Schlumberger

Company: Anadarko Petroleum Company

Well: Spurling 14N-34HZ

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log

County:	Weld
Field:	Wattenberg
Location:	NWNW Sec 34, T2N, R67W
Well:	Spurling 14N-34HZ
Company:	Anadarko Petroleum Company

Location:				
NWNW Sec 34, T2N, R67W	Elev.:	K.B.	5035.00	ft
SHL: 377' FNL & 1148' FWL		G.L.	5014.00	ft
Lat/Long: 40.100998/-104.882316		D.F.	5034.00	ft

Permanent Datum:	Ground Level	Elev.:	5014.00 f
Log Measured From:	Kelly Bushing	21.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
05-123-39127-0000	34		67W

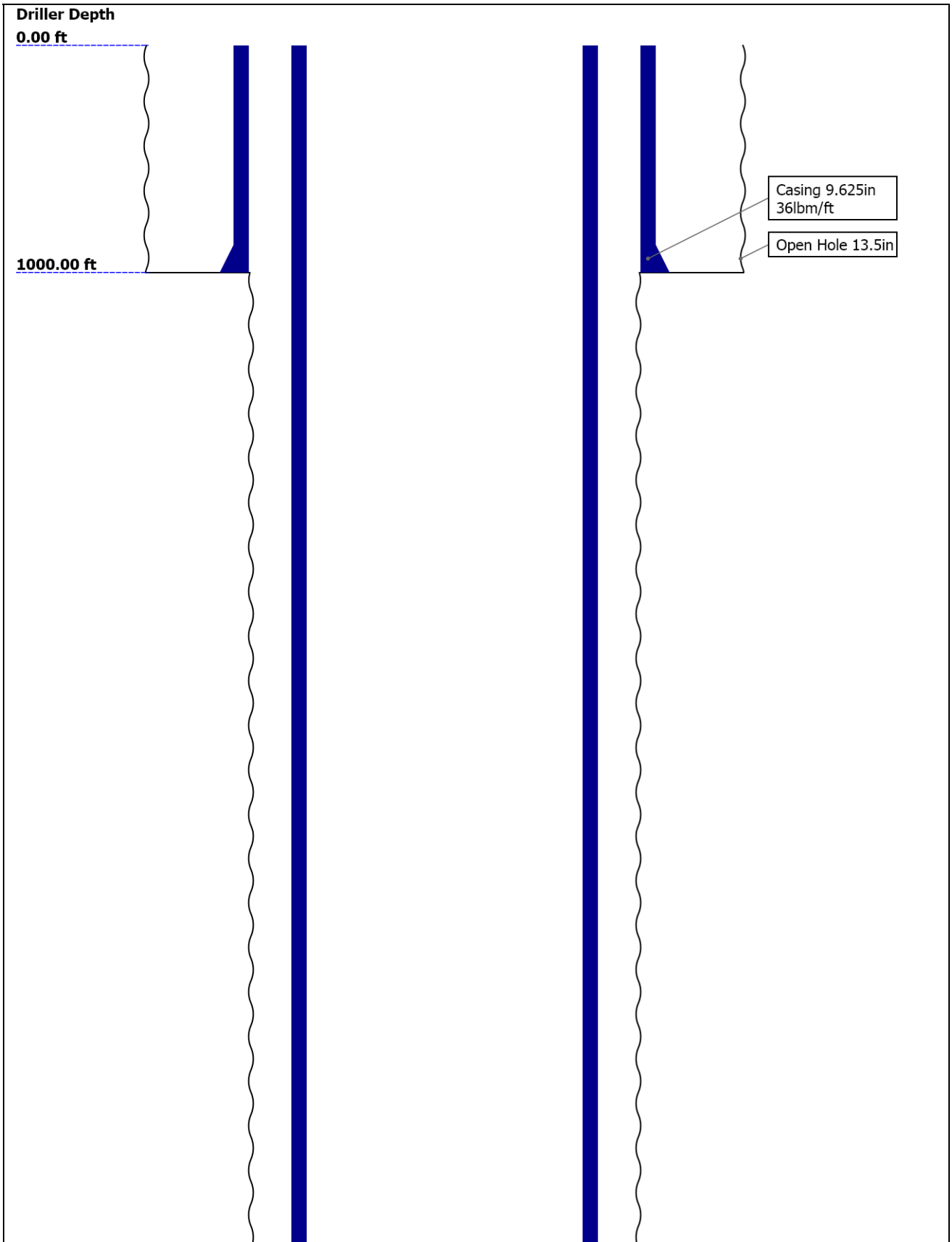
Logging Date		18-Jun-2014			
Run Number		Run 1			
Depth Driller		7852.00 ft			
Schlumberger Depth		7852.00 ft			
Bottom Log Interval		6850.00 ft			
Top Log Interval					
Casing Fluid Type		Water			
Salinity					
Density		8.4 lbm/gal			
Fluid Level		8.00 ft			
BIT/CASING/TUBING STRING					
Bit Size		8.75 in			
From		1000.00 ft			
To		7852.00 ft			
Casing/Tubing Size		7 in			
Weight		26 lbm/ft			
Grade		N/A			
From		0.00 ft			
To		7852.00 ft			
Max Recorded Temperatures		216.95 degF			
Logger on Bottom	Time	18-Jun-2014	14:13:00		
Unit Number	Location:	3030	Fort Morgan, CO		
Recorded By		Keri Ondrus			
Witnessed By		Trevor Davie			

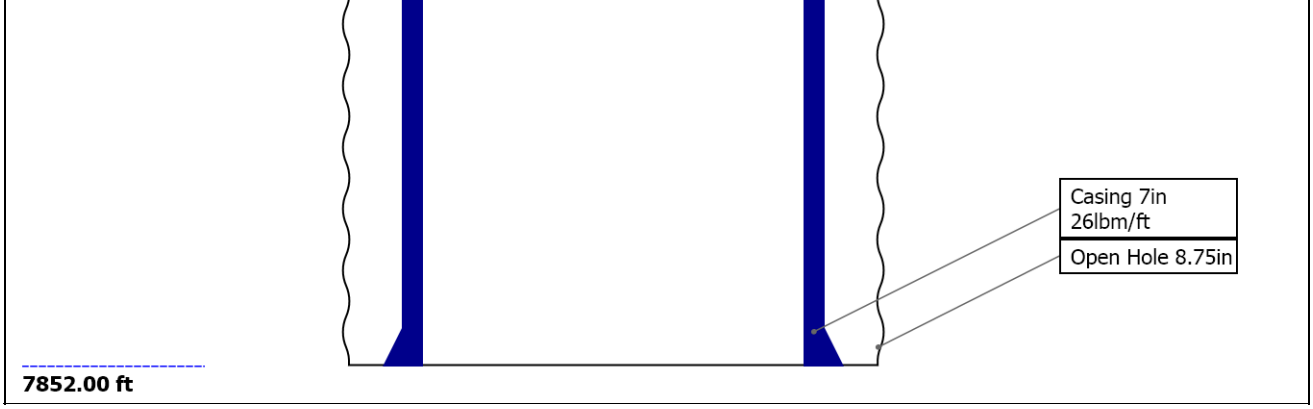
Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.75				
Top Driller (ft)	0	1000				
Top Logger (ft)	0	1000				
Bottom Driller (ft)	1000	7852				
Bottom Logger (ft)	1000	7852				
Casing						
Size (in)	9.625	7				
Weight (lbm/ft)	36	26				
Inner Diameter (in)	8.921	6.276				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1000	7852				
Bottom Logger (ft)	1000	7852				

Operational Run Summary

Parameter (unit)	Run 1					
Date Log Started	18-Jun-2014					
Time Log Started	07:10:40					
Date Log Finished	18-Jun-2014					
Time Log Finished	18:19:26					
Top Log Interval (ft)	NaN					
Bottom Log Interval (ft)	6850.00					
Total Depth (ft)	7000.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	3030					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Keri Ondrus					
Witnessed By	Trevor Davie					
Service Order Number	BX19-00145					

Service Order Number	BX15-00145					

Borehole Fluids

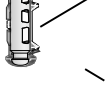
Parameter(unit)	Run 1					
Fluid Type	Water					
Max Recorded Temperatures (degF)	216.95					
Salinity (ppm)	0					
Density (lbm/gal)	8.4					
Date Logger on Bottom	18-Jun-2014					
Time Logger on Bottom	14:13:00					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

Run 1 : Toolstring

Run 1 : Remarks

Run 1 : Remarks
Toolstring run as per toolsketch.
4.5" liner top at 6867'. Bottom log interval at 6850' to maintain distance from liner top.
Log interval from 6850' to ground level run with 0 PSI and 3000 PSI.
Full lube used to reach ground level with logs.
Cemented by Halliburton.
13 PPG lead and 14.4 PPG tail cement. HAL welllife slurry with rubber compund.
Estimated top of cement at 715'.
Thank you for choosing Schlumberger Wireline!
SLB crew: Derrick Hunter, Jake Jump, Gary Lapp. and Keri Ondrus.



Lengths are in ft
Maximum Outer Diameter = 4.472 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

	Run 1		
Depth Measuring Device			
Type	IDW-B		
Serial Number	6428		
Calibration Date	21-Apr-2014		
Calibrator Serial Number			
Calibration Cable Type	7-39PLXS		
Wheel Correction 1	-5		
Wheel Correction 2	-4		
Tension Device			
Type	CMTD-B/A		
Serial Number	777		
Calibration Date	12-Jun-2014		
Calibrator Serial Number	78135a		
Number of Calibration Points	10		
Calibration Root Mean Square Error	27		
Calibration Peak Error	43		
Logging Cable			
Type	7-39P-LXS		
Serial Number	F713271		
Length	18200.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

Run 1 :Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.
Rig Up Length At Surface		IDW used as primary depth control device.
Rig Up Length At Bottom		Z-chart used as secondary depth control device.
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

USI IBC SLG Composite

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[7]:Up	6856.55	12.08

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC SLG Composite - 3000 PSI

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001

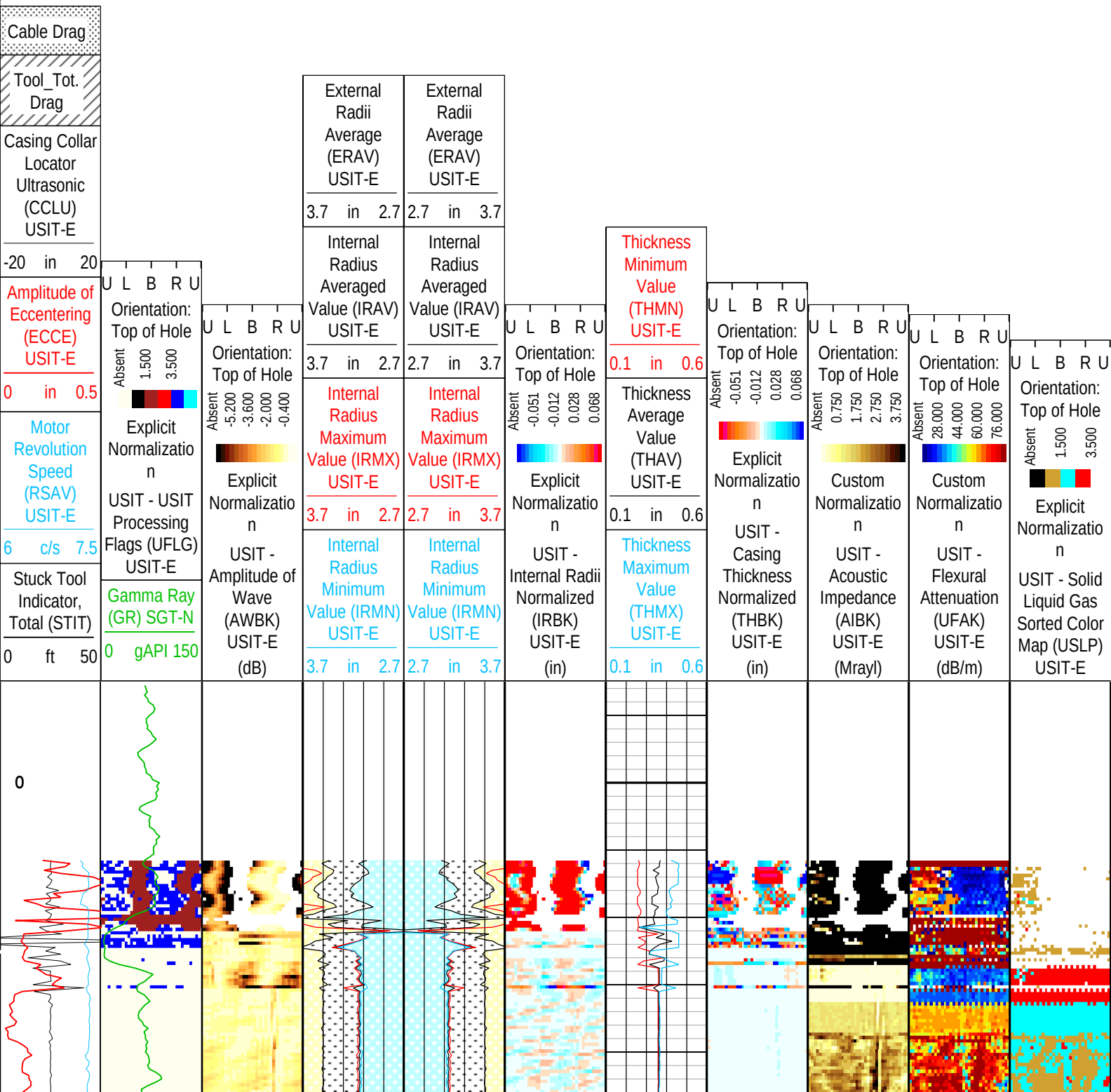
Computation	Description	Version
DepthCorrection	DepthCorrection	4.0.9213.3000

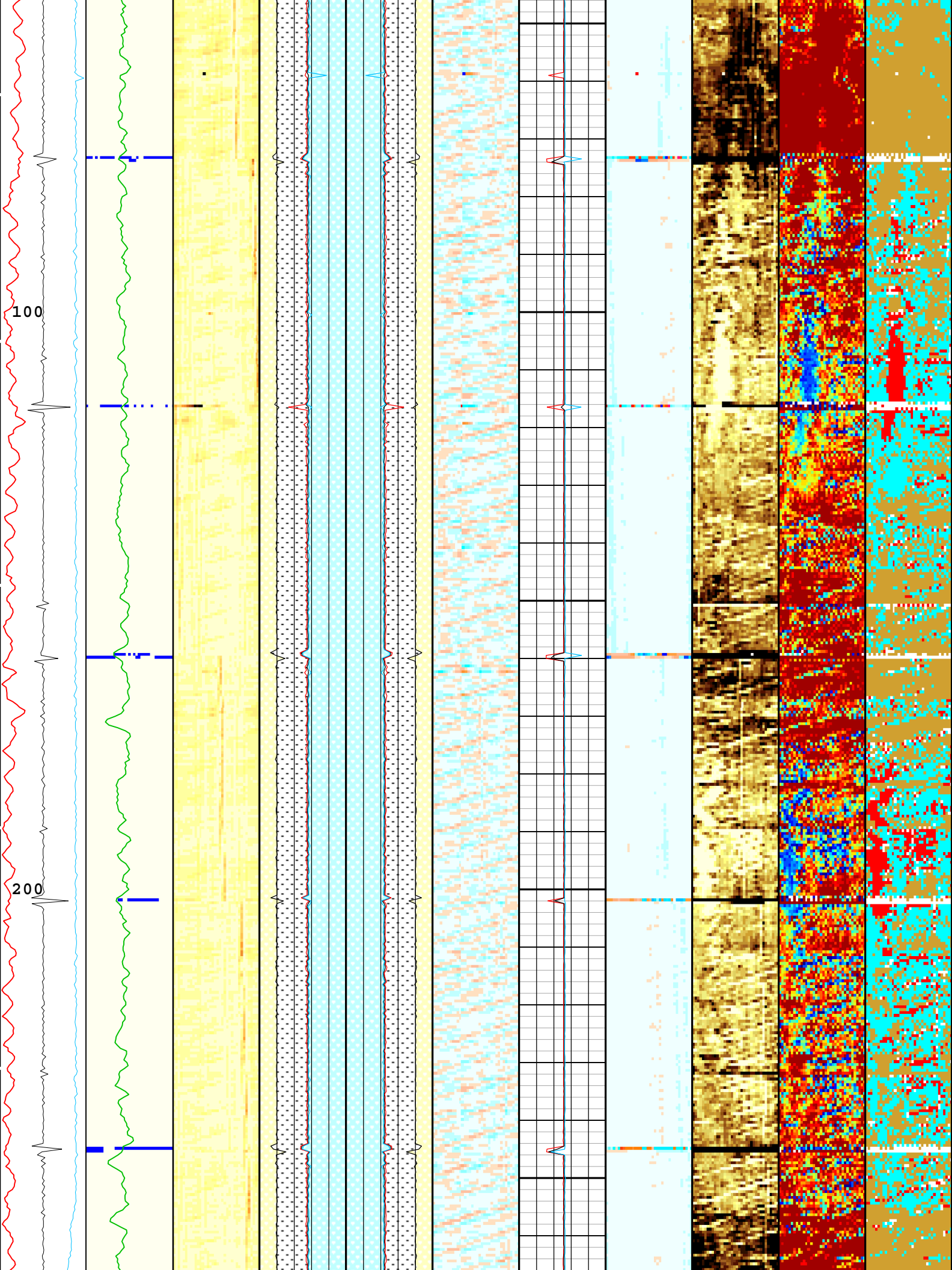
Tool Elements	Description	Software Version	Firmware Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000	

Log Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ Run 1 : Main[7]:Up:S011

Description: USI IBC SLG Composite Format: USI IBC SLG Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:40

TIME_1900 - Time Marked every 60.00 (s)

