

Company: Anadarko Petroleum Company

Well: Spurling 35N-34HZ

Field: Wattenberg

County: Weld State: Colorado

Ultrasonic Imager
Cement Evaluation
Gamma Ray - CCLCounty: Weld
Field: Wattenberg
Location: NWNW Sec 34, T2N, R67W
Well: Spurling 35N-34HZ
Company: Anadarko Petroleum Company

Location:			Elev.:	K.B.	5036.00 ft
NWNW Sec 34, T2N, R67W					
SHL: 377' FNL & 1088' FWL				G.L.	5015.00 ft
Lat/Long: 40.100998,-104.882530				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:	Township:	Range:		
05-123-38950-0000	34	2N	67W		

Logging Date	21-Jun-2014		
Run Number	Run 1		
Depth Driller	7794.00 ft		
Schlumberger Depth	7794.00 ft		
Bottom Log Interval	6820.00 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	7794.00 ft		
Casing/Tubing Size	7 in		
Weight	26 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	7794.00 ft		
Max Recorded Temperatures			
Logger on Bottom	Time	21-Jun-2014	07:20:00
Unit Number	Location:	3030	Fort Morgan, CO
Recorded By	Keri Ondrus		
Witnessed By	Trevor		

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.

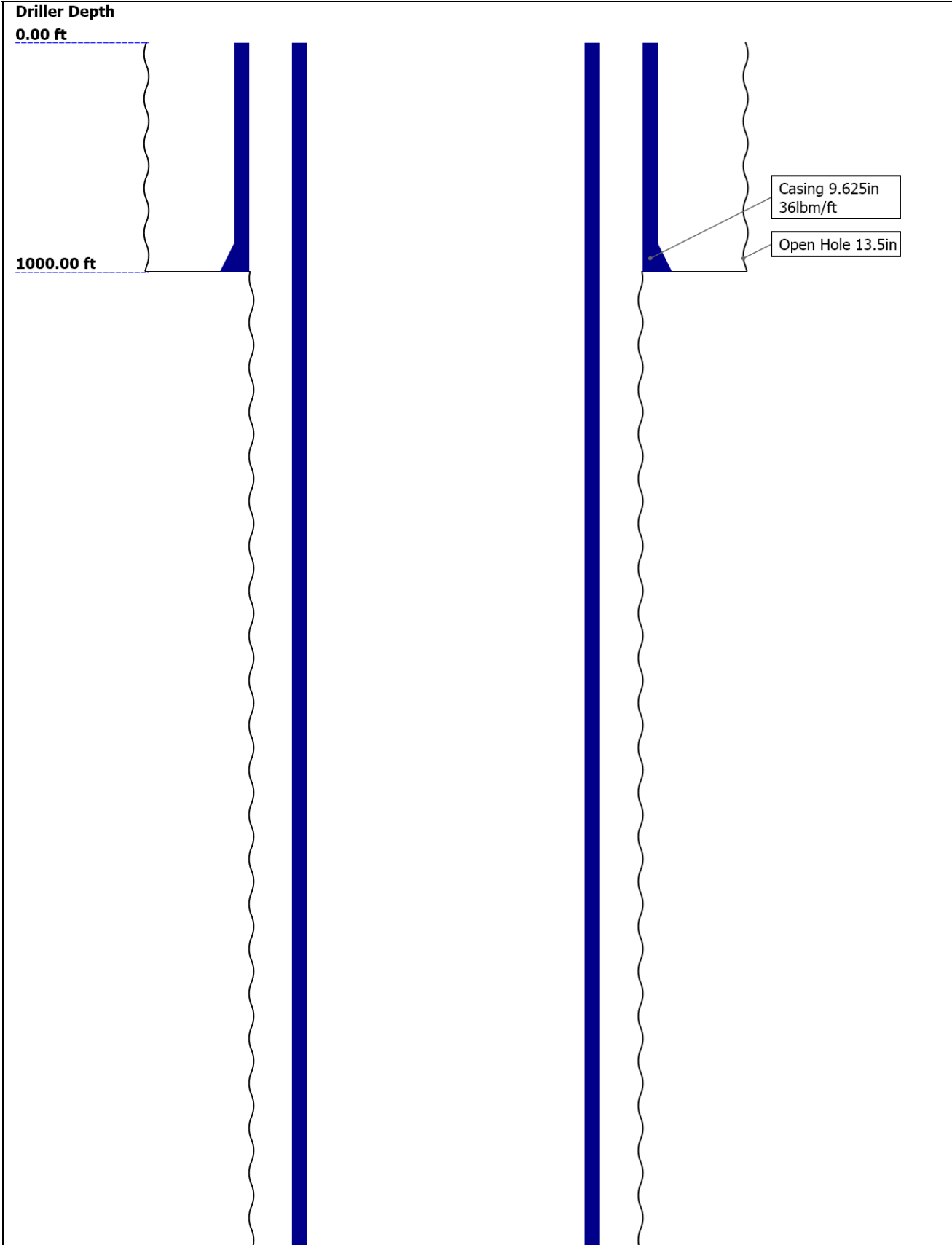
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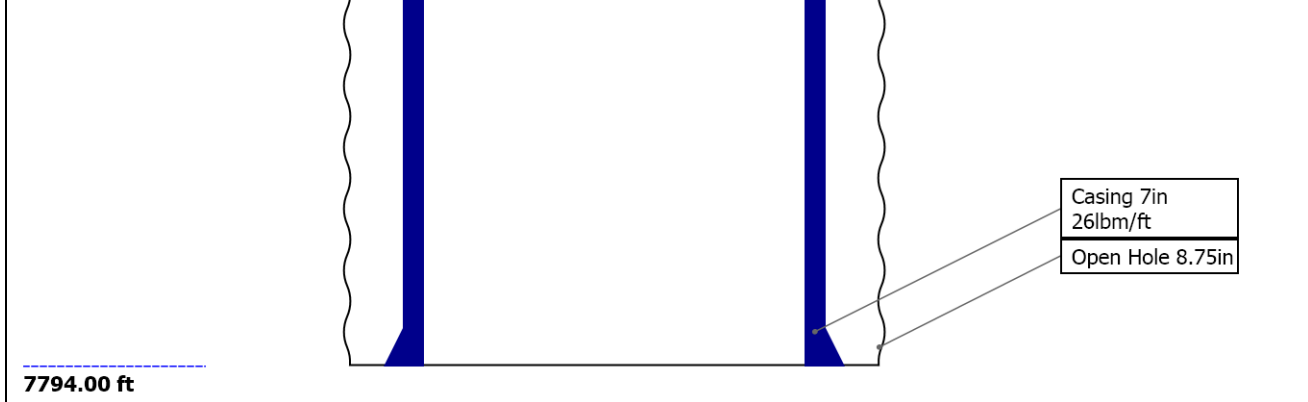
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Well Sketch





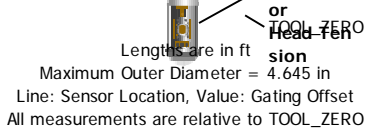
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.75				
Top Driller (ft)	0	1000				
Top Logger (ft)	0	1000				
Bottom Driller (ft)	1000	7794				
Bottom Logger (ft)	1000	7794				
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	7794				
Bottom Logger (ft)	1000	7794				

Operational Run Summary

Parameter (unit)	Run 1					
Date Log Started	21-Jun-2014					
Time Log Started	06:40:52					
Date Log Finished	21-Jun-2014					
Time Log Finished	10:44:52					
Top Log Interval (ft)	NaN					
Bottom Log Interval (ft)	6820.00					
Total Depth (ft)	6820.00					
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					
Service Order Number	RX19-00148					

Service Order Number	DX15-00140					
Borehole Fluids						
Parameter(unit)	Run 1					
Fluid Type	Water					
Max Recorded Temperatures (degF)	NaN					
Salinity (ppm)	0					
Density (lbm/gal)	8.4					
Date Logger on Bottom	21-Jun-2014					
Time Logger on Bottom	07:20:00					
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>MP name</div> <div></div> <div>Offset</div> <div></div> </div> </div> <div> </div>		<div>Toolstring run as per toolsketch.</div> <div>4.5" liner top at 6834'. Bottom log interval at 6825 feet to maintain distance from liner top.</div> <div>Log interval from 6834' 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; 14.4 PPG class G Expandacem.</div> <div>Estimated top of cement at 350'.</div> <div>0 PSI logged spliced at 195 feet due to top of fluid on first attempt.</div> <div>Thank you for choosing Schlumberger Wireline!</div> <div>SLB crew: Jay Musgrave, Josh Strand, Jake Jump, and Keri Ondrus.</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>CTEM</div> <div>HV</div> <div>28.94</div> <div>0.00</div> </div> </div> <div> </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>GR</div> <div>25.92</div> </div> </div> <div> </div>						
<div> <div> <div>CME-AF 21.34</div> </div> </div> <div> </div>						
<div> <div> <div>AH-184:27 17.54</div> <div>46</div> </div> </div> <div> </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> <div>USI Sens 0.38</div> </div> </div> <div> </div>						



Depth Measuring Device

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

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		

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

Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.
Rig Up Length At Surface		IDW used as primary depth control device.
Rig Up Length At Bottom		Z-chart used as secondary depth control device.
Rig Up Length Correction		
Stretch Correction	5.54 ft	
Tool Zero Check At Surface		

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[5]:Up	6820.01	7.54

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

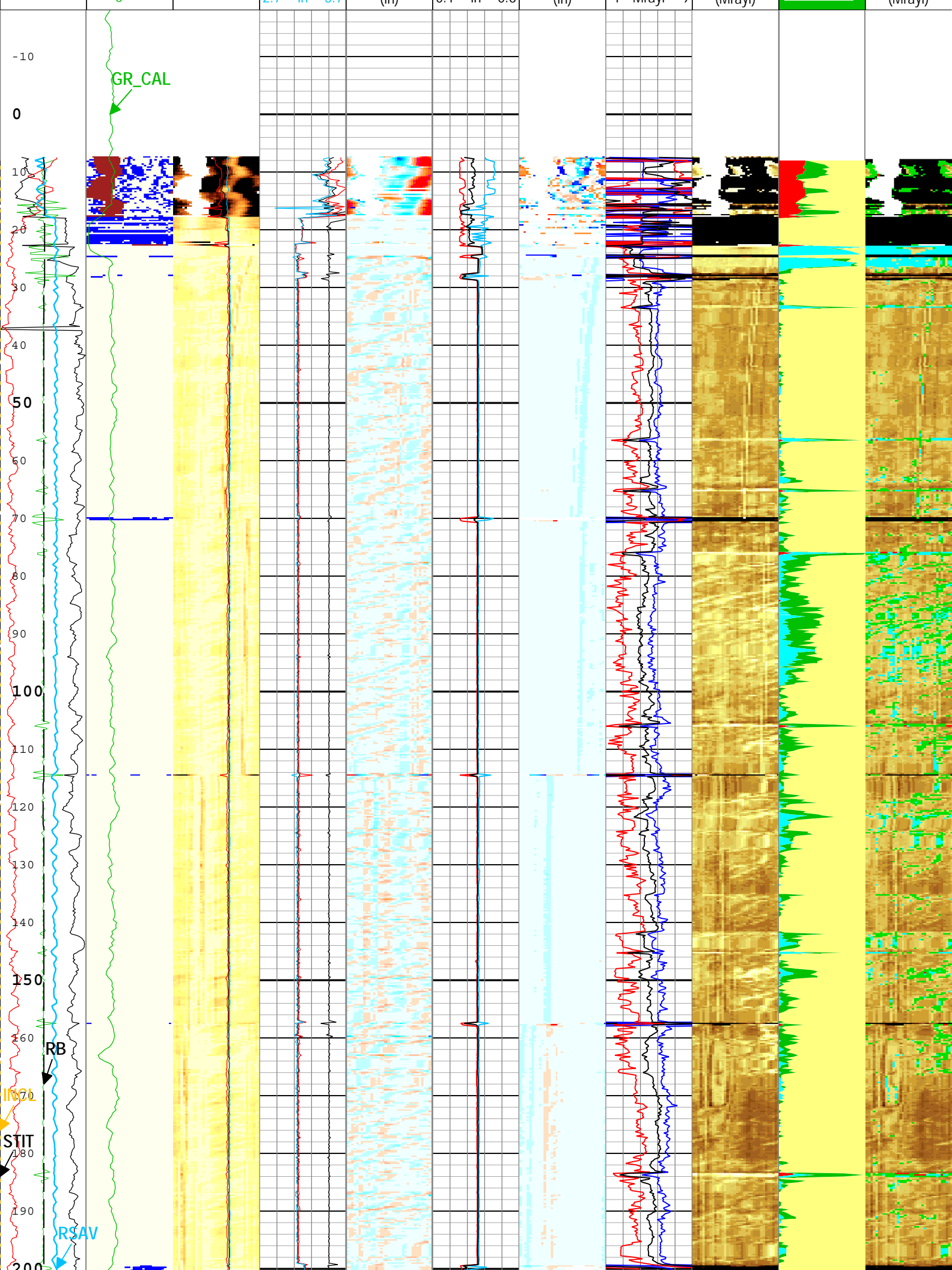
Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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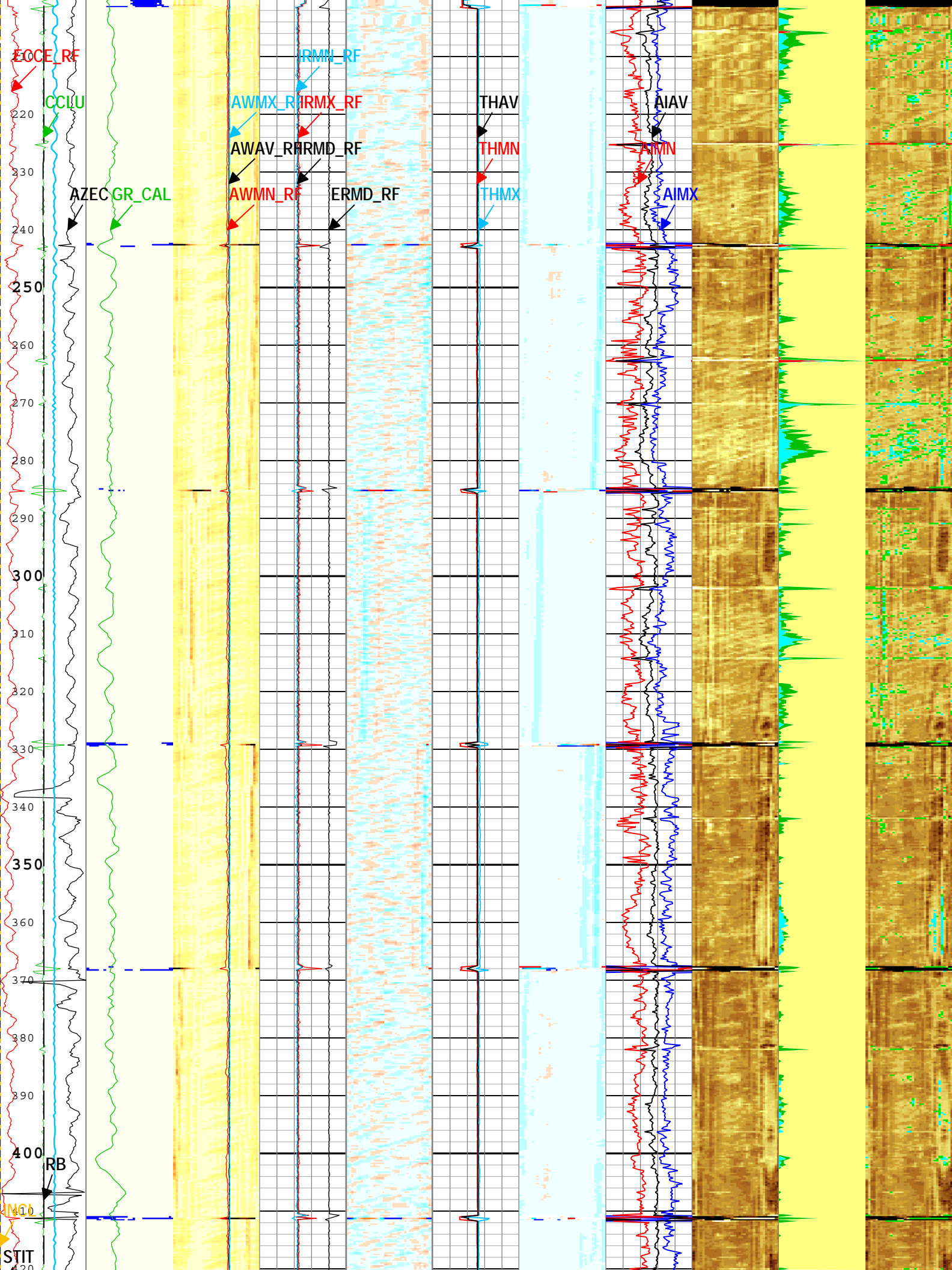
Mud Impedance = "Manual".
 CZMD uses ZMUD parameter zoned table below

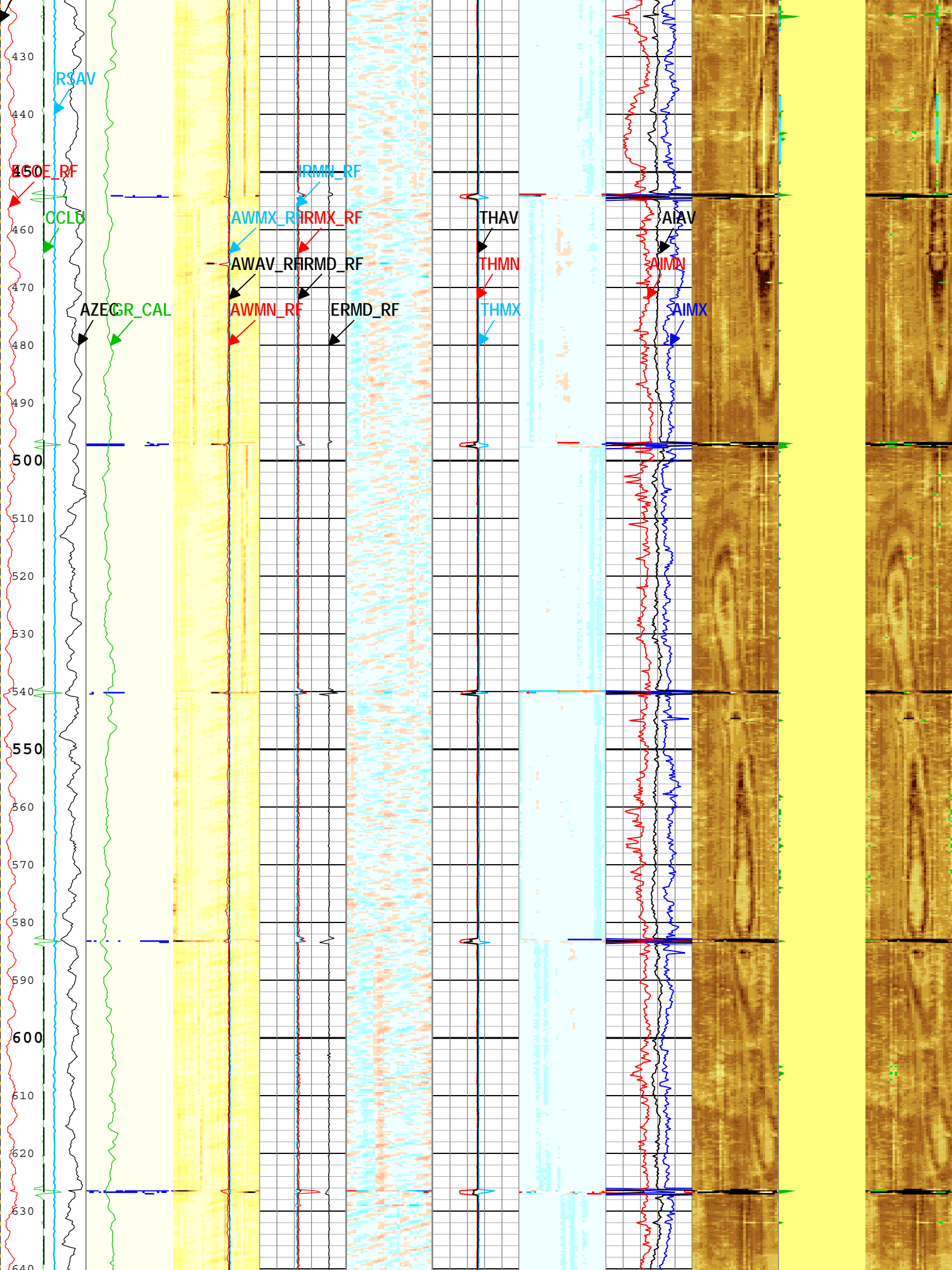
Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	875	1.7	1.7
875	2400	1.68	1.68
2400	3500	1.69	1.69
3500	4200	1.7	1.7
4200		1.7	1.7

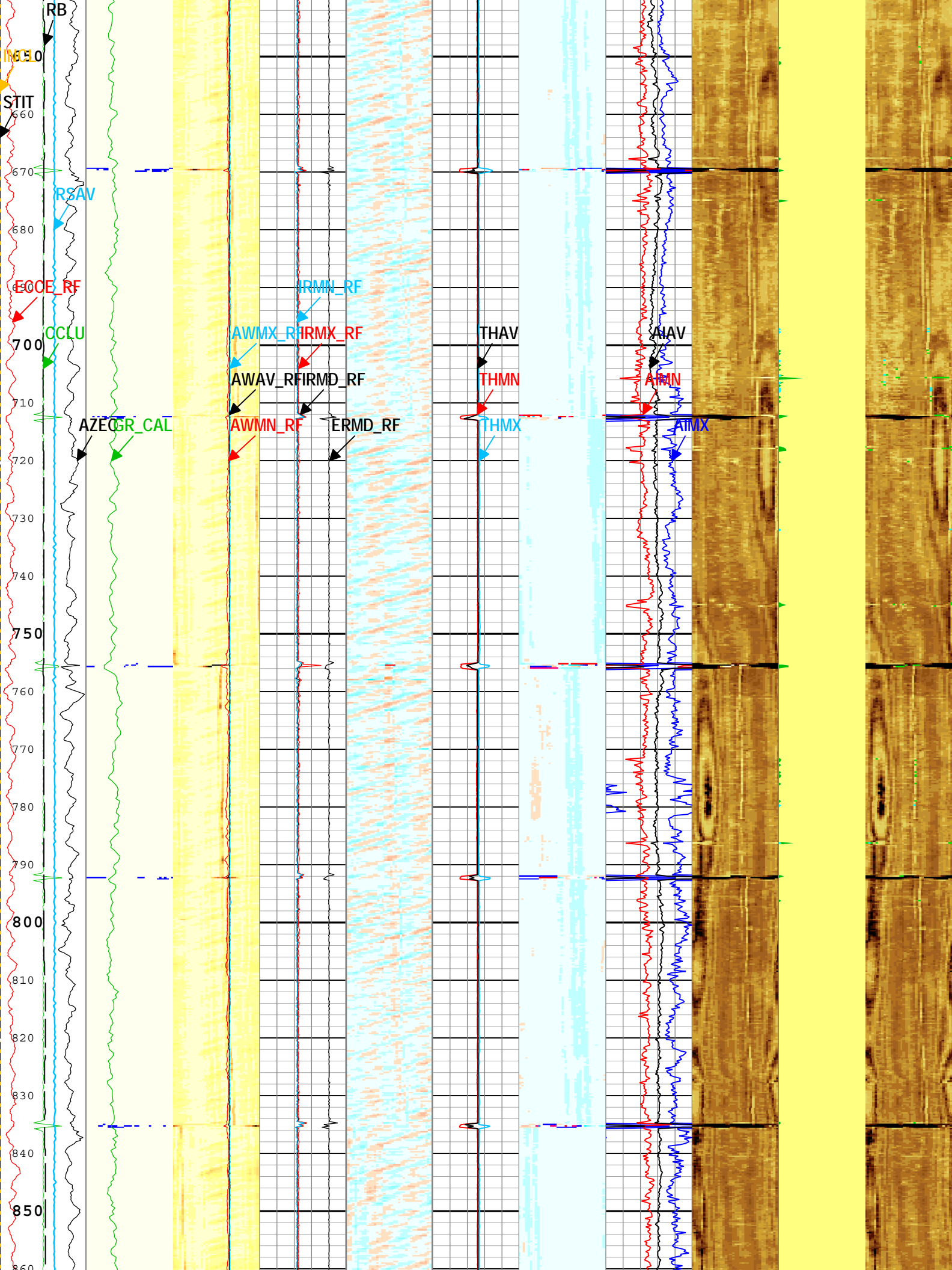
Composite - 3000 PSI

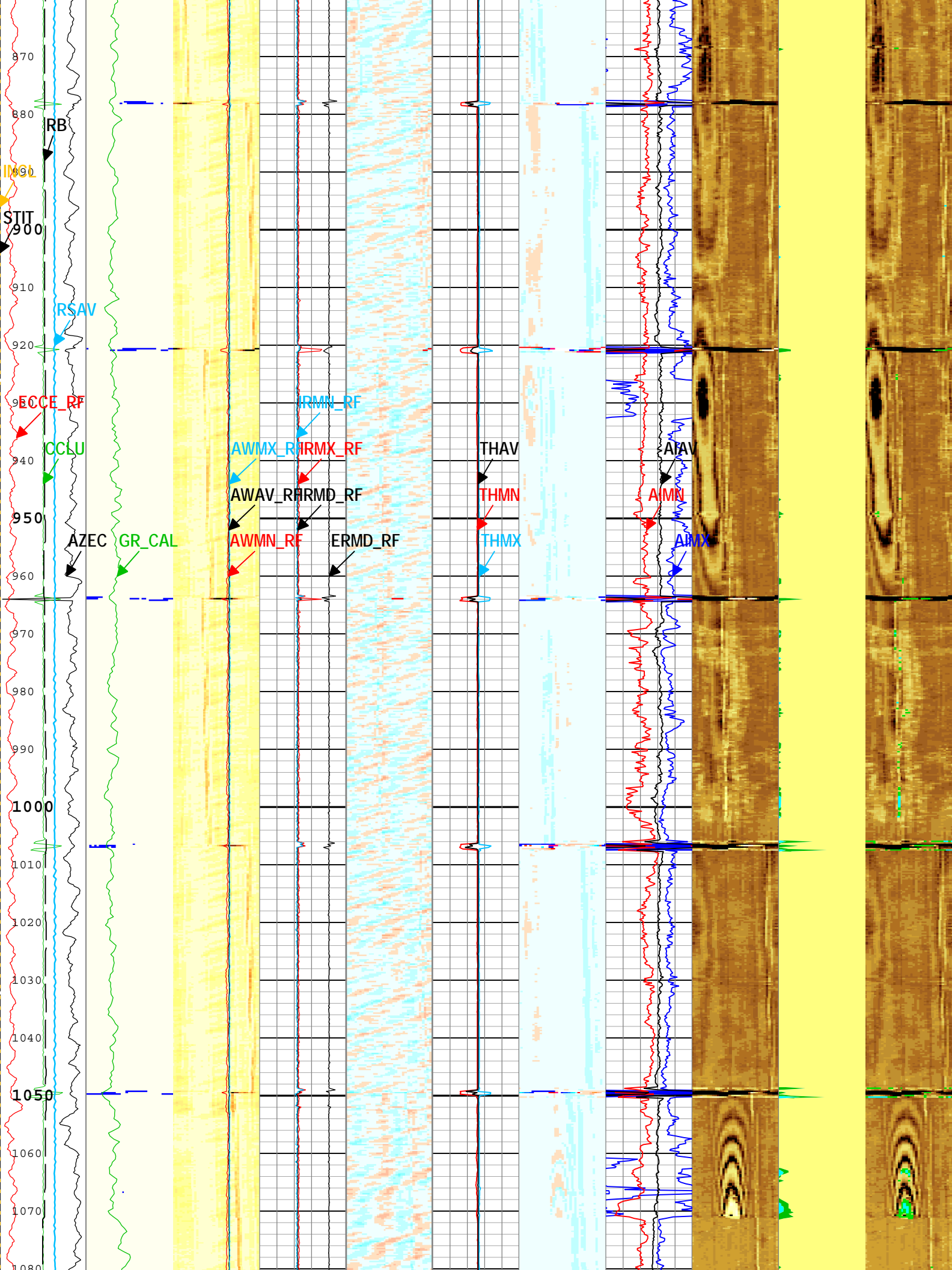
USIT -
Acoustic
Impedance
With
Micro-debond
ing Image

