

Company: V.O.F. Geothermie De Lier

Well: De Lier - GT-01

Field: De Lier

Rig Name: T-49

Country: Netherlands

Cement and Corrosion log

13-3/8" section

29-JUN-2014

Rig Name:	T-49	Field:	De Lier	Location:	De Lier	Well:	De Lier - GT-01	Company:	V.O.F. Geothermie De Lier		
Location:	De Lier	Permanent Datum:	NAP	Log Measured From:	Drill Floor	Drilling Measured From:	Drill Floor	Elev.:	K.B. G.L. D.F.	1.90 m 4.80 m	0.00 m above Perm.Datum

Scale:	1:500, 1:200	Max.Hole Deviation	40 deg	Longitude:	4° 16' 57" E	Latitude:	51° 58' 37" N
Logging Date	30-Jun-2014						

Run Number	2
Depth Driller	2876.00 m
Schlumberger Depth	910.00 m
Bottom Log Interval	910.00 m
Top Log Interval	0.00 m
Casing Fluid Type	Salt Brine
Salinity	
Density	1.08 g/cm³
Fluid Level	0.00 m

BIT/CASING/TUBING STRING	
Bit Size	8.50 in
From	2579.00 m
To	2876.00 m
Casing/Tubing Size	6.625 in
Weight	24 lb/mft
Grade	L80

From	2499.40 m
To	2872.00 m
Max Recorded Temperatures	87 degC

Logger on Bottom	Time
Unit Number	705

Recorded By	Location:
	P. Kool

Witnessed By	P. Kool
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Disclaimer

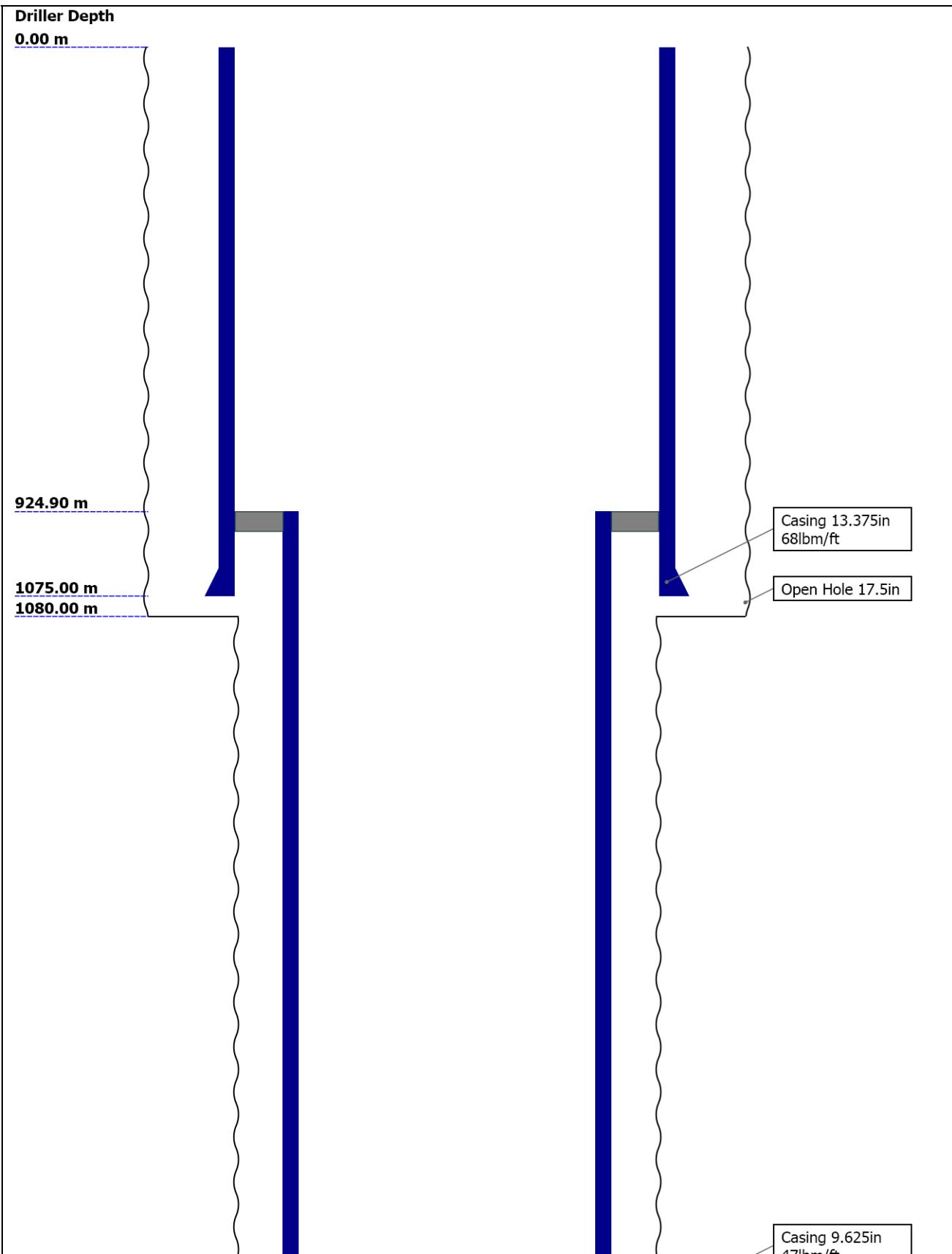
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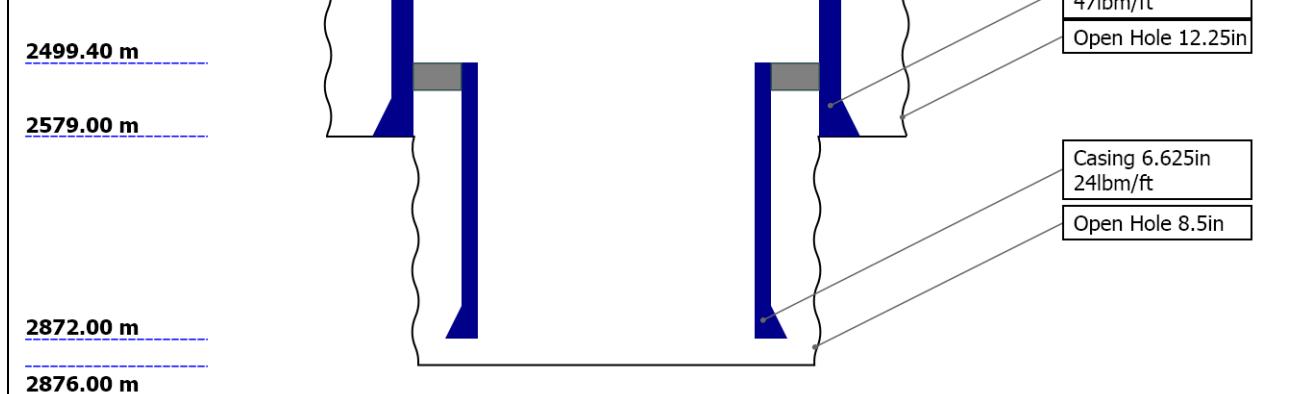
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Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	12.25	8.5			
Top Driller (m)	0	1080	2579			
Top Logger (m)	0	1080	2579			
Bottom Driller (m)	1080	2579	2876			
Bottom Logger (m)	1080	2579	2876			
Casing						
Size (in)	13.375	9.625	6.625			
Weight (lbm/ft)	68	47	24			
Inner Diameter (in)	12.415	8.681	5.921			
Grade	L80	L80	L80			
Top Driller (m)	0	924.9	2499.4			
Top Logger (m)	0	924.9	2499.4			
Bottom Driller (m)	1075	2579	2872			
Bottom Logger (m)	1075	2579	2872			

Operational Run Summary

Parameter (unit)	2					
Date Log Started	30-Jun-2014					
Time Log Started	02:01:52					
Date Log Finished	30-Jun-2014					
Time Log Finished	03:52:49					
Top Log Interval (m)	0.00					
Bottom Log Interval (m)	910.00					
Total Depth (m)						
Max Hole Deviation (deg)	40.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.500					
Logging Unit Number	705					
Logging Unit Location	NLIJ					
Recorded By	P. Kool					
Witnessed By	P. Kool					
Service Order Number						

Borehole Fluids	
Parameter(unit)	2
Fluid Type	Water
Fluid Name	Salt Brine
Max Recorded Temperatures (degC)	87
Salinity (ppm)	0
Density (g/cm3)	1.08
Date Logger on Bottom	30-Jun-2014
Time Logger on Bottom	02:40:10
Total Solid (%)	
High Gravity Solids (%)	
Remarks and Equipment Summary	
2: Toolstring	2: Remarks
Equip name Length LEH-QT 8.18 LEH-QT DTC-H:8057 7.29 ECH-KC DTC-H:8057 SGT-N:1002 6.38 2 SGH-K SGD-TAA SGC-TB:10022 USIT-E:1750 4.7 ECH-MFA USAC-A:1750 USIS-A:1757 USSC-B:795 USR-D:854 USI-SENSOR:2 334	MP name Offset CTEM HV TelStatus ToolStatu s GR 7.02 0.00 6.38 6.38 6.1 Log objective: Cement and Casing Evaluation. Logging fluid: 1.08 g/cc brine, as given by the Client on the wellsite. ZMUD set to theoretical. FVEL set to automatic. USIT logged with 10 deg 3 in resolution. Main log interval: from 910 m to 0 m Repeat log interval: from 120 m to 0 m
 Lengths are in m Maximum Outer Diameter = 8.660 in Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO	
Depth Summary	

Depth Measuring Device	
Type	IDW-E
Serial Number	967
Calibration Date	31-JAN-2014
Calibrator Serial Number	15
Calibration Cable Type	7-46 ZV-XS
Wheel Correction 1	-5
Wheel Correction 2	-5

Tension Device

Type	CMTD-B/A		
Serial Number	1536		
Calibration Date	11-JUN-2014		
Calibrator Serial Number	1267		
Number of Calibration Points	10		
Calibration Root Mean Square Error	35		
Calibration Peak Error	78		

Logging Cable

Type	7-46ZV-XS		
Serial Number	F712451		
Length	7315.20 m		
Conveyance Type	Wireline		
Rig Type			

2: Depth Control Parameters

Depth Control Remarks

Z.Depth Control Parameters		Depth Control Remarks
Log Sequence	Subsequent Log in the Well	SLB Depth Control Standard-05 & SLB WL Depth Control Guidelines-10 (both dated on APR-10 & DEC-10) followed.
Reference Log Name	Cement and Corrosion log 9-5/8"	Subsequent Log in the Well procedures followed.
Reference Log Run Number	2	IDW used as primary depth control, Z-chart used as secondary depth control.
Reference Log Date	19-Jun-2014	Log correlated to GR peak at 434 m

2

Main 1:500

Software Version

Acquisition System		Version	
MaxWell		4.0.9163.3000	
Application Patch		Patch-SP-10767_13393-4.0.9163.3001	
Computation	Description	Version	
Cementation	Cementation Computation Application	4.0.9167.3000	
CORROSION Ensemble	CORROSION Ensemble	4.0.9033.3000	
Tool Elements	Description	Software Version	Firmware Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000	

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2	Main[3]:Up	Up	4.11 m	911.37 m	30-Jun-2014 2:52:56 AM	30-Jun-2014 3:31:21 AM	ON	1.32 m	Yes

