Schlumberger

Company: Chevron USA Inc.

Well: SKR 598-36-BV-21

Field: Skinner Ridge

County: Garfield State: Colorado

Ultrasonic Imager

Casing Evaluation

Gamma Ray - CCL Log

County:	Garfield
Field:	Skinner Ridge
Location:	NWSW 36 5S98W
Well:	SKR 598-36-BV-21
Company:	Chevron USA Inc.

Location:
NWSW 36 5S98W
1331' FSL 501' FWL
Lat/Long: 39.56656 / -108.346561

Elev.: K.B. 6060.00 ft
G.L. 6035.00 ft
D.F. 6059.00 ft

Permanent Datum: Ground Level Elev.: 6035.00 f
Log Measured From: Kelly Bushing 25.00 ft above Perm.Datum
Drilling Measured From: Kelly Bushing

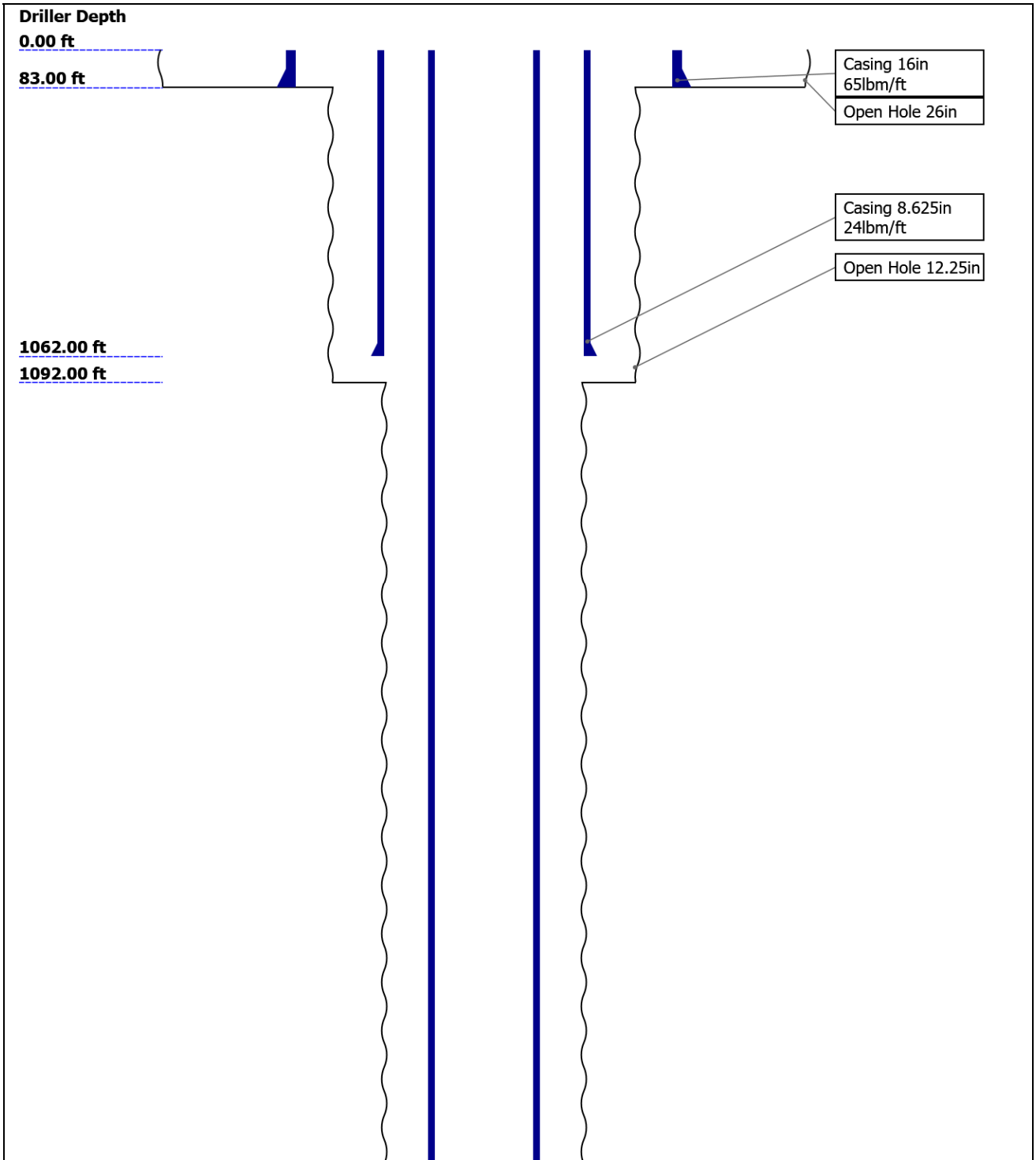
API Serial No.	Section:	Township:	Range:
05-045-16934	36	5S	98W

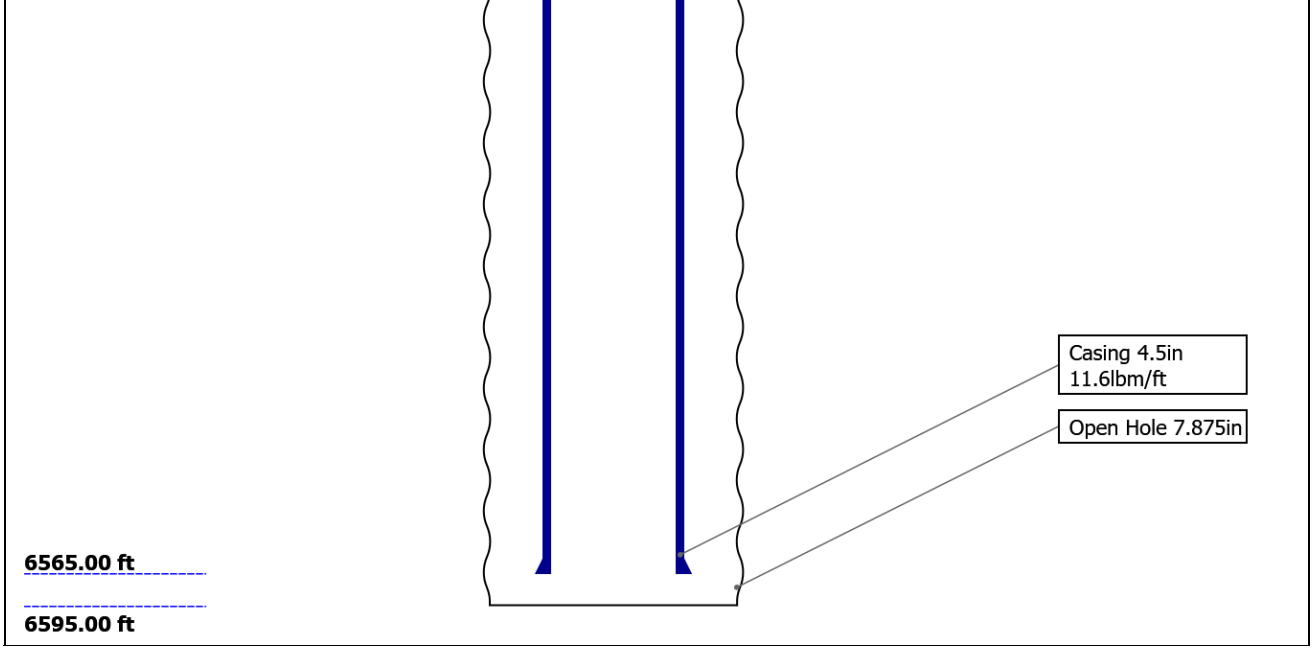
Logging Date		11-Aug-2022			
Run Number		1B			
Depth Driller		6595.00 ft			
Schlumberger Depth		6595.00 ft			
Bottom Log Interval		6505.00 ft			
Top Log Interval		25.00 ft			
Casing Fluid Type		Water			
Salinity					
Density		8.43 lbm/gal			
Fluid Level		8.00 ft			
BIT/CASING/TUBING STRING					
Bit Size		7.88 in			
From		1092.00 ft			
To		6595.00 ft			
Casing/Tubing Size		4.5 in			
Weight		11.6 lbm/ft			
Grade		N80			
From		0.00 ft			
To		6565.00 ft			
Max Recorded Temperatures		199.15 degF			
Logger on Bottom	Time	12-Aug-2022	11:04:00		
Unit Number	Location:	TAM	Fort Morgan		
Recorded By		J. Hahn / S. Strickland			
Witnessed By		Jess Jacobs			

Disclaimer

Contents

Well Sketch





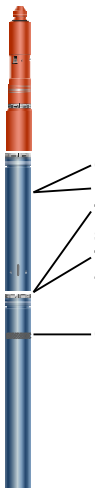
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26	12.25	7.875			
Top Driller (ft)	0	83	1092			
Top Logger (ft)	0	83	1092			
Bottom Driller (ft)	83	1092	6595			
Bottom Logger (ft)	83	1092	6595			
Casing						
Size (in)	16	8.625	4.5			
Weight (lbm/ft)	65	24	11.6			
Inner Diameter (in)	15.25	8.097	4			
Grade	N/A	J55	N80			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	83	1062	6565			
Bottom Logger (ft)	83	1062	6565			

Remarks and Equipment Summary

1B: Toolstring

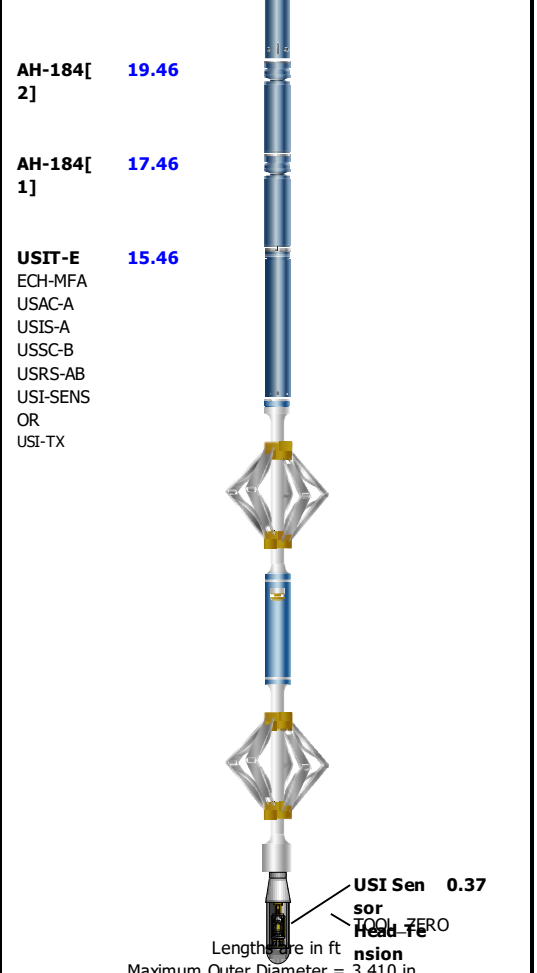
Equip name	Length
LEH-MT	31.11
LEH-MT	
DTC-H	27.96
ECH-KC	
DTC-H	
SGT-N	24.96
SGH-K	
SGC-TB	
SGD-TAA	



MP name	Offset
CTEM	27.06
HV	0.00
TelStatus	24.96
ToolStatus	24.96
GR	24.04

1B: Remarks

Thank you for choosing Schlumberger!
Log run for cement and casing evaluation
Tool string run as per tool sketch, centralized using Houma/booster kit
USRS-AB sub with USI-TX transducer
Log correlated to top joint
Main pass logged in 10 deg 3" Repeat passes logged at 10 deg 0.6"
Logs done in 0 psi and then 2500 psi surfaced induced pressure



Depth Summary

	1B		
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		
Tension Device			
Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		
Logging Cable			
Type	7-39PI-XS		
Serial Number	1234		
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Land		

1B:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	Schlumberger depth control procedures followed
Rig Up Length At Surface		IDW used as primary depth control system
Rig Up Length At Bottom		Z-Chart used as secondary depth control system
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[1]:Down	3.96	6493.69

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)

Mud Impedance = "Theoretical".
CZMD uses theoretical results.
MUD_N_THE=1.07
DFD=1.01g/cm3(8.43lbm/gal)

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

Pressure Pass

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Log[2]:Up	Up	3956.37 ft	6500.59 ft	11-Aug-2022 11:06:07 AM	11-Aug-2022 11:42:18 AM	ON	-4.43 ft	Yes
1B	Log[9]:Up	Up	10.39 ft	4206.44 ft	11-Aug-2022 1:15:45 PM	11-Aug-2022 1:58:28 PM	ON	0.50 ft	Yes

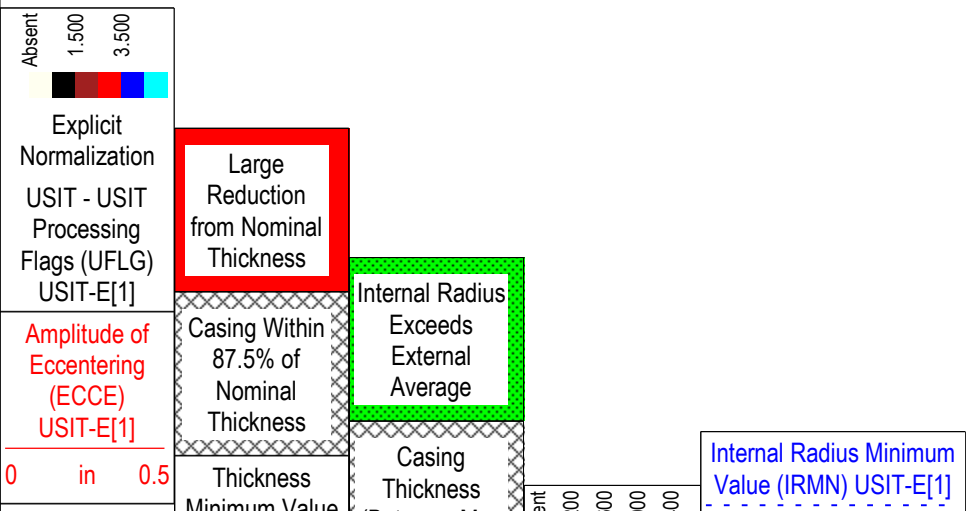
All depths are referenced to toolstring zero

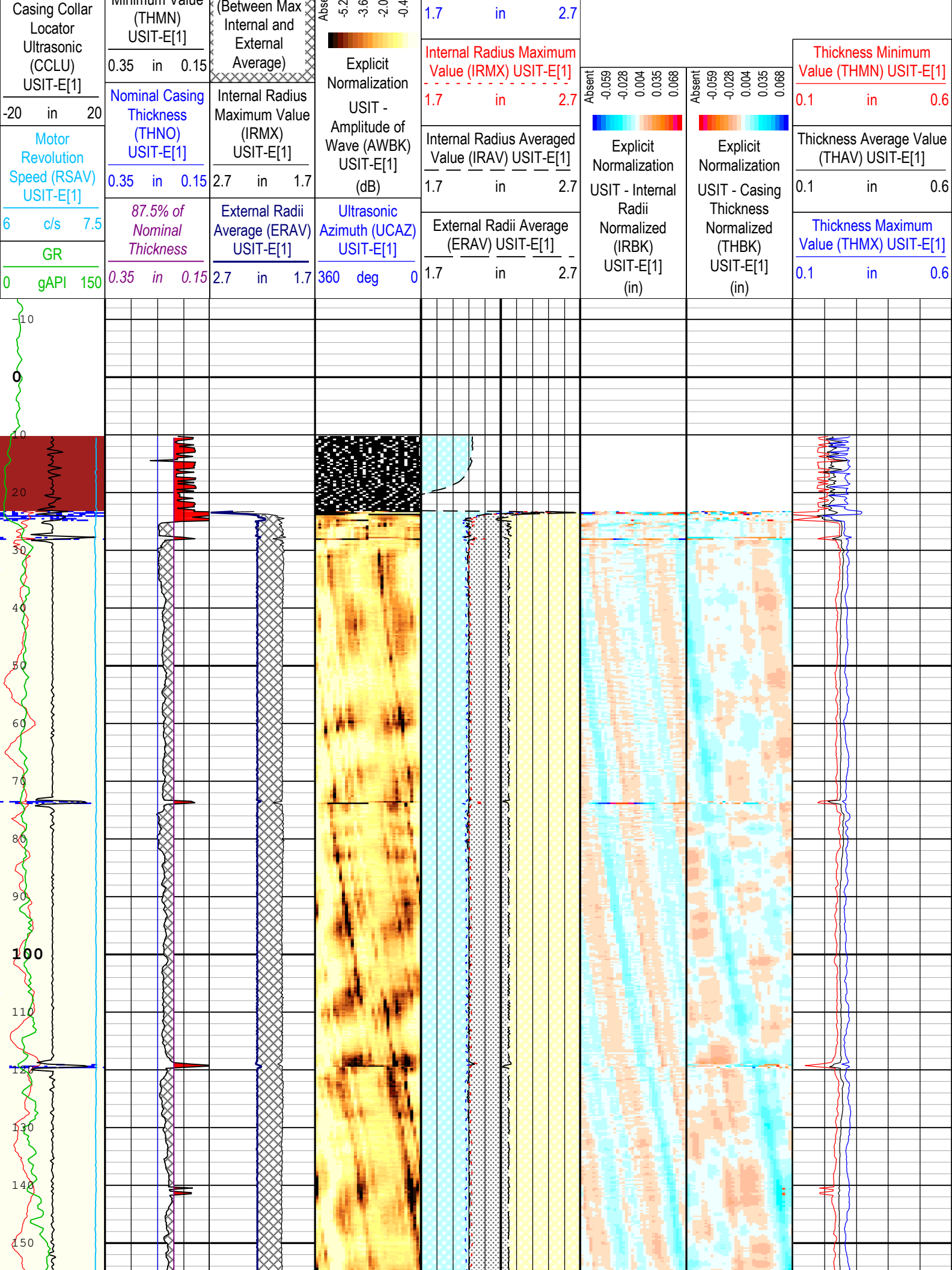
Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-21
Pressure Pass:S009

Description: USI Corrosion Format: Log (USI Casing Integrity 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Aug-2022 02:05:29

TIME_1900 - Time Marked every 60.00 (s)




Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-20 in 20
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 7.5
GR
0 gAPI 150
Minimum Value (THMN) USIT-E[1]
0.35 in 0.15
Nominal Casing Thickness (THNO) USIT-E[1]
0.35 in 0.15
87.5% of Nominal Thickness
0.35 in 0.15
(Between Max Internal and External Average)
Internal Radius Maximum Value (IRMX) USIT-E[1]
2.7 in 1.7
External Radii Average (ERAV) USIT-E[1]
2.7 in 1.7
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E[1] (dB)
Ultrasonic Azimuth (UCAZ) USIT-E[1]
360 deg 0
1.7 in 2.7
Internal Radius Maximum Value (IRMX) USIT-E[1]
1.7 in 2.7
Internal Radius Averaged Value (IRAV) USIT-E[1]
1.7 in 2.7
External Radii Average (ERAV) USIT-E[1]
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[1] (in)
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Casing Thickness Normalized (THBK) USIT-E[1] (in)
Thickness Minimum Value (THMN) USIT-E[1]
0.1 in 0.6
Thickness Average Value (THAV) USIT-E[1]
0.1 in 0.6
Thickness Maximum Value (THMX) USIT-E[1]
0.1 in 0.6
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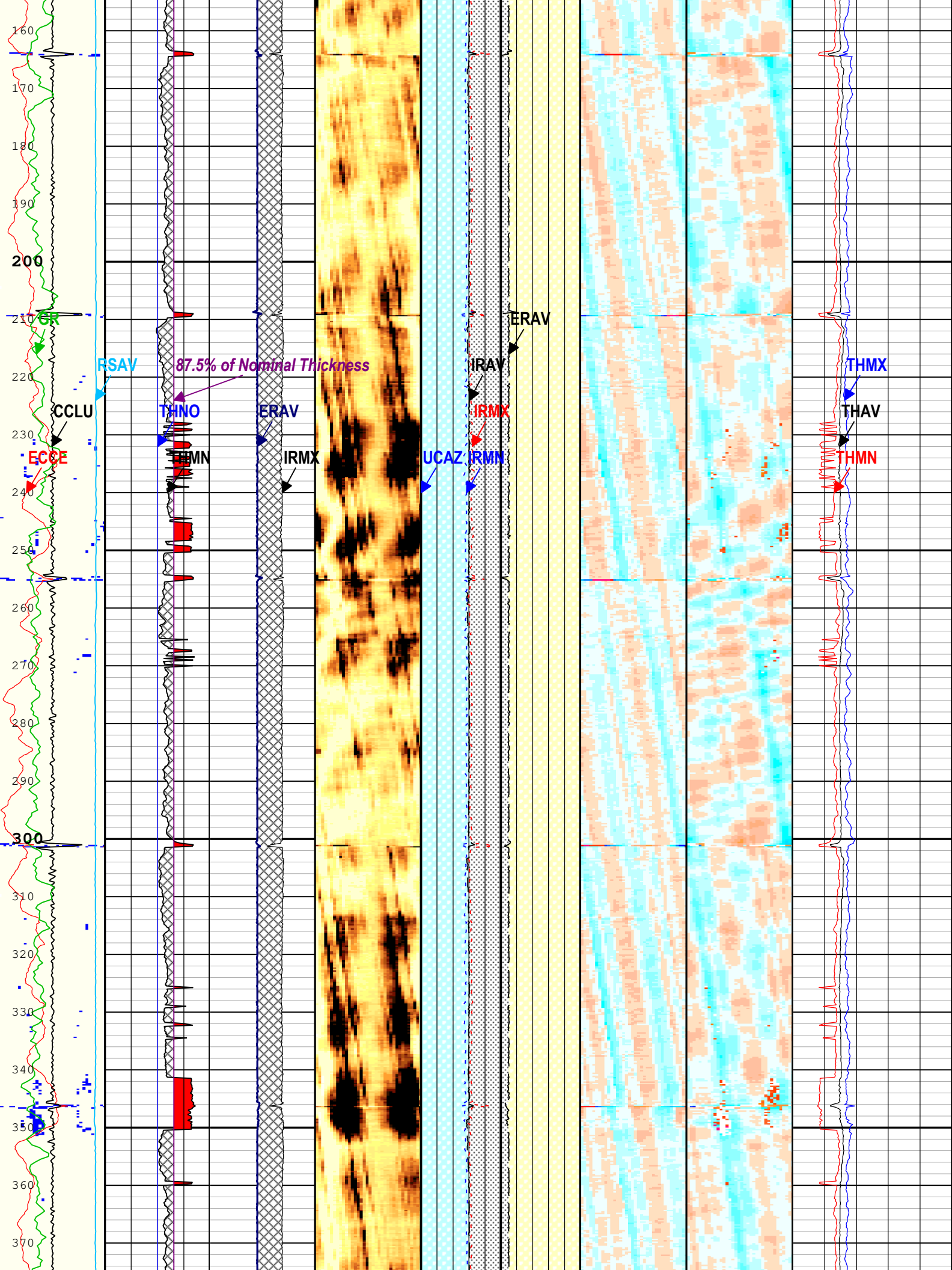
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87.5% of Nominal Thickness
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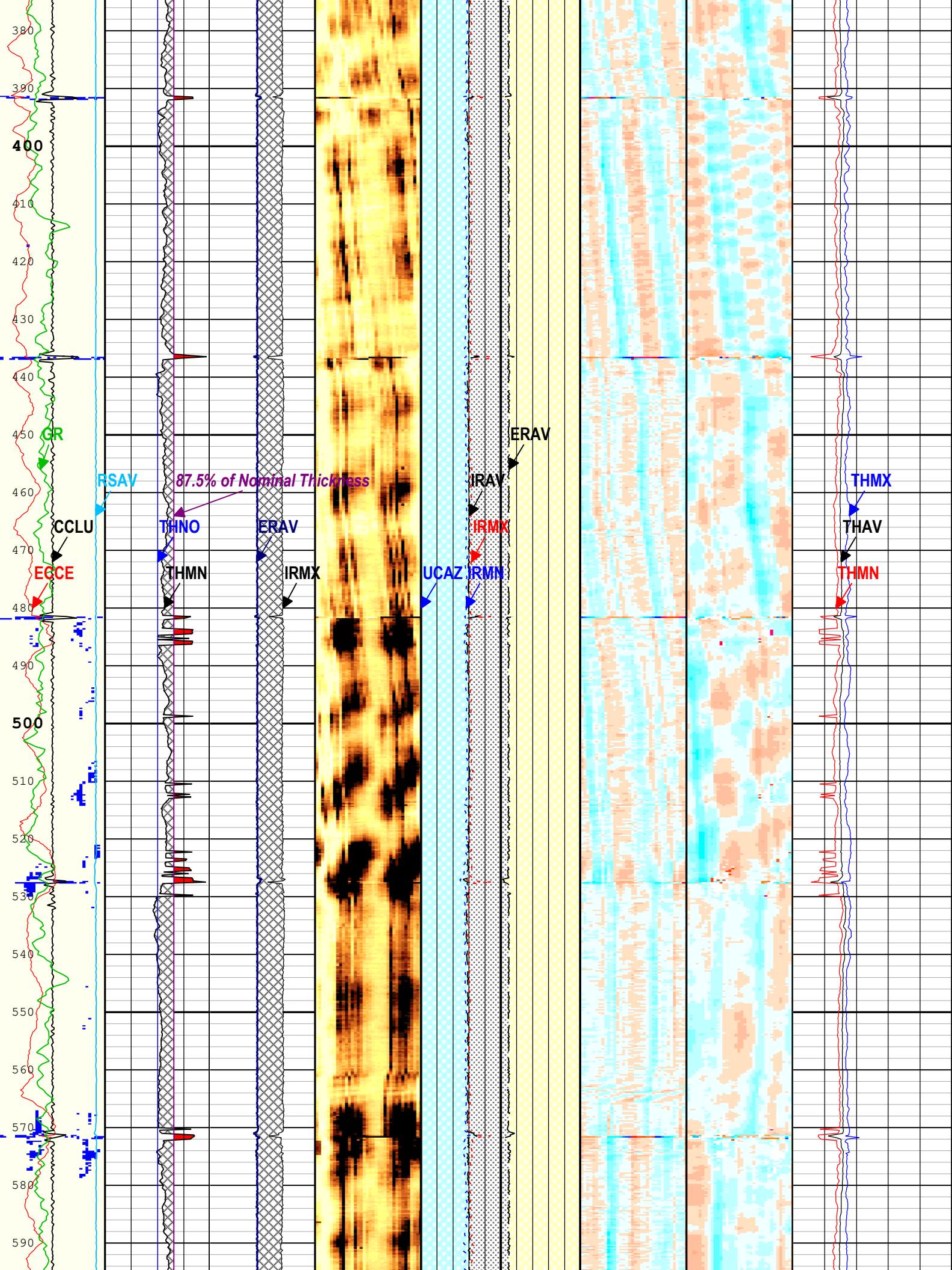
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87.5% of Nominal Thickness
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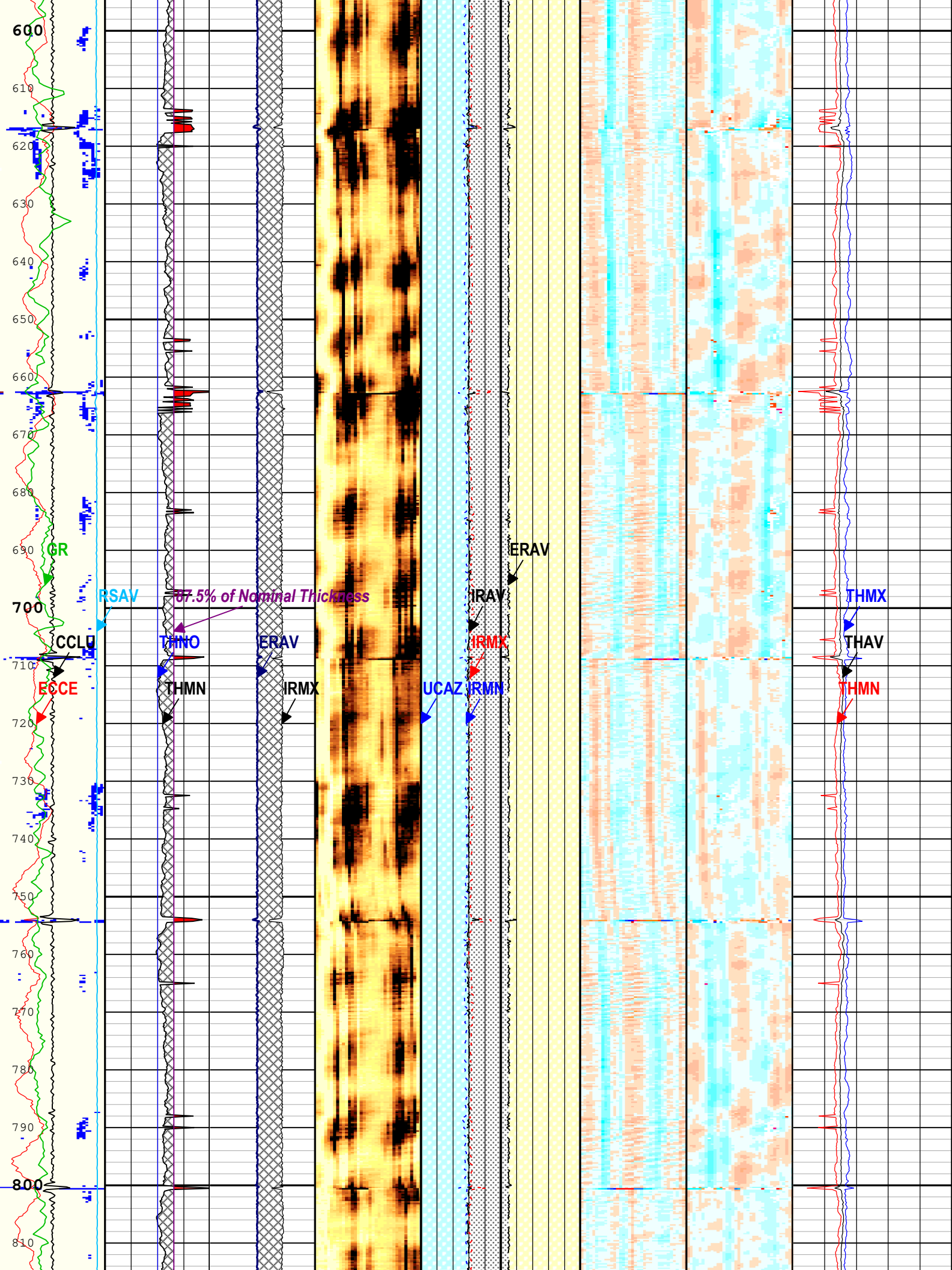
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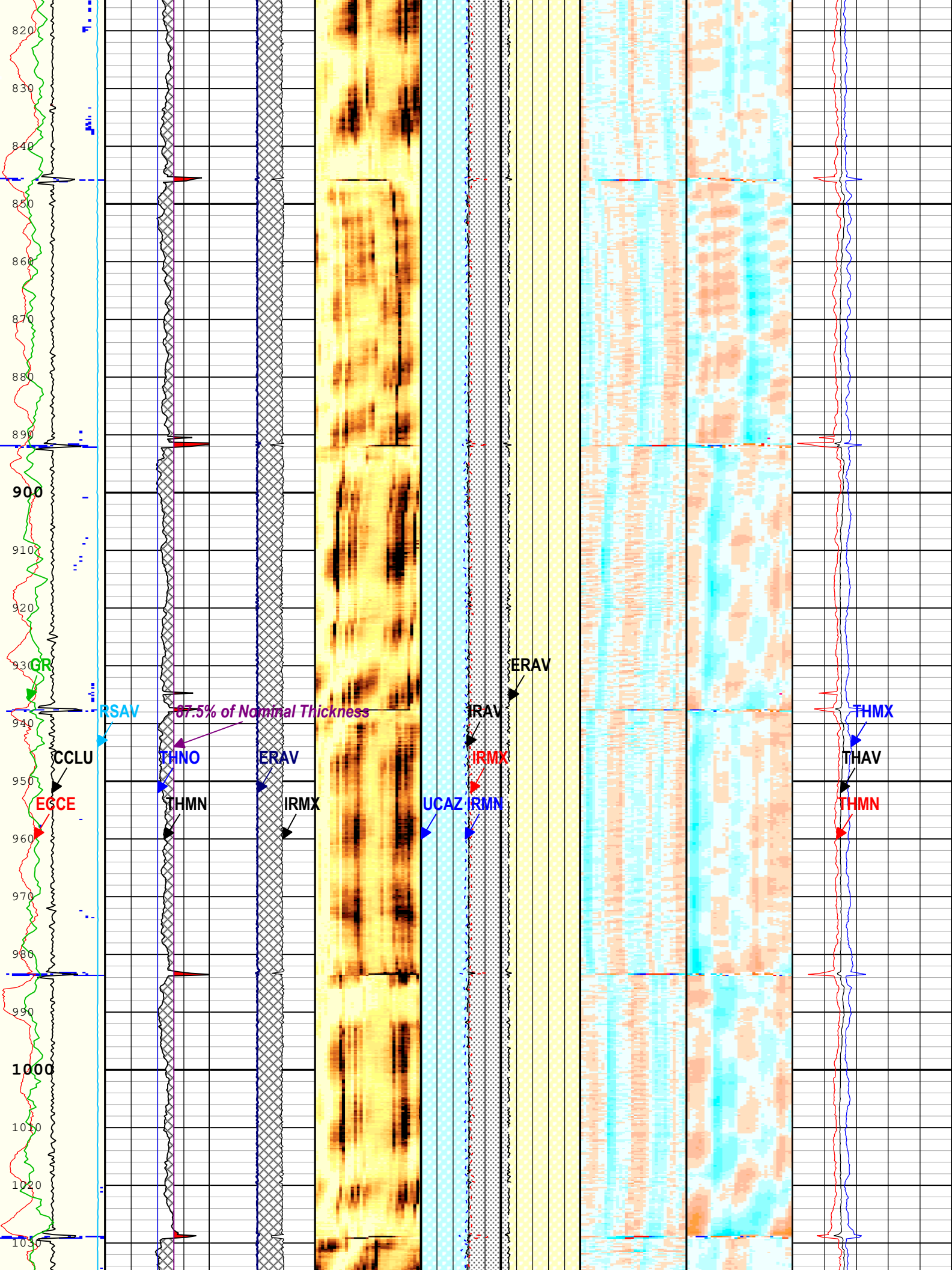