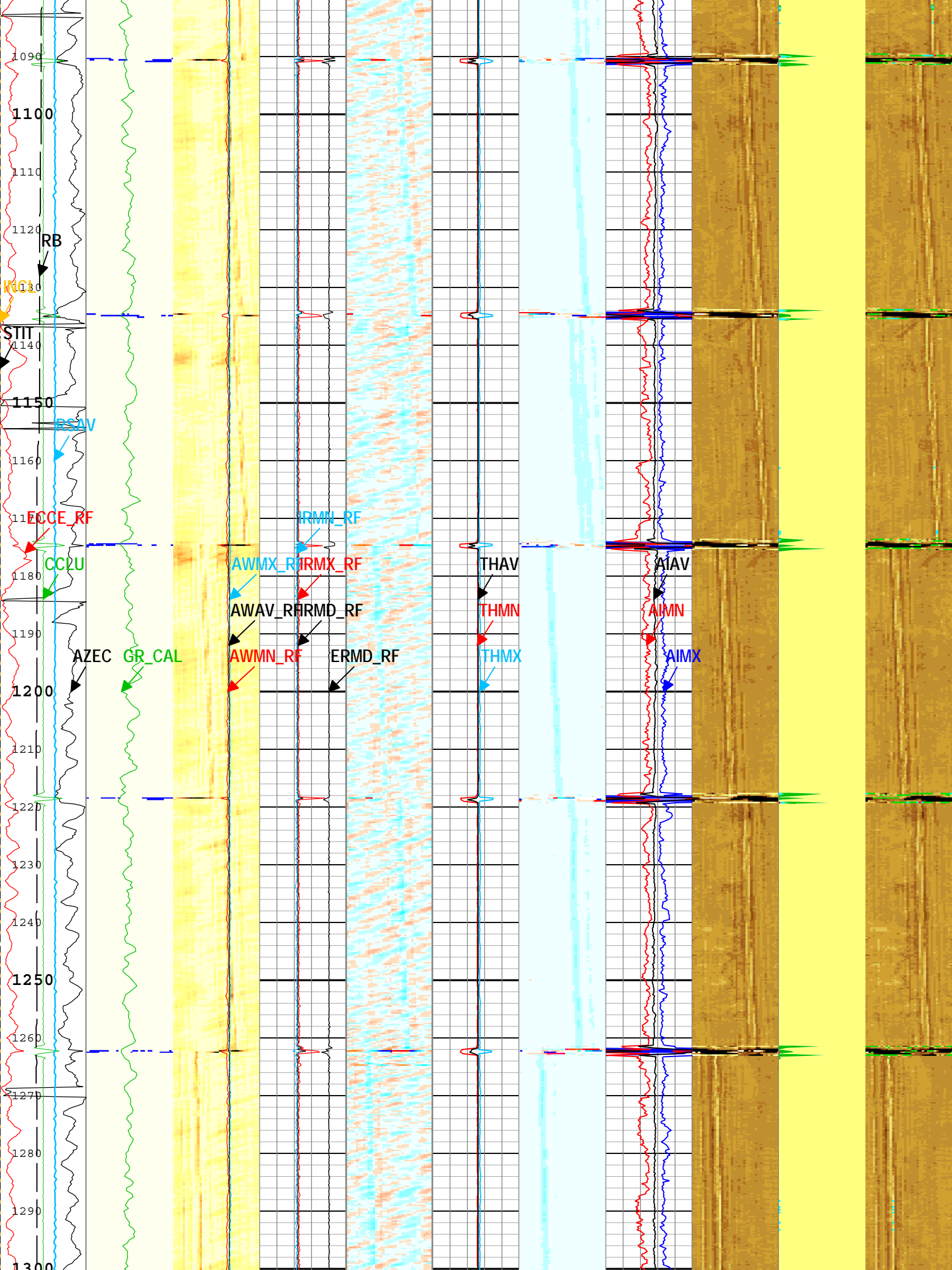


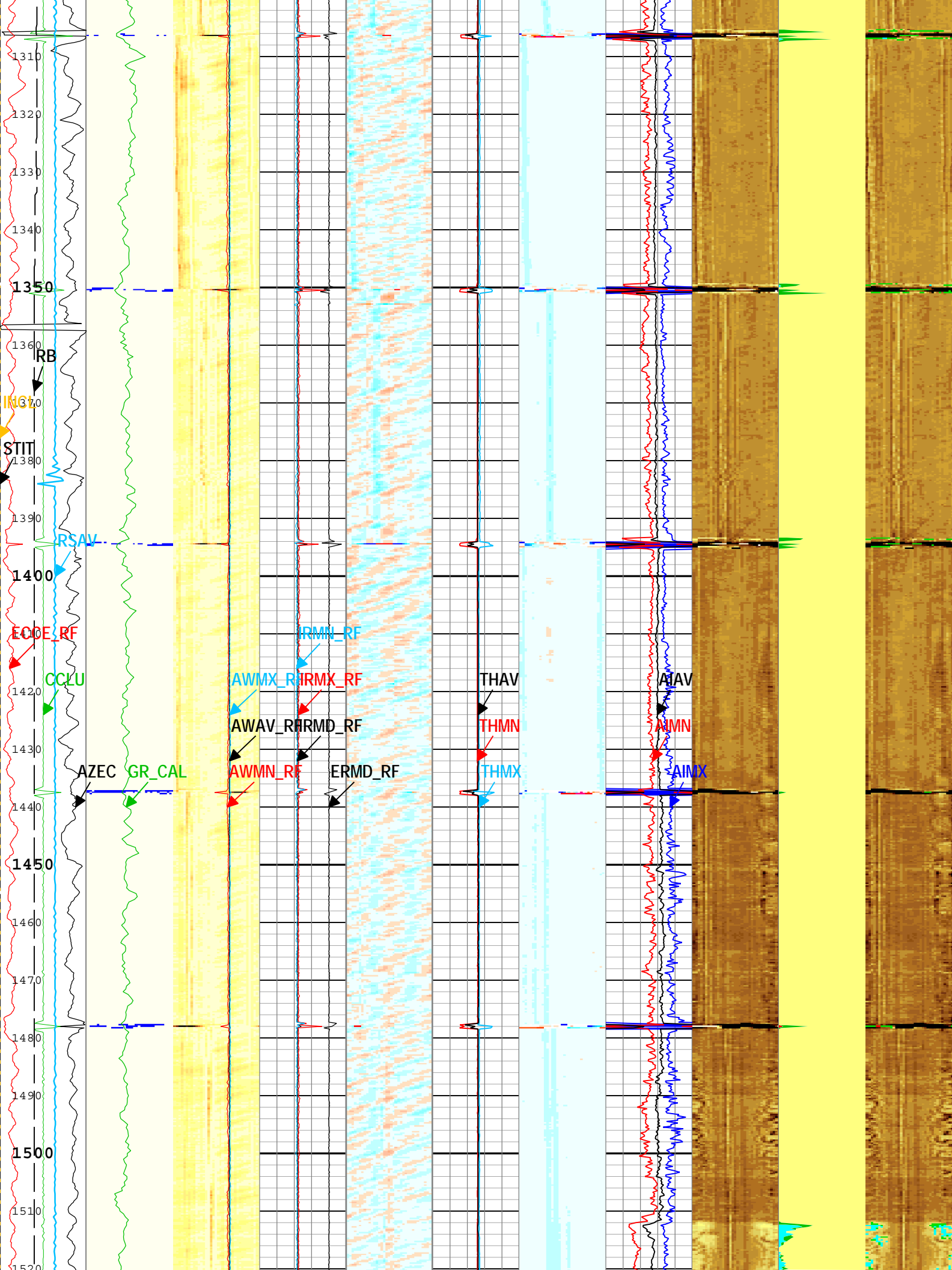


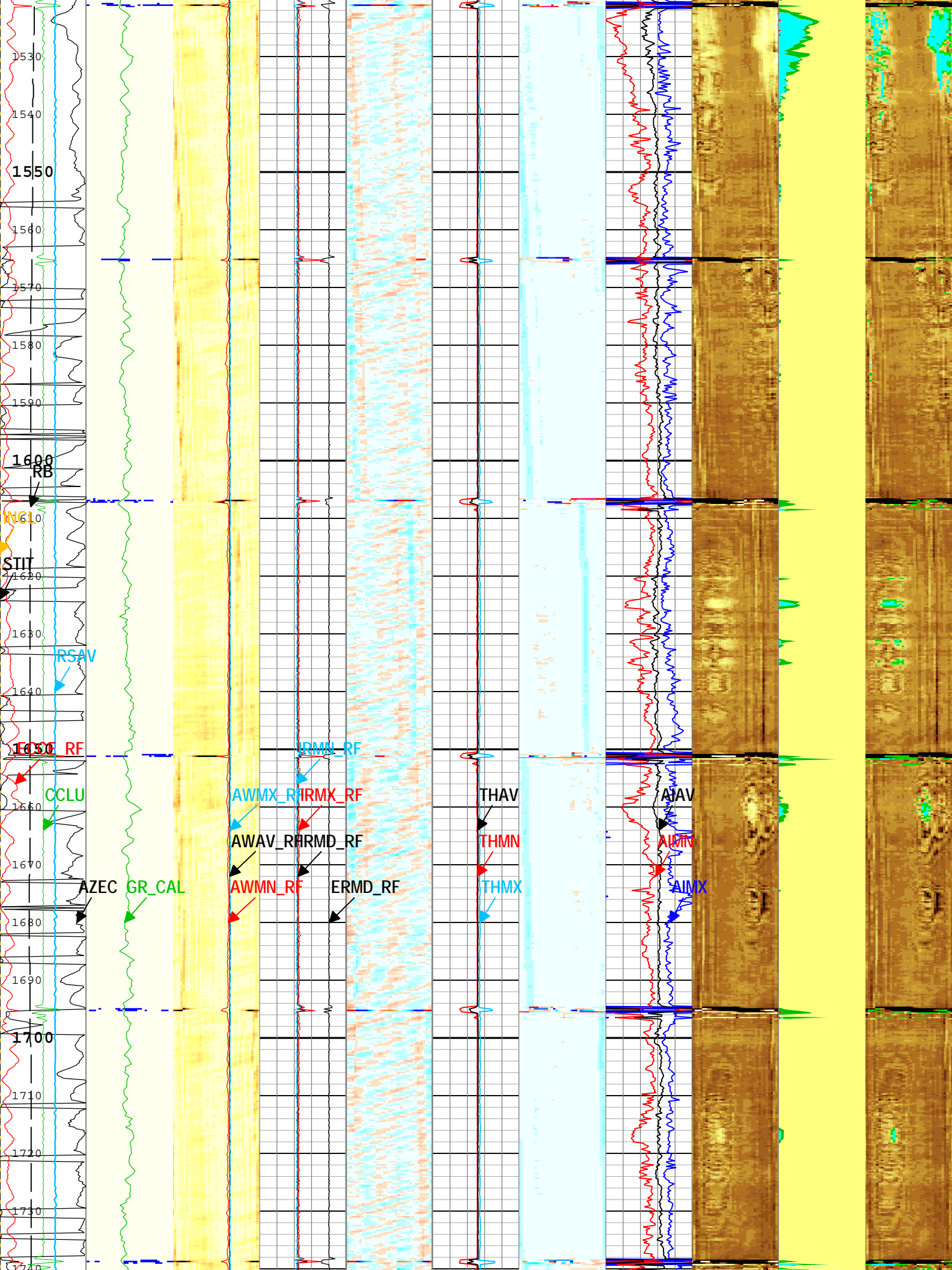


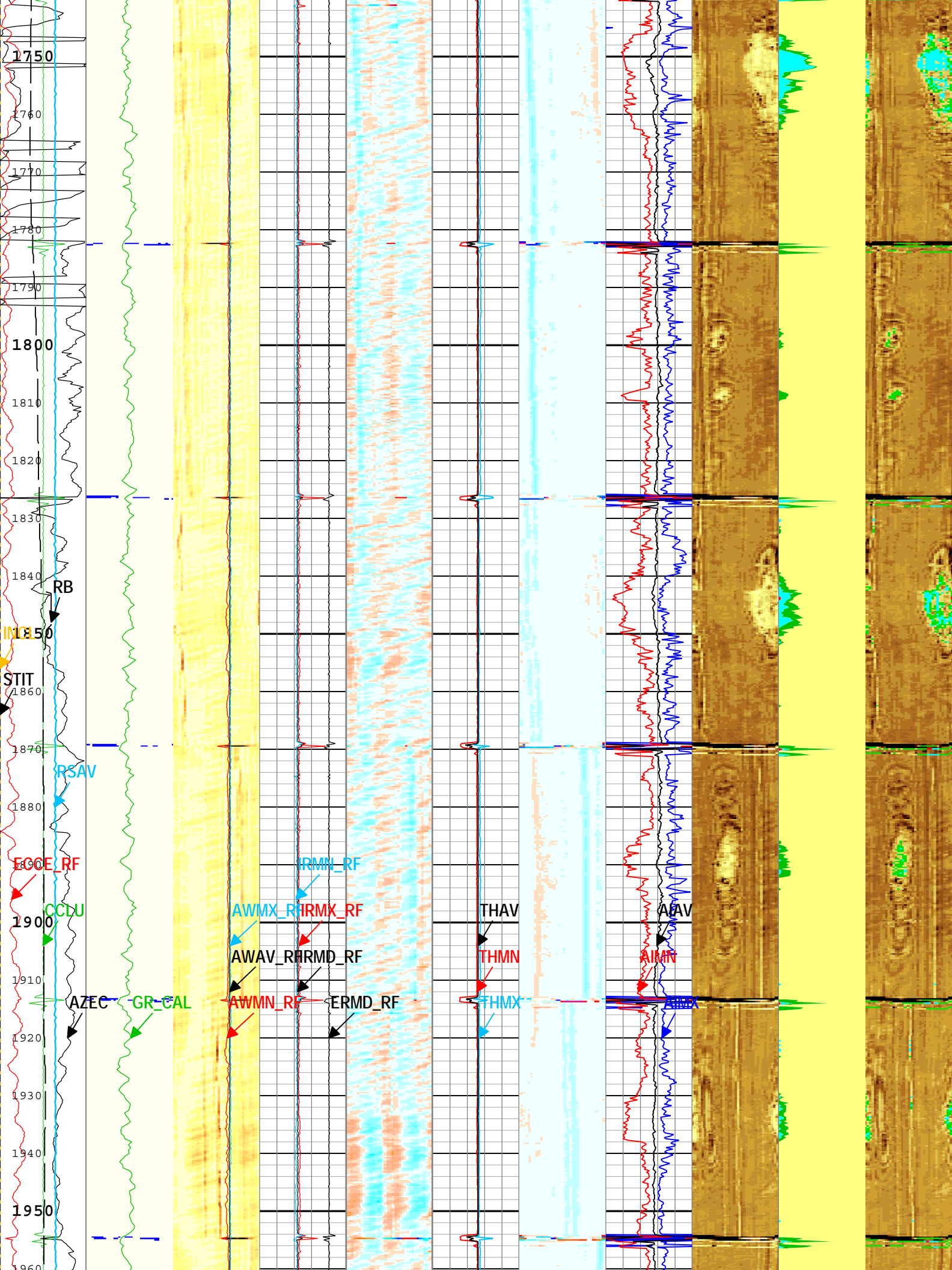


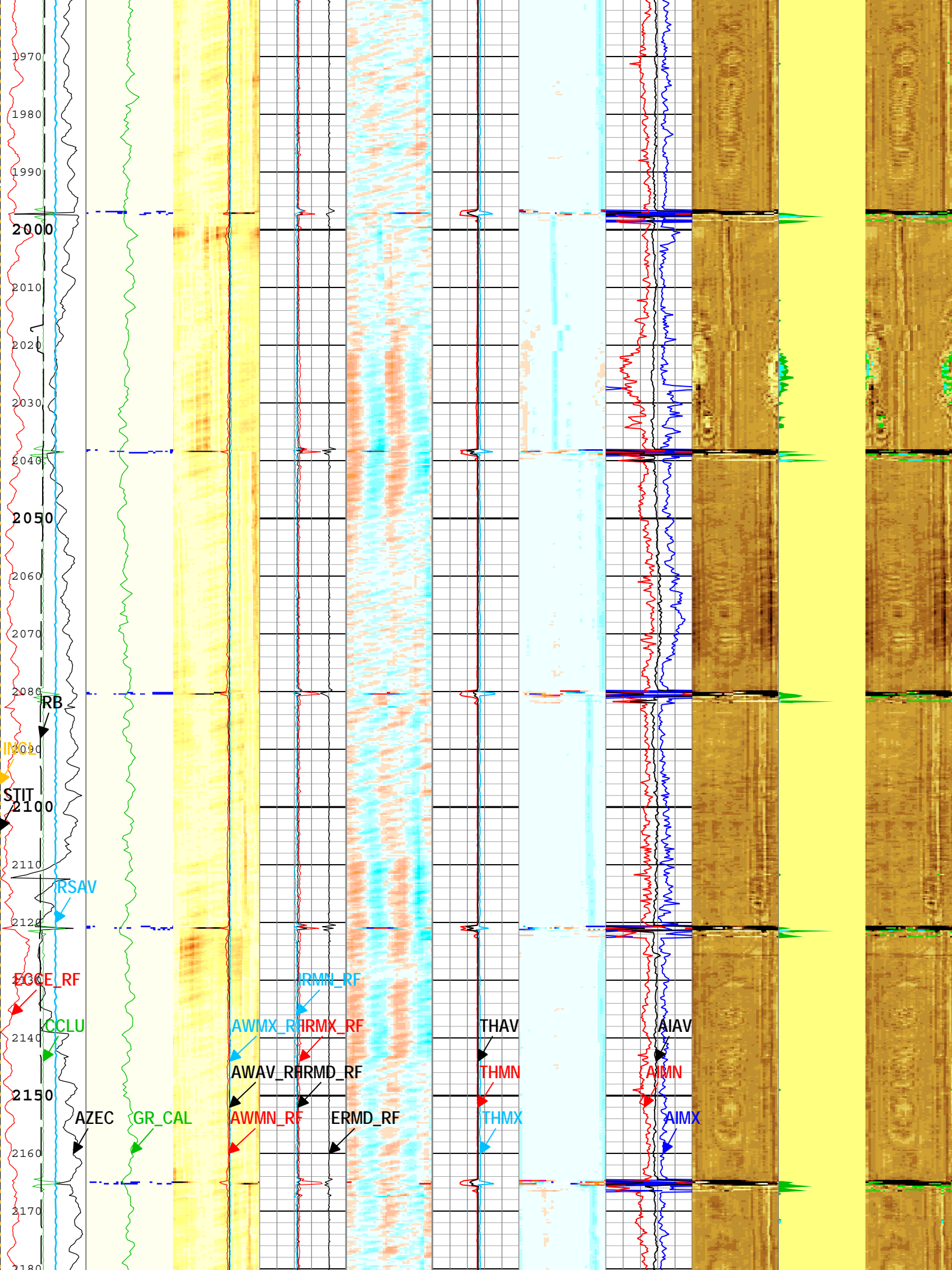


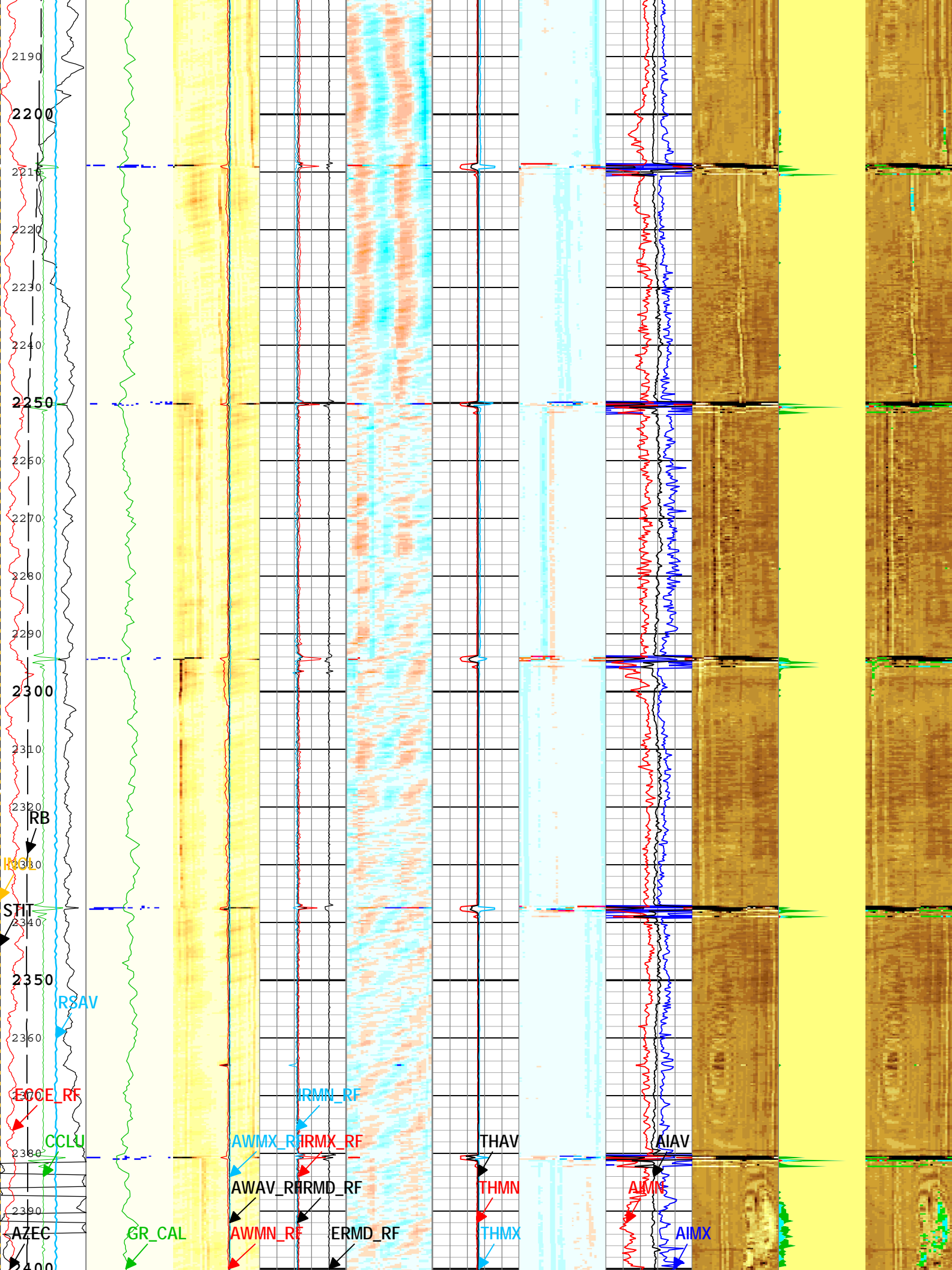


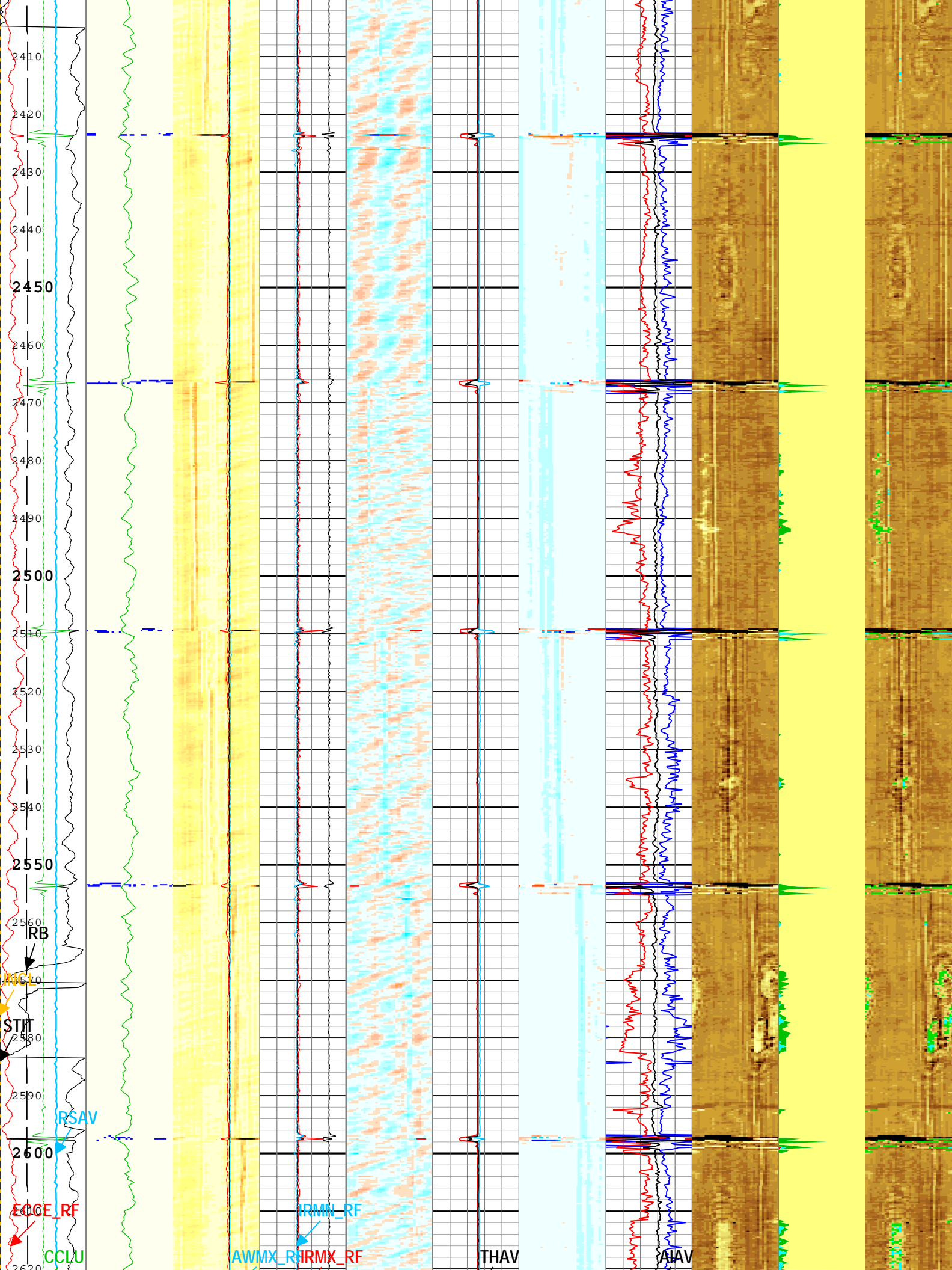


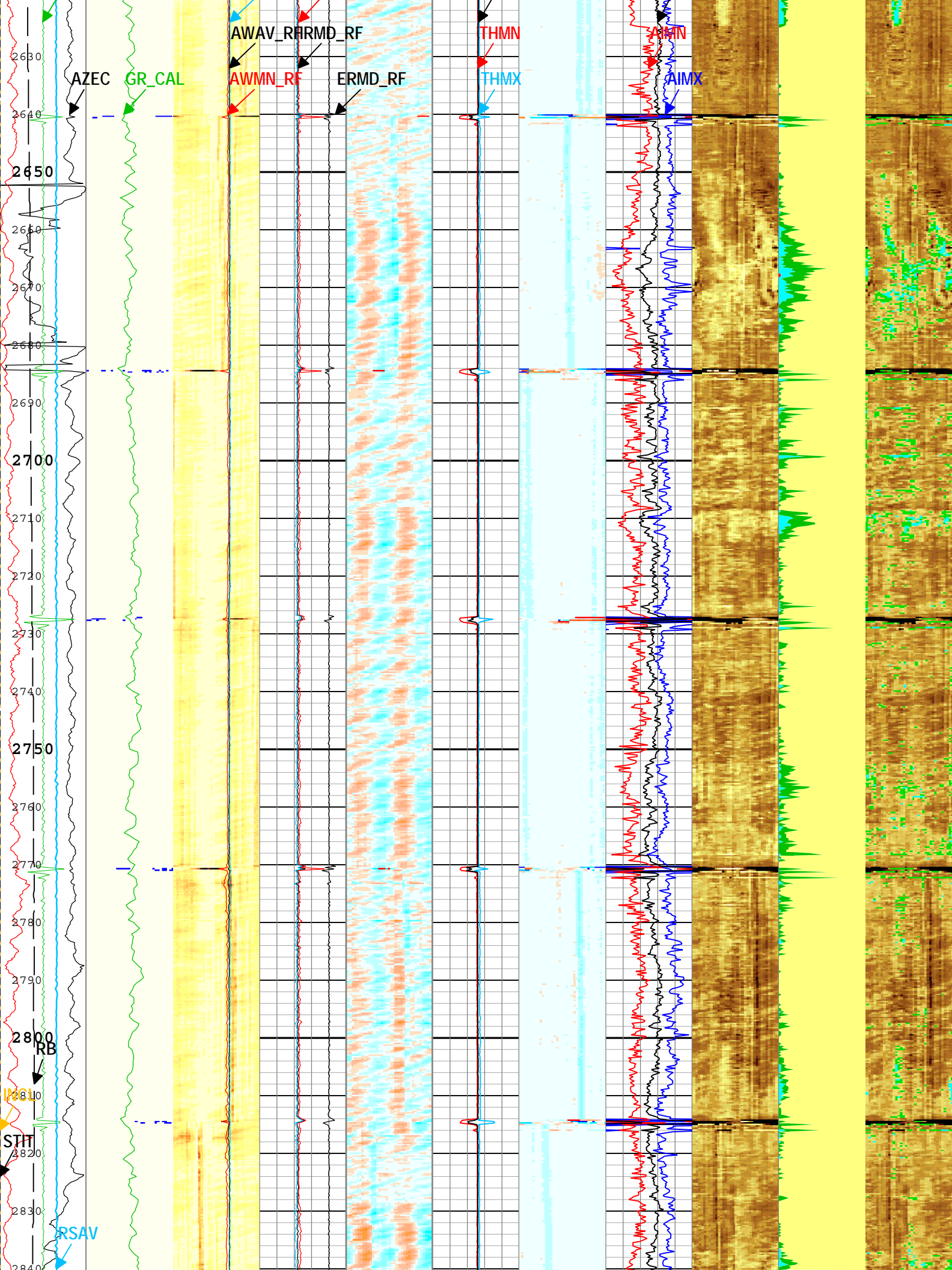


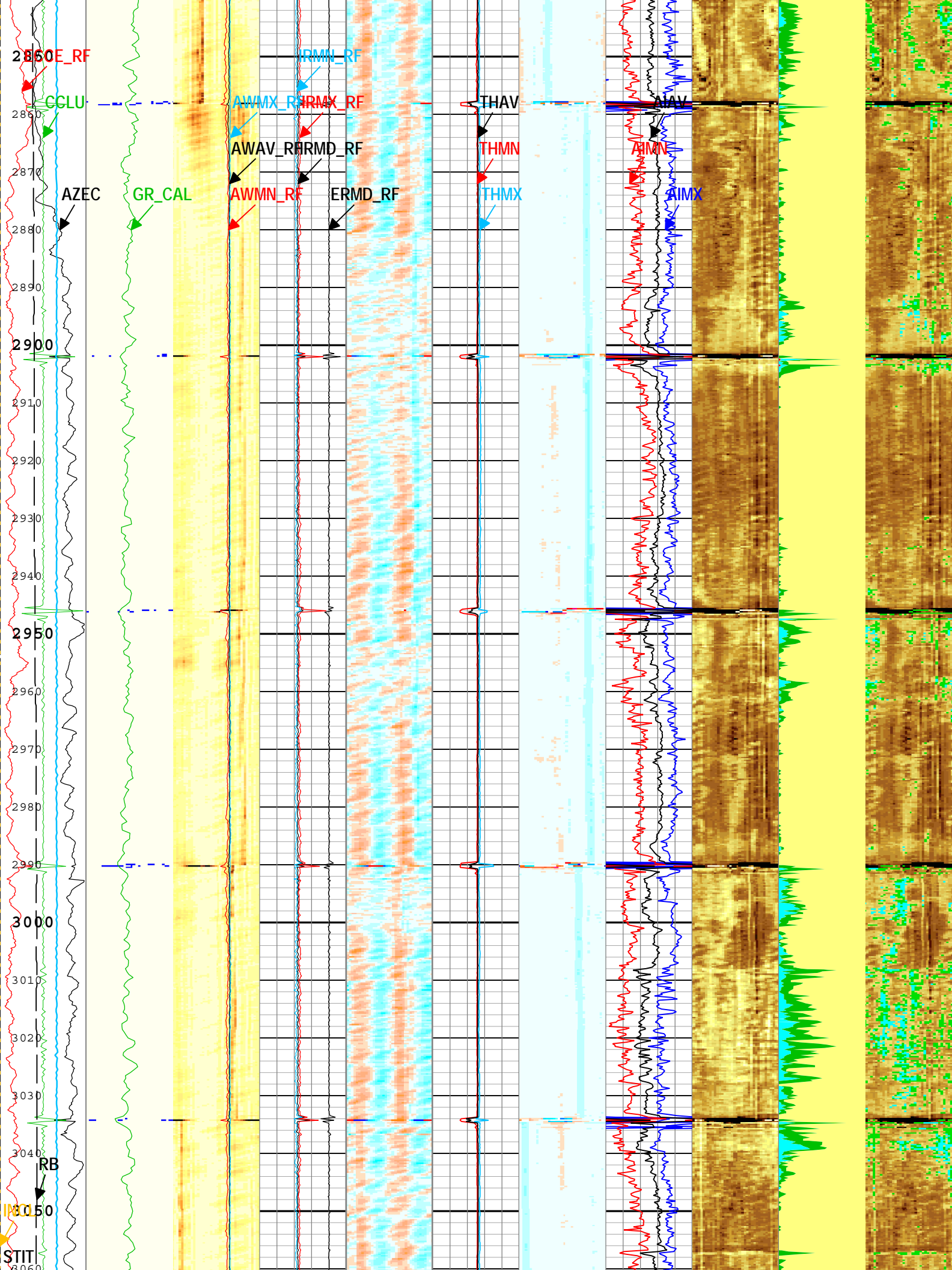


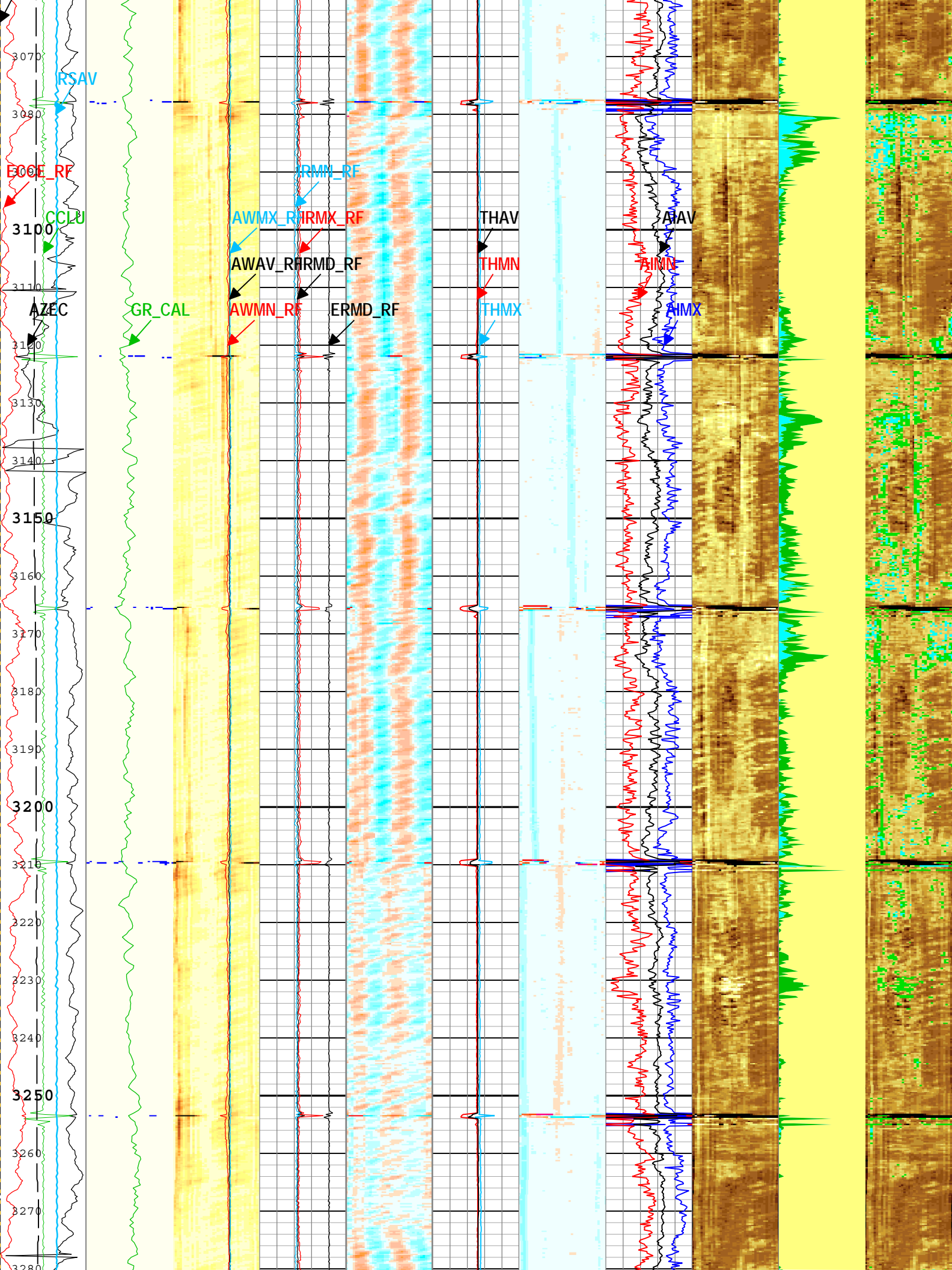


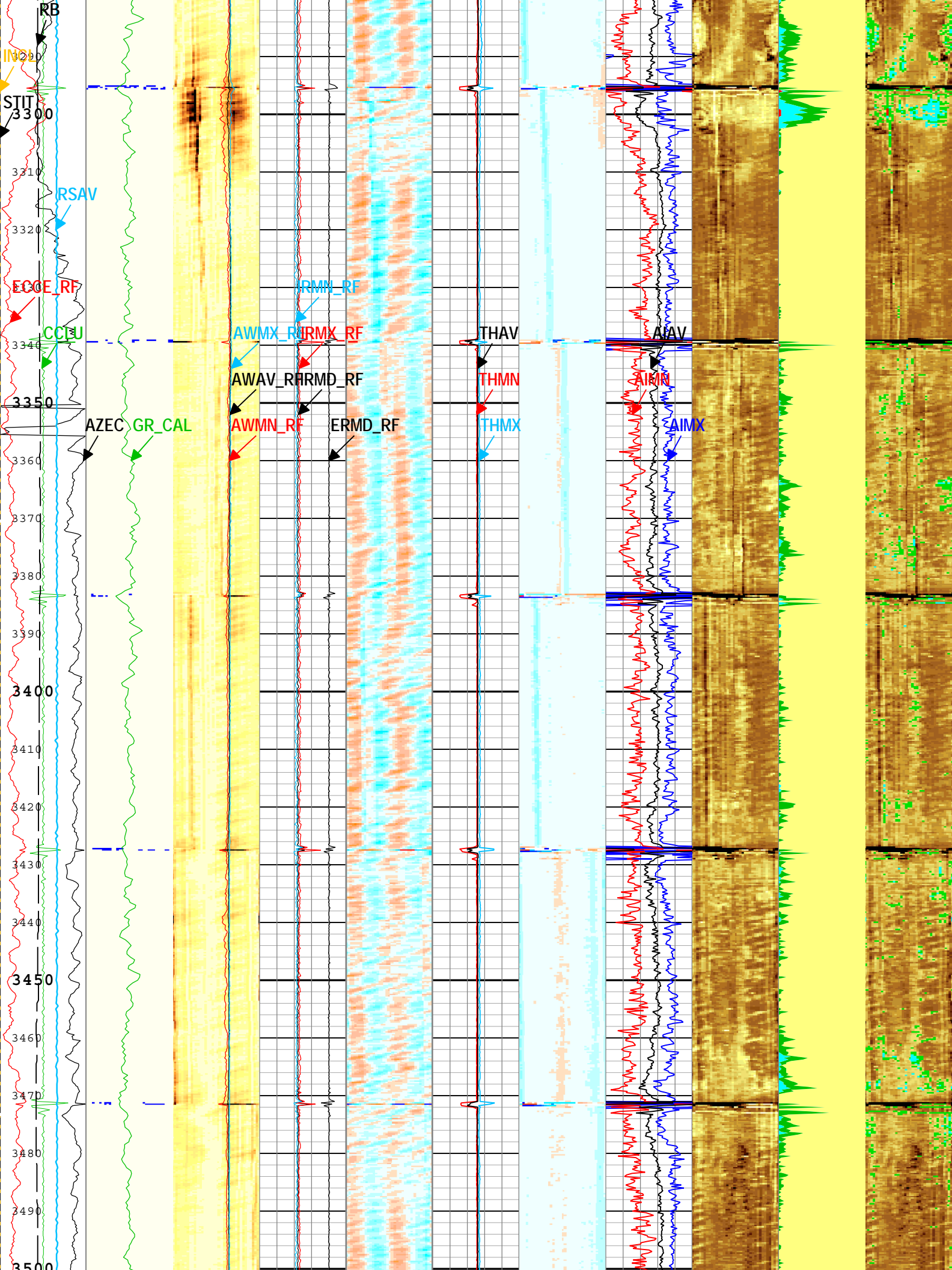


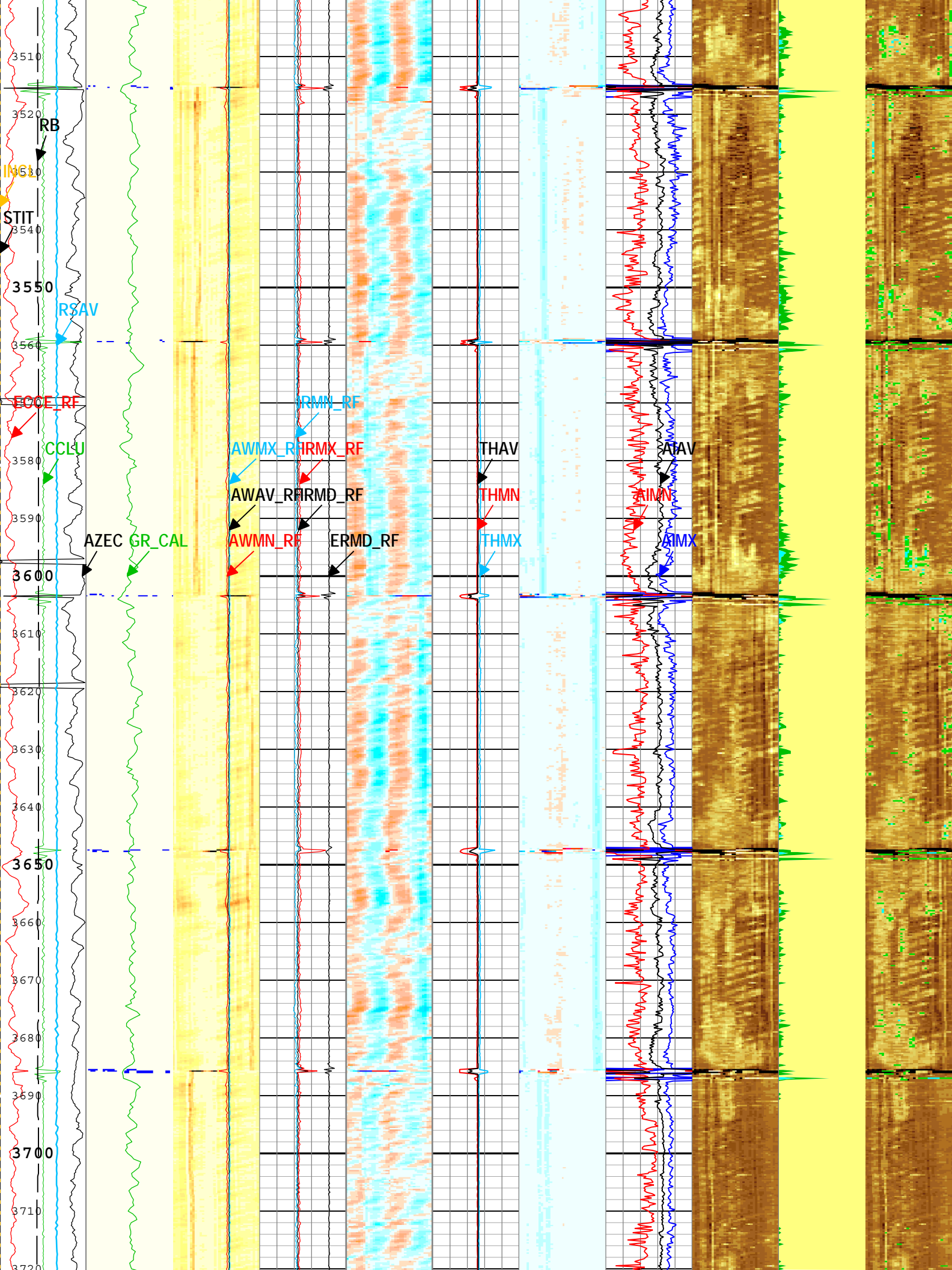


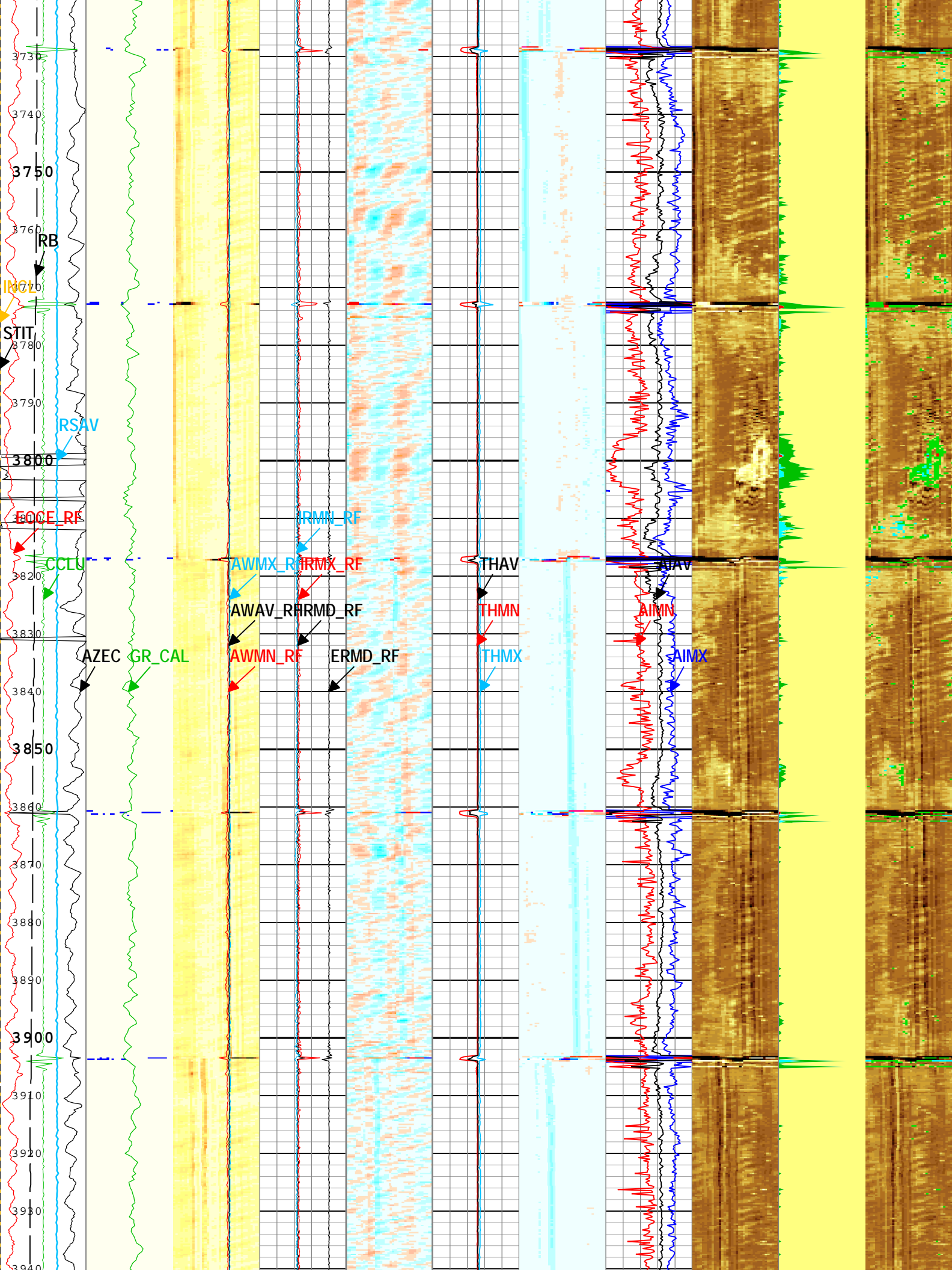


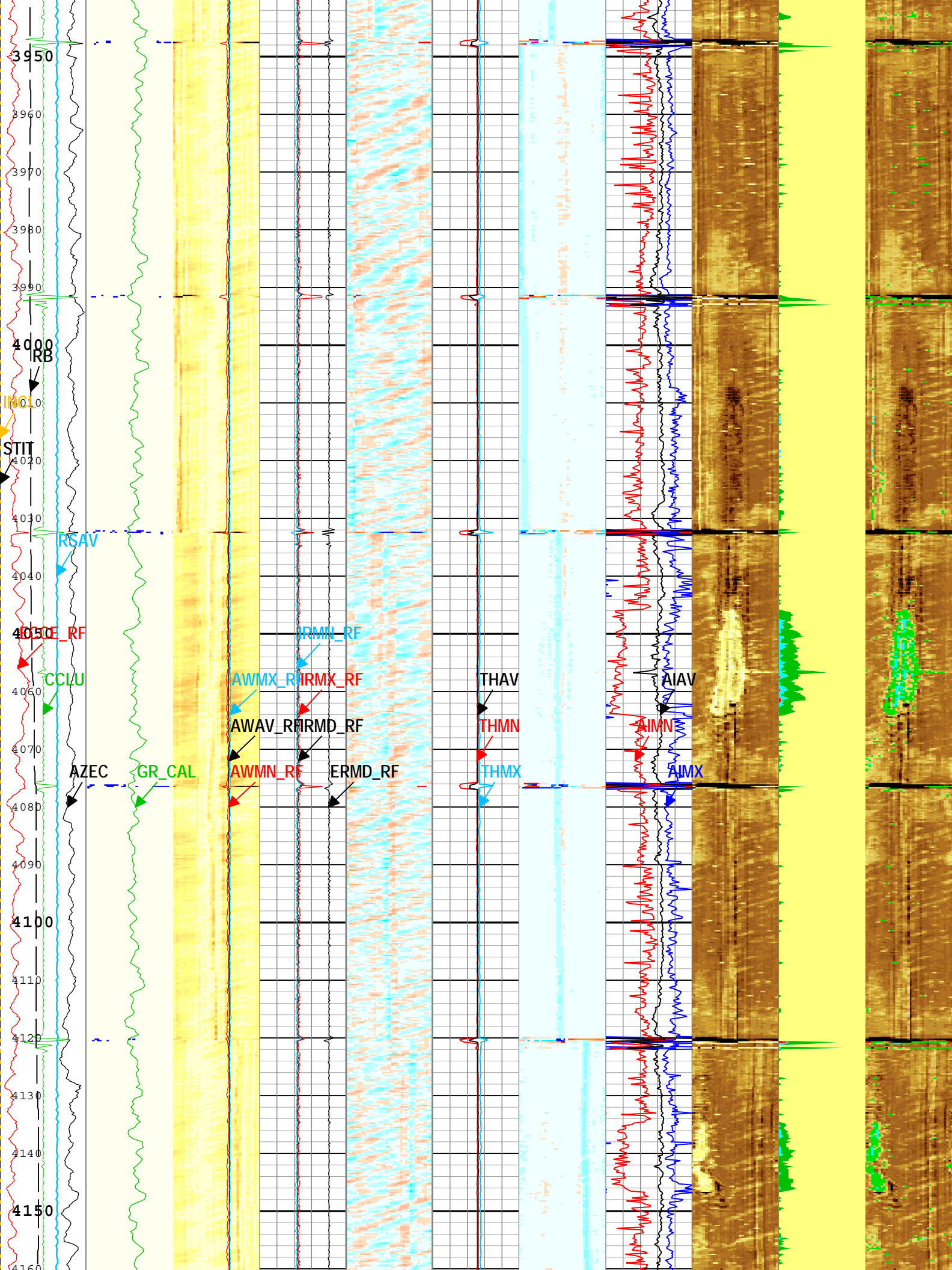


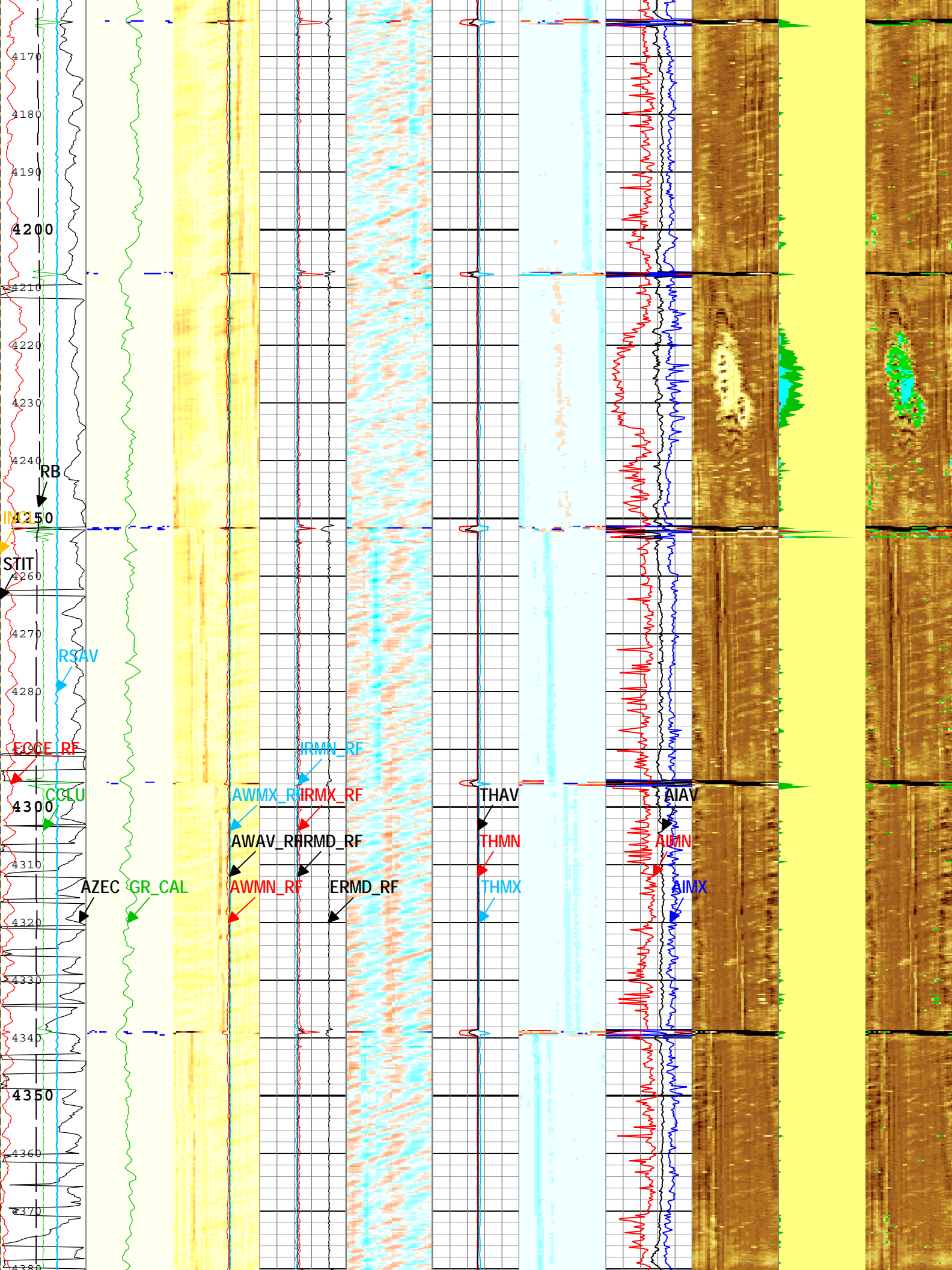


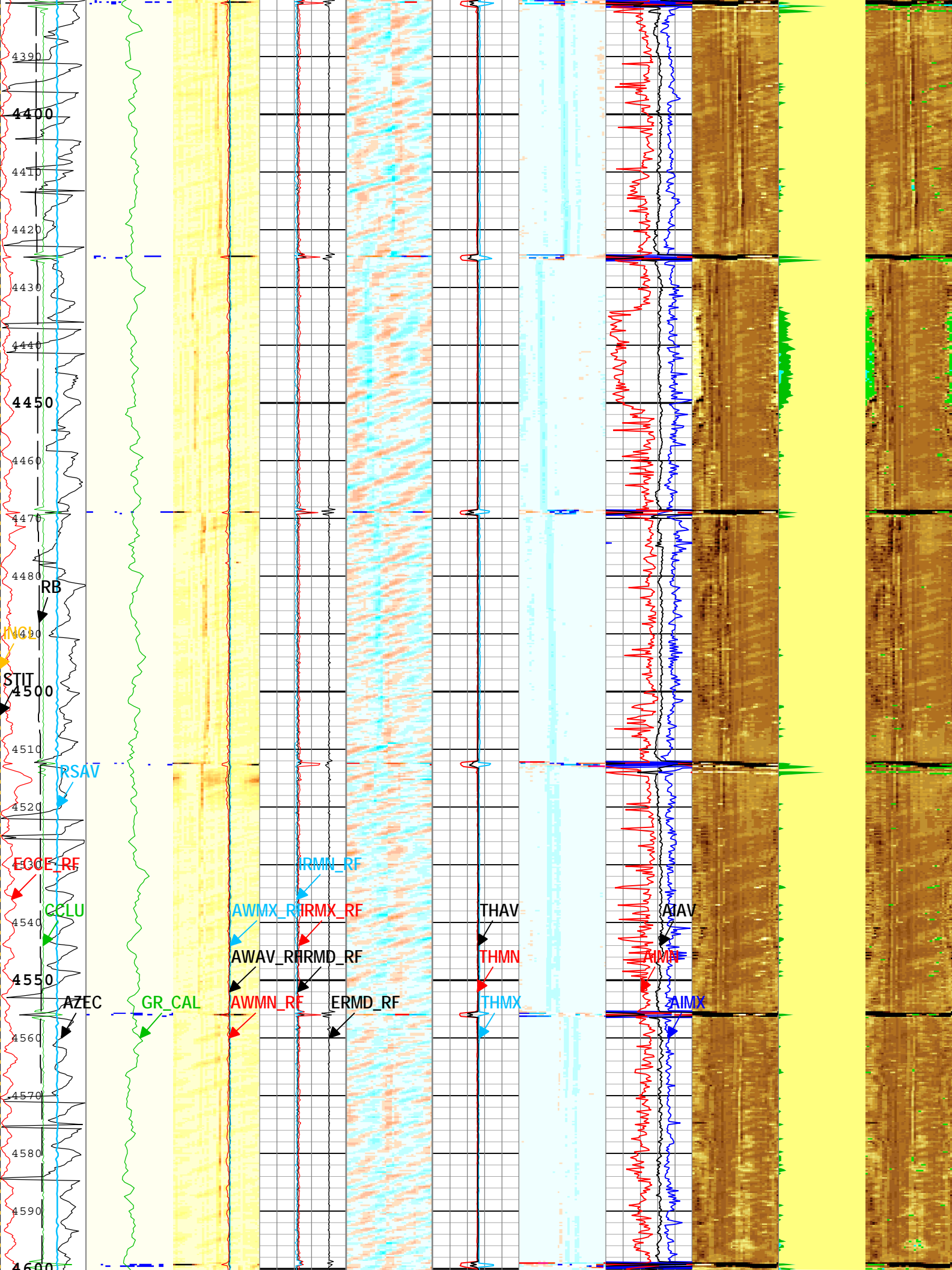


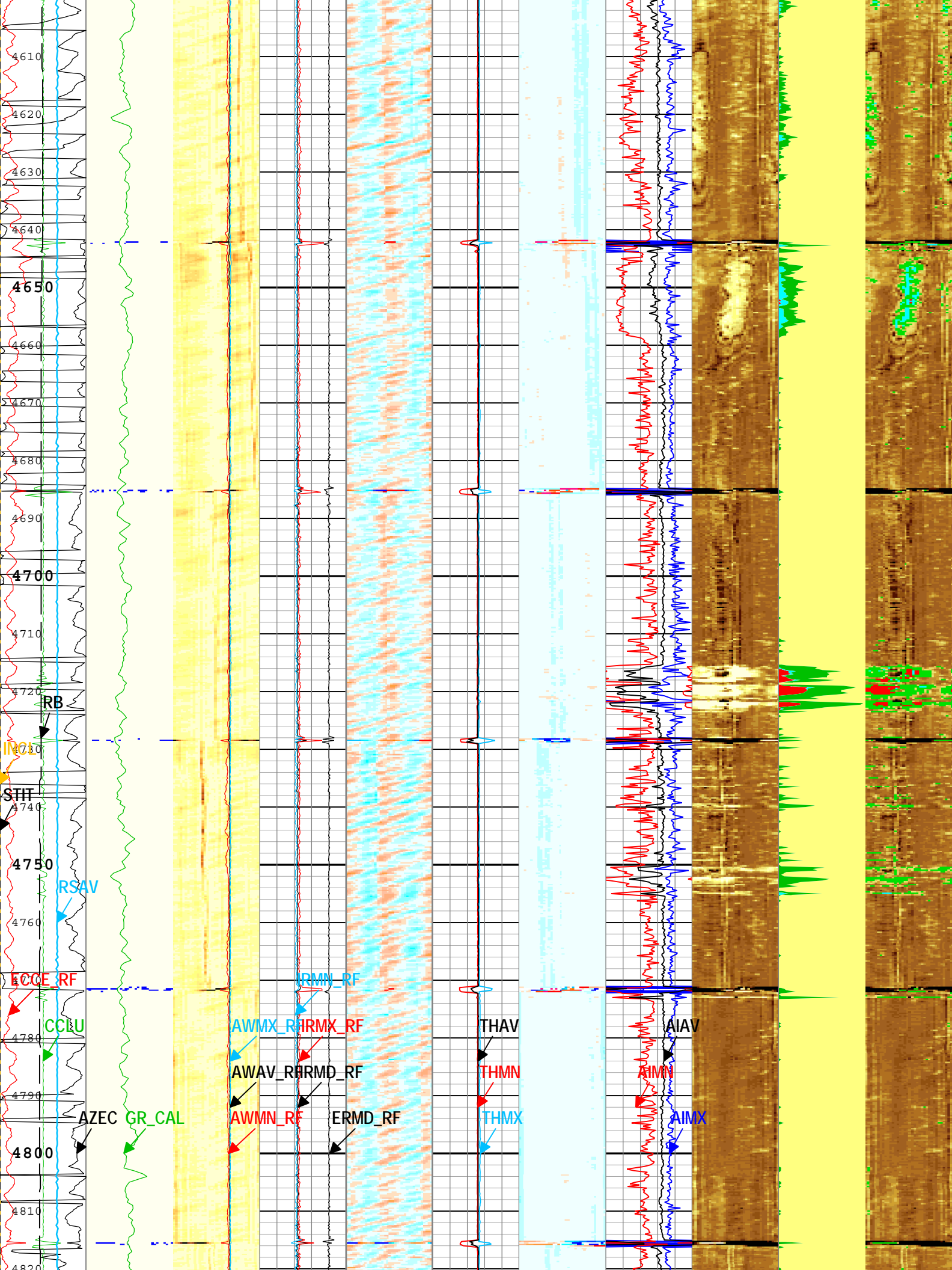


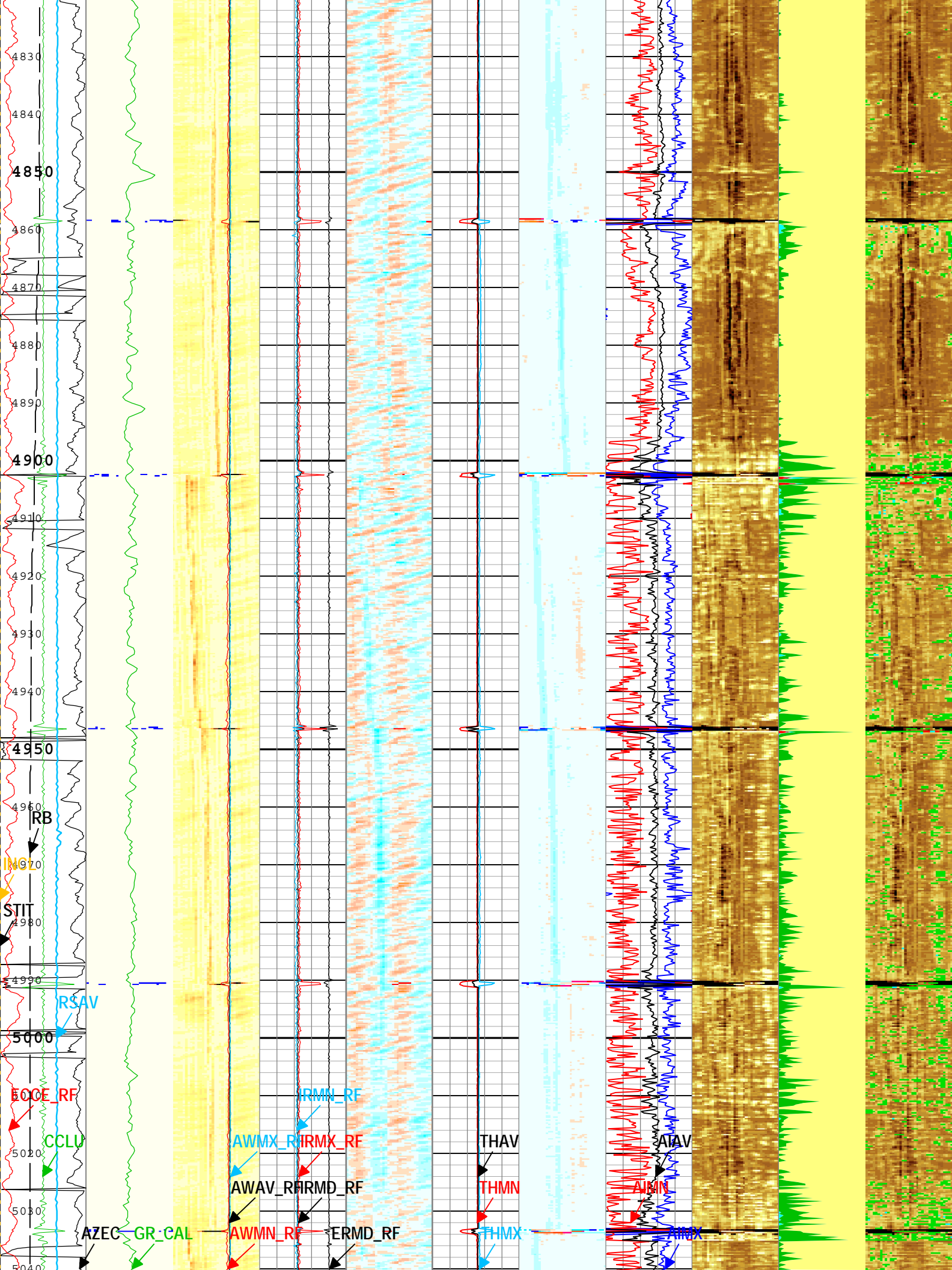


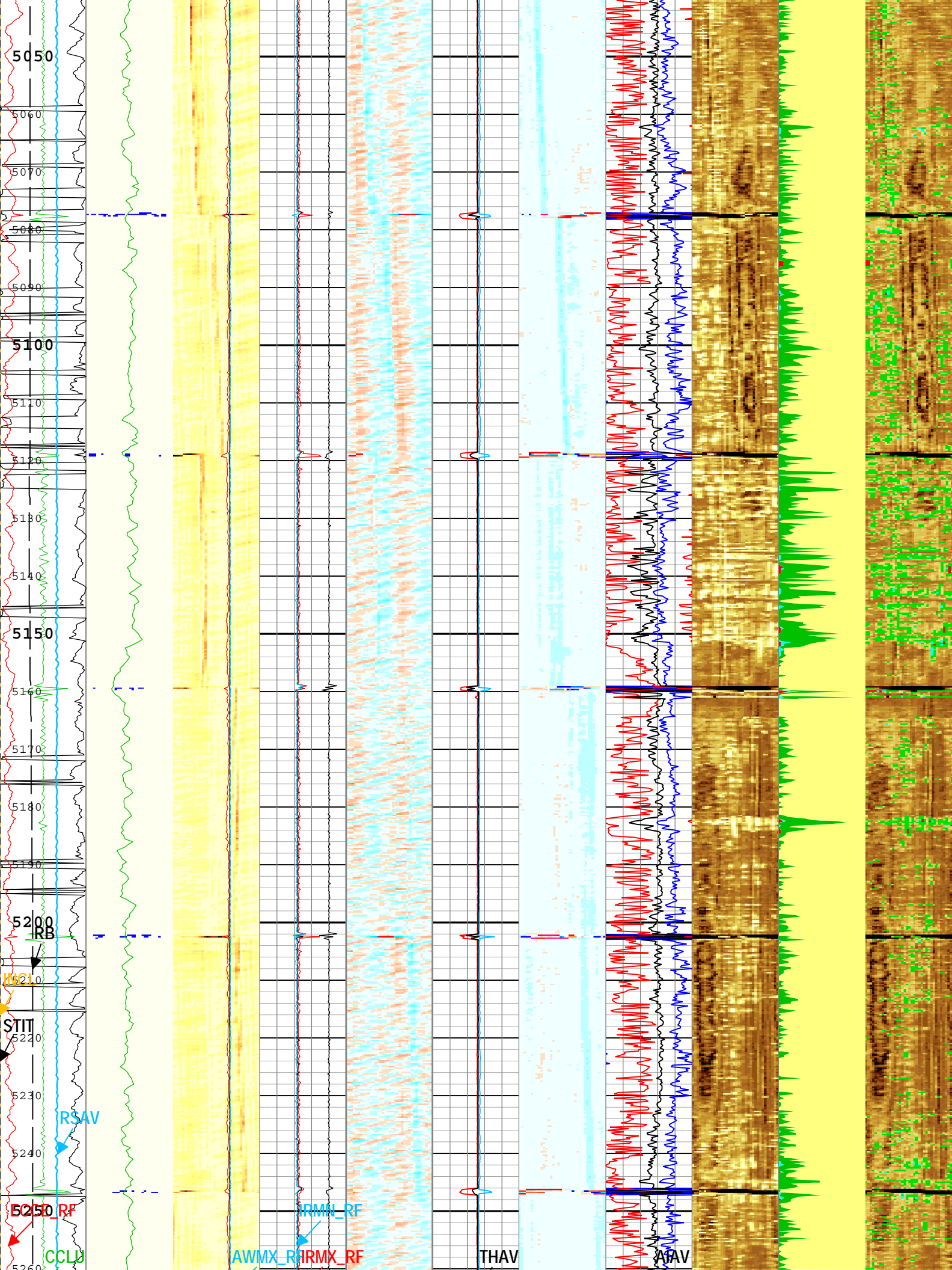


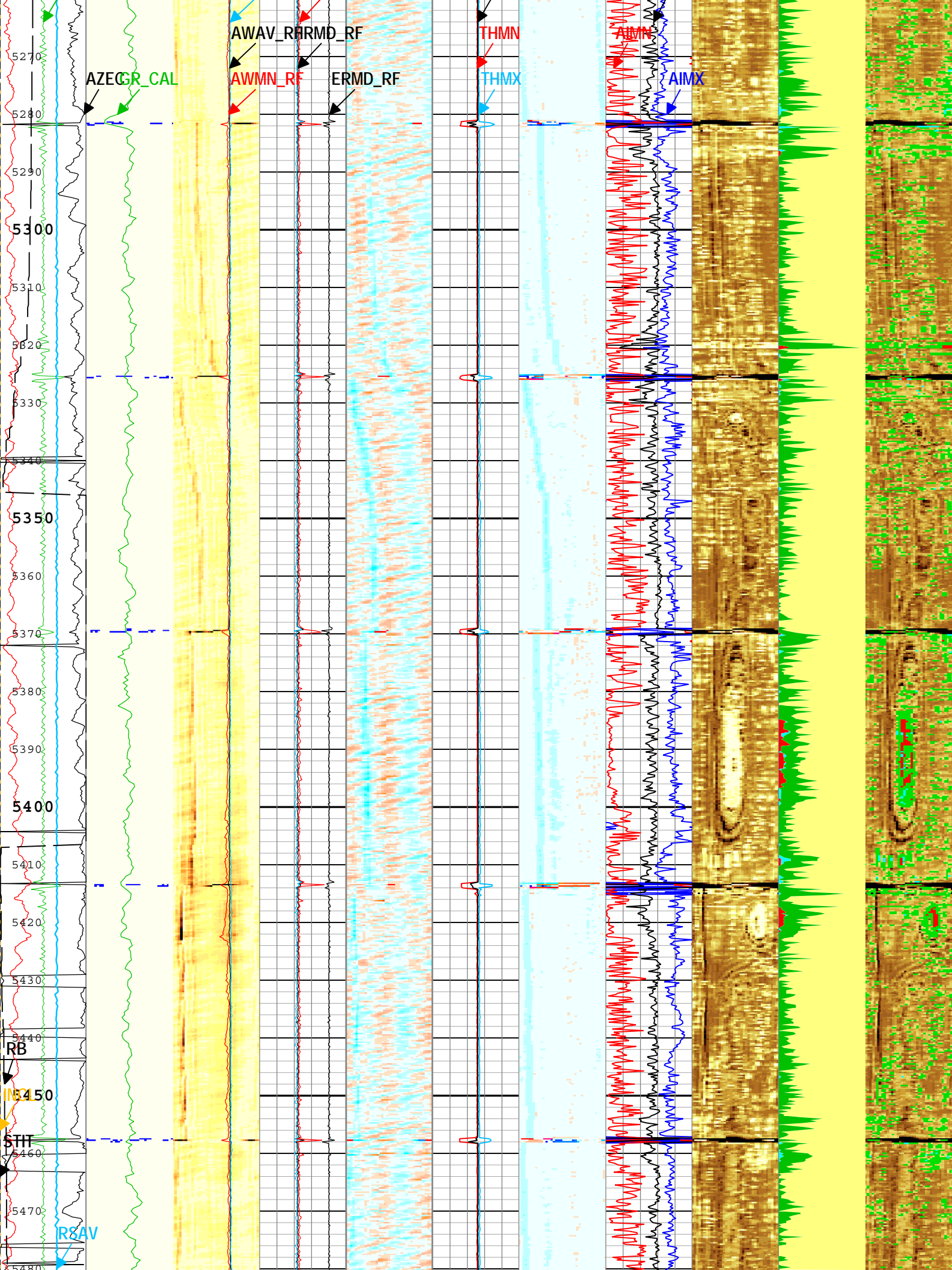


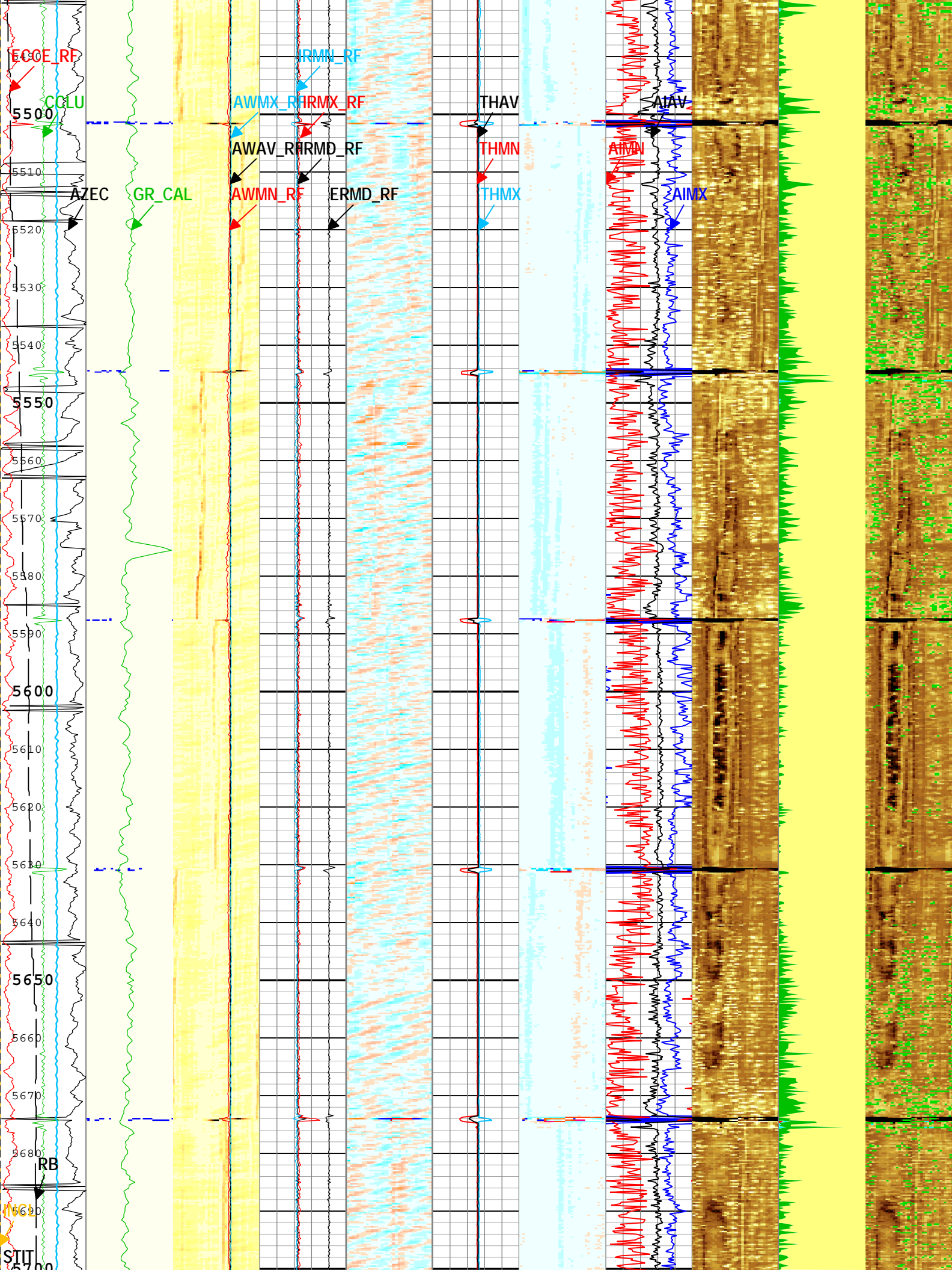


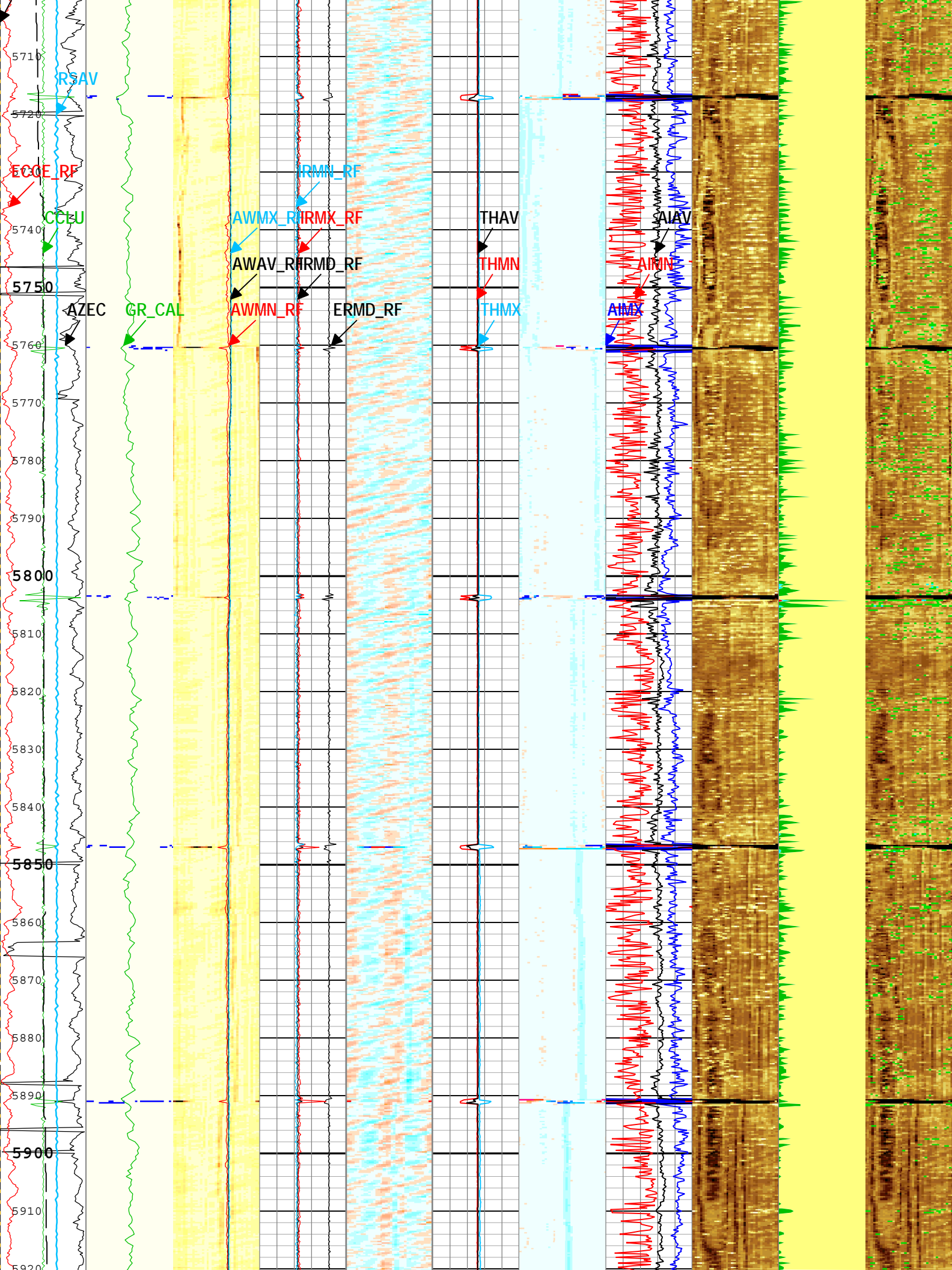


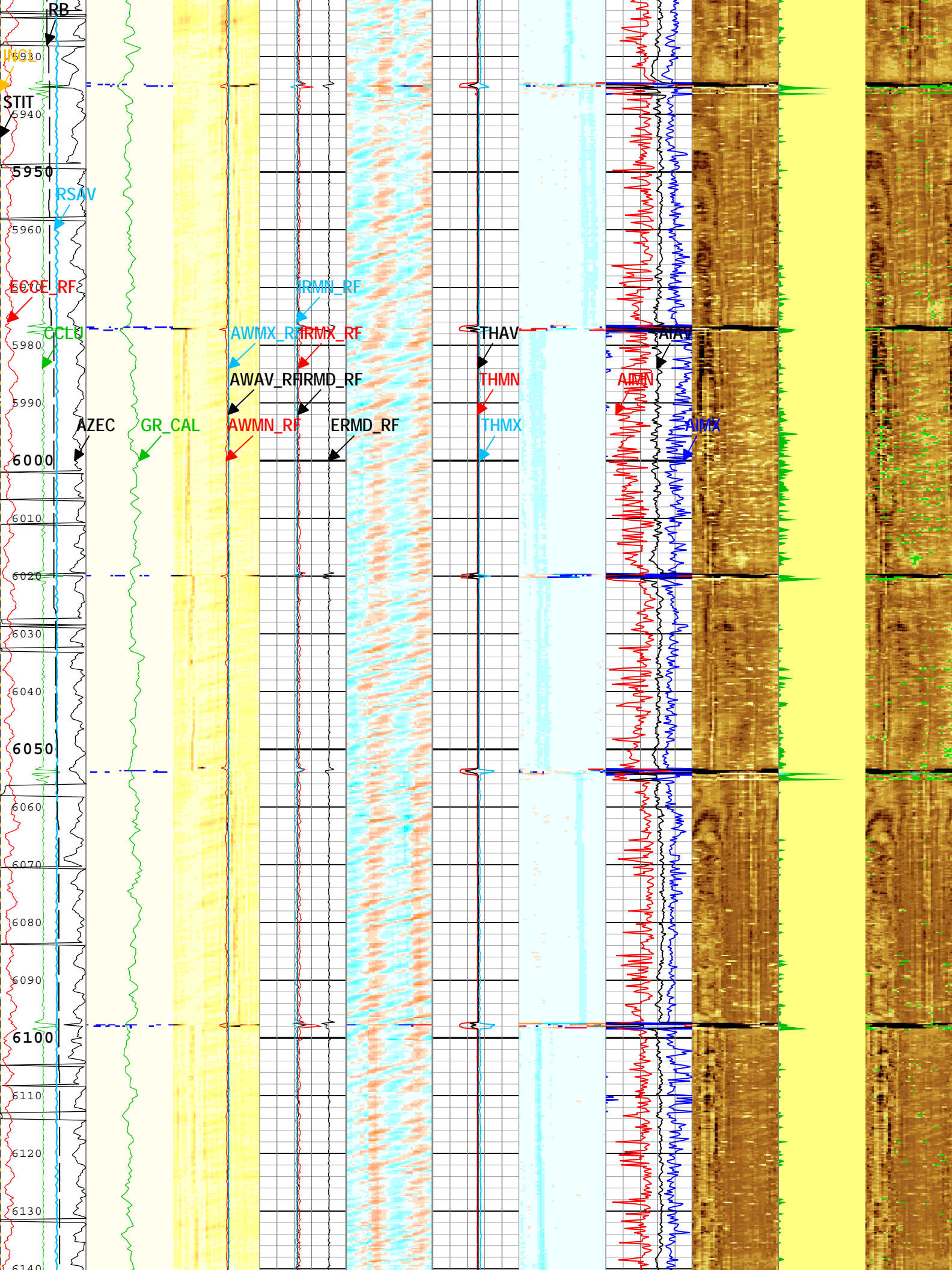


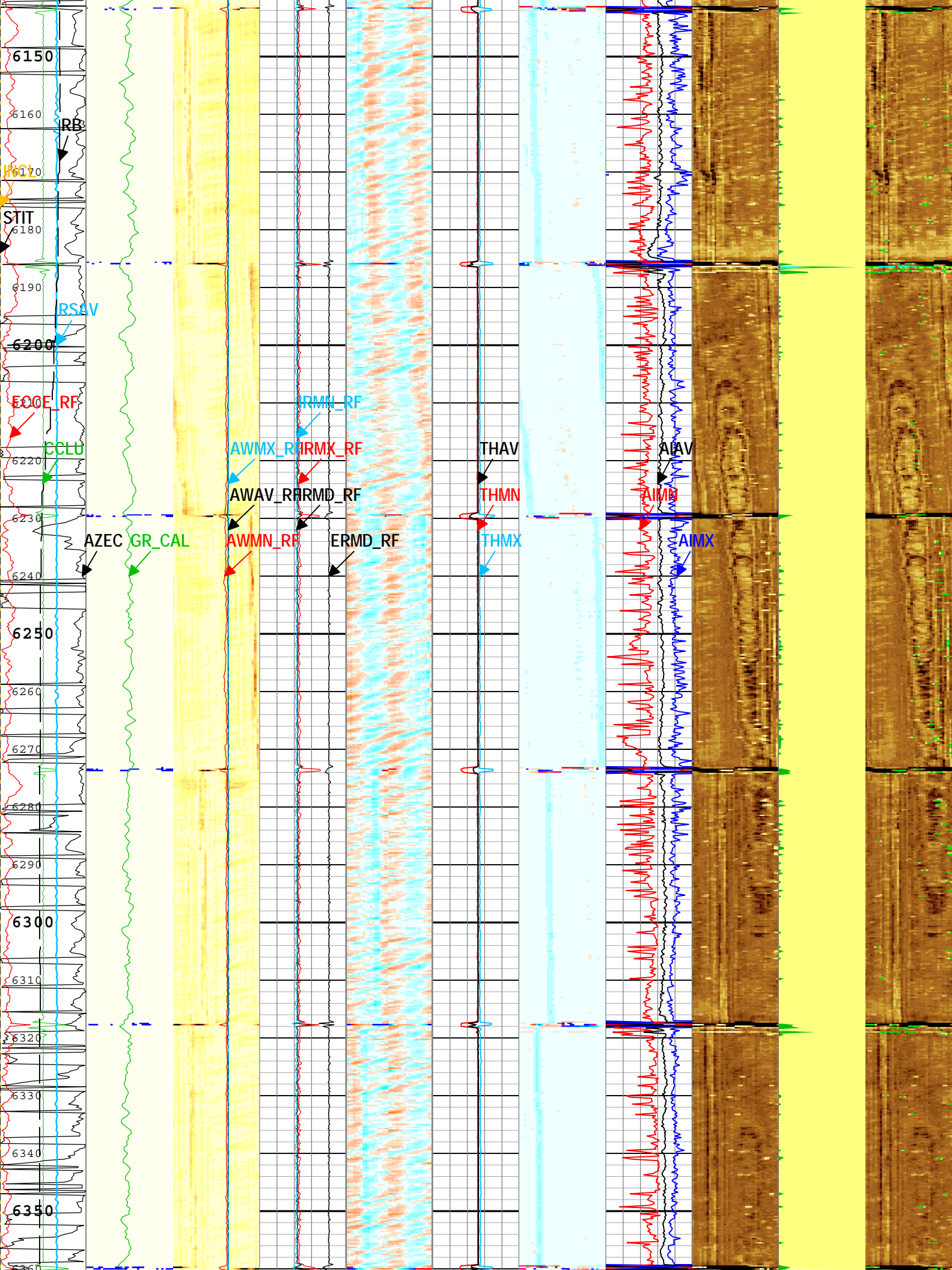


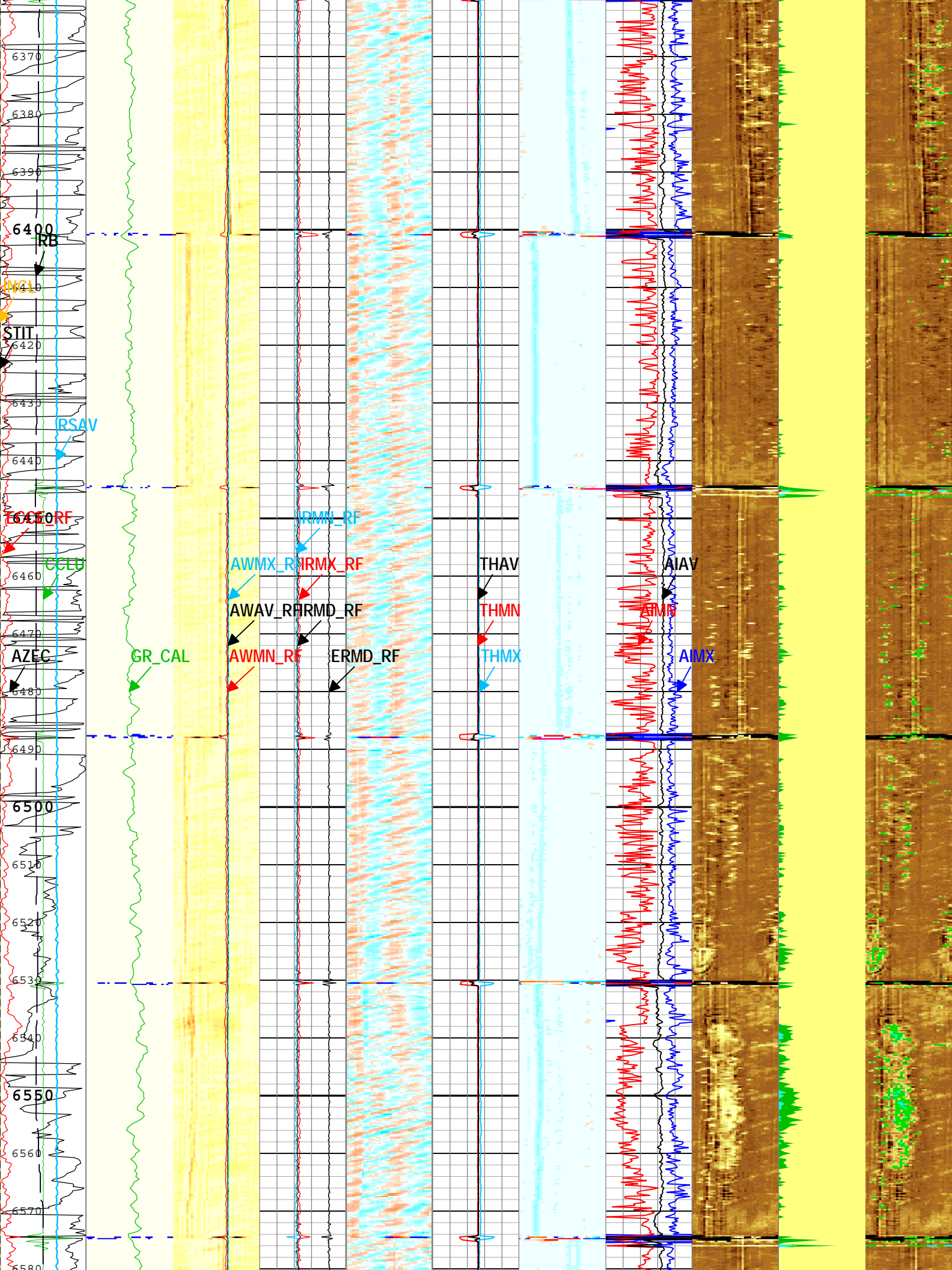


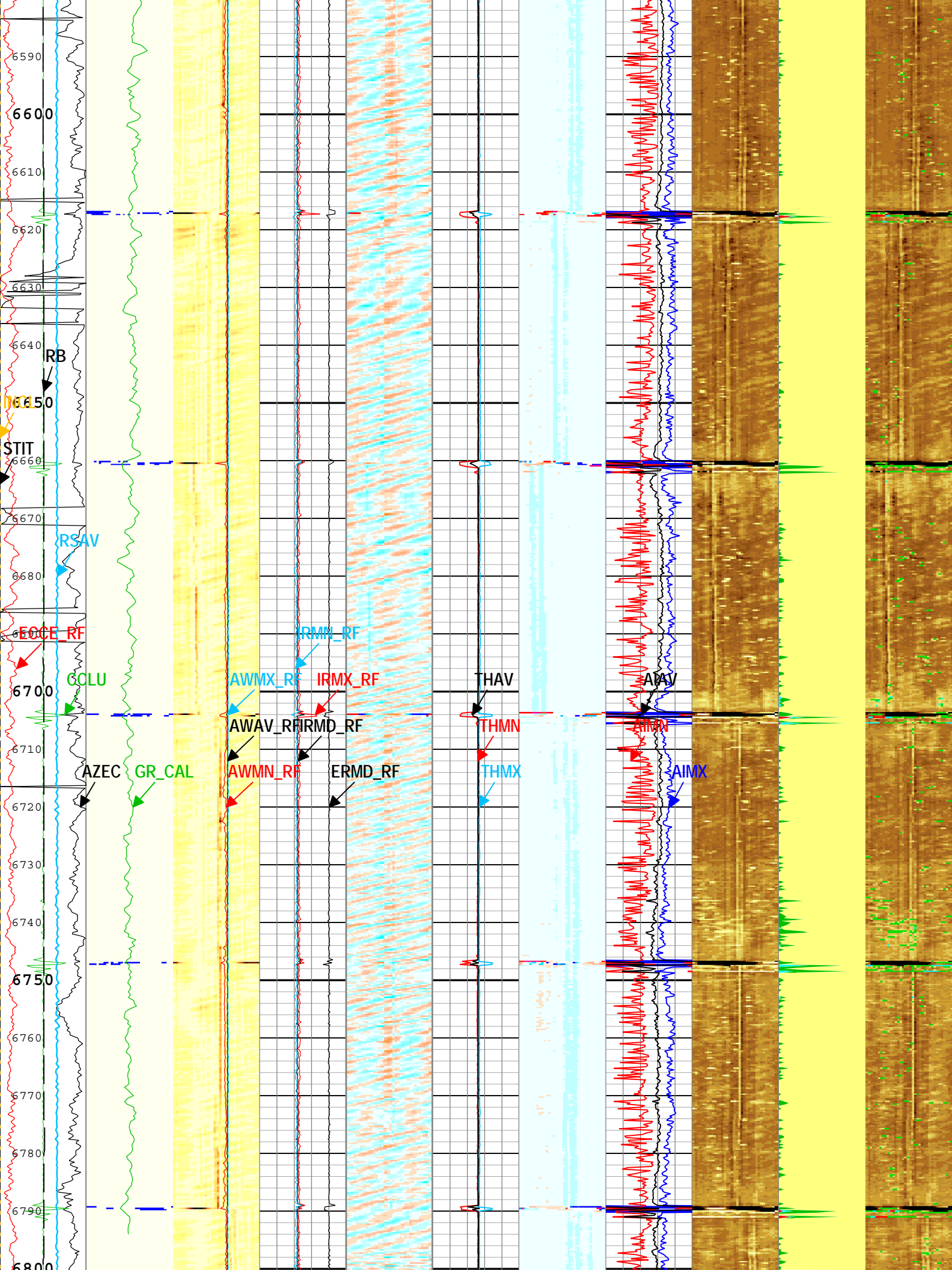


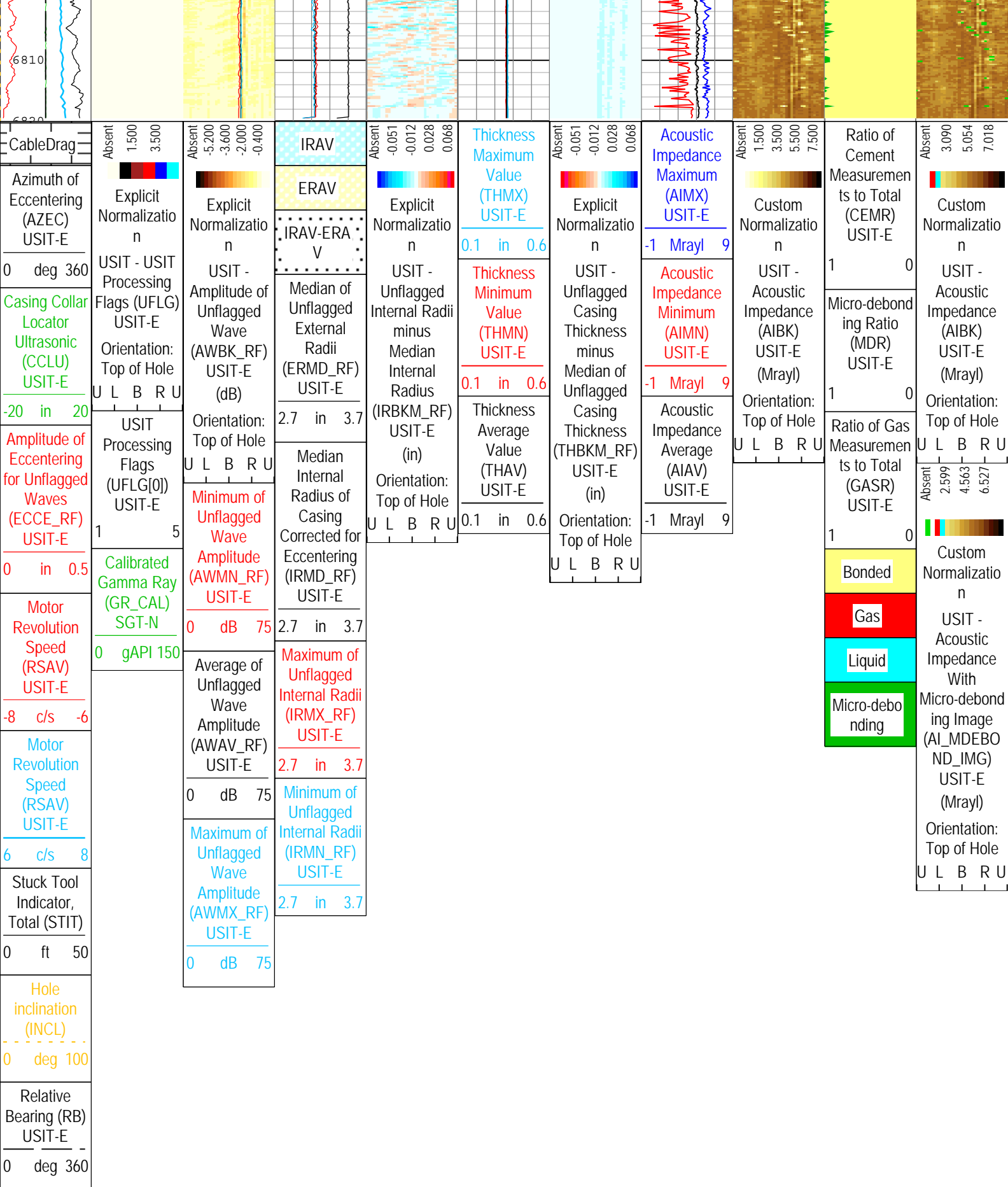












TIME_1900 - Time Marked every 60.00 (s)

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] - :

Channel Processing 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	6820	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
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Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
