

Company: Chevron USA Inc.

Well: SKR 598-36-BV-11

Field: Skinner Ridge

County: Garfield State: Colorado

Ultrasonic Imager

Casing Integrity

Gamma Ray - CCL Log

County: Garfield
 Field: Skinner Ridge
 Location: NWSW 36 5S98W
 Well: SKR 598-36-BV-11
 Company: Chevron USA Inc.

Location:		NWSW 36 5S98W	Elev.:	K.B. 6060.00 ft
		1366' FSL 487' FWL	G.L.	6035.00 ft
		Lat/Long: 39.56665 / -108.3466103	D.F.	
Permanent Datum:	Ground Level		Elev.:	6035.00 f
Log Measured From:	Kelly Bushing			25.00 ft above Perm. Datum
Drilling Measured From:	Kelly Bushing			
API Serial No.	Section:	36	Township:	5S
05-045-16936				Range: 98W

Logging Date: 11-Oct-2022

Run Number: One

Depth Driller: 7137.00 ft

Schlumberger Depth: 7137.00 ft

Bottom Log Interval: 7020.00 ft

Top Log Interval: 25.00 ft

Casing Fluid Type: Water

Salinity: Water

Density: 8.4 lbm/gal

Fluid Level: 8.00 ft

BIT/CASING/TUBING STRING

Bit Size: 7.88 in

From: 1415.00 ft

To: 7137.00 ft

Casing/Tubing Size: 4.5 in

Weight: 11.6 lbm/ft

Grade: N/A

From: 0.00 ft

To: 7107.00 ft

Max Recorded Temperatures: 201 degF

Logger on Bottom: 11-Oct-2022 15:04:00

Unit Number: 9115 Location: Fort Morgan

Recorded By: Ruobing Wu

Witnessed By: Jess Jacobs

Disclaimer

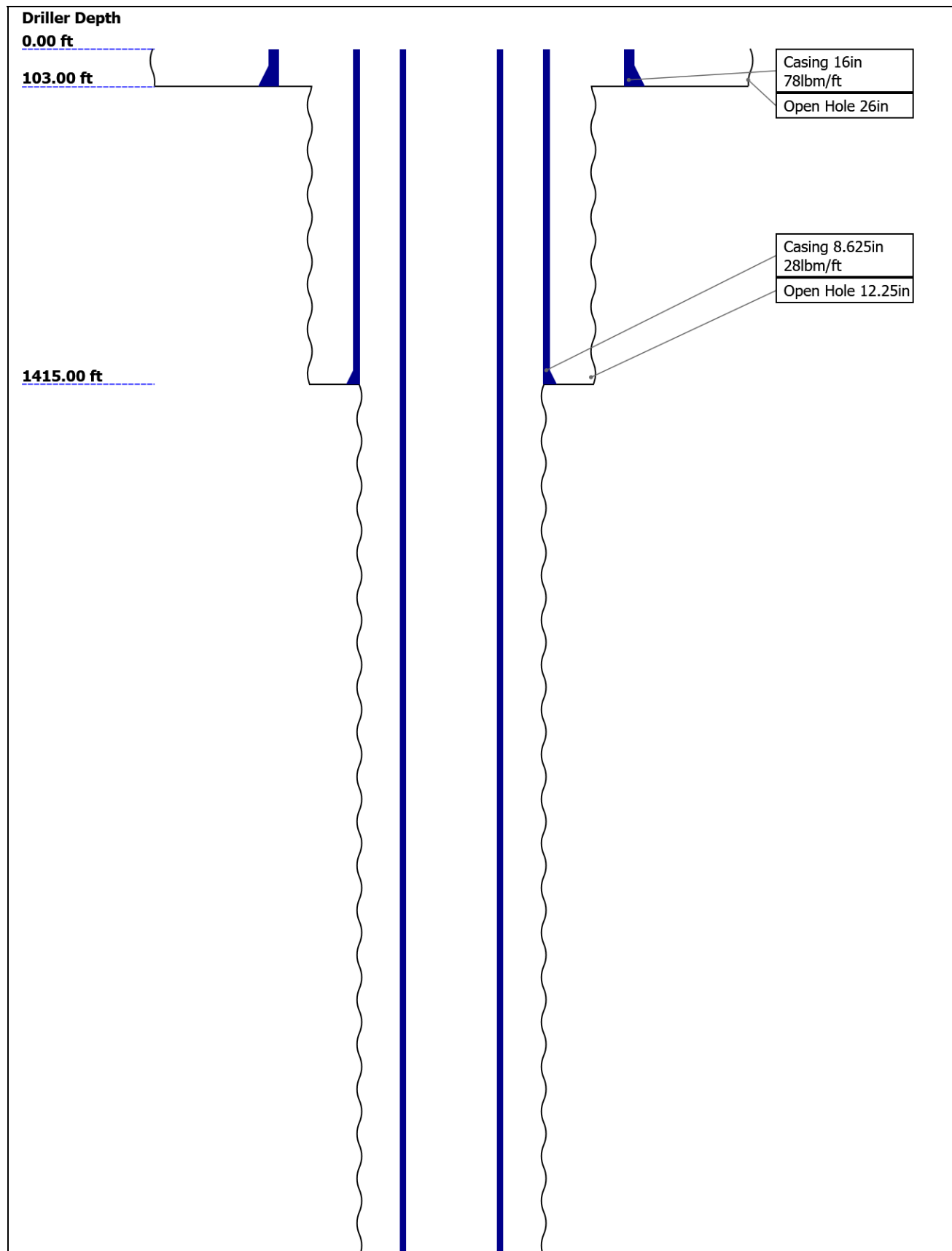
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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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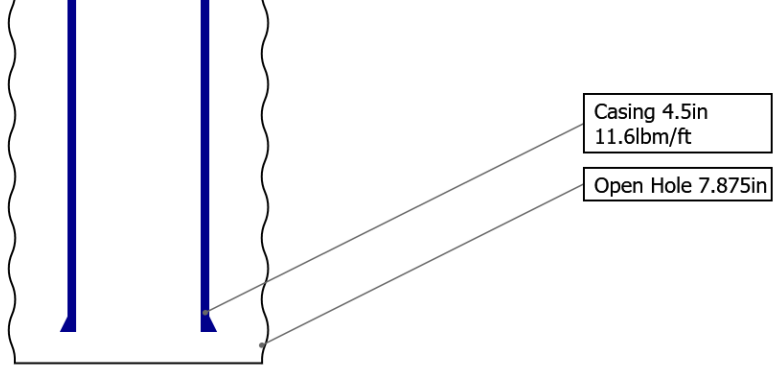
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|---|--|

- 9.4 Log (IBC Casing Integrity HiRes 4.5IN)
- 9.5 Parameter Listing
- 10. One HiRes repeat
 - 10.1 Integration Summary
 - 10.2 Software Version
 - 10.3 Composite Summary
 - 10.4 Log (IBC Casing Integrity HiRes 4.5IN)

Well Sketch



7107.00 ft
7137.00 ft



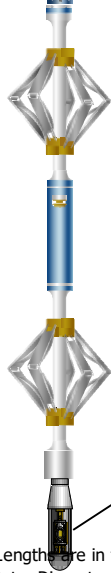
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26	12.25	7.875			
Top Driller (ft)	0	103	1415			
Top Logger (ft)	0	103	1415			
Bottom Driller (ft)	103	1415	7137			
Bottom Logger (ft)	103	1415	7137			
Casing						
Size (in)	16	8.625	4.5			
Weight (lbm/ft)	78	28	11.6			
Inner Diameter (in)	15.081	8.017	4			
Grade	N/A	N/A	N/A			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	103	1415	7107			
Bottom Logger (ft)	103	1415	7107			

Remarks and Equipment Summary

One: Toolstring		One: Remarks	
Equip name	Length	MP name	Offset
LEH-QT	29.44		
LEH-QT			
EDTC-B	25.96		
EDTH-B			
EDTG-A			
EDTC-B			
		CTEM	22.46
		ACCZ	0.00
		HV	0.00
		Gamma Ray	20.59
		TelStatu	19.46
		s	
AH-184[2]	19.46		
AH-184[1]	17.46		
USIT-E	15.46		
ECH-MFA			
USAC-A			
USIS-A			
USSC-B			
USRS-AB			
UST-GENC			
		Thank you for choosing Schlumberger!	
		Log run for cement and casing evaluation	
		Tool was run as per tool sketch, centralized using Houma/booster kit.	
		USRS-AB sub ran with USI-TX transducer	
		Log correlated to top joint	
		Main Pass logged in 10deg3in repeats ran in 10deg0.6in	
		Downlog ran at 0Psi, uplog ran at 2500psi surface induced pressure	

USI-SENS
OR
USI-TX



USI Sen 0.37
 Length in ft
 Maximum Outer Diameter = 3.625 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[2]:Up	7022.79	14.16

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 = "Theoretical".
 CZMD uses theoretical results.
 MUD_N_THE=1.00
 DFD=1.01g/cm3(8.40lbm/gal)

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

Main Pass

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220287 Wireline_NPD-ThruBit-2022.1_12.1.219291

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Up	Up	14.16 ft	7022.79 ft	11-Oct-2022 3:03:04 PM	11-Oct-2022 4:12:33 PM	ON	2.50 ft	Yes

All depths are referenced to toolstring zero

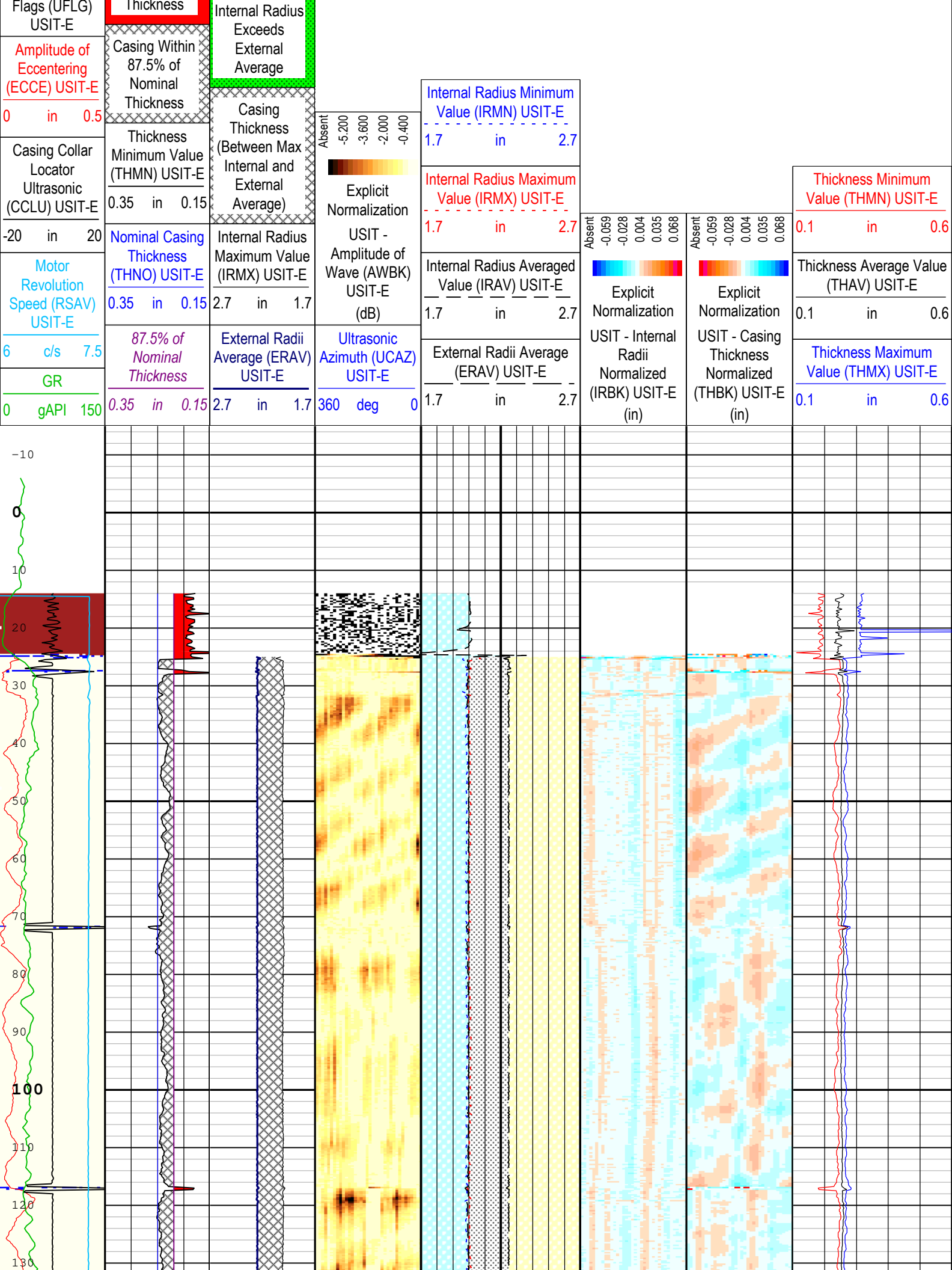
Log Company:Chevron USA Inc. Well:SKR 598-36-BV-11 One: Log[2]:Up:S004

Description: USI Corrosion Format: Log (IBC Casing Integrity 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Oct-2022 20:34:41

TIME_1900 - Time Marked every 60.00 (s)

Absent
 1.500
 3.500
 Explicit
 Normalization
 USIT - USIT Processing

Large Reduction from Nominal



Flags (UFLG) USIT-E
 Amplitude of Eccentering (ECCE) USIT-E
 0 in 0.5
 Casing Collar Locator Ultrasonic (CCLU) USIT-E
 -20 in 20
 Motor Revolution Speed (RSAV) USIT-E
 6 c/s 7.5
 GR
 0 gAPI 150

Thickness
 Casing Within 87.5% of Nominal Thickness
 Thickness Minimum Value (THMN) USIT-E
 0.35 in 0.15
 Nominal Casing Thickness (THNO) USIT-E
 0.35 in 0.15
 87.5% of Nominal Thickness
 0.35 in 0.15

Internal Radius
 Exceeds External Average
 Casing Thickness (Between Max Internal and External Average)
 Internal Radius Maximum Value (IRMX) USIT-E
 2.7 in 1.7
 External Radii Average (ERAV) USIT-E
 2.7 in 1.7

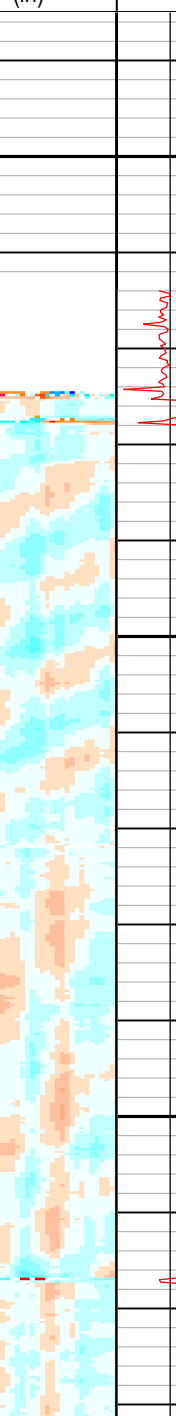
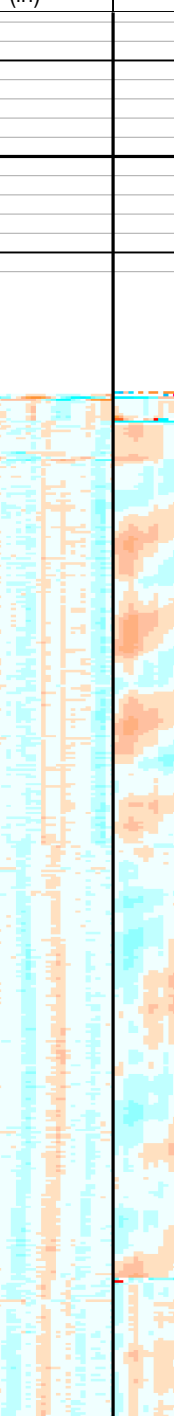
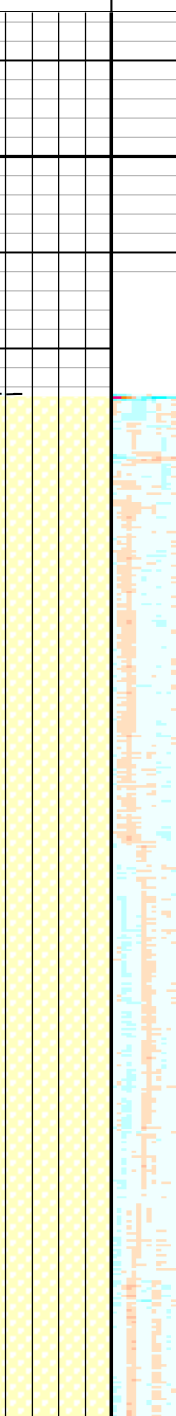
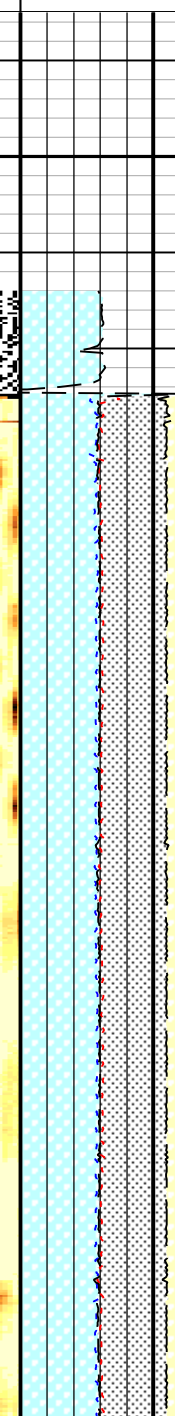
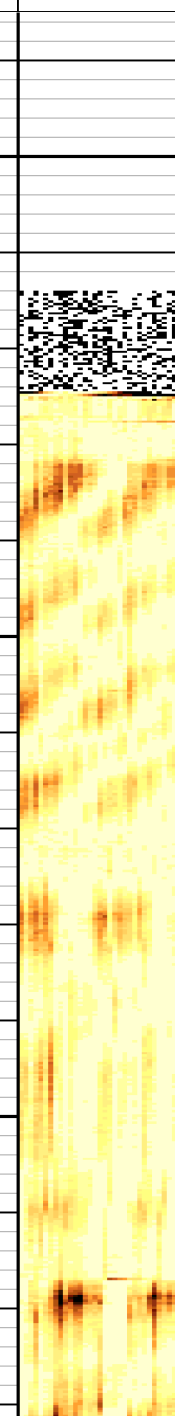
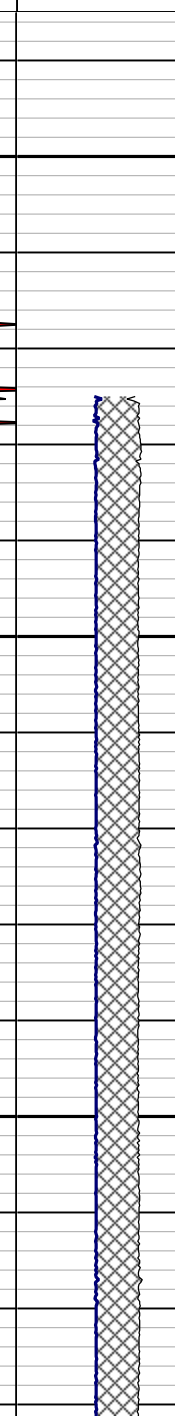
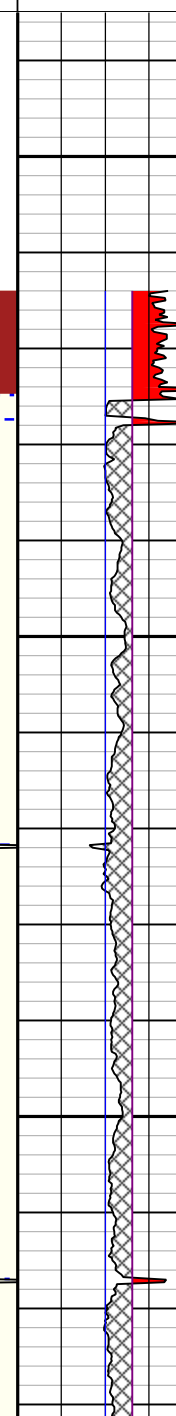
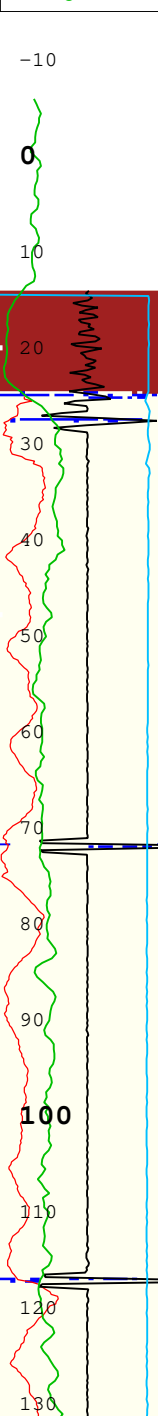
Absent -5.200 -3.600 -2.000 -0.400
 Explicit Normalization
 USIT - Amplitude of Wave (AWBK) USIT-E (dB)
 1.7 in 2.7
 Ultrasonic Azimuth (UCAZ) USIT-E
 360 deg 0