All depths are referenced to toolstring zero

Log

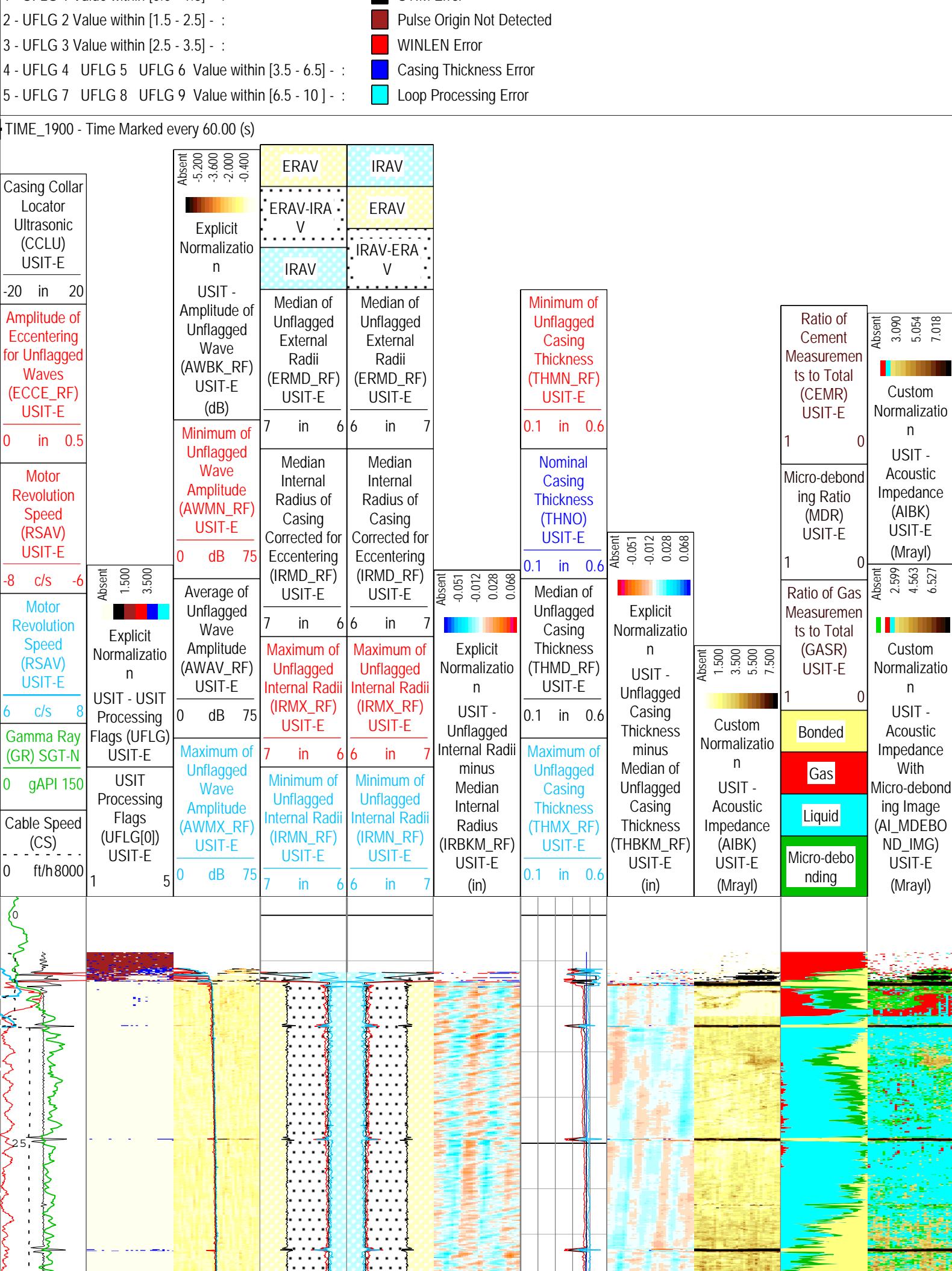
Company:V.O.F. Geothermie De Lier

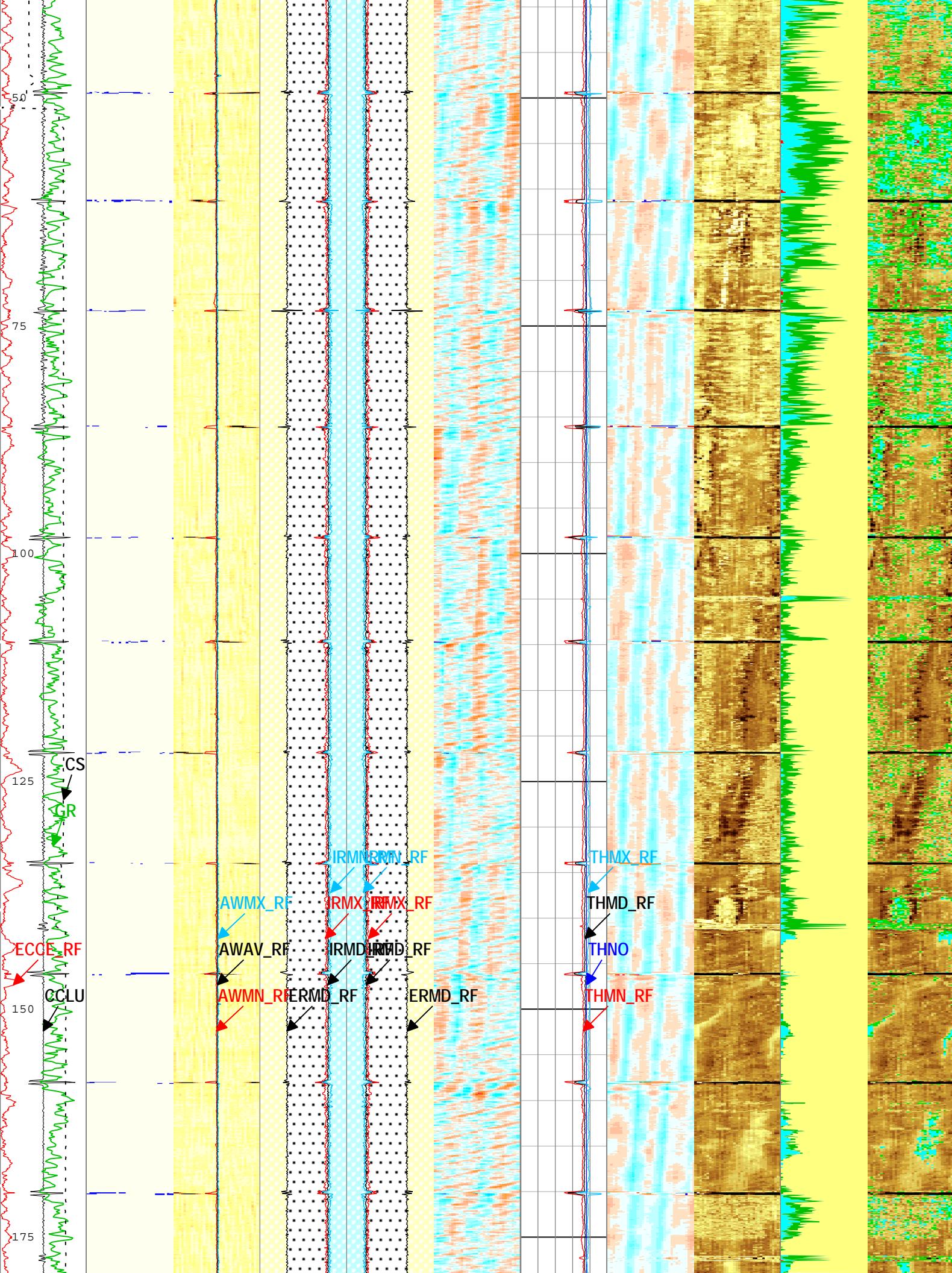
Well:De Lier - GT-01

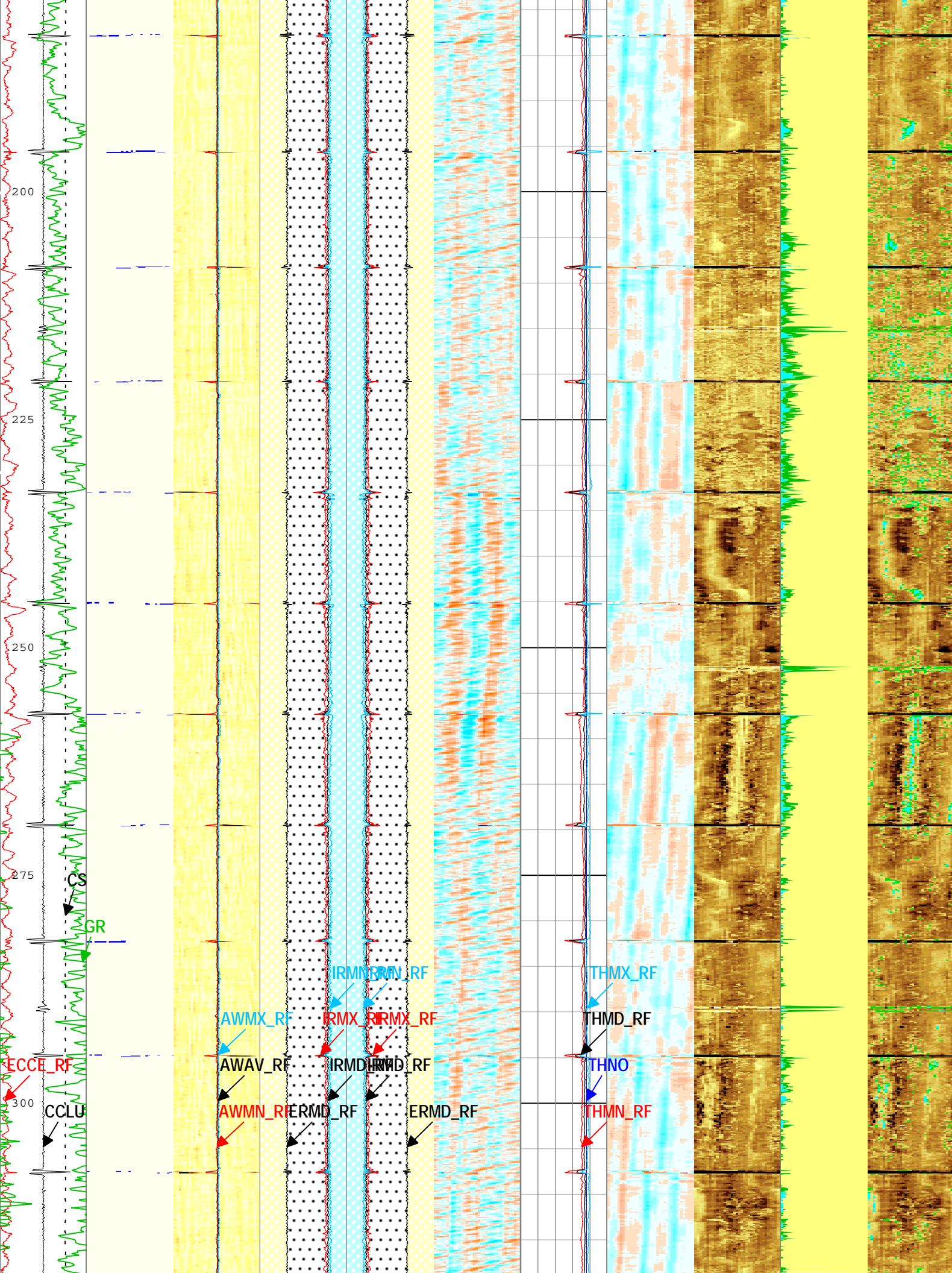
2: Main[3]:Up:S010

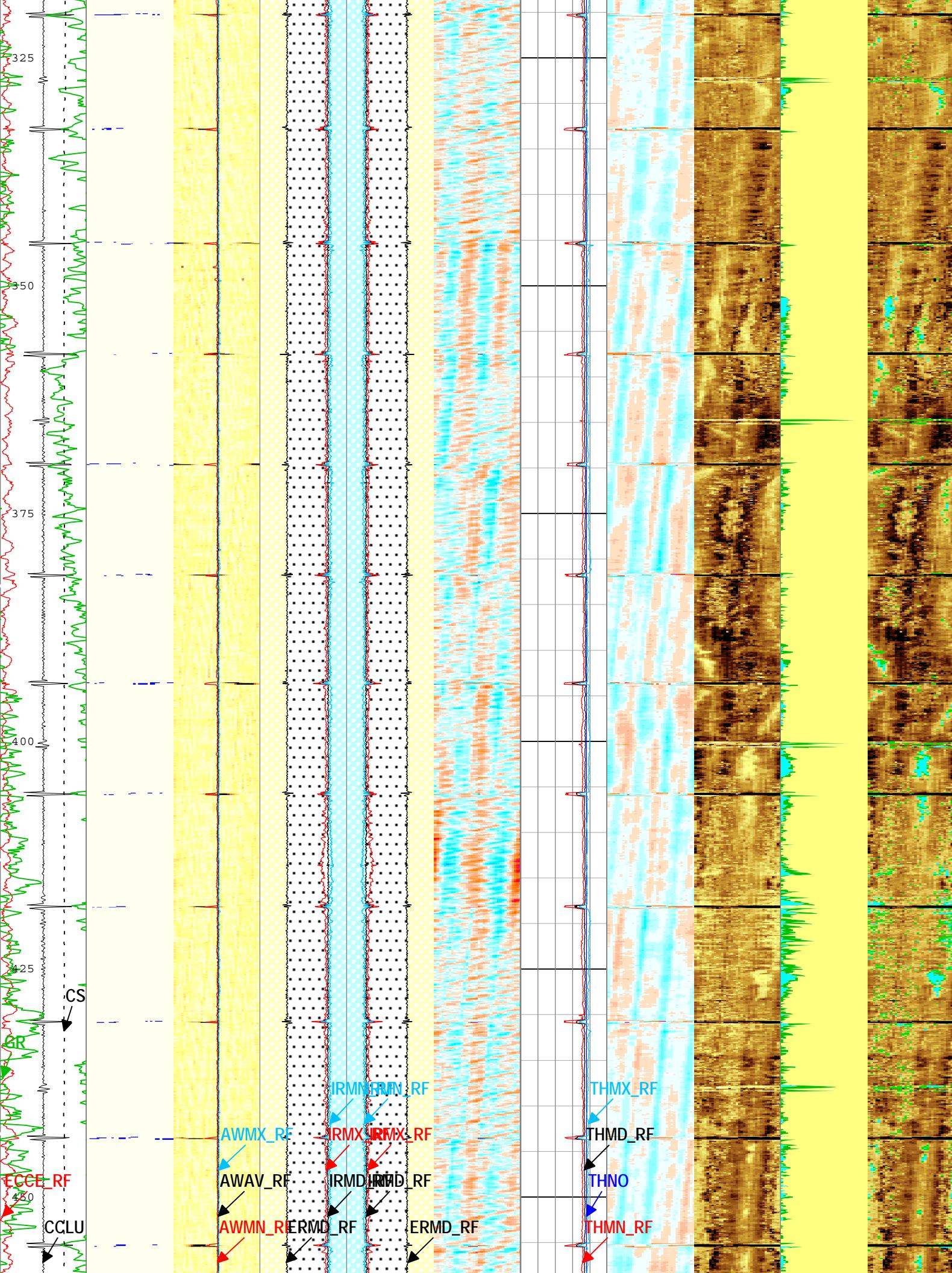
Description: USI Composite Format: Log (USI Composite 13-38in) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 30-Jun-2014 04:06:01