MEAS_WLEN	22.5	0	6820
ZMUD	1.7	0	875
ZMUD	1.68	875	2400
ZMUD	1.69	2400	3500
ZMUD	1.7	3500	6820

All depth are actual.

Tool Control Parameters

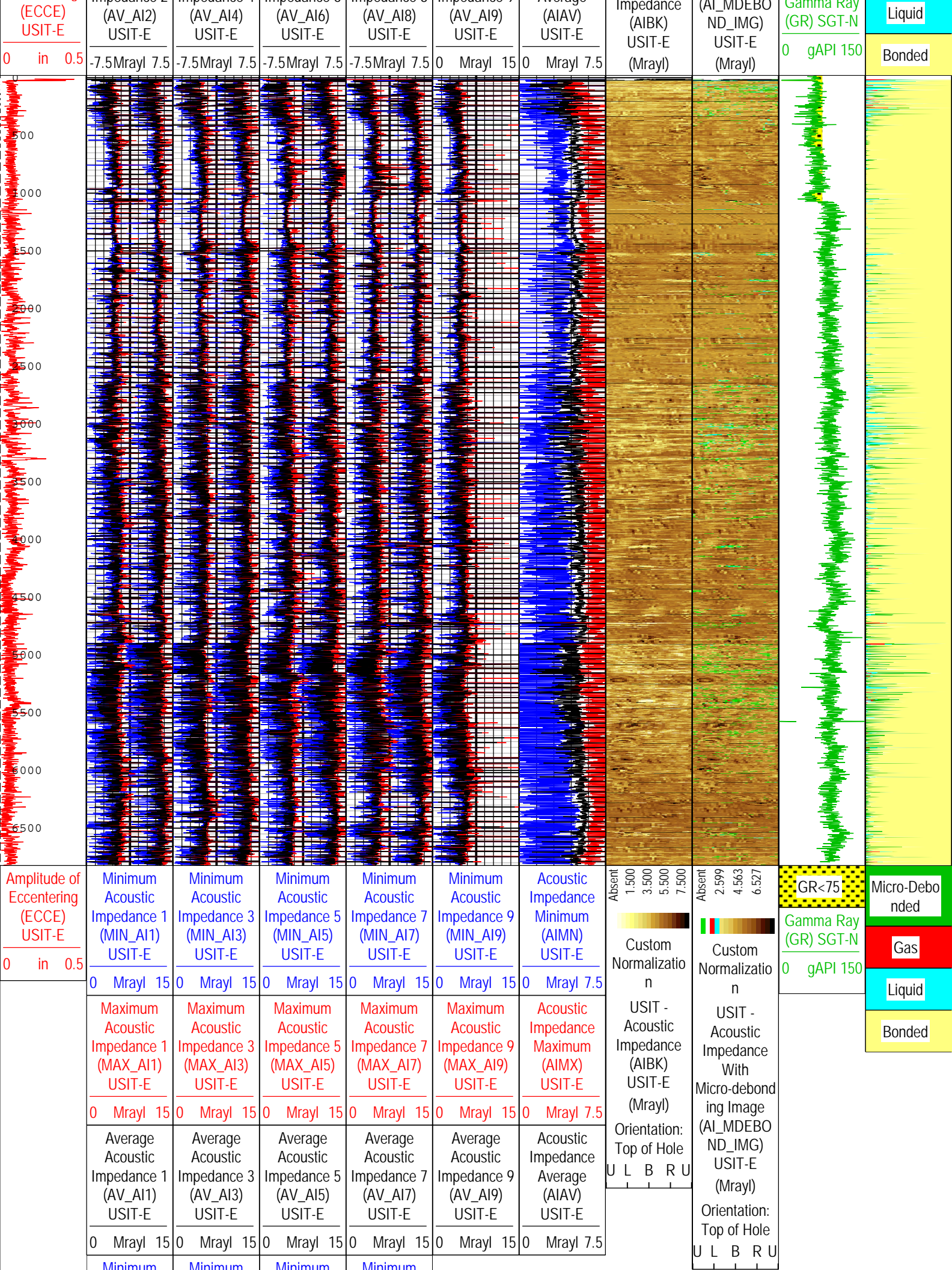
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOTF	Distance between Opposite Transducer Faces	USIT-E	2.874	in
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal 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	6820	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	50	21-Jun-2014 09:16:23	21-Jun-2014 09:26:43	6820.01	5809.58
EMXV	55	21-Jun-2014 09:26:43	21-Jun-2014 09:27:04	5809.58	5774.38
EMXV	60	21-Jun-2014 09:27:04	21-Jun-2014 09:27:20	5774.38	5747.18
EMXV	58	21-Jun-2014 09:27:20	21-Jun-2014 09:30:40	5747.18	5409.98
EMXV	55	21-Jun-2014 09:30:40	21-Jun-2014 09:49:29	5409.98	3422.42
EMXV	58	21-Jun-2014 09:49:29	21-Jun-2014 09:50:03	3422.42	3364.58
EMXV	60	21-Jun-2014 09:50:03	21-Jun-2014 09:50:12	3364.58	3349.4
EMXV	63	21-Jun-2014 09:50:12	21-Jun-2014 09:50:26	3349.4	3325.64
EMXV	60	21-Jun-2014 09:50:26	21-Jun-2014 09:56:10	3325.64	2724.33
EMXV	62	21-Jun-2014 09:56:10	21-Jun-2014 09:58:51	2724.33	2440.28
EMXV	63	21-Jun-2014 09:58:51	21-Jun-2014 10:00:50	2440.28	2226.18
EMXV	65	21-Jun-2014 10:00:50	21-Jun-2014 10:02:20	2226.18	2063.87
EMXV	68	21-Jun-2014 10:02:20	21-Jun-2014 10:13:24	2063.87	882.89
EMXV	70	21-Jun-2014 10:13:24	21-Jun-2014 10:14:02	882.89	816.73
EMXV	72	21-Jun-2014 10:14:02	21-Jun-2014 10:27:16	816.73	62.92
EMXV	74	21-Jun-2014 10:27:16	21-Jun-2014 10:29:56	62.92	7.54

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[5]:Up	6820.01	7.54					
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	875	1.7	1.7					
875	2400	1.68	1.68					
2400	3500	1.69	1.69					
3500	4200	1.7	1.7					
4200		1.7	1.7					
Run 1								
USI Goodwin Compressed - 3000 PSI								
Log	Company:Anadarko Petroleum Company		Well:Spurling 35N-34HZ					
			Run 1: Main[5]:Up:S006					
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 17:19:36								
TIME_1900 - Time Marked every 60.00 (s)								
Amplitude of Eccentering	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				
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15				
	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				
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15				
	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				
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15				
	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	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E	Acoustic Impedance Minimum (AIMN) USIT-E		
	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	0 Mrayl 15	0 Mrayl 7.5		
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E	Acoustic Impedance Maximum (AIMX) USIT-E		
	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	-7.5Mrayl 7.5	0 Mrayl 15	0 Mrayl 7.5		
	Average Acoustic Impedance 2	Average Acoustic Impedance 4	Average Acoustic Impedance 6	Average Acoustic Impedance 8	Average Acoustic Impedance 9	Acoustic Impedance Average		