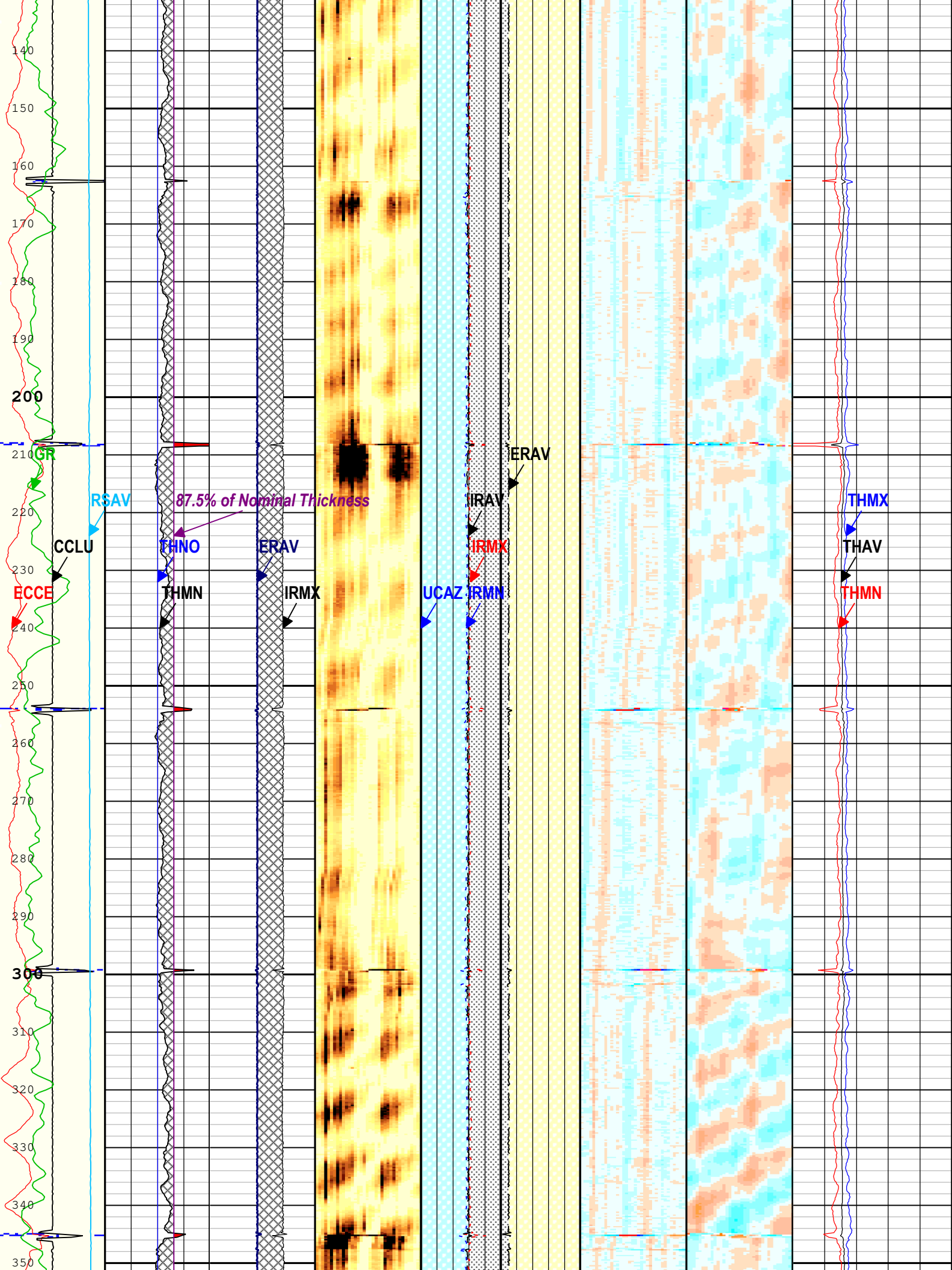
Internal Radius Minimum Value (IRMN) USIT-E
 1.7 in 2.7
 Internal Radius Maximum Value (IRMX) USIT-E
 1.7 in 2.7
 Internal Radius Averaged Value (IRAV) USIT-E
 1.7 in 2.7
 External Radii Average (ERAV) USIT-E
 1.7 in 2.7

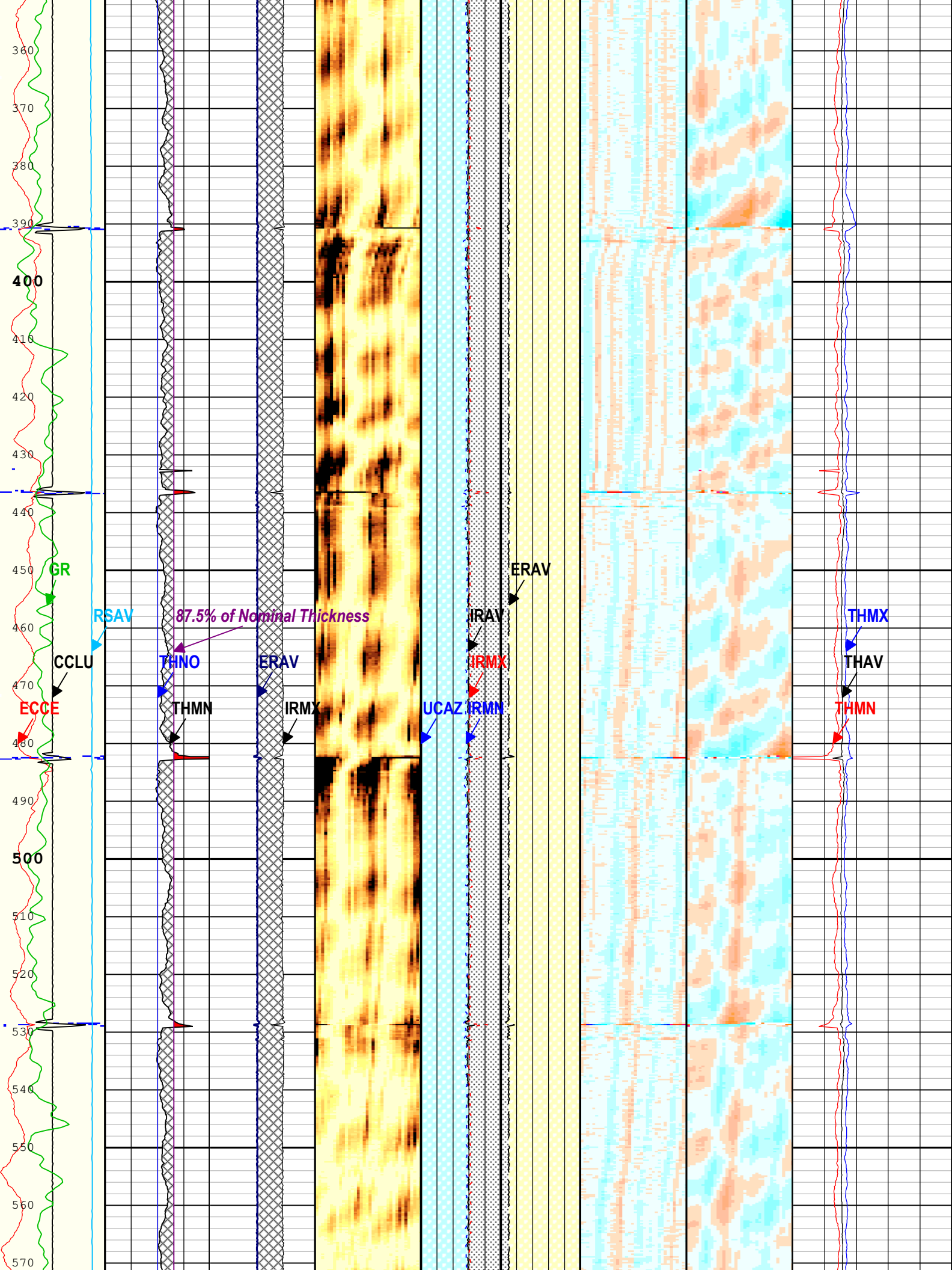
Absent -0.059 -0.028 0.004 0.035 0.068
 Explicit Normalization
 USIT - Internal Radii Normalized (IRBK) USIT-E (in)
 0.1 in 0.6

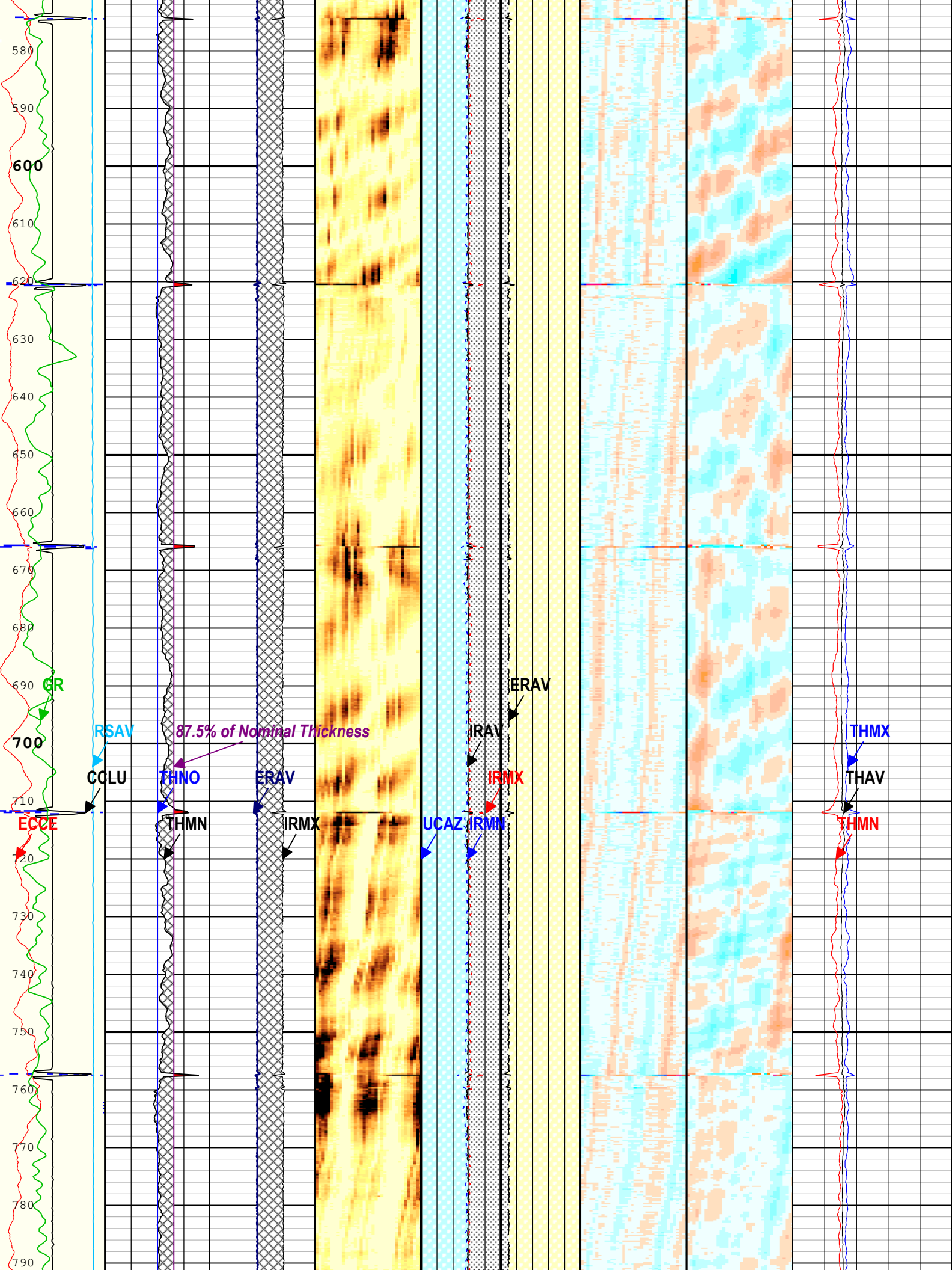
Absent -0.059 -0.028 0.004 0.035 0.068
 Explicit Normalization
 USIT - Casing Thickness Normalized (THBK) USIT-E (in)
 0.1 in 0.6

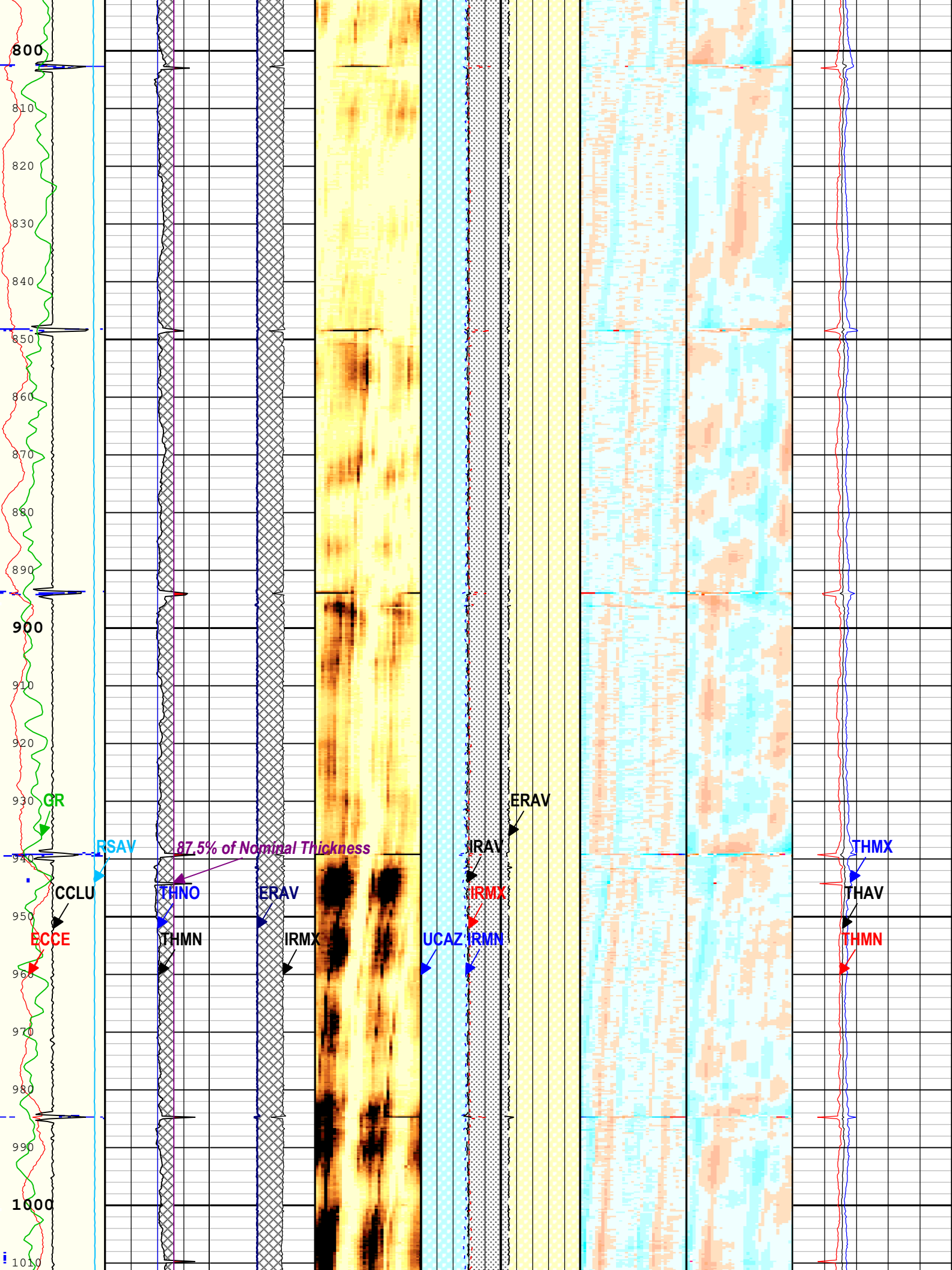
Thickness Minimum Value (THMN) USIT-E
 0.1 in 0.6
 Thickness Average Value (THAV) USIT-E
 0.1 in 0.6
 Thickness Maximum Value (THMX) USIT-E
 0.1 in 0.6