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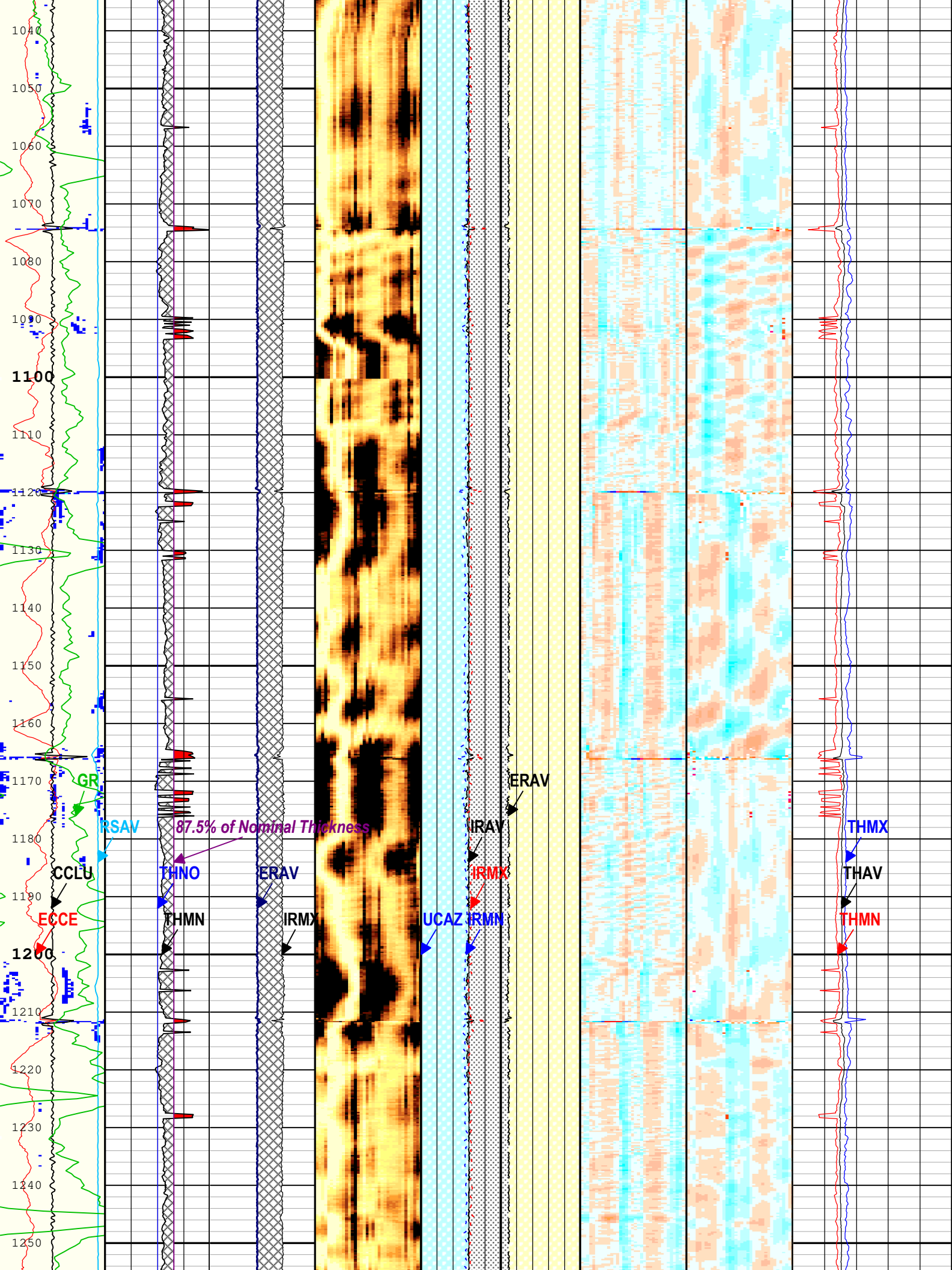
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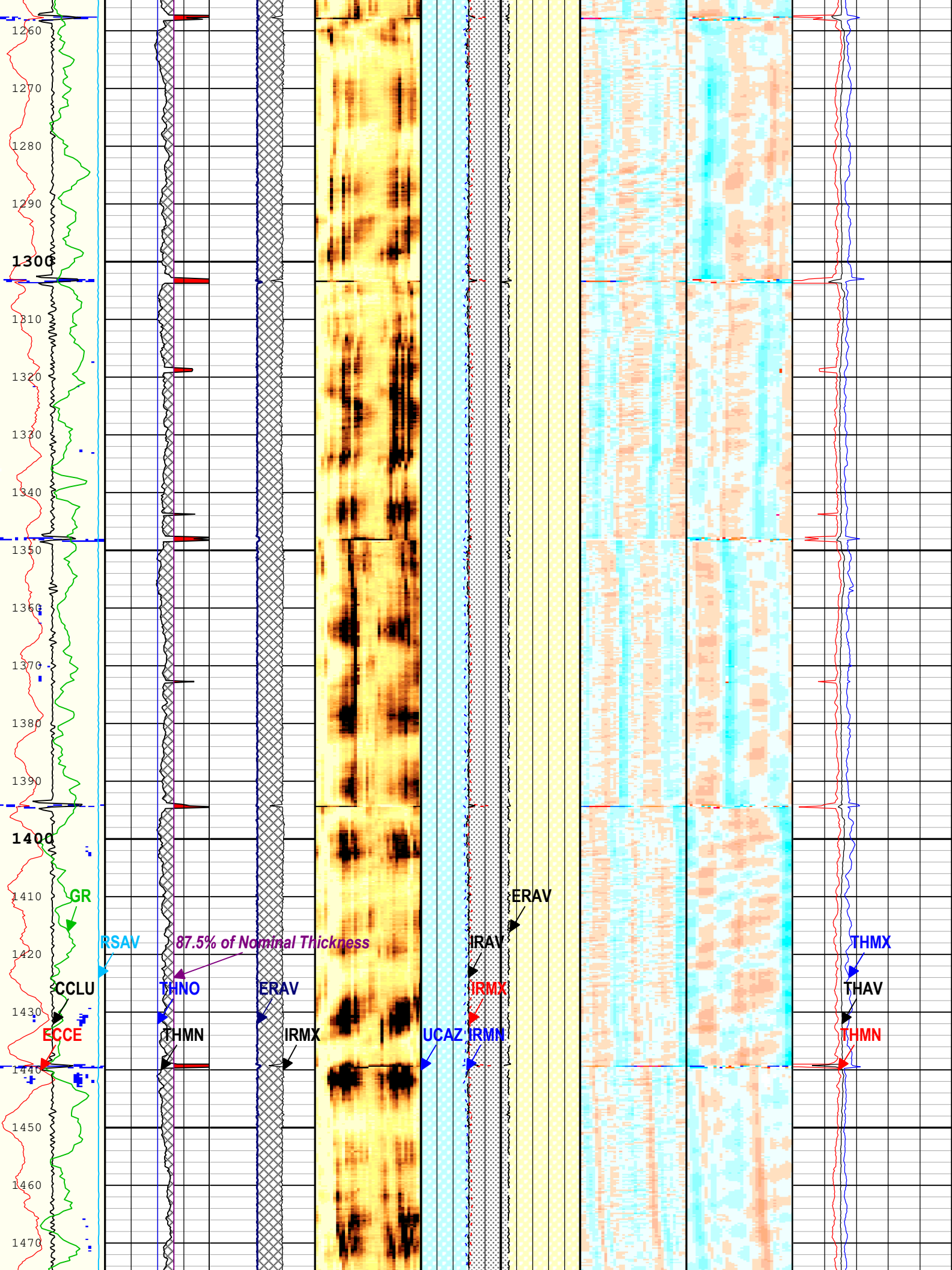
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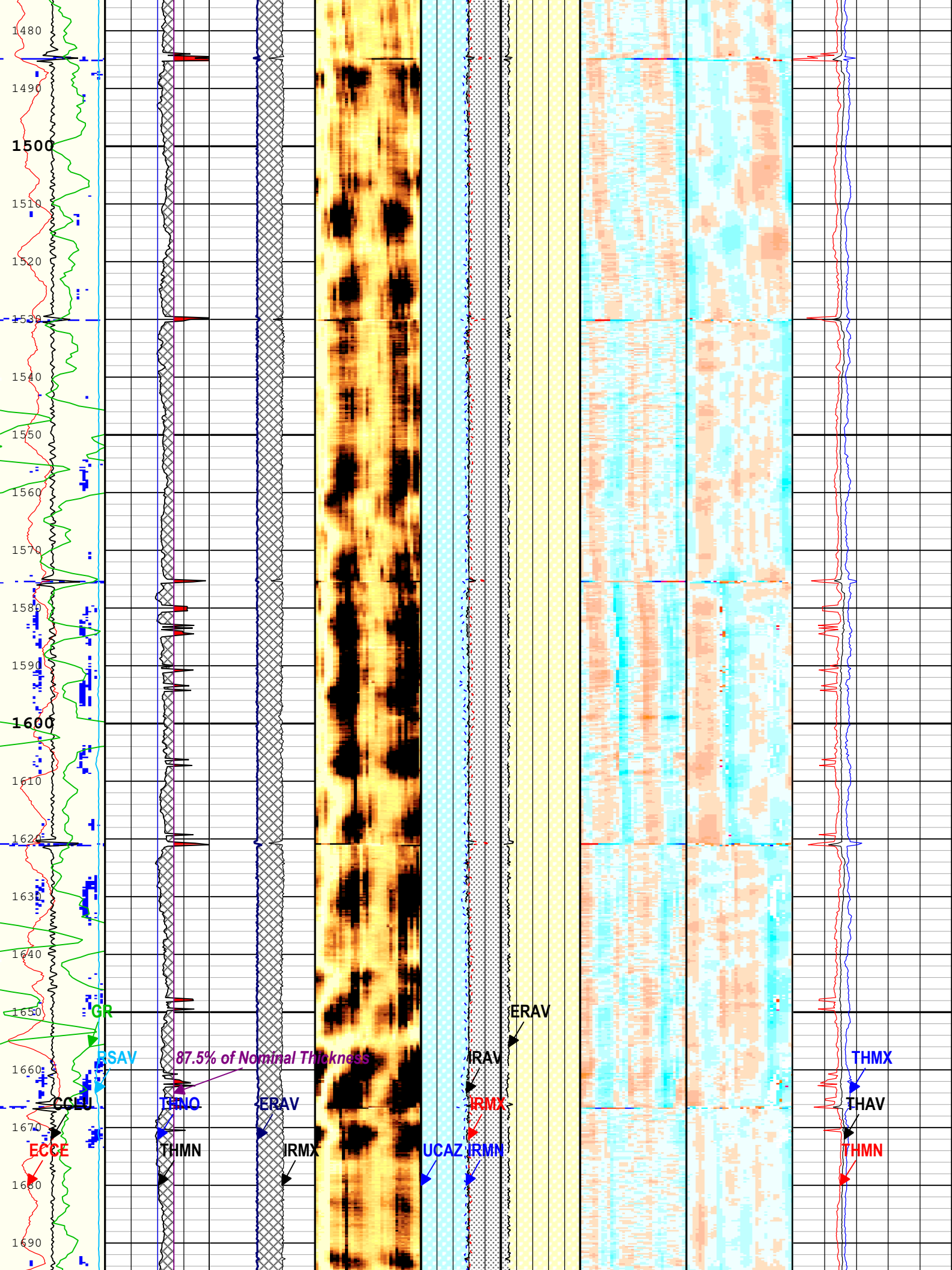
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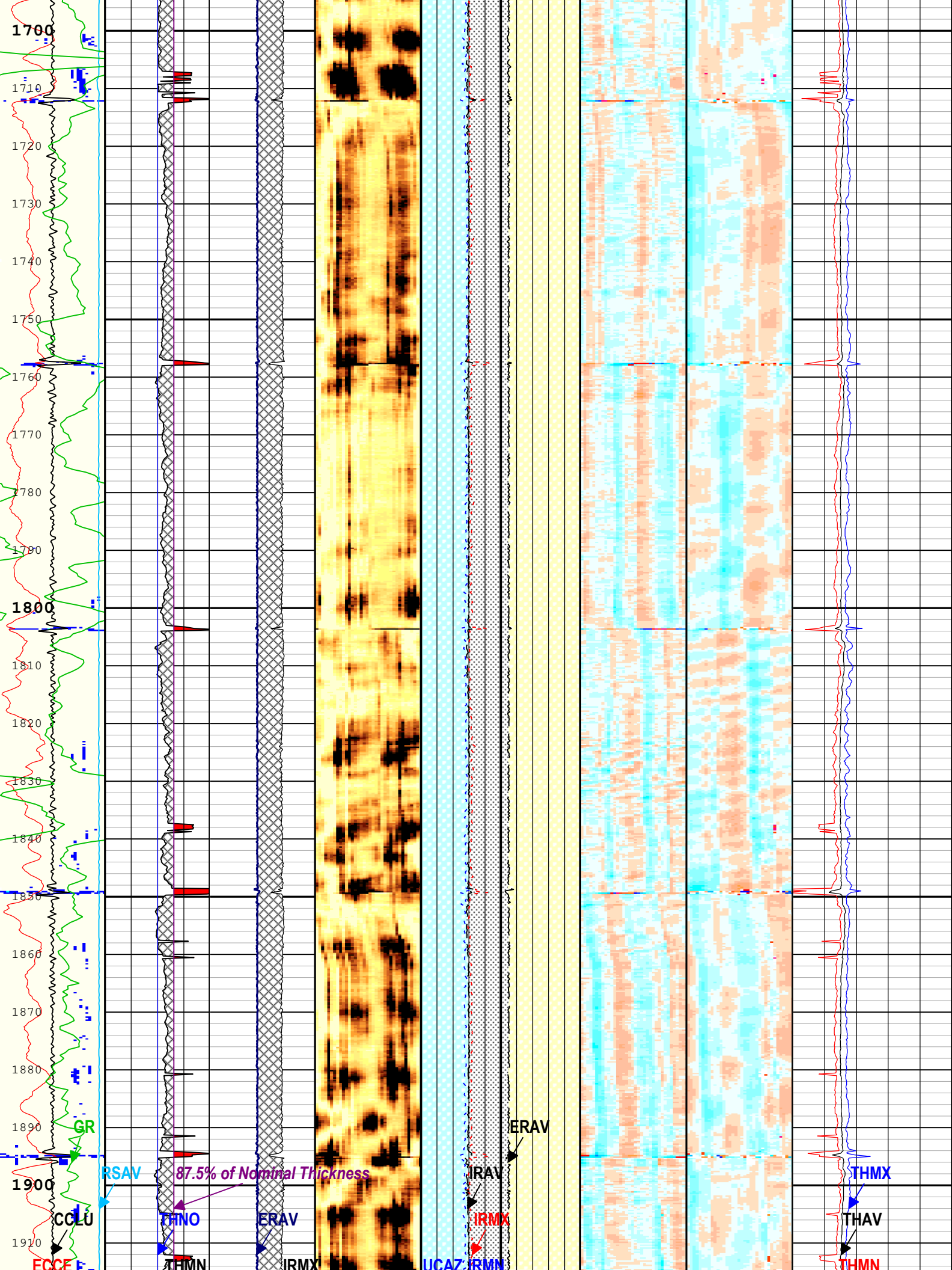
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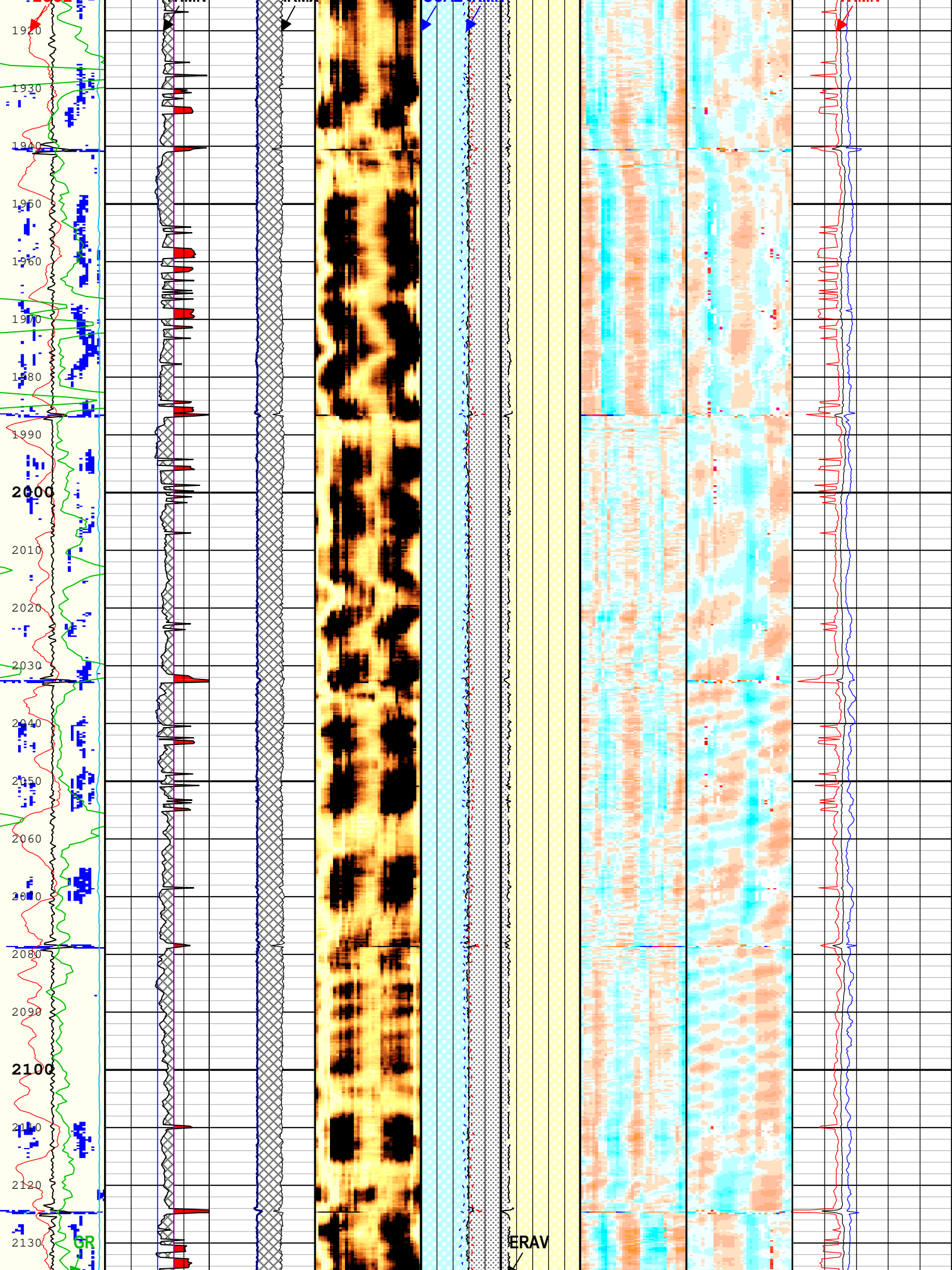
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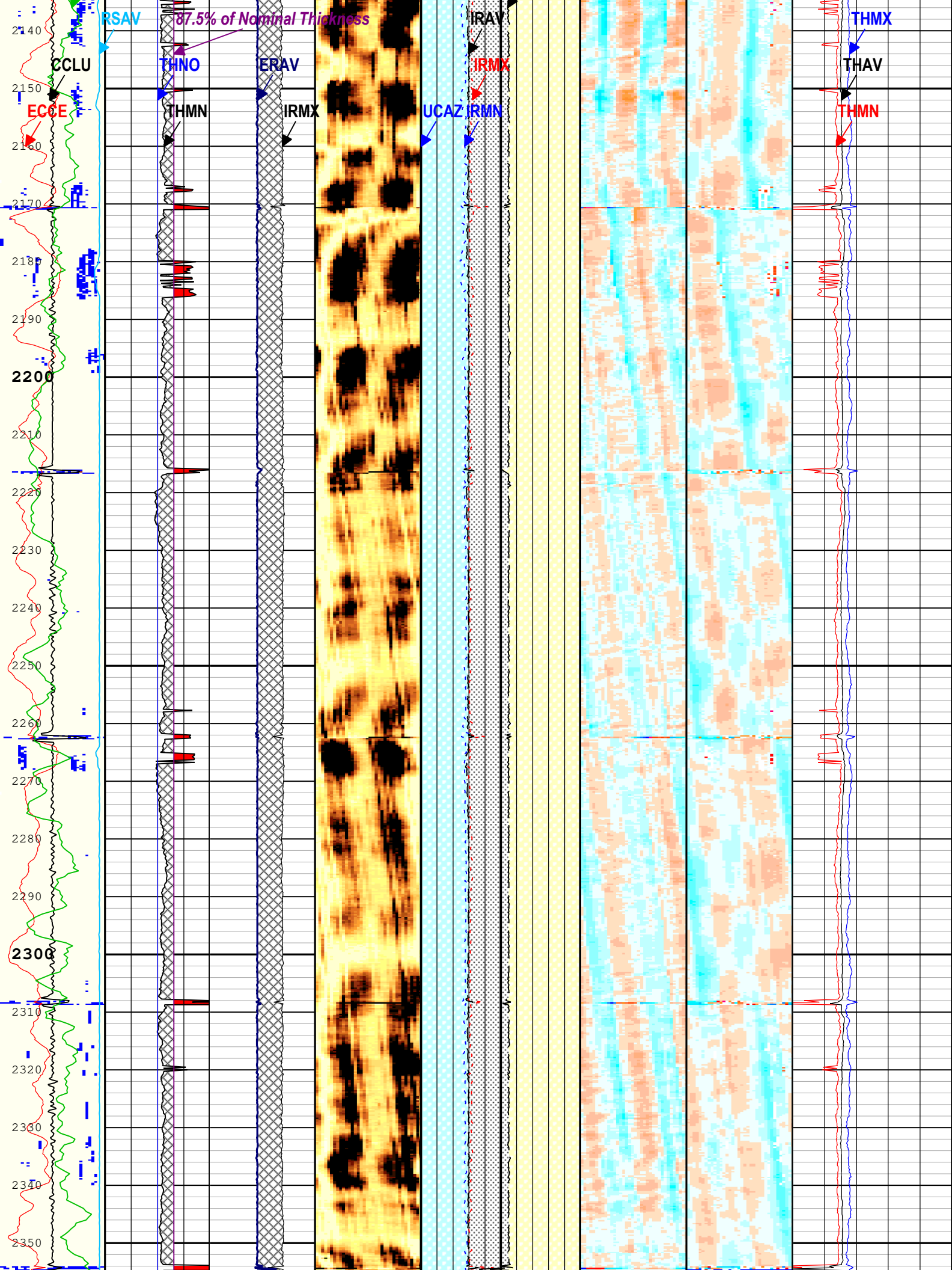
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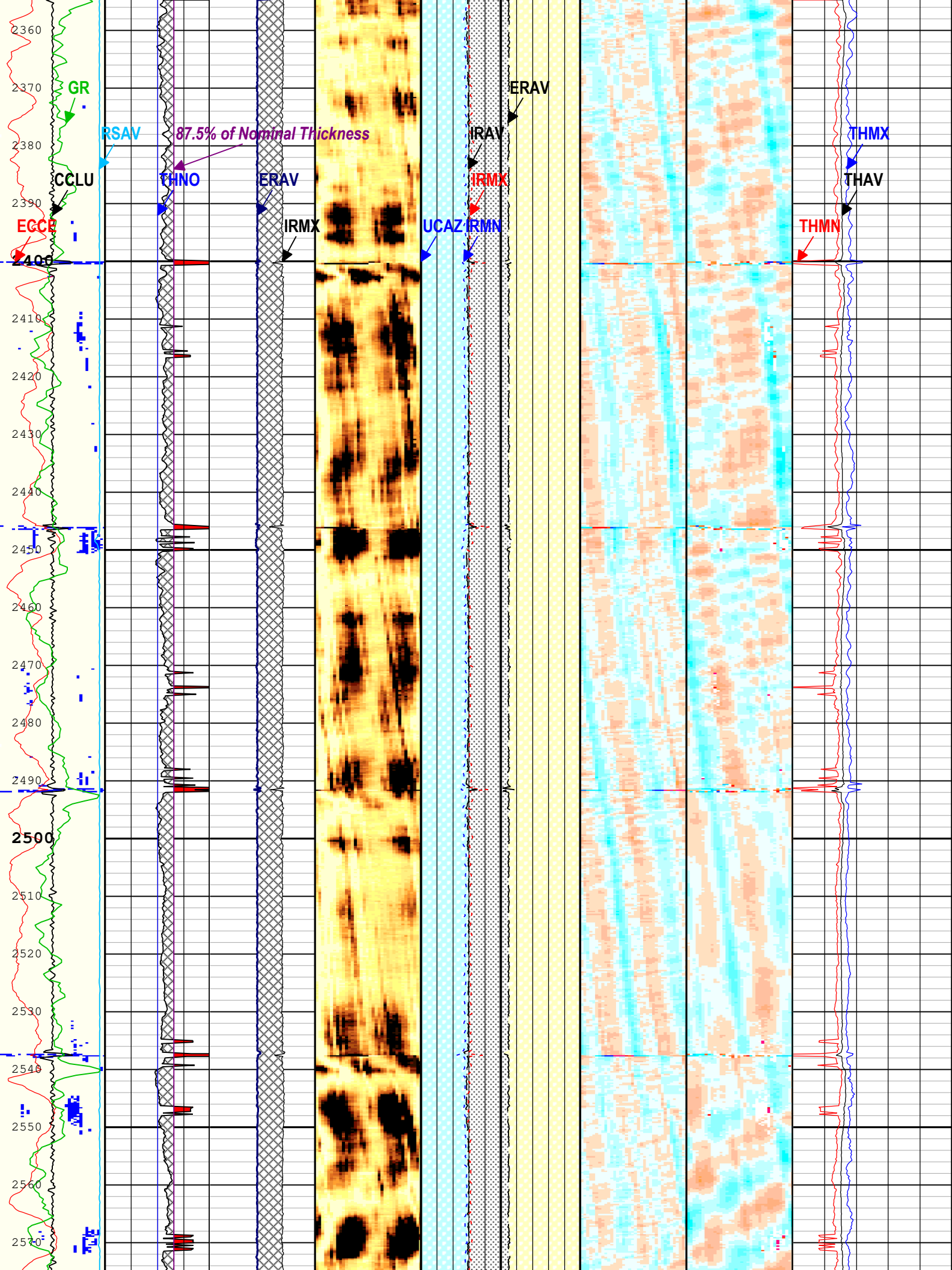
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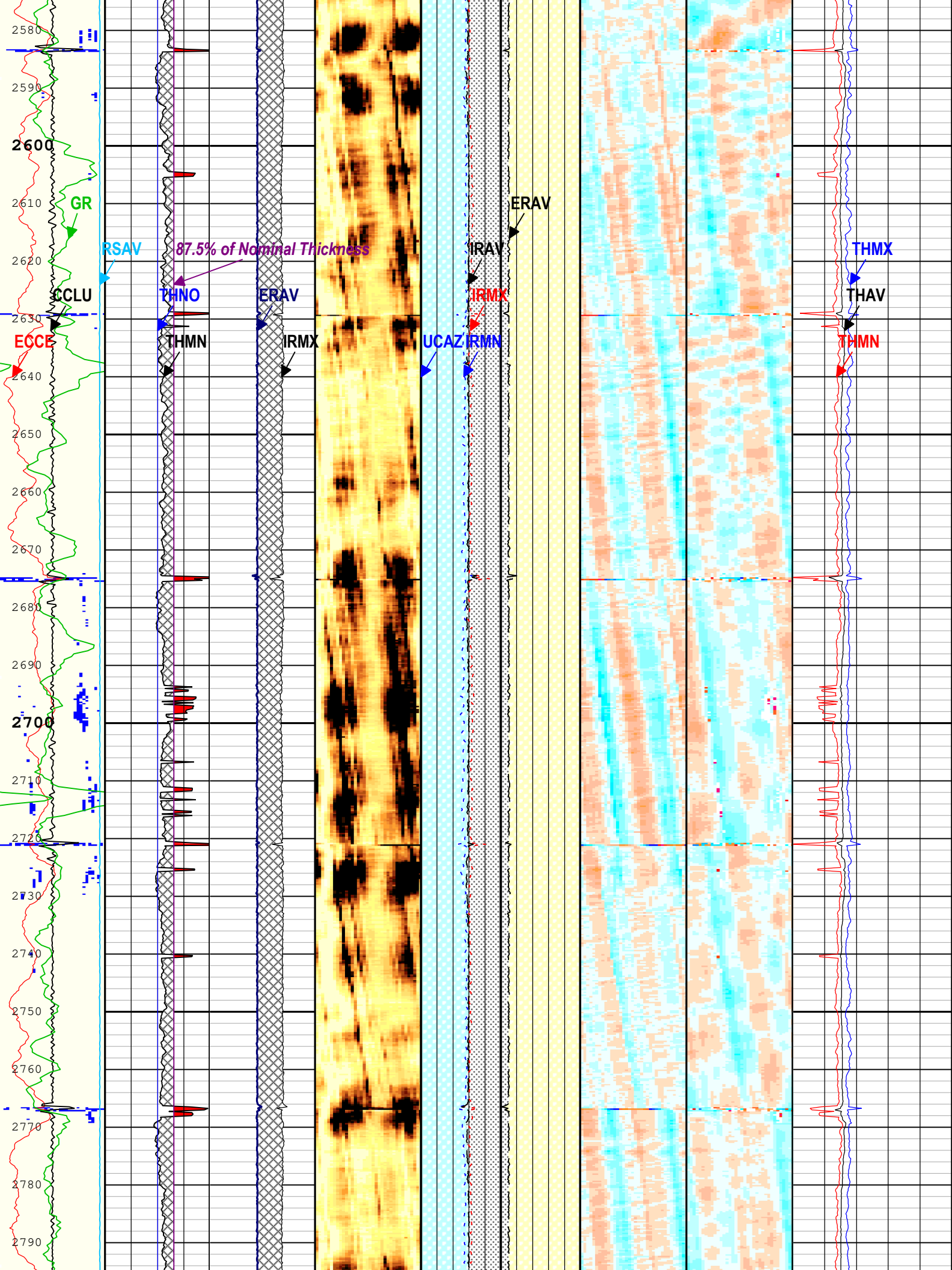
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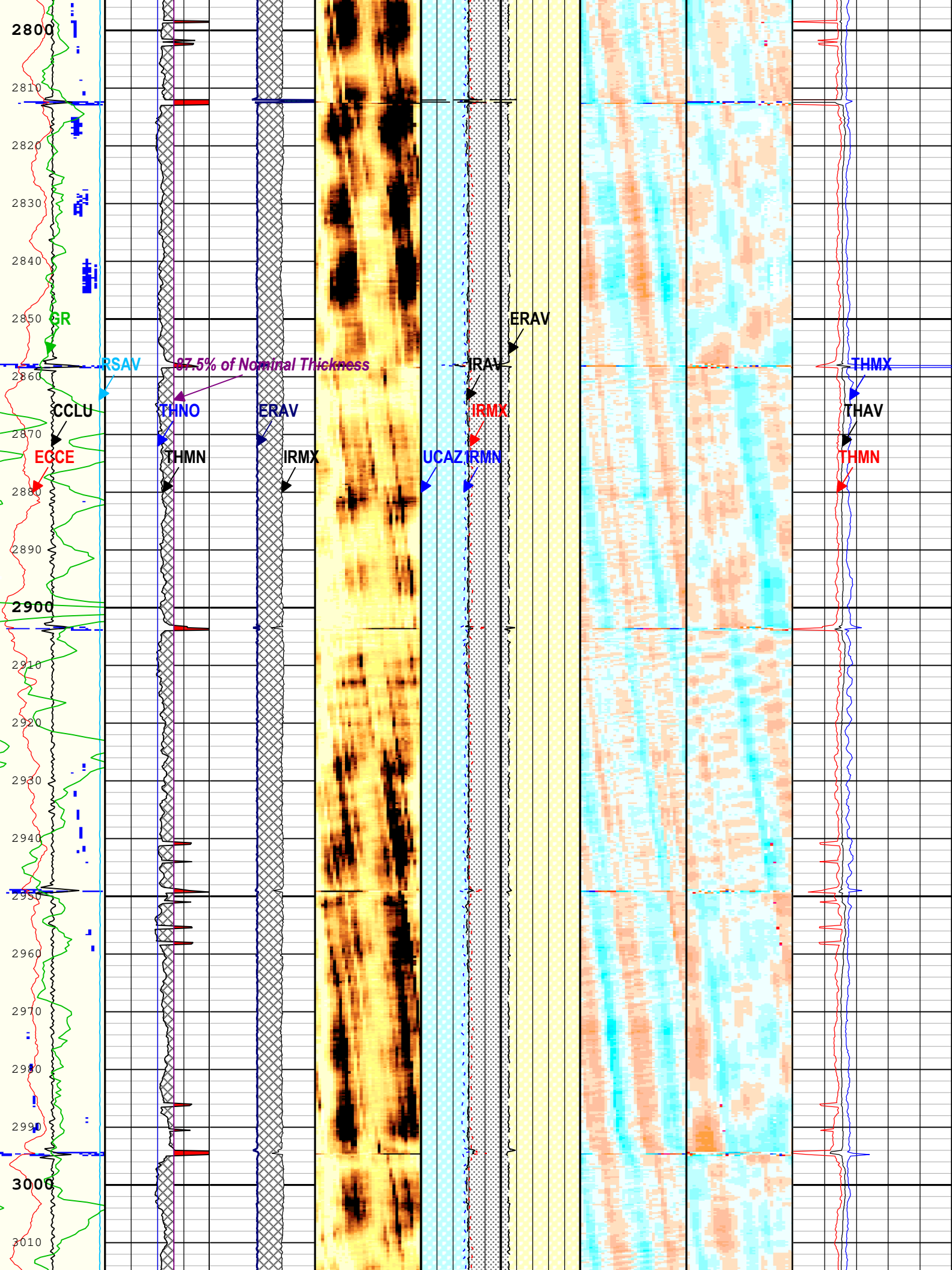
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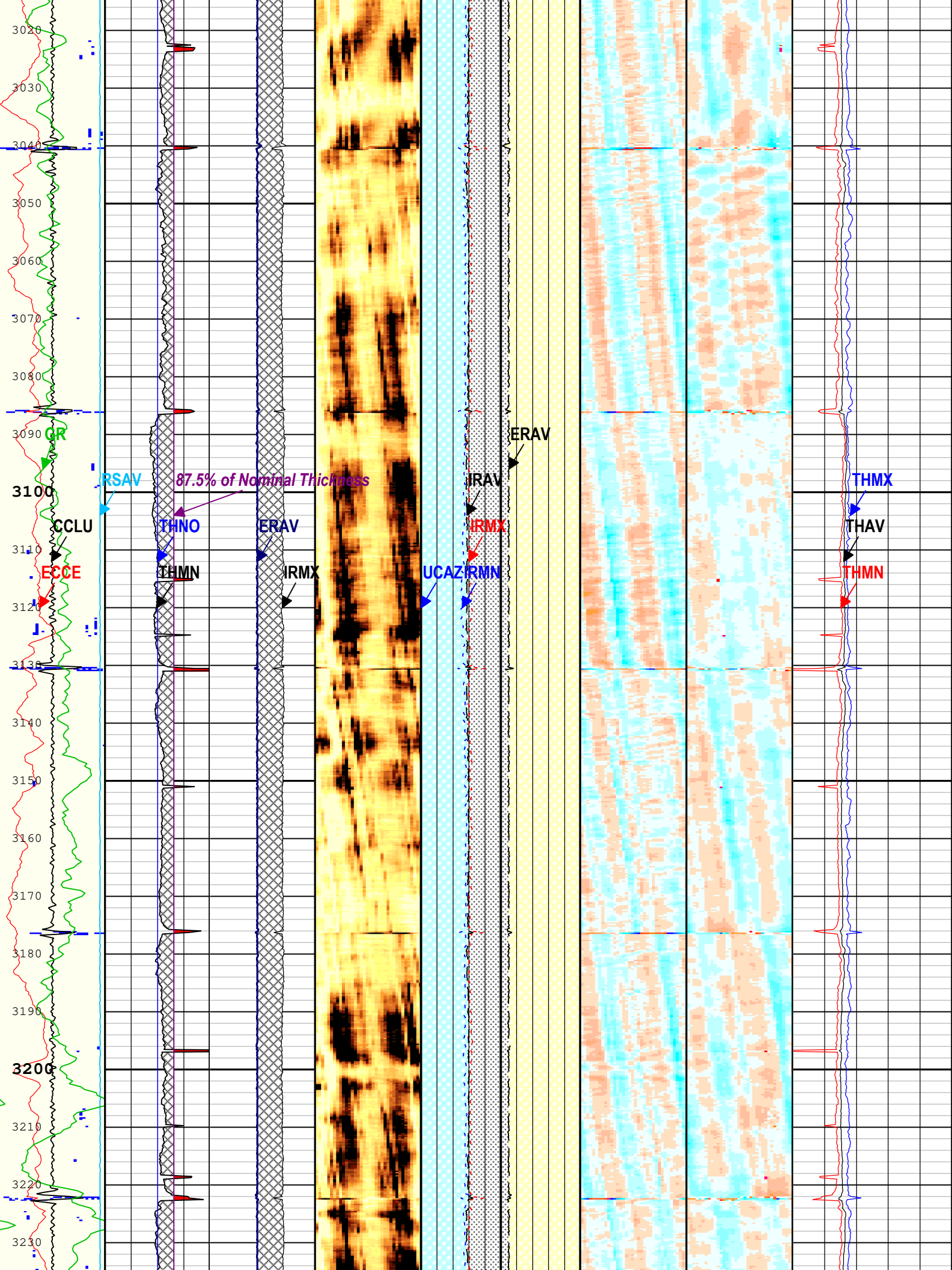
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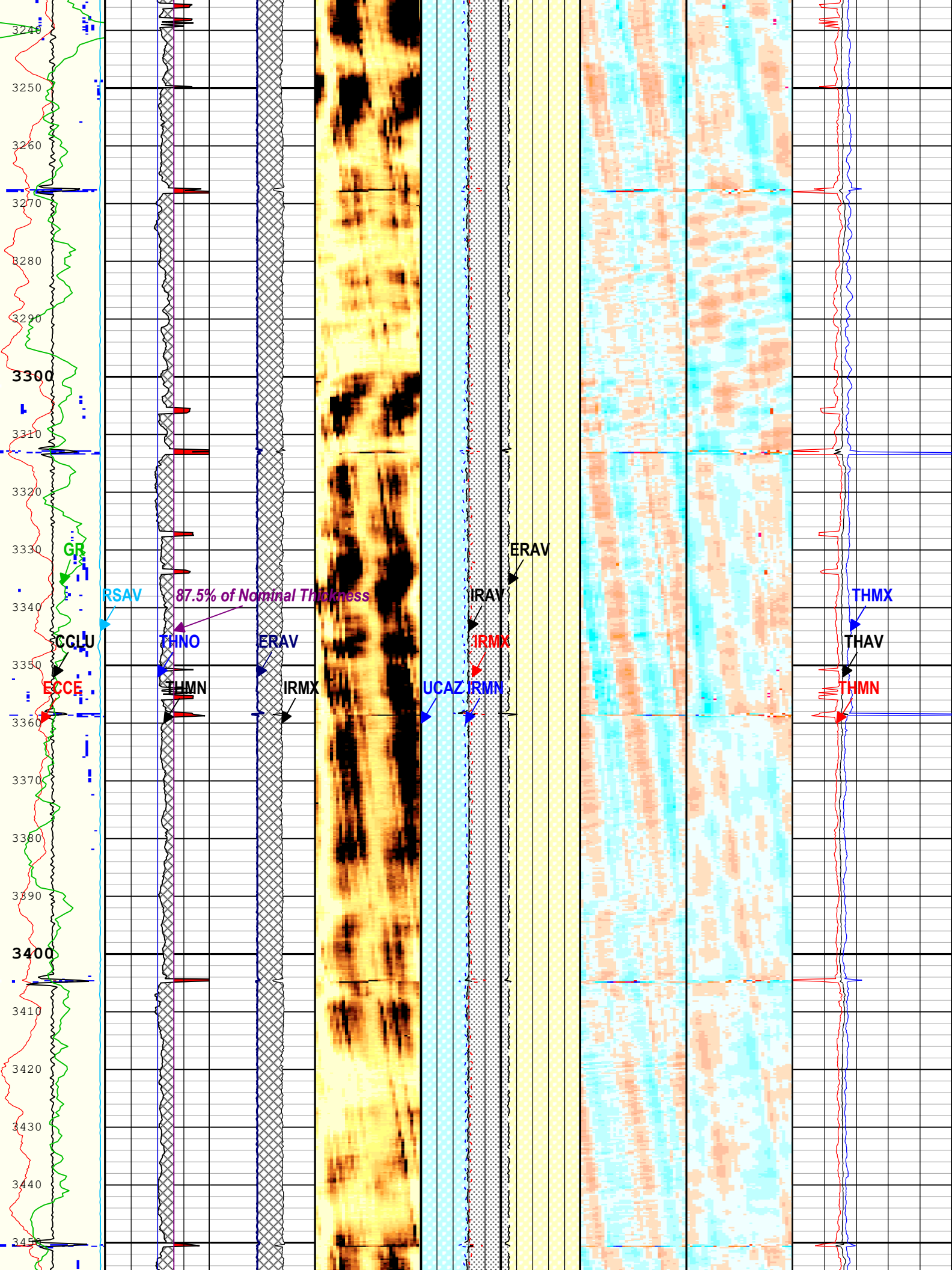
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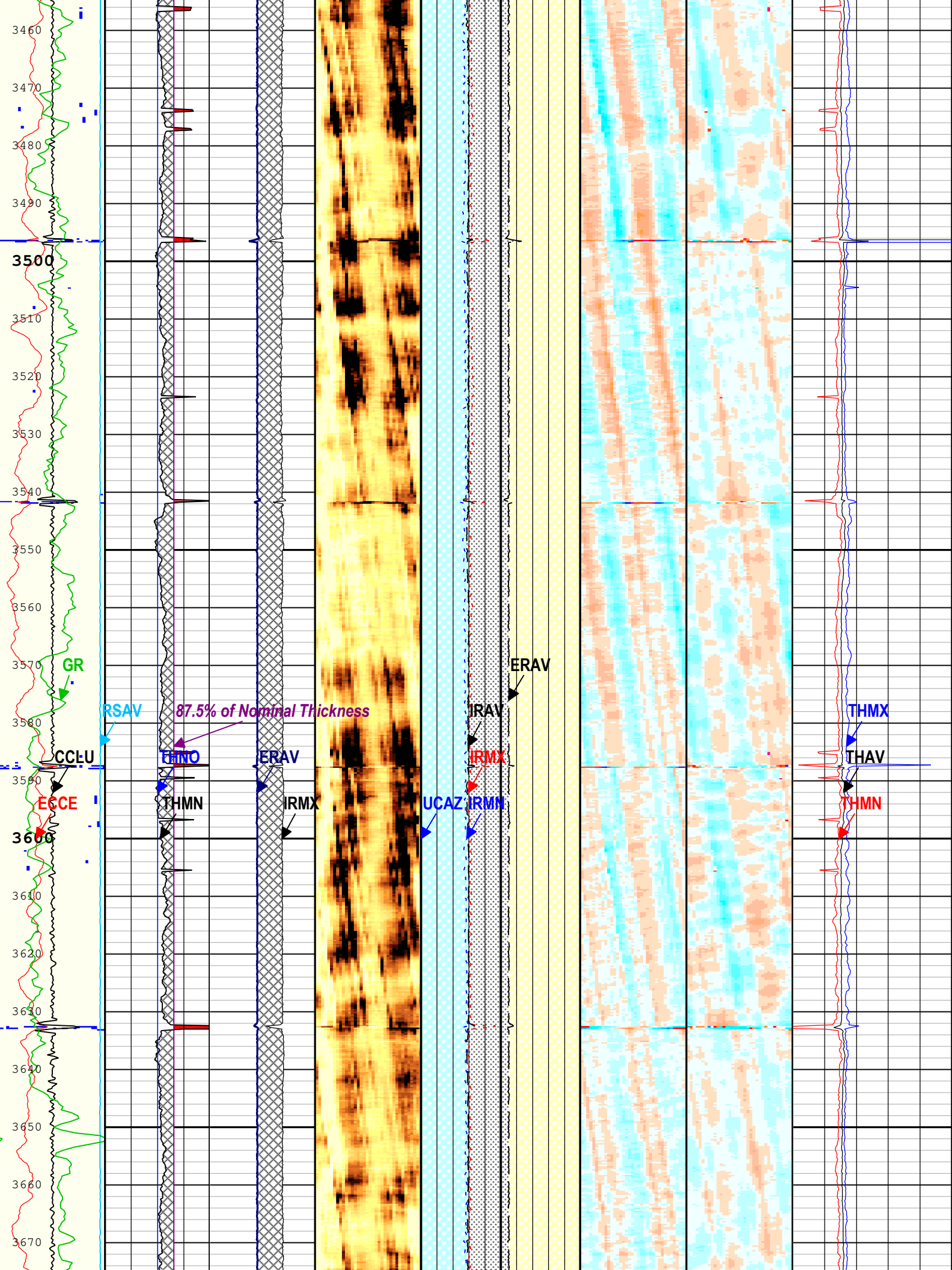
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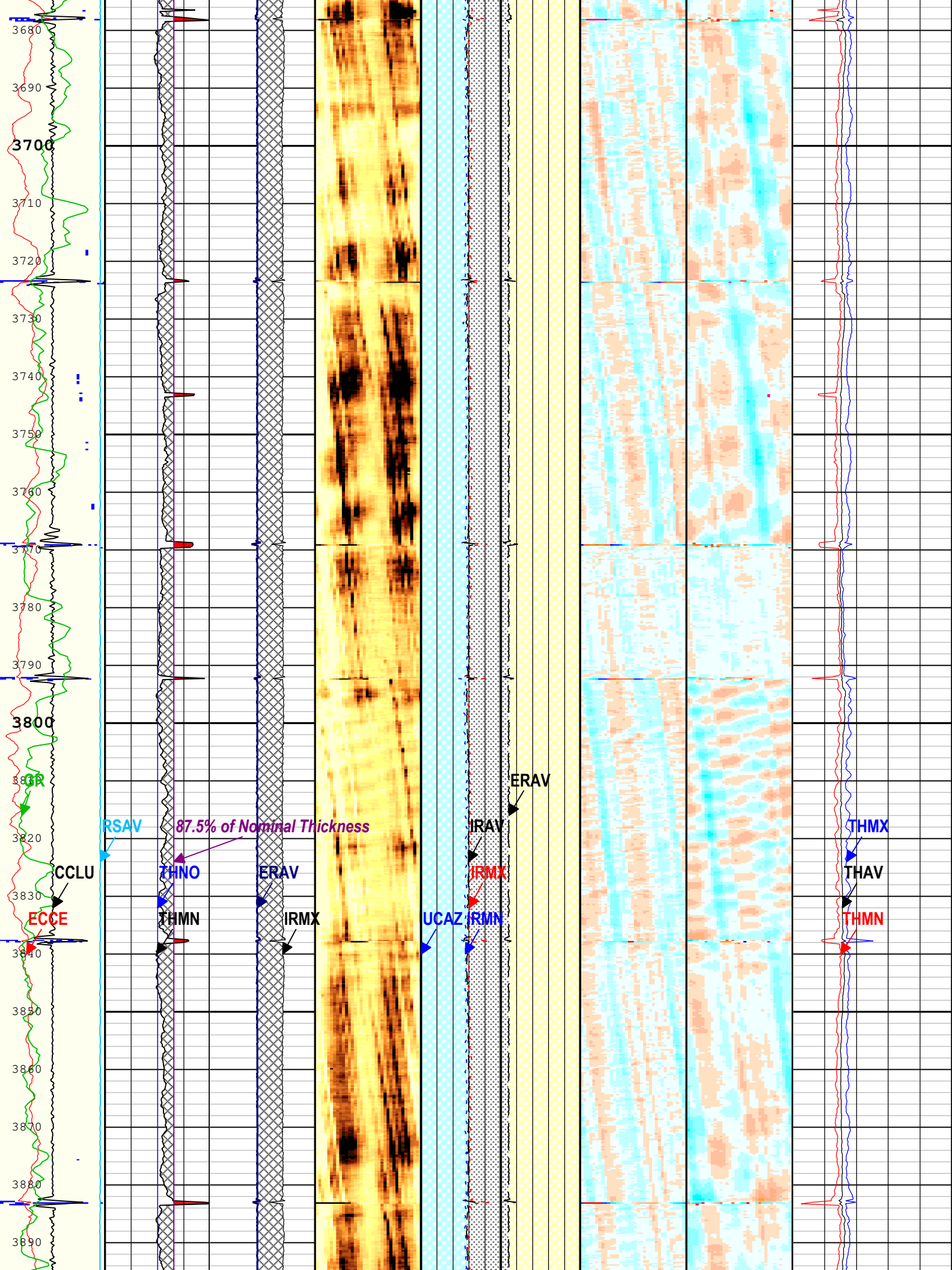
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87.5% of Nominal Thickness
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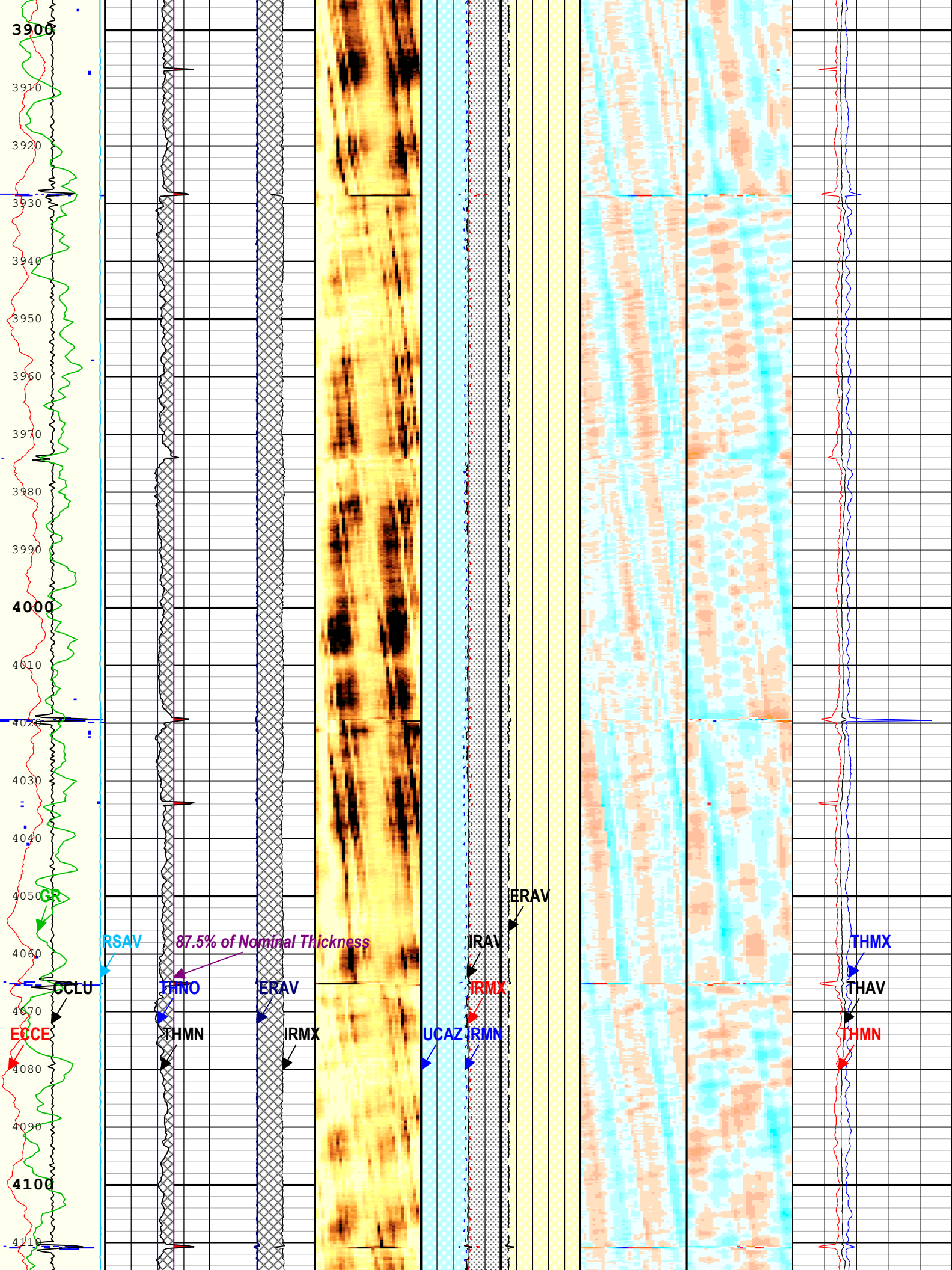
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4090
4100
4110
GR
RSAV
87.5% of Nominal Thickness
CCLU
THNO
ERAV
ECCE
THMN
IRMX
UCAZ
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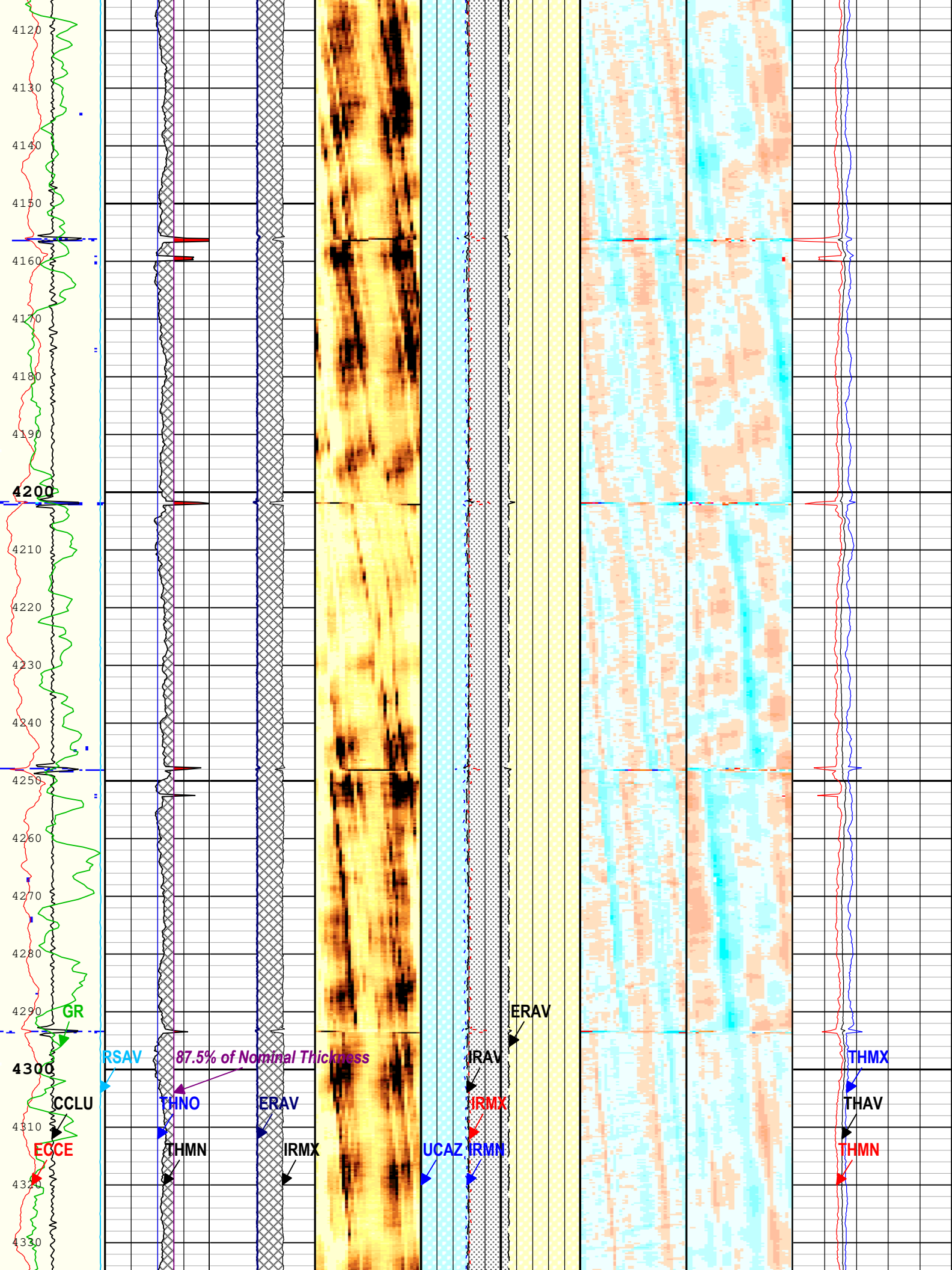
