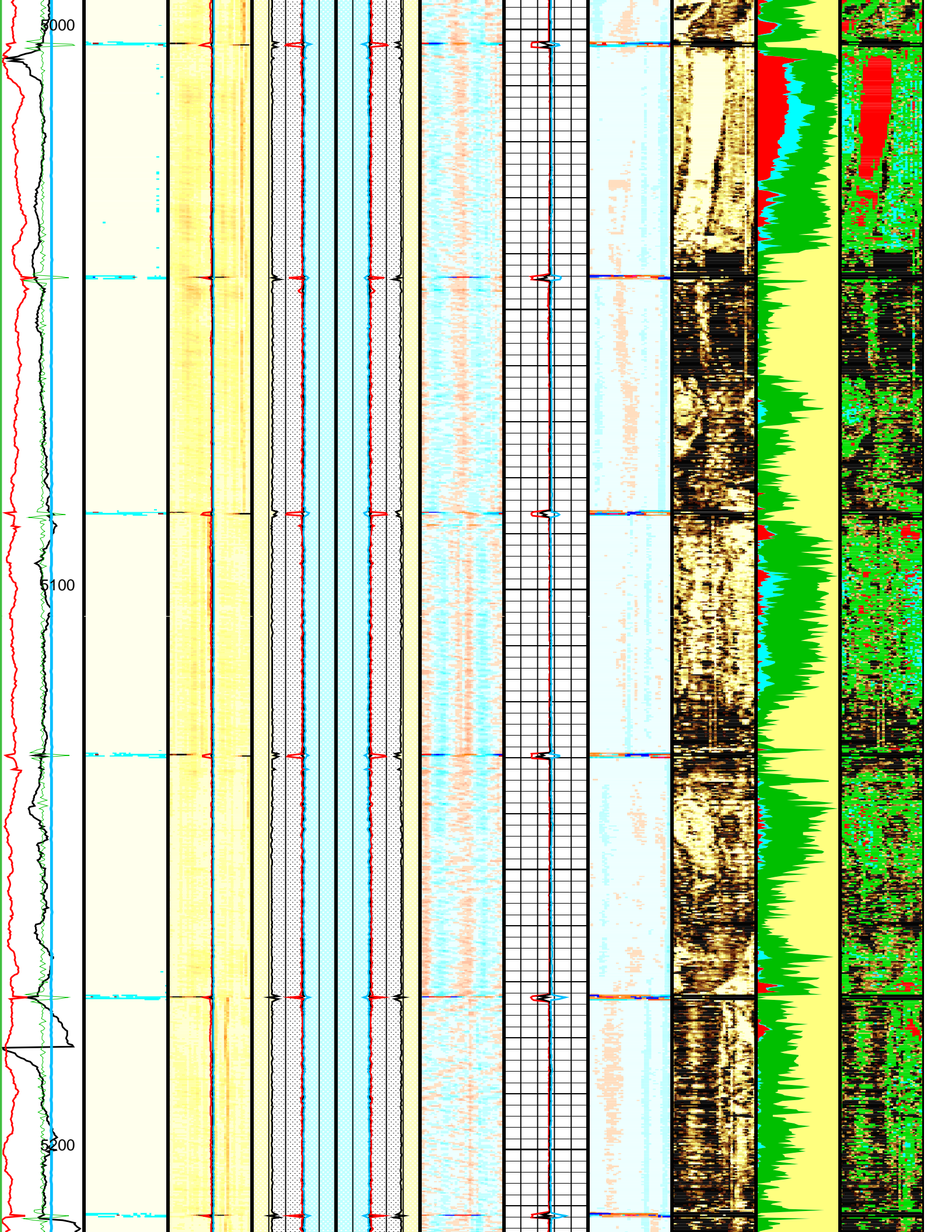


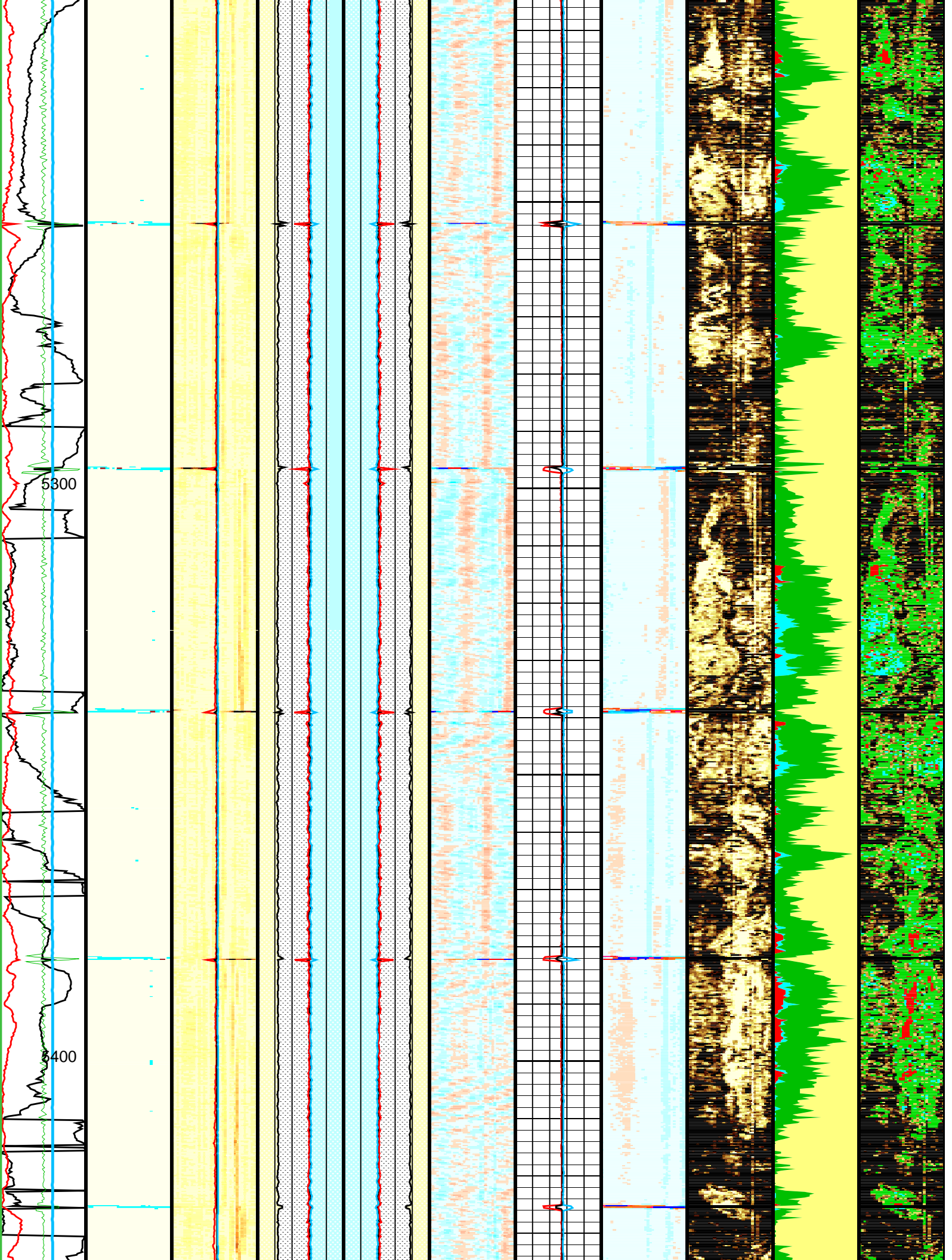


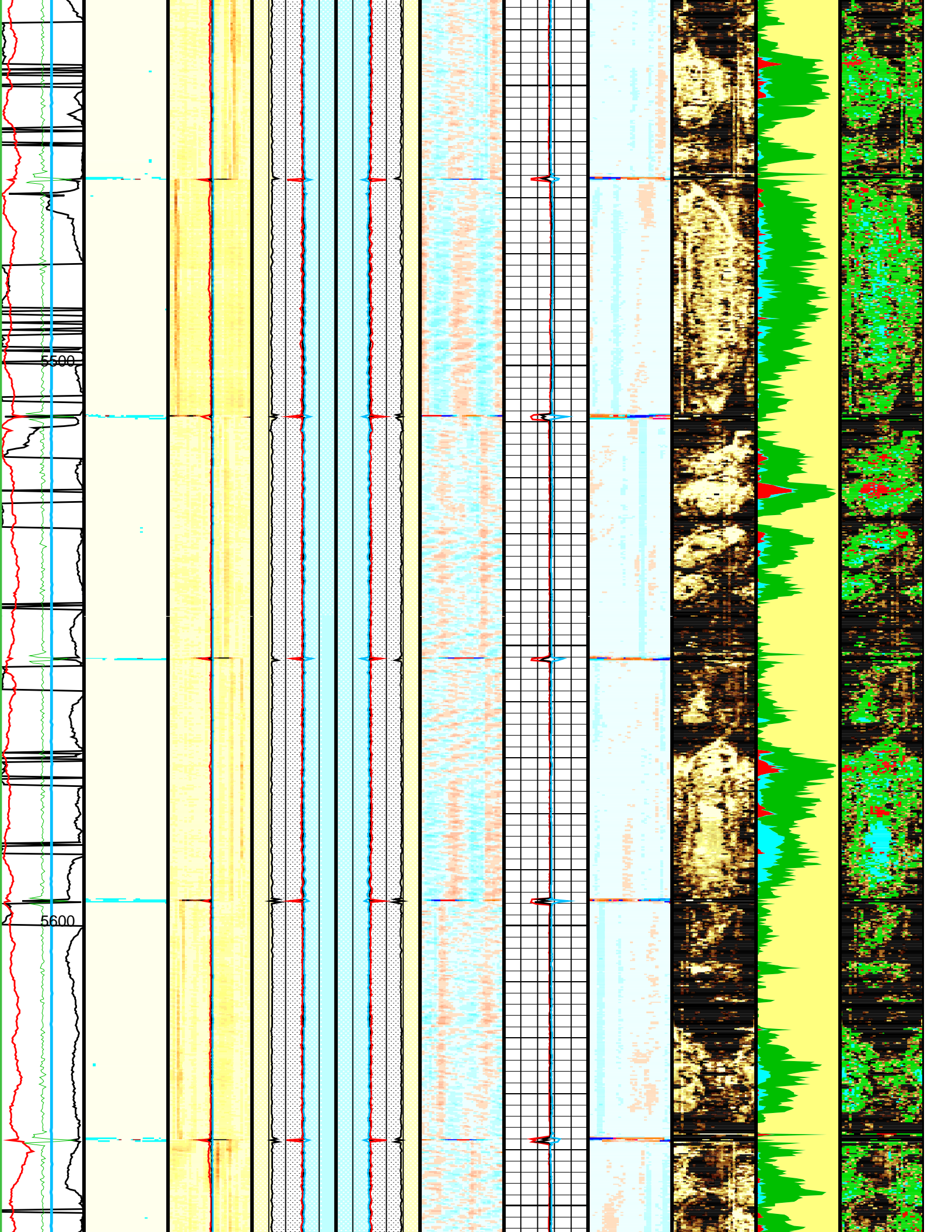


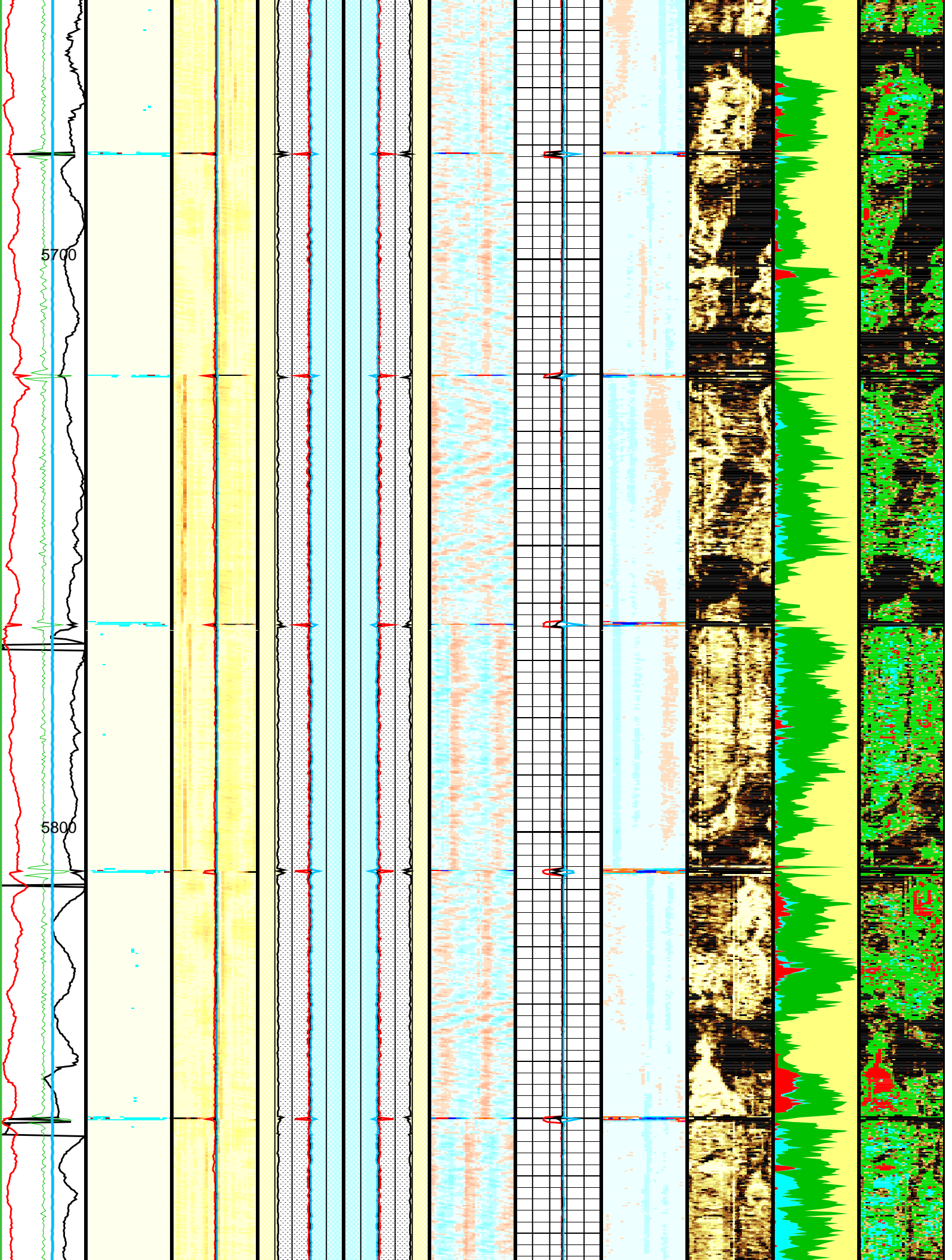


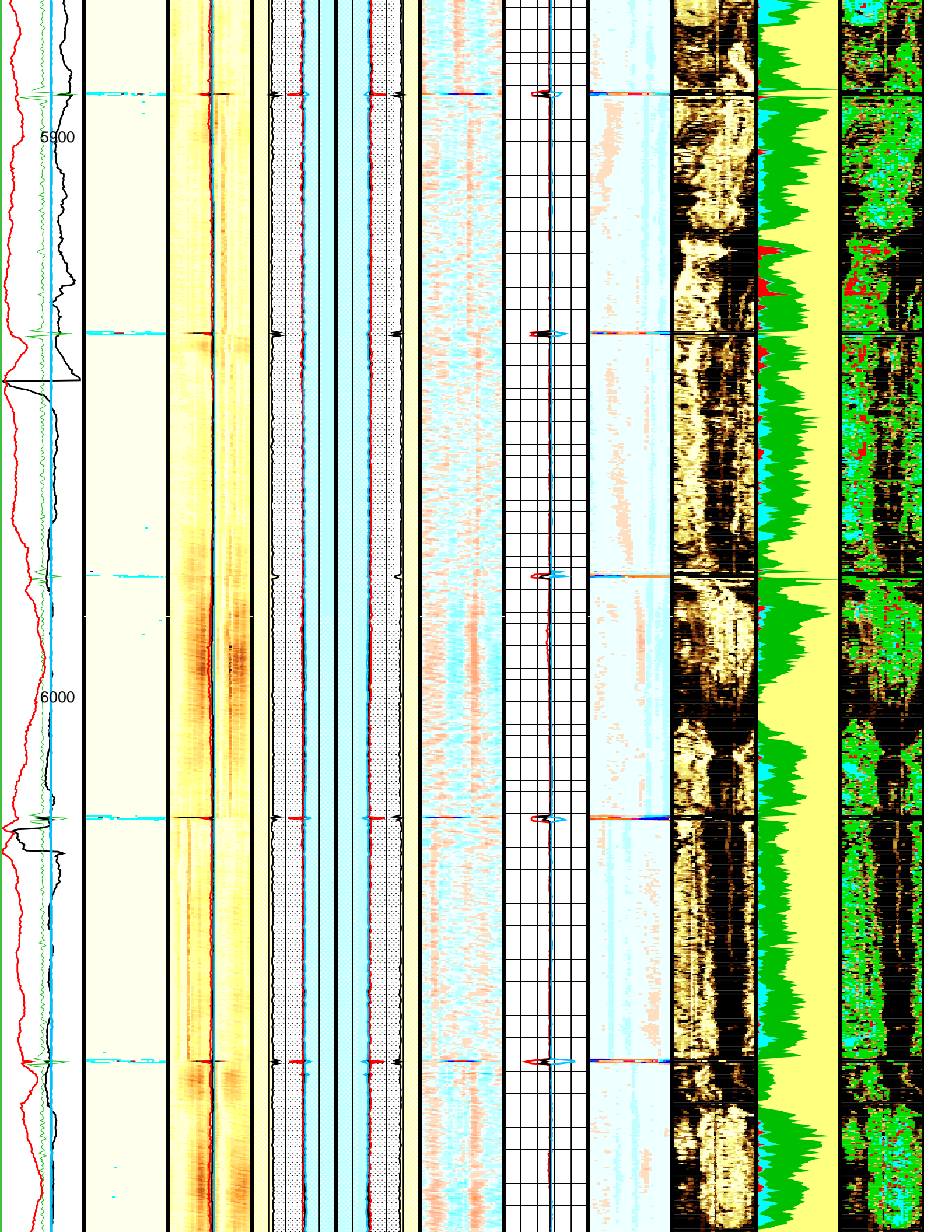


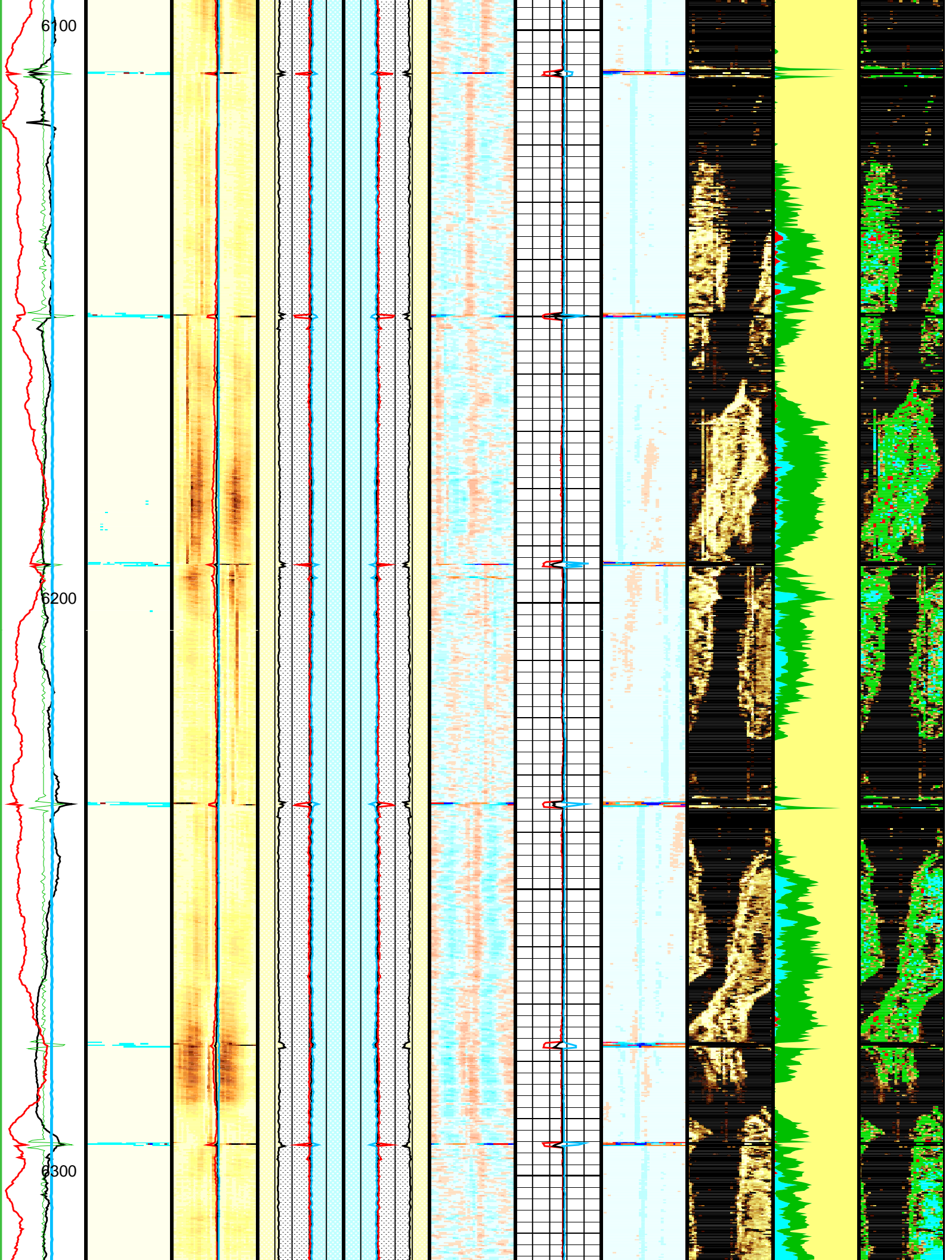


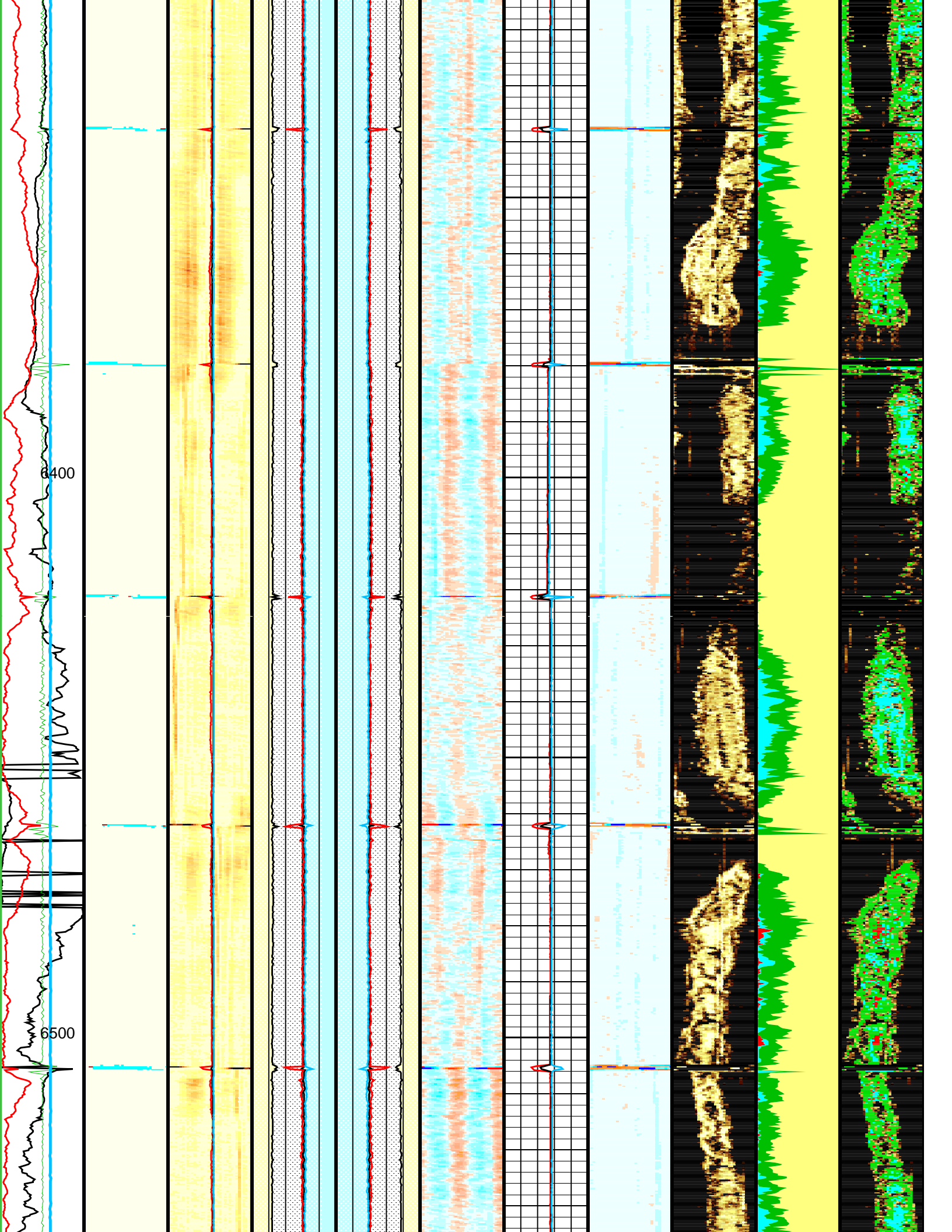


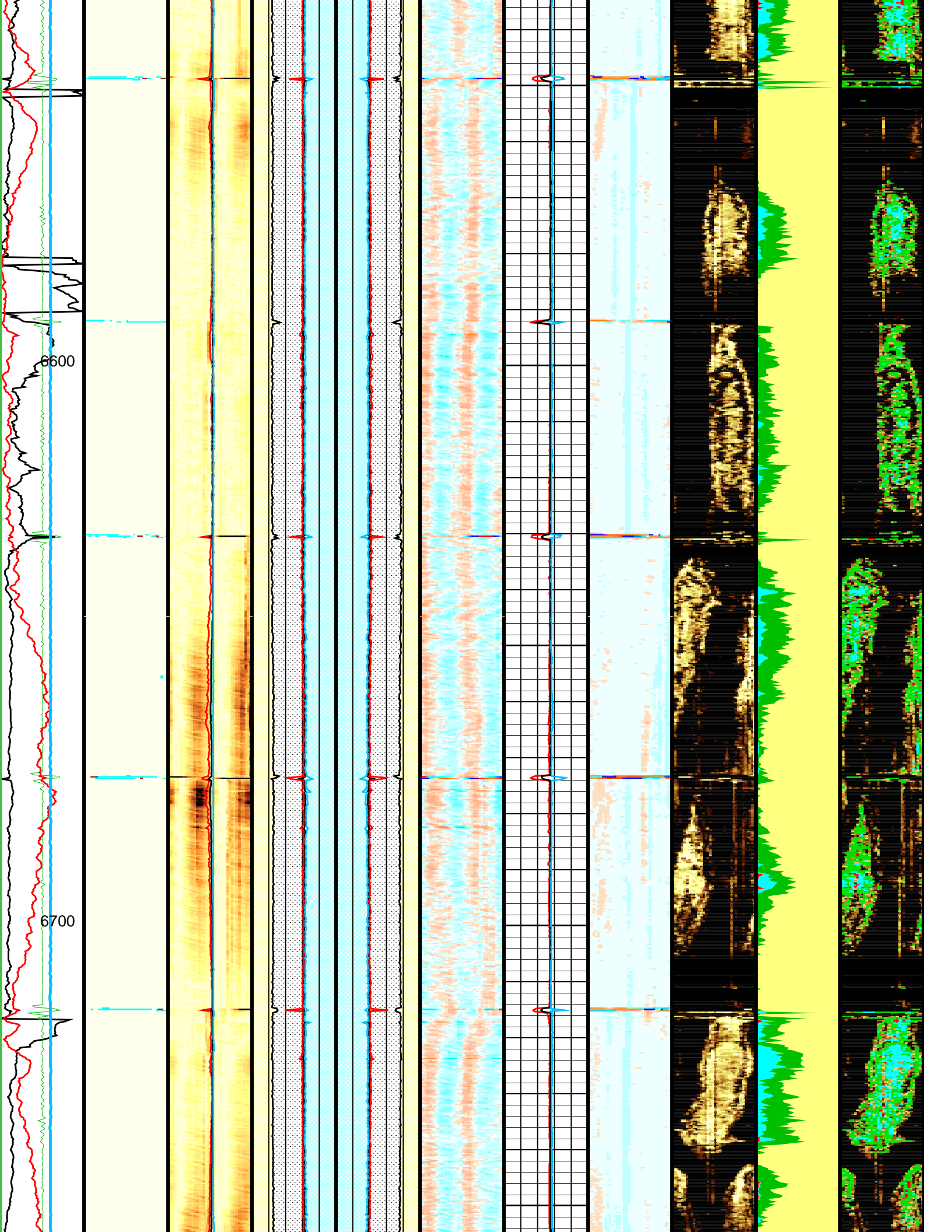


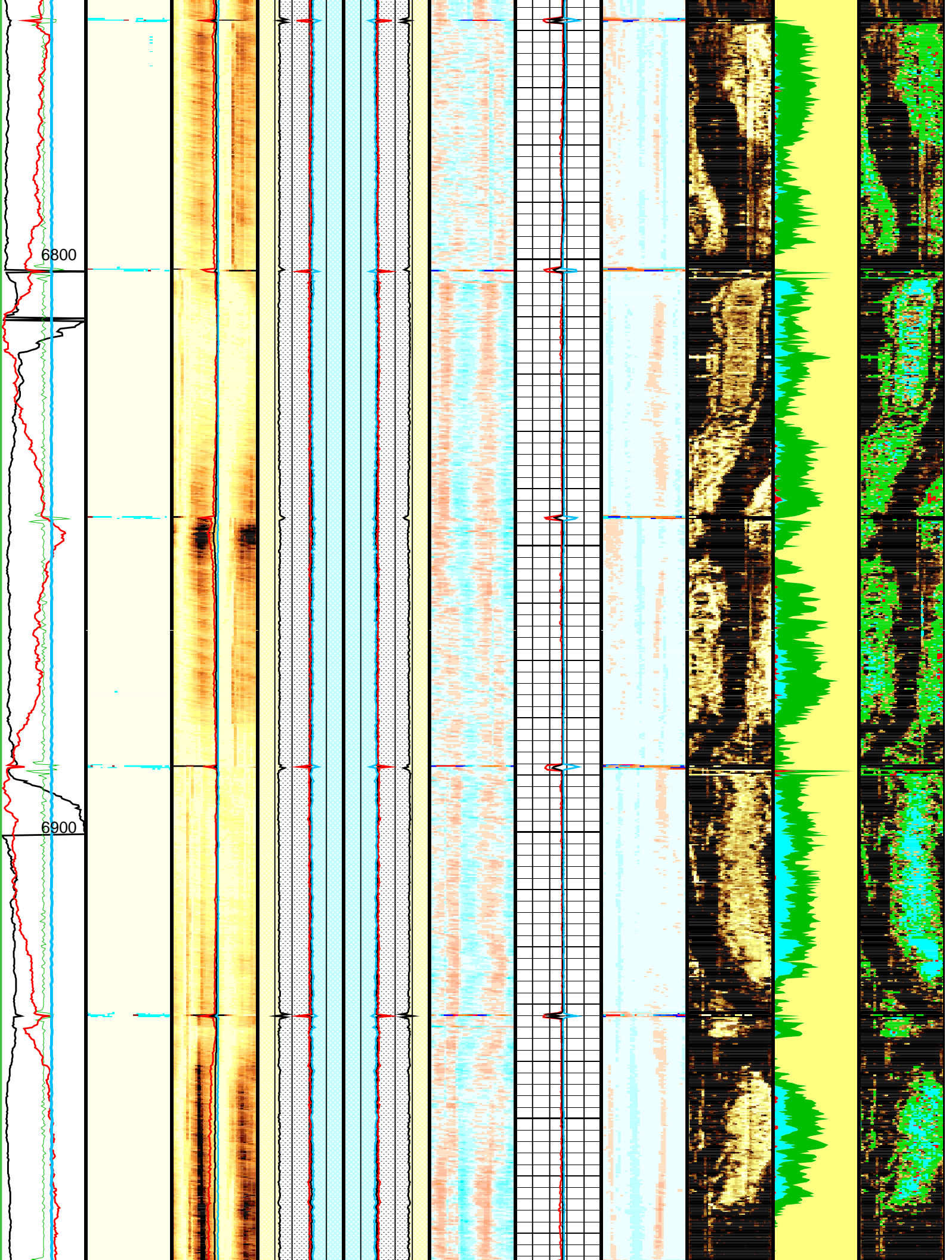


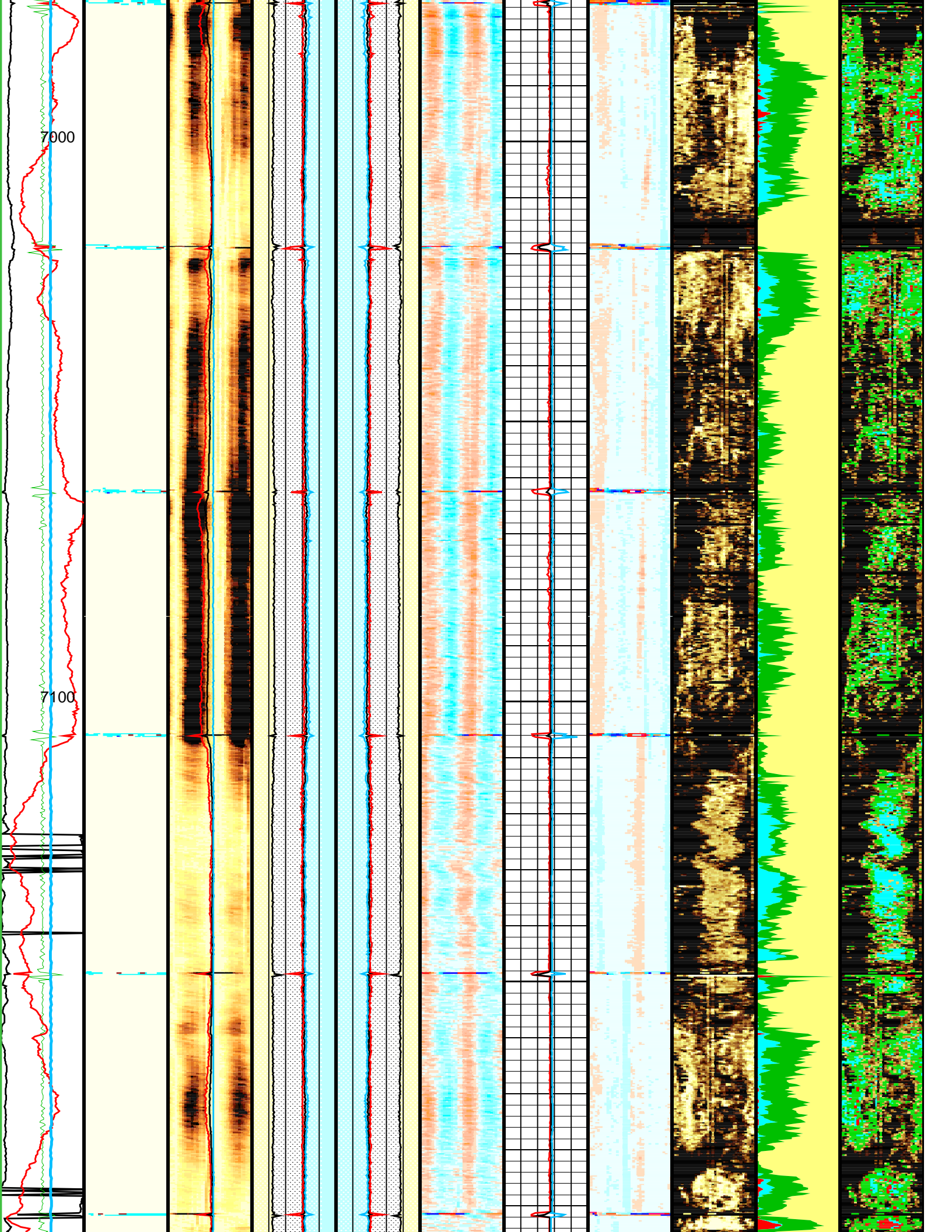


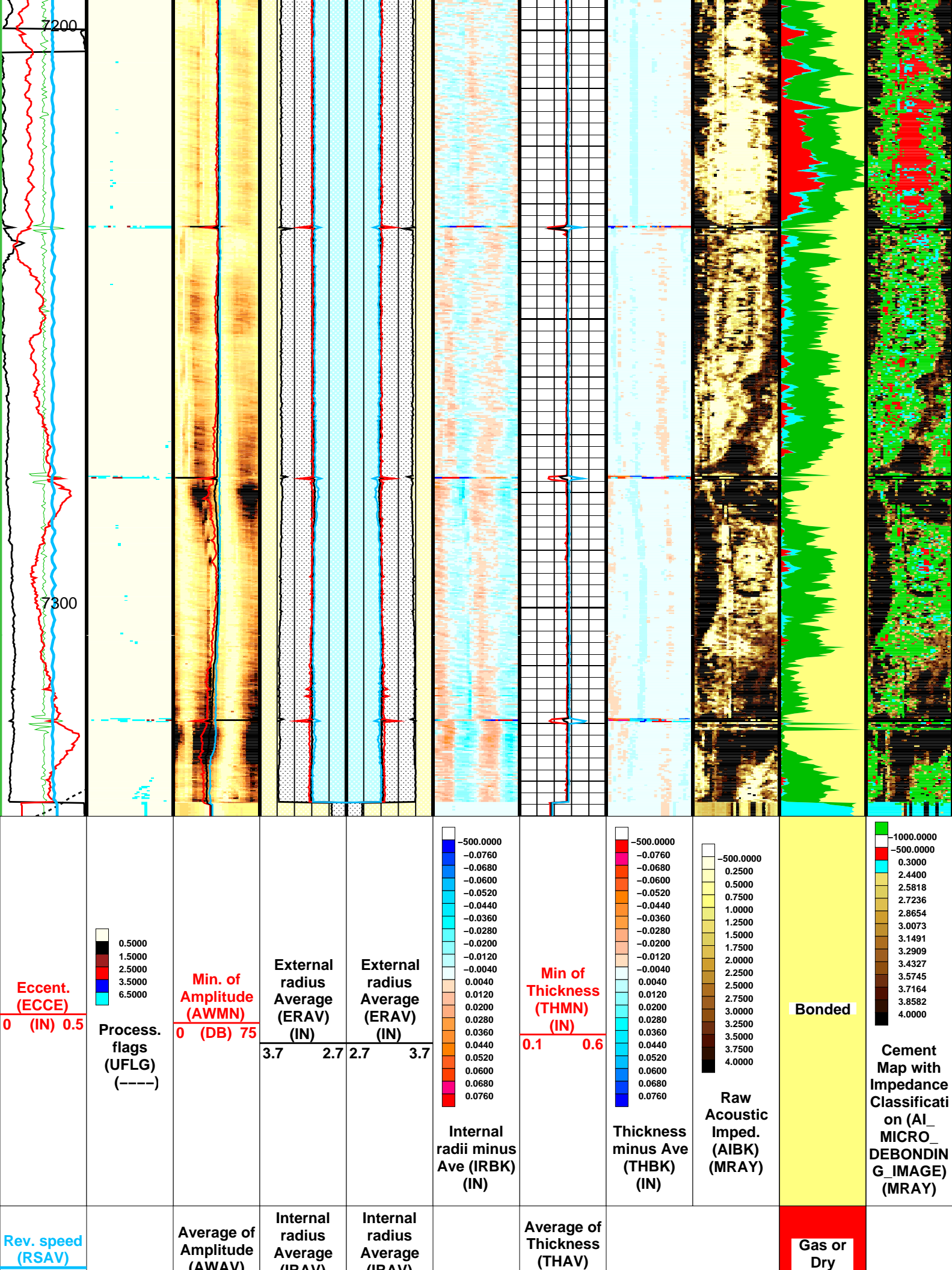


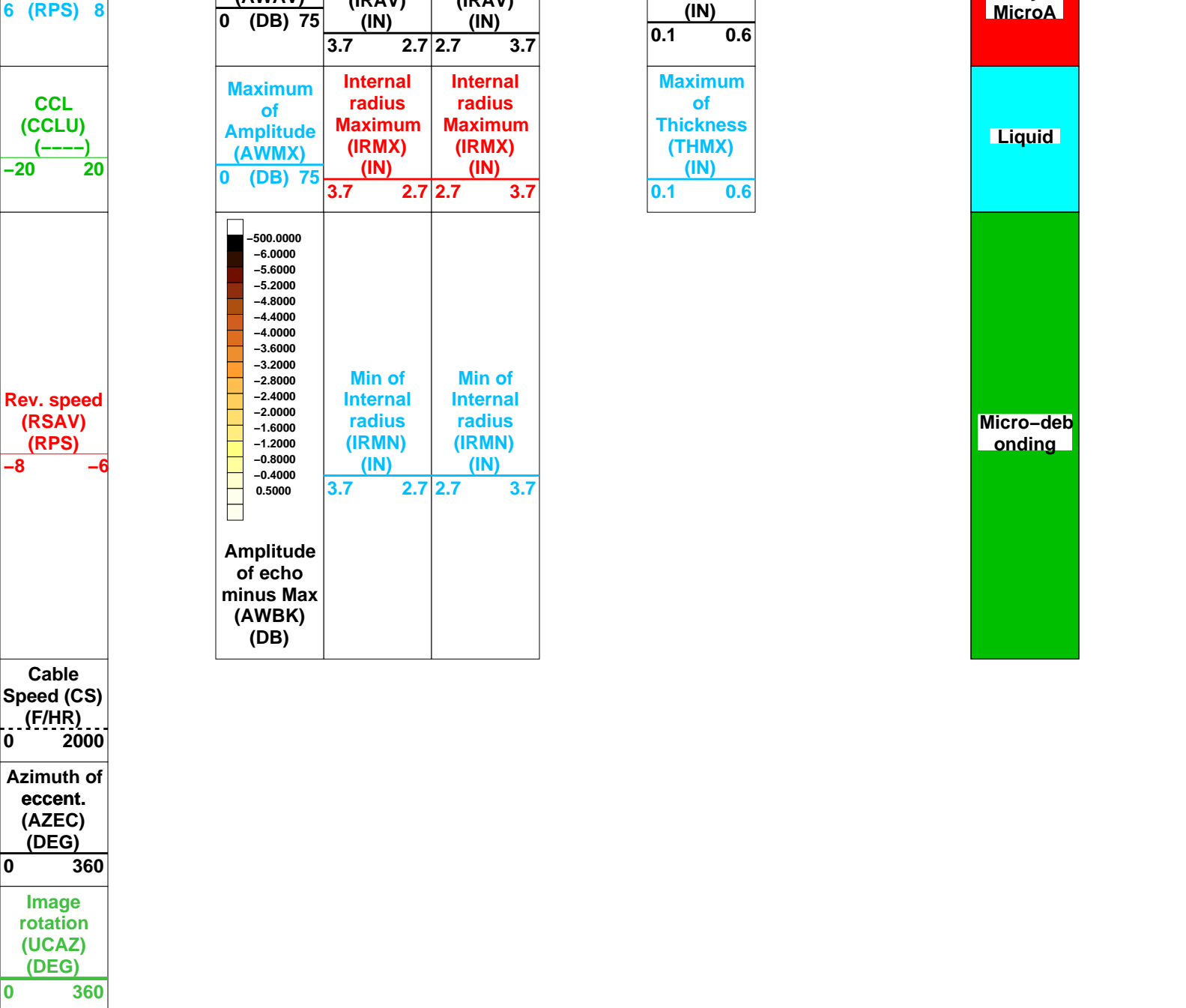












Format: USI_Composite

Vertical Scale: 5" per 100'

Graphics File Created: 10-Mar-2014 19:26

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E19C2-270EDTC-B19C2-270

All USI Images are outside views

COMPUTATION FLAGS LABELLING			
(0 - 1.5)	UFLG 1	UTIM error	
(1.5 - 2.5)	UFLG 2	Pulse origin not detected	
(2.5 - 3.5)	UFLG 3	WINLEN error	
(3.5 - 6.5)	UFLG 4 UFLG 5 UFLG 6	CASING THICKNESS error	

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-E: Ultrasonic Imaging – E			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	201	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	20	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro-debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro-debonding	0.3	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
UMAO	USIT Measurement Angular Offset	18	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_3IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	–1	MRAY
ZMUD	Acoustic Impedance of Mud	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.44	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_051PUP	FN:50	PRODUCER	10–Mar–2014 19:09	7336.0 FT	234.0 FT
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Output DLIS Files

DEFAULT	USI_052PUP	FN:51	PRODUCER	10–Mar–2014 19:26
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**USI COMPOSITE
3000 PSI REPEAT**

Input DLIS Files

DEFAULT	USI_035PUP	FN:34	PRODUCER	10-Mar-2014 04:04	7275.0 FT	6772.0 FT
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Output DLIS Files

DEFAULT	USI_055PUP	FN:54	PRODUCER	10-Mar-2014 19:37	7309.0 FT	6806.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E	19C2-270	EDTC-B	19C2-270
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Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
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7500.00	194.00	1.77
7000.00	194.00	1.77
6500.00	194.00	1.76
6000.00	193.00	1.74
5500.00	193.00	1.75
5000.00	193.00	1.73
4500.00	193.00	1.73
4000.00	193.00	1.73
3500.00	193.50	1.73
3000.00	193.80	1.72
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

Image
rotation
(UCAZ)
(DEG)

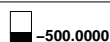
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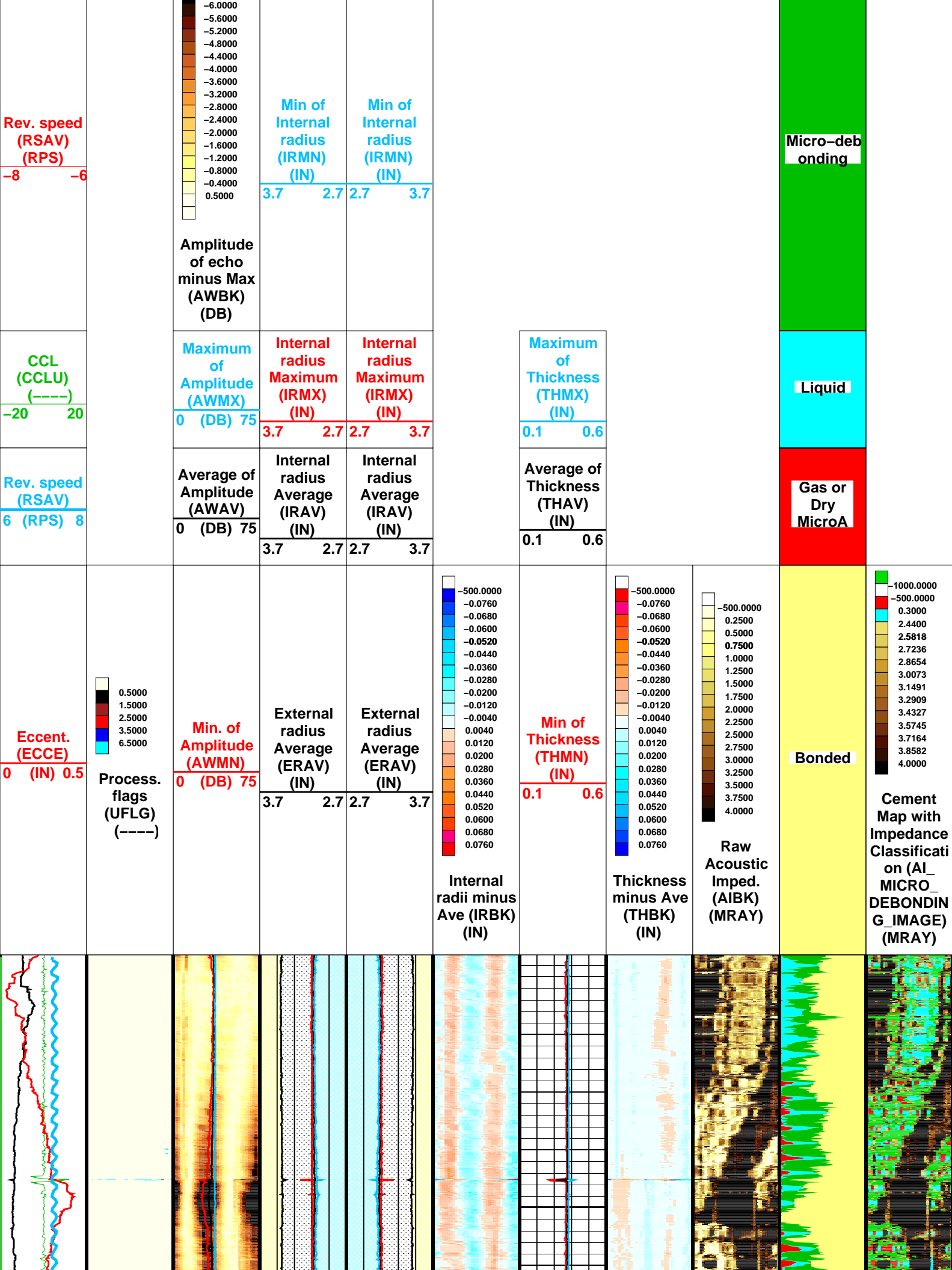
Azimuth of
eccent.
(AZEC)
(DEG)

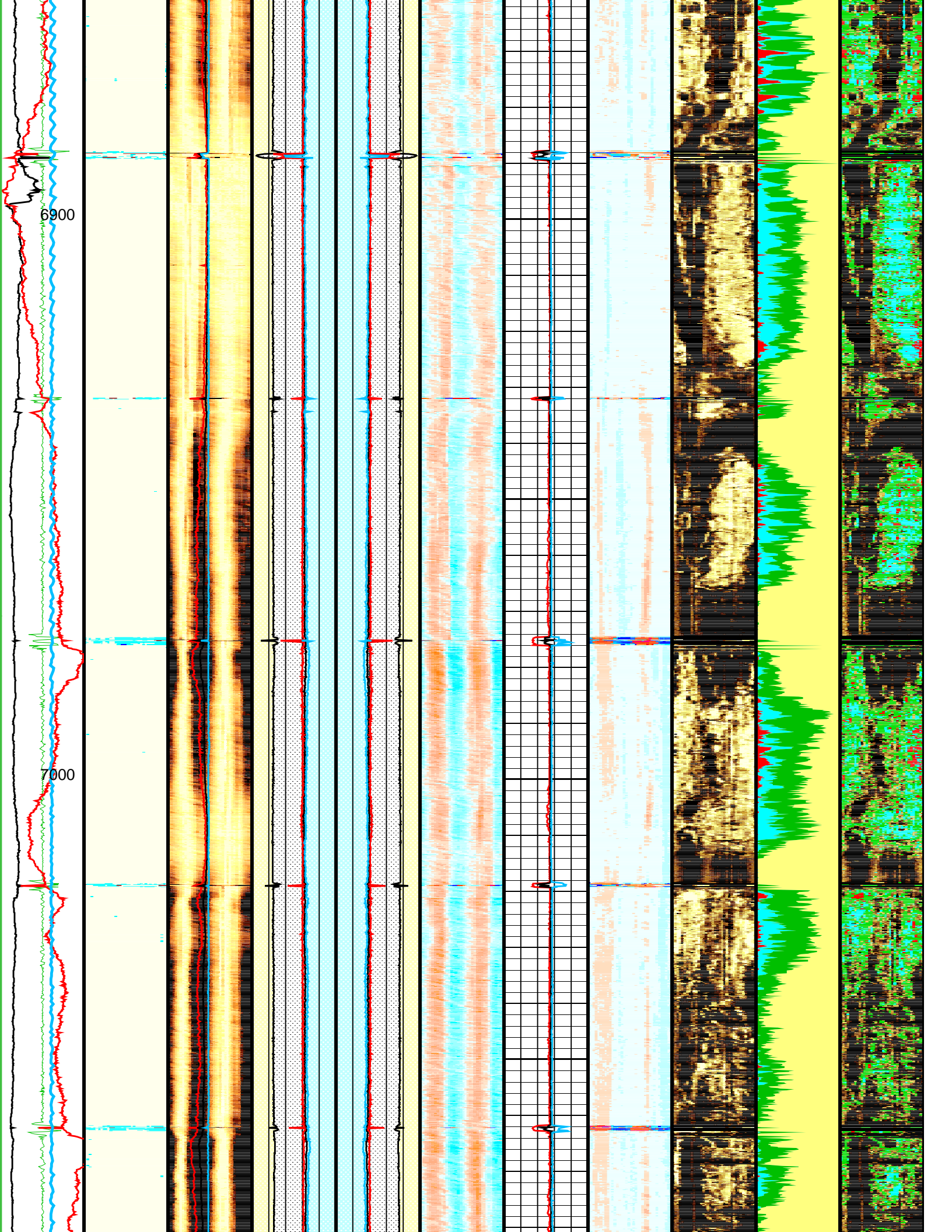
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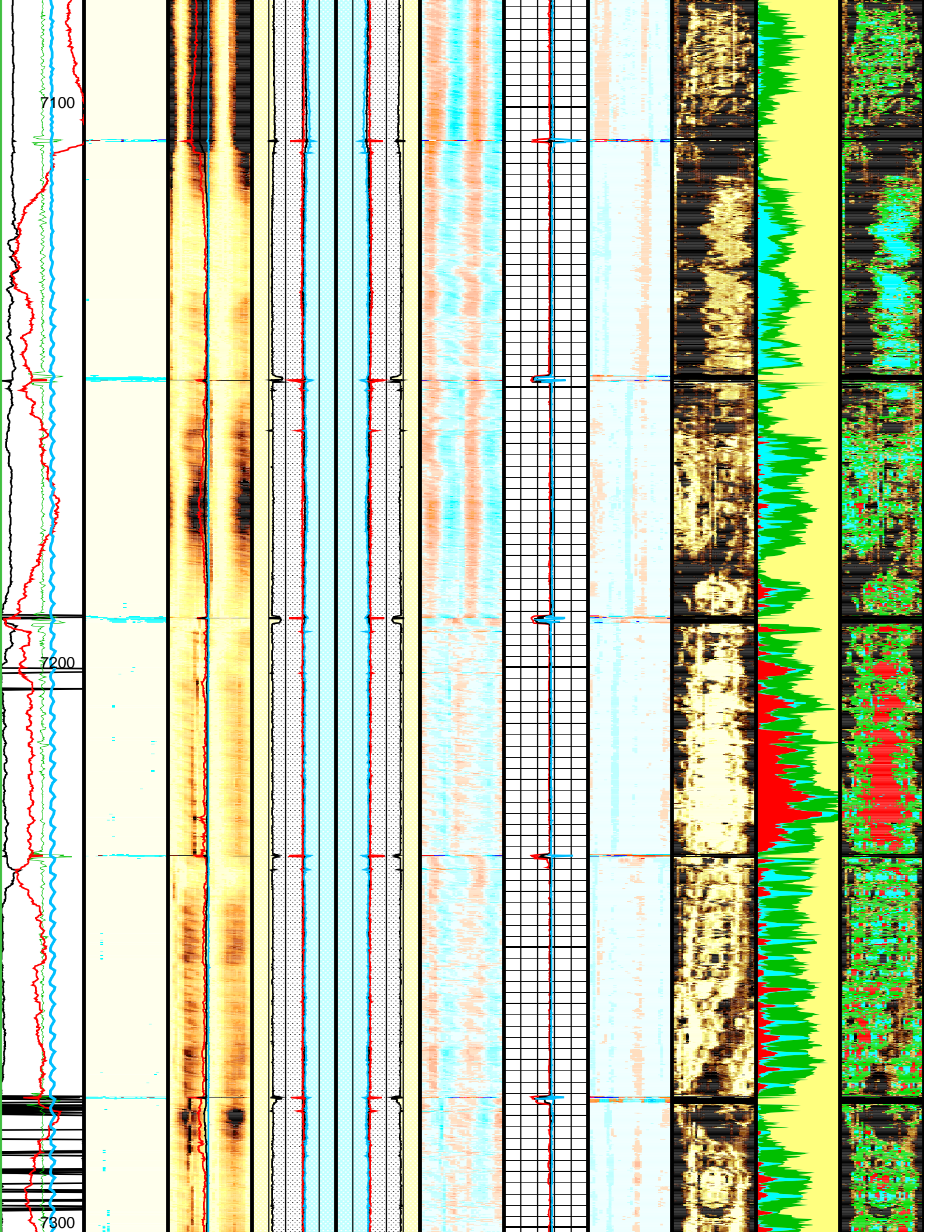
Cable
Speed (CS)
(F/HR)

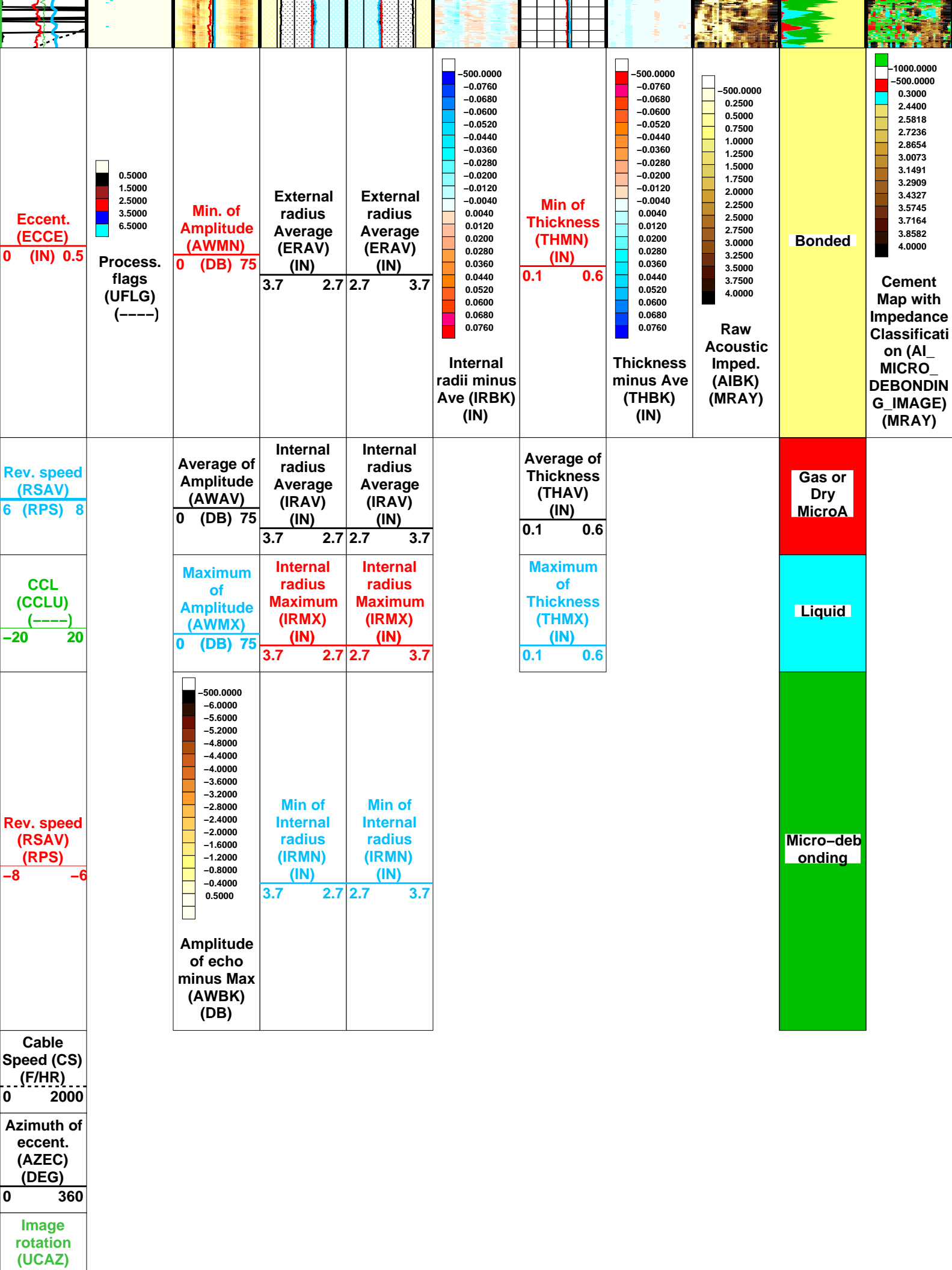