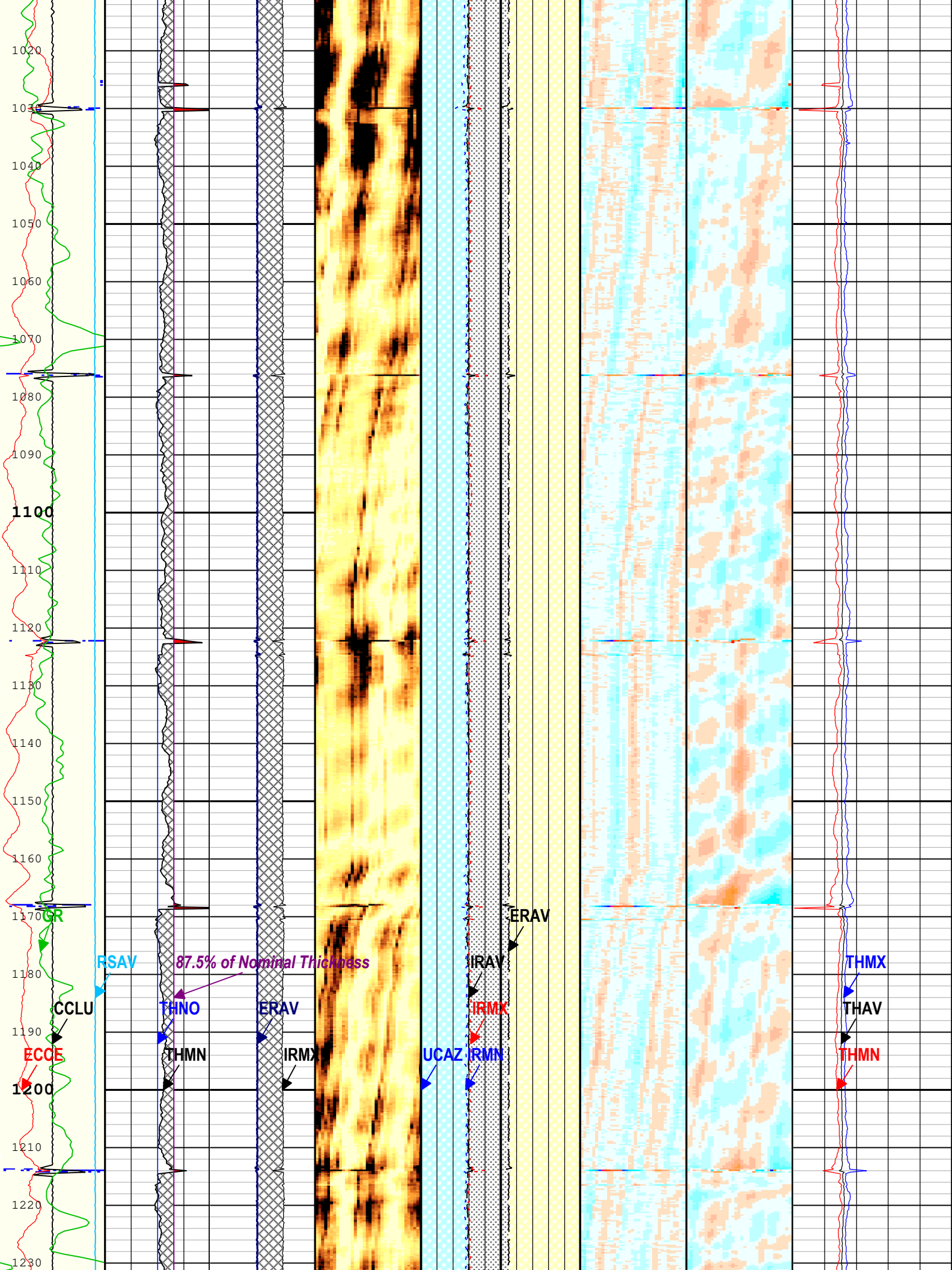


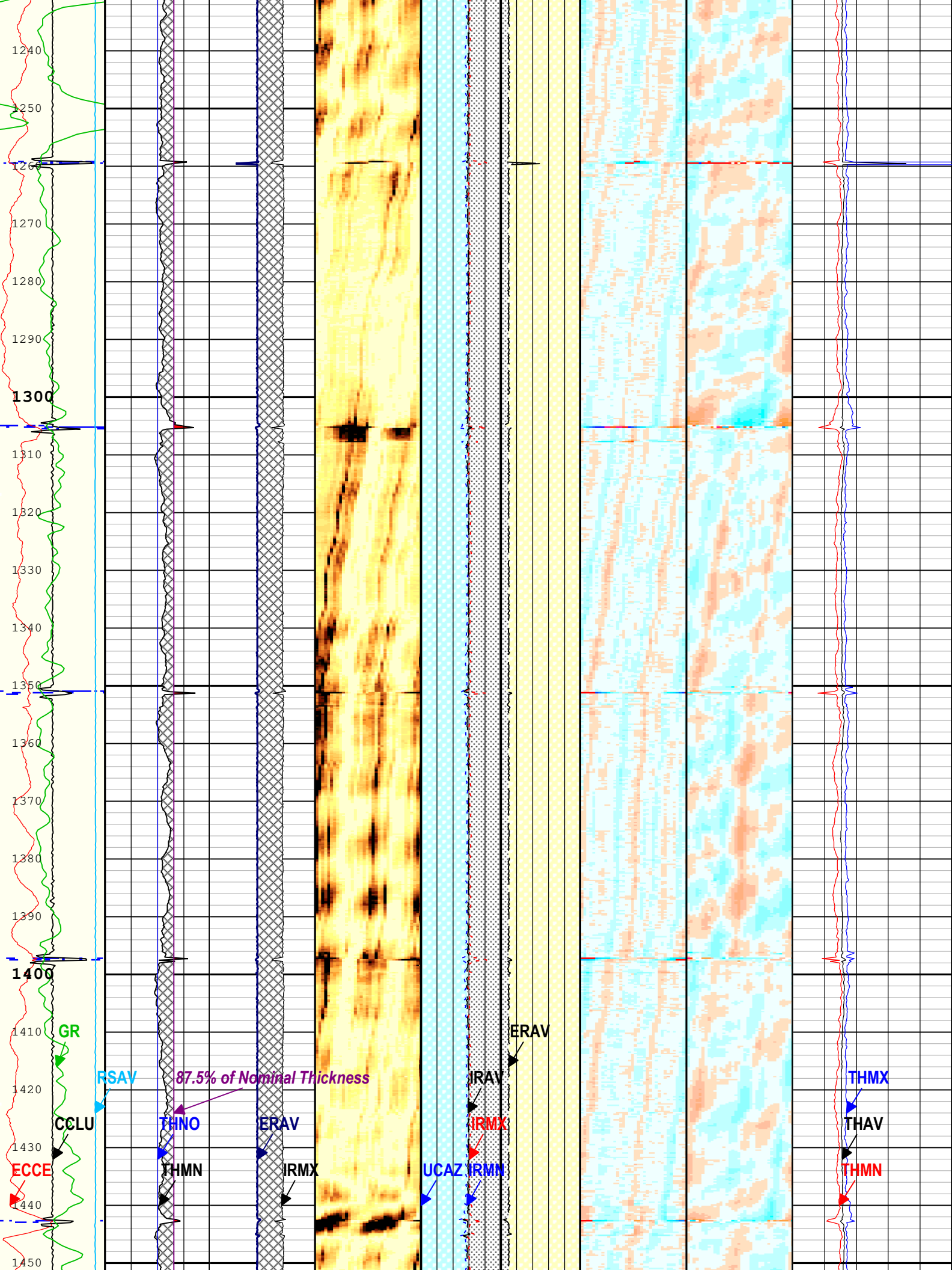


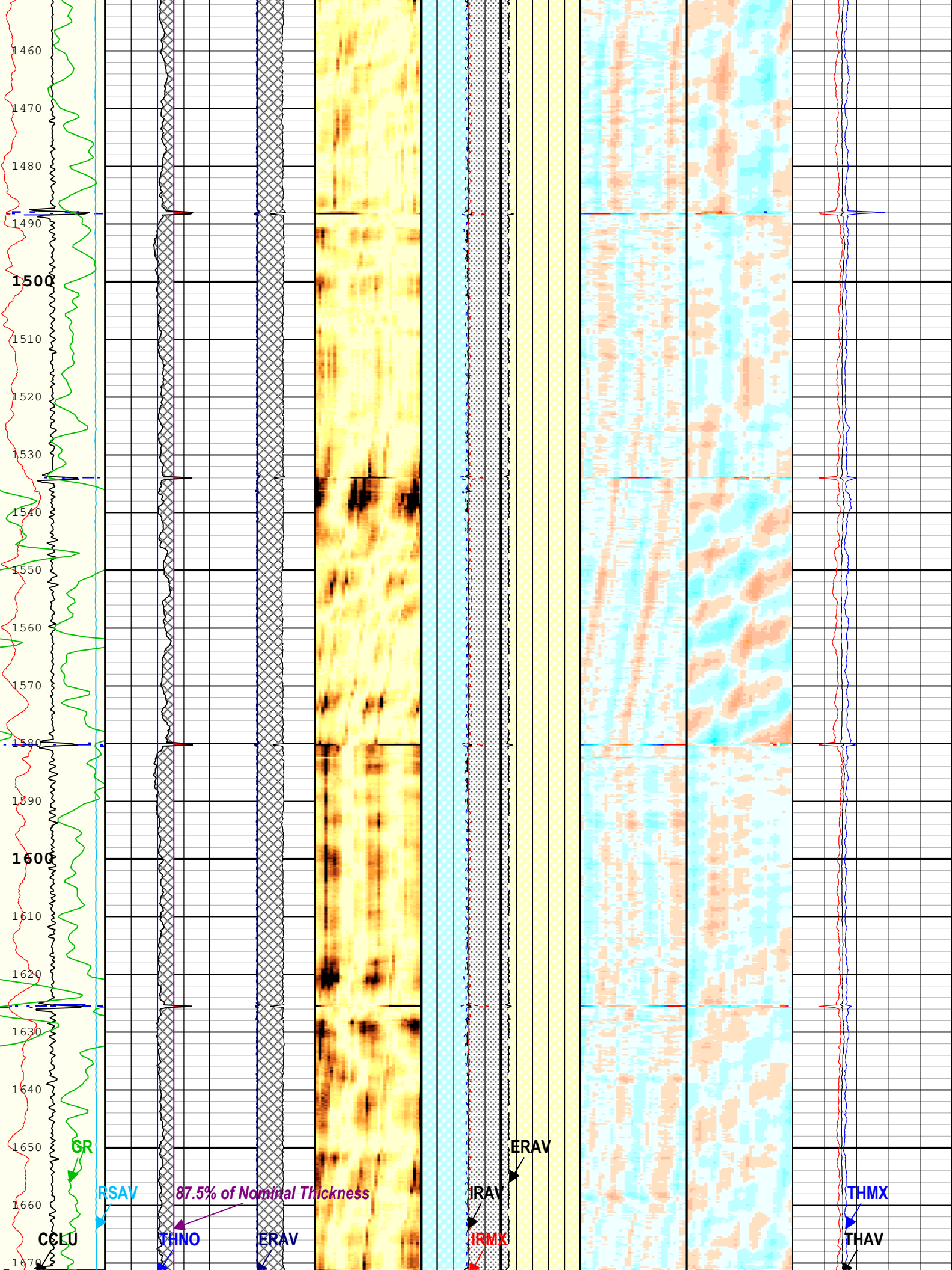


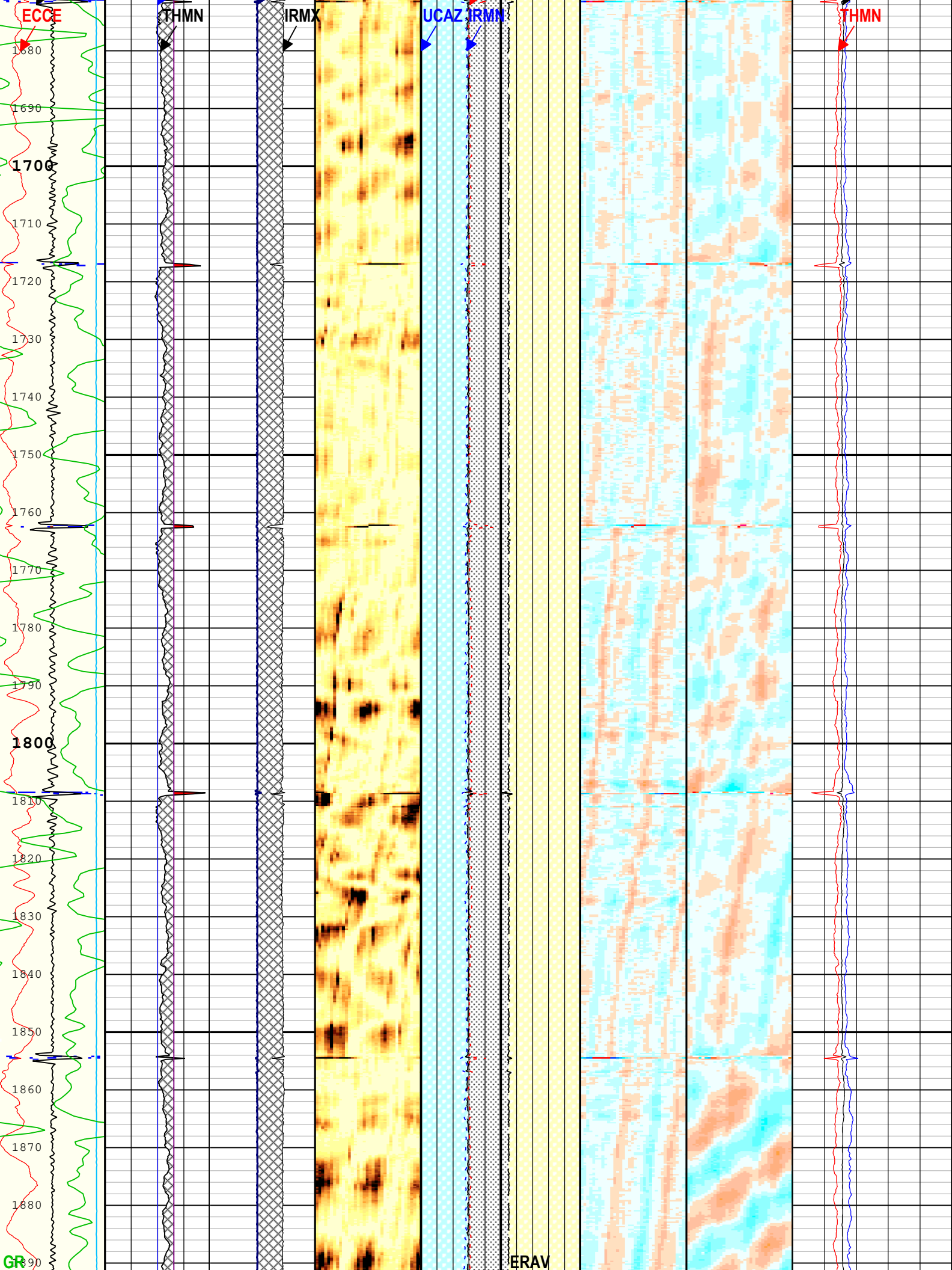


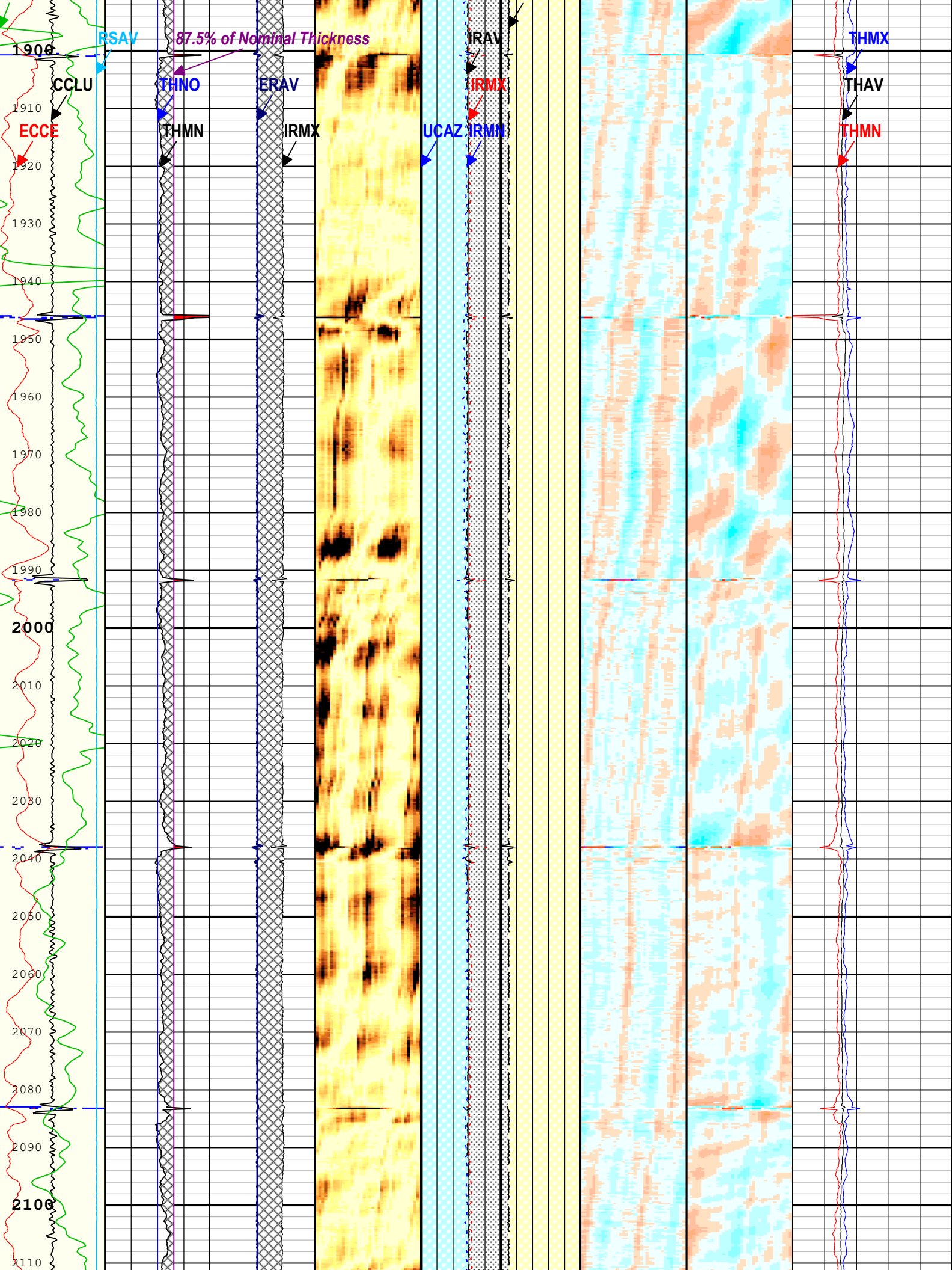


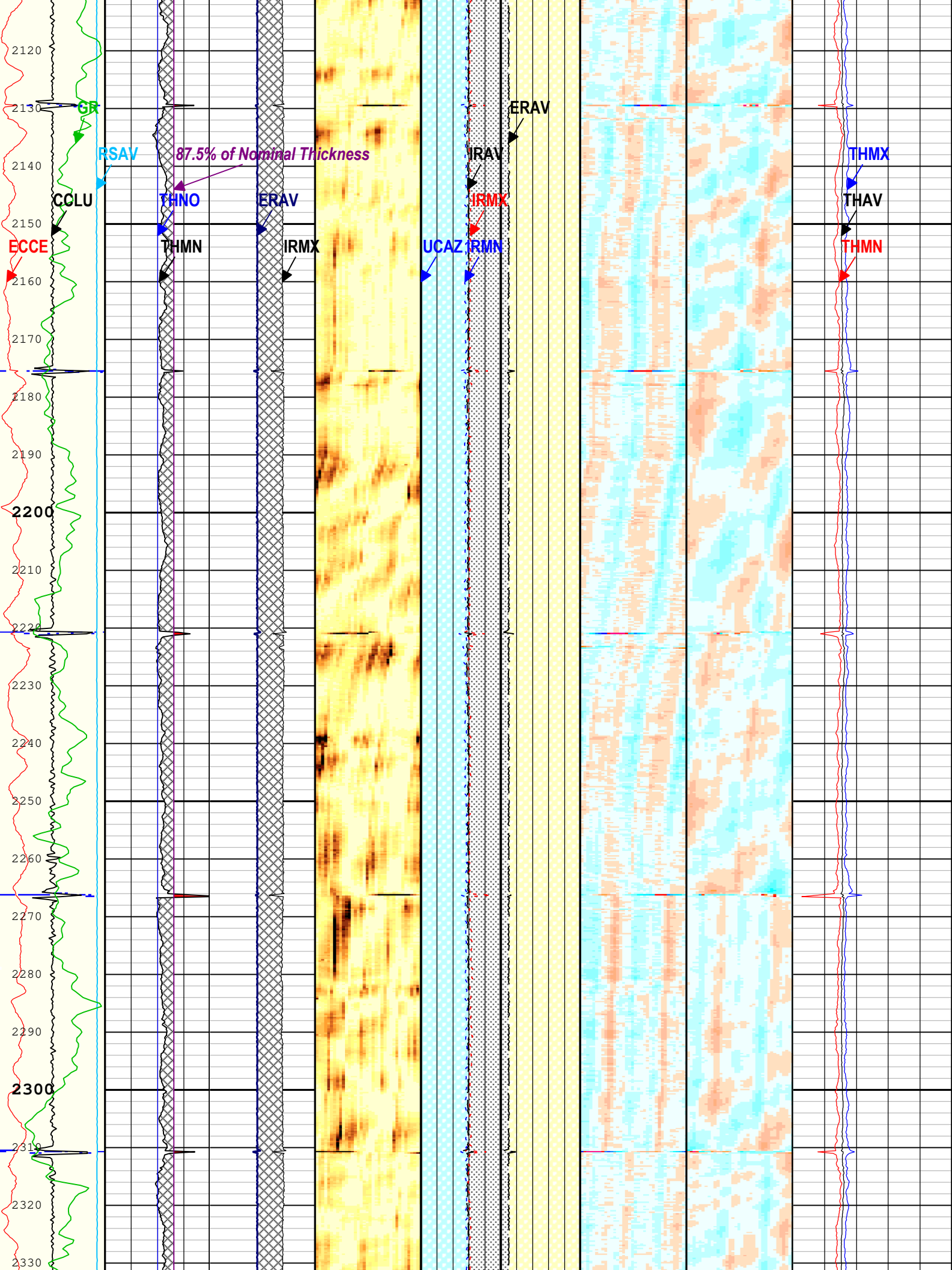


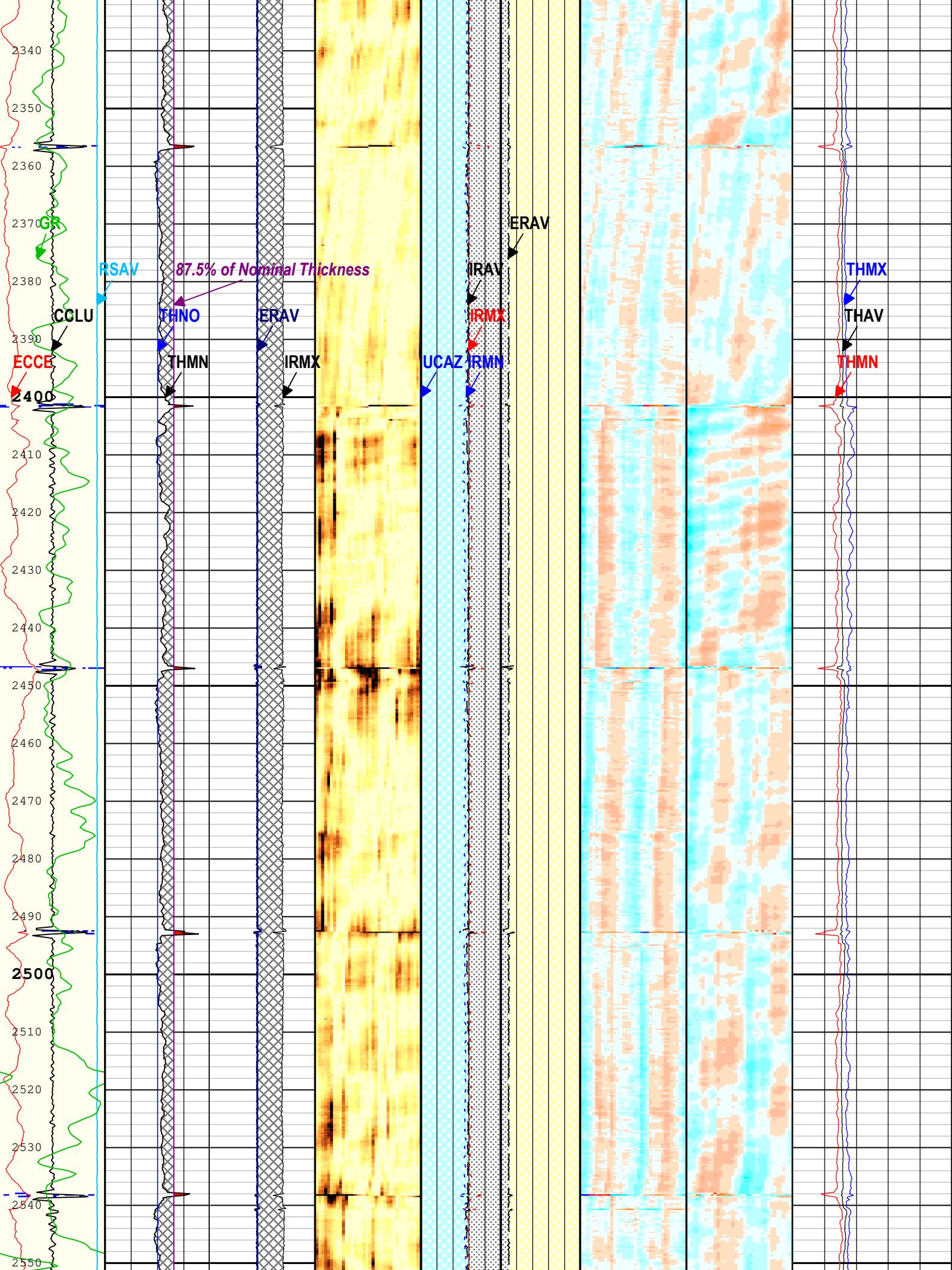


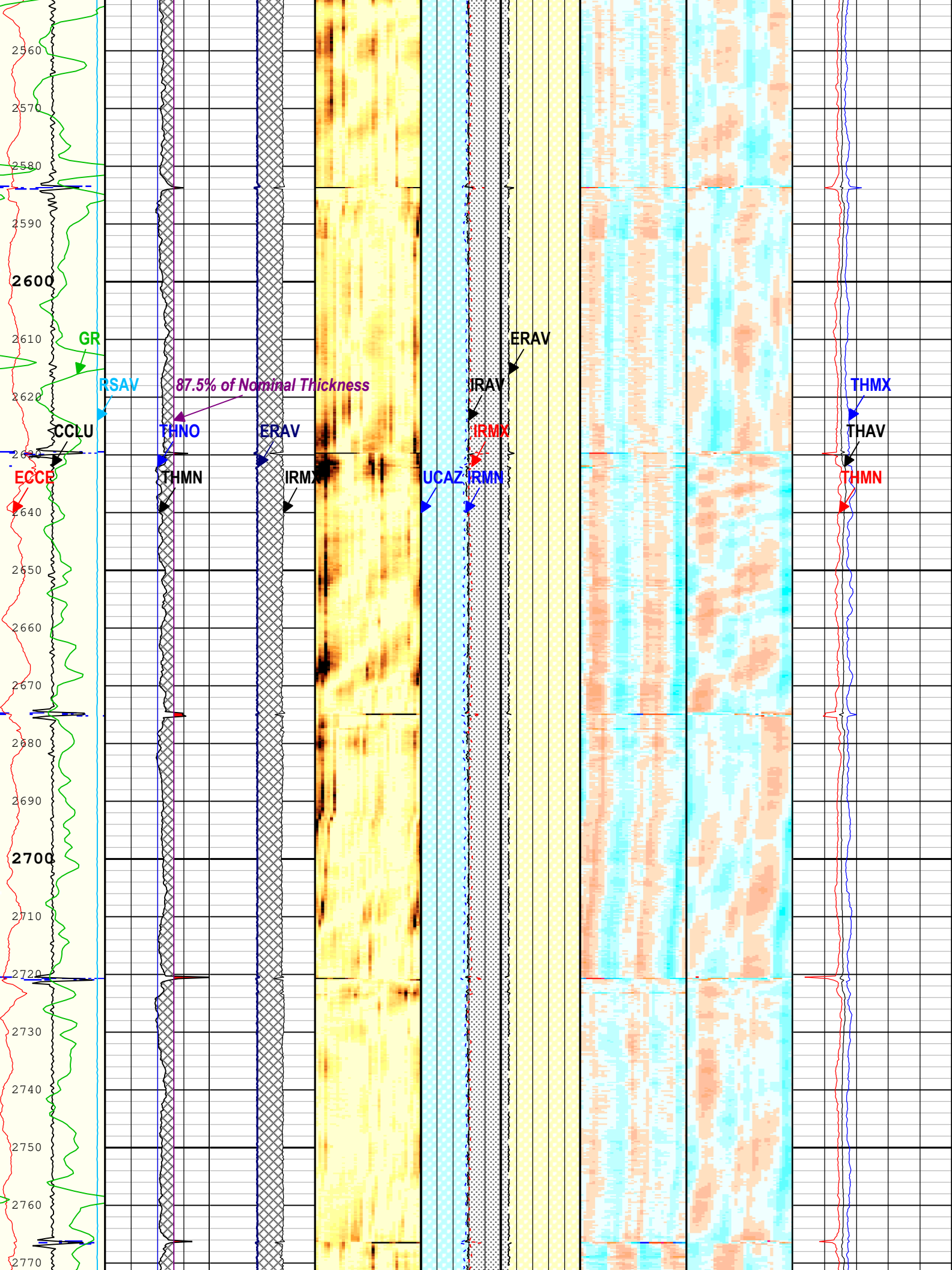


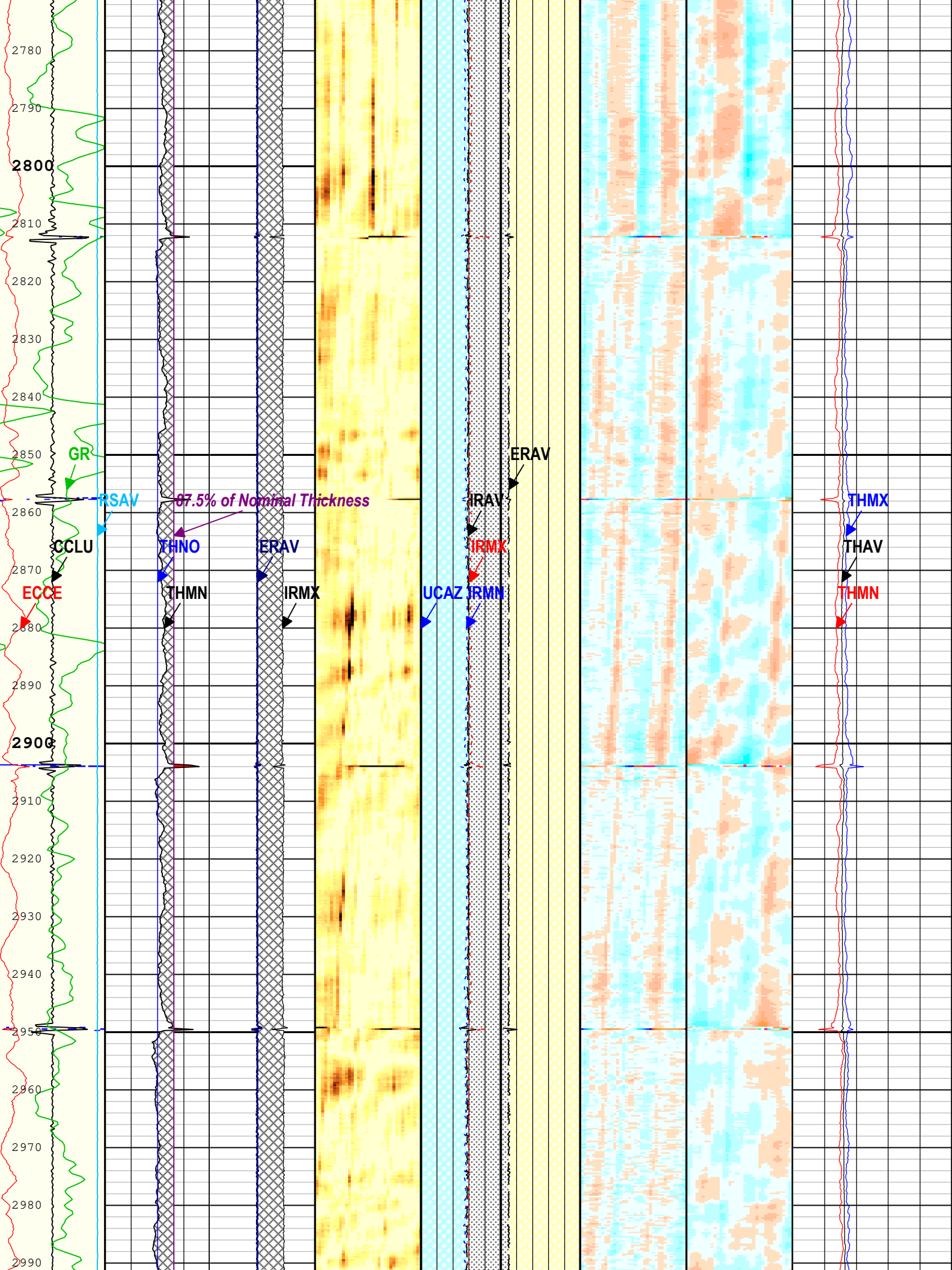


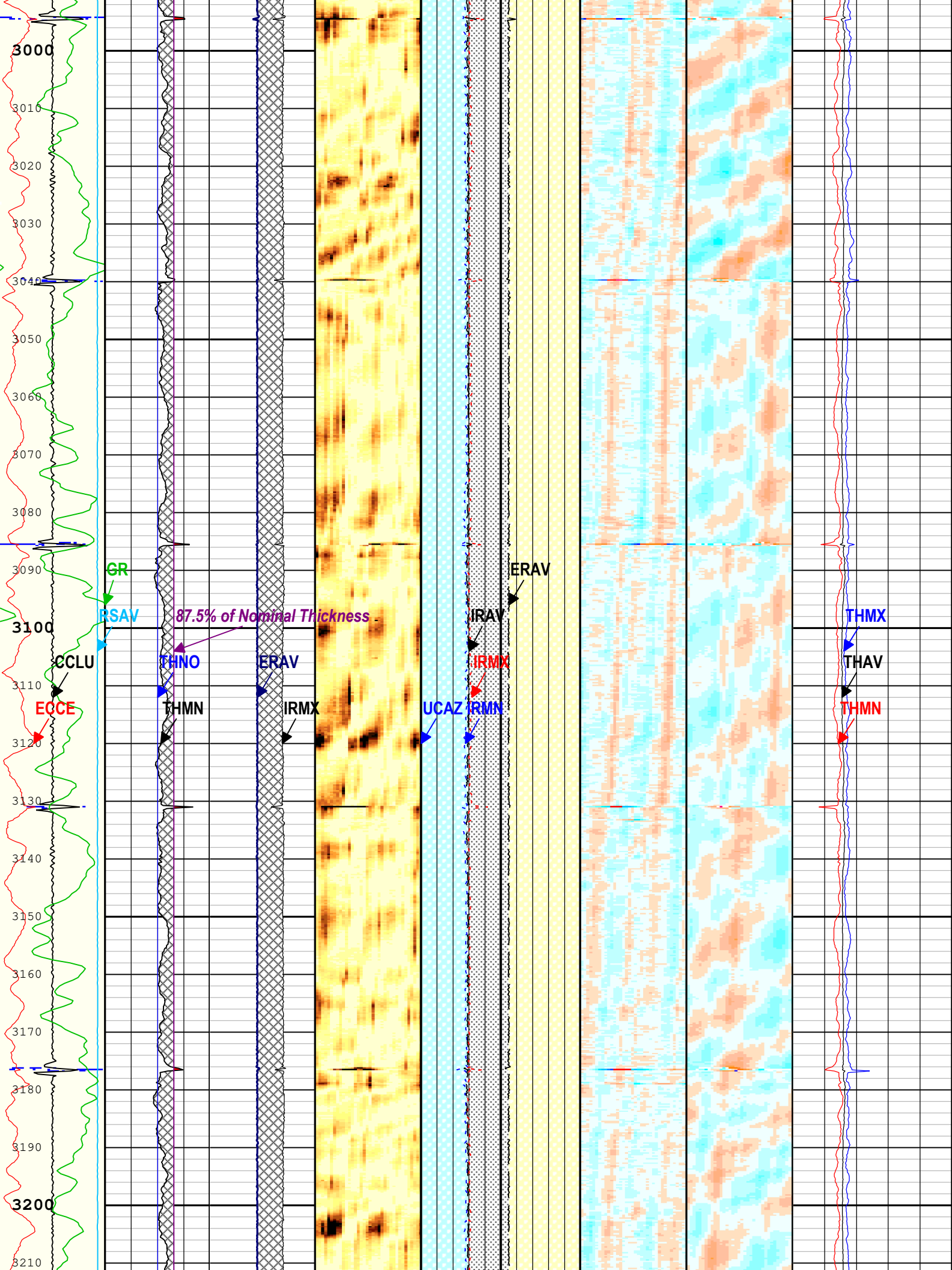


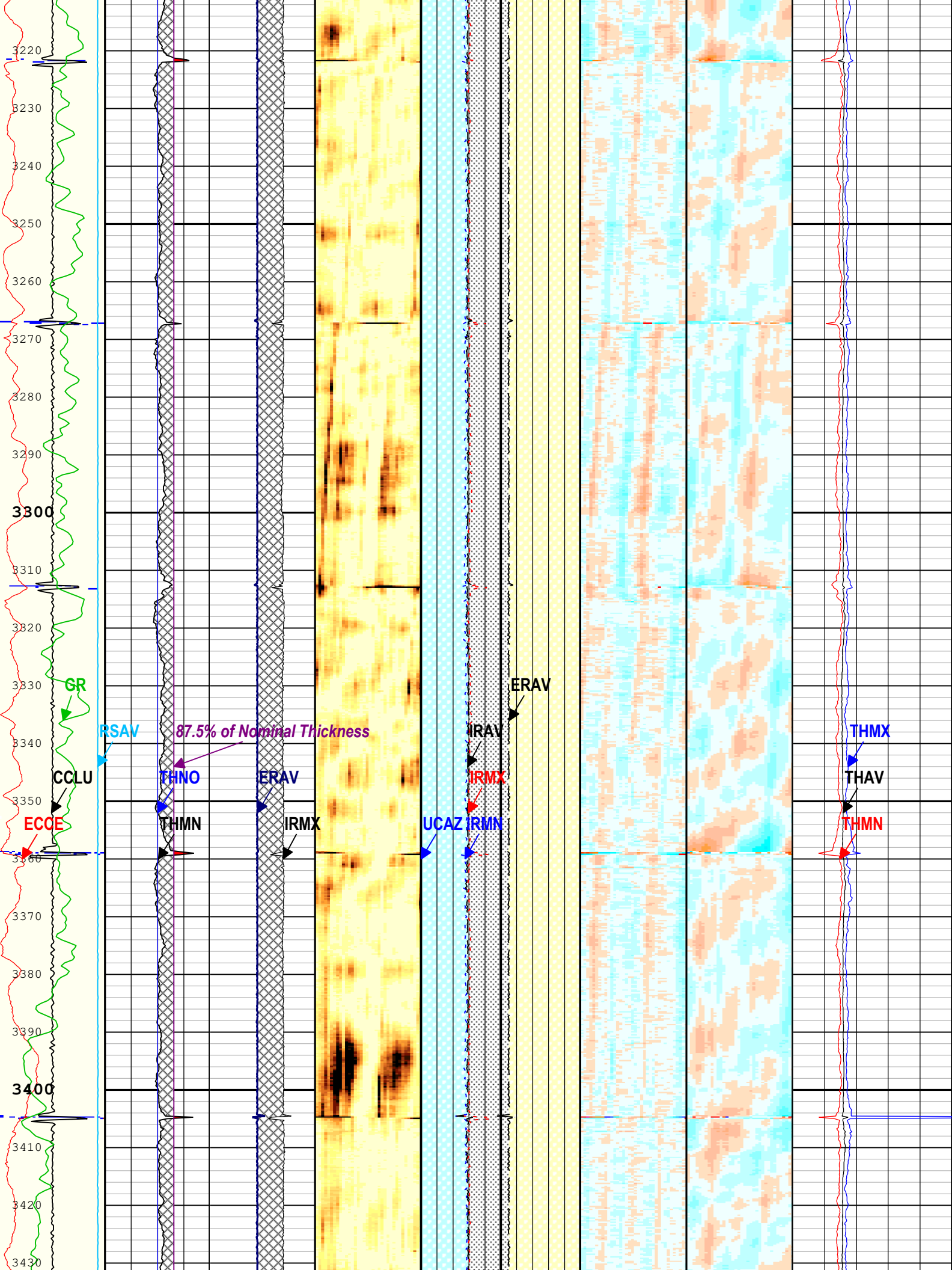