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RSAV
87.5% of Nominal Thickness
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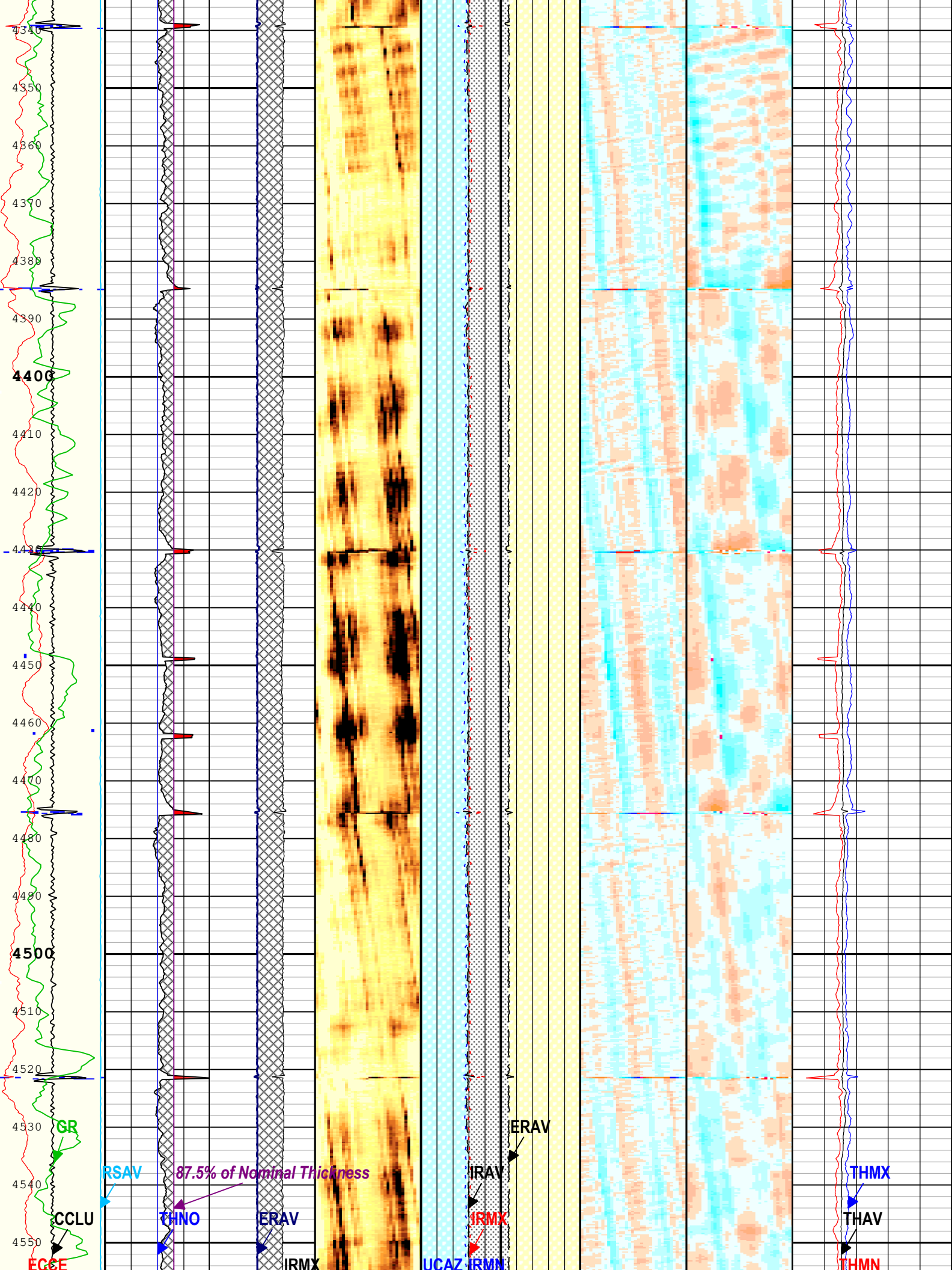
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87.5% of Nominal Thickness
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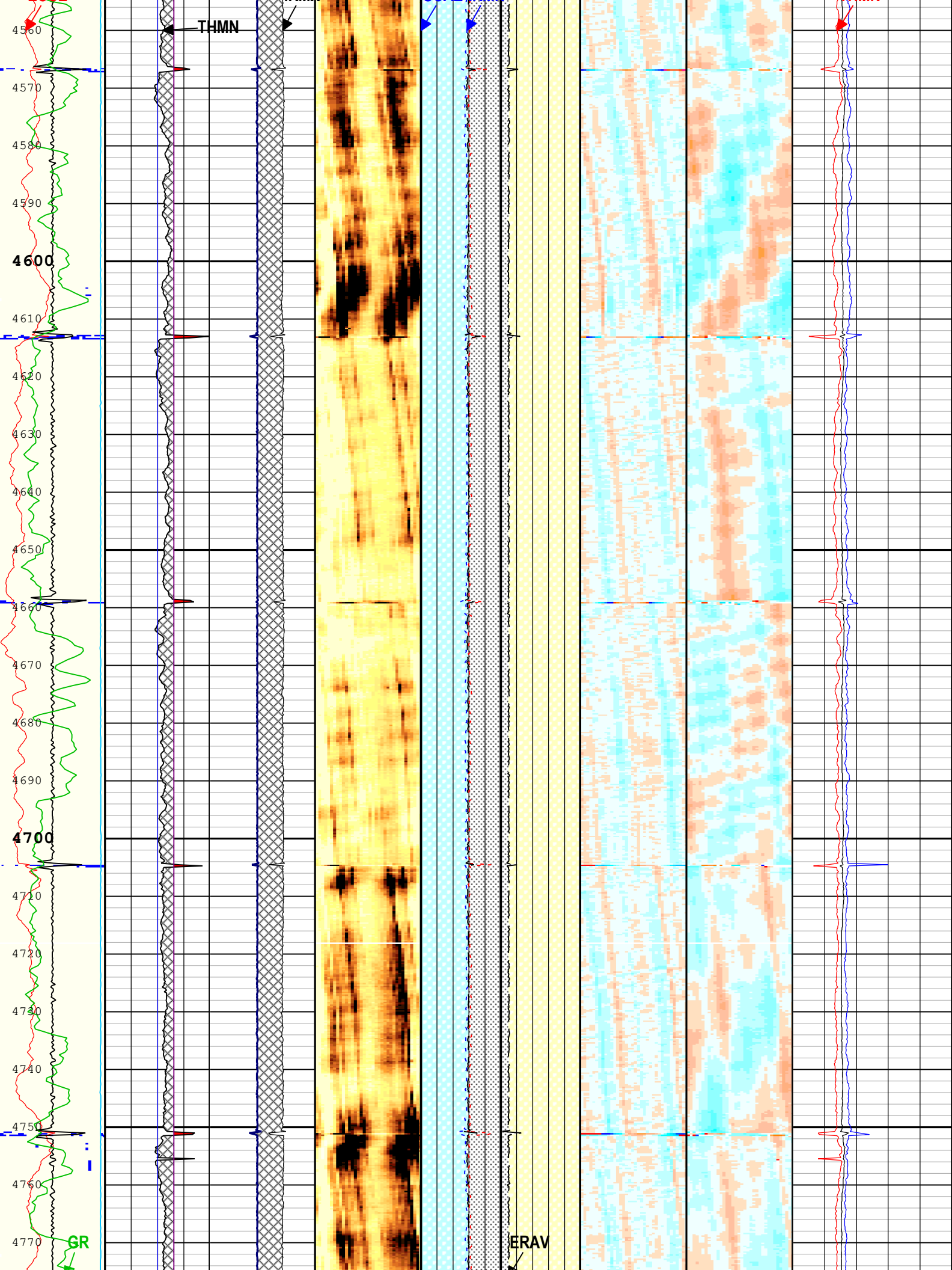
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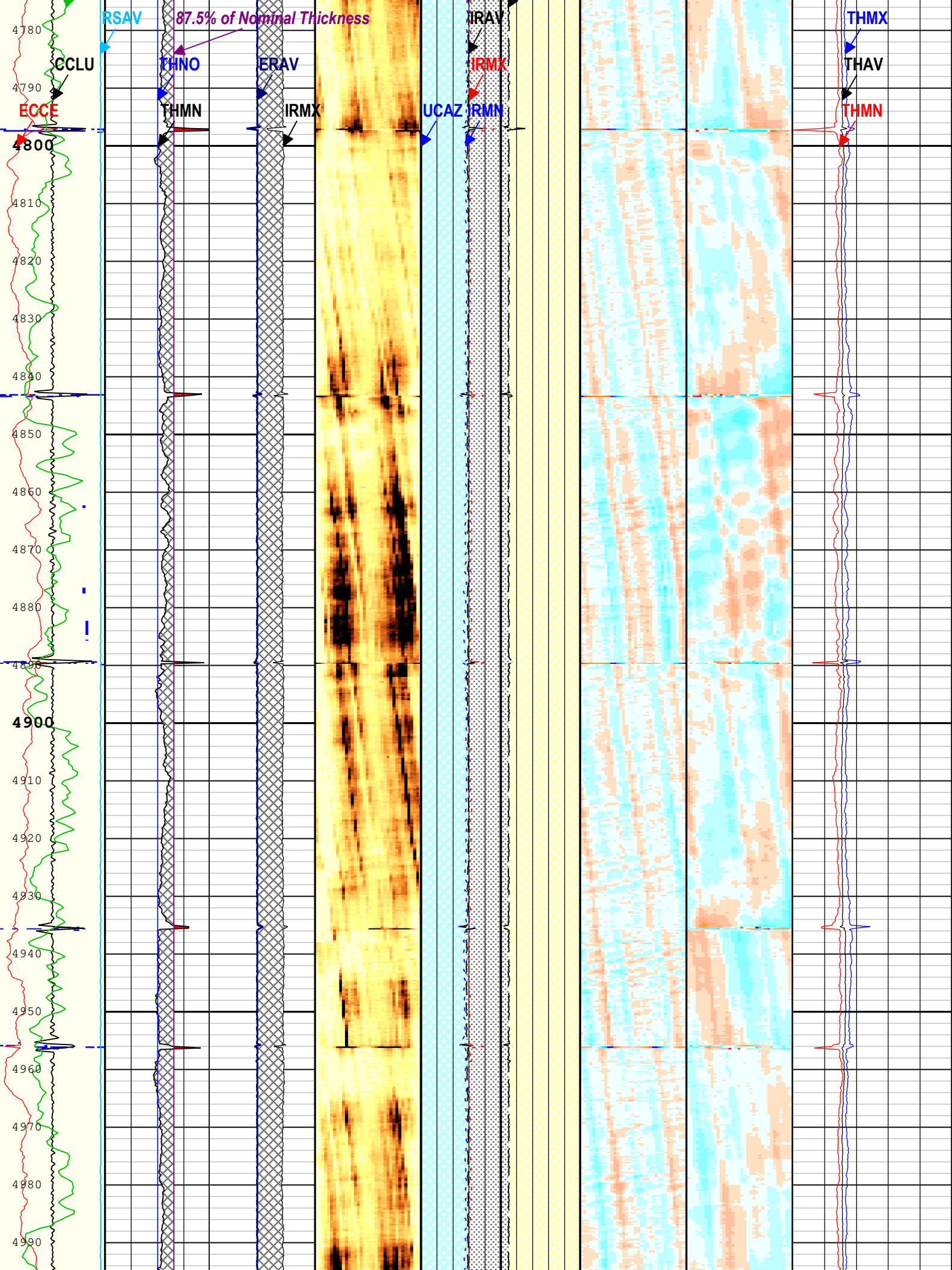
RSAV
87.5% of Nominal Thickness
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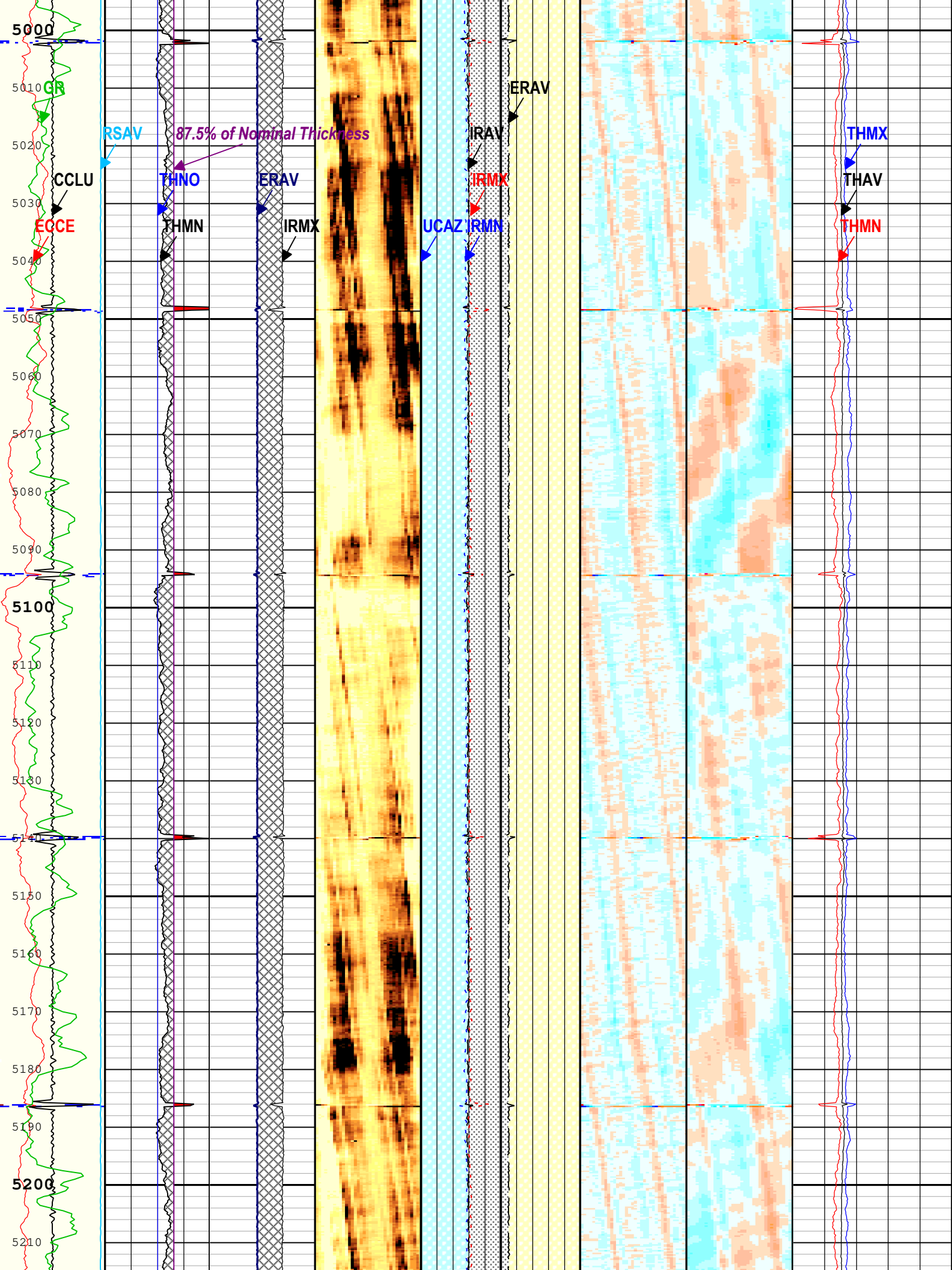
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RSAV
87.5% of Nominal Thickness
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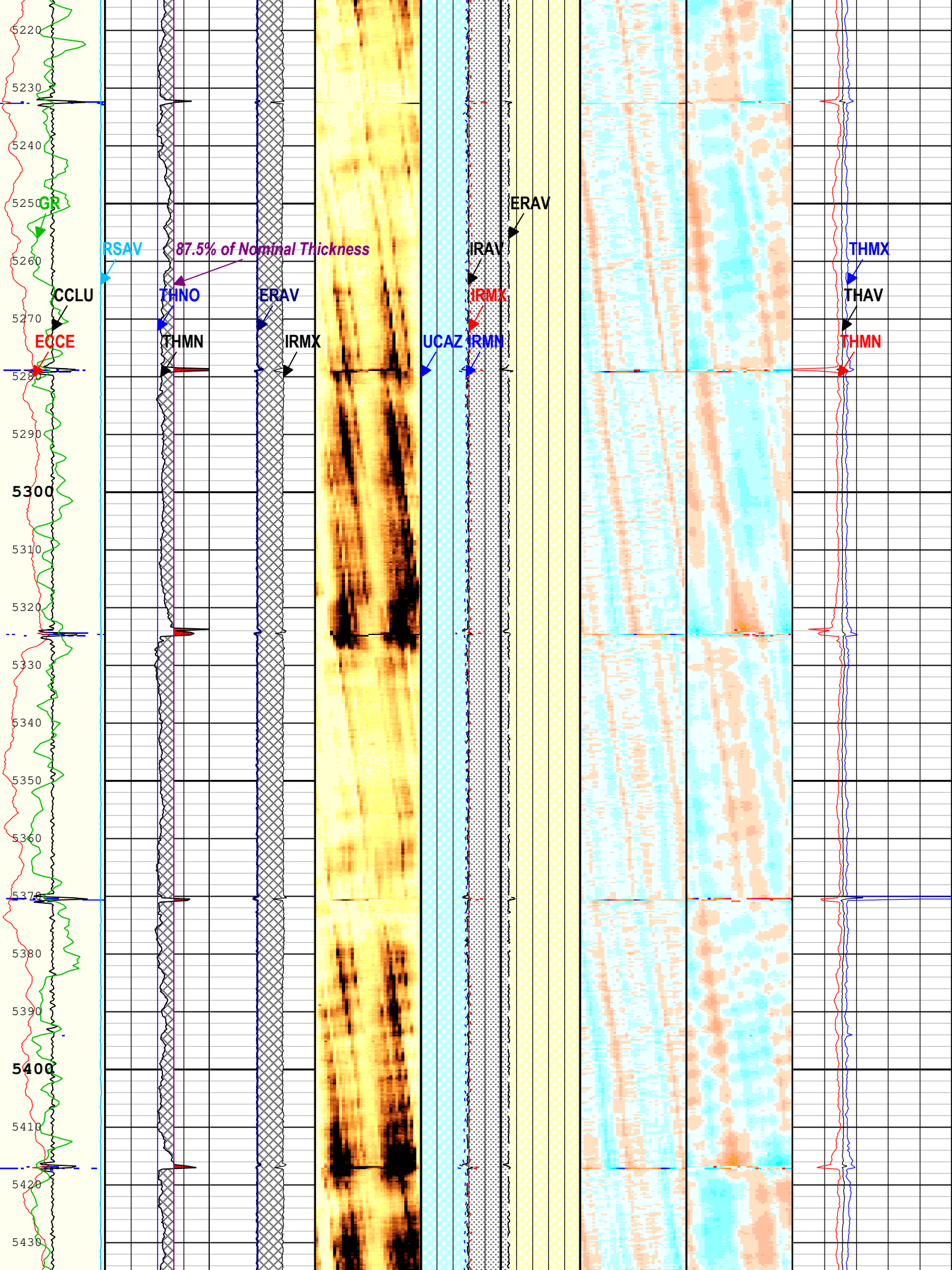
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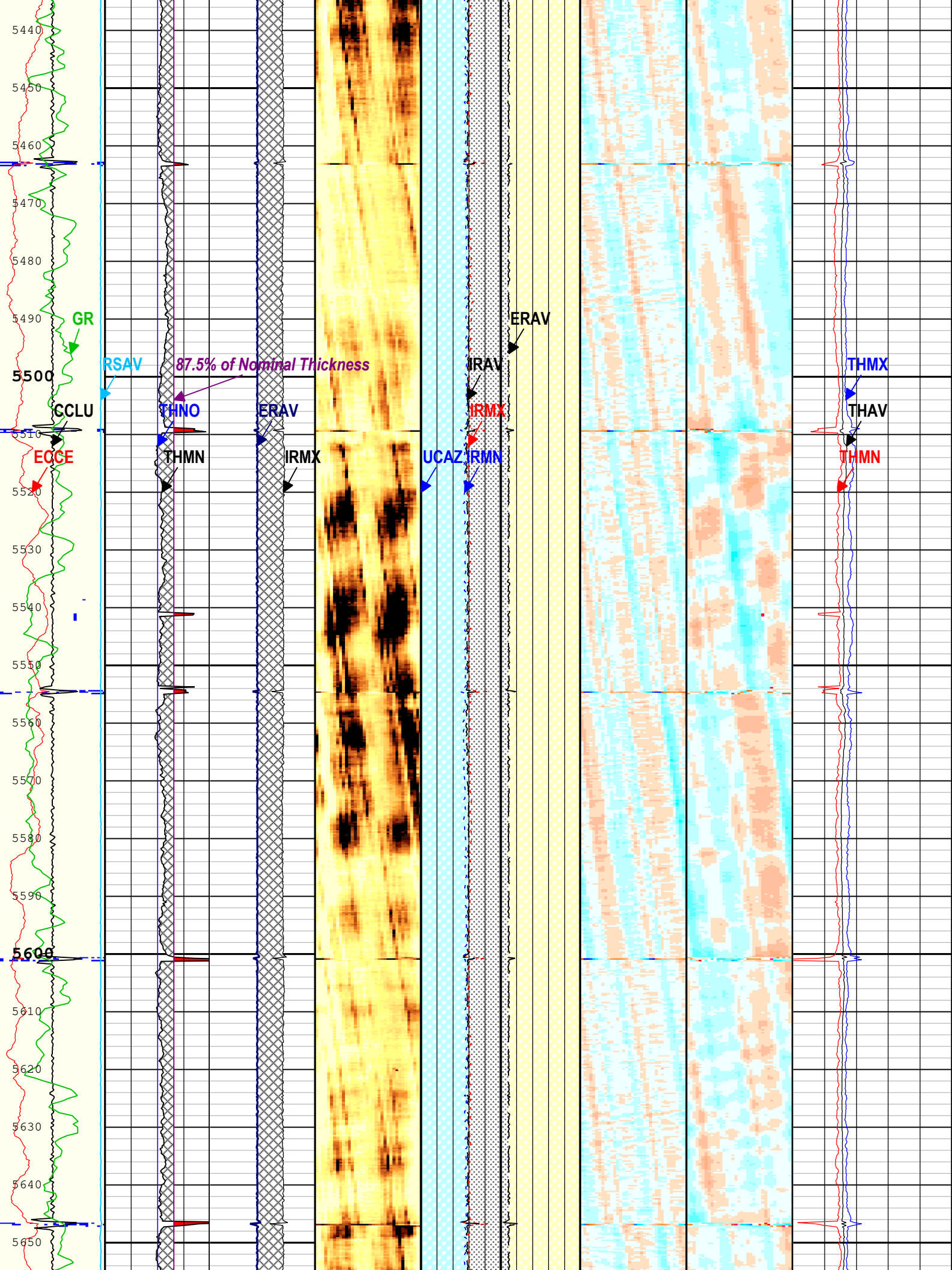
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RSAV
87.5% of Nominal Thickness
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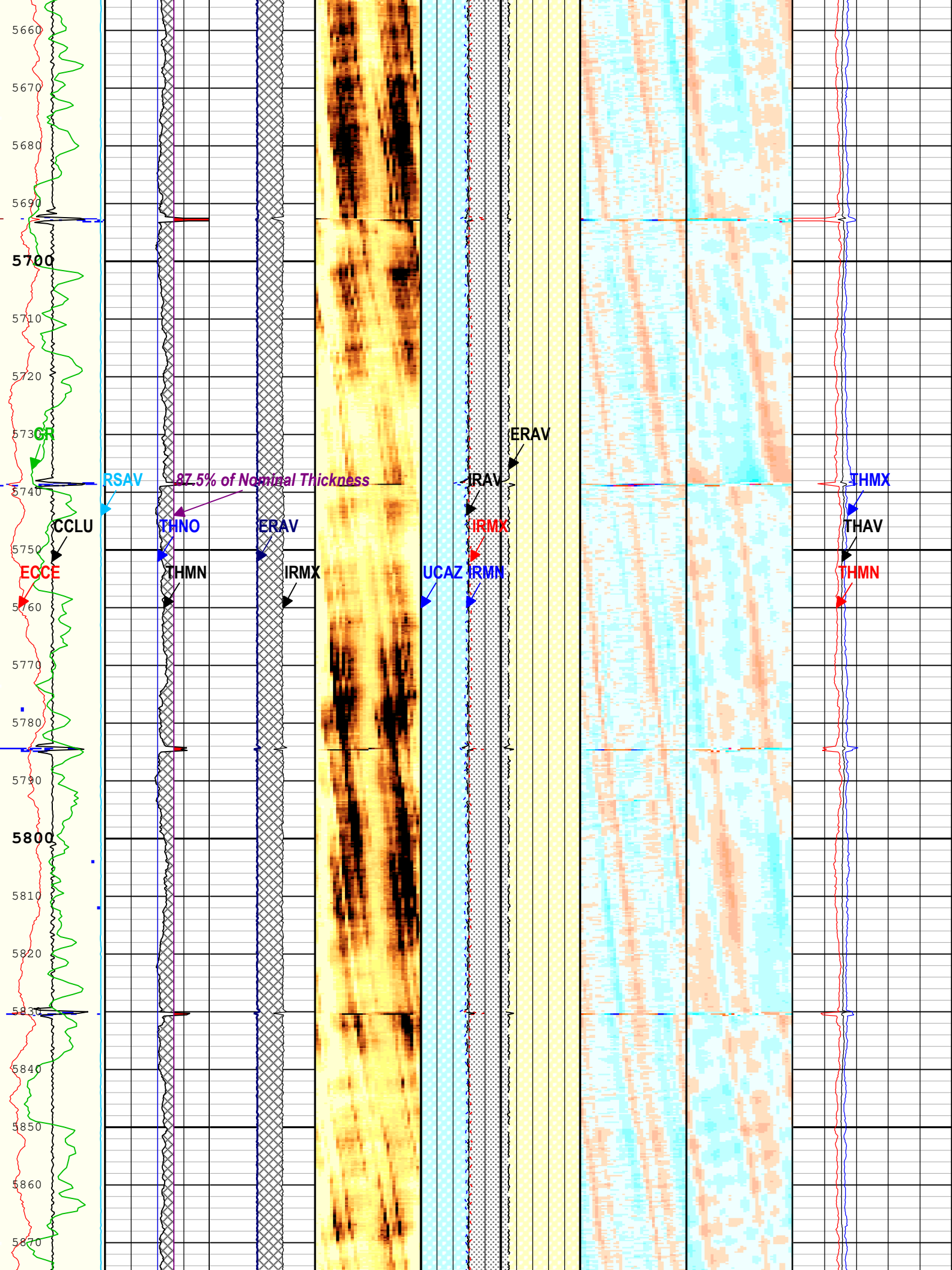
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87.5% of Nominal Thickness
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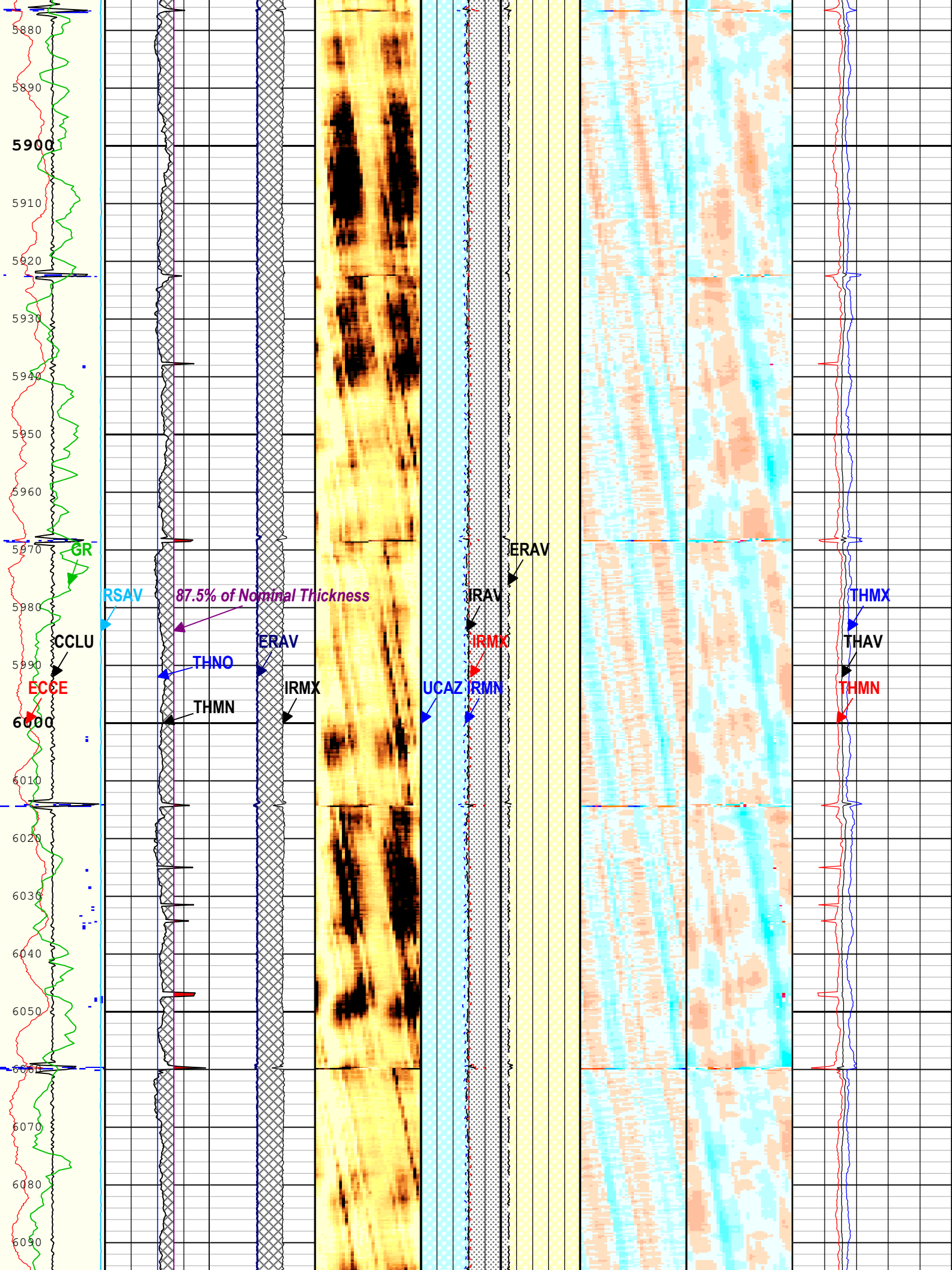
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RSAV
87.5% of Nominal Thickness
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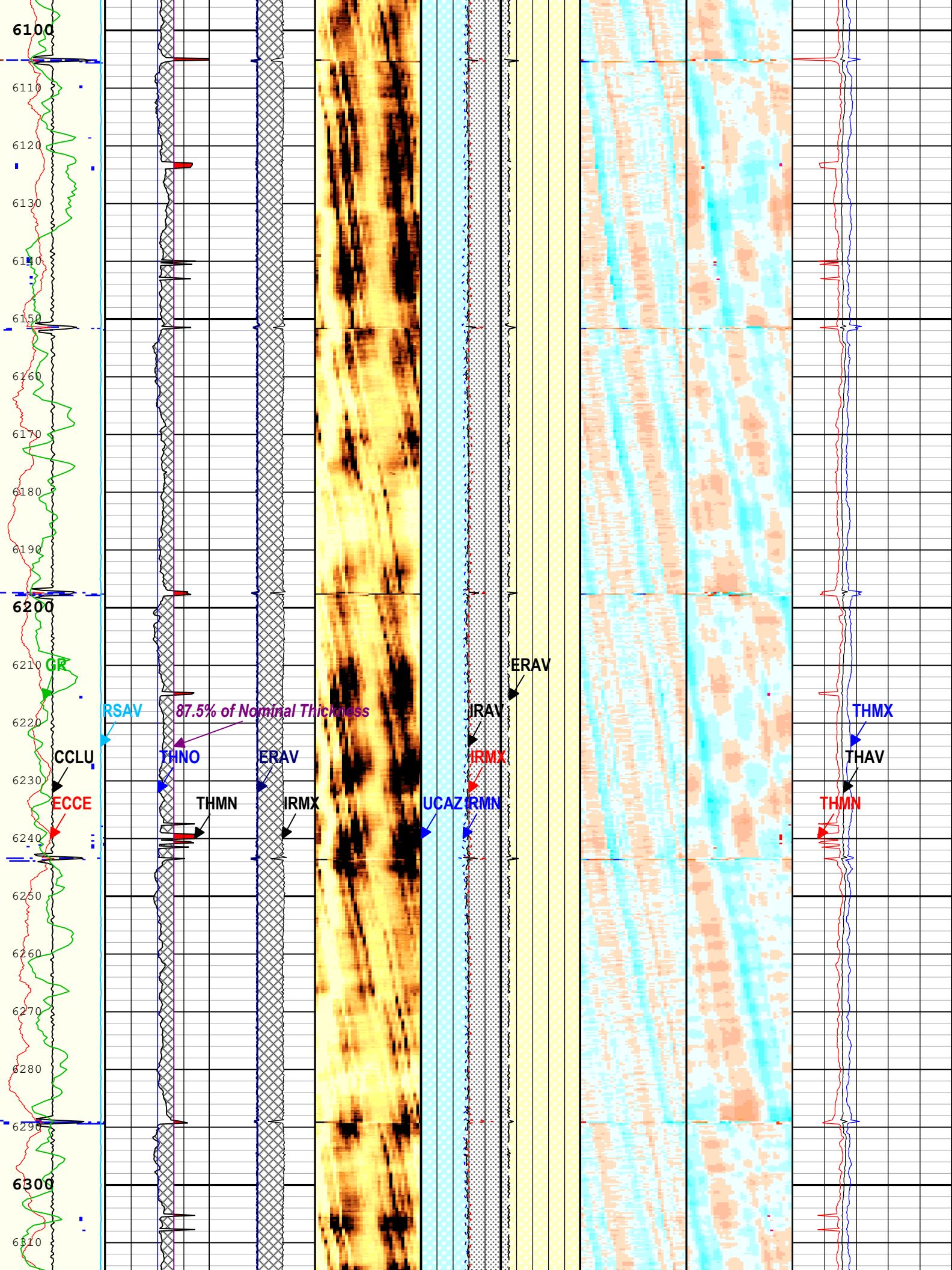
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87.5% of Nominal Thickness
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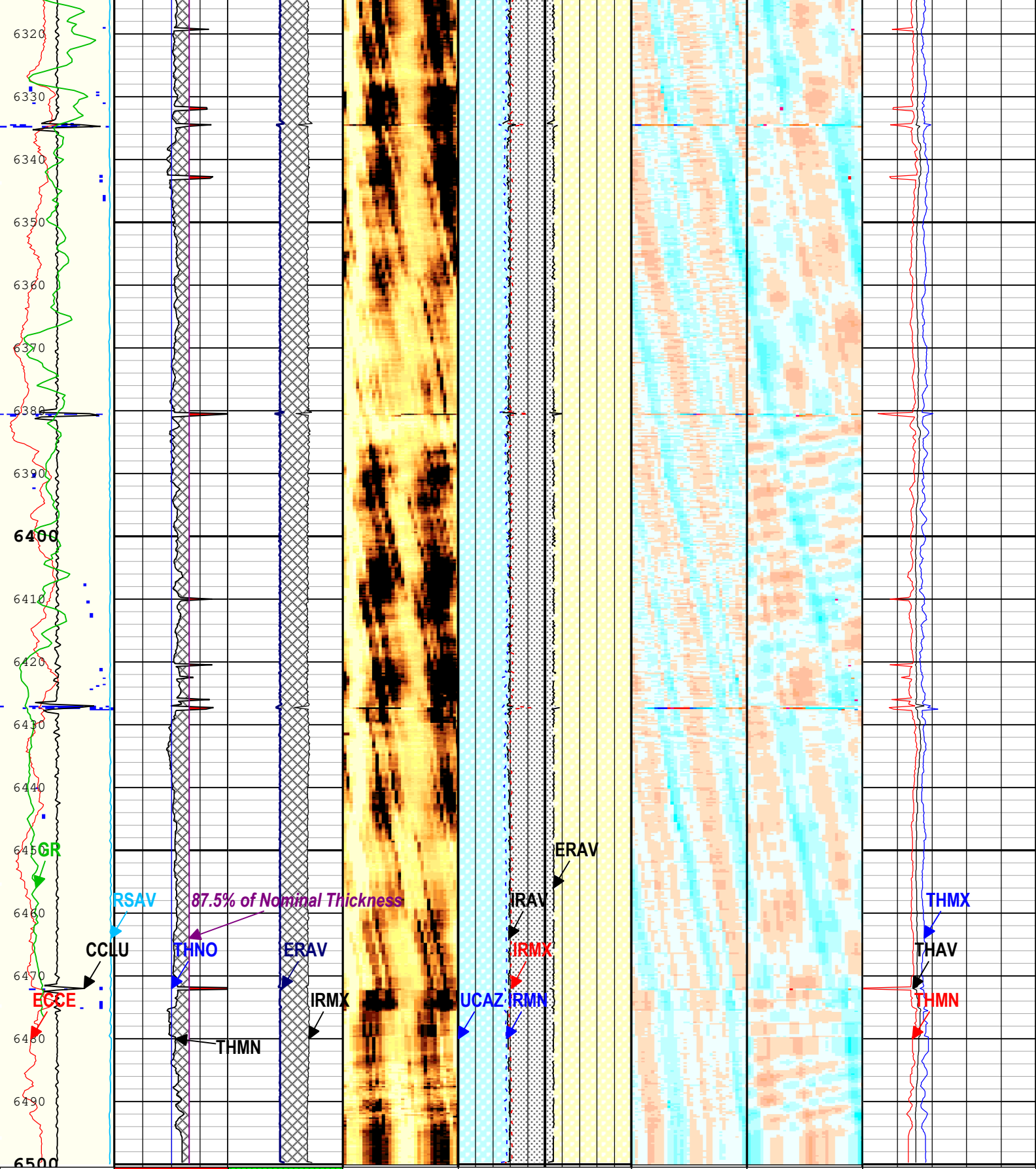