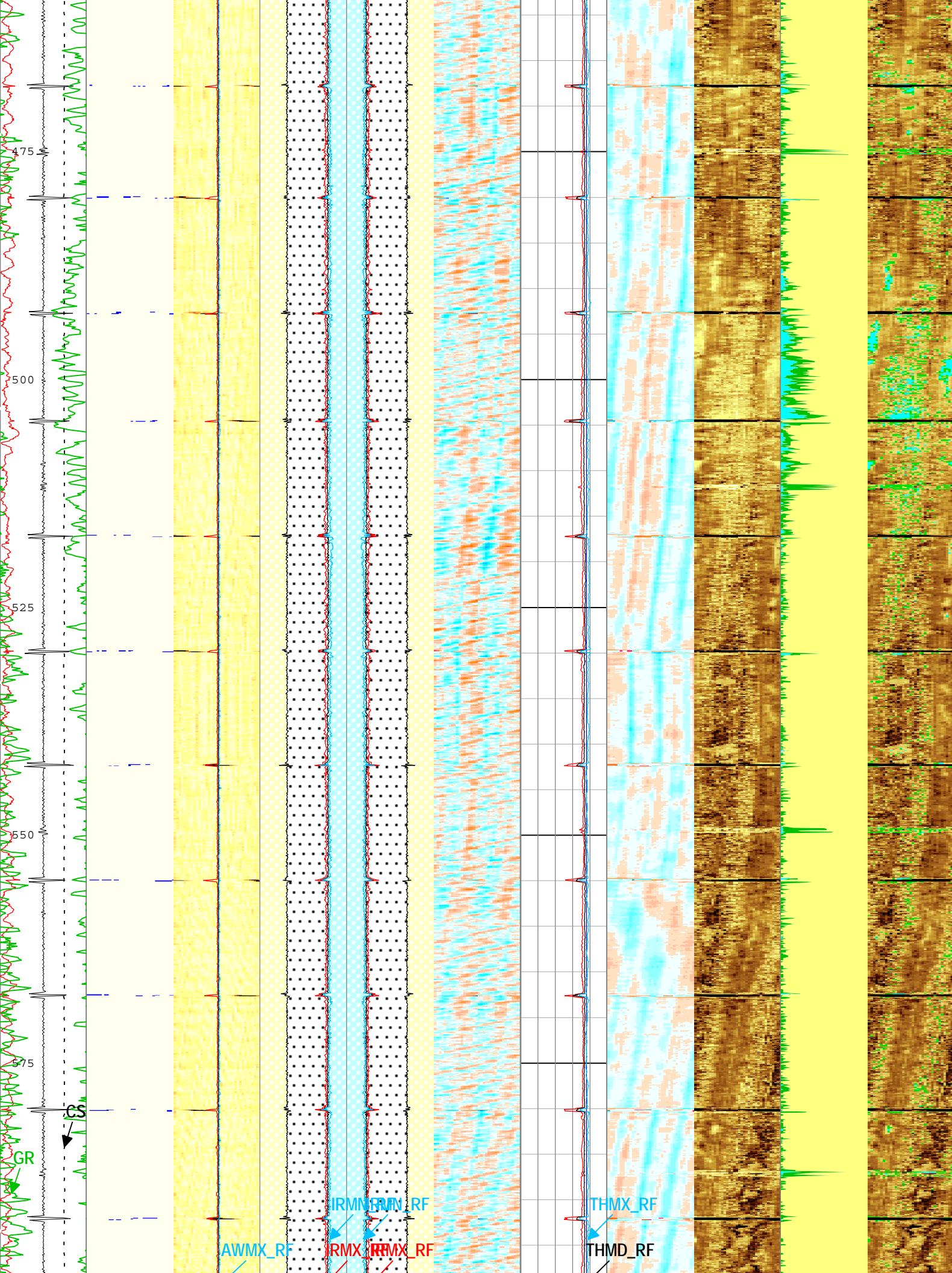
USIT Processing Flags (UFLG[0]) USIT-E

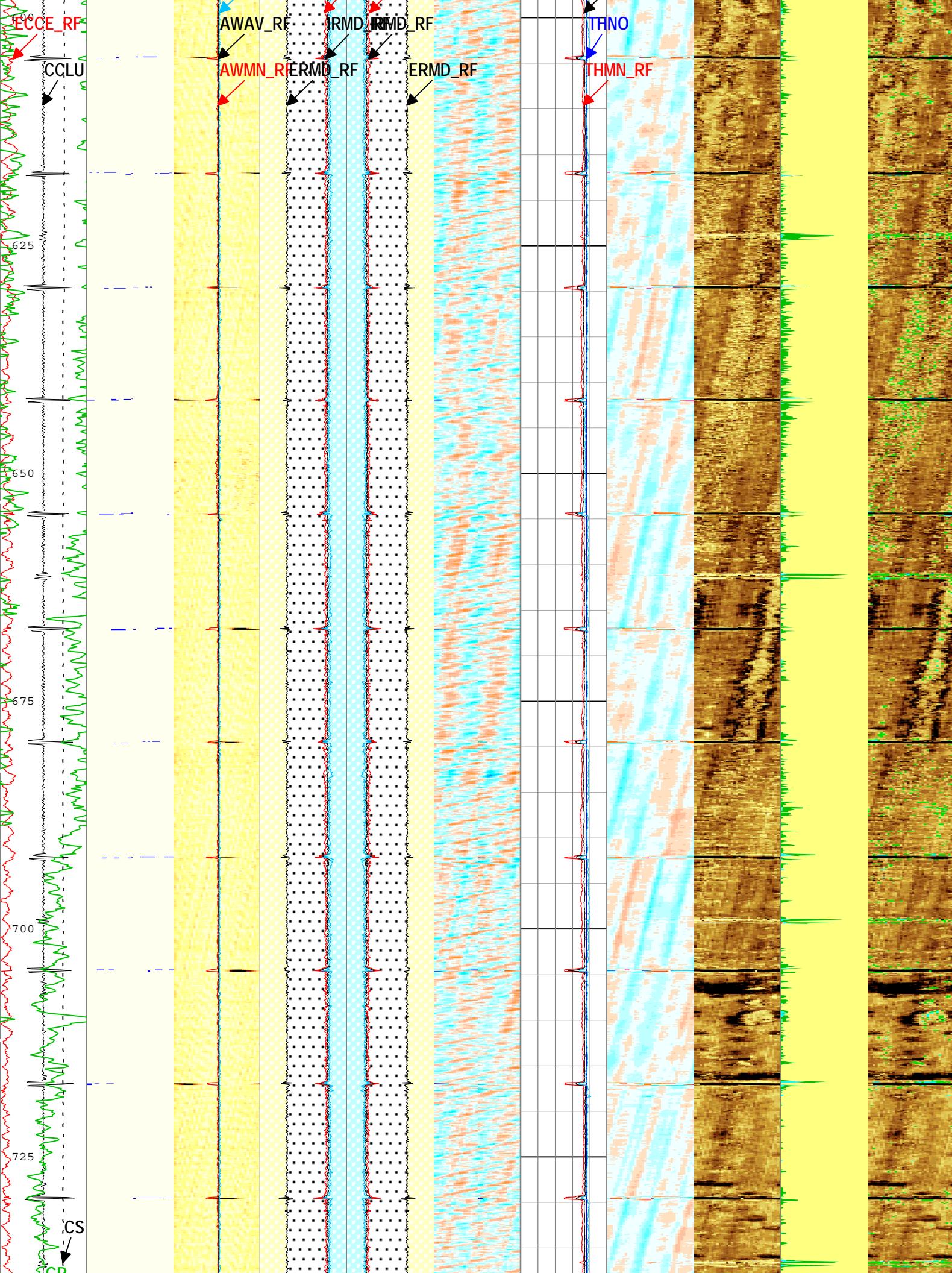


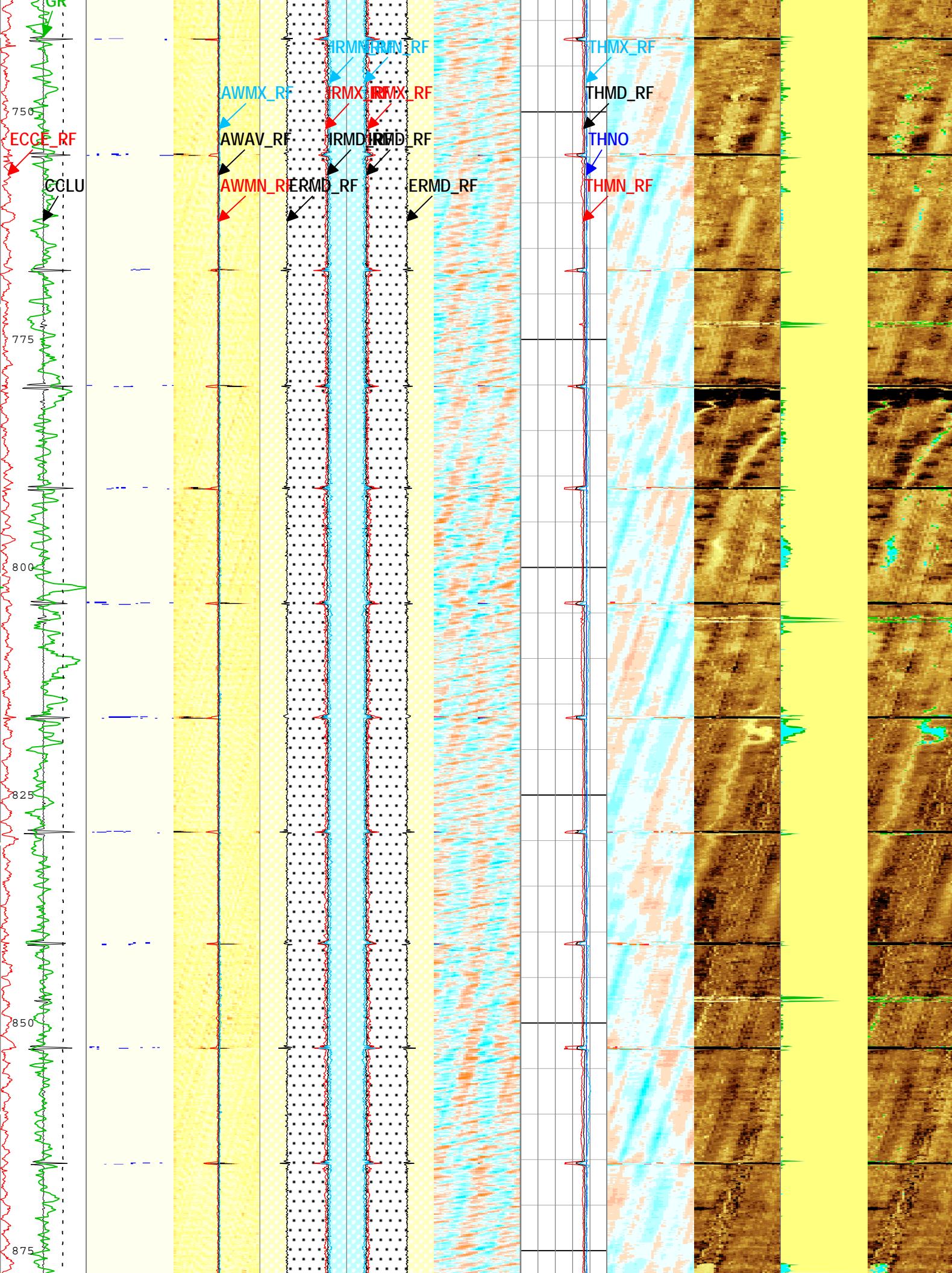


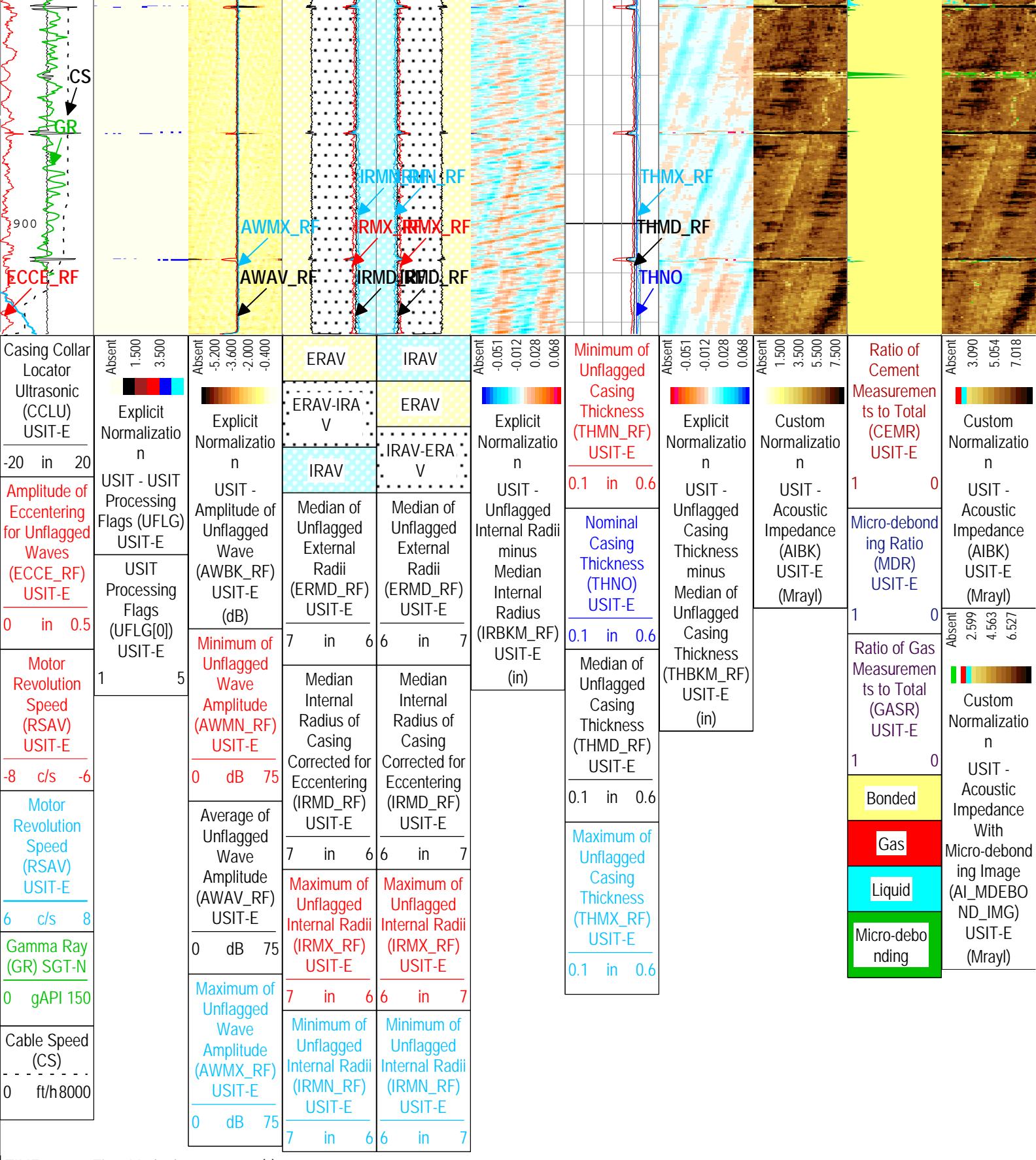












TIME_1900 - Time Marked every 60.00 (s)

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

Main 1:200

Software Version

Acquisition System		Version
MaxWell		4.0.9163.3000
Application Patch		Patch-SP-10767_13393-4.0.9163.3001
Computation	Description	Version
Cementation	Cementation Computation Application	4.0.9167.3000
CORROSION Ensemble	CORROSION Ensemble	4.0.9033.3000
Tool Elements	Description	Software Version
USI-SENSOR	USIT Transducer Element	4.0.9265.3000
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2	Main[3]:Up	Up	4.11 m	911.37 m	30-Jun-2014 2:52:56 AM	30-Jun-2014 3:31:21 AM	ON	1.32 m	Yes

All depths are referenced to toolstring zero

Log

Company:V.O.F. Geothermie De Lier

Well:De Lier - GT-01

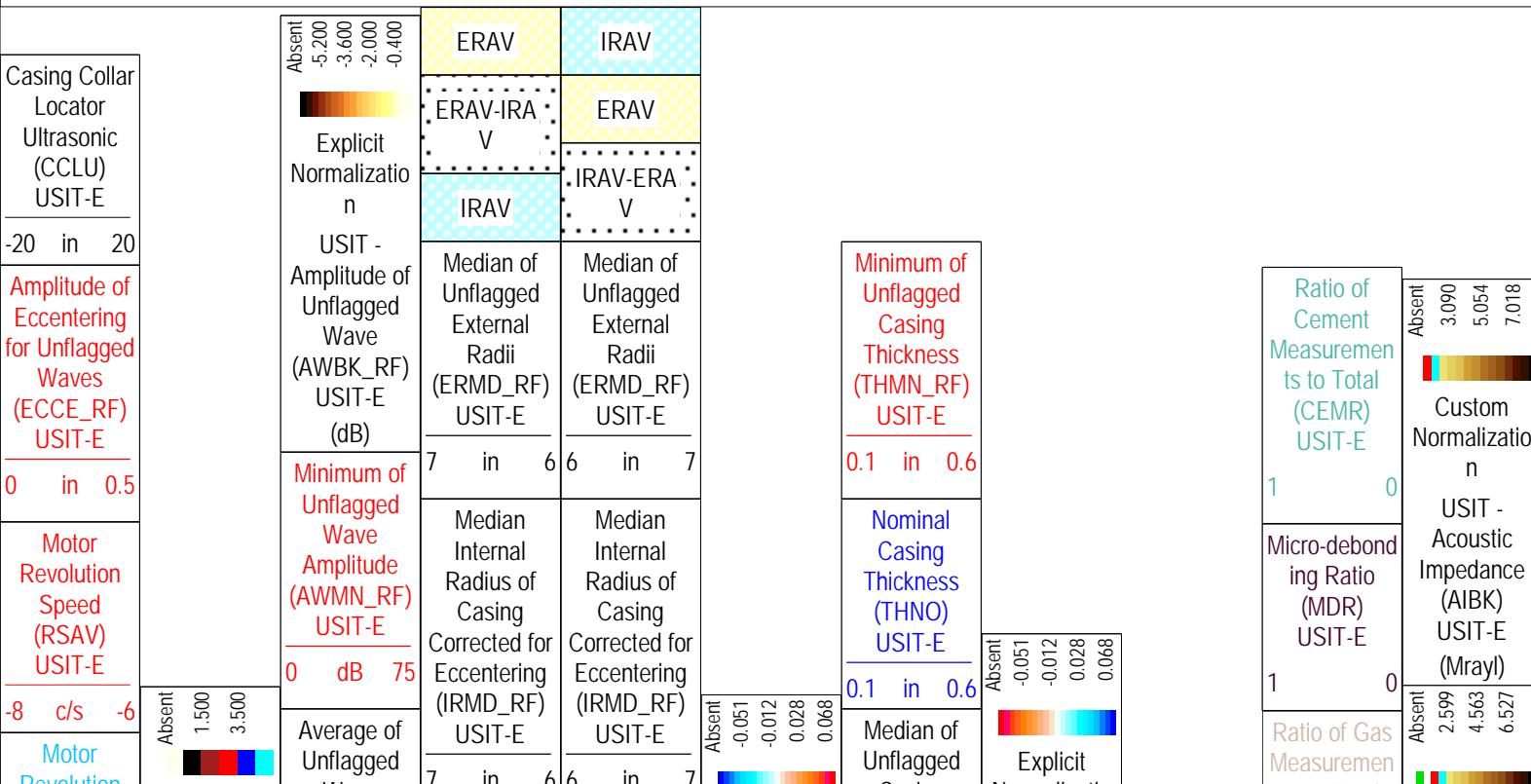
2: Main[3]:Up:S010

Description: USI Composite Format: Log (USI Composite 13-38in) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 30-Jun-2014 04:06:08

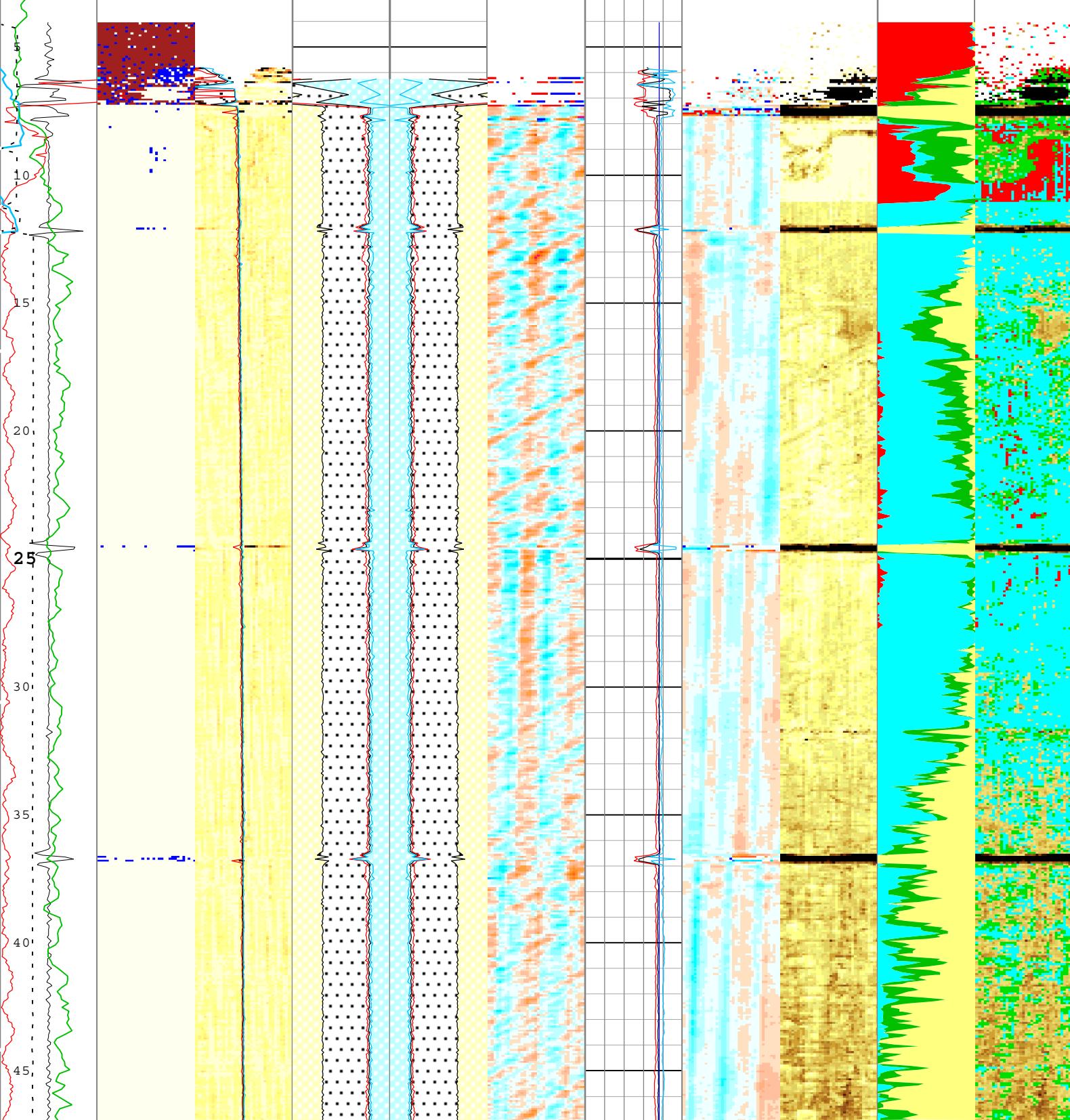
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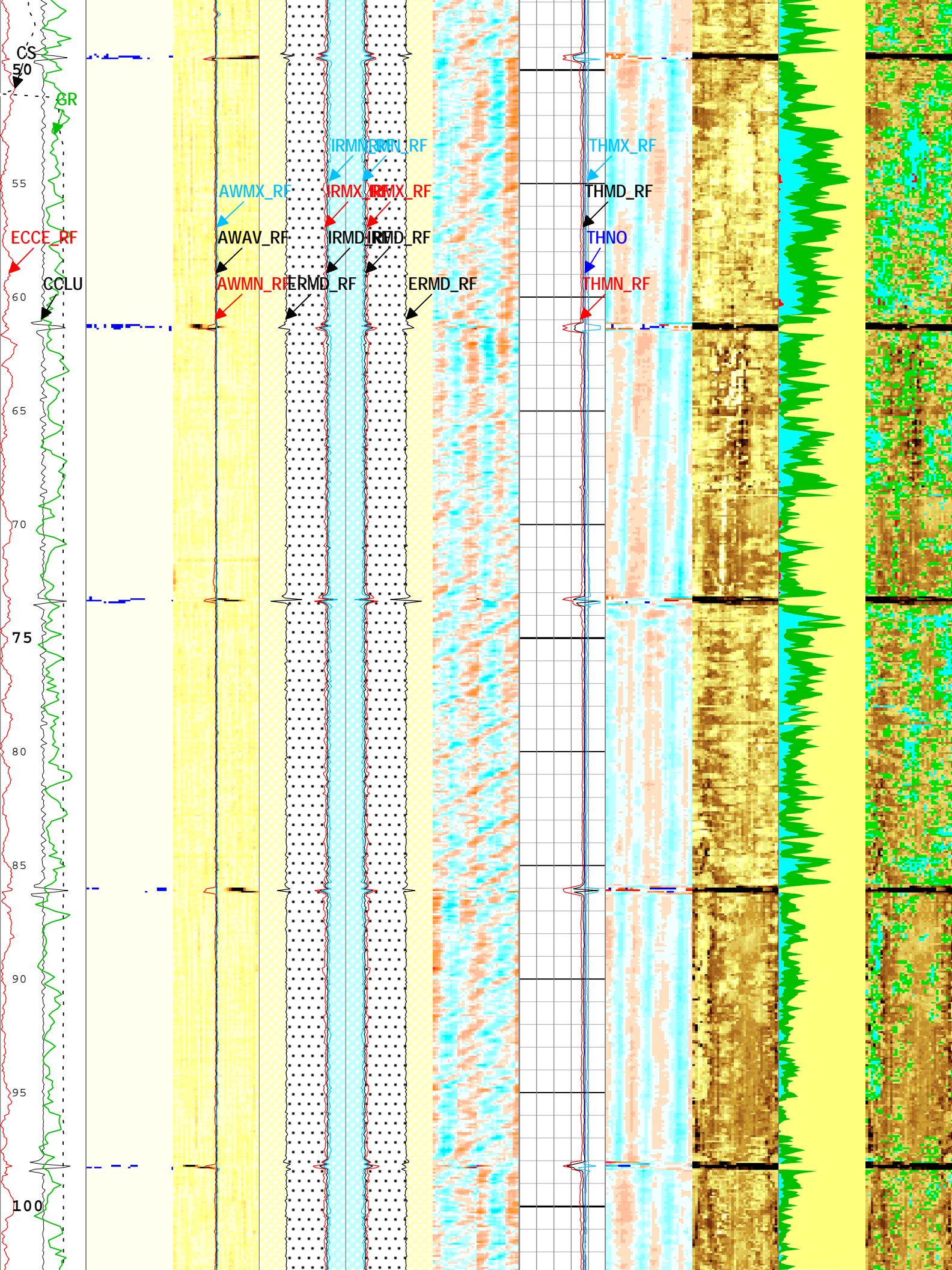
USIT Processing Flags (UFLG[0]) USIT-E

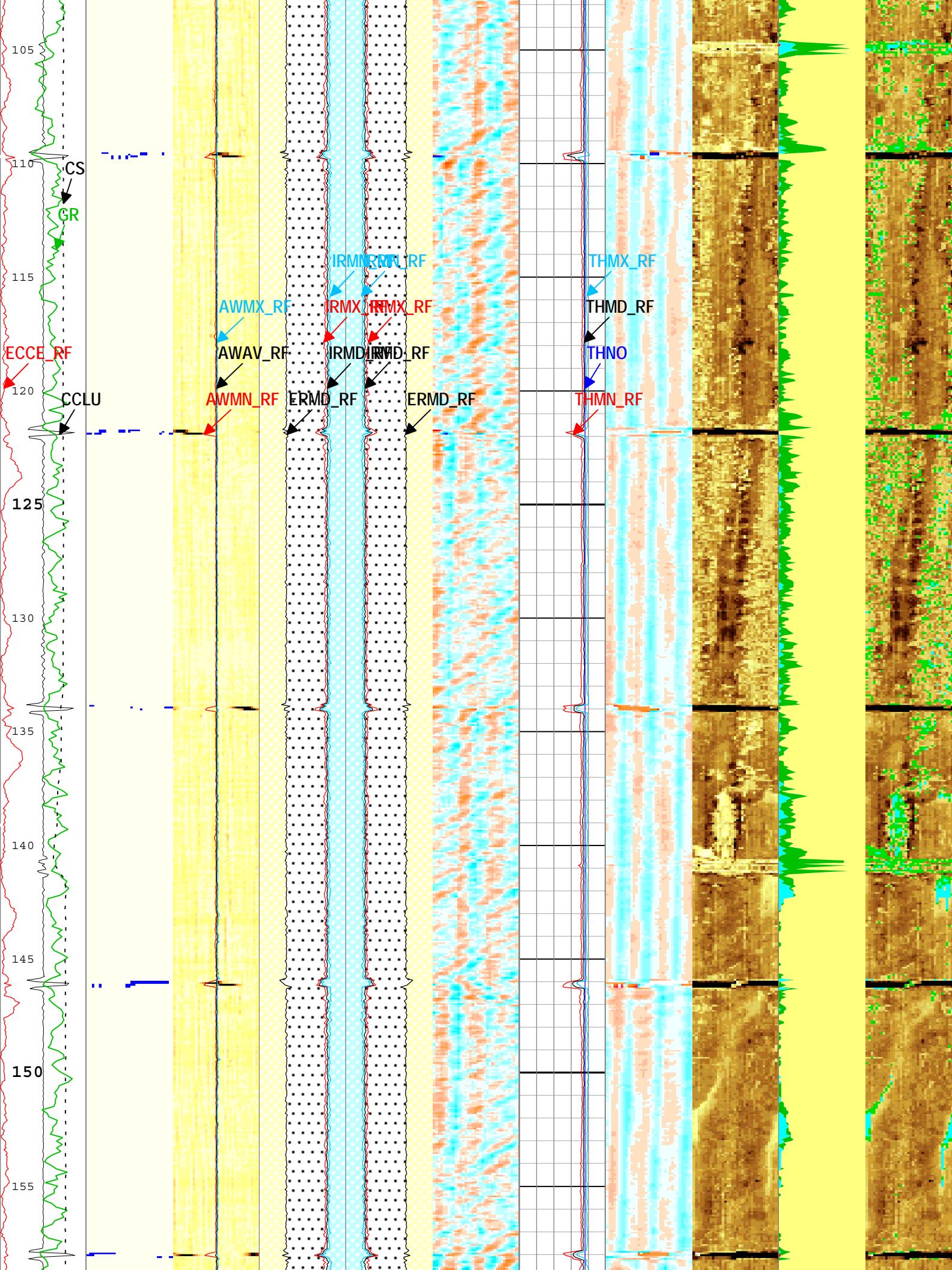
- 1 - UFLG 1 Value within [0.0 - 1.5] - : █ UTIM Error
 2 - UFLG 2 Value within [1.5 - 2.5] - : █ Pulse Origin Not Detected
 3 - UFLG 3 Value within [2.5 - 3.5] - : █ WINLEN Error
 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : █ Casing Thickness Error
 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5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

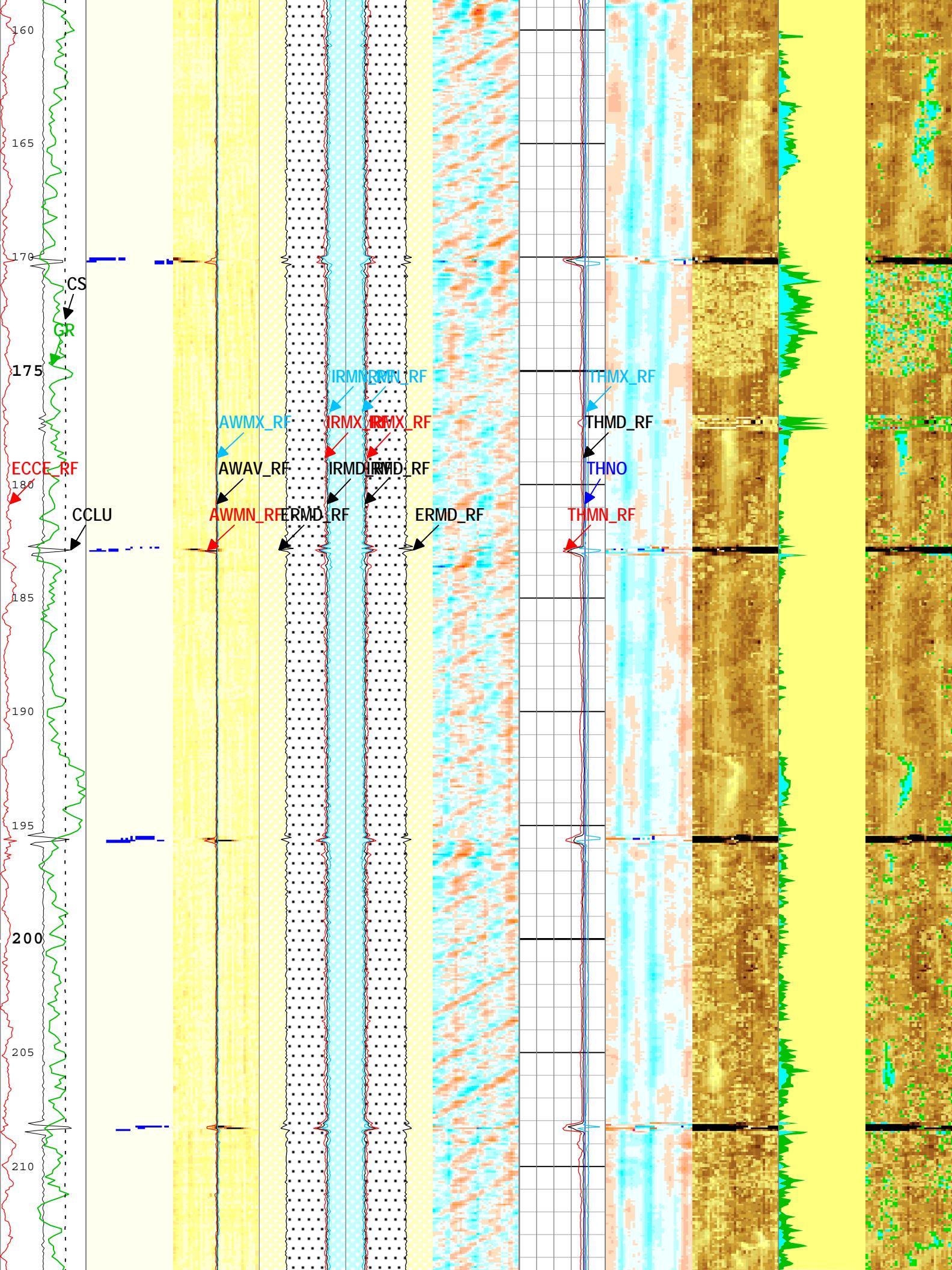


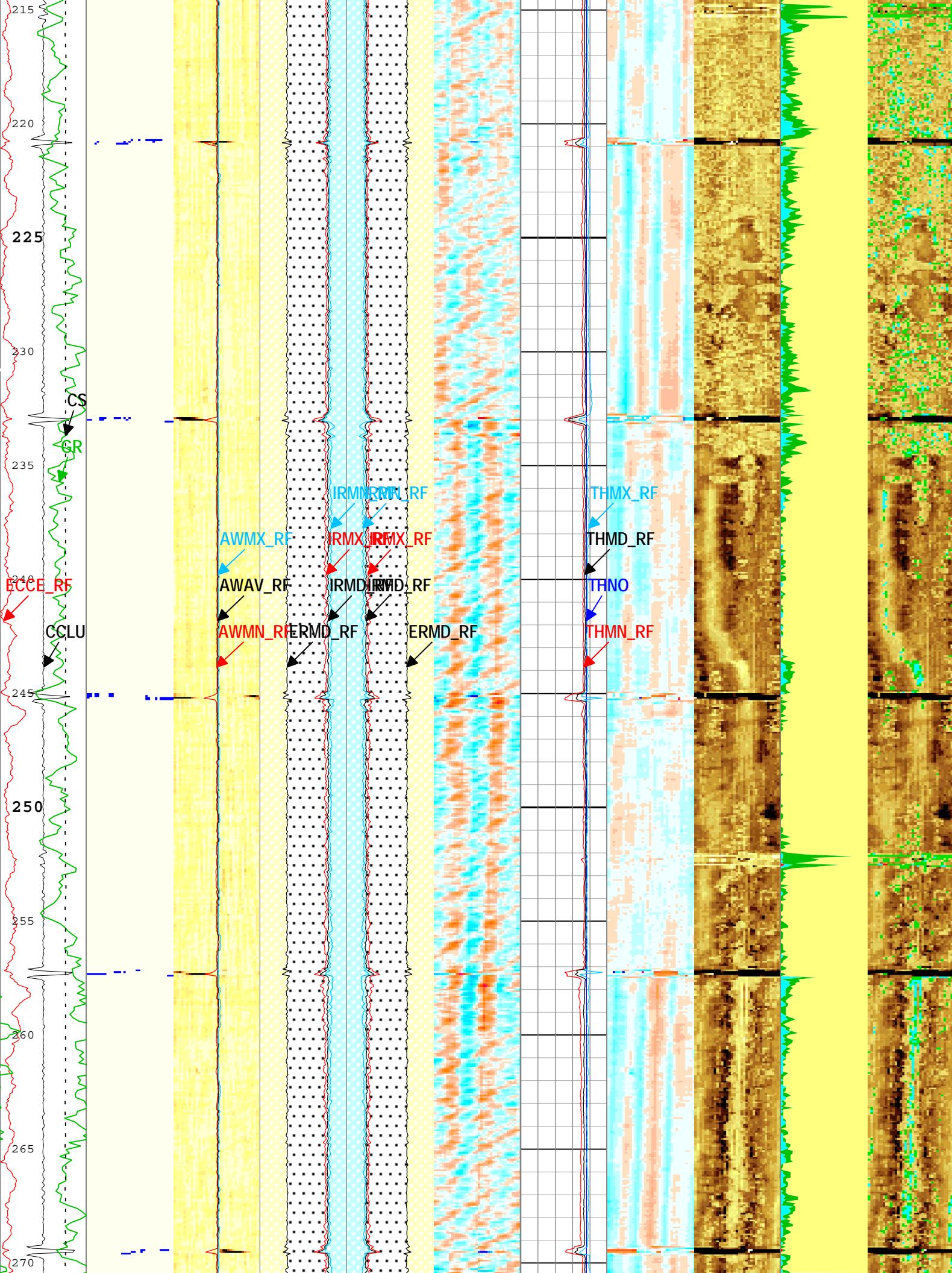
Resolution	Explicit Normalization	Wave Amplitude (AWAV_RF) USIT-E	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Explicit Normalization	Casing Thickness (THMD_RF) USIT-E	Normalization	Thicknesses to Total (GASR) USIT-E	Custom Normalization
Speed (RSAV) USIT-E	USIT - USIT Processing Flags (UFLG) USIT-E	0 dB 75	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	USIT - Unflagged Internal Radii minus Median of Unflagged Internal Radius (IRBKM_RF) USIT-E (in)	0.1 in 0.6	USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)	0.1 in 0.6	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
6 c/s 8			7 in 6	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	Custom Normalization	1	Custom Normalization
Gamma Ray (GR) SGT-N	USIT Processing Flags (UFLG[0]) USIT-E	0 dB 75	Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	Absent	0	USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBO ND_IMG) USIT-E (Mrayl)
0 gAPI 150			7 in 6	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	1.500	1	Gas
Cable Speed (CS)	USIT Processing Flags (UFLG[0]) USIT-E	0 ft/h 8000	7 in 6	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	3.500	0	Liquid
			7 in 6	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	5.500	0	Micro-debonding
			7 in 6	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	0.1 in 0.6	7.500	0	

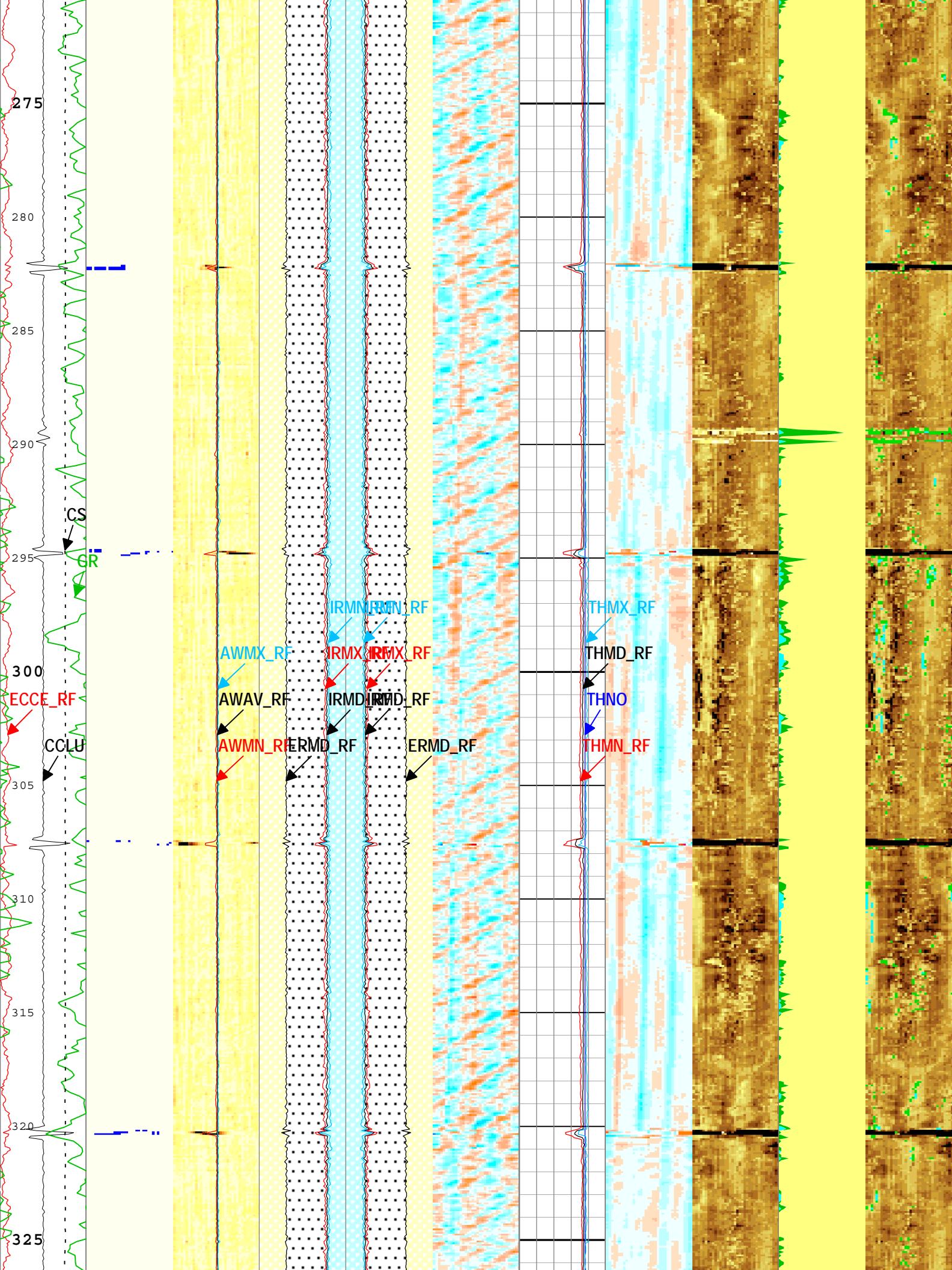


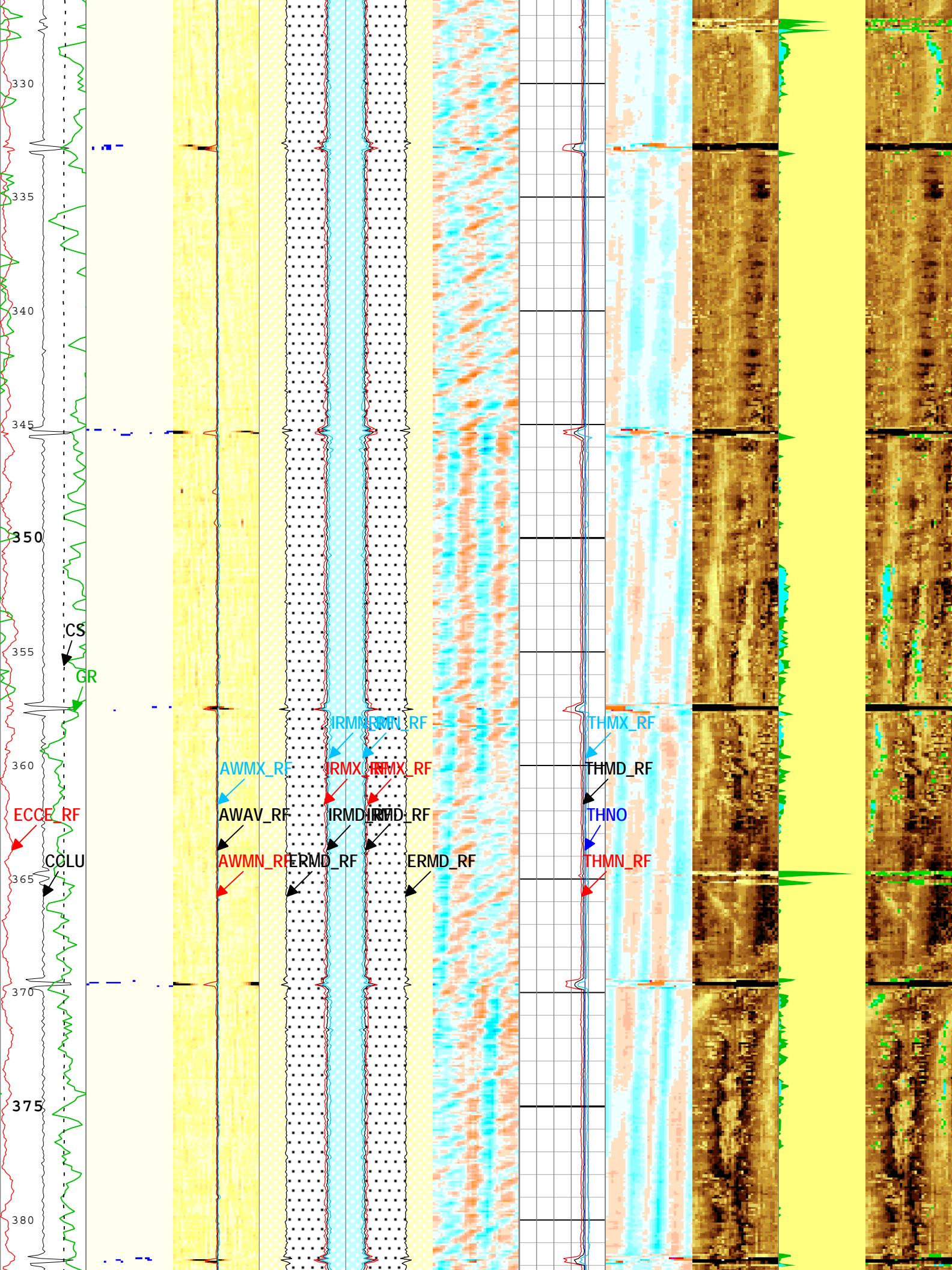


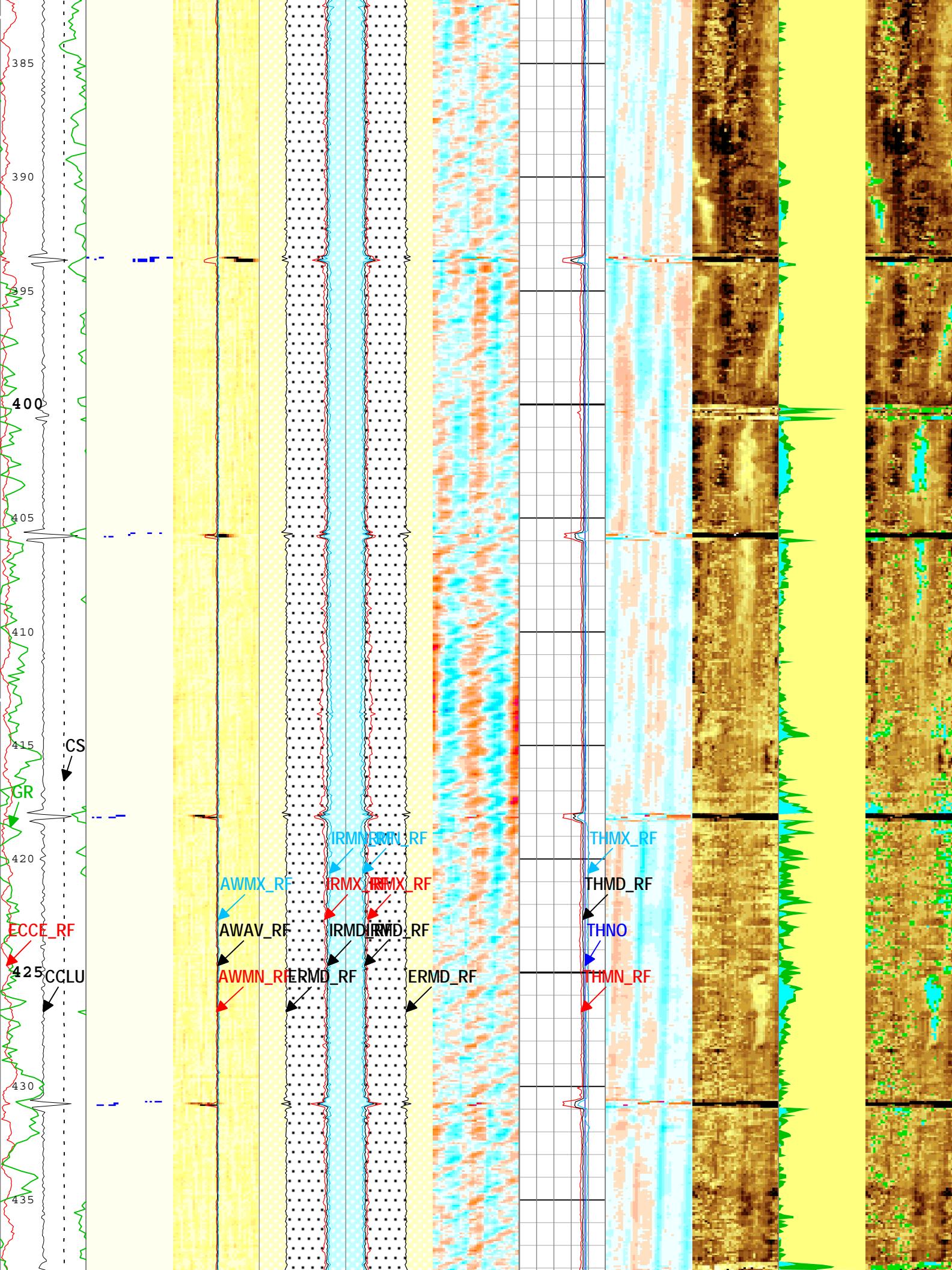


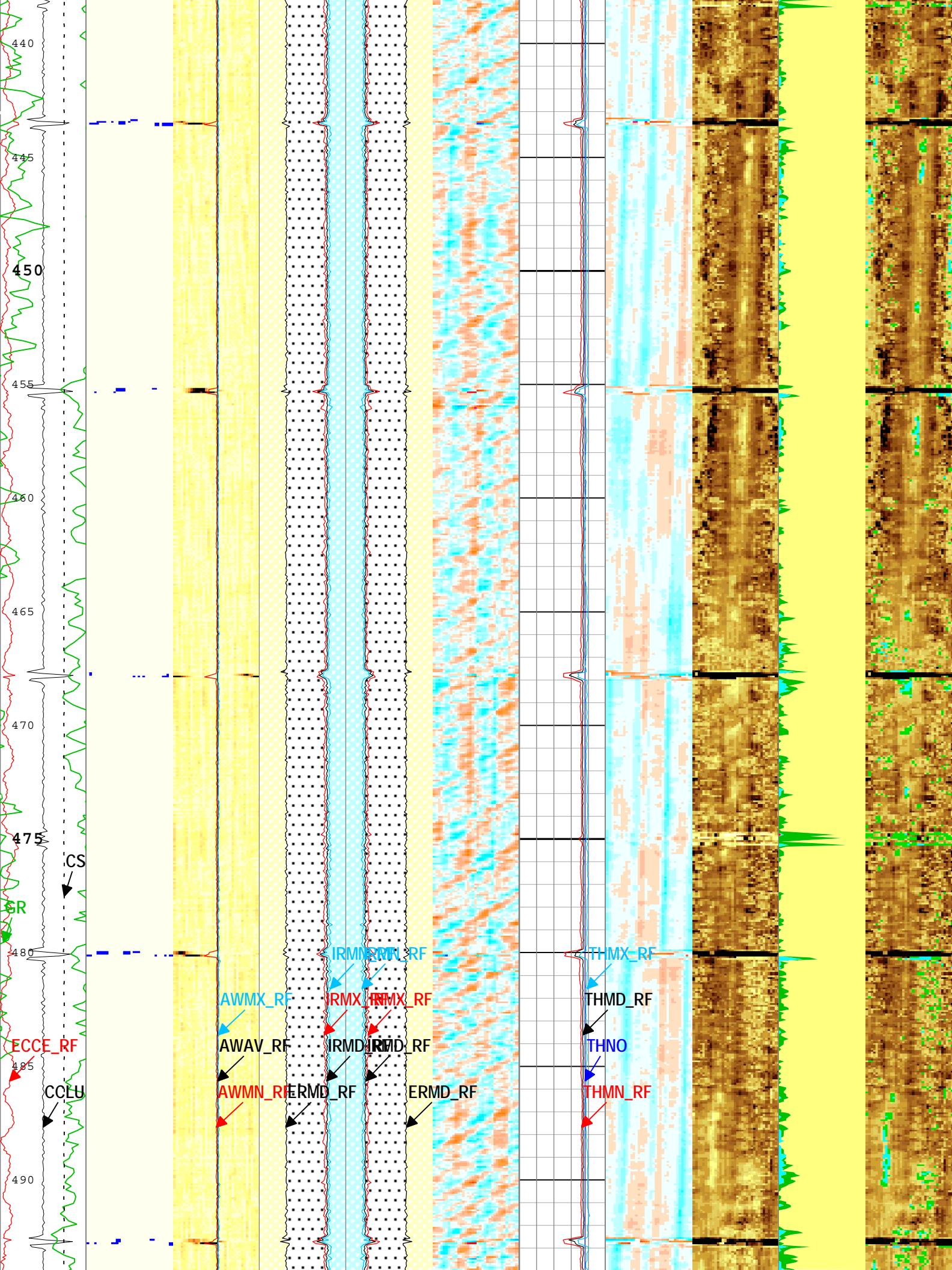


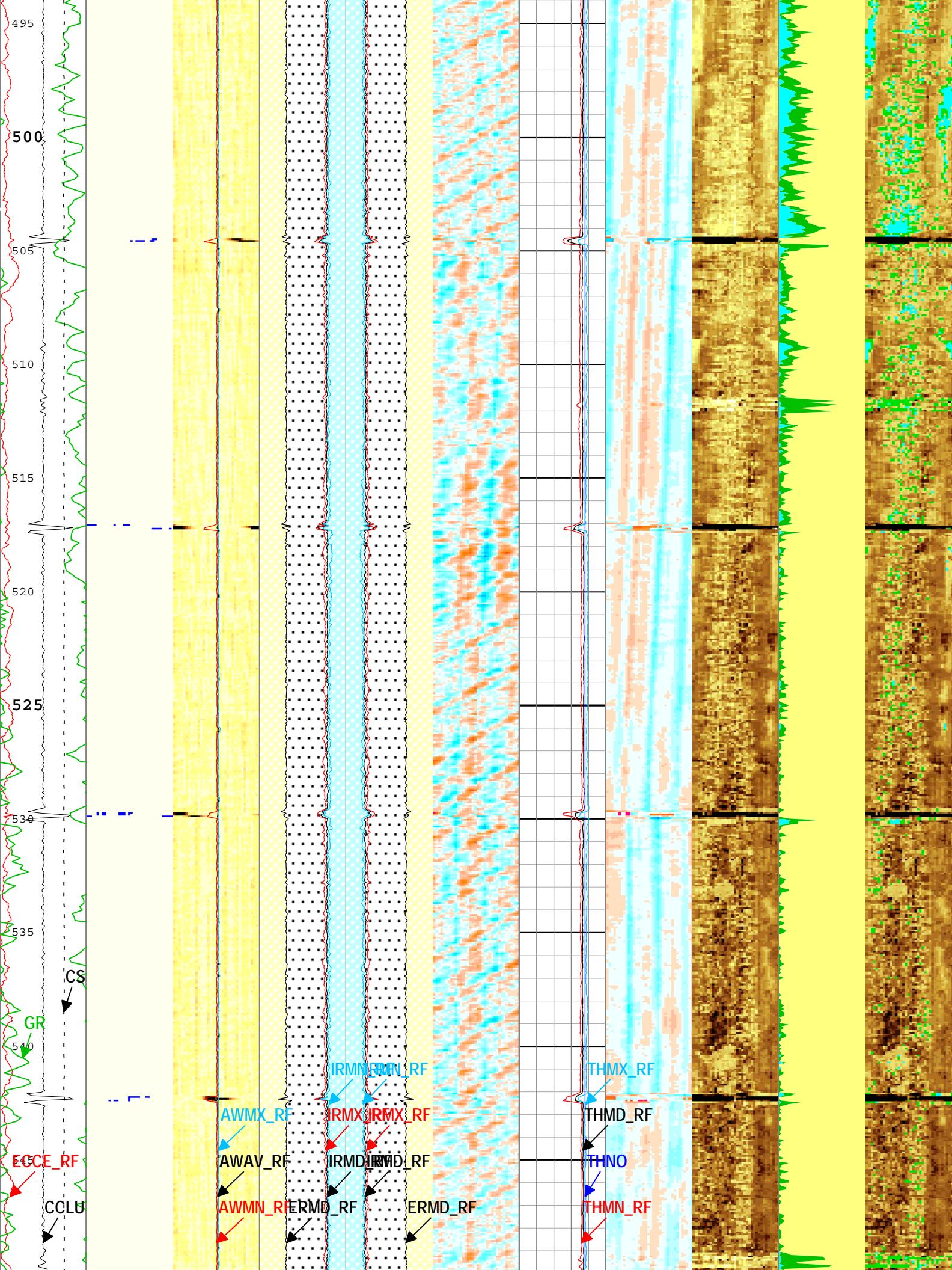


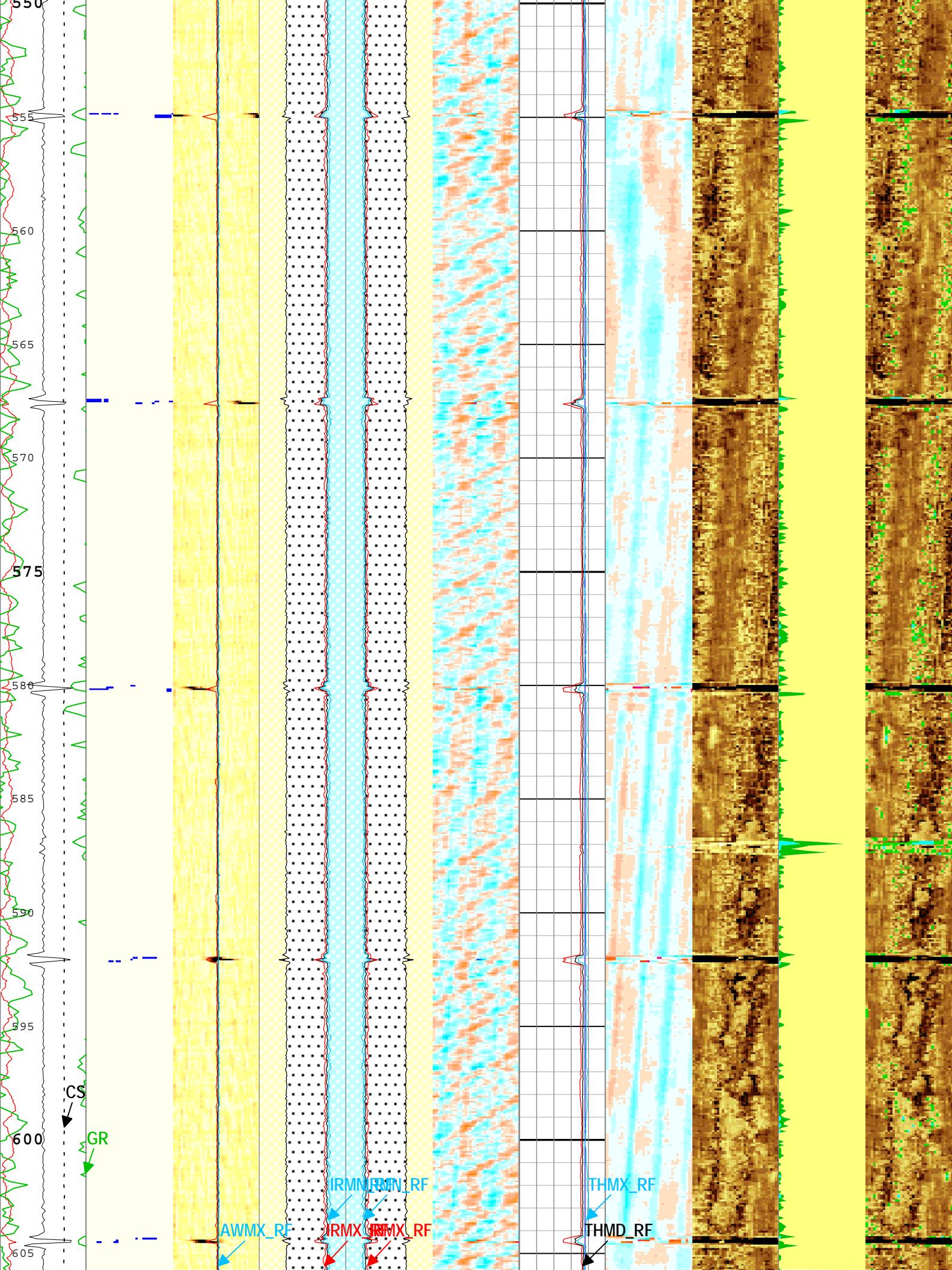


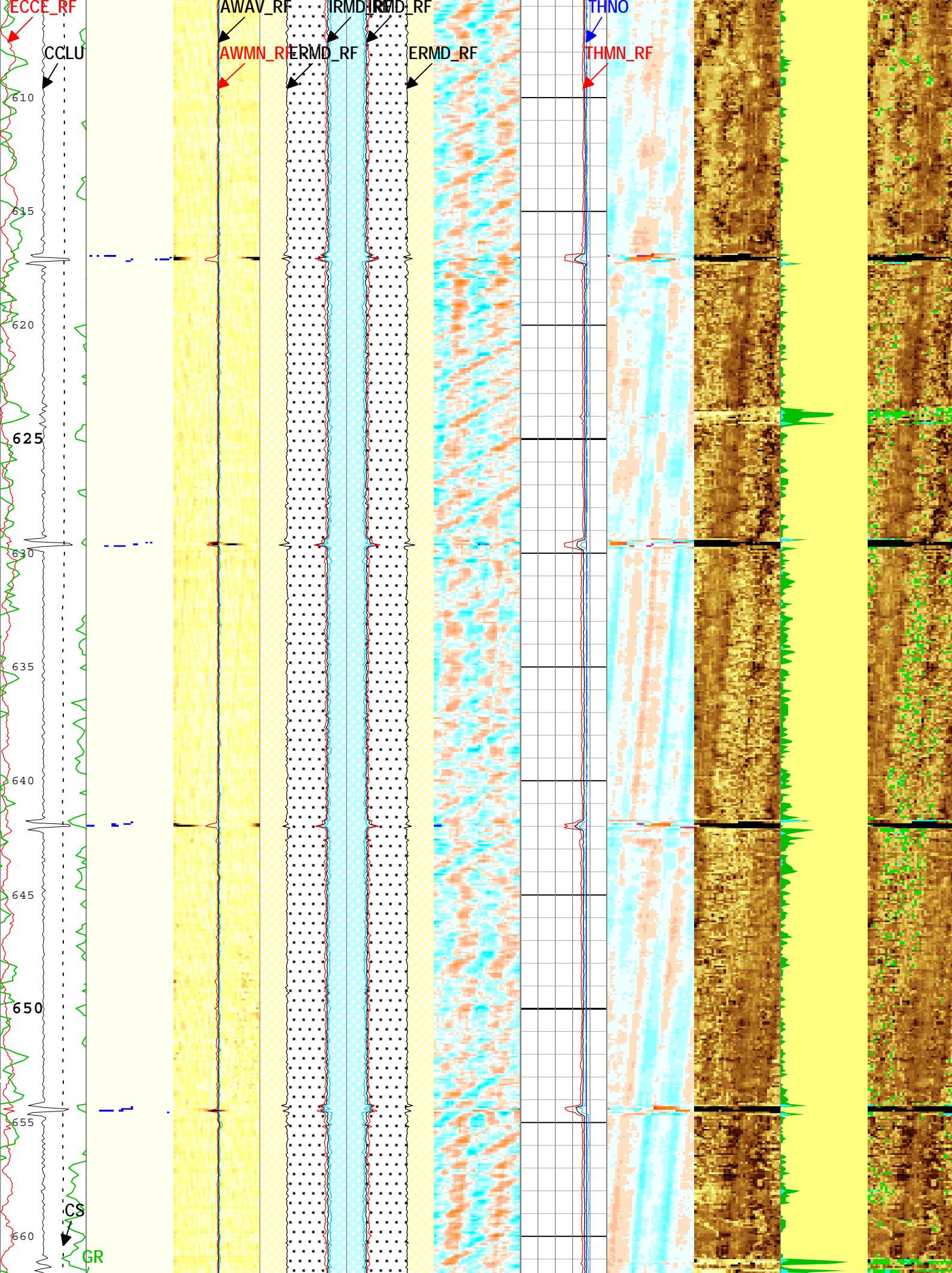


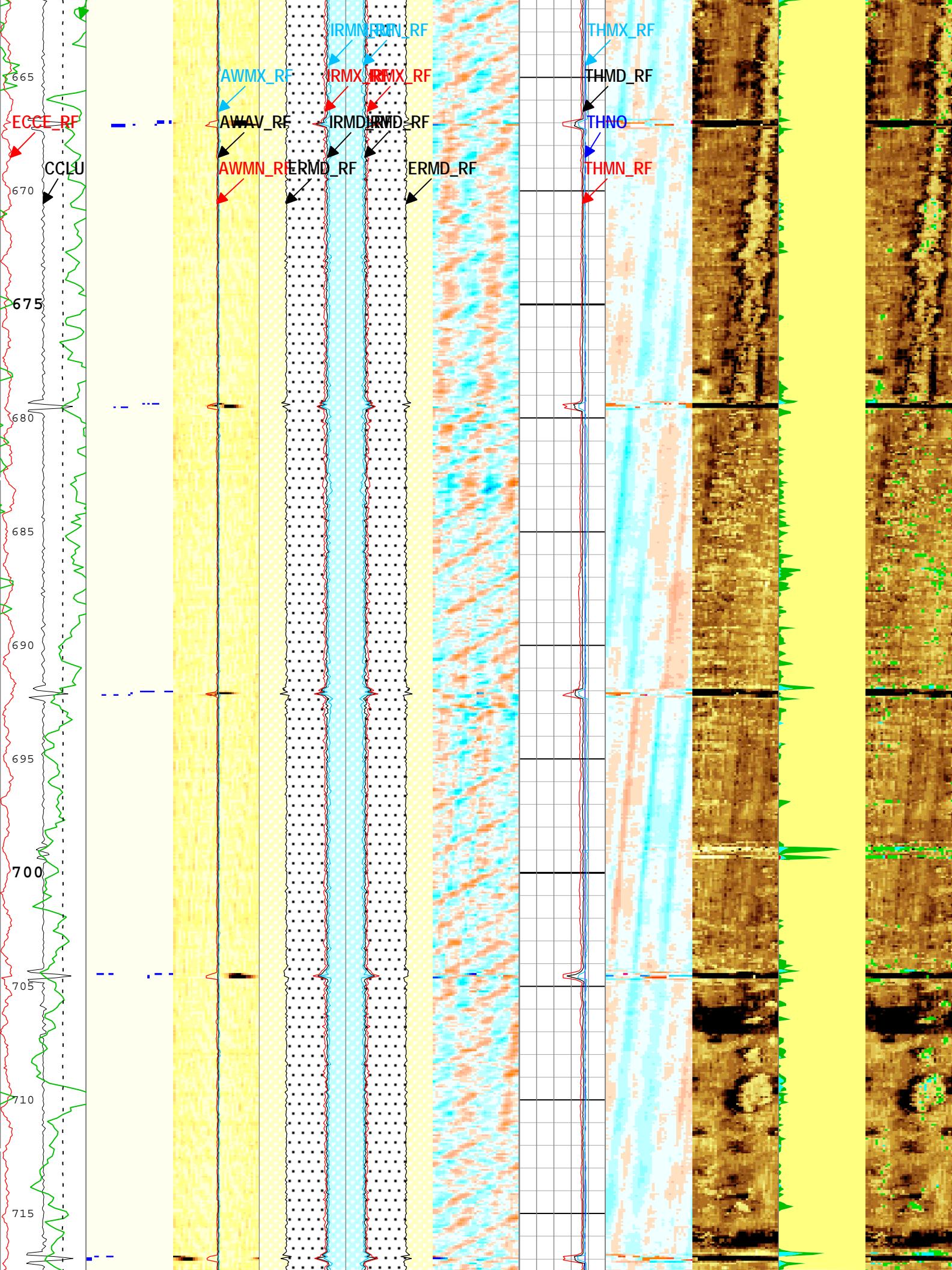


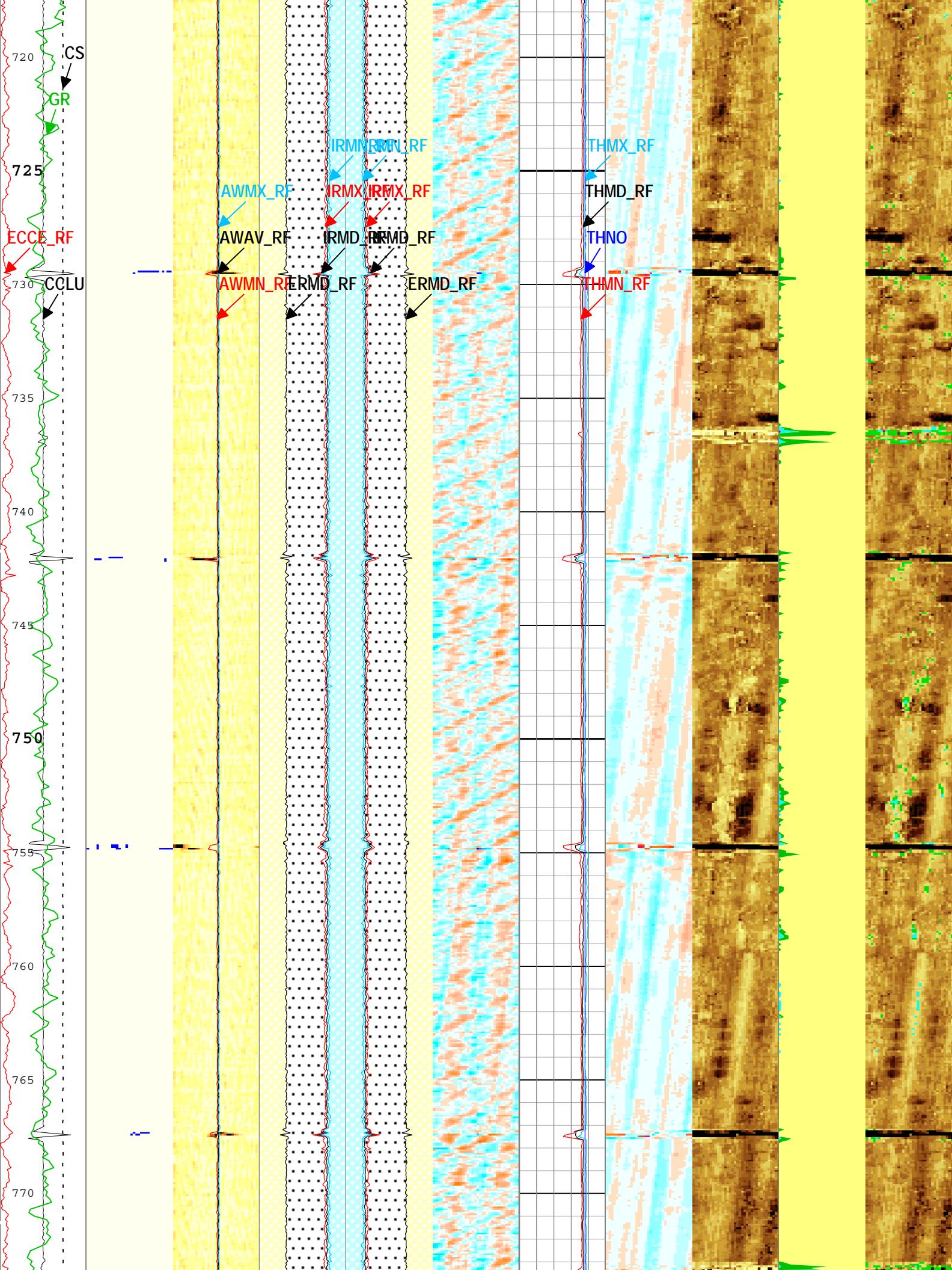


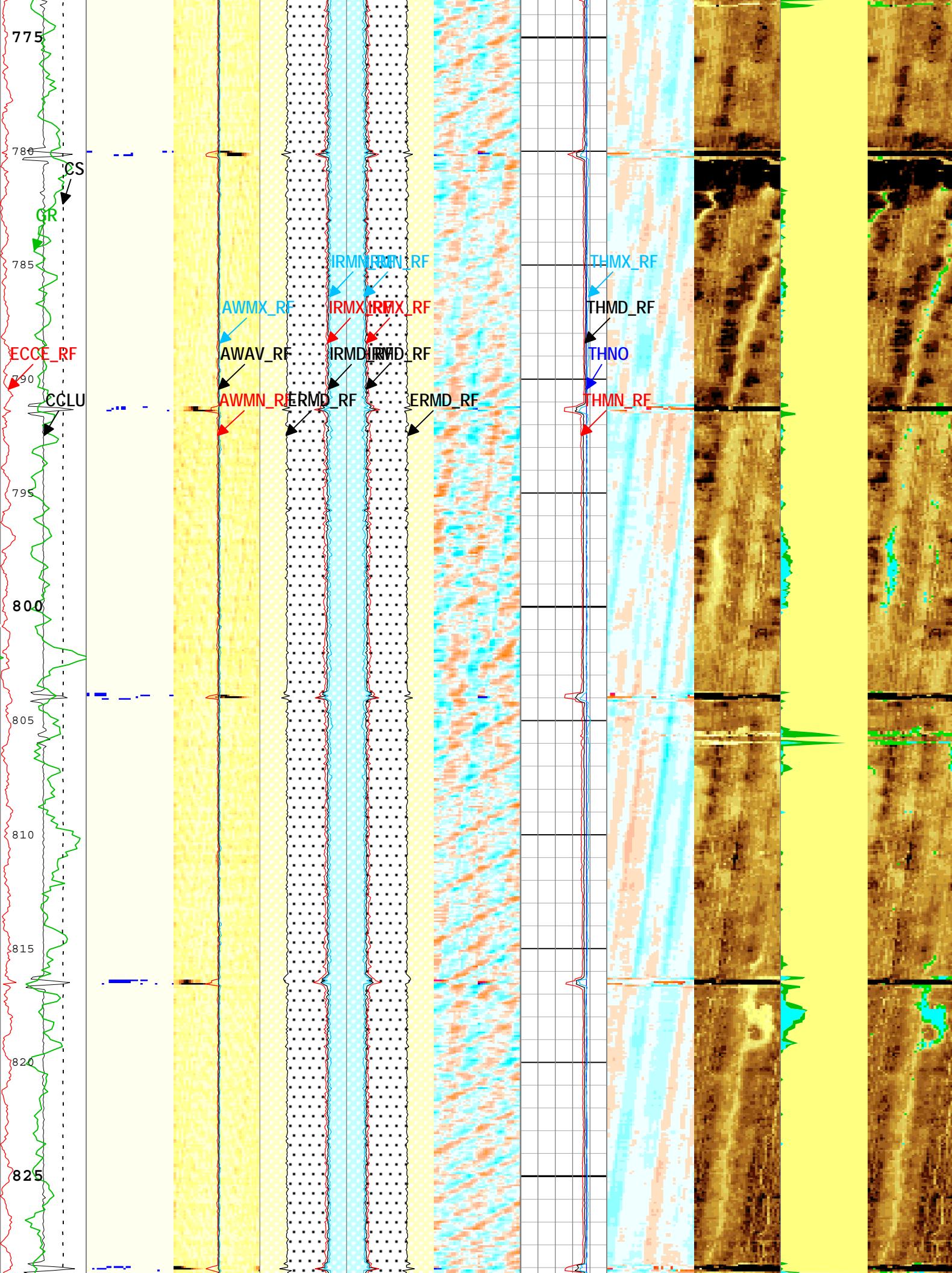


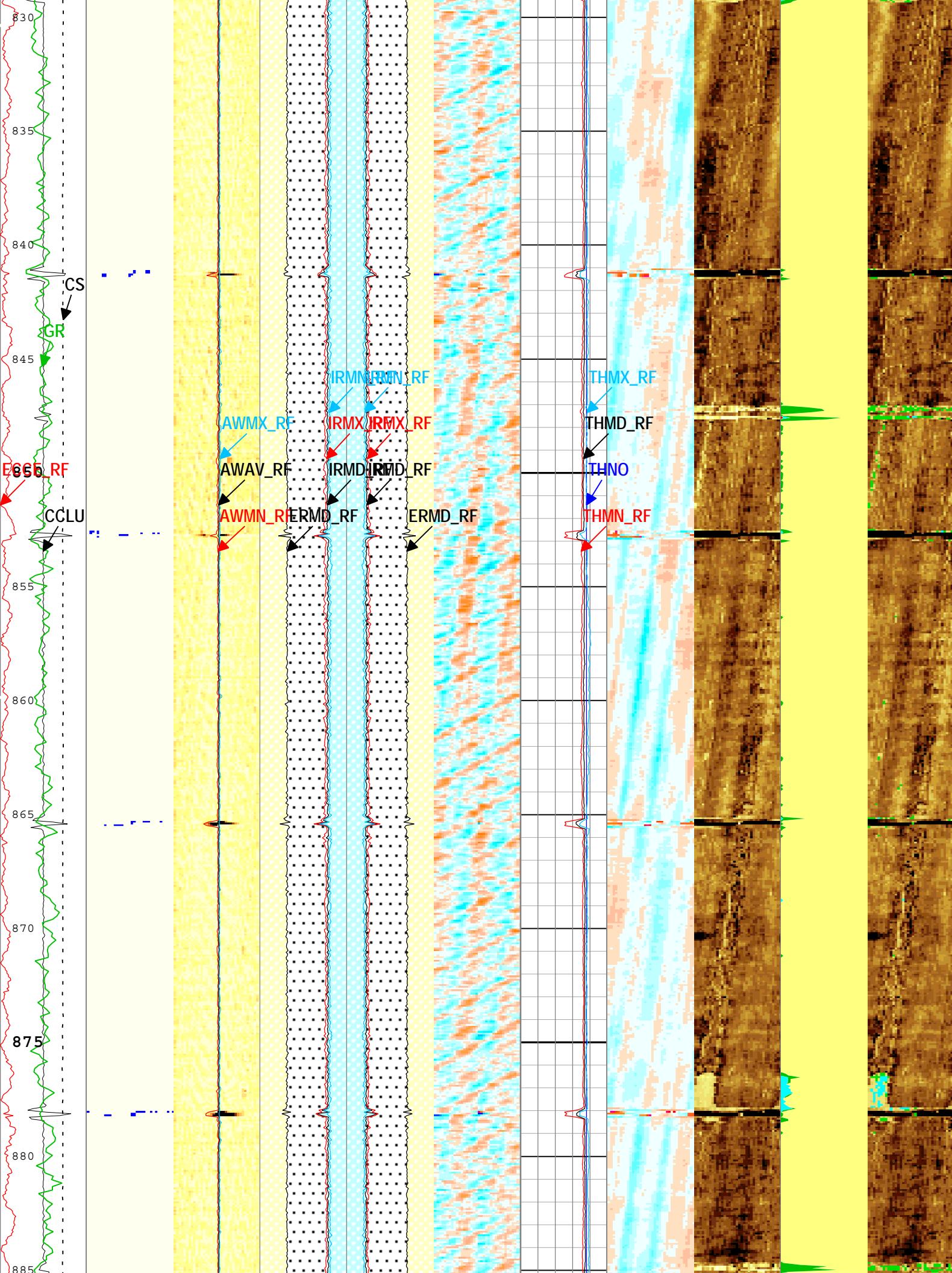


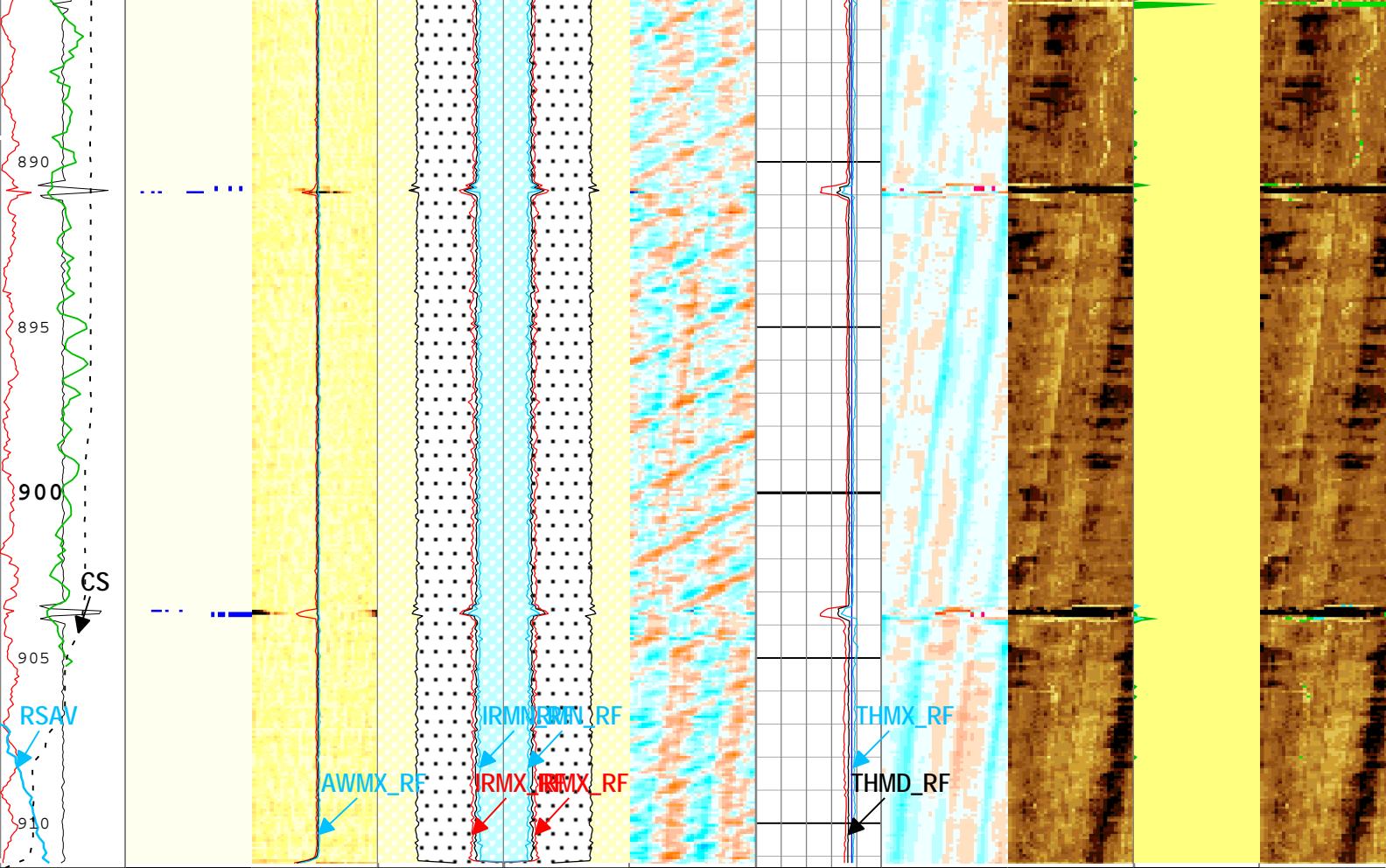












Casing Collar Locator Ultrasonic (CCLU) USIT-E	Absent 1.500 3.500	Absent -5.200 -3.600 -2.000 -0.400	ERAV	IRAV	Absent -0.051 -0.012 0.028 0.068	Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E	Absent 1.500 3.500 5.500 7.500	Ratio of Cement Measurements to Total (CEMR) USIT-E	Absent 3.090 5.054 7.018
-20 in 20			Explicit Normalization	Explicit Normalization	Explicit Normalization	Explicit Normalization		Custom Normalization	Custom Normalization
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E	USIT - USIT Processing Flags (UFLG) USIT-E	USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E	Median of Unflagged External Radii (ERMD_RF) USIT-E	Median of Unflagged External Radii (ERMD_RF) USIT-E	USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)	Nominal Casing Thickness (THNO) USIT-E	USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
0 in 0.5	USIT Processing Flags (UFLG[0]) USIT-E	Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E	7 in 6	6 in 7	0.1 in 0.6	0.1 in 0.6	0.1 in 0.6	1	1
Motor Revolution Speed (RSAV) USIT-E	1 5	Median Internal Radius of Casing Corrected for Eccentering (IRMD_RF) USIT-E	Median Internal Radius of Casing Corrected for Eccentering (IRMD_RF) USIT-E	Median of Unflagged Casing Thickness (THMD_RF) USIT-E	0.1 in 0.6	0.1 in 0.6	0.1 in 0.6	0	0
-8 c/s -6		Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E	7 in 6	6 in 7	0.1 in 0.6	0.1 in 0.6	0.1 in 0.6		
Motor Revolution Speed (RSAV) USIT-E	6 8	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E	0.1 in 0.6	0.1 in 0.6	0.1 in 0.6	Bonded	Bonded
Gamma Ray (GR) SGT-N	0 dB 75	7 in 6	6 in 7	7 in 6	7 in 6	7 in 6	7 in 6	Gas	Gas
0 gAPI 150		Minimum of Unflagged Wave Amplitude (WMX_RF) USIT-E	Minimum of Unflagged Internal Radii	Minimum of Unflagged Internal Radii	Minimum of Unflagged Internal Radii	Minimum of Unflagged Internal Radii	Minimum of Unflagged Internal Radii	Liquid	Liquid
Cable Speed (CS)								Micro-debonding	Micro-debonding

0 ft/h8000	(AVMX_RF) USIT-E	Internal Radii (IRMN_RF) USIT-E	Internal Radii (IRMN_RF) USIT-E
0 dB 75	7 in	6 in	7

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (USI Composite 13-38in) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 30-Jun-2014 04:06:08

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	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	17.5	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	2872	m
CDEN	Cement Density	SGT-N	2	g/cm3
CMTY	Cement Type	USIT-E	Regular Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.48	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	551580.58	kPa
DFD	Drilling Fluid Density	Borehole	1.08	g/cm3
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	185	us/ft
FDII	FPM Data Interpolation Interval	USIT-E	0	m
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	30.2	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	1.378	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
SDNV	Number of Vertical Samples used for Micro-debonding Computation	USIT-E	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	USIT-E	0.5	Mrayl
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro-debonding	USIT-E	0.3	Mrayl
SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TBIDLGR	Tubing inner diameter - Zoned along logger depths	WLSESSION	0	in
TBODLGR	Tubing outer diameter - Zoned along logger depths	WLSESSION	0	in

TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Centered	
TWTLGR	Tubing Linear Weight - Zoned along logger depths	WLSESSION	0	lbm/ft
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	2950	m/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	Theoretical	
UTHDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control 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	6.938	in
EMXV	EMEX Voltage	USIT-E	60	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 300 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	910	m
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	64.44	us
WINE	Window End Time	USIT-E	104.44	us

2

Repeat pass 1:200

Software Version

Acquisition System	Version		
MaxWell	4.0.9163.3000		
Application Patch	Patch-SP-10767_13393-4.0.9163.3001		
Computation	Description	Version	
Cementation	Cementation Computation Application	4.0.9167.3000	
CORROSION Ensemble	CORROSION Ensemble	4.0.9033.3000	
Tool Elements	Description	Software Version	Firmware Version

USI-SENSOR	USIT Transducer Element	4.0.9265.3000	DSP: v01.82						
SGC-TB	Scintillation Gamma Cartridge	4.0.9033.3000							
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2	Repeat[4]:Up	Up	0.31 m	120.35 m	30-Jun-2014 3:38:19 AM	30-Jun-2014 3:46:02 AM	ON	0.00 m	Yes

All depths are referenced to toolstring zero

Log

Company: V.O.F. Geothermie De Lier

Well: De Lier - GT-01

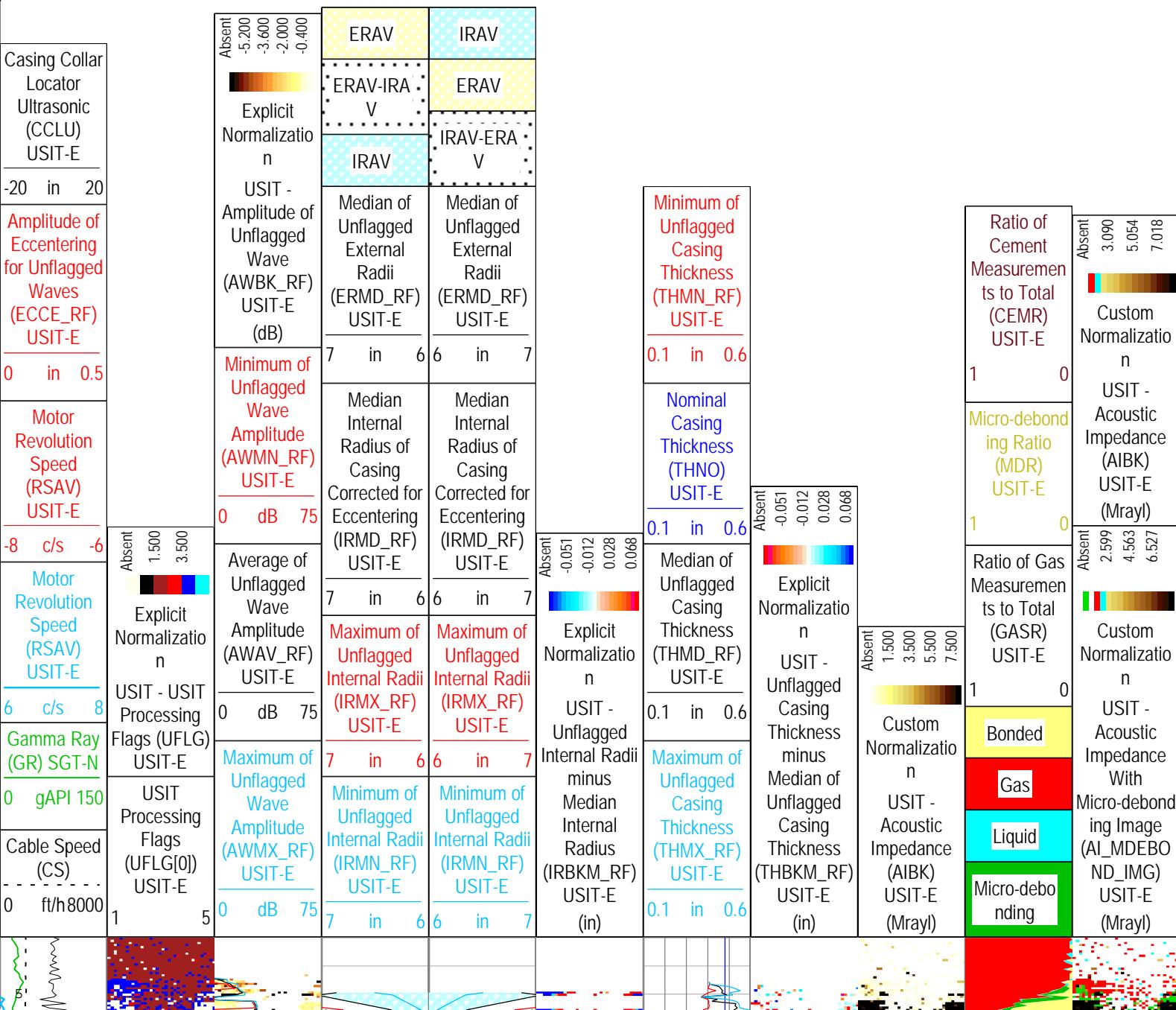
2: Repeat[4]:Up:S010

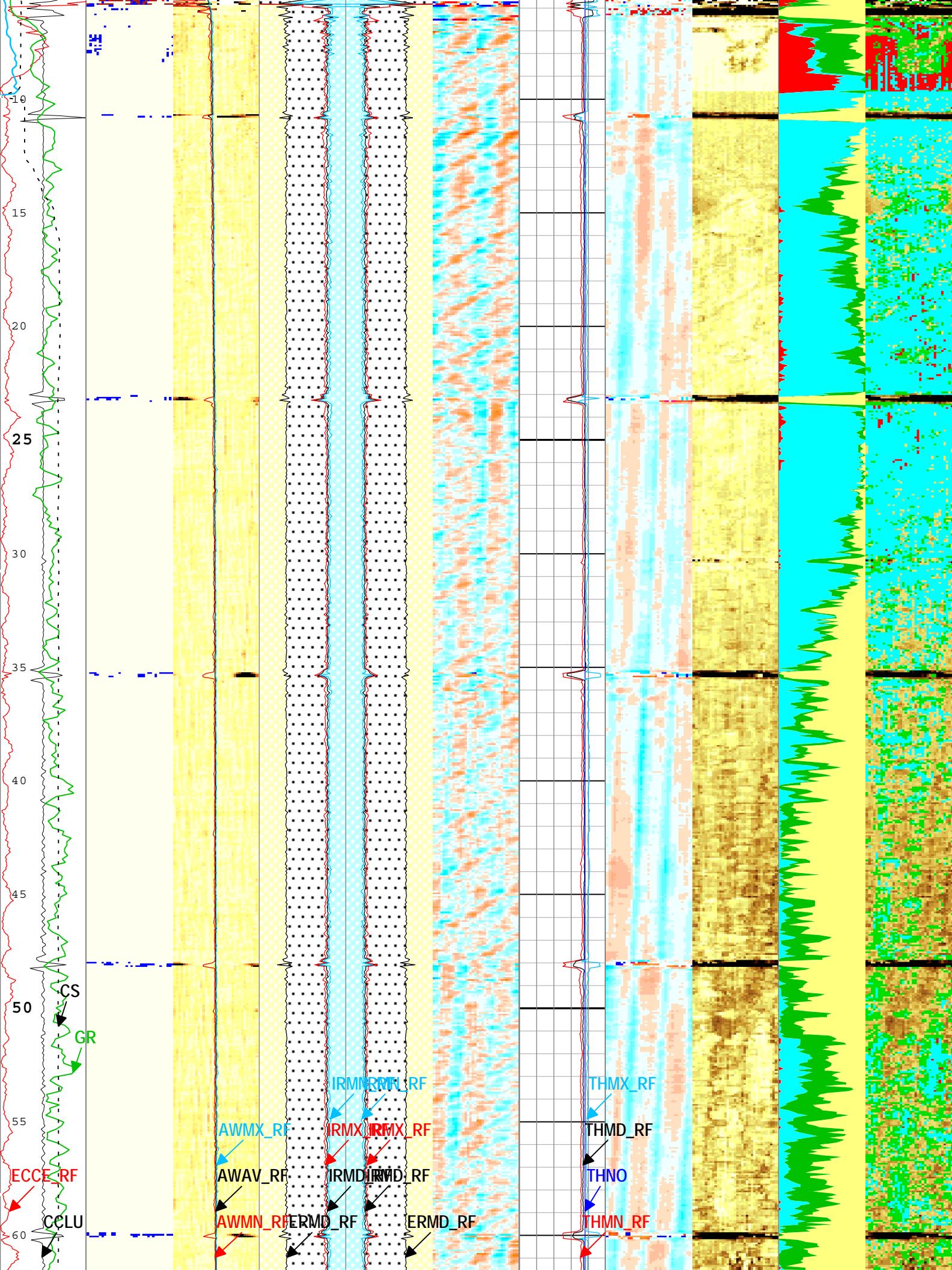
Description: USI Composite Format: Log (USI Composite 13-38in) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 30-Jun-2014 04:06:16

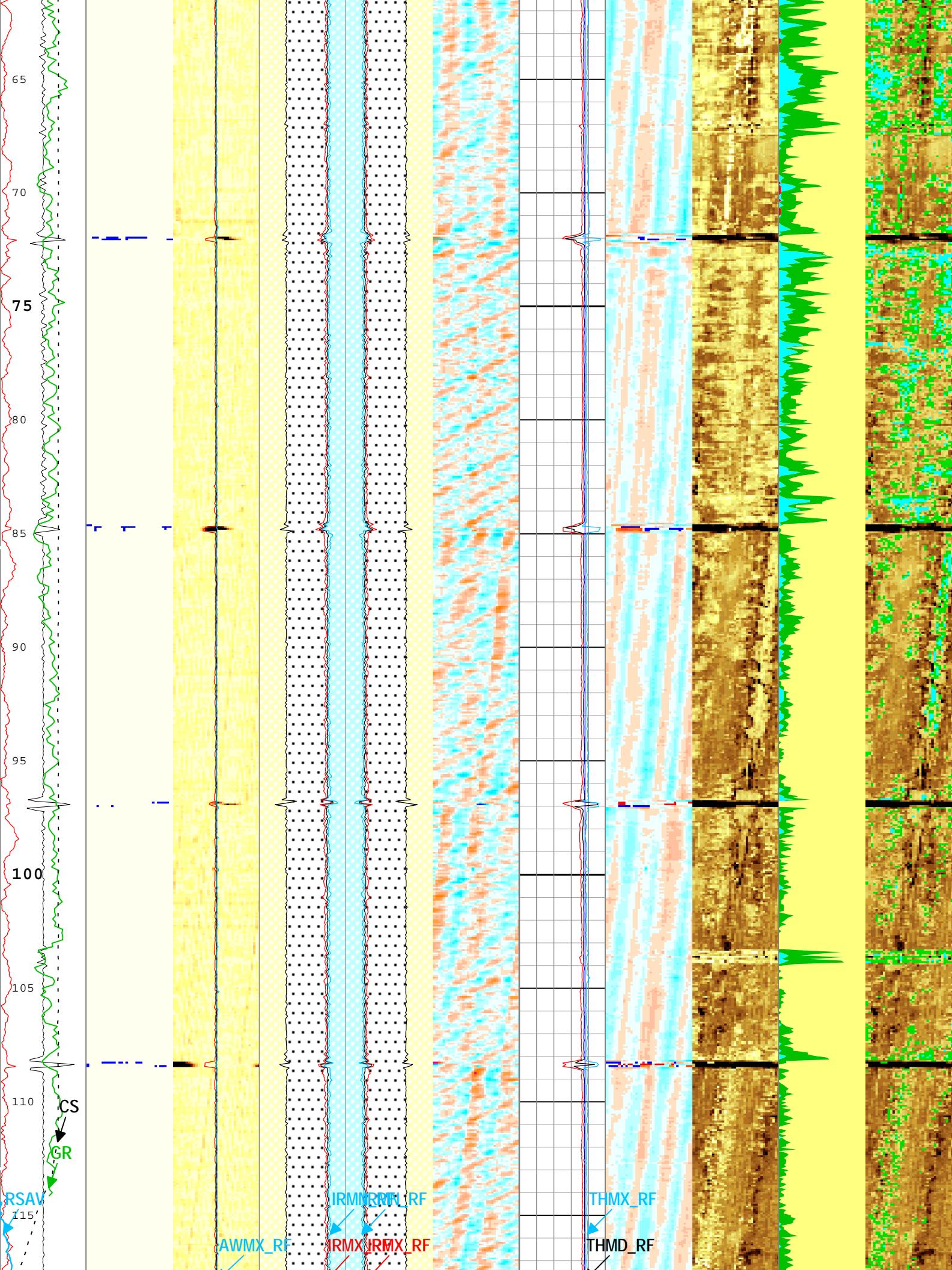
USIT Processing Flags (UFLG[0]) USIT-E

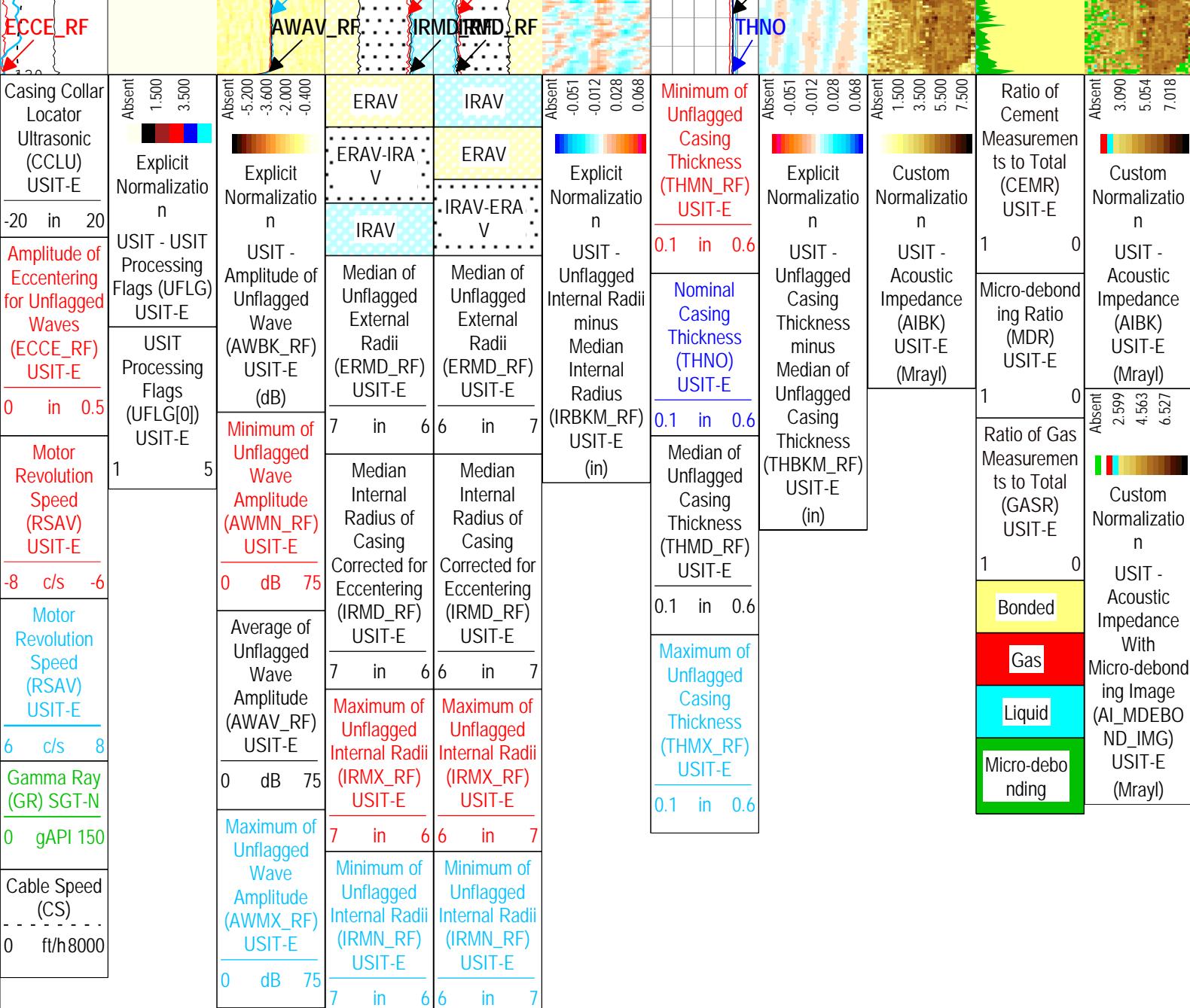
- 1 - UFLG 1 Value within [0.0 - 1.5] - : █ UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - : █ Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - : █ WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : █ Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within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

TIME_1900 - Time Marked every 60.00 (s)









TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (USI Composite 13-38in) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 30-Jun-2014 04:06:16

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	17.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	2872	m
CDEN	Cement Density	SGT-N	2	g/cm3
CMTY	Cement Type	USIT-E	Regular Cement	
CTHILGR	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.48	in

CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	551580.58	kPa
DFD	Drilling Fluid Density	Borehole	1.08	g/cm3
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	185	us/ft
FDII	FPM Data Interpolation Interval	USIT-E	0	m
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	30.2	us
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
TBIDLGR	Tubing inner diameter - Zoned along logger depths	WLSESSION	0	in
TBODLGR	Tubing outer diameter - Zoned along logger depths	WLSESSION	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Centered	
TWTLGR	Tubing Linear Weight - Zoned along logger depths	WLSESSION	0	lbm/ft
UDFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	2950	m/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	Theoretical	
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
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl

Tool Control Parameters

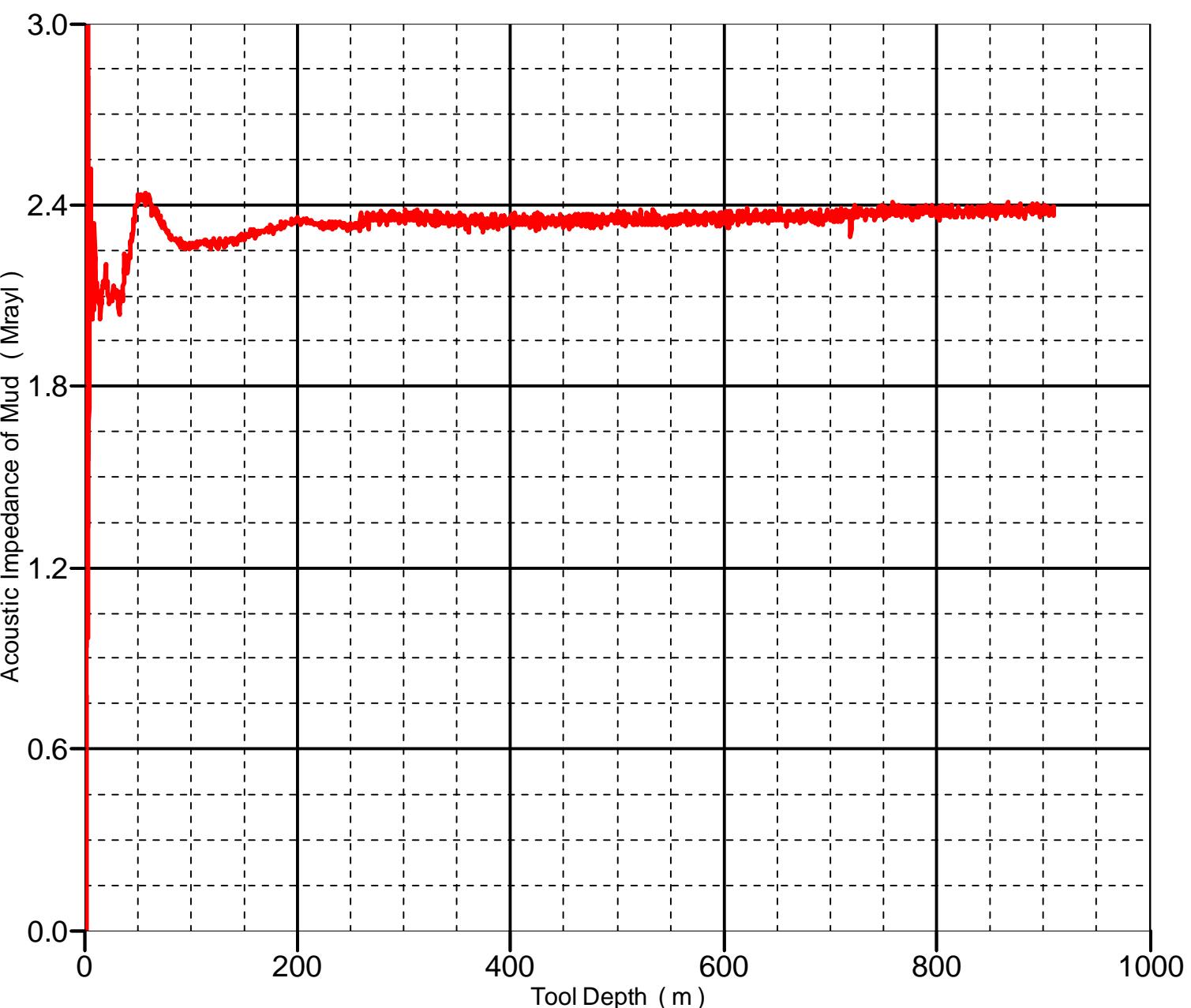
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
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HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
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USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	910	m
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	64.44	us
WINE	Window End Time	USIT-E	104.44	us

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From -1.07 to 910.89 m

— UDEP-AIBM



XYZ

Company: V.O.F. Geothermie De Lier

Well: De Lier - GT-01

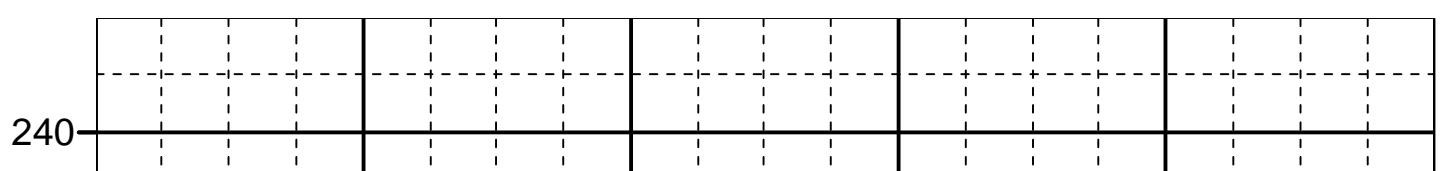
Composite 1: S010

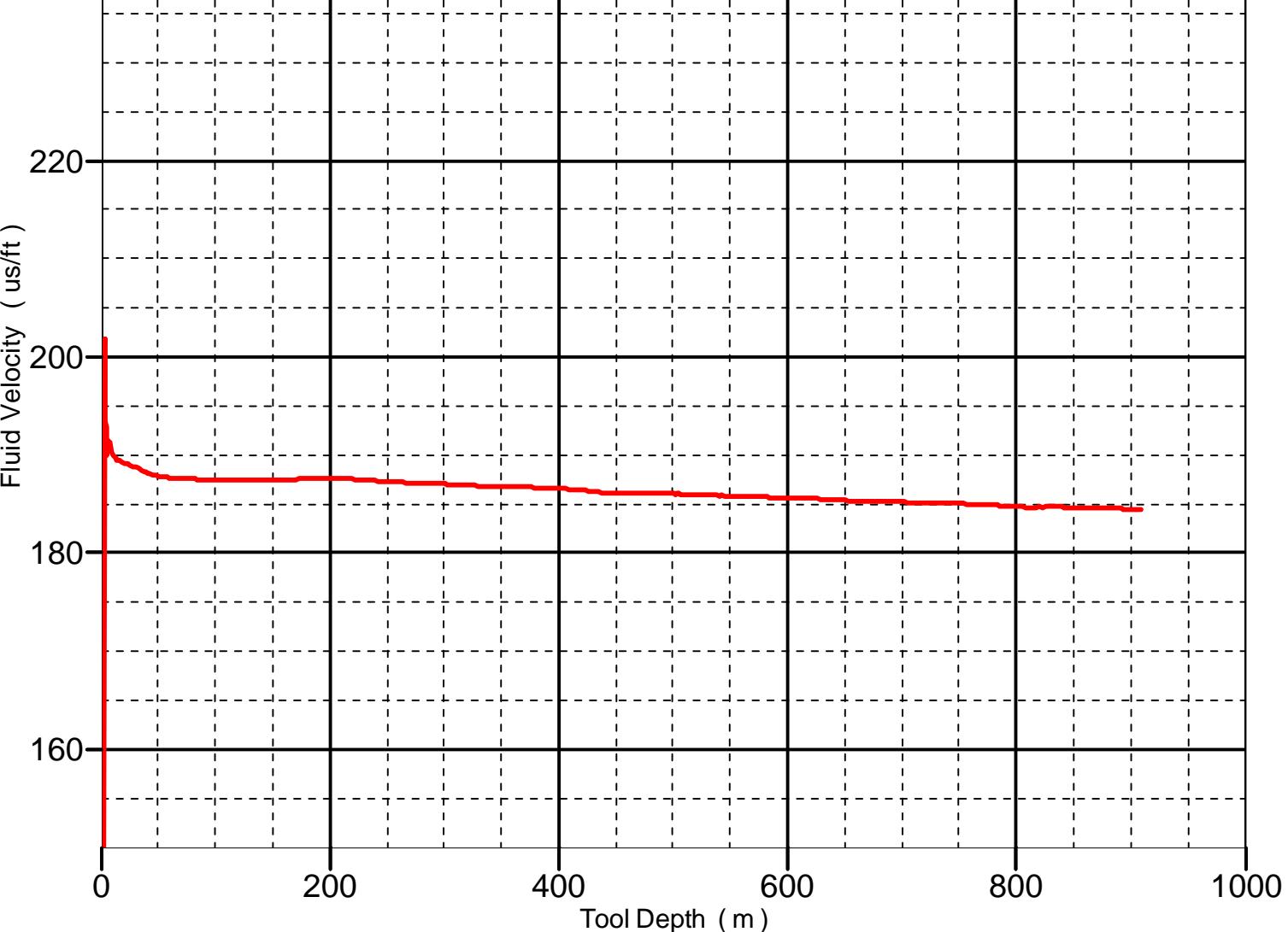
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From -1.07 to 910.89 m

— UDEP-FVEM





XYZ

Company: V.O.F. Geothermie De Lier

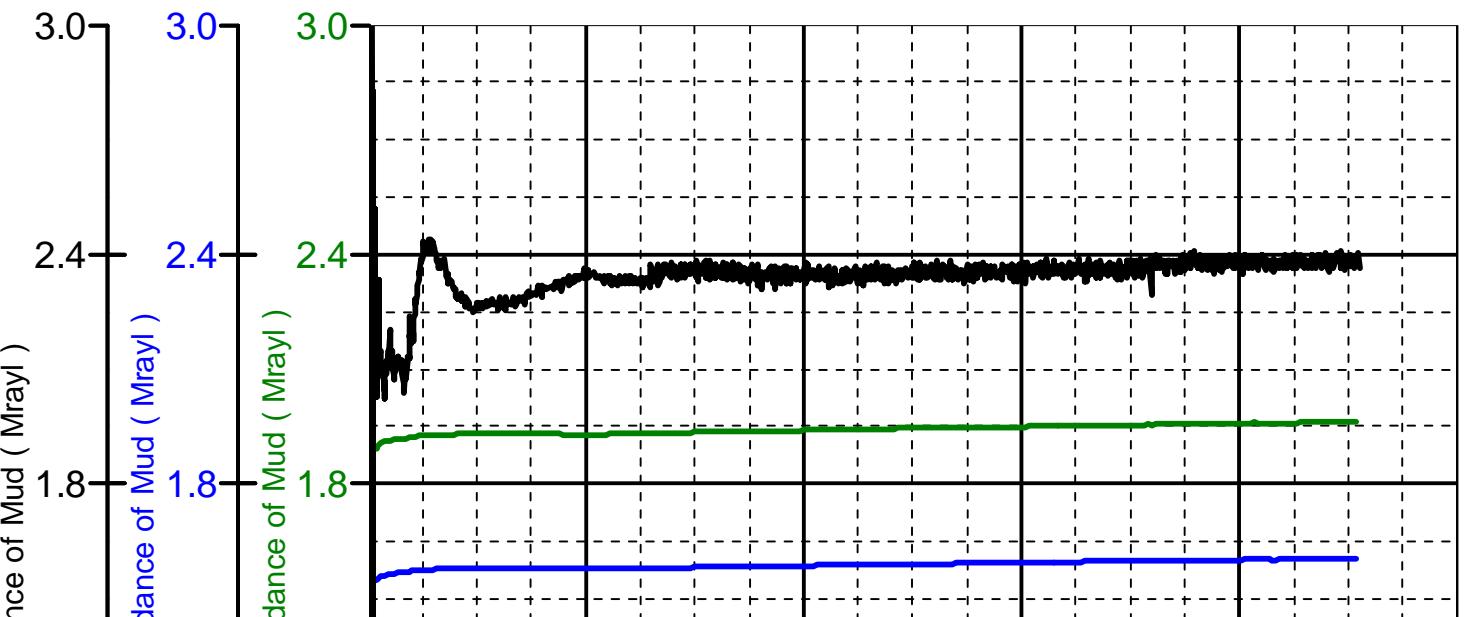
Well: De Lier - GT-01

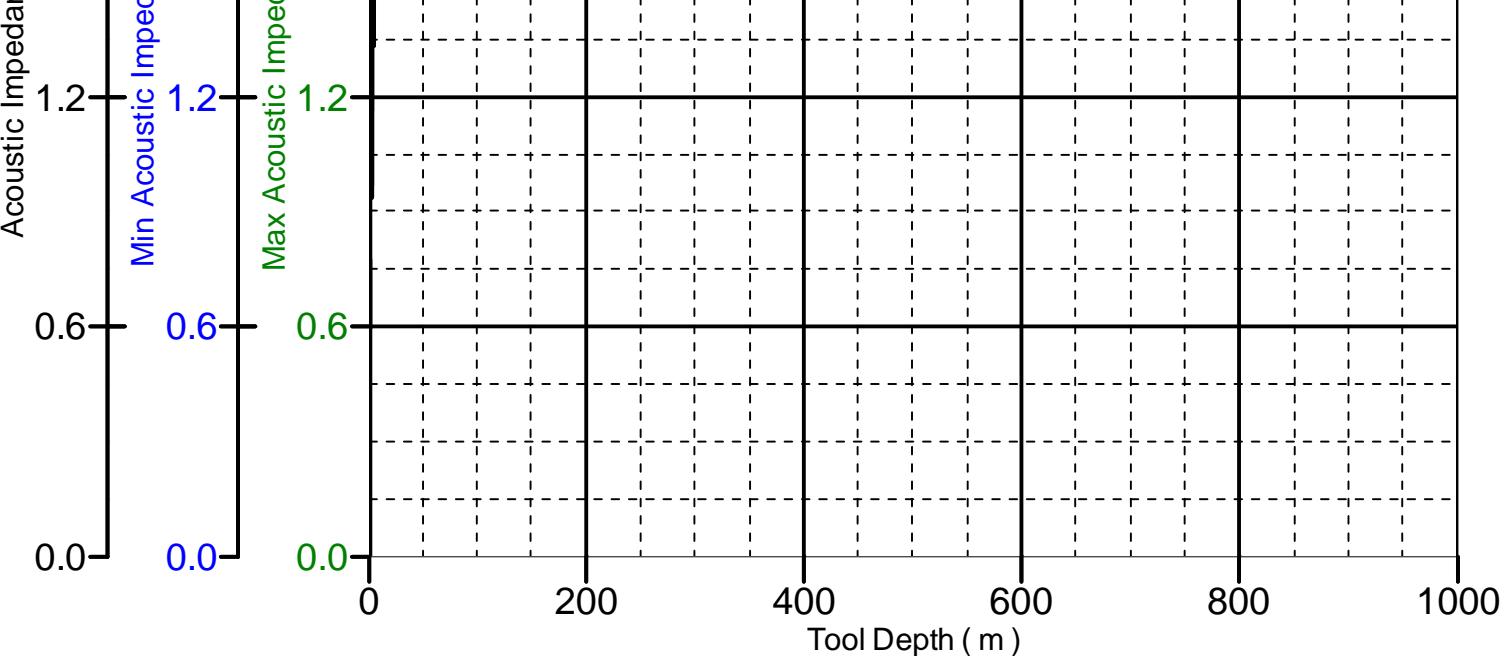
Composite 1:S010

Theoretical Acoustic Impedance of Mud vs Depth 2D Cross Plot

Index Range: From -1.07 to 910.89 m

— UDEP-AIBH — UDEP-AIBL — UDEP-AIBM





Calibration Report

SGT-N (Scintillation Gamma-Ray Tool) Calibration - Run 2

Primary Equipment :

Scintillation Gamma Cartridge	SGC-TB	10022
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Calibration Parameter :

Plus Reference (Jig minus background reference)	165
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SGT-N Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured):	18:52:08 29-Jun-2014	After (Measured):	03:49:05 30-Jun-2014
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Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Gain		Before			1.046		
		After	---	---	---	---	
		After-Before	---	---	---	---	

SGT-N Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured):	18:52:08 29-Jun-2014	After (Measured):	03:49:05 30-Jun-2014
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Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before		0	9.614	120.000	
		After		0	8.992	120.000	
		After-Before	----	----	-0.622	----	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Plus Measurement	gAPI	Before	157.763	143.421	157.763	172.105	
		After	158.546	144.133	158.546	172.959	
		After-Before	----	----	0.783	----	

SGT-N Gamma-Ray Plateau Check - Gamma Ray Plateau Check

Before (Measured):	02:04:57 30-Jun-2014	After (Measured):	03:52:26 30-Jun-2014
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Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Plus Plateau Measurement	gAPI	Before			11.099		
		After			164.754		
		After-Before	----	----	153.655	----	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Minus Plateau Measurement	gAPI	Before			10.700		
		After			165.638		
		After-Before	----	----	154.938	----	

Company: V.O.F. Geothermie De Lier

Schlumberger

Well: De Lier - GT-01

Field: De Lier

Rig Name: T-49

Country: Netherlands

Cement and Corrosion log

13-3/8" section

29-JUN-2014