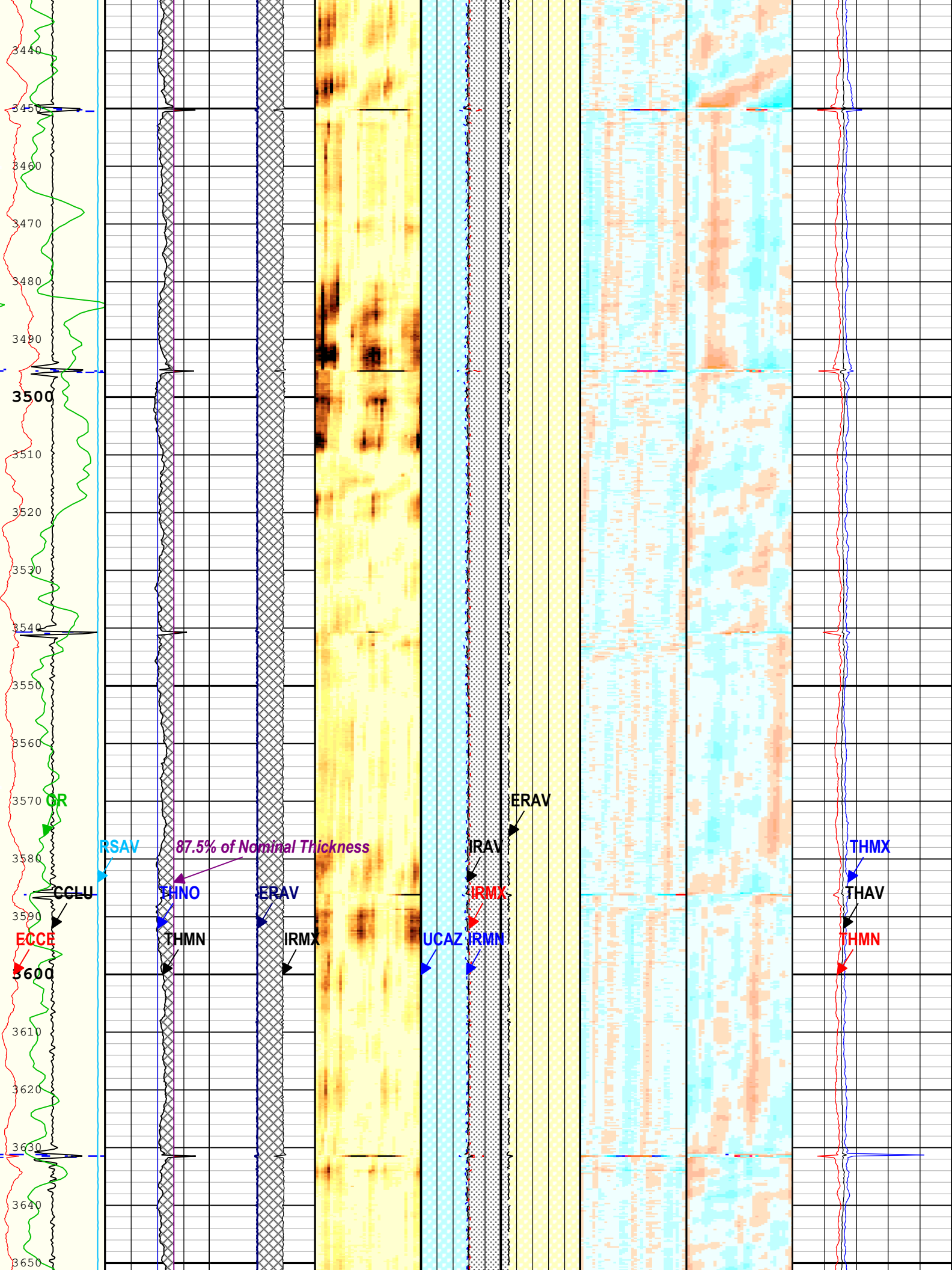


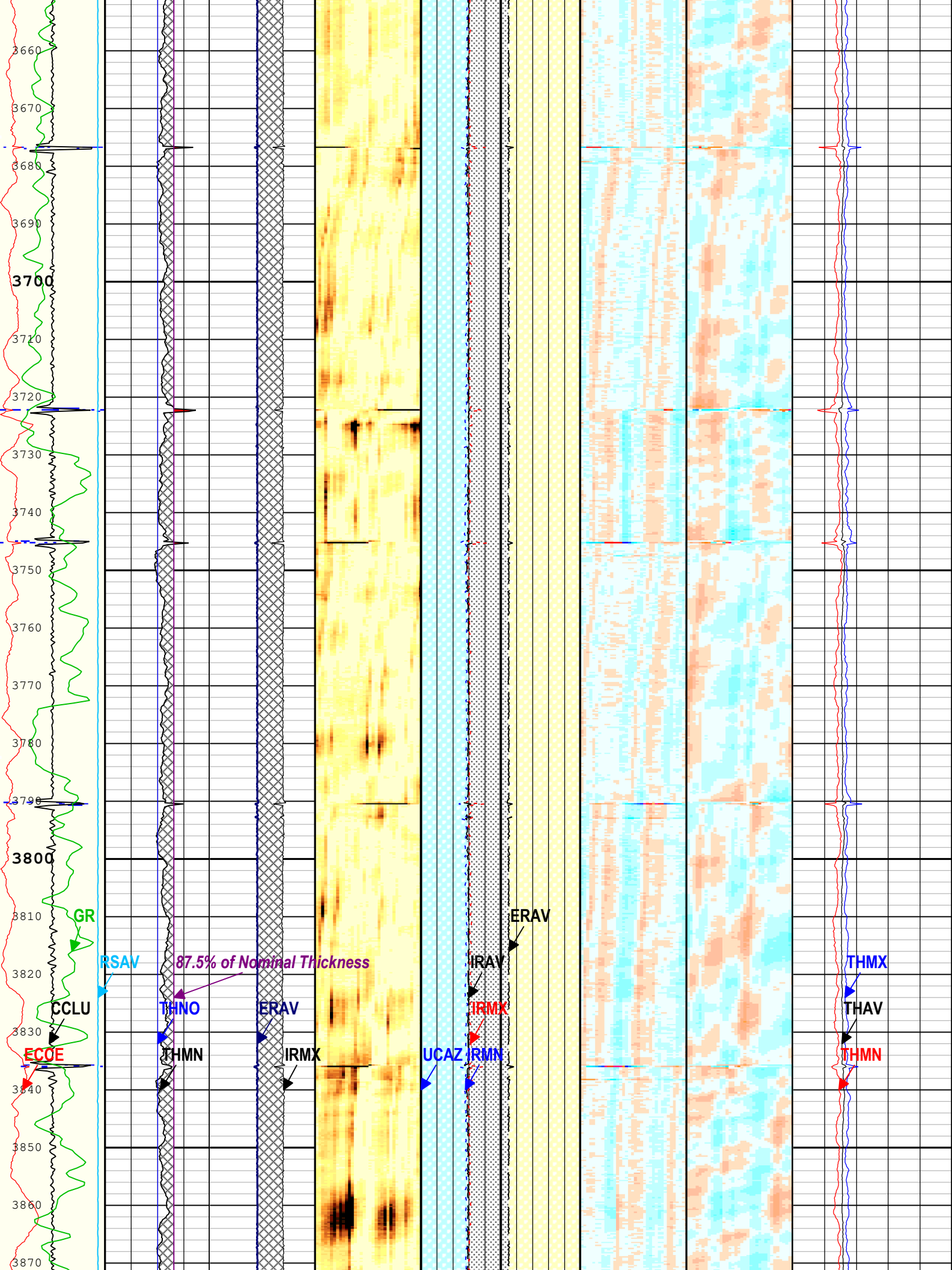


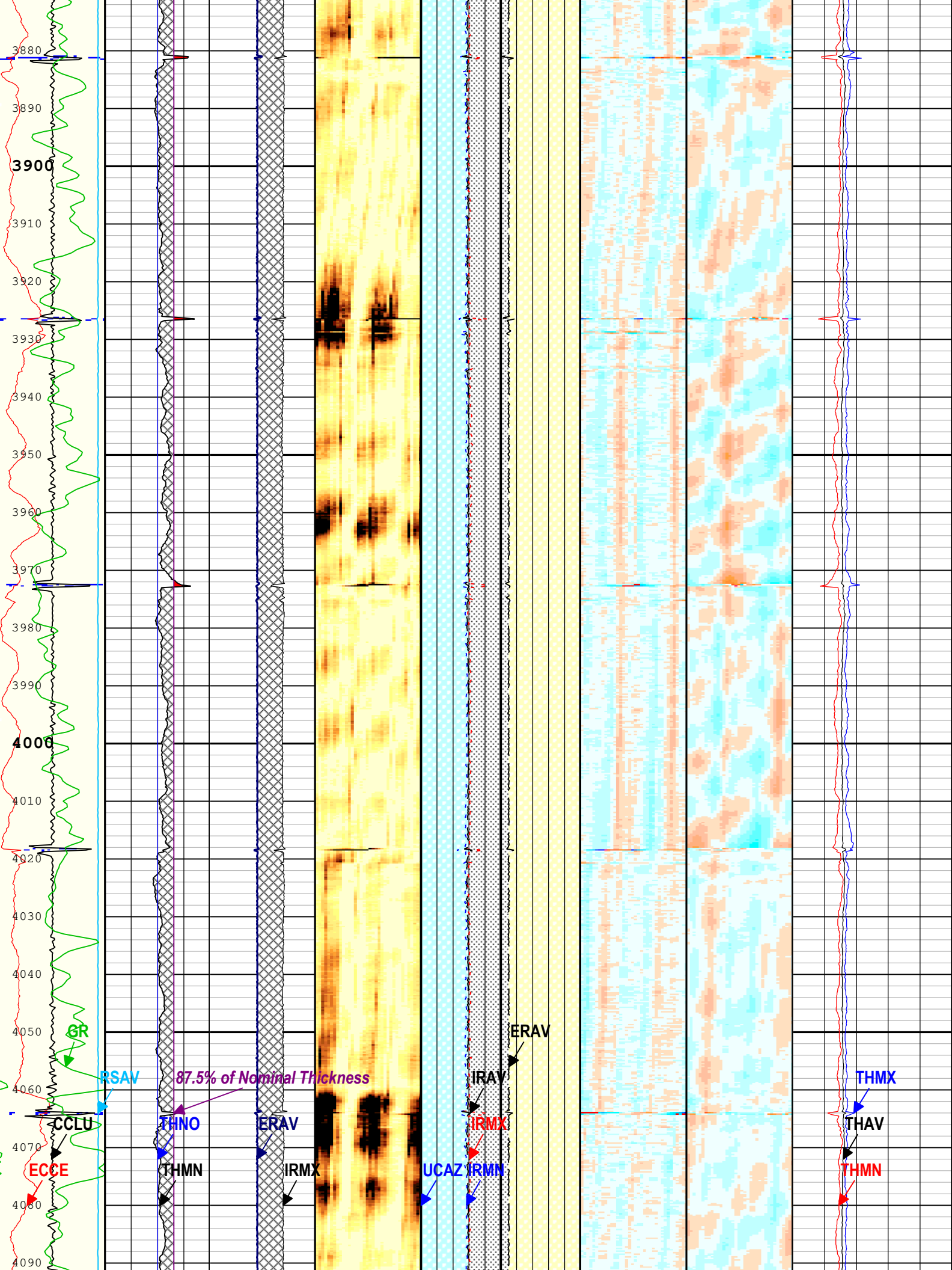


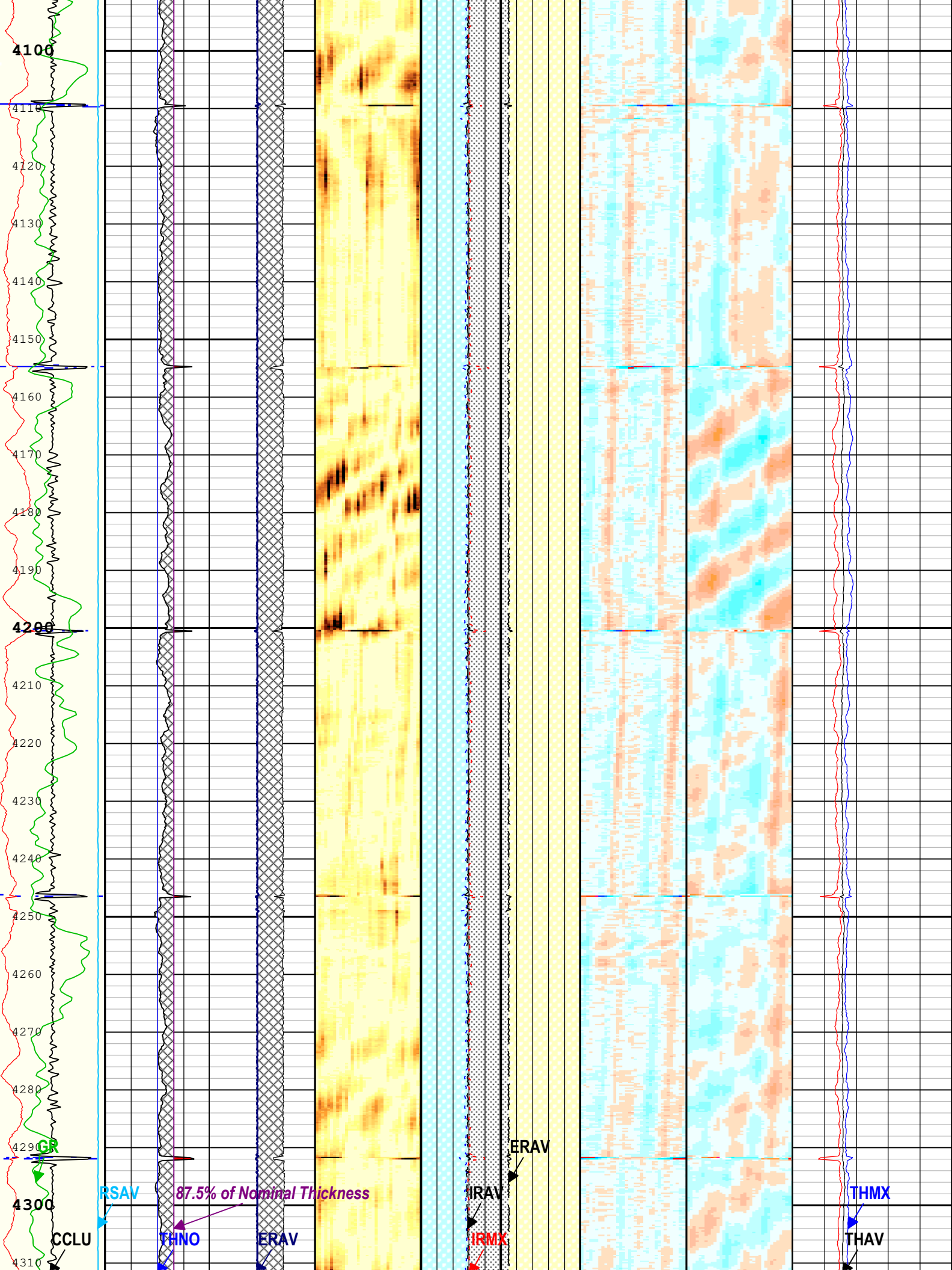


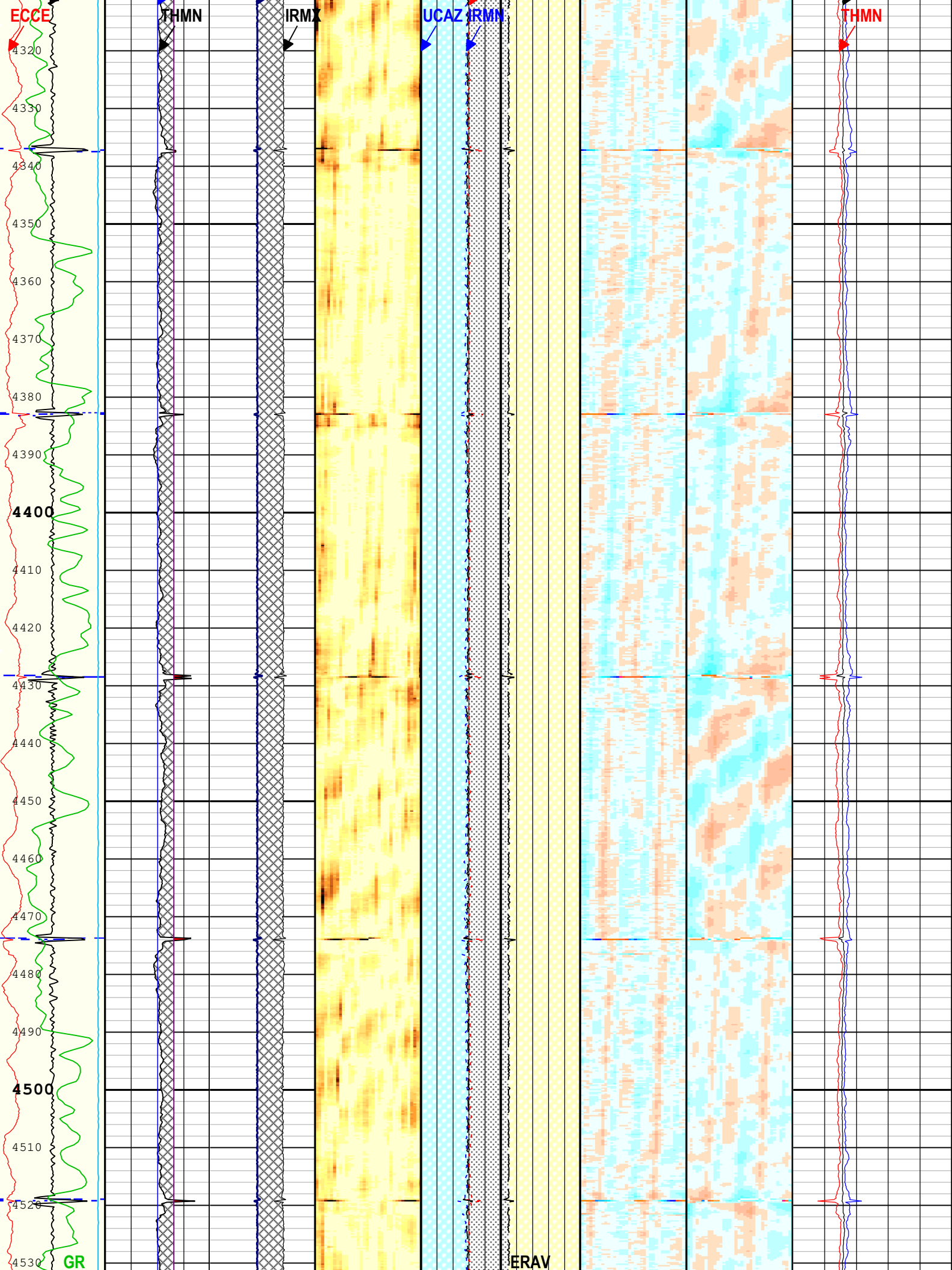


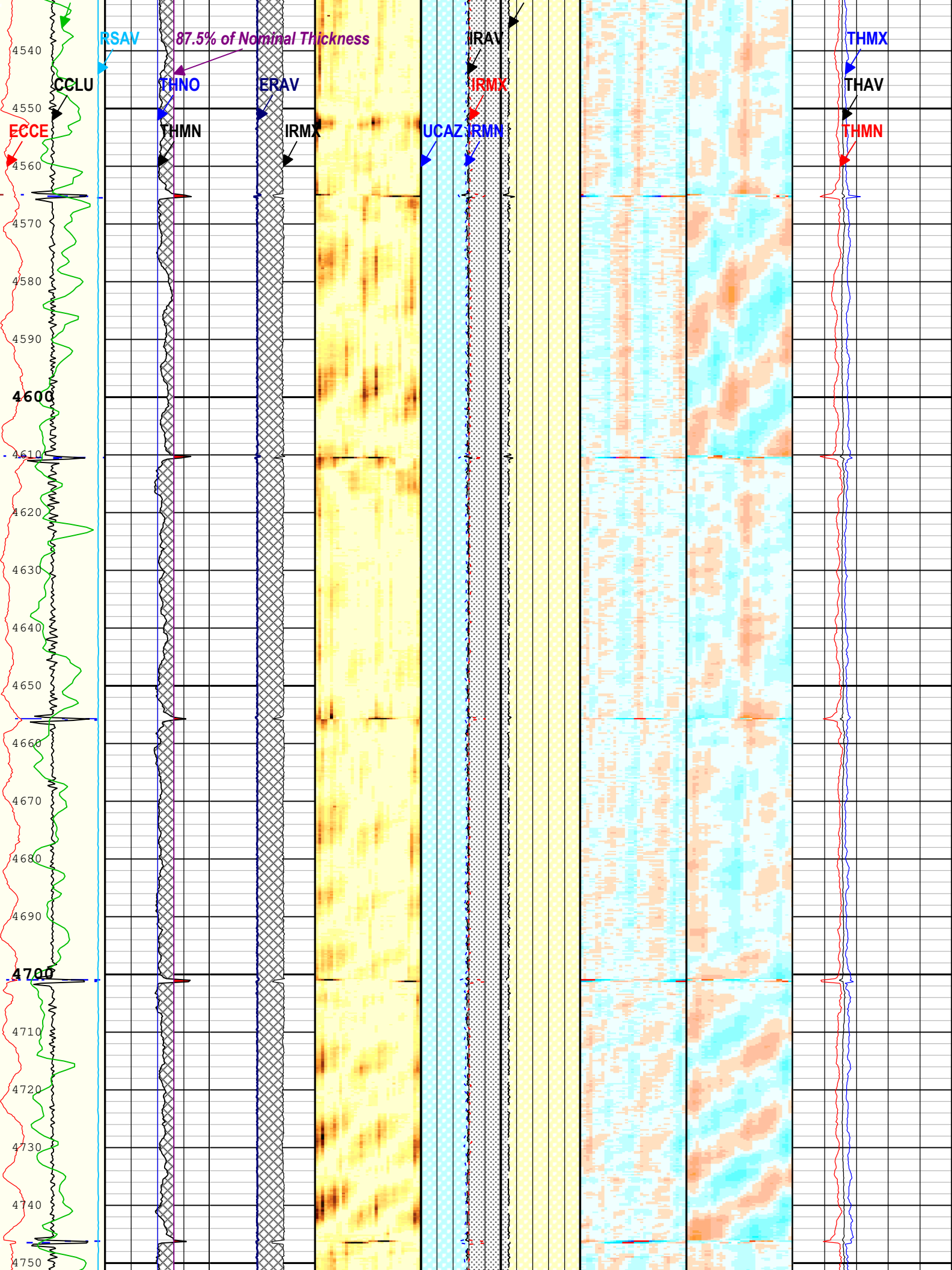












4540

4550

4560

4570

4580

4590

4600

4610

4620

4630

4640

4650

4660

4670

4680

4690

4700

4710

4720

4730

4740

4750

RSAV

CCLU

ECCE

THNO

THMN

ERAV

IRMX

UCAZ

IRMV

THMX