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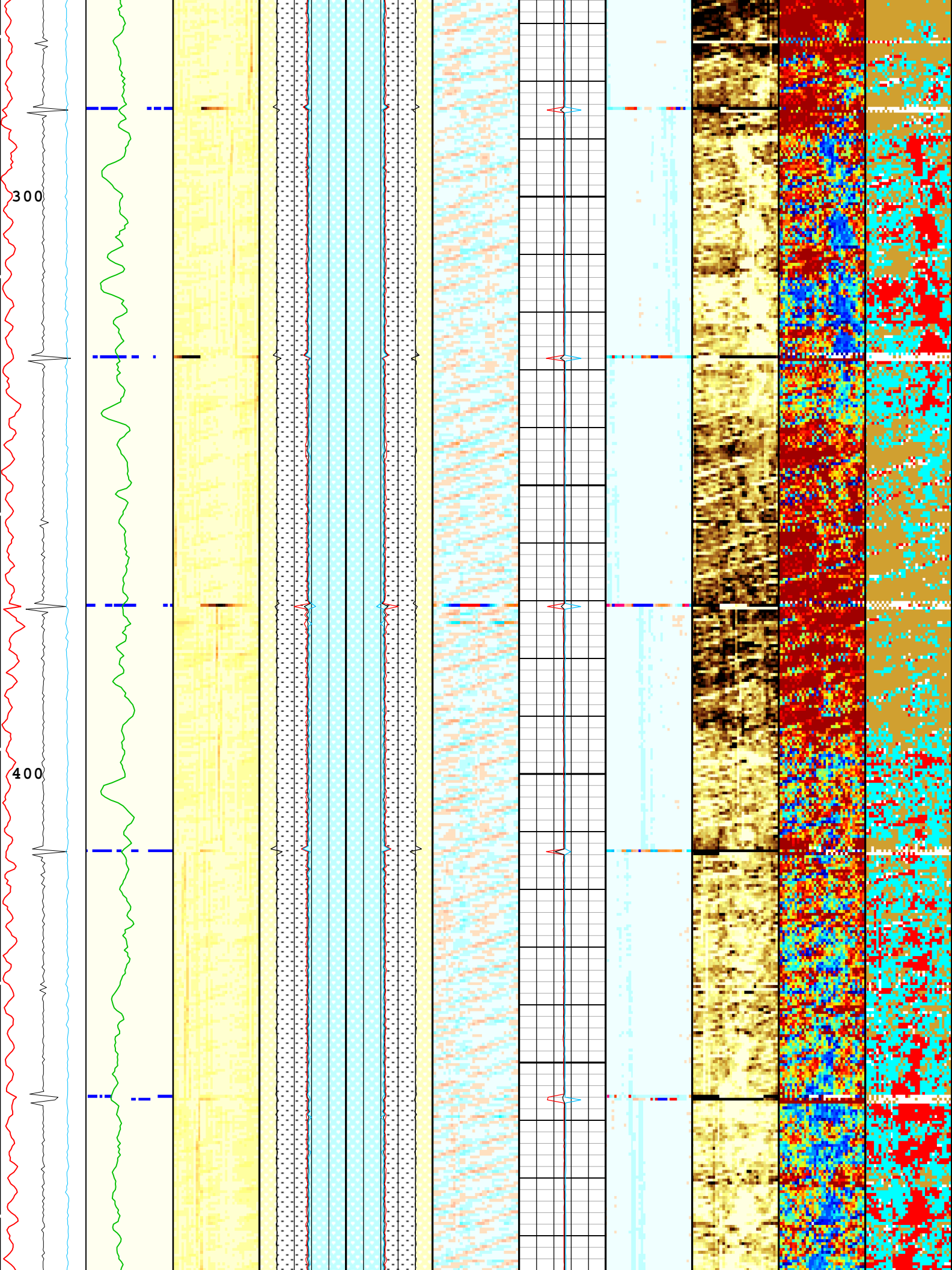
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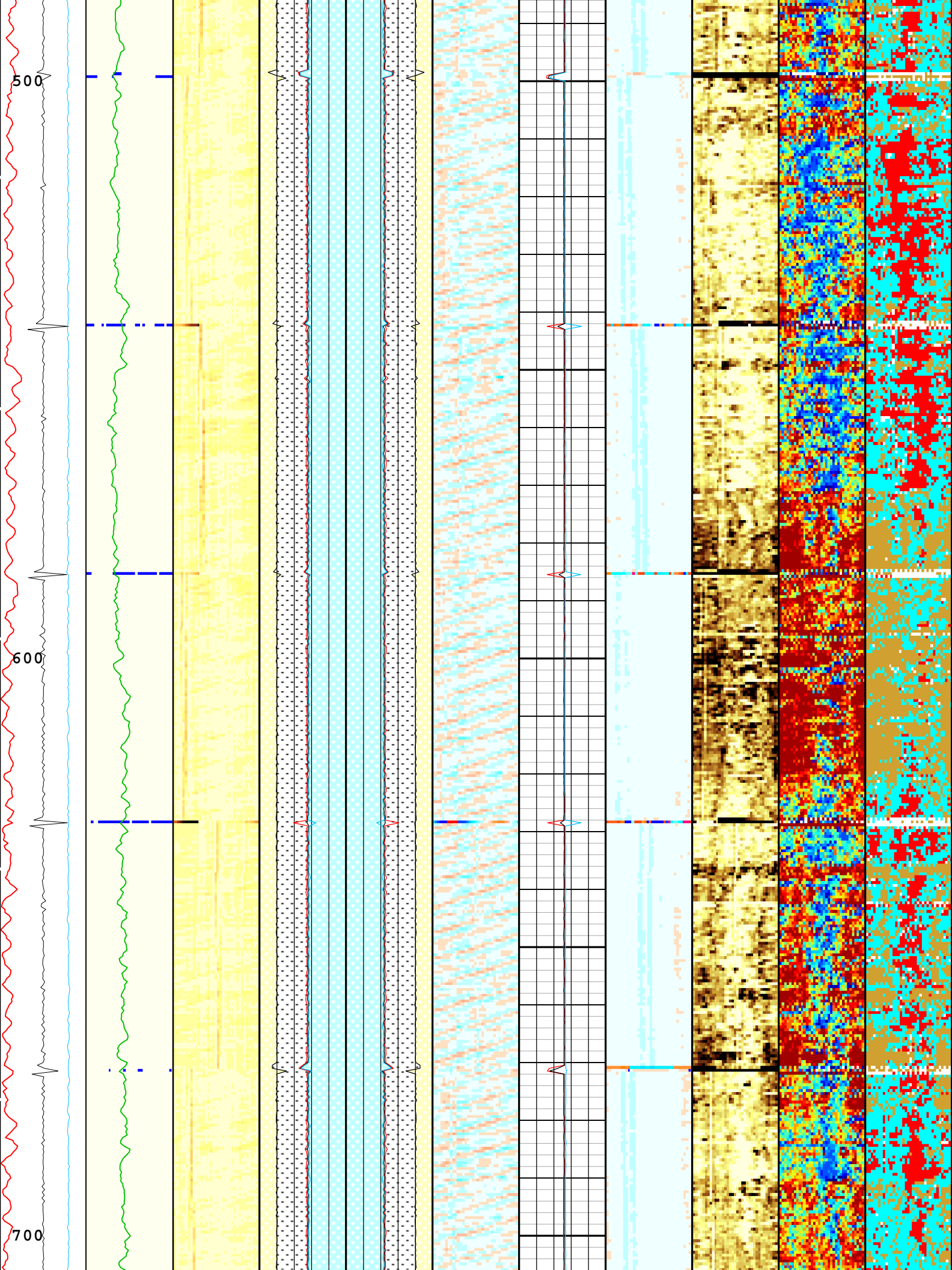
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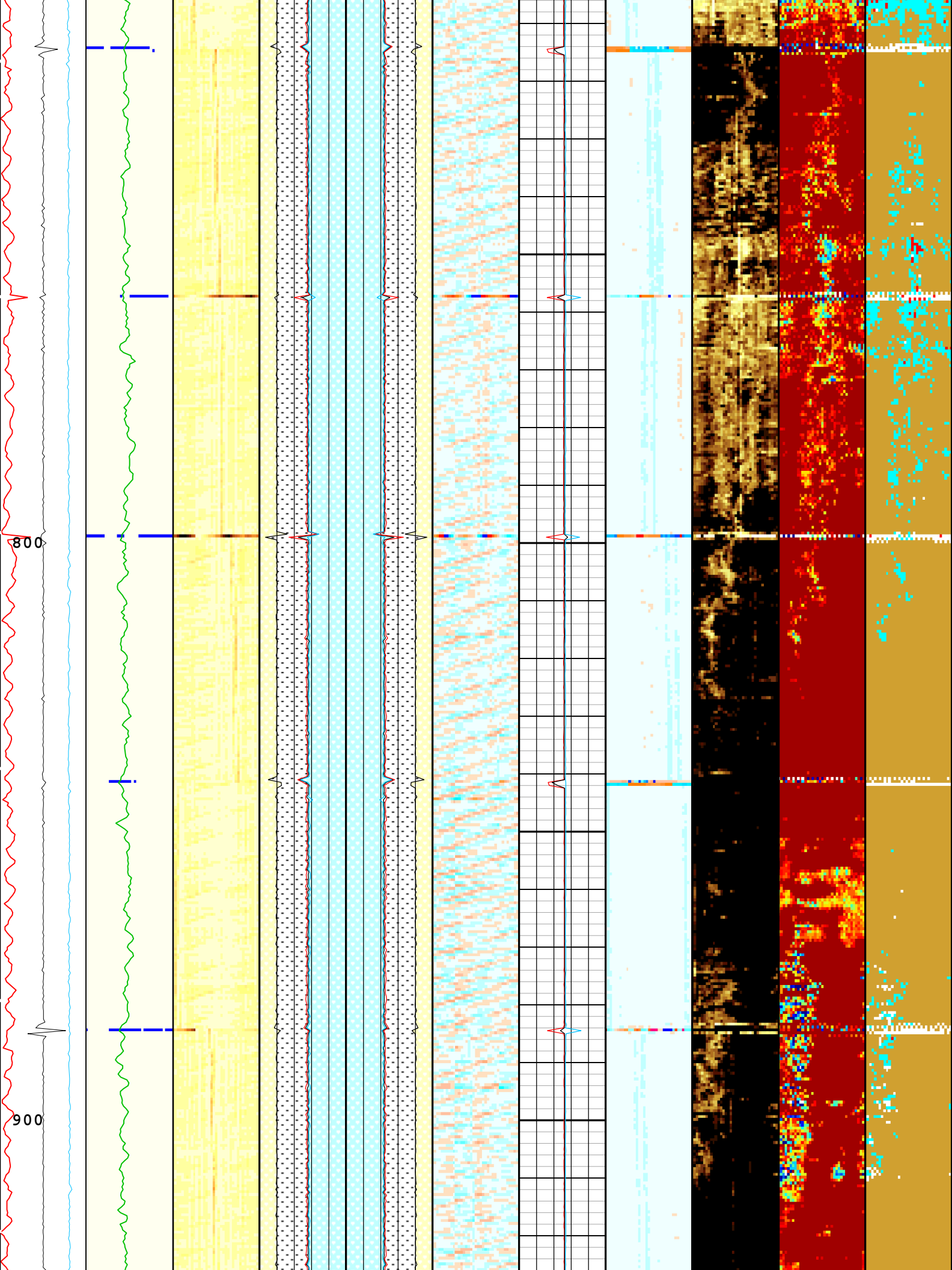
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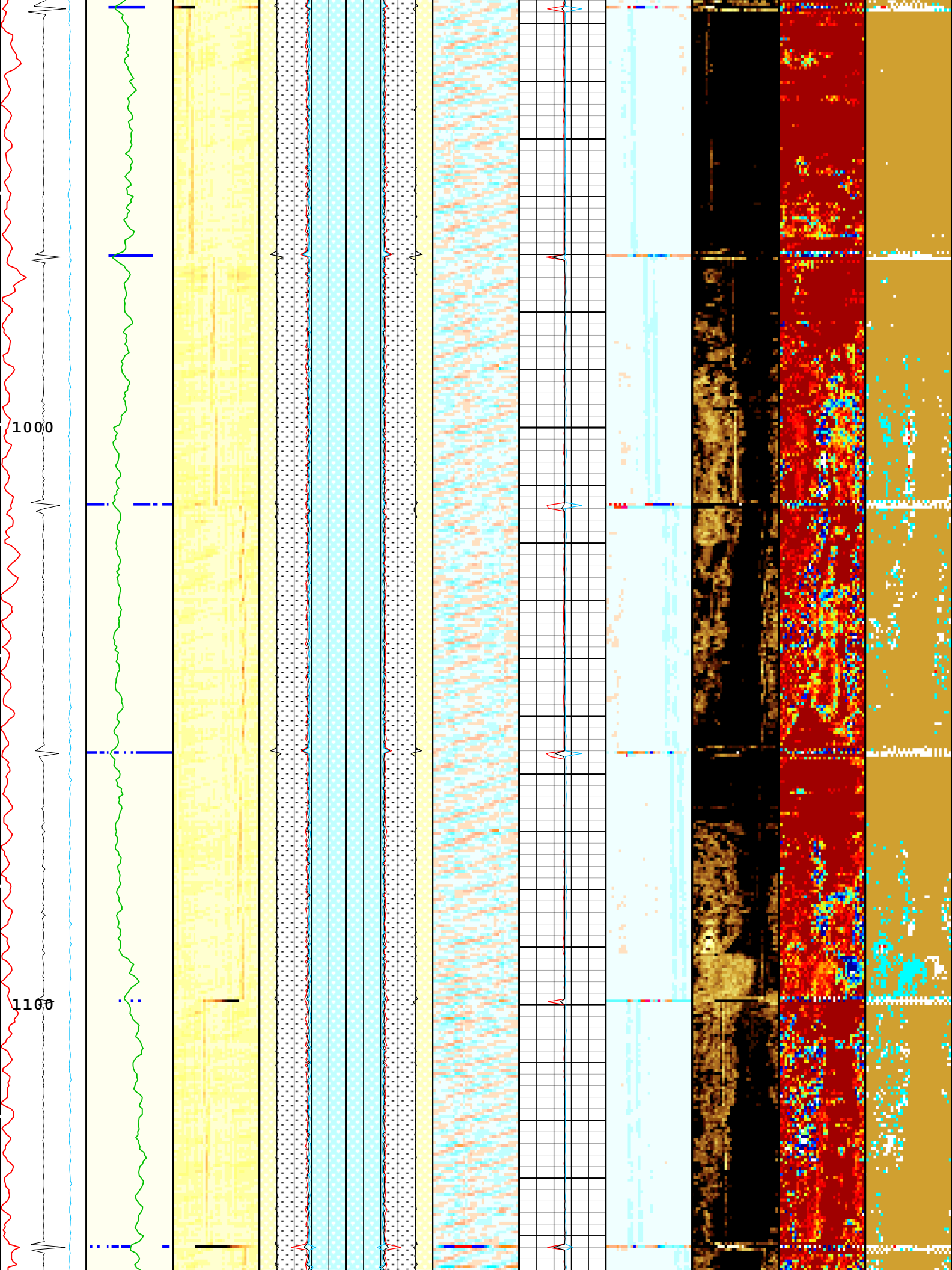
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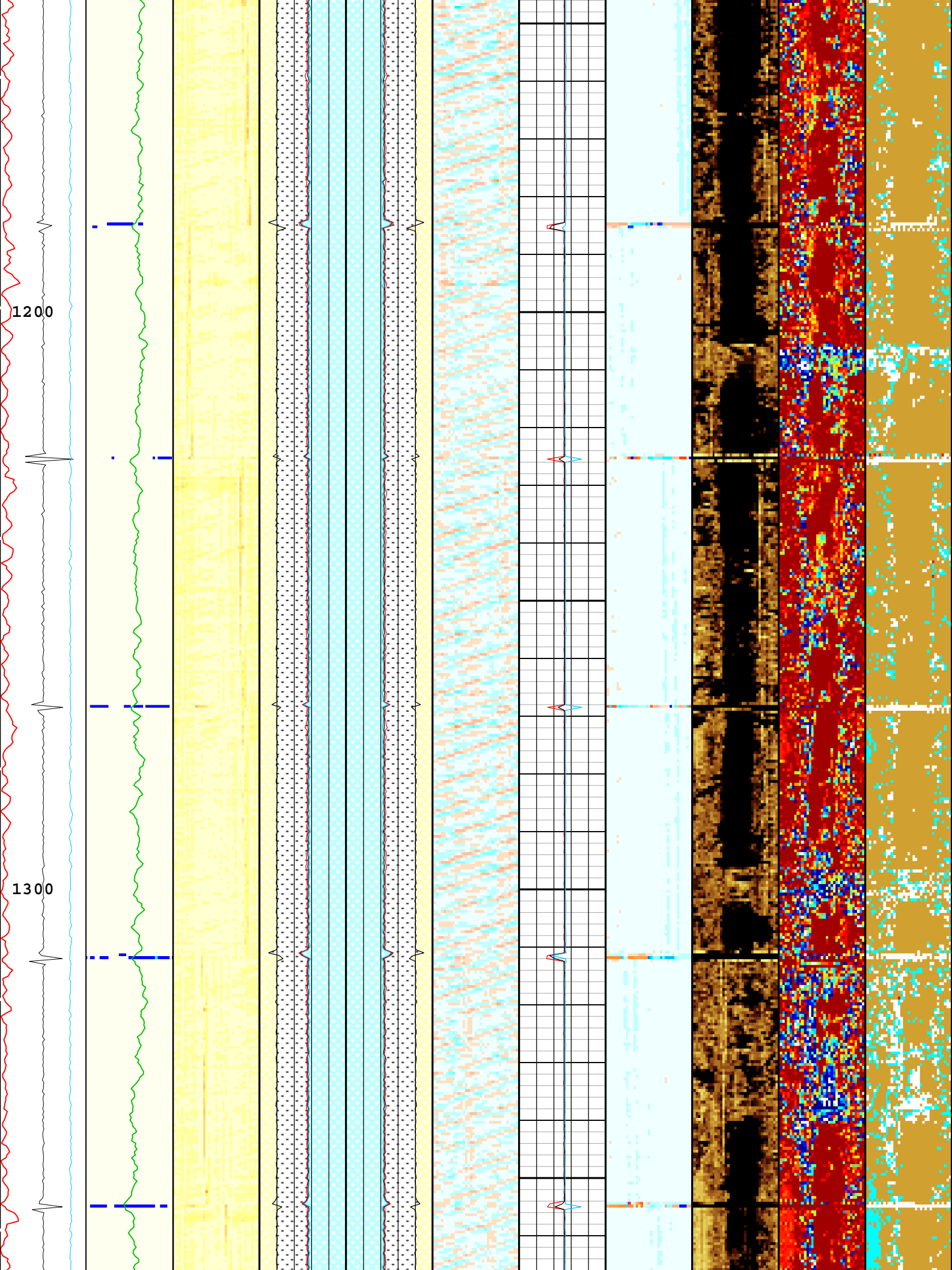
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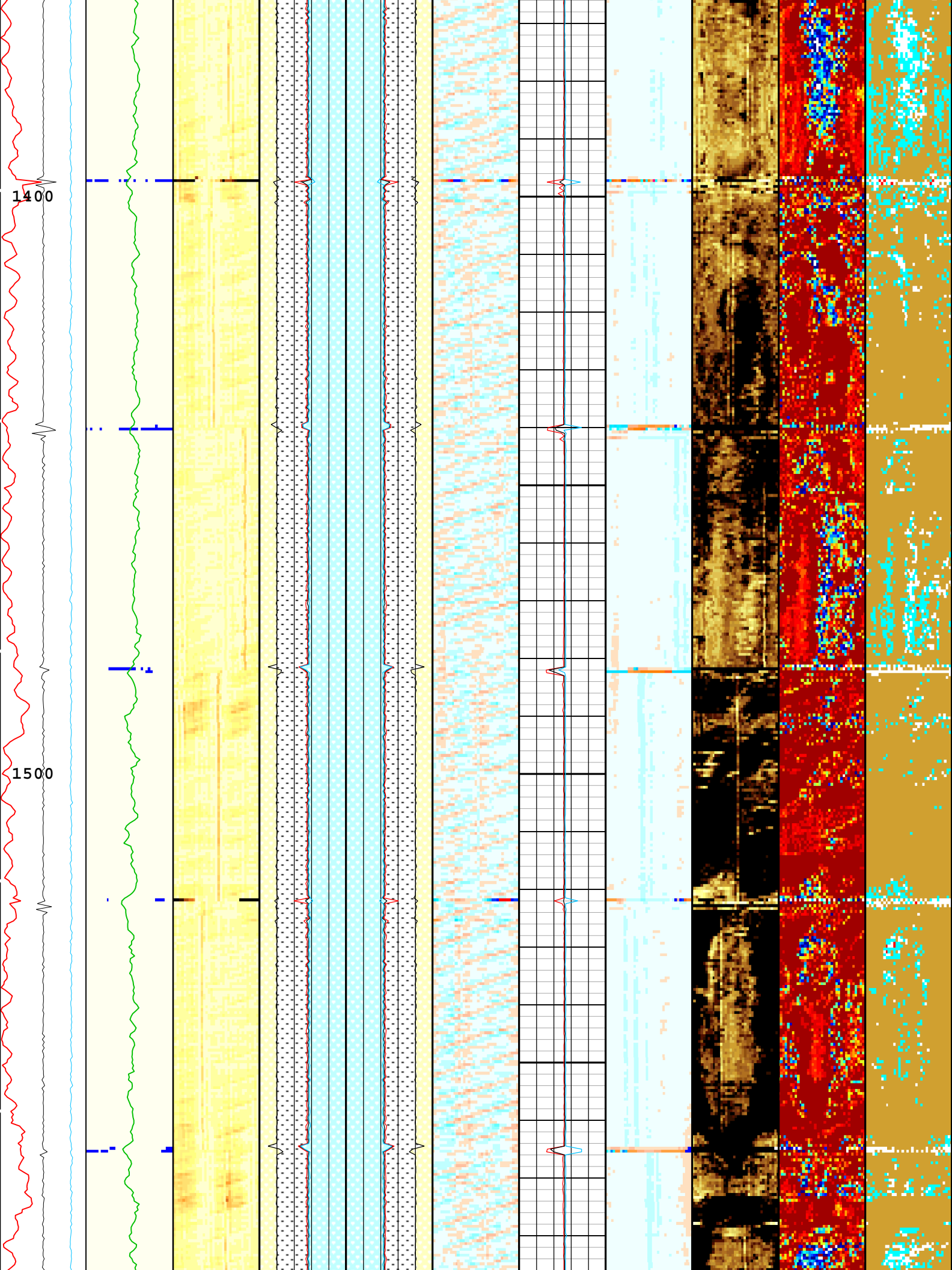
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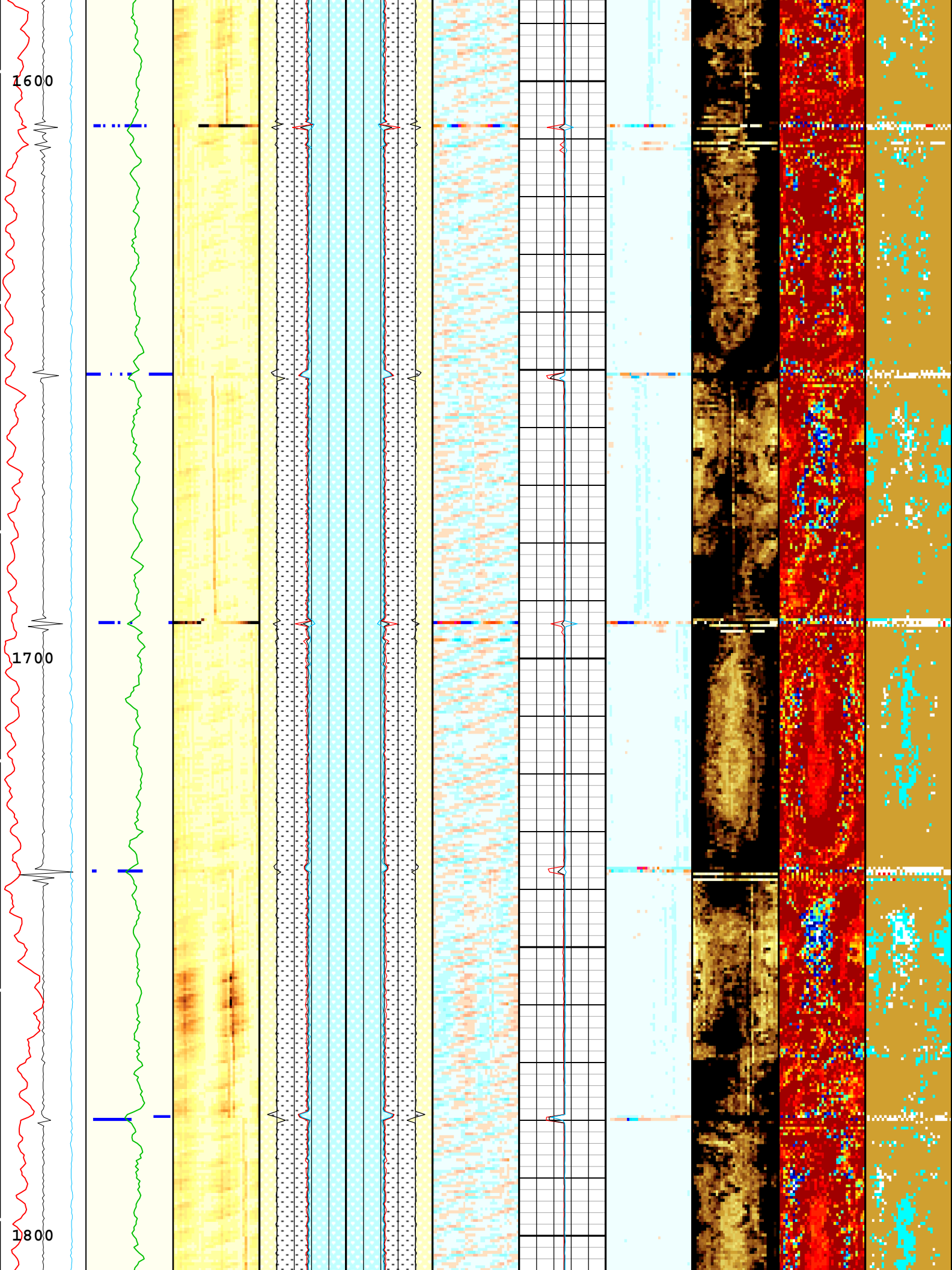
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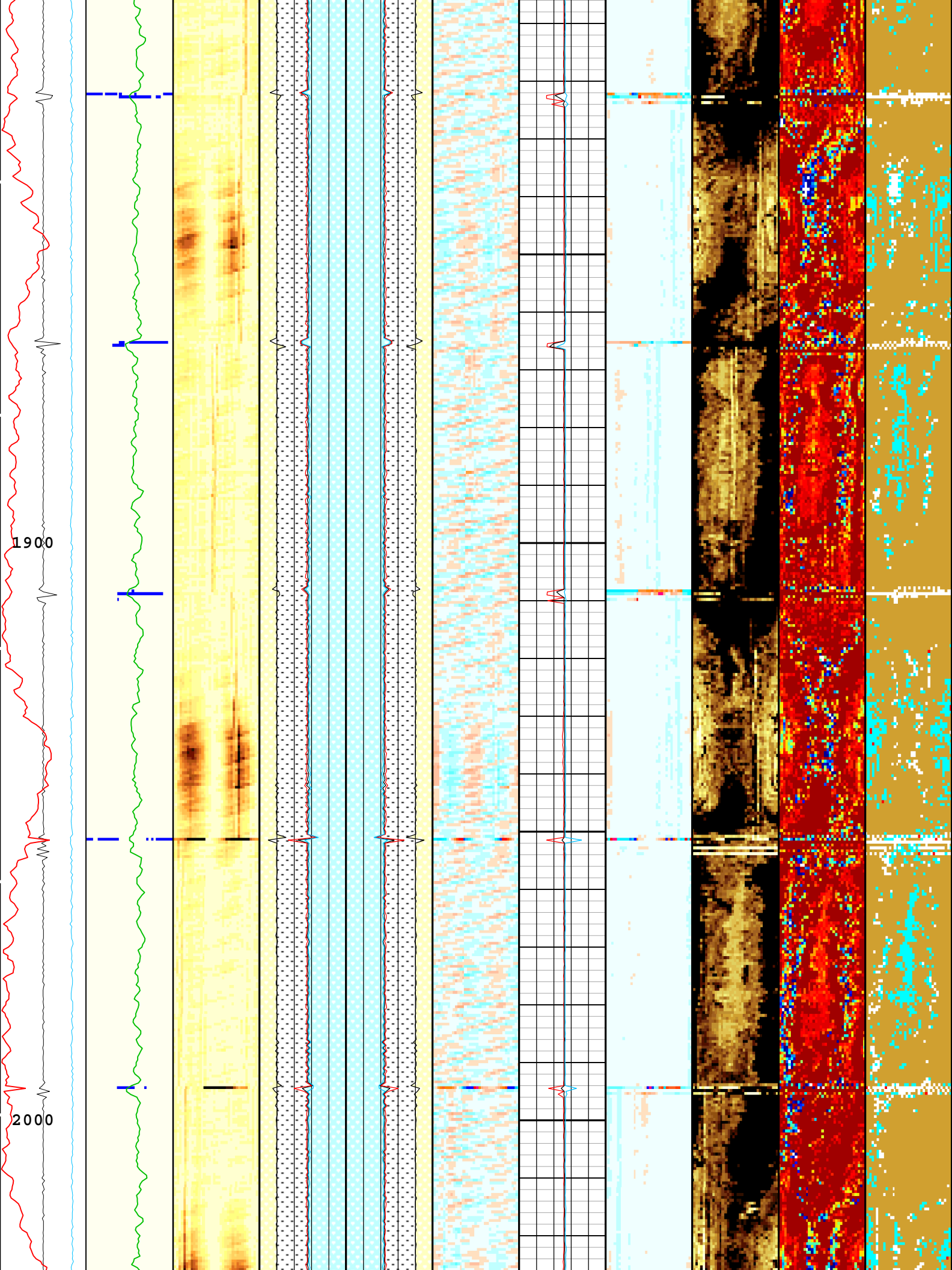
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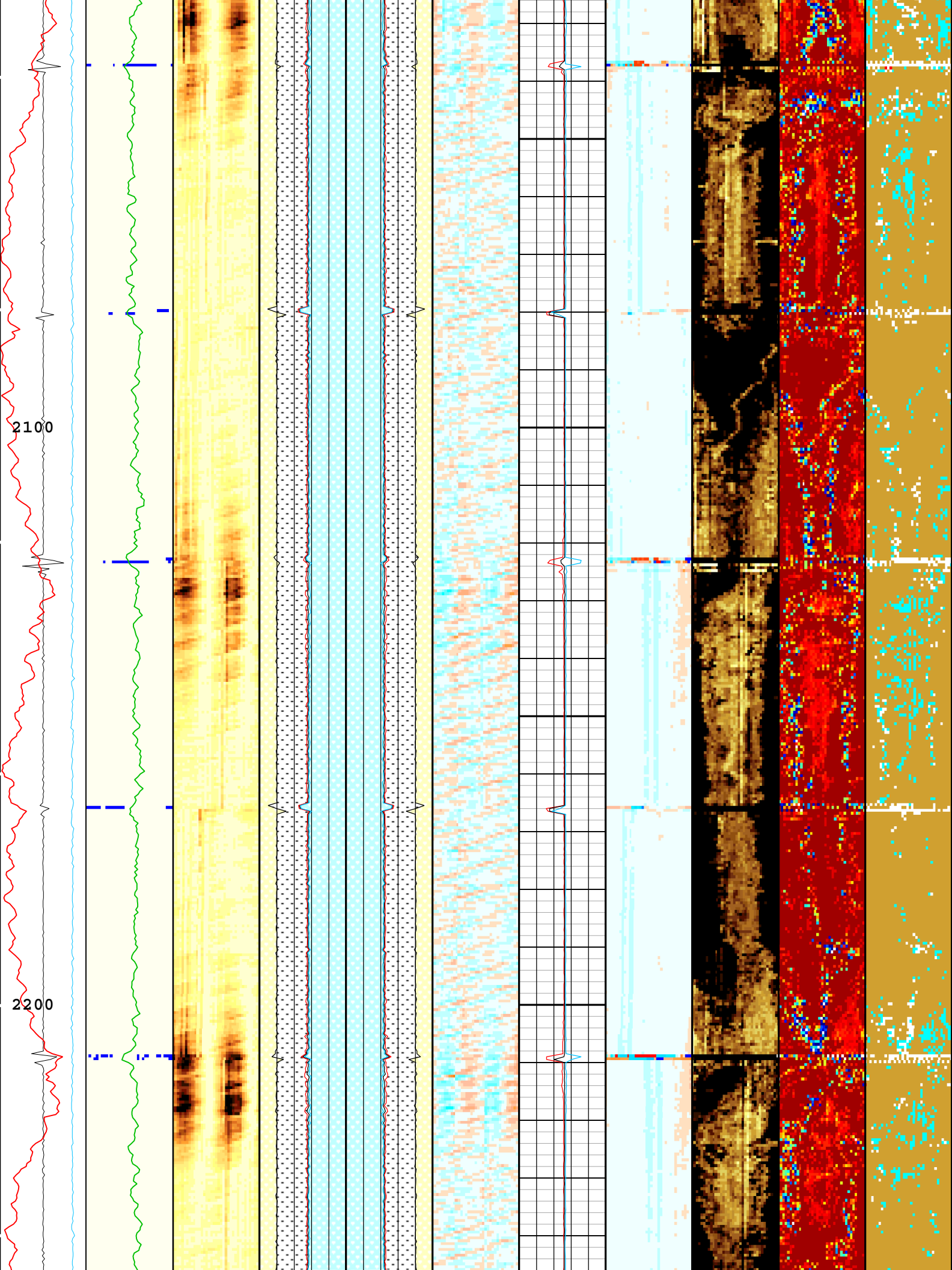
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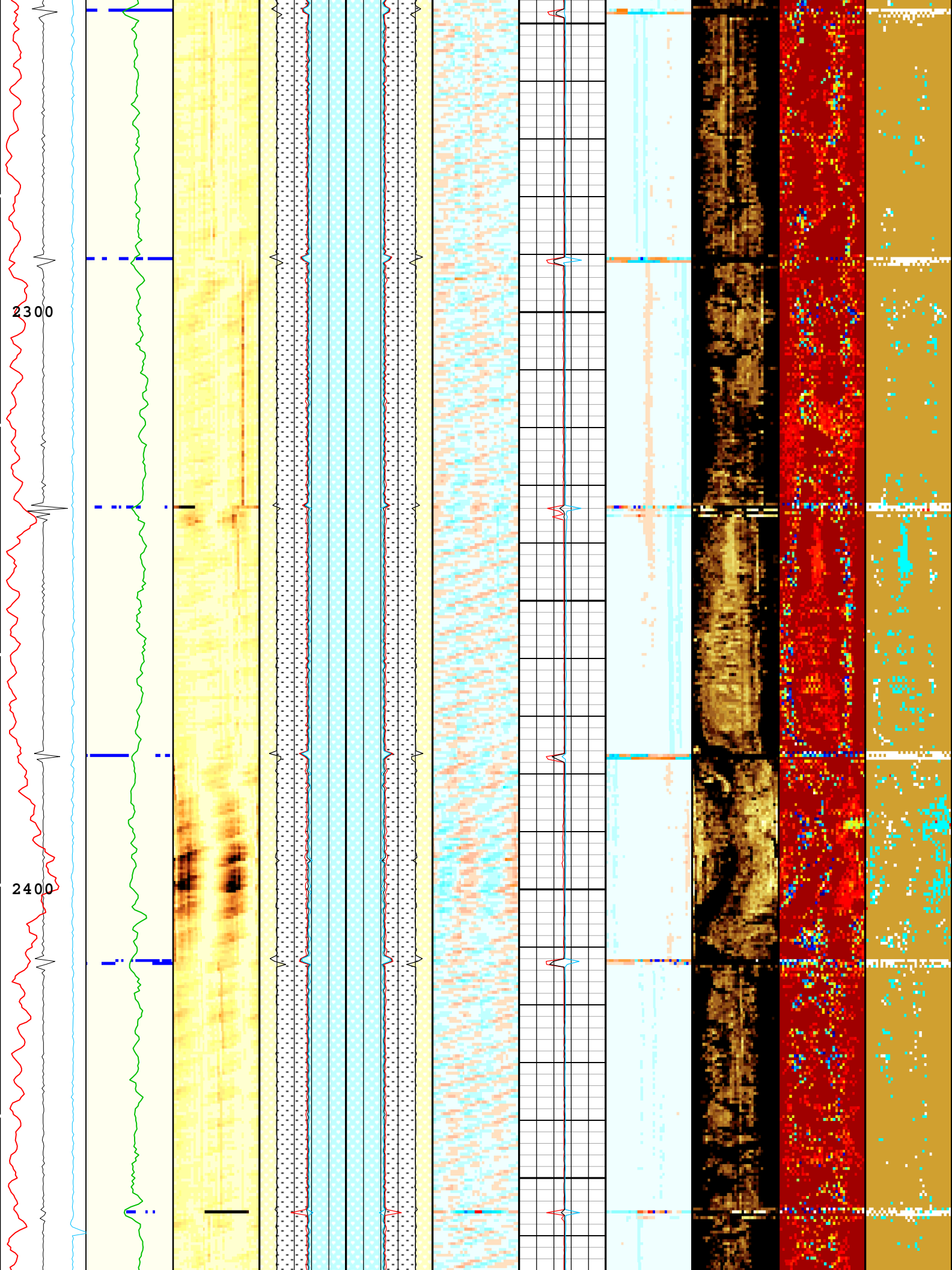
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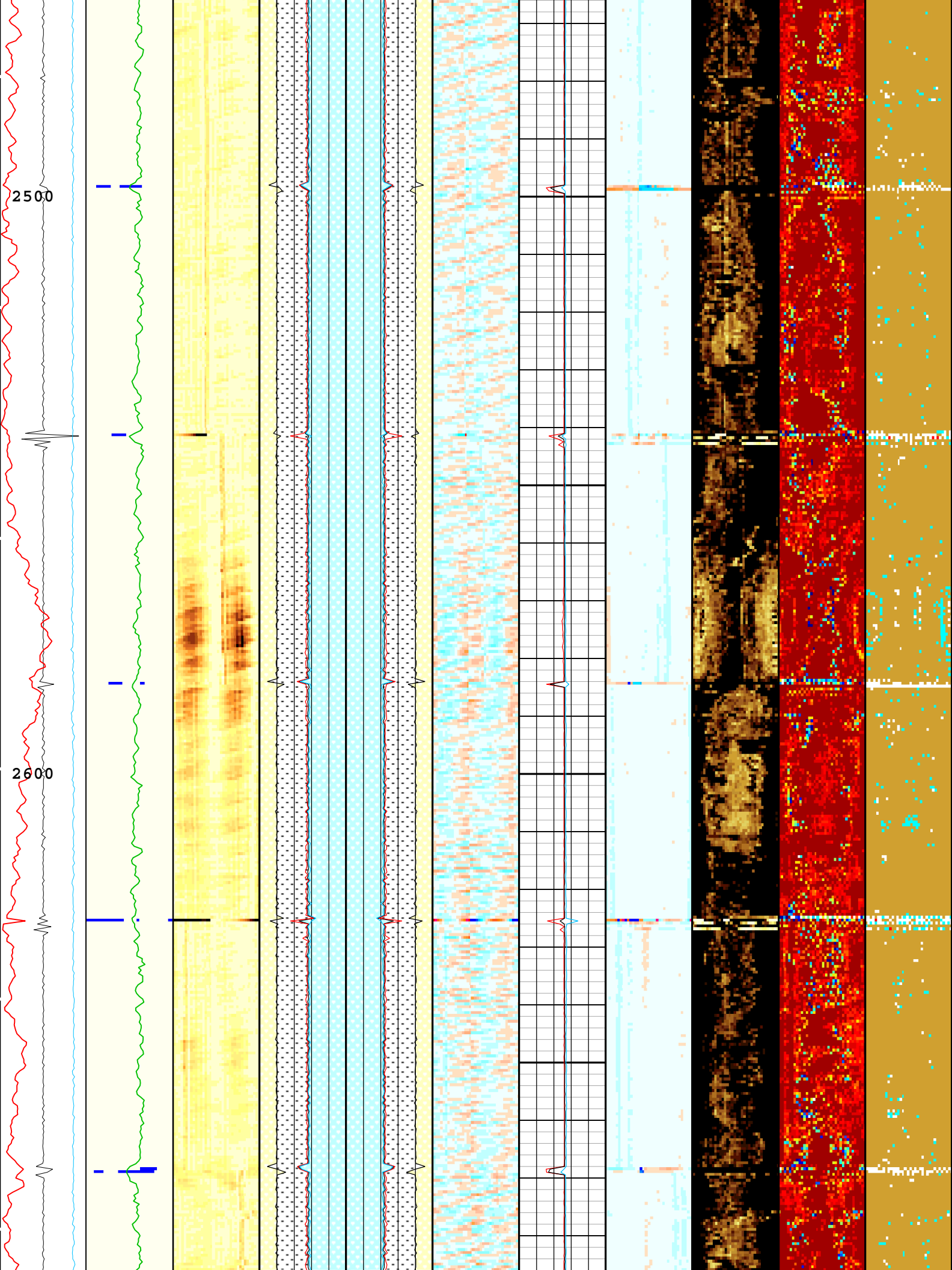
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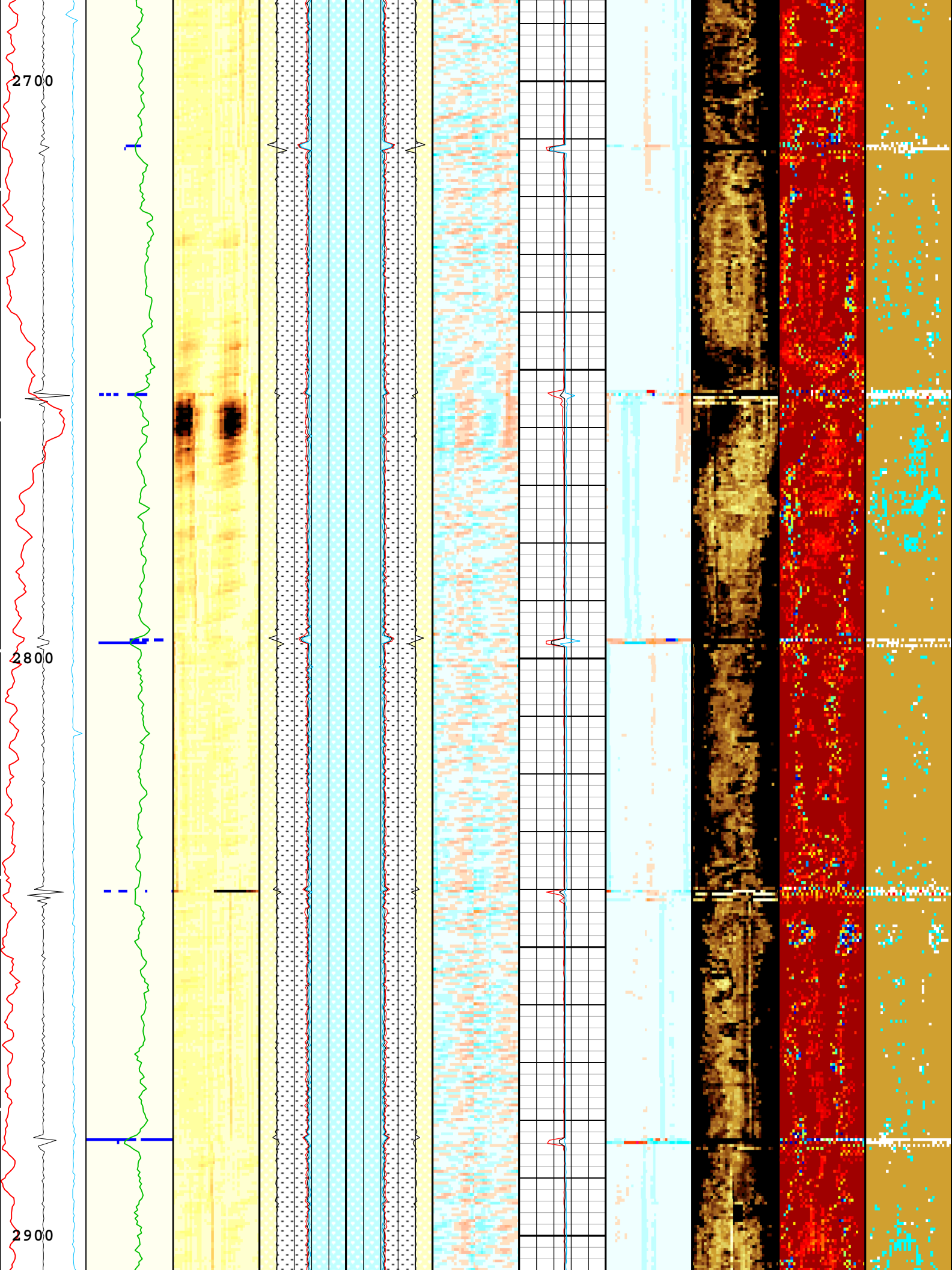
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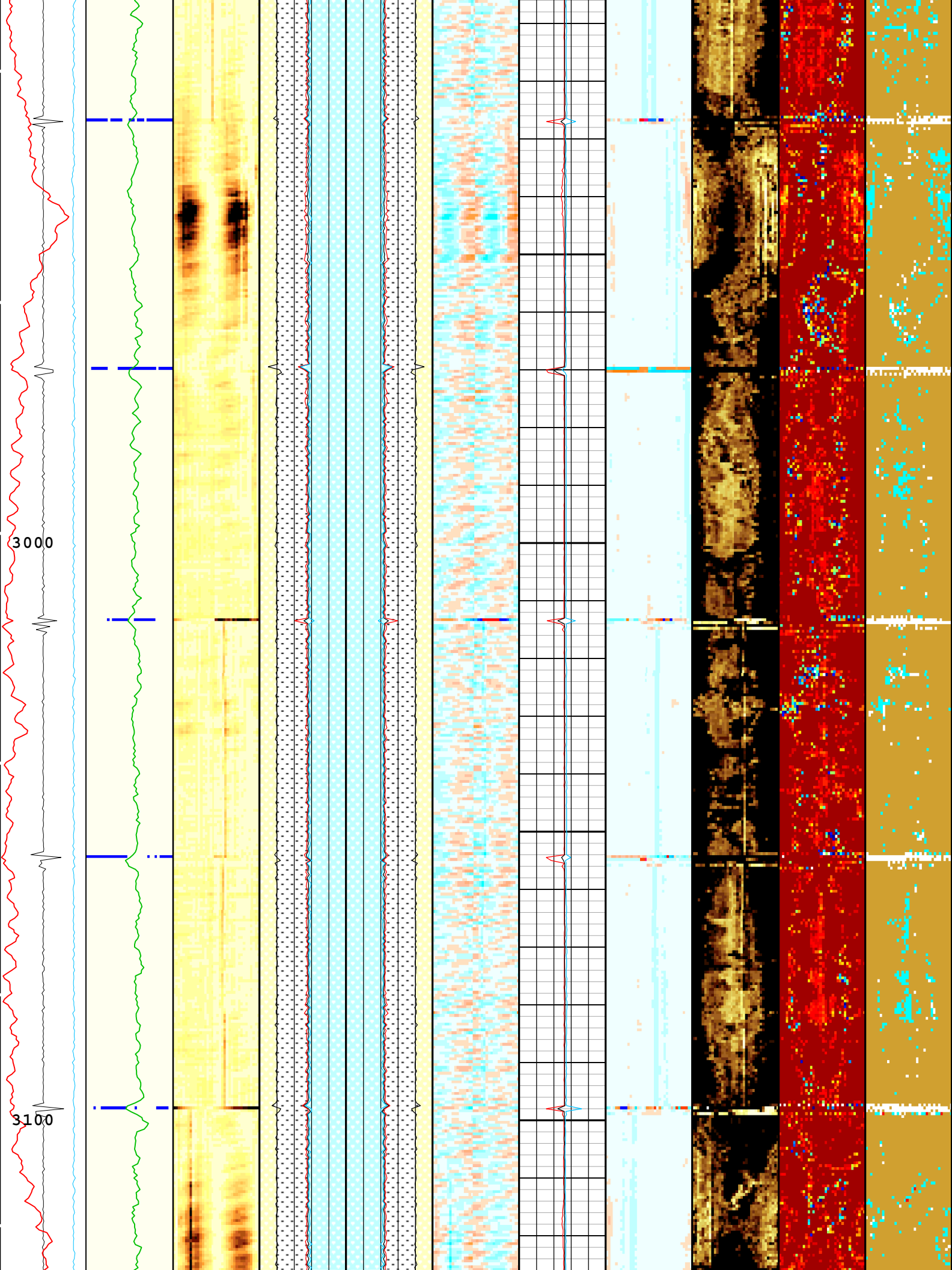
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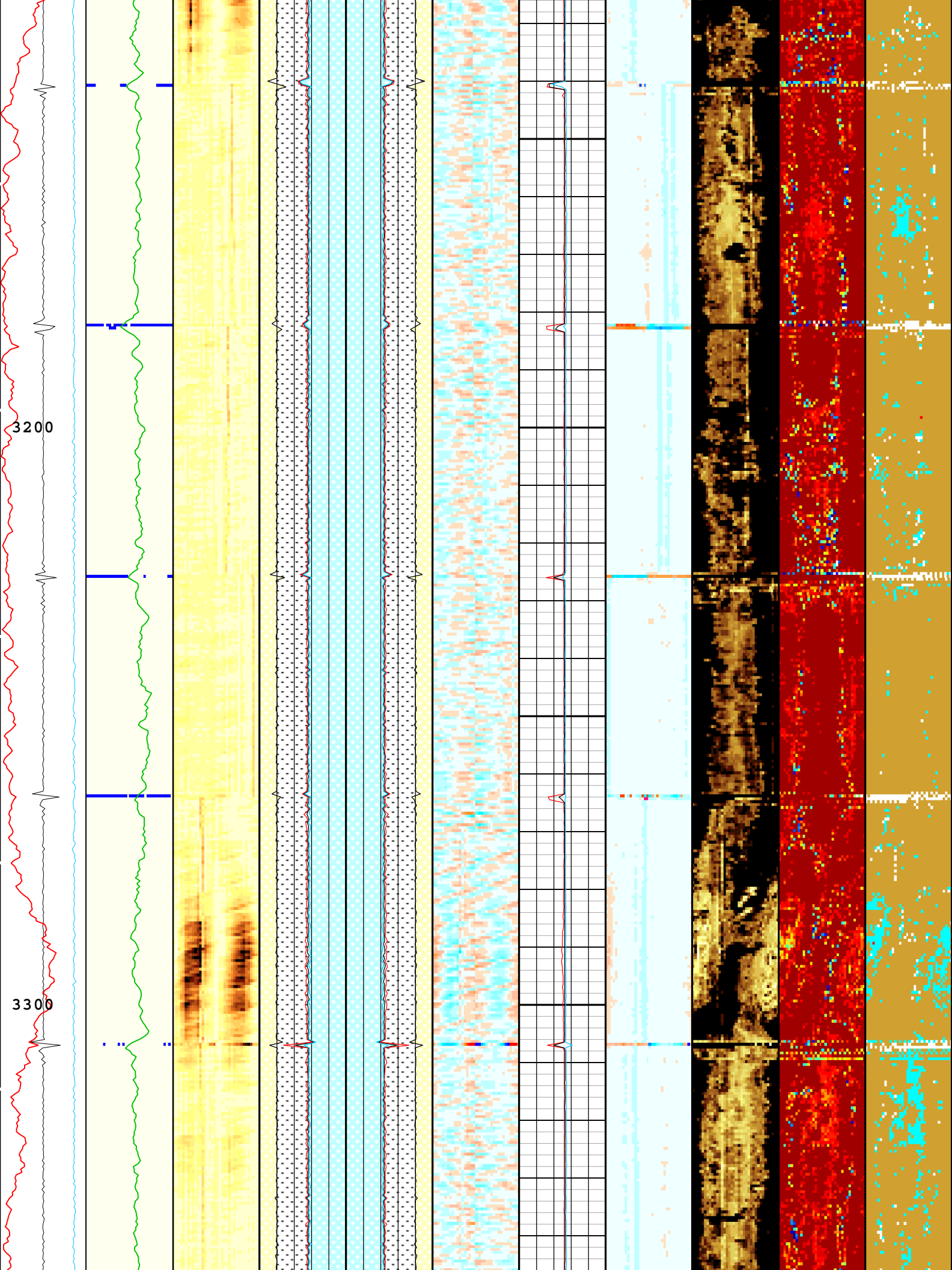
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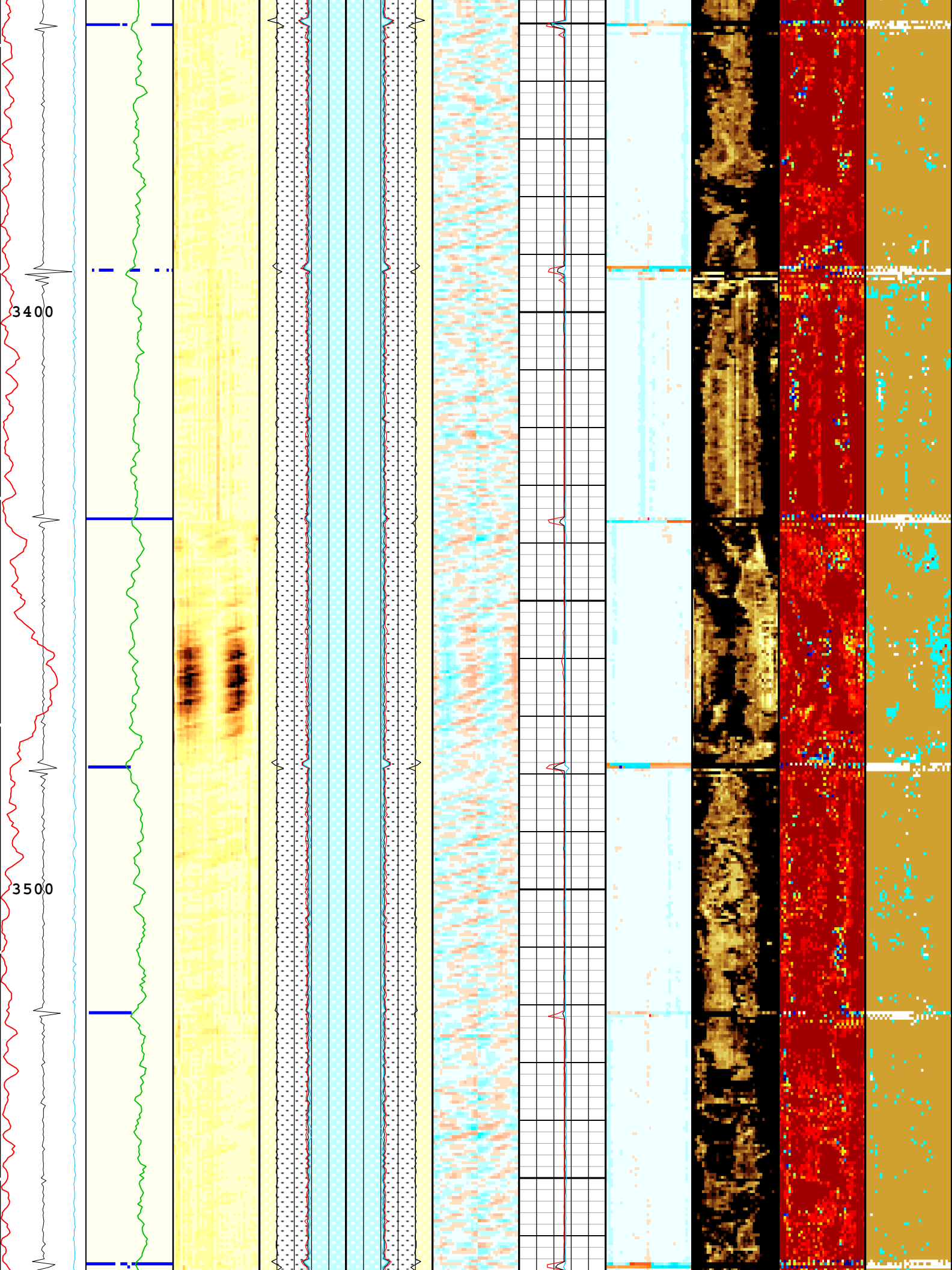
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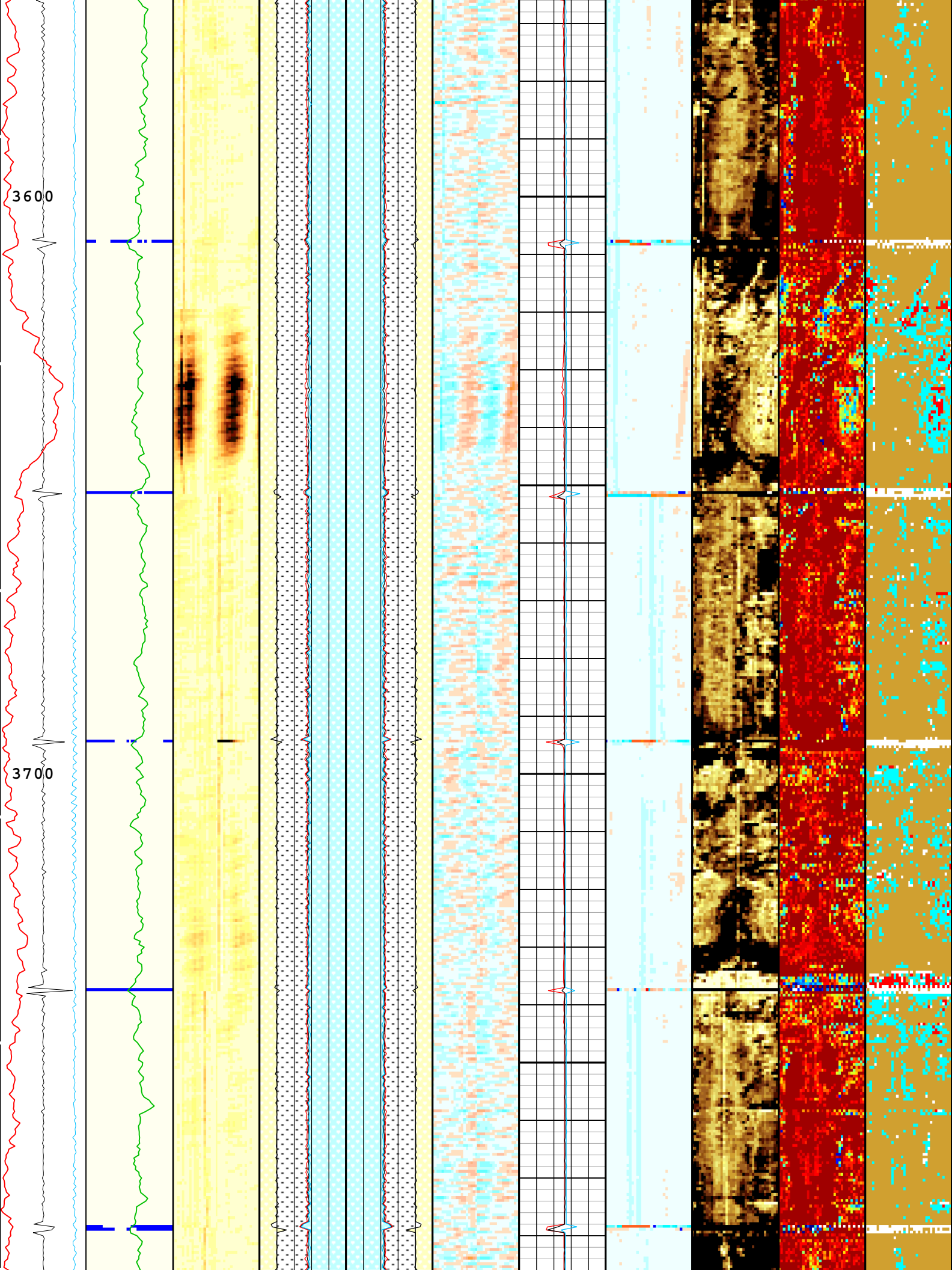
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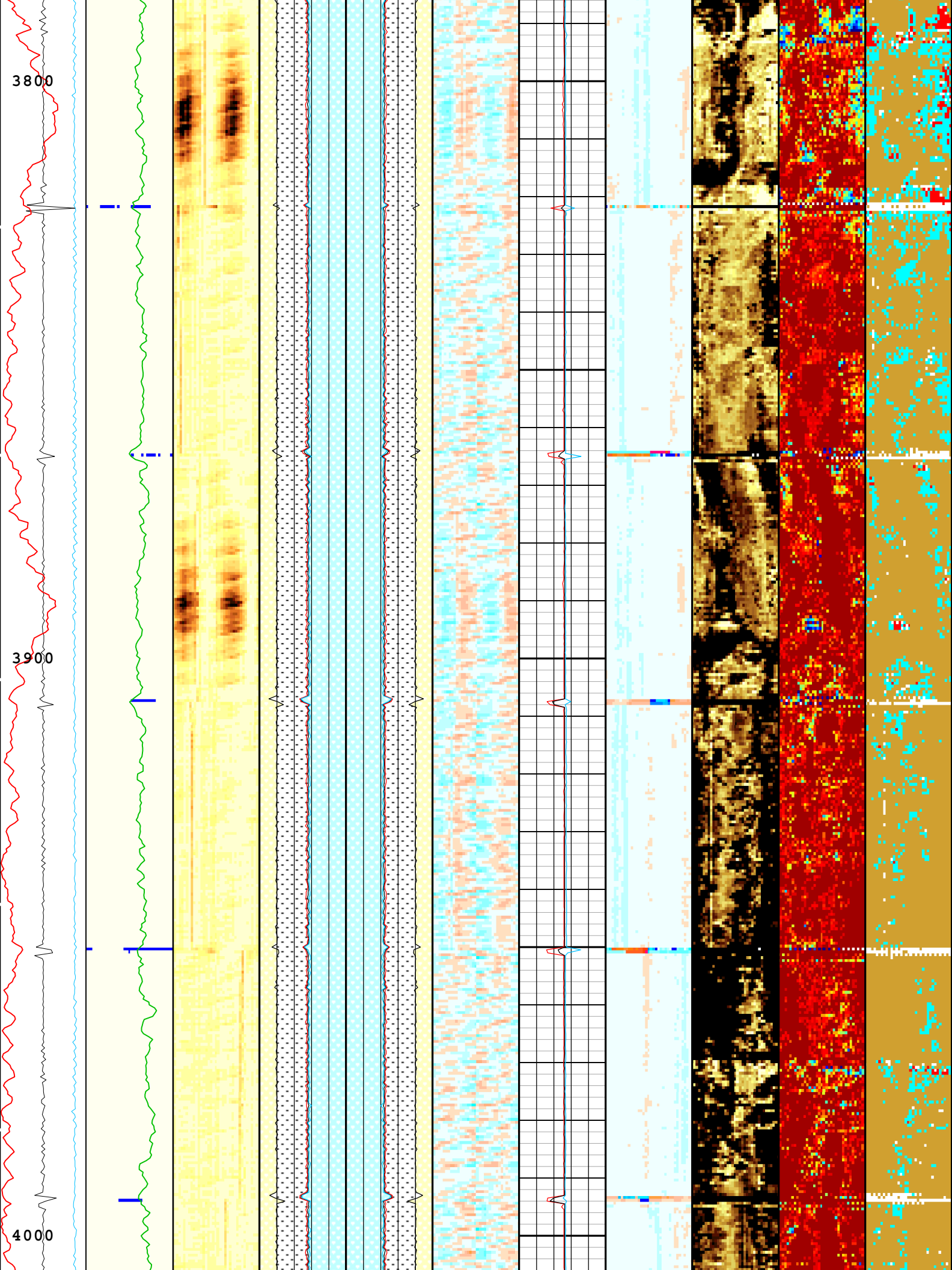
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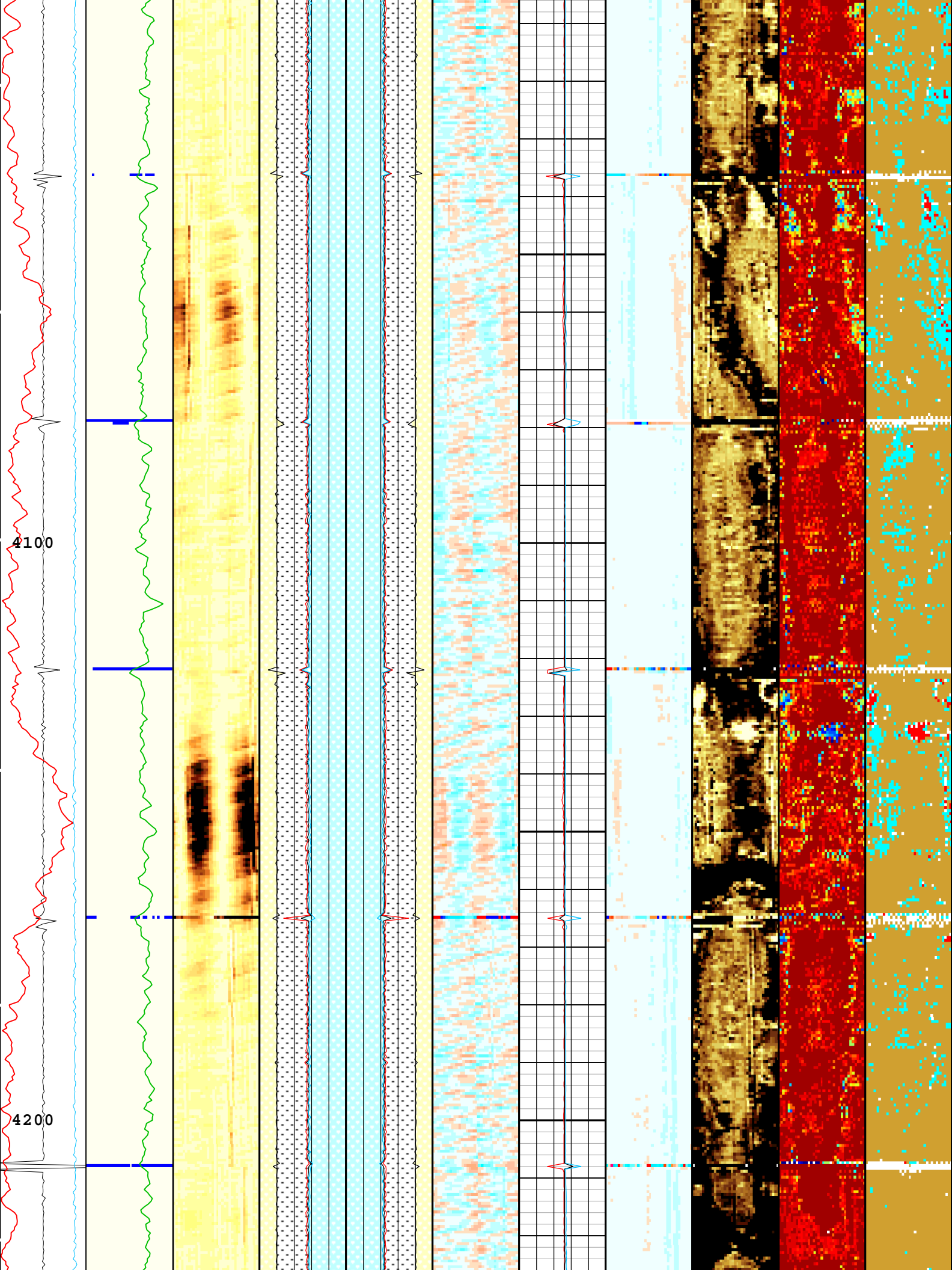
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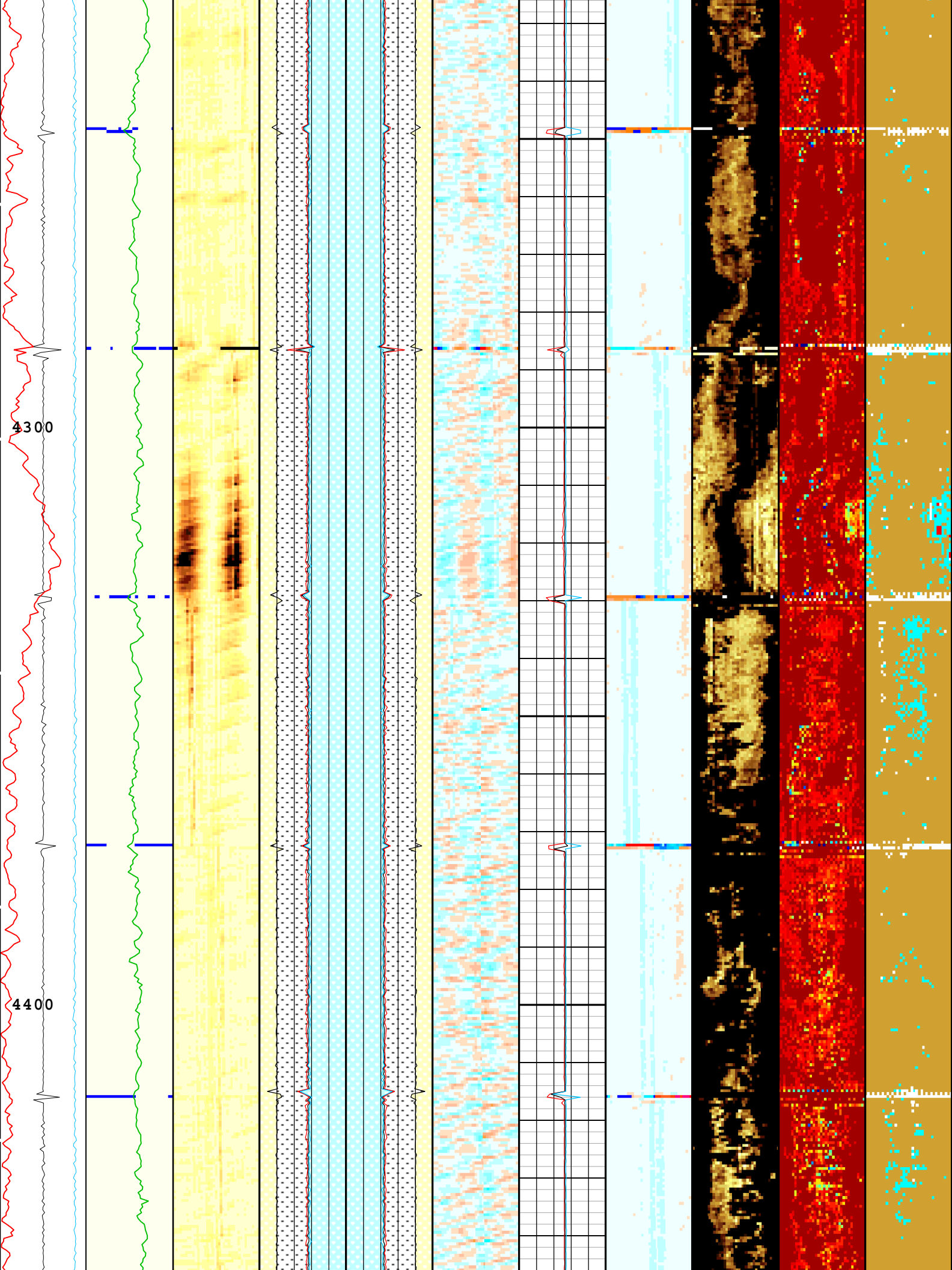
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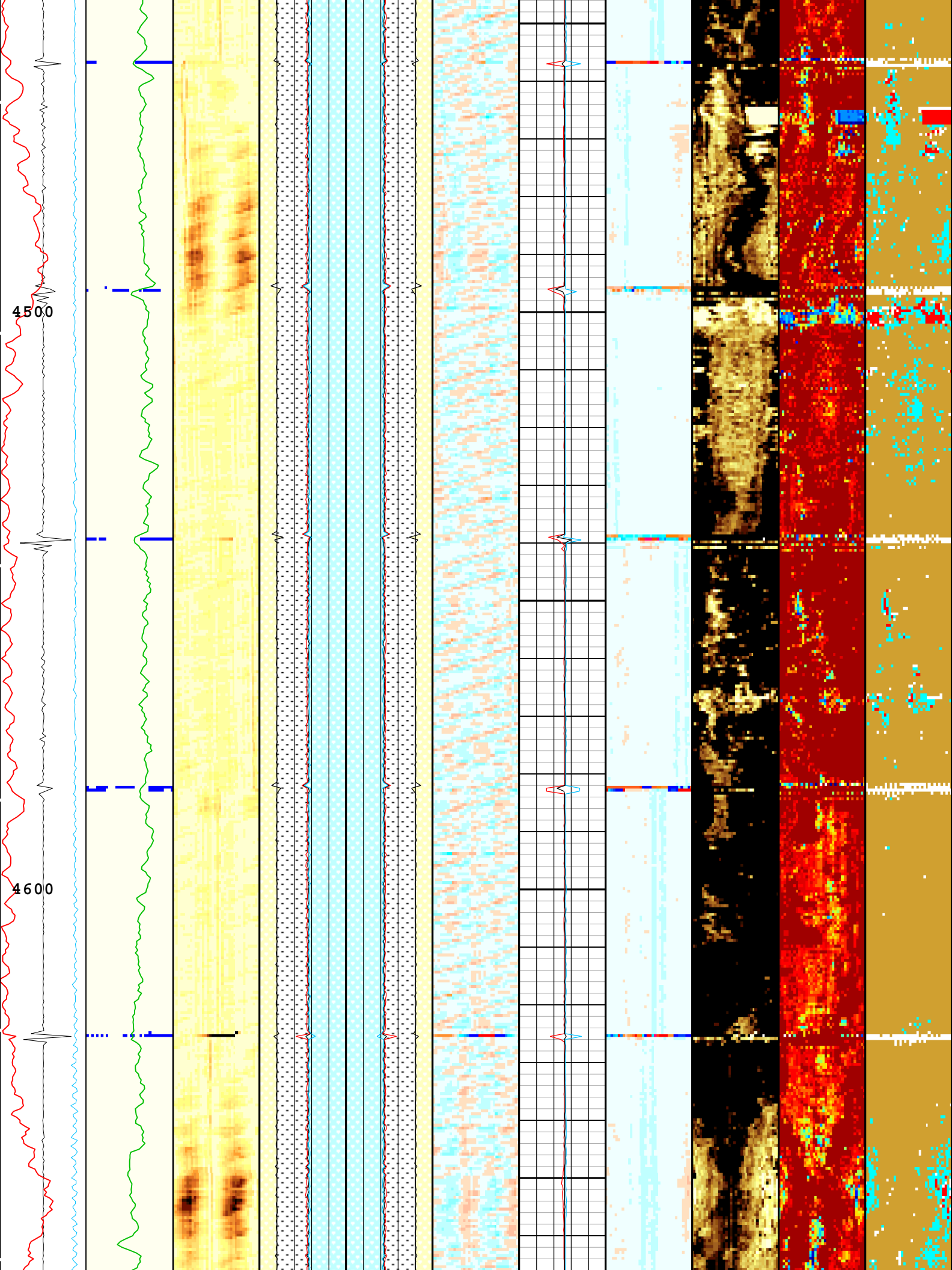
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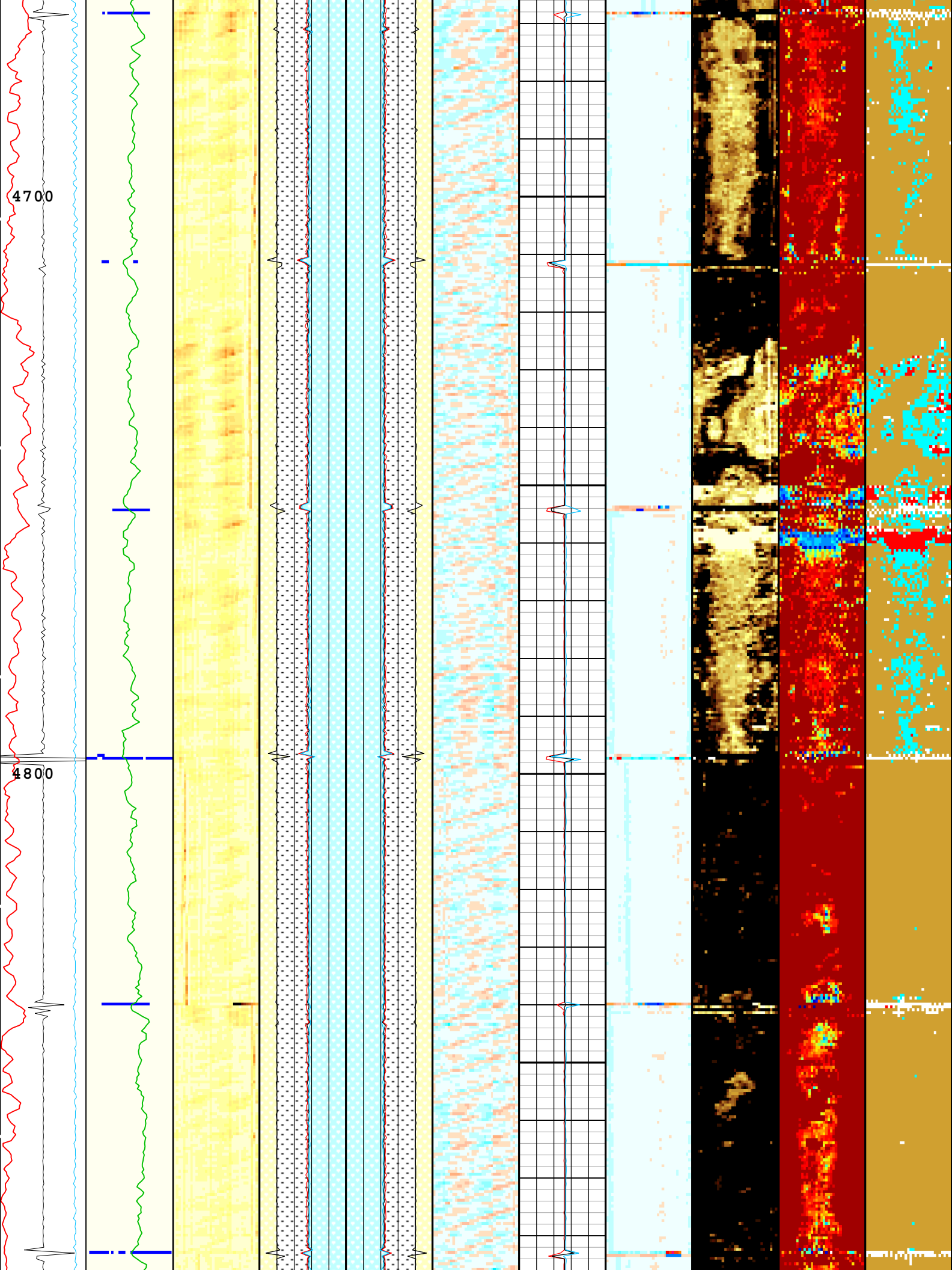
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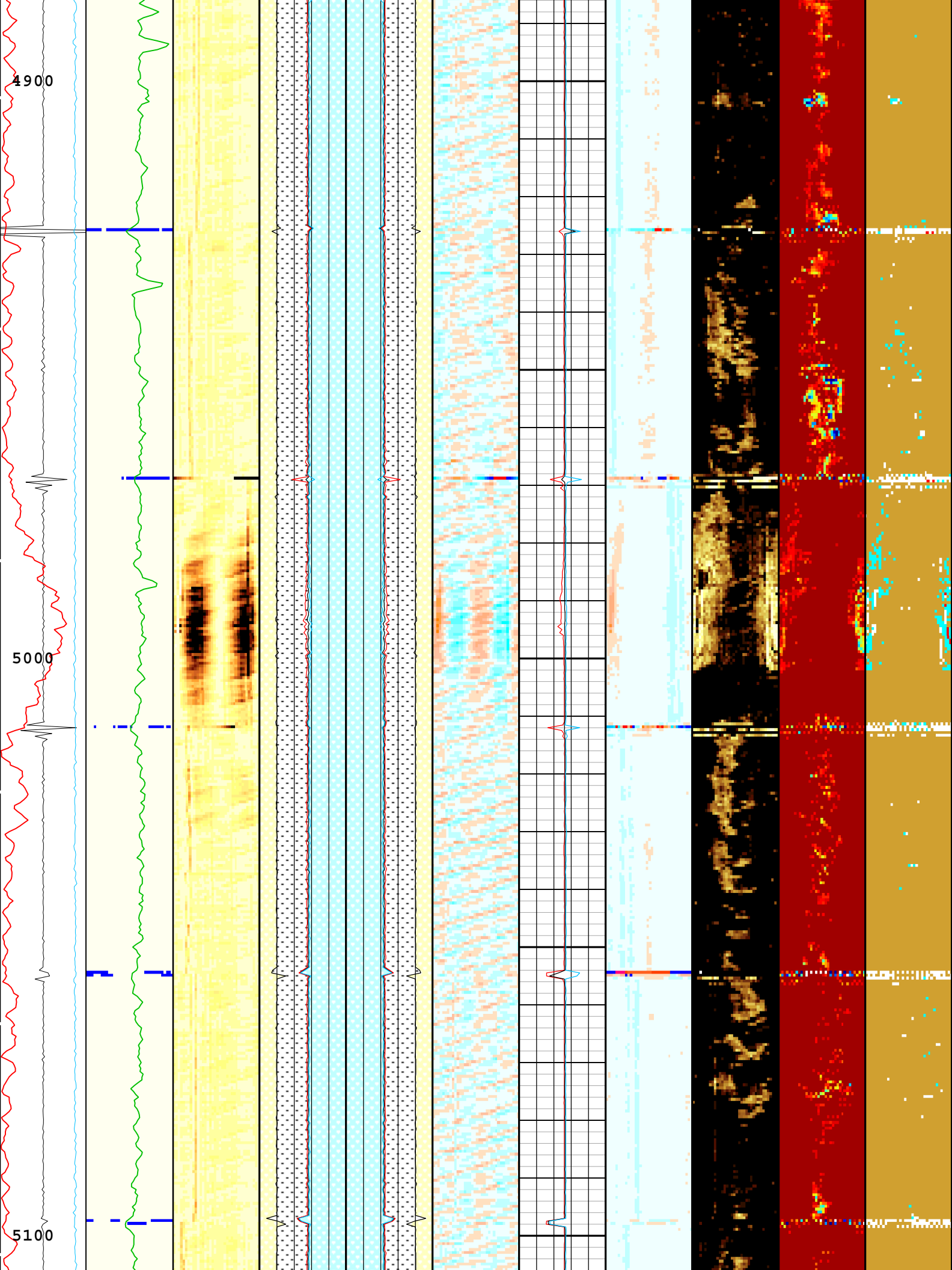
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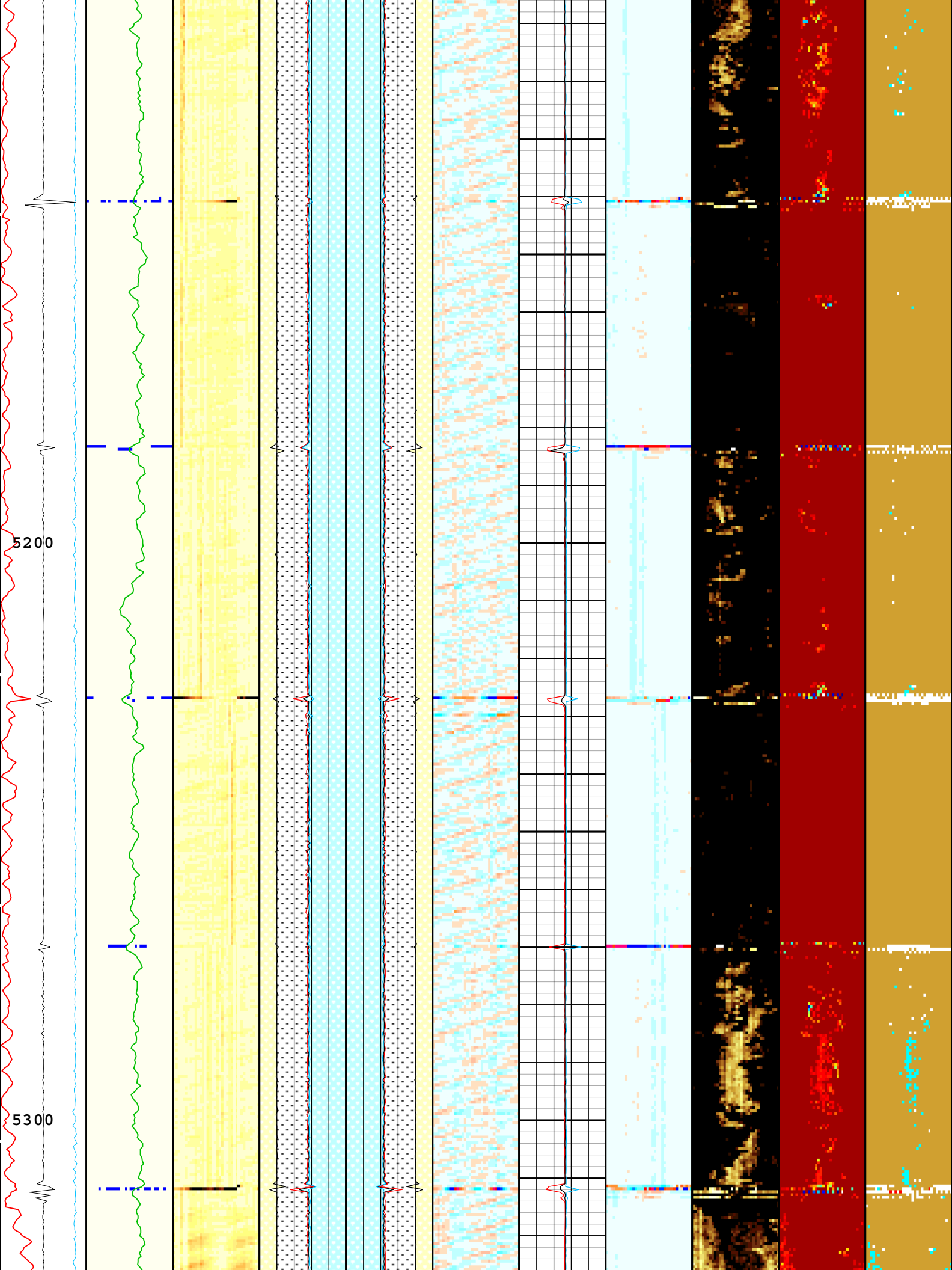
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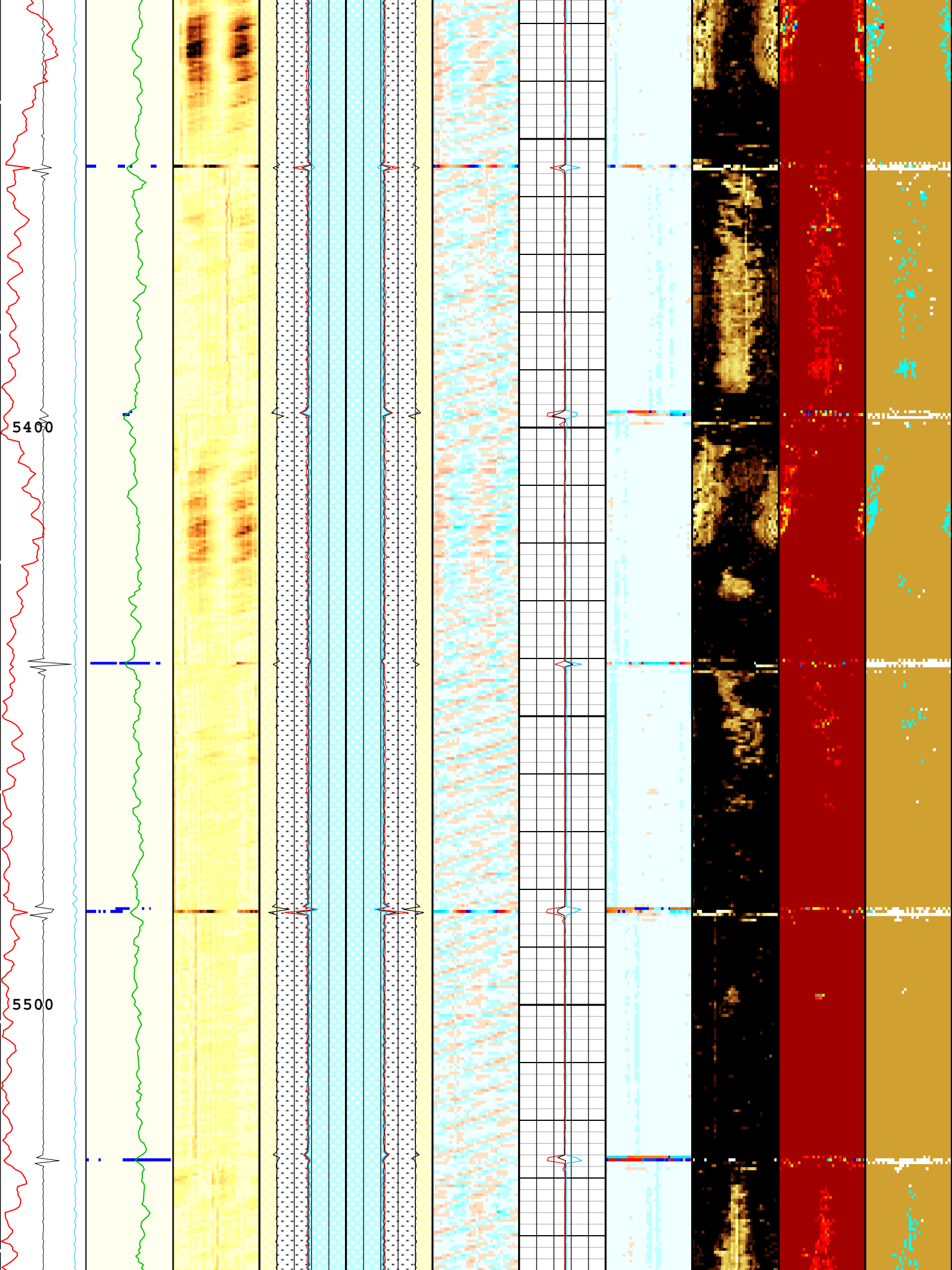
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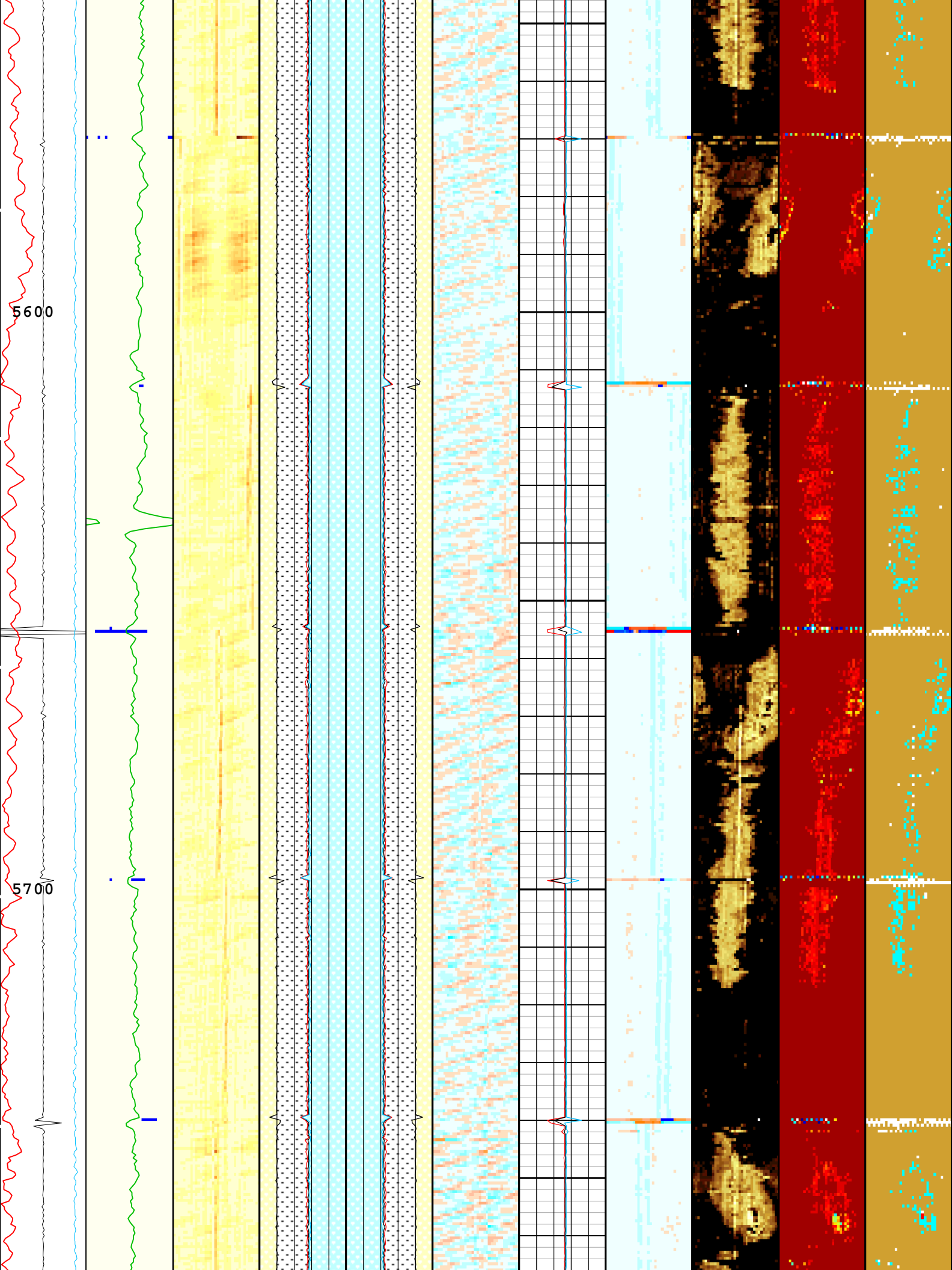
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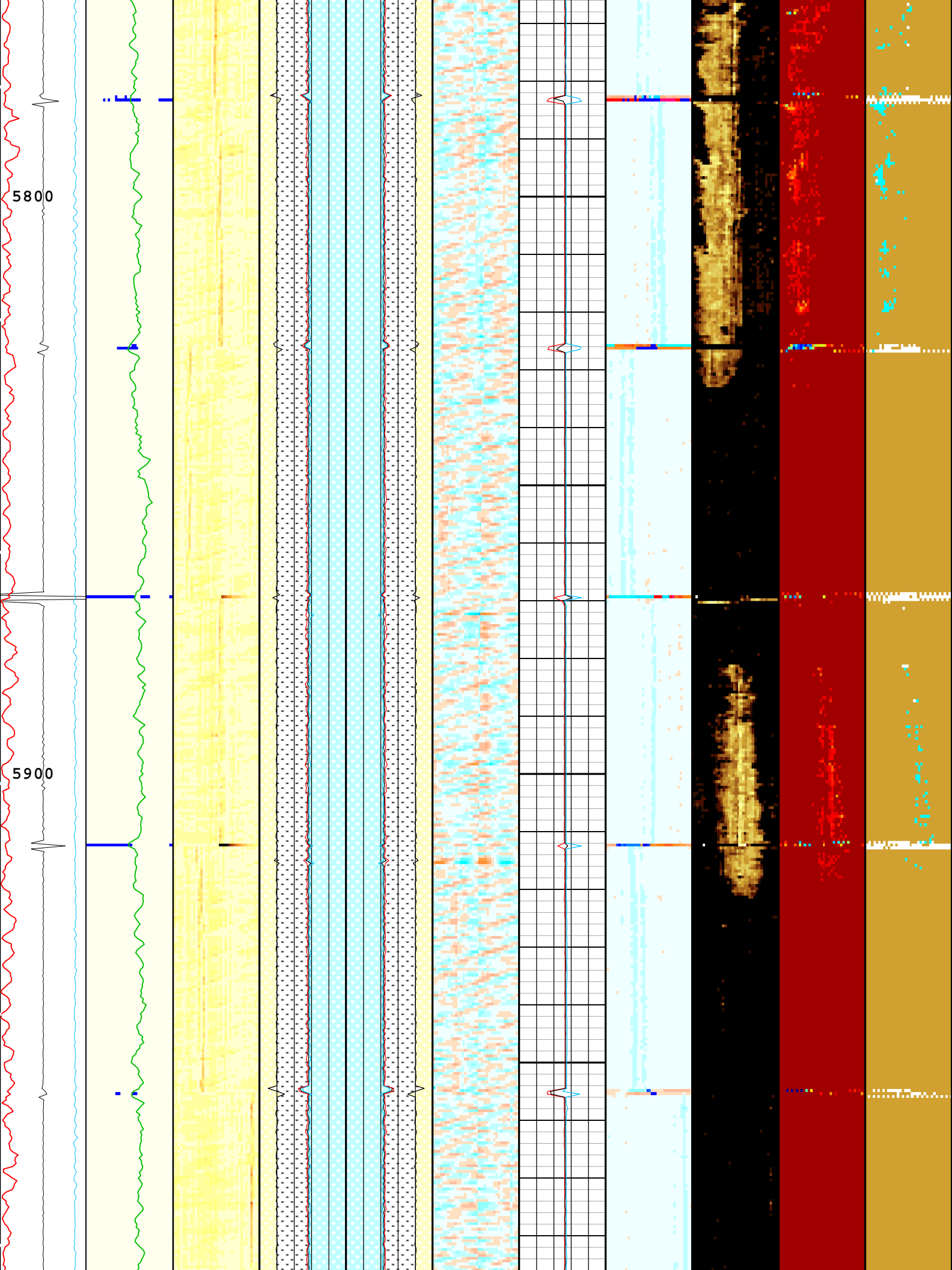
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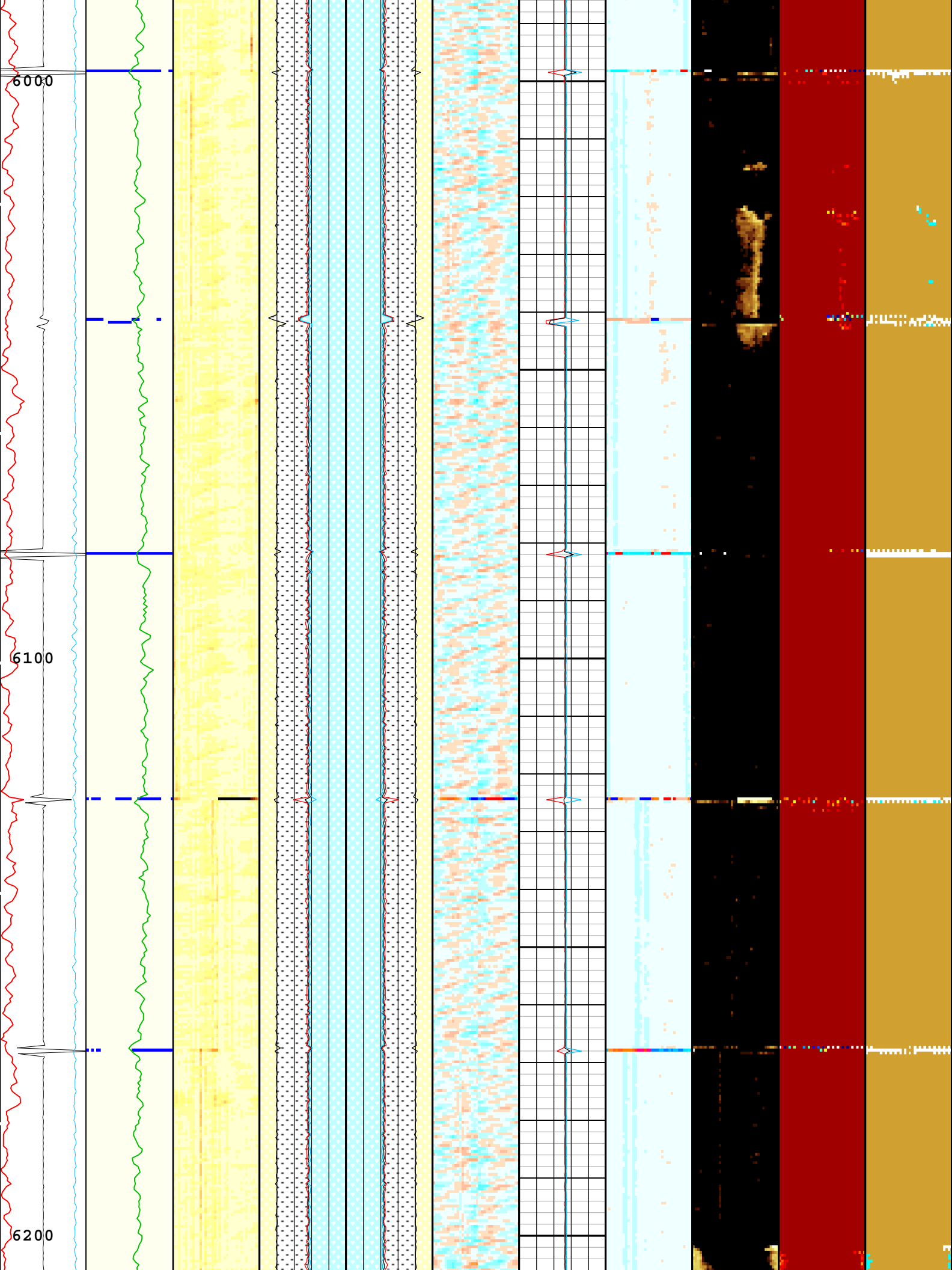
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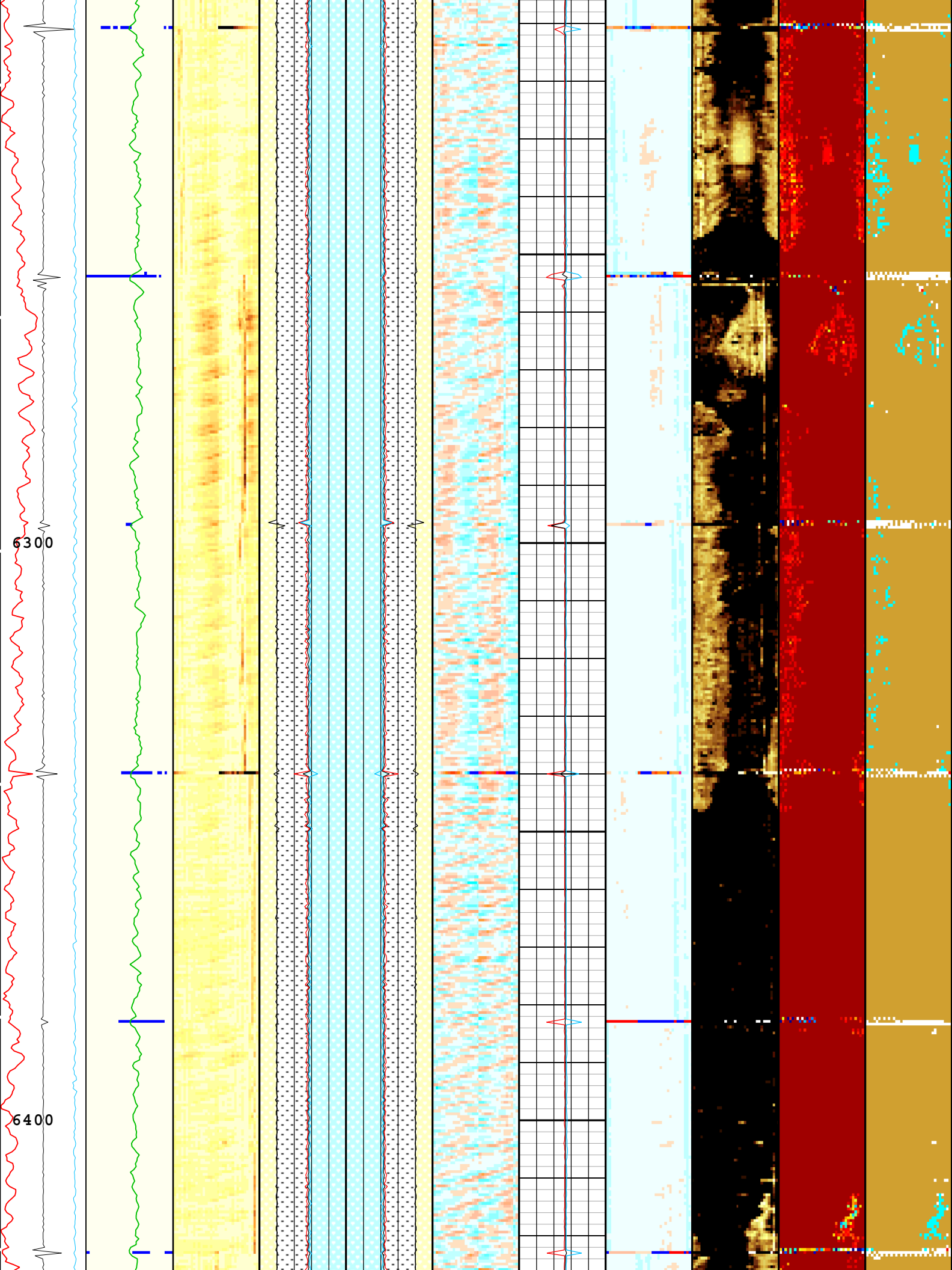
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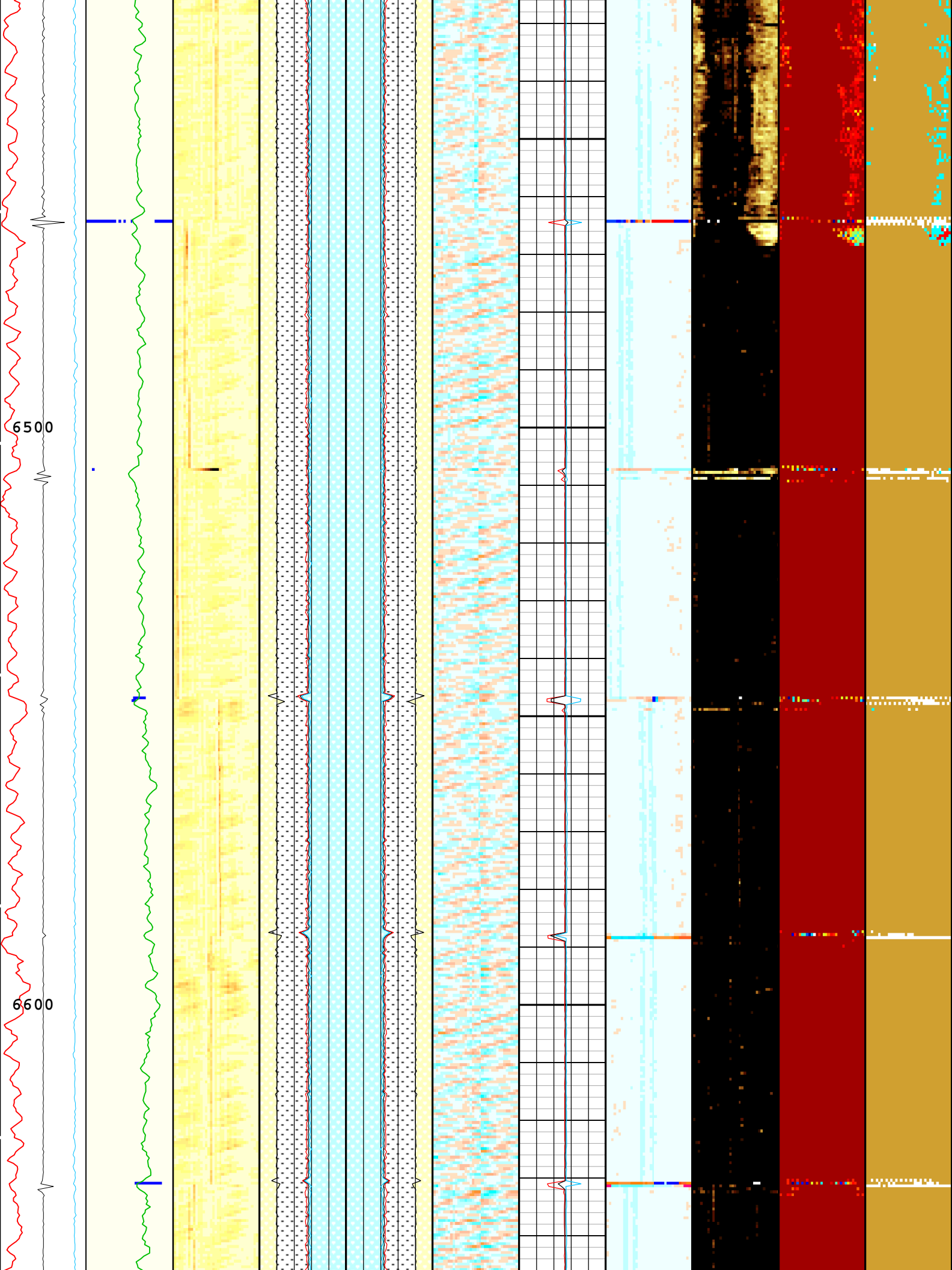
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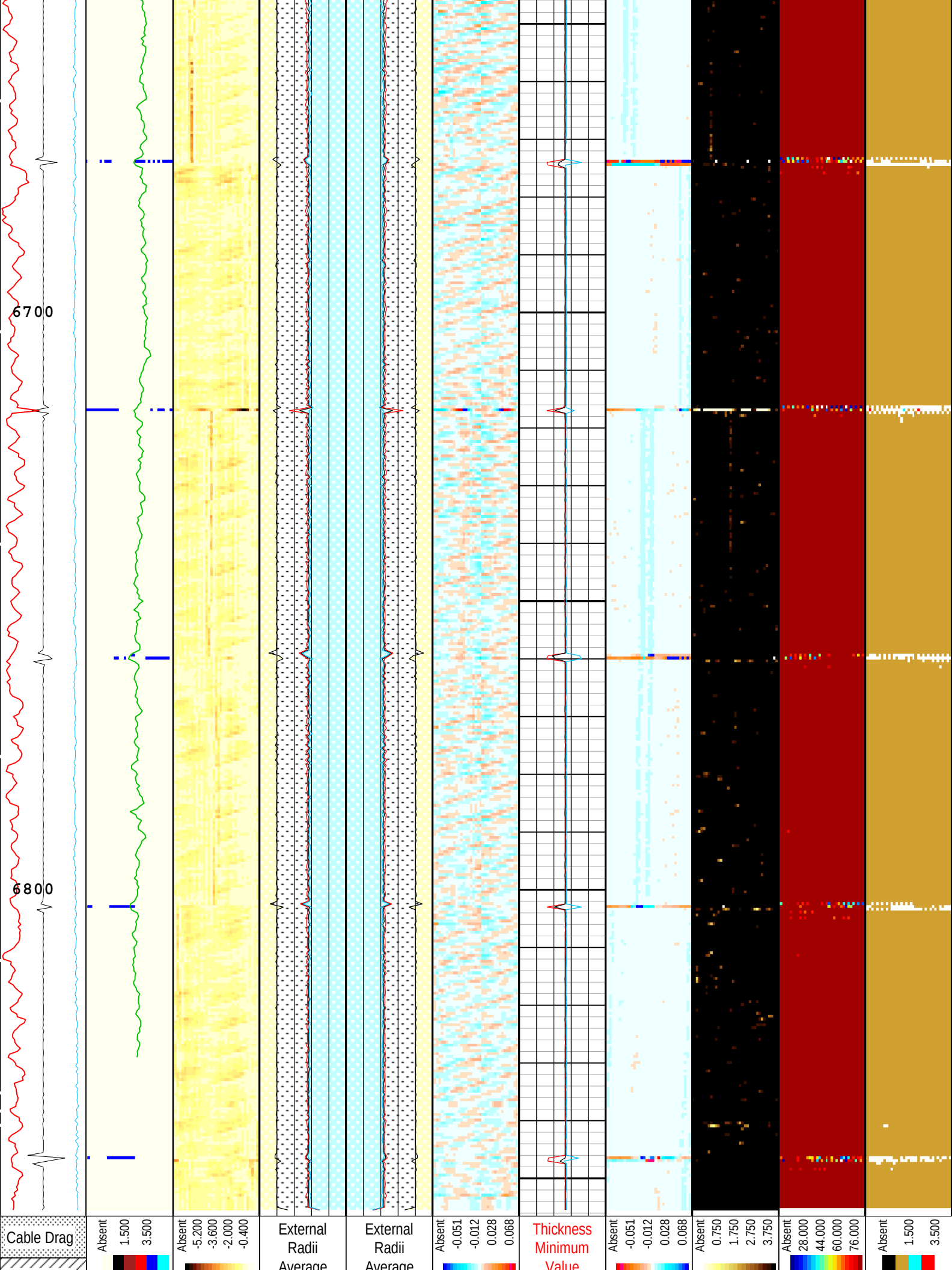
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3.500
Absent
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-3.600
-2.000
-0.400
External Radii Average
External Radii Average
Absent
-0.051
-0.012
0.028
0.068
Thickness Minimum Value
Absent
-0.051
-0.012
0.028
0.068
Absent
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3.750
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1.500
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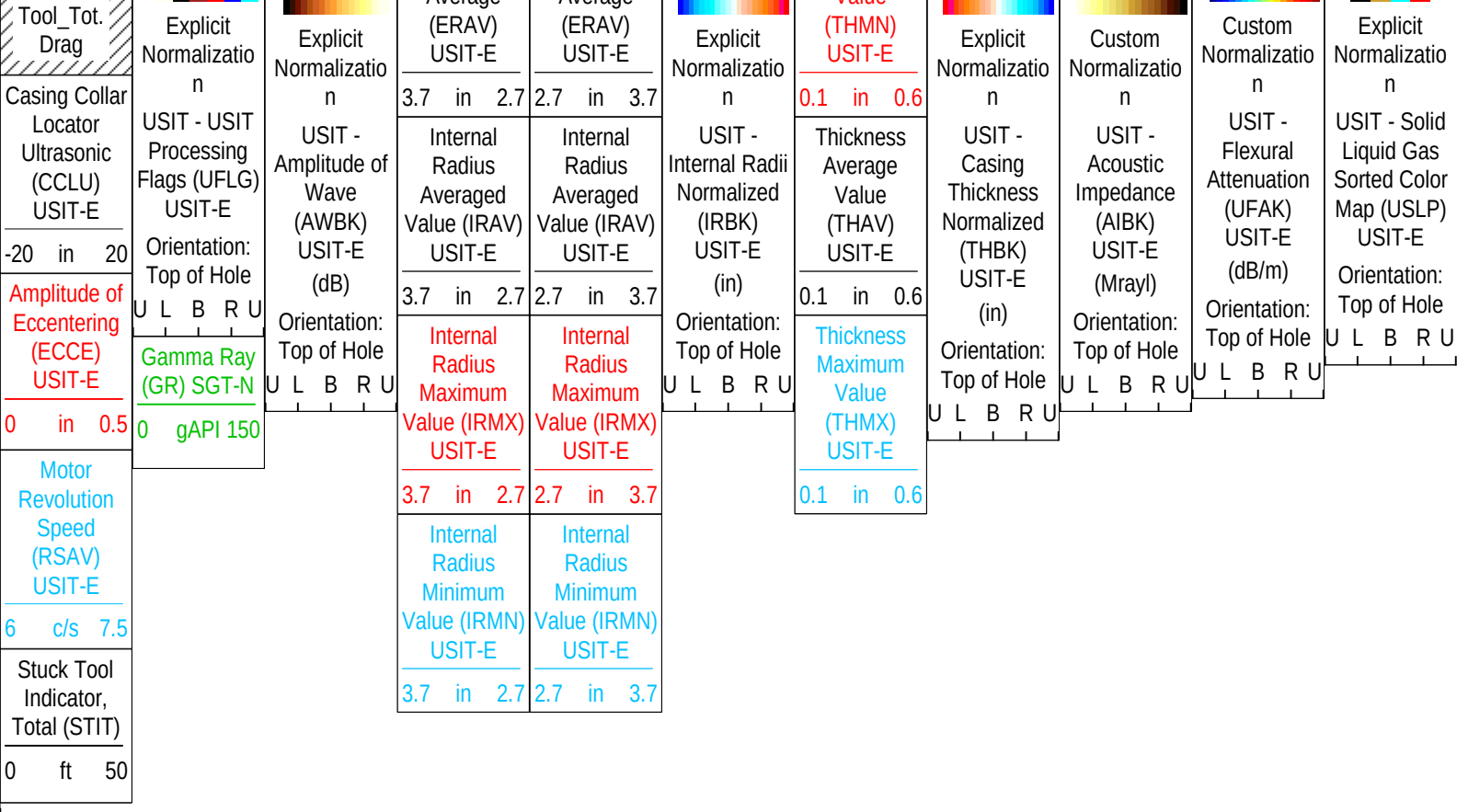


TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: USI IBC SLG Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:40

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
BARI	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	7852	ft
CDEN.1	Cement Density	USIT-E	0	lbm/gal
CDEN.2	Cement Density	SGT-N	16.69	lbm/gal
CMTY	Cement Type	USIT-E	Light Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.01	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	7.81	dB/m
IBC_FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	

IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_BINPROC	ICE Bin Processing Depth Interval	USIT-E	0	ft
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	1.07	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.09	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OCDI	Outer Casing Diameter	USIT-E	0	in
OCSH	Outer Casing Shoe	USIT-E	0	ft
OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7000	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Eccentered	
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFAO	SIT Flexural Attenuation Offset	USIT-E	1.88	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
UTHDP	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	1.6	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	0	1000
BS	8.75	1000	6856.5
MEAS_WLEN	22.5	0	6856.5

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h

TMUC	Type of Mud	USIT-E	BRI	
UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
UNWB	Near Receiver Window Begin Time	USIT-E	102	us
UNWE	Near Receiver Window End Time	USIT-E	142	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6855	ft
USSP	Ultrasonic Service	USIT-E	IBC	
UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	37.61	us
WINE	Window End Time	USIT-E	77.61	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	30	18-Jun-2014 14:56:53	18-Jun-2014 15:06:20	6856.55	6609.45
EMXV	25	18-Jun-2014 15:06:20	18-Jun-2014 15:06:29	6609.45	6603.59
EMXV	30	18-Jun-2014 15:06:29	18-Jun-2014 15:06:33	6603.59	6600.56
EMXV	32	18-Jun-2014 15:06:33	18-Jun-2014 15:08:06	6600.56	6538.8
EMXV	30	18-Jun-2014 15:08:06	18-Jun-2014 15:08:10	6538.8	6535.86
EMXV	28	18-Jun-2014 15:08:10	18-Jun-2014 15:08:14	6535.86	6533.37
EMXV	27	18-Jun-2014 15:08:14	18-Jun-2014 15:08:18	6533.37	6530.78
EMXV	24	18-Jun-2014 15:08:18	18-Jun-2014 15:08:23	6530.78	6527.27
EMXV	21	18-Jun-2014 15:08:23	18-Jun-2014 15:08:27	6527.27	6524.59
EMXV	18	18-Jun-2014 15:08:27	18-Jun-2014 15:08:32	6524.59	6521.38
EMXV	15	18-Jun-2014 15:08:32	18-Jun-2014 15:08:35	6521.38	6519.03
EMXV	12	18-Jun-2014 15:08:35	18-Jun-2014 15:08:38	6519.03	6517.02
EMXV	9	18-Jun-2014 15:08:38	18-Jun-2014 15:08:41	6517.02	6514.88
EMXV	6	18-Jun-2014 15:08:41	18-Jun-2014 15:08:51	6514.88	6508.56
EMXV	3	18-Jun-2014 15:08:51	18-Jun-2014 15:09:00	6508.56	6502.32
EMXV	0	18-Jun-2014 15:09:00	18-Jun-2014 15:55:40	6502.32	4637.5
EMXV	3	18-Jun-2014 15:55:40	18-Jun-2014 15:56:04	4637.5	4621.3
EMXV	6	18-Jun-2014 15:56:04	18-Jun-2014 15:58:52	4621.3	4508.62
EMXV	3	18-Jun-2014 15:58:52	18-Jun-2014 15:59:02	4508.62	4502.23
EMXV	0	18-Jun-2014 15:59:02	18-Jun-2014 15:59:30	4502.23	4483.47
EMXV	3	18-Jun-2014 15:59:30	18-Jun-2014 16:03:50	4483.47	4308.74
EMXV	6	18-Jun-2014 16:03:50	18-Jun-2014 16:07:44	4308.74	4149.66
EMXV	9	18-Jun-2014 16:07:44	18-Jun-2014 16:07:52	4149.66	4144.2
EMXV	12	18-Jun-2014 16:07:52	18-Jun-2014 16:08:03	4144.2	4136.81
EMXV	15	18-Jun-2014 16:08:03	18-Jun-2014 16:14:11	4136.81	3896.22
EMXV	18	18-Jun-2014 16:14:11	18-Jun-2014 16:14:25	3896.22	3887.17
EMXV	21	18-Jun-2014 16:14:25	18-Jun-2014 16:14:33	3887.17	3882.19
EMXV	24	18-Jun-2014 16:14:33	18-Jun-2014 16:18:43	3882.19	3718.2

EMXV	27	18-Jun-2014 16:18:43	18-Jun-2014 16:18:54	3718.2	3710.9
EMXV	30	18-Jun-2014 16:18:54	18-Jun-2014 16:19:02	3710.9	3705.82
EMXV	33	18-Jun-2014 16:19:02	18-Jun-2014 16:19:13	3705.82	3698.96
EMXV	36	18-Jun-2014 16:19:13	18-Jun-2014 16:20:00	3698.96	3668.18
EMXV	39	18-Jun-2014 16:20:00	18-Jun-2014 16:20:06	3668.18	3663.93
EMXV	41	18-Jun-2014 16:20:06	18-Jun-2014 16:20:11	3663.93	3660.93
EMXV	44	18-Jun-2014 16:20:11	18-Jun-2014 16:20:16	3660.93	3657.22
EMXV	47	18-Jun-2014 16:20:16	18-Jun-2014 16:20:30	3657.22	3648.08
EMXV	50	18-Jun-2014 16:20:30	18-Jun-2014 16:21:08	3648.08	3623.03
EMXV	53	18-Jun-2014 16:21:08	18-Jun-2014 16:56:50	3623.03	2206.23
EMXV	56	18-Jun-2014 16:56:50	18-Jun-2014 16:56:57	2206.23	2202.02
EMXV	62	18-Jun-2014 16:56:57	18-Jun-2014 16:57:05	2202.02	2196.43
EMXV	65	18-Jun-2014 16:57:05	18-Jun-2014 16:57:11	2196.43	2192.38
EMXV	68	18-Jun-2014 16:57:11	18-Jun-2014 16:57:21	2192.38	2185.86
EMXV	70	18-Jun-2014 16:57:21	18-Jun-2014 16:57:44	2185.86	2170.36
EMXV	75	18-Jun-2014 16:57:44	18-Jun-2014 16:57:57	2170.36	2161.76
EMXV	78	18-Jun-2014 16:57:57	18-Jun-2014 16:58:05	2161.76	2156.5
EMXV	81	18-Jun-2014 16:58:05	18-Jun-2014 16:58:40	2156.5	2132.92
EMXV	85	18-Jun-2014 16:58:40	18-Jun-2014 16:58:46	2132.92	2128.95
EMXV	88	18-Jun-2014 16:58:46	18-Jun-2014 16:58:58	2128.95	2120.97
EMXV	91	18-Jun-2014 16:58:58	18-Jun-2014 16:59:04	2120.97	2117
EMXV	95	18-Jun-2014 16:59:04	18-Jun-2014 17:03:36	2117	1934.41
EMXV	98	18-Jun-2014 17:03:36	18-Jun-2014 17:03:40	1934.41	1931.64
EMXV	100	18-Jun-2014 17:03:40	18-Jun-2014 17:03:45	1931.64	1927.91
EMXV	105	18-Jun-2014 17:03:45	18-Jun-2014 17:51:51	1927.91	12.08
UFWB	133	18-Jun-2014 14:56:53	18-Jun-2014 15:20:57	6856.55	6022.68
UFWB	131.06	18-Jun-2014 15:20:57	18-Jun-2014 15:46:38	6022.68	4997.36
UFWB	126.7	18-Jun-2014 15:46:38	18-Jun-2014 15:46:48	4997.36	4990.68
UFWB	123.22	18-Jun-2014 15:46:48	18-Jun-2014 17:51:51	4990.68	12.08
UFWE	173	18-Jun-2014 14:56:53	18-Jun-2014 15:15:50	6856.55	6227.31
UFWE	185.91	18-Jun-2014 15:15:50	18-Jun-2014 15:20:39	6227.31	6034.72
UFWE	198.98	18-Jun-2014 15:20:39	18-Jun-2014 15:21:00	6034.72	6020.84
UFWE	190.27	18-Jun-2014 15:21:00	18-Jun-2014 17:51:51	6020.84	12.08

All depth are at tool zero.

USI IBC SLG

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[7]:Up	6856.55	12.08

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC SLG - 3000 PSI

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001

Computation	Description	Version
DepthCorrection	DepthCorrection	4.0.9213.3000

Tool Elements	Description	Software Version	Firmware Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000	

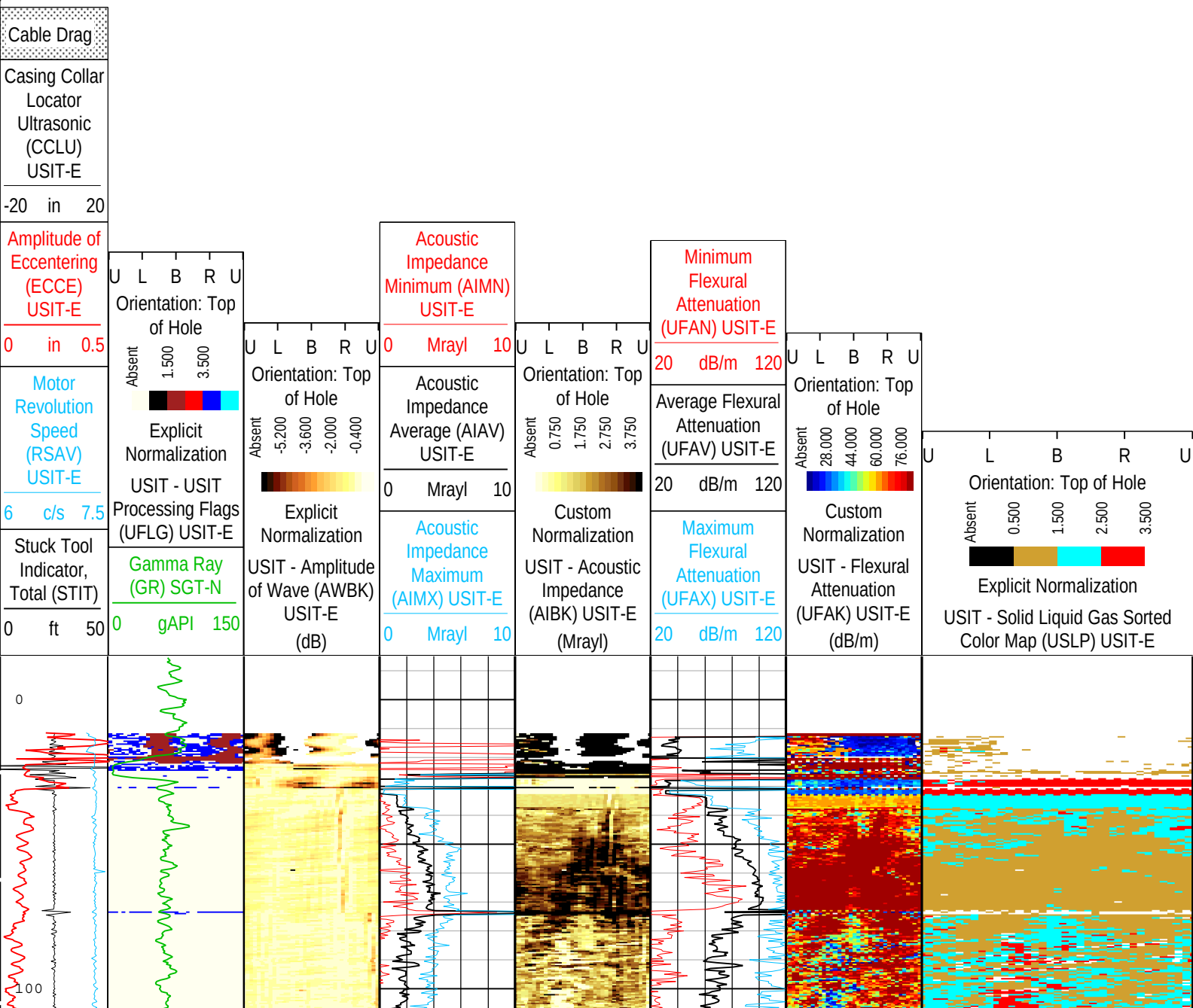
Log

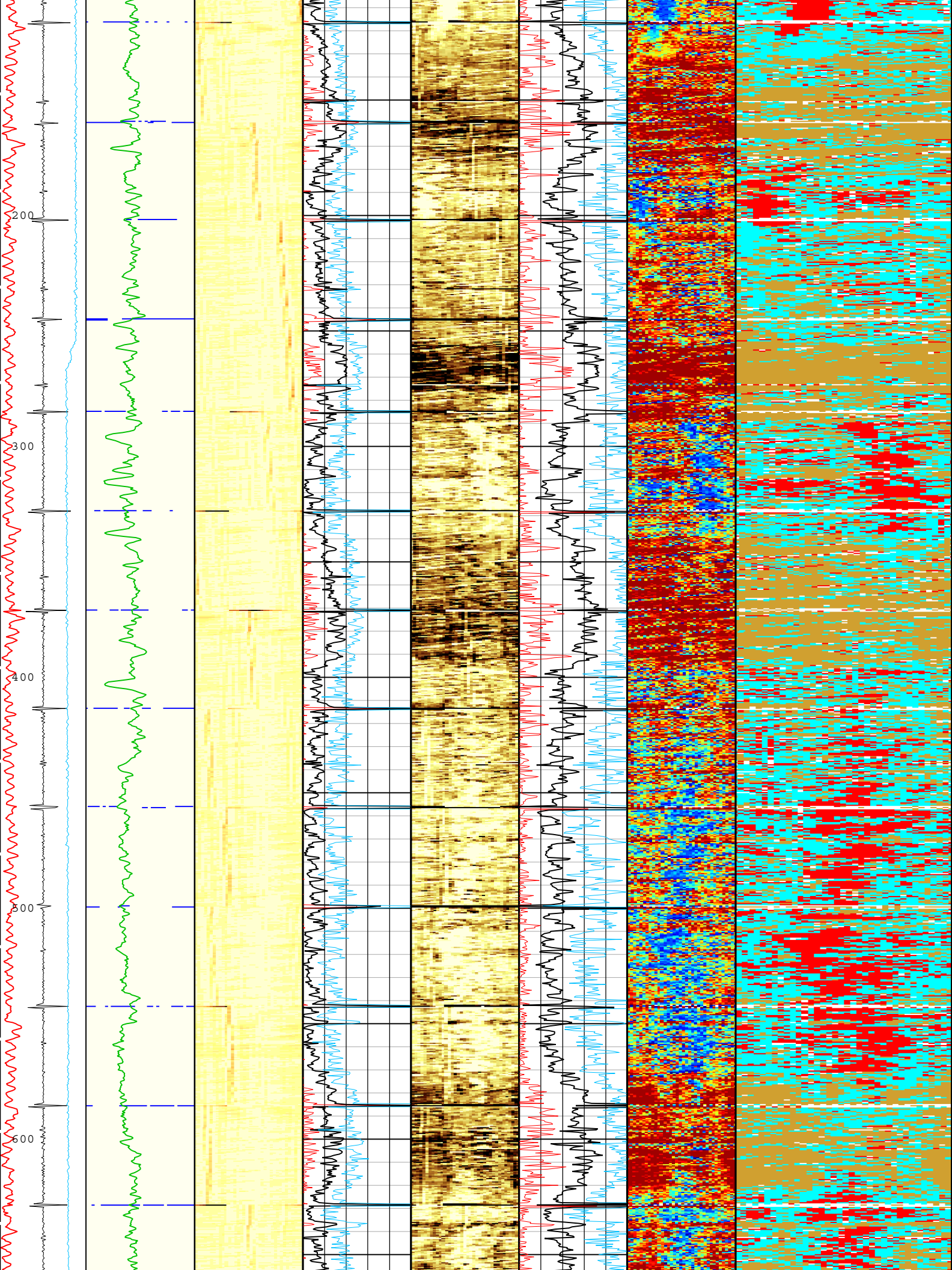
Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

Run 1 : Main[7]:Up:S011

Description: USI IBC SLG Format: USI IBC SLG Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:50

TIME_1900 - Time Marked every 60.00 (s)

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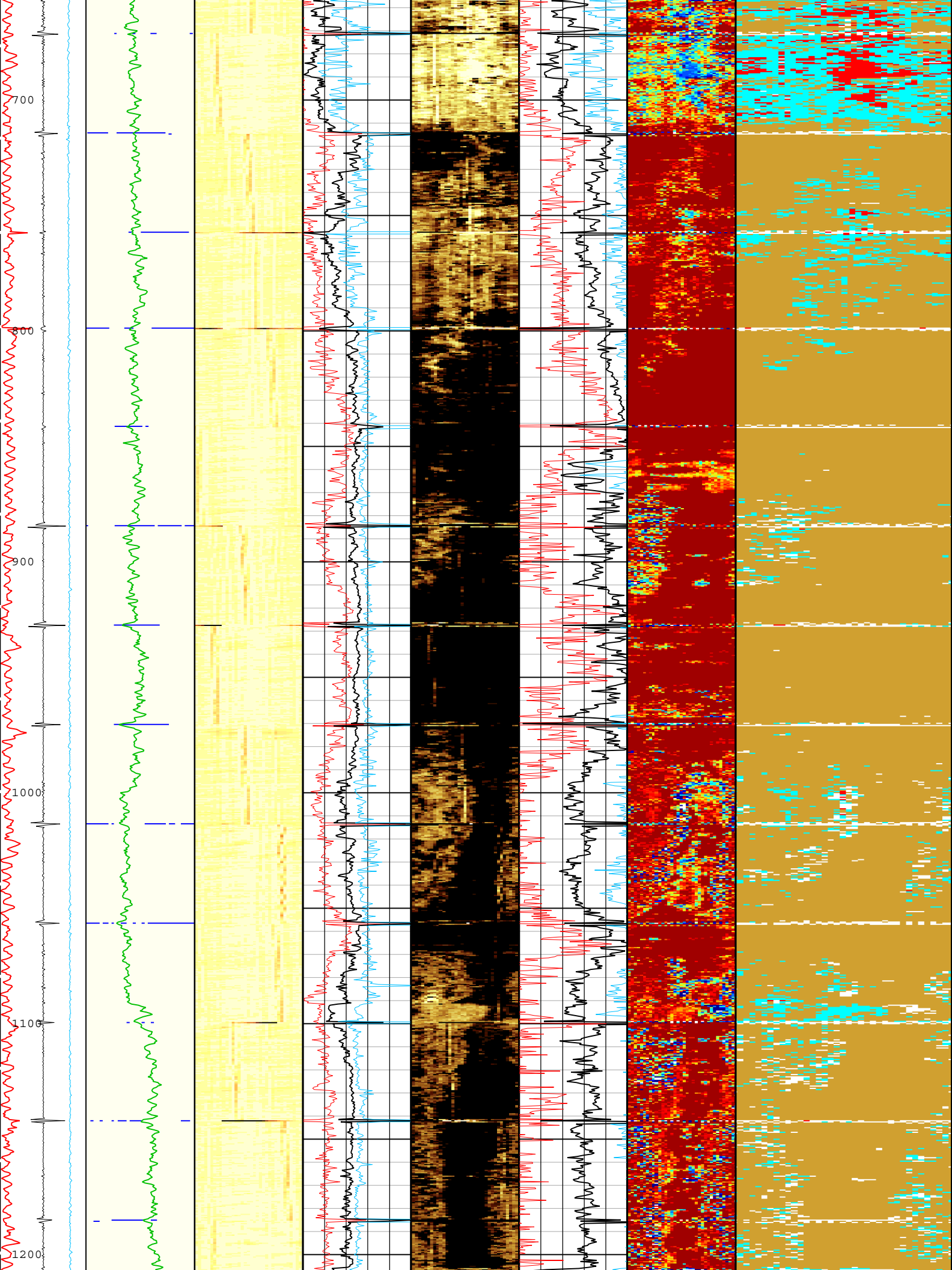
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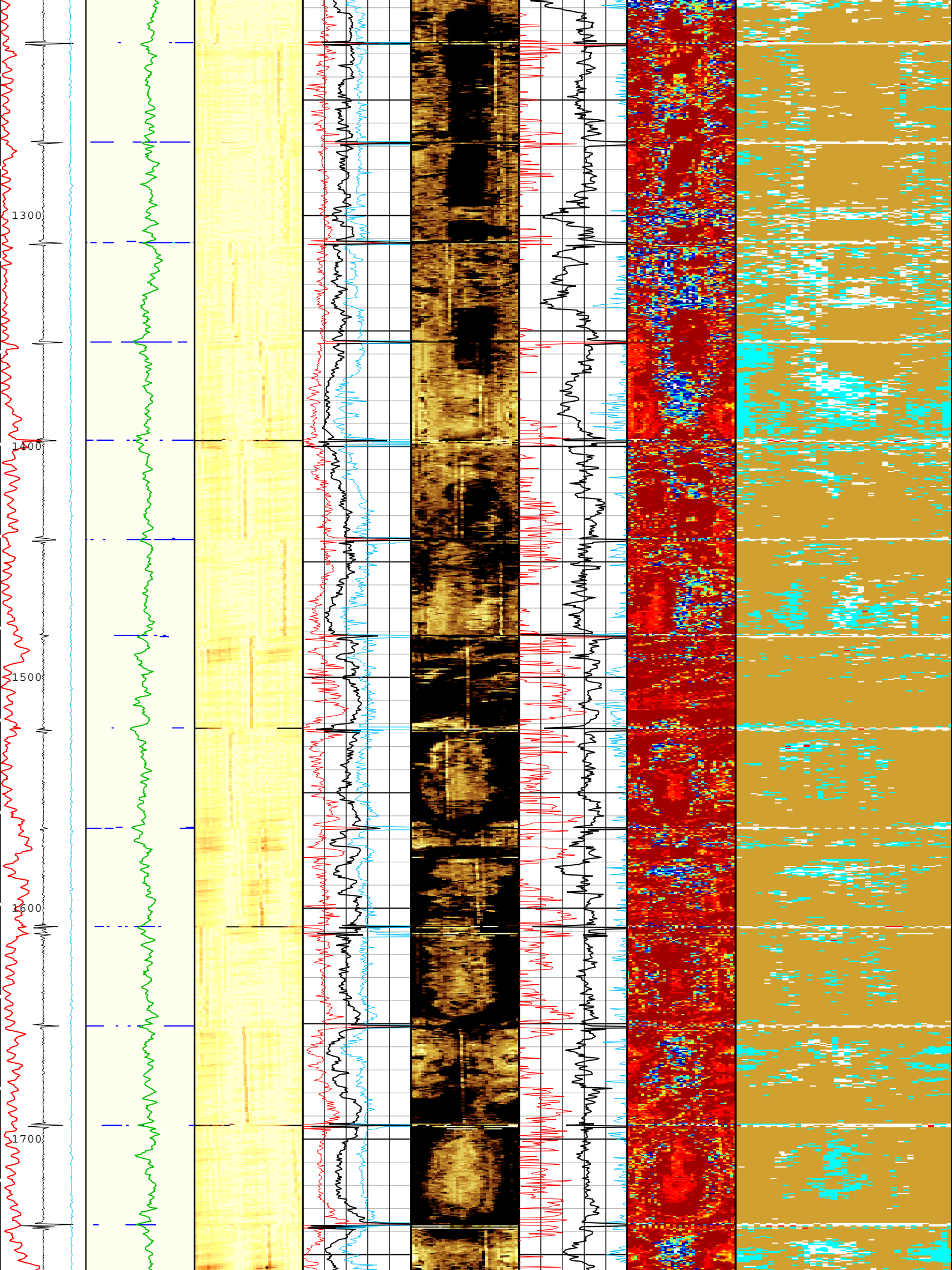
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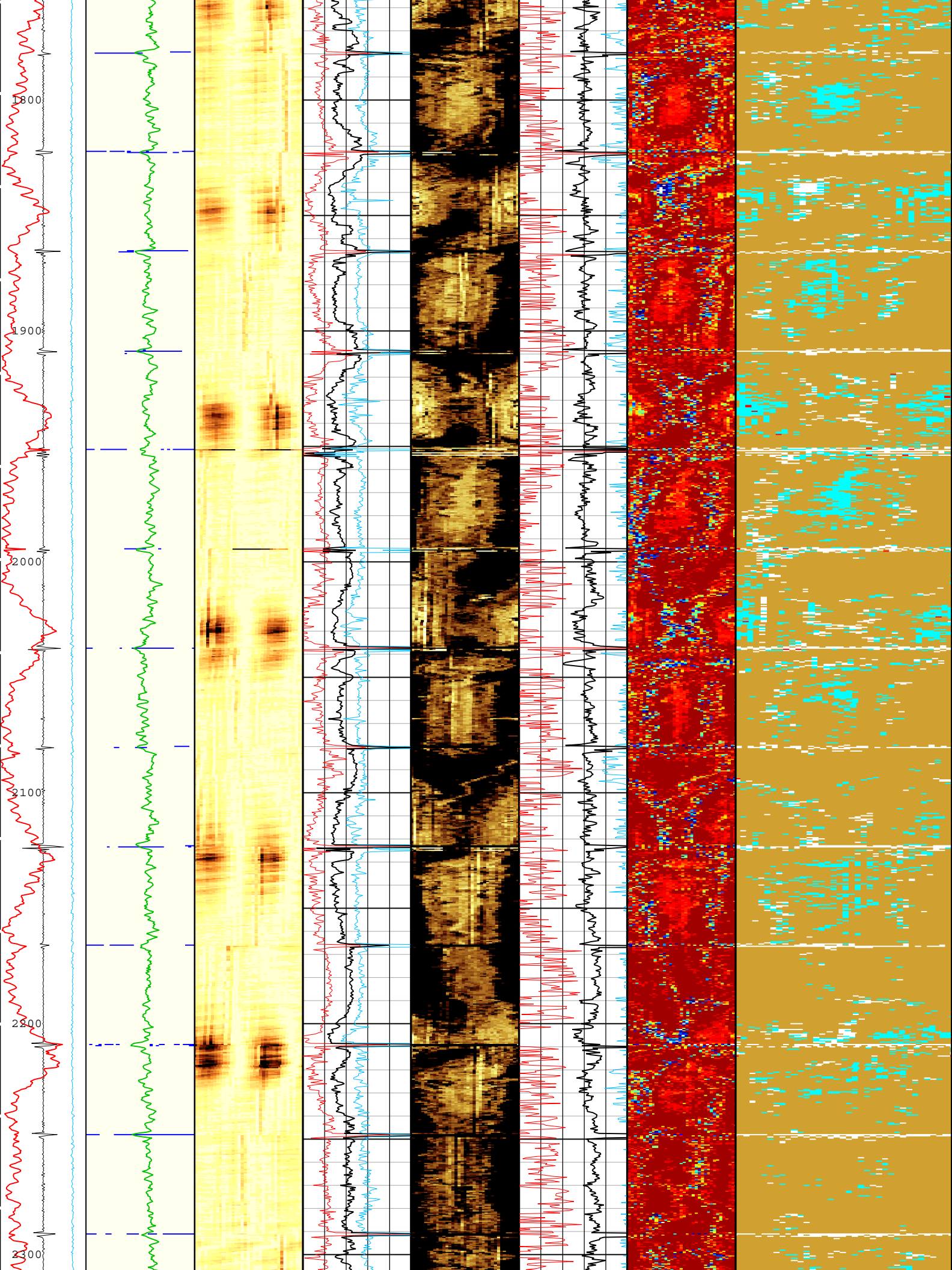
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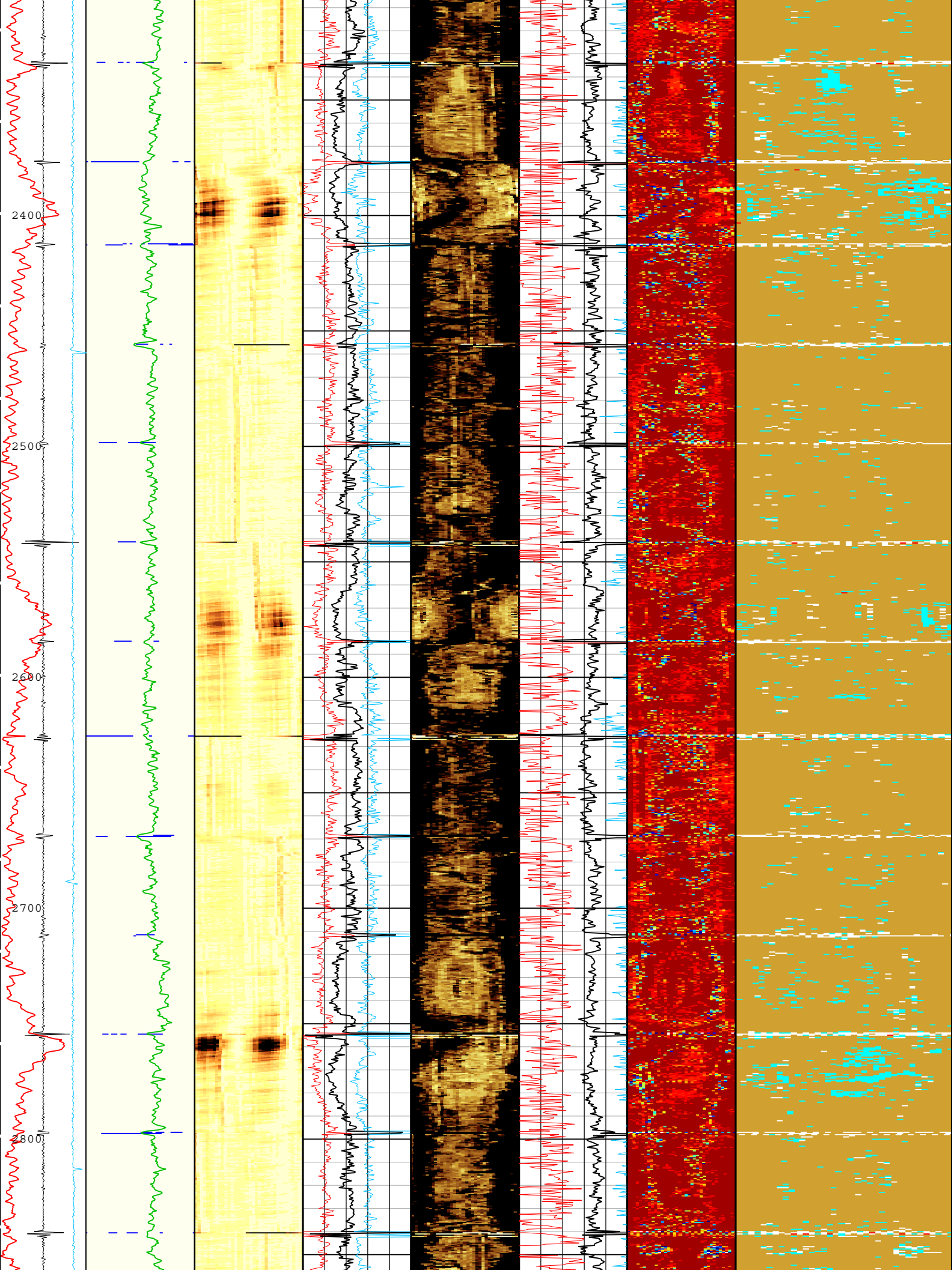
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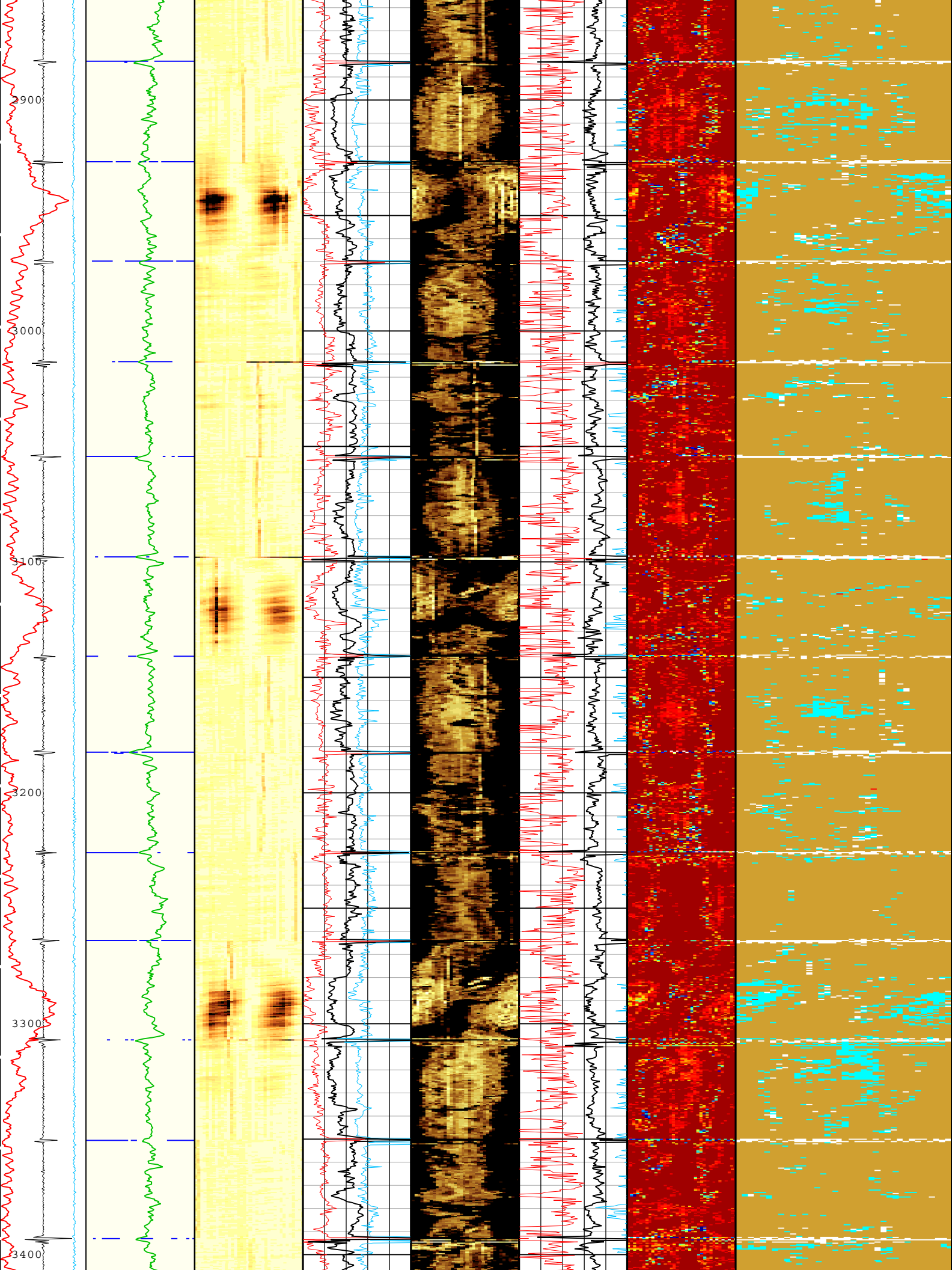
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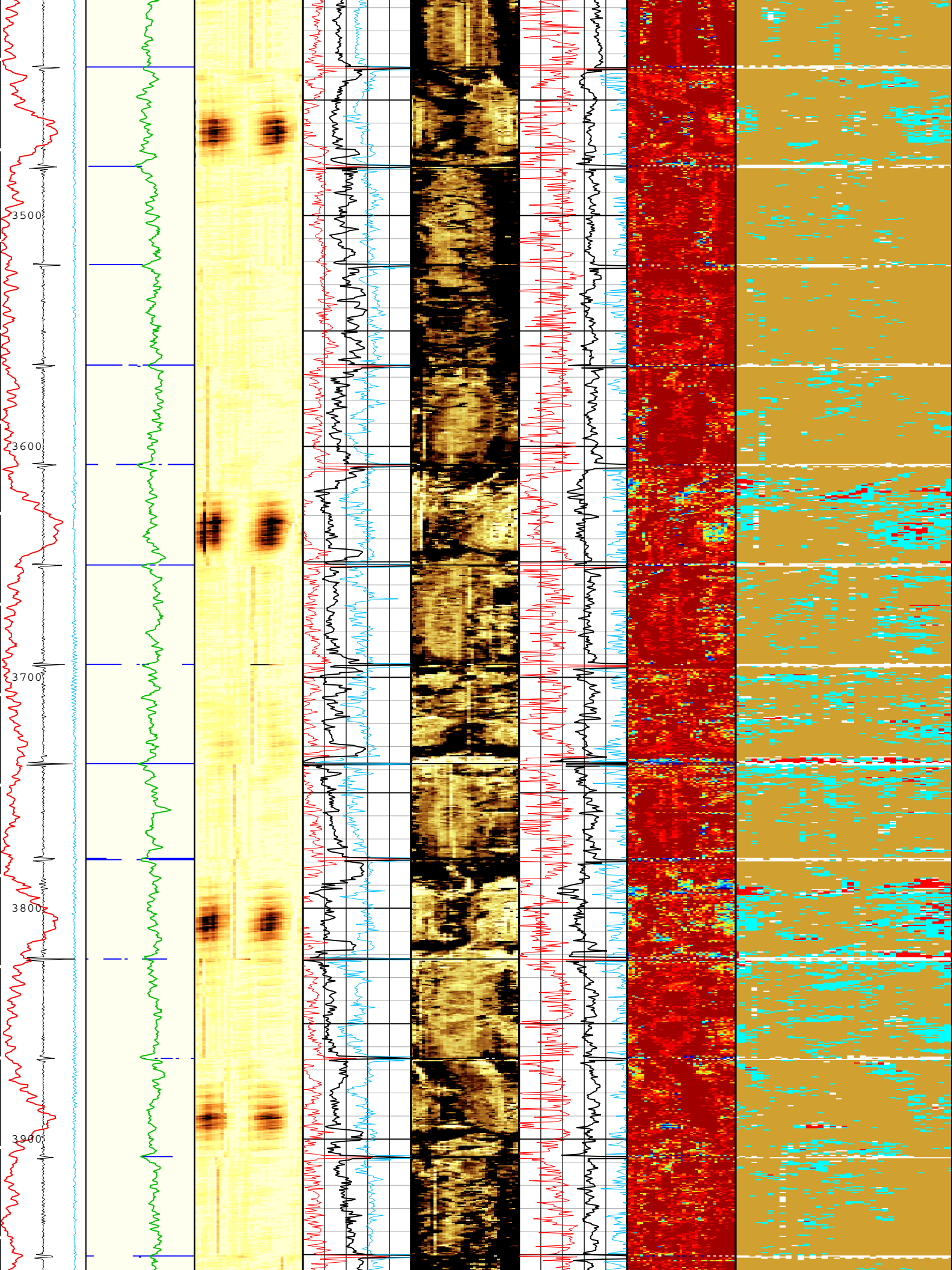
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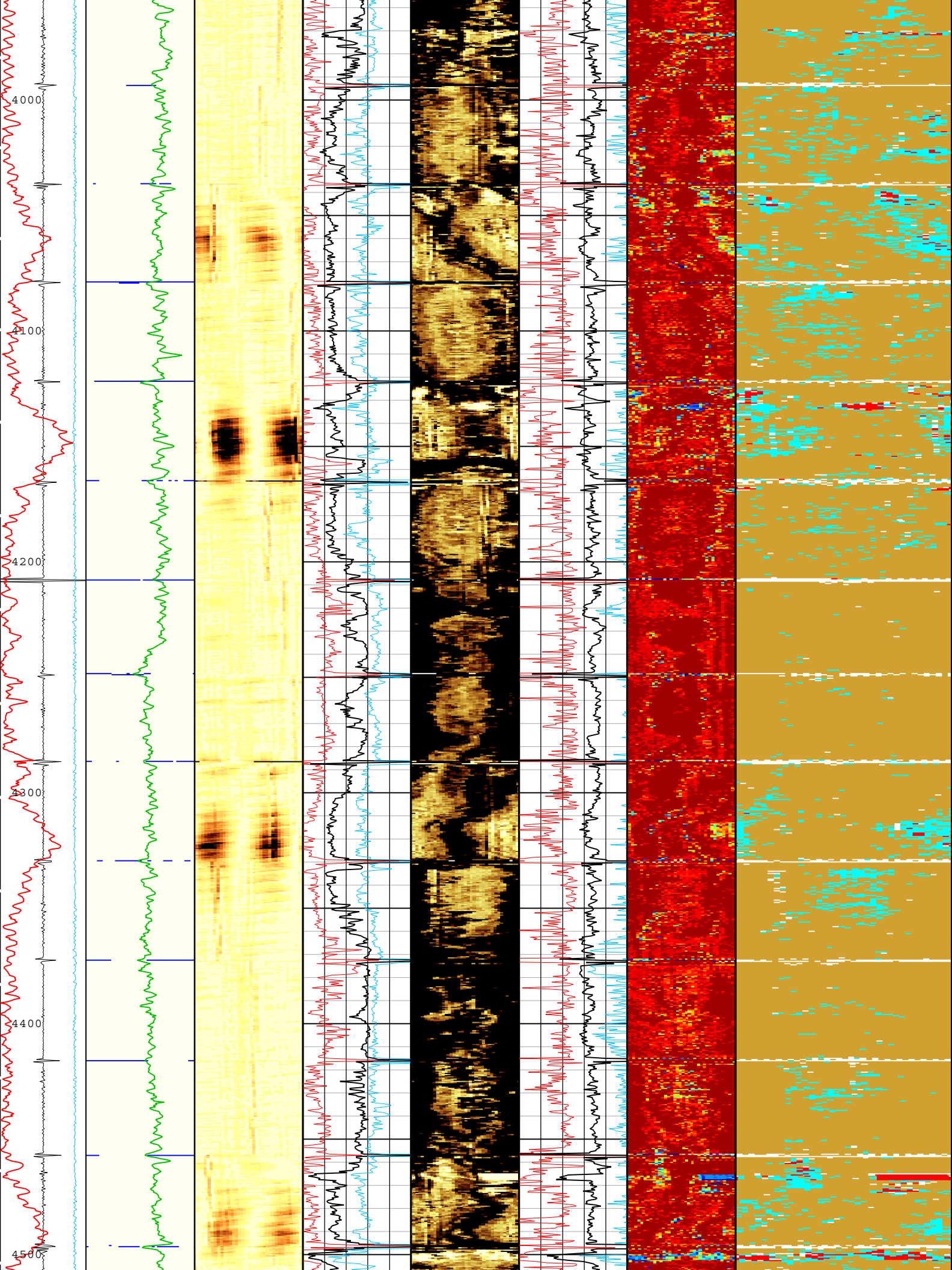
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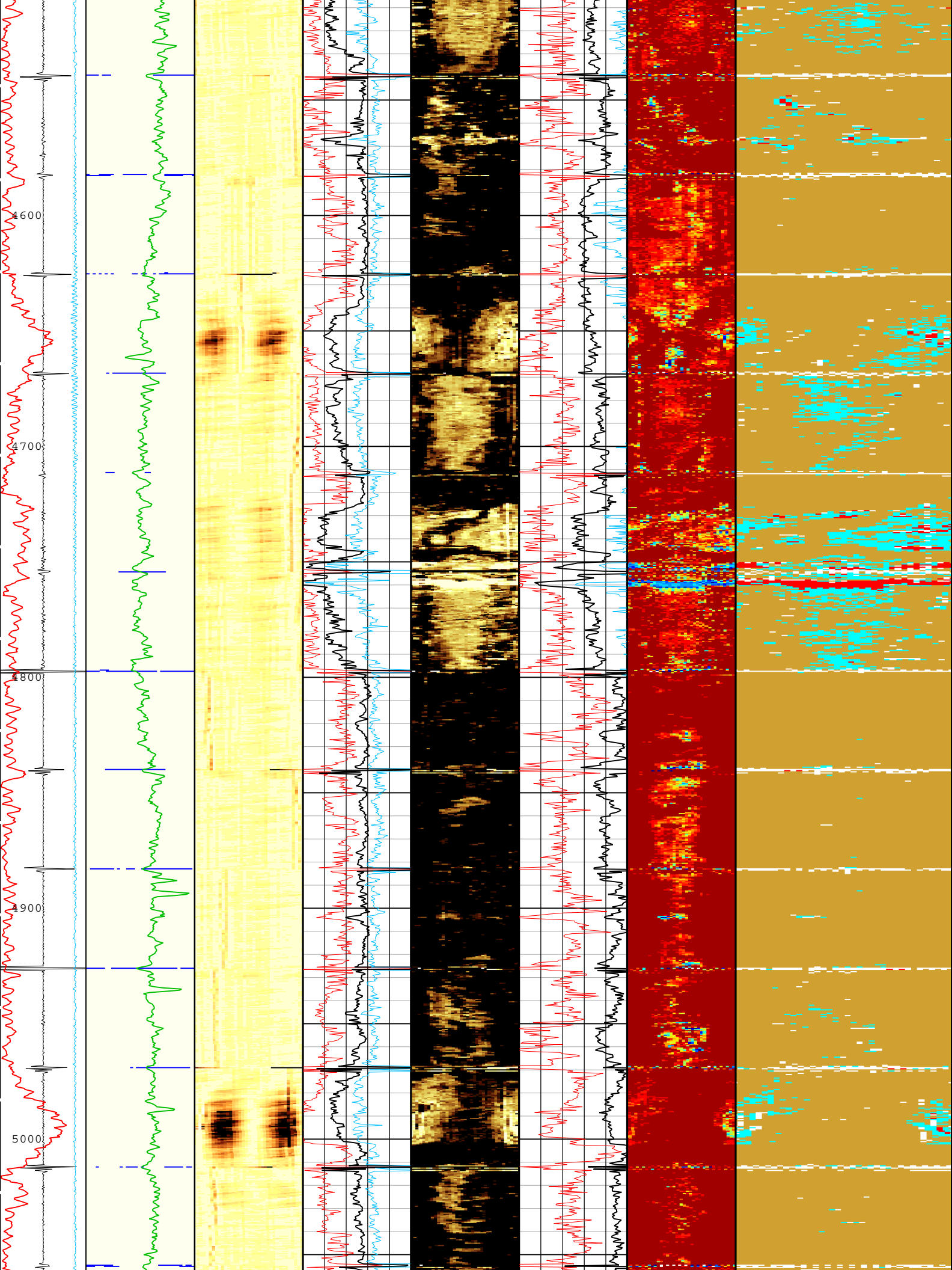
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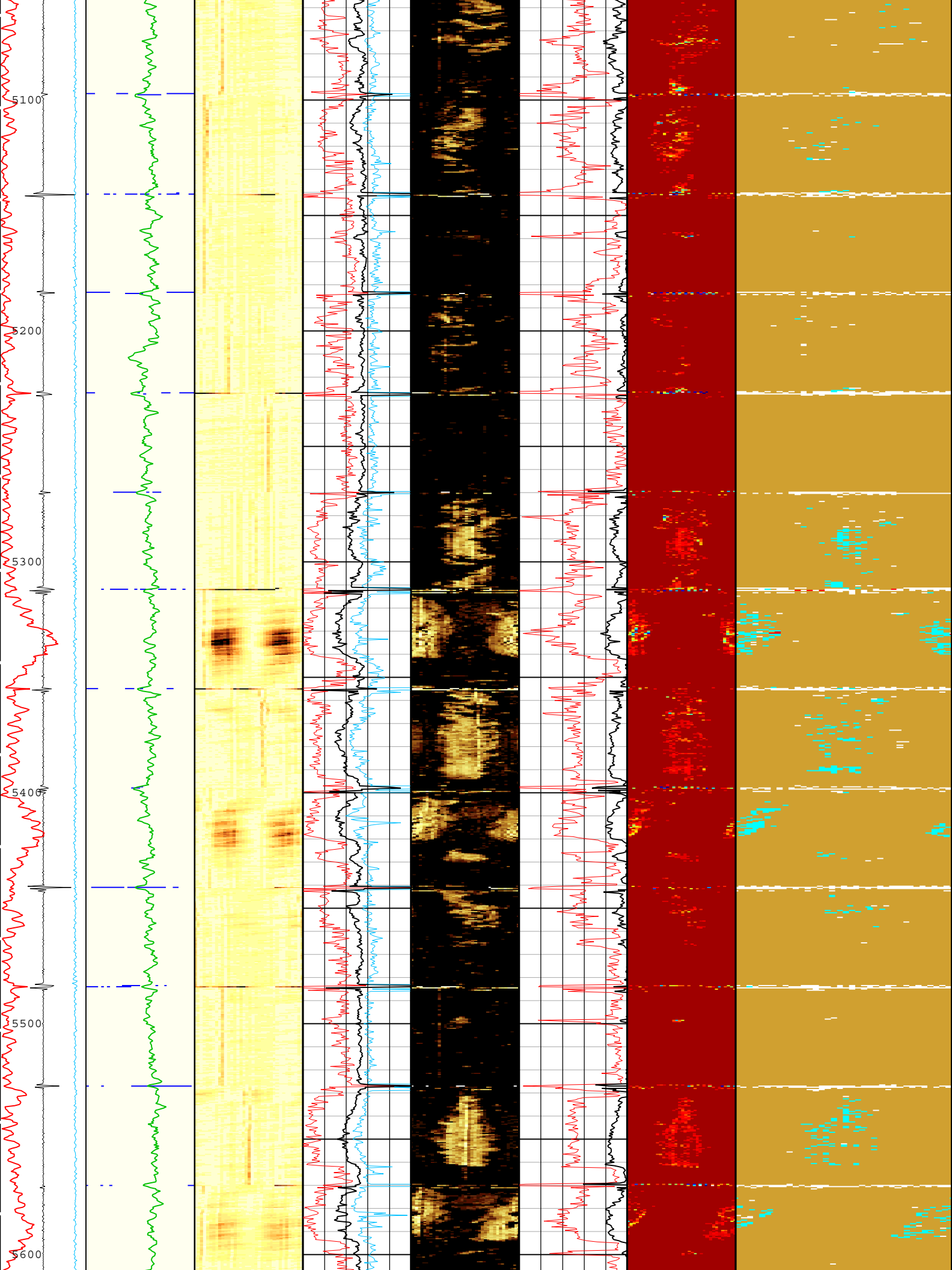
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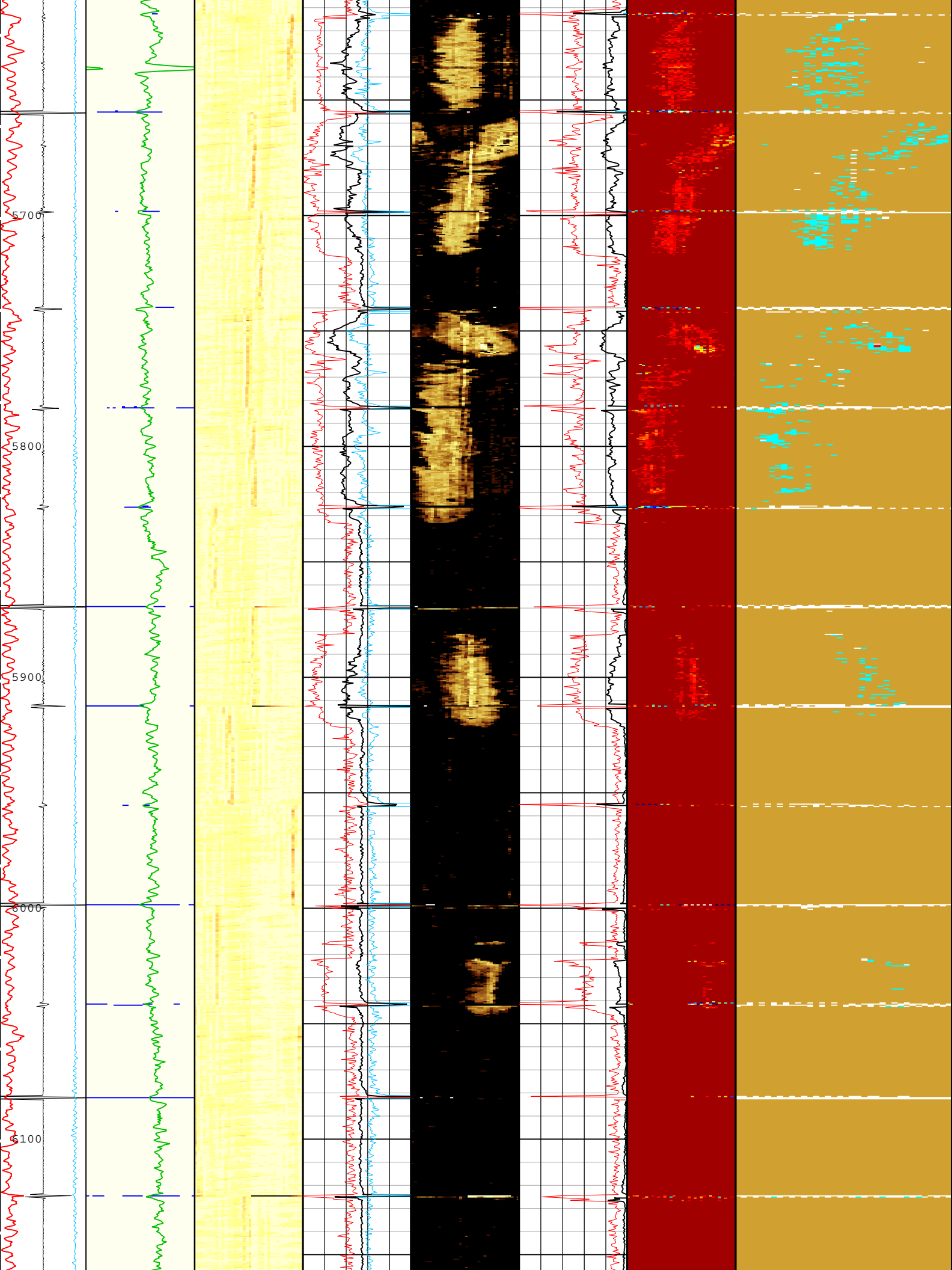
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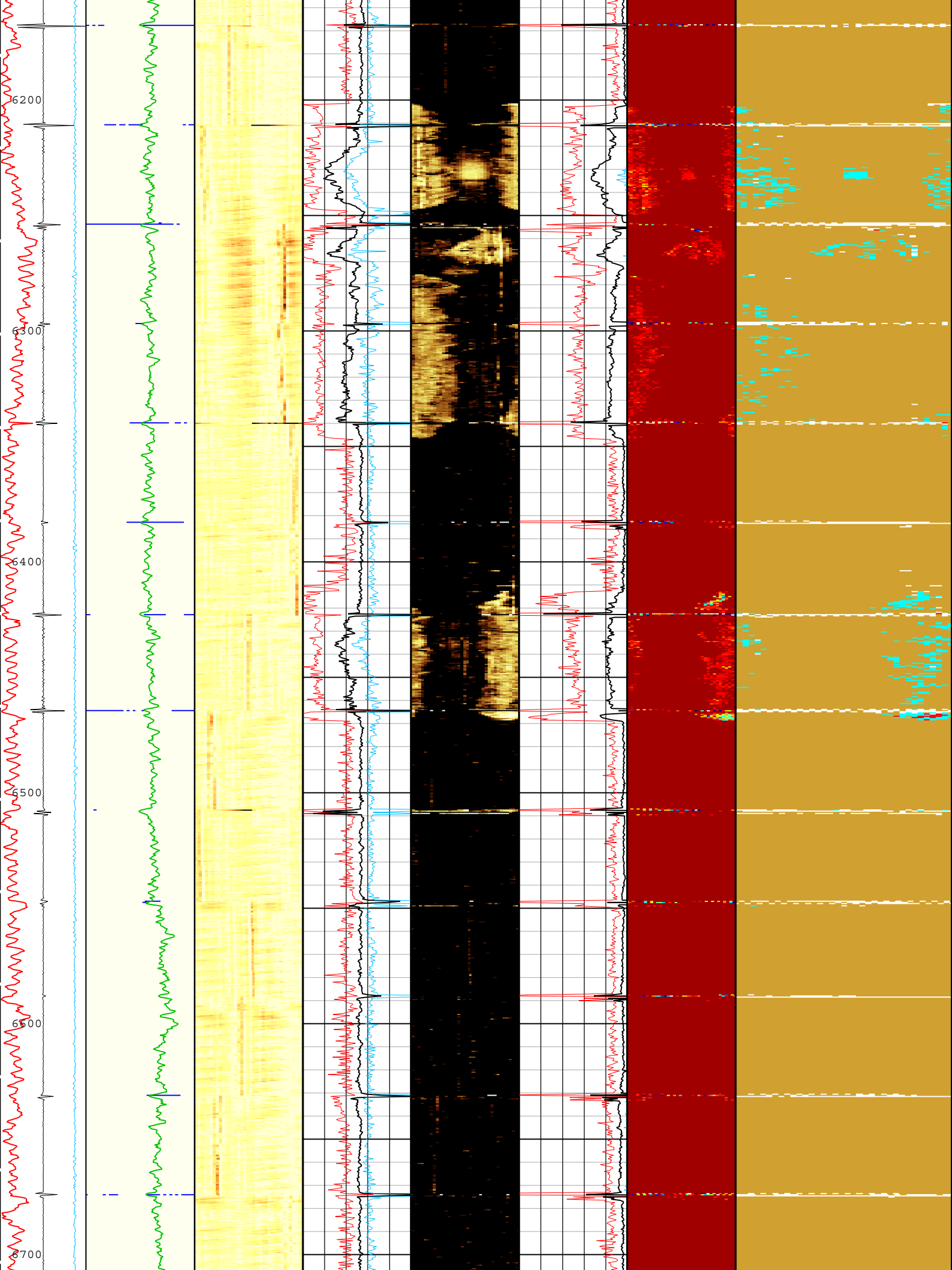
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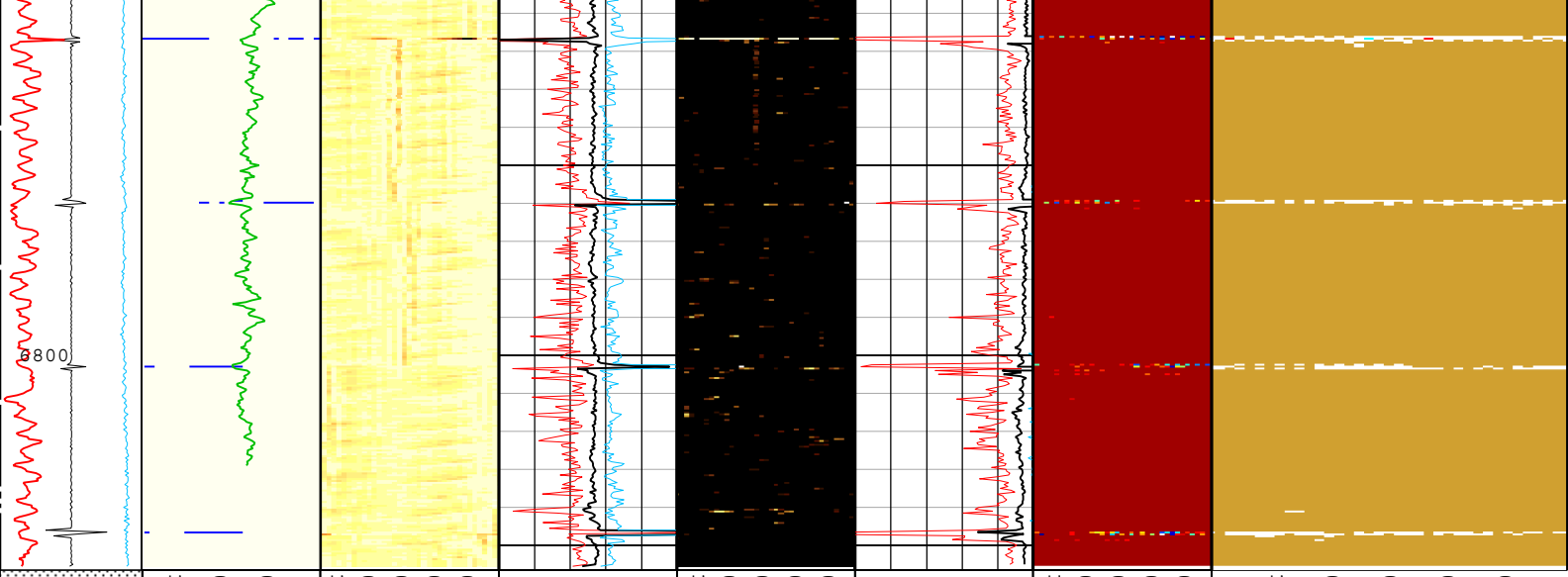


Cable Drag

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

Stuck Tool Indicator, Total (STIT)

0 ft 50

Absent 1.500 3.500

Explicit Normalization

USIT - USIT Processing Flags (UFLG) USIT-E

Orientation: Top of Hole

U L B R U

Gamma Ray (GR) SGT-N

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

0 Mrayl 10

Acoustic Impedance Average (AIAV) USIT-E

0 Mrayl 10

Acoustic Impedance Maximum (AIMX) USIT-E

0 Mrayl 10

Absent 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Acoustic Impedance (AIBK) USIT-E

(Mrayl)

Orientation: Top of Hole

U L B R U

Minimum Flexural Attenuation (UFAN) USIT-E

20 dB/m 120

Average Flexural Attenuation (UFAV) USIT-E

20 dB/m 120

Maximum Flexural Attenuation (UFAX) USIT-E

20 dB/m 120

Absent 28.000 44.000 60.000 76.000

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: USI IBC SLG Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:50

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
BARI	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	7852	ft
CDEN.1	Cement Density	USIT-E	0	lbm/gal
CDEN.2	Cement Density	SGT-N	16.69	lbm/gal
CMTY	Cement Type	USIT-E	Light Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	

DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.01	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	7.81	dB/m
IBC_FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_BINPROC	ICE Bin Processing Depth Interval	USIT-E	0	ft
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	1.07	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.09	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OCDI	Outer Casing Diameter	USIT-E	0	in
OCSH	Outer Casing Shoe	USIT-E	0	ft
OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7000	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Eccentered	
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFAO	SIT Flexural Attenuation Offset	USIT-E	1.88	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
UTHDP	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	1.6	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	0	1000
BS	8.75	1000	6856.5
MEAS_WLEN	22.5	0	6856.5

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
TMUC	Type of Mud	USIT-E	BRI	
UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
UNWB	Near Receiver Window Begin Time	USIT-E	102	us
UNWE	Near Receiver Window End Time	USIT-E	142	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6855	ft
USSP	Ultrasonic Service	USIT-E	IBC	
UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	37.61	us
WINE	Window End Time	USIT-E	77.61	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	30	18-Jun-2014 14:56:53	18-Jun-2014 15:06:20	6856.55	6609.45
EMXV	25	18-Jun-2014 15:06:20	18-Jun-2014 15:06:29	6609.45	6603.59
EMXV	30	18-Jun-2014 15:06:29	18-Jun-2014 15:06:33	6603.59	6600.56
EMXV	32	18-Jun-2014 15:06:33	18-Jun-2014 15:08:06	6600.56	6538.8
EMXV	30	18-Jun-2014 15:08:06	18-Jun-2014 15:08:10	6538.8	6535.86
EMXV	28	18-Jun-2014 15:08:10	18-Jun-2014 15:08:14	6535.86	6533.37
EMXV	27	18-Jun-2014 15:08:14	18-Jun-2014 15:08:18	6533.37	6530.78
EMXV	24	18-Jun-2014 15:08:18	18-Jun-2014 15:08:23	6530.78	6527.27
EMXV	21	18-Jun-2014 15:08:23	18-Jun-2014 15:08:27	6527.27	6524.59
EMXV	18	18-Jun-2014 15:08:27	18-Jun-2014 15:08:32	6524.59	6521.38
EMXV	15	18-Jun-2014 15:08:32	18-Jun-2014 15:08:35	6521.38	6519.03
EMXV	12	18-Jun-2014 15:08:35	18-Jun-2014 15:08:38	6519.03	6517.02
EMXV	9	18-Jun-2014 15:08:38	18-Jun-2014 15:08:41	6517.02	6514.88
EMXV	6	18-Jun-2014 15:08:41	18-Jun-2014 15:08:51	6514.88	6508.56
EMXV	3	18-Jun-2014 15:08:51	18-Jun-2014 15:09:00	6508.56	6502.32
EMXV	0	18-Jun-2014 15:09:00	18-Jun-2014 15:55:40	6502.32	4637.5

EMXV	3	18-Jun-2014 15:55:40	18-Jun-2014 15:56:04	4637.5	4621.3
EMXV	6	18-Jun-2014 15:56:04	18-Jun-2014 15:58:52	4621.3	4508.62
EMXV	3	18-Jun-2014 15:58:52	18-Jun-2014 15:59:02	4508.62	4502.23
EMXV	0	18-Jun-2014 15:59:02	18-Jun-2014 15:59:30	4502.23	4483.47
EMXV	3	18-Jun-2014 15:59:30	18-Jun-2014 16:03:50	4483.47	4308.74
EMXV	6	18-Jun-2014 16:03:50	18-Jun-2014 16:07:44	4308.74	4149.66
EMXV	9	18-Jun-2014 16:07:44	18-Jun-2014 16:07:52	4149.66	4144.2
EMXV	12	18-Jun-2014 16:07:52	18-Jun-2014 16:08:03	4144.2	4136.81
EMXV	15	18-Jun-2014 16:08:03	18-Jun-2014 16:14:11	4136.81	3896.22
EMXV	18	18-Jun-2014 16:14:11	18-Jun-2014 16:14:25	3896.22	3887.17
EMXV	21	18-Jun-2014 16:14:25	18-Jun-2014 16:14:33	3887.17	3882.19
EMXV	24	18-Jun-2014 16:14:33	18-Jun-2014 16:18:43	3882.19	3718.2
EMXV	27	18-Jun-2014 16:18:43	18-Jun-2014 16:18:54	3718.2	3710.9
EMXV	30	18-Jun-2014 16:18:54	18-Jun-2014 16:19:02	3710.9	3705.82
EMXV	33	18-Jun-2014 16:19:02	18-Jun-2014 16:19:13	3705.82	3698.96
EMXV	36	18-Jun-2014 16:19:13	18-Jun-2014 16:20:00	3698.96	3668.18
EMXV	39	18-Jun-2014 16:20:00	18-Jun-2014 16:20:06	3668.18	3663.93
EMXV	41	18-Jun-2014 16:20:06	18-Jun-2014 16:20:11	3663.93	3660.93
EMXV	44	18-Jun-2014 16:20:11	18-Jun-2014 16:20:16	3660.93	3657.22
EMXV	47	18-Jun-2014 16:20:16	18-Jun-2014 16:20:30	3657.22	3648.08
EMXV	50	18-Jun-2014 16:20:30	18-Jun-2014 16:21:08	3648.08	3623.03
EMXV	53	18-Jun-2014 16:21:08	18-Jun-2014 16:56:50	3623.03	2206.23
EMXV	56	18-Jun-2014 16:56:50	18-Jun-2014 16:56:57	2206.23	2202.02
EMXV	62	18-Jun-2014 16:56:57	18-Jun-2014 16:57:05	2202.02	2196.43
EMXV	65	18-Jun-2014 16:57:05	18-Jun-2014 16:57:11	2196.43	2192.38
EMXV	68	18-Jun-2014 16:57:11	18-Jun-2014 16:57:21	2192.38	2185.86
EMXV	70	18-Jun-2014 16:57:21	18-Jun-2014 16:57:44	2185.86	2170.36
EMXV	75	18-Jun-2014 16:57:44	18-Jun-2014 16:57:57	2170.36	2161.76
EMXV	78	18-Jun-2014 16:57:57	18-Jun-2014 16:58:05	2161.76	2156.5
EMXV	81	18-Jun-2014 16:58:05	18-Jun-2014 16:58:40	2156.5	2132.92
EMXV	85	18-Jun-2014 16:58:40	18-Jun-2014 16:58:46	2132.92	2128.95
EMXV	88	18-Jun-2014 16:58:46	18-Jun-2014 16:58:58	2128.95	2120.97
EMXV	91	18-Jun-2014 16:58:58	18-Jun-2014 16:59:04	2120.97	2117
EMXV	95	18-Jun-2014 16:59:04	18-Jun-2014 17:03:36	2117	1934.41
EMXV	98	18-Jun-2014 17:03:36	18-Jun-2014 17:03:40	1934.41	1931.64
EMXV	100	18-Jun-2014 17:03:40	18-Jun-2014 17:03:45	1931.64	1927.91
EMXV	105	18-Jun-2014 17:03:45	18-Jun-2014 17:51:51	1927.91	12.08
UFWB	133	18-Jun-2014 14:56:53	18-Jun-2014 15:20:57	6856.55	6022.68
UFWB	131.06	18-Jun-2014 15:20:57	18-Jun-2014 15:46:38	6022.68	4997.36
UFWB	126.7	18-Jun-2014 15:46:38	18-Jun-2014 15:46:48	4997.36	4990.68
UFWB	123.22	18-Jun-2014 15:46:48	18-Jun-2014 17:51:51	4990.68	12.08
UFWE	173	18-Jun-2014 14:56:53	18-Jun-2014 15:15:50	6856.55	6227.31
UFWE	185.91	18-Jun-2014 15:15:50	18-Jun-2014 15:20:39	6227.31	6034.72
UFWE	198.98	18-Jun-2014 15:20:39	18-Jun-2014 15:21:00	6034.72	6020.84

UFWE	190.27	18-Jun-2014 15:21:00	18-Jun-2014 17:51:51	6020.84	12.08

All depth are at tool zero.

USI Goodwin

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[7]:Up	6856.55	12.08

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC Goodwin Compressed - 3000 PSI

Log

Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

Run 1 : Main[7]:Up:S011

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:55

TIME_1900 - Time Marked every 60.00 (s)

Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E 0 Mrayl 15	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E 0 Mrayl 15	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E 0 Mrayl 15	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E 0 Mrayl 15				
Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E 0 Mrayl 15	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E 0 Mrayl 15	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E 0 Mrayl 15	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E 0 Mrayl 15				
Average Acoustic Impedance 1 (AV_AI1) USIT-E 0 Mrayl 15	Average Acoustic Impedance 3 (AV_AI3) USIT-E 0 Mrayl 15	Average Acoustic Impedance 5 (AV_AI5) USIT-E 0 Mrayl 15	Average Acoustic Impedance 7 (AV_AI7) USIT-E 0 Mrayl 15				
Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E -7.5 Mrayl 7.5	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E -7.5 Mrayl 7.5	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E -7.5 Mrayl 7.5	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E -7.5 Mrayl 7.5	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E 0 Mrayl 15	Acoustic Impedance Maximum (AIMX) USIT-E 0 Mrayl 7.5	Maximum Flexural Attenuation (UFAX) USIT-E 40 dB/m 140	
Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E -7.5 Mrayl 7.5	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E -7.5 Mrayl 7.5	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E -7.5 Mrayl 7.5	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E -7.5 Mrayl 7.5	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E 0 Mrayl 15	Acoustic Impedance Minimum (AIMN) USIT-E 0 Mrayl 7.5	Average Flexural Attenuation (UFAV) USIT-E 40 dB/m 140	
Average Acoustic Impedance 2	Average Acoustic Impedance 4	Average Acoustic Impedance 6	Average Acoustic Impedance 8	Average Acoustic Impedance 9	Acoustic Impedance Average	Minimum Flexural Attenuation	

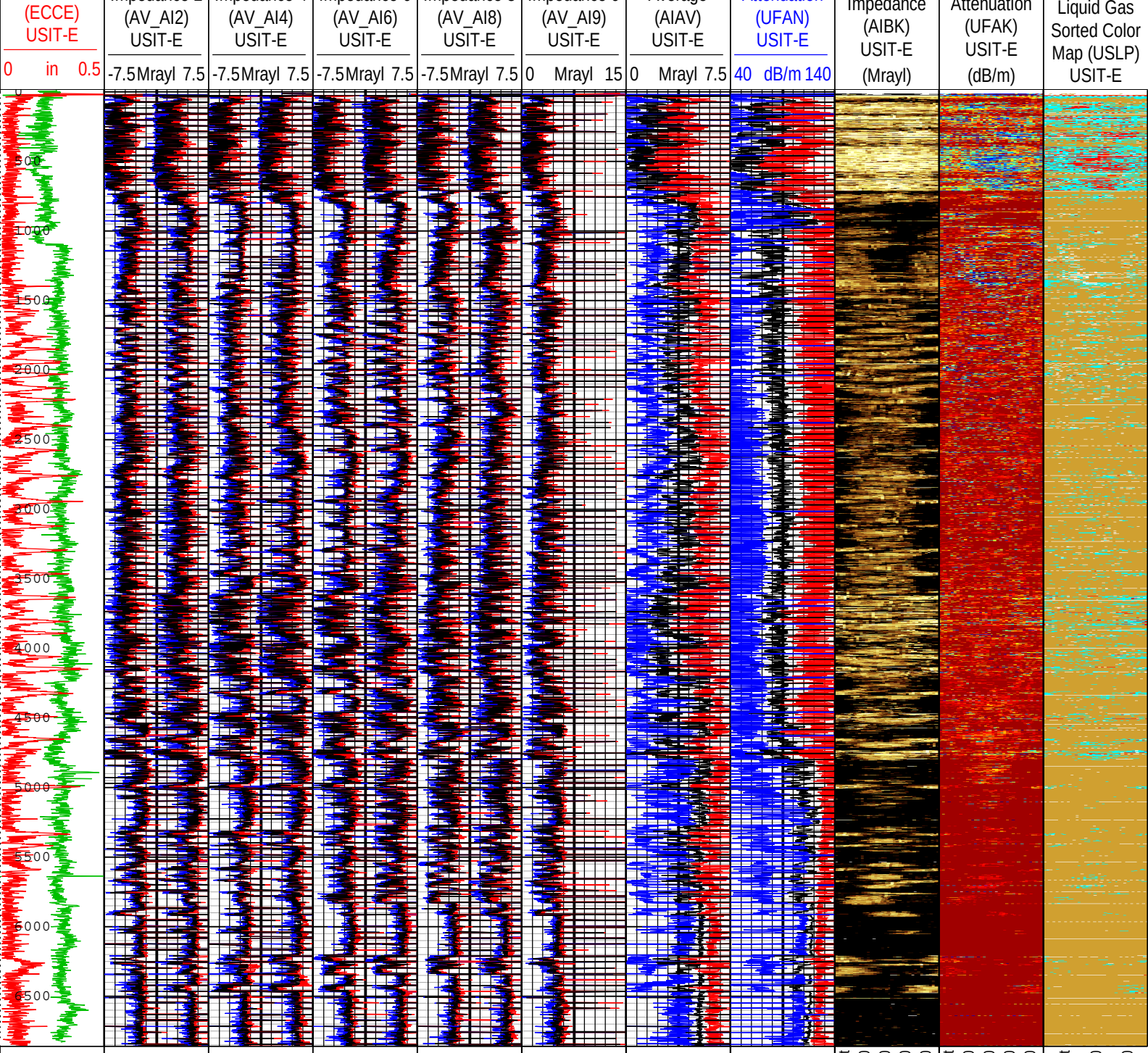
Gamma Ray (GR) SGT-N
0 gAPI 150

Amplitude of Eccentering

U L B R U
Orientation: Top of Hole
Absent 0.750 1.750 2.750 3.750
Custom Normalization
USIT - Acoustic

U L B R U
Orientation: Top of Hole
Absent 28.000 44.000 60.000 76.000
Custom Normalization
USIT - Flexural

U L B R U
Orientation: Top of Hole
Absent 1.500 3.500
Explicit Normalization
USIT - Solid



Gamma Ray (GR) SGT-N
0 gAPI 150

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

Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E
0 Mrayl 15

Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E
0 Mrayl 15

Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E
0 Mrayl 15

Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E
0 Mrayl 15

Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E
0 Mrayl 15

Acoustic Impedance Maximum (AIMX) USIT-E
0 Mrayl 7.5

Maximum Flexural Attenuation (UFAX) USIT-E
40 dB/m 140

Absent 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Orientation: Top of Hole
U L B R U

Absent 28.000 44.000 60.000 76.000

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

Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E
0 Mrayl 15

Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E
0 Mrayl 15

Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E
0 Mrayl 15

Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E
0 Mrayl 15

Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E
0 Mrayl 15

Acoustic Impedance Minimum (AIMN) USIT-E
0 Mrayl 7.5

Average Flexural Attenuation (UFAV) USIT-E
40 dB/m 140

Average Acoustic Impedance 1 (AV_AI1) USIT-E
0 Mrayl 15

Average Acoustic Impedance 3 (AV_AI3) USIT-E
0 Mrayl 15

Average Acoustic Impedance 5 (AV_AI5) USIT-E
0 Mrayl 15

Average Acoustic Impedance 7 (AV_AI7) USIT-E
0 Mrayl 15

Average Acoustic Impedance 9 (AV_AI9) USIT-E
0 Mrayl 15

Acoustic Impedance Average (AIAV) USIT-E
0 Mrayl 7.5

Minimum Flexural Attenuation (UFAN) USIT-E
40 dB/m 140

Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E
-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5
Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E
-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5
Average Acoustic Impedance 2 (AV_AI2) USIT-E	Average Acoustic Impedance 4 (AV_AI4) USIT-E	Average Acoustic Impedance 6 (AV_AI6) USIT-E	Average Acoustic Impedance 8 (AV_AI8) USIT-E
-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:07:56

USI IBC SLG Composite

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[6]:Up	6856.94	8.38

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC SLG Composite - 0 PSI

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001

Computation	Description	Version
DepthCorrection	DepthCorrection	4.0.9213.3000

Tool Elements	Description	Software Version	Firmware Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000	

Log

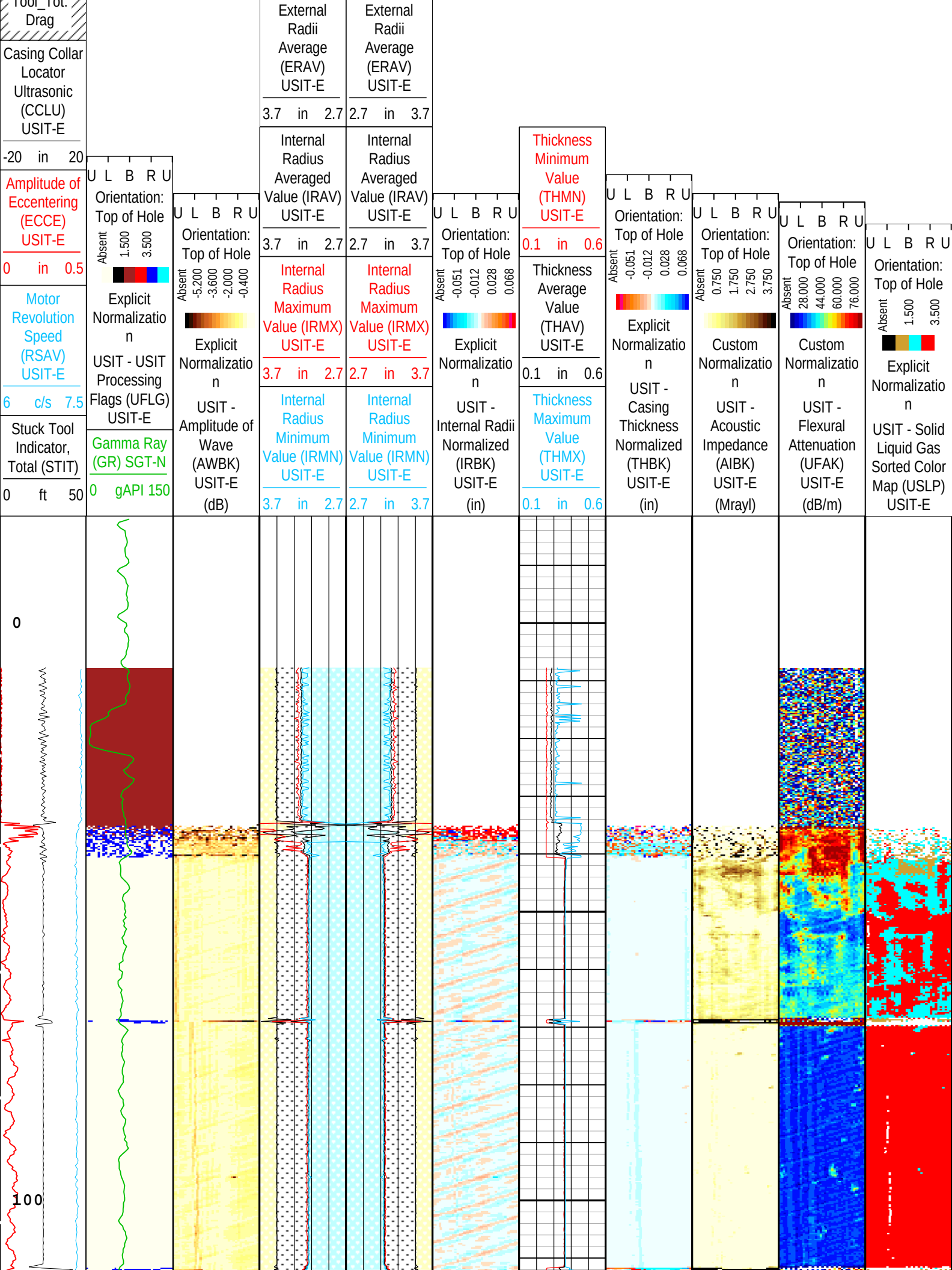
Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ
Run 1 : Main[6]:Up:S011

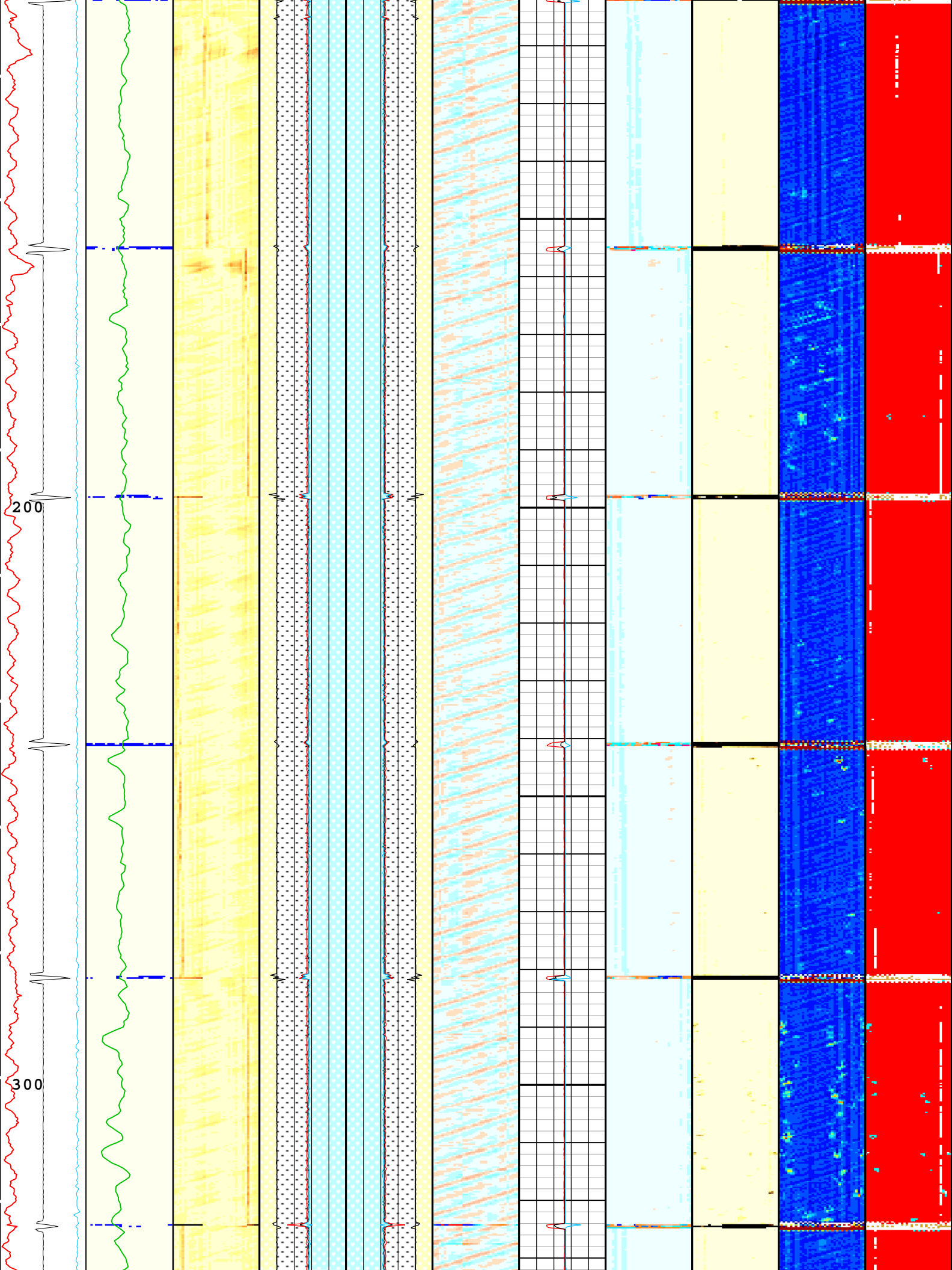
Description: USI IBC SLG Composite Format: USI IBC SLG Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:02

TIME_1900 - Time Marked every 60.00 (s)

Cable Drag

Tool Tot


Tool_Tot. Drag
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
Stuck Tool Indicator, Total (STIT)
0 ft 50
U L B R U
Orientation: Top of Hole
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
Gamma Ray (GR) SGT-N
0 gAPI 150
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
3.7 in 2.7
Internal Radius Averaged Value (IRAV) USIT-E
3.7 in 2.7
Internal Radius Maximum Value (IRMX) USIT-E
3.7 in 2.7
Internal Radius Minimum Value (IRMN) USIT-E
3.7 in 2.7
External Radii Average (ERAV) USIT-E
2.7 in 3.7
Internal Radius Averaged Value (IRAV) USIT-E
2.7 in 3.7
Internal Radius Maximum Value (IRMX) USIT-E
2.7 in 3.7
Internal Radius Minimum Value (IRMN) USIT-E
2.7 in 3.7
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
Orientation: Top of Hole
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E
(in)
Orientation: Top of Hole
Absent 0.750 1.750 2.750 3.750
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Orientation: Top of Hole
Absent 28.000 44.000 60.000 76.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E
(dB/m)
Orientation: Top of Hole
Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
0
100


200
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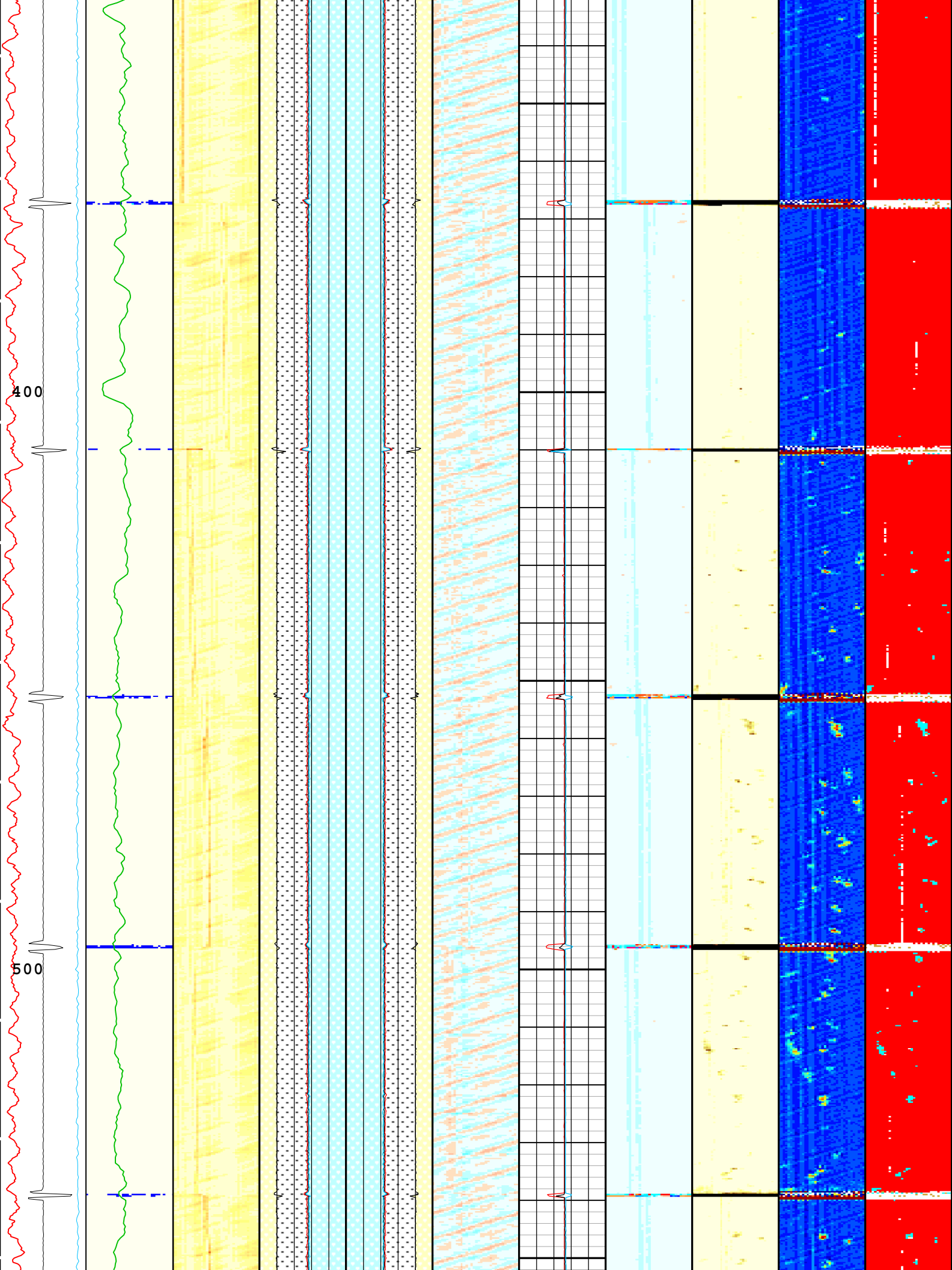
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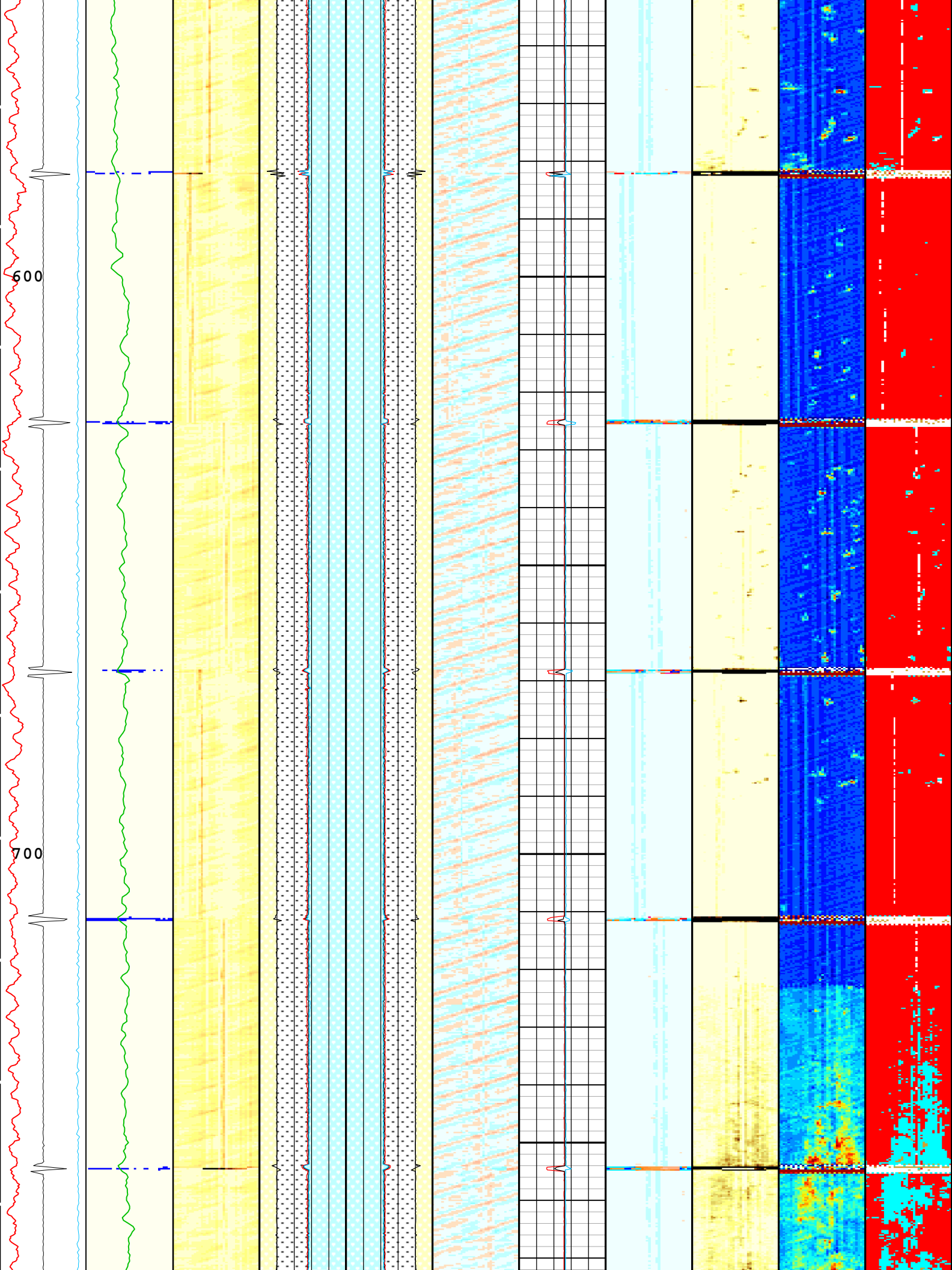
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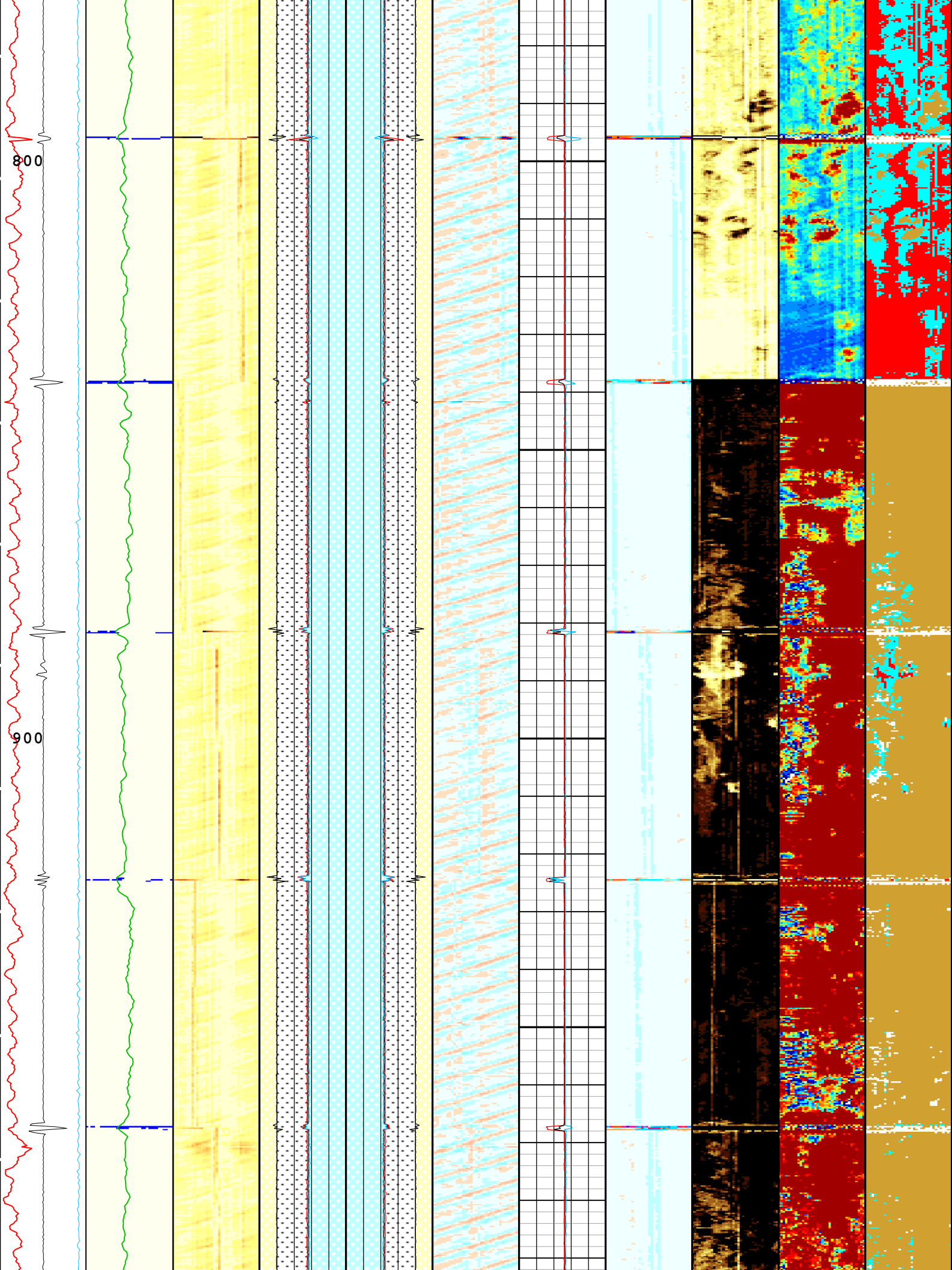
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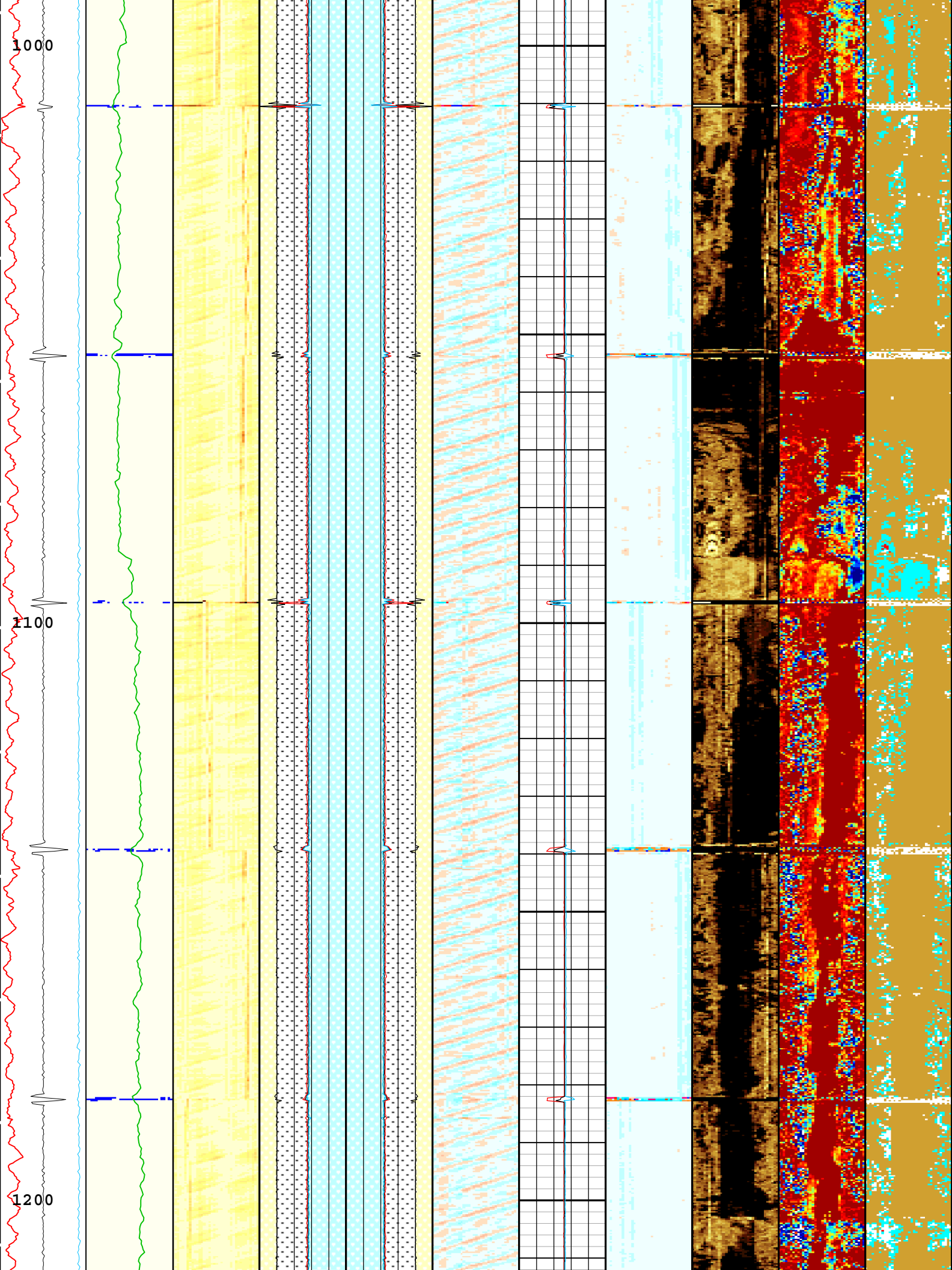
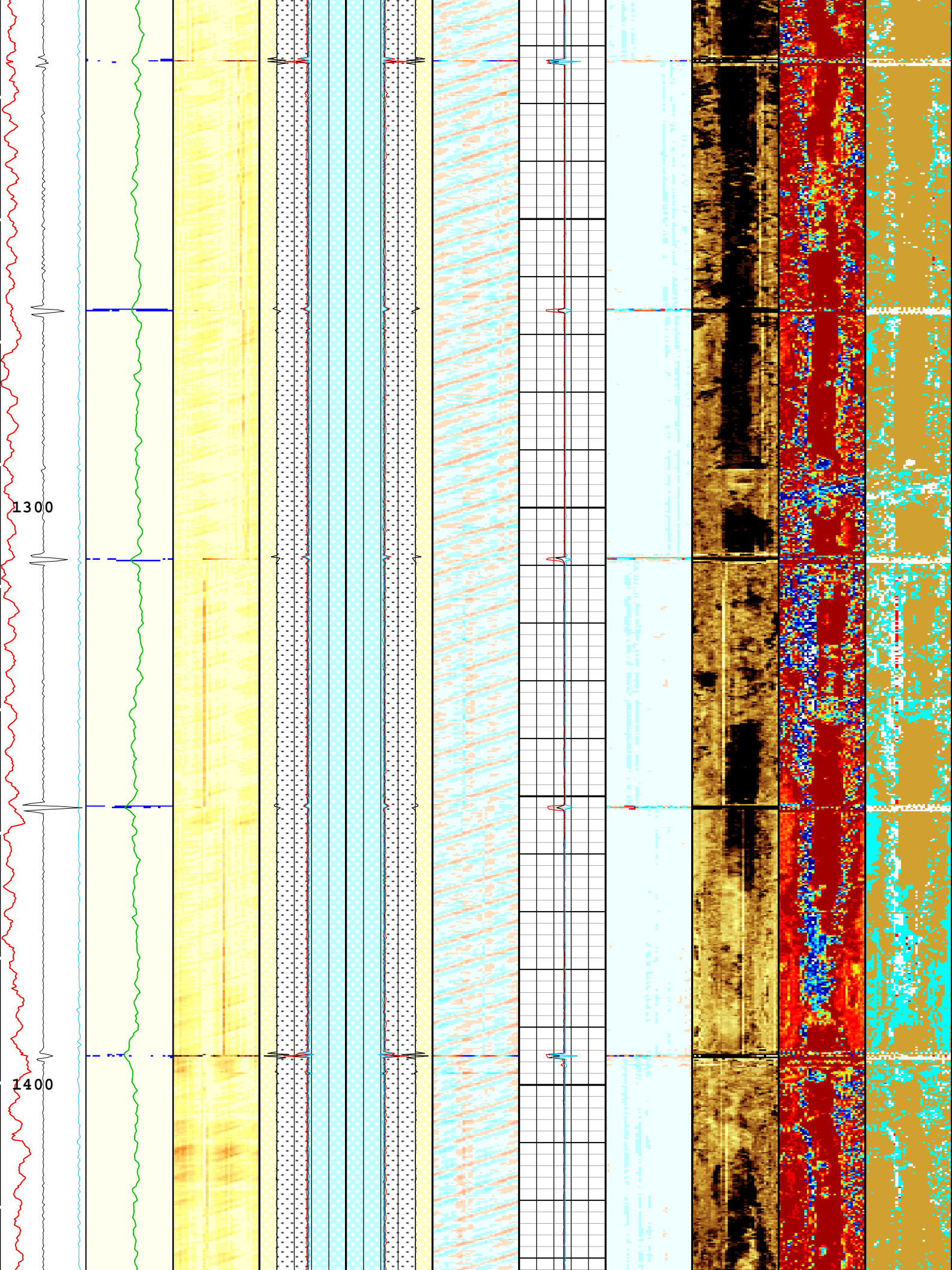

1000
1100
1200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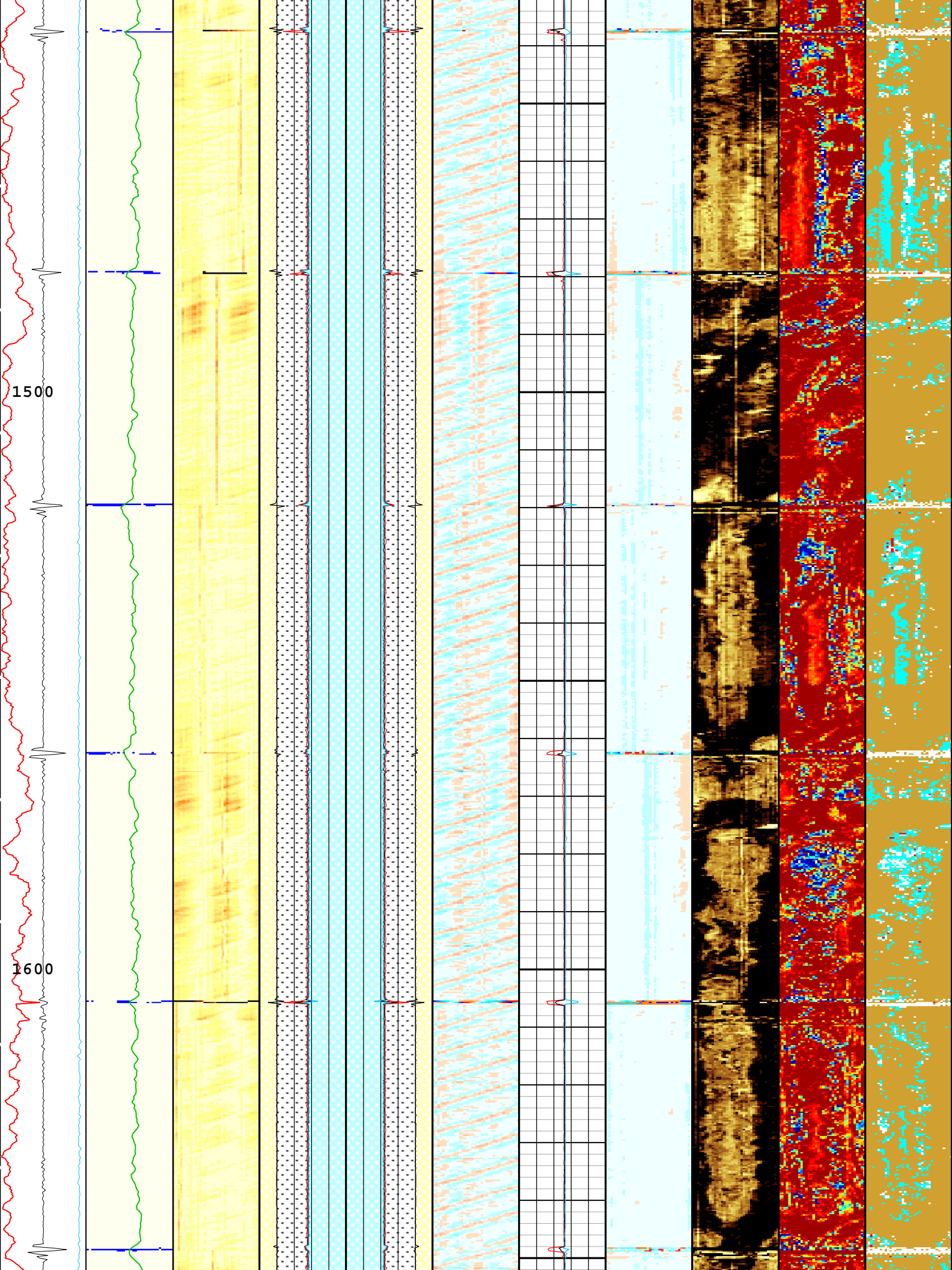
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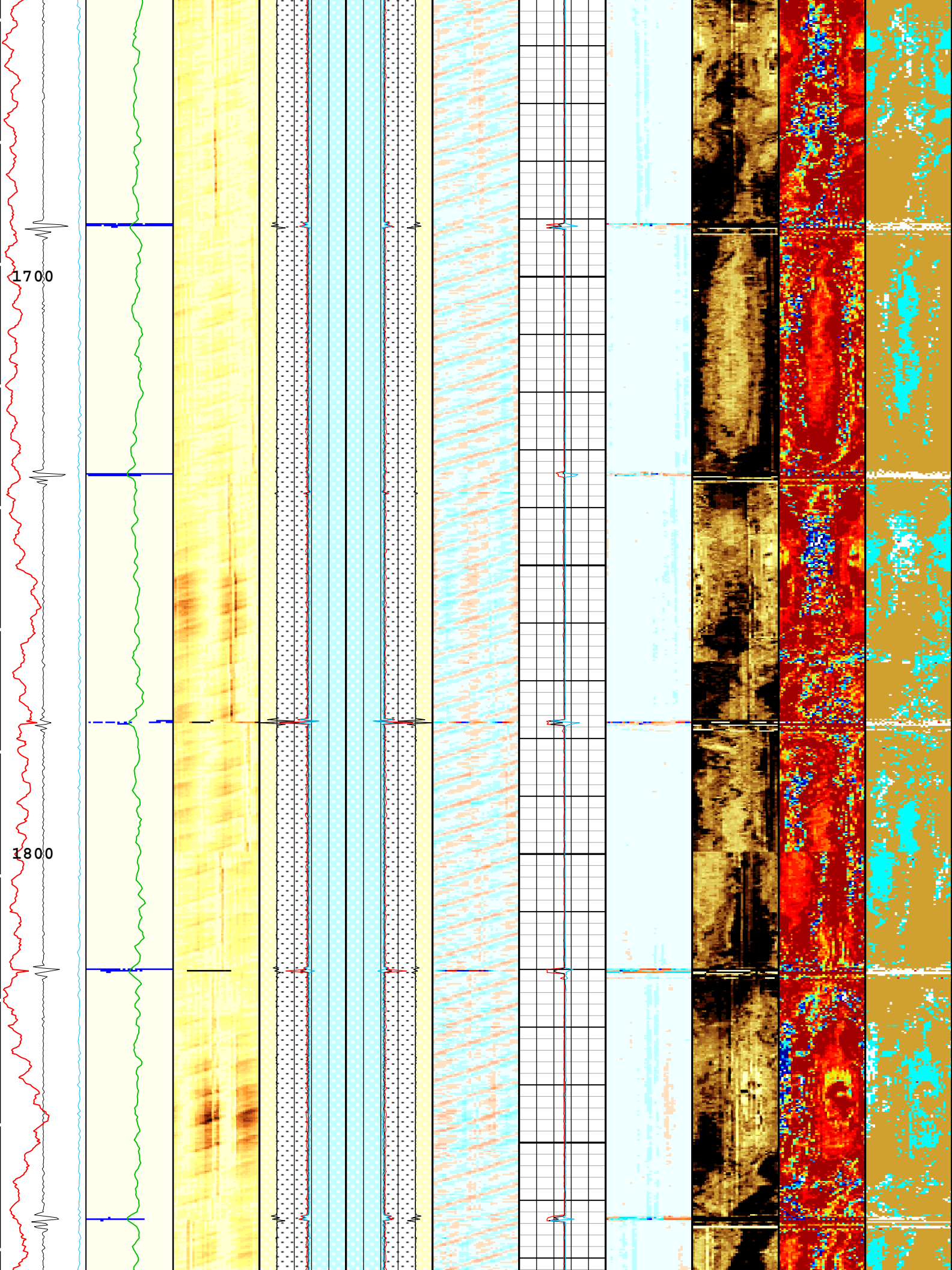
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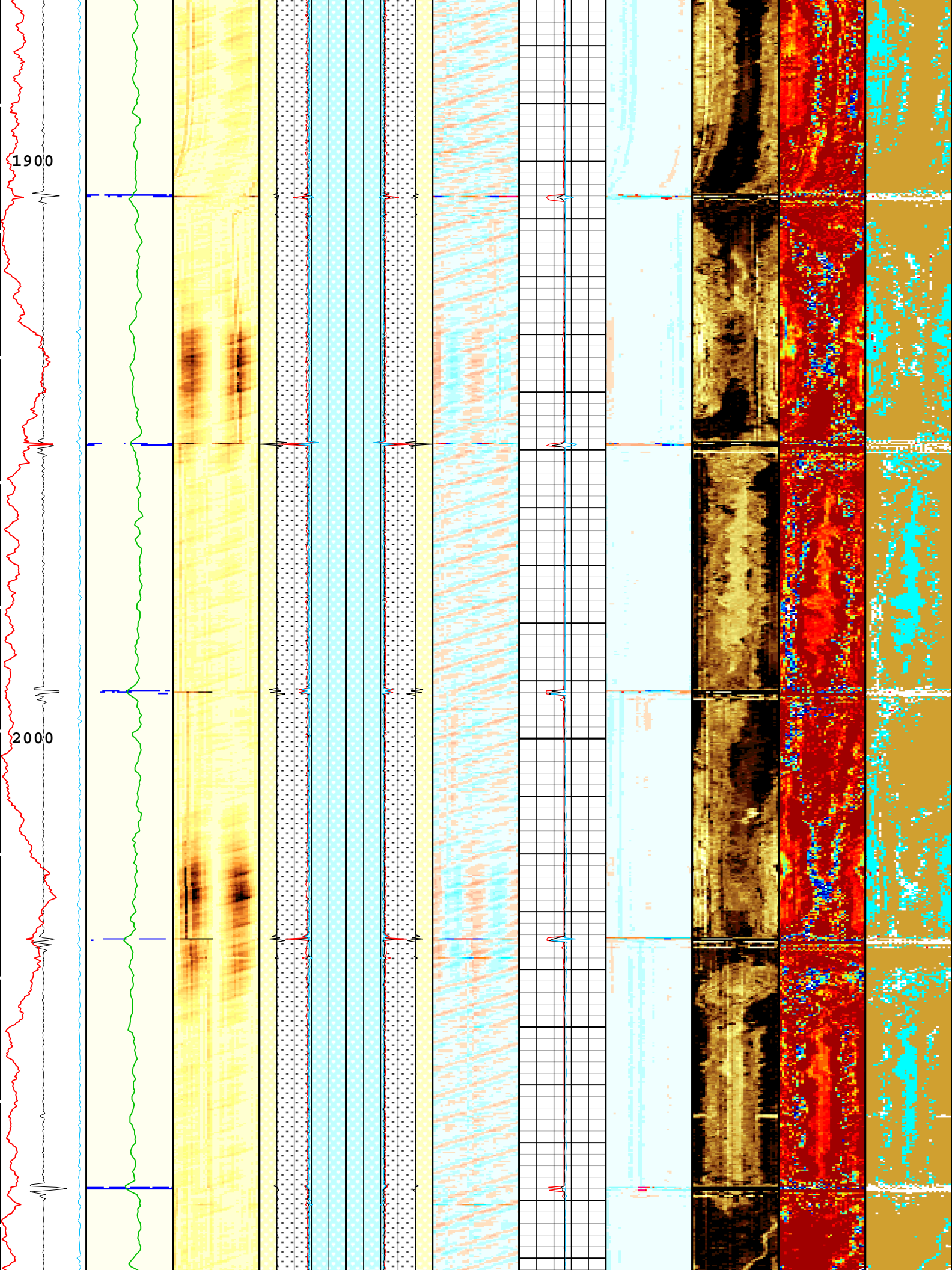
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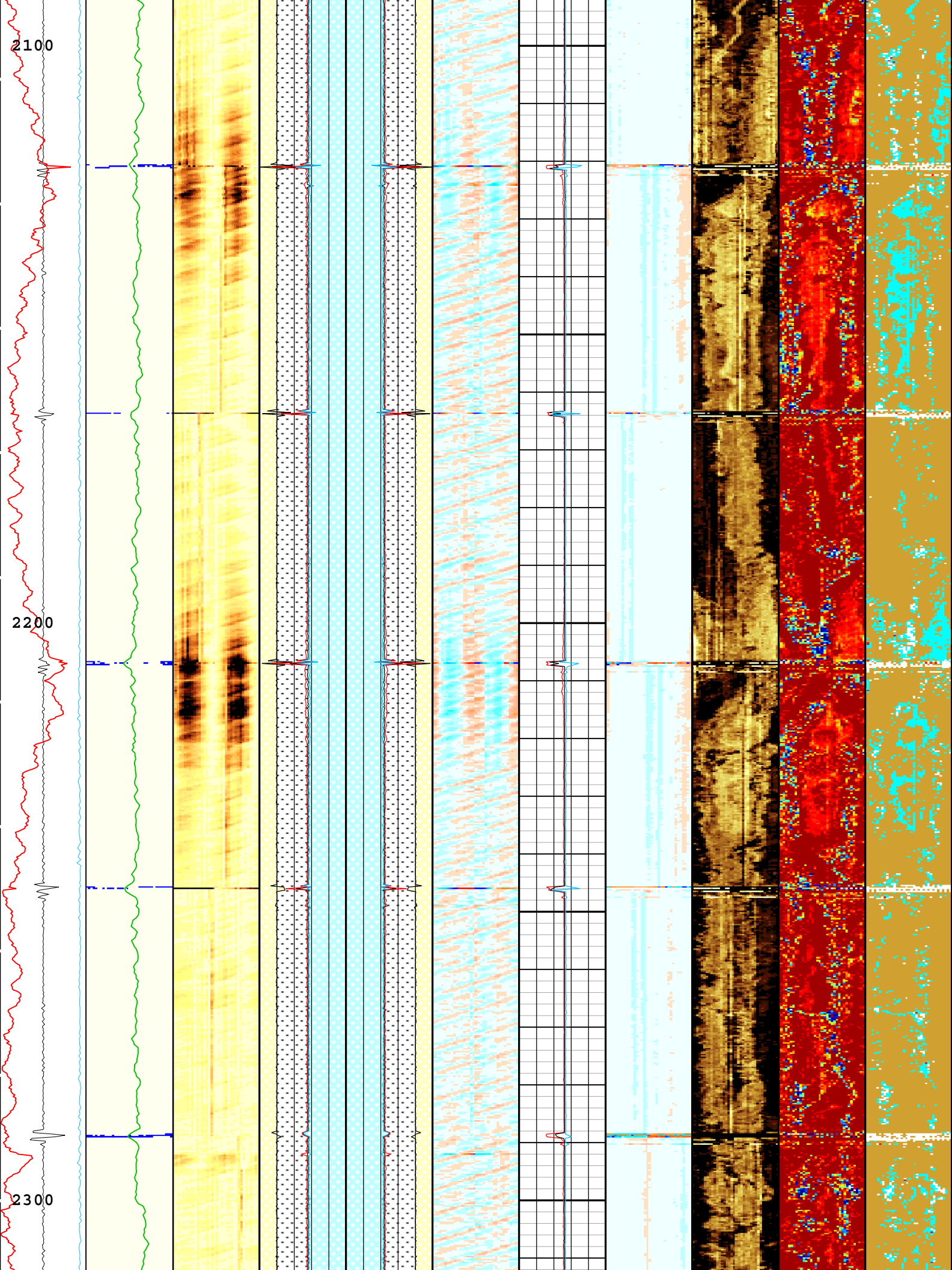
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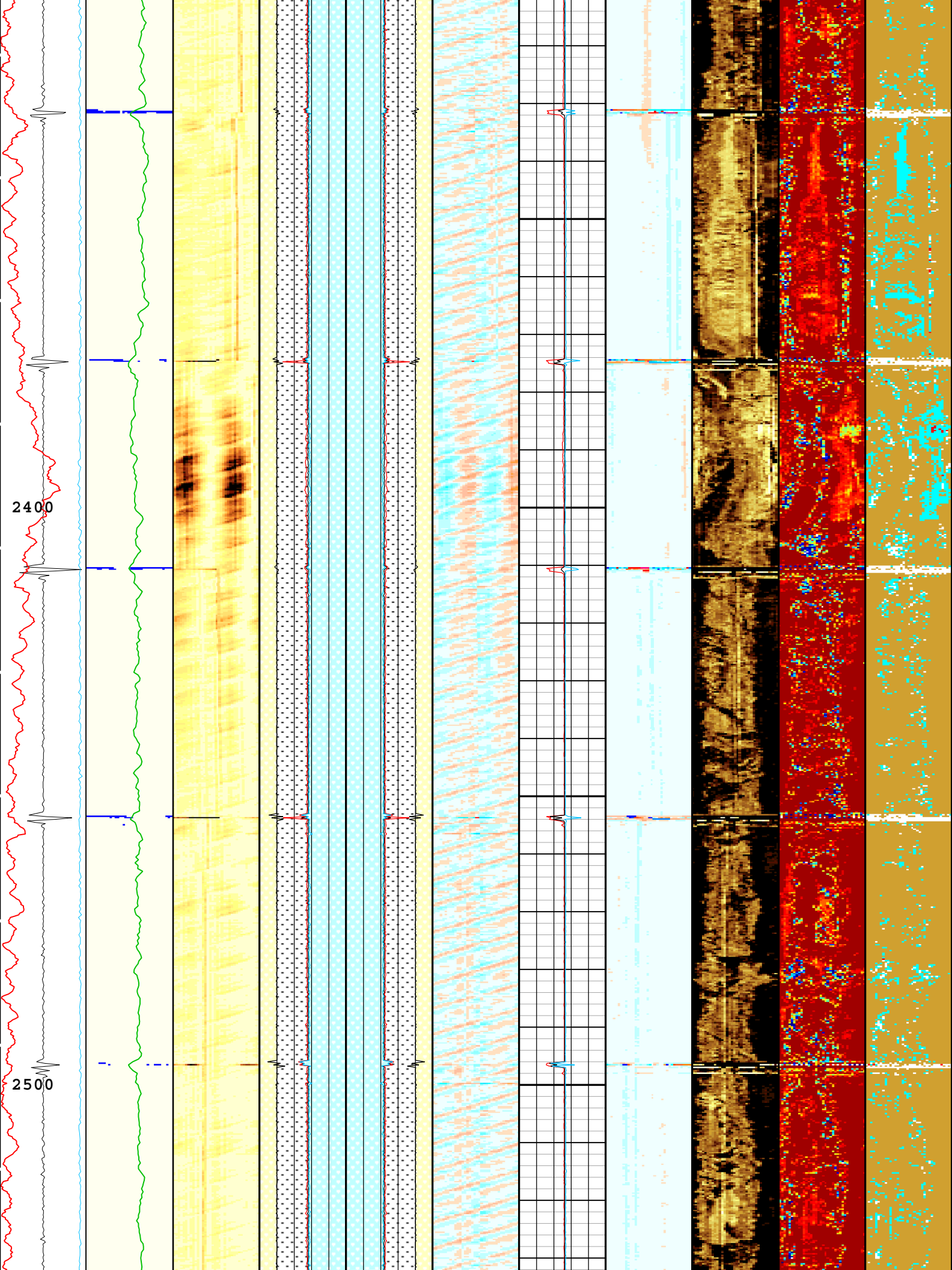
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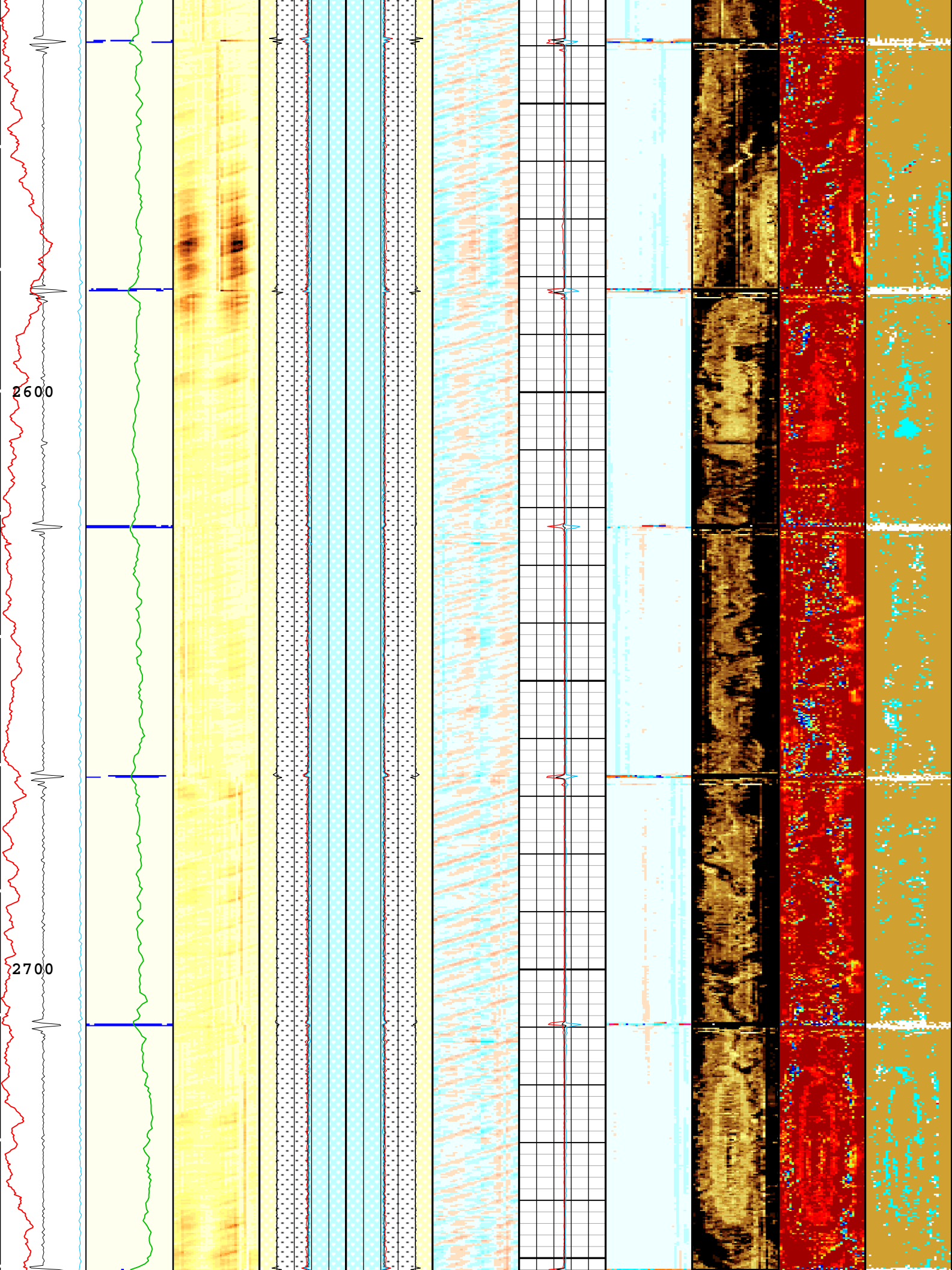
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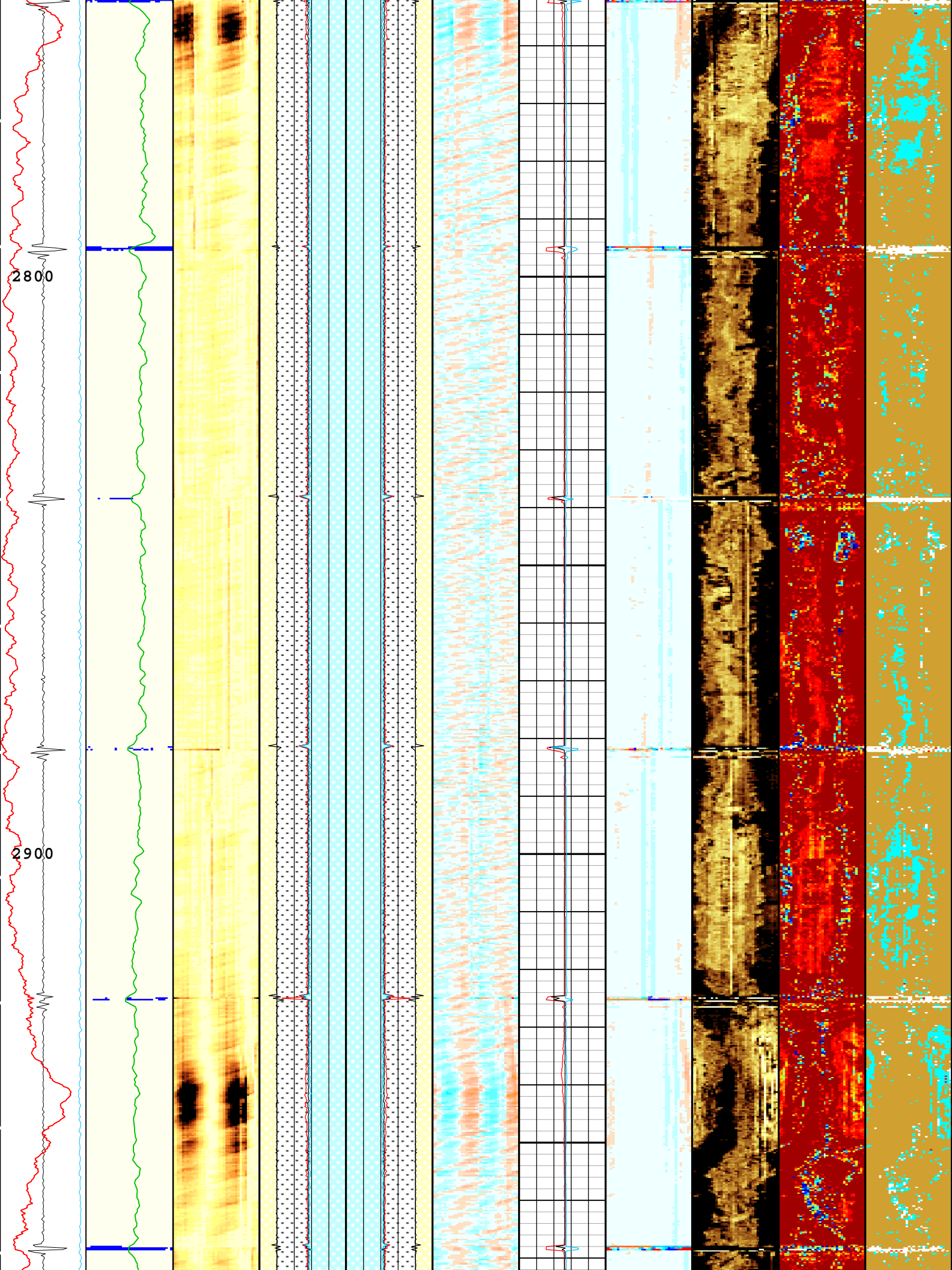
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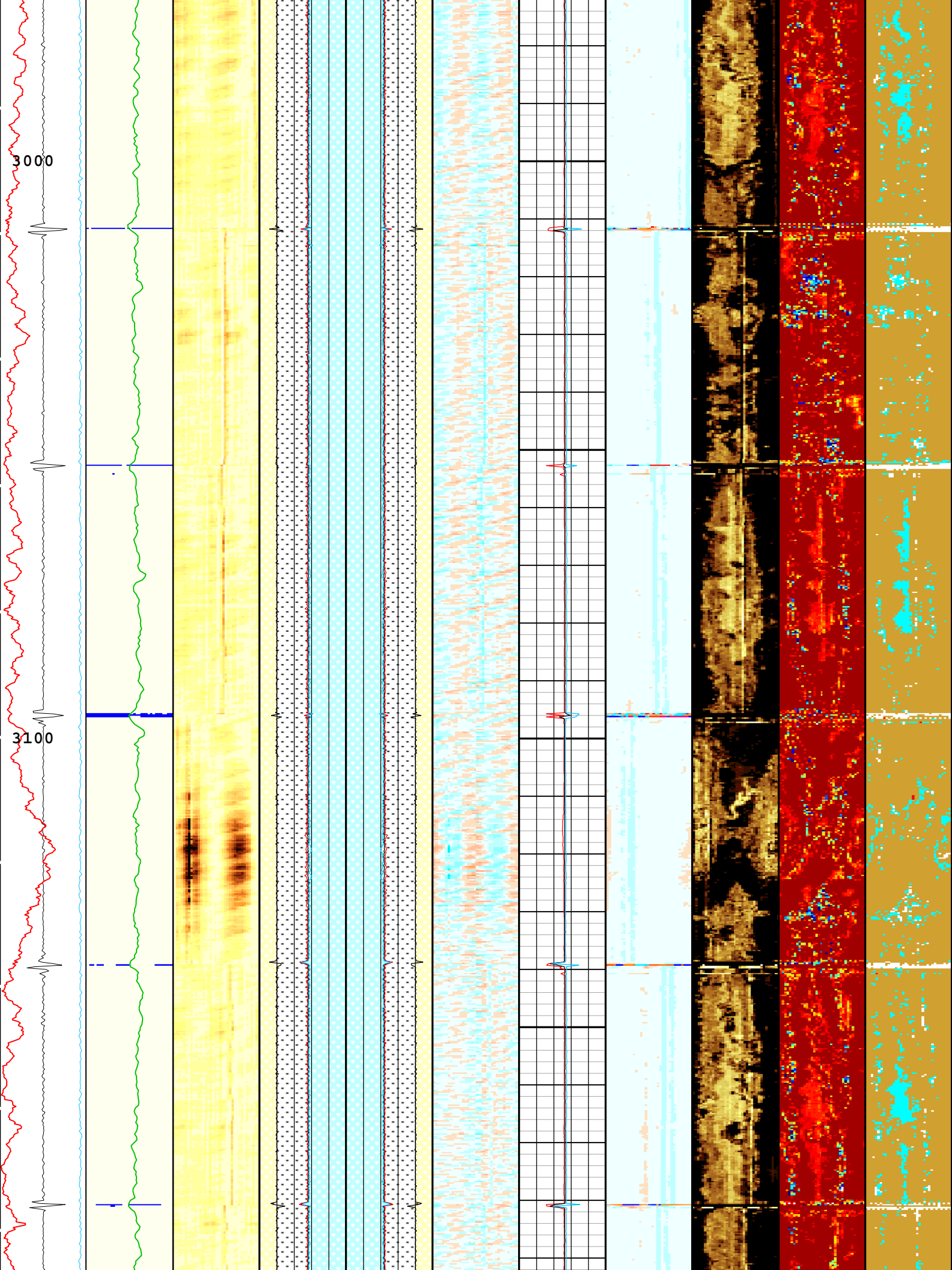
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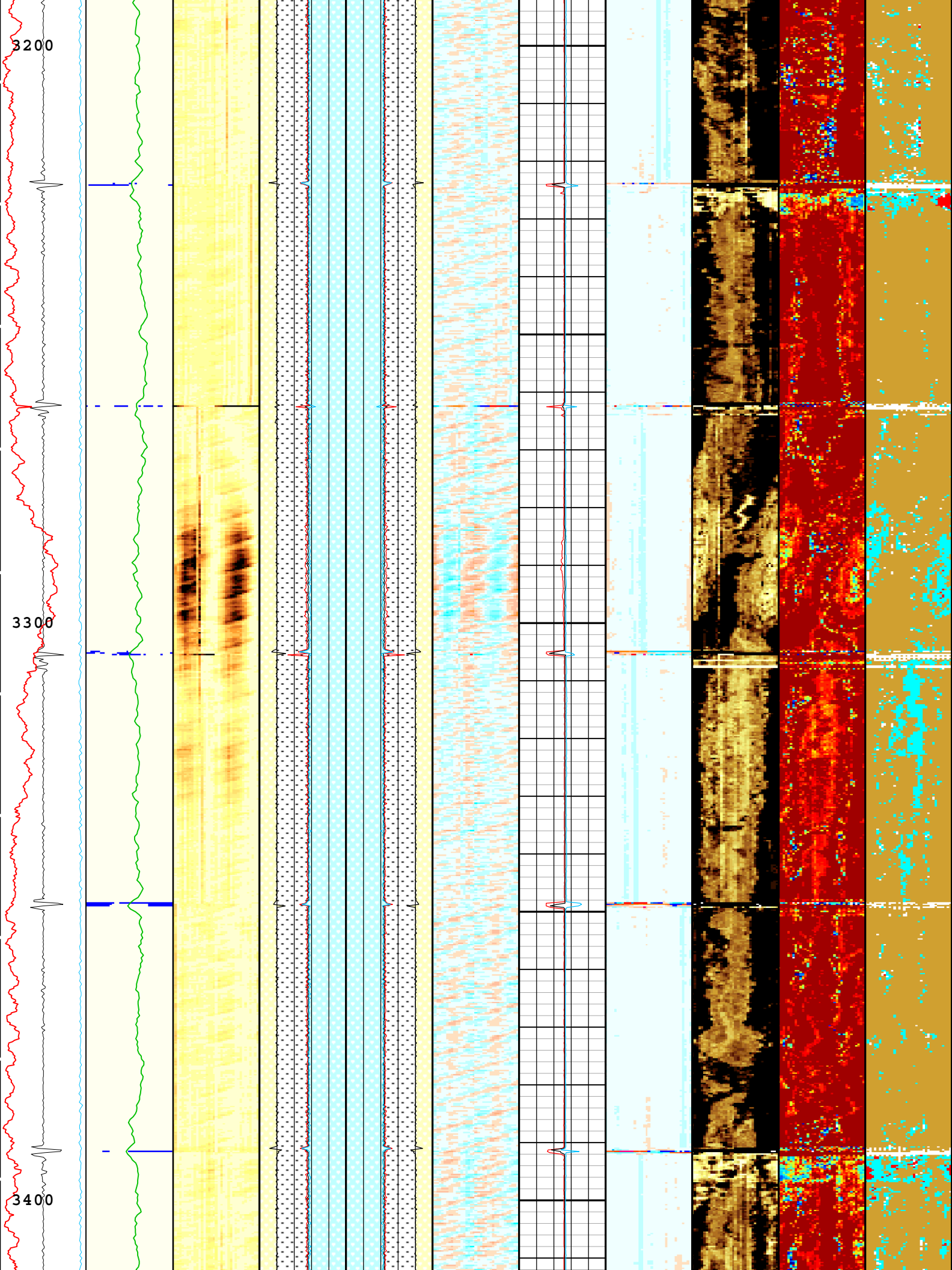
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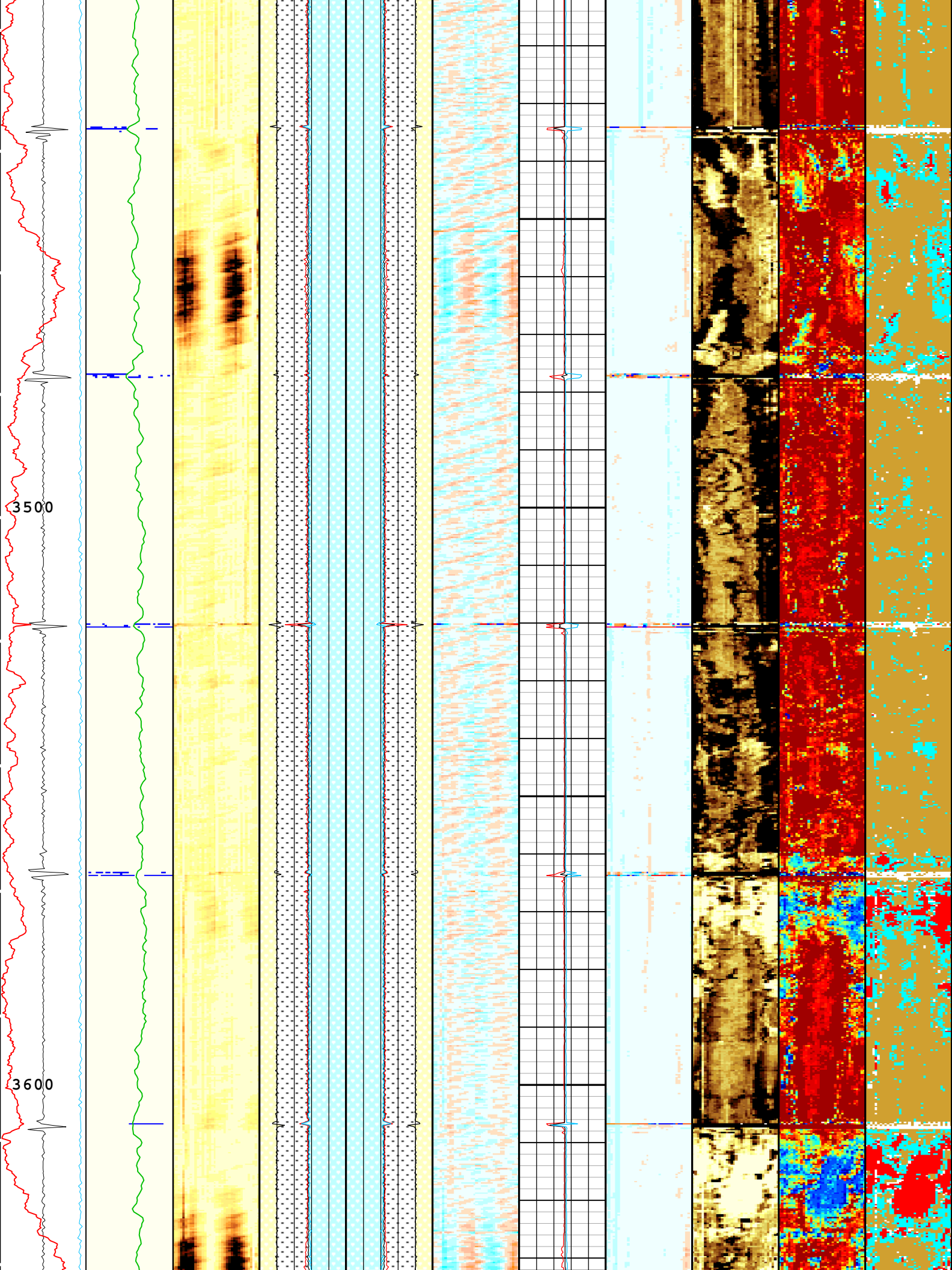
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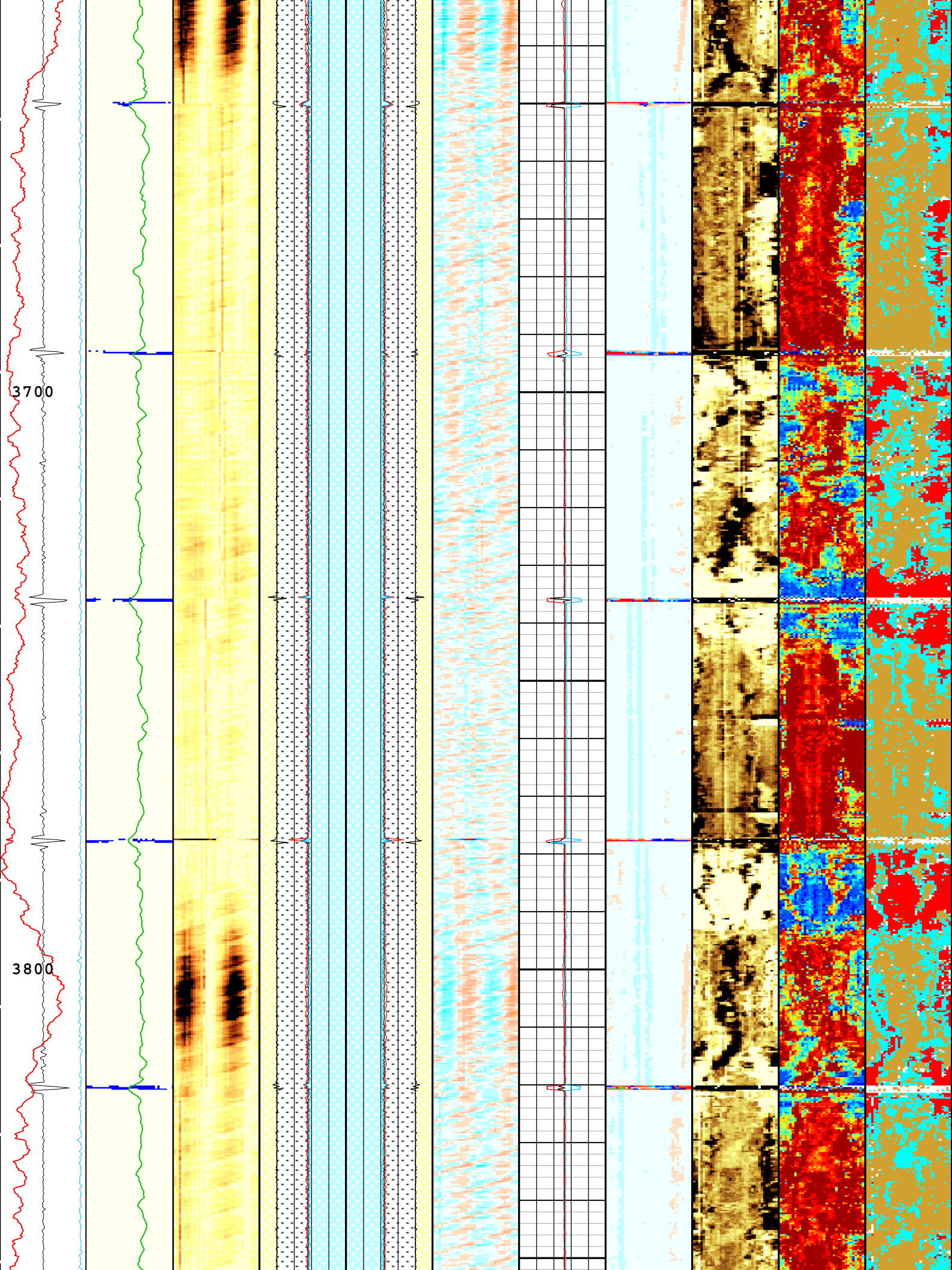
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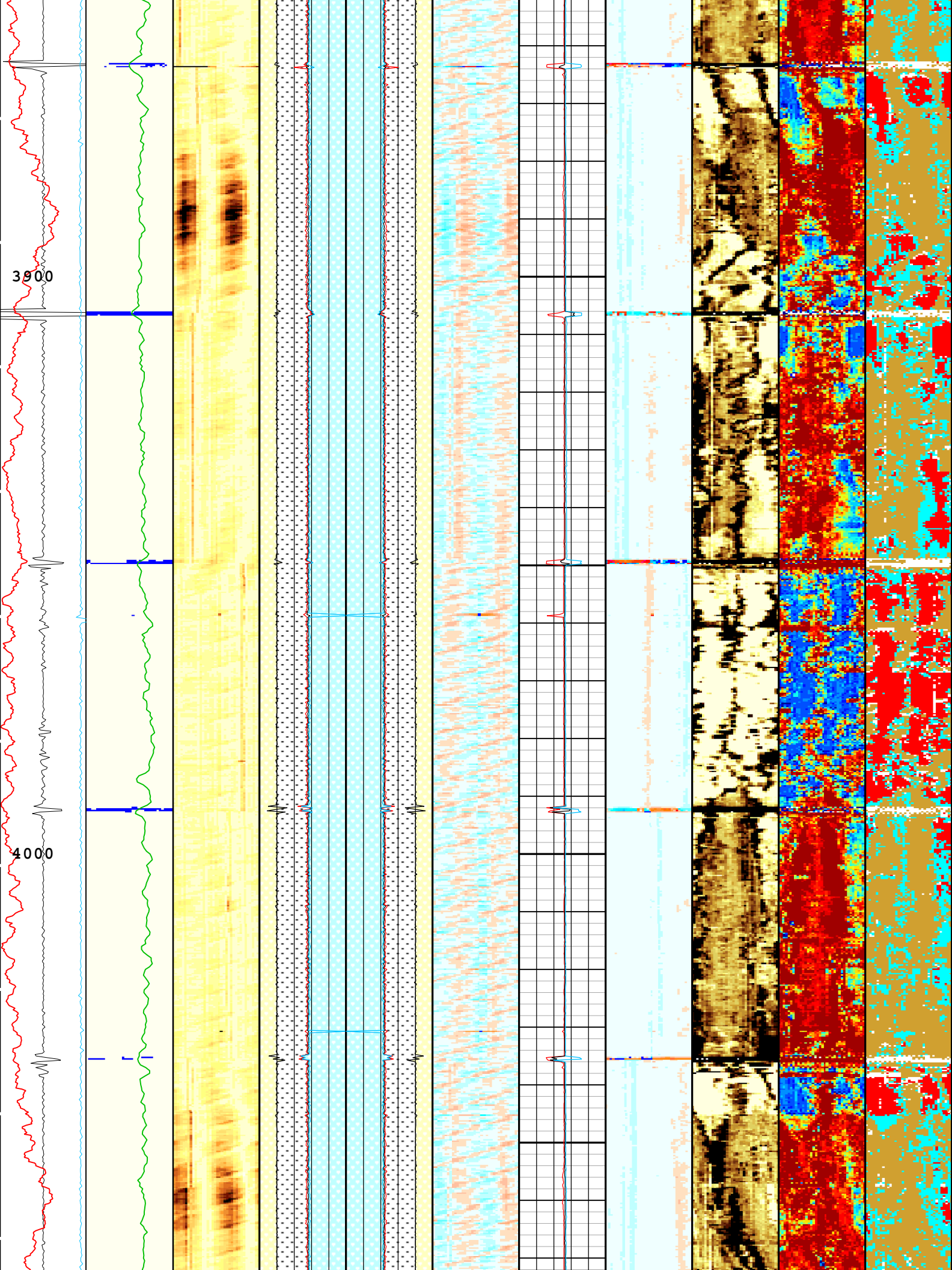
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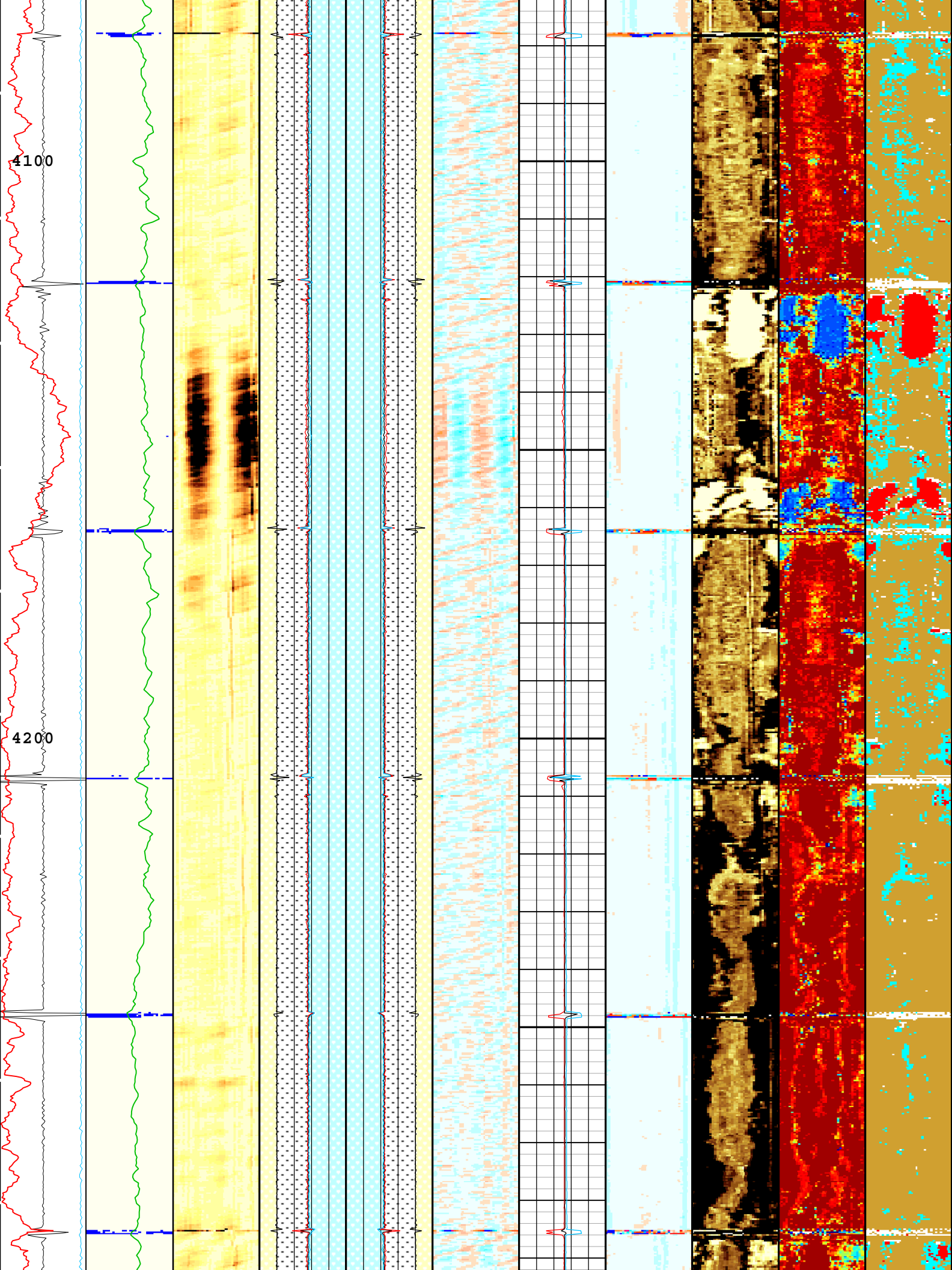
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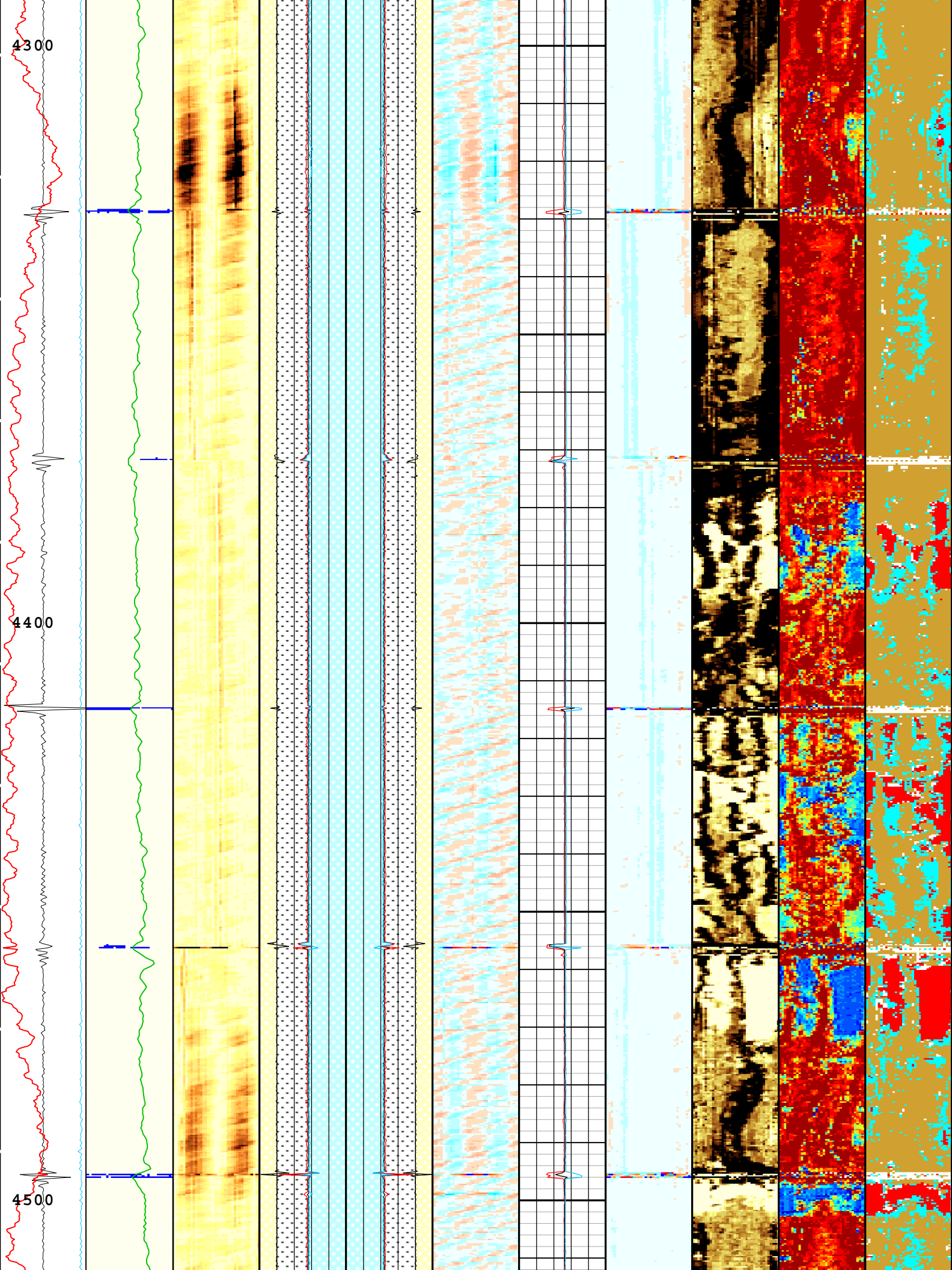
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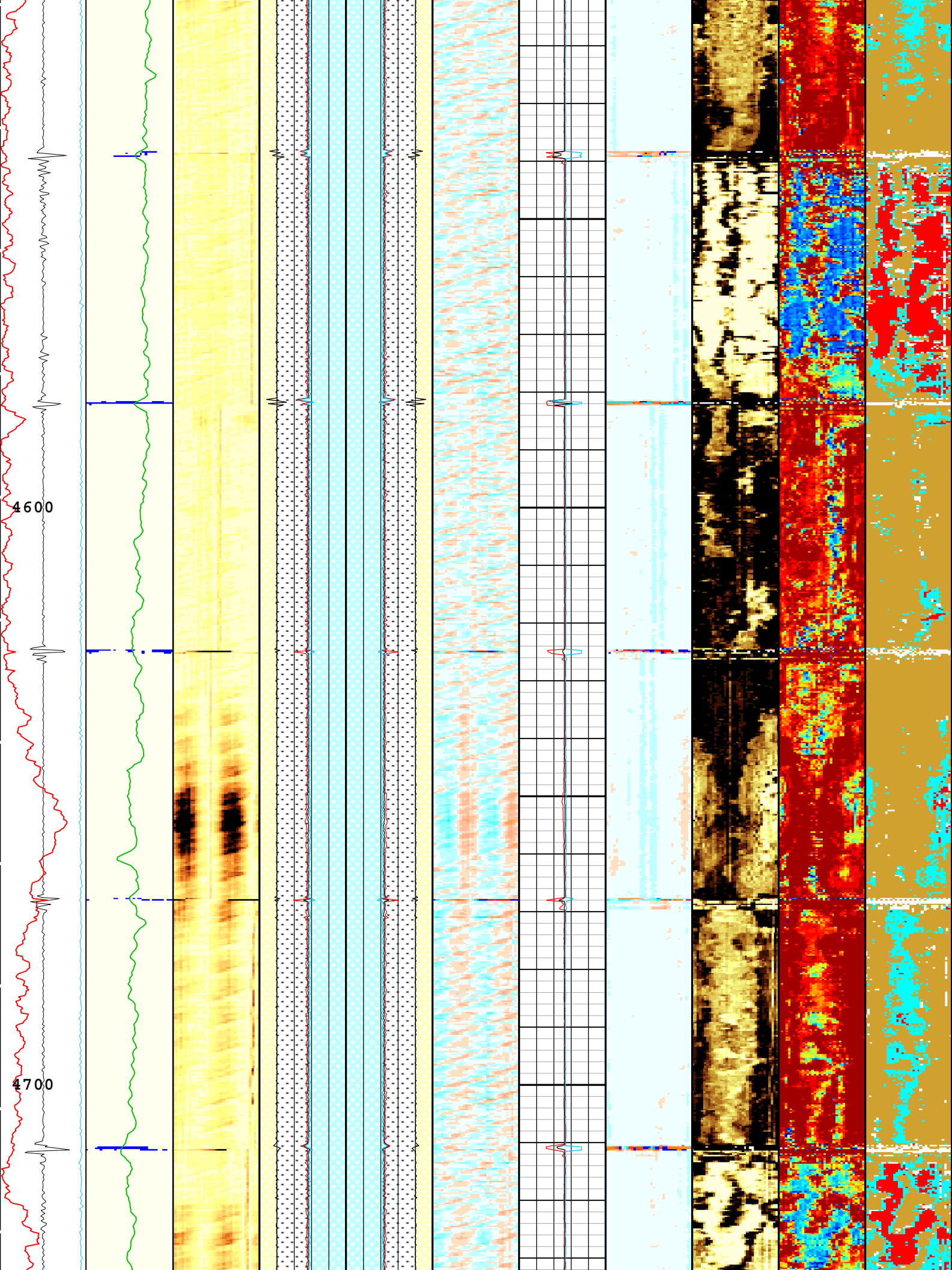
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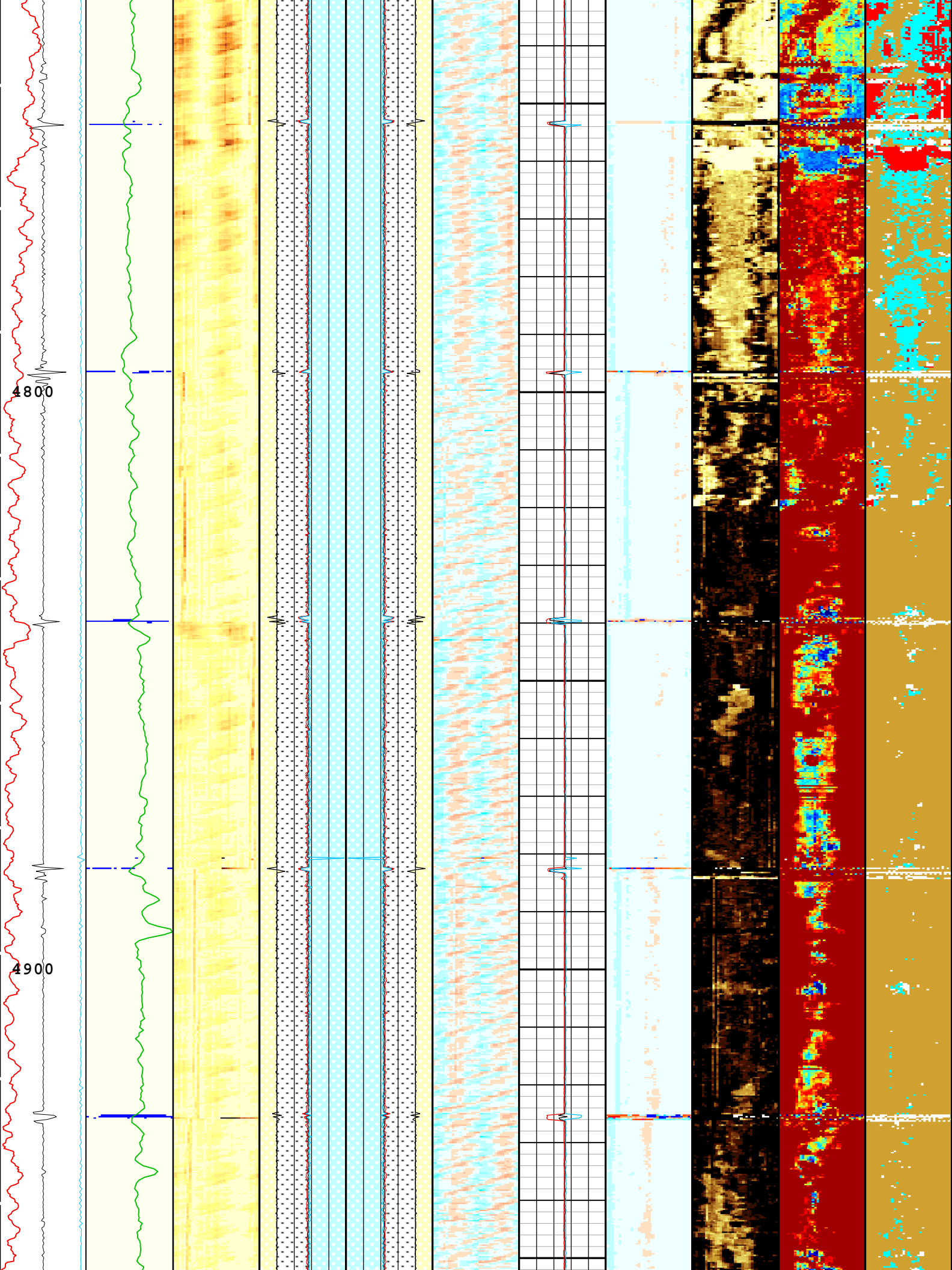
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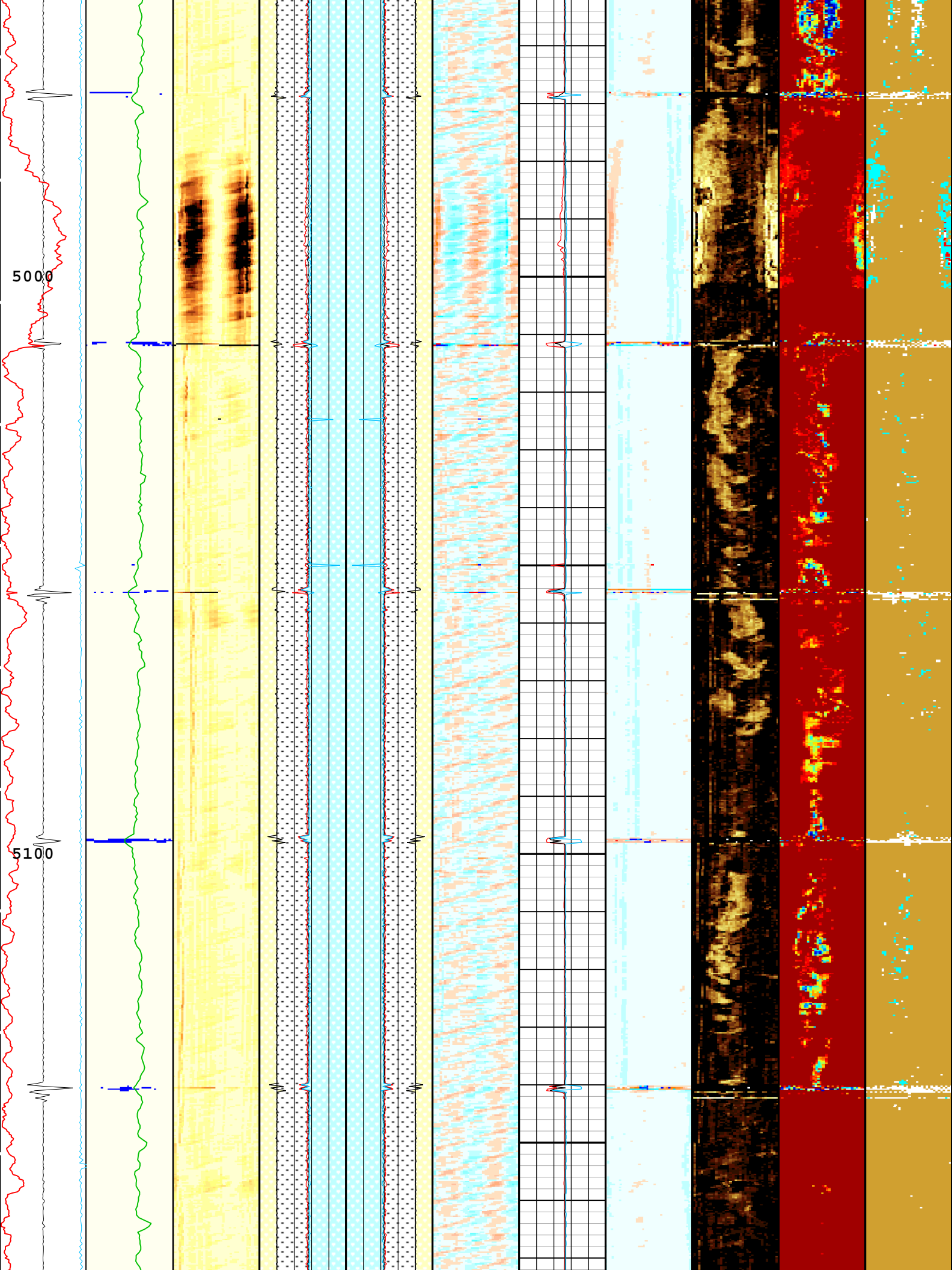
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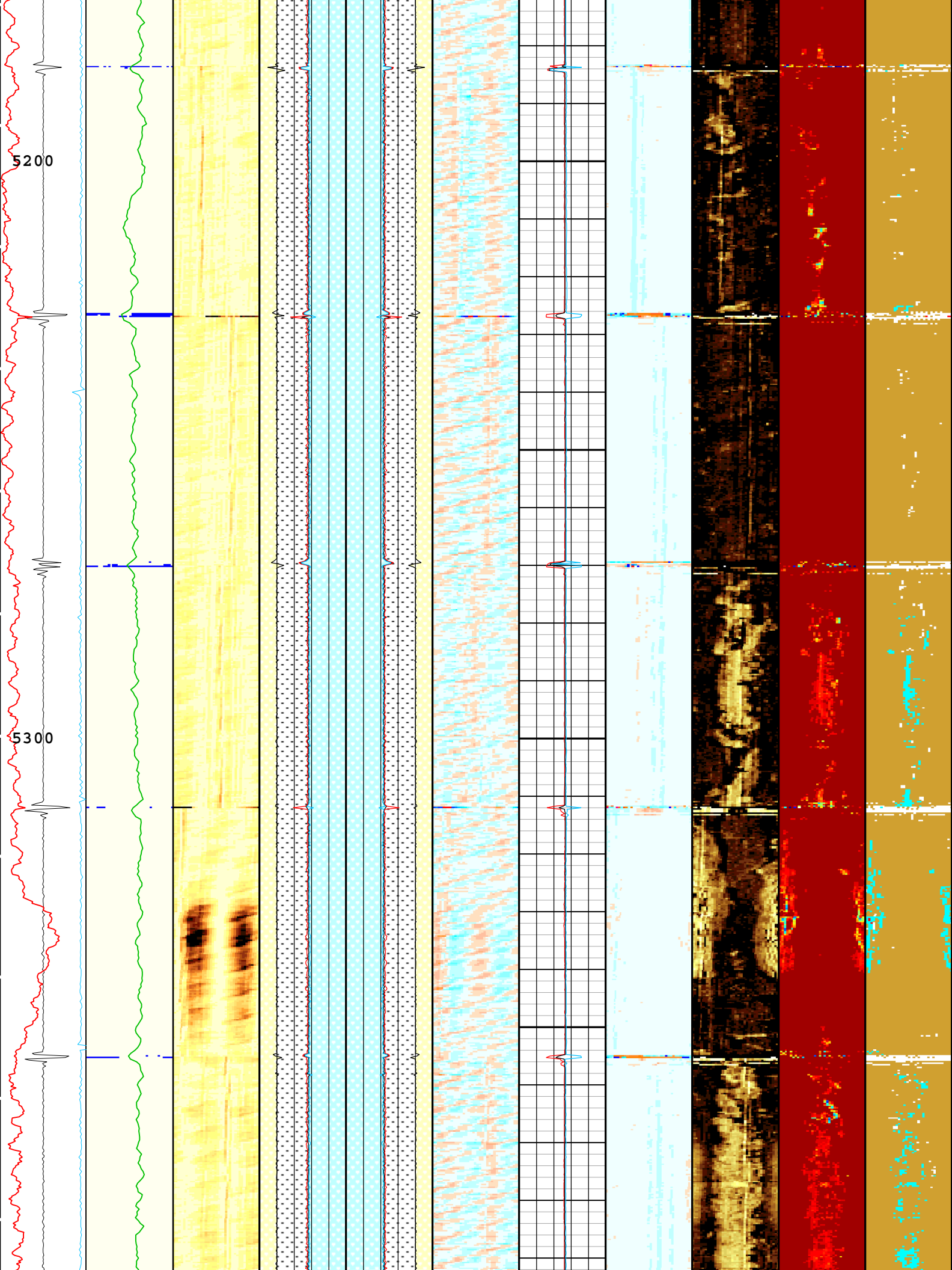
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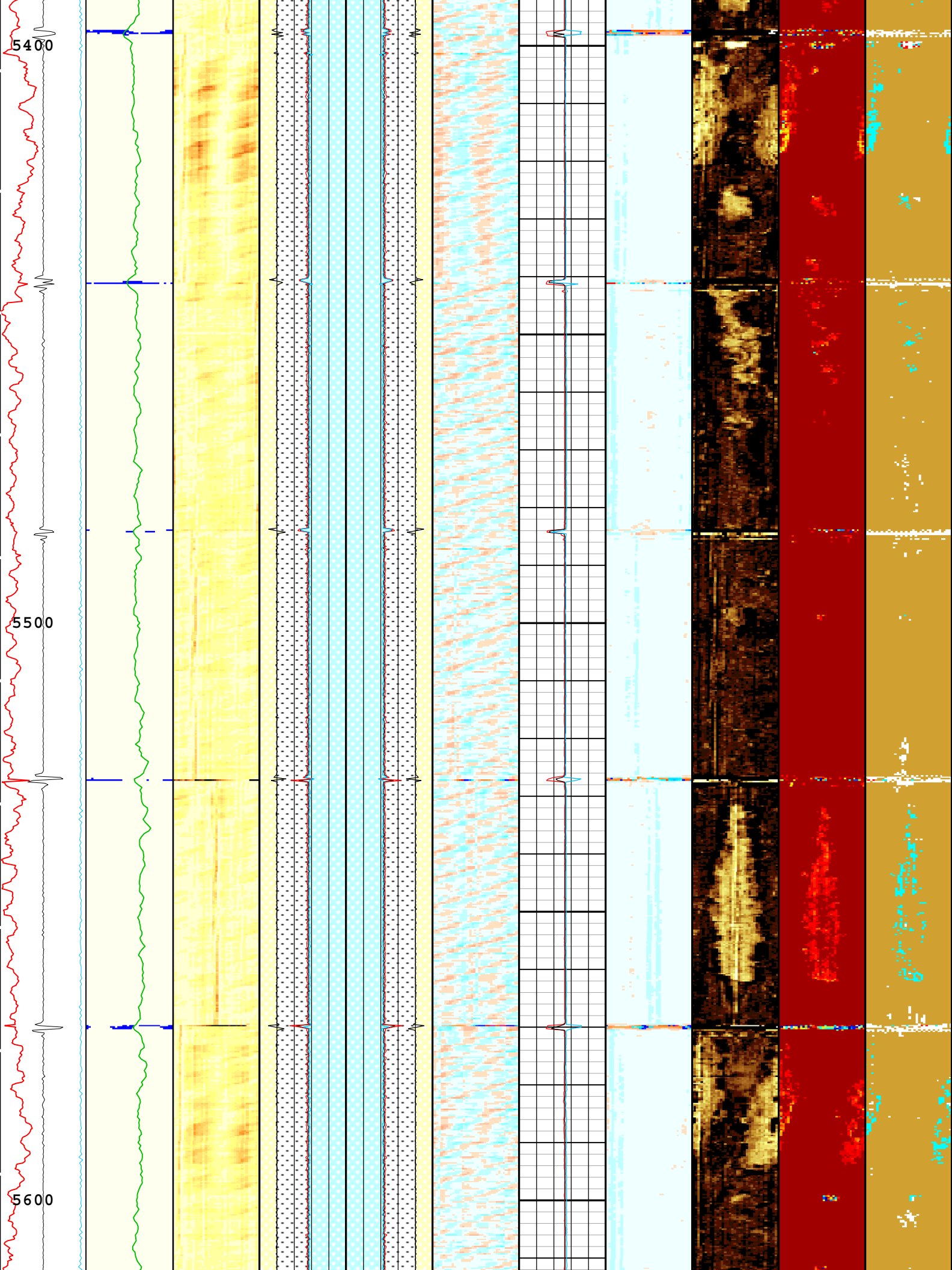
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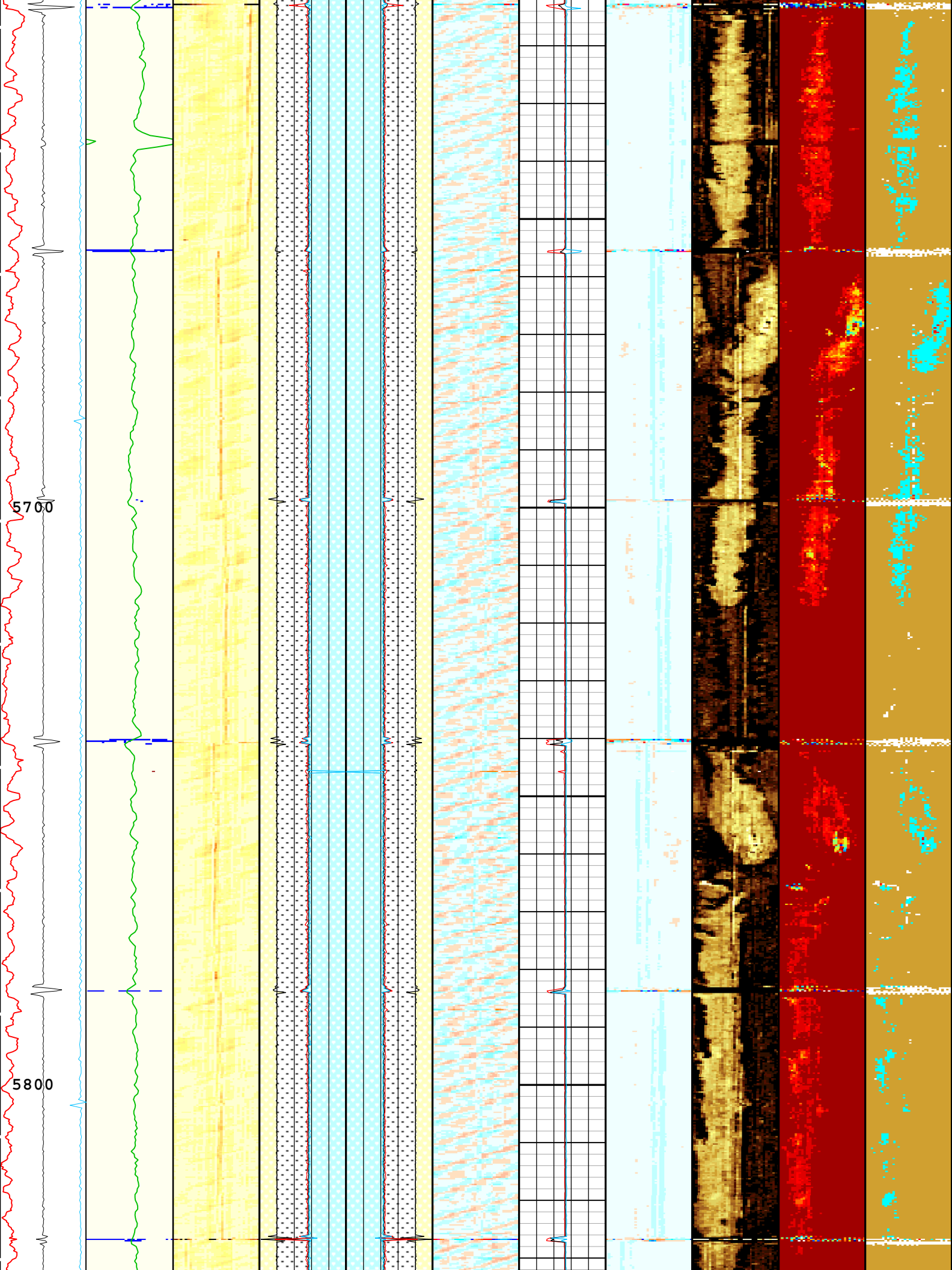
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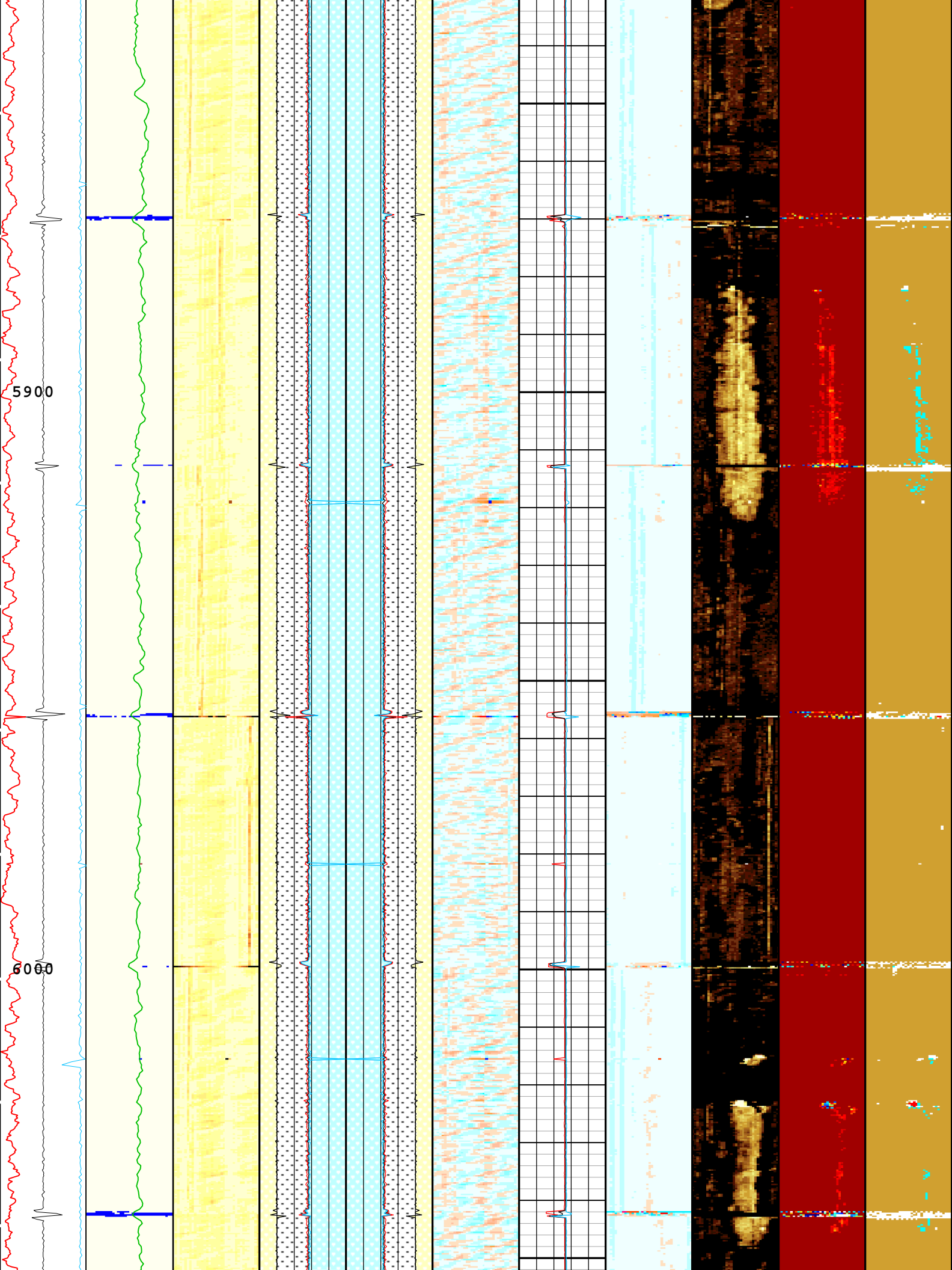
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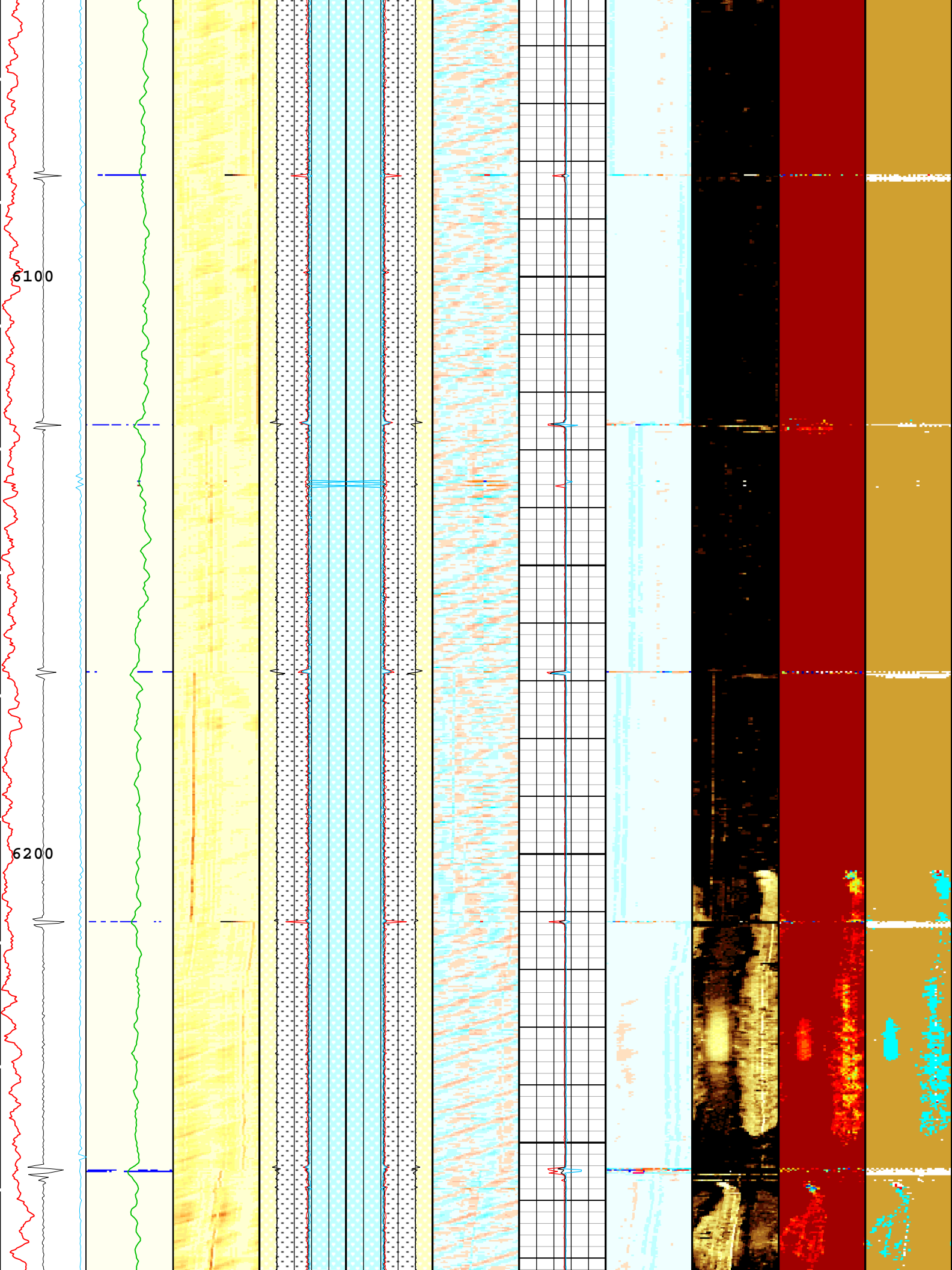
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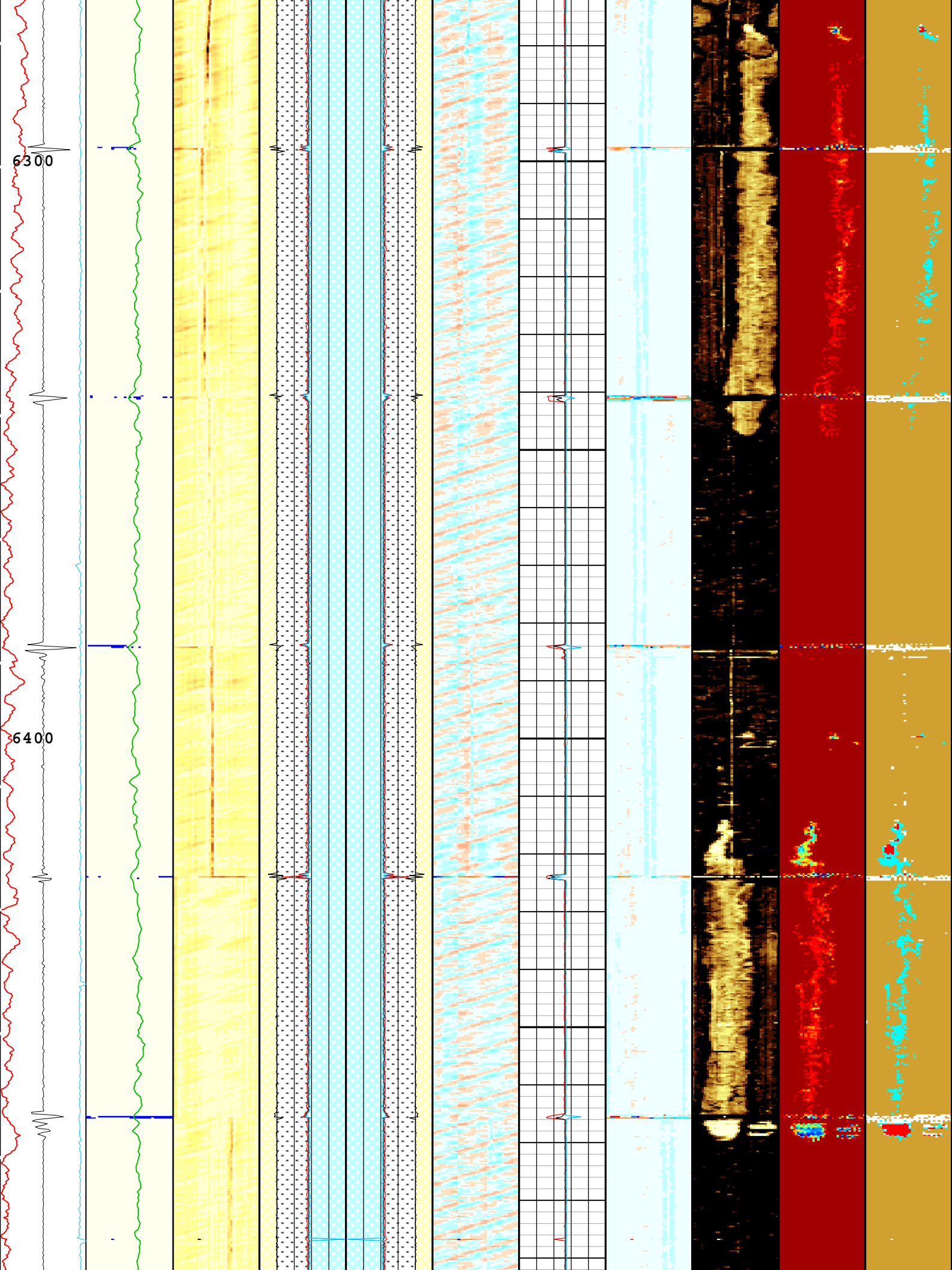
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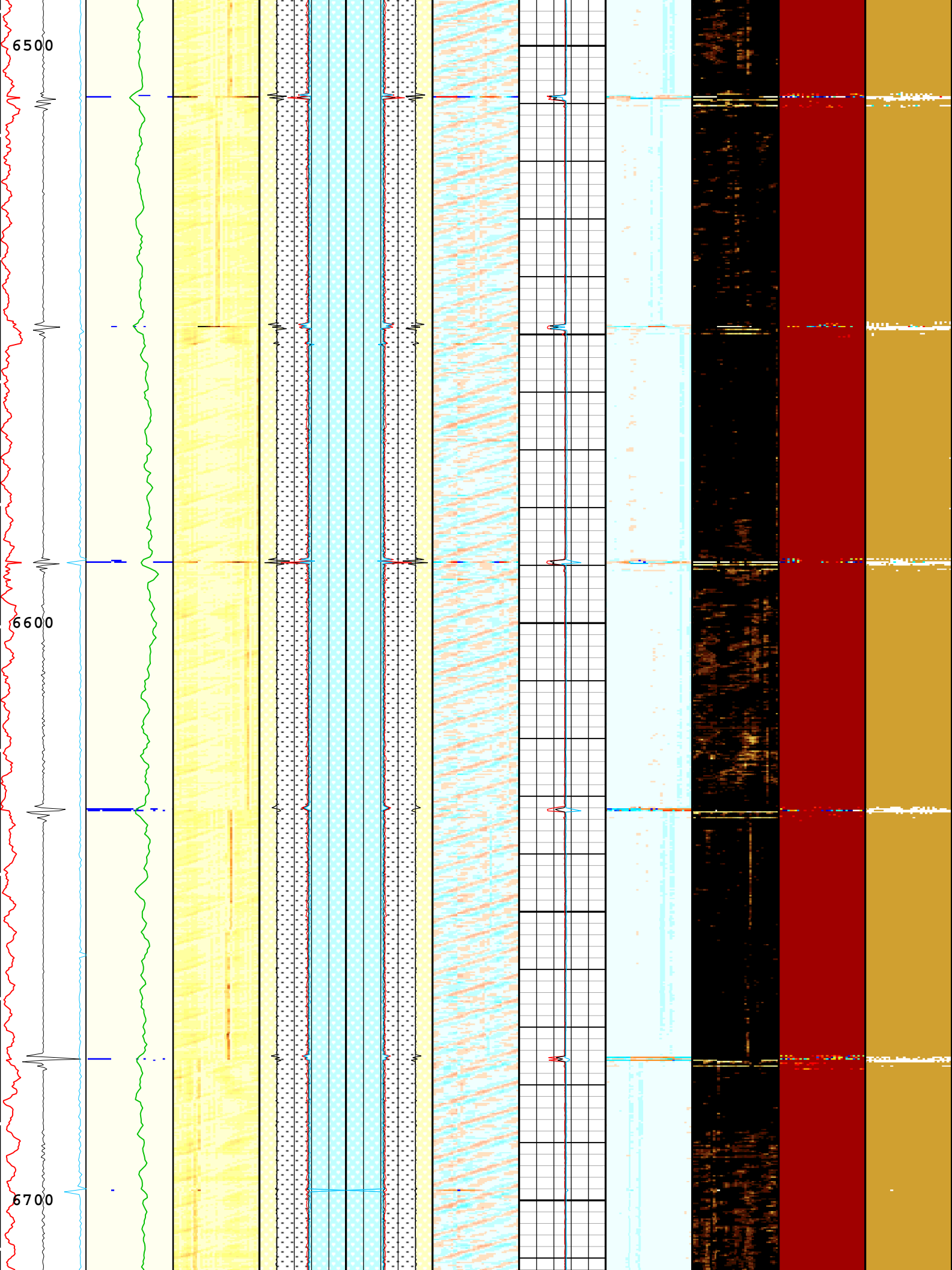
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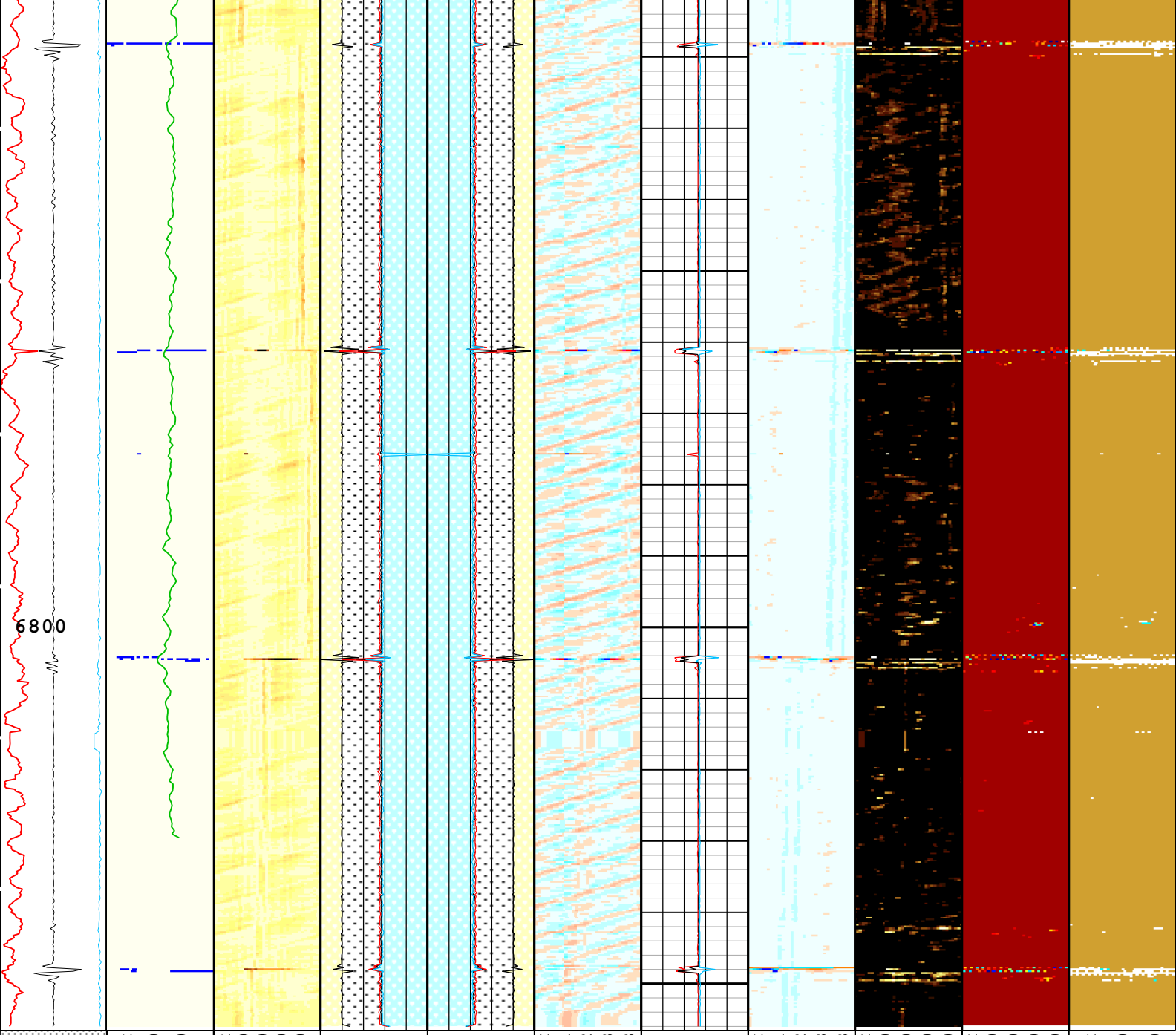

Cable Drag

Tool_Tot. Drag

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

Absent 1.500 3.500

Explicit Normalization

USIT - USIT Processing Flags (UFLG) USIT-E

Orientation: Top of Hole

U L B R U

Gamma Ray (GR) SGT-N

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

3.7 in 2.7

Internal Radius Averaged Value (IRAV) USIT-E

3.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E

3.7 in 2.7

Internal Radius

External Radii Average (ERAV) USIT-E

2.7 in 3.7

Internal Radius Averaged Value (IRAV) USIT-E

2.7 in 3.7

Internal Radius Maximum Value (IRMX) USIT-E

2.7 in 3.7

Internal Radius

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 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Acoustic Impedance (AIBK) USIT-E

(Mrayl)

Orientation: Top of Hole

U L B R U

Absent 28.000 44.000 60.000 76.000

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

USIT-E

6 c/s 7.5

Stuck Tool Indicator, Total (STIT)

0 ft 50

Minimum Value (IRMN) USIT-E

3.7 in 2.7

Minimum Value (IRMN) USIT-E

2.7 in 3.7

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: USI IBC SLG Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:02

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
BARI	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	7852	ft
CDEN.1	Cement Density	USIT-E	0	lbm/gal
CDEN.2	Cement Density	SGT-N	16.69	lbm/gal
CMTY	Cement Type	USIT-E	Light Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.01	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	7.81	dB/m
IBC_FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_BINPROC	ICE Bin Processing Depth Interval	USIT-E	0	ft
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	1.07	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.09	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OCDI	Outer Casing Diameter	USIT-E	0	in
OCSH	Outer Casing Shoe	USIT-E	0	ft
OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in

SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7000	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Eccentered	
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFAO	SIT Flexural Attenuation Offset	USIT-E	1.88	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
UTHDP	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	1.6	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	0	1000
BS	8.75	1000	6856.5
MEAS_WLEN	22.5	0	6856.5

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	Time Zoned	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1350	ft/h
TMUC	Type of Mud	USIT-E	BRI	
UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6855	ft
USSP	Ultrasonic Service	USIT-E	IBC	
UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us

WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
AGMX	18	18-Jun-2014 08:48:50	18-Jun-2014 09:13:48	6856.94	6326.51
AGMX	16	18-Jun-2014 09:13:48	18-Jun-2014 09:14:04	6326.51	6321.04
AGMX	14	18-Jun-2014 09:14:04	18-Jun-2014 09:14:54	6321.04	6303.01
AGMX	10	18-Jun-2014 09:14:54	18-Jun-2014 09:15:24	6303.01	6292.23
AGMX	8	18-Jun-2014 09:15:24	18-Jun-2014 09:19:14	6292.23	6210.4
AGMX	18	18-Jun-2014 09:19:14	18-Jun-2014 09:39:37	6210.4	5774.39
AGMX	24	18-Jun-2014 09:39:37	18-Jun-2014 09:40:14	5774.39	5761.08
AGMX	48	18-Jun-2014 09:40:14	18-Jun-2014 14:10:07	5761.08	8.38
EMXV	75	18-Jun-2014 08:48:50	18-Jun-2014 09:10:24	6856.94	6399.62
EMXV	70	18-Jun-2014 09:10:24	18-Jun-2014 09:10:38	6399.62	6394.49
EMXV	68	18-Jun-2014 09:10:38	18-Jun-2014 09:10:48	6394.49	6391
EMXV	65	18-Jun-2014 09:10:48	18-Jun-2014 09:10:55	6391	6388.54
EMXV	62	18-Jun-2014 09:10:55	18-Jun-2014 09:11:02	6388.54	6385.91
EMXV	60	18-Jun-2014 09:11:02	18-Jun-2014 09:11:14	6385.91	6381.72
EMXV	58	18-Jun-2014 09:11:14	18-Jun-2014 09:11:32	6381.72	6375.5
EMXV	56	18-Jun-2014 09:11:32	18-Jun-2014 09:12:17	6375.5	6359.24
EMXV	52	18-Jun-2014 09:12:17	18-Jun-2014 09:12:22	6359.24	6357.39
EMXV	48	18-Jun-2014 09:12:22	18-Jun-2014 09:12:28	6357.39	6355.51
EMXV	46	18-Jun-2014 09:12:28	18-Jun-2014 09:12:32	6355.51	6353.78
EMXV	42	18-Jun-2014 09:12:32	18-Jun-2014 09:12:46	6353.78	6348.75
EMXV	38	18-Jun-2014 09:12:46	18-Jun-2014 09:13:05	6348.75	6342.21
EMXV	35	18-Jun-2014 09:13:05	18-Jun-2014 09:13:18	6342.21	6337.41
EMXV	30	18-Jun-2014 09:13:18	18-Jun-2014 09:13:28	6337.41	6333.92
EMXV	26	18-Jun-2014 09:13:28	18-Jun-2014 09:13:35	6333.92	6331.31
EMXV	20	18-Jun-2014 09:13:35	18-Jun-2014 09:14:15	6331.31	6316.82
EMXV	16	18-Jun-2014 09:14:15	18-Jun-2014 09:14:23	6316.82	6314.13
EMXV	14	18-Jun-2014 09:14:23	18-Jun-2014 09:14:32	6314.13	6310.8
EMXV	10	18-Jun-2014 09:14:32	18-Jun-2014 09:21:49	6310.8	6155
EMXV	8	18-Jun-2014 09:21:49	18-Jun-2014 09:22:23	6155	6142.82
EMXV	5	18-Jun-2014 09:22:23	18-Jun-2014 09:24:39	6142.82	6094.3
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EMXV	3	18-Jun-2014 09:24:47	18-Jun-2014 09:32:02	6091.71	5936.33
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EMXV	3	18-Jun-2014 09:32:30	18-Jun-2014 09:32:55	5926.08	5917.3
EMXV	1	18-Jun-2014 09:32:55	18-Jun-2014 10:00:37	5917.3	5328.2
EMXV	3	18-Jun-2014 10:00:37	18-Jun-2014 10:01:02	5328.2	5319.71
EMXV	1	18-Jun-2014 10:01:02	18-Jun-2014 10:12:17	5319.71	5082.63
EMXV	0	18-Jun-2014 10:12:17	18-Jun-2014 10:32:20	5082.63	4654.44
EMXV	5	18-Jun-2014 10:32:20	18-Jun-2014 10:32:31	4654.44	4650.53
EMXV	8	18-Jun-2014 10:32:31	18-Jun-2014 10:33:06	4650.53	4638.38
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EMXV	8	18-Jun-2014 10:35:57	18-Jun-2014 10:36:05	4577.74	4574.67
EMXV	6	18-Jun-2014 10:36:05	18-Jun-2014 10:48:37	4574.67	4309.4
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EMXV	12	18-Jun-2014 10:56:21	18-Jun-2014 10:56:27	4145.24	4143.17
EMXV	14	18-Jun-2014 10:56:27	18-Jun-2014 10:56:32	4143.17	4141.42
EMXV	16	18-Jun-2014 10:56:32	18-Jun-2014 10:56:37	4141.42	4139.62
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EMXV	20	18-Jun-2014 10:56:43	18-Jun-2014 10:59:35	4137.37	4075.47
EMXV	22	18-Jun-2014 10:59:35	18-Jun-2014 10:59:42	4075.47	4072.81
EMXV	24	18-Jun-2014 10:59:42	18-Jun-2014 10:59:58	4072.81	4067.27
EMXV	26	18-Jun-2014 10:59:58	18-Jun-2014 11:00:19	4067.27	4059.59
EMXV	28	18-Jun-2014 11:00:19	18-Jun-2014 11:00:25	4059.59	4057.27
EMXV	30	18-Jun-2014 11:00:25	18-Jun-2014 11:00:32	4057.27	4054.97
EMXV	33	18-Jun-2014 11:00:32	18-Jun-2014 11:00:37	4054.97	4053
EMXV	36	18-Jun-2014 11:00:37	18-Jun-2014 11:00:45	4053	4050.27
EMXV	40	18-Jun-2014 11:00:45	18-Jun-2014 11:00:56	4050.27	4046.25
EMXV	43	18-Jun-2014 11:00:56	18-Jun-2014 11:01:05	4046.25	4043.02
EMXV	47	18-Jun-2014 11:01:05	18-Jun-2014 11:01:11	4043.02	4040.72
EMXV	50	18-Jun-2014 11:01:11	18-Jun-2014 11:01:44	4040.72	4029.18
EMXV	53	18-Jun-2014 11:01:44	18-Jun-2014 11:01:52	4029.18	4026.31
EMXV	55	18-Jun-2014 11:01:52	18-Jun-2014 11:23:00	4026.31	3566.35
EMXV	57	18-Jun-2014 11:23:00	18-Jun-2014 11:27:54	3566.35	3461.39
EMXV	60	18-Jun-2014 11:27:54	18-Jun-2014 11:28:00	3461.39	3459.12
EMXV	63	18-Jun-2014 11:28:00	18-Jun-2014 11:28:06	3459.12	3457.04
EMXV	65	18-Jun-2014 11:28:06	18-Jun-2014 11:28:14	3457.04	3454.36
EMXV	68	18-Jun-2014 11:28:14	18-Jun-2014 11:28:18	3454.36	3452.95
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EMXV	72	18-Jun-2014 11:28:21	18-Jun-2014 11:28:27	3451.62	3449.85
EMXV	75	18-Jun-2014 11:28:27	18-Jun-2014 11:28:32	3449.85	3447.87
EMXV	78	18-Jun-2014 11:28:32	18-Jun-2014 11:28:37	3447.87	3446.12
EMXV	80	18-Jun-2014 11:28:37	18-Jun-2014 11:28:42	3446.12	3444.39
EMXV	83	18-Jun-2014 11:28:42	18-Jun-2014 11:29:17	3444.39	3432.21
EMXV	85	18-Jun-2014 11:29:17	18-Jun-2014 11:29:23	3432.21	3430.19
EMXV	88	18-Jun-2014 11:29:23	18-Jun-2014 12:15:01	3430.19	2449.5
EMXV	90	18-Jun-2014 12:15:01	18-Jun-2014 14:10:07	2449.5	8.38
UFWB	133	18-Jun-2014 08:48:50	18-Jun-2014 10:16:26	6856.94	4994.97
UFWB	124.9	18-Jun-2014 10:16:26	18-Jun-2014 13:30:05	4994.97	843.43
UFWB	138.02	18-Jun-2014 13:30:05	18-Jun-2014 13:30:33	843.43	833.46
UFWB	133.67	18-Jun-2014 13:30:33	18-Jun-2014 14:10:07	833.46	8.38
UFWE	173	18-Jun-2014 08:48:50	18-Jun-2014 10:14:04	6856.94	5045.07
UFWE	177.26	18-Jun-2014 10:14:04	18-Jun-2014 13:29:50	5045.07	848.79
UFWE	189.4	18-Jun-2014 13:29:50	18-Jun-2014 14:10:07	848.79	8.38

UNWB	102	18-Jun-2014 08:48:50	18-Jun-2014 10:16:23	6856.94	4996.03
UNWB	94.63	18-Jun-2014 10:16:23	18-Jun-2014 13:30:02	4996.03	844.43
UNWB	105.26	18-Jun-2014 13:30:02	18-Jun-2014 13:30:36	844.43	832.36
UNWB	102.42	18-Jun-2014 13:30:36	18-Jun-2014 14:10:07	832.36	8.38
UNWE	142	18-Jun-2014 08:48:50	18-Jun-2014 10:14:14	6856.94	5041.63
UNWE	149.45	18-Jun-2014 10:14:14	18-Jun-2014 13:29:59	5041.63	845.68
UNWE	170.68	18-Jun-2014 13:29:59	18-Jun-2014 14:10:07	845.68	8.38
WINB	37.61	18-Jun-2014 08:48:50	18-Jun-2014 10:16:43	6856.94	4989.05
WINB	31.6	18-Jun-2014 10:16:43	18-Jun-2014 13:44:35	4989.05	537.89
WINB	39.84	18-Jun-2014 13:44:35	18-Jun-2014 13:44:43	537.89	535.15
WINB	46	18-Jun-2014 13:44:43	18-Jun-2014 13:44:55	535.15	530.83
WINB	44.77	18-Jun-2014 13:44:55	18-Jun-2014 13:45:07	530.83	526.82
WINB	42.3	18-Jun-2014 13:45:07	18-Jun-2014 14:10:07	526.82	8.38
WINE	77.61	18-Jun-2014 08:48:50	18-Jun-2014 10:16:49	6856.94	4987.07
WINE	80.79	18-Jun-2014 10:16:49	18-Jun-2014 13:44:39	4987.07	536.38
WINE	84.2	18-Jun-2014 13:44:39	18-Jun-2014 14:10:07	536.38	8.38

All depth are at tool zero.

USI IBC SLG

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[6]:Up	6856.94	8.38

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC SLG - 0 PSI

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001

Computation	Description	Version
DepthCorrection	DepthCorrection	4.0.9213.3000

Tool Elements	Description	Software Version	Firmware Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000	

Log

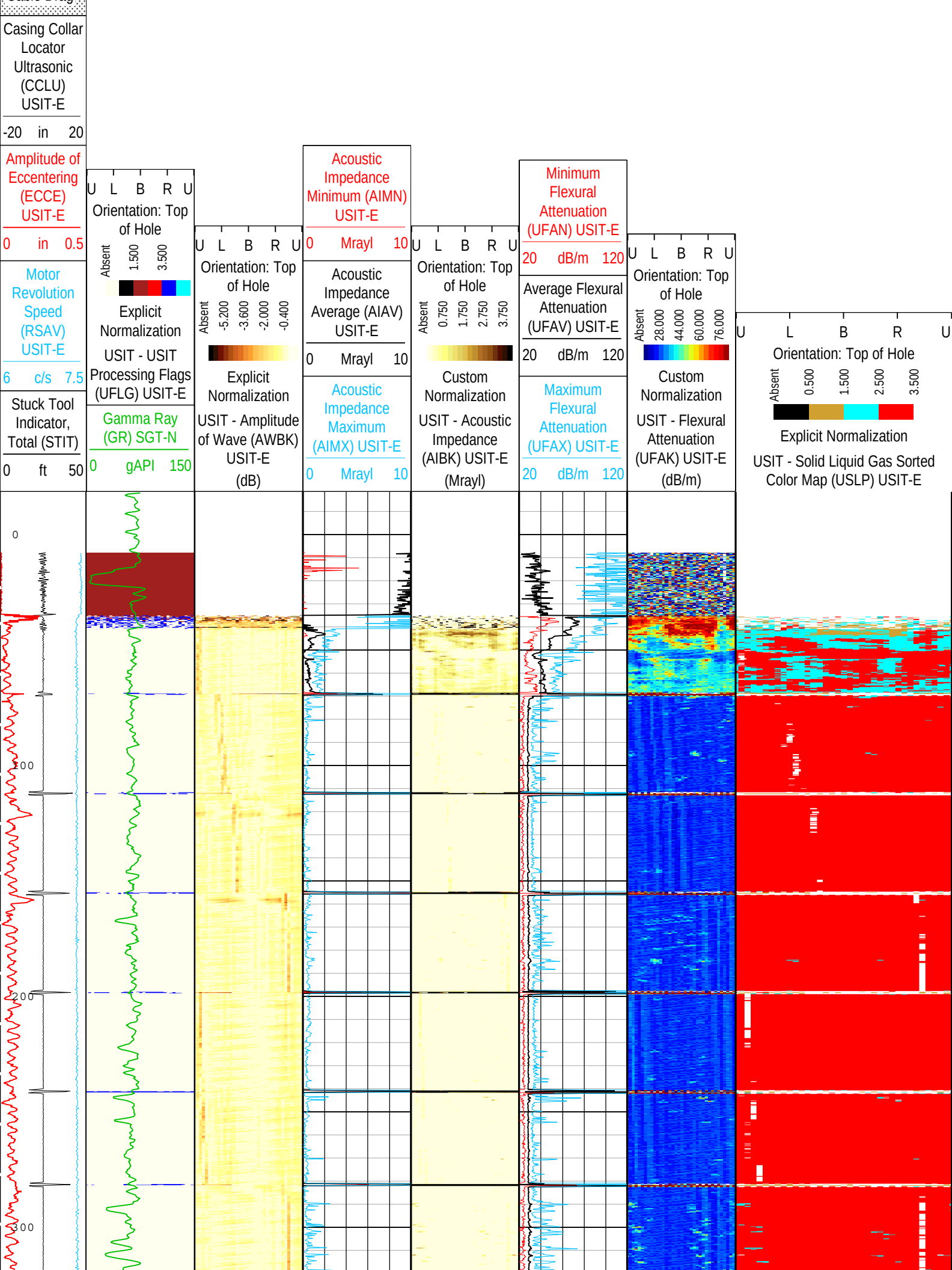
Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

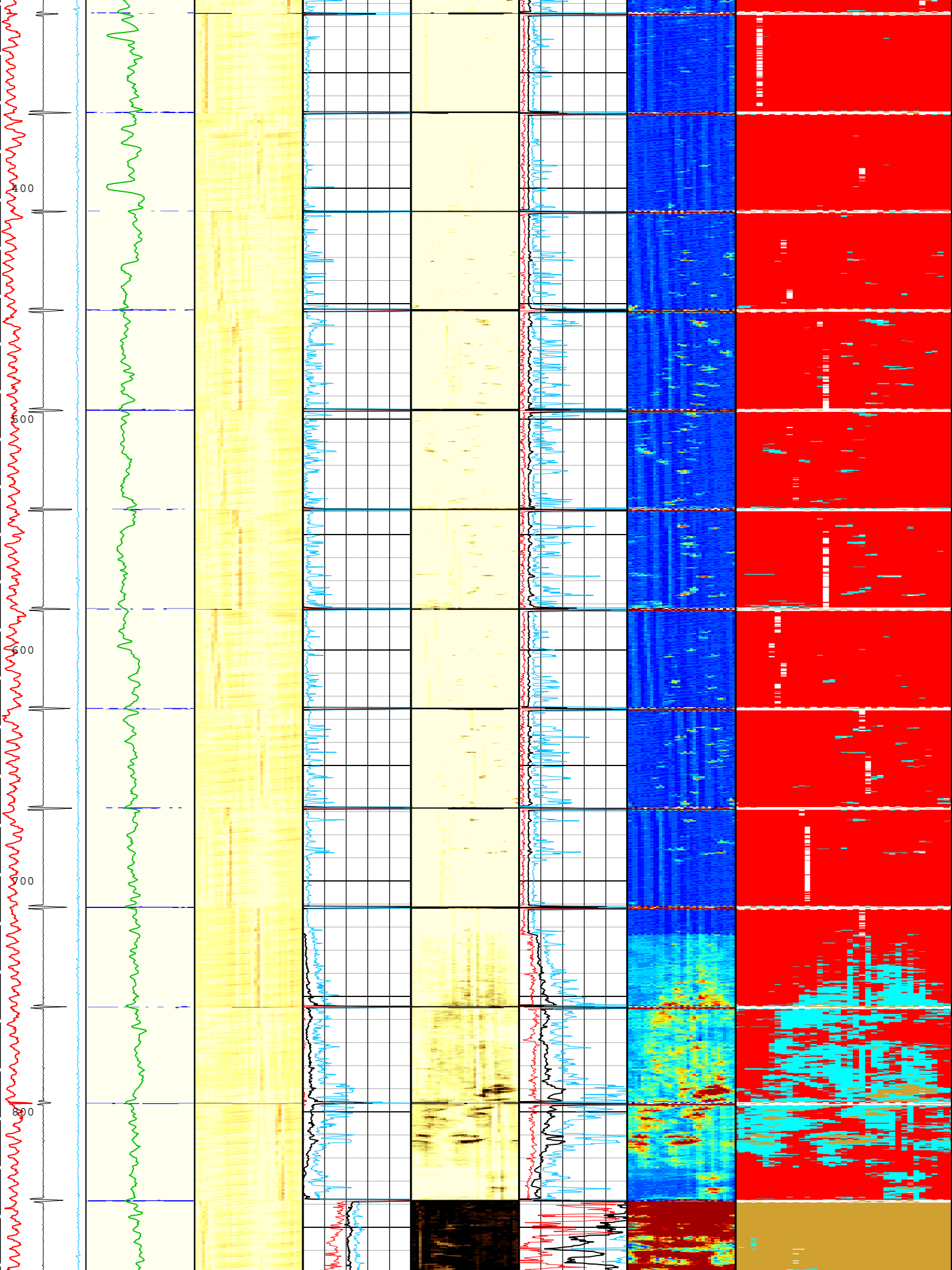
Run 1 : Main[6]:Up:S011

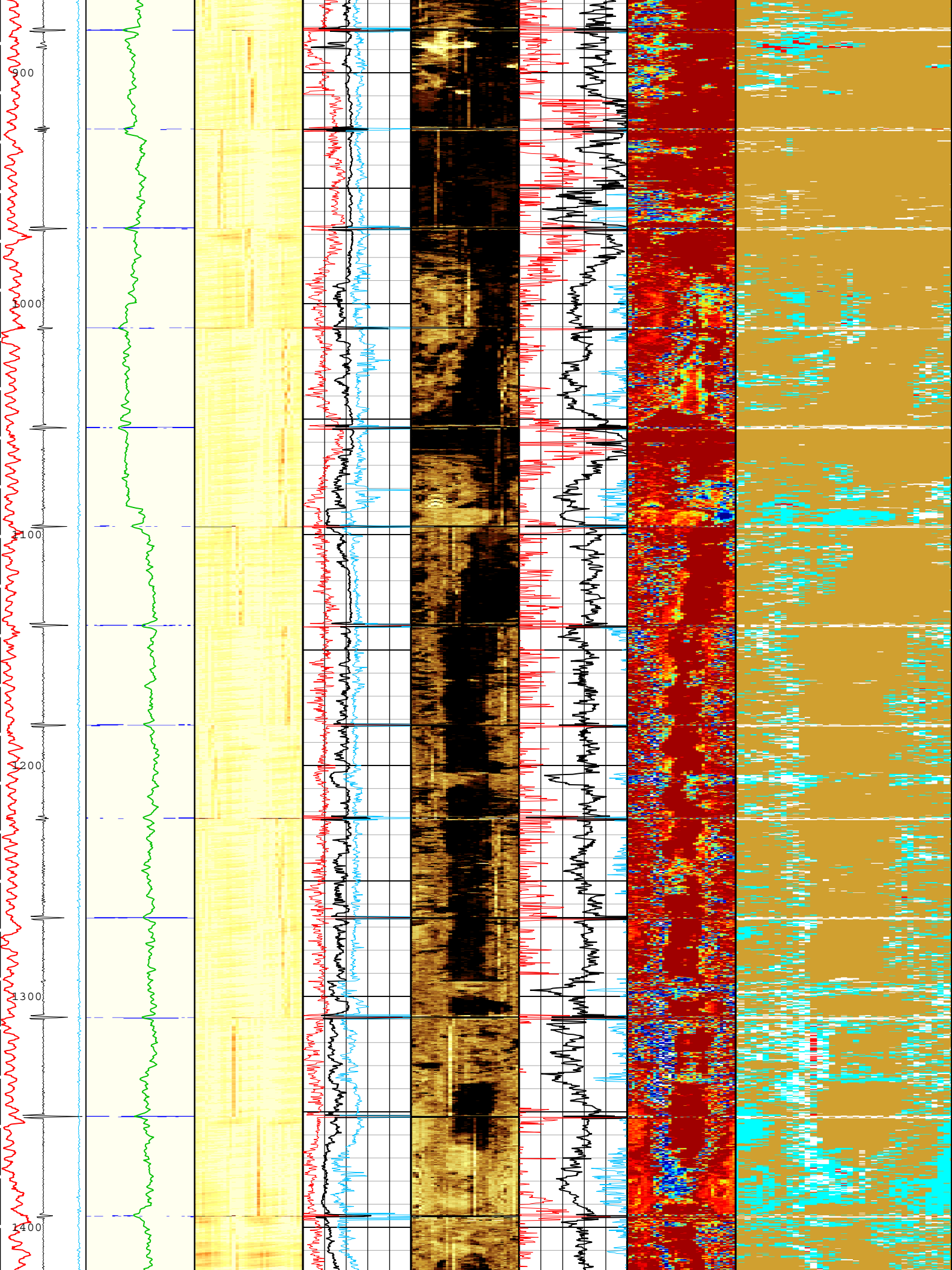
Description: USI IBC SLG Format: USI IBC SLG Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:17

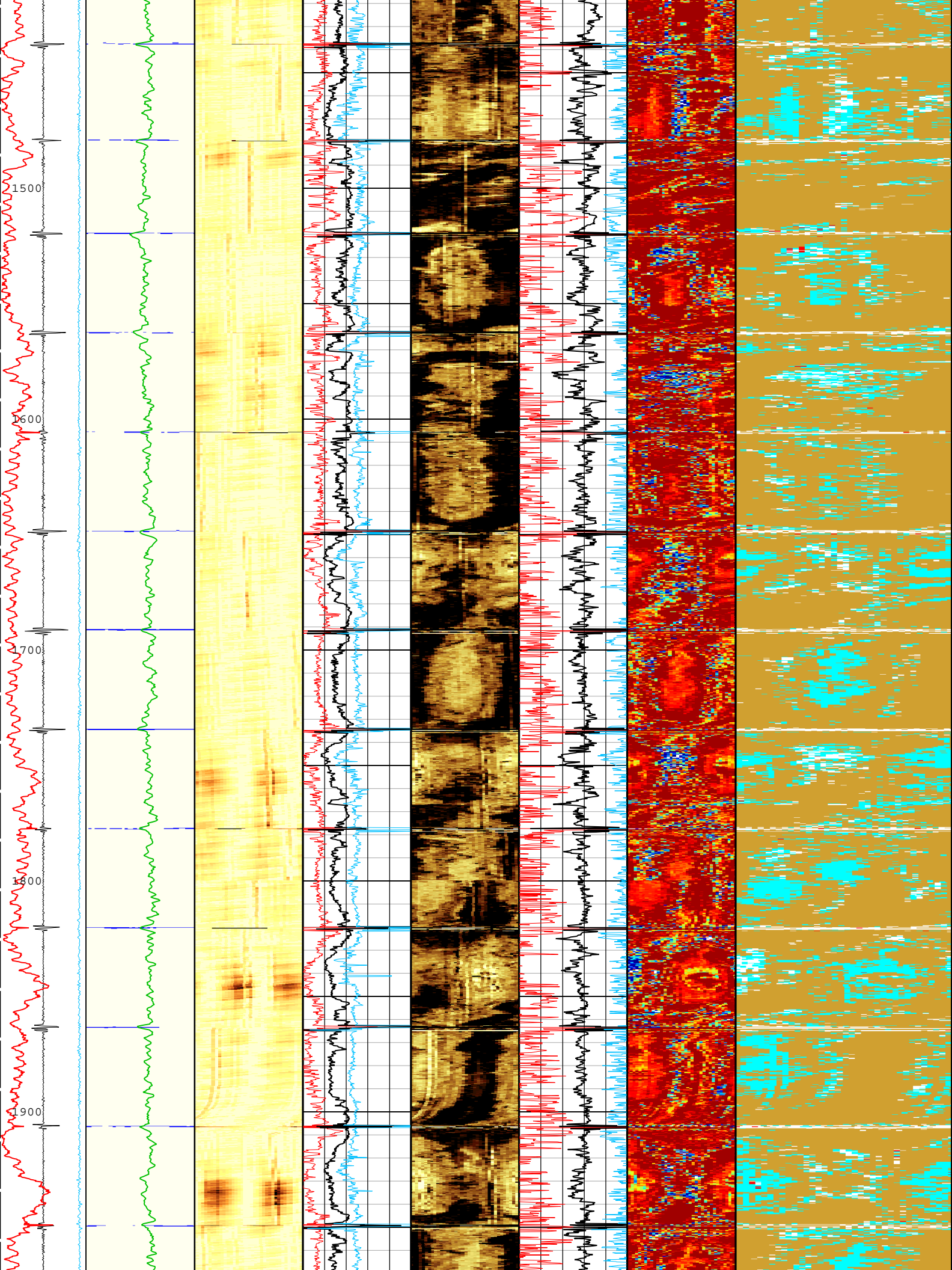
TIME_1900 - Time Marked every 60.00 (s)

Cable Drag


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
Stuck Tool Indicator, Total (STIT)
0 ft 50
U L B R U
Orientation: Top of Hole
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
Gamma Ray (GR) SGT-N
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
0 Mrayl 10
Acoustic Impedance Average (AIAV) USIT-E
0 Mrayl 10
Acoustic Impedance Maximum (AIMX) USIT-E
0 Mrayl 10
U L B R U
Orientation: Top of Hole
Absent 0.750 1.750 2.750 3.750
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
Minimum Flexural Attenuation (UFAN) USIT-E
20 dB/m 120
Average Flexural Attenuation (UFAV) USIT-E
20 dB/m 120
Maximum Flexural Attenuation (UFAX) USIT-E
20 dB/m 120
U L B R U
Orientation: Top of Hole
Absent 28.000 44.000 60.000 76.000
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
0
100
200
300


400
500
600
700
800


900
1000
1100
1200
1300
1400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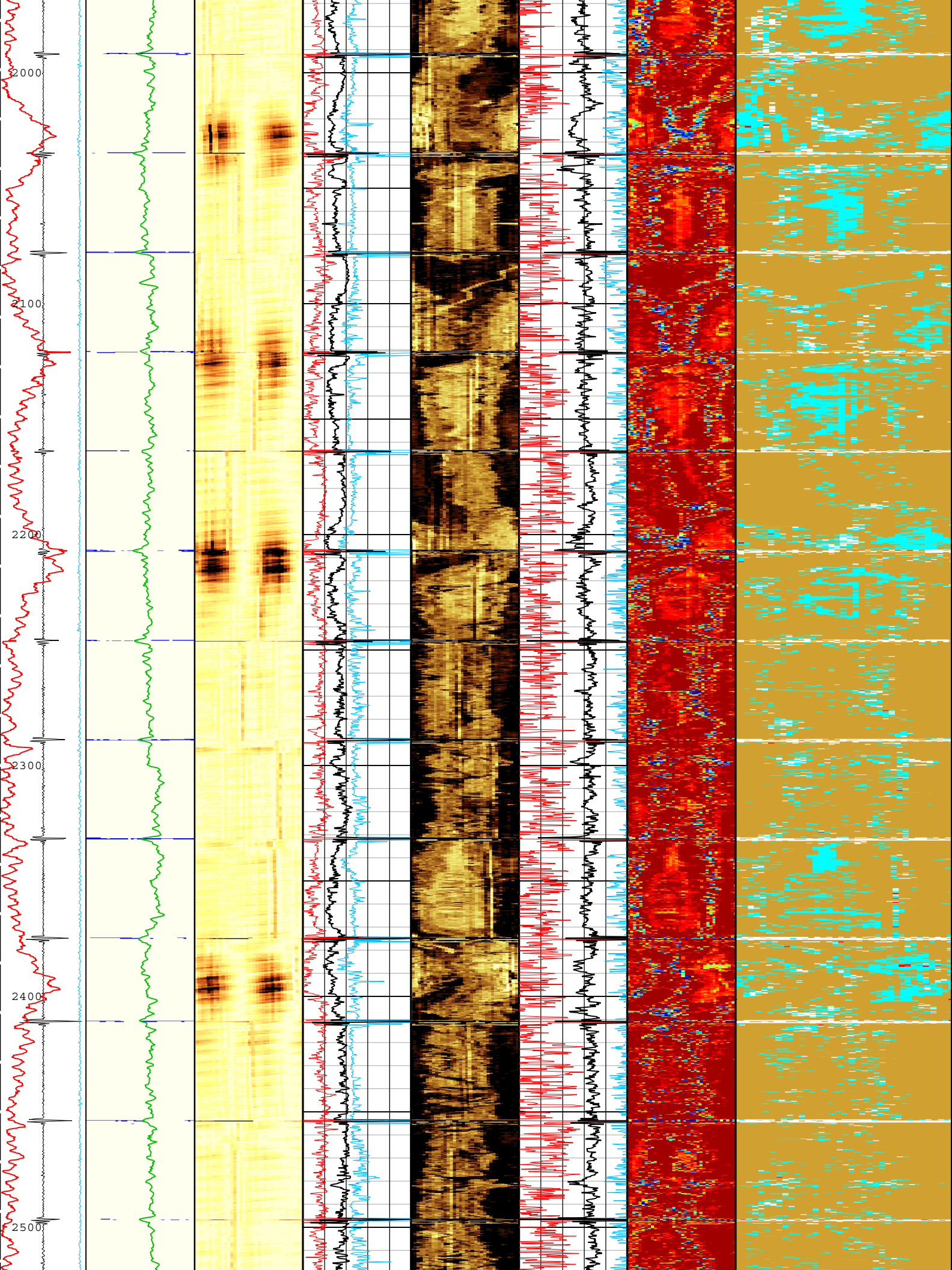
1600
1700
1800
1900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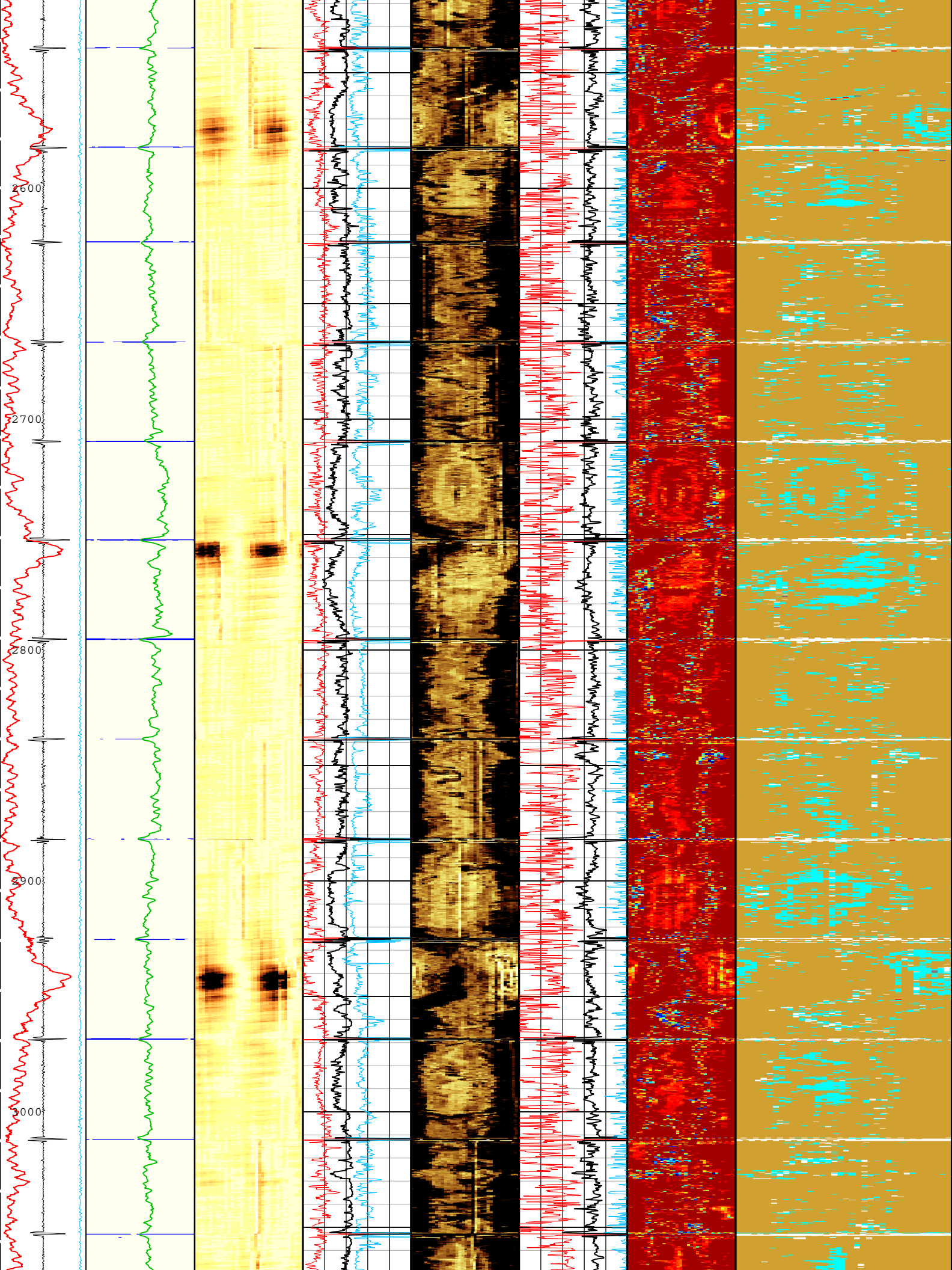
2100
2200
2300
2400
2500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2700
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2900
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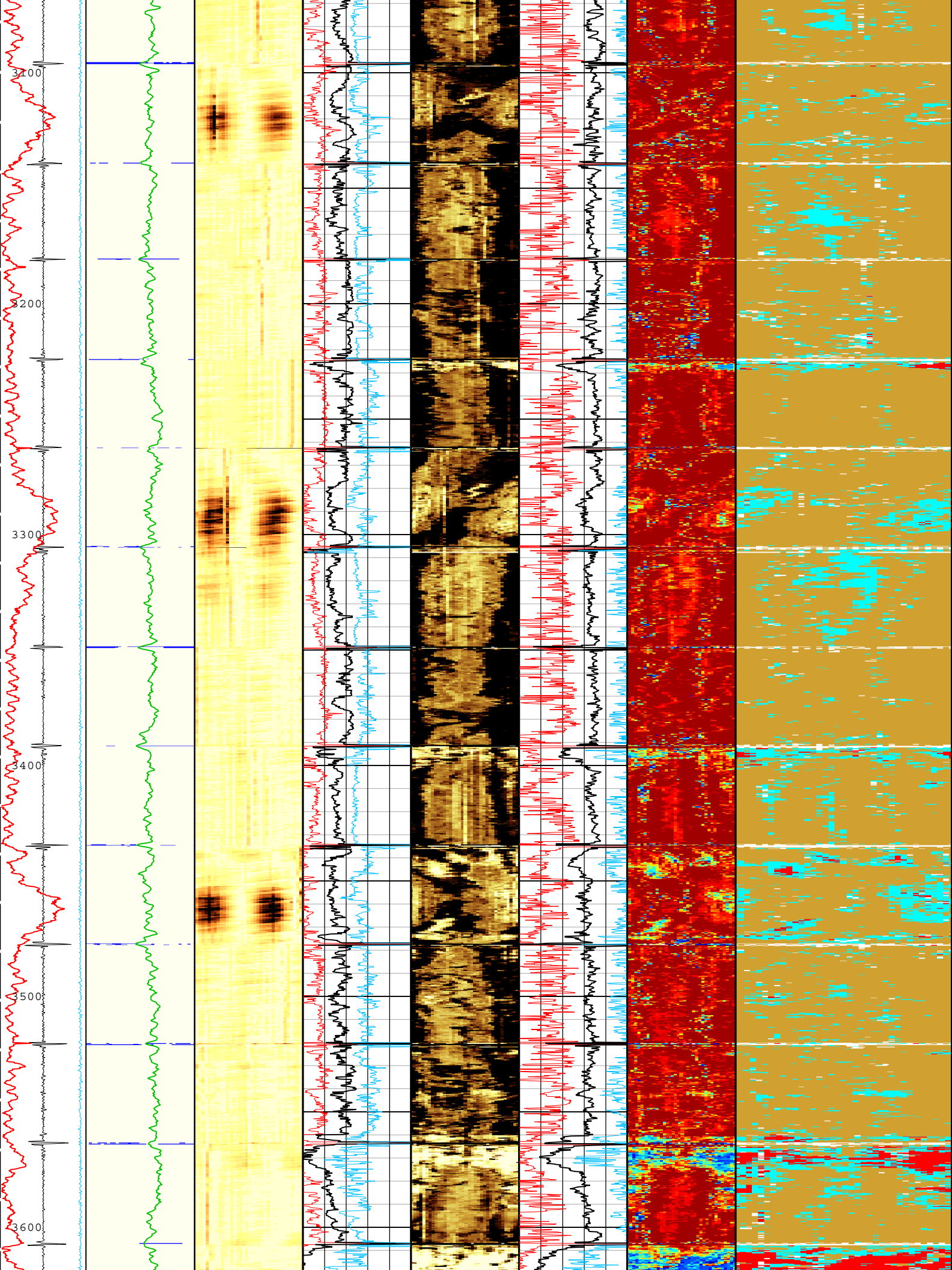
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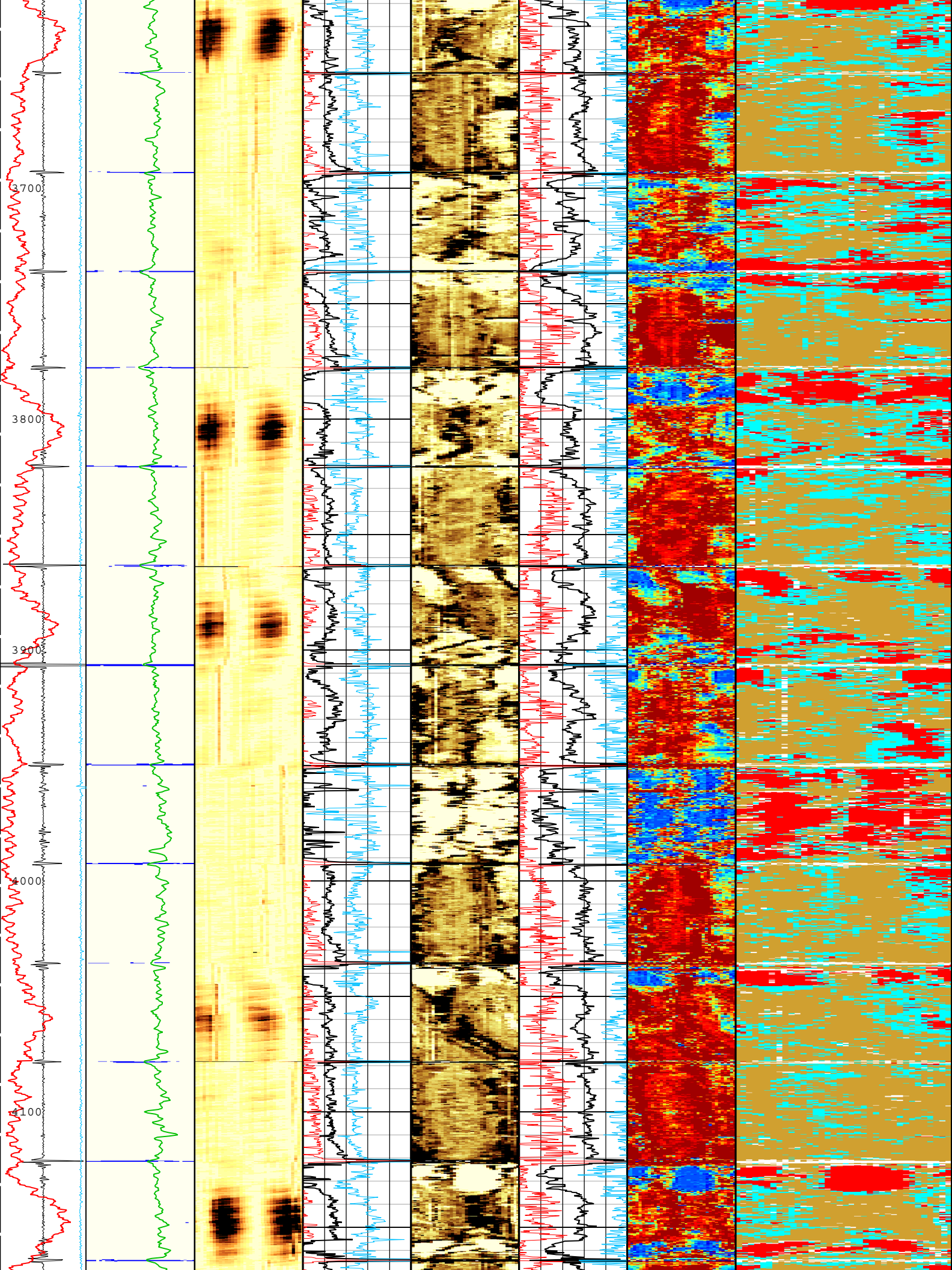
3500
3600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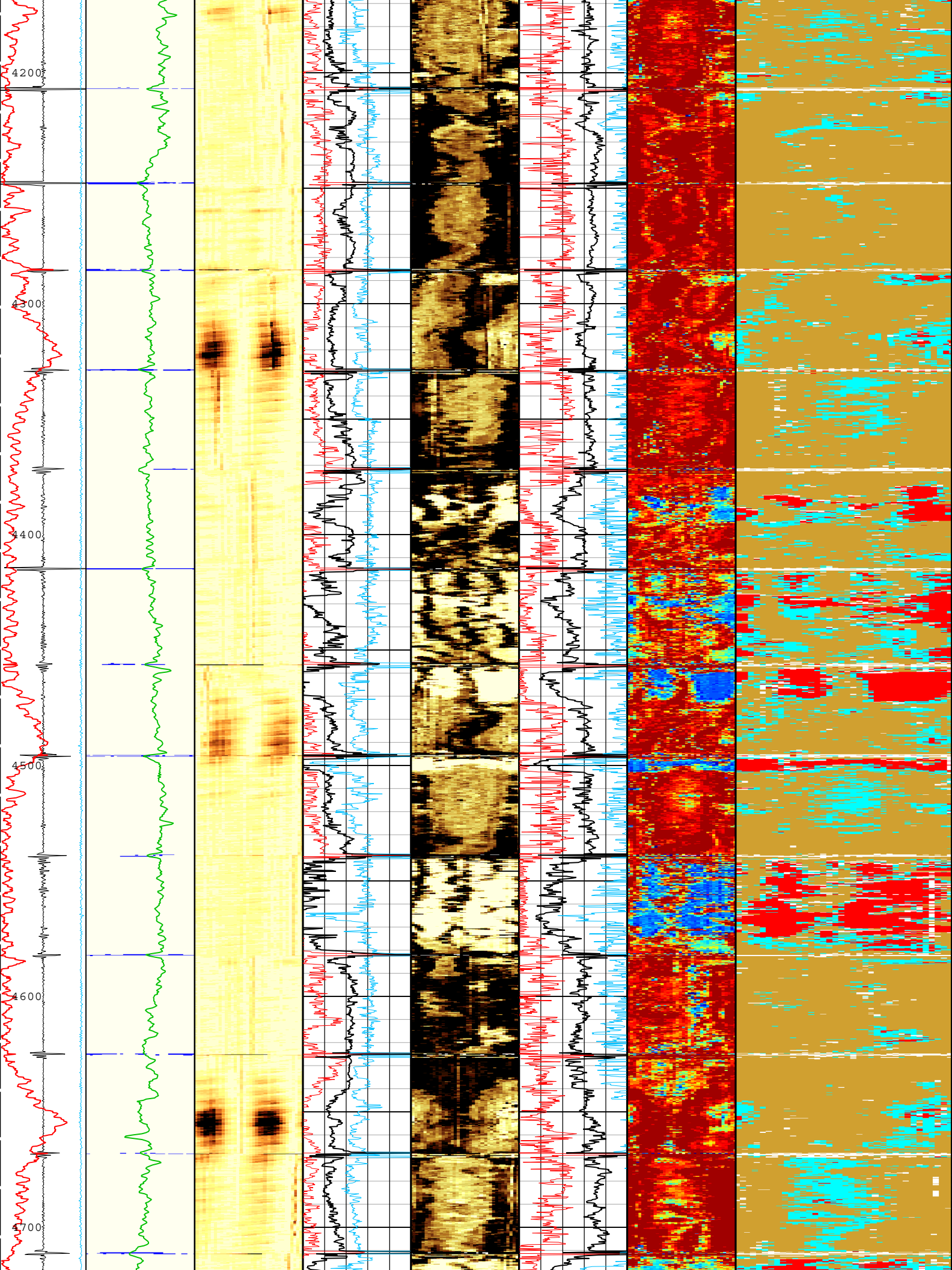
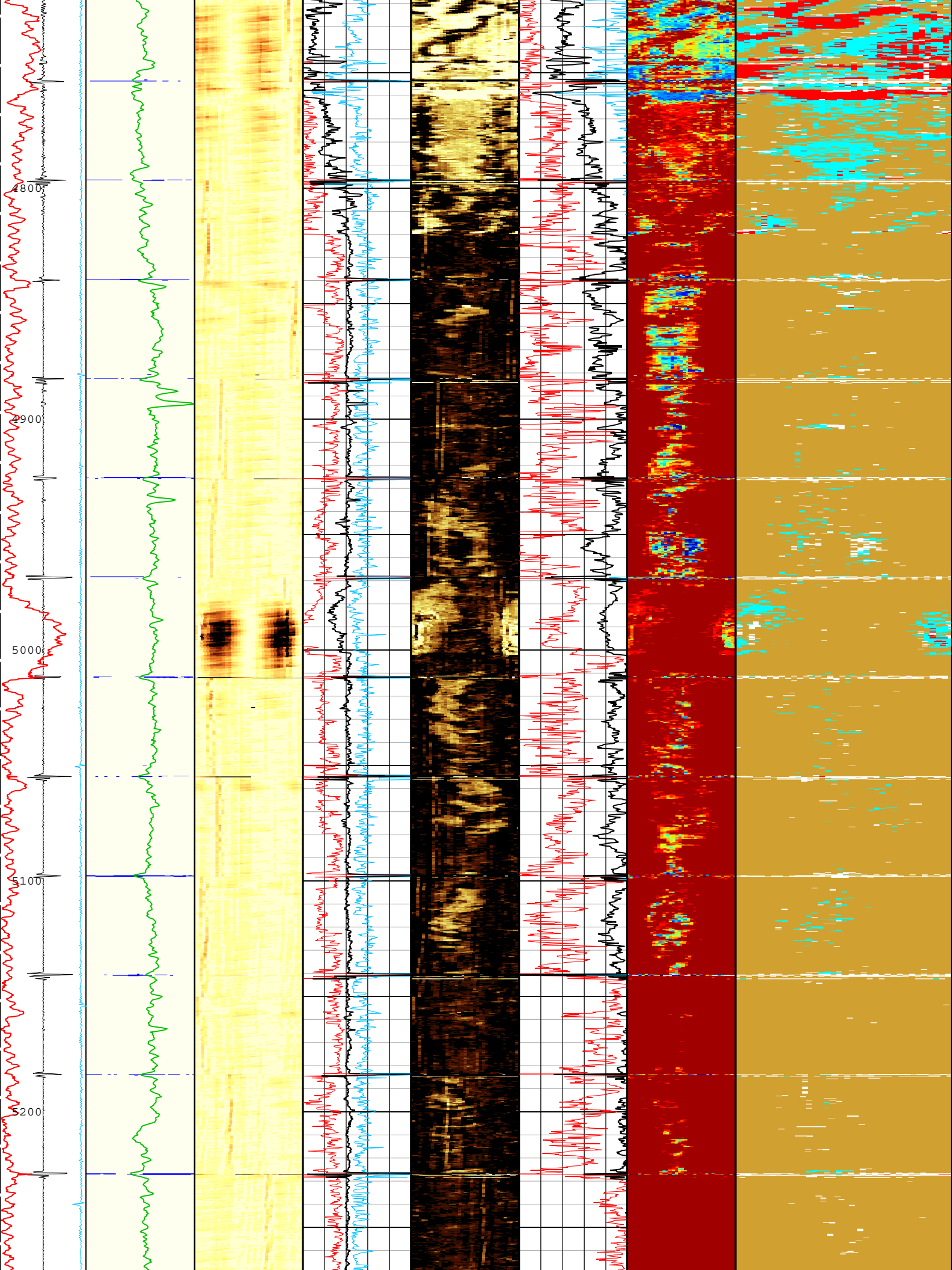
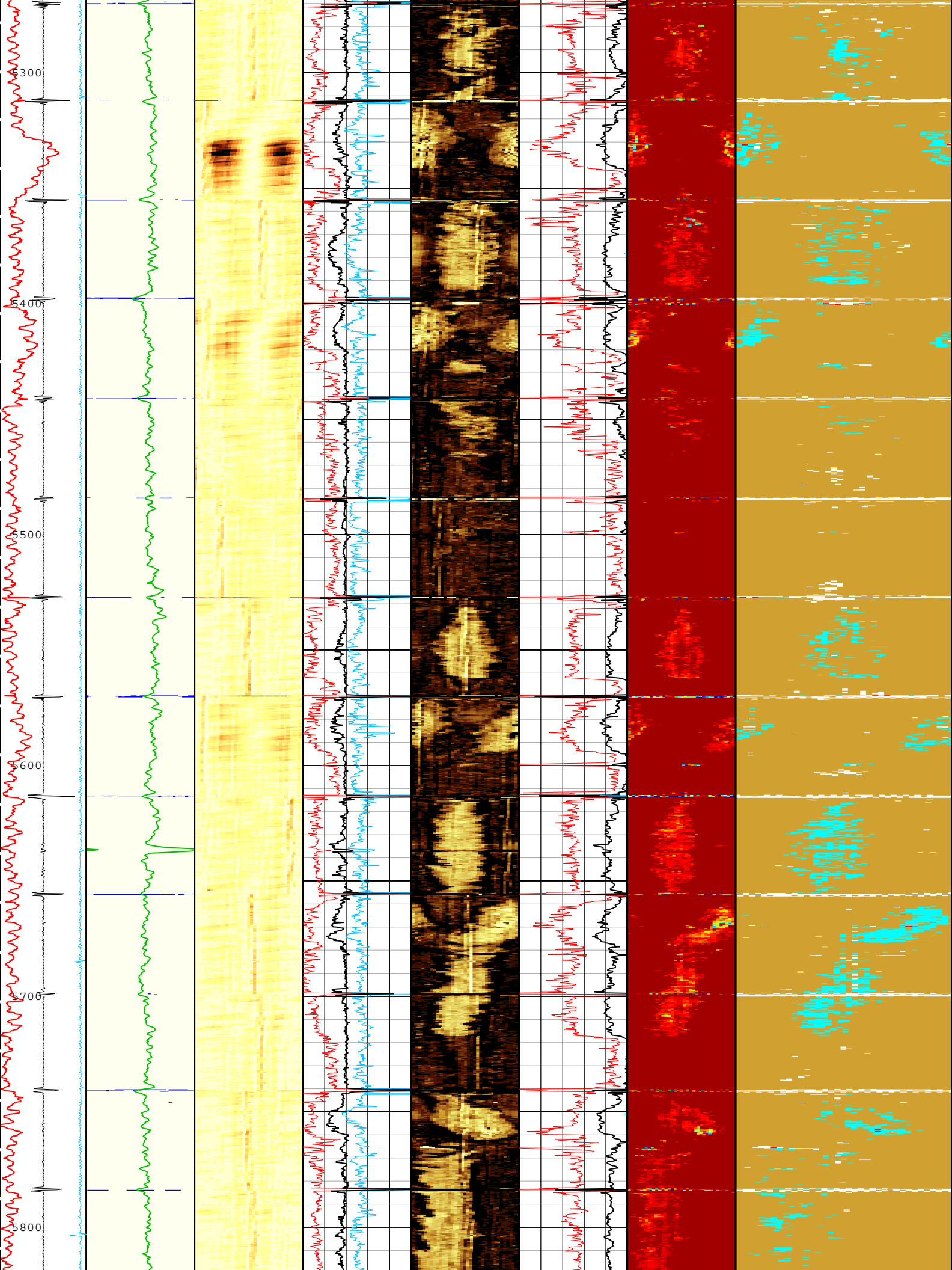
3800
3900
4000
4100


4200
4300
4400
4500
4600
4700


4800
4900
5000
5100
5200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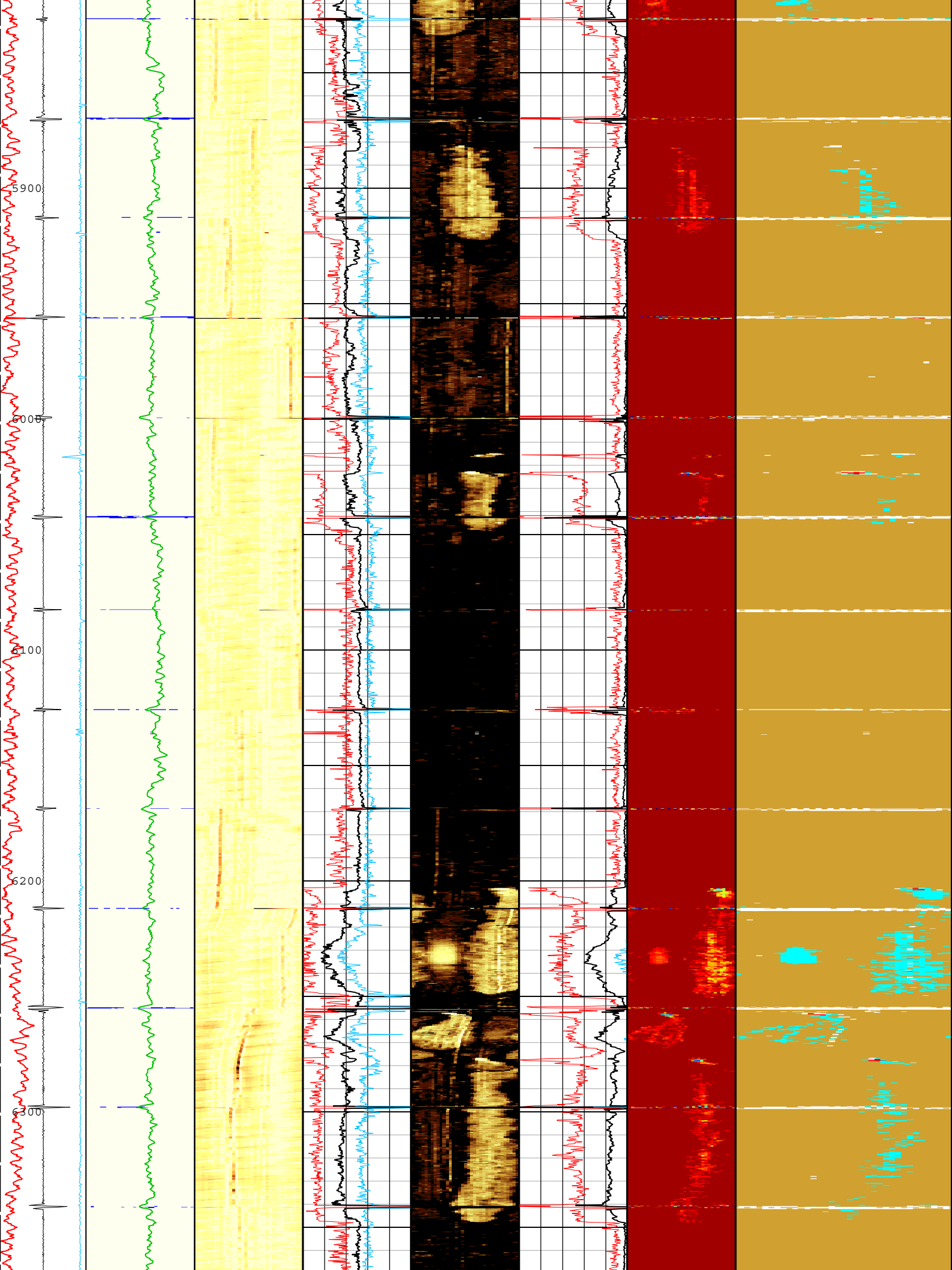
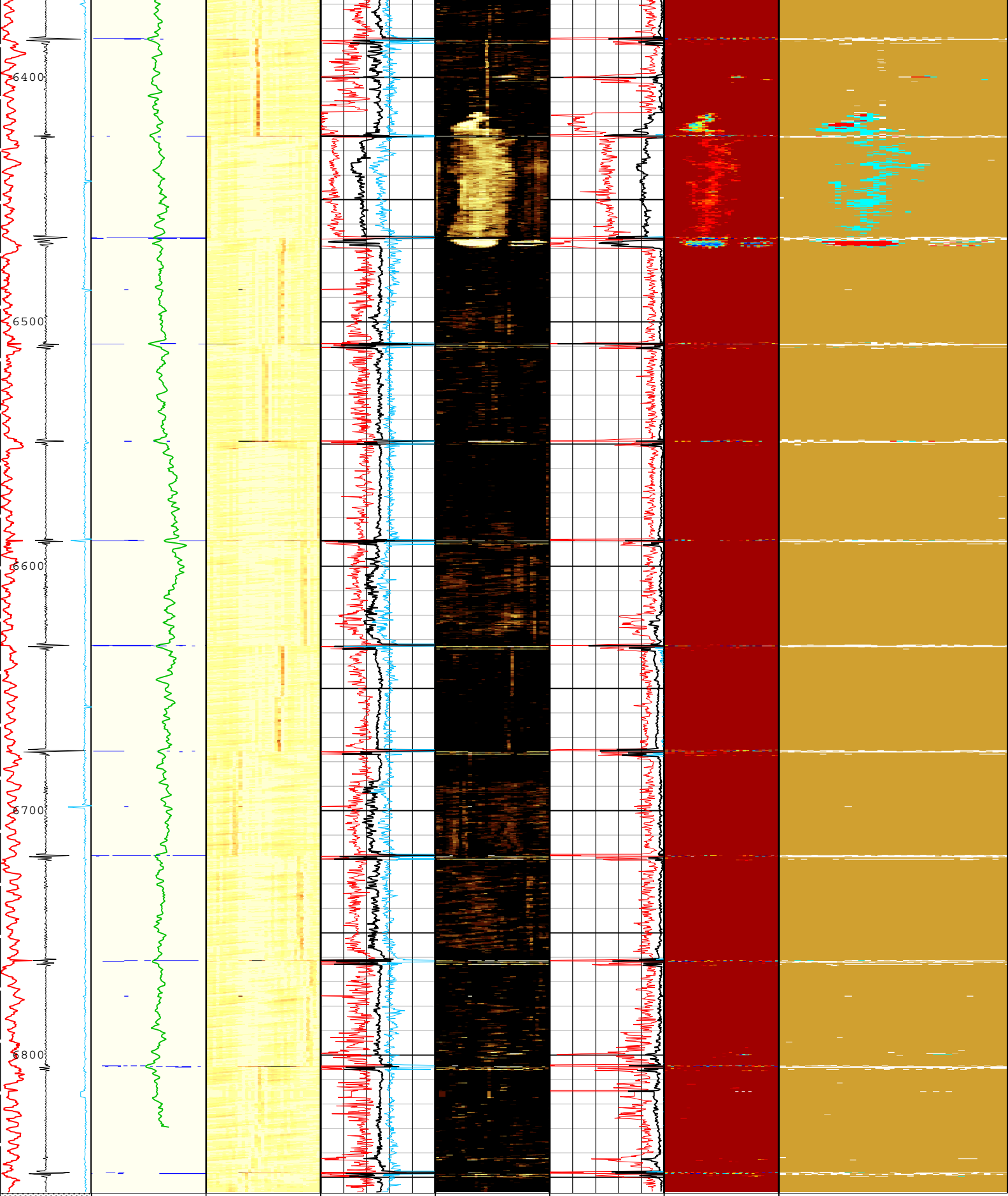
5400
5500
5600
5700
5800


5900
6000
6100
6200
6300



Cable Drag

Casing Collar Locator Ultrasonic (CCLU) USIT-E

Absent 1.500 3.500

Explicit Normalization

USIT - USIT Processing Flags

Absent -5.200 -3.600 -2.000 -0.400

Explicit Normalization

USIT - Amplitude of Wave (AWBK)

Acoustic Impedance Minimum (AIMN) USIT-E

0 Mrayl 10

Acoustic

Absent 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Acoustic Impedance

Minimum Flexural Attenuation (UFAN) USIT-E

20 dB/m 120

Average Flexural

Absent 28.000 44.000 60.000 76.000

Custom Normalization

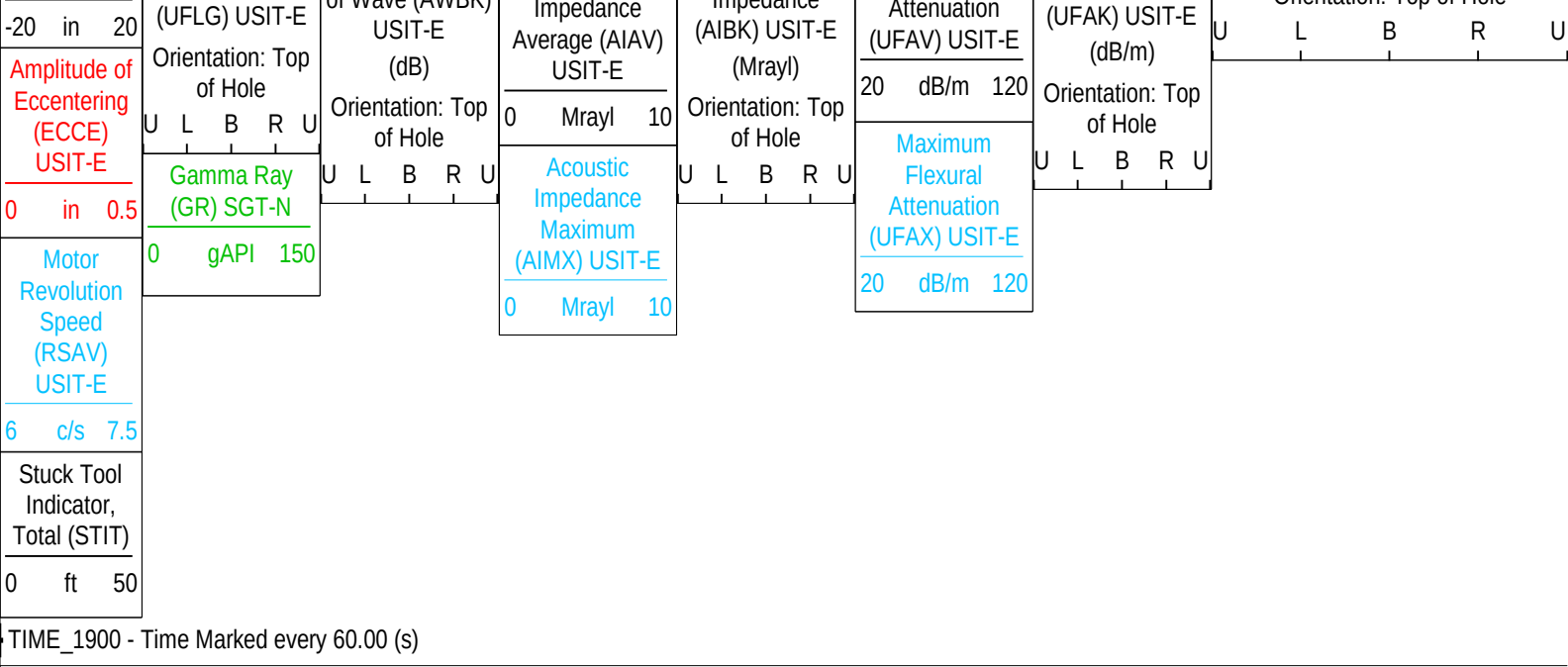
USIT - Flexural Attenuation

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



Description: USI IBC SLG Format: USI IBC SLG Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:17

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
BARI	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	7852	ft
CDEN.1	Cement Density	USIT-E	0	lbm/gal
CDEN.2	Cement Density	SGT-N	16.69	lbm/gal
CMTY	Cement Type	USIT-E	Light Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.01	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	7.81	dB/m
IBC_FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_BINPROC	ICE Bin Processing Depth Interval	USIT-E	0	ft
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	1.07	

MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.09	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OCDI	Outer Casing Diameter	USIT-E	0	in
OCSH	Outer Casing Shoe	USIT-E	0	ft
OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7000	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Eccentered	
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFAO	SIT Flexural Attenuation Offset	USIT-E	1.88	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
UTHDP	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	1.6	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	0	1000
BS	8.75	1000	6856.5
MEAS_WLEN	22.5	0	6856.5

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	Time Zoned	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1350	ft/h
TMUC	Type of Mud	USIT-E	BRI	
UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us

UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6855	ft
USSP	Ultrasonic Service	USIT-E	IBC	
UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
AGMX	18	18-Jun-2014 08:48:50	18-Jun-2014 09:13:48	6856.94	6326.51
AGMX	16	18-Jun-2014 09:13:48	18-Jun-2014 09:14:04	6326.51	6321.04
AGMX	14	18-Jun-2014 09:14:04	18-Jun-2014 09:14:54	6321.04	6303.01
AGMX	10	18-Jun-2014 09:14:54	18-Jun-2014 09:15:24	6303.01	6292.23
AGMX	8	18-Jun-2014 09:15:24	18-Jun-2014 09:19:14	6292.23	6210.4
AGMX	18	18-Jun-2014 09:19:14	18-Jun-2014 09:39:37	6210.4	5774.39
AGMX	24	18-Jun-2014 09:39:37	18-Jun-2014 09:40:14	5774.39	5761.08
AGMX	48	18-Jun-2014 09:40:14	18-Jun-2014 14:10:07	5761.08	8.38
EMXV	75	18-Jun-2014 08:48:50	18-Jun-2014 09:10:24	6856.94	6399.62
EMXV	70	18-Jun-2014 09:10:24	18-Jun-2014 09:10:38	6399.62	6394.49
EMXV	68	18-Jun-2014 09:10:38	18-Jun-2014 09:10:48	6394.49	6391
EMXV	65	18-Jun-2014 09:10:48	18-Jun-2014 09:10:55	6391	6388.54
EMXV	62	18-Jun-2014 09:10:55	18-Jun-2014 09:11:02	6388.54	6385.91
EMXV	60	18-Jun-2014 09:11:02	18-Jun-2014 09:11:14	6385.91	6381.72
EMXV	58	18-Jun-2014 09:11:14	18-Jun-2014 09:11:32	6381.72	6375.5
EMXV	56	18-Jun-2014 09:11:32	18-Jun-2014 09:12:17	6375.5	6359.24
EMXV	52	18-Jun-2014 09:12:17	18-Jun-2014 09:12:22	6359.24	6357.39
EMXV	48	18-Jun-2014 09:12:22	18-Jun-2014 09:12:28	6357.39	6355.51
EMXV	46	18-Jun-2014 09:12:28	18-Jun-2014 09:12:32	6355.51	6353.78
EMXV	42	18-Jun-2014 09:12:32	18-Jun-2014 09:12:46	6353.78	6348.75
EMXV	38	18-Jun-2014 09:12:46	18-Jun-2014 09:13:05	6348.75	6342.21
EMXV	35	18-Jun-2014 09:13:05	18-Jun-2014 09:13:18	6342.21	6337.41
EMXV	30	18-Jun-2014 09:13:18	18-Jun-2014 09:13:28	6337.41	6333.92
EMXV	26	18-Jun-2014 09:13:28	18-Jun-2014 09:13:35	6333.92	6331.31
EMXV	20	18-Jun-2014 09:13:35	18-Jun-2014 09:14:15	6331.31	6316.82
EMXV	16	18-Jun-2014 09:14:15	18-Jun-2014 09:14:23	6316.82	6314.13
EMXV	14	18-Jun-2014 09:14:23	18-Jun-2014 09:14:32	6314.13	6310.8
EMXV	10	18-Jun-2014 09:14:32	18-Jun-2014 09:21:49	6310.8	6155
EMXV	8	18-Jun-2014 09:21:49	18-Jun-2014 09:22:23	6155	6142.82
EMXV	5	18-Jun-2014 09:22:23	18-Jun-2014 09:24:39	6142.82	6094.3
EMXV	8	18-Jun-2014 09:24:39	18-Jun-2014 09:24:47	6094.3	6091.71
EMXV	3	18-Jun-2014 09:24:47	18-Jun-2014 09:32:02	6091.71	5936.33
EMXV	1	18-Jun-2014 09:32:02	18-Jun-2014 09:32:30	5936.33	5926.08

EMXV	3	18-Jun-2014 09:32:30	18-Jun-2014 09:32:55	5926.08	5917.3
EMXV	1	18-Jun-2014 09:32:55	18-Jun-2014 10:00:37	5917.3	5328.2
EMXV	3	18-Jun-2014 10:00:37	18-Jun-2014 10:01:02	5328.2	5319.71
EMXV	1	18-Jun-2014 10:01:02	18-Jun-2014 10:12:17	5319.71	5082.63
EMXV	0	18-Jun-2014 10:12:17	18-Jun-2014 10:32:20	5082.63	4654.44
EMXV	5	18-Jun-2014 10:32:20	18-Jun-2014 10:32:31	4654.44	4650.53
EMXV	8	18-Jun-2014 10:32:31	18-Jun-2014 10:33:06	4650.53	4638.38
EMXV	10	18-Jun-2014 10:33:06	18-Jun-2014 10:35:57	4638.38	4577.74
EMXV	8	18-Jun-2014 10:35:57	18-Jun-2014 10:36:05	4577.74	4574.67
EMXV	6	18-Jun-2014 10:36:05	18-Jun-2014 10:48:37	4574.67	4309.4
EMXV	8	18-Jun-2014 10:48:37	18-Jun-2014 10:56:00	4309.4	4152.73
EMXV	9	18-Jun-2014 10:56:00	18-Jun-2014 10:56:16	4152.73	4147.08
EMXV	10	18-Jun-2014 10:56:16	18-Jun-2014 10:56:21	4147.08	4145.24
EMXV	12	18-Jun-2014 10:56:21	18-Jun-2014 10:56:27	4145.24	4143.17
EMXV	14	18-Jun-2014 10:56:27	18-Jun-2014 10:56:32	4143.17	4141.42
EMXV	16	18-Jun-2014 10:56:32	18-Jun-2014 10:56:37	4141.42	4139.62
EMXV	18	18-Jun-2014 10:56:37	18-Jun-2014 10:56:43	4139.62	4137.37
EMXV	20	18-Jun-2014 10:56:43	18-Jun-2014 10:59:35	4137.37	4075.47
EMXV	22	18-Jun-2014 10:59:35	18-Jun-2014 10:59:42	4075.47	4072.81
EMXV	24	18-Jun-2014 10:59:42	18-Jun-2014 10:59:58	4072.81	4067.27
EMXV	26	18-Jun-2014 10:59:58	18-Jun-2014 11:00:19	4067.27	4059.59
EMXV	28	18-Jun-2014 11:00:19	18-Jun-2014 11:00:25	4059.59	4057.27
EMXV	30	18-Jun-2014 11:00:25	18-Jun-2014 11:00:32	4057.27	4054.97
EMXV	33	18-Jun-2014 11:00:32	18-Jun-2014 11:00:37	4054.97	4053
EMXV	36	18-Jun-2014 11:00:37	18-Jun-2014 11:00:45	4053	4050.27
EMXV	40	18-Jun-2014 11:00:45	18-Jun-2014 11:00:56	4050.27	4046.25
EMXV	43	18-Jun-2014 11:00:56	18-Jun-2014 11:01:05	4046.25	4043.02
EMXV	47	18-Jun-2014 11:01:05	18-Jun-2014 11:01:11	4043.02	4040.72
EMXV	50	18-Jun-2014 11:01:11	18-Jun-2014 11:01:44	4040.72	4029.18
EMXV	53	18-Jun-2014 11:01:44	18-Jun-2014 11:01:52	4029.18	4026.31
EMXV	55	18-Jun-2014 11:01:52	18-Jun-2014 11:23:00	4026.31	3566.35
EMXV	57	18-Jun-2014 11:23:00	18-Jun-2014 11:27:54	3566.35	3461.39
EMXV	60	18-Jun-2014 11:27:54	18-Jun-2014 11:28:00	3461.39	3459.12
EMXV	63	18-Jun-2014 11:28:00	18-Jun-2014 11:28:06	3459.12	3457.04
EMXV	65	18-Jun-2014 11:28:06	18-Jun-2014 11:28:14	3457.04	3454.36
EMXV	68	18-Jun-2014 11:28:14	18-Jun-2014 11:28:18	3454.36	3452.95
EMXV	70	18-Jun-2014 11:28:18	18-Jun-2014 11:28:21	3452.95	3451.62
EMXV	72	18-Jun-2014 11:28:21	18-Jun-2014 11:28:27	3451.62	3449.85
EMXV	75	18-Jun-2014 11:28:27	18-Jun-2014 11:28:32	3449.85	3447.87
EMXV	78	18-Jun-2014 11:28:32	18-Jun-2014 11:28:37	3447.87	3446.12
EMXV	80	18-Jun-2014 11:28:37	18-Jun-2014 11:28:42	3446.12	3444.39
EMXV	83	18-Jun-2014 11:28:42	18-Jun-2014 11:29:17	3444.39	3432.21
EMXV	85	18-Jun-2014 11:29:17	18-Jun-2014 11:29:23	3432.21	3430.19
EMXV	88	18-Jun-2014 11:29:23	18-Jun-2014 12:15:01	3430.19	2449.5

EMXV	90	18-Jun-2014 12:15:01	18-Jun-2014 14:10:07	2449.5	8.38
UFWB	133	18-Jun-2014 08:48:50	18-Jun-2014 10:16:26	6856.94	4994.97
UFWB	124.9	18-Jun-2014 10:16:26	18-Jun-2014 13:30:05	4994.97	843.43
UFWB	138.02	18-Jun-2014 13:30:05	18-Jun-2014 13:30:33	843.43	833.46
UFWB	133.67	18-Jun-2014 13:30:33	18-Jun-2014 14:10:07	833.46	8.38
UFWE	173	18-Jun-2014 08:48:50	18-Jun-2014 10:14:04	6856.94	5045.07
UFWE	177.26	18-Jun-2014 10:14:04	18-Jun-2014 13:29:50	5045.07	848.79
UFWE	189.4	18-Jun-2014 13:29:50	18-Jun-2014 14:10:07	848.79	8.38
UNWB	102	18-Jun-2014 08:48:50	18-Jun-2014 10:16:23	6856.94	4996.03
UNWB	94.63	18-Jun-2014 10:16:23	18-Jun-2014 13:30:02	4996.03	844.43
UNWB	105.26	18-Jun-2014 13:30:02	18-Jun-2014 13:30:36	844.43	832.36
UNWB	102.42	18-Jun-2014 13:30:36	18-Jun-2014 14:10:07	832.36	8.38
UNWE	142	18-Jun-2014 08:48:50	18-Jun-2014 10:14:14	6856.94	5041.63
UNWE	149.45	18-Jun-2014 10:14:14	18-Jun-2014 13:29:59	5041.63	845.68
UNWE	170.68	18-Jun-2014 13:29:59	18-Jun-2014 14:10:07	845.68	8.38
WINB	37.61	18-Jun-2014 08:48:50	18-Jun-2014 10:16:43	6856.94	4989.05
WINB	31.6	18-Jun-2014 10:16:43	18-Jun-2014 13:44:35	4989.05	537.89
WINB	39.84	18-Jun-2014 13:44:35	18-Jun-2014 13:44:43	537.89	535.15
WINB	46	18-Jun-2014 13:44:43	18-Jun-2014 13:44:55	535.15	530.83
WINB	44.77	18-Jun-2014 13:44:55	18-Jun-2014 13:45:07	530.83	526.82
WINB	42.3	18-Jun-2014 13:45:07	18-Jun-2014 14:10:07	526.82	8.38
WINE	77.61	18-Jun-2014 08:48:50	18-Jun-2014 10:16:49	6856.94	4987.07
WINE	80.79	18-Jun-2014 10:16:49	18-Jun-2014 13:44:39	4987.07	536.38
WINE	84.2	18-Jun-2014 13:44:39	18-Jun-2014 14:10:07	536.38	8.38

All depth are at tool zero.

Import (3) of USI Goodwin

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[6]:Up	6856.94	8.38

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 : 36.45m(119.58ft) to 44.03m(144.46ft)
MUD_N_FRP = 1.07
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.60 MRayl

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

Run 1

IBC Goodwin Compressed

Log

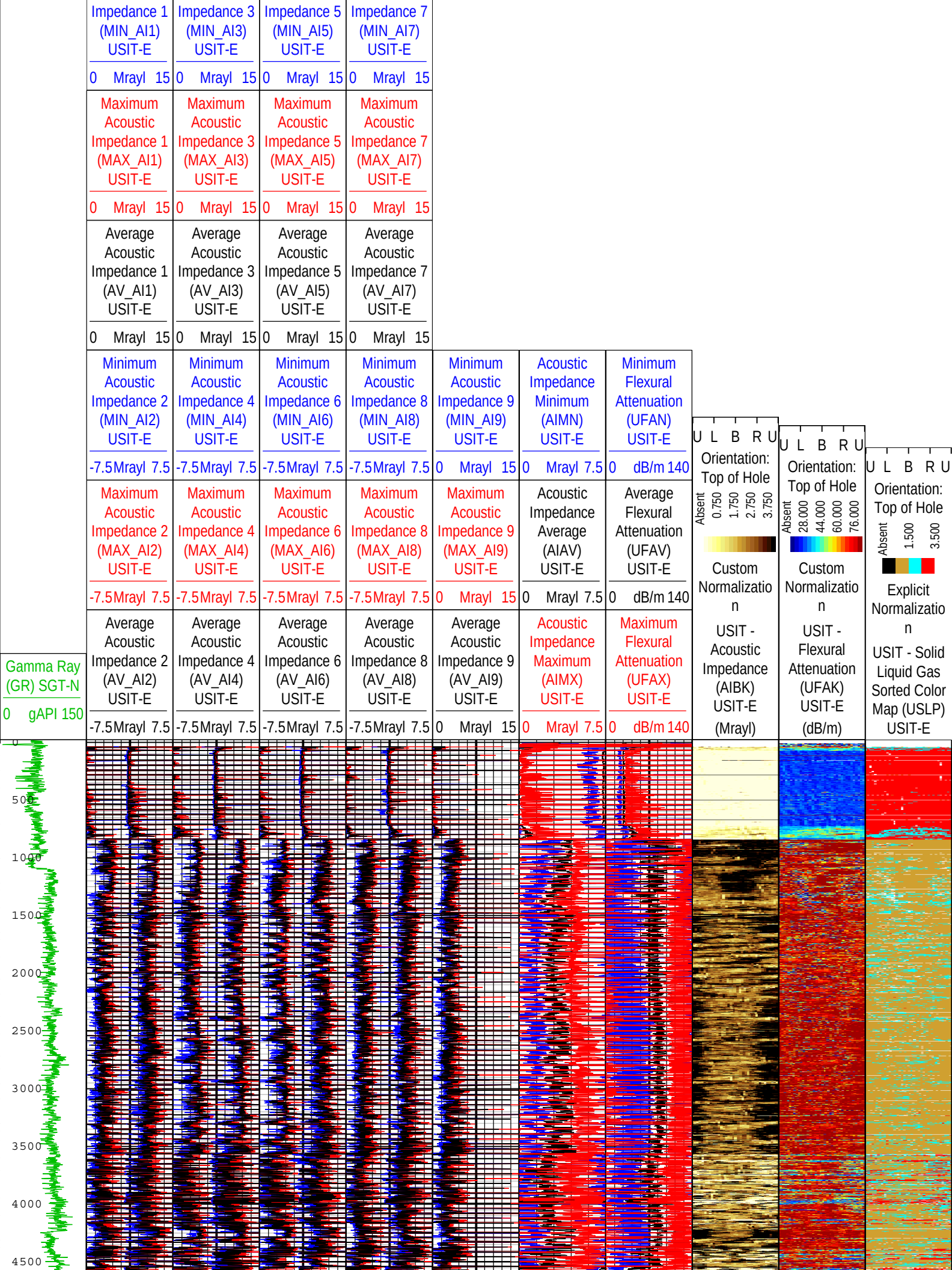
Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

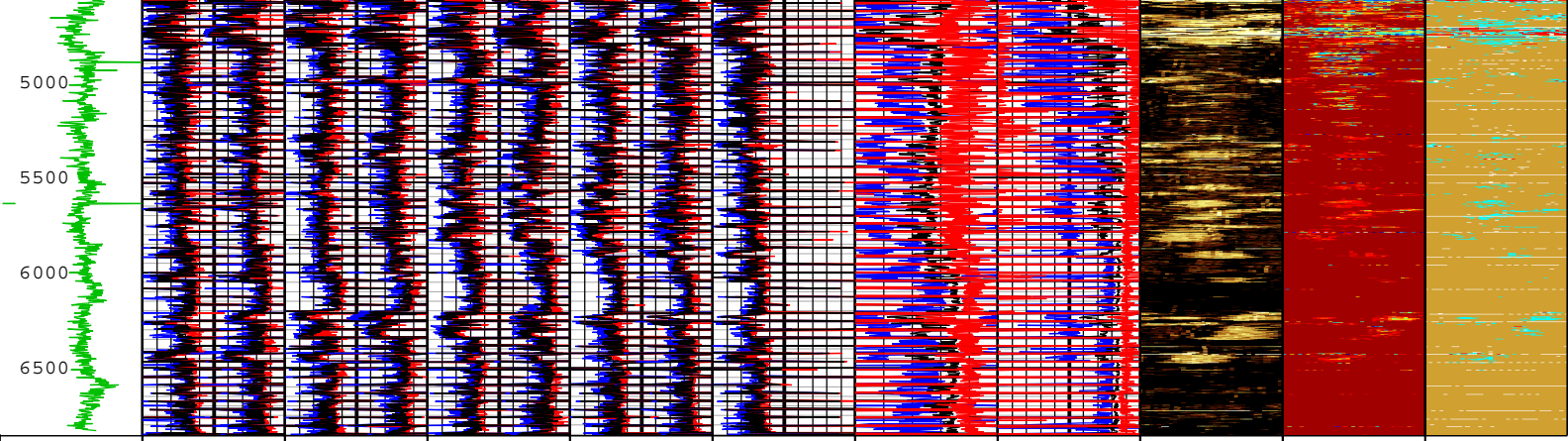
Run 1 : Main[6]:Up:S011

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:25

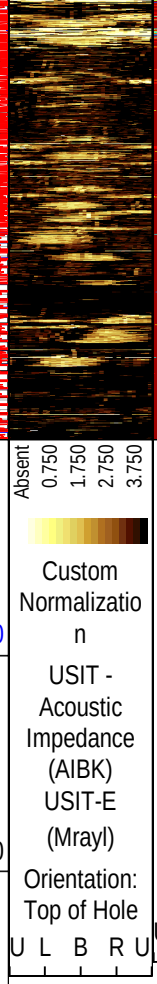
TIME_1900 - Time Marked every 60.00 (s)

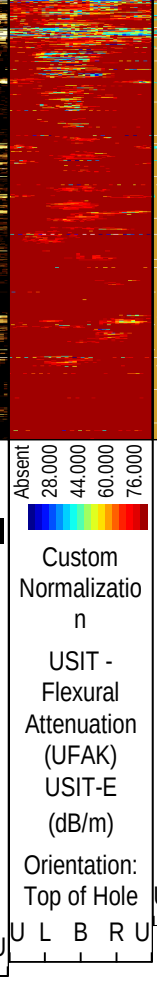
Minimum Acoustic	Minimum Acoustic	Minimum Acoustic	Minimum Acoustic

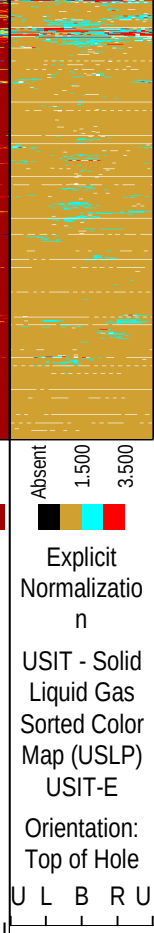

Impedance 1 (MIN_AI1) USIT-E
0 Mrayl 15
Impedance 3 (MIN_AI3) USIT-E
0 Mrayl 15
Impedance 5 (MIN_AI5) USIT-E
0 Mrayl 15
Impedance 7 (MIN_AI7) USIT-E
0 Mrayl 15
Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E
0 Mrayl 15
Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E
0 Mrayl 15
Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E
0 Mrayl 15
Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E
0 Mrayl 15
Average Acoustic Impedance 1 (AV_AI1) USIT-E
0 Mrayl 15
Average Acoustic Impedance 3 (AV_AI3) USIT-E
0 Mrayl 15
Average Acoustic Impedance 5 (AV_AI5) USIT-E
0 Mrayl 15
Average Acoustic Impedance 7 (AV_AI7) USIT-E
0 Mrayl 15
Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E
-7.5 Mrayl 7.5
Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E
-7.5 Mrayl 7.5
Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E
-7.5 Mrayl 7.5
Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E
-7.5 Mrayl 7.5
Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E
0 Mrayl 15
Acoustic Impedance Minimum (AIMN) USIT-E
0 Mrayl 7.5
Minimum Flexural Attenuation (UFAN) USIT-E
0 dB/m 140
Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E
-7.5 Mrayl 7.5
Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E
-7.5 Mrayl 7.5
Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E
-7.5 Mrayl 7.5
Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E
-7.5 Mrayl 7.5
Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E
0 Mrayl 15
Acoustic Impedance Average (AIAV) USIT-E
0 Mrayl 7.5
Average Flexural Attenuation (UFAV) USIT-E
0 dB/m 140
Average Acoustic Impedance 2 (AV_AI2) USIT-E
-7.5 Mrayl 7.5
Average Acoustic Impedance 4 (AV_AI4) USIT-E
-7.5 Mrayl 7.5
Average Acoustic Impedance 6 (AV_AI6) USIT-E
-7.5 Mrayl 7.5
Average Acoustic Impedance 8 (AV_AI8) USIT-E
-7.5 Mrayl 7.5
Average Acoustic Impedance 9 (AV_AI9) USIT-E
0 Mrayl 15
Acoustic Impedance Maximum (AIMX) USIT-E
0 Mrayl 7.5
Maximum Flexural Attenuation (UFAX) USIT-E
0 dB/m 140
Gamma Ray (GR) SGT-N
0 gAPI 150
U L B R U
Orientation: Top of Hole
Absent 0.750 1.750 2.750 3.750
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
U L B R U
Orientation: Top of Hole
Absent 28.000 44.000 60.000 76.000
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
0
500
1000
1500
2000
2500
3000
3500
4000
4500



Gamma Ray (GR) SGT-N	Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E	Acoustic Impedance Minimum (AIMN) USIT-E	Minimum Flexural Attenuation (UFAN) USIT-E
0 gAPI 150	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	0 dB/m 140
	Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E	Acoustic Impedance Average (AIAV) USIT-E	Average Flexural Attenuation (UFAV) USIT-E
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	0 dB/m 140
	Average Acoustic Impedance 1 (AV_AI1) USIT-E	Average Acoustic Impedance 3 (AV_AI3) USIT-E	Average Acoustic Impedance 5 (AV_AI5) USIT-E	Average Acoustic Impedance 7 (AV_AI7) USIT-E	Average Acoustic Impedance 9 (AV_AI9) USIT-E	Acoustic Impedance Maximum (AIMX) USIT-E	Maximum Flexural Attenuation (UFAX) USIT-E
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	0 dB/m 140
	Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E			
	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5			
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E			
	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5			
	Average Acoustic Impedance 2 (AV_AI2) USIT-E	Average Acoustic Impedance 4 (AV_AI4) USIT-E	Average Acoustic Impedance 6 (AV_AI6) USIT-E	Average Acoustic Impedance 8 (AV_AI8) USIT-E			
	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5	-7.5 Mrayl 7.5			







TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Jun-2014 23:08:25

XYZ

Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

Run 1 : Main[7]:Up:S011

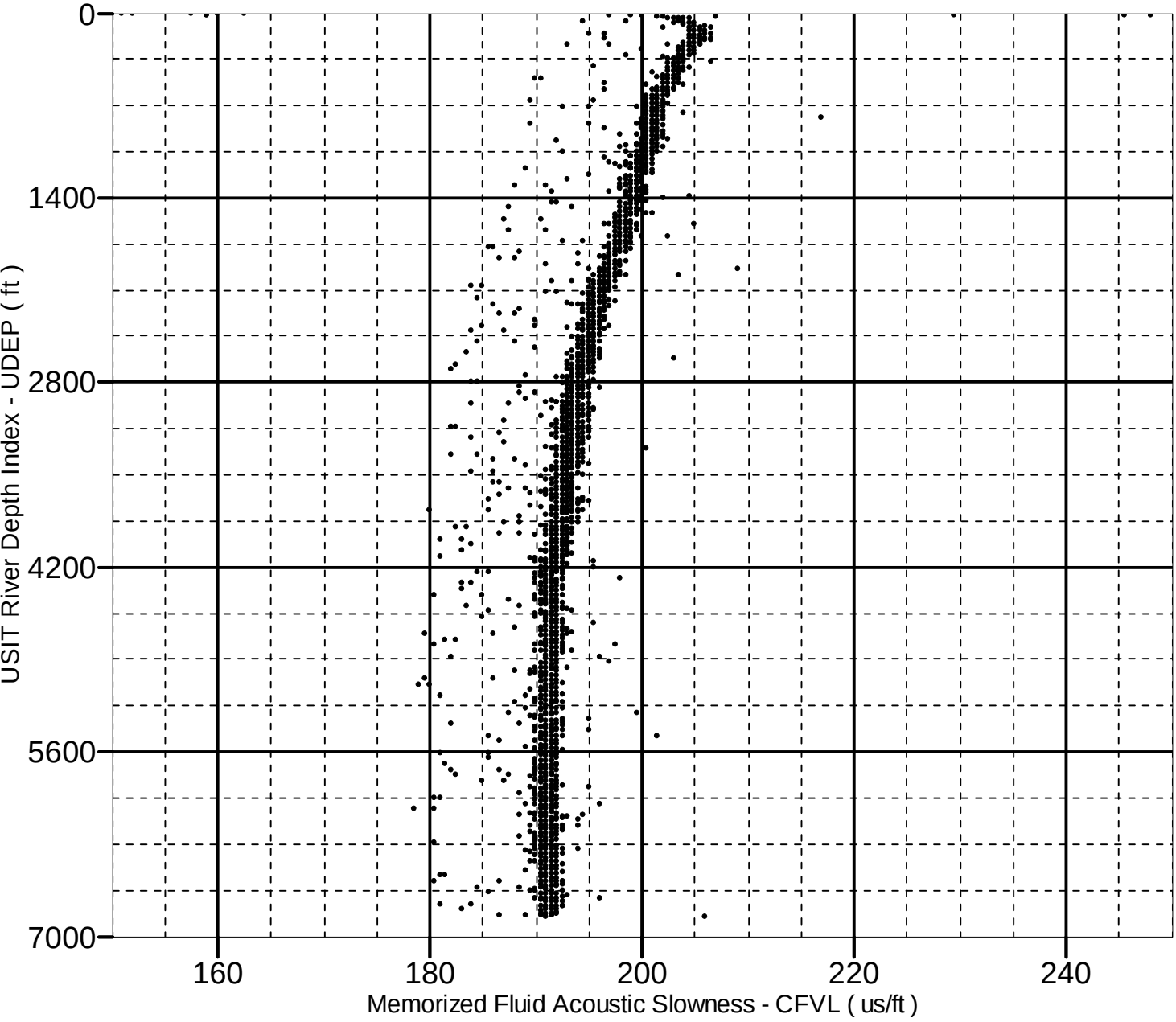
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6855.50 to 11.50 ft

Index Range: From 6855.50 to 11.50 ft

● CFVL-UDEP



XYZ

Company:Anadarko Petroleum Company Well:Spurling 14N-34HZ

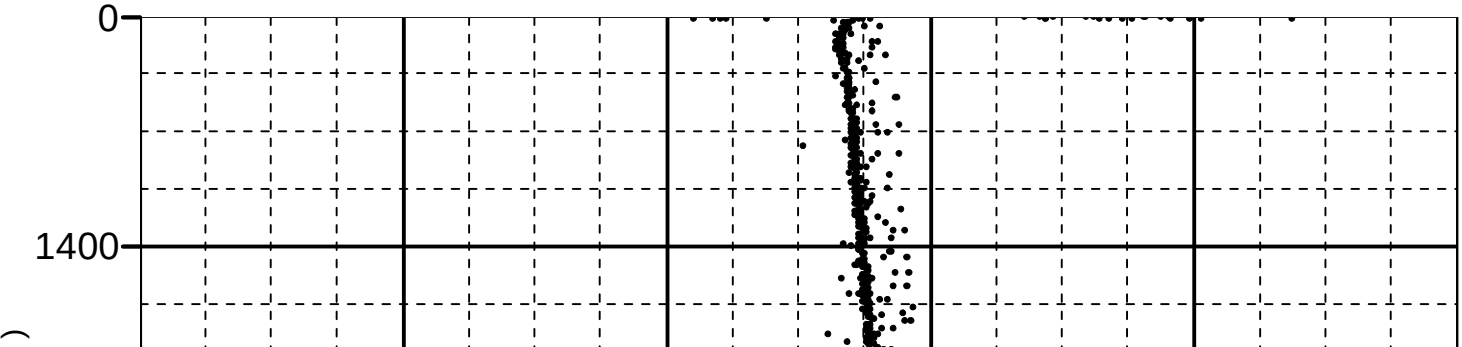
Run 1 : Main[7]:Up:S011

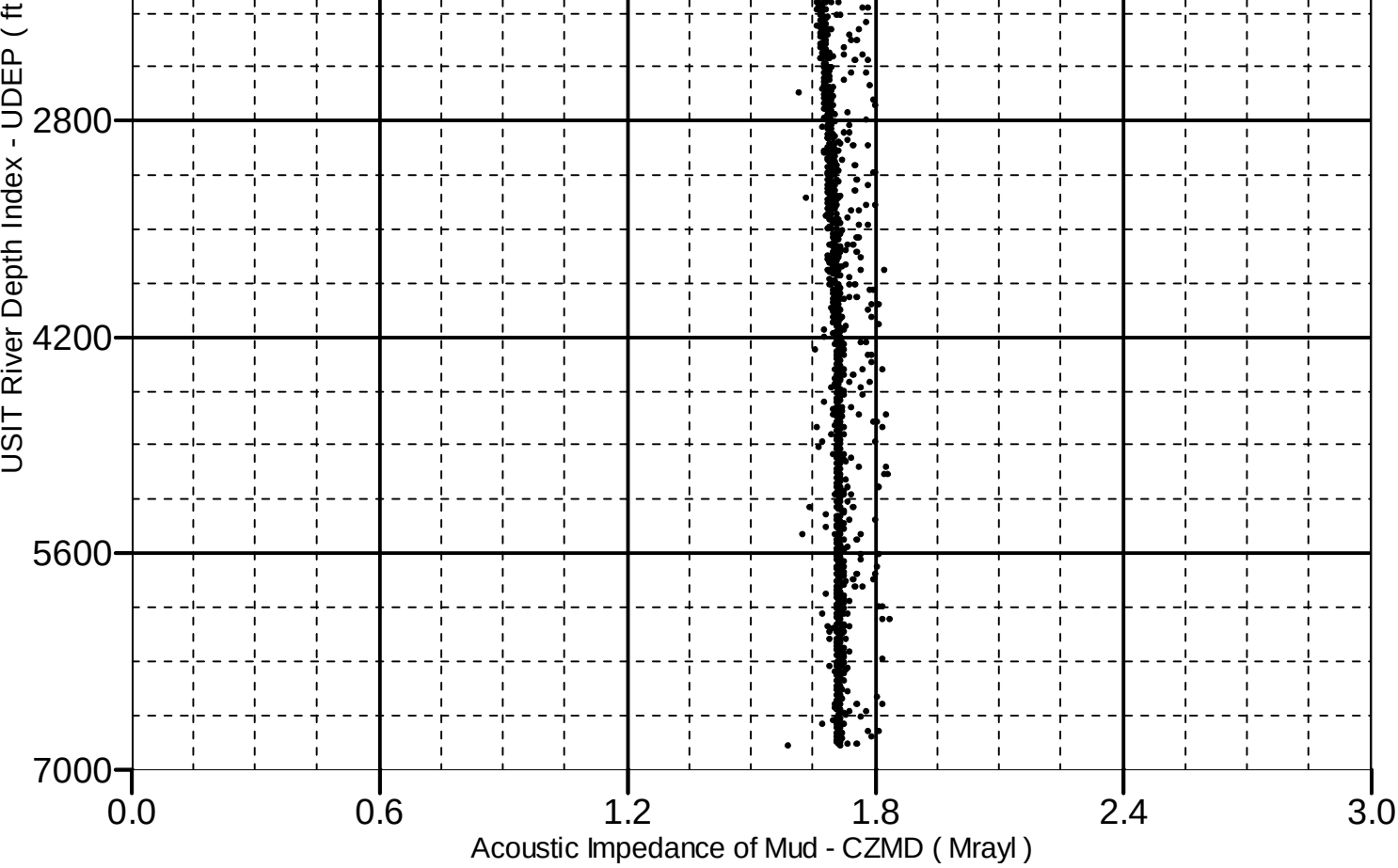
Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6855.50 to 11.50 ft

● CZMD-UDEP




USIT River Depth Index - UDEP (ft
2800
4200
5600
7000
0.0
0.6
1.2
1.8
2.4
3.0
Acoustic Impedance of Mud - CZMD (Mrayl)

Company:	Anadarko Petroleum Company
Well:	Spurling 14N-34HZ
Field:	Wattenberg
County:	Weld
State:	Colorado

Schlumberger

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL Log