Absent 1.500 3.500

Explicit Normalization

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

Large Reduction from Nominal Thickness

Casing Within 87.5% of Nominal Thickness

Internal Radius Exceeds External Average

Casing Thickness (Between Max Internal and External

Absent -5.200 -3.600 -2.000 -0.400

Explicit Normalization

USIT - Amplitude of Wave (AWBK) USIT-E[1]

Internal Radius Minimum Value (IRMN) USIT-E[1]

1.7 in 2.7

Internal Radius Maximum Value (IRMX) USIT-E[1]

1.7 in 2.7

Internal Radius Averaged

Absent -0.059 -0.028 0.004 0.035 0.068

Explicit Normalization

USIT - Internal Radii Normalized (IRBK)

Absent -0.059 -0.028 0.004 0.035 0.068

Explicit Normalization

USIT - Casing Thickness Normalized (THBK)

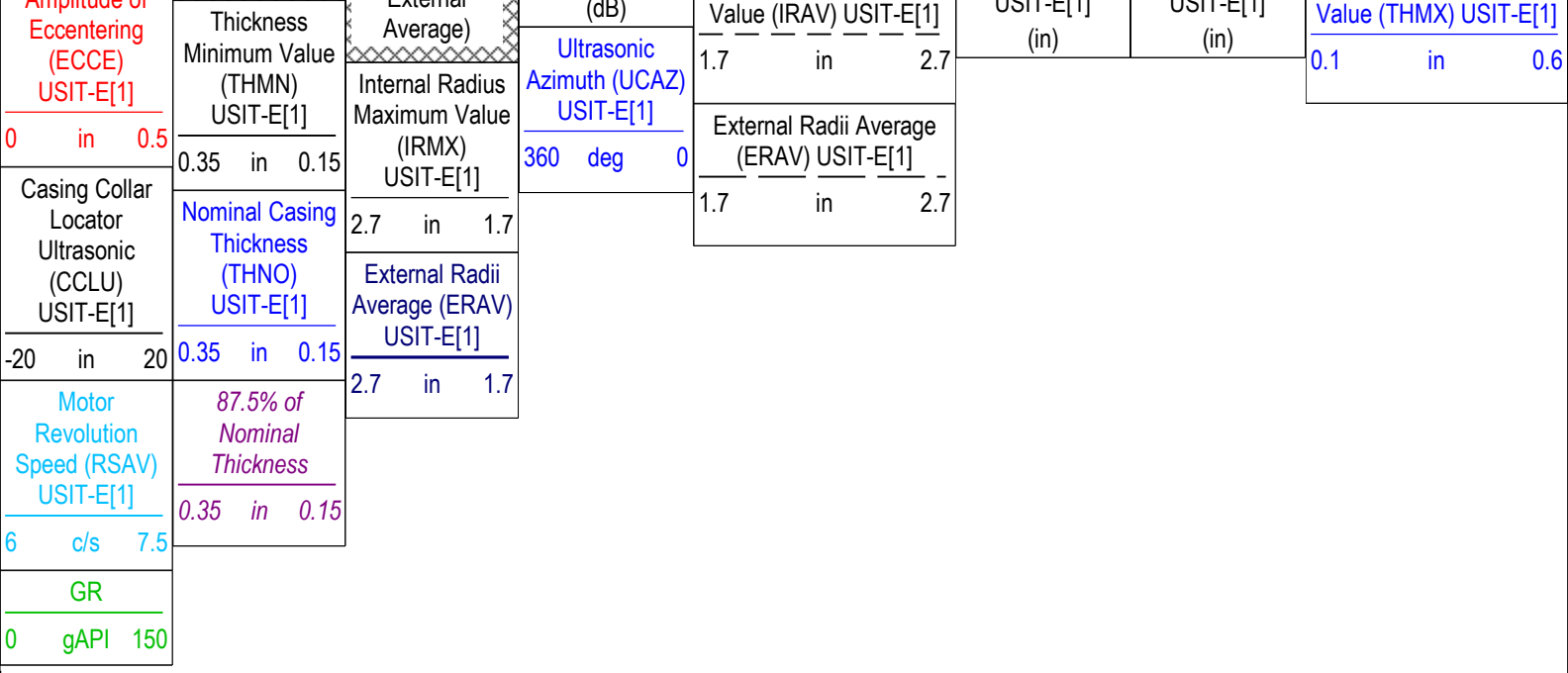
Thickness Minimum Value (THMN) USIT-E[1]

0.1 in 0.6

Thickness Average Value (THAV) USIT-E[1]

0.1 in 0.6

Thickness Maximum



Description: USI Corrosion Format: Log (USI Casing Integrity 4.5IN) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Aug-2022 02:05:29

Channel Processing Parameters

1B: 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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	Time Zoned	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	Time Zoned	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

1BDepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	26	0	83
BS	12.25	83	1092
BS	7.875	1092	6500.5

All depth are actual.

1BTime Zoned Parameters

Pass Log[2]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
THDH	130	11-Aug-2022 11:06:07	11-Aug-2022 11:36:33	6500.37	4550.72
THDH	115	11-Aug-2022 11:36:33	11-Aug-2022 11:36:35	4550.72	4547.32
THDH	130	11-Aug-2022 11:36:35	11-Aug-2022 11:42:18	4547.32	3974.37
THDL	70	11-Aug-2022 11:06:07	11-Aug-2022 11:36:33	6500.37	4550.72
THDL	85	11-Aug-2022 11:36:33	11-Aug-2022 11:36:35	4550.72	4547.32
THDL	70	11-Aug-2022 11:36:35	11-Aug-2022 11:42:18	4547.32	3974.37

Pass Log[9]:Up

THDH	130	11-Aug-2022 13:18:29	11-Aug-2022 13:58:28	3974.37	10.62
THDL	70	11-Aug-2022 13:18:29	11-Aug-2022 13:58:28	3974.37	10.62

All depth are at tool zero.

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	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	

1BTime Zoned Parameters

Pass Log[2]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	90	11-Aug-2022 11:06:07	11-Aug-2022 11:19:49	6500.37	6174.18
EMXV	80	11-Aug-2022 11:19:49	11-Aug-2022 11:42:18	6174.18	3974.37

Pass Log[9]:Up

EMXV	60	11-Aug-2022 13:18:29	11-Aug-2022 13:58:28	3974.37	10.62

All depth are at tool zero.

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

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

1B	Repeat[3]:Up	Up	5916.90 ft	6506.81 ft	11-Aug-2022 12:02:47 PM	11-Aug-2022 12:36:59 PM	ON	1.43 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-21

1B: Repeat[3]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:05:51

TIME_1900 - Time Marked every 60.00 (s)

Absent 1.500 3.500

Explicit Normalization

USIT - USIT Processing Flags (UFLG) USIT-E

Large Reduction from Nominal Thickness

Internal Radius Exceeds External Average

Casing Within 87.5% of Nominal Thickness

Amplitude of Eccentering (ECCE) USIT-E

0 in 0.5

Thickness Minimum Value (THMN) USIT-E

0.35 in 0.15

Casing Thickness (Between Max Internal and External Average)

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Nominal Casing Thickness (THNO) USIT-E