THAV

THMN

87.5% of Nominal Thickness

IRAV

IRMX

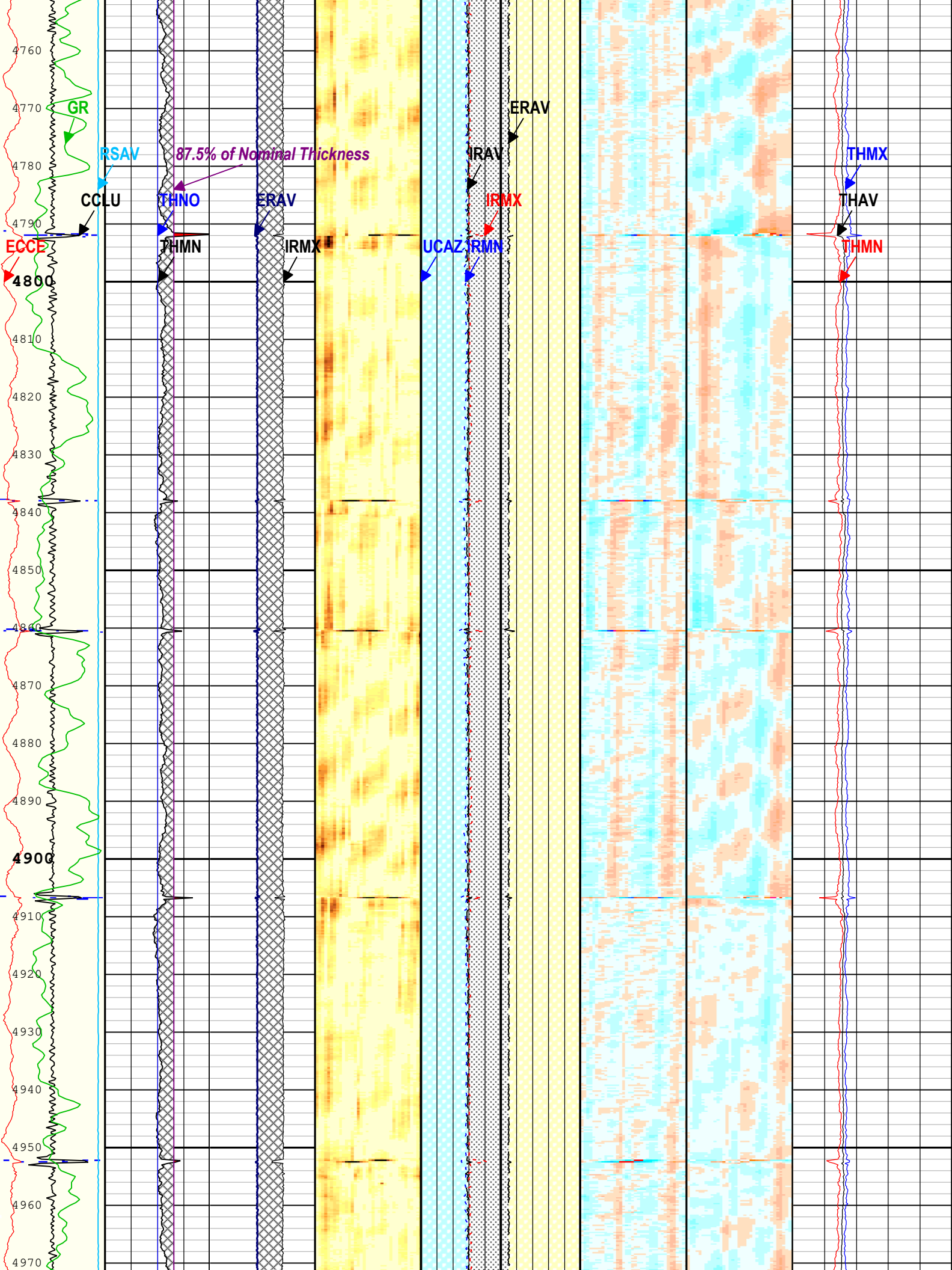
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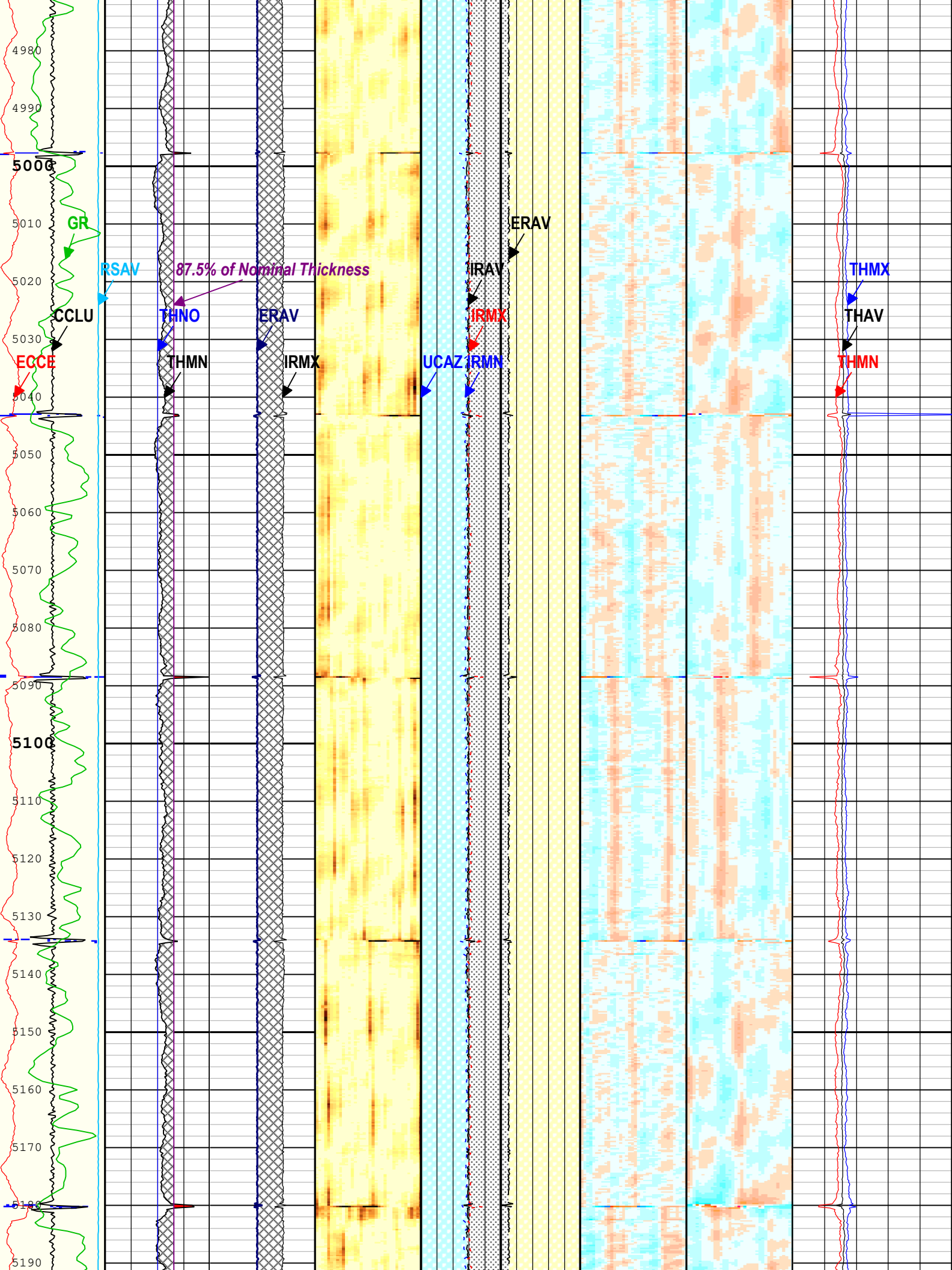
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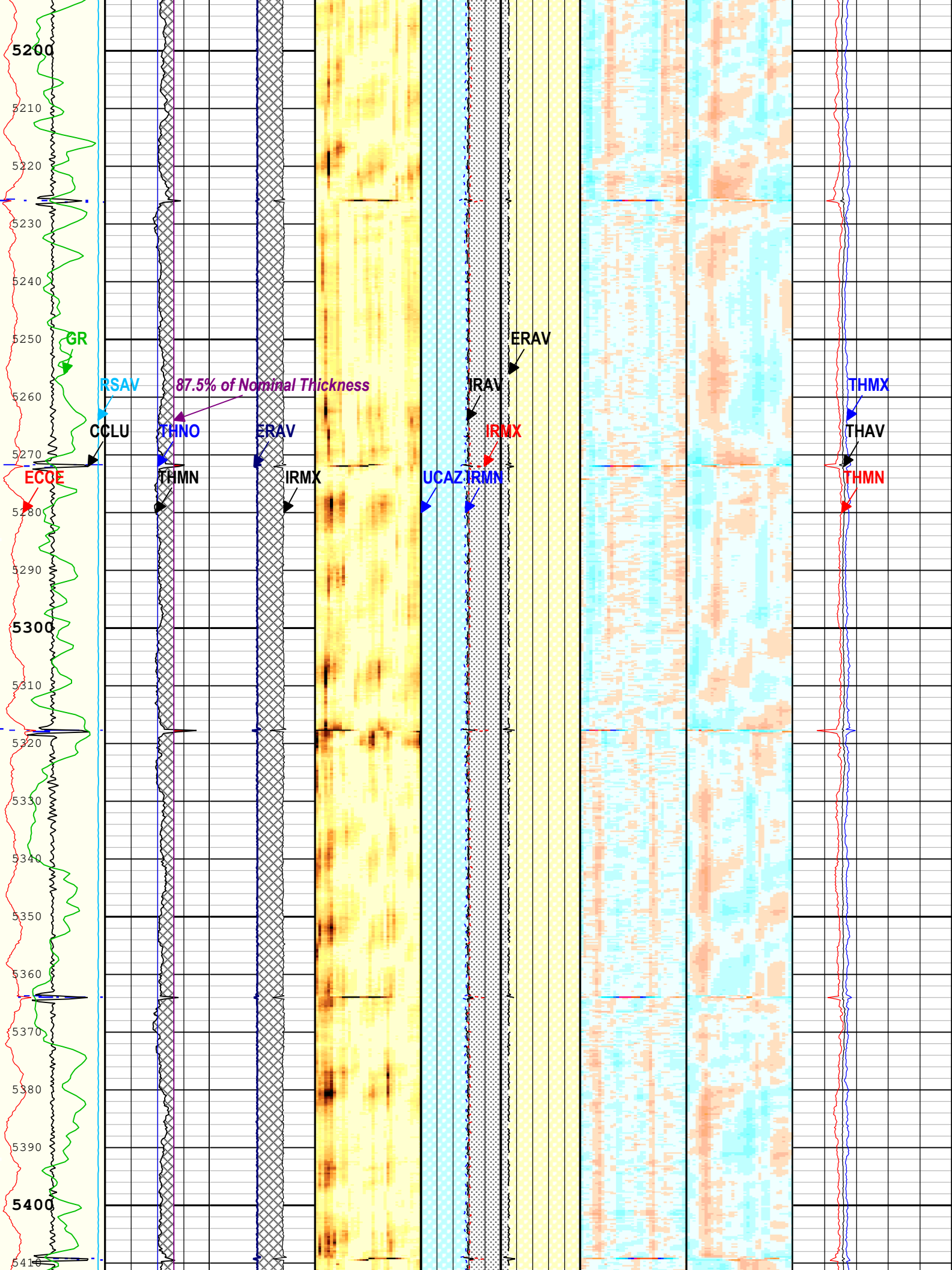
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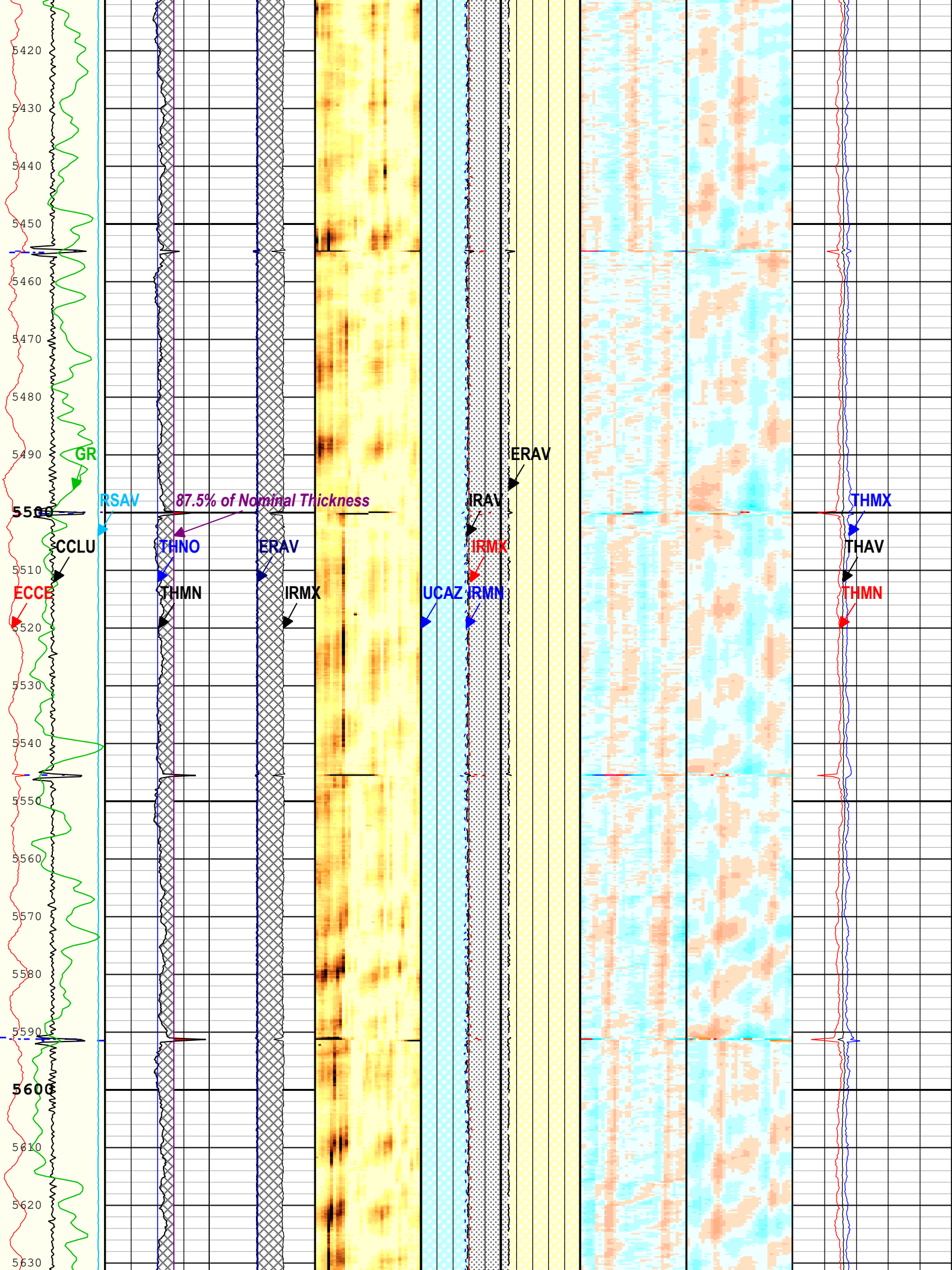
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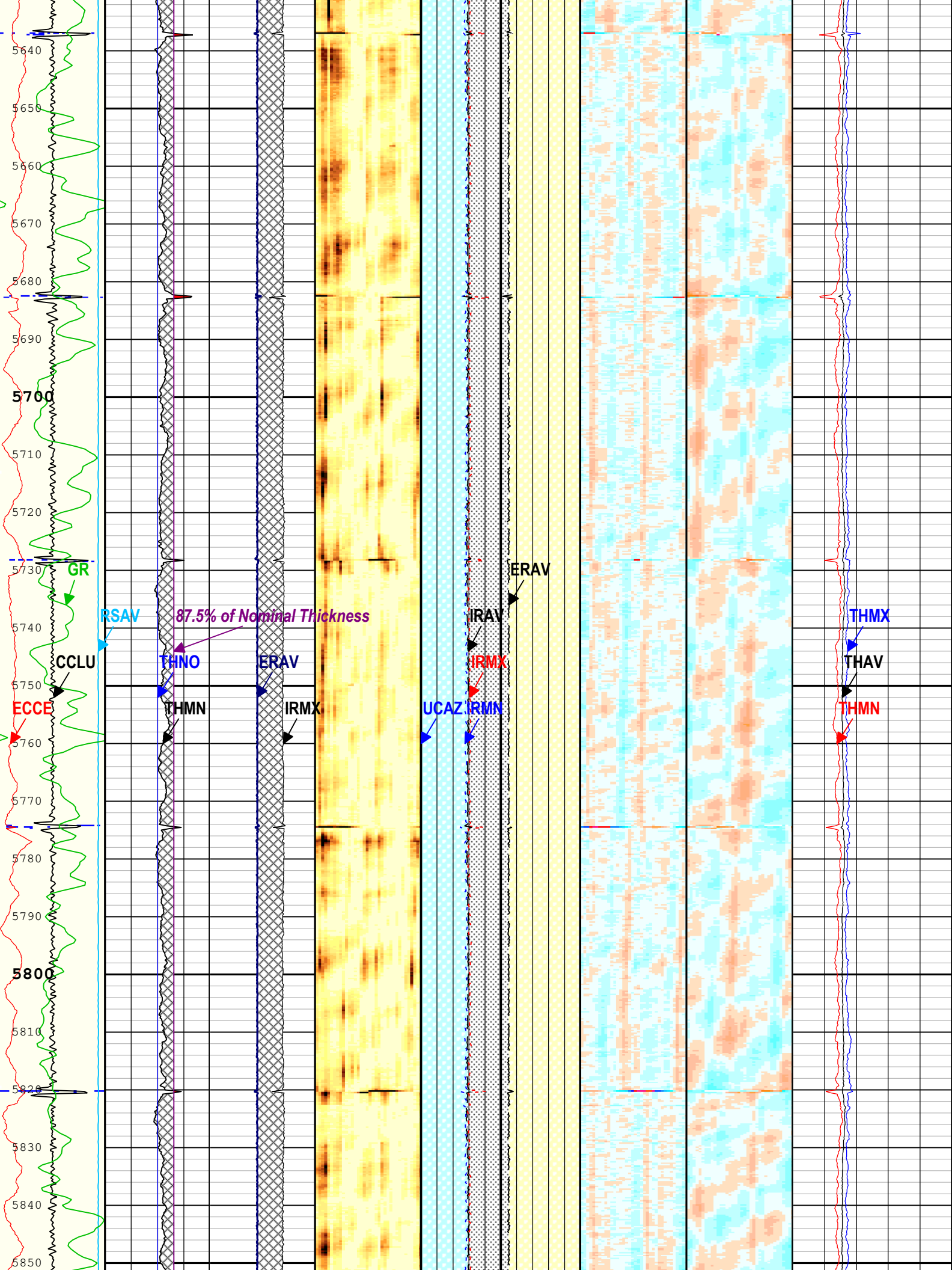
