Schlumberger

Company: Crestone Peak Resources and Operating LLC

Well: Echeverria 2F-2H-D267

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log

County: Weld
Field: Wattenberg
Location: NWNW Sec. 2, T2N, R67W
Well: Echeverria 2F-2H-D267
Company: Crestone Peak Resources and Operating LLC

Location:				
NWNW Sec. 2, T2N, R67W		Elev.:	K.B.	4905.00 ft
SHL: 898' FNL & 609' FWL			G.L.	4882.00 ft
Lat/Long: 40.172031 \ -104.864792			D.F.	4905.00 ft
Permanent Datum:	Ground Level	Elev.:		4882.00 f
Log Measured From:	Kelly Bushing	23.00 ft		above Perm.Datum
Drilling Measured From:	Kelly Bushing			

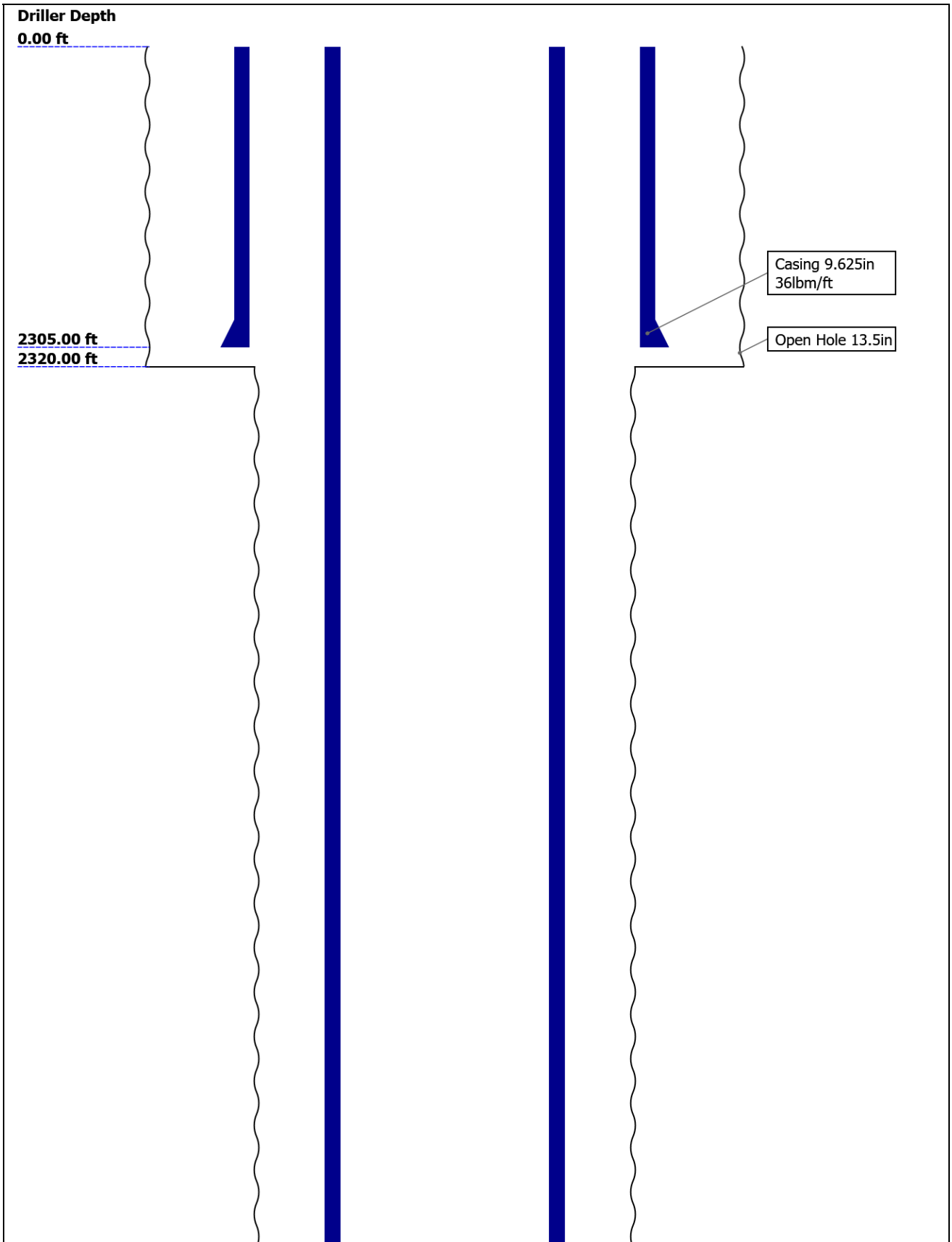
API Serial No.	Section:	Township:	Range:
05-123-48750	2	2N	67W

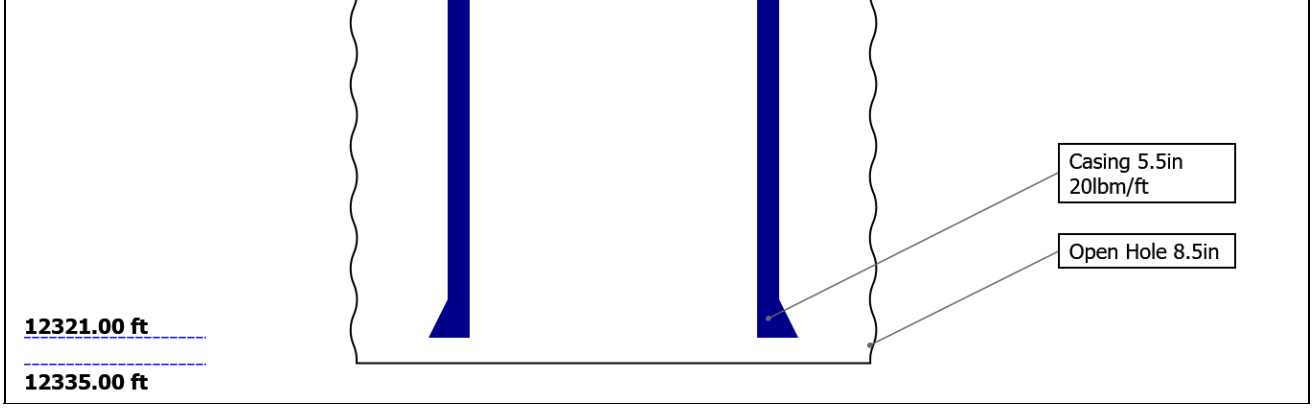
Logging Date		18-May-2019		
Run Number		TWO		
Depth Driller		12335.00 ft		
Schlumberger Depth		6995.00 ft		
Bottom Log Interval		6992.00 ft		
Top Log Interval		79.00 ft		
Casing Fluid Type		Brine		
Salinity				
Density		8.4 lbm/gal		
Fluid Level		8.00 ft		
BIT/CASING/TUBING STRING				
Bit Size		8.50 in		
From		2320.00 ft		
To		6995.00 ft		
Casing/Tubing Size		5.5 in		
Weight		20 lbm/ft		
Grade		P110		
From		0.00 ft		
To		6995.00 ft		
Max Recorded Temperatures		229.34 degF		
Logger on Bottom	Time	18-May-2019	08:09:00	
Unit Number	Location:	9111	Fort Morgan	
Recorded By		A.Blochowicz/A.Alkindi		
Witnessed By		Keith Kershisnik		

Disclaimer

Contents

Well Sketch





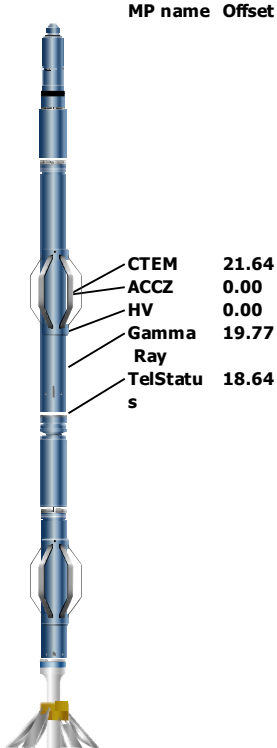
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.5				
Top Driller (ft)	0	2320				
Top Logger (ft)	0	2320				
Bottom Driller (ft)	2320	12335				
Bottom Logger (ft)	2320	6995				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	36	20				
Inner Diameter (in)	8.921	4.778				
Grade	J55	P110				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2305	12321				
Bottom Logger (ft)	2305	6995				

Remarks and Equipment Summary

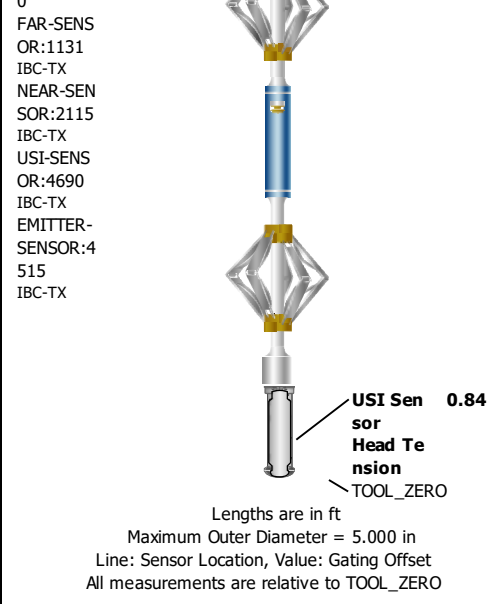
TWO: Toolstring

Equip name	Length
LEH-QT	**28.62**
LEH-QT	
EDTC-B:8324	**25.14**
EDTH-B:8101	
EDTG-A:77301	
EDTC-B:8324	
AH-184:3763	**18.64**
USIT-E:981	**16.64**
ECH-MFA:1923	
USAC-A:981	
USIS-A:1739	
USSC-B	
IBCS-A:80	



TWO: Remarks

Thank you for choosing Schlumberger!
Toolstring run as per tool sketch and client logging program.
Two 5" gemcos and in-line centralizers with small hole kit and booster kit run for centralization.
All passes run under 0 PSI.
Annular Fluid: 10.5 ppg OBM Spacer: 11 ppg Lead Cement: 12.5 ppg Tail Cement: 13.5 ppg
Log correlated to SCMT log at 6485 FT.



Lengths are in ft
Maximum Outer Diameter = 5.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

	TWO		
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6241		
Calibration Date	30-Apr-2019		
Calibrator Serial Number	IDWC-C-57		
Calibration Cable Type	7-46 PXS		
Wheel Correction 1	-1		
Wheel Correction 2	-2		
Tension Device			
Type	CMTD-B/A		
Serial Number	161		
Calibration Date	13-May-2019		
Calibrator Serial Number	1148		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	10		
Logging Cable			
Type	7-46P-XS		
Serial Number	U712020		
Length	23245.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

TWO:Depth Control Parameters		Depth Control Remarks
Log Sequence	Subsequent Log In the Well	All Schlumberger depth control policies followed.
Reference Log Name	Slim Cement Mapping Tool	IDW used as primary depth reference.
Reference Log Run Number	ONE	Z-chart used as secondary depth reference.
Reference Log Date	17-May-2019	

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)

Run 2	Log[5]:Up	6997.33	68.82

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 : 176.28m(578.34ft) to 179.07m(587.51ft)
MUD_N_FRP = 1.19
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.68 MRayl

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

TWO

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[5]:Up	Up	68.82 ft	6997.33 ft	18-May-2019 8:09:12 AM	18-May-2019 9:51:47 AM	ON	-3.13 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267

TWO: Log[5]:Up:S028

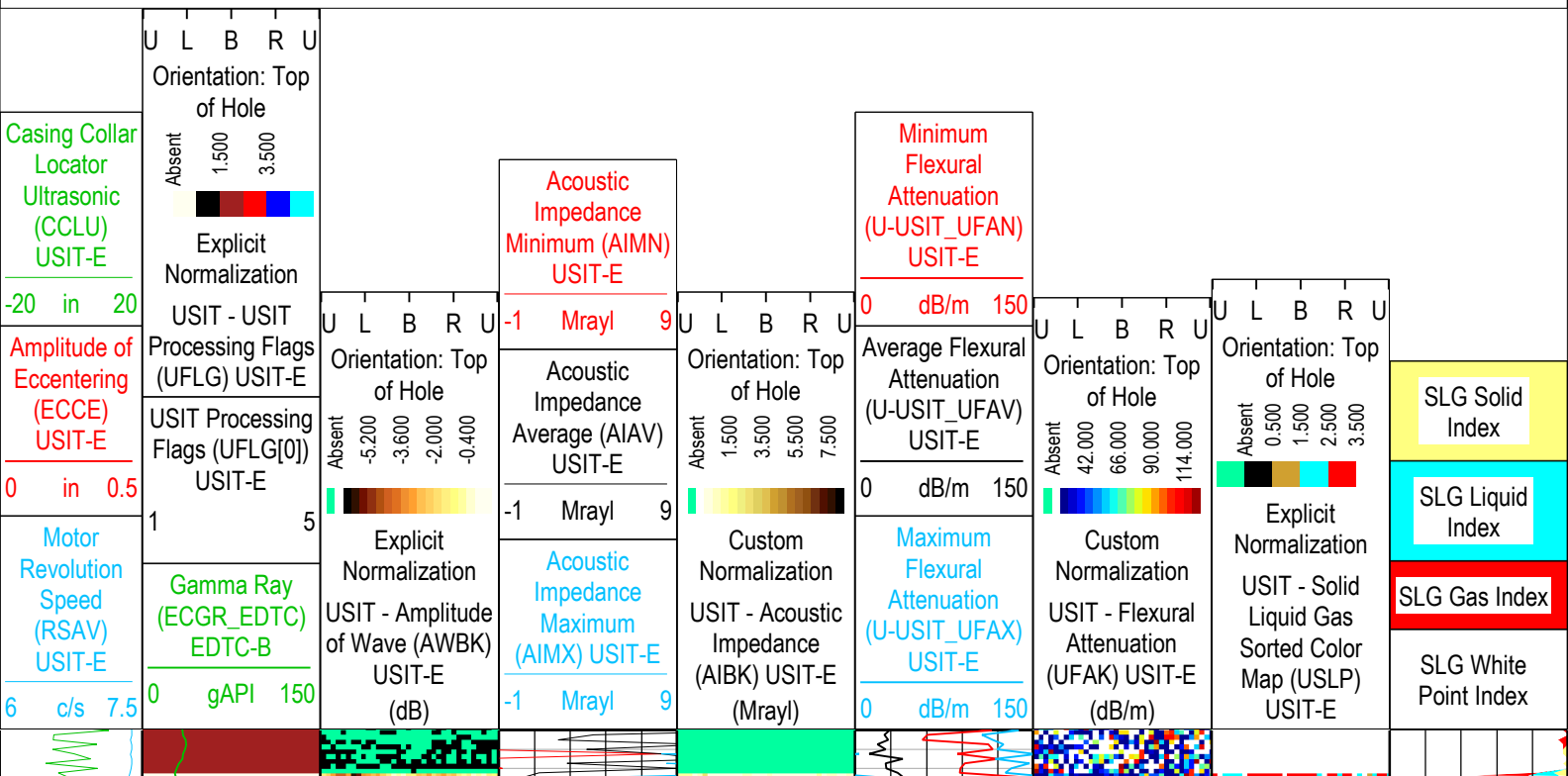
Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:18

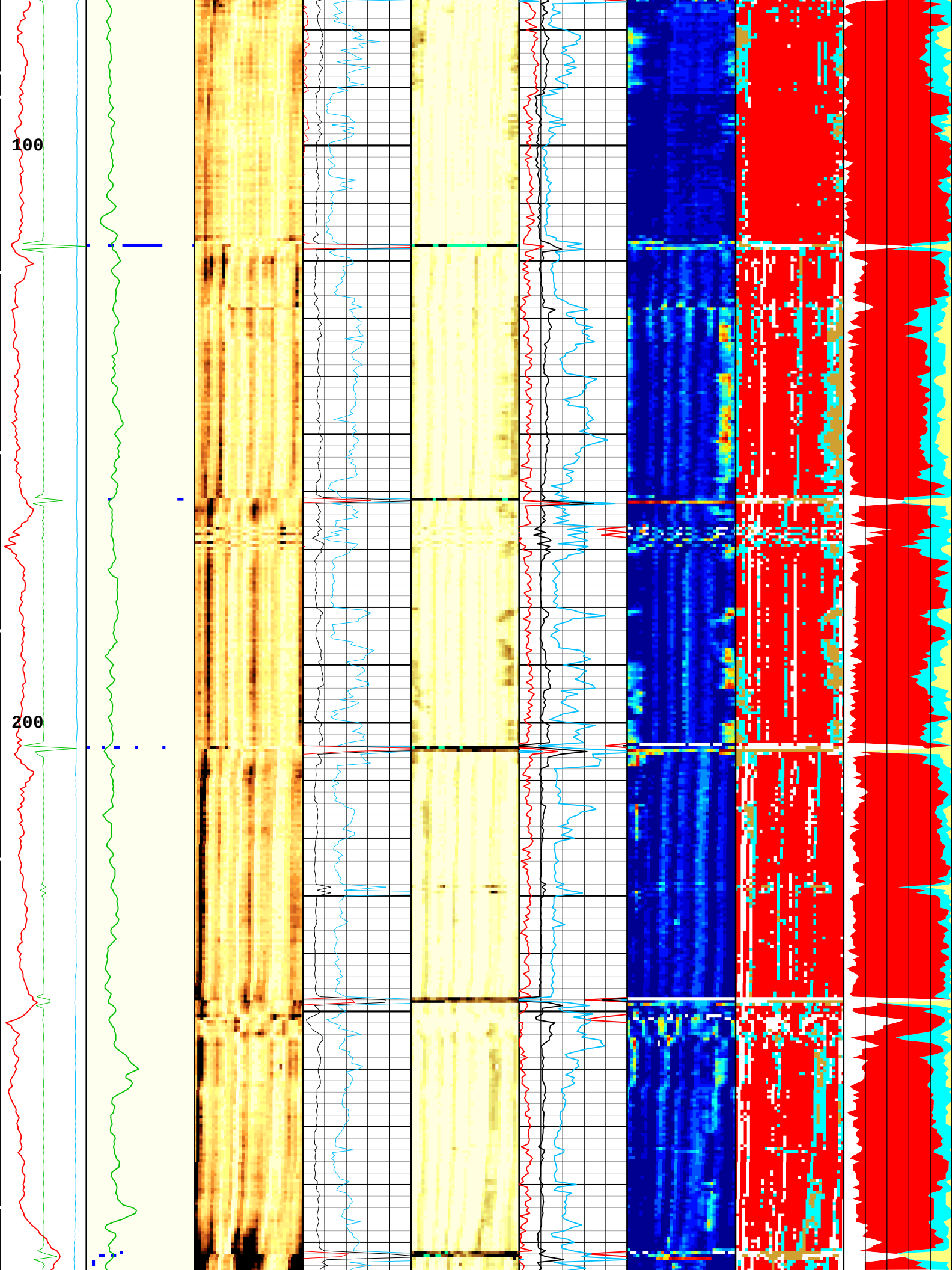
TIME_1900 - Time Marked every 60.00 (s)

