Schlumberger

Company: Southern California Gas Company

Well: Porter 69F

Field: Aliso Canyon

County: Los Angeles State: California

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 47# casing

County:	Los Angeles
Field:	Aliso Canyon
Location:	1770.14' N & 2661.98W
Well:	Porter 69F
Company:	Southern California Gas Company

Location:			
1770.14' N & 2661.98W		Elev.: K.B.	2395.00 ft
From the SE Corner of Section 27		G.L.	2366.00 ft
X: 1937428.73 Y: 6393327.81		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:
04-037-24226	27	4N	16W

Logging Date		07-Apr-2016	
Run Number		Three	
Depth Driller		7451.00 ft	
Schlumberger Depth		7447.00 ft	
Bottom Log Interval		7447.00 ft	
Top Log Interval		85.00 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		860.00 ft	
To		7986.00 ft	
Casing/Tubing Size		9.625 in	
Weight		47 lbm/ft	
Grade		N80	
From		0.00 ft	
To		7980.00 ft	
Max Recorded Temperatures			
Logger on Bottom	Time	07-Apr-2016 09:48:00	
Unit Number	Location:	3189 Ventura	
Recorded By		I. Kartawidjaja	
Witnessed By		Mr. Tom McMahon	

Disclaimer

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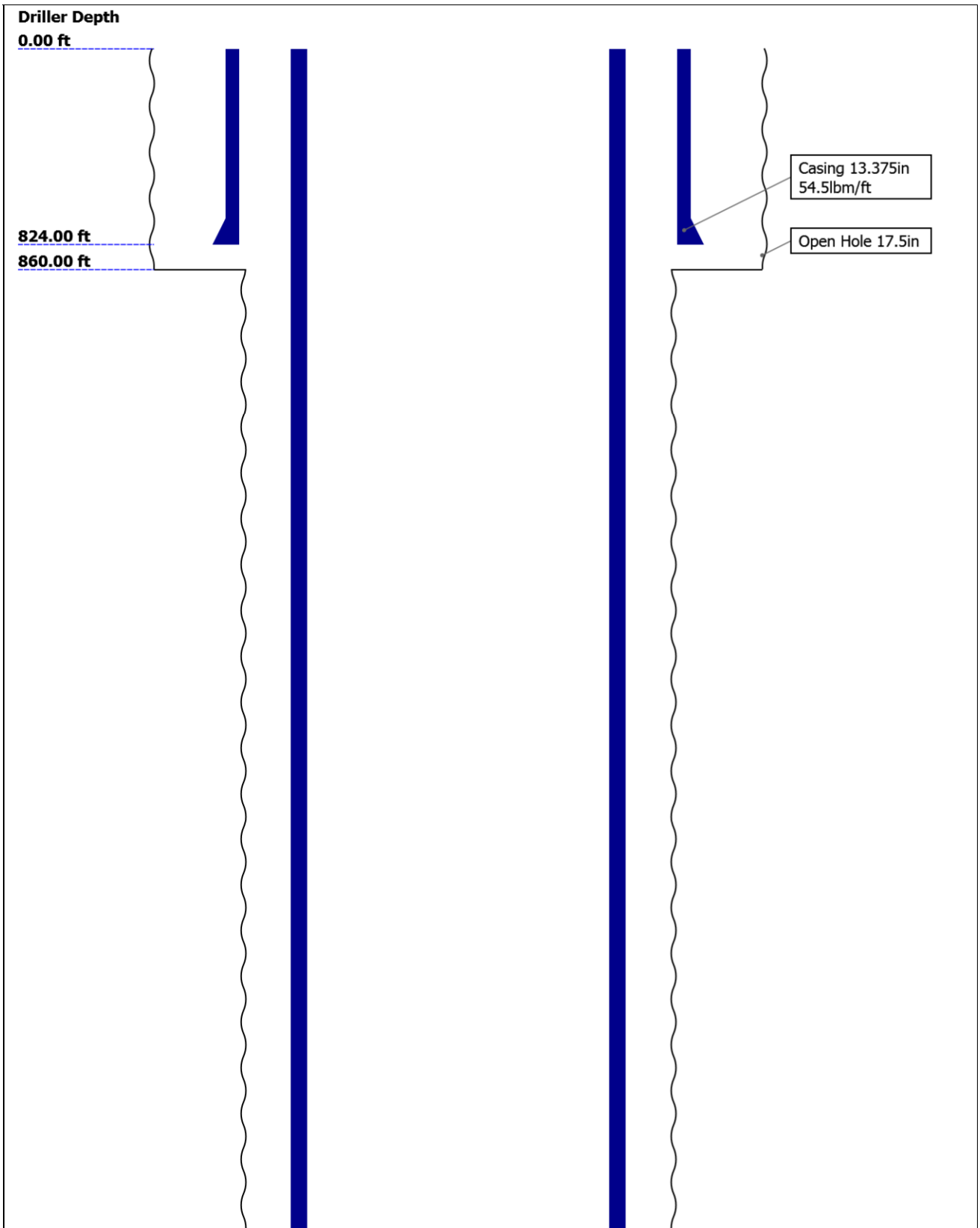
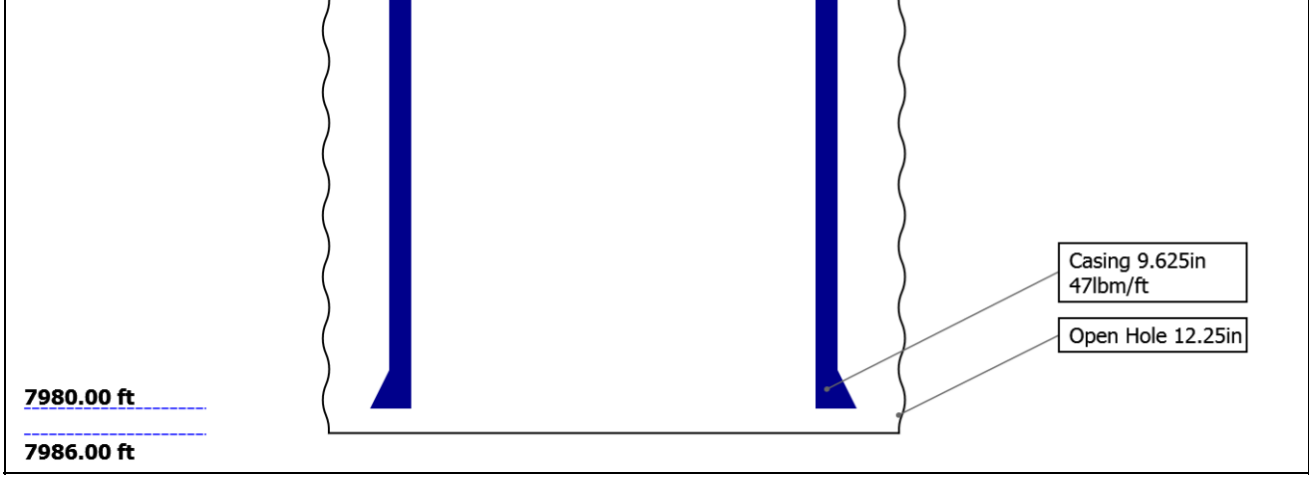
Well Sketch





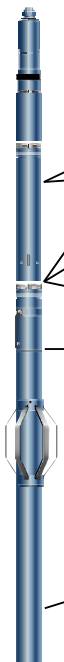
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	12.25				
Top Driller (ft)	0	860				
Top Logger (ft)	0	860				
Bottom Driller (ft)	860	7986				
Bottom Logger (ft)	860	7986				
Casing						
Size (in)	13.375	9.625				
Weight (lbm/ft)	54.5	47				
Inner Diameter (in)	12.615	8.681				
Grade	K55	N80				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	824	7980				
Bottom Logger (ft)	824	7980				

Remarks and Equipment Summary

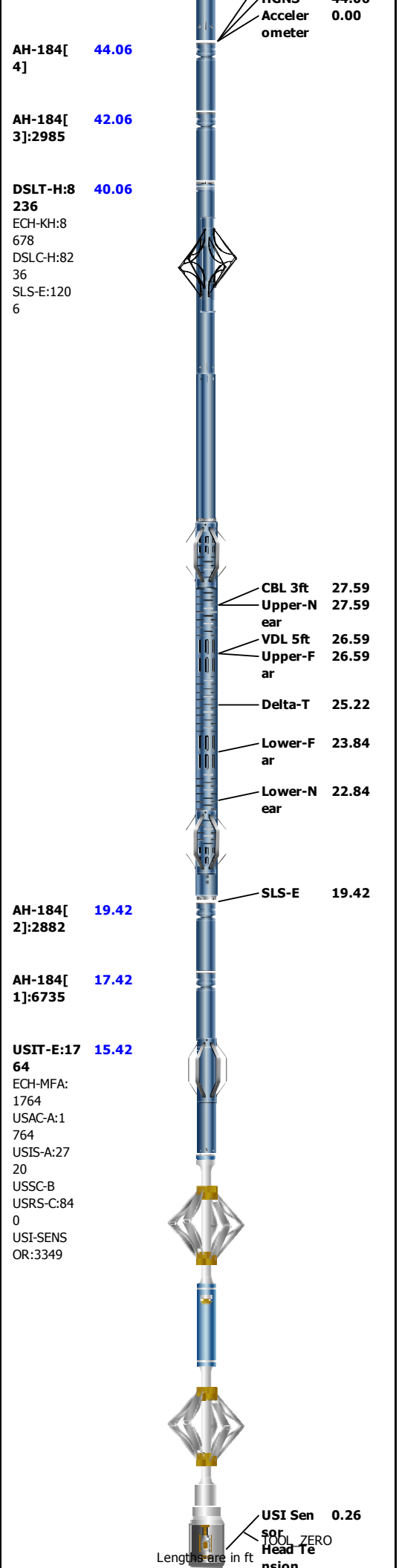
Three: Toolstring

Equip name	Length	MP name	Offset
LEH-QT:2867	**59.39**	Red	
LEH-QT:2867			
DTC-H	**56.47**	**CTEM**	**55.57**
ECH-KC		**HV**	**0.00**
DTC-H		**TelStatus**	**53.47**
		ToolStatus	**53.47**
HGNS-H:3923	**53.47**	**Temperature**	**53.44**
HGNH:4819		**GR**	**52.73**
NPV-N			
NSR-F:5002			
HGNS-H:3923			
HACCZ-H:3923			
HMCA-H			
		CNL Porosity	**46.4**
		HMCA	**44.06**
		HGNS	**44.06**



Three: Remarks

Depth correlated to SLB Platform Express log dated 25-Oct-2001
Logging objectives: Cement and corrosion evaluation
USIT logged in 10 deg/1.5 inch, logging speed 2800-3000 fph, Repeated hi-res in 10 deg/0.6 inch, speed 1000 fph
Top of sand at 7451 ft, logged from 7447 ft to 60 ft under 0 psi surface pressure
Rig: Ensign 343
Toolstring ran as per toolsketch.
Two centralizers on USIS and two CME-Y used to centralize ultrasonic tool.
Thank you for choosing Schlumberger!
USIT data above 110 ft affected by insufficient pressure on USI transducer.
A separate pass to capture surface section was logged using lubricator to maintain hydrostatic pressure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Acceler ometer 0.00
AH-184[4] 44.06
AH-184[3]:2985 42.06
DSLT-H:8236 40.06
ECH-KH:8678
DSLC-H:8236
SLS-E:1206
CBL 3ft 27.59
Upper-Near 27.59
VDL 5ft 26.59
Upper-Far 26.59
Delta-T 25.22
Lower-Far 23.84
Lower-Near 22.84
SLS-E 19.42
AH-184[2]:2882 19.42
AH-184[1]:6735 17.42
USIT-E:1764 15.42
ECH-MFA:1764
USAC-A:1764
USIS-A:2720
USSC-B
USRS-C:840
USI-SENSOR:3349
USI Sensor 0.26
TOOL ZERO
Head Tension
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				**Apr-07-2016 08:13**
Log[6]:Down	Apr-07-2016 08:56	01:44:08	368.04 - 7449.83 ft	FPM
Log[7]:Up	Apr-07-2016 09:42	00:03:27	7439.12 - 7297.13 ft	Repeat Pass at TD 0 psi
Log[8]:Up	Apr-07-2016 09:48	03:34:39	7446.59 - 59.73 ft	Main Pass 0 psi
Log[9]:Up	Apr-07-2016 13:02	00:08:13	7282.79 - 7139.64 ft	Repeat Very Hi-res
Log[10]:Up	Apr-07-2016 13:21	00:11:24	5051.92 - 4861.17 ft	Repeat Very Hi-res
Log[11]:Up	Apr-07-2016 13:45	00:15:13	2156.5 - 1888.9 ft	Repeat Very Hi-res
Log[12]:Up	Apr-07-2016 14:08	00:04:30	255.69 - 78.89 ft	Repeat Top Section
Run 2				**Apr-07-2016 14:34**
Log[1]:Up	Apr-07-2016 14:39	00:03:48	200.46 - 56.75 ft	Surface Pass Main #1
Log[6]:Up	Apr-07-2016 14:56	00:03:59	149.69 - 24.83 ft	Surface Pass Main #2

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[8]:Up	7447.53	60.69

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 : 30.44m(99.87ft) to 39.69m(130.20ft)
MUD_N_FRP = 1.05
DFD = 1.08g/cm3(9.00lbm/gal)
CZMD median computed in free pipe normalization interval = 1.70 MRayl

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

Main Composite

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
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
Three	Log[8]:Up	Up	60.69 ft	7447.53 ft	07-Apr-2016 9:48:55 AM	07-Apr-2016 12:23:34 PM	ON	0.96 ft	Yes
Three	Log[12]:Up	Up	85.32 ft	262.12 ft	07-Apr-2016 2:08:49 PM	07-Apr-2016 2:13:19 PM	ON	6.42 ft	Yes

All depths are referenced to toolstring zero

All depths are referenced to toolstring zero

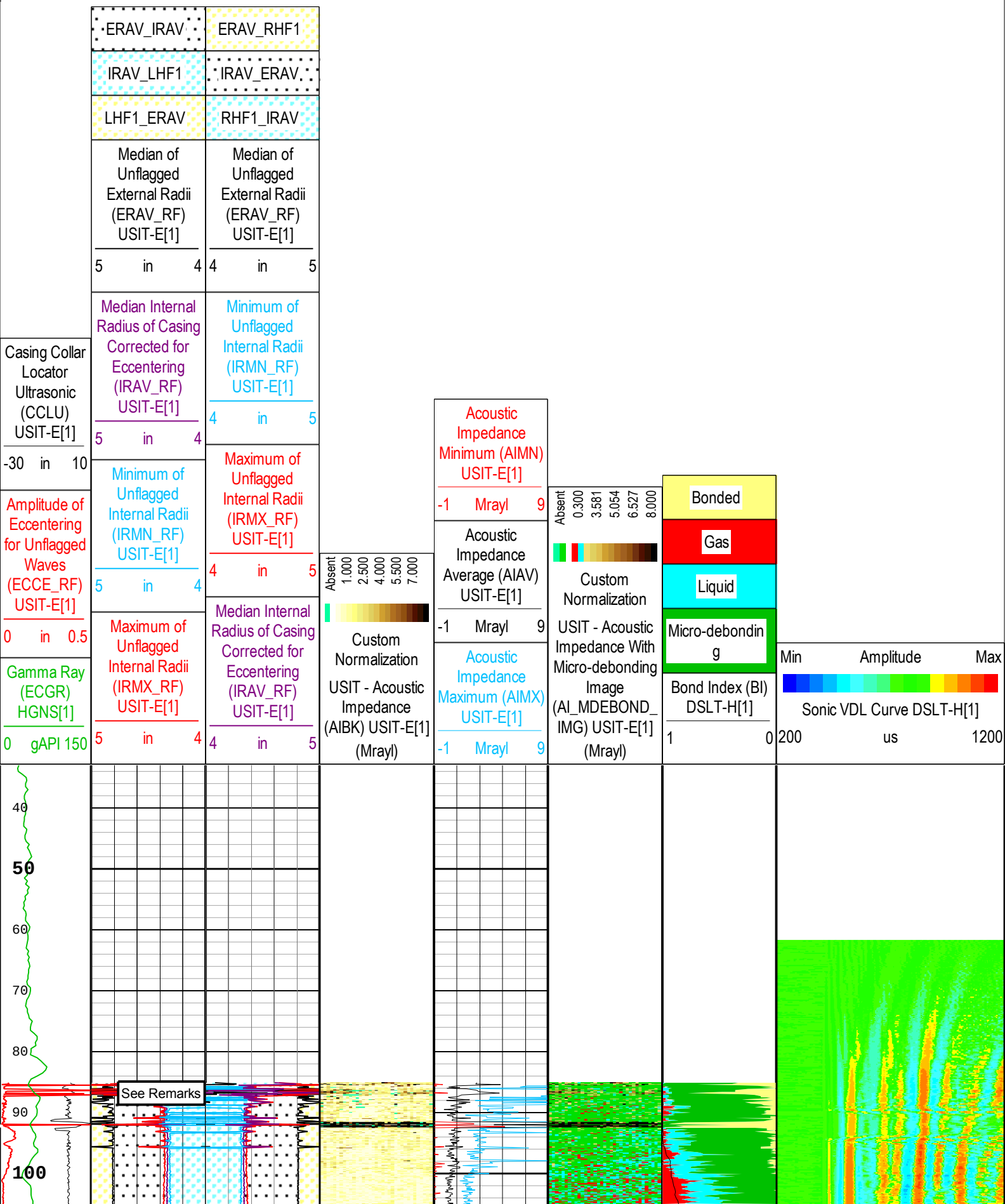
Log

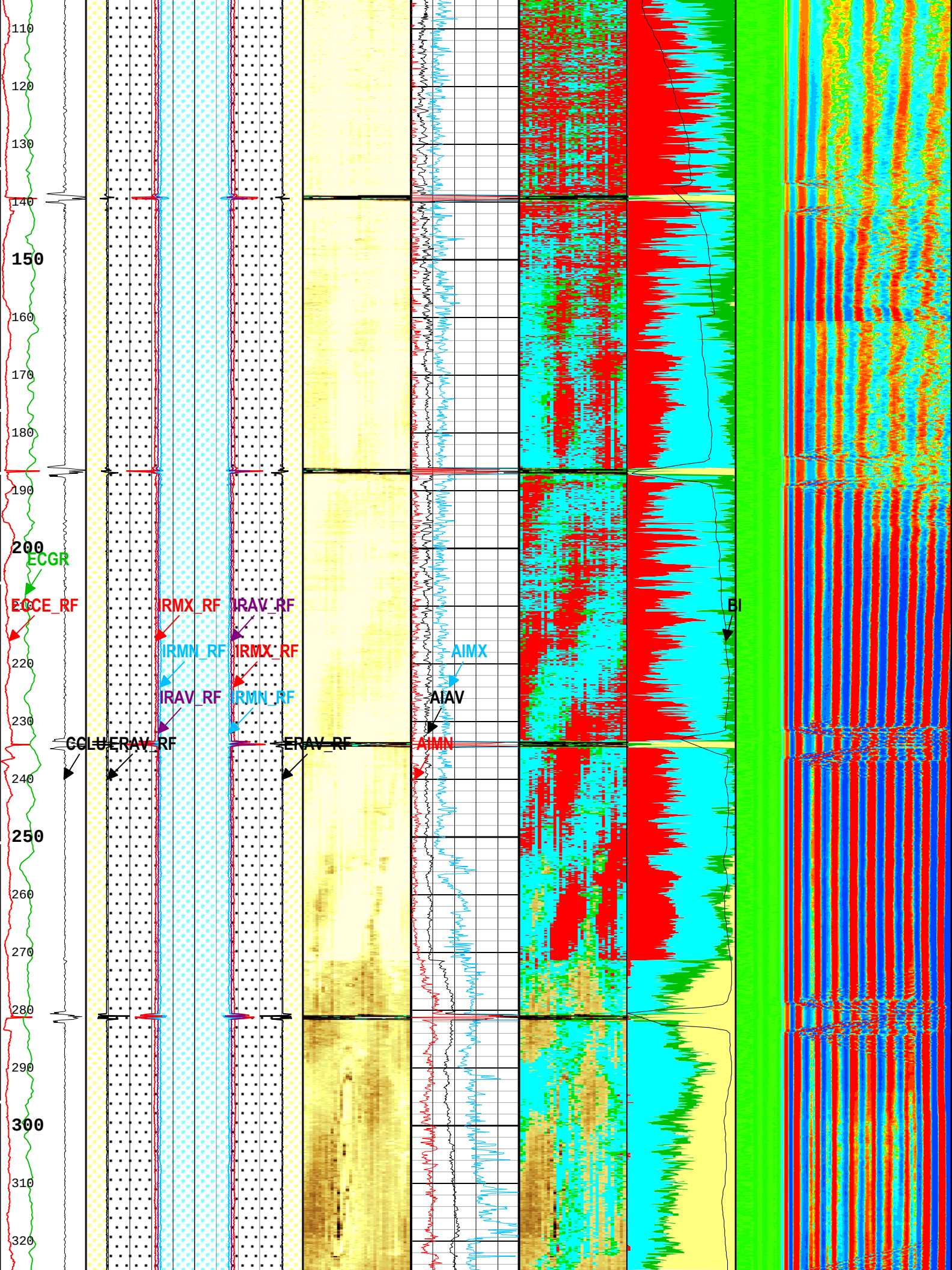
Company:Southern California Gas Company Well:Porter 69F

Main Composite:S001

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: 07-Apr-2016 19:28:24

TIME_1900 - Time Marked every 60.00 (s)

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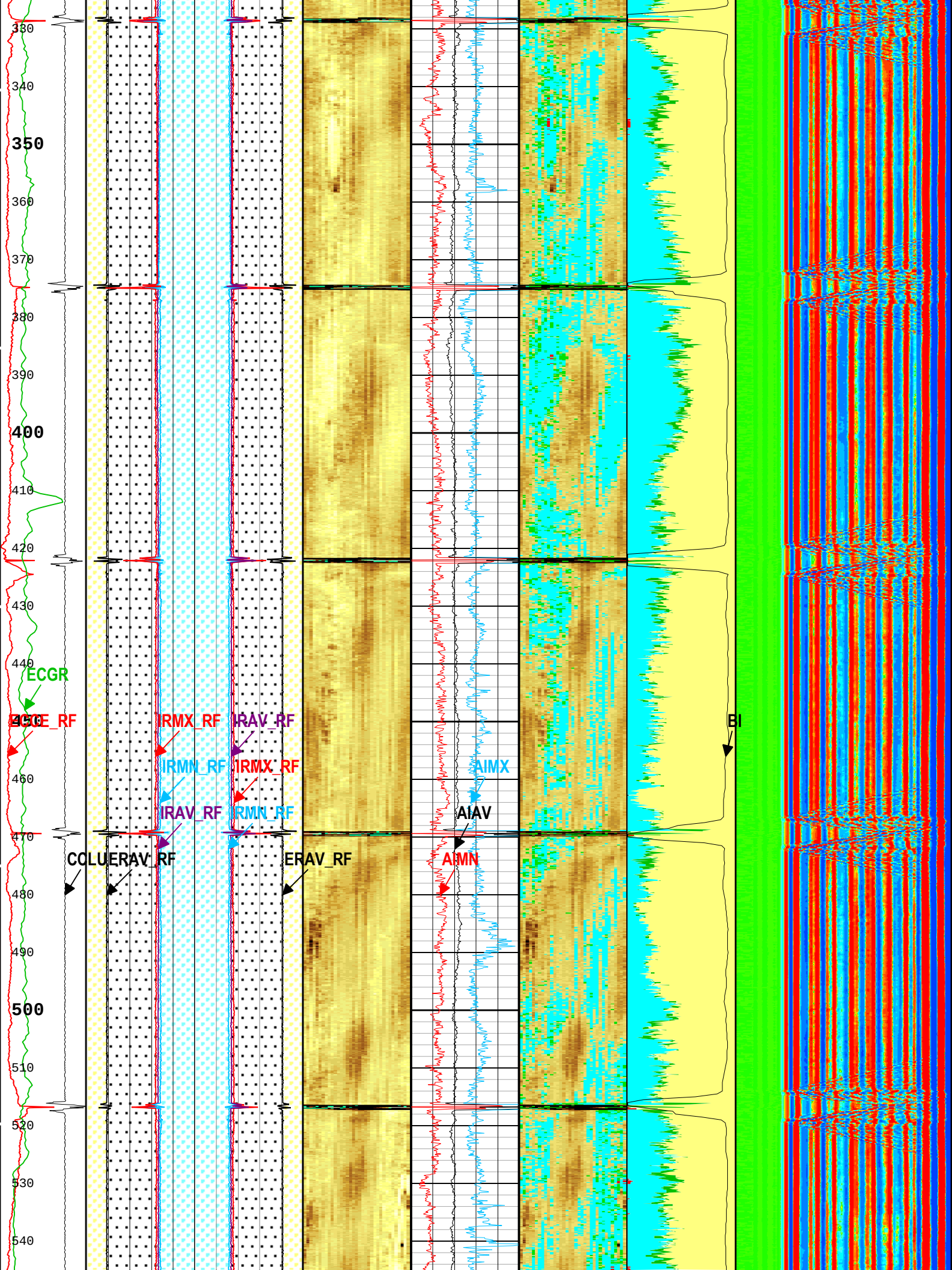
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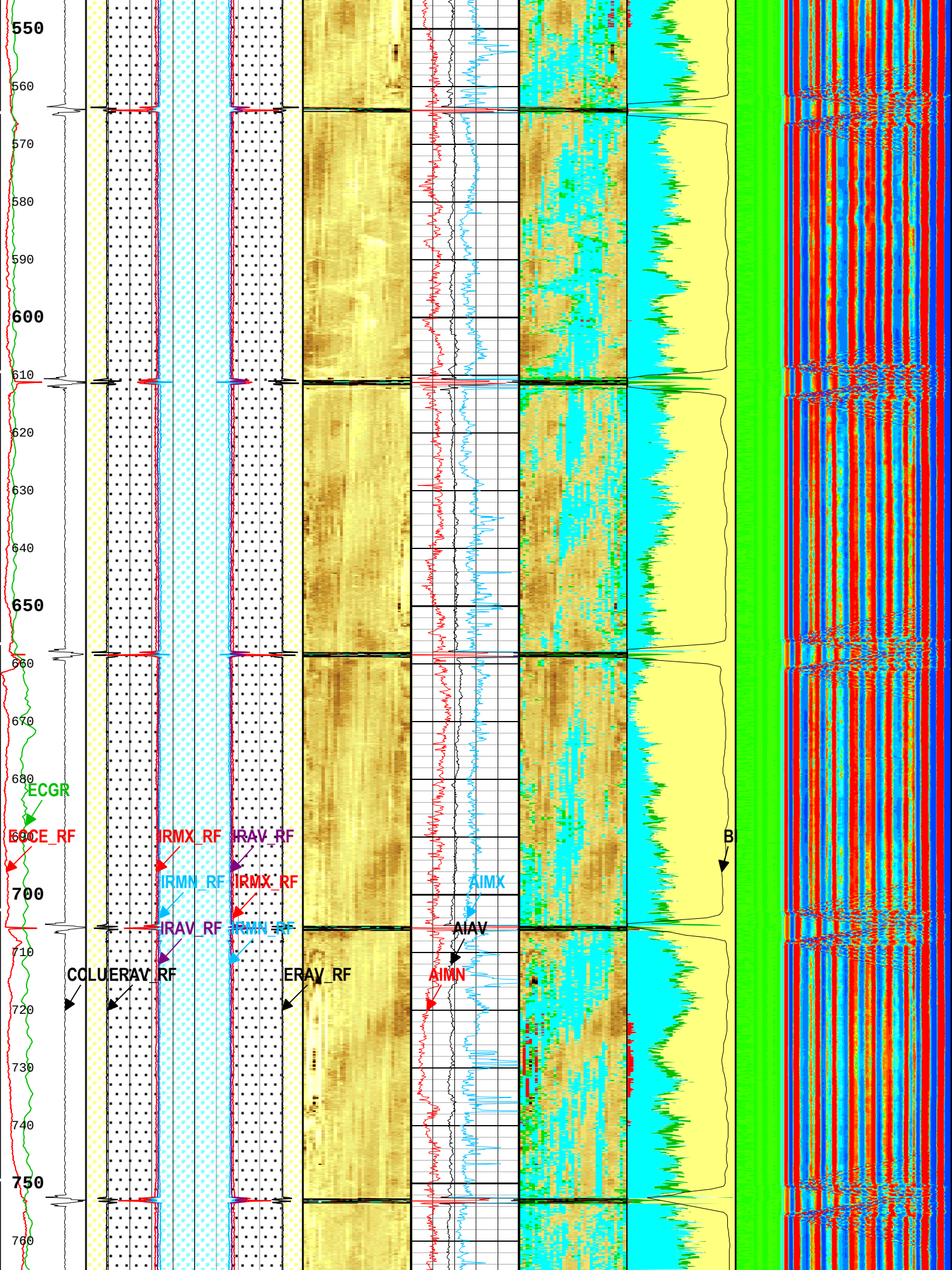
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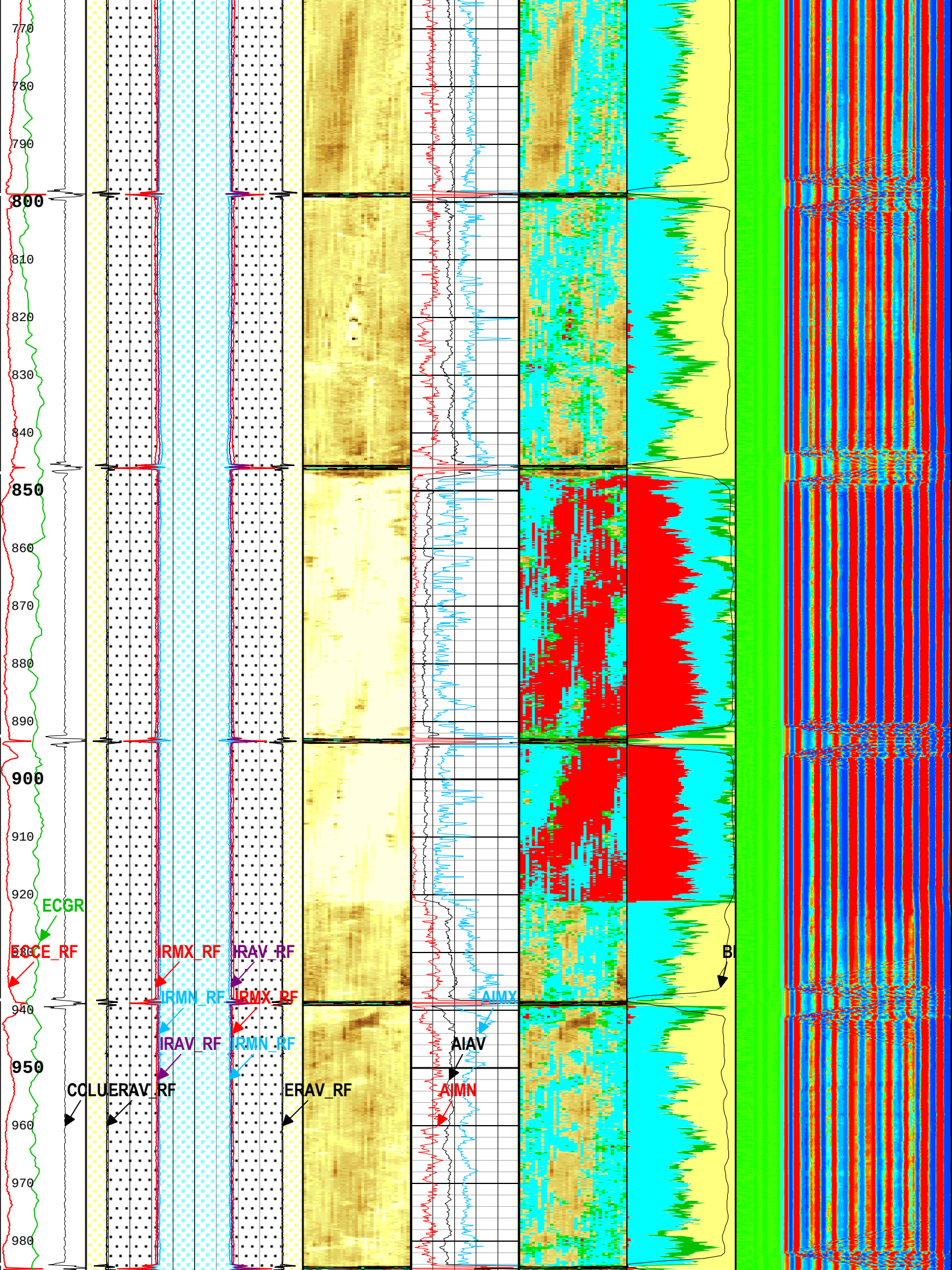
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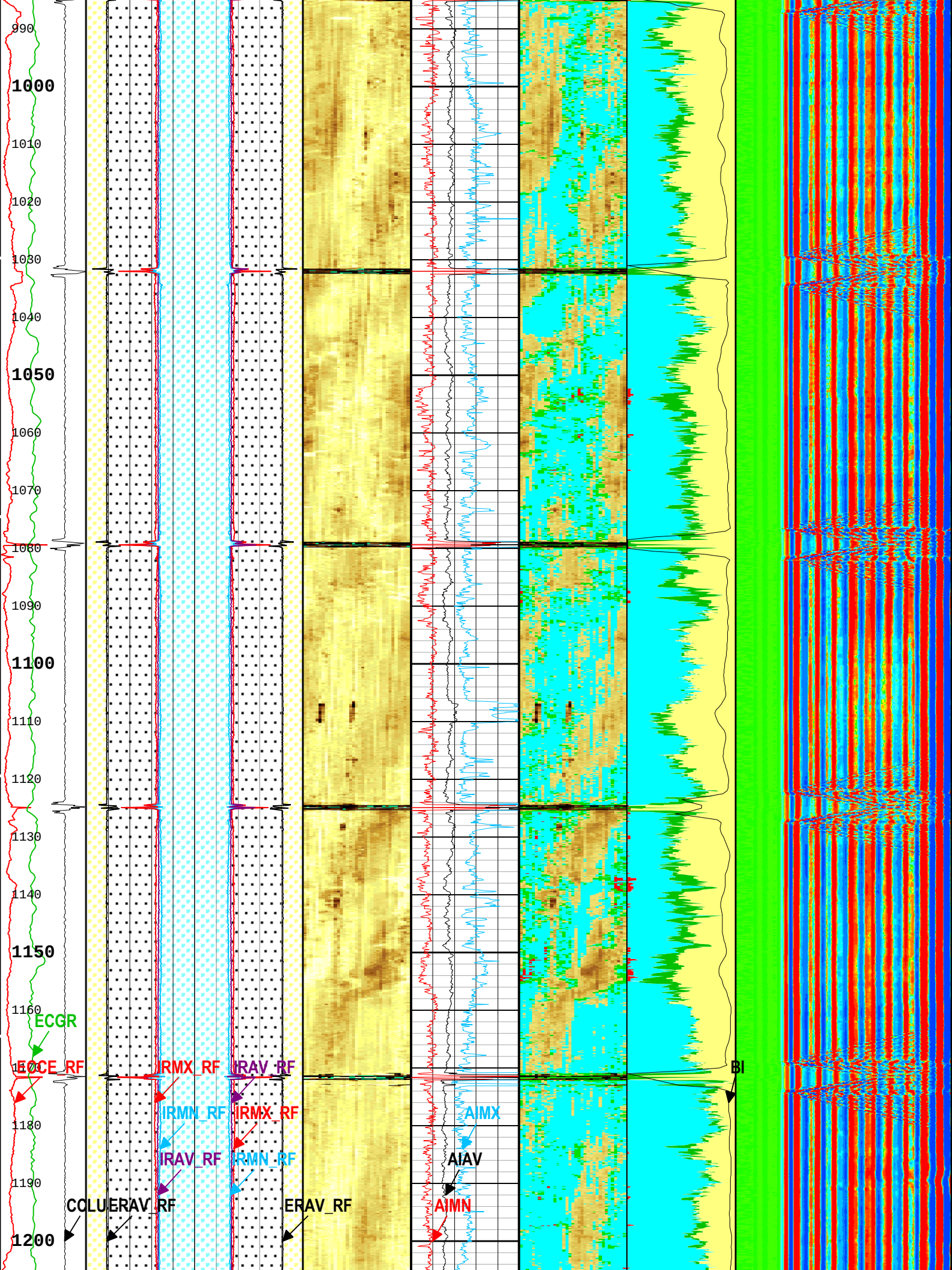
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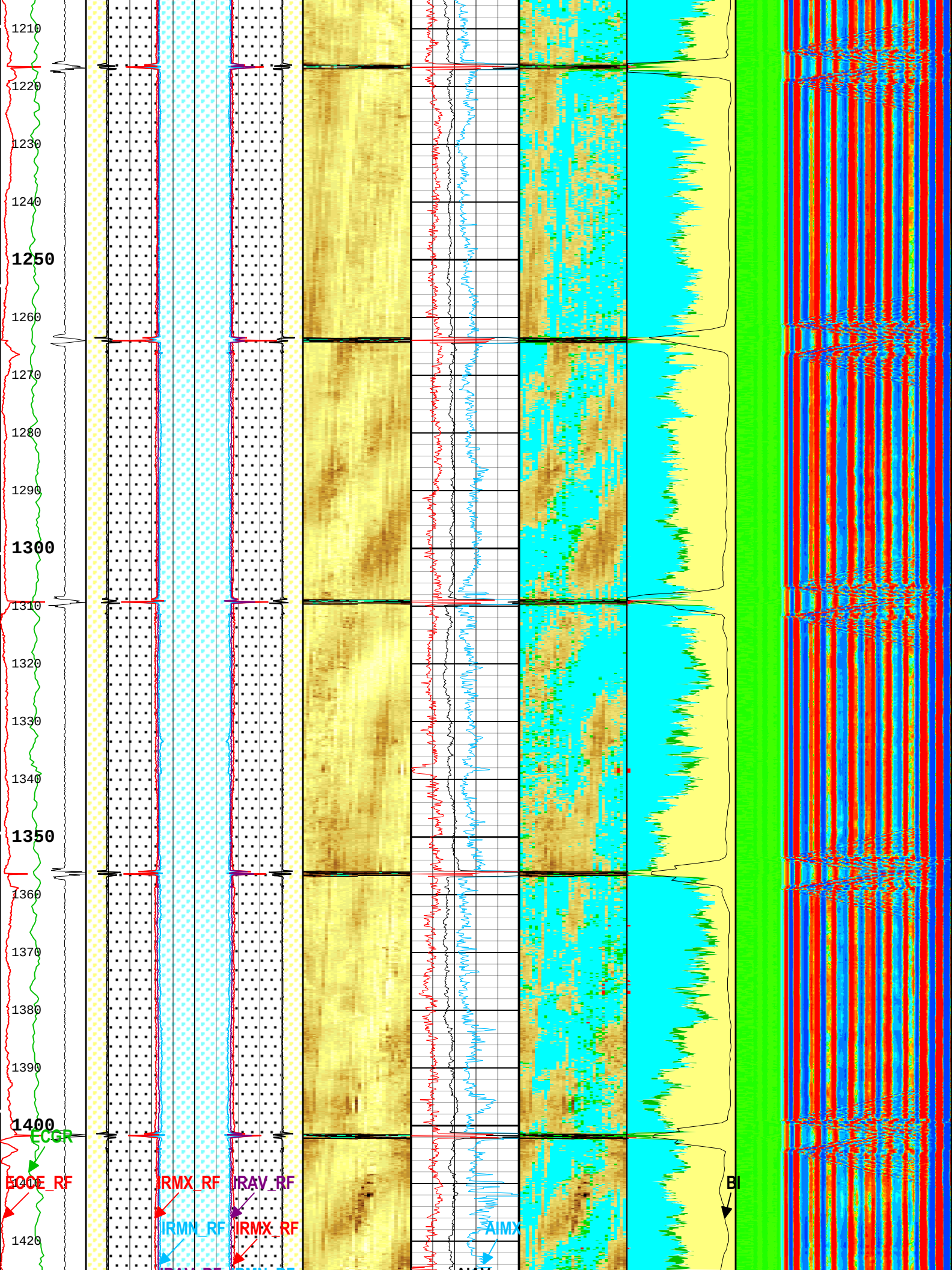
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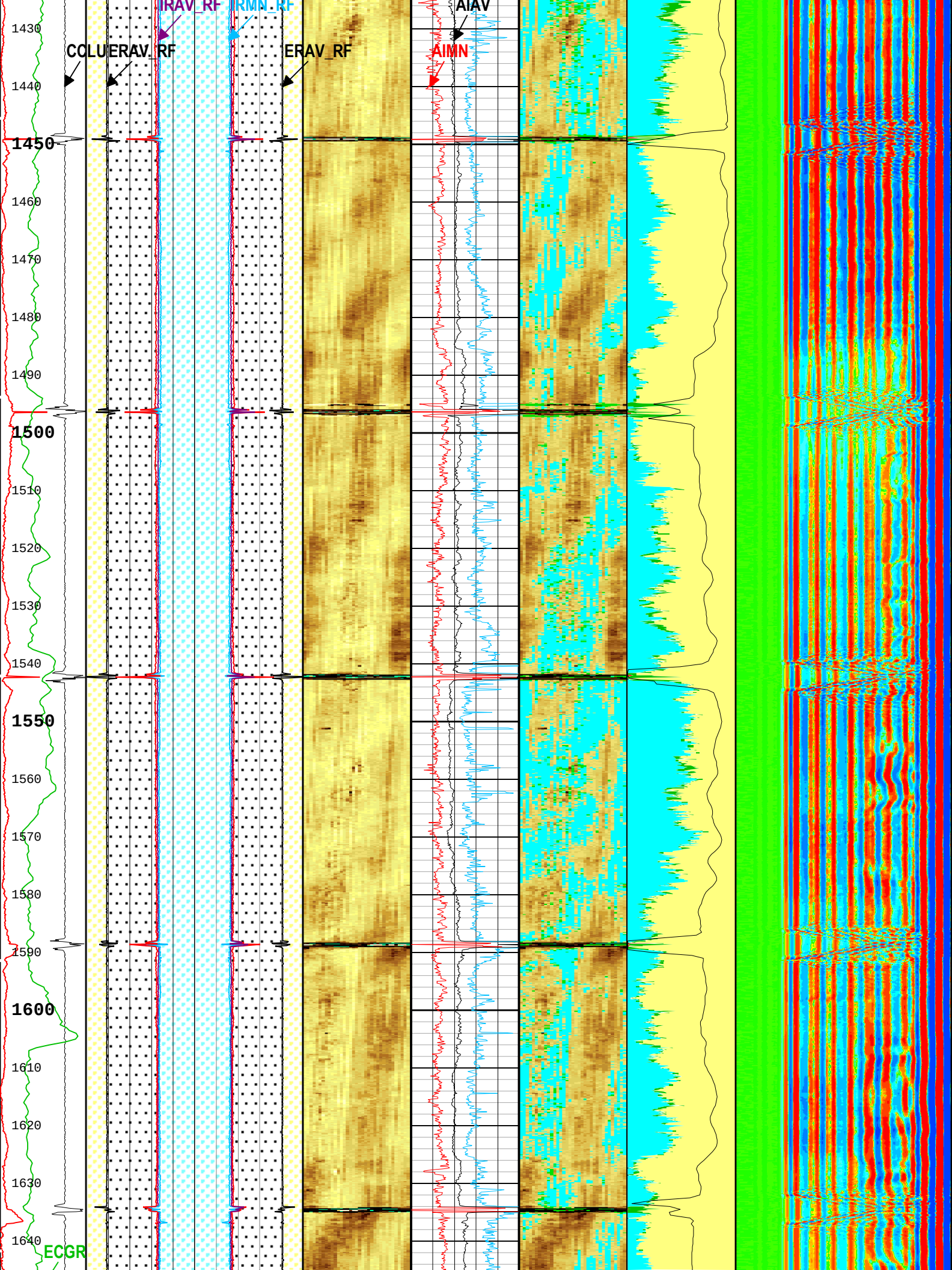
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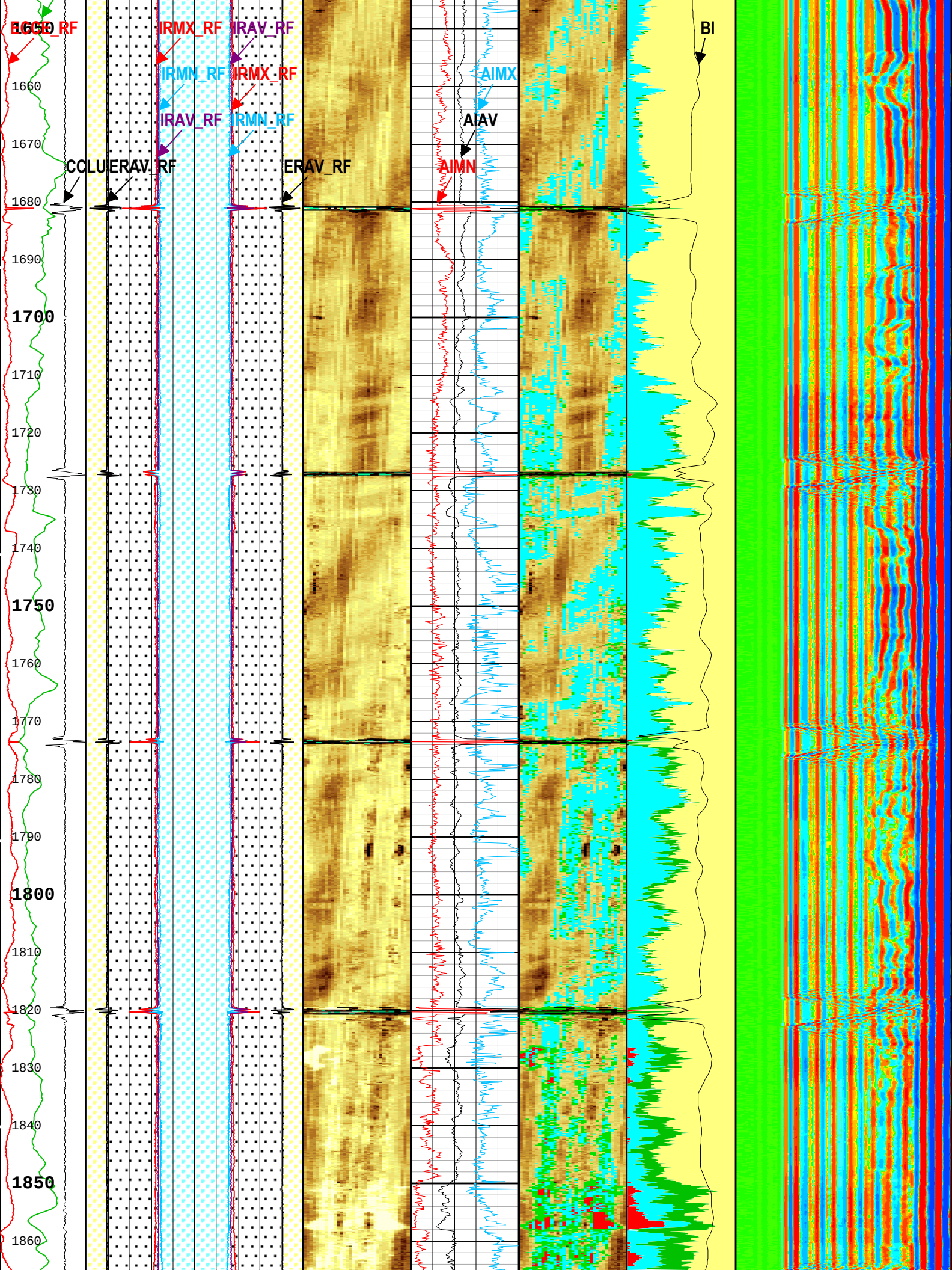
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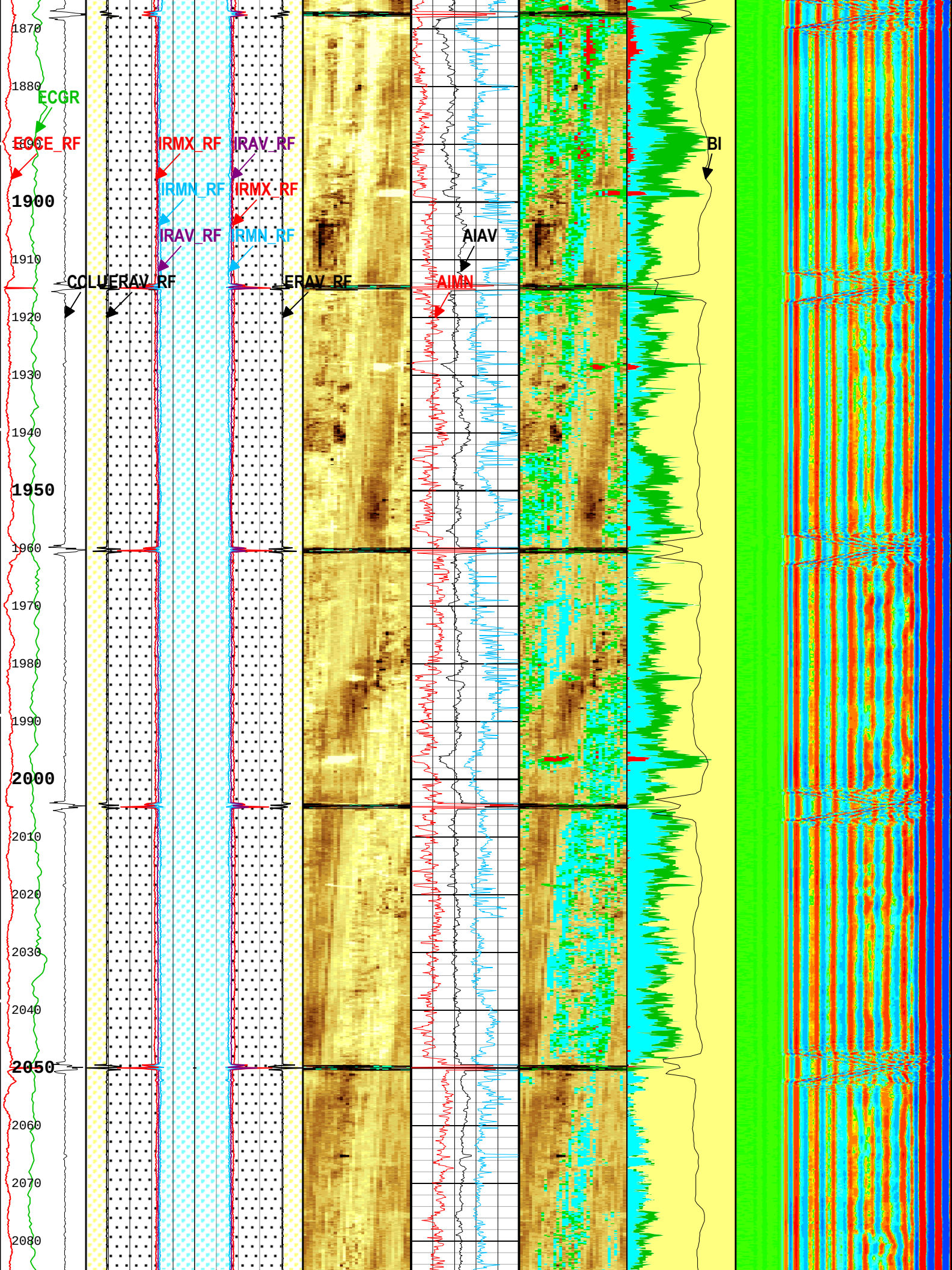
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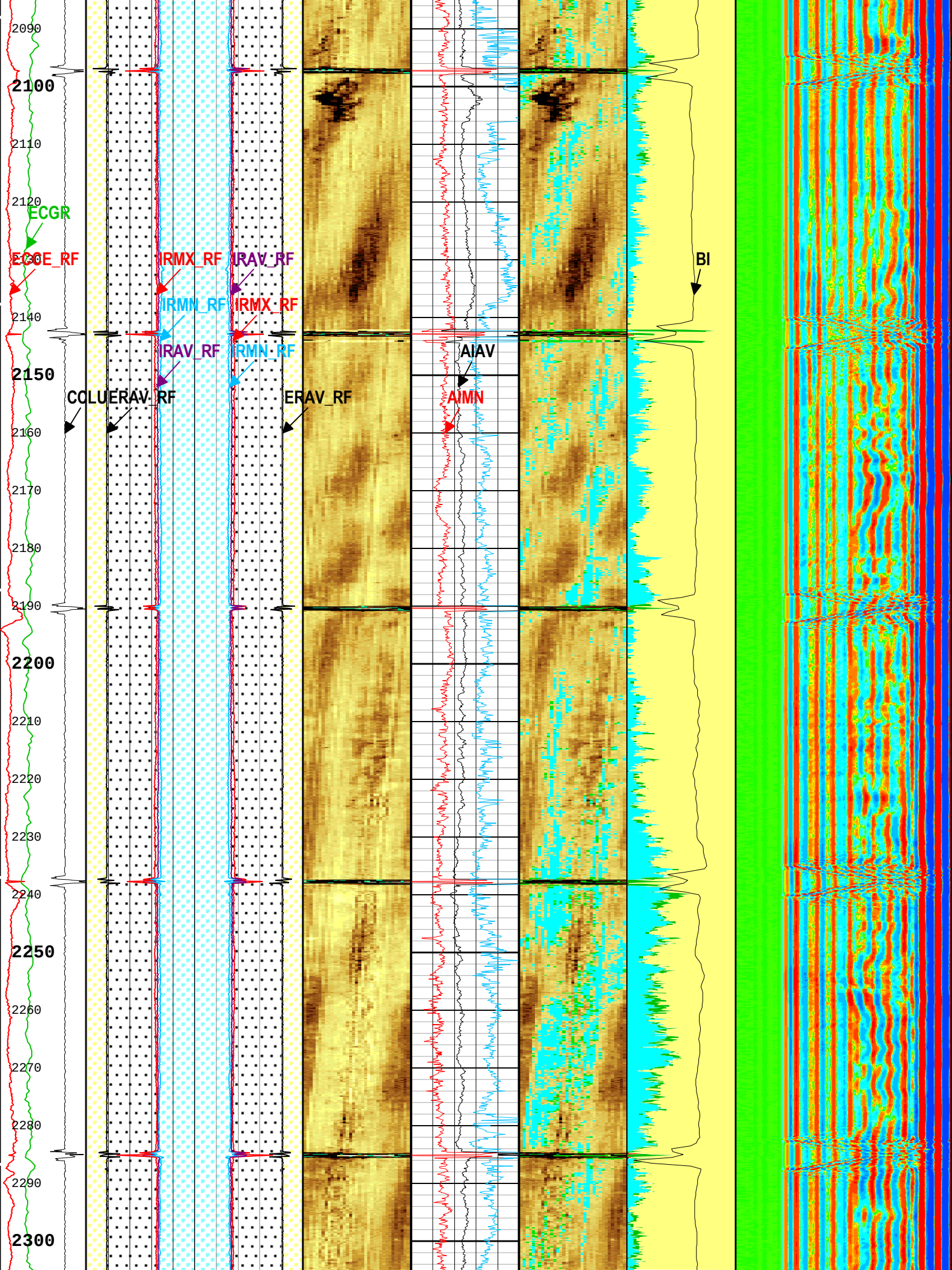
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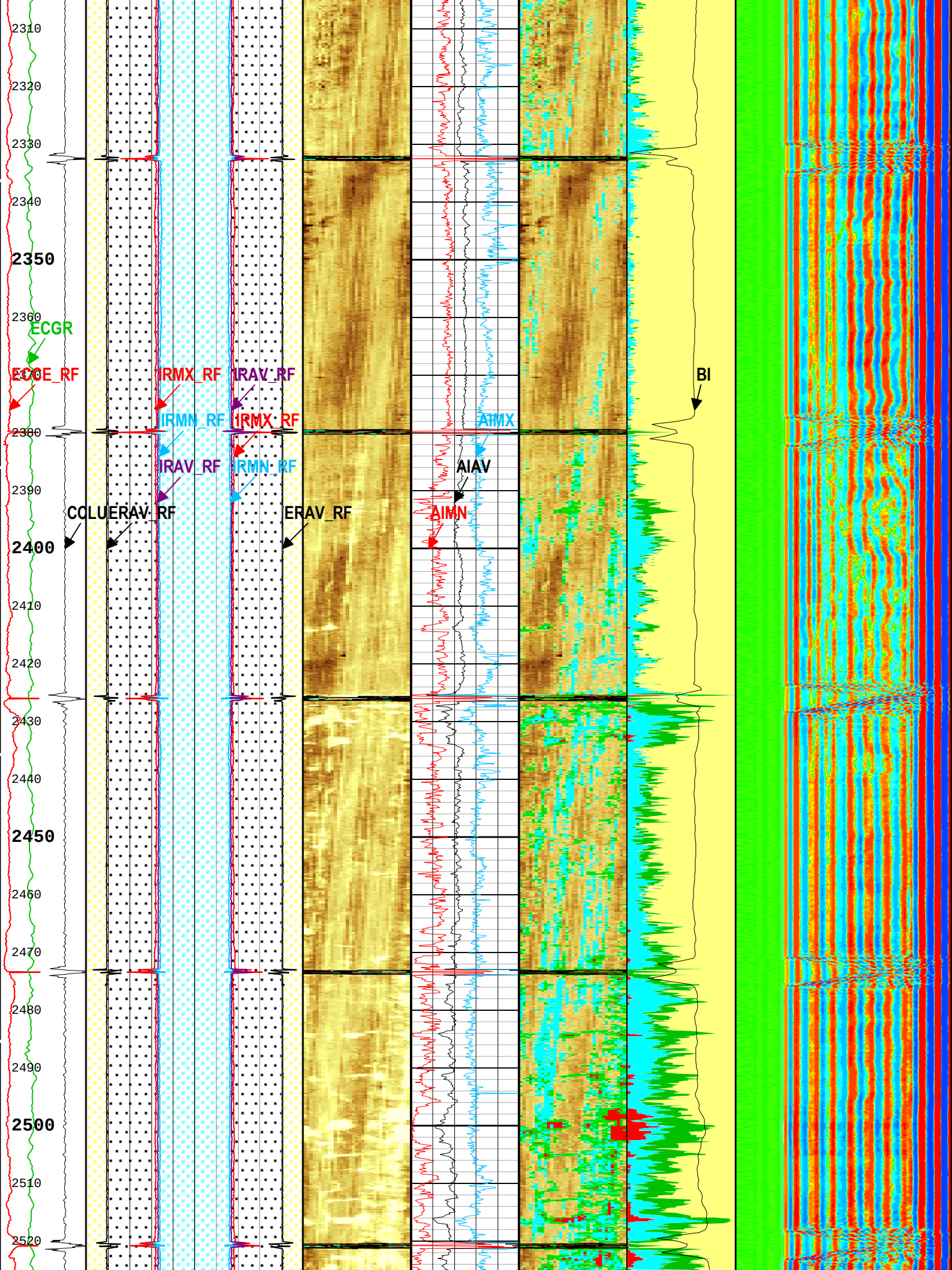
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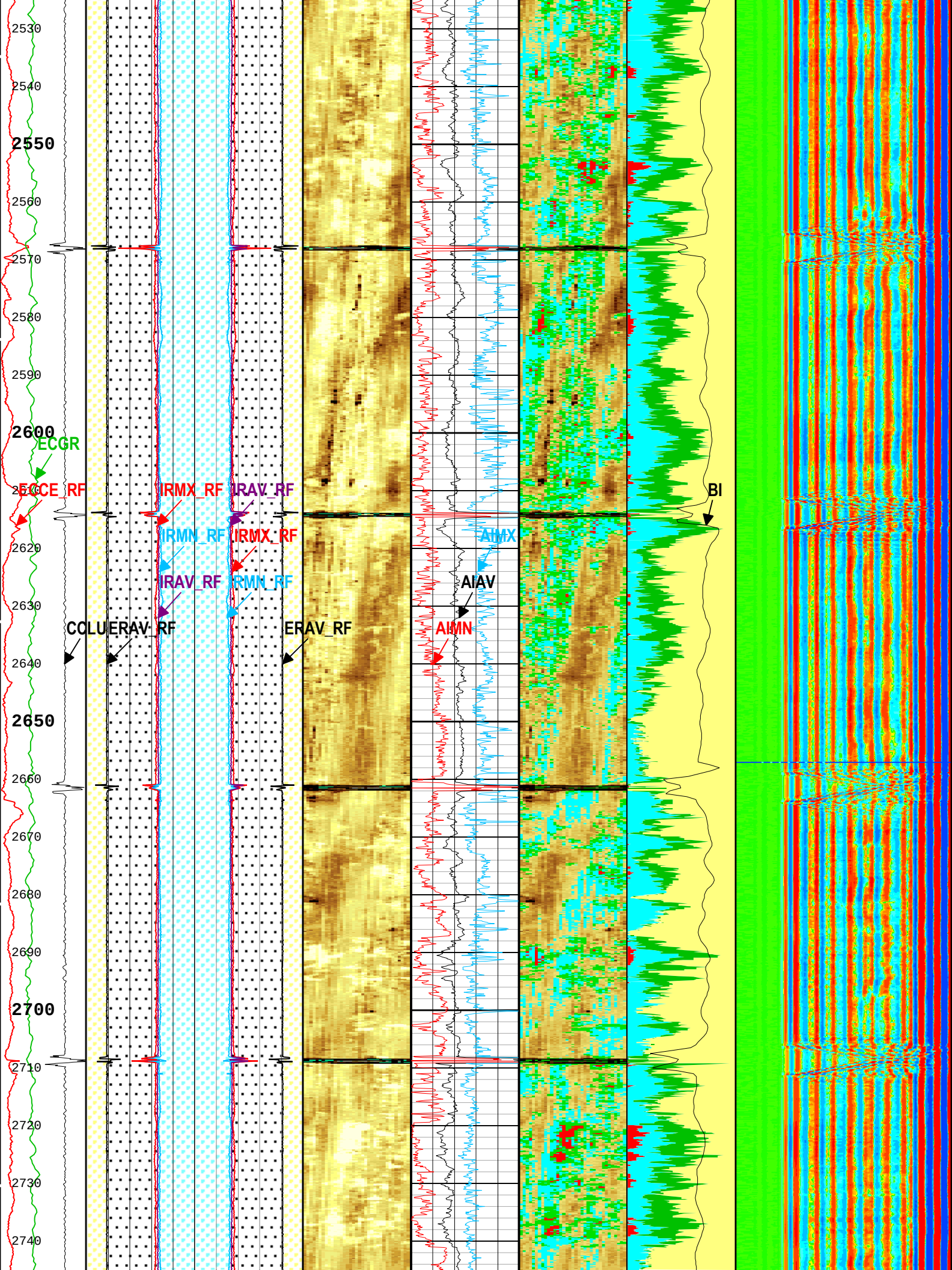
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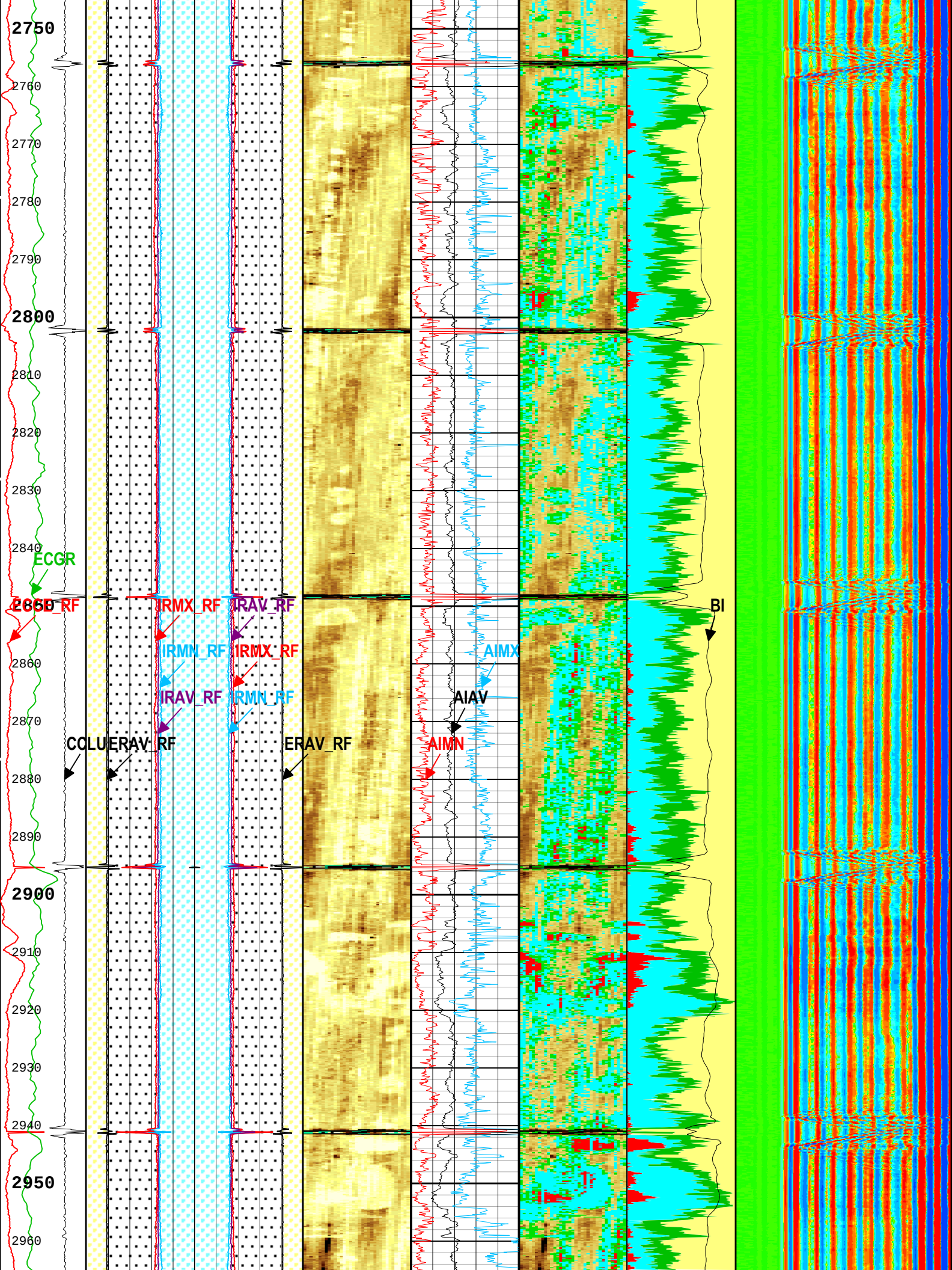
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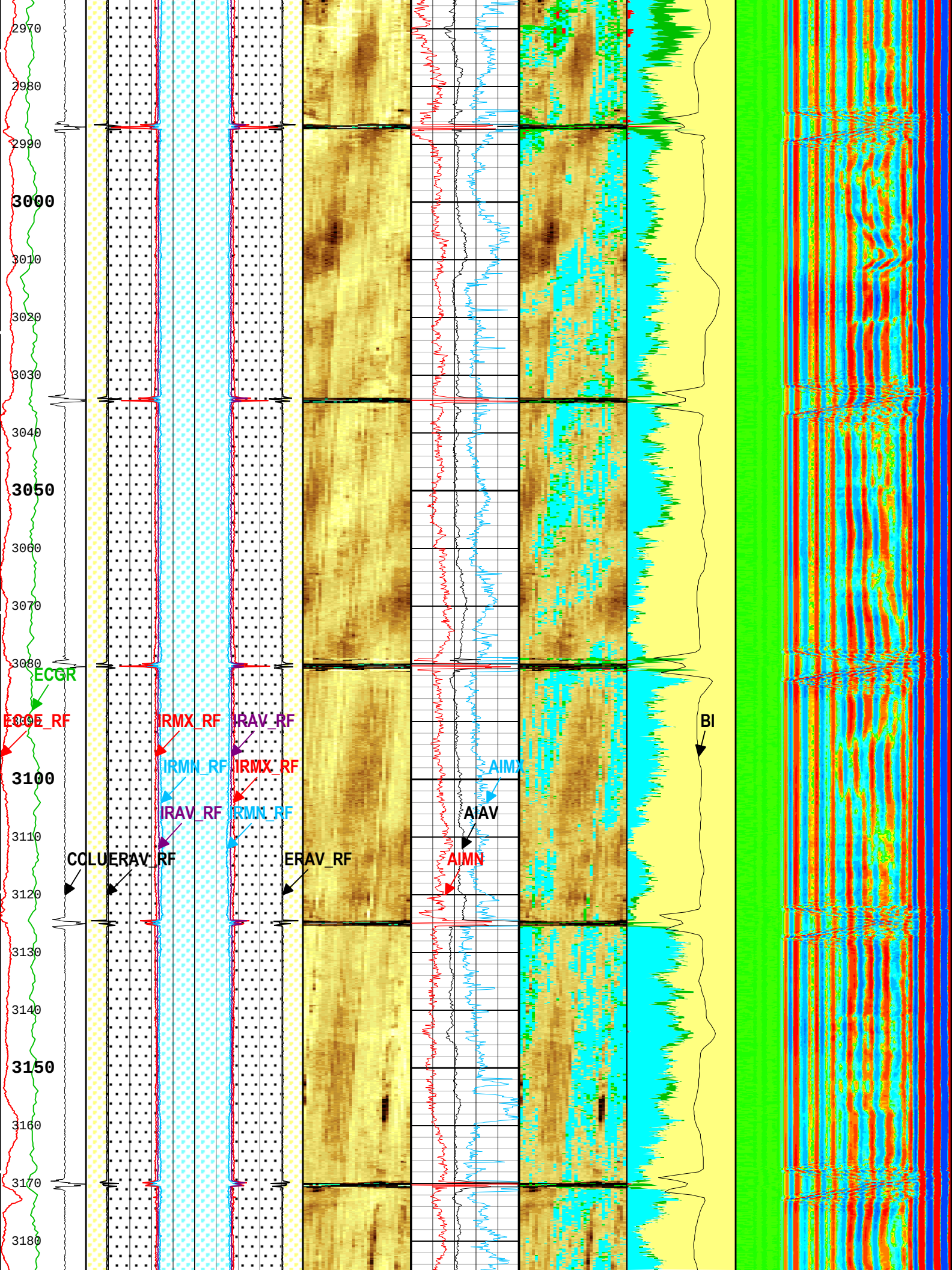
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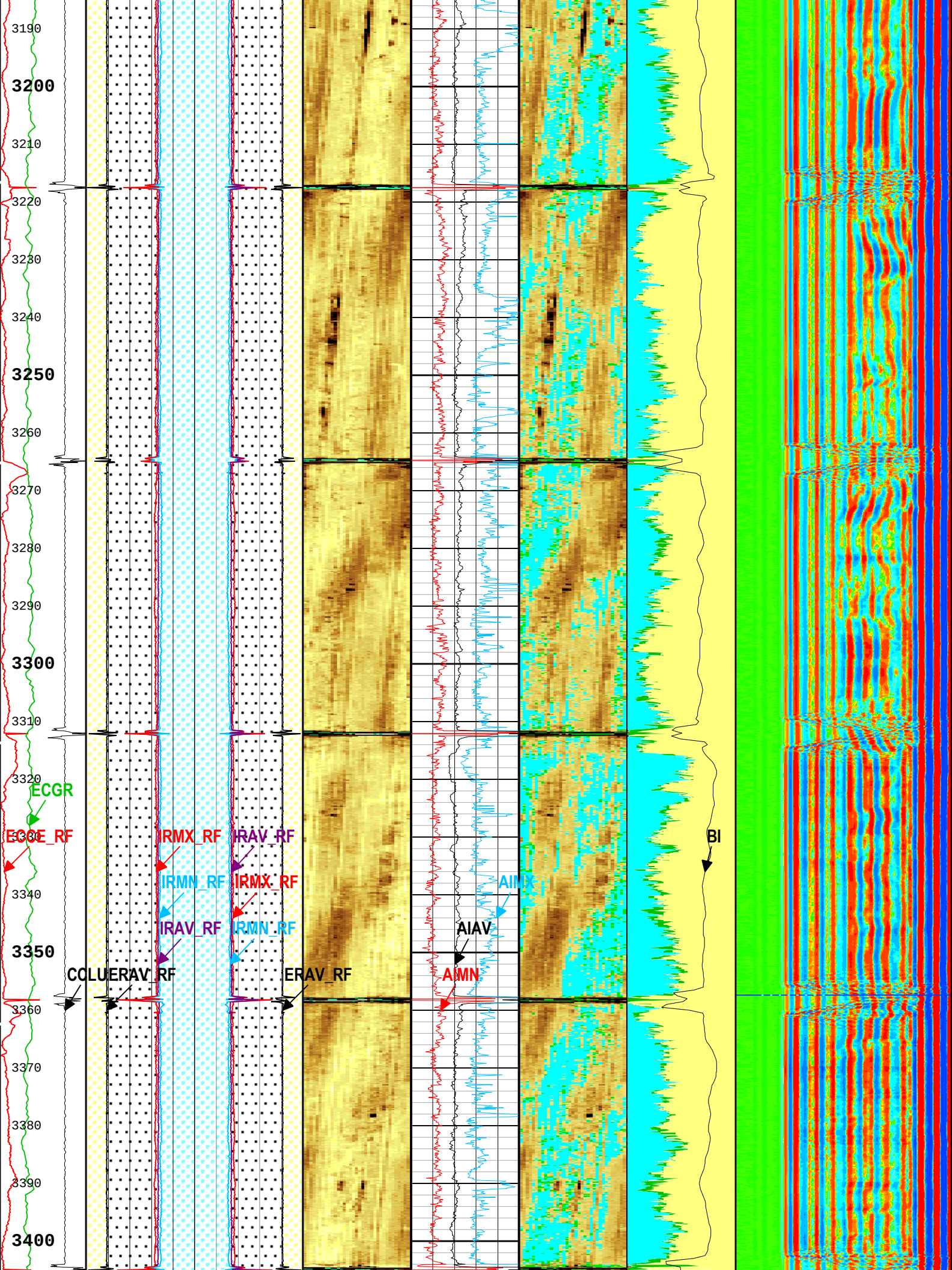
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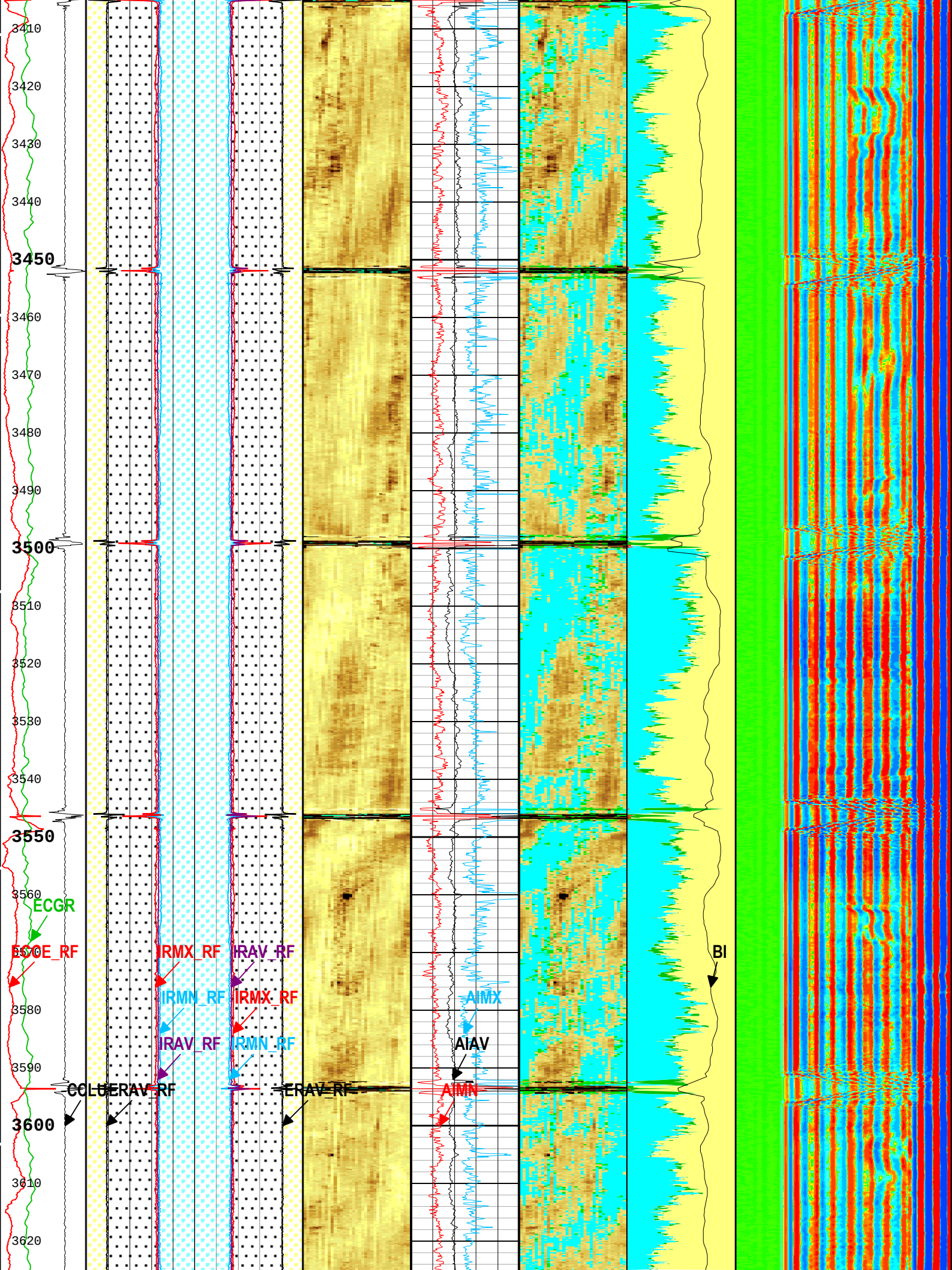
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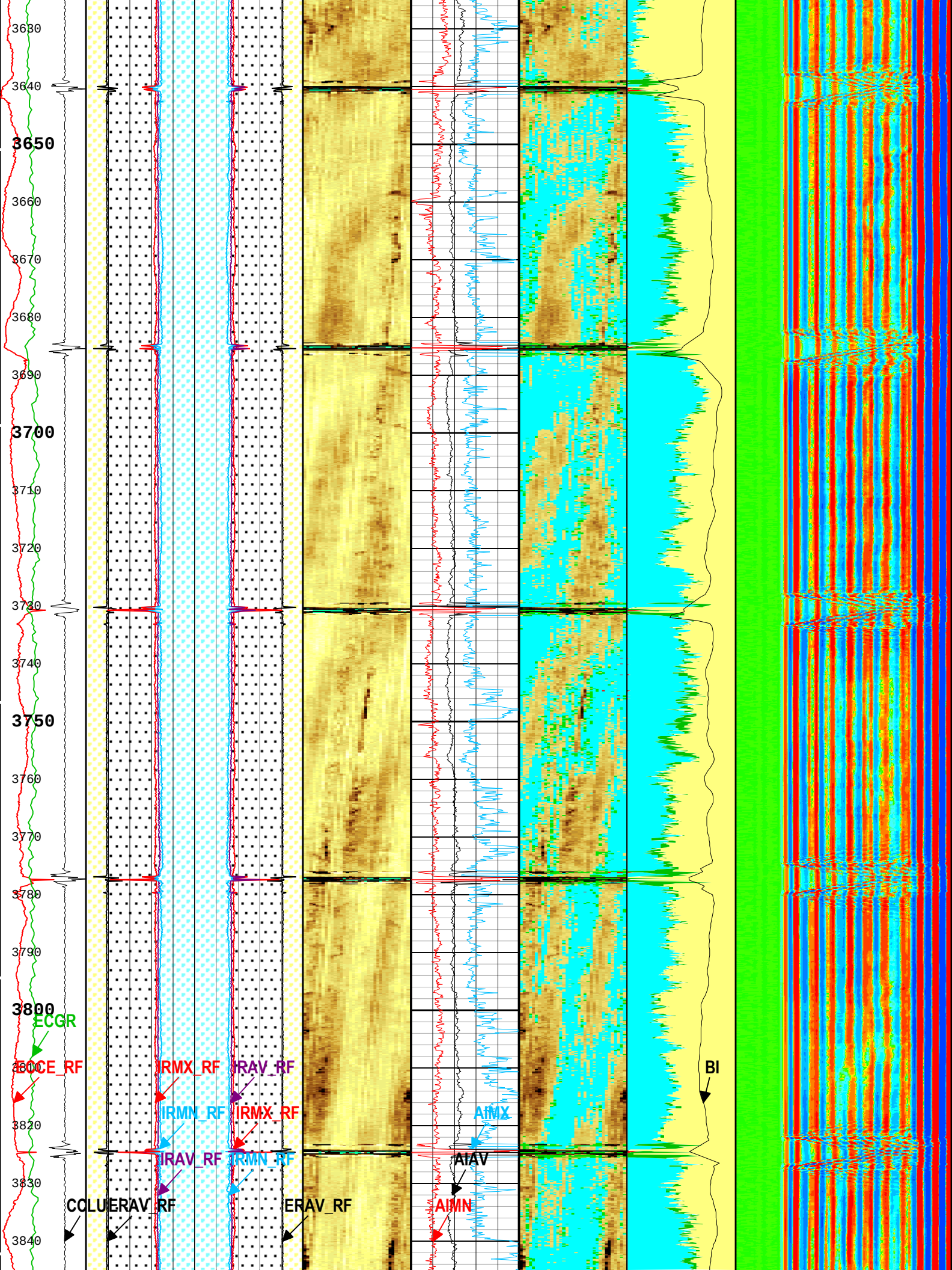
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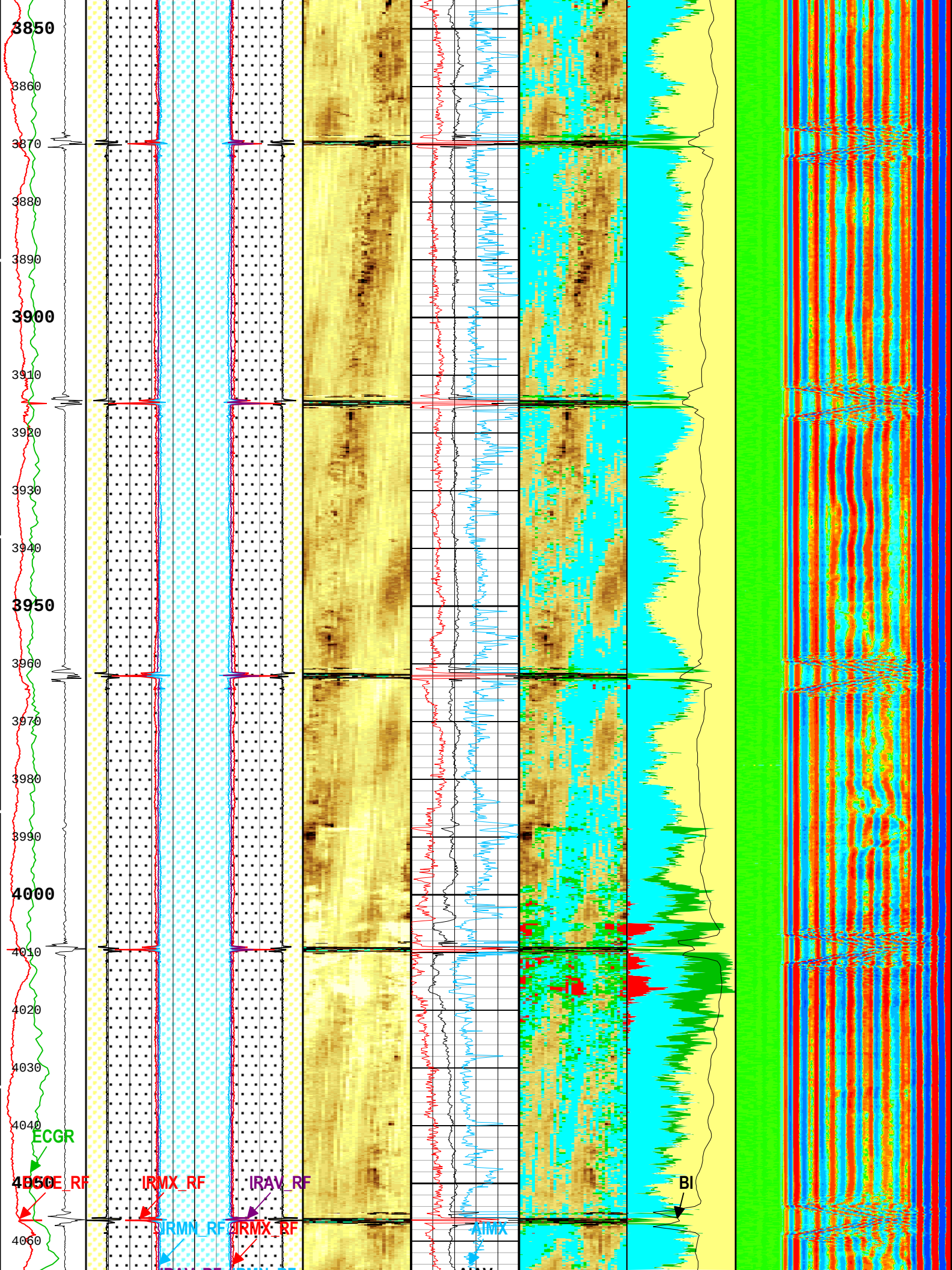
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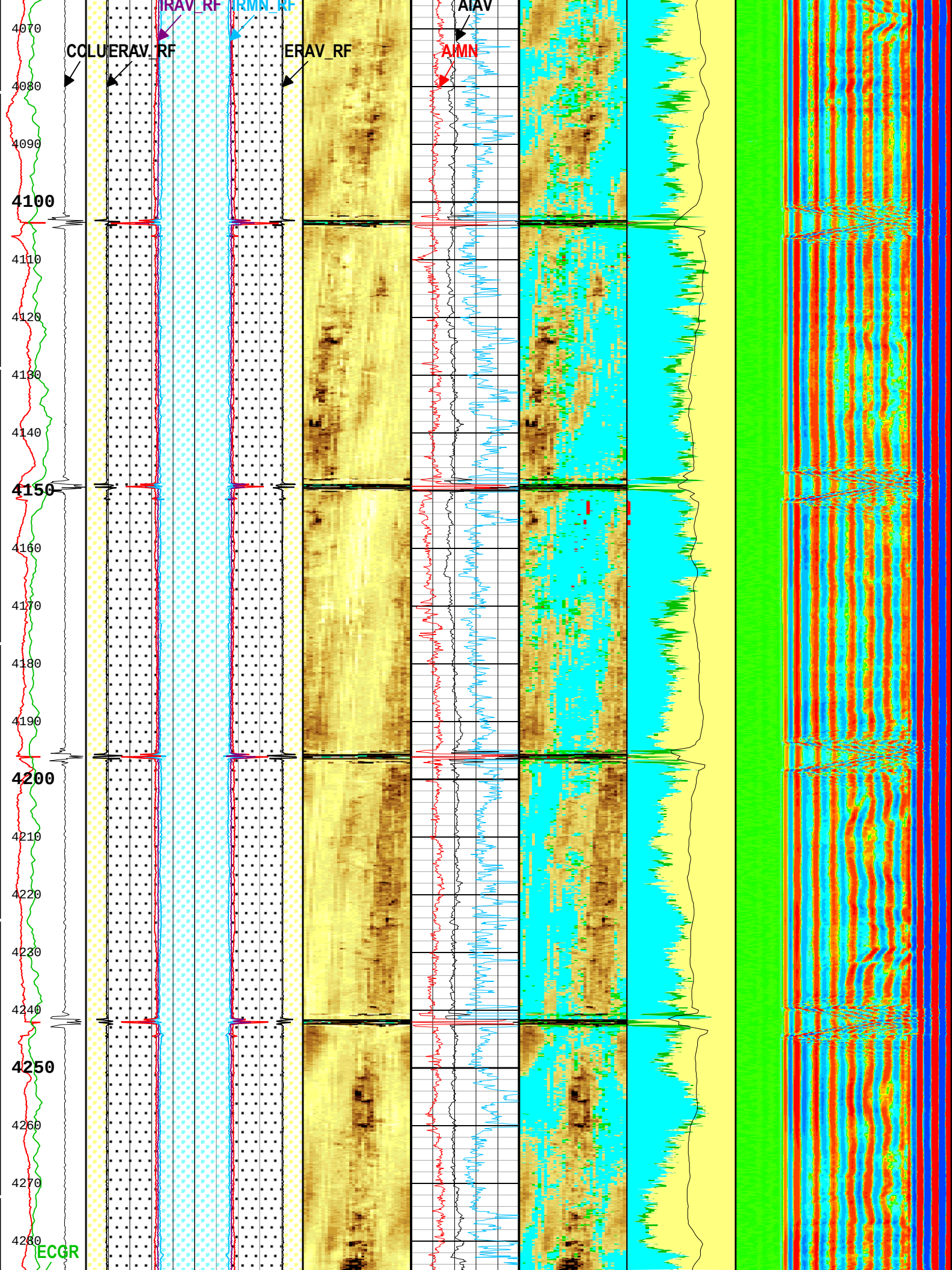
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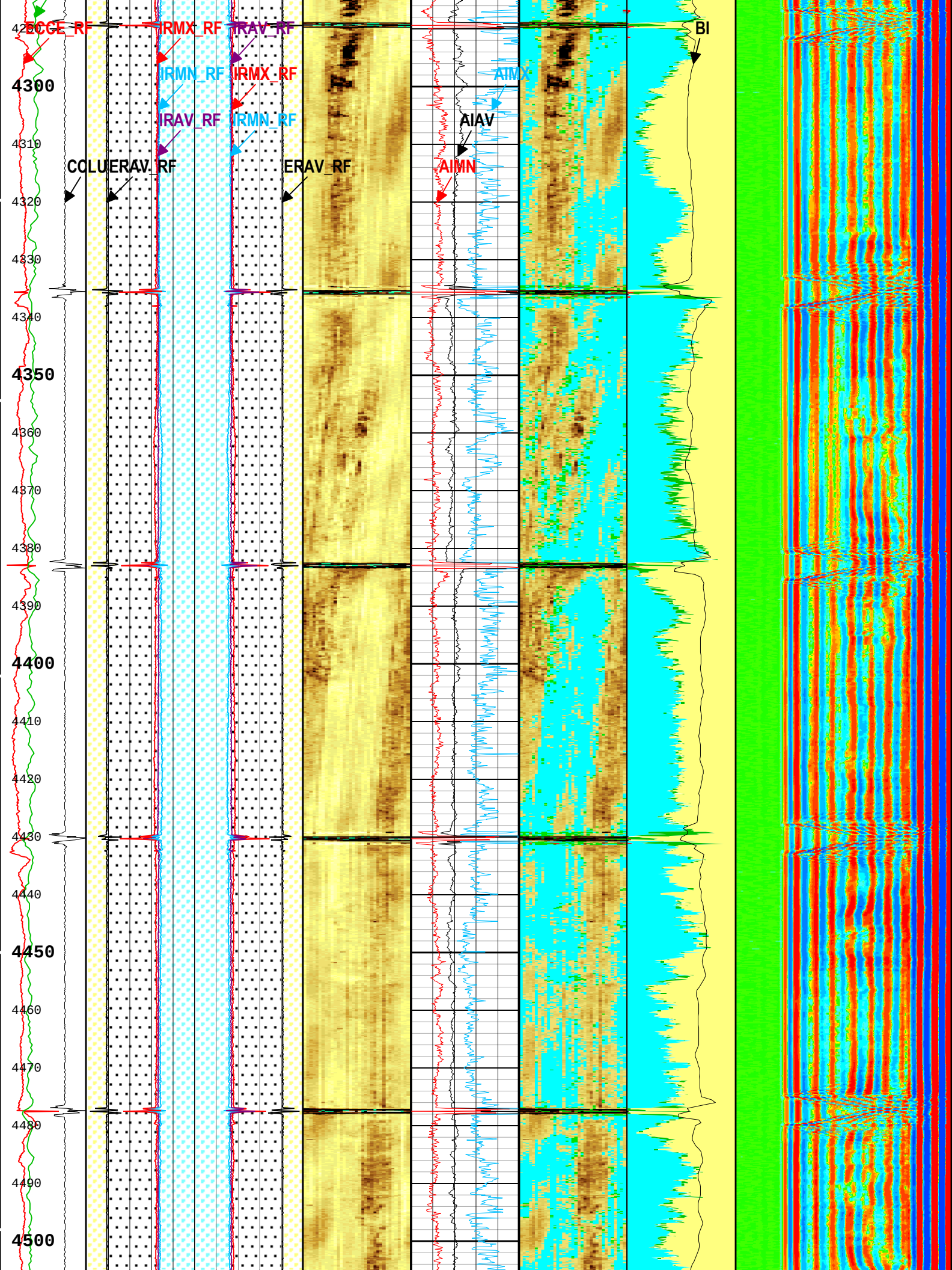
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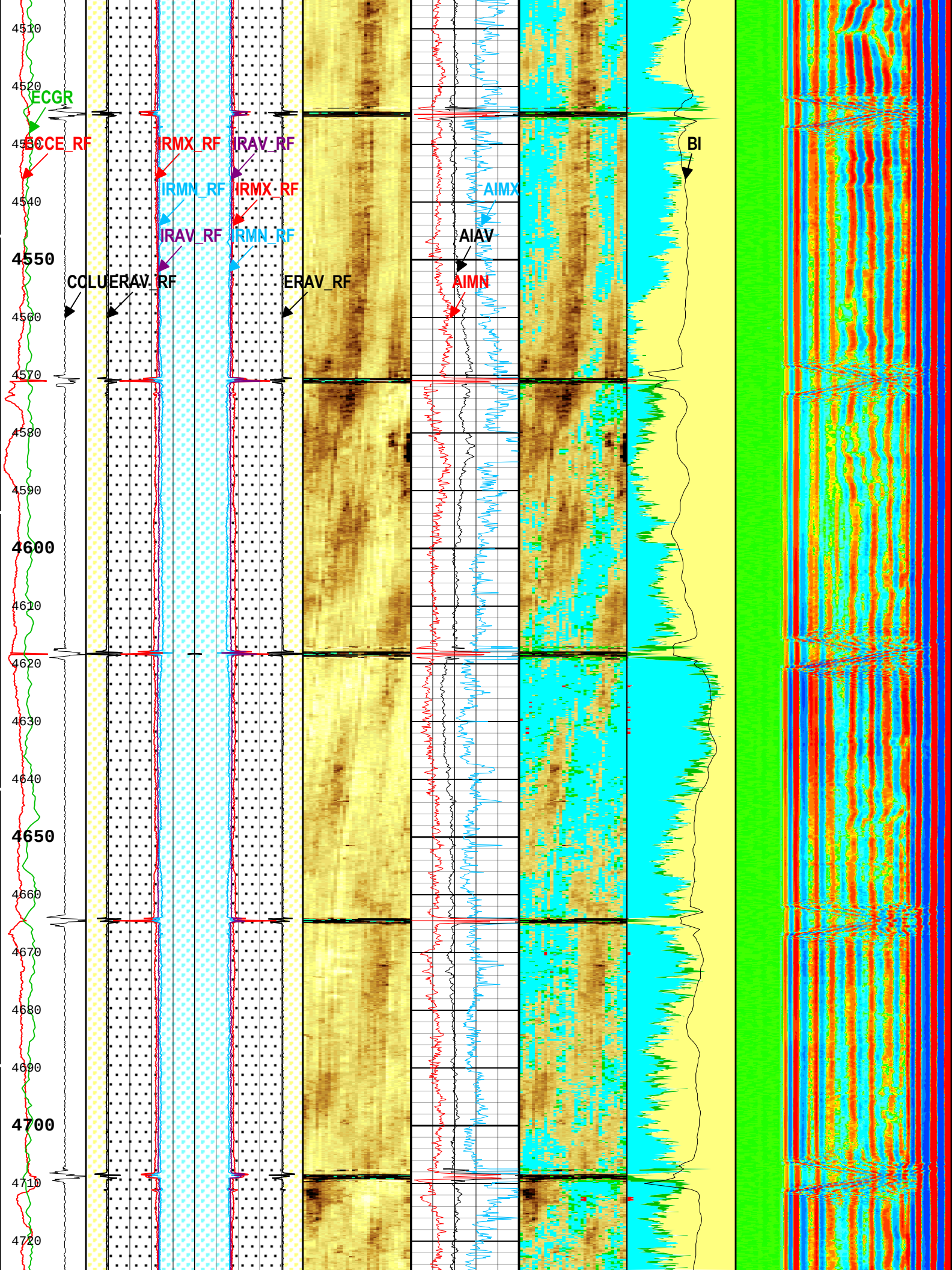
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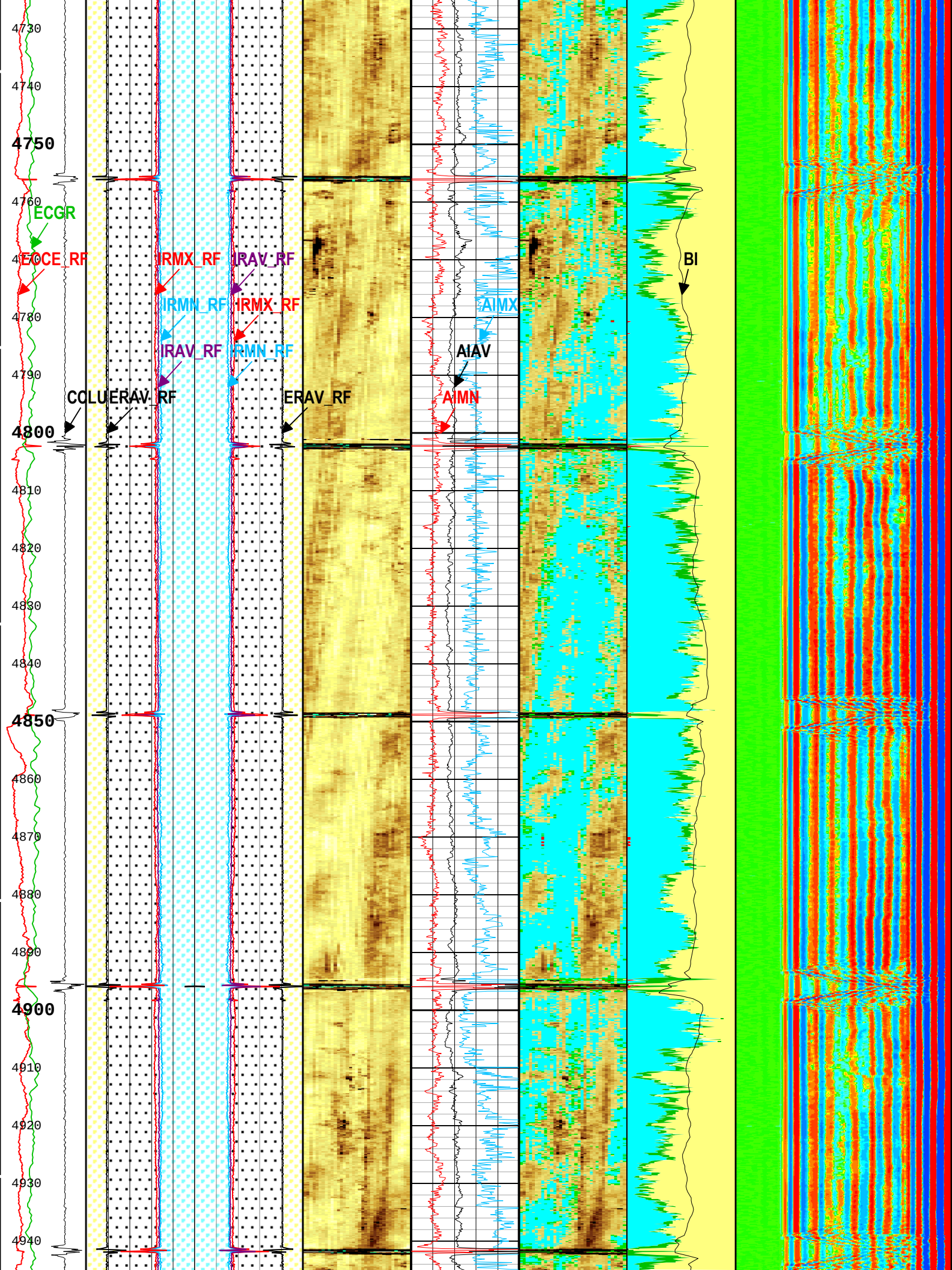
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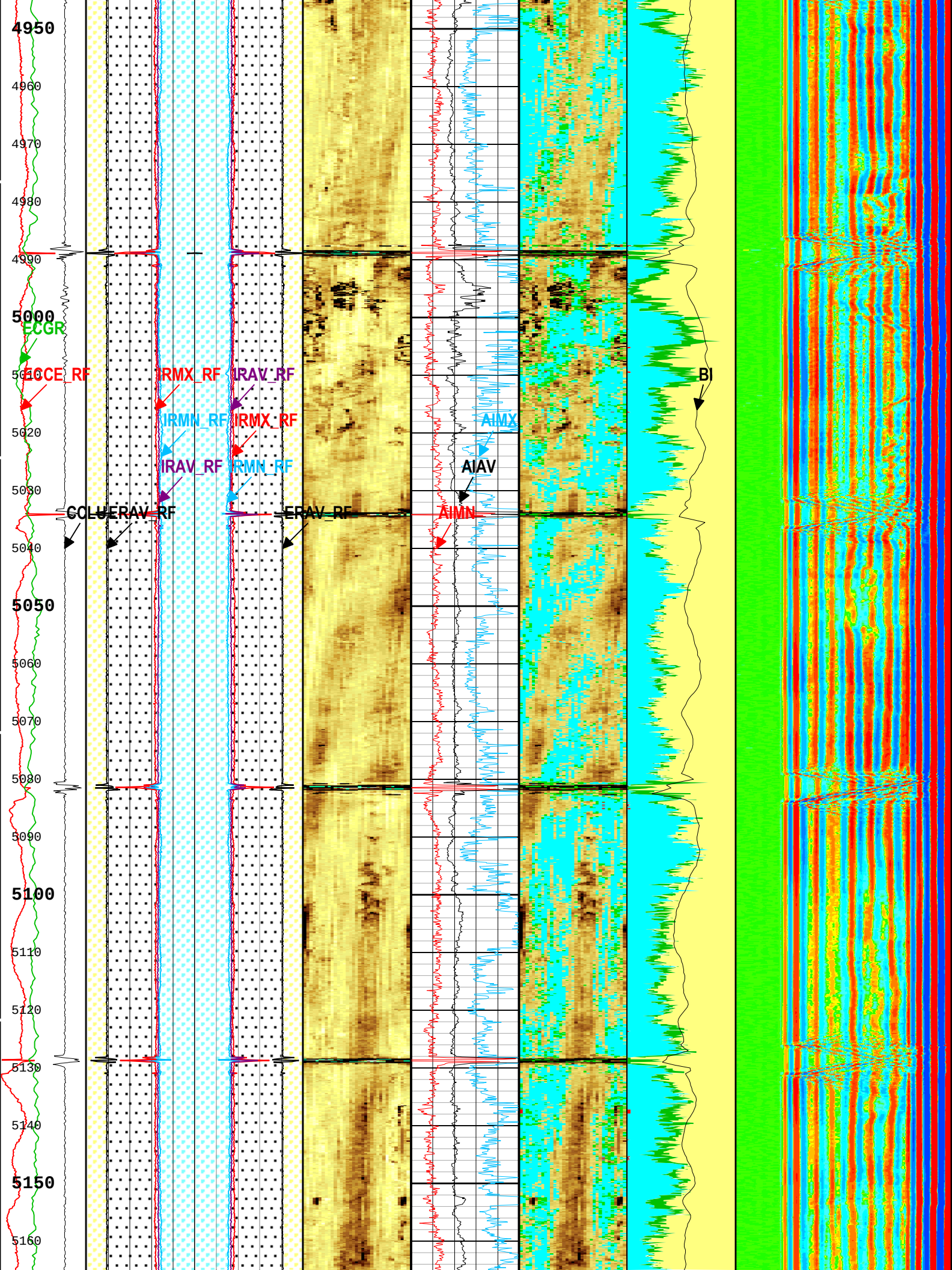
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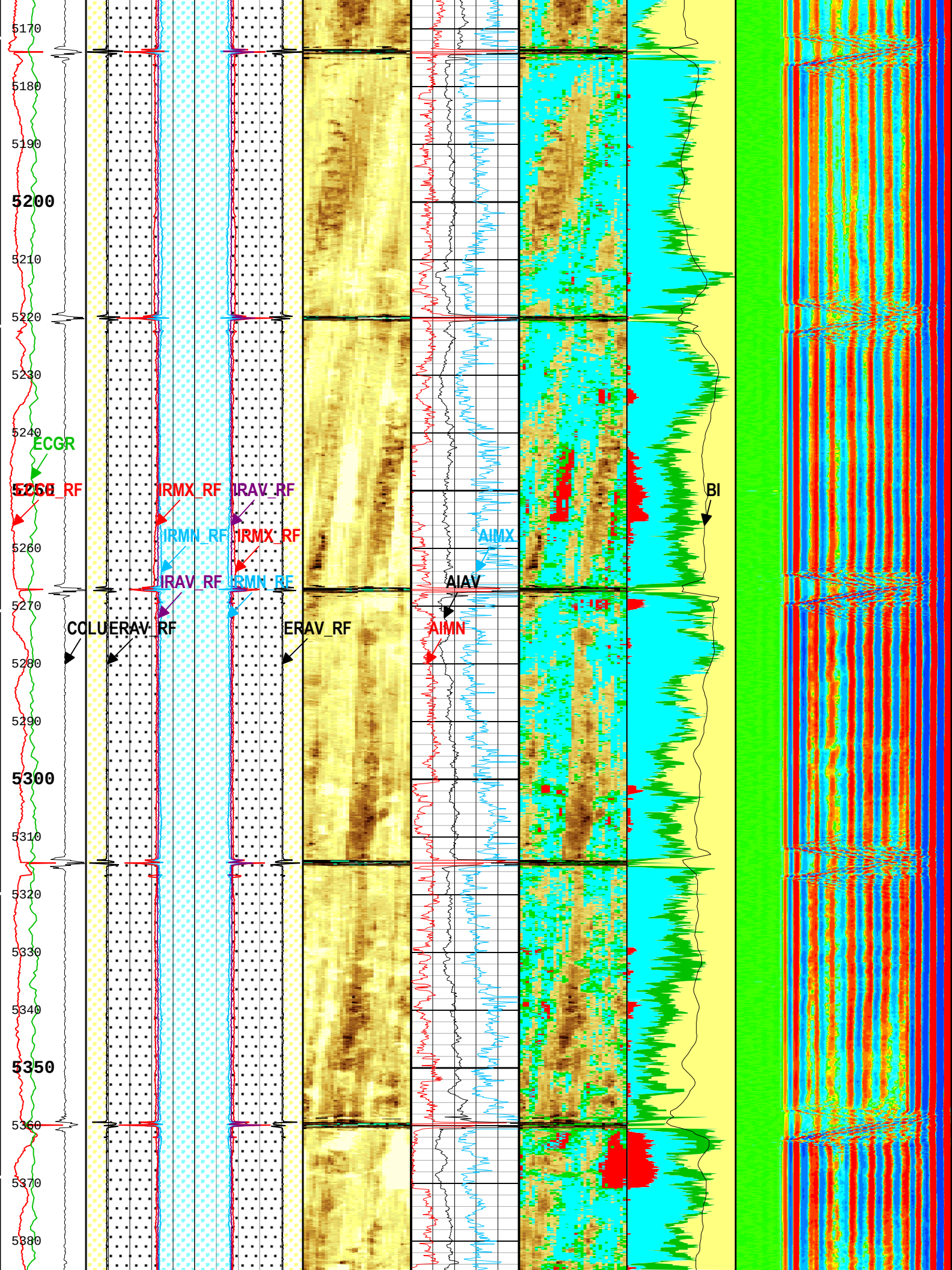
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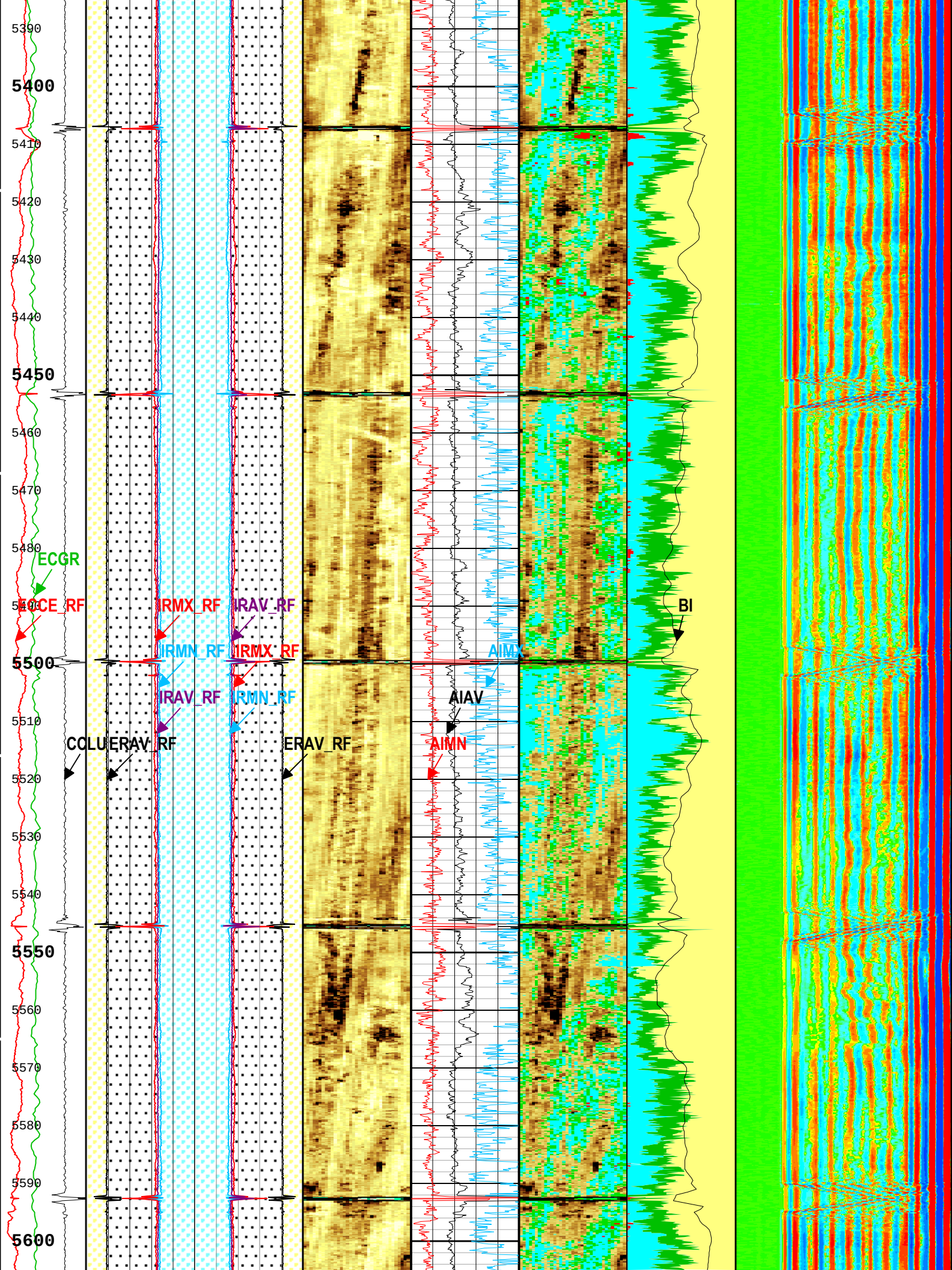
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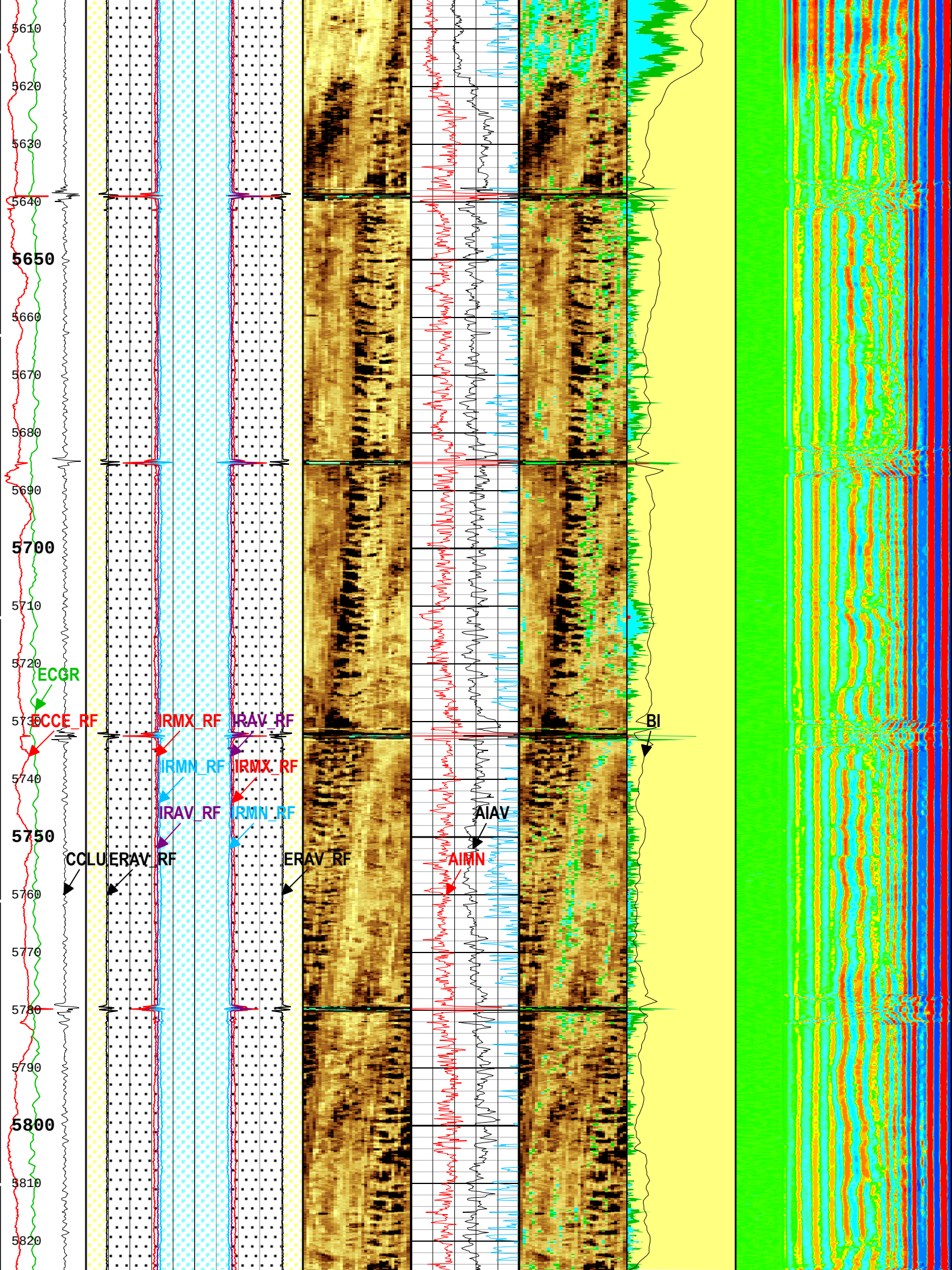
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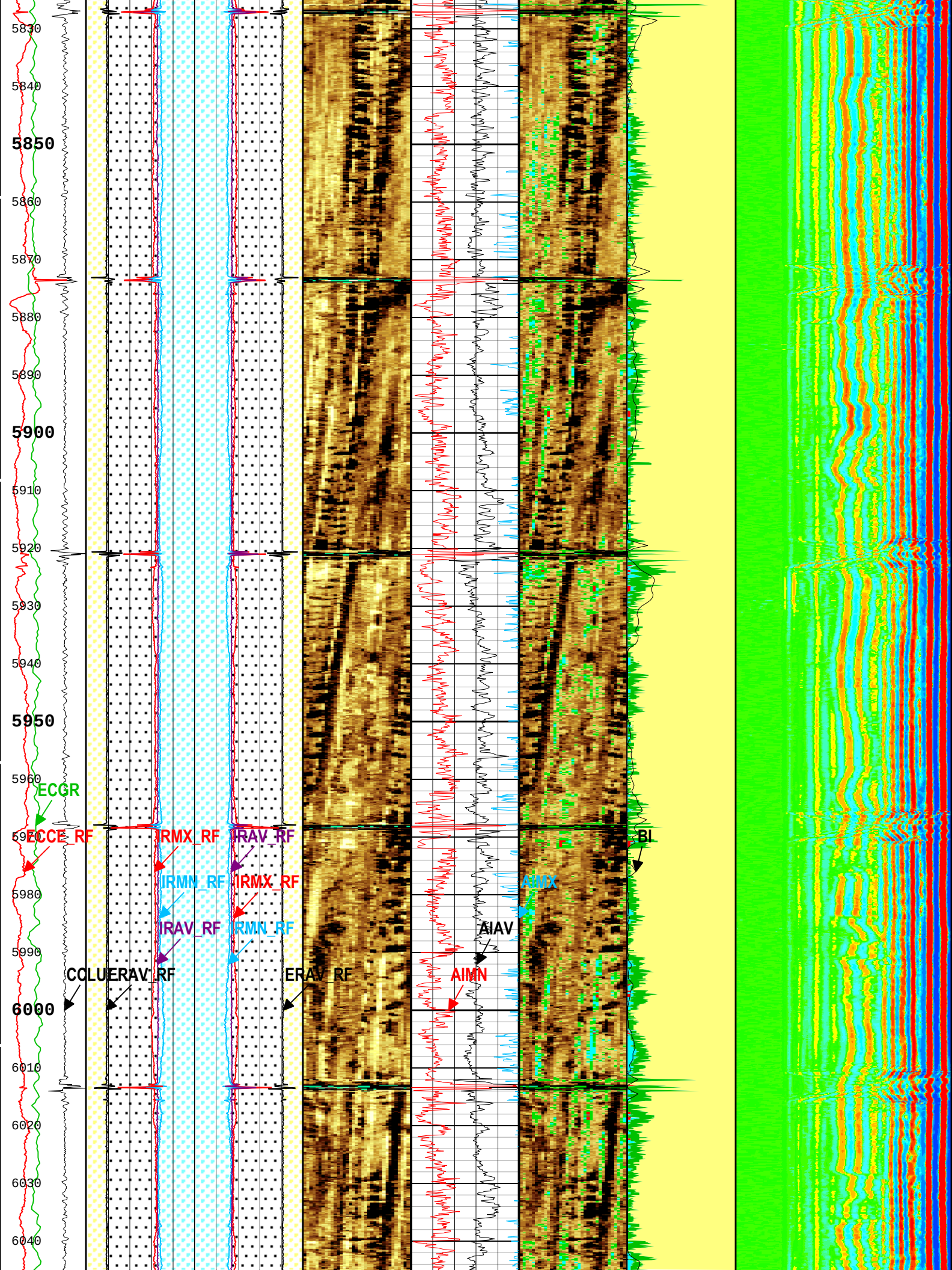
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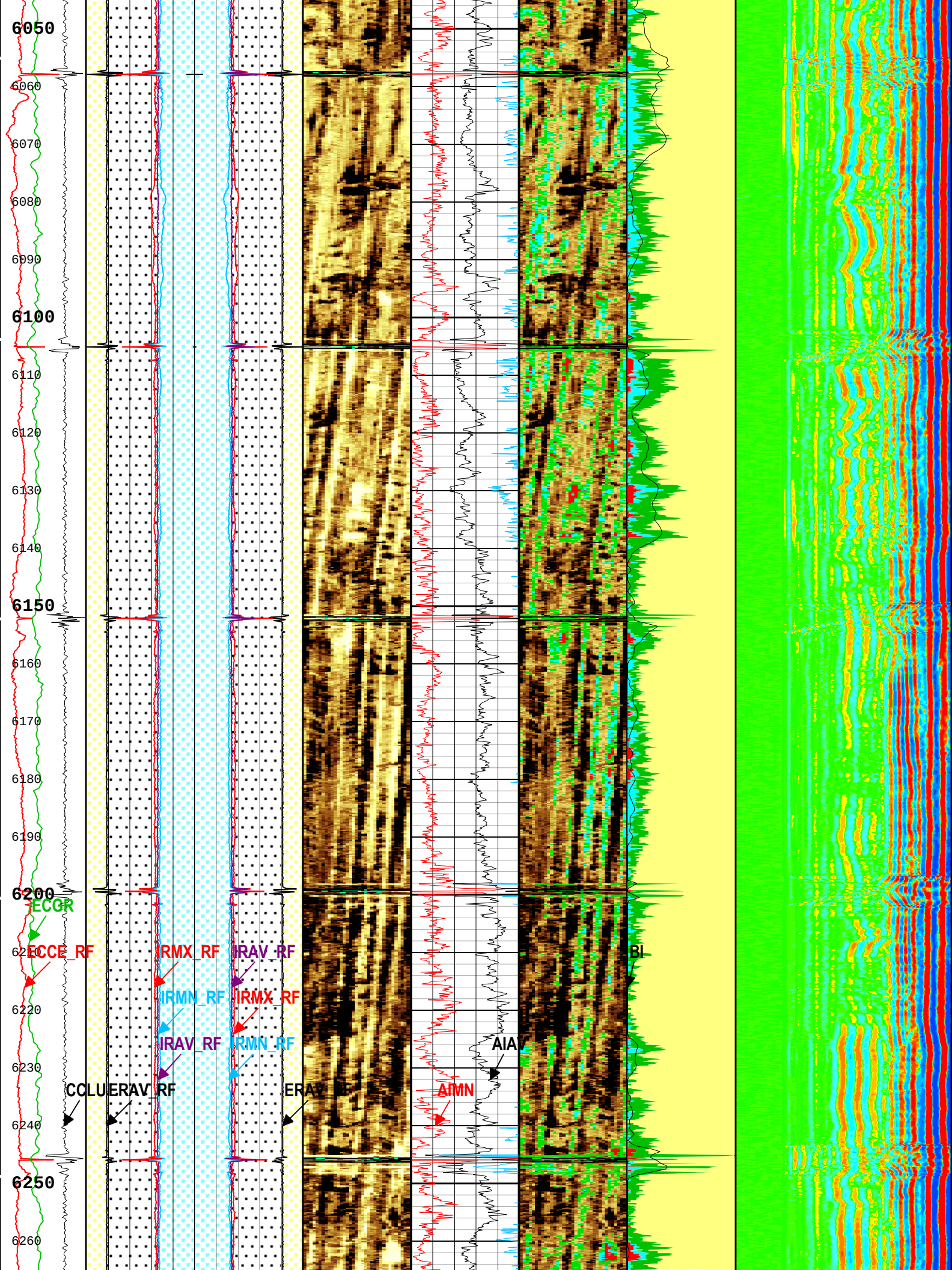
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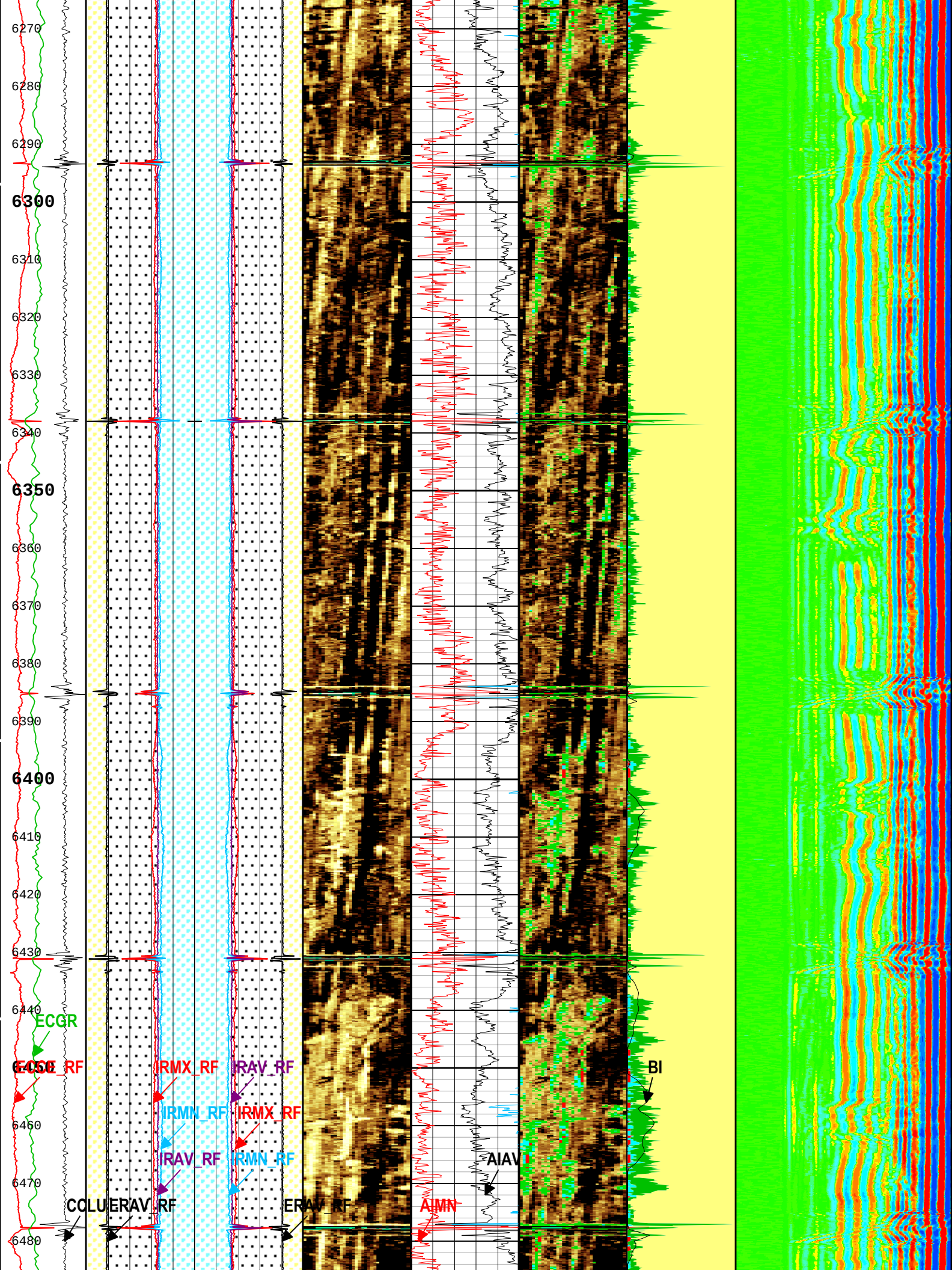
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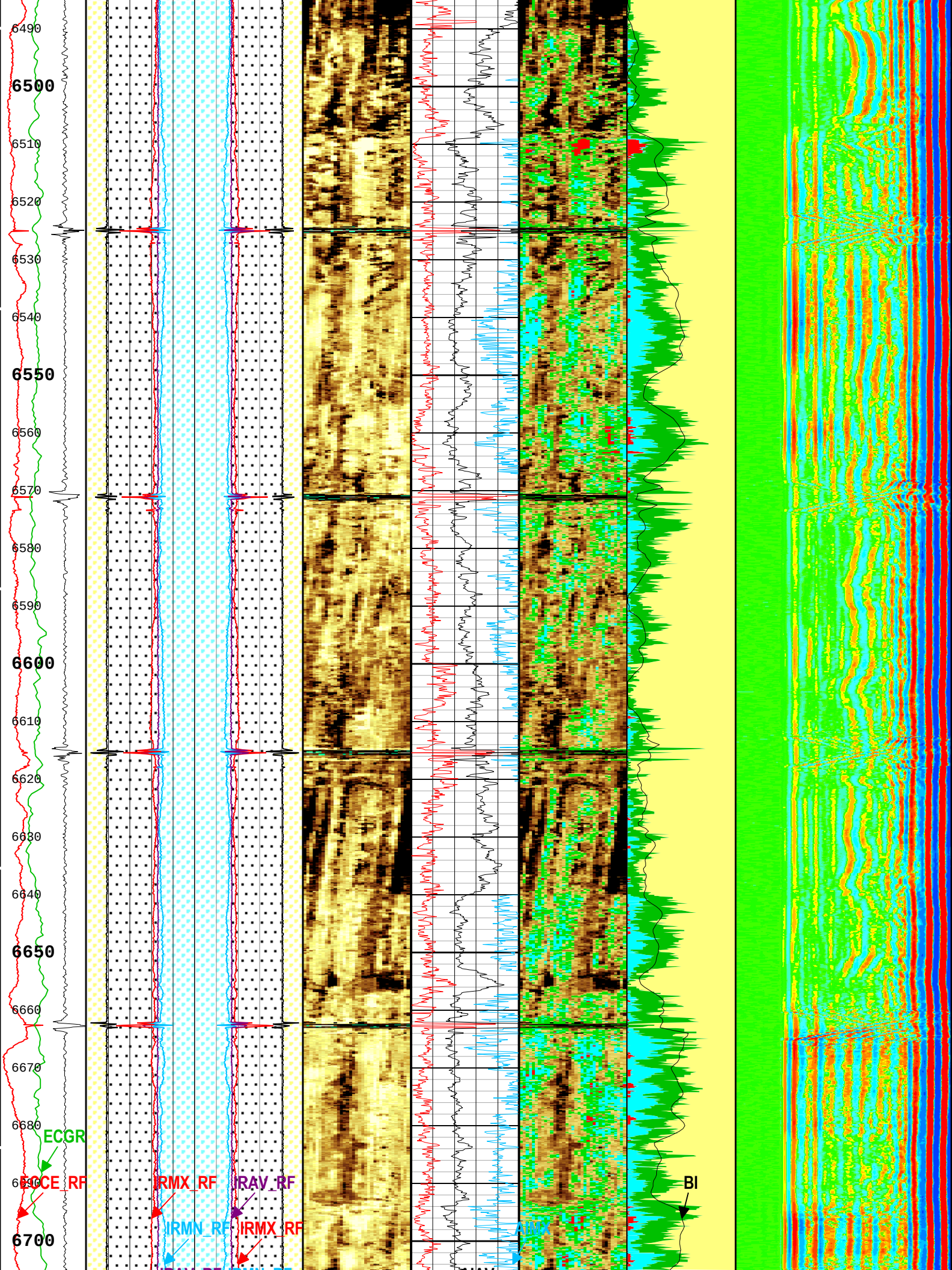
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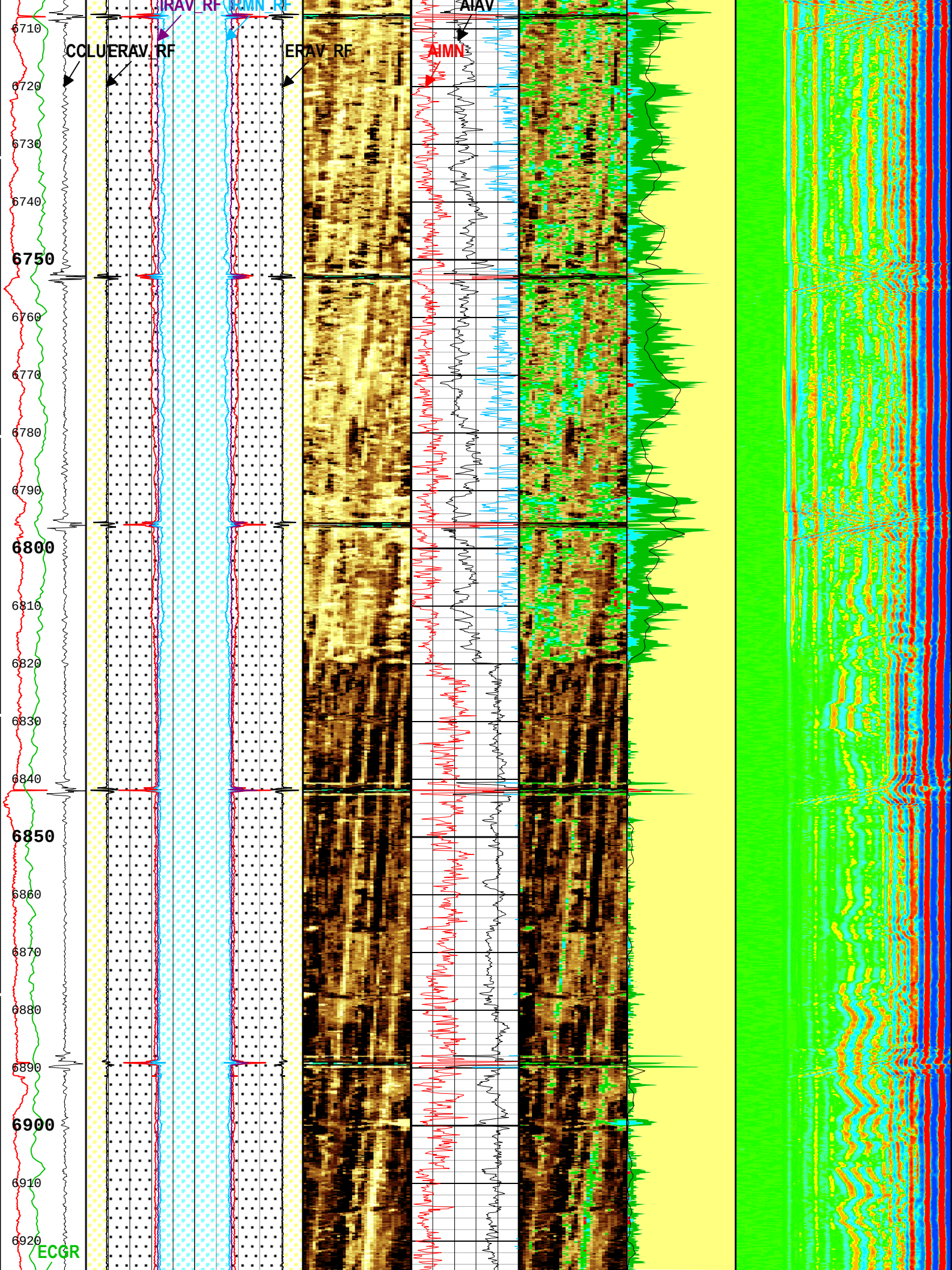
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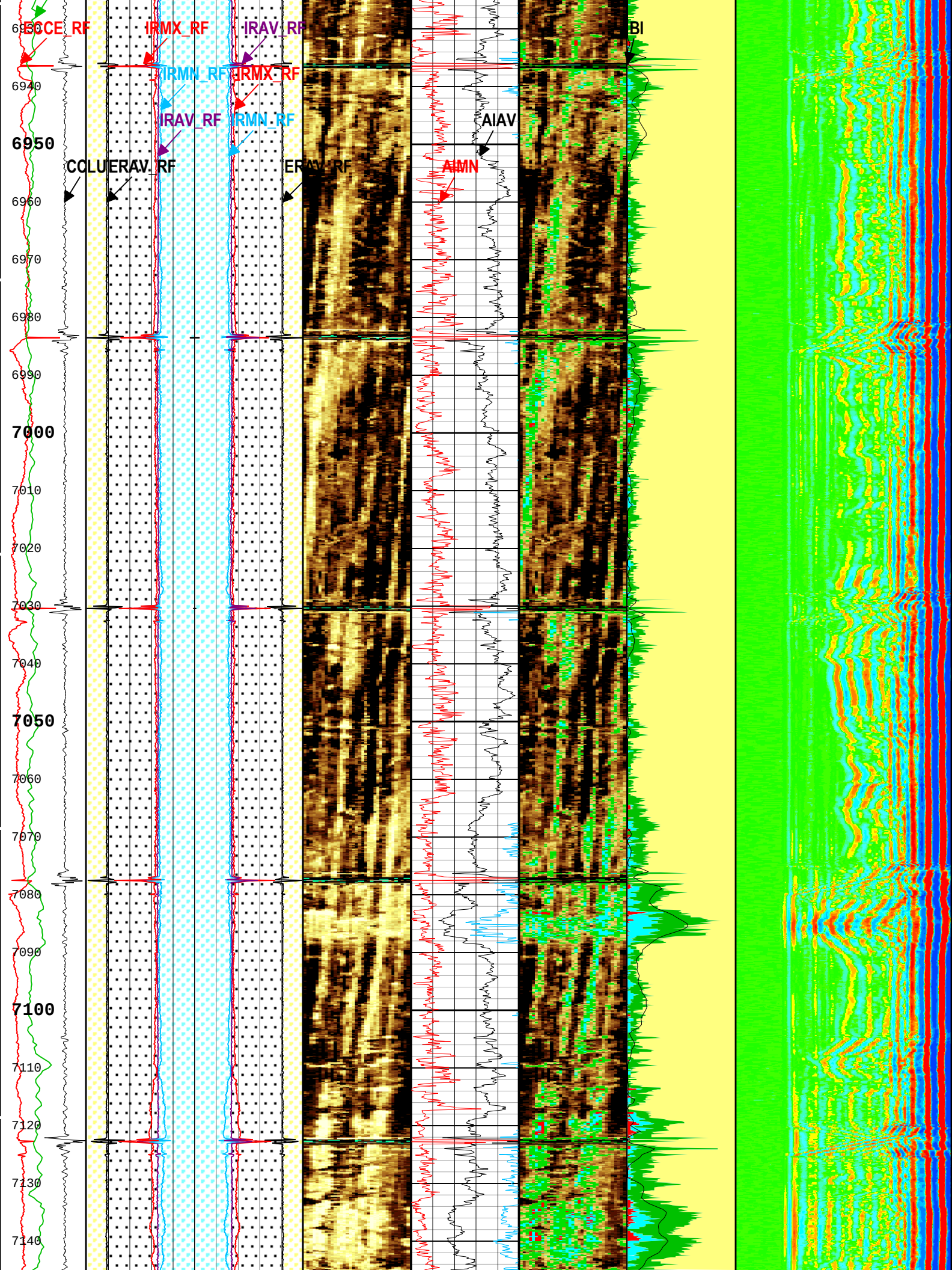
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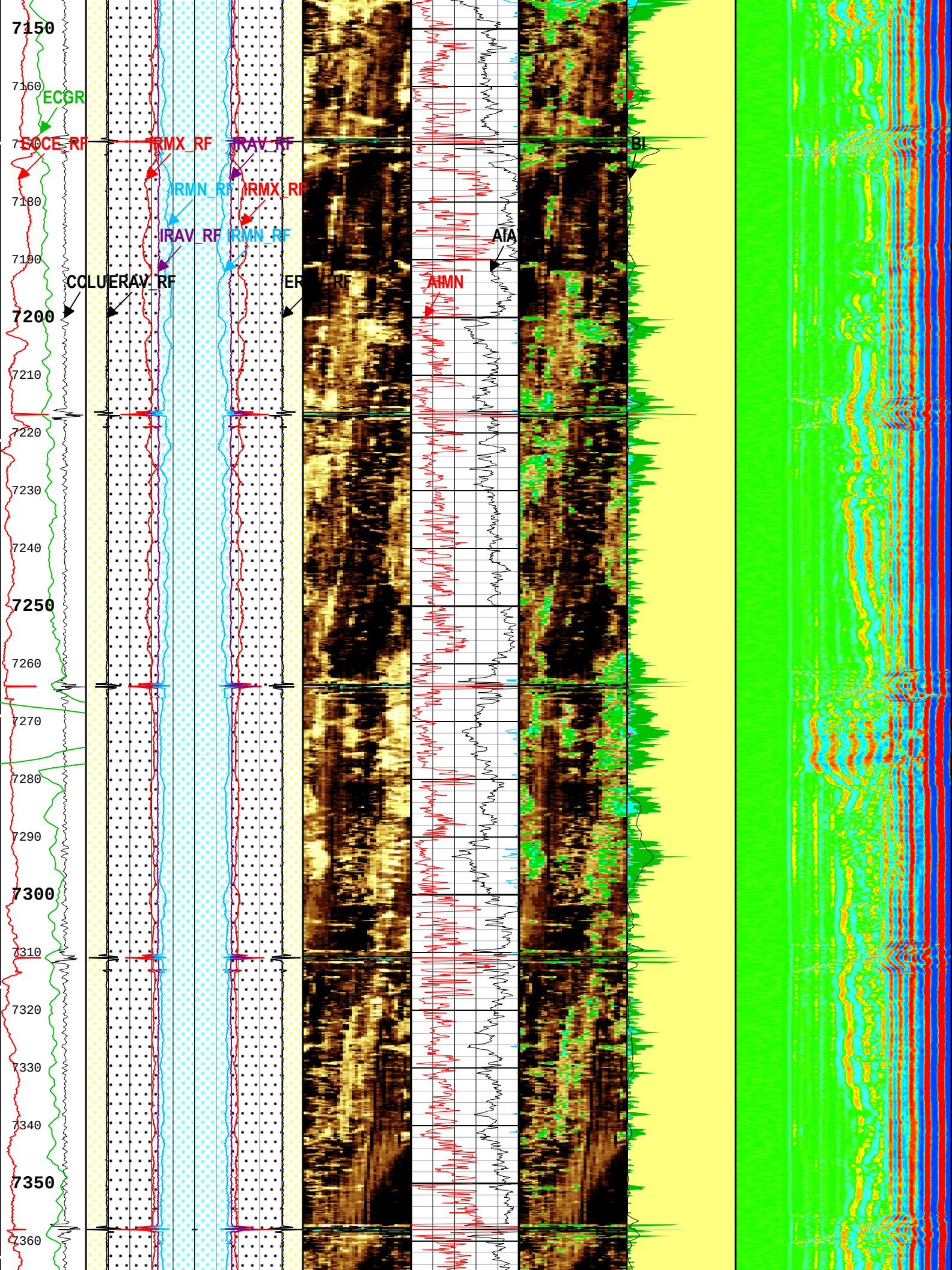
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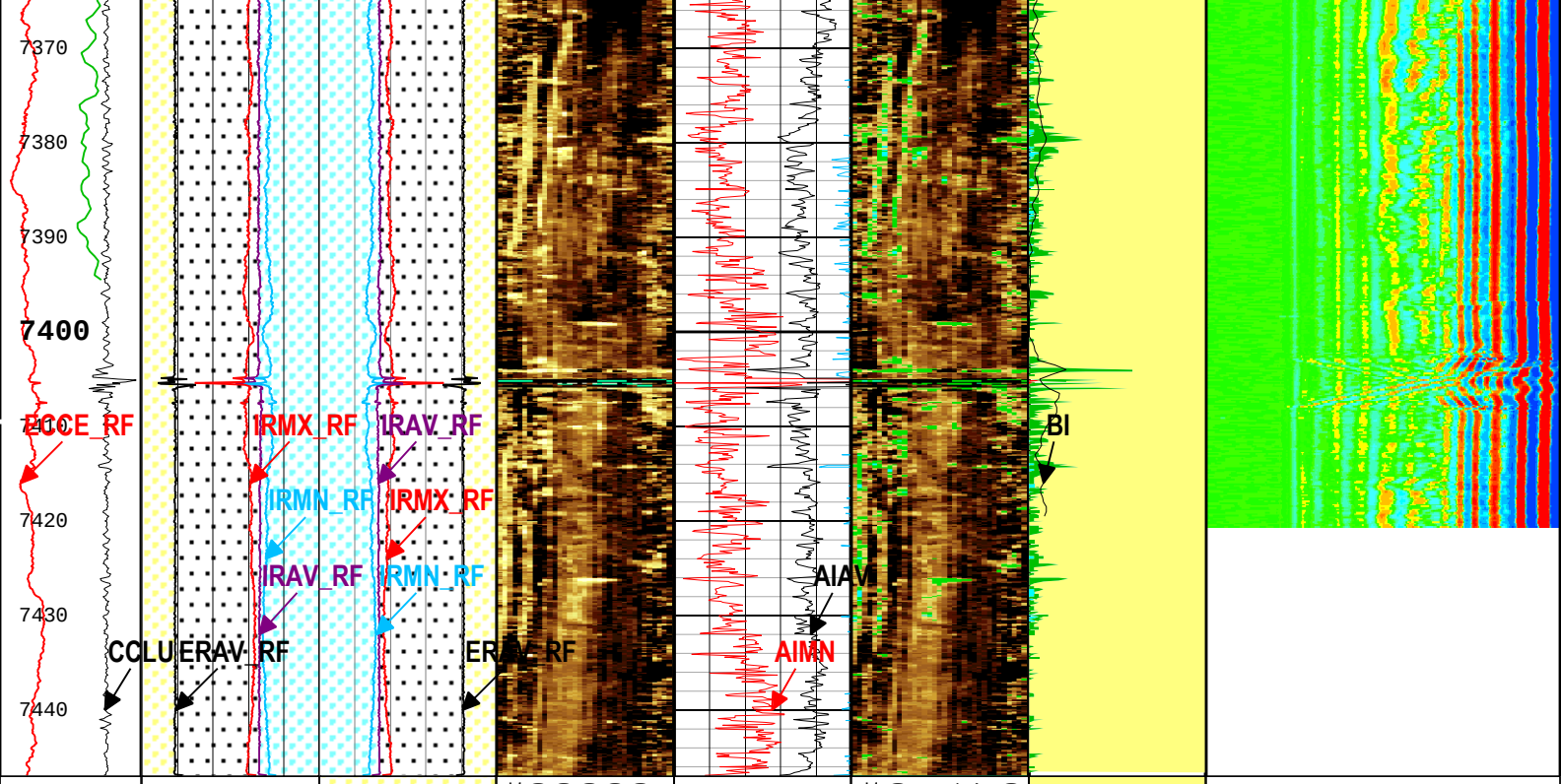


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

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

Gamma Ray (ECGR) HGNS[1]
0 gAPI 150

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

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

Maximum of Unflagged Internal Radii (IRMX_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

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

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

Median Internal Radius of Casing Corrected for Eccentering (IRAV_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 Impedance Maximum (AIMX) USIT-E[1]
-1 Mrayl 9

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]
1 0

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: 07-Apr-2016 19:28:24

Channel Processing Parameters

Three: 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	Open	
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	45	us
CBLO	Casing Bottom (Logger)	WLSESSION	7980	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	1	
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	195	us/ft
FCF	CBL Fluid Compensation Factor	DSLT-H	0.89	
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	4.78	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	9.3	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	2.63	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	2.63	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.05	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
NMSG	Near Minimum Sliding Gate	DSLT-H	Time Zoned	us
NMXG	Near Maximum Sliding Gate	DSLT-H	940	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	Time Zoned	%
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	6.8	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	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

ThreeDepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	17.5	33	860
BS	12.25	860	7447
MCI	21.68	33	824
MCI	14.81	824	7447

All depth are actual.

ThreeTime Zoned Parameters

Pass Log[8]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
NMSG	308	07-Apr-2016 09:48:55	07-Apr-2016 09:52:27	7447.26	7294.56
NMSG	300	07-Apr-2016 09:52:27	07-Apr-2016 12:23:34	7294.56	186.68
THDL	65	07-Apr-2016 09:48:59	07-Apr-2016 12:23:34	7447.26	186.68

Pass Log[12]:Up

NMSG	300	07-Apr-2016 14:10:44	07-Apr-2016 14:13:19	187.04	85.38
THDL	70	07-Apr-2016 14:10:44	07-Apr-2016 14:13:19	187.04	85.38

All depth are at tool zero.

Tool Control Parameters

Three: 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	7440	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	

ThreeTime Zoned Parameters

Pass Log[8]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	40	07-Apr-2016 09:48:59	07-Apr-2016 12:23:34	7447.26	186.68
UPAT	Pattern 500 KHz	07-Apr-2016 09:48:59	07-Apr-2016 12:23:34	7447.26	186.68
WINB	20	07-Apr-2016 09:48:59	07-Apr-2016 12:23:34	7447.26	186.68

Pass Log[12]:Up

EMXV	80	07-Apr-2016 14:10:44	07-Apr-2016 14:13:19	187.04	85.38
UPAT	Pattern 750 KHz	07-Apr-2016 14:10:44	07-Apr-2016 14:13:19	187.04	85.38
WINB	14.4	07-Apr-2016 14:10:44	07-Apr-2016 14:13:19	187.04	85.38

All depth are at tool zero.

Main Composite

Main Pass 5 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include

									Parallel Data
Three	Log[8]:Up	Up	60.69 ft	7447.53 ft	07-Apr-2016 9:48:55 AM	07-Apr-2016 12:23:34 PM	ON	0.96 ft	Yes
Three	Log[12]:Up	Up	85.32 ft	262.12 ft	07-Apr-2016 2:08:49 PM	07-Apr-2016 2:13:19 PM	ON	6.42 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F

Main Composite:S001

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: 07-Apr-2016 19:29:06

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)

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 | IRAV | 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

ERAV | 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

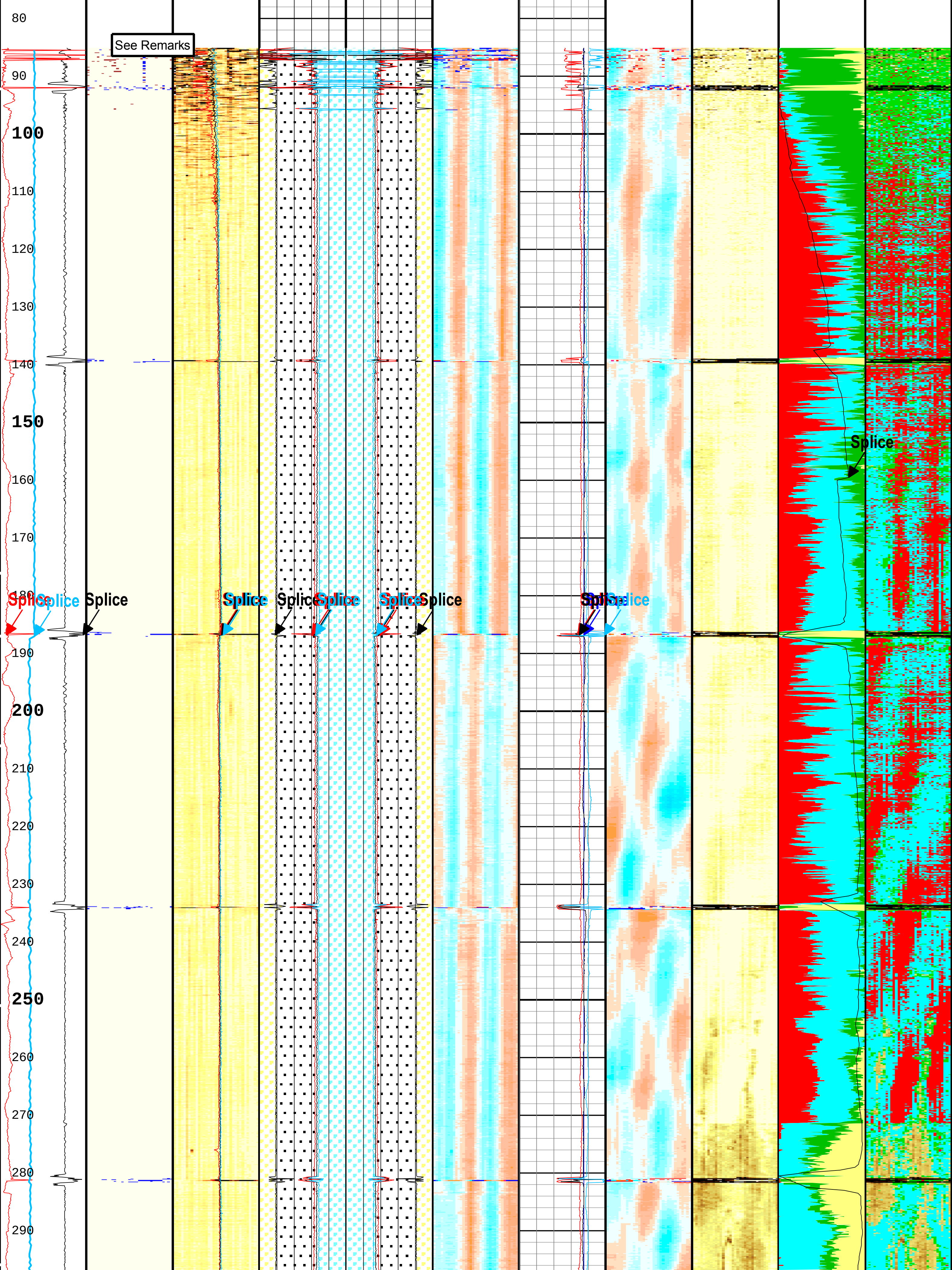
Bonded | Gas | Liquid | Micro-debonding

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)

70



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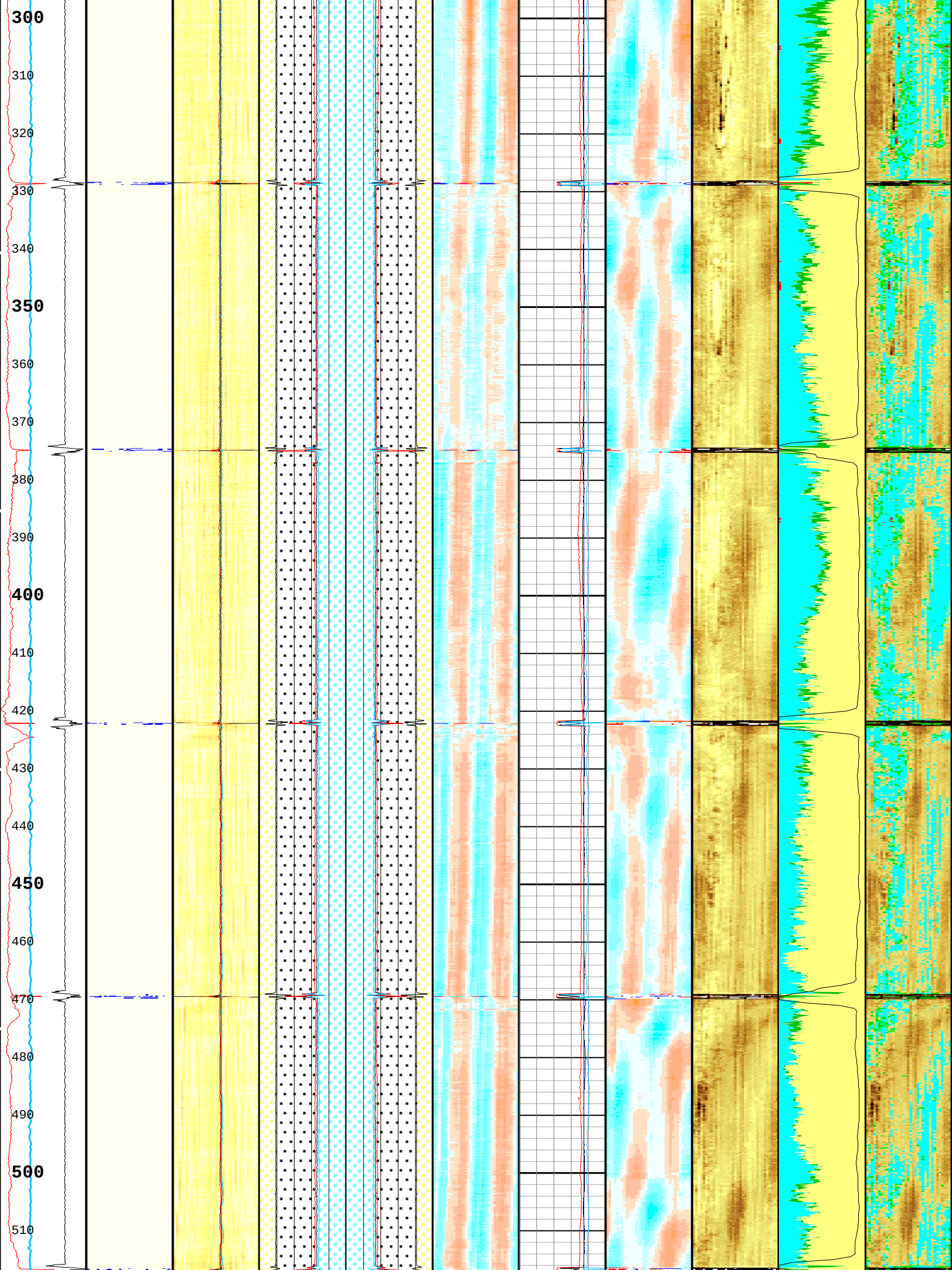
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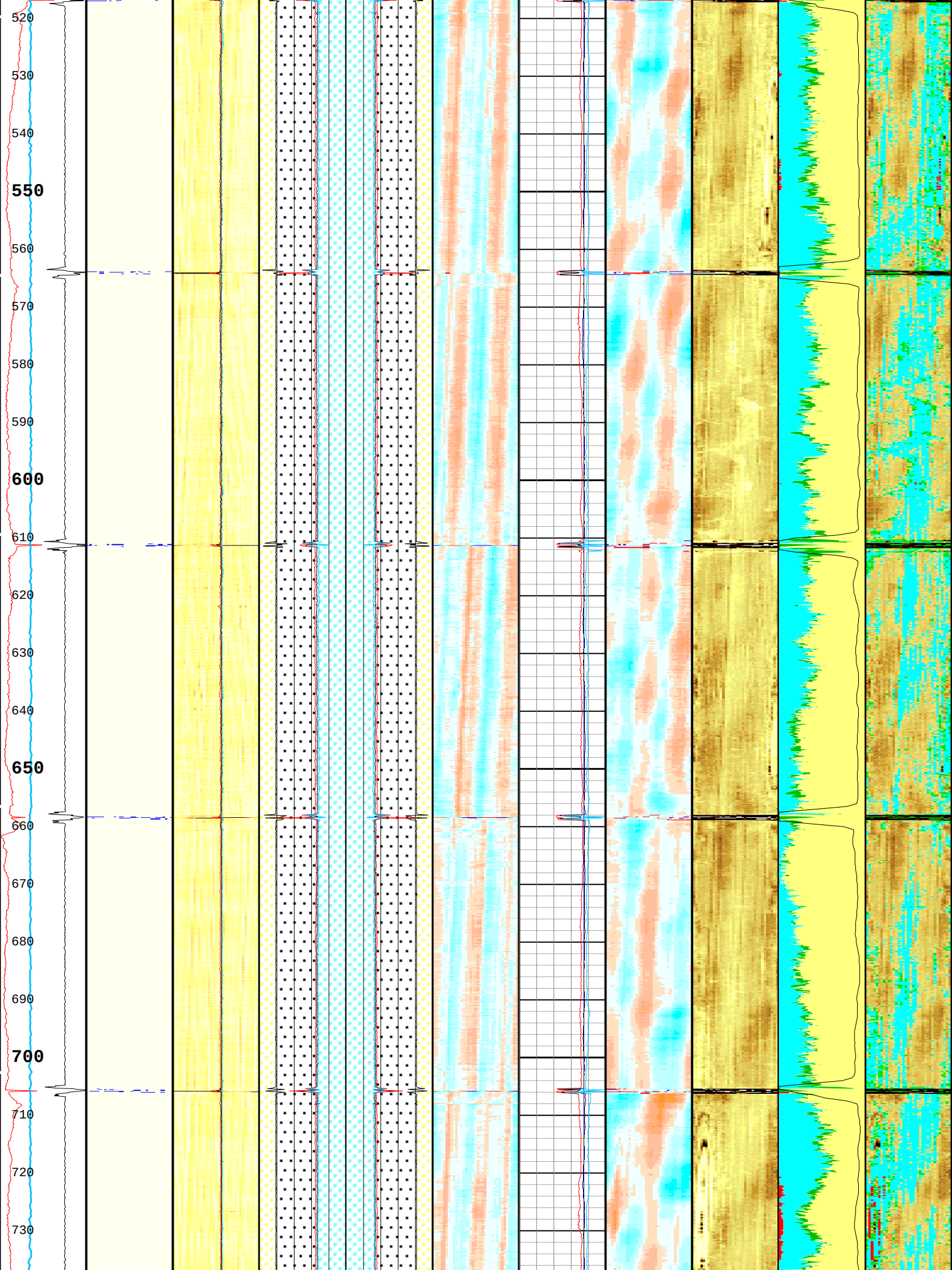
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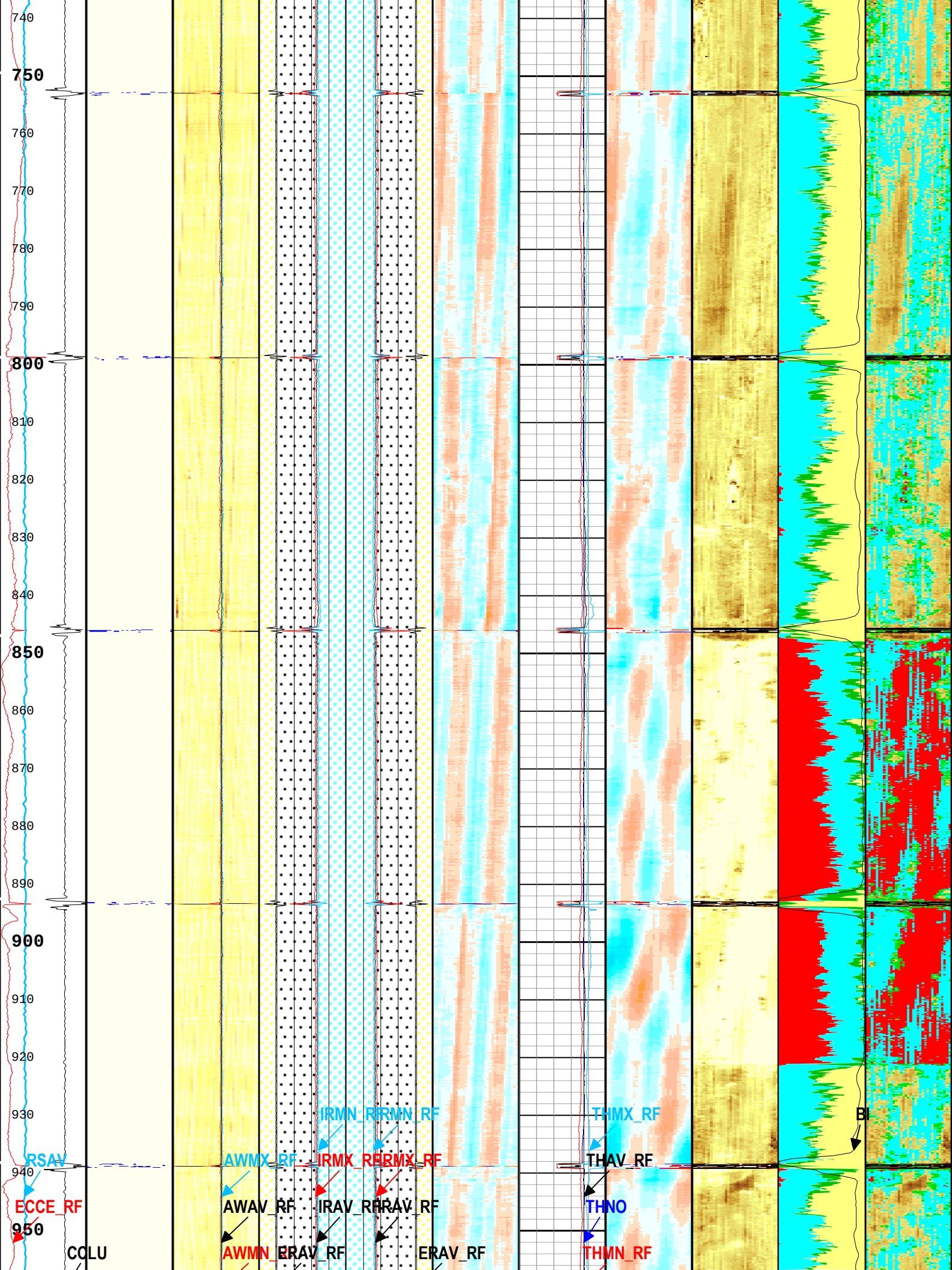
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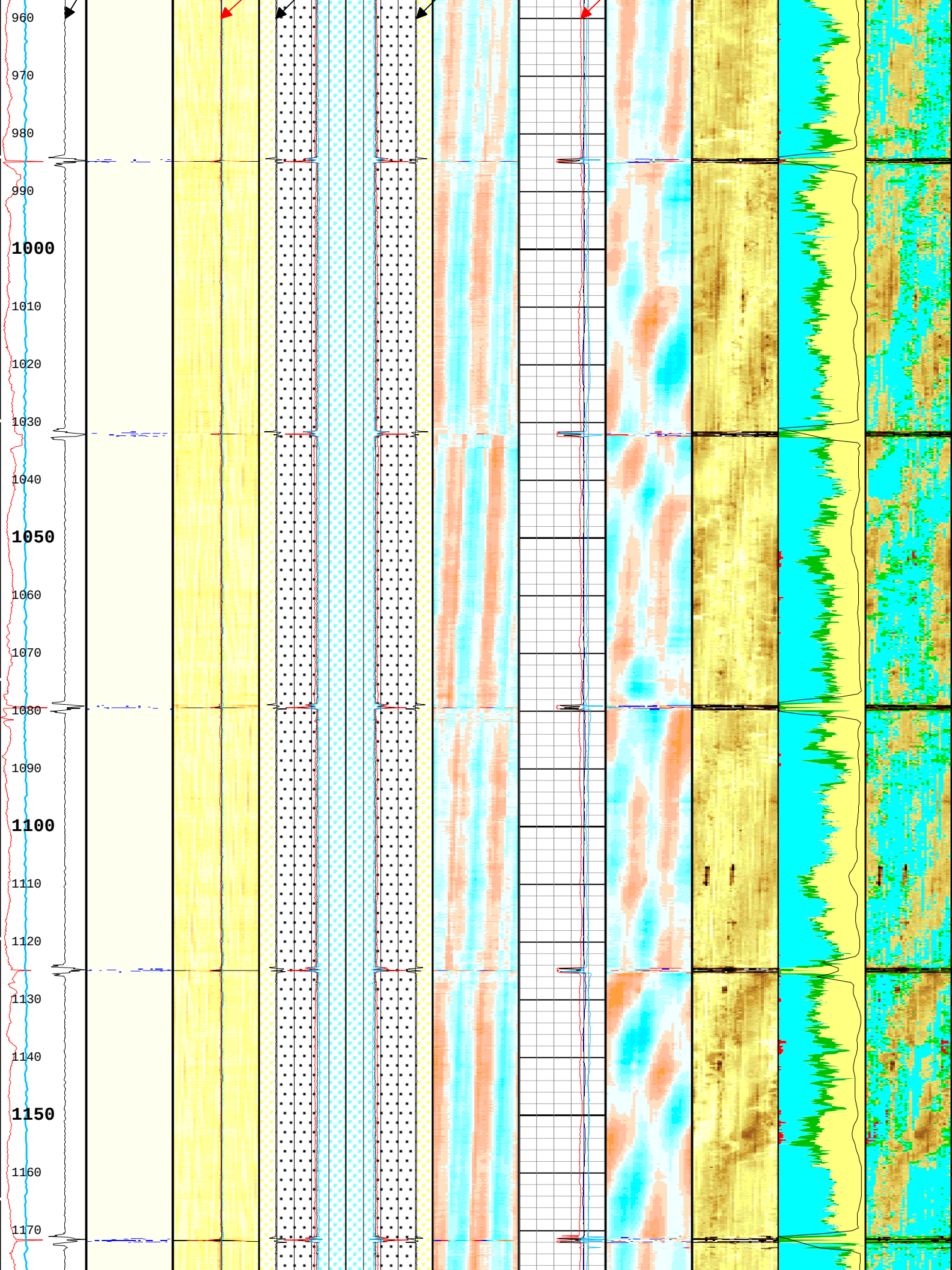
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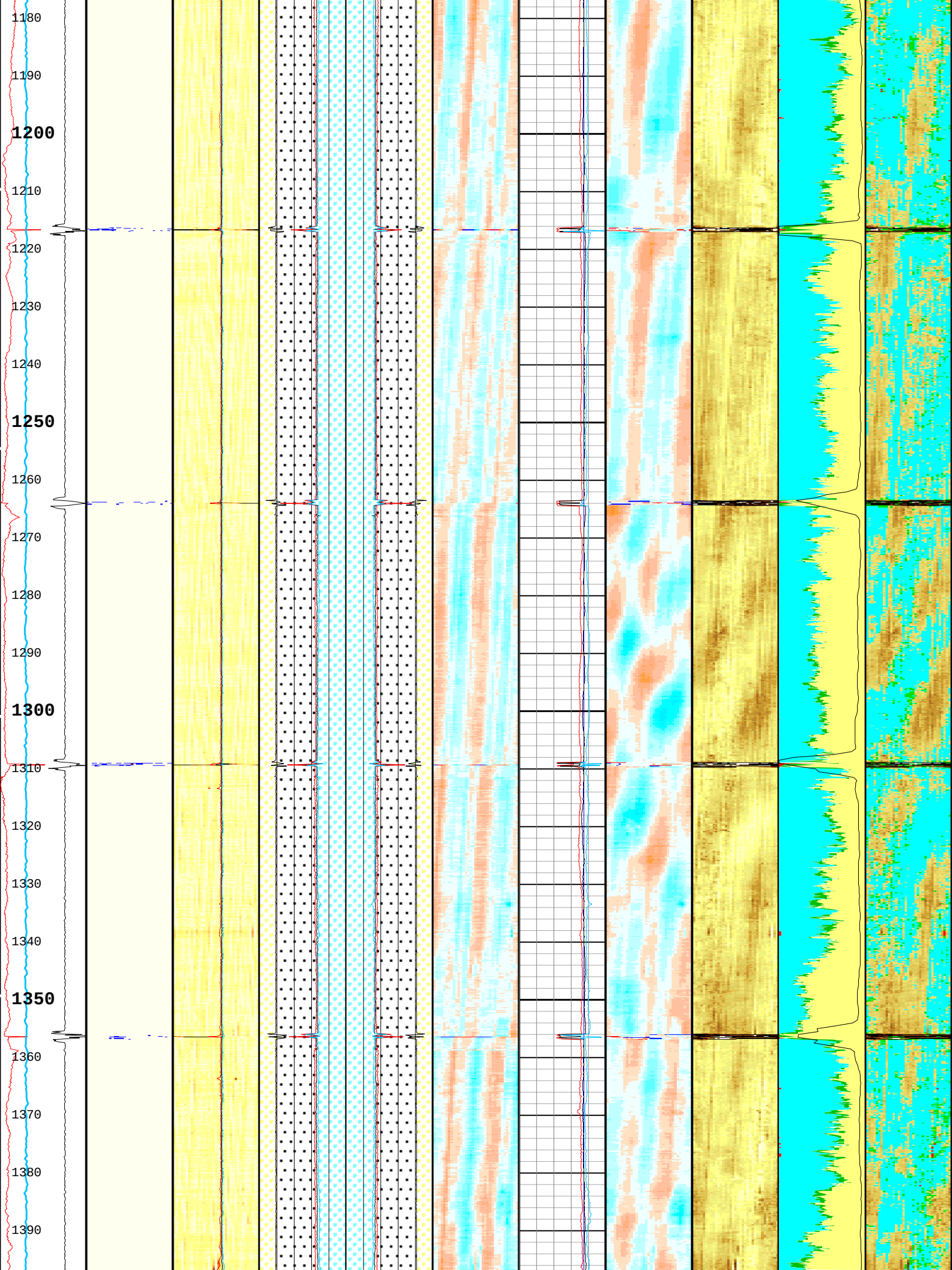
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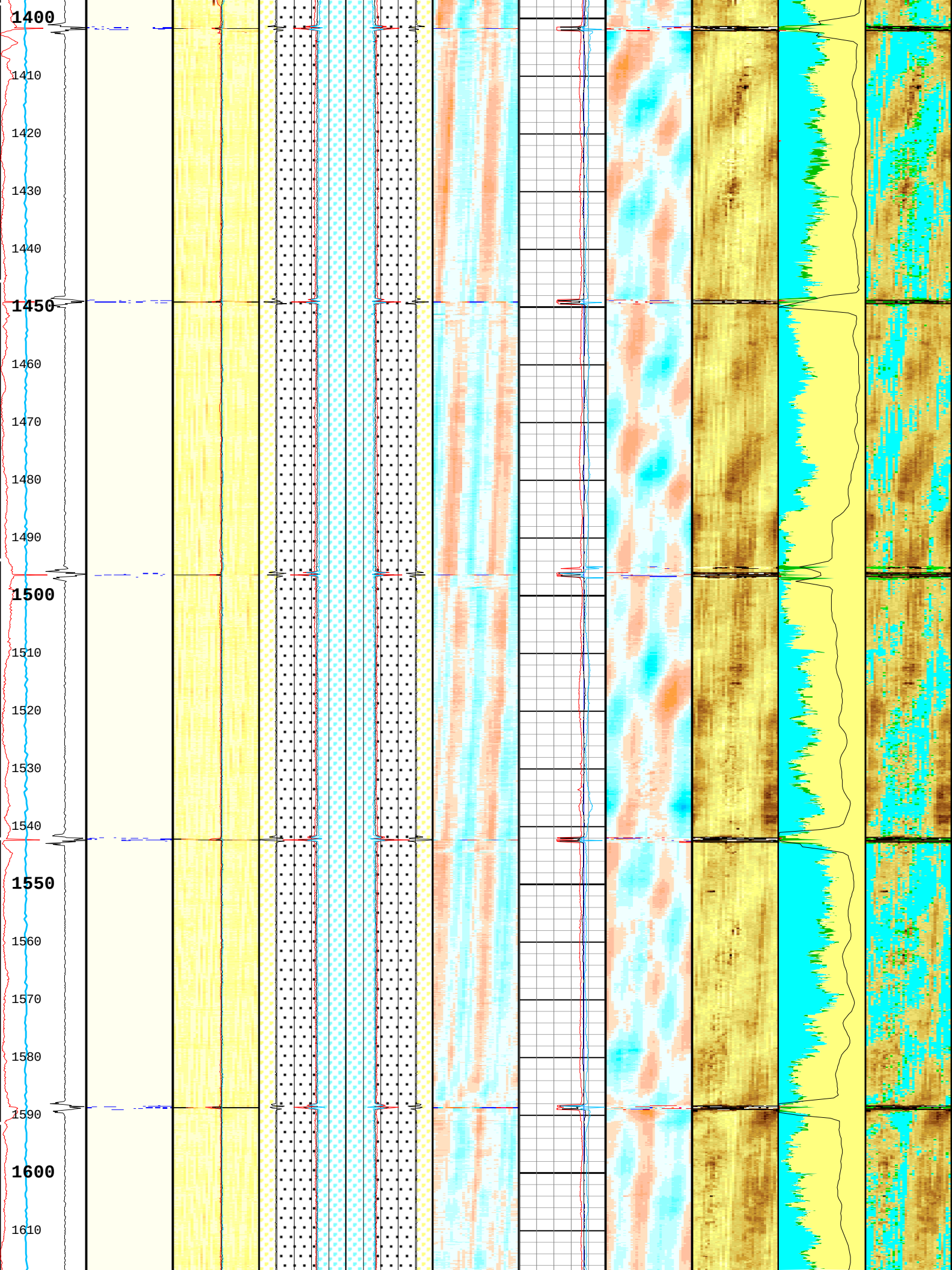
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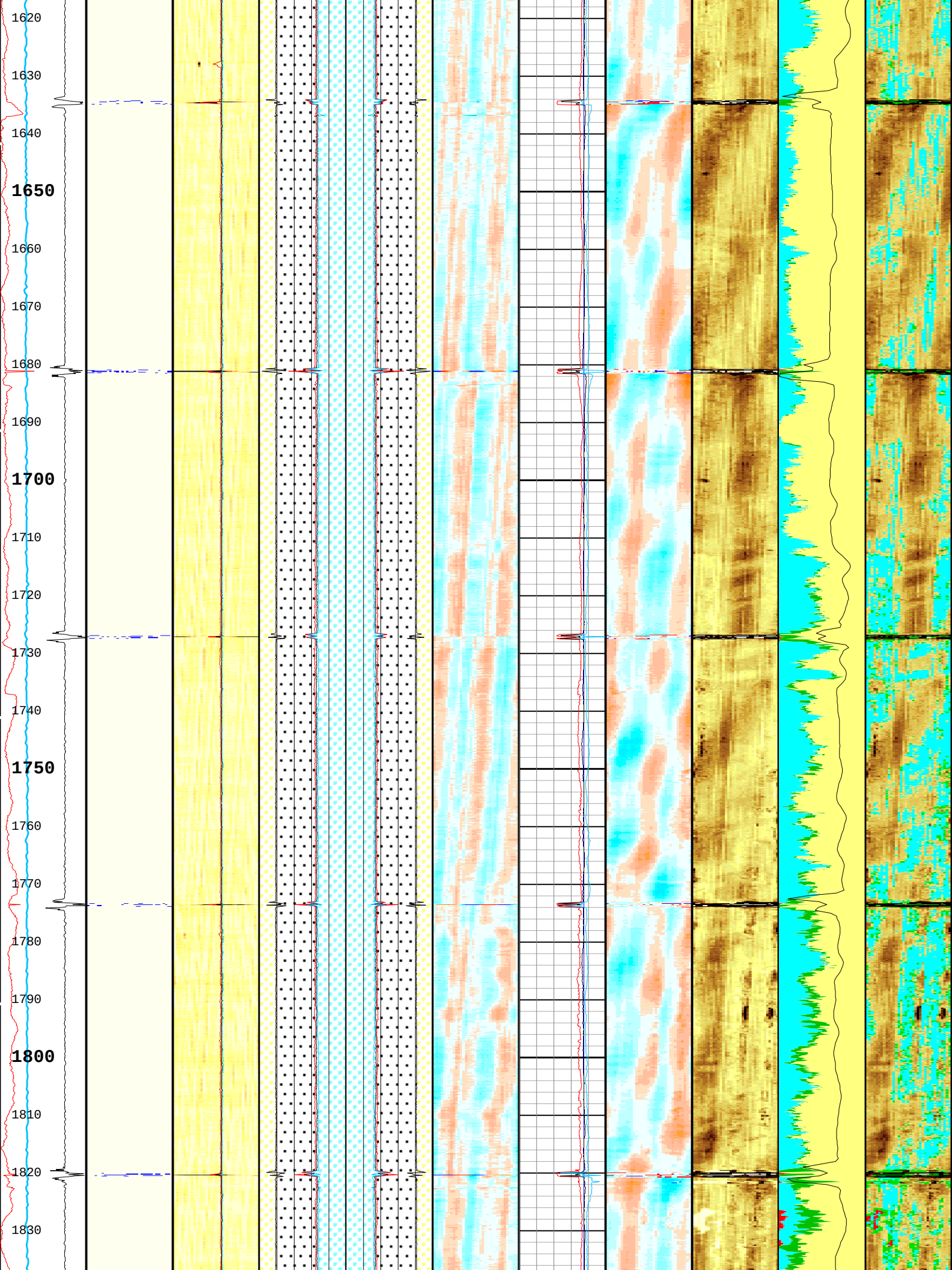
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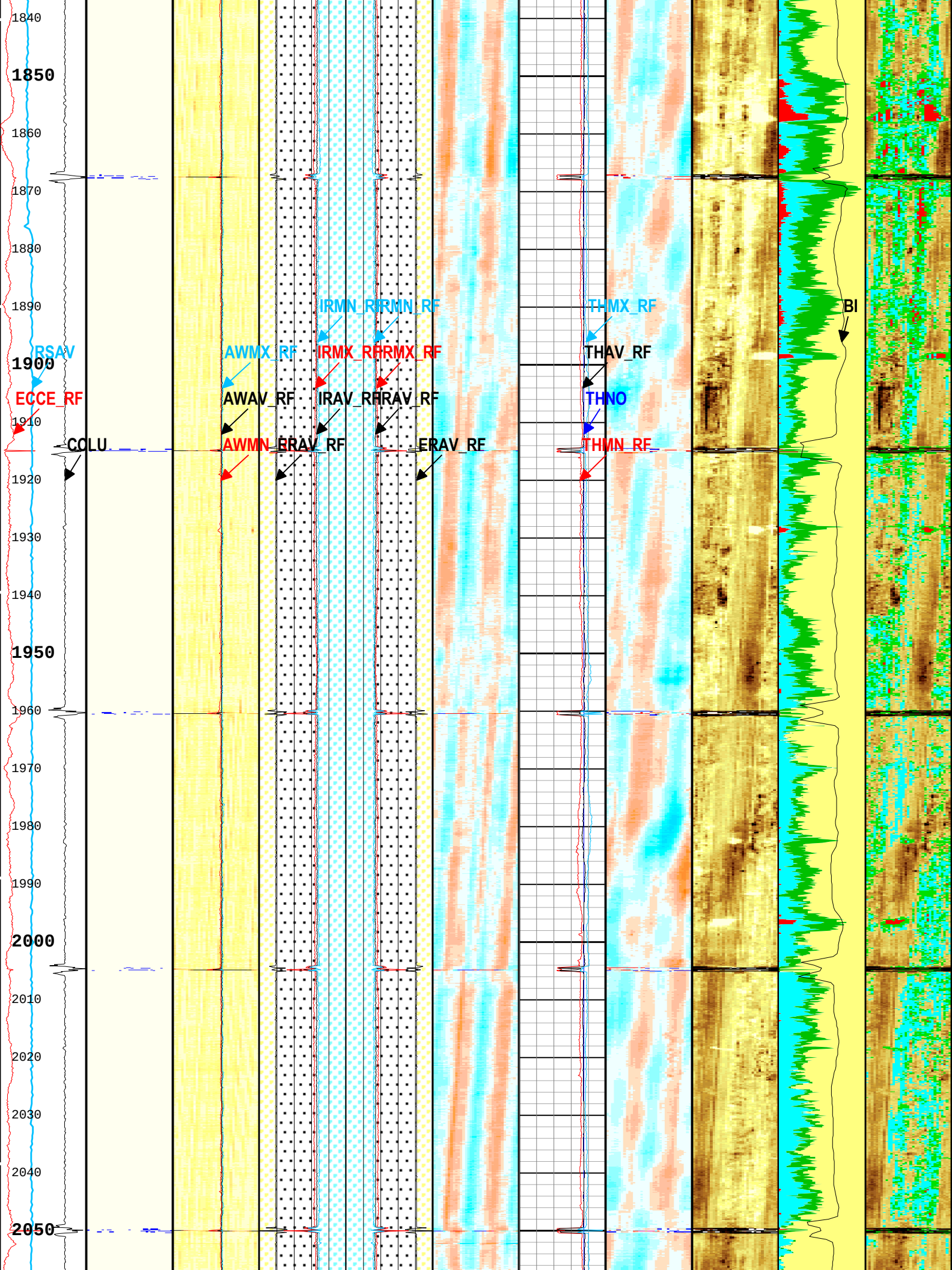
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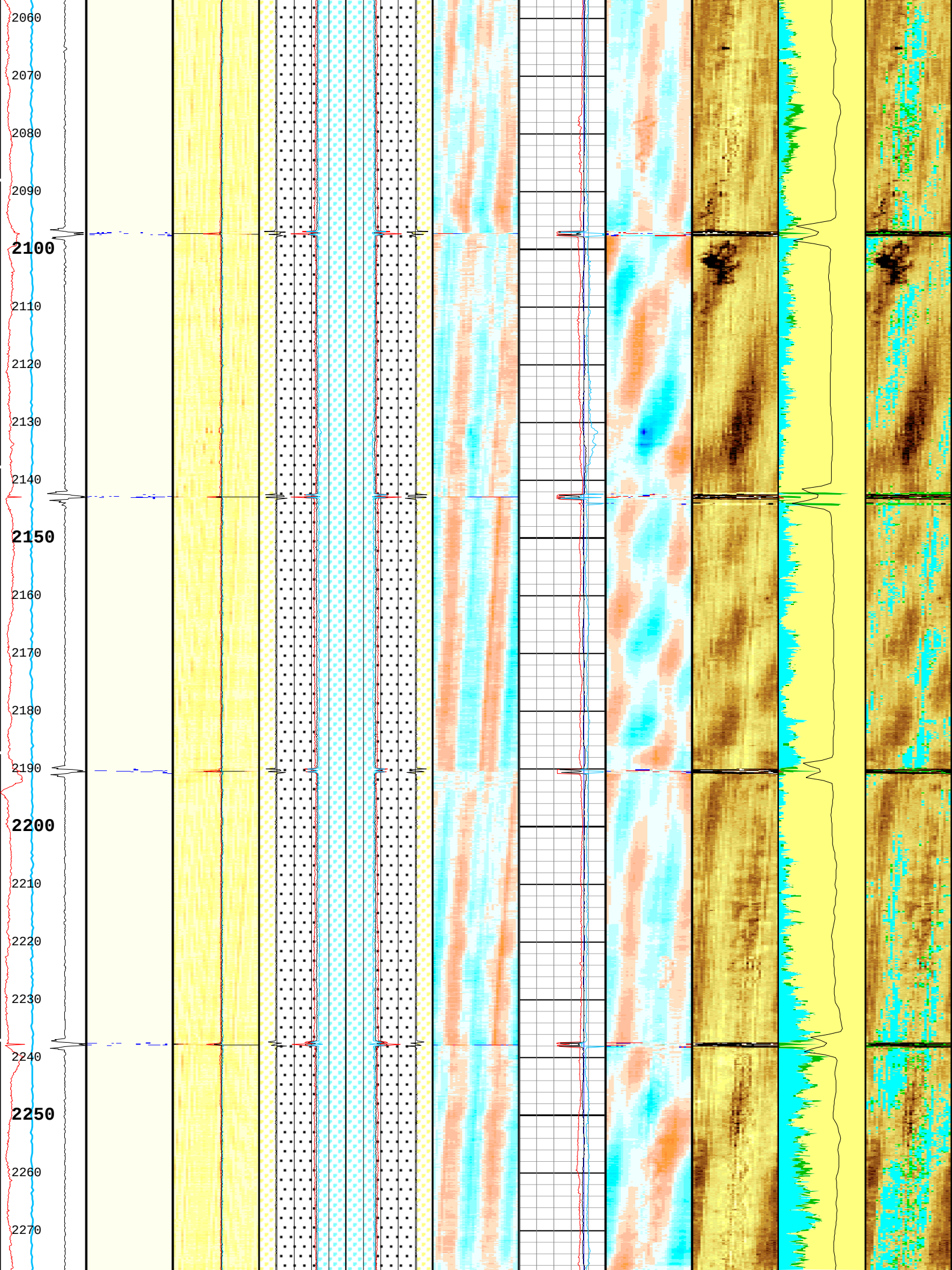
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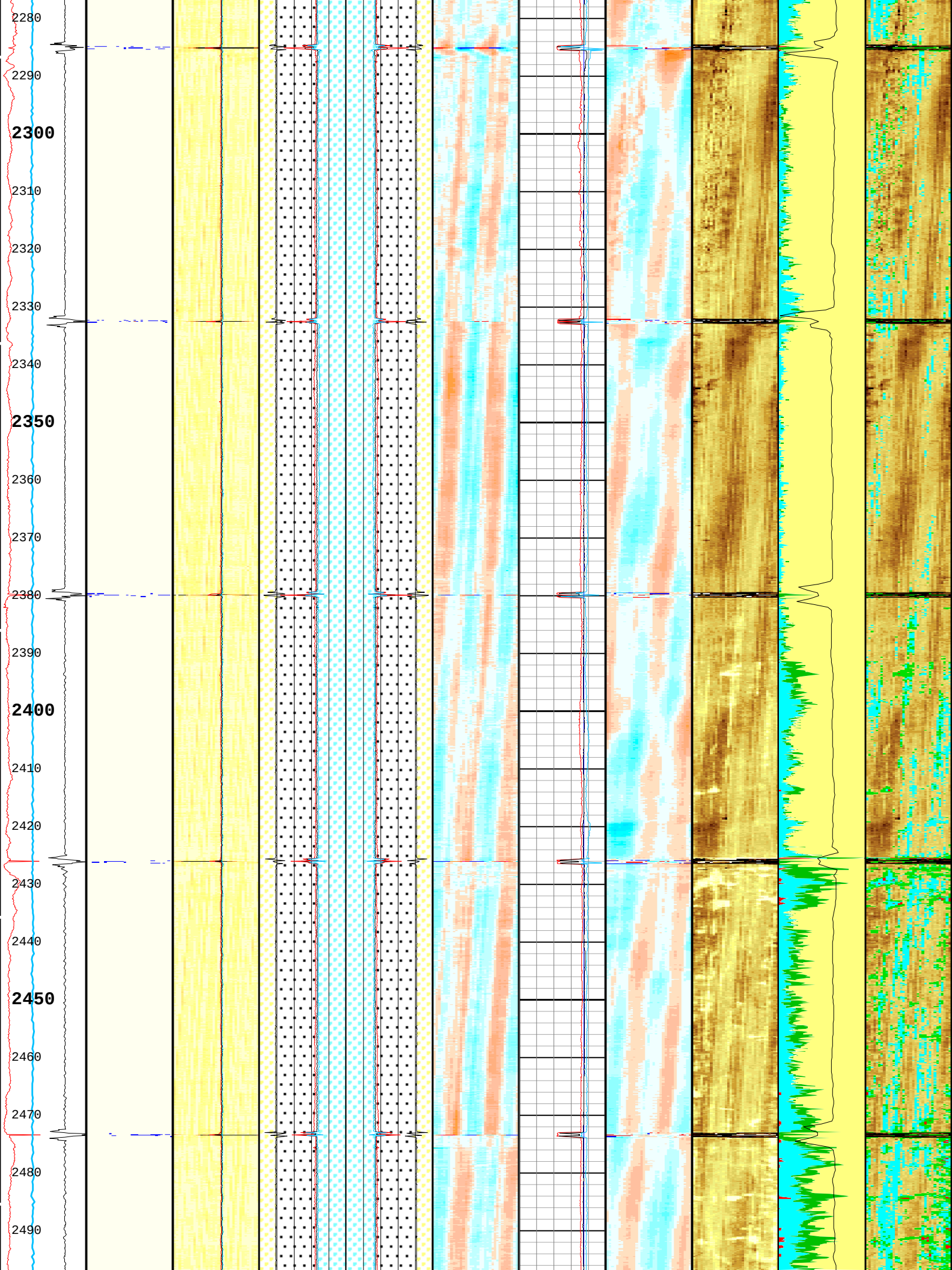
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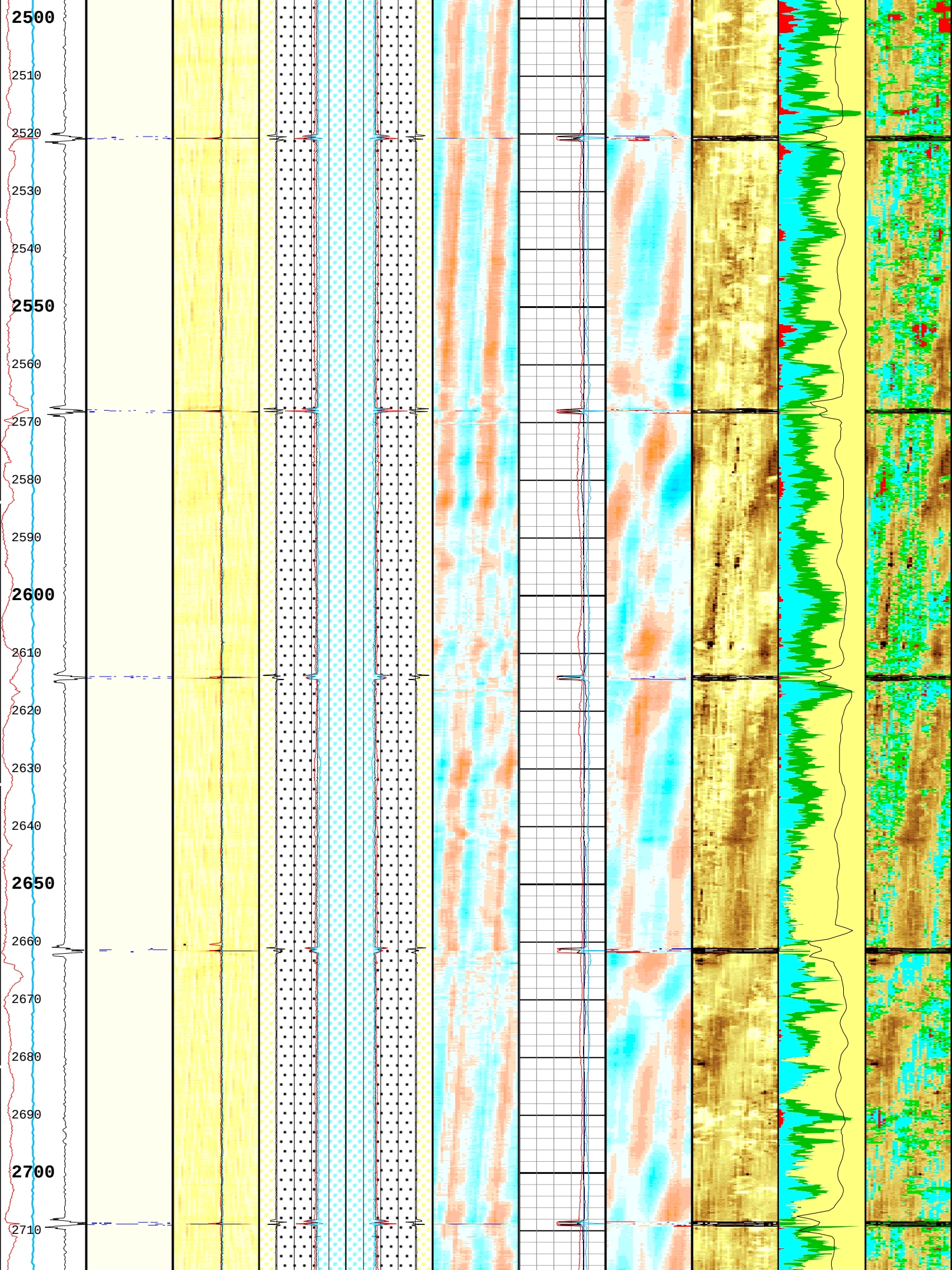
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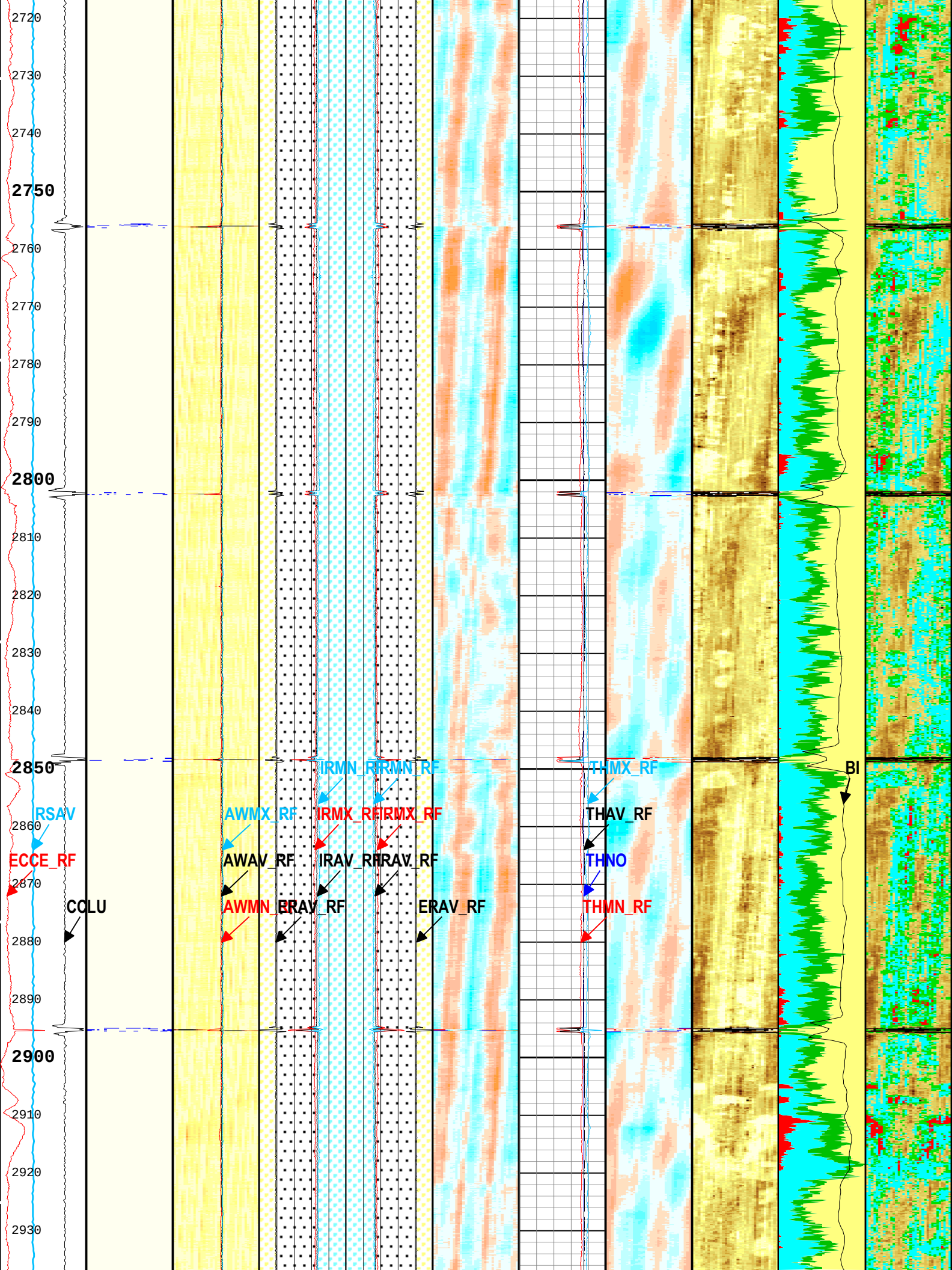
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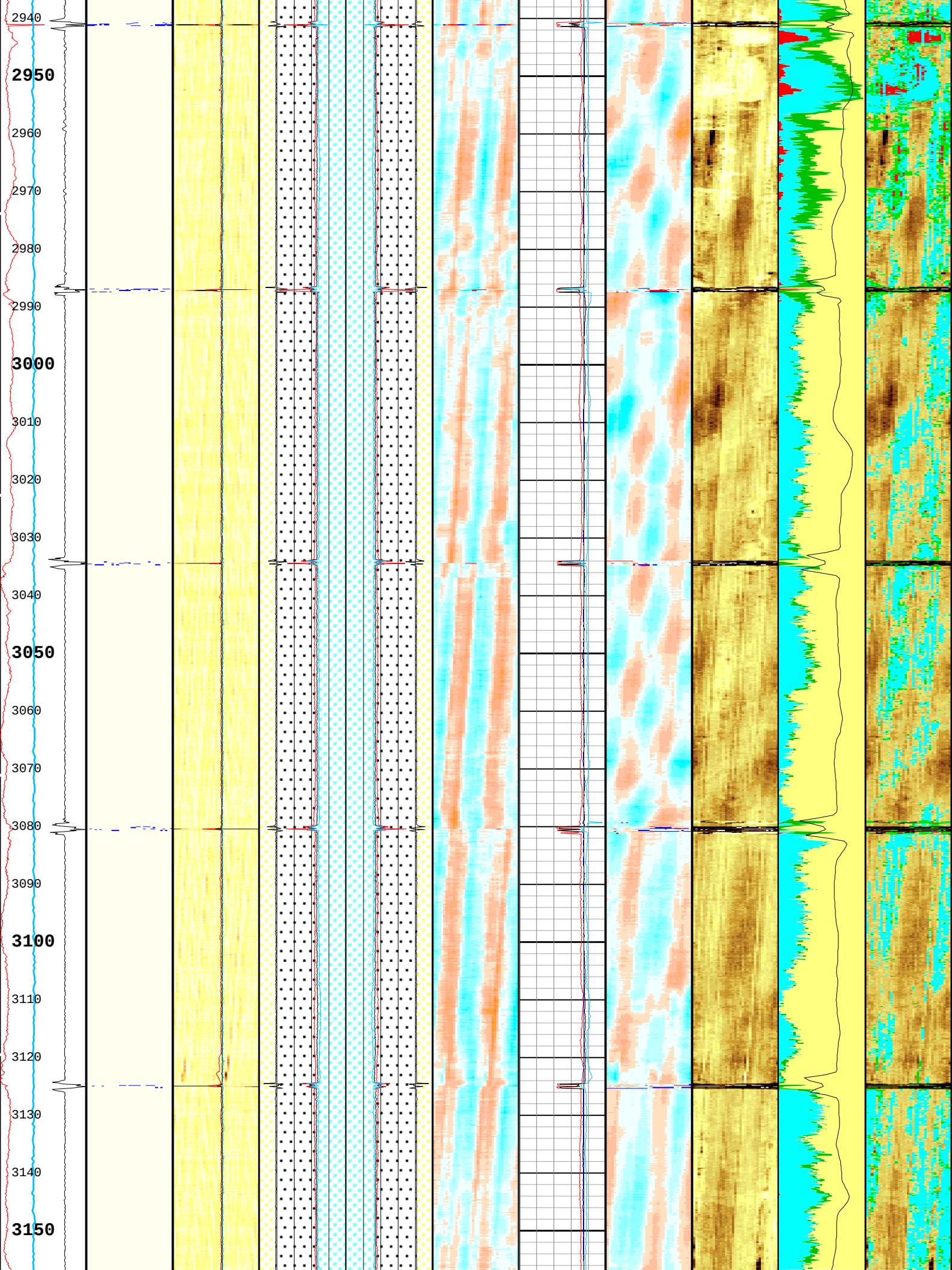
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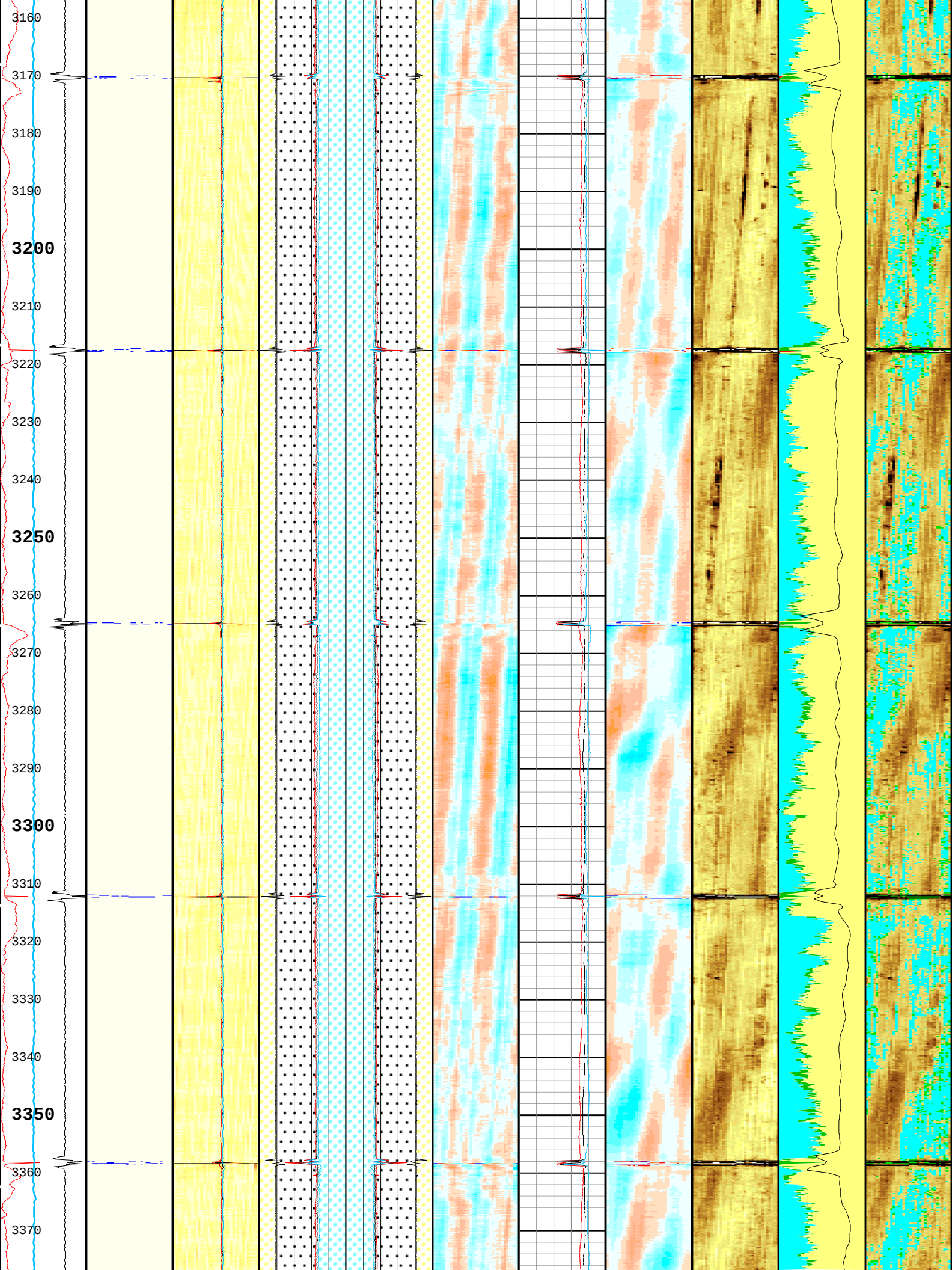
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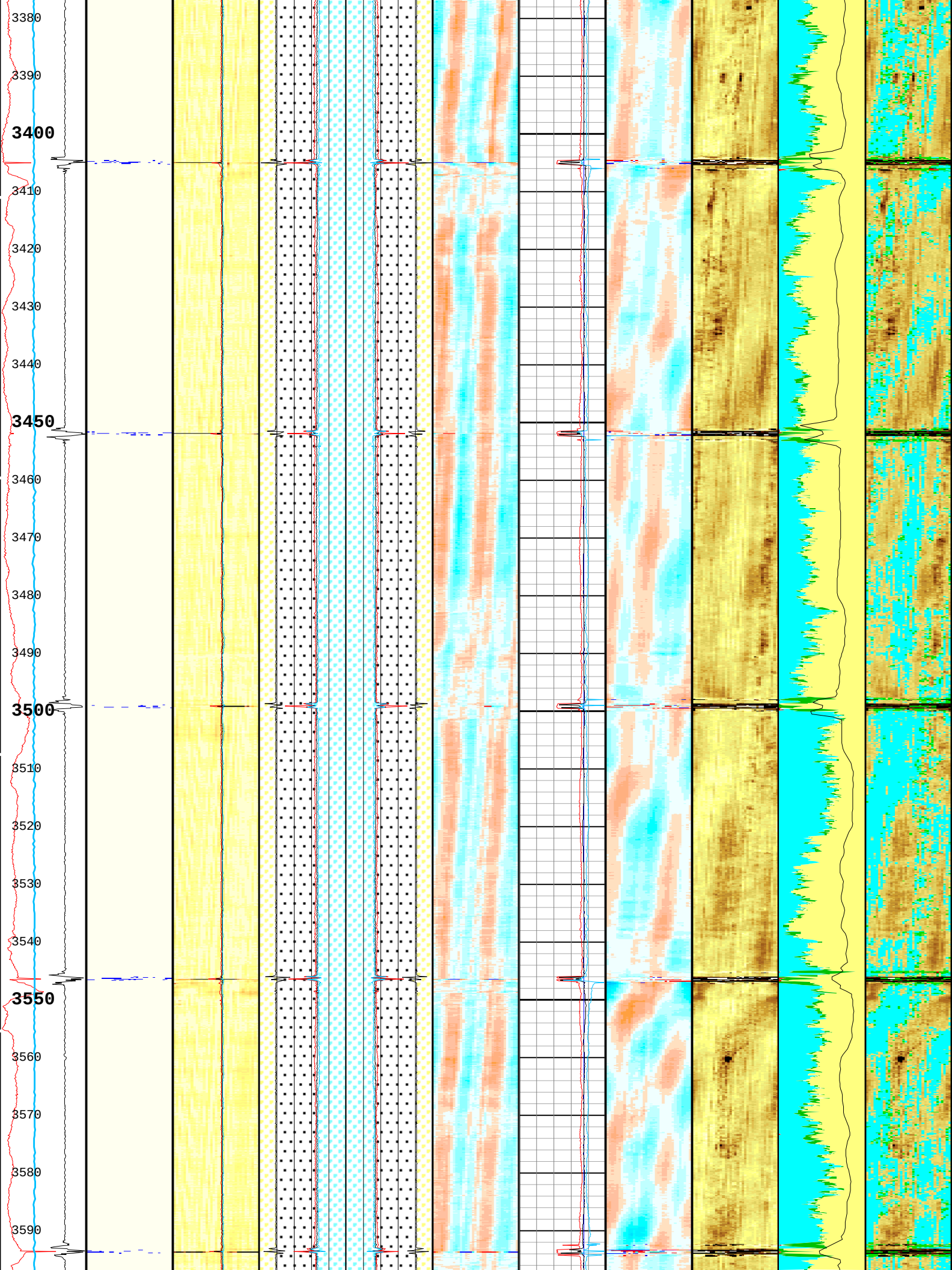
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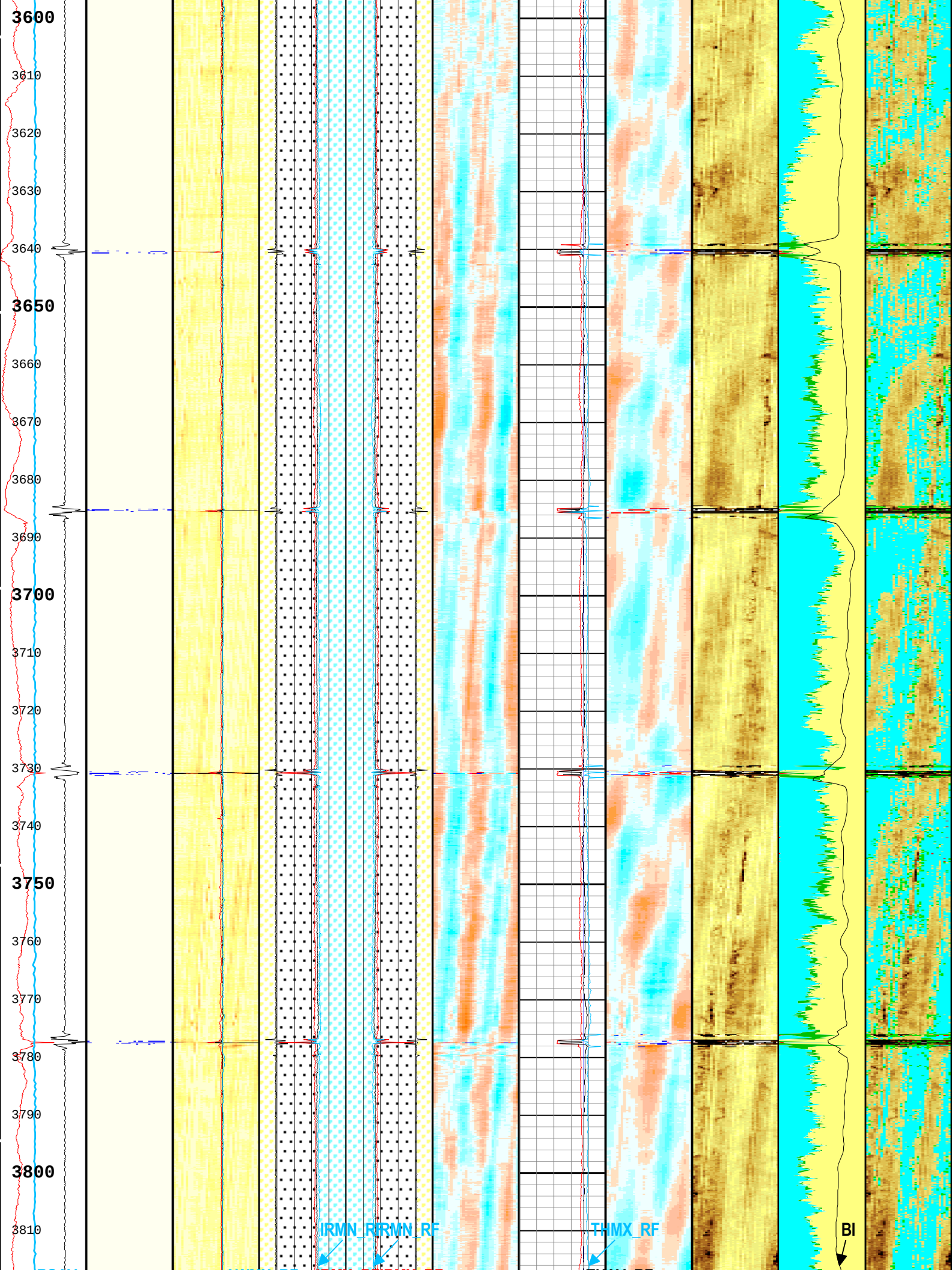
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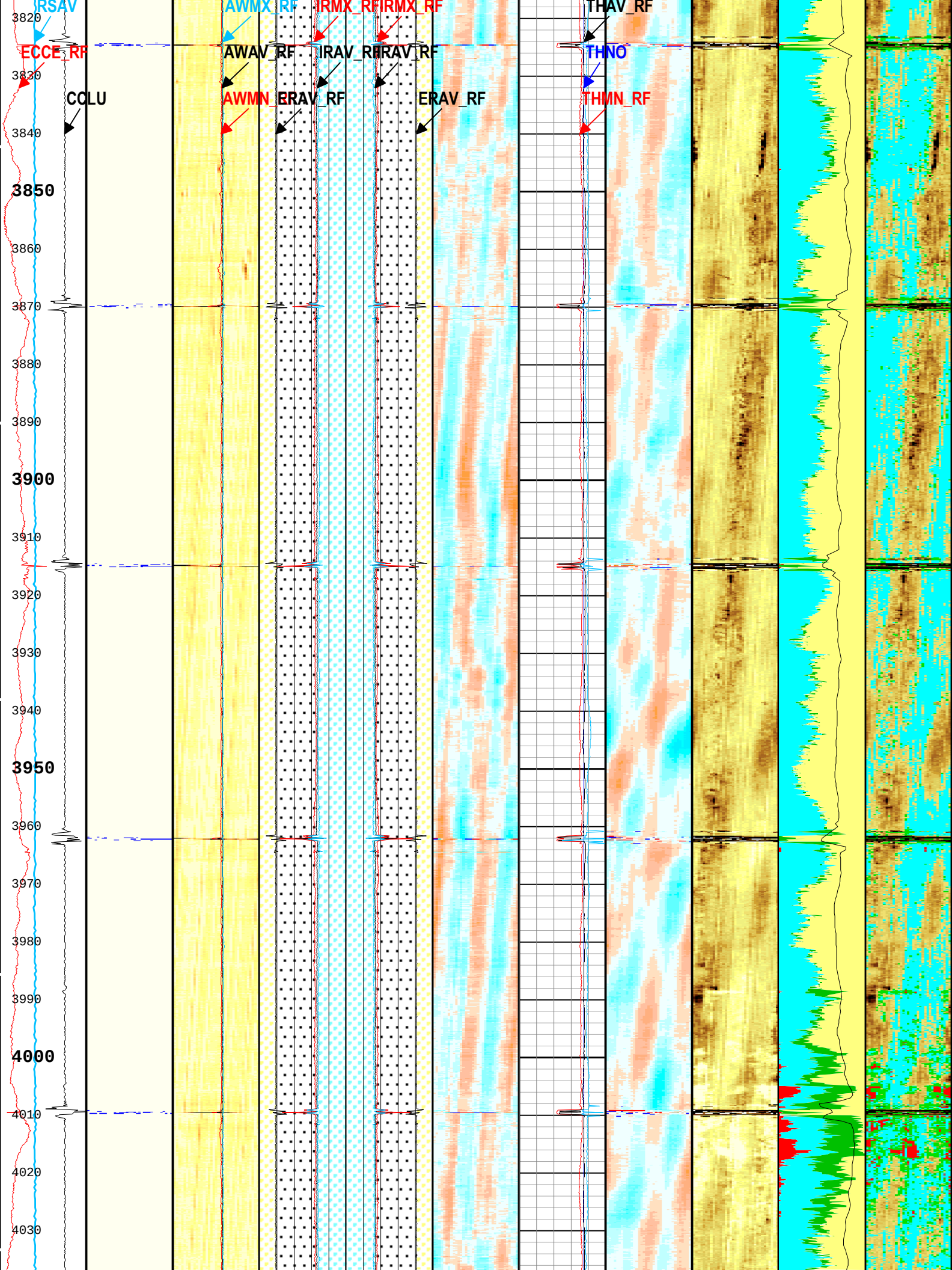
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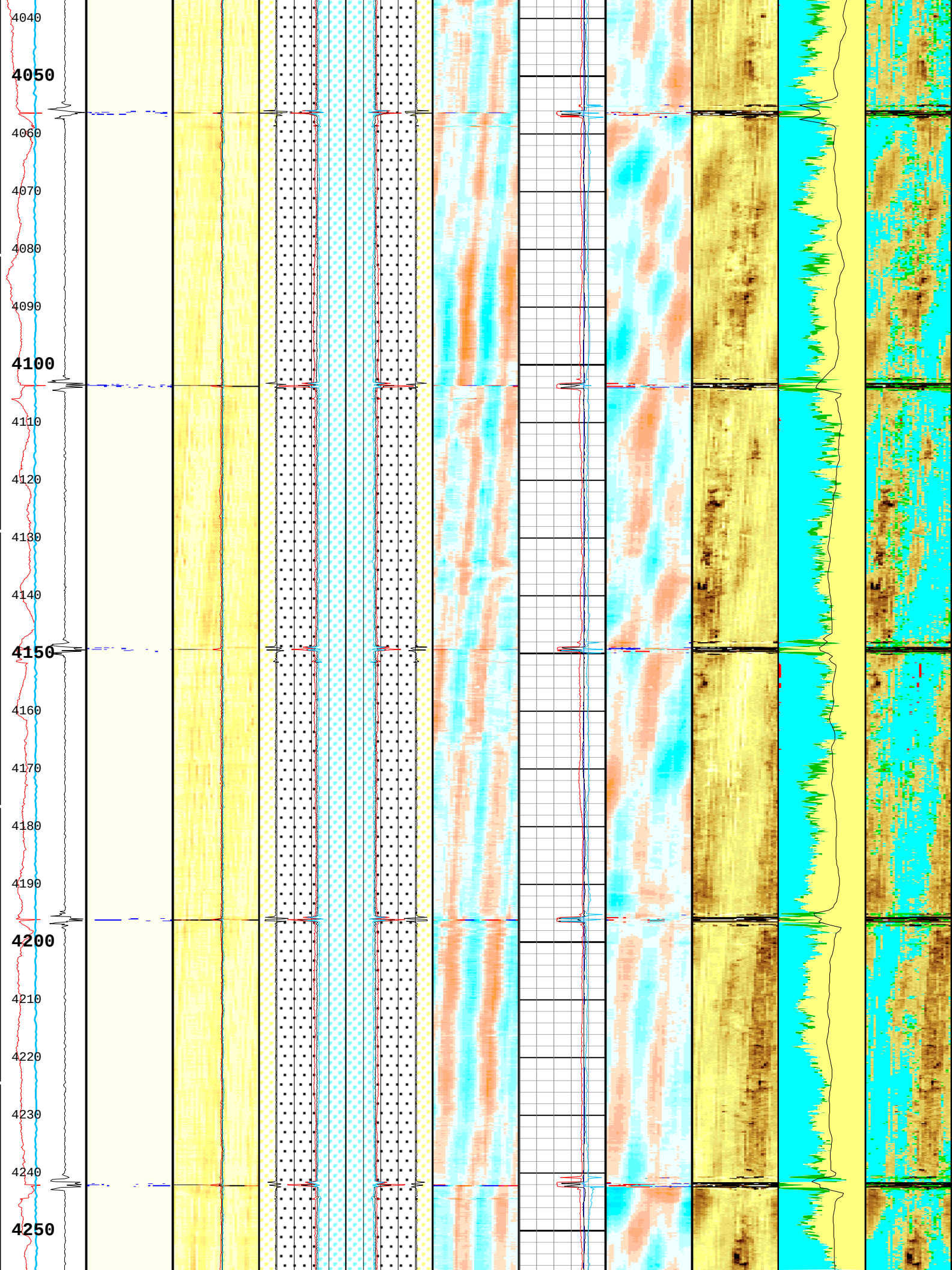
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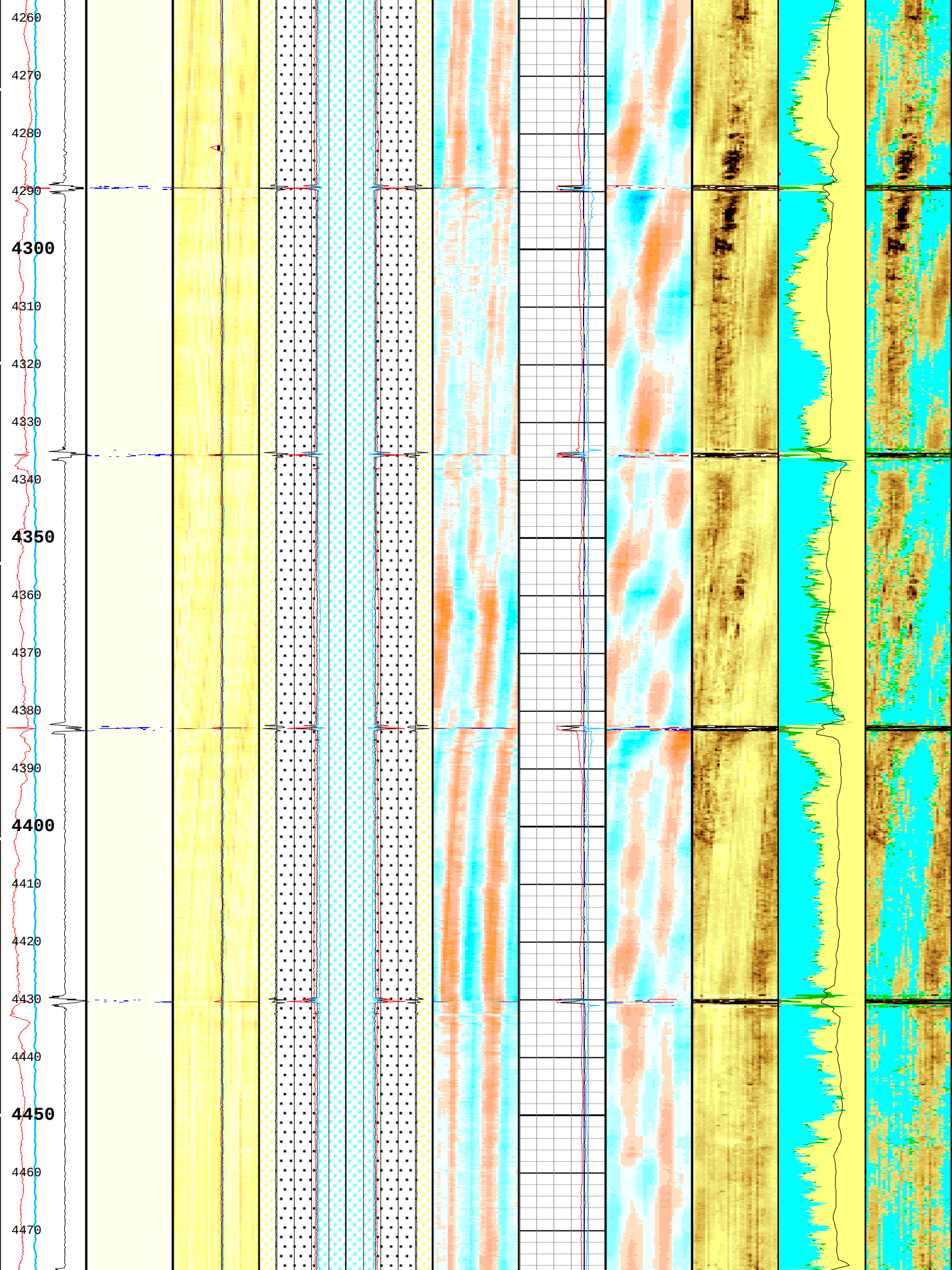
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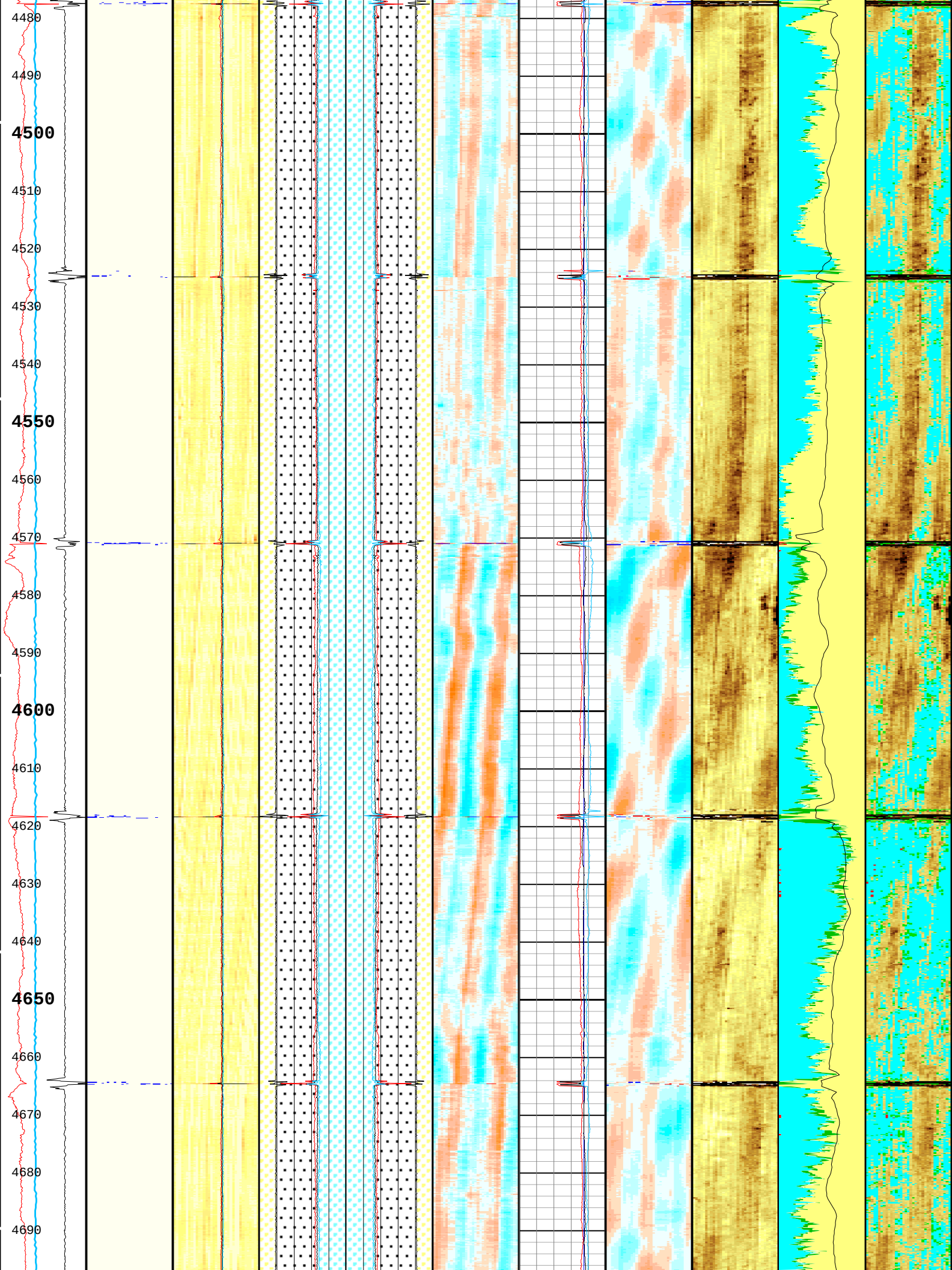
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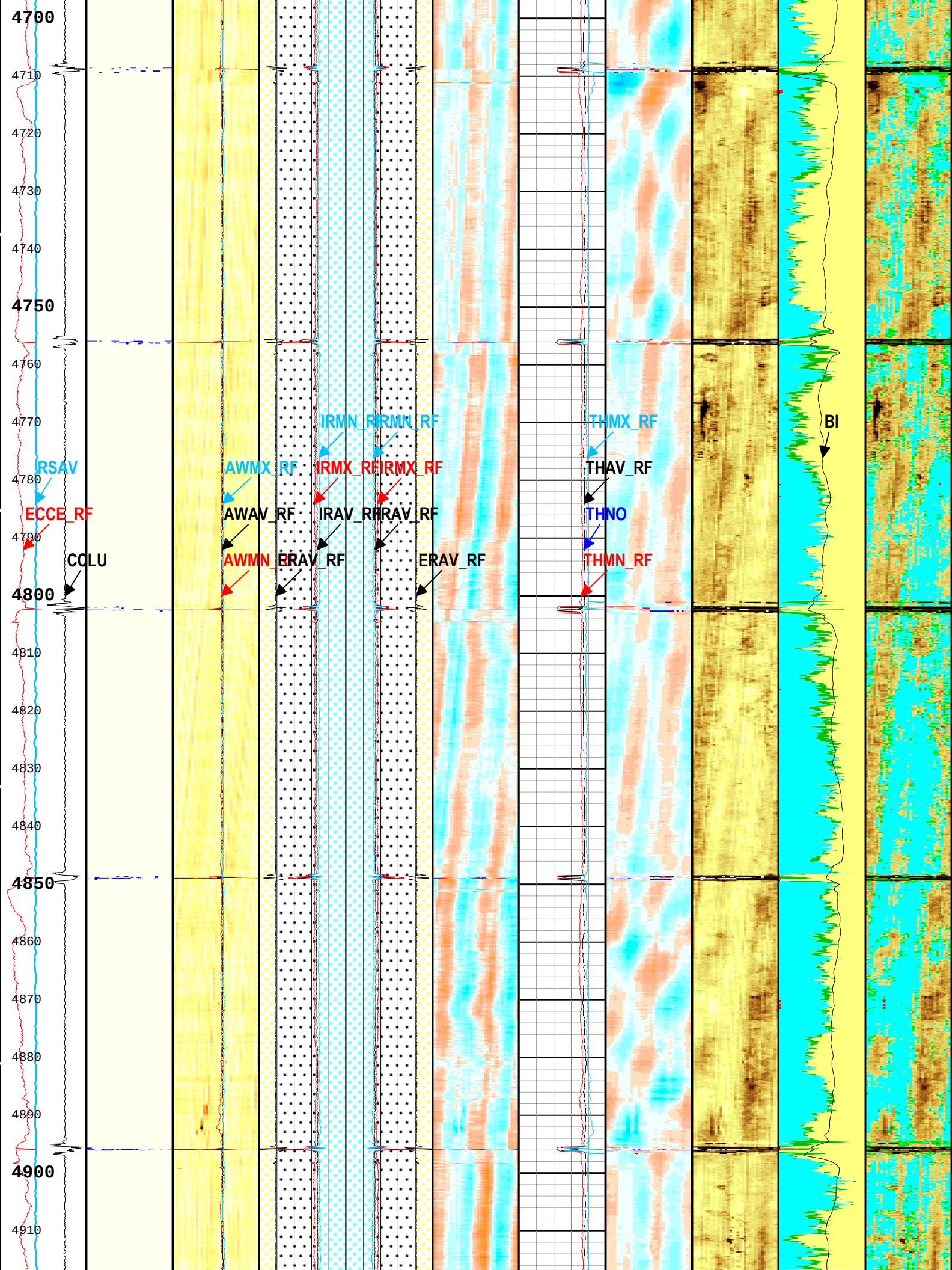
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ECCE_RF
COLU
AWMX_RF
AWAV_RF
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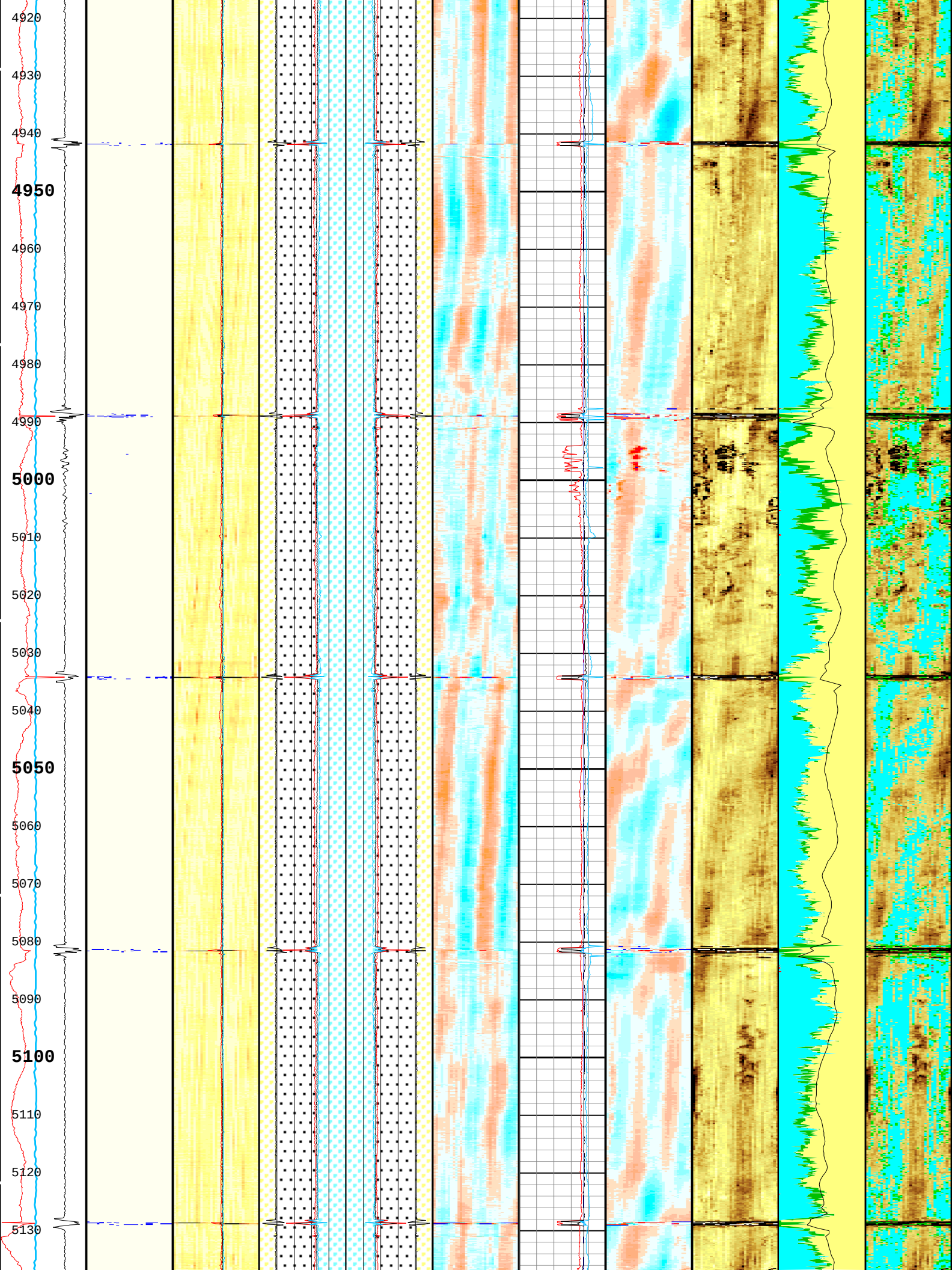
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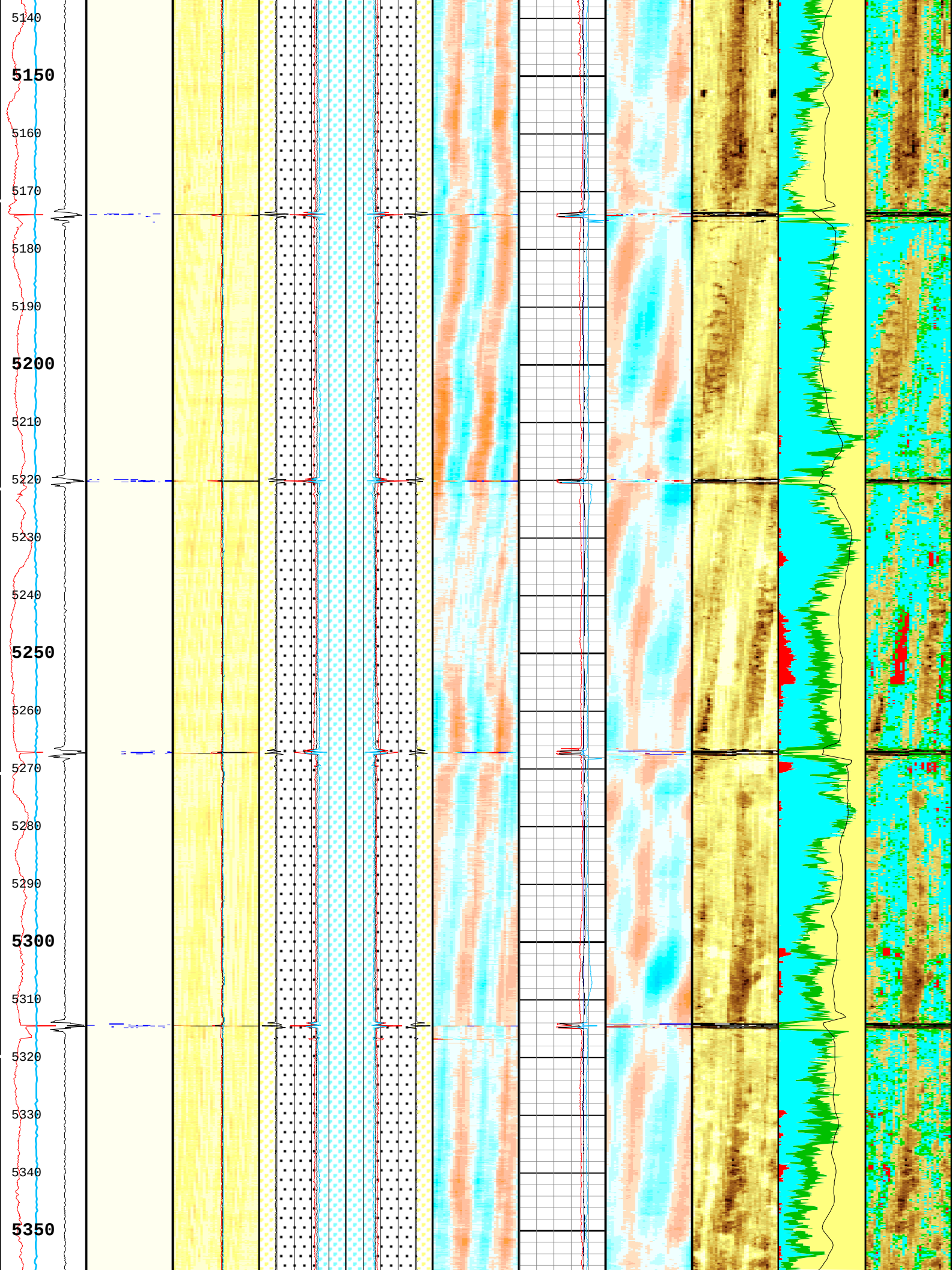
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5160
5170
5180
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5200
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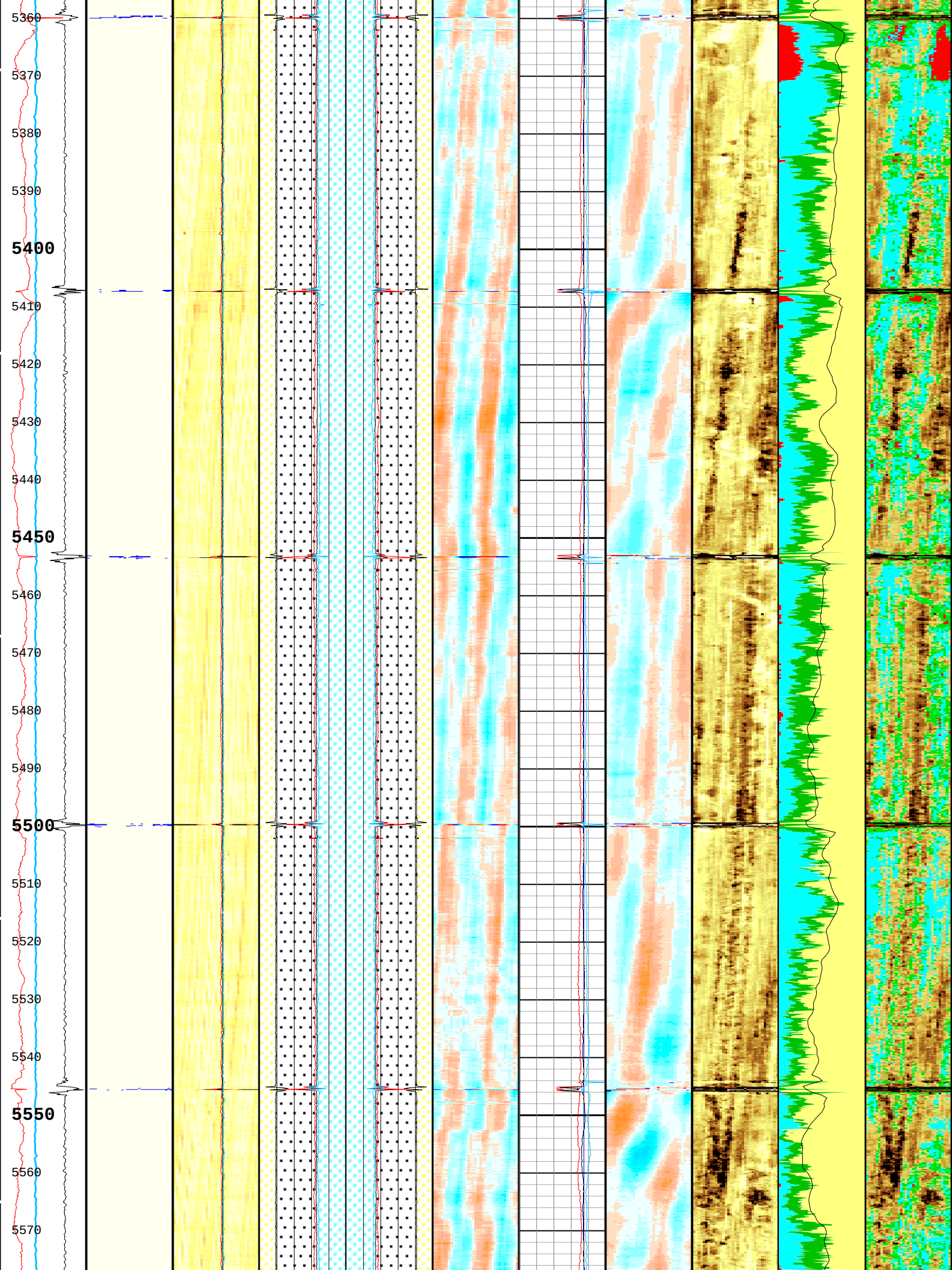
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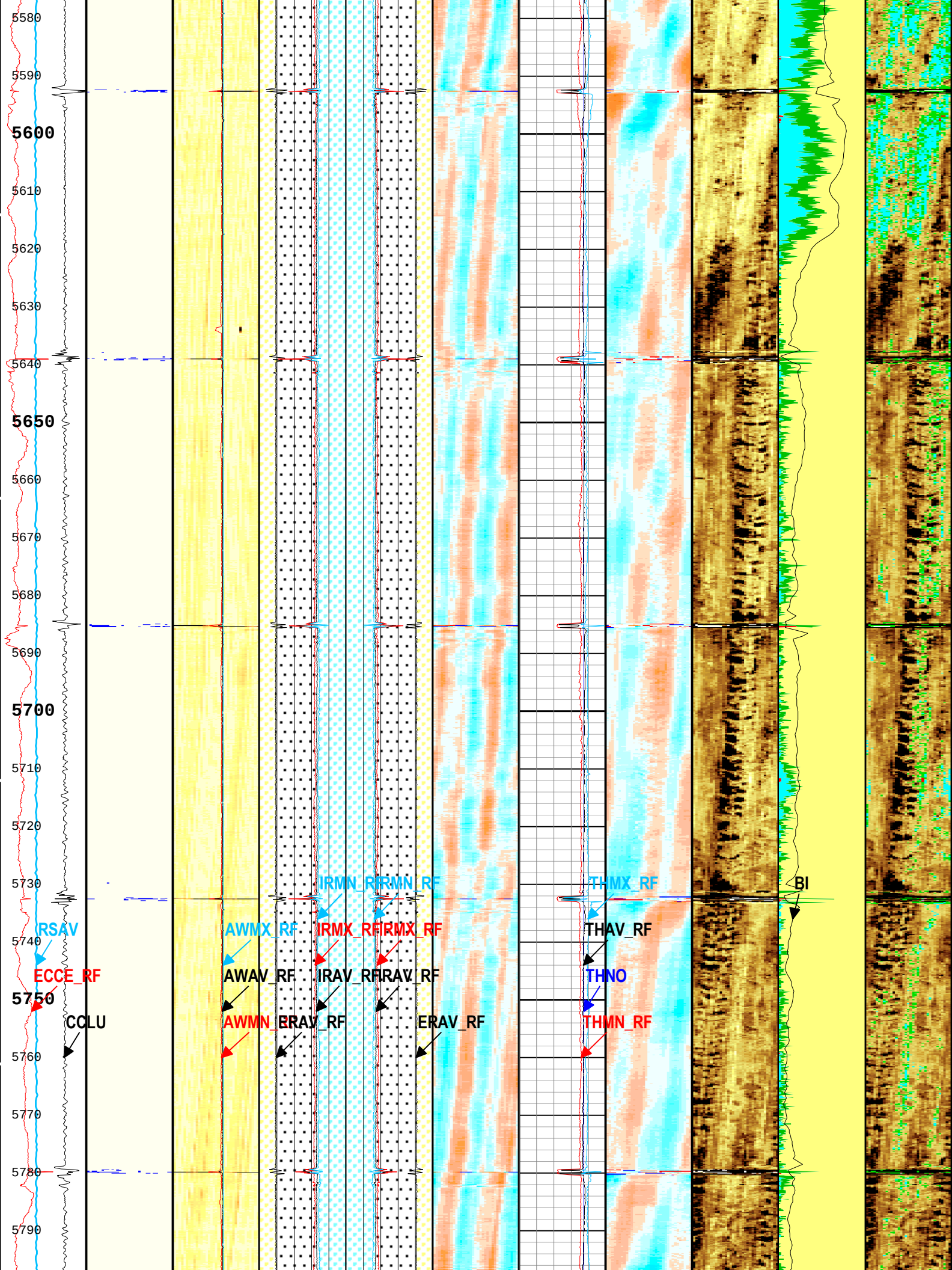
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5740
5750
5760
5770
5780
5790
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMN_RF
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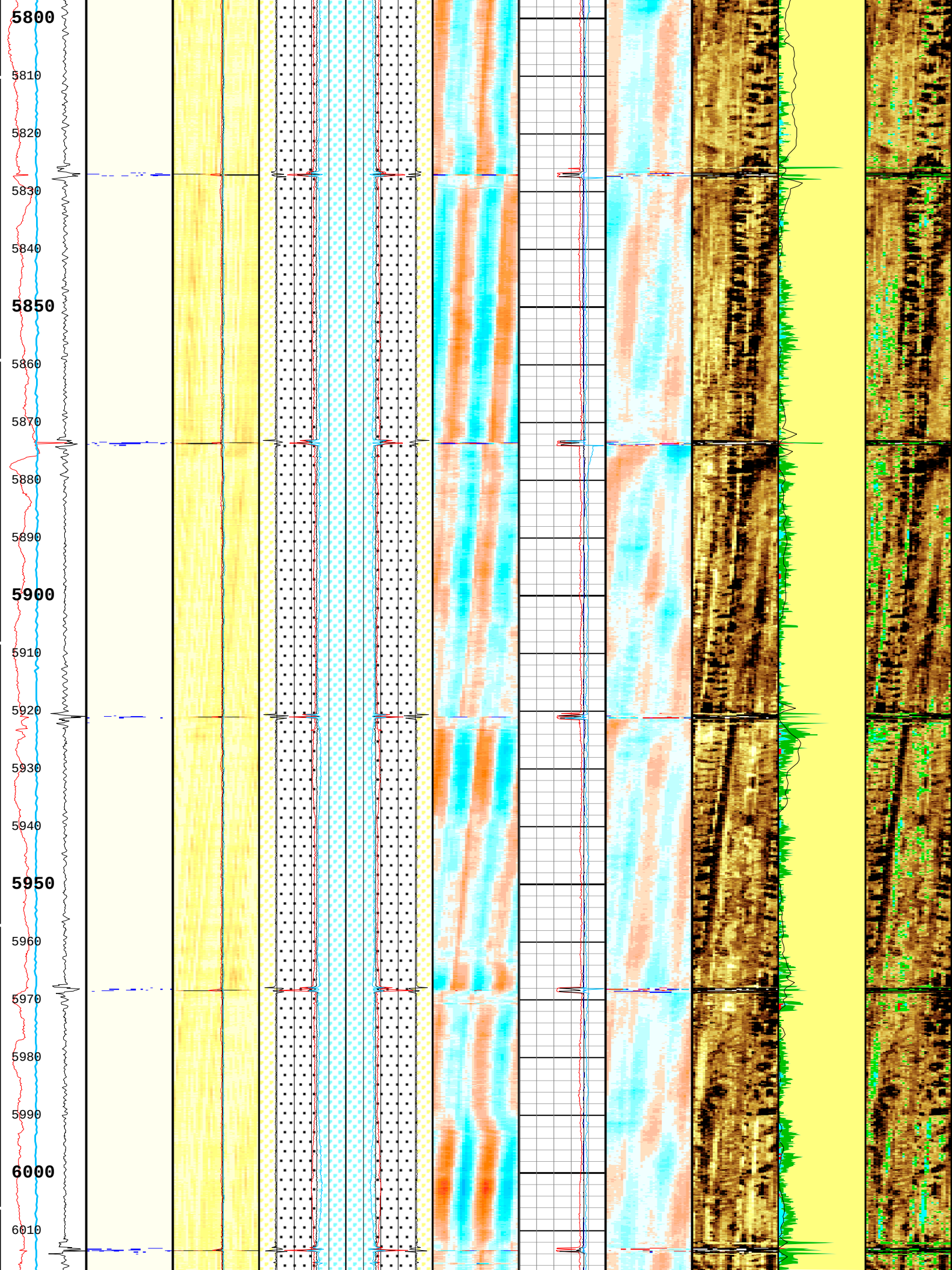
THAV_RF
THNO
THMN_RF
BI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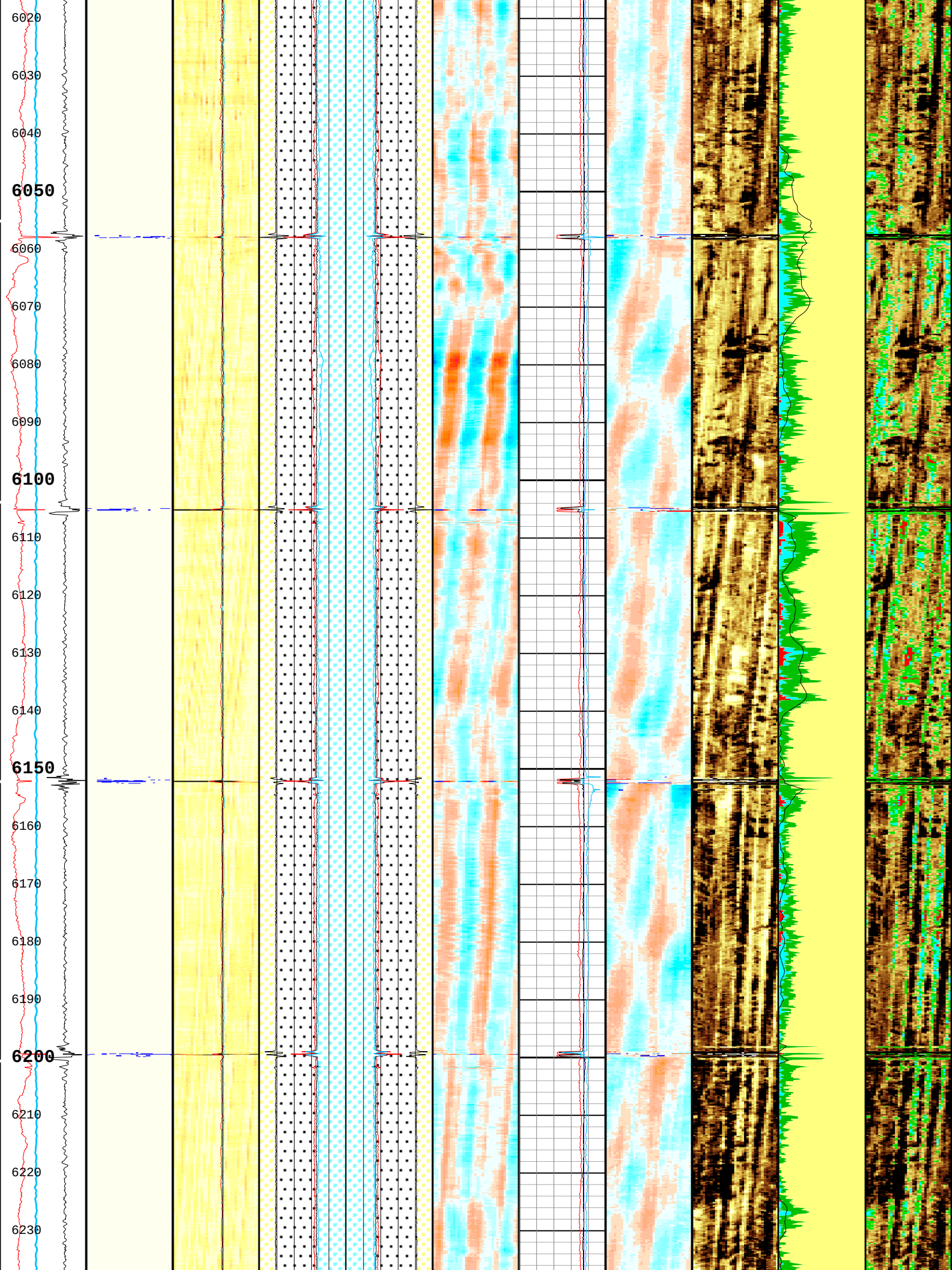
6000
6010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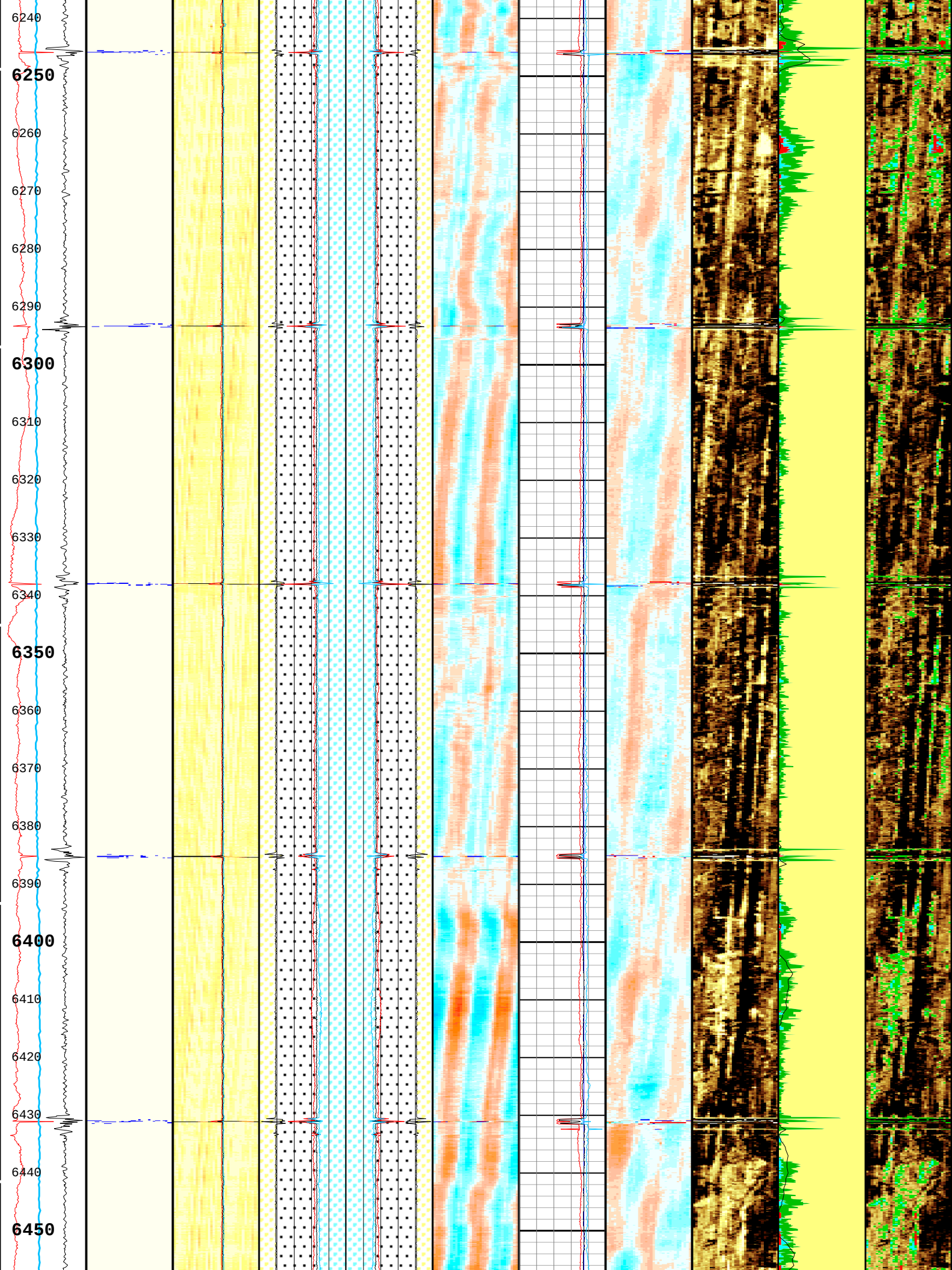
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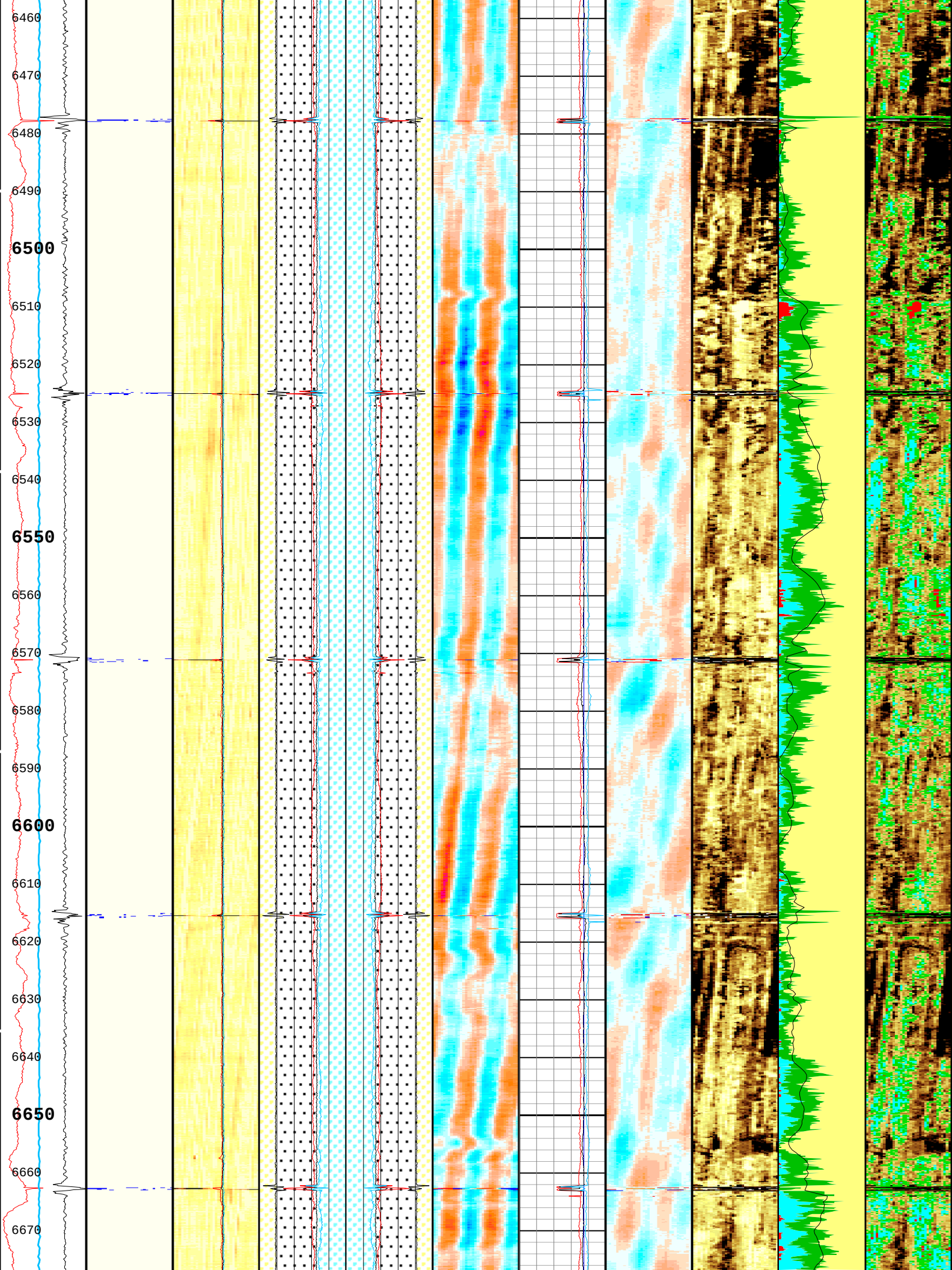
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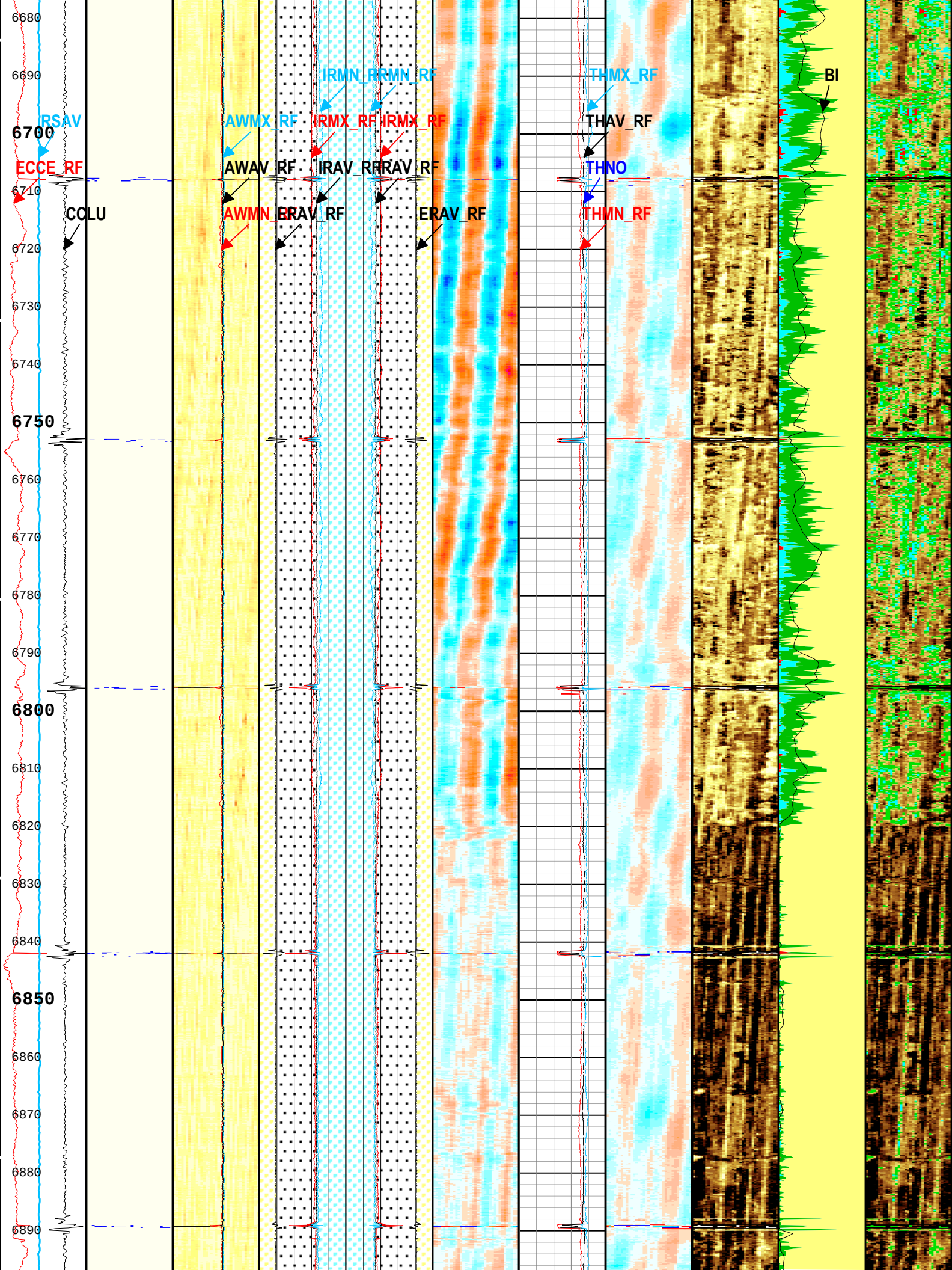
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6850
6860
6870
6880
6890
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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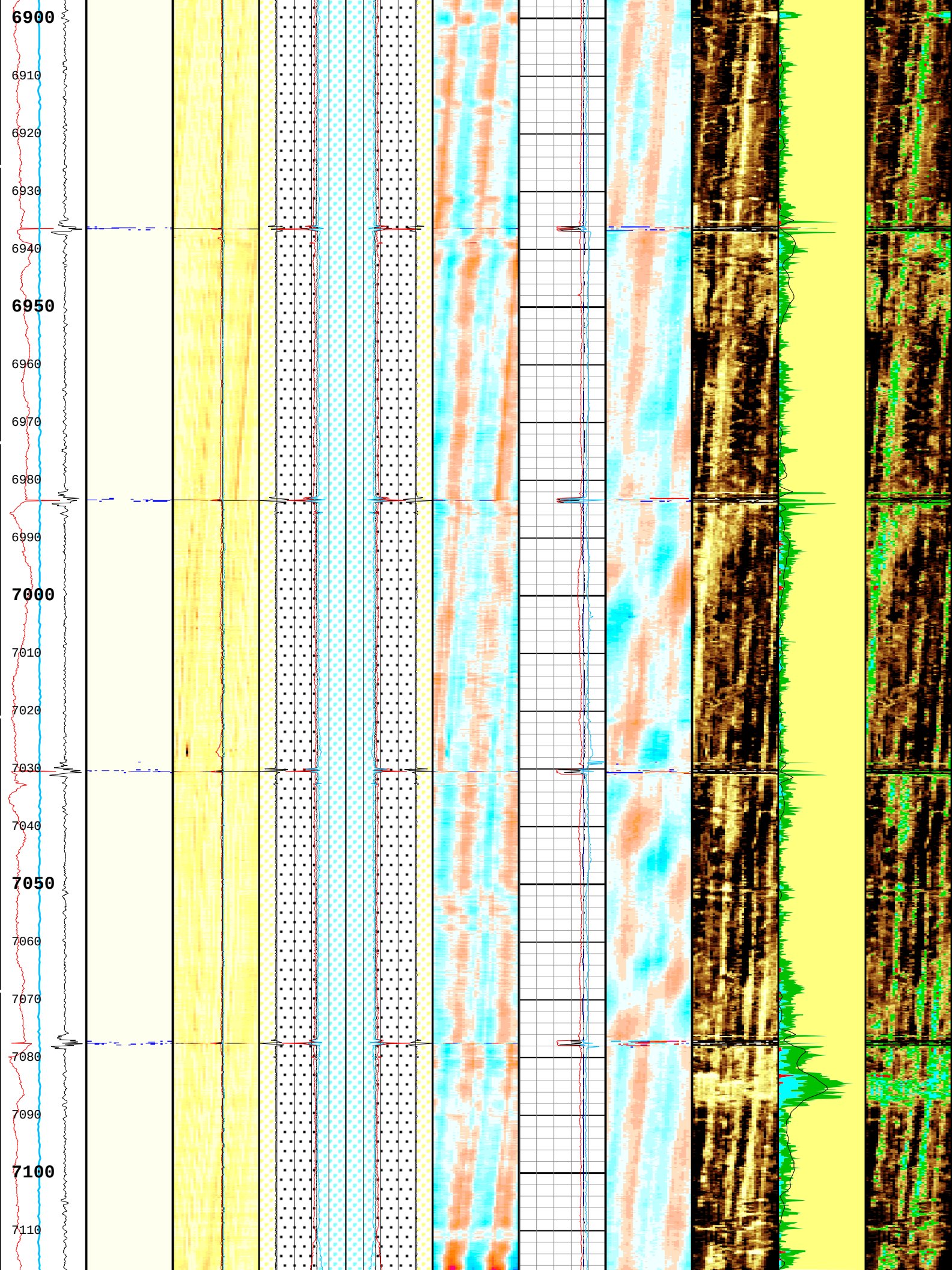
THAV_RF
THNO
THMN_RF
BI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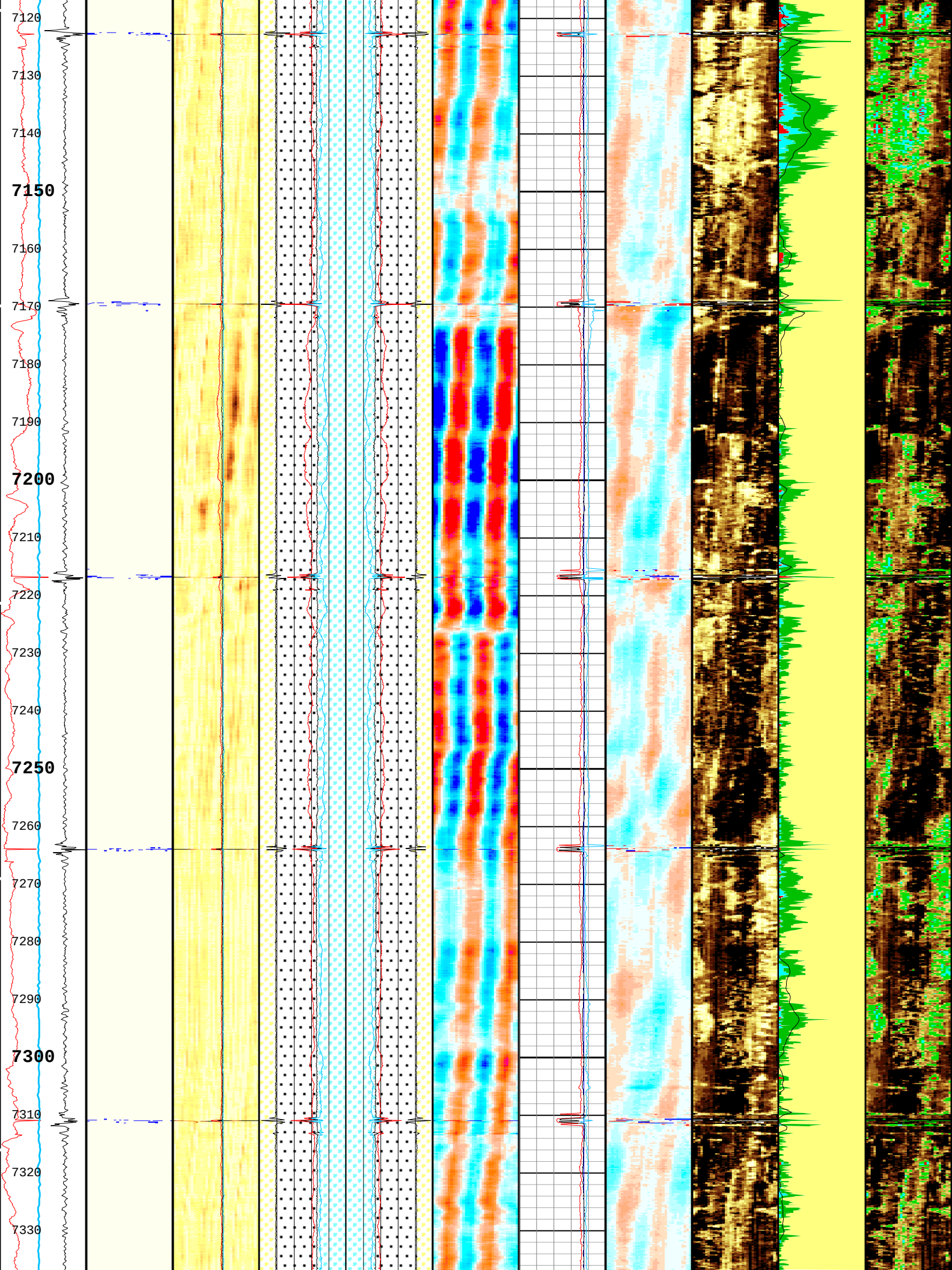
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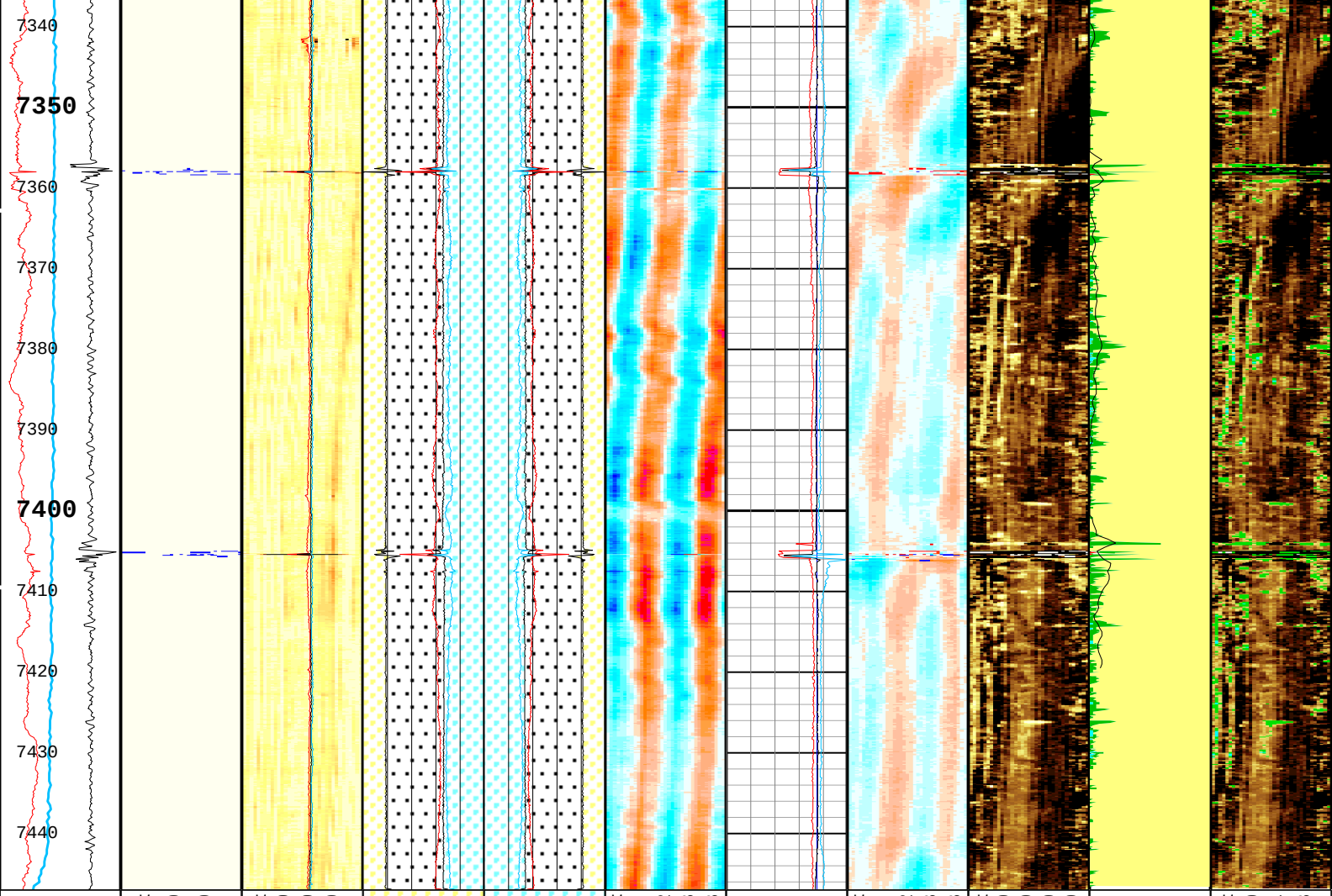


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

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

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

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

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

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)

Amplitude (AWMX_RF) USIT-E[1]
0 dB 75

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

(BI) DSLT-H[1]
1 0

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

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: 07-Apr-2016 19:29:06

Main Composite

Cement Log 2 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[8]:Up	Up	60.69 ft	7447.53 ft	07-Apr-2016 9:48:55 AM	07-Apr-2016 12:23:34 PM	ON	0.96 ft	Yes
Three	Log[12]:Up	Up	85.32 ft	262.12 ft	07-Apr-2016 2:08:49 PM	07-Apr-2016 2:13:19 PM	ON	6.42 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F
Main Composite:S001

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: 07-Apr-2016 19:30:02

TIME_1900 - Time Marked every 60.00 (s)

ERAV_IRAV
ERAV_RHF1
IRAV_LHF1
IRAV_ERAV
LHF1_ERAV
RHF1_IRAV

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

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

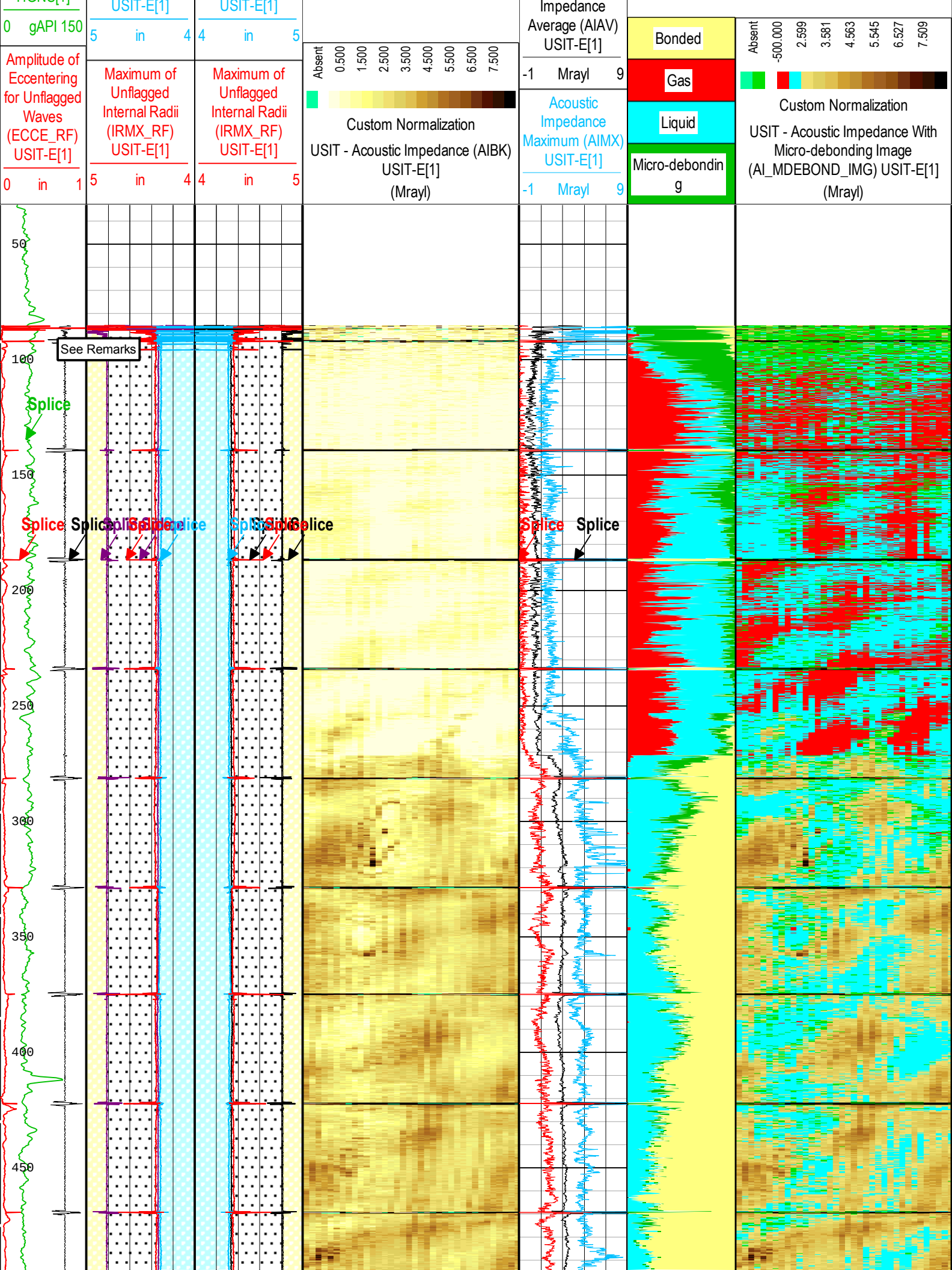
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]

Minimum of Unflagged Internal Radii (IRMN_RF)

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

Gamma Ray (ECGR) HGNS[1]

Acoustic


0 gAPI 150
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 1
USIT-E[1]
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
5 in 4
USIT-E[1]
4 in 5
Maximum of Unflagged Internal Radii (IRMX_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)
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)
50
100
150
200
250
300
350
400
450
See Remarks
Splice
Splice
Splice
Splice
Splice
Splice
Splice
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Splice
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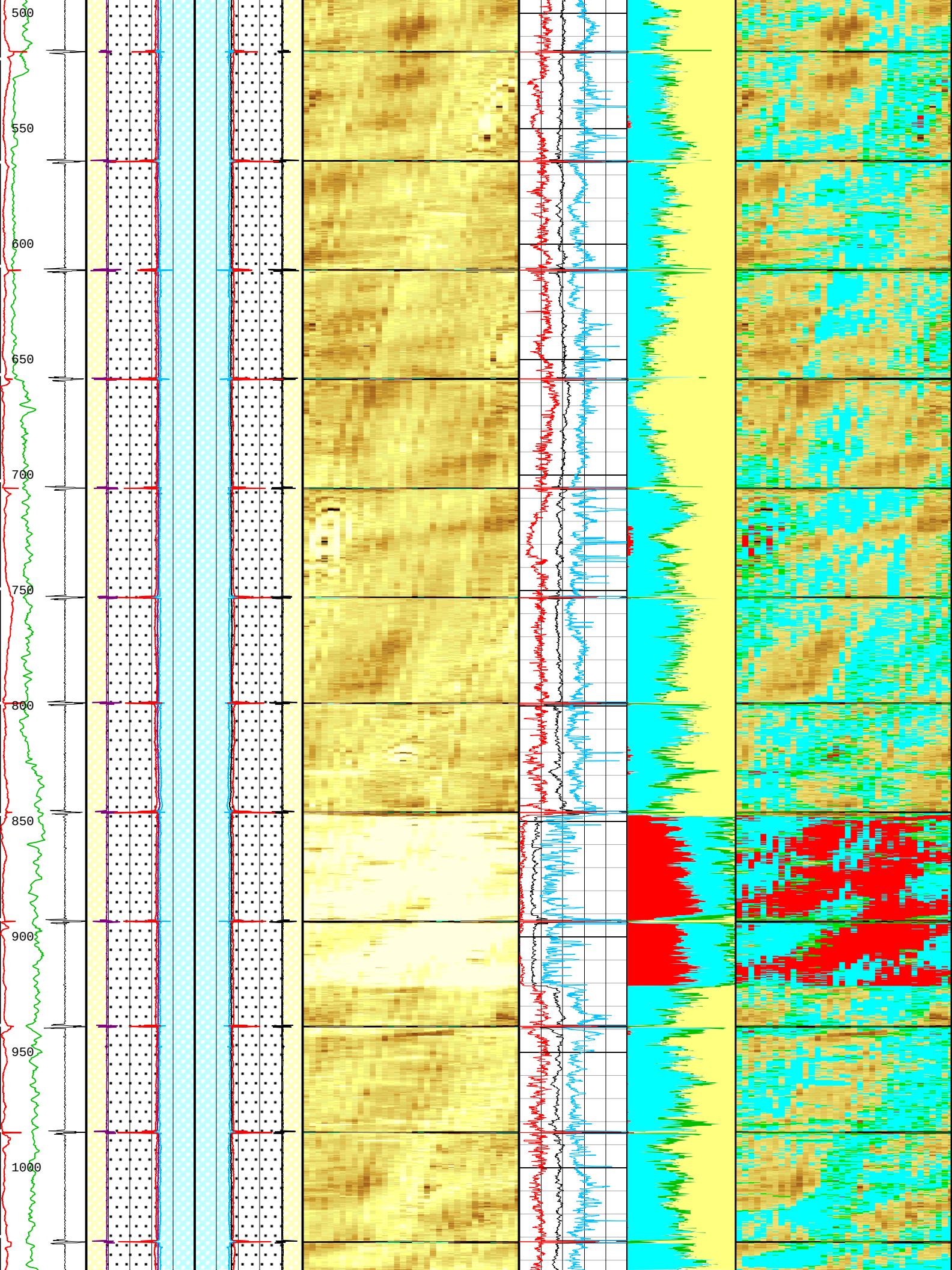
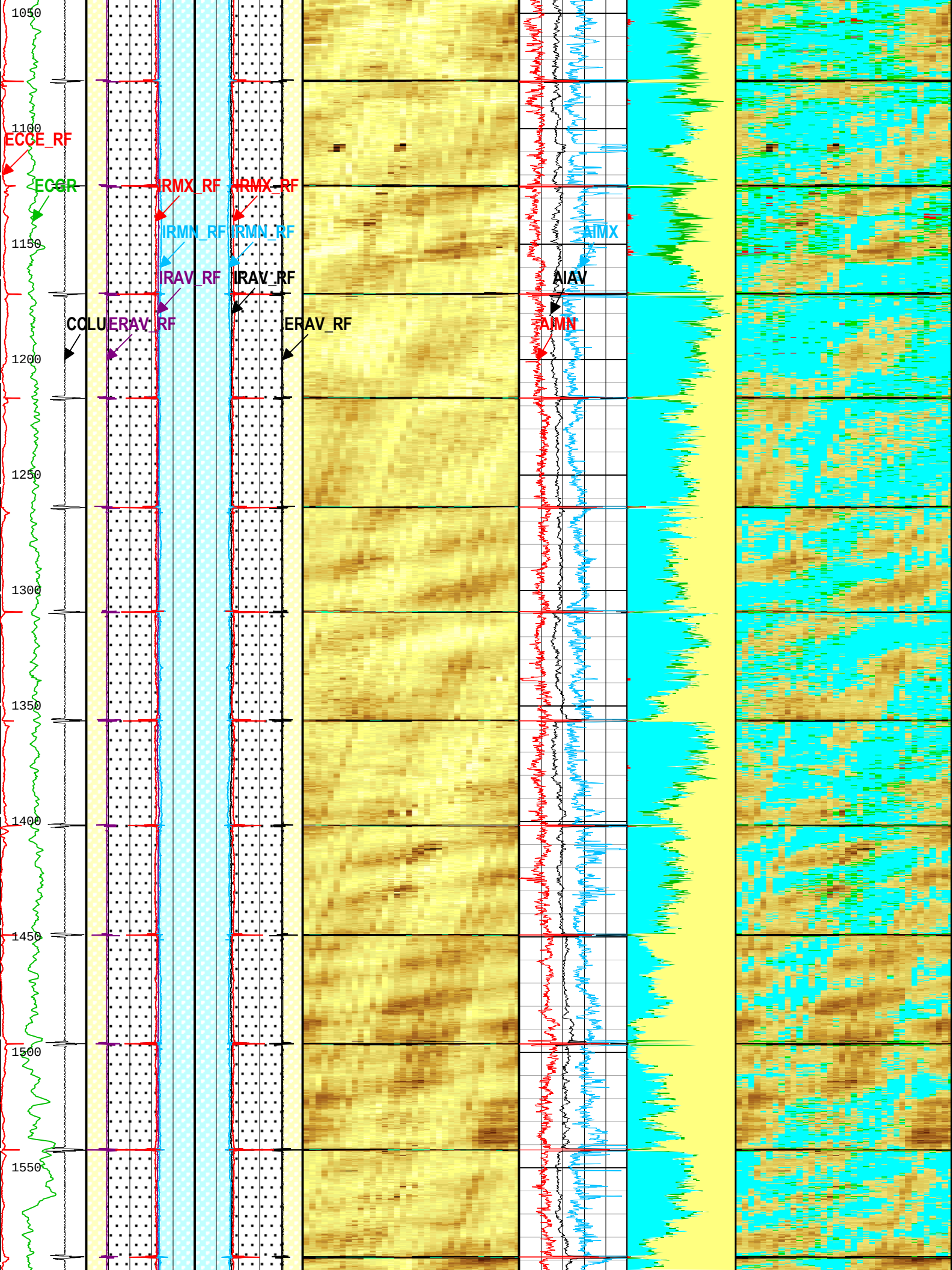
Splice
Splice
Splice


500
550
600
650
700
750
800
850
900
950
1000


1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
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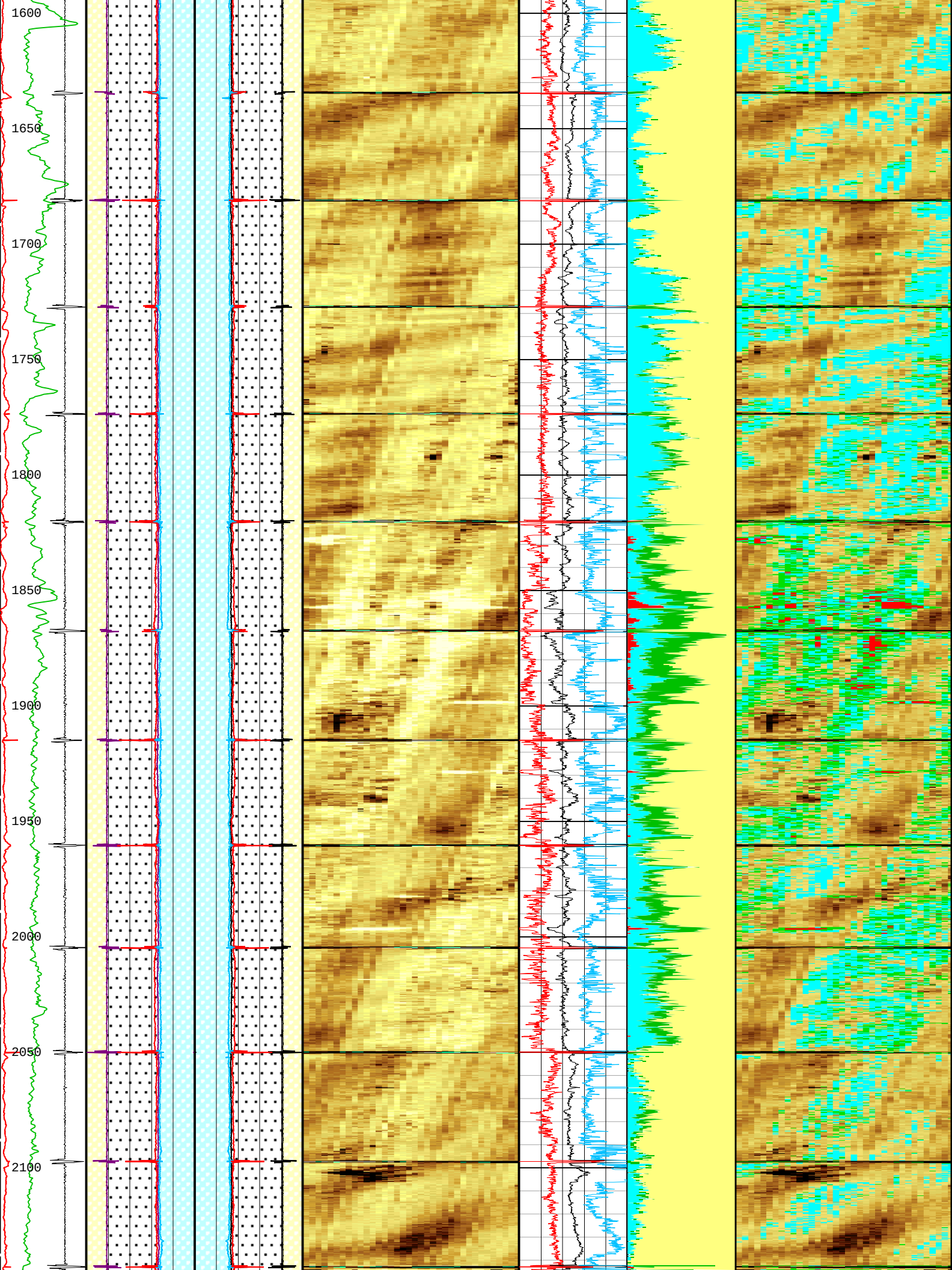
ERAV_RF
AIMX
AIAV
AIMN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1650
1700
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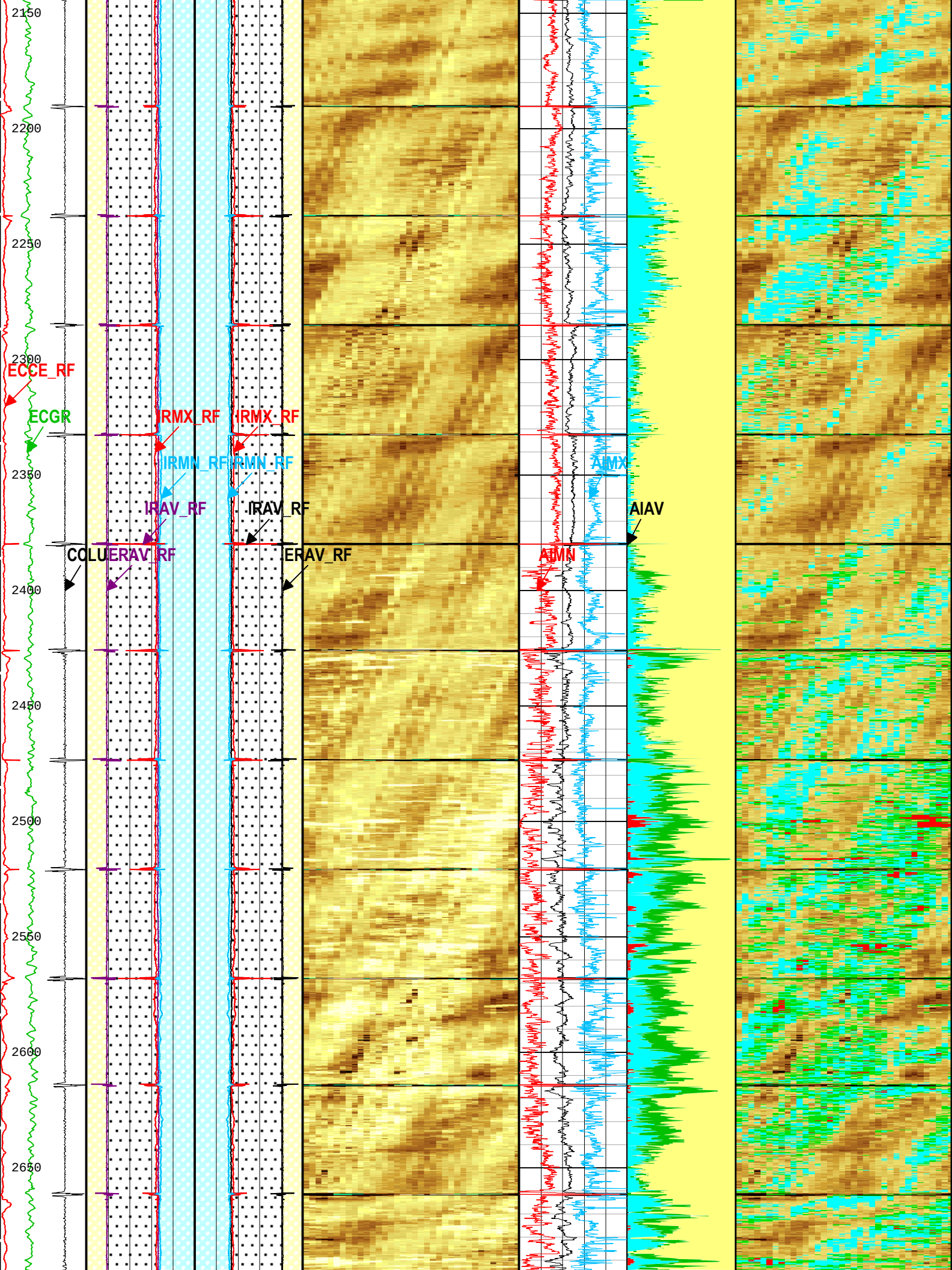
1800
1850
1900
1950
2000
2050
2100


2150
2200
2250
2300
2350
2400
2450
2500
2550
2600
2650
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
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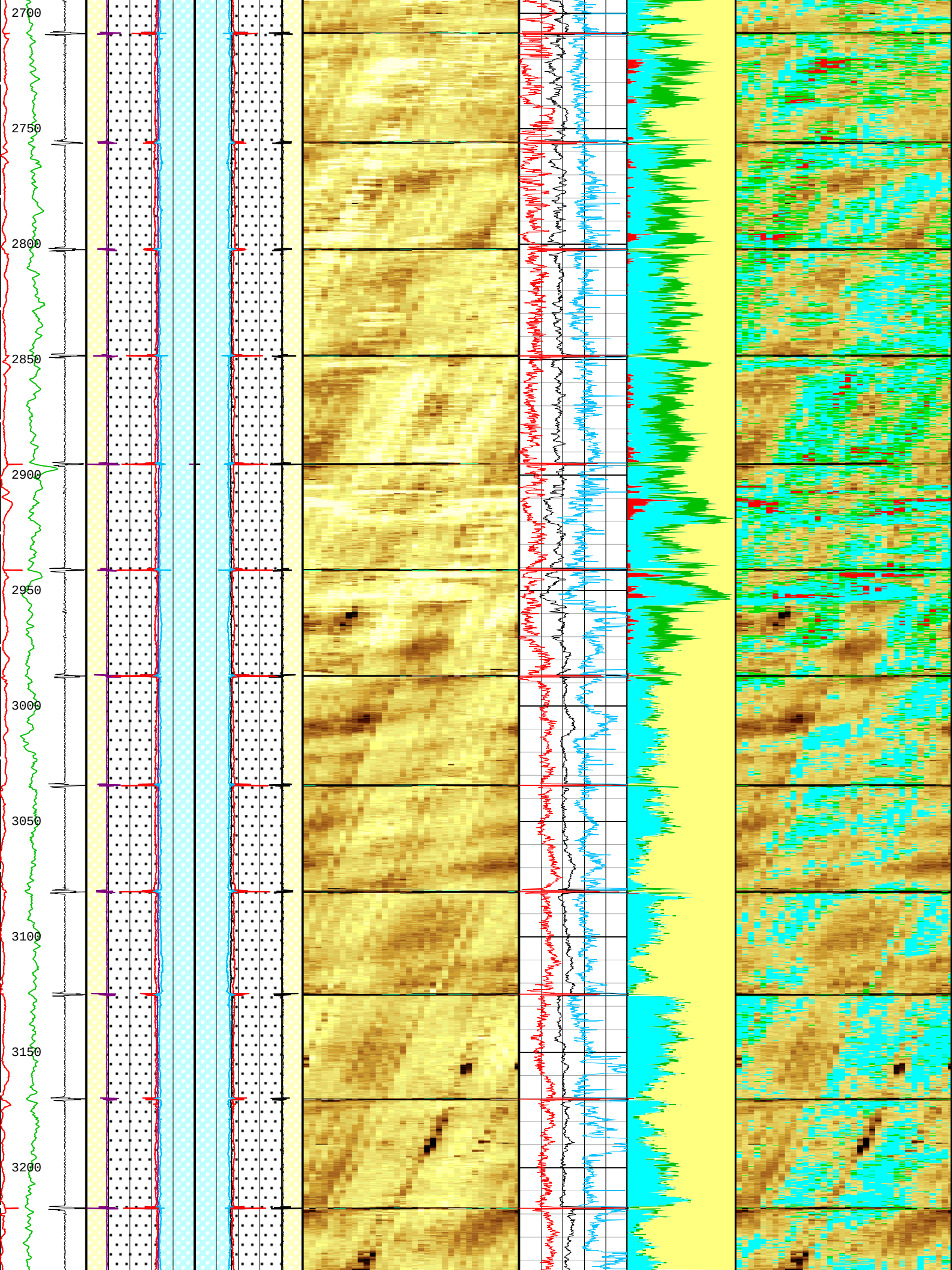
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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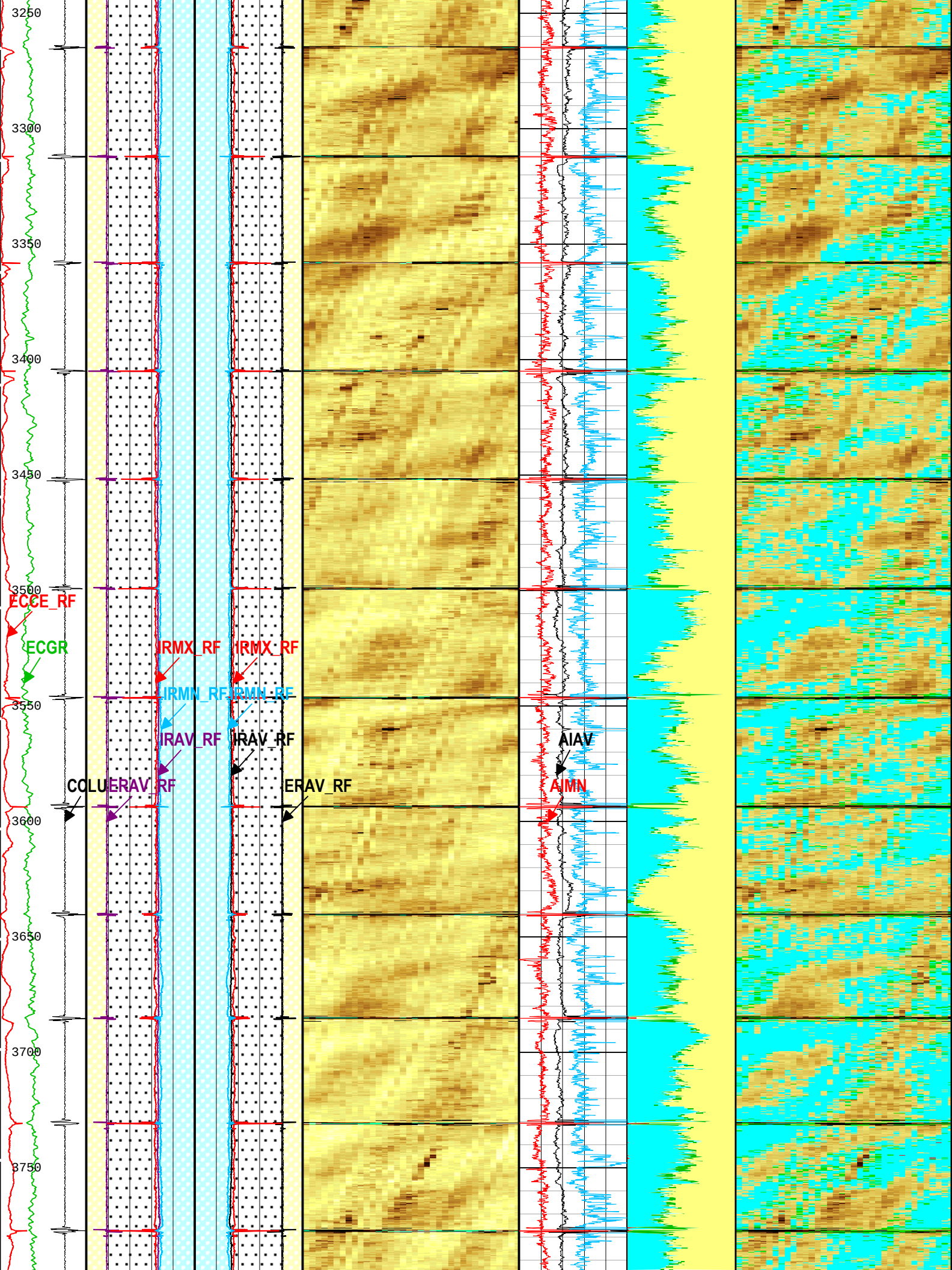
3200


3250
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3350
3400
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3500
3550
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3650
3700
3750
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
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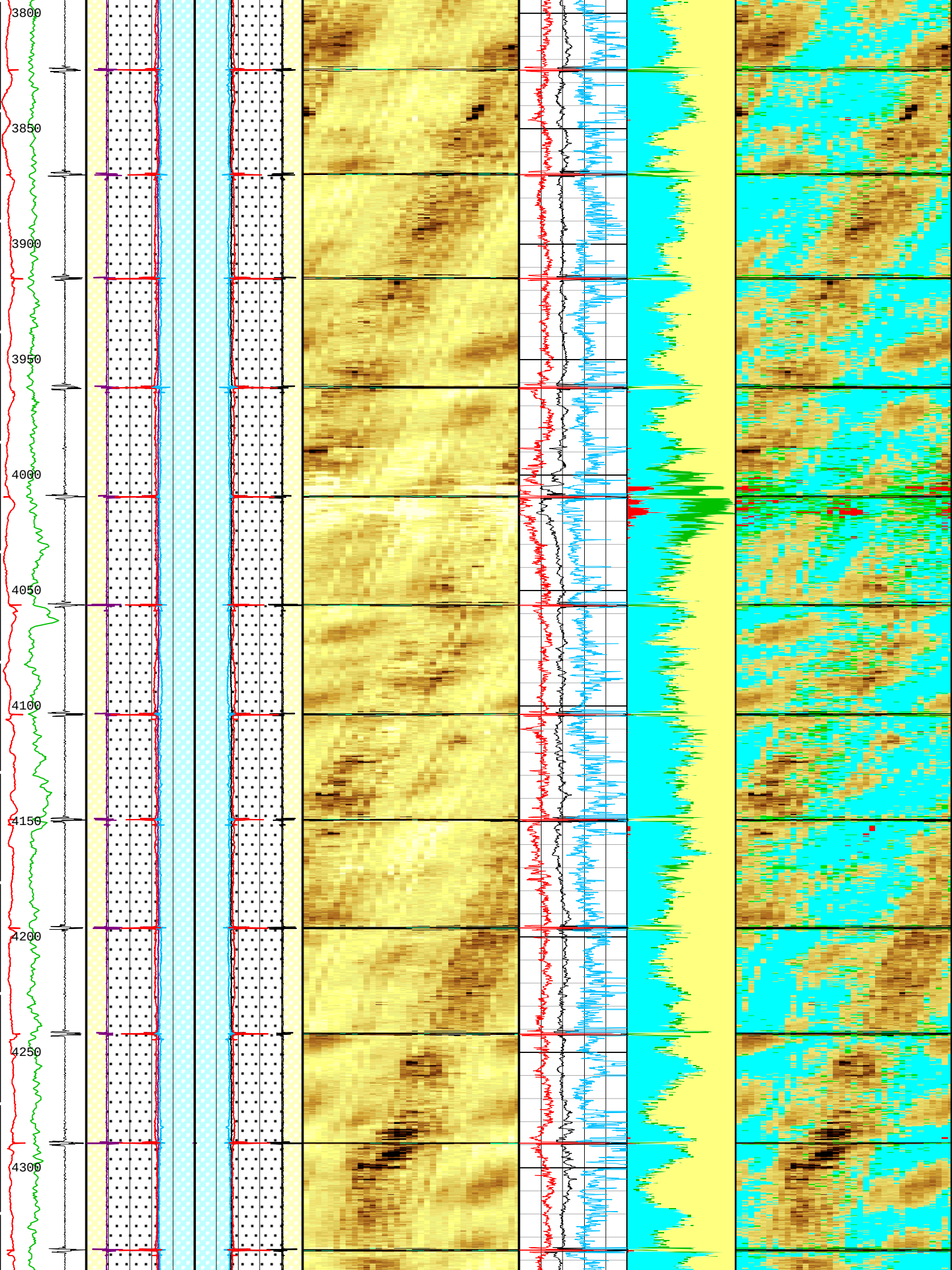
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIAV
AIMN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4250
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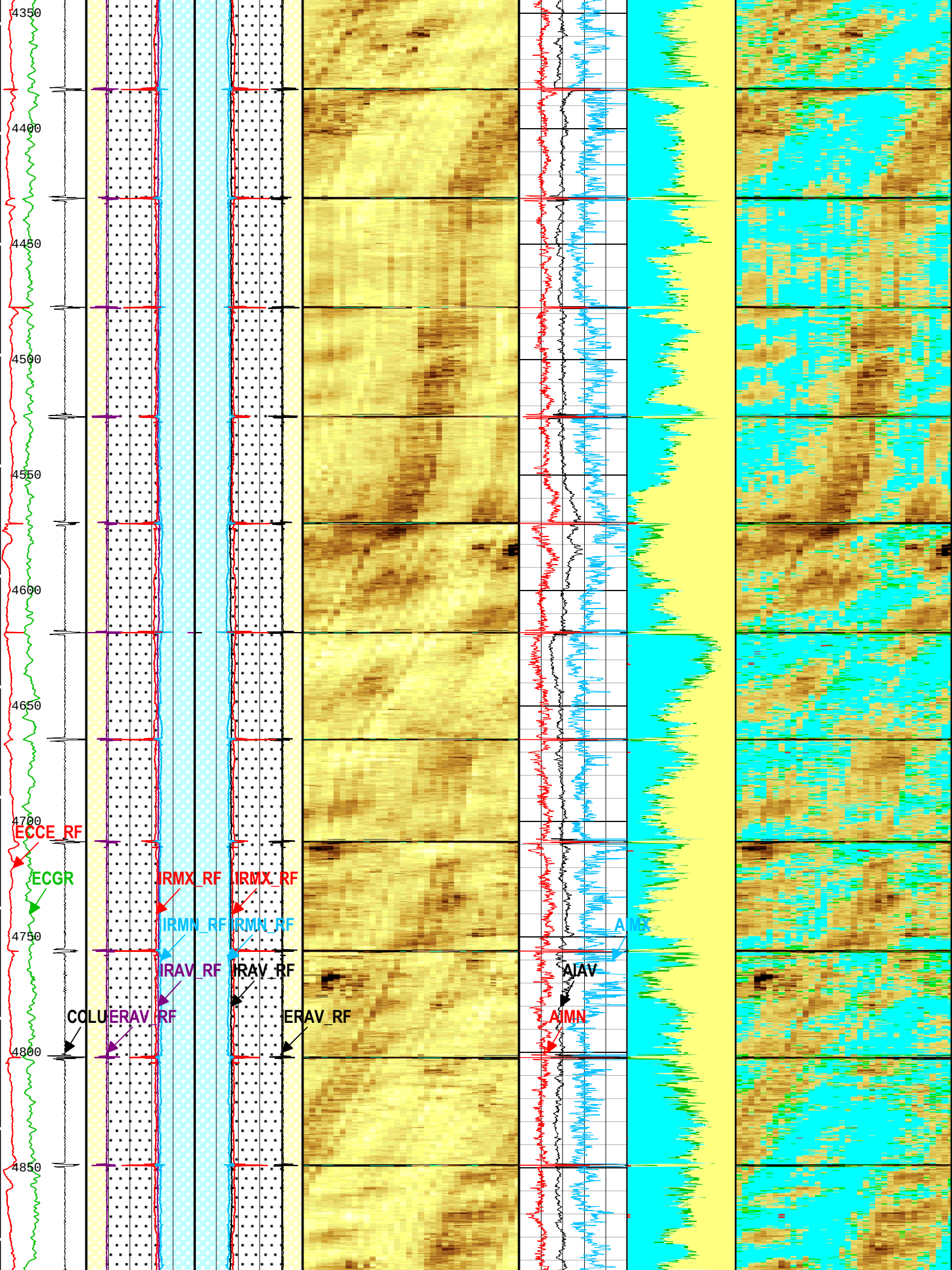
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4850
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
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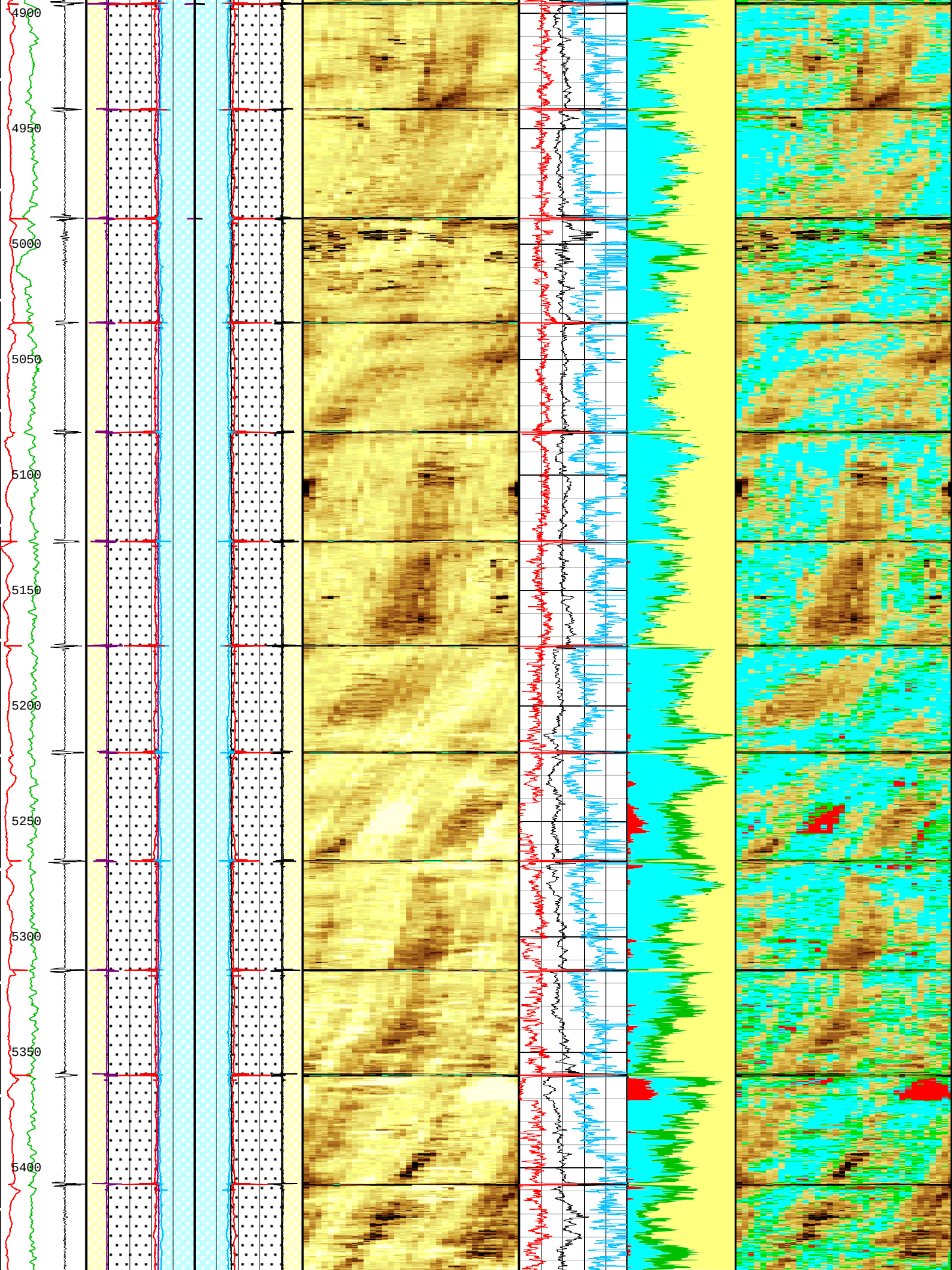
IRAV_RF
IRAV_RF
COLU
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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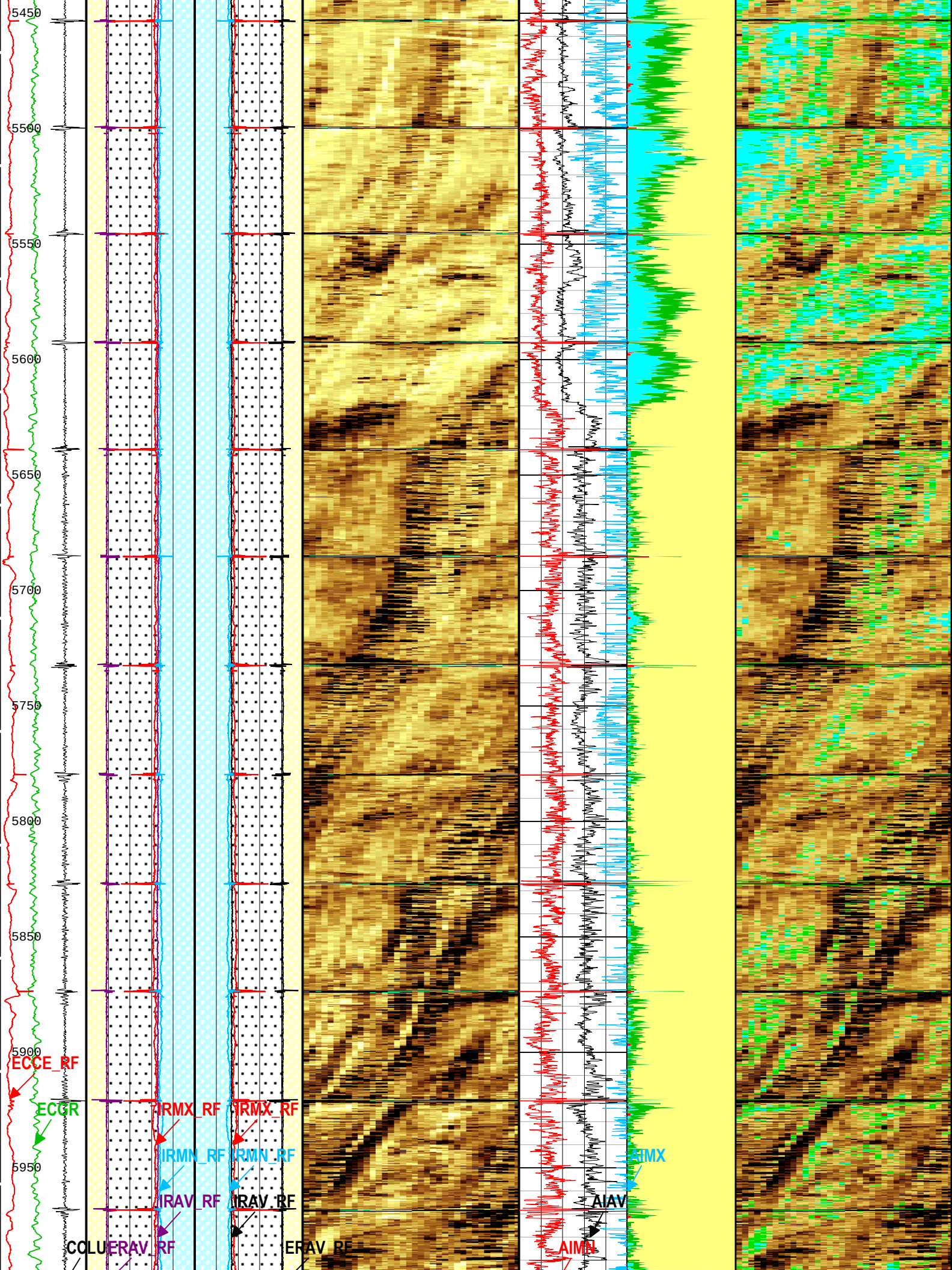
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ECGR
IRMX_RF
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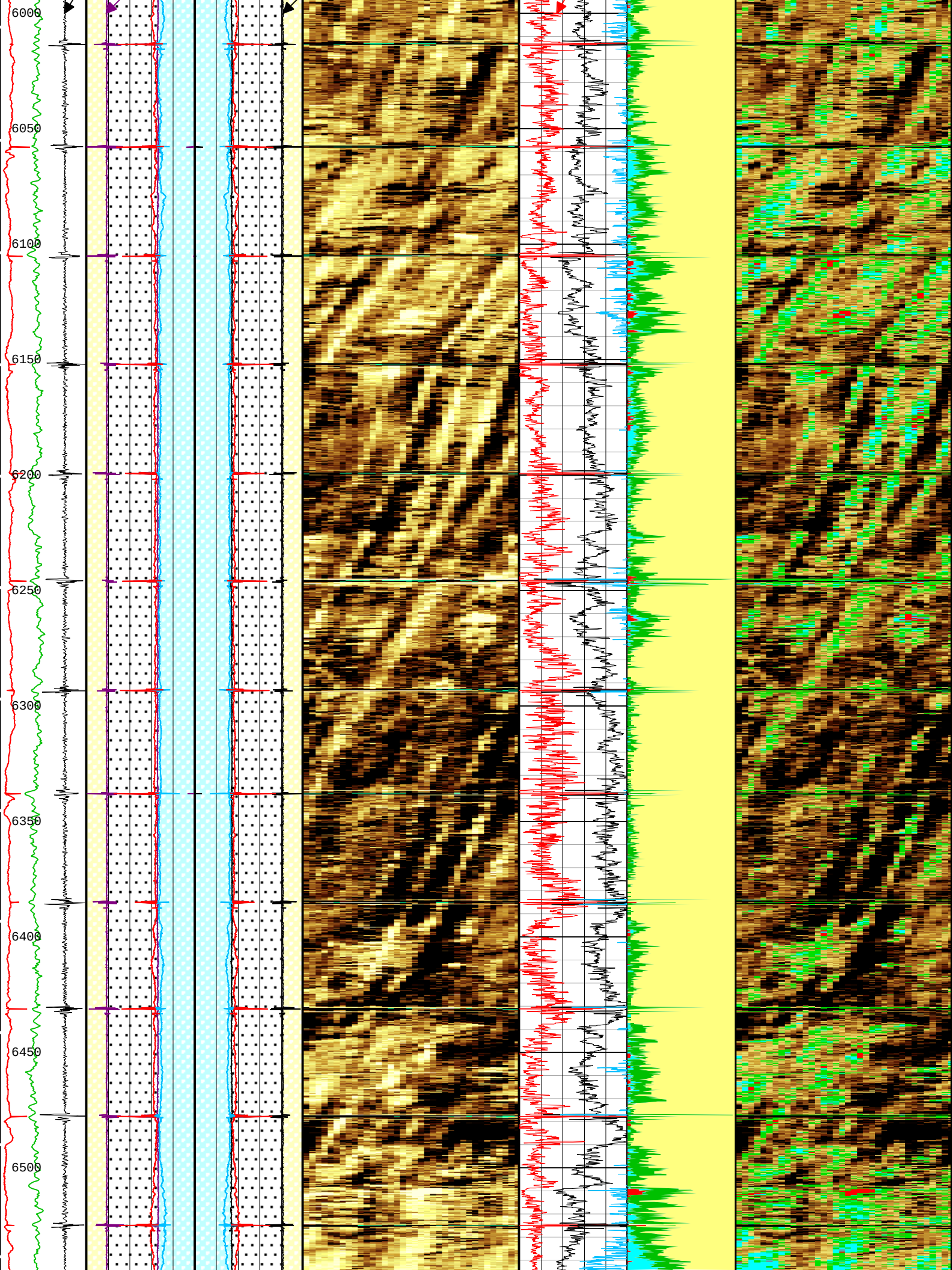
AIMX
AIAV
AIMN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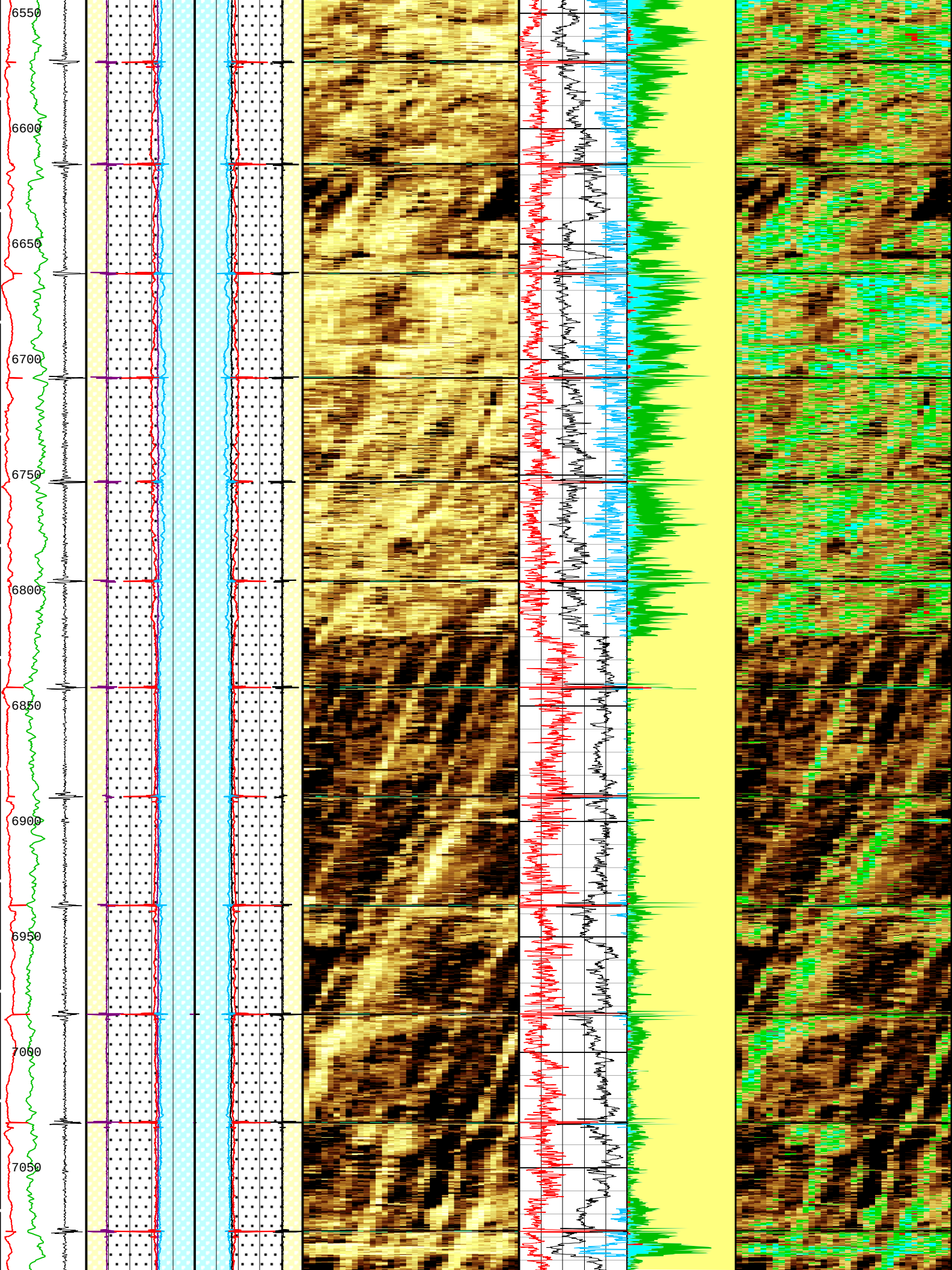
6500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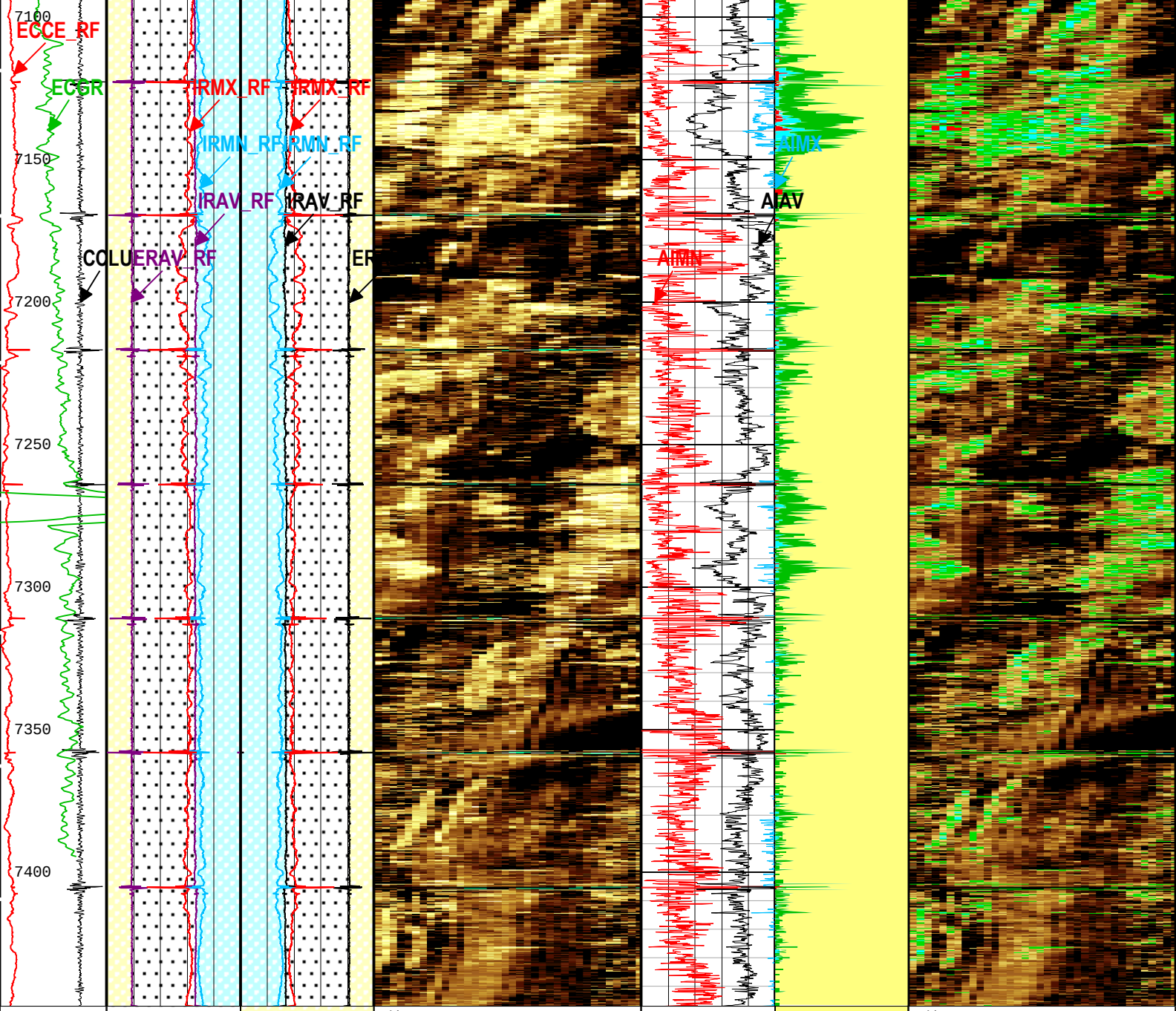


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

Gamma Ray (ECGR) HGNS[1]
0 gAPI 150

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

ERAV_IRAV | ERAV_RHF1
IRAV_LHF1 | IRAV_ERAV
LHF1_ERAV | RHF1_IRAV

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

Minimum of

Minimum of

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

Unflagged Internal Radii (IRMN_RF) USIT-E[1]	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: 07-Apr-2016 19:30:02

Main Composite

Corrosion 5 in = 100 ft

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[8]:Up	Up	60.69 ft	7447.53 ft	07-Apr-2016 9:48:55 AM	07-Apr-2016 12:23:34 PM	ON	0.96 ft	Yes
Three	Log[12]:Up	Up	85.32 ft	262.12 ft	07-Apr-2016 2:08:49 PM	07-Apr-2016 2:13:19 PM	ON	6.42 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F

Main Composite:S001

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: 07-Apr-2016 19:30:39

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) USIT-E[1]

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

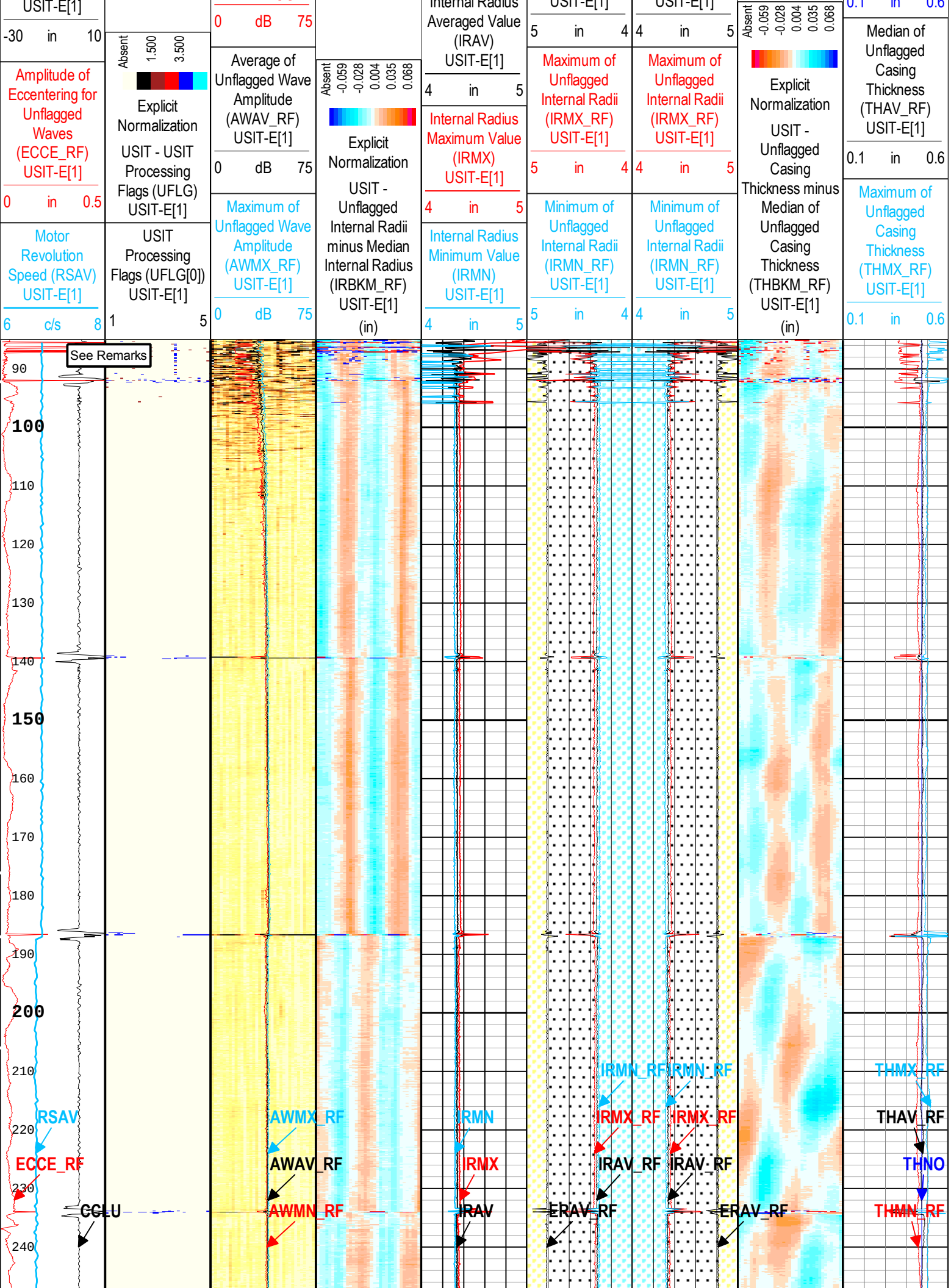
ERAV	IRAV
ERAV-IRAV	ERAV
IRAV	IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]	Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
5 in 4	4 in 5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]	Median Internal Radius of Casing Corrected for Eccentering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

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


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
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
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
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
See Remarks
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
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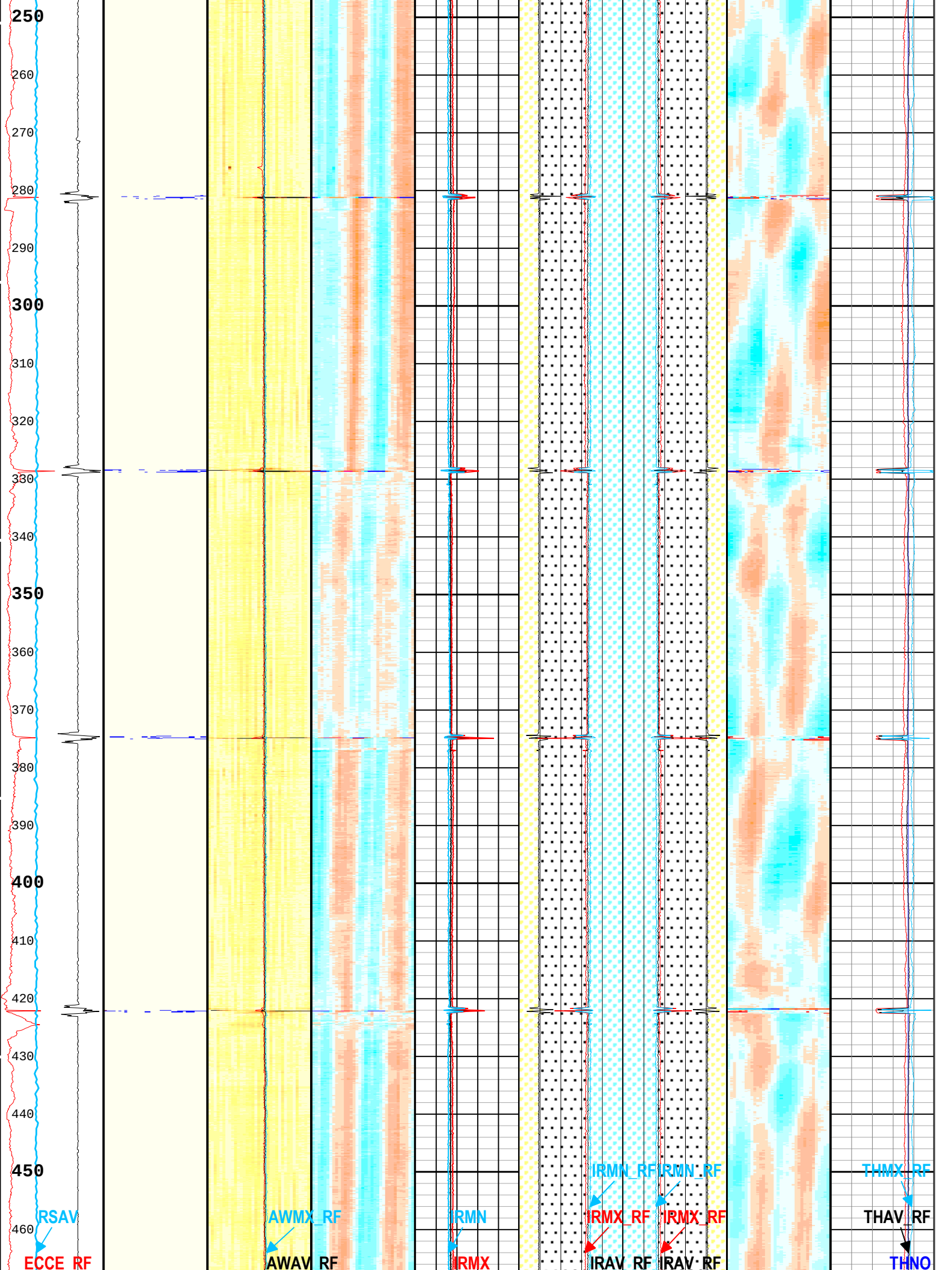
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF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460
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
IRMN
IRMX
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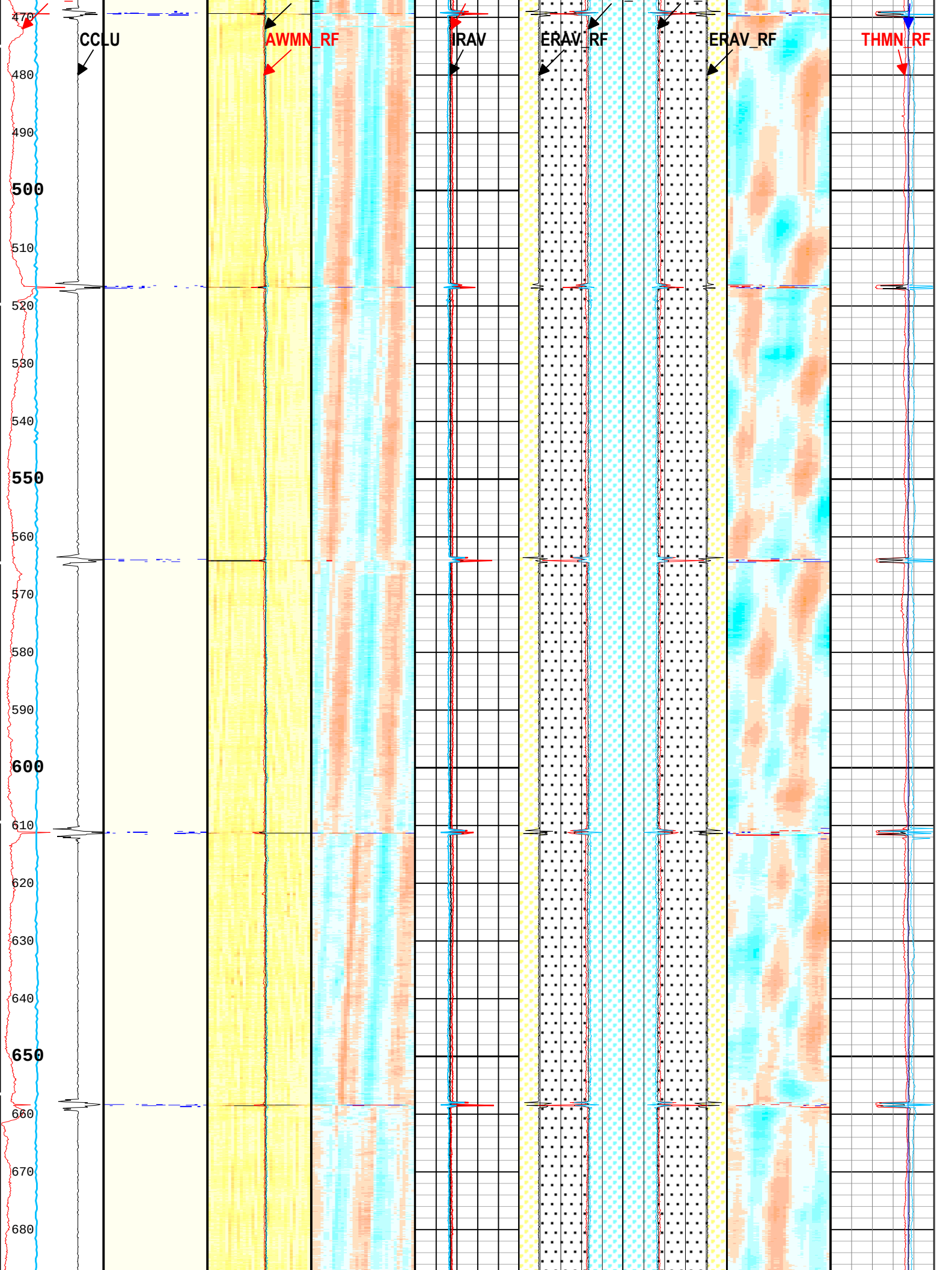
IRAV_RF
THMX_RF
THAV_RF
THNO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AWMN_RF
IRAV
ERAV_RF
ERAV_RF
THMN_RF
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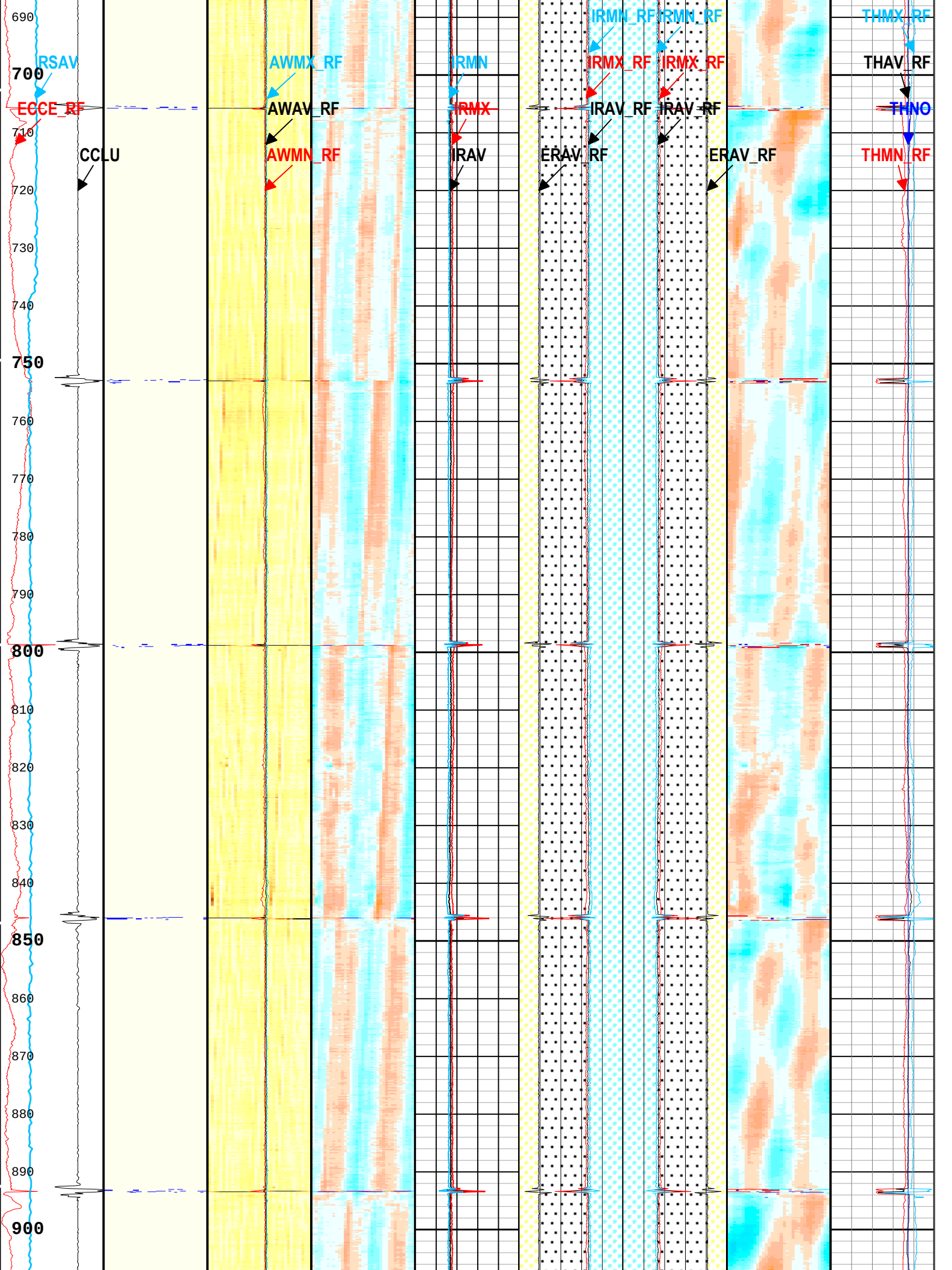
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RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
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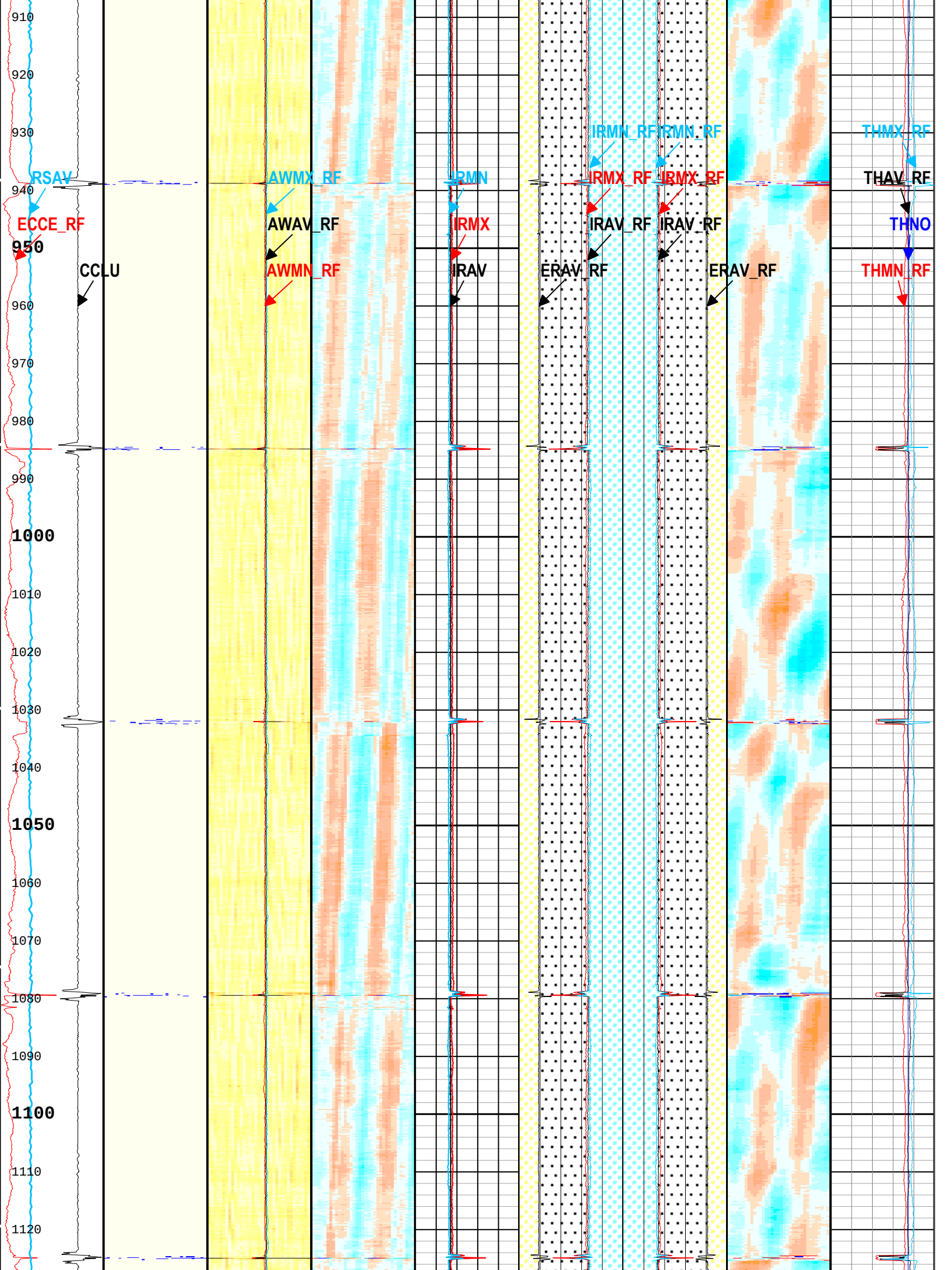
THNO
THMN_RF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RSAV
ECCE_RF
CCLU
AWMX_RF
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IRMN
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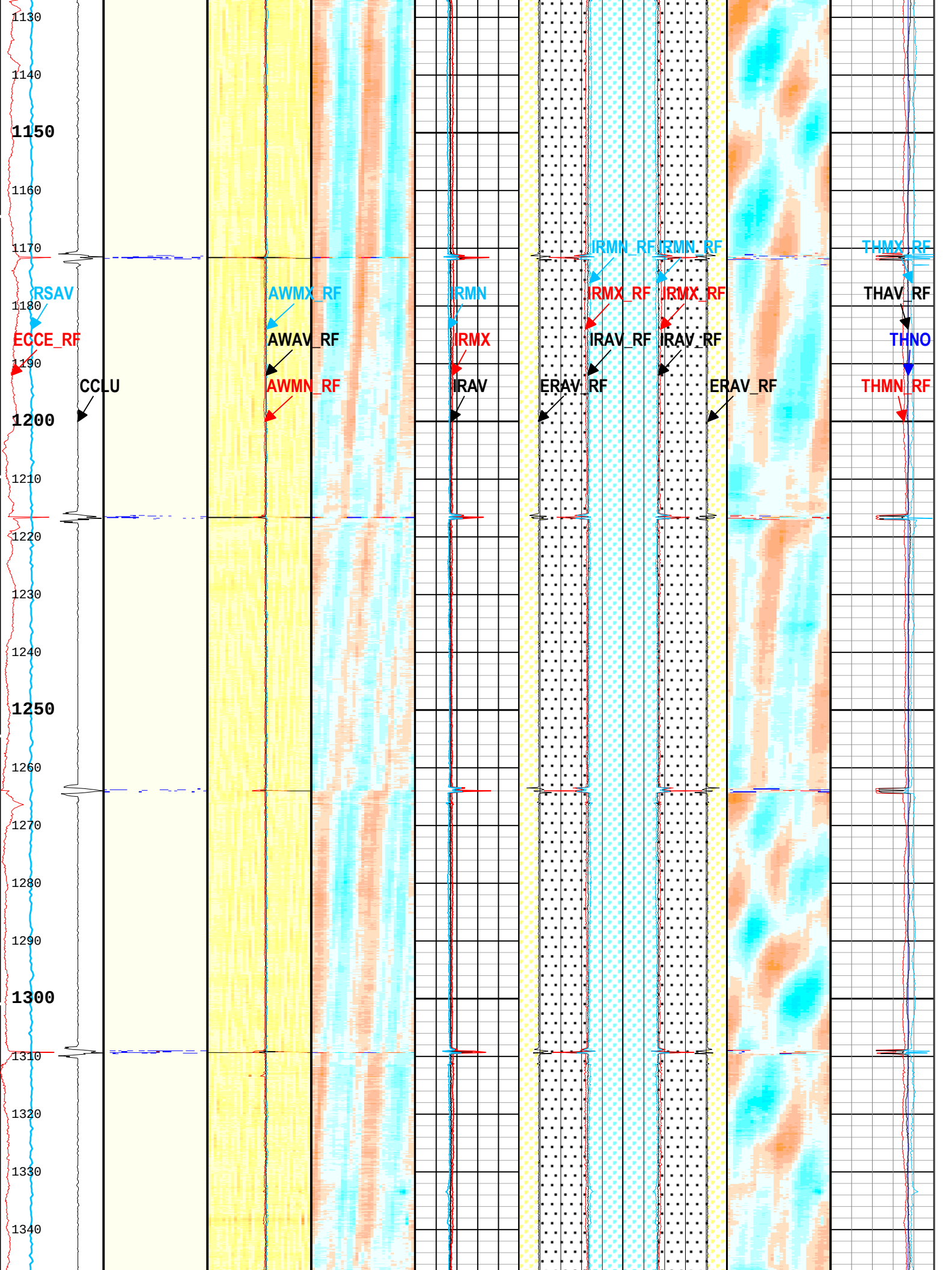
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RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
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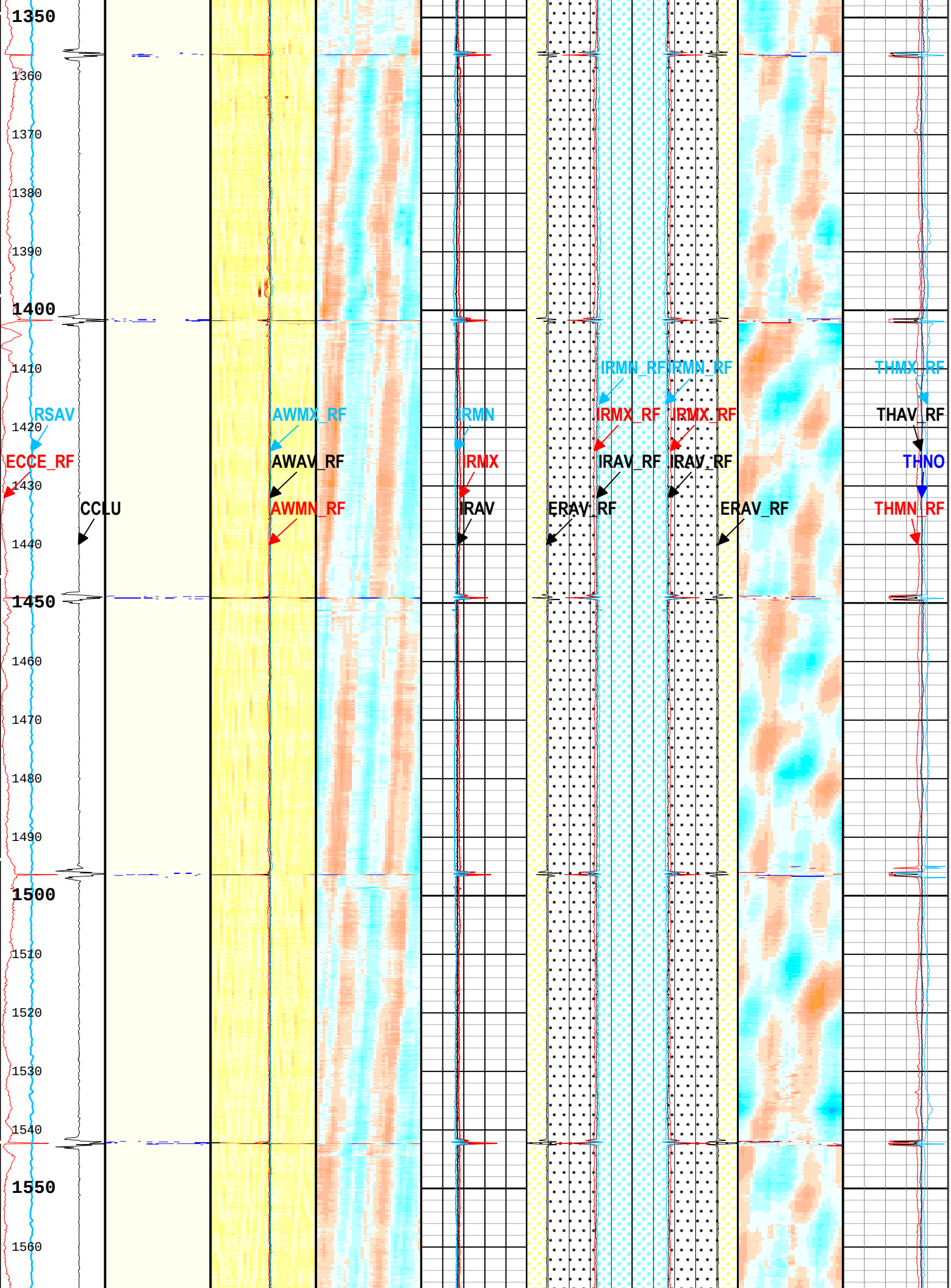
THMN_RF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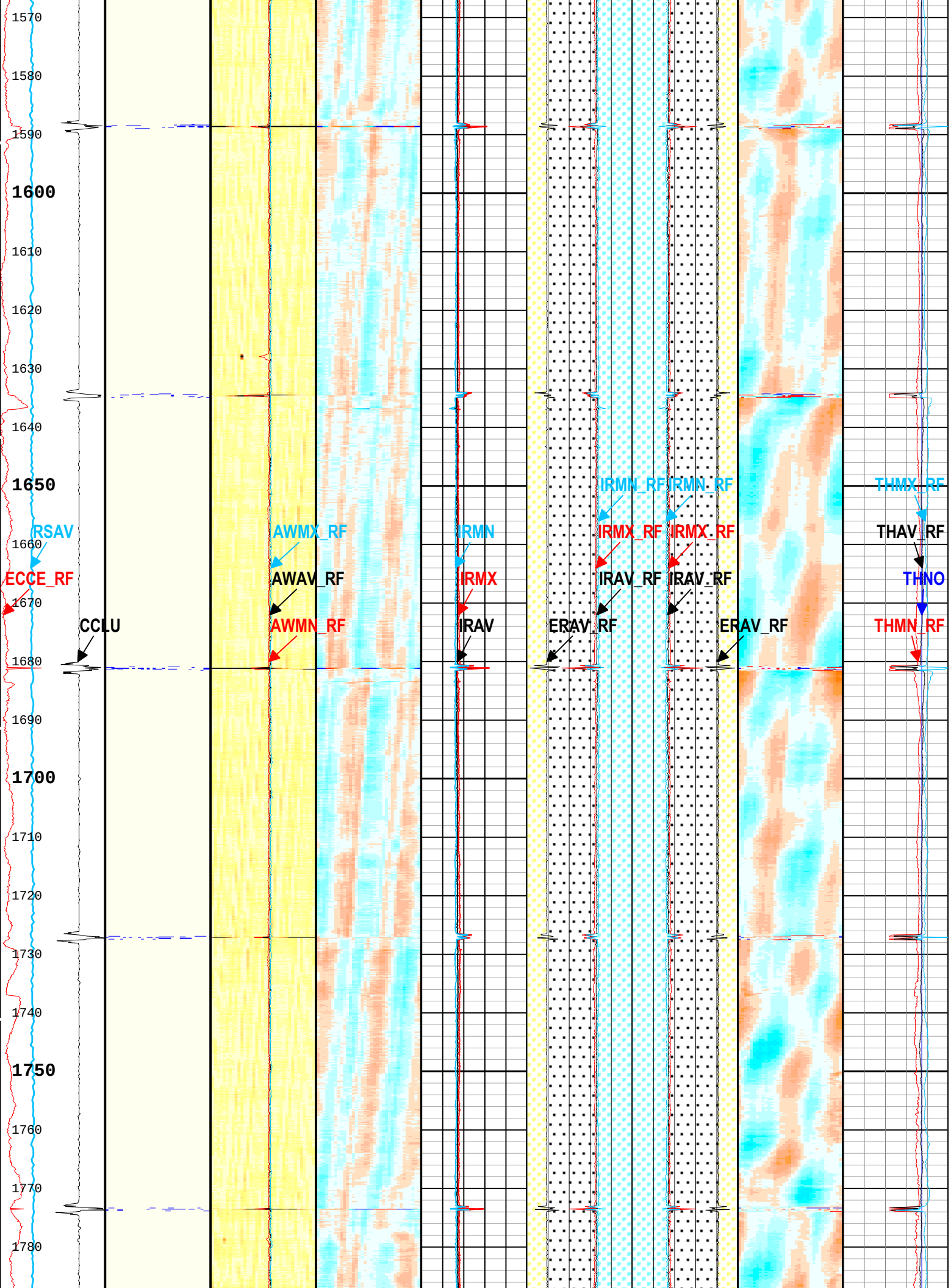
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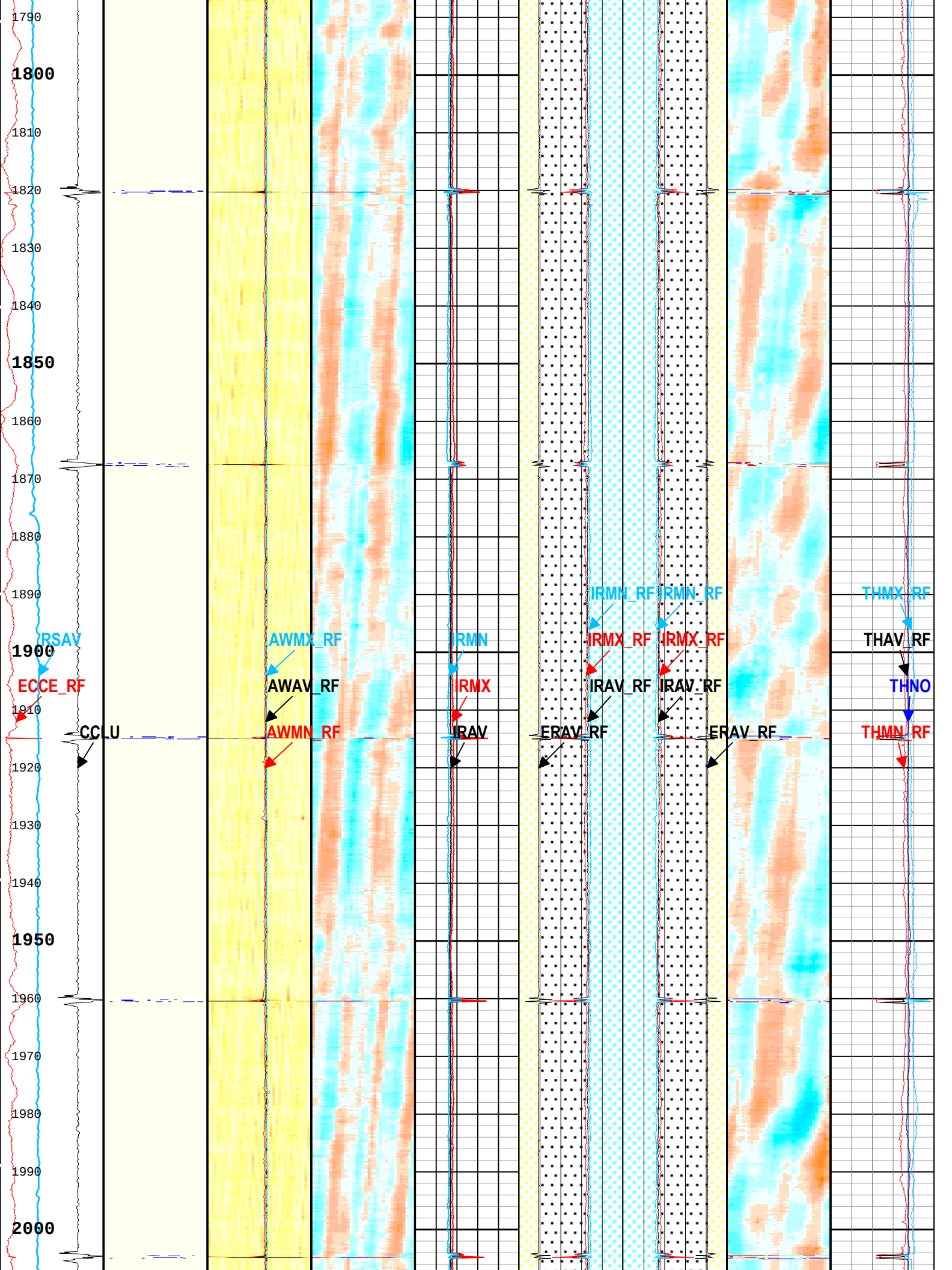
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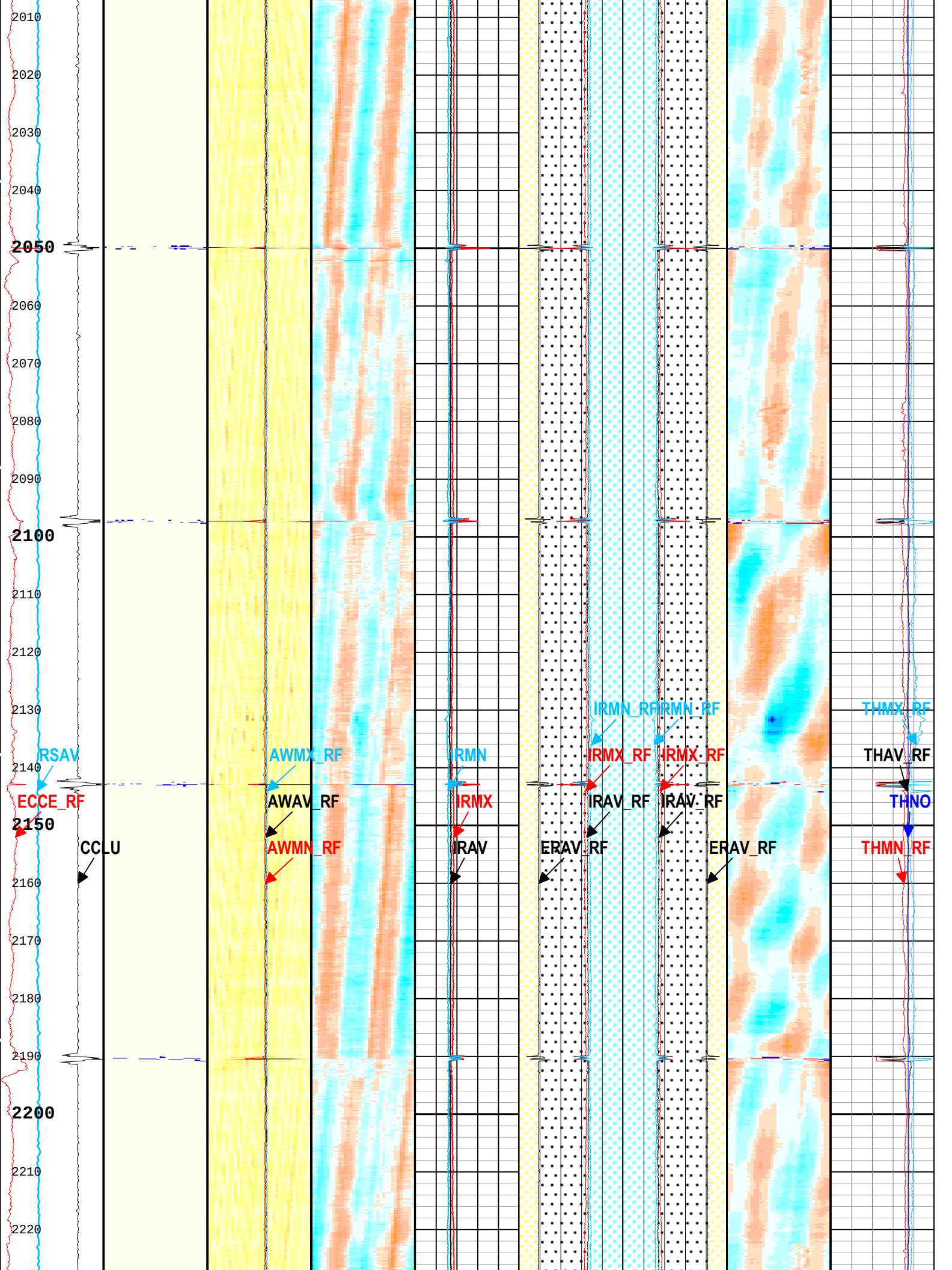
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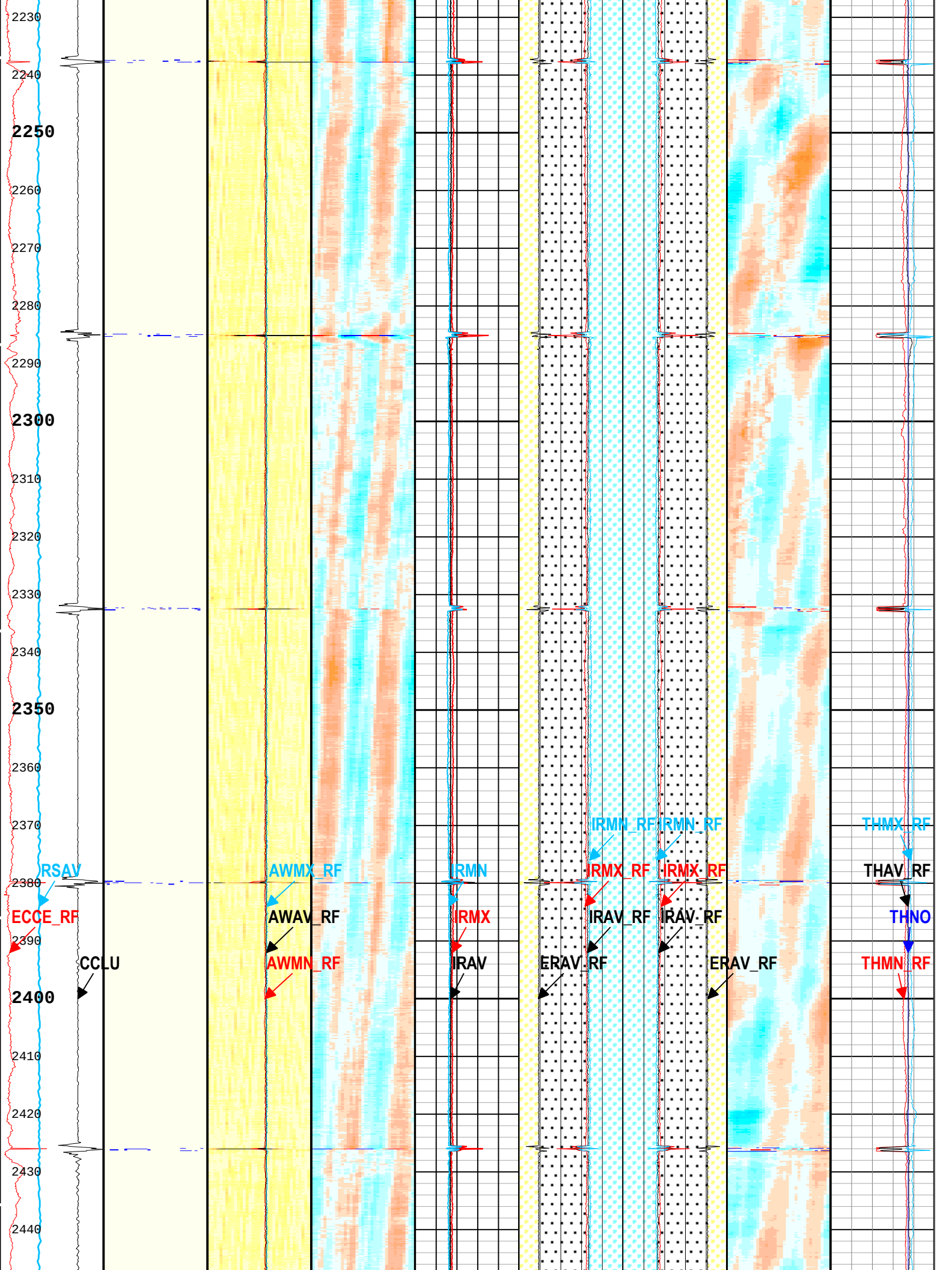
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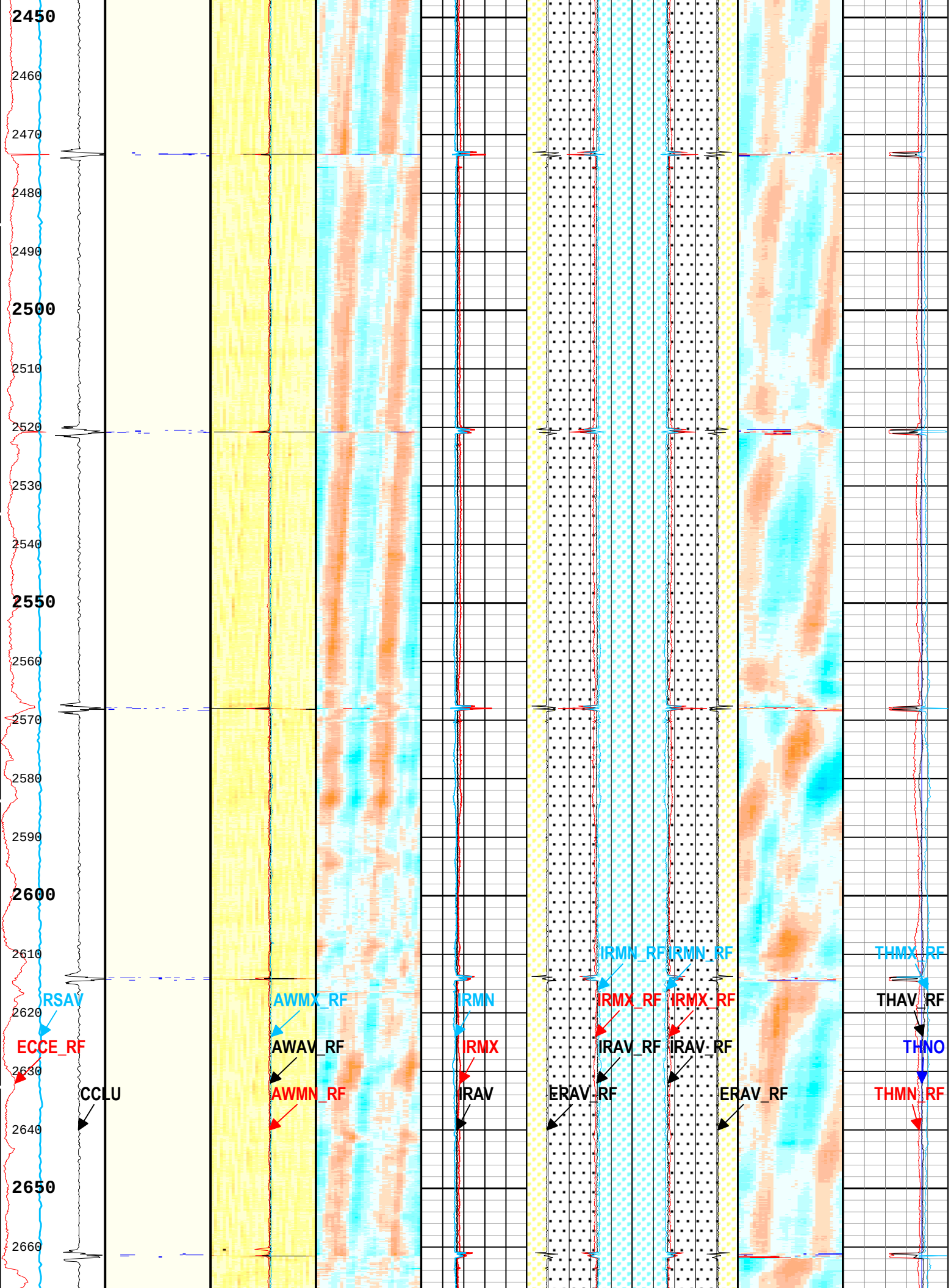
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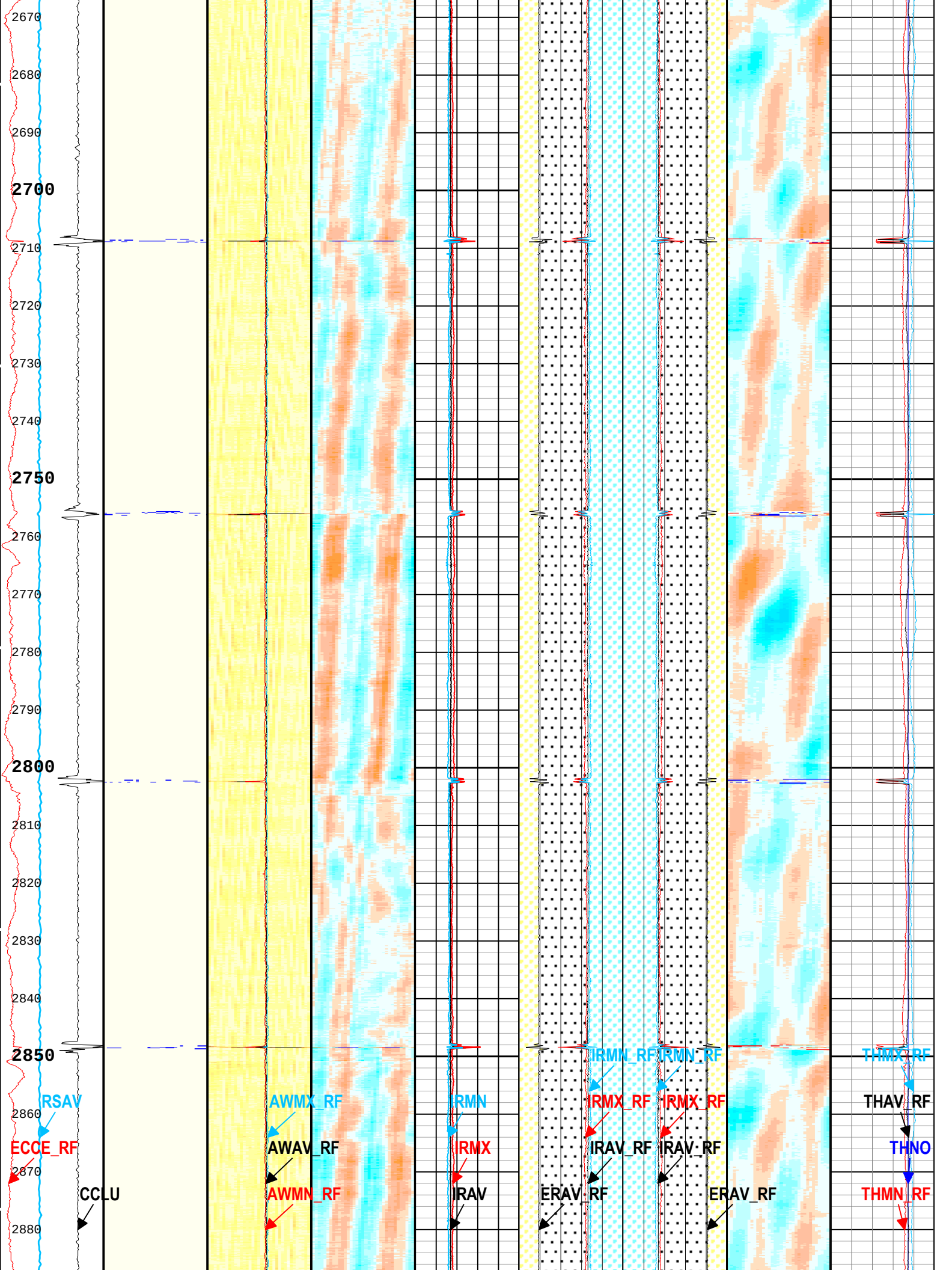
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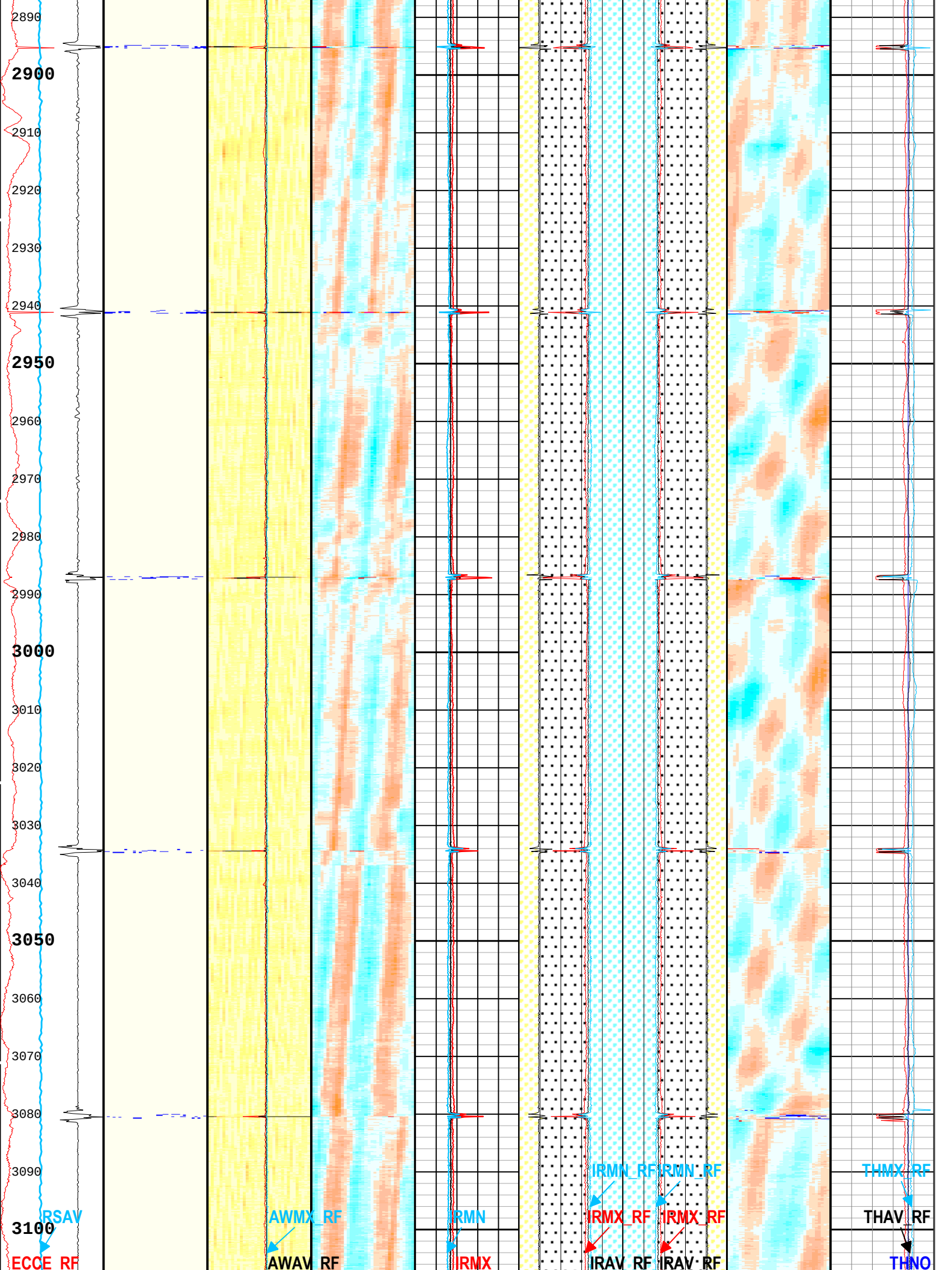
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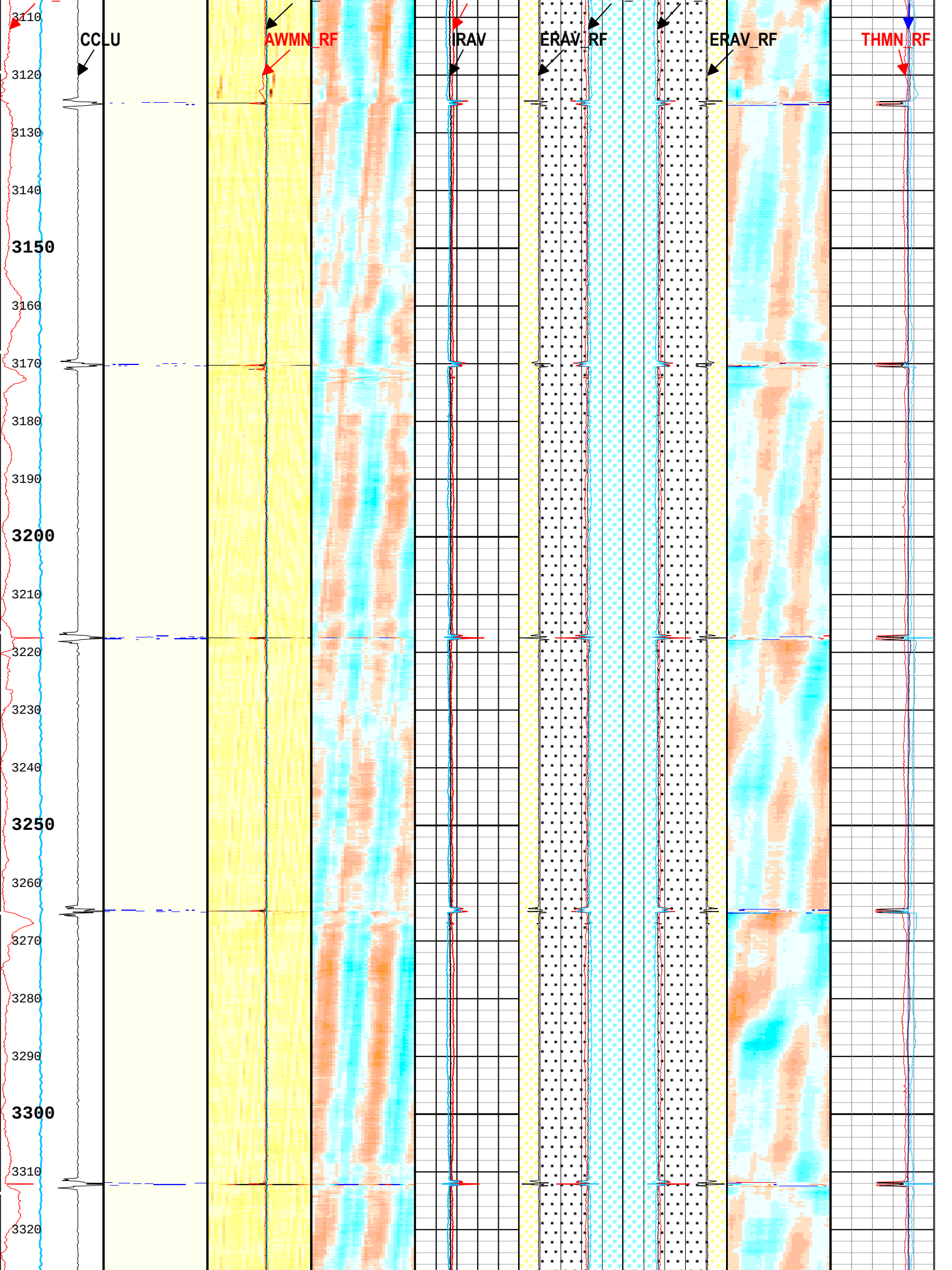
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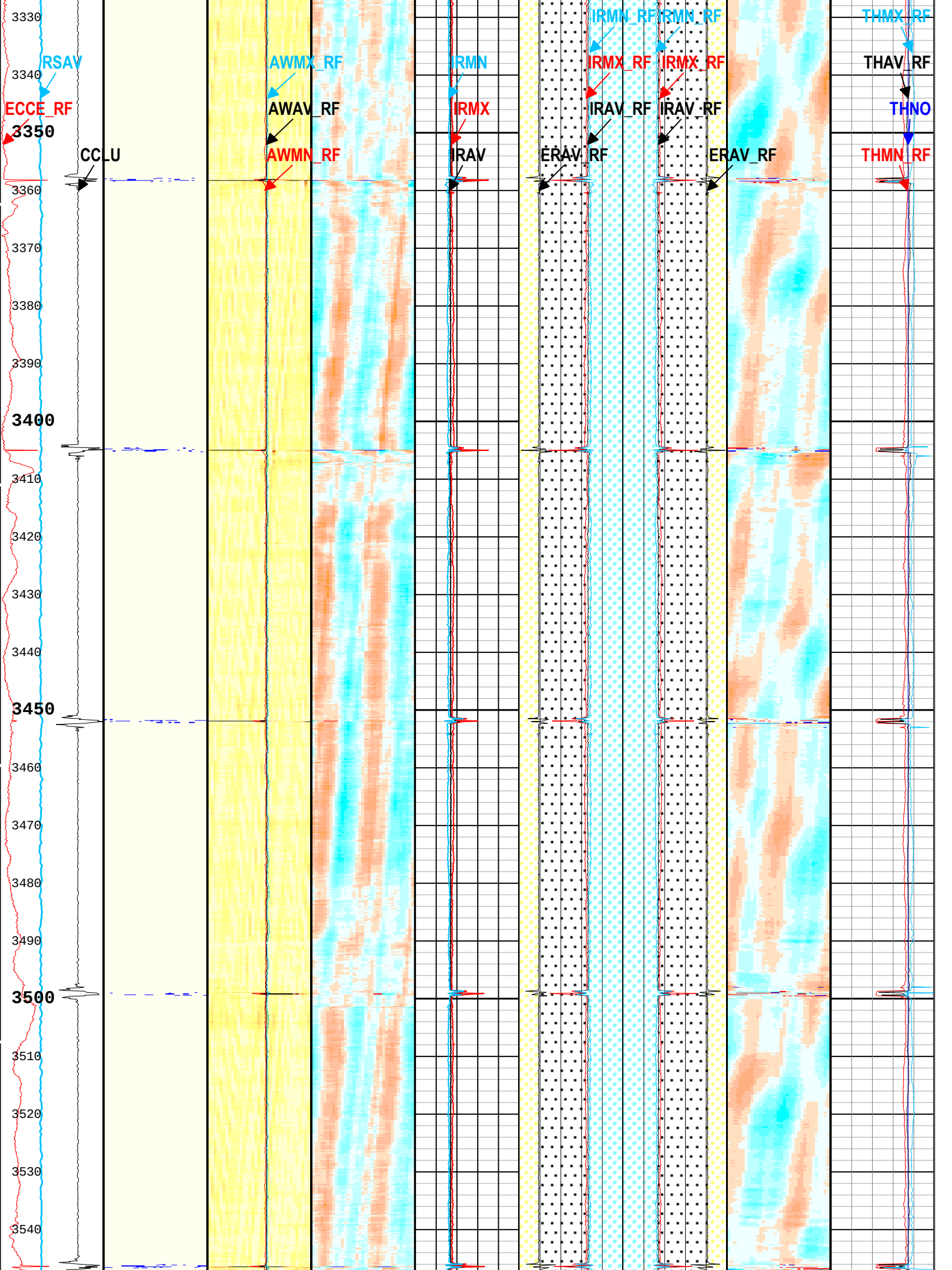
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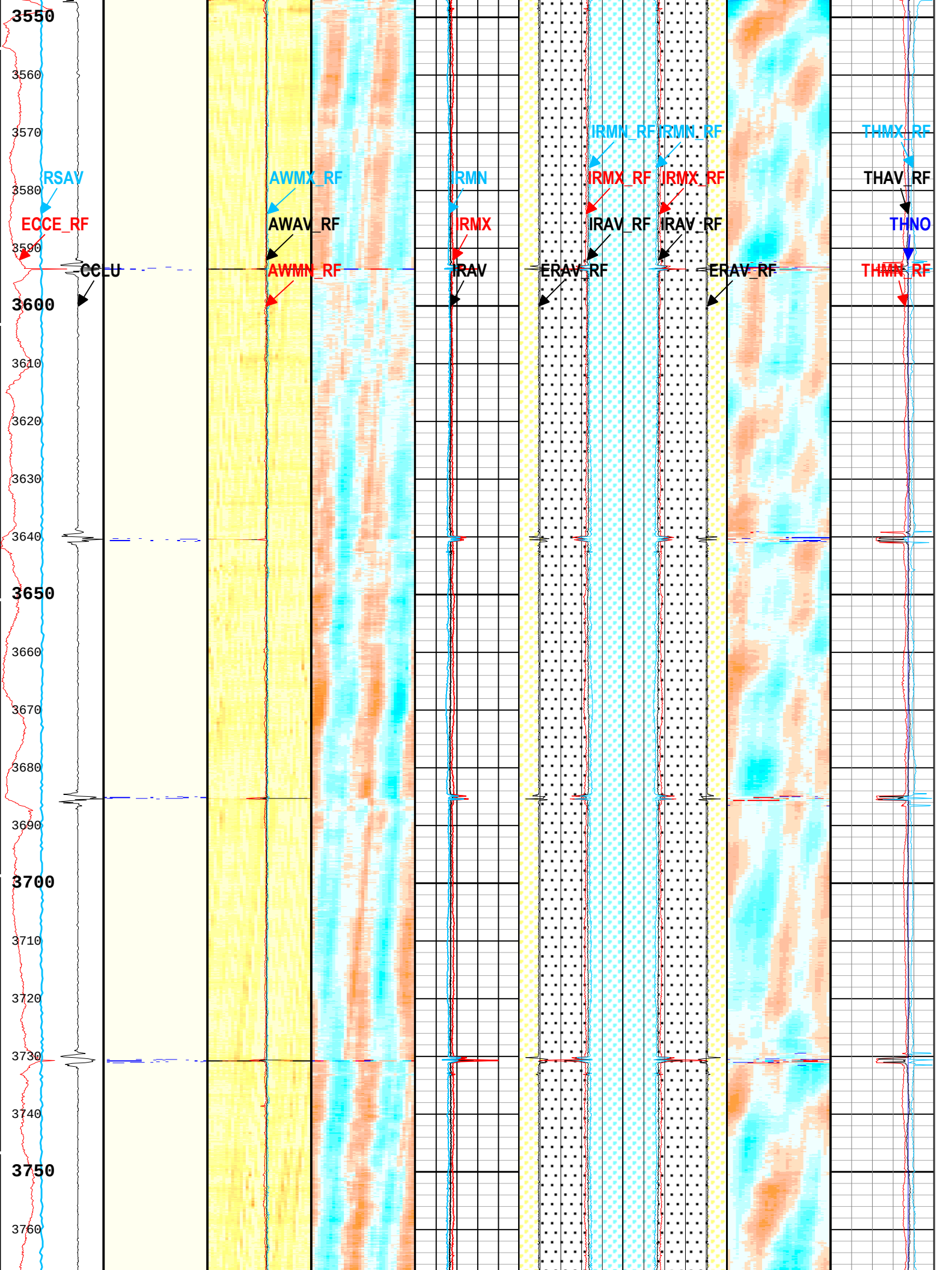
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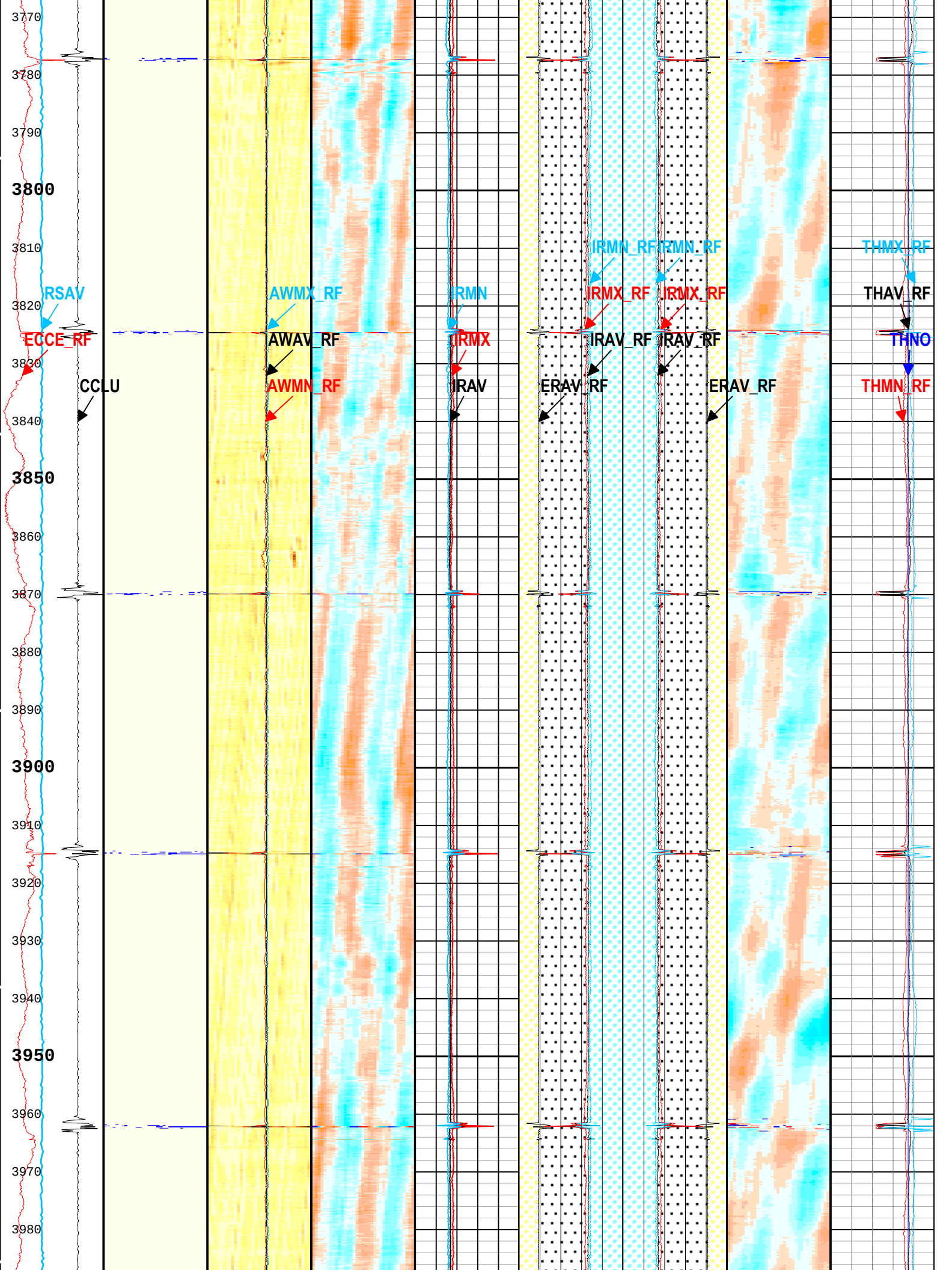
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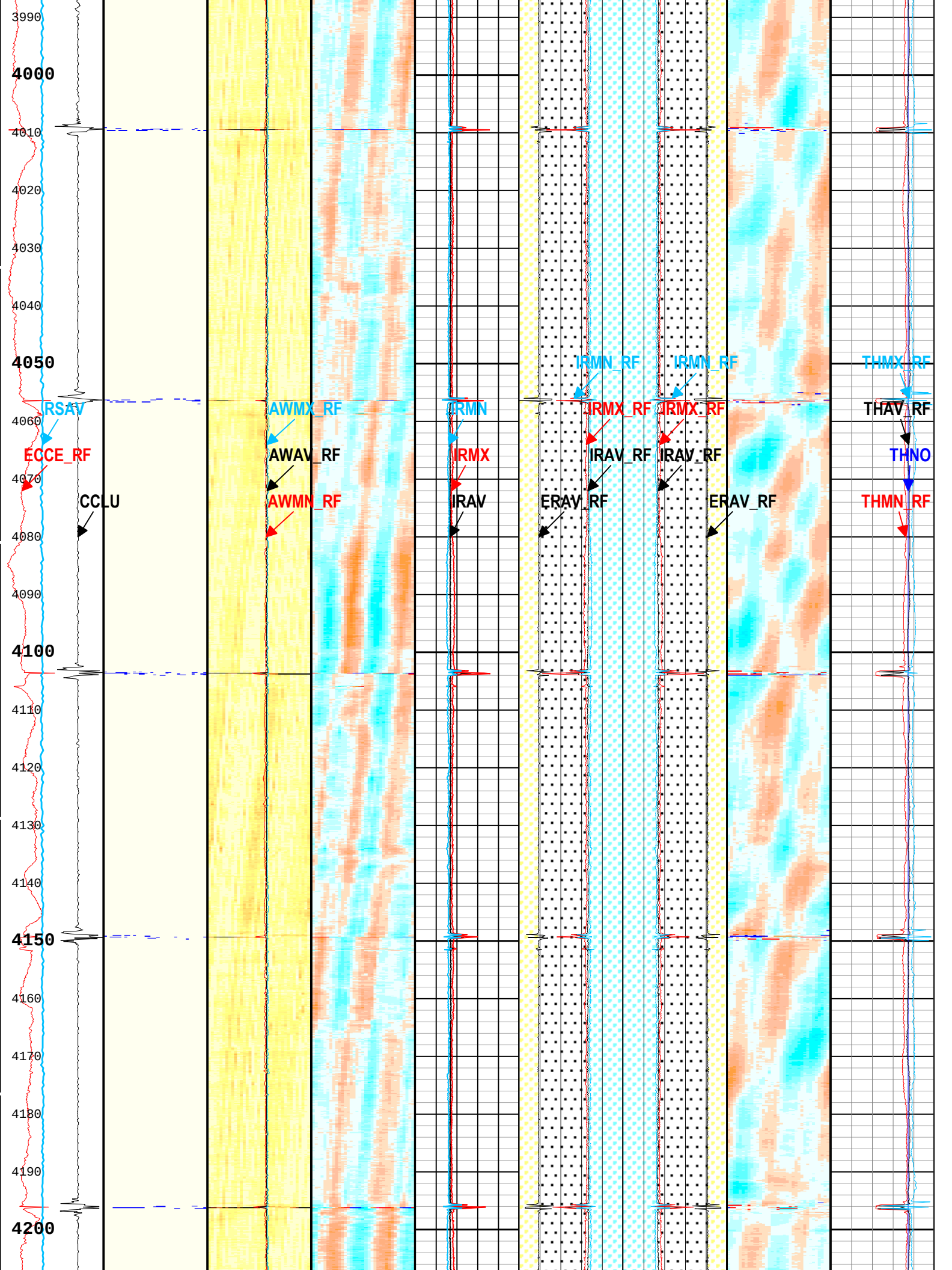
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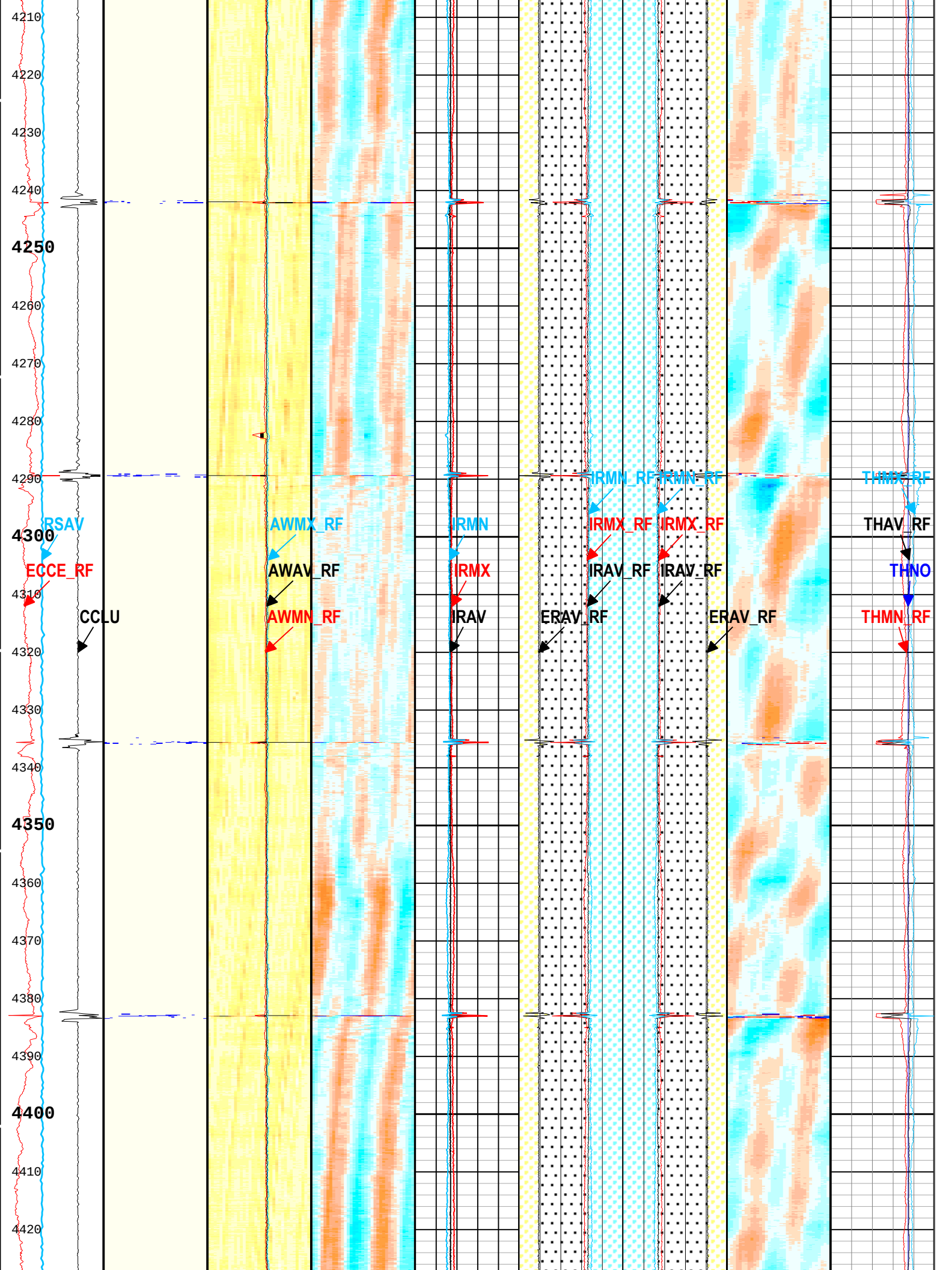
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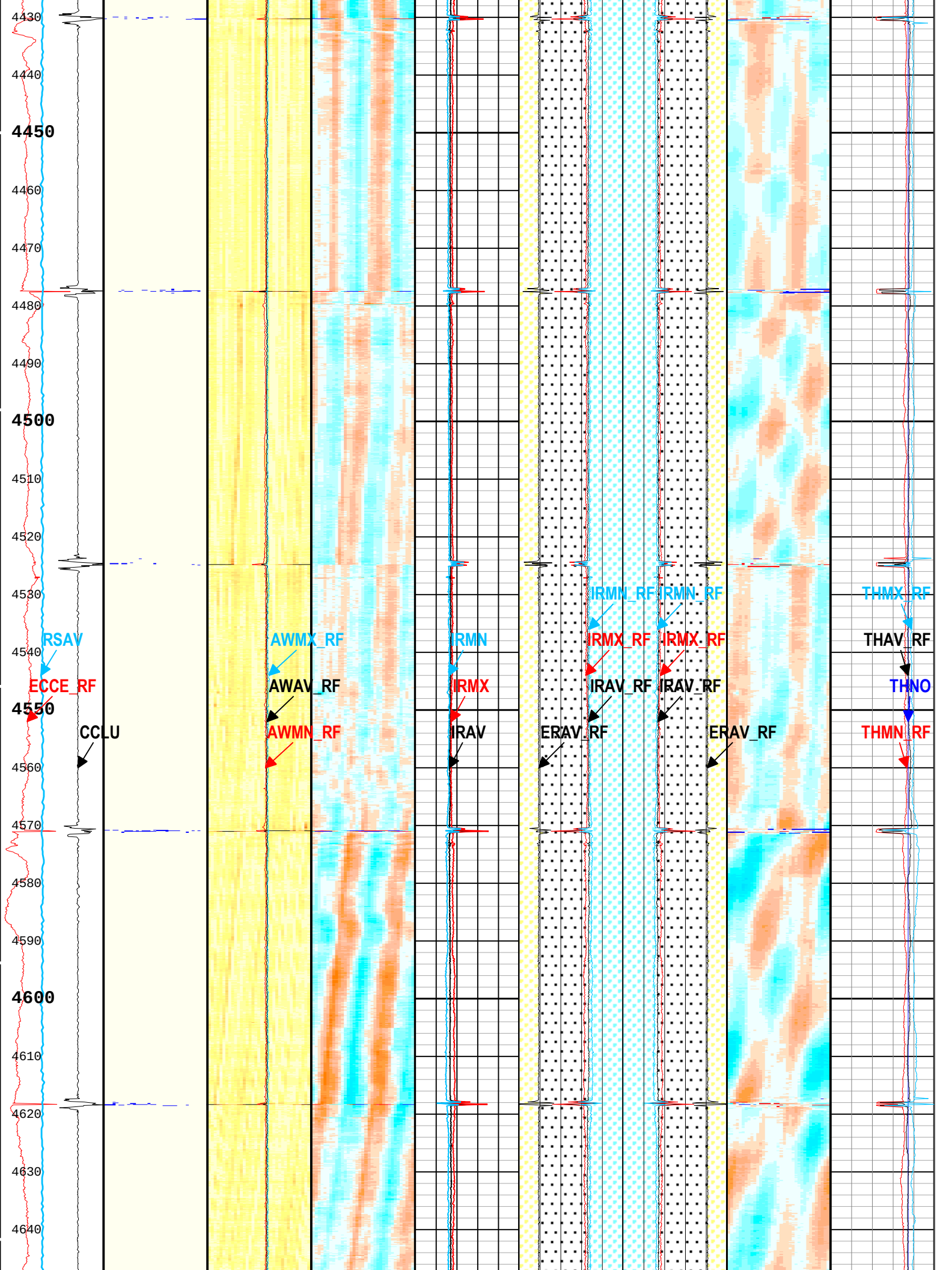
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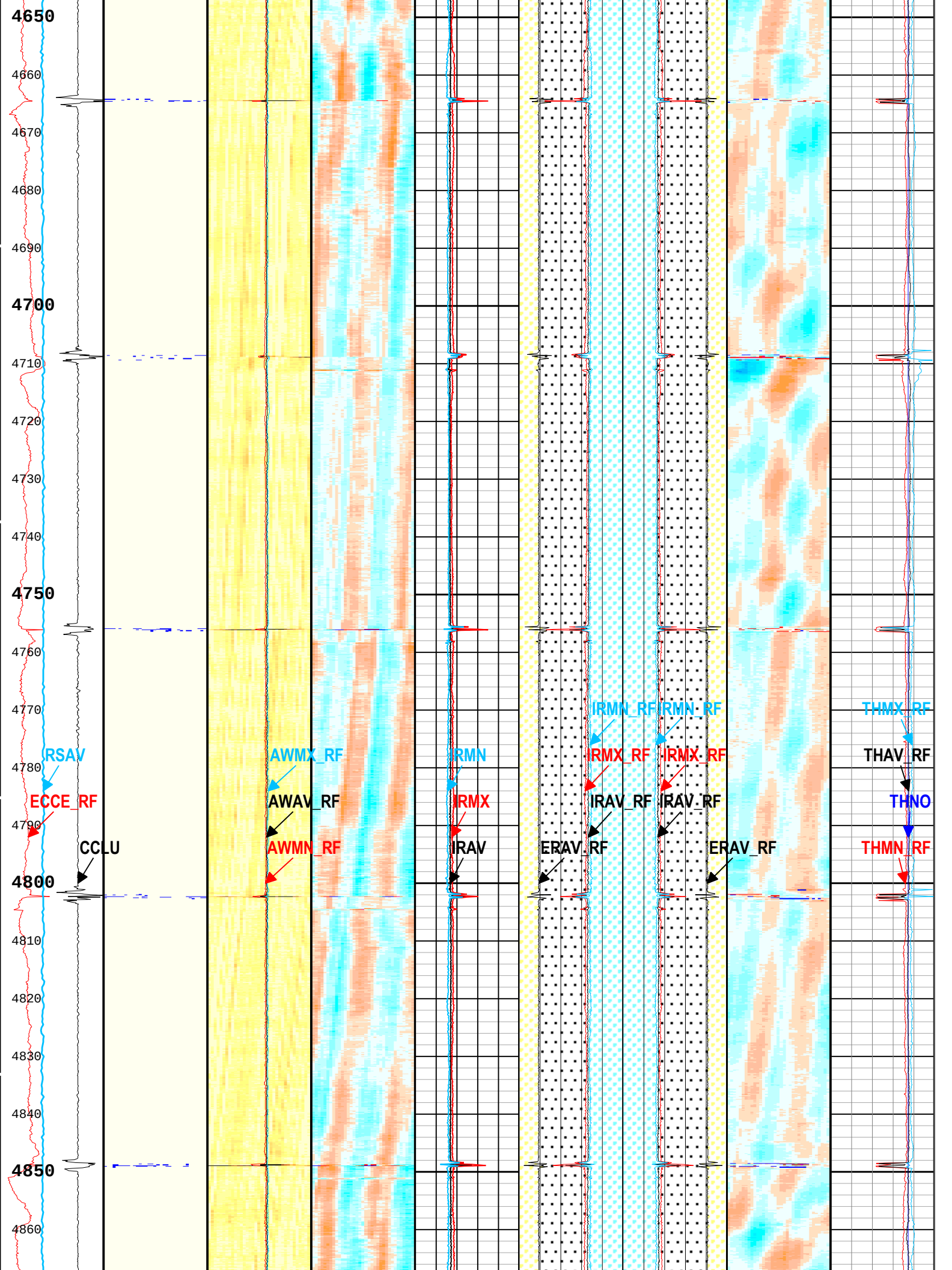
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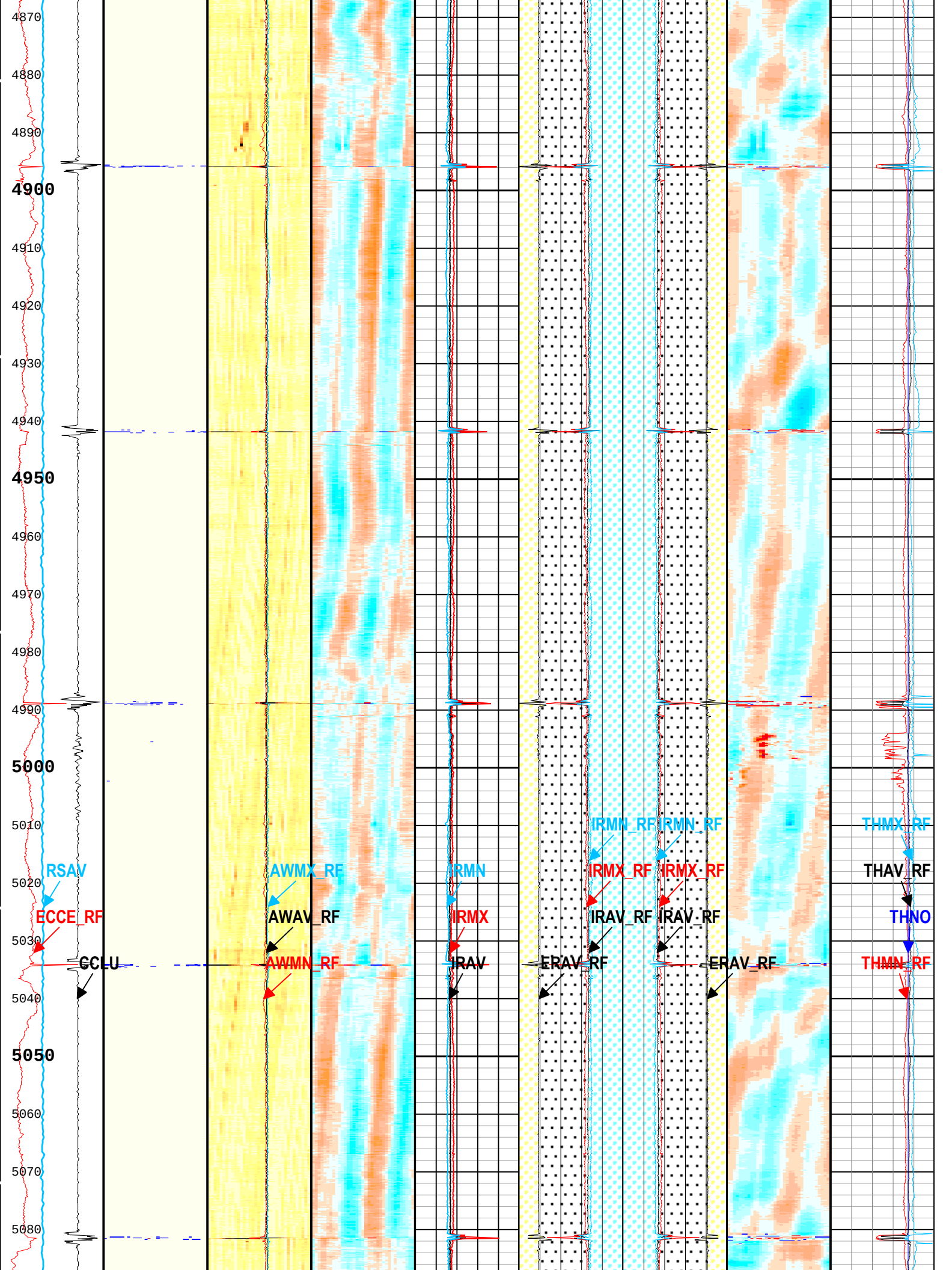
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RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
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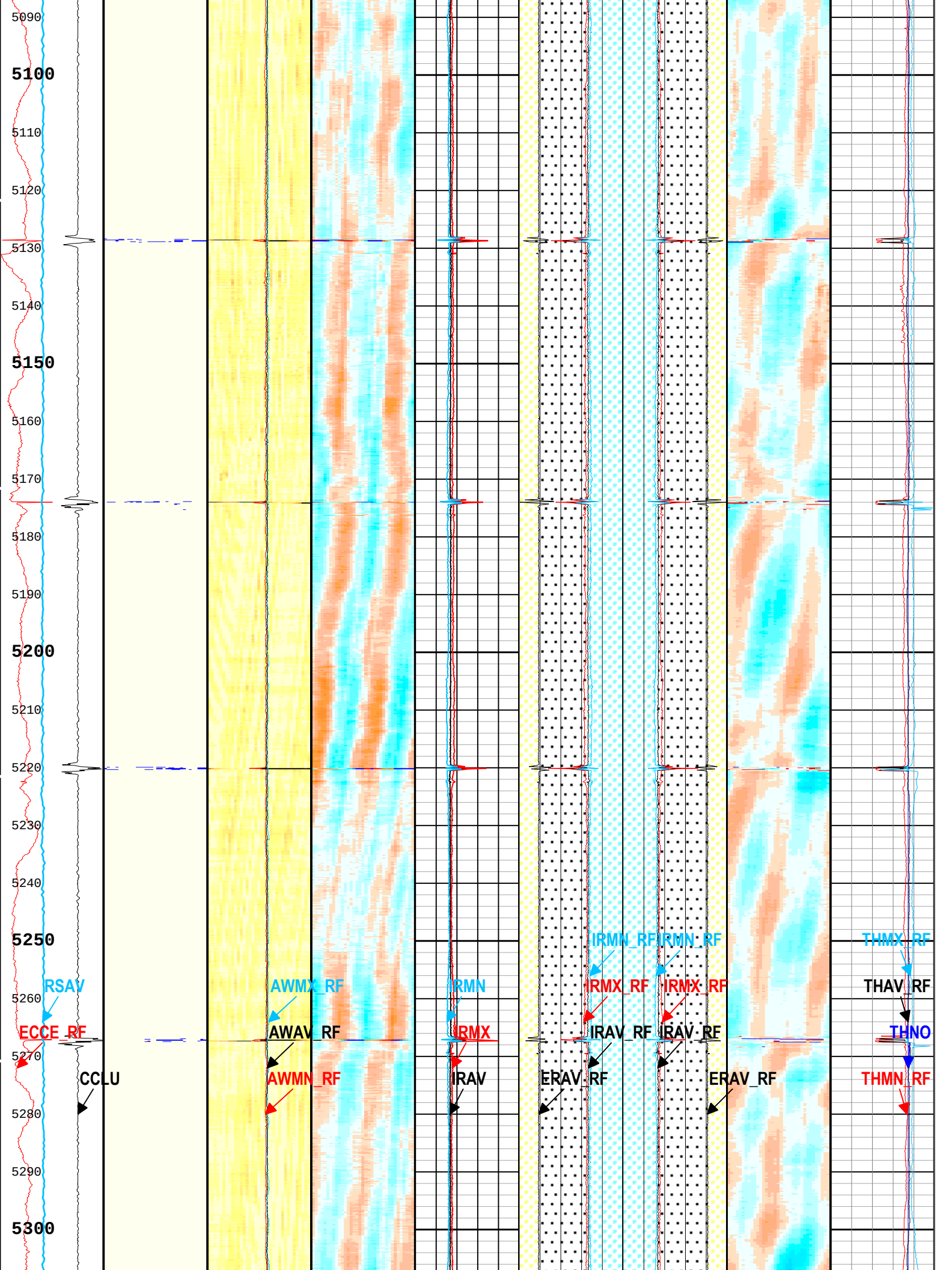
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RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
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IRAV
IRMN_RF
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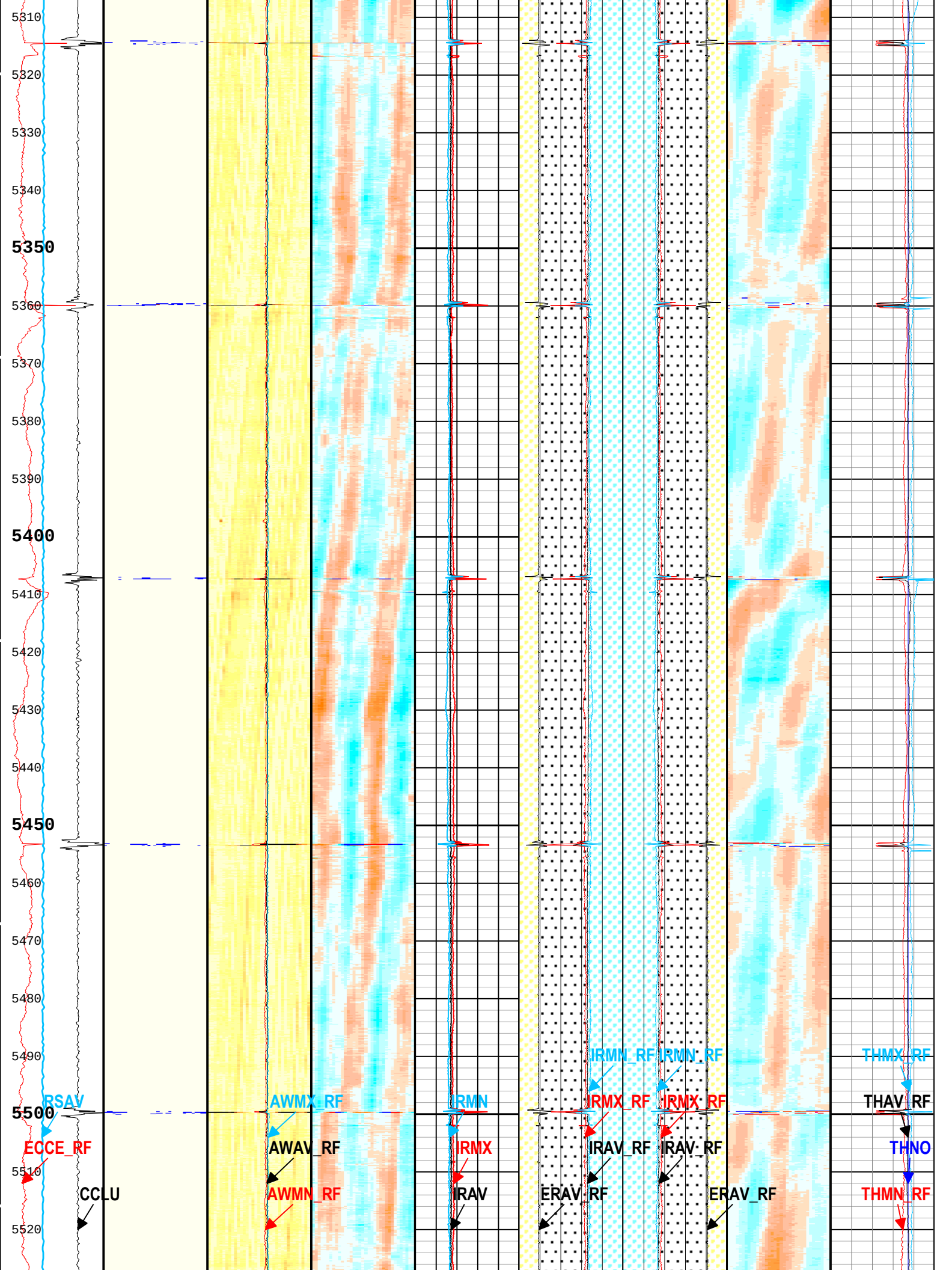
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ECCE_RF
CCLU
AWMX_RF
AWAV_RF
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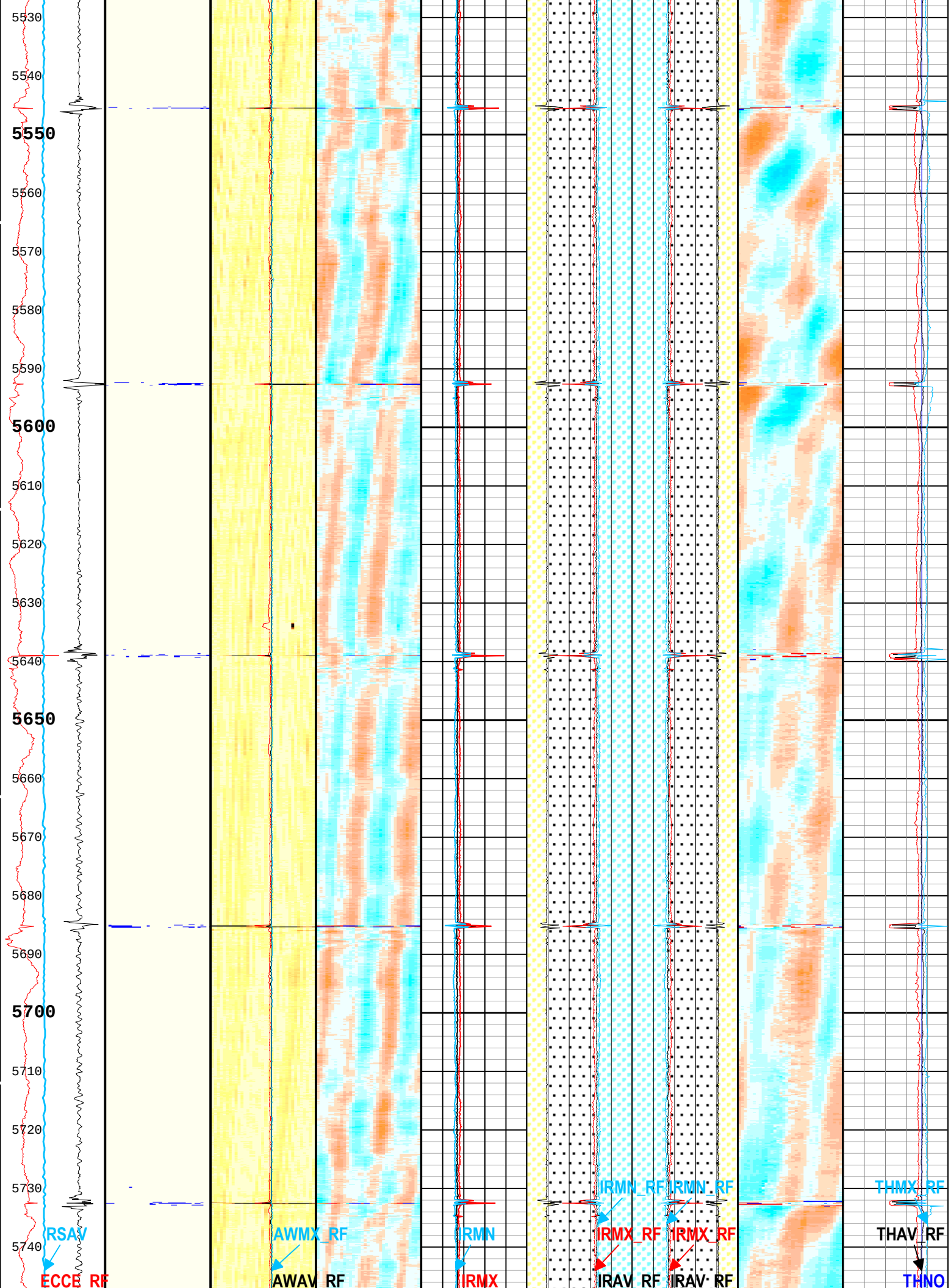
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RSAV
ECCE_RF
AWMX_RF
AWAV_RF
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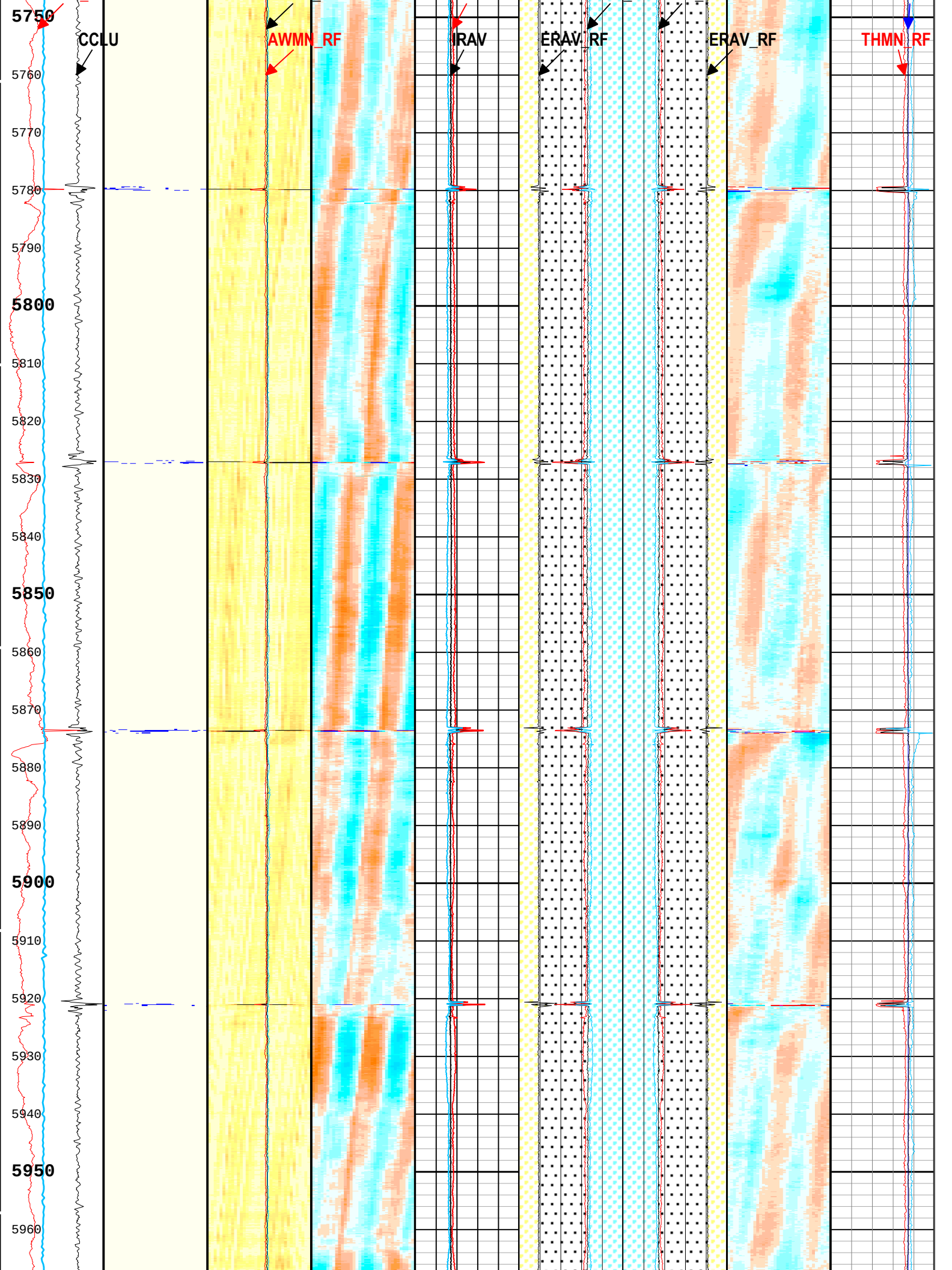
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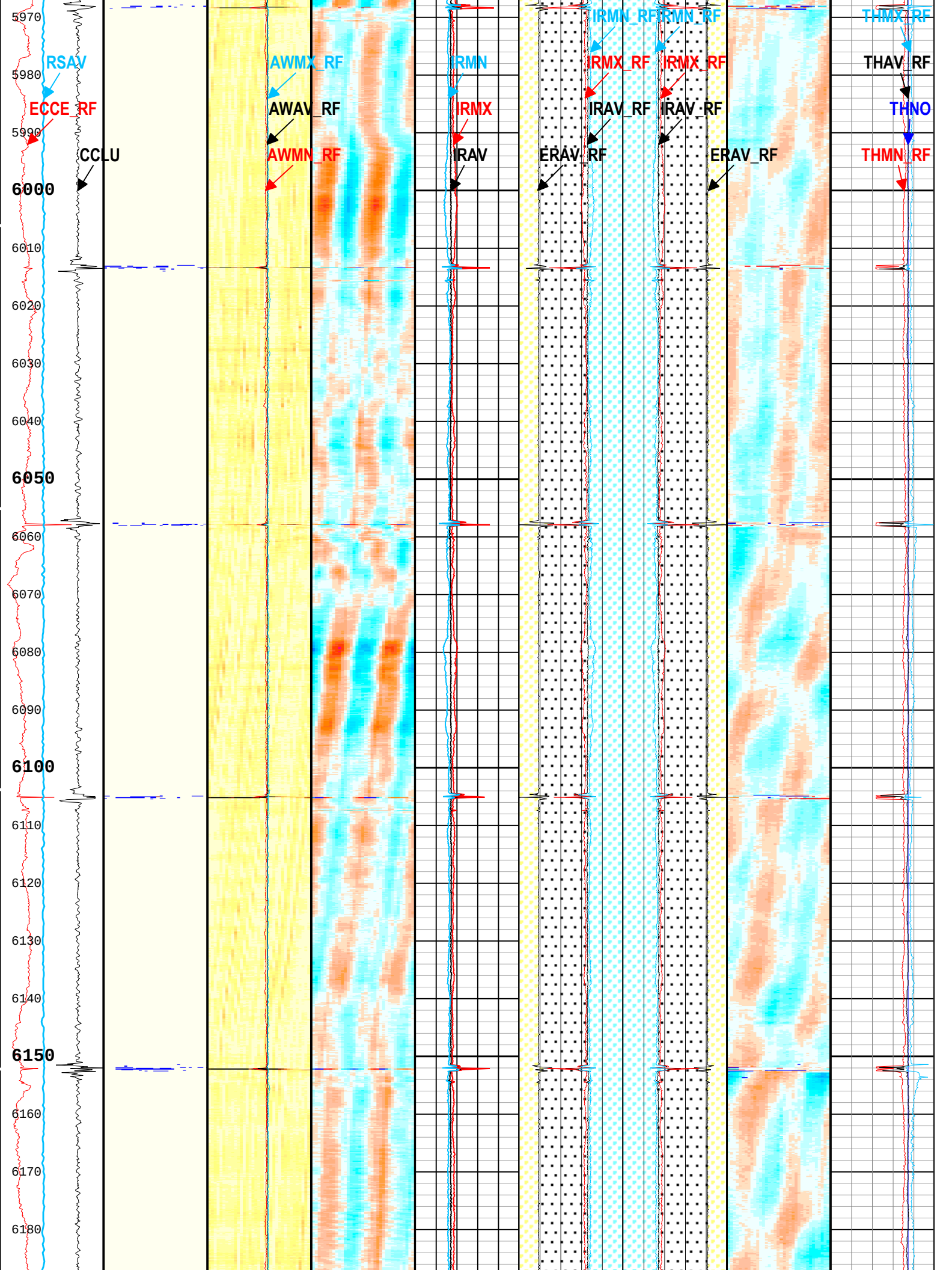
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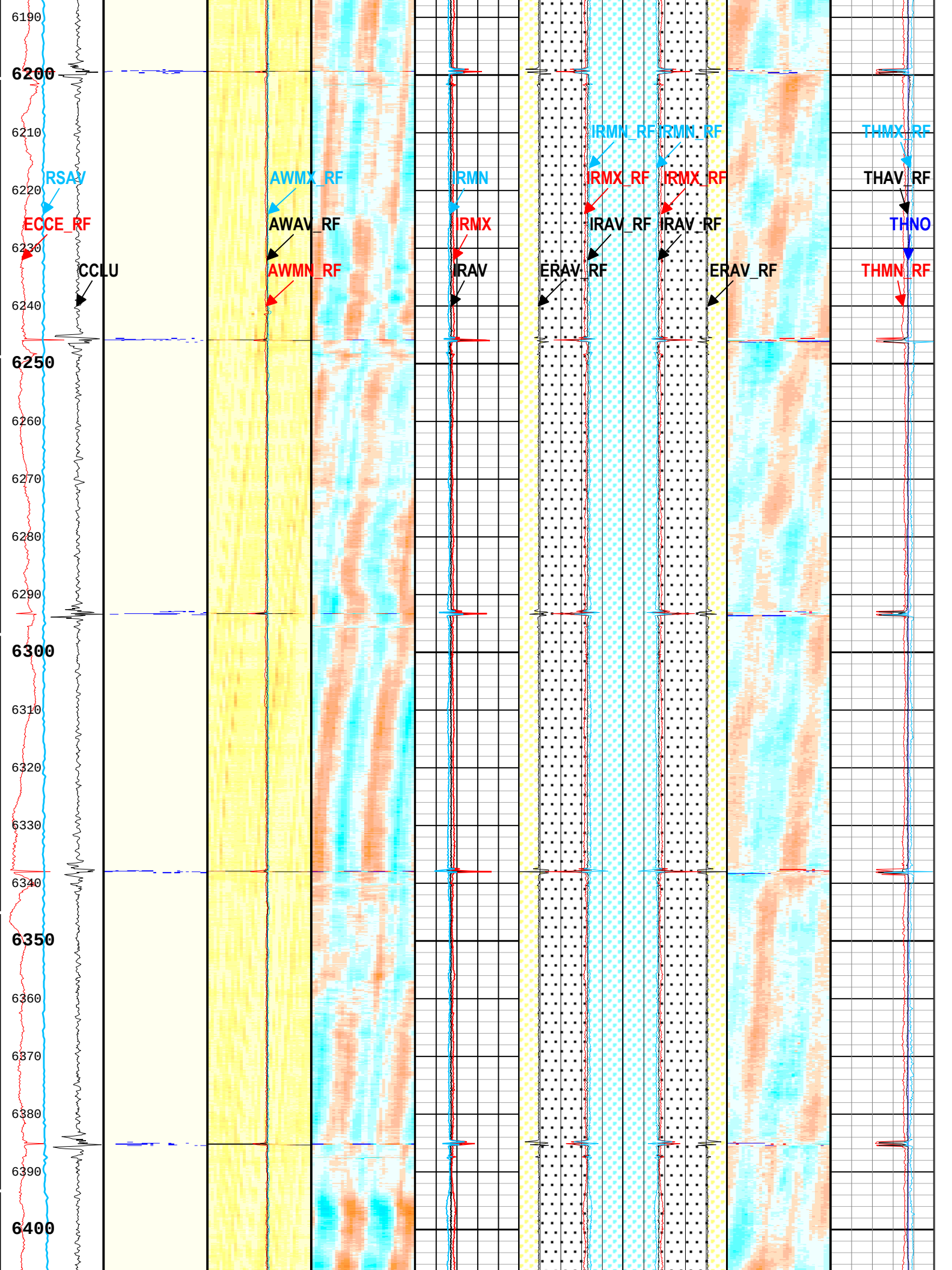
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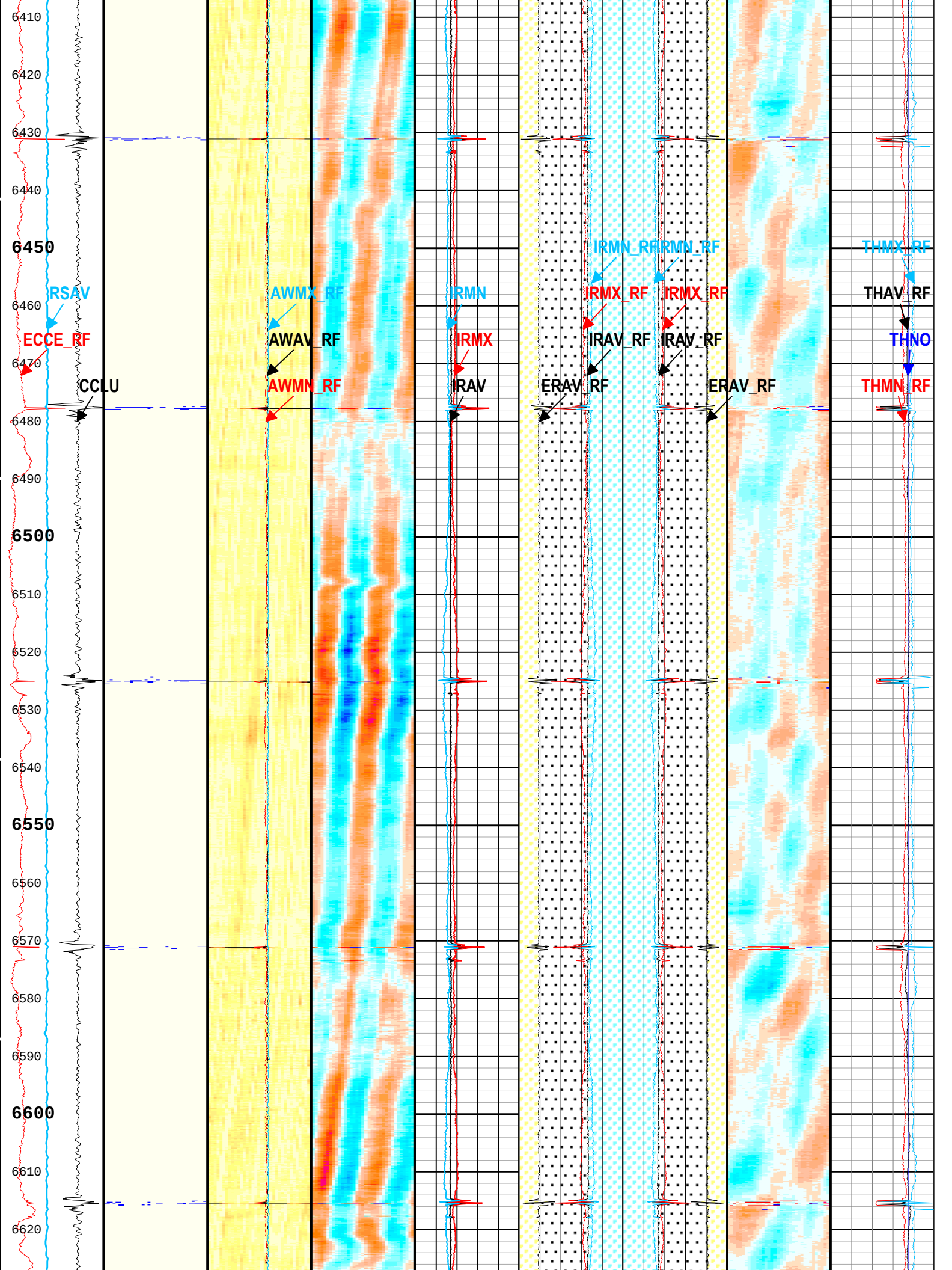
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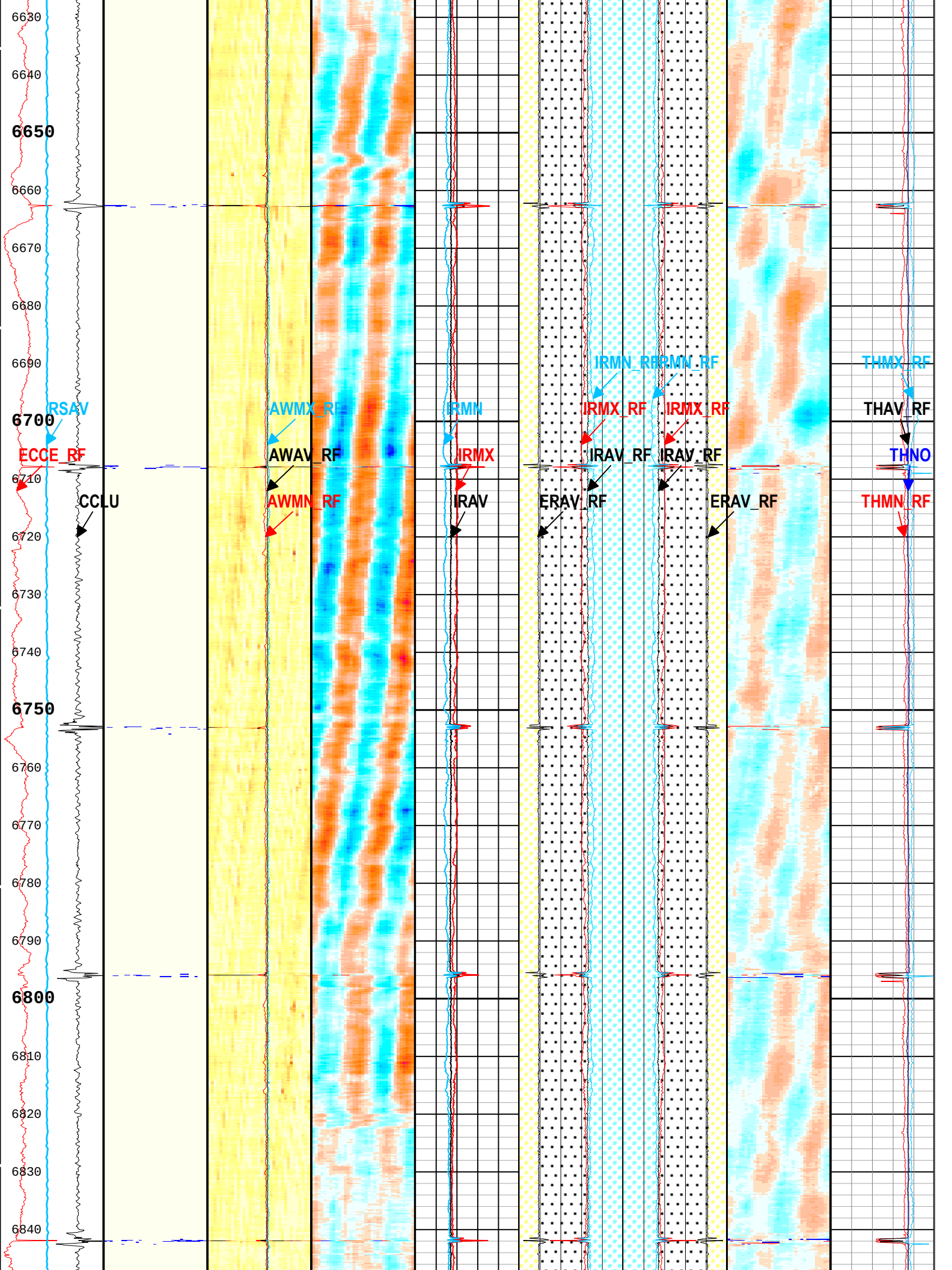
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ECCE_RF
CCLU
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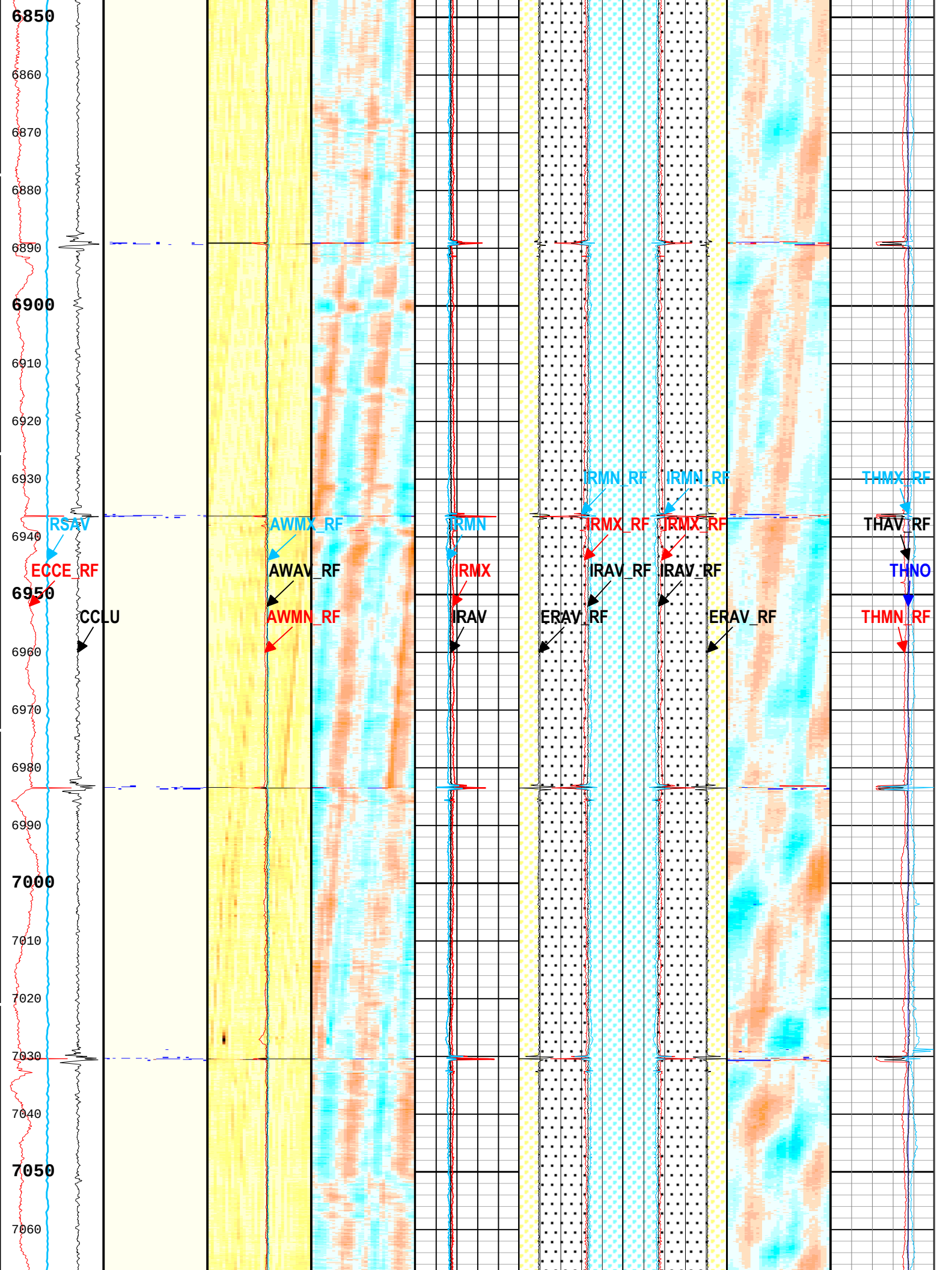
THMN_RF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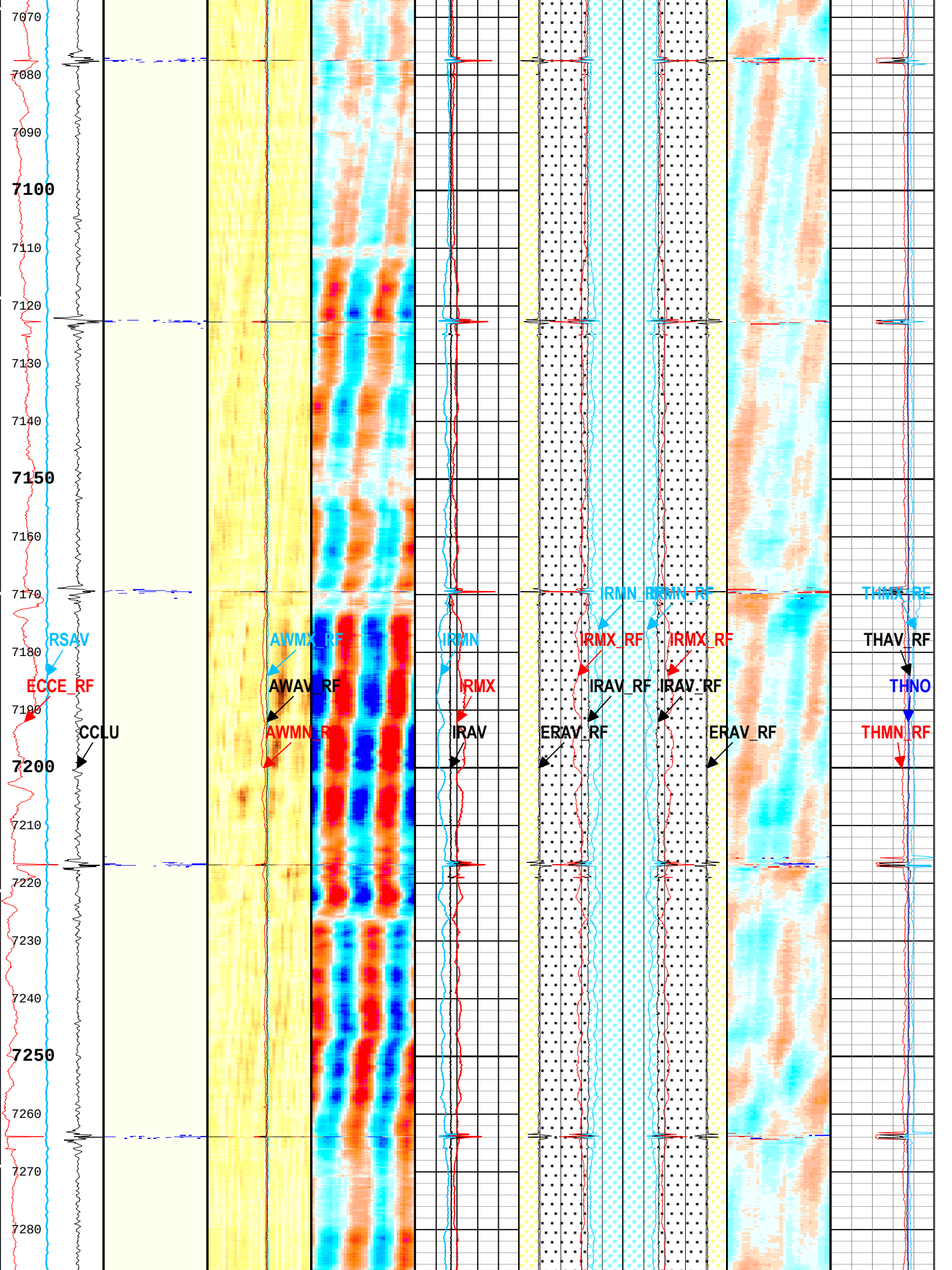
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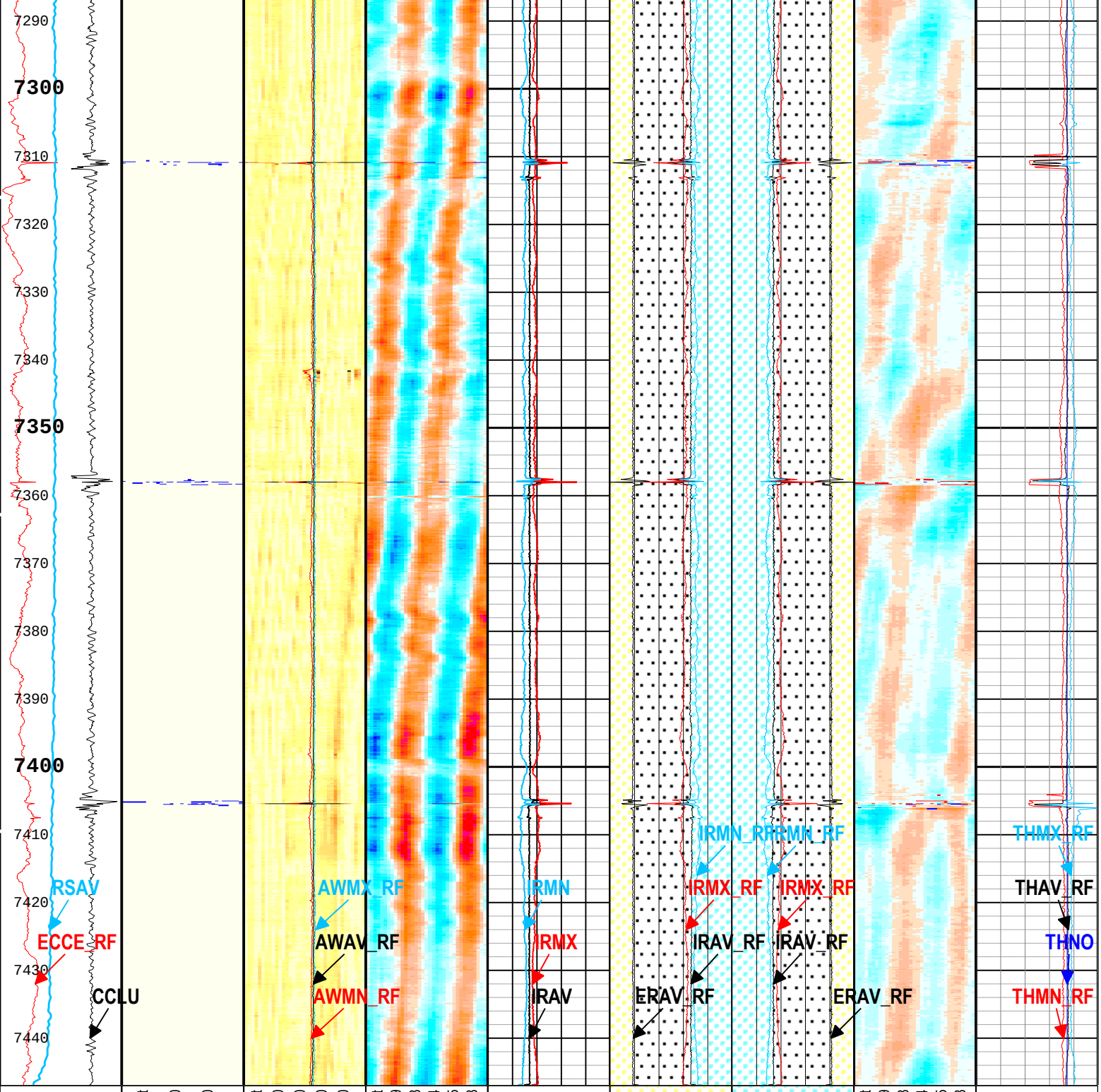


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-30 in 10

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

Motor Revolution

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 -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) USIT-E[1]

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

ERAV
ERAV-IRAV
IRAV

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

Median Internal Radius of Casing Corrected for

IRAV
ERAV
IRAV-ERAV

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

Median Internal Radius of Casing Corrected for

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)

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

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

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

Eccentering (IRAV_RF) USIT-E[1]		
5	in	4

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

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] - :
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: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 07-Apr-2016 19:30:39

Main Composite

USI Compressed Goodwin

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[8]:Up	Up	60.69 ft	7447.53 ft	07-Apr-2016 9:48:55 AM	07-Apr-2016 12:23:34 PM	ON	0.96 ft	Yes
Three	Log[12]:Up	Up	85.32 ft	262.12 ft	07-Apr-2016 2:08:49 PM	07-Apr-2016 2:13:19 PM	ON	6.42 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F
Main Composite:S001

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Apr-2016 19:31:23

TIME_1900 - Time Marked every 60.00 (s)

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

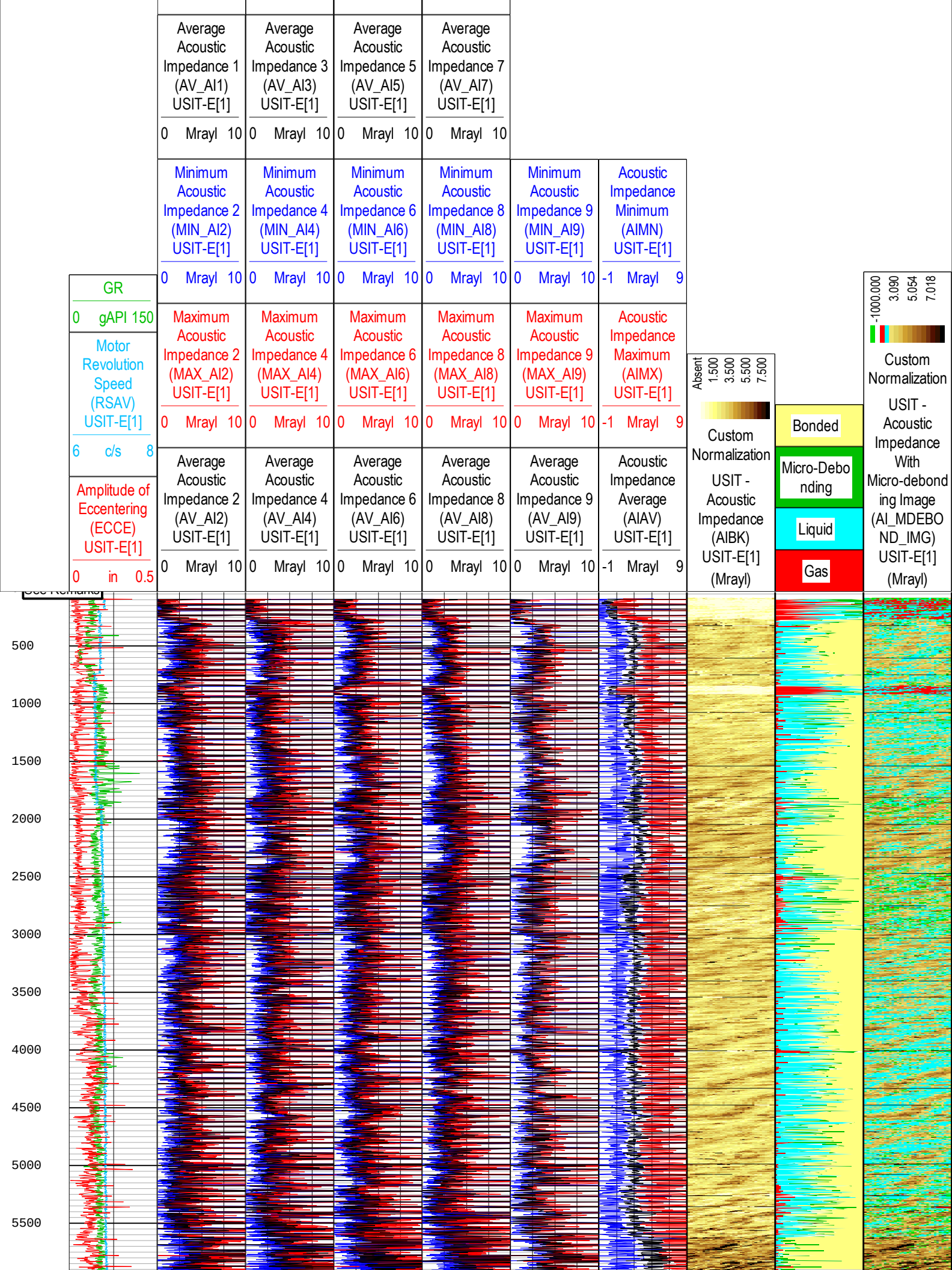
Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E[1]		
0	Mrayl	10

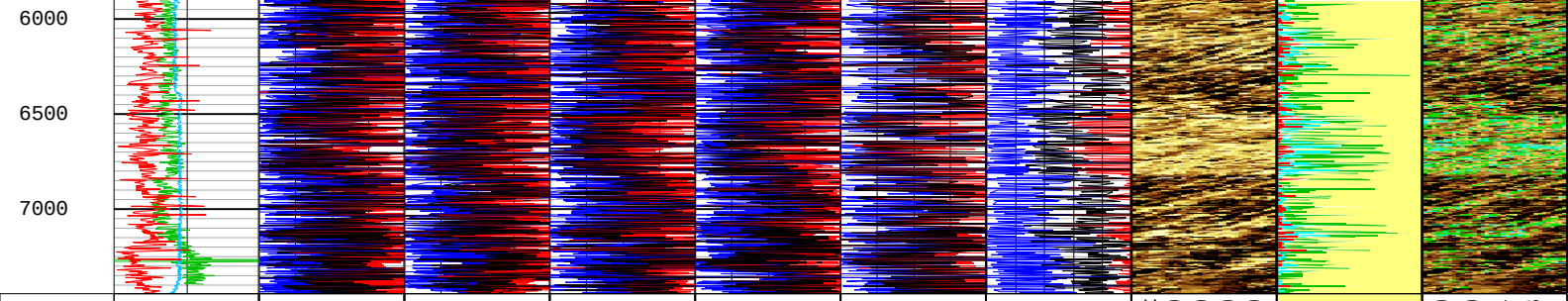
Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E[1]		
0	Mrayl	10

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


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
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
Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E[1]
0 Mrayl 10
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
GR
0 gAPI 150
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
Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E[1]
0 Mrayl 10
Acoustic Impedance Maximum (AIMX) USIT-E[1]
-1 Mrayl 9
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8
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
Average Acoustic Impedance 9 (AV_AI9) USIT-E[1]
0 Mrayl 10
Acoustic Impedance Average (AIAV) USIT-E[1]
-1 Mrayl 9
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)
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500



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	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)
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: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Apr-2016 19:31:23

Three

Repeat Pass 5 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data

Three	Log[7]:Up	Up	7304.67 ft	7446.62 ft	07-Apr-2016 9:42:32 AM	07-Apr-2016 9:45:59 AM	ON	7.54 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F

Three: Log[7]:Up:S001

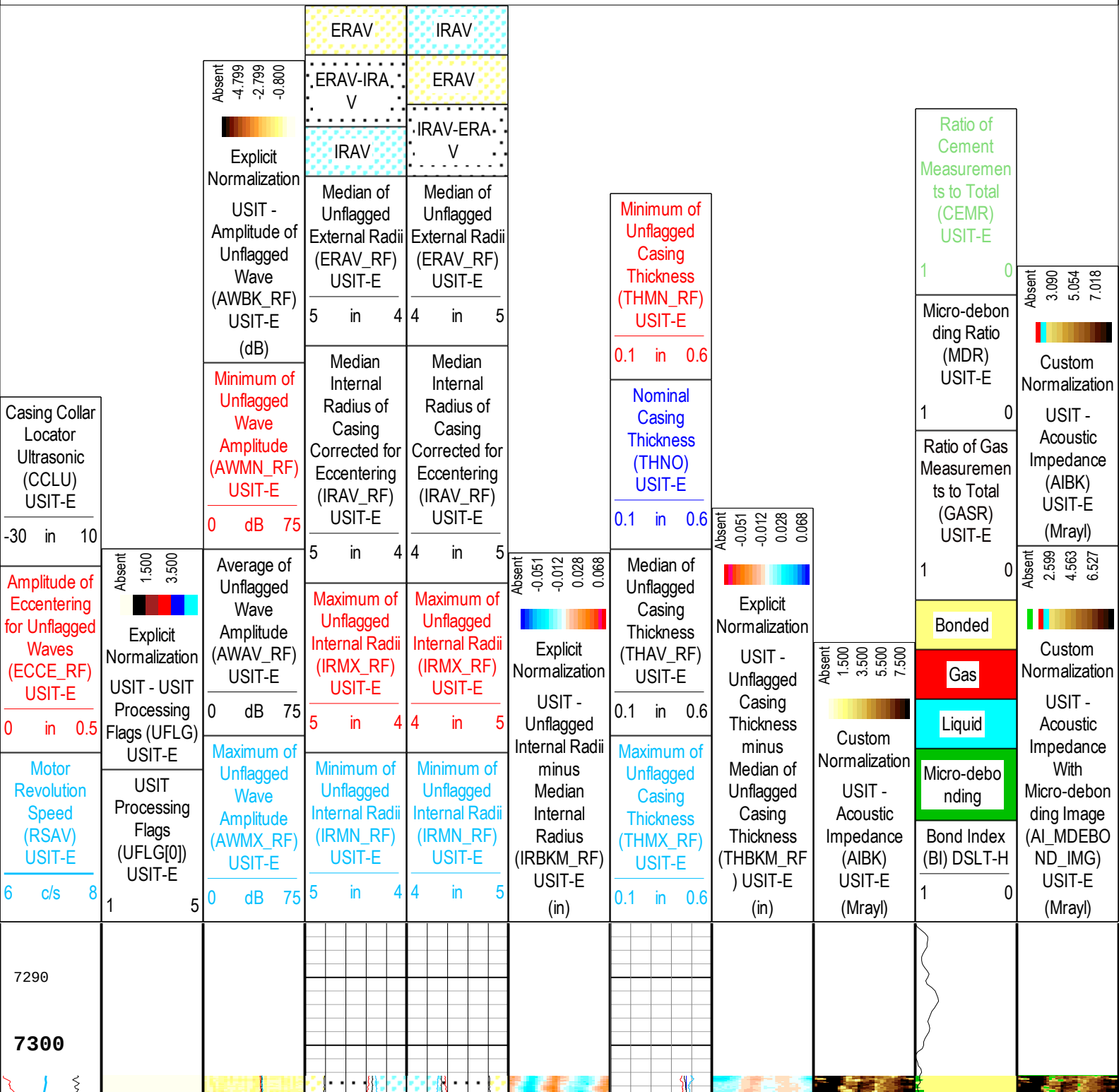
Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 07-Apr-2016 19:31:28

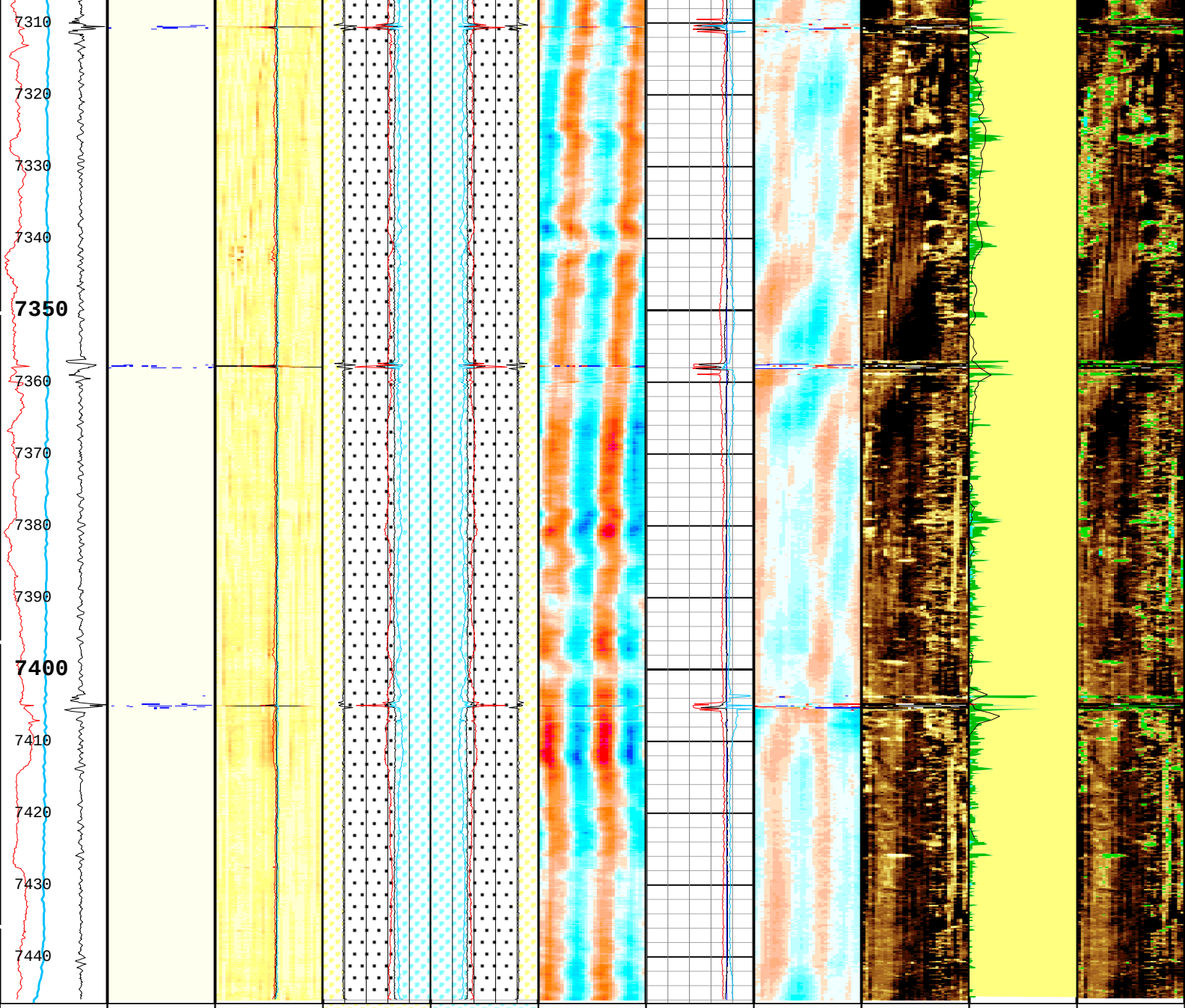
TIME_1900 - Time Marked every 60.00 (s)

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 -4.799 -2.799 -0.800
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

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

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

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_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

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 (in)

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

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

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

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

Bonded

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

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debon

Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

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

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

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

Gas
Liquid
Micro-debonding

ding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

Bond Index (BI) DSLT-H
1 0

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 07-Apr-2016 19:31:28

Three

Very Hi-Res Repeat Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[11]:Up	Up	1894.96 ft	2162.56 ft	07-Apr-2016 1:45:59 PM	07-Apr-2016 2:01:13 PM	ON	6.05 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F
Three: Log[11]:Up:S001

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: 07-Apr-2016 19:31:31

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

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Unflagged Wave

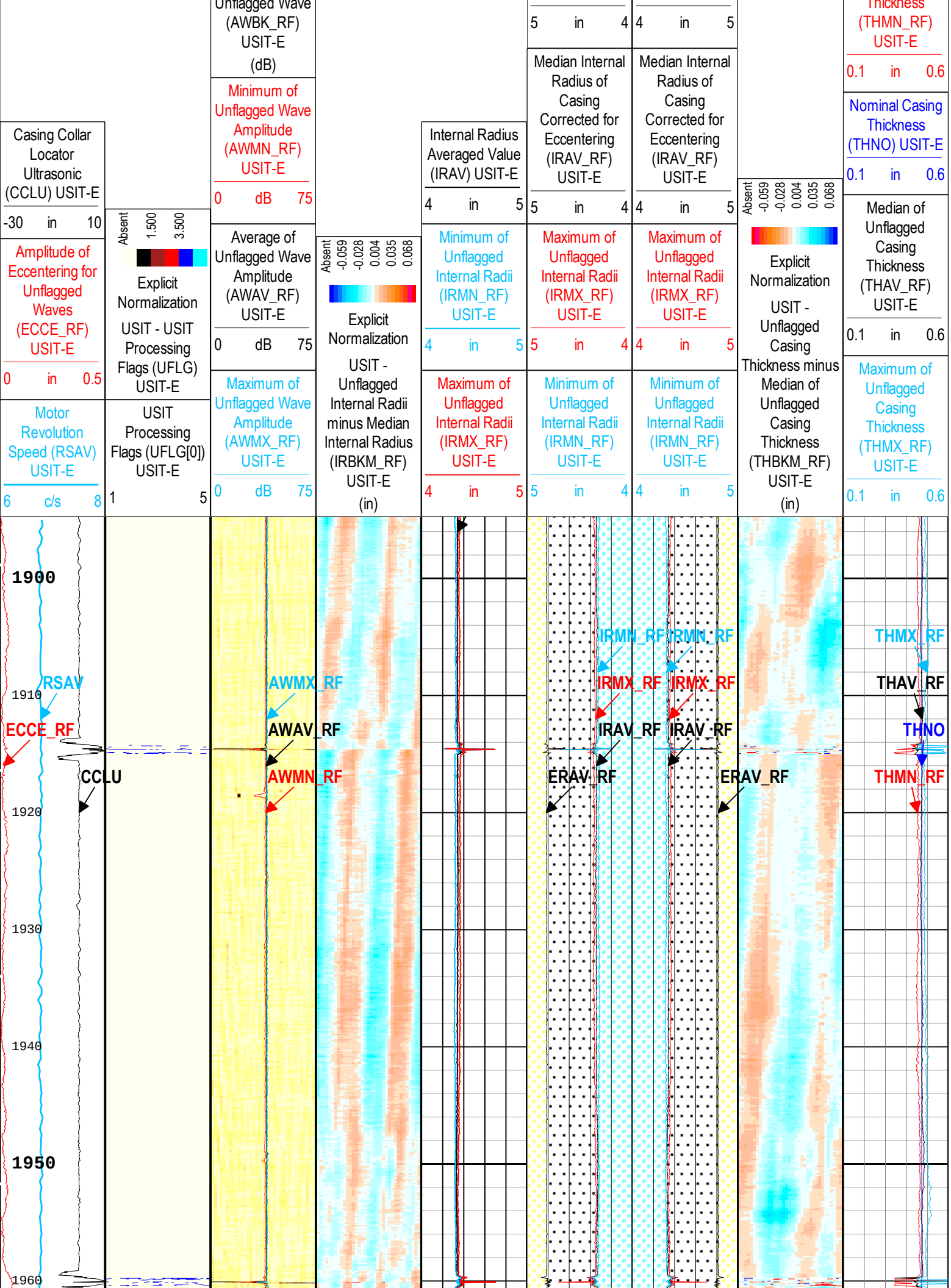
ERAV
ERAV-IRAV
IRAV

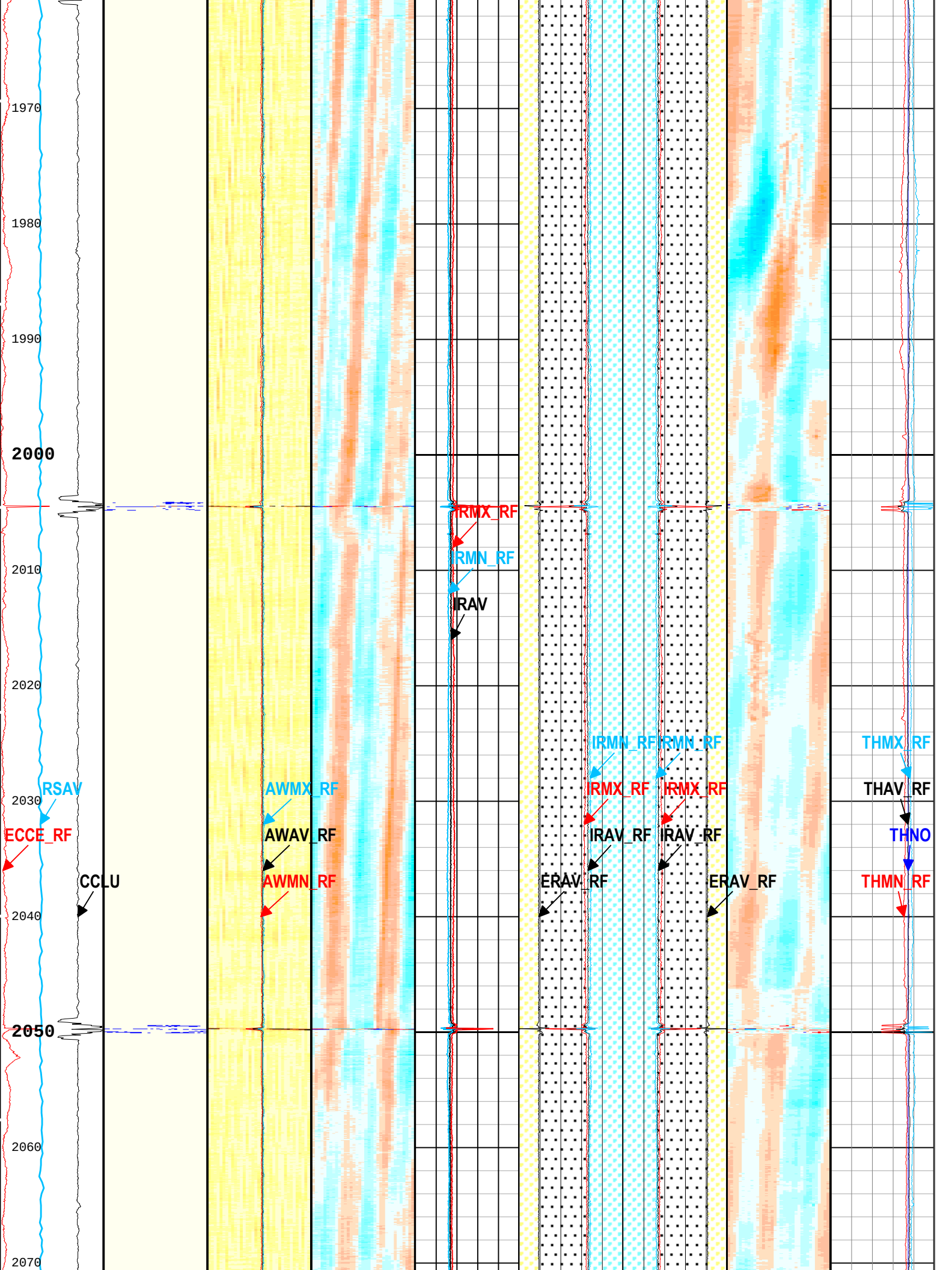
IRAV
ERAV
IRAV-ERAV

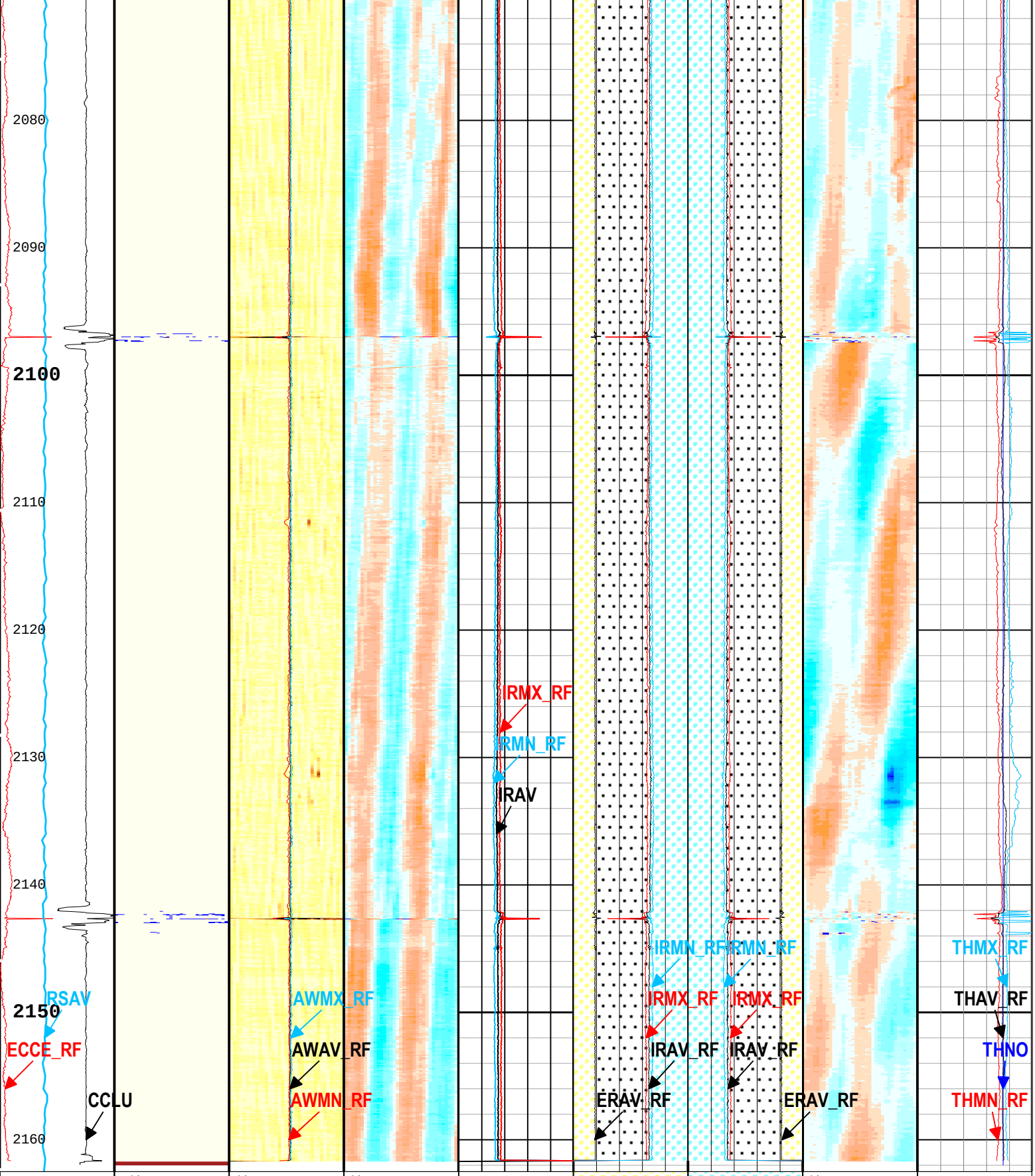
Median of Unflagged External Radii (ERAV_RF) USIT-E

Median of Unflagged External Radii (ERAV_RF) USIT-E

Minimum of Unflagged Casing


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
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
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
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)
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
1900
1910
1920
1930
1940
1950
1960
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF


1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
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



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

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

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

USIT

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

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

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

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF)

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF)

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

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

Nominal Casing Thickness (THNO) USIT-E

USIT-E
0 in 0.5

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

(dB)

(IRBKM_RF) USIT-E
(in)

4 in 5

USIT-E
5 in 4

USIT-E
4 in 5

Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

(THNO) USIT-E
0.1 in 0.6

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

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

Maximum of Unflagged Internal Radii (IRMX_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

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

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

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

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

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

Maximum of Unflagged Wave Amplitude (AWMX_RF) 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: 07-Apr-2016 19:31:31

Three

Very Hi-Res Repeat Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[10]:Up	Up	4866.74 ft	5057.47 ft	07-Apr-2016 1:21:18 PM	07-Apr-2016 1:32:43 PM	ON	5.56 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F
Three: Log[10]:Up:S001

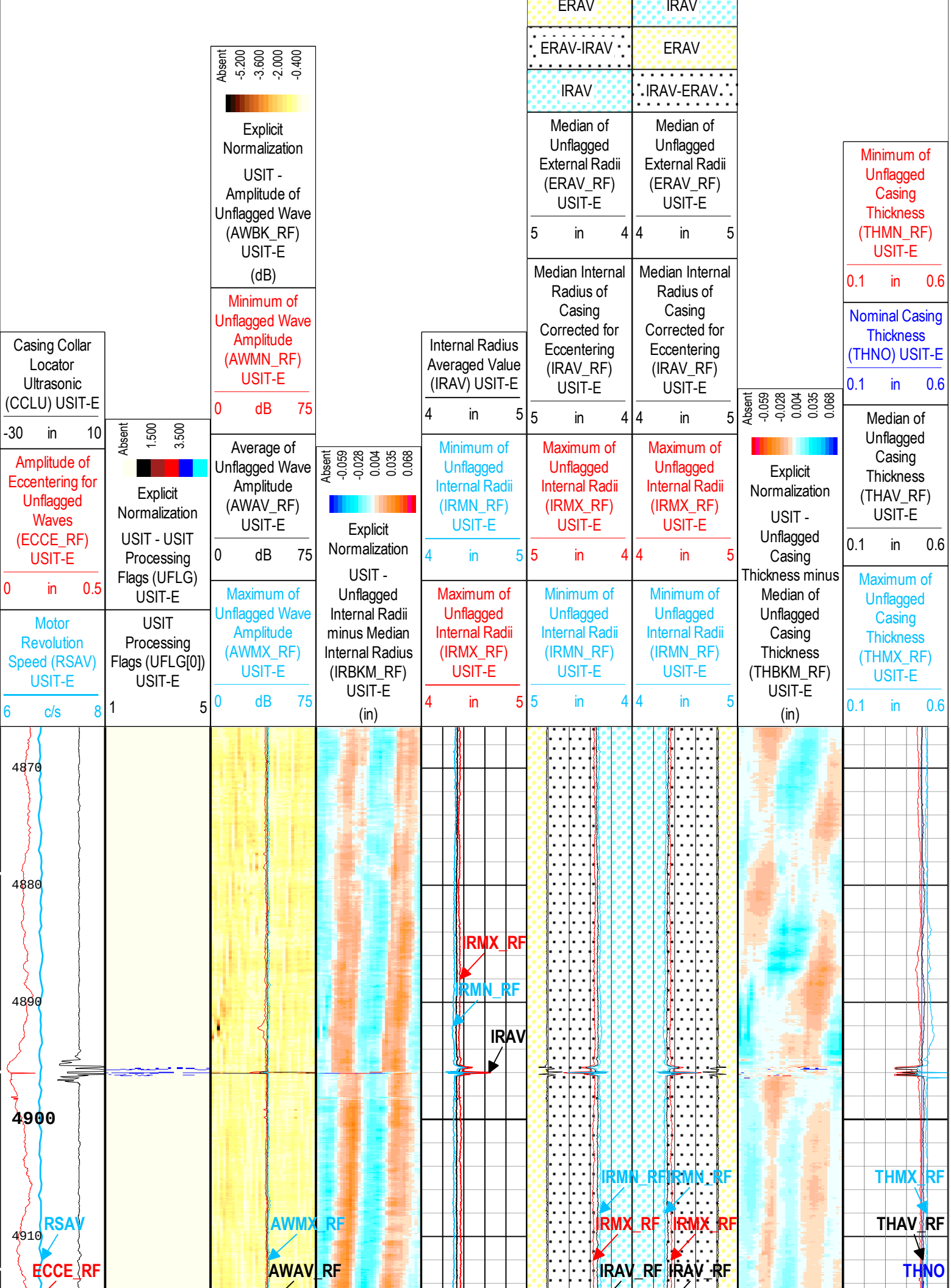
Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 07-Apr-2016 19:31:36

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
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
4870
4880
4890
4900
4910
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
IRMX_RF
IRMN_RF
IRAV
IRMN_RF
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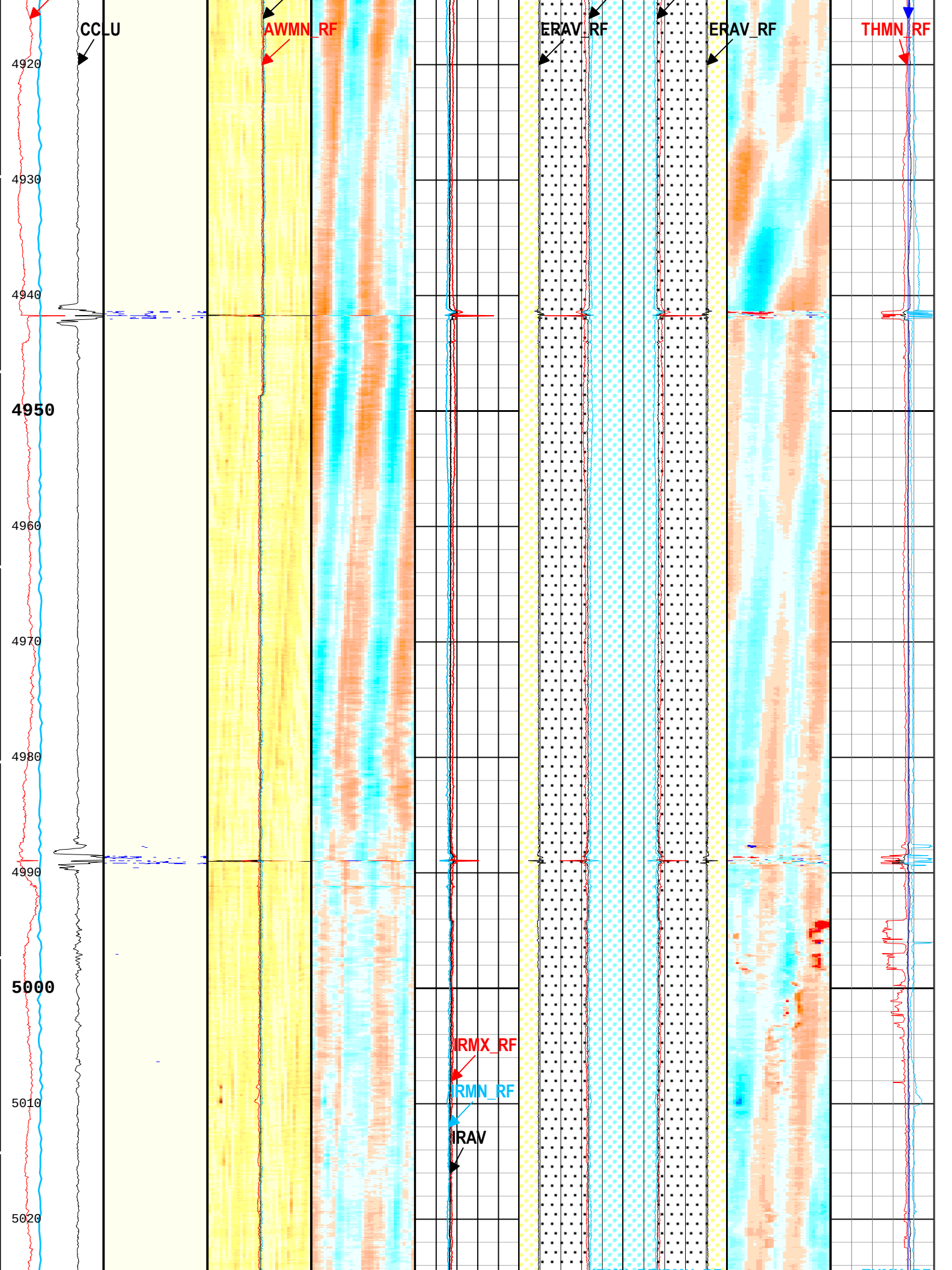
IRAV_RF
THMX_RF
THAV_RF
THNO


CCLU
AWMN_RF
ERAV_RF
ERAV_RF
THMN_RF
4920
4930
4940
4950
4960
4970
4980
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5000
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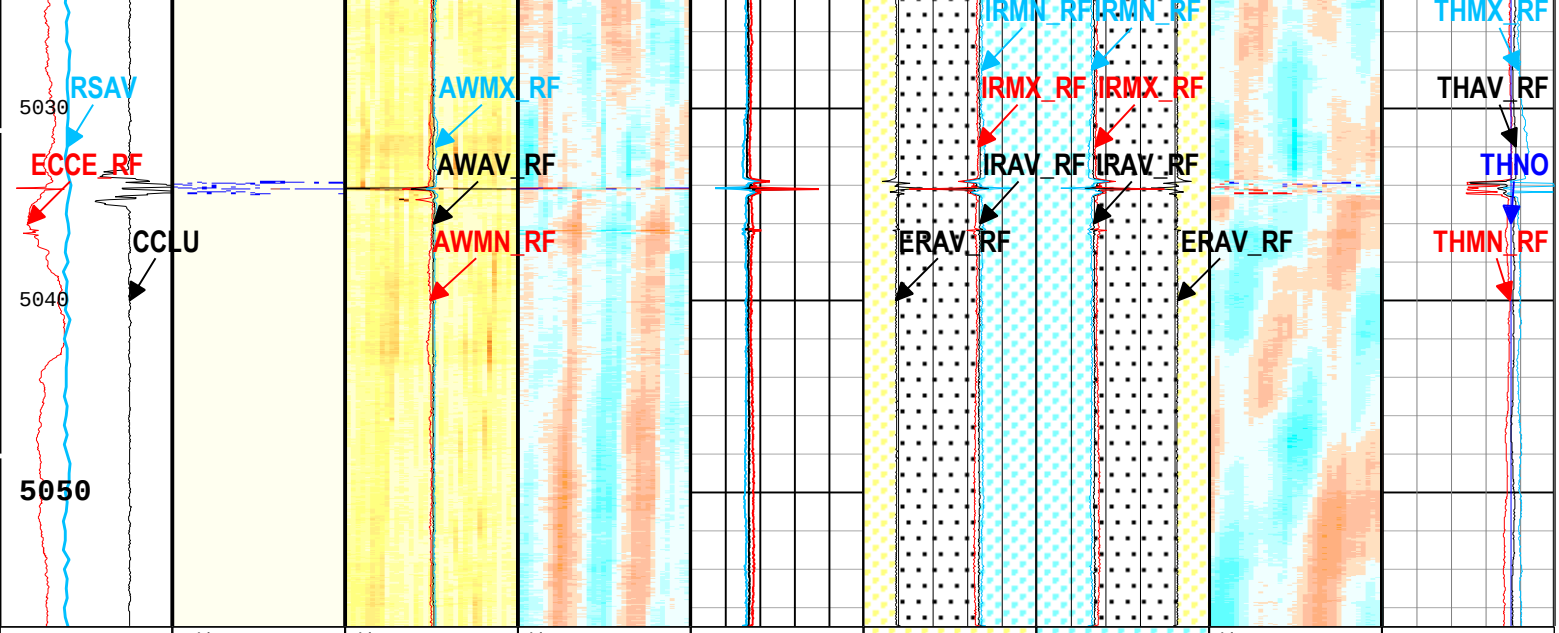
5020
IRMX_RF
IRMN_RF
IRAV



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: 07-Apr-2016 19:31:36

Three

Very Hi-Res Repeat Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Three	Log[9]:Up	Up	7144.59 ft	7287.73 ft	07-Apr-2016 1:02:22 PM	07-Apr-2016 1:10:36 PM	ON	4.95 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 69F
Three: Log[9]:Up:S001

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: 07-Apr-2016 19:31:41

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

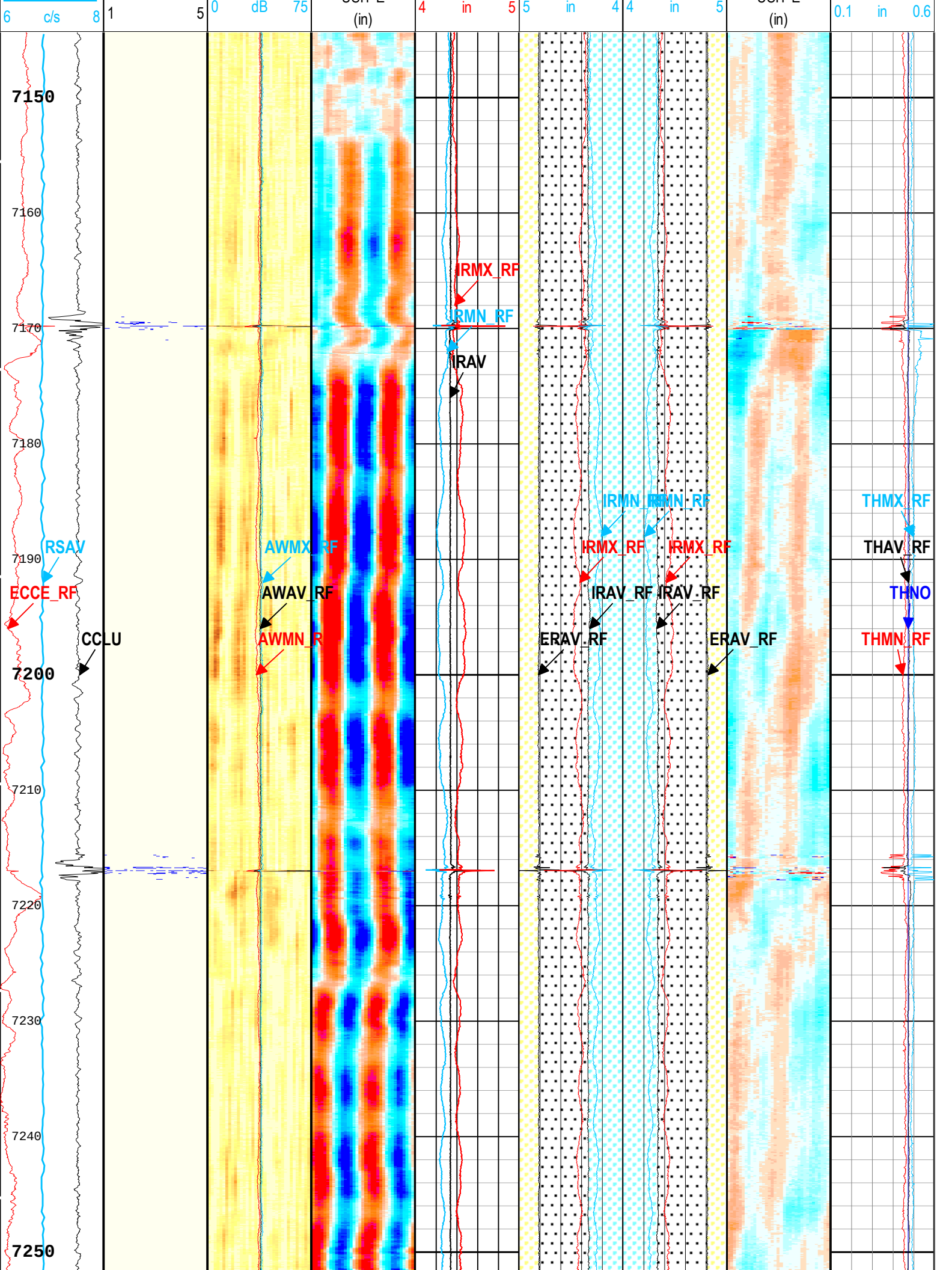
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E

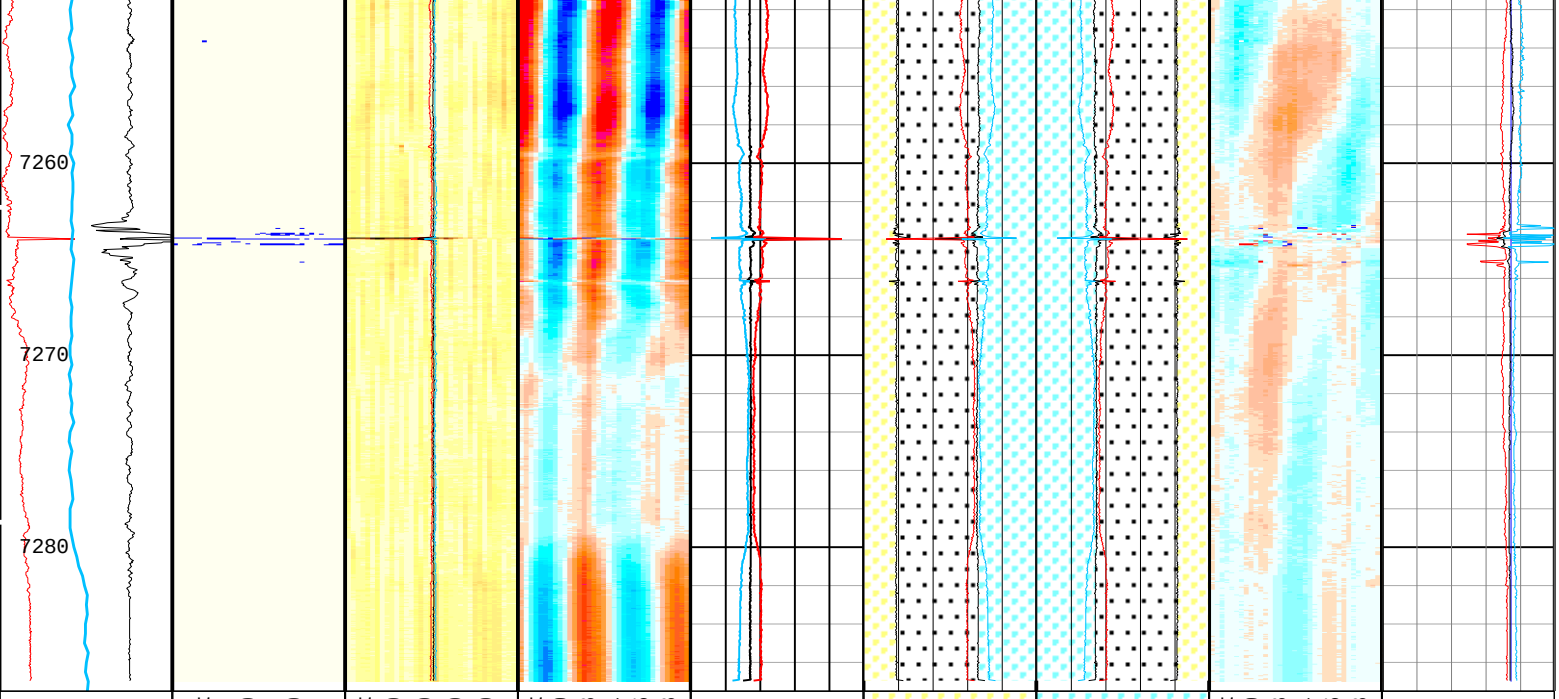
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

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
(in)
4 in 5
5 in 4
4 in 5
(in)
0.1 in 0.6
7150
7160
7170
7180
7190
7200
7210
7220
7230
7240
7250
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_R
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



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] - :
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

3 - UFLG 3 Value within [2.5 - 3.5] - : WINEEN 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: 07-Apr-2016 19:31:41

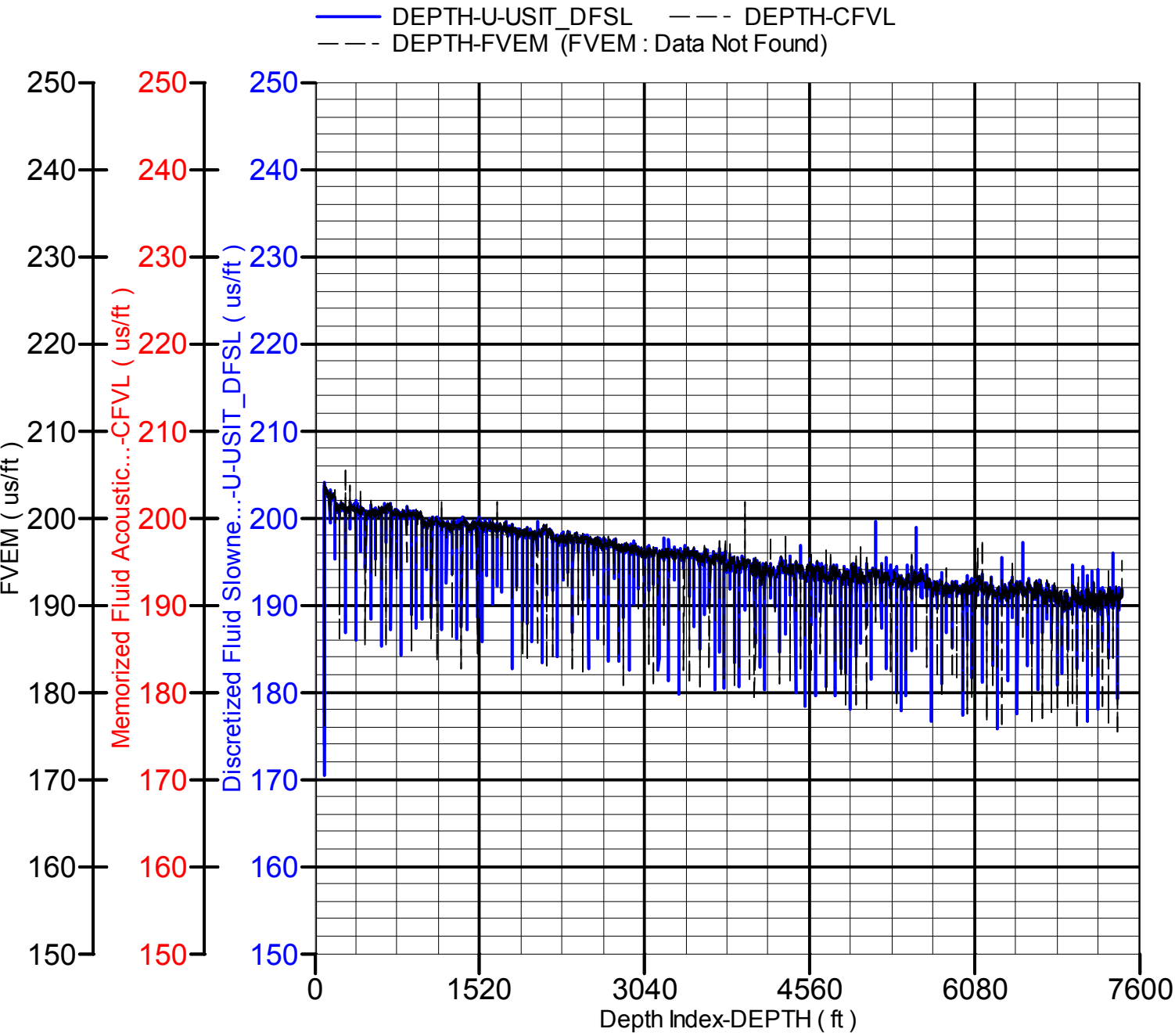
XYZ

Company:Southern California Gas Company Well:Porter 69F
Main Composite:S001

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 85.13 to 7447.50 ft



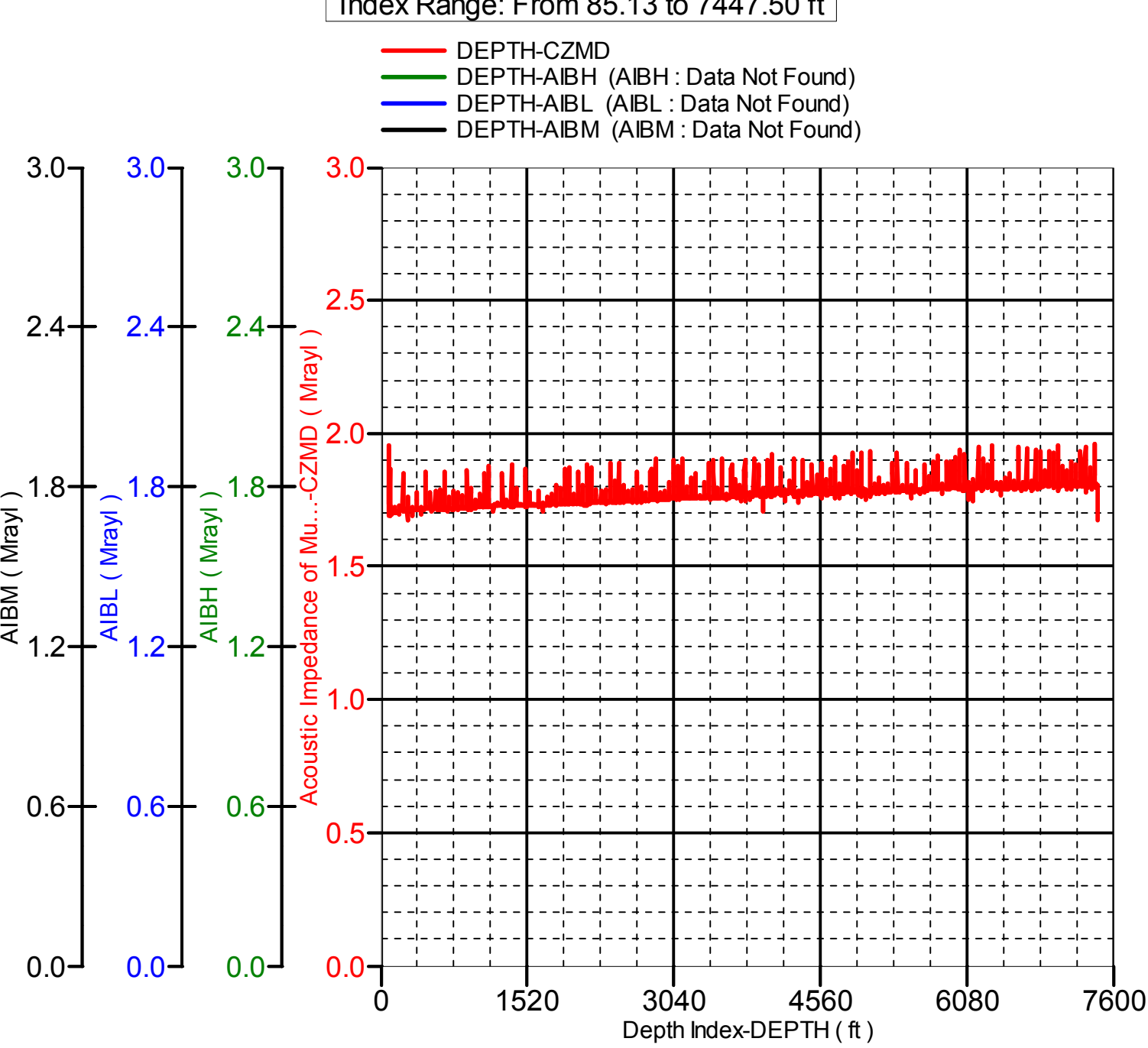
XYZ

Company:Southern California Gas Company Well:Porter 69F
Main Composite:S001

Theoretical Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 85.13 to 7447.50 ft


Index Range: From 85.13 to 7447.50 ft
DEPTH-CZMD
DEPTH-AIBH (AIBH : Data Not Found)
DEPTH-AIBL (AIBL : Data Not Found)
DEPTH-AIBM (AIBM : Data Not Found)
AIBM (Mrayl)
AIBL (Mrayl)
AIBH (Mrayl)
Acoustic Impedance of Mu...-CZMD (Mrayl)
3.0
2.4
1.8
1.2
0.6
0.0
2.5
2.0
1.5
1.0
0.5
0
1520
3040
4560
6080
7600
Depth Index-DEPTH (ft)

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

Schlumberger

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 47# casing