THMN











5640
5650
5660
5670
5680
5690
5700
5710
5720
5730
5740
5750
5760
5770
5780
5790
5800
5810
5820
5830
5840
5850

RSAV
CCLU
ECCE

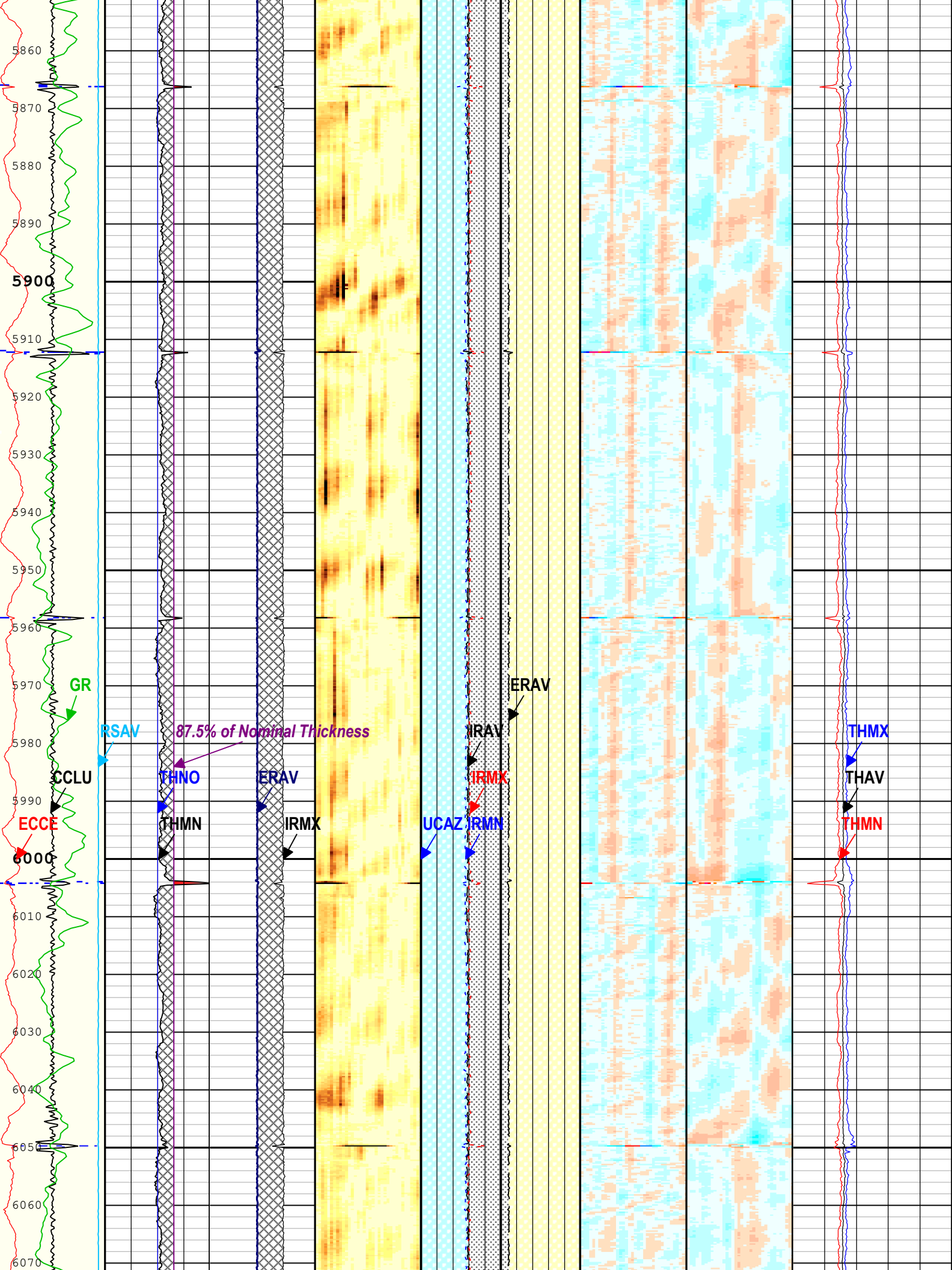
THNO
THMN

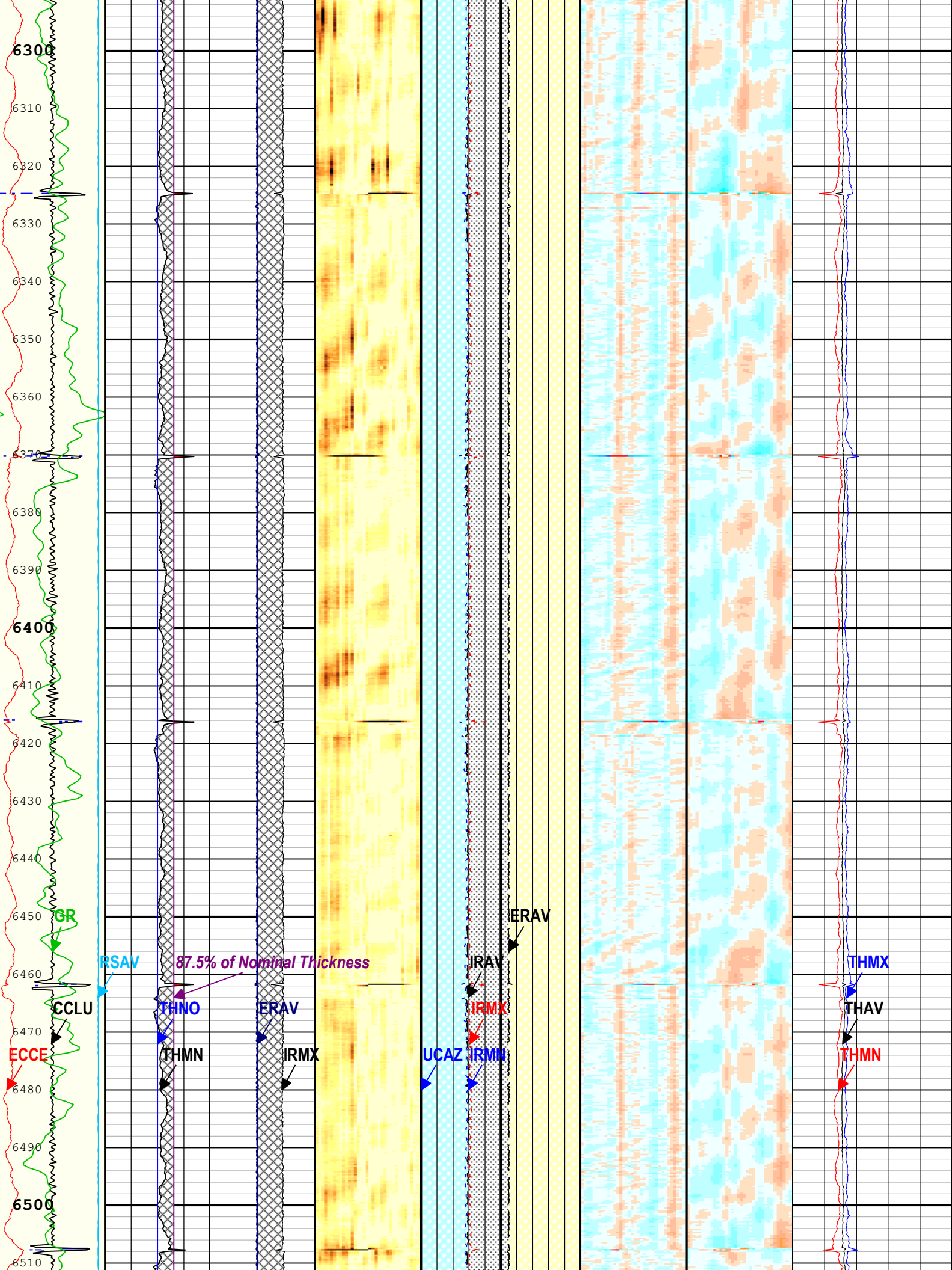
ERAV
IRMX

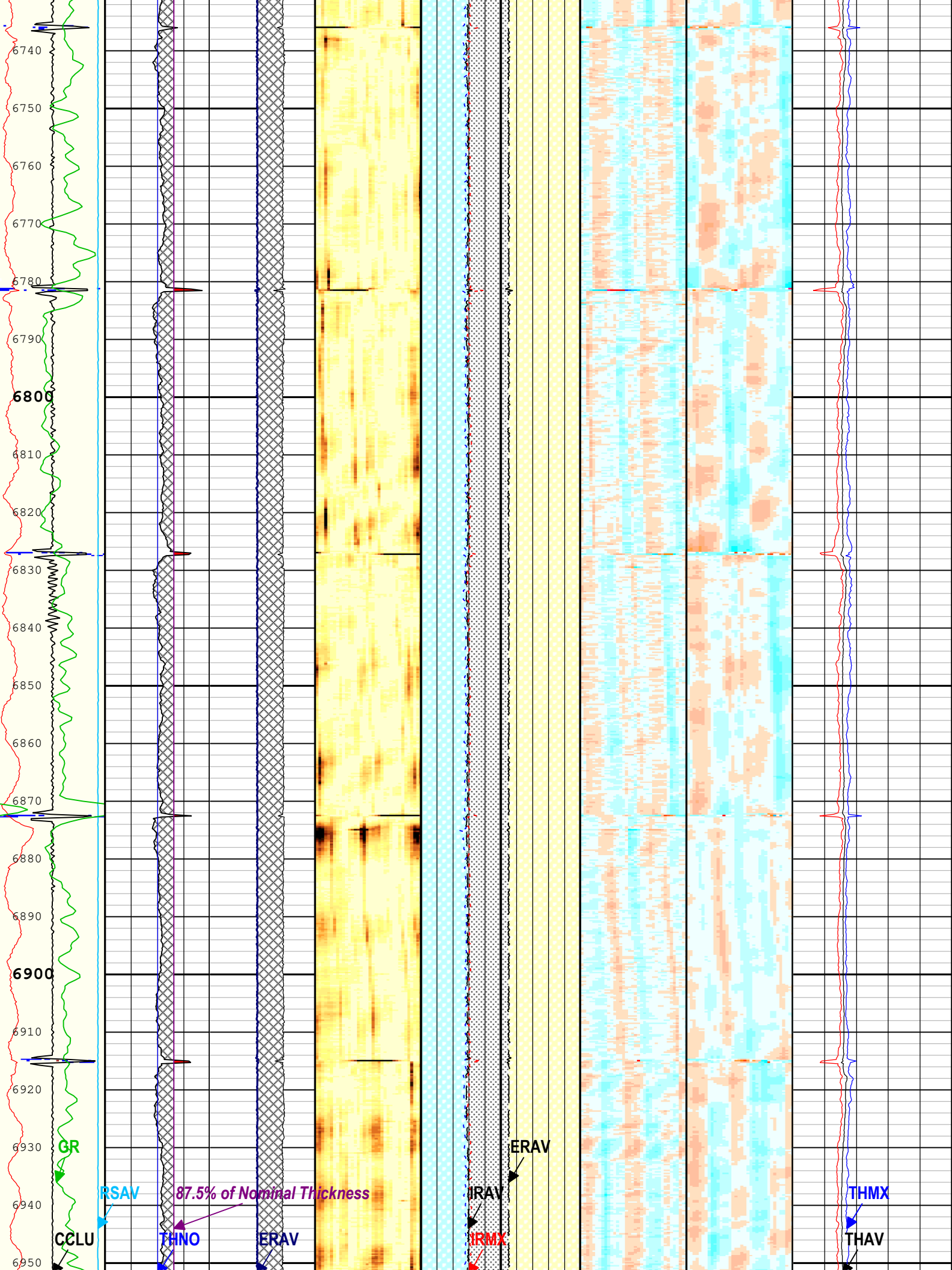
UCAZ
IRAV
IRMX

THMX
THAV
THMN

87.5% of Nominal Thickness







6740
6750
6760
6770
6780
6790
6800
6810
6820
6830
6840
6850
6860
6870
6880
6890
6900
6910
6920
6930
6940
6950