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E

19C2-270

EDTC-B

19C2-270

All USI Images are outside views

COMPUTATION FLAGS LABELLING

(0 – 1.5)	UFLG 1	UTIM error
(1.5 – 2.5)	UFLG 2	Pulse origin not detected
(2.5 – 3.5)	UFLG 3	WINLEN error
(3.5 – 6.5)	UFLG 4 UFLG 5 UFLG 6	CASING THICKNESS error
(6.5 – 10)	UFLG 7 UFLG 8 UFLG 9	LOOP PROCESSING error

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-E: Ultrasonic Imaging – E			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
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FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
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RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro-debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	0.5	
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THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
UMAO	USIT Measurement Angular Offset	18	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_1_5IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	–1	MRAY
ZMUD	Acoustic Impedance of Mud	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.44	MRAY

ZTCM	Acoustic Impedance Threshold for Cement	2.44	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	34.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_035PUP	FN:34	PRODUCER	10-Mar-2014 04:04	7275.0 FT	6772.0 FT
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Output DLIS Files

DEFAULT	USI_055PUP	FN:54	PRODUCER	10-Mar-2014 19:37
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Schlumberger

**USI CEMENT
3000 PSI MAIN**

MAXIS Field Log

Company: NOBLE ENERGY INC	Well: PEAKS K26-77-1HN
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Input DLIS Files

DEFAULT	USI_051PUP	FN:50	PRODUCER	10-Mar-2014 19:09	7336.0 FT	234.0 FT
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Output DLIS Files

DEFAULT	USI_052PUP	FN:51	PRODUCER	10-Mar-2014 19:26	7336.0 FT	234.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E	19C2-270	EDTC-B	19C2-270
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Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
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7500.00	194.00	1.77
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7000.00	194.00	1.77
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6500.00	194.00	1.76
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6000.00	193.00	1.74
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5500.00	193.00	1.75
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5000.00	193.00	1.73
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4500.00	193.00	1.73
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4000.00	193.00	1.73
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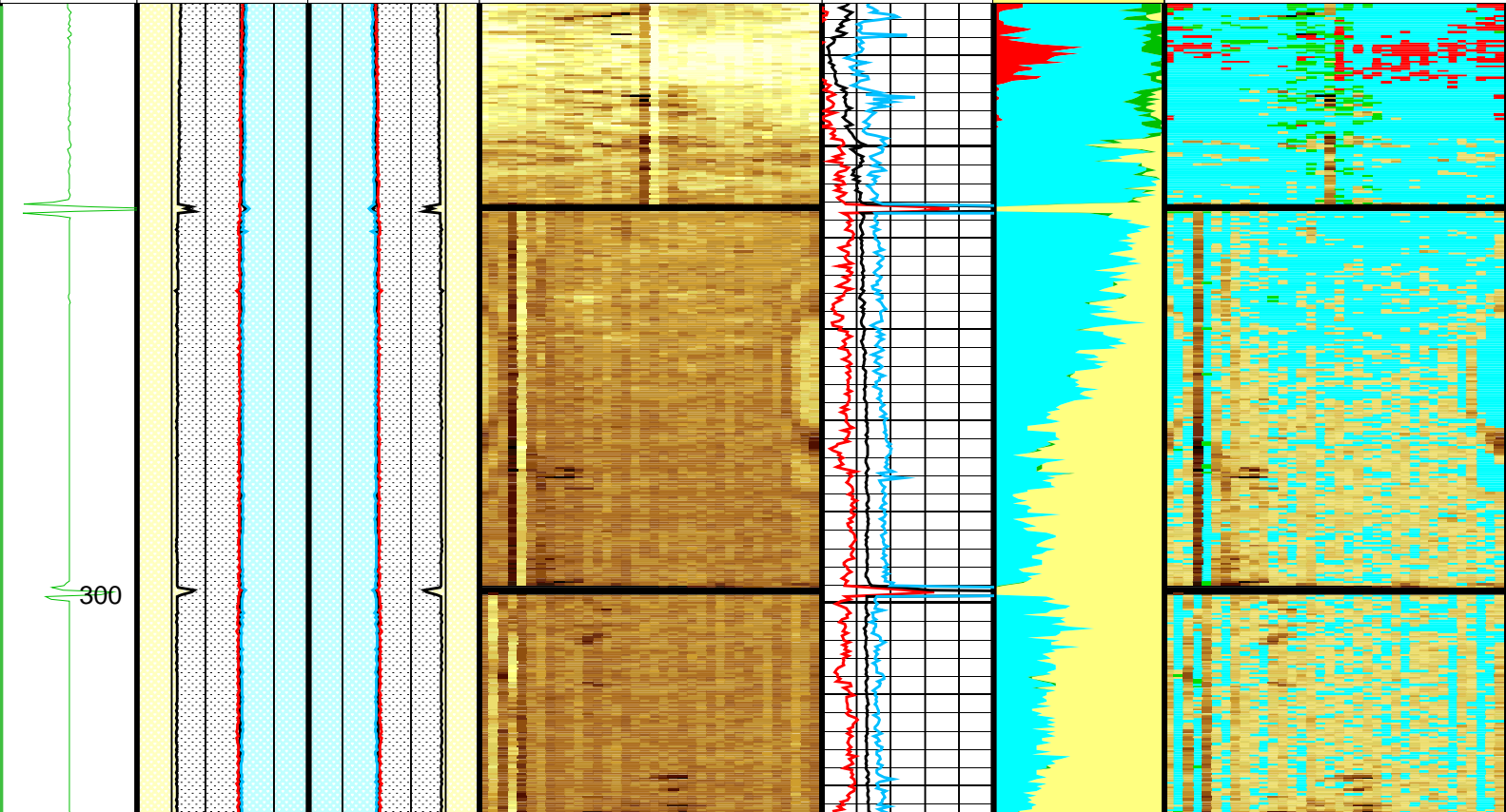
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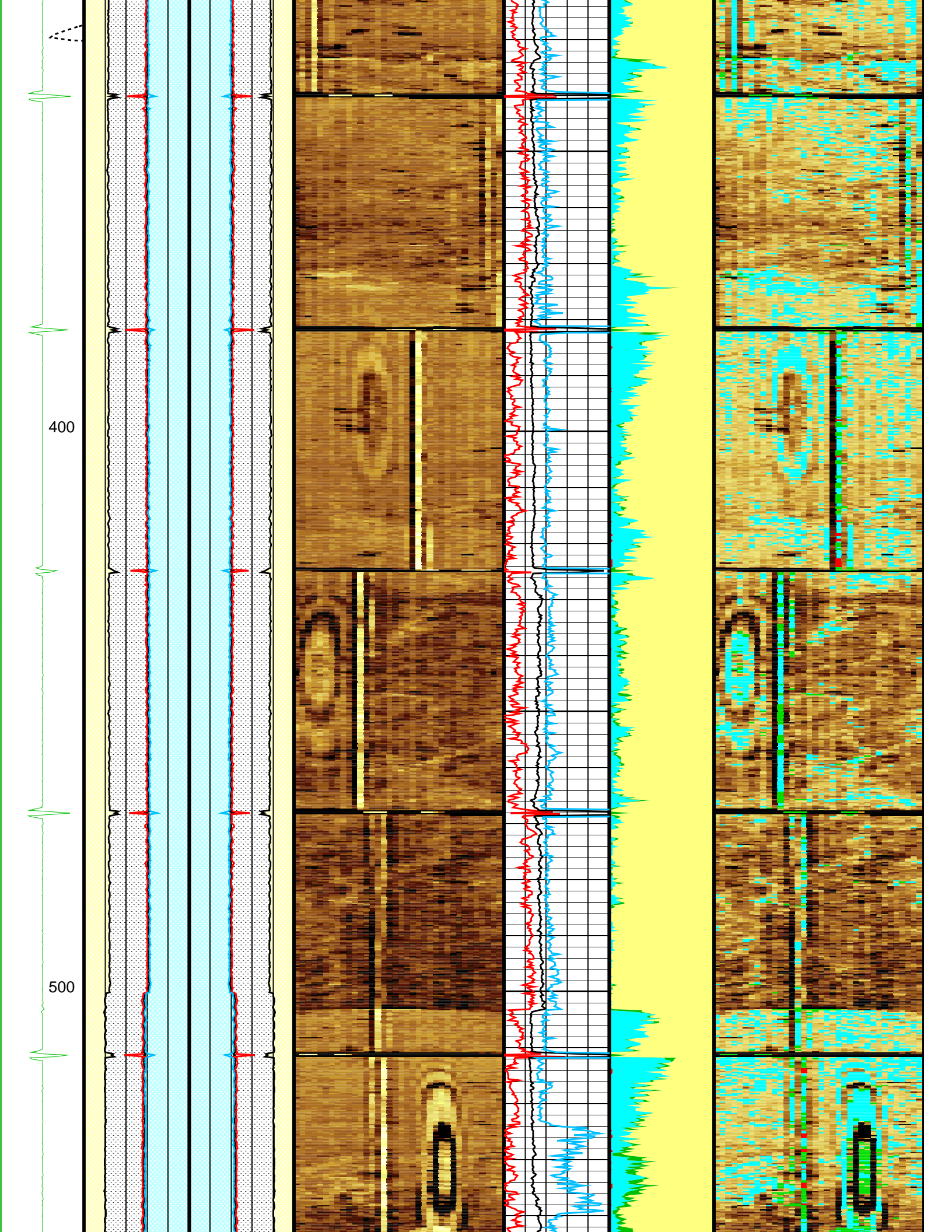
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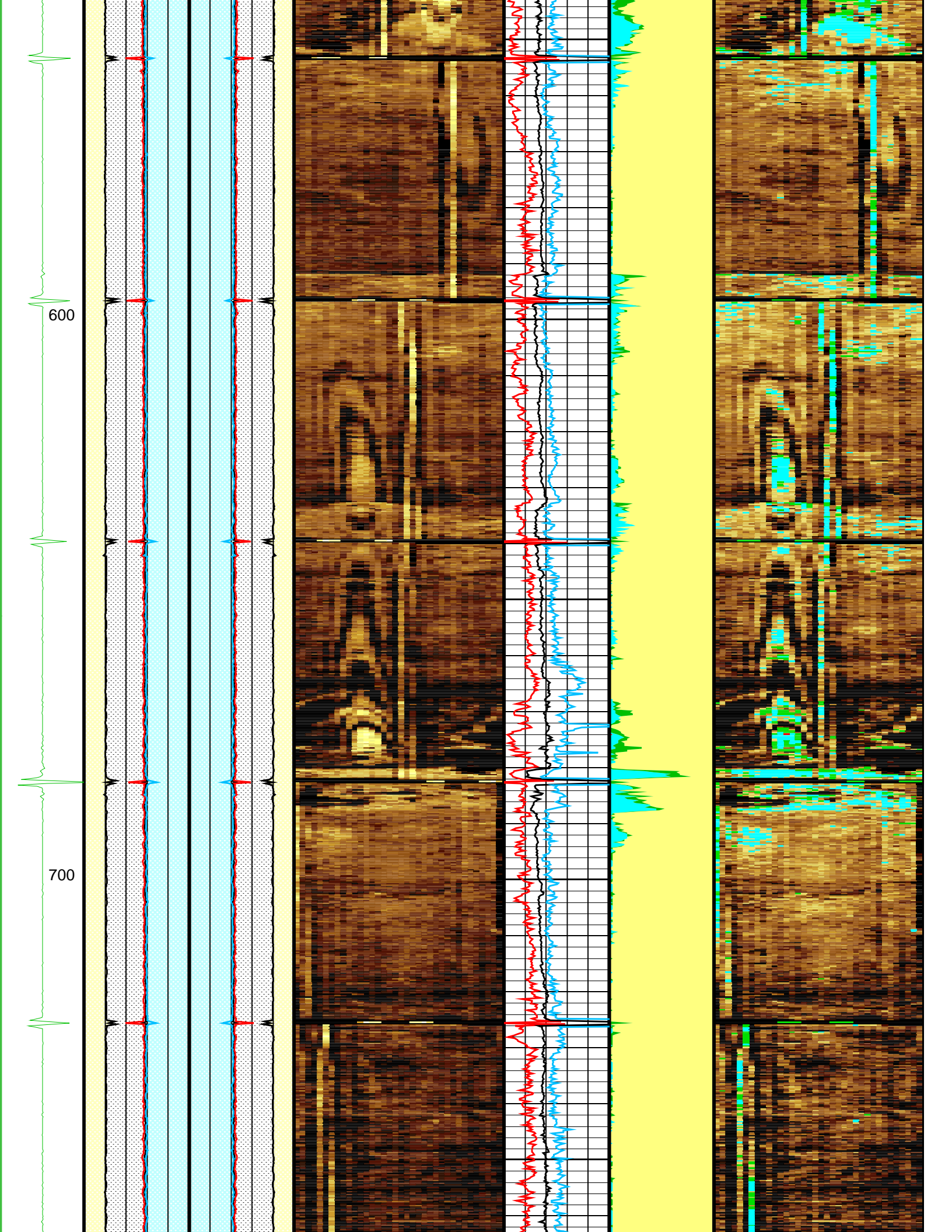
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

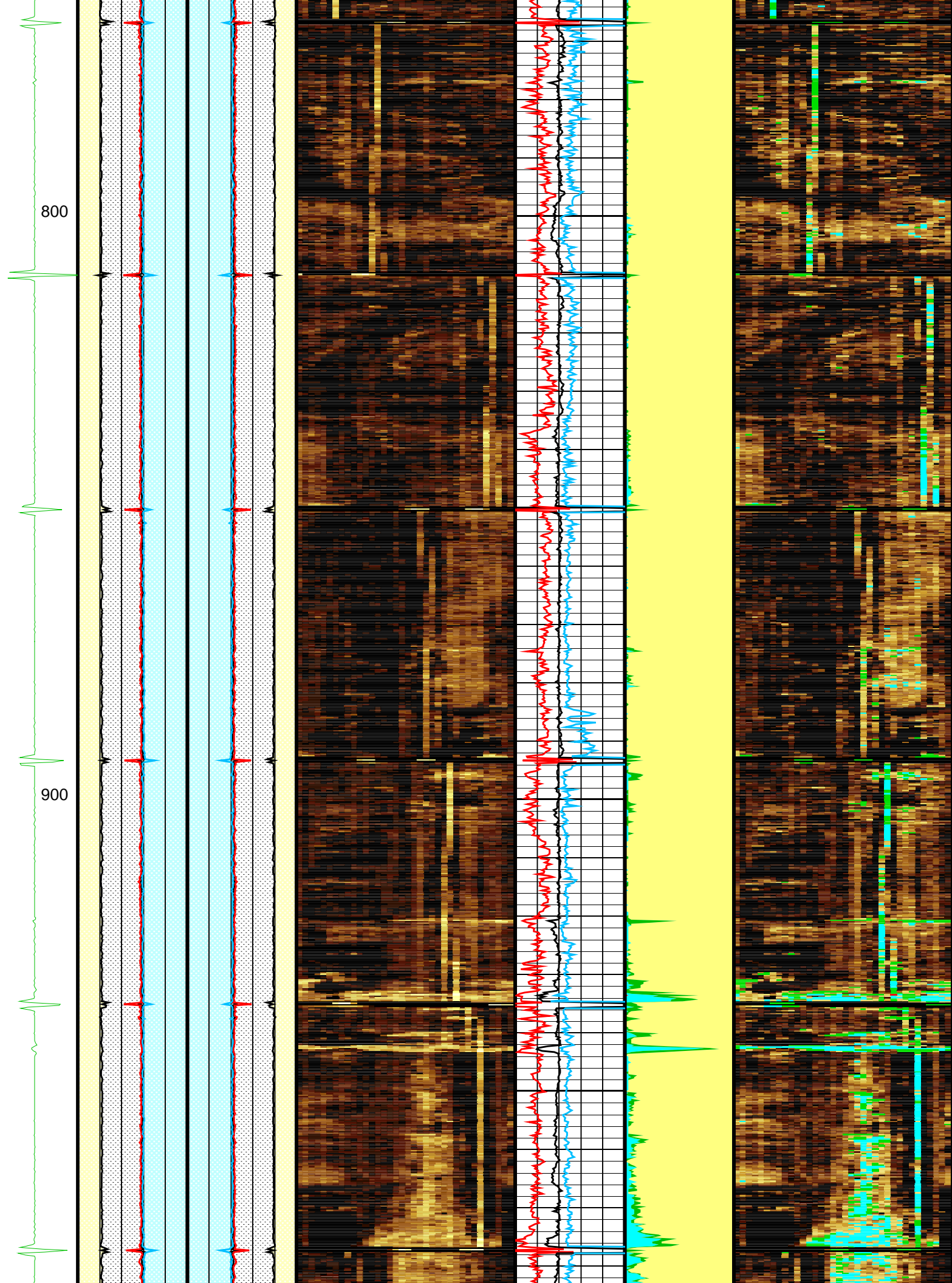
	Min of Internal radius (IRMN) 3.7 (IN) 2.7	Min of Internal radius (IRMN) 2.7 (IN) 3.7			Micro-debonding	
Image rotation (UCAZ) (DEG) 0 360	External radius Average (ERAV) 3.7 (IN) 2.7	Internal radius Maximum (IRMX) 2.7 (IN) 3.7		Maximum of AI (AIMX) 0 (MRAY) 10	Liquid	
Cable Speed (CS) (F/HR) 0 2000	Internal radius Maximum (IRMX) 3.7 (IN) 2.7	Internal radius Average (IRAV) 2.7 (IN) 3.7		Average of AI (AIAV) 0 (MRAY) 10	Gas or Dry MicroA	

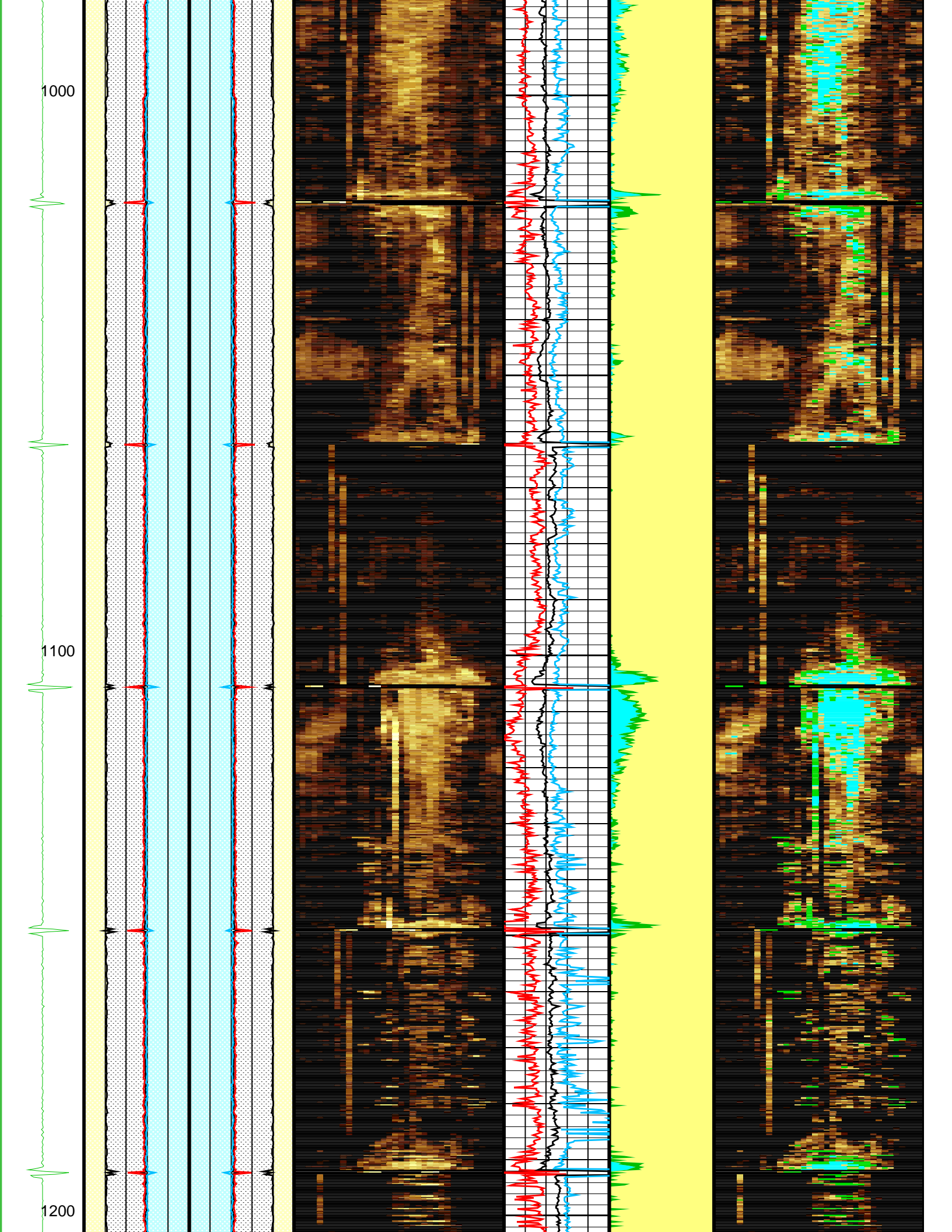
CCL (CCLU) (-----) -20 20	Internal radius Average (IRAV) 3.7 (IN) 2.7	External radius Average (ERAV) 2.7 (IN) 3.7	<div> <div> -500.0000 0.2500 0.5000 0.7500 1.0000 1.2500 1.5000 1.7500 2.0000 2.2500 2.5000 2.7500 3.0000 3.2500 3.5000 3.7500 4.0000 </div> </div>	Minimum of AI (AIMN) 0 (MRAY) 10	Bonded	<div> <div> 1000.0000 -500.0000 0.3000 2.4400 2.5818 2.7236 2.8654 3.0073 3.1491 3.2909 3.4327 3.5745 3.7164 3.8582 4.0000 </div> </div>
			Raw Acoustic Imped. (AIBK) (MRAY)			Cement Map with Impedance Classification (AI_MICRO_DEBONDING_IMAGE) (MRAY)

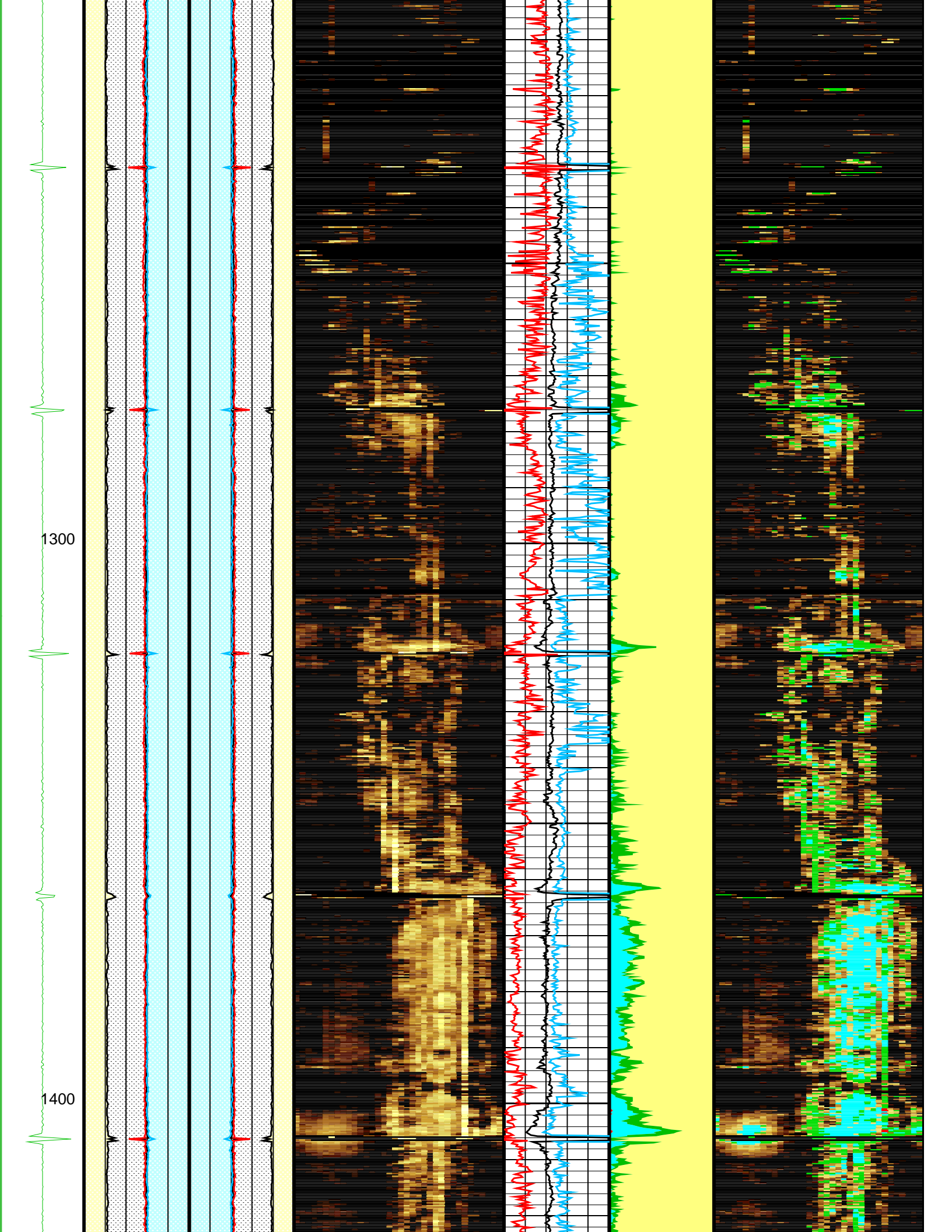


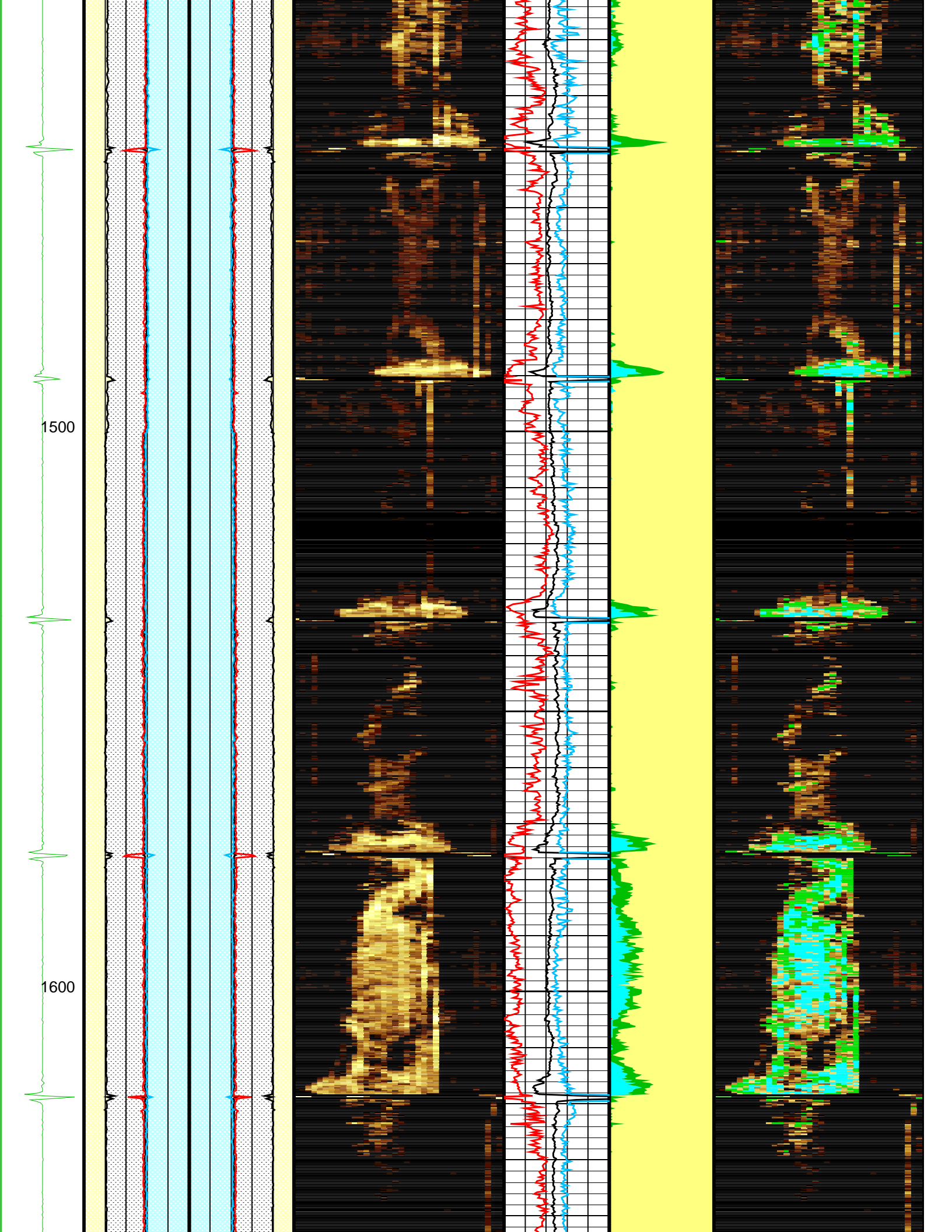


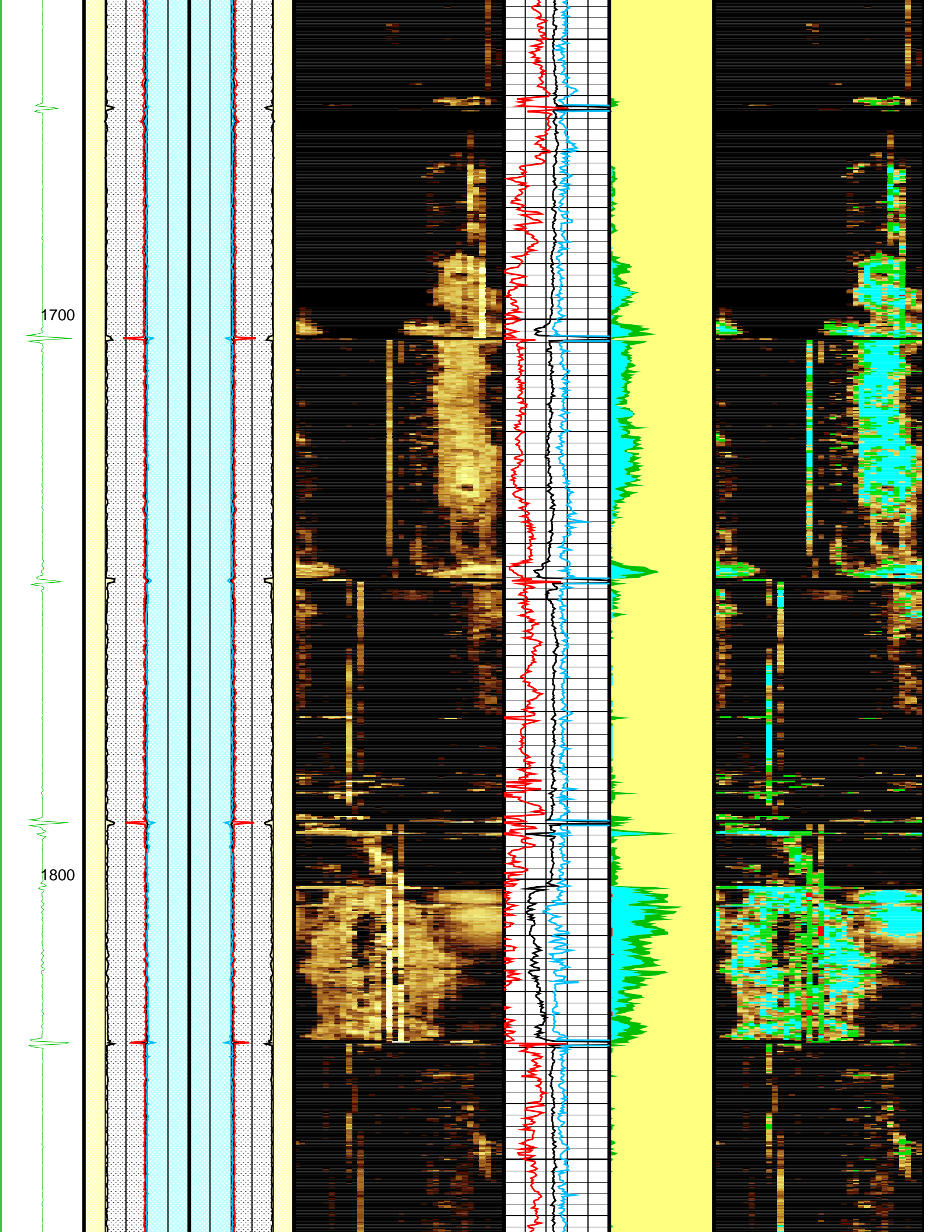


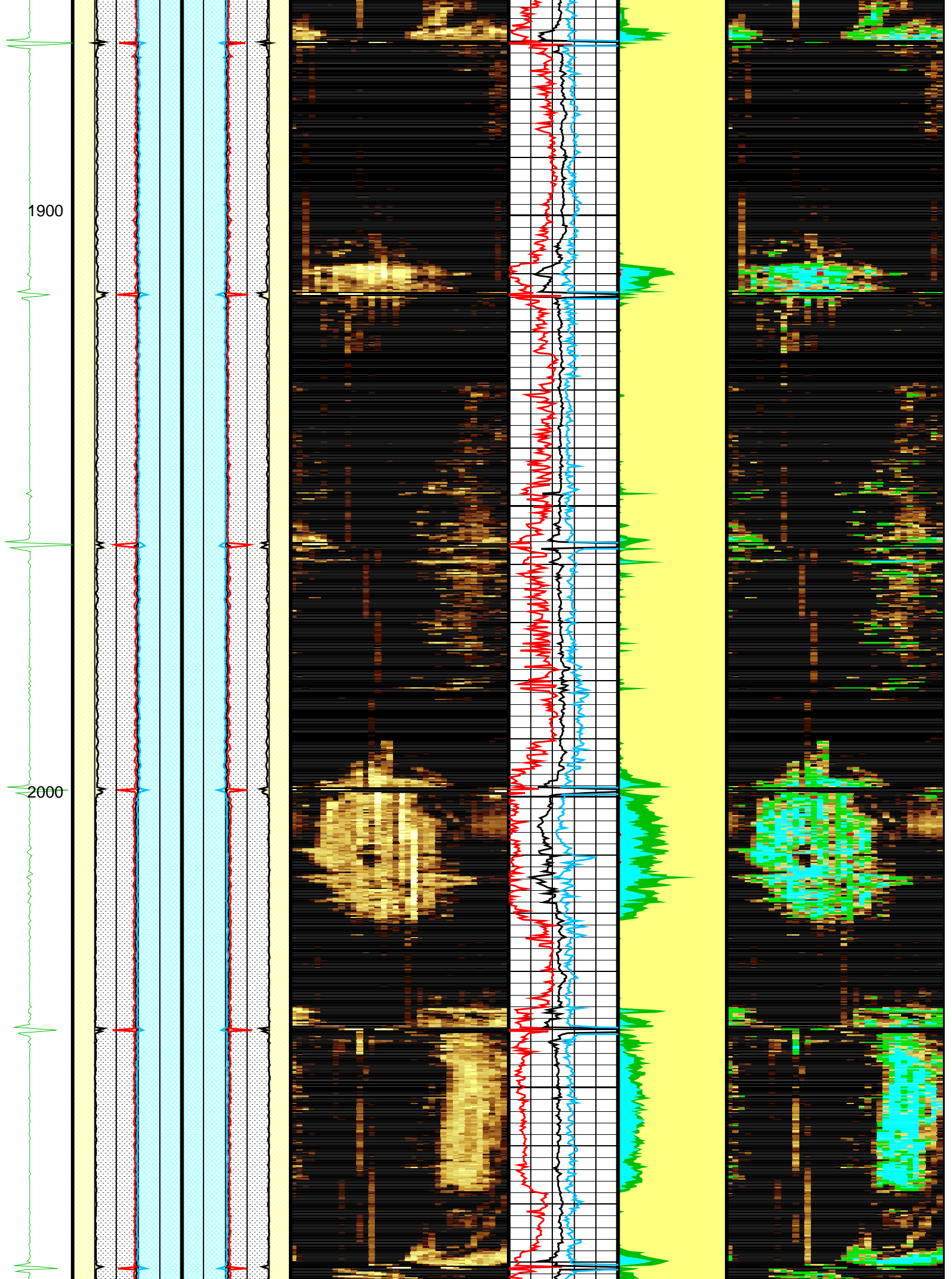


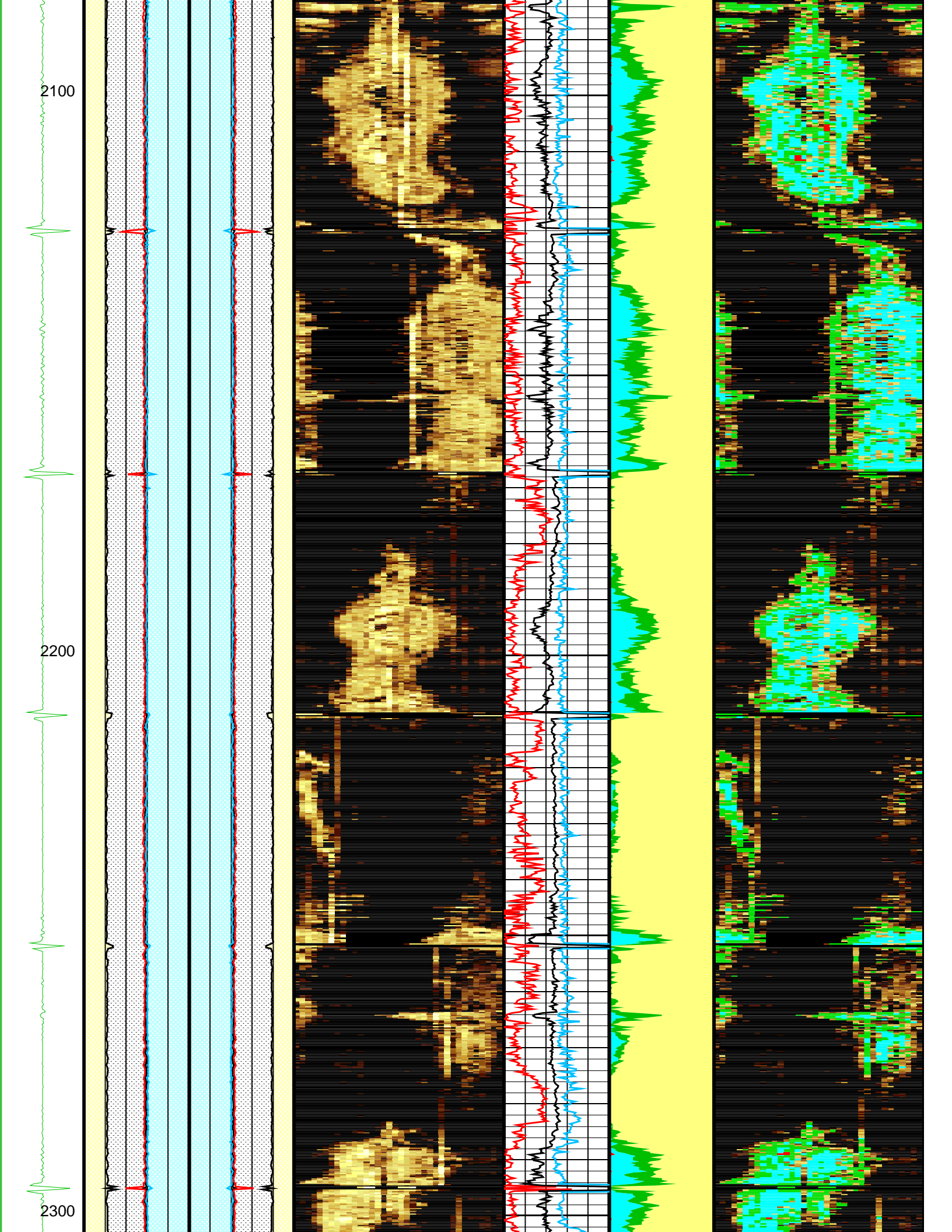


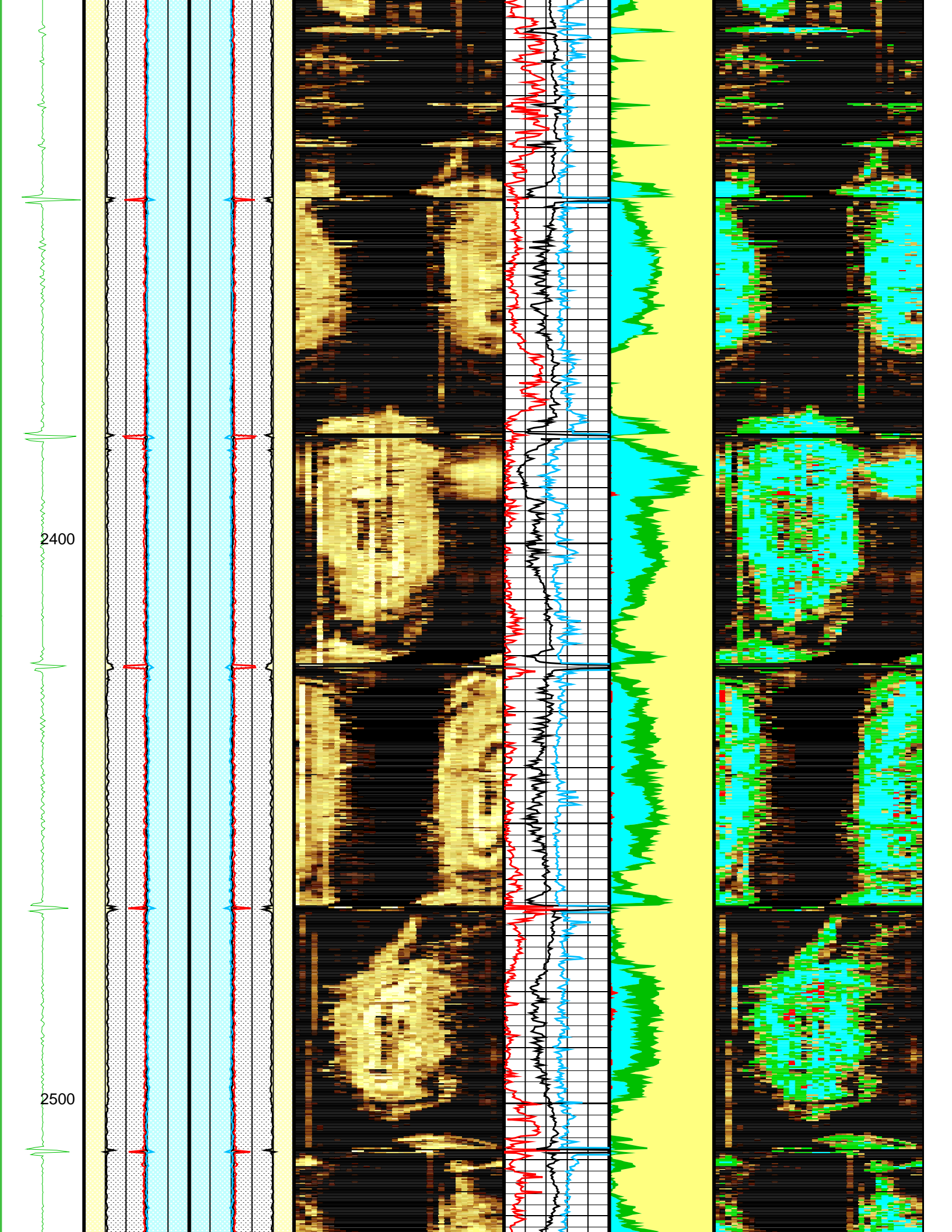


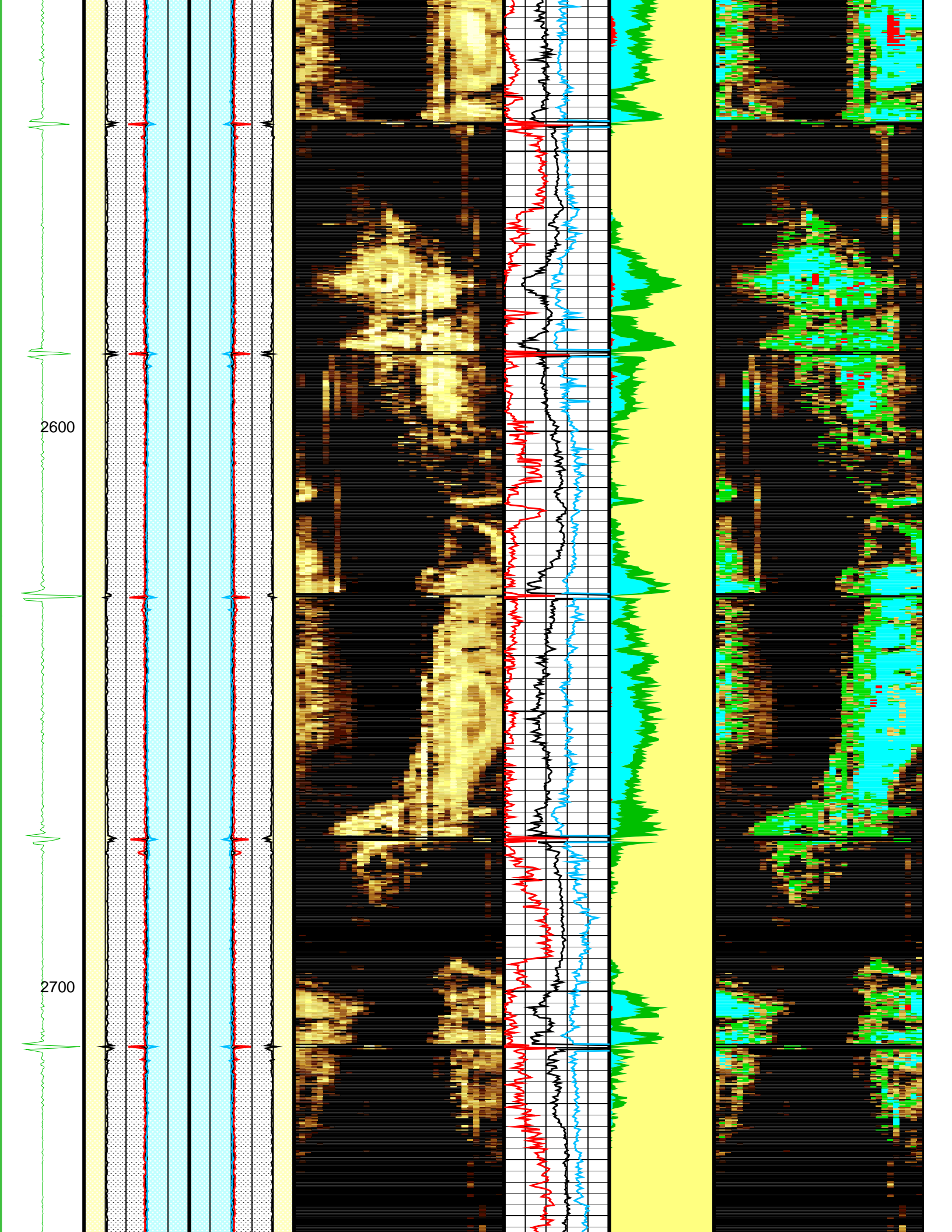


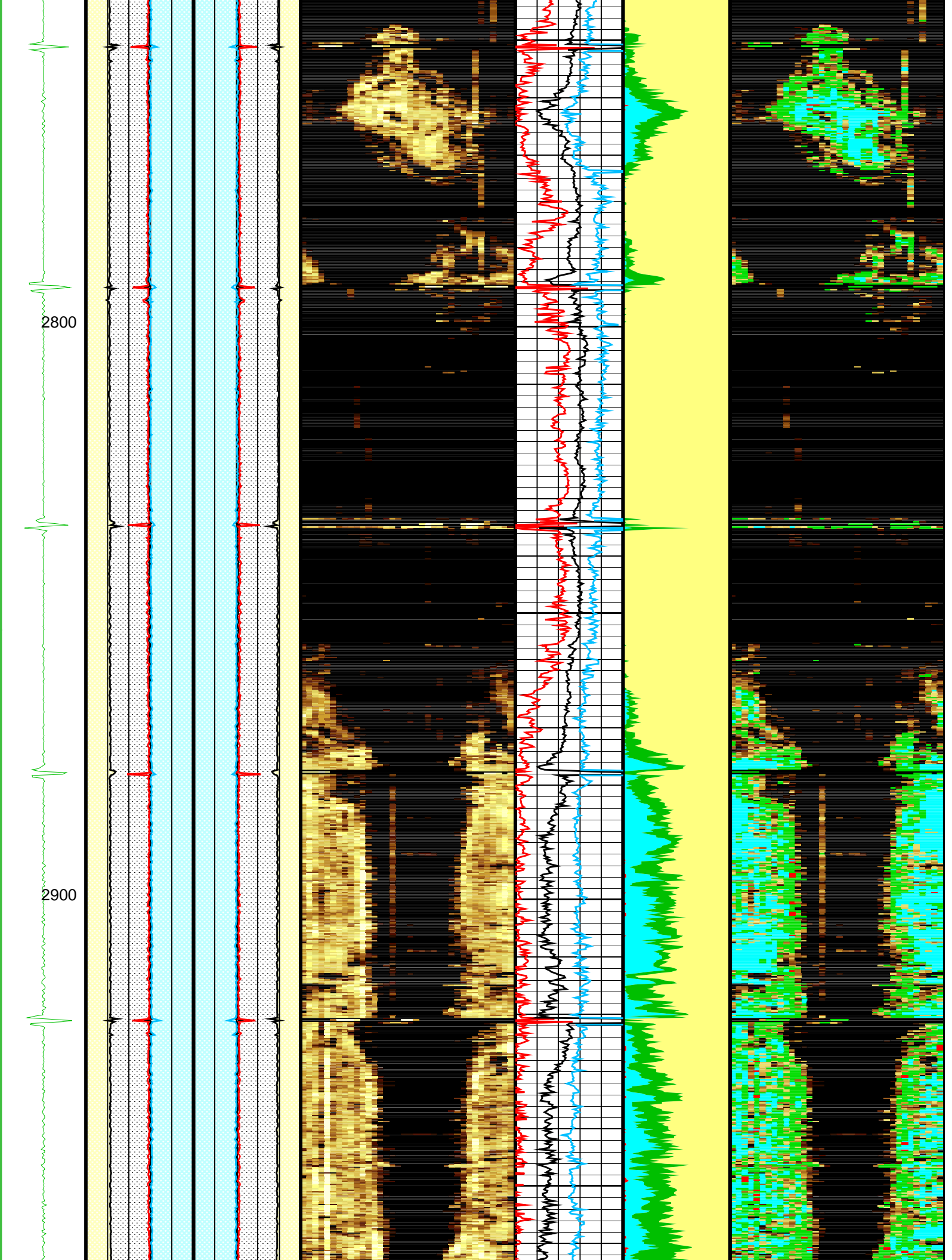


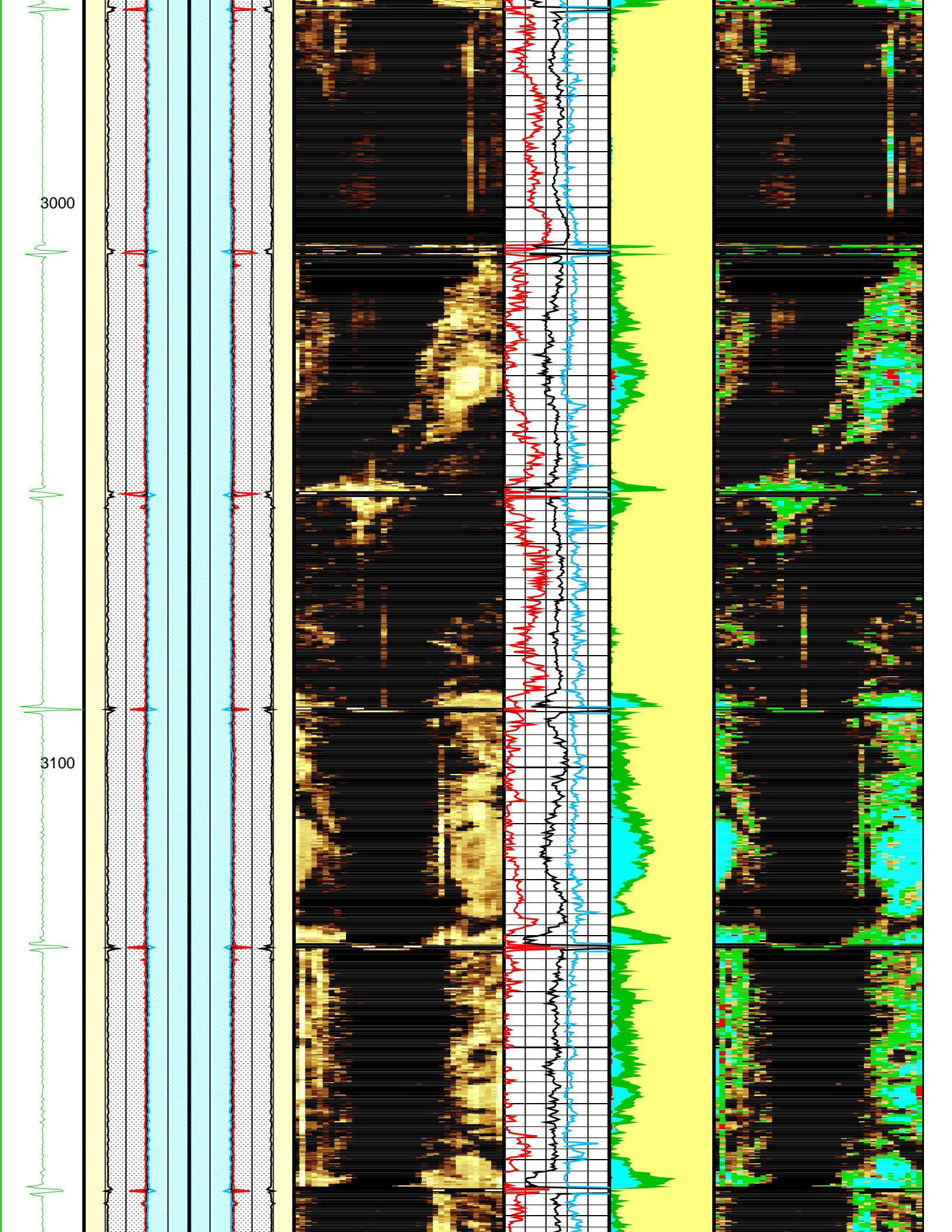


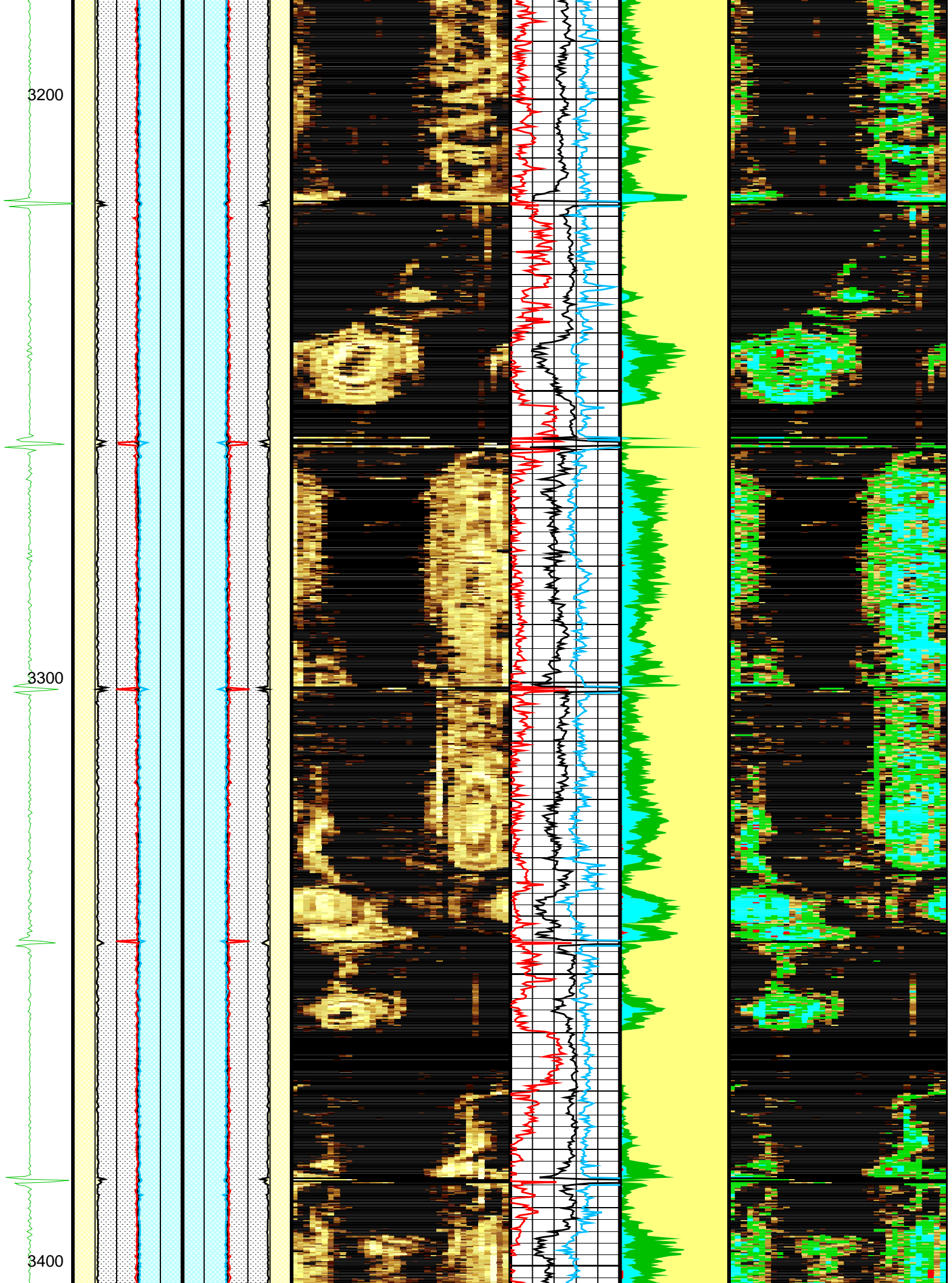


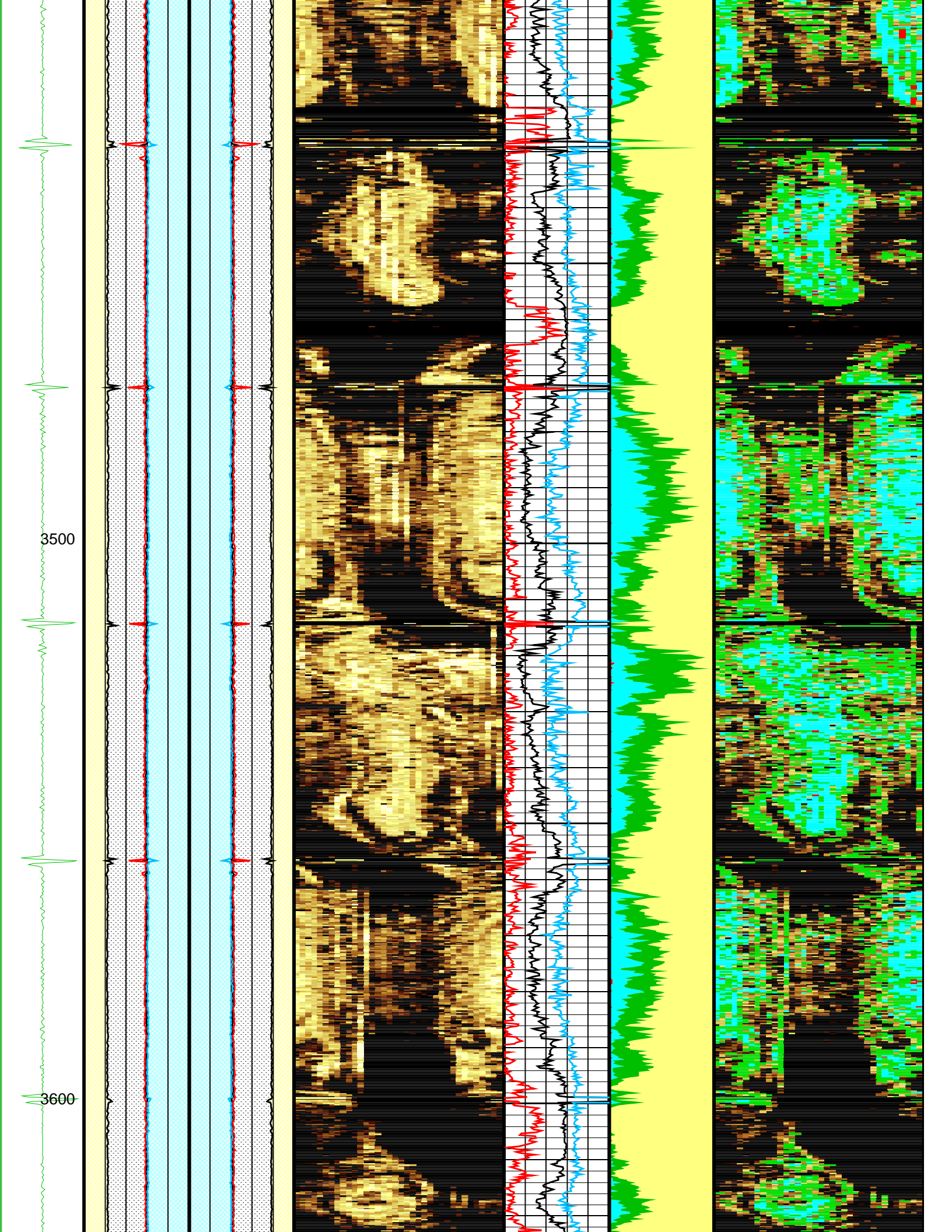


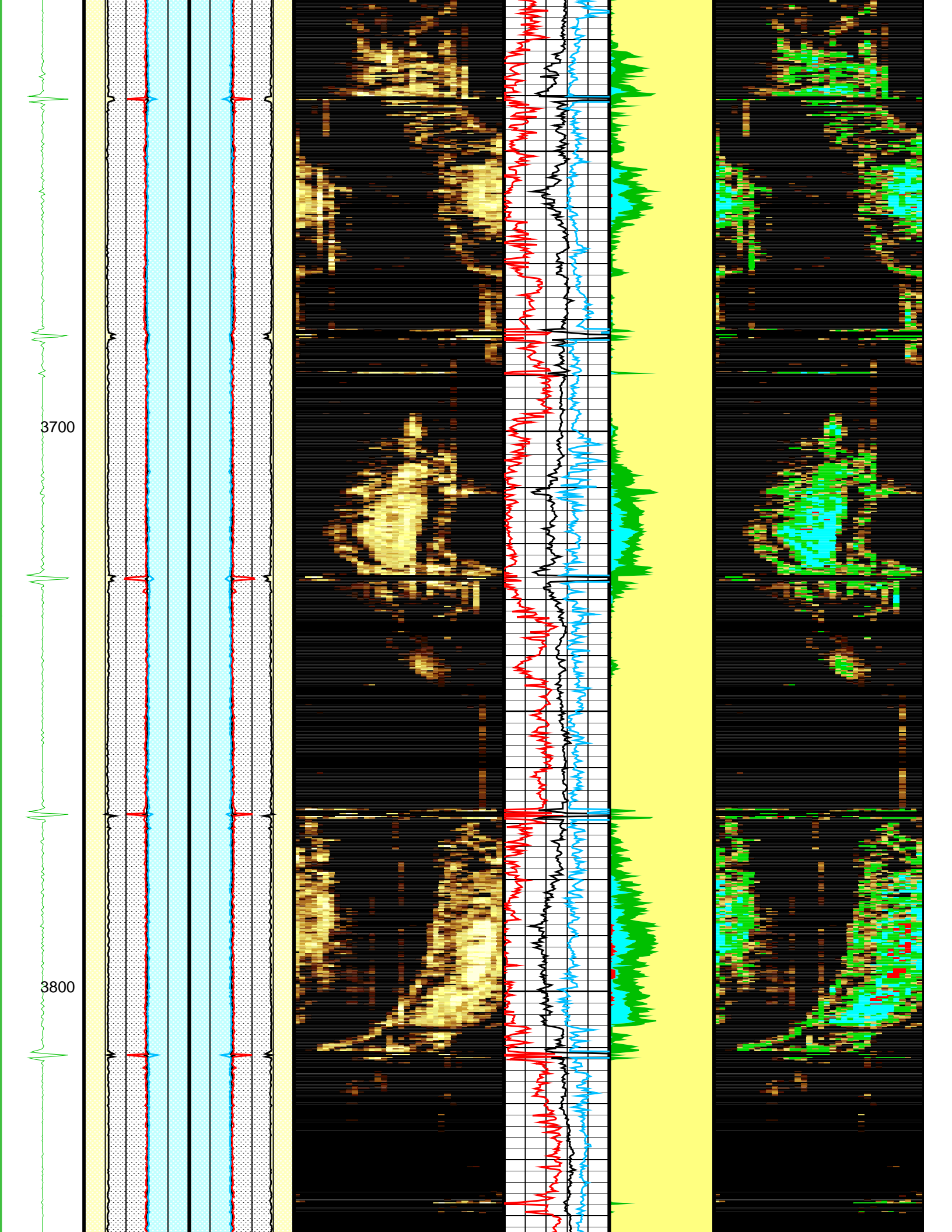


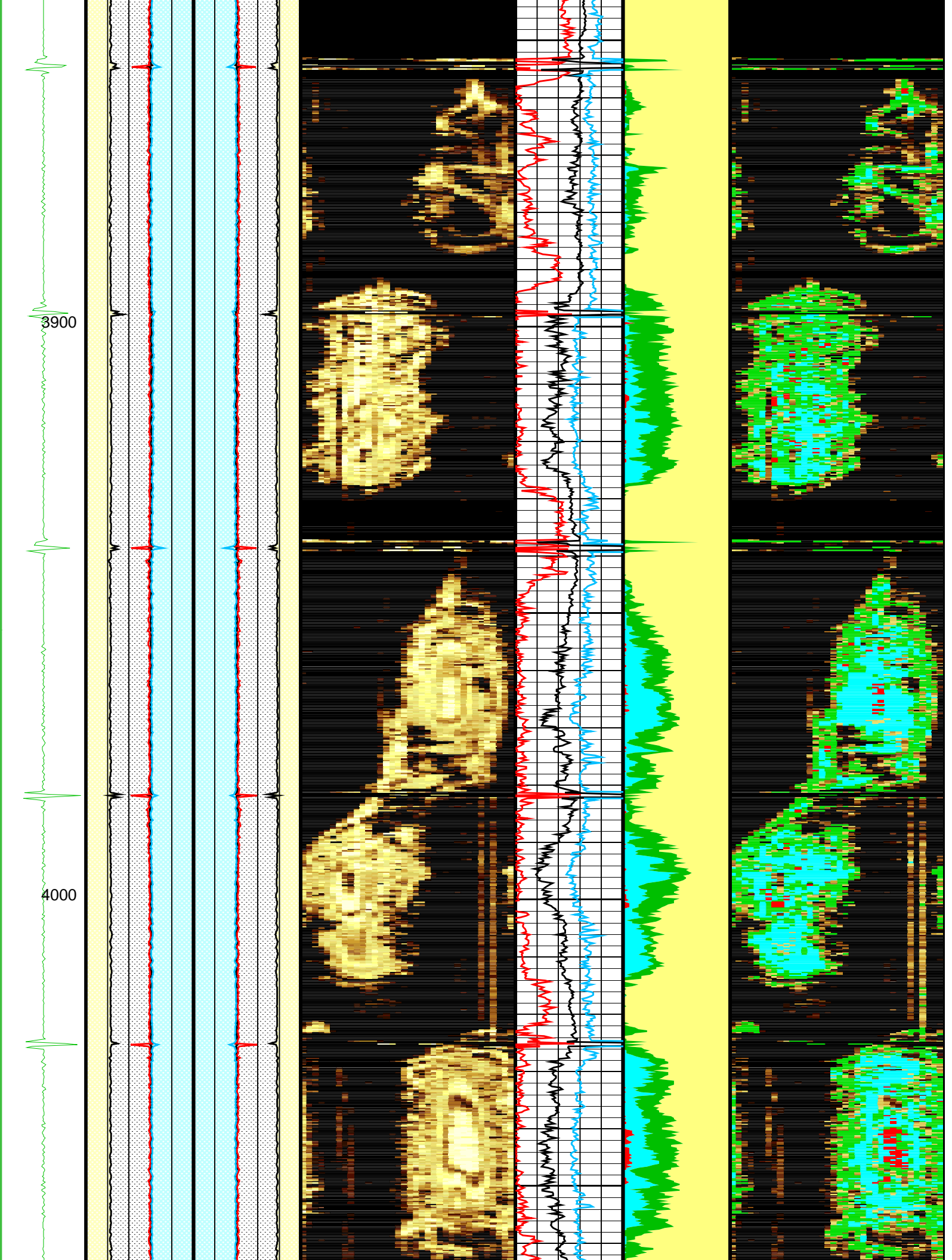


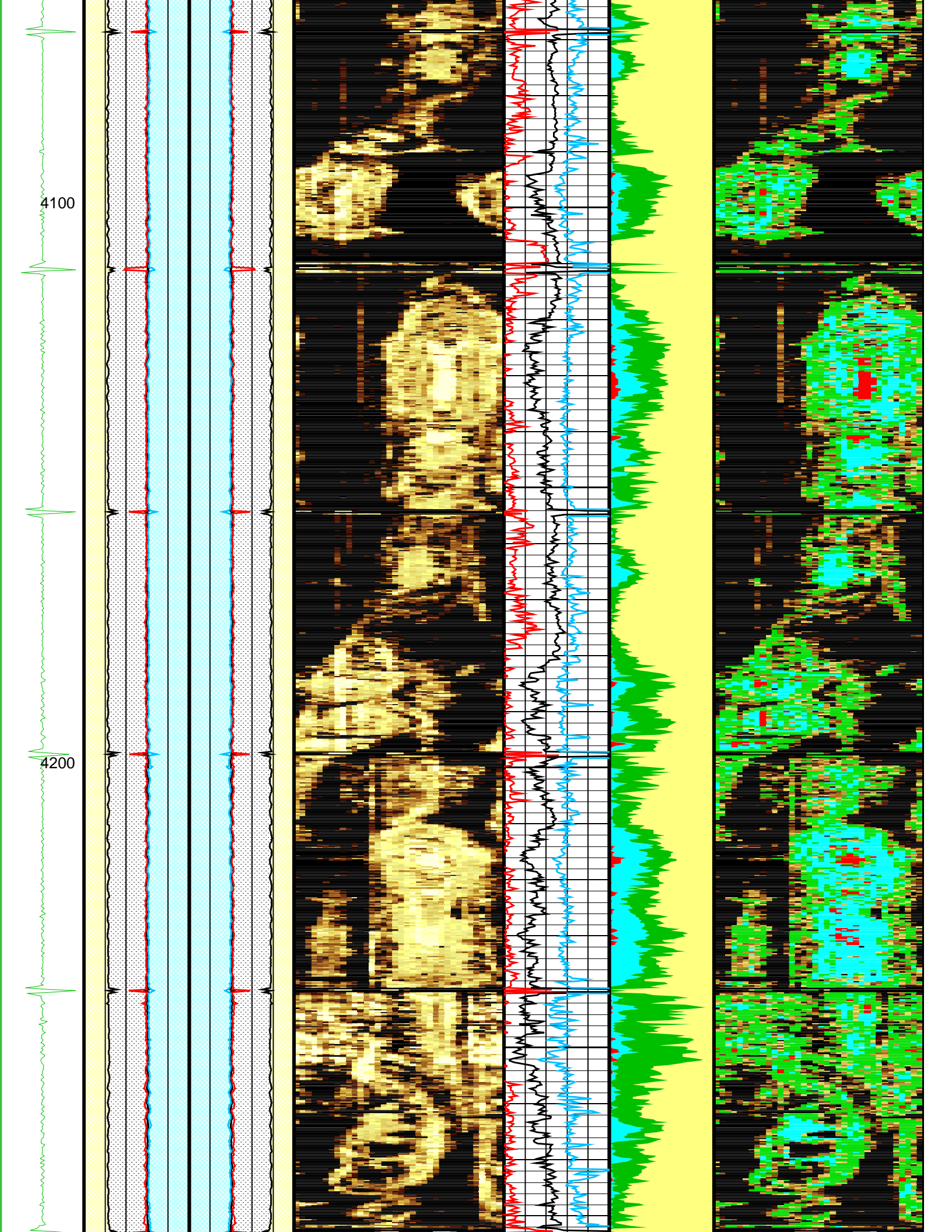


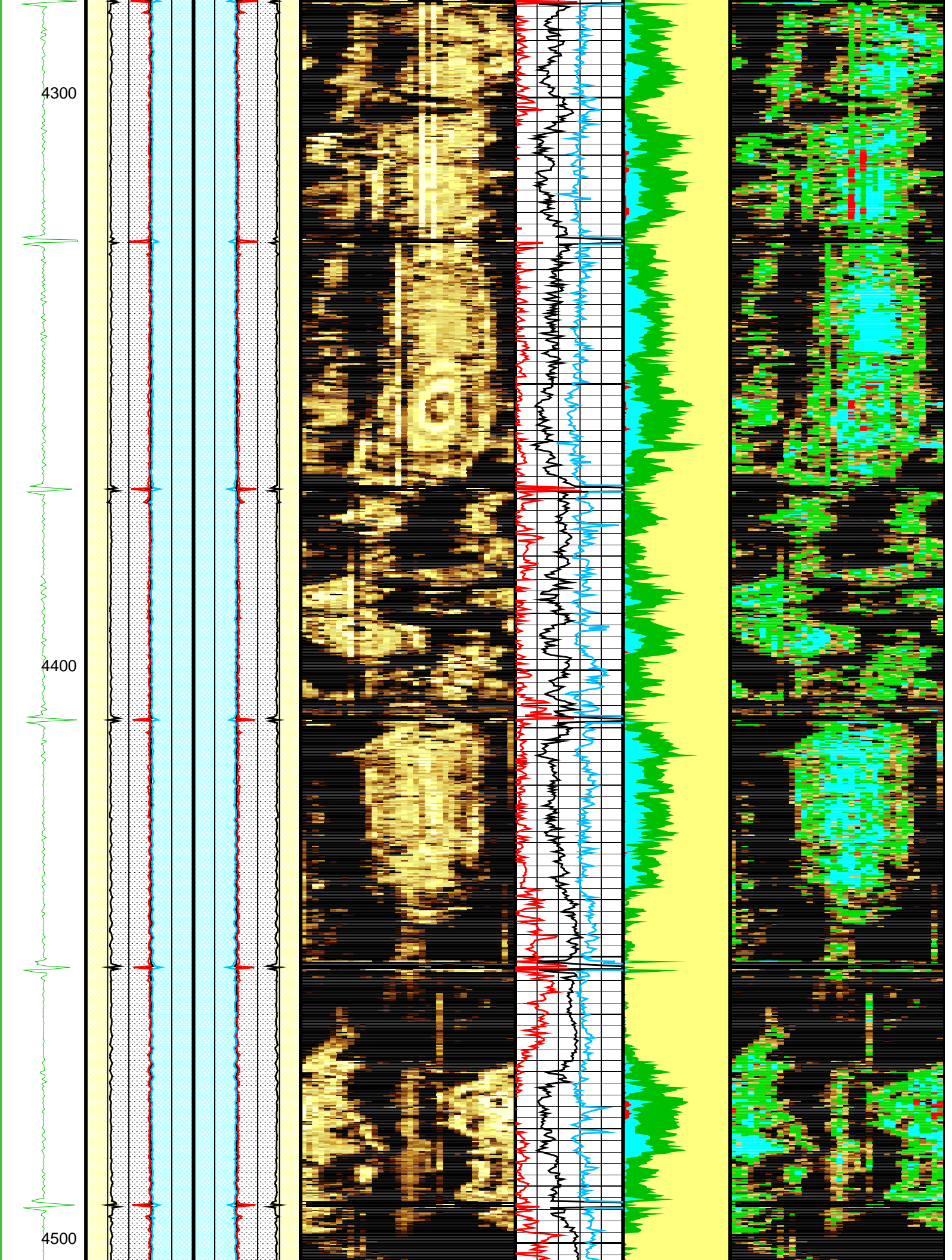


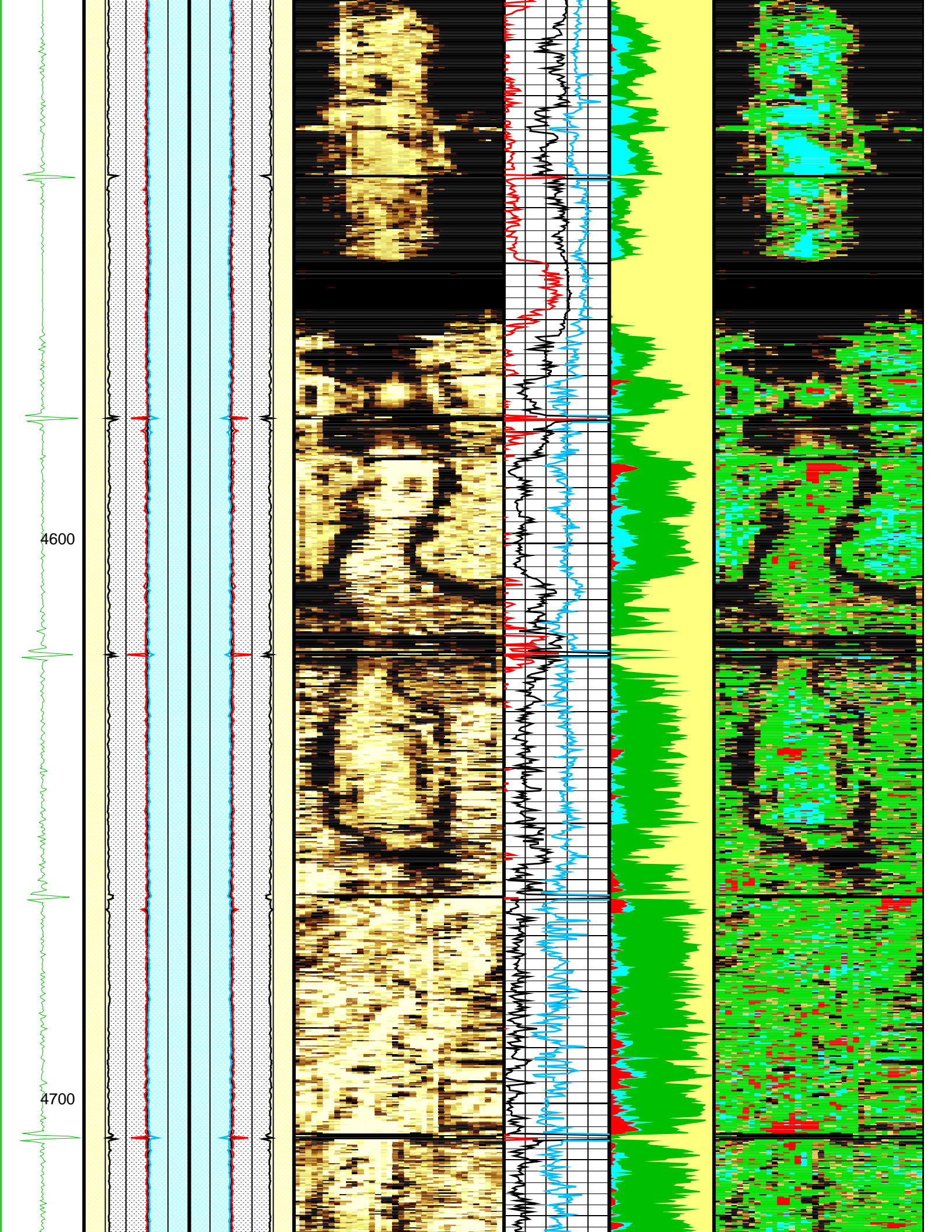


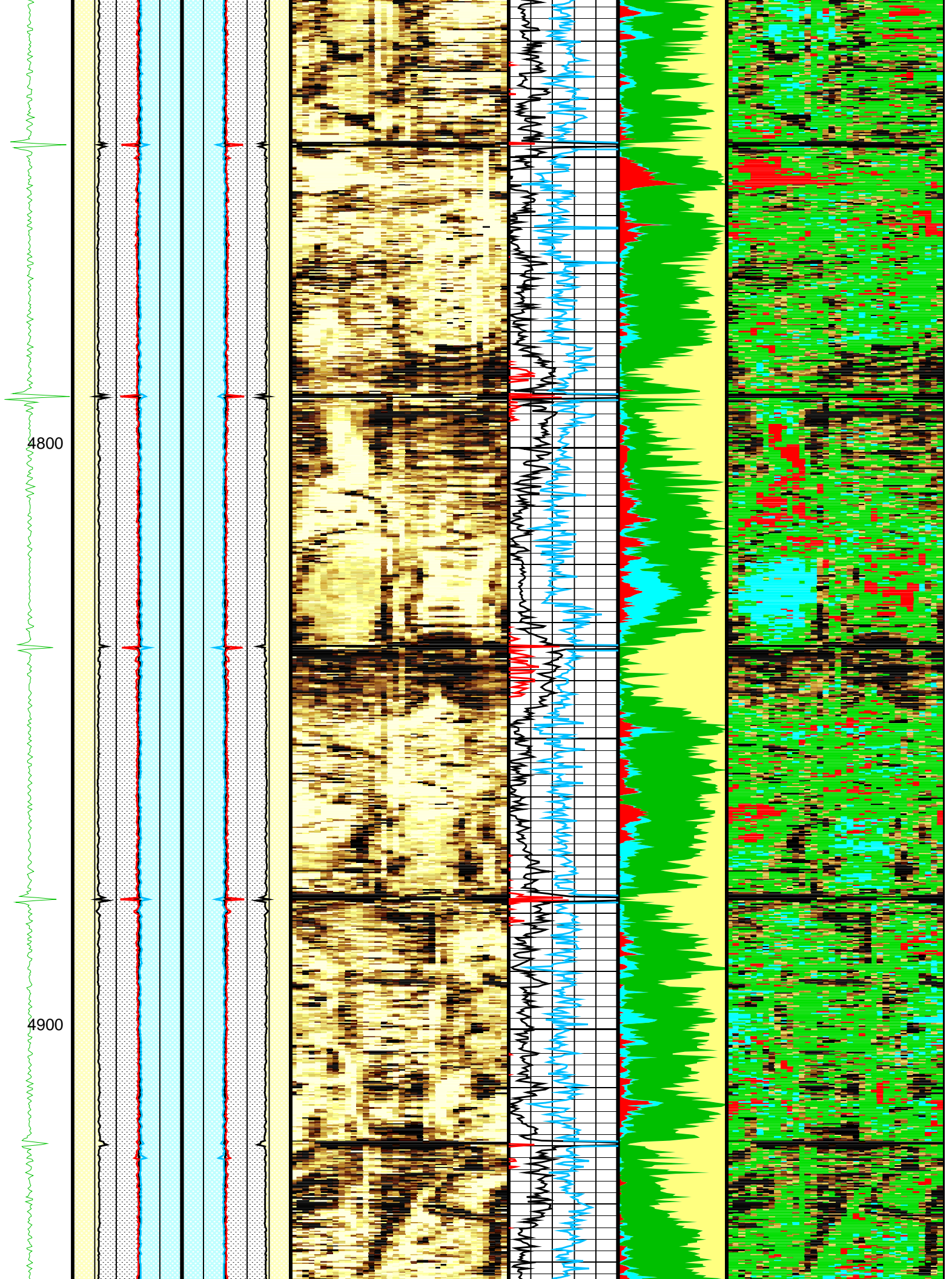


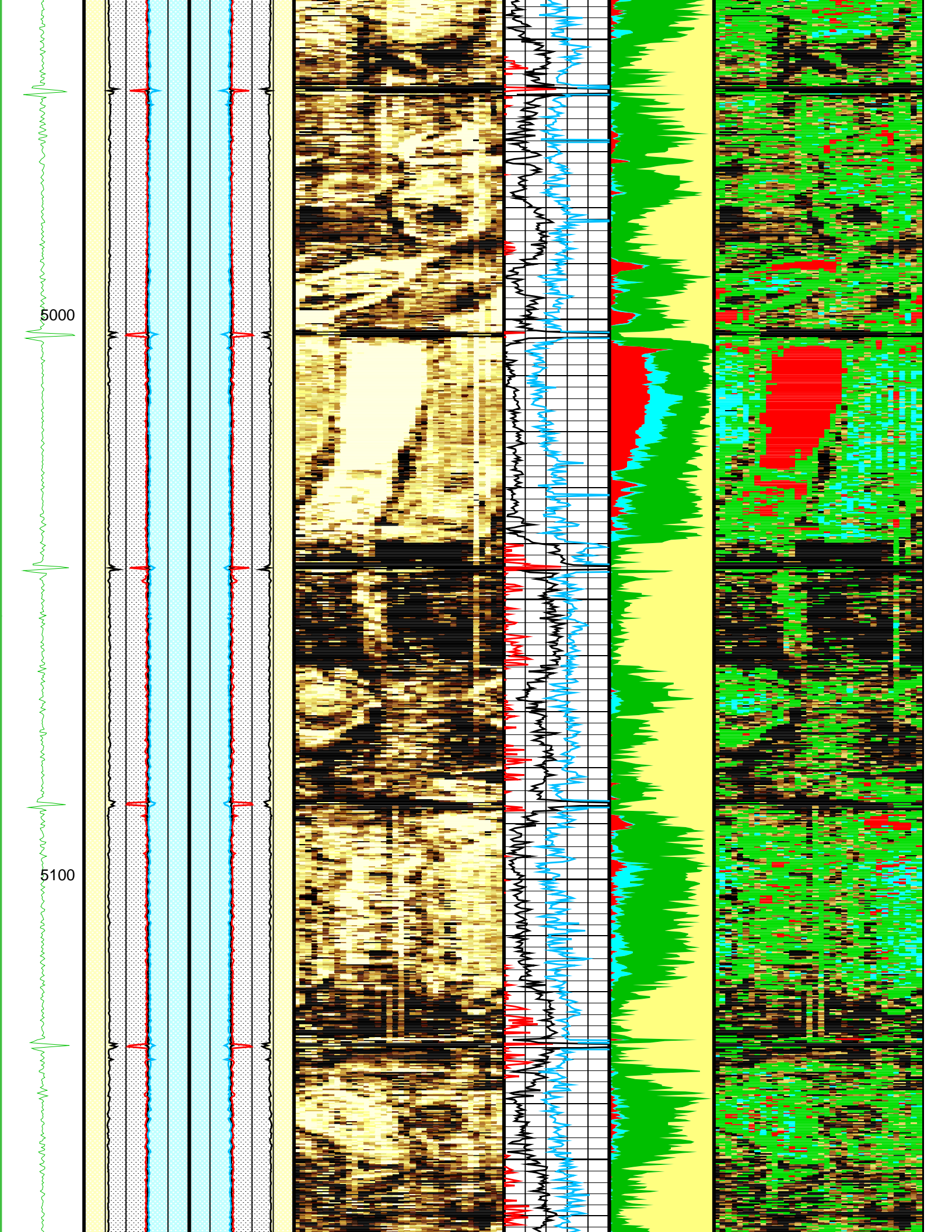


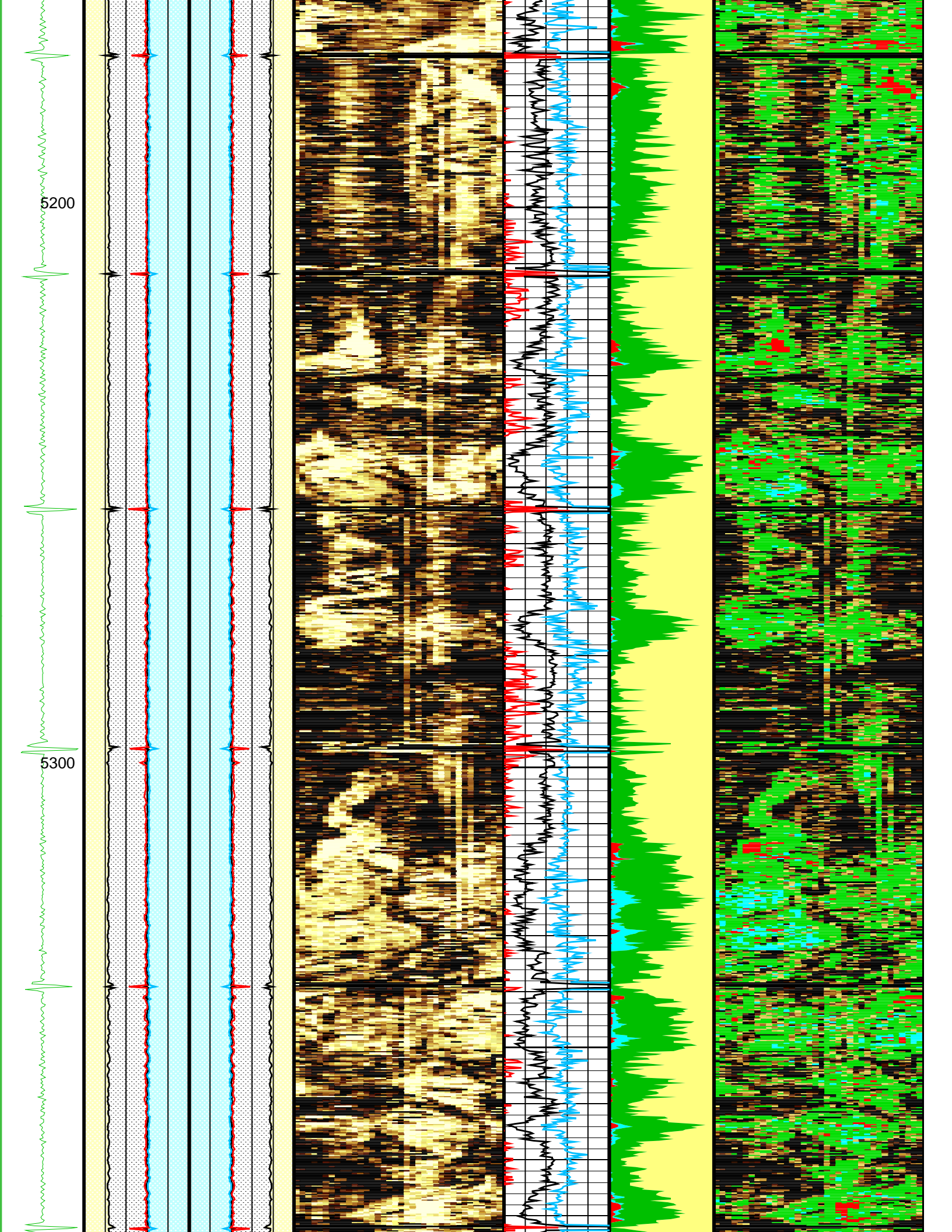


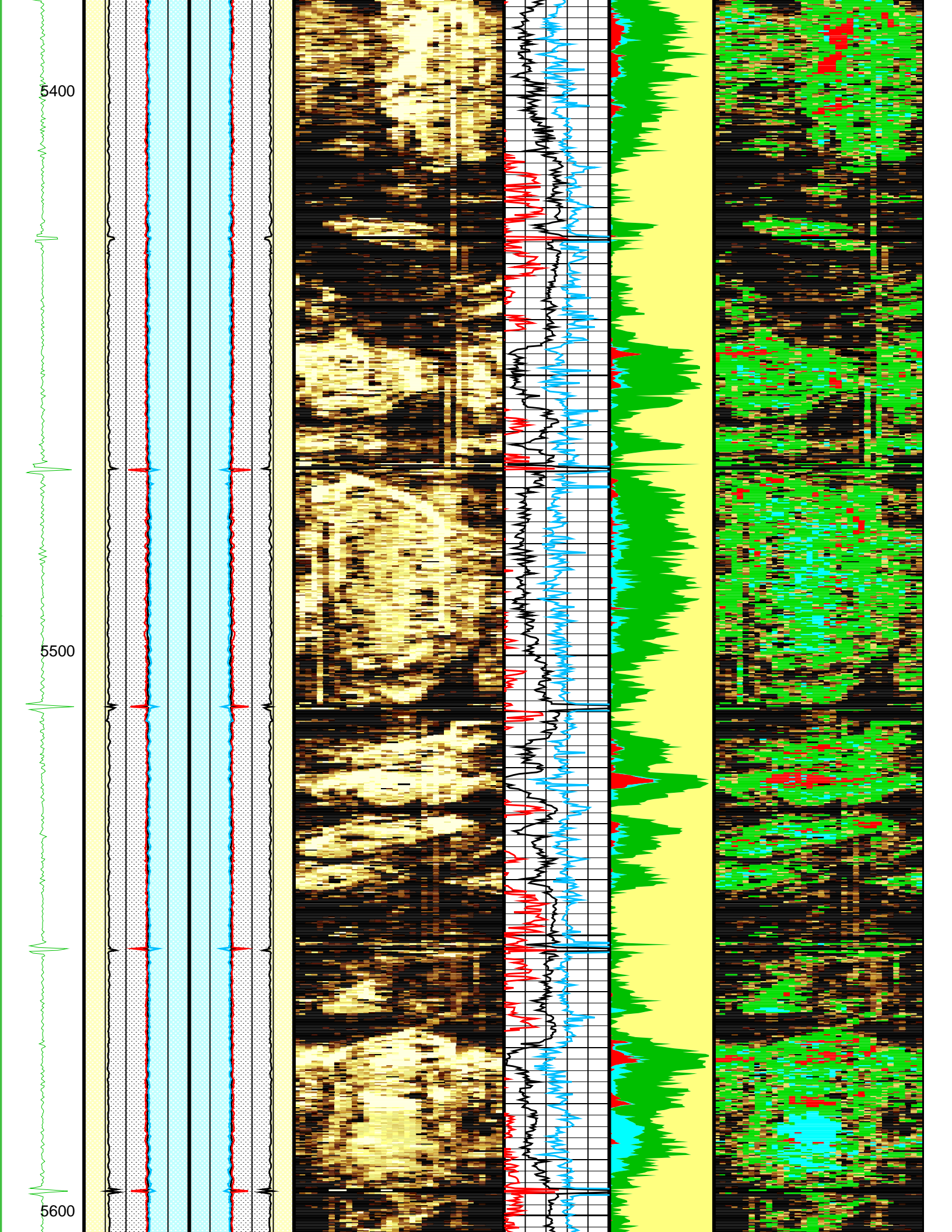


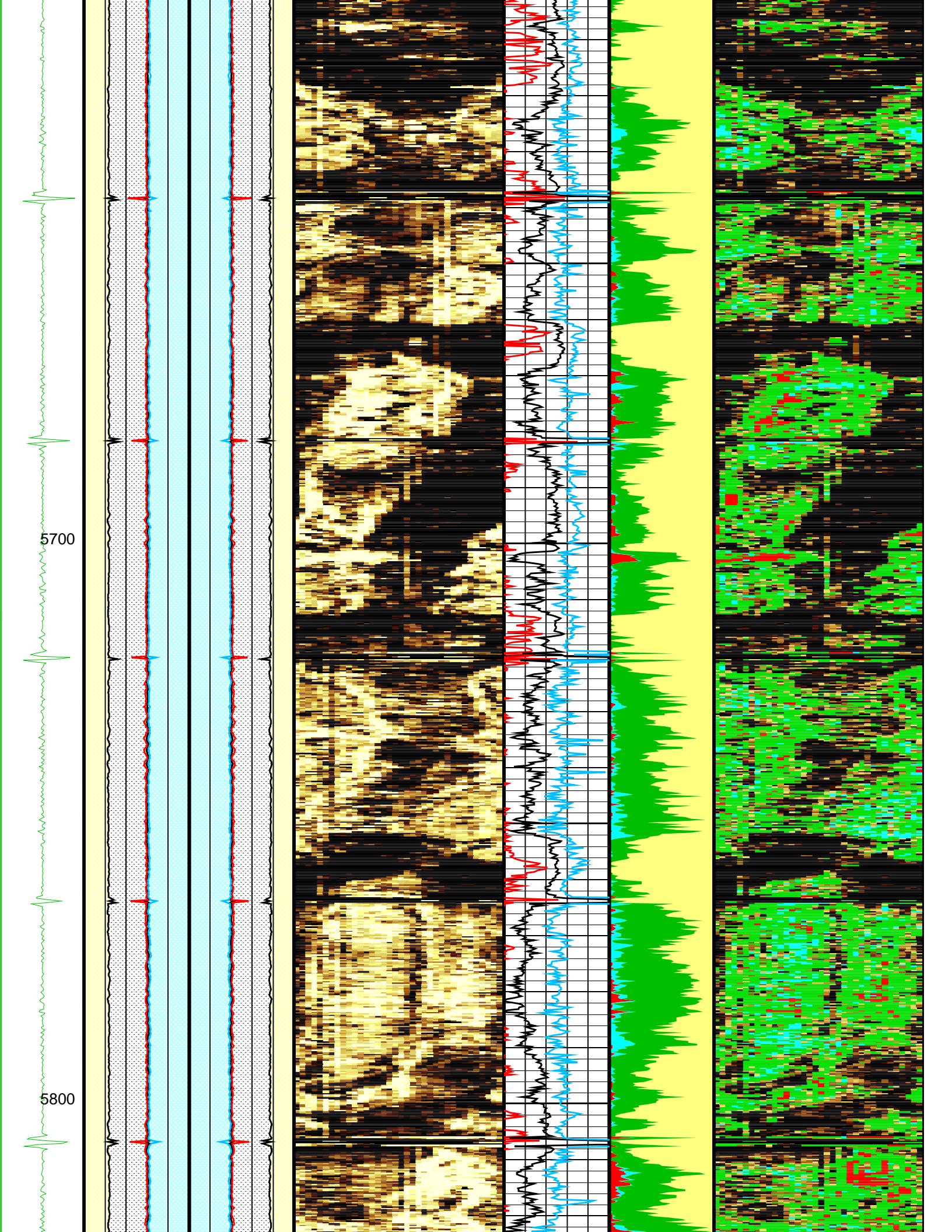


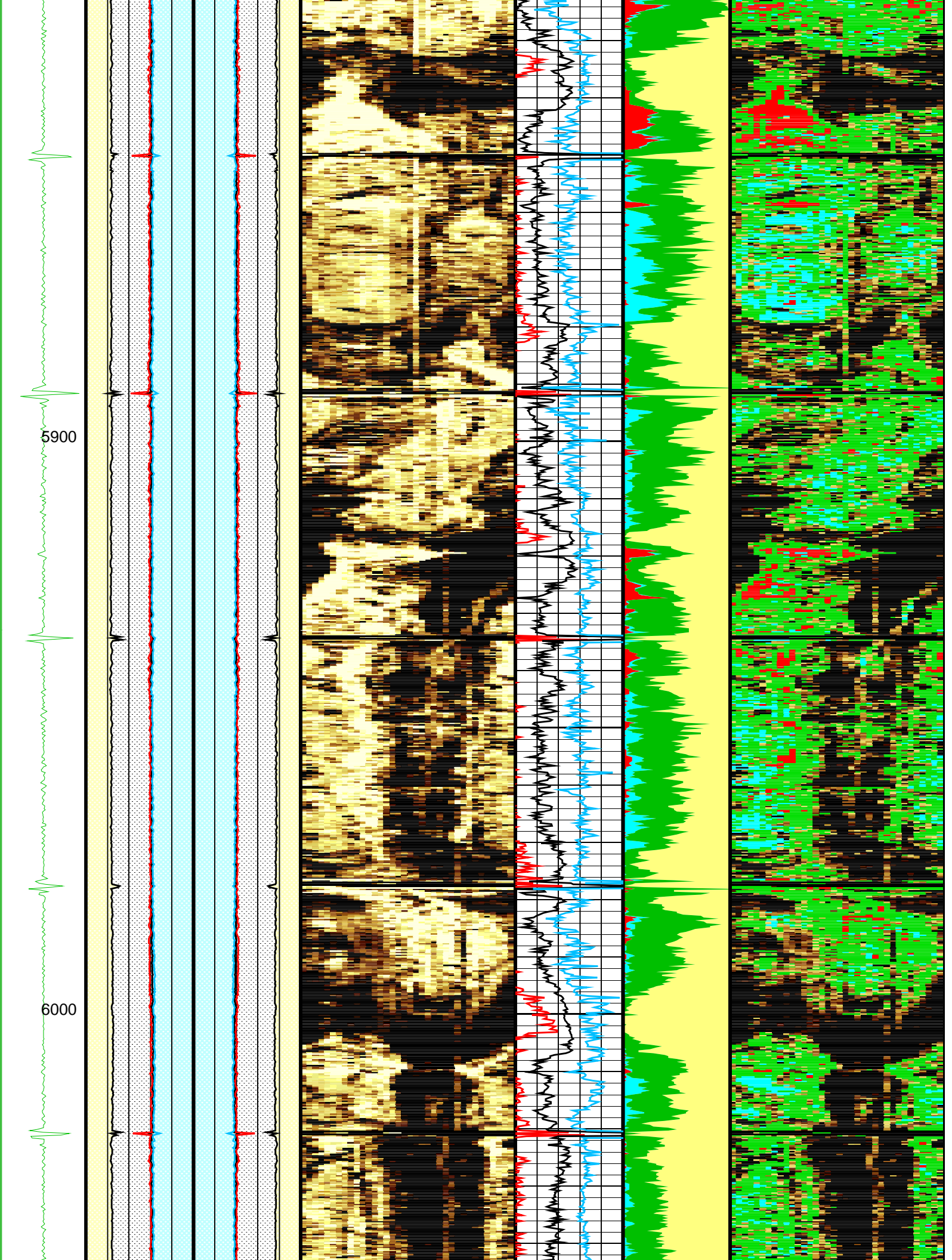


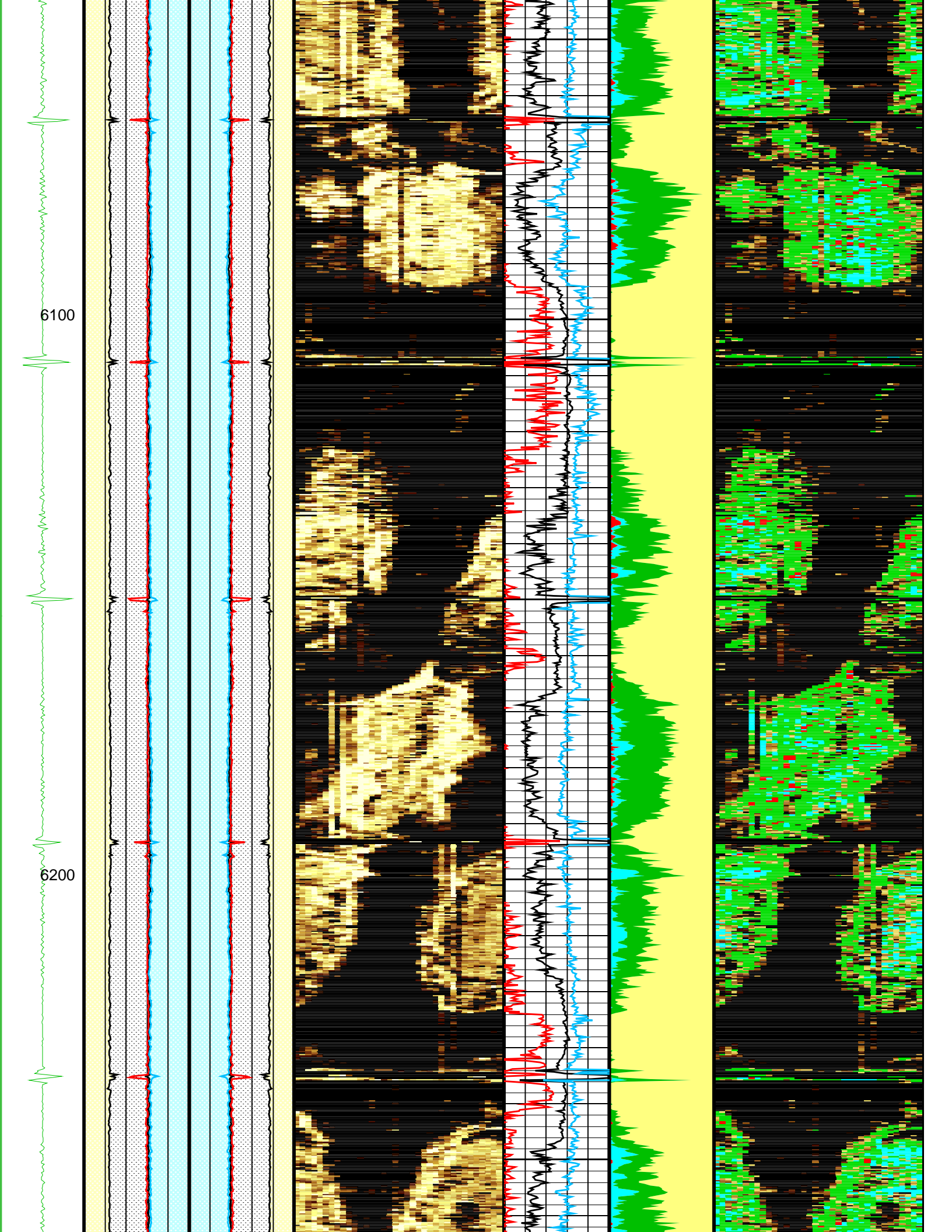


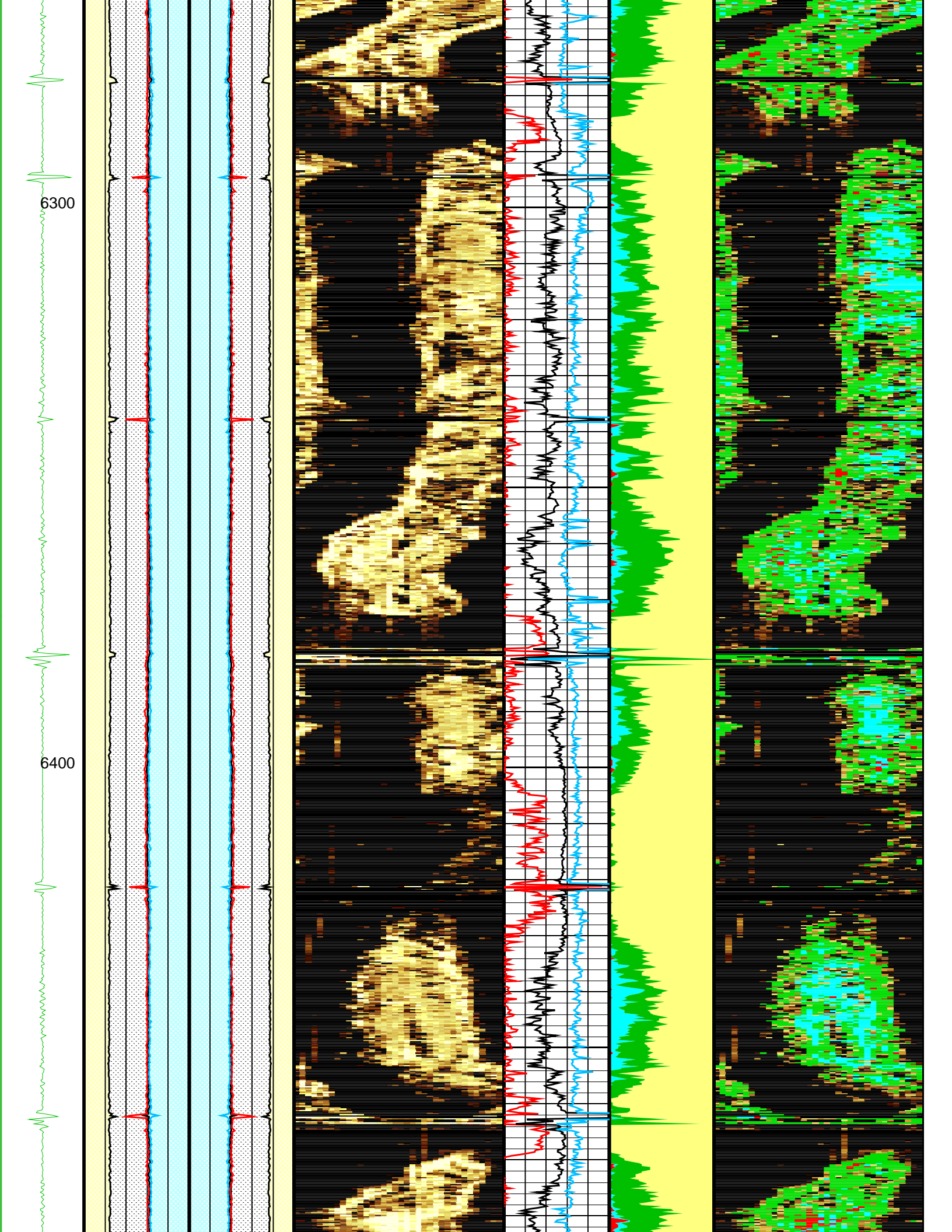


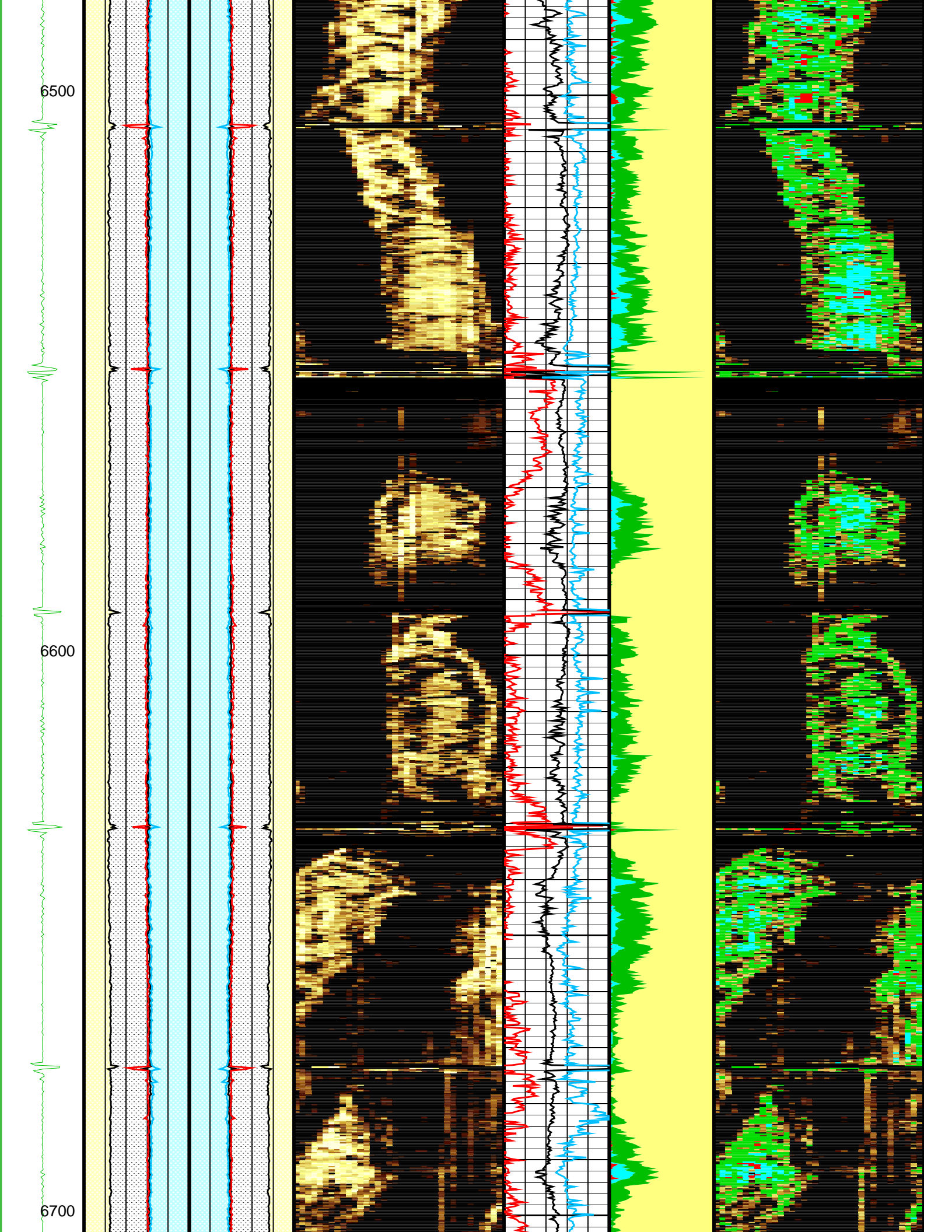


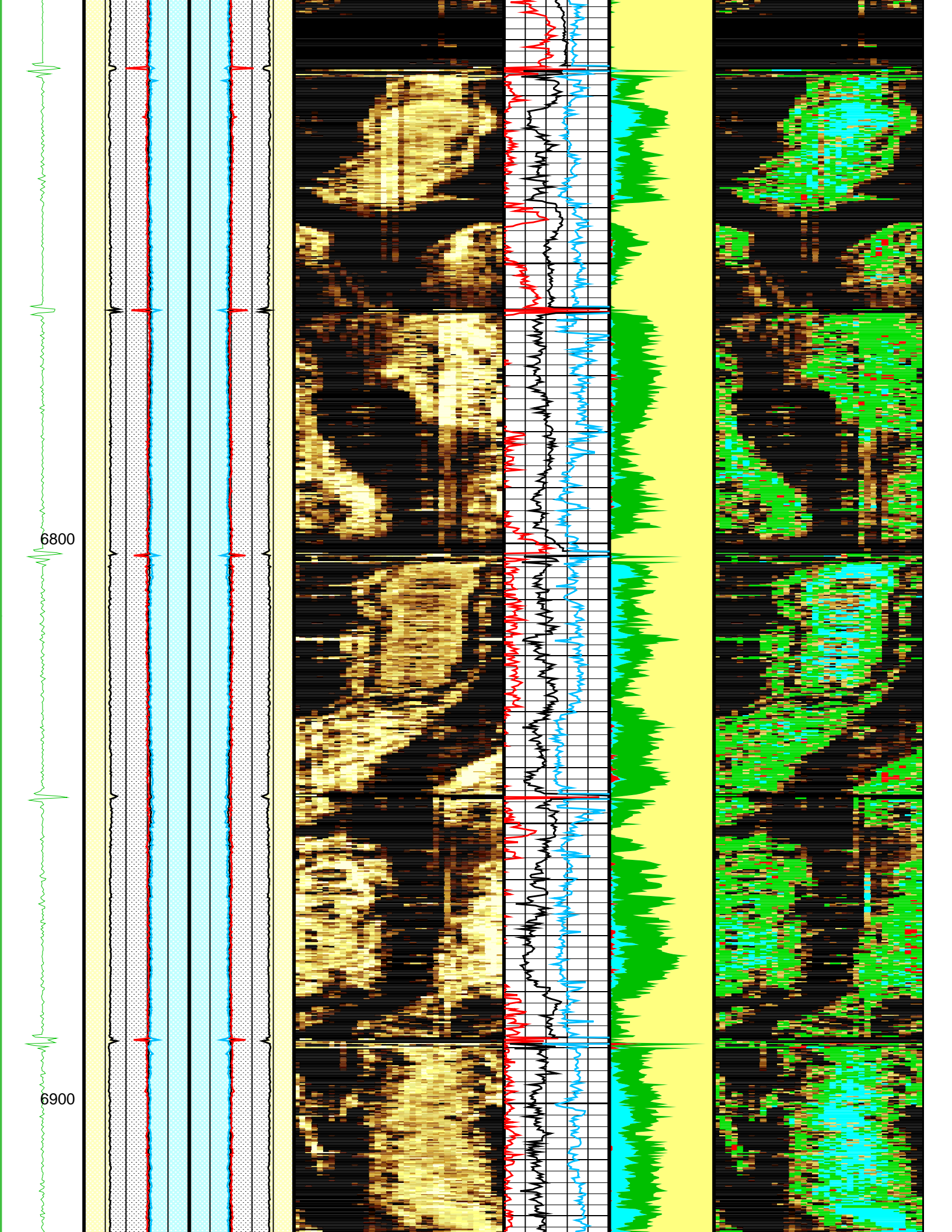


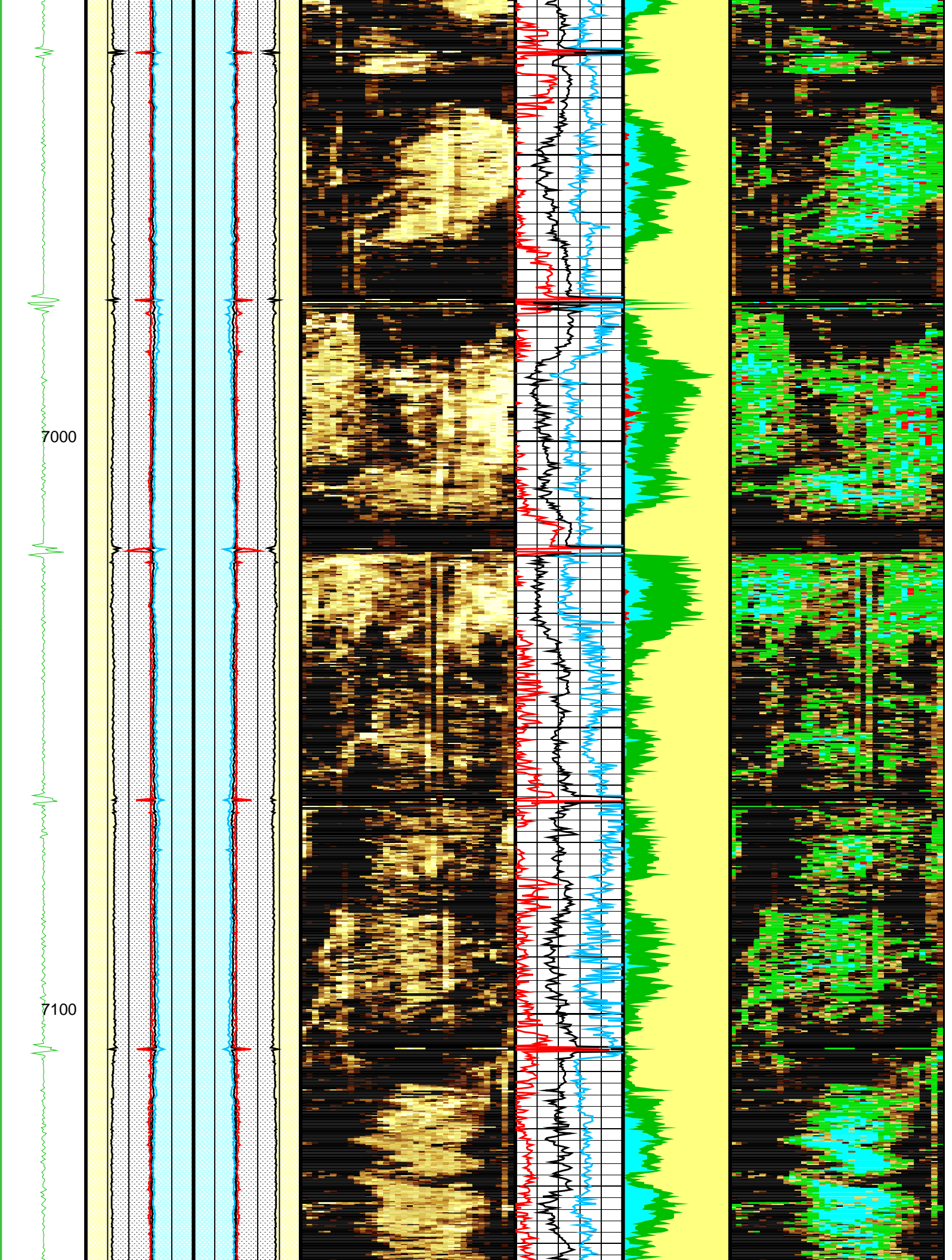


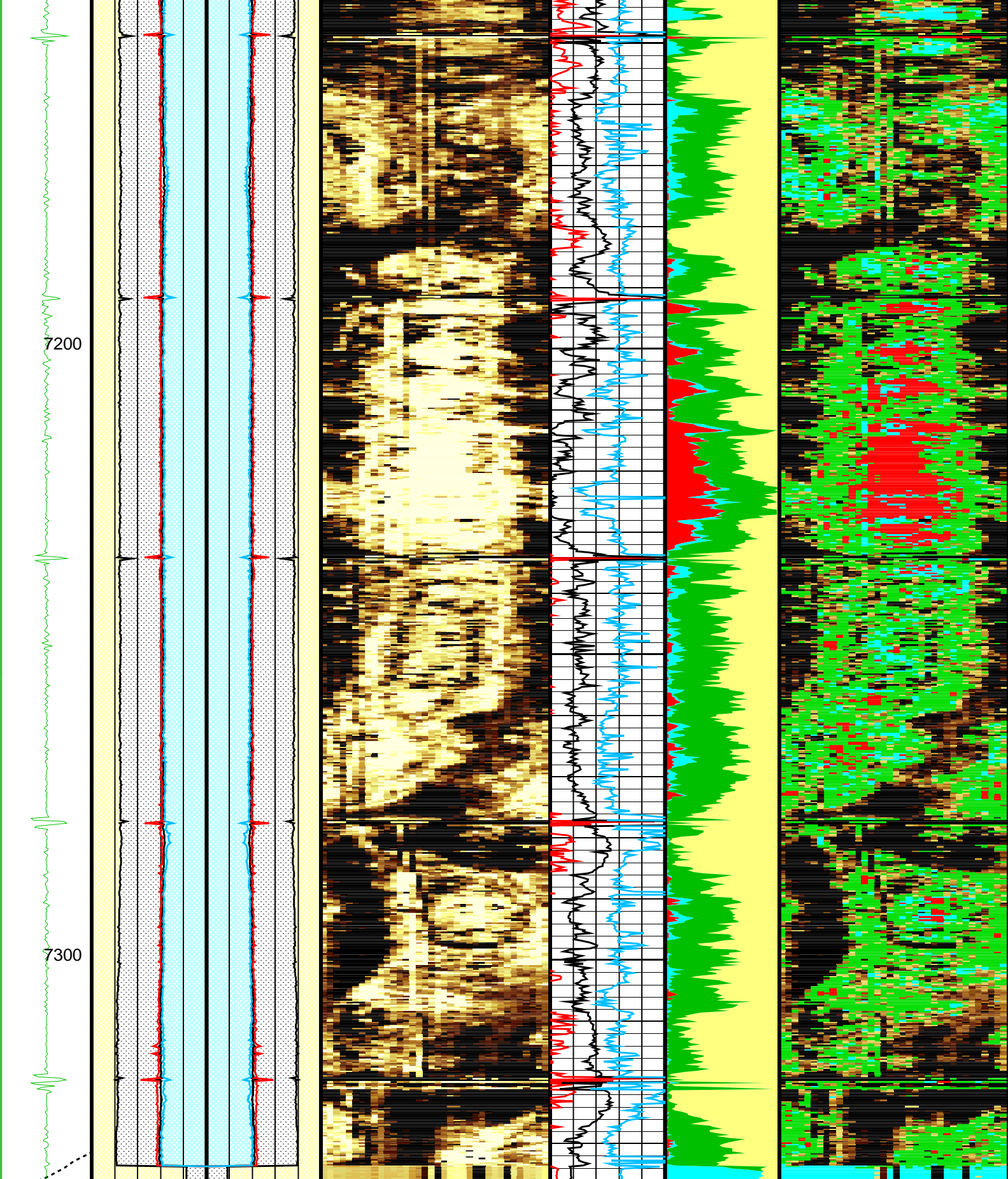








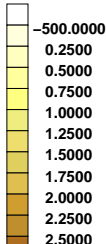




CCL
(CCLU)

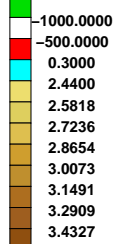
Internal radius
Average
(IRAV)

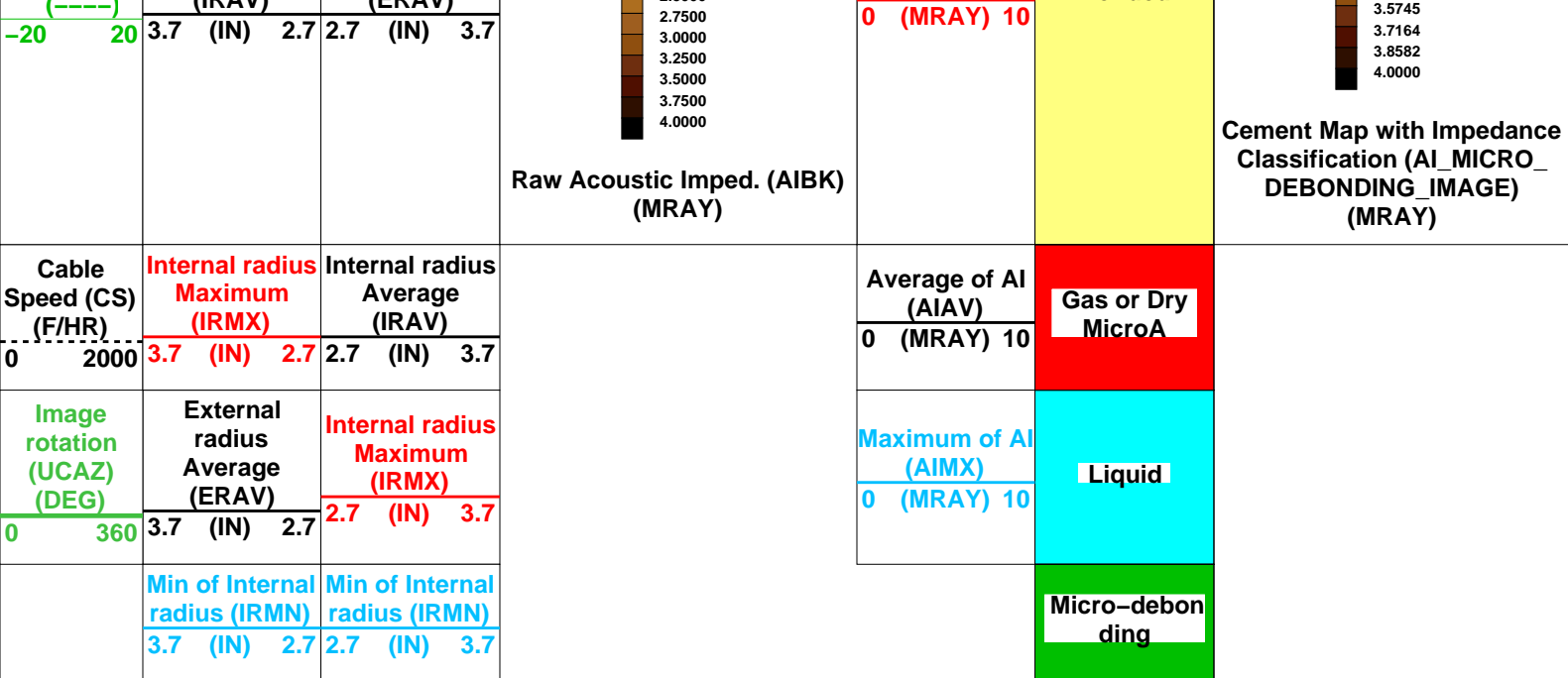
External radius
Average
(ERAV)



Minimum of AI
(AIMN)

Bonded





Format: USIT CEMENT 5 inch Vertical Scale: 5" per 100' Graphics File Created: 10-Mar-2014 19:26

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E 19C2-270 EDTC-B 19C2-270

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-E: Ultrasonic Imaging – E			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	201	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	20	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro–debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro–debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro–debonding	0.3	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
UMAO	USIT Measurement Angular Offset	18	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_3IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
VCEN	T^3 Processing Length	21.7078	US

WLEN	PS Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.44	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_051PUP	FN:50	PRODUCER	10-Mar-2014 19:09	7336.0 FT	234.0 FT
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Output DLIS Files

DEFAULT	USI_052PUP	FN:51	PRODUCER	10-Mar-2014 19:26
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Schlumberger

**USI CEMENT
3000 PSI REPEAT**

MAXIS Field Log

Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Input DLIS Files

DEFAULT	USI_035PUP	FN:34	PRODUCER	10-Mar-2014 04:04	7275.0 FT	6772.0 FT
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Output DLIS Files

DEFAULT	USI_055PUP	FN:54	PRODUCER	10-Mar-2014 19:37	7309.0 FT	6806.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E	19C2-270	EDTC-B	19C2-270
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Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
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7500.00	194.00	1.77
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7000.00	194.00	1.77
---------	--------	------

6500.00	194.00	1.76
---------	--------	------

6000.00	193.00	1.74
---------	--------	------

5500.00	193.00	1.75
---------	--------	------

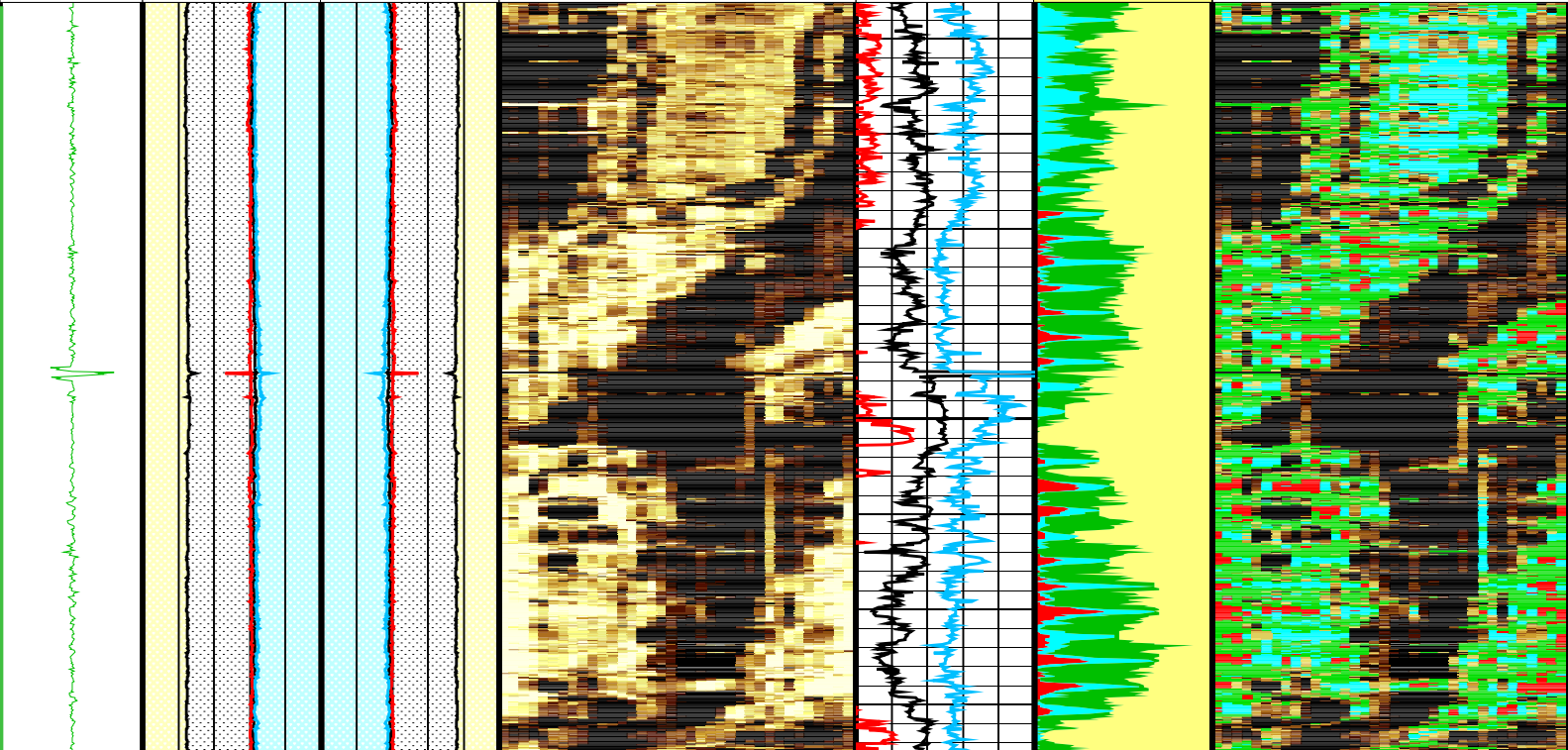
5000.00	193.00	1.73
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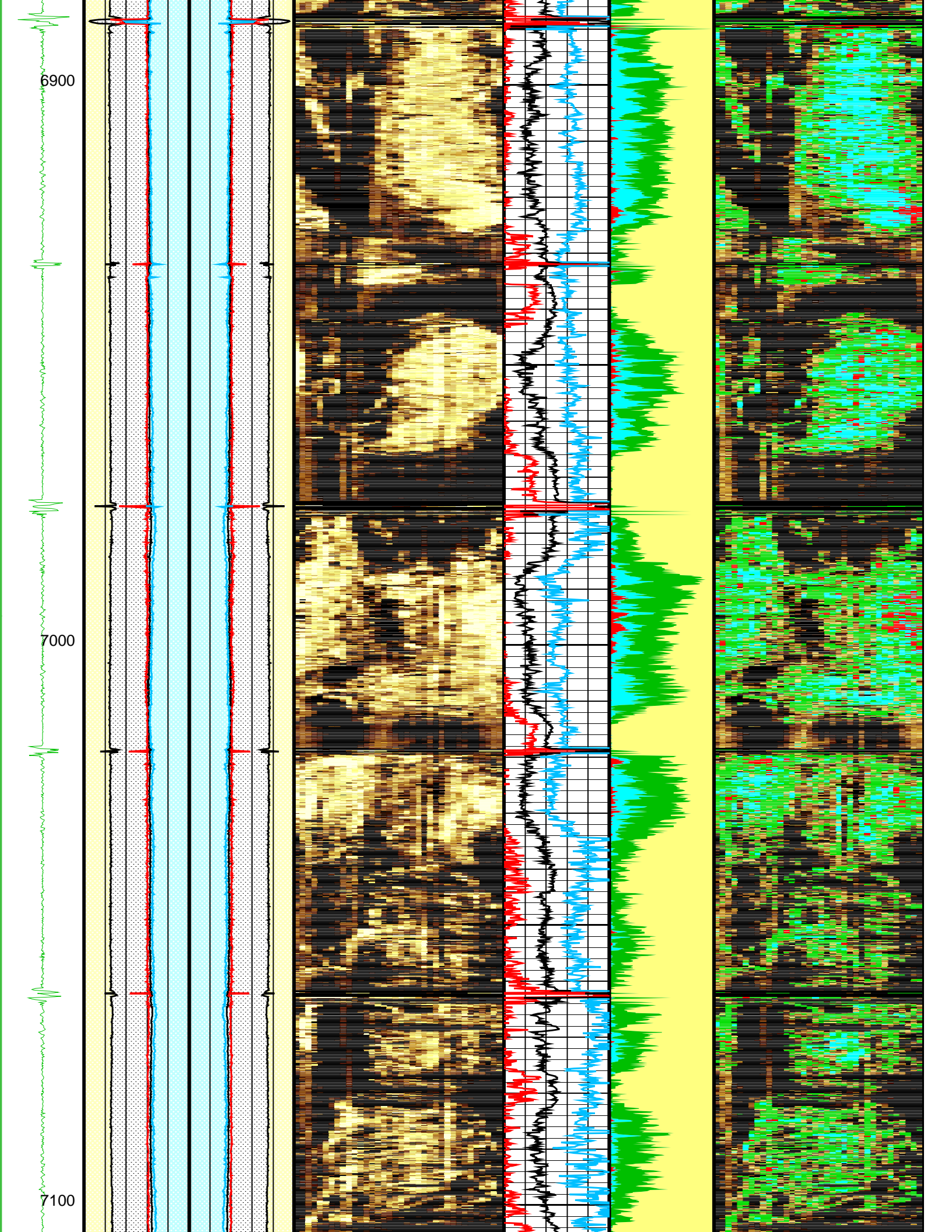
4500.00	193.00	1.73
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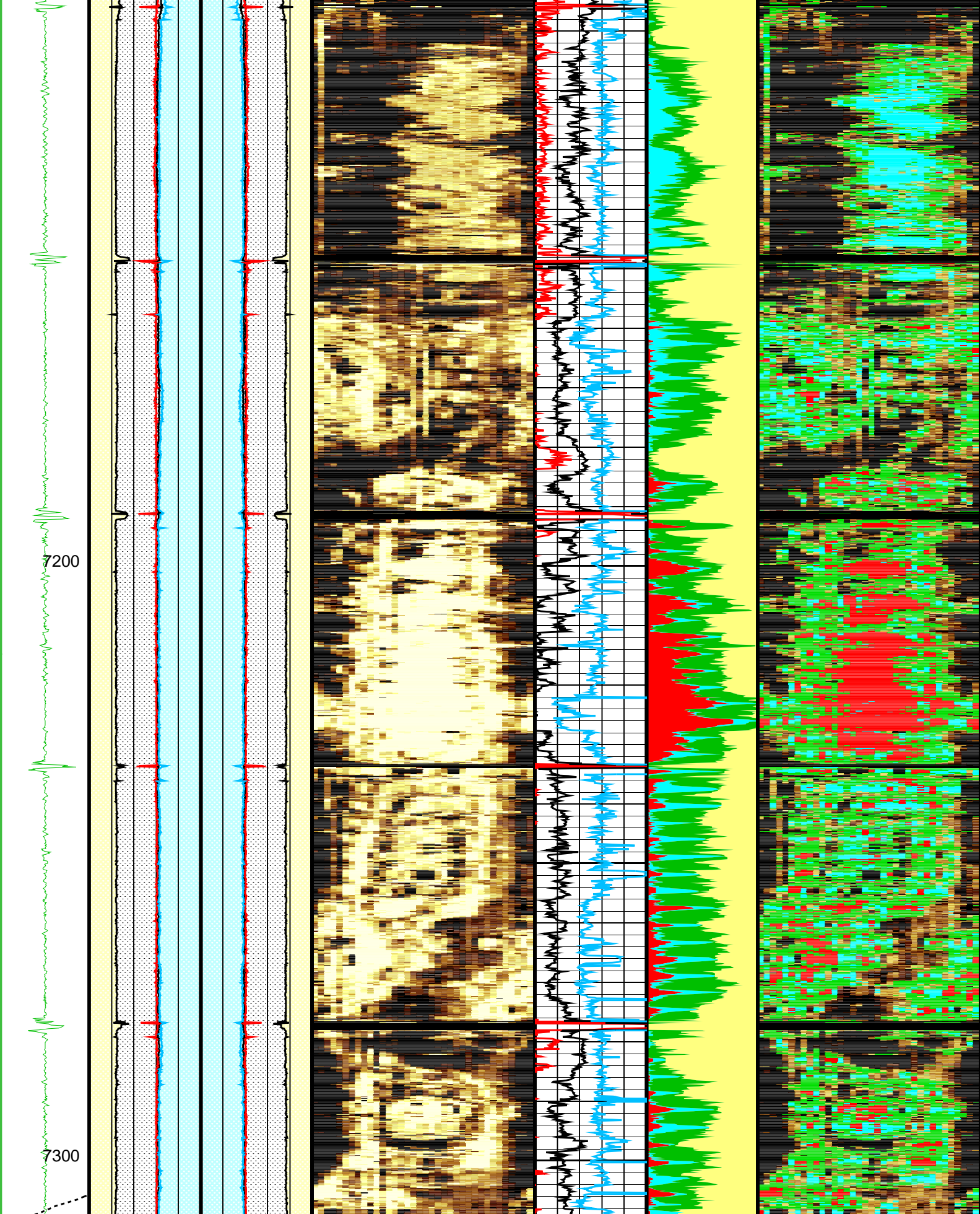
4000.00	193.00	1.73
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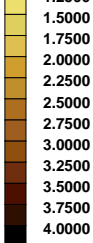
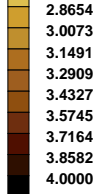
3500.00	193.50	1.73
3000.00	193.80	1.72
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

	Min of Internal radius (IRMN) 3.7 (IN) 2.7	Min of Internal radius (IRMN) 2.7 (IN) 3.7			Micro-debonding	
Image rotation (UCAZ) (DEG) 0 360	External radius Average (ERAV) 3.7 (IN) 2.7	Internal radius Maximum (IRMX) 2.7 (IN) 3.7		Maximum of AI (AIMX) 0 (MRAY) 10	Liquid	
Cable Speed (CS) (F/HR) 0 2000	Internal radius Maximum (IRMX) 3.7 (IN) 2.7	Internal radius Average (IRAV) 2.7 (IN) 3.7		Average of AI (AIAV) 0 (MRAY) 10	Gas or Dry MicroA	
CCL (CCLU) (-----) -20 20	Internal radius Average (IRAV) 3.7 (IN) 2.7	External radius Average (ERAV) 2.7 (IN) 3.7	<div><div></div><div>-500.0000</div><div>0.2500</div><div>0.5000</div><div>0.7500</div><div>1.0000</div><div>1.2500</div><div>1.5000</div><div>1.7500</div><div>2.0000</div><div>2.2500</div><div>2.5000</div><div>2.7500</div><div>3.0000</div><div>3.2500</div><div>3.5000</div><div>3.7500</div><div>4.0000</div></div>	Minimum of AI (AIMN) 0 (MRAY) 10	Bonded	<div><div></div><div>1000.0000</div><div>-500.0000</div><div>0.3000</div><div>2.4400</div><div>2.5818</div><div>2.7236</div><div>2.8654</div><div>3.0073</div><div>3.1491</div><div>3.2909</div><div>3.4327</div><div>3.5745</div><div>3.7164</div><div>3.8582</div><div>4.0000</div></div> <div>Cement Map with Impedance Classification (AI_MICRO_DEBONDING_IMAGE) (MRAY)</div>







CCL (CCLU) (----) -20 20	Internal radius Average (IRAV) 3.7 (IN) 2.7	External radius Average (ERAV) 2.7 (IN) 3.7		Minimum of AI (AIMN) 0 (MRAY) 10	Bonded	
Cable Speed (CS) (F/HR) 0 2000	Internal radius Maximum (IRMX) 3.7 (IN) 2.7	Internal radius Average (IRAV) 2.7 (IN) 3.7	Raw Acoustic Imped. (AIBK) (MRAY)	Average of AI (AIAV) 0 (MRAY) 10	Gas or Dry MicroA	Cement Map with Impedance Classification (AI_MICRO_ DEBONDING_IMAGE) (MRAY)
Image rotation (UCAZ) (DEG) 0 360	External radius Average (ERAV) 3.7 (IN) 2.7	Internal radius Maximum (IRMX) 2.7 (IN) 3.7		Maximum of AI (AIMX) 0 (MRAY) 10	Liquid	
	Min of Internal radius (IRMN) 3.7 (IN) 2.7	Min of Internal radius (IRMN) 2.7 (IN) 3.7			Micro-debon ding	

Format: USIT CEMENT 5 inch Vertical Scale: 5" per 100' Graphics File Created: 10-Mar-2014 19:37

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E 19C2-270 EDTC-B 19C2-270

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-E: Ultrasonic Imaging – E			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	201	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	50	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro–debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro–debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro–debonding	0.3	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
UMAO	USIT Measurement Angular Offset	18	DEG

USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_1_5IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.44	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	34.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_035PUP	FN:34	PRODUCER	10-Mar-2014 04:04	7275.0 FT	6772.0 FT
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Output DLIS Files

DEFAULT	USI_055PUP	FN:54	PRODUCER	10-Mar-2014 19:37
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Schlumberger

**COMPRESSED GOODWIN
3000 PSI MAIN**

MAXIS Field Log

Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Input DLIS Files

DEFAULT	USI_051PUP	FN:50	PRODUCER	10-Mar-2014 19:09	7336.0 FT	234.0 FT
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Output DLIS Files

DEFAULT	USI_052PUP	FN:51	PRODUCER	10-Mar-2014 19:26	7336.0 FT	234.0 FT
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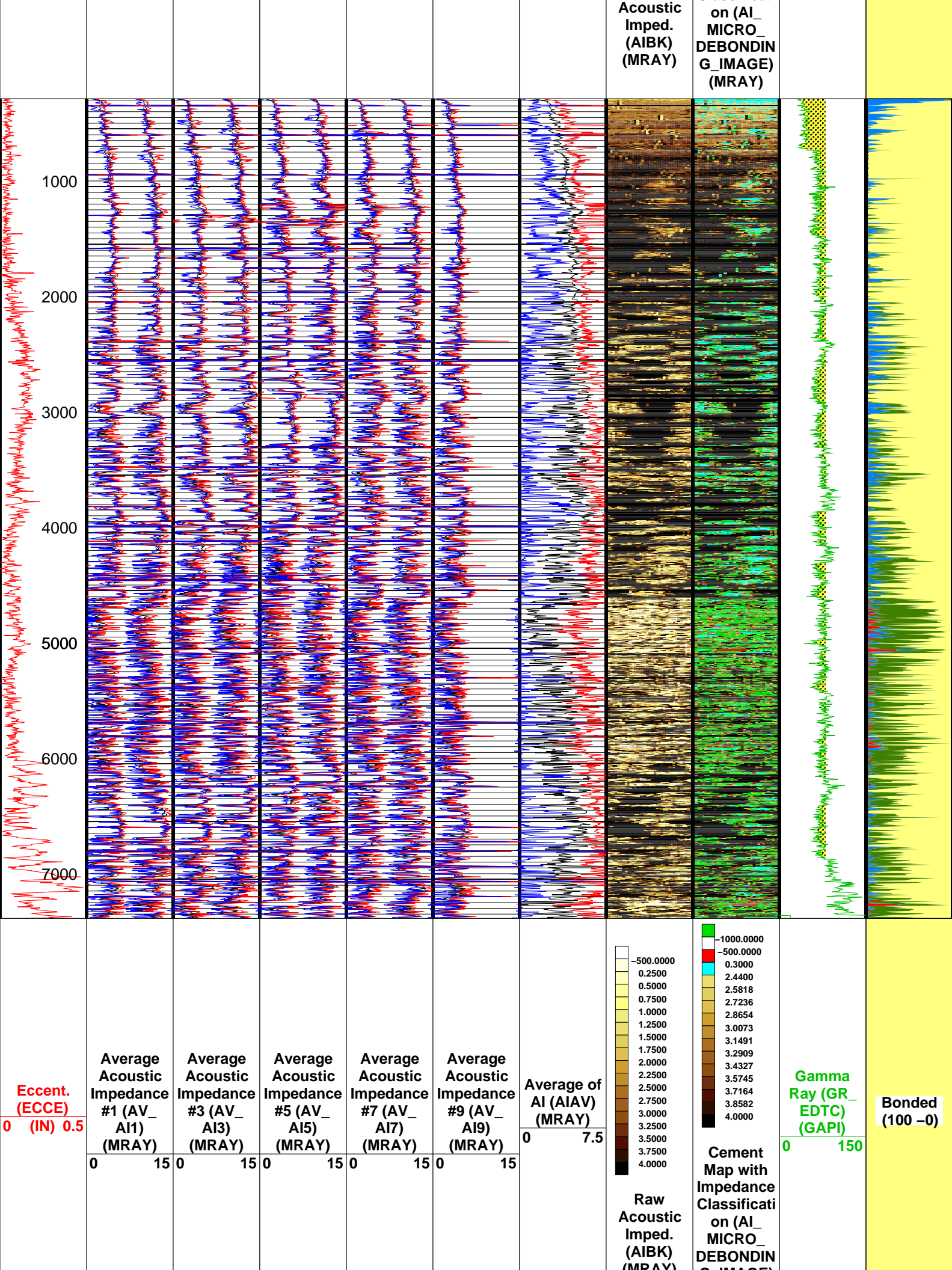
OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E	19C2-270	EDTC-B	19C2-270
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Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
7500.00	194.00	1.77
7000.00	194.00	1.77
6500.00	194.00	1.76
6000.00	193.00	1.74
5500.00	193.00	1.75
5000.00	193.00	1.73



MAXIS Field Log

Company: NOBLE ENERGY INCWell: PEAKS K26-77-1HN

Input DLIS Files

DEFAULTUSI_035PUPFN:34PRODUCER10-Mar-2014 04:047275.0 FT6772.0 FT

Output DLIS Files

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OP System Version: 19C2-270
eWAFE Version: 1.189

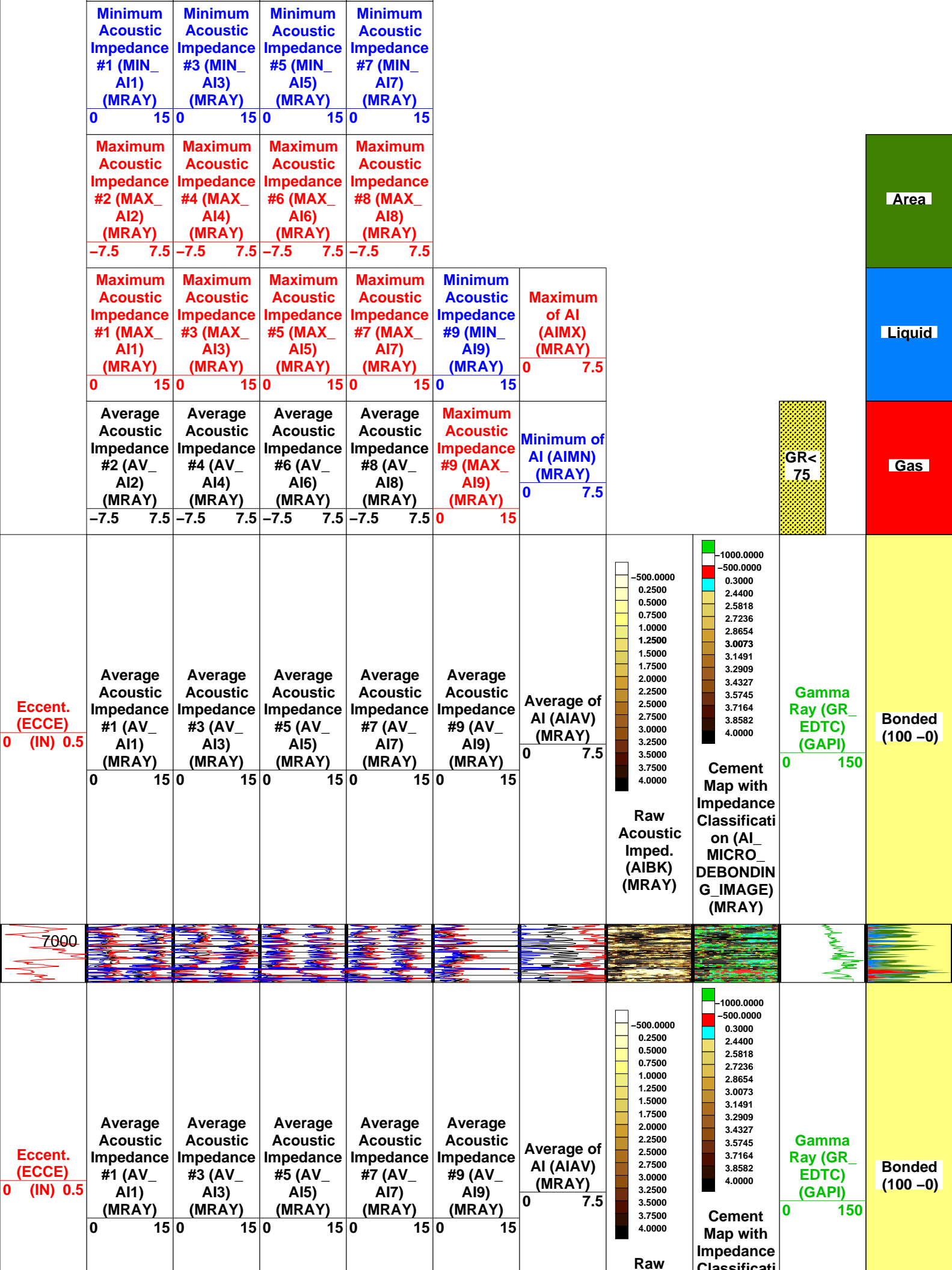
USIT-EDTC-B19C2-27019C2-270

Zoning of Mud Parameters

DepthFluid Velocity (DFVL)Acoustic Impedance (ZMUD)

7500.00	194.00	1.77
7000.00	194.00	1.77
6500.00	194.00	1.76
6000.00	193.00	1.74
5500.00	193.00	1.75
5000.00	193.00	1.73
4500.00	193.00	1.73
4000.00	193.00	1.73
3500.00	193.50	1.73
3000.00	193.80	1.72
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

Minimum Acoustic Impedance #2 (MIN_ AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_ AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_ AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_ AI8) (MRAY)
-7.57.5	-7.57.5	-7.57.5	-7.57.5



							Acoustic Imped. (AIBK) (MRAY)	Classification on (AI_ MICRO_ DEBONDING_IMAGE) (MRAY)		
	Average Acoustic Impedance #2 (AV_ AI2) (MRAY)	Average Acoustic Impedance #4 (AV_ AI4) (MRAY)	Average Acoustic Impedance #6 (AV_ AI6) (MRAY)	Average Acoustic Impedance #8 (AV_ AI8) (MRAY)	Maximum Acoustic Impedance #9 (MAX_ AI9) (MRAY)	Minimum of AI (AIMN) (MRAY)			GR< 75	Gas
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5				
	Maximum Acoustic Impedance #1 (MAX_ AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_ AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_ AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_ AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_ AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)				Liquid
	0 15	0 15	0 15	0 15	0 15	0 7.5				
	Maximum Acoustic Impedance #2 (MAX_ AI2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_ AI4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_ AI6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_ AI8) (MRAY)						Area
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5						
	Minimum Acoustic Impedance #1 (MIN_ AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_ AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_ AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_ AI7) (MRAY)						
	0 15	0 15	0 15	0 15						
	Minimum Acoustic Impedance #2 (MIN_ AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_ AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_ AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_ AI8) (MRAY)						
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5						

Format: USIT only Goodwin Compressed Vertical Scale: 0.1" per 100' Graphics File Created: 10-Mar-2014 19:37

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-E 19C2-270 EDTC-B 19C2-270

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

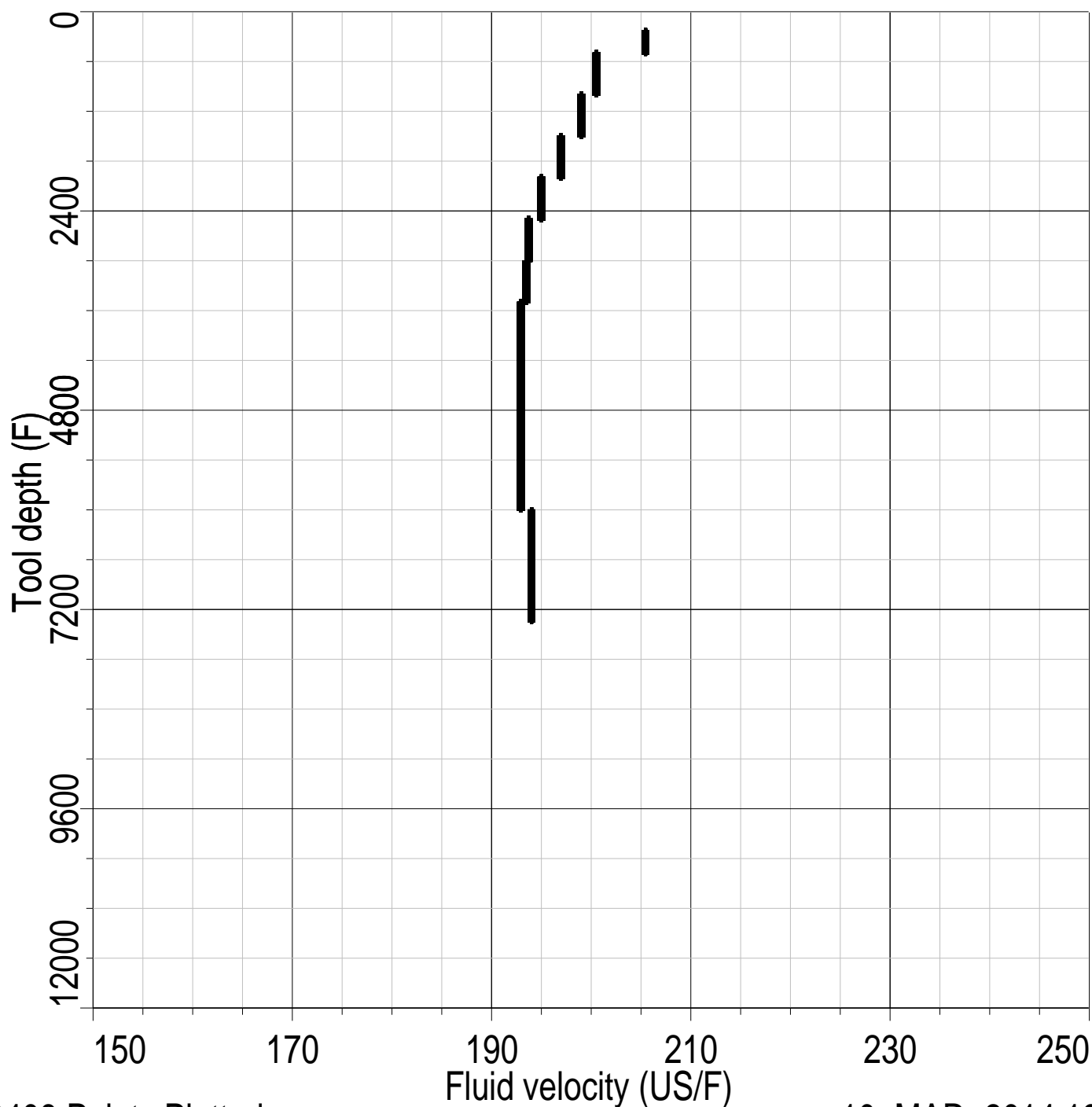
Input DLIS Files

DEFAULT USI_035PUP FN:34 PRODUCER 10-Mar-2014 04:04 7275.0 FT 6772.0 FT

Output DLIS Files

DEFAULT USI_055PUP FN:54 PRODUCER 10-Mar-2014 19:37

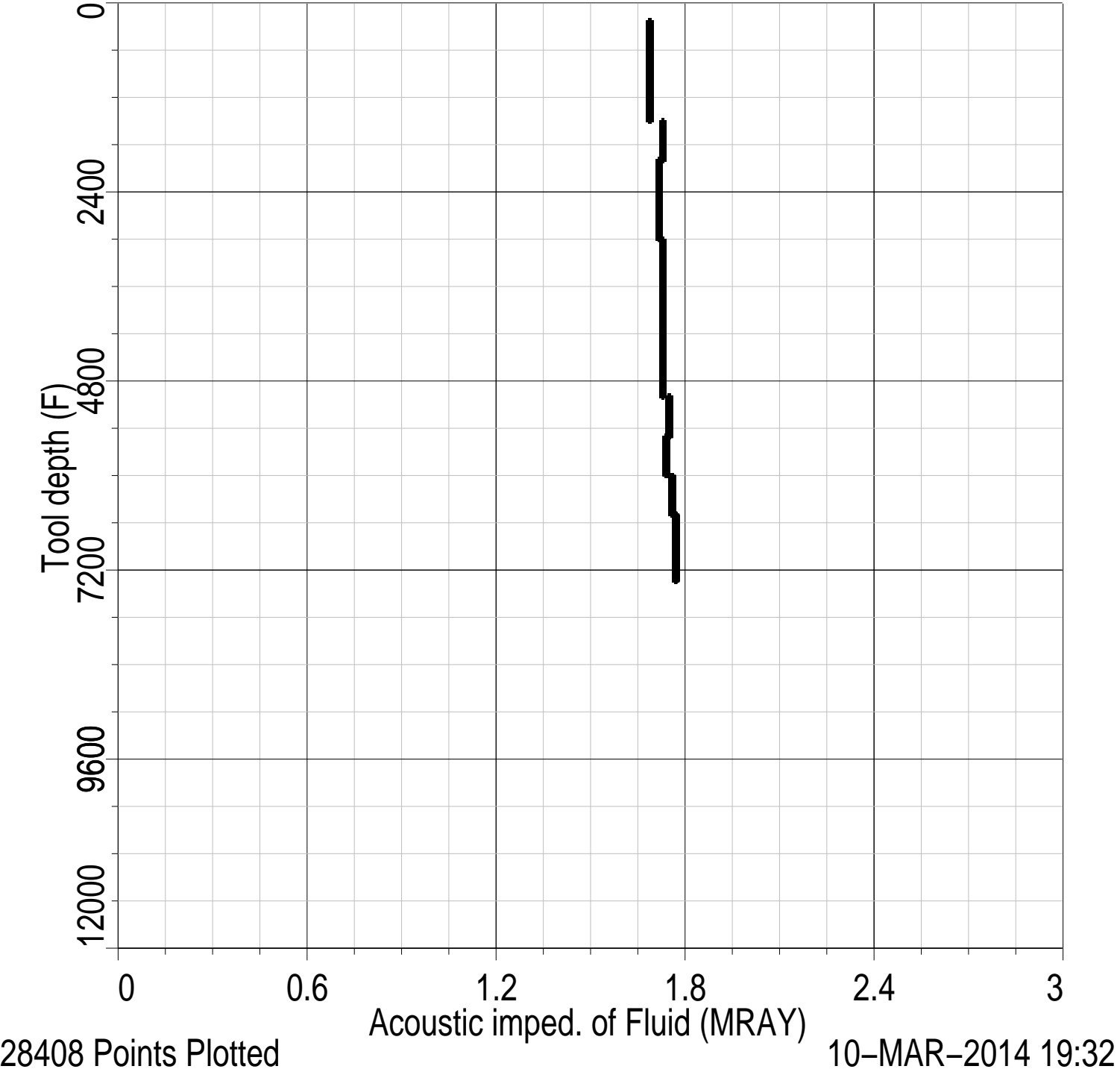
Index: 7336.0 – 234.2 FT



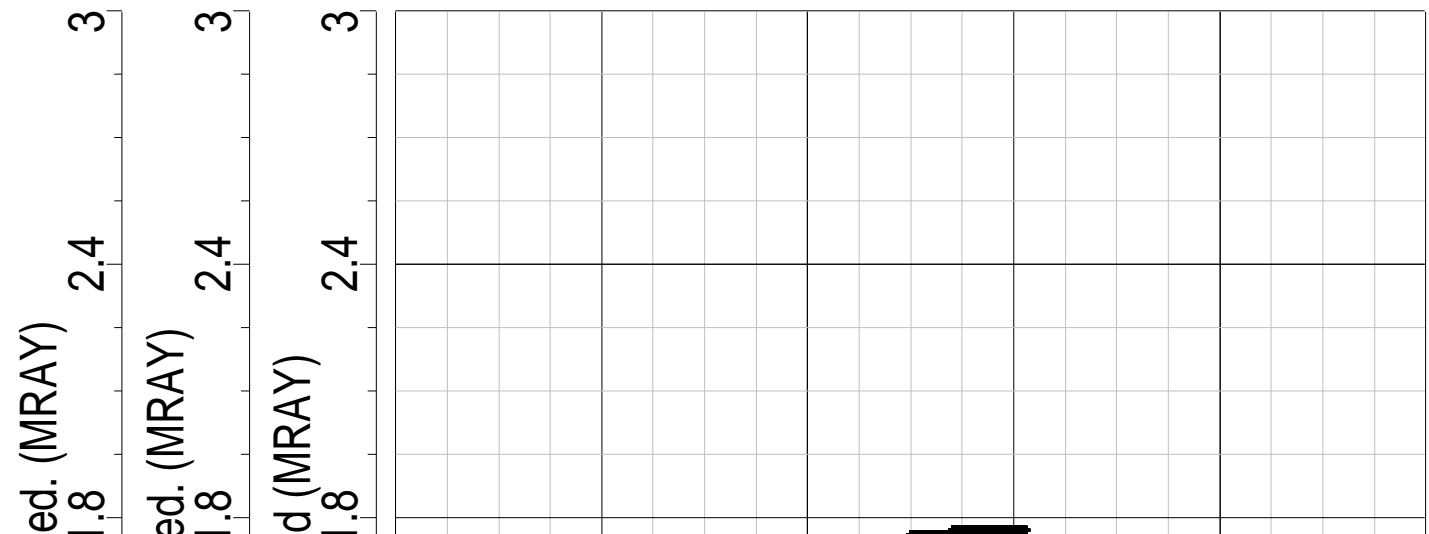
28408 Points Plotted

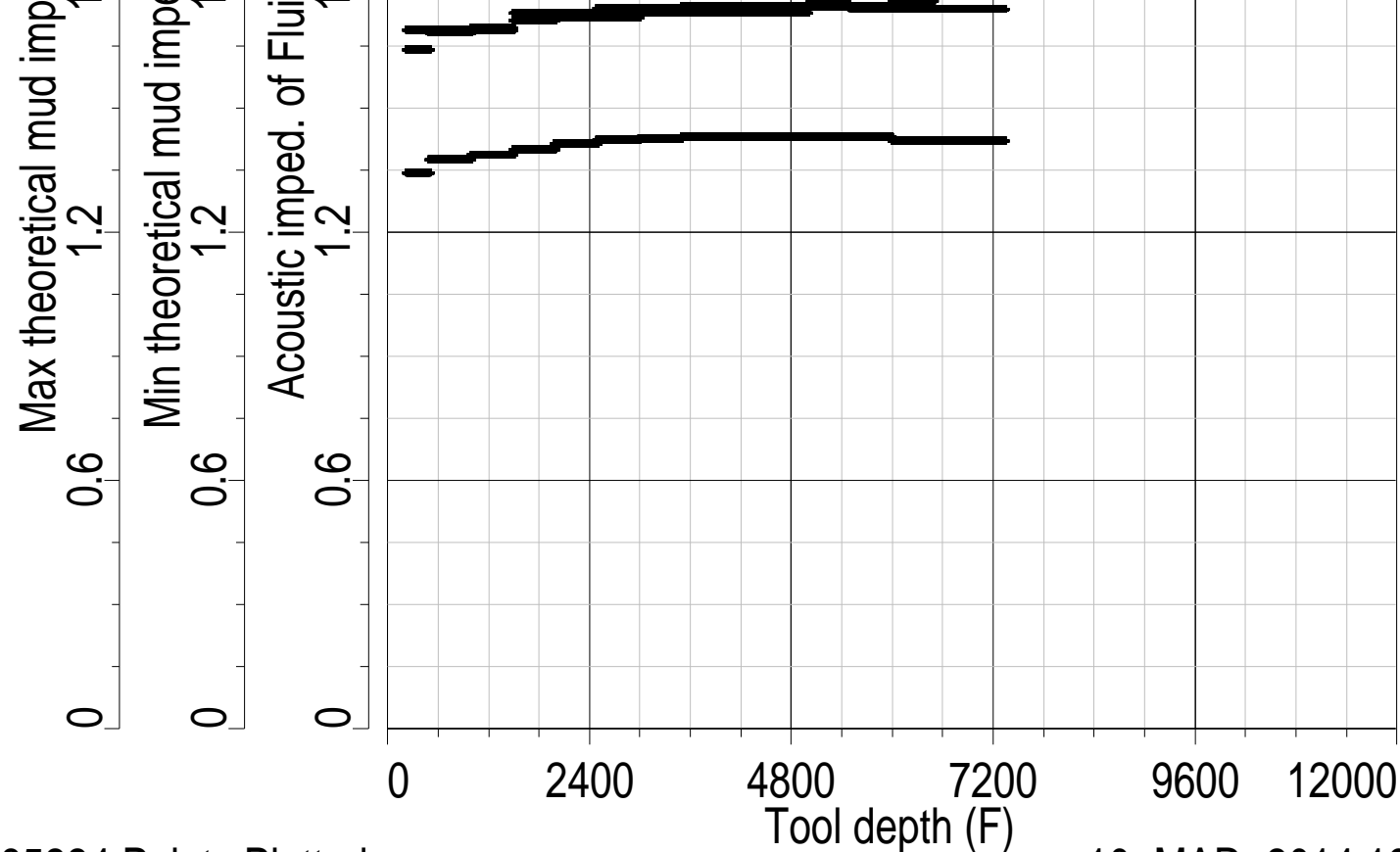
10-MAR-2014 19:32

Index: 7336.0 – 234.2 FT



Index: 7336.0 – 234.2 FT





85224 Points Plotted

10-MAR-2014 19:32

Schlumberger

USI IBC SLG COMPOSITE ZERO PSI

MAXIS Field Log

Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Input DLIS Files

DEFAULT	USI_016PUP	FN:15	PRODUCER	09-Mar-2014 17:45	7326.5 FT	5444.0 FT
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Output DLIS Files

DEFAULT	USI_059PUP	FN:58	PRODUCER	10-Mar-2014 20:19	6600.0 FT	5478.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-D	19C2-270	EDTC-B	19C2-270
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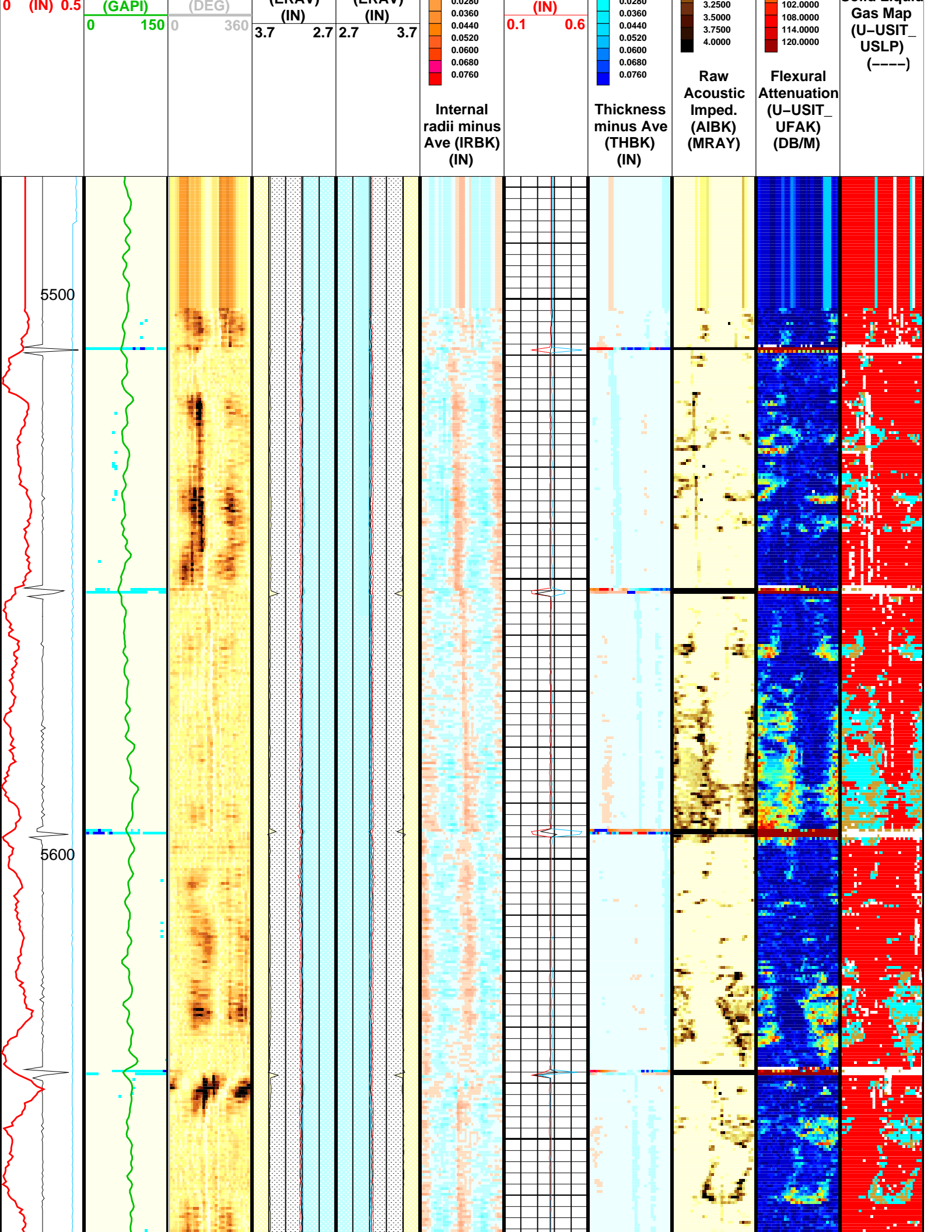
Zoning of Mud Parameters

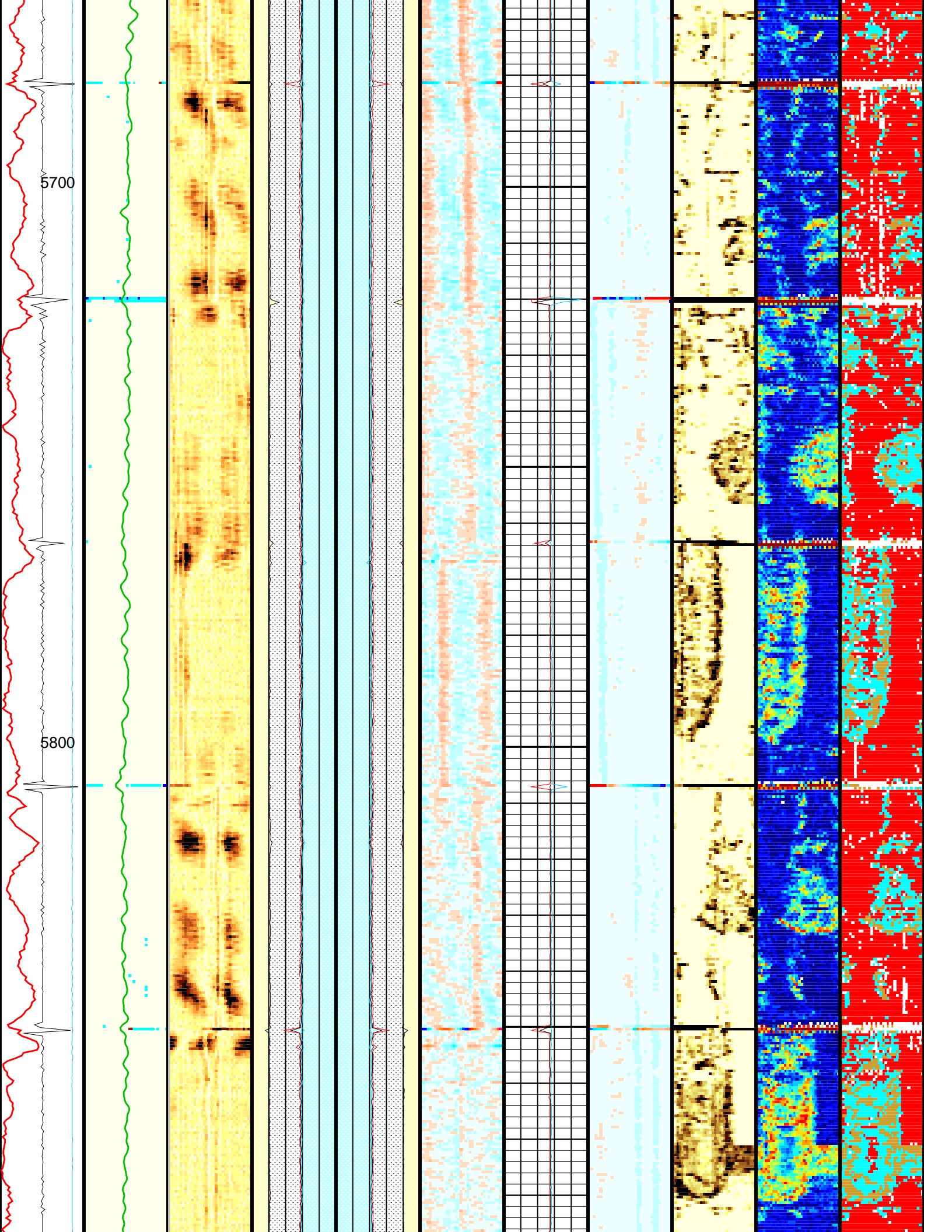
Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
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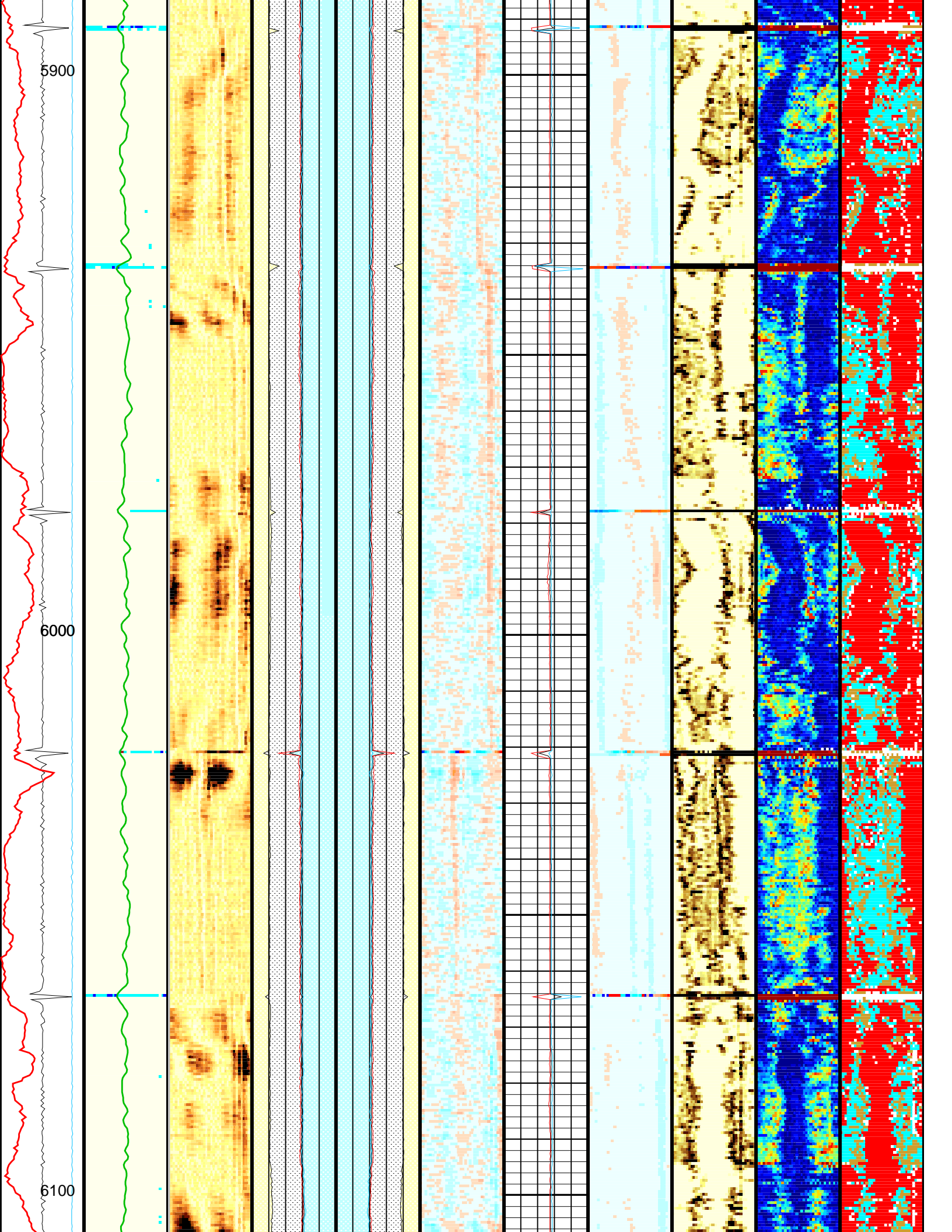
7500.00	194.00	1.77
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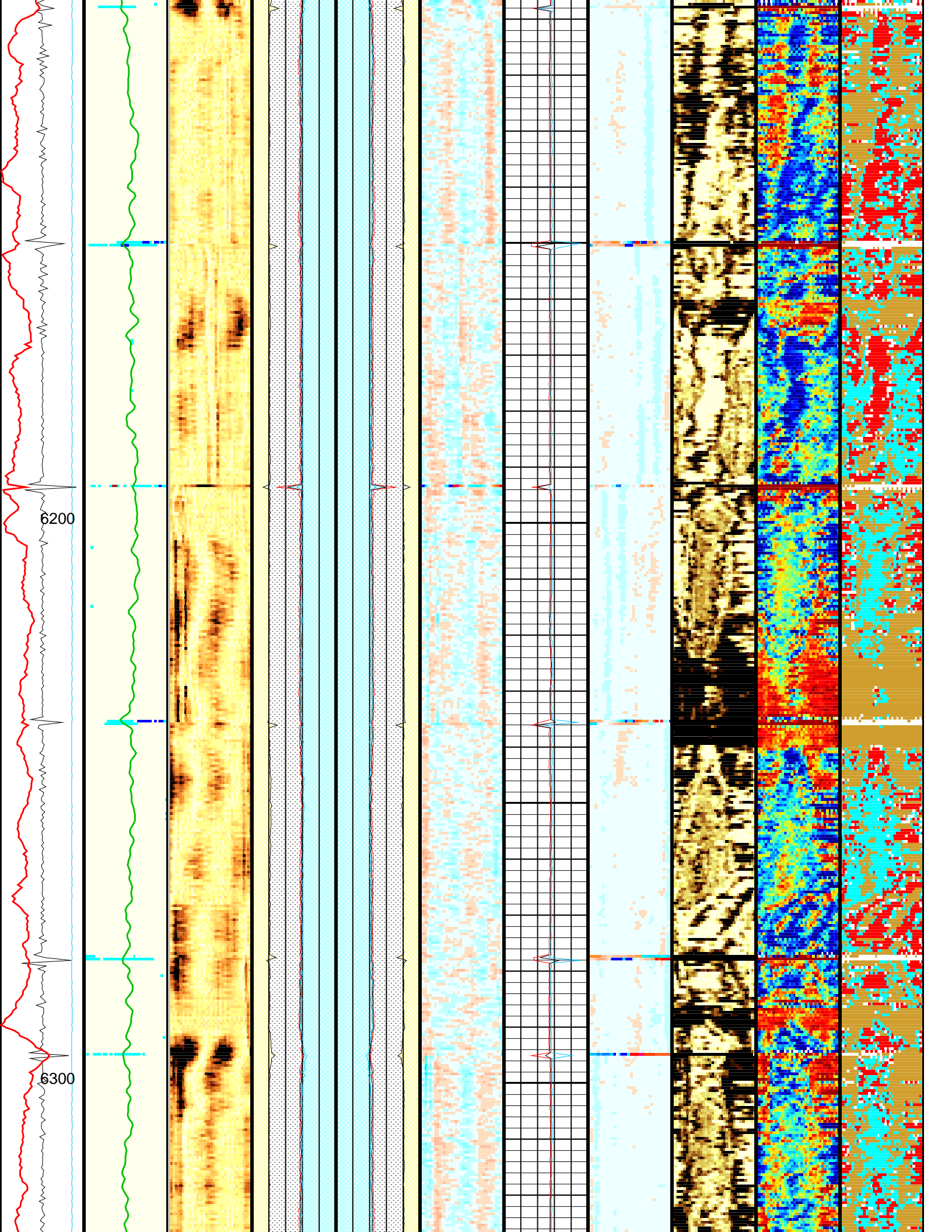
7000.00	194.00	1.77
6500.00	194.00	1.76
6000.00	193.00	1.74
5500.00	193.00	1.75
5000.00	193.00	1.73
4500.00	193.00	1.73
4000.00	193.00	1.73
3500.00	193.50	1.73
3000.00	193.80	1.72
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

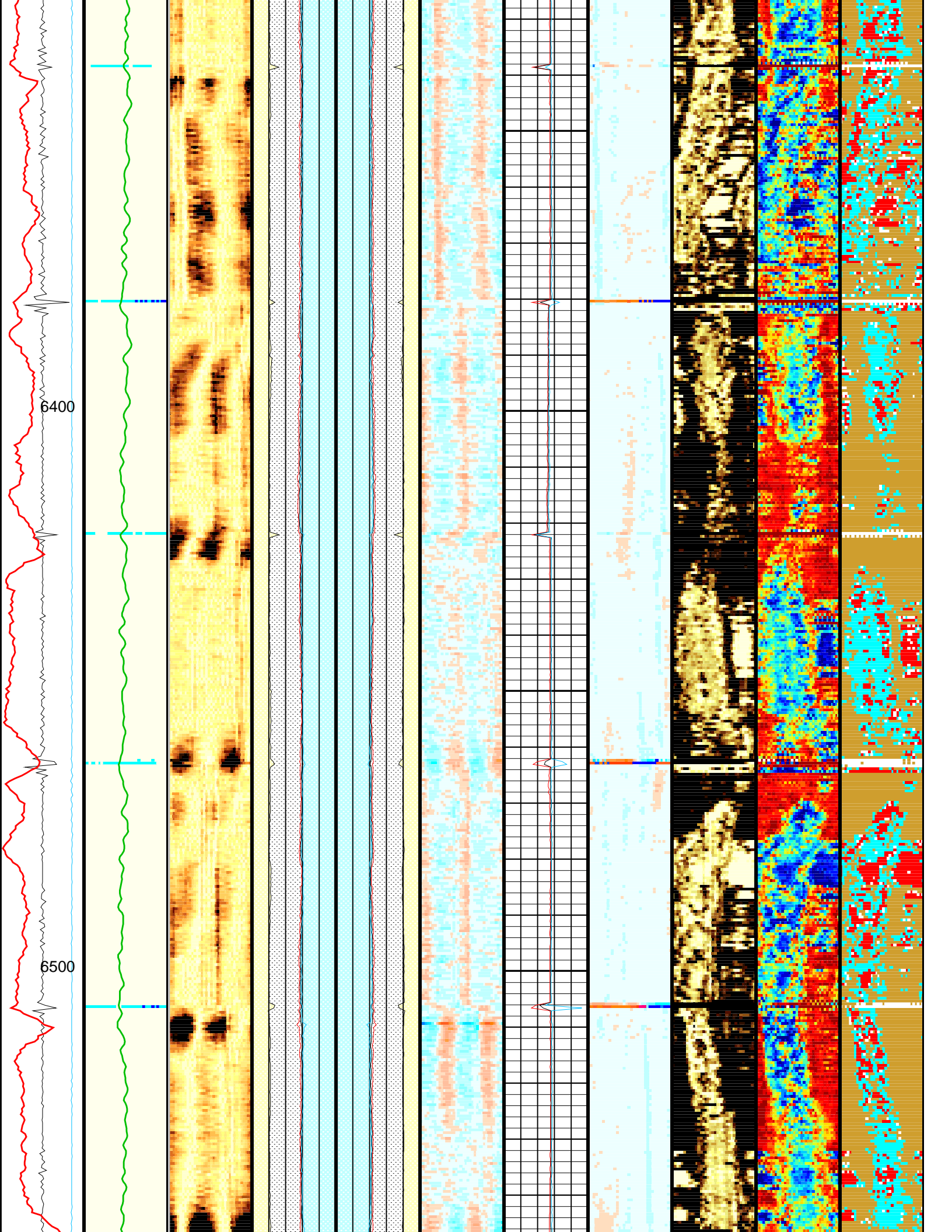
		Min of Internal radius (IRMN) (IN)		Min of Internal radius (IRMN) (IN)			
		3.7	2.7	2.7	3.7		
RSAV (RSAV) (RPS)		Internal radius Maximum (IRMX) (IN)		Internal radius Maximum (IRMX) (IN)		Maximum of Thickness (THMX) (IN)	
6	7.5	3.7	2.7	2.7	3.7	0.1	0.6
CCL (CCLU) (----)		Internal radius Average (IRAV) (IN)		Internal radius Average (IRAV) (IN)		Average of Thickness (THAV) (IN)	
-20	20	3.7	2.7	2.7	3.7	0.1	0.6
Process. flags (UFLG) (----)							

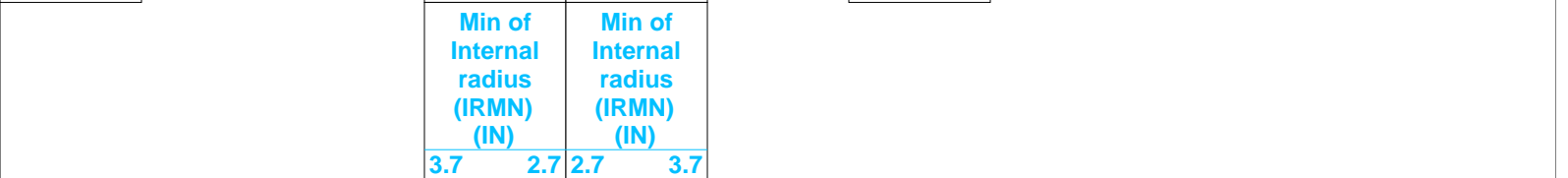












OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-D 19C2-270 EDTC-B 19C2-270

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging – D			
	T^3 Processing Length for FPM	15.508	US
	Corrosion range minimum	−0.076	IN
	Corrosion range maximum	0.076	IN
AGMN	Minimum Gain of Cartridge	−4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CDUN	Curves Unit Declared in Presentation Manager	IN	
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
CYST	Casing Yield Strength	0	PSI
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	85	V
FDII	FPM Data Interpolation Interval	0	FT
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
OPLEV	USIT Remove Flagged Data Level	level2	
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	IN
SDNV	Number of Vertical Samples used for Micro-debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro-debonding	0.3	
SUBT	Ultrasonic Subassembly Type	Sub_5_inch_S	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
TMUC	Type of Mud	BRINE	
U-USIT_CEMT	USIT Cement Type	LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	2.24	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_RFWB	USIT Remove Flagged Data Window Begin	0	US
U-USIT_RFWE	USIT Remove Flagged Data Window End	511	US
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UDFC	USIT Deflector for Casing	NONE	
U-USIT_UFAO	USIT Flexural Attenuation Offset	−10	DB/M
U-USIT_UFGA	Far Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UFGI	Far Receiver Minimum Gain of Cartridge	−12	DB
U-USIT_UHCI	USIT IBC Hydraulic Communication Interval	06FT_02M	
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UNCA	Near Receiver Maximum Gain of Cartridge	48	DB

U-USIT_UNGA	Near Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UNGI	Near Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_URTP	USIT Radial Transducer Position	UNKNOWN	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
UPAT	Emission Pattern	Pattern_375K	
USIT_USAC_TASK_ALLOW	USIT USAC Allow Task after Power Up	YES	
USIT_USAC_TASK_TIMEOUT	USIT USAC Task Timeout (in seconds) FOR TEST REPORT	600	
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	STAN	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U-ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U-TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	34.0	FT
FLEV	Fluid Level	-50000.00	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	FT
TDD	Total Depth - Driller	12100.00	FT
TDL	Total Depth - Logger	-50000.00	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Input DLIS Files

DEFAULT	USI_016PUP	FN:15	PRODUCER	09-Mar-2014 17:45	7326.5 FT	5444.0 FT
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Output DLIS Files

DEFAULT	USI_059PUP	FN:58	PRODUCER	10-Mar-2014 20:19
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Company: NOBLE ENERGY INCWell: PEAKS K26-77-1HN

Input DLIS Files

DEFAULTUSI_016PUPFN:15PRODUCER09-Mar-2014 17:457326.5 FT5444.0 FT

Output DLIS Files

DEFAULTUSI_059PUPFN:58PRODUCER10-Mar-2014 20:196600.0 FT5478.0 FT

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-DEDTC-B19C2-27019C2-270

Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
7500.00	194.00	1.77
7000.00	194.00	1.77
6500.00	194.00	1.76
6000.00	193.00	1.74
5500.00	193.00	1.75
5000.00	193.00	1.73
4500.00	193.00	1.73
4000.00	193.00	1.73
3500.00	193.50	1.73
3000.00	193.80	1.72
2500.00	195.00	1.72
2000.00	197.00	1.73
1500.00	199.00	1.69
1000.00	200.50	1.69
500.00	205.45	1.69

Image rotation (UCAZ) (DEG)

0360

RSAV (RSAP) (RPS)

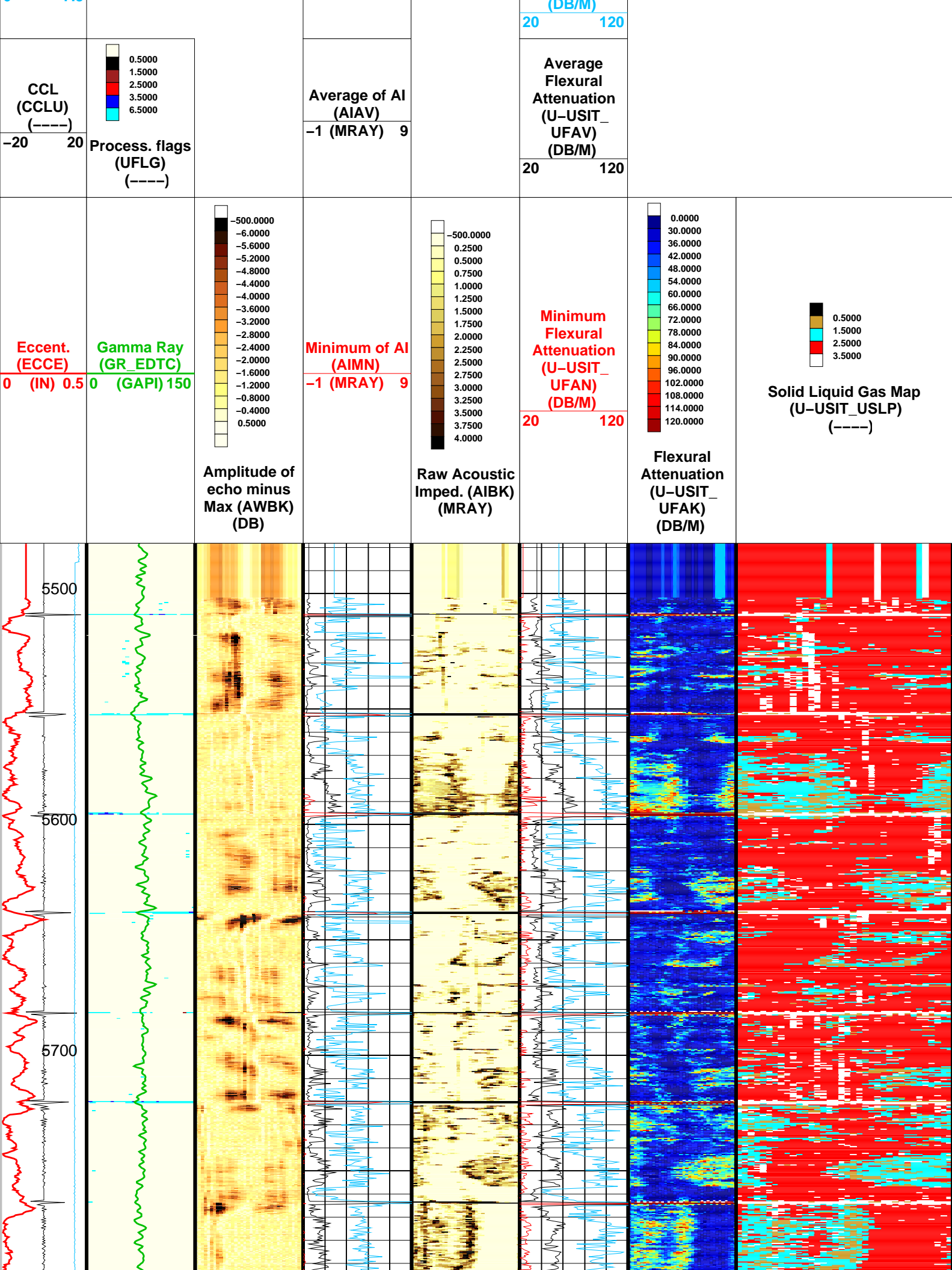
67.5

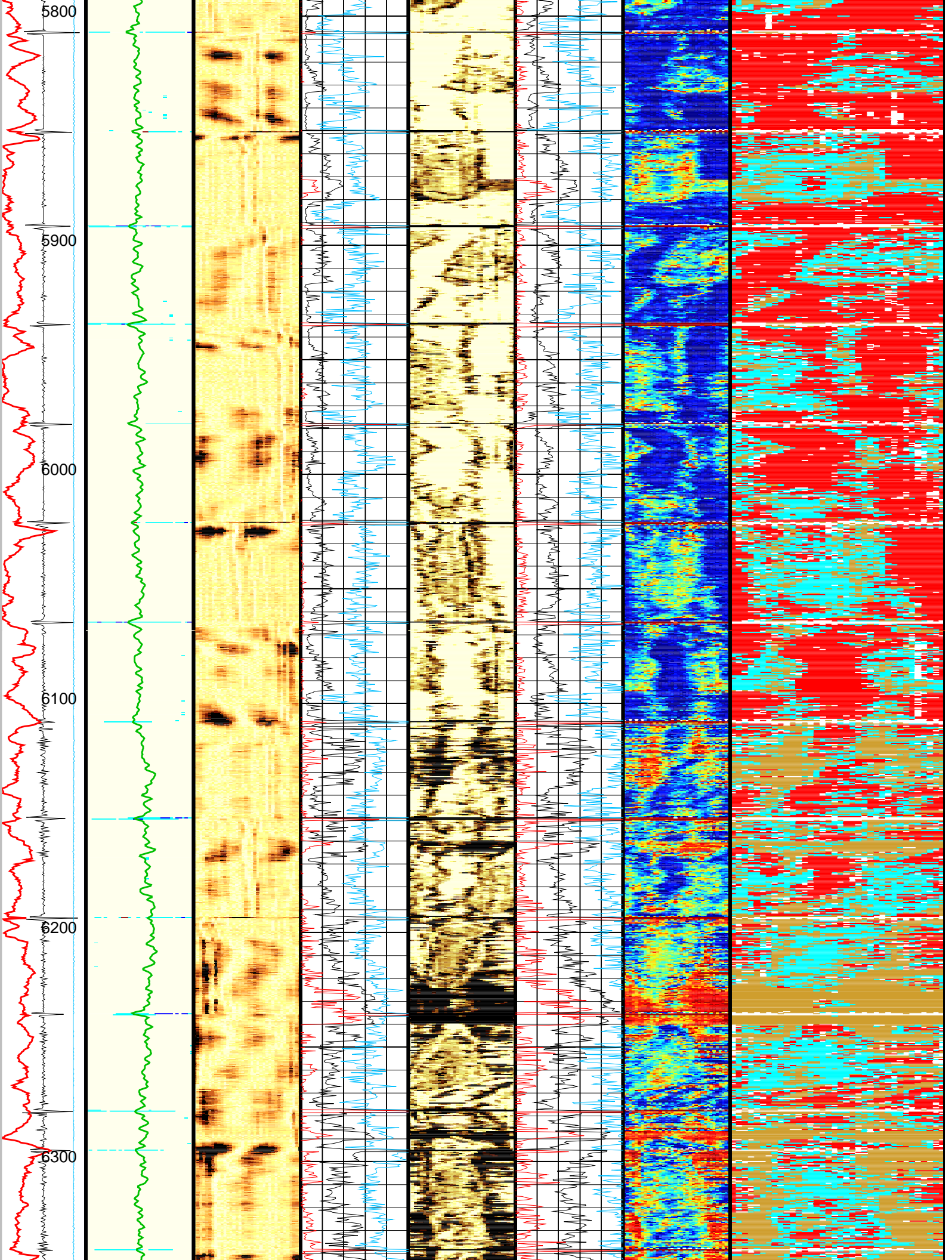
Maximum of AI (AIMX)

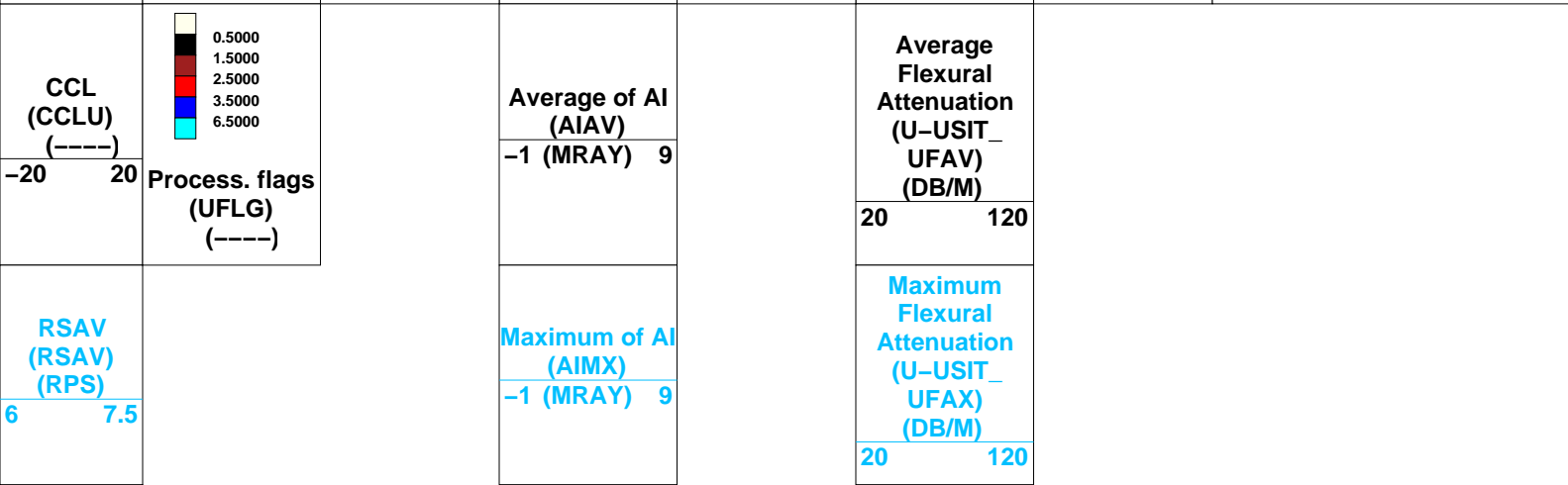
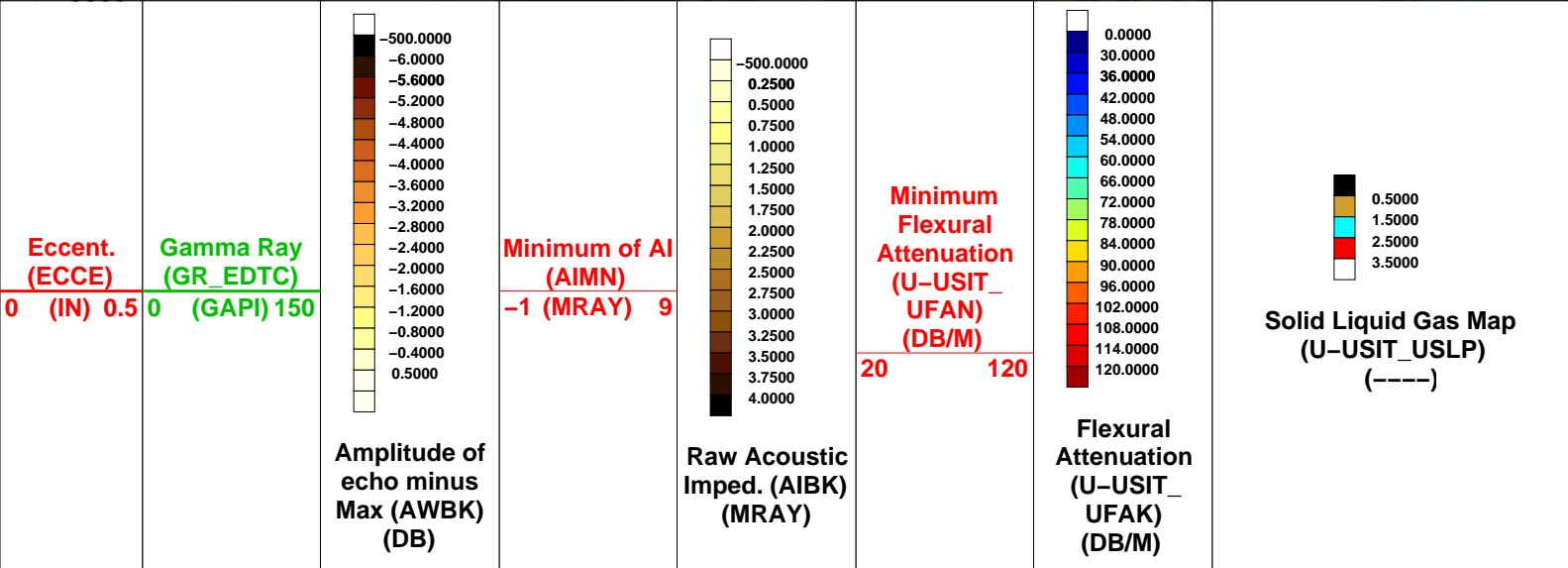
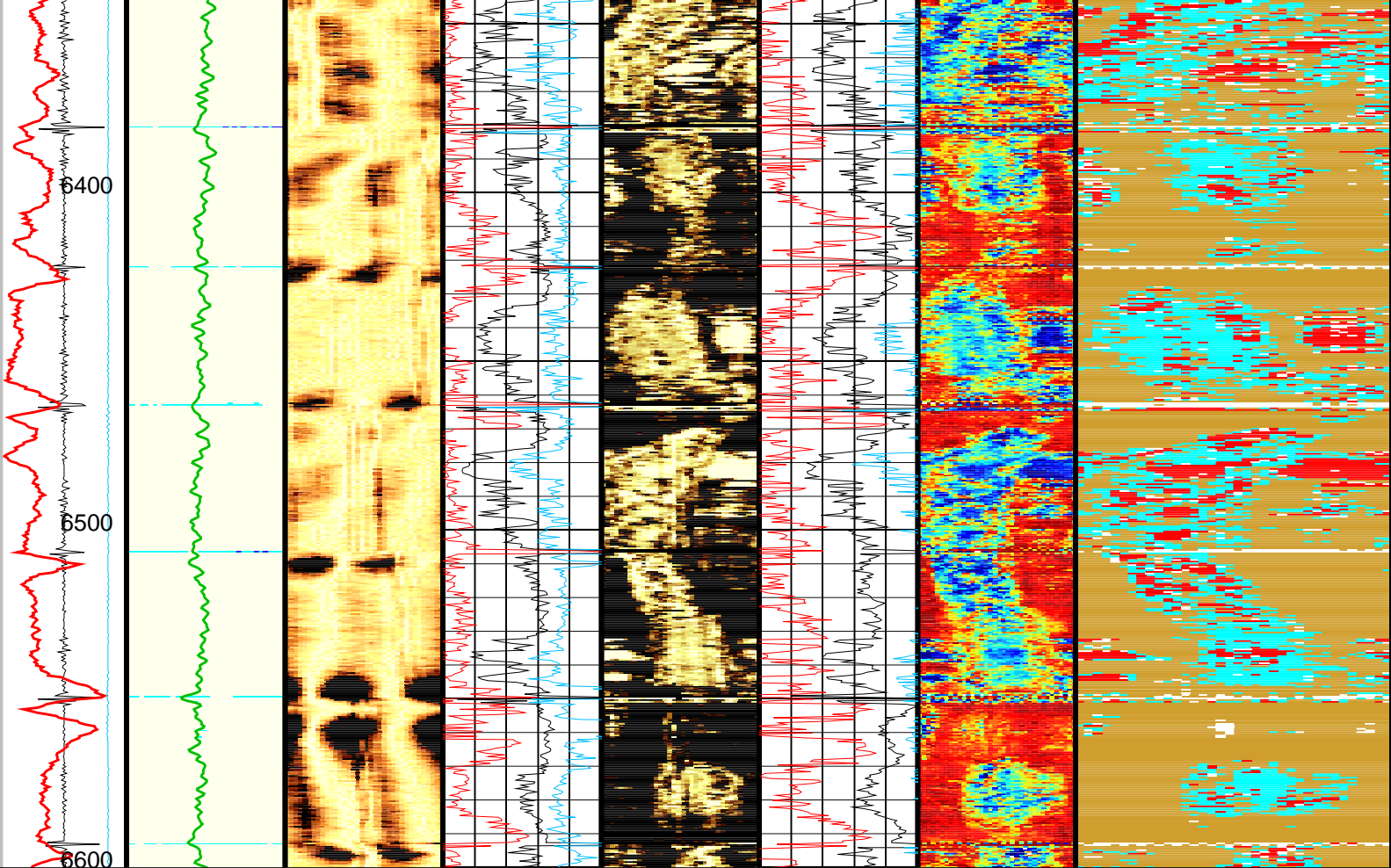
-1 (MRAY)9

Maximum Flexural Attenuation (U-USIT_UFAX) (RPS)

67.5







OP System Version: 19C2-270
eWAFE Version: 1.189

USIT-D 19C2-270 EDTC-B 19C2-270

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging – D			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	85	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CEMT	USIT Cement Type	LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	2.24	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	–10	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	–10	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	–1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	26.00	LB/F

Input DLIS Files

DEFAULT	USI_016PUP	FN:15	PRODUCER	09-Mar-2014 17:45	7326.5 FT	5444.0 FT
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Output DLIS Files

DEFAULT	USI_059PUP	FN:58	PRODUCER	10-Mar-2014 20:19
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USI IBC VDL WIDE ZERO PSI

MAXIS Field Log

Company: NOBLE ENERGY INC

Well: PEAKS K26-77-1HN

Input DLIS Files

DEFAULT	USI_016PUP	FN:15	PRODUCER	09-Mar-2014 17:45	7326.5 FT	5444.0 FT
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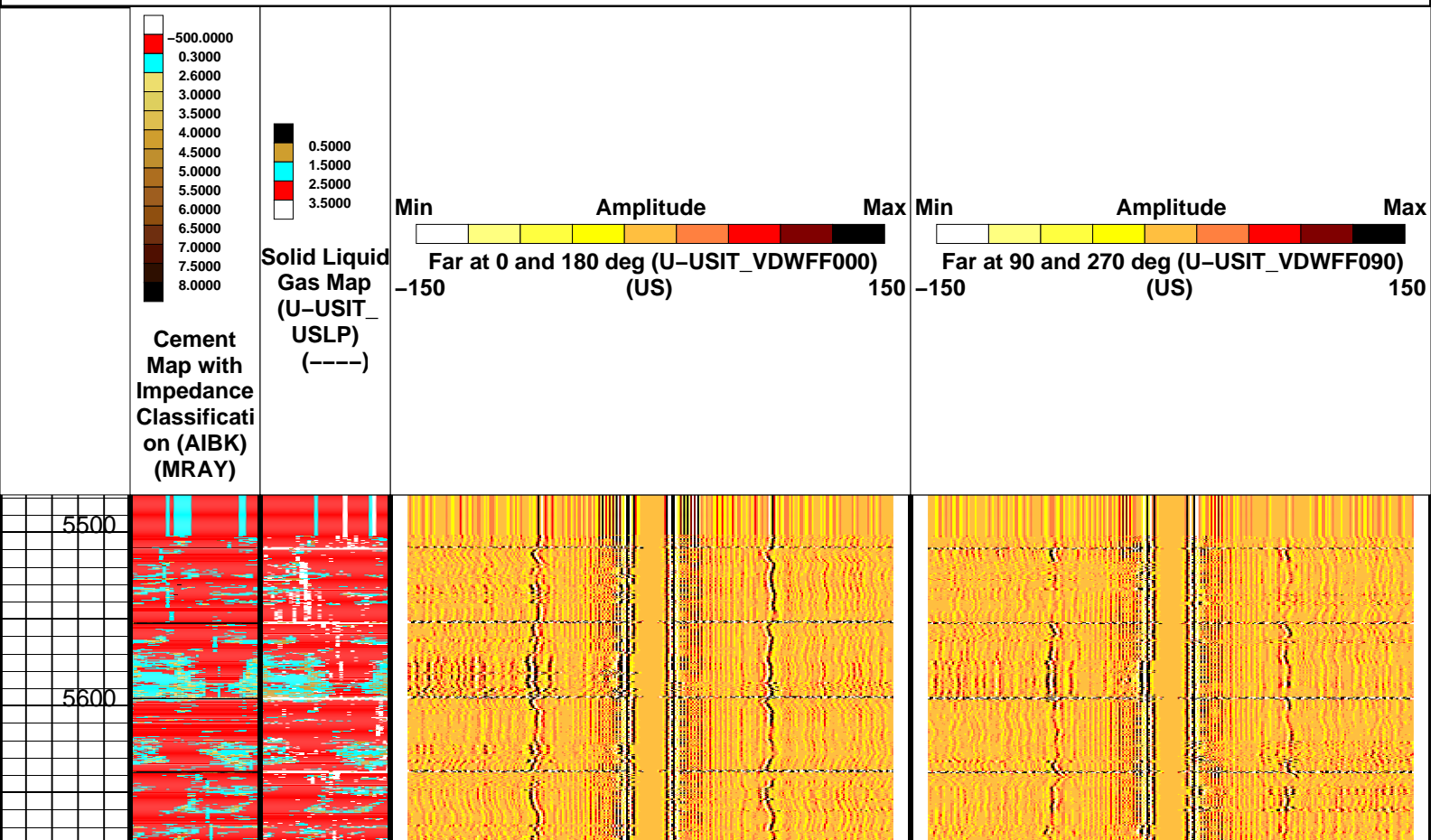
Output DLIS Files

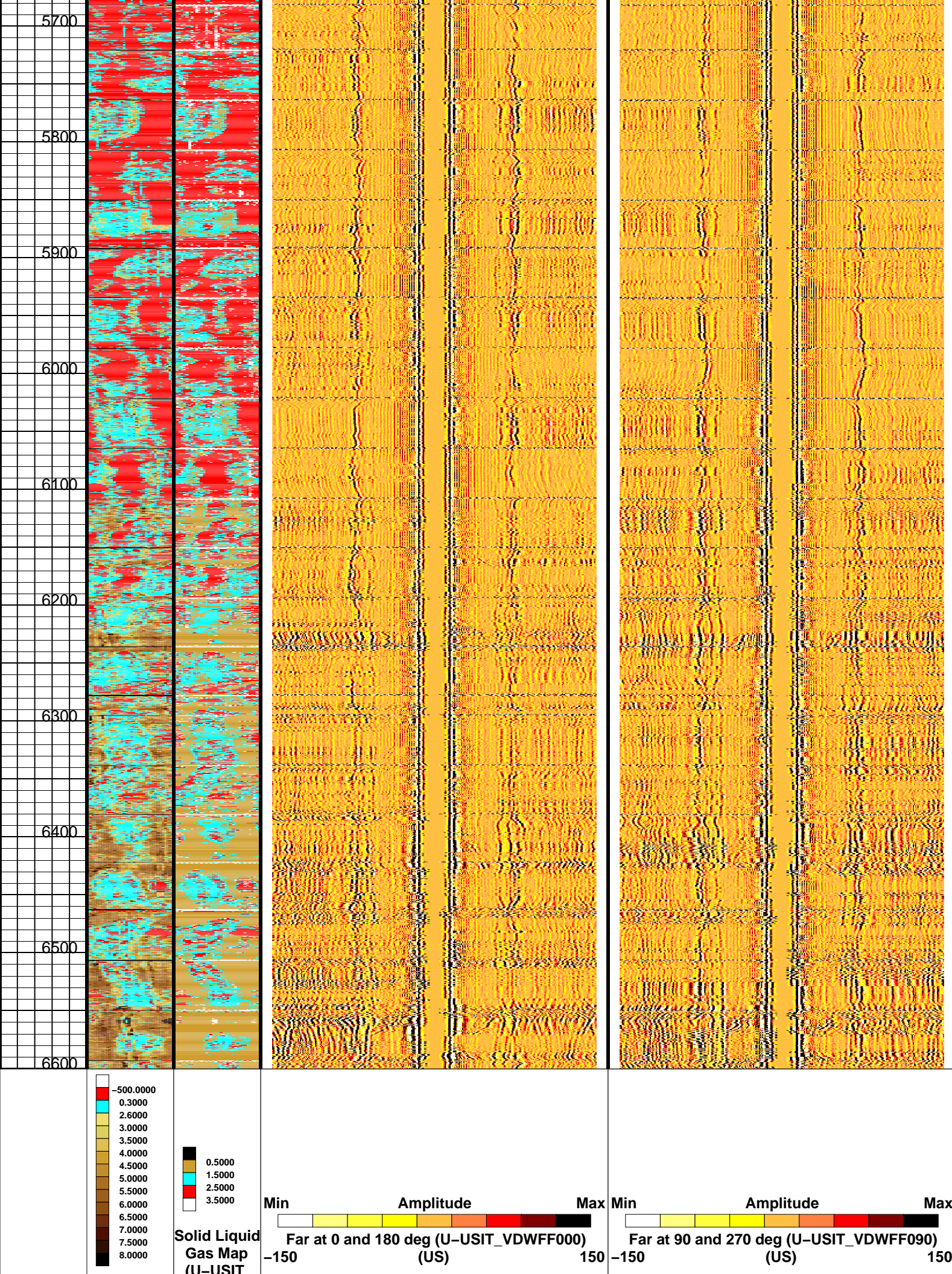
DEFAULT	USI_059PUP	FN:58	PRODUCER	10-Mar-2014 20:19	6600.0 FT	5478.0 FT
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OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-D	19C2-270	EDTC-B	19C2-270
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	Cement Map with Impedance Classificati on (AIBK) (MRAY)	(USLP) (----)		
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Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	85	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CENT	USIT Cement Type	LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	2.24	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	-10	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	34.0	FT
PP	Playback Processing	RECOMPUTE	

Format: 1 inch IBC VDL WIDE Vertical Scale: 1" per 100' Graphics File Created: 10-Mar-2014 20:19

OP System Version: 19C2-270

eWAFE Version: 1.189

USIT-D 19C2-270 EDTC-B 19C2-270

Input DLIS Files

DEFAULT USI_016PUP FN:15 PRODUCER 09-Mar-2014 17:45 7326.5 FT 5444.0 FT

Output DLIS Files

DEFAULT	USI_059PUP	FN:58	PRODUCER	10-Mar-2014 20:19
<div><div>Company: NOBLE ENERGY INC</div><div>Well: PEAKS K26-77-1HN</div><div>Field: HAMBERT</div><div>County: WELD</div><div>State: COLORADO</div></div> <div>Schlumberger</div> <div>ULTRASONIC IMAGER TOOL GAMMA RAY</div>				