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

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 17:19:36

Copy of USI Composite			
USIT - Fluid Properties Measurement			
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[2]:Up	6819.24	115.03
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	875	1.7	1.7
875	2400	1.68	1.68
2400	3500	1.69	1.69
3500	4200	1.7	1.7
4200		1.7	1.7
Composite 1			
Composite - 0 PSI			
Log	Company:Anadarko Petroleum Company Well:Spurling 35N-34HZ Composite 1:S006		

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 17:19:44

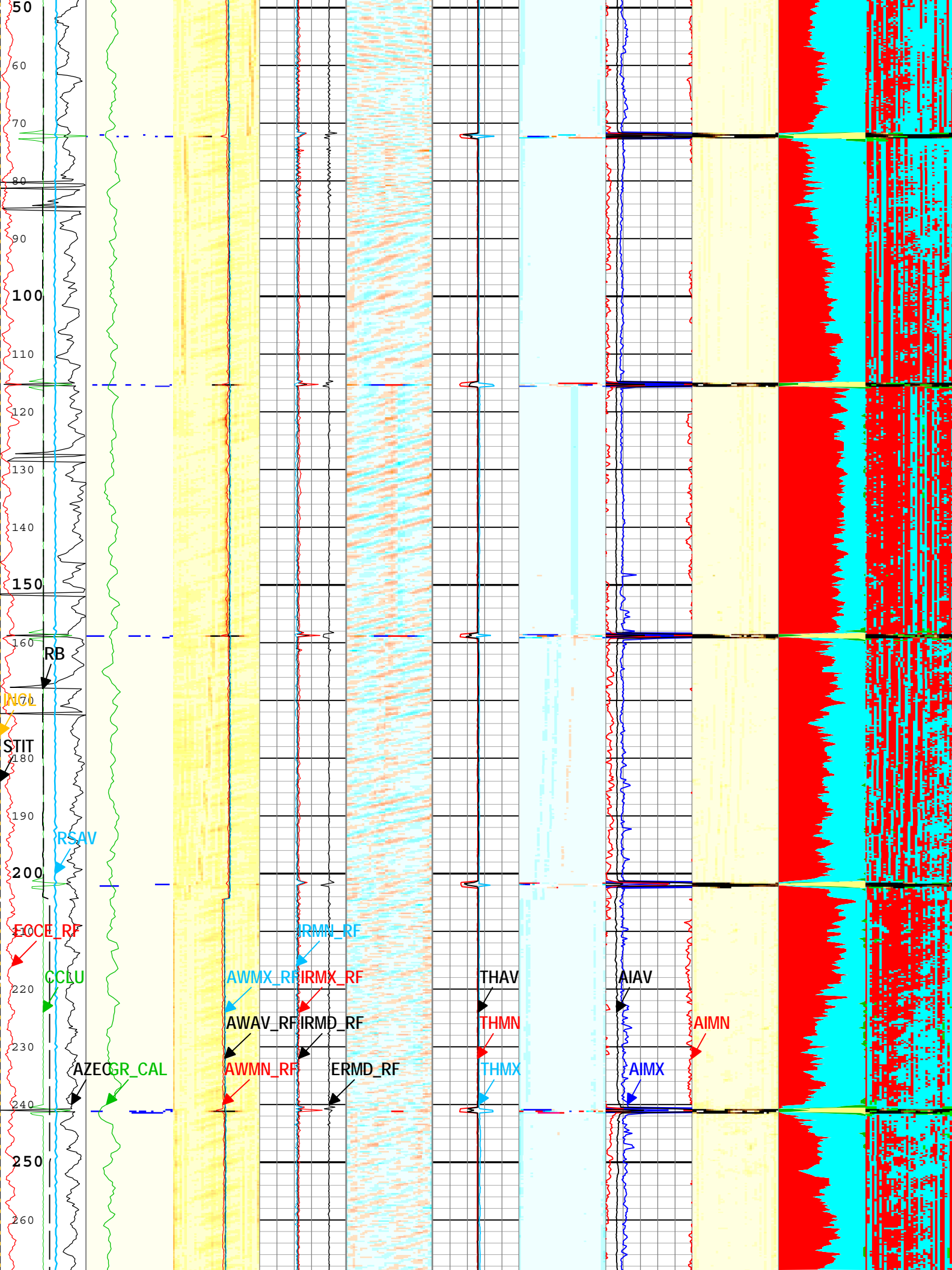
TIME_1900 - Time Marked every 60.00 (s)

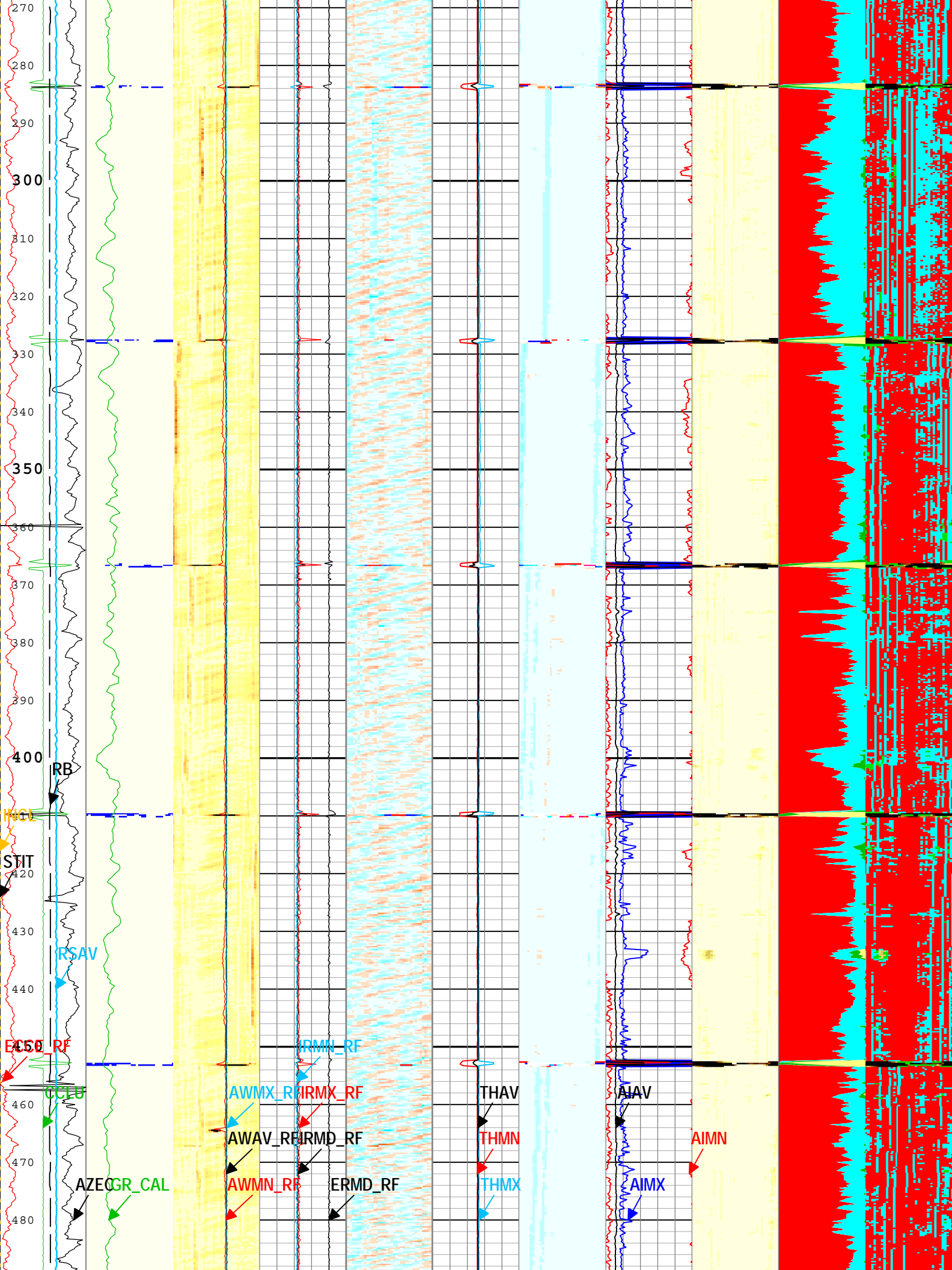
USIT Processing Flags (UFLG[0]) USIT-E[1]

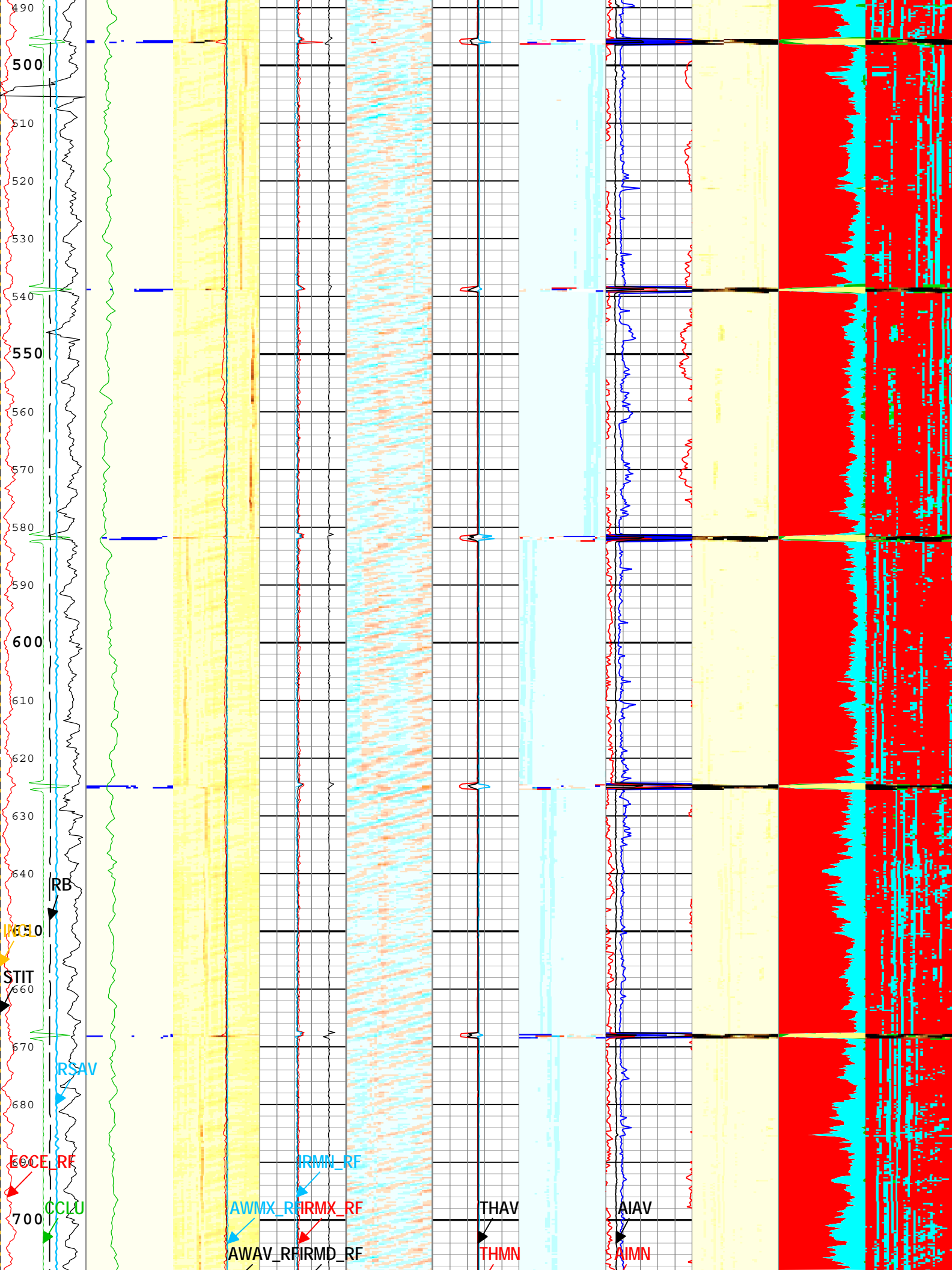
- | | |
|--|---|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : |  UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.5] - : |  Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - : |  WINLEN Error |
| 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : |  Casing Thickness Error |
| 5 - UFLG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

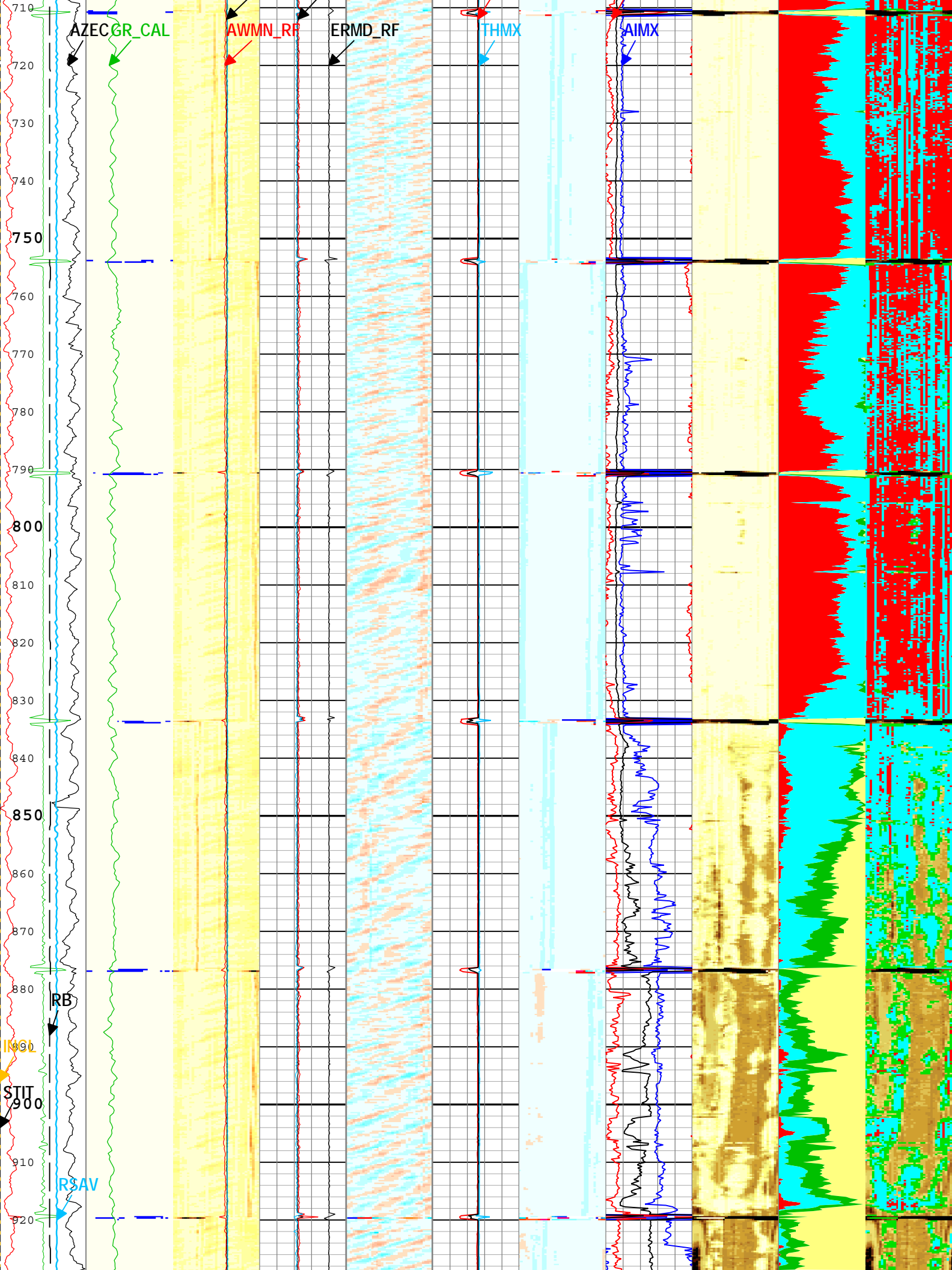
CableDrag
Azimuth of Eccentering (AZEC)

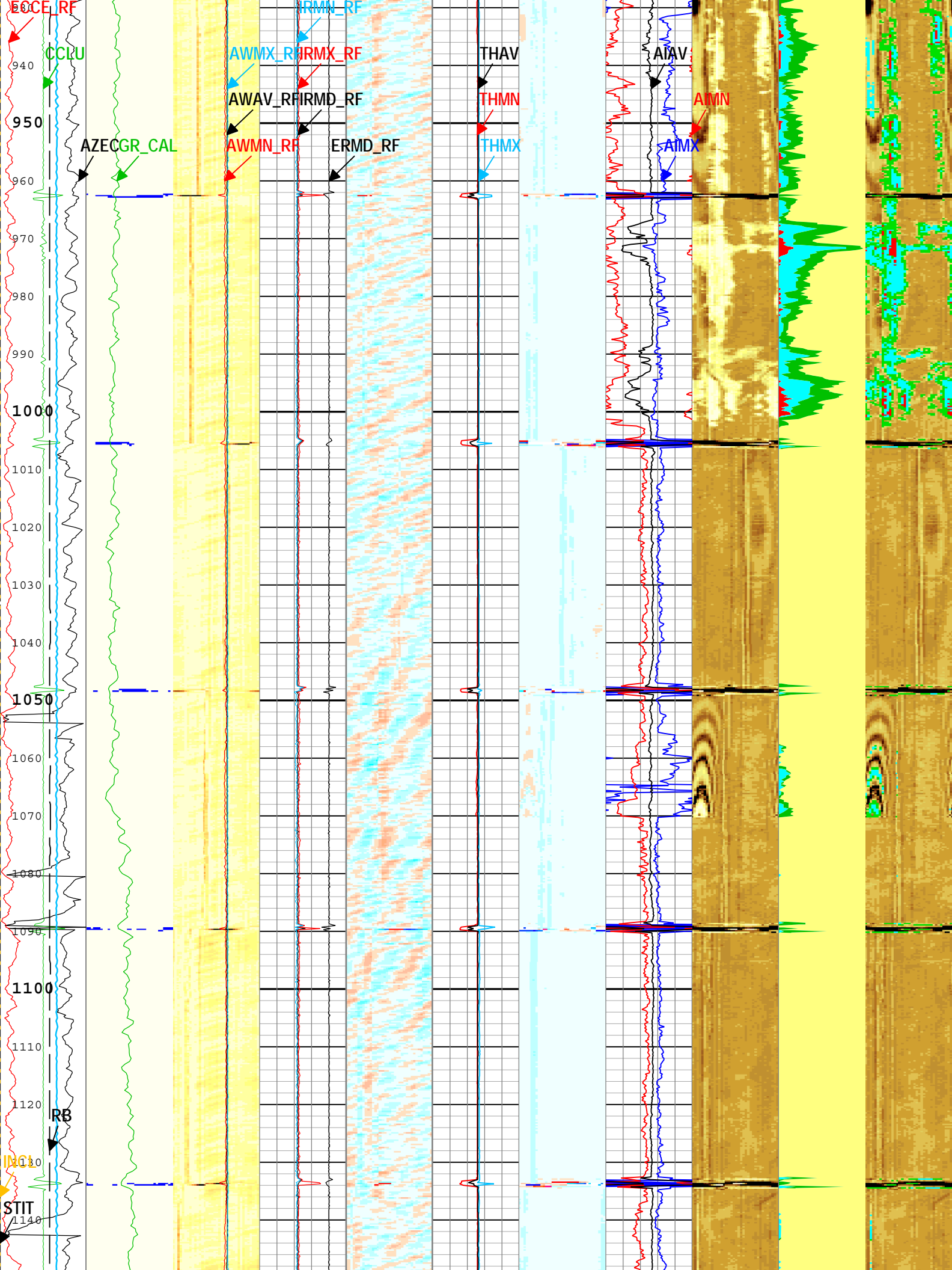
USIT-E[1]									
0	deg	360							
Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]									
-20	in	20							
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]									
0	in	0.5							
Motor Revolution Speed (RSAV) USIT-E[1]									
-8	c/s	-6							
Motor Revolution Speed (RSAV) USIT-E[1]									
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							
-10									
0									
10									
20									
30									
40									