GR
CCLU

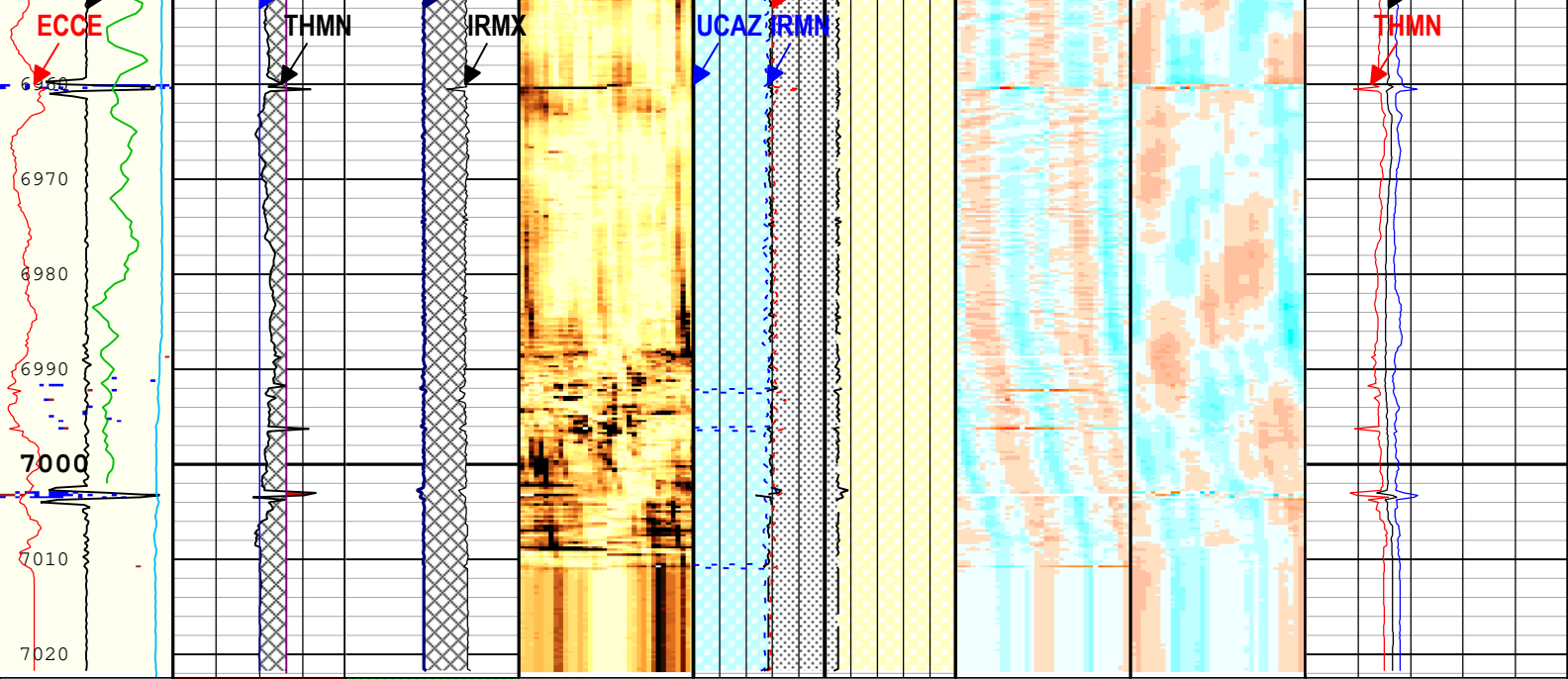
THNO

87.5% of Nominal Thickness

ERAV

IRAV
IRMX

THMX
THAV



Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5	Large Reduction from Nominal Thickness Casing Within 87.5% of Nominal Thickness Thickness Minimum Value (THMN) USIT-E 0.35 in 0.15	Internal Radius Exceeds External Average Casing Thickness (Between Max Internal and External Average) Internal Radius Maximum Value (IRMX) USIT-E 2.7 in 1.7	Explicit Normalization USIT - Amplitude of Wave (AWBK) USIT-E (dB) Ultrasonic Azimuth (UCAZ) USIT-E 360 deg 0	Internal Radius Minimum Value (IRMN) USIT-E 1.7 in 2.7 Internal Radius Maximum Value (IRMX) USIT-E 1.7 in 2.7 Internal Radius Averaged Value (IRAV) USIT-E 1.7 in 2.7 External Radii Average (ERAV) USIT-E 1.7 in 2.7	Explicit Normalization USIT - Internal Radii Normalized (IRBK) USIT-E (in) Explicit Normalization USIT - Casing Thickness Normalized (THBK) USIT-E (in)	Thickness Minimum Value (THMN) USIT-E 0.1 in 0.6 Thickness Average Value (THAV) USIT-E 0.1 in 0.6 Thickness Maximum Value (THMX) USIT-E 0.1 in 0.6
Motor Revolution Speed (RSAV) USIT-E 6 c/s 7.5	<i>87.5% of Nominal Thickness</i> 0.35 in 0.15	External Radii Average (ERAV) USIT-E 2.7 in 1.7				
GR 0 gAPI 150						

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (IBC Casing Integrity 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Oct-2022 20:34:41

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	Depth Zoned	in
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi

DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
HEMA	Hematite Presence Flag	Borehole	No	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	Theoretical	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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)
BS	26	0	103
BS	12.25	103	1415
BS	7.875	1415	7022.5

All depth are actual.

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMXV	EMEX Voltage	USIT-E	50	V
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in	
VRES	Vertical Resolution	USIT-E	3.0 in	

One

HiRes repeat

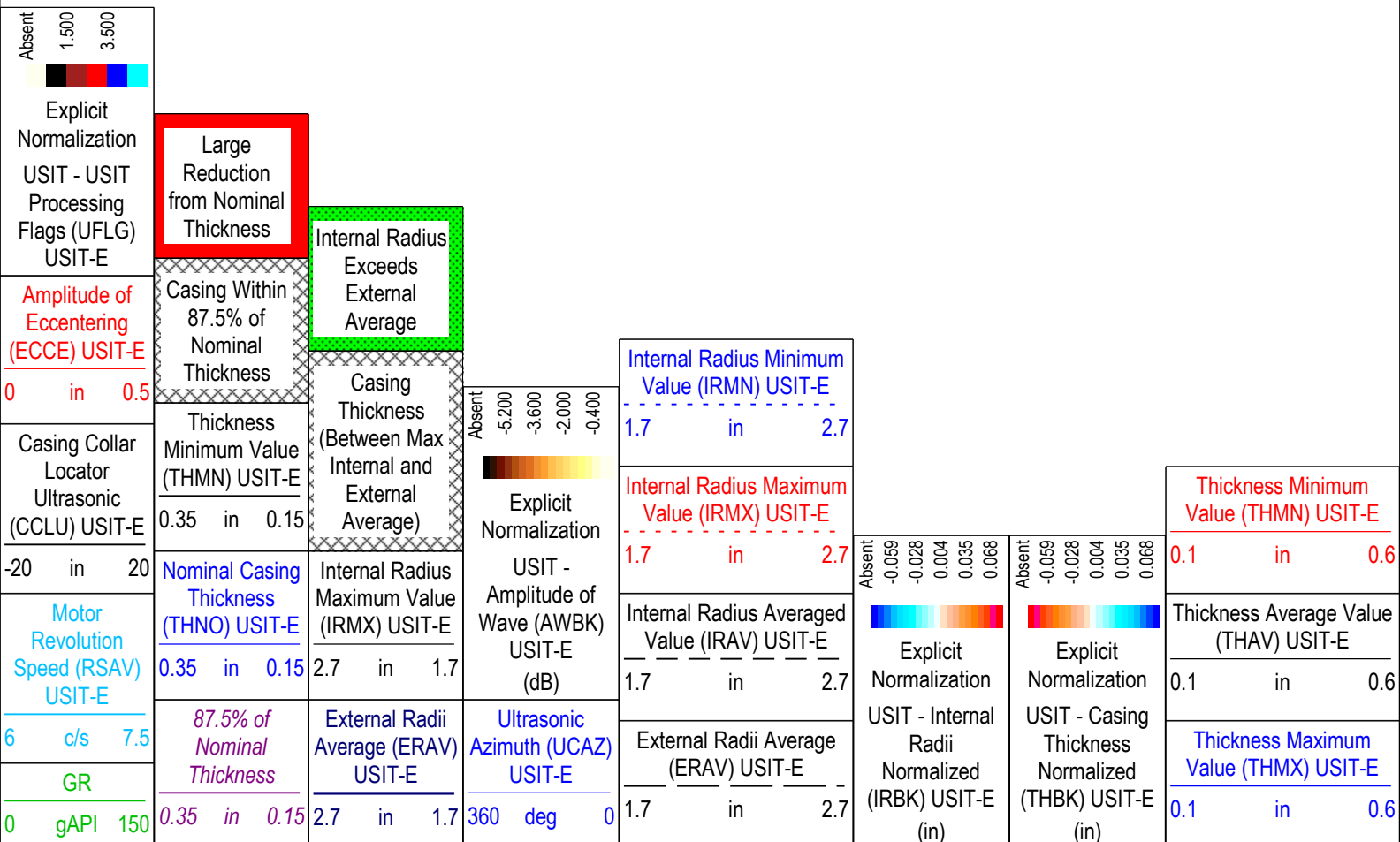
Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220287 Wireline_NPD-ThruBit-2022.1_12.1.219291

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	990.92 ft	1056.92 ft	11-Oct-2022 4:20:52 PM	11-Oct-2022 4:23:57 PM	ON	3.26 ft	Yes

All depths are referenced to toolstring zero



Absent
1.500
3.500

Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

Large Reduction from Nominal Thickness

Internal Radius Exceeds External Average

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

Casing Within 87.5% of Nominal Thickness

Casing Thickness (Between Max Internal and External Average)

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization

Internal Radius Minimum Value (IRMN) USIT-E
1.7 in 2.7

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Thickness Minimum Value (THMN) USIT-E
0.35 in 0.15

Internal Radius Maximum Value (IRMX) USIT-E
2.7 in 1.7

Internal Radius Maximum Value (IRMX) USIT-E
1.7 in 2.7

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization

Thickness Minimum Value (THMN) USIT-E
0.1 in 0.6

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Nominal Casing Thickness (THNO) USIT-E
0.35 in 0.15

External Radii Average (ERAV) USIT-E
2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E
1.7 in 2.7

USIT - Internal Radii Normalized (IRBK) USIT-E (in)

USIT - Casing Thickness Normalized (THBK) USIT-E (in)

Thickness Average Value (THAV) USIT-E
0.1 in 0.6

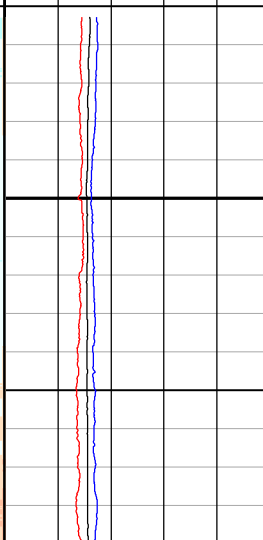
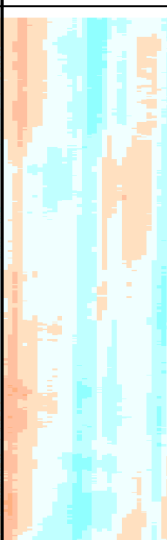
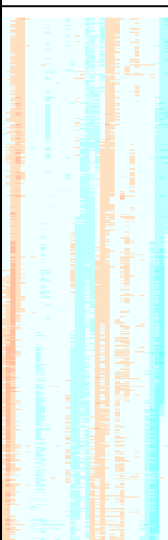
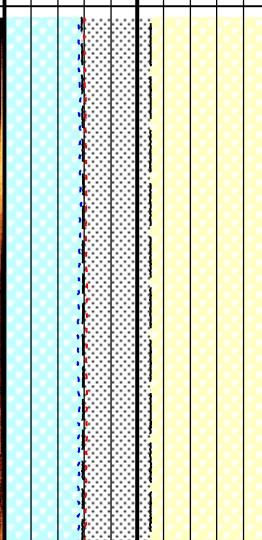
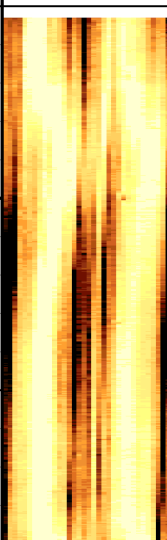
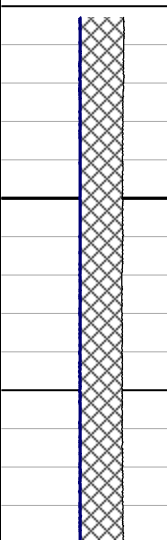
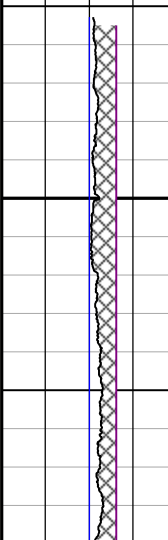
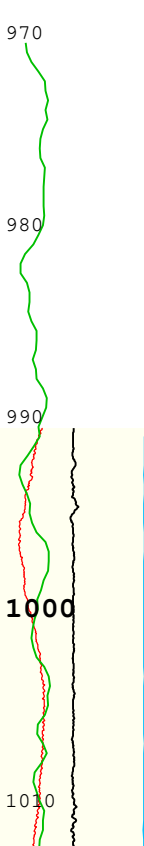
GR
0 gAPI 150

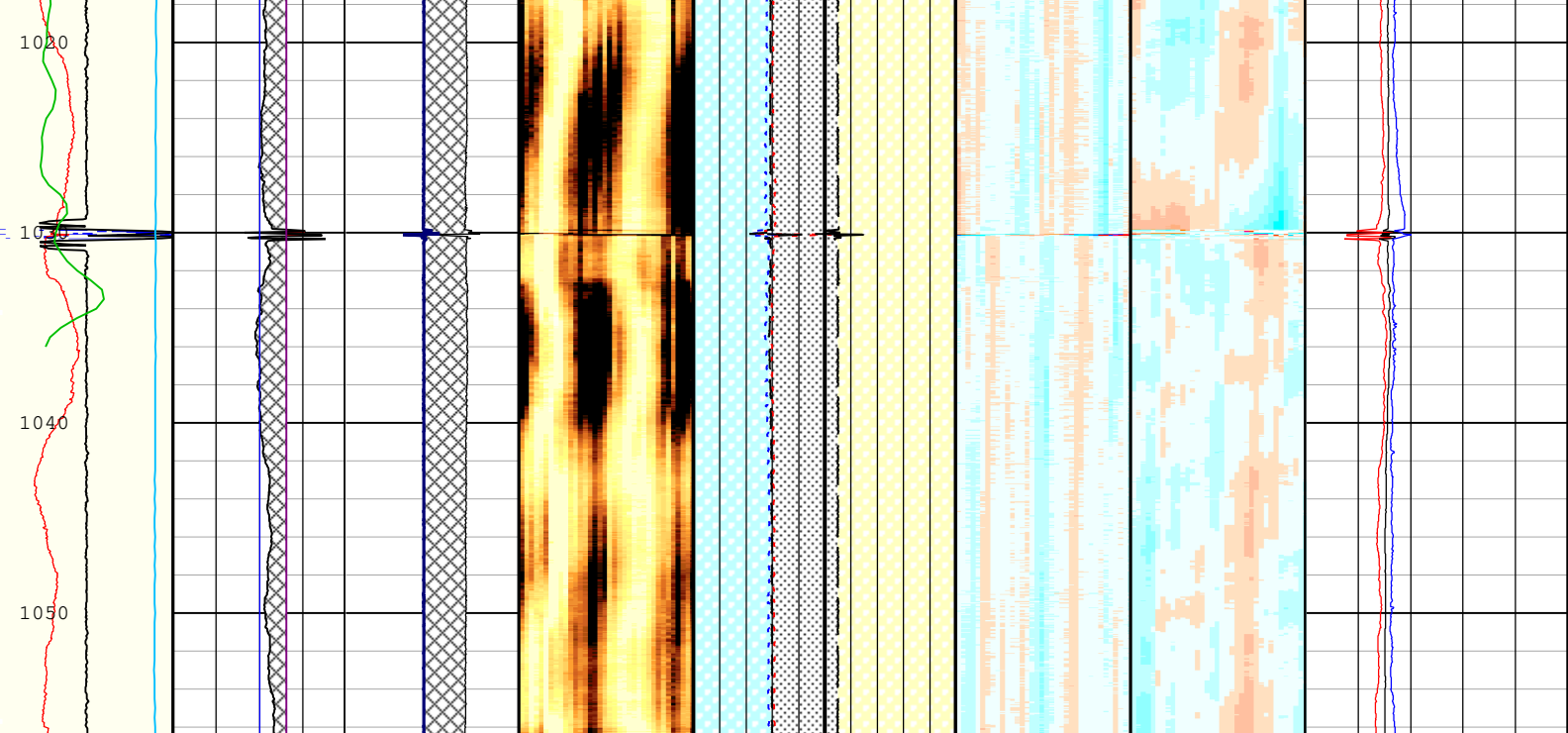
87.5% of Nominal Thickness
0.35 in 0.15

Ultrasonic Azimuth (UCAZ) USIT-E
360 deg 0

External Radii Average (ERAV) USIT-E
1.7 in 2.7

Thickness Maximum Value (THMX) USIT-E
0.1 in 0.6





<p>Absent 1.500 3.500</p> <p>Explicit Normalization</p> <p>USIT - USIT Processing Flags (UFLG) USIT-E</p> <p>Amplitude of Eccentering (ECCE) USIT-E</p> <p>0 in 0.5</p> <p>Casing Collar Locator Ultrasonic (CCLU) USIT-E</p> <p>-20 in 20</p> <p>Motor Revolution Speed (RSAV) USIT-E</p> <p>6 c/s 7.5</p> <p>GR</p> <p>0 gAPI 150</p>	<p>Large Reduction from Nominal Thickness</p> <p>Casing Within 87.5% of Nominal Thickness</p> <p>Thickness Minimum Value (THMN) USIT-E</p> <p>0.35 in 0.15</p> <p>Nominal Casing Thickness (THNO) USIT-E</p> <p>0.35 in 0.15</p> <p>87.5% of Nominal Thickness</p> <p>0.35 in 0.15</p>	<p>Internal Radius Exceeds External Average</p> <p>Casing Thickness (Between Max Internal and External Average)</p> <p>Internal Radius Maximum Value (IRMX) USIT-E</p> <p>2.7 in 1.7</p> <p>External Radii Average (ERAV) USIT-E</p> <p>2.7 in 1.7</p>	<p>Absent -5.200 -3.600 -2.000 -0.400</p> <p>Explicit Normalization</p> <p>USIT - Amplitude of Wave (AWBK) USIT-E</p> <p>Ultrasonic Azimuth (UCAZ) USIT-E</p> <p>360 deg 0</p>	<p>Internal Radius Minimum Value (IRMN) USIT-E</p> <p>1.7 in 2.7</p> <p>Internal Radius Maximum Value (IRMX) USIT-E</p> <p>1.7 in 2.7</p> <p>Internal Radius Averaged Value (IRAV) USIT-E</p> <p>1.7 in 2.7</p> <p>External Radii Average (ERAV) USIT-E</p> <p>1.7 in 2.7</p>	<p>Absent -0.059 -0.028 0.004 0.035 0.068</p> <p>Explicit Normalization</p> <p>USIT - Internal Radii Normalized (IRBK) USIT-E (in)</p> <p>Explicit Normalization</p> <p>USIT - Casing Thickness Normalized (THBK) USIT-E (in)</p>	<p>Thickness Minimum Value (THMN) USIT-E</p> <p>0.1 in 0.6</p> <p>Thickness Average Value (THAV) USIT-E</p> <p>0.1 in 0.6</p> <p>Thickness Maximum Value (THMX) USIT-E</p> <p>0.1 in 0.6</p>
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TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (IBC Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
 Creation Date: 11-Oct-2022 20:34:56

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	12.25	in
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	

IHNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
HEMA	Hematite Presence Flag	Borehole	No	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	Theoretical	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMXV	EMEX Voltage	USIT-E	50	V
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 0.6 in	
VRES	Vertical Resolution	USIT-E	0.6 in	

One

HiRes repeat

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220287 Wireline_NPD-ThruBit-2022.1_12.1.219291

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	918.66 ft	952.28 ft	11-Oct-2022 4:24:37 PM	11-Oct-2022 4:26:10 PM	ON	3.12 ft	Yes

All depths are referenced to toolstring zero

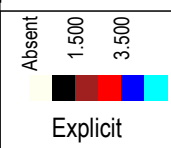
Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-11

One: Log[4]:Up:S004

Description: USI Corrosion Format: Log (IBC Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 11-Oct-2022 20:34:59

TIME_1900 - Time Marked every 60.00 (s)



