

Company: Anadarko Petroleum Company

Well: Spurling 13C-34HZ

Field: Wattenberg

County: Weld State: Colorado

Ultrasonic Imager
Cement Evaluation
Gamma Ray - CCL

County: Weld

Field: Wattenberg

Location: NWNW Sec 34, T2N, R67W

Well: Spurling 13C-34HZ

Company: Anadarko Petroleum Company

Location:

NWNW Sec 34, T2N, R67W

SHL: 377' FNL & 1058' FWL

Lat/Long: 40.100997/-104.882638

Elev.:

K.B. 5036.00 ft

G.L. 5015.00 ft

D.F. 5035.00 ft

Permanent Datum:

Ground Level

Elev.: 5015.00 f

Log Measured From:

Kelly Bushing

21.00 ft

above Perm.Datum

Drilling Measured From:

Kelly Bushing

API Serial No.

Section: 34

Township: 2N

Range: 67W

05-123-38949-0000

Logging Date	21-Jun-2014		
Run Number	Run 1		
Depth Driller	8023.00 ft		
Schlumberger Depth	8023.00 ft		
Bottom Log Interval	7005.00 ft		
Top Log Interval			
Casing Fluid Type	Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.75 in		
From	1000.00 ft		
To	8023.00 ft		
Casing/Tubing Size	7 in		
Weight	26 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	8023.00 ft		
Max Recorded Temperatures	204 degF		
Logger on Bottom	21-Jun-2014	11:54:10	
Unit Number	Location: 3030	Fort Morgan, CO	
Recorded By	Keri Ondrus		
Witnessed By	Trevor Daniel		

Disclaimer

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

Contents

1. Header

2. Disclaimer

3. Contents

4. Well Sketch

5. Borehole Size/Casing/Tubing Record

6. Operational Run Summary

7. Borehole Fluids

8. Remarks and Equipment Summary

9. Depth Summary

10. Copy of USI Composite

10.1 USI Fluid Properties Measurement

10.2 USI Composite

10.3 Parameter Listing

11. USI Goodwin

11.1 USI Fluid Properties Measurement

11.2 USI Goodwin

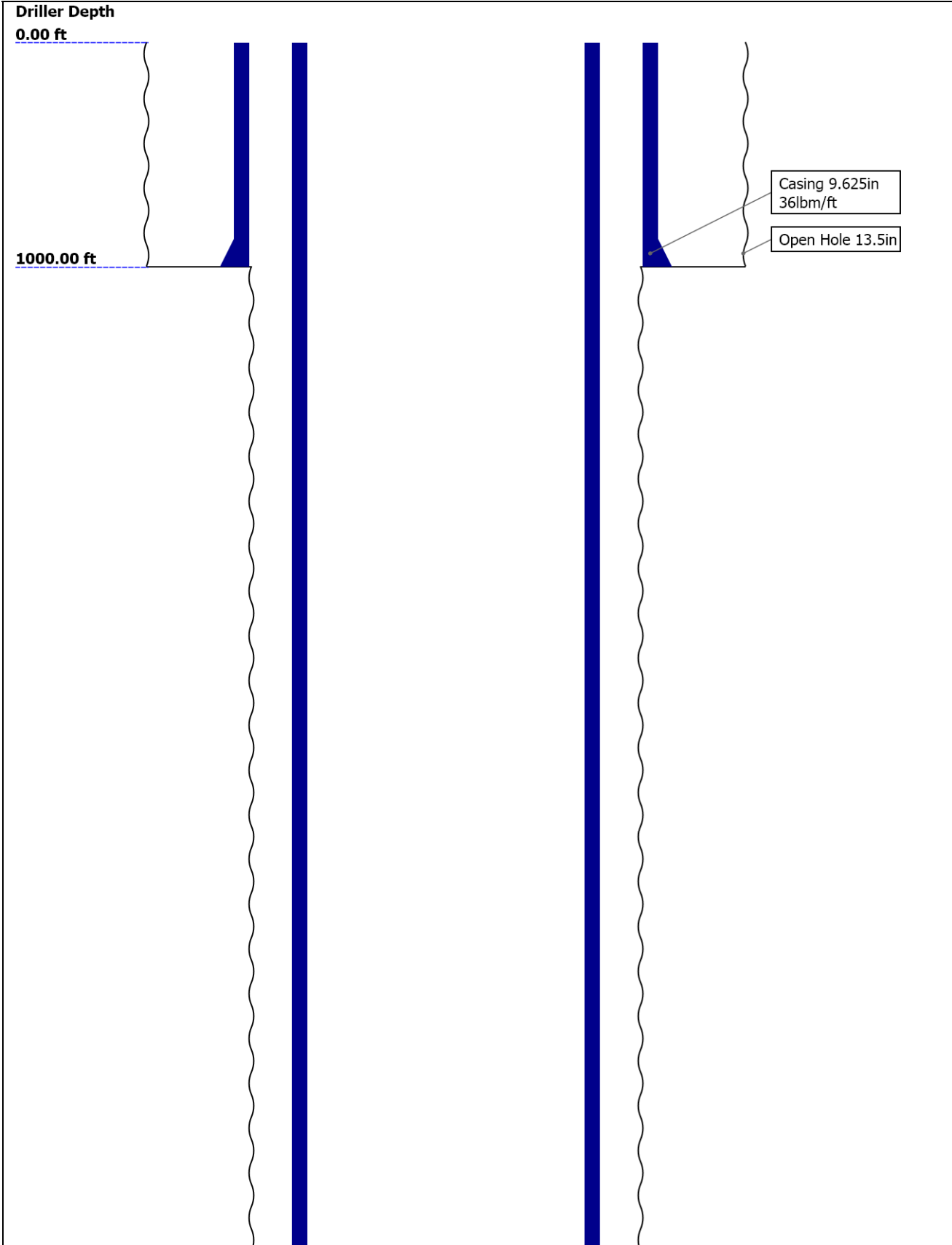
12. Copy of USI Composite
- in)

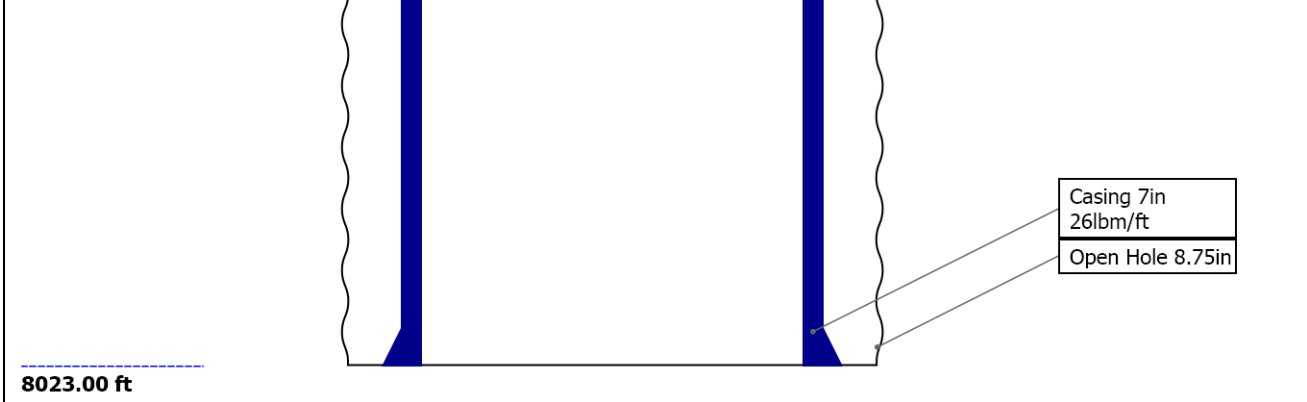
15. XYZ (USI Fluid Acoustic Slowness vs Depth 3.0 in)

16. Tail

- 12.1 USI Fluid Properties Measurement
- 12.2 USI Composite
- 12.3 Parameter Listing
- 13. Import (2) of USI Goodwin
 - 13.1 USI Fluid Properties Measurement
 - 13.2 USI Goodwin
- 14. XYZ (USI Acoustic Impedance of Mud vs Depth 3.0

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.75				
Top Driller (ft)	0	1000				
Top Logger (ft)	0	1000				
Bottom Driller (ft)	1000	8023				
Bottom Logger (ft)	1000	8023				
Casing						
Size (in)	9.625	7				
Weight (lbm/ft)	36	26				
Inner Diameter (in)	8.921	6.276				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1000	8023				
Bottom Logger (ft)	1000	8023				

Operational Run Summary

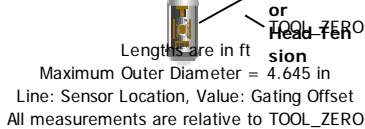
Parameter (unit)	Run 1					
Date Log Started	21-Jun-2014					
Time Log Started	11:22:00					
Date Log Finished	21-Jun-2014					
Time Log Finished	15:03:29					
Top Log Interval (ft)	NaN					
Bottom Log Interval (ft)	7005.00					
Total Depth (ft)	7005.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	3030					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Keri Ondrus					
Witnessed By	Trevor Daniel					
Service Order Number	RX19-00149					

Borehole Fluids

Parameter(unit)	Run 1					
Fluid Type	Water					
Max Recorded Temperatures (degF)	204					
Salinity (ppm)	0					
Density (lbm/gal)	8.4					
Date Logger on Bottom	21-Jun-2014					
Time Logger on Bottom	11:54:10					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

Run 1: Toolstring	Run 1: Remarks	
<div> <div> <div>Equip name Length</div> <div>LEH-QT:21 32.75</div> <div>10</div> <div>LEH-QT:2110</div> </div> <div> <div>DTC-H:938 29.84</div> <div>6</div> <div>ECH-KC:1047</div> <div>2</div> <div>DTC-H:9386</div> </div> <div> <div>SGT-N:103 26.84</div> <div>86</div> <div>SGH-K:3164</div> <div>SGC-TB:1038</div> <div>6</div> <div>SGD-TAA:218</div> <div>92</div> </div> <div> <div>CME-AF 21.34</div> </div> <div> <div>AH-184:27 17.54</div> <div>46</div> </div> <div> <div>USIT-E:977 15.54</div> <div>ECH-MFA:19</div> <div>69</div> <div>USAC-A:977</div> <div>USIS-A:2797</div> <div>USSC-B:1730</div> <div>USRS-B:875</div> <div>USI-SENSOR</div> </div> </div> <div> </div> <div> <div>MP name Offset</div> <div>CTEM HV 28.94</div> <div>TelStatus 26.84</div> <div>ToolStat 26.84</div> <div>GR 25.92</div> <div>USI Sens 0.38</div> </div>	<div>Toolstring run as per toolsketch.</div> <div>4.5" liner top at 7018'. Bottom log interval at 7000' to maintain distance from liner top.</div> <div>Log interval from 7000' to ground level run under 0 PSI and 3000 PSI.</div> <div>Full lube used to reach ground level with logs.</div> <div>Cemented by Halliburton.</div> <div>Lead cement: 12.7 PPG Class G Econocem B1; Tail cement: 14.4 PPG Class G Expandac</div> <div>Estimated top of cement at 375'.</div> <div>Logged spliced at 66' due to top of fluid during first attempt.</div> <div>Thank you for choosing Schlumberger Wireline!</div> <div>SLB crew: Jay Musgrave, Jake Jump, Josh Strand, and Keri Ondrus.</div>	



	Run 1		
--	-------	--	--

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Type	IDW-B		
Serial Number	6428		
Calibration Date	21-Apr-2014		
Calibrator Serial Number			
Calibration Cable Type	7-39PLXS		
Wheel Correction 1	-5		
Wheel Correction 2	-4		

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Type	CMTD-B/A		
Serial Number	777		
Calibration Date	12-Jun-2014		
Calibrator Serial Number	78135a		
Number of Calibration Points	10		
Calibration Root Mean Square Error	27		
Calibration Peak Error	43		

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Type	7-39P-LXS		
Serial Number	F713271		
Length	18200.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

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Log Sequence	First Log In the Well
Rig Up Length At Surface	
Rig Up Length At Bottom	
Rig Up Length Correction	
Stretch Correction	5.51 ft
Tool Zero Check At Surface	

All Schlumberger depth control procedures followed.
IDW used as primary depth control device.
Z-chart used as secondary depth control procedure.

All Schlumberger depth control procedures followed.
IDW used as primary depth control device.
Z-chart used as secondary depth control procedure.

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[3]:Up	7006.08	11.93

Top Depth(ft)
0.93

.93

Start Value(us/ft)	End Value(us/ft)
--------------------	------------------

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
[Redacted]																																																																																																			

Start Value(Mravl)	End Value(Mravl)
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Start Value(msec)	End Value(msec)
61	161

63	1.63
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1.65	1.65
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.67	1.67
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.68	1.68
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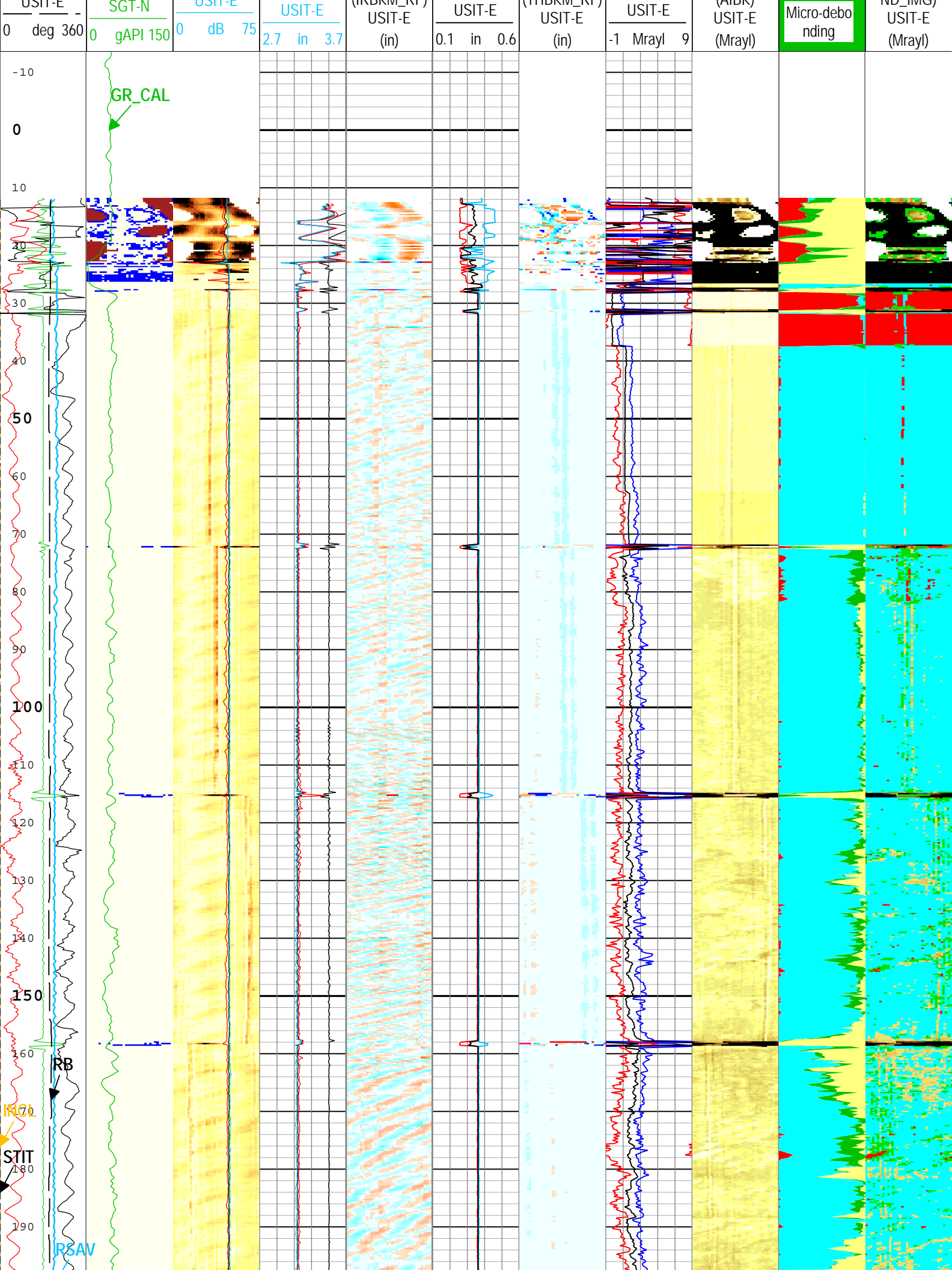
.69	1.69
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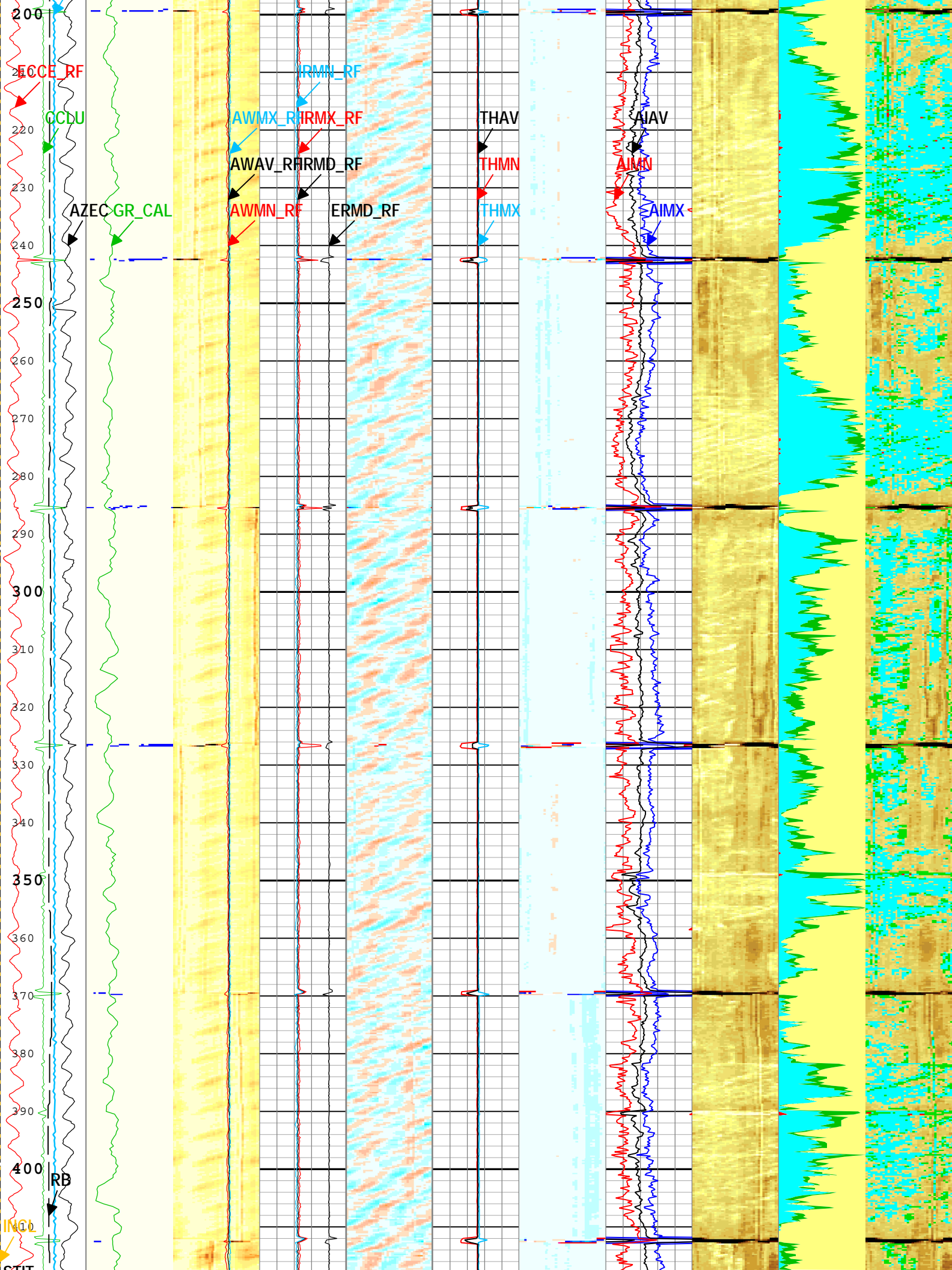
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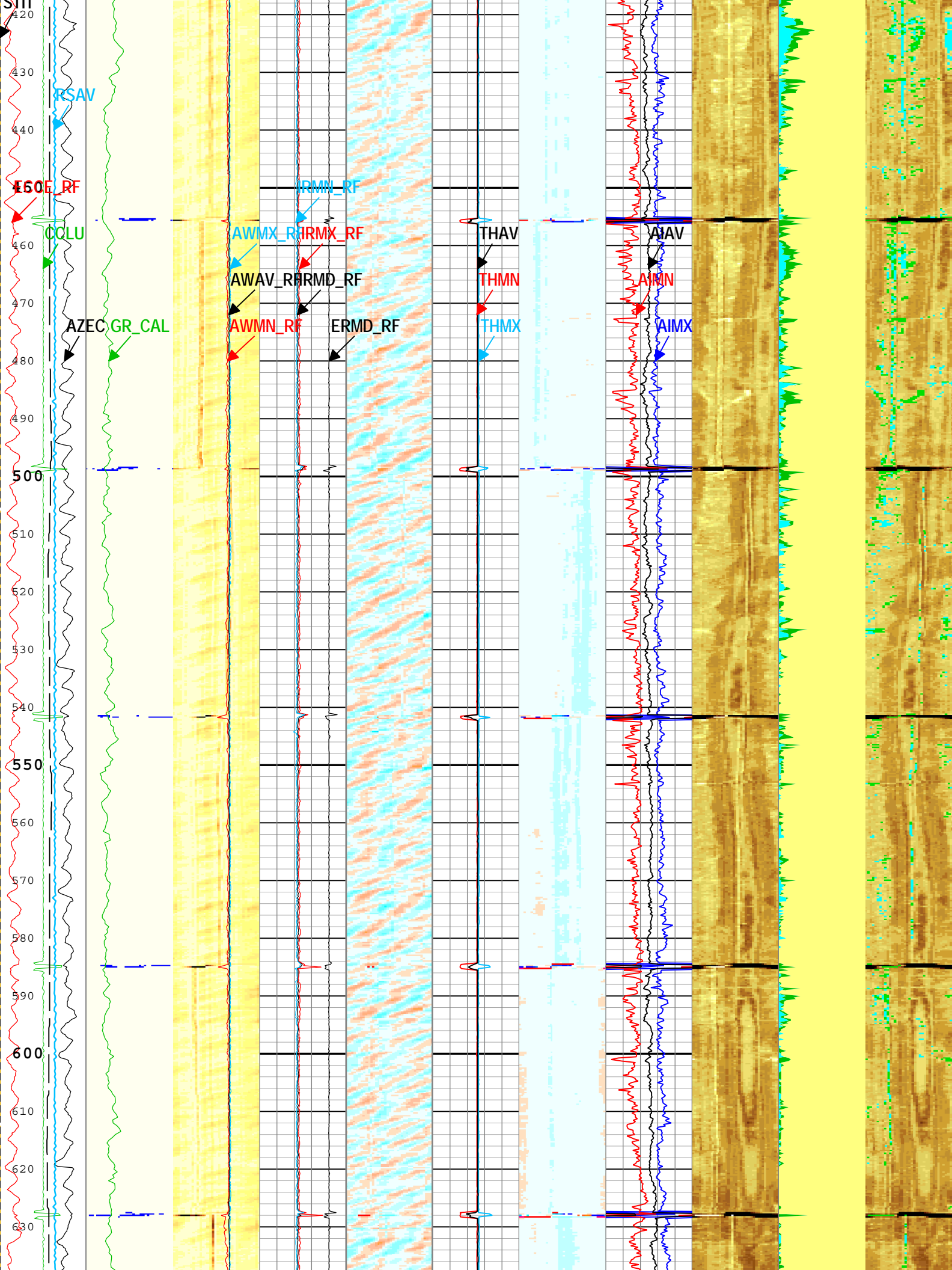
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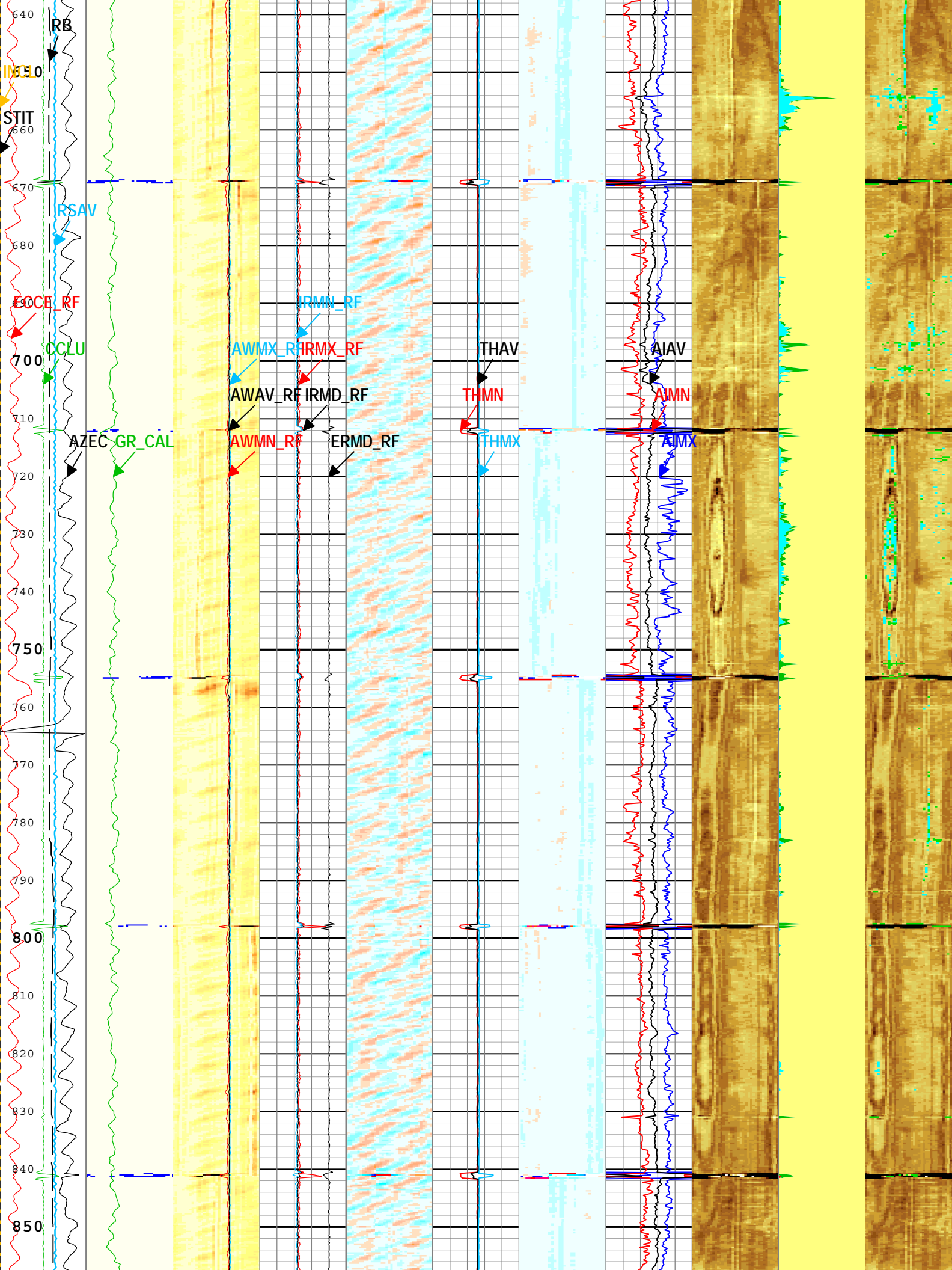
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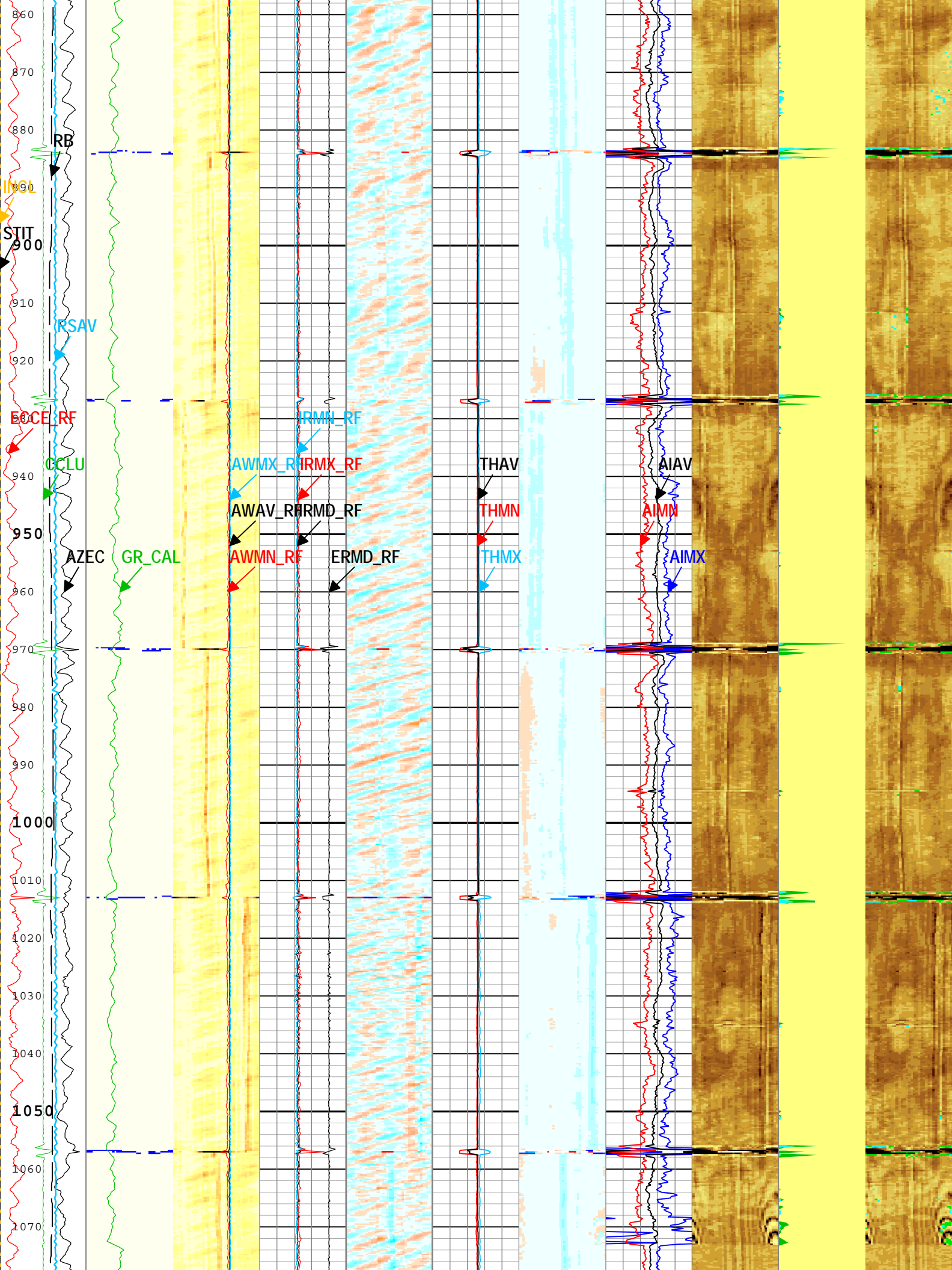
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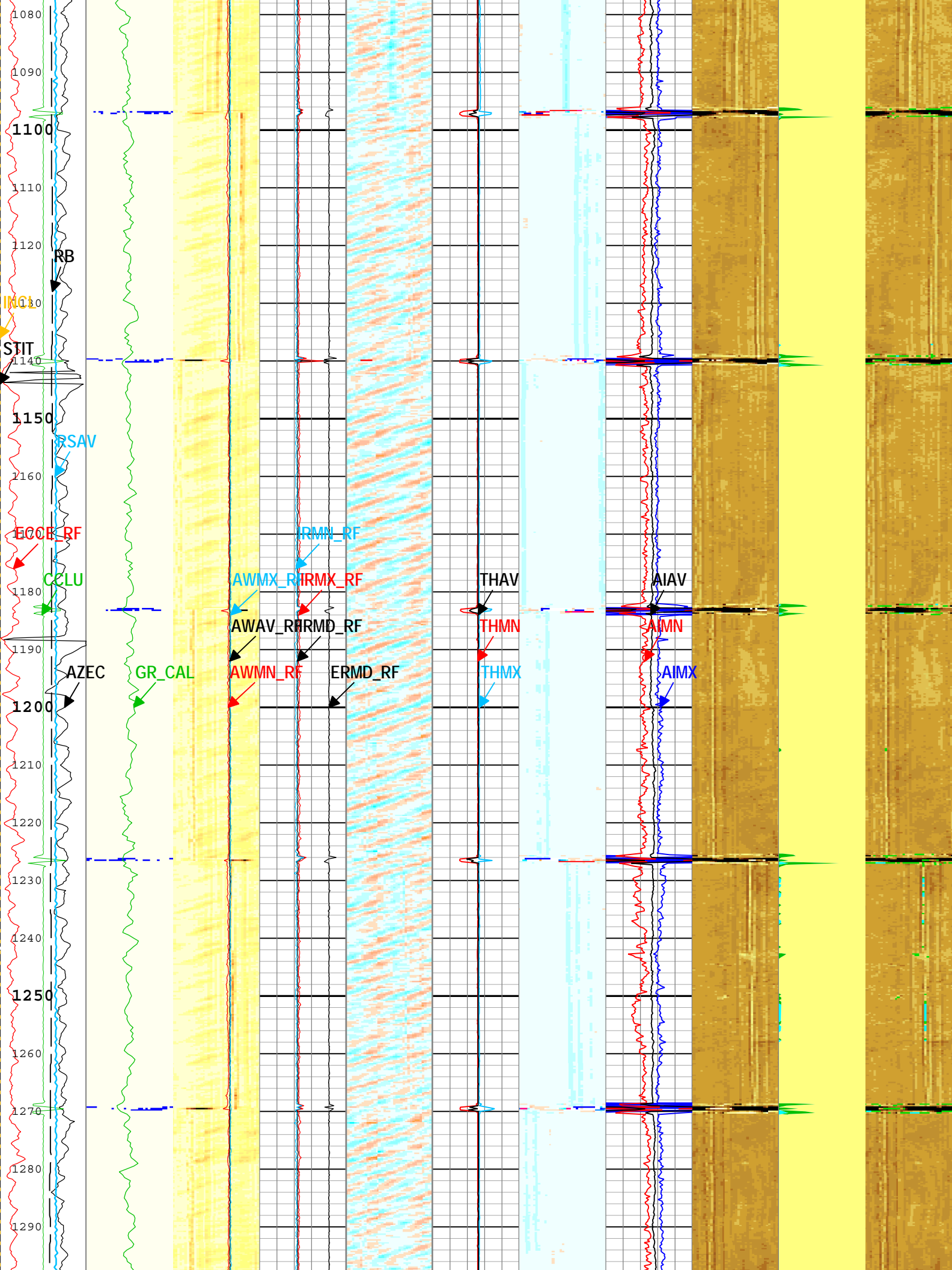


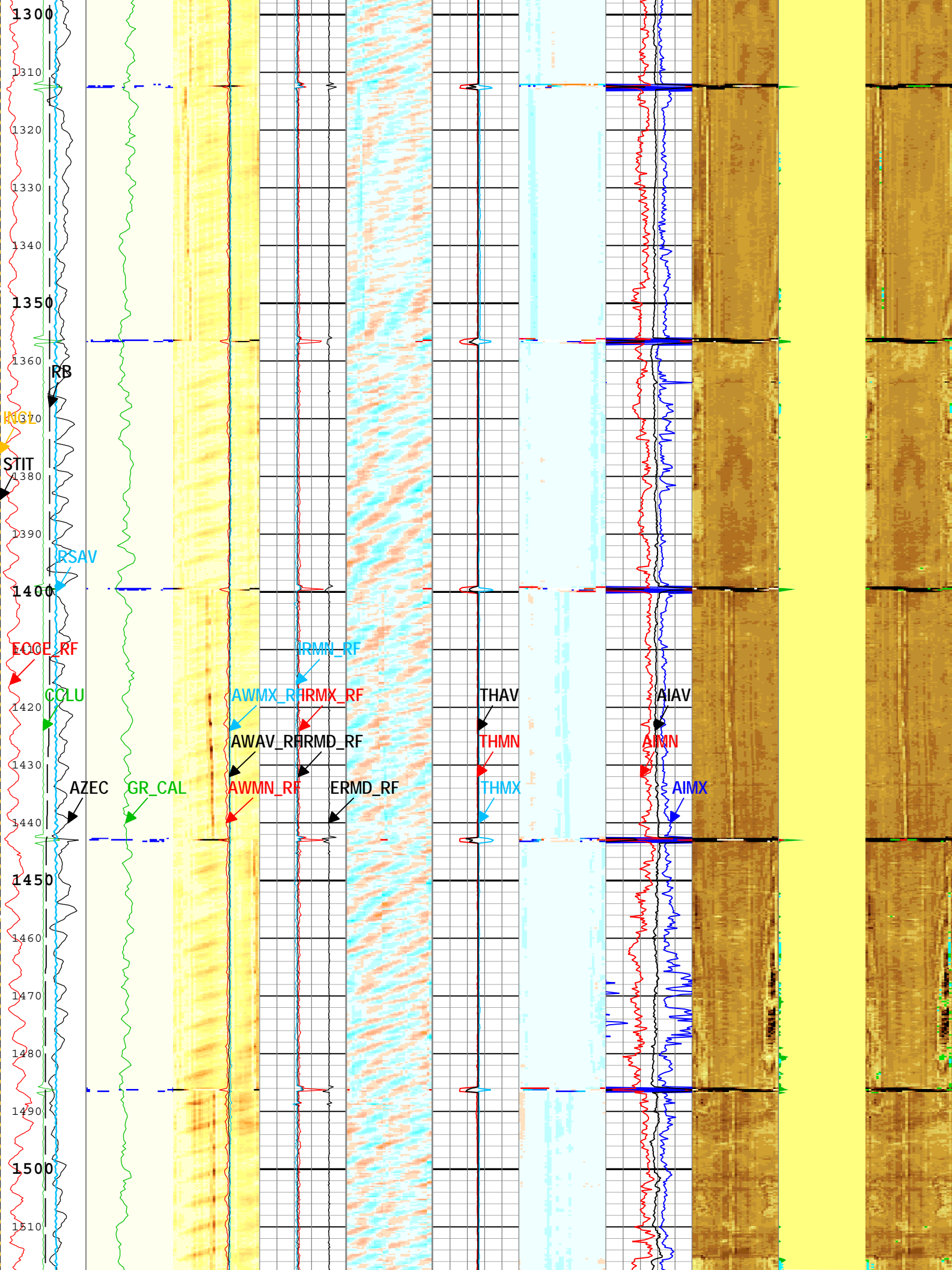


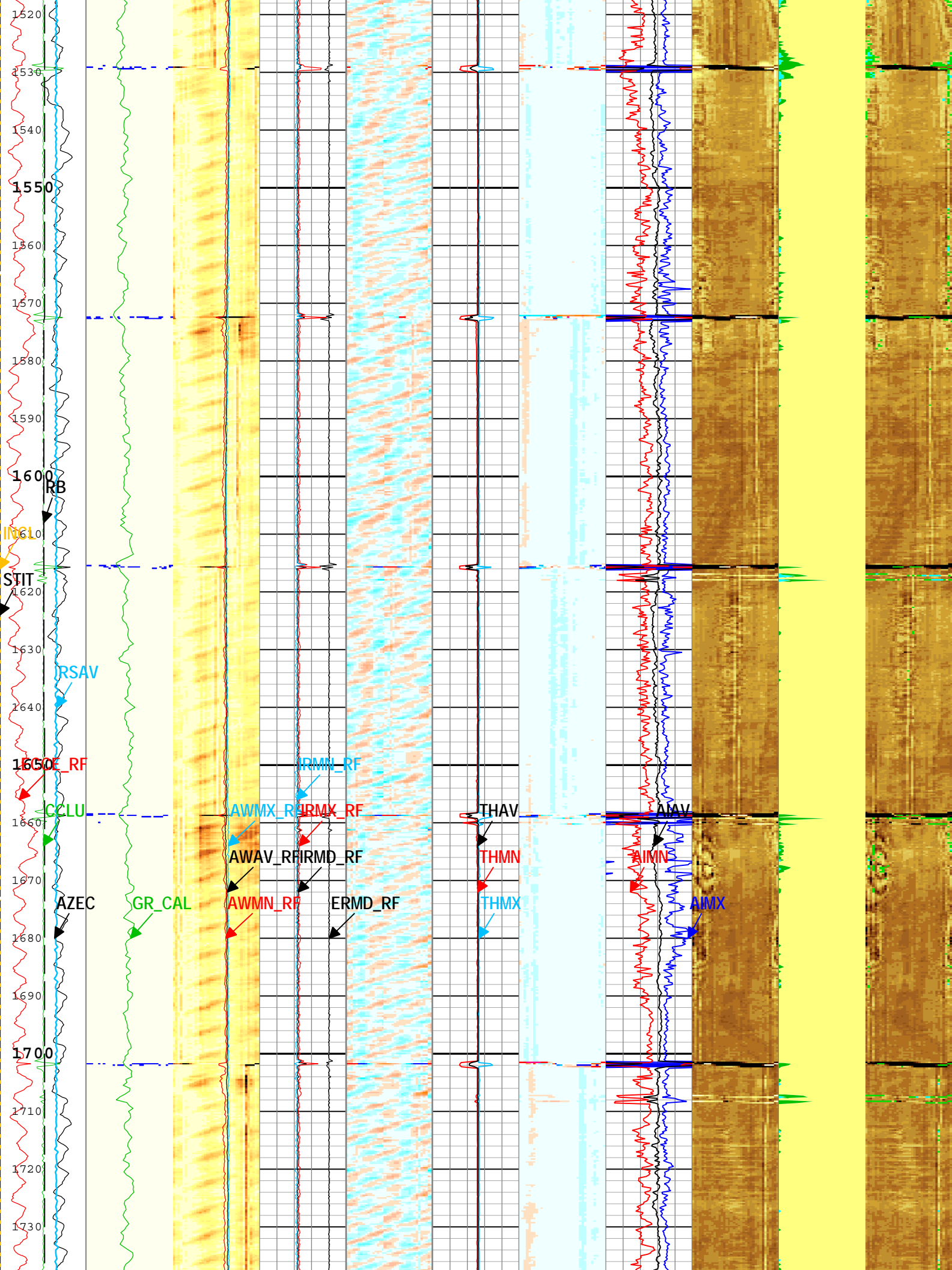


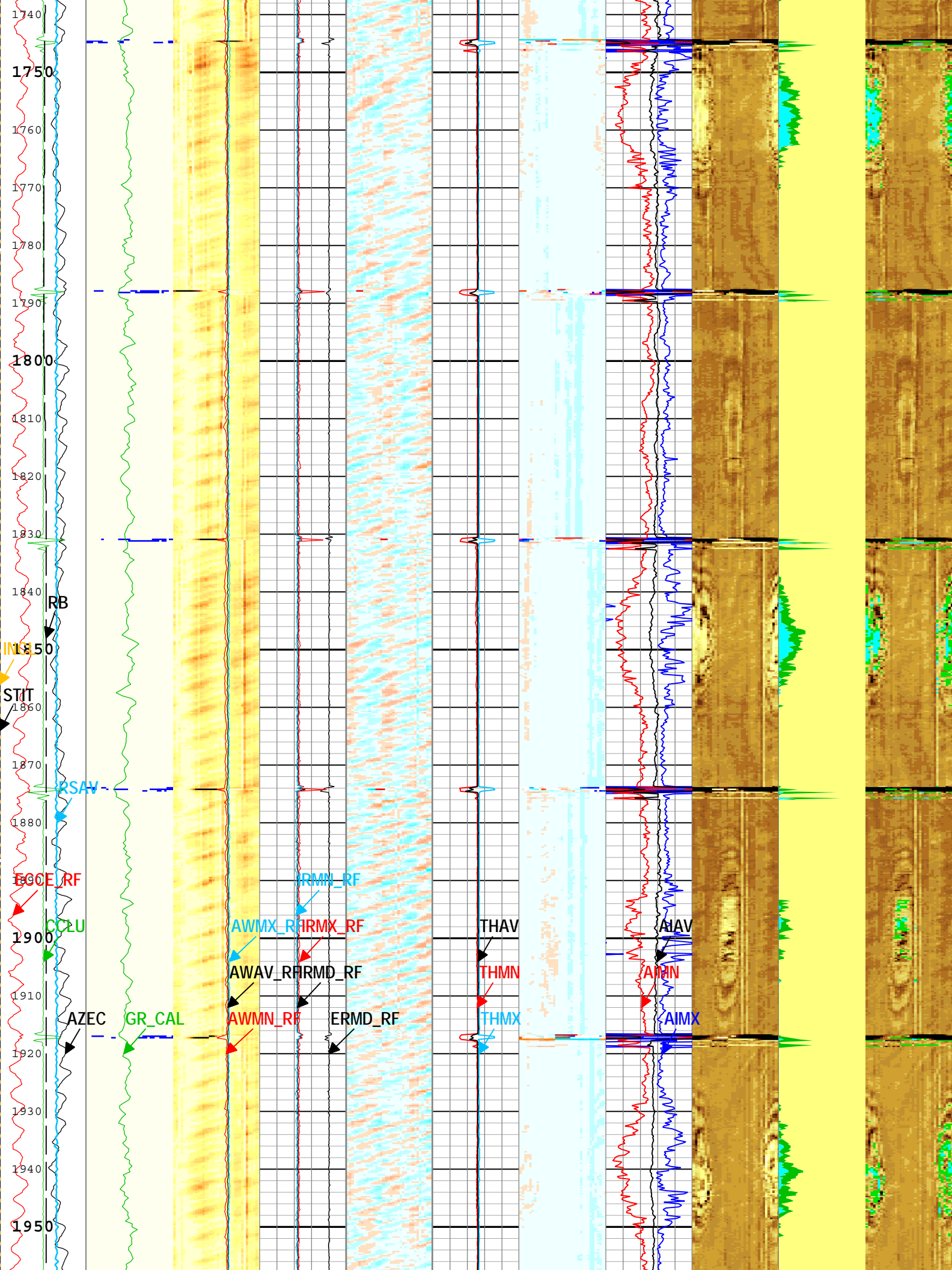


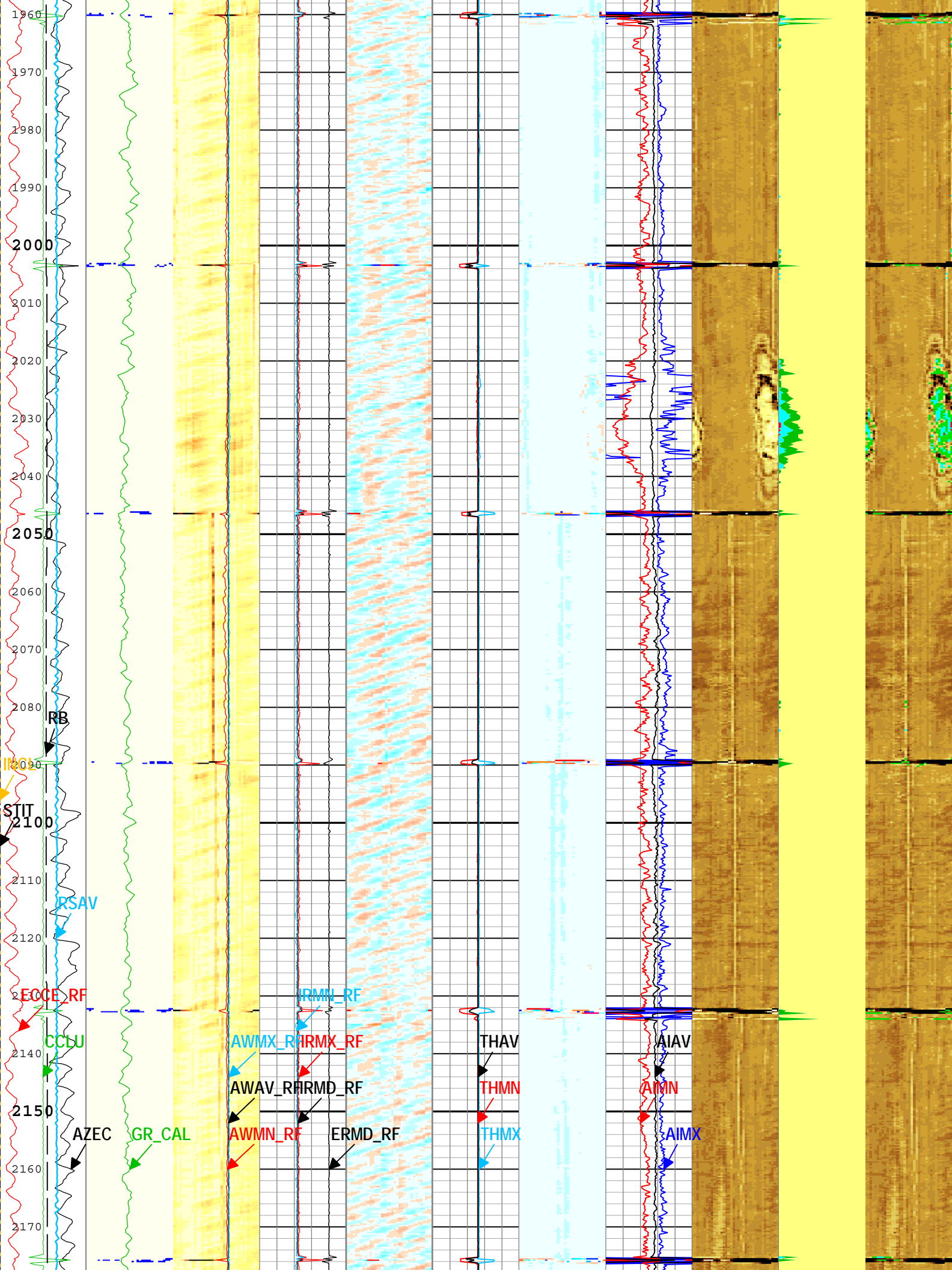


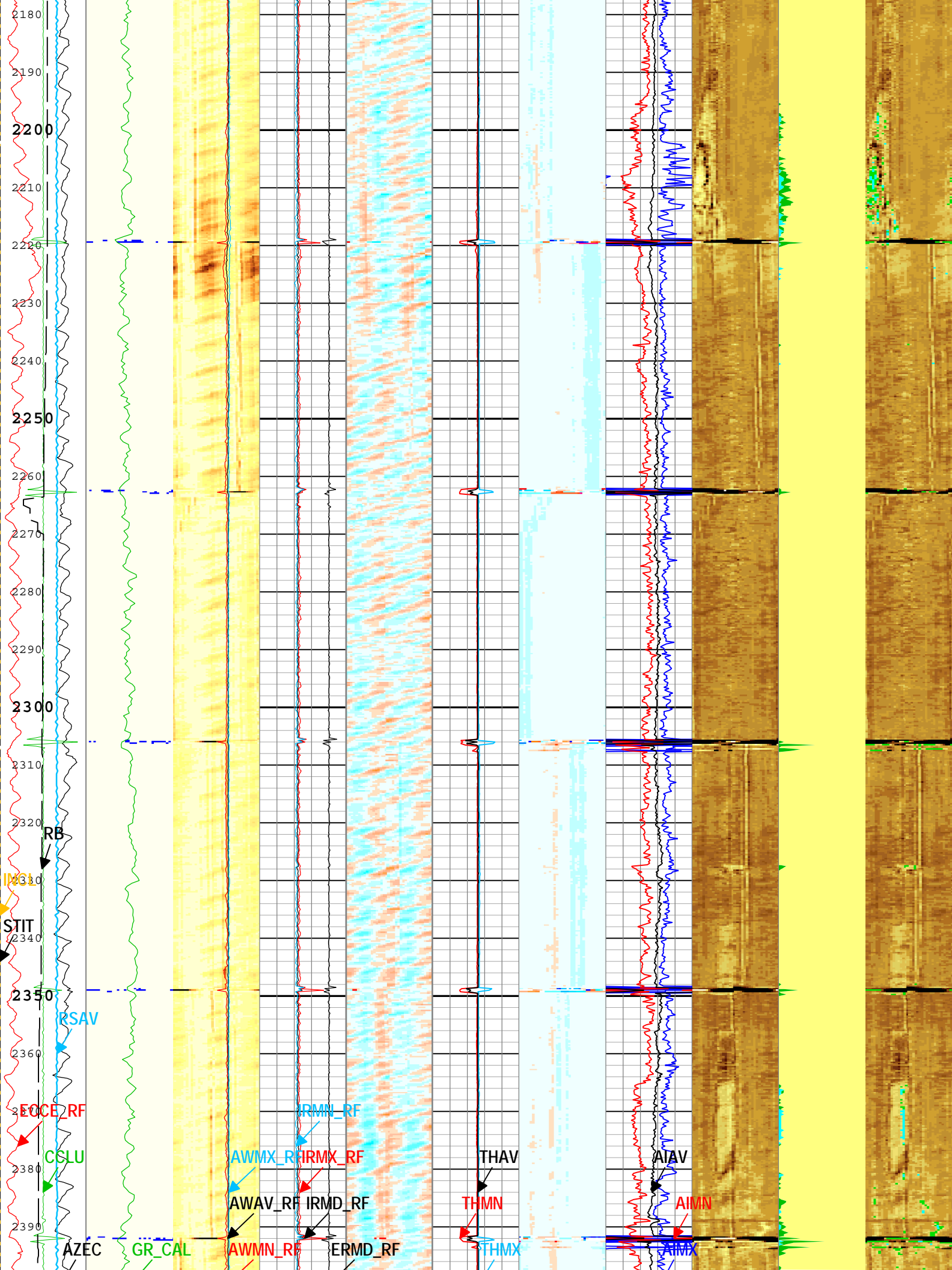


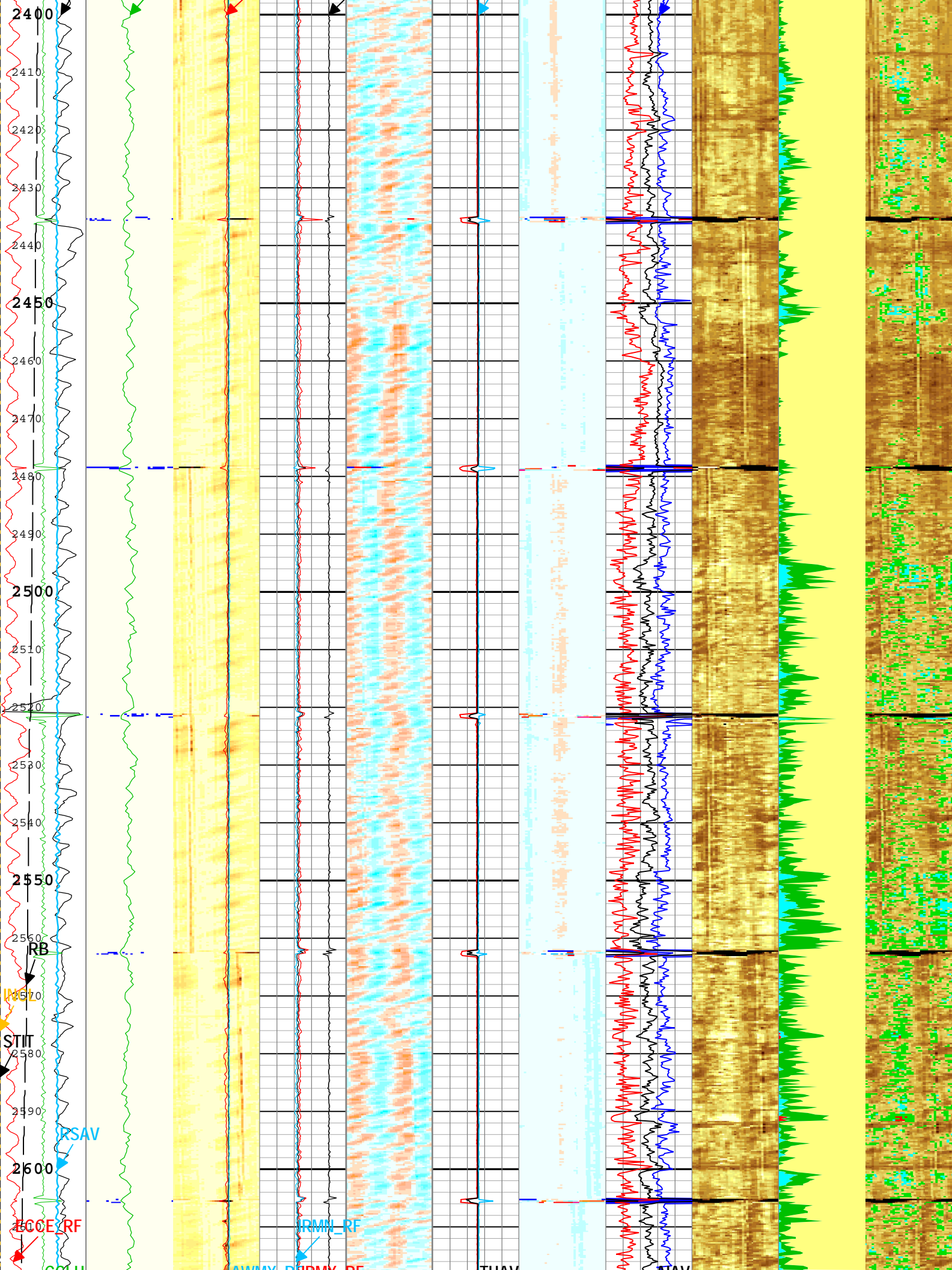


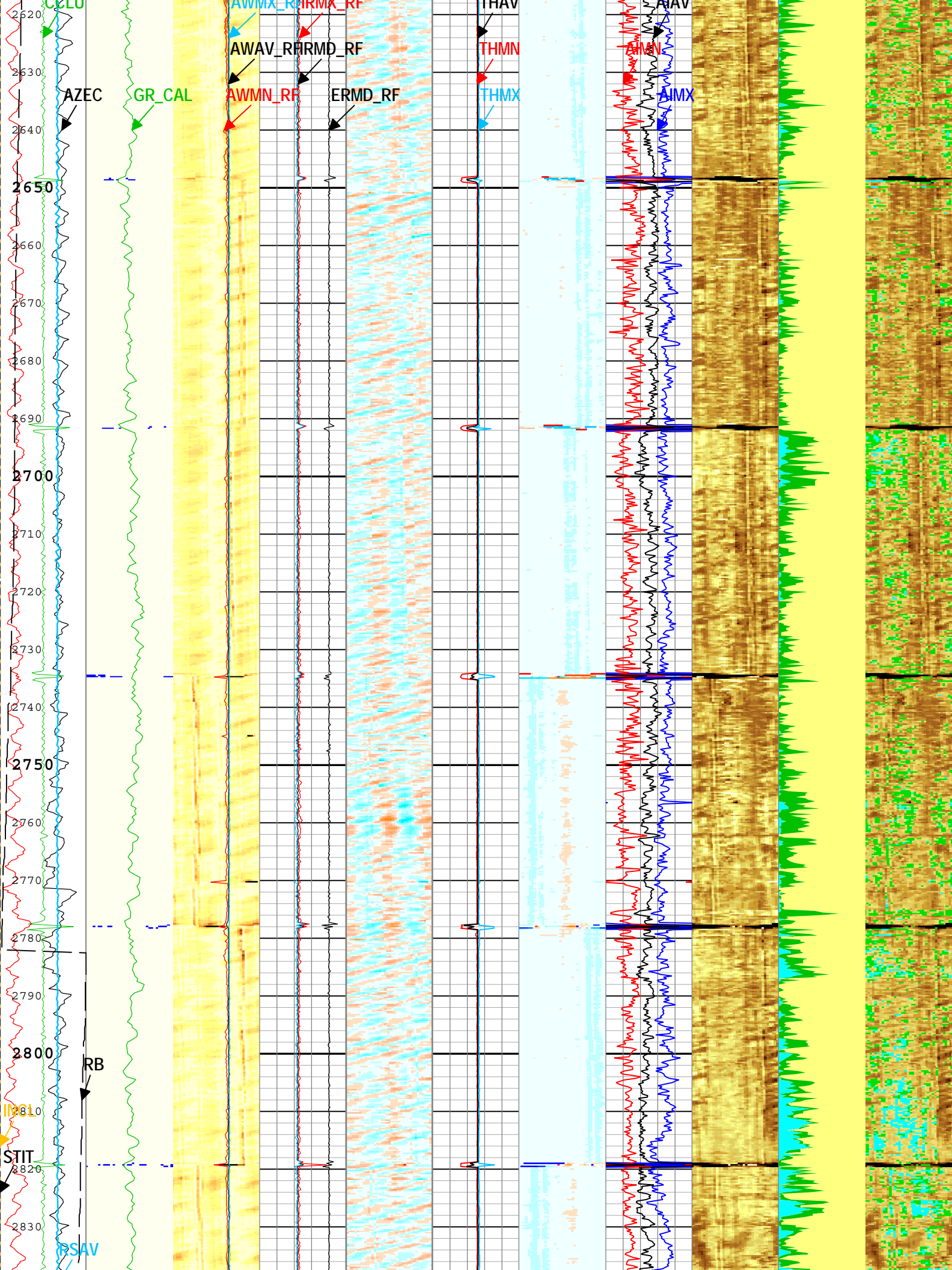


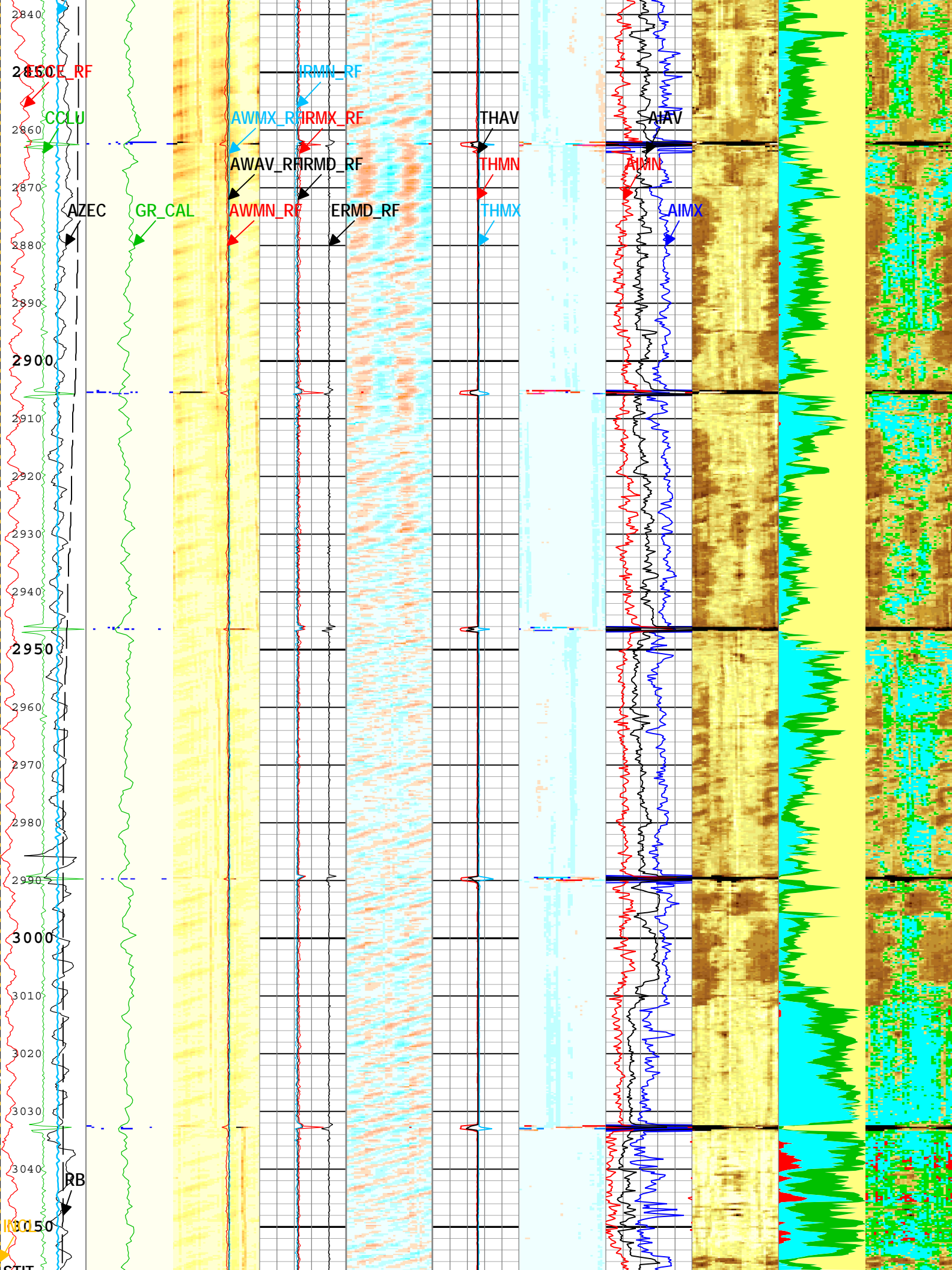


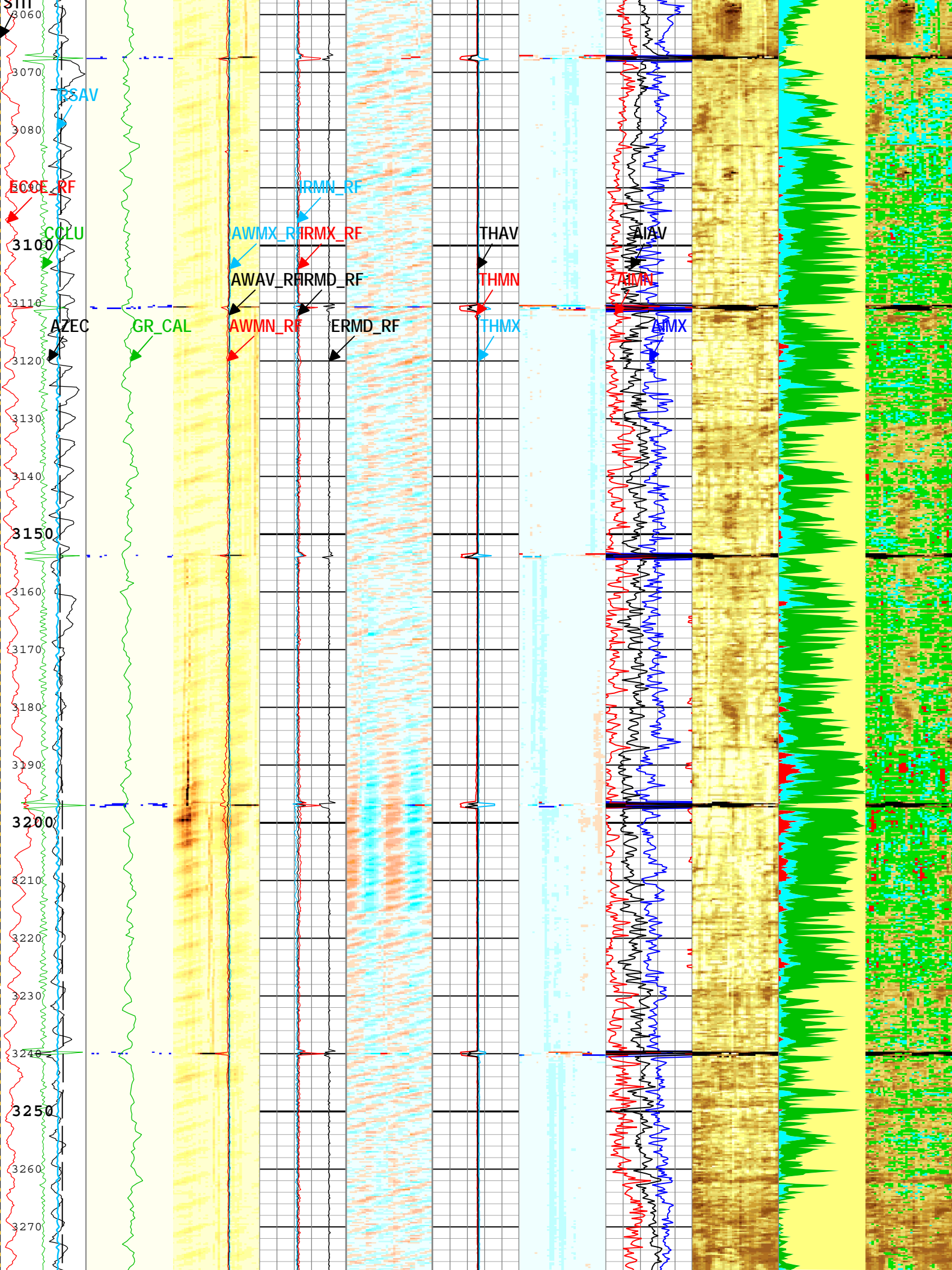


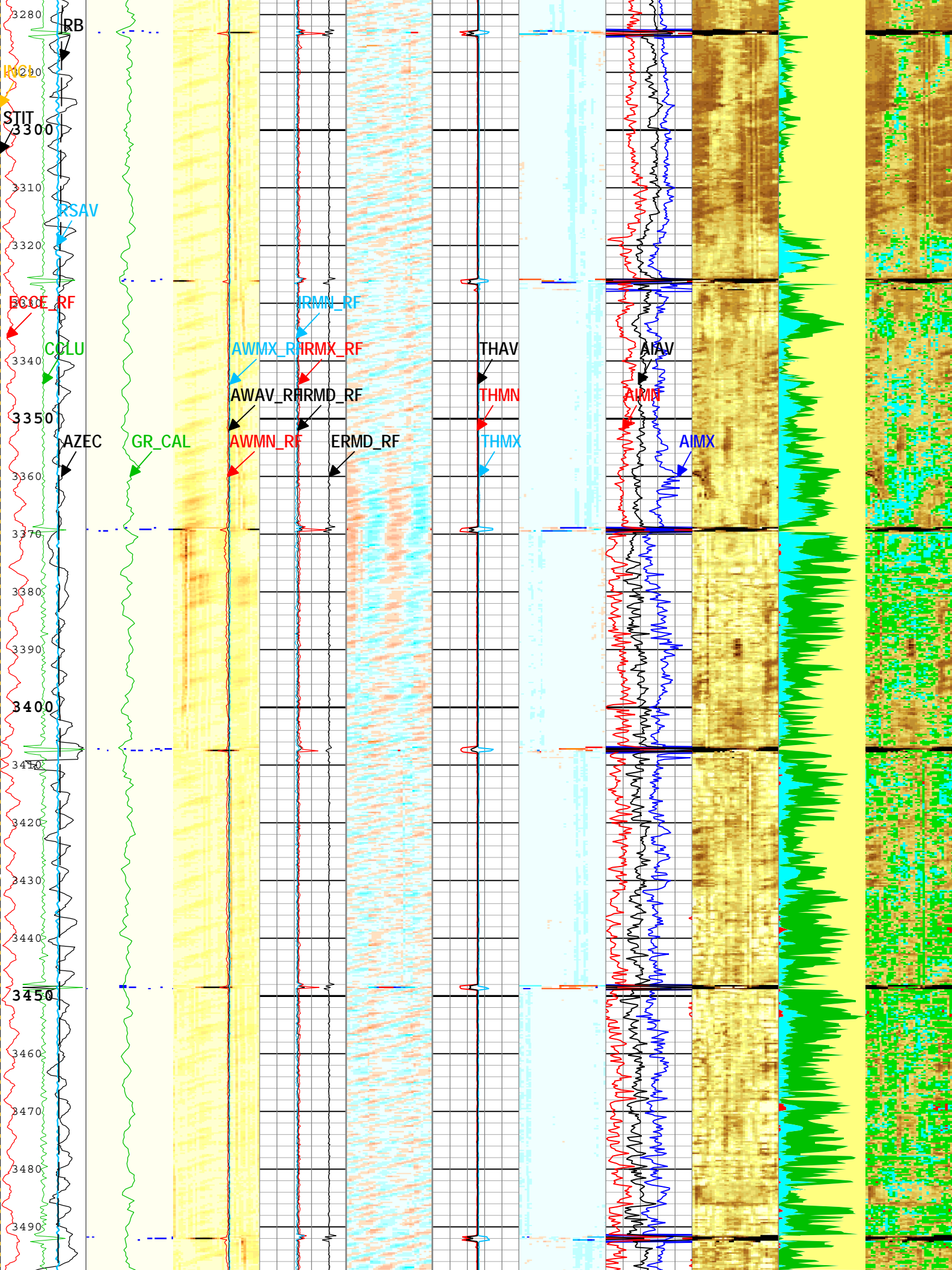


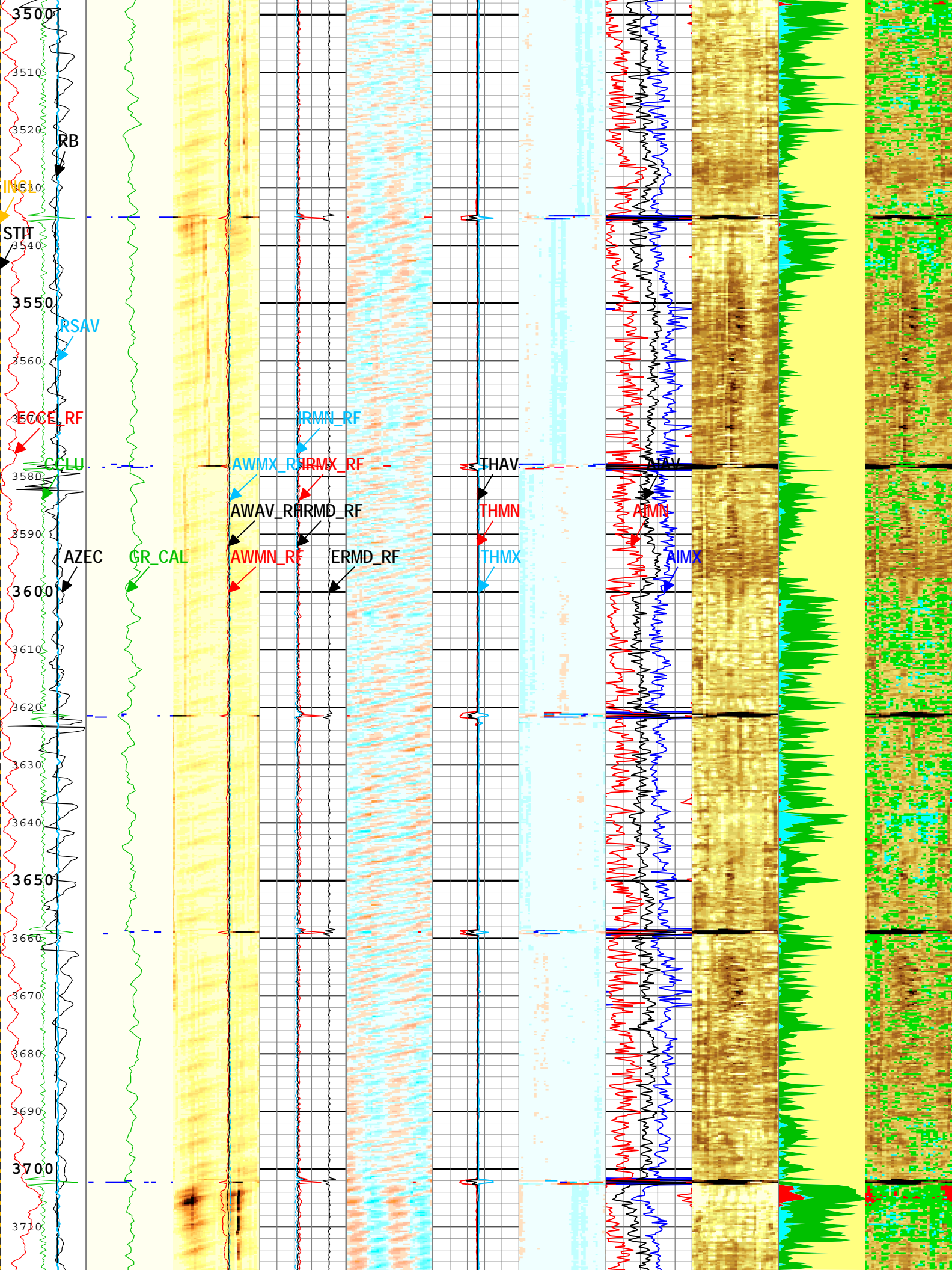


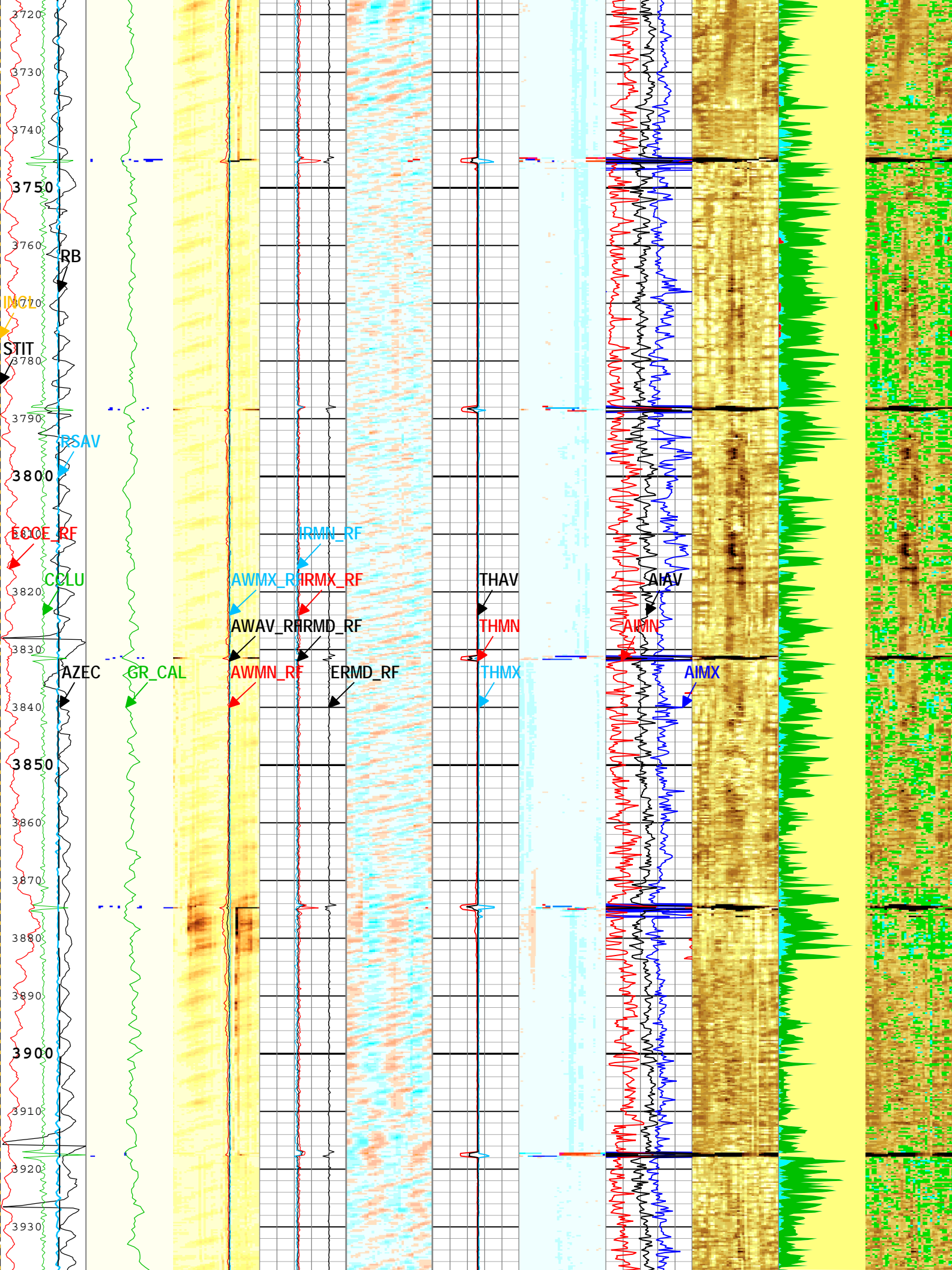


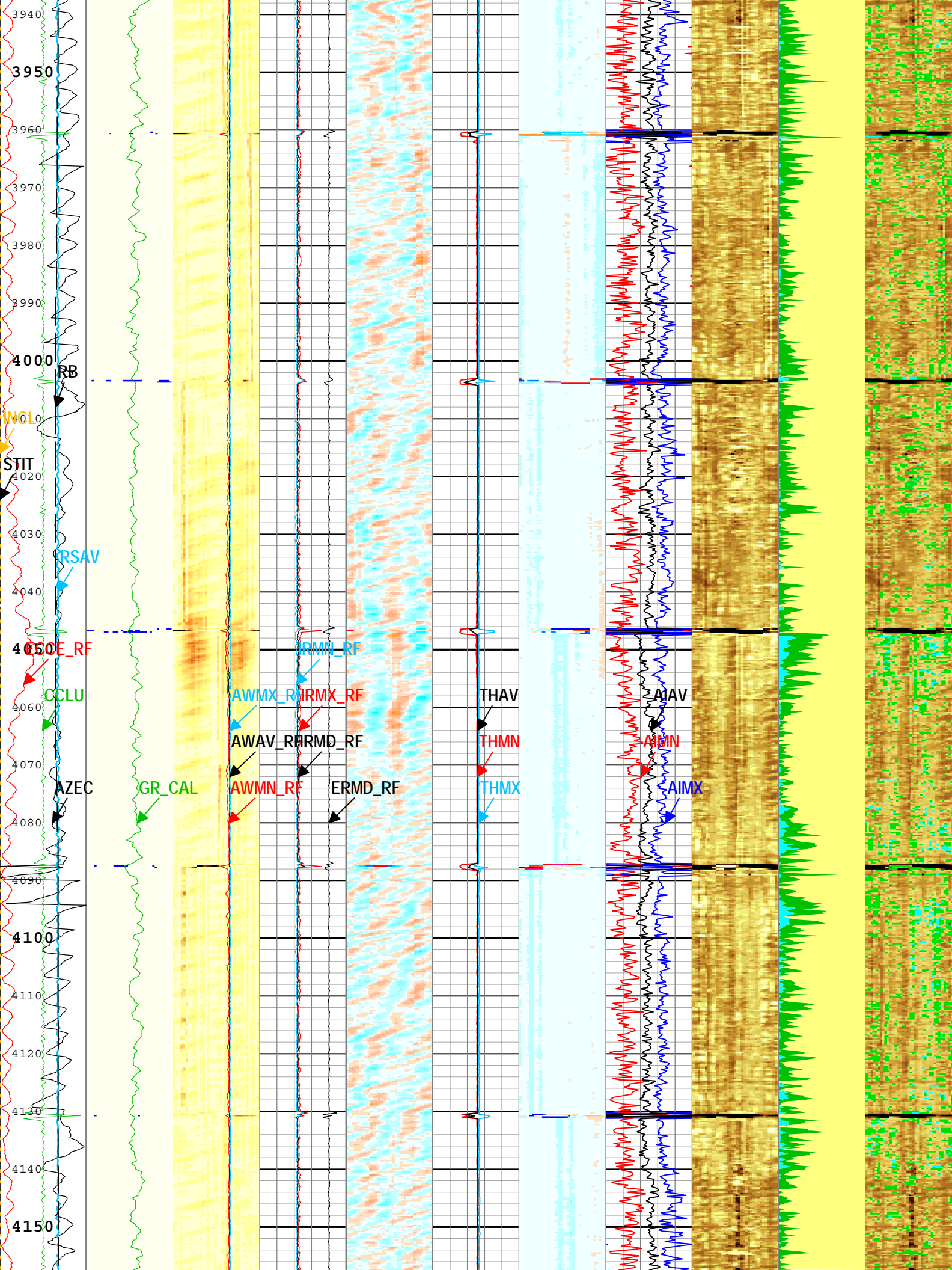


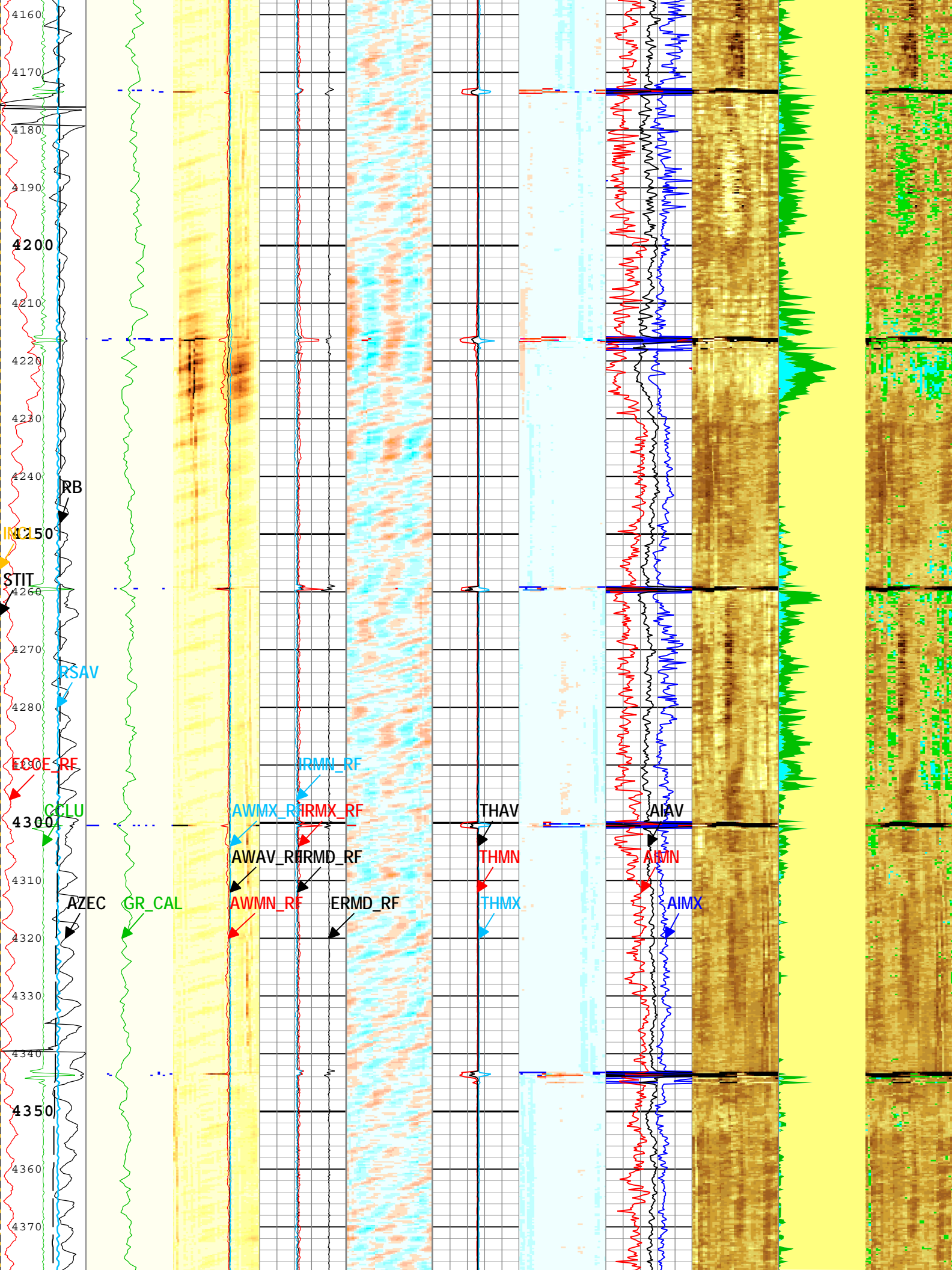


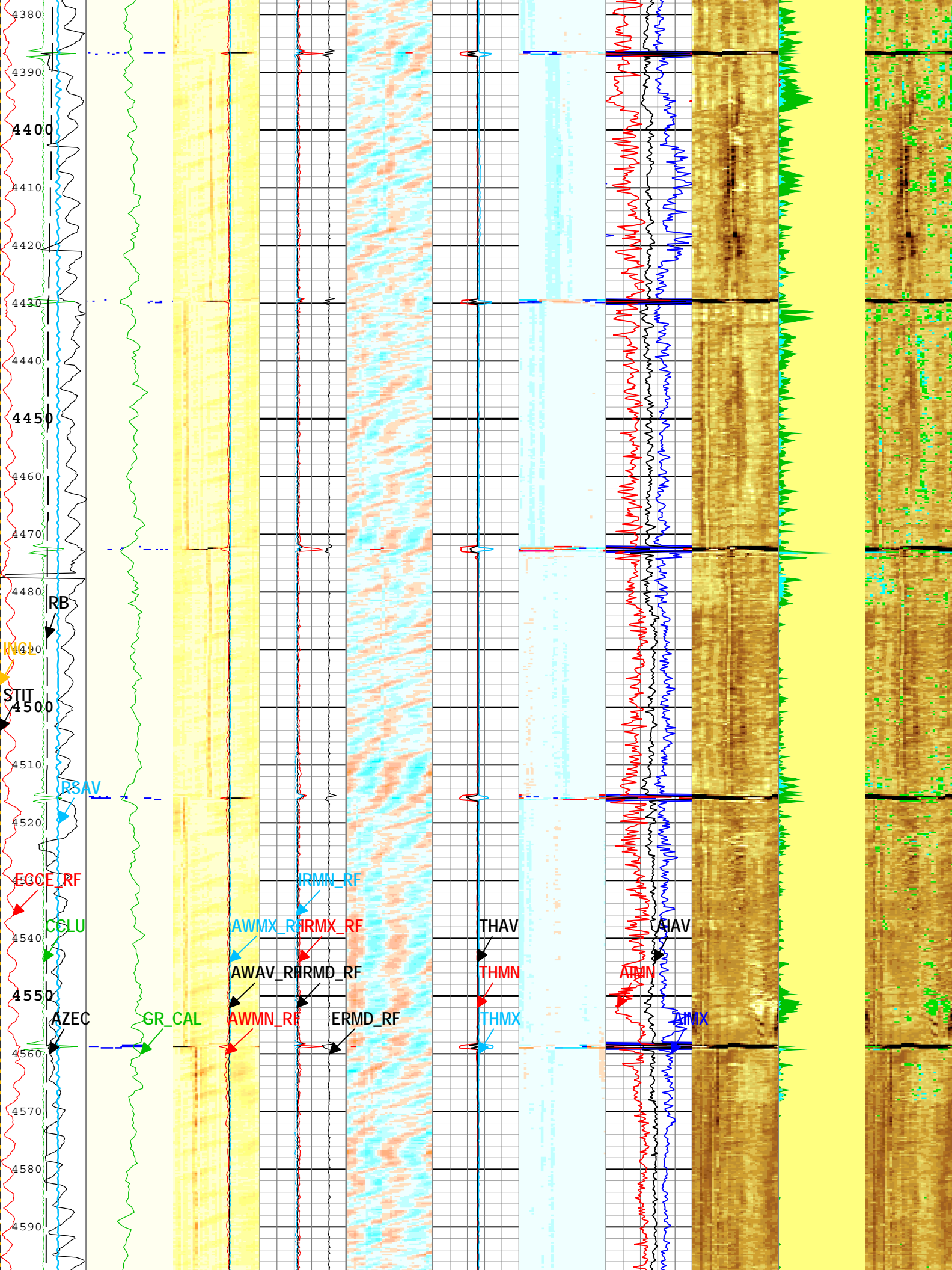


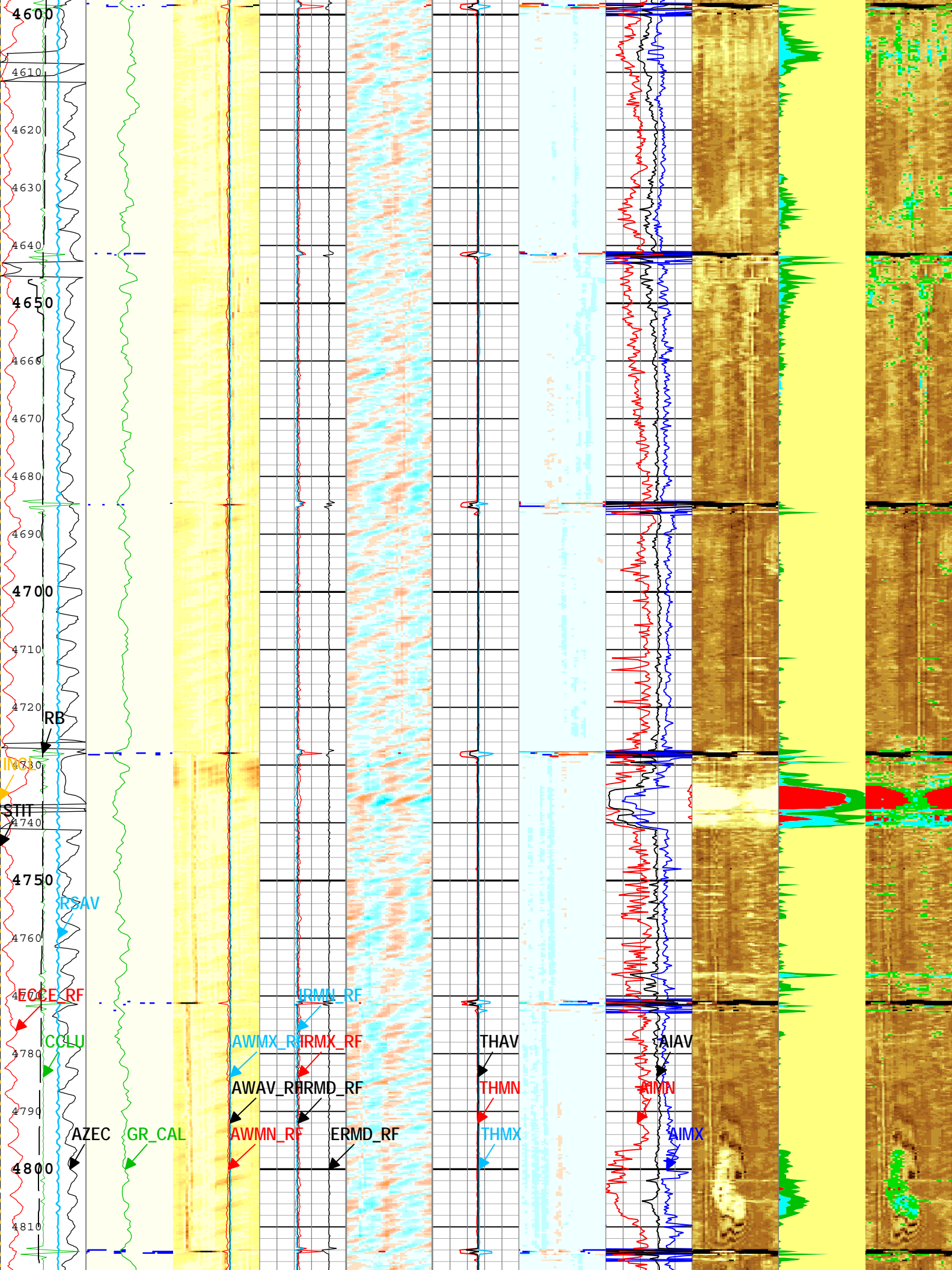


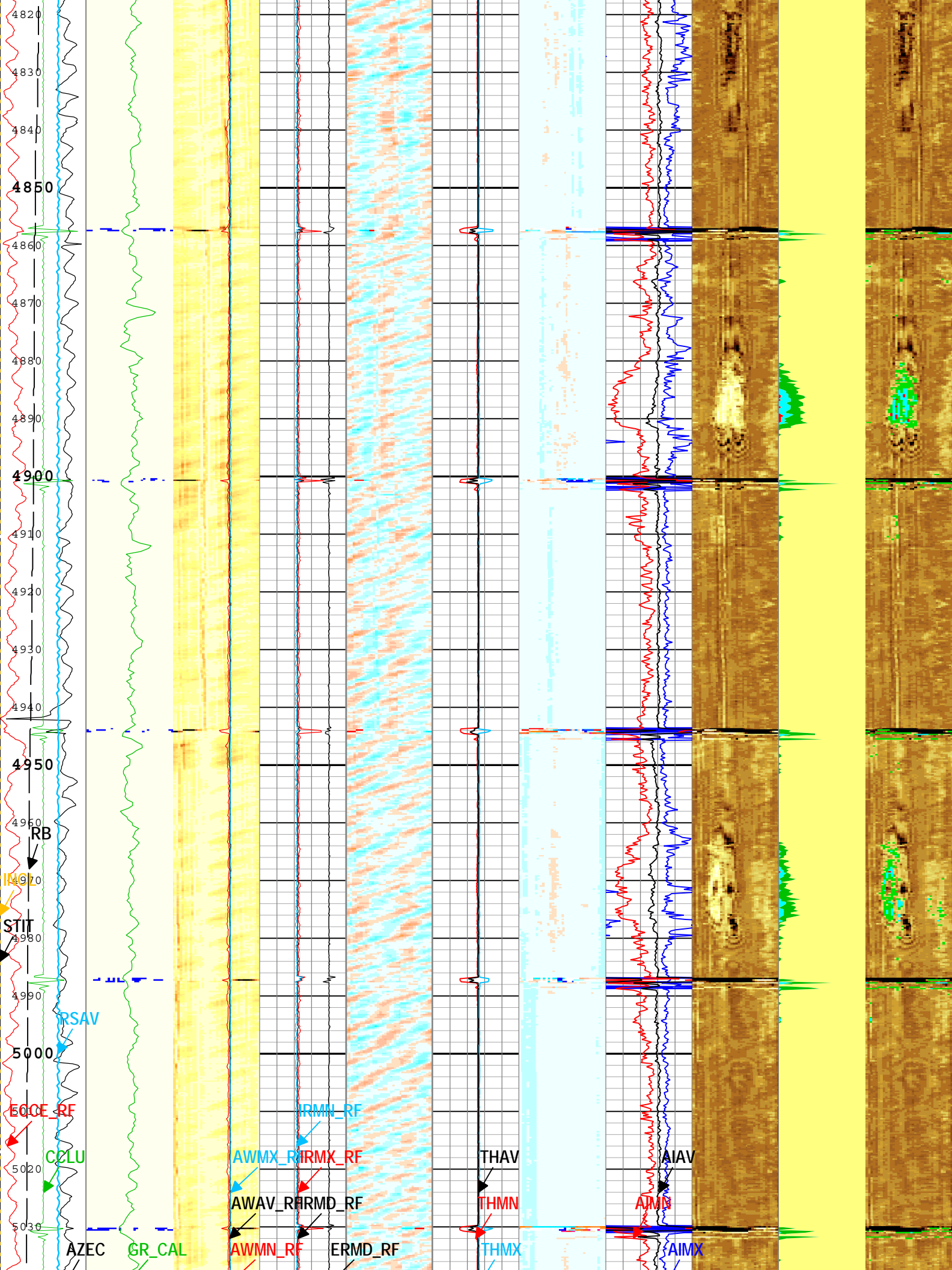


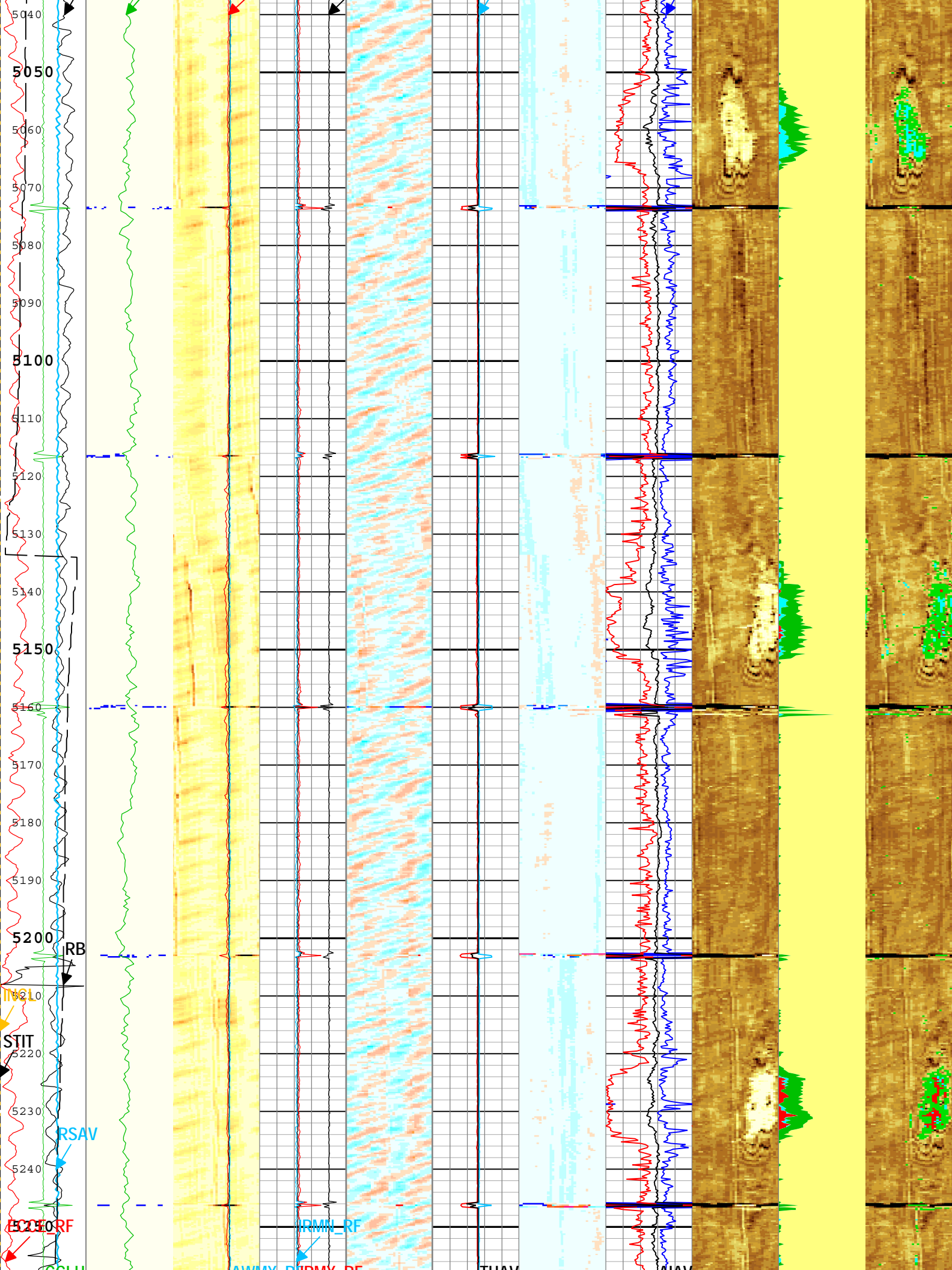


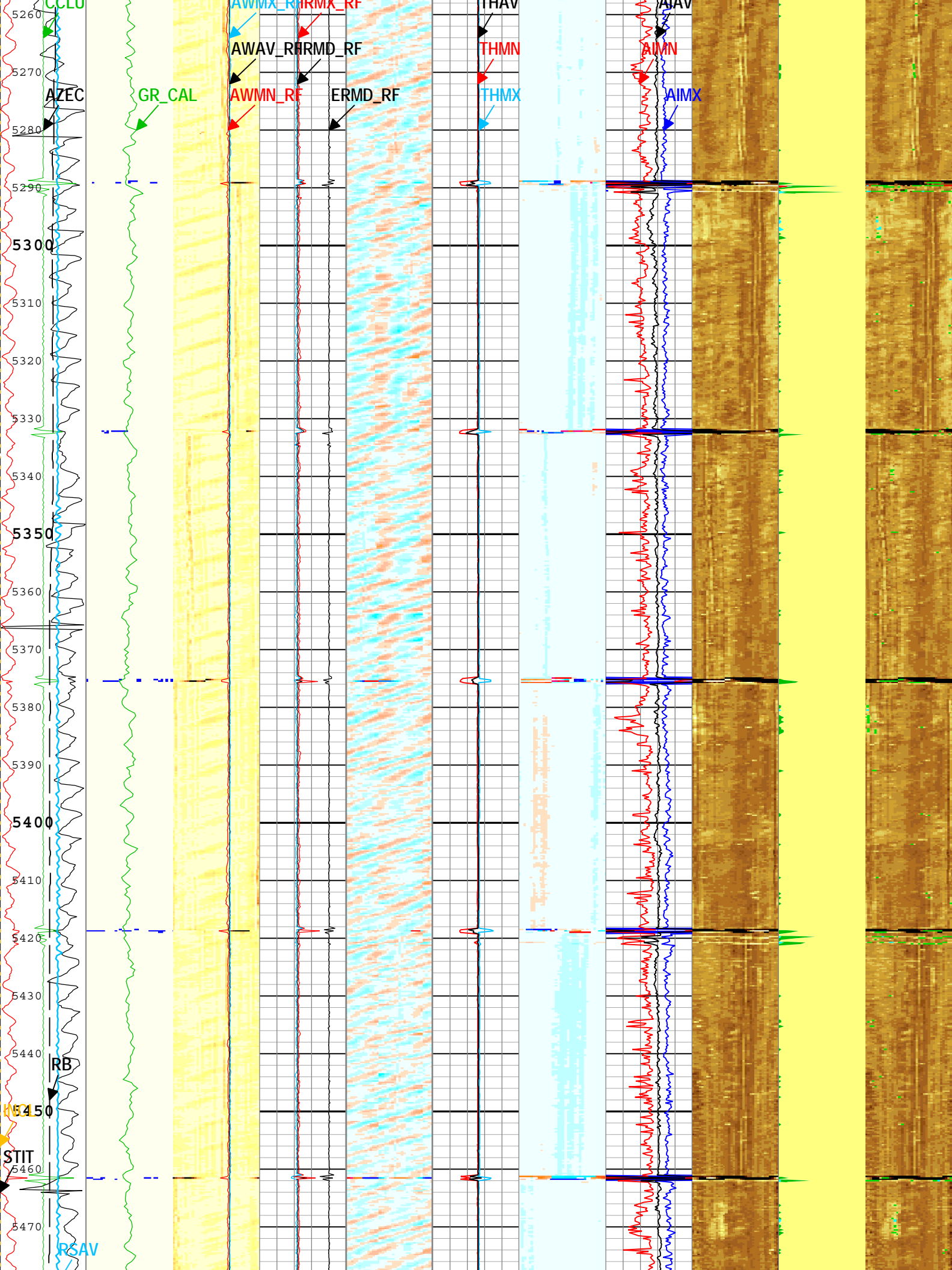


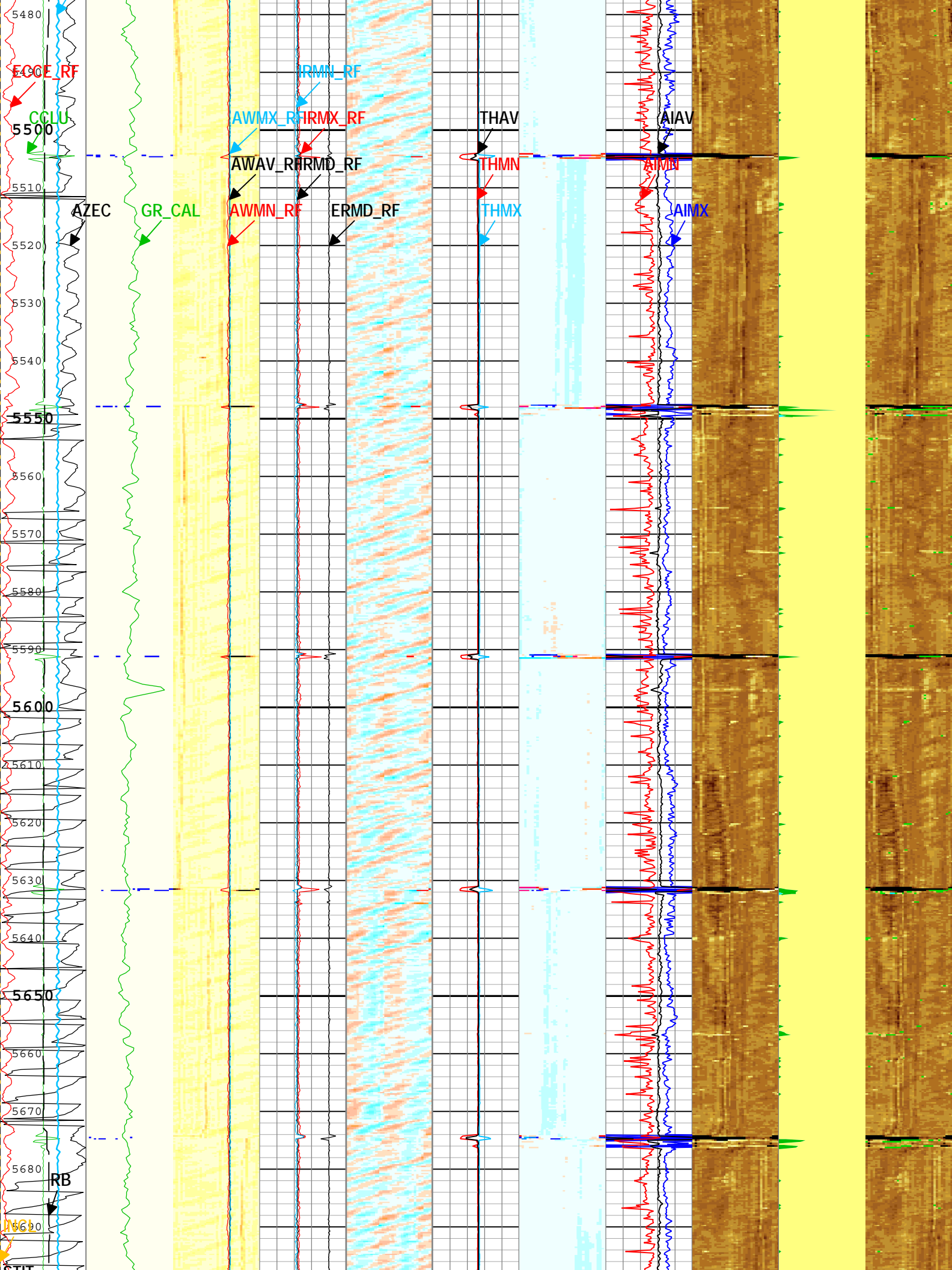


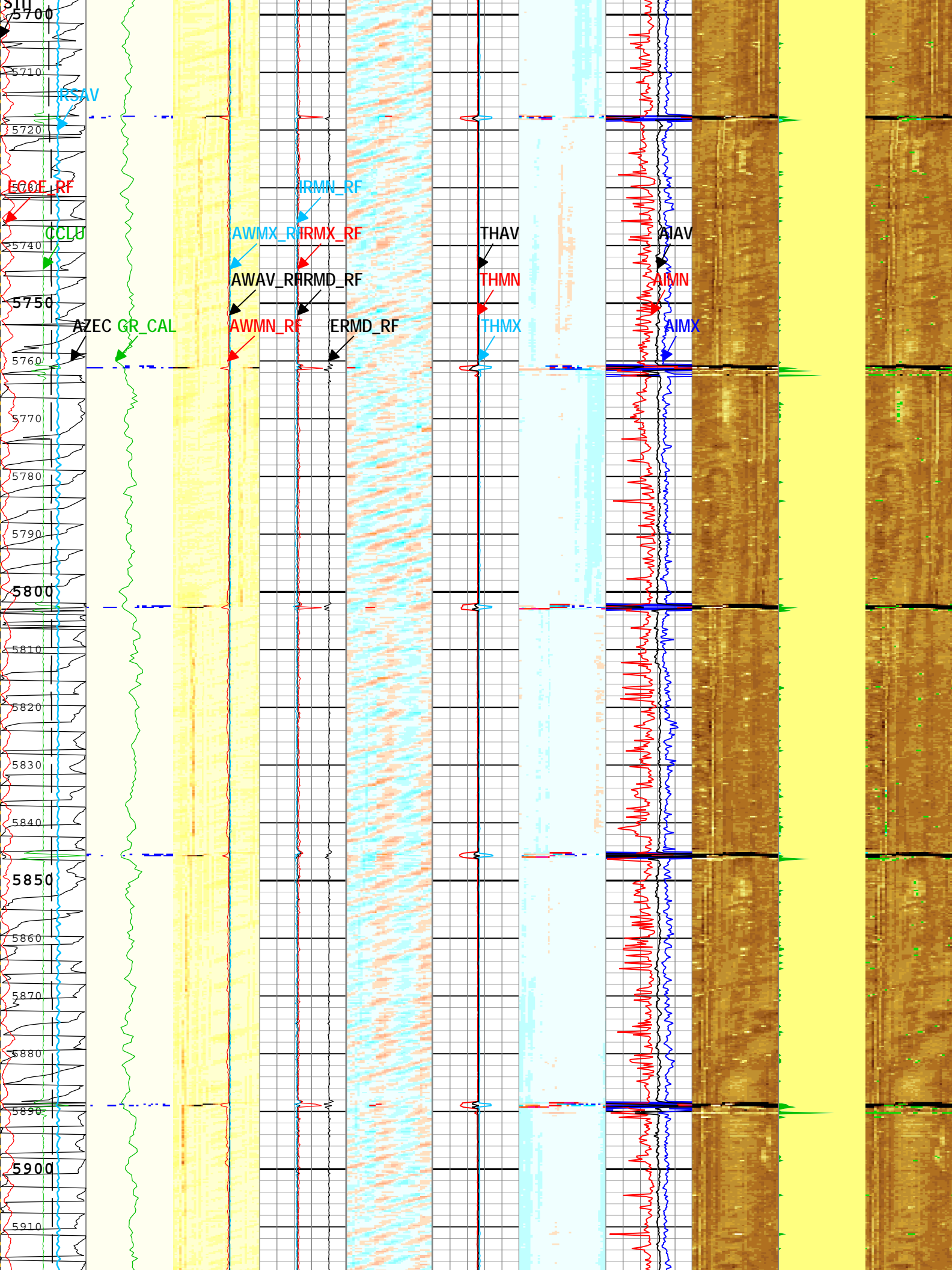


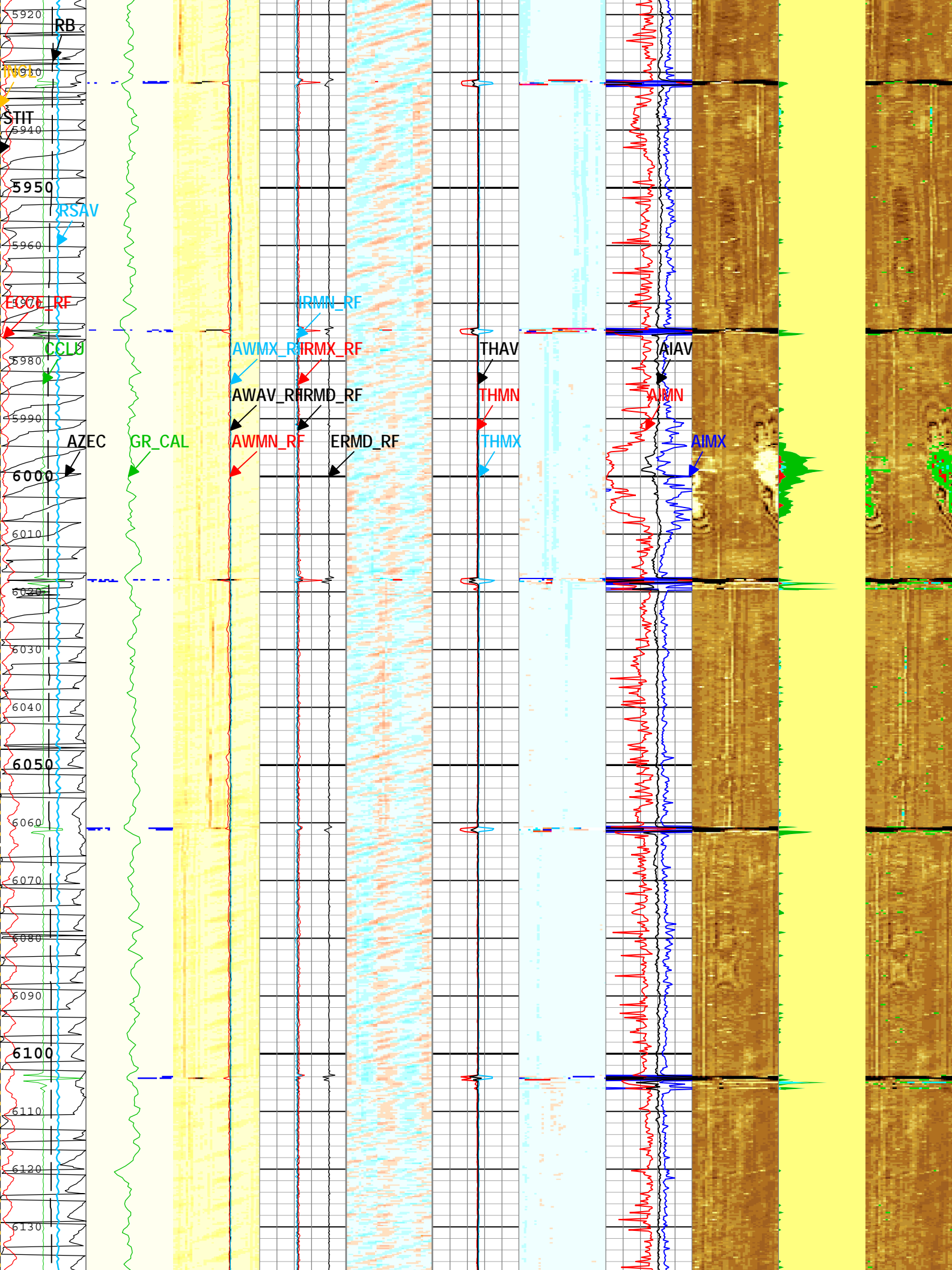


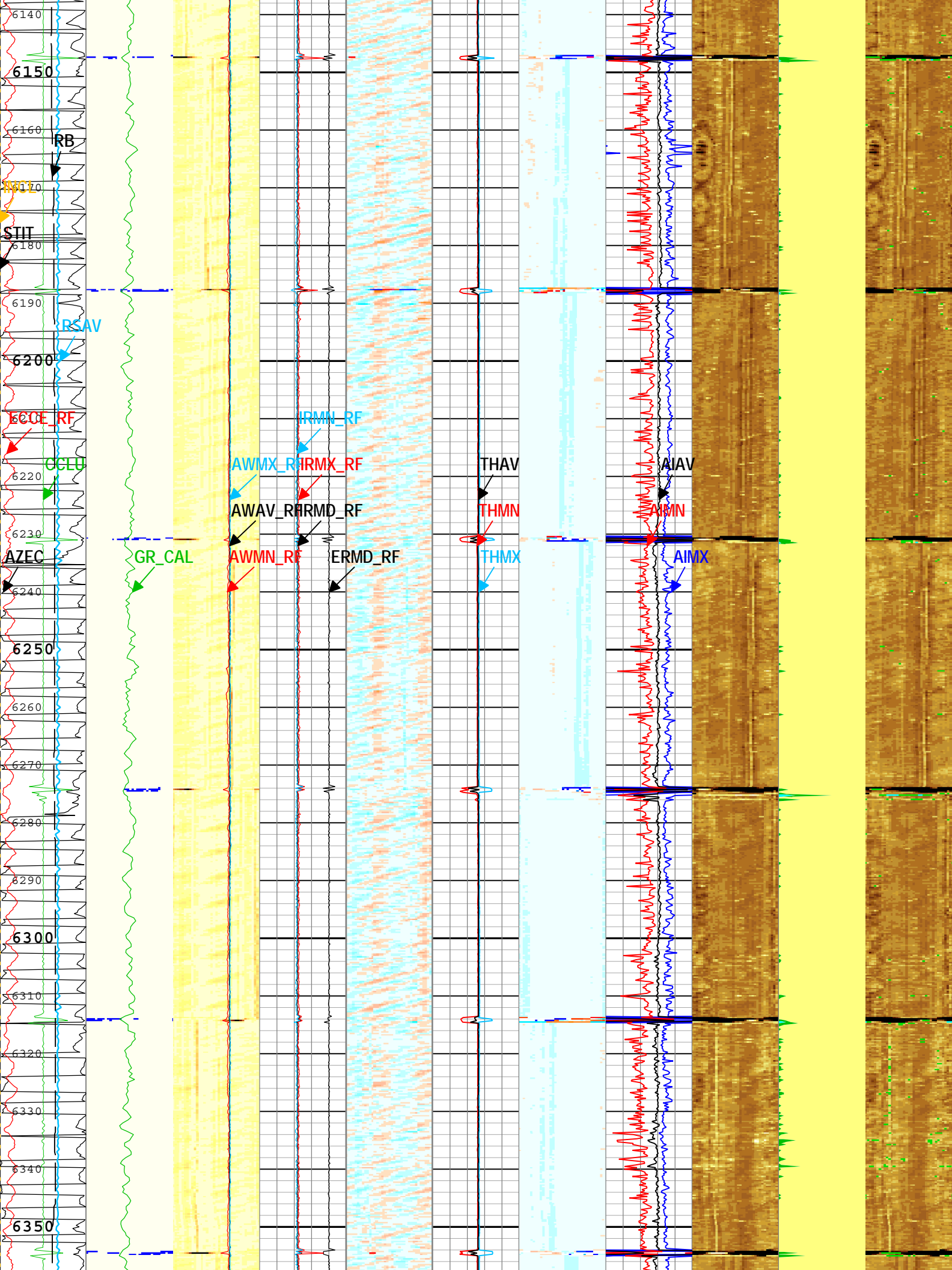


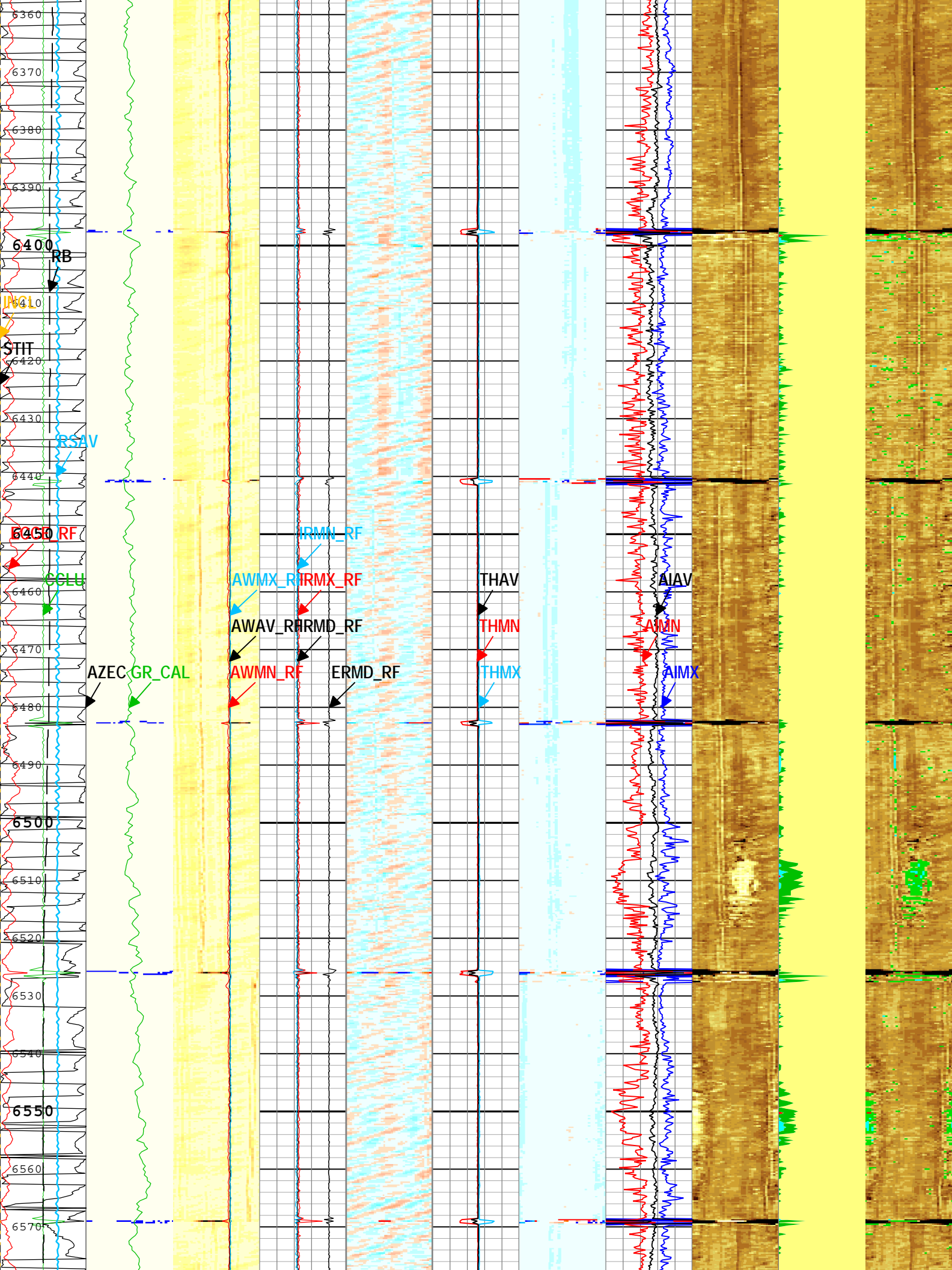


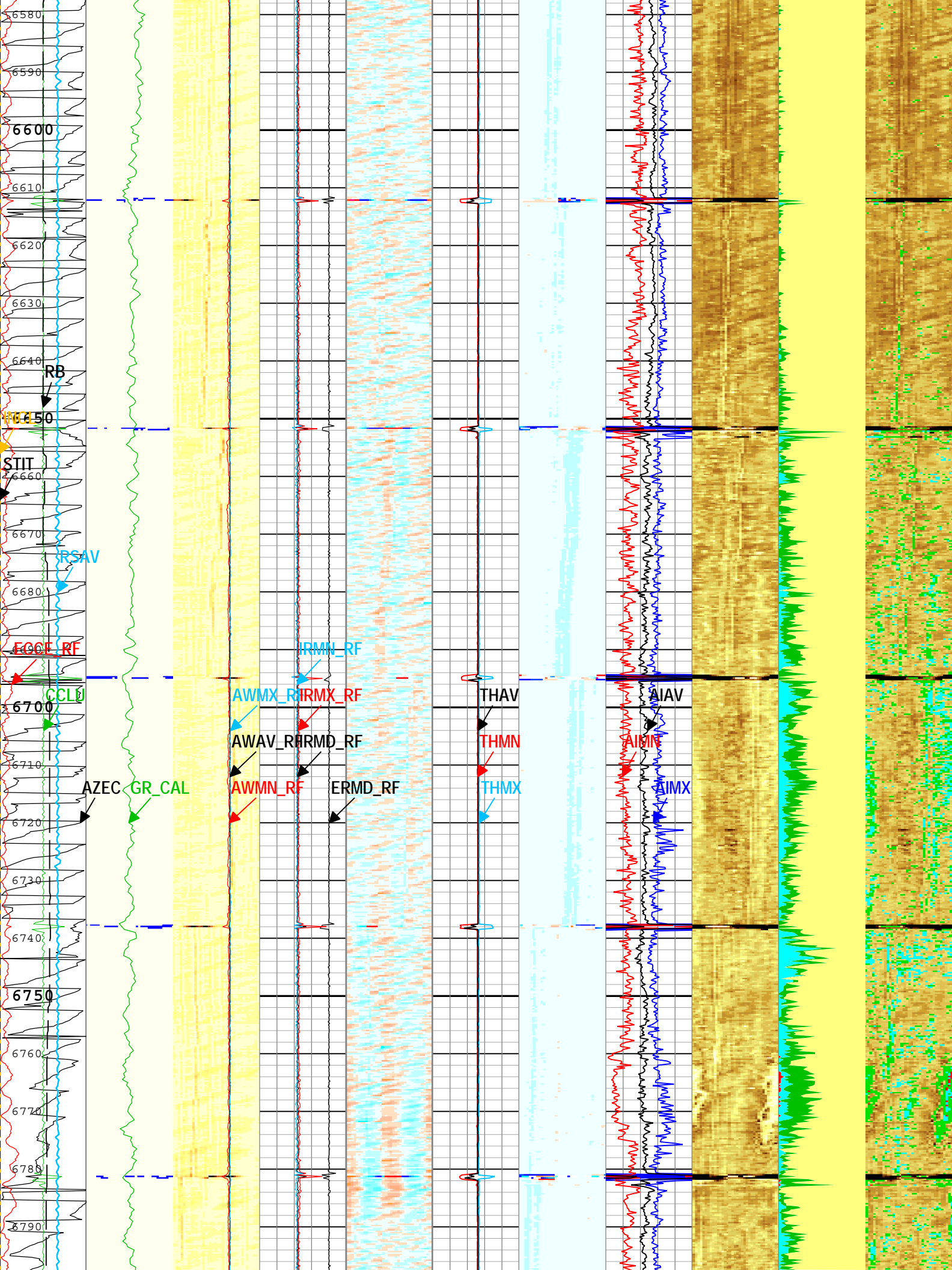


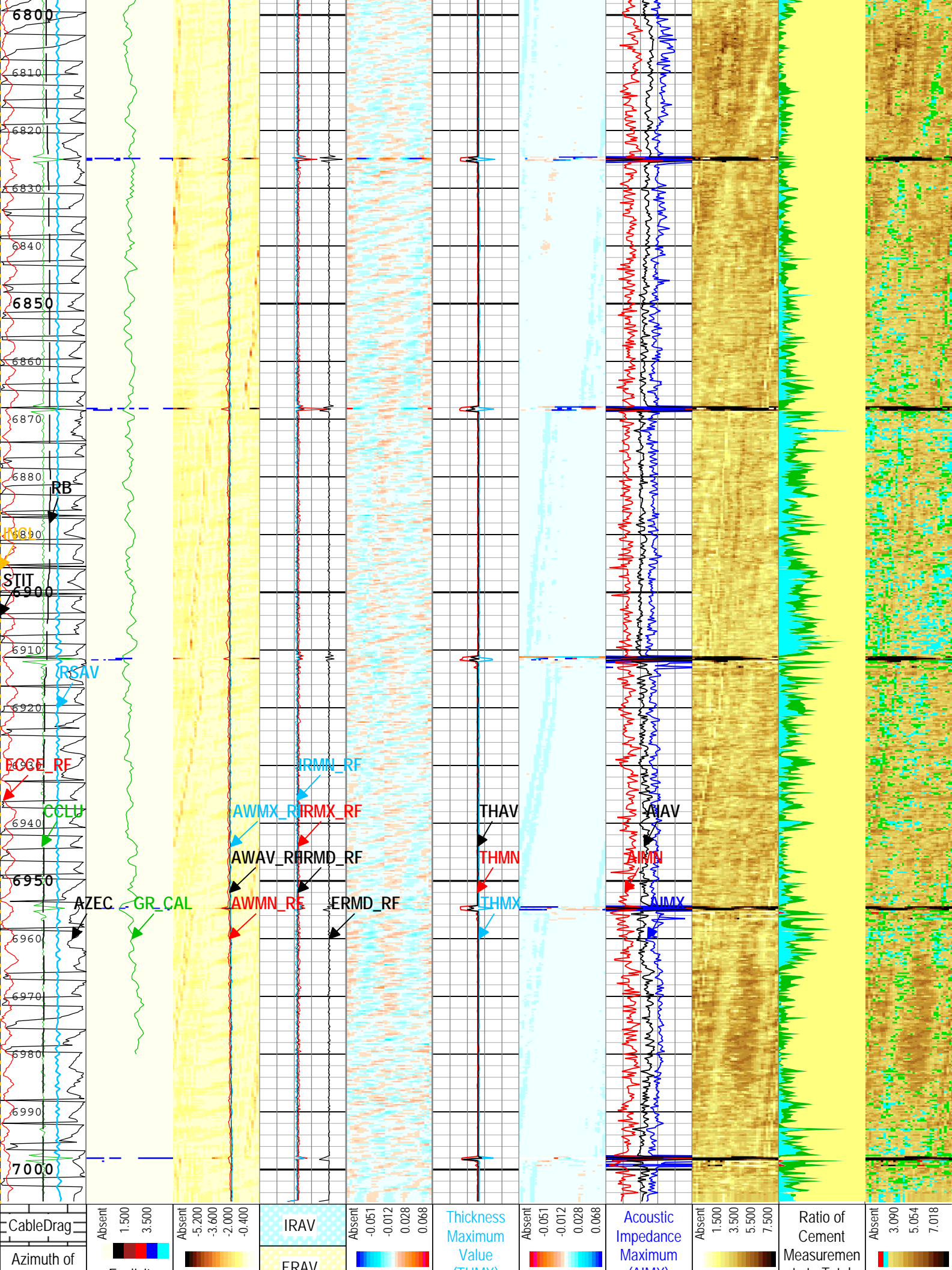












Explicit Normalization (AZEC) USIT-E	Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E	Explicit Normalization USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E	Explicit Normalization USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E	Explicit Normalization (THMX) USIT-E	Explicit Normalization USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E	Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E	Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E	Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E
0 deg 360	USIT - USIT Processing Flags (UFLG) USIT-E	USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E	USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E	0.1 in 0.6	USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E
Casing Collar Locator Ultrasonic (CCLU) USIT-E	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Thickness Minimum Value (THMN) USIT-E	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U
-20 in 20	USIT Processing Flags (UFLG[0]) USIT-E	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	0.1 in 0.6	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E	1 5	Minimum of Unflagged Wave USIT-E	Minimum of Unflagged Wave USIT-E	Thickness Average Value (THAV) USIT-E	Orientation: Top of Hole U L B R U	Acoustic Impedance Average (AIAV) USIT-E	Ratio of Gas Measurements to Total (GASR) USIT-E	Ratio of Gas Measurements to Total (GASR) USIT-E
0 in 0.5	Calibrated Gamma Ray (GR_CAL) SGT-N	Amplitude (AWMN_RF) USIT-E	Amplitude (AWMN_RF) USIT-E	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
Motor Revolution Speed (RSAV) USIT-E	0 gAPI 150	0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
-8 c/s -6		Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E	Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
Motor Revolution Speed (RSAV) USIT-E		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
6 c/s 8		Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E	Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
Stuck Tool Indicator, Total (STIT)		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
0 ft 50		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
Hole inclination (INCL) USIT-E		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
0 deg 100		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
Relative Bearing (RB) USIT-E		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0
0 deg 360		0 dB 75	0 dB 75	0.1 in 0.6	Orientation: Top of Hole U L B R U	-1 Mrayl 9	1 0	1 0

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E			
1 - UFLG 1 Value within [0.0 - 1.5] - :	UTIM Error		
2 - UFLG 2 Value within [1.5 - 2.5] - :	Pulse Origin Not Detected		
3 - UFLG 3 Value within [2.5 - 3.5] - :	WINLEN Error		
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	Casing Thickness Error		
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :	Loop Processing Error		

Description: USI Composite Format: USI Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Jun-2014 16:20:51

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
AFVU	Automatic Fluid Velocity Update	USIT-E	On	
BAPL	Barite Mud Processing Flag	Barohole	No	

IMAR	Bad Echo Rejection	USIT-E	On	
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson ratio	
CMTY	Cement Type	USIT-E	Regular Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
ETIP	Elevation of the TIP above MSL	WLSESSION	5036	ft
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	0	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OPLEV	USIT Remove Flagged Data Level	USIT-E	OPT2	
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
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
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7005	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
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	Manual	
UTHDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	Depth Zoned	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters				
Parameter	Value	Start (ft)		Stop (ft)
MEAS_WLEN	22.5	0		7006
ZMUD	1.61	0		400
ZMUD	1.63	400		800
ZMUD	1.65	800		1200

ZMUD	1.65	800	1200
ZMUD	1.67	1200	1800
ZMUD	1.68	1800	2700
ZMUD	1.69	2700	3000
ZMUD	1.7	3000	7006
All depth are actual.			

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	7001	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	38.4	us
WINE	Window End Time	USIT-E	78.4	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	75	21-Jun-2014 13:32:05	21-Jun-2014 13:38:43	7006.08	6995.3
EMXV	70	21-Jun-2014 13:38:43	21-Jun-2014 13:38:51	6995.3	6986.32
EMXV	68	21-Jun-2014 13:38:51	21-Jun-2014 13:38:54	6986.32	6981.59
EMXV	66	21-Jun-2014 13:38:54	21-Jun-2014 13:38:58	6981.59	6975.48
EMXV	64	21-Jun-2014 13:38:58	21-Jun-2014 13:39:07	6975.48	6960.96
EMXV	62	21-Jun-2014 13:39:07	21-Jun-2014 13:39:10	6960.96	6956.62
EMXV	60	21-Jun-2014 13:39:10	21-Jun-2014 13:39:42	6956.62	6903.03
EMXV	58	21-Jun-2014 13:39:42	21-Jun-2014 13:44:44	6903.03	6395.44
EMXV	56	21-Jun-2014 13:44:44	21-Jun-2014 13:47:15	6395.44	6139.52
EMXV	58	21-Jun-2014 13:47:15	21-Jun-2014 13:49:03	6139.52	5955.33
EMXV	56	21-Jun-2014 13:49:03	21-Jun-2014 13:49:12	5955.33	5939.08
EMXV	54	21-Jun-2014 13:49:12	21-Jun-2014 14:00:30	5939.08	4749.16
EMXV	52	21-Jun-2014 14:00:30	21-Jun-2014 14:03:02	4749.16	4475.68
EMXV	54	21-Jun-2014 14:03:02	21-Jun-2014 14:13:26	4475.68	3384.5
EMXV	56	21-Jun-2014 14:13:26	21-Jun-2014 14:24:34	3384.5	2247.27
EMXV	58	21-Jun-2014 14:24:34	21-Jun-2014 14:29:39	2247.27	1709.73
EMXV	56	21-Jun-2014 14:29:39	21-Jun-2014 14:29:57	1709.73	1677.34
EMXV	54	21-Jun-2014 14:29:57	21-Jun-2014 14:30:02	1677.34	1668.43
EMXV	52	21-Jun-2014 14:30:02	21-Jun-2014 14:30:22	1668.43	1632.64
EMXV	50	21-Jun-2014 14:30:22	21-Jun-2014 14:30:33	1632.64	1612.33
EMXV	48	21-Jun-2014 14:30:33	21-Jun-2014 14:30:41	1612.33	1597.52

EMXV	48	21-Jun-2014 14:30:35	21-Jun-2014 14:30:41	1512.55	1537.52
EMXV	50	21-Jun-2014 14:30:41	21-Jun-2014 14:30:46	1597.52	1589.45
EMXV	52	21-Jun-2014 14:30:46	21-Jun-2014 14:30:50	1589.45	1582.62
EMXV	54	21-Jun-2014 14:30:50	21-Jun-2014 14:30:57	1582.62	1568.41
EMXV	56	21-Jun-2014 14:30:57	21-Jun-2014 14:31:02	1568.41	1560.86
EMXV	58	21-Jun-2014 14:31:02	21-Jun-2014 14:31:05	1560.86	1554.97
EMXV	60	21-Jun-2014 14:31:05	21-Jun-2014 14:31:09	1554.97	1547.73
EMXV	62	21-Jun-2014 14:31:09	21-Jun-2014 14:31:14	1547.73	1538
EMXV	64	21-Jun-2014 14:31:14	21-Jun-2014 14:31:21	1538	1526.08
EMXV	66	21-Jun-2014 14:31:21	21-Jun-2014 14:31:29	1526.08	1512.22
EMXV	68	21-Jun-2014 14:31:29	21-Jun-2014 14:32:36	1512.22	1390.82
EMXV	70	21-Jun-2014 14:32:36	21-Jun-2014 14:47:52	1390.82	11.93

All depth are at tool zero.

USI Goodwin

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[3]:Up	7006.08	11.93

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Mud Impedance = "Manual".
CZMD uses ZMUD parameter zoned table below

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	400	1.61	1.61
400	800	1.63	1.63
800	1200	1.65	1.65
1200	1800	1.67	1.67
1800	2700	1.68	1.68
2700	3000	1.69	1.69
3000		1.7	1.7

Run 1

USI Goodwin Compressed - 3000 PSI

Log	Company:Anadarko Petroleum Company	Well:Spurling 13C-34HZ
		Run 1: Main[3]:Up:S004

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Jun-2014 16:21:02

TIME_1900 - Time Marked every 60.00 (s)

<div>Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E</div> <div>0 Mrayl 15</div>	<div>Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E</div> <div>0 Mrayl 15</div>	<div>Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E</div> <div>0 Mrayl 15</div>	<div>Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E</div> <div>0 Mrayl 15</div>
<div>Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E</div> <div>0 Mrayl 15</div>	<div>Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E</div> <div>0 Mrayl 15</div>	<div>Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E</div> <div>0 Mrayl 15</div>	<div>Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E</div> <div>0 Mrayl 15</div>
Average Acoustic	Average Acoustic	Average Acoustic	Average Acoustic

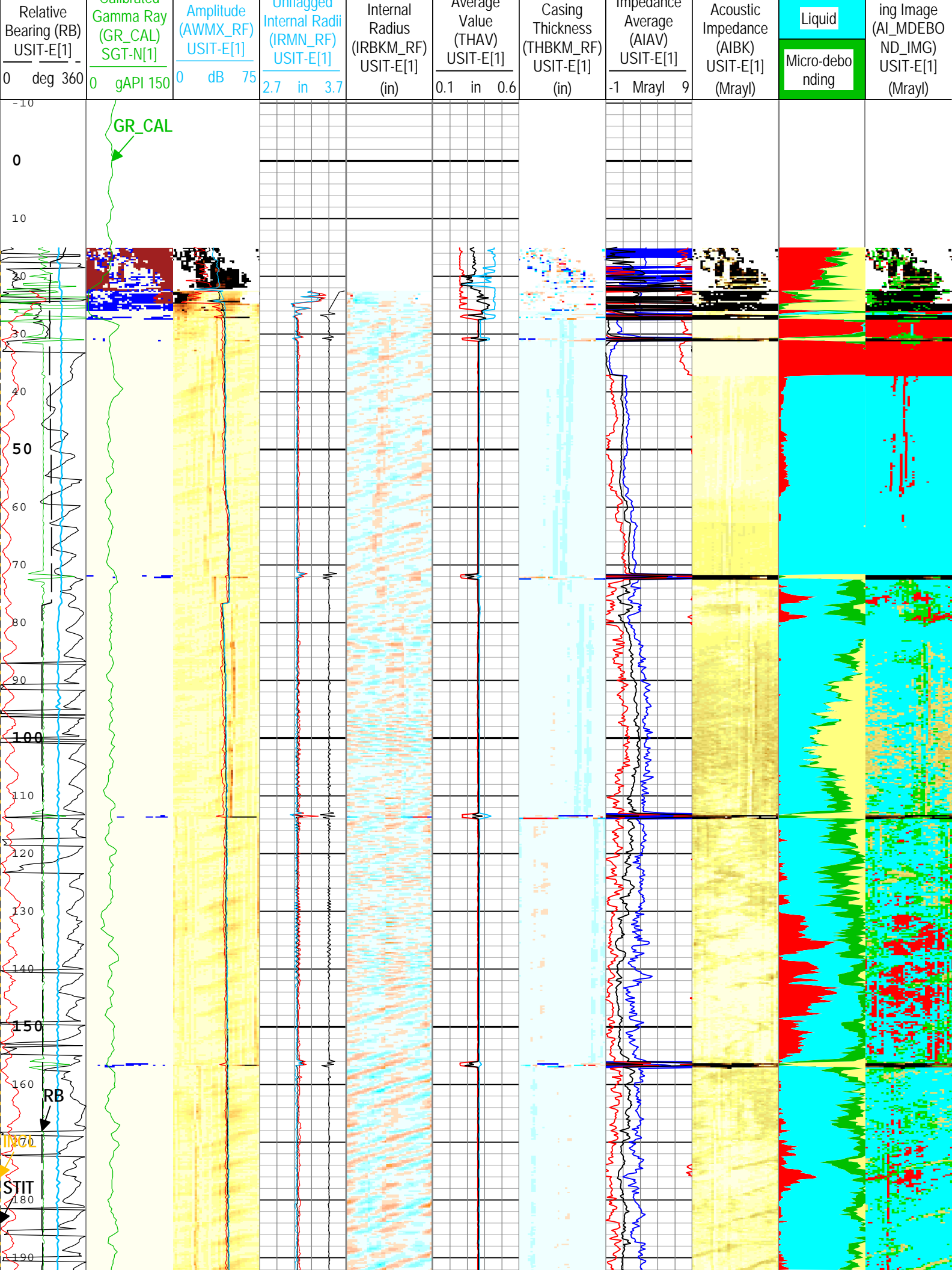
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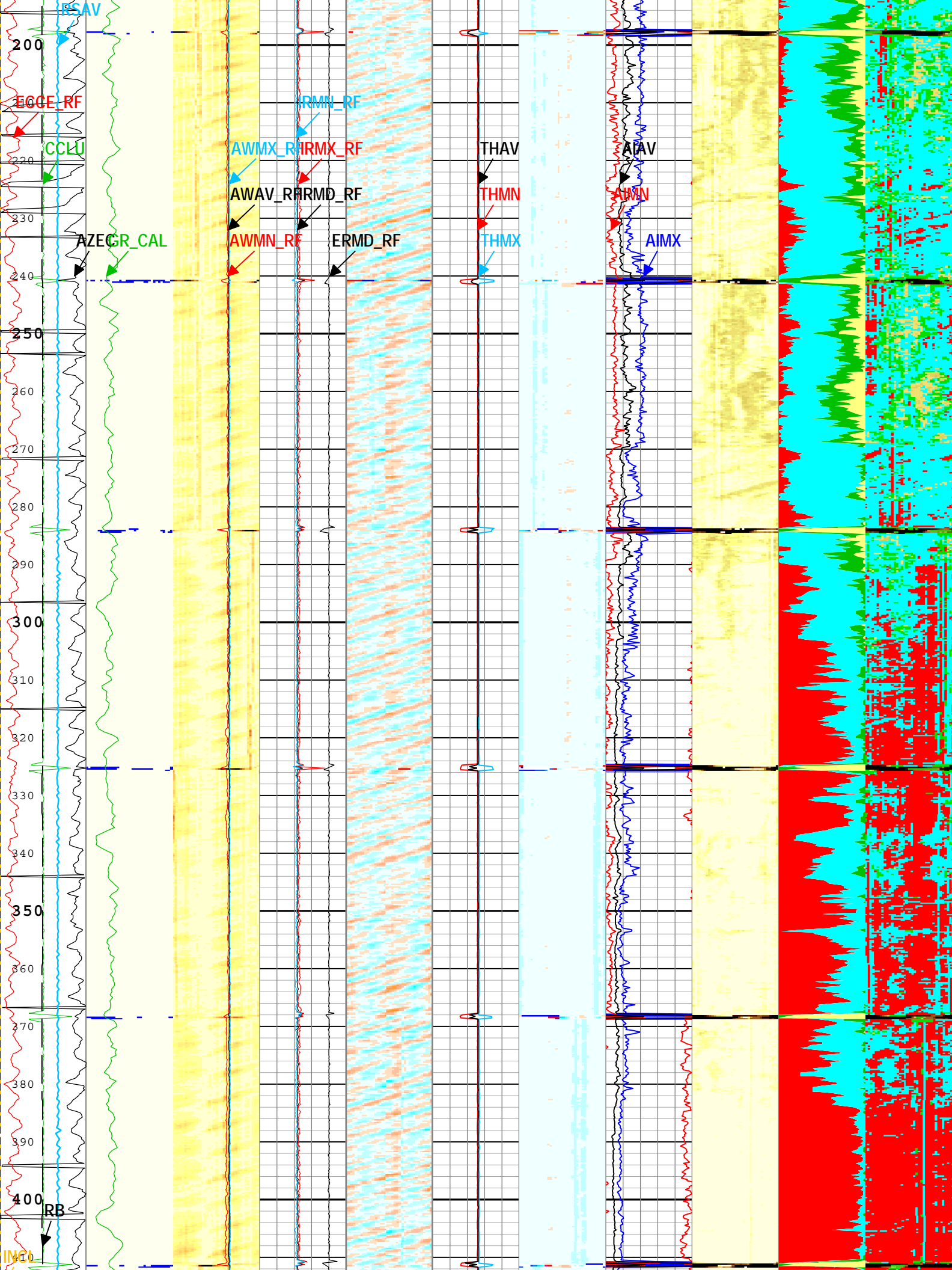
Amplitude of Eccentering (ECCE) USIT-E	Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E	Acoustic Impedance Minimum (AIMN) USIT-E	Absent 1.500 3.500 5.500 7.500	Absent 2.599 4.563 6.527	GR<75	Micro-Debonded
0 in 0.5	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	Custom Normalization	Custom Normalization	Gamma Ray (GR) SGT-N	Gas
	Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E	Acoustic Impedance Maximum (AIMX) USIT-E	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)	USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)		Liquid
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	Orientation: Top of Hole U L B R U	Orientation: Top of Hole U L B R U		Bonded
	Average Acoustic Impedance 1 (AV_AI1) USIT-E	Average Acoustic Impedance 3 (AV_AI3) USIT-E	Average Acoustic Impedance 5 (AV_AI5) USIT-E	Average Acoustic Impedance 7 (AV_AI7) USIT-E	Average Acoustic Impedance 9 (AV_AI9) USIT-E	Acoustic Impedance Average (AIAV) USIT-E				
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5				
	Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E						
	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5						
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E						
	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5						
	Average Acoustic Impedance 2 (AV_AI2) USIT-E	Average Acoustic Impedance 4 (AV_AI4) USIT-E	Average Acoustic Impedance 6 (AV_AI6) USIT-E	Average Acoustic Impedance 8 (AV_AI8) USIT-E						
	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5						

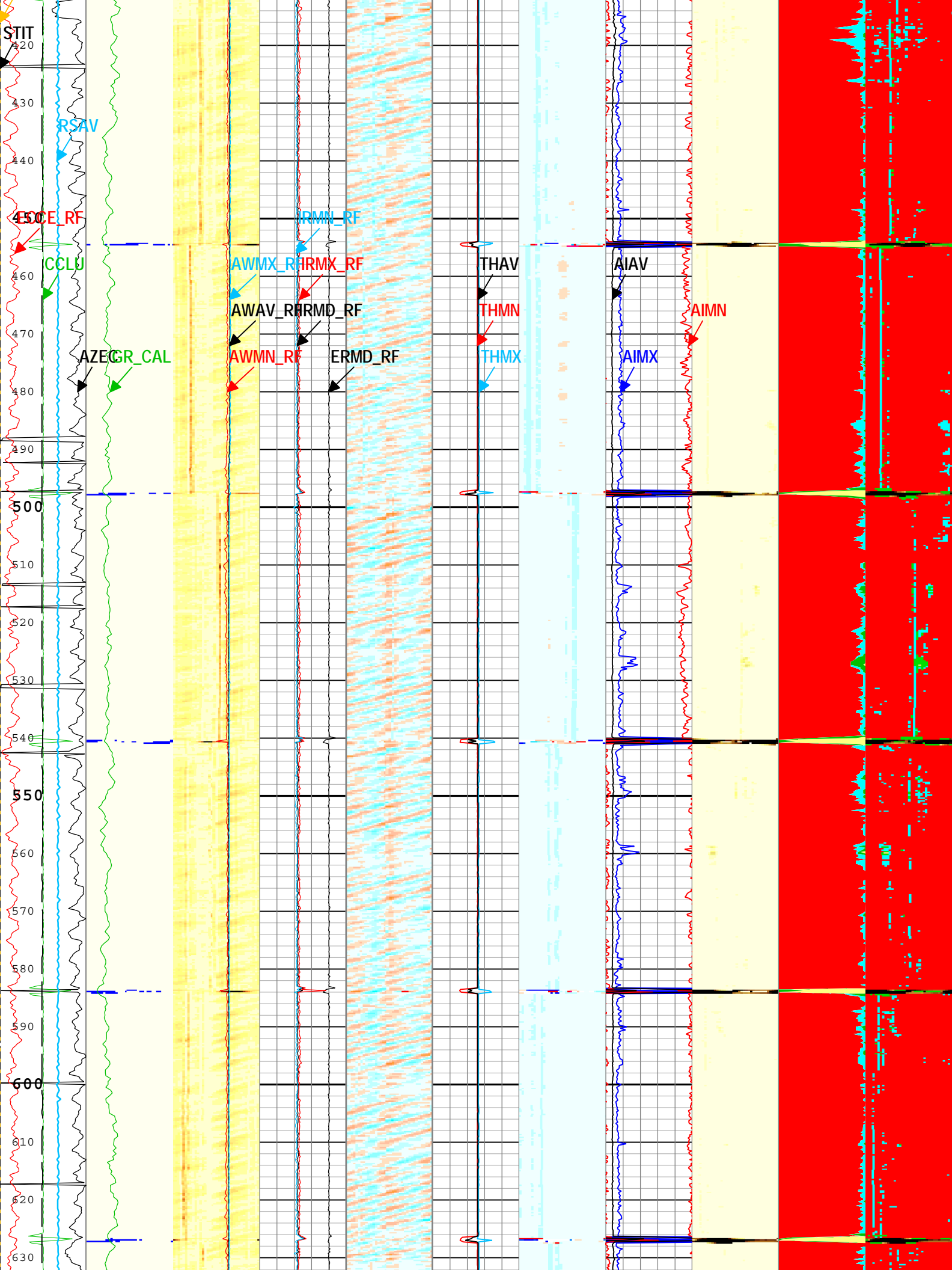
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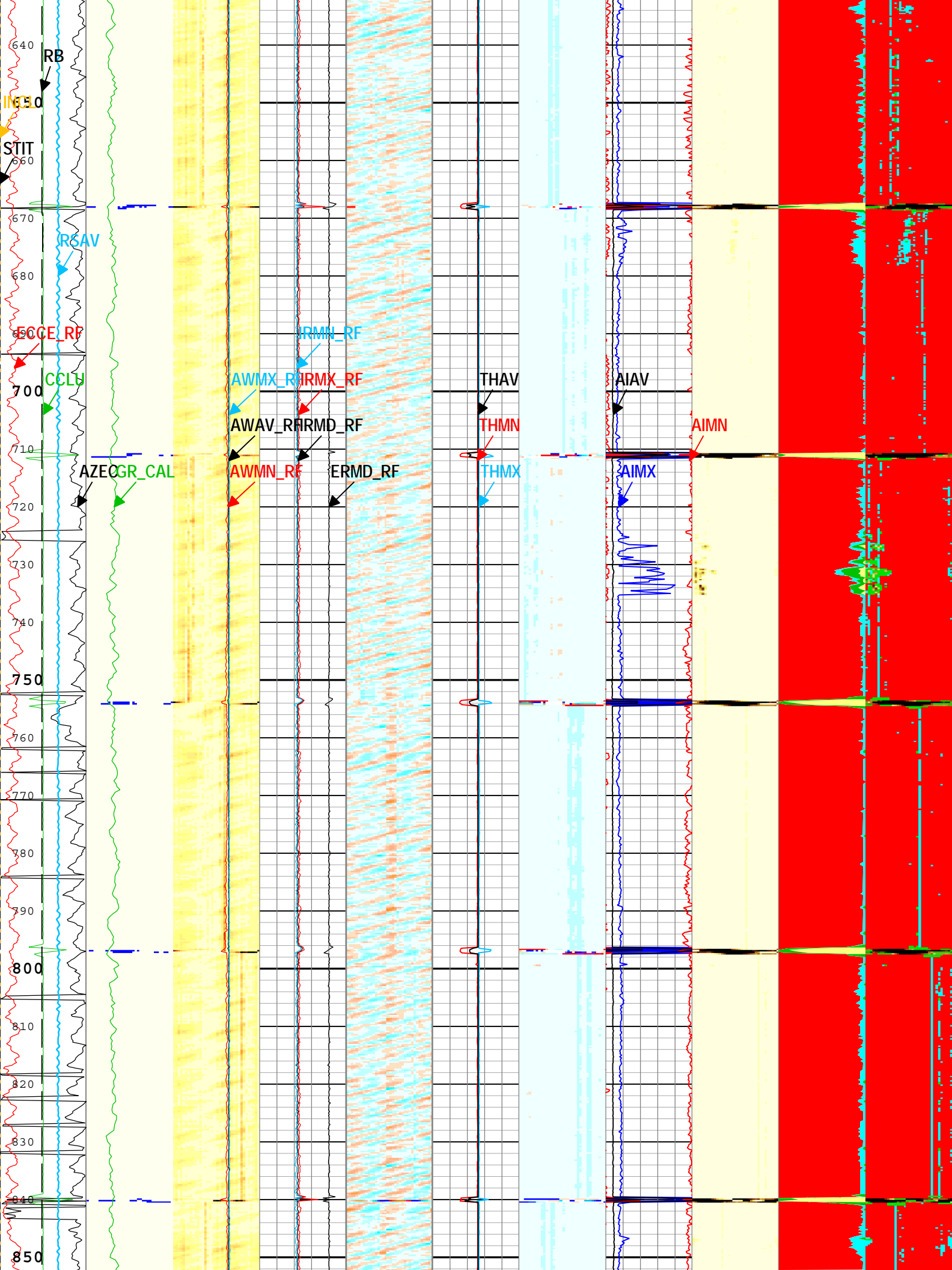
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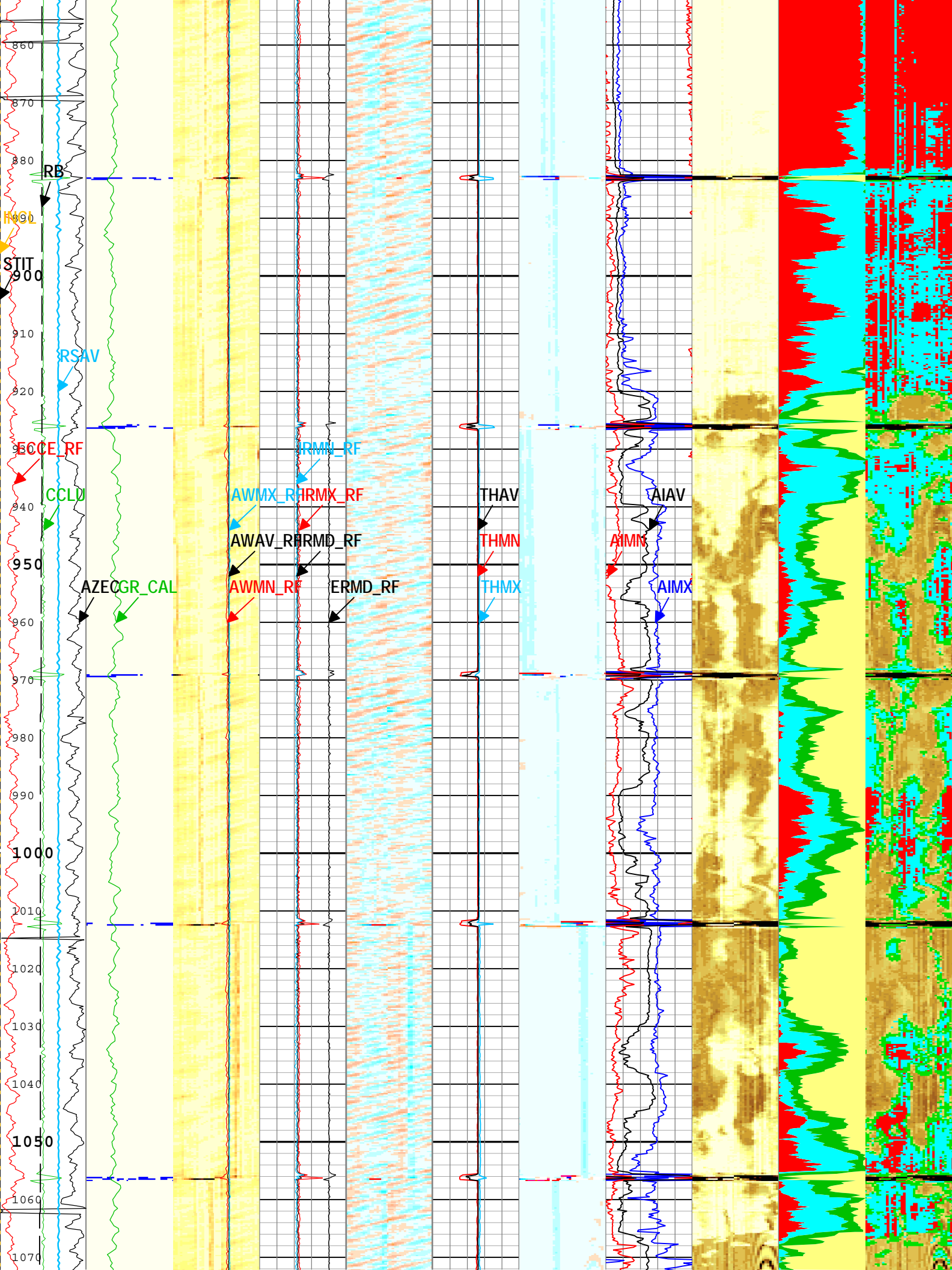
Copy of USI Composite			
USIT - Fluid Properties Measurement			
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[2]:Up	7006.14	40.74
Fluid Velocity = "Automatic". CFVL equals DFSL channel			
Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
Mud Impedance = "Manual". CZMD uses ZMUD parameter zoned table below			
Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	400	1.61	1.61
400	800	1.63	1.63
800	1200	1.65	1.65
1200	1800	1.67	1.67
1800	2700	1.68	1.68
2700	3000	1.69	1.69
3000		1.7	1.7

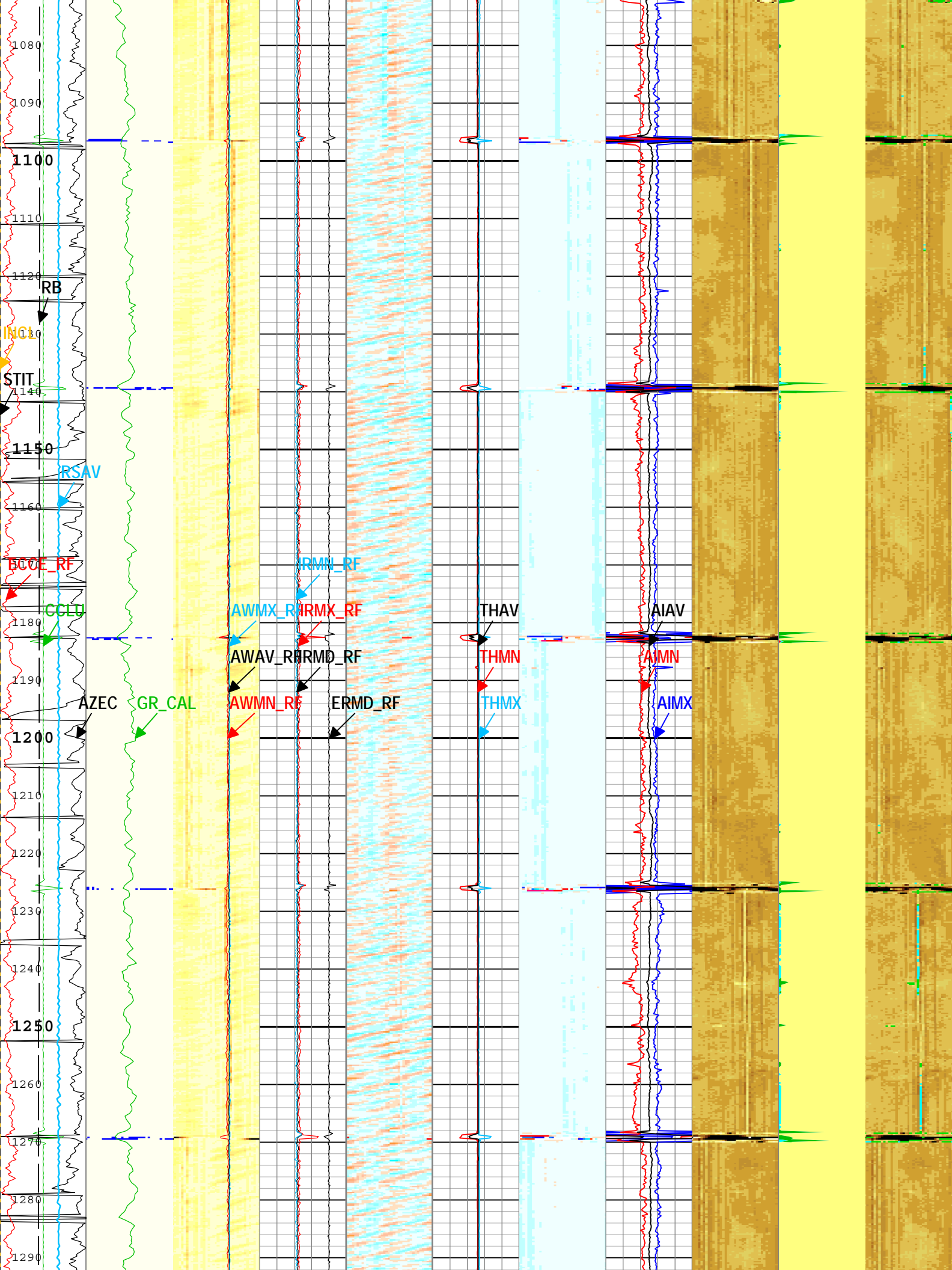


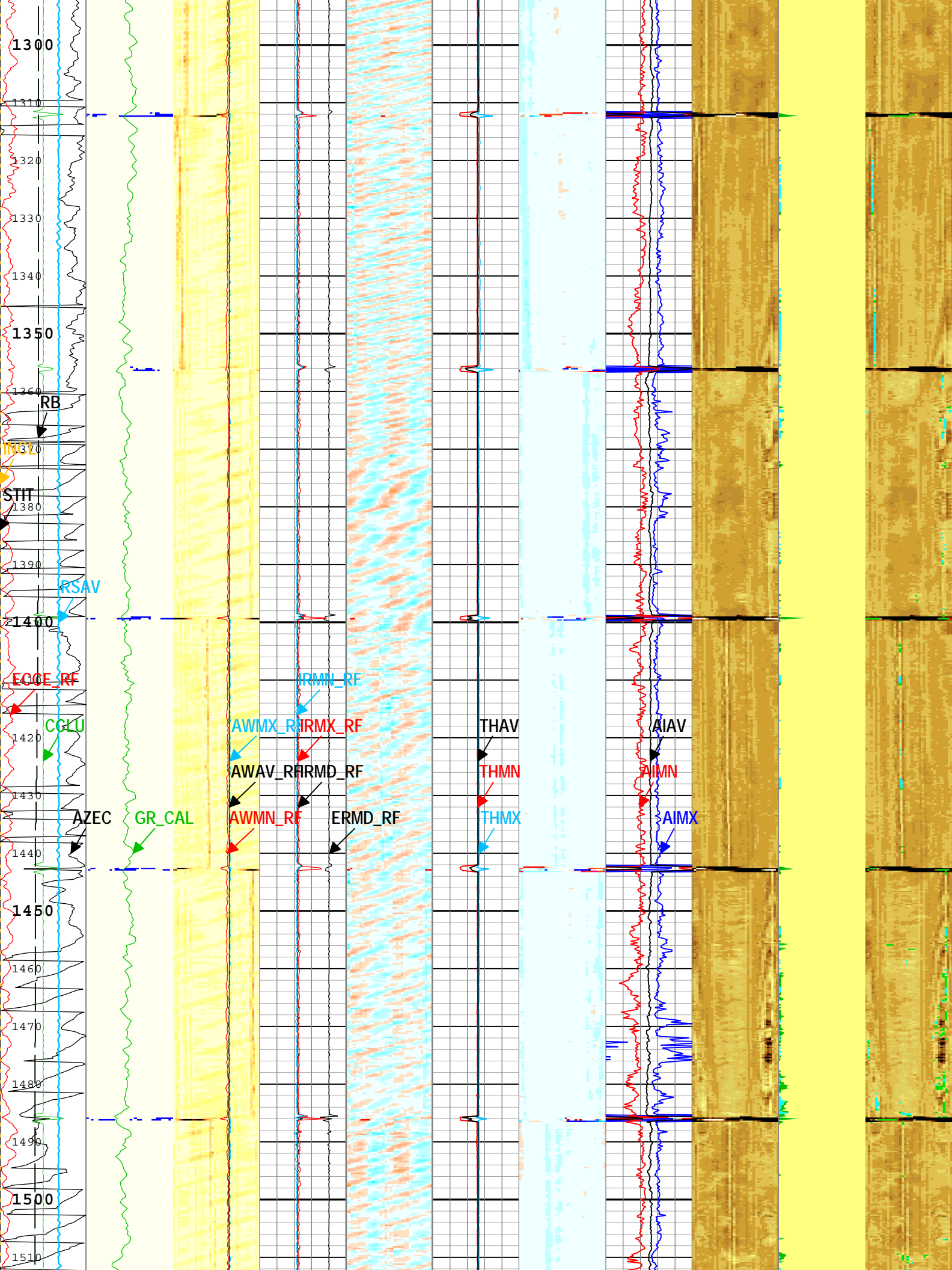


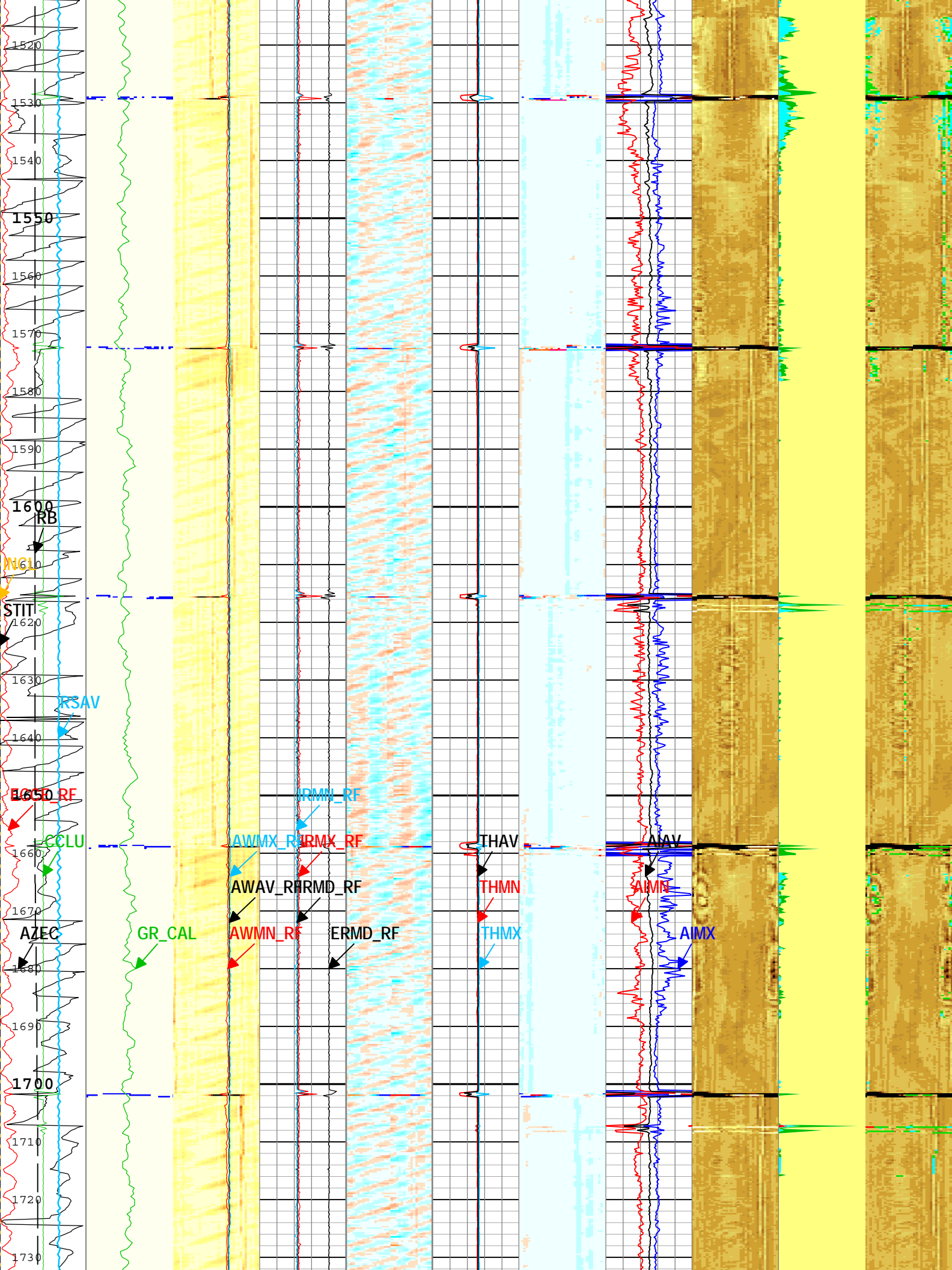


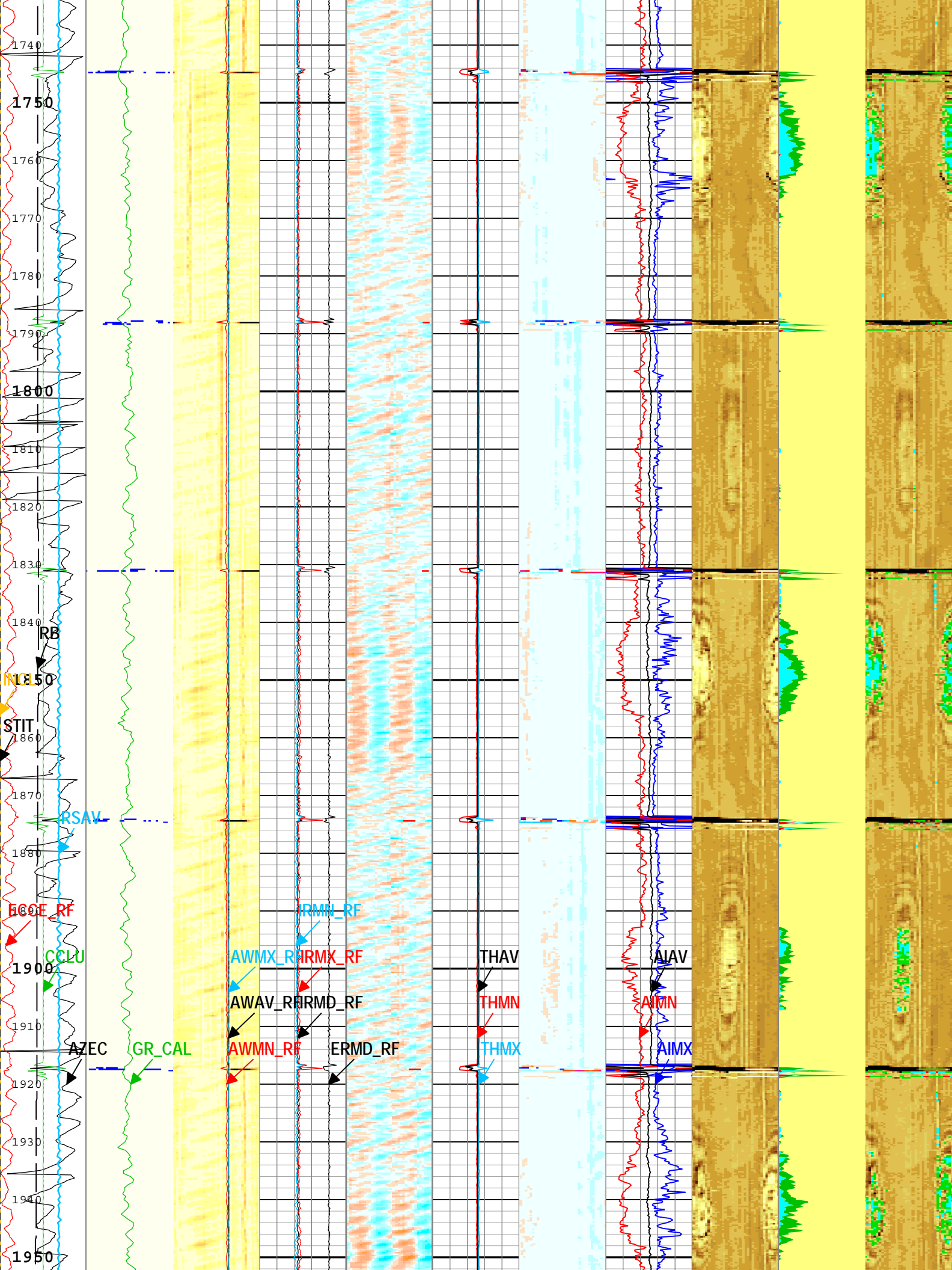


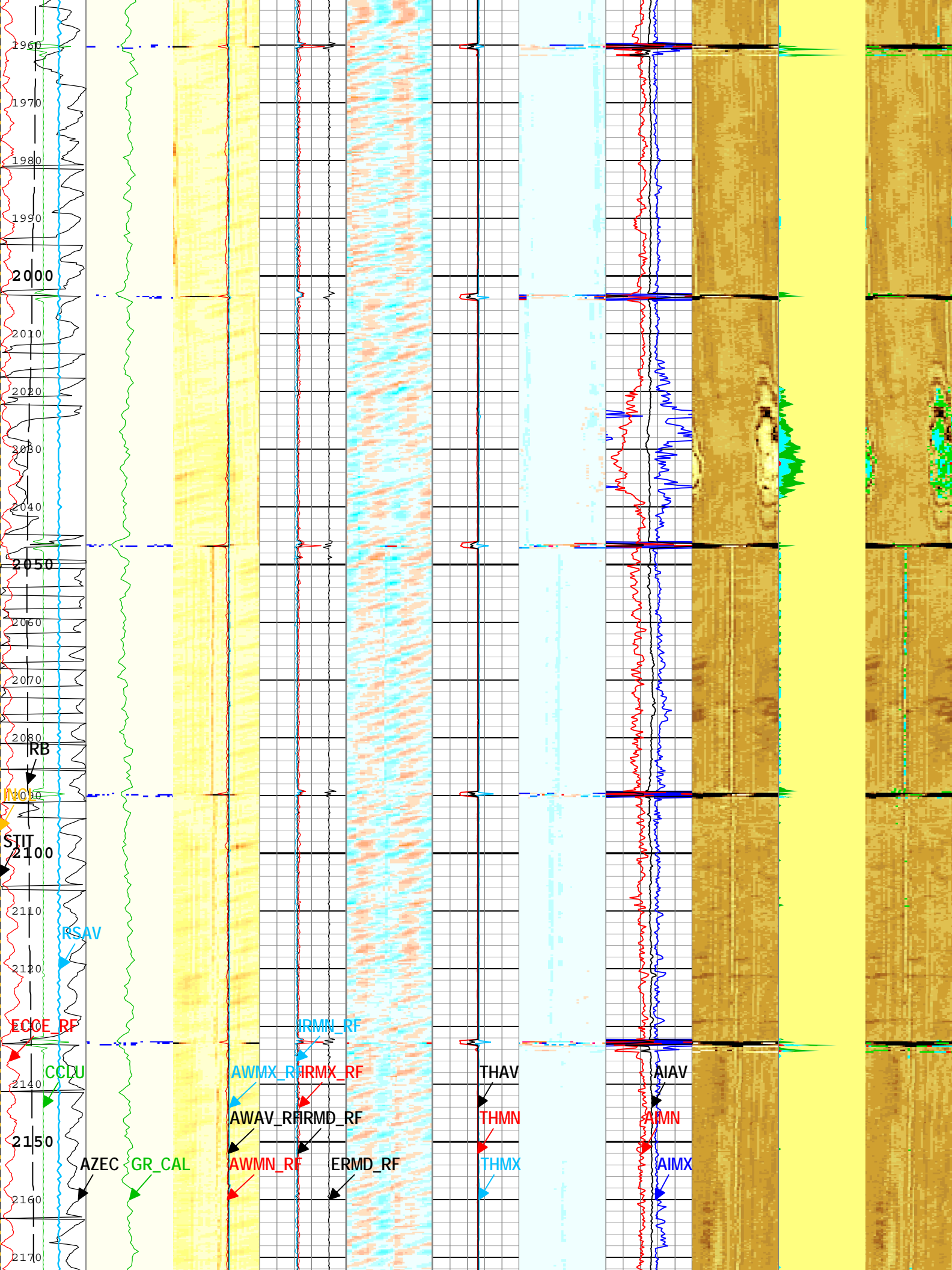


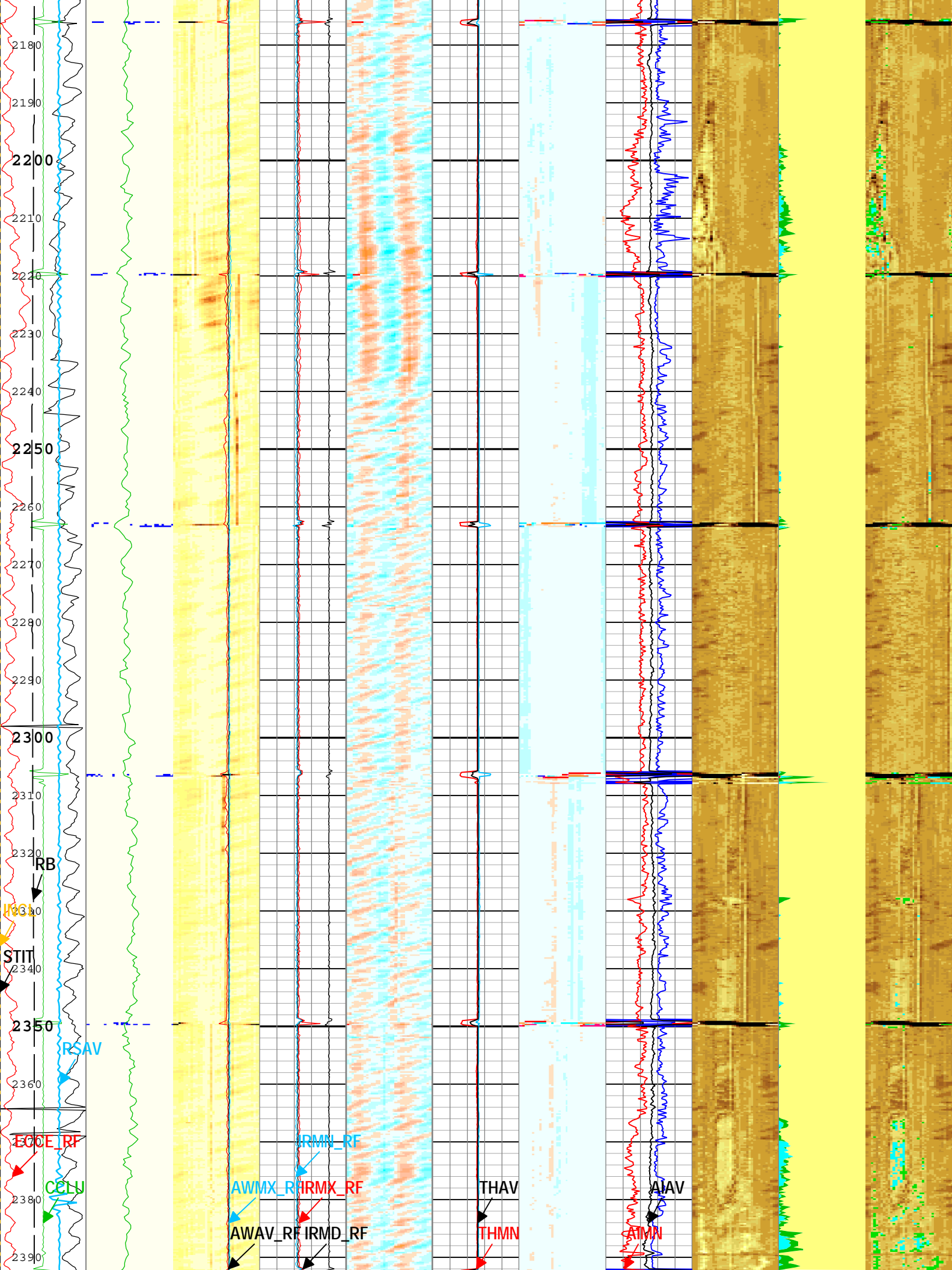


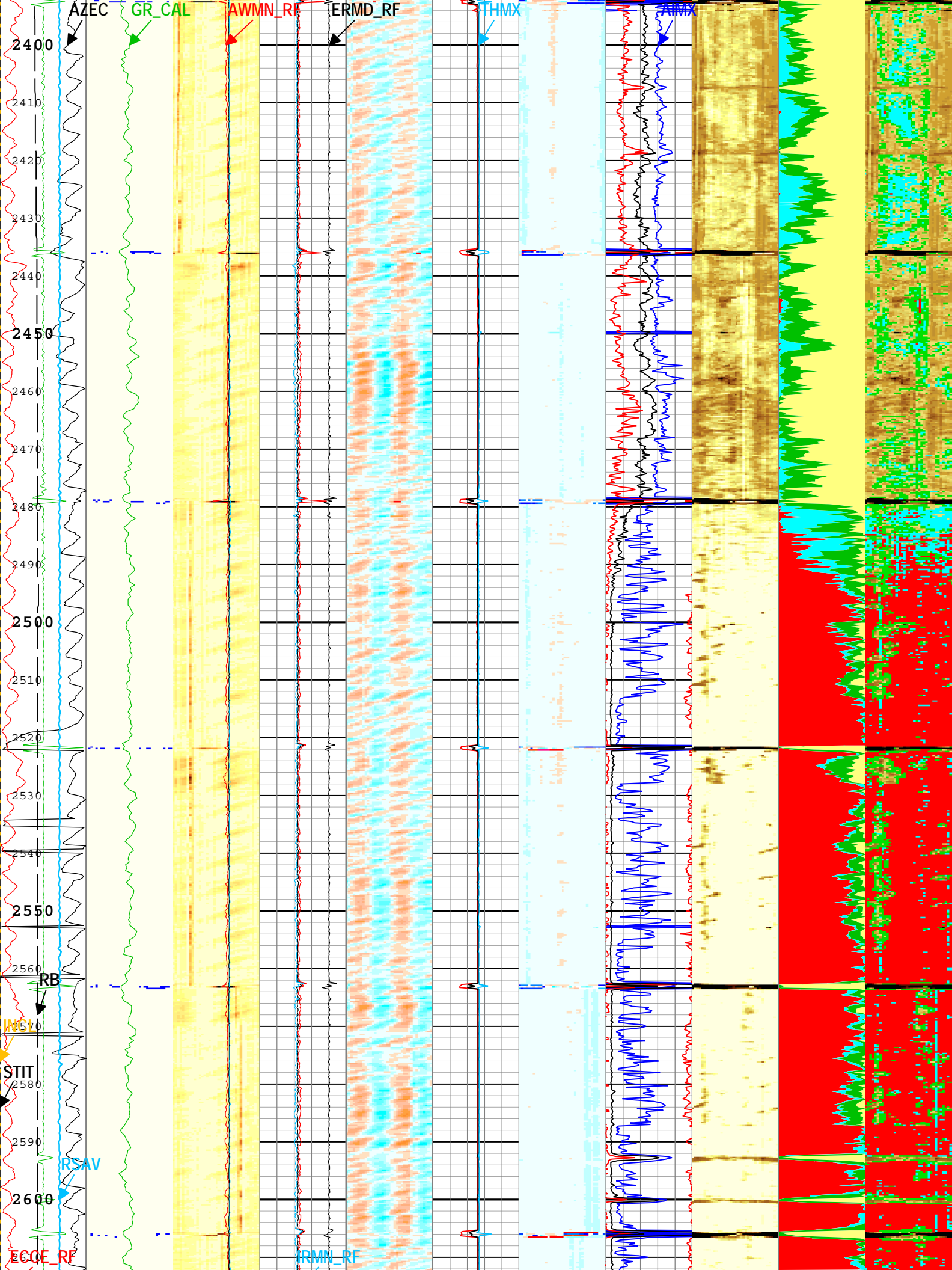


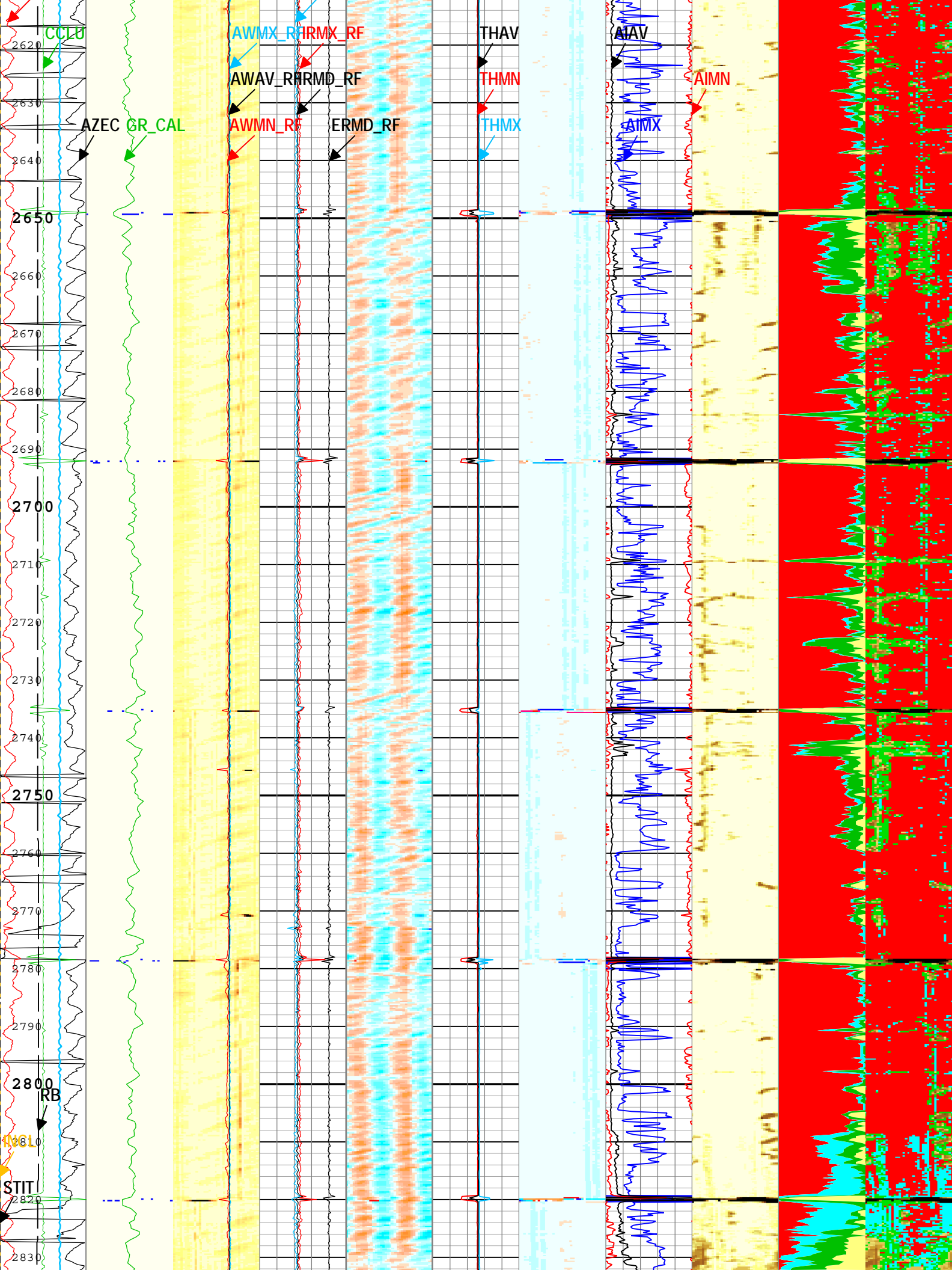


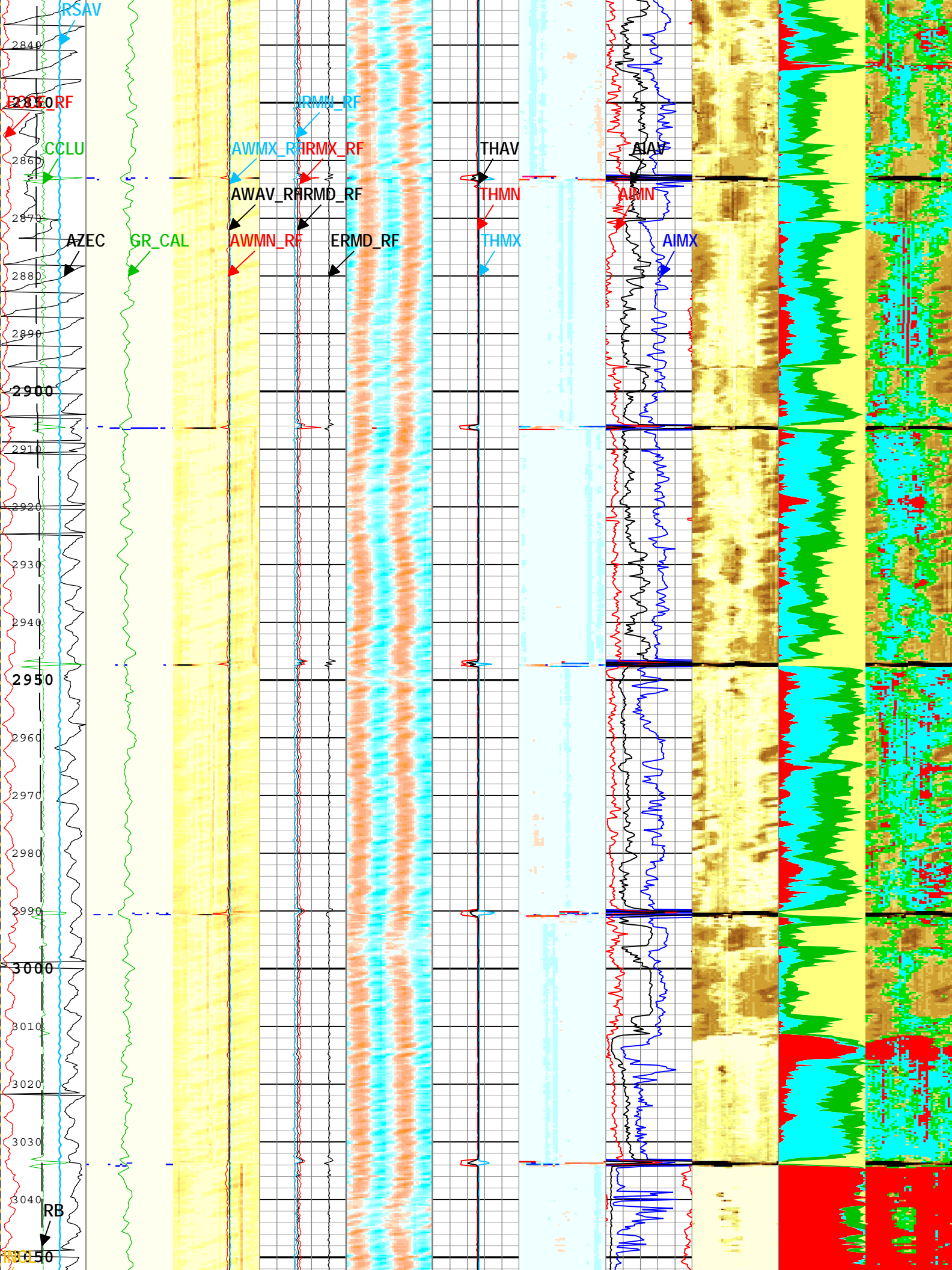


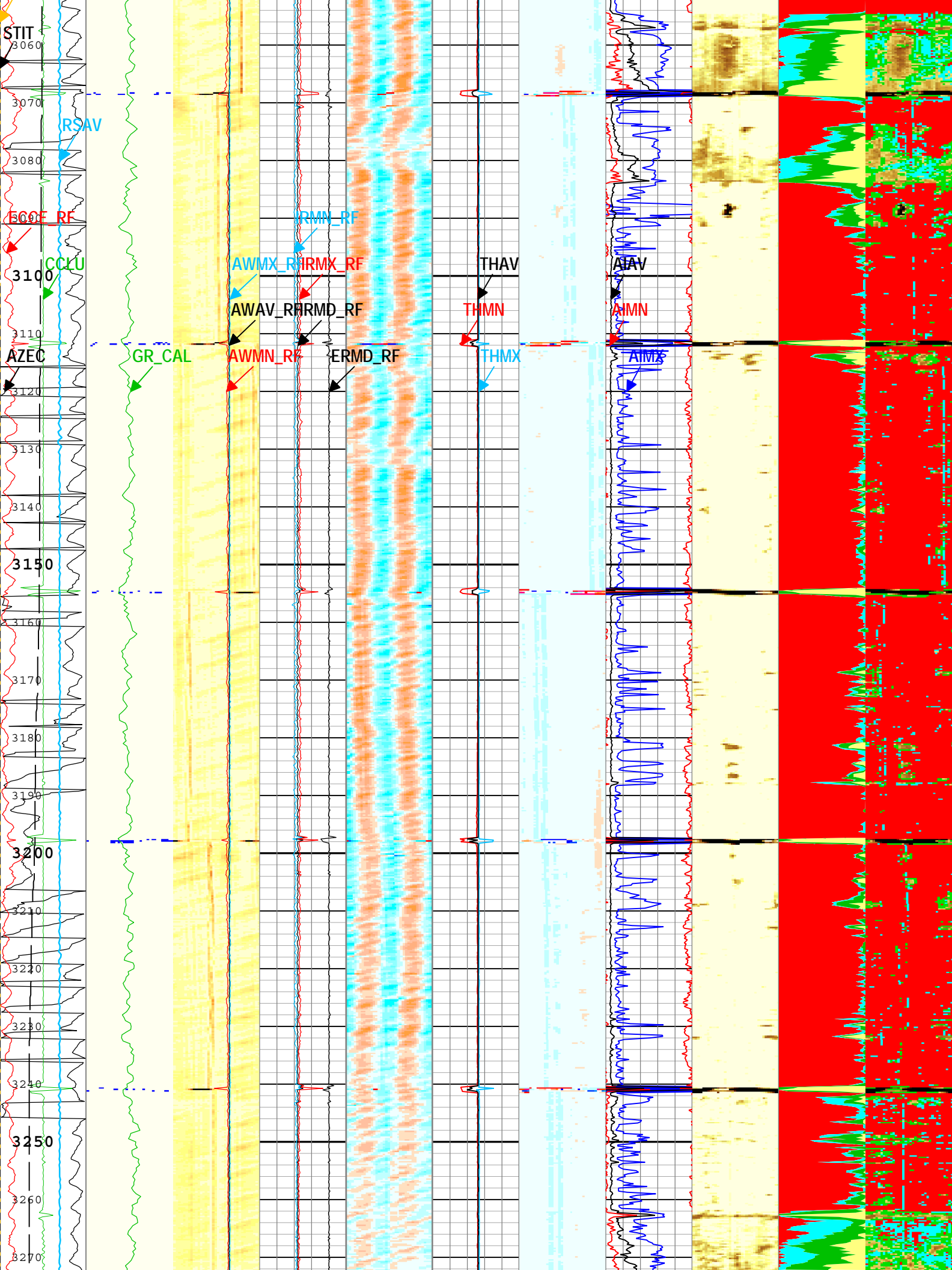


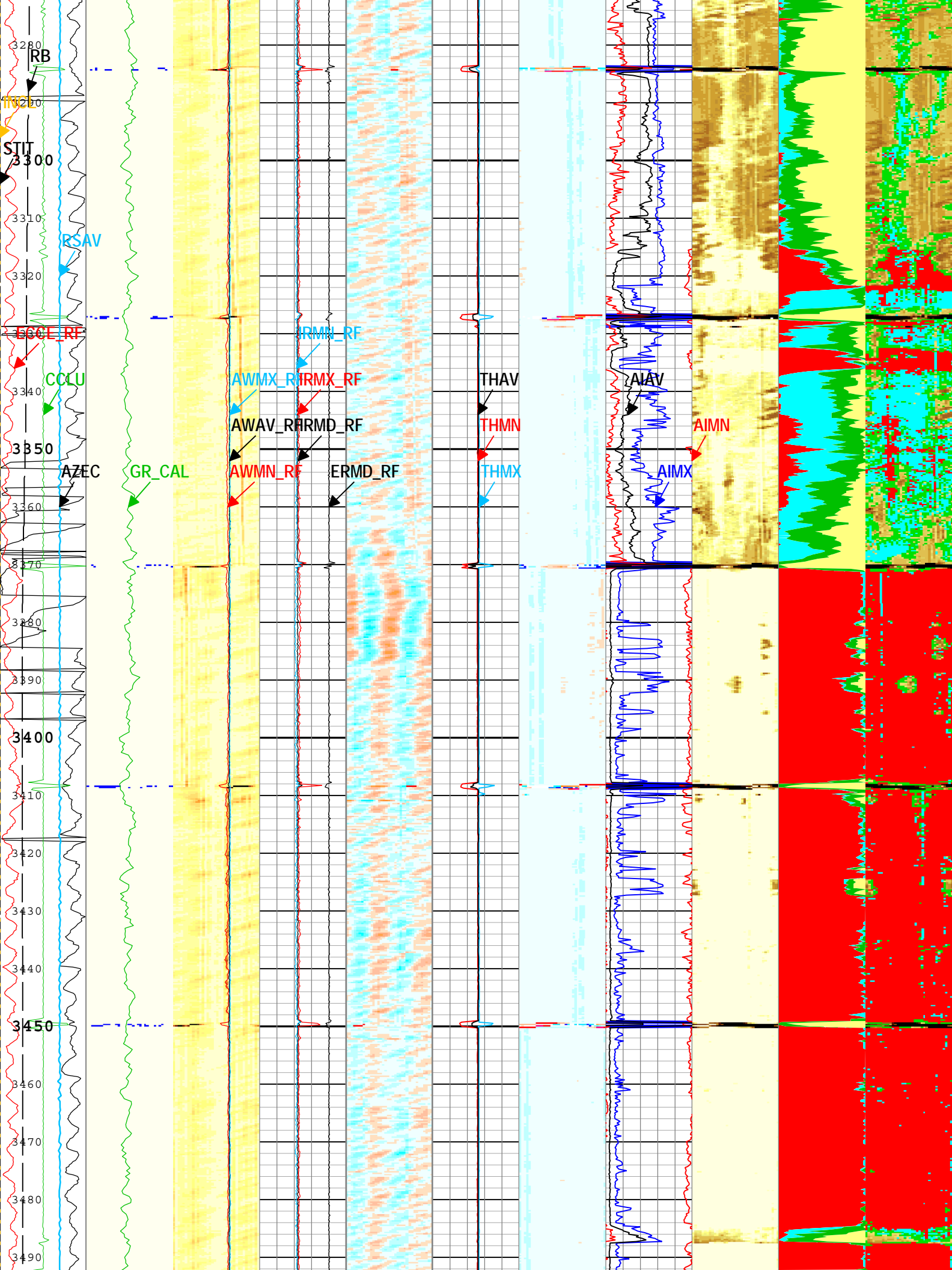


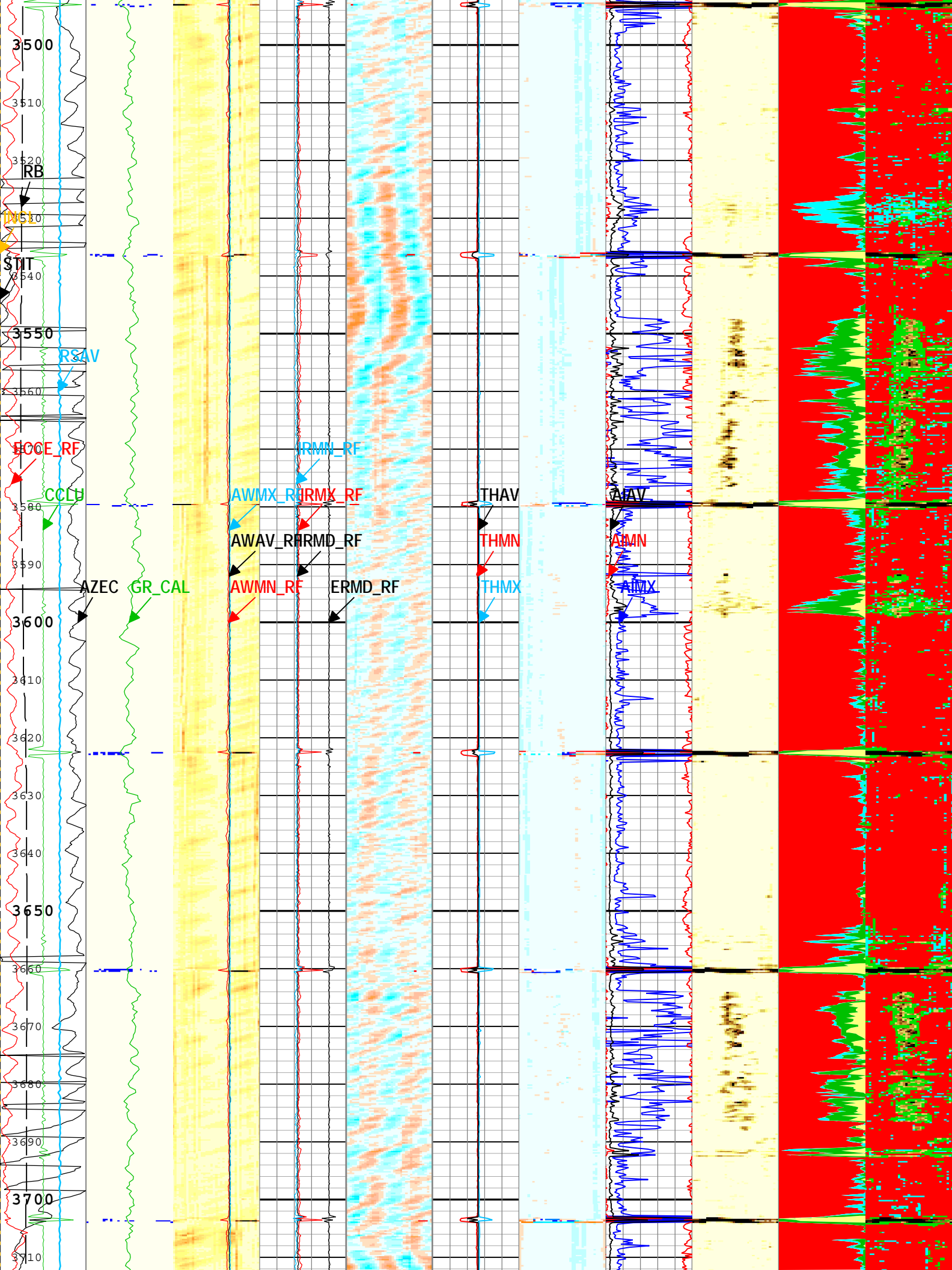


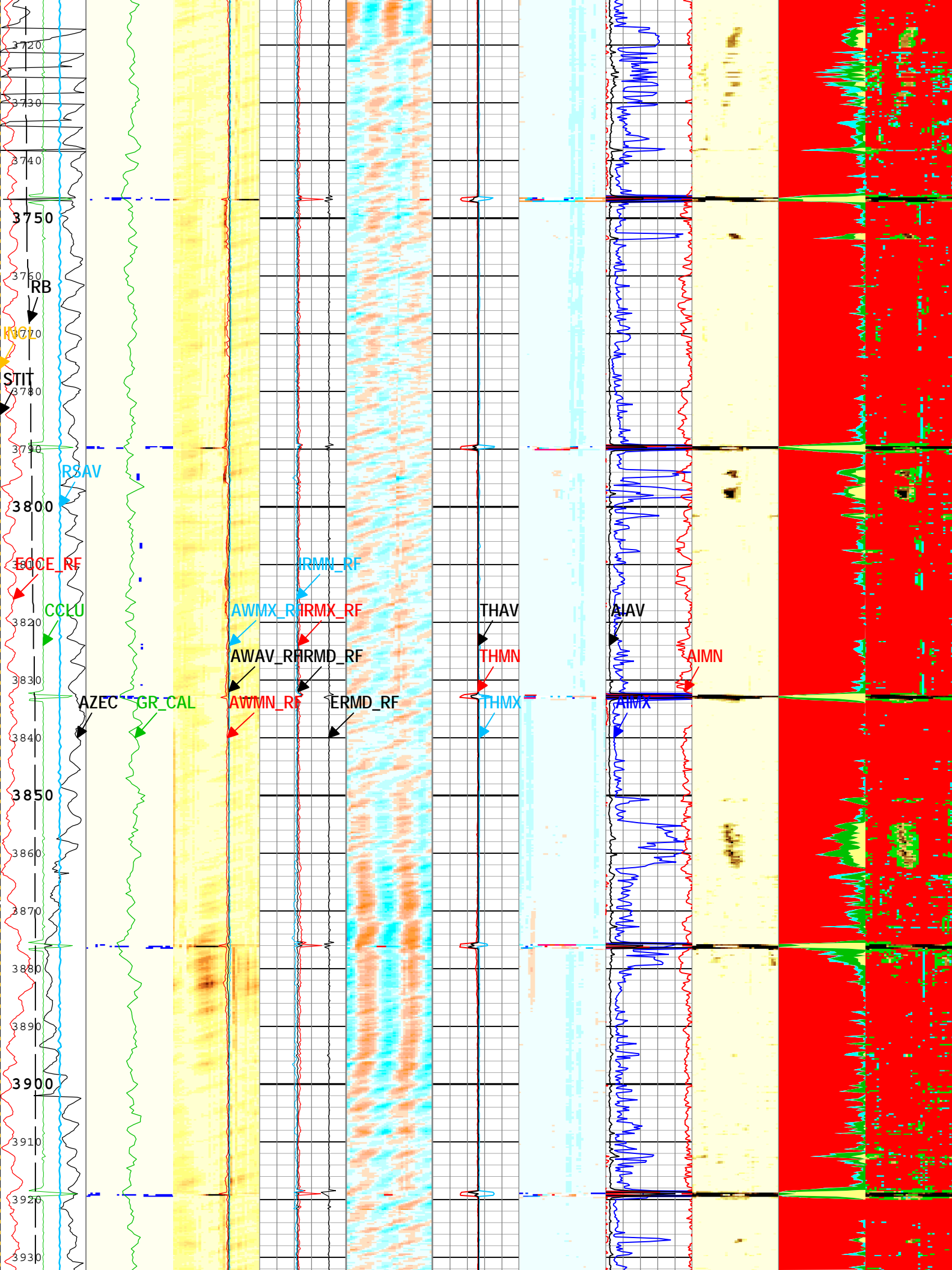


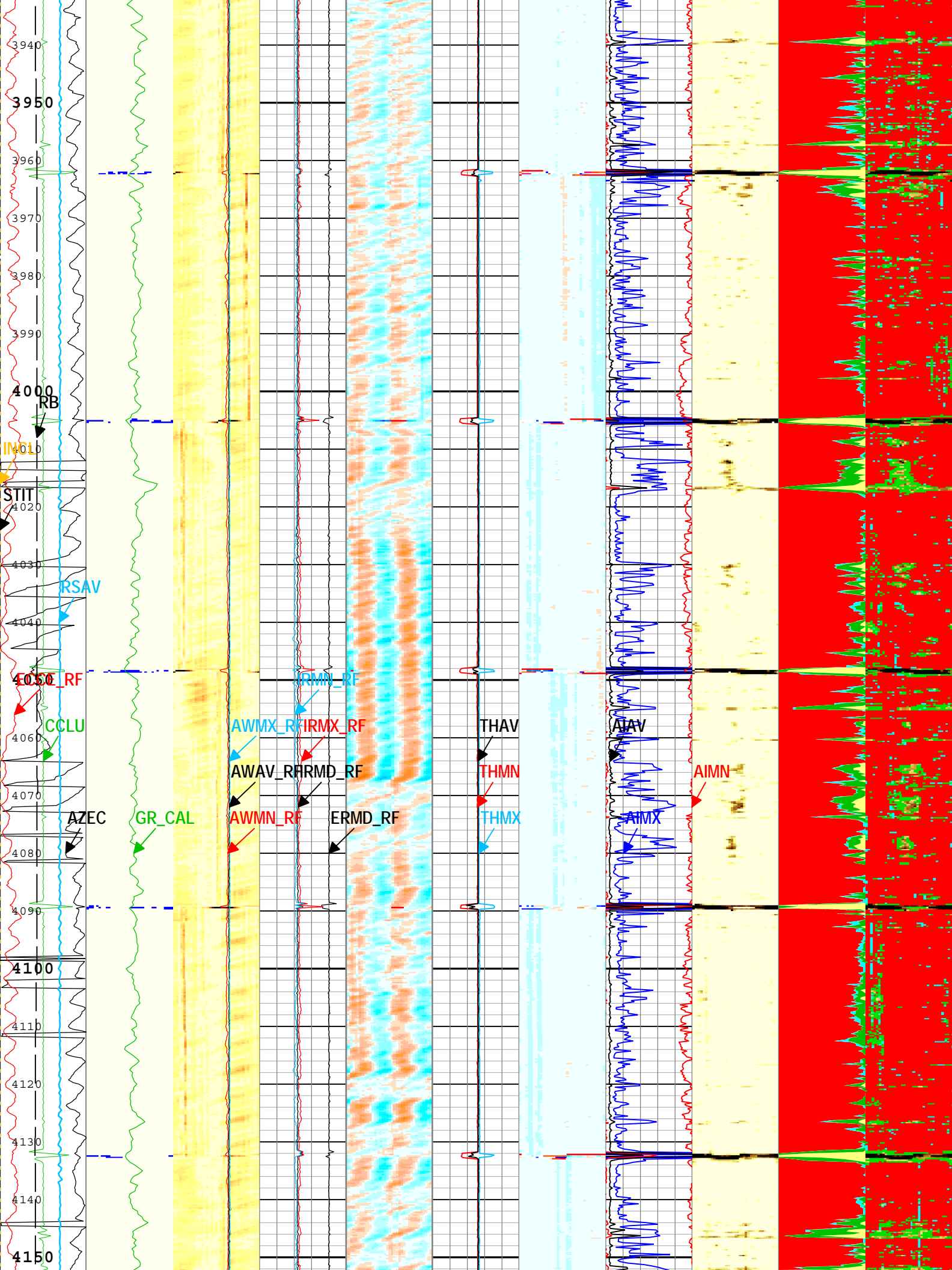


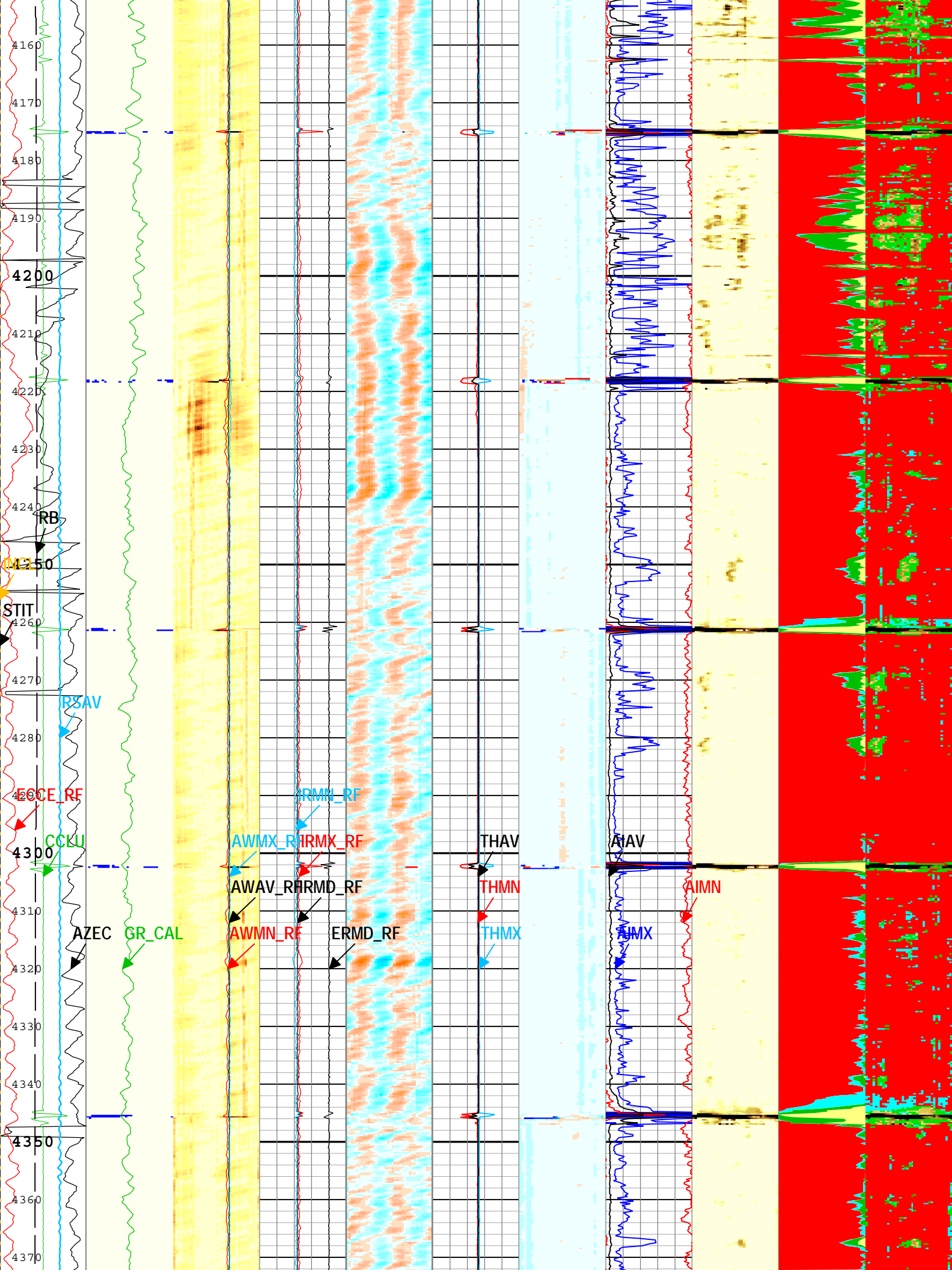


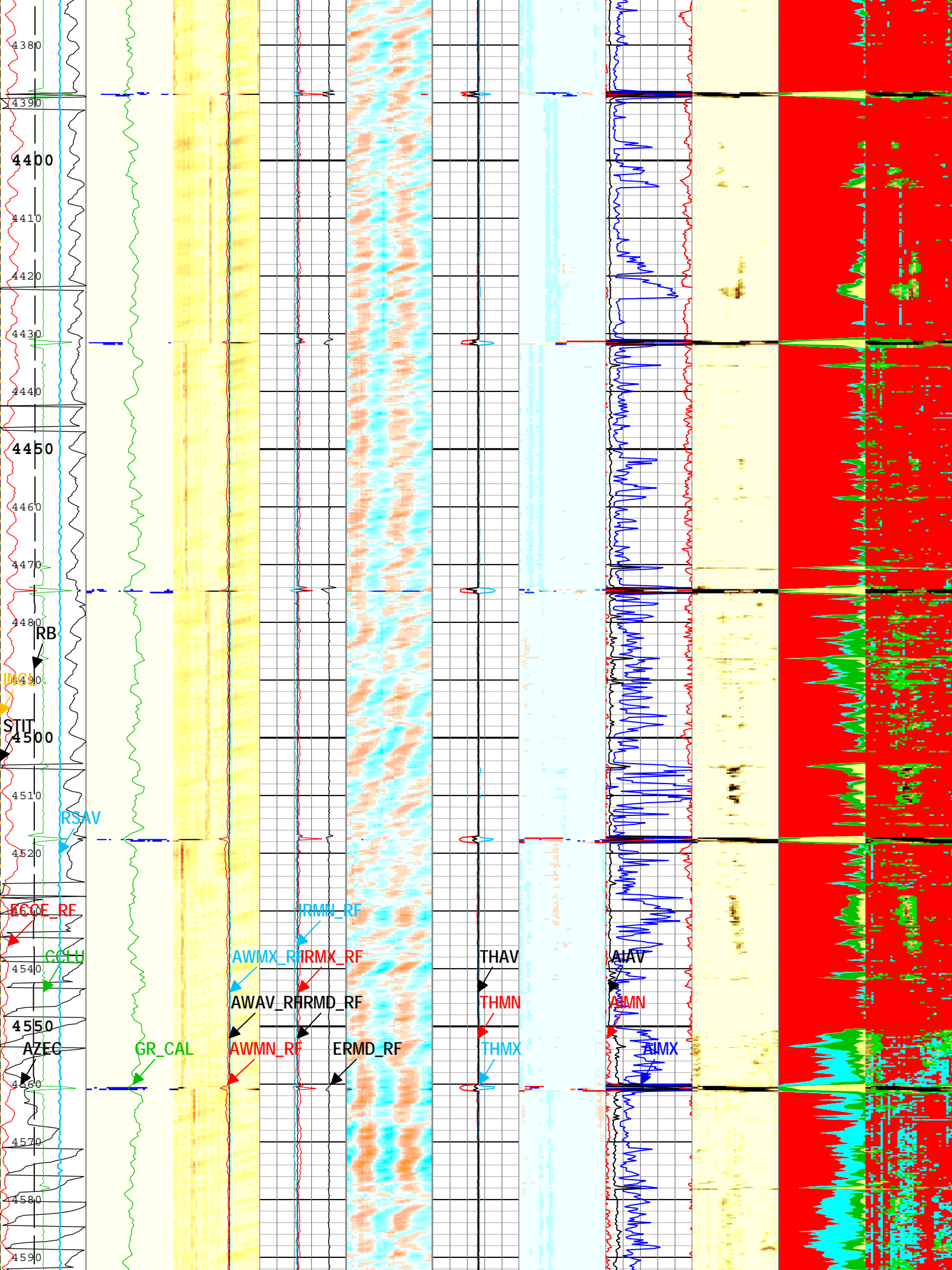


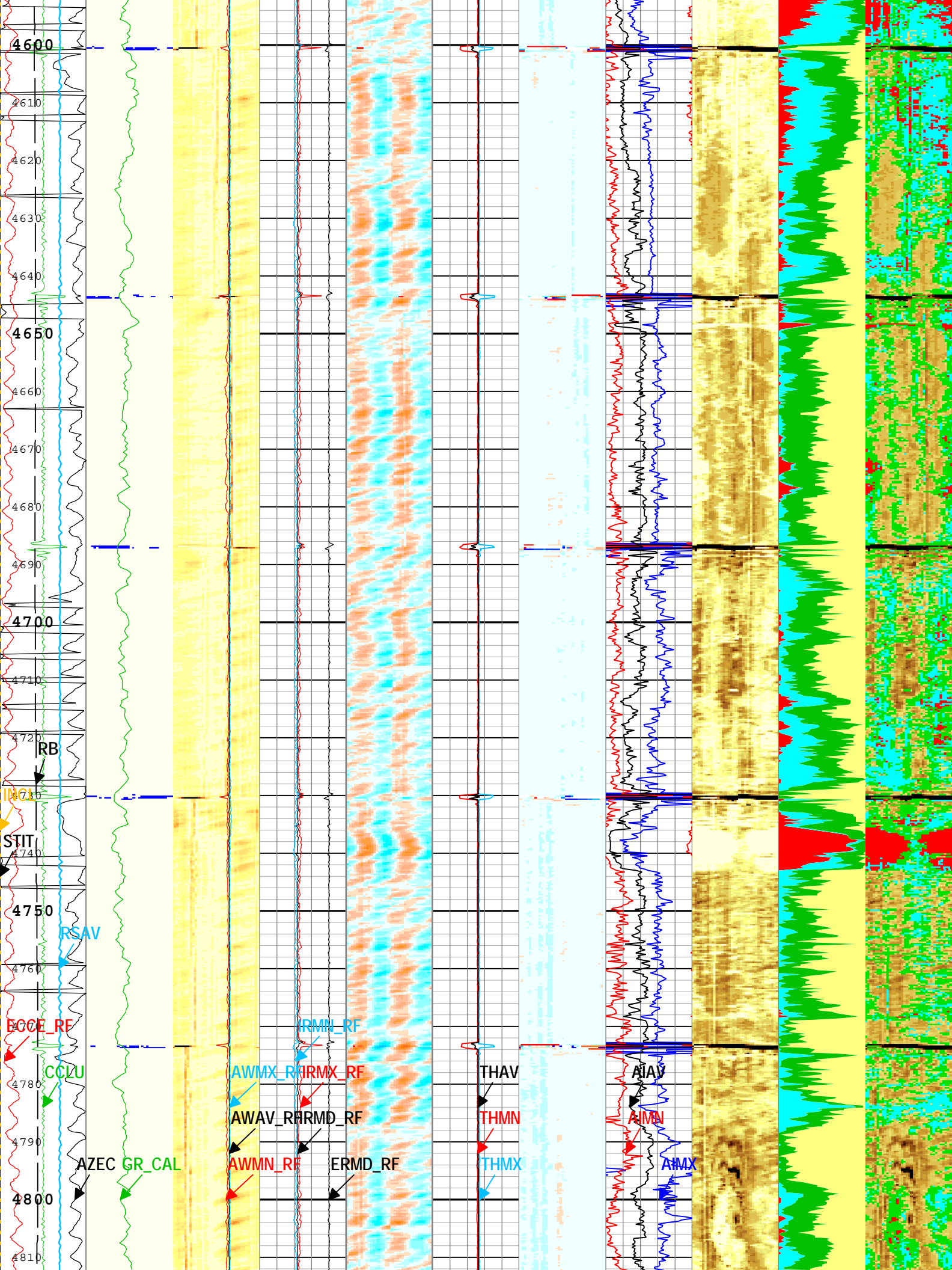


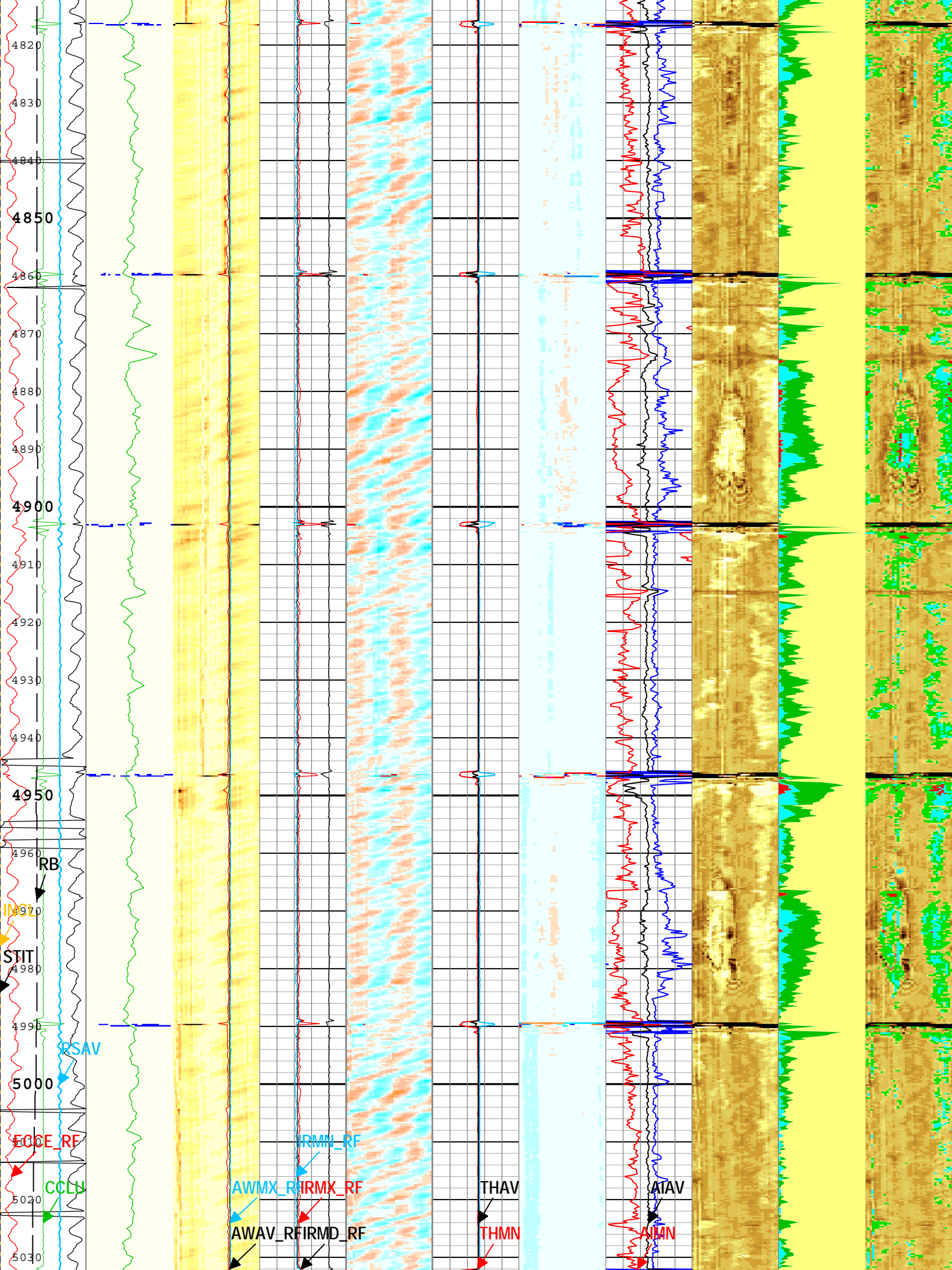


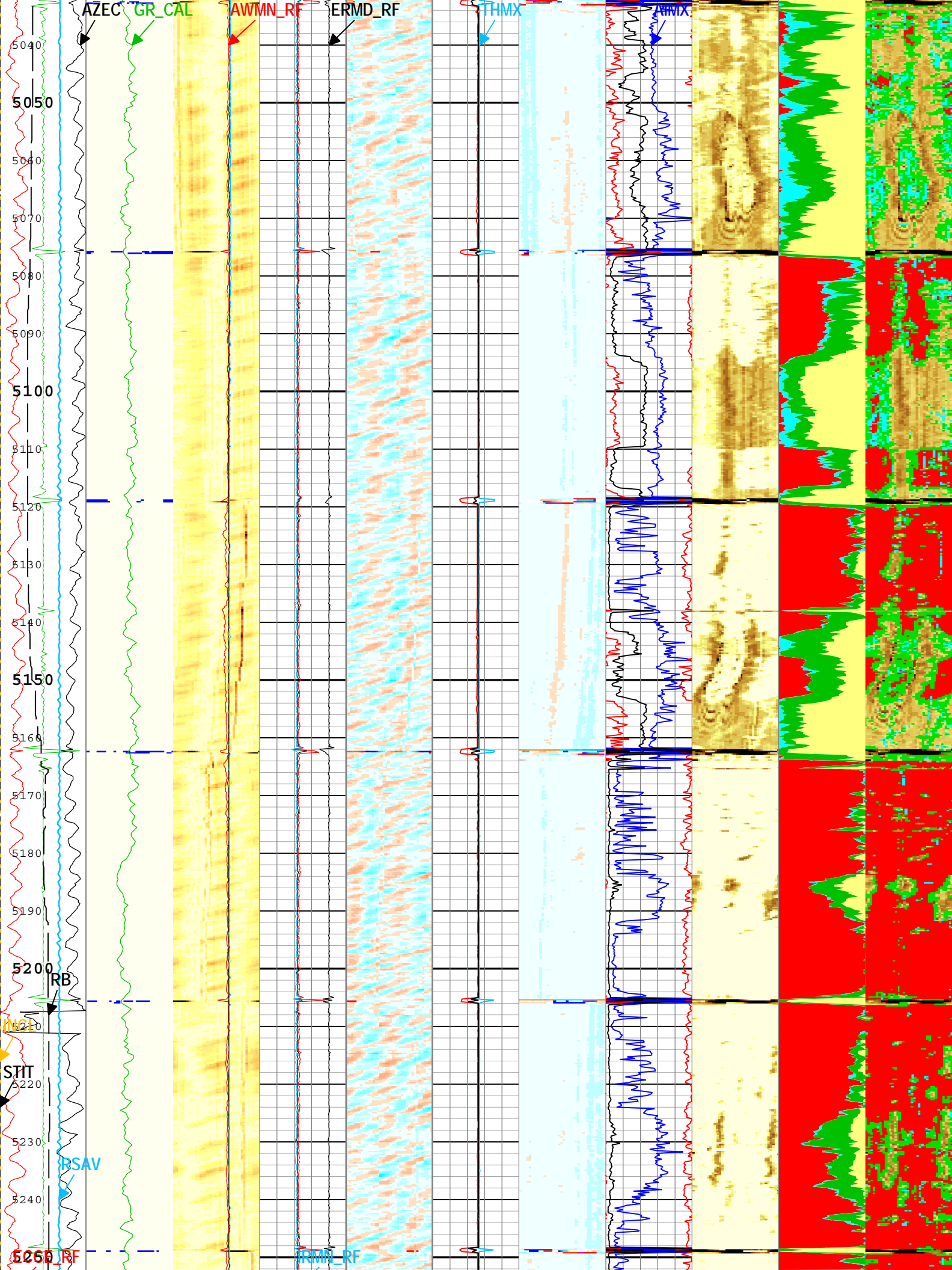


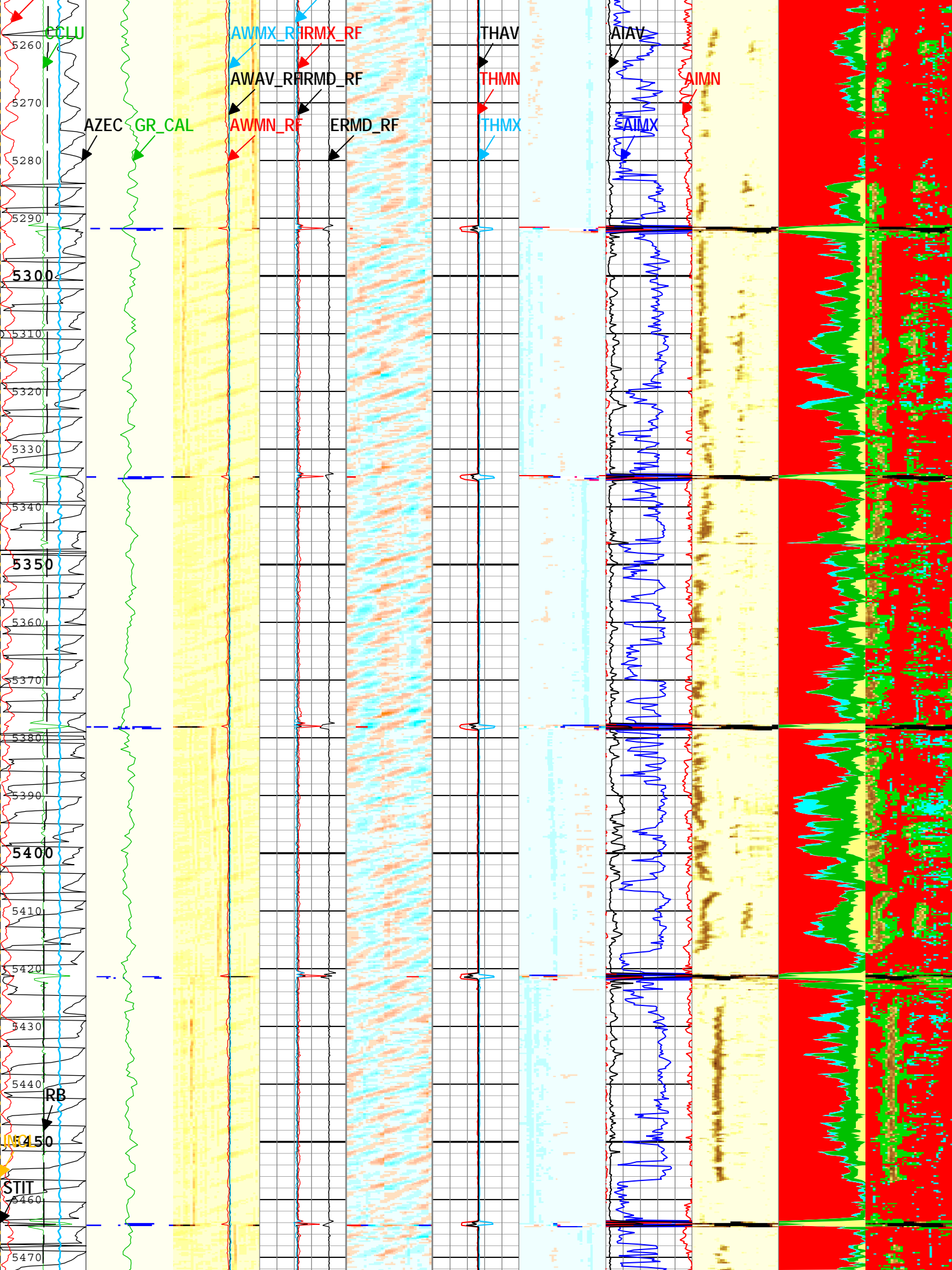


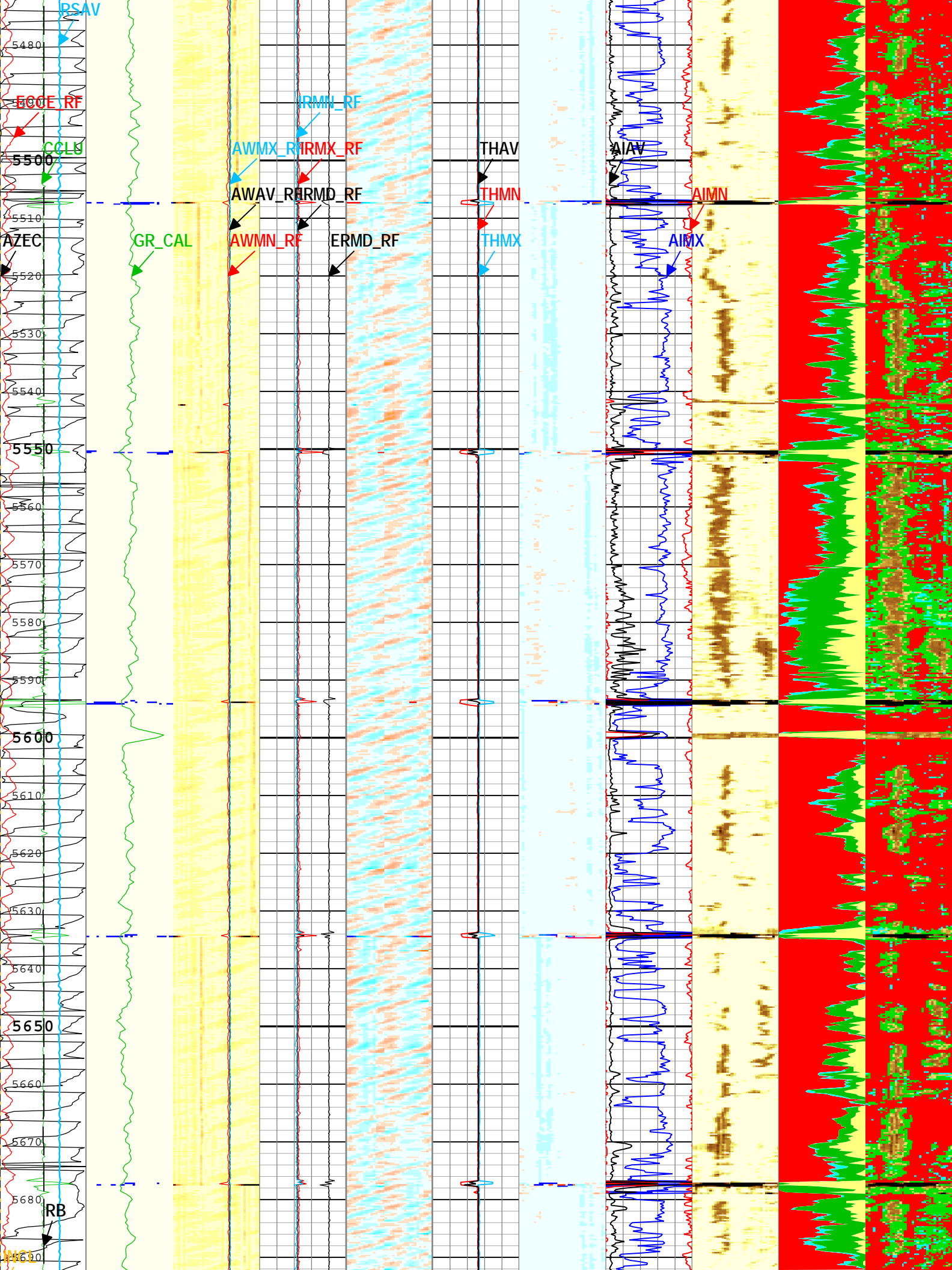


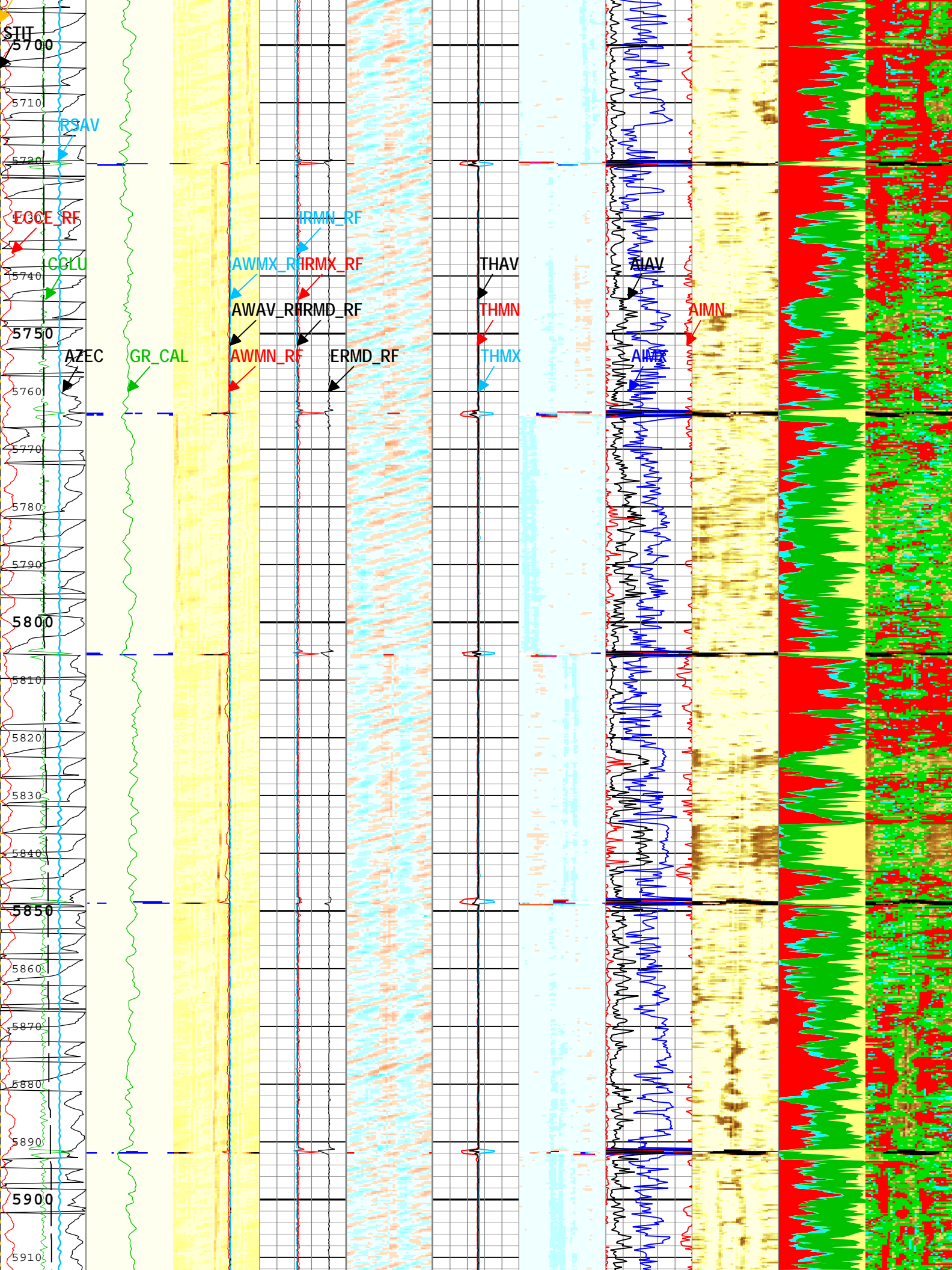


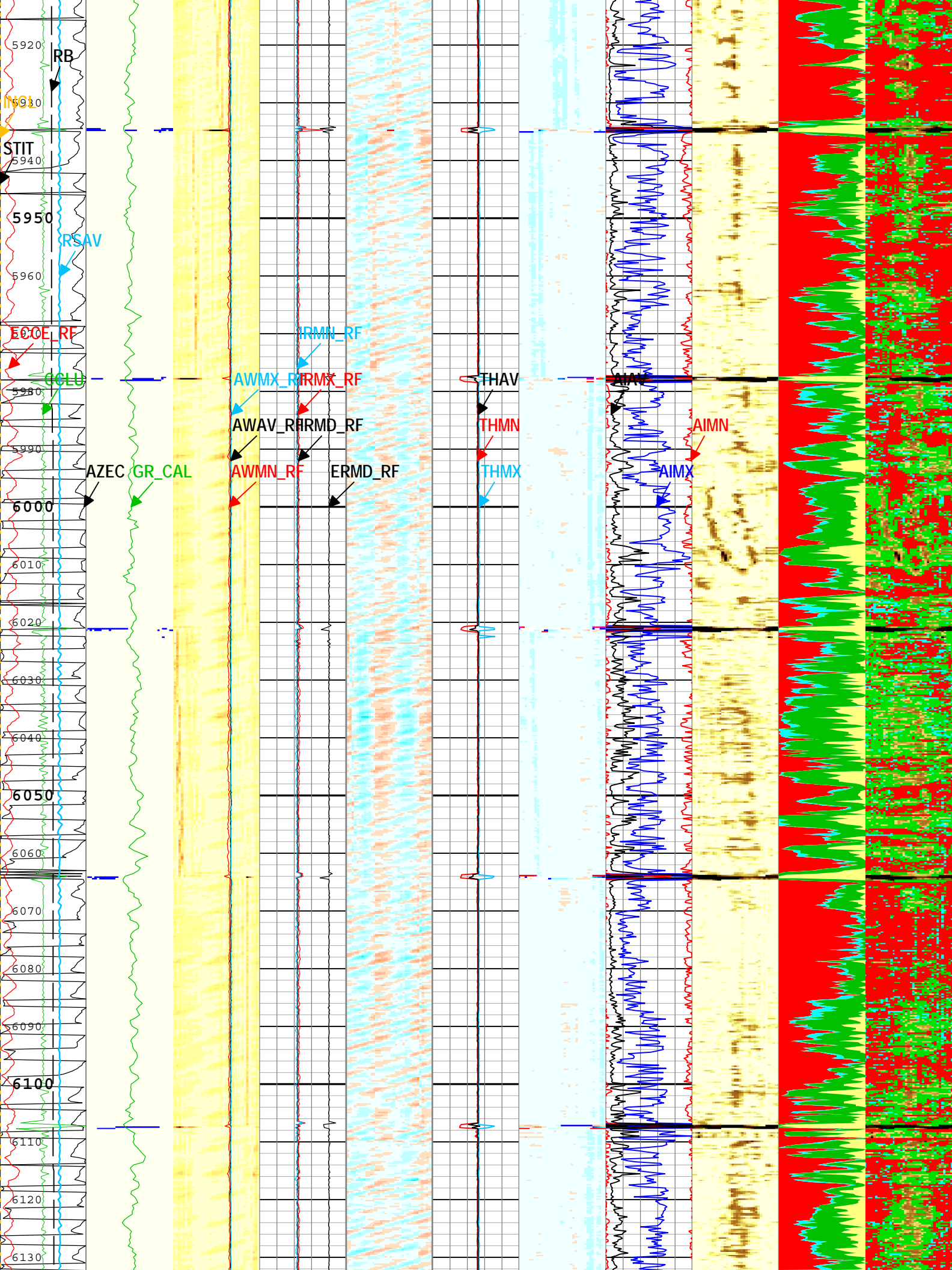


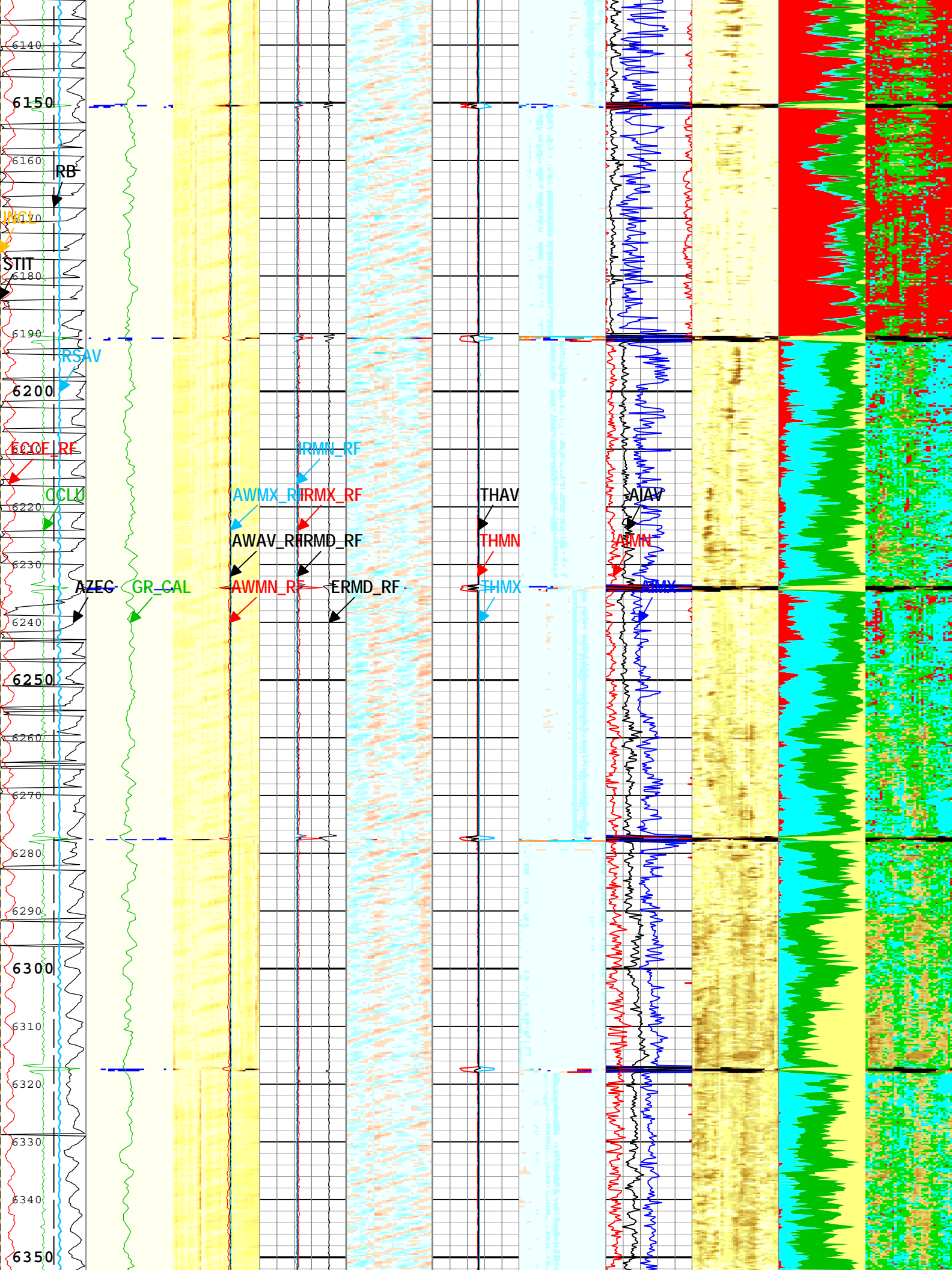


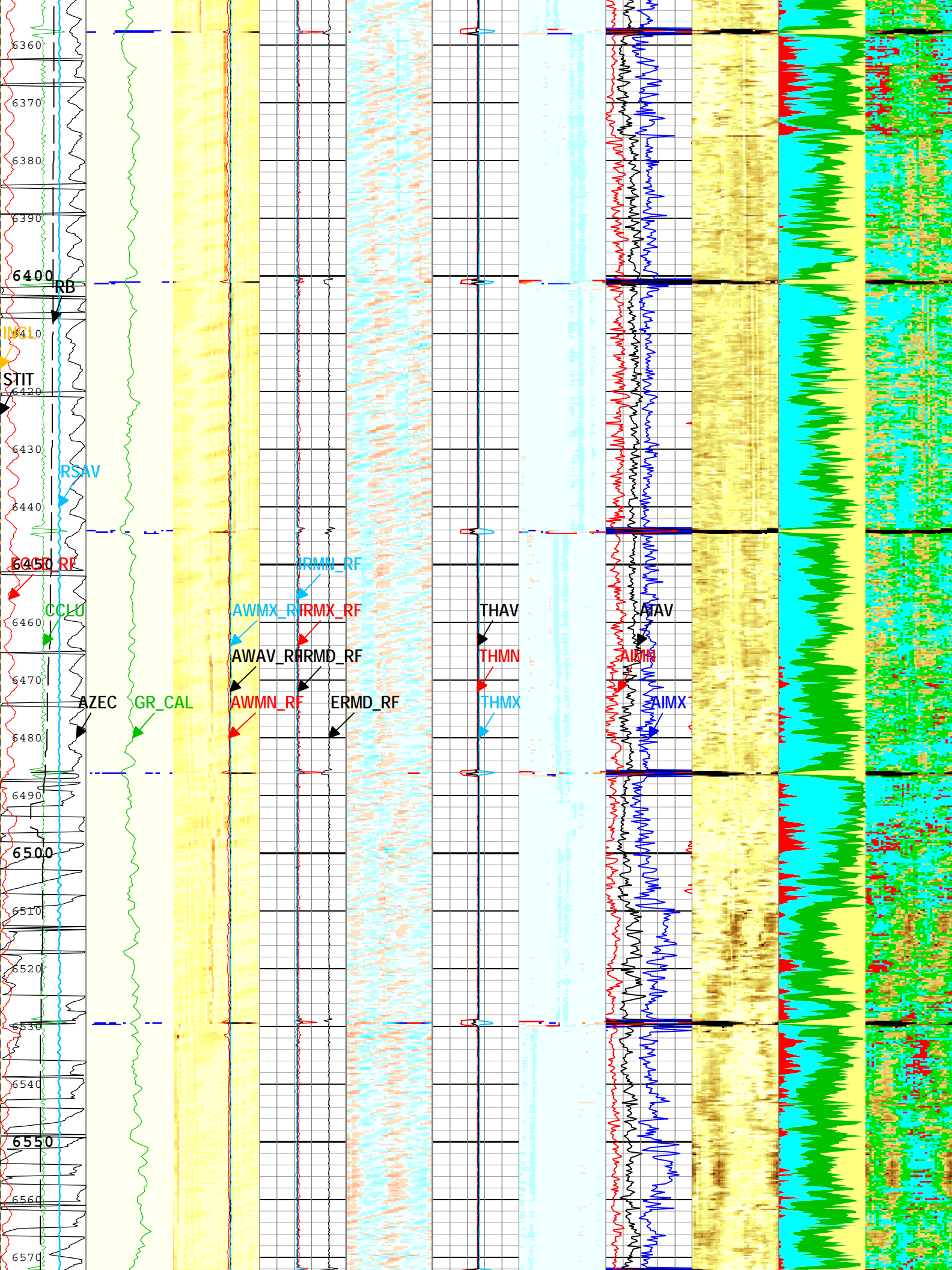


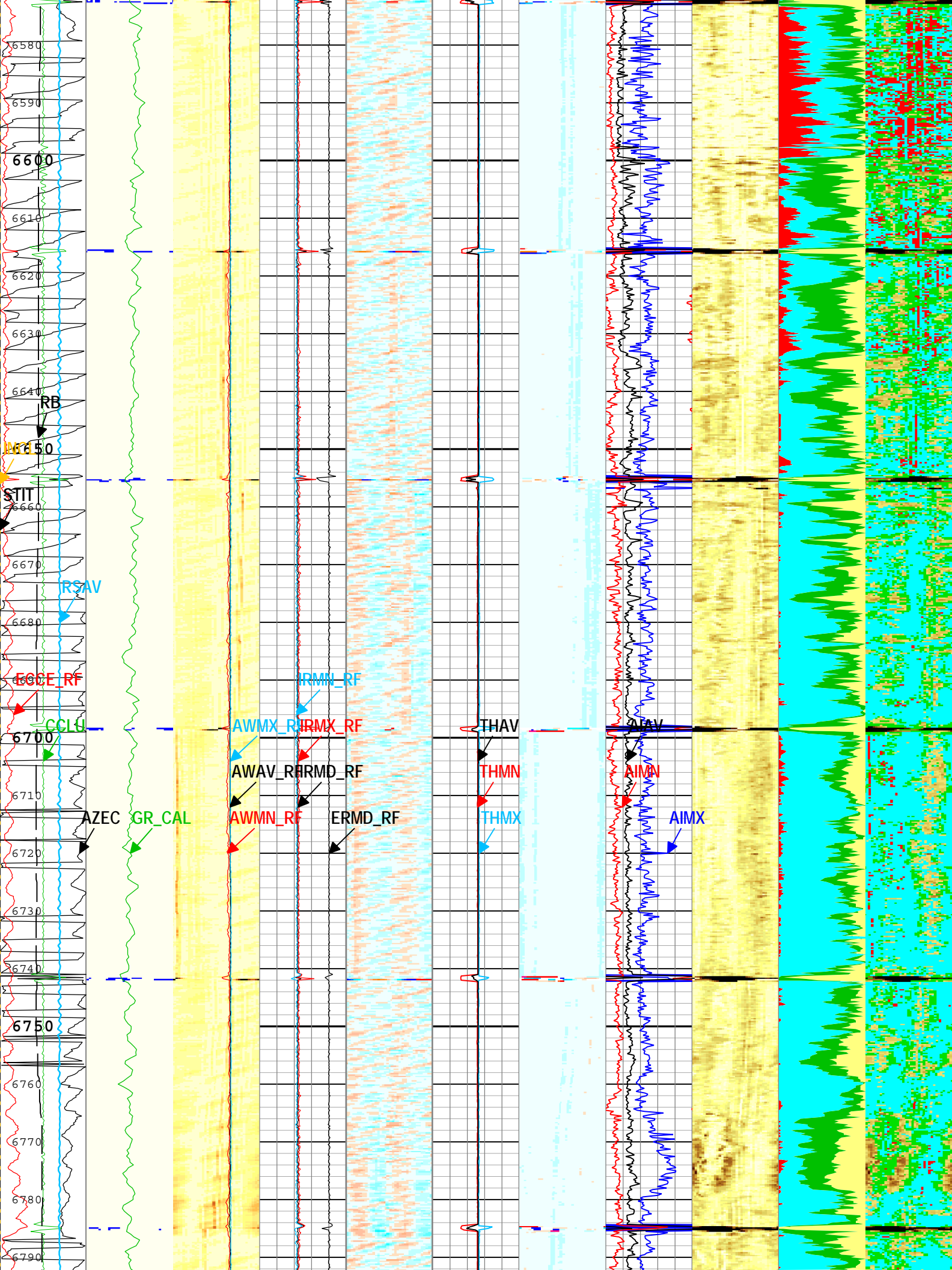


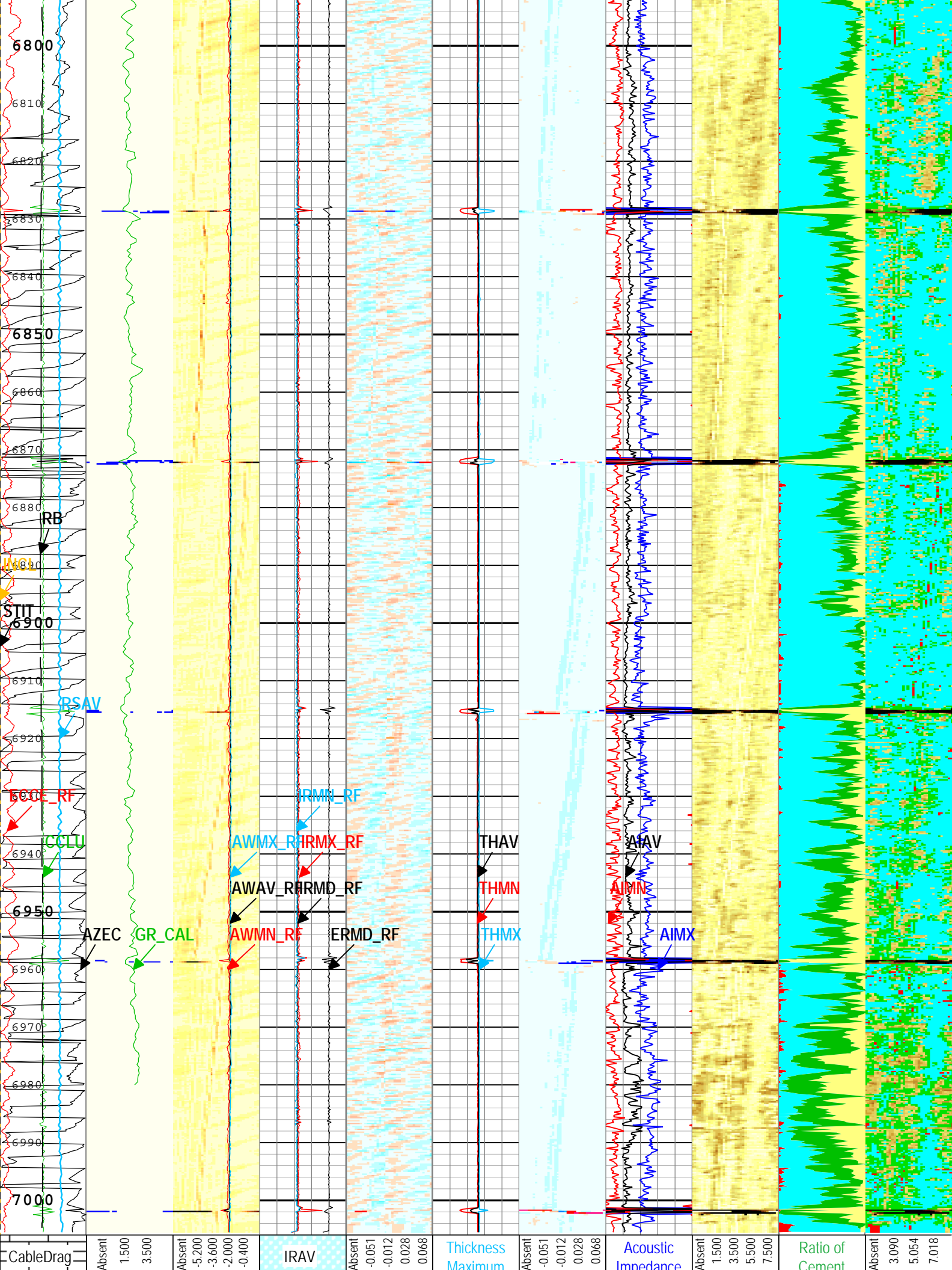






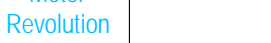
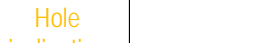

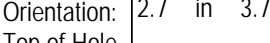
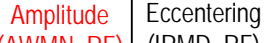


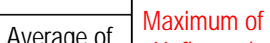

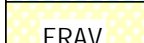

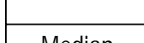



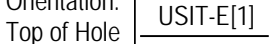

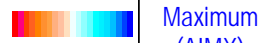
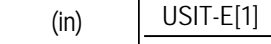







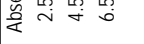
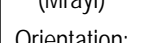















 Azimuth of Eccentering (AZEC) USIT-E[1] 0 deg 360  Casing Collar Locator Ultrasonic (CCLU) USIT-E[1] -20 in 20  Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1] 0 in 0.5  Motor Revolution Speed (RSAV) USIT-E[1] -8 c/s -6  Motor Revolution Speed (RSAV) USIT-E[1] 6 c/s 8 Stuck Tool Indicator, Total (STIT) 0 ft 50  Hole inclination (INCL) 0 deg 100 Relative Bearing (RB) USIT-E[1] 0 deg 360	 Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E[1] Orientation: Top of Hole U L B R U  USIT Processing Flags (UFLG[0]) USIT-E[1] 1 5  Calibrated Gamma Ray (GR_CAL) SGT-N[1] 0 gAPI 150	 Explicit Normalization USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1] (dB) Orientation: Top of Hole U L B R U  Minimum of Unflagged Wave (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 V  Median of Unflagged External Radii (ERMD_RF) USIT-E[1] 2.7 in 3.7  Median Internal Radius of Casing Corrected for Eccentering (IRMD_RF) USIT-E[1] 2.7 in 3.7  Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1] 2.7 in 3.7  Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1] 2.7 in 3.7	 Explicit Normalization USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1] (in) Orientation: Top of Hole U L B R U  Thickness Average Value (THAV) USIT-E[1] 0.1 in 0.6  Thickness Minimum Value (THMX) USIT-E[1] 0.1 in 0.6	 Explicit Normalization USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E[1] (in) Orientation: Top of Hole U L B R U  Maximum Impedance (AIMX) USIT-E[1] -1 Mrayl 9  Acoustic Impedance Minimum (AIMN) USIT-E[1] -1 Mrayl 9  Acoustic Impedance Average (AIAV) USIT-E[1] -1 Mrayl 9	 Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U  Measurements to Total (CEMR) USIT-E[1] 1 0  Ratio of Gas Measurements to Total (GASR) USIT-E[1] 1 0  Bonded Gas Liquid Micro-debonding	 Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U  Custom Normalization USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U  Custom Normalization USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U
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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: USI Composite Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Jun-2014 16:21:09

Channel Processing Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
AFVU	Automatic Fluid Velocity Update	USIT-E	On	
BARI	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson ratio	
CMTY	Cement Type	USIT-E	Regular Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
ETIP	Elevation of the TIP above MSL	WLSESSION	5036	ft
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	0	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
OPLEV	USIT Remove Flagged Data Level	USIT-E	OPT2	
RAPID_OPTION	Rapid Access Computation Option	USIT-E	Off	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
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
TCUB	T^3 Processing Level	USIT-E	Loop	
TD	Total Measured Depth	Borehole	7005	ft
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
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	Manual	
UTHDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	Depth Zoned	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Run 1Depth Zoned Parameters				
Parameter	Value	Start (ft)		Stop (ft)
MEAS_WLEN	22.5	0		7006

ZMUD	1.61	0	400
ZMUD	1.63	400	800
ZMUD	1.65	800	1200
ZMUD	1.67	1200	1800
ZMUD	1.68	1800	2700
ZMUD	1.69	2700	3000
ZMUD	1.7	3000	7006

All depth are actual.

Tool Control Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
USI_UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
USI_UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	7001	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	38.4	us
WINE	Window End Time	USIT-E	78.4	us

Run 1Time Zoned Parameters

Pass Main[2]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	65	21-Jun-2014 11:53:51	21-Jun-2014 11:57:06	7005.88	6725.28
EMXV	62	21-Jun-2014 11:57:06	21-Jun-2014 12:04:37	6725.28	5952.95
EMXV	60	21-Jun-2014 12:04:37	21-Jun-2014 12:04:53	5952.95	5925.81
EMXV	58	21-Jun-2014 12:04:53	21-Jun-2014 12:05:08	5925.81	5898.31
EMXV	56	21-Jun-2014 12:05:08	21-Jun-2014 12:09:40	5898.31	5421.58
EMXV	54	21-Jun-2014 12:09:40	21-Jun-2014 12:14:59	5421.58	4851.37
EMXV	52	21-Jun-2014 12:14:59	21-Jun-2014 12:24:31	4851.37	3810.23
EMXV	54	21-Jun-2014 12:24:31	21-Jun-2014 12:24:44	3810.23	3788.26
EMXV	56	21-Jun-2014 12:24:44	21-Jun-2014 12:24:49	3788.26	3778.08
EMXV	58	21-Jun-2014 12:24:49	21-Jun-2014 12:24:58	3778.08	3762.64
EMXV	56	21-Jun-2014 12:24:58	21-Jun-2014 12:31:18	3762.64	3067.18
EMXV	58	21-Jun-2014 12:31:18	21-Jun-2014 12:43:54	3067.18	1737.83
EMXV	60	21-Jun-2014 12:43:54	21-Jun-2014 12:44:00	1737.83	1726.7
EMXV	63	21-Jun-2014 12:44:00	21-Jun-2014 12:46:26	1726.7	1463.74
EMXV	65	21-Jun-2014 12:46:26	21-Jun-2014 12:55:52	1463.74	504.18
EMXV	67	21-Jun-2014 12:55:52	21-Jun-2014 12:55:59	504.18	491.81

EMXV	72	21-Jun-2014 12:55:59	21-Jun-2014 12:59:34	491.81	125.47
EMXV	75	21-Jun-2014 12:59:34	21-Jun-2014 12:59:39	125.47	118.28
EMXV	78	21-Jun-2014 12:59:39	21-Jun-2014 12:59:44	118.28	111.95
EMXV	81	21-Jun-2014 12:59:44	21-Jun-2014 12:59:51	111.95	104.16
EMXV	85	21-Jun-2014 12:59:51	21-Jun-2014 12:59:56	104.16	98.32
EMXV	88	21-Jun-2014 12:59:56	21-Jun-2014 13:00:02	98.32	92.55
EMXV	91	21-Jun-2014 13:00:02	21-Jun-2014 13:00:09	92.55	85
EMXV	95	21-Jun-2014 13:00:09	21-Jun-2014 13:01:26	85	74.75

Pass Log[4]:Up

EMXV	70	21-Jun-2014 14:59:20	21-Jun-2014 15:01:33	76.84	50.19
EMXV	72	21-Jun-2014 15:01:33	21-Jun-2014 15:01:39	50.19	47.74
EMXV	75	21-Jun-2014 15:01:39	21-Jun-2014 15:01:45	47.74	44.98
EMXV	78	21-Jun-2014 15:01:45	21-Jun-2014 15:01:48	44.98	43.43
EMXV	80	21-Jun-2014 15:01:48	21-Jun-2014 15:01:52	43.43	41.69
EMXV	83	21-Jun-2014 15:01:52	21-Jun-2014 15:01:56	41.69	39.81
EMXV	85	21-Jun-2014 15:01:56	21-Jun-2014 15:02:00	39.81	38.19
EMXV	88	21-Jun-2014 15:02:00	21-Jun-2014 15:02:02	38.19	37.07
EMXV	90	21-Jun-2014 15:02:02	21-Jun-2014 15:02:09	37.07	33.85
EMXV	95	21-Jun-2014 15:02:09	21-Jun-2014 15:02:16	33.85	30.85
EMXV	98	21-Jun-2014 15:02:16	21-Jun-2014 15:02:23	30.85	27.69
EMXV	102	21-Jun-2014 15:02:23	21-Jun-2014 15:02:32	27.69	23.94
EMXV	95	21-Jun-2014 15:02:32	21-Jun-2014 15:03:01	23.94	15.38

All depth are at tool zero.

Import (2) of USI Goodwin

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[2]:Up	7006.14	40.74

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Mud Impedance = "Manual".
CZMD uses ZMUD parameter zoned table below

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	400	1.61	1.61
400	800	1.63	1.63
800	1200	1.65	1.65
1200	1800	1.67	1.67
1800	2700	1.68	1.68
2700	3000	1.69	1.69
3000		1.7	1.7

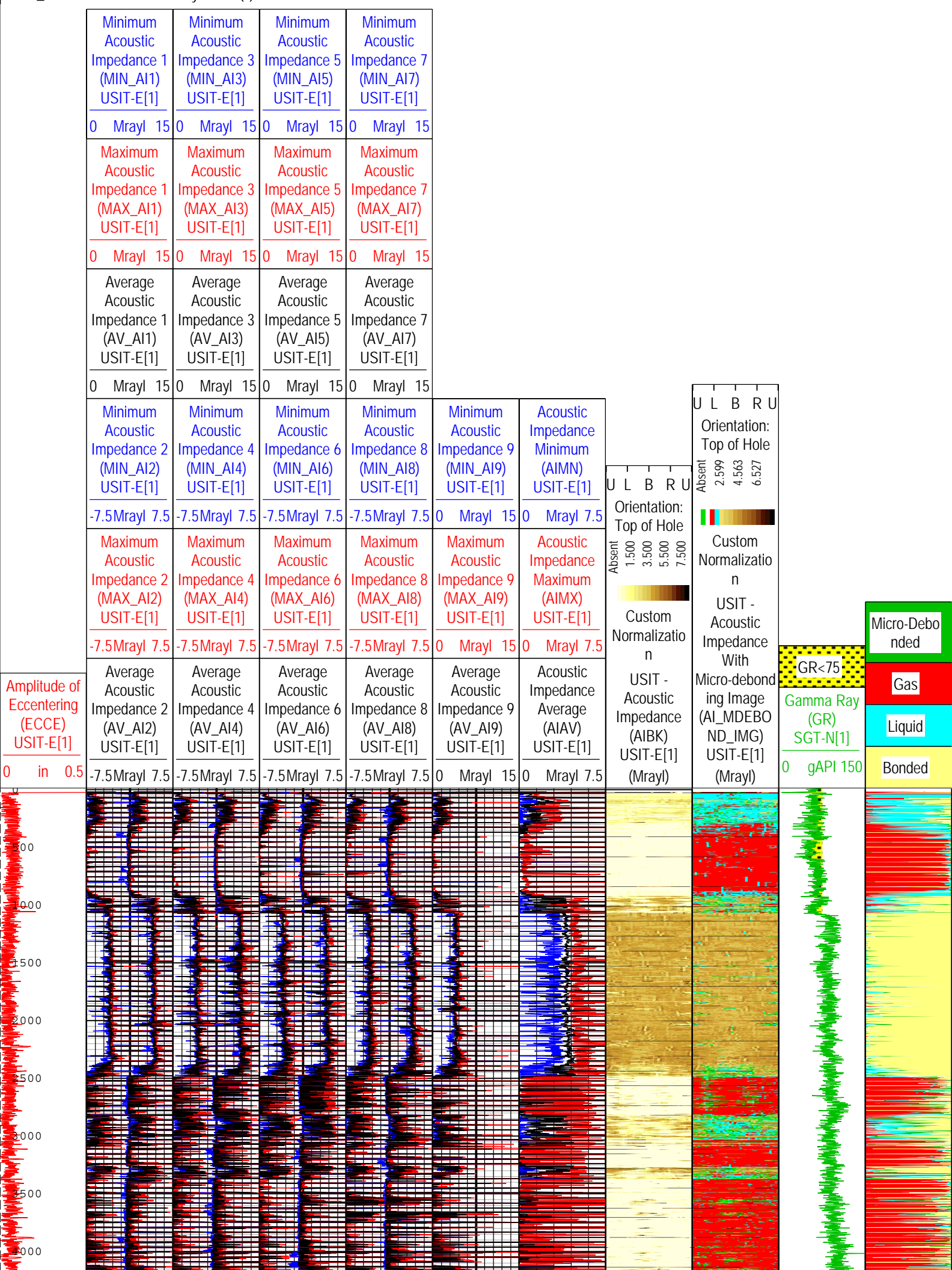
Composite 1

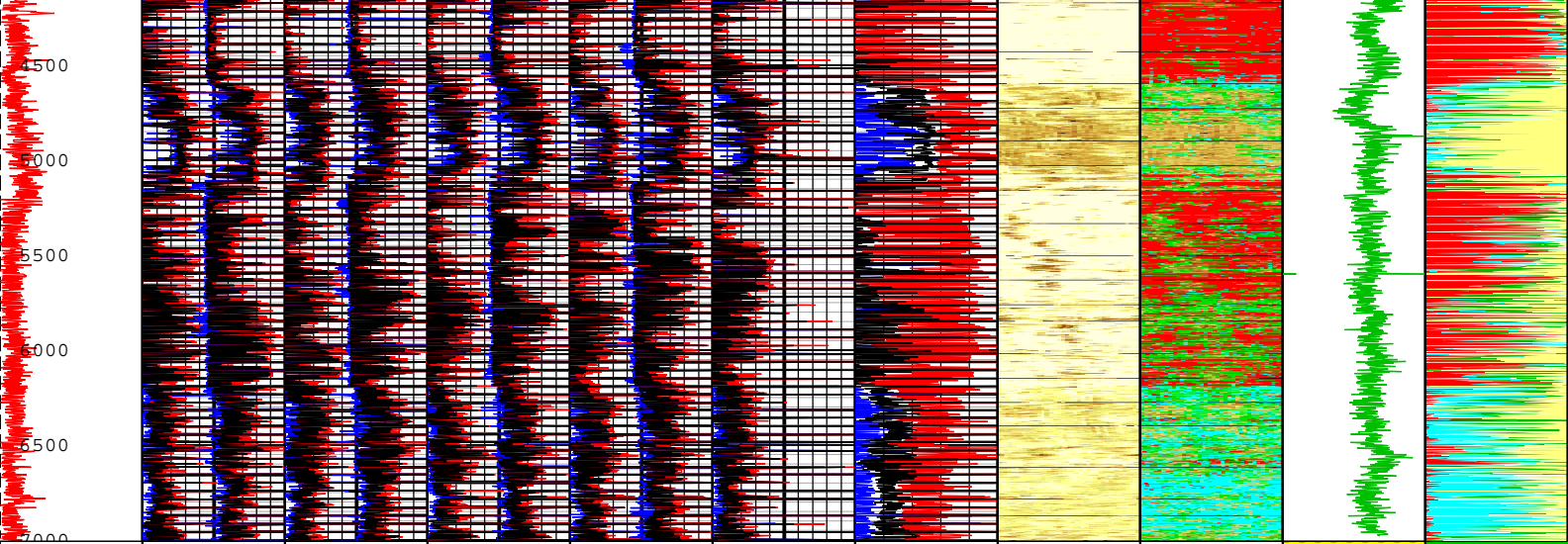
USI Goodwin Compressed - 0 PSI

Log	Company:Anadarko Petroleum Company	Well:Spurling 13C-34HZ
		Composite 1:S004

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Jun-2014 16:21:23

TIME_1900 - Time Marked every 60.00 (s)





Amplitude of Eccentering (ECCE) USIT-E[1] 0 in 0.5	Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E[1] 0 Mrayl 15	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E[1] 0 Mrayl 15	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E[1] 0 Mrayl 15	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E[1] 0 Mrayl 15	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E[1] 0 Mrayl 15	Acoustic Impedance Minimum (AIMN) USIT-E[1] 0 Mrayl 7.5	Absent 1.500 3.500 5.500 7.500 Custom Normalization	Absent 2.599 4.563 6.527 Custom Normalization	GR<75 Gamma Ray (GR) SGT-N[1] 0 gAPI 150	Micro-Debonded Gas Liquid Bonded
	Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E[1] 0 Mrayl 15	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E[1] 0 Mrayl 15	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E[1] 0 Mrayl 15	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E[1] 0 Mrayl 15	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E[1] 0 Mrayl 15	Acoustic Impedance Maximum (AIMX) USIT-E[1] 0 Mrayl 7.5	USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U	USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl) Orientation: Top of Hole U L B R U		
	Average Acoustic Impedance 1 (AV_AI1) USIT-E[1] 0 Mrayl 15	Average Acoustic Impedance 3 (AV_AI3) USIT-E[1] 0 Mrayl 15	Average Acoustic Impedance 5 (AV_AI5) USIT-E[1] 0 Mrayl 15	Average Acoustic Impedance 7 (AV_AI7) USIT-E[1] 0 Mrayl 15	Average Acoustic Impedance 9 (AV_AI9) USIT-E[1] 0 Mrayl 15	Acoustic Impedance Average (AIAV) USIT-E[1] 0 Mrayl 7.5				
	Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E[1] -7.5Mrayl 7.5	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E[1] -7.5Mrayl 7.5	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E[1] -7.5Mrayl 7.5	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E[1] -7.5Mrayl 7.5						
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E[1] -7.5Mrayl 7.5	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E[1] -7.5Mrayl 7.5	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E[1] -7.5Mrayl 7.5	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E[1] -7.5Mrayl 7.5						
	Average Acoustic Impedance 2 (AV_AI2) USIT-E[1] -7.5Mrayl 7.5	Average Acoustic Impedance 4 (AV_AI4) USIT-E[1] -7.5Mrayl 7.5	Average Acoustic Impedance 6 (AV_AI6) USIT-E[1] -7.5Mrayl 7.5	Average Acoustic Impedance 8 (AV_AI8) USIT-E[1] -7.5Mrayl 7.5						

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Jun-2014 16:21:23

XYZ

Company:Anadarko Petroleum Company

Well:Spurling 13C-34HZ

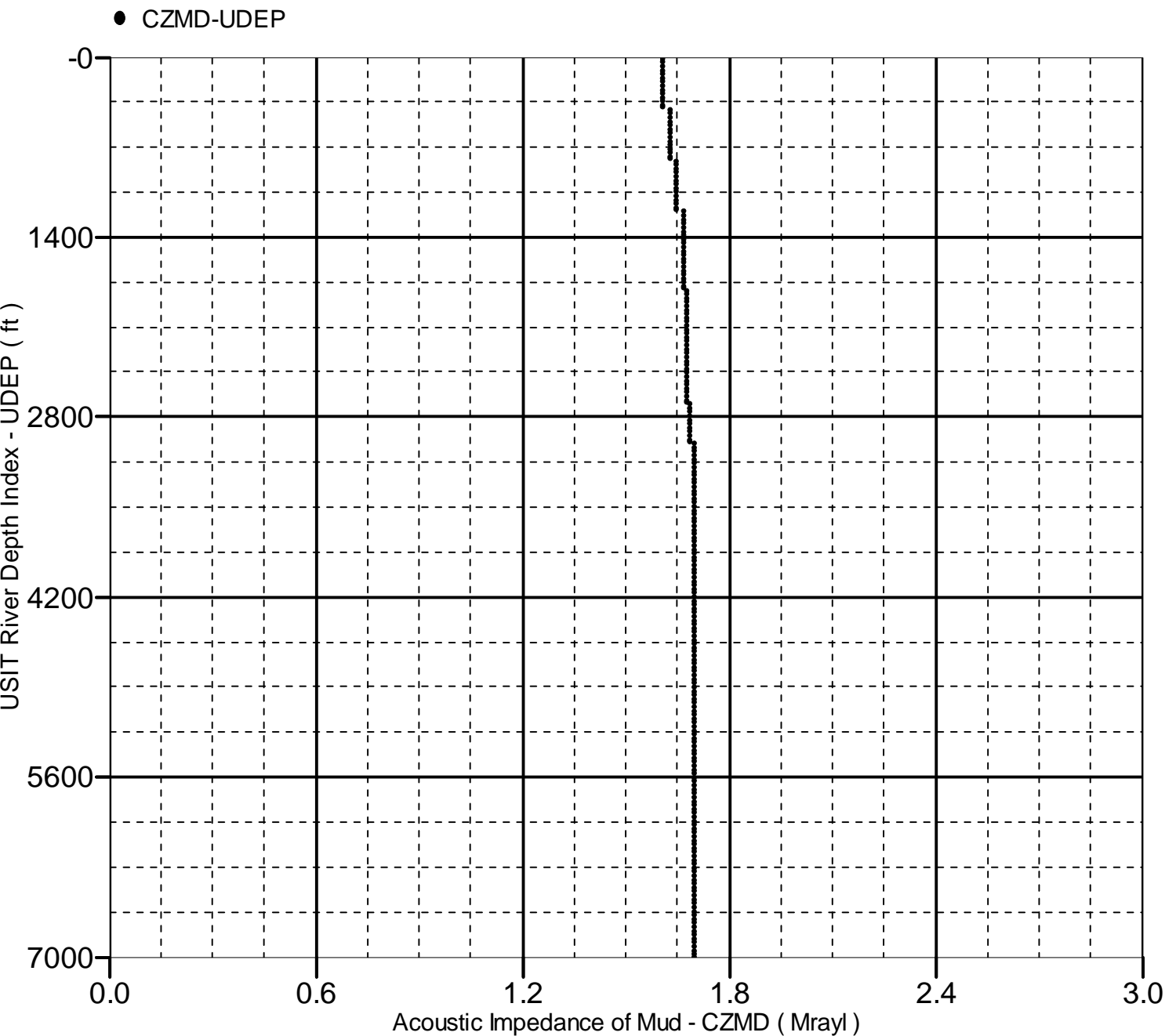
Run 1: Main[3]:Up:S004

Acoustic Impedance of Mud vs Depth

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7005.75 to 11.75 ft



XYZ

Company:Anadarko Petroleum Company

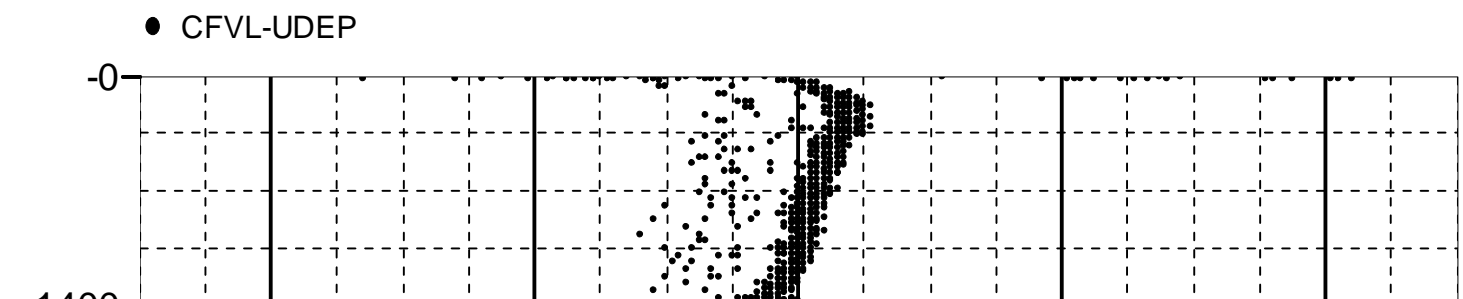
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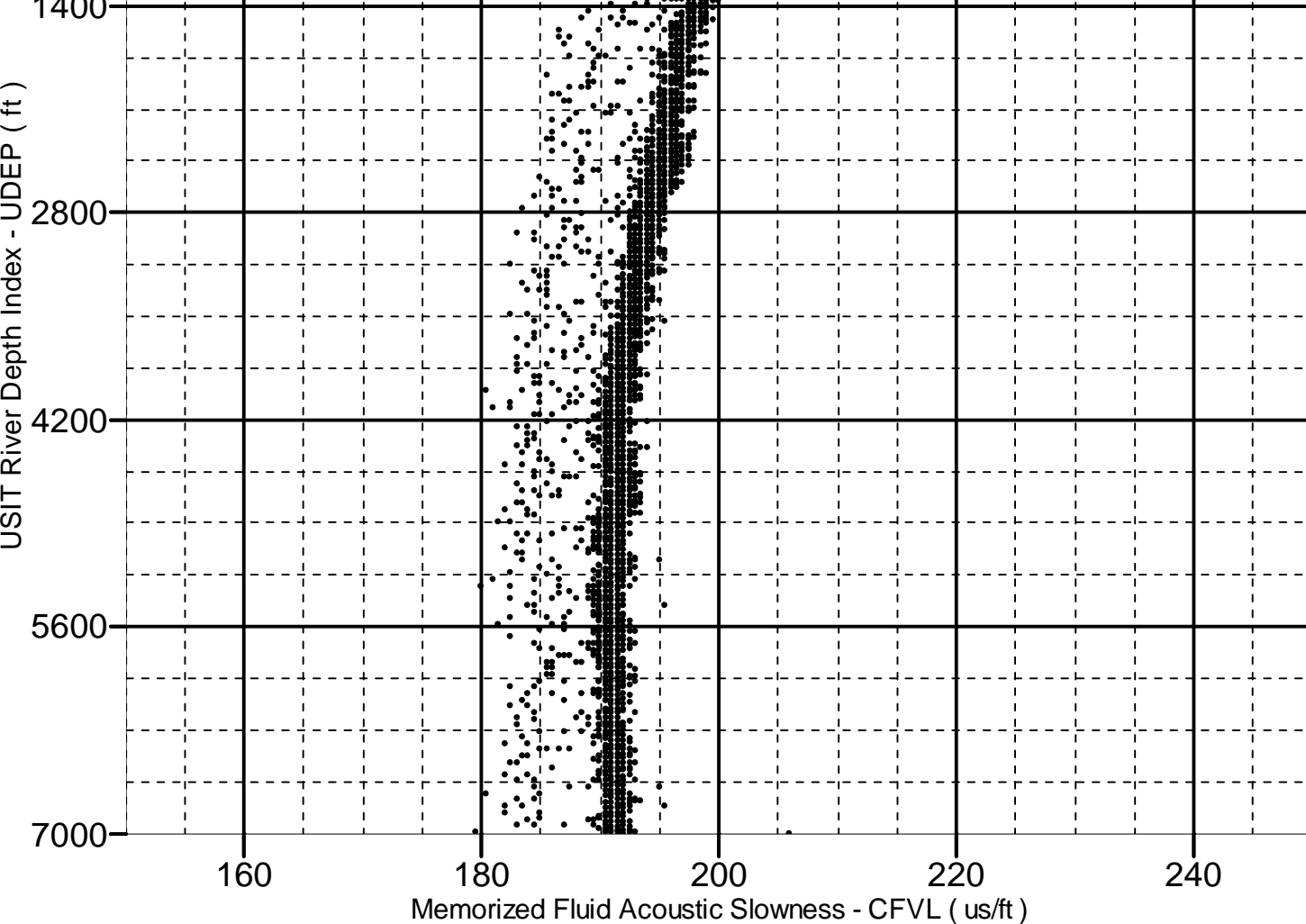
Run 1: Main[3]:Up:S004

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7005.75 to 11.75 ft





Company: Anadarko Petroleum Company

Schlumberger

Well: Spurling 13C-34HZ

Field:	Wattenberg
County:	Weld
State:	Colorado

Ultrasonic Imager
Cement Evaluation
Gamma Ray - CCL