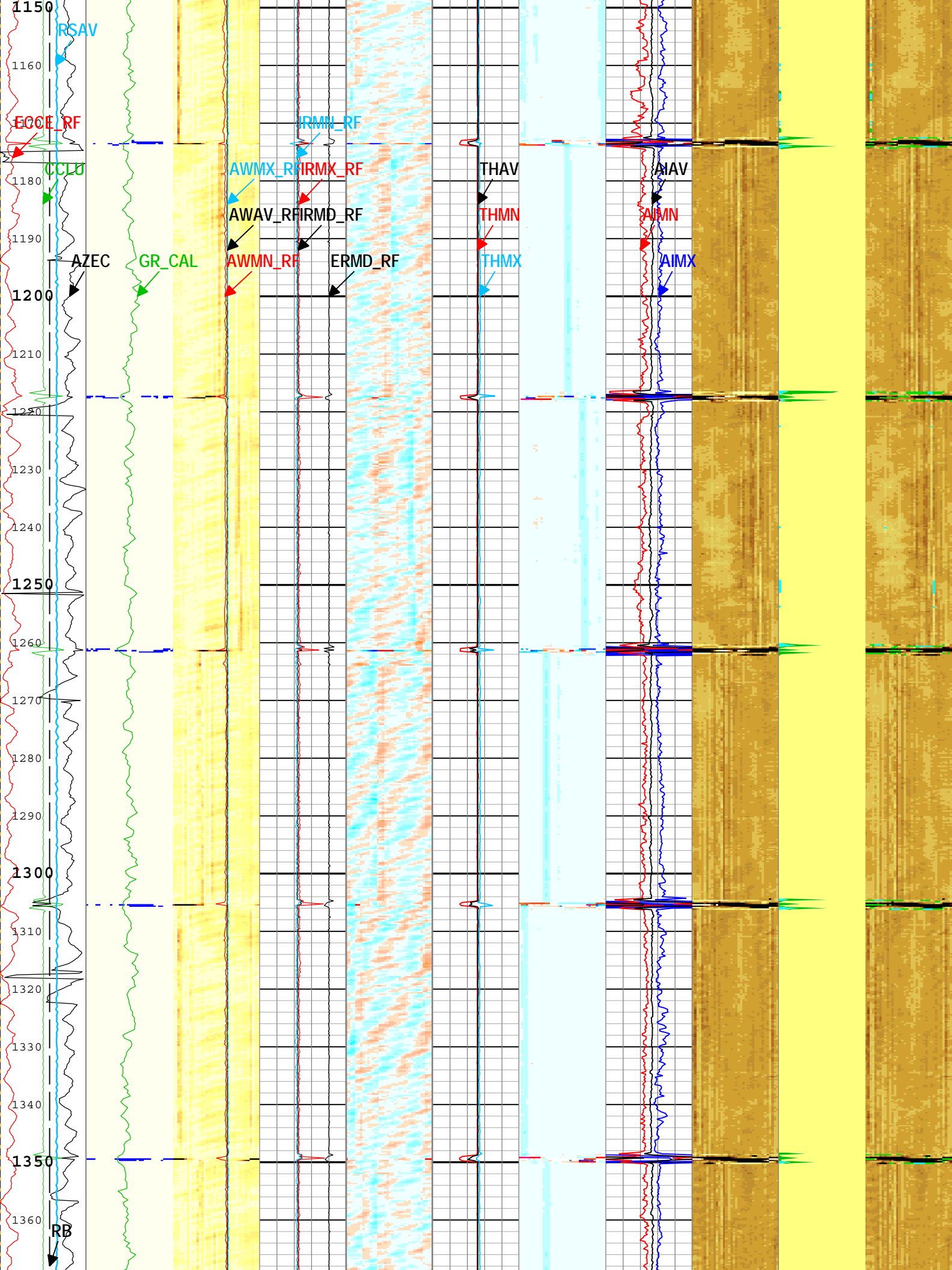


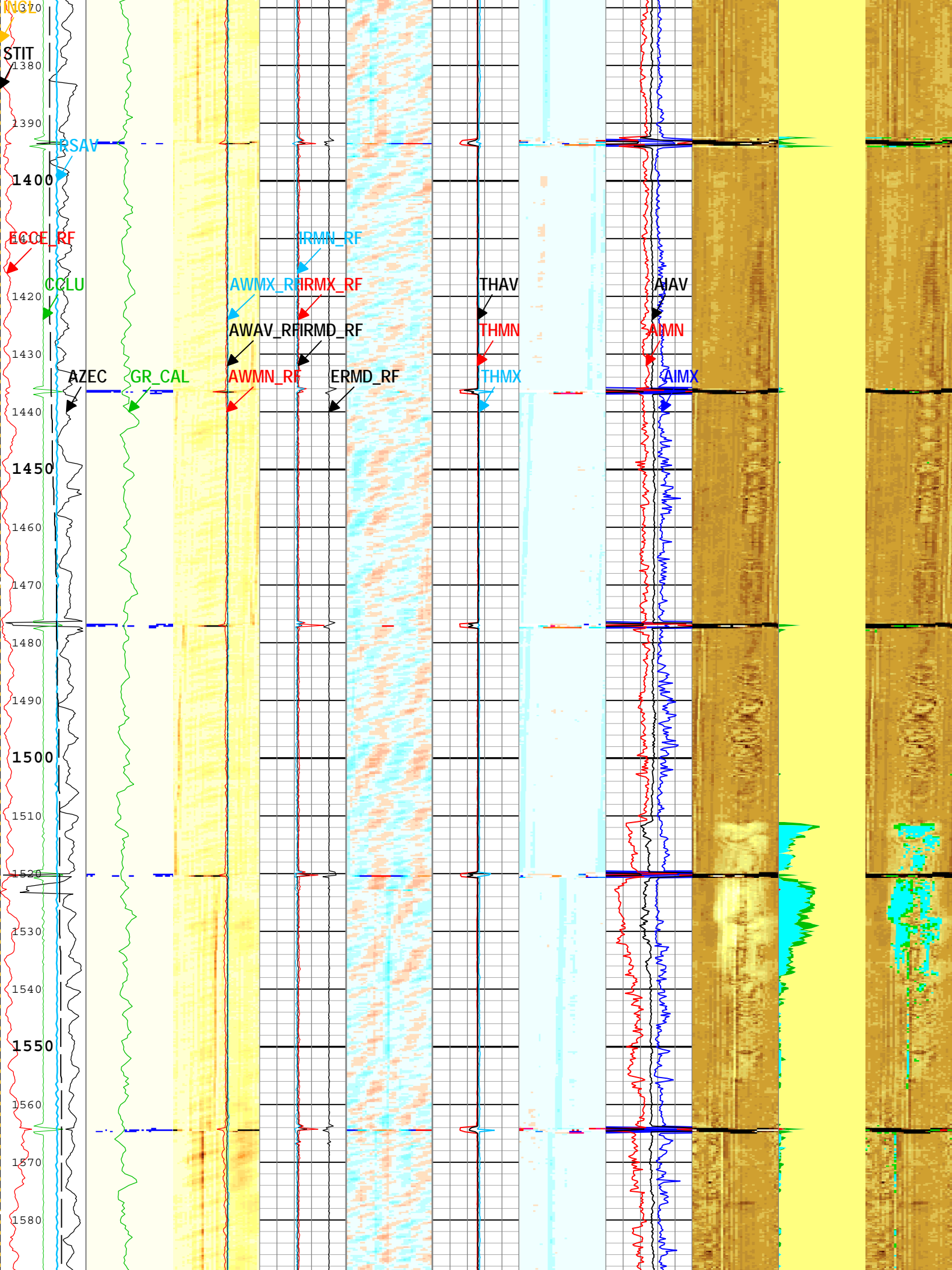


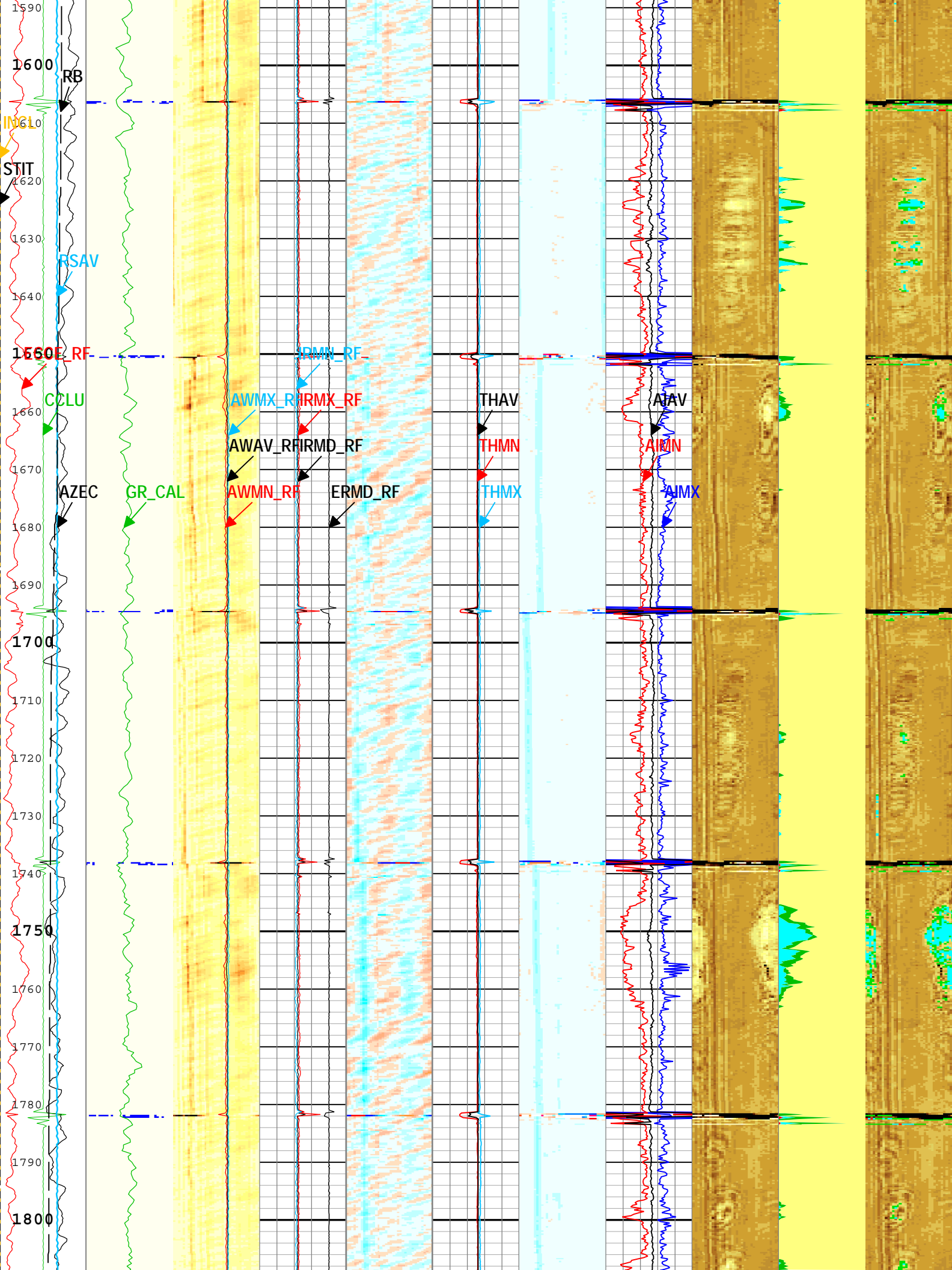


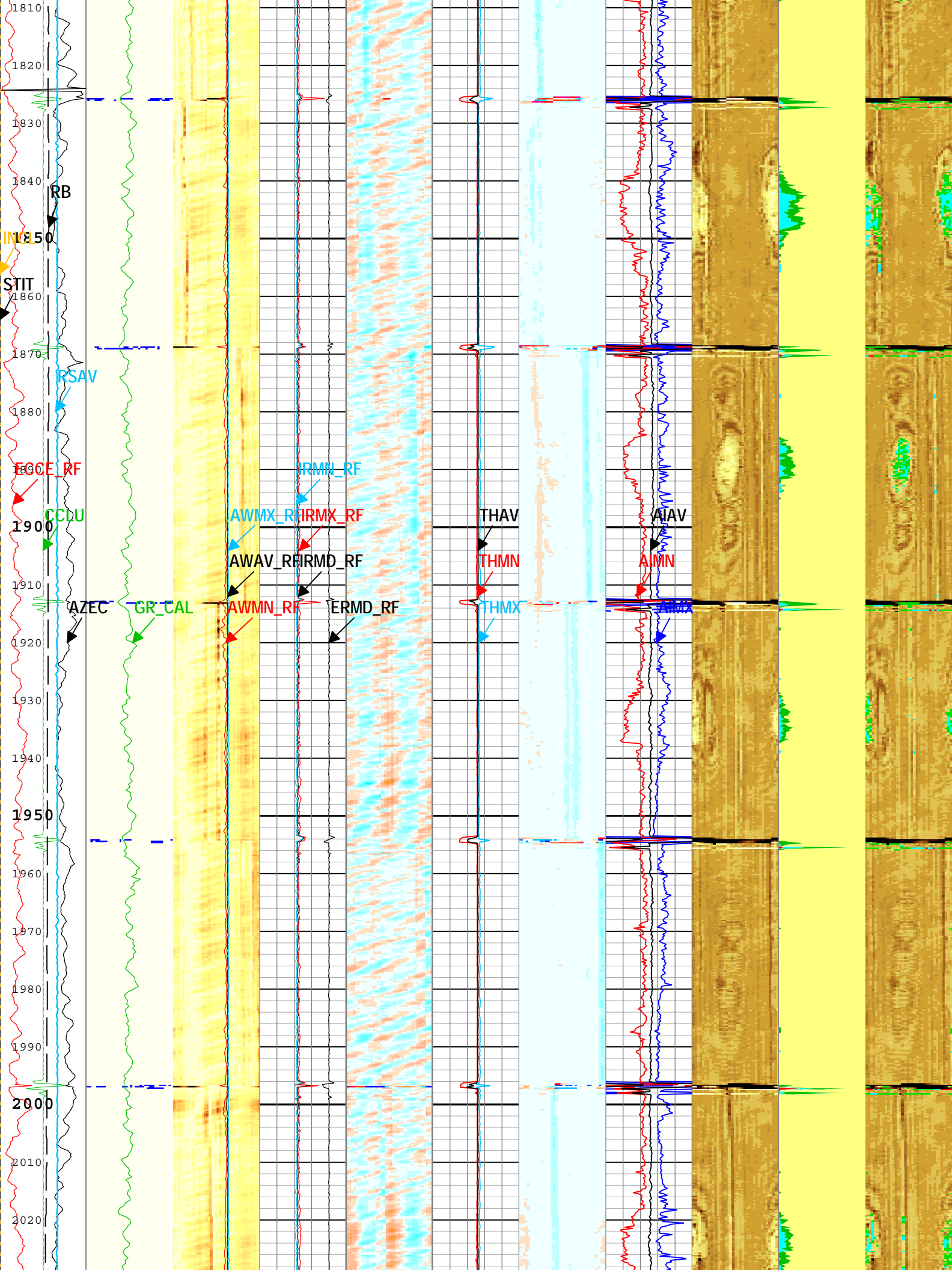


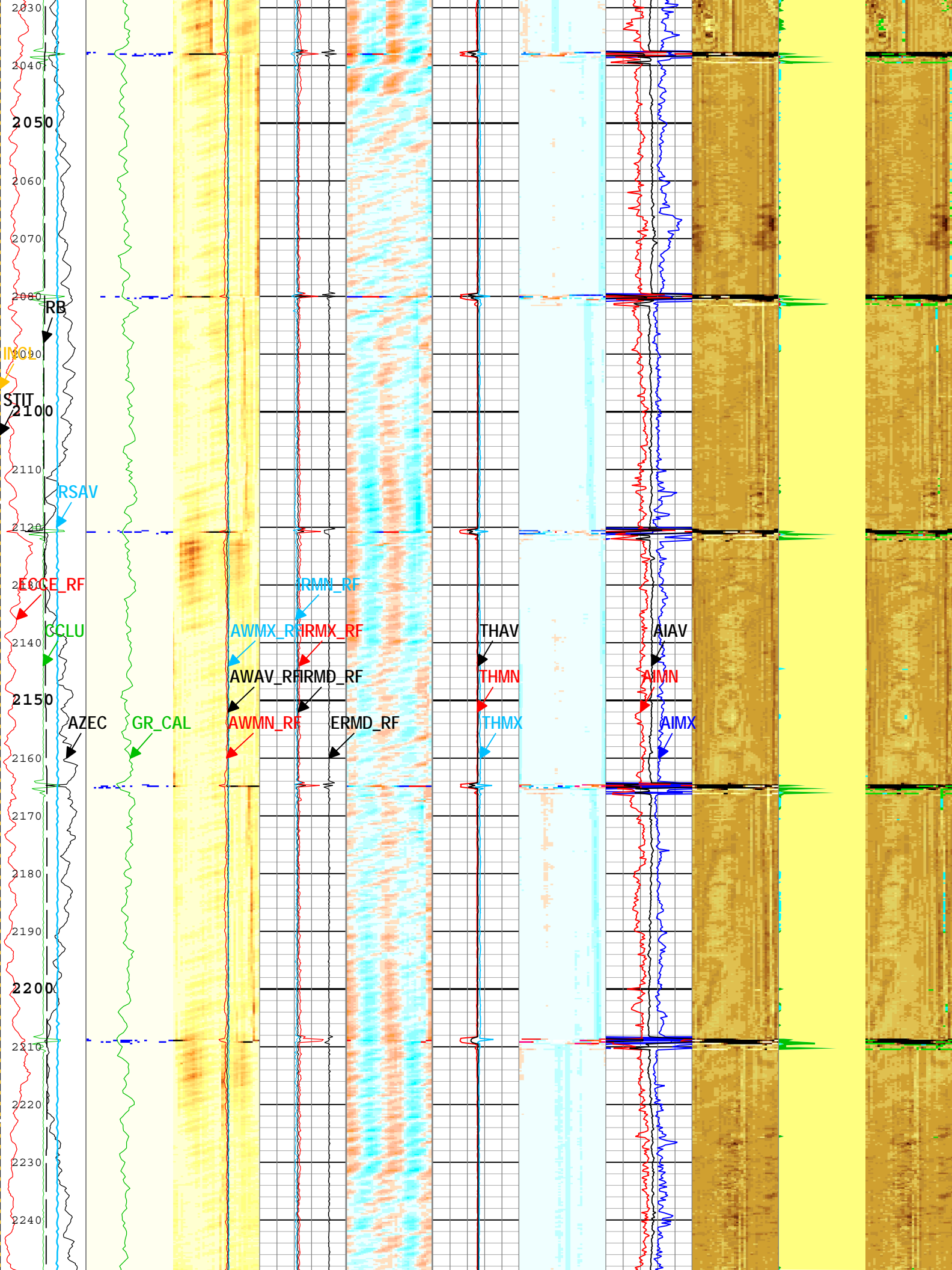


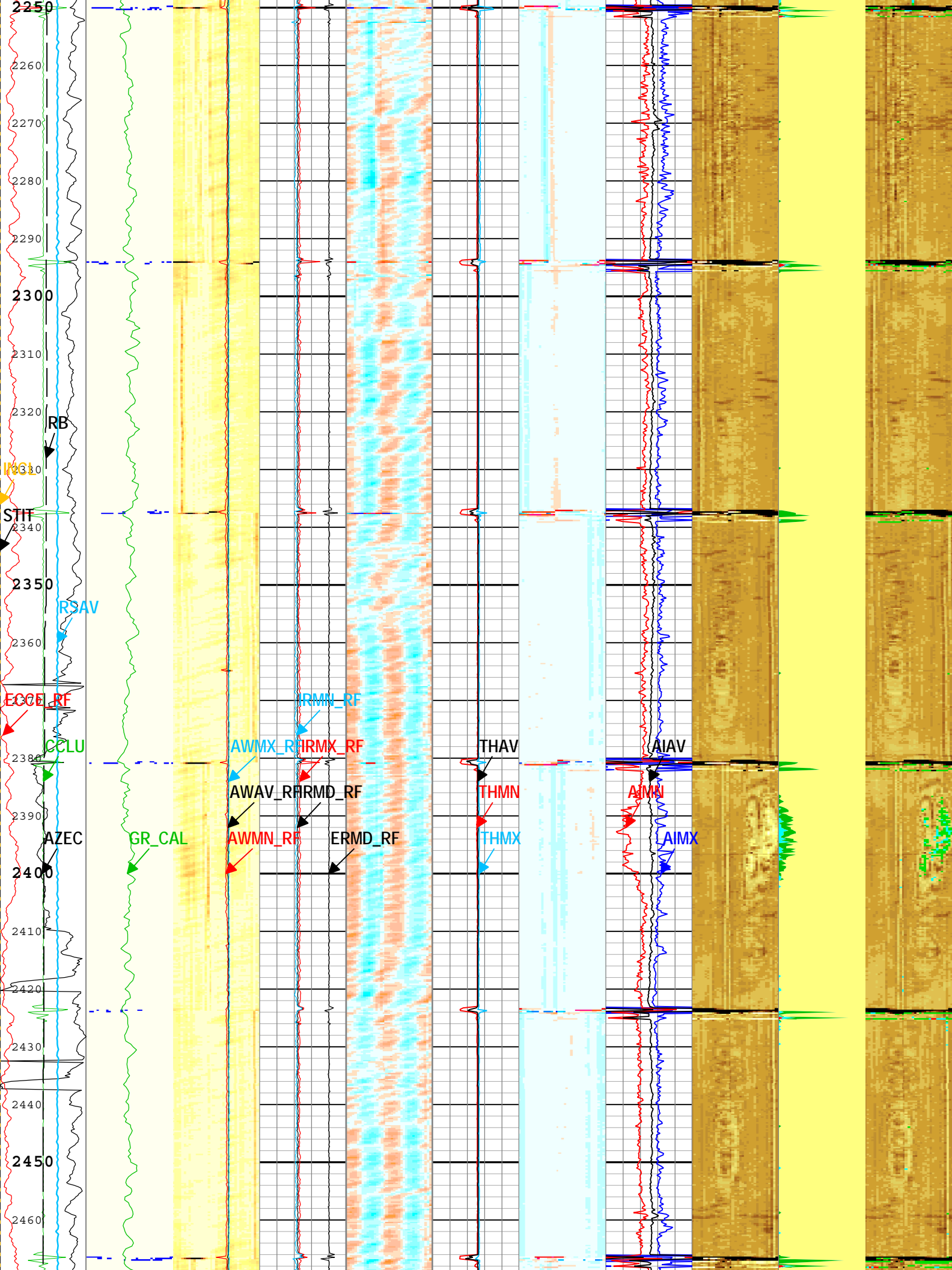


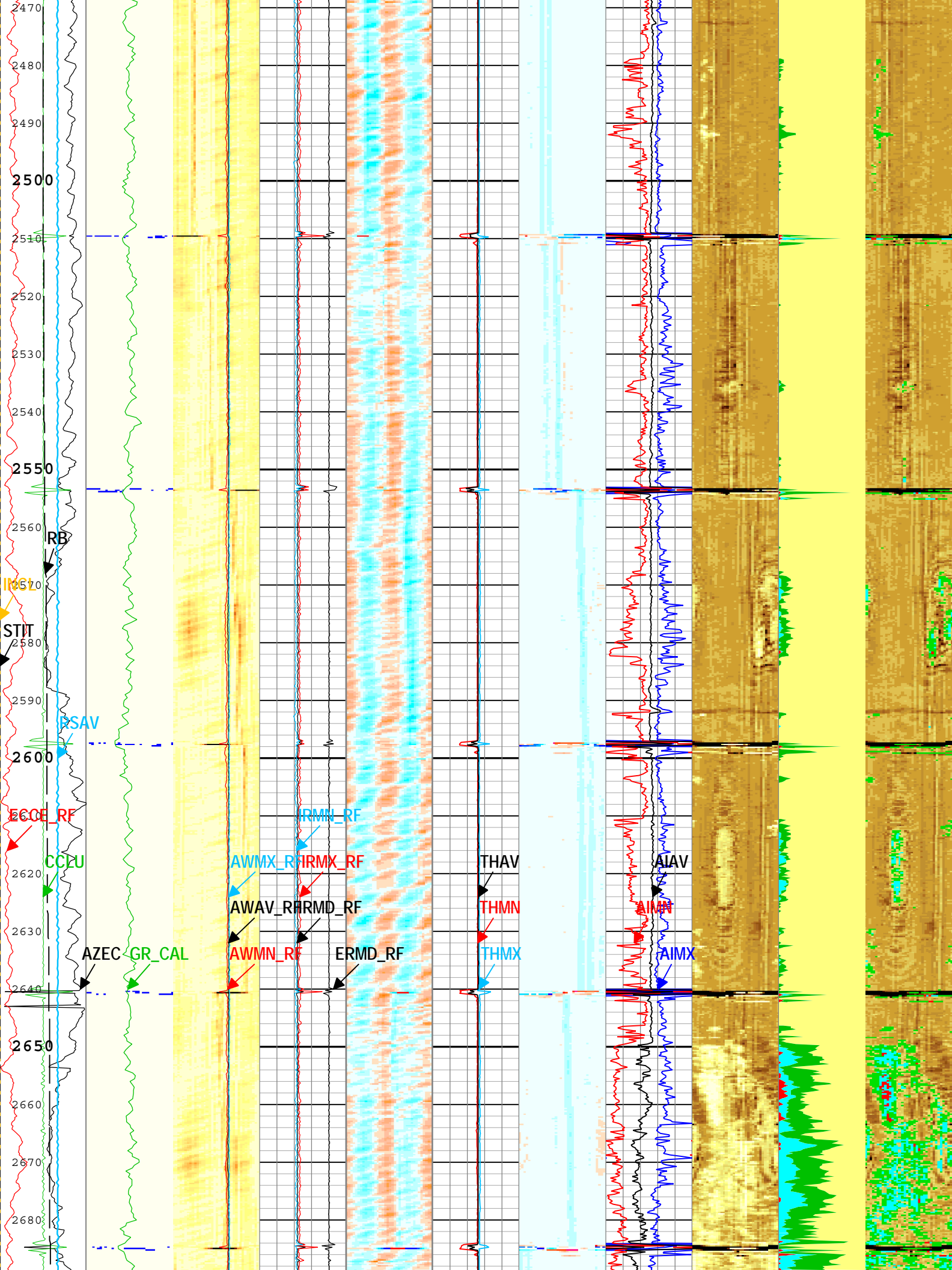


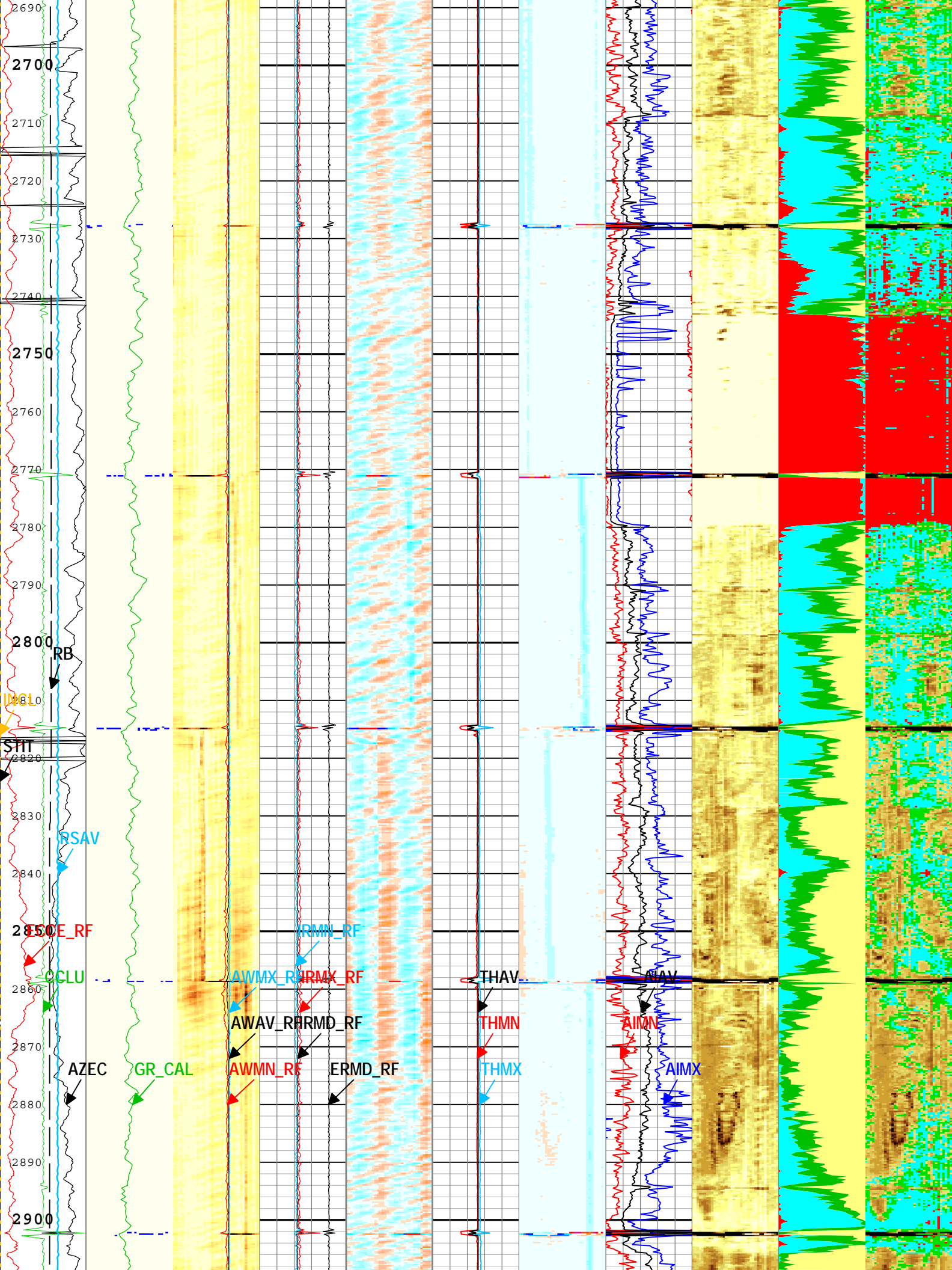


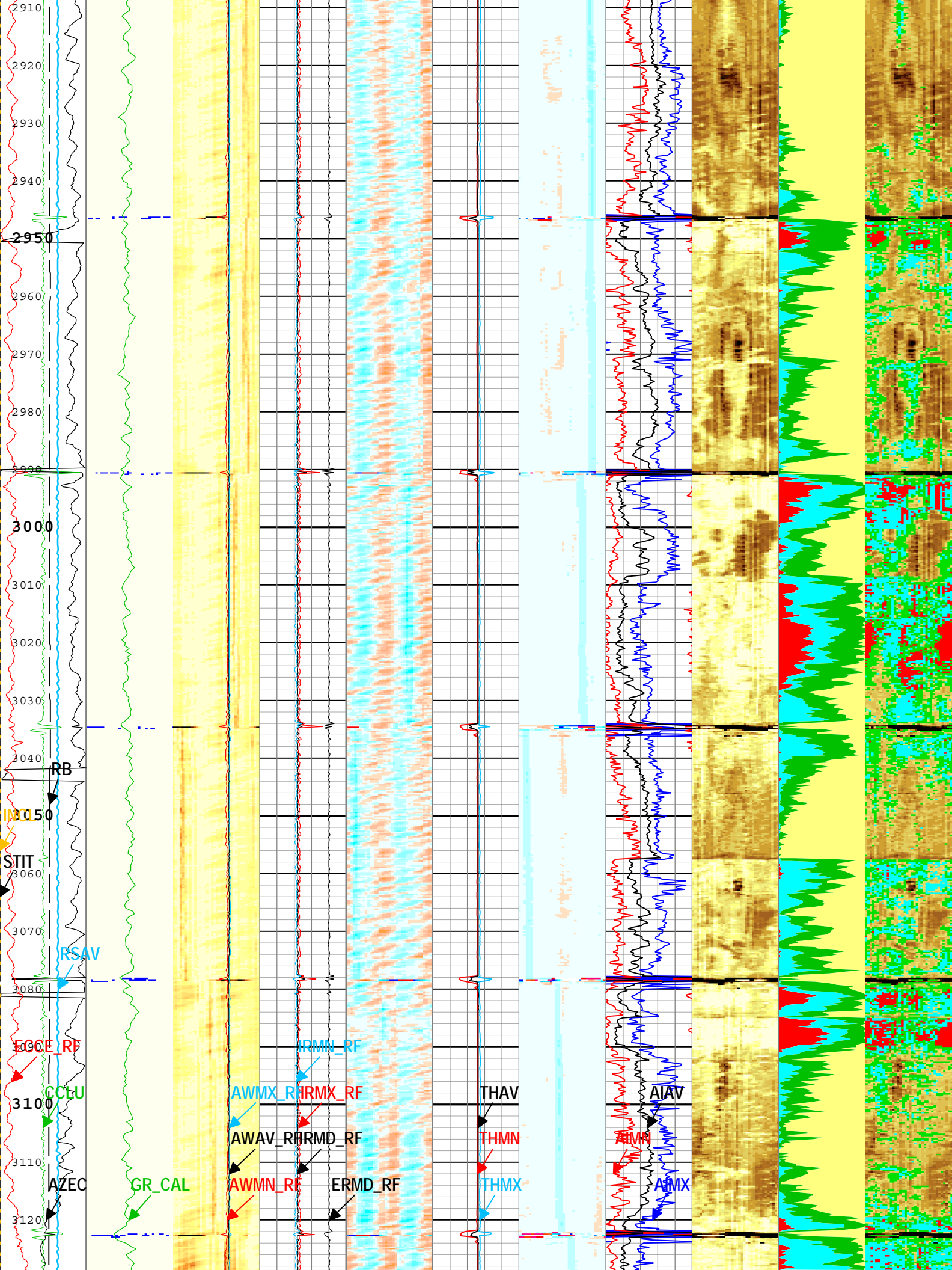


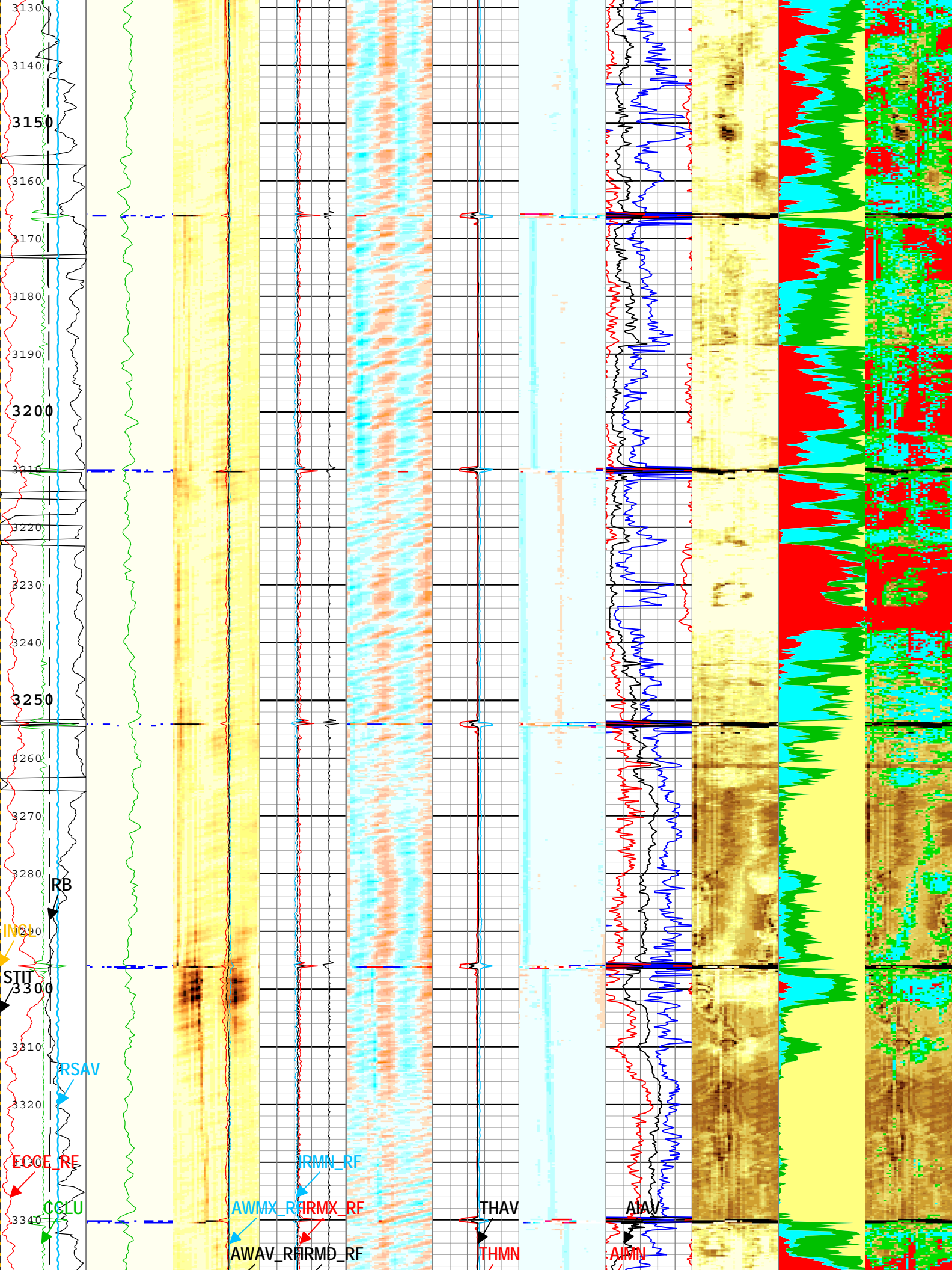


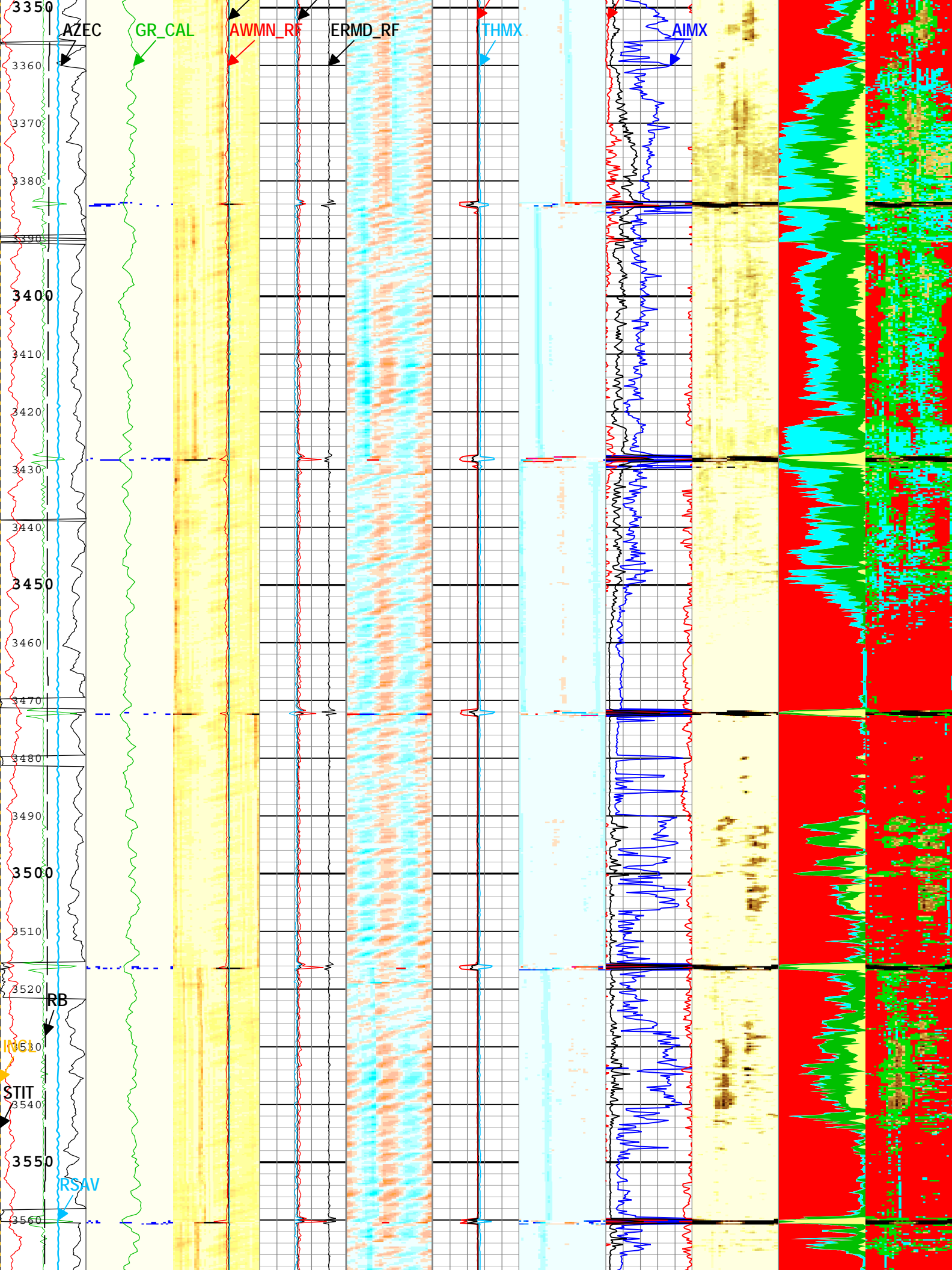


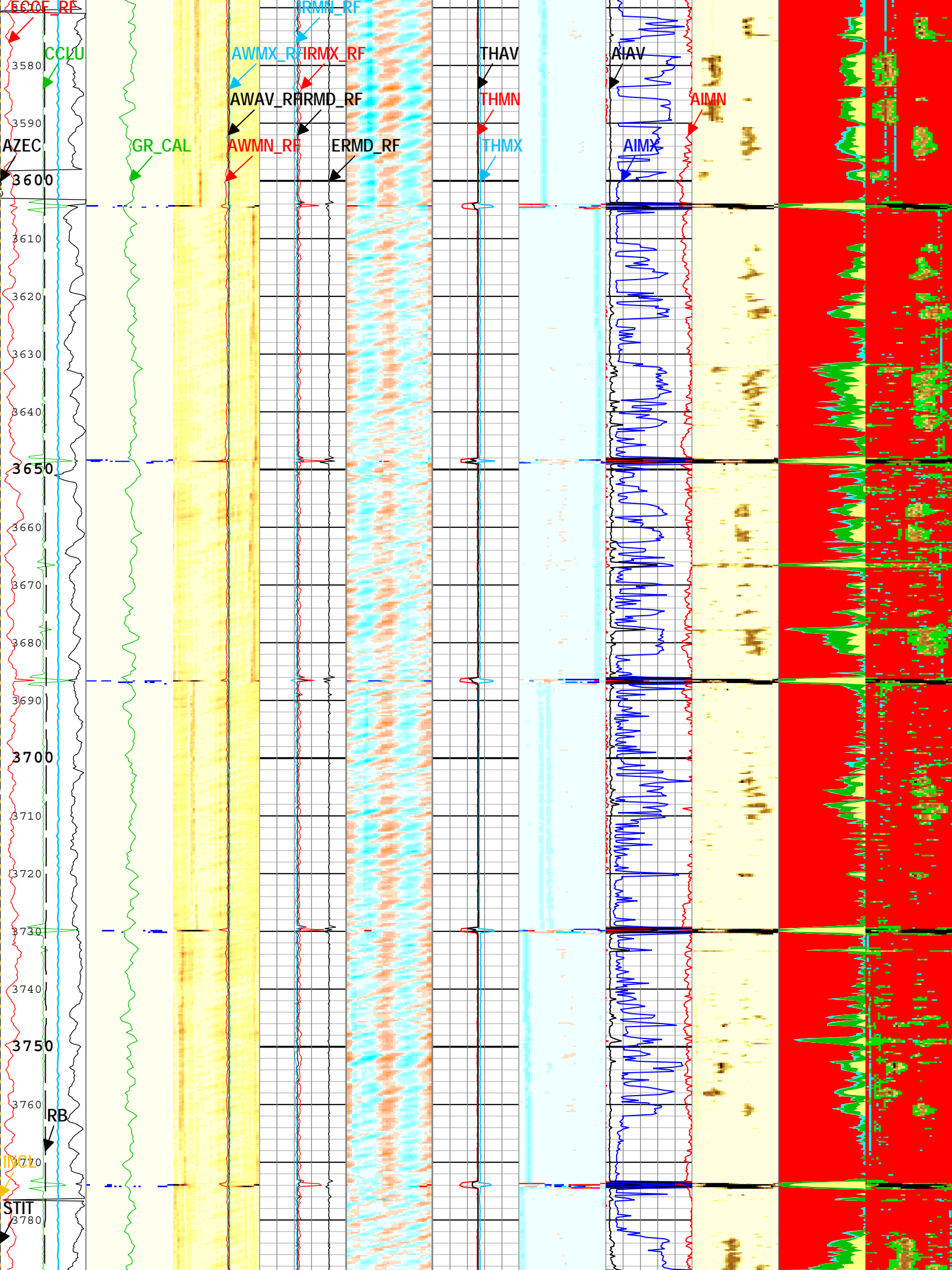


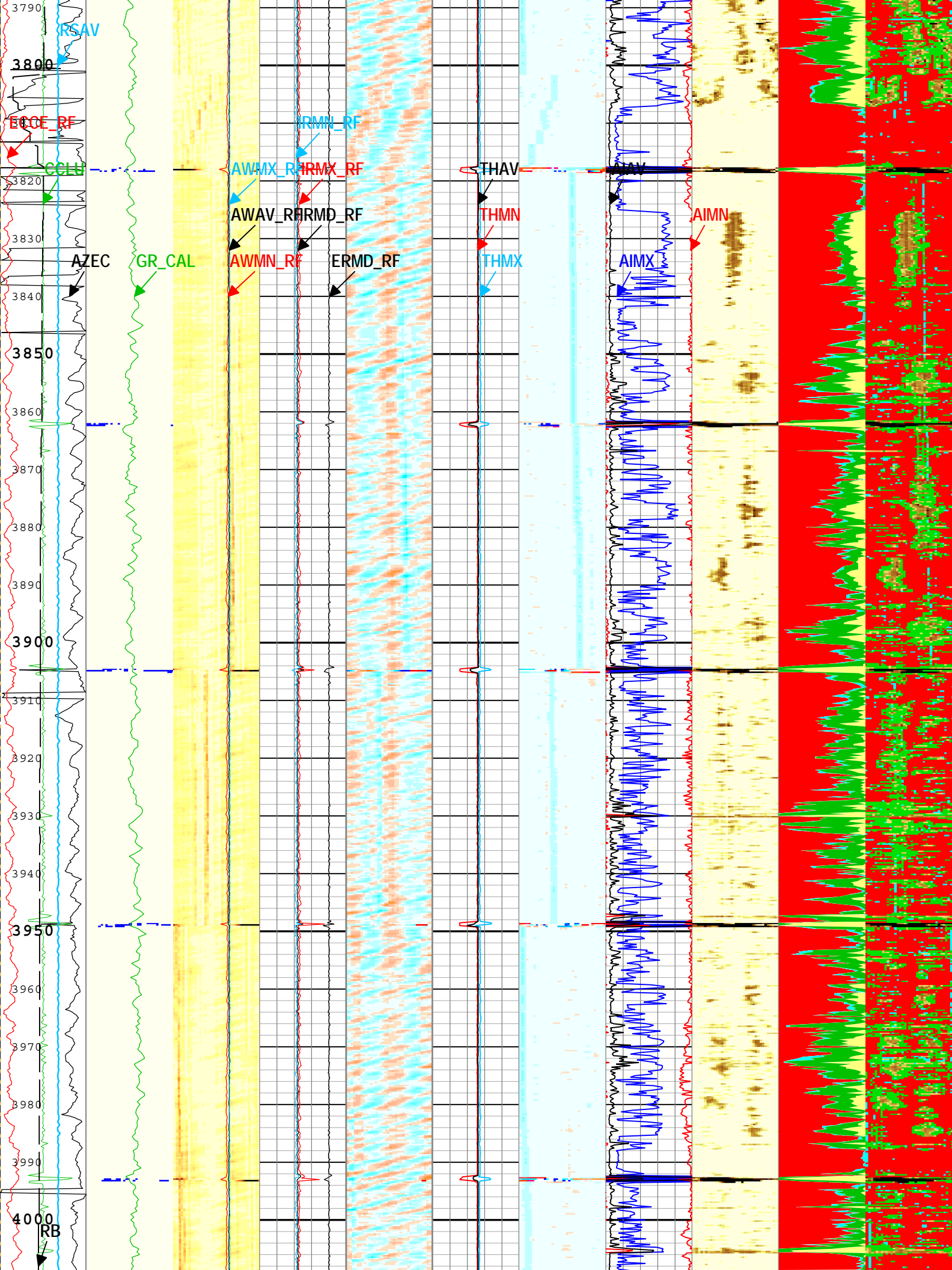


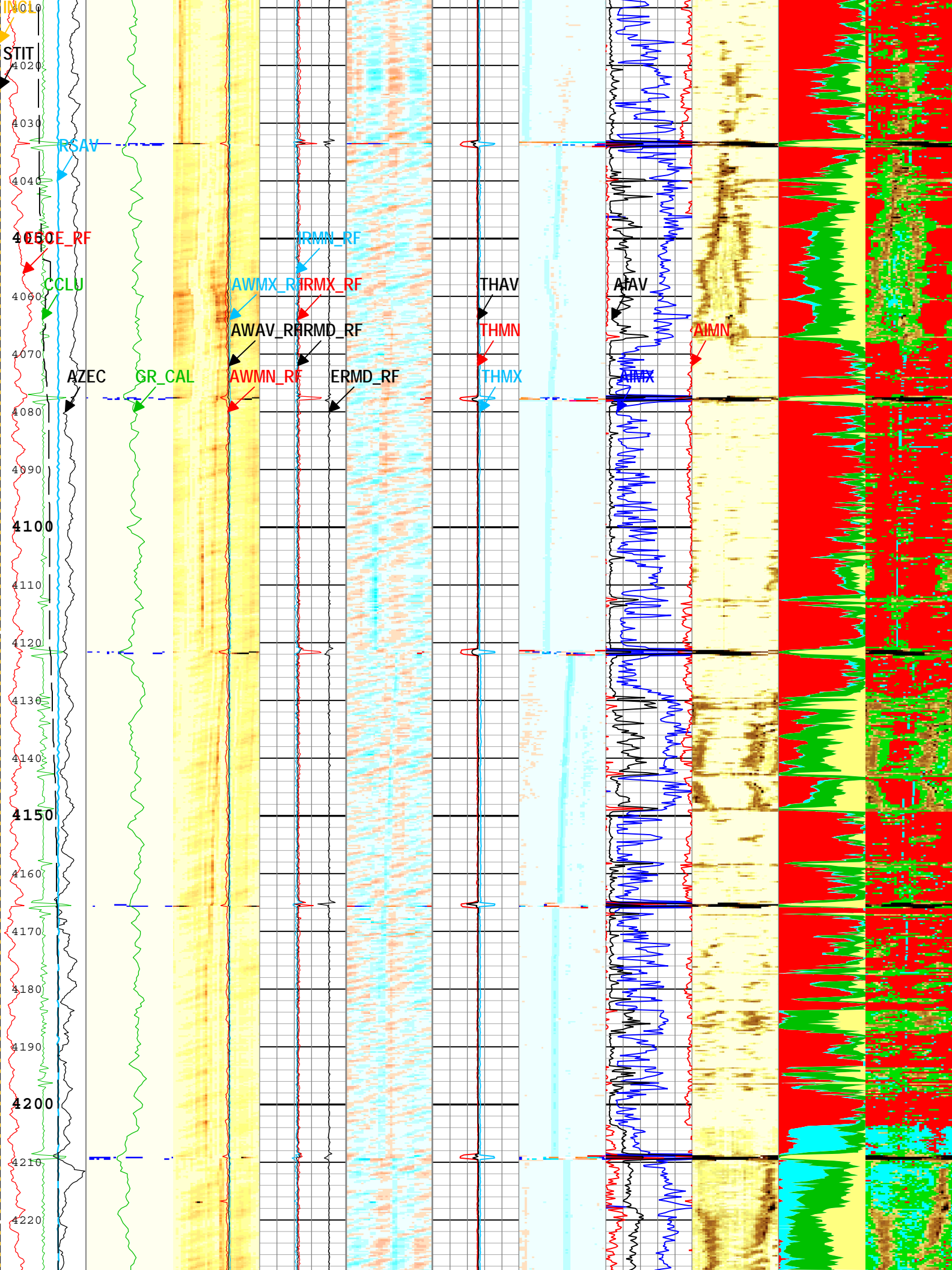


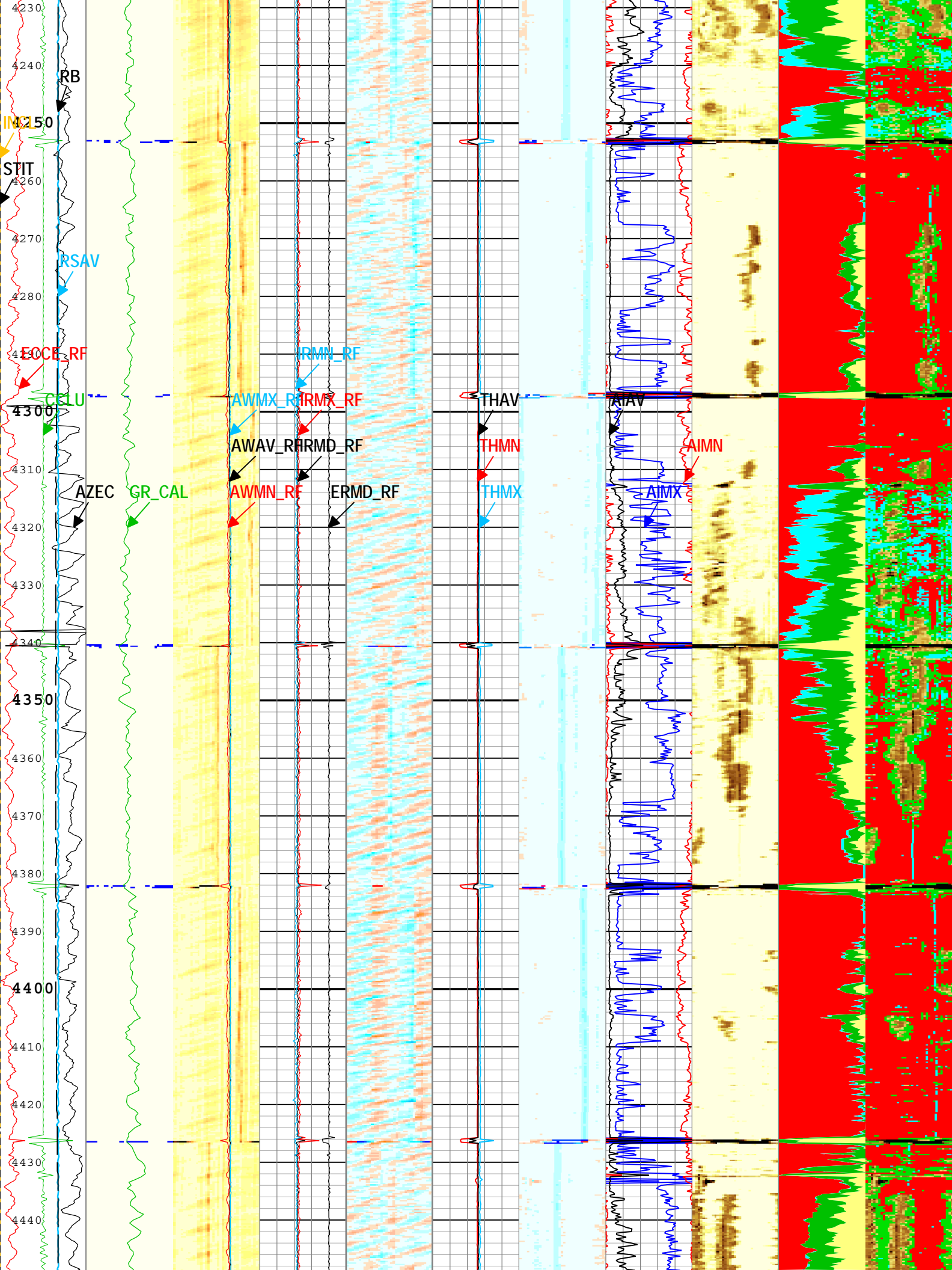


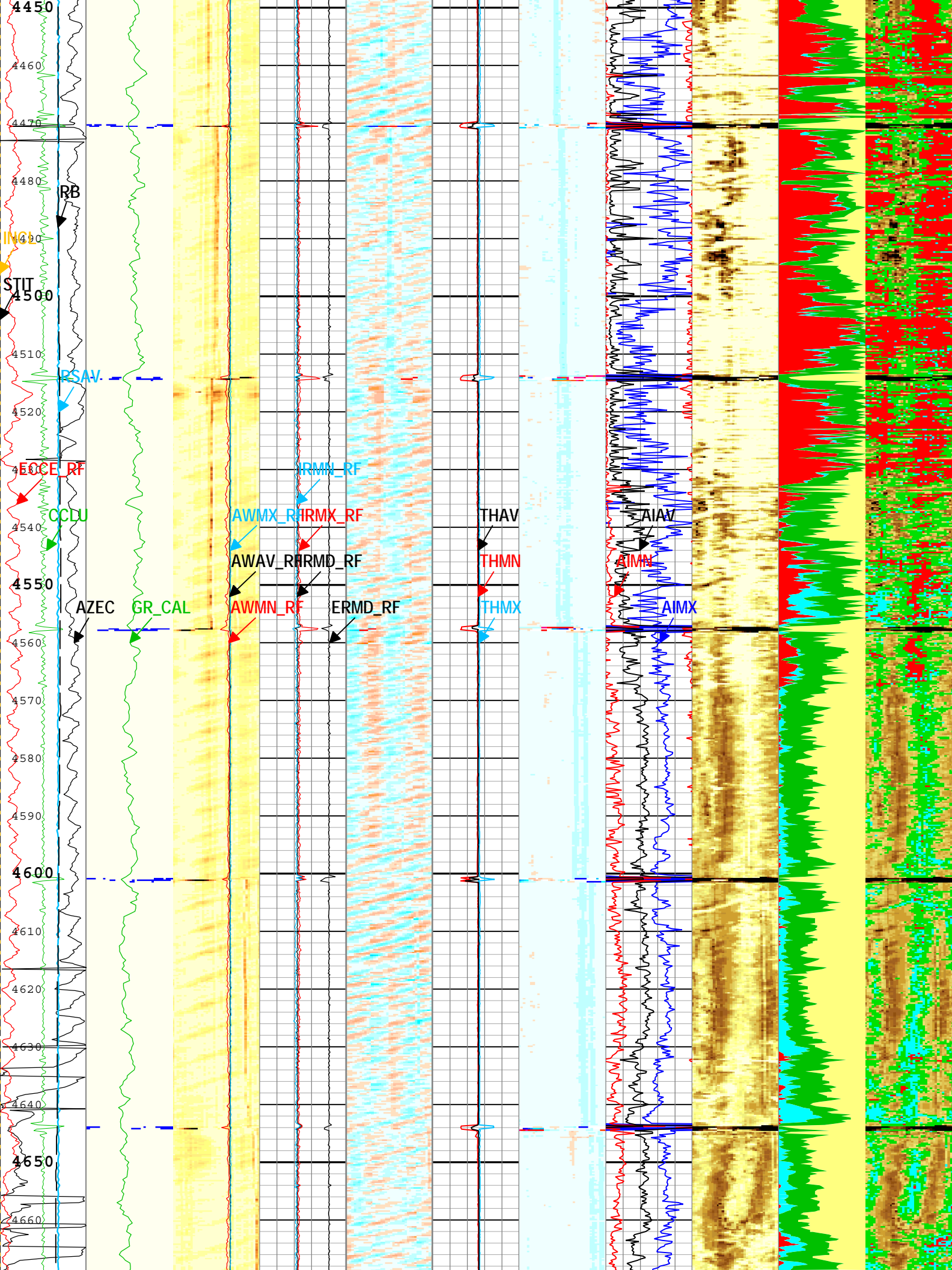


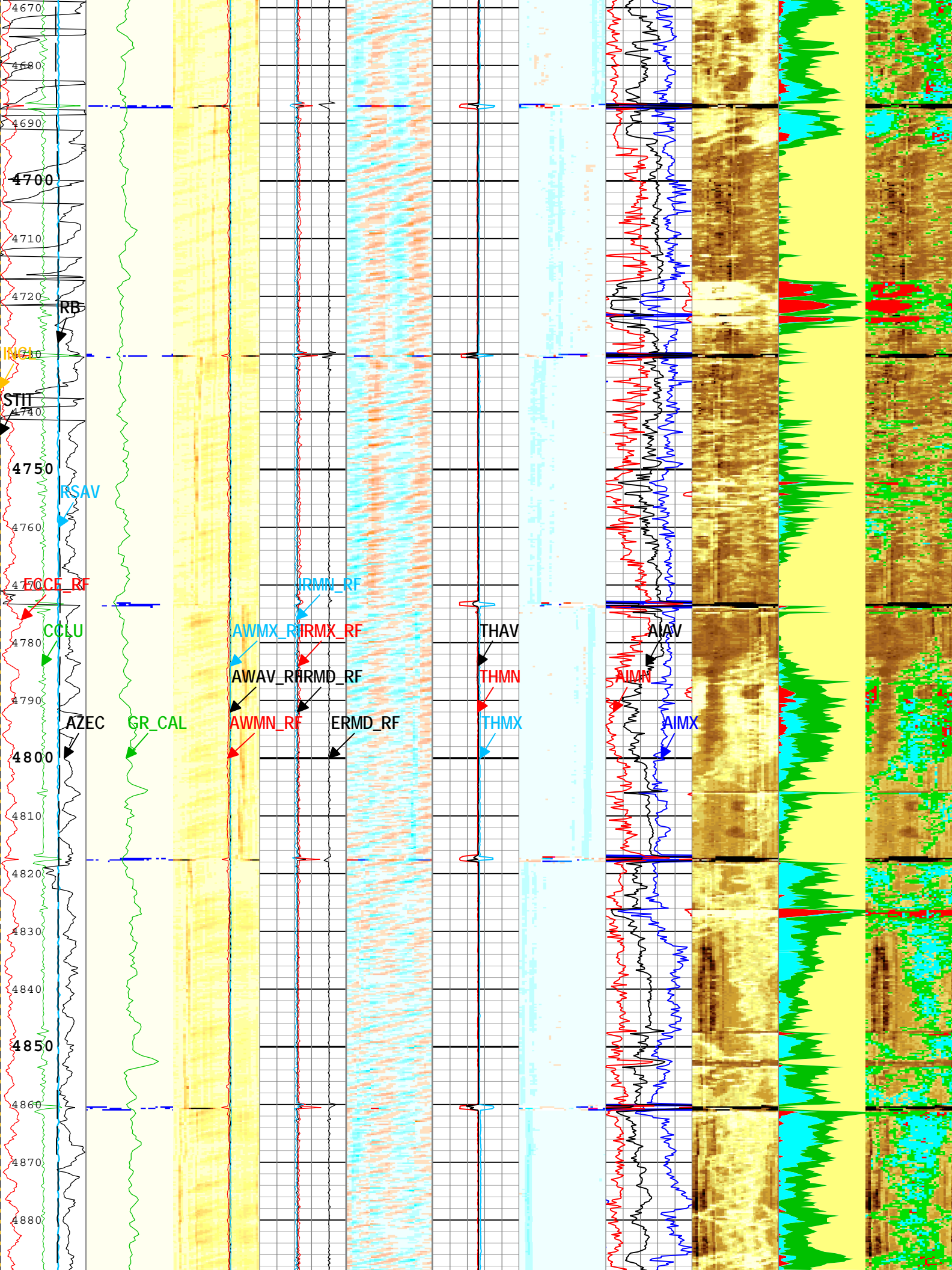


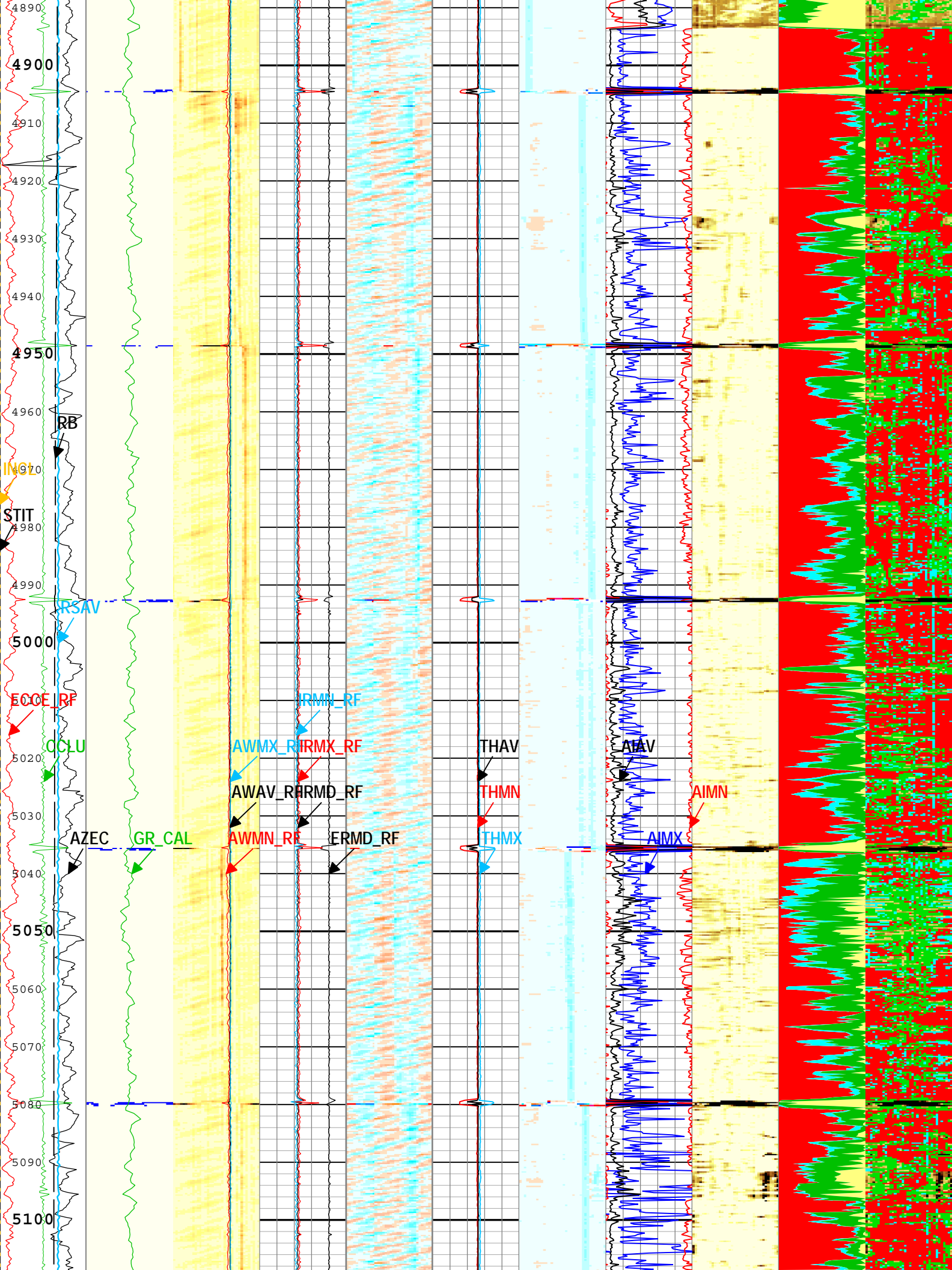


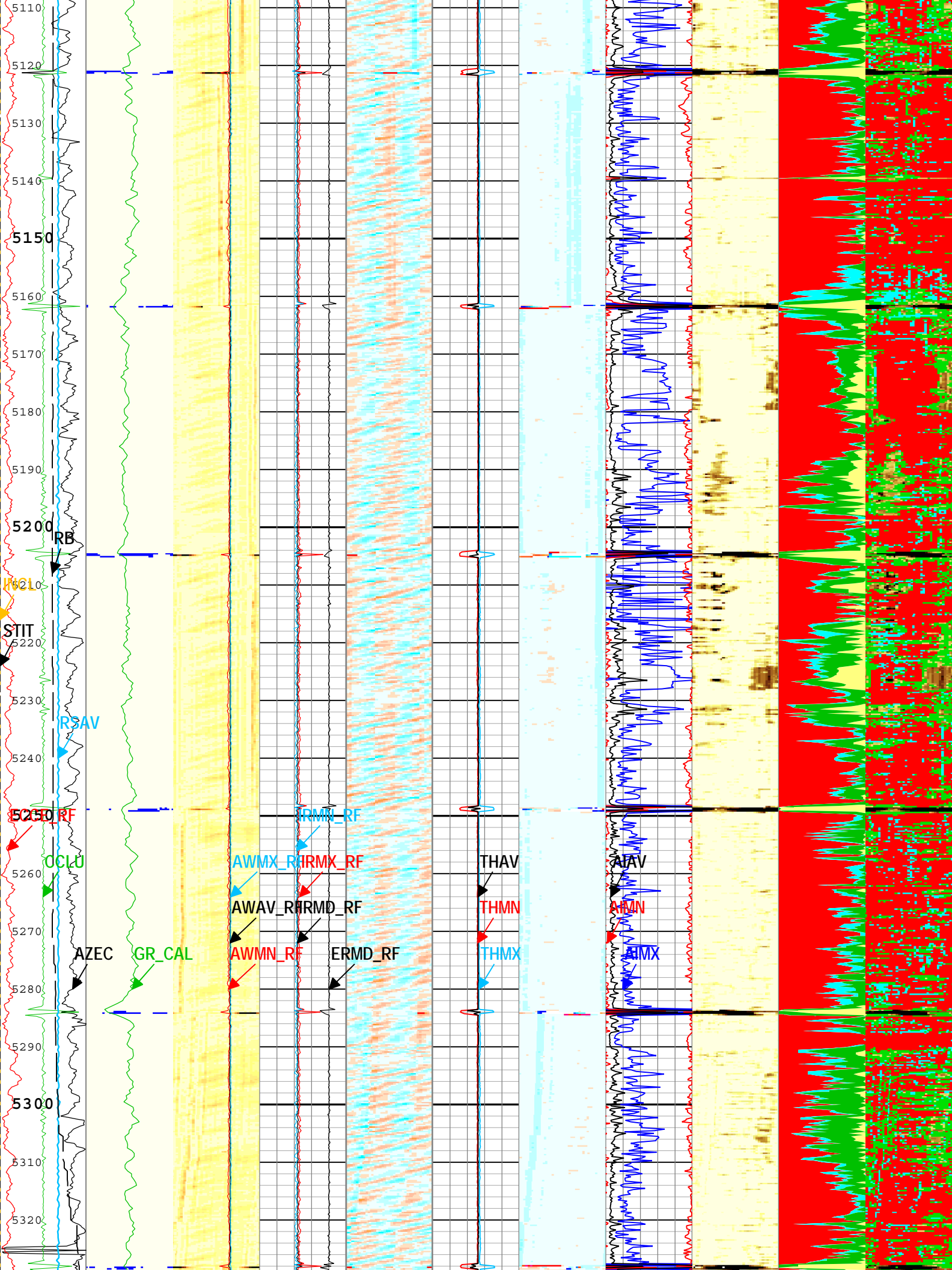


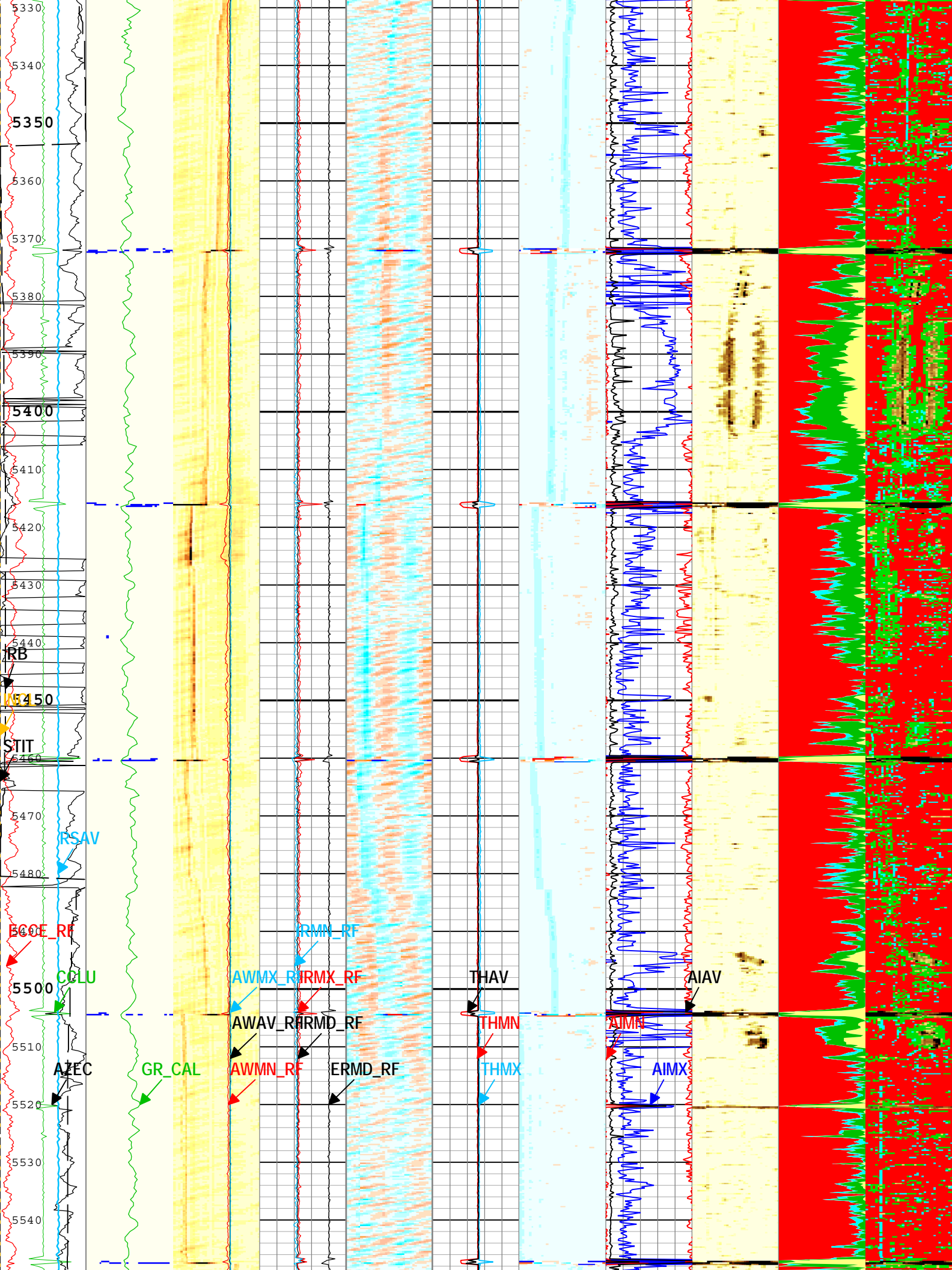


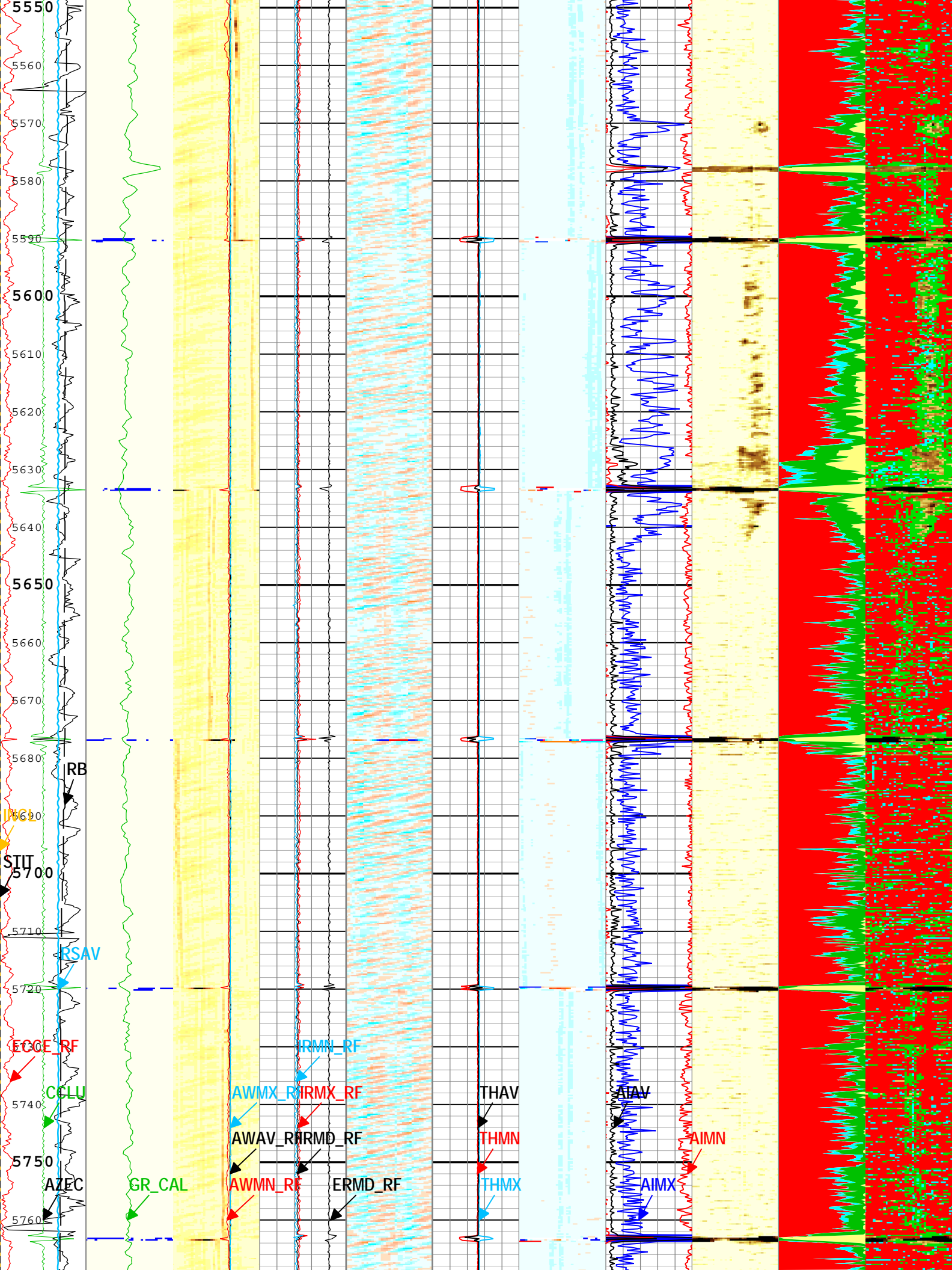


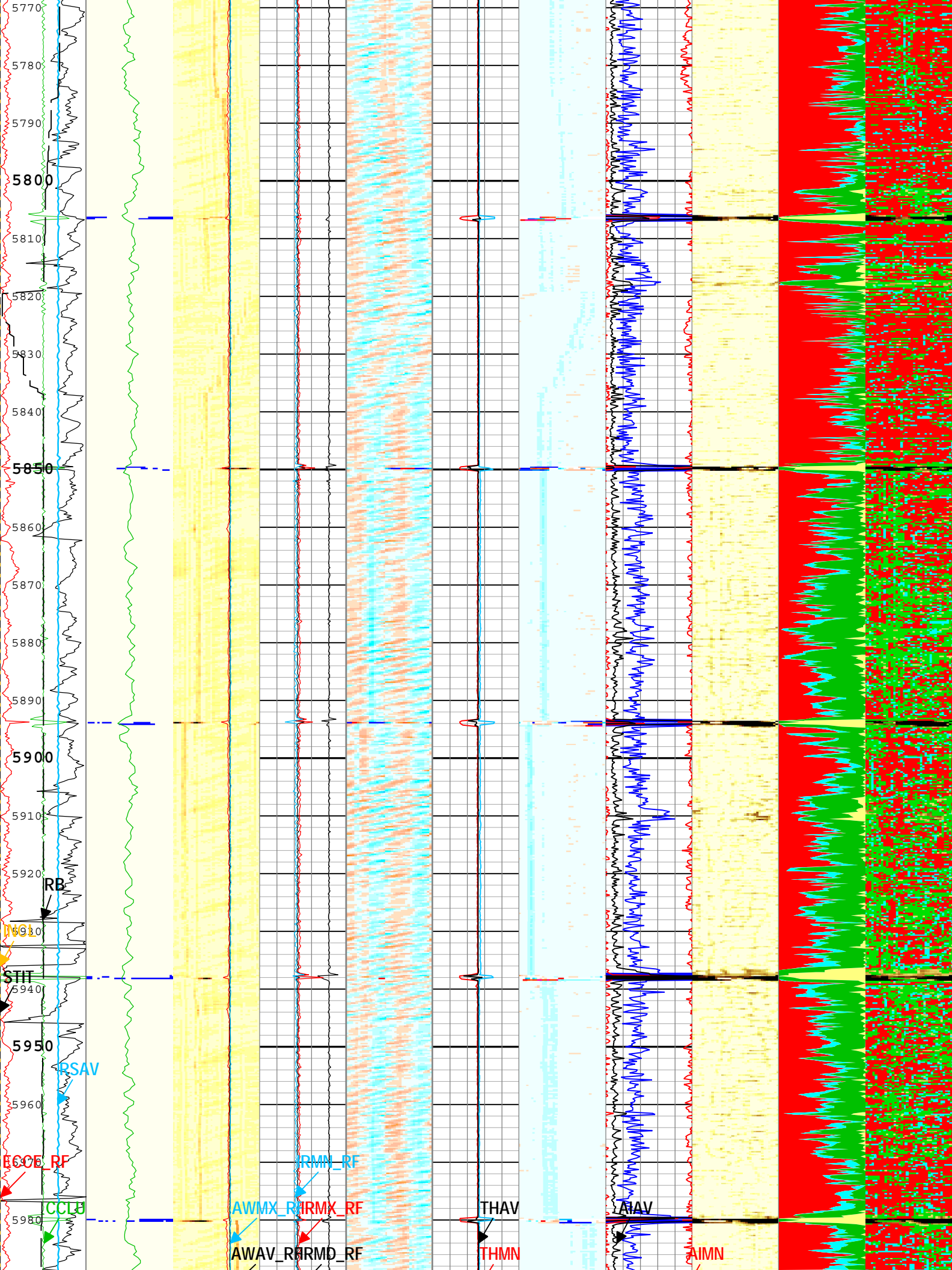


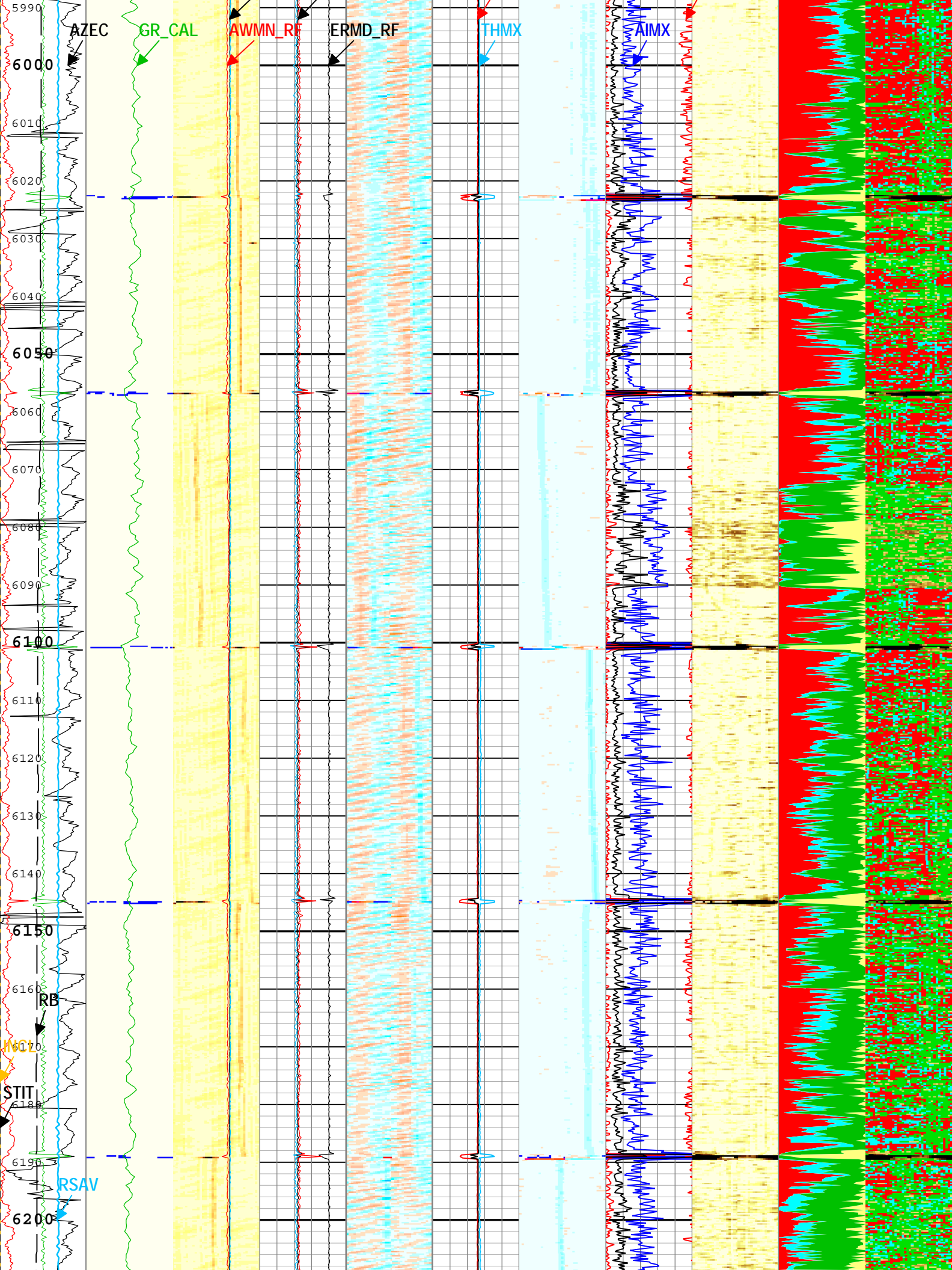


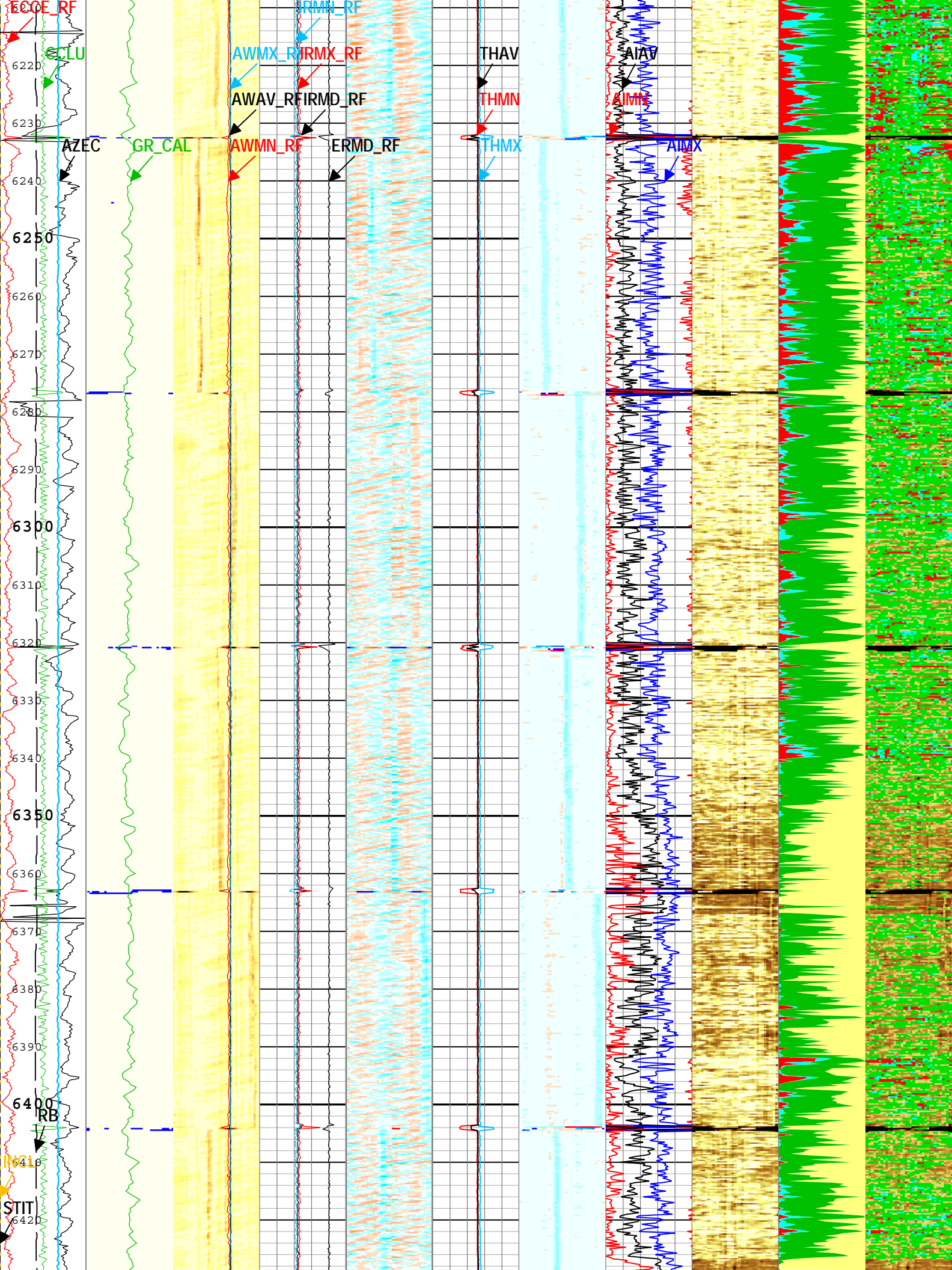


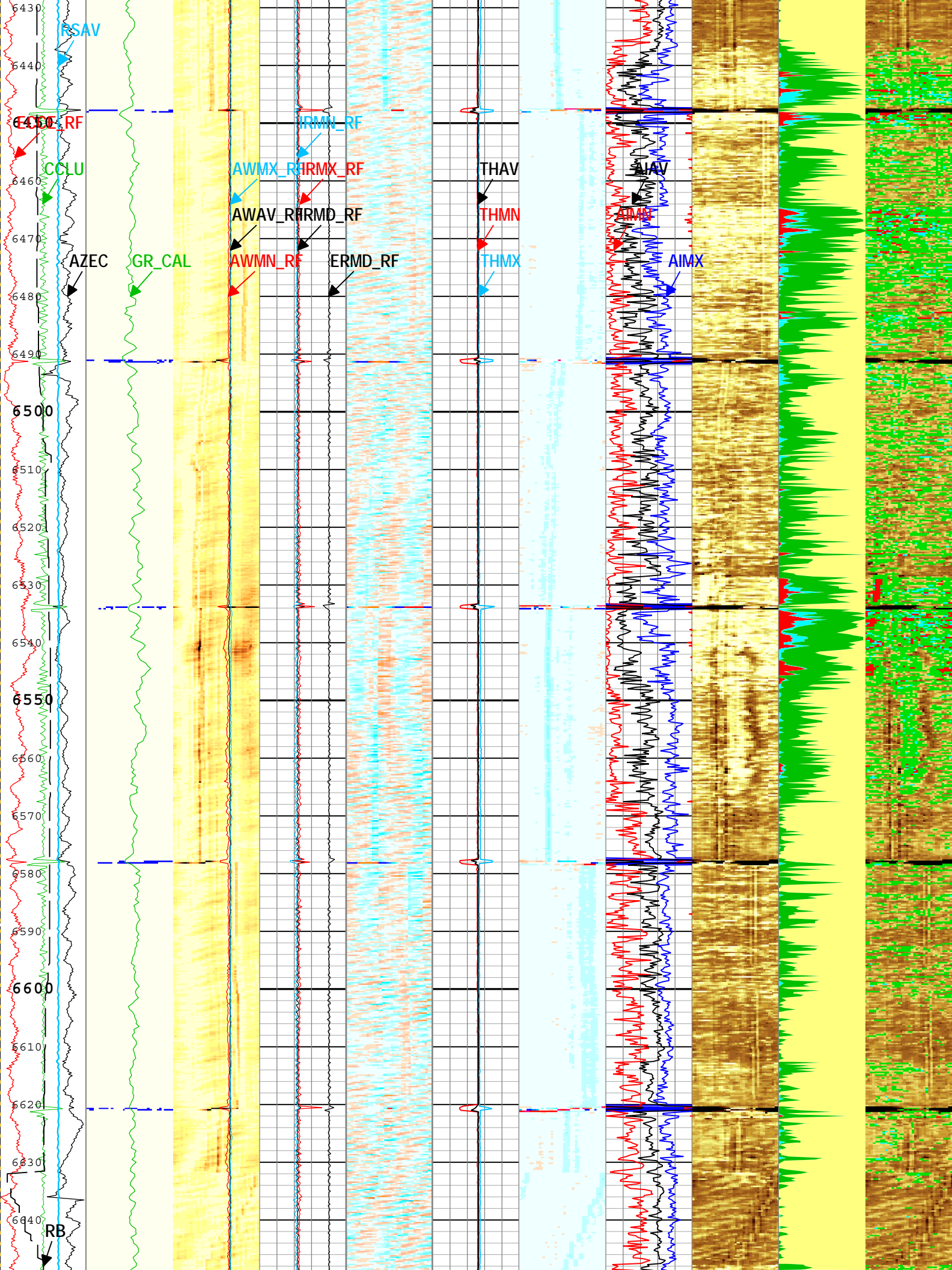


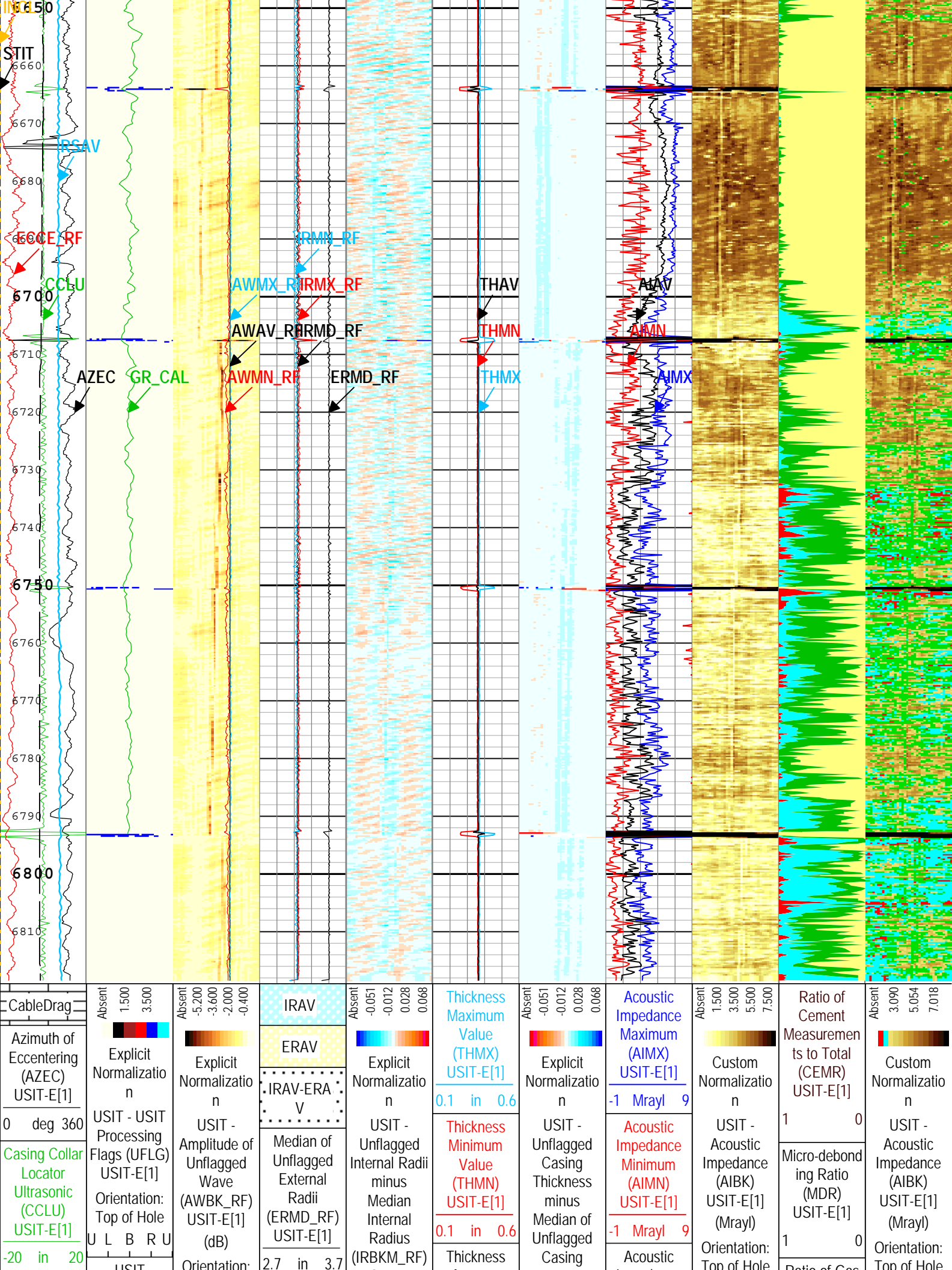












Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]	USIT Processing Flags (UFLG[0]) USIT-E[1]	Orientation: Top of Hole (in)	Average Value (THAV) USIT-E[1]	Thickness (THBKM_RF) USIT-E[1] (in)	Impedance Average (AIAV) USIT-E[1]	Top of Hole (in)	Ratio of Gas Measurements to Total (GASR) USIT-E[1]	Top of Hole (in)
0 in 0.5	1 5	U L B R U	0.1 in 0.6	U L B R U	-1 Mrayl 9	U L B R U	1 0	U L B R U
Motor Revolution Speed (RSAV) USIT-E[1]	Calibrated Gamma Ray (GR_CAL) SGT-N[1]	Median Internal Radius of Casing Corrected for Eccentering (IRMD_RF) USIT-E[1]						
-8 c/s -6	0 gAPI 150	2.7 in 3.7						
Motor Revolution Speed (RSAV) USIT-E[1]		Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]						
6 c/s 8		2.7 in 3.7						
Stuck Tool Indicator, Total (STIT)		Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]						
0 ft 50		2.7 in 3.7						
Hole inclination (INCL)		Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]						
0 deg 100		0 dB 75						
Relative Bearing (RB) USIT-E[1]								
0 deg 360								

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)
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 17:19:44

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	6820	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	6819
ZMUD	1.7	0	875
ZMUD	1.68	875	2400
ZMUD	1.69	2400	3500
ZMUD	1.7	3500	6819
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	24	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	6816	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 Log[2]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	60	21-Jun-2014 07:20:02	21-Jun-2014 07:27:40	6818.88	6240.02
EMXV	58	21-Jun-2014 07:27:40	21-Jun-2014 07:27:55	6240.02	6216.8
EMXV	55	21-Jun-2014 07:27:55	21-Jun-2014 07:47:04	6216.8	4314.67
EMXV	52	21-Jun-2014 07:47:04	21-Jun-2014 07:56:38	4314.67	3326.08
EMXV	55	21-Jun-2014 07:56:38	21-Jun-2014 08:28:09	3326.08	196.25

Pass Log[6]:Up

EMXV	74	21-Jun-2014 10:40:18	21-Jun-2014 10:43:13	204.59	11.88
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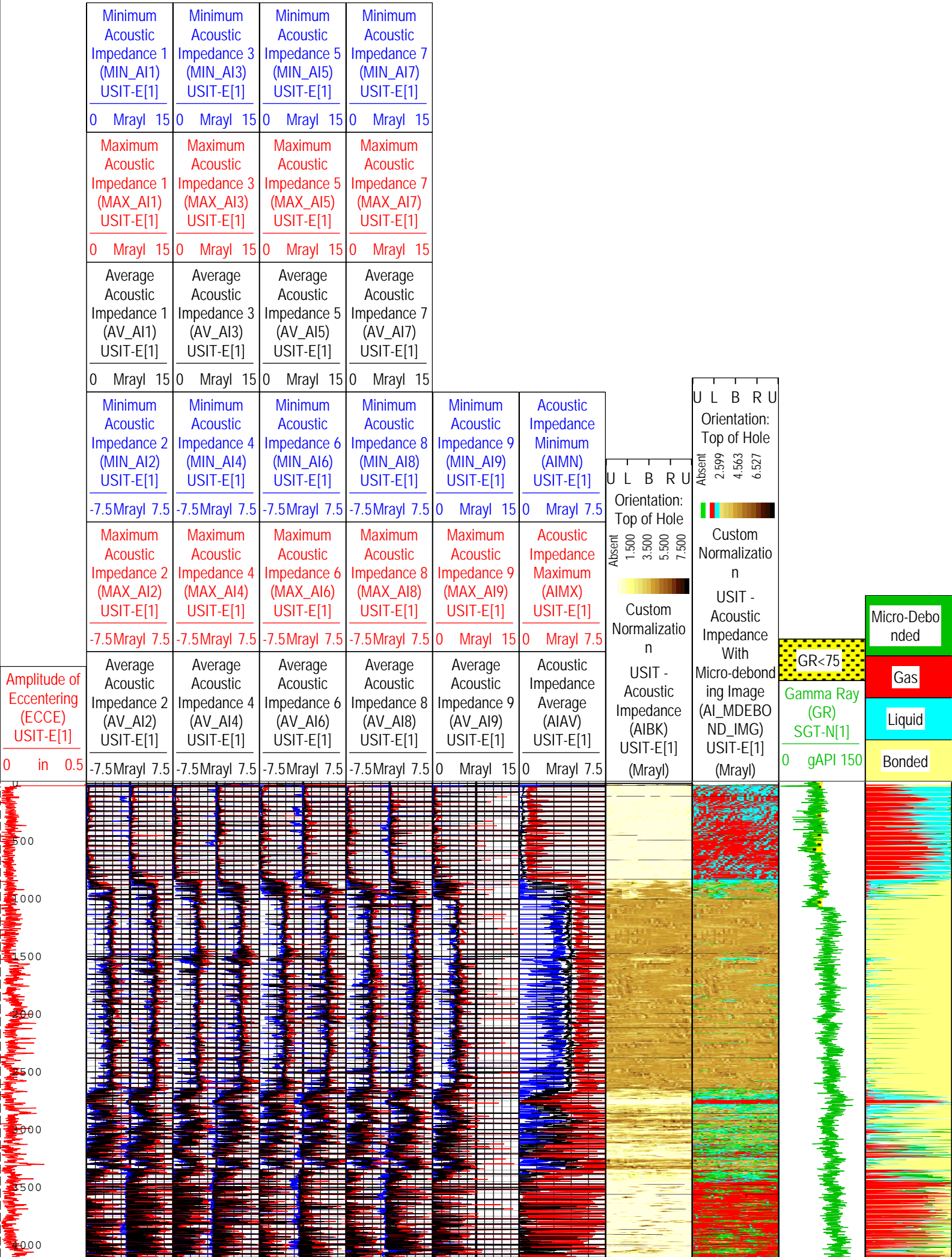
All depth are at tool zero.

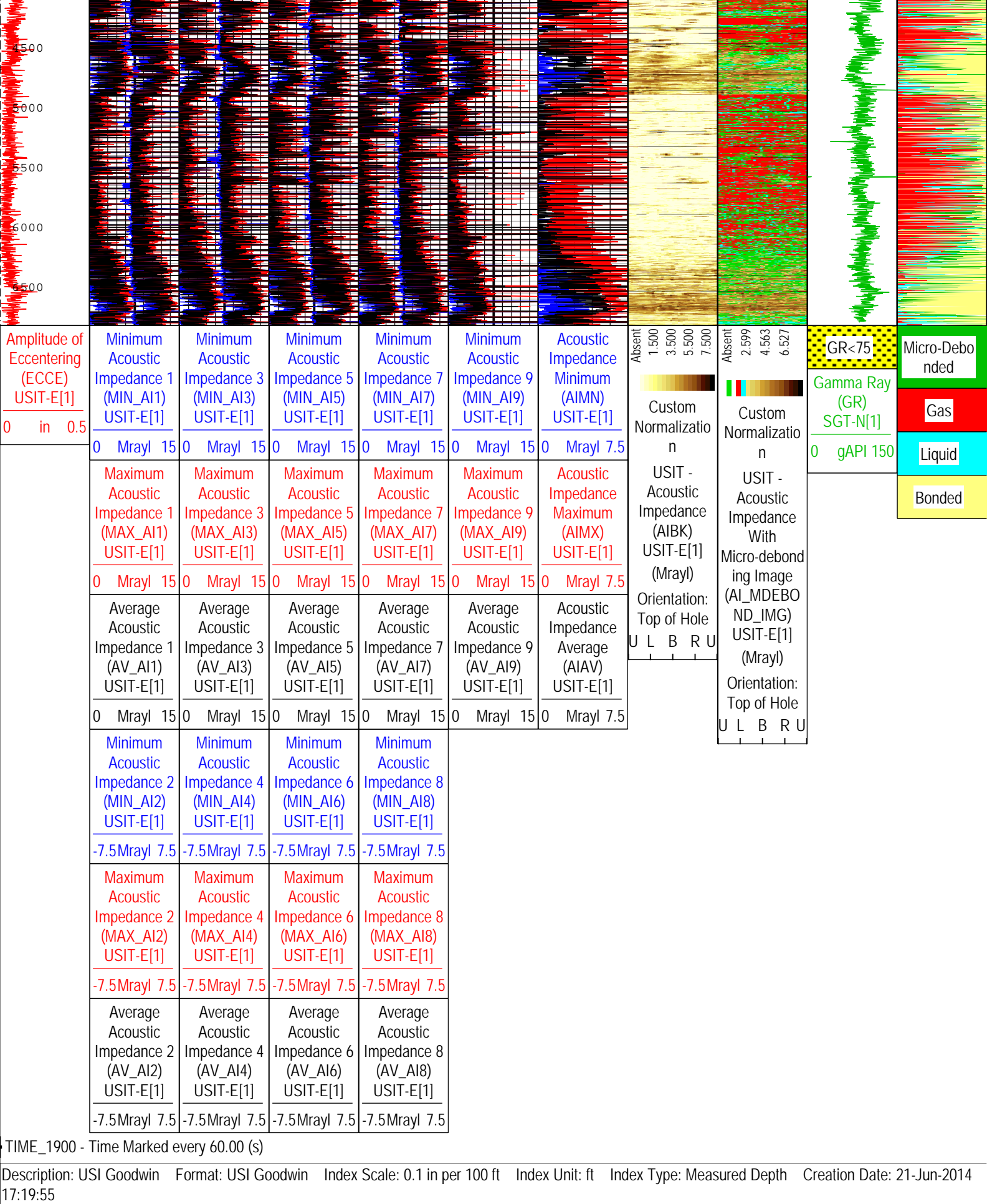
Import (2) of USI Goodwin			
USIT - Fluid Properties Measurement			
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[2]:Up	6819.24	115.03
Fluid Velocity = "Automatic". CFVL equals DFSL channel			
Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
Mud Impedance = "Manual". CZMD uses ZMUD parameter zoned table below			
Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	875	1.7	1.7
875	2400	1.68	1.68
2400	3500	1.69	1.69
3500	4200	1.7	1.7
4200		1.7	1.7
Composite 1			
USI Goodwin Compressed - 0 PSI			

Log	Company:Anadarko Petroleum Company	Well:Spurling 35N-34HZ
		Composite 1:S006

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 17:19:55

TIME: 1900 Time Marked every 60.00 (s)



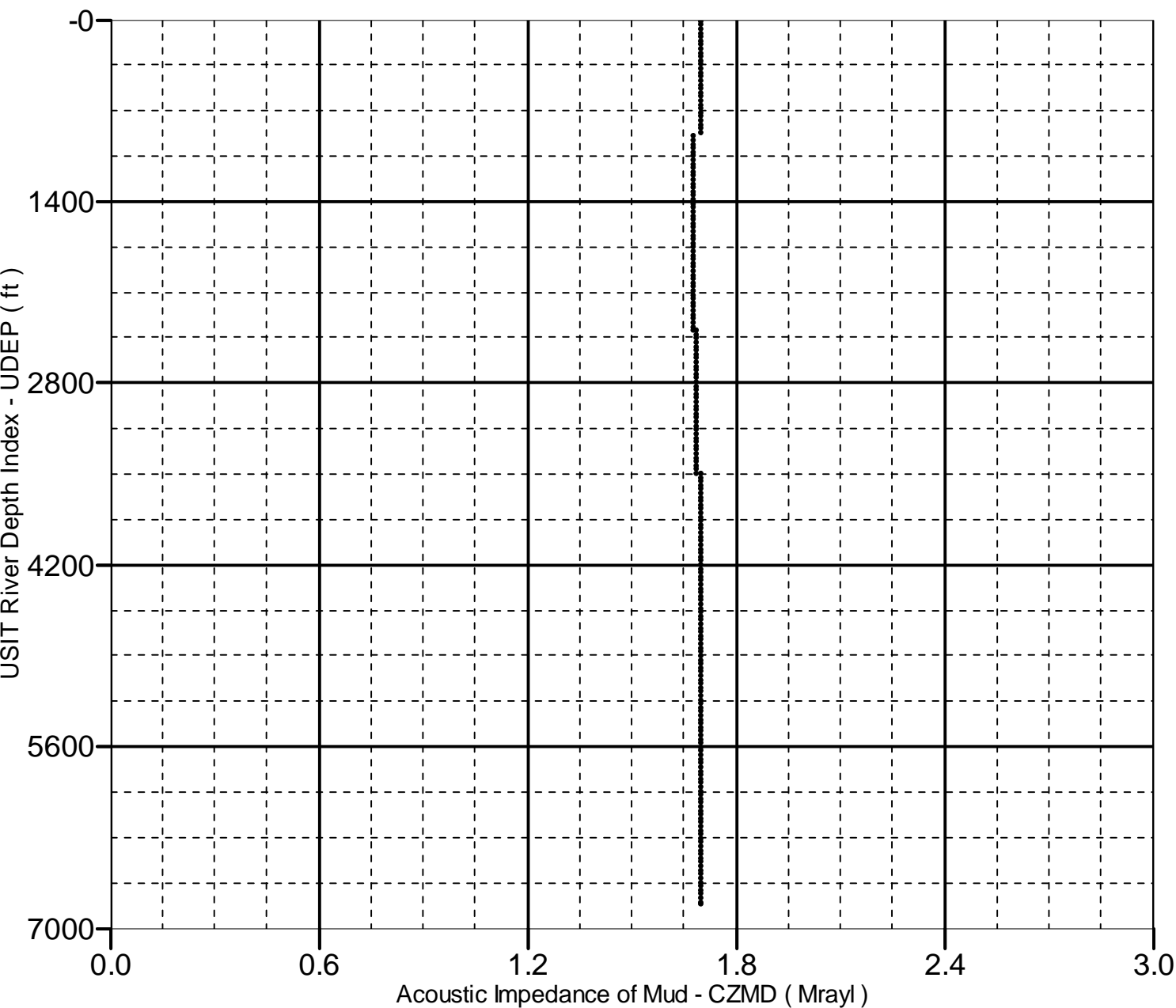


Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6819.75 to 7.25 ft

● CZMD-UDEP



XYZ

Company: Anadarko Petroleum Company

Well: Spurling 35N-34HZ

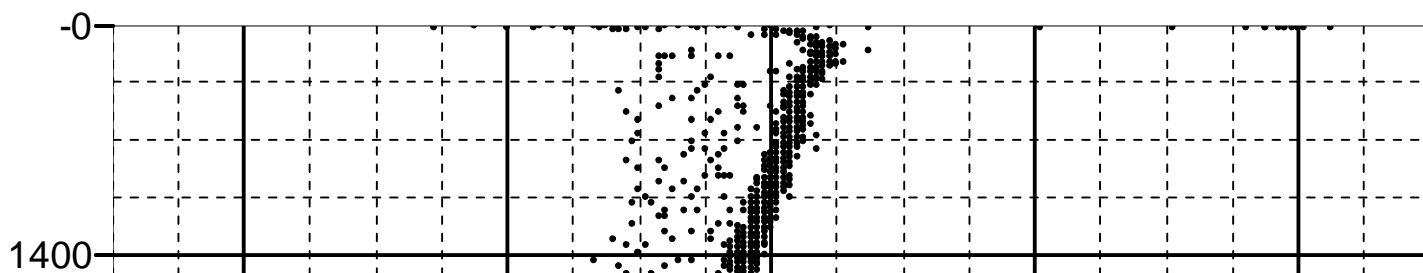
Run 1: Main[5]:Up:S006

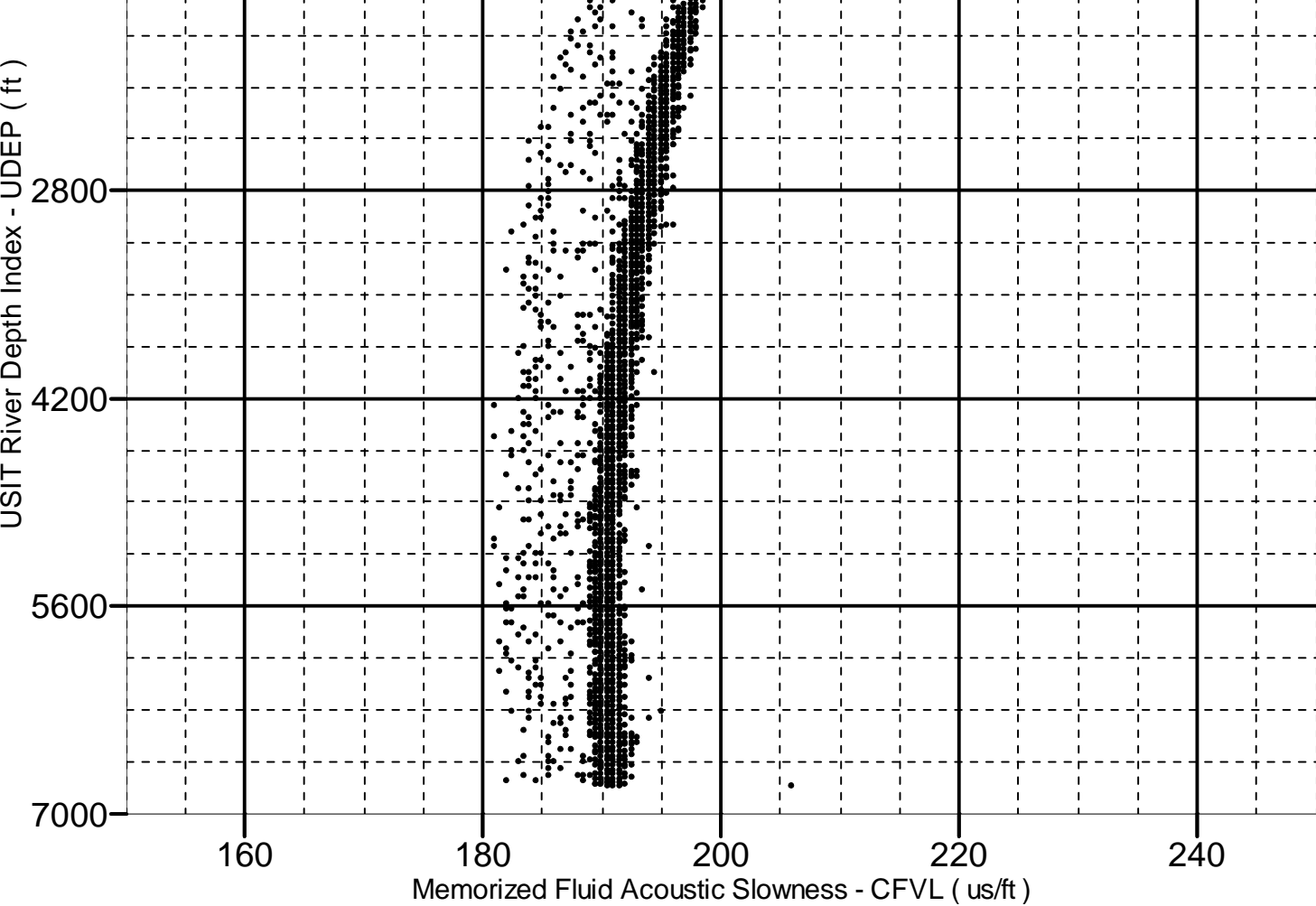
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6819.75 to 7.25 ft

● CFVL-UDEP





Company:	Anadarko Petroleum Company	Schlumberger
Well:	Spurling 35N-34HZ	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Ultrasonic Imager		
Cement Evaluation		
Gamma Ray - CCL		