Explicit Normalization	from Nominal Thickness	External Average	Explicit Normalization	1.7 in 2.7	Explicit Normalization	Explicit Normalization	0.1 in 0.6
USIT - USIT Processing Flags (UFLG) USIT-E	Casing Within 87.5% of Nominal Thickness	Casing Thickness (Between Max Internal and External Average)	USIT - Amplitude of Wave (AWBK) USIT-E	Internal Radius Maximum Value (IRMX) USIT-E 1.7 in 2.7	USIT - Internal Radii Normalized (IRBK) USIT-E (in)	USIT - Casing Thickness Normalized (THBK) USIT-E (in)	Thickness Average Value (THAV) USIT-E 0.1 in 0.6
Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5	Thickness Minimum Value (THMN) USIT-E 0.35 in 0.15	Internal Radius Maximum Value (IRMX) USIT-E 2.7 in 1.7	Ultrasonic Azimuth (UCAZ) USIT-E 360 deg 0	Internal Radius Averaged Value (IRAV) USIT-E 1.7 in 2.7			Thickness Maximum Value (THMX) USIT-E 0.1 in 0.6
Casing Collar Locator Ultrasonic (CCLU) USIT-E -20 in 20	Nominal Casing Thickness (THNO) USIT-E 0.35 in 0.15	External Radii Average (ERAV) USIT-E 2.7 in 1.7		External Radii Average (ERAV) USIT-E 1.7 in 2.7			
Motor Revolution Speed (RSAV) USIT-E 6 c/s 7.5	87.5% of Nominal Thickness 0.35 in 0.15						
GR 0 gAPI 150							

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (IBC Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 11-Oct-2022 20:34:59

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	12.25	in
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
HEMA	Hematite Presence Flag	Borehole	No	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	Theoretical	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMAX	EMAX	USIT-E	50	dB

EMXV	EMEX Voltage	USIT-E	50	
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 0.6 in	
VRES	Vertical Resolution	USIT-E	0.6 in	

One

HiRes repeat

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220287 Wireline_NPD-ThruBit-2022.1_12.1.219291

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[5]:Up	Up	406.23 ft	448.29 ft	11-Oct-2022 4:28:19 PM	11-Oct-2022 4:30:35 PM	ON	3.78 ft	Yes

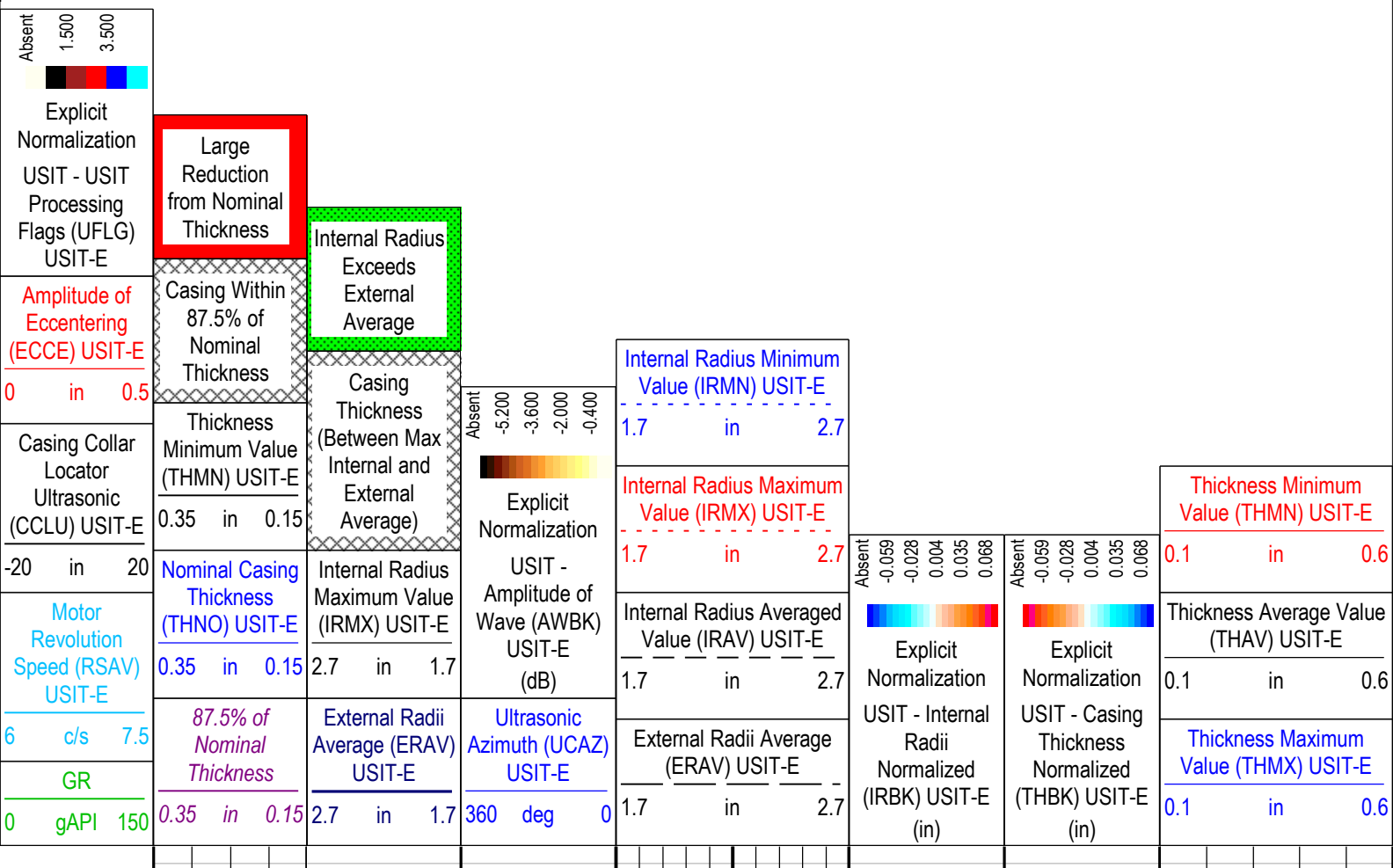
All depths are referenced to toolstring zero

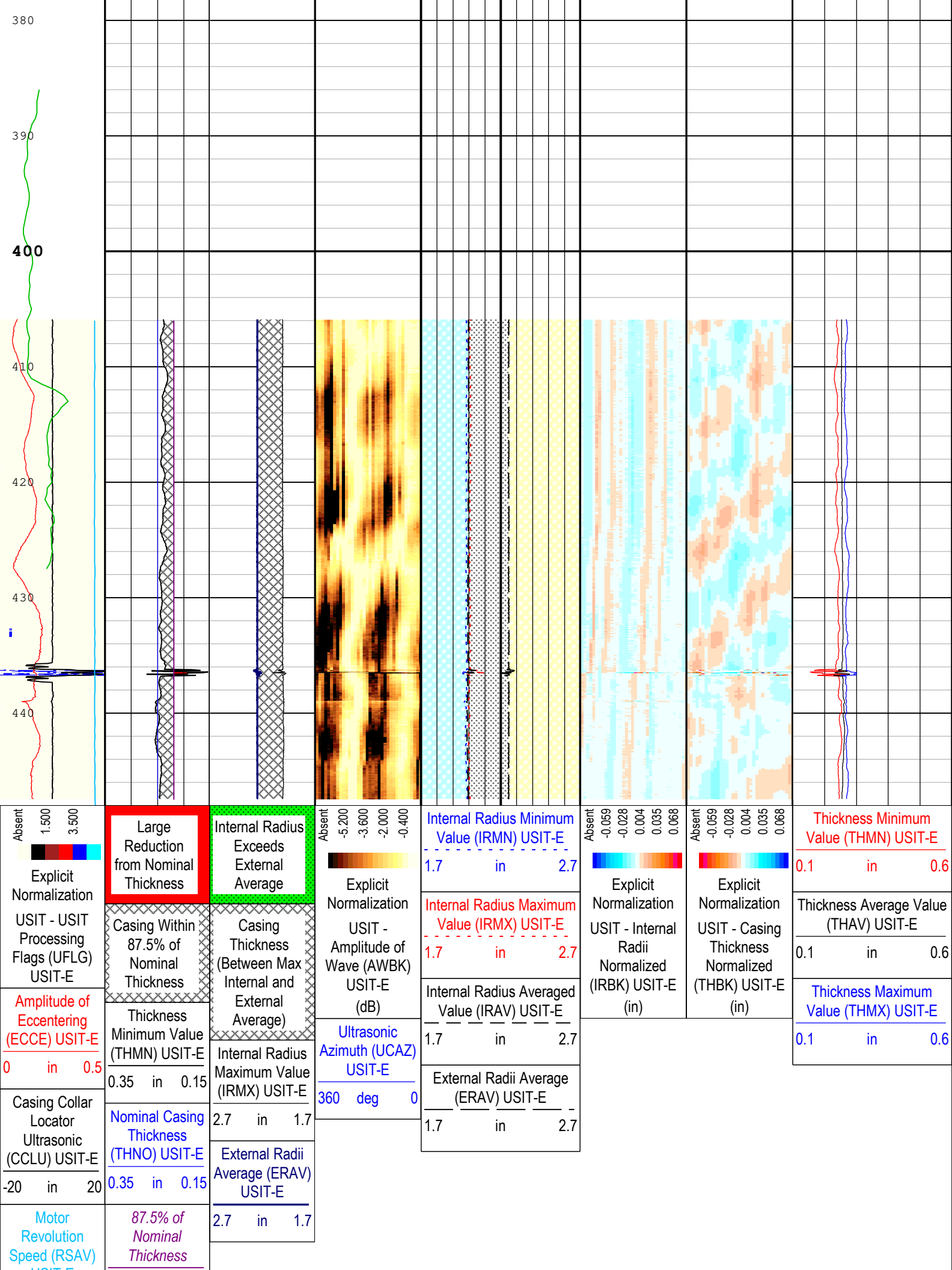
Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-11
One: Log[5]:Up:S004

Description: USI Corrosion Format: Log (IBC Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 11-Oct-2022 20:35:02

TIME_1900 - Time Marked every 60.00 (s)





380

390

400

410

420

430

440

Absent
1.500
3.500

Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Motor Revolution Speed (RSAV) USIT-E

Large Reduction from Nominal Thickness

Casing Within 87.5% of Nominal Thickness

Thickness Minimum Value (THMN) USIT-E
0.35 in 0.15

Nominal Casing Thickness (THNO) USIT-E
0.35 in 0.15

87.5% of Nominal Thickness

Internal Radius Exceeds External Average

Casing Thickness (Between Max Internal and External Average)

Internal Radius Maximum Value (IRMX) USIT-E
2.7 in 1.7

External Radii Average (ERAV) USIT-E
2.7 in 1.7

2.7 in 1.7

Absent
-5.200
-3.600
-2.000
-0.400

Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

Ultrasonic Azimuth (UCAZ) USIT-E
360 deg 0

Internal Radius Minimum Value (IRMN) USIT-E
1.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E
1.7 in 2.7

Internal Radius Averaged Value (IRAV) USIT-E
1.7 in 2.7

External Radii Average (ERAV) USIT-E
1.7 in 2.7

Absent
-0.059
-0.028
0.004
0.035
0.068

Explicit Normalization
USIT - Internal Radii Normalized (IRBK) USIT-E (in)

Absent
-0.059
-0.028
0.004
0.035
0.068

Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E (in)

Thickness Minimum Value (THMN) USIT-E
0.1 in 0.6

Thickness Average Value (THAV) USIT-E
0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E
0.1 in 0.6

USIT-E	0.35	in	0.15
6	c/s	7.5	
GR			
0	gAPI	150	

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (IBC Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
 Creation Date: 11-Oct-2022 20:35:02

Channel Processing Parameters

One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	12.25	in
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
HEMA	Hematite Presence Flag	Borehole	No	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	Theoretical	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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

One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMXV	EMEX Voltage	USIT-E	50	V
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 0.6 in	
VRES	Vertical Resolution	USIT-E	0.6 in	

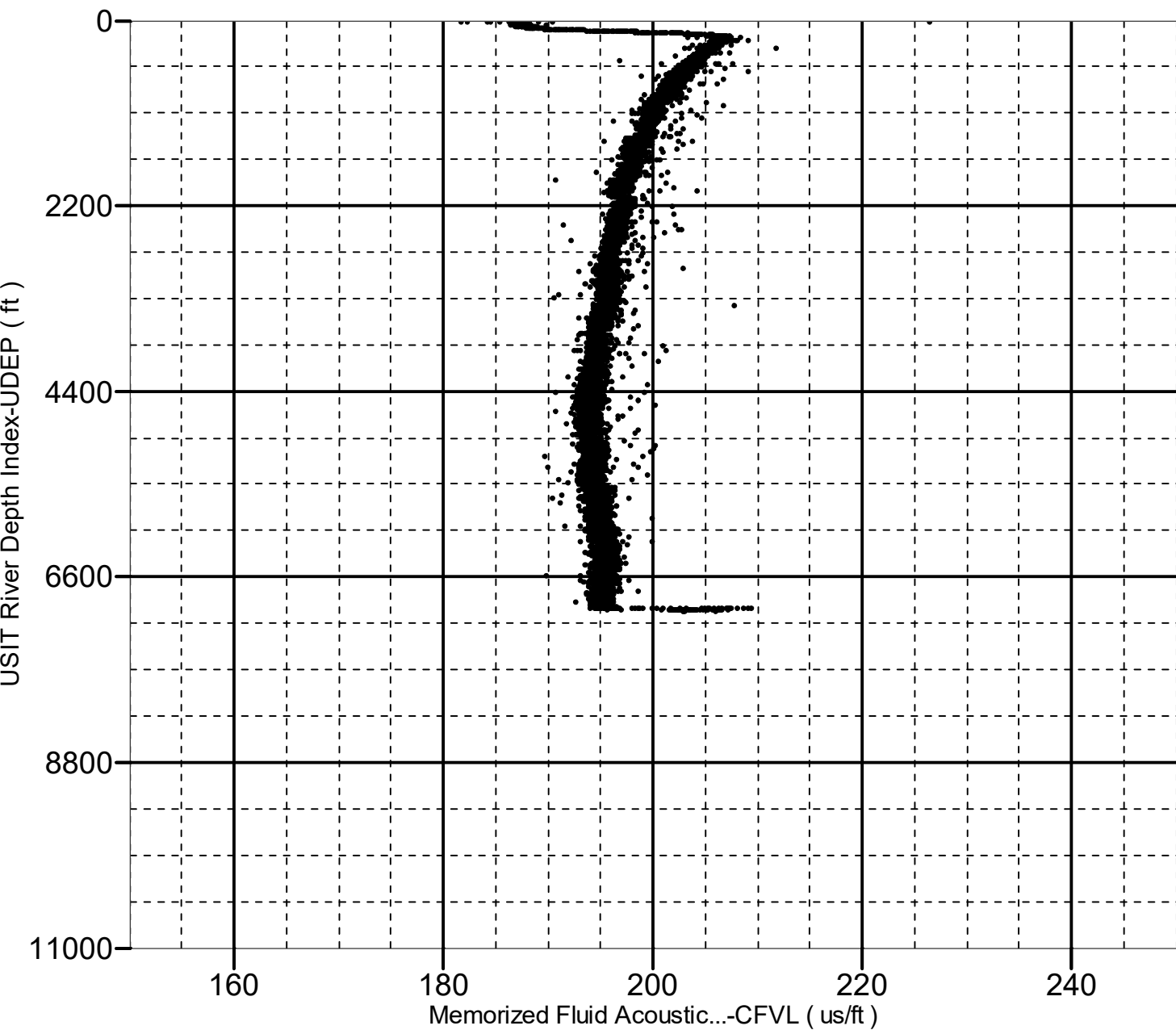
XYZ
Company:Chevron USA Inc. Well:SKR 598-36-BV-11

One: Log[2]:Up:S004

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7022.50 to 14.00 ft



XYZ

Company:Chevron USA Inc. Well:SKR 598-36-BV-11

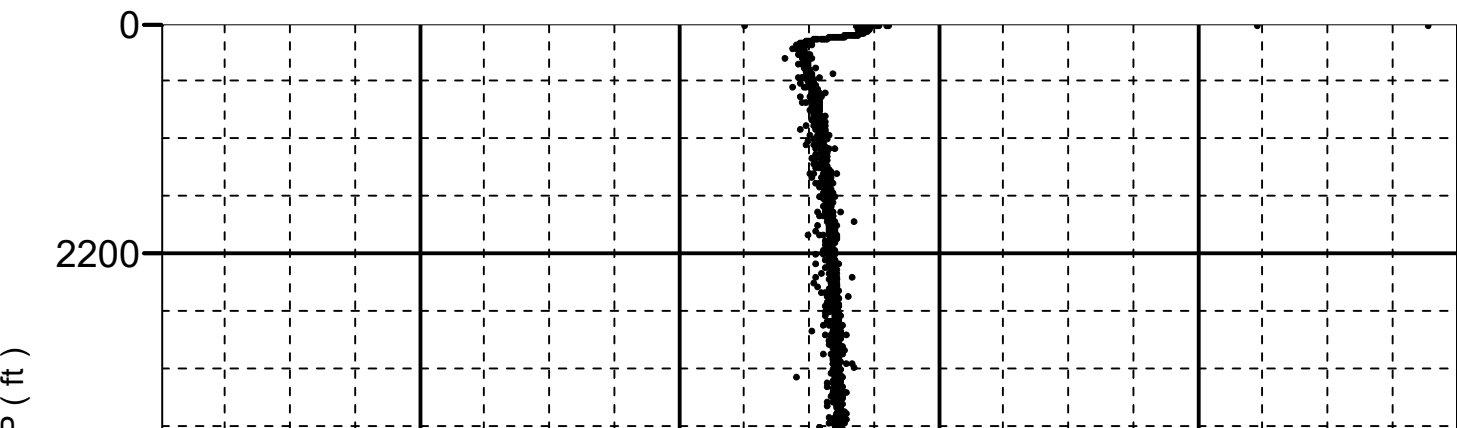
One: Log[2]:Up:S004

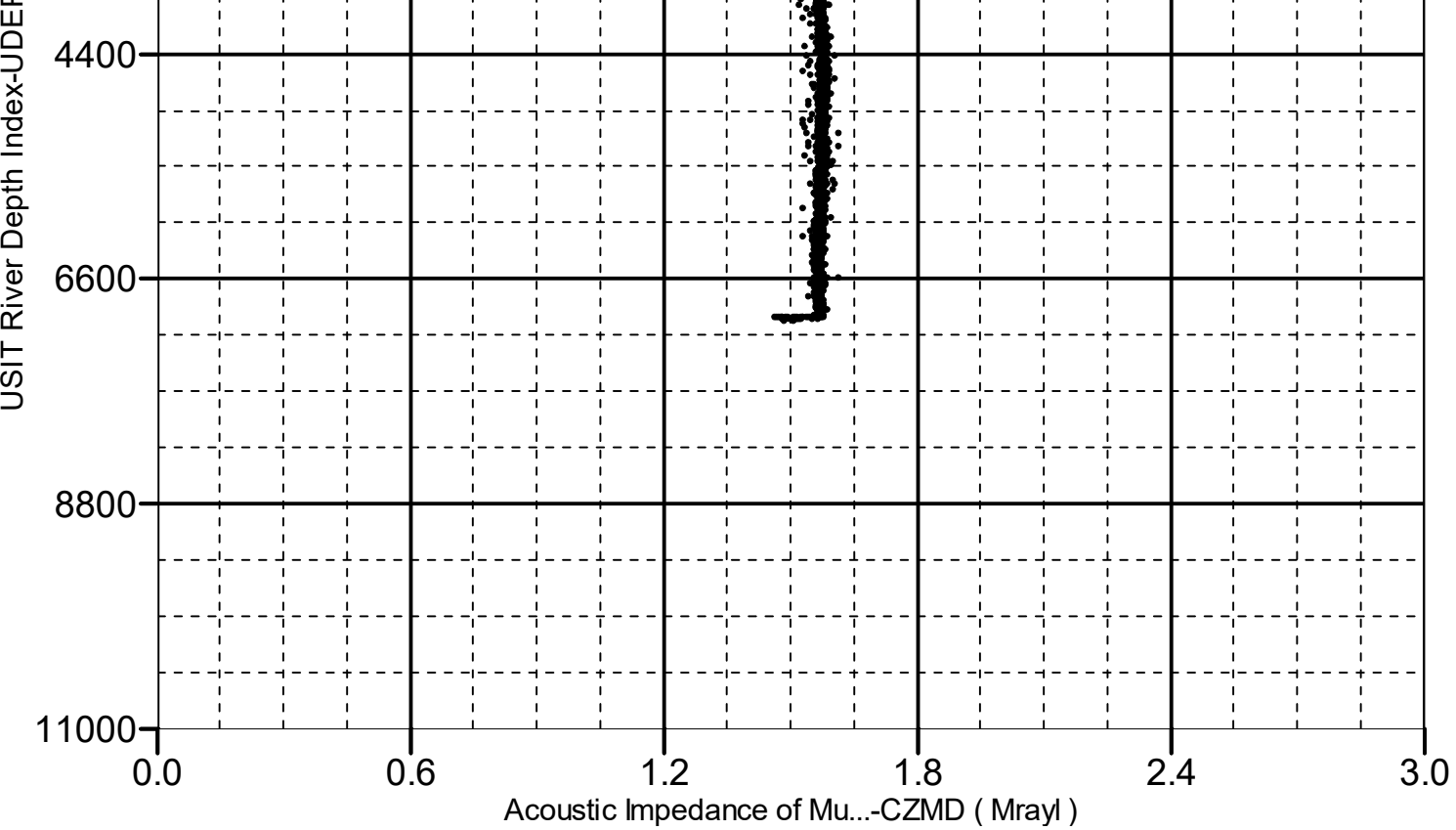
Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7022.50 to 14.00 ft

● CZMD-UDEP





Company: Chevron USA Inc.

Schlumberger

Well: SKR 598-36-BV-11

Field: Skinner Ridge

County: Garfield

State: Colorado

Ultrasonic Imager

Casing Integrity

Gamma Ray - CCL Log