0.35 in 0.15

Internal Radius Maximum Value (IRMX) USIT-E

2.7 in 1.7

Motor Revolution Speed (RSAV) USIT-E

6 c/s 7.5

87.5% of Nominal Thickness

0.35 in 0.15

External Radii Average (ERAV) USIT-E

2.7 in 1.7

GR

0 gAPI 150

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

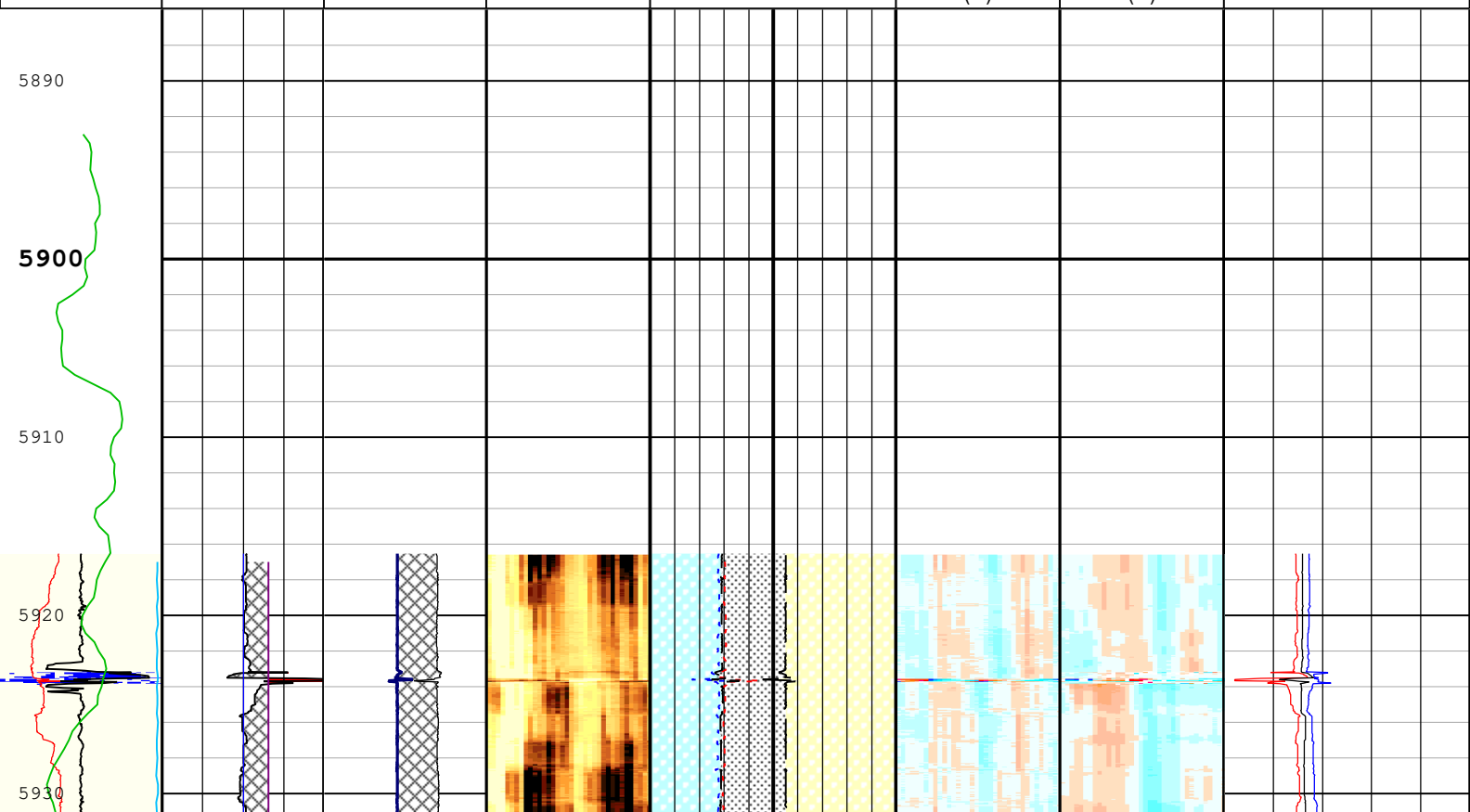
0.1 in 0.6

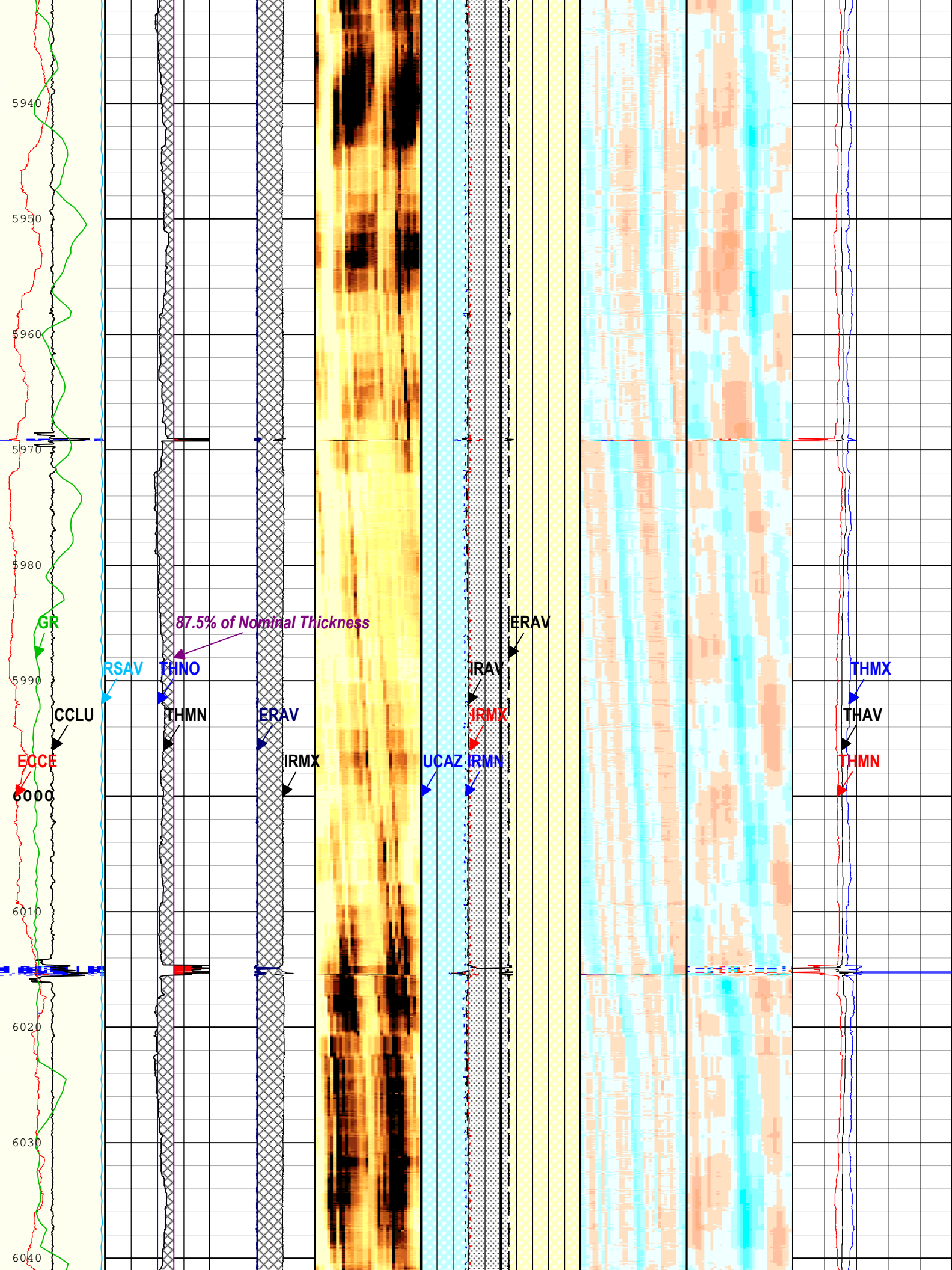
Thickness Average Value (THAV) USIT-E

0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E

0.1 in 0.6

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GR
87.5% of Nominal Thickness
RSAV
THNO
CCLU
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ECCE
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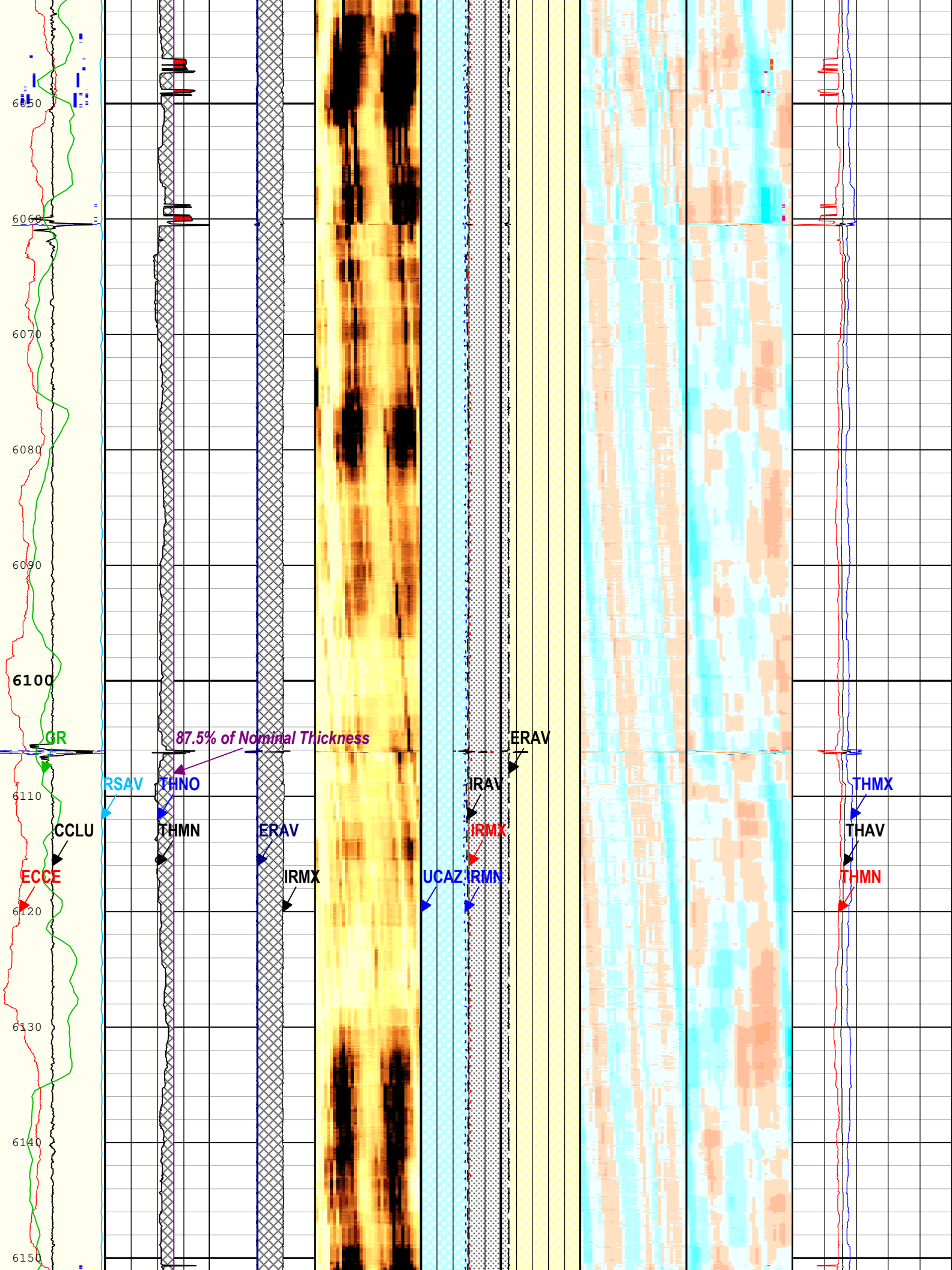
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87.5% of Nominal Thickness
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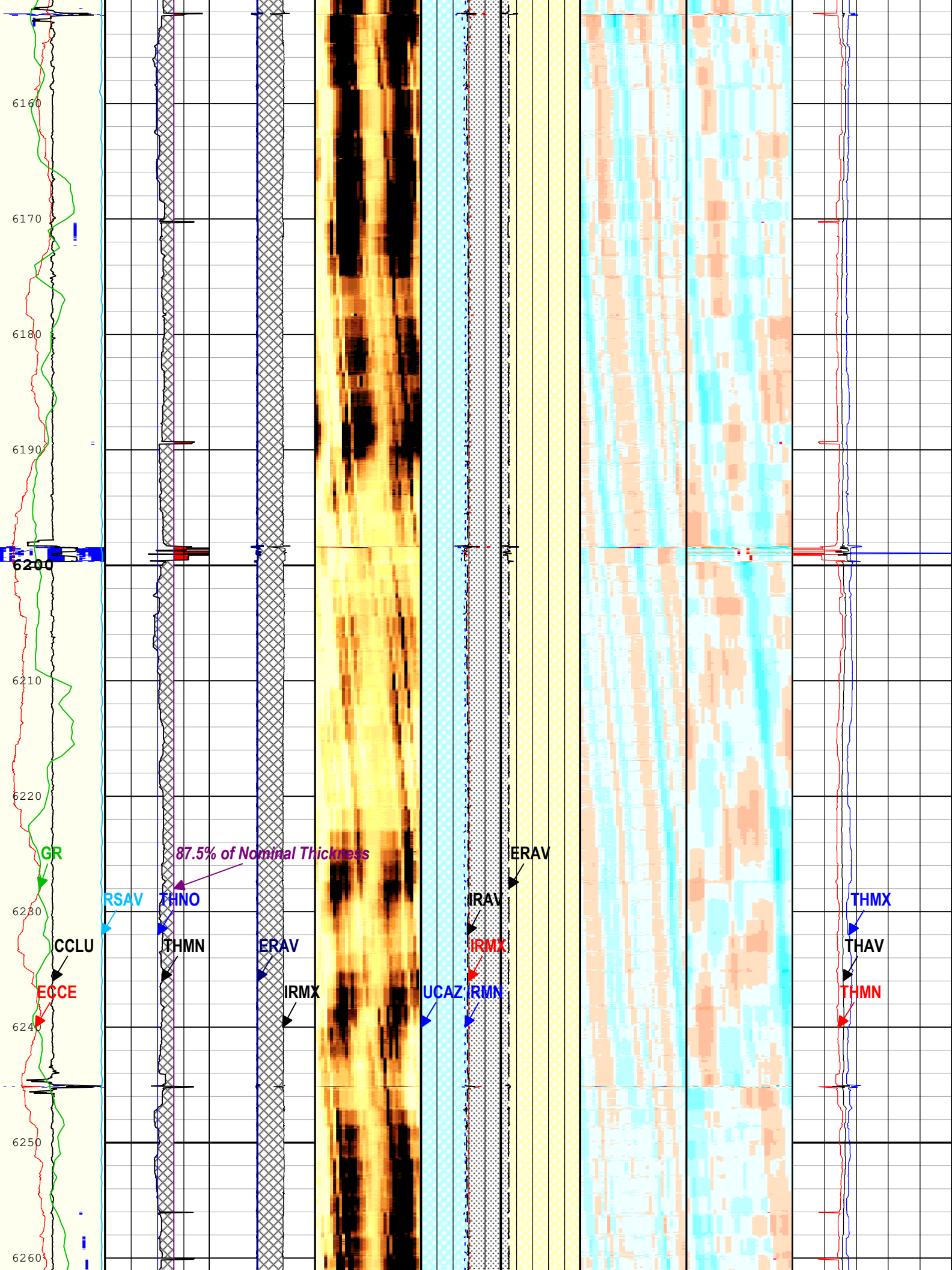
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87.5% of Nominal Thickness
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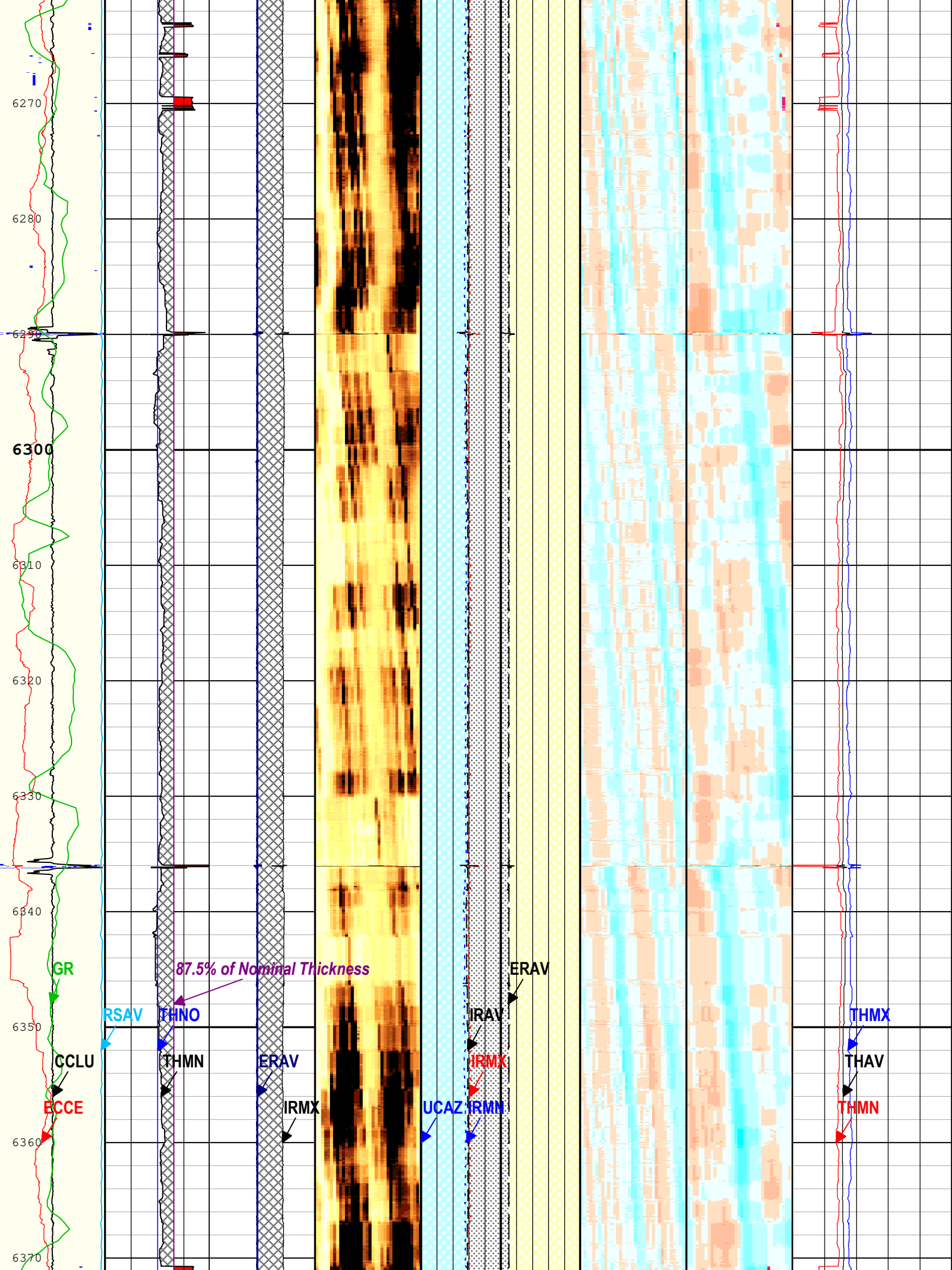
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87.5% of Nominal Thickness
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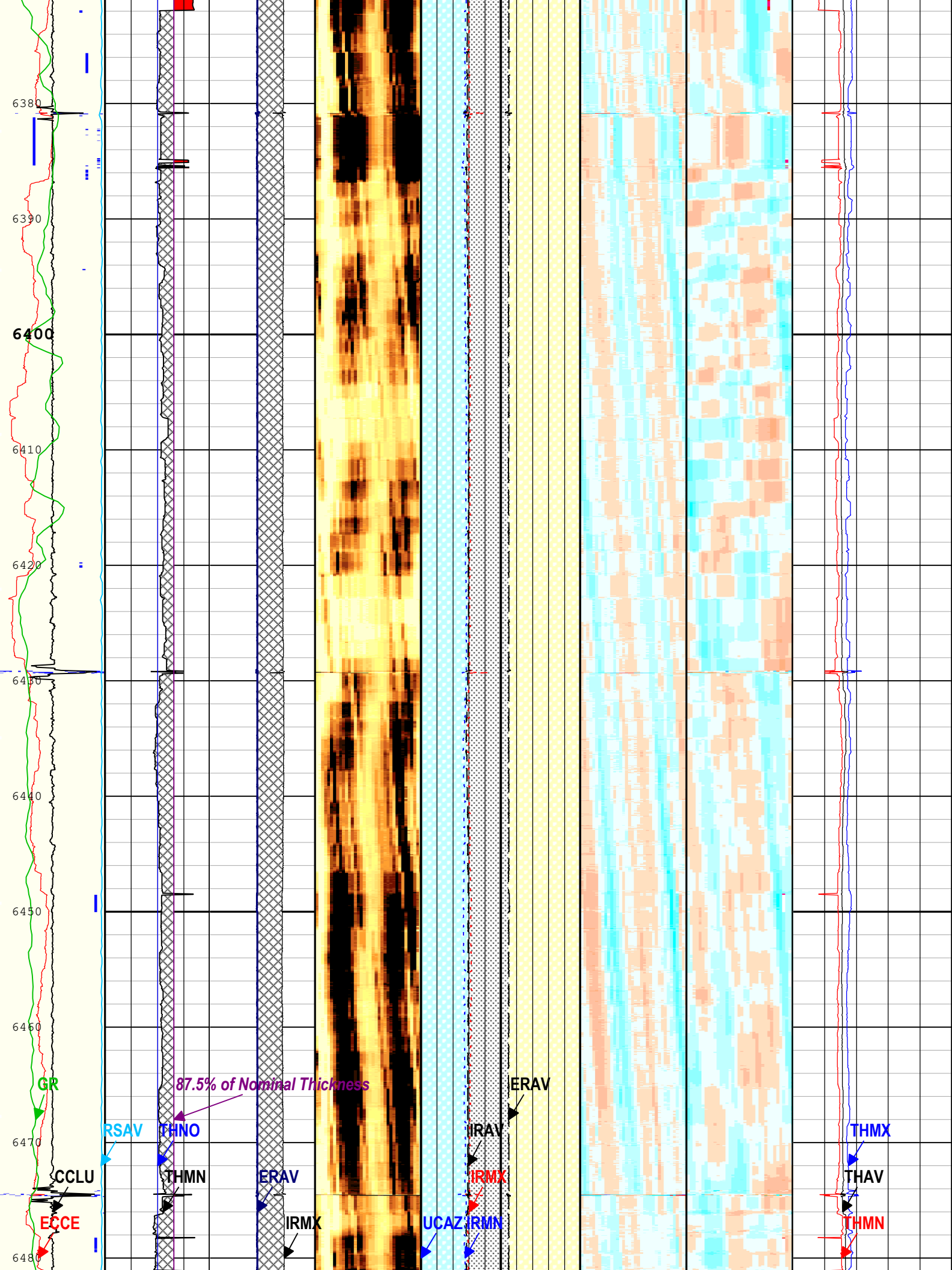
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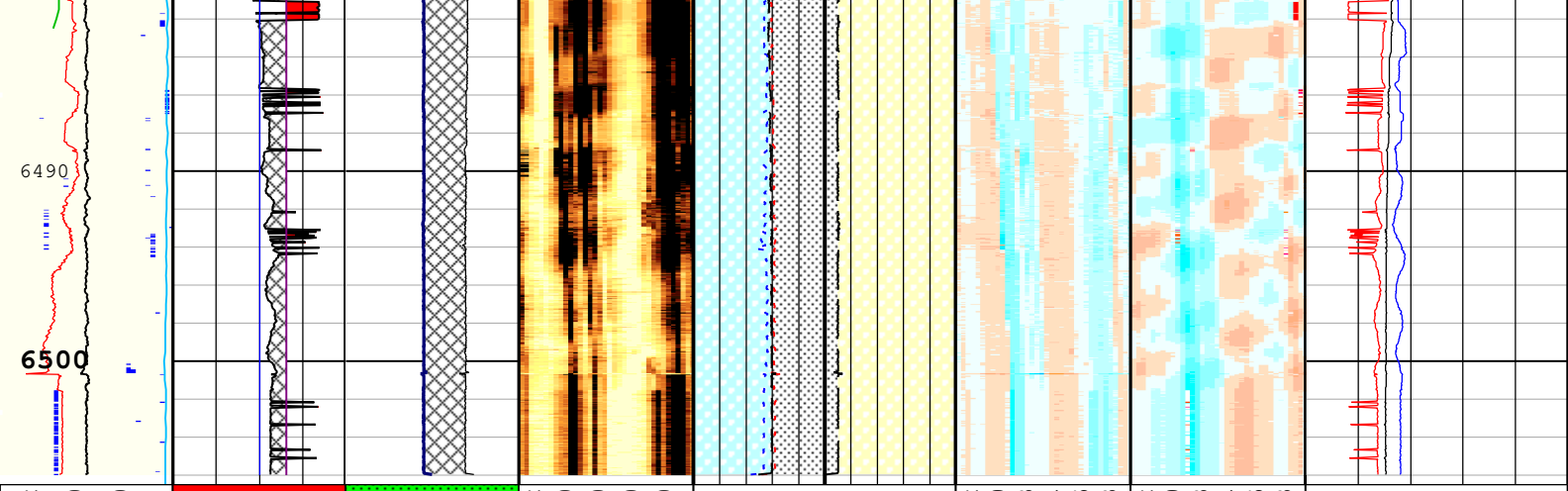


Absent 1.500 3.500

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

6 c/s 7.5

GR

0 gAPI 150

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

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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:05:52

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Repeat[4]:Up	Up	5501.72 ft	5588.20 ft	11-Aug-2022 12:39:44 PM	11-Aug-2022 12:44:04 PM	ON	1.30 ft	Yes

All depths are referenced to toolstring zero

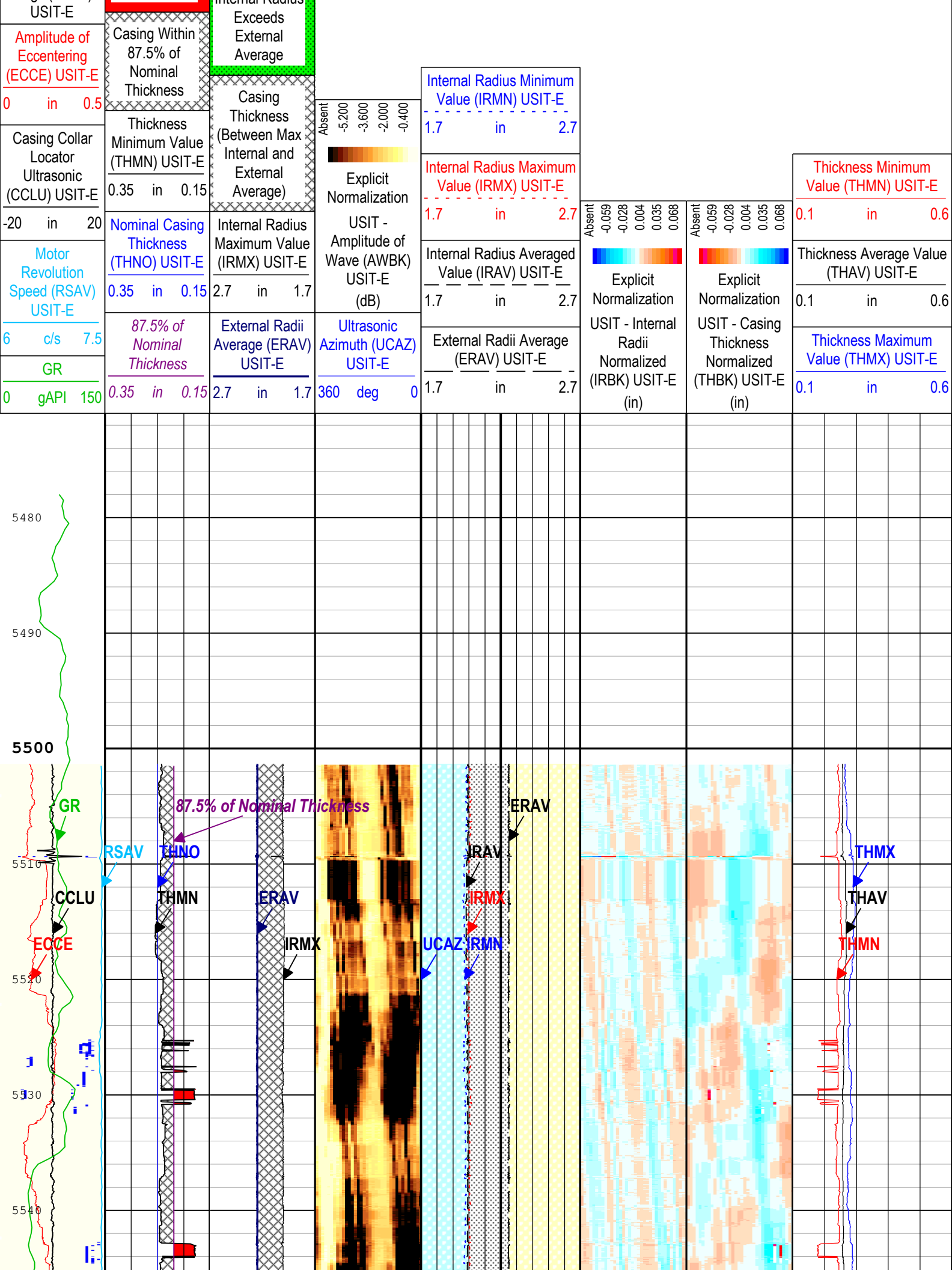
Log

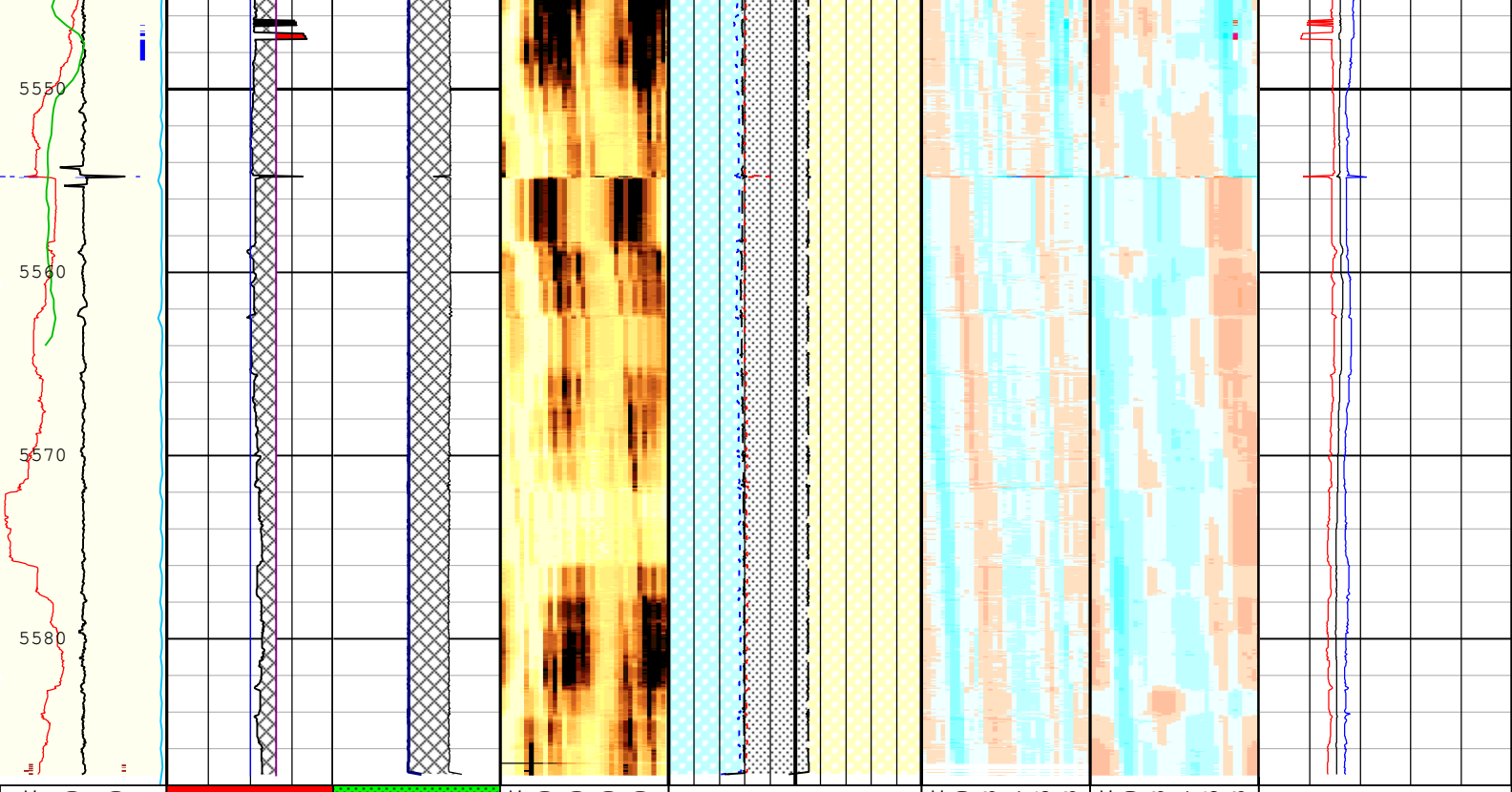
Company:Chevron USA Inc. Well:SKR 598-36-BV-21

1B: Repeat[4]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:05:59

TIME_1900 - Time Marked every 60.00 (s)


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
Casing Within 87.5% of Nominal Thickness
Exceeds External Average
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
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)
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
5480
5490
5500
5510
5520
5530
5540
GR
RSAV
THNO
87.5% of Nominal Thickness
CCLU
ECCE
THMN
ERAV
IRMX
UCAZ
IRMN
IRAV
ERAV
THMX
THAV
THMN



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

6 c/s 7.5

GR

0 gAPI 150

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

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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:05:59

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	in

BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Repeat[5]:Up	Up	4744.98 ft	4821.68 ft	11-Aug-2022 12:49:18 PM	11-Aug-2022 12:52:50 PM	ON	0.65 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-21

1B: Repeat[5]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:06:02

Creation Date: 12-Aug-2022 02:06:03

TIME_1900 - Time Marked every 60.00 (s)

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

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

Internal Radius Minimum Value (IRMN) USIT-E

1.7 in 2.7

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

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Thickness Minimum Value (THMN) USIT-E

0.35 in 0.15

Nominal Casing Thickness (THNO) USIT-E

0.35 in 0.15

Internal Radius Maximum Value (IRMX) USIT-E

2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E

1.7 in 2.7

Thickness Average Value (THAV) USIT-E

0.1 in 0.6

Motor Revolution Speed (RSAV) USIT-E

6 c/s 7.5

87.5% of Nominal Thickness

0.35 in 0.15

External Radii Average (ERAV) USIT-E

2.7 in 1.7

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

GR

0 gAPI 150

4720

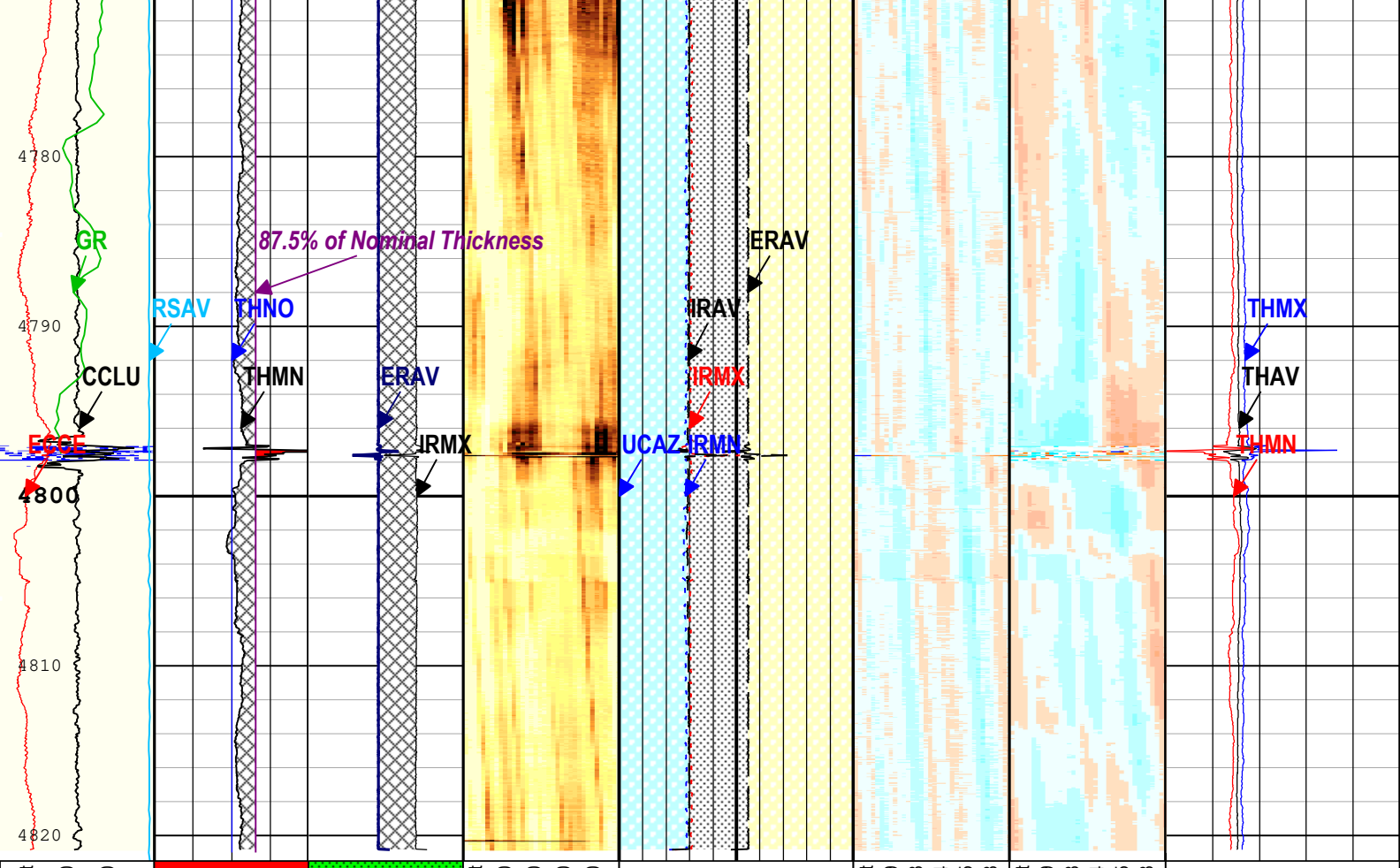
4730

4740

4750

4760

4770



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
6 c/s 7.5

GR
0 gAPI 150

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
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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:06:03

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Repeat[6]:Up	Up	4422.33 ft	4496.23 ft	11-Aug-2022 12:55:02 PM	11-Aug-2022 12:58:53 PM	ON	0.39 ft	Yes

All depths are referenced to toolstring zero

All depths are referenced to toolstring zero

Log

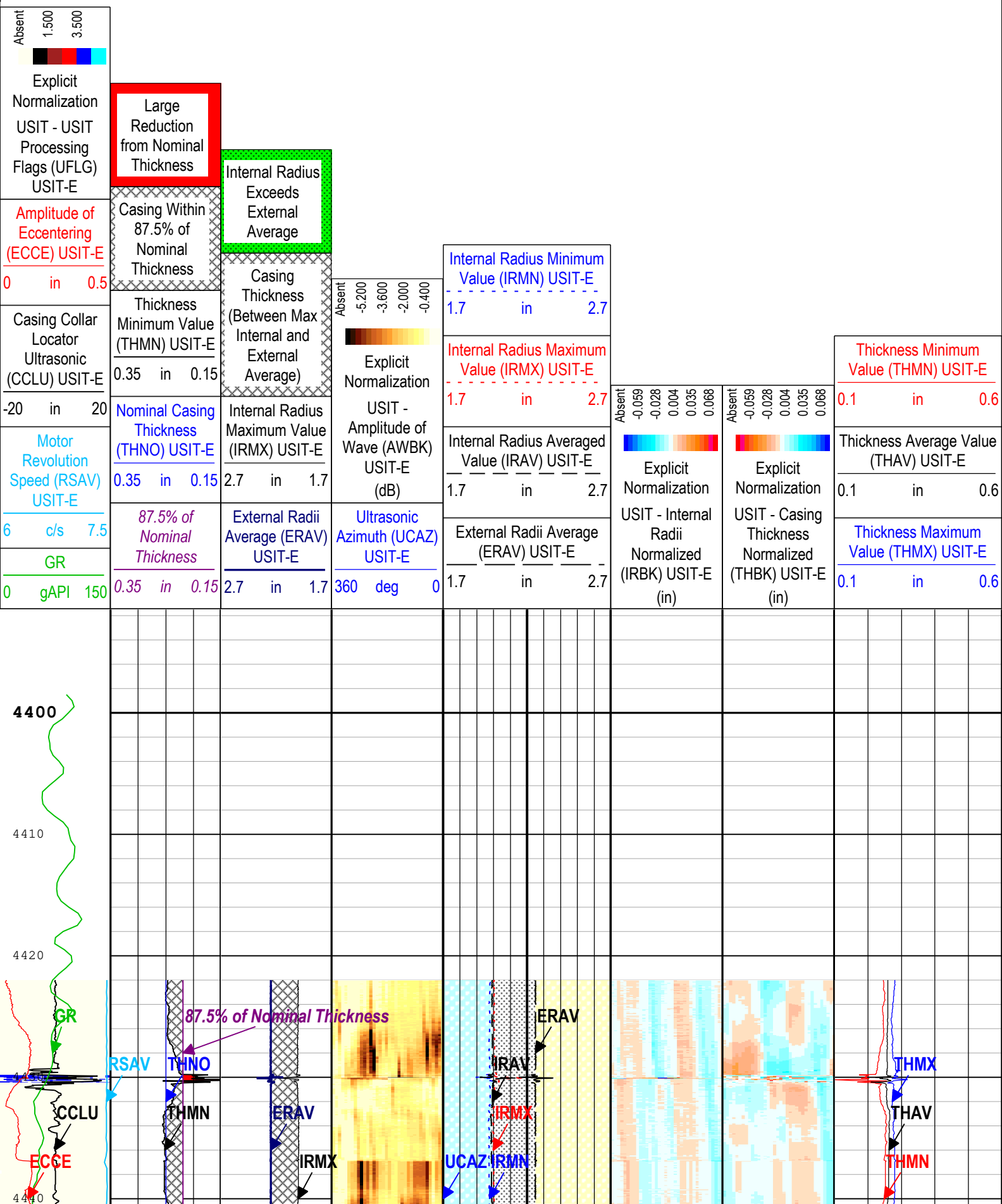
Company:Chevron USA Inc. Well:SKR 598-36-BV-21

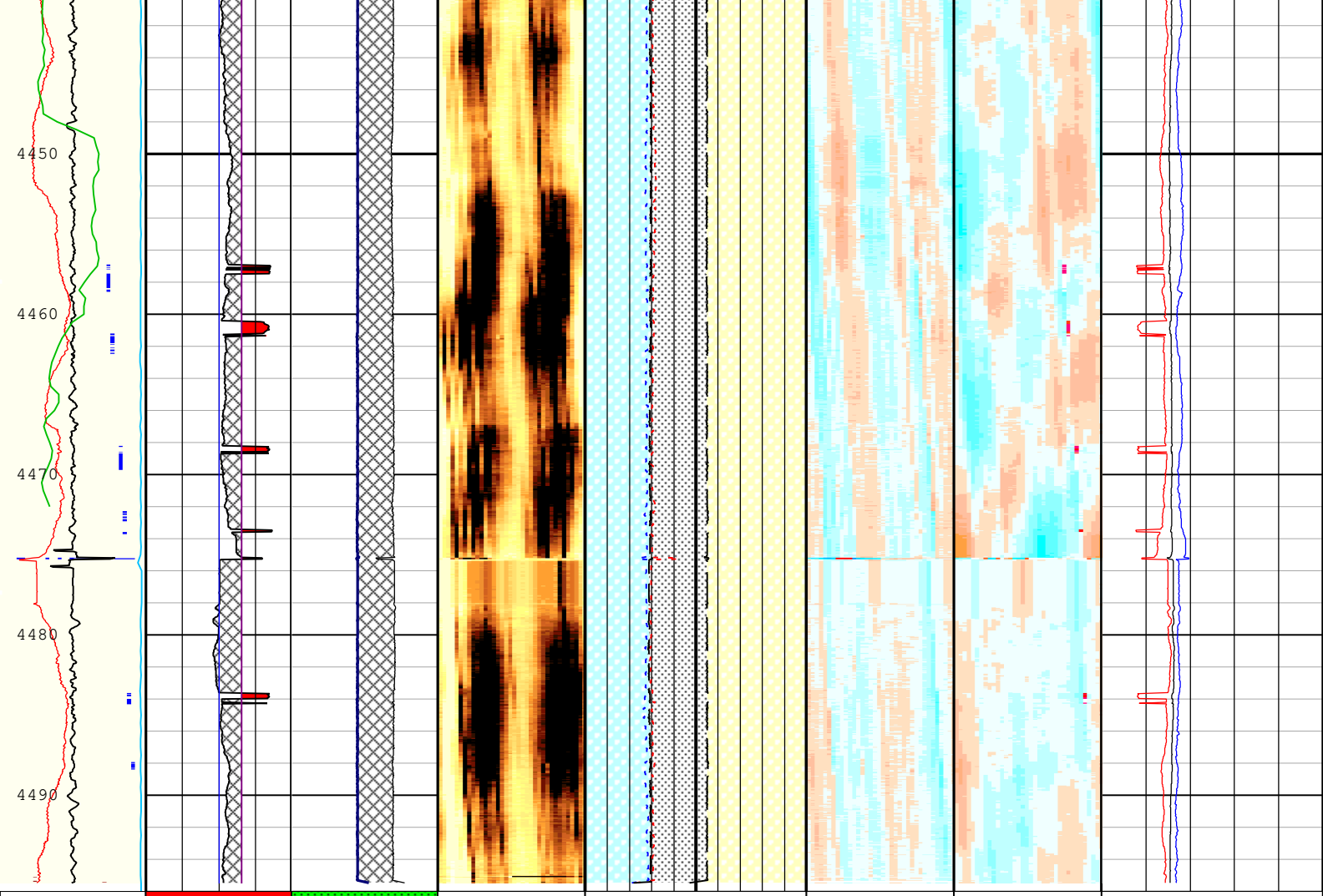
1B: Repeat[6]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:06:08

TIME_1900 - Time Marked every 60.00 (s)





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

6 c/s 7.5

GR

0 gAPI 150

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

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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

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

1B	Repeat[7]:Up	Up	4149.37 ft	4314.43 ft	11-Aug-2022 1:00:58 PM	11-Aug-2022 1:08:54 PM	ON	0.65 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-21

1B: Repeat[7]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:06:12

TIME_1900 - Time Marked every 60.00 (s)

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

USIT - Amplitude of Wave (AWBK) USIT-E

(dB)

Internal Radius Minimum Value (IRMN) USIT-E

1.7 in 2.7

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

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Thickness Minimum Value (THMN) USIT-E

0.35 in 0.15

Nominal Casing Thickness (THNO) USIT-E

0.35 in 0.15

Internal Radius Maximum Value (IRMX) USIT-E

2.7 in 1.7

Internal Radius Averaged Value (IRAV) USIT-E

1.7 in 2.7

Thickness Average Value (THAV) USIT-E

0.1 in 0.6

Motor Revolution Speed (RSAV) USIT-E

6 c/s 7.5

87.5% of Nominal Thickness

0.35 in 0.15

External Radii Average (ERAV) USIT-E

2.7 in 1.7

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

GR

0 gAPI 150

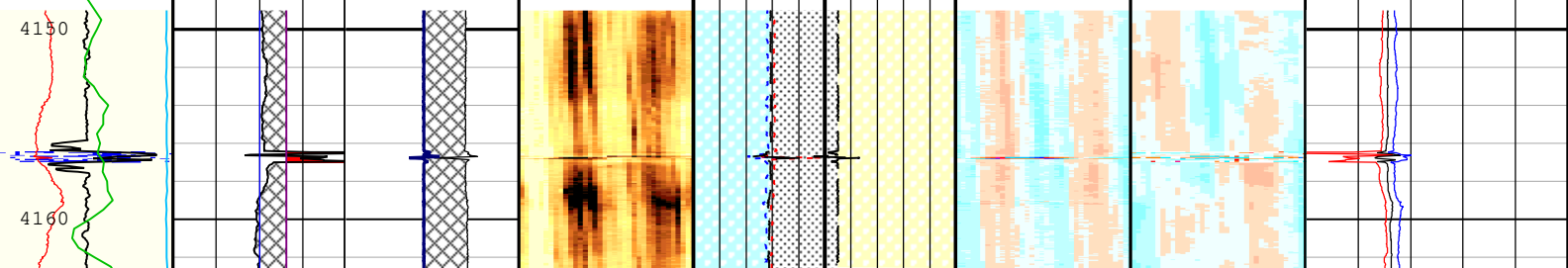
4120

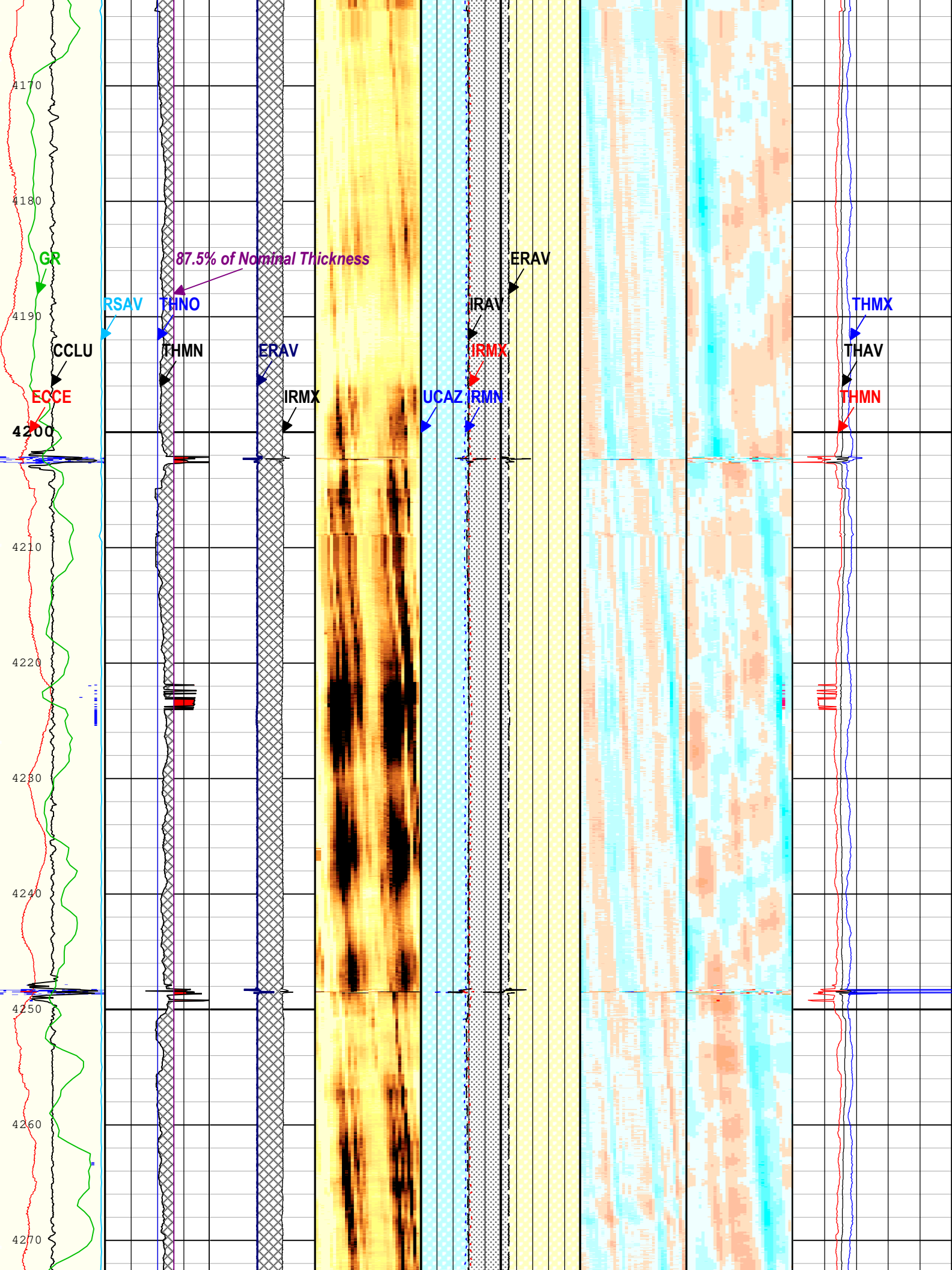
4130

4140

4150

4160

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87.5% of Nominal Thickness
RSAV
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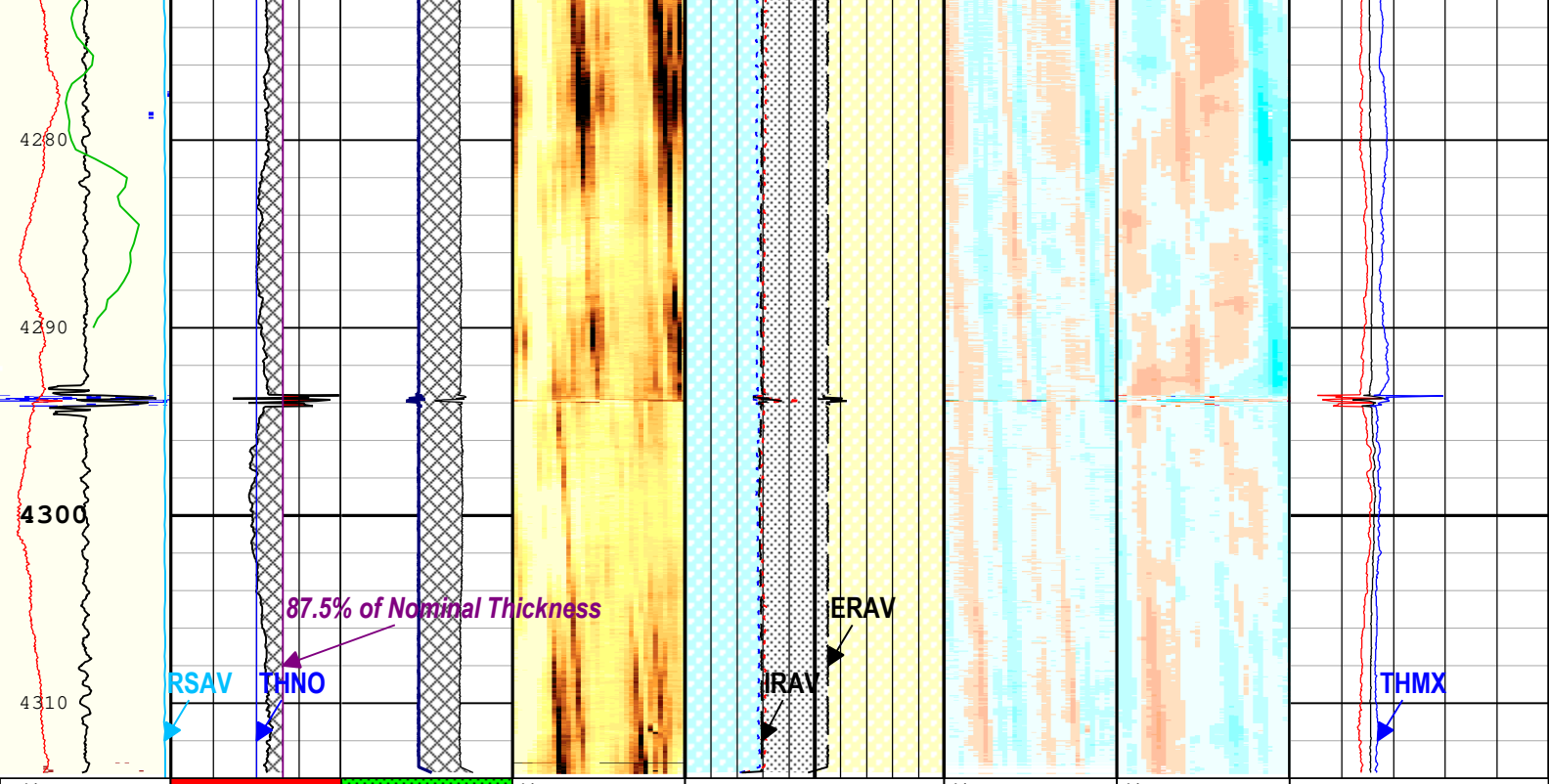


Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

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
6 c/s 7.5

GR
0 gAPI 150

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
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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:06:12

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Repeat[8]:Up	Up	4011.04 ft	4088.89 ft	11-Aug-2022 1:09:43 PM	11-Aug-2022 1:13:07 PM	ON	0.52 ft	Yes

All depths are referenced to toolstring zero

Log

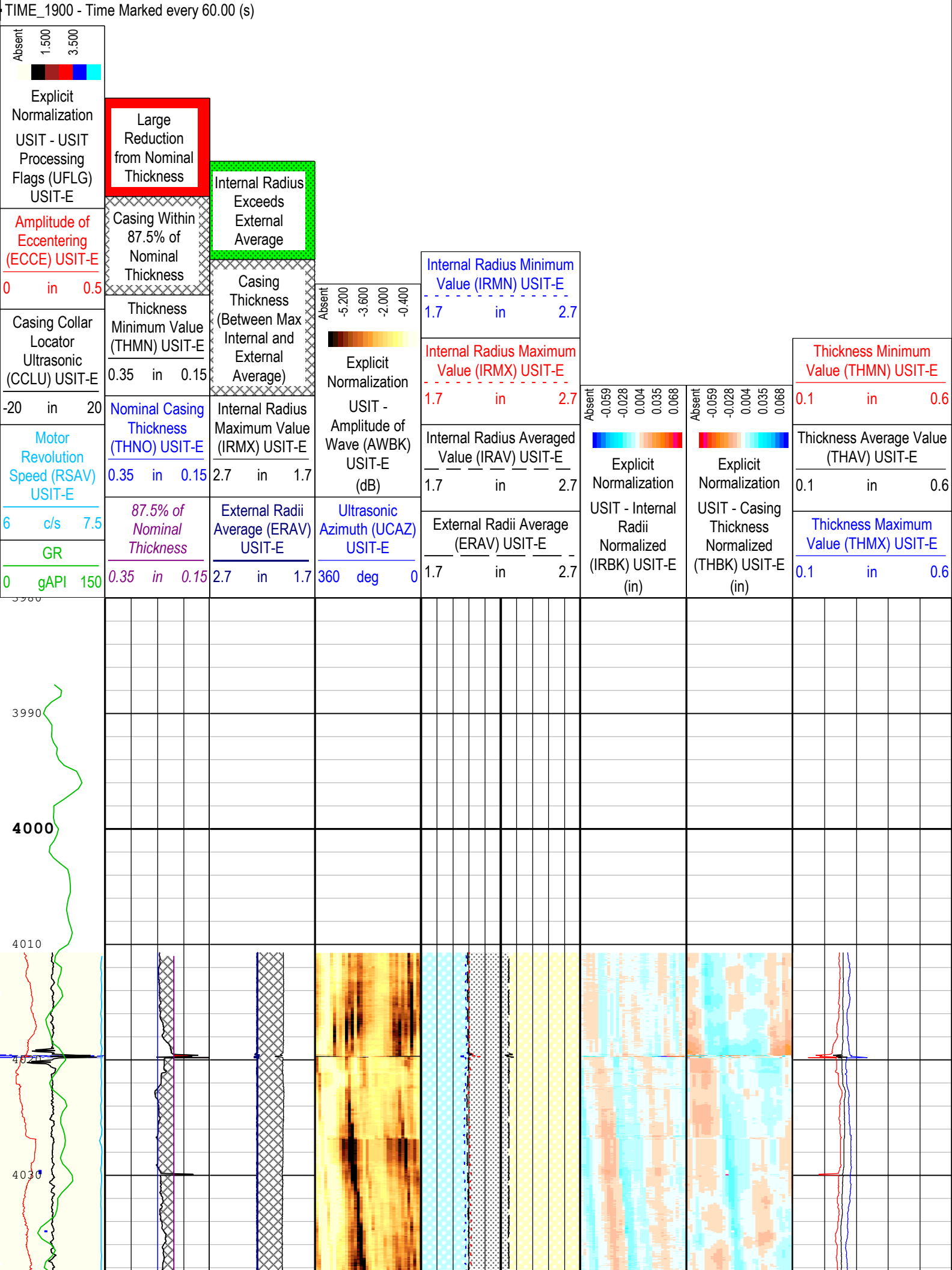
Company:Chevron USA Inc. Well:SKR 598-36-BV-21

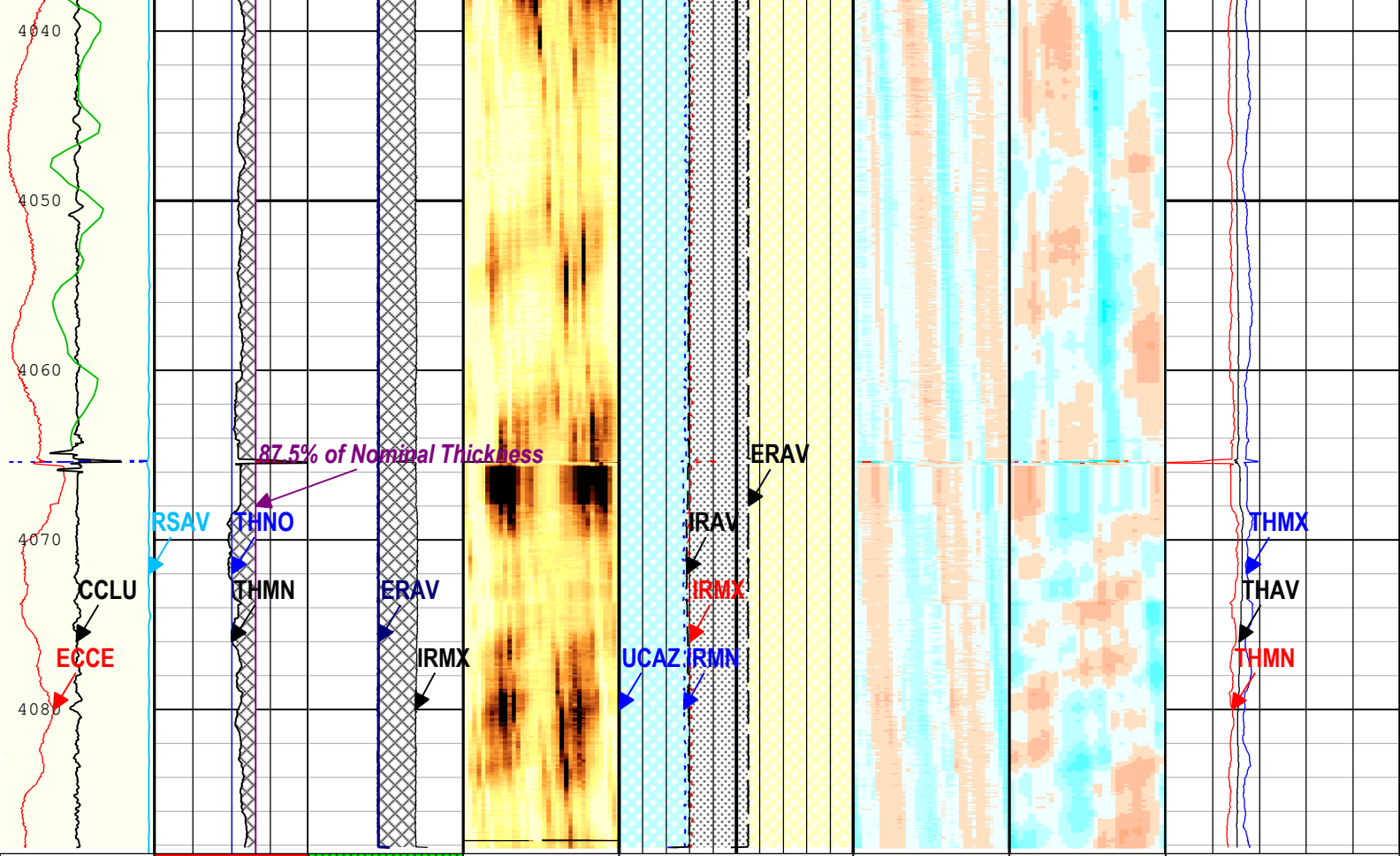
1B: Repeat[8]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:06:17

TIME_1900 - Time Marked every 60.00 (s)





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
6 c/s 7.5

GR
0 gAPI 150

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
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)

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:06:17

Channel Processing Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	7.875	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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	80	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	

1B

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.217167
	Wireline_NPD-ThruBit-2022.0_12.0.217960

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1B	Repeat[10]:Up	Up	20.27 ft	3960.58 ft	11-Aug-2022 2:27:29 PM	11-Aug-2022 5:43:06 PM	ON	3.57 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Chevron USA Inc. Well:SKR 598-36-BV-21

1B: Repeat[10]:Up:S009

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 12-Aug-2022 02:06:21

TIME_1900 - Time Marked every 60.00 (s)

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

6 c/s 7.5

GR

0 gAPI 150

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

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)

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

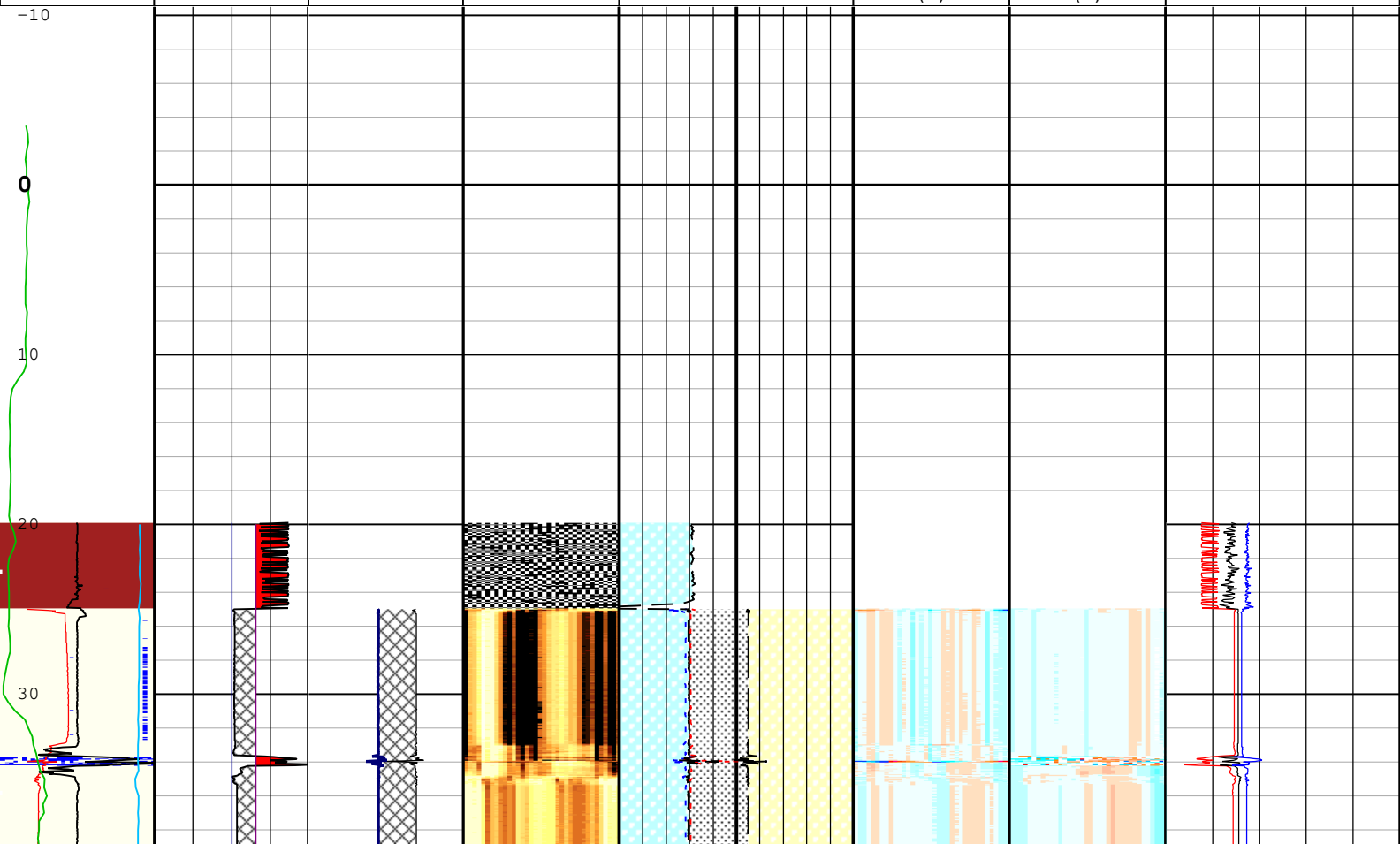
0.1 in 0.6

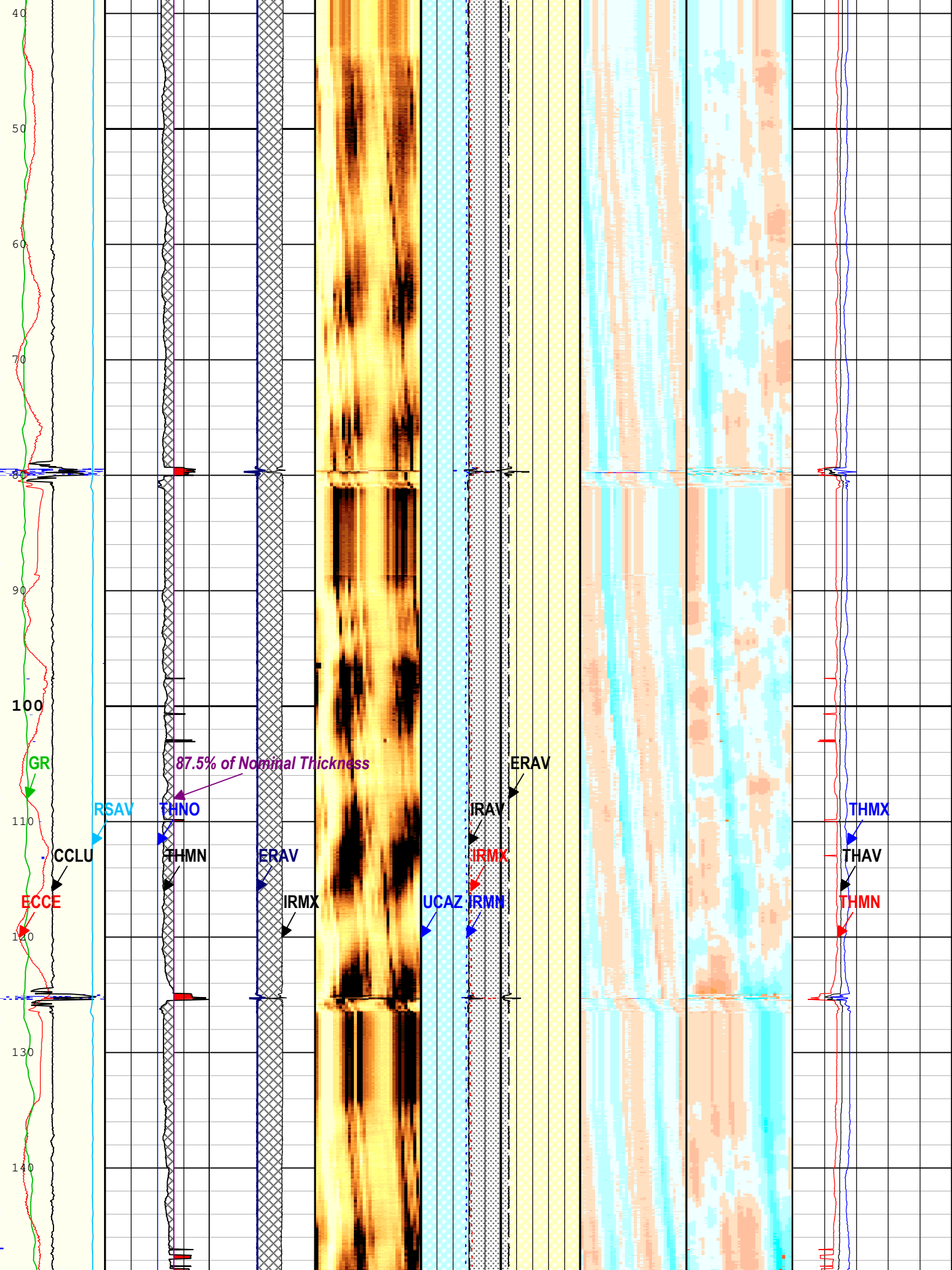
Thickness Average Value (THAV) USIT-E

0.1 in 0.6

Thickness Maximum Value (THMX) USIT-E

0.1 in 0.6

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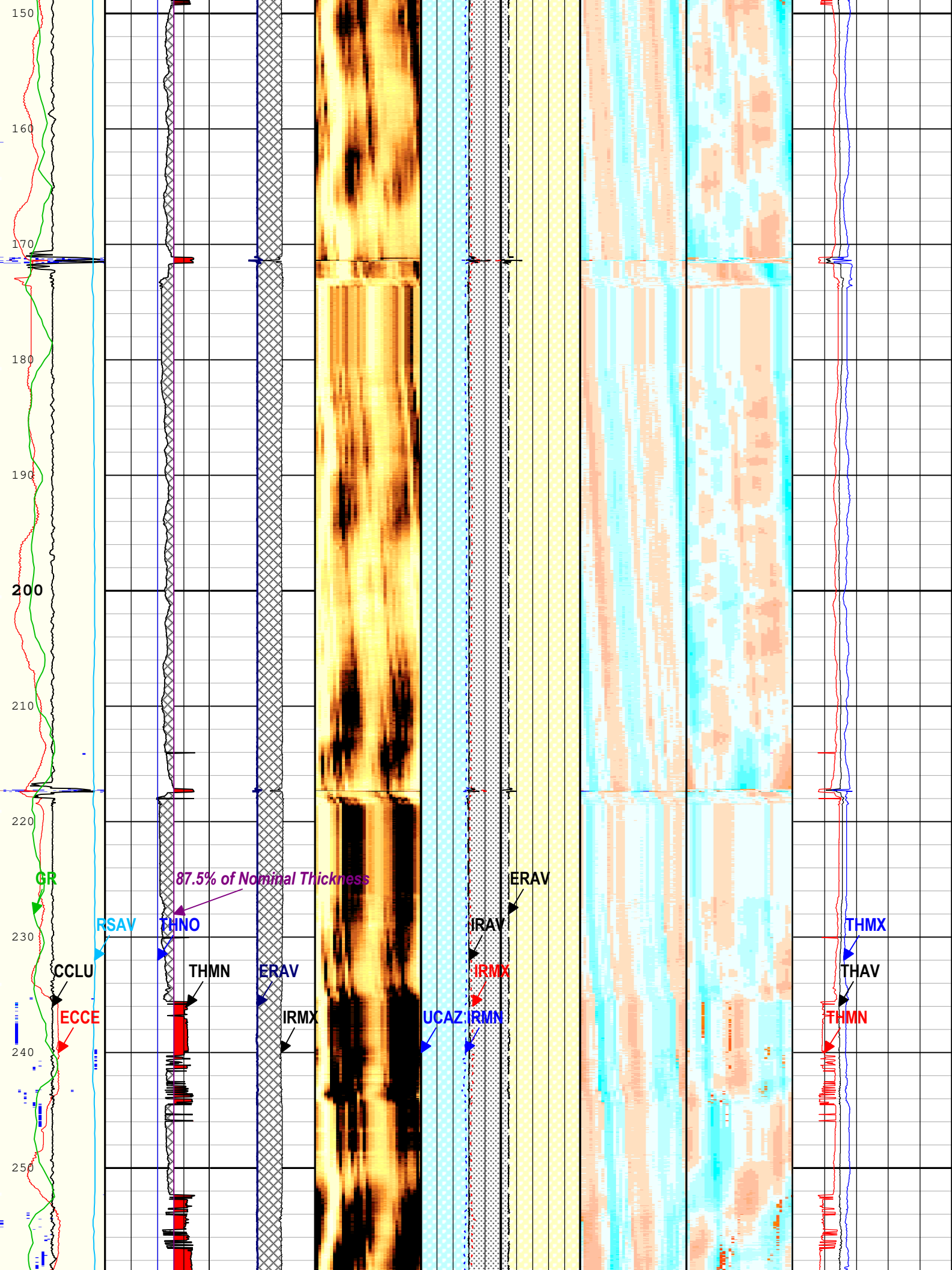
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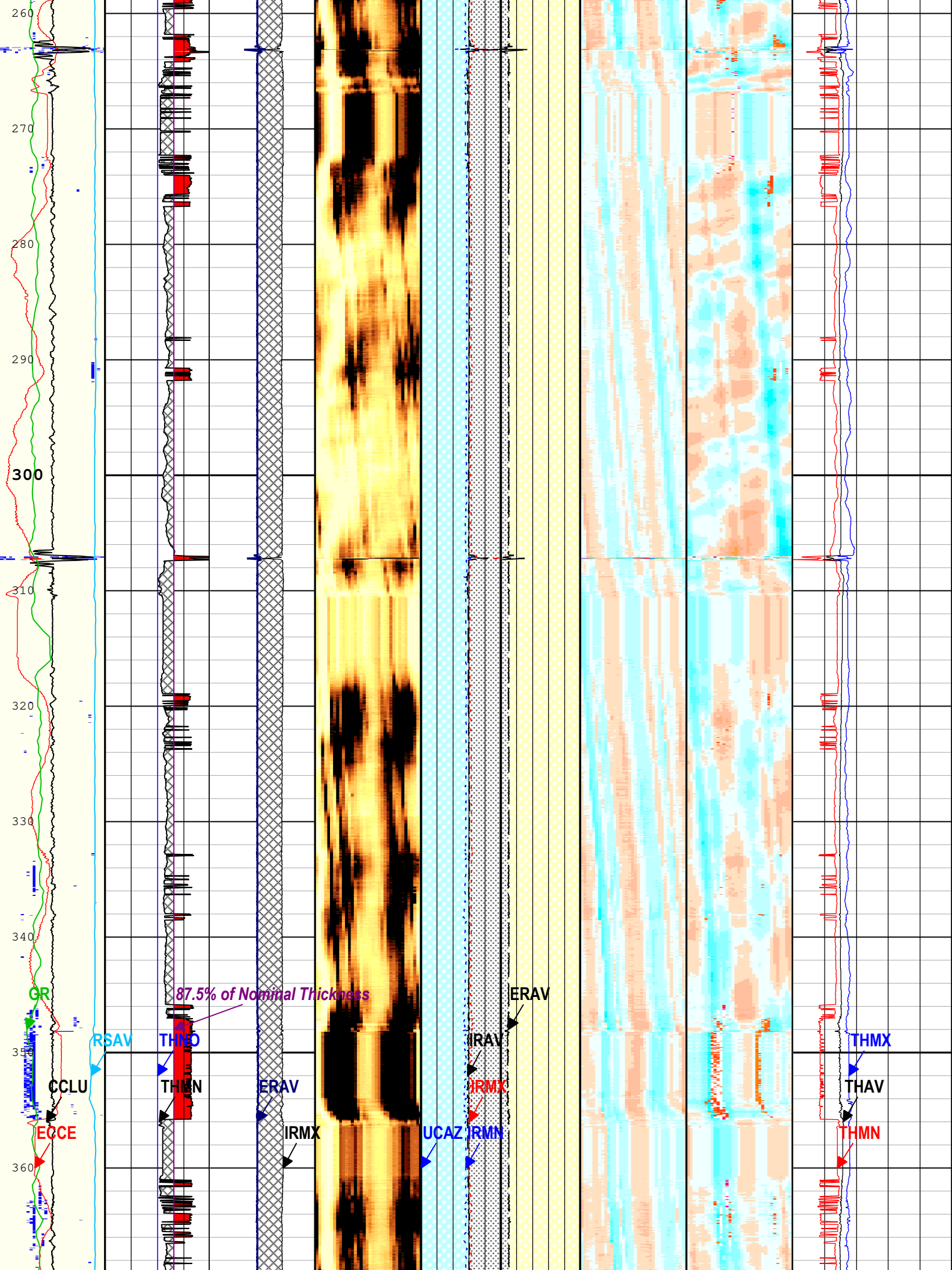
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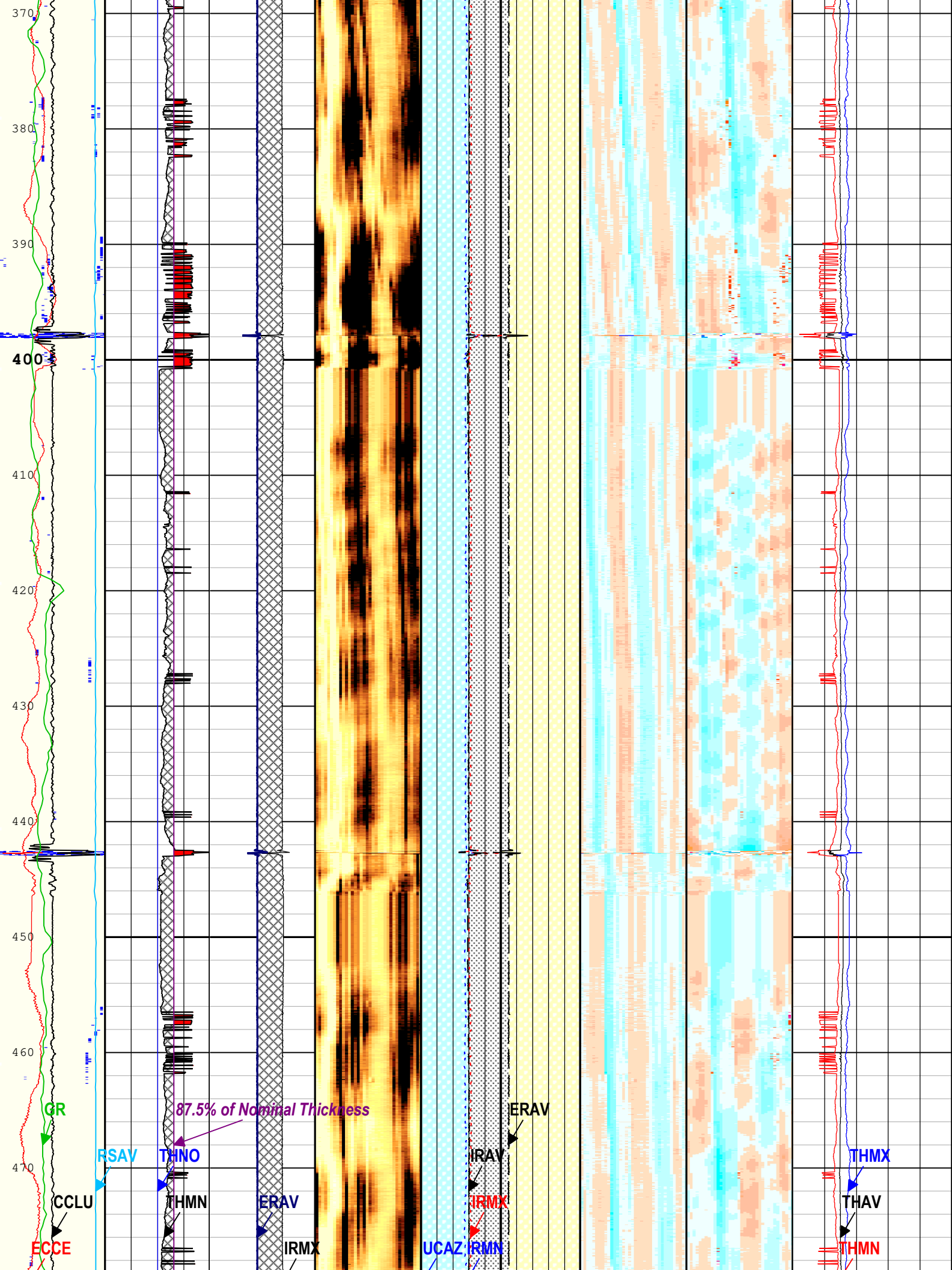
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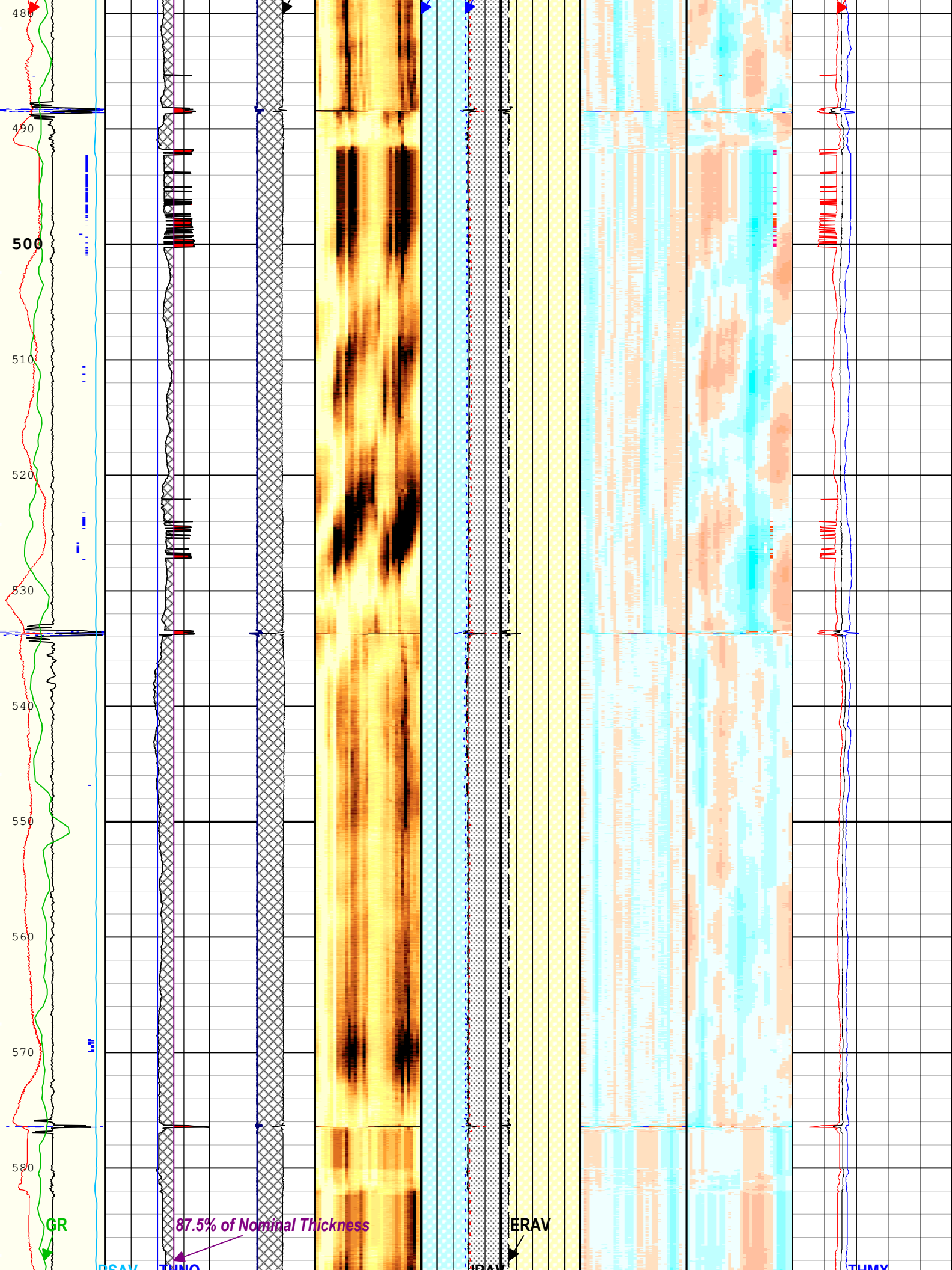
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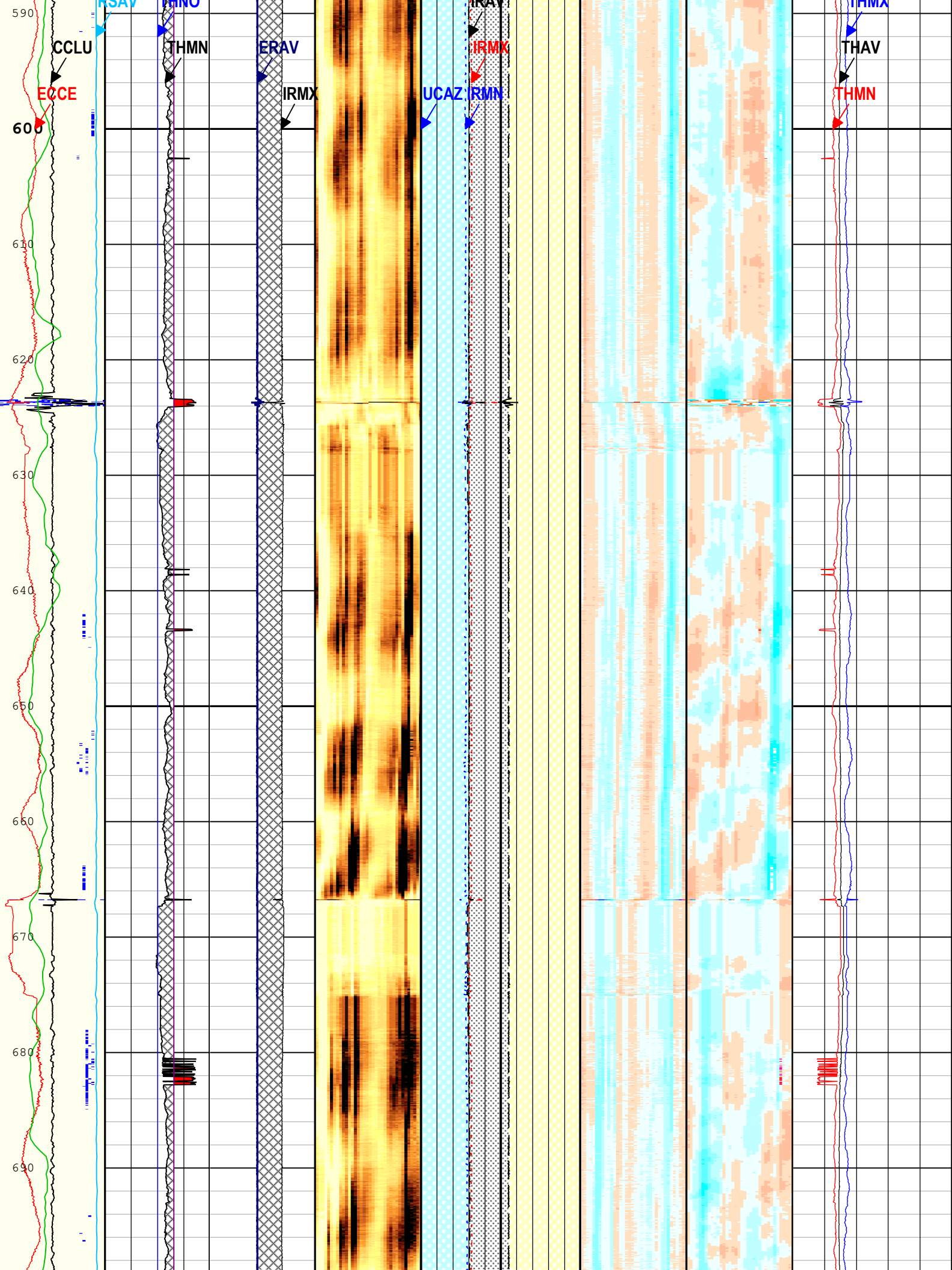
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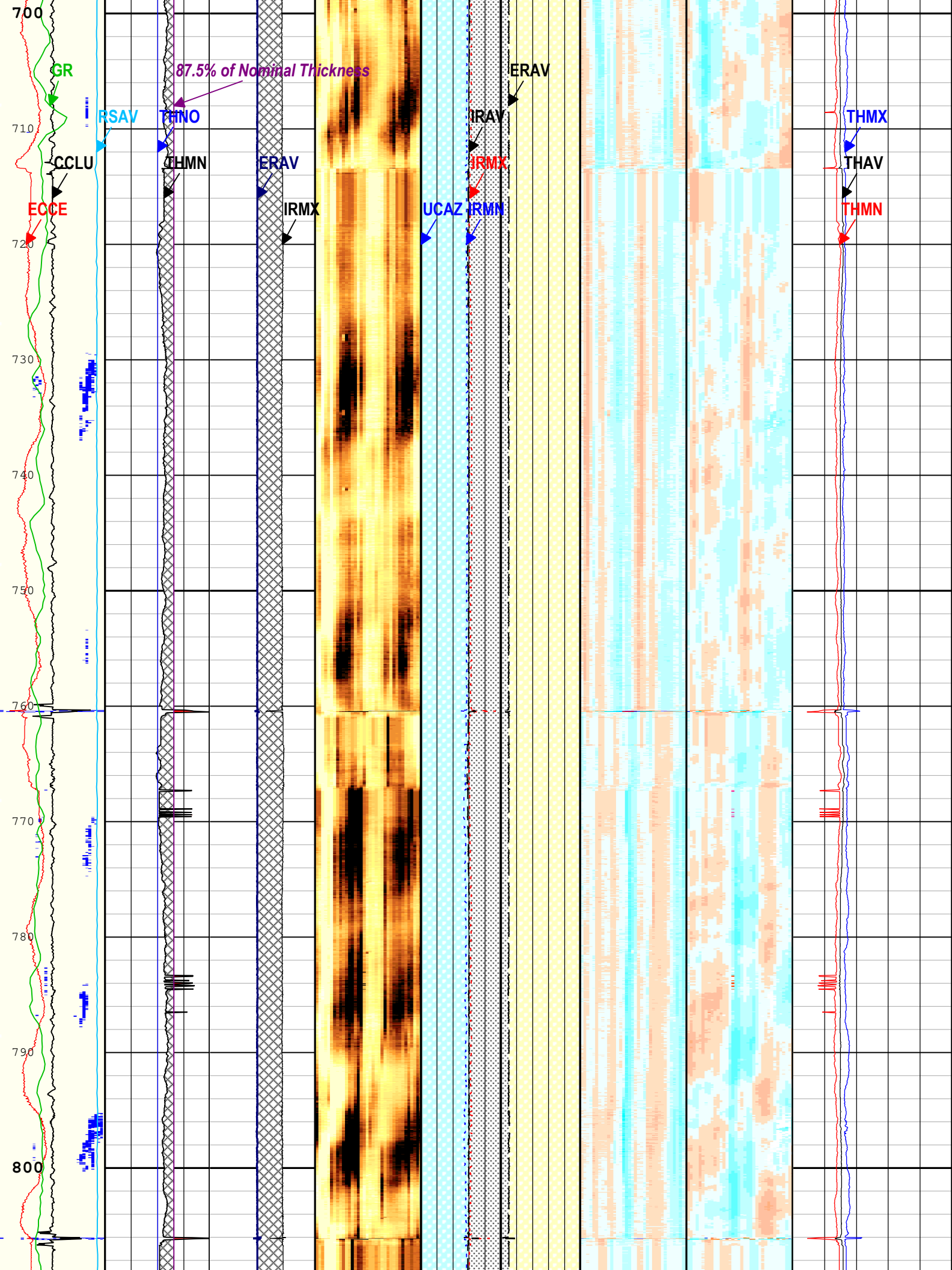
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