Schlumberger

Company: Southern California Gas Company

Well: Porter 69K

Field: Aliso Canyon

County: Los Angeles State: California

County: Los Angeles
Field: Aliso Canyon
Location:
Well: Porter 69K
Company: Southern California Gas Company

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 47# casing

Location:				
			Elev.: K.B.	2395.00 ft
			G.L.	2366.00 ft
			D.F.	
Permanent Datum:	Ground Level	Elev.:	2366.00 f	
Log Measured From:	Kelly Bushing	29.00 ft	above Perm.Datum	
Drilling Measured From:	Kelly Bushing			

API Serial No.	Section:	Township:	Range:
04-037-24236	28	3N	16W

Logging Date		23-May-2016	
Run Number		Two	
Depth Driller		7706.00 ft	
Schlumberger Depth		7705.00 ft	
Bottom Log Interval		7702.00 ft	
Top Log Interval		45.00 ft	
Casing Fluid Type		Polymer	
Salinity			
Density		9 lbm/gal	
Fluid Level		8.00 ft	
BIT/CASING/TUBING STRING			
Bit Size		12.25 in	
From		923.00 ft	
To		8801.00 ft	
Casing/Tubing Size		9.625 in	
Weight		47 lbm/ft	
Grade		N80	
From		0.00 ft	
To		8801.00 ft	
Max Recorded Temperatures			
Logger on Bottom	Time	23-May-2016 08:10:00	
Unit Number	Location:	3189 Ventura	
Recorded By		I. Kartawidjaja	
Witnessed By		Mr. Tom McMahon	

Disclaimer

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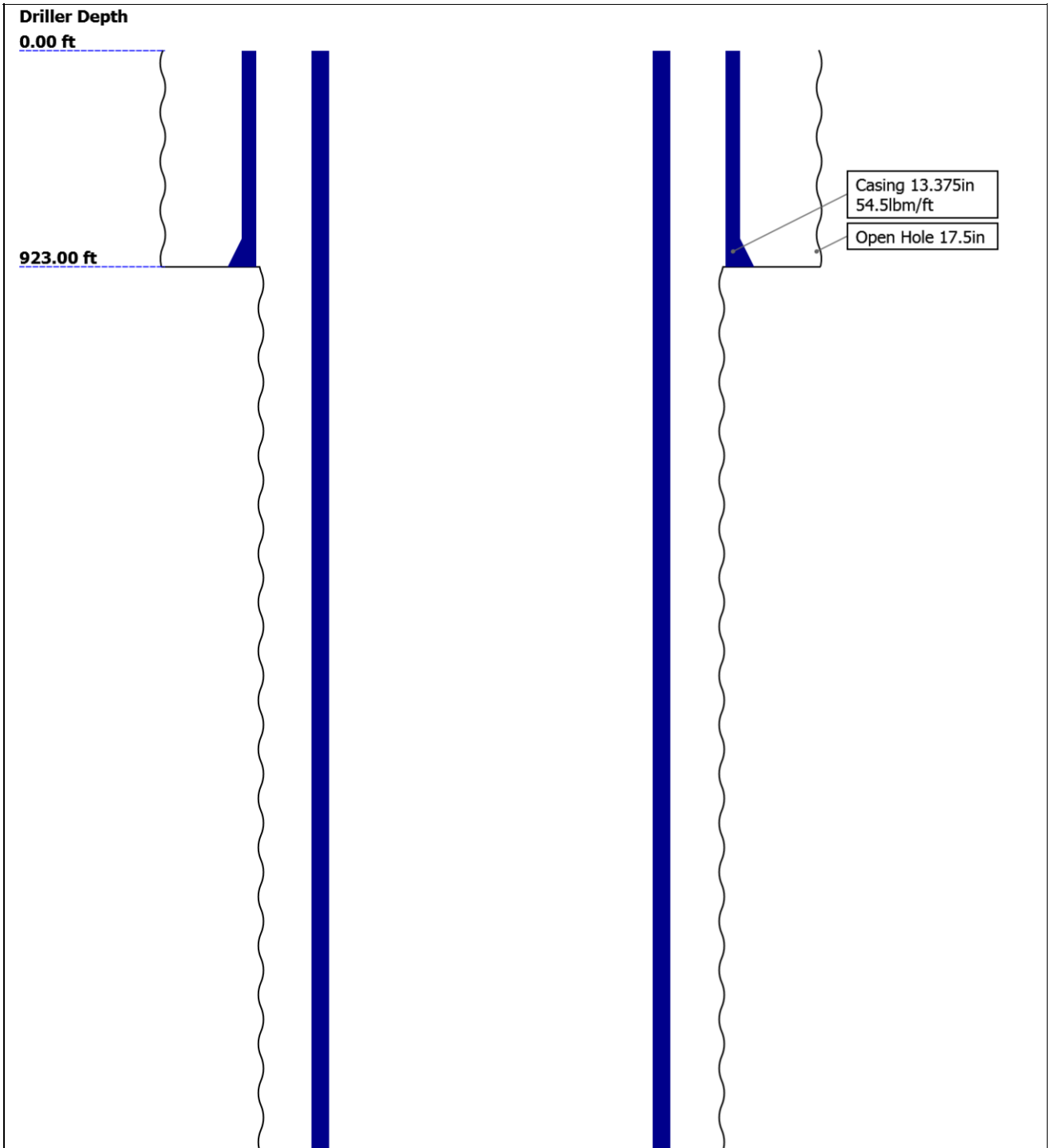
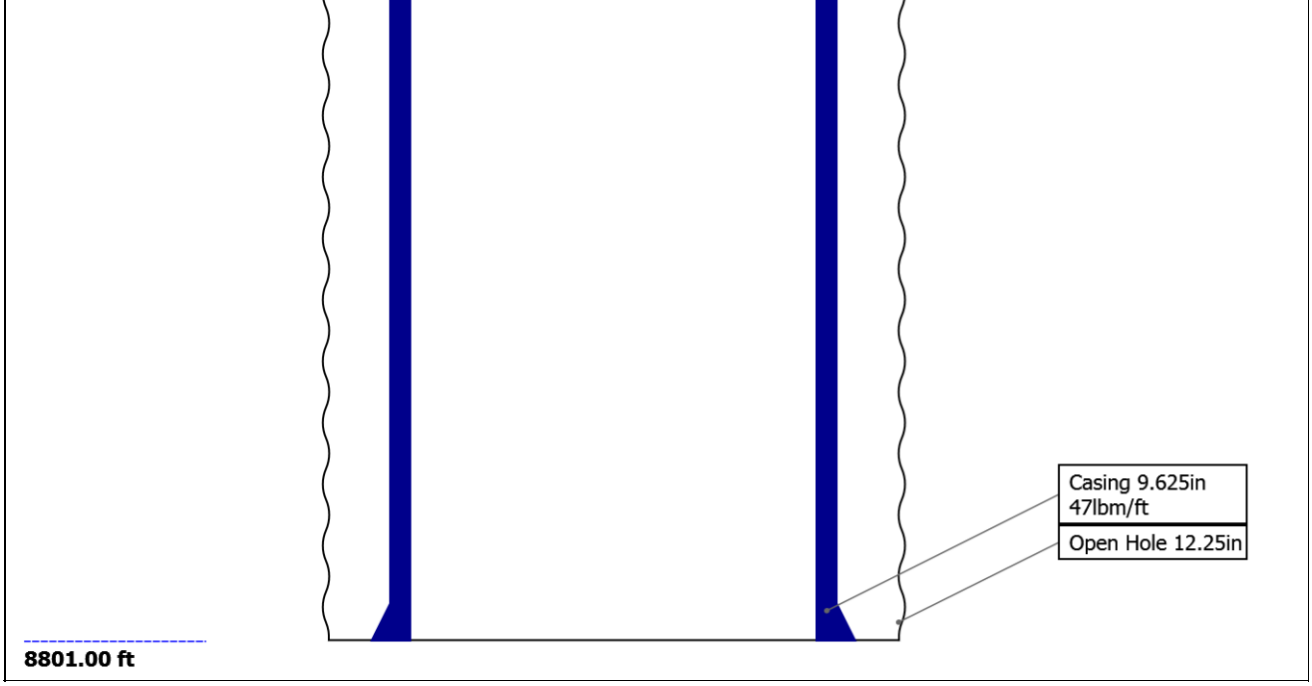
Well Sketch





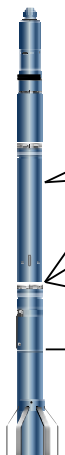
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	12.25				
Top Driller (ft)	0	923				
Top Logger (ft)	0	923				
Bottom Driller (ft)	923	8801				
Bottom Logger (ft)	923	8801				
Casing						
Size (in)	13.375	9.625				
Weight (lbm/ft)	54.5	47				
Inner Diameter (in)	12.615	8.681				
Grade	N/A	N80				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	923	8801				
Bottom Logger (ft)	923	8801				

Remarks and Equipment Summary

R2D1: Toolstring

Equip name	Length
LEH-QT:2867	**59.39**
LEH-QT:2867	
DTC-H	**56.47**
ECH-KC	
DTC-H	
HGNS-H:3923	**53.47**
HGNH:4819	
NSR-F:5002	
NPV-N	
HGNS-H:3	



MP name	Offset
Red	
CTEM	**55.57**
HV	**0.00**
TelStatus	**53.47**
ToolStatus	**53.47**
Temperature	**53.44**
GR	**52.73**

R2D1: Remarks

Depth correlated to SLB Dipole Sonic log dated 20-Jan-2002

Logging objective is cement and corrosion evaluation

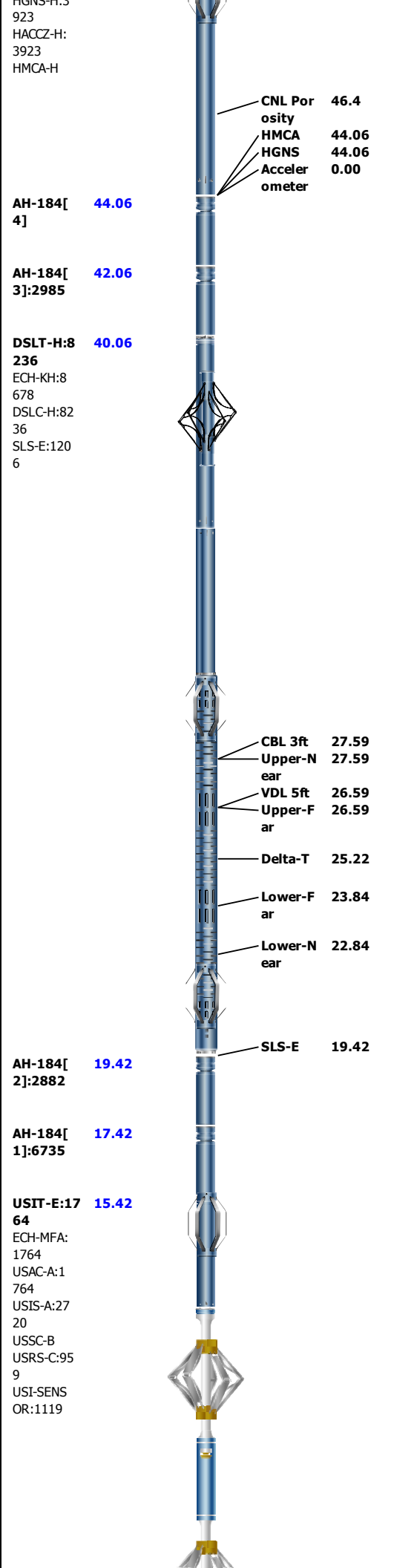
9-5/8" 47# casing cemented with 1636sx Class G

USIT Logged at 10 deg/1.5 inch resolution, logging speed 2800 fph.
Hi-resolution repeats at 10 deg/0.6 inch, speed 1000 fph

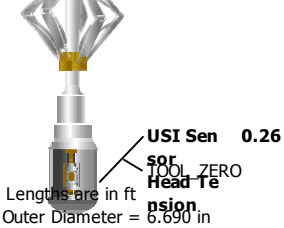
USIT run in combination with CBL, Neutron and Gamma Ray tools.

Bridge plug set at 7716 ft with sand on top.
Top of sand at 7705 ft logged to surface.

Log recorded with 0 psi surface pressure from TD to ~500 ft, 200psi from 500 ft to surf to



maintain pressure on USI transducer
Rig: Rival 12
Toolstring ran as per toolsketch.
Two centralizers on USIS and two CME-Y used to centralize ultrasonic tool.
Thank you for choosing Schlumberger!



Lengths are in ft
Maximum Outer Diameter = 6.690 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Job Event Summary

Event	Time	Duration	Interval	Remark
Run 1				**May-23-2016 06:58**
Log[1]:Down	May-23-2016 07:05	01:56:22	137.44 - 7701.22 ft	FPM
Log[2]:Up	May-23-2016 08:02	00:04:37	7701.82 - 7507.29 ft	Repeat Pass 0 Psi @ TD
Log[3]:Up	May-23-2016 08:10	03:41:42	7701.92 - 219.03 ft	Main Pass #1 0 psi
Log[8]:Up	May-23-2016 11:36	00:05:25	5083.92 - 4996.7 ft	Very HiRes Repeat 0 psi
Log[10]:Up	May-23-2016 11:45	00:03:41	4821.68 - 4757.99 ft	Very HiRes Repeat 0 psi
Log[11]:Up	May-23-2016 11:51	00:03:56	4404.34 - 4341.75 ft	Very HiRes Repeat 0 psi
Log[12]:Up	May-23-2016 11:57	00:04:06	4113.72 - 4046.4 ft	Very HiRes Repeat 0 psi
Log[13]:Up	May-23-2016 12:04	00:04:13	3577.01 - 3504.68 ft	Very HiRes Repeat 0 psi
Log[14]:Up	May-23-2016 12:16	00:07:32	1790.08 - 1662.12 ft	Very HiRes Repeat 0 psi
Log[15]:Up	May-23-2016 12:29	00:04:00	1008.44 - 956.13 ft	Very HiRes Repeat 0 psi
Log[18]:Up	May-23-2016 13:20	00:23:11	1045.45 - 67.11 ft	Main Pass #2 200 psi
Run 2				**May-23-2016 14:16**
Log[2]:Up	May-23-2016 14:50	00:09:35	7701.48 - 7230.22 ft	Repeat Pass 200 psi
Log[3]:Up	May-23-2016 15:31	00:06:24	257.18 - 33.52 ft	Surface Main Pass 200 psi
Log[4]:Up	May-23-2016 15:38	00:01:42	59.02 - 33.89 ft	Very HiRes Repeat 200 psi

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[18]:Up	1045.45	67.11

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 : 41.37m(135.72ft) to 51.27m(168.22ft)
MUD_N_FRP = 1.13
DFD = 1.08g/cm3(9.00lbm/gal)
CZMD median computed in free pipe normalization interval = 1.78 MRayl

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

Composite 1

Main Pass 5 in = 100 ft

Software Version

Acquisition System	Version
Maxwell 2016 SP1	6.1.58882.3100

Computation	Description	Version
CEVAL	Sonic Cement Evaluation Computation Ensemble provides common Parameters and Channels	6.1.58882.3100
Cementation	Cementation Computation Application	6.1.58882.3100

SoftwareVersion_Tool	SoftwareVersion_Run Version	SoftwareVersion_Build Version
WAFE-SEC	Synergy SV451EC version 9.10	Synergy SV451EC version 9.10
WAFE-FEC	Synergy SV451EC version 9.10	Synergy SV451EC version 9.10
WAFE-TMDI	Synergy SV451EC version 46.19	Synergy SV451EC version 46.19

Tool Elements	Description	Software Version	Firmware Version
HGNS-H	HILT Gamma Ray and Neutron Sonde, 150 degC	6.1.58882.3100	2.0

HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	6.1.58882.3100	2.0
SLS-E	Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL	6.1.58882.3100	4.0
USI-SENSOR	USIT Transducer Element	6.1.58882.3100	DSP: v1.82

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[3]:Up	Up	219.03 ft	7701.92 ft	23-May-2016 8:10:50 AM	23-May-2016 10:52:33 AM	ON	-2.00 ft	Yes
R2D1	Log[18]:Up	Up	67.11 ft	1045.45 ft	23-May-2016 1:20:29 PM	23-May-2016 1:43:41 PM	ON	2.67 ft	Yes

All depths are referenced to toolstring zero

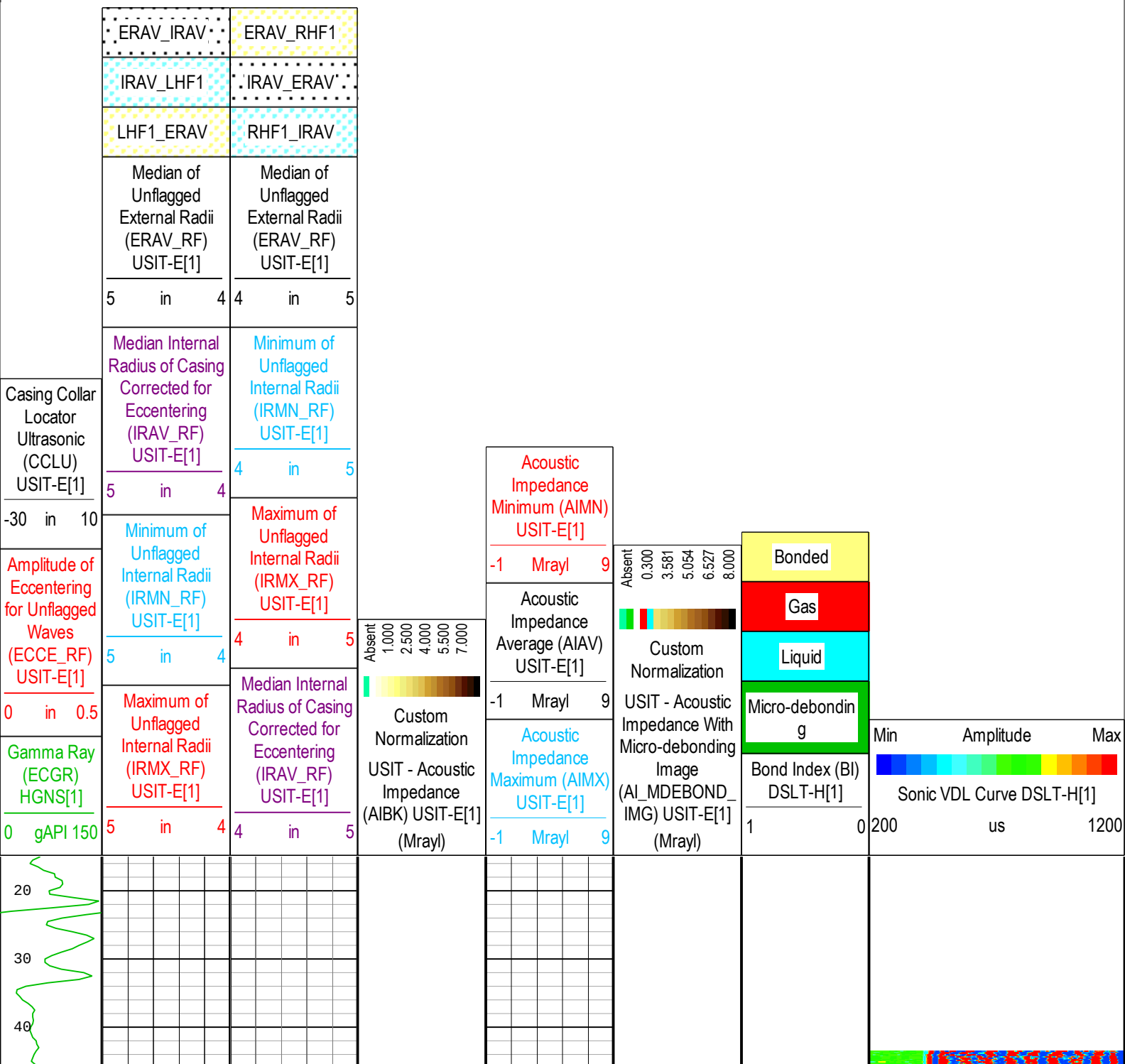
Log

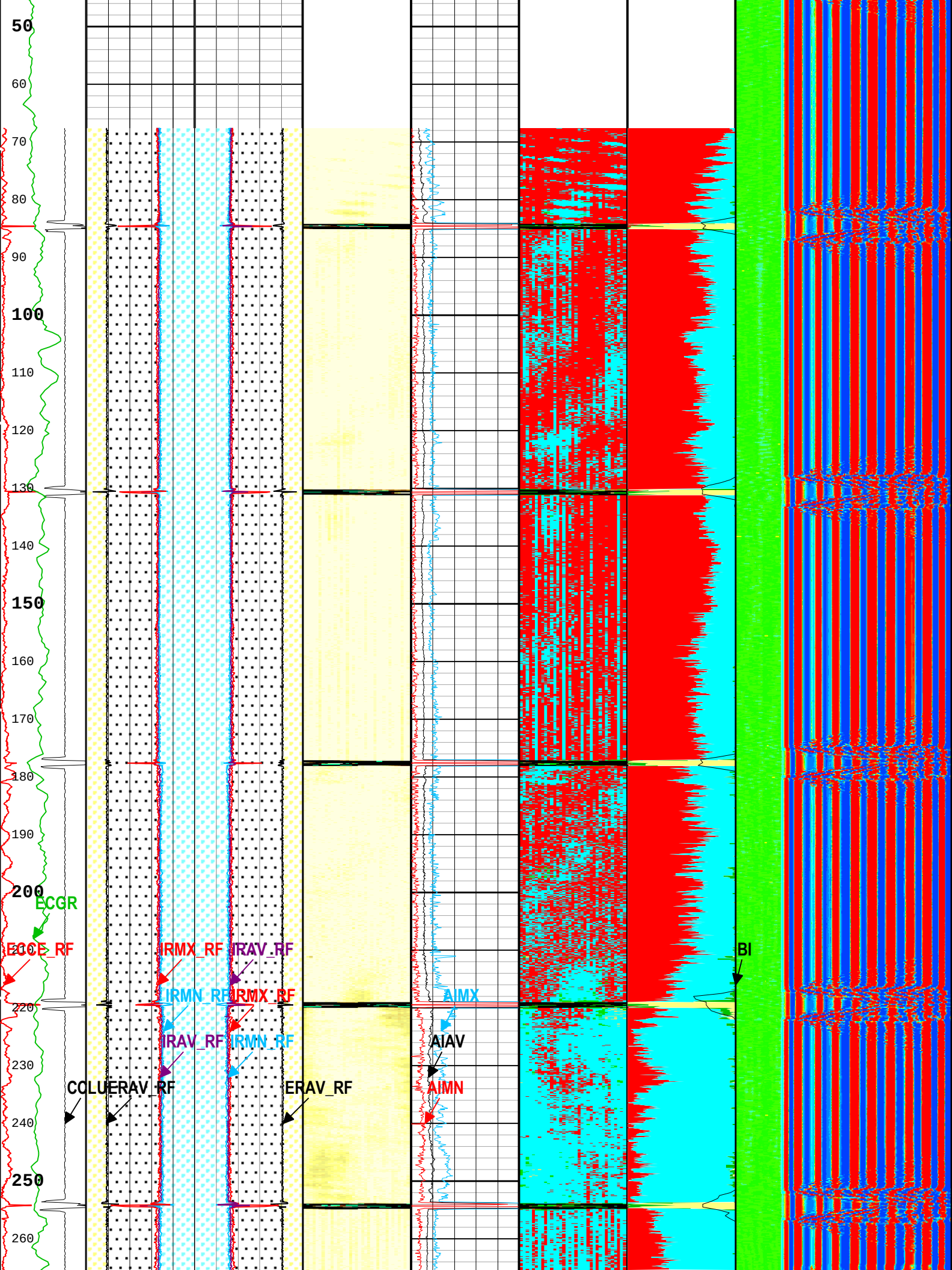
Company:Southern California Gas Company Well:Porter 69K

Composite 1:S002

Description: USI VDL Cement Format: Log (LBV1_USI-VDL (DSLT) Cement 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:35:25

TIME_1900 - Time Marked every 60.00 (s)

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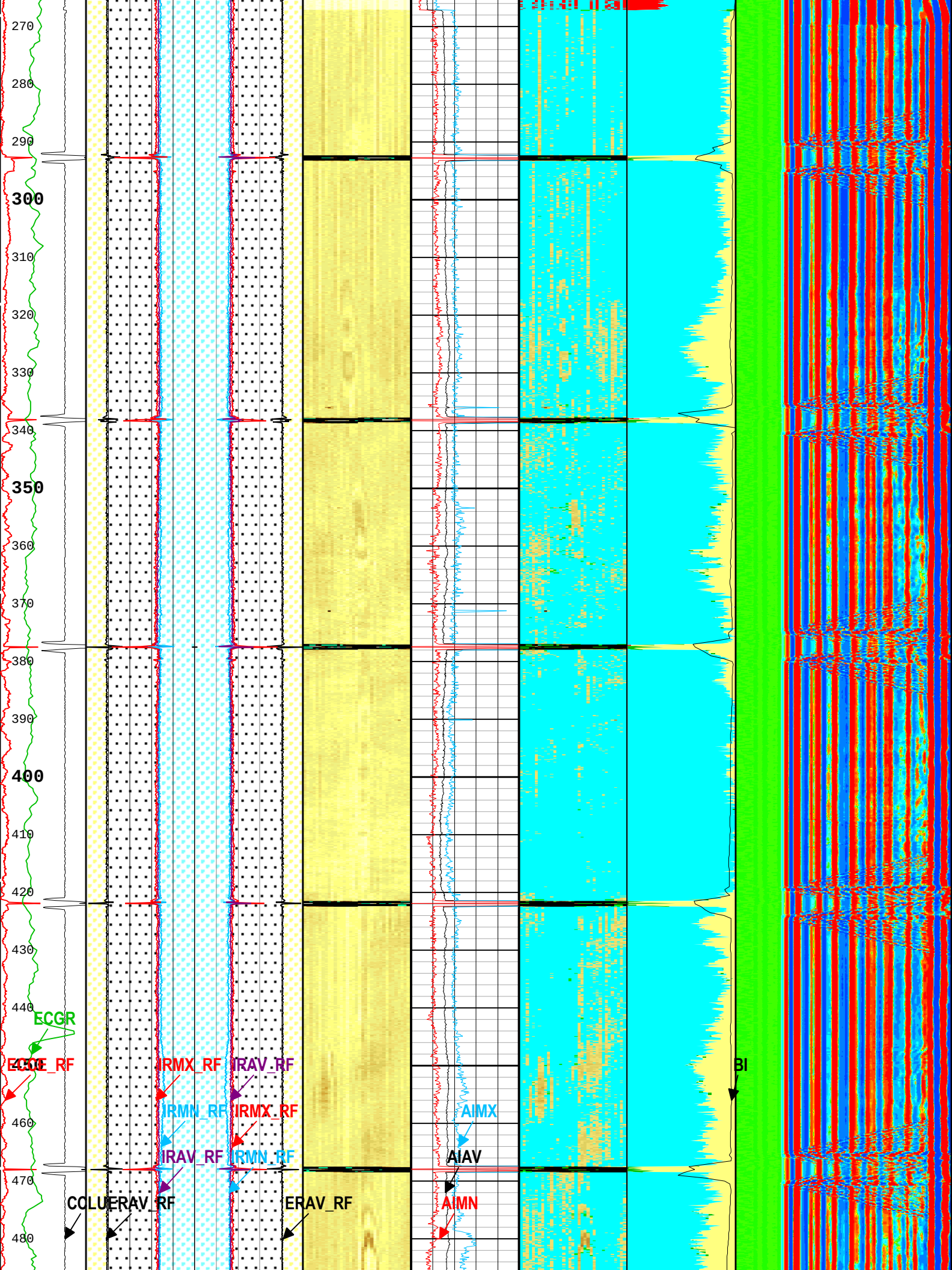
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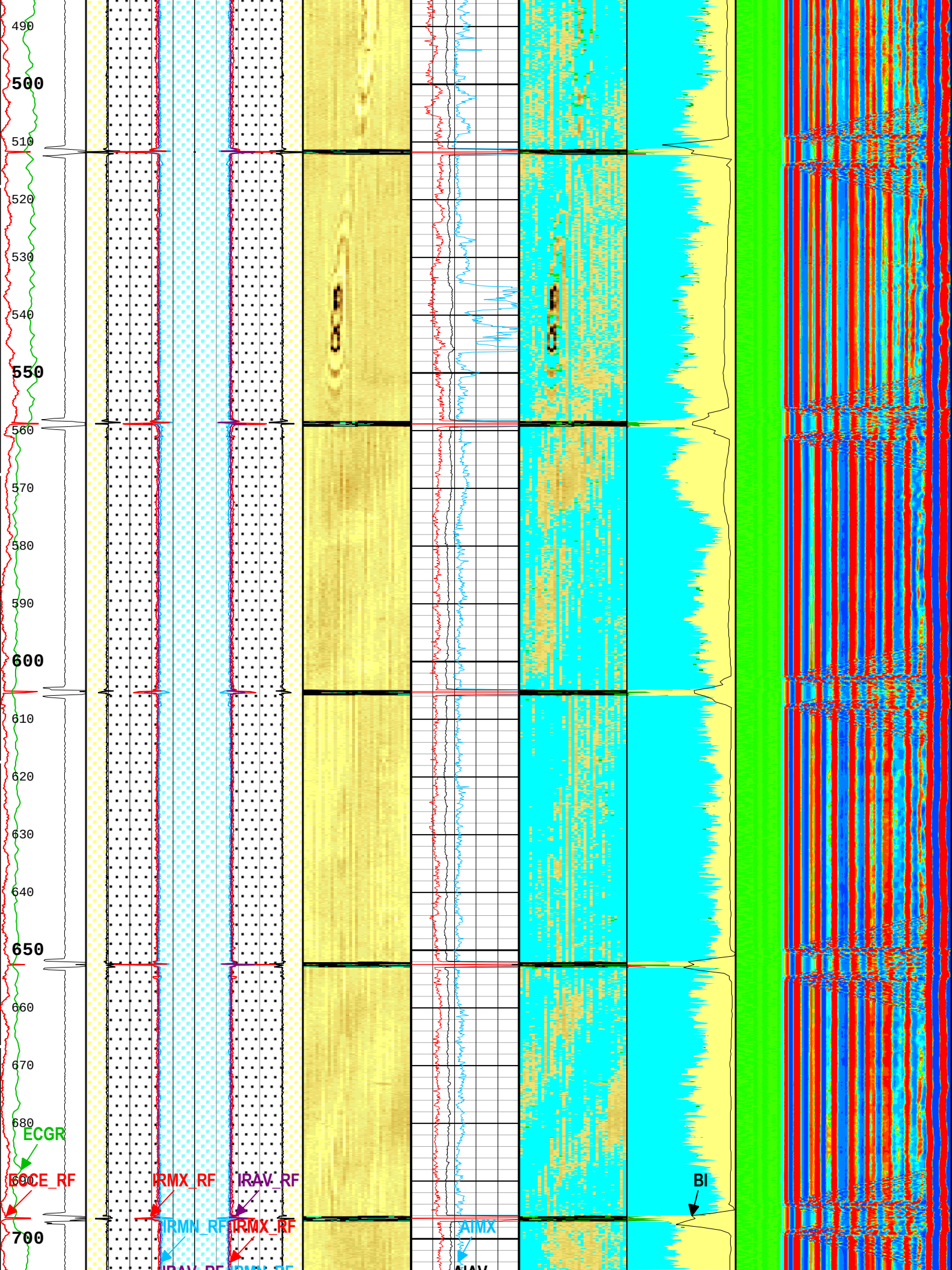
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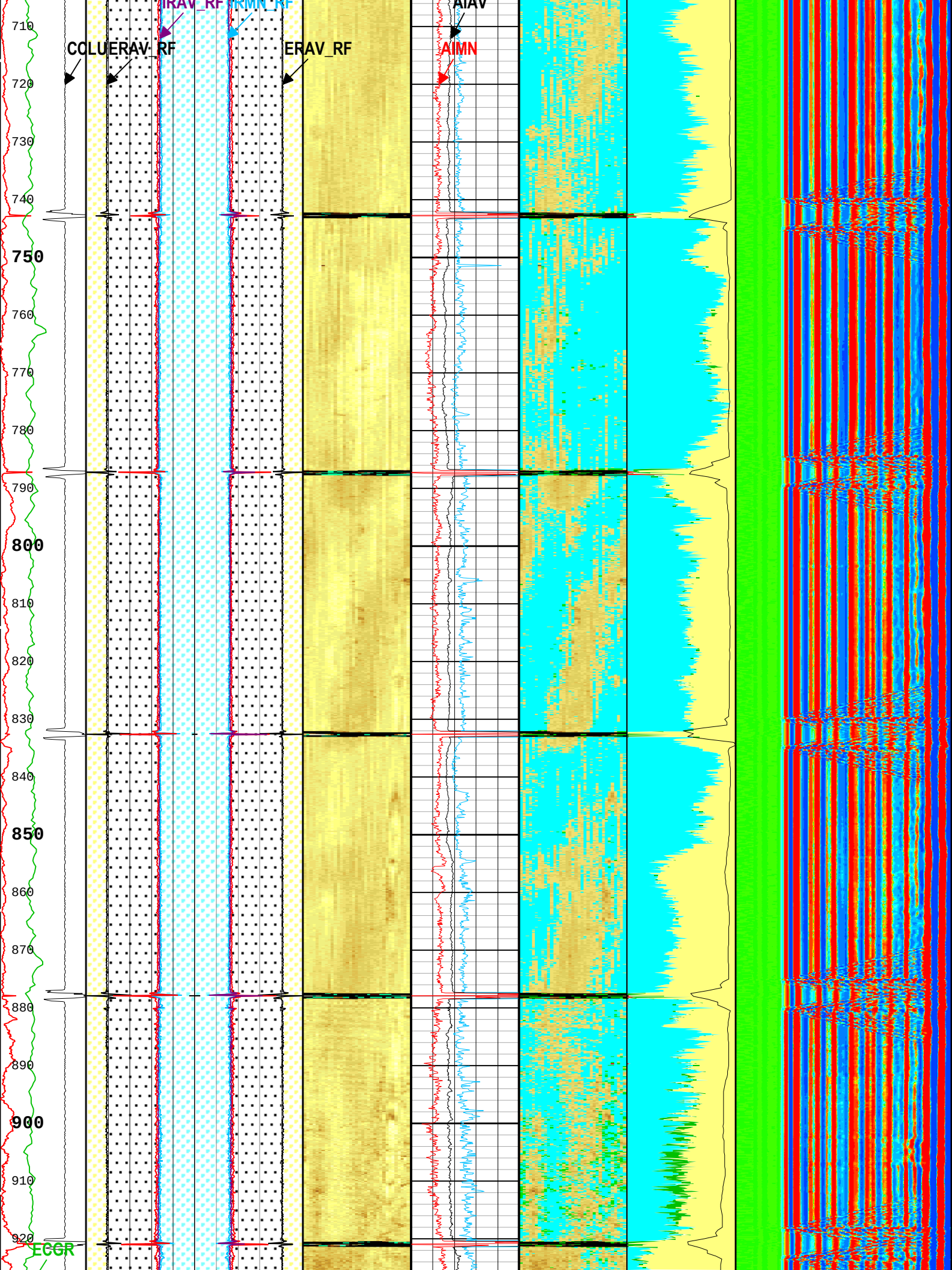
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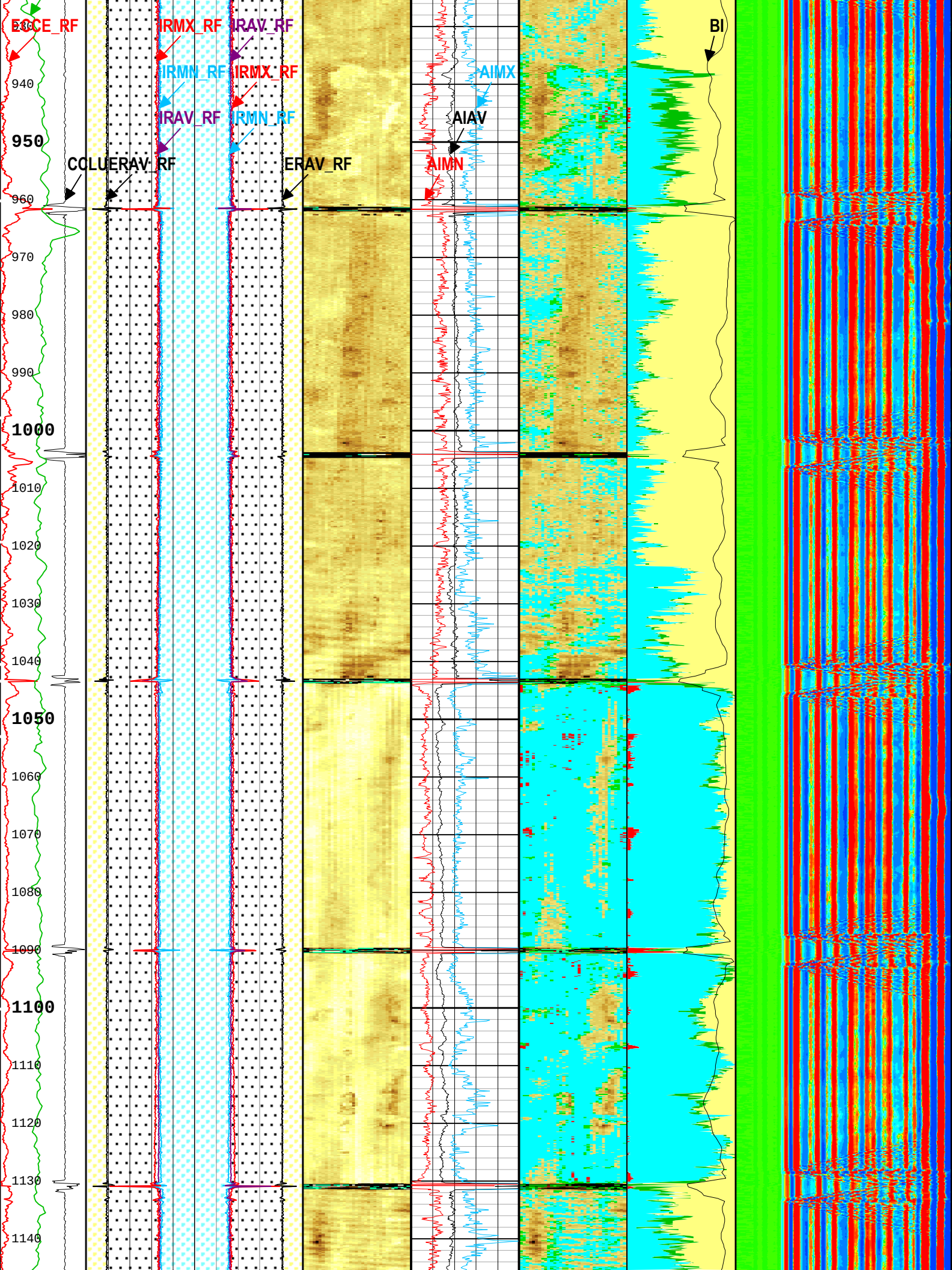
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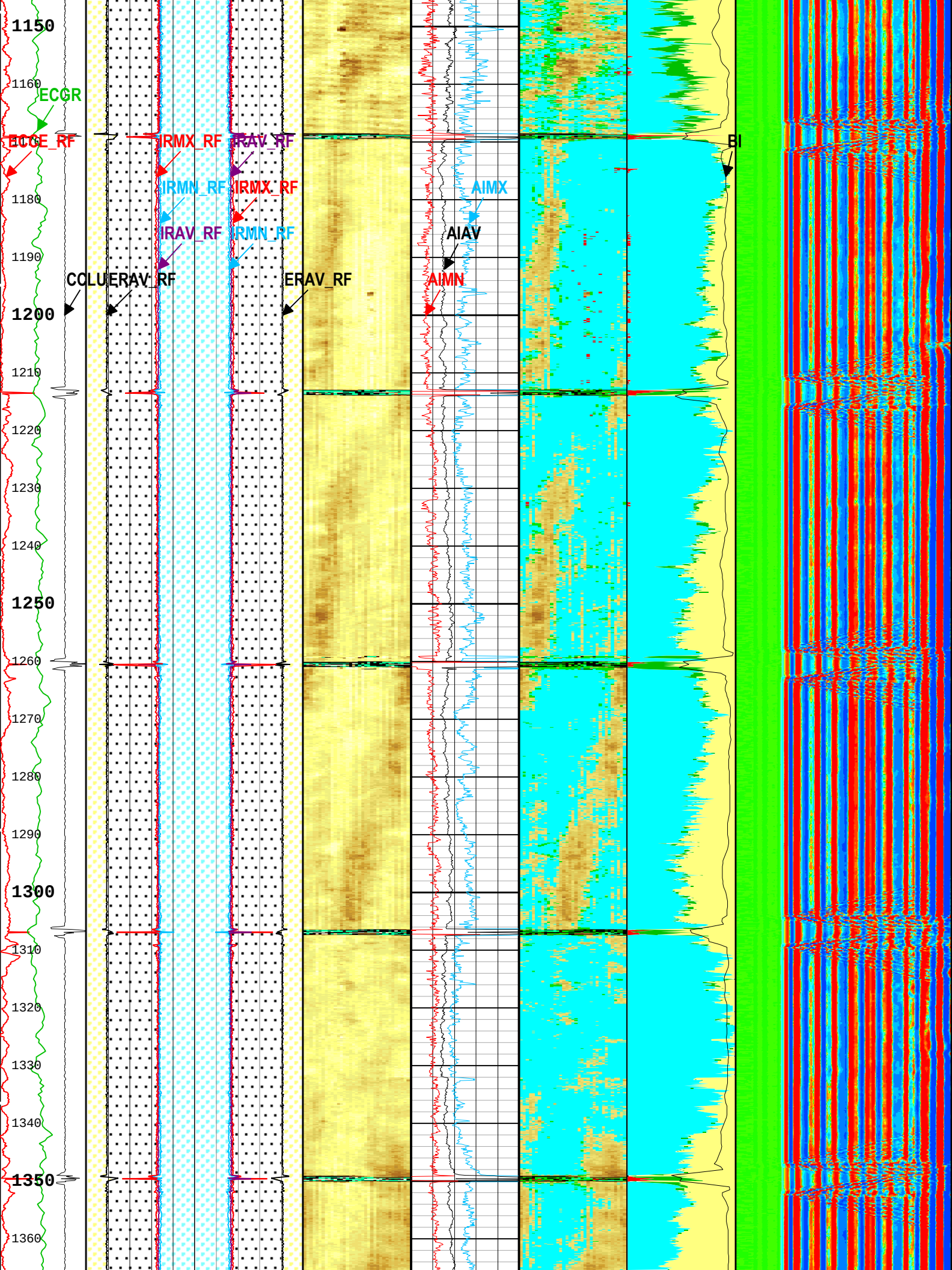
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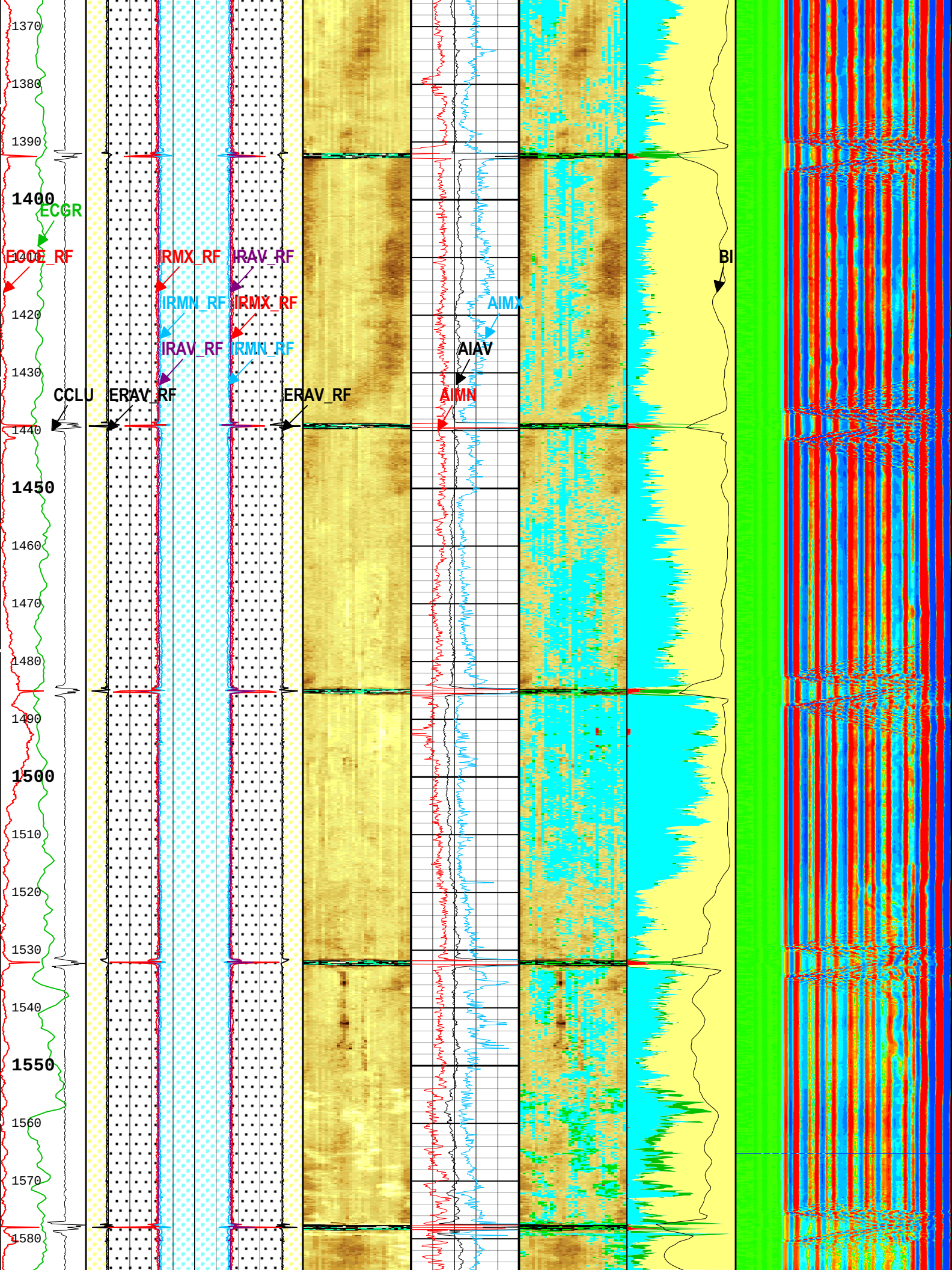
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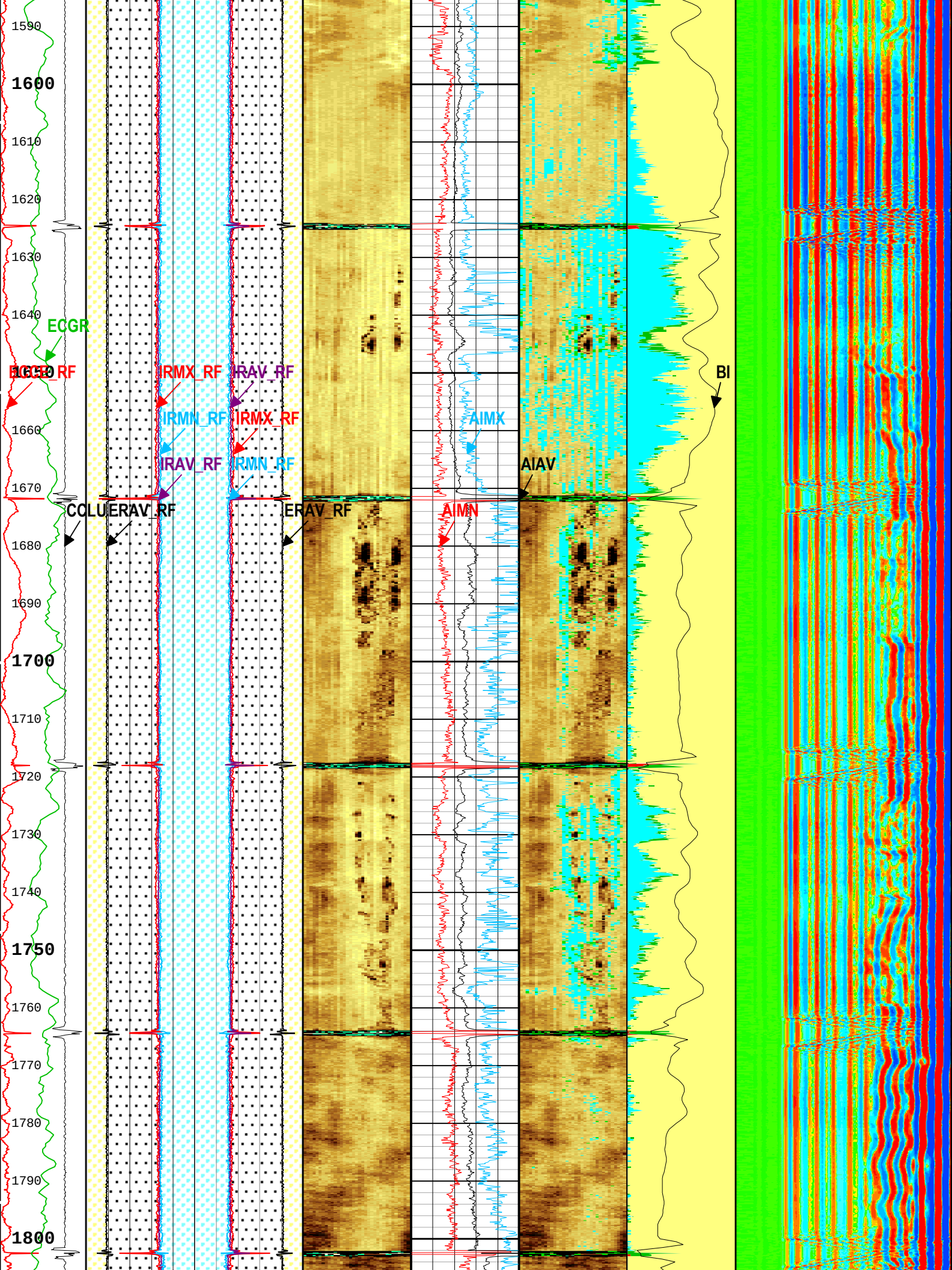
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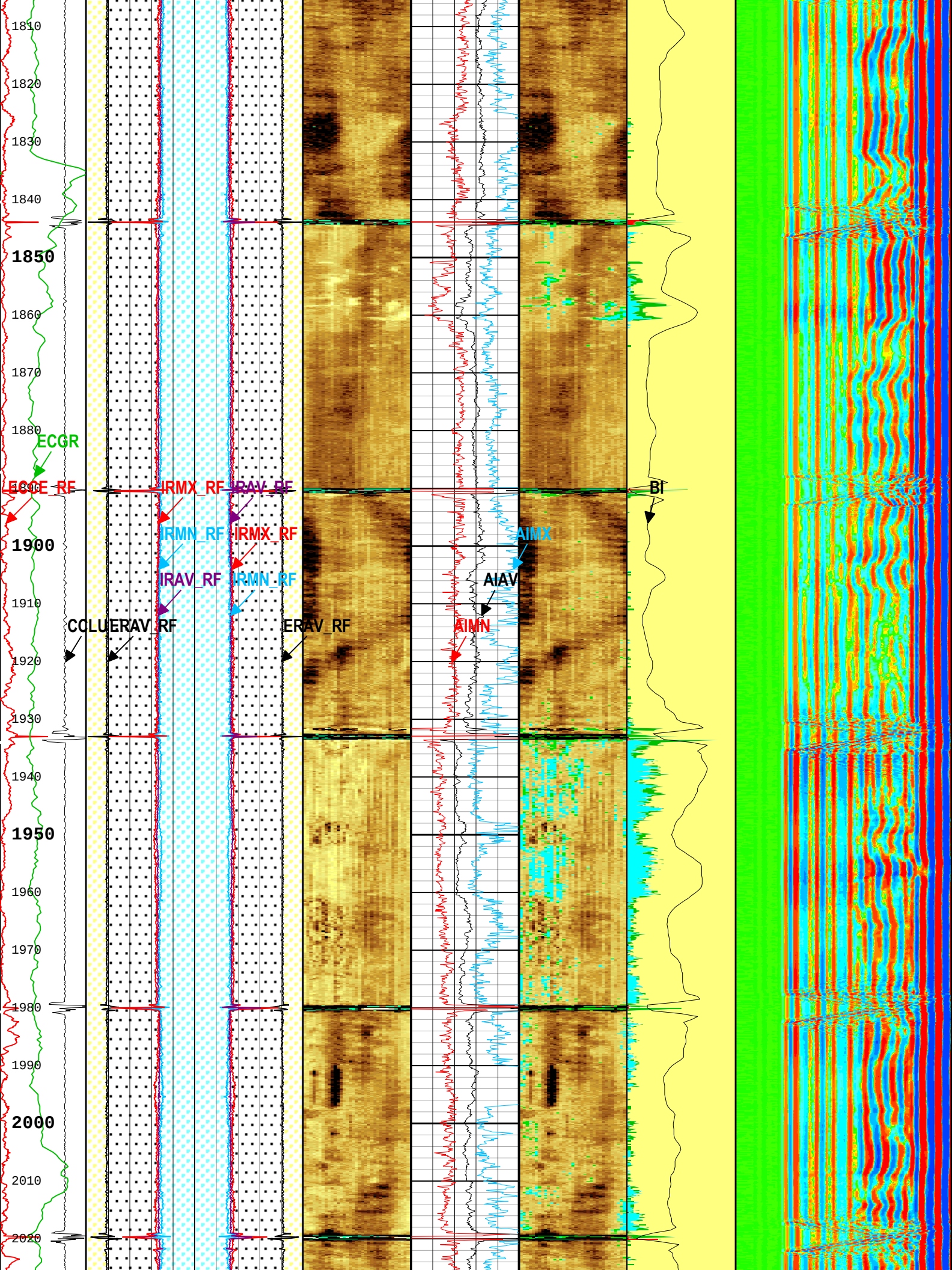
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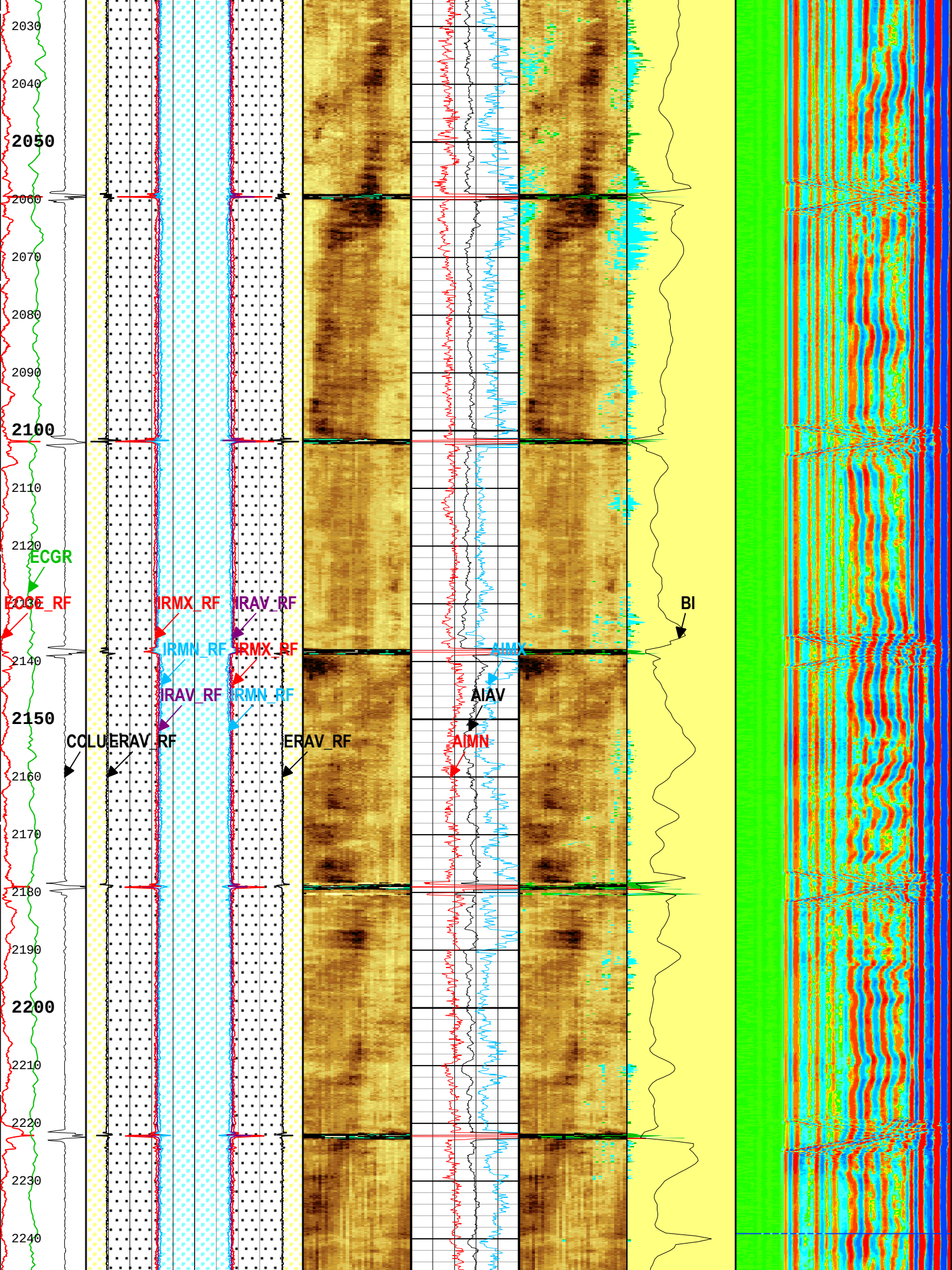
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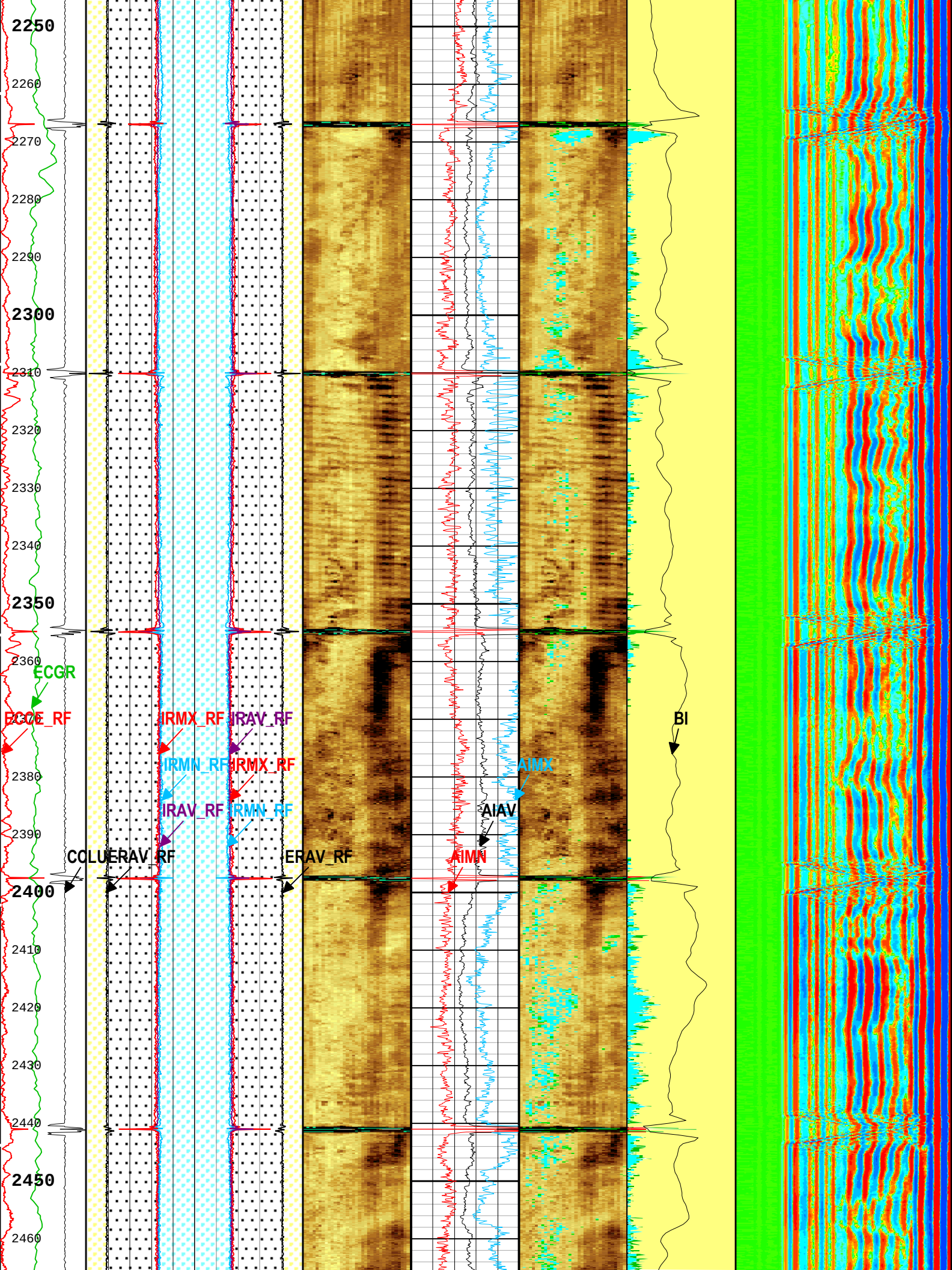
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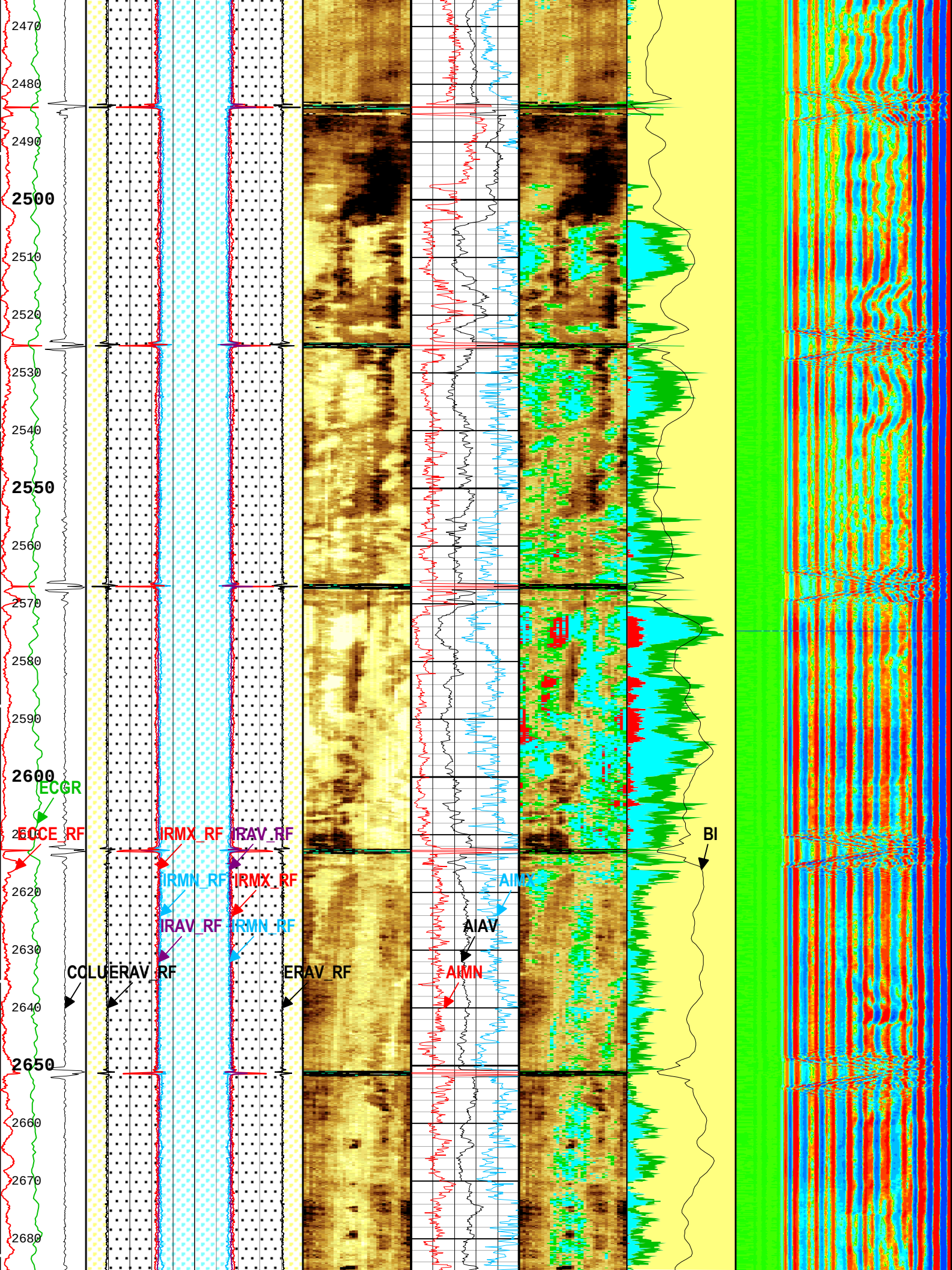
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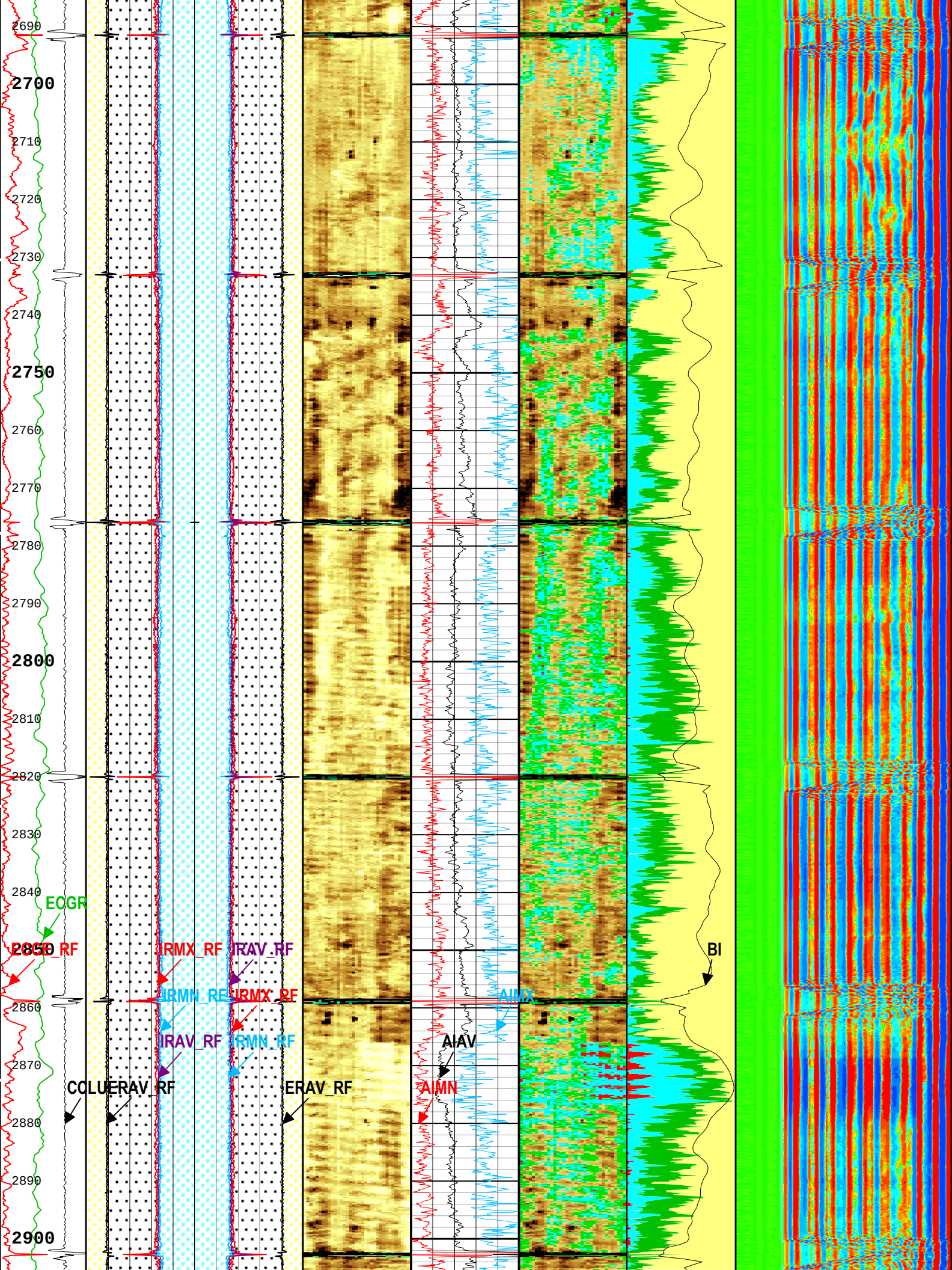
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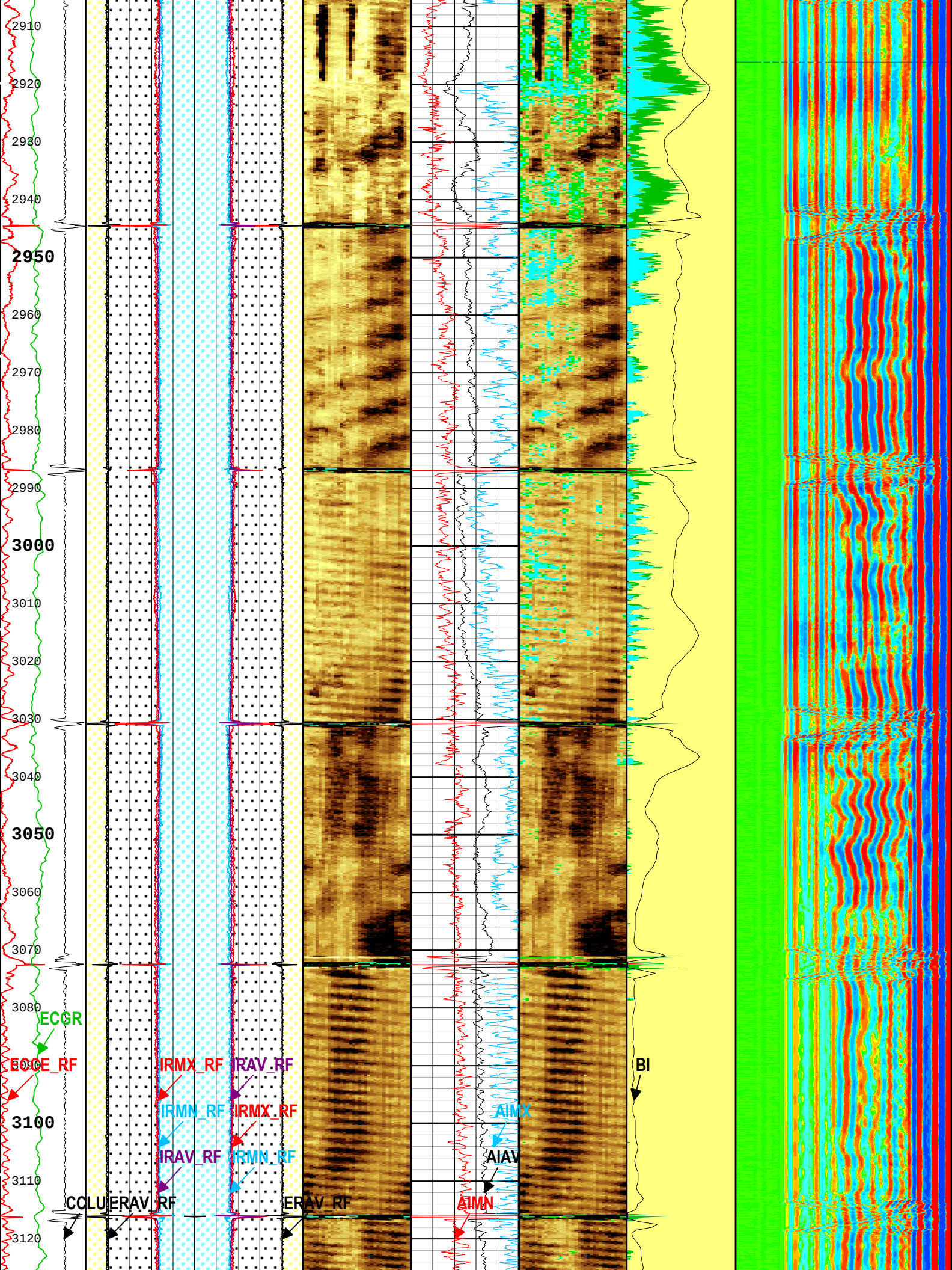
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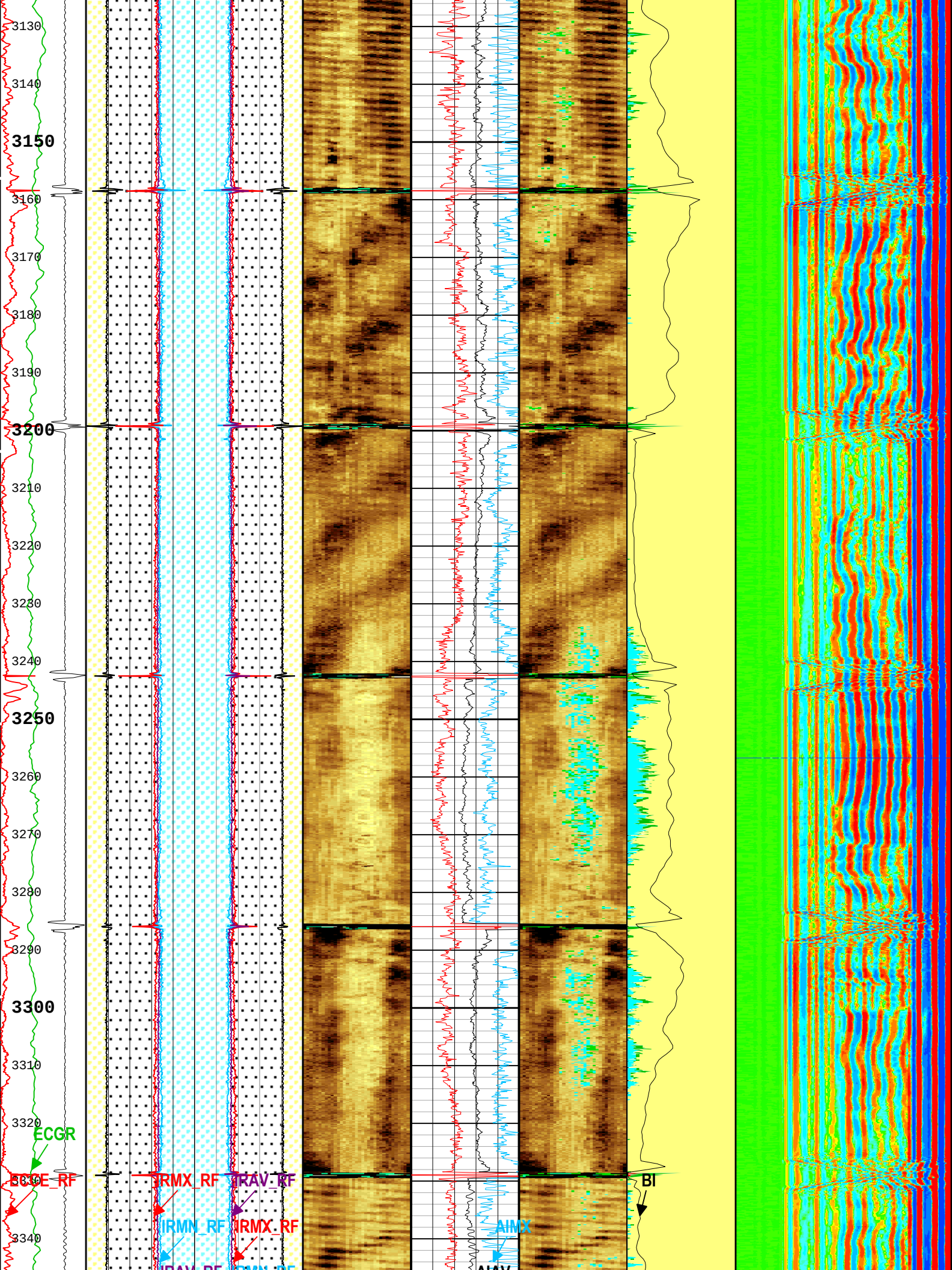
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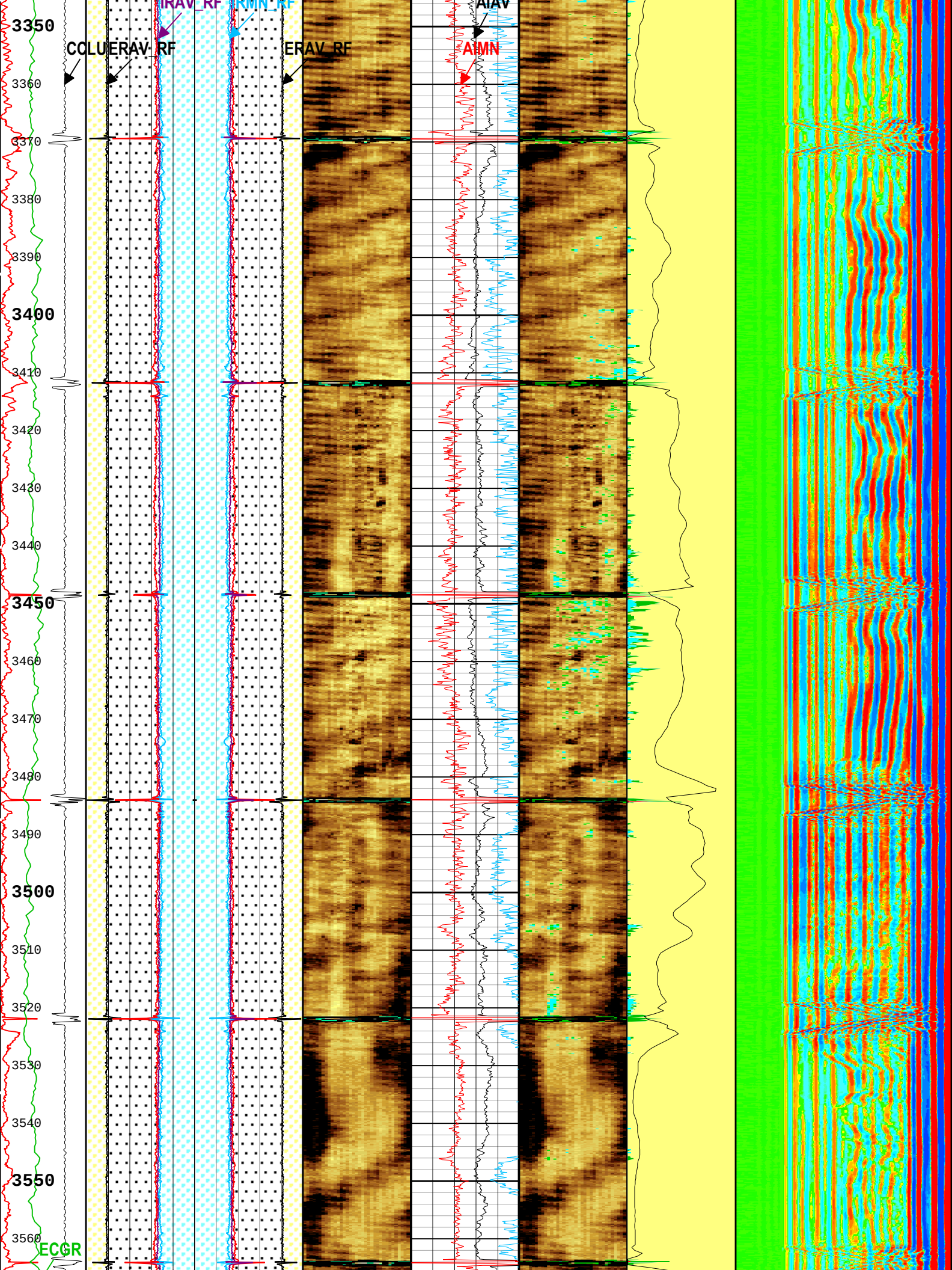
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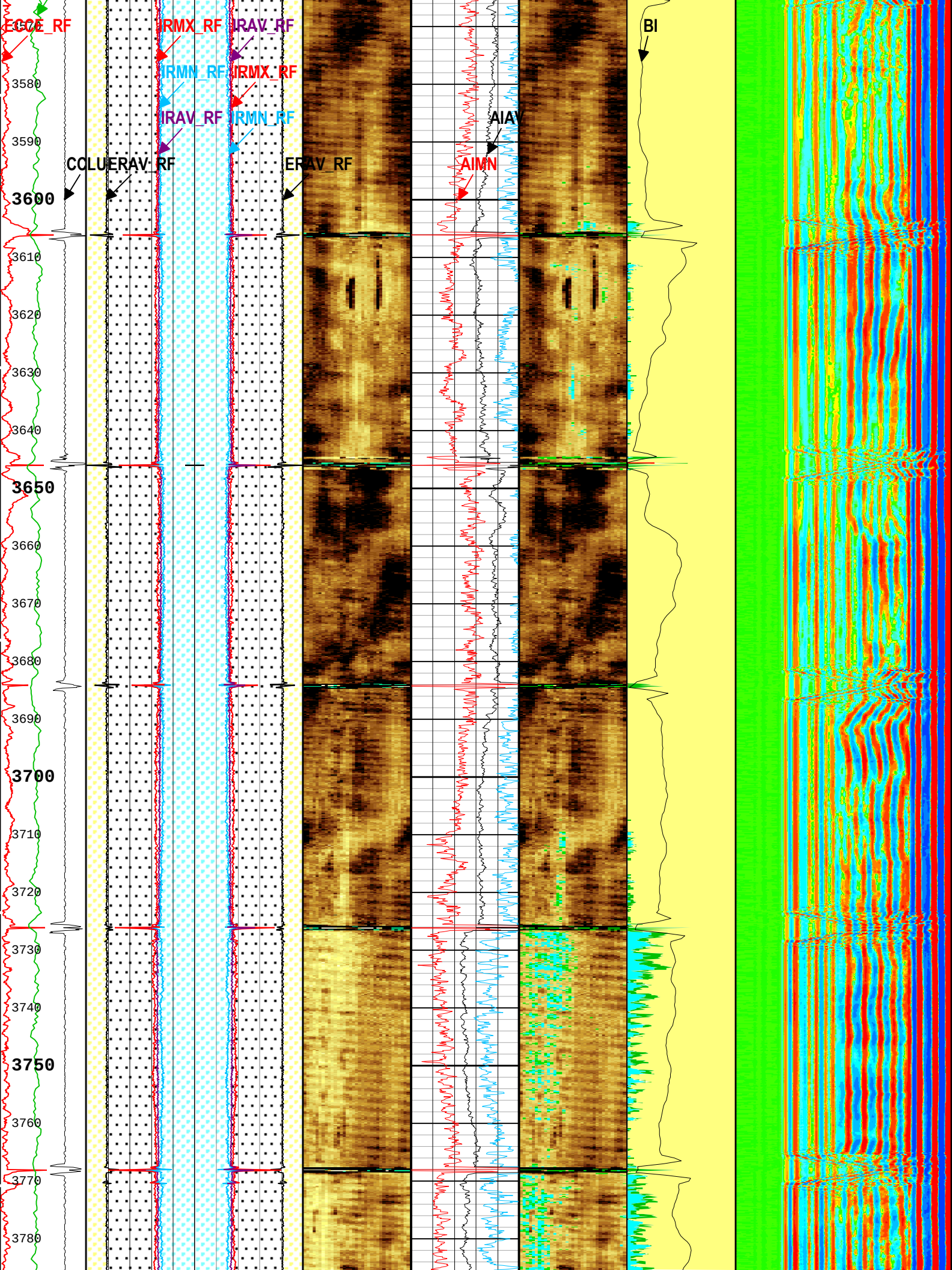
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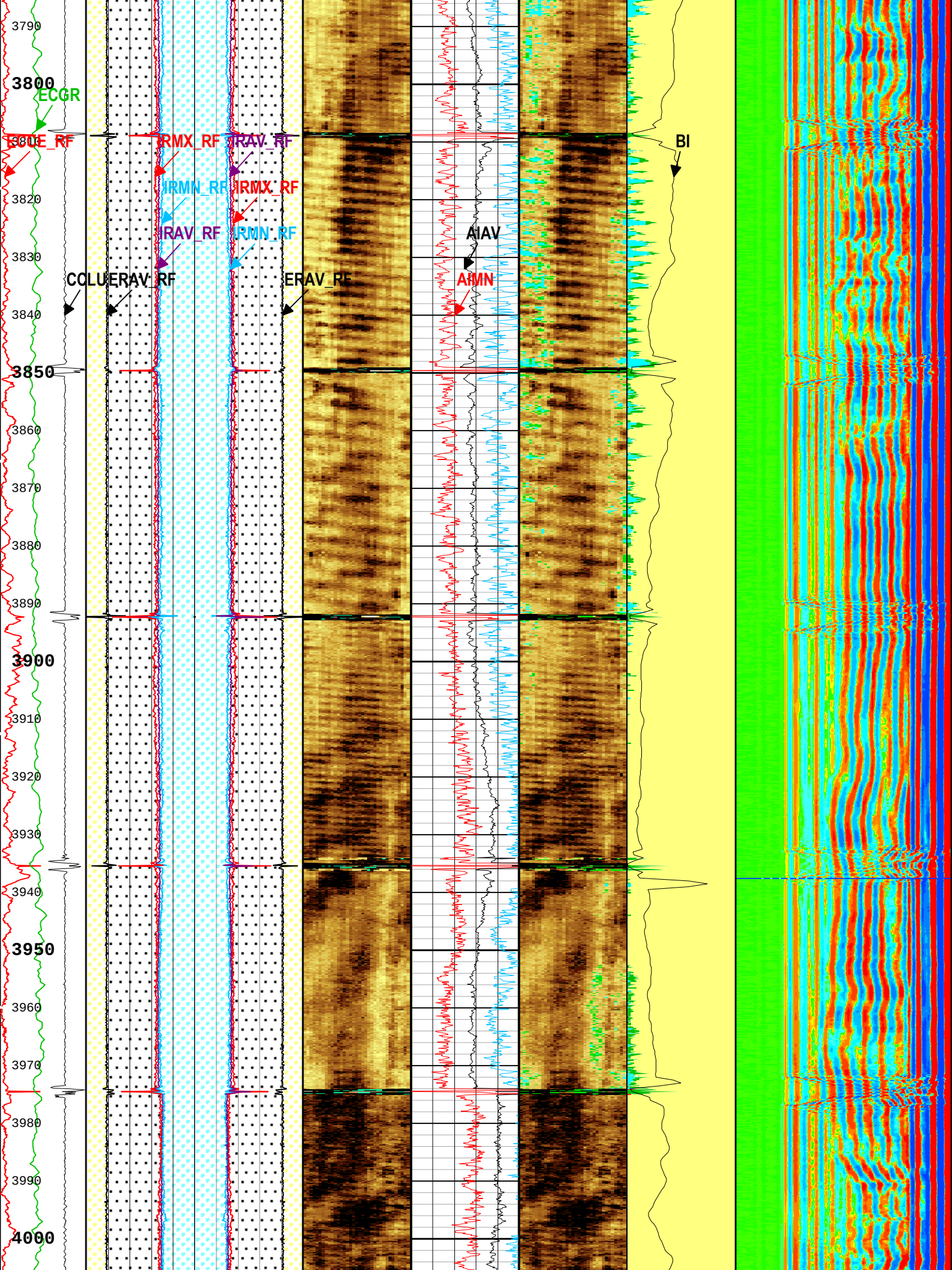
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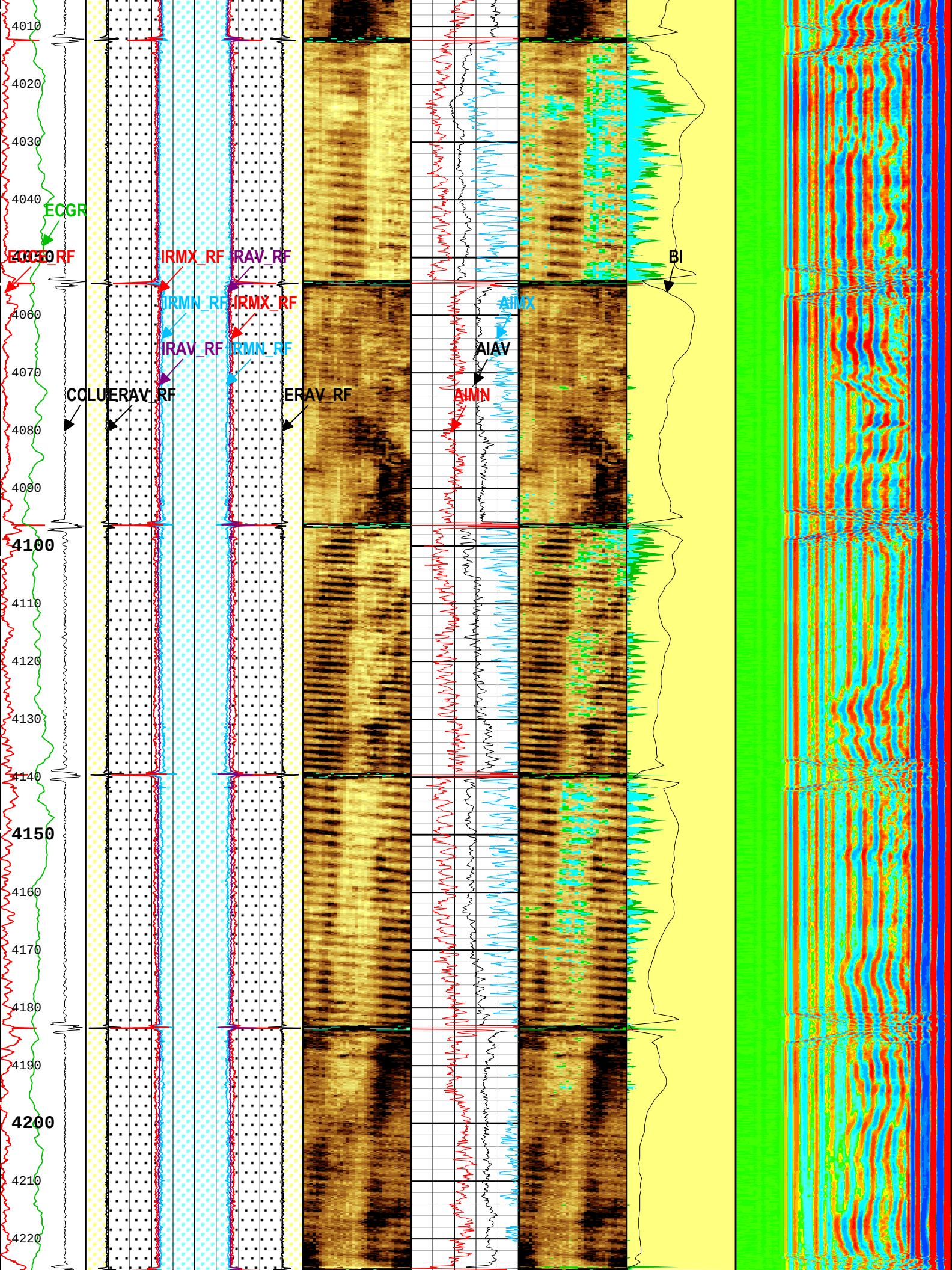
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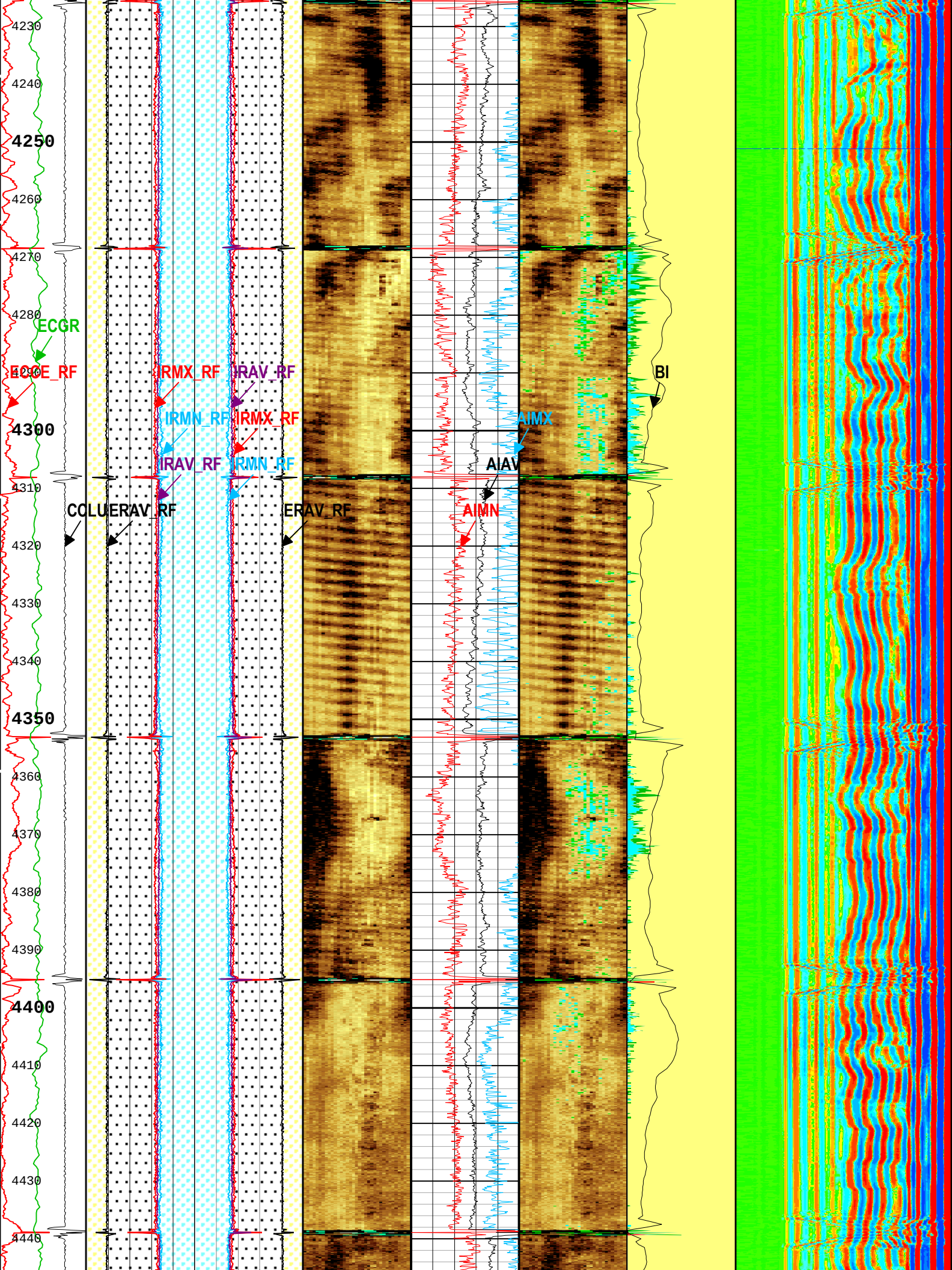
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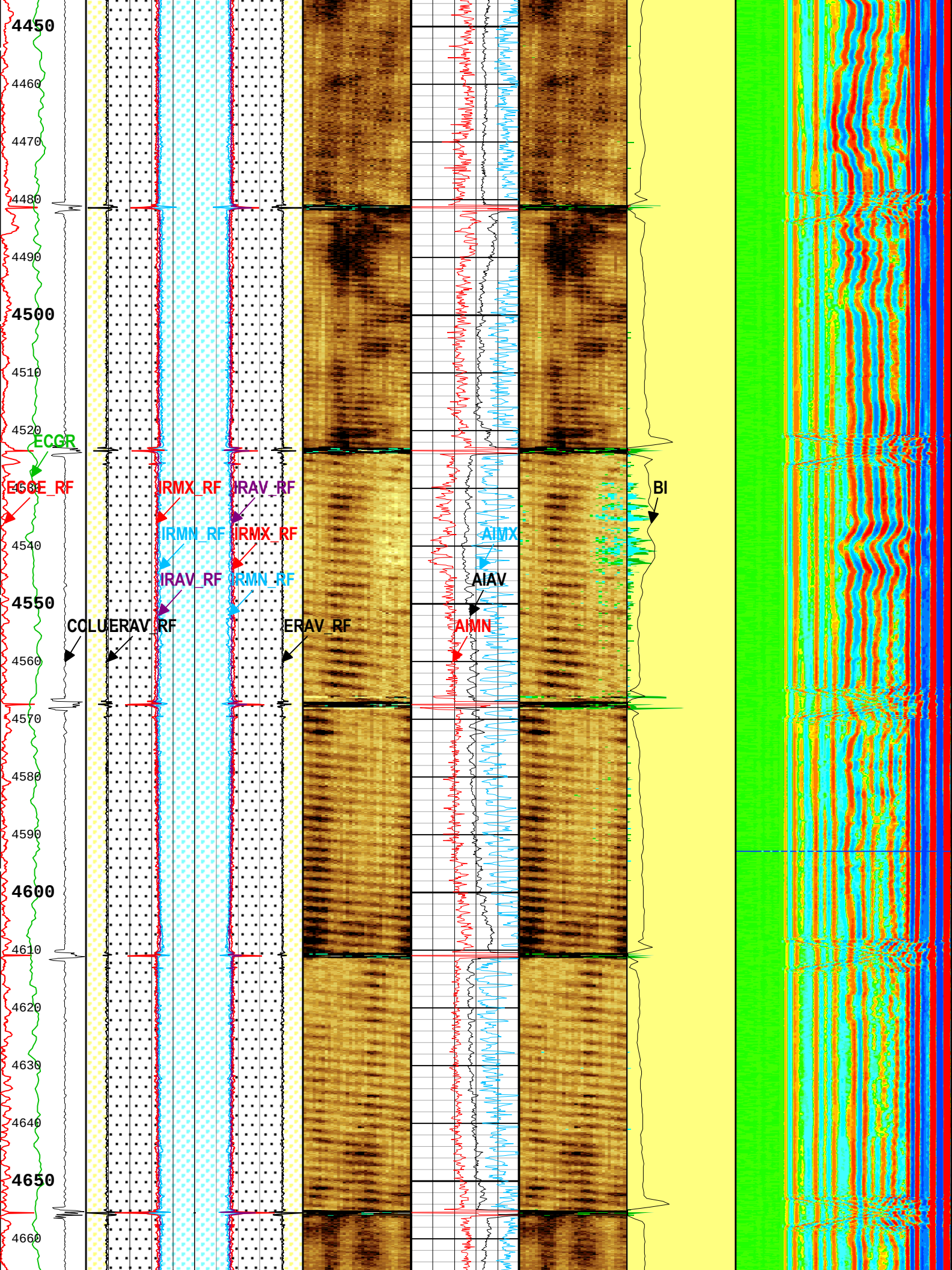
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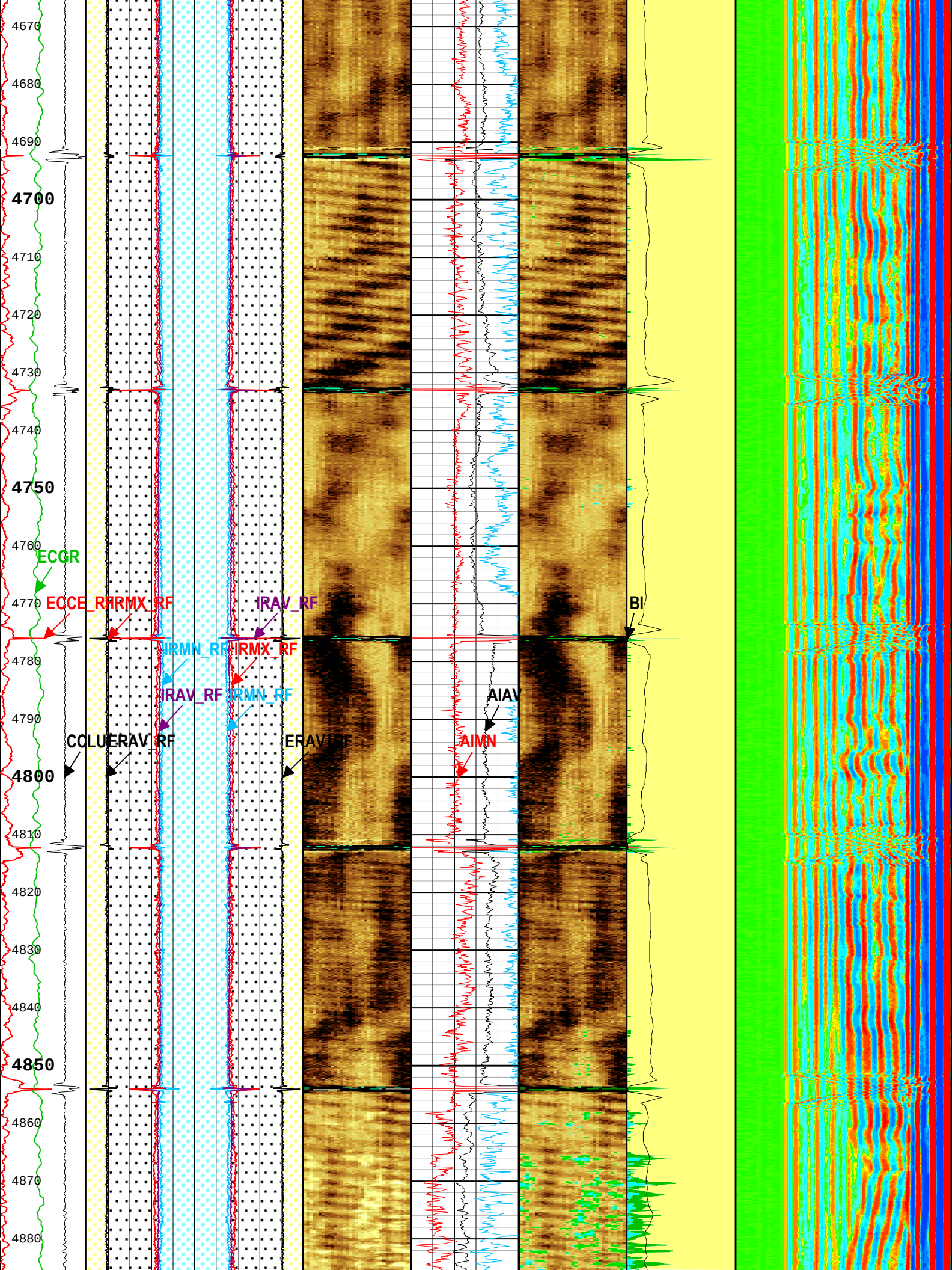
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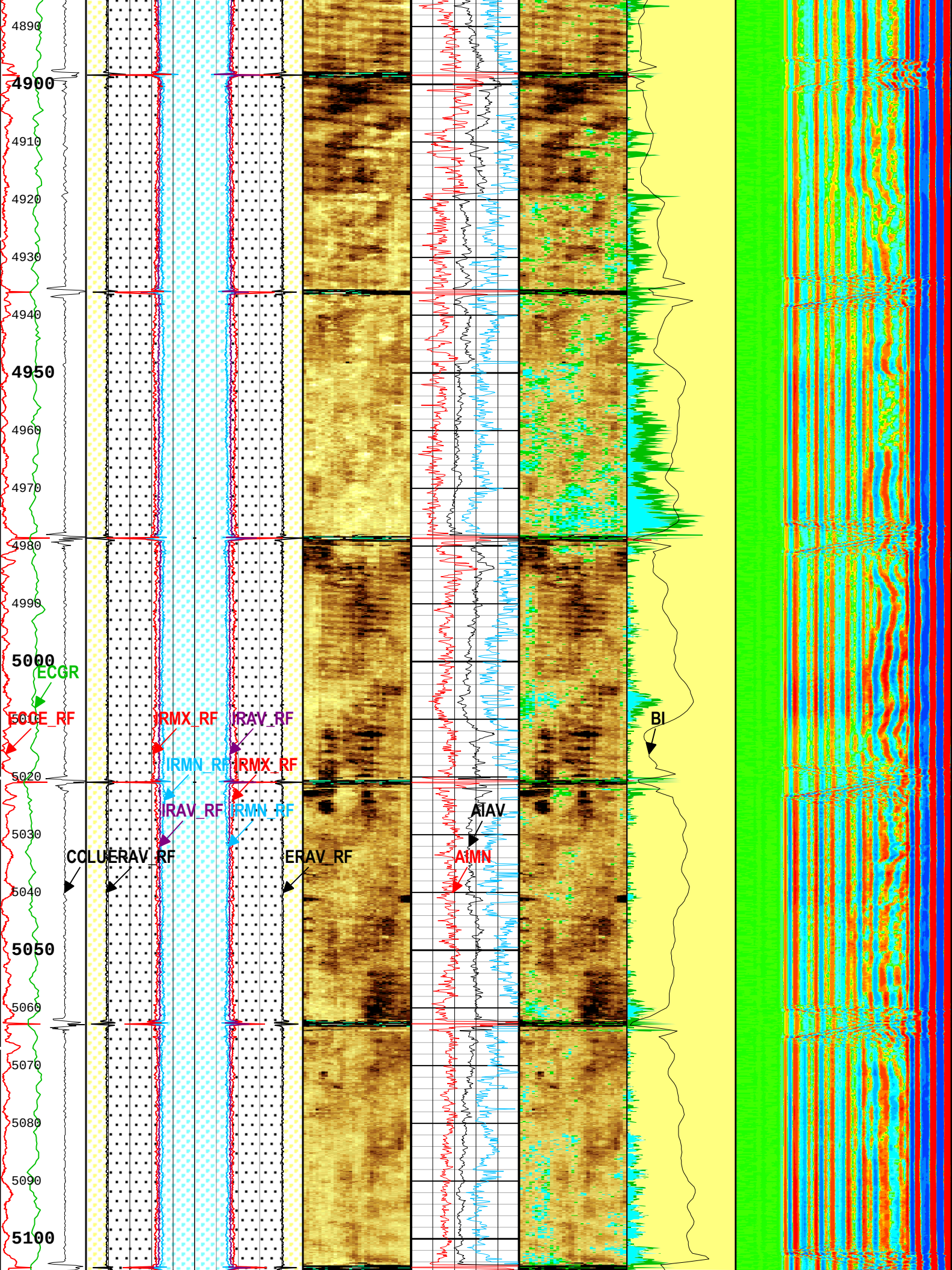
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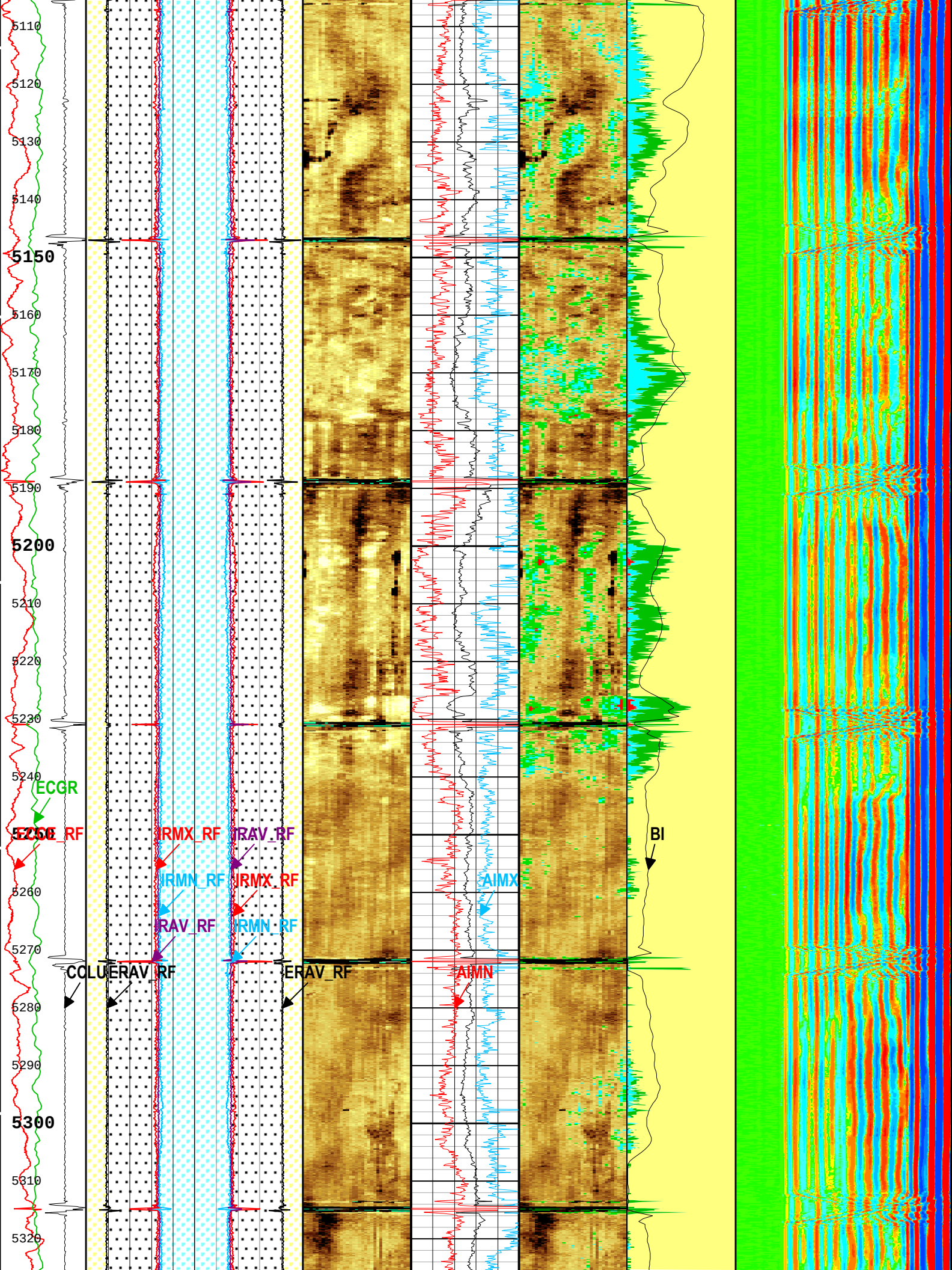
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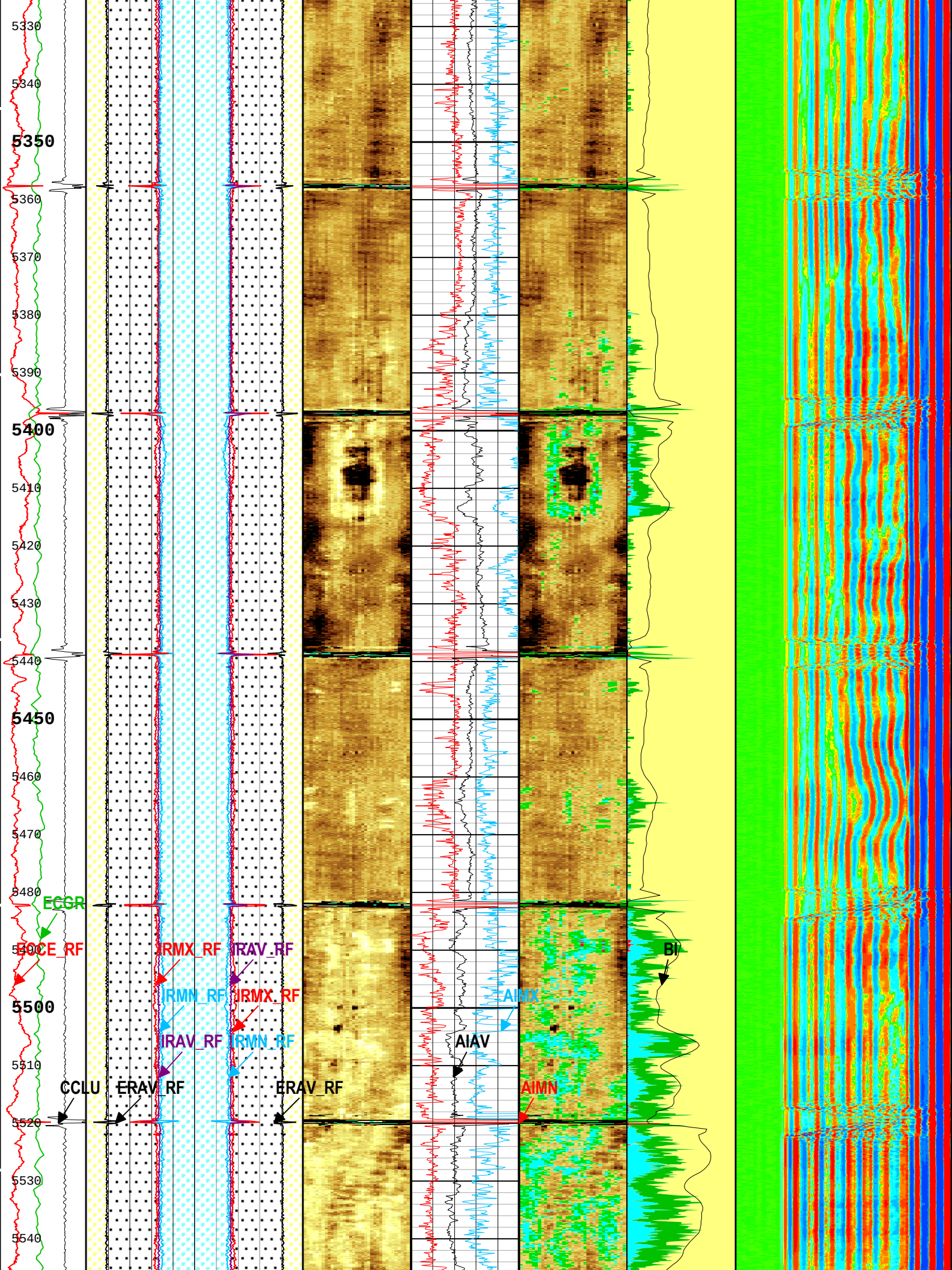
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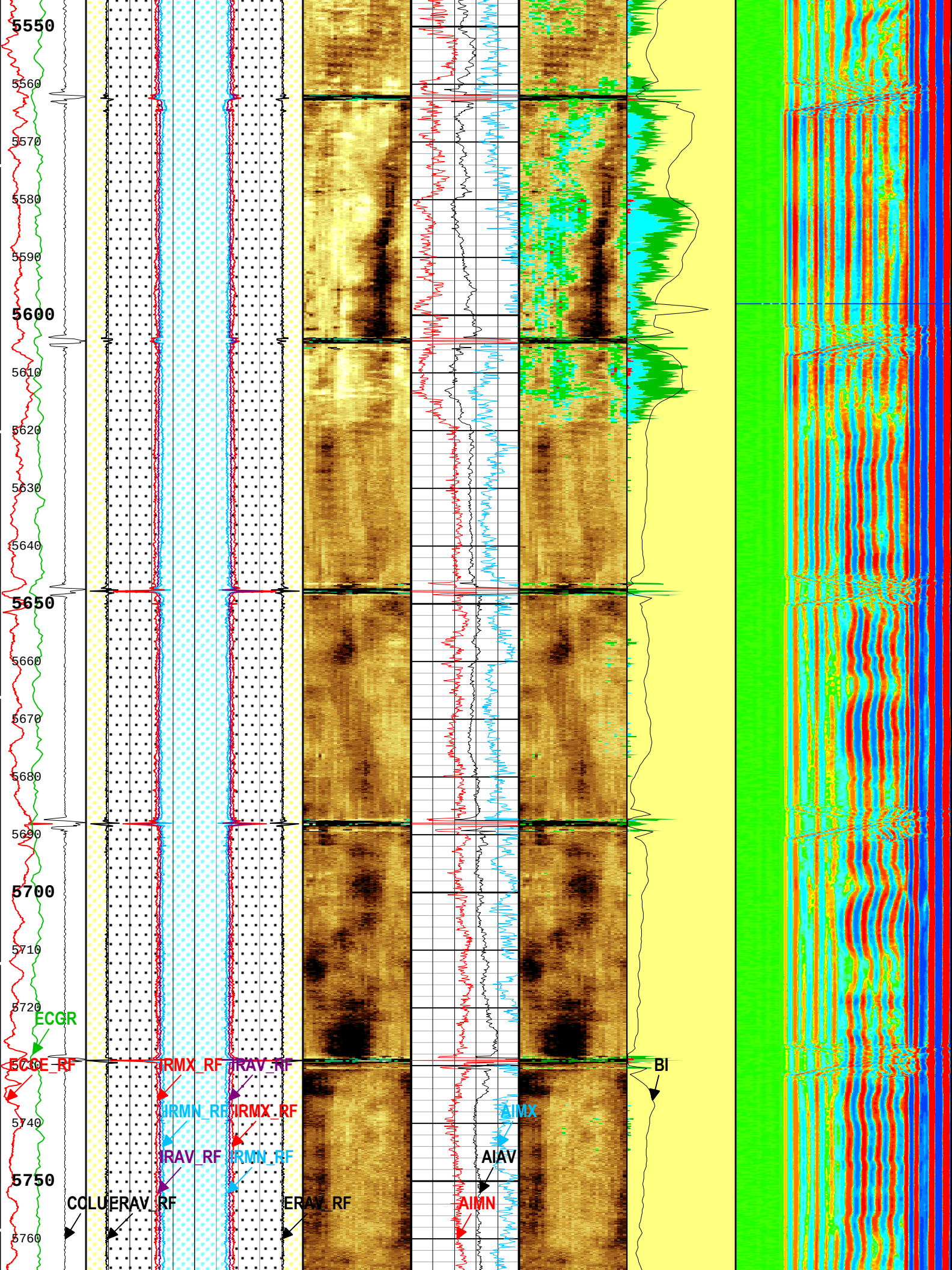
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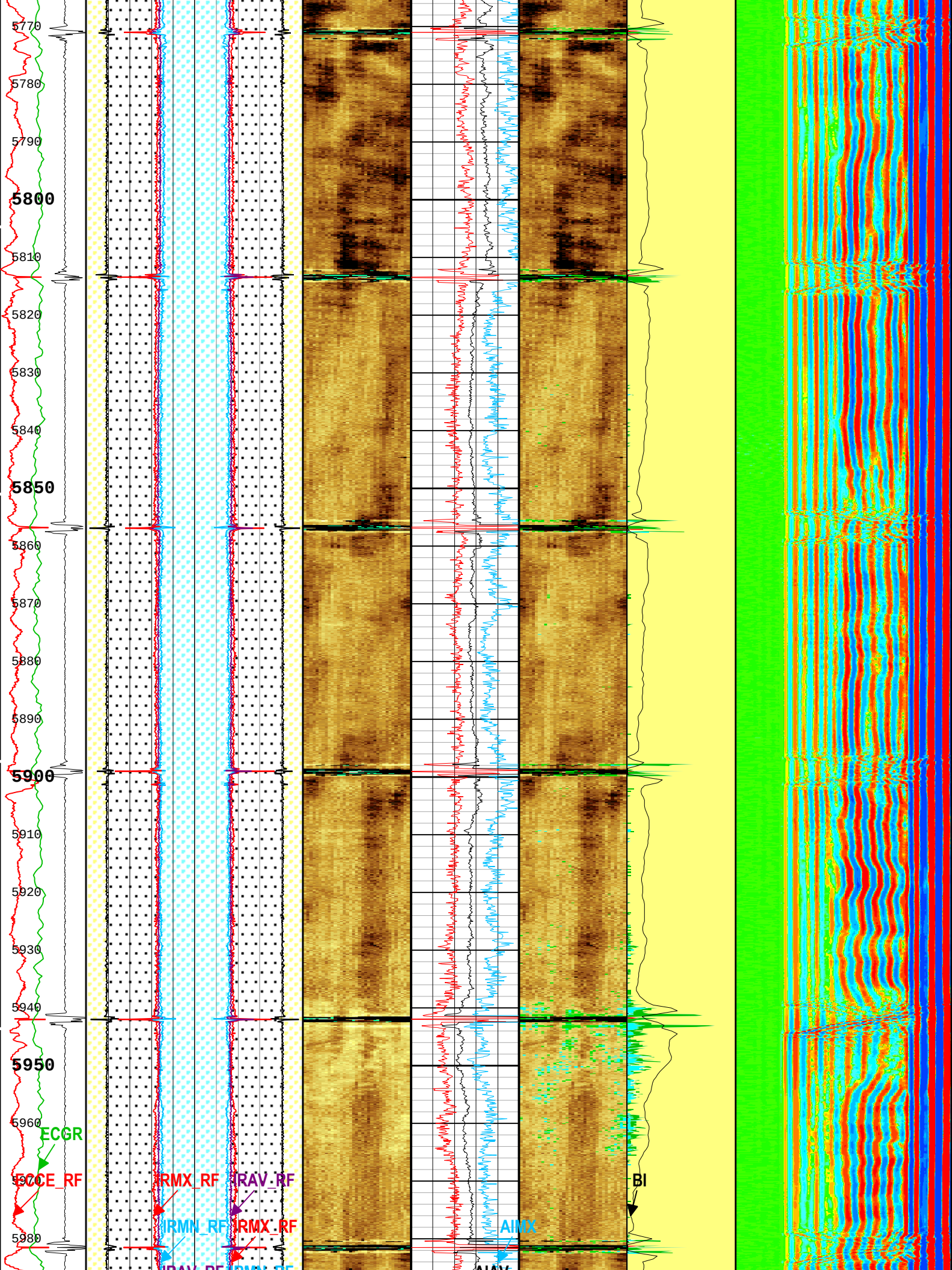
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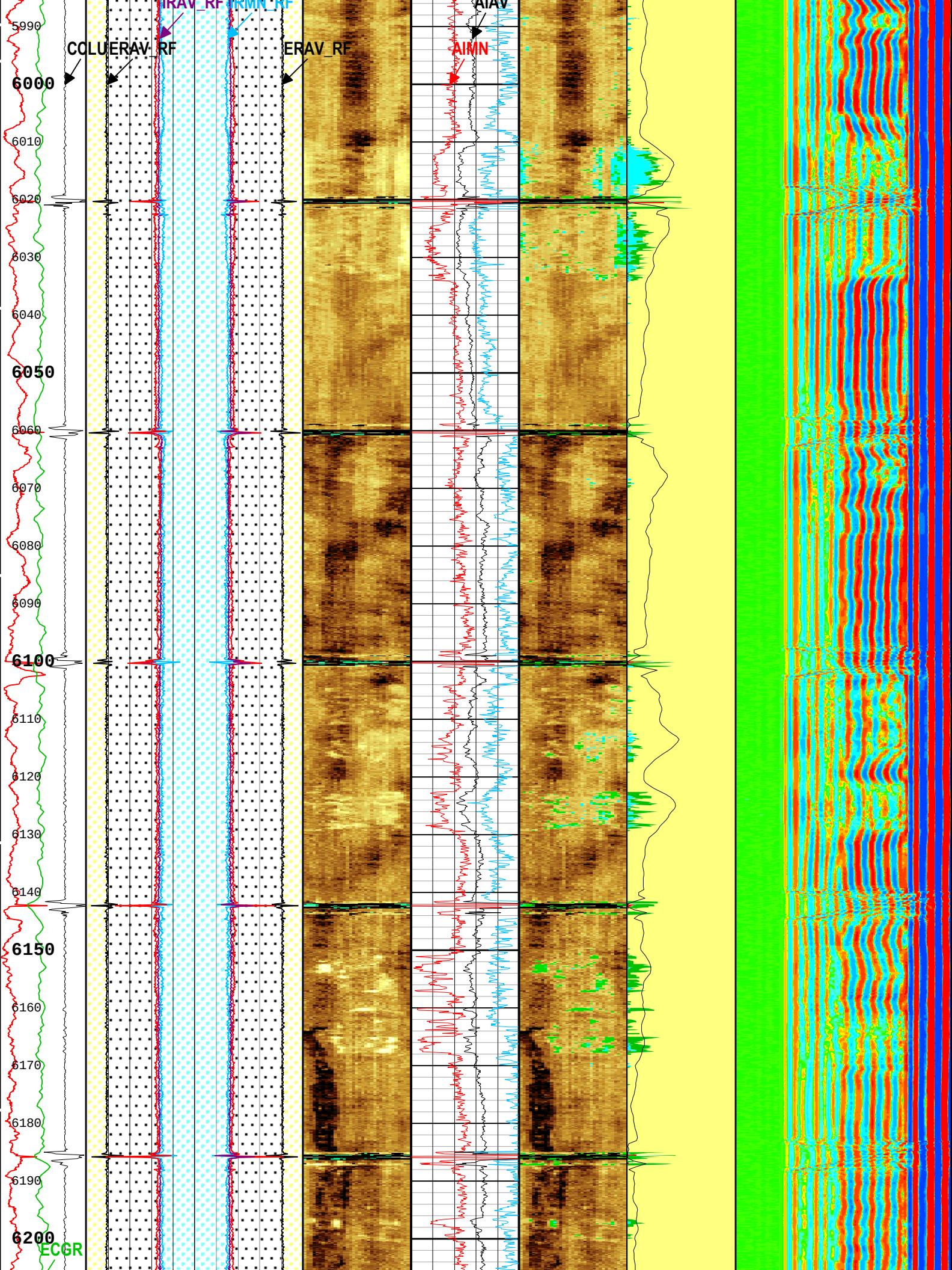
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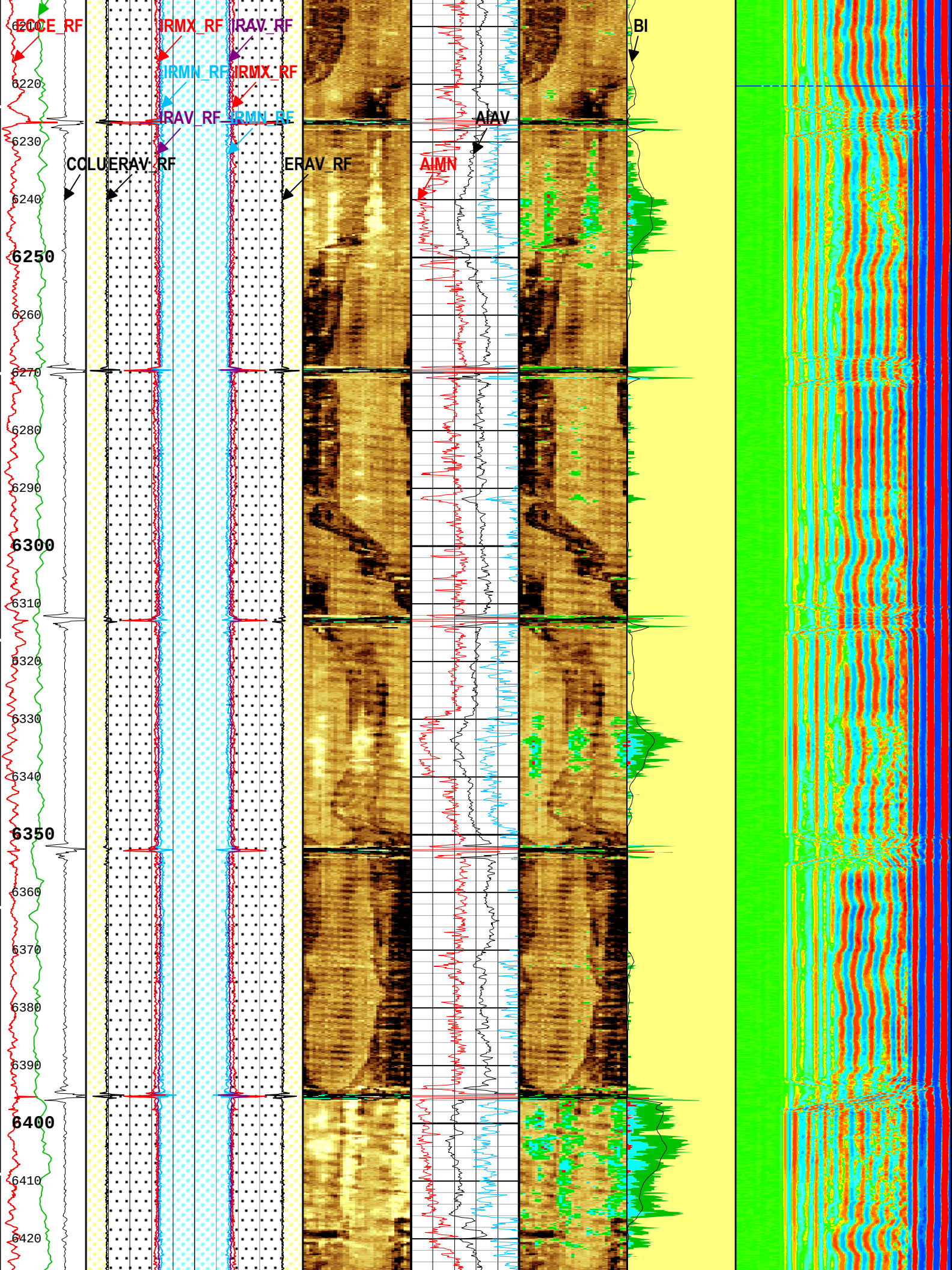
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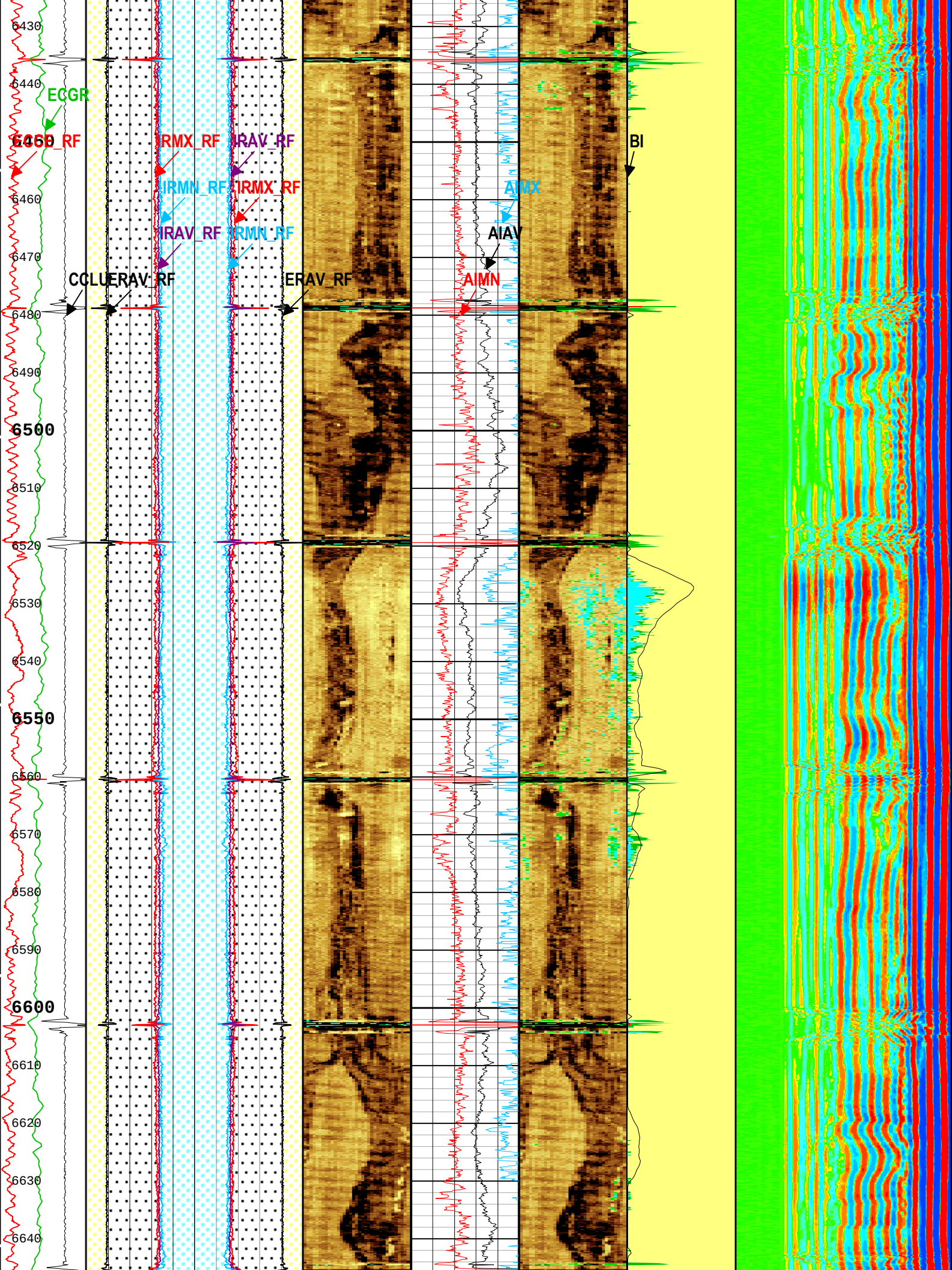
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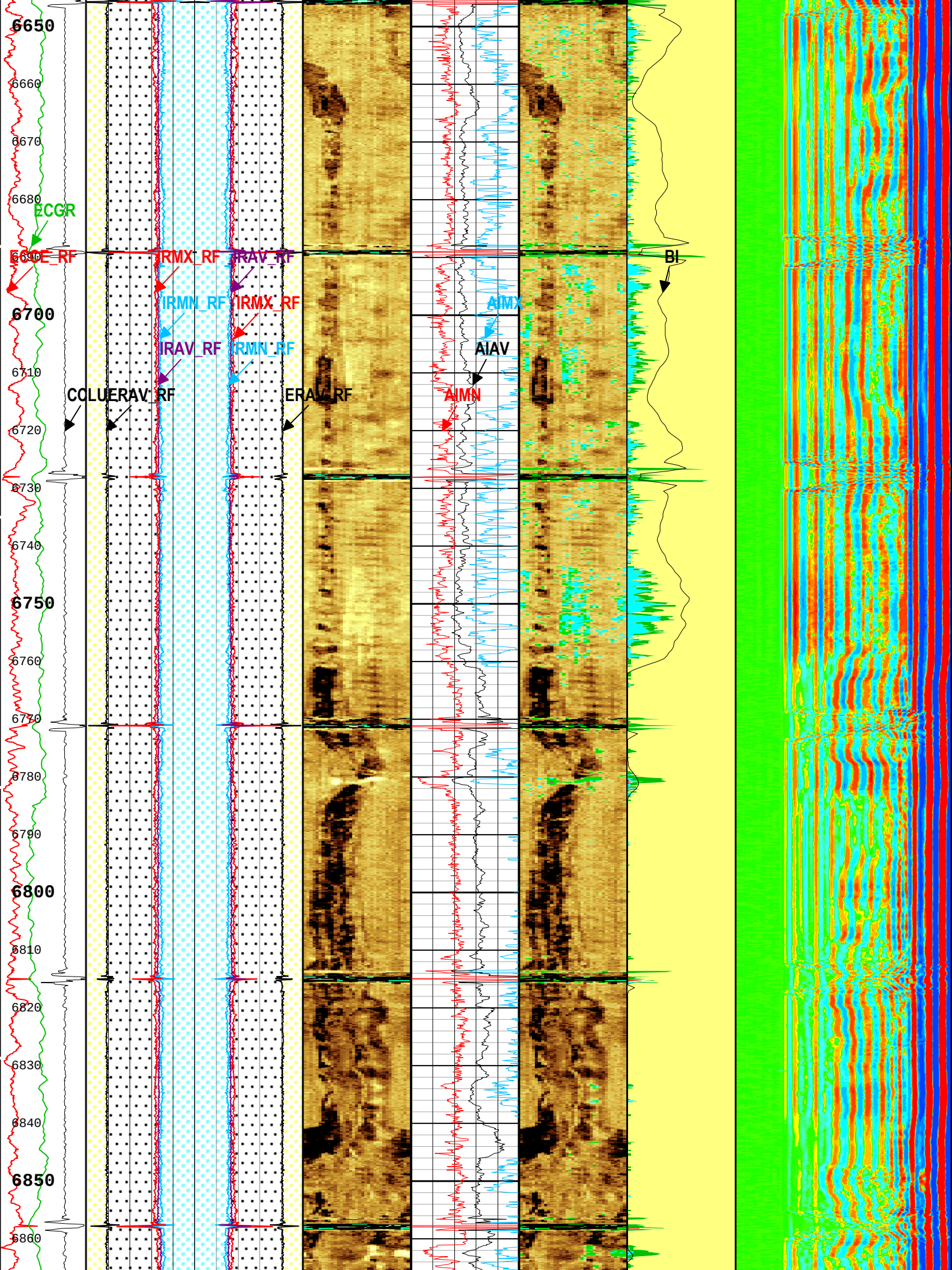
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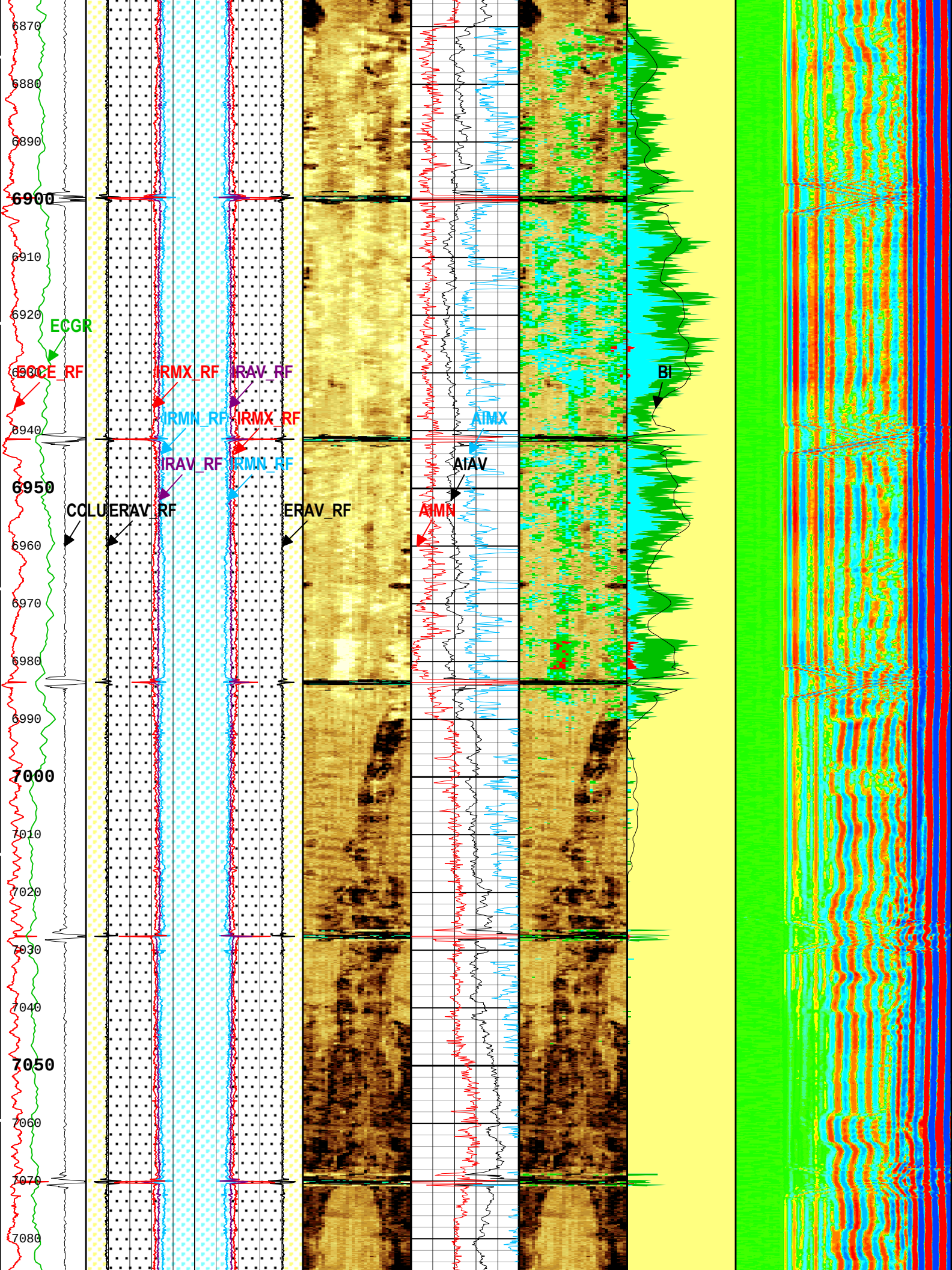
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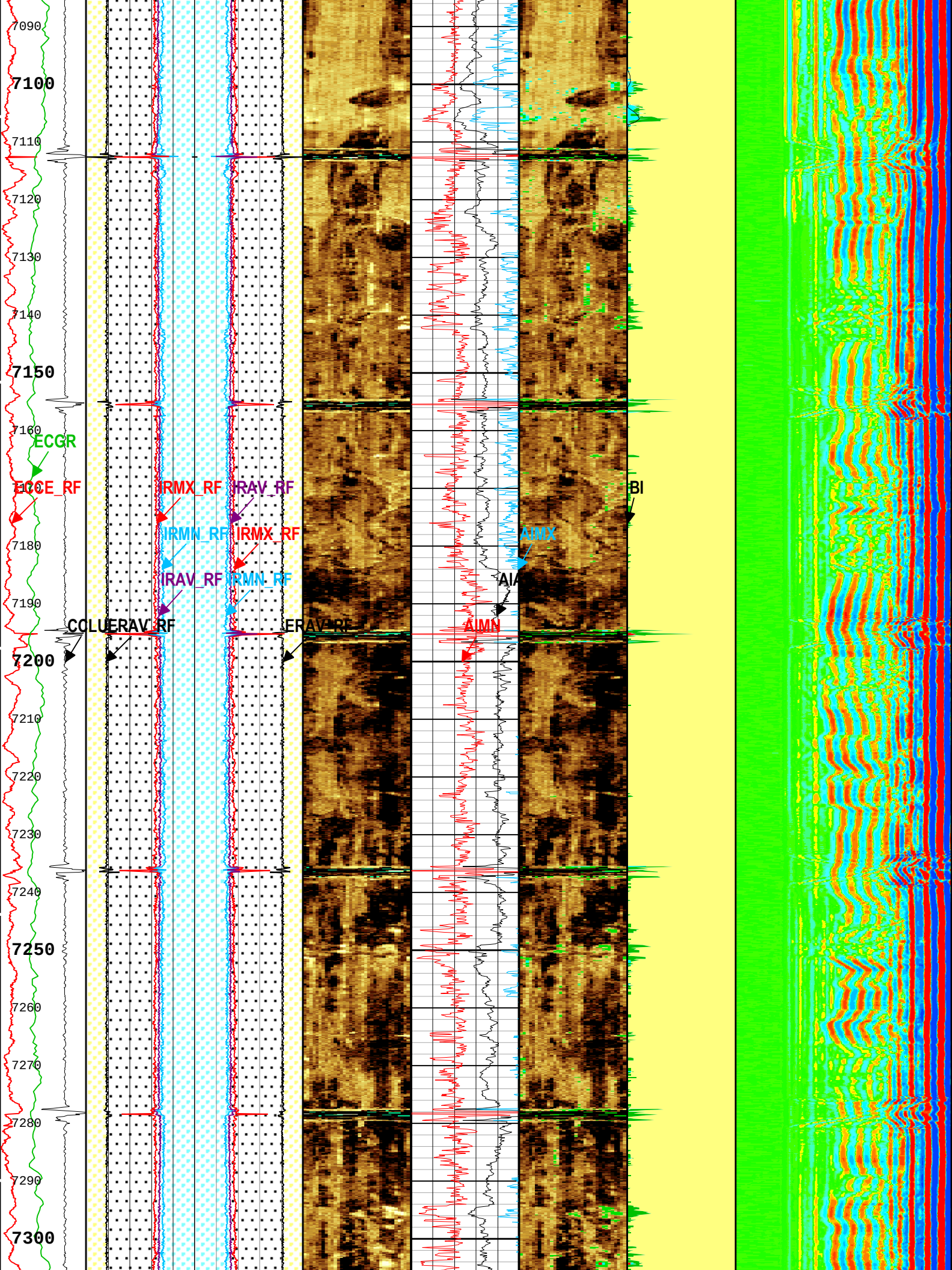
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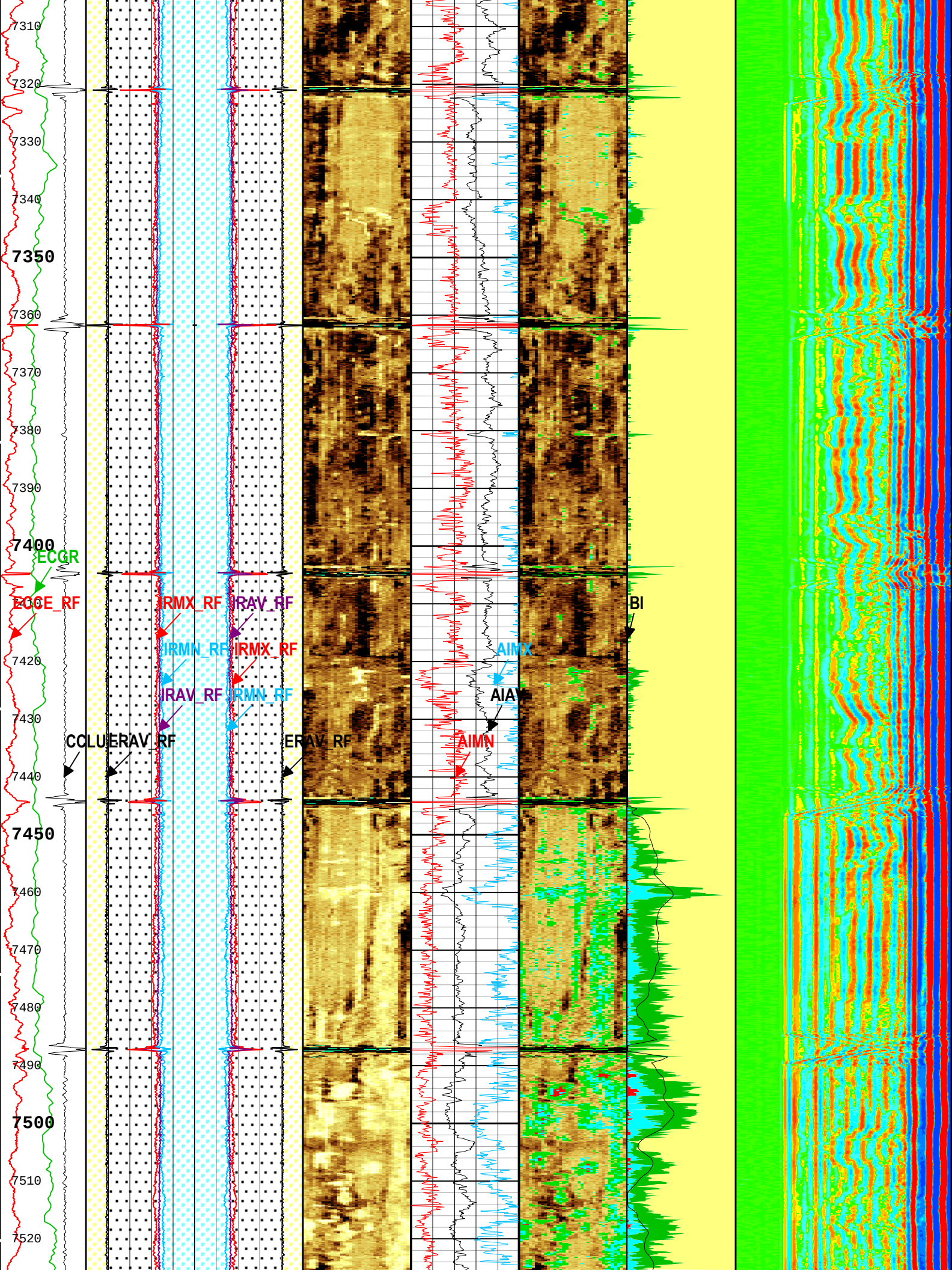
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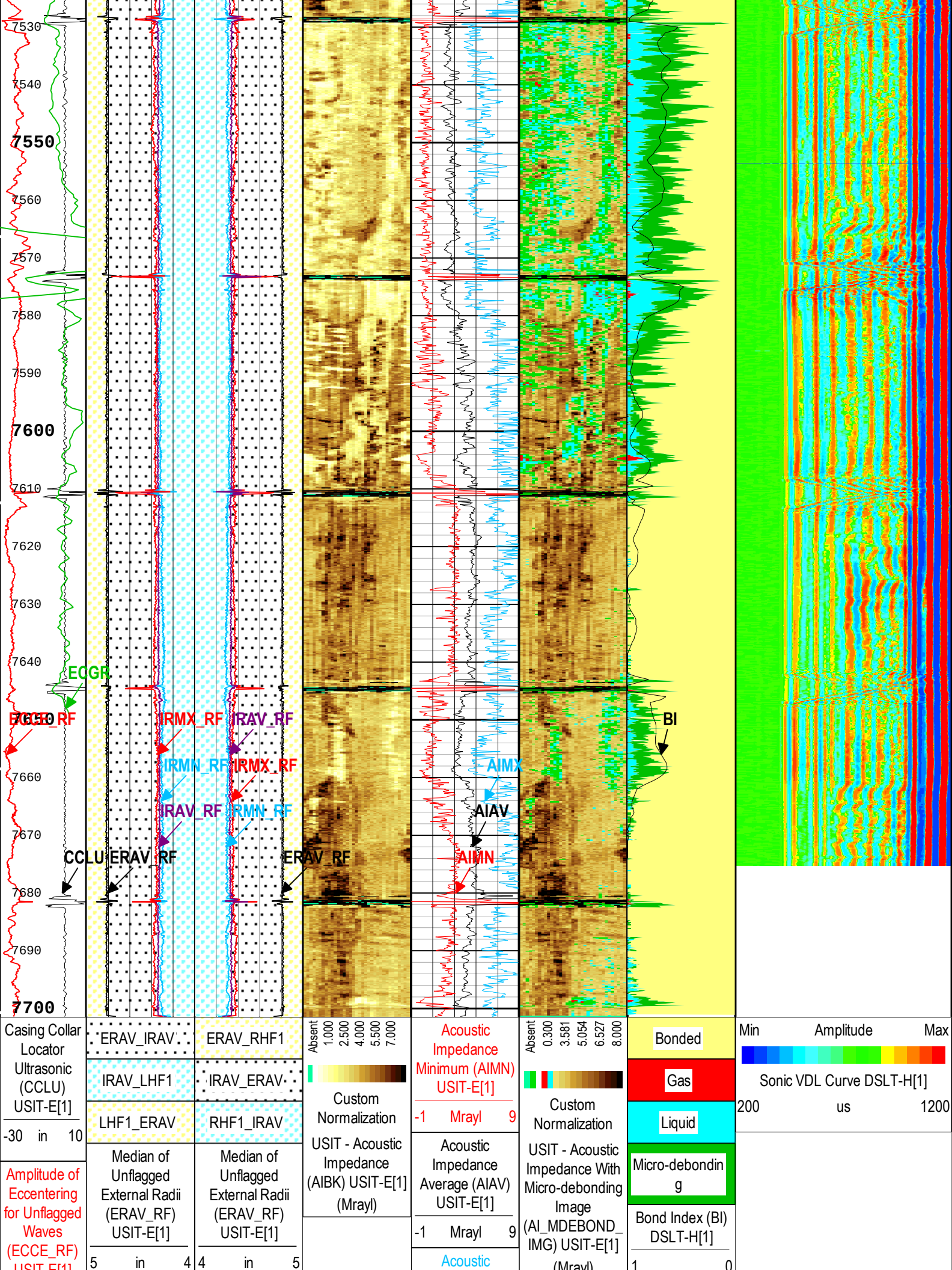
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BI
Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
ERAV_IRAV
IRAV_LHF1
LHF1_ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4
ERAV_RHF1
IRAV_ERAV
RHF1_IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4 in 5
Absent 1.000 2.500 4.000 5.500 7.000
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E[1]
-1 Mrayl 9
Acoustic
Absent 0.300 3.581 5.054 6.527 8.000
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H[1]
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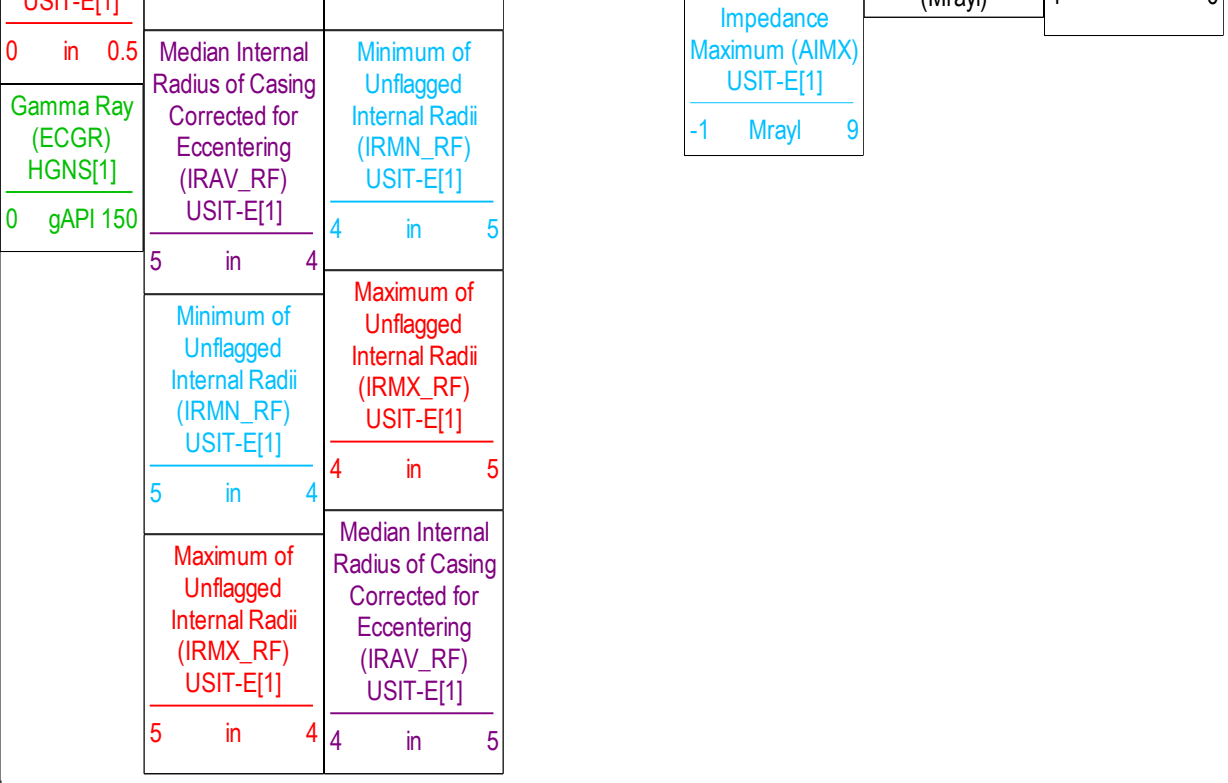
Min Amplitude Max
Sonic VDL Curve DSLT-H[1]
200 us 1200



TIME_1900 - Time Marked every 60.00 (s)

Description: USI VDL Cement Format: Log (LBV1_USI-VDL (DSLT) Cement 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:35:25

Channel Processing Parameters

R2D1: Parameters

Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	DSLT-H	140	us
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BILI	Bond Index Level for Zone Isolation	DSLT-H	0.8	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLG	CBL Gate Width	DSLT-H	39	us
CBLO	Casing Bottom (Logger)	WLSESSION	8801	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLT-H	52	mV
CDEN	Cement Density	HGNS-H	2	g/cm3
CMCF	CBL Cement Type Compensation Factor	DSLT-H	0.32	
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.472	in
DETE	Delta-T Detection	DSLT-H	E1	
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	DSLT-H	0.94	
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	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLT-H	11.79	mV
GR_MULTIPLIER	Gamma Ray Multiplier	HGNS-H	1	
HEMA	Hematite Presence Flag	Borehole	No	

ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MAHTR	Manual High Threshold Reference for first arrival detection	DSLT-H	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLT-H	5.89	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLT-H	Depth Zoned	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	29.67	us
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
MSA	Minimum Sonic Amplitude	DSLT-H	2.61	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	8.13	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.13	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
NMSG	Near Minimum Sliding Gate	DSLT-H	310	us
NMXG	Near Maximum Sliding Gate	DSLT-H	950	us
NUMP	Number of Detection Passes	DSLT-H	2	
OPLEV	USIT Remove Flagged Data Level	USIT-E	OPT2	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.378	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
SDNV	Number of Vertical Samples used for Micro-debonding Computation	USIT-E	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	USIT-E	0.5	Mrayl
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro-debonding	USIT-E	0.3	Mrayl
SFAF	Sonic Formation Attenuation Factor	DSLT-H	3.25	dB/ft
SGAD	Sliding Gate Status	DSLT-H	Off	
SGCL	Sliding Gate Closing Delta-T	DSLT-H	130	us/ft
SGCW	Sliding Gate Closing Width	DSLT-H	25	us
SGDT	Sliding Gate Delta-T	DSLT-H	57	us/ft
SGW	Sliding Gate Width	DSLT-H	110	us
SLEV	Signal Level for AGC	DSLT-H	5000	mV
SOCN	Standoff Distance	HGNS-H	0.125	in
SOCO	Standoff Correction Option	HGNS-H	No	
TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
HISC	Tool Position: Centered or Eccentered	HGNS-H	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0.1	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
USI_FSOD	USIT USI Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
VDLG	VDL Manual Gain	DSLT-H	5	
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZCMT	Acoustic Impedance of Cement	DSLT-H	4	Mrayl
ZCMT_NEAT	Acoustic Impedance of Cement in Neat Cement	DSLT-H	6.8	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	3.6	Mrayl

ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

R2D1Depth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	17.5	15	923
BS	12.25	923	7701.5
MCI	21.68	15	923
MCI	14.81	923	7701.5

All depth are actual.

Tool Control Parameters

R2D1: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDEL	Digitizing Delay	DSLT-H	0	us
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	4.874	in
MODE	DSLT Acquisition Mode	DSLT-H	CBLB	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
DWCO	Digitizer Word Count	DSLT-H	250	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
SDTH	Switch Down Threshold	DSLT-H	20000	
SGAI	Selectable Acquisition Gain	DSLT-H	x1	
SUTH	Switch Up Threshold	DSLT-H	1000	
TMUC	Type of Mud	USIT-E	BRI	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	No	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Time Zoned	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 1.5 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	7695	ft
USSP	Ultrasonic Service	USIT-E	USI	
VRES	Vertical Resolution	USIT-E	1.5 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	100	us
WMOD	Waveform Firing Mode	DSLT-H	Full	

R2D1Time Zoned Parameters

Pass Log[3]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	20	23-May-2016 08:10:50	23-May-2016 10:23:53	7701.76	1564.82
EMXV	40	23-May-2016 10:23:53	23-May-2016 10:34:16	1564.82	1087.36
EMXV	50	23-May-2016 10:34:16	23-May-2016 10:52:33	1087.36	1043.36
UPAT	Pattern 500 KHz	23-May-2016 08:10:57	23-May-2016 10:52:33	7701.76	1043.36
WINB	20	23-May-2016 08:10:57	23-May-2016 10:52:33	7701.76	1043.36

WINB	20	23-May-2016 08:10:57	23-May-2016 10:52:33	7701.76	1043.36

Pass Log[18]:Up

EMXV	120	23-May-2016 13:20:29	23-May-2016 13:22:23	1044.11	1011.06
EMXV	100	23-May-2016 13:22:23	23-May-2016 13:24:02	1011.06	958.59
EMXV	80	23-May-2016 13:24:02	23-May-2016 13:43:41	958.59	67.88
UPAT	Pattern 600 KHz	23-May-2016 13:20:49	23-May-2016 13:43:41	1044.11	67.88
WINB	25	23-May-2016 13:20:49	23-May-2016 13:43:41	1044.11	67.88

All depth are at tool zero.

Composite 1

Main Pass 5 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[3]:Up	Up	219.03 ft	7701.92 ft	23-May-2016 8:10:50 AM	23-May-2016 10:52:33 AM	ON	-2.00 ft	Yes
R2D1	Log[18]:Up	Up	67.11 ft	1045.45 ft	23-May-2016 1:20:29 PM	23-May-2016 1:43:41 PM	ON	2.67 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K

Composite 1:S002

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 23-May-2016 18:36:13

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

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

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

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

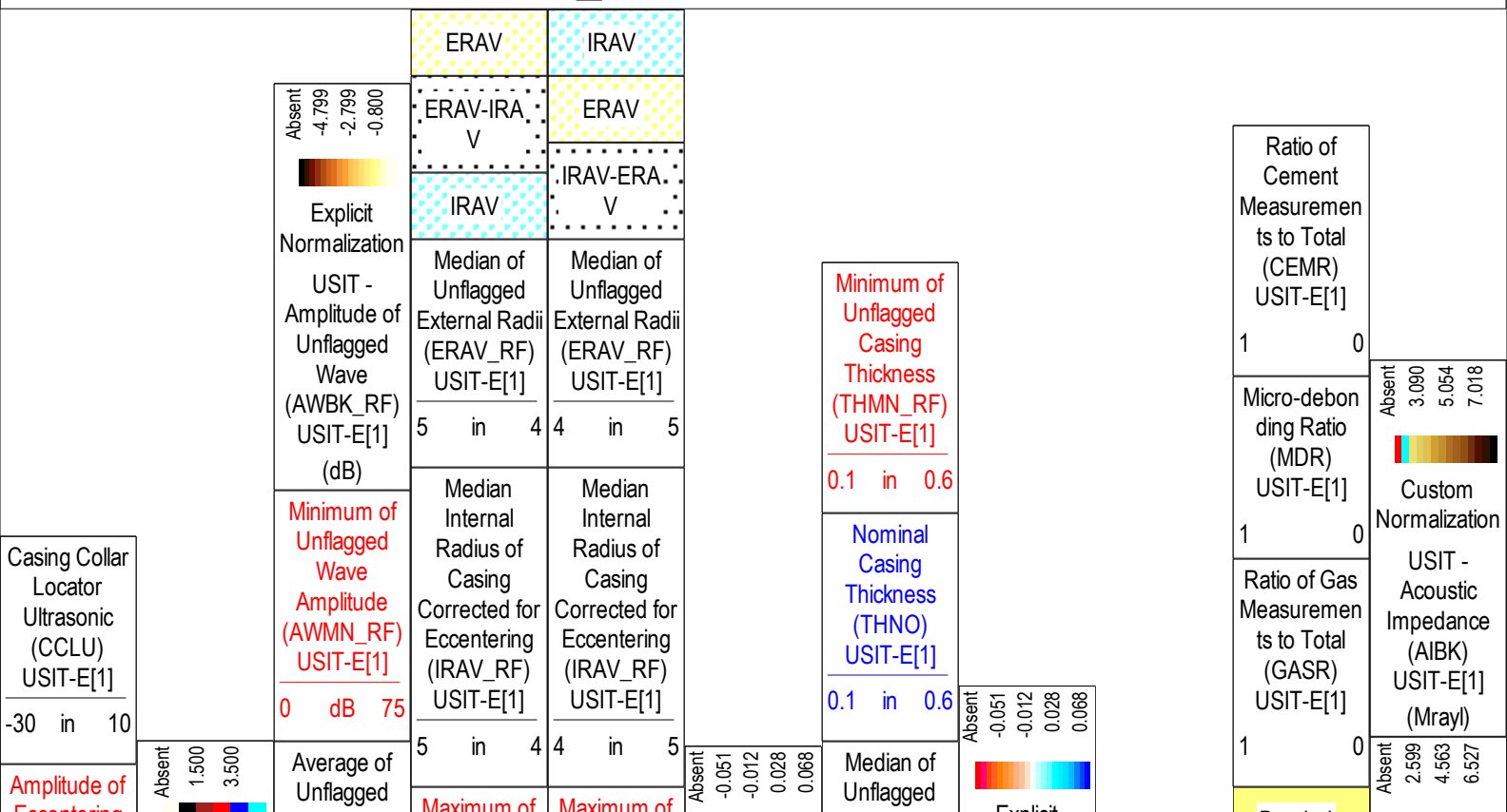
UTIM Error

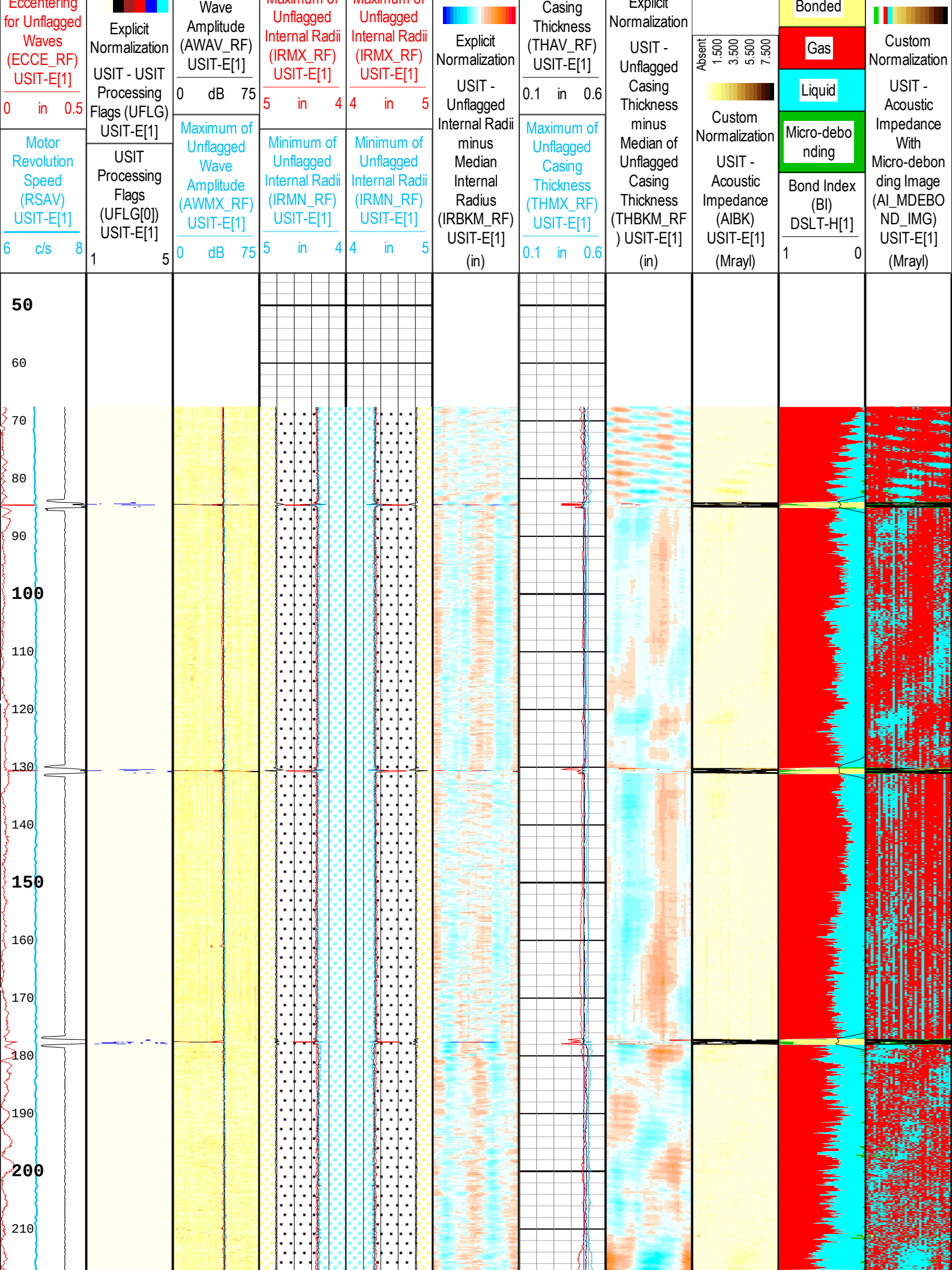
Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error




Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]
USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5
Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4 in 5
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1]
(in)
Casing Thickness (THAV_RF) USIT-E[1]
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.1 in 0.6
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E[1]
(in)
Absent
1.500
3.500
5.500
7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1]
(Mrayl)
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H[1]
1 0
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1]
(Mrayl)
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100
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160
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180
190
200
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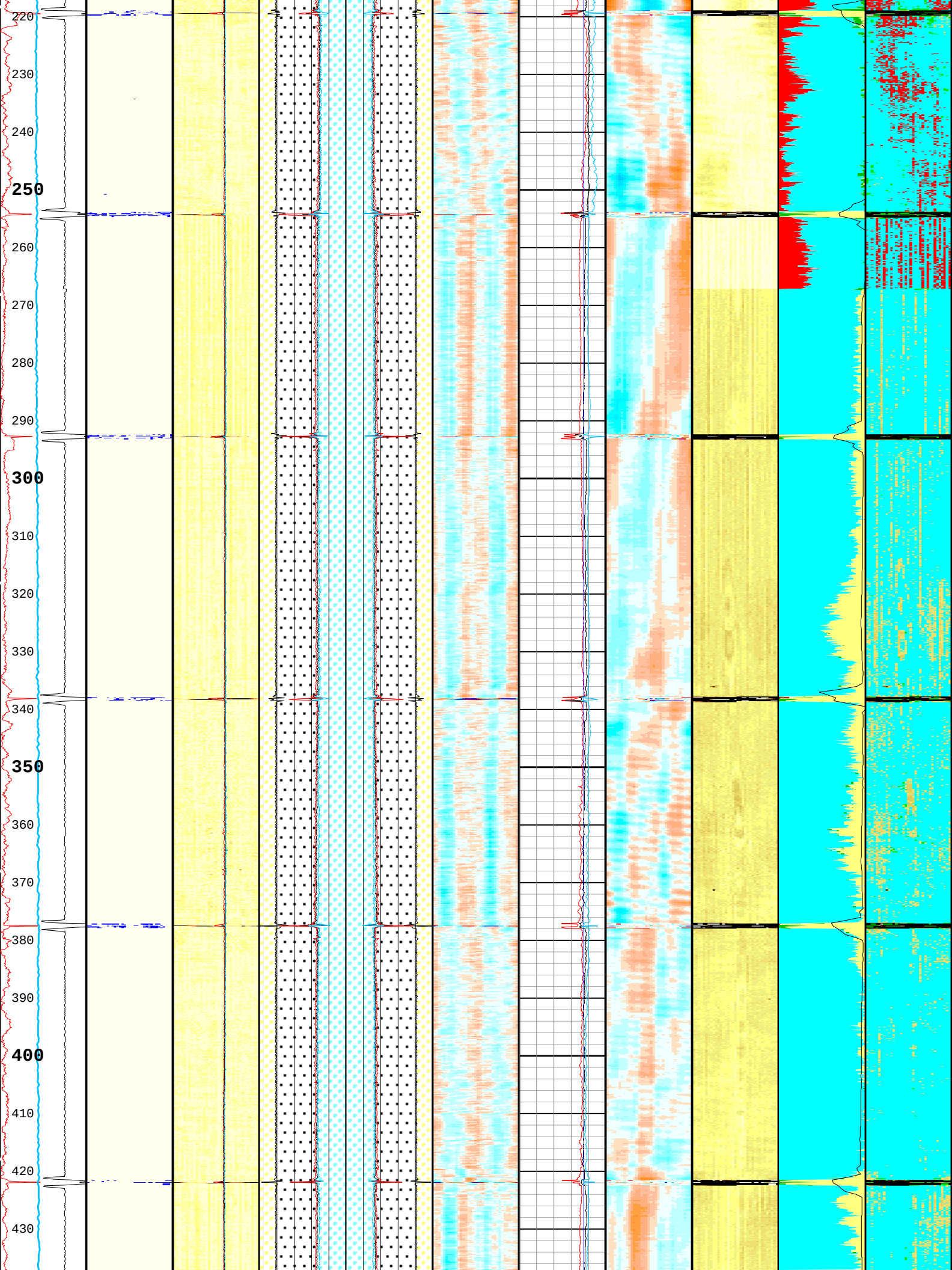
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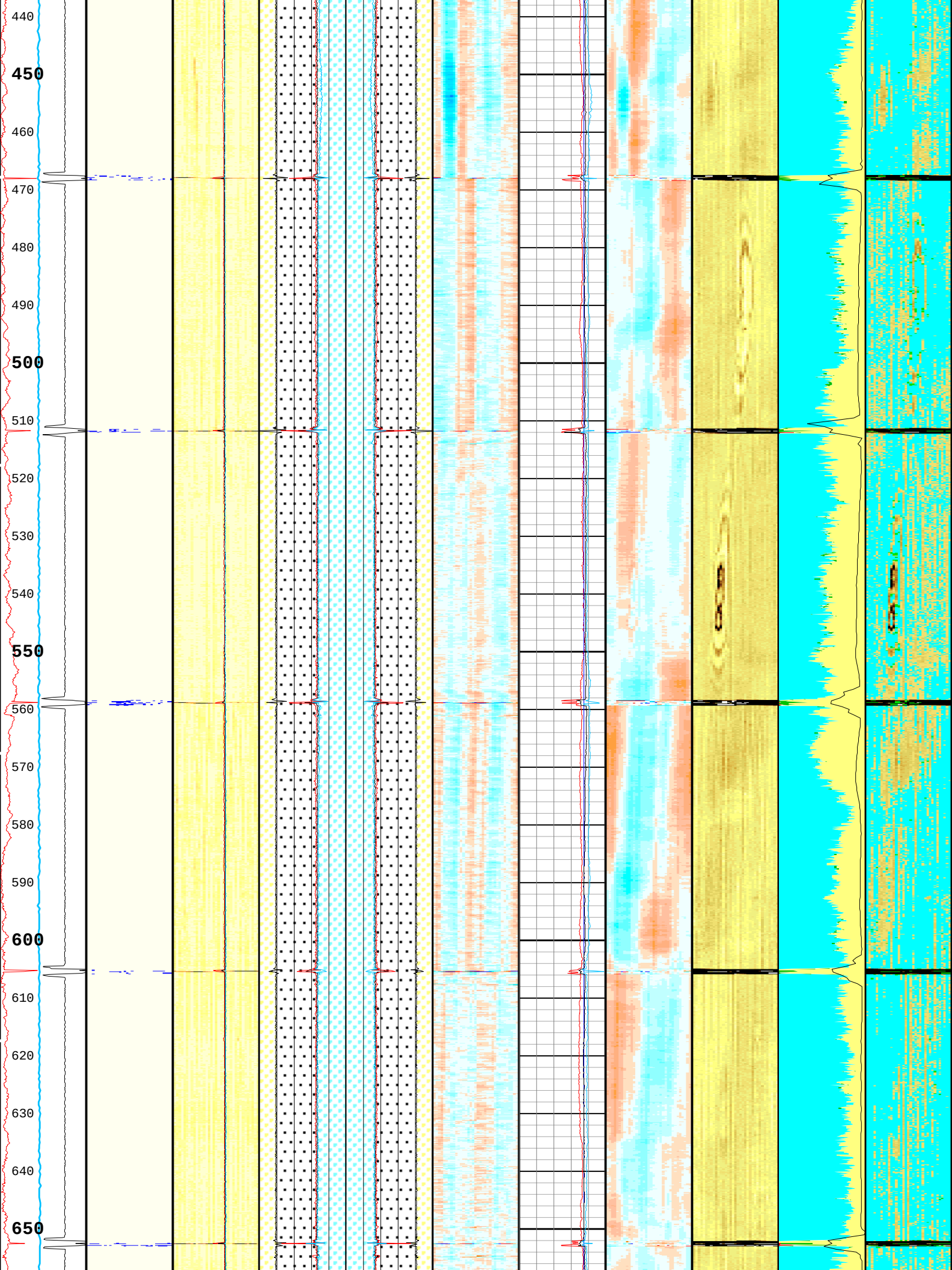
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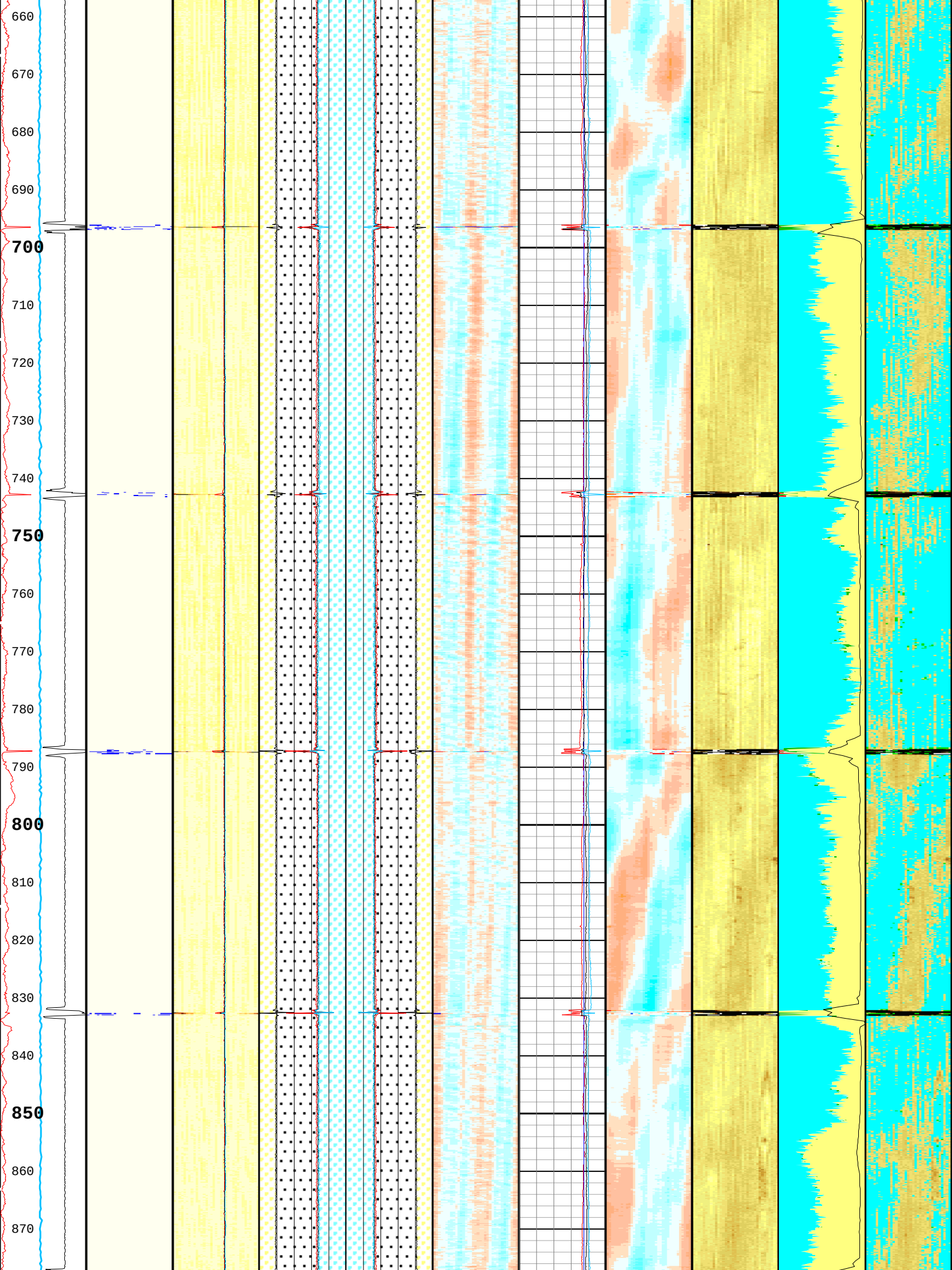
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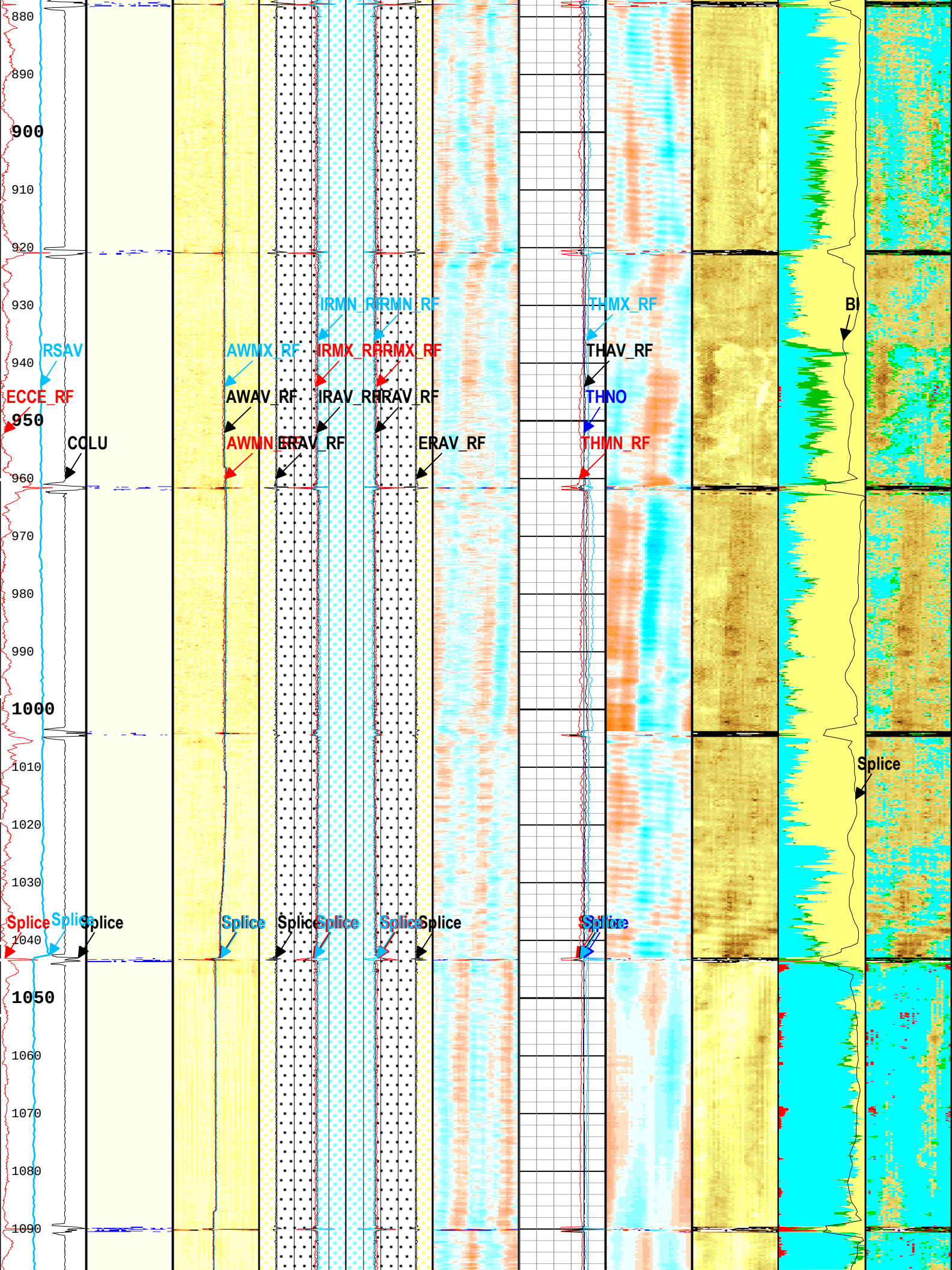
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COLU
AWMX_RF
AWAV_RF
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IRAV_RF
ERAV_RF
THMX_RF
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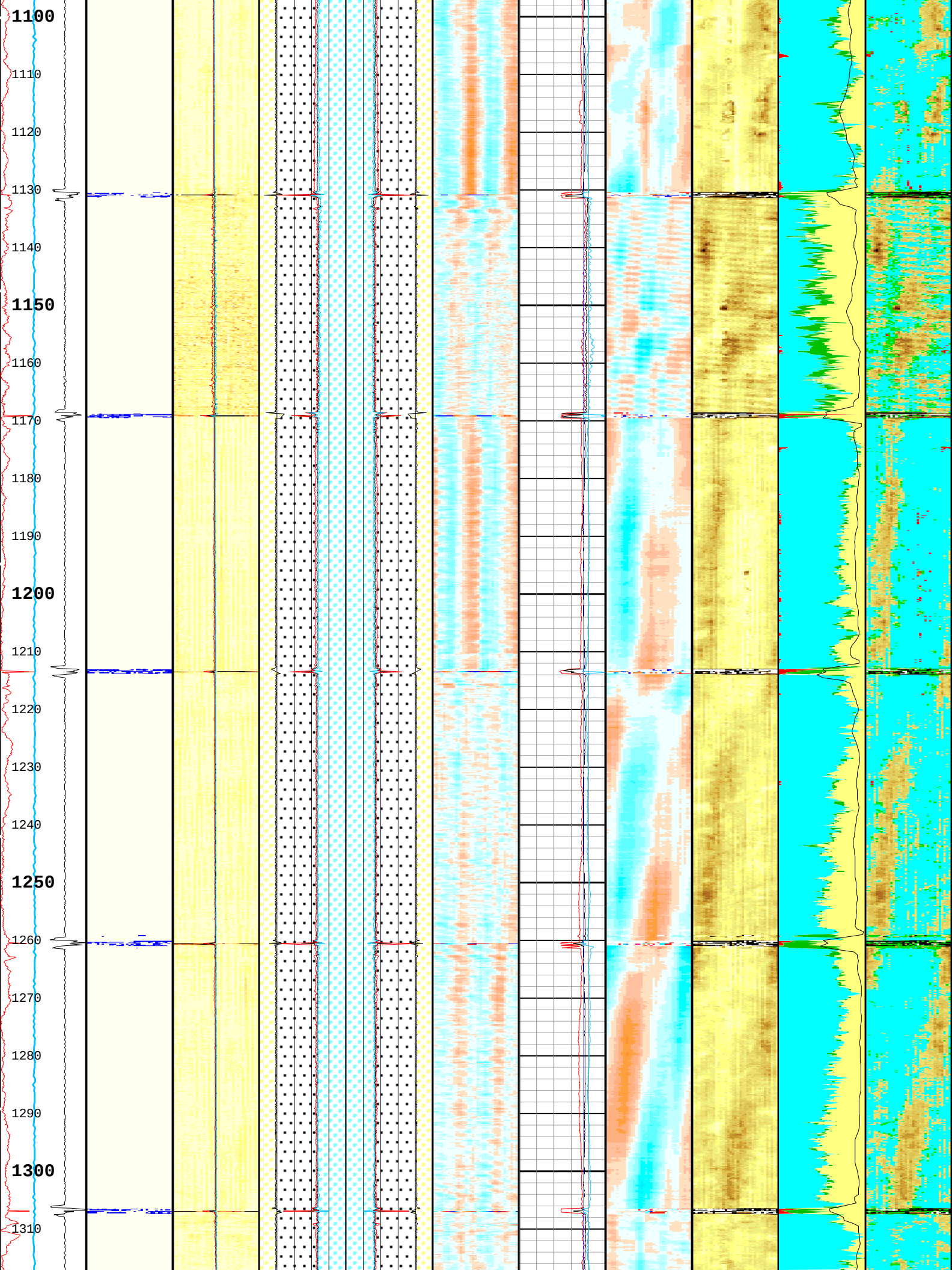
Splice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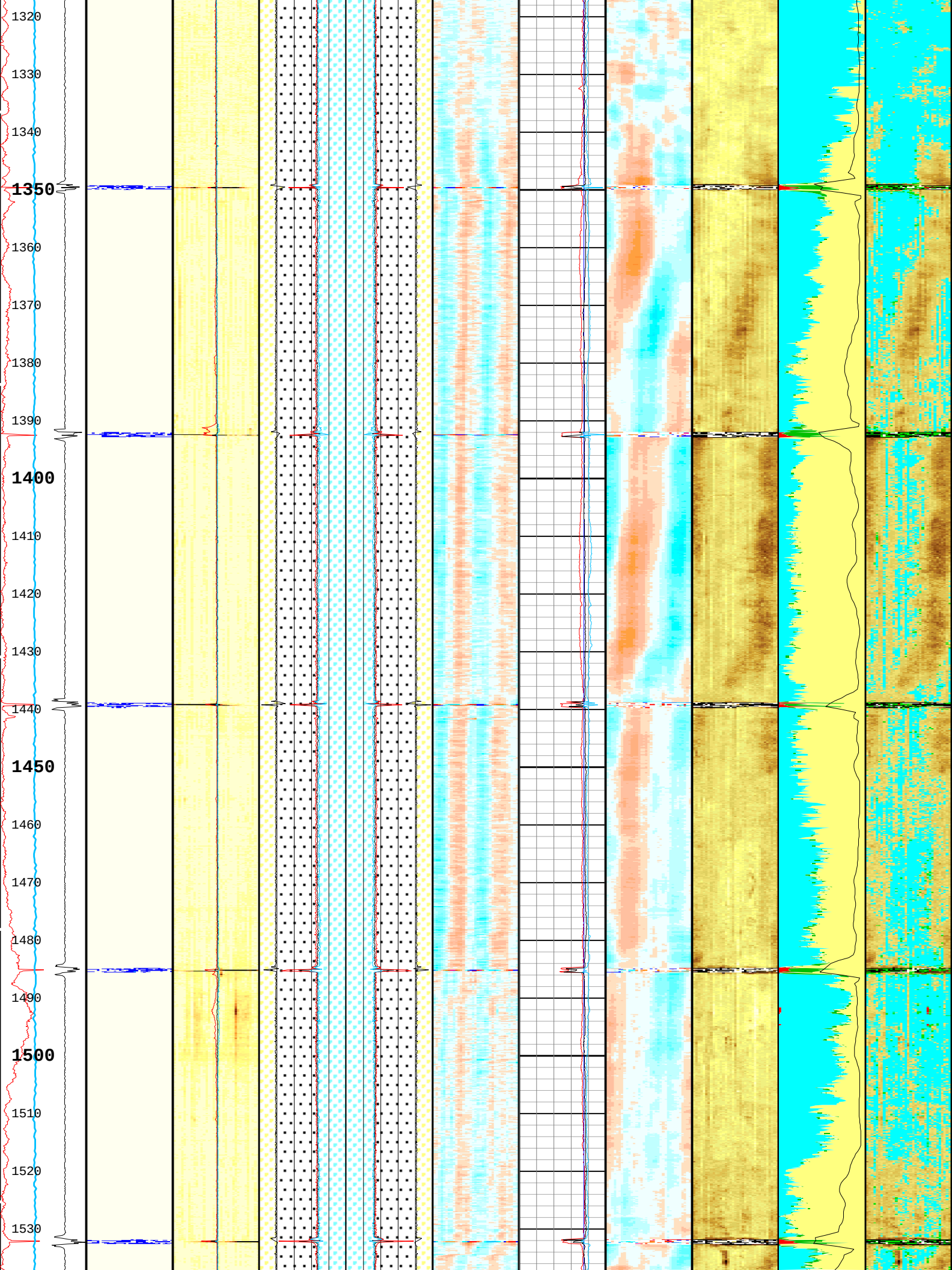
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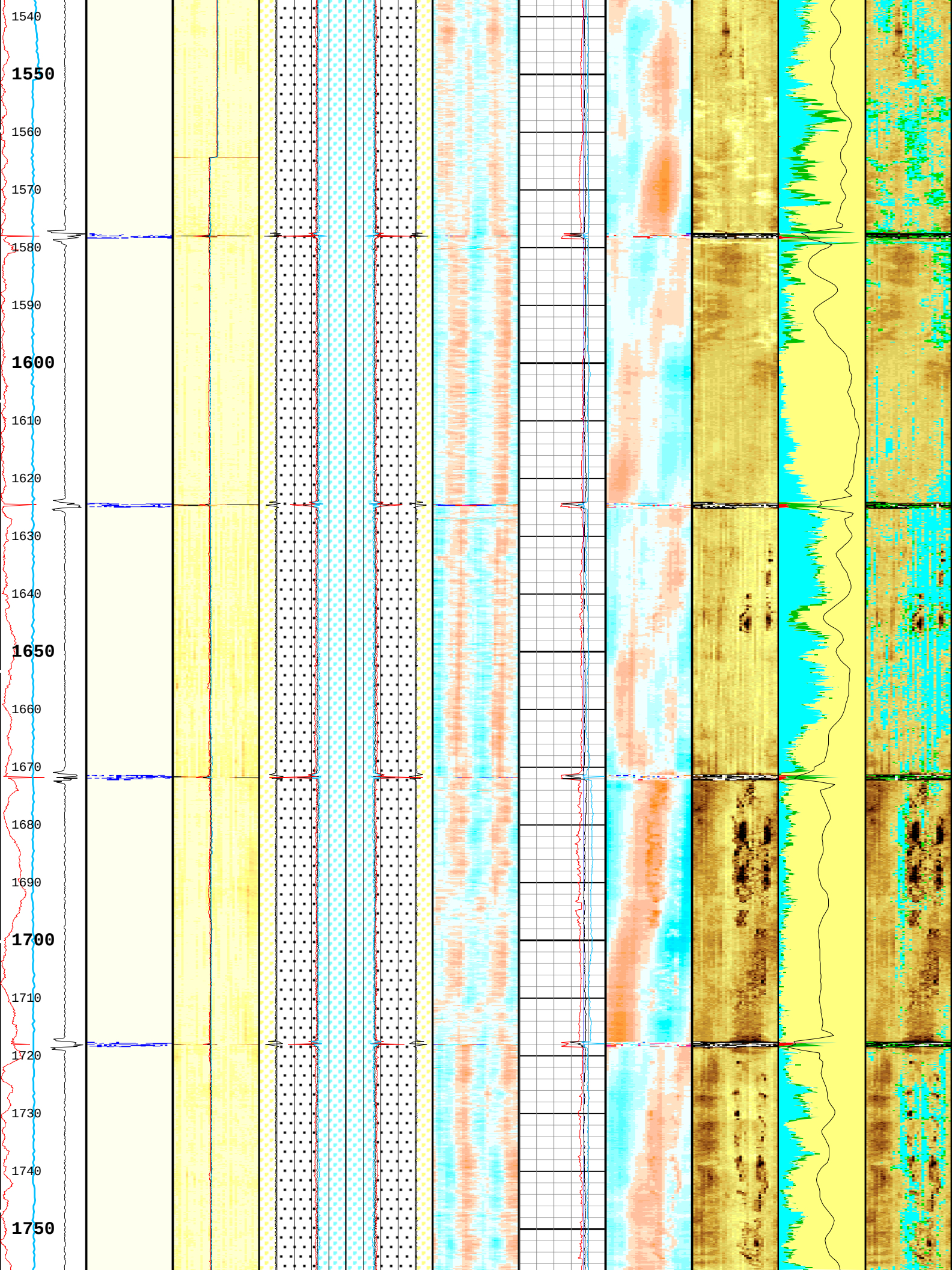
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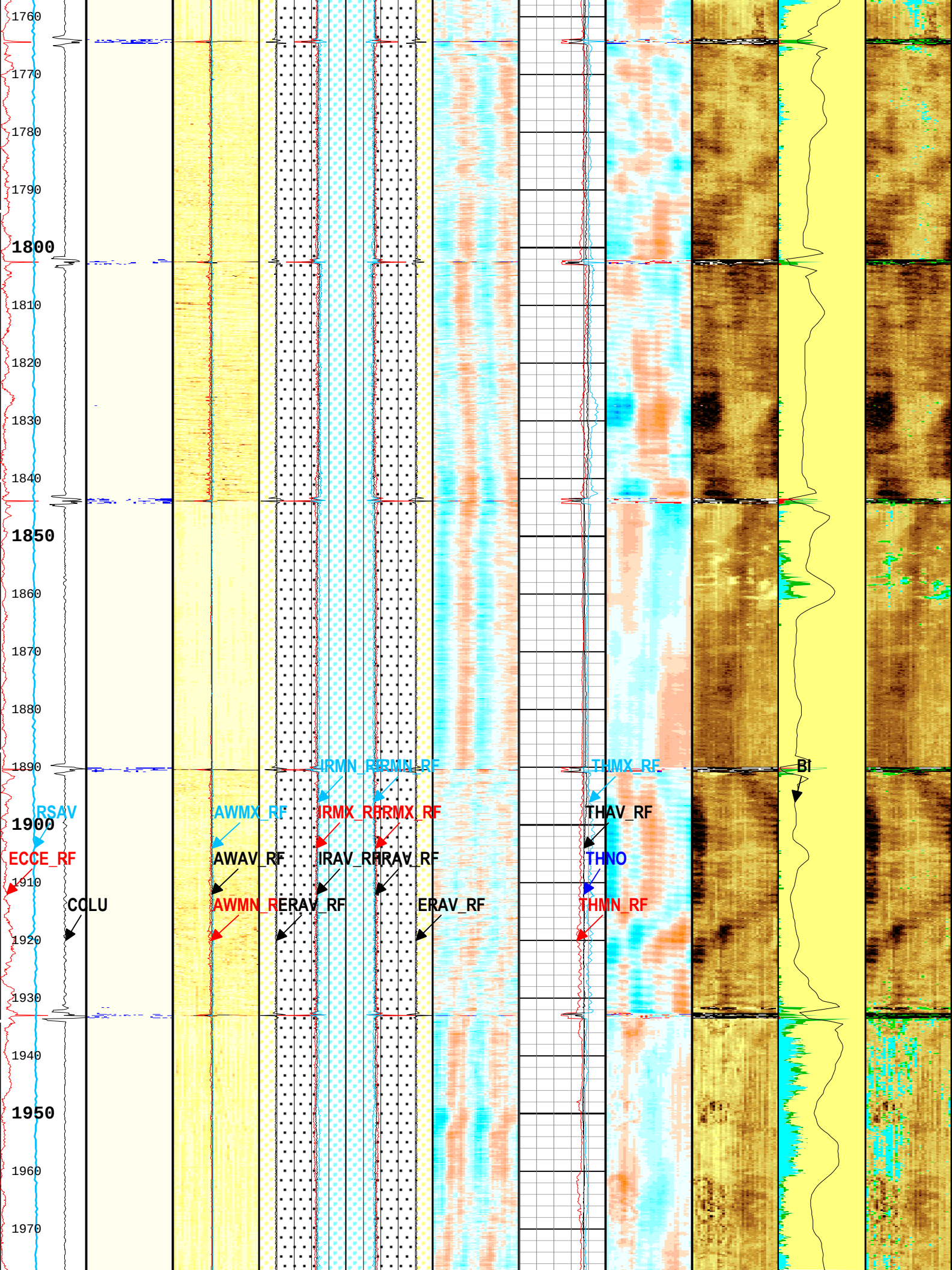
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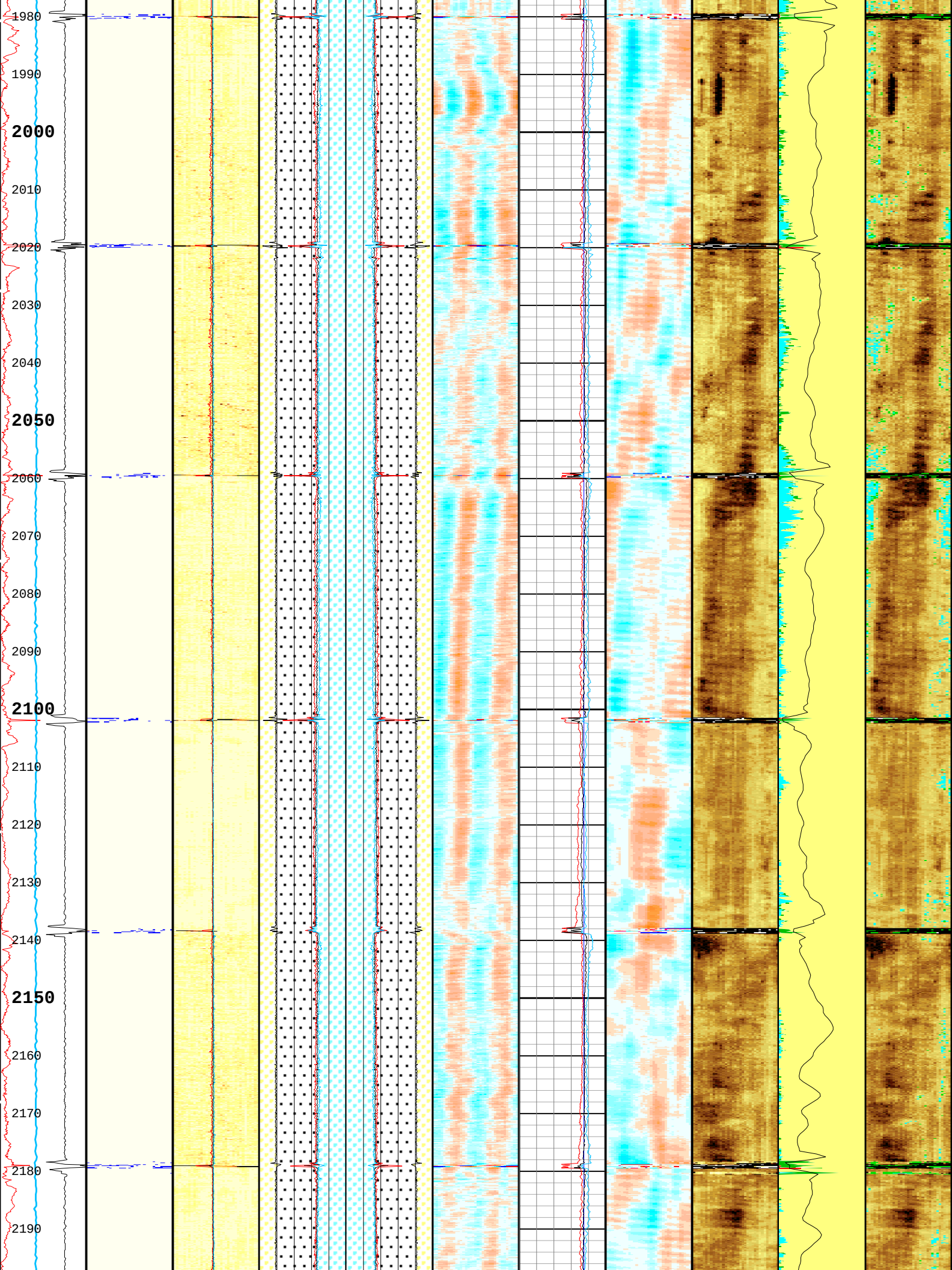
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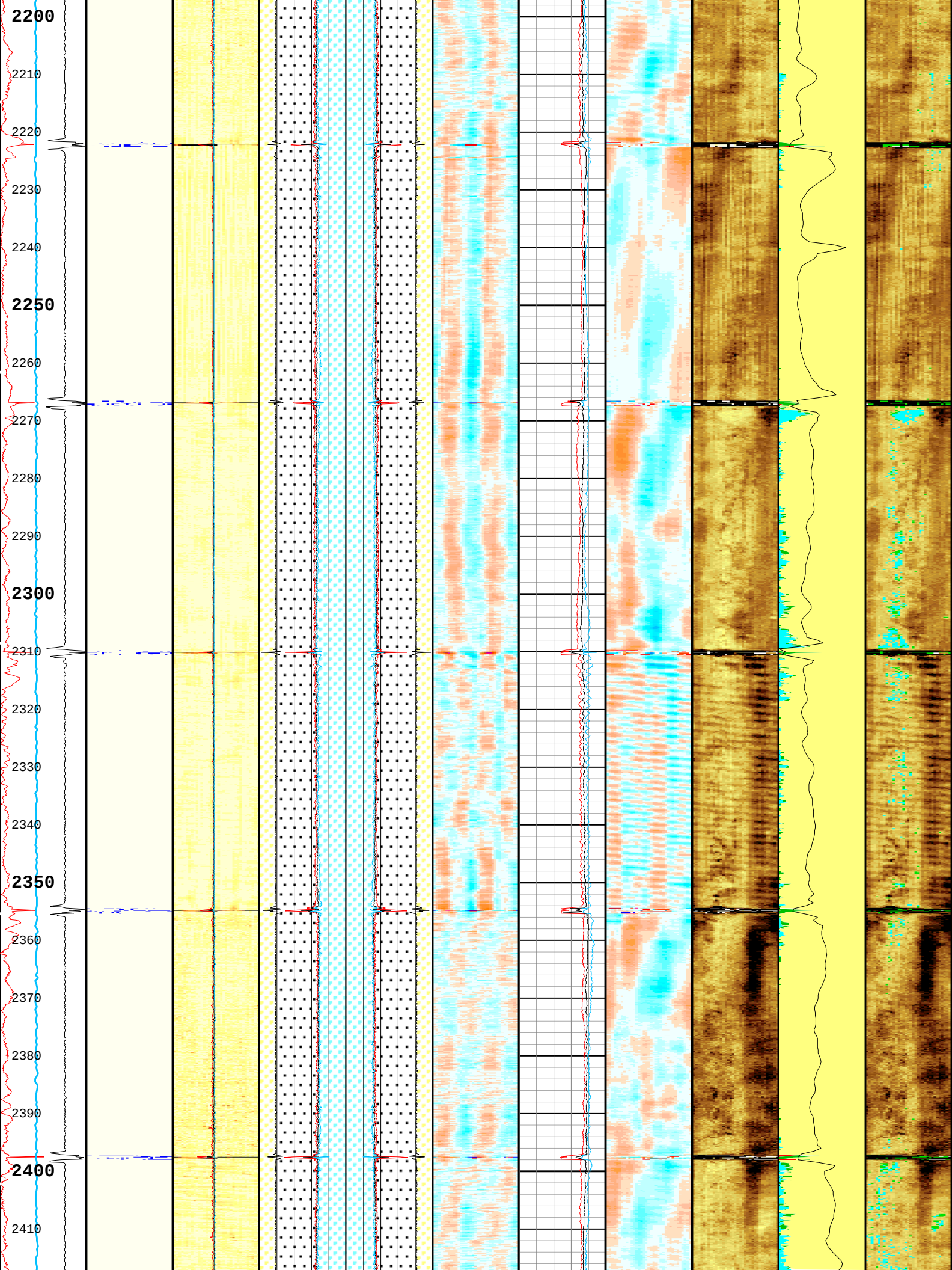
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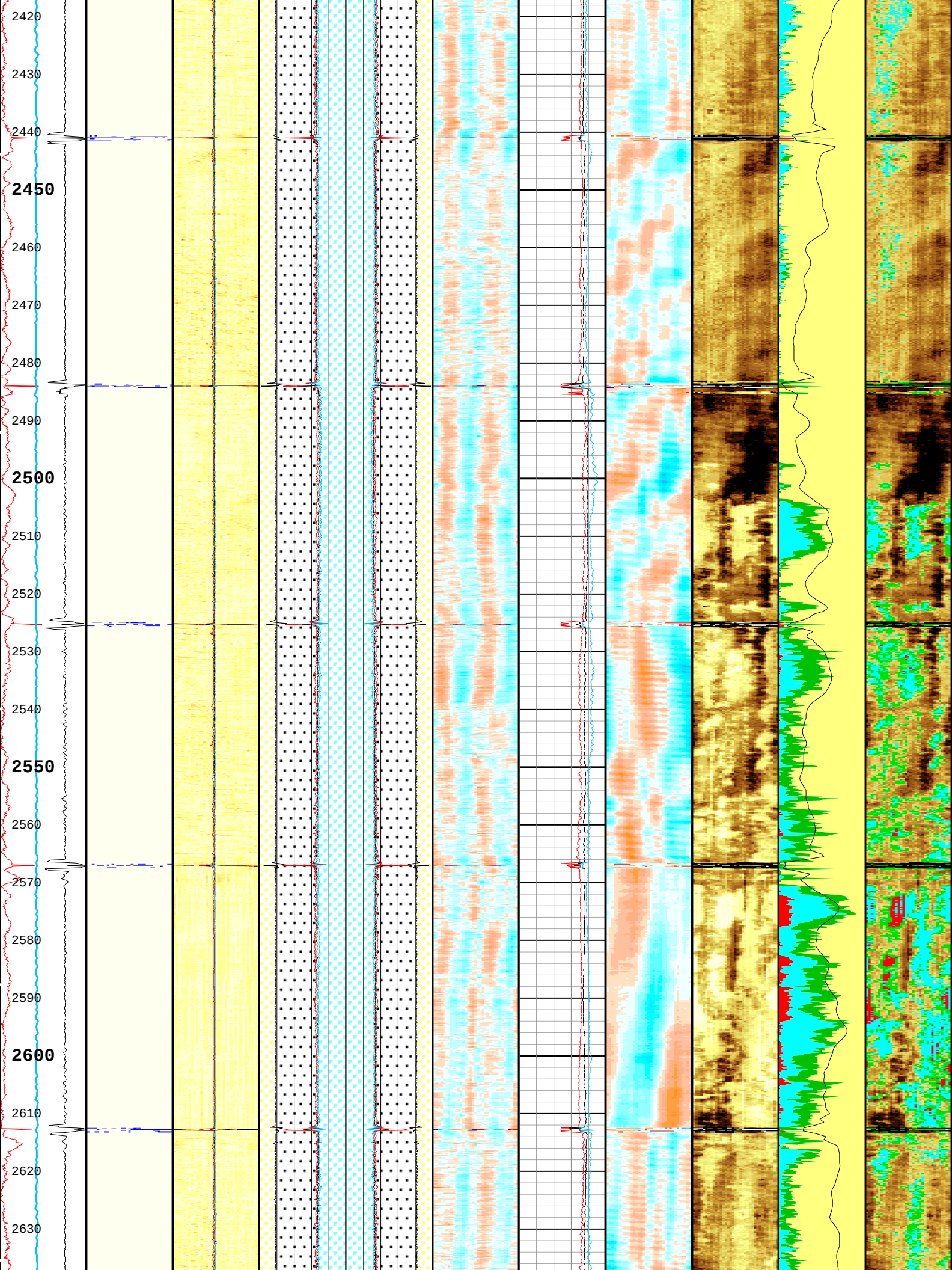
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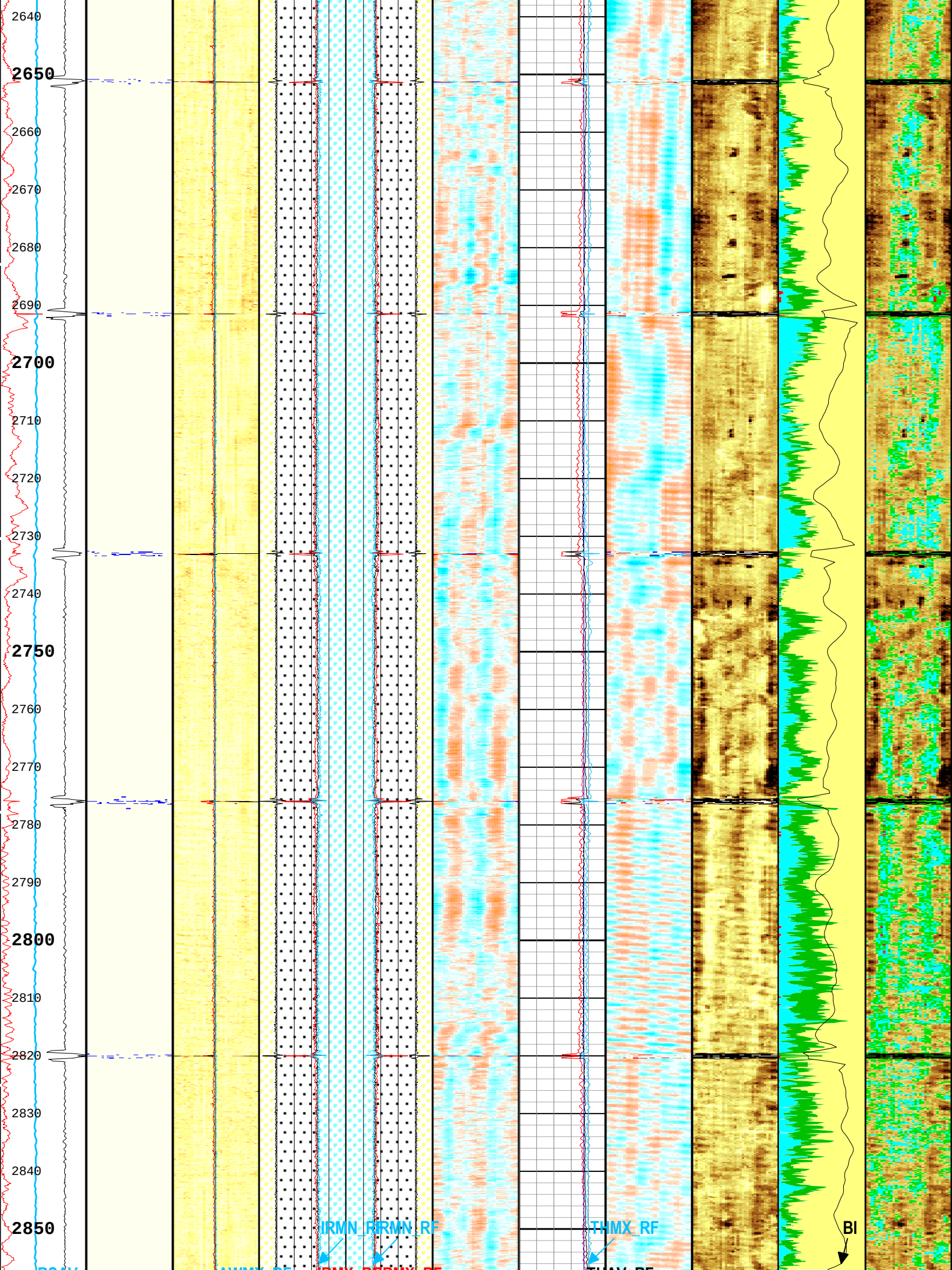
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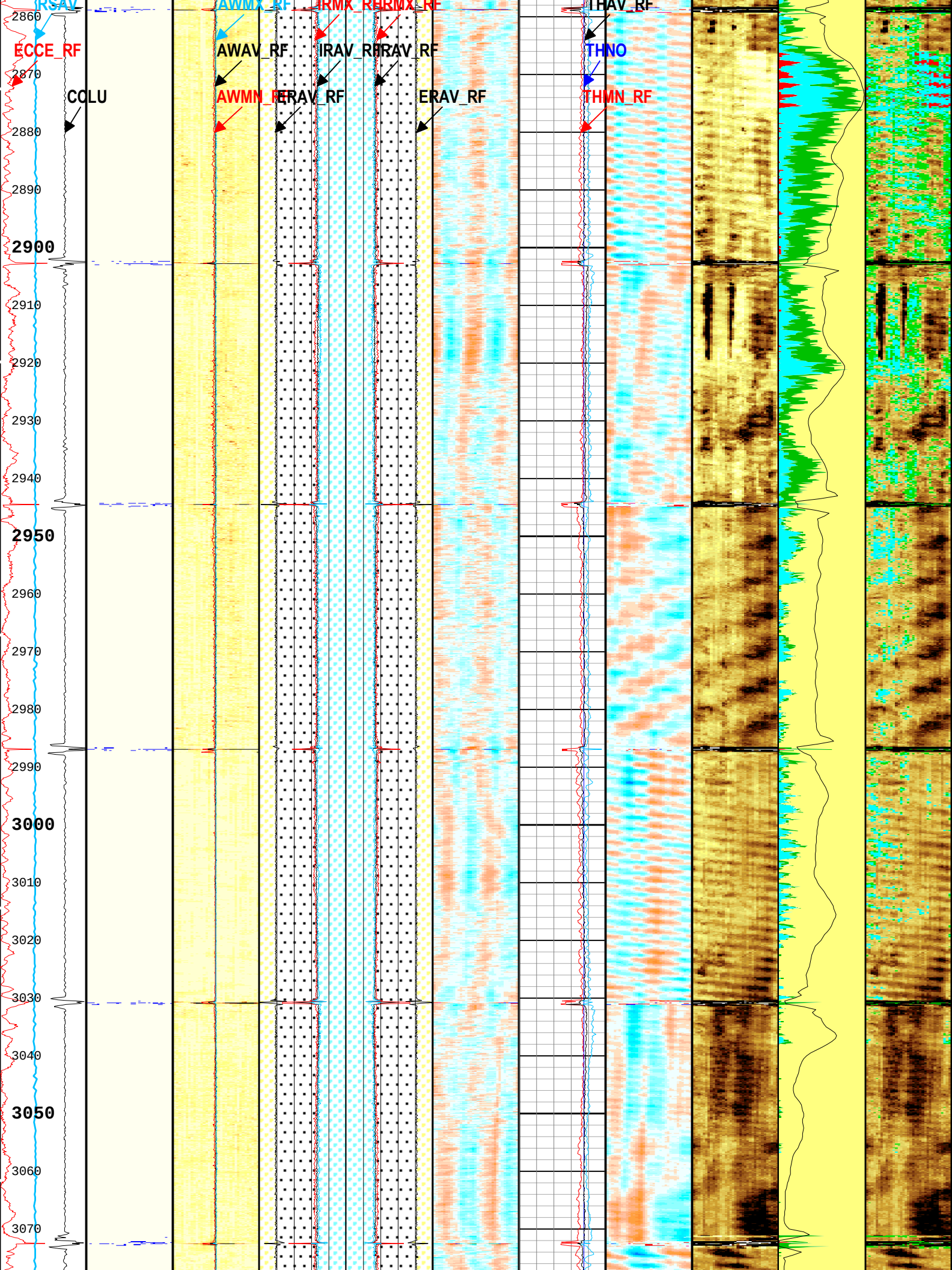
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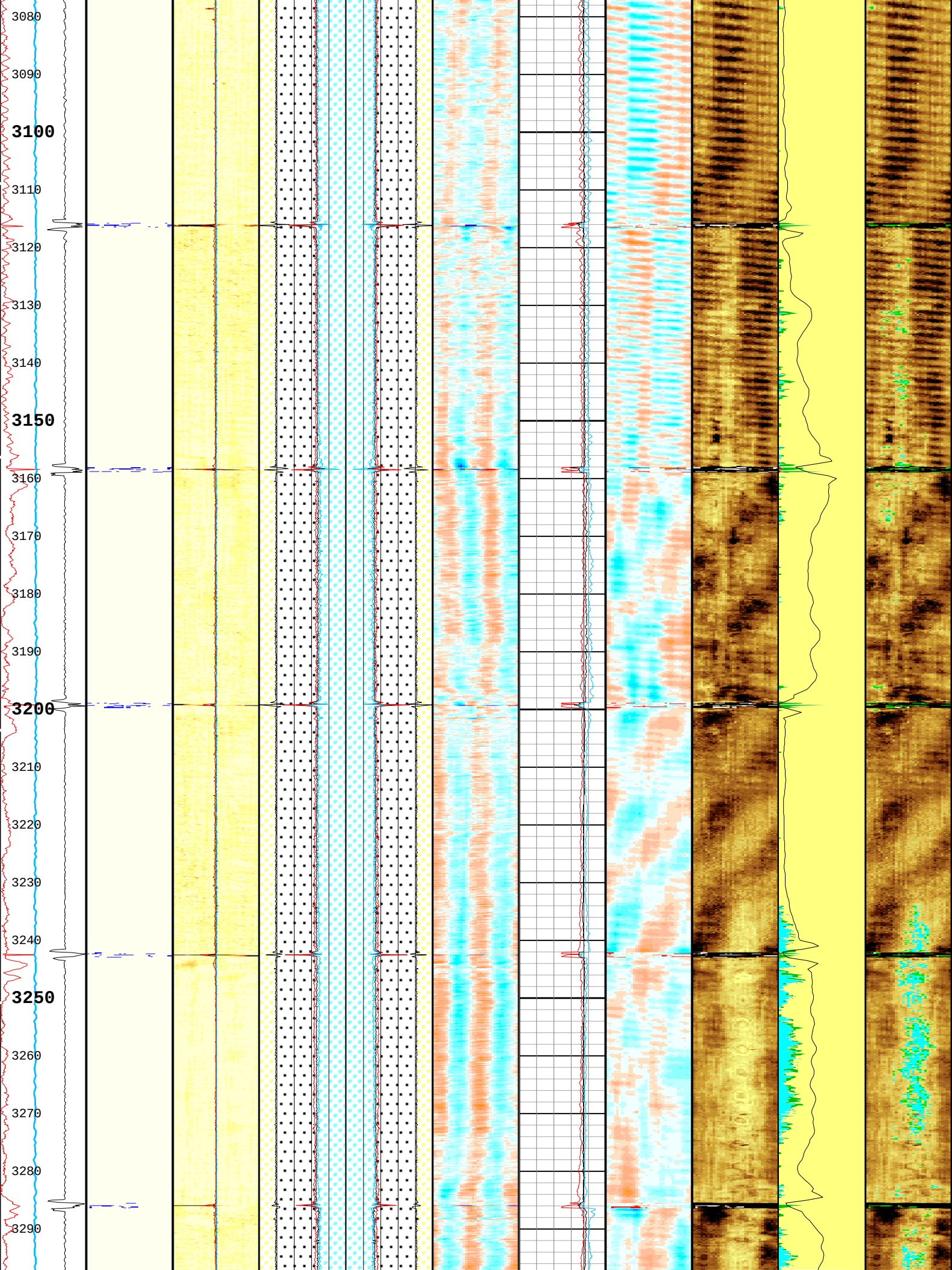
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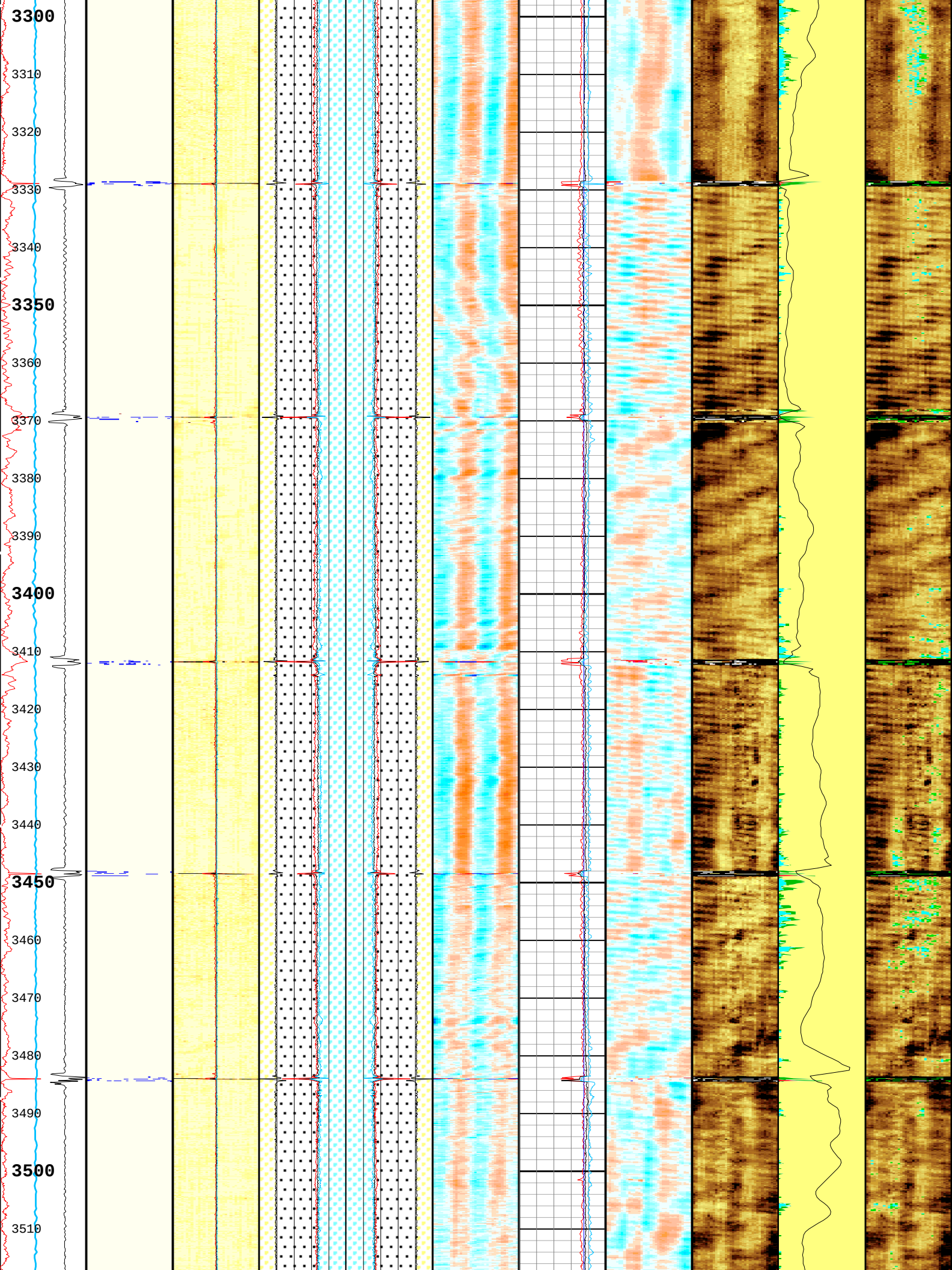
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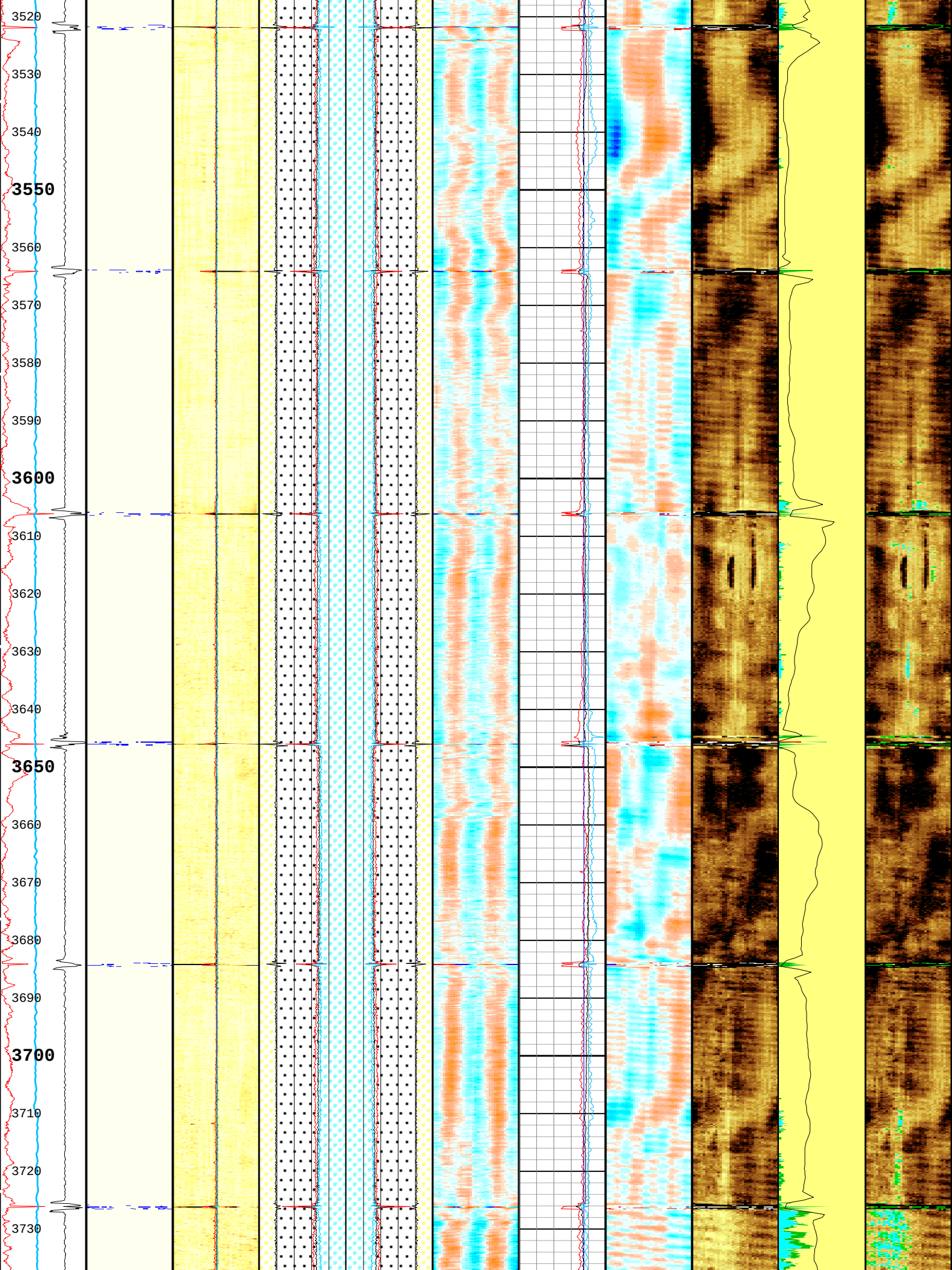
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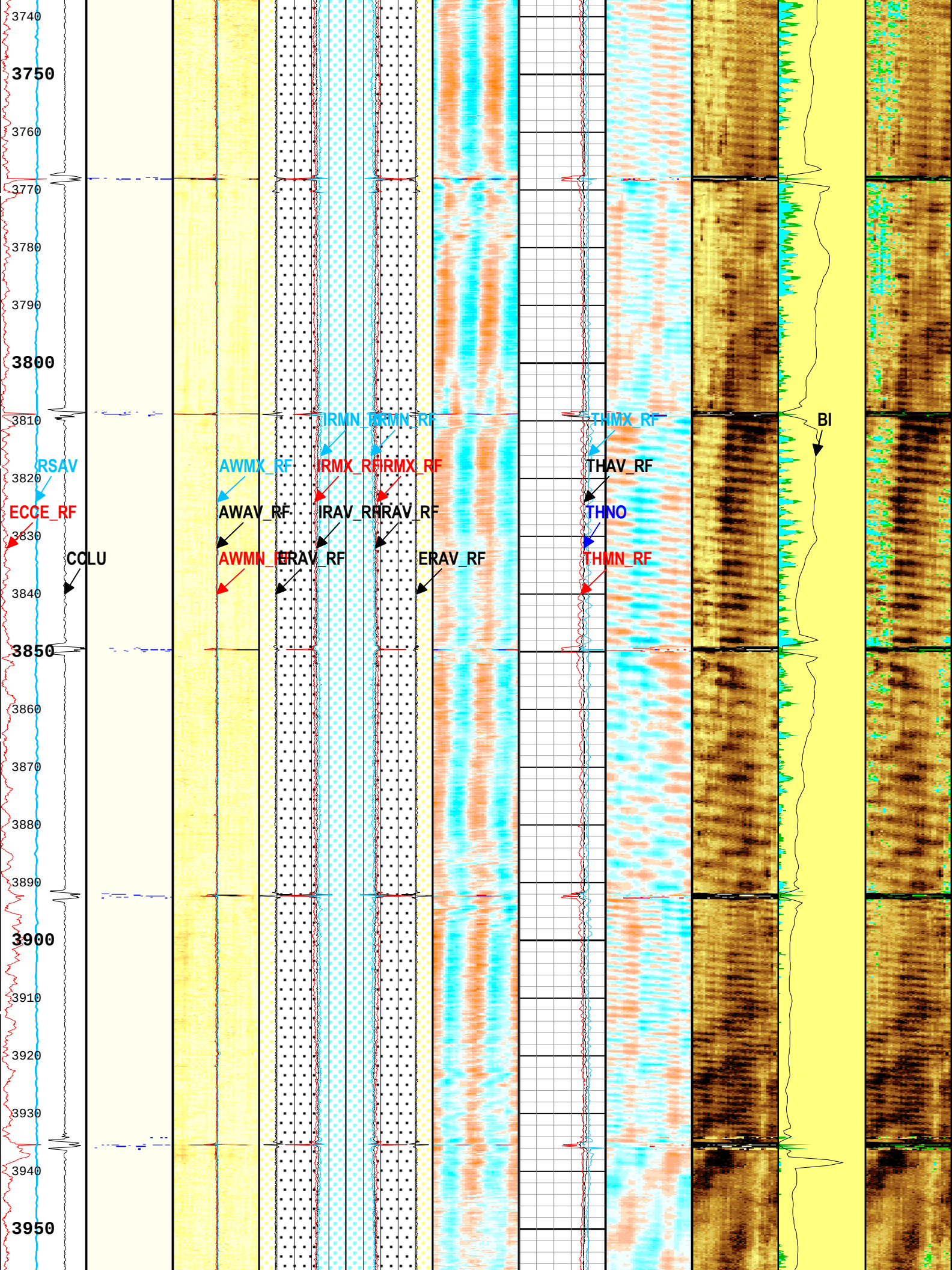
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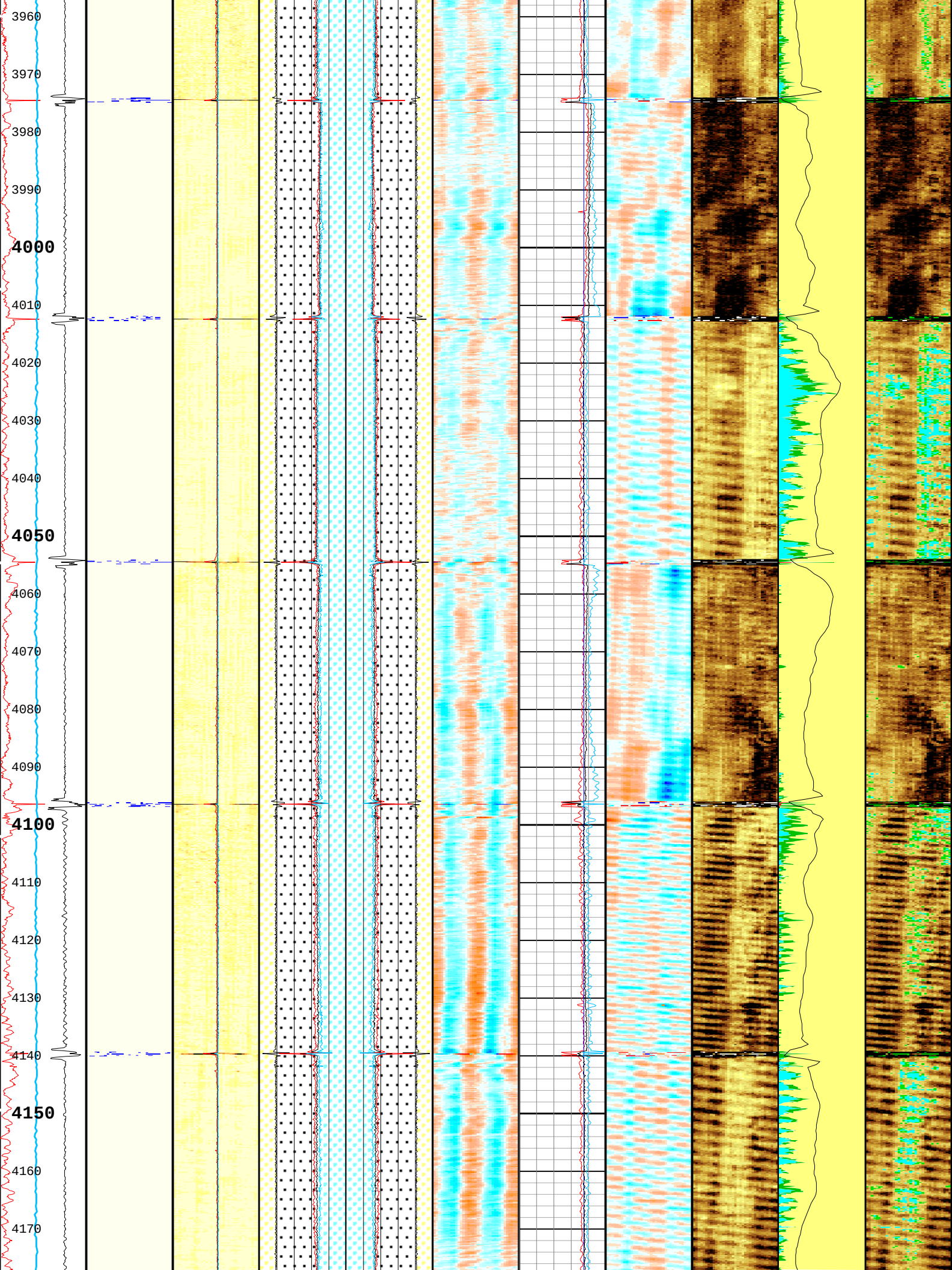
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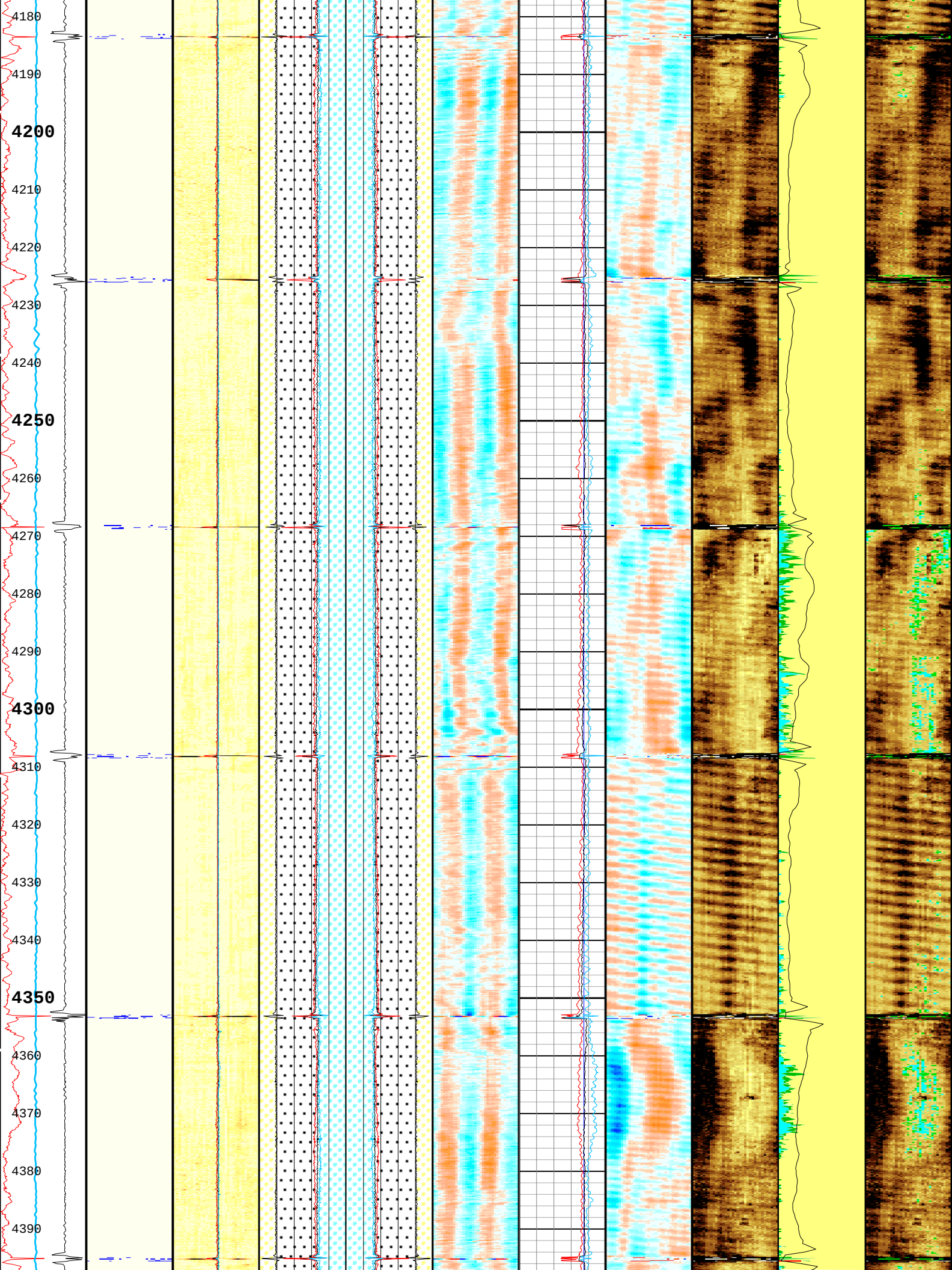
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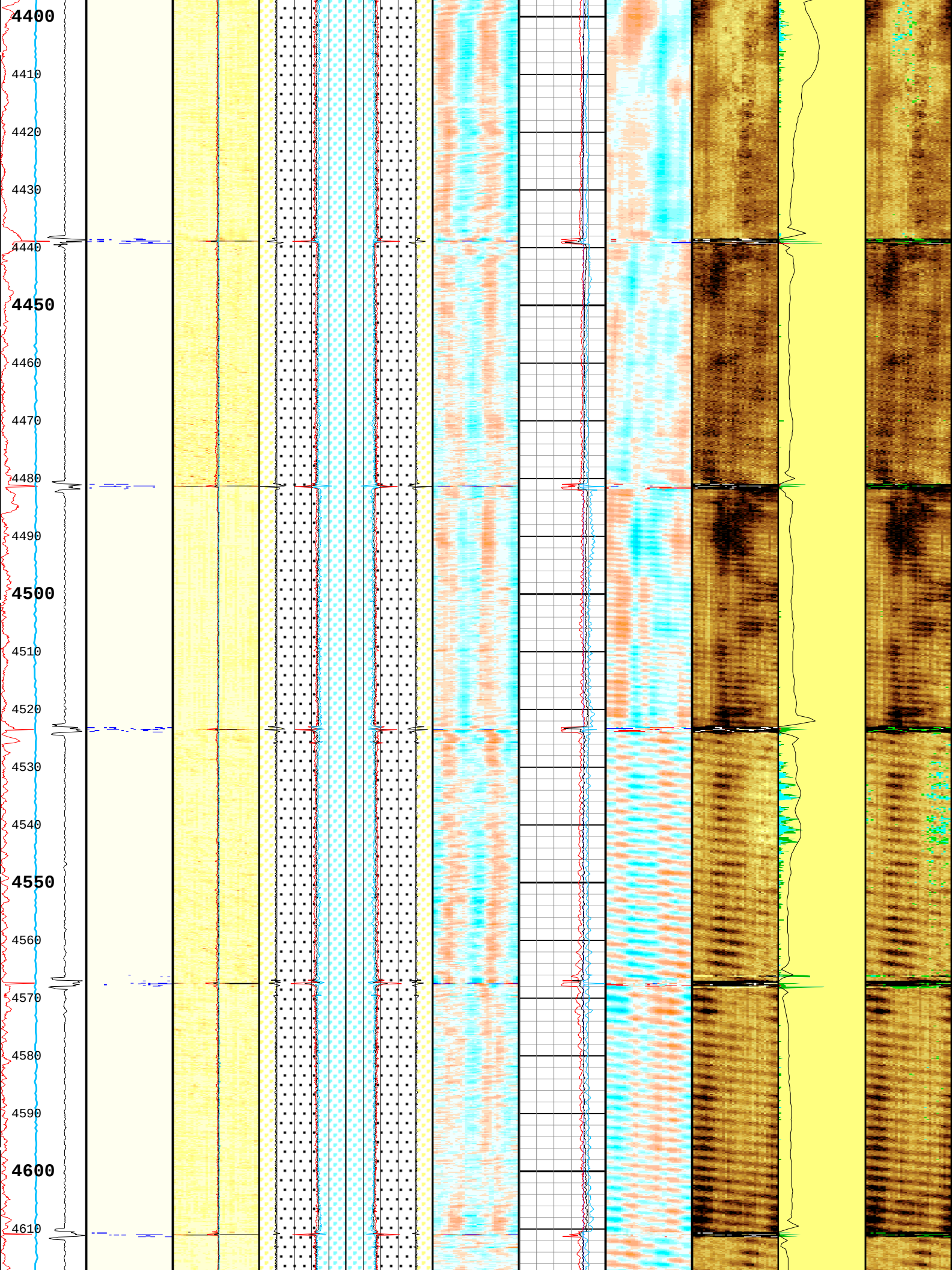
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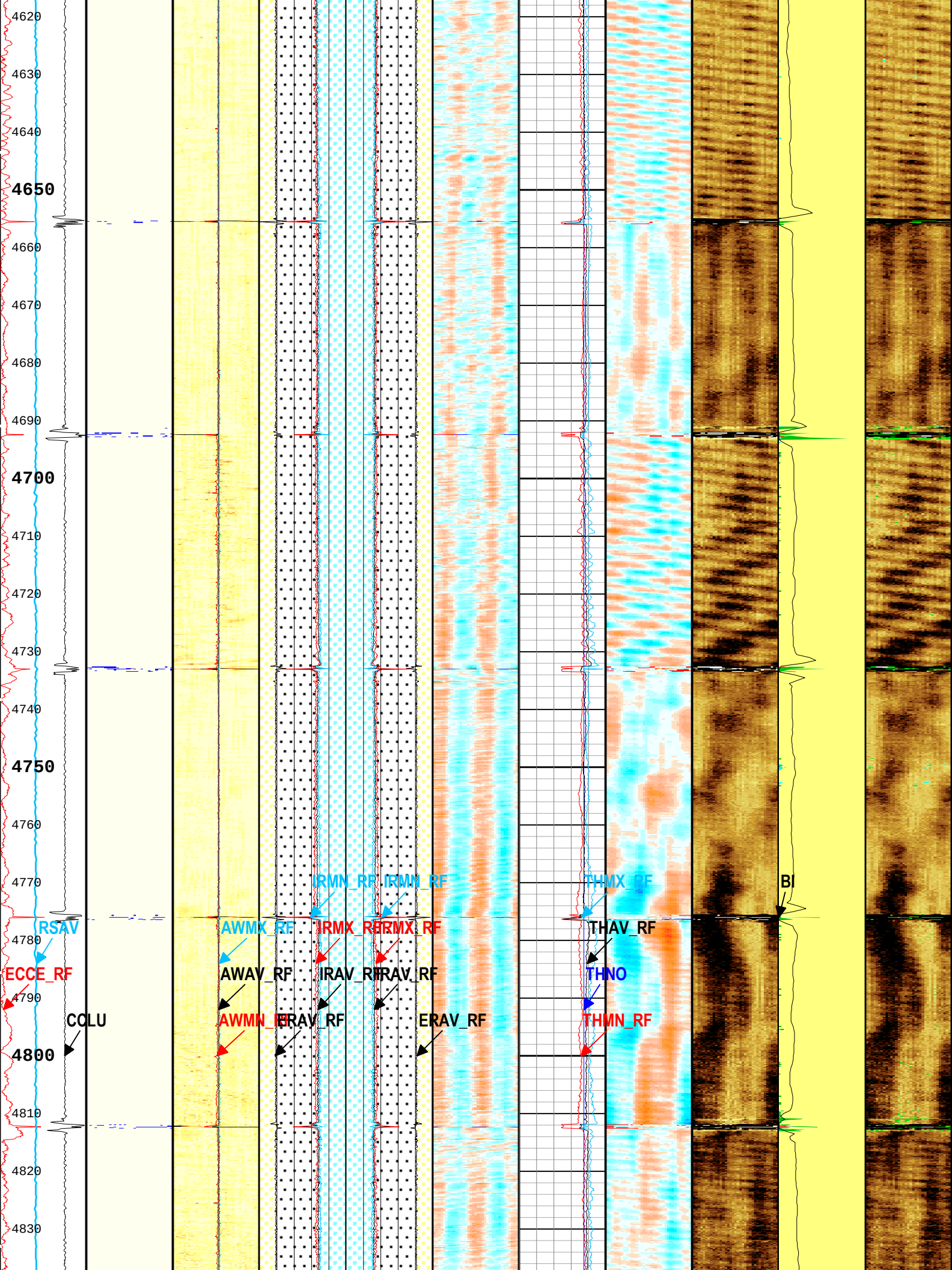
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COLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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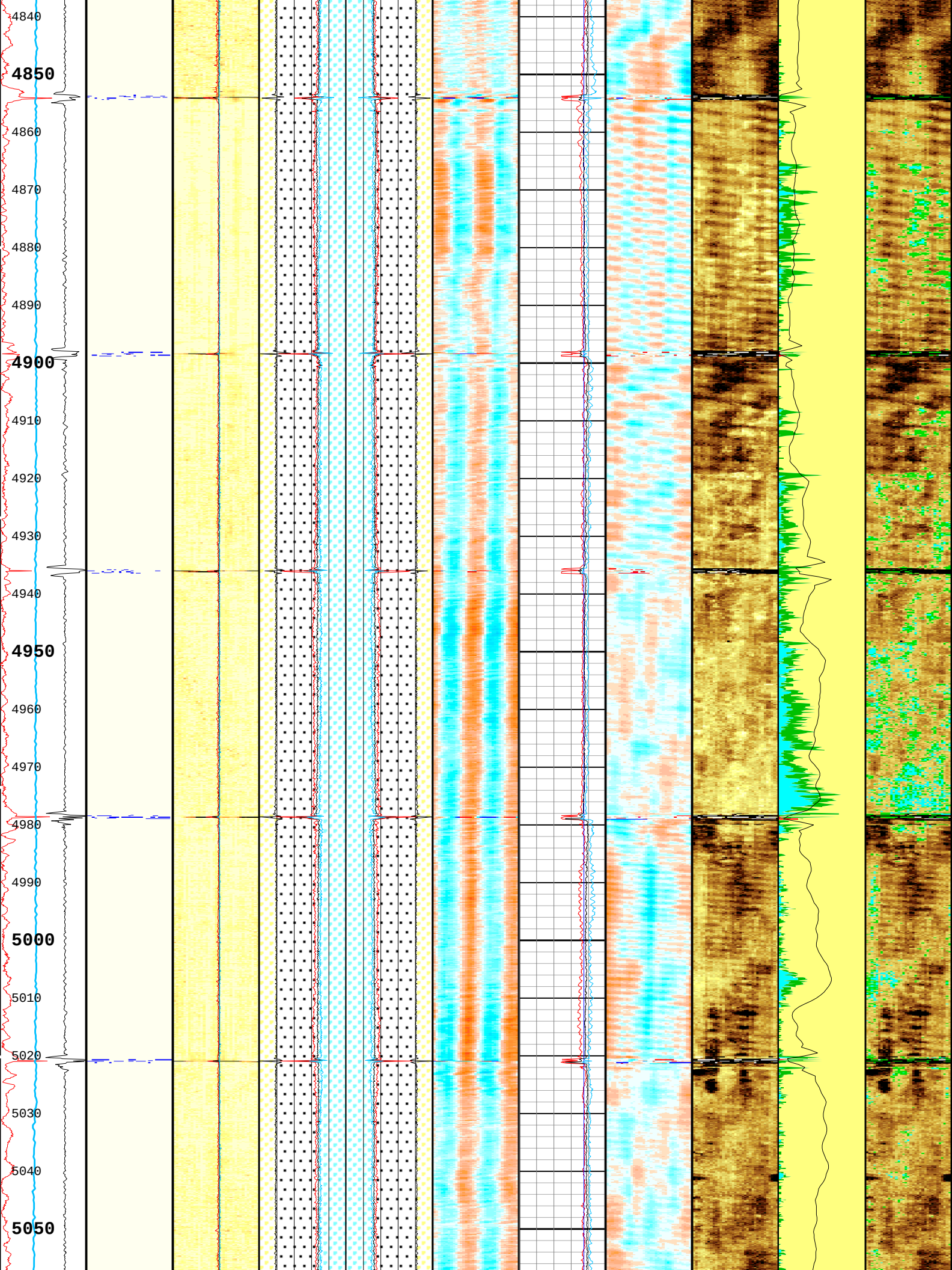
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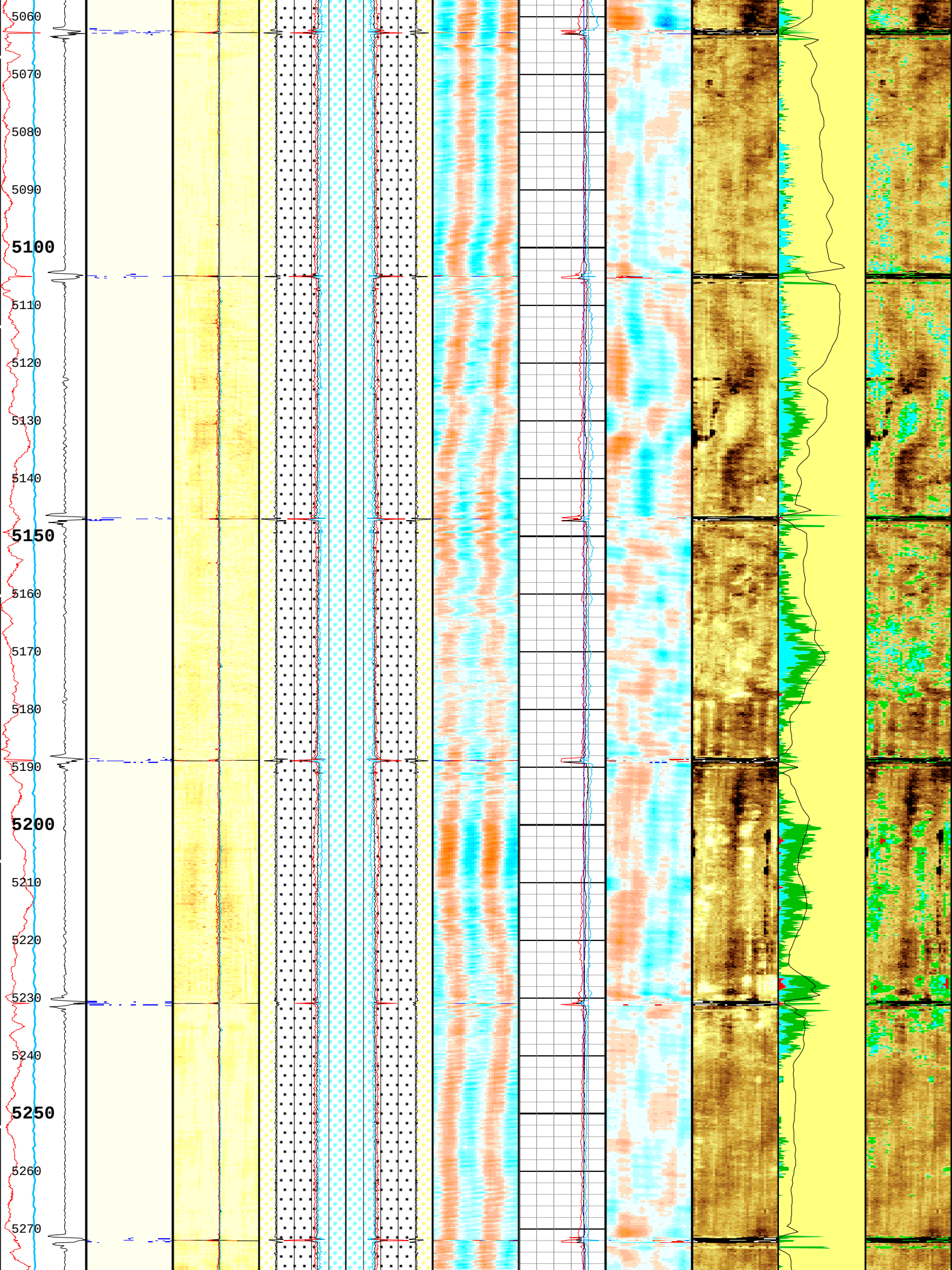
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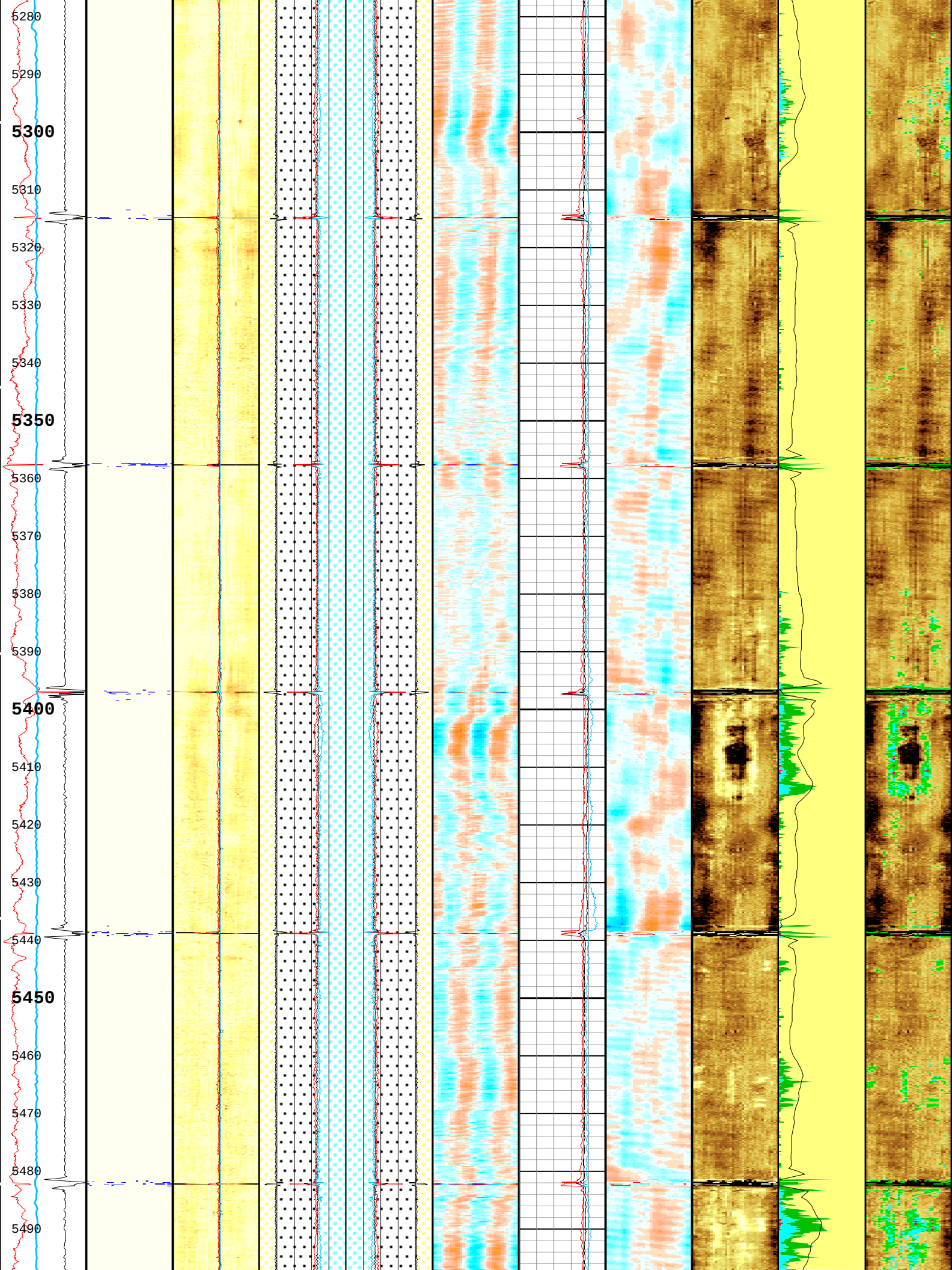
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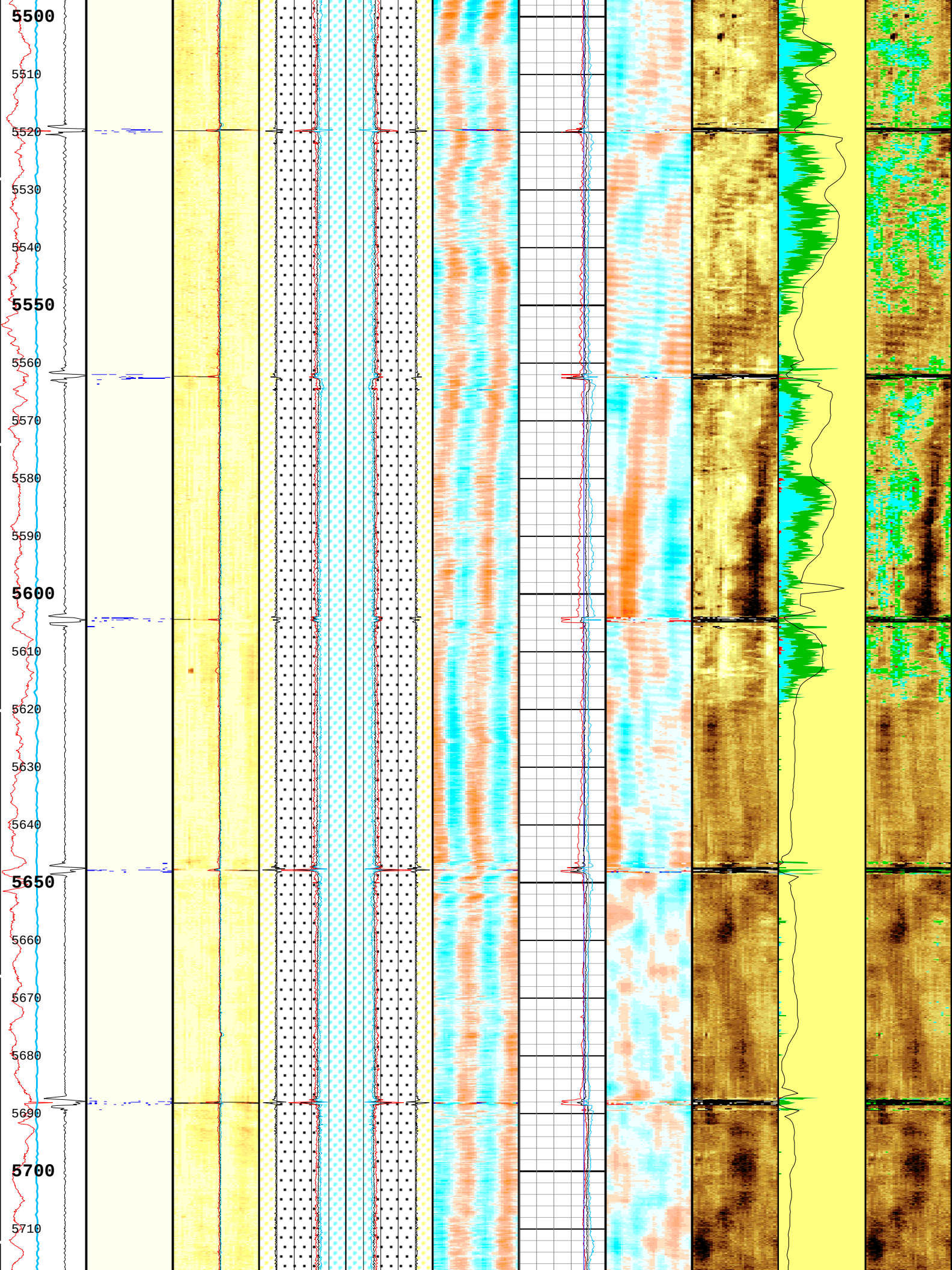
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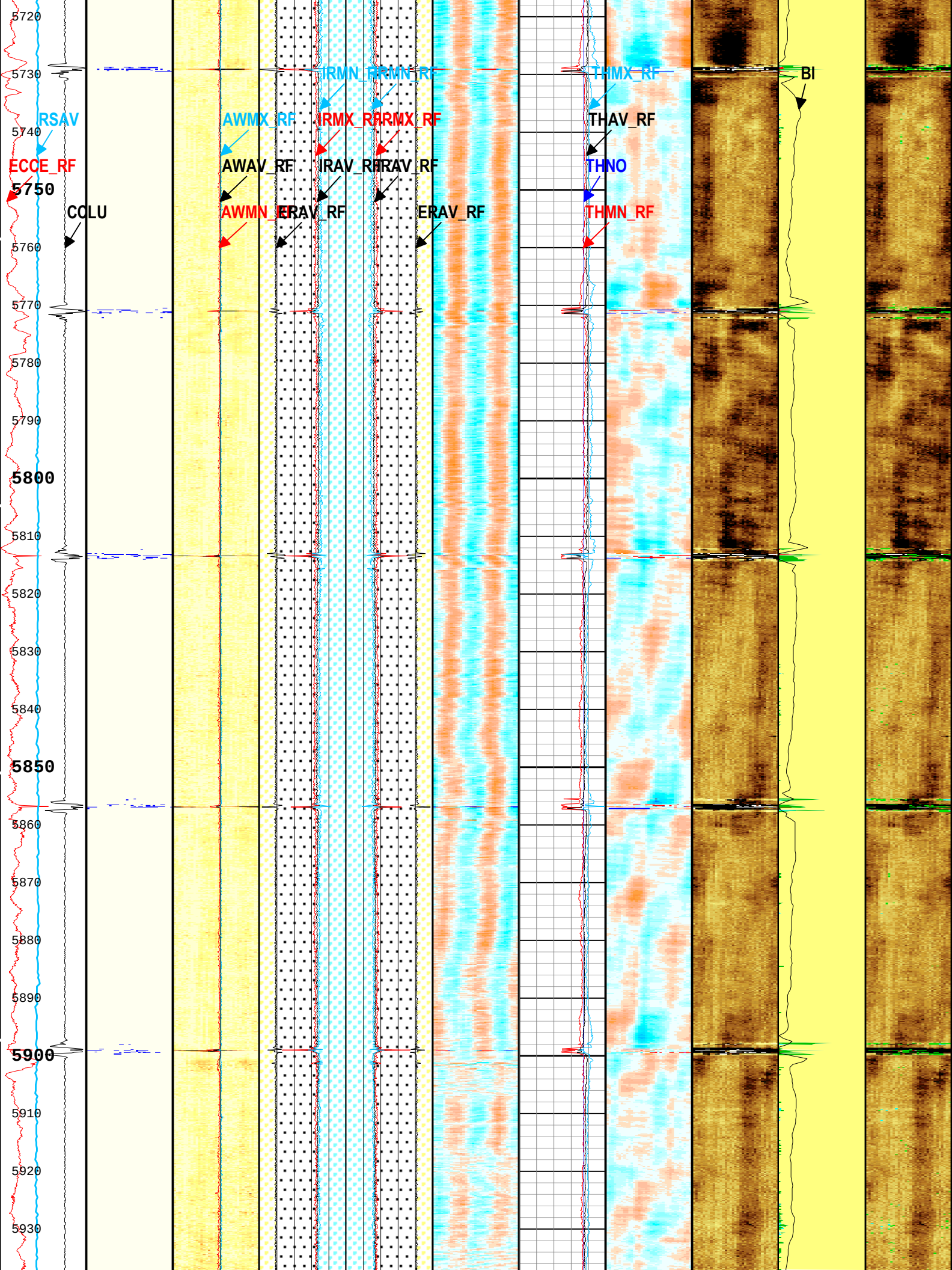
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5900
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5920
5930
RSAV
ECCE_RF
COLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
RRMN_RF
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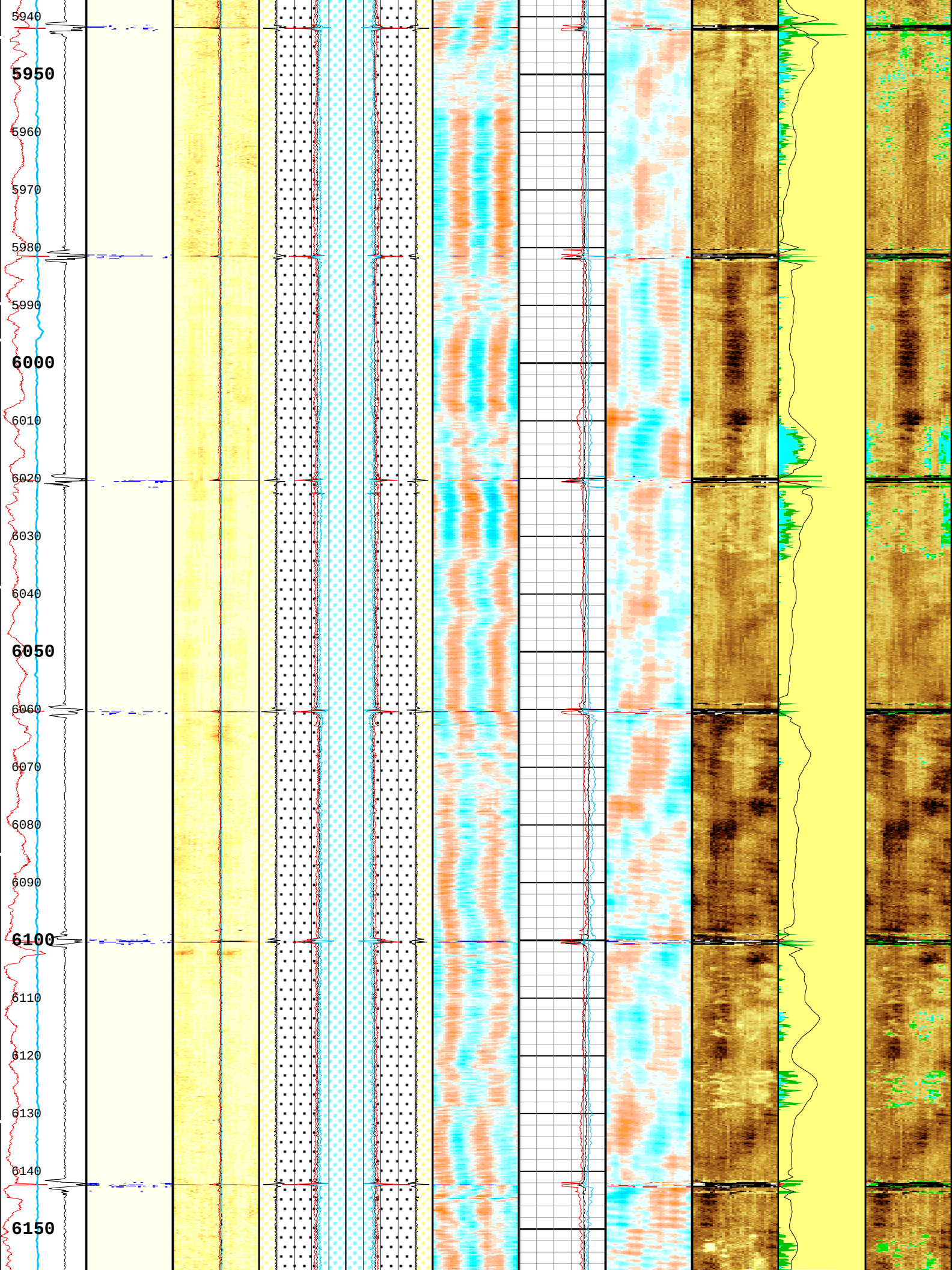
THAV_RF
THNO
THMN_RF
BI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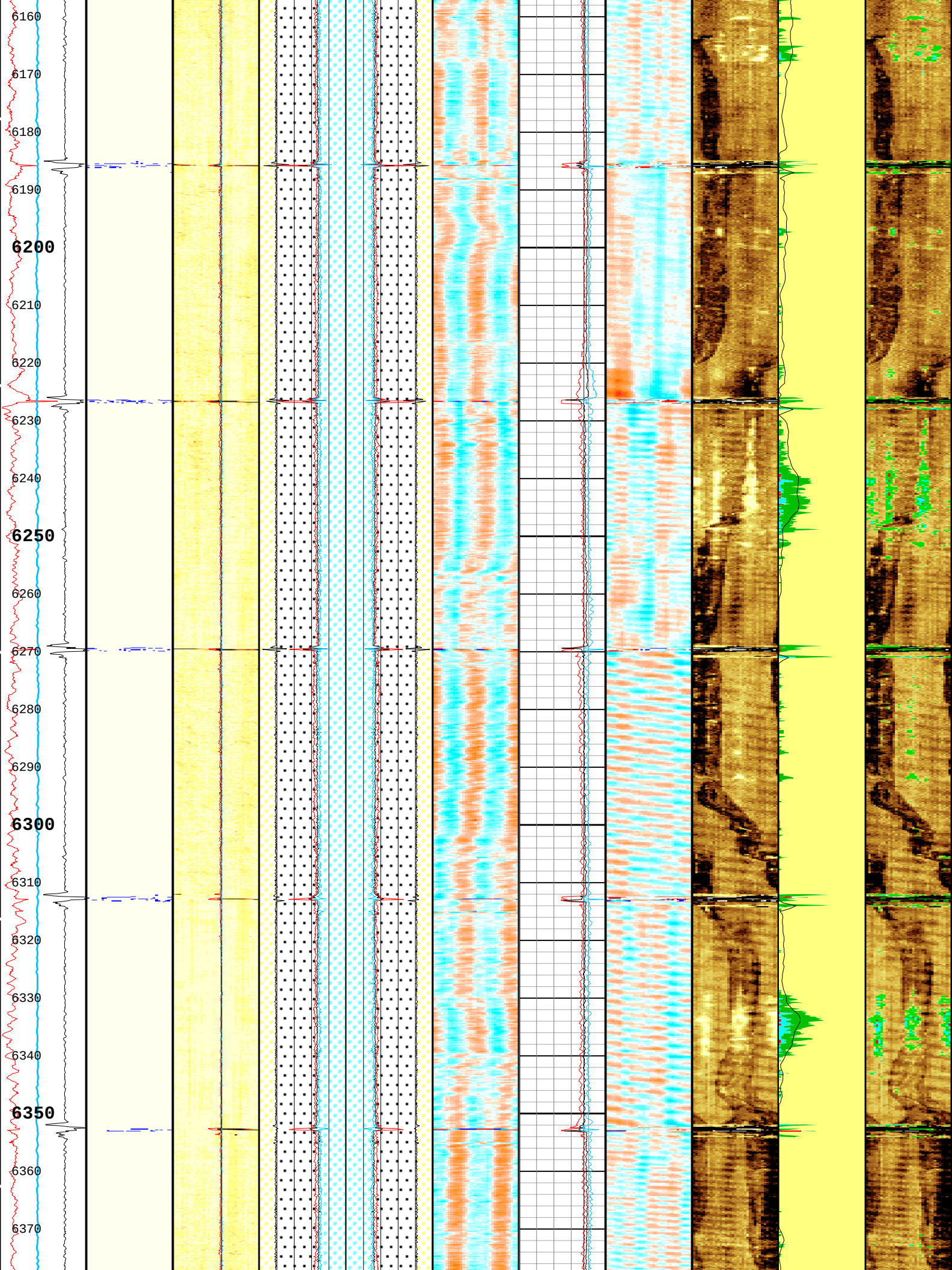
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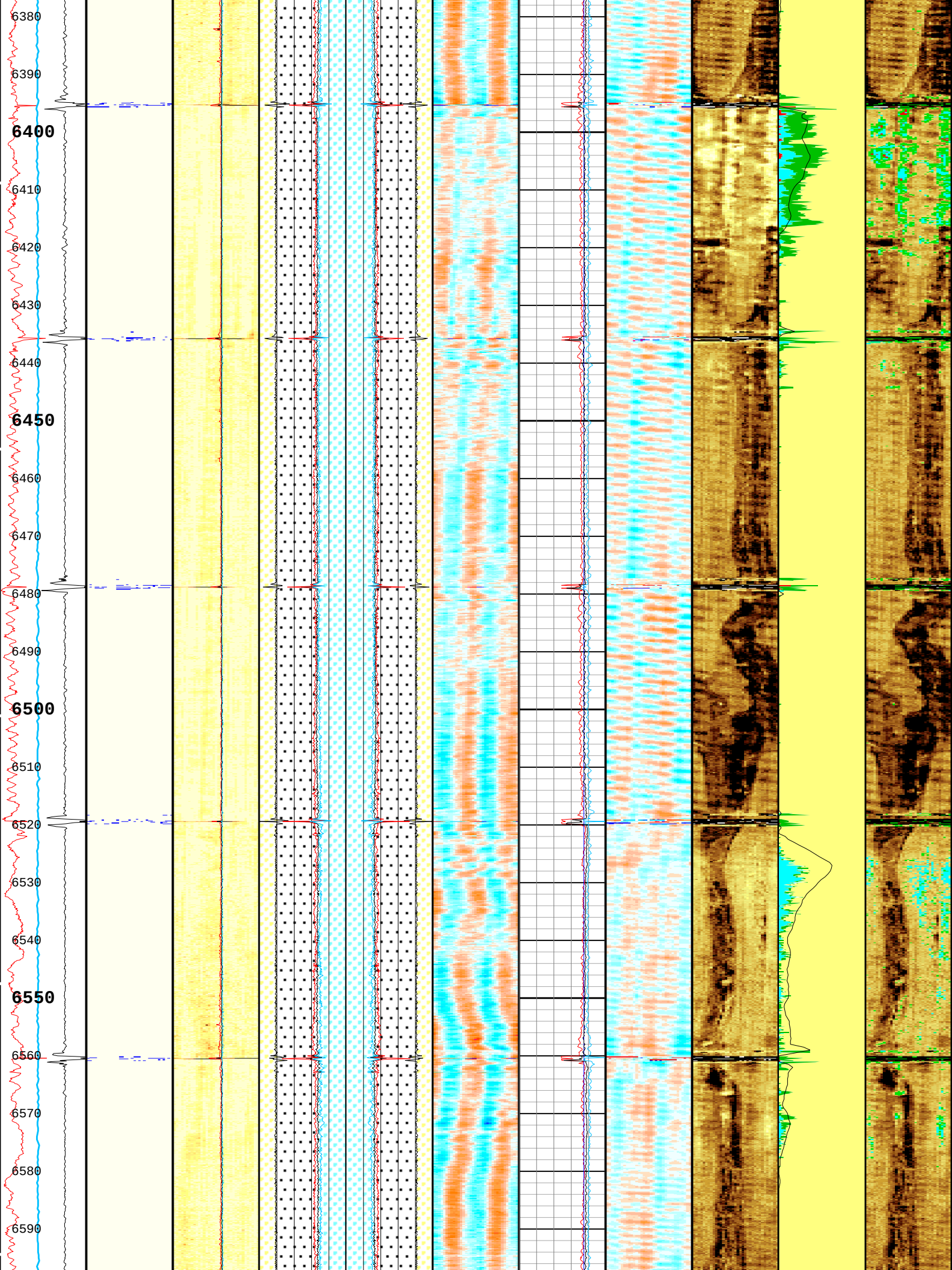
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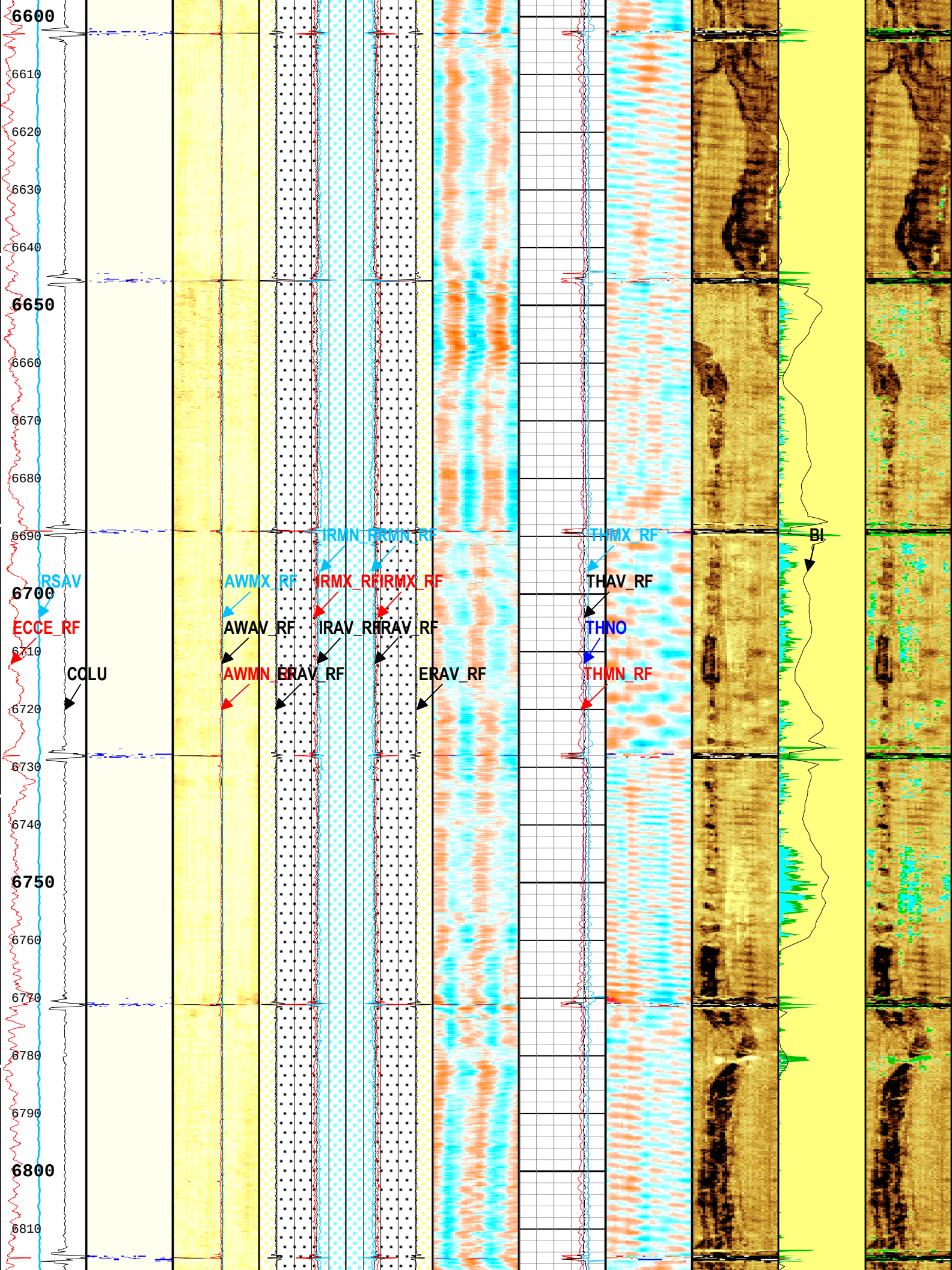
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COLU
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AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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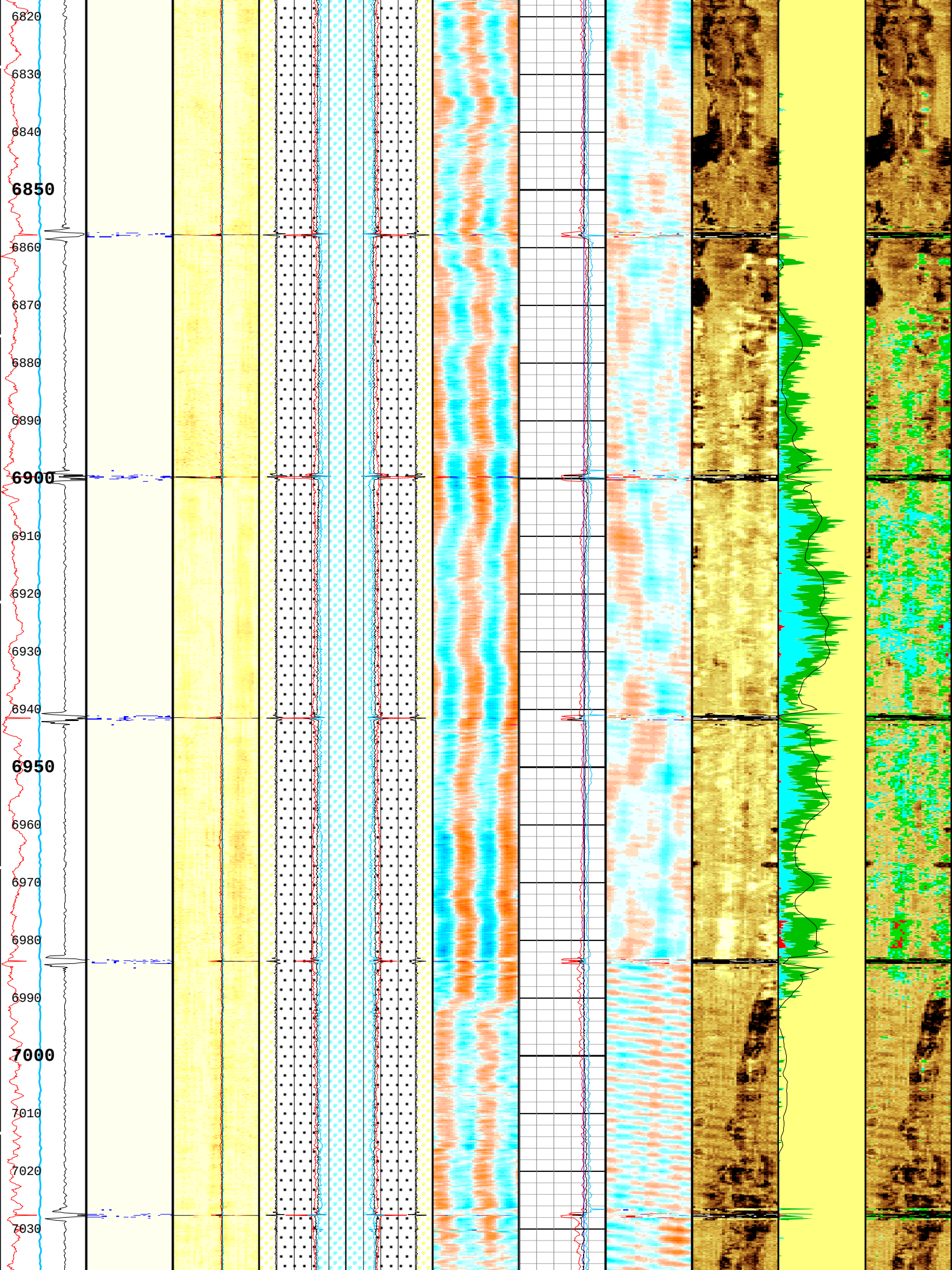
THAV_RF
THNO
THMN_RF
BI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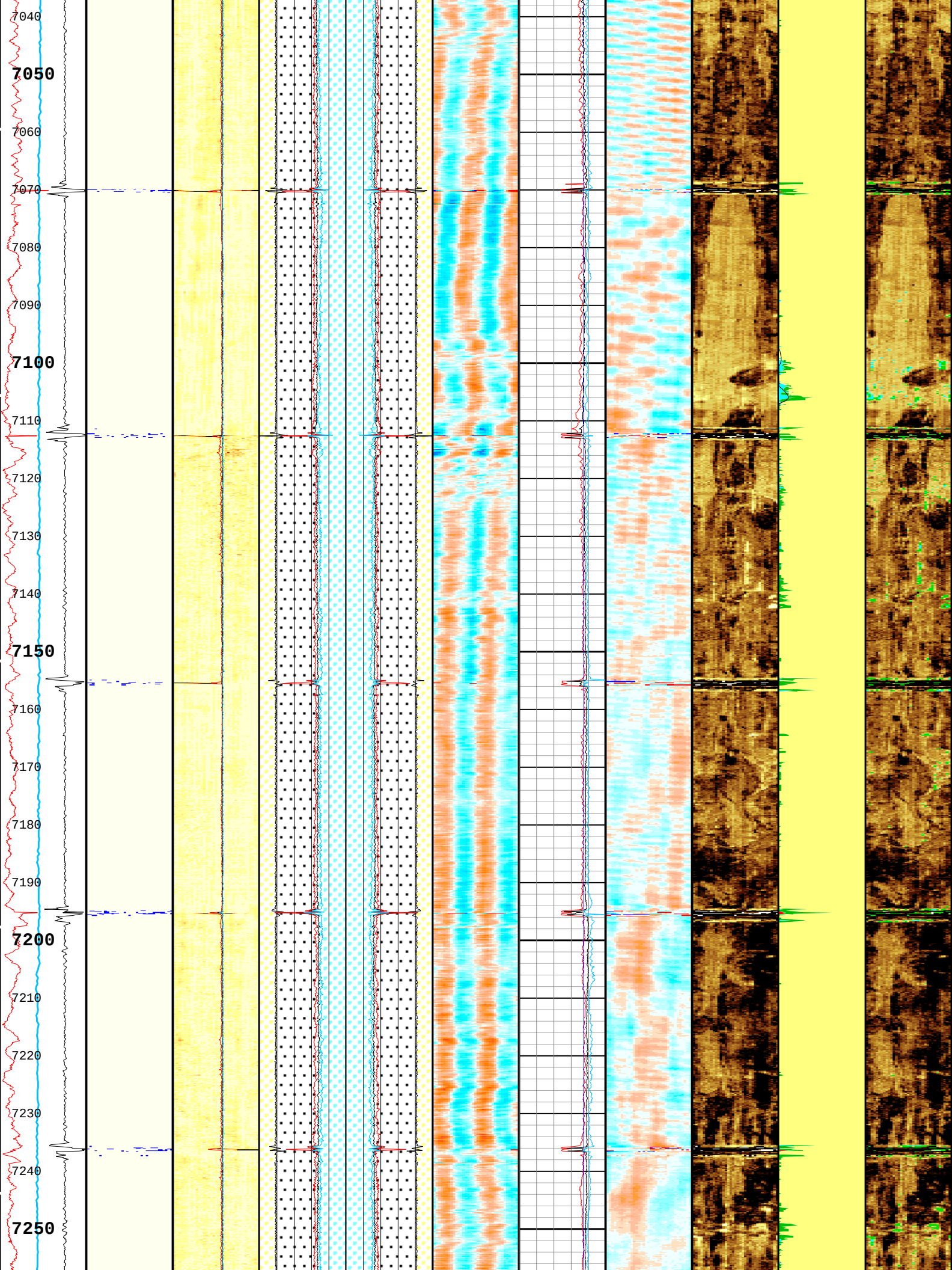
7030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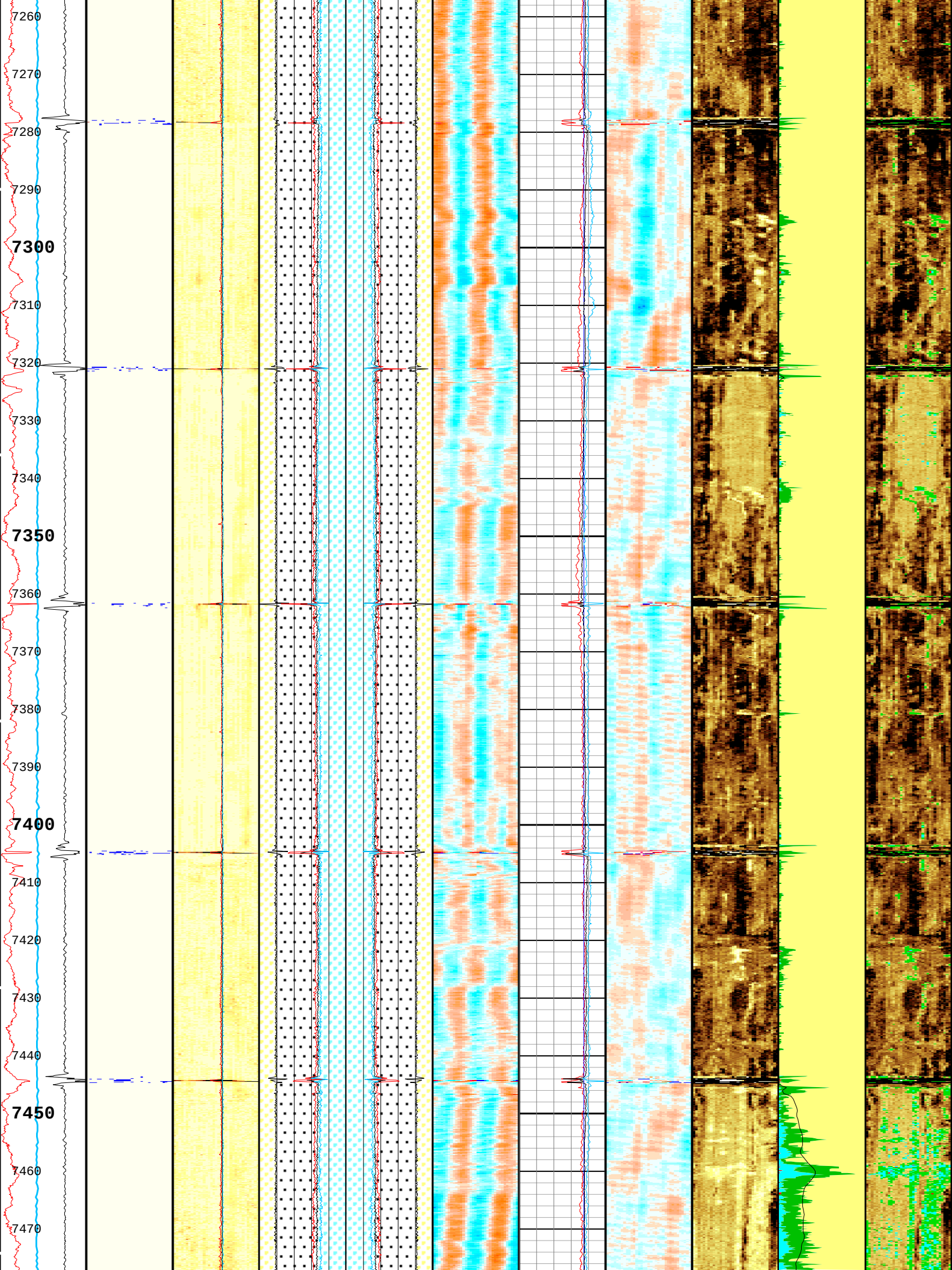
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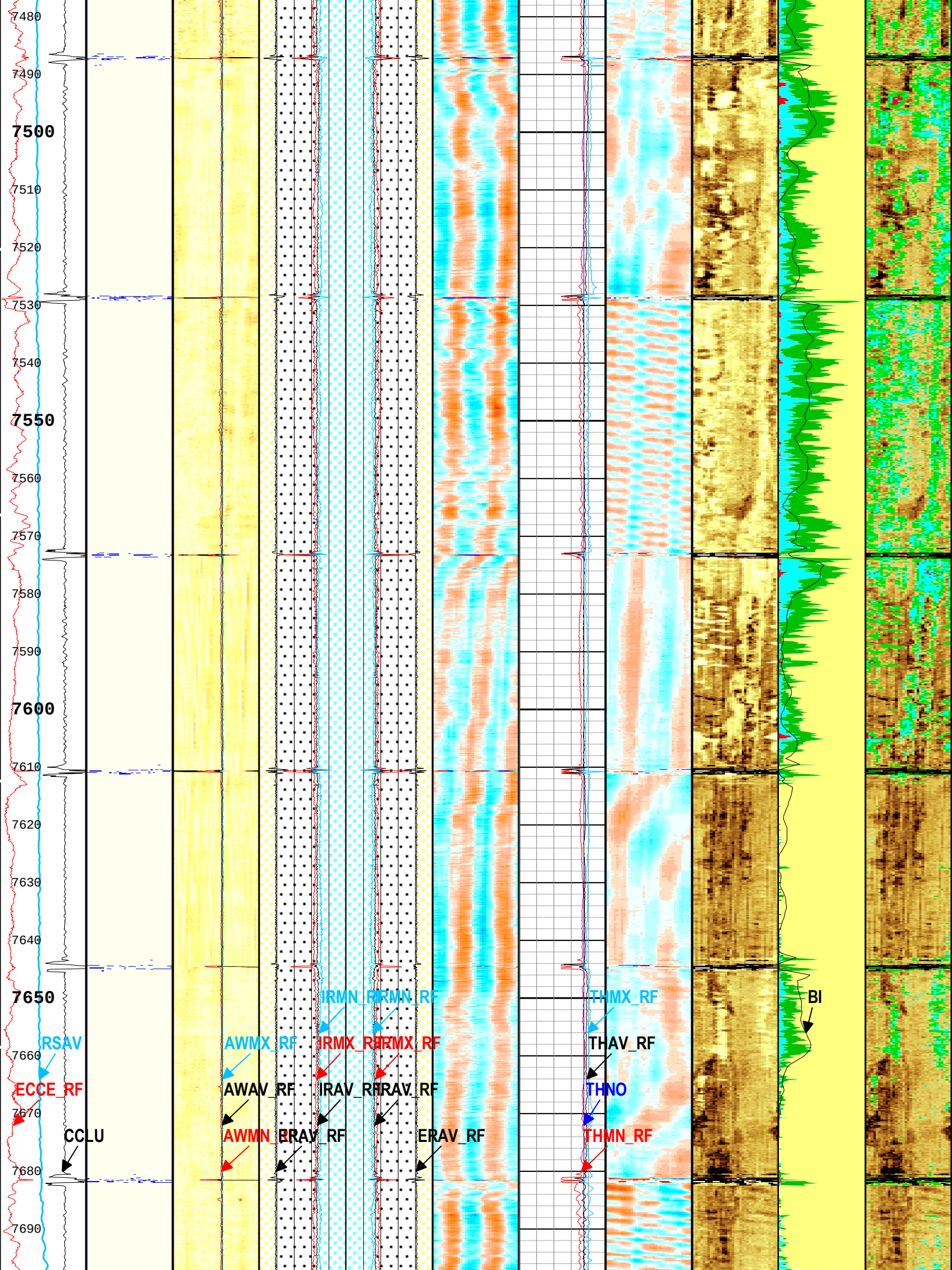
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7680
7690
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI

7700

Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]

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

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1] (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1] (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E[1]
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E[1]
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E[1] (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E[1]
1 0

Micro-debonding Ratio (MDR) USIT-E[1]
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E[1]
1 0

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H[1]
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:36:13

Composite 1

Cement Log 2 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[3]:Up	Up	219.03 ft	7701.92 ft	23-May-2016 8:10:50 AM	23-May-2016 10:52:33 AM	ON	-2.00 ft	Yes
R2D1	Log[18]:Up	Up	67.11 ft	1045.45 ft	23-May-2016 1:20:29 PM	23-May-2016 1:43:41 PM	ON	2.67 ft	Yes

All depths are referenced to toolstring zero

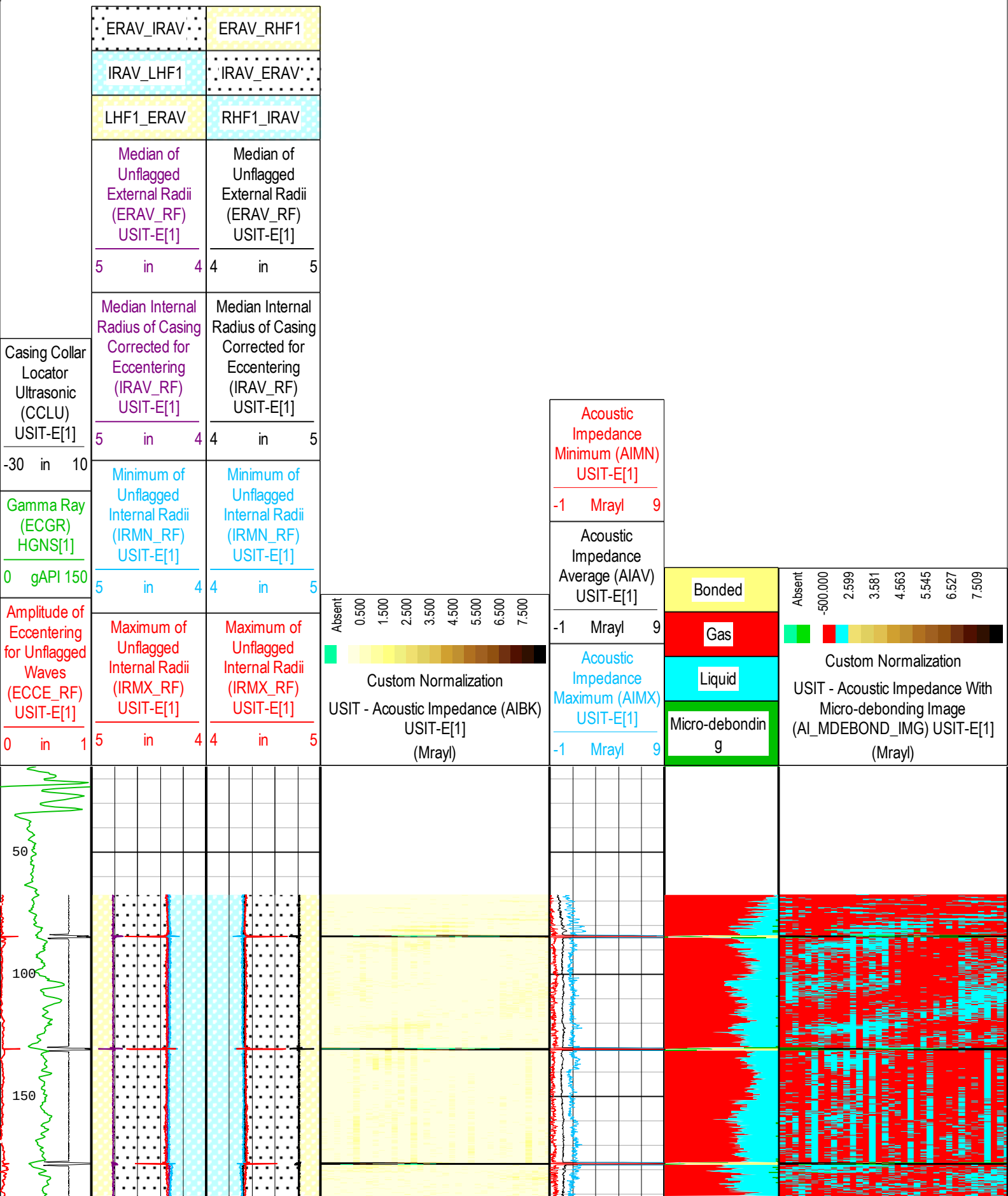
Log

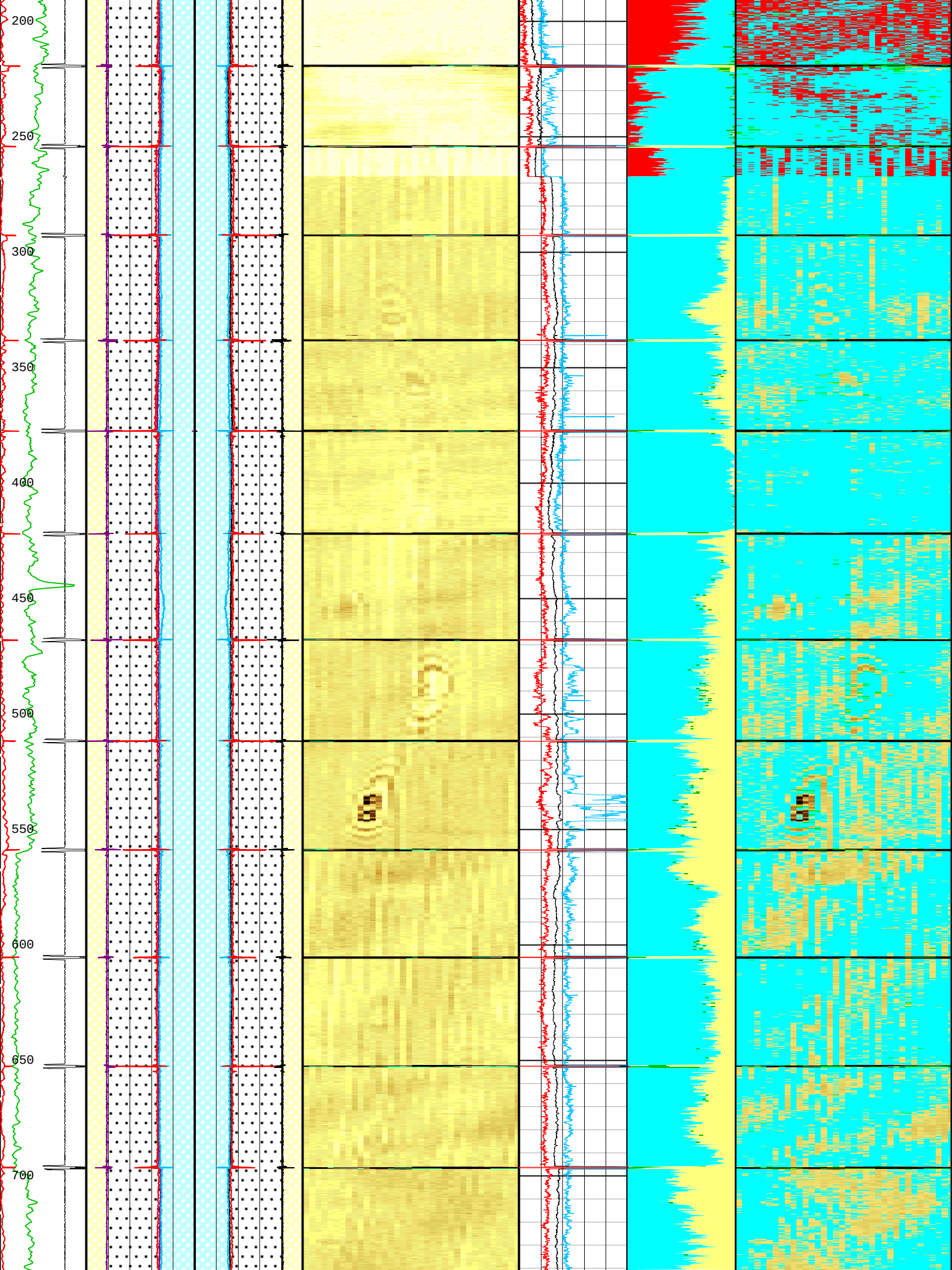
Company:Southern California Gas Company Well:Porter 69K

Composite 1:S002

Description: USI Cement Format: Log (LBV1_USI Cement 9.625inch) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:37:18

TIME_1900 - Time Marked every 60.00 (s)

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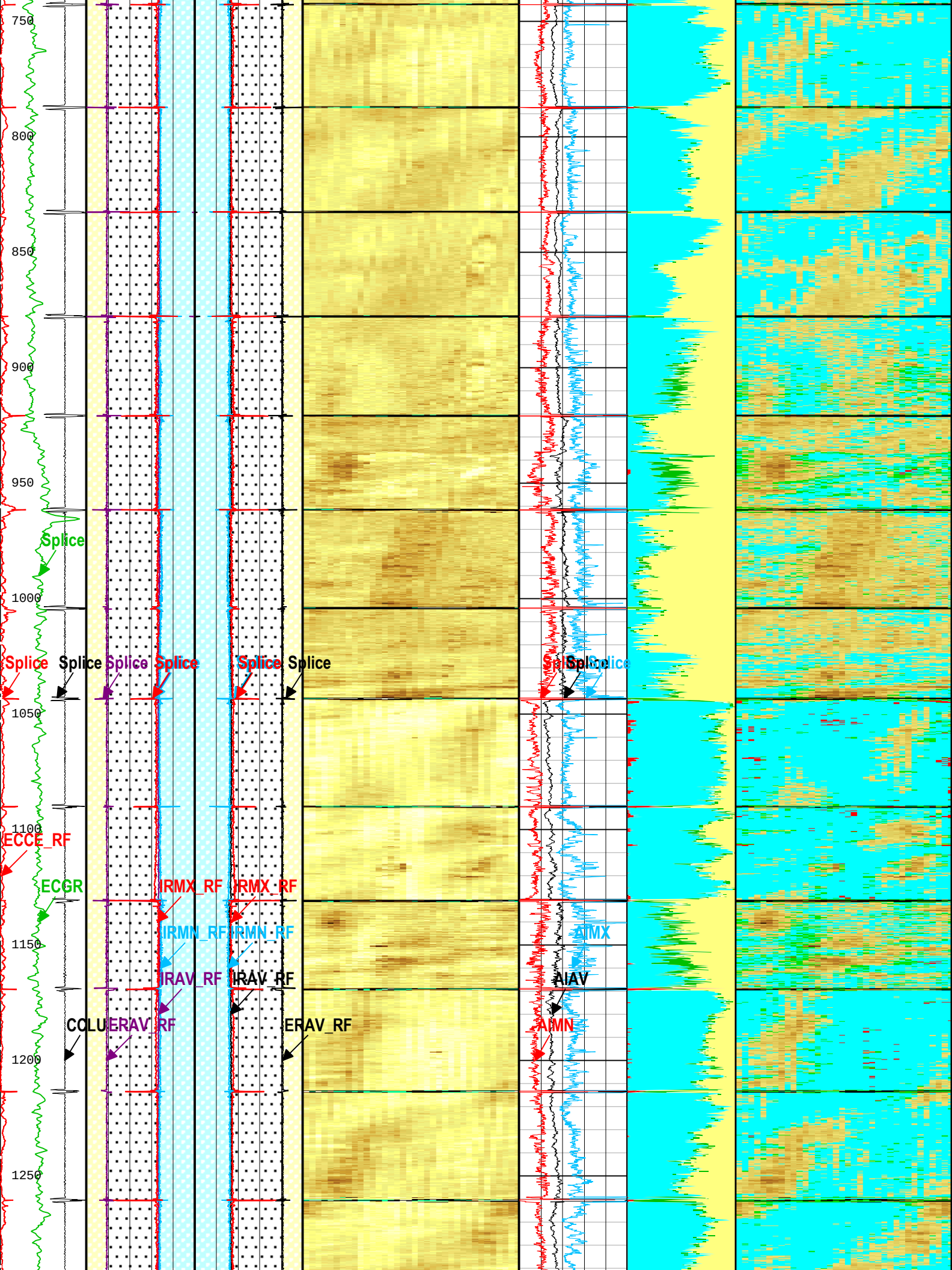
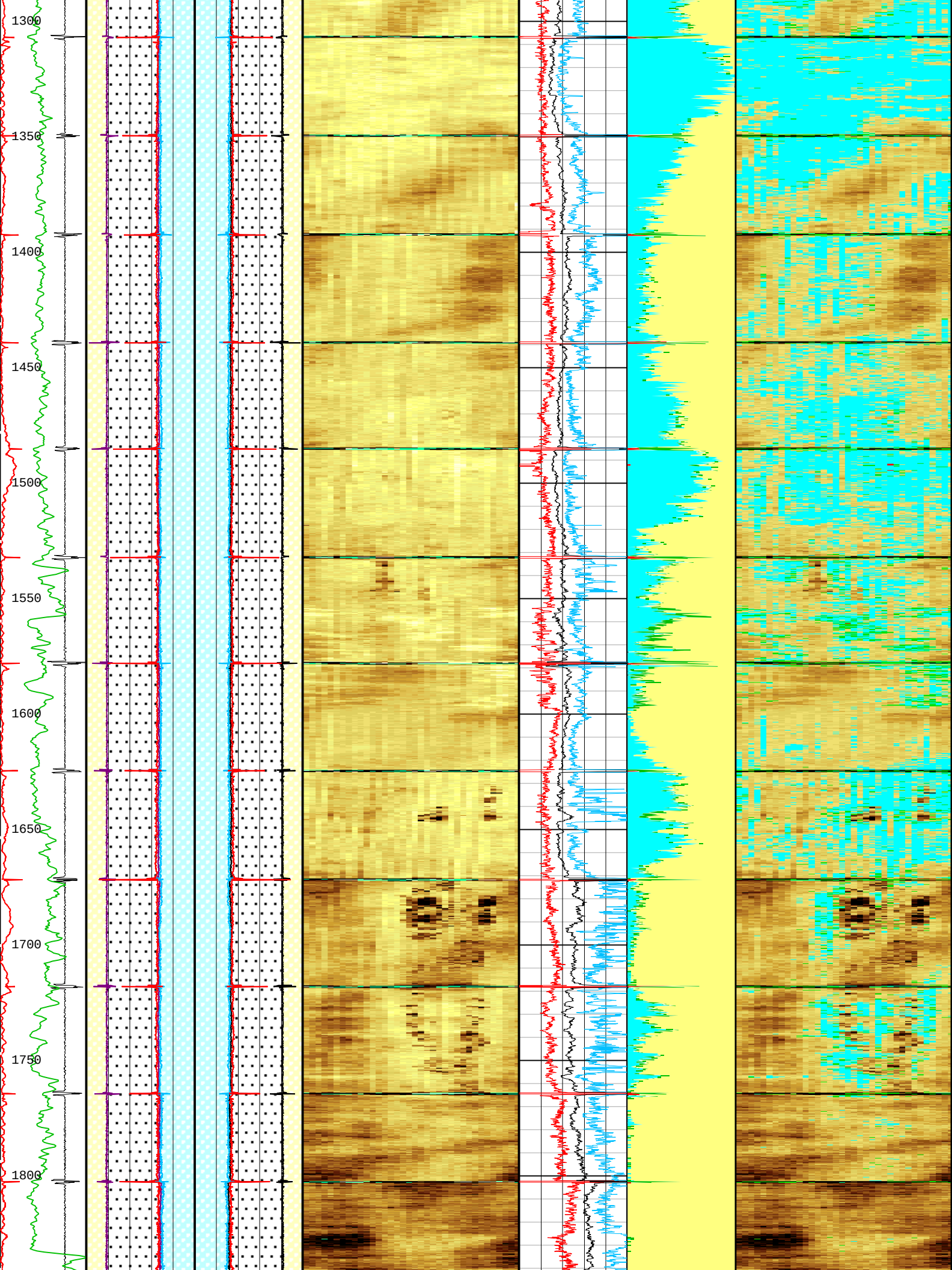
450
500
550
600
650
700


750
800
850
900
950
1000
1050
1100
1150
1200
1250
Splice
Splice
Splice
Splice
Splice
Splice
Splice
Splice
Splice
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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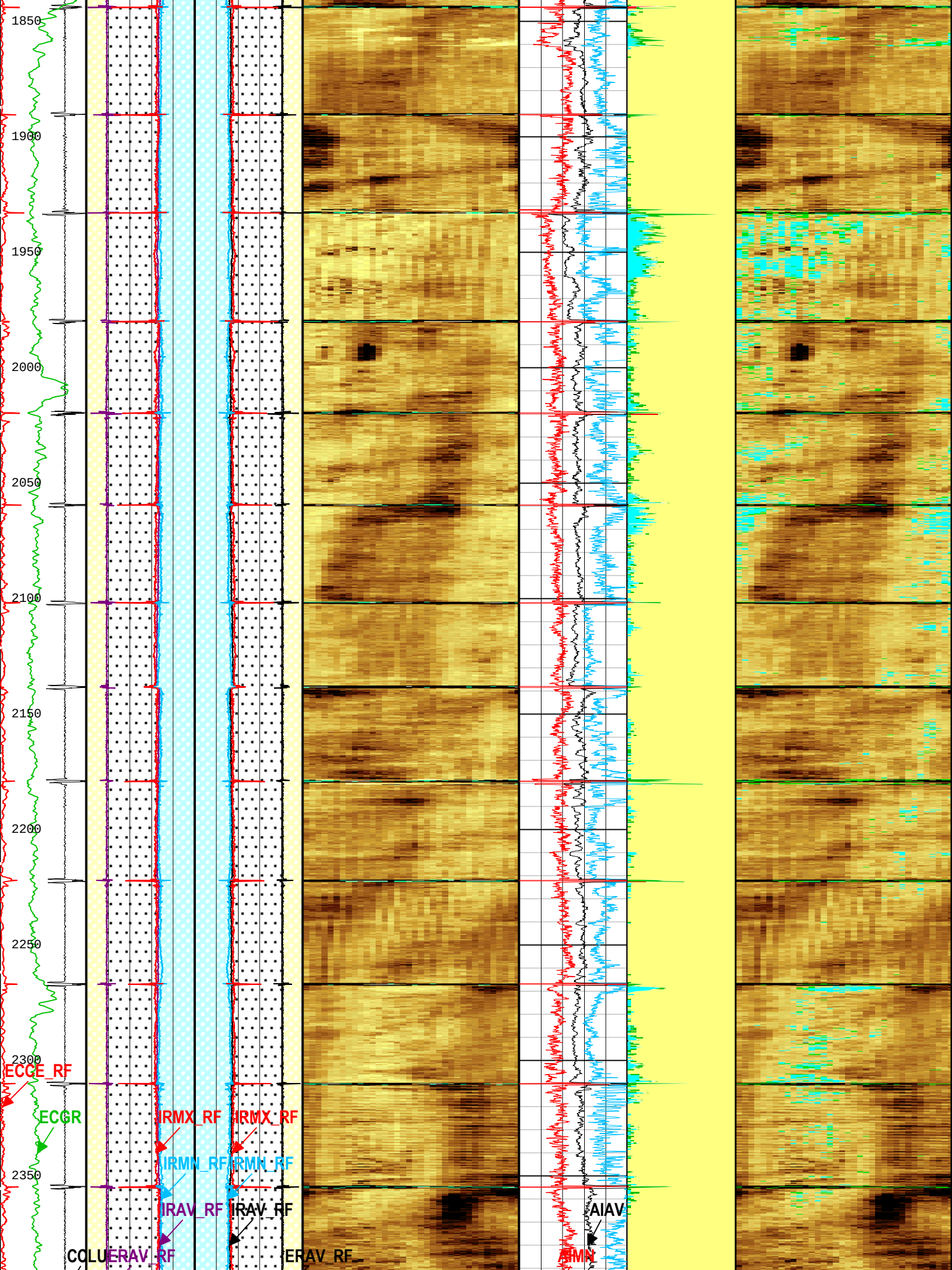
1350
1400
1450
1500
1550
1600
1650
1700
1750
1800


1850
1900
1950
2000
2050
2100
2150
2200
2250
2300
2350
ECGE_RF
ECGR
IRMX_RF
IRMX_RF
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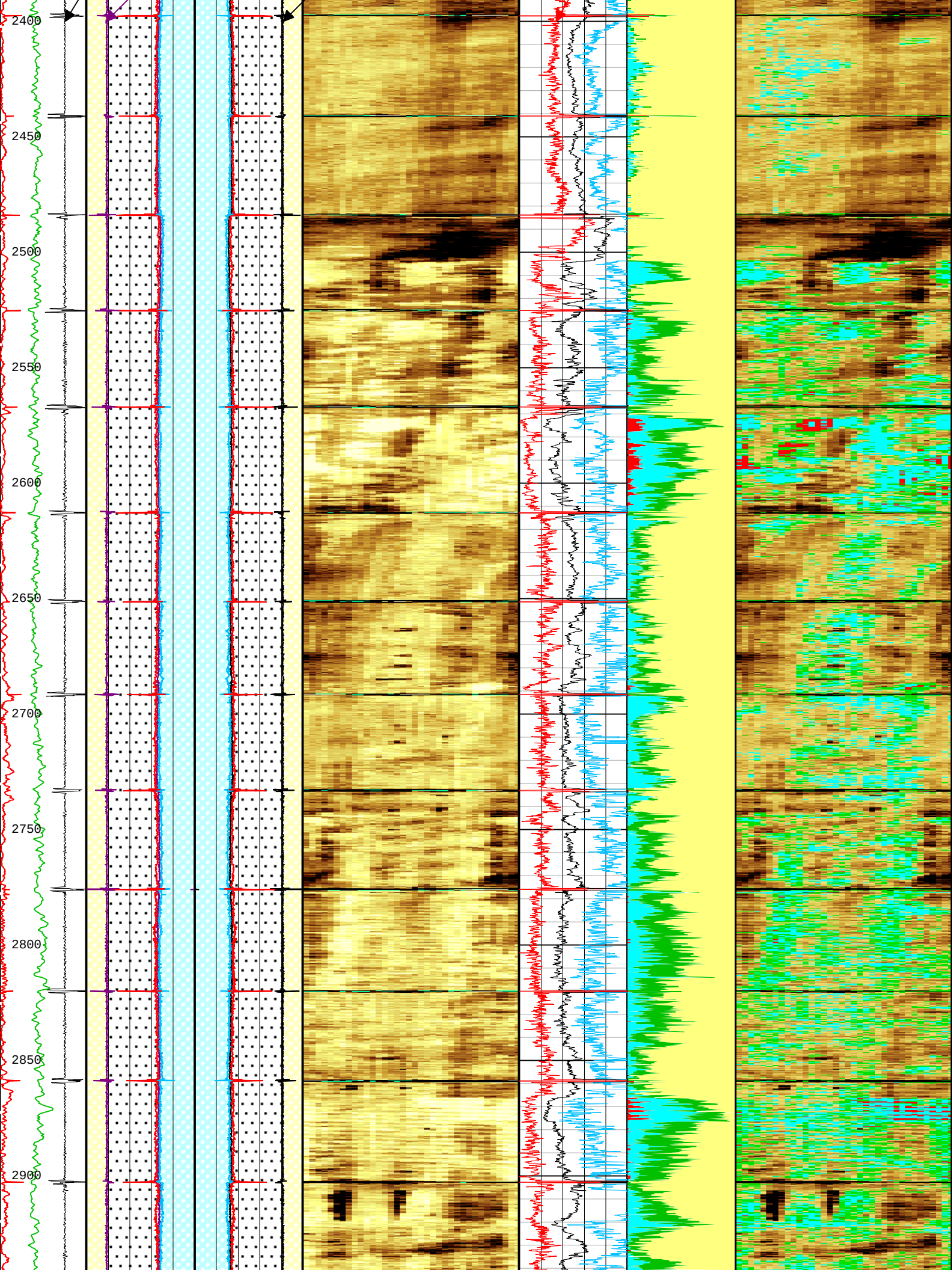
COLU
ERAV_RF
ERAV_RF
AIMN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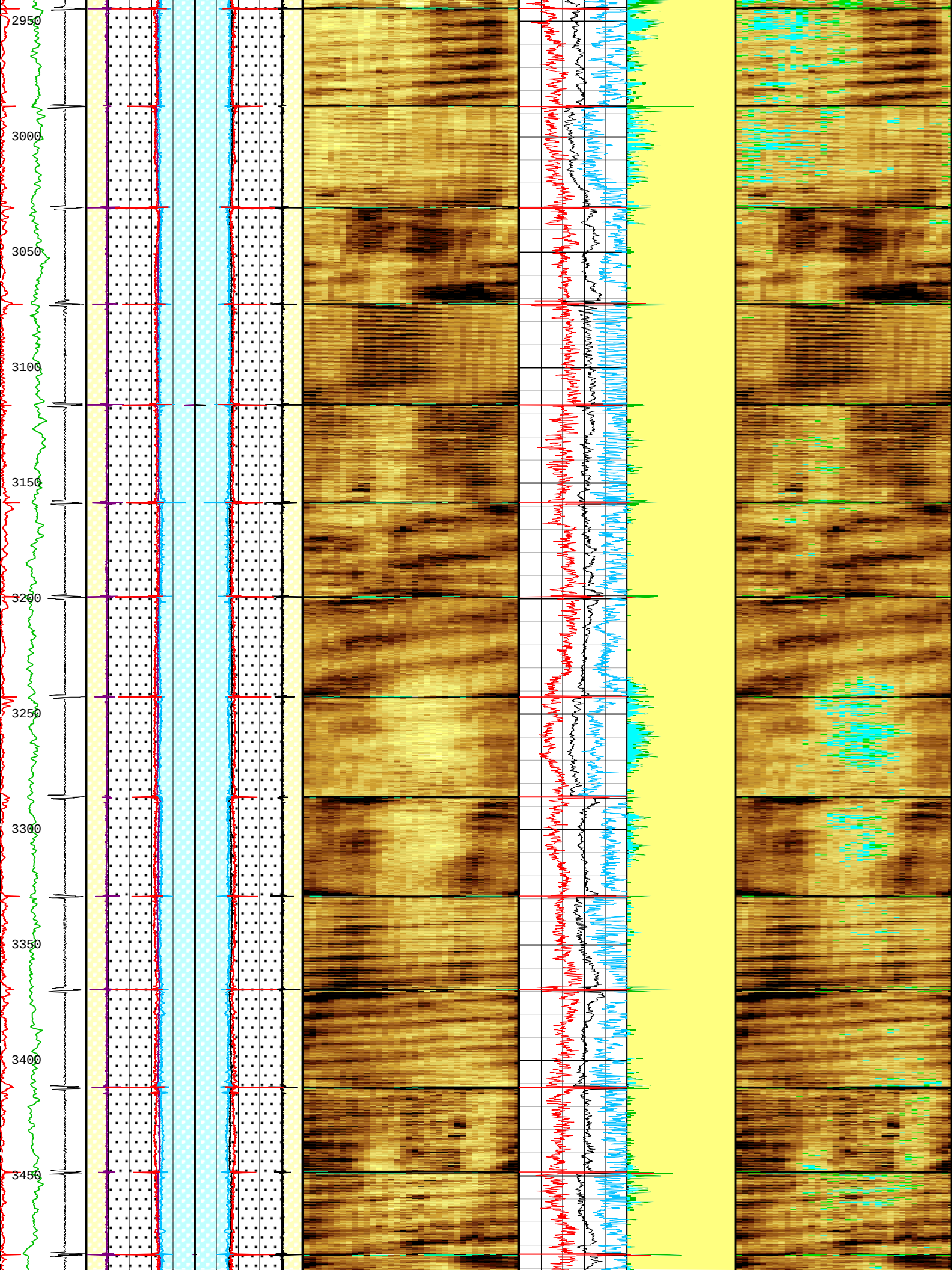
2450
2500
2550
2600
2650
2700
2750
2800
2850
2900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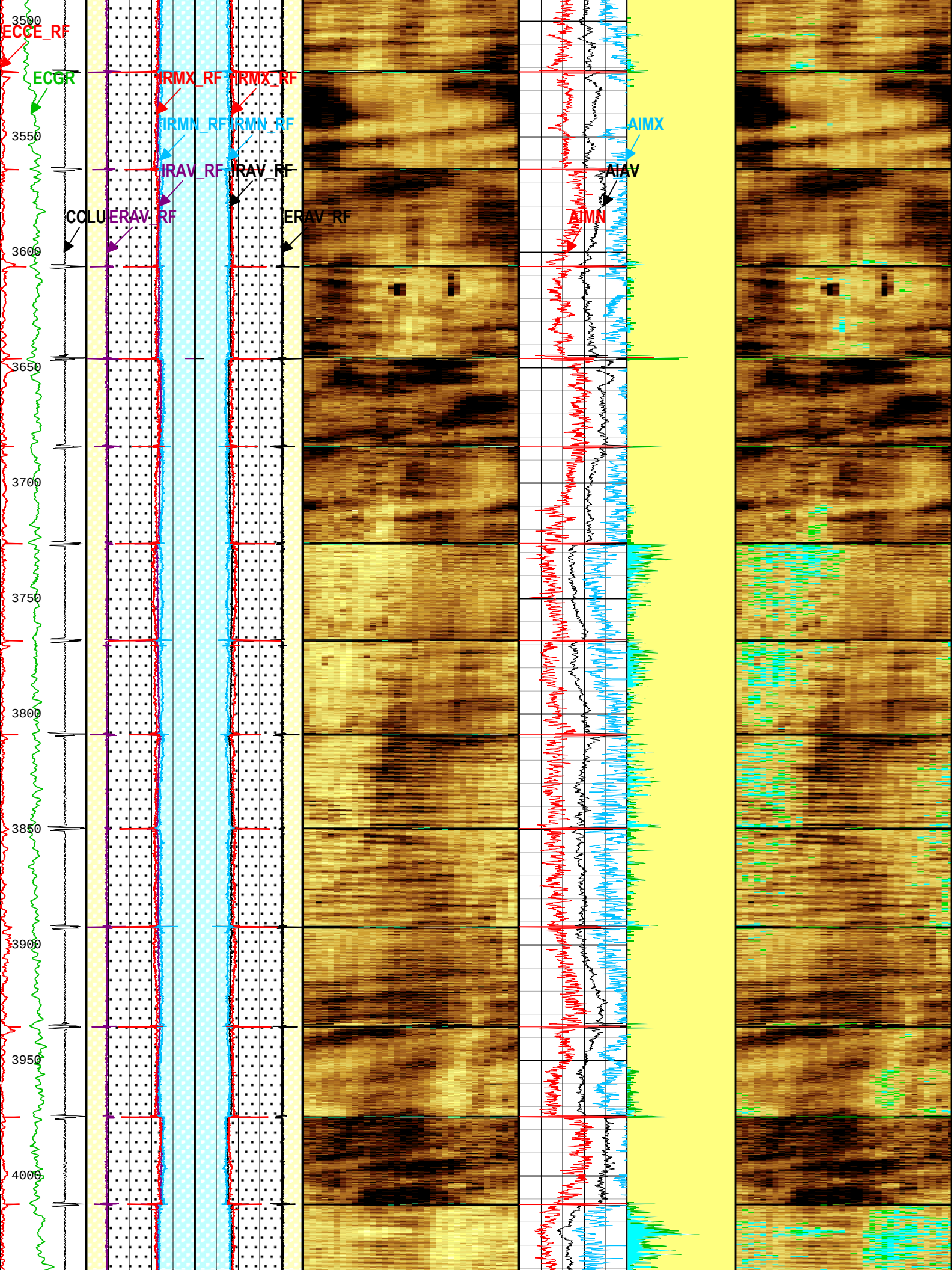
3000
3050
3100
3150
3200
3250
3300
3350
3400
3450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ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
3550
IRAV_RF
IRAV_RF
CCLU
ERAV_RF
ERAV_RF
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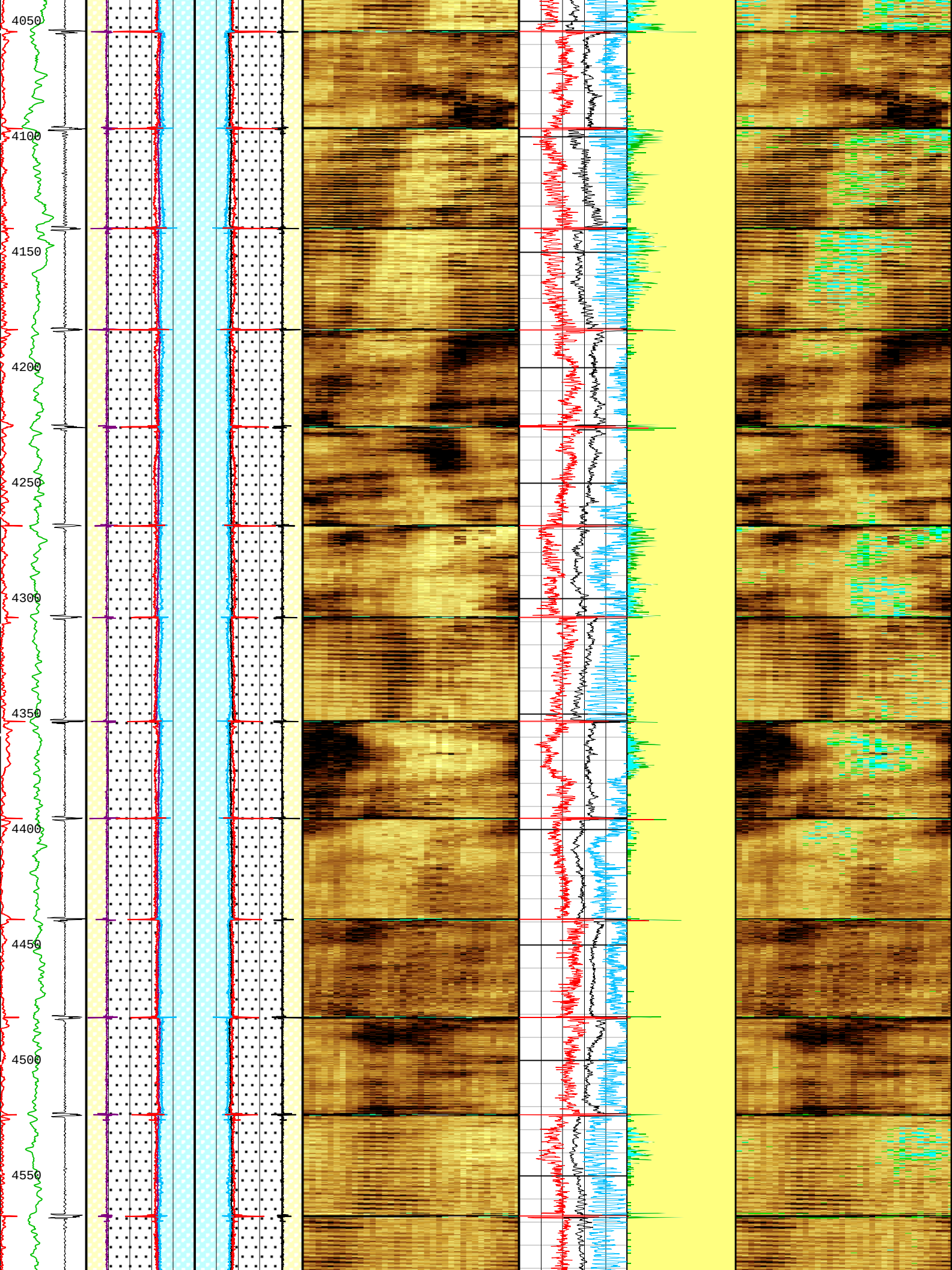
3650
3700
3750
3800
3850
3900
3950
4000
AIMX
AIAV
AIMN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4200
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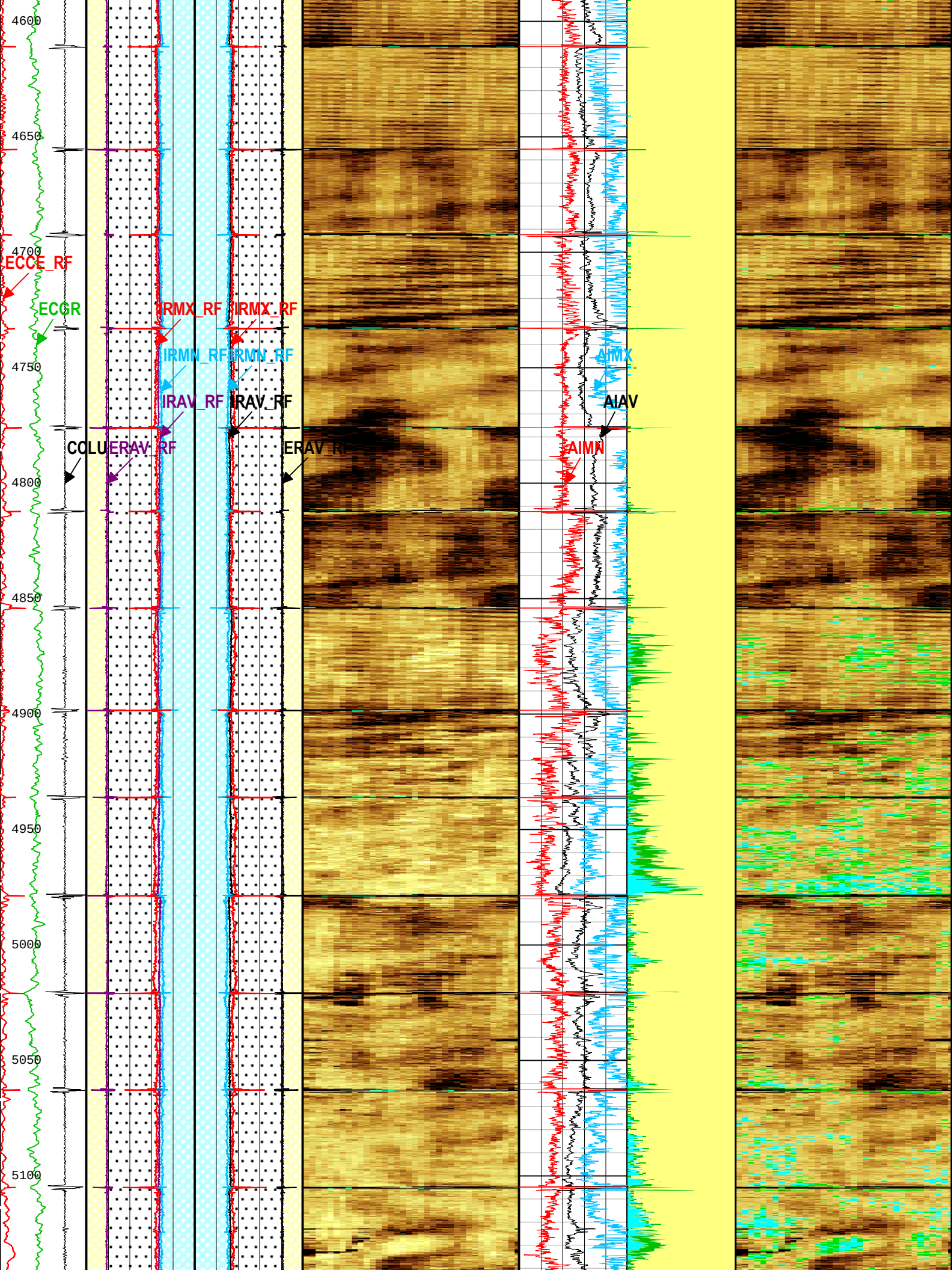
4300
4350
4400
4450
4500
4550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4800
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4950
5000
5050
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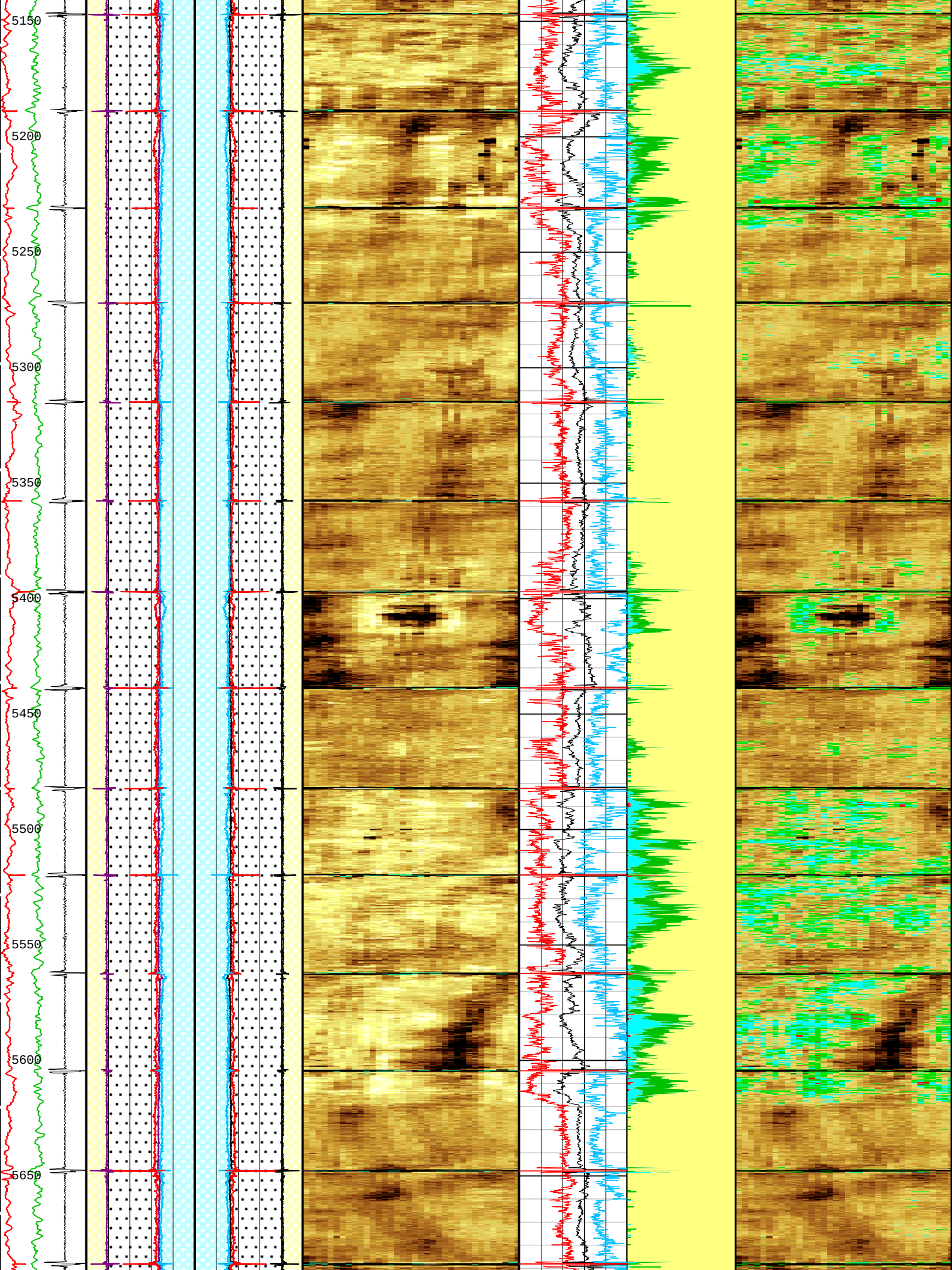
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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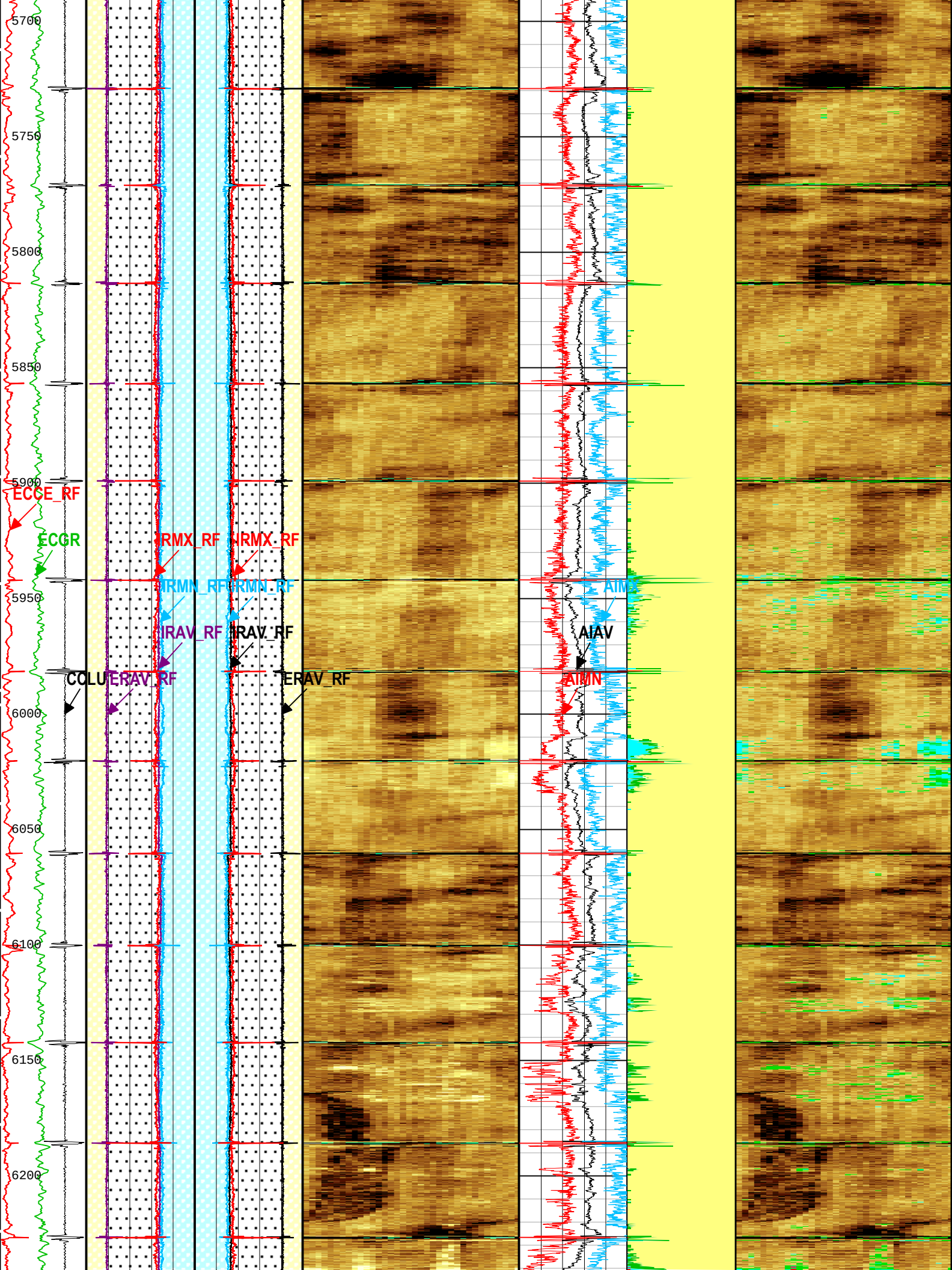
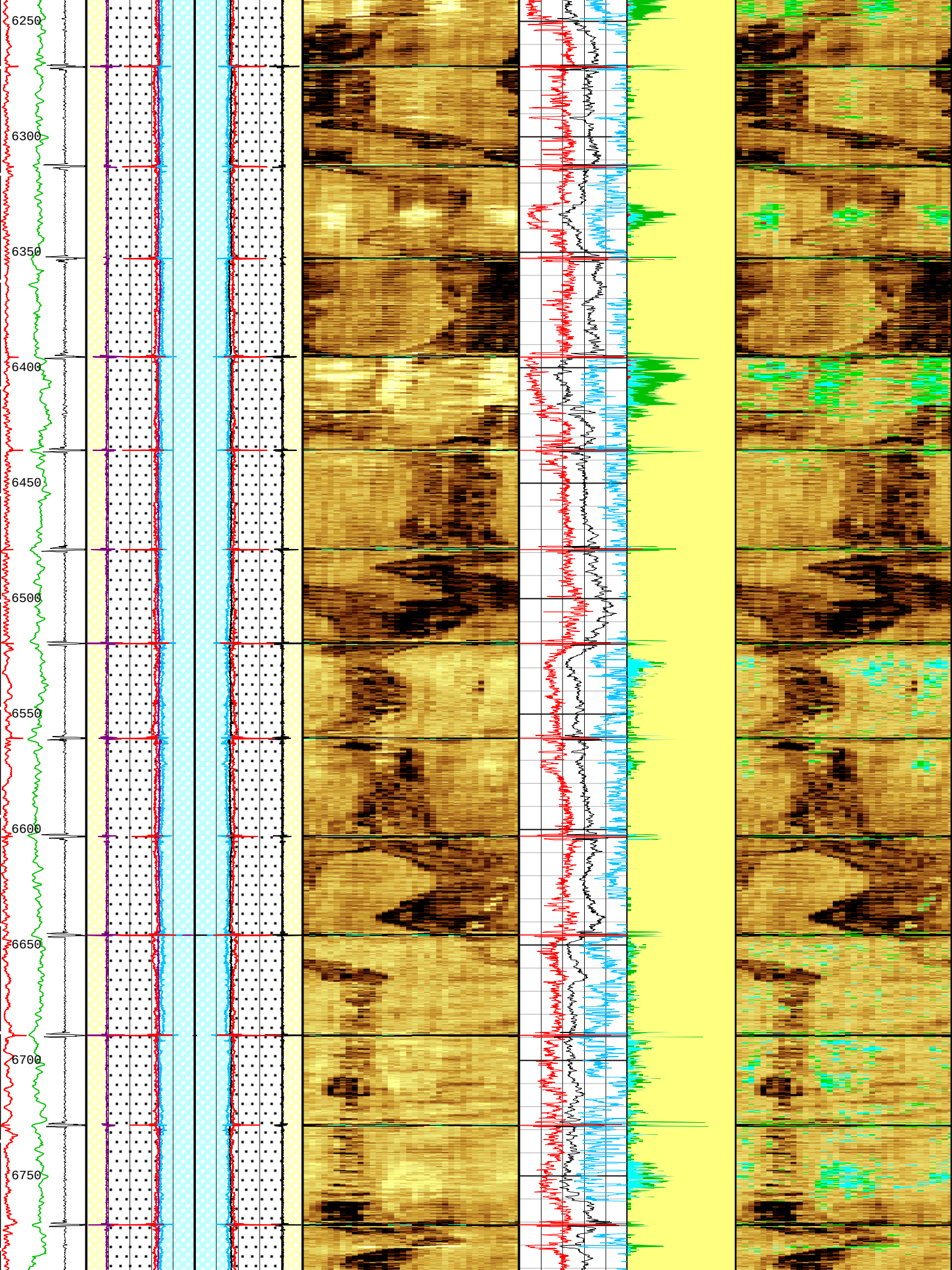
5650


5700
5750
5800
5850
5900
5950
6000
6050
6100
6150
6200
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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6700
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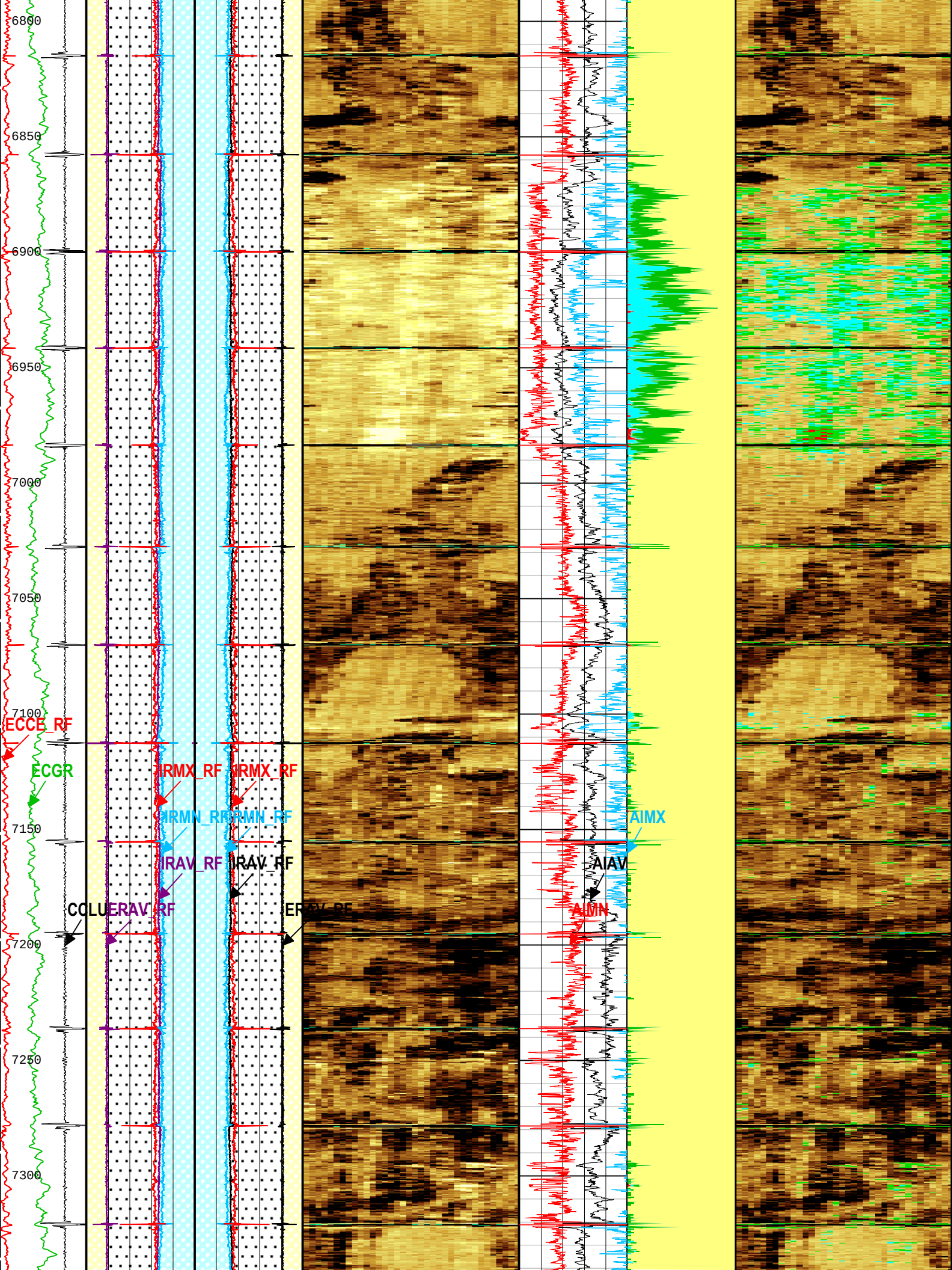
6800
6850
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6950
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7050
7100
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7200
7250
7300
ECCE_RF
ECGR
IRMX_RF
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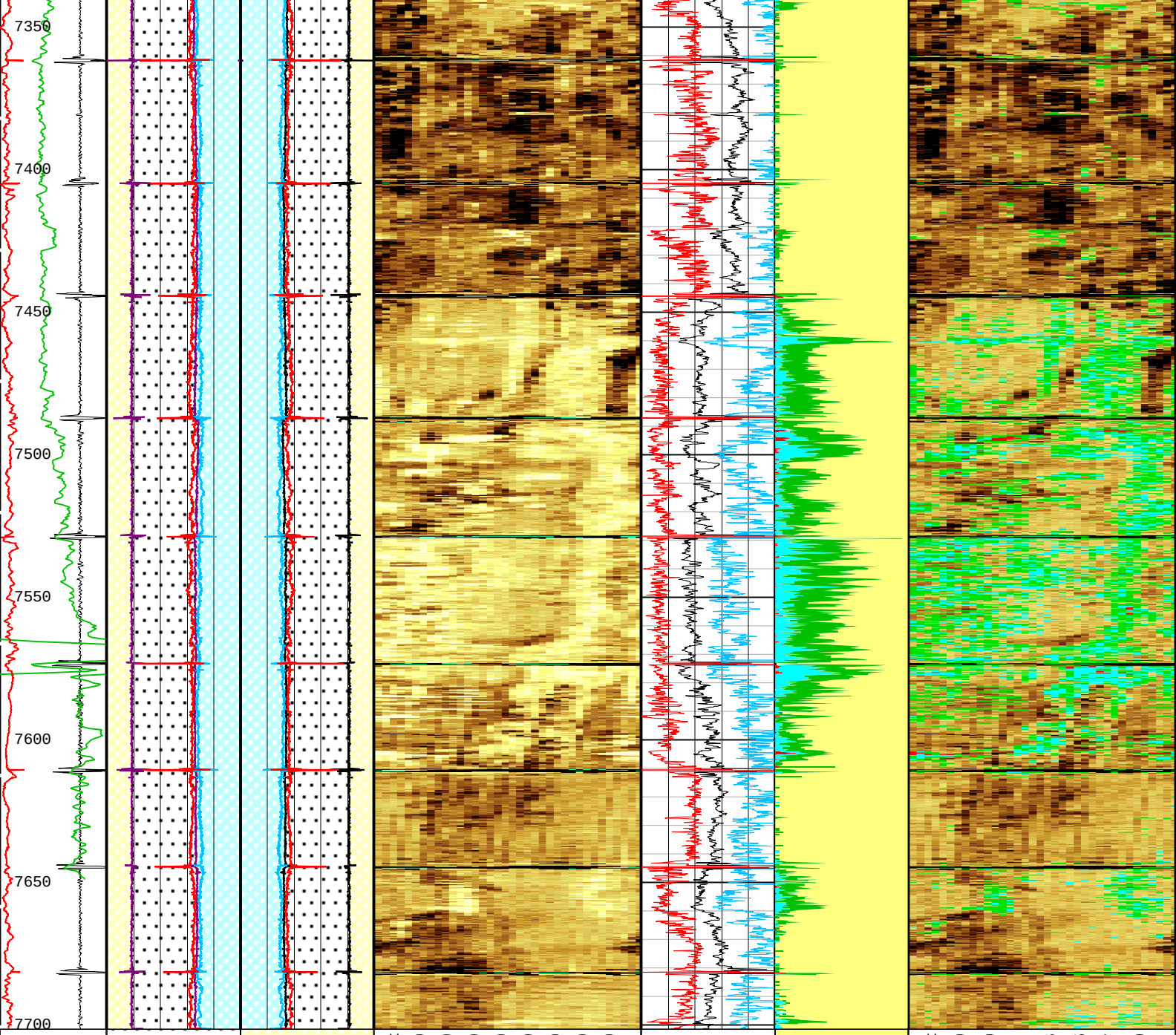
AIMX
AIAV
AIMN


7350
7400
7450
7500
7550
7600
7650
7700
Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10
Gamma Ray (ECGR) HGNS[1]
0 gAPI 150
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 1
ERAV_IRAV
IRAV_LHF1
LHF1_ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
5 in 4
ERAV_RHF1
IRAV_ERAV
RHF1_IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4 in 5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4 in 5
Absent 0.500 1.500 2.500 3.500 4.500 5.500 6.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Maximum (AIMX) USIT-E[1]
-1 Mrayl 9
Bonded
Gas
Liquid
Micro-debonding
Absent -500.000 2.599 3.581 4.563 5.545 6.527 7.509
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
5 in 4	4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4	4 in 5

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: Log (LBV1_USI Cement 9.625inch) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:37:18

Composite 1

Corrosion 5 in = 100 ft

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[3]:Up	Up	219.03 ft	7701.92 ft	23-May-2016 8:10:50 AM	23-May-2016 10:52:33 AM	ON	-2.00 ft	Yes
R2D1	Log[18]:Up	Up	67.11 ft	1045.45 ft	23-May-2016 1:20:29 PM	23-May-2016 1:43:41 PM	ON	2.67 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K

Composite 1:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:38:00

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

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

TIME_1900 - Time Marked every 60.00 (s)

Absent -5.200 -3.600 -2.000 -0.400

Explicit Normalization

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1] (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF)

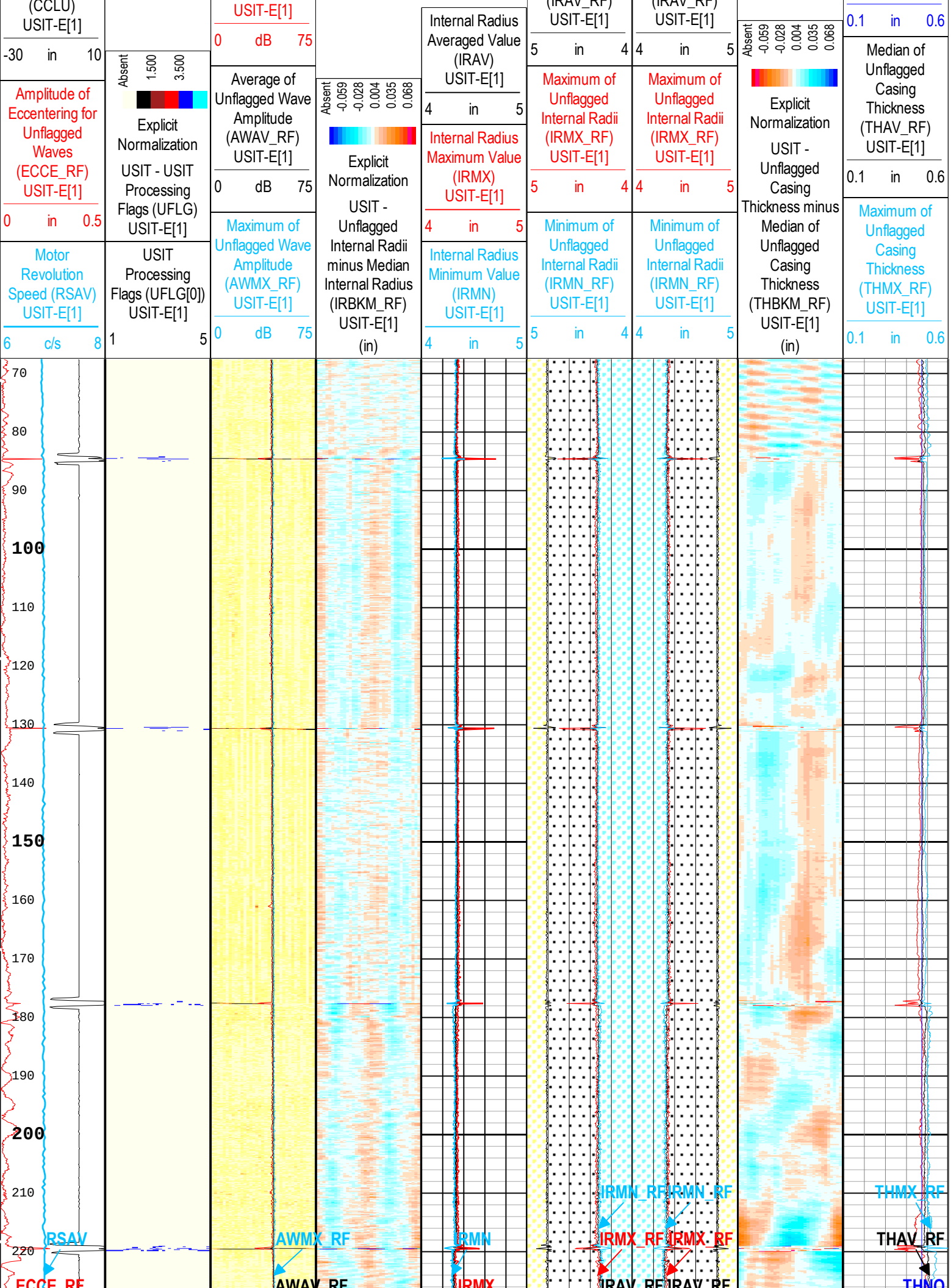
Casing Collar Locator Ultrasonic

ERAV	IRAV
ERAV-IRAV	ERAV
IRAV	IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]	Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4	4 in 5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF)	Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E[1]

0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E[1]


(CCLU) USIT-E[1]
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]
USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5
USIT-E[1]
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1] (in)
Internal Radius Averaged Value (IRAV) USIT-E[1]
4 in 5
Internal Radius Maximum Value (IRMX) USIT-E[1]
4 in 5
Internal Radius Minimum Value (IRMN) USIT-E[1]
4 in 5
(IRAV_RF) USIT-E[1]
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
5 in 4
(IRAV_RF) USIT-E[1]
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4 in 5
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E[1] (in)
0.1 in 0.6
Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.1 in 0.6
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
IRMN
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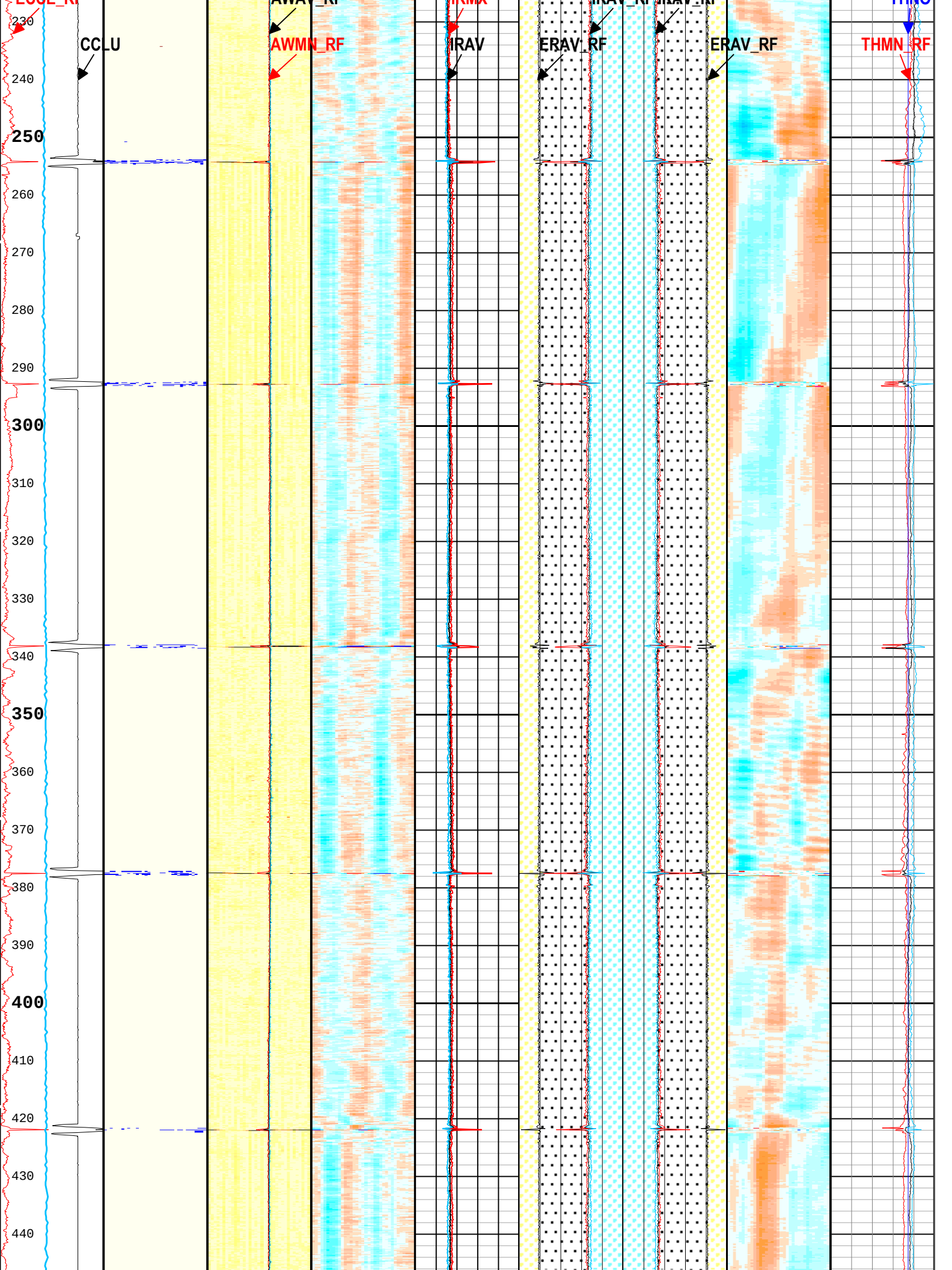
THAV_RF
THNO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AWMN_RF
IRAV
ERAV_RF
ERAV_RF
THMN_RF
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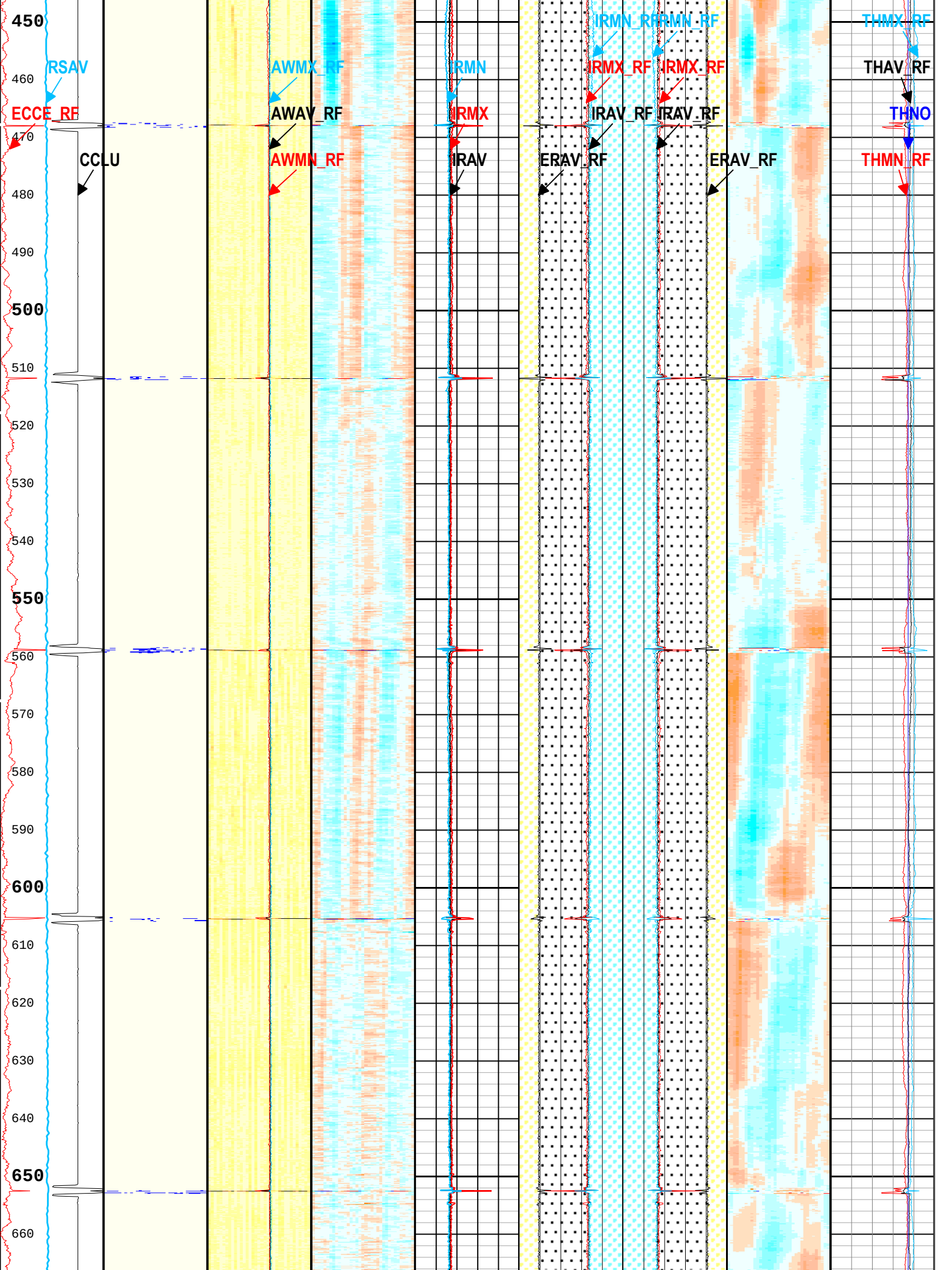
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RSAV
ECCE_RF
CCLU
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AWAV_RF
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IRAV
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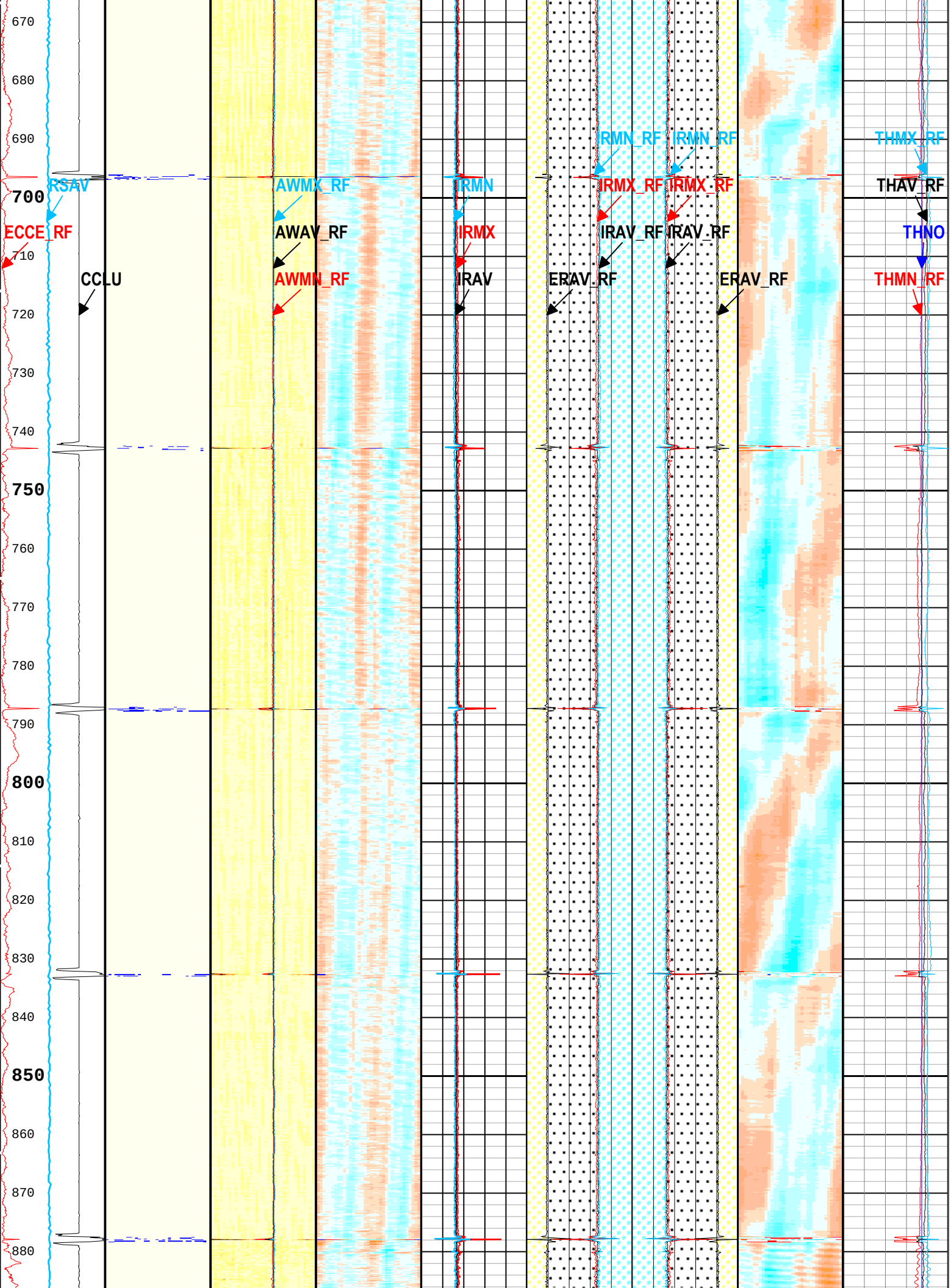
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RSAV
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CCLU
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AWAV_RF
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IRMX_RF
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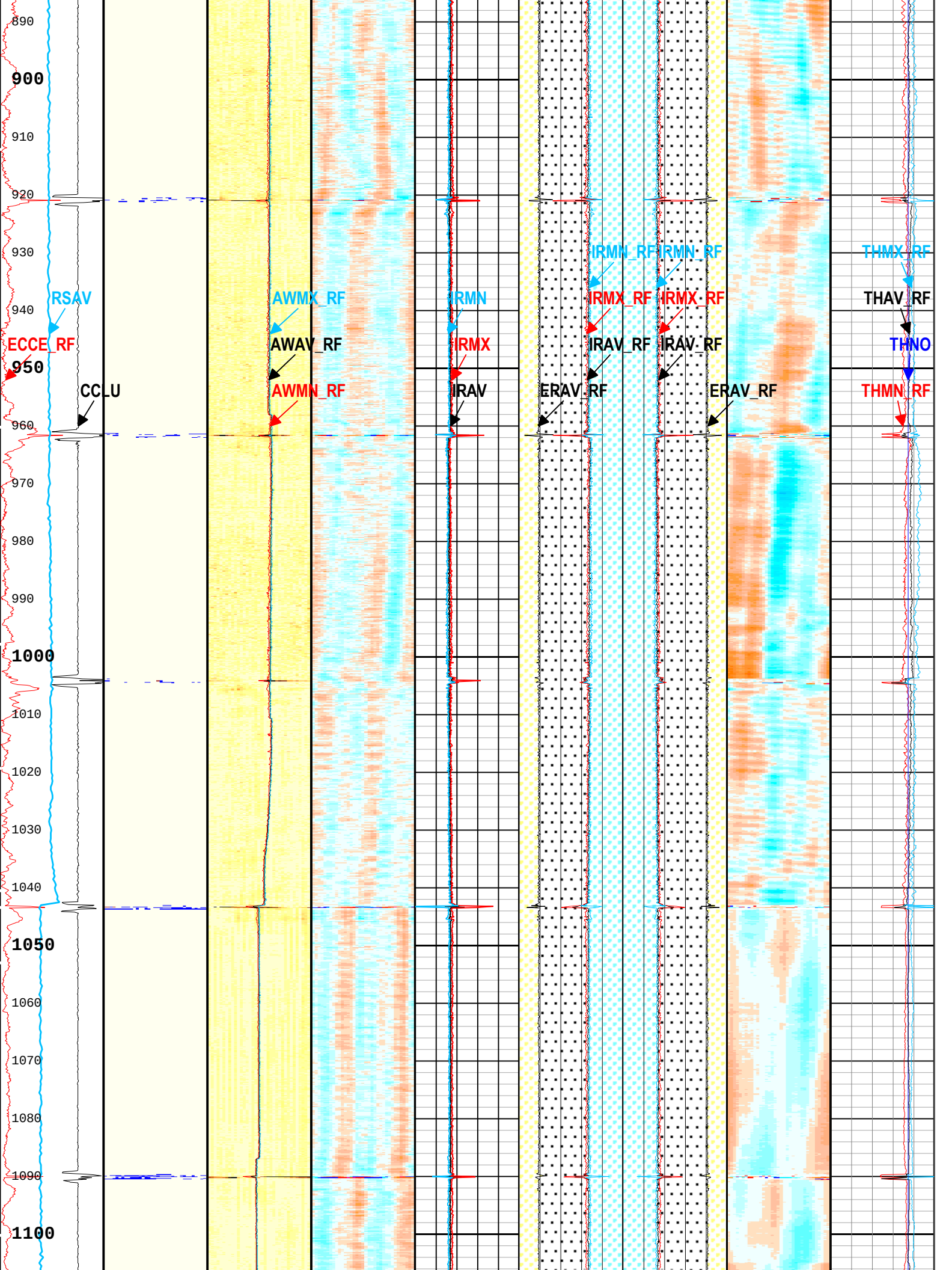
THNO
THMN_RF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1100
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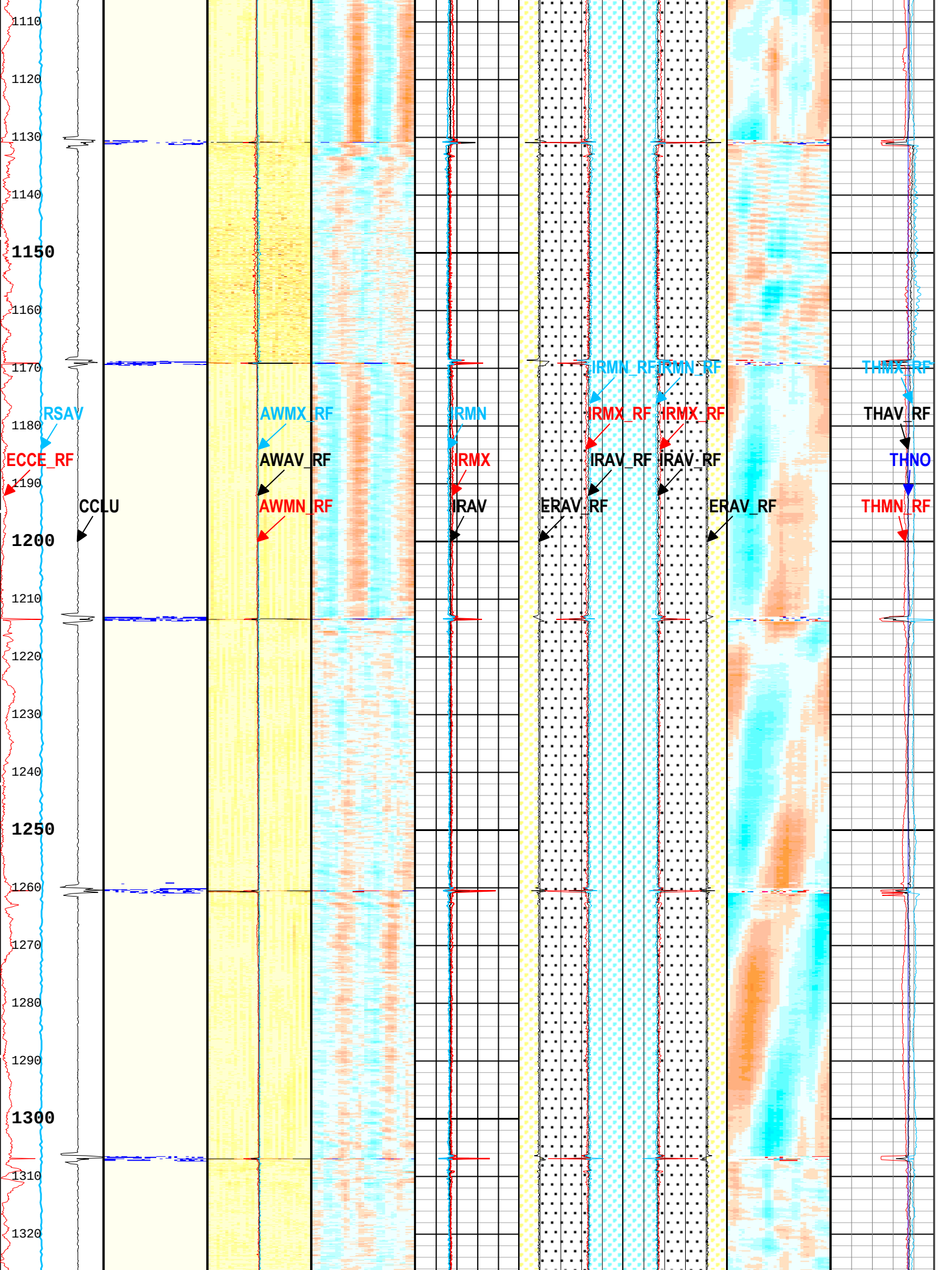
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AWAV_RF
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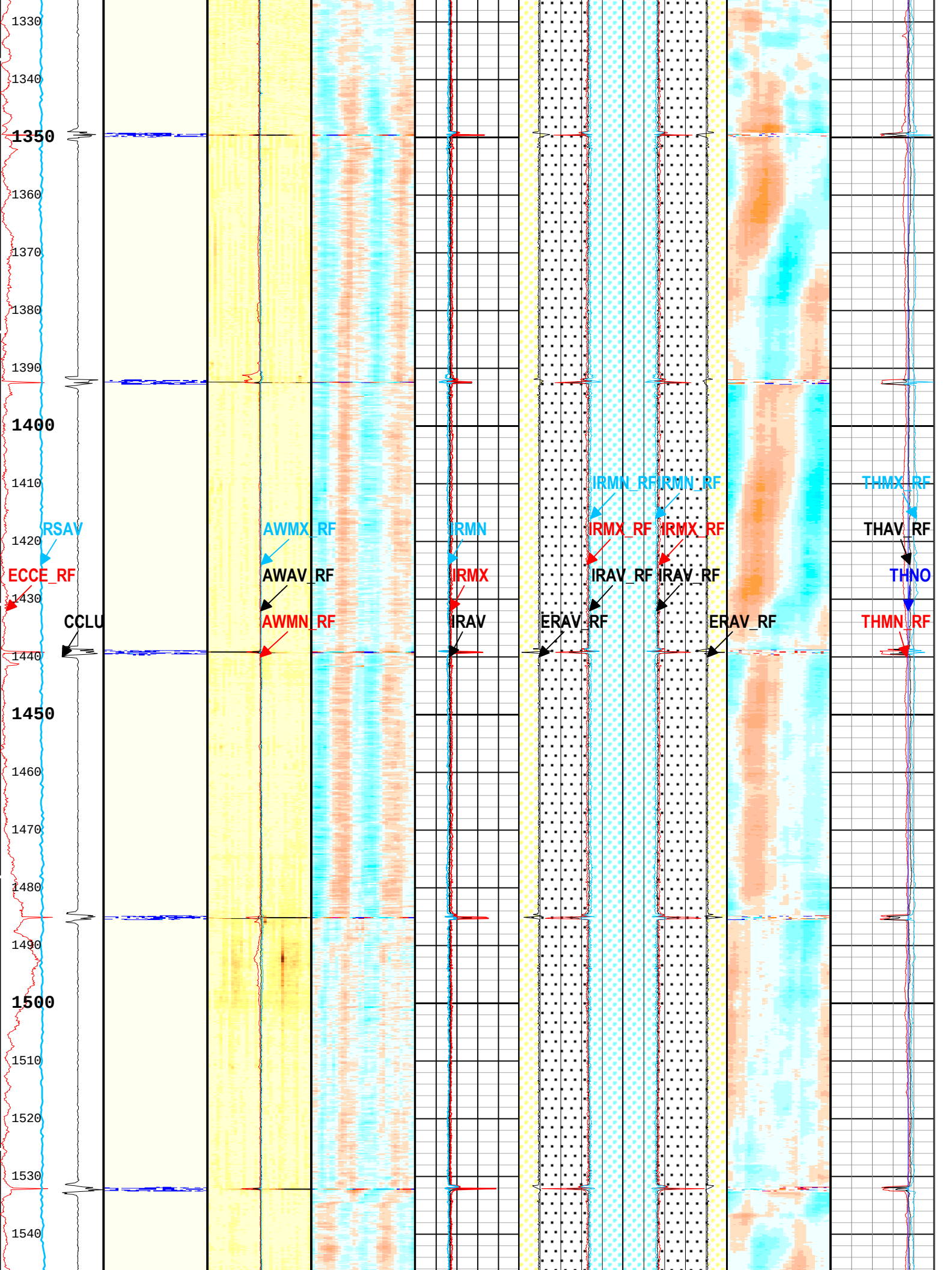
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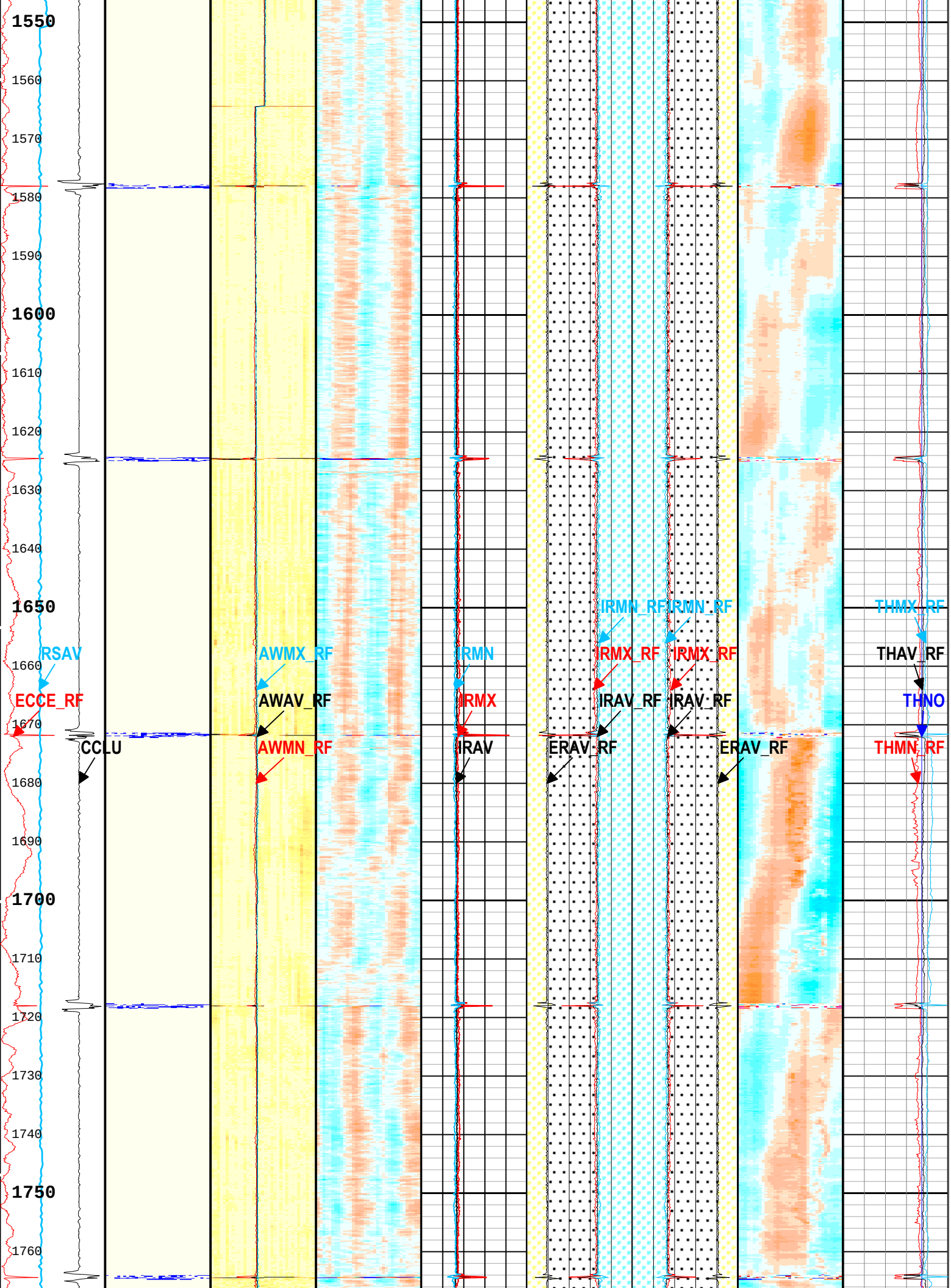
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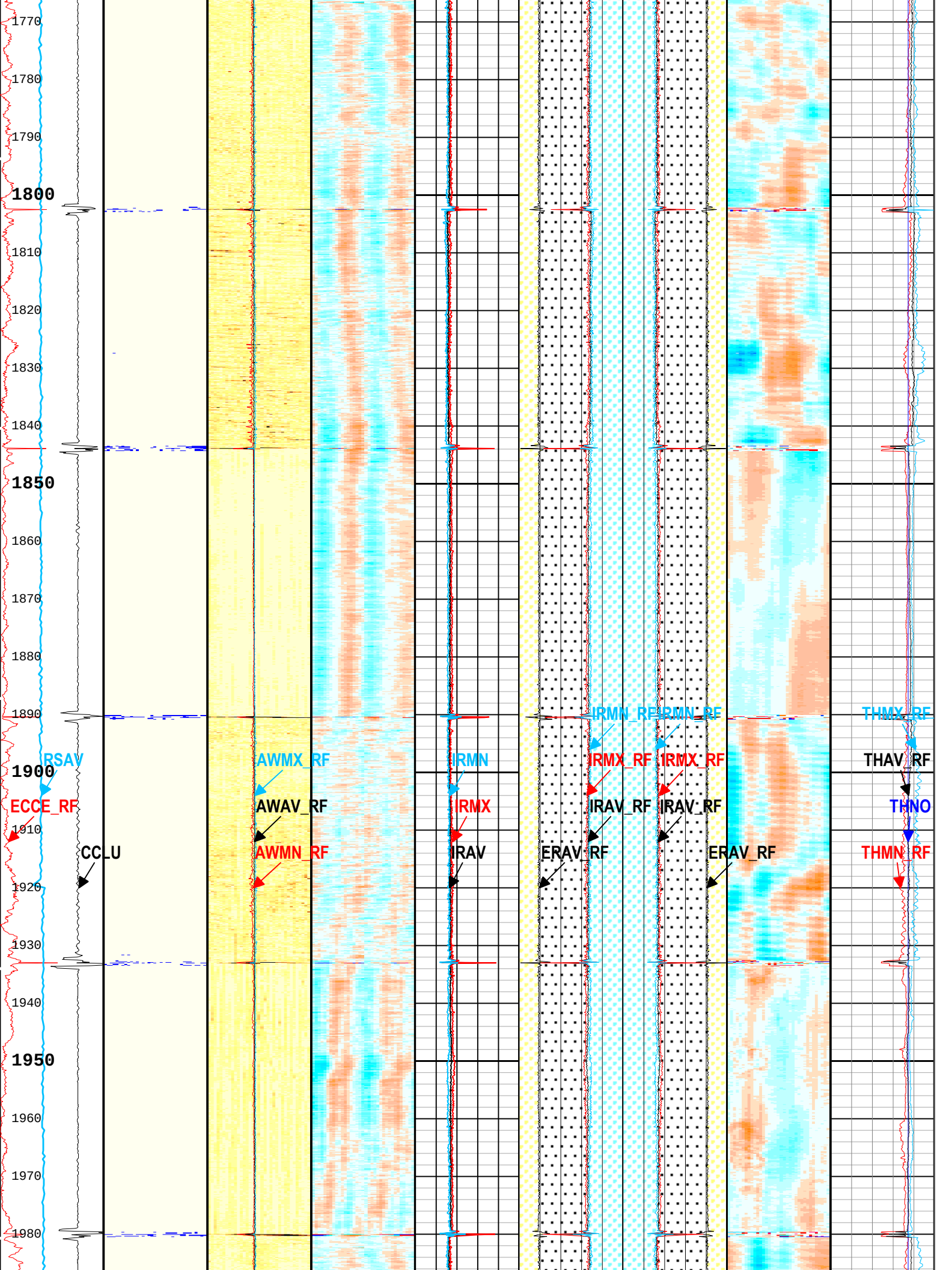
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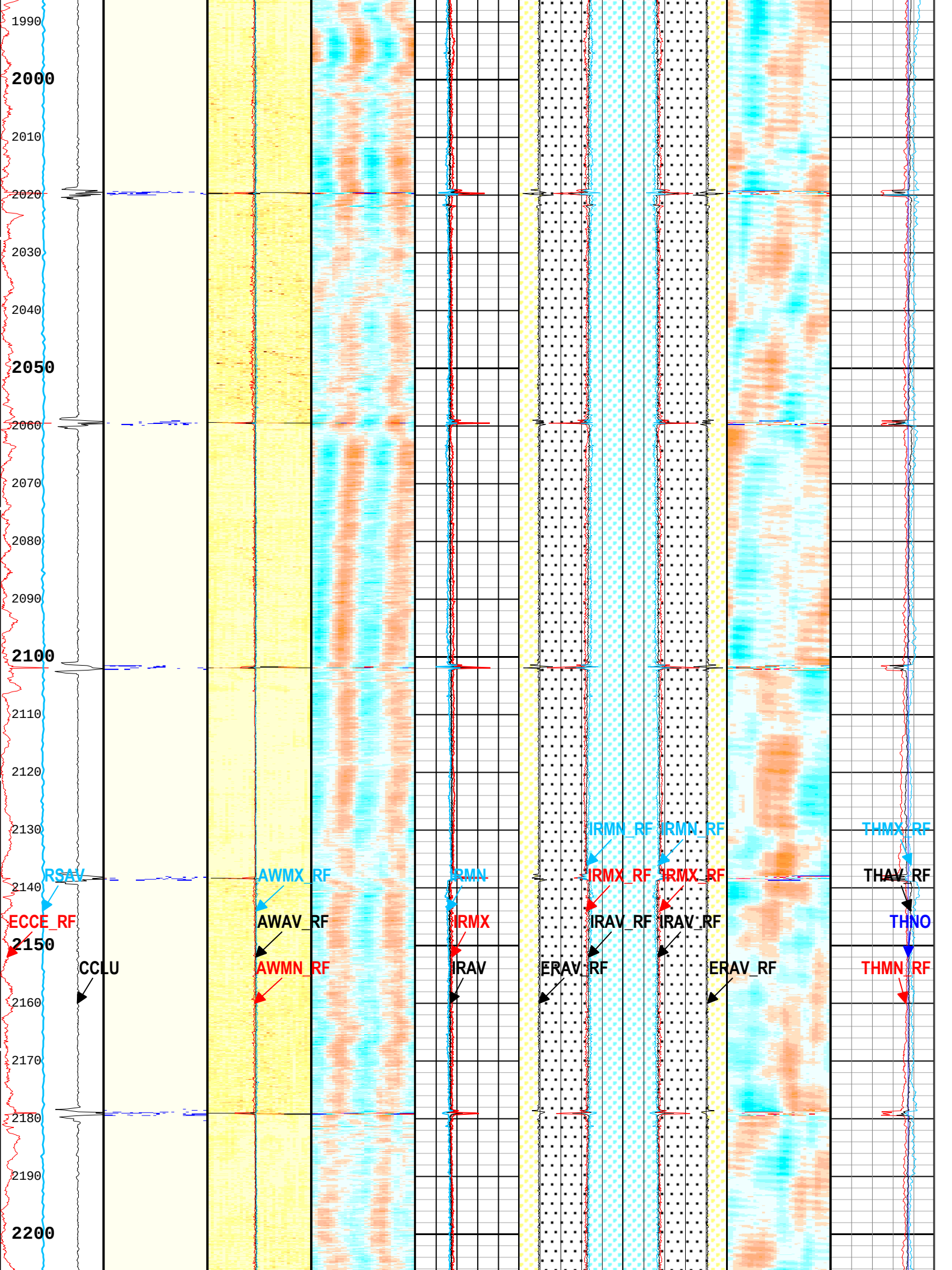
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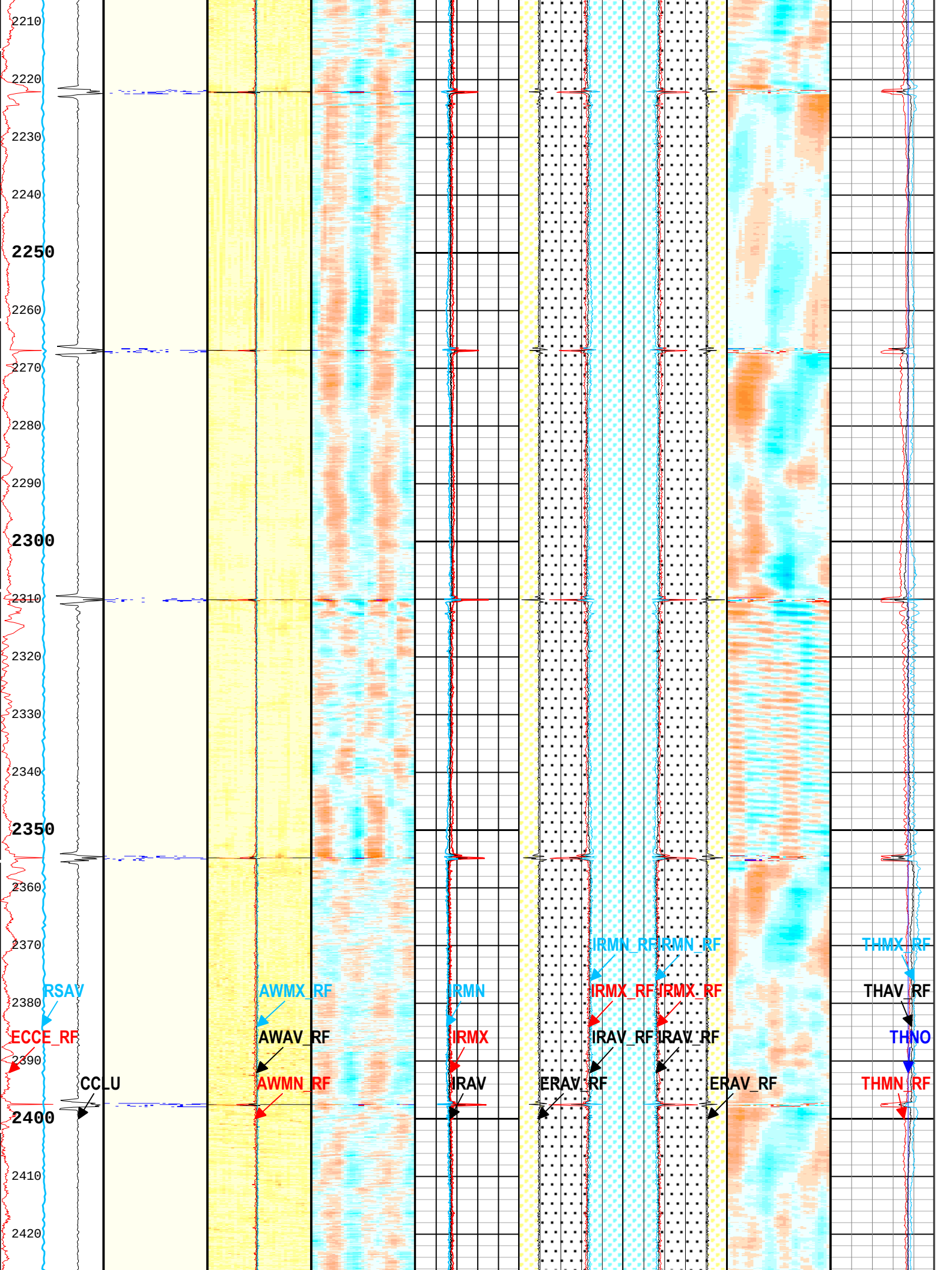
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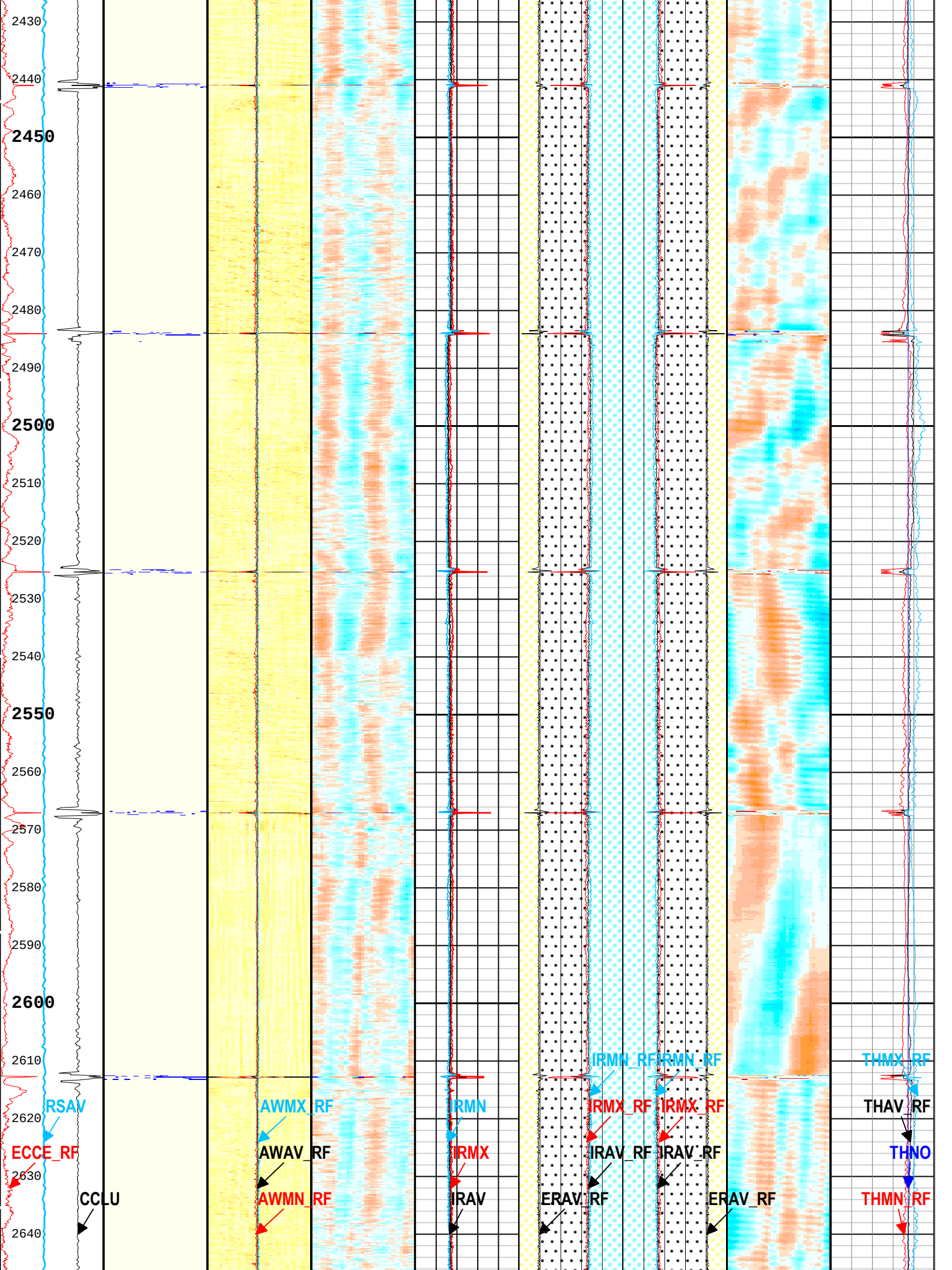
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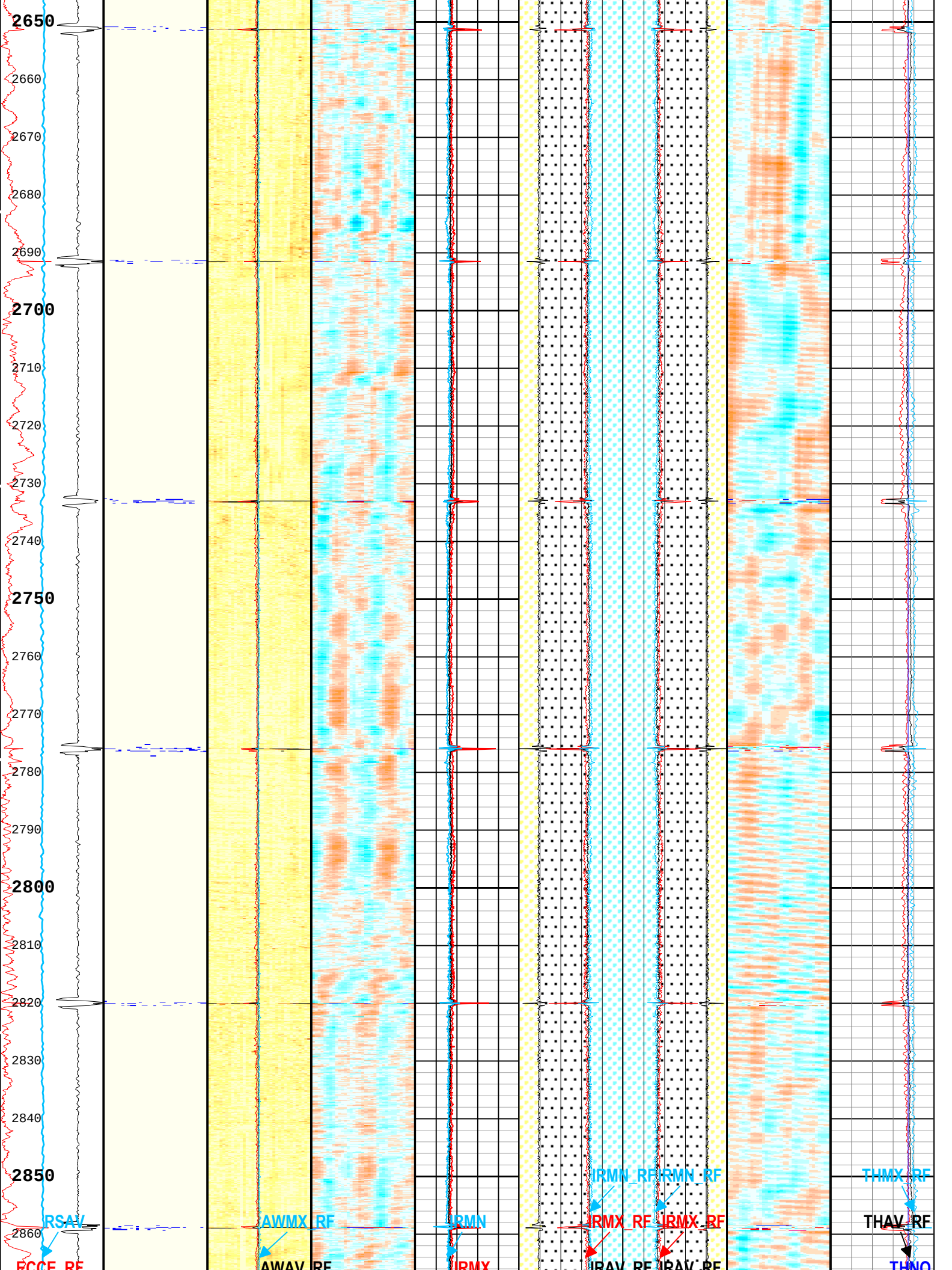
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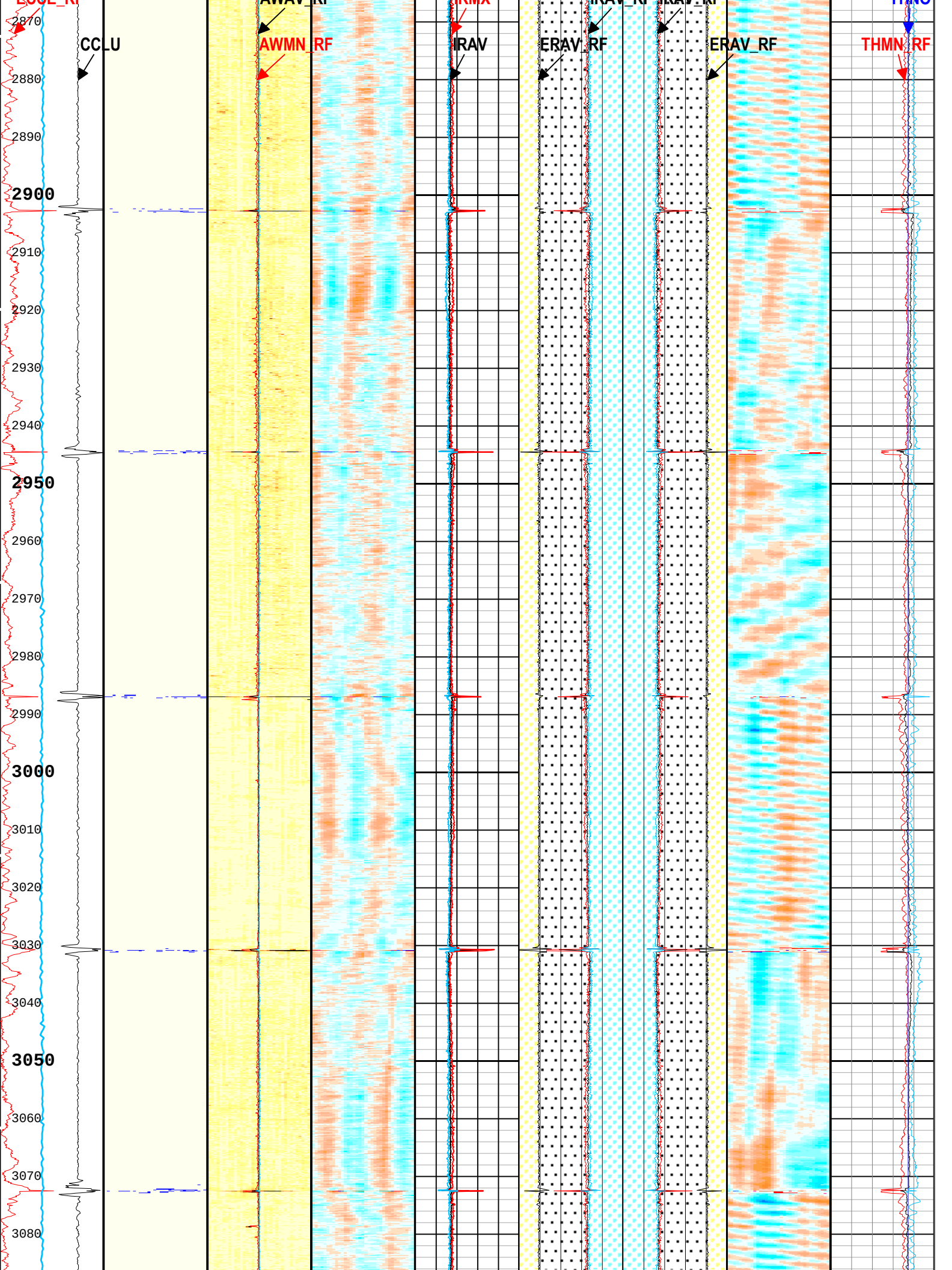
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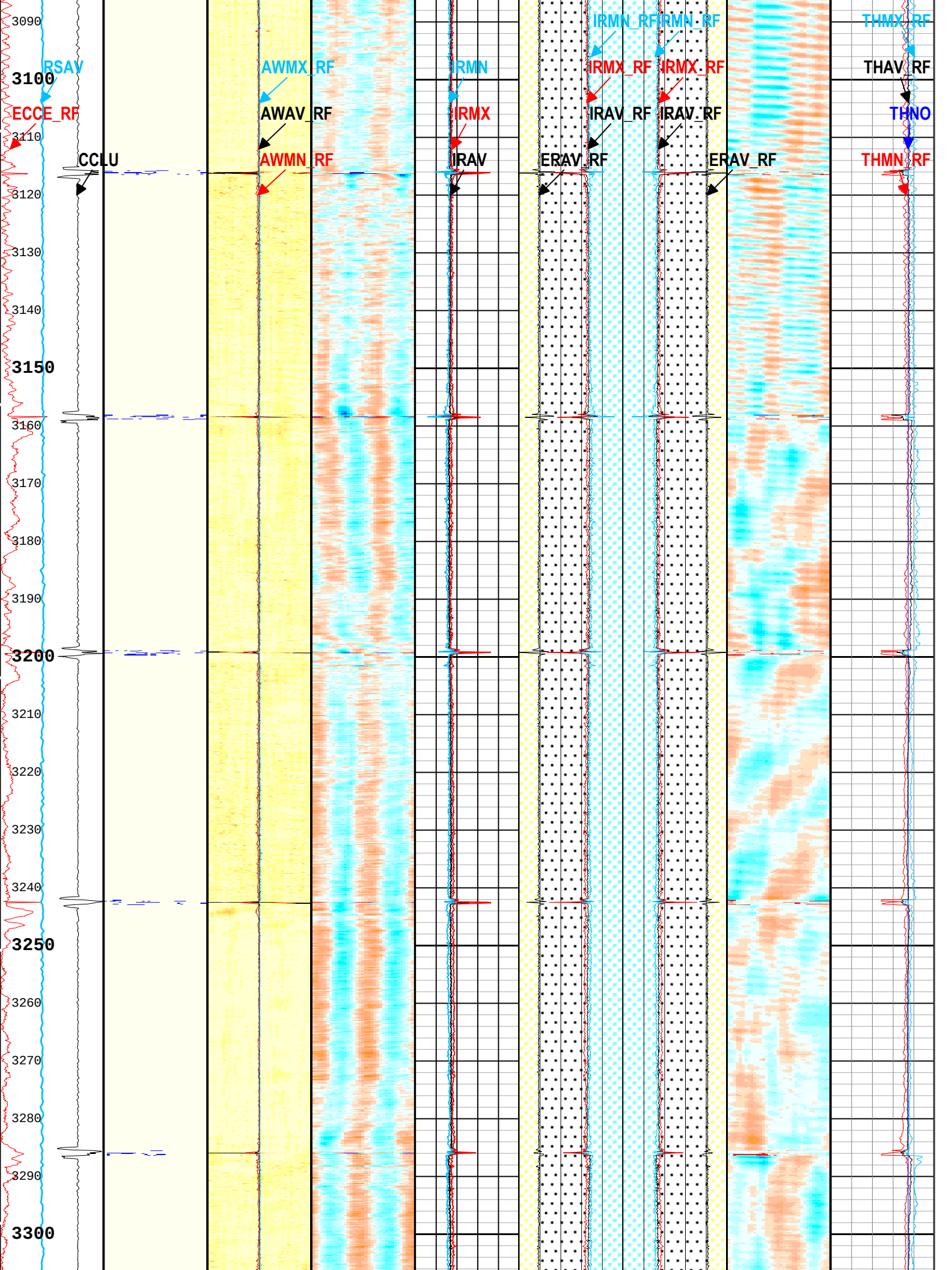
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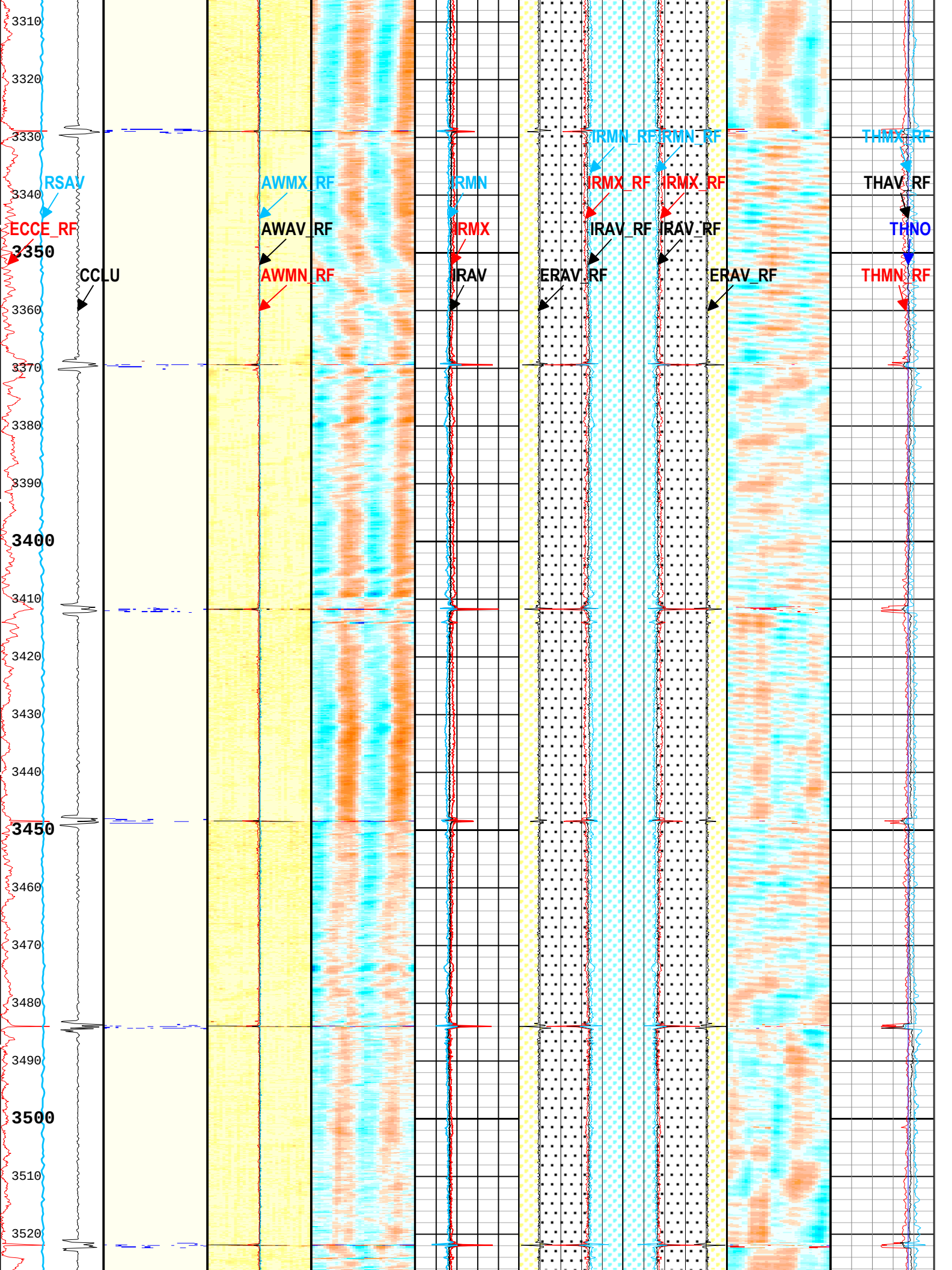
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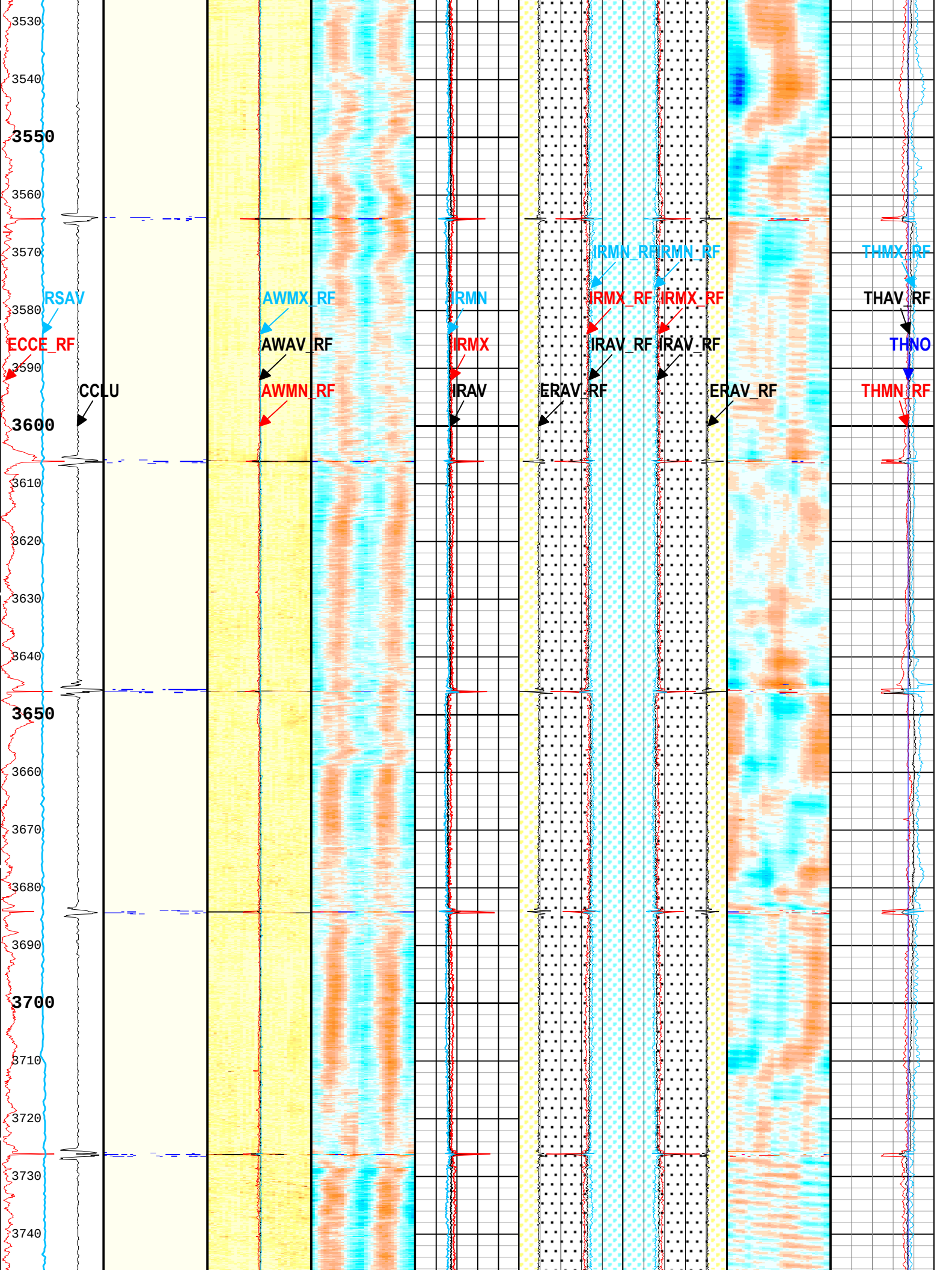
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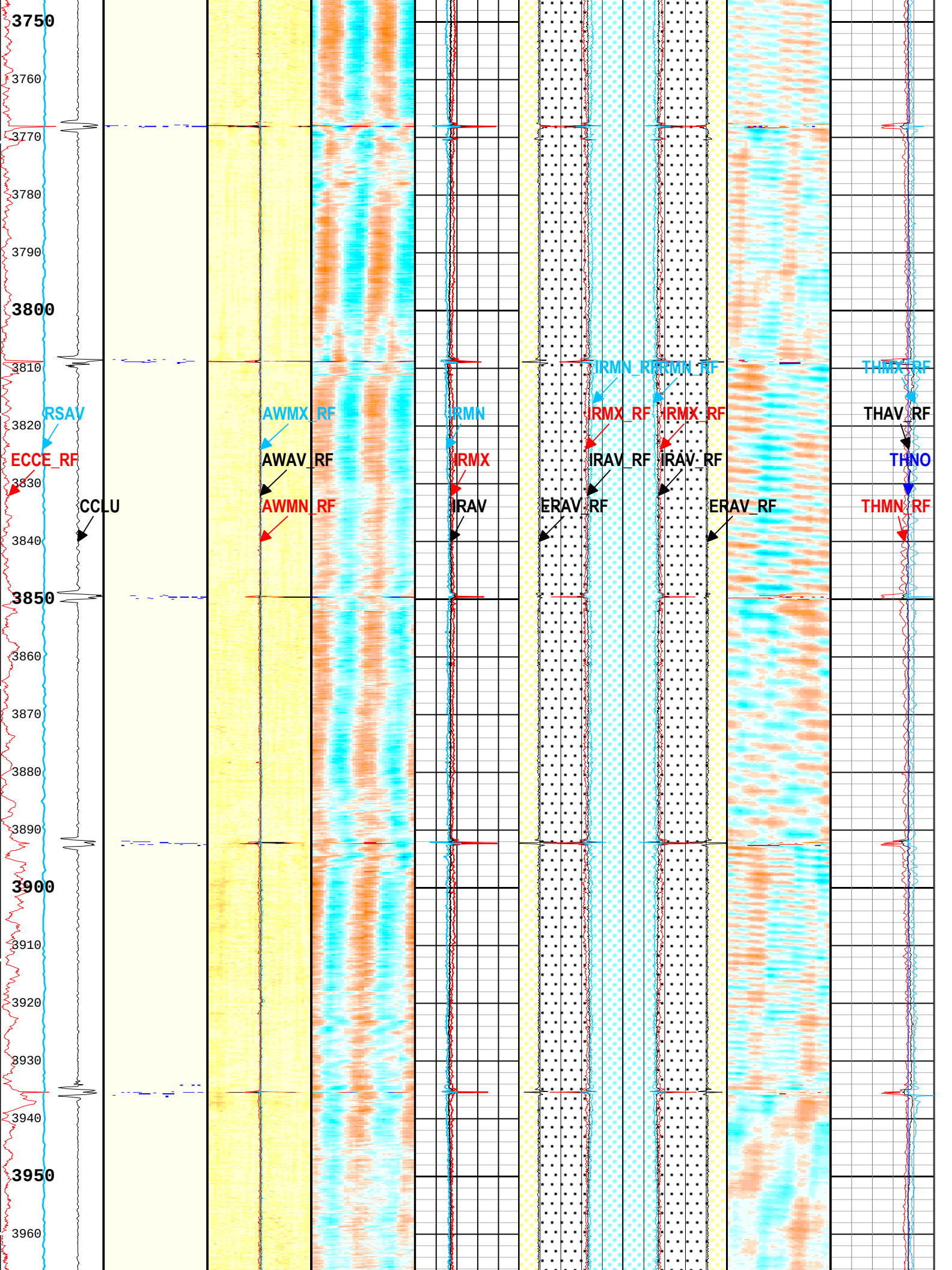
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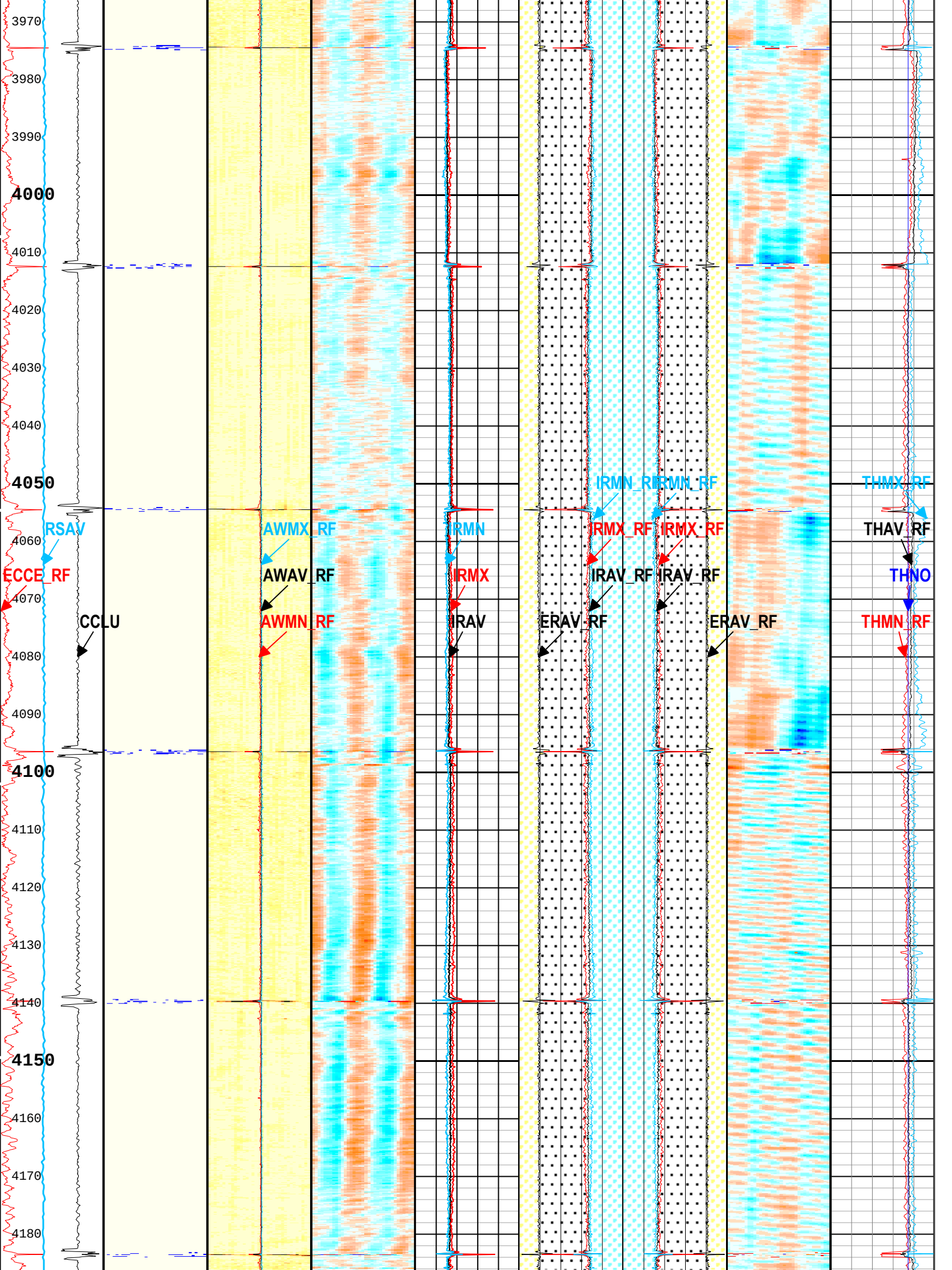
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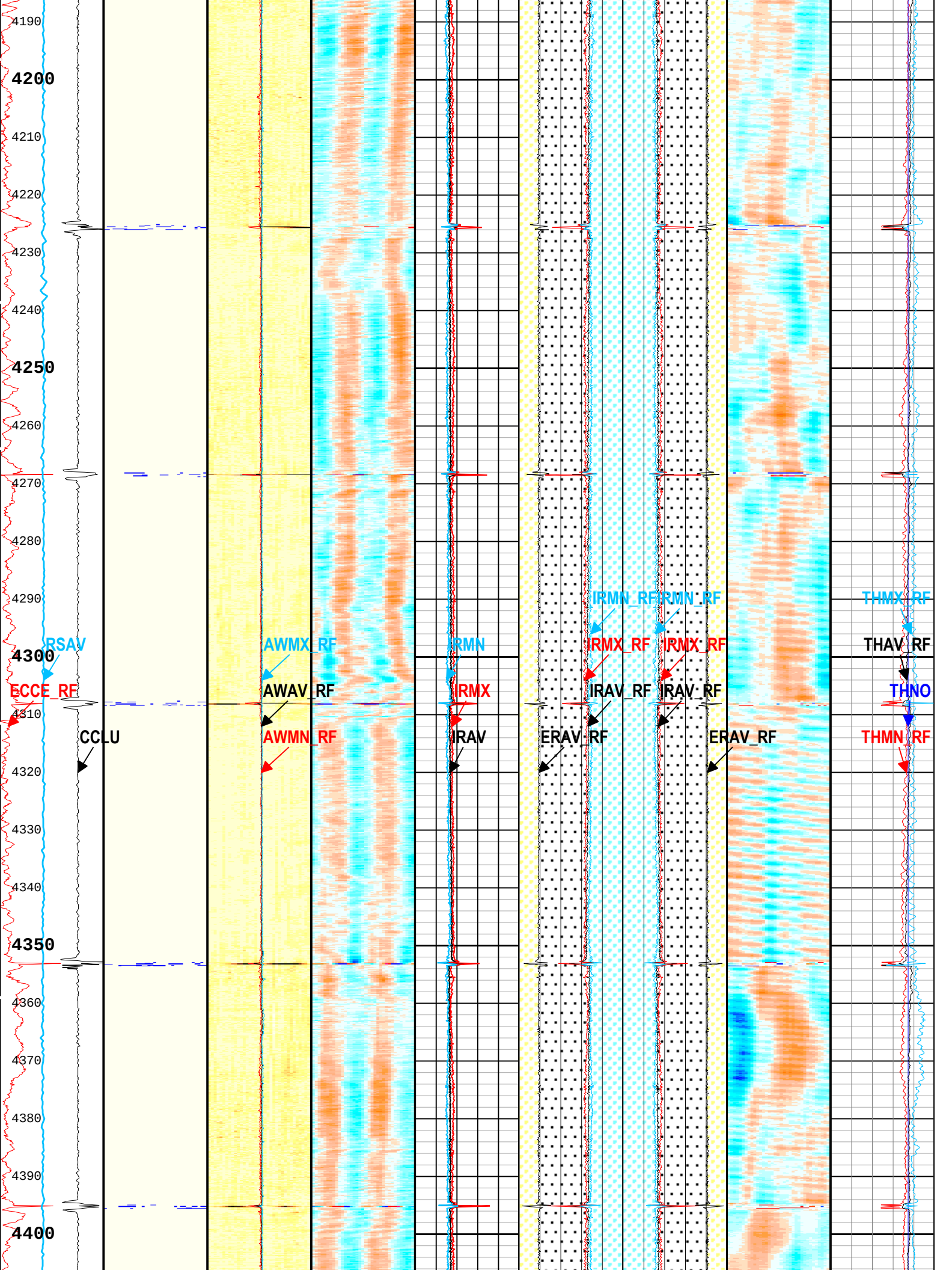
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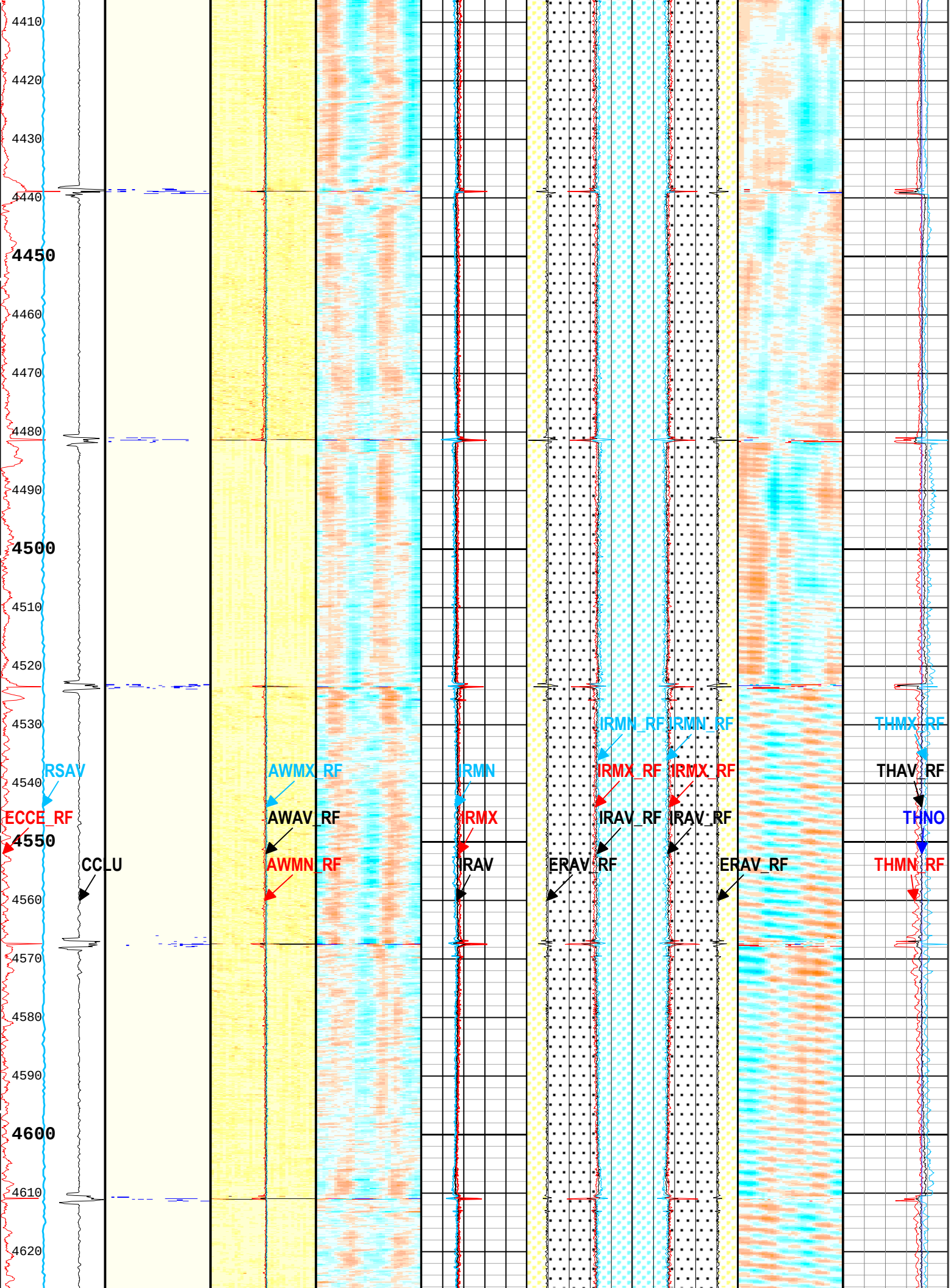
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CCLU
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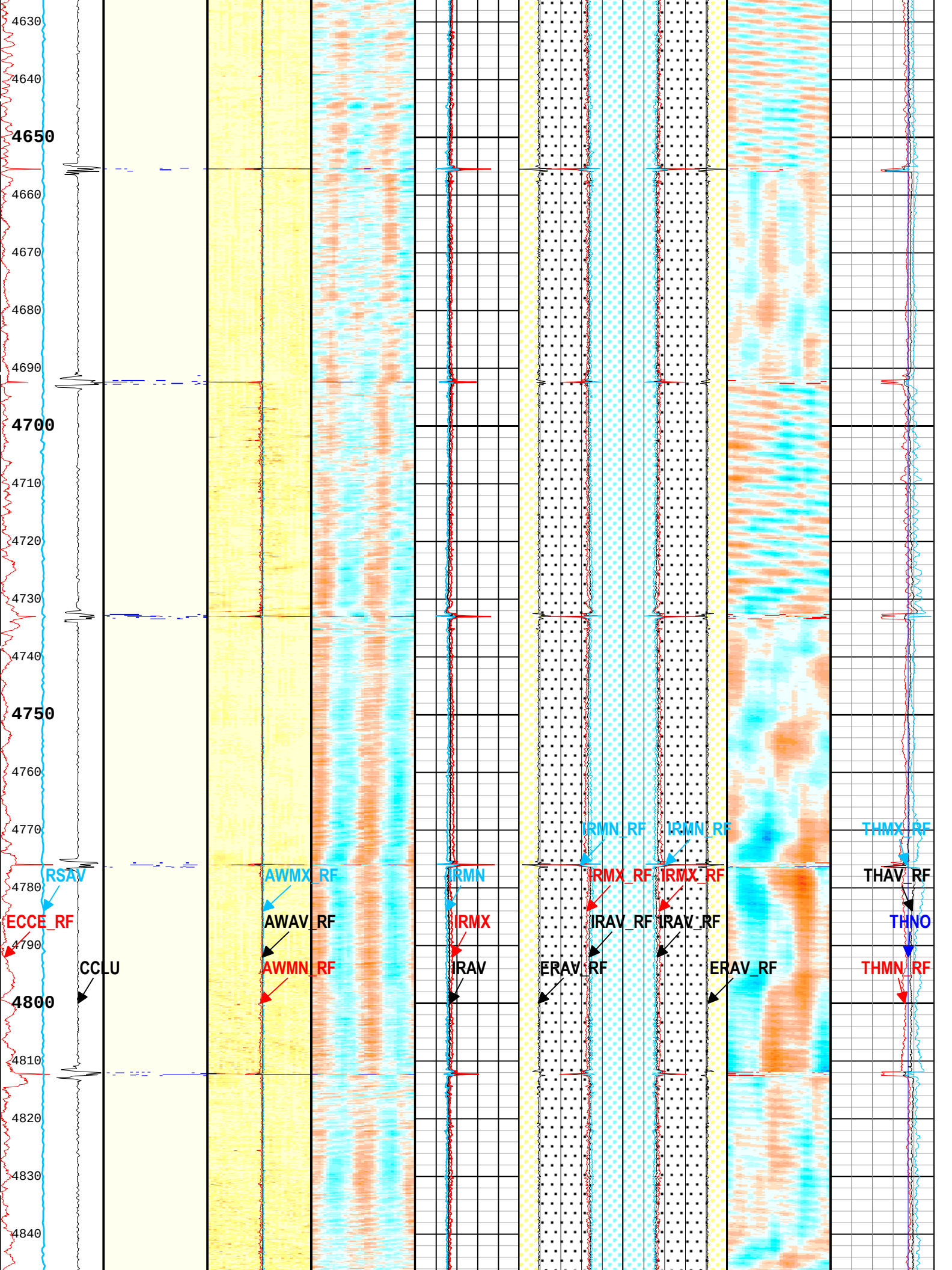
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RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
IRMN_RF
IRMX_RF
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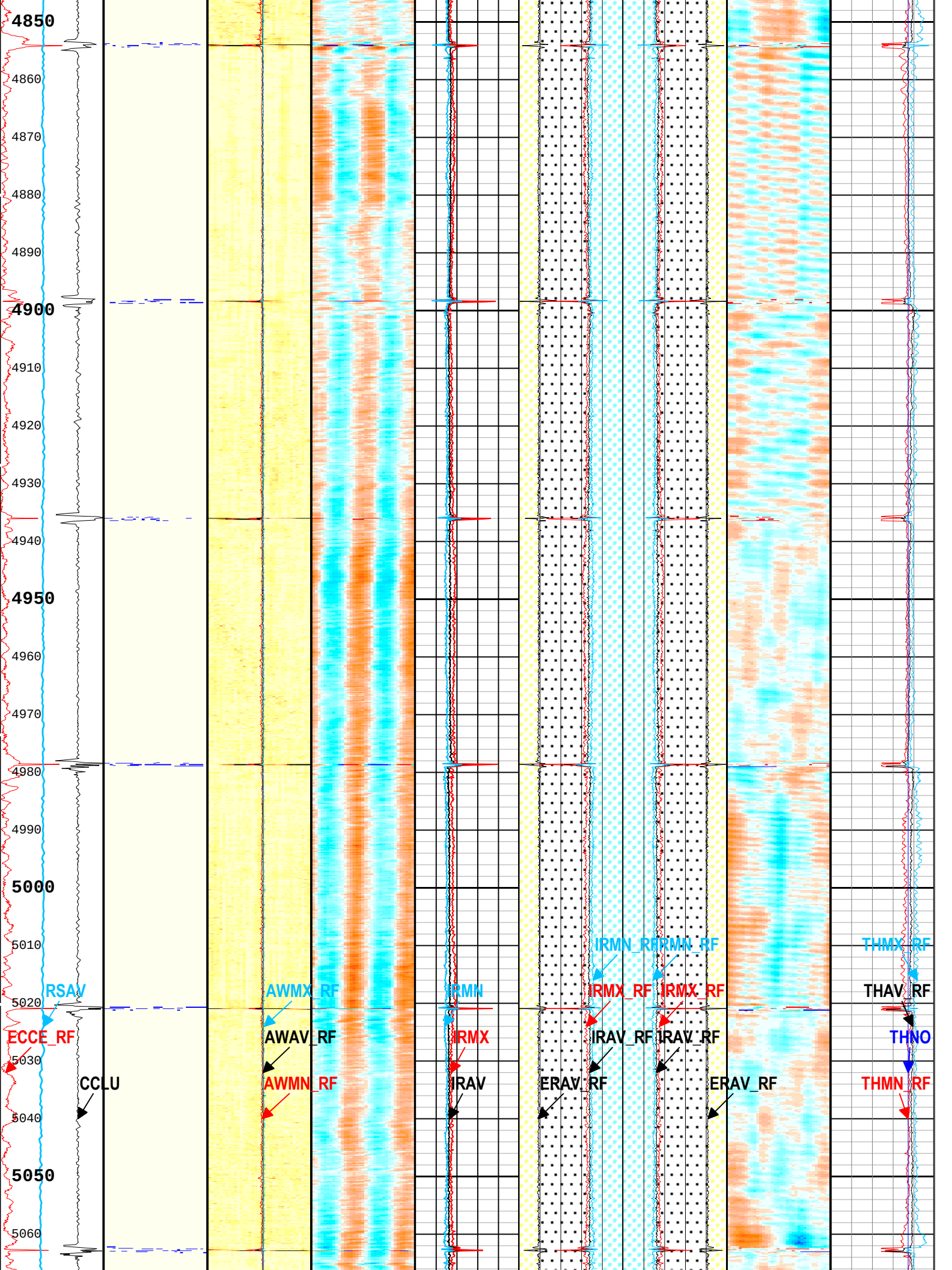
THNO
THMN_RF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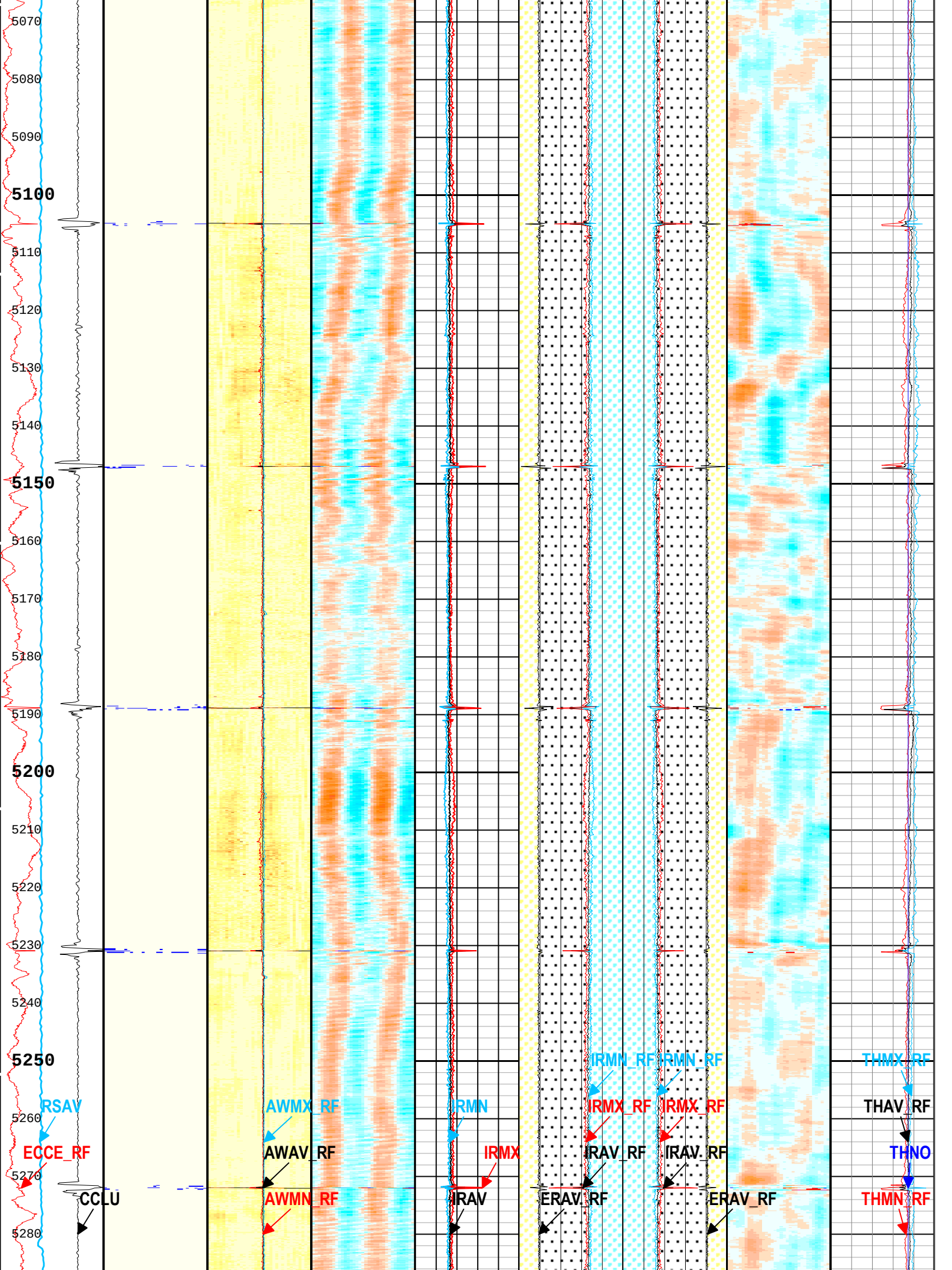
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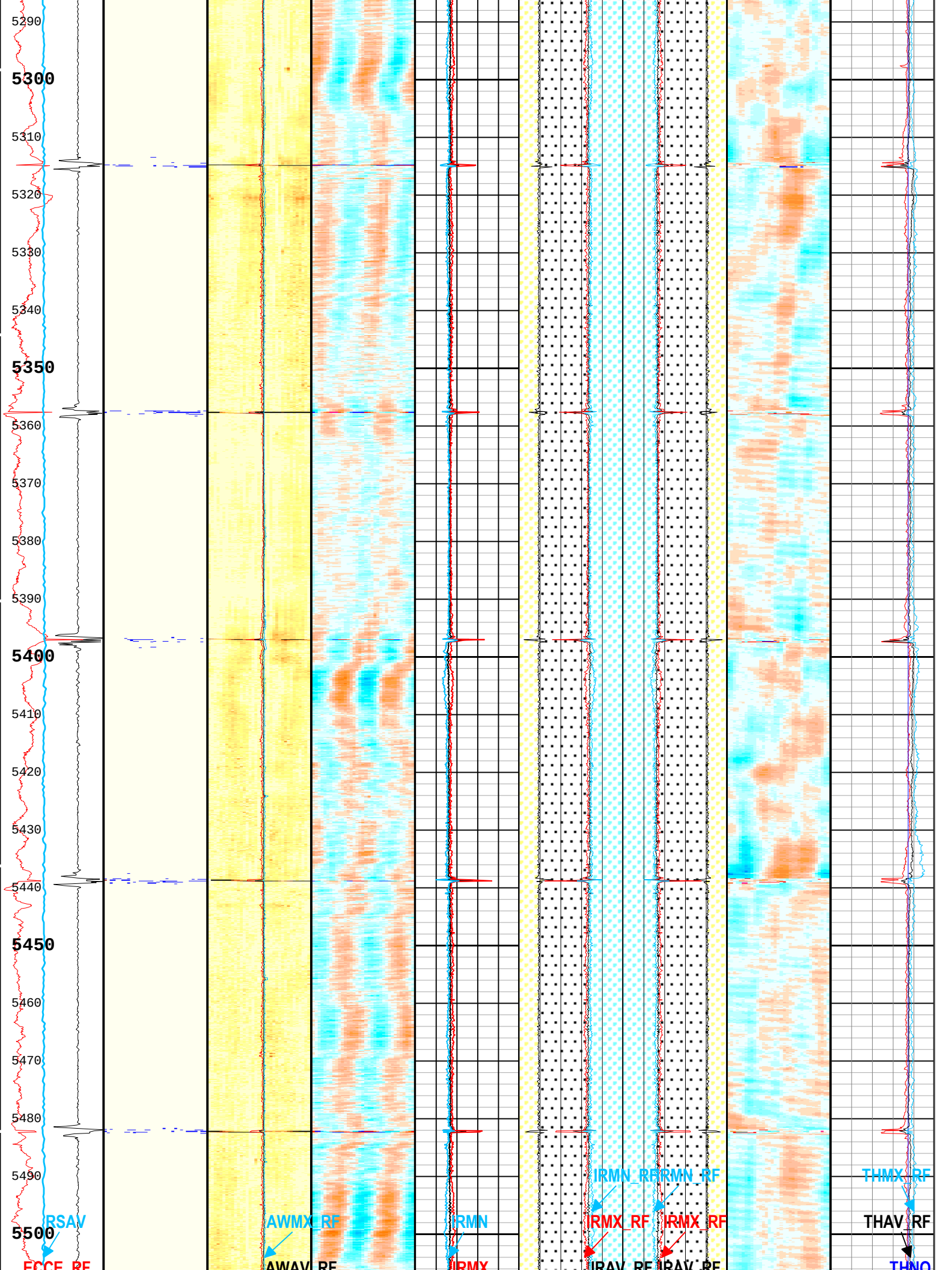
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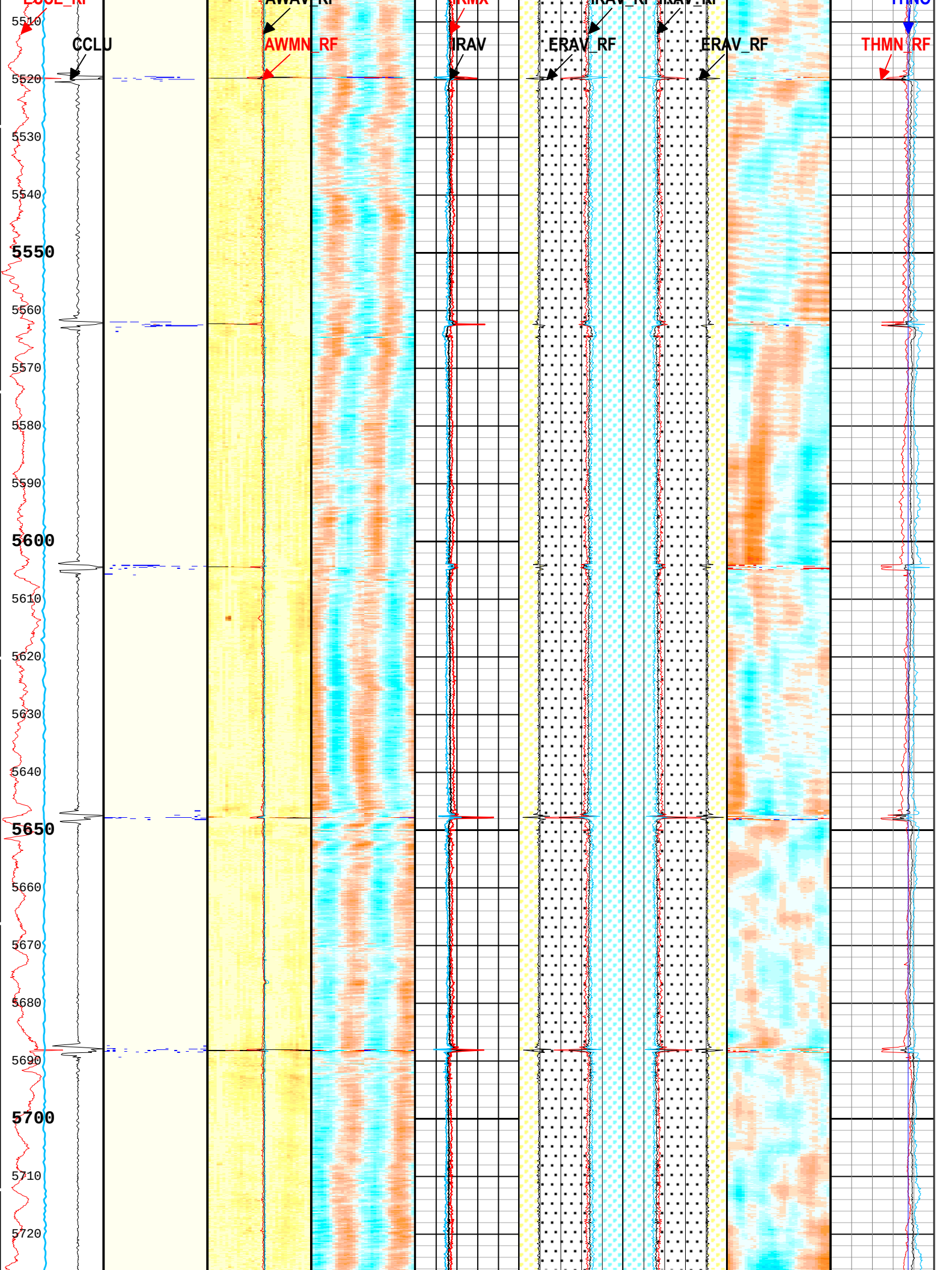
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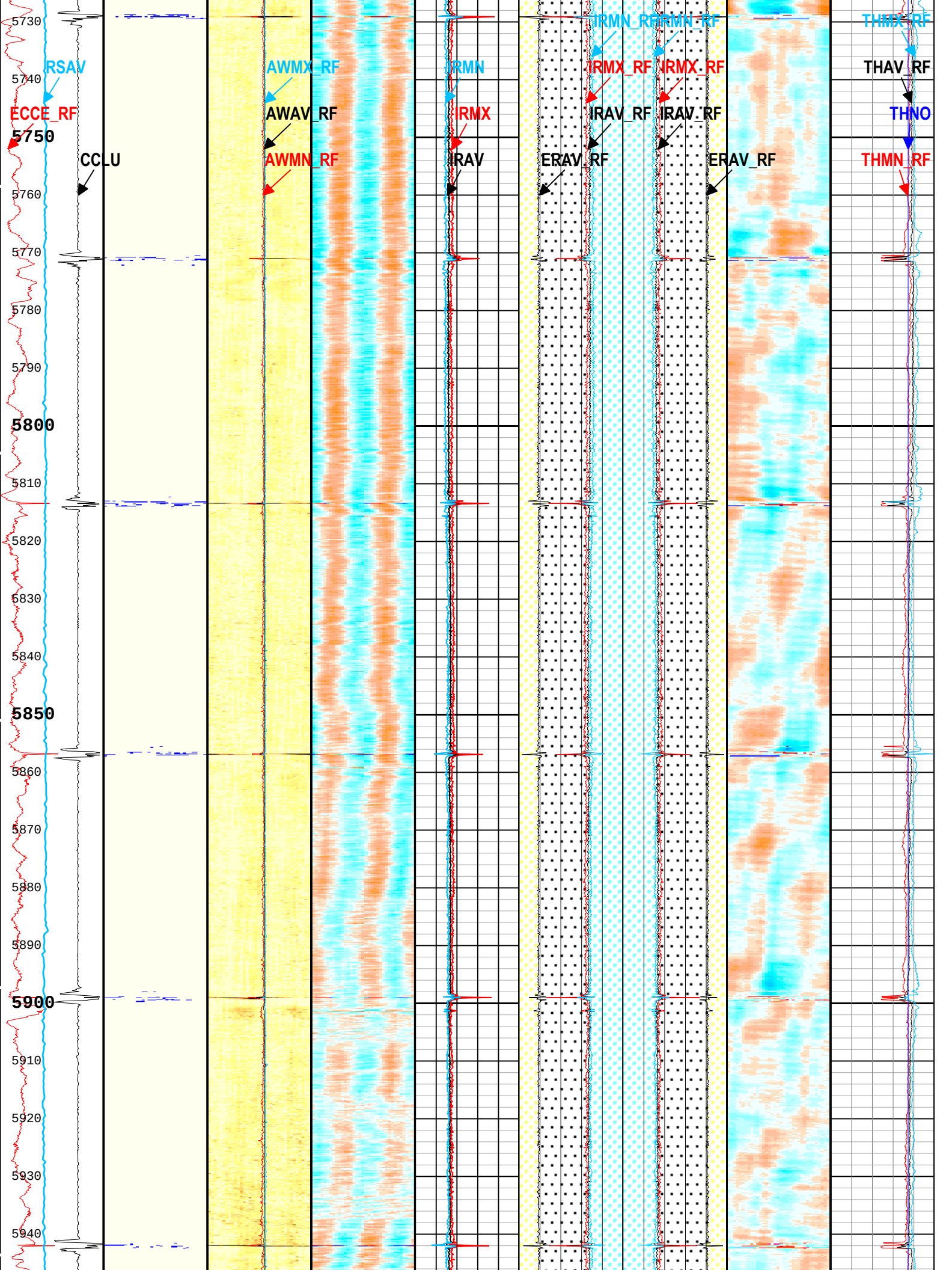
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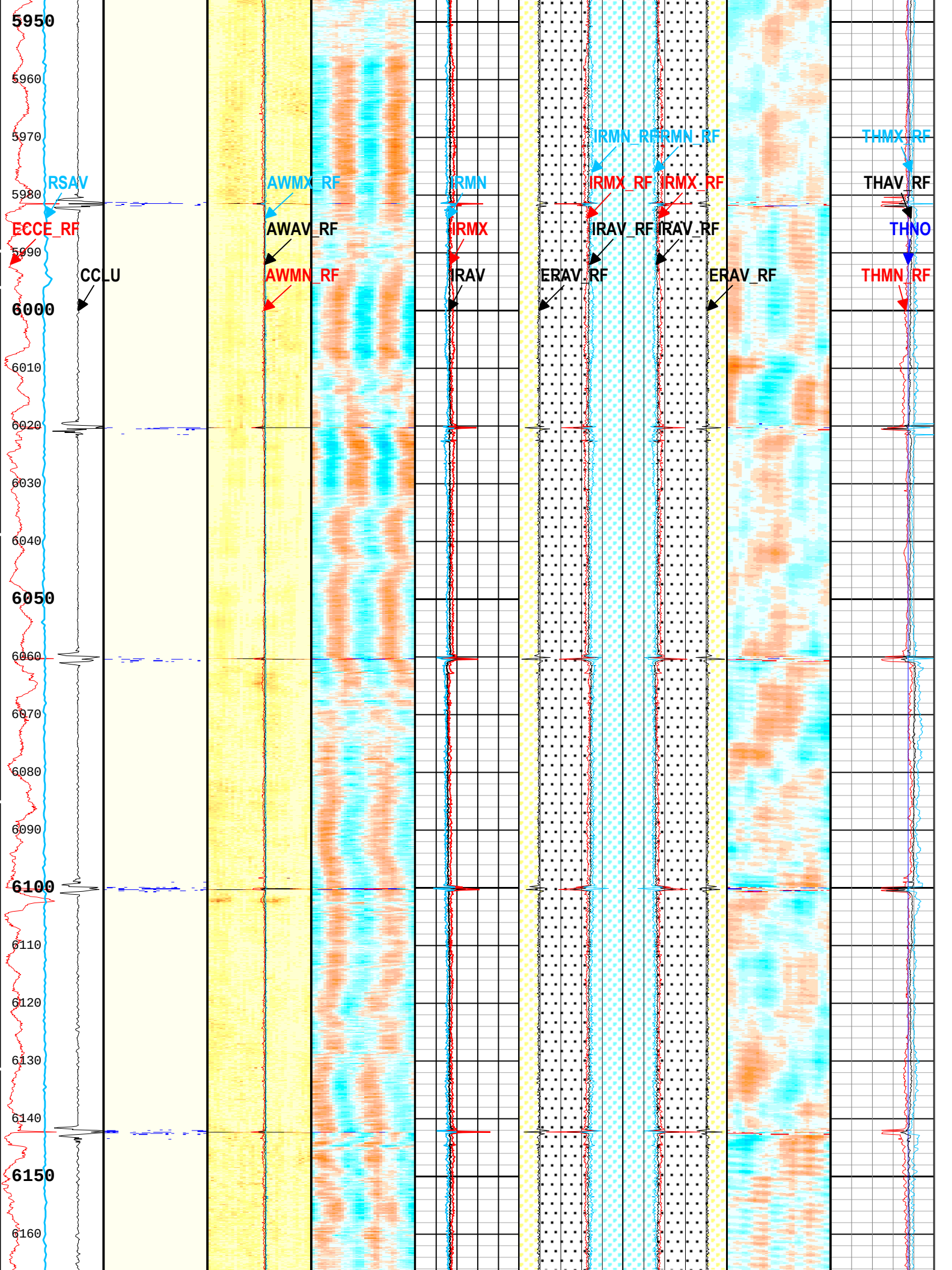
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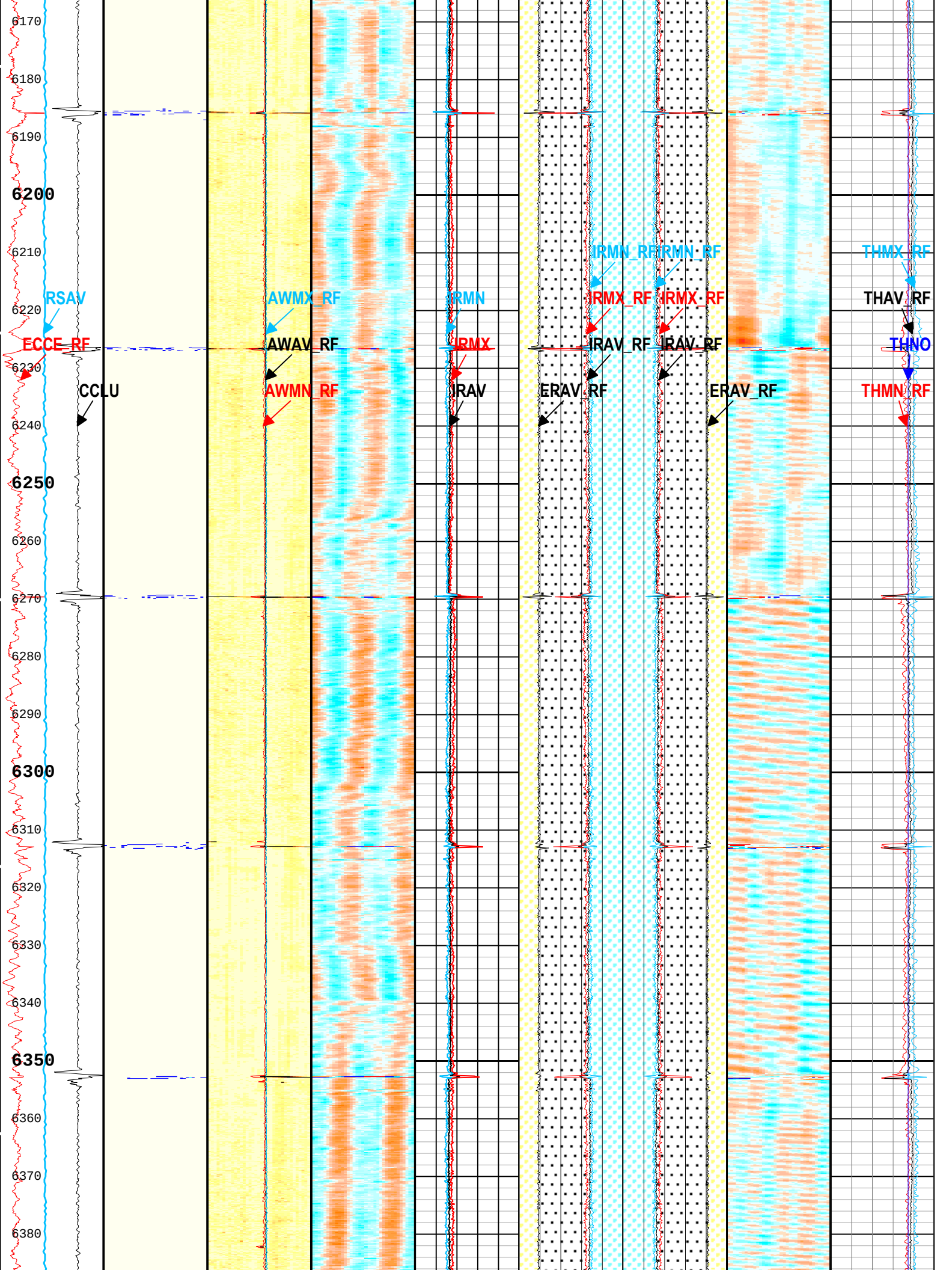
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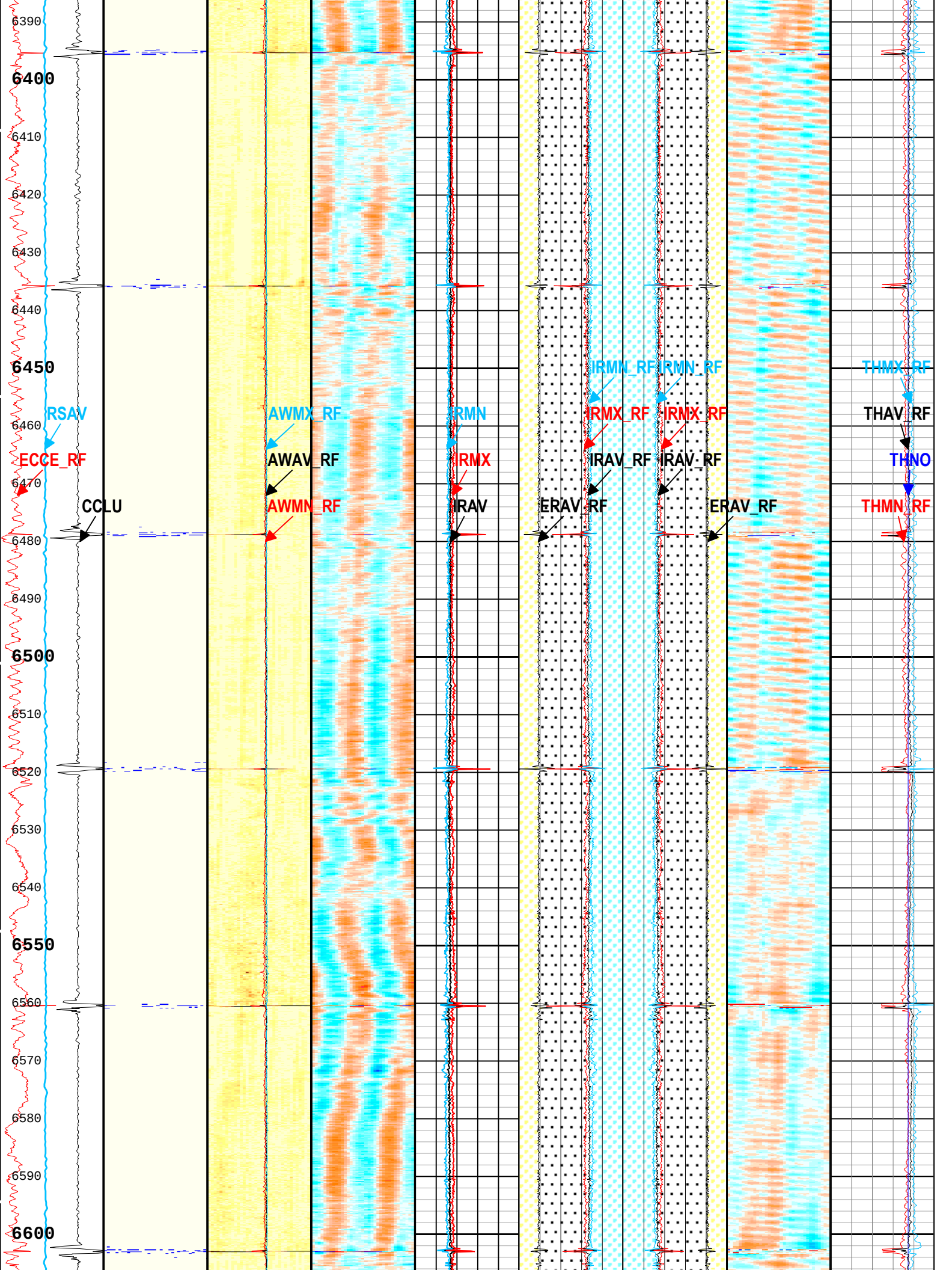
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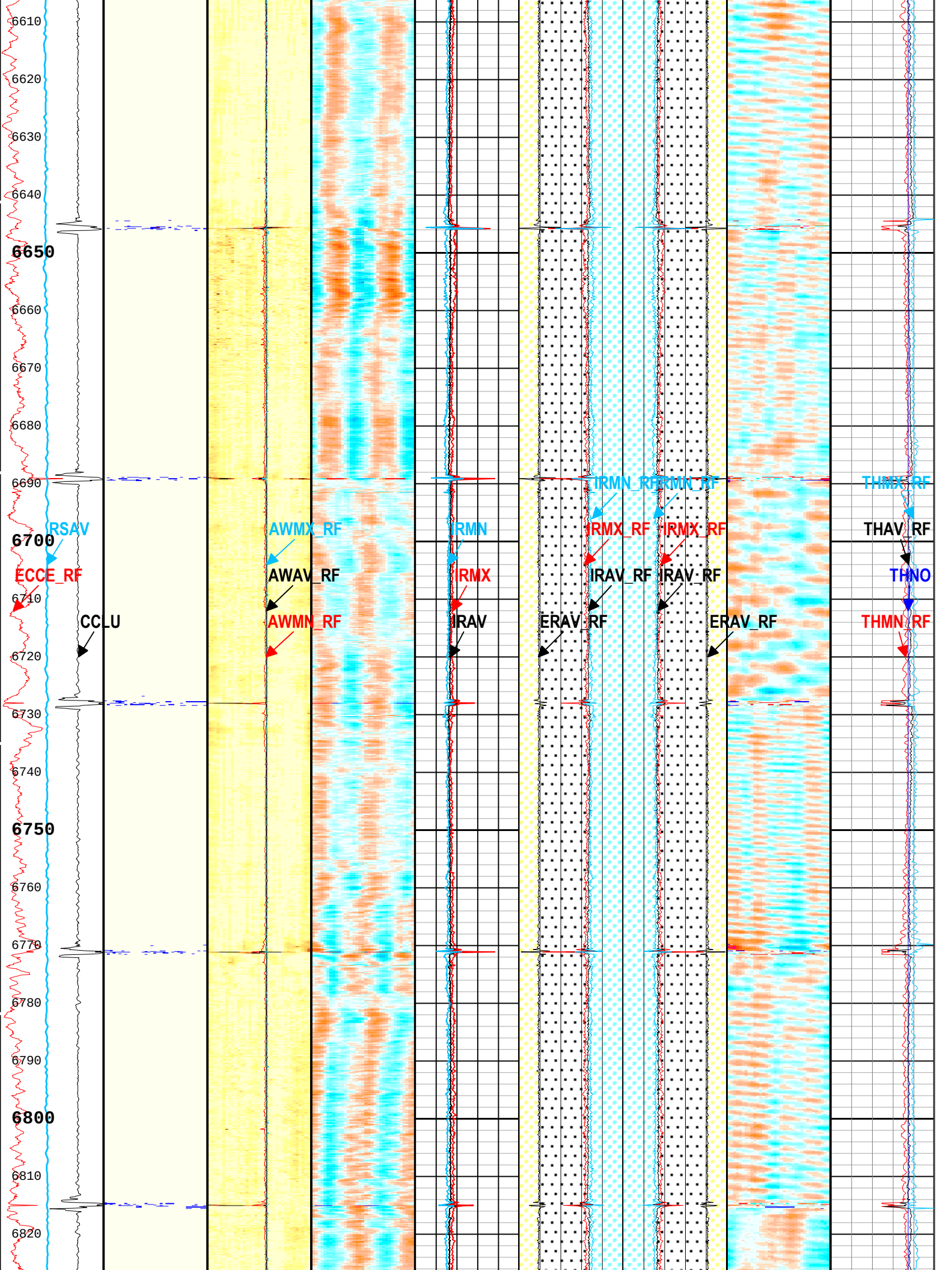
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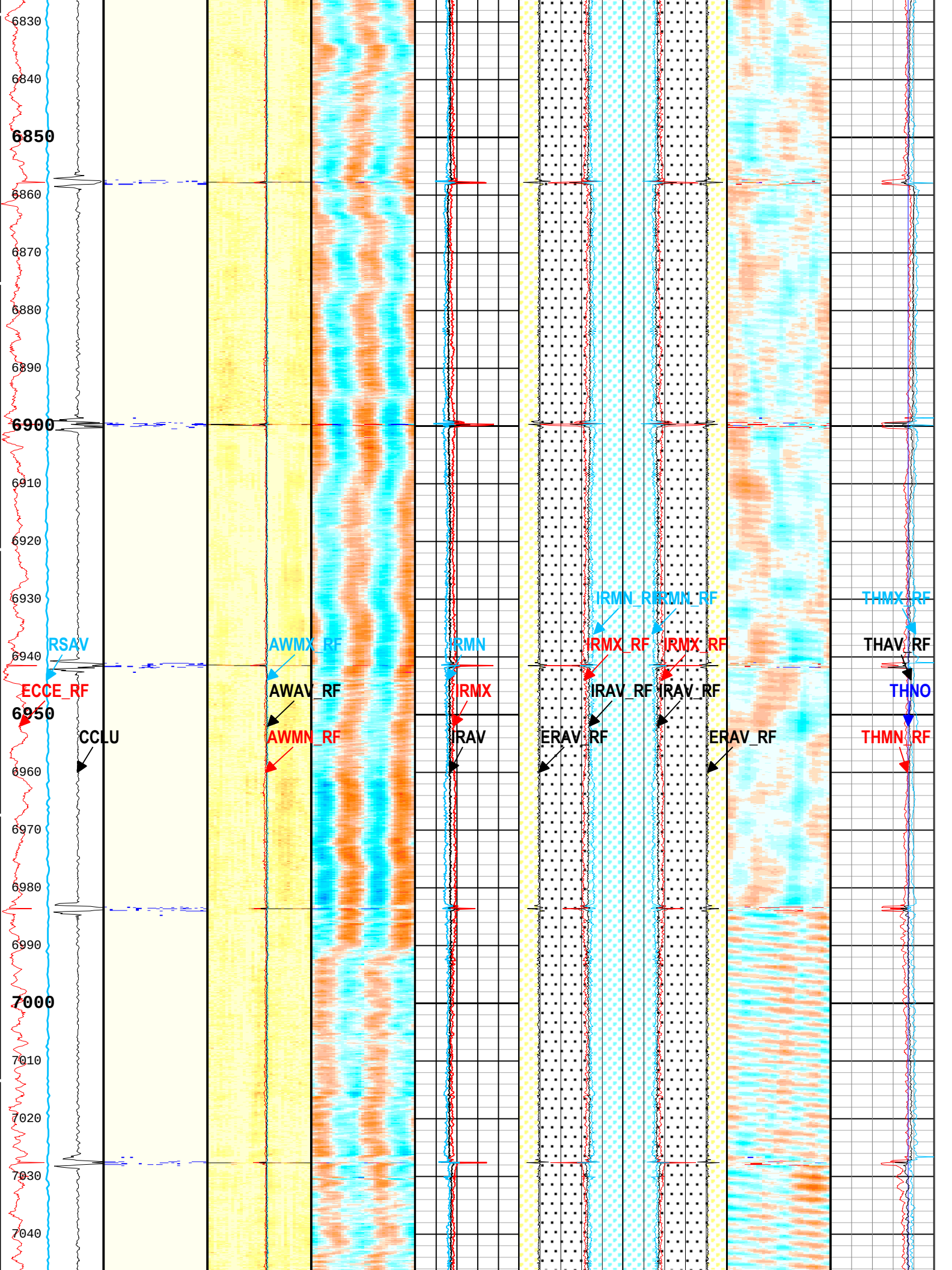
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AWMX_RF
AWAV_RF
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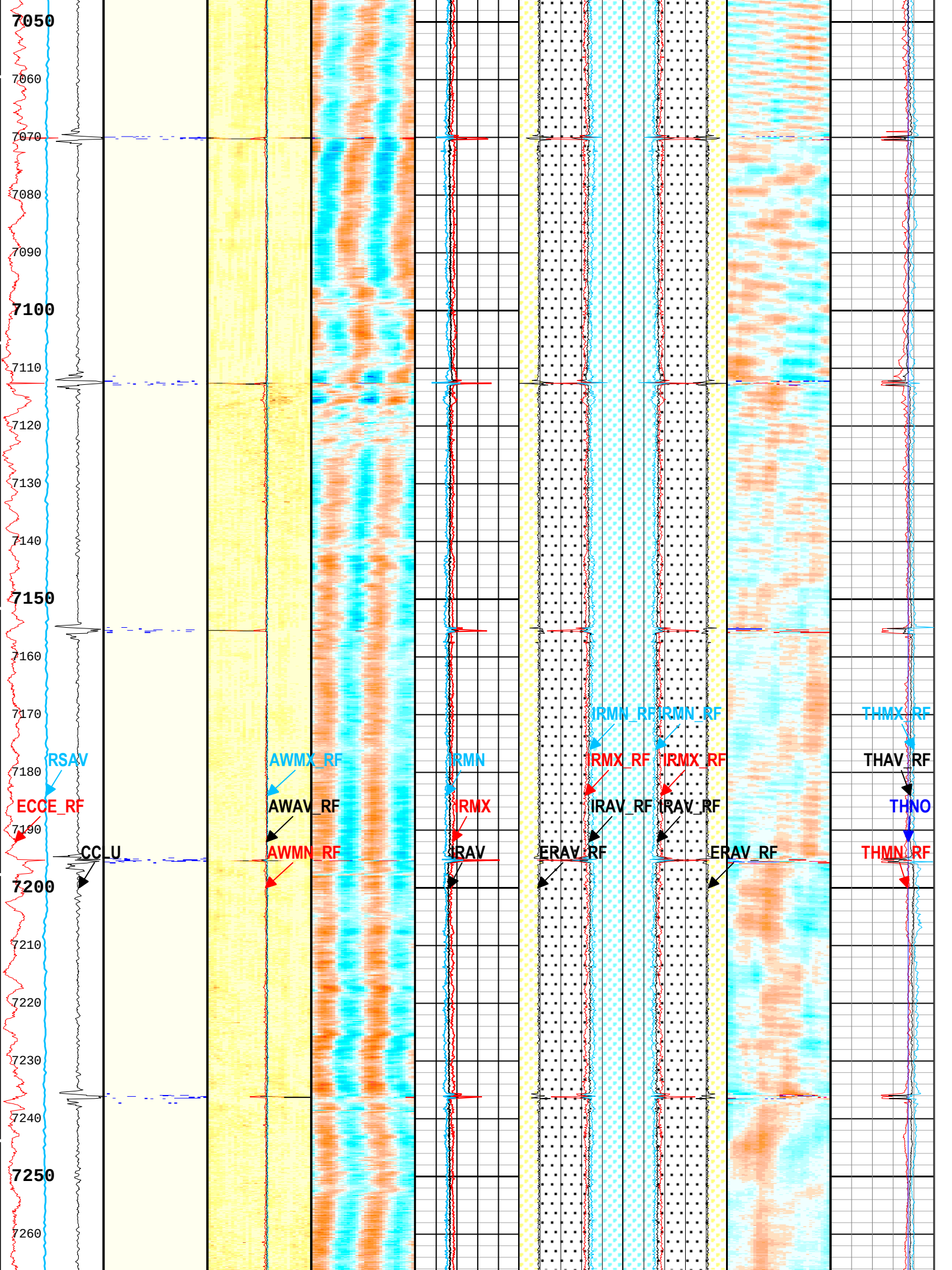
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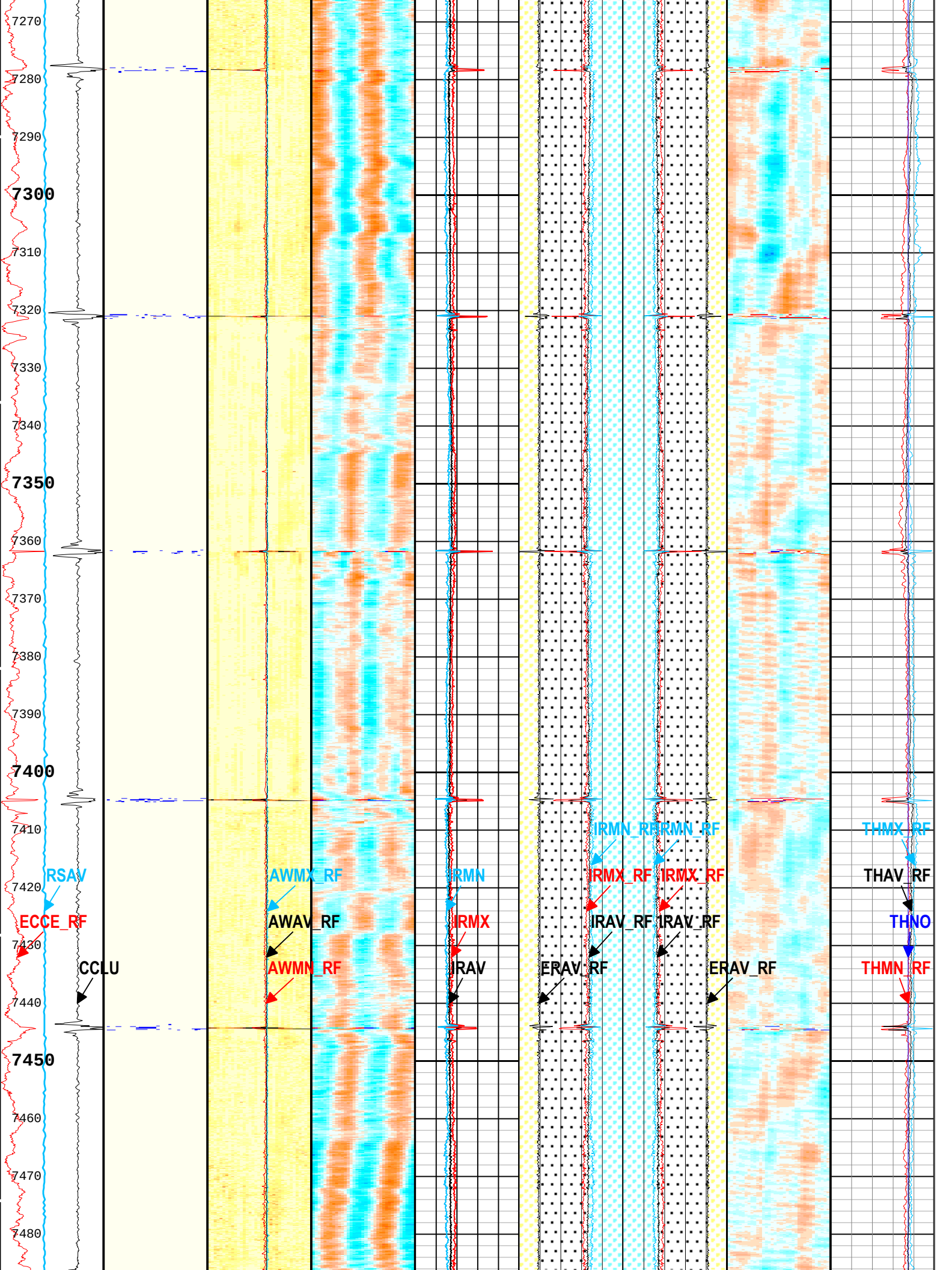
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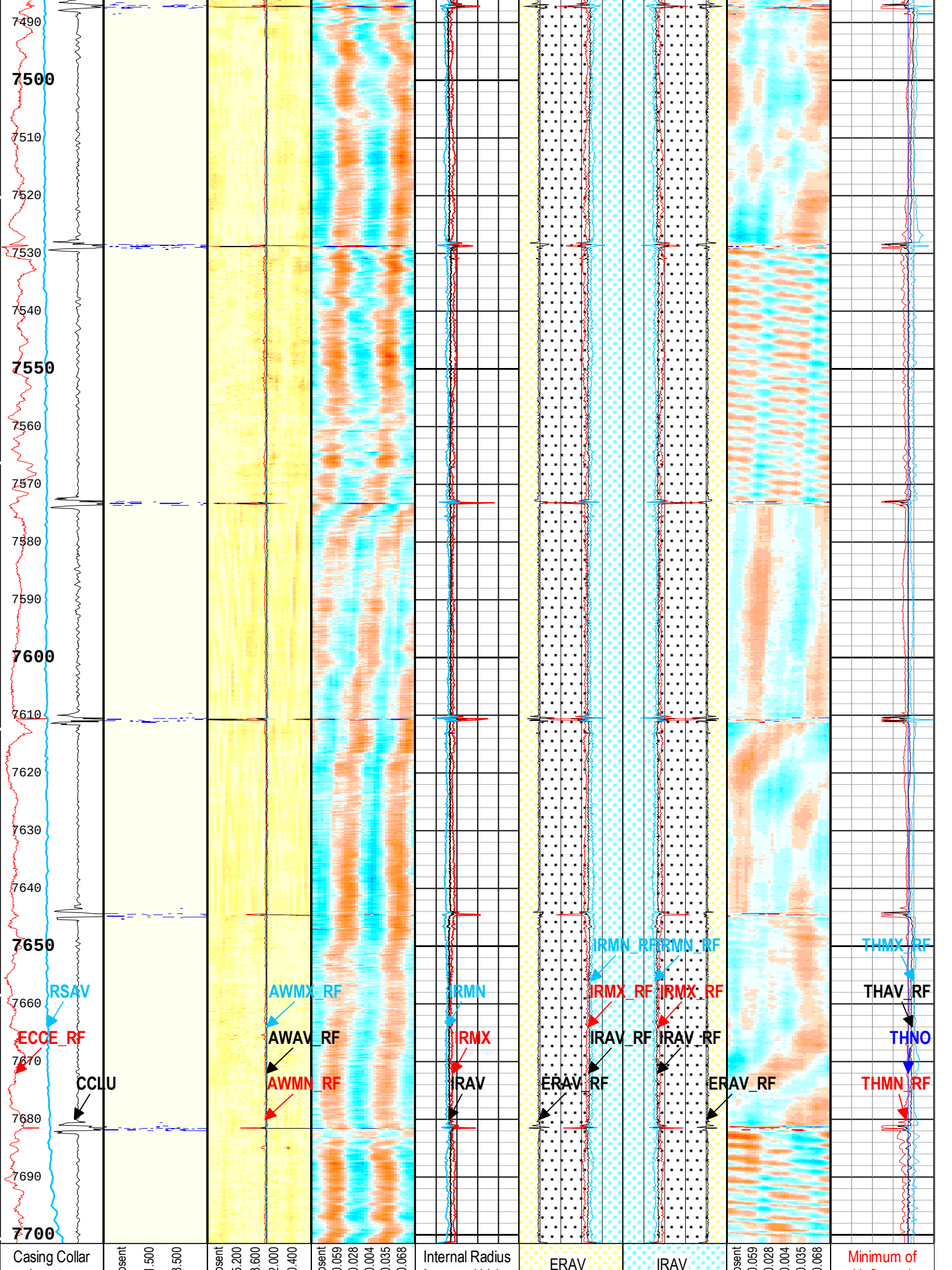
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ERAV_RF
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IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
Casing Collar
Internal Radius
ERAV
IRAV
Minimum of

Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8

Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]

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

Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1]
(dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75

Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1]
(in)

Averaged Value (IRAV) USIT-E[1]
4 in 5

Internal Radius Maximum Value (IRMX) USIT-E[1]
4 in 5

Internal Radius Minimum Value (IRMN) USIT-E[1]
4 in 5

ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4 in 5

Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E[1]
(in)

Unflagged Casing Thickness (THMN_RF) USIT-E[1]
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E[1]
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.1 in 0.6

TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:38:00

Composite 1

USI Compressed Goodwin

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[3]:Up	Up	219.03 ft	7701.92 ft	23-May-2016 8:10:50 AM	23-May-2016 10:52:33 AM	ON	-2.00 ft	Yes
R2D1	Log[18]:Up	Up	67.11 ft	1045.45 ft	23-May-2016 1:20:29 PM	23-May-2016 1:43:41 PM	ON	2.67 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K
Composite 1:S002

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date:

23-May-2016 18:38:50

TIME_1900 - Time Marked every 60.00 (s)

Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E[1]	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E[1]	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E[1]	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10
Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E[1]	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E[1]	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E[1]	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10
Average Acoustic Impedance 1 (AV_AI1) USIT-E[1]	Average Acoustic Impedance 3 (AV_AI3) USIT-E[1]	Average Acoustic Impedance 5 (AV_AI5) USIT-E[1]	Average Acoustic Impedance 7 (AV_AI7) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10

Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E[1]	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E[1]	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E[1]	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E[1]	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E[1]	Acoustic Impedance Minimum (AIMN) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9
Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E[1]	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E[1]	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E[1]	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E[1]	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E[1]	Acoustic Impedance Maximum (AIMX) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9
Average Acoustic Impedance 2 (AV_AI2) USIT-E[1]	Average Acoustic Impedance 4 (AV_AI4) USIT-E[1]	Average Acoustic Impedance 6 (AV_AI6) USIT-E[1]	Average Acoustic Impedance 8 (AV_AI8) USIT-E[1]	Average Acoustic Impedance 9 (AV_AI9) USIT-E[1]	Acoustic Impedance Average (AIAV) USIT-E[1]
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9

GR
0 gAPI 150

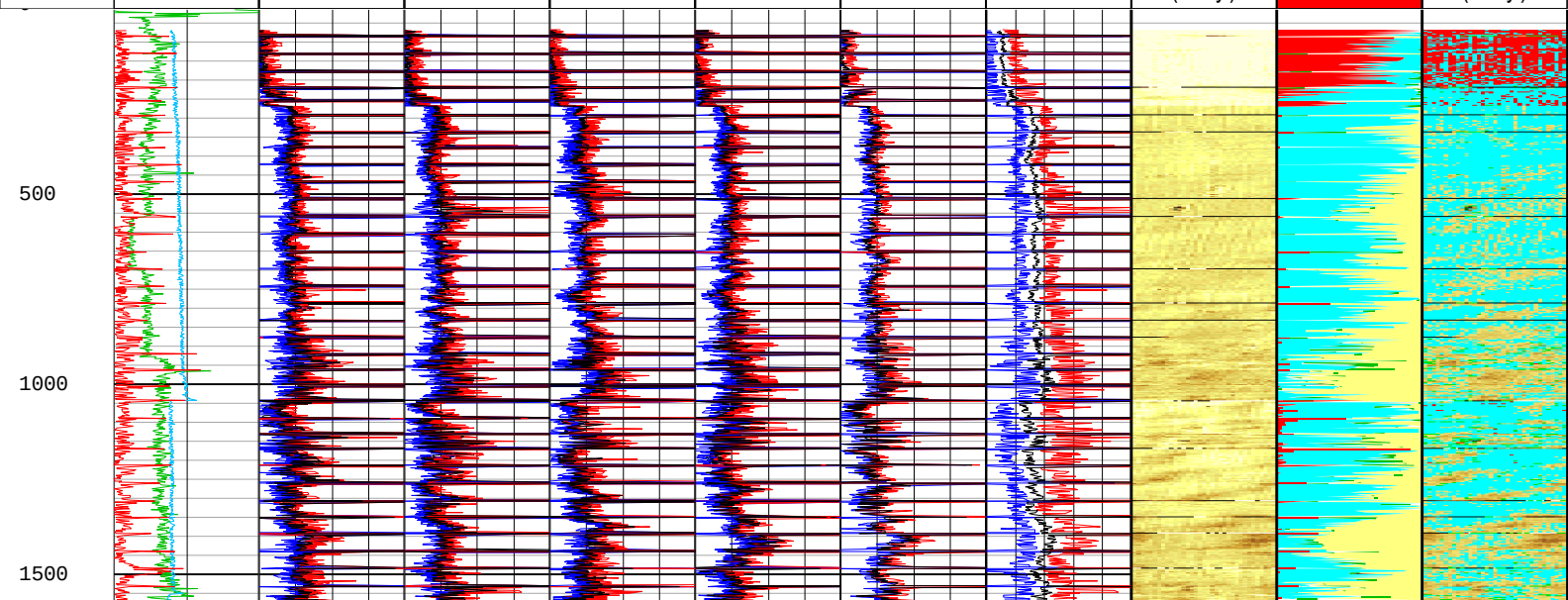
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8

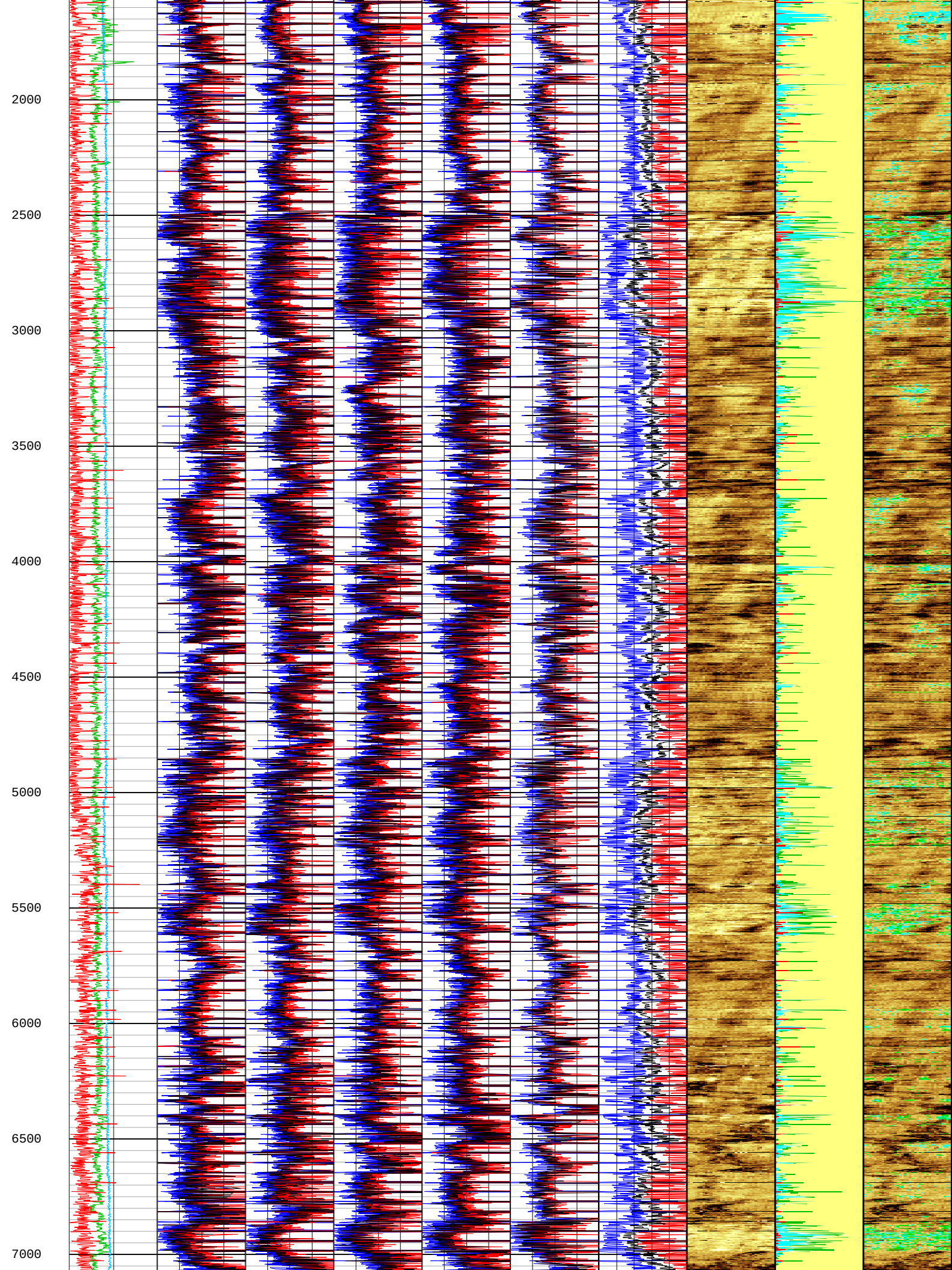
Amplitude of Eccentering (ECCE) USIT-E[1]
0 in 0.5

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

Bonded
Micro-Debonding
Liquid
Gas

-1000.000 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)

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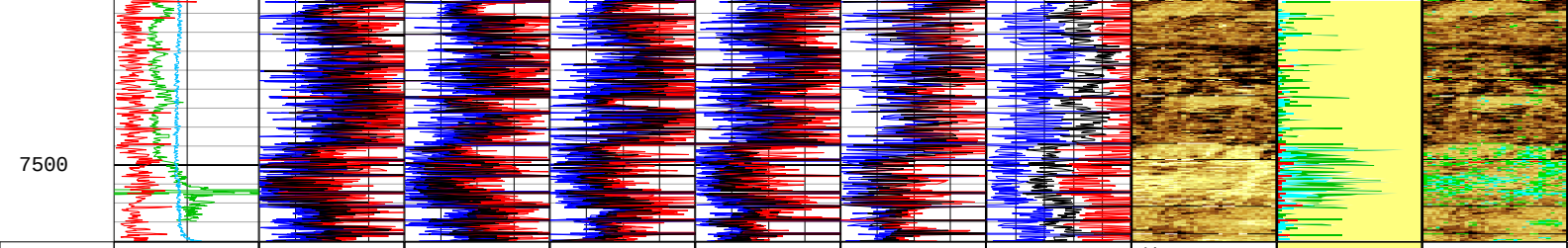


GR 0 gAPI 150	Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E[1] 0 Mrayl 10	Acoustic Impedance Minimum (AIMN) USIT-E[1] -1 Mrayl 9
Motor Revolution Speed (RSAV) USIT-E[1] 6 c/s 8	Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E[1] 0 Mrayl 10	Acoustic Impedance Maximum (AIMX) USIT-E[1] -1 Mrayl 9
Amplitude of Eccentering (ECCE) USIT-E[1] 0 in 0.5	Average Acoustic Impedance 1 (AV_AI1) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 3 (AV_AI3) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 5 (AV_AI5) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 7 (AV_AI7) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 9 (AV_AI9) USIT-E[1] 0 Mrayl 10	Acoustic Impedance Average (AIAV) USIT-E[1] -1 Mrayl 9
	Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E[1] 0 Mrayl 10	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E[1] 0 Mrayl 10		
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E[1] 0 Mrayl 10	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E[1] 0 Mrayl 10		
	Average Acoustic Impedance 2 (AV_AI2) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 4 (AV_AI4) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 6 (AV_AI6) USIT-E[1] 0 Mrayl 10	Average Acoustic Impedance 8 (AV_AI8) USIT-E[1] 0 Mrayl 10		

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-May-2016 18:38:50

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[15]:Up	Up	956.13 ft	1008.44 ft	23-May-2016 12:29:19 PM	23-May-2016 12:33:19 PM	ON	1.72 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K

R2D1: Log[15]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:38:56

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

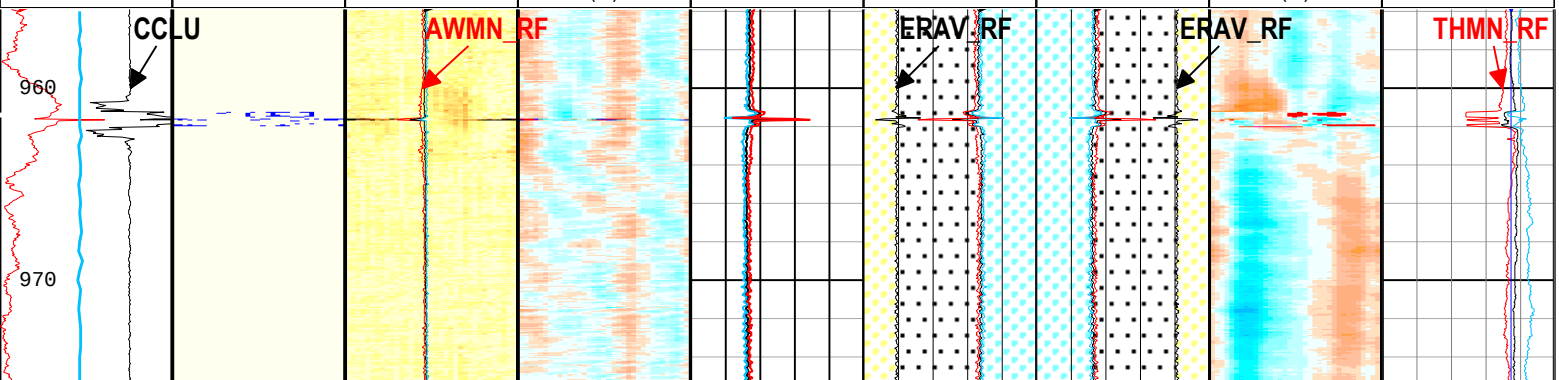
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

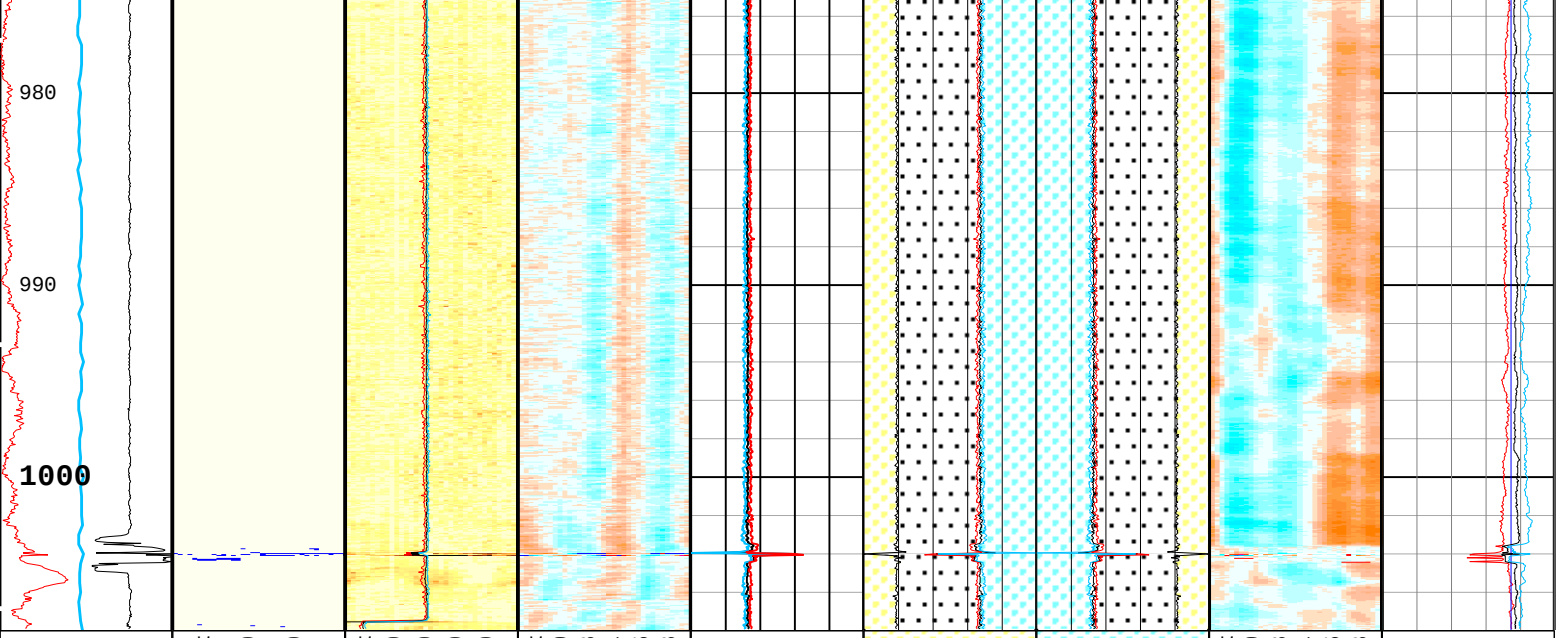
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6





Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:38:56

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[14]:Up	Up	1662.13 ft	1790.08 ft	23-May-2016 12:16:40 PM	23-May-2016 12:24:13 PM	ON	1.88 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K
R2D1: Log[14]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:38:59

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) 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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

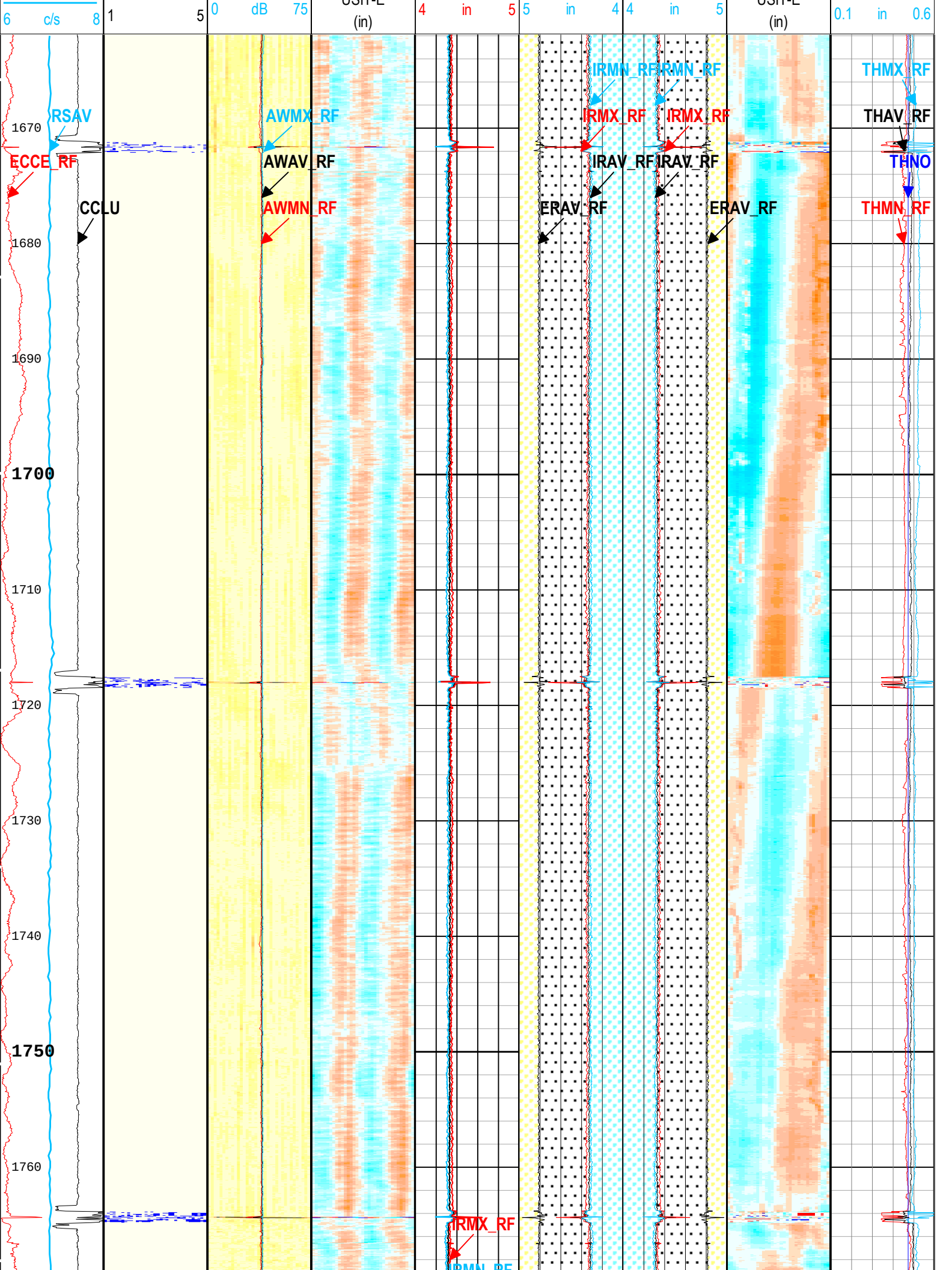
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E


6 c/s 8
1 5
0 dB 75
USH-L (in)
4 in 5
5 in 4
4 in 5
USH-L (in)
0.1 in 0.6
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
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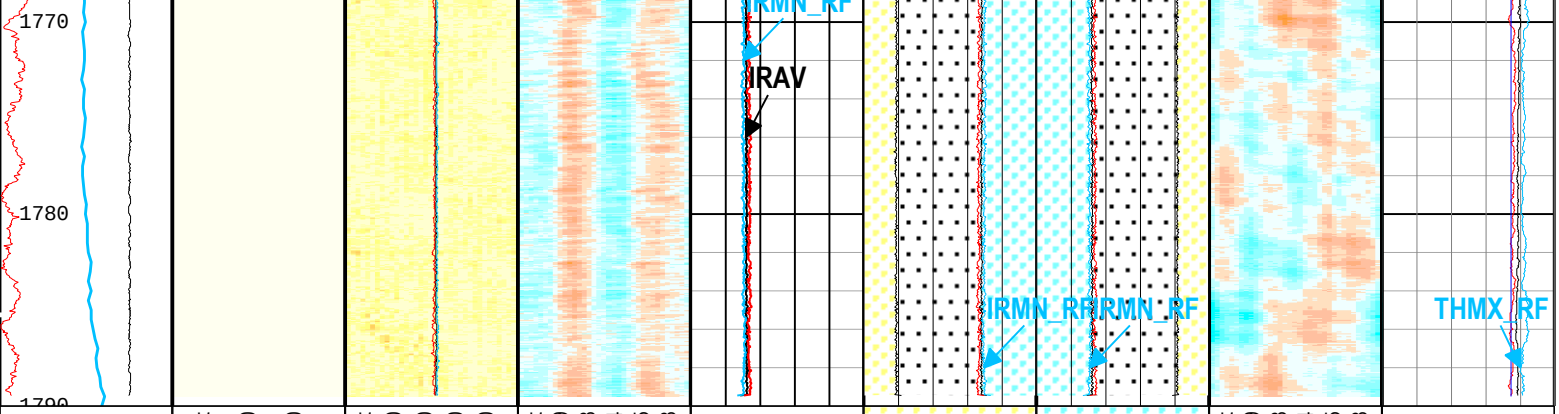


Casing Collar Locator Ultrasonic (CCLU) USIT-E	Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E	Explicit Normalization USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)	Explicit Normalization USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)	Internal Radius Averaged Value (IRAV) USIT-E	ERAV / ERAV-IRAV / IRAV	IRAV / ERAV / IRAV-ERAV	Explicit Normalization USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)	Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
-30 in 10	Absent 1.500 3.500	Absent -5.200 -3.600 -2.000 -0.400	Absent -0.059 -0.028 0.004 0.035 0.068	4 in 5			Absent -0.059 -0.028 0.004 0.035 0.068	0.1 in 0.6
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E	USIT Processing Flags (UFLG[0]) USIT-E	Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E		Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	Median of Unflagged External Radii (ERAV_RF) USIT-E	Median of Unflagged External Radii (ERAV_RF) USIT-E		Nominal Casing Thickness (THNO) USIT-E
0 in 0.5	1 5	0 dB 75		4 in 5	5 in 4	4 in 5		0.1 in 0.6
Motor Revolution Speed (RSAV) USIT-E		Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E		Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E	Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E		Median of Unflagged Casing Thickness (THAV_RF) USIT-E
6 c/s 8		0 dB 75		4 in 5	5 in 4	4 in 5		0.1 in 0.6
		Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E			Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E		Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
		0 dB 75			5 in 4	4 in 5		0.1 in 0.6
					Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E		
					5 in 4	4 in 5		

TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:38:59

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Very HiRes Corrosion Repeat 10 in - 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[13]:Up	Up	3504.68 ft	3577.01 ft	23-May-2016 12:04:33 PM	23-May-2016 12:08:46 PM	ON	1.82 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K

R2D1: Log[13]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:03

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

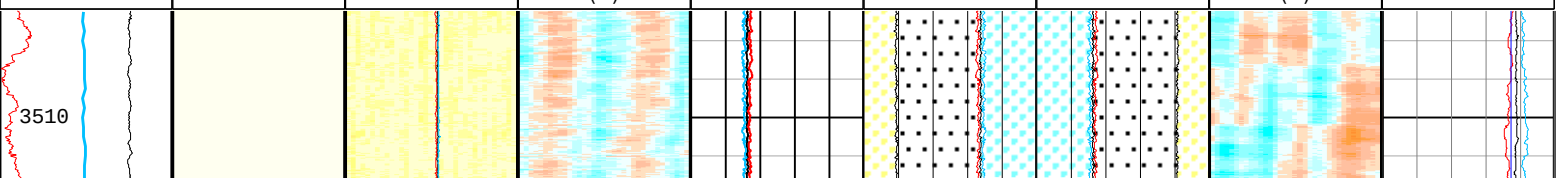
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

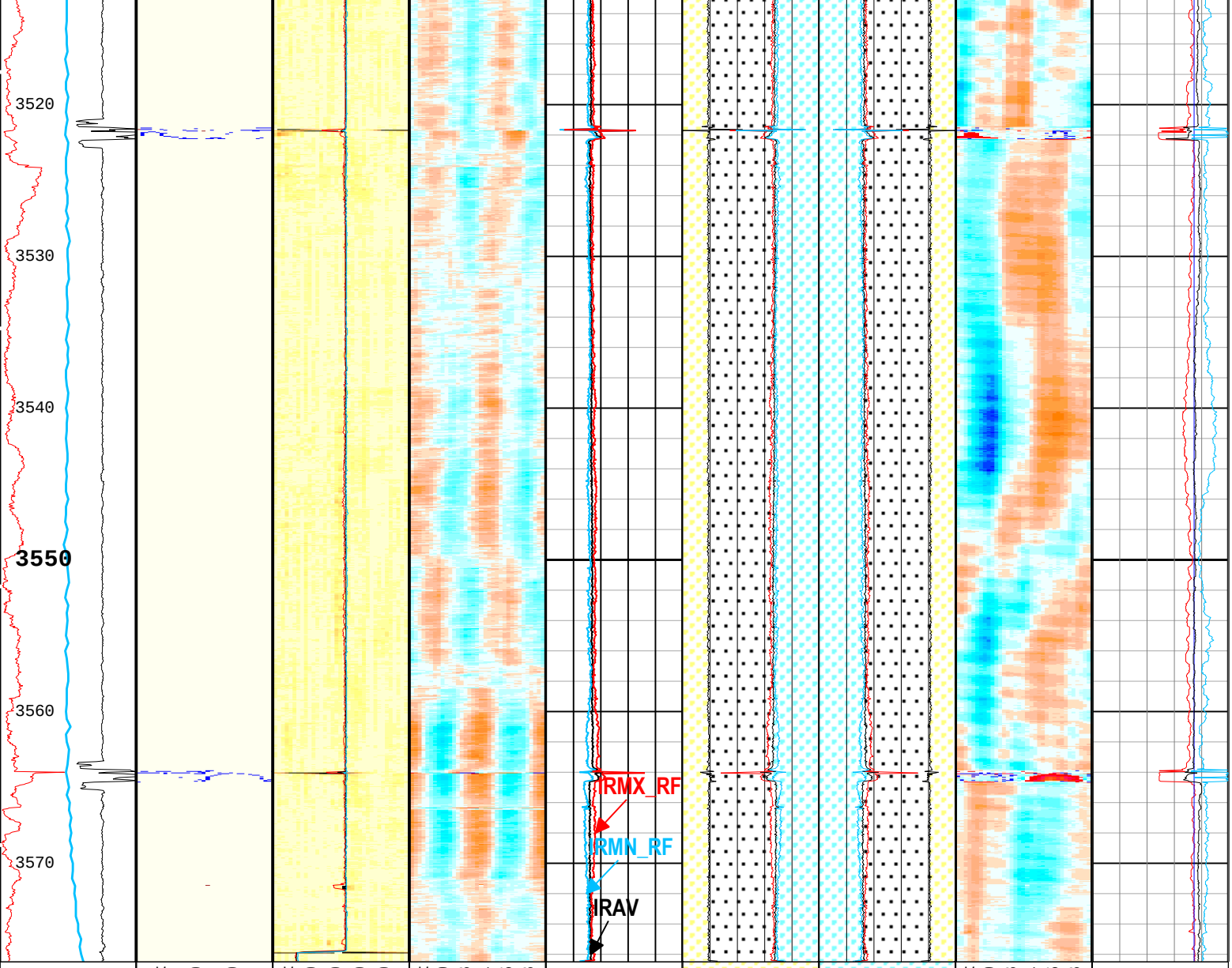
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6





Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

5 in 4 | 4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4 | 4 in 5

0.1 in 0.6

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:03

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[12]:Up	Up	4046.40 ft	4113.73 ft	23-May-2016 11:57:46 AM	23-May-2016 12:01:52 PM	ON	1.98 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K
R2D1: Log[12]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:06

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

Absent -5.200 -3.600 -2.000 -0.400

Explicit Normalization

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave

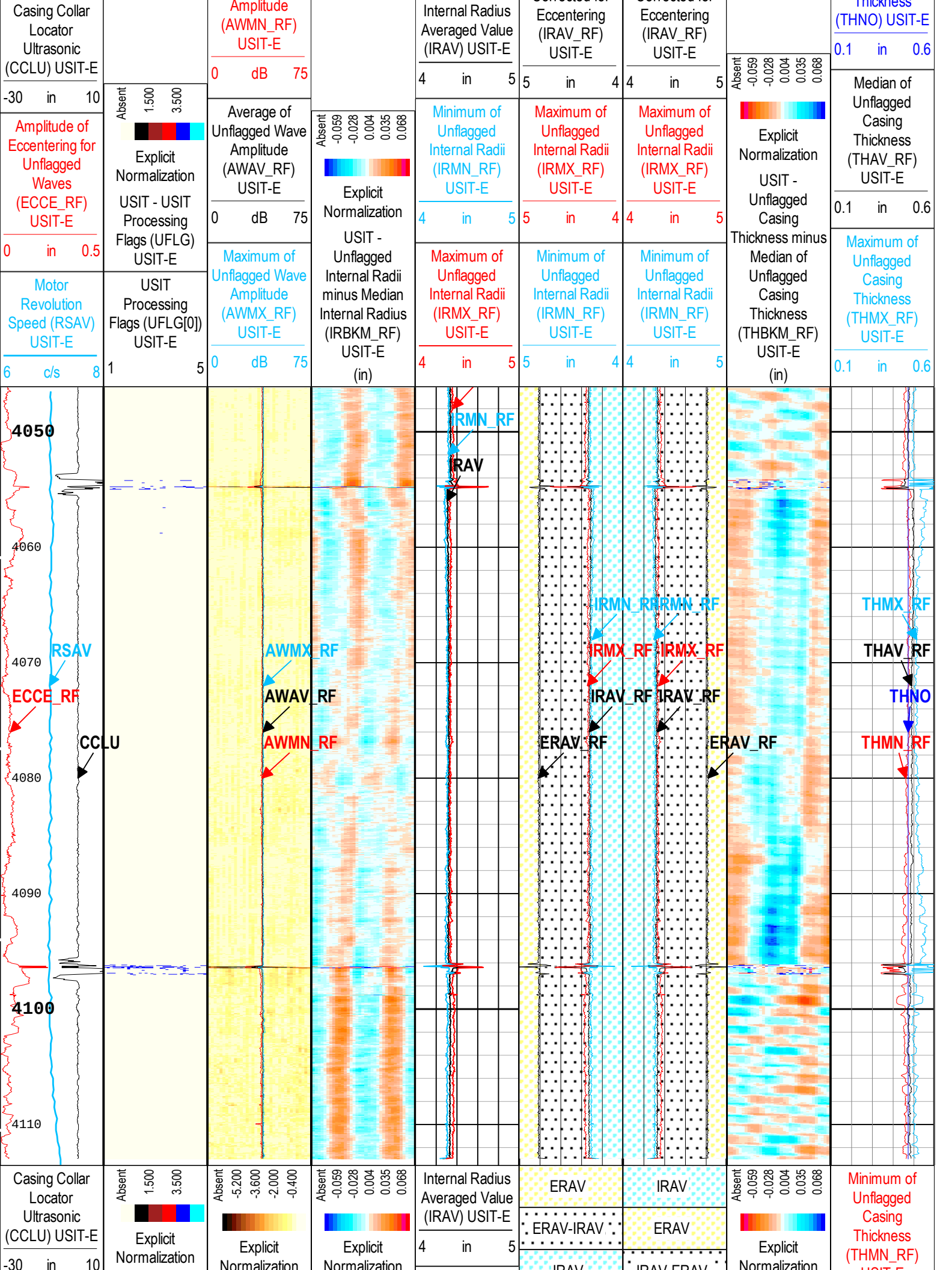
ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4 | 4 in 5

Median Internal Radius of Casing Corrected for

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
Amplitude (AWMN_RF) USIT-E
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
Absent -5.200 -3.600 -2.000 -0.400
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)
Internal Radius Averaged Value (IRAV) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)
Thickness (THNO) USIT-E
0.1 in 0.6
Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6
4050
4060
4070
4080
4090
4100
4110
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRAV
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10
Absent 1.500 3.500
Explicit Normalization
Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
Internal Radius Averaged Value (IRAV) USIT-E
4 in 5
ERAV
IRAV
ERAV-IRAV
ERAV
IRAV
IRAV-ERAV
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

USIT - USIT Processing Flags (UFLG) USIT-E

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

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:06

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[11]:Up	Up	4341.75 ft	4404.34 ft	23-May-2016 11:51:34 AM	23-May-2016 11:55:31 AM	ON	1.82 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K
R2D1: Log[11]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:09

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error

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

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

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

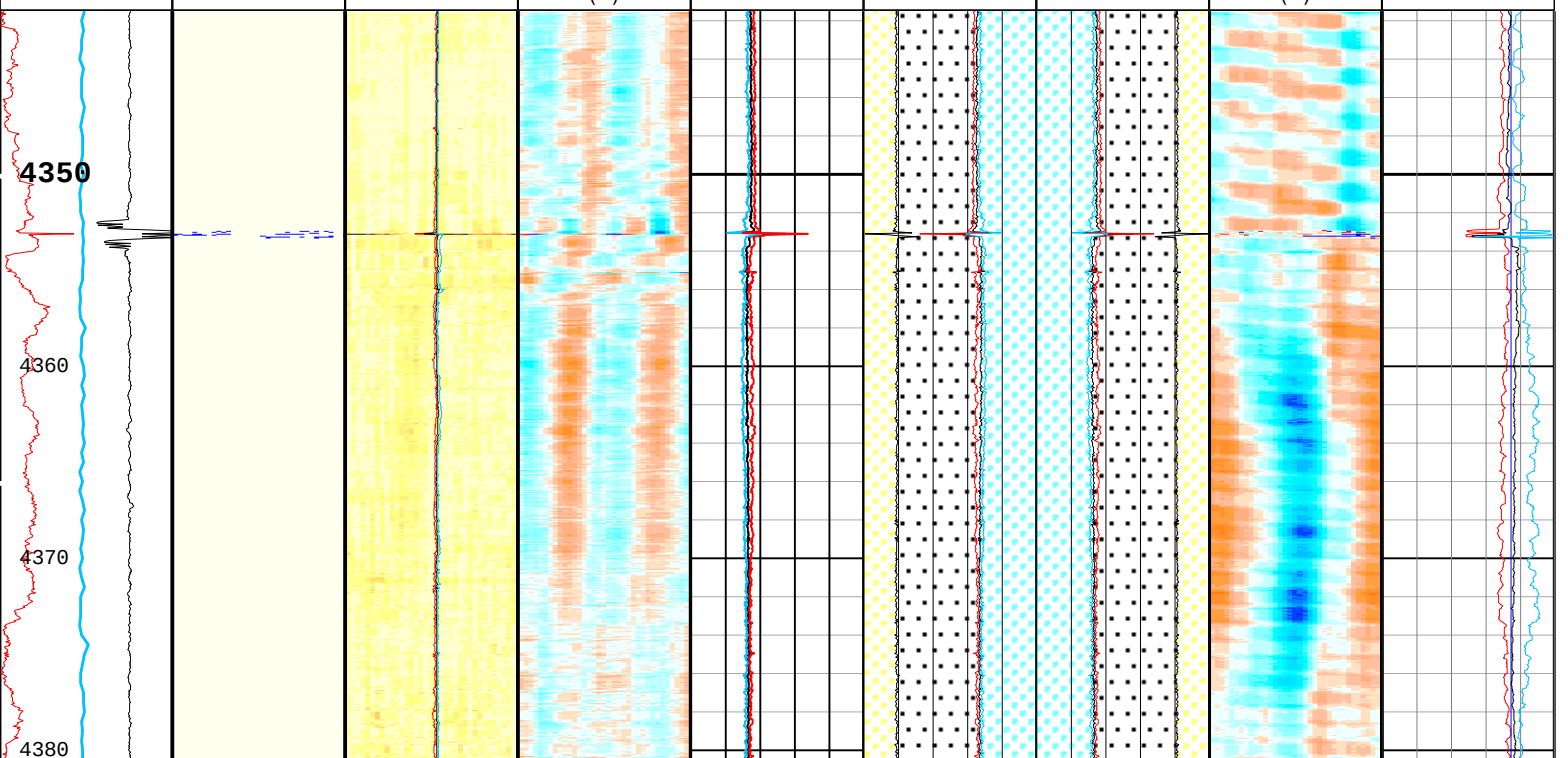
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

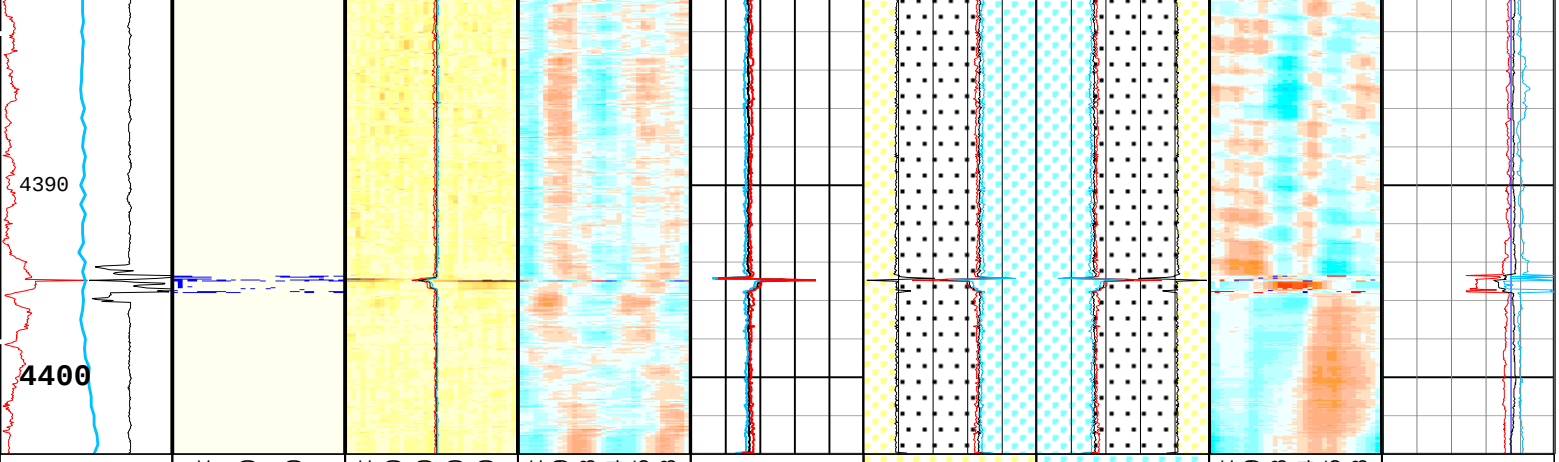
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6





Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:09

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[10]:Up	Up	4757.99 ft	4821.68 ft	23-May-2016 11:45:18 AM	23-May-2016 11:49:00 AM	ON	2.08 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K

R2D1: Log[10]:Up:S002

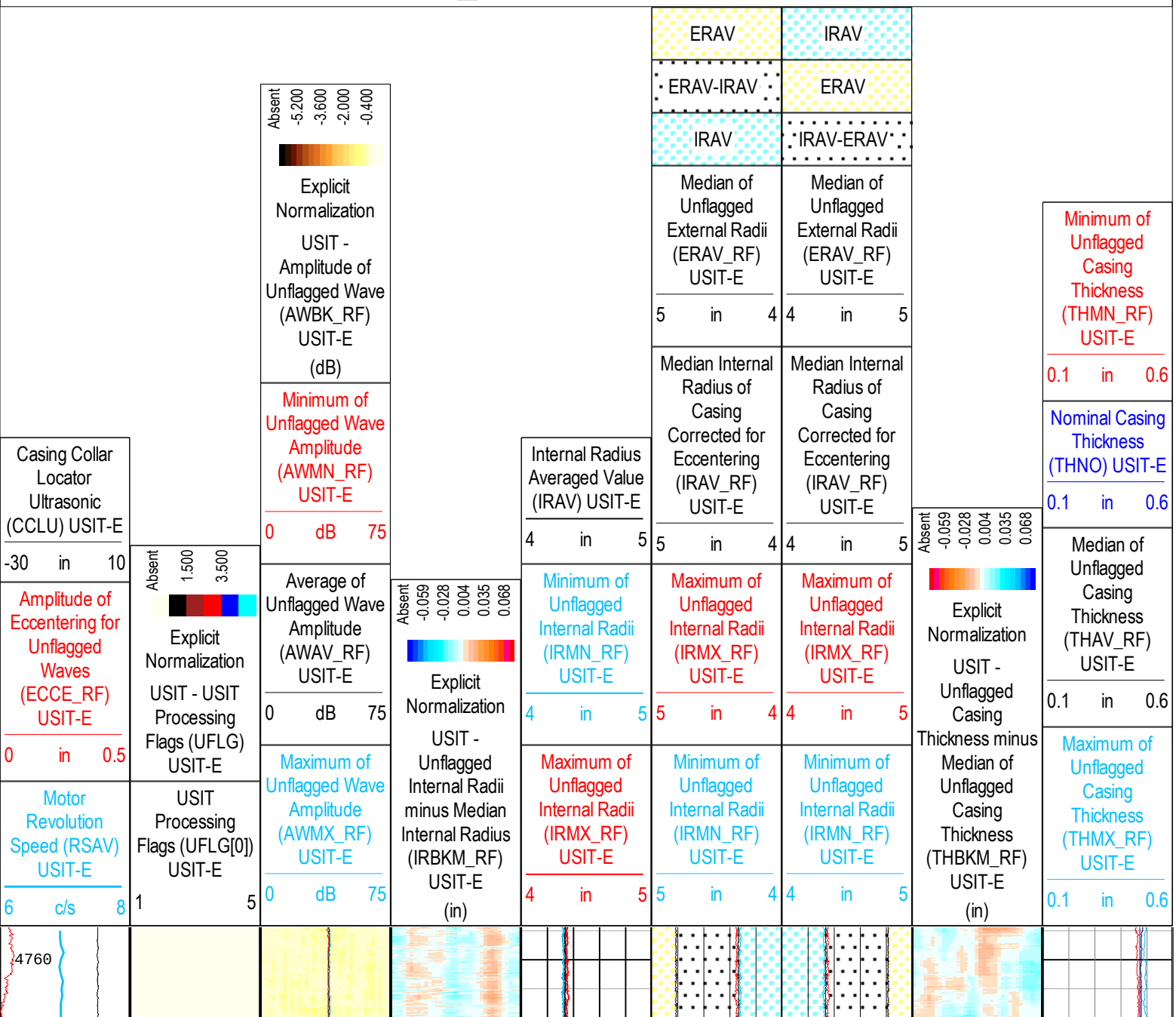
Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:12

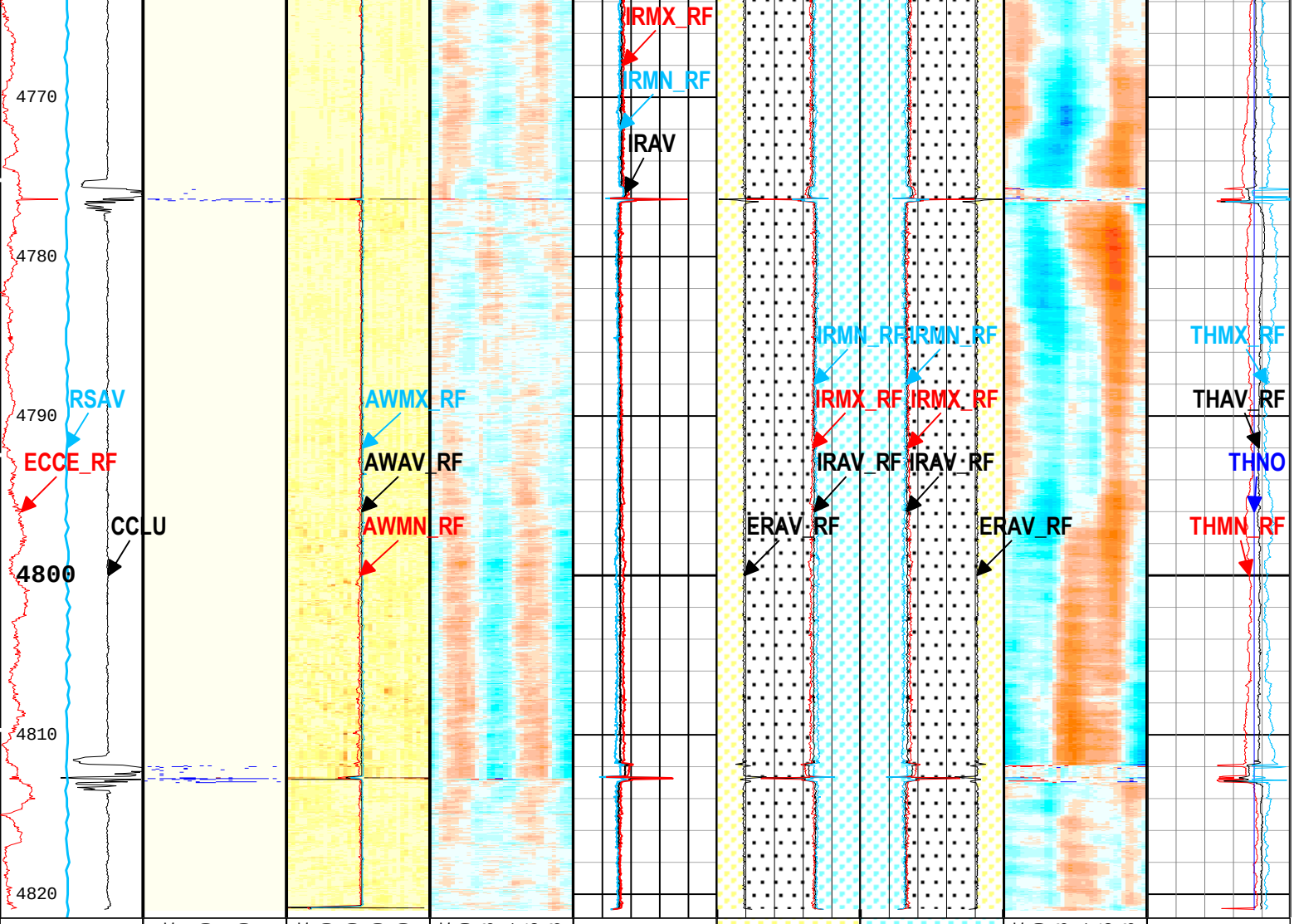
TIME_1900 - Time Marked every 60.00 (s)

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

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

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





Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF)

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

USIT-E

0 dB 75

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

4 in 5

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:12

R2D1

Very HiRes Corrosion Repeat 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
R2D1	Log[8]:Up	Up	4996.70 ft	5083.93 ft	23-May-2016 11:36:05 AM	23-May-2016 11:41:31 AM	ON	2.08 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69K
R2D1: Log[8]:Up:S002

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:15

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Absent -5.200 -3.600 -2.000 -0.400

Explicit Normalization

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Median of Unflagged External Radii (ERAV_RF) USIT-E

5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E

4 in 5

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E

0.1 in 0.6

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E

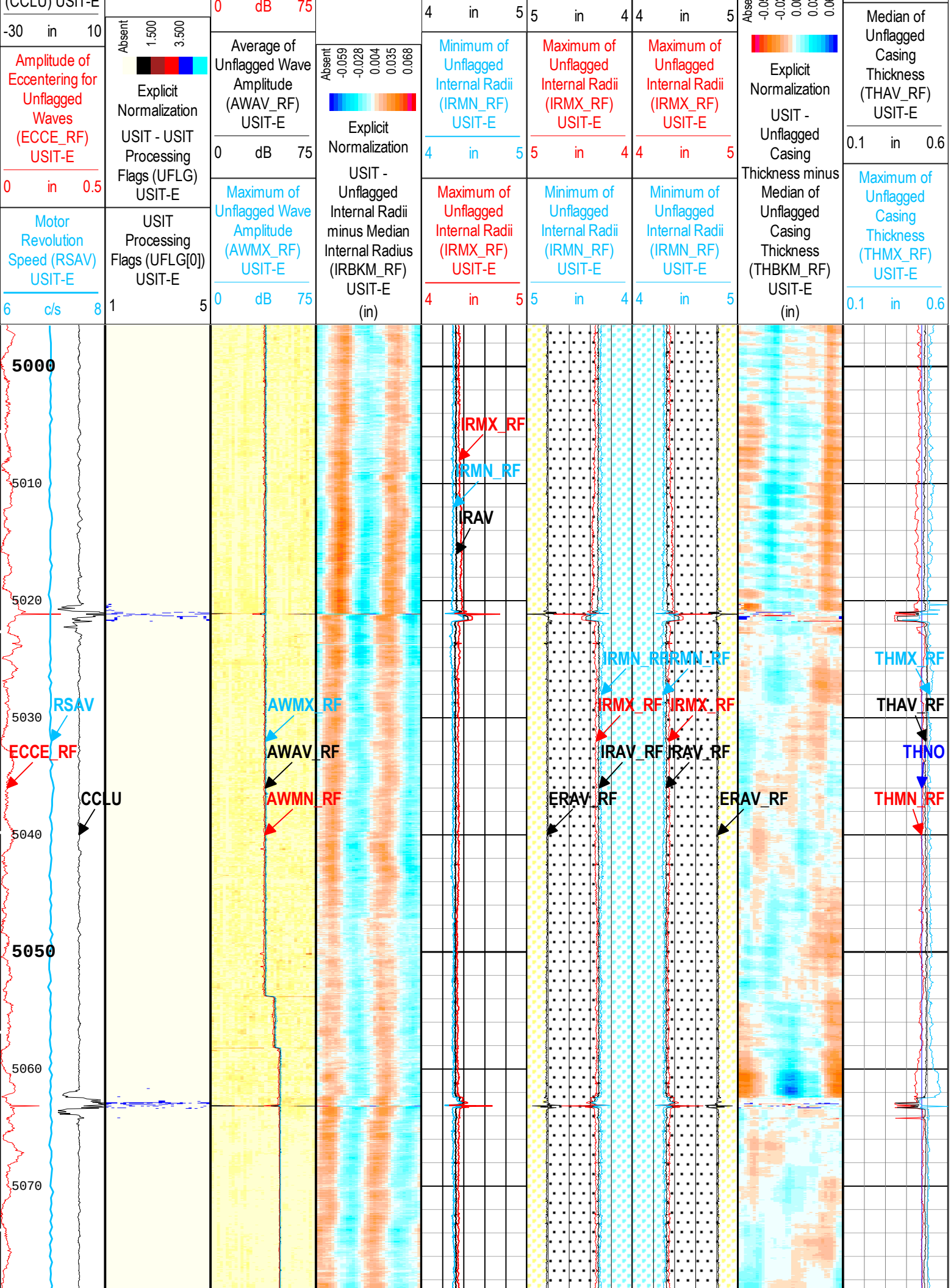
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E

Nominal Casing Thickness (THNO) USIT-E

0.1 in 0.6

Casing Collar Locator Ultrasonic (CCLU) USIT-E

Internal Radius Averaged Value (IRAV) USIT-E


(CCLU) USIT-E
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)
Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6
5000
5010
5020
5030
5040
5050
5060
5070
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMX_RF
IRMN_RF
IRAV
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF

5080

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

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

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

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

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

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

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-May-2016 18:39:15

XYZ

Company:Southern California Gas Company Well:Porter 69K
Composite 1:S002

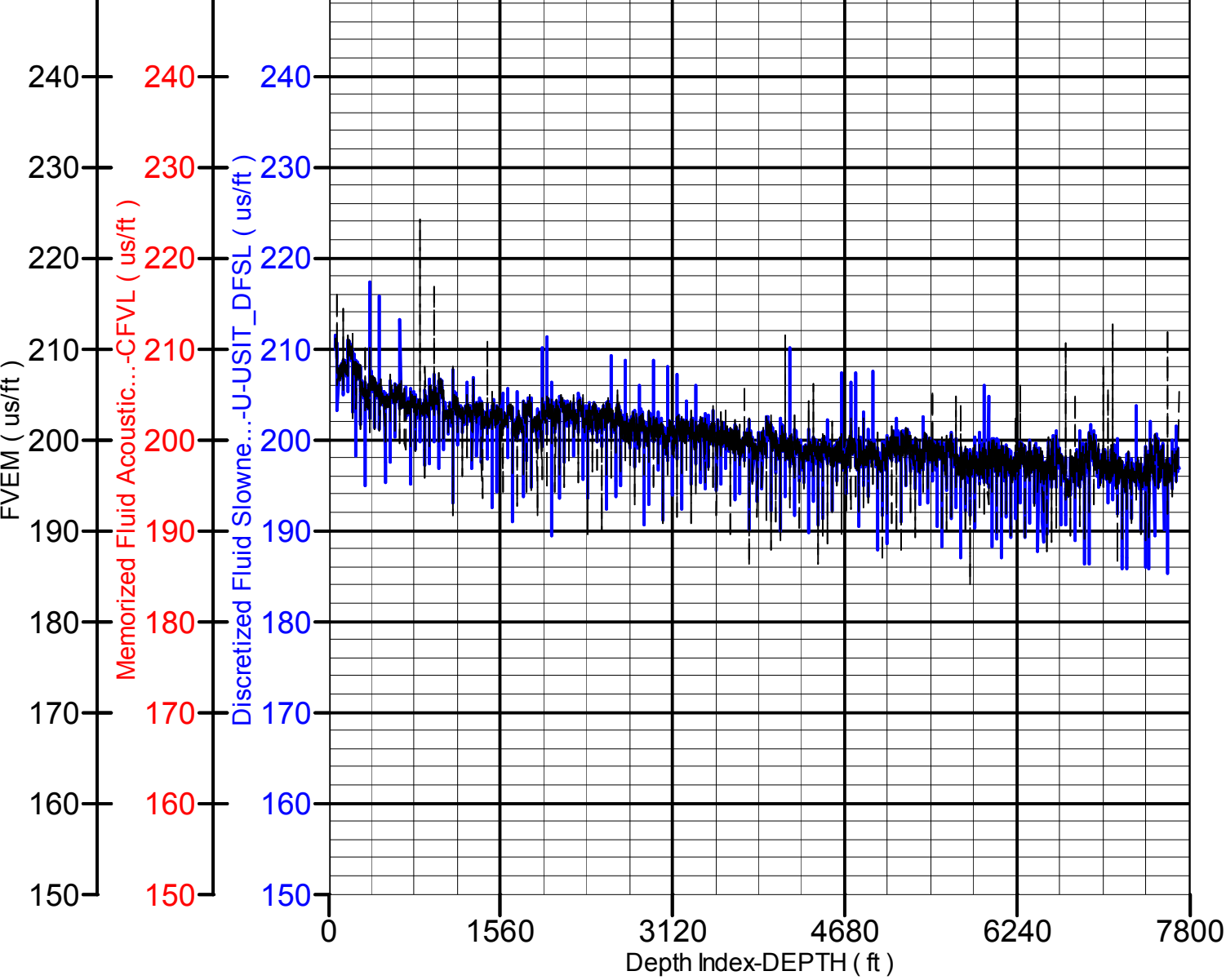
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 67.63 to 7702.00 ft

DEPTH-U-USIT_DFSL — — - DEPTH-CFVL
— — - DEPTH-FVEM (FVEM : Data Not Found)

250 250 250



XYZ

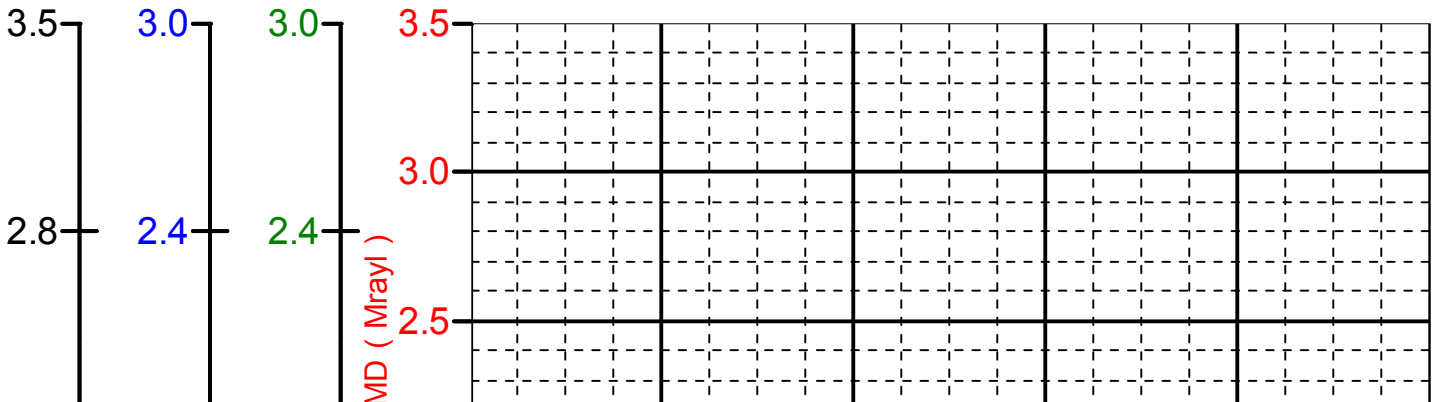
Company:Southern California Gas Company Well:Porter 69K
Composite 1:S002

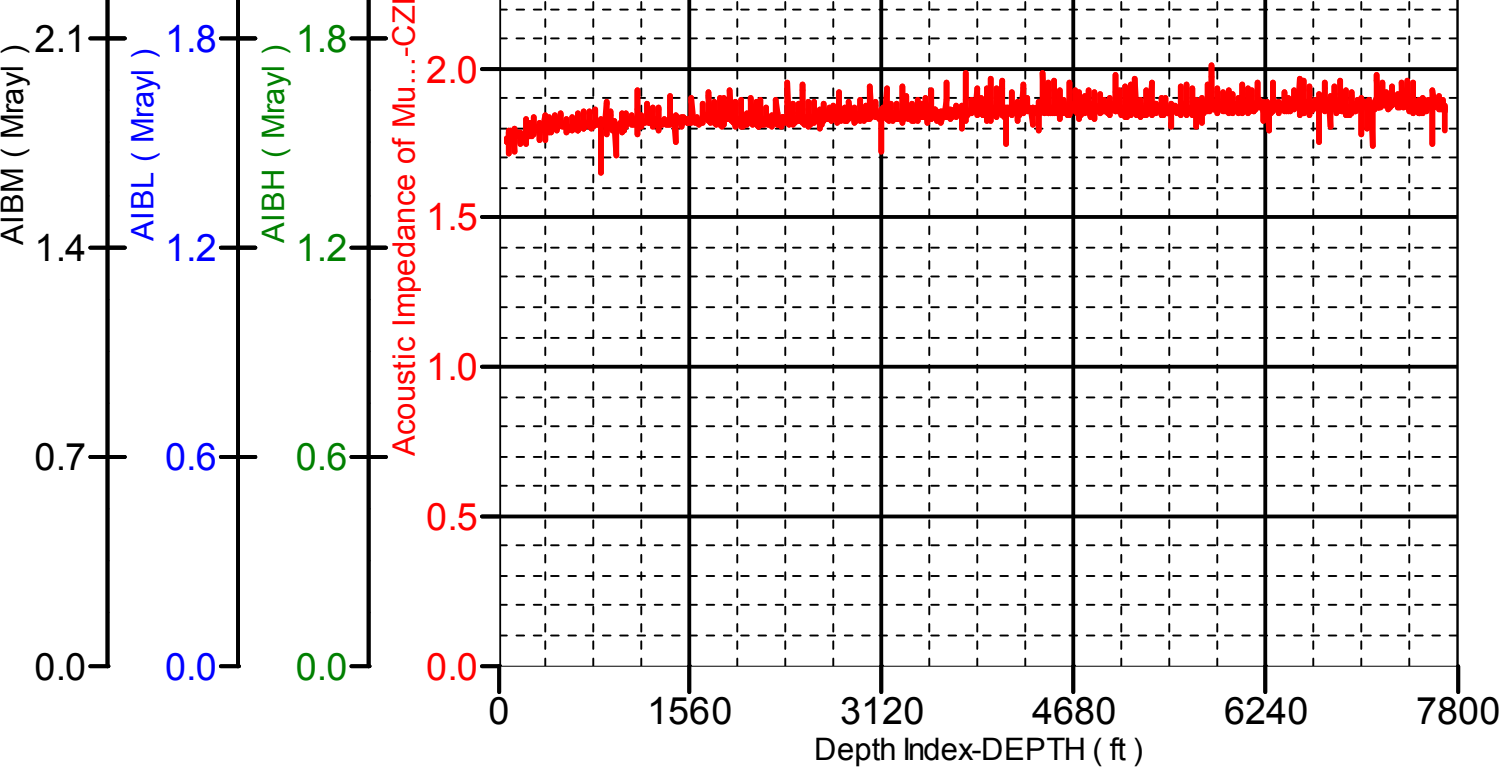
Theoretical Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 67.63 to 7702.00 ft

DEPTH-CZMD
DEPTH-AIBH (AIBH : Data Not Found)
DEPTH-AIBL (AIBL : Data Not Found)
DEPTH-AIBM (AIBM : Data Not Found)




AIBM (Mrayl)
2.1
1.4
0.7
0.0
AIBL (Mrayl)
1.8
1.2
0.6
0.0
AIBH (Mrayl)
1.8
1.2
0.6
0.0
Acoustic Impedance of Mu...-CZ
2.0
1.5
1.0
0.5
0.0
0
1560
3120
4680
6240
7800
Depth Index-DEPTH (ft)

Company:	Southern California Gas Company
Well:	Porter 69K
Field:	Aliso Canyon
County:	Los Angeles
State:	California

Schlumberger

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 47# casing