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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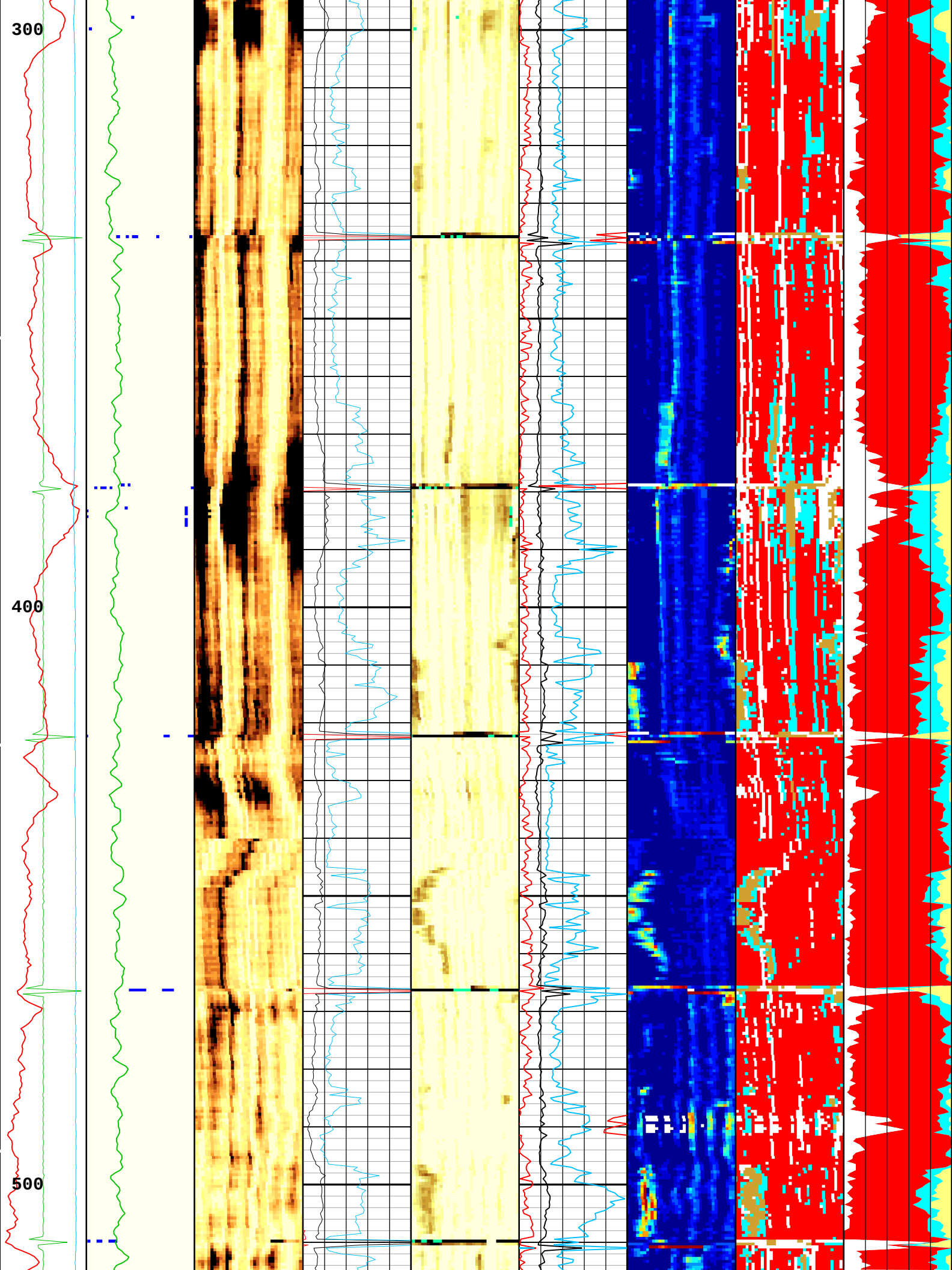
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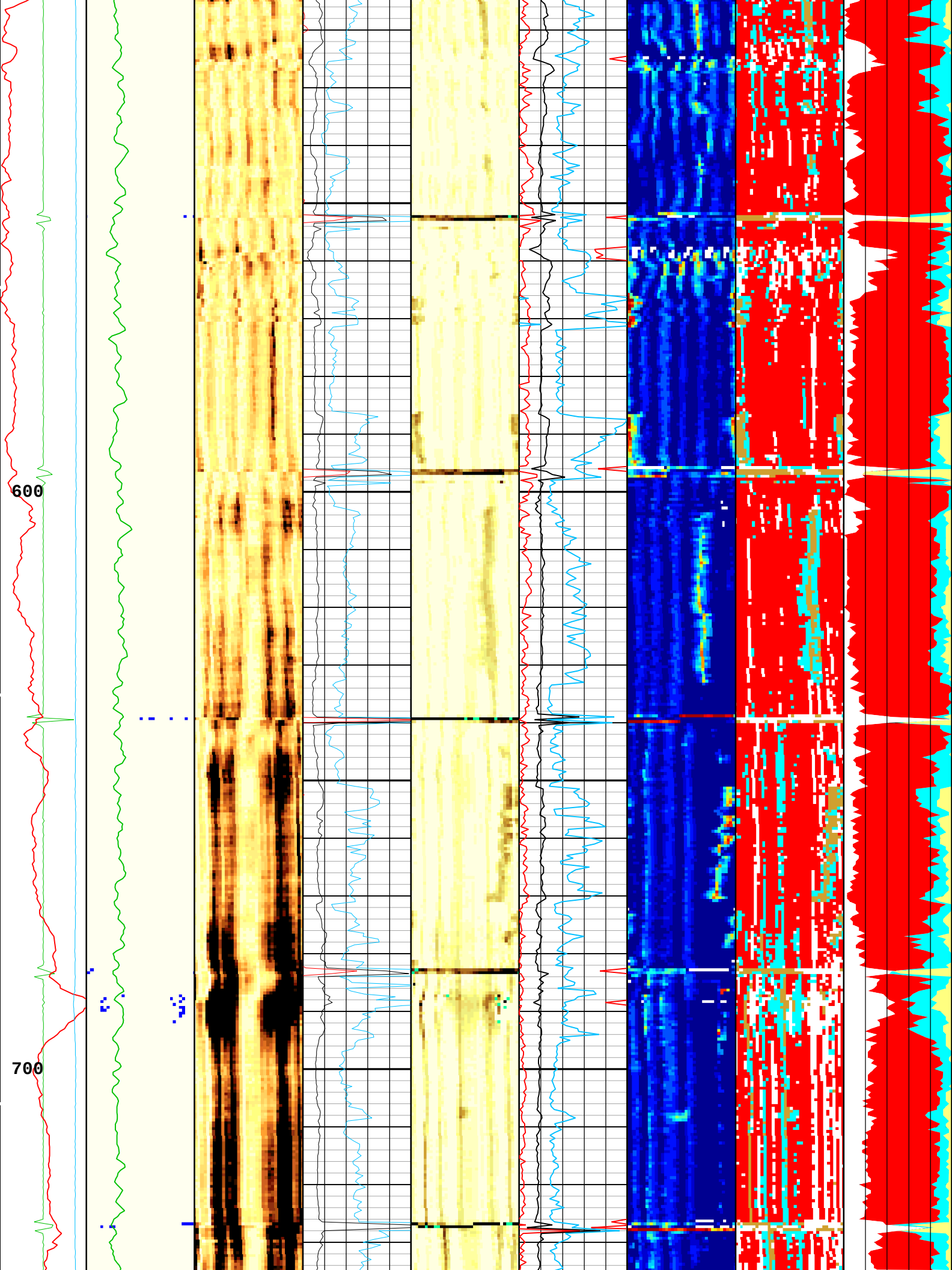
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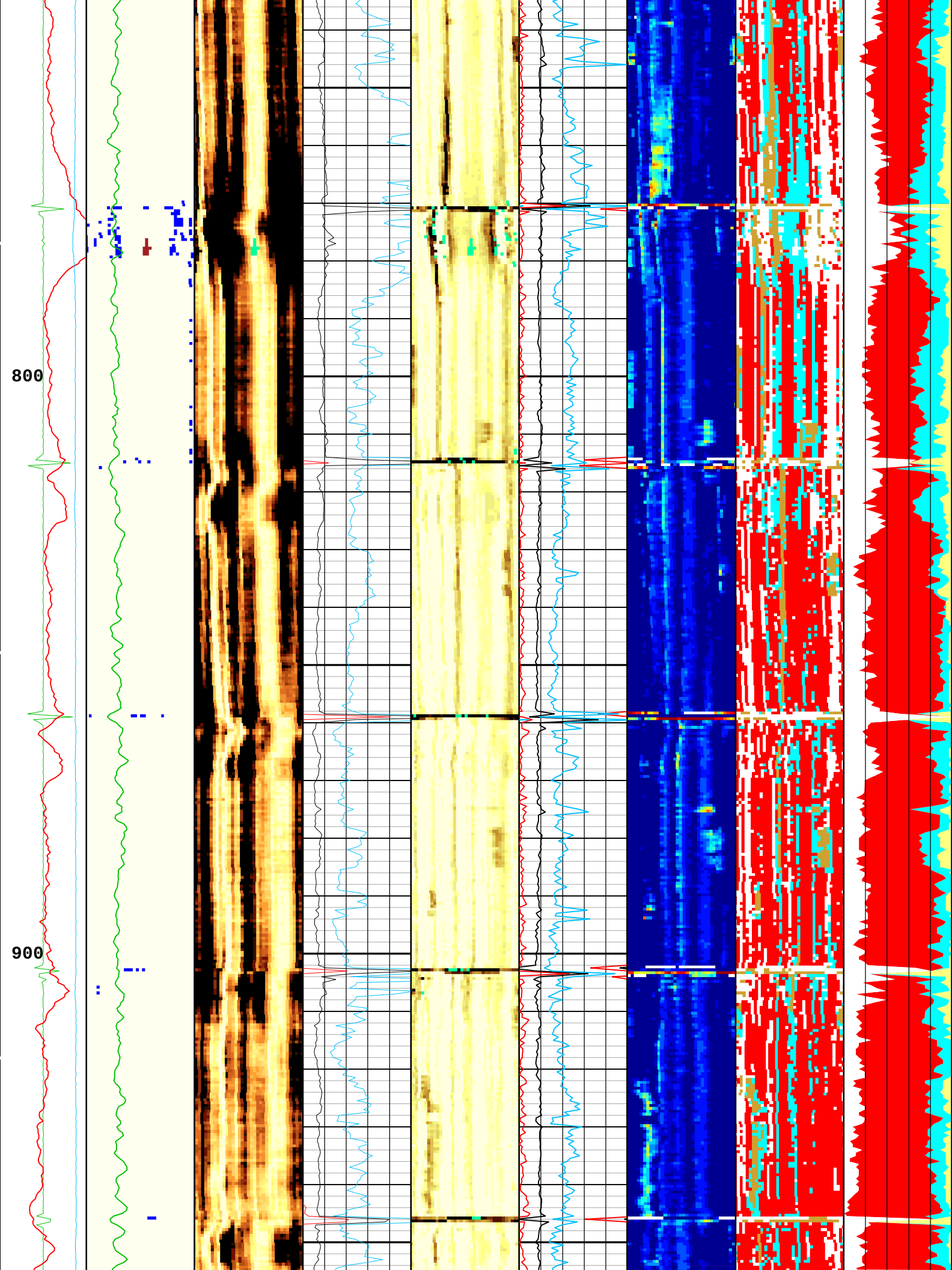
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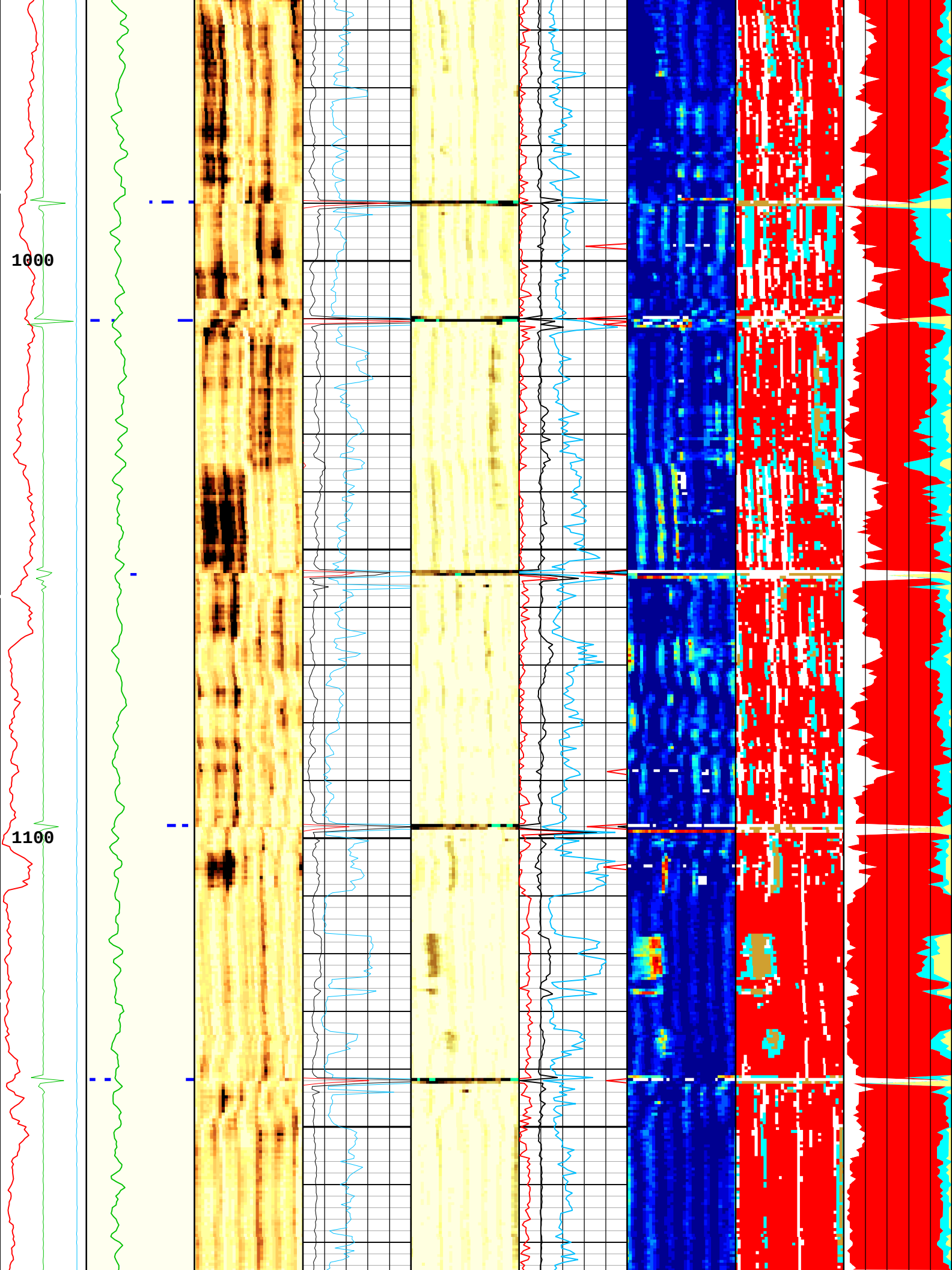
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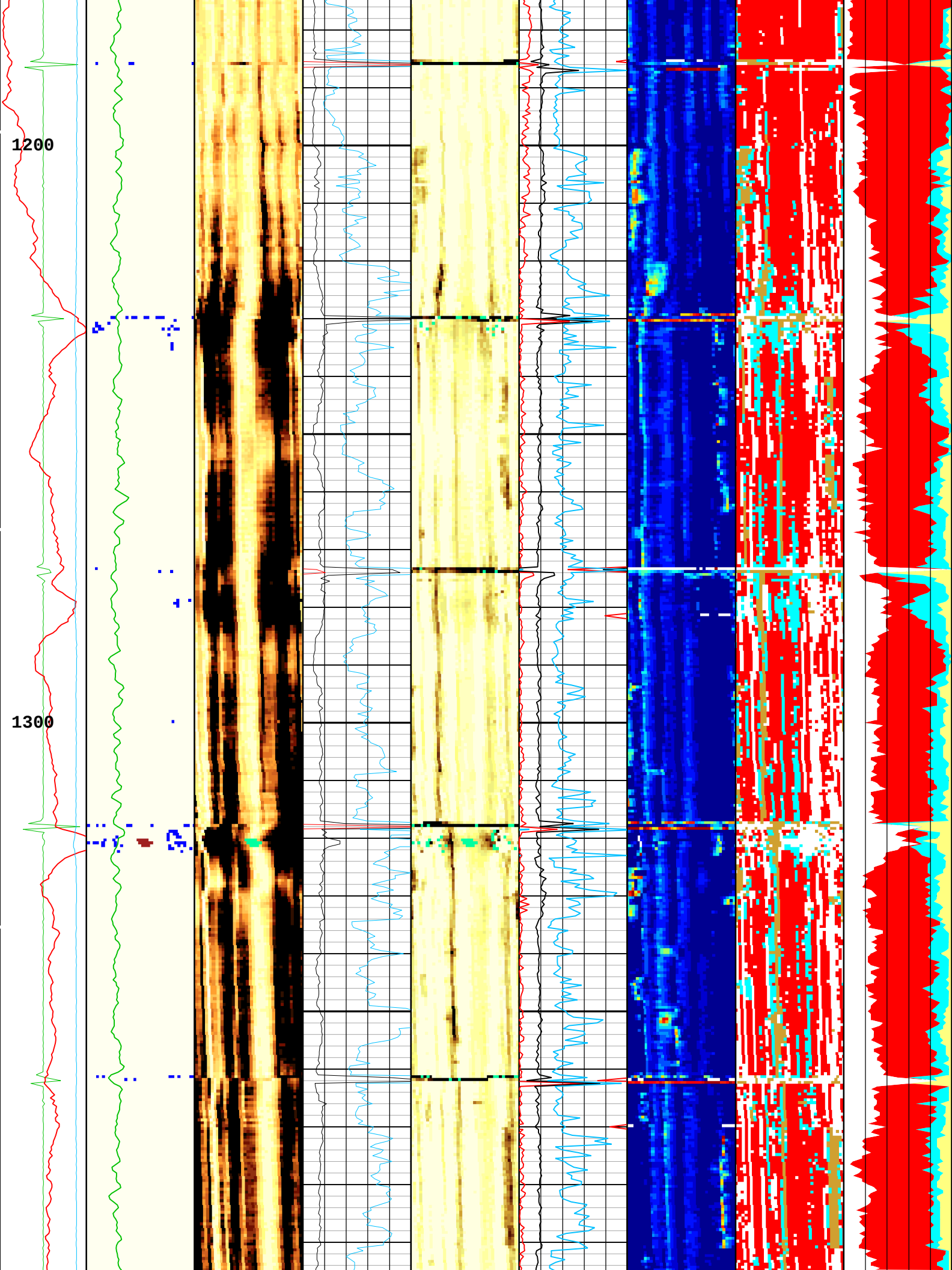
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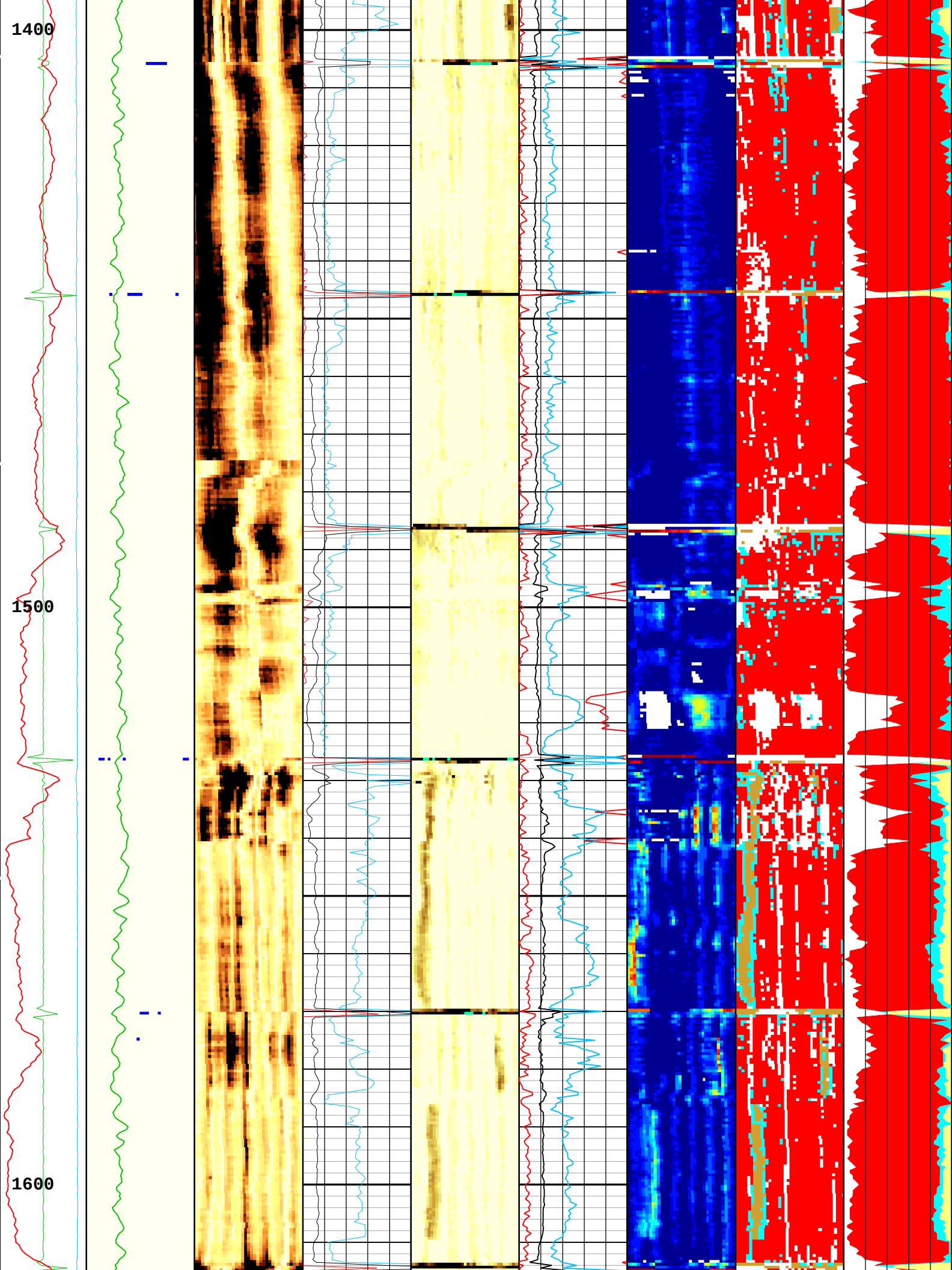
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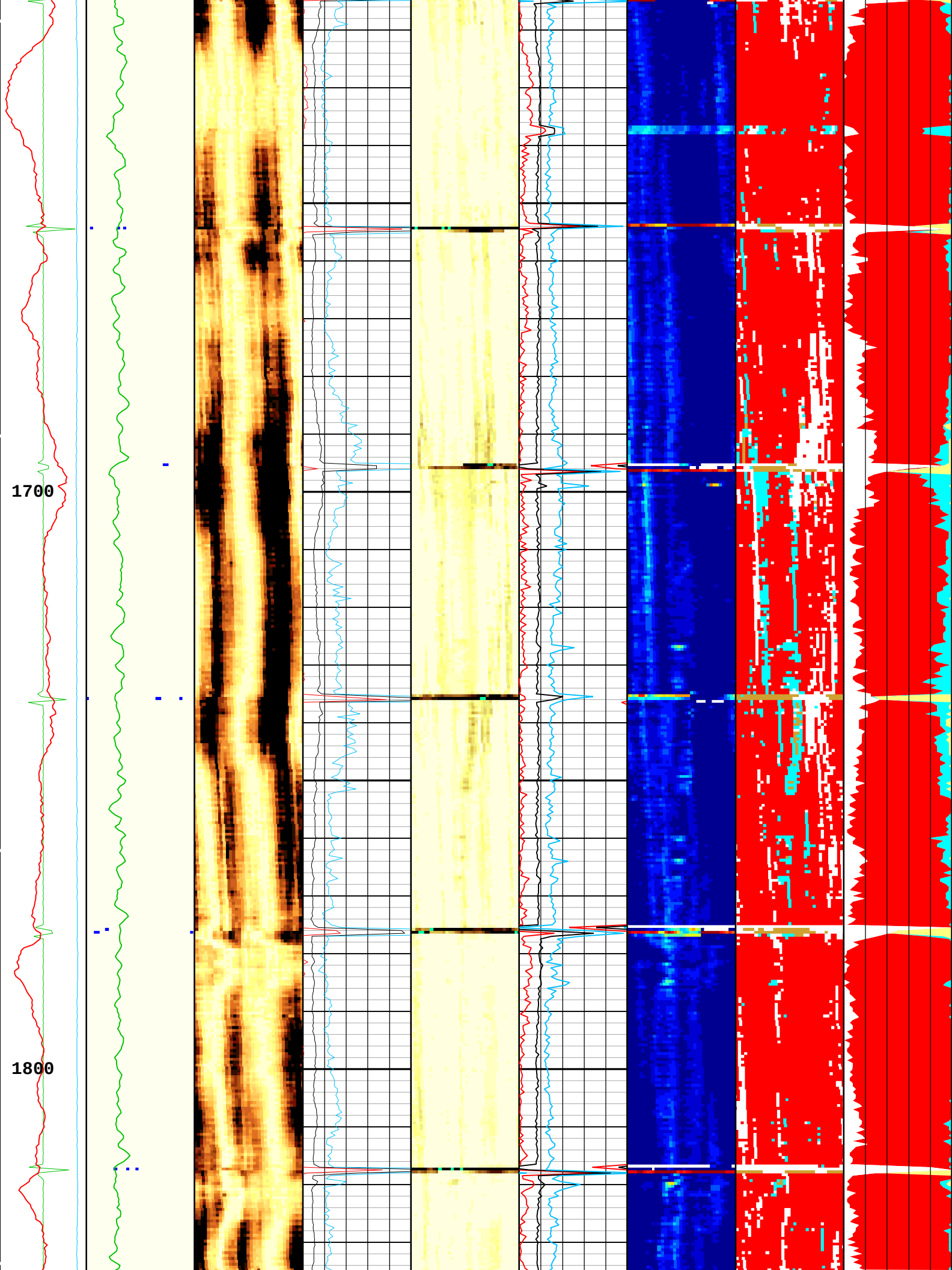
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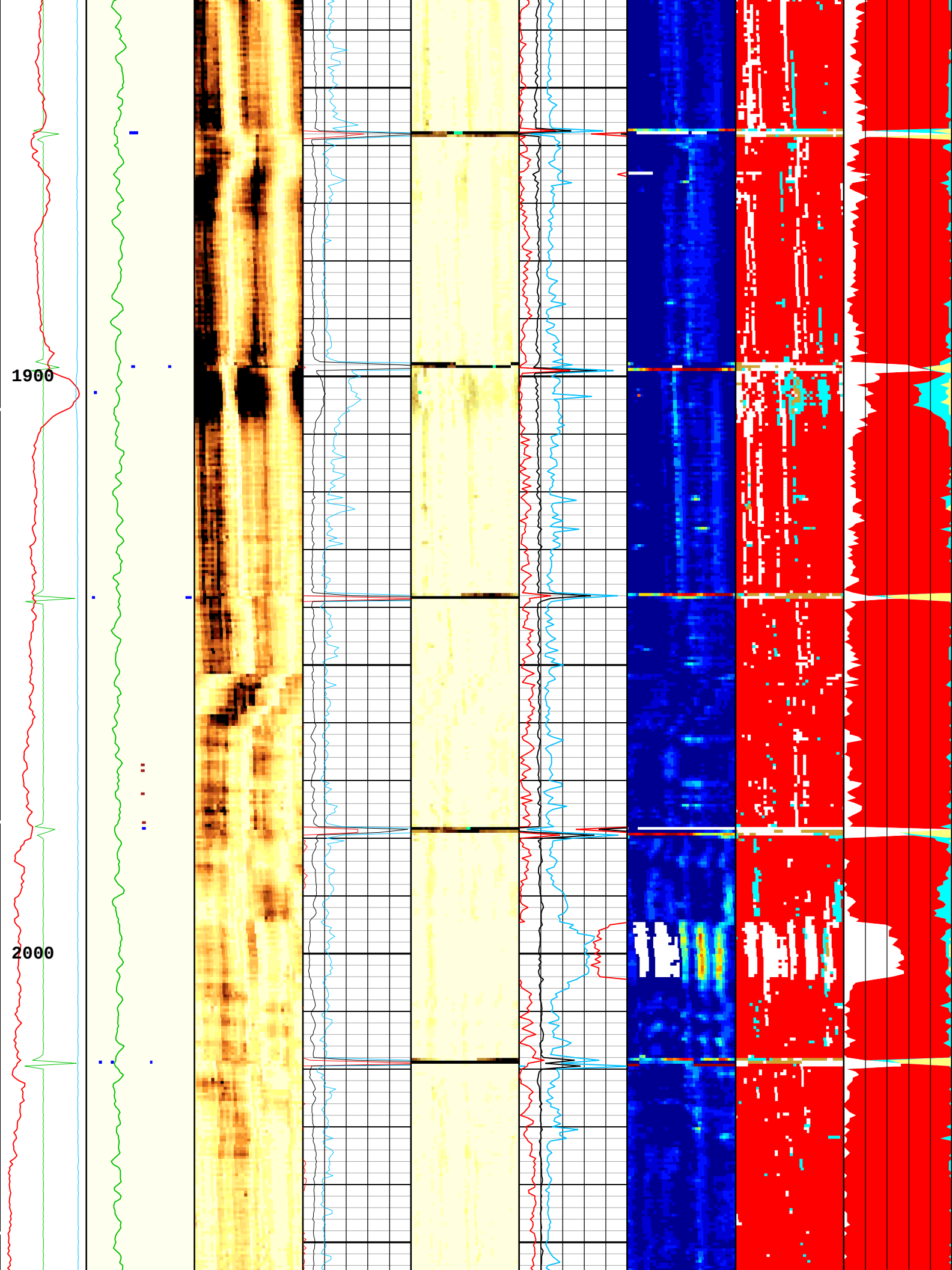
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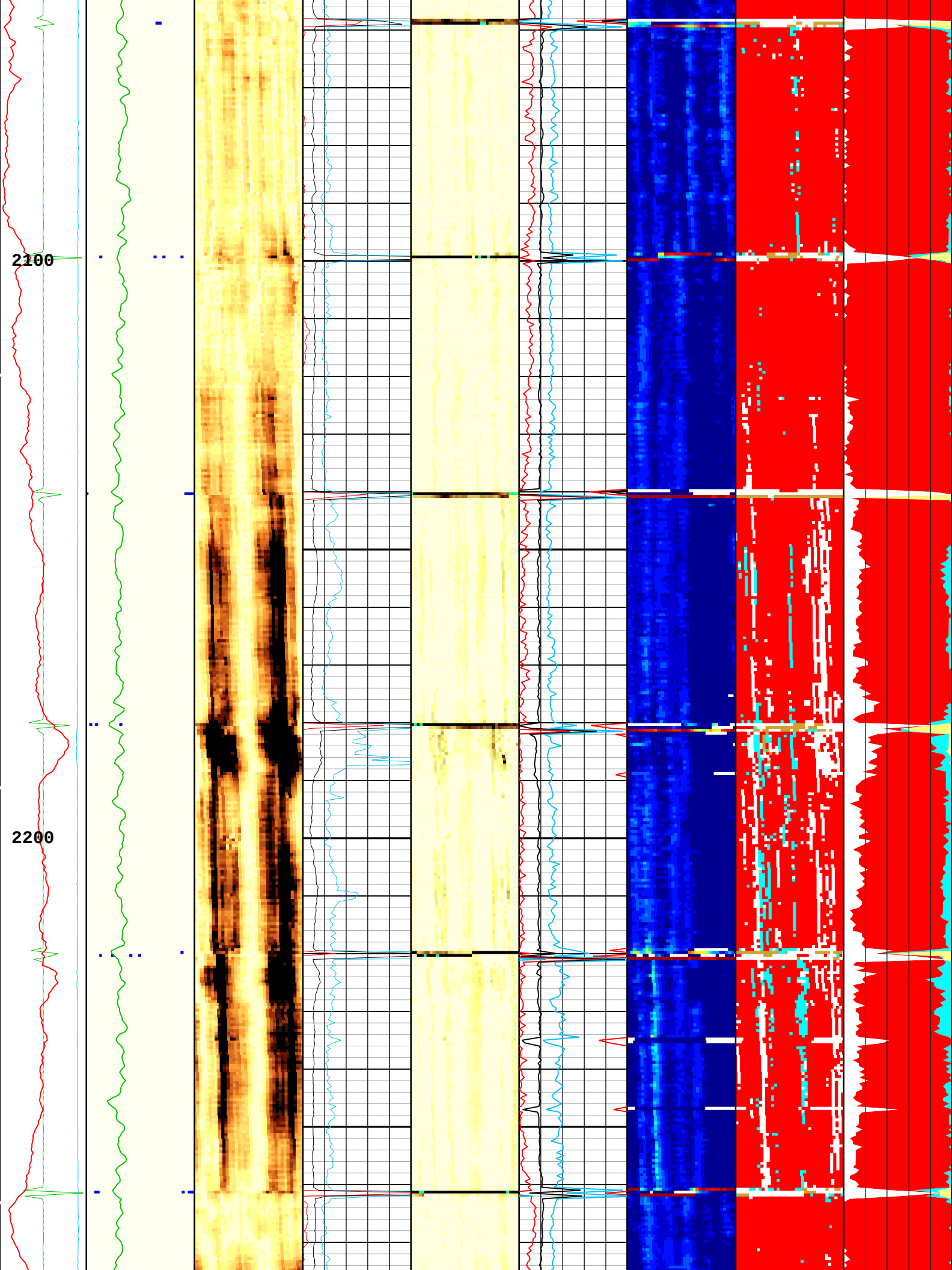
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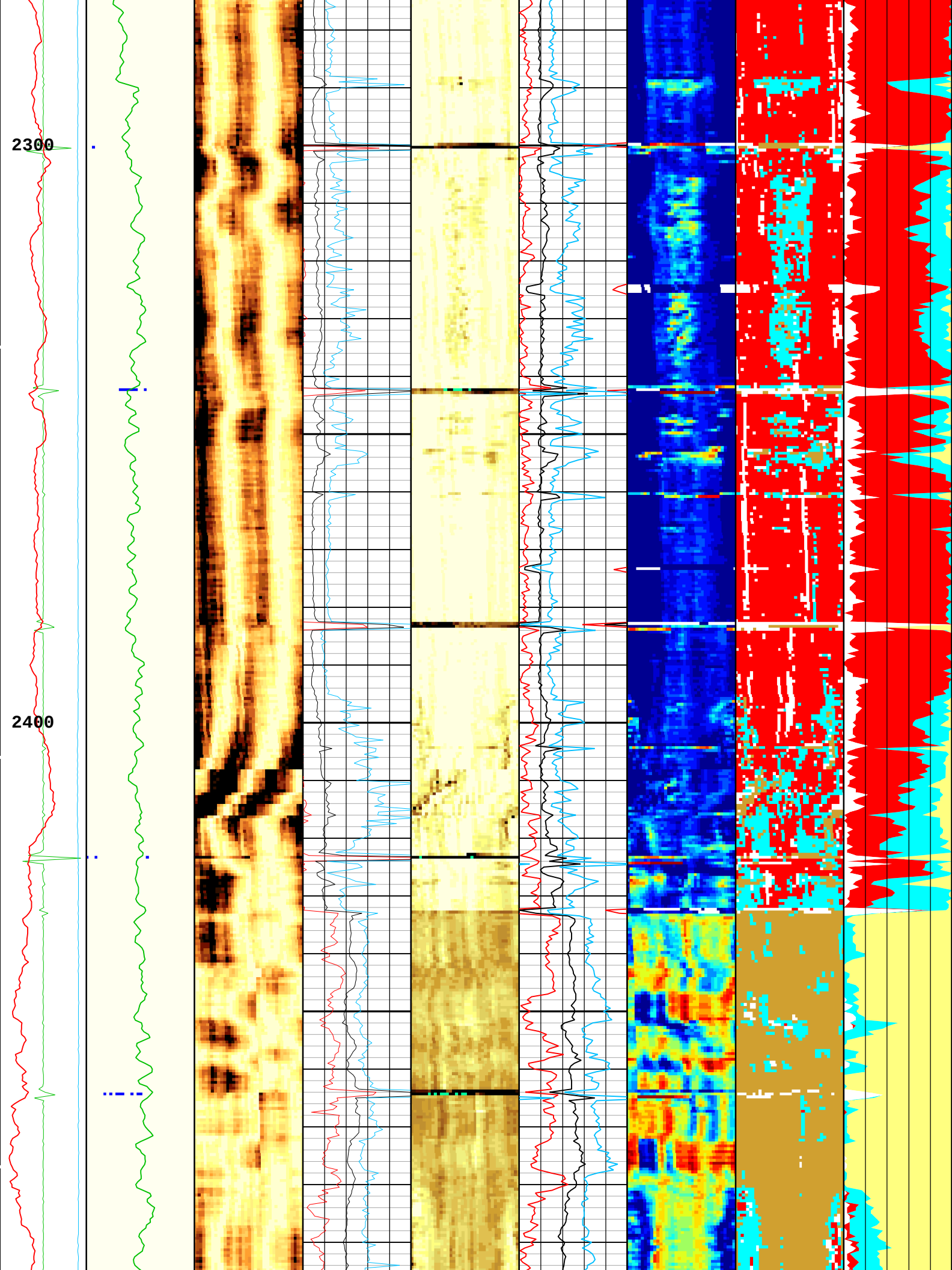
