Schlumberger

Company: Occidental Petroleum Corporation

Well: Northglenn State 4-36

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log

Location:	2436' FNL & 2488' FEL		Elev.:	K.B.	5164.00 ft
				G.L.	5147.00 ft
				D.F.	5163.00 ft
	Permanent Datum:	Ground Level	Elev.:		5147.00 f
	Log Measured From:	Kelly Bushing	17.00 ft		above Perm.Datum
	Drilling Measured From:	Kelly Bushing			

API Serial No.	Section:	Township:	Range:
05-123-30964	36	1N	68W

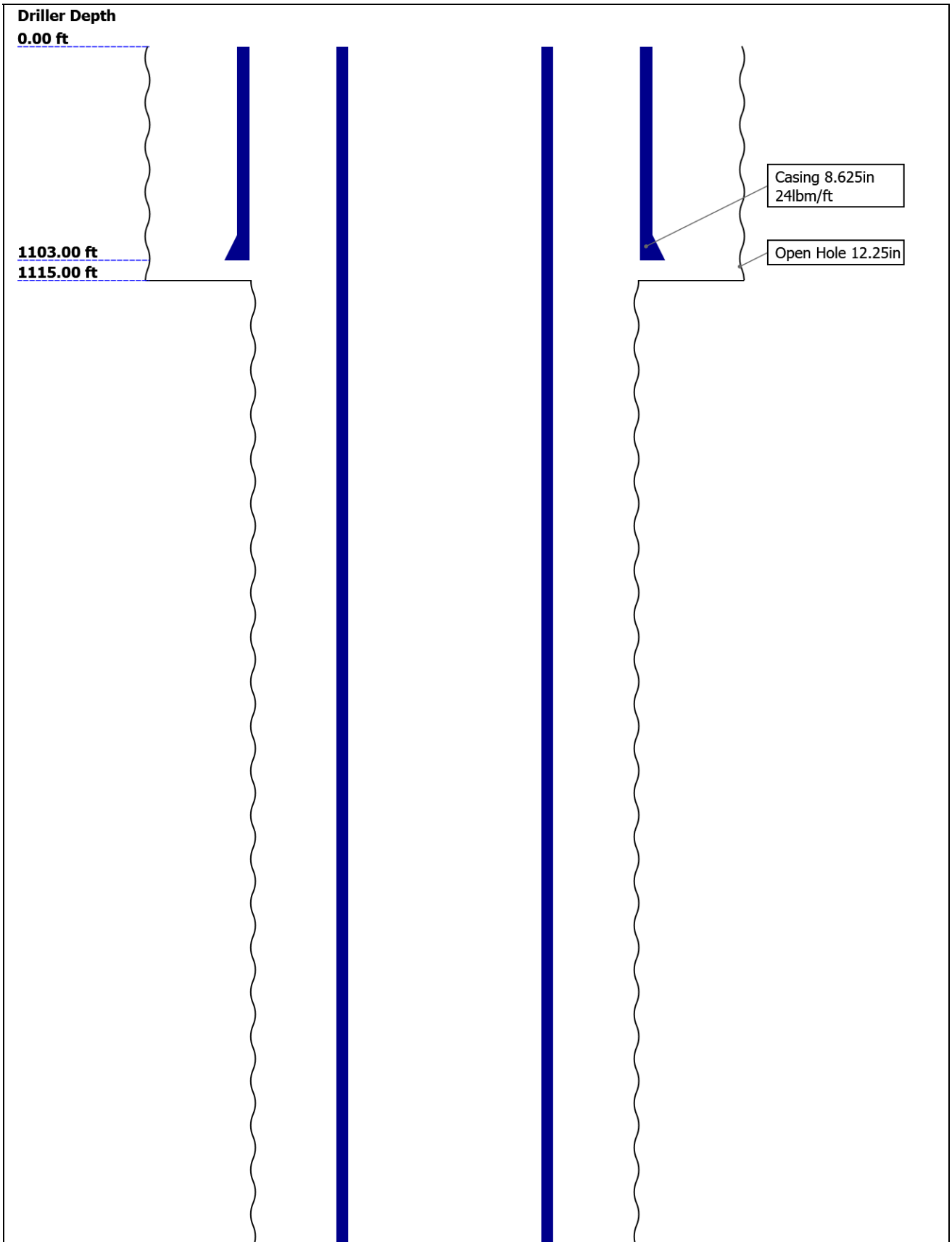
County: Weld
Field: Wattenberg
Location: 2436' FNL & 2488' FEL
Well: Northglenn State 4-36
Company: Occidental Petroleum Corporation

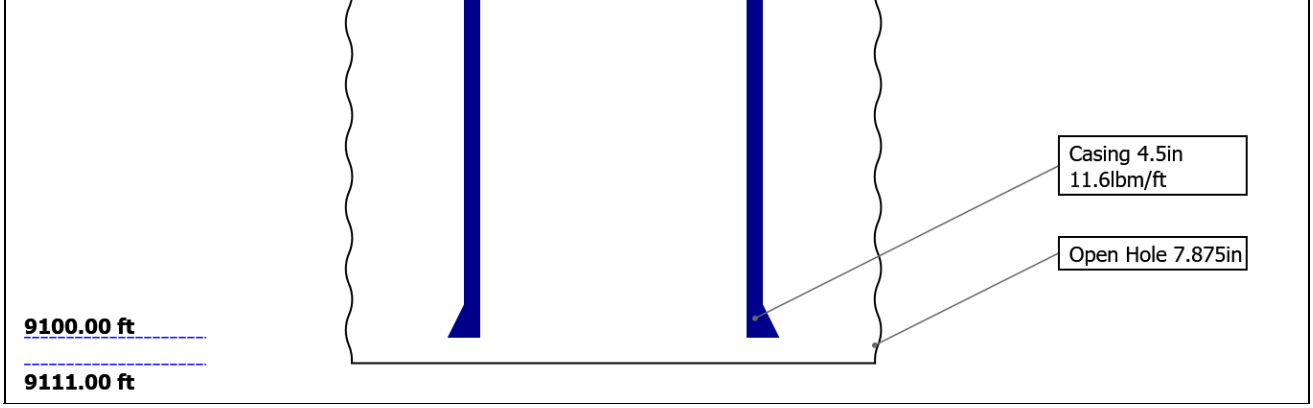
Logging Date	16-Mar-2023		
Run Number	One		
Depth Driller	9111.00 ft		
Schlumberger Depth	TD Not Tag		
Bottom Log Interval	7692.00 ft		
Top Log Interval	67.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	7.88 in		
From	1115.00 ft		
To	9111.00 ft		
Casing/Tubing Size	4.5 in		
Weight	11.6 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	9100.00 ft		
Max Recorded Temperatures	195 degF		
Logger on Bottom Time	16-Mar-2023	14:12:00	
Unit Number Location:	9102	Ft. Morgan	
Recorded By	M.Oloyede/C.Jordan		
Witnessed By	Brandon Quera		

Disclaimer

Contents

Well Sketch



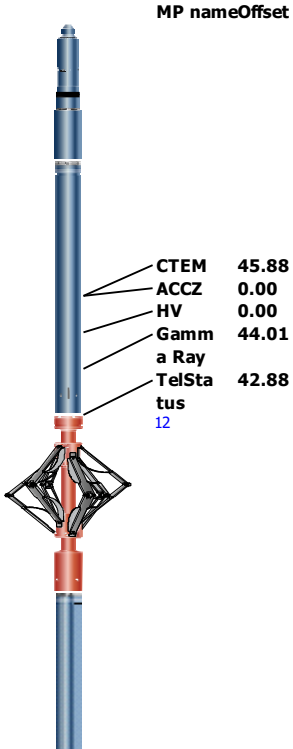


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	7.875				
Top Driller (ft)	0	1115				
Top Logger (ft)	0	1115				
Bottom Driller (ft)	1115	9111				
Bottom Logger (ft)	1115	9111				
Casing						
Size (in)	8.625	4.5				
Weight (lbm/ft)	24	11.6				
Inner Diameter (in)	8.097	4				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1103	9100				
Bottom Logger (ft)	1103	9100				

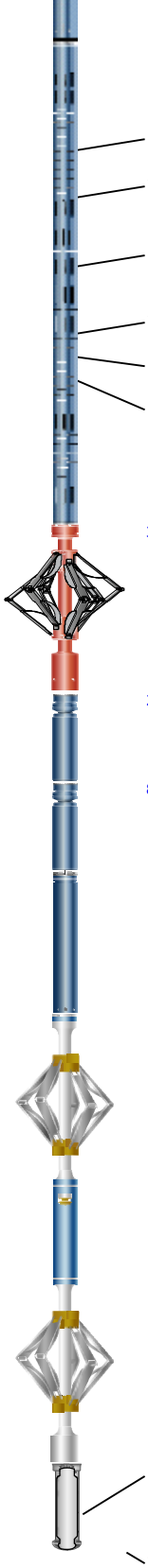
Remarks and Equipment Summary

One: Toolstring



One: Remarks

Tool was run as per tool sketch
All logging intervals as per client request
Main pass logged from TDL(top of drilled out cement) to surface at 10 deg 6" resolution
Repeat pass logged from 500'-300' at 10 deg 1.5" resolution
500 PSI , surface induced pressure applied to the main pass
Logs correlated to CBL-VDL-GR dated OCT-6 -2010
Thank you for choosing SLB!!!



Lengths are in ft
Maximum Outer Diameter = 3.800 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[4]:Up	7697.24	75.77

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

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

Mud Impedance = "FreePipe Norm.".
Free Pipe normalization zone is : 2003.01m(6571.57ft) to 2009.74m(6593.65ft)
MUD_N_FRP = 1.05

DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.57 MRayl

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

One

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.221762
	Wireline_NPD-ThruBit-2022.1_12.1.221178
	Wireline_NPD-HCS-2022.1_12.1.221849

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	75.77 ft	7697.24 ft	16-Mar-2023 2:13:27 PM	16-Mar-2023 4:12:27 PM	ON	-4.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Petroleum Corporation Well:Northglenn State 4-36

One: Log[4]:Up:S010

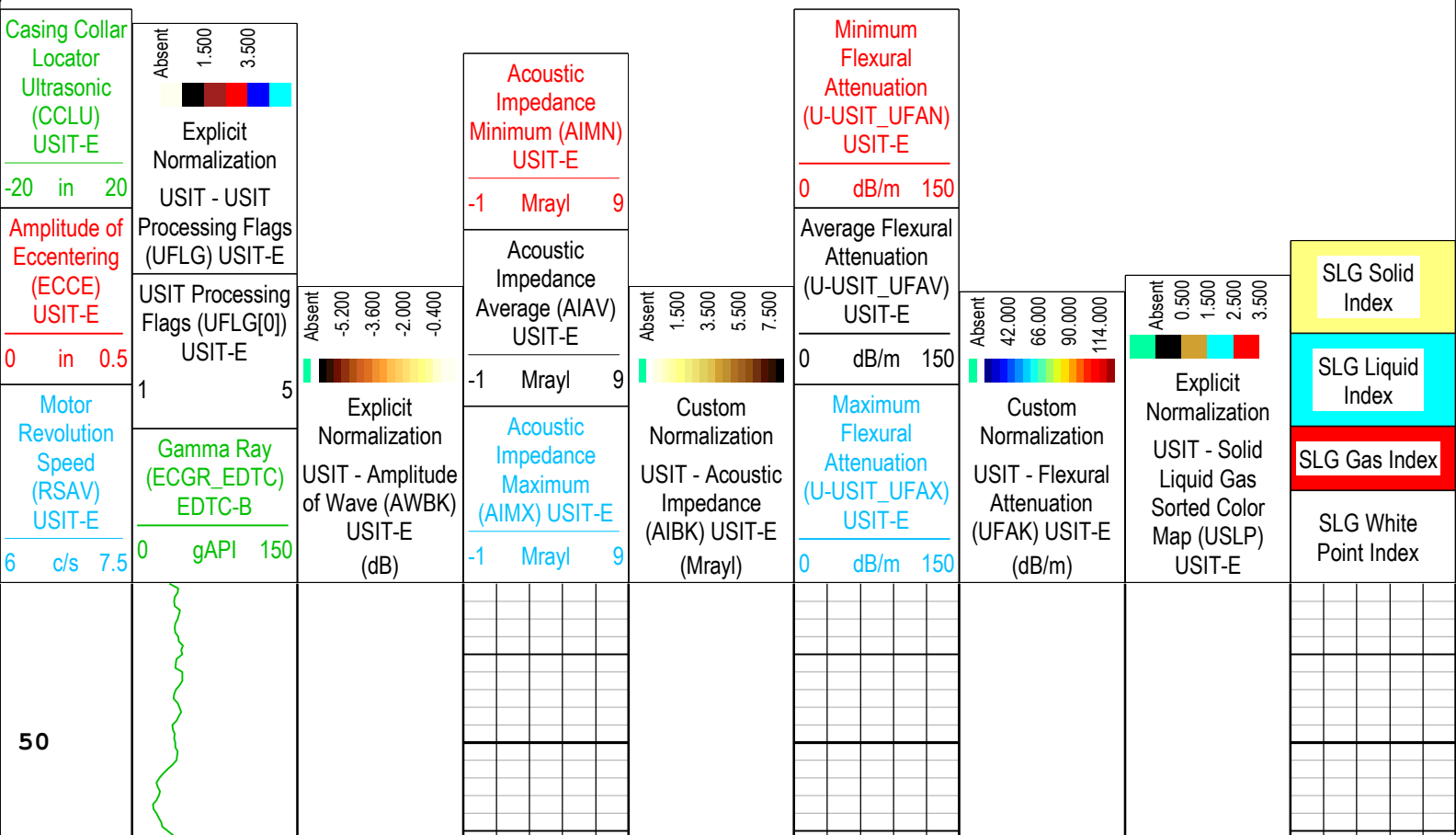
Description: USI IBC SLG Format: Log (Import of IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:48:34

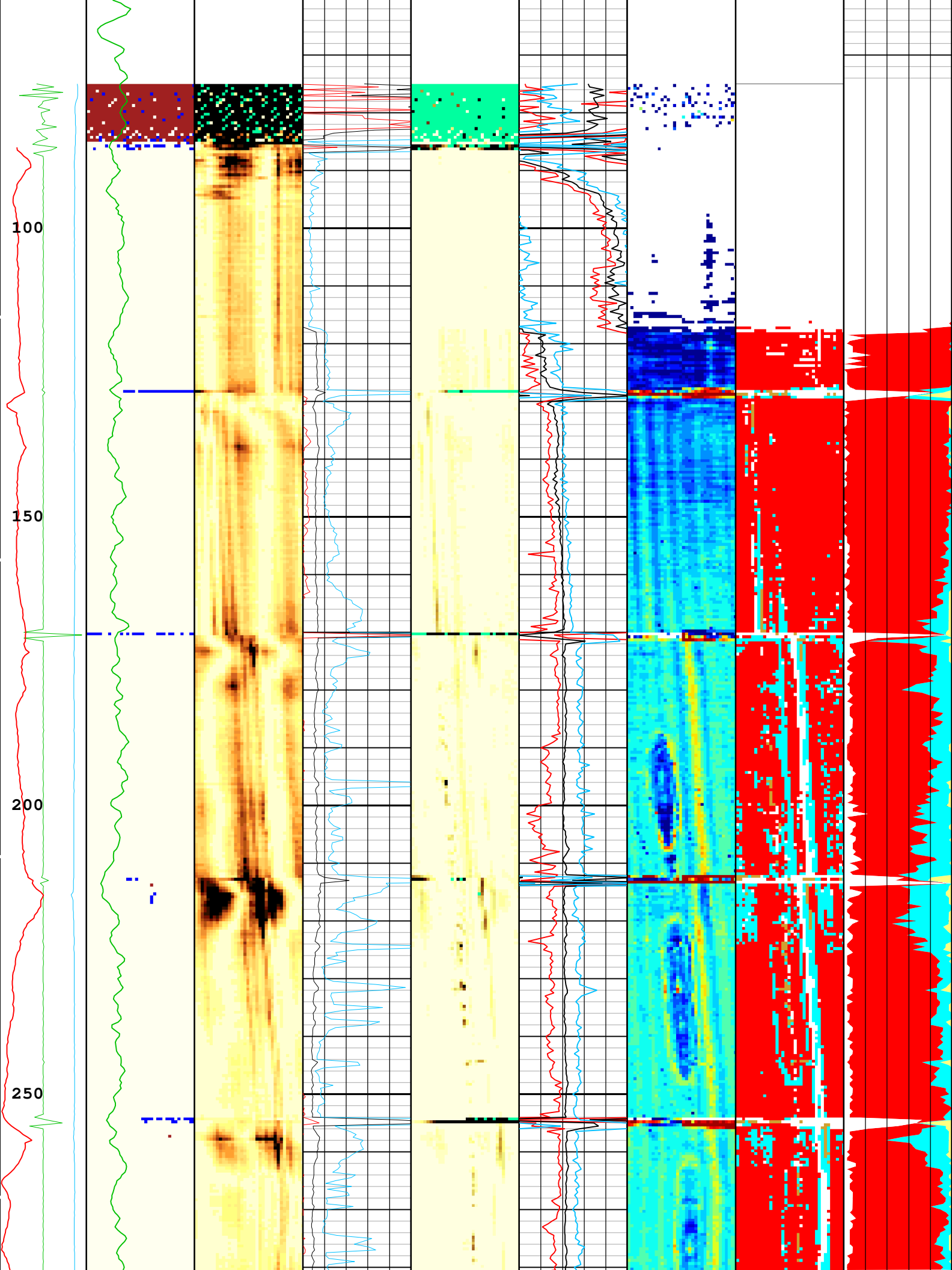
USIT Processing Flags (UFLG[0]) USIT-E

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)

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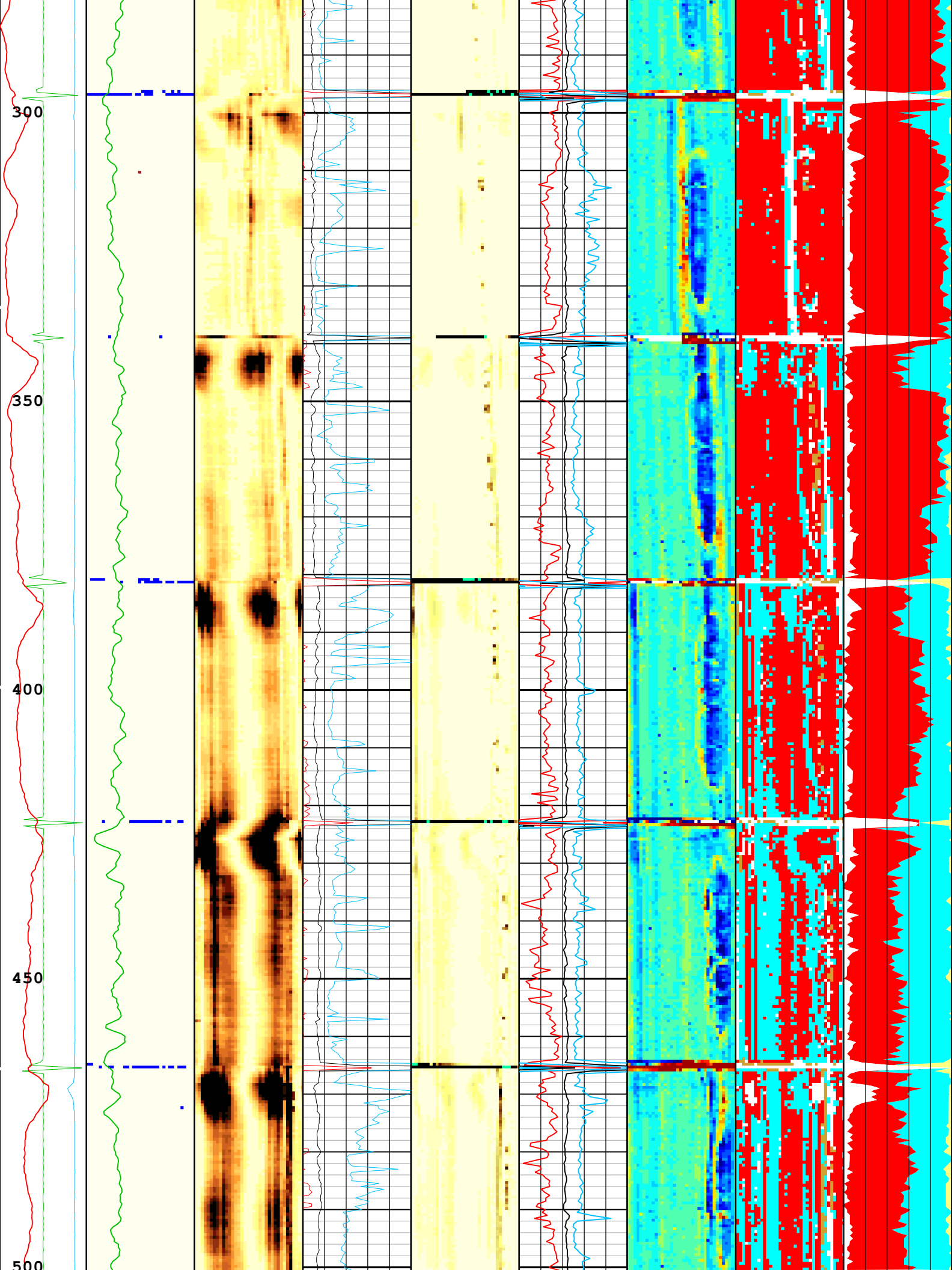
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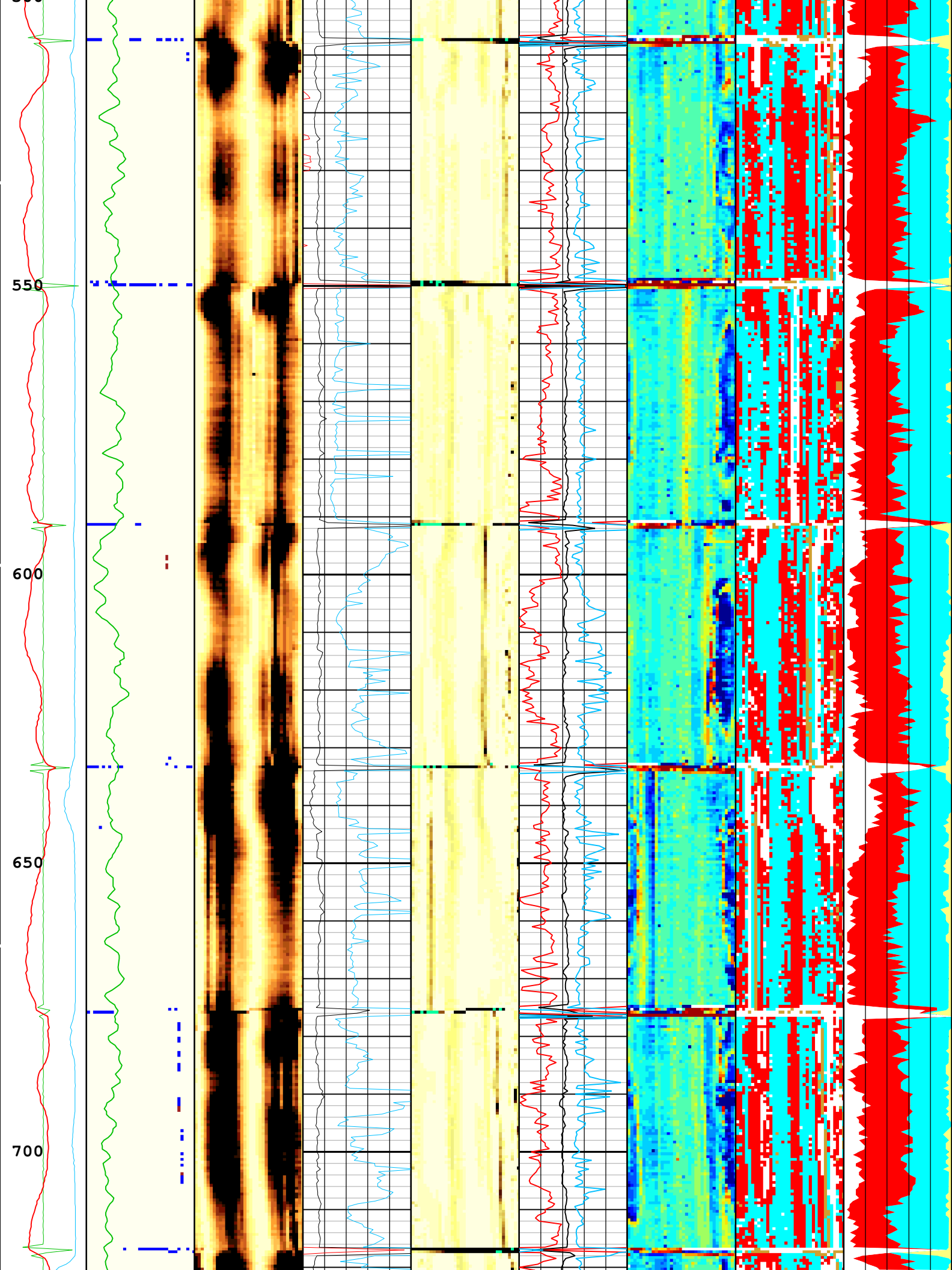
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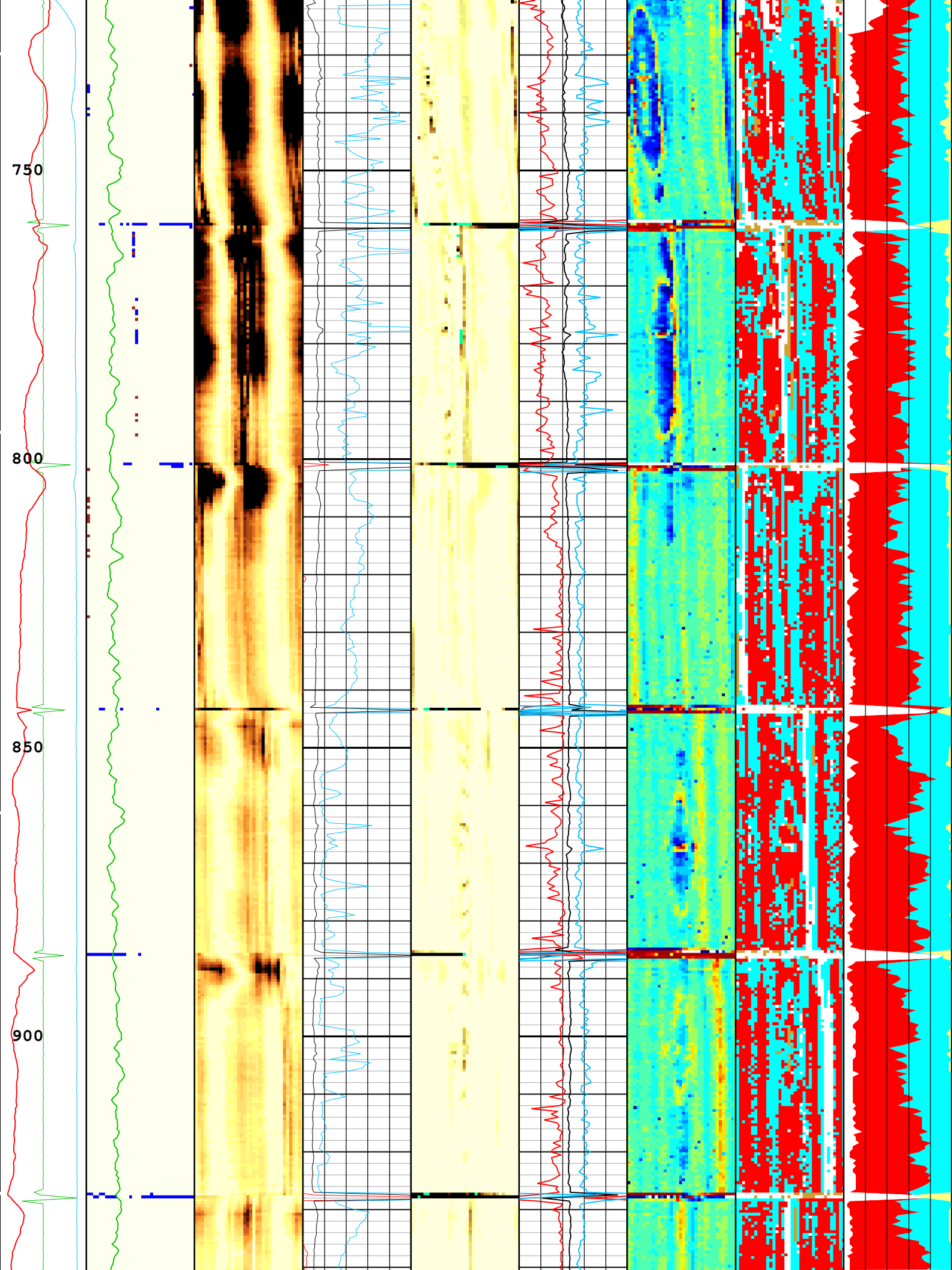
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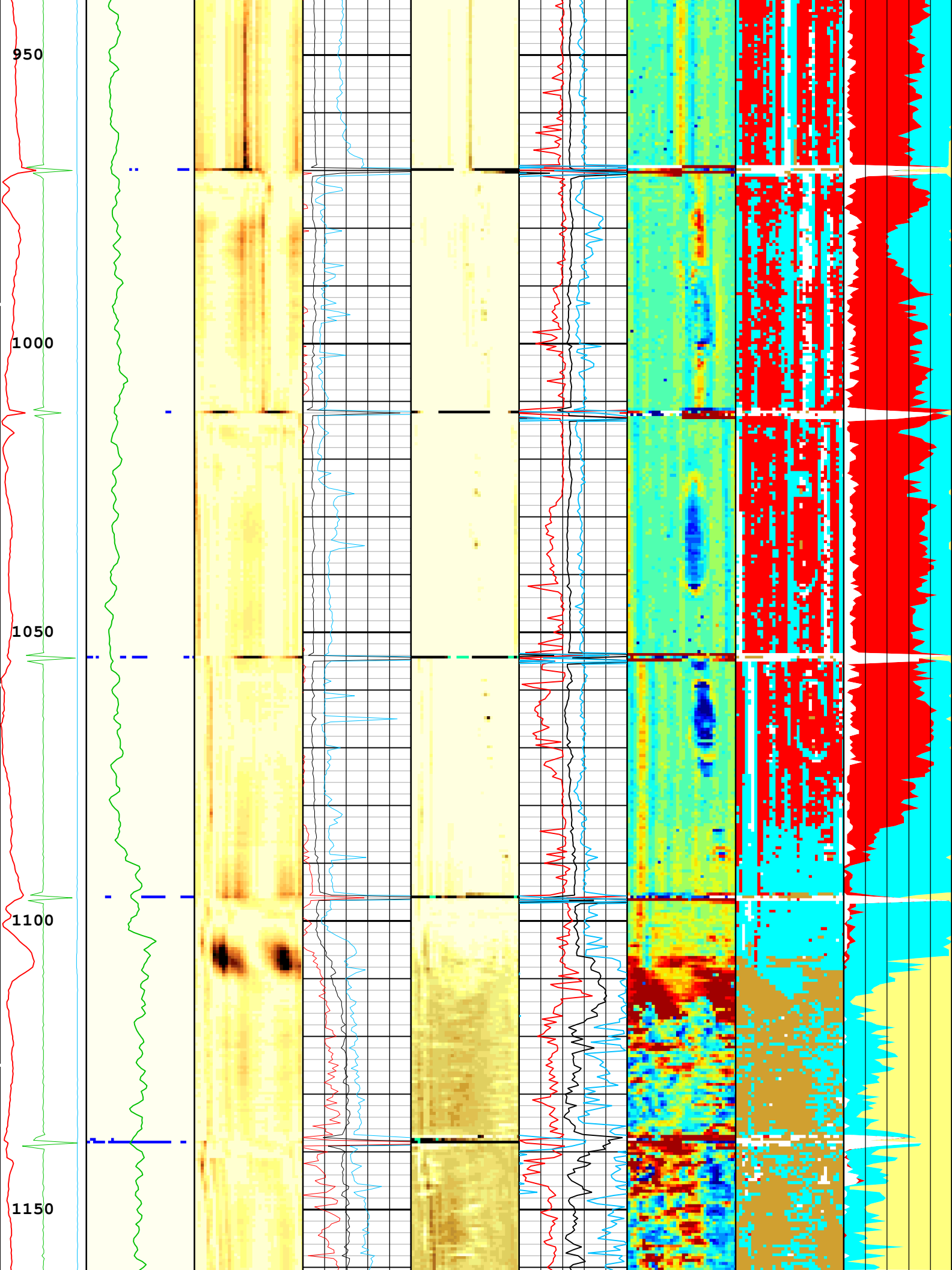
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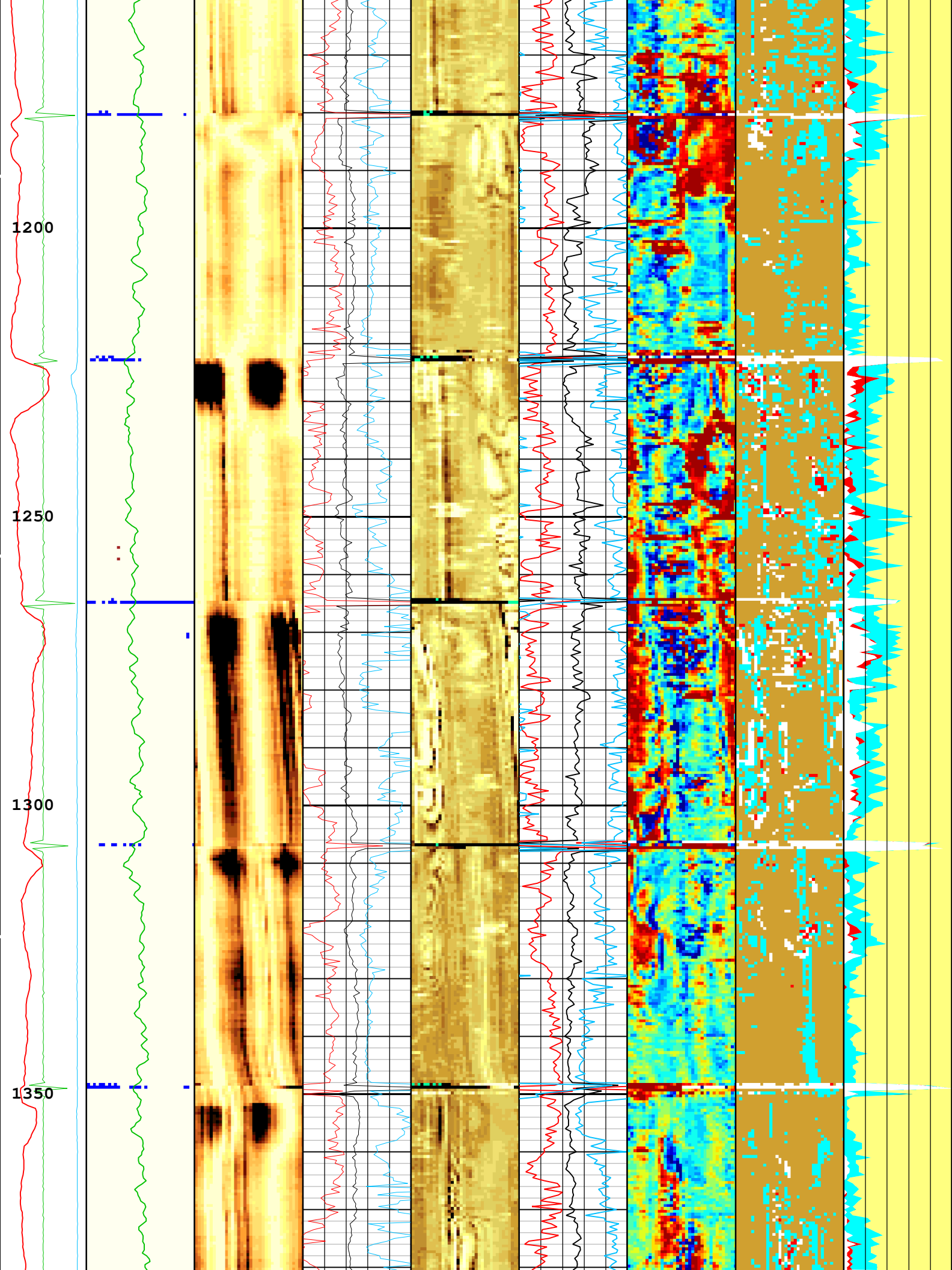
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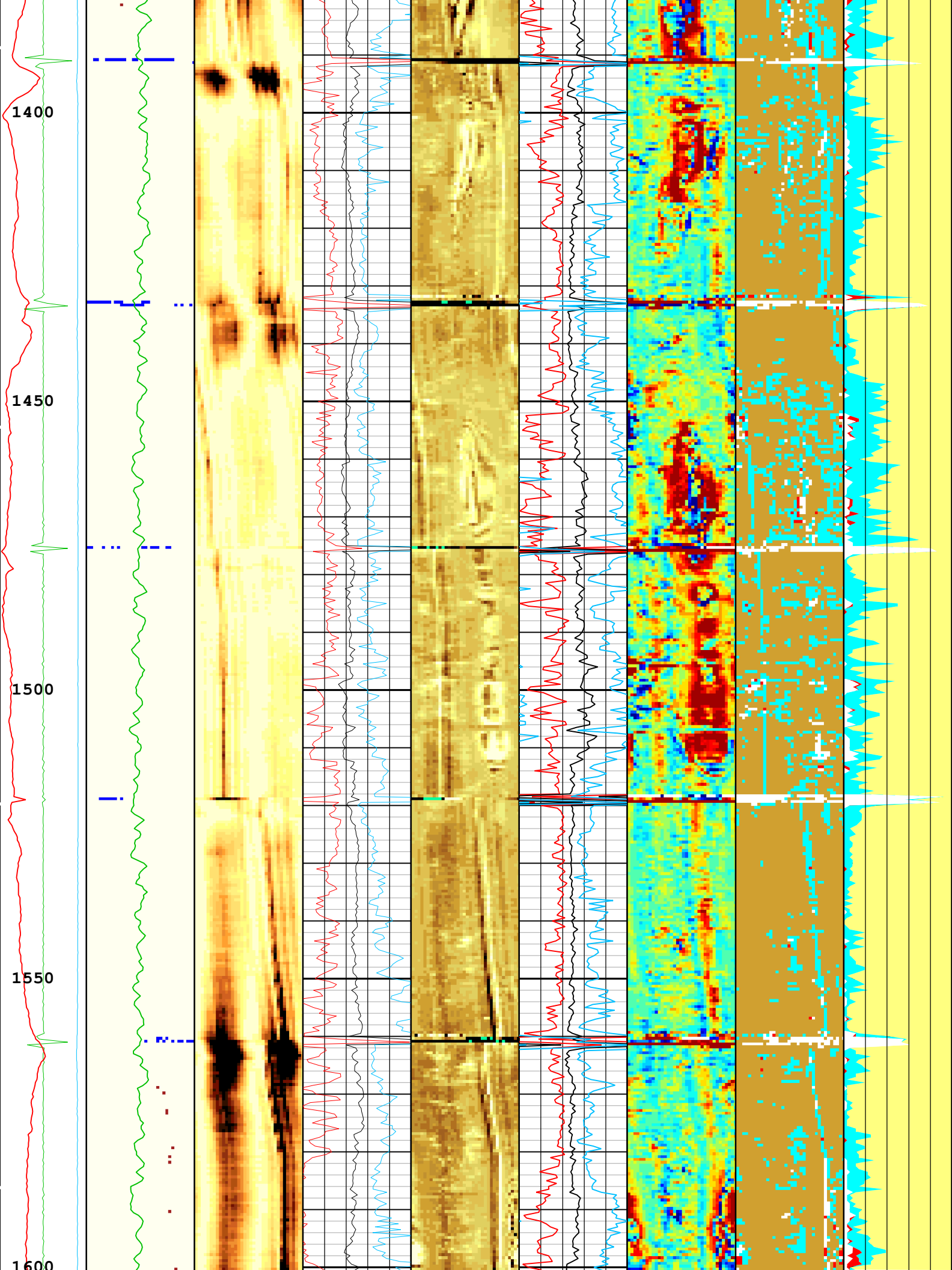
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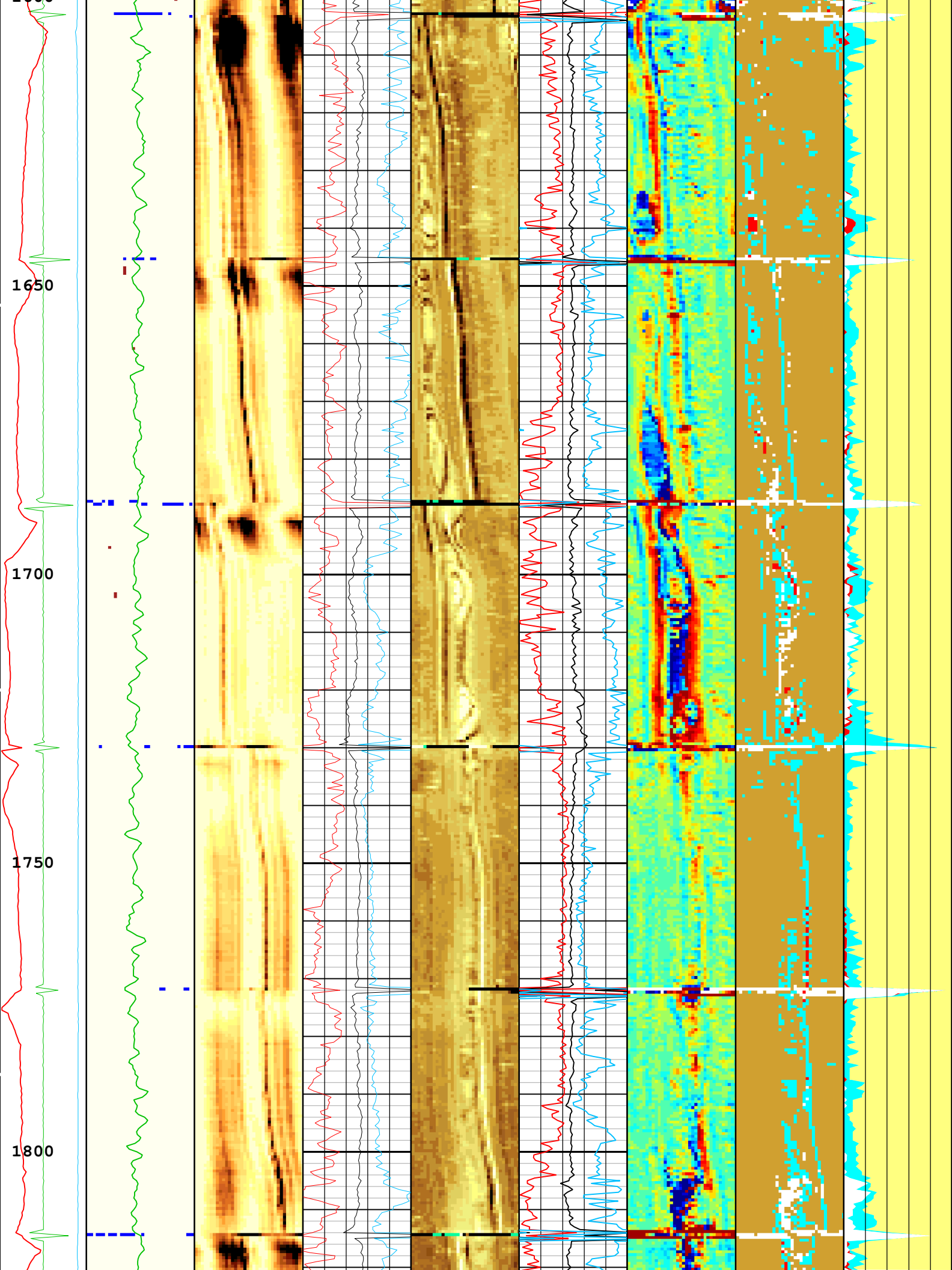
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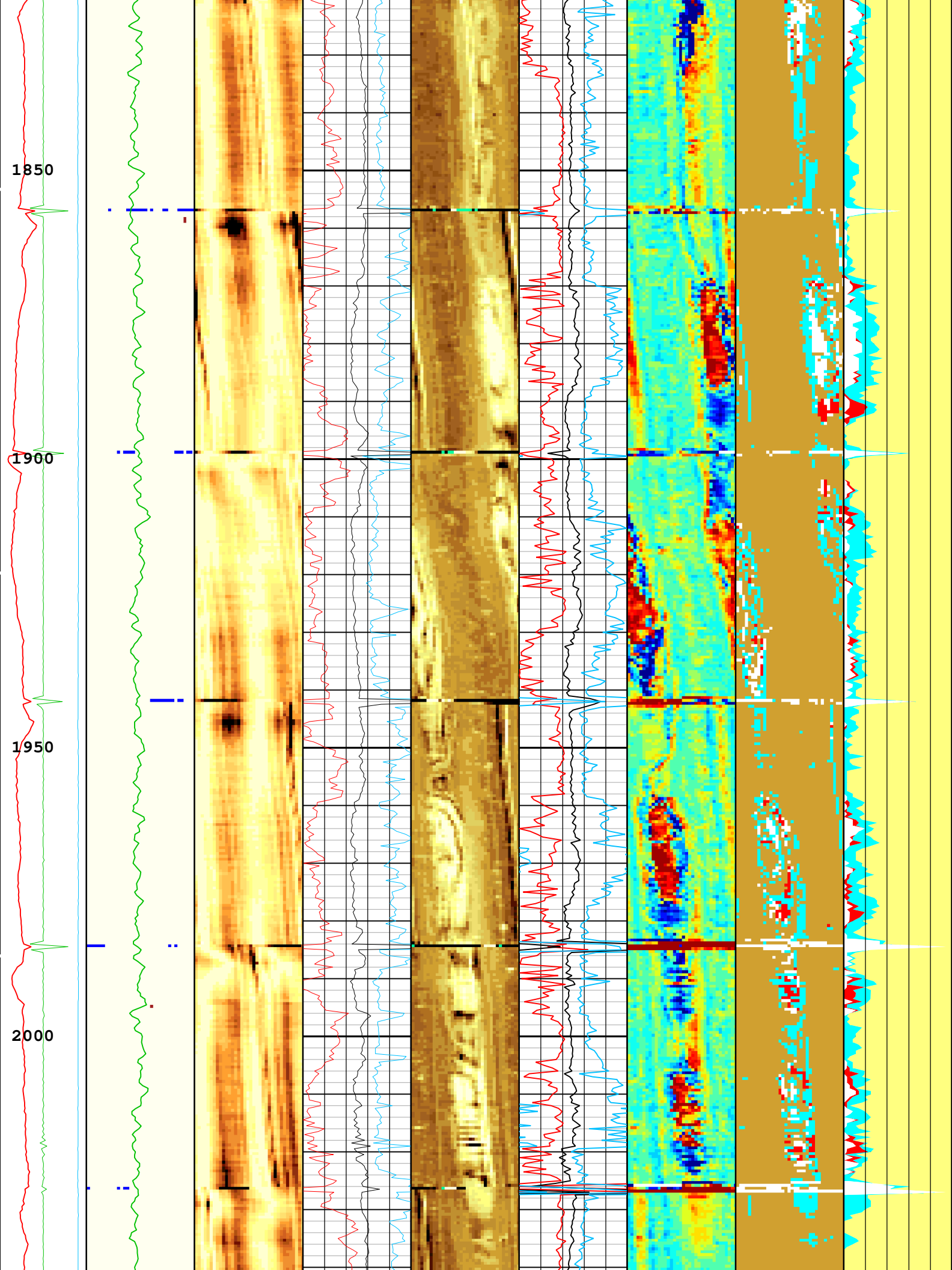
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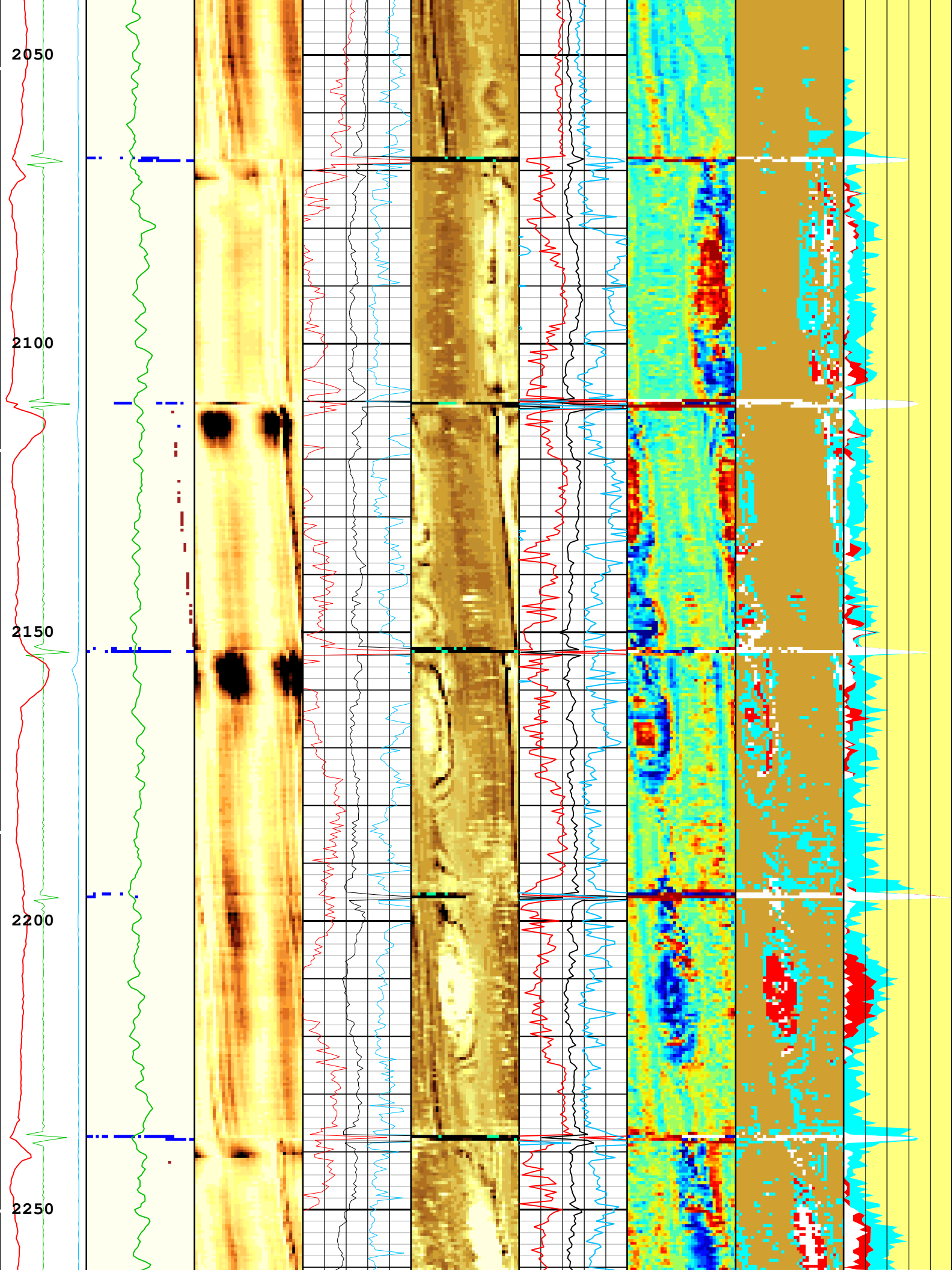
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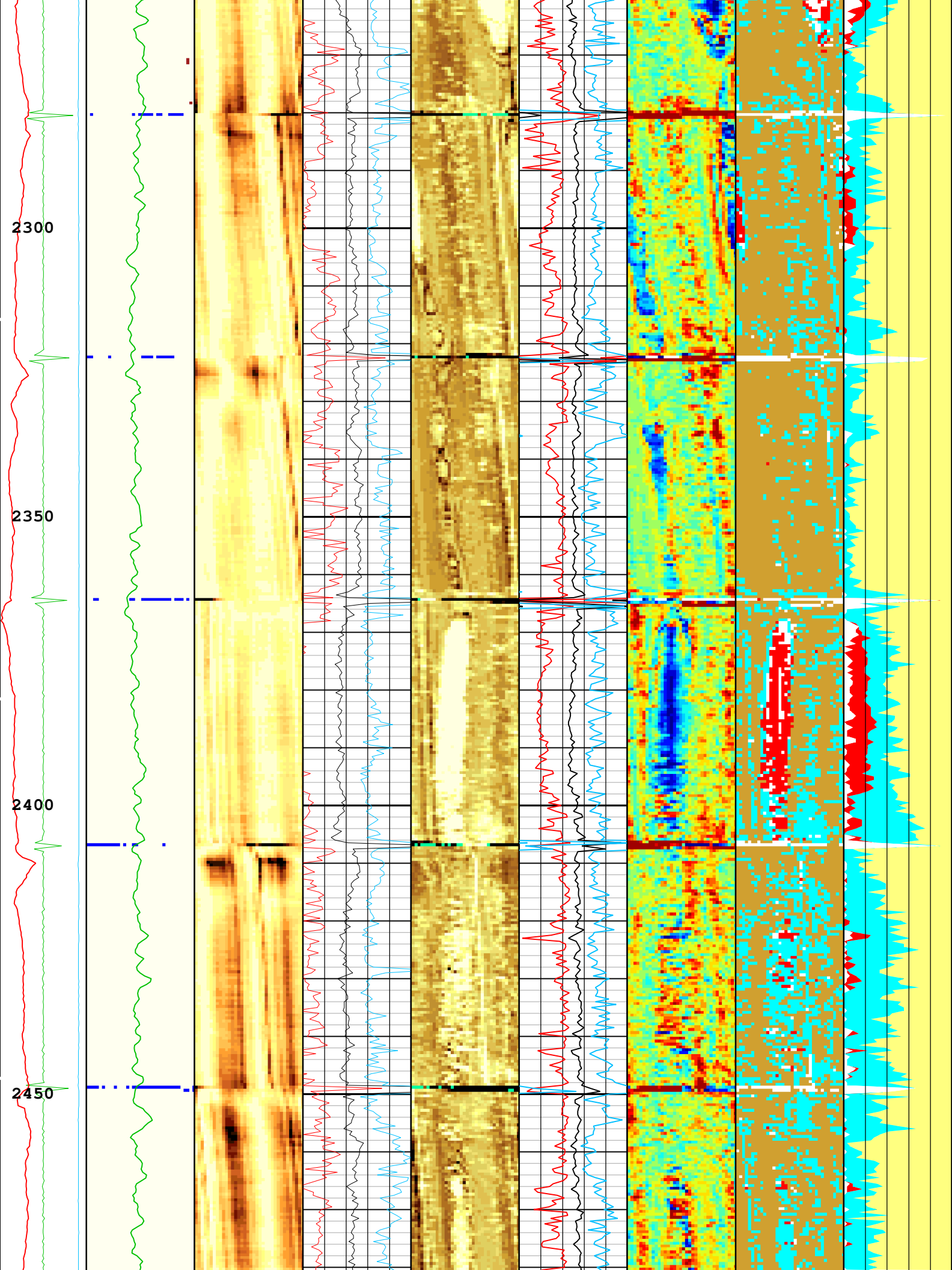
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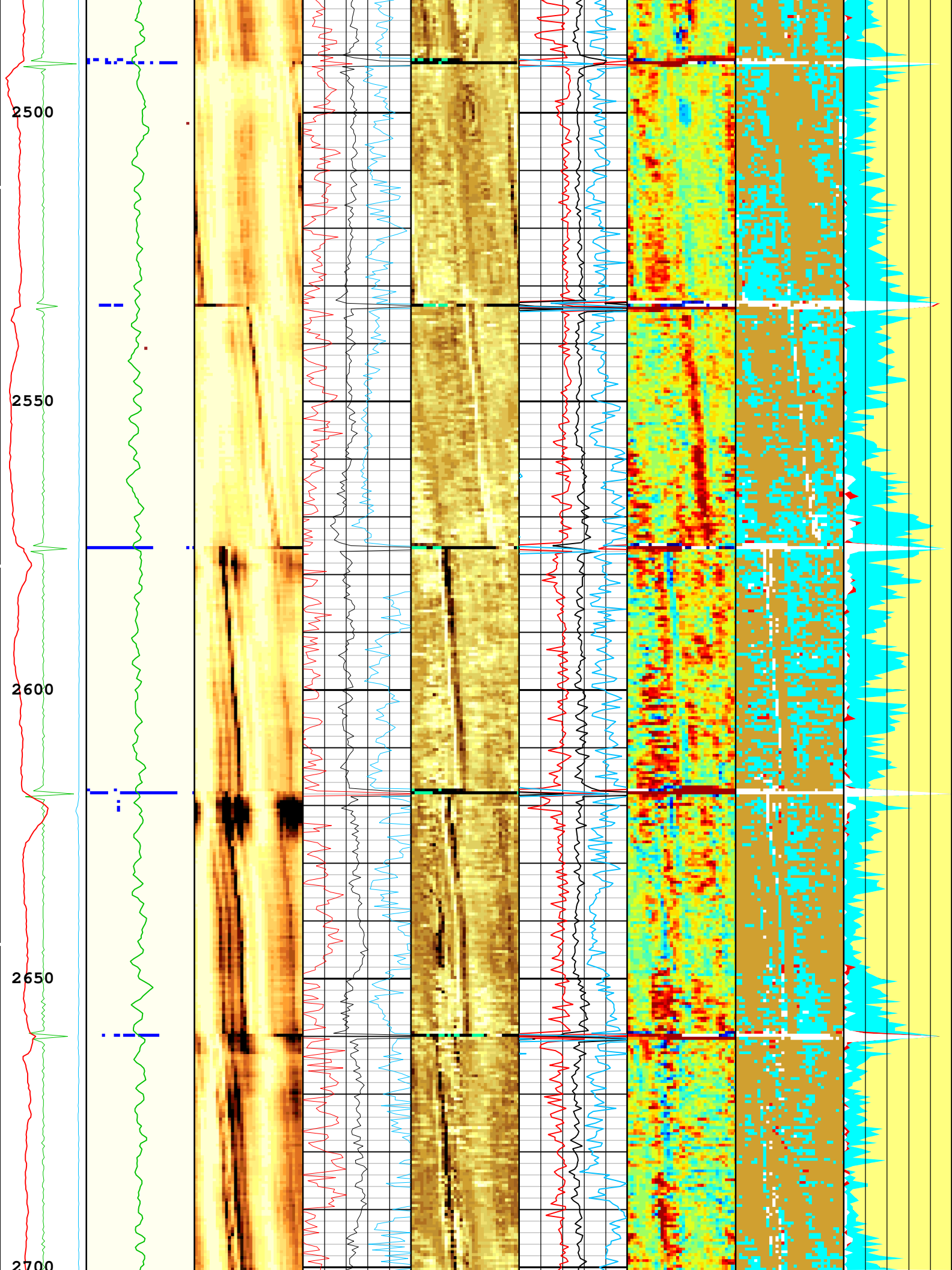
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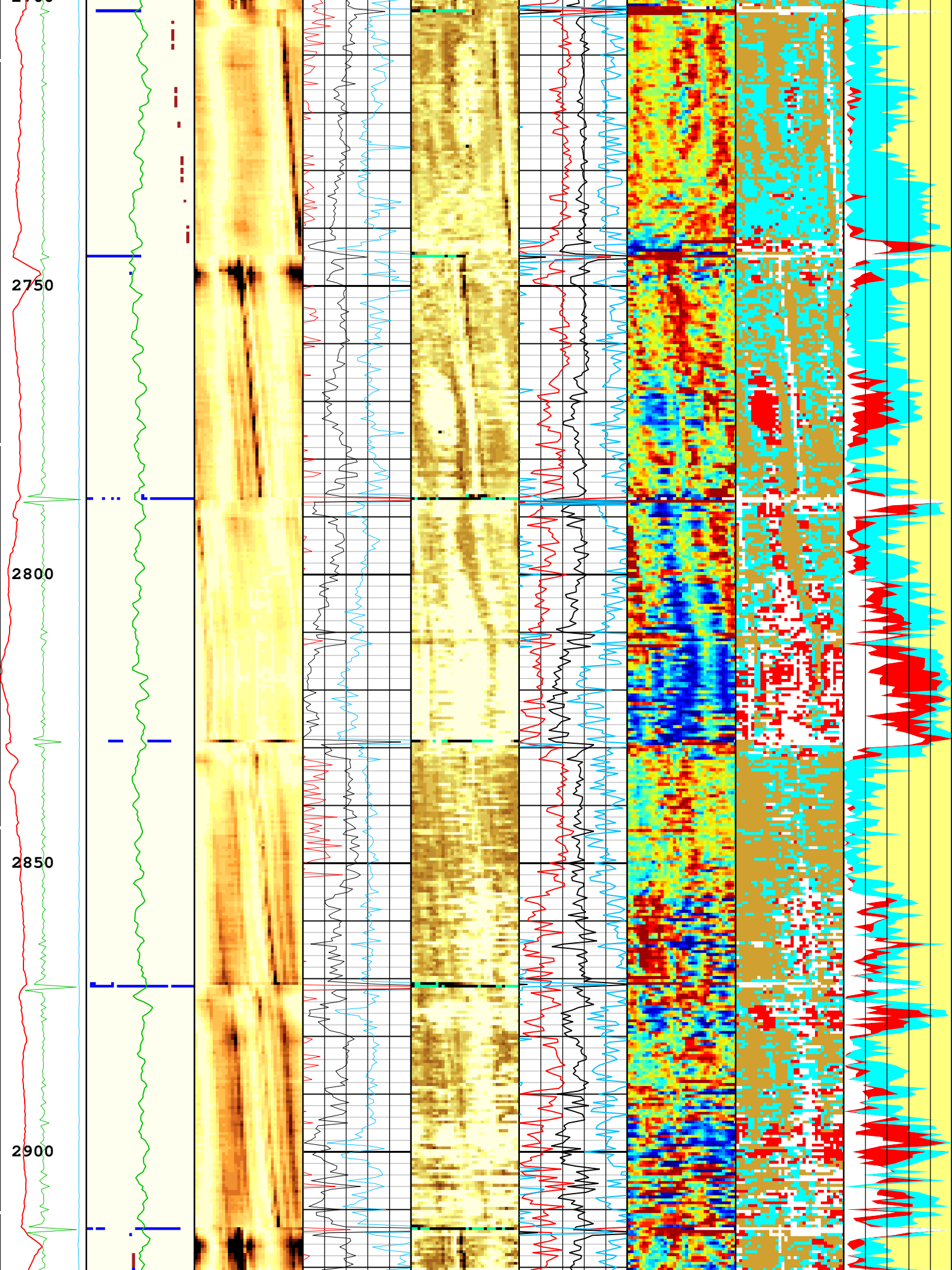
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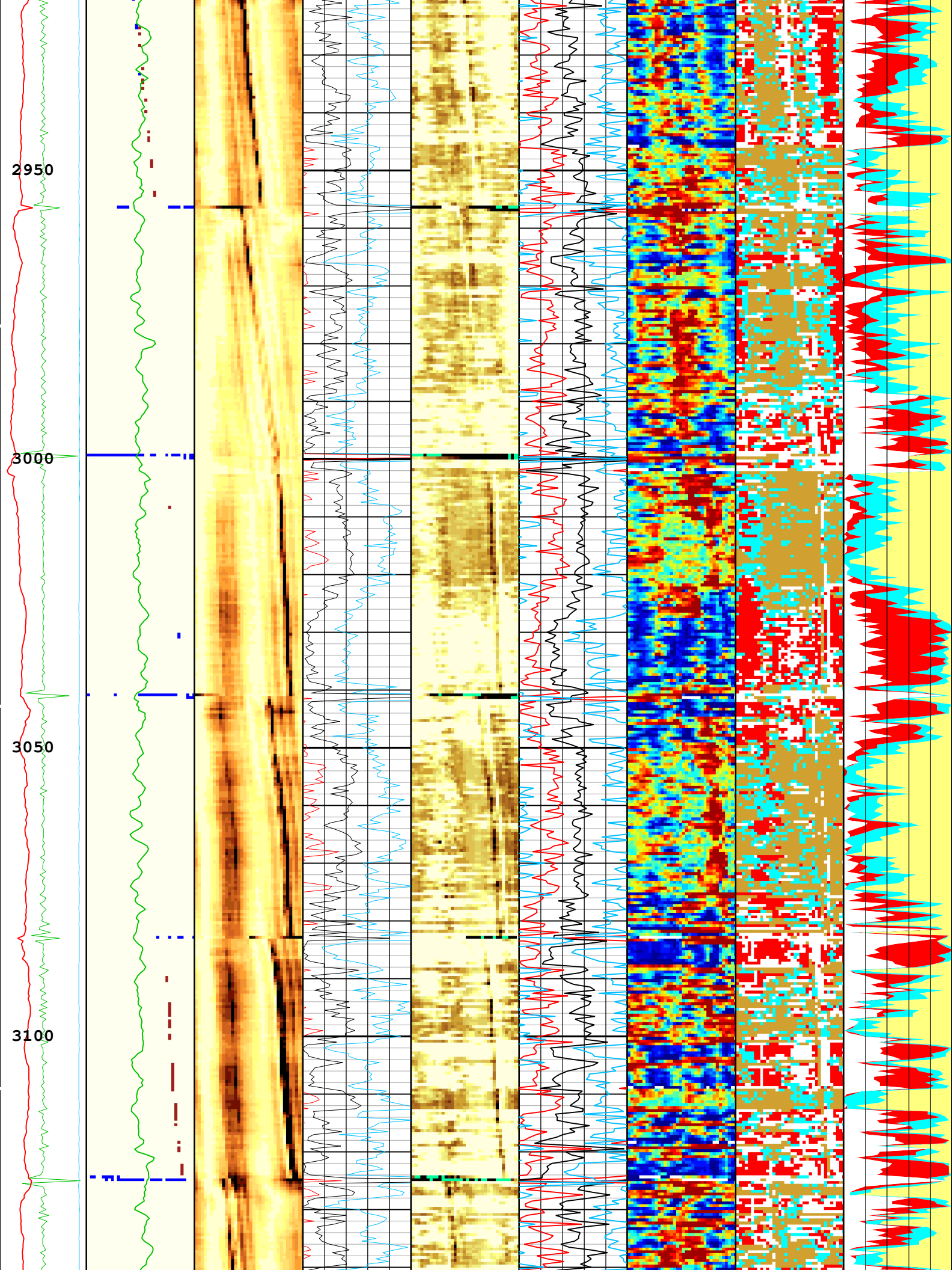
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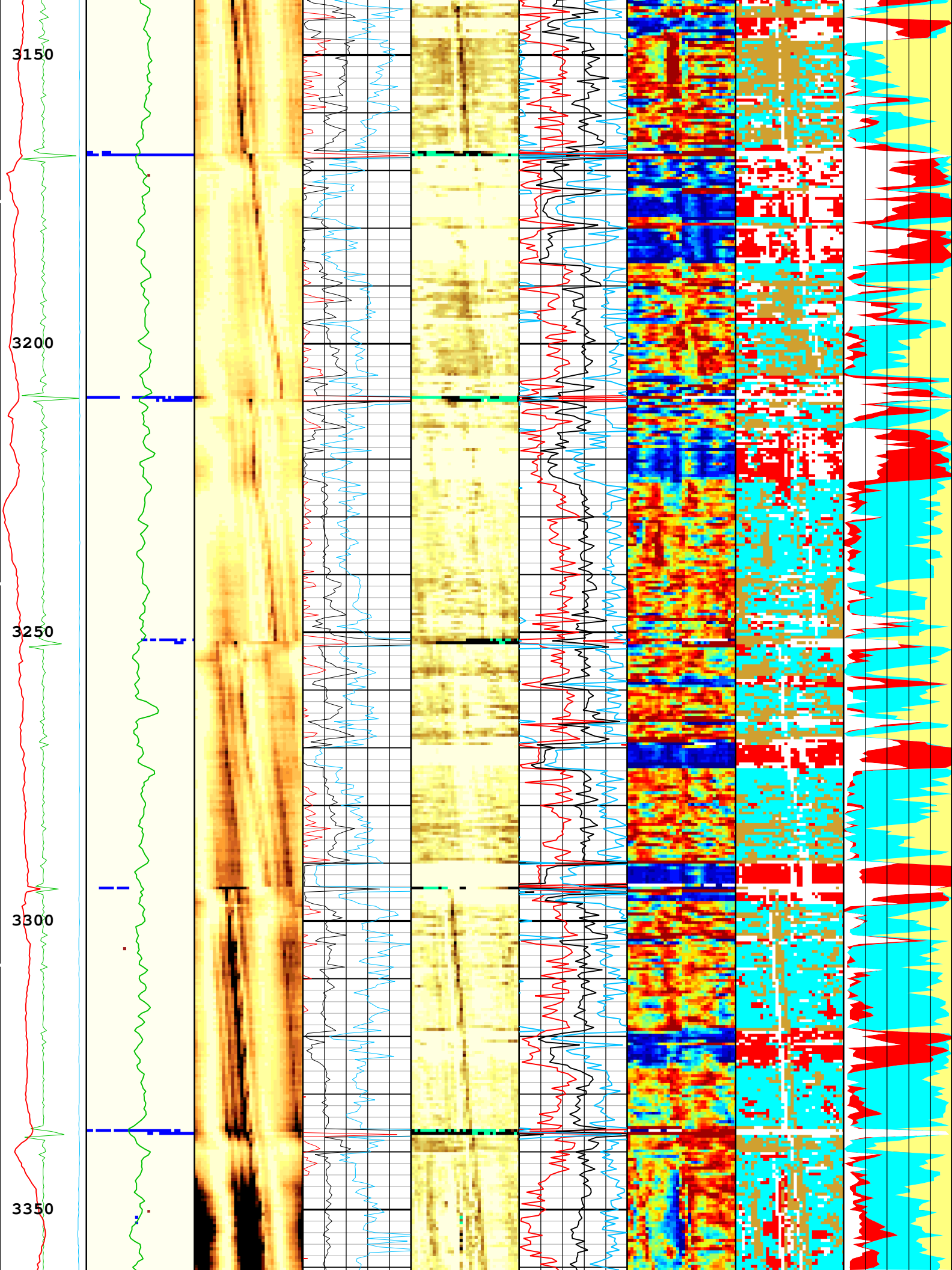
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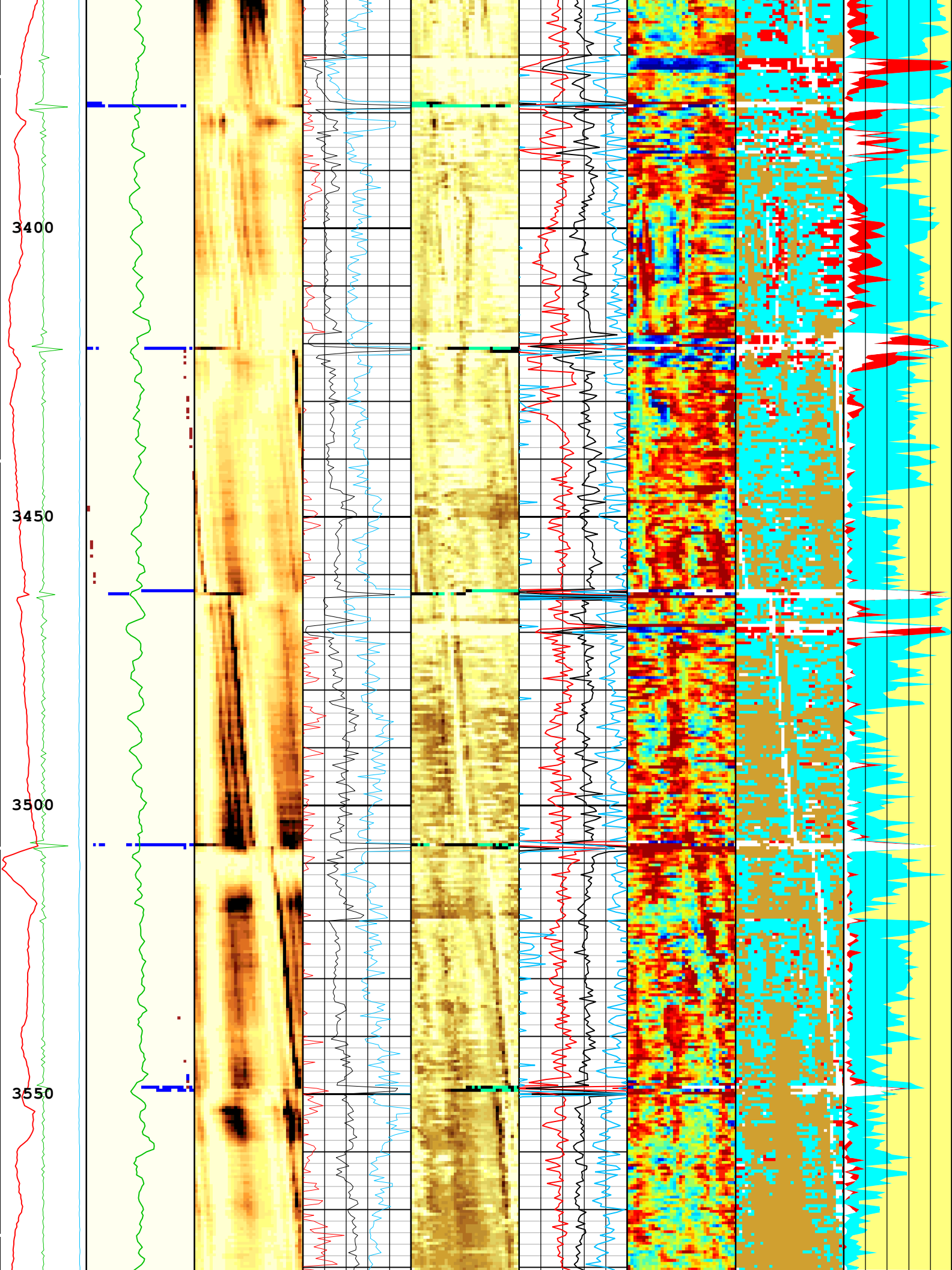
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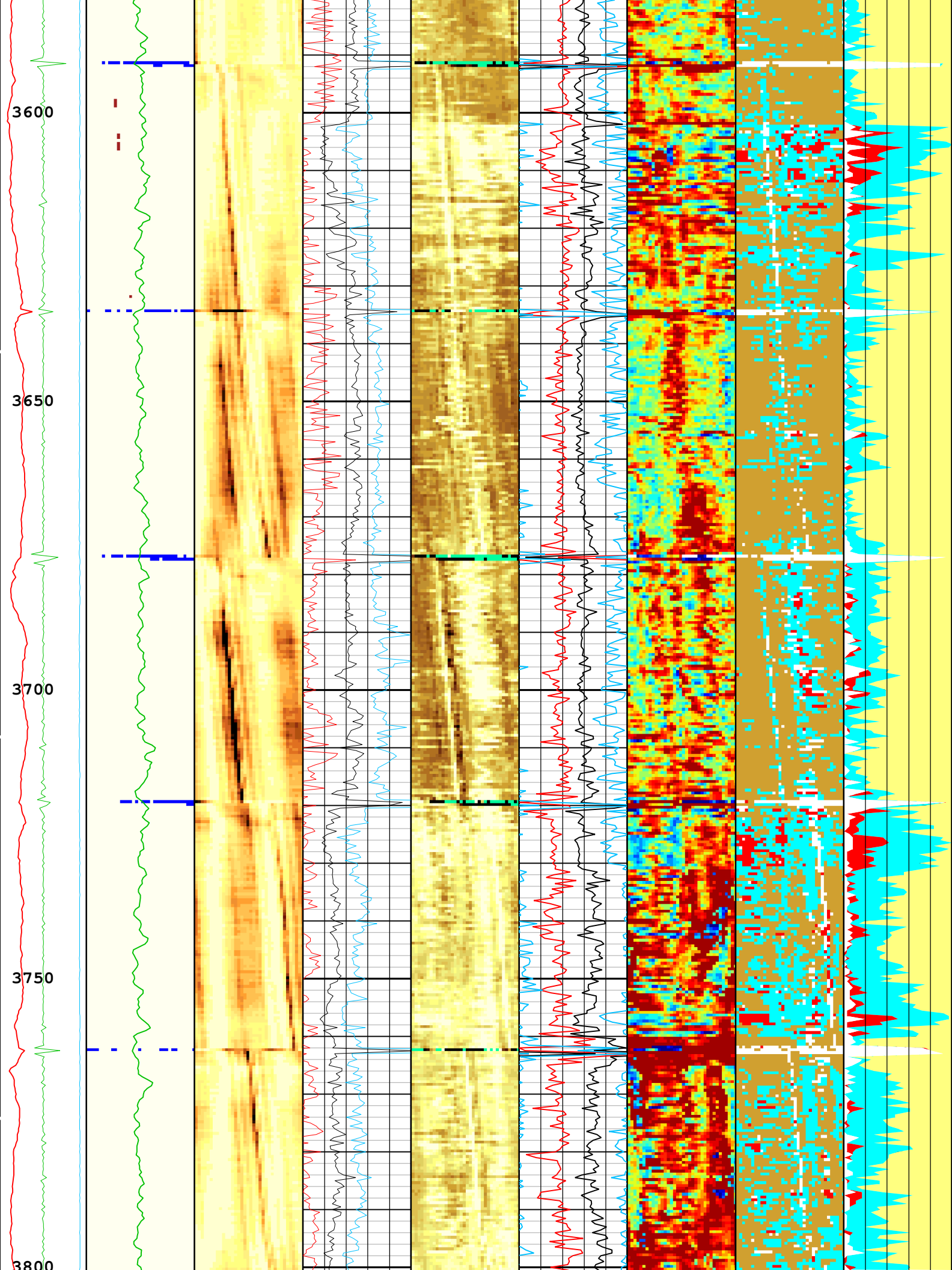
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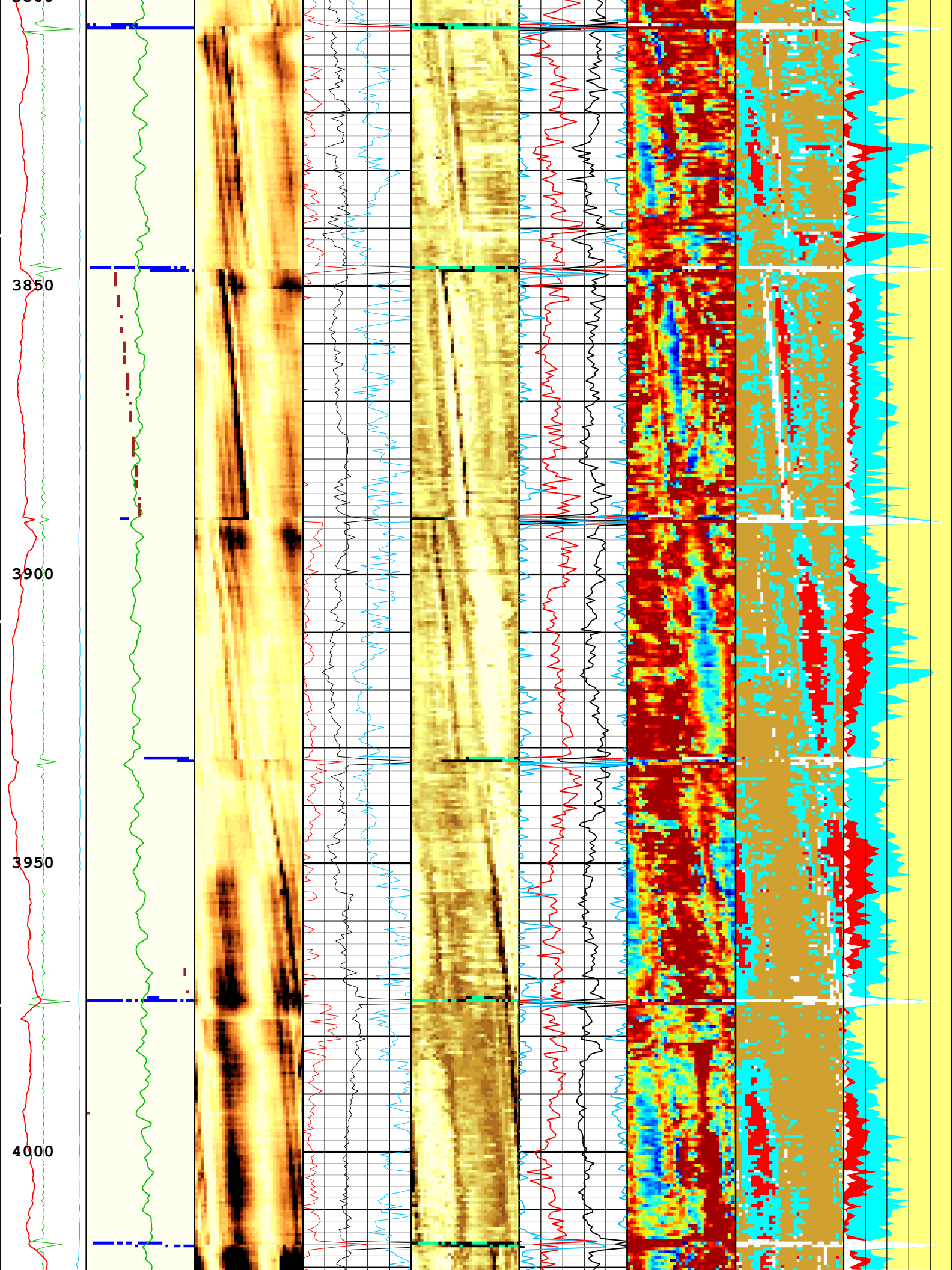
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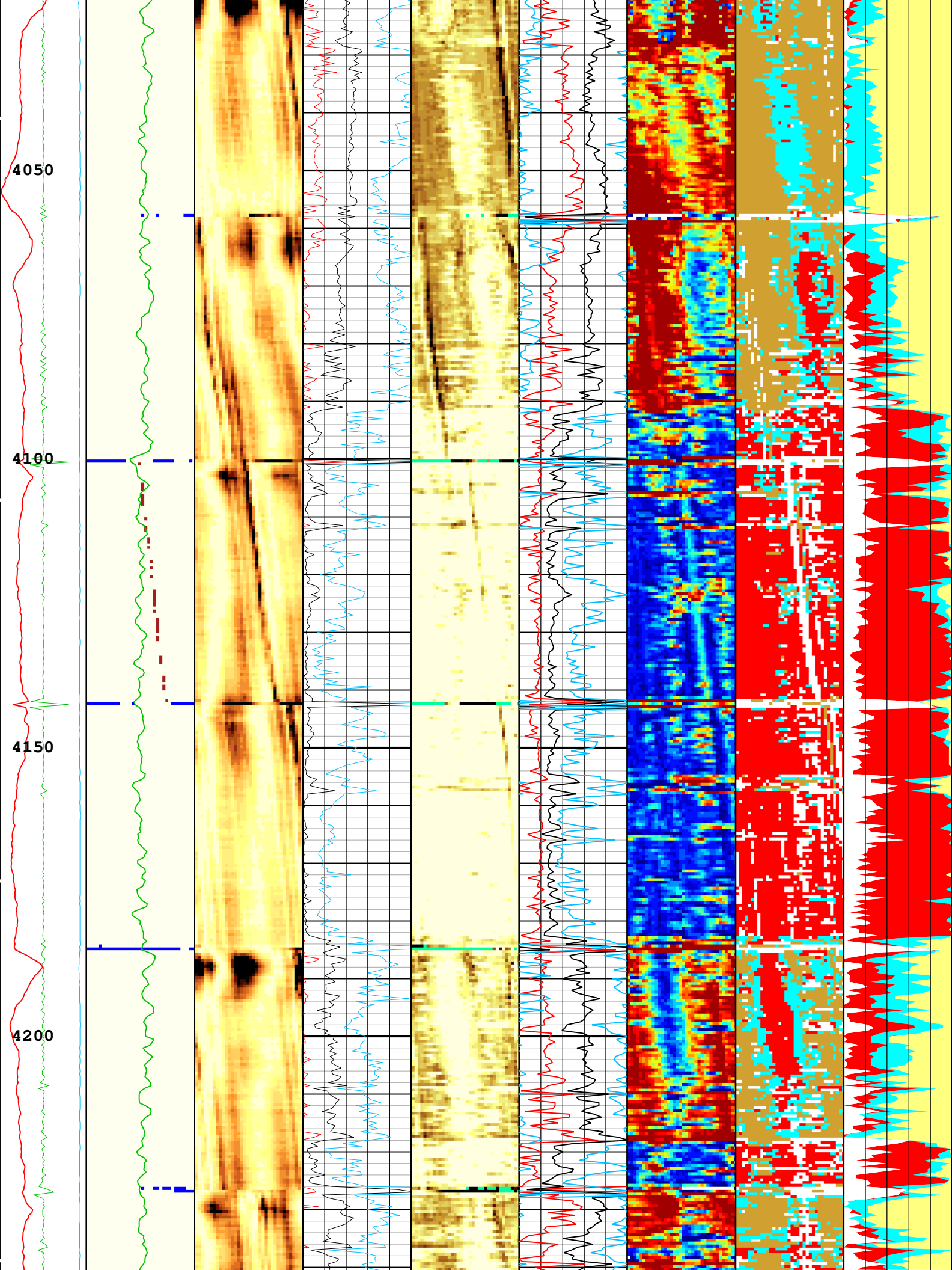
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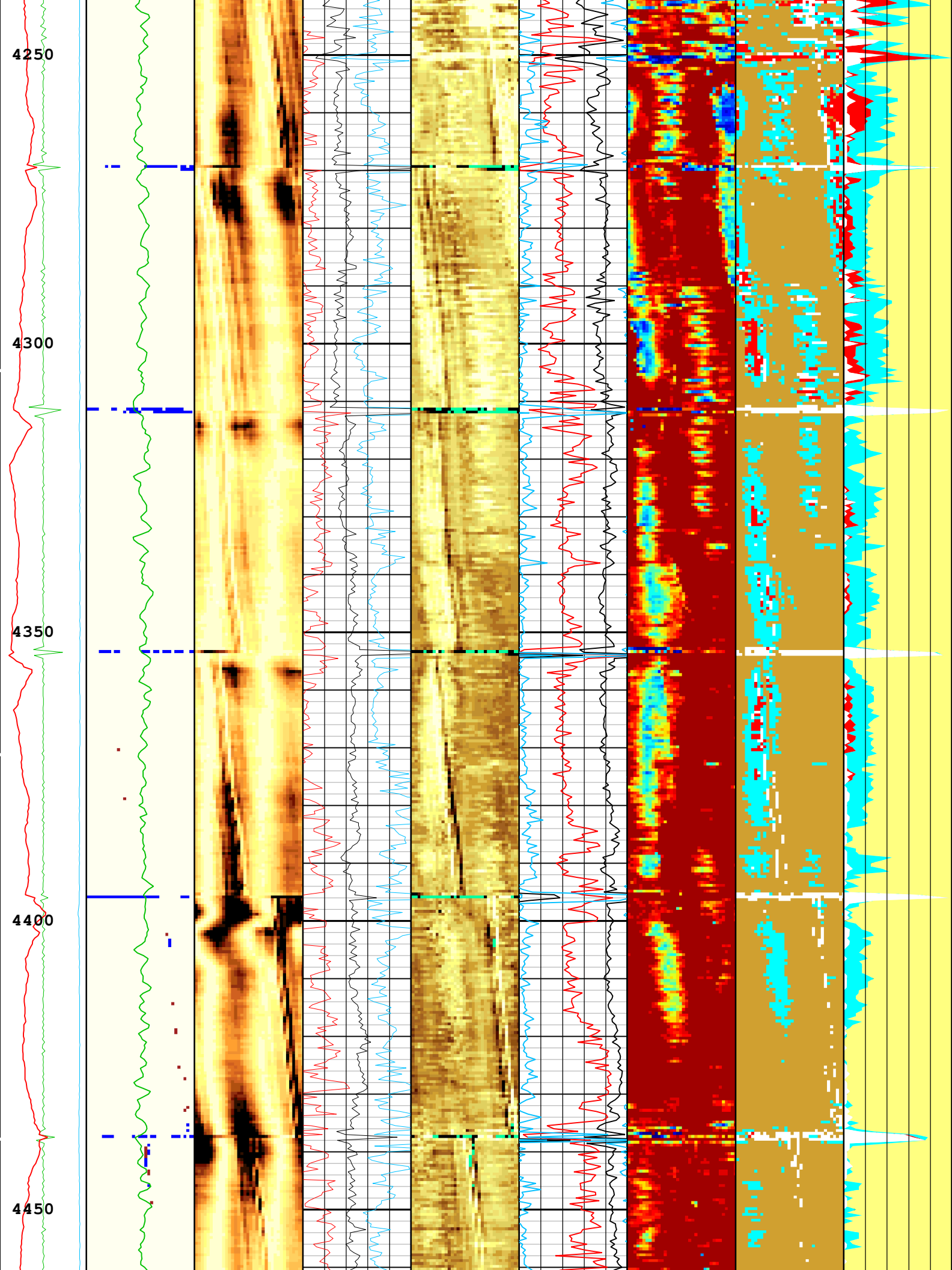
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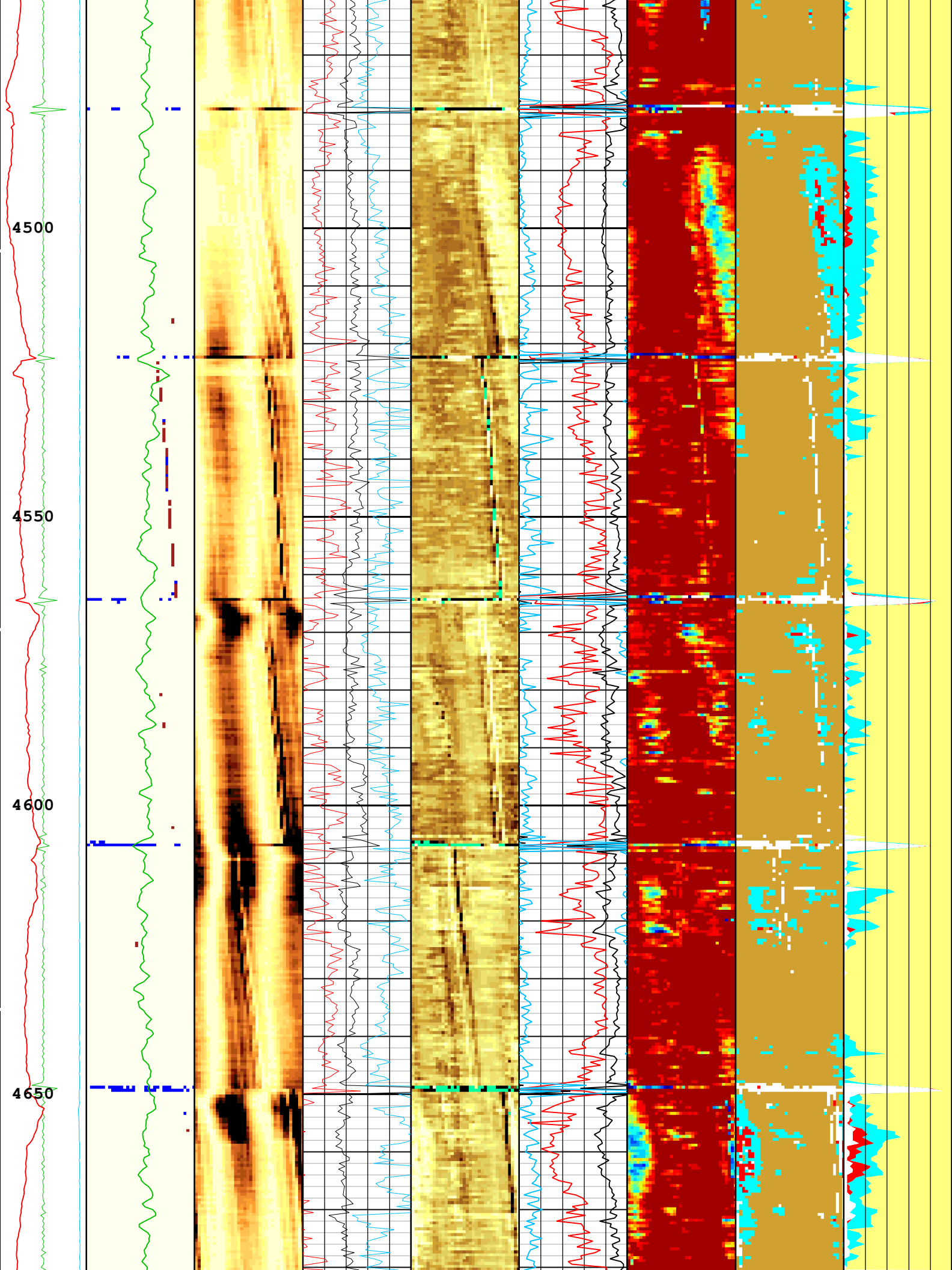
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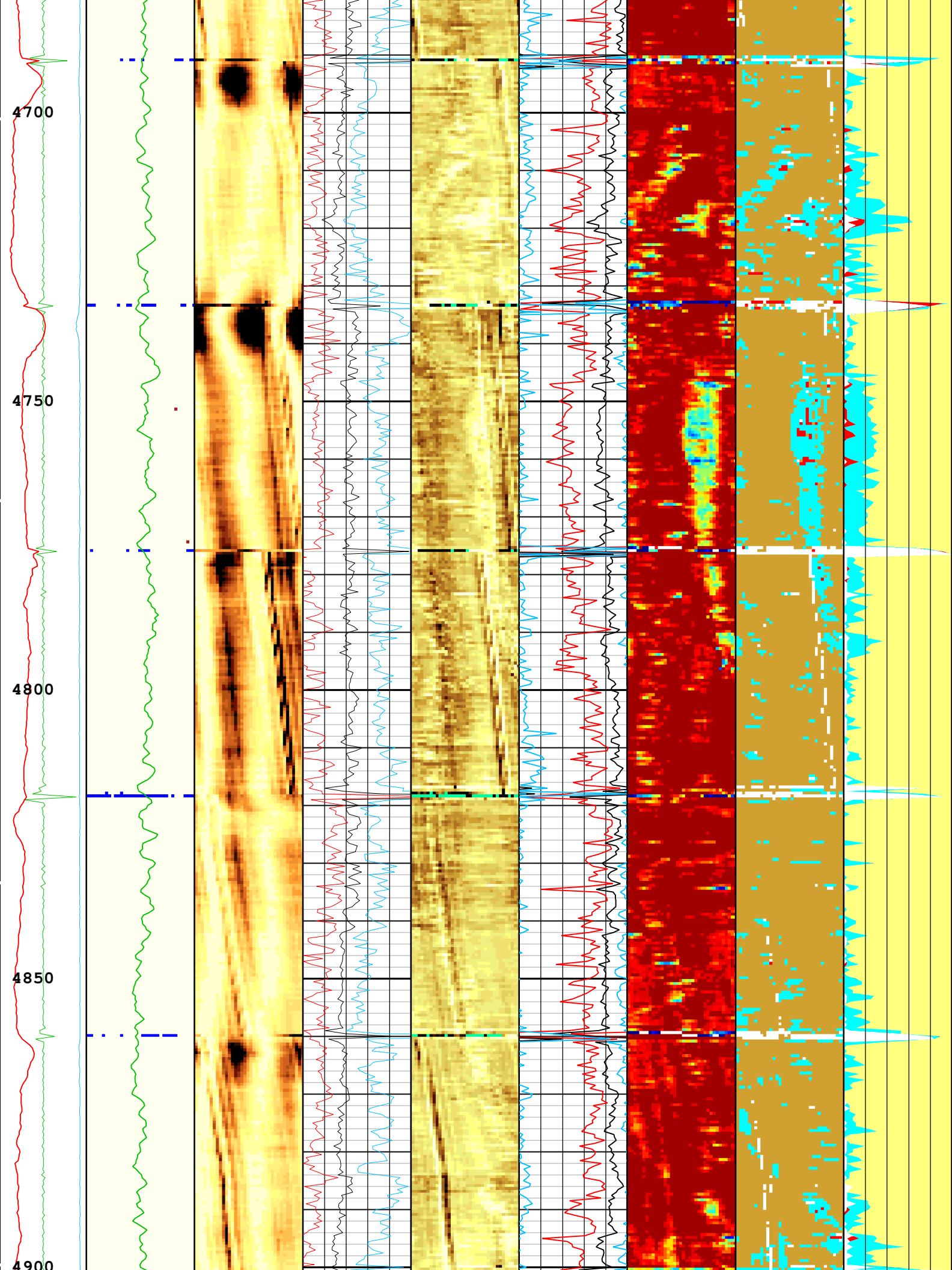
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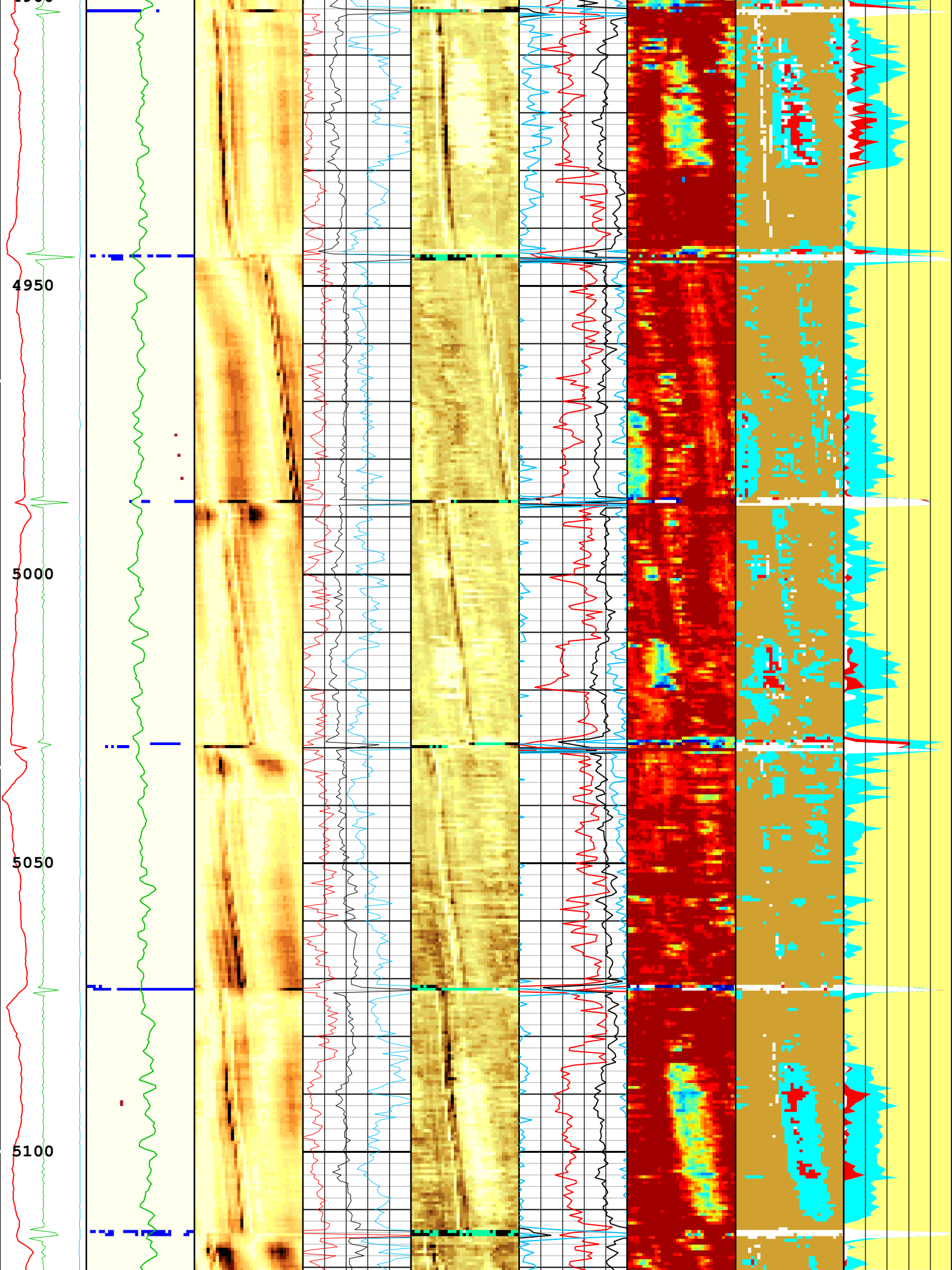
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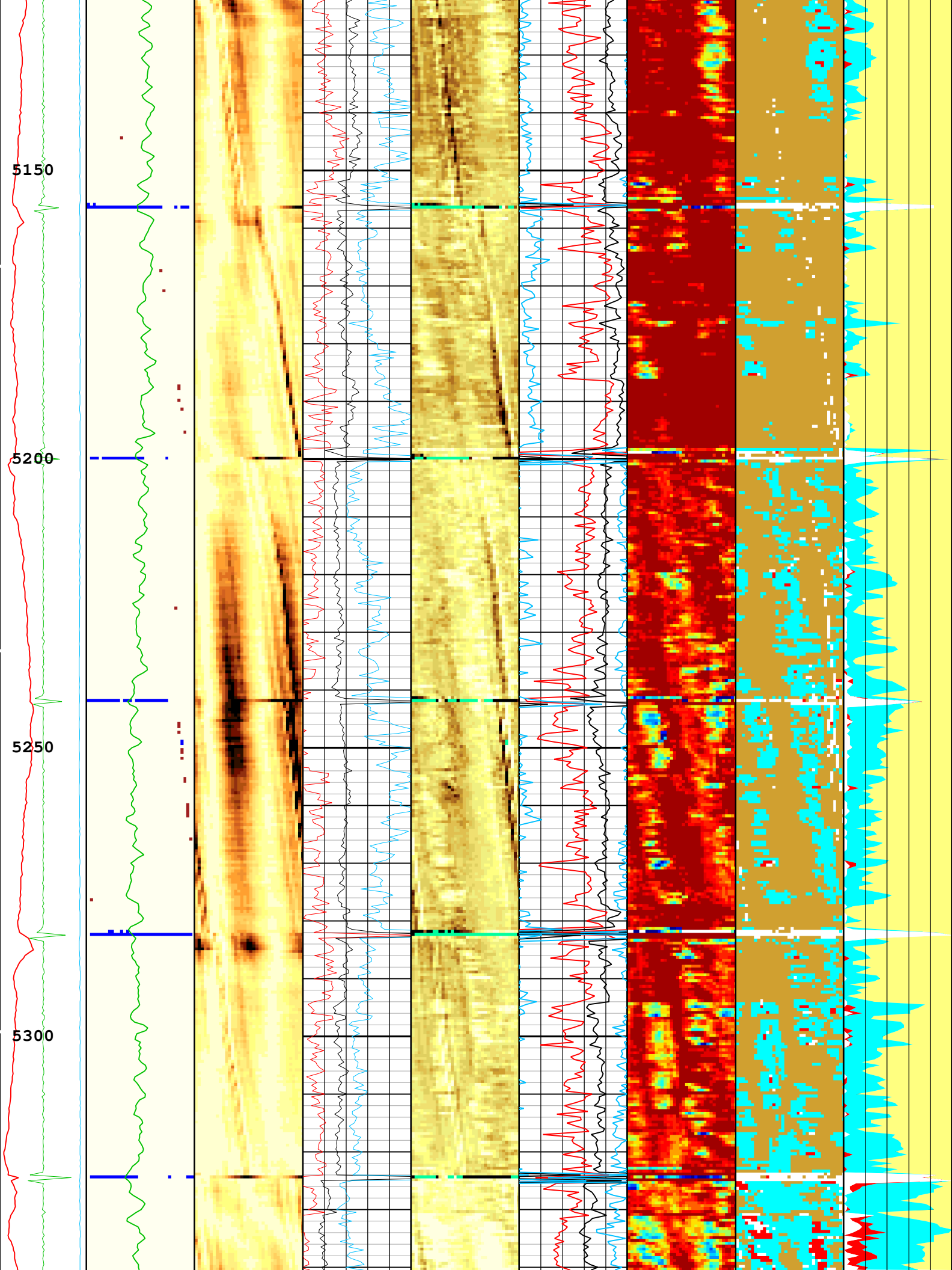
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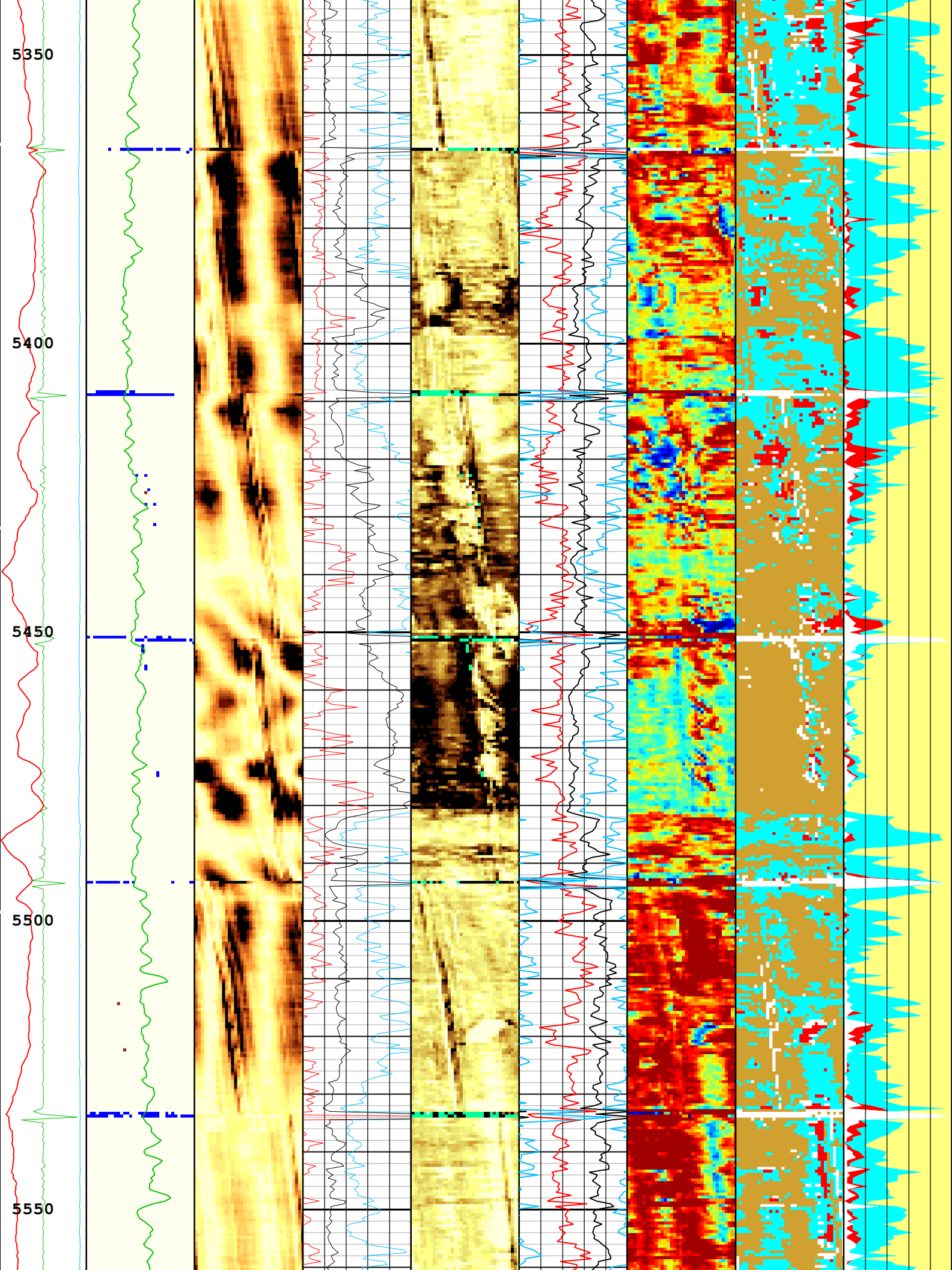
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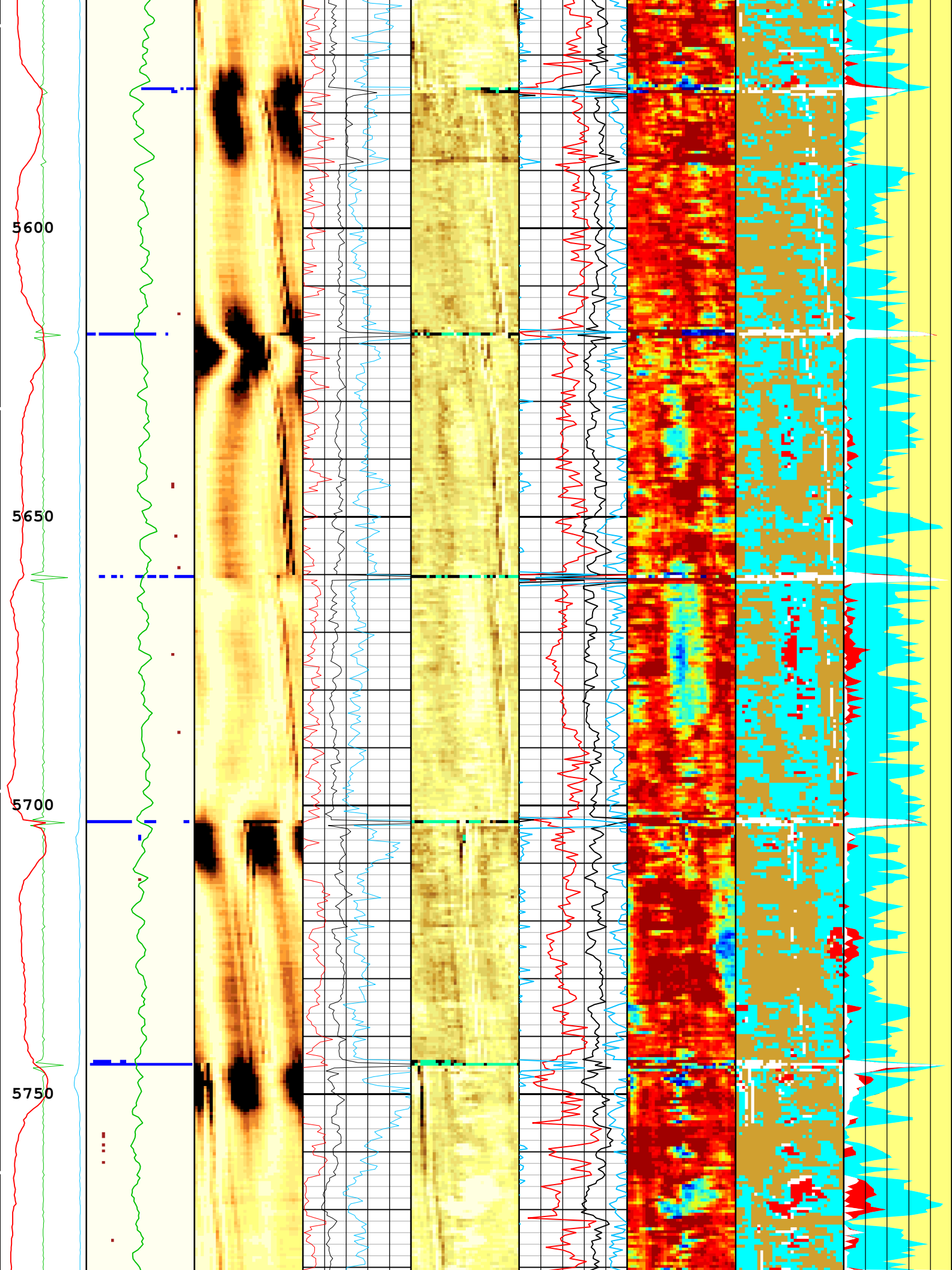
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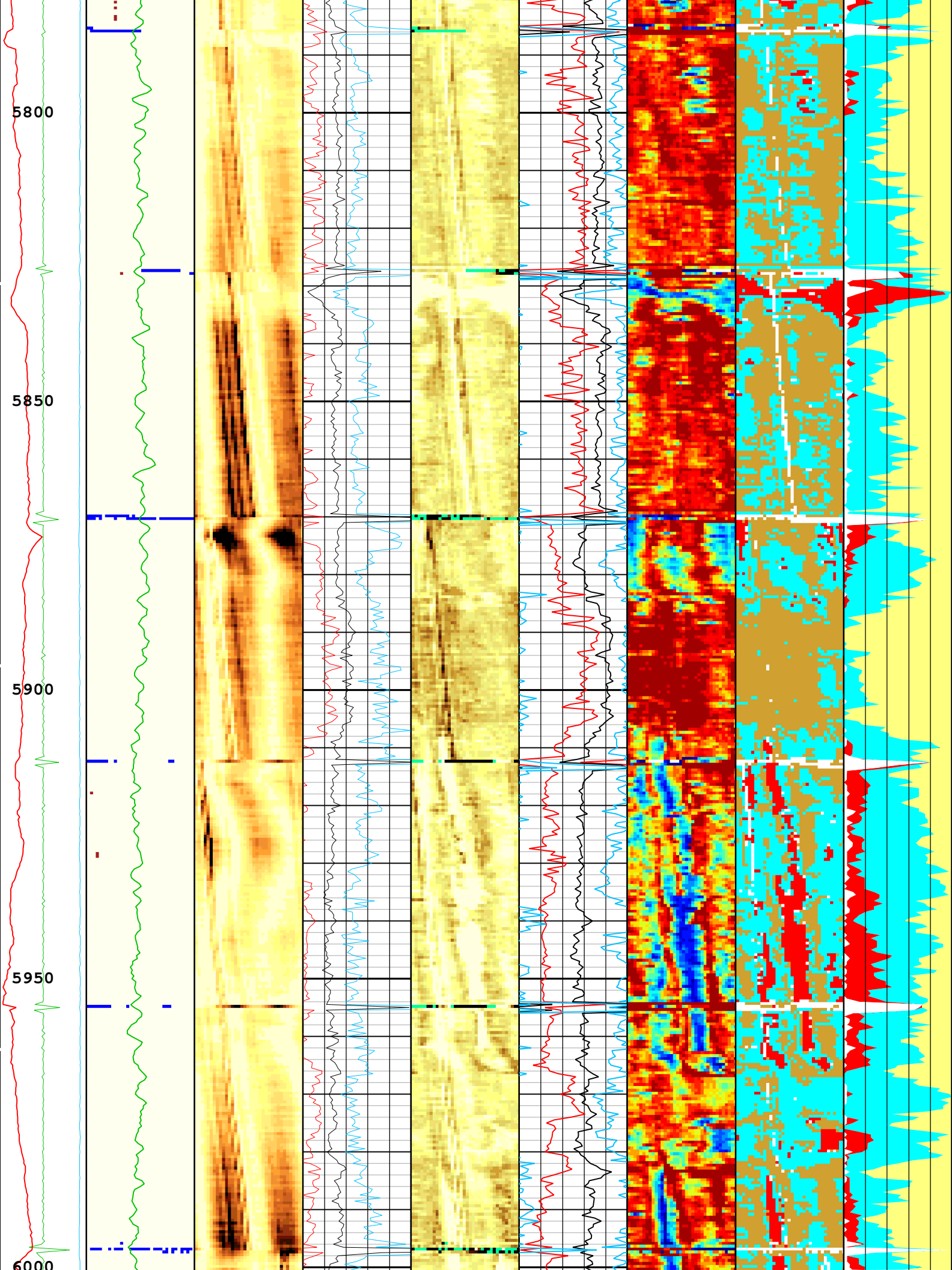
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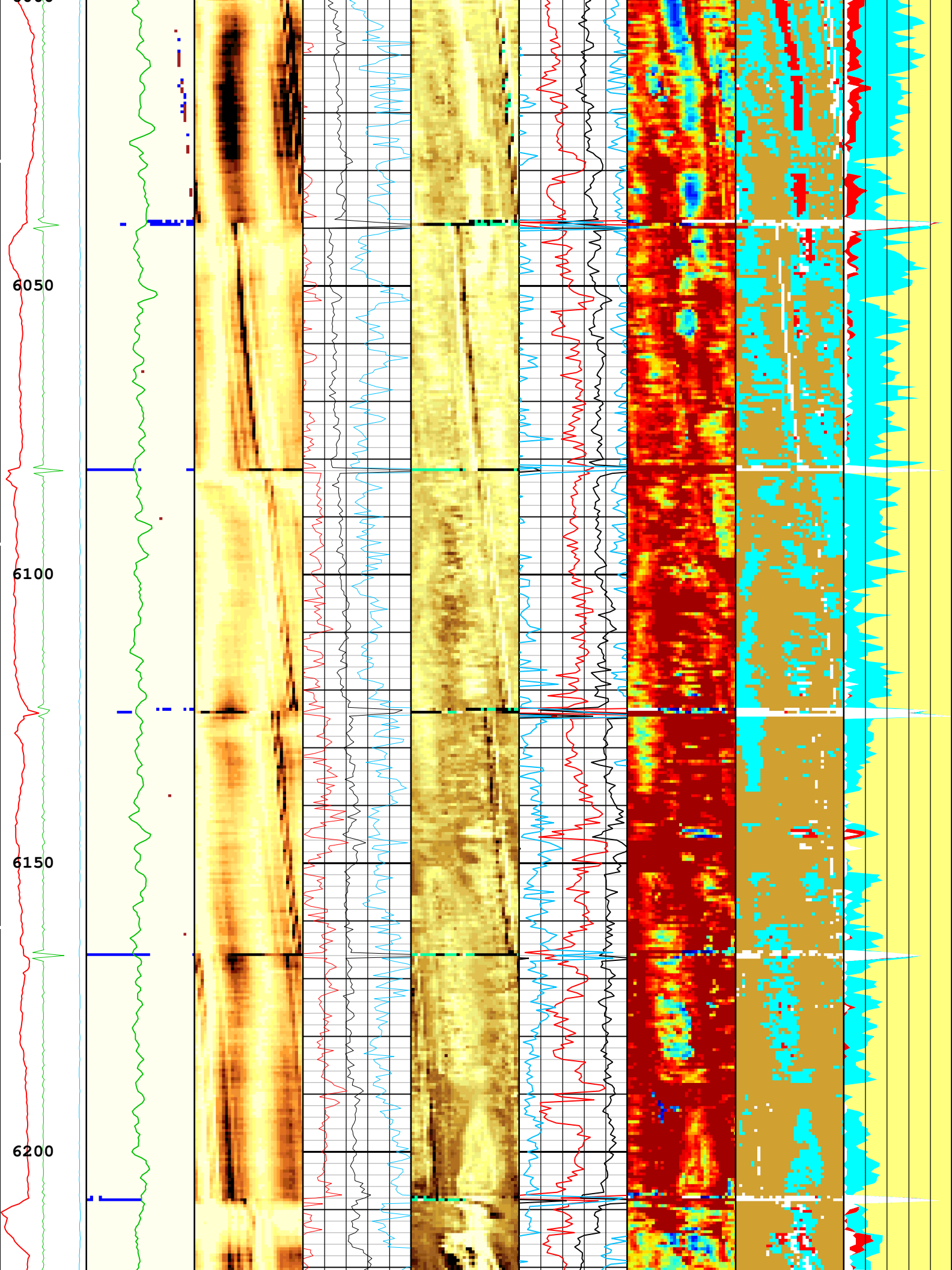
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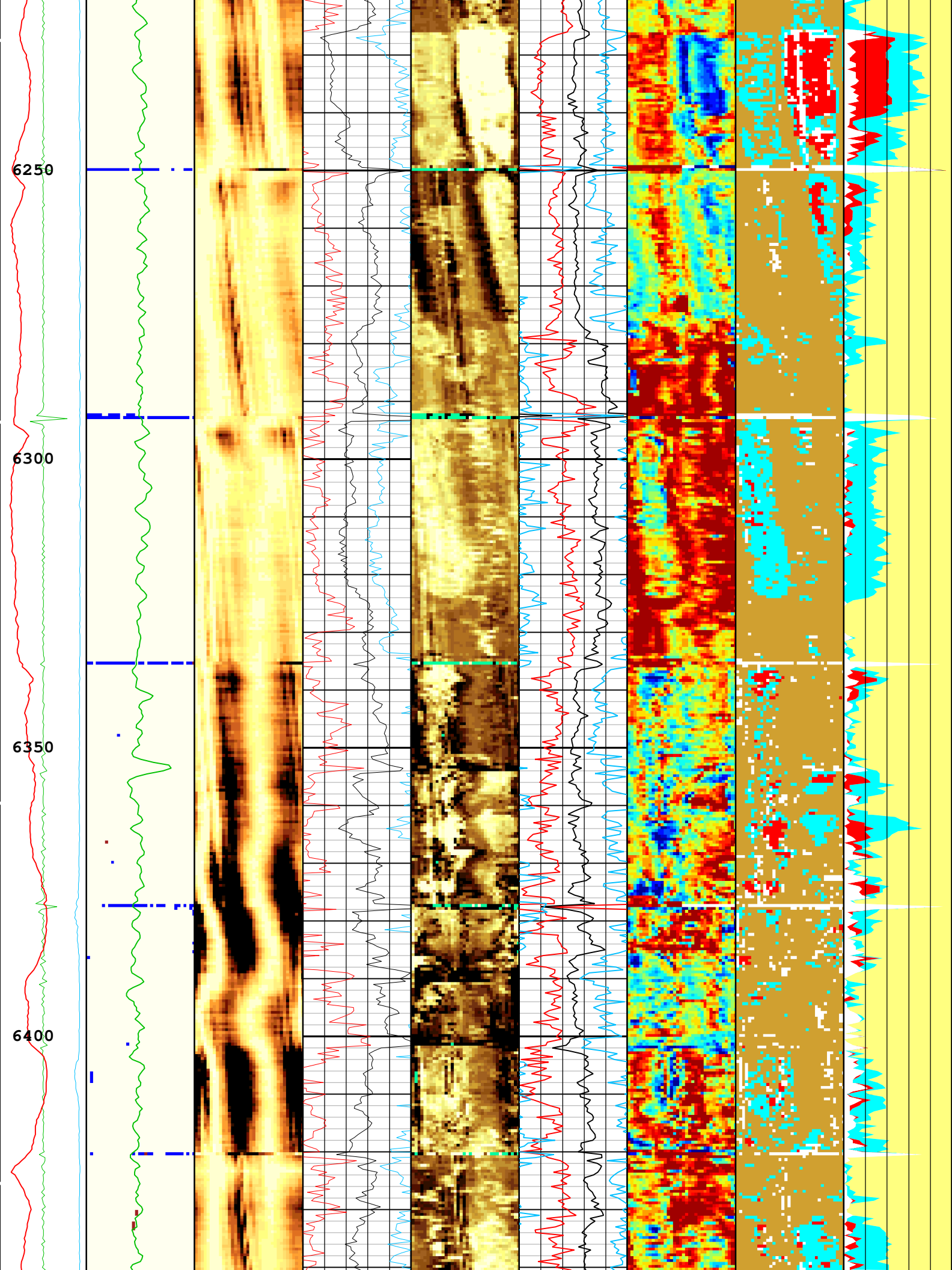
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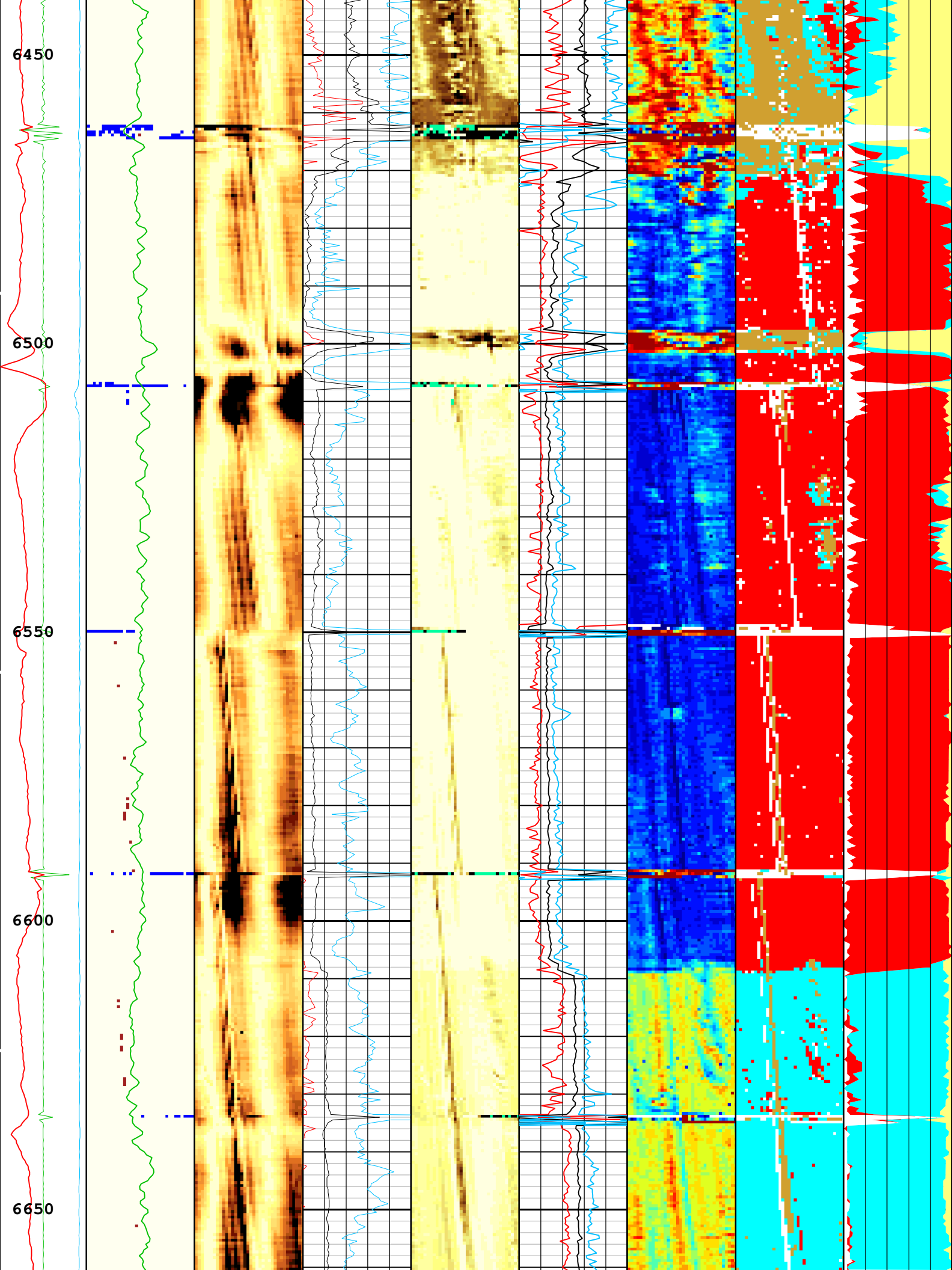
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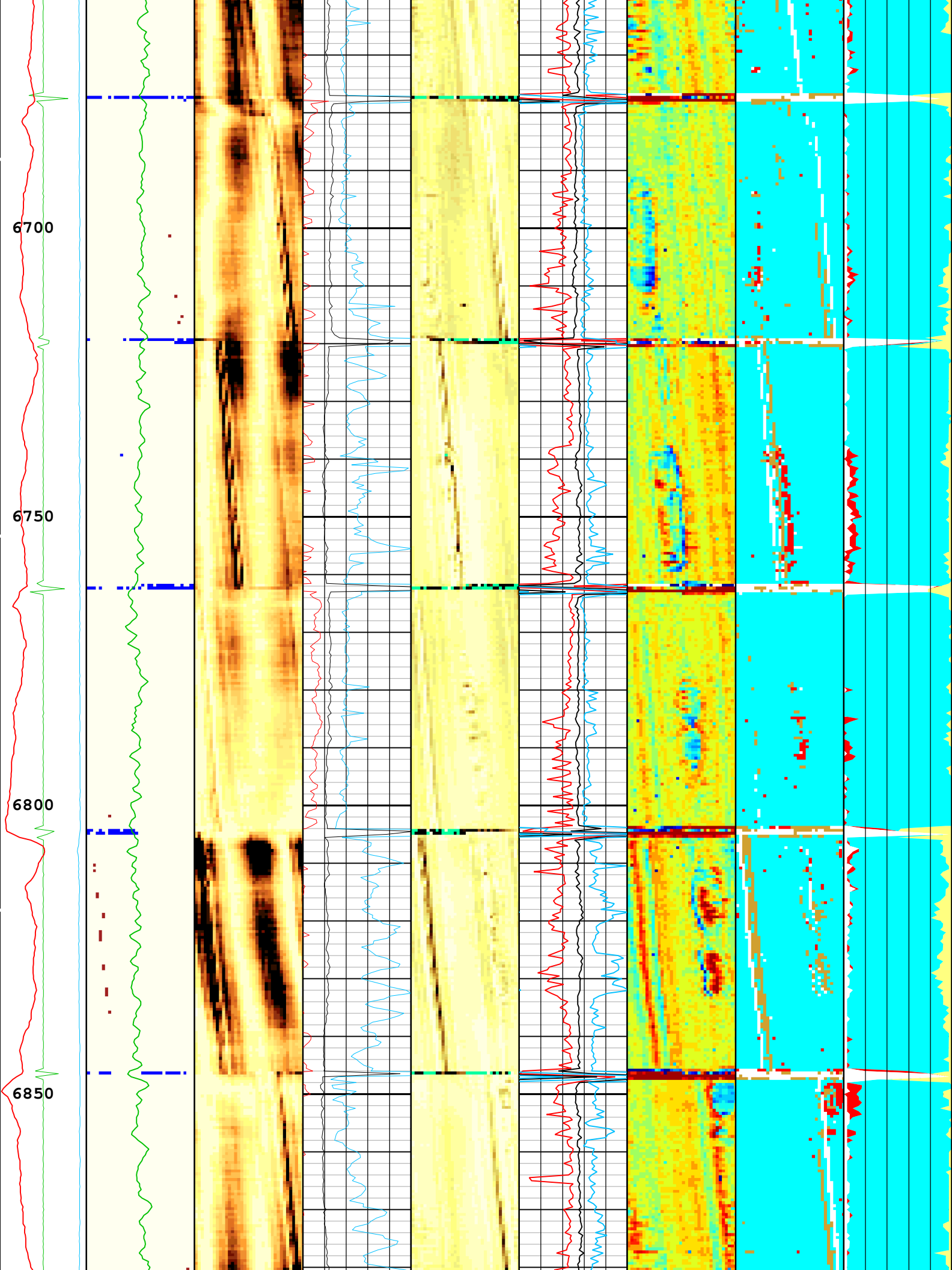
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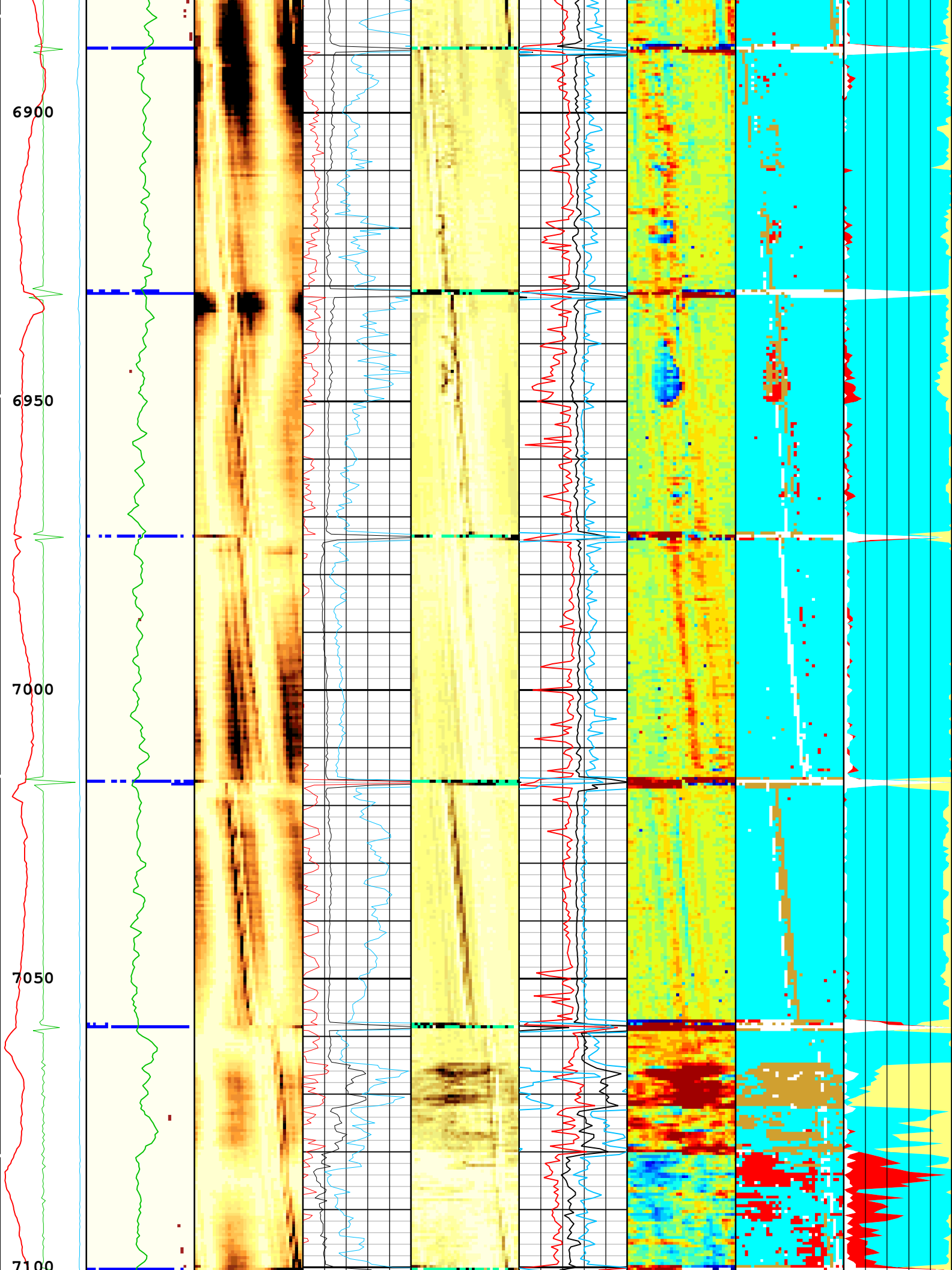
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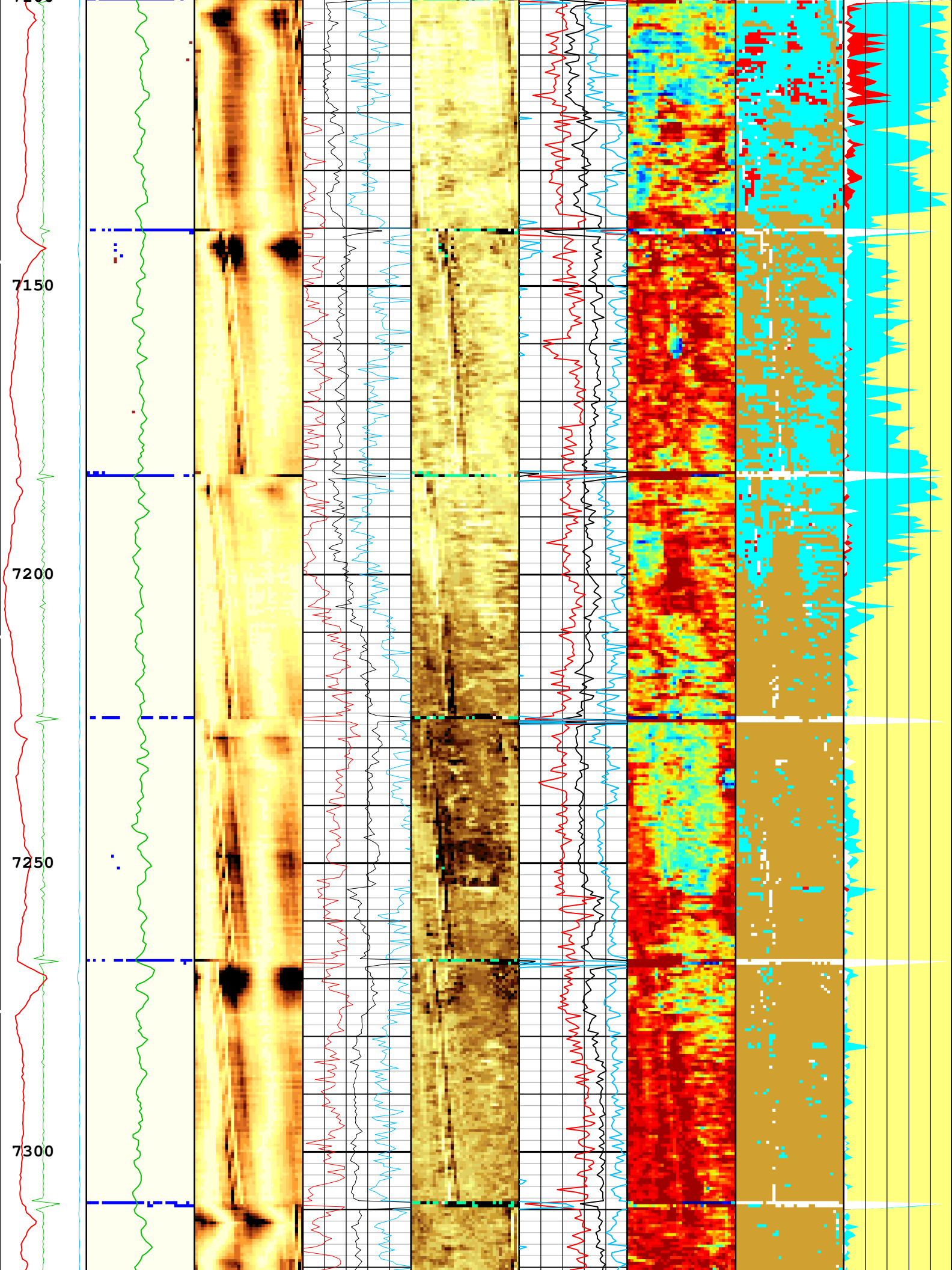
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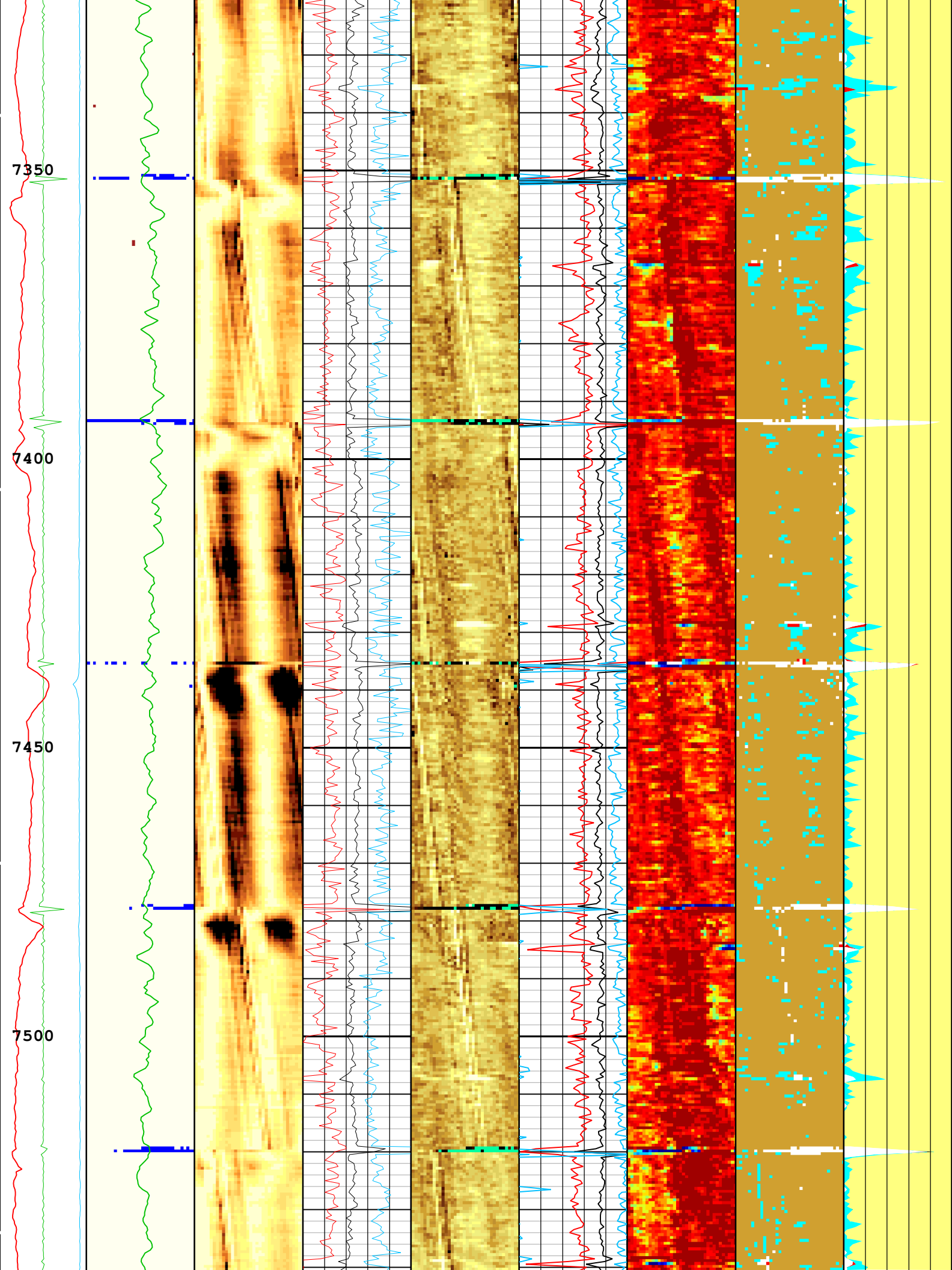
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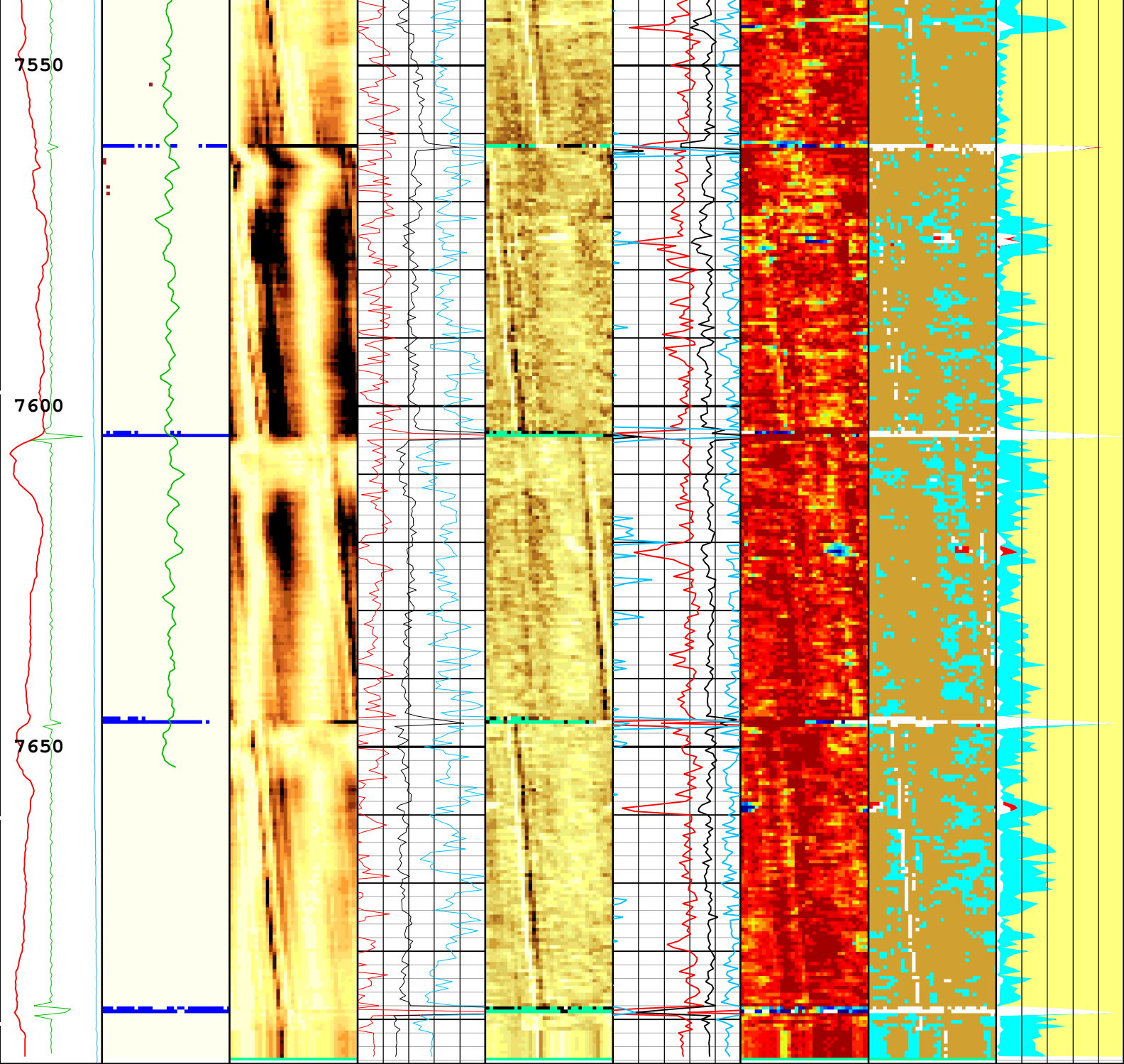


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/m 150

Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 0.500 1.500 2.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index

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

Description: USI IBC SLG Format: Log (Import of IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:48:34

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	9100	ft
CDEN	Cement Density	USIT-E	1.56	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	1.32	g/cm3
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	-41.84	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.14	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-25	dB/m

UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
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	1.48	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	12.25	32	1115
BS	7.875	1115	7696.5

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	54	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	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 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	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	16-Mar-2023 14:13:27	16-Mar-2023 14:18:19	7697.24	7513.62
EMXV	10	16-Mar-2023 14:18:19	16-Mar-2023 15:17:18	7513.62	3620.74
EMXV	7	16-Mar-2023 15:17:18	16-Mar-2023 16:12:27	3620.74	75.77

All depth are at tool zero.

One

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.221762

Wireline_NPD-ThruBit-2022.1_12.1.221178

Wireline_NPD-HCS-2022.1_12.1.221849

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	75.77 ft	7697.24 ft	16-Mar-2023 2:13:27 PM	16-Mar-2023 4:12:27 PM	ON	-4.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Petroleum Corporation Well:Northglenn State 4-36

One: Log[4]:Up:S010

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 16-Mar-2023 17:48:59

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] - :

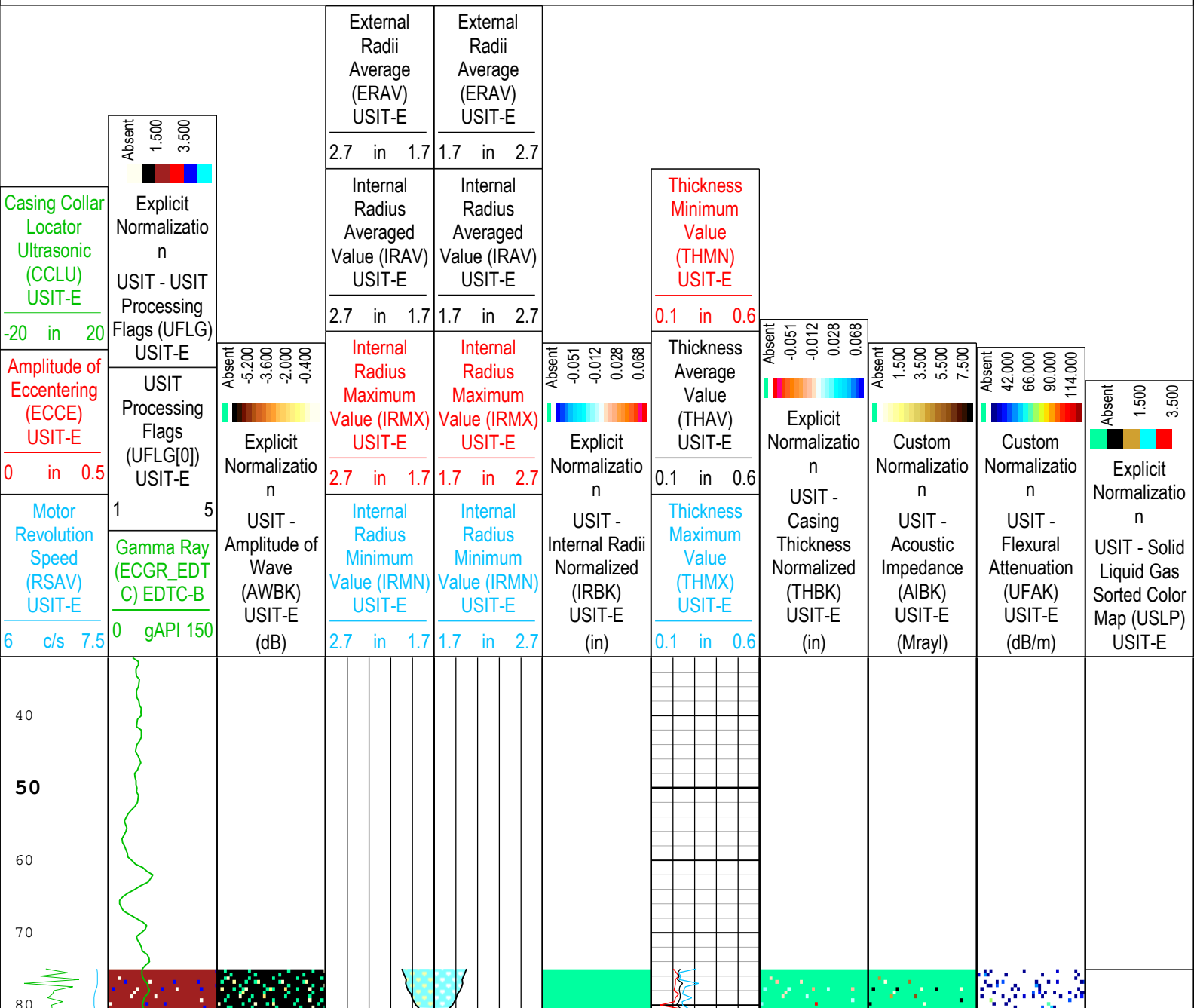
UTIM Error

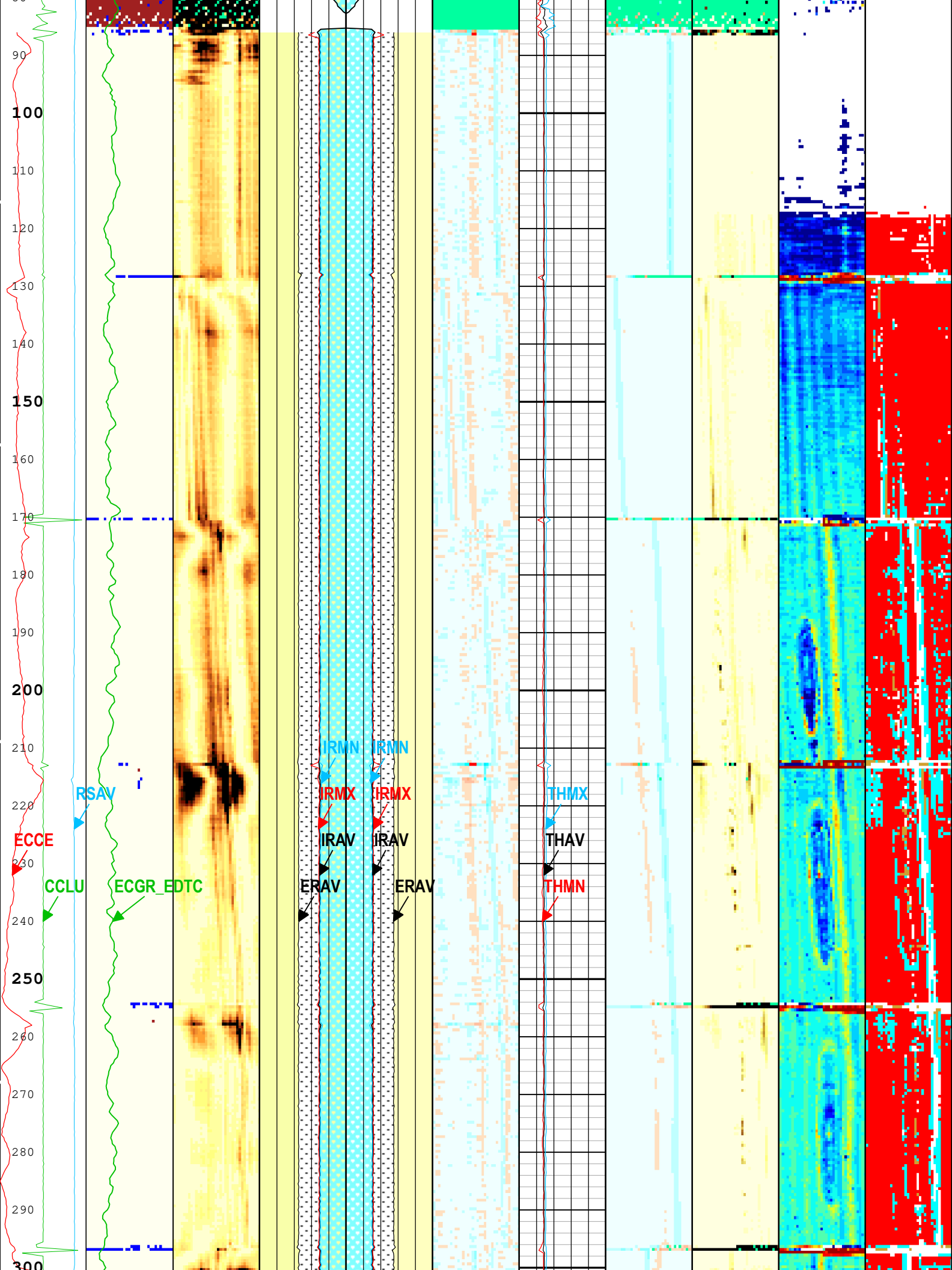
Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

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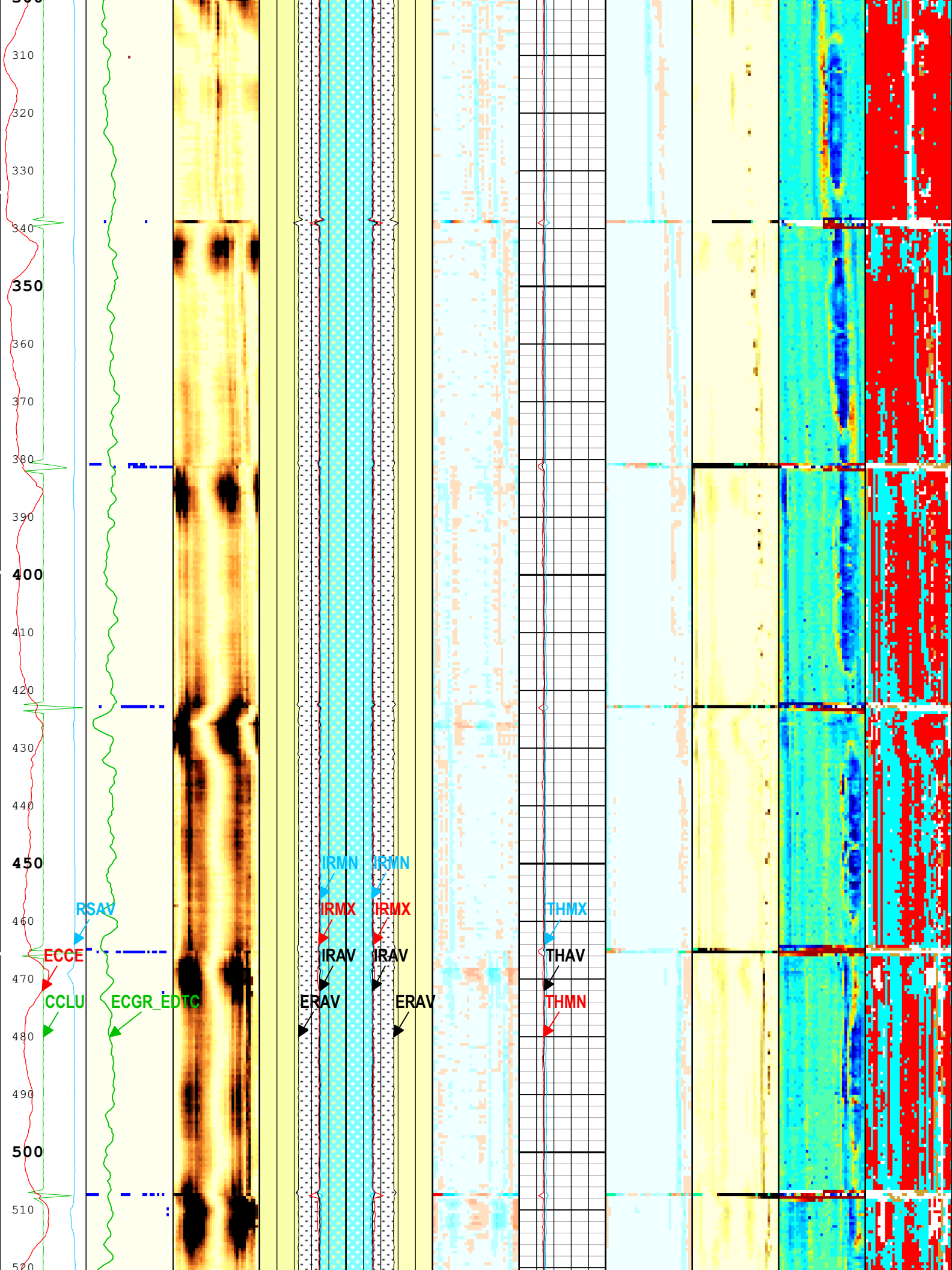
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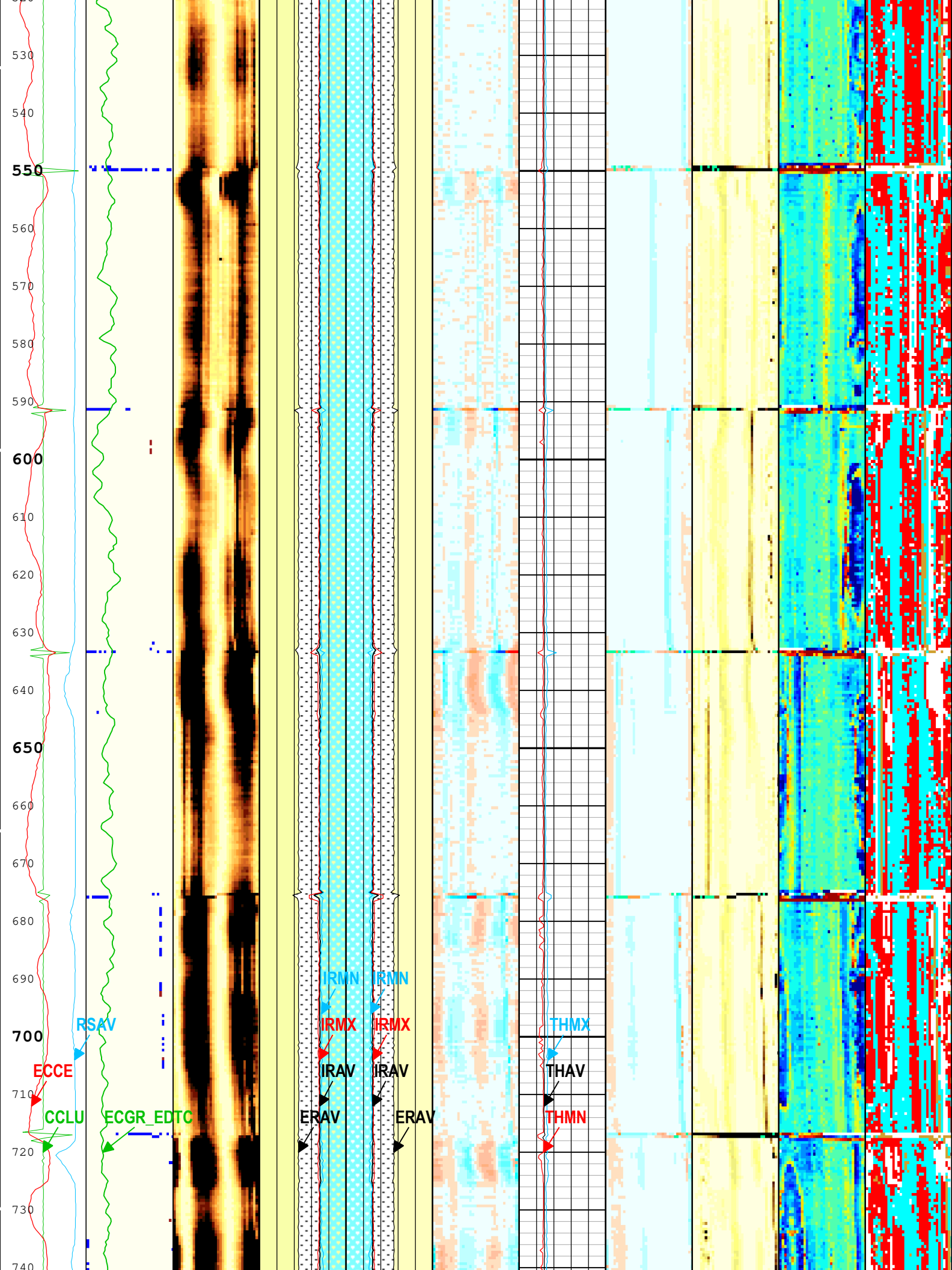
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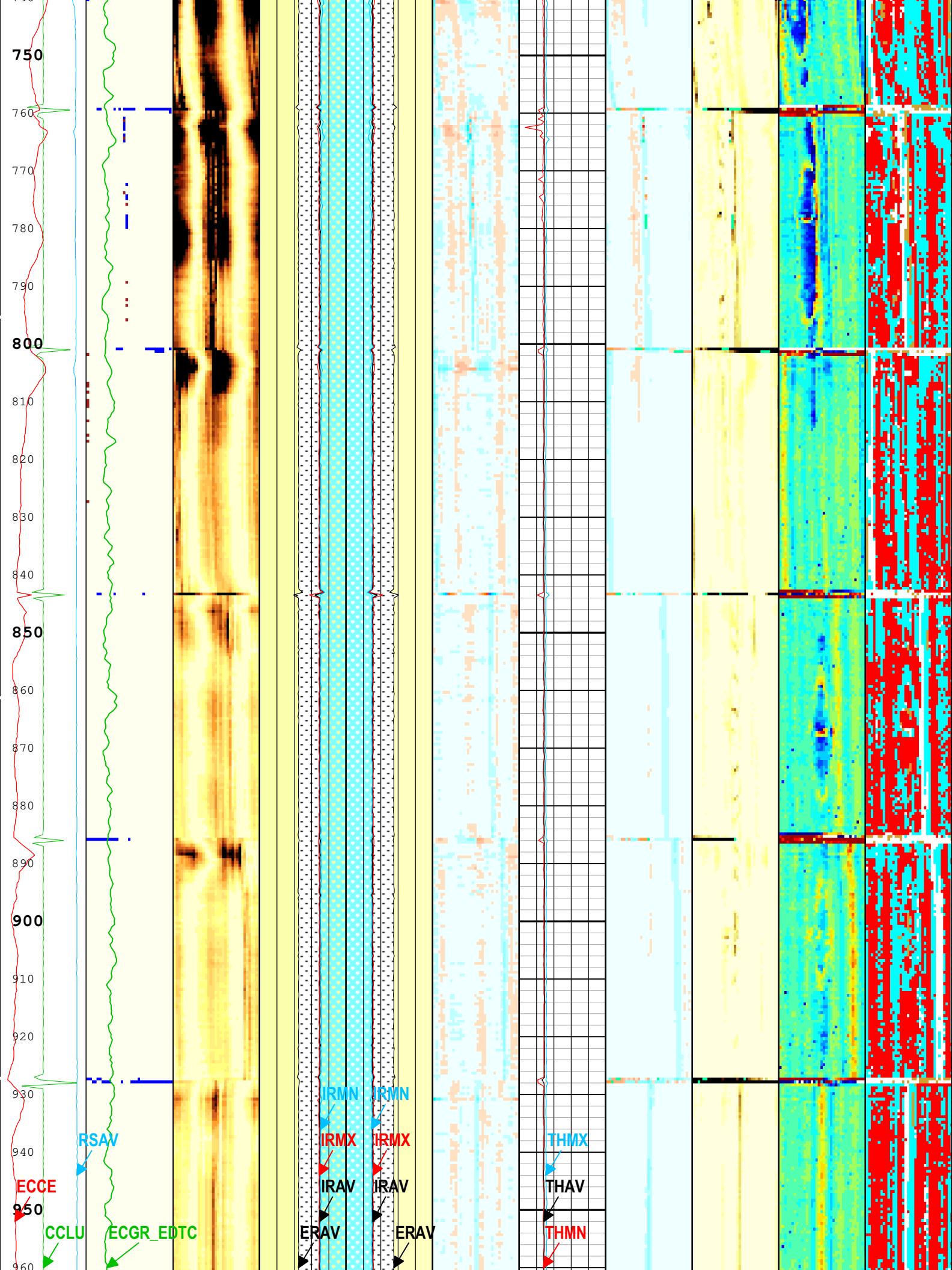
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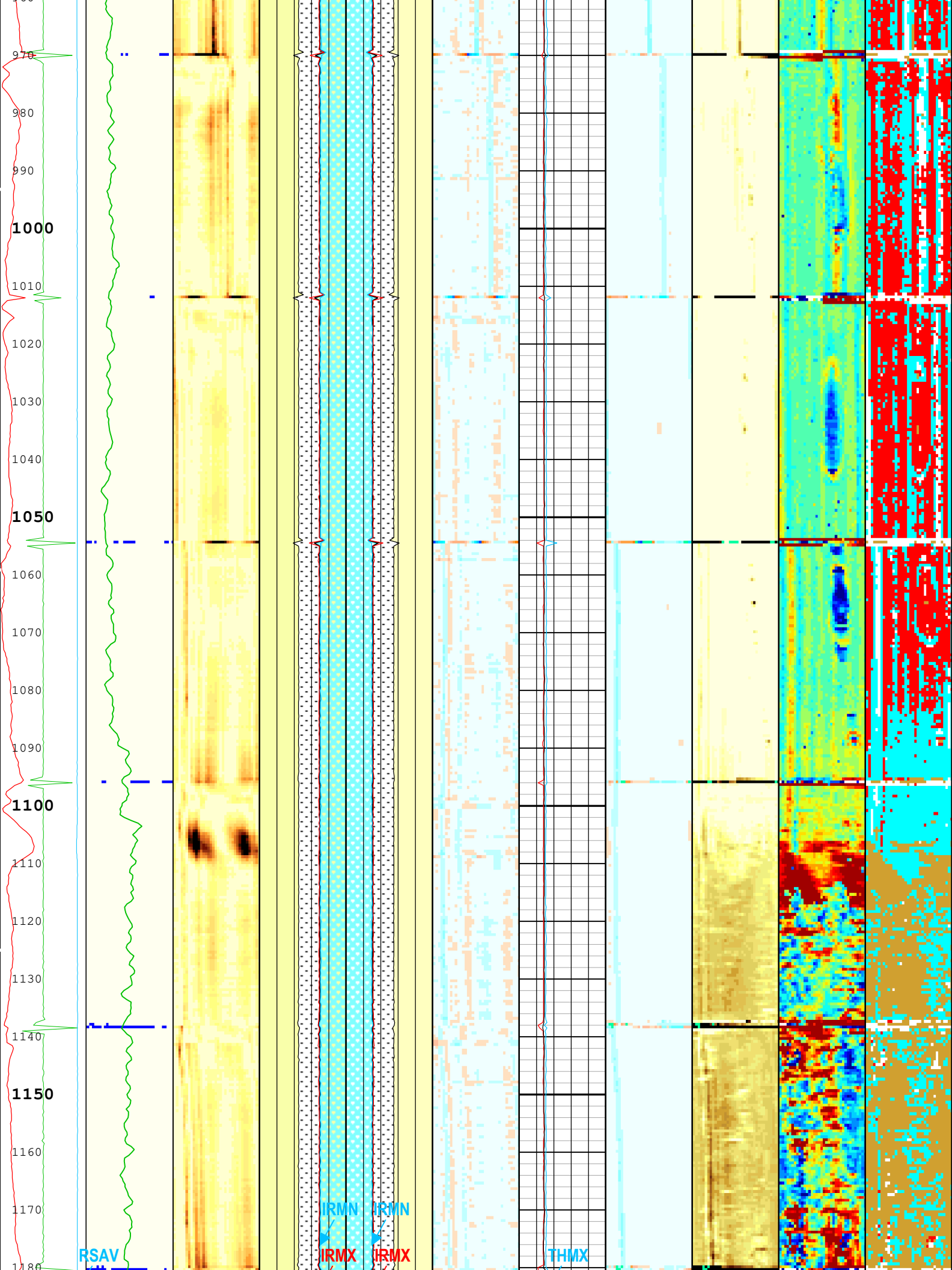
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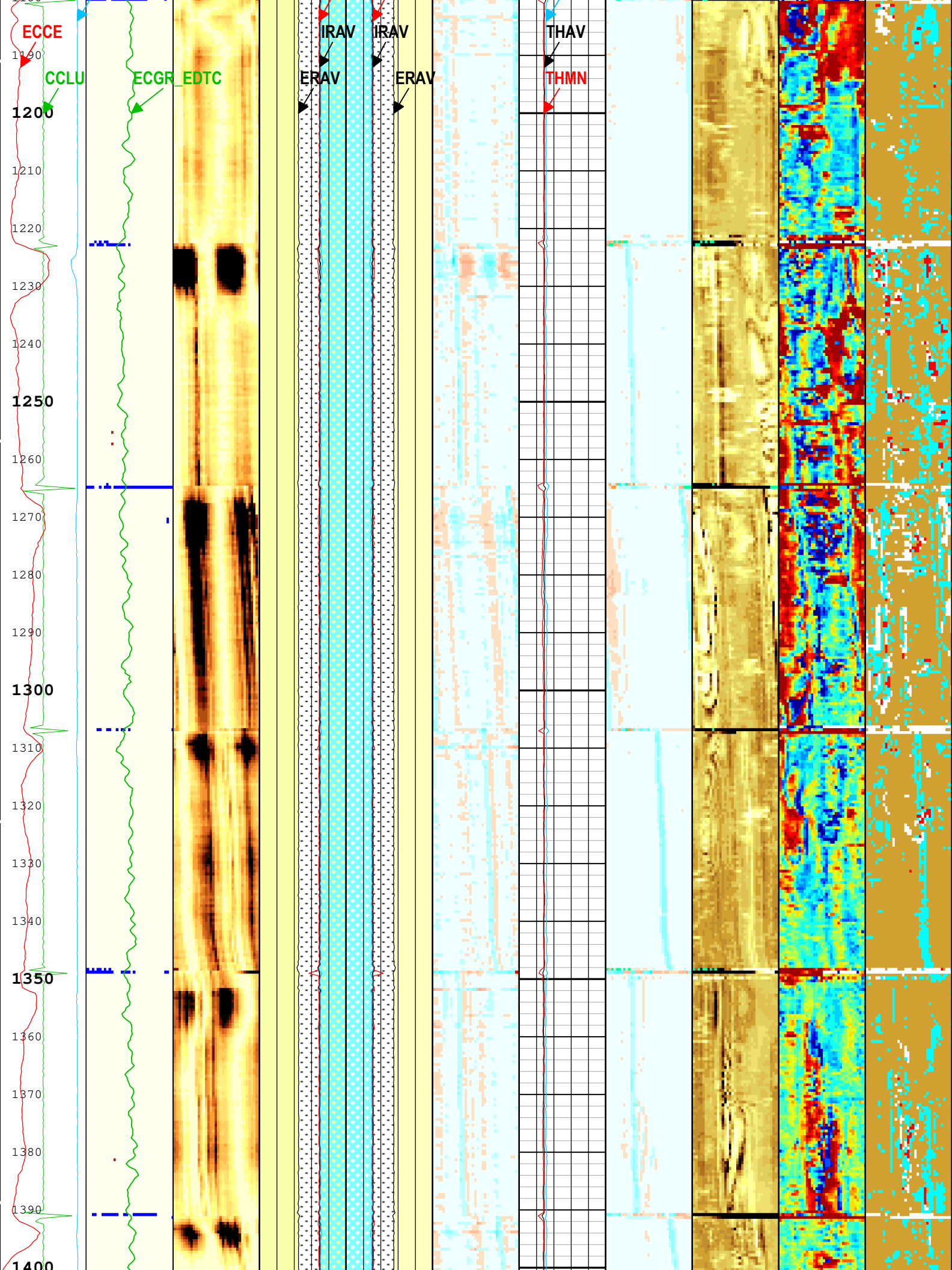
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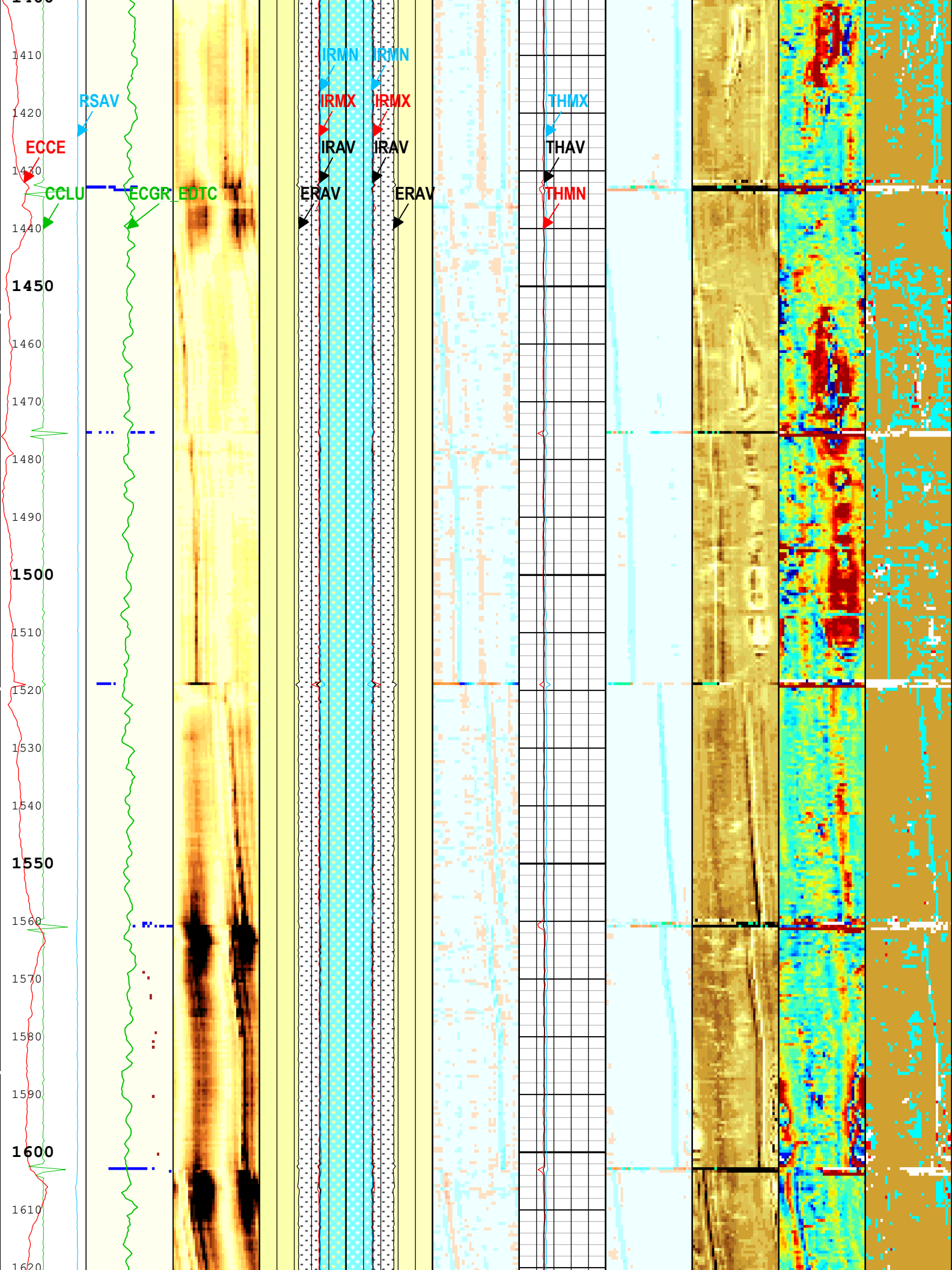
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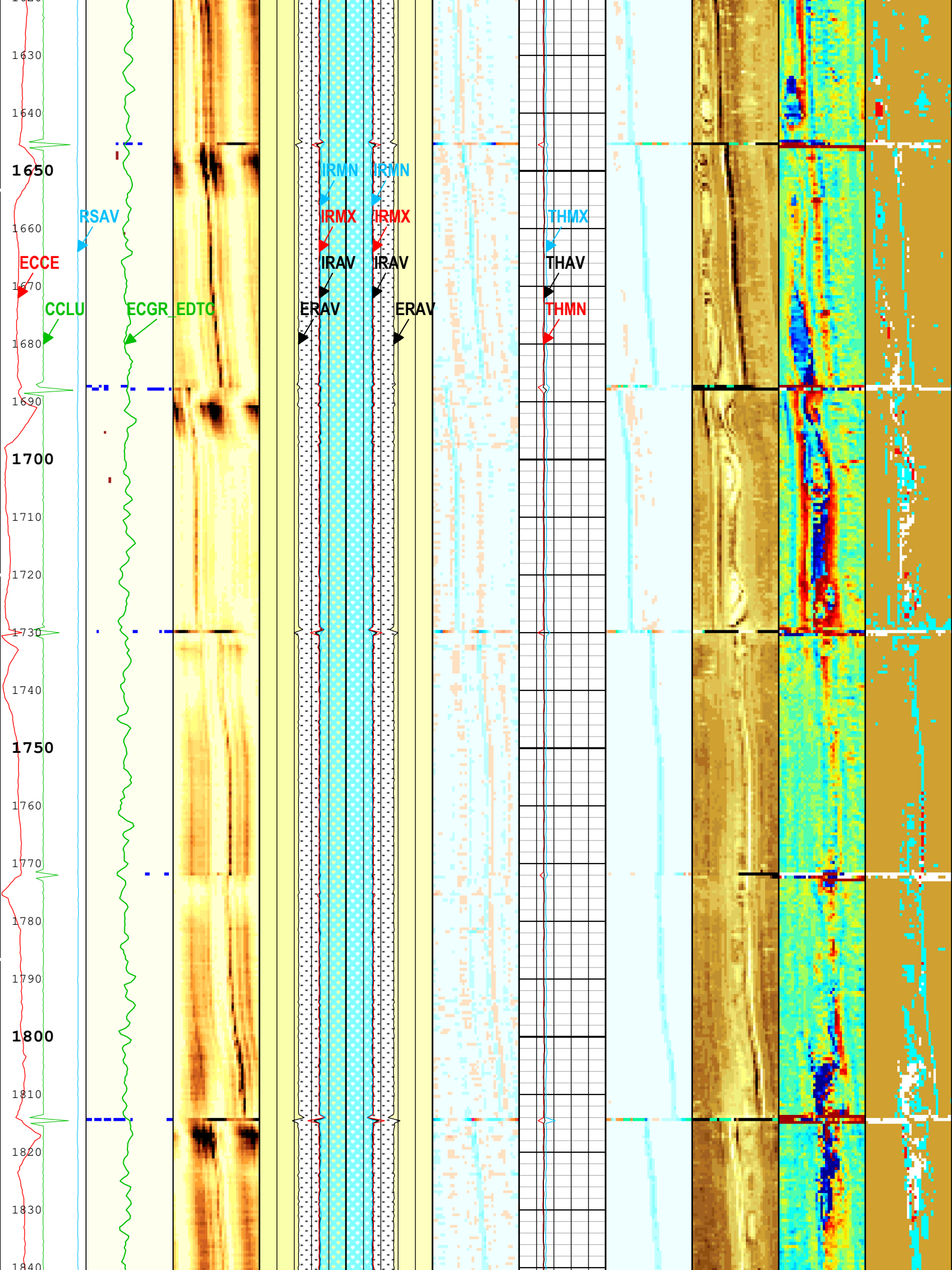
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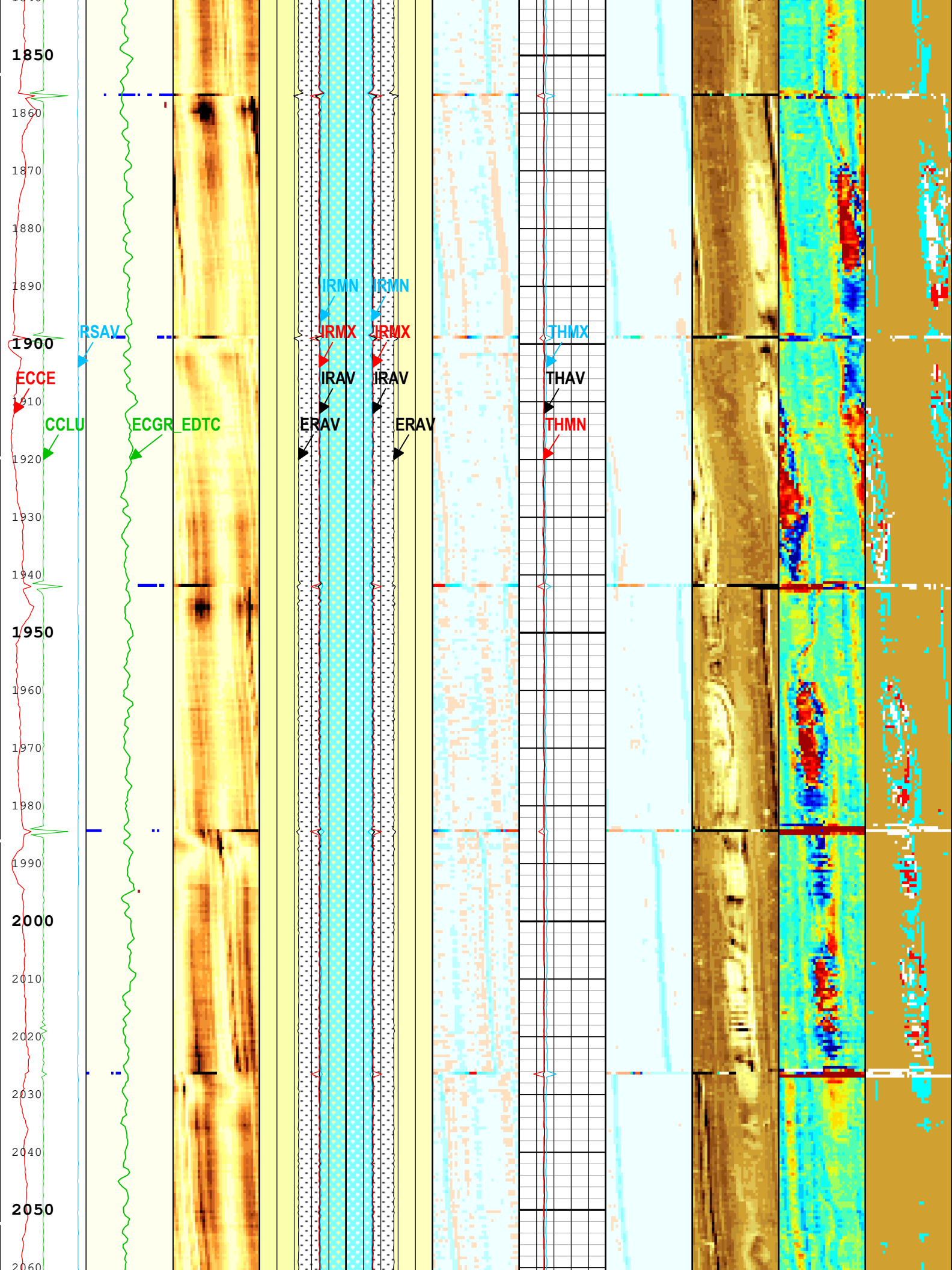
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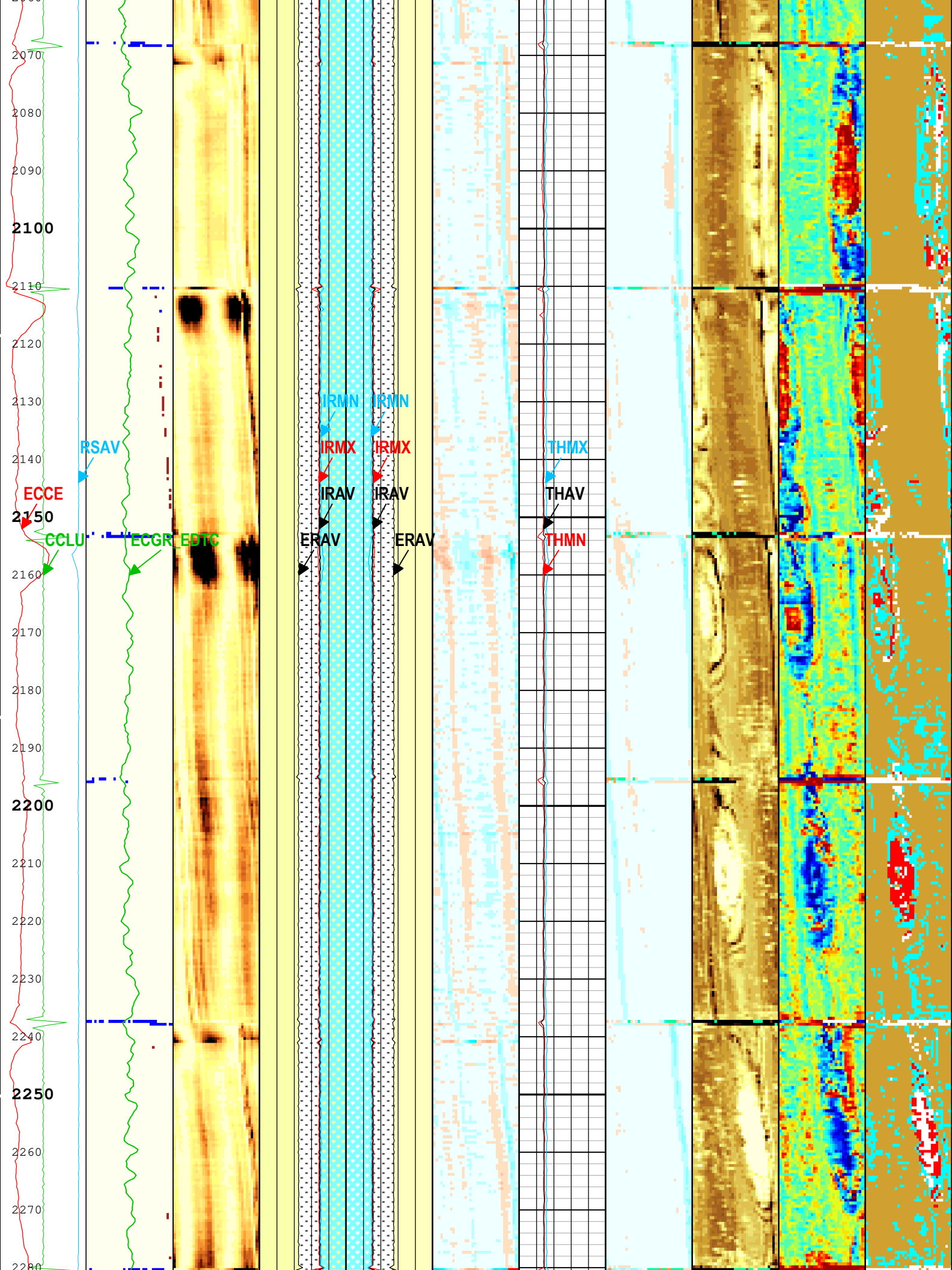
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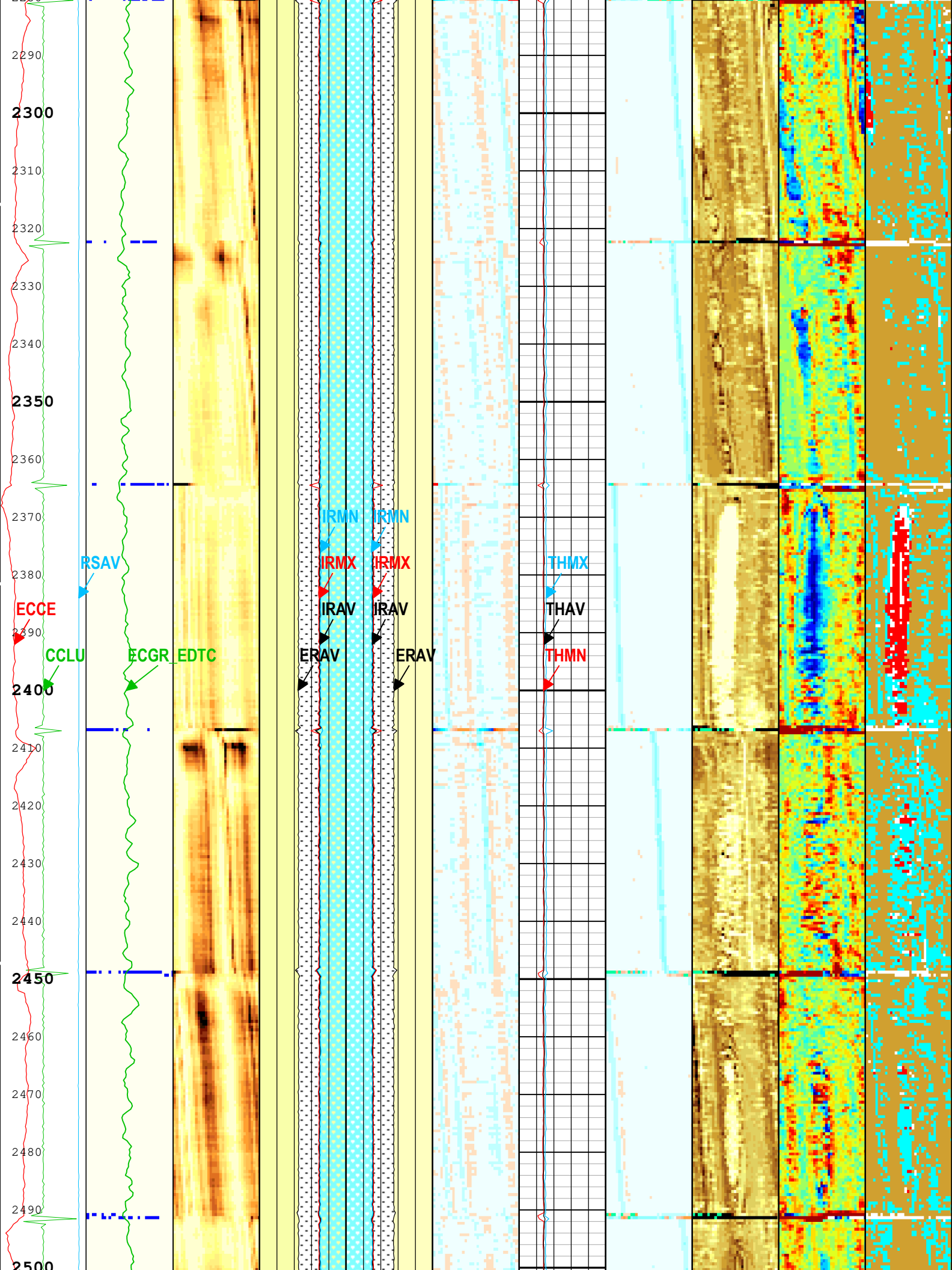
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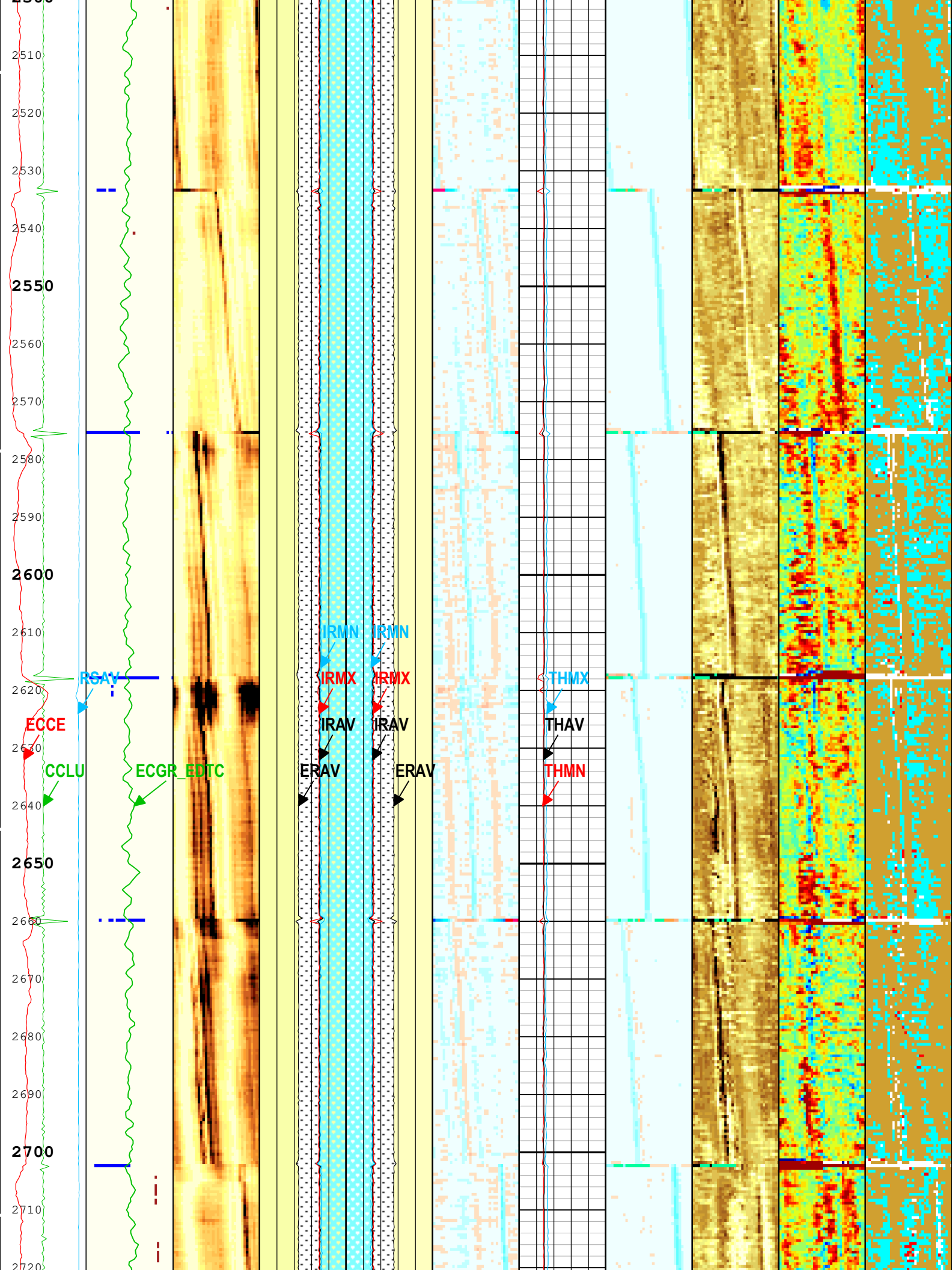
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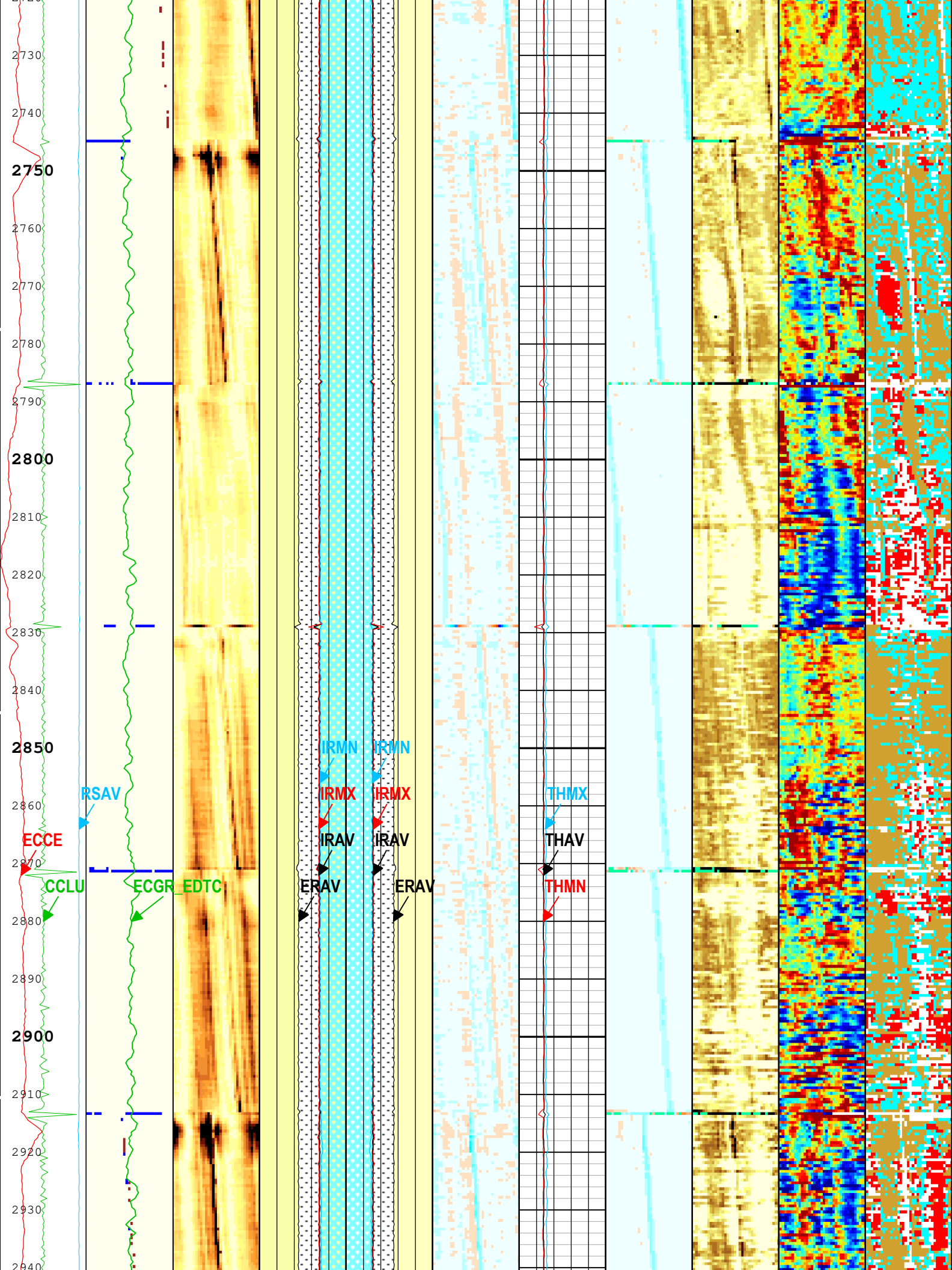
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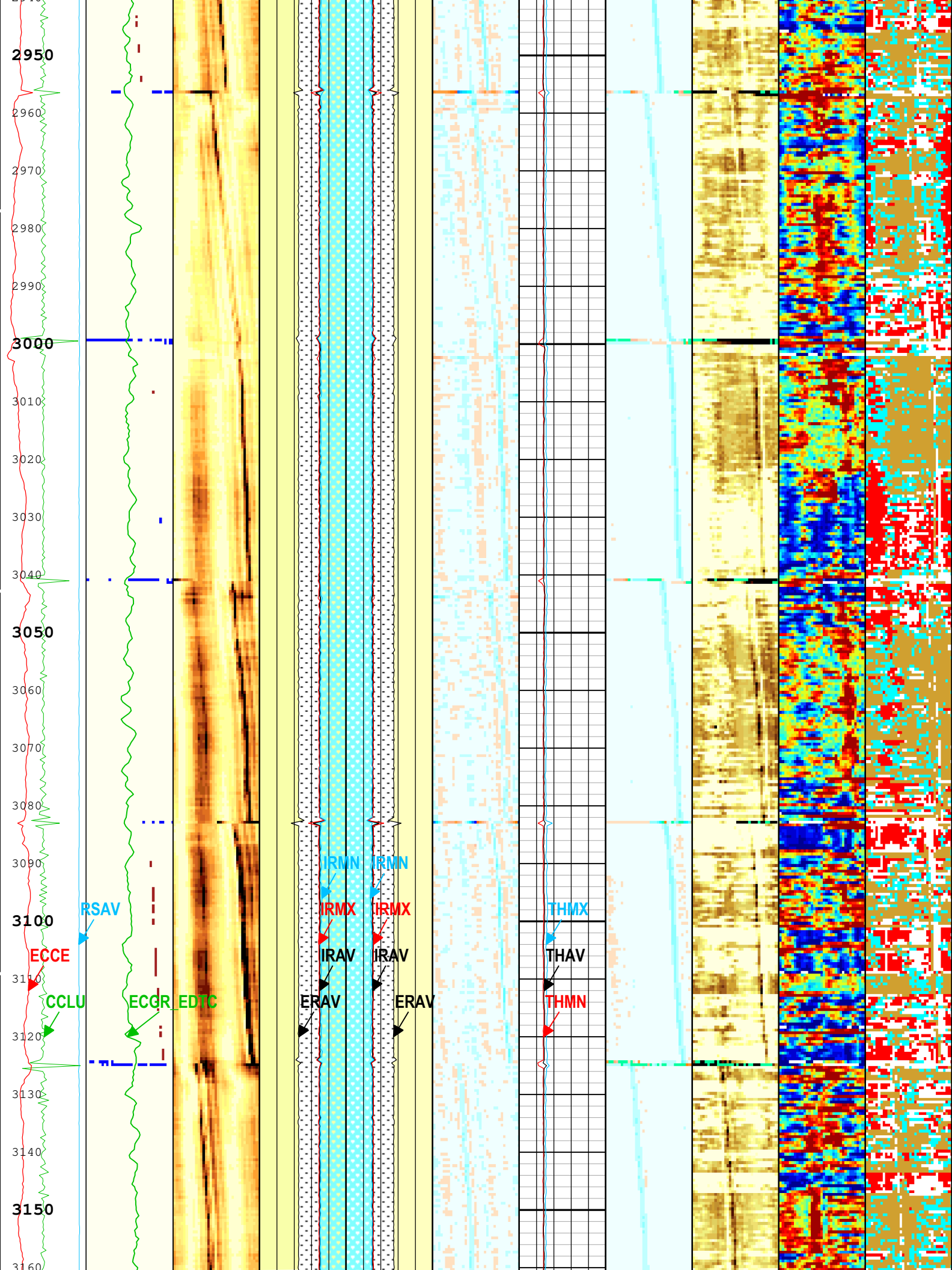
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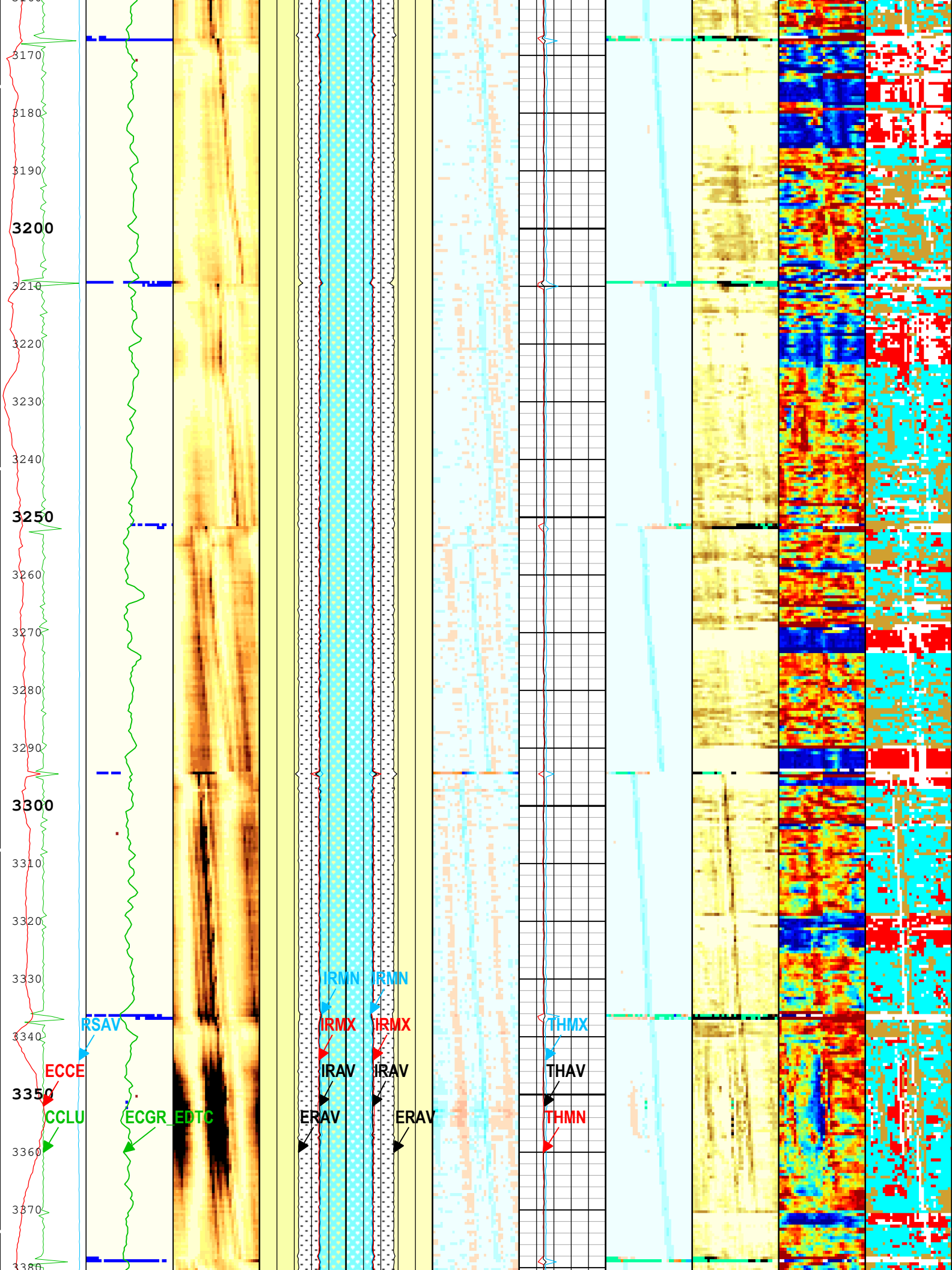
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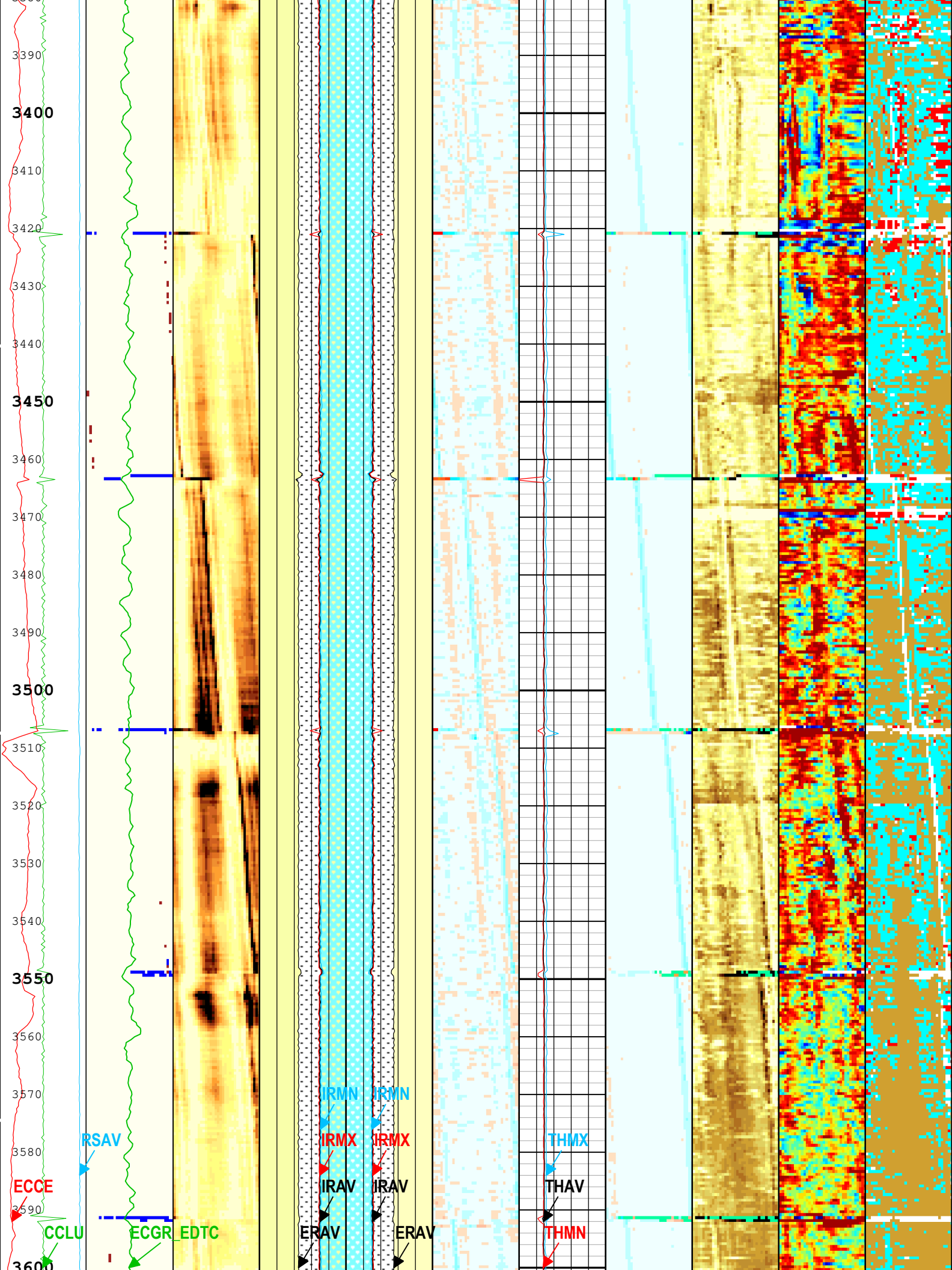
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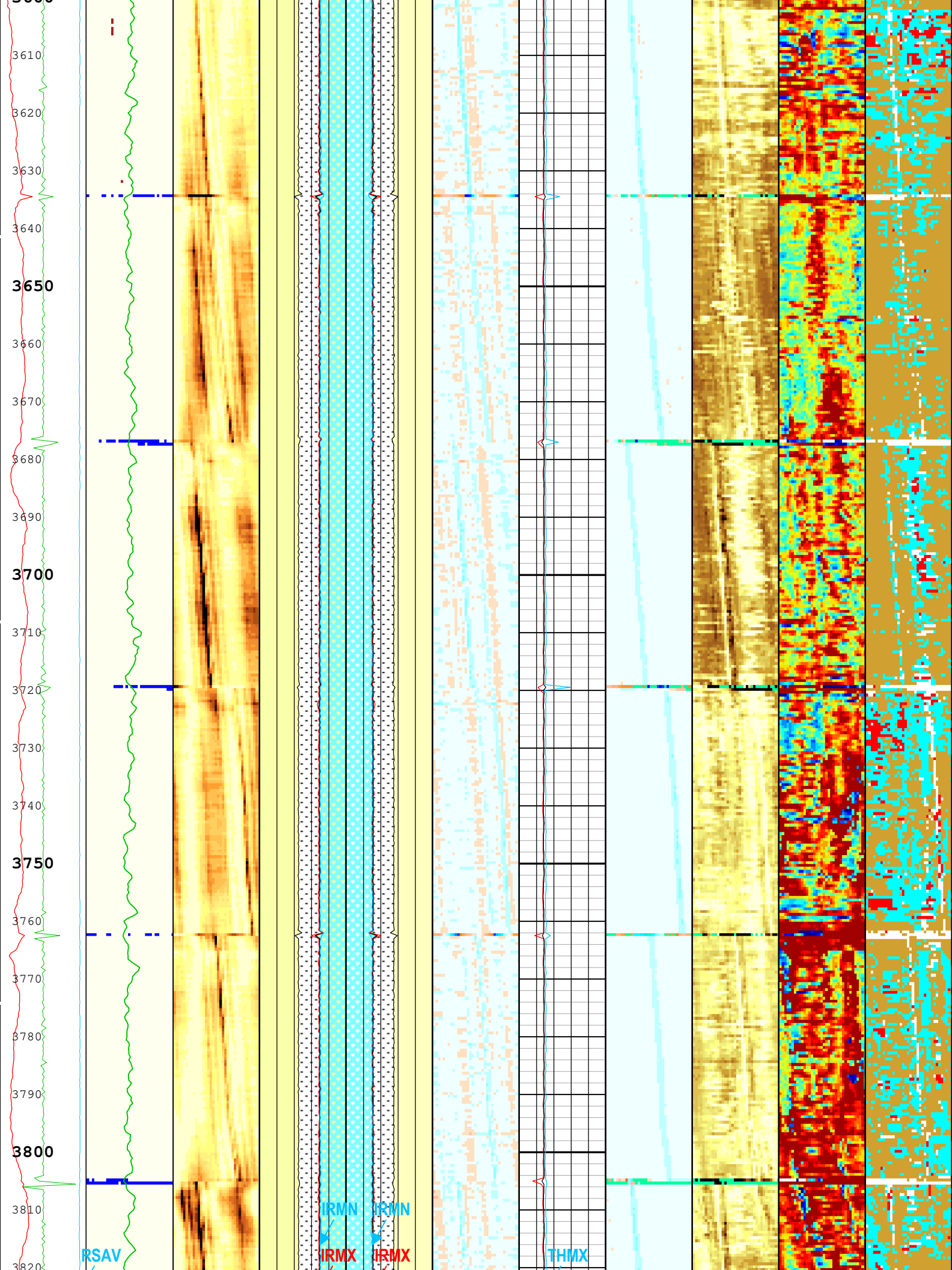
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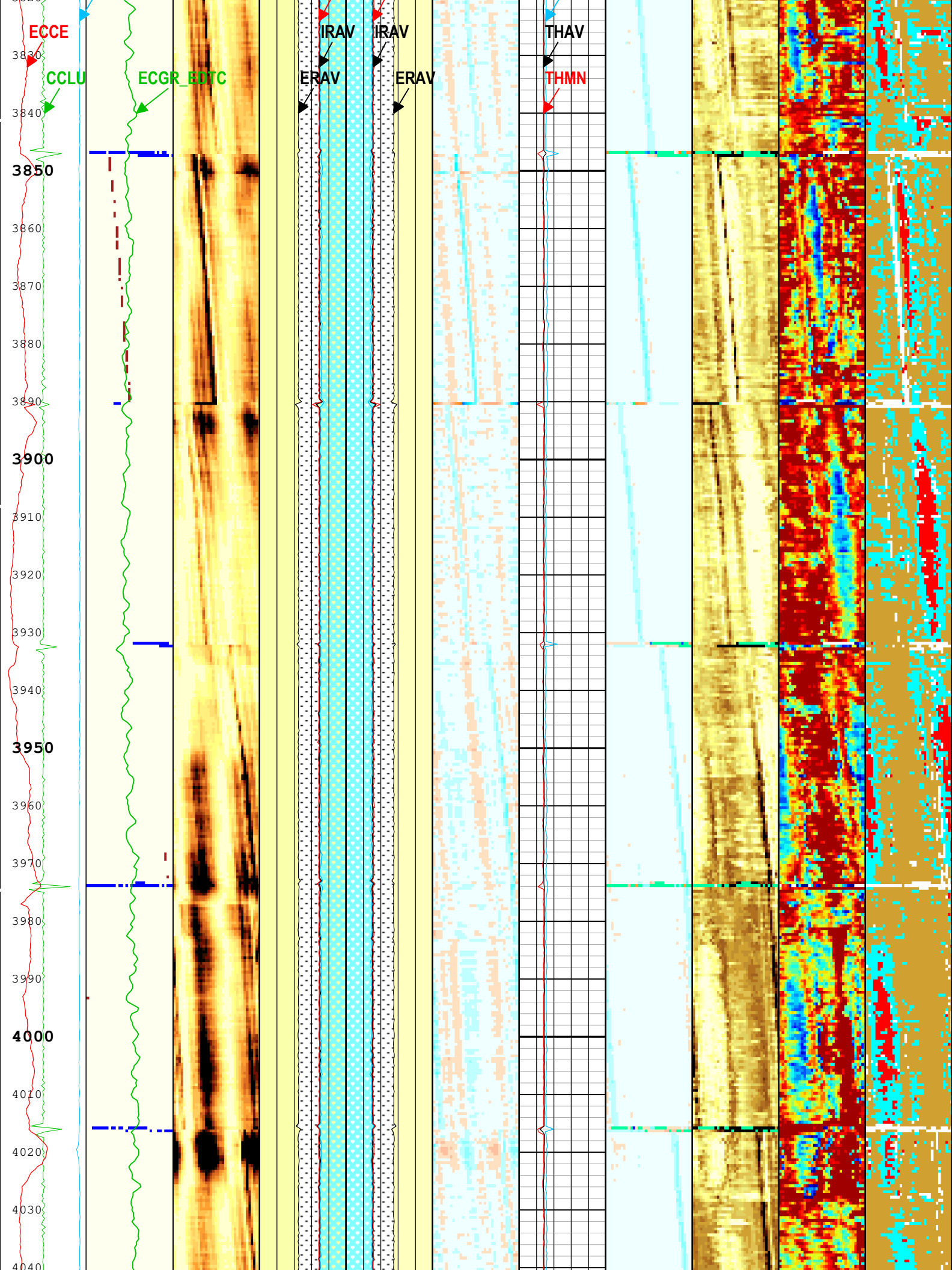
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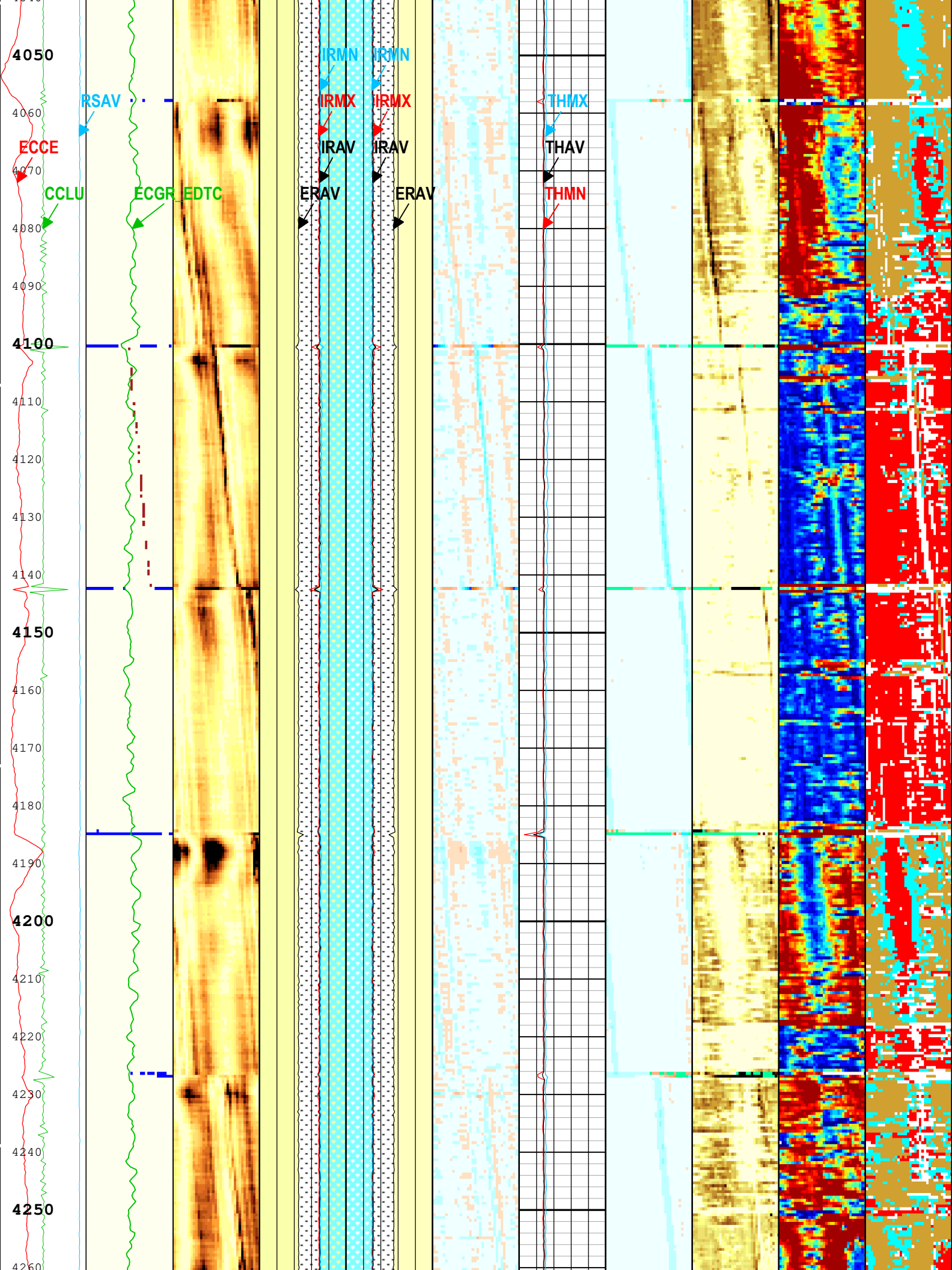
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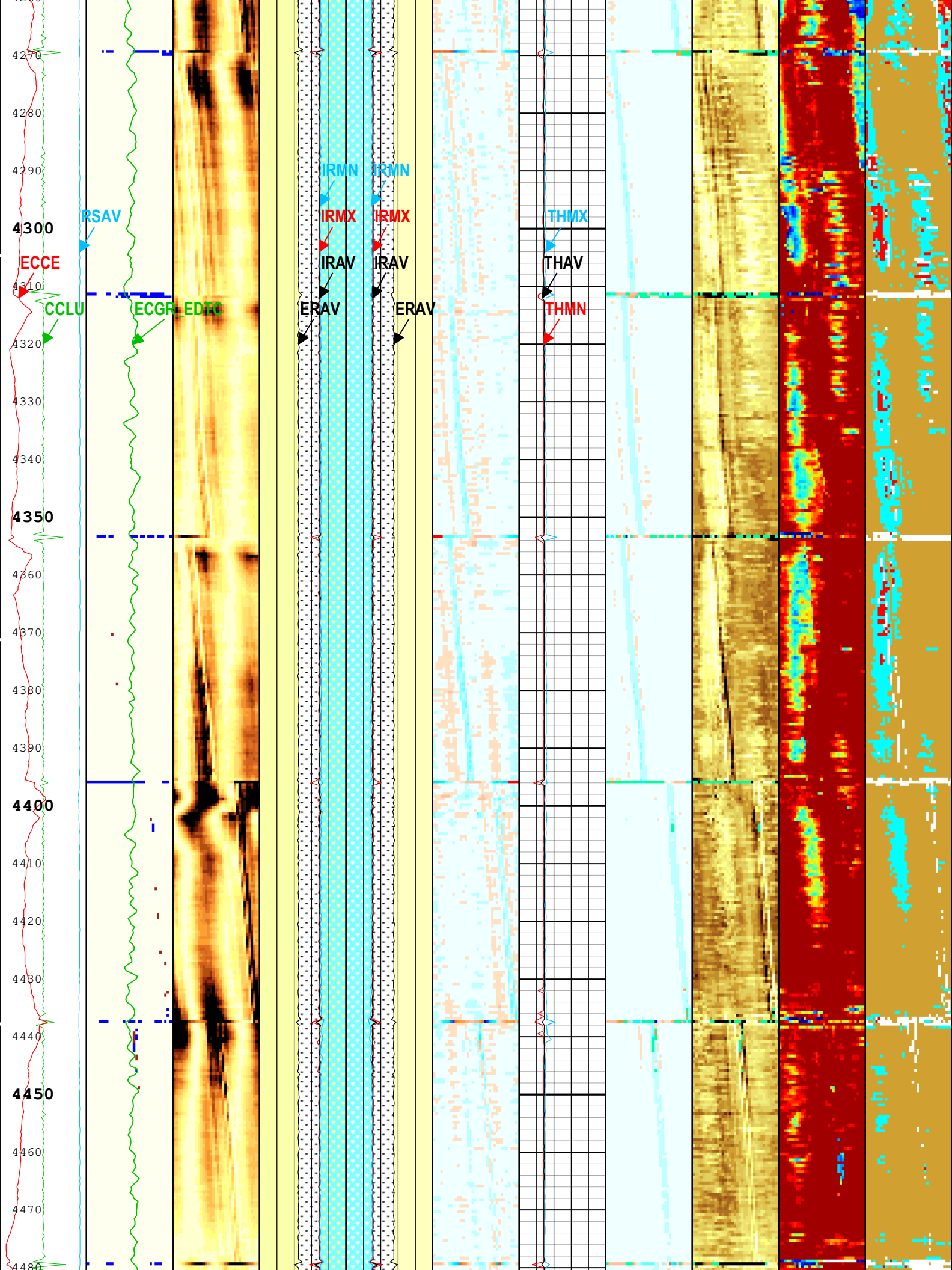
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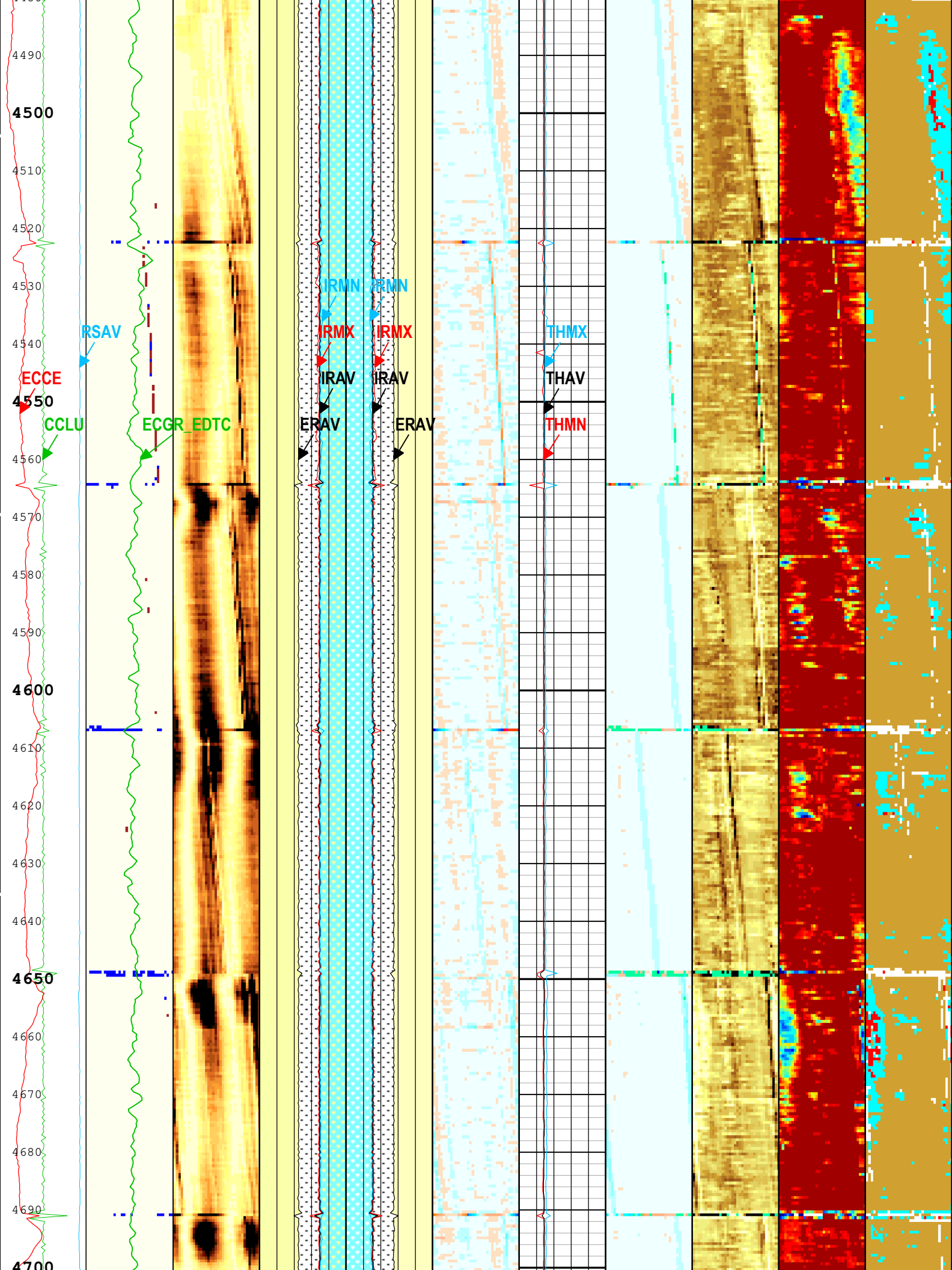
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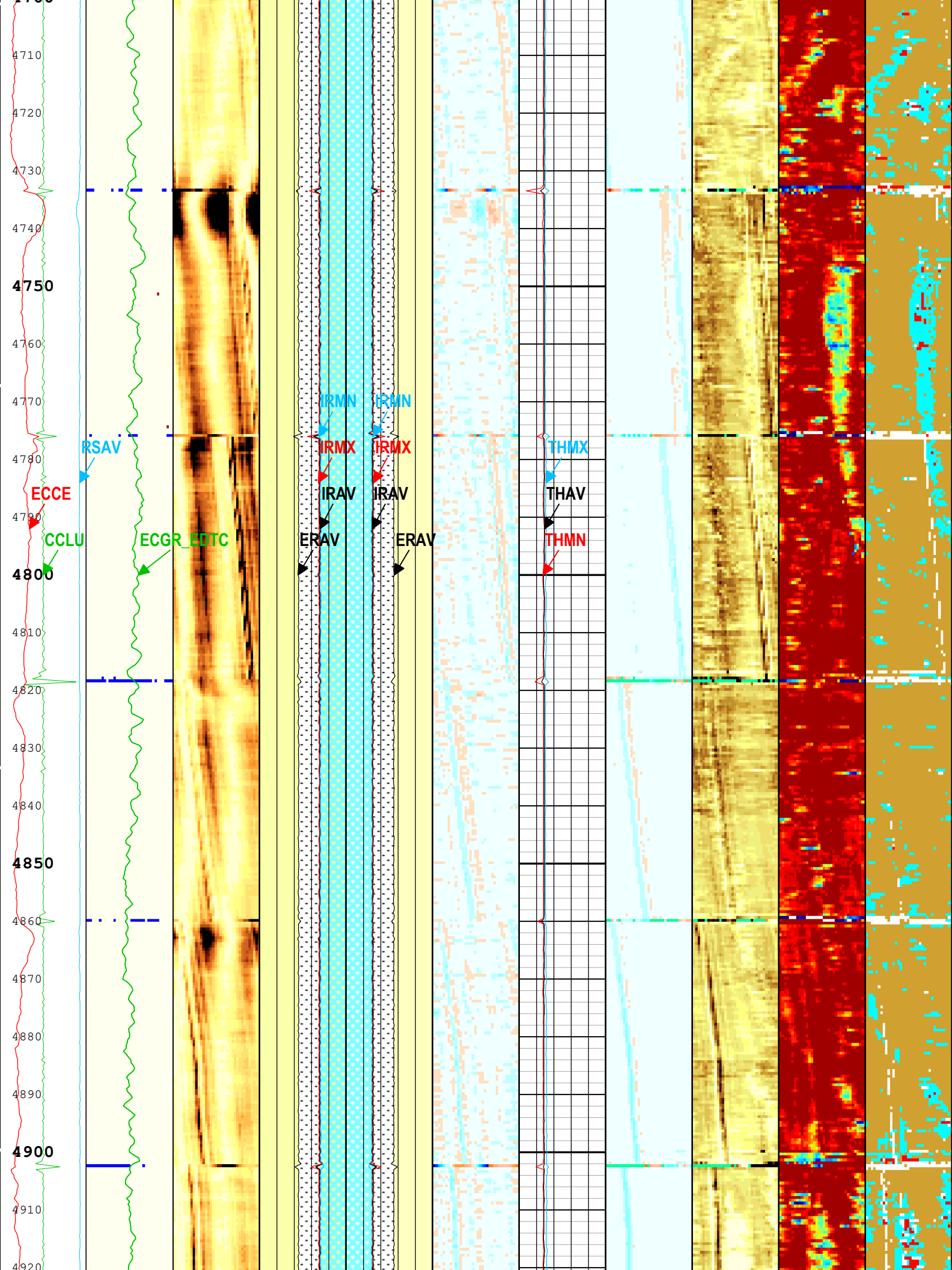
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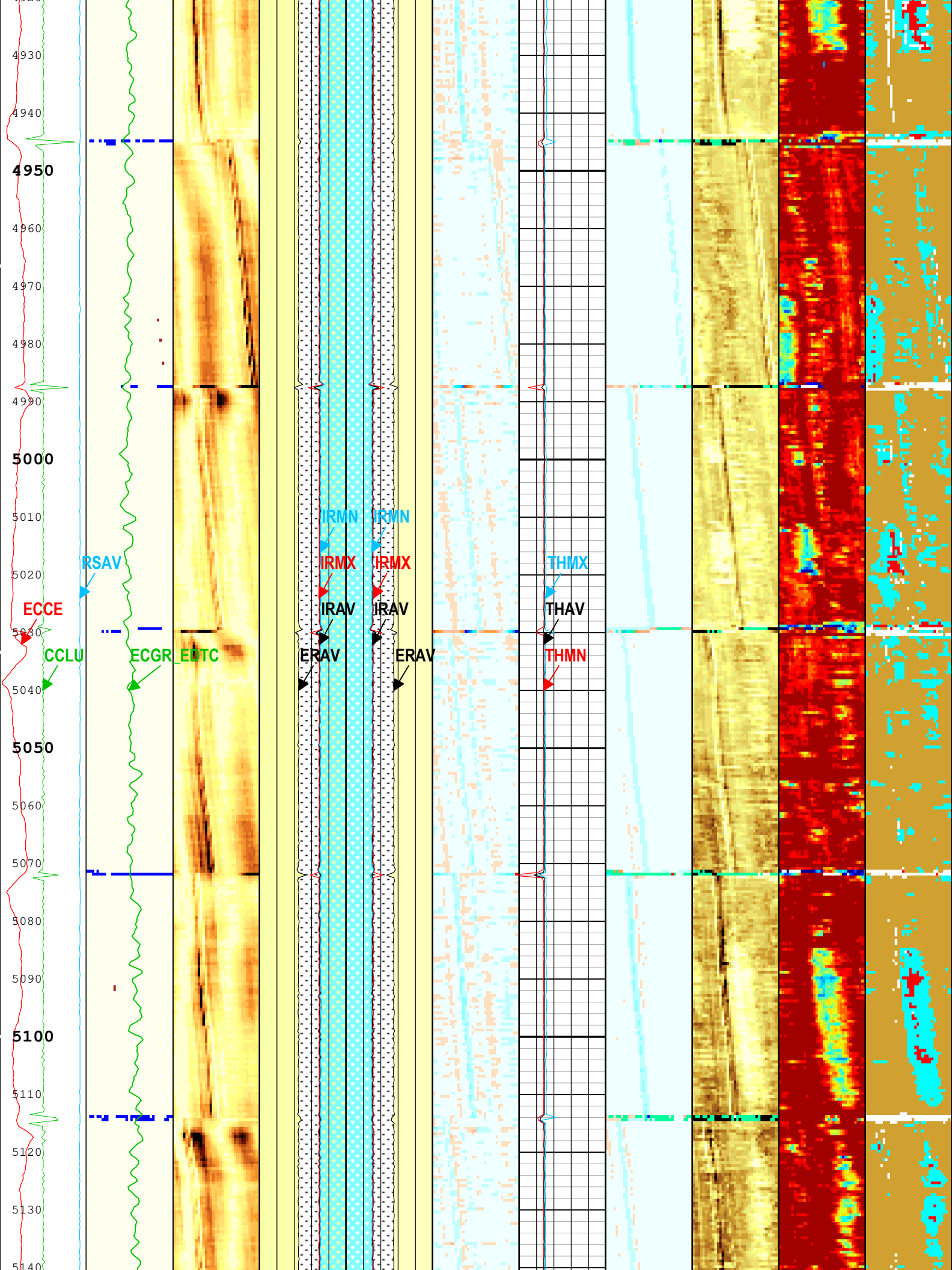
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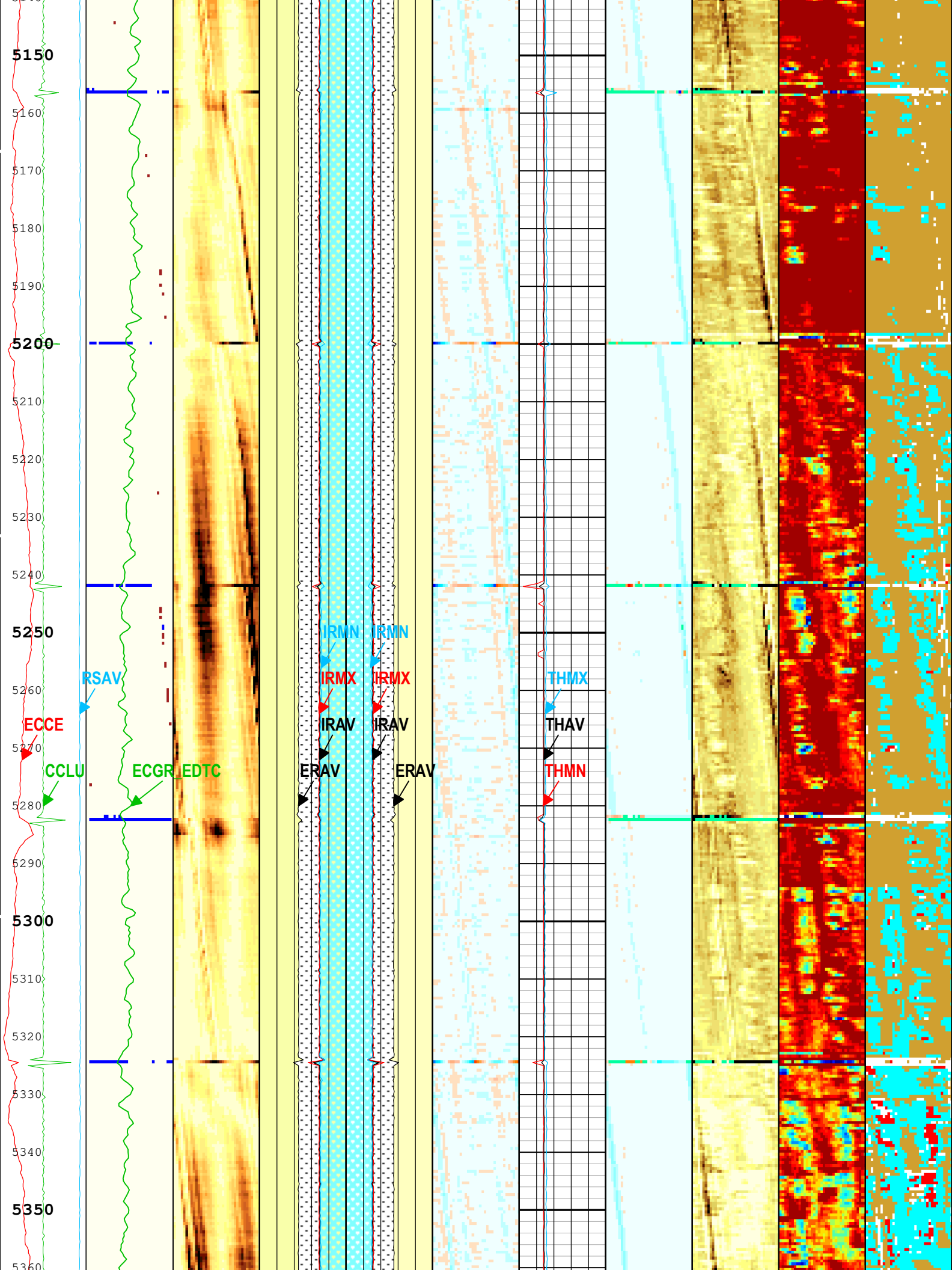
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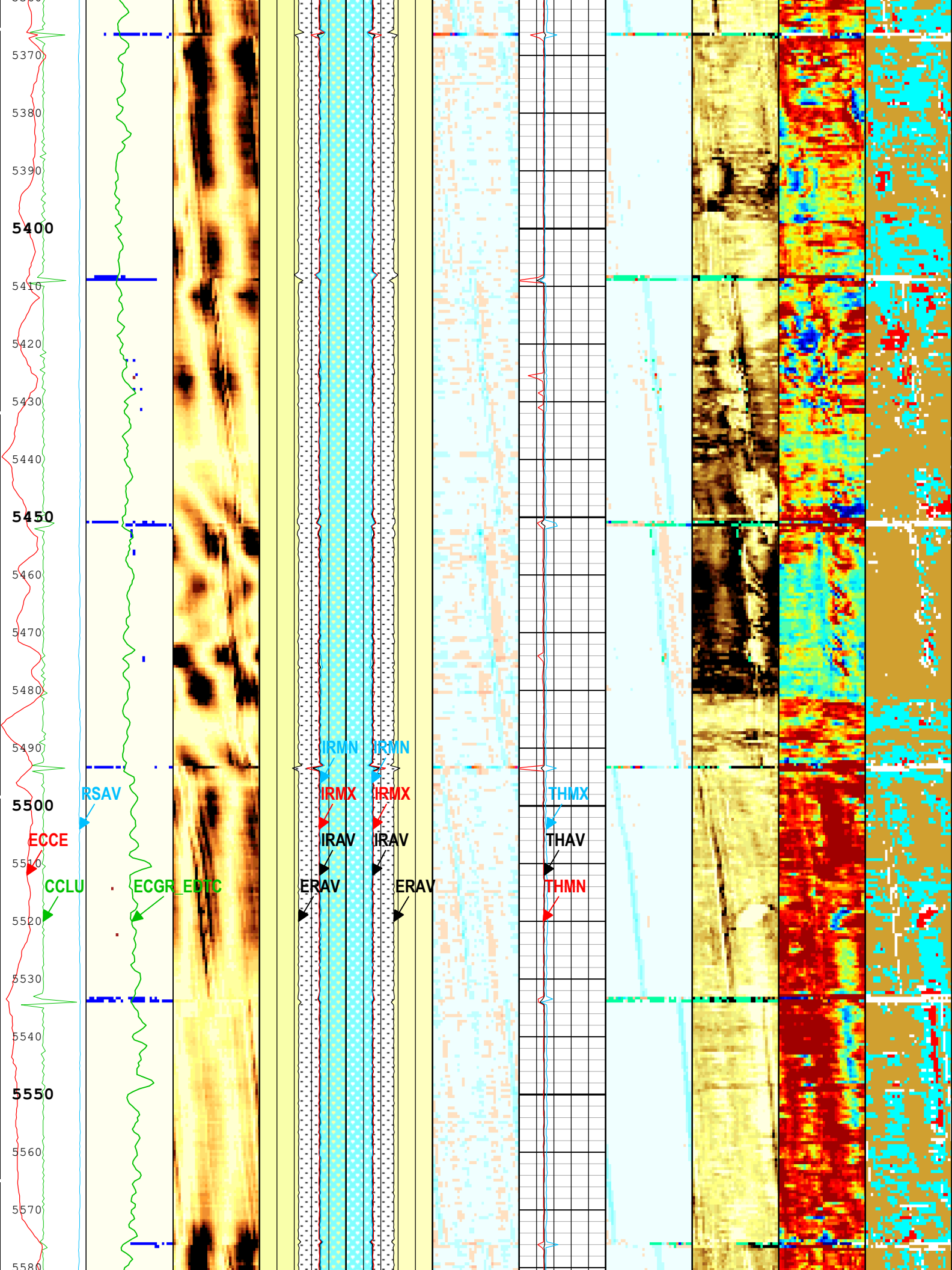
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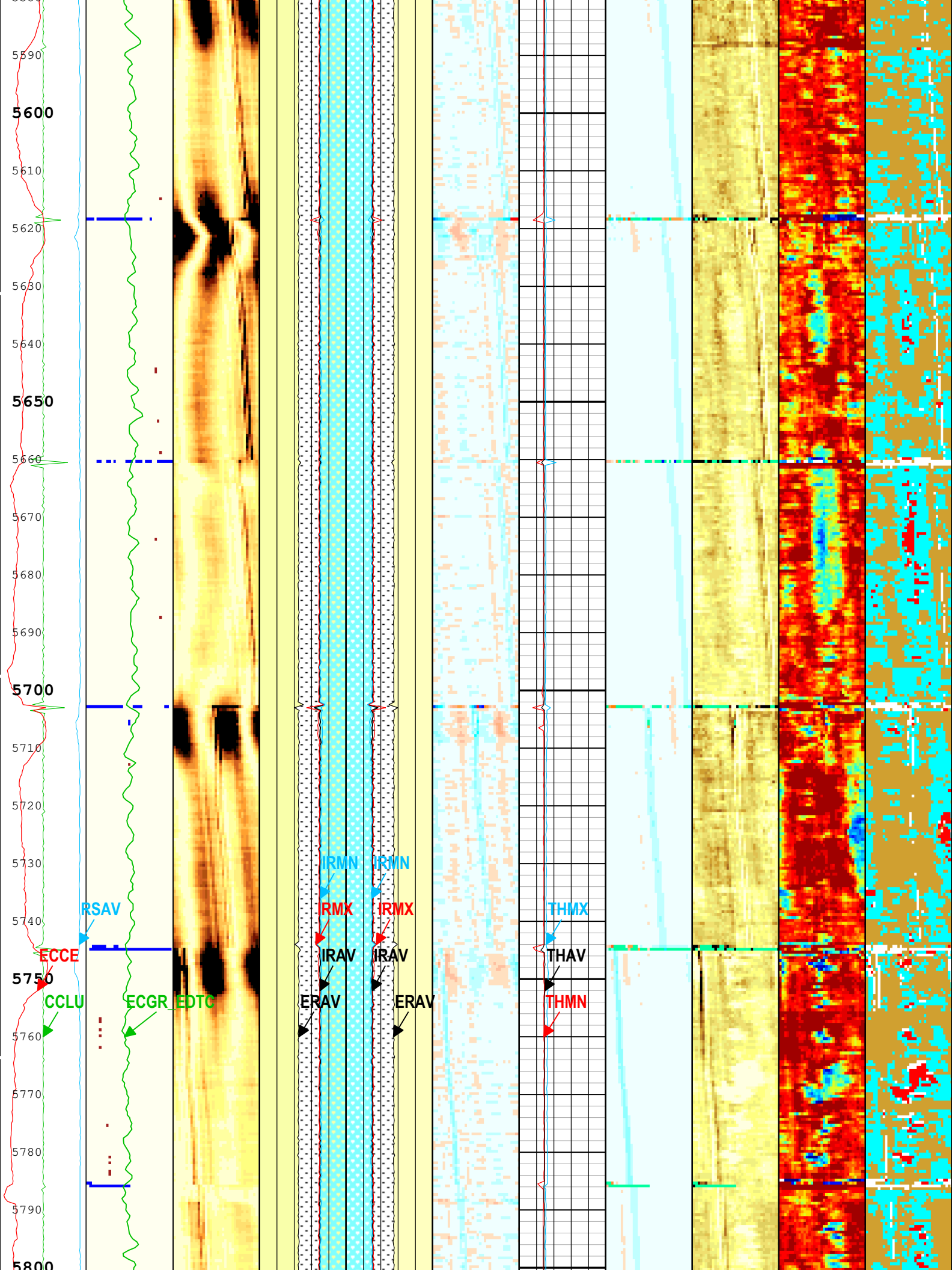
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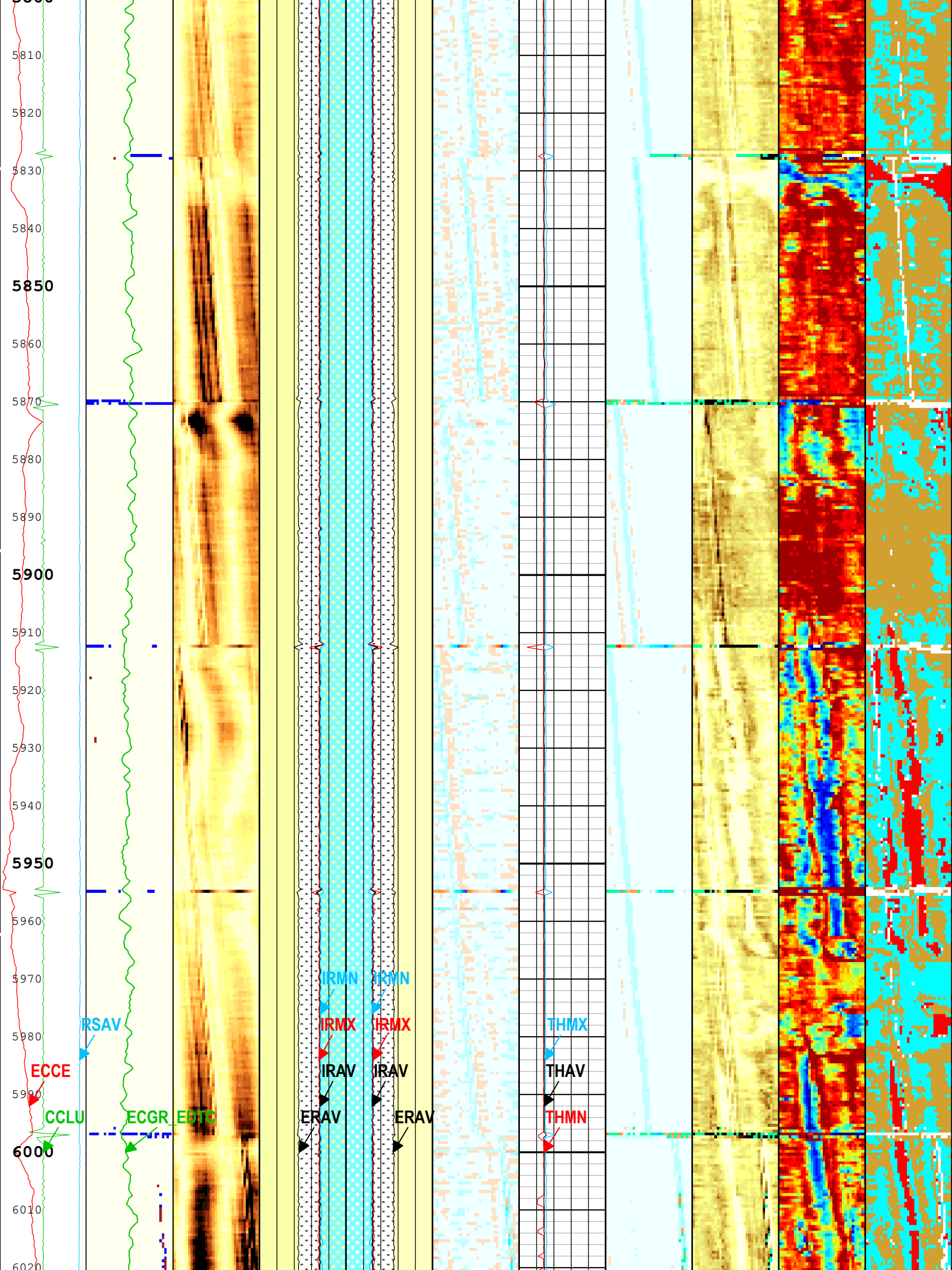
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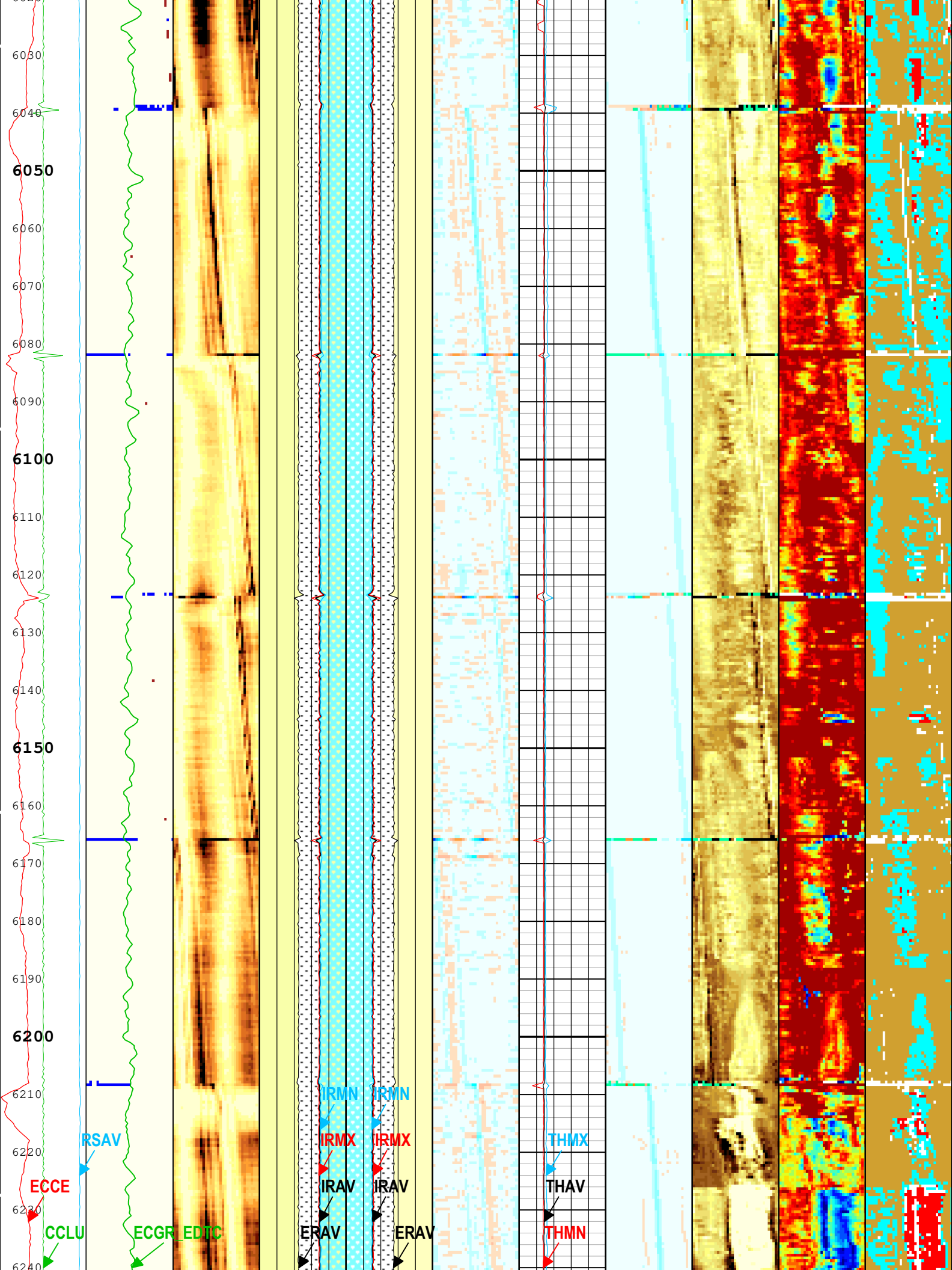
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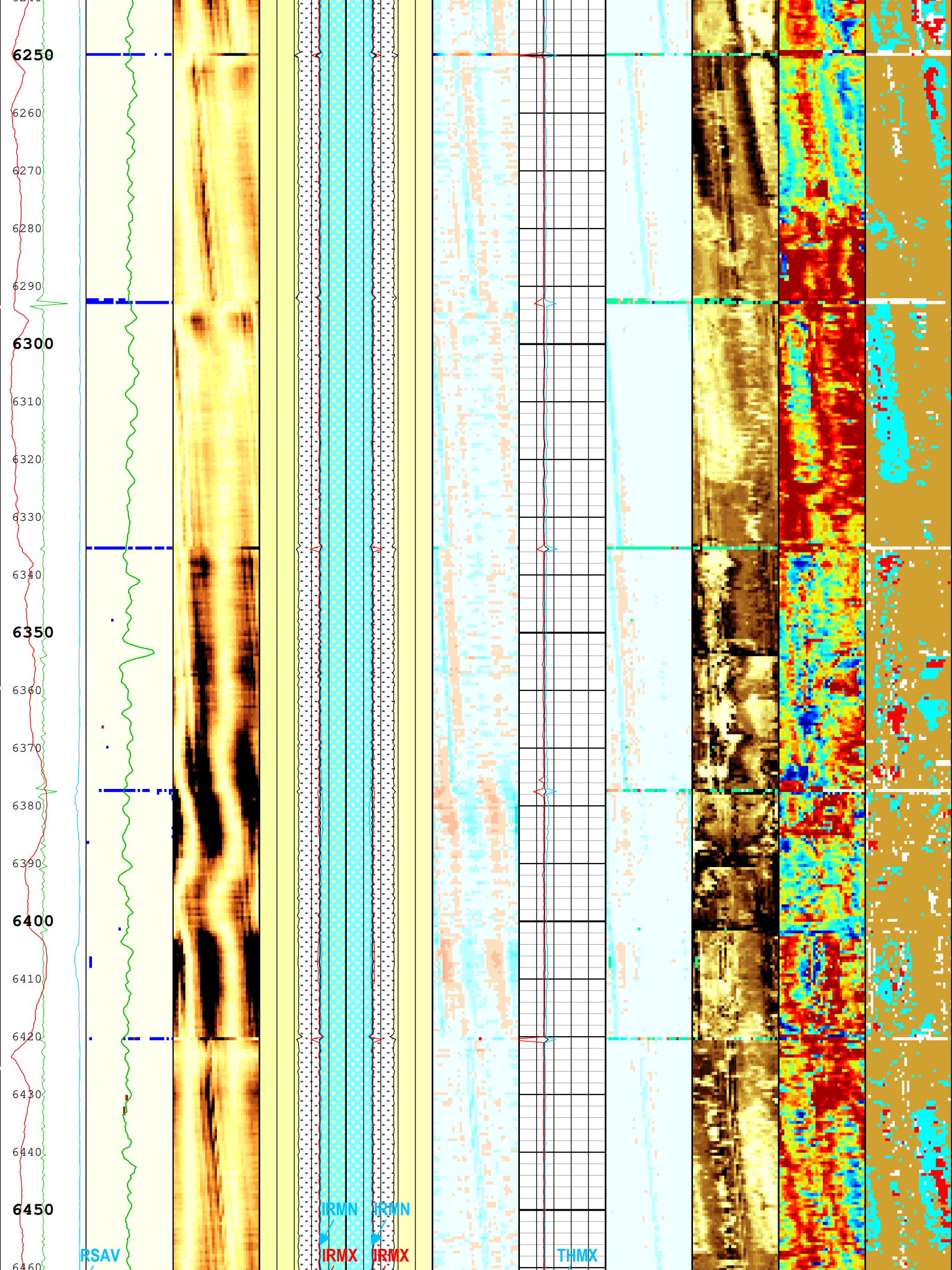
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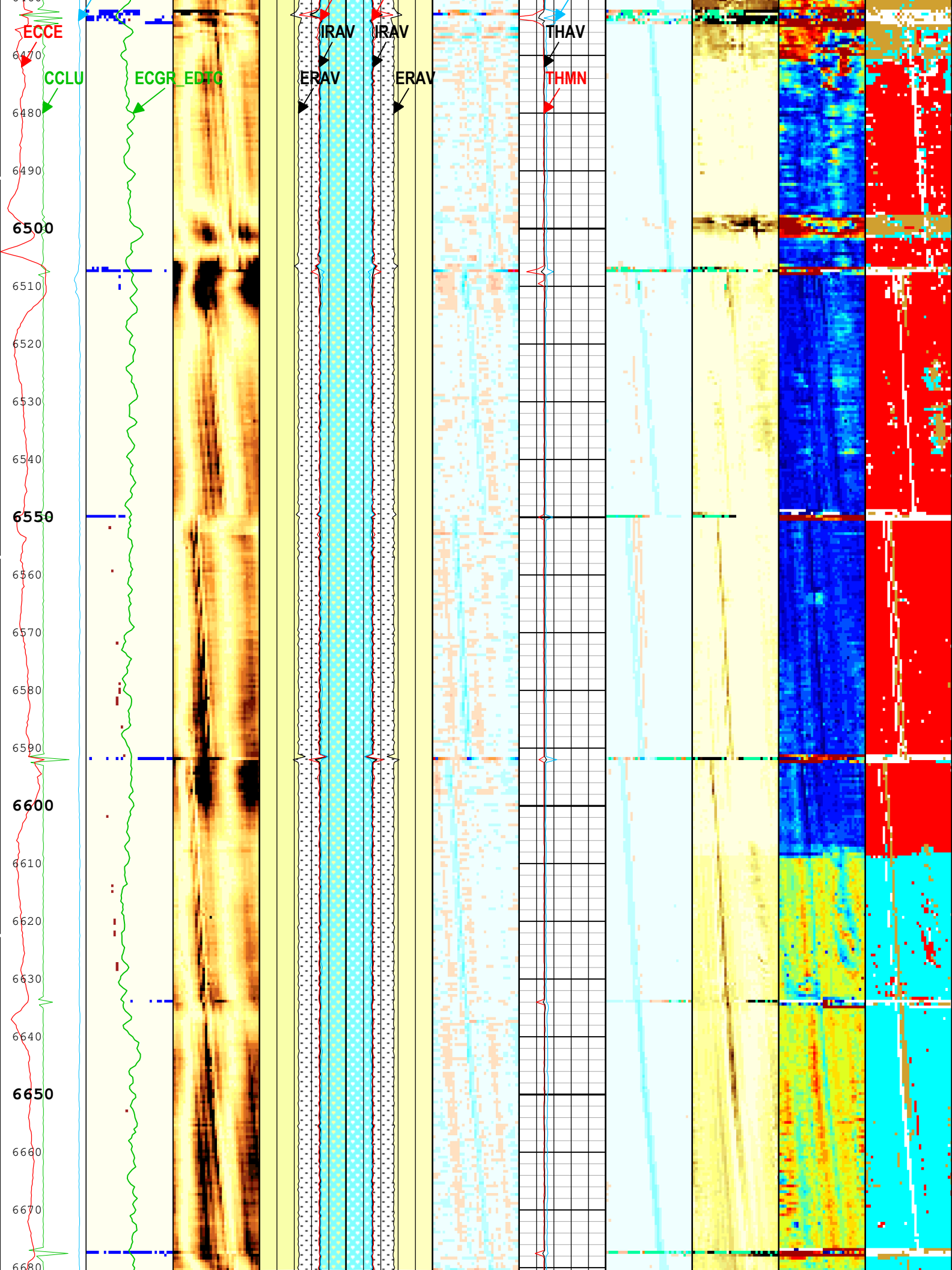
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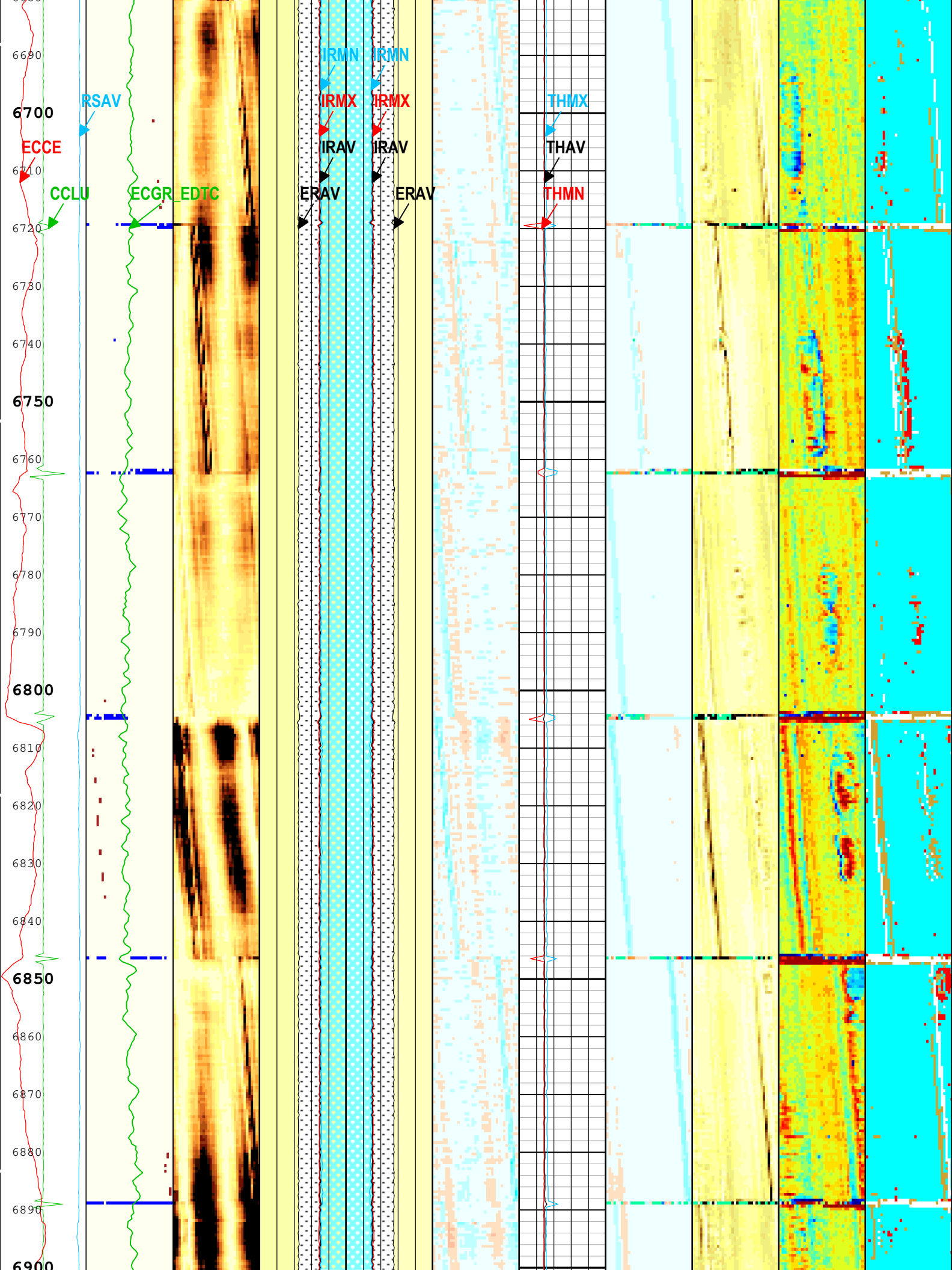
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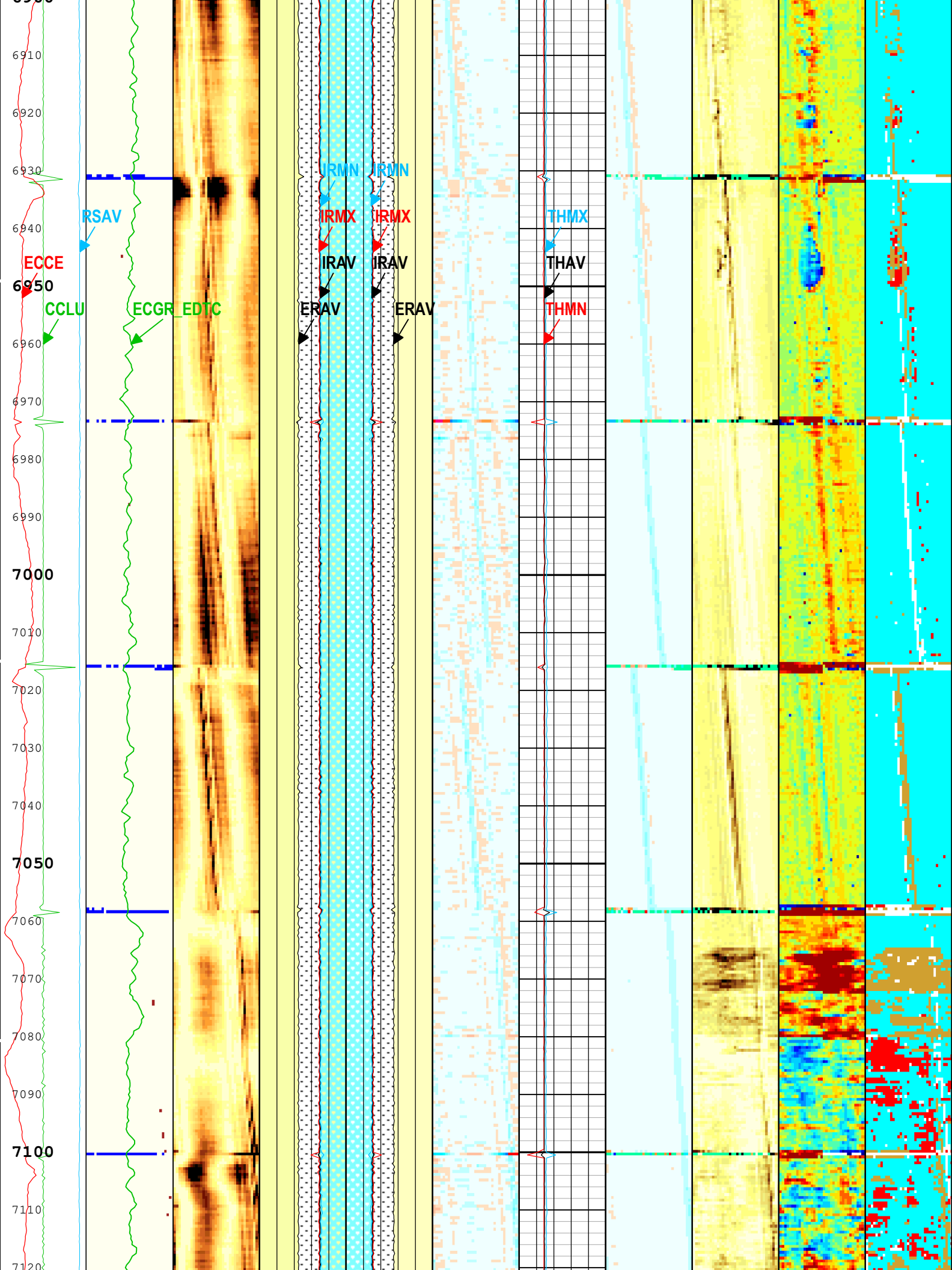
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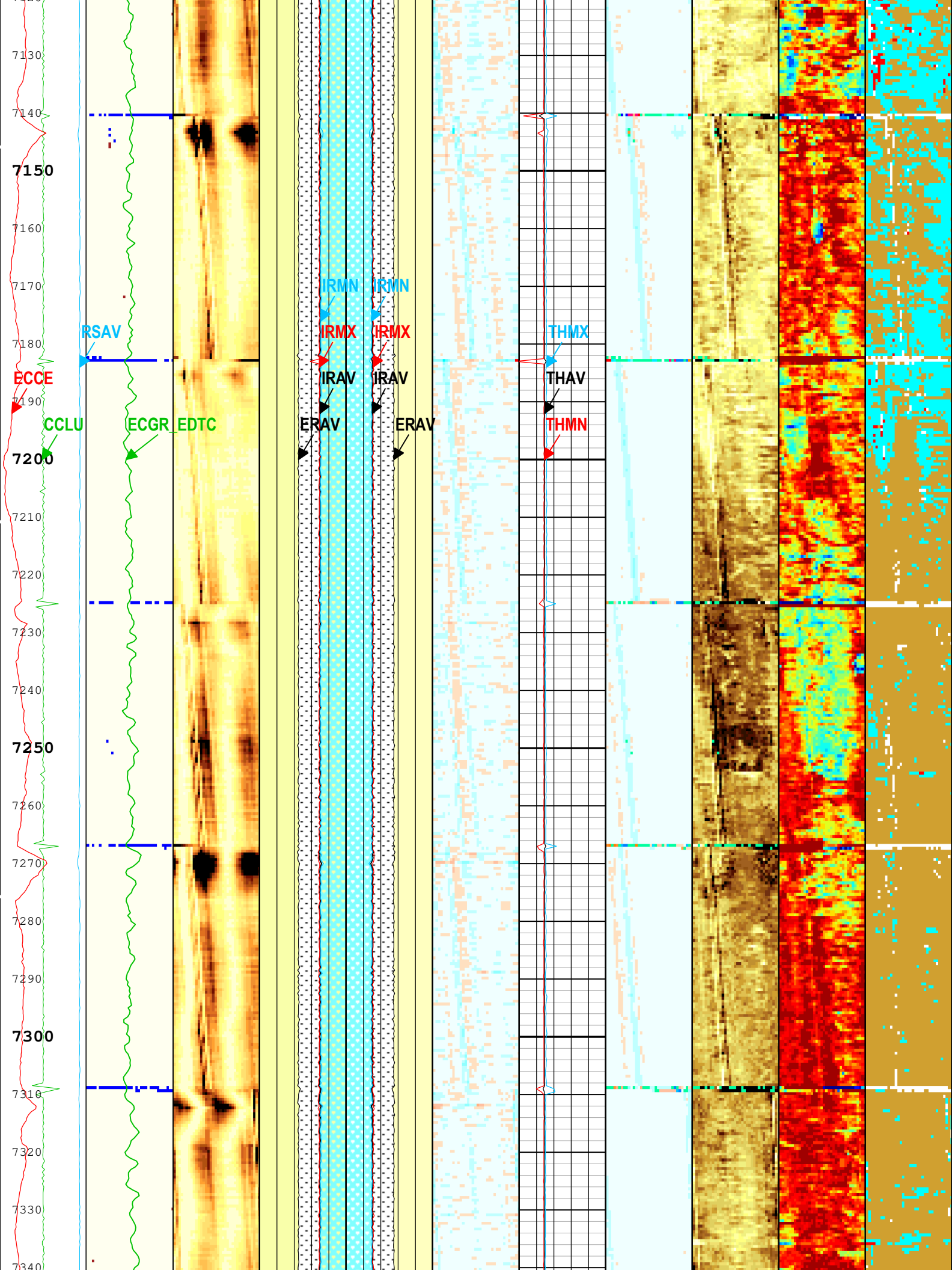
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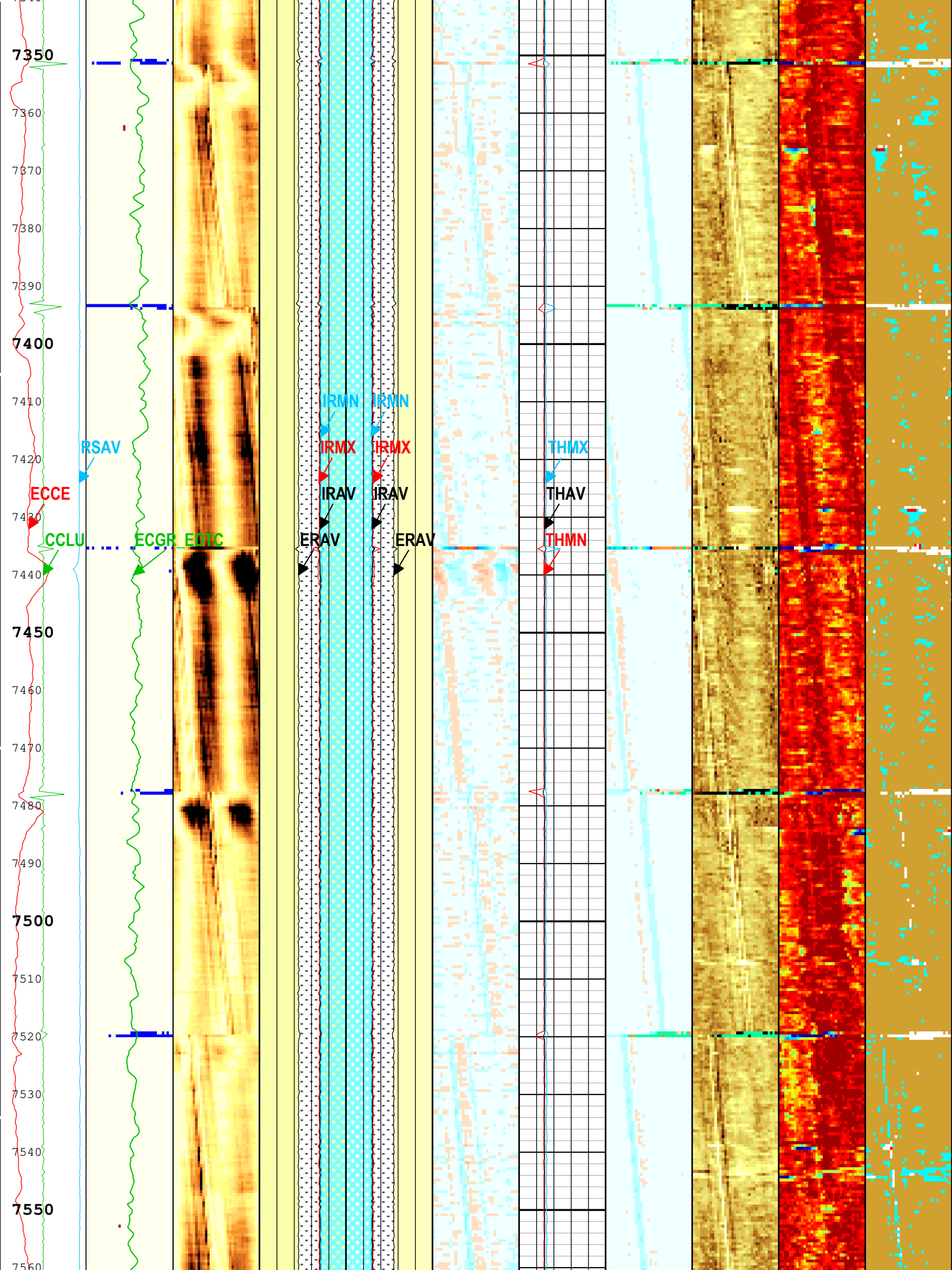
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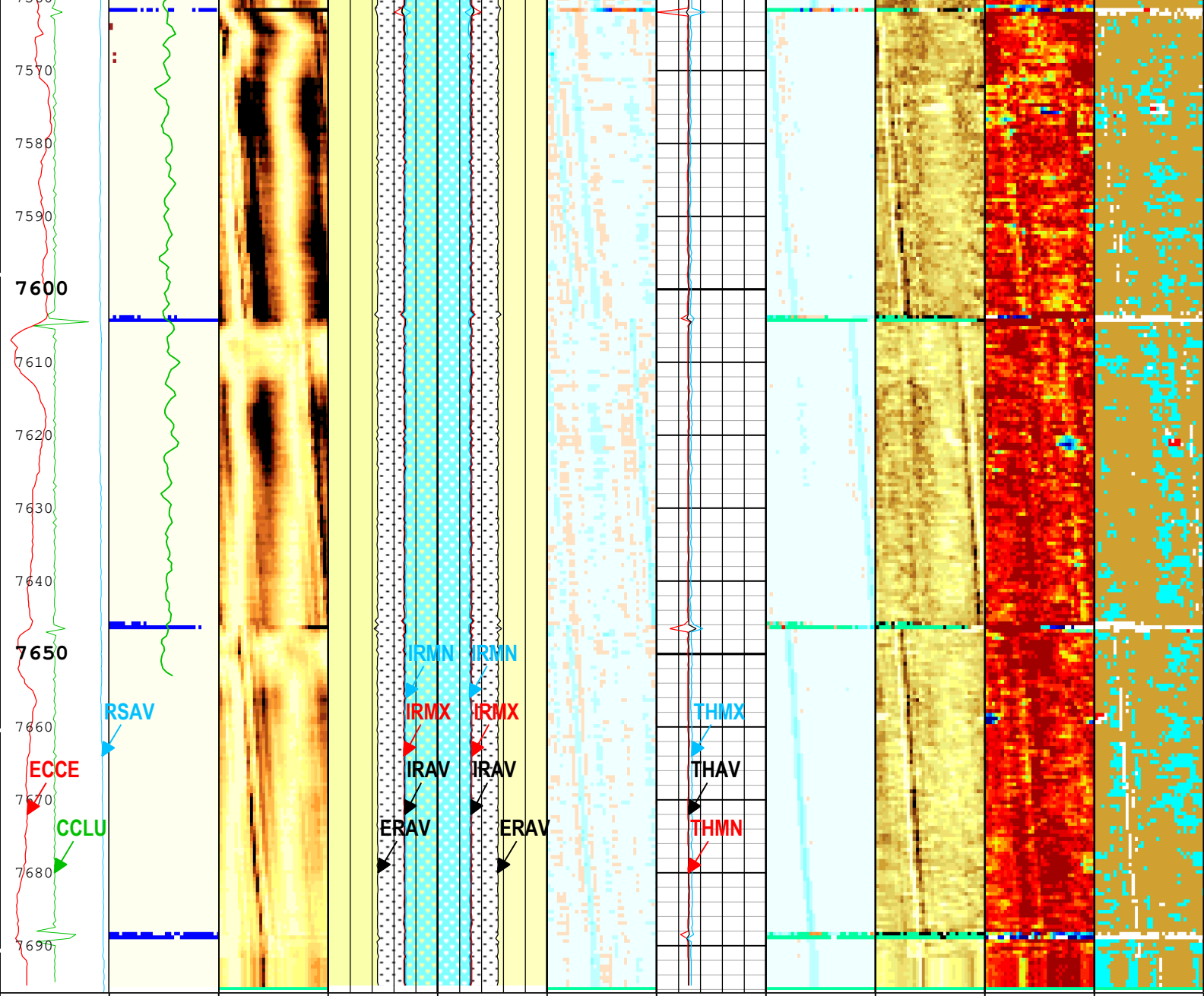


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

External Radii Average (ERAV) USIT-E
2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E
2.7 in 1.7

Internal Radius Maximum Value (IRMX) USIT-E
2.7 in 1.7

Internal Radius Minimum Value (IRMN) USIT-E

External Radii Average (ERAV) USIT-E
1.7 in 2.7

Internal Radius Averaged Value (IRAV) USIT-E
1.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E
1.7 in 2.7

Internal Radius Minimum Value (IRMN) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Internal Radii Normalized (IRBK) USIT-E (in)

Thickness Minimum Value (THMN) USIT-E
0.1 in 0.6

Thickness Average Value (THAV) USIT-E
0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

2.7 in 1.7	1.7 in 2.7

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 16-Mar-2023 17:49:00

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	9100	ft
CDEN	Cement Density	USIT-E	1.56	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	1.32	g/cm3
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	-41.84	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.14	
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-25	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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	12.25	32	1115
BS	7.875	1115	7696.5

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	54	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	
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 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	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	16-Mar-2023 14:13:27	16-Mar-2023 14:18:19	7697.24	7513.62
EMXV	10	16-Mar-2023 14:18:19	16-Mar-2023 15:17:18	7513.62	3620.74
EMXV	7	16-Mar-2023 15:17:18	16-Mar-2023 16:12:27	3620.74	75.77

All depth are at tool zero.

One

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.221762
	Wireline_NPD-ThruBit-2022.1_12.1.221178
	Wireline_NPD-HCS-2022.1_12.1.221849

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	75.77 ft	7697.24 ft	16-Mar-2023 2:13:27 PM	16-Mar-2023 4:12:27 PM	ON	-4.00 ft	Yes

All depths are referenced to toolstring zero

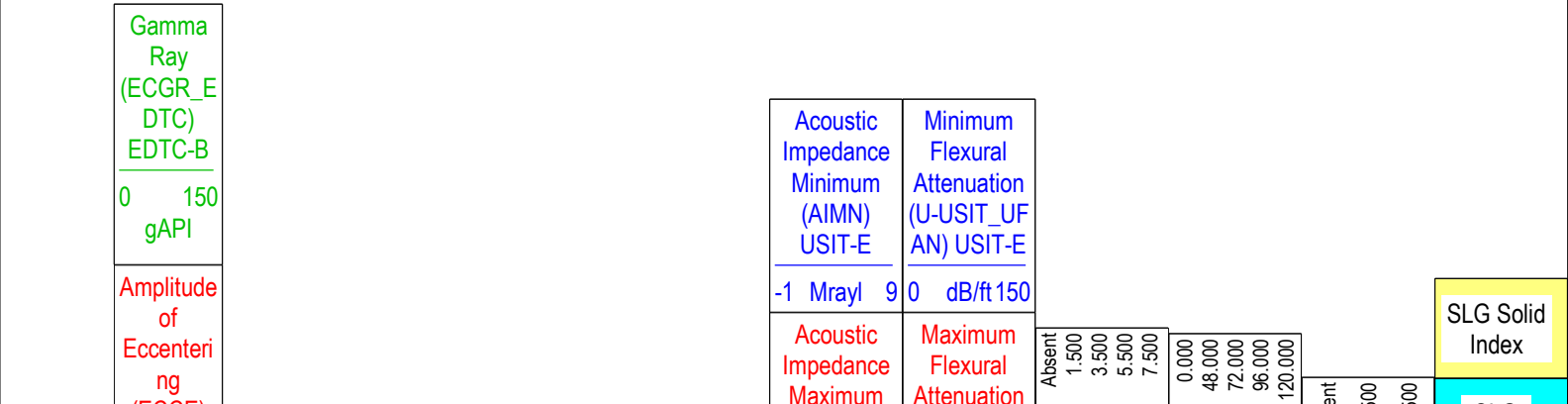
Log

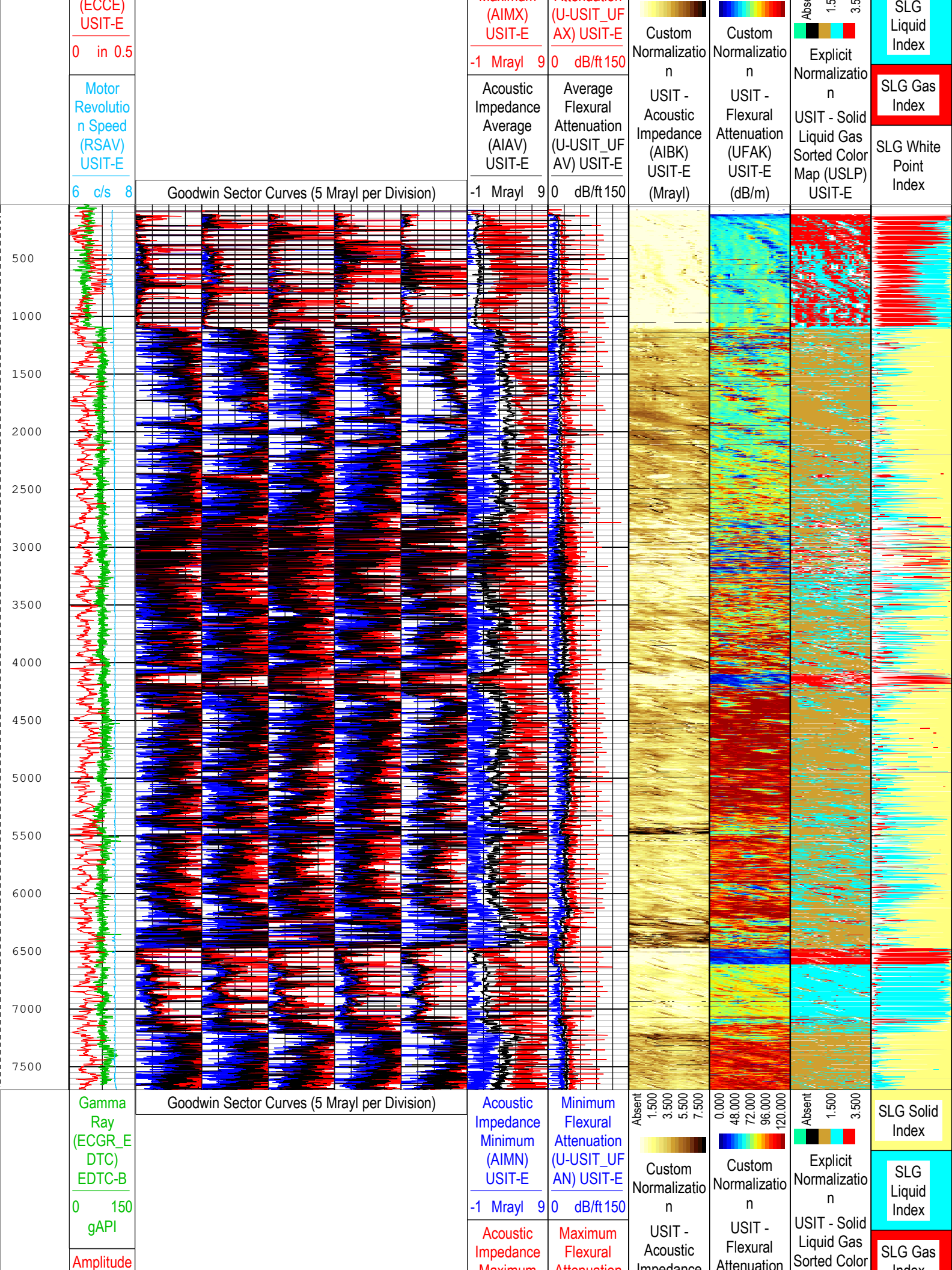
Company:Occidental Petroleum Corporation Well:Northglenn State 4-36

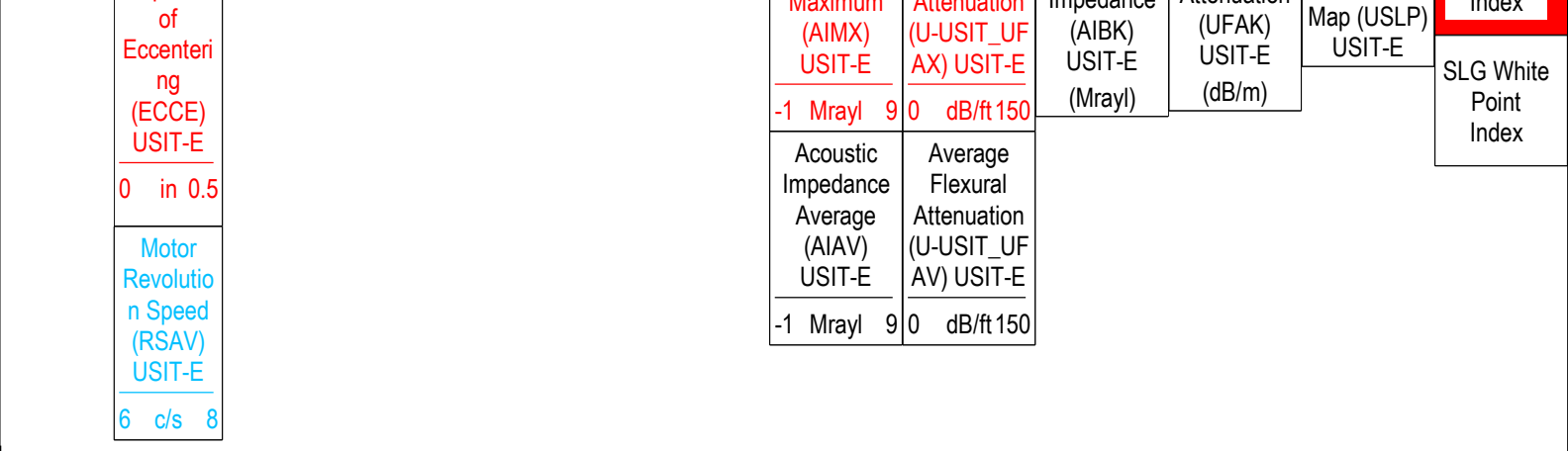
One: Log[4]:Up:S010

Description: USI Goodwin Format: Log (Import of IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:49:26

TIME_1900 - Time Marked every 60.00 (s)




(ECCE) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Goodwin Sector Curves (5 Mrayl per Division)
(AIMX) USIT-E
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9
(U-USIT_UFAX) USIT-E
0 dB/ft 150
Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/ft 150
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
SLG Liquid Index
SLG Gas Index
SLG White Point Index
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
Gamma Ray (ECGR_EDTC) EDTC-B
0 150 gAPI
Amplitude
Goodwin Sector Curves (5 Mrayl per Division)
Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9
Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/ft 150
Acoustic Impedance Maximum
Maximum Flexural Attenuation
Absent 1.500 3.500 5.500 7.500
0.000 48.000 72.000 96.000 120.000
Absent 1.500 3.500
Custom Normalization
USIT - Acoustic Impedance
Custom Normalization
USIT - Flexural Attenuation
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color
SLG Solid Index
SLG Liquid Index
SLG Gas Index



TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (Import of IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:49:26

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	9100	ft
CDEN	Cement Density	USIT-E	1.56	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	1.32	g/cm3
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	-41.84	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.14	
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-25	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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	12.25	32	1115

BS	12.25	32	1115
BS	7.875	1115	7696.5

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	54	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	
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 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	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	16-Mar-2023 14:13:27	16-Mar-2023 14:18:19	7697.24	7513.62
EMXV	10	16-Mar-2023 14:18:19	16-Mar-2023 15:17:18	7513.62	3620.74
EMXV	7	16-Mar-2023 15:17:18	16-Mar-2023 16:12:27	3620.74	75.77

All depth are at tool zero.

One

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.221762
	Wireline_NPD-ThruBit-2022.1_12.1.221178
	Wireline_NPD-HCS-2022.1_12.1.221849

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Up	Up	48.03 ft	498.25 ft	16-Mar-2023 1:11:51 PM	16-Mar-2023 1:24:38 PM	ON	-12.24 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Petroleum Corporation Well:Northglenn State 4-36

One: Log[2]:Up:S010

Description: USI IBC SLG Format: Log (Import of IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:49:34

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

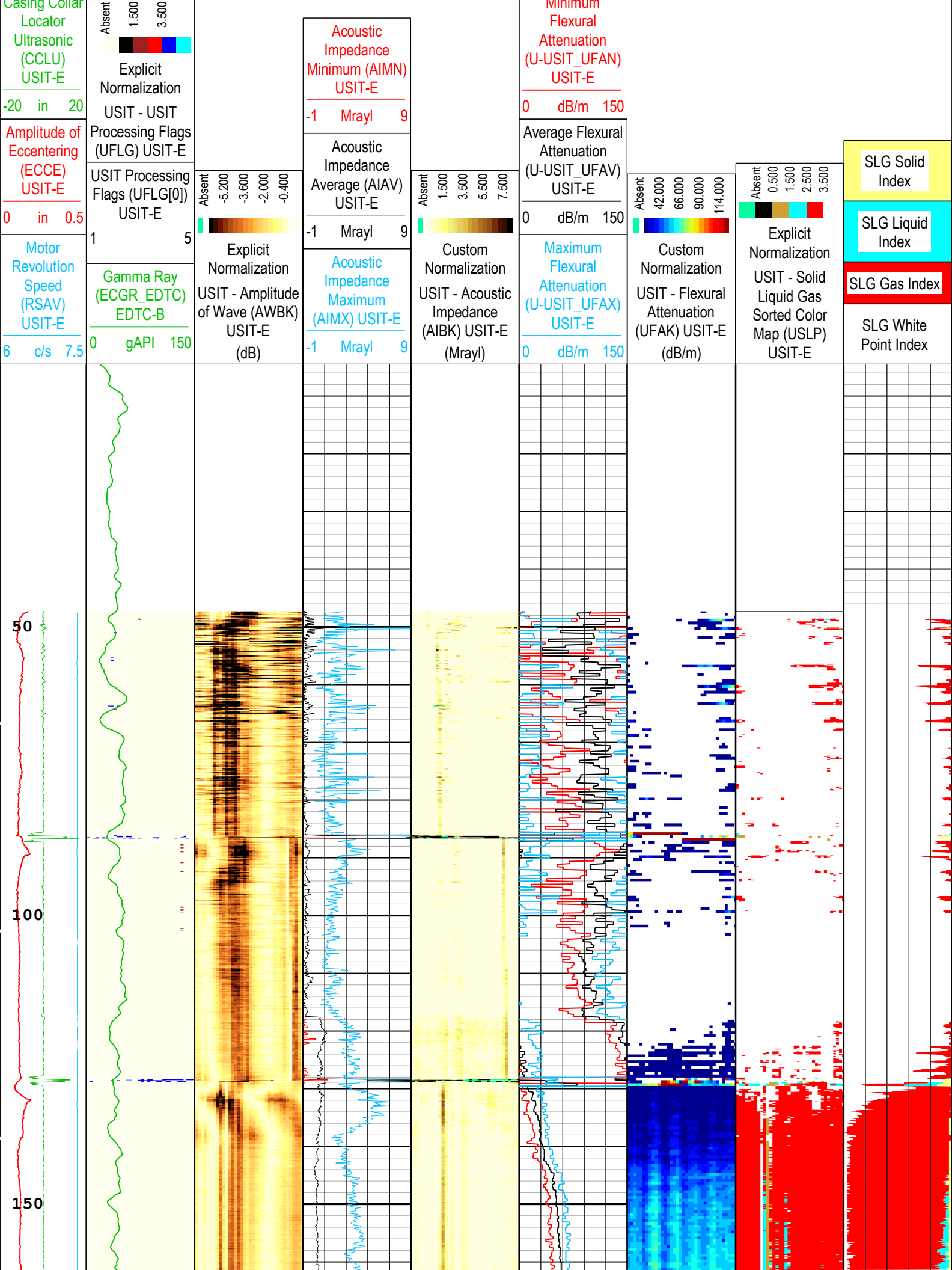
Pulse Origin Not Detected

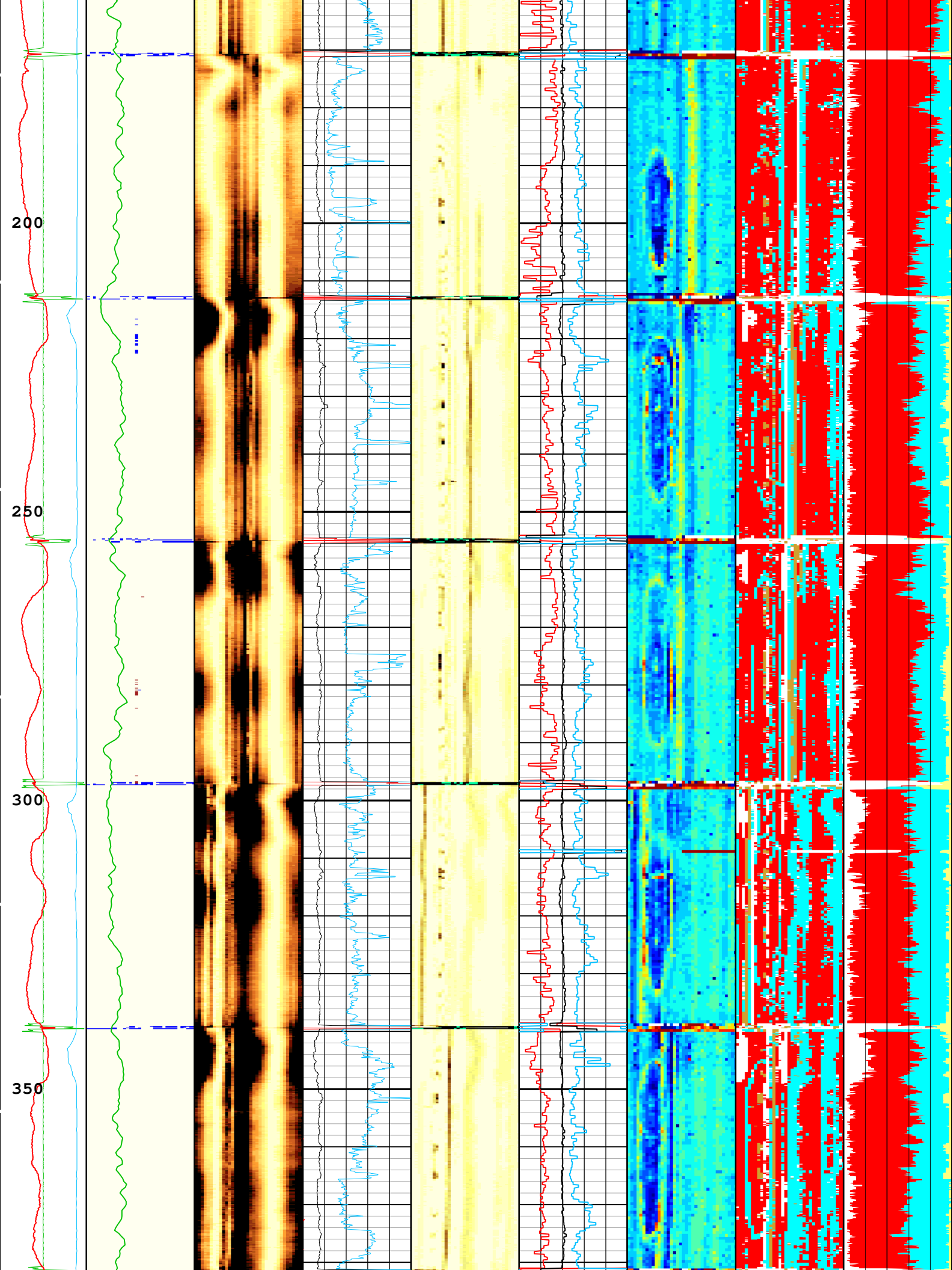
WINLEN Error

Casing Thickness Error

Loop Processing Error

Casing Collar Minimum


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20
Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150
Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E
(dB)
Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9
Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/m 150
Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/m 150
Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150
Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)
Absent 0.500 1.500 2.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index
50
100
150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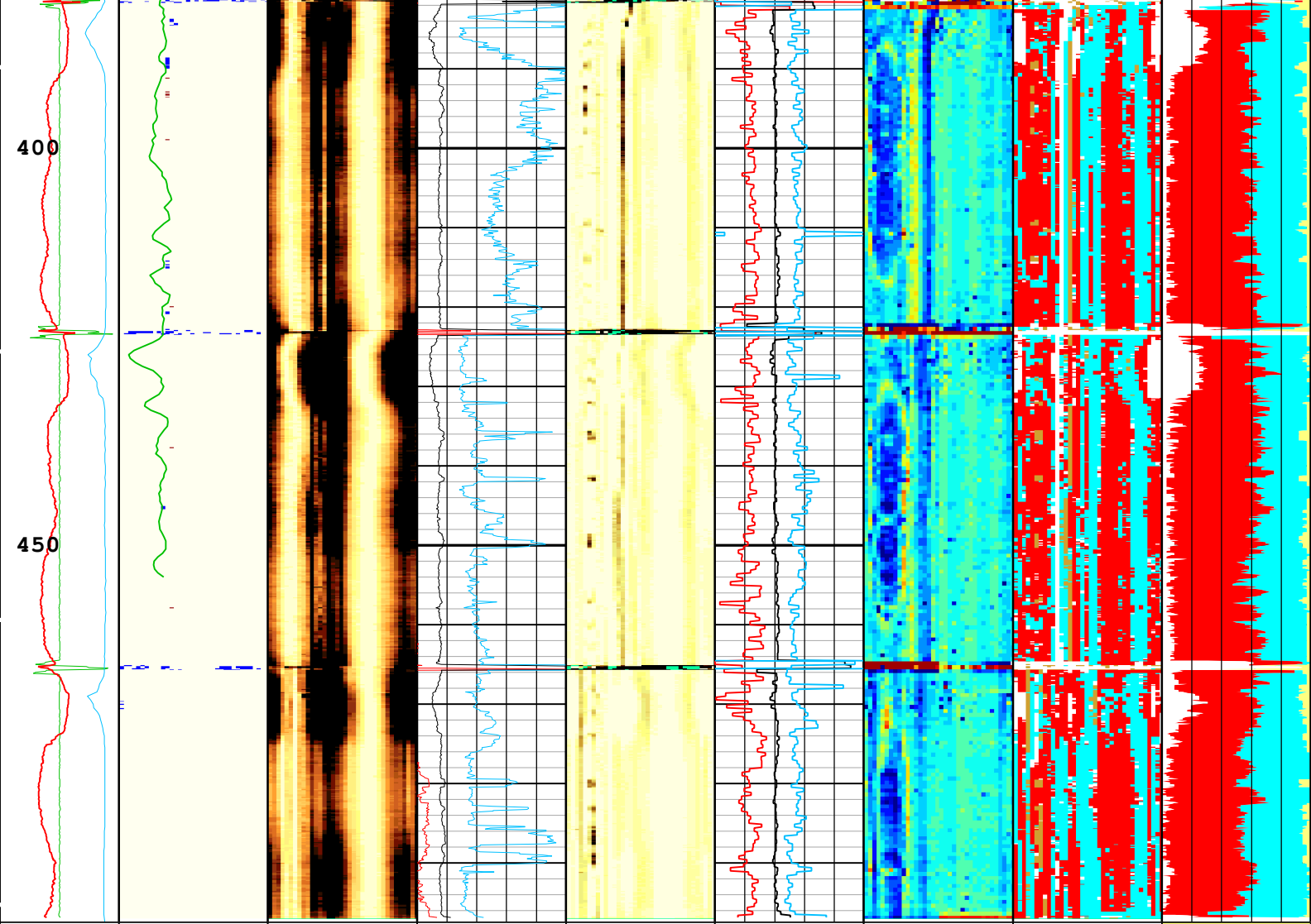


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/m 150

Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 0.500 1.500 2.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index

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 Format: Log (Import of IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Mar-2023 17:49:34

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	12.25	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	9100	ft
CDEN	Cement Density	USIT-E	1.56	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	1.32	g/cm3
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	-41.84	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.14	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-25	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
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	1.48	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	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	DVR 1/4 and 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	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 1.5 in	
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	1.5 in	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	16-Mar-2023 13:11:51	16-Mar-2023 13:15:18	498.25	378.62
EMXV	7	16-Mar-2023 13:15:18	16-Mar-2023 13:24:38	378.62	48.02

All depth are at tool zero.

One

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.221762
	Wireline_NPD-ThruBit-2022.1_12.1.221178
	Wireline_NPD-HCS-2022.1_12.1.221849

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Up	Up	48.03 ft	498.25 ft	16-Mar-2023 1:11:51 PM	16-Mar-2023 1:24:38 PM	ON	-12.24 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Petroleum Corporation Well:Northglenn State 4-36

One: Log[2]:Up:S010

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 16-Mar-2023 17:49:44

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] - :

UTIM Error

Pulse Origin Not Detected

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] - :

WINLEN Error
Casing Thickness Error
Loop Processing Error

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E
(dB)

External Radii Average (ERAV) USIT-E
2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E
2.7 in 1.7

Internal Radius Maximum Value (IRMX) USIT-E
2.7 in 1.7

Internal Radius Minimum Value (IRMN) USIT-E
2.7 in 1.7

External Radii Average (ERAV) USIT-E
1.7 in 2.7

Internal Radius Averaged Value (IRAV) USIT-E
1.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E
1.7 in 2.7

Internal Radius Minimum Value (IRMN) USIT-E
1.7 in 2.7

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Internal Radii Normalized (IRBK) USIT-E
(in)

Thickness Minimum Value (THMN) USIT-E
0.1 in 0.6

Thickness Average Value (THAV) USIT-E
0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E
0.1 in 0.6

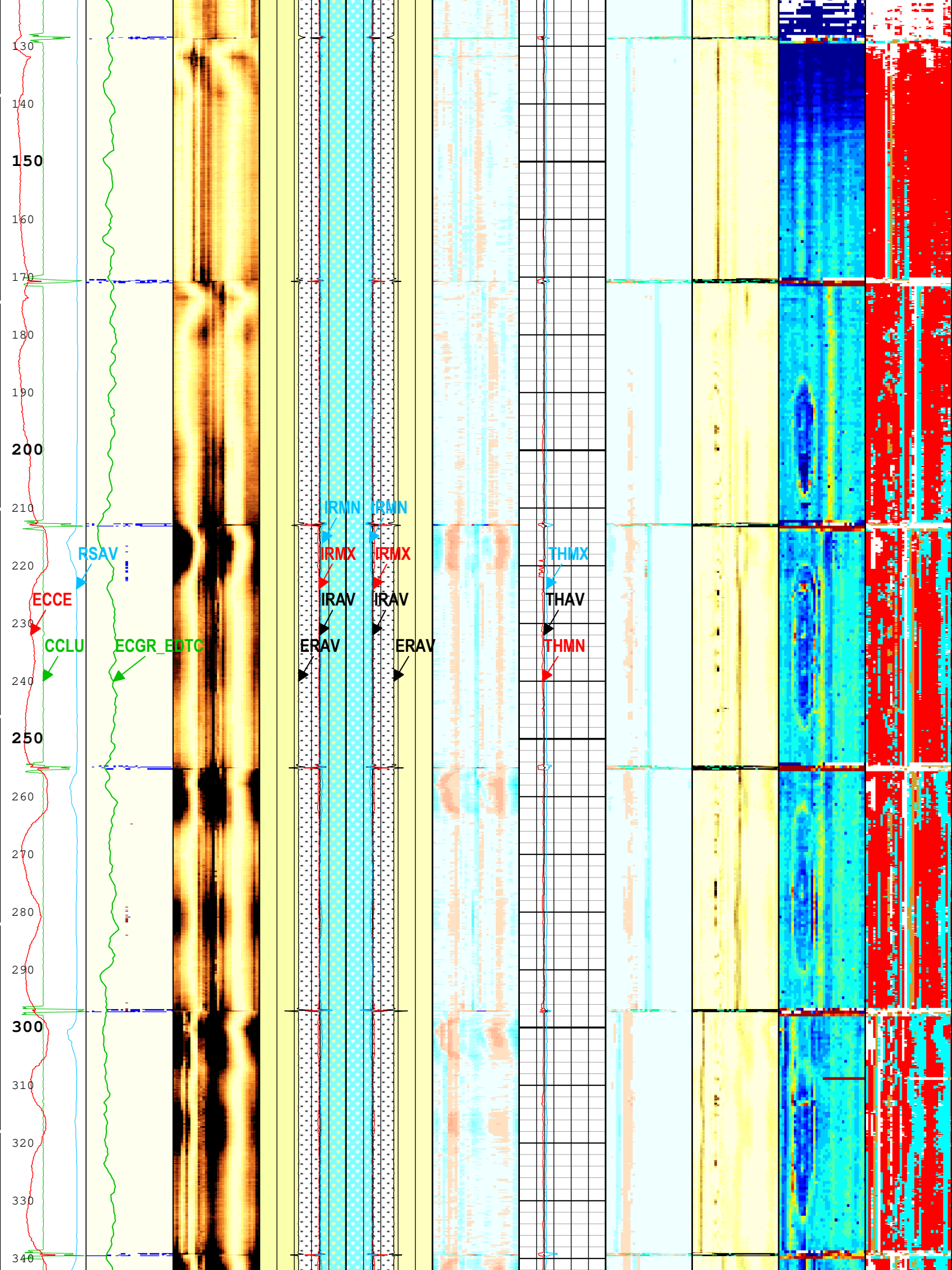
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E
(in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

10
20
30
40
50
60
70
80
90
100
110
120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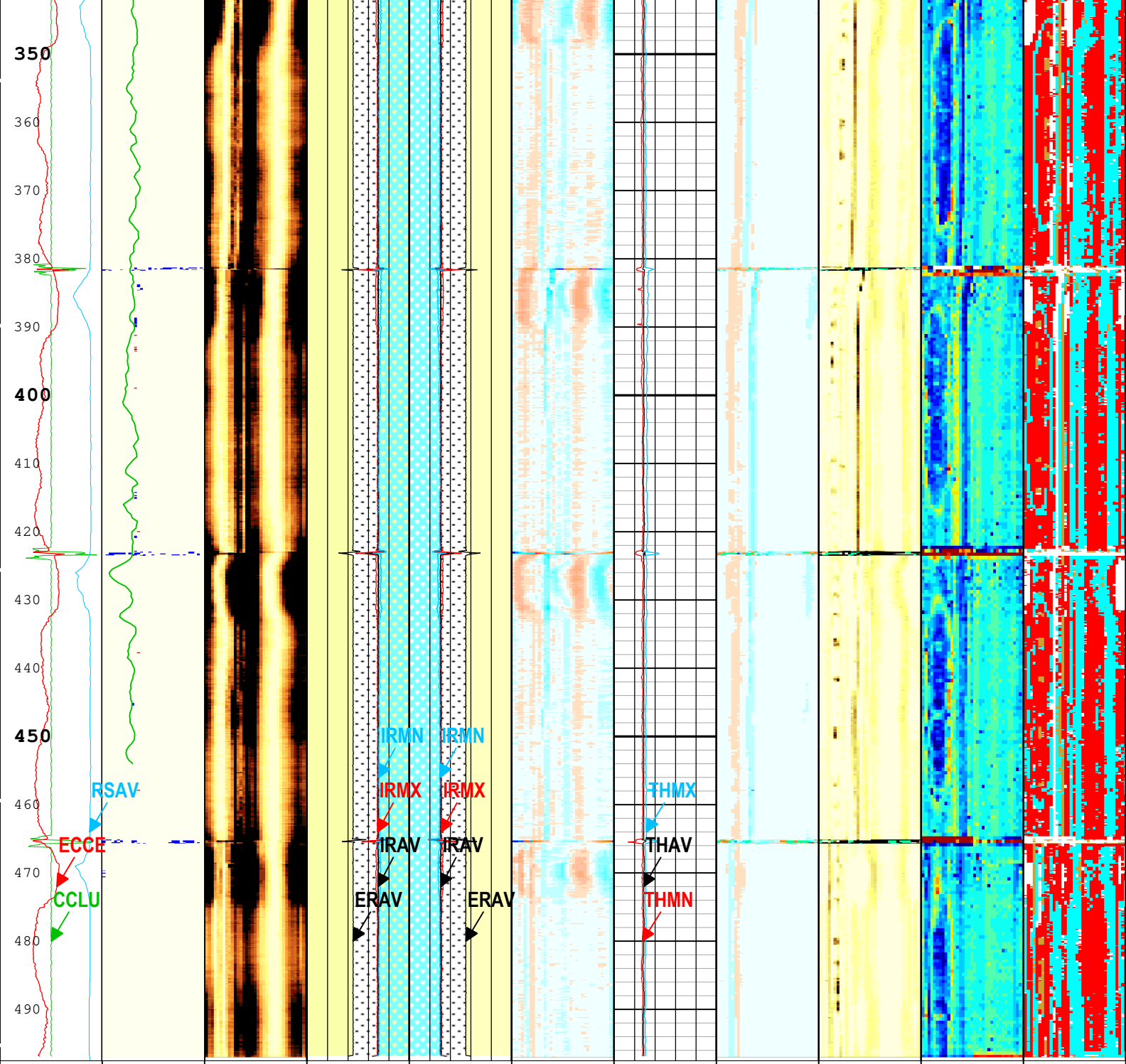
340
RSAV
ECCE
CCLU
ECGR_EDTC
IRMN
IRMN
IRMX
IRMX
IRAV
IRAV
ERAV
ERAV
THMX
THAV
THMN



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDT

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E
(dB)

External Radii Average (ERAV) USIT-E
2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E
2.7 in 1.7

Internal Radius Maximum Value (IRMX) USIT-E

External Radii Average (ERAV) USIT-E
1.7 in 2.7

Internal Radius Averaged Value (IRAV) USIT-E
1.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Internal Radii Normalized (IRBK) USIT-E
(in)

Thickness Minimum Value (THMN) USIT-E
0.1 in 0.6

Thickness Average Value (THAV) USIT-E
0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E
(in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

C) EDTC-B

0 gAPI 150

2.7 in 1.7 | 1.7 in 2.7

Internal Radius Minimum Value (IRMN) USIT-E

2.7 in 1.7 | 1.7 in 2.7

0.1 in 0.6

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 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 16-Mar-2023 17:49:44

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	12.25	in
CBLO	Casing Bottom (Logger)	WLSESSION	9100	ft
CDEN	Cement Density	USIT-E	1.56	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	1.32	g/cm3
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	-41.84	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.14	
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-25	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 1.5 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	1.5 in	

Time Zone Parameters

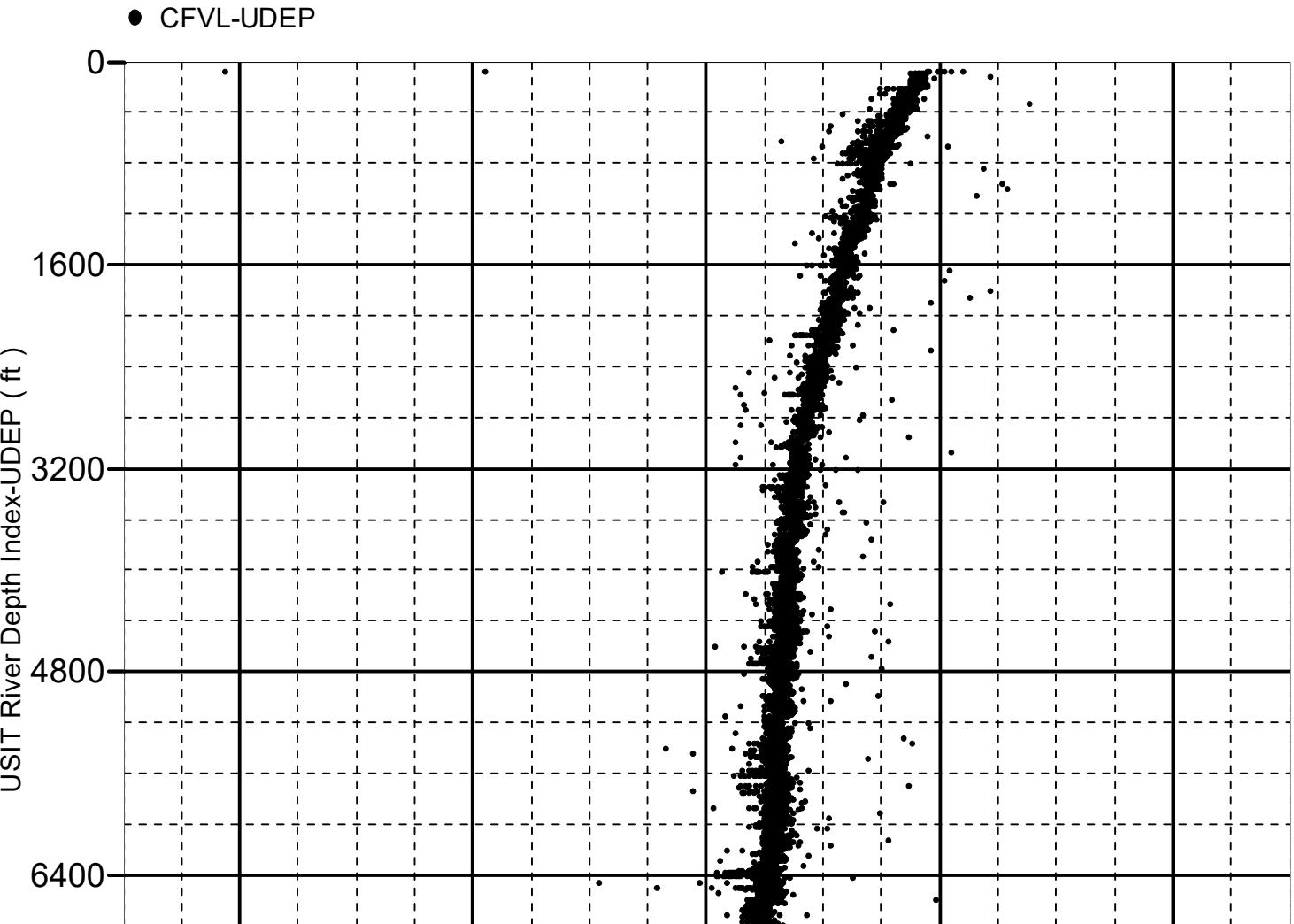
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	16-Mar-2023 13:11:51	16-Mar-2023 13:15:18	498.25	378.62
EMXV	7	16-Mar-2023 13:15:18	16-Mar-2023 13:24:38	378.62	48.02

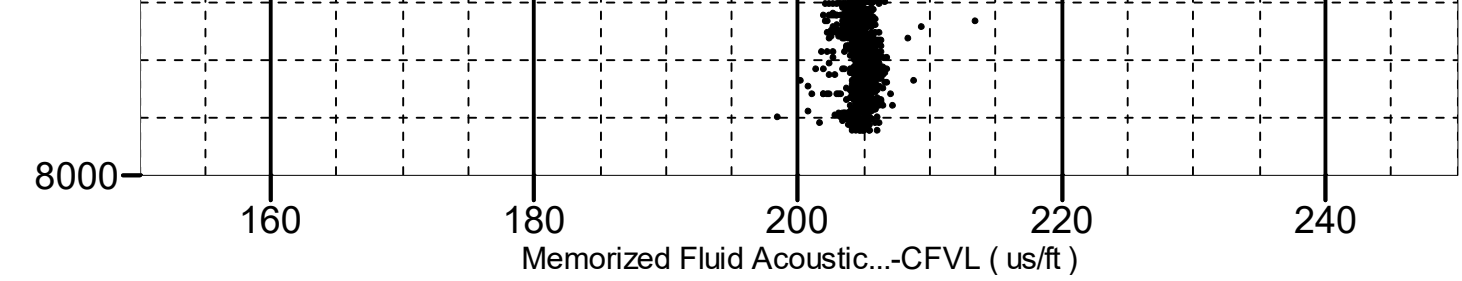
All depth are at tool zero.

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7696.50 to 75.00 ft





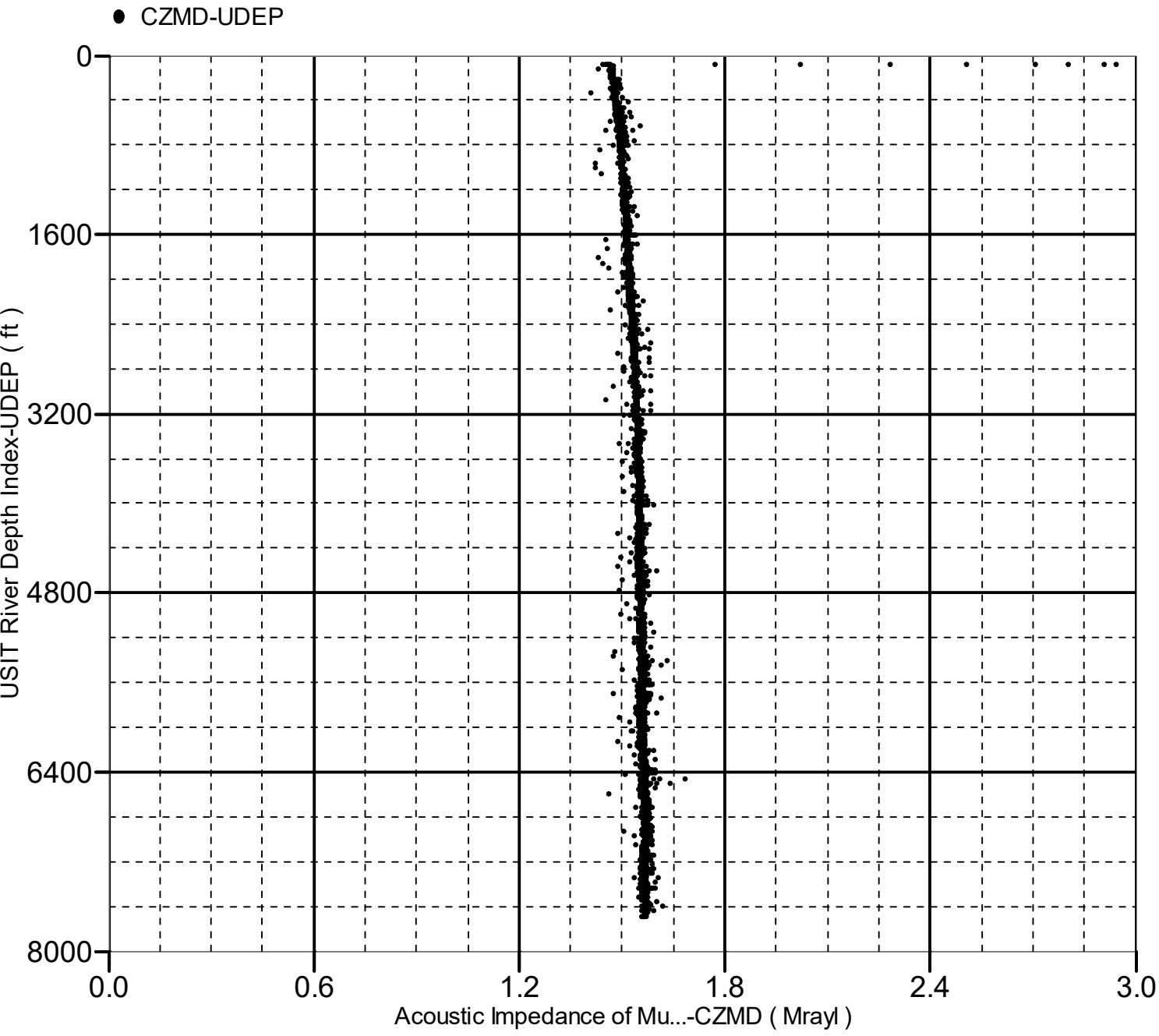
XYZ

Company:Occidental Petroleum Corporation Well:Northglenn State 4-36
One: Log[4]:Up:S010

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7696.50 to 75.00 ft



Company:	Occidental Petroleum Corporation
Well:	Northglenn State 4-36
Field:	Wattenberg
County:	Weld
State:	Colorado

Schlumberger

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL Log