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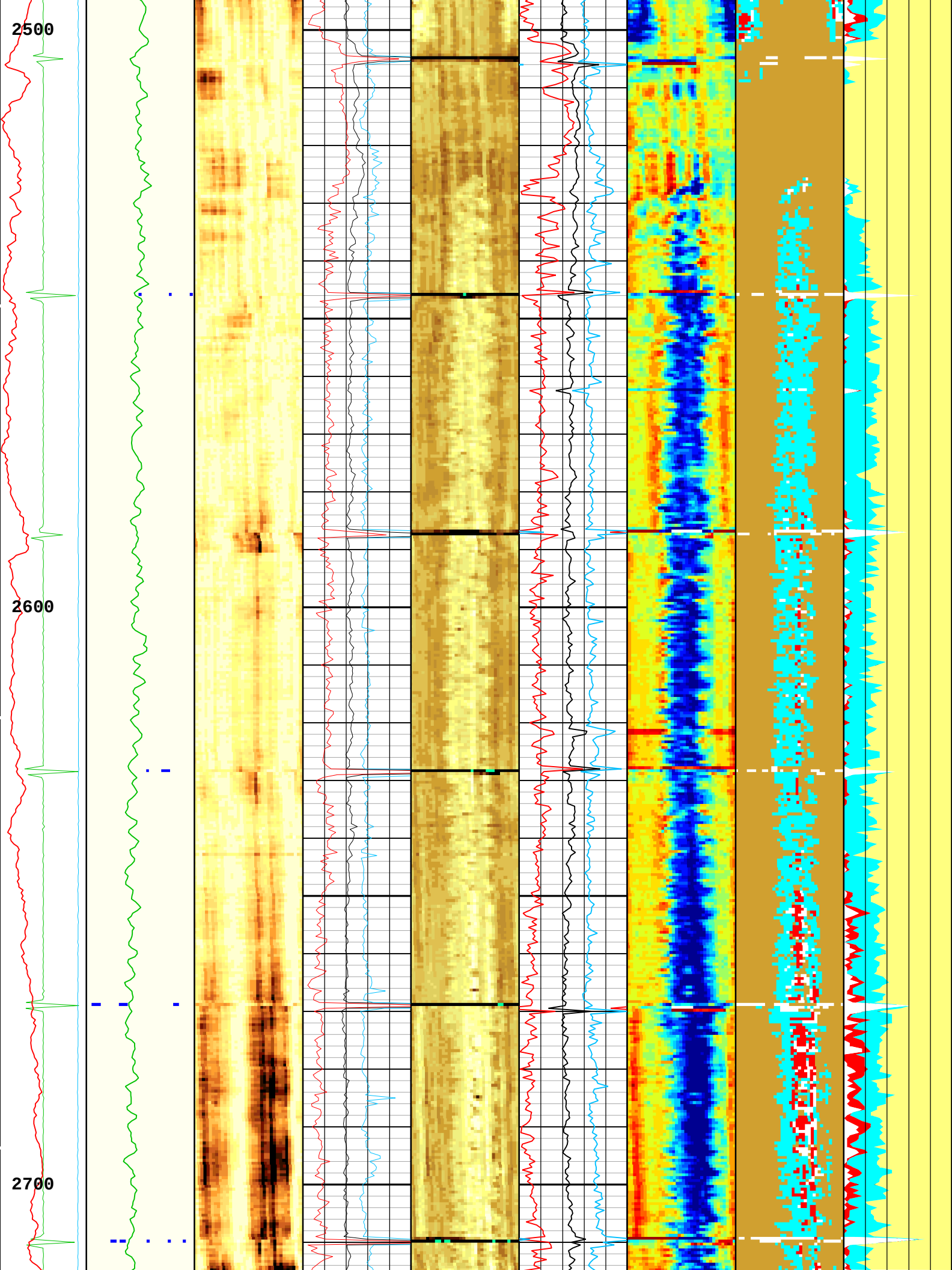
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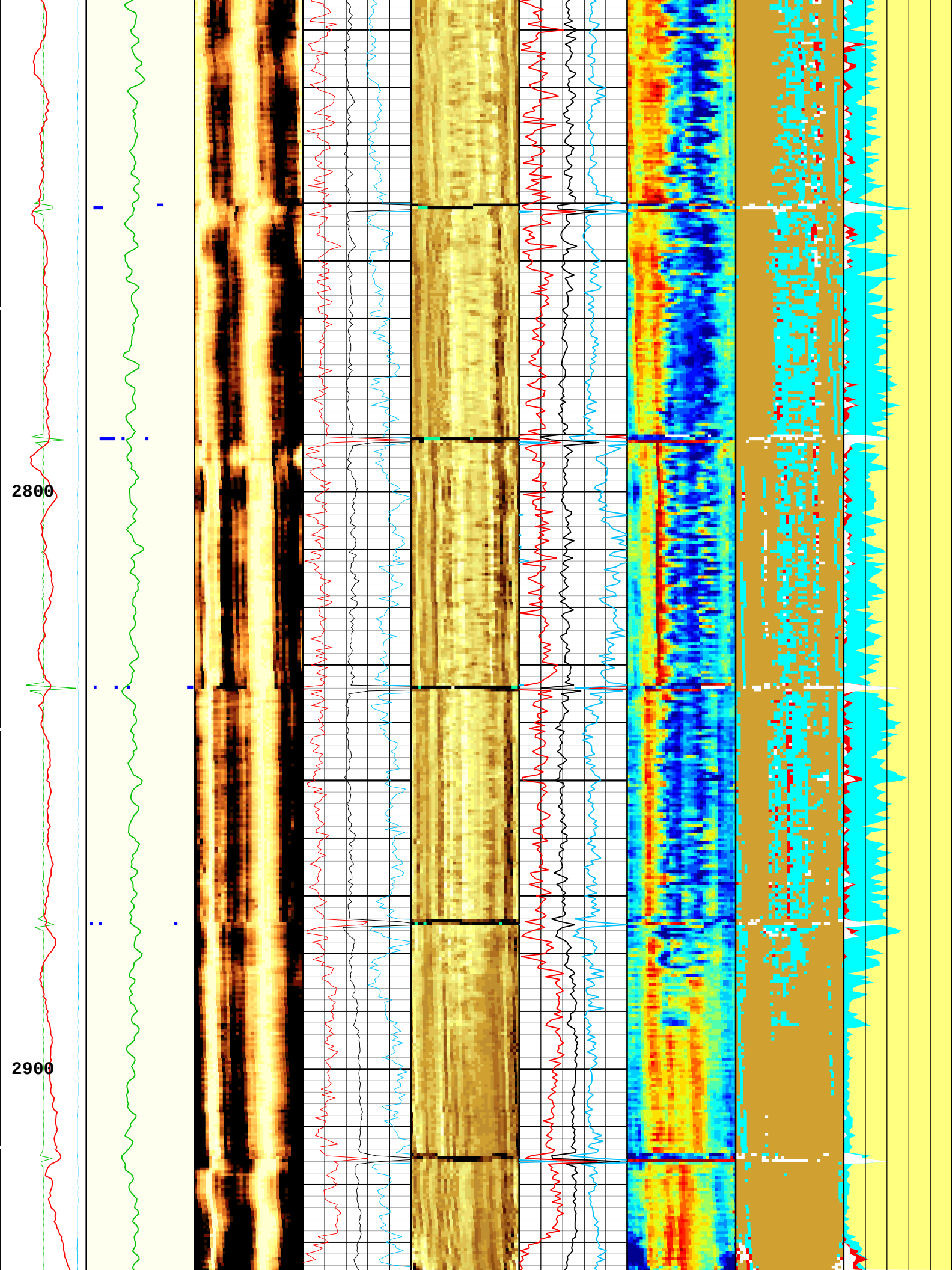
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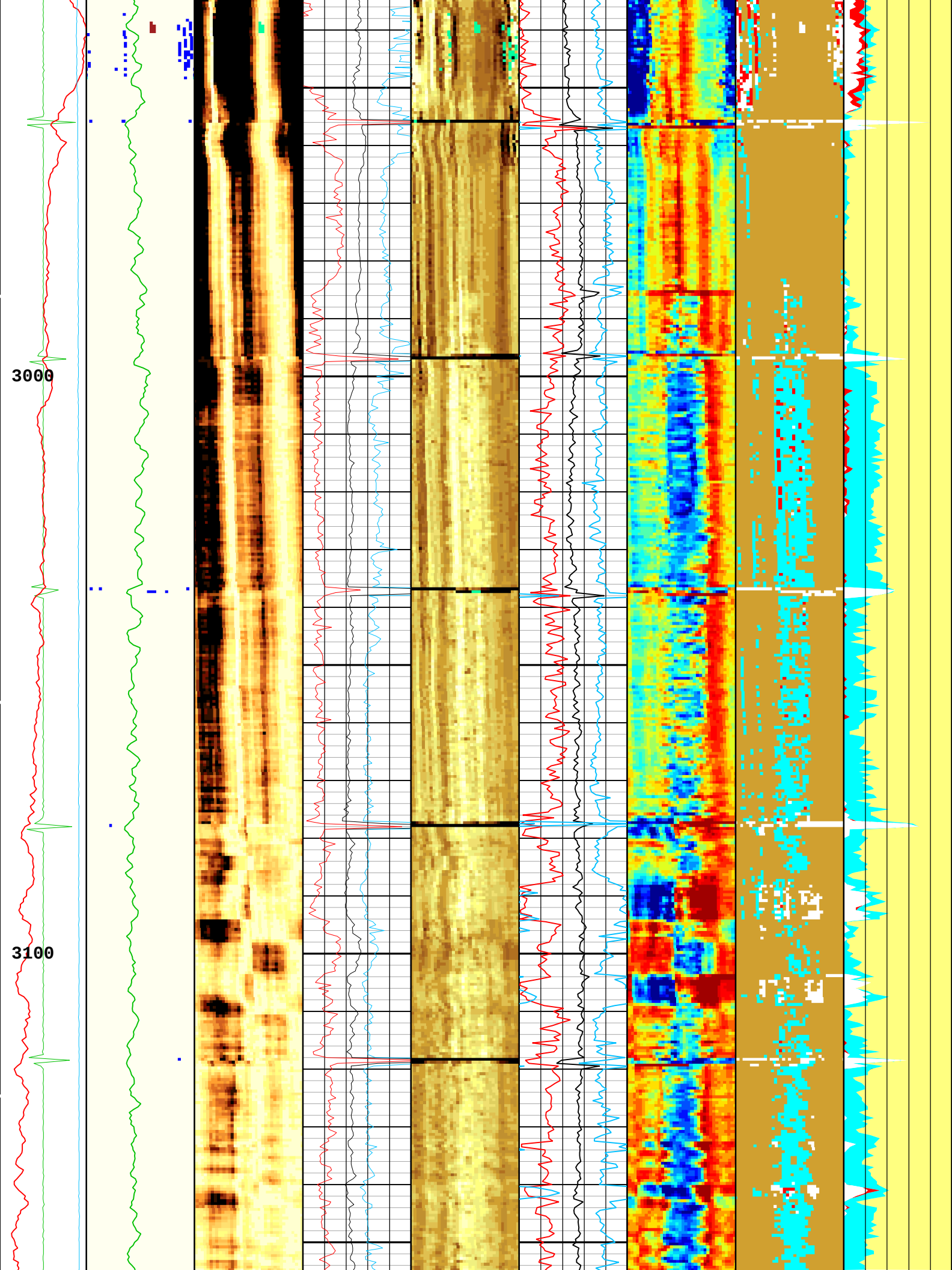
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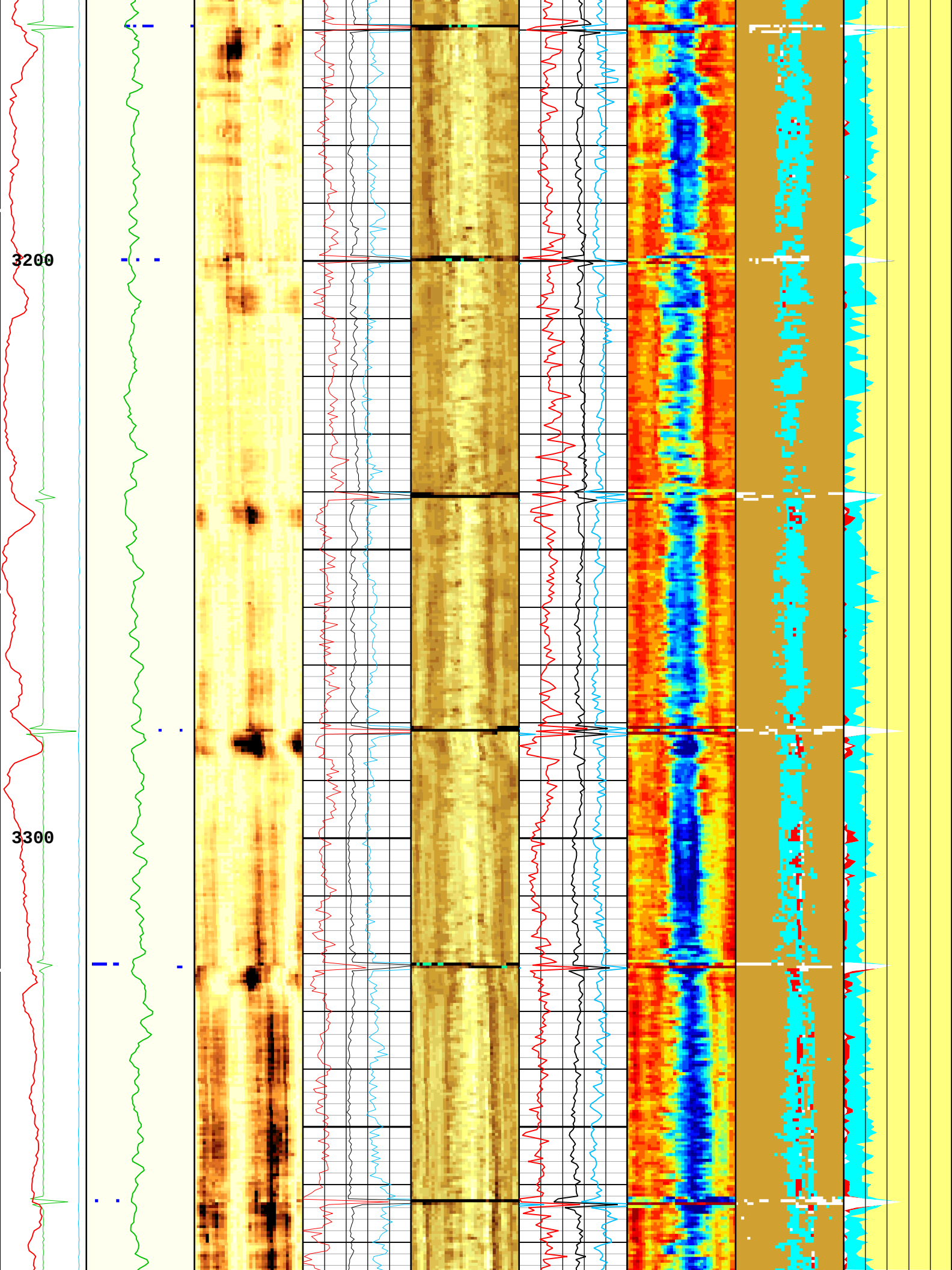
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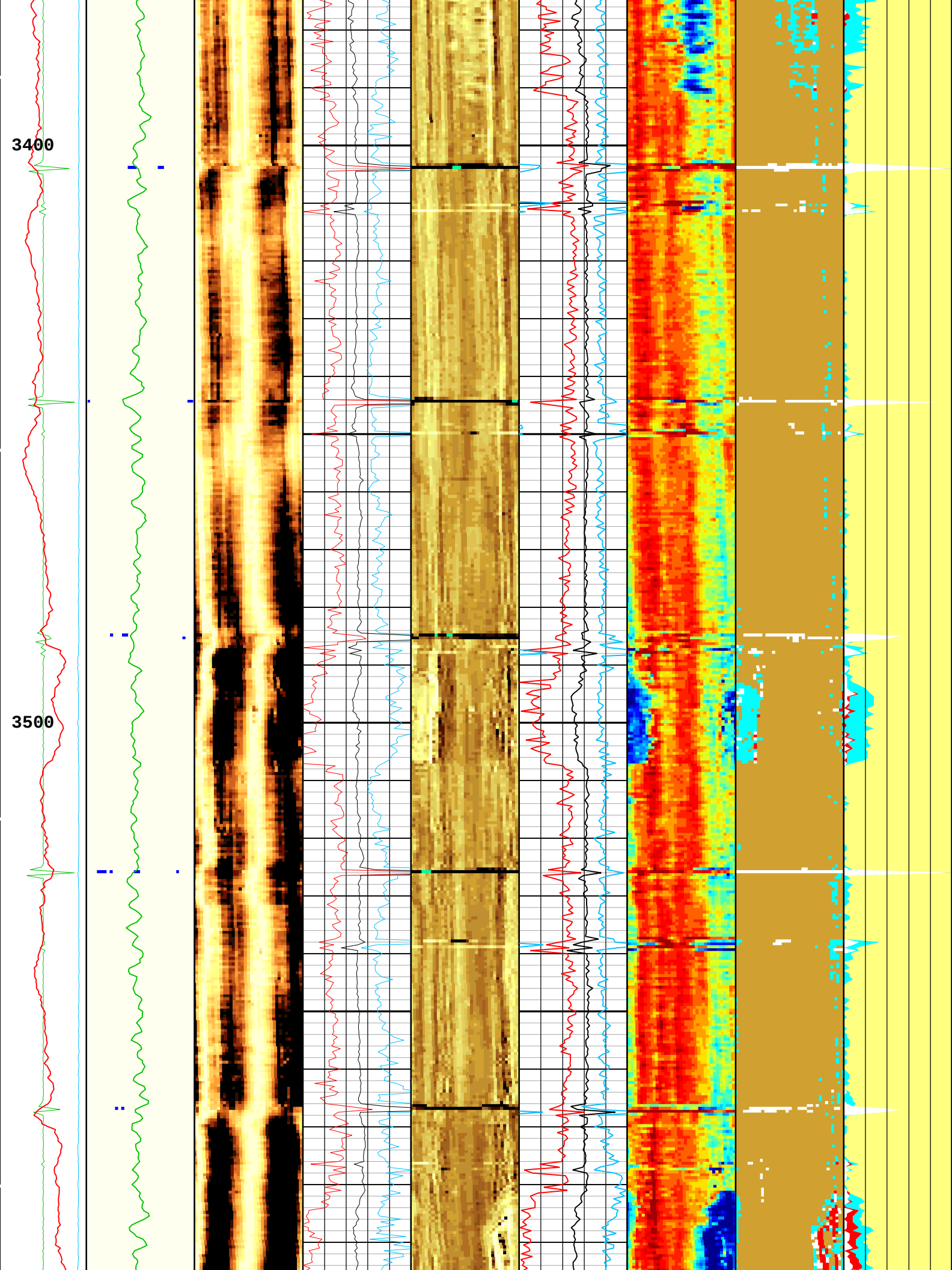
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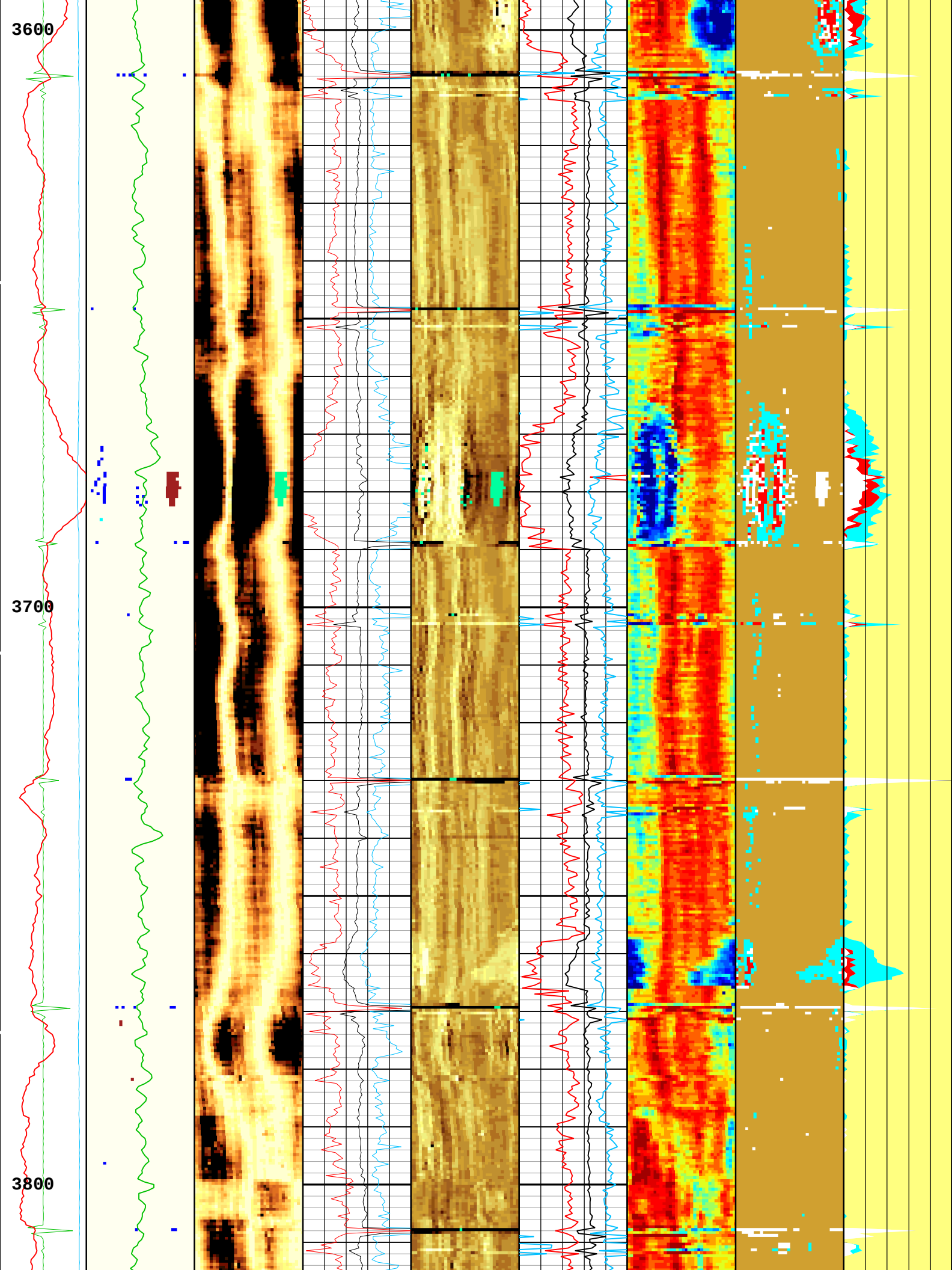
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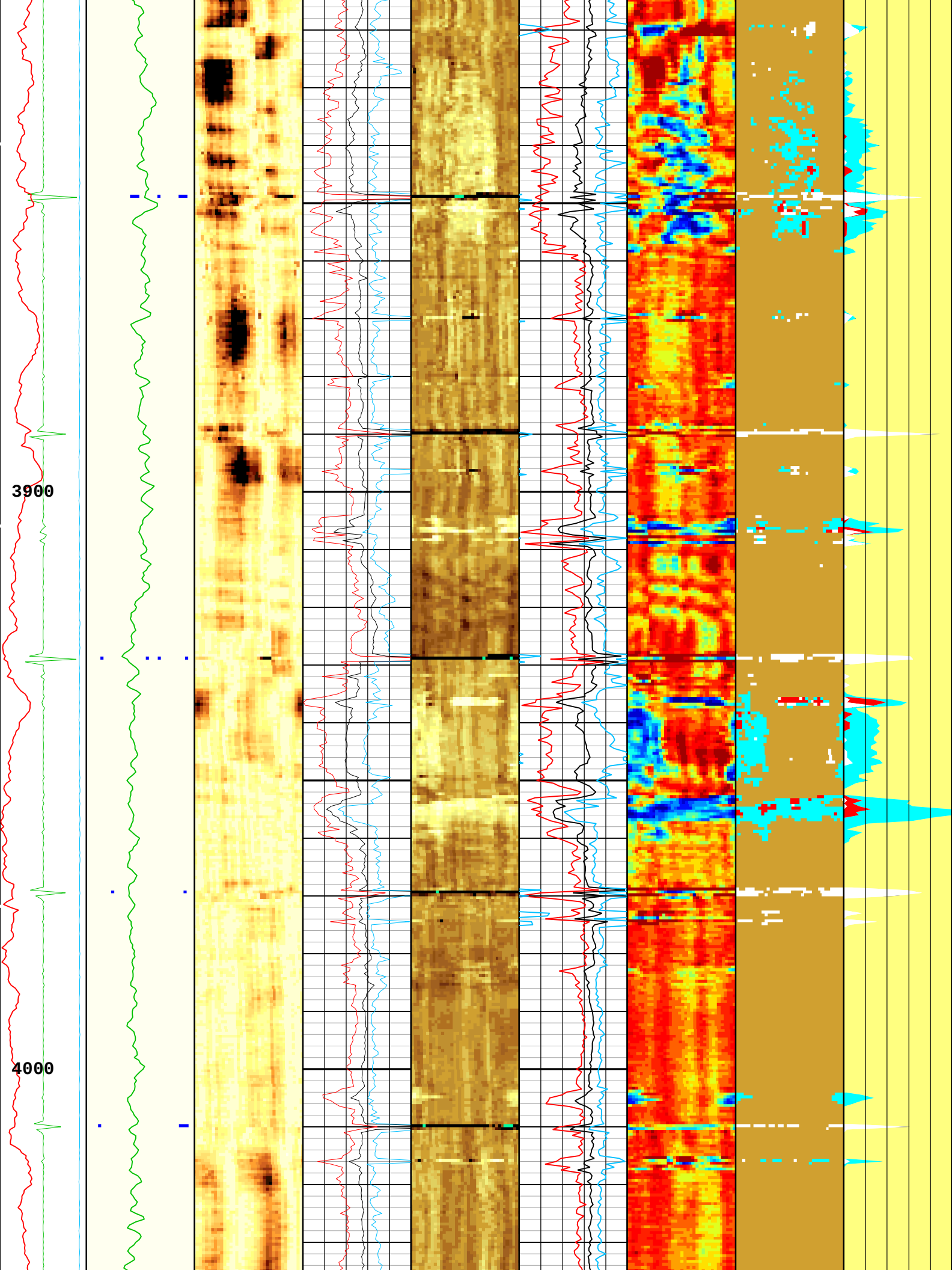
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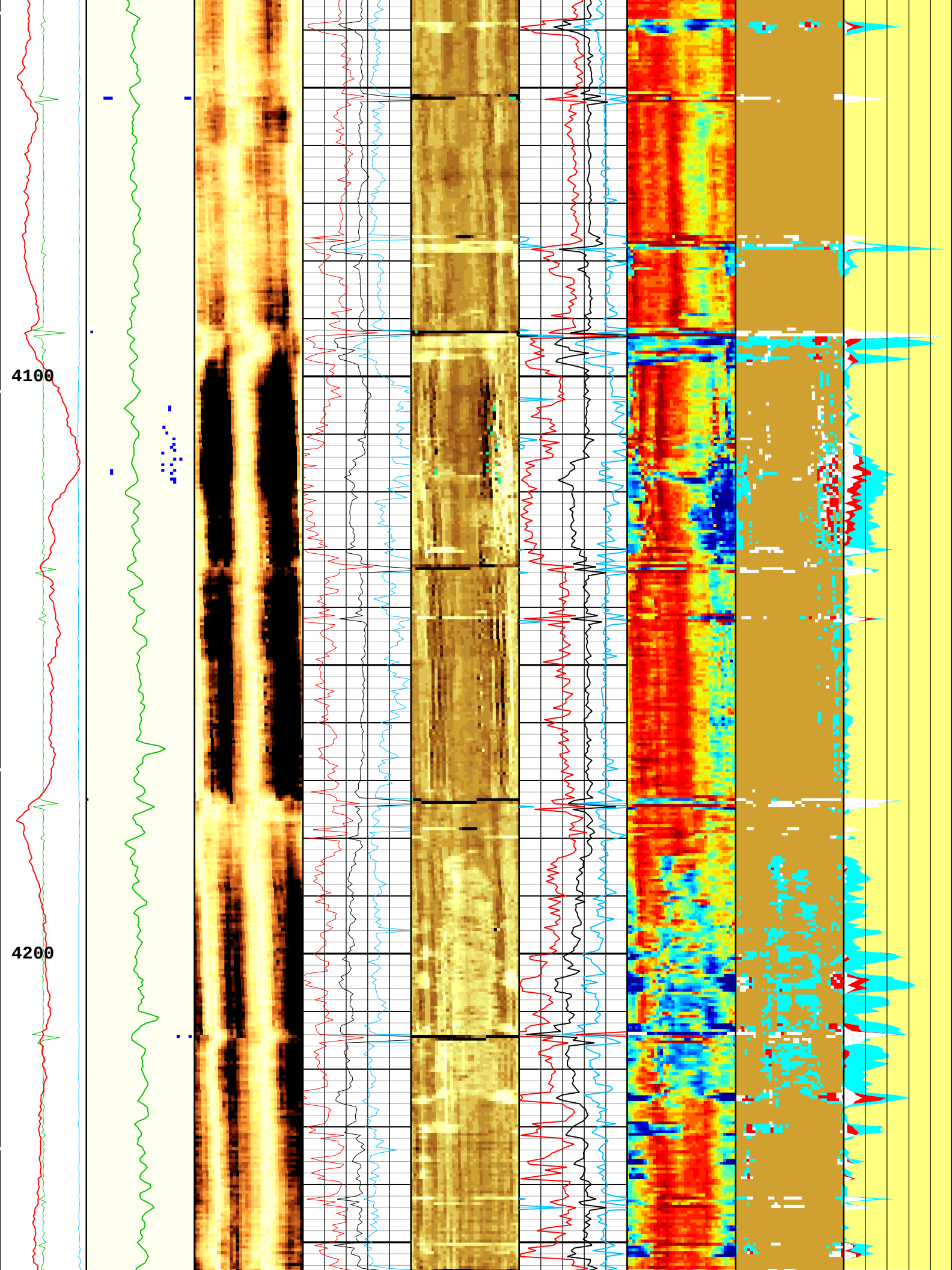
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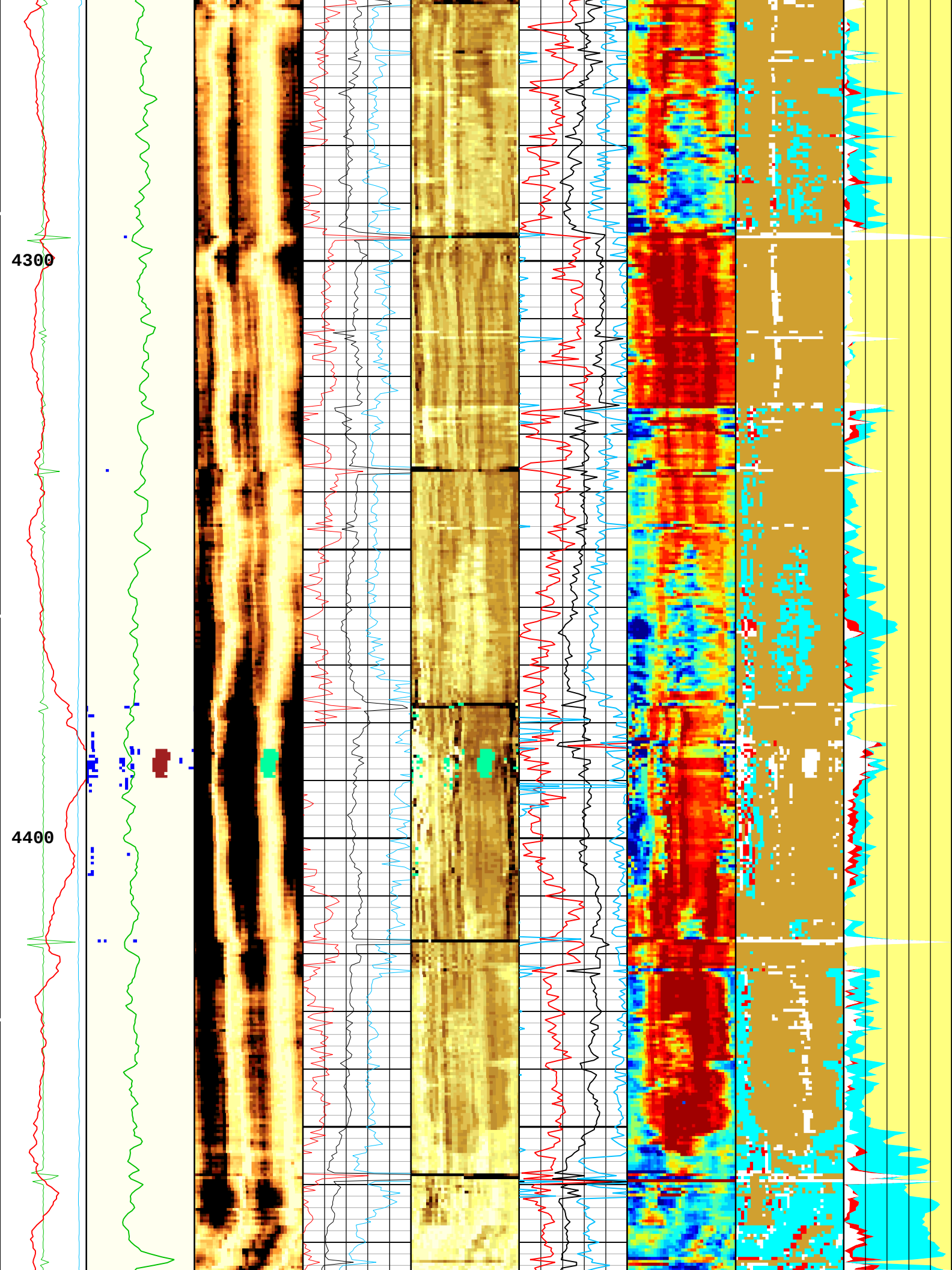
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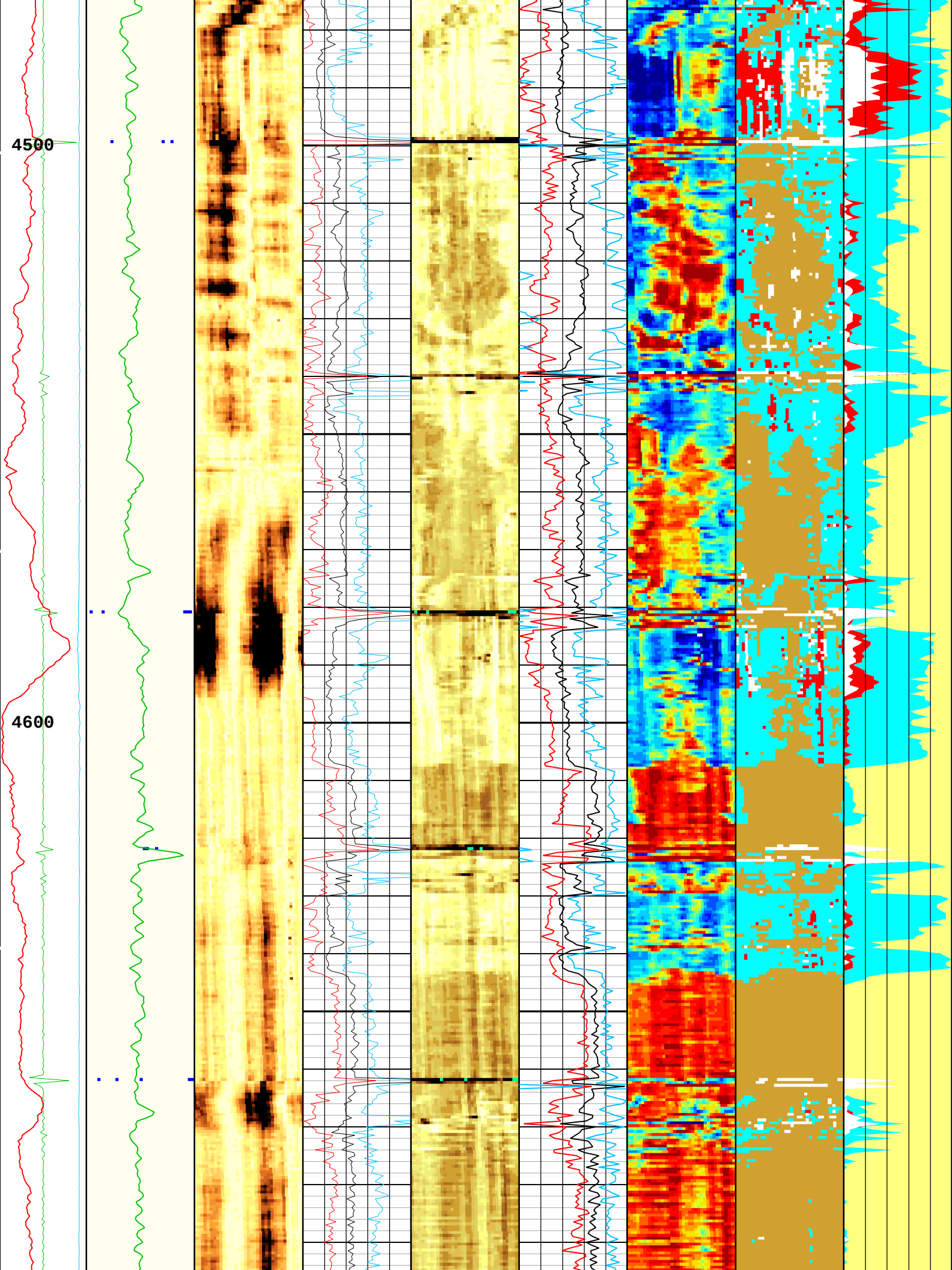
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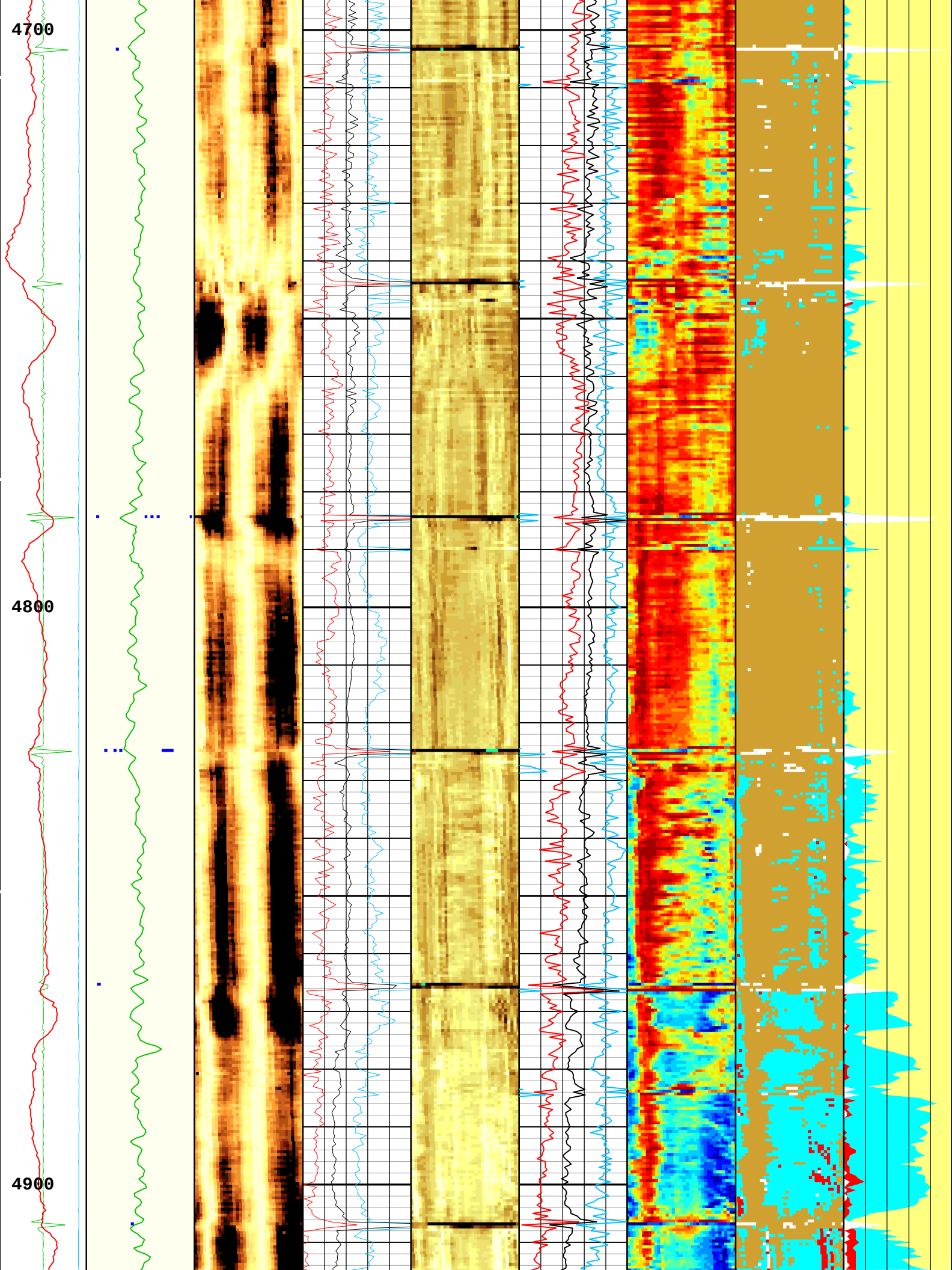
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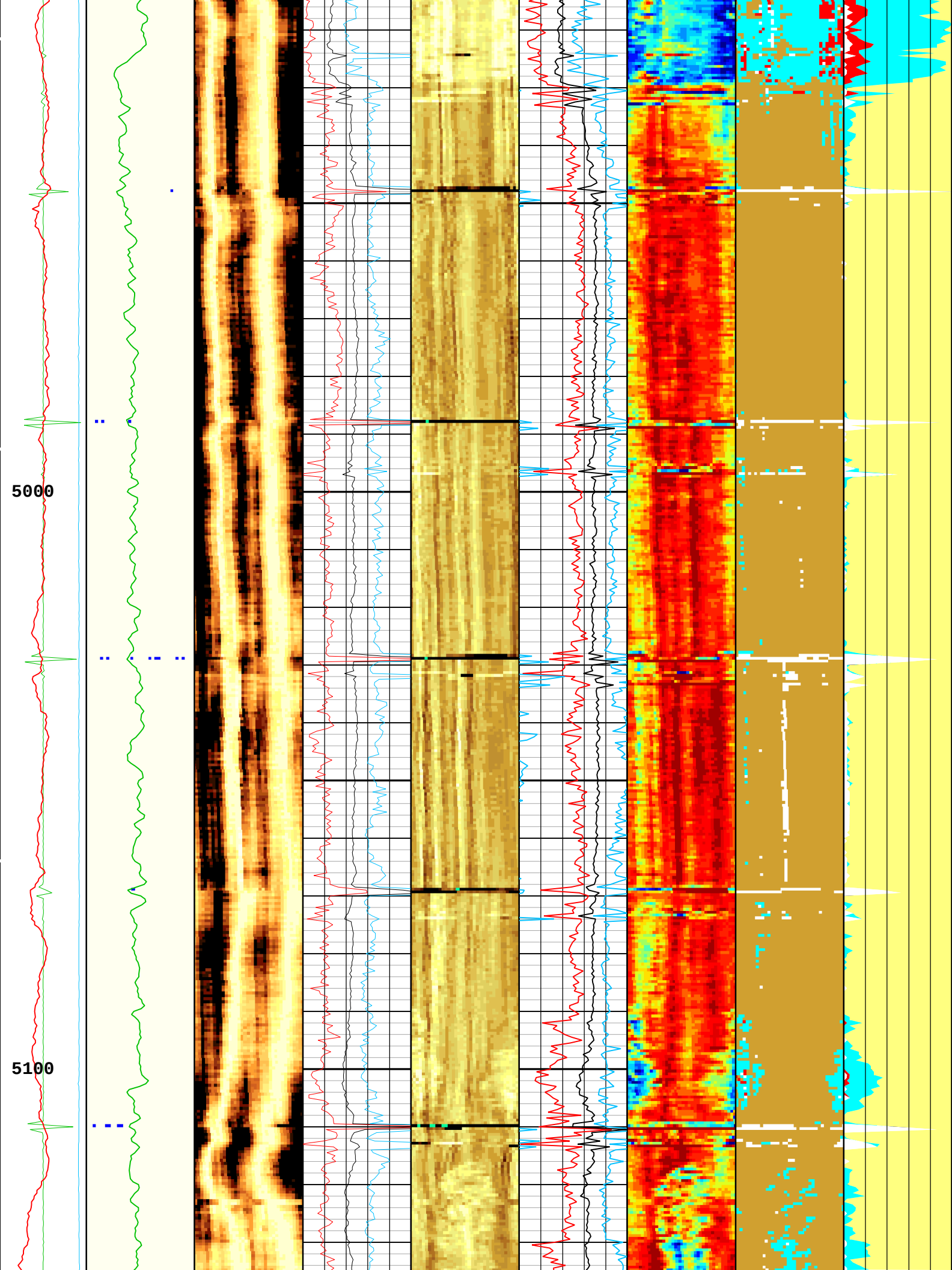
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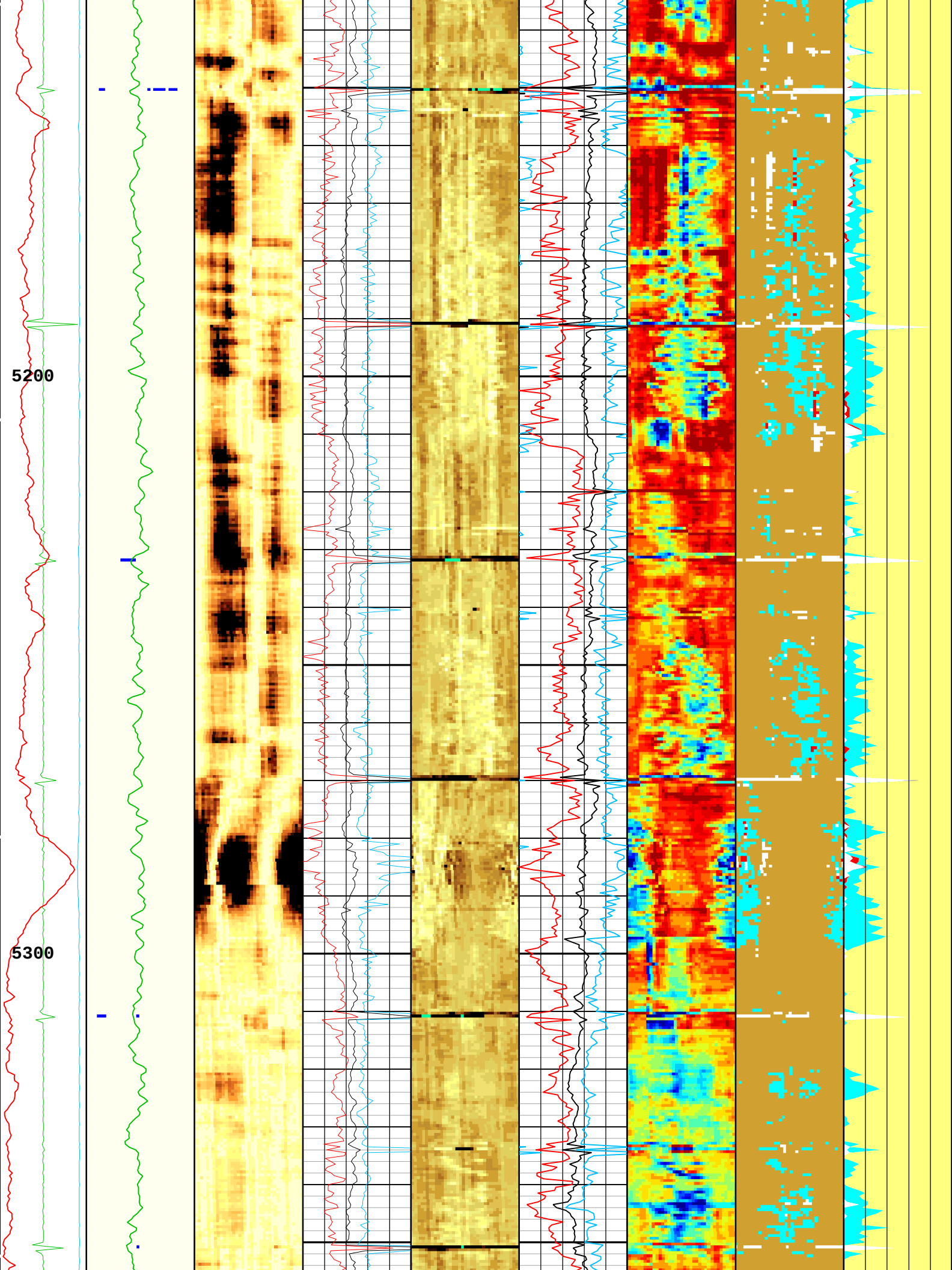
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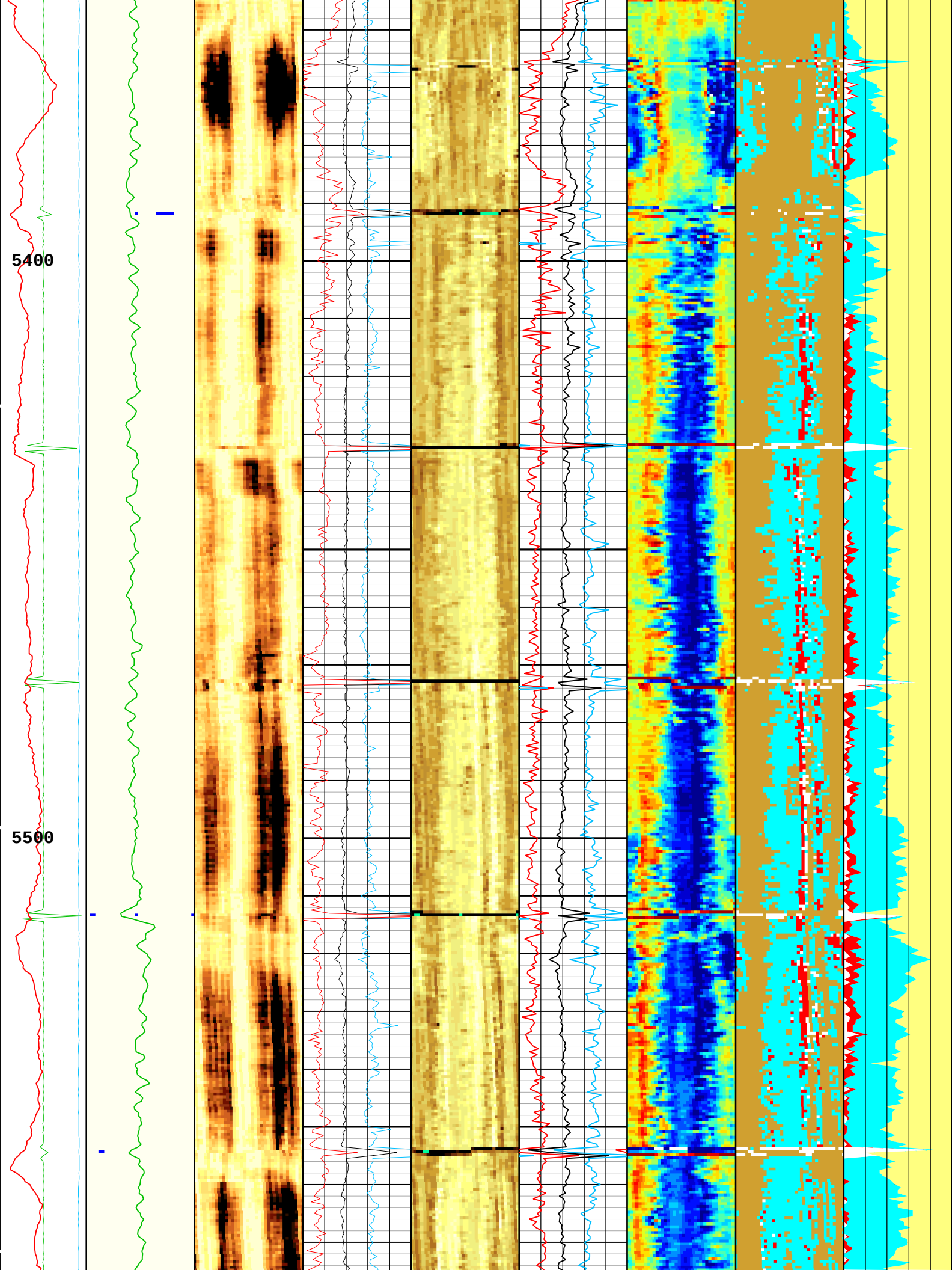
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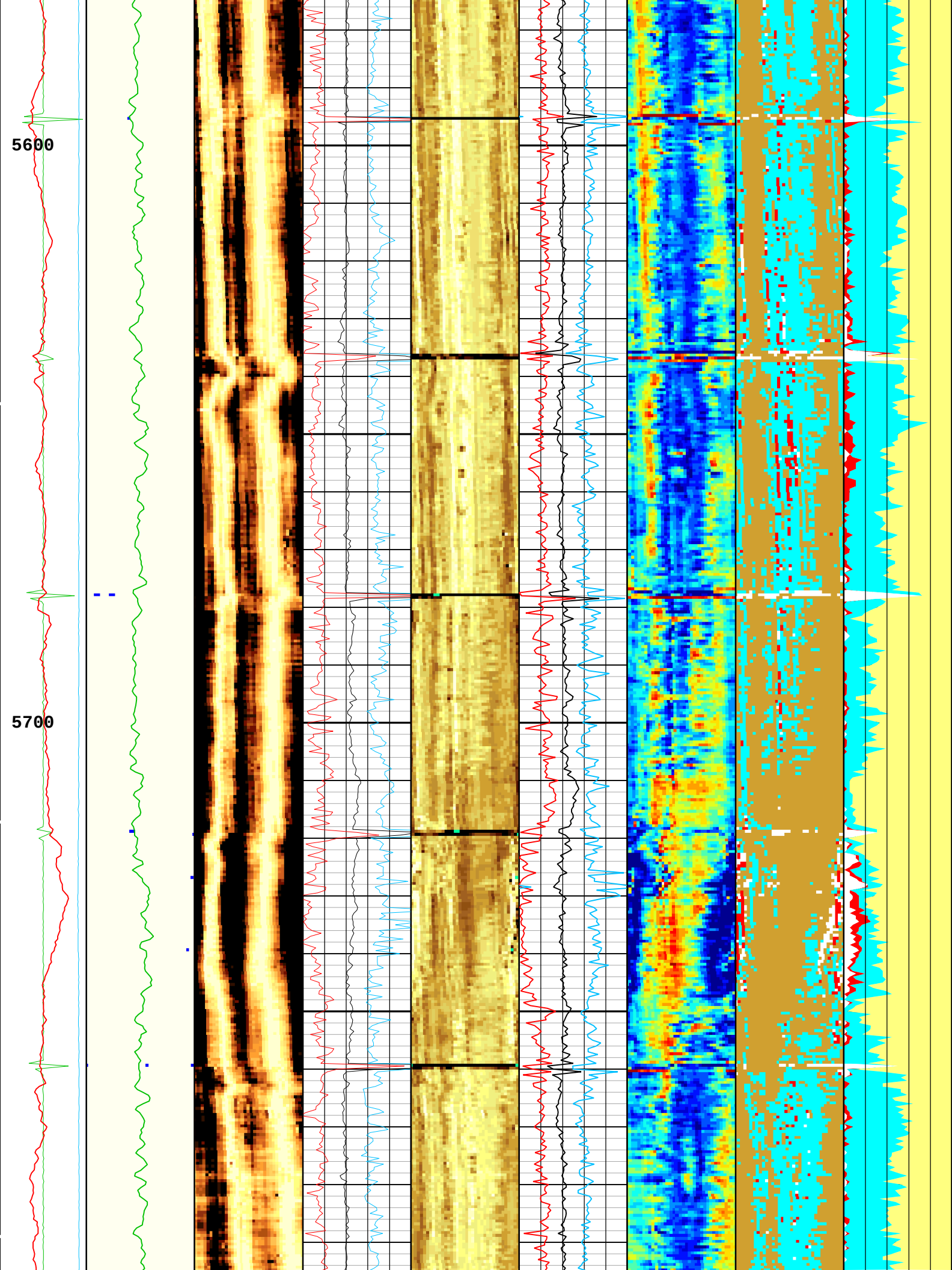
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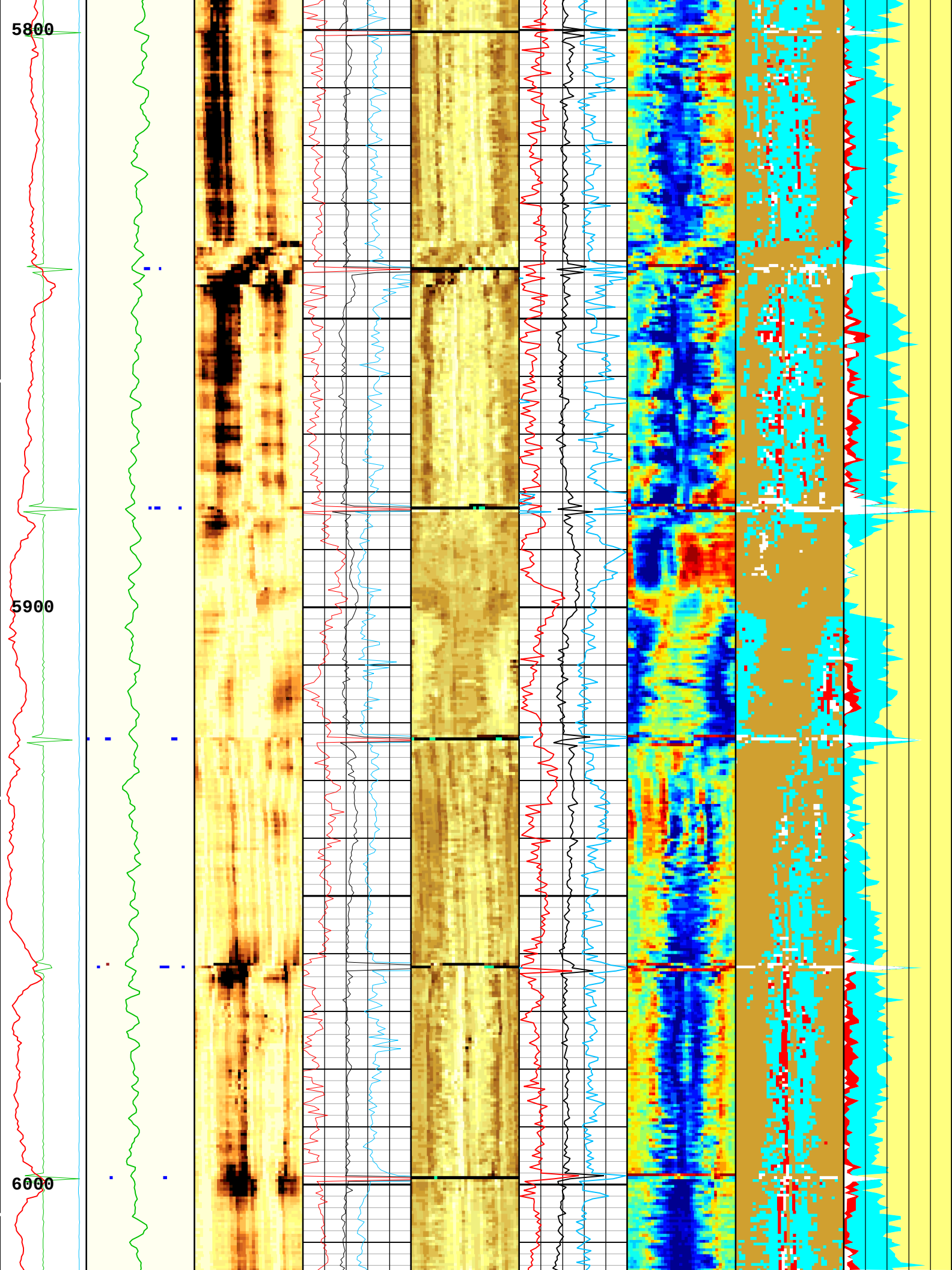
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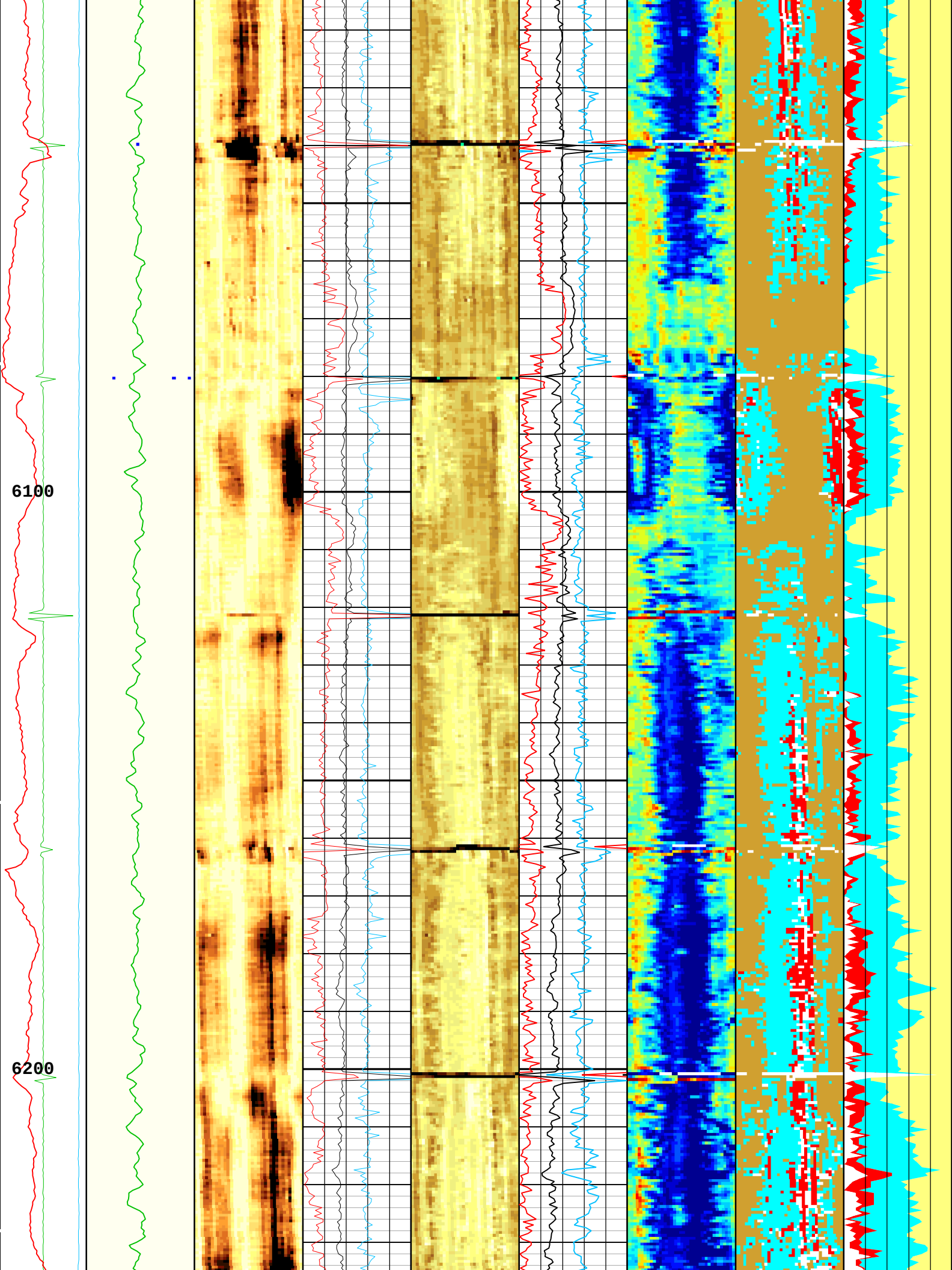
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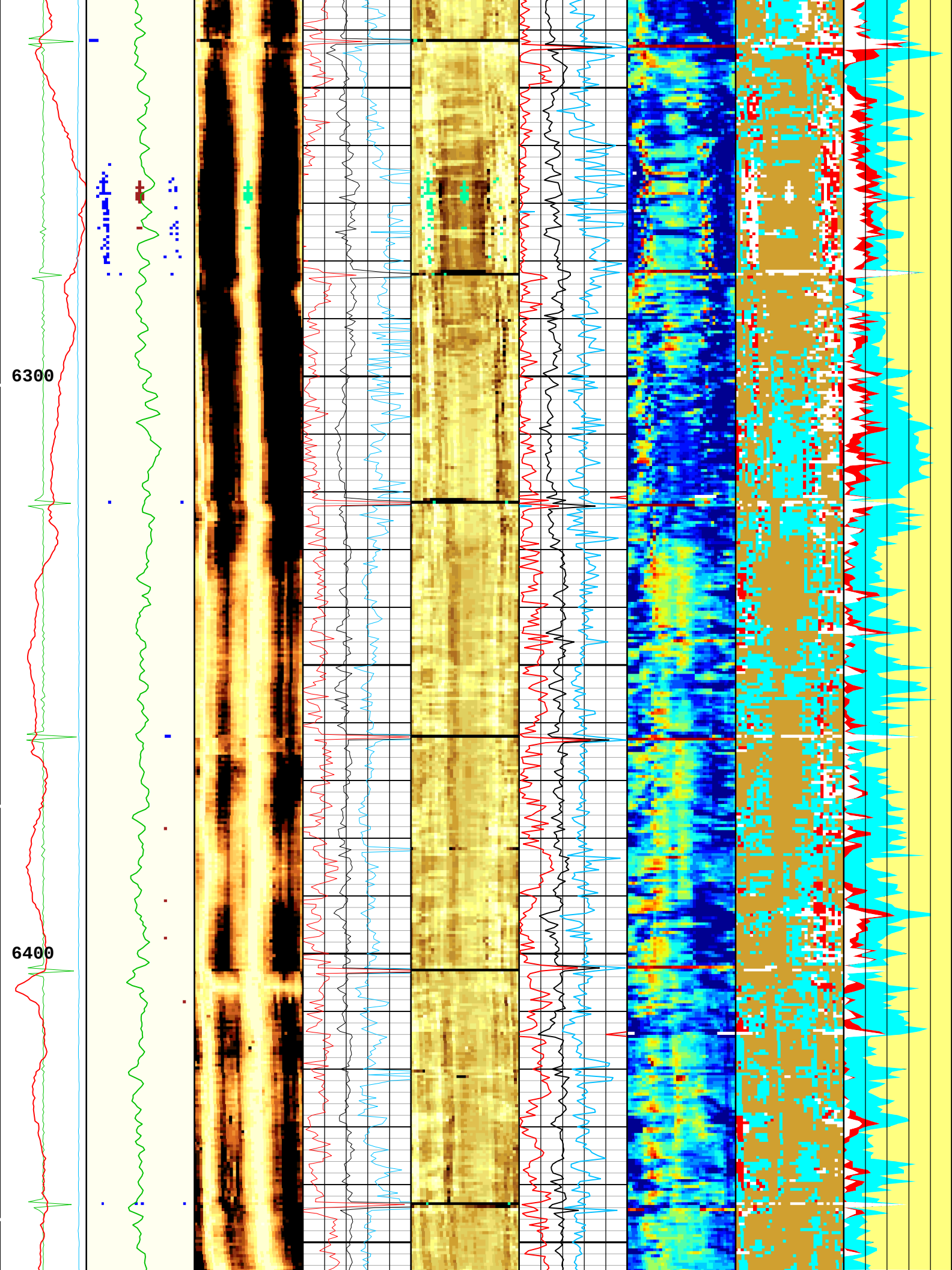
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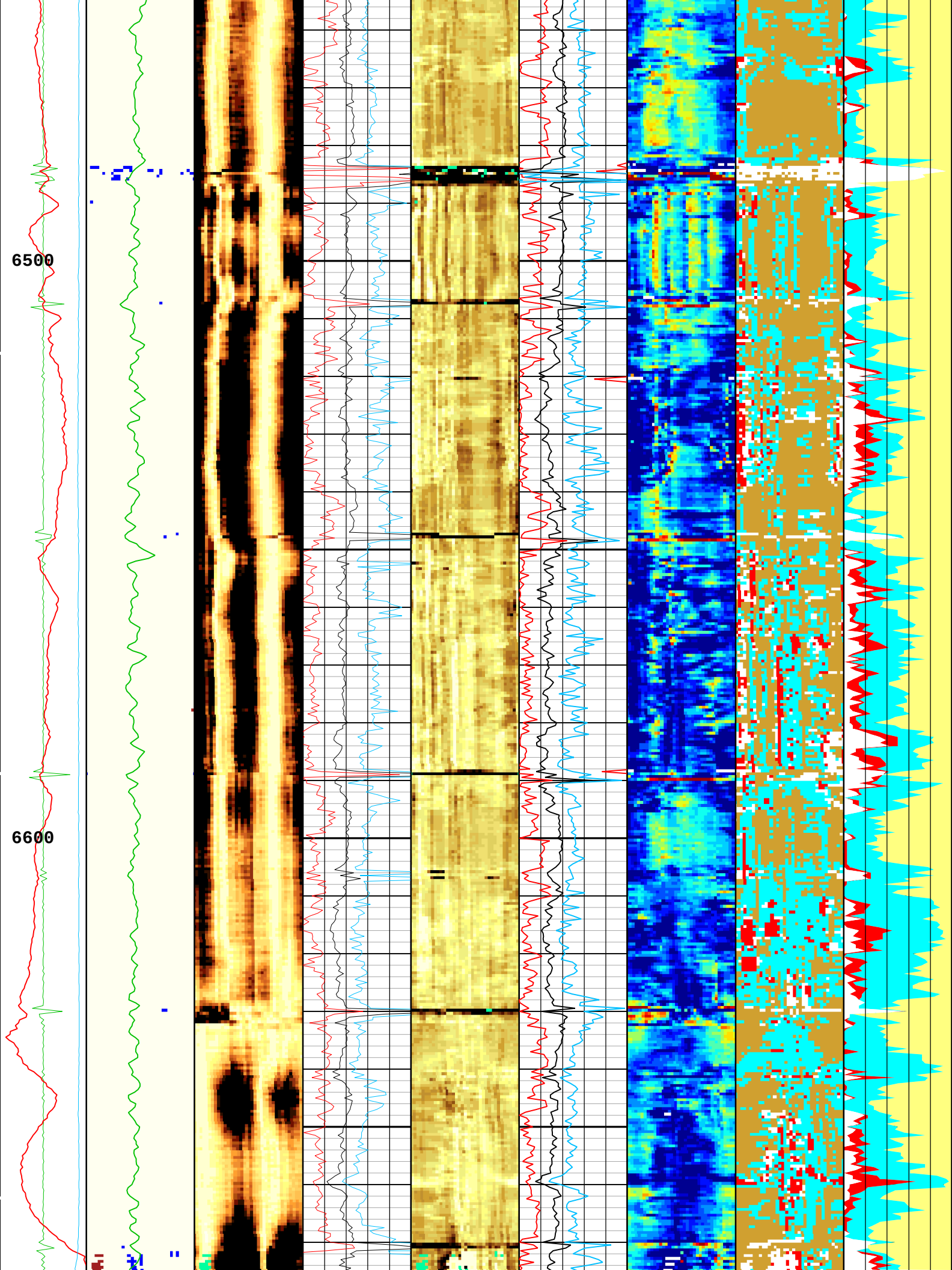
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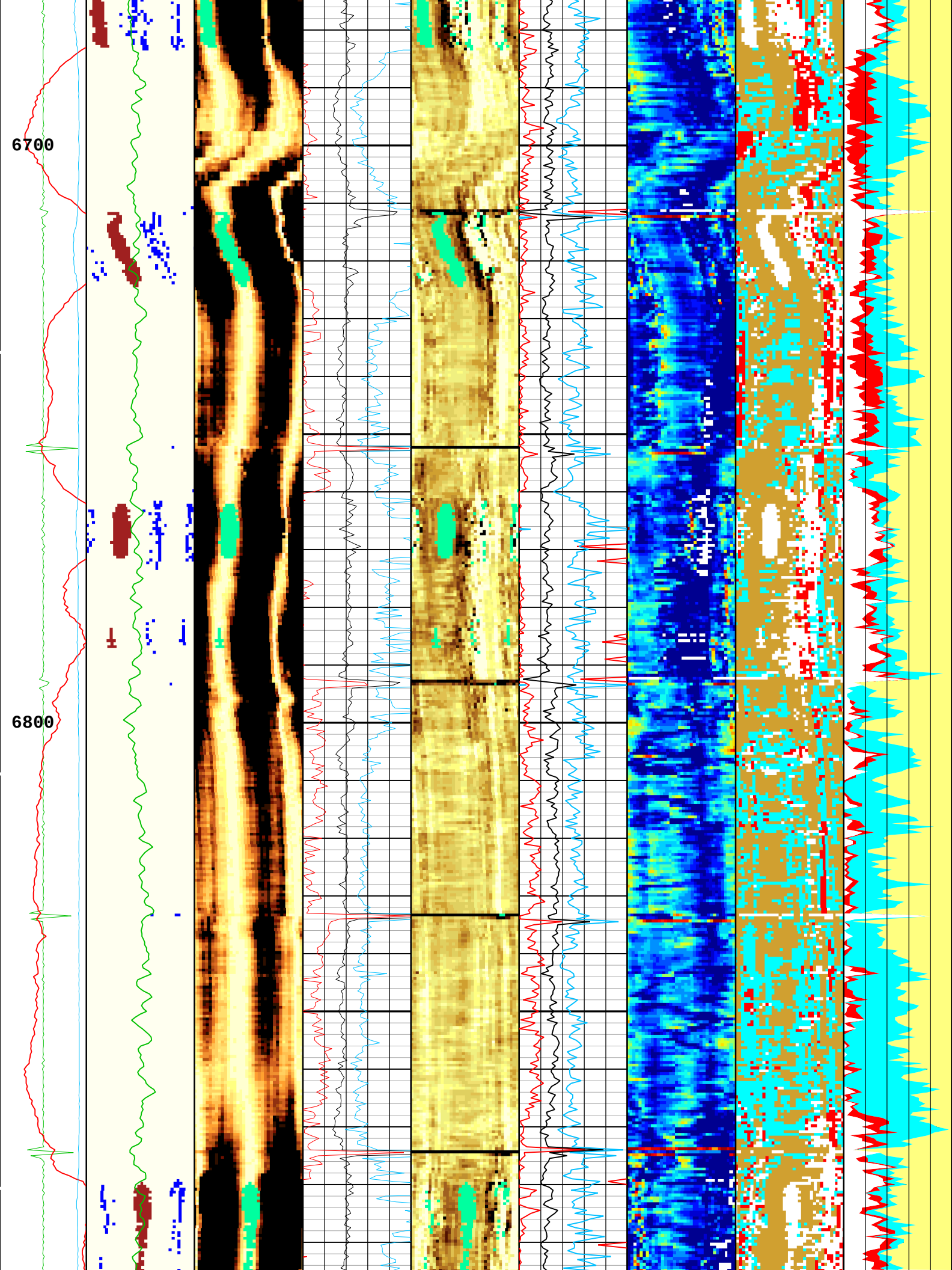
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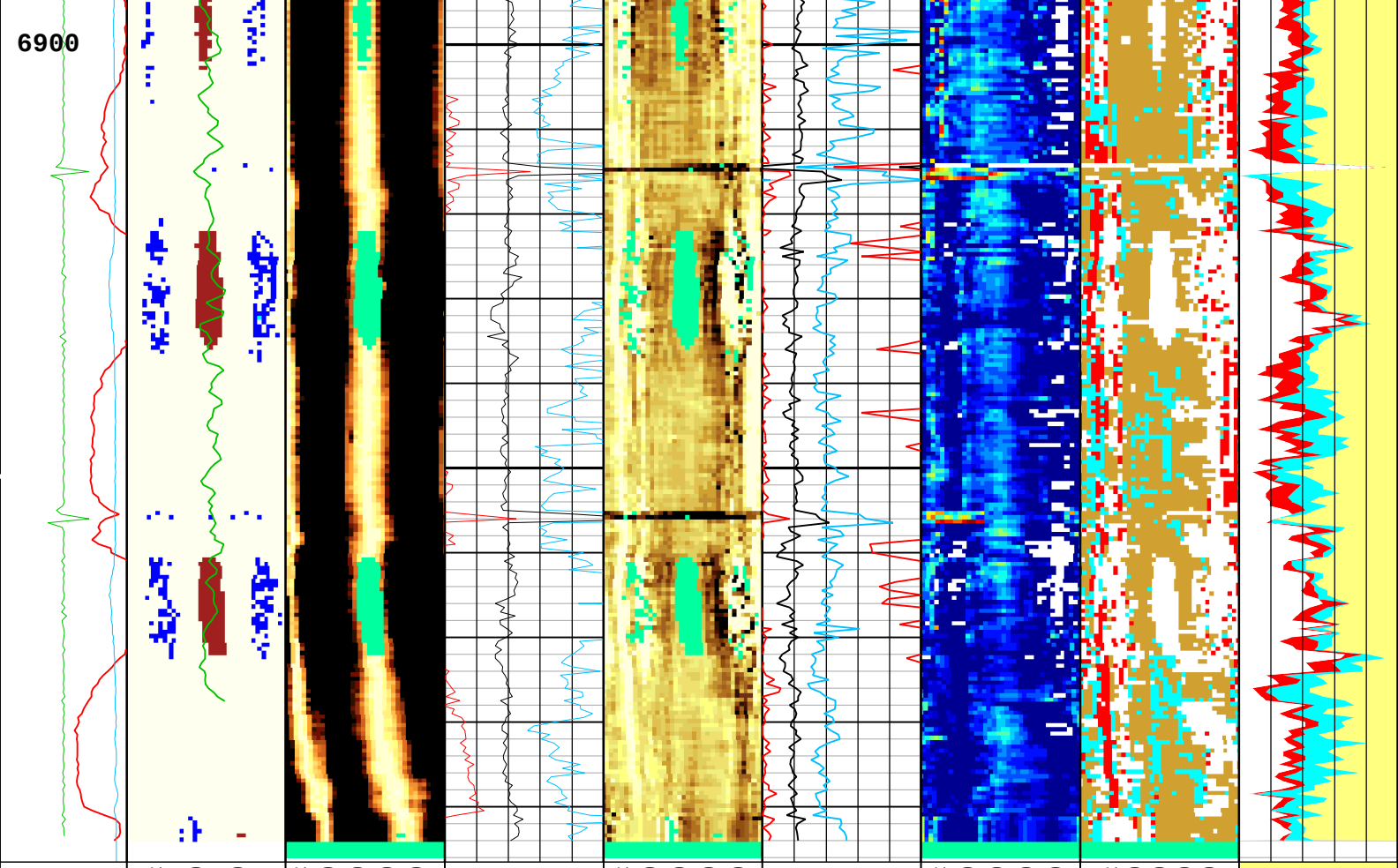


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

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
Orientation: Top of Hole
U L B R U

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)
Orientation: Top of Hole
U L B R U

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)
Orientation: Top of Hole
U L B R U

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)
Orientation: Top of Hole
U L B R U

Absent 0.500 1.500 2.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
Orientation: Top of Hole
U L B R U

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 (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:18

TWO: 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	6995	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	4.16	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	Time Zoned	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	70	2320
BS	8.5	2320	6995
MEAS_WLEN	22.44	70	6995
MEAS_WLEN	20	6995	6996.5

All depth are actual.

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFAO	-3.84	18-May-2019 08:09:12	18-May-2019 08:19:48	6997.33	6242.67
U-USIT_UFAO	-13.84	18-May-2019 08:19:48	18-May-2019 08:31:08	6242.67	5415.43
U-USIT_UFAO	-30.84	18-May-2019 08:31:08	18-May-2019 08:32:07	5415.43	5343.94
U-USIT_UFAO	-13.84	18-May-2019 08:32:07	18-May-2019 08:32:45	5343.94	5297.92
U-USIT_UFAO	13.16	18-May-2019 08:32:45	18-May-2019 08:33:49	5297.92	5220.78
U-USIT_UFAO	-13.84	18-May-2019 08:33:49	18-May-2019 08:44:21	5220.78	4476.87
U-USIT_UFAO	13.16	18-May-2019 08:44:21	18-May-2019 09:07:00	4476.87	2986.16
U-USIT_UFAO	-13.84	18-May-2019 09:07:00	18-May-2019 09:14:37	2986.16	2433.21
U-USIT_UFAO	13.16	18-May-2019 09:14:37	18-May-2019 09:16:59	2433.21	2264.36
U-USIT_UFAO	33.16	18-May-2019 09:16:59	18-May-2019 09:17:04	2264.36	2258.38
U-USIT_UFAO	11.16	18-May-2019 09:17:04	18-May-2019 09:17:13	2258.38	2247.55
U-USIT_UFAO	33.16	18-May-2019 09:17:13	18-May-2019 09:17:19	2247.55	2240.36
U-USIT_UFAO	13.16	18-May-2019 09:17:19	18-May-2019 09:17:23	2240.36	2235.56
U-USIT_UFAO	33.16	18-May-2019 09:17:23	18-May-2019 09:18:55	2235.56	2125.77
U-USIT_UFAO	26.16	18-May-2019 09:18:55	18-May-2019 09:25:44	2125.77	1637.62
U-USIT_UFAO	3.16	18-May-2019 09:25:44	18-May-2019 09:51:47	1637.62	68.82

All depth are at tool zero.

Tool Control Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	120	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	181.88	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	

USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	33.22	us
WINE	Window End Time	USIT-E	73.87	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UNWE	148.89	18-May-2019 08:09:12	18-May-2019 08:32:37	6997.33	5307.03
U-USIT_UNWE	146.25	18-May-2019 08:32:37	18-May-2019 09:51:47	5307.03	68.82

All depth are at tool zero.

TWO

IBC SLG Composite

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[5]:Up	Up	68.82 ft	6997.33 ft	18-May-2019 8:09:12 AM	18-May-2019 9:51:47 AM	ON	-3.13 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267

TWO: Log[5]:Up:S028

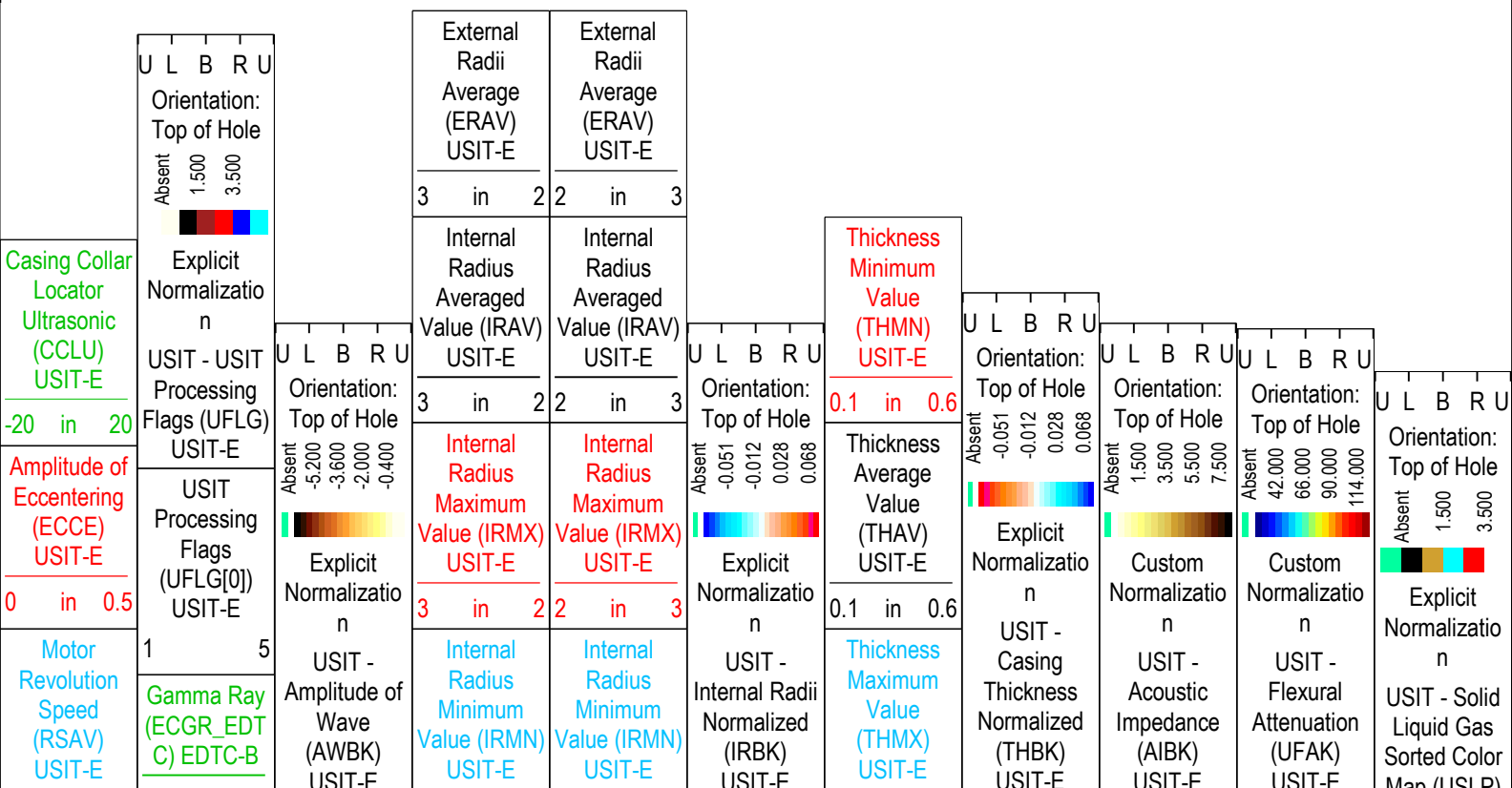
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 20-May-2019 14:58:34

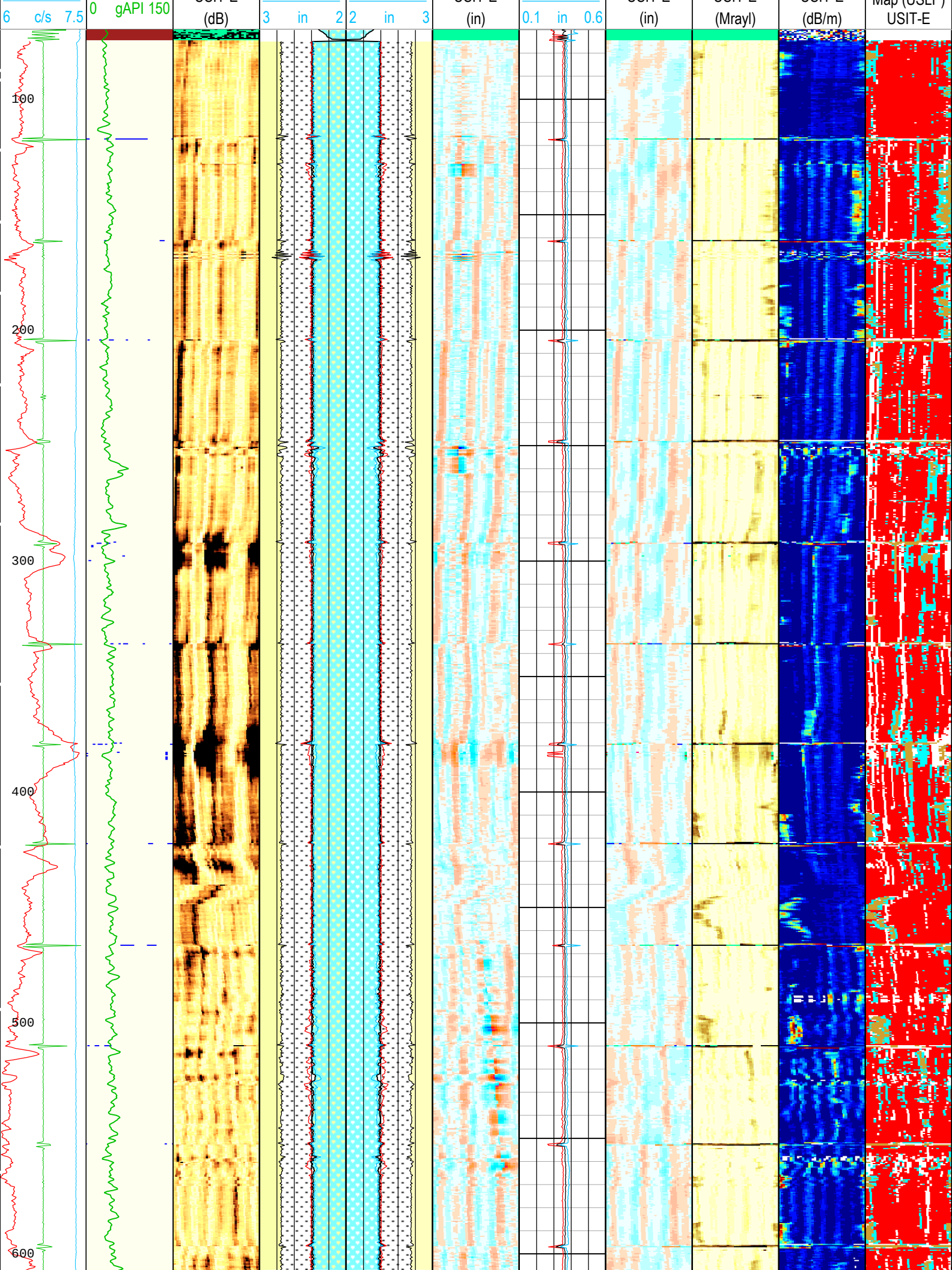
USIT Processing Flags (UFLG[0]) USIT-E

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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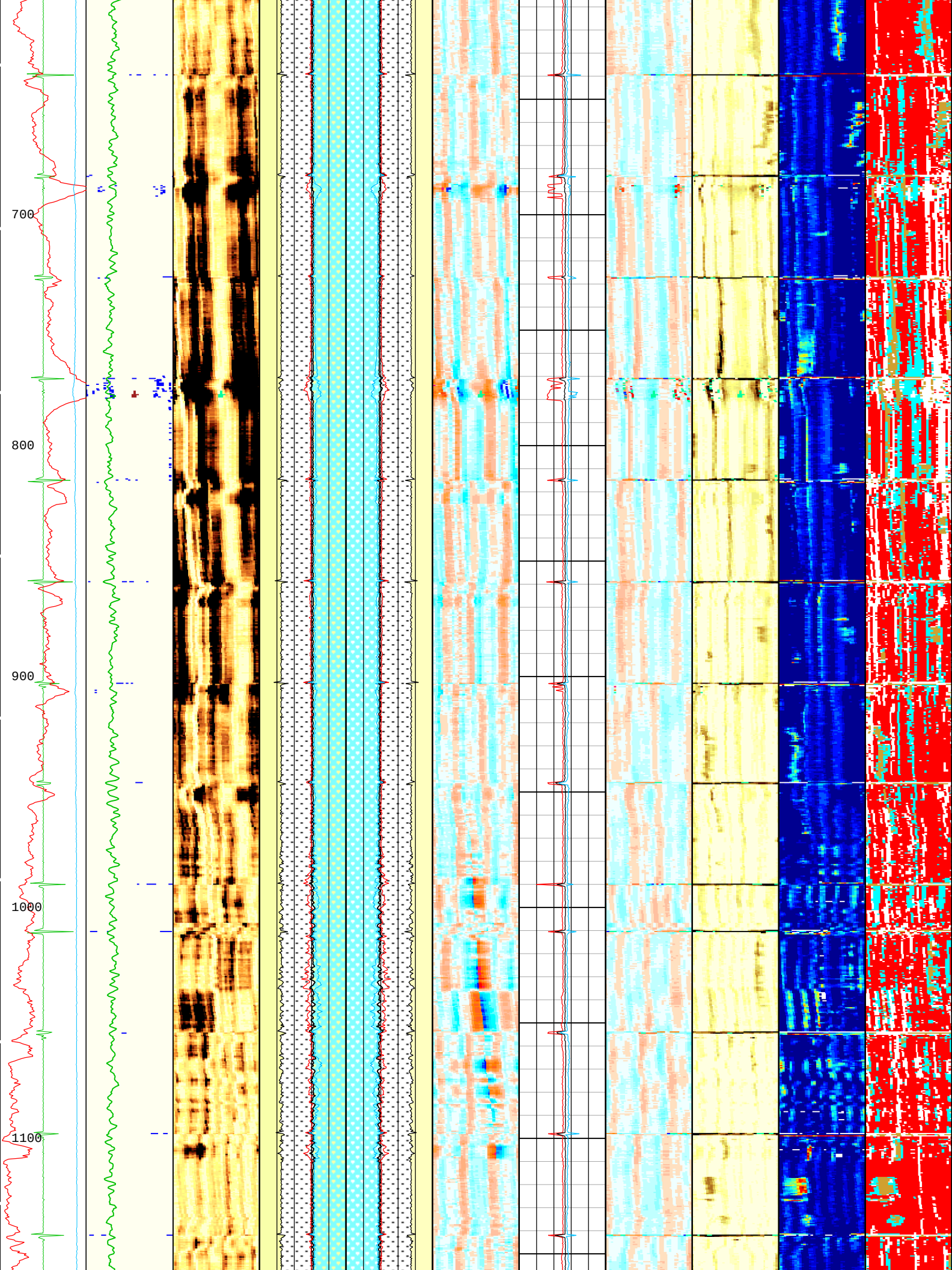
(dB)
3 in 2
2 in 3
(in)
0.1 in 0.6
(in)
(Mrayl)
(dB/m)
Map (USIT-E
USIT-E
100
200
300
400
500
600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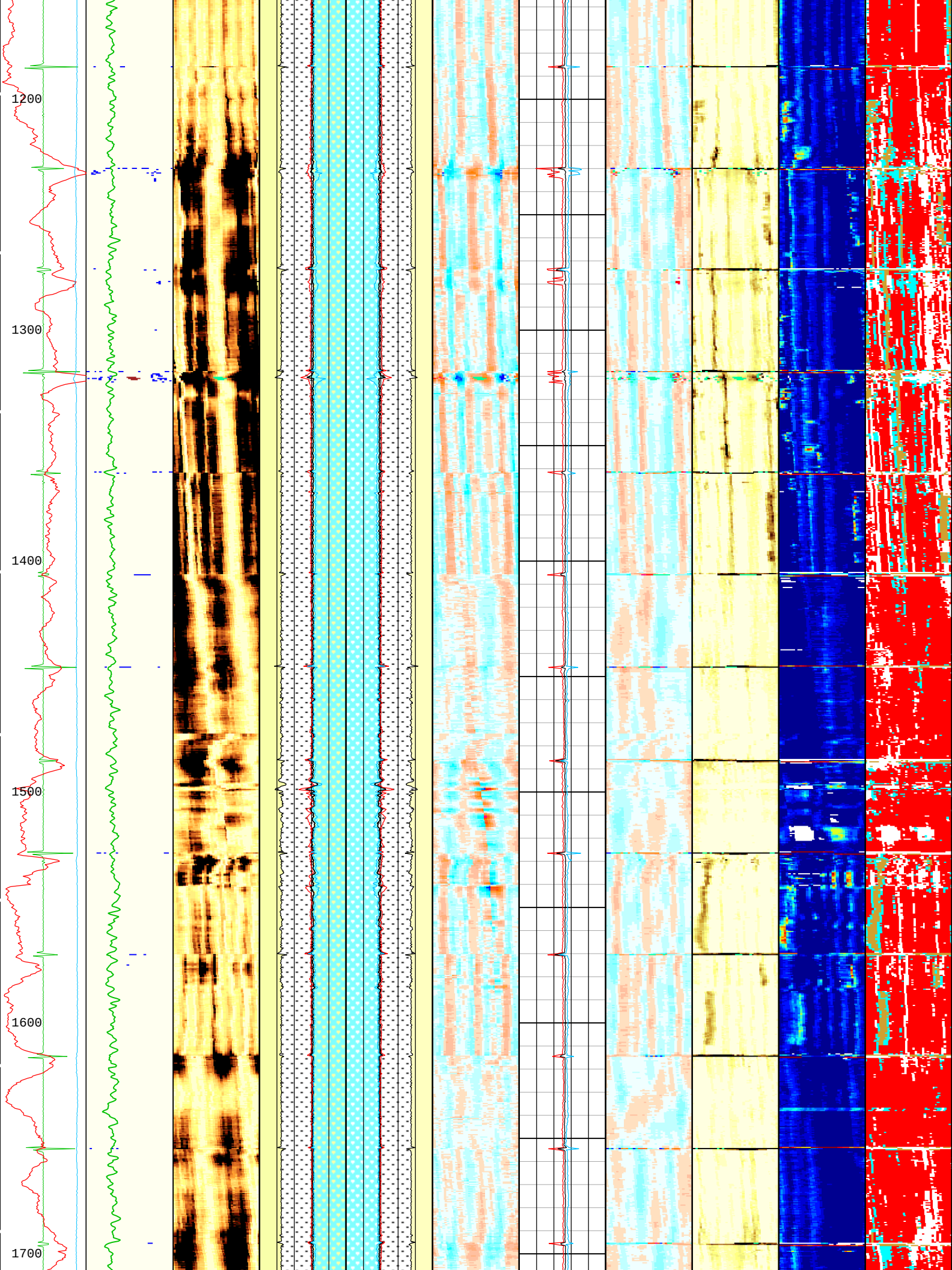
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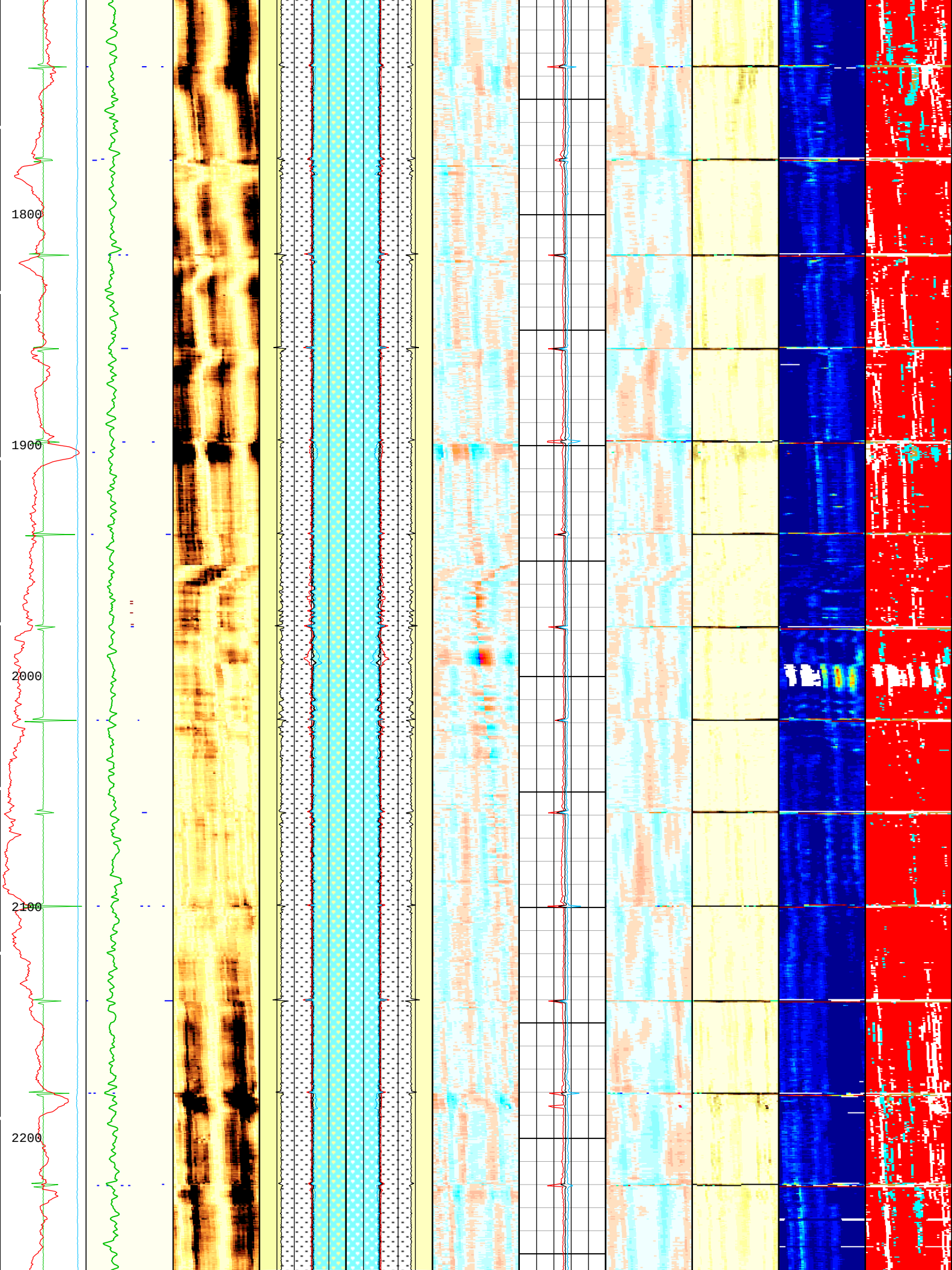
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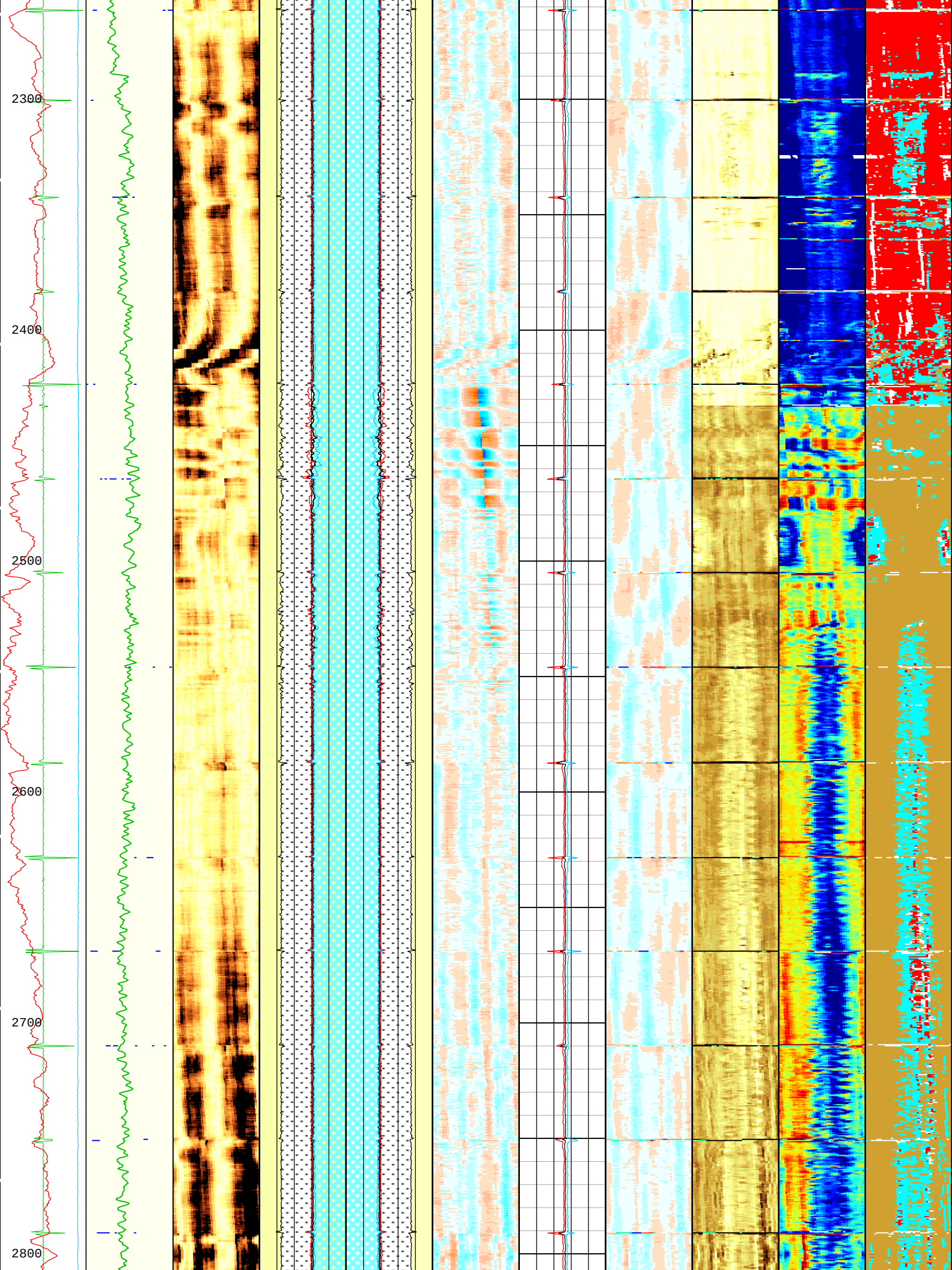
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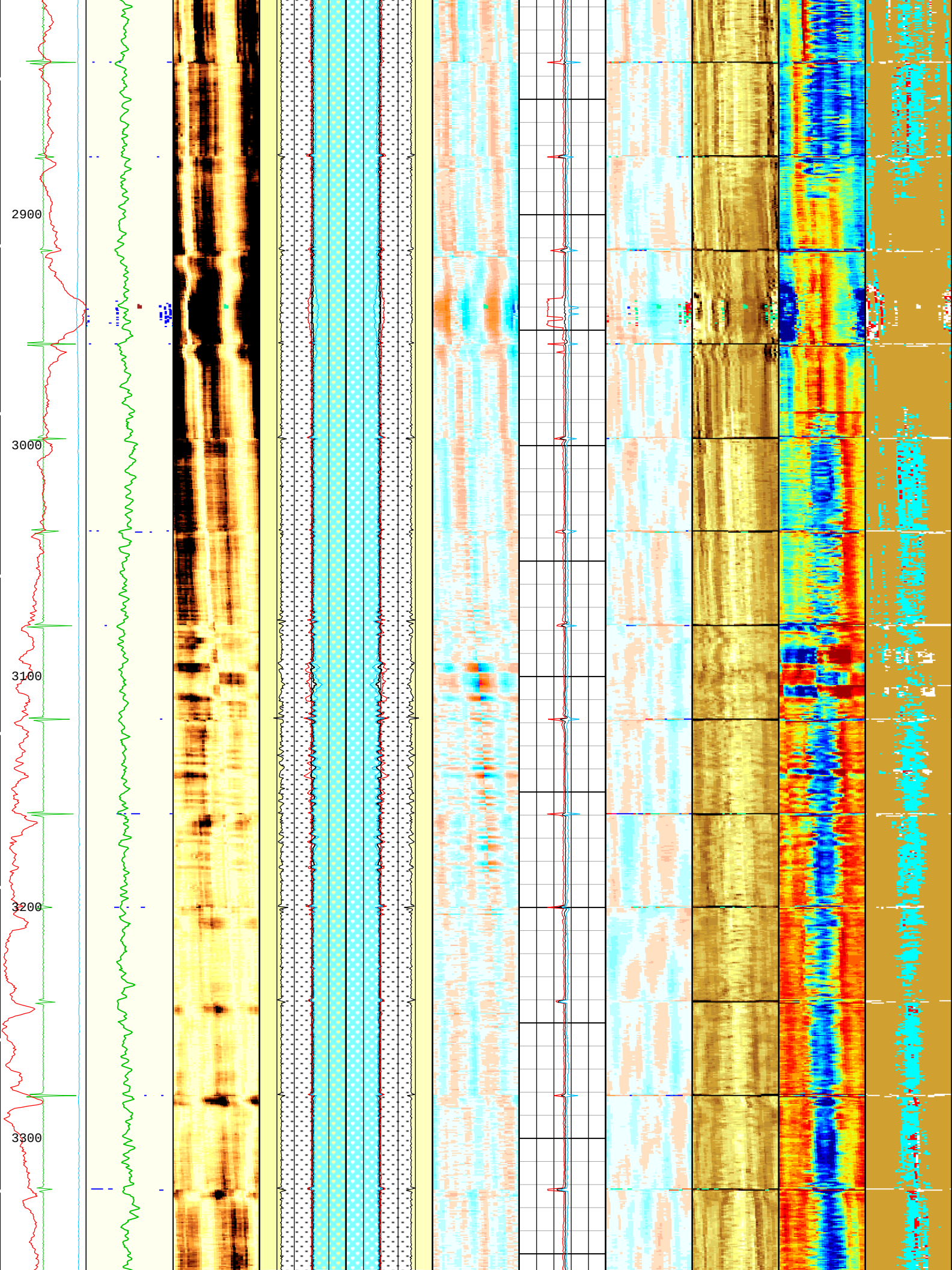
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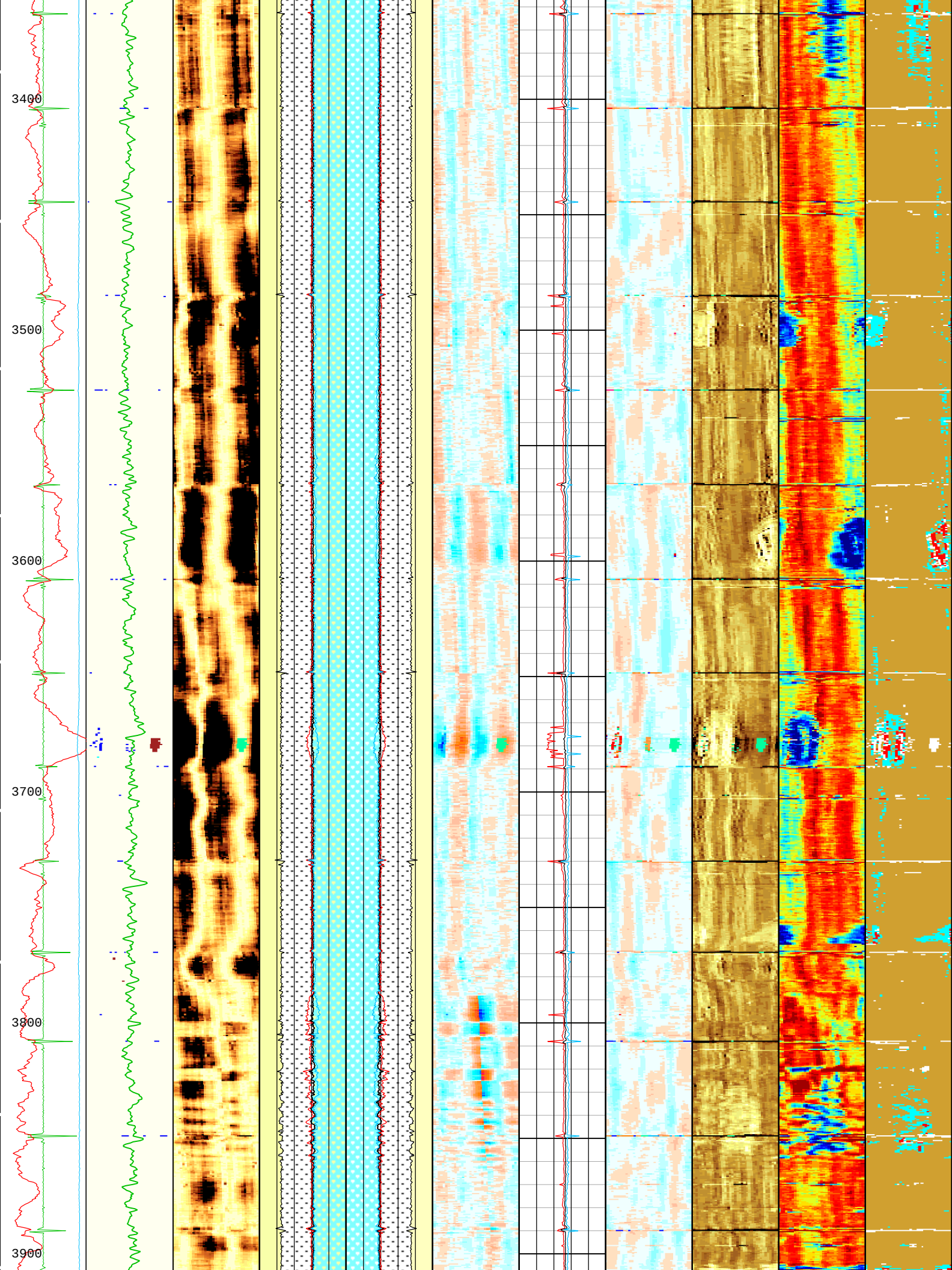
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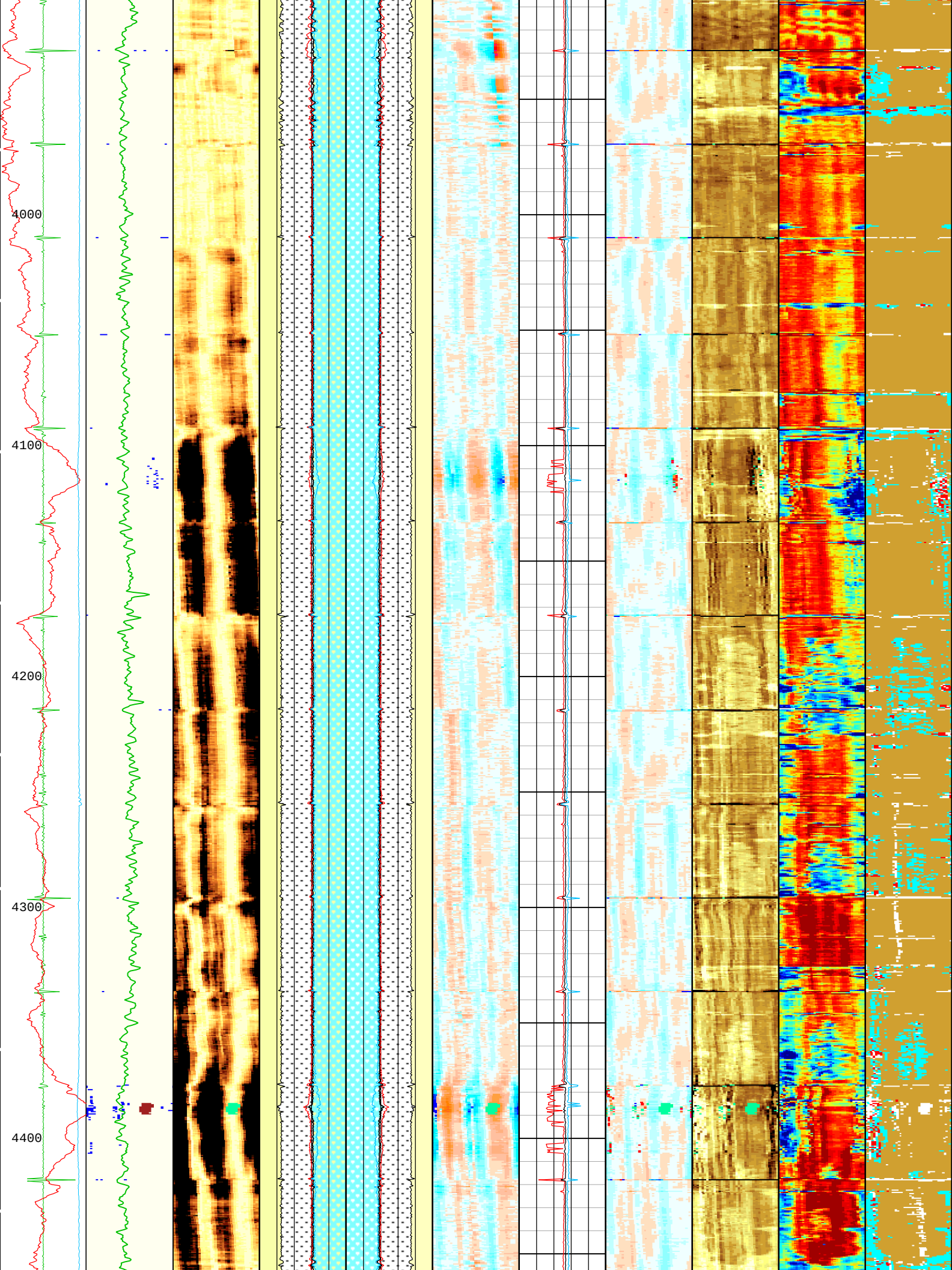
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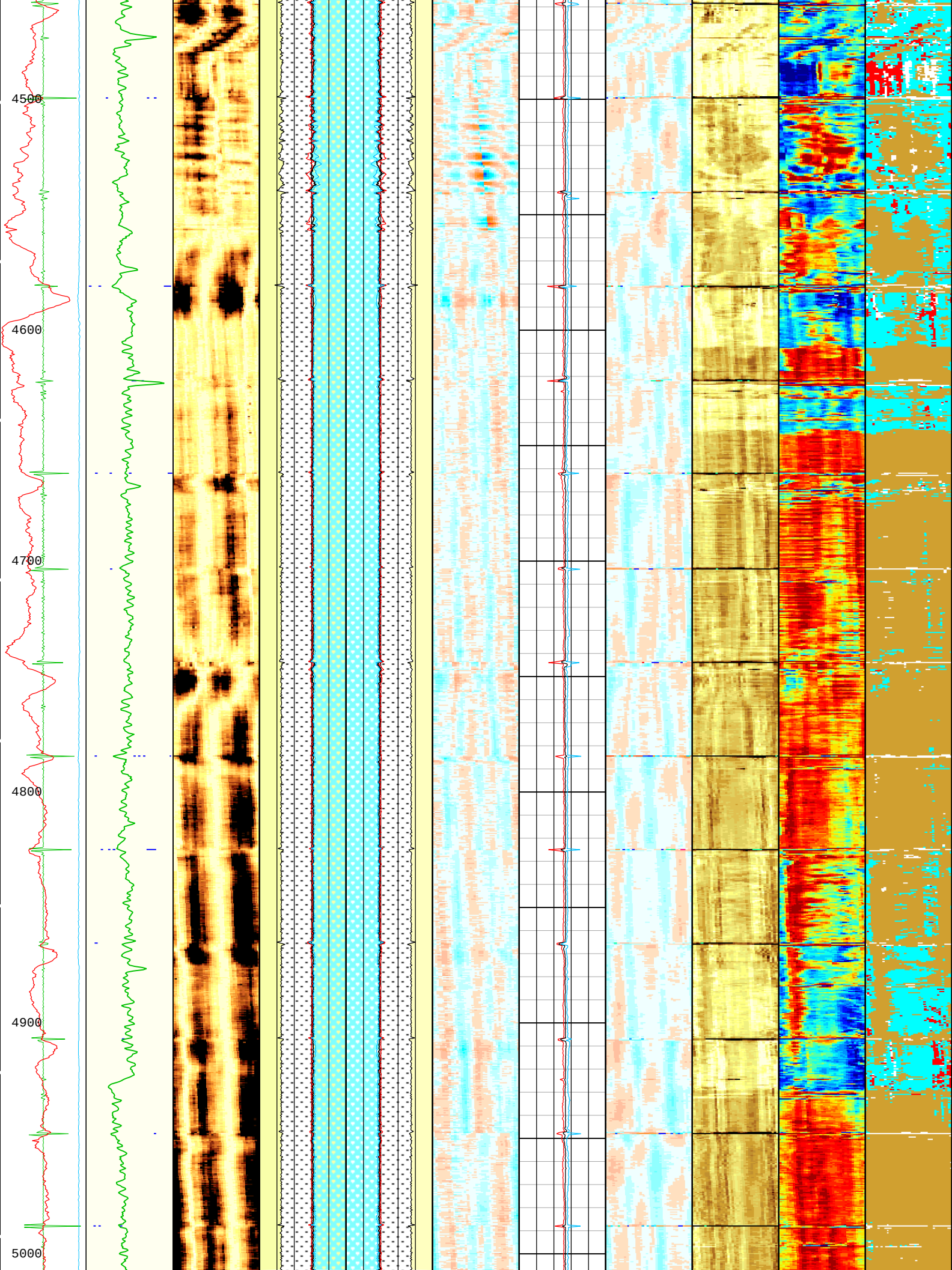
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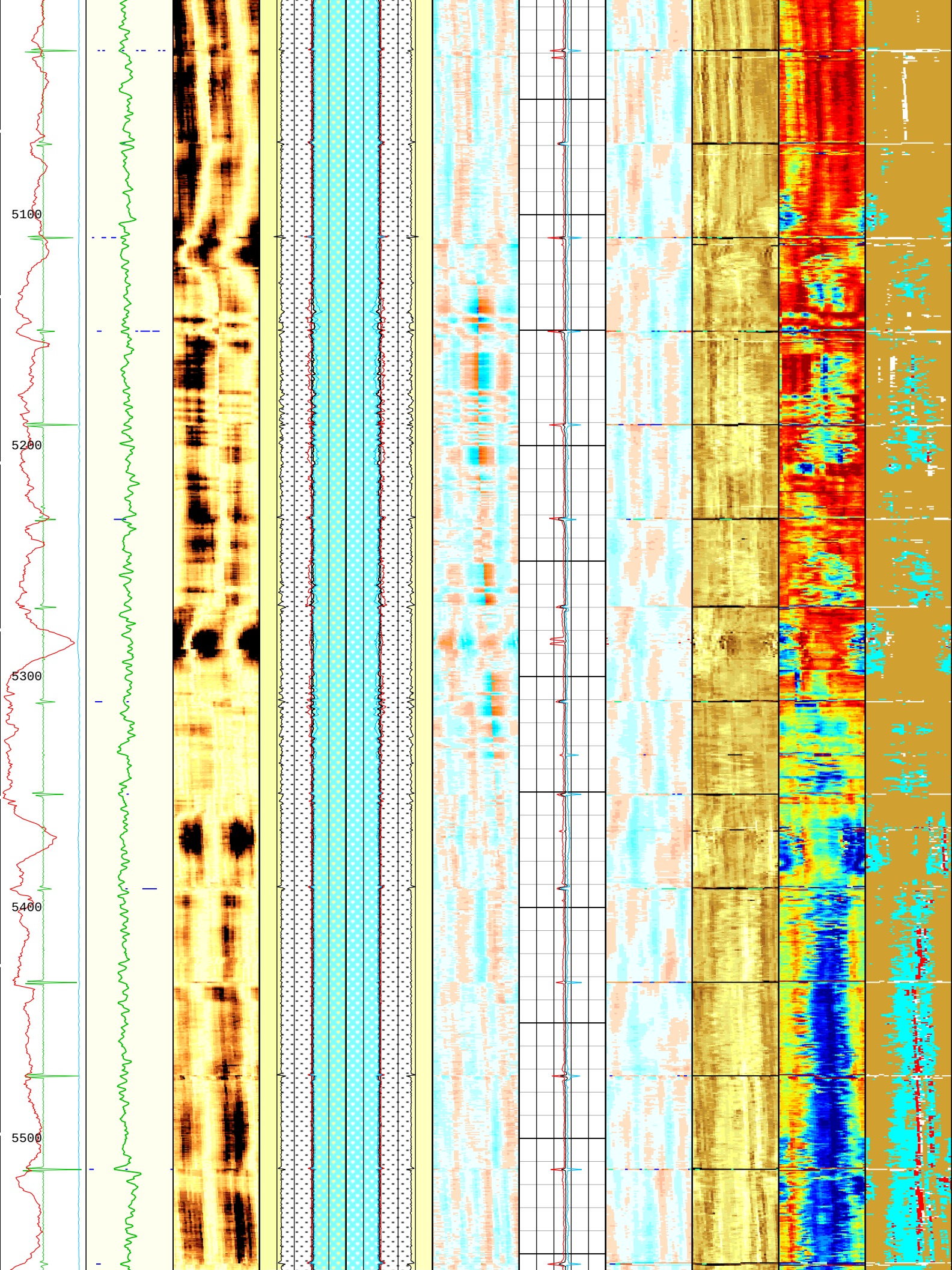
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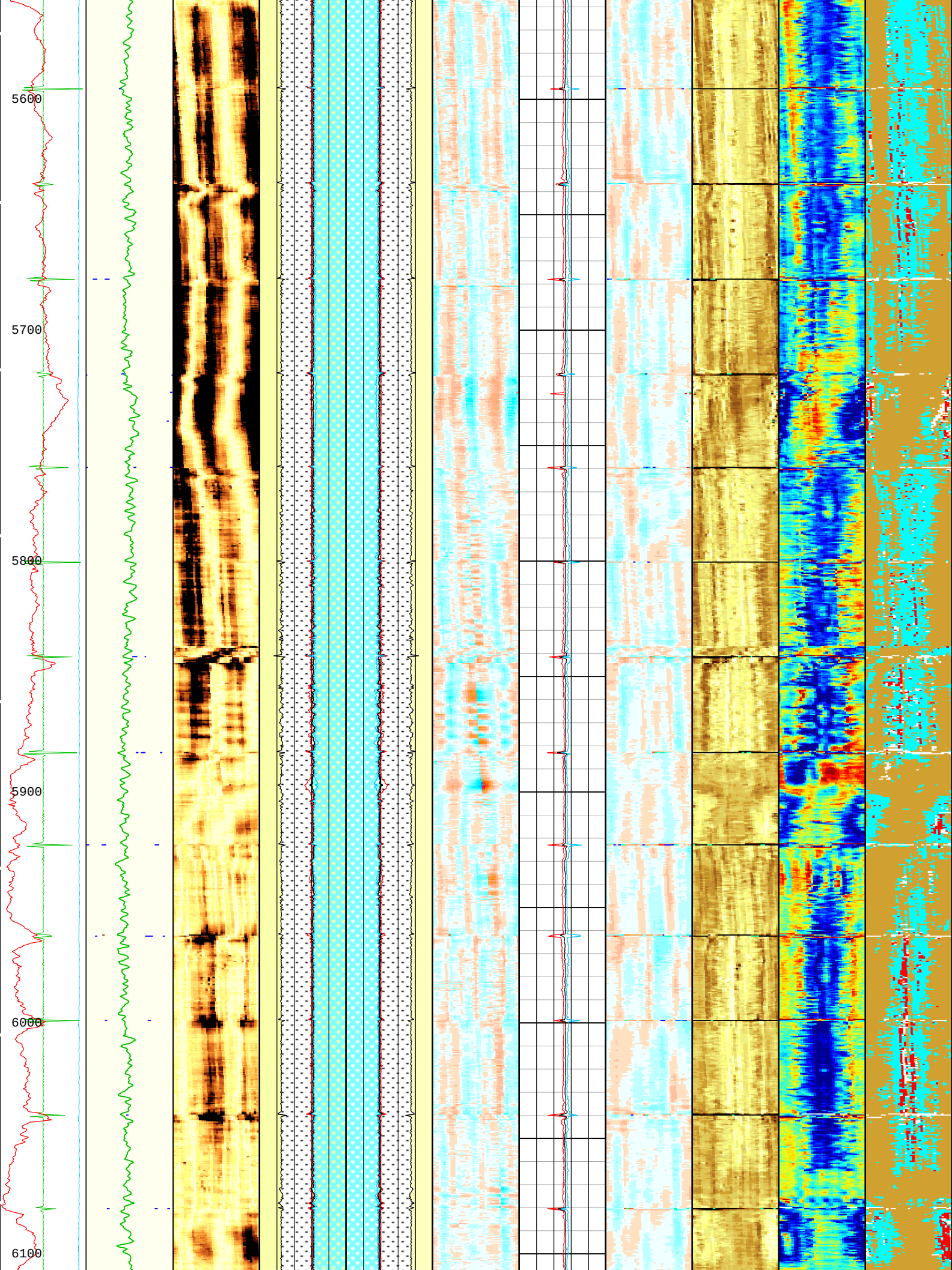
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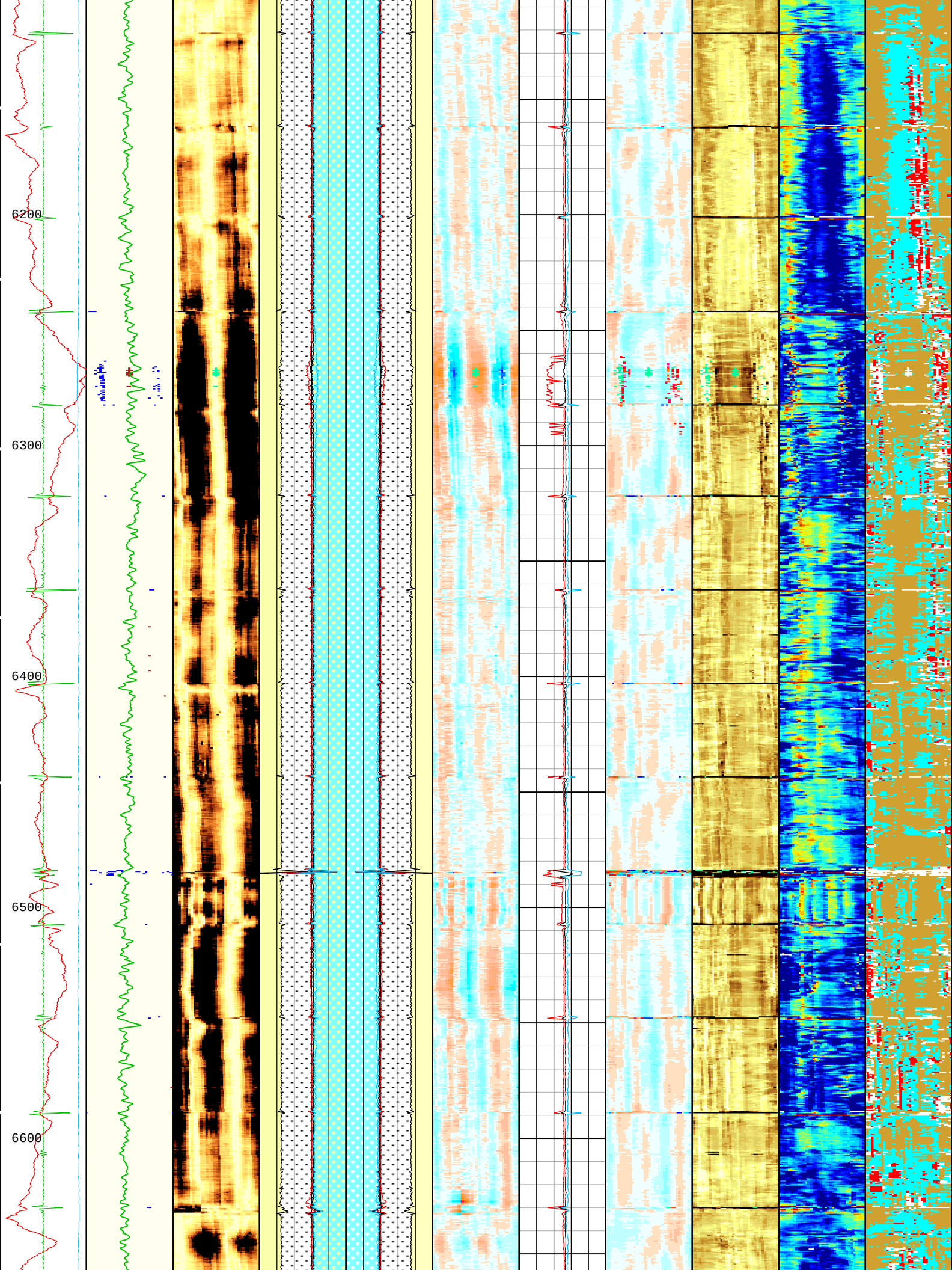
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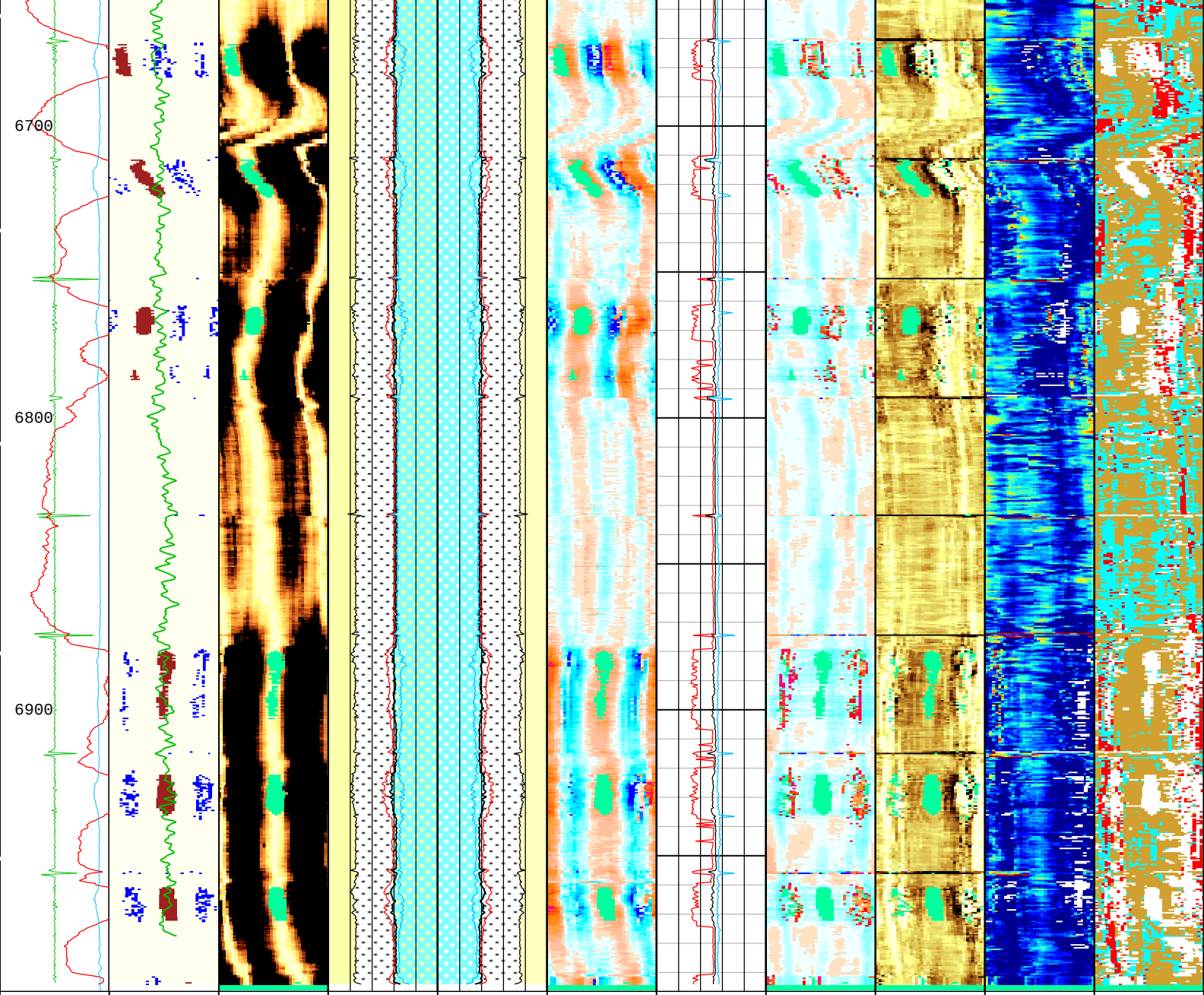


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

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
Orientation: Top of Hole
U L B R U

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)
Orientation: Top of Hole
U L B R U

External Radii Average (ERAV) USIT-E
3 in 2

Internal Radius Averaged Value (IRAV) USIT-E
3 in 2

Internal Radius Maximum Value (IRMX) USIT-E
3 in 2

Internal Radius Minimum Value (IRMN) USIT-E

External Radii Average (ERAV) USIT-E
2 in 3

Internal Radius Averaged Value (IRAV) USIT-E
2 in 3

Internal Radius Maximum Value (IRMX) USIT-E
2 in 3

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)
Orientation: Top of Hole
U L B R U

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)
Orientation: Top of Hole
U L B R U

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Orientation: Top of Hole
U L B R U

Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)
Orientation: Top of Hole
U L B R U

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
Orientation: Top of Hole
U L B R U

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 Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 20-May-2019 14:58:34

Channel Processing Parameters

TWO: 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	6995	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	4.16	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	Time Zoned	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	70	2320
BS	8.5	2320	6995
MEAS_WLEN	22.44	70	6995
MEAS_WLEN	20	6995	6996.5

All depth are actual.

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFAO	-3.84	18-May-2019 08:09:12	18-May-2019 08:19:48	6997.33	6242.67
U-USIT_UFAO	-13.84	18-May-2019 08:19:48	18-May-2019 08:31:08	6242.67	5415.43
U-USIT_UFAO	-30.84	18-May-2019 08:31:08	18-May-2019 08:32:07	5415.43	5343.94
U-USIT_UFAO	-13.84	18-May-2019 08:32:07	18-May-2019 08:32:45	5343.94	5297.92
U-USIT_UFAO	13.16	18-May-2019 08:32:45	18-May-2019 08:33:49	5297.92	5220.78
U-USIT_UFAO	-13.84	18-May-2019 08:33:49	18-May-2019 08:44:21	5220.78	4476.87
U-USIT_UFAO	13.16	18-May-2019 08:44:21	18-May-2019 09:07:00	4476.87	2986.16
U-USIT_UFAO	-13.84	18-May-2019 09:07:00	18-May-2019 09:14:37	2986.16	2433.21
U-USIT_UFAO	13.16	18-May-2019 09:14:37	18-May-2019 09:16:59	2433.21	2264.36
U-USIT_UFAO	33.16	18-May-2019 09:16:59	18-May-2019 09:17:04	2264.36	2258.38
U-USIT_UFAO	11.16	18-May-2019 09:17:04	18-May-2019 09:17:13	2258.38	2247.55
U-USIT_UFAO	33.16	18-May-2019 09:17:13	18-May-2019 09:17:19	2247.55	2240.36
U-USIT_UFAO	13.16	18-May-2019 09:17:19	18-May-2019 09:17:23	2240.36	2235.56
U-USIT_UFAO	33.16	18-May-2019 09:17:23	18-May-2019 09:18:55	2235.56	2125.77
U-USIT_UFAO	26.16	18-May-2019 09:18:55	18-May-2019 09:25:44	2125.77	1637.62
U-USIT_UFAO	3.16	18-May-2019 09:25:44	18-May-2019 09:51:47	1637.62	68.82

All depth are at tool zero.

Tool Control Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	120	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	181.88	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	33.22	us
WINE	Window End Time	USIT-E	73.87	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UNWE	148.89	18-May-2019 08:09:12	18-May-2019 08:32:37	6997.33	5307.03
U-USIT_UNWE	146.25	18-May-2019 08:32:37	18-May-2019 09:51:47	5307.03	68.82

All depth are at tool zero.

TWO

IBC Goodwin Compressed

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[5]:Up	Up	68.82 ft	6997.33 ft	18-May-2019 8:09:12 AM	18-May-2019 9:51:47 AM	ON	-3.13 ft	Yes

All depths are referenced to toolstring zero

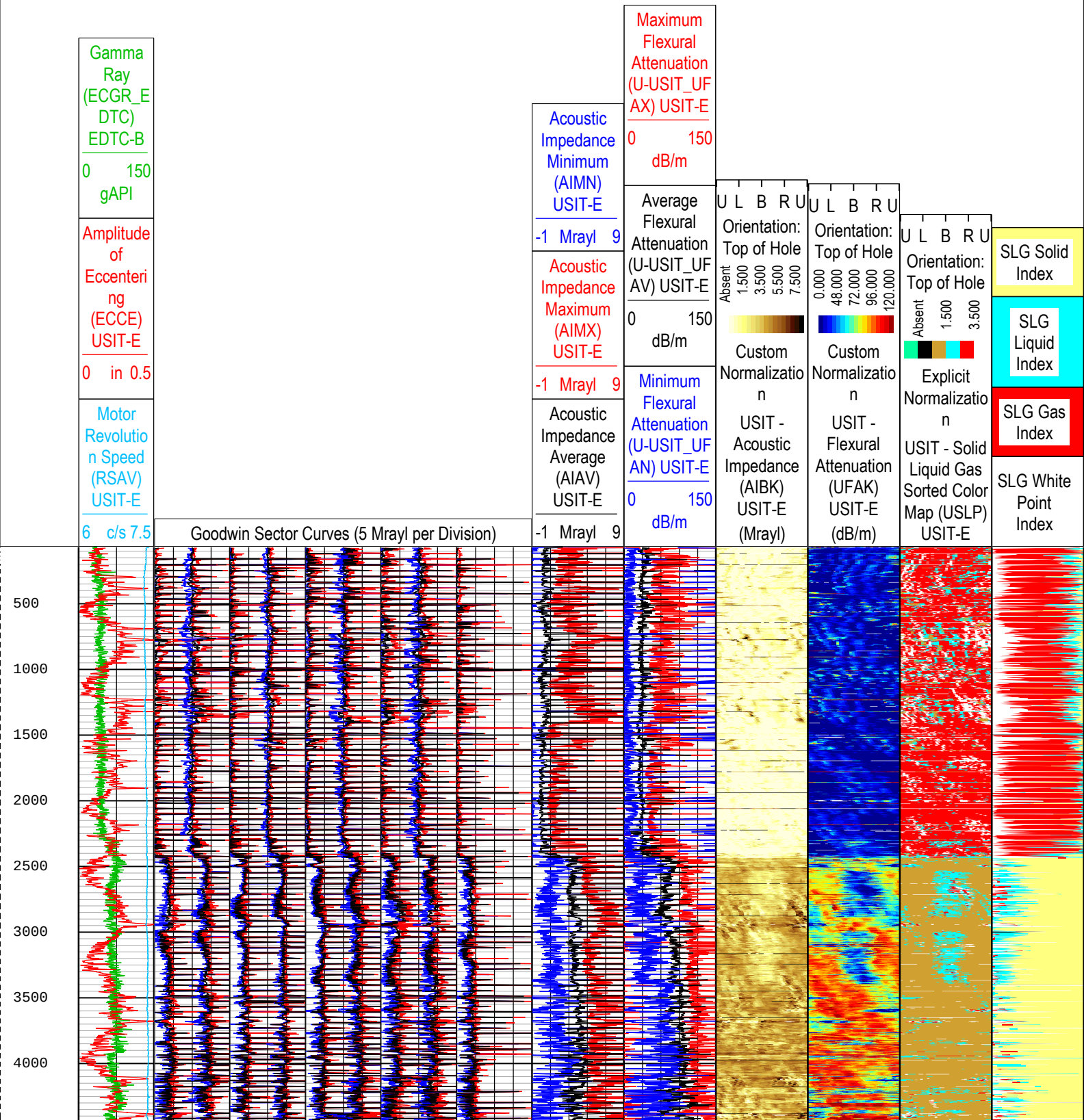
Log

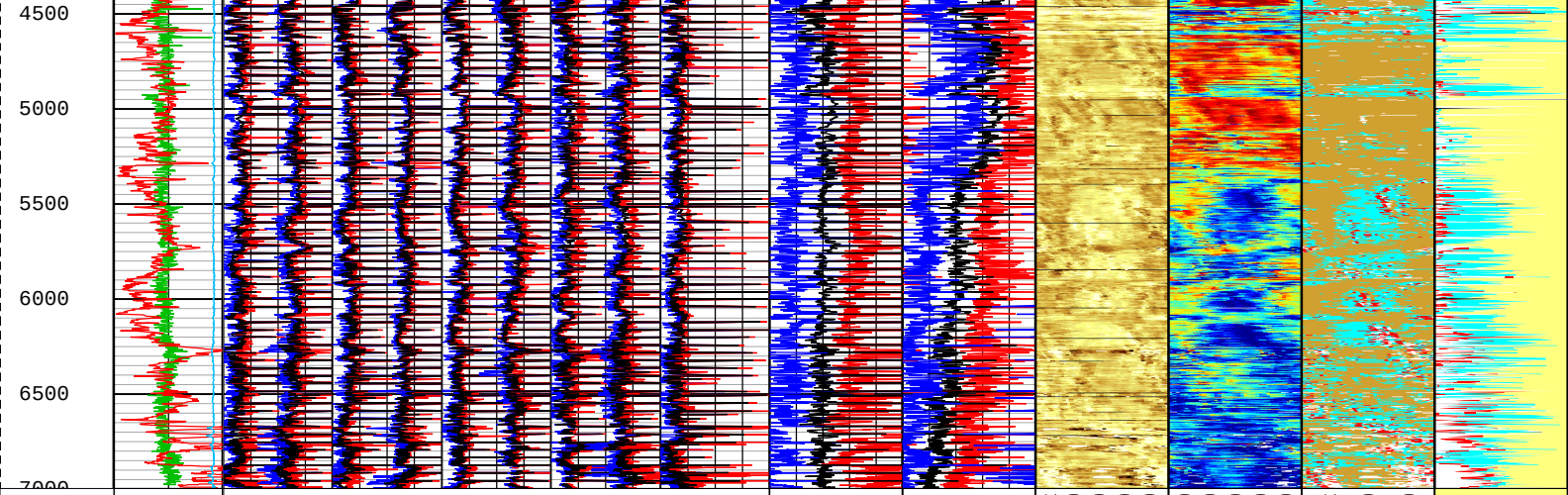
Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267

TWO: Log[5]:Up:S028

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:46

TIME_1900 - Time Marked every 60.00 (s)





Gamma Ray (ECGR_EDTC) EDTC-B
0 150 gAPI

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

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

Goodwin Sector Curves (5 Mrayl per Division)

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

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

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

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

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

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

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Orientation: Top of Hole
U L B R U

0.000 48.000 72.000 96.000 120.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)
Orientation: Top of Hole
U L B R U

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
Orientation: Top of Hole
U L B R U

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:46

TWO

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	2019.25 ft	2401.55 ft	18-May-2019 7:05:34 AM	18-May-2019 7:11:18 AM	ON	-9.12 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267
TWO: Log[2]:Up:S028

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:53

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

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

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness Error
Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

U L B R U
Orientation: Top of Hole
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

U L B R U
Orientation: Top of Hole
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

U L B R U
Orientation: Top of Hole
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

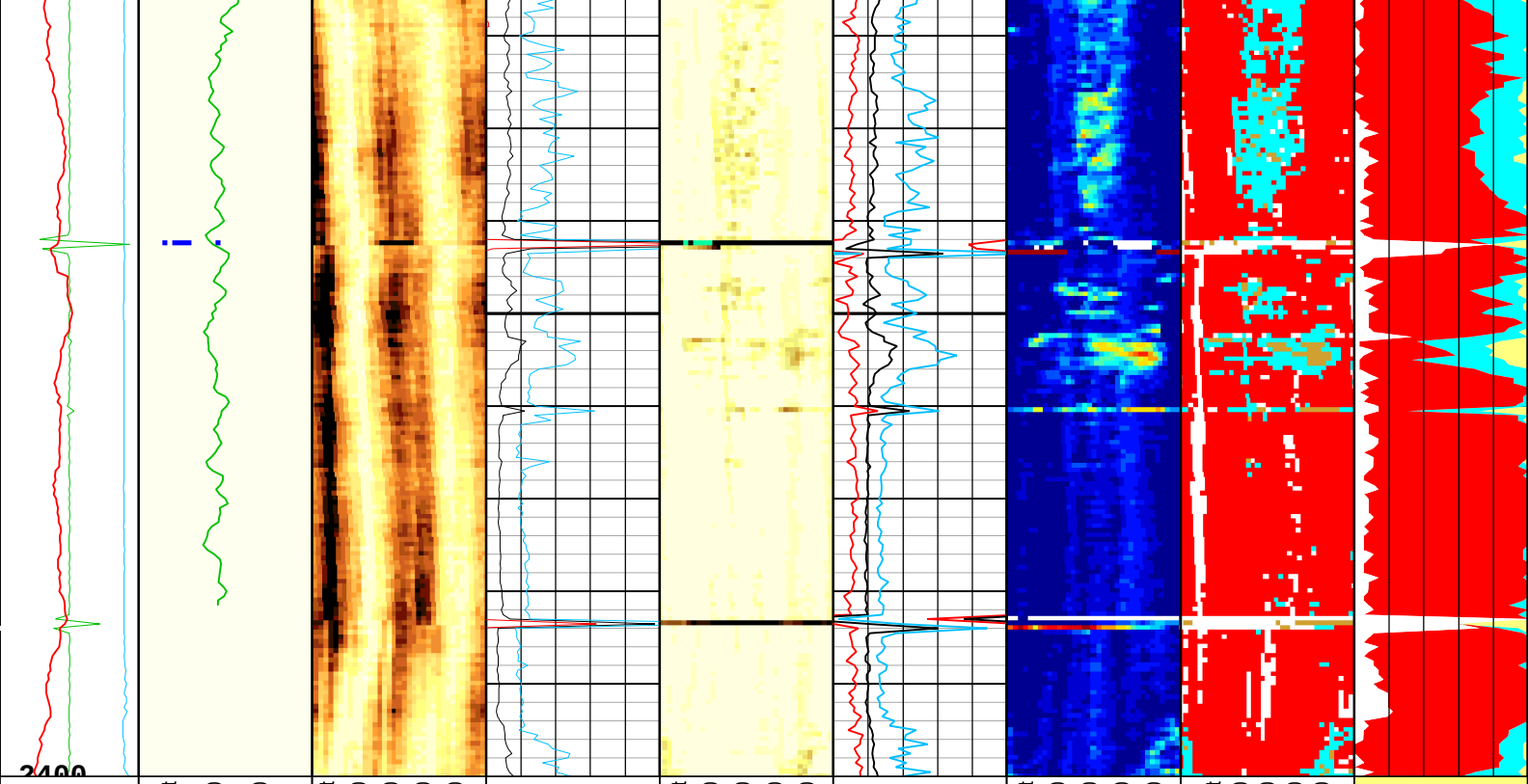
Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150

U L B R U
Orientation: Top of Hole
Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

U L B R U
Orientation: Top of Hole
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

2200
2300



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 (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 20-May-2019 14:58:53

Channel Processing Parameters

TWO: 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	6995	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	4.16	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-4.84	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	2200	2320
BS	8.5	2320	2400

All depths are stated

All depth are actual.

Tool Control Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	110	18-May-2019 07:05:34	18-May-2019 07:06:26	2401.55	2353.27
EMXV	120	18-May-2019 07:06:26	18-May-2019 07:06:59	2353.27	2315.78
EMXV	100	18-May-2019 07:06:59	18-May-2019 07:07:37	2315.78	2272.32
EMXV	90	18-May-2019 07:07:37	18-May-2019 07:08:26	2272.32	2216.46
EMXV	80	18-May-2019 07:08:26	18-May-2019 07:09:35	2216.46	2137.62
EMXV	120	18-May-2019 07:09:35	18-May-2019 07:11:18	2137.62	2019.25
WINE	71.88	18-May-2019 07:05:34	18-May-2019 07:08:44	2401.55	2195.66
WINE	75.39	18-May-2019 07:08:44	18-May-2019 07:08:51	2195.66	2187.38
WINE	77.88	18-May-2019 07:08:51	18-May-2019 07:11:18	2187.38	2019.25

All depth are at tool zero.

TWO

IBC SLG Composite

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	2019.25 ft	2401.55 ft	18-May-2019 7:05:34 AM	18-May-2019 7:11:18 AM	ON	-9.12 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267

TWO: Log[2]:Up:S028

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 20-May-2019 14:58:59

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

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

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

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

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

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

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Amplitude of Eccentering (ECCE) USIT-E

0 in 0.5

Motor Revolution Speed (RSAV) USIT-E

6 c/s 7.5

U L B R U Orientation: Top of Hole

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

U L B R U Orientation: Top of Hole

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

3 in 2

Internal Radius Averaged Value (IRAV) USIT-E

3 in 2

Internal Radius Maximum Value (IRMX) USIT-E

3 in 2

Internal Radius Minimum Value (IRMN) USIT-E

3 in 2

External Radii Average (ERAV) USIT-E

2 in 3

Internal Radius Averaged Value (IRAV) USIT-E

2 in 3

Internal Radius Maximum Value (IRMX) USIT-E

2 in 3

Internal Radius Minimum Value (IRMN) USIT-E

2 in 3

U L B R U Orientation: Top of Hole

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

U L B R U Orientation: Top of Hole

Absent -0.051 -0.012 0.028 0.068

Explicit Normalization

USIT - Casing Thickness Normalized (THBK) USIT-E

(in)

U L B R U Orientation: Top of Hole

Absent 1.500 3.500 5.500 7.500

Custom Normalization

USIT - Acoustic Impedance (AIBK) USIT-E

(Mrayl)

U L B R U Orientation: Top of Hole

Absent 42.000 66.000 90.000 114.000

Custom Normalization

USIT - Flexural Attenuation (UFAK) USIT-E

(dB/m)

U L B R U Orientation: Top of Hole

Absent 1.500 3.500

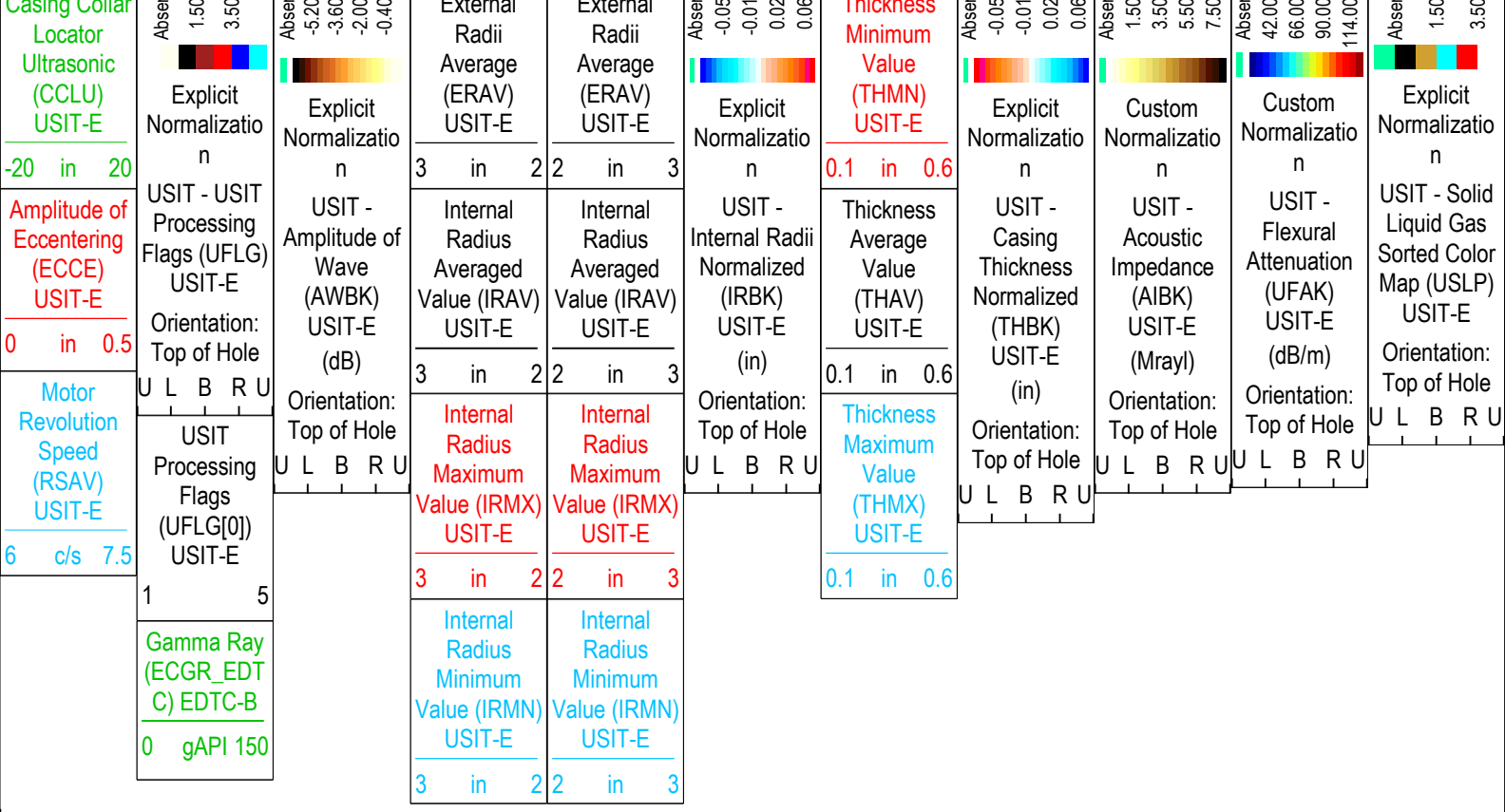
Explicit Normalization

USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

2200

2300

2400



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 Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 20-May-2019 14:58:59

Channel Processing Parameters

TWO: 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	6995	ft
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	4.16	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	

IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-4.84	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	2200	2320
BS	8.5	2320	2400

All depth are actual.

Tool Control Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

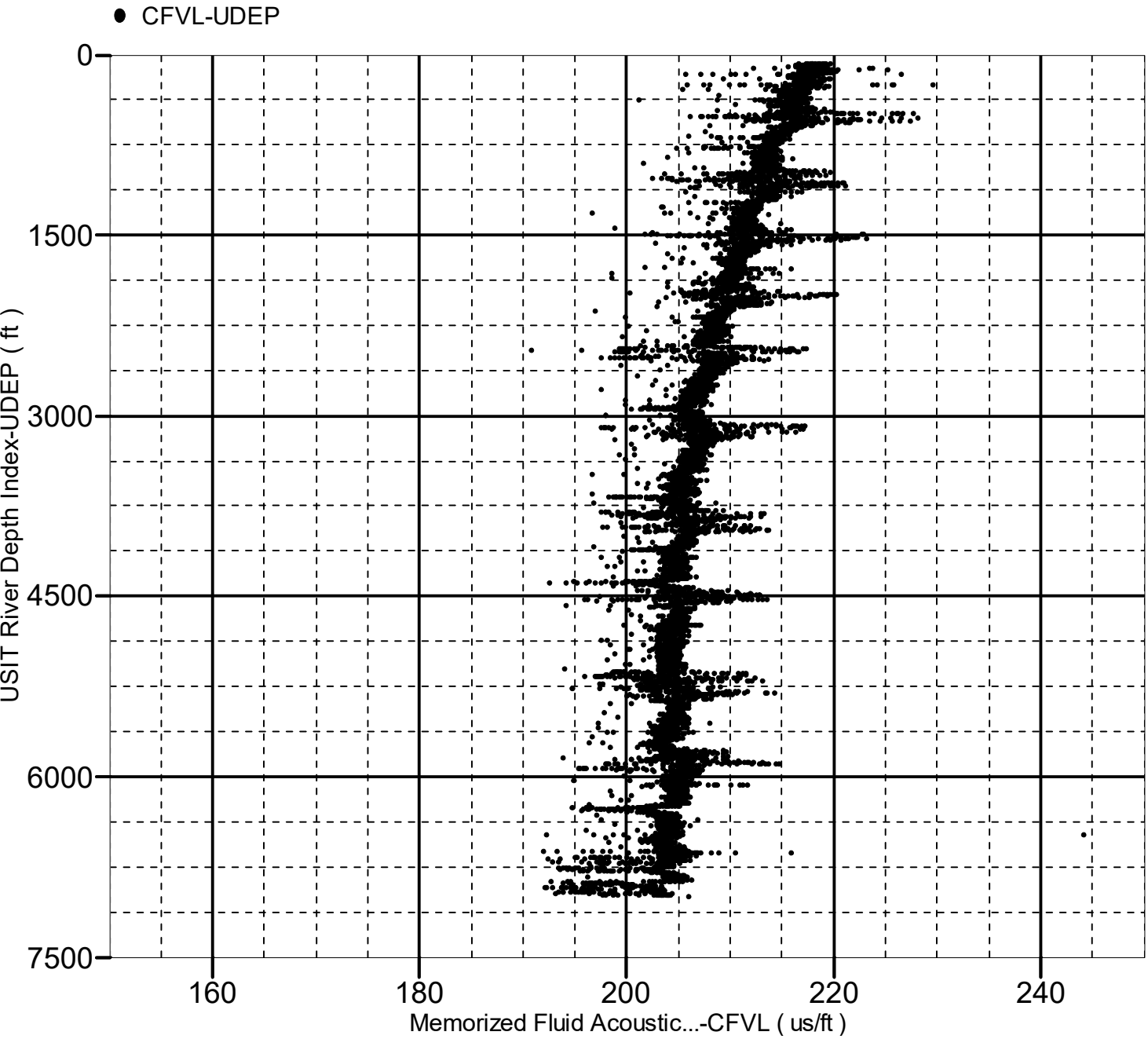
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	110	18-May-2019 07:05:34	18-May-2019 07:06:26	2401.55	2353.27
EMXV	120	18-May-2019 07:06:26	18-May-2019 07:06:59	2353.27	2315.78
EMXV	100	18-May-2019 07:06:59	18-May-2019 07:07:37	2315.78	2272.32
EMXV	90	18-May-2019 07:07:37	18-May-2019 07:08:26	2272.32	2216.46
EMXV	80	18-May-2019 07:08:26	18-May-2019 07:09:35	2216.46	2137.62
EMXV	120	18-May-2019 07:09:35	18-May-2019 07:11:18	2137.62	2019.25
WINE	71.88	18-May-2019 07:05:34	18-May-2019 07:08:44	2401.55	2195.66
WINE	75.39	18-May-2019 07:08:44	18-May-2019 07:08:51	2195.66	2187.38
WINE	77.88	18-May-2019 07:08:51	18-May-2019 07:11:18	2187.38	2019.25

All depth are at tool zero.

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6996.50 to 68.00 ft

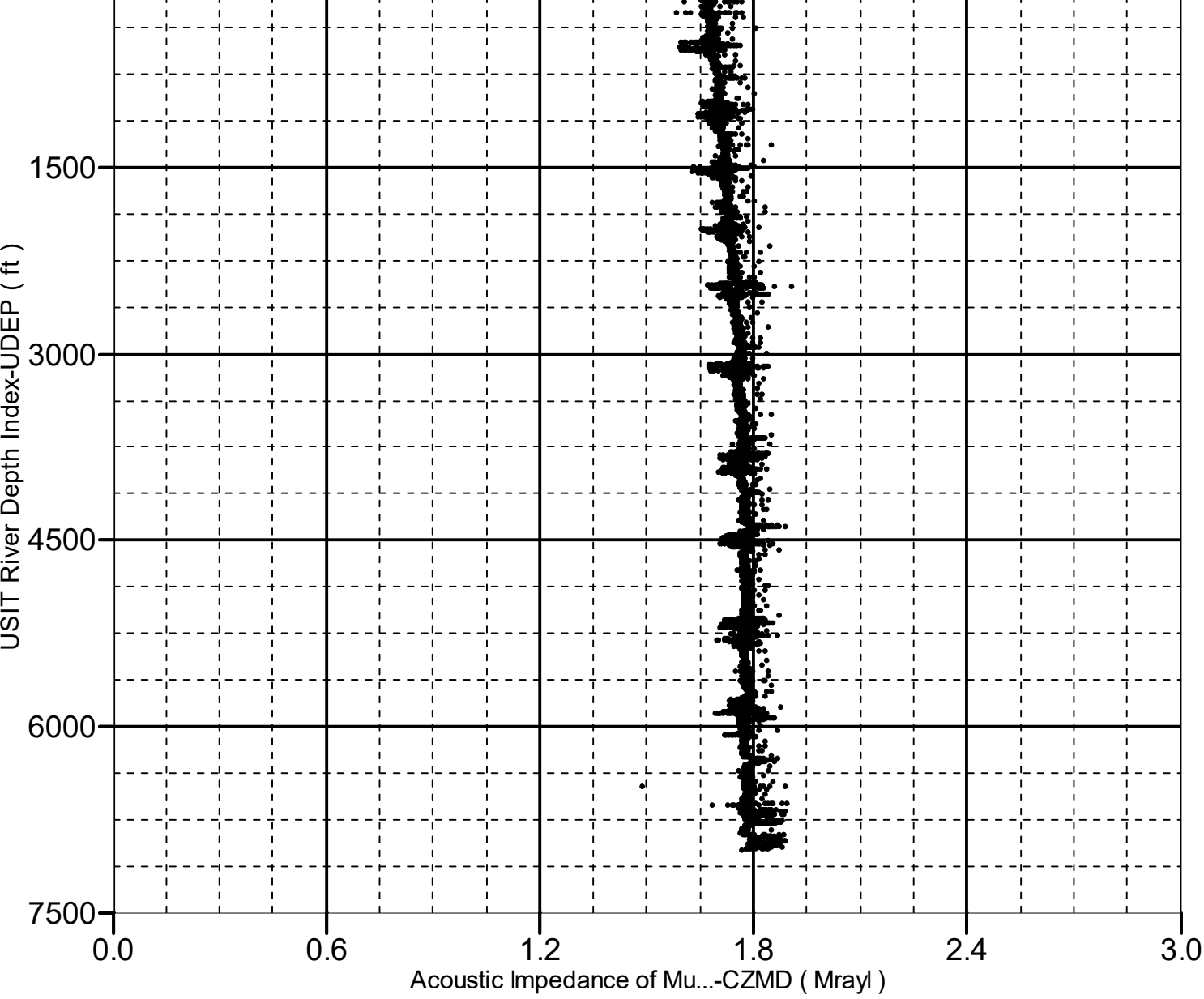


XYZ
Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2F-2H-D267
TWO: Log[5]:Up:S028

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6996.50 to 68.00 ft


1500
3000
4500
6000
7500
USIT River Depth Index-UDEP (ft)
0.0
0.6
1.2
1.8
2.4
3.0
Acoustic Impedance of Mu...-CZMD (Mrayl)

Company:	Crestone Peak Resources and Operating LLC
Well:	Echeverria 2F-2H-D267
Field:	Wattenberg
County:	Weld
State:	Colorado

Schlumberger

Isolation Scanner
Cement Evaluation

Gamma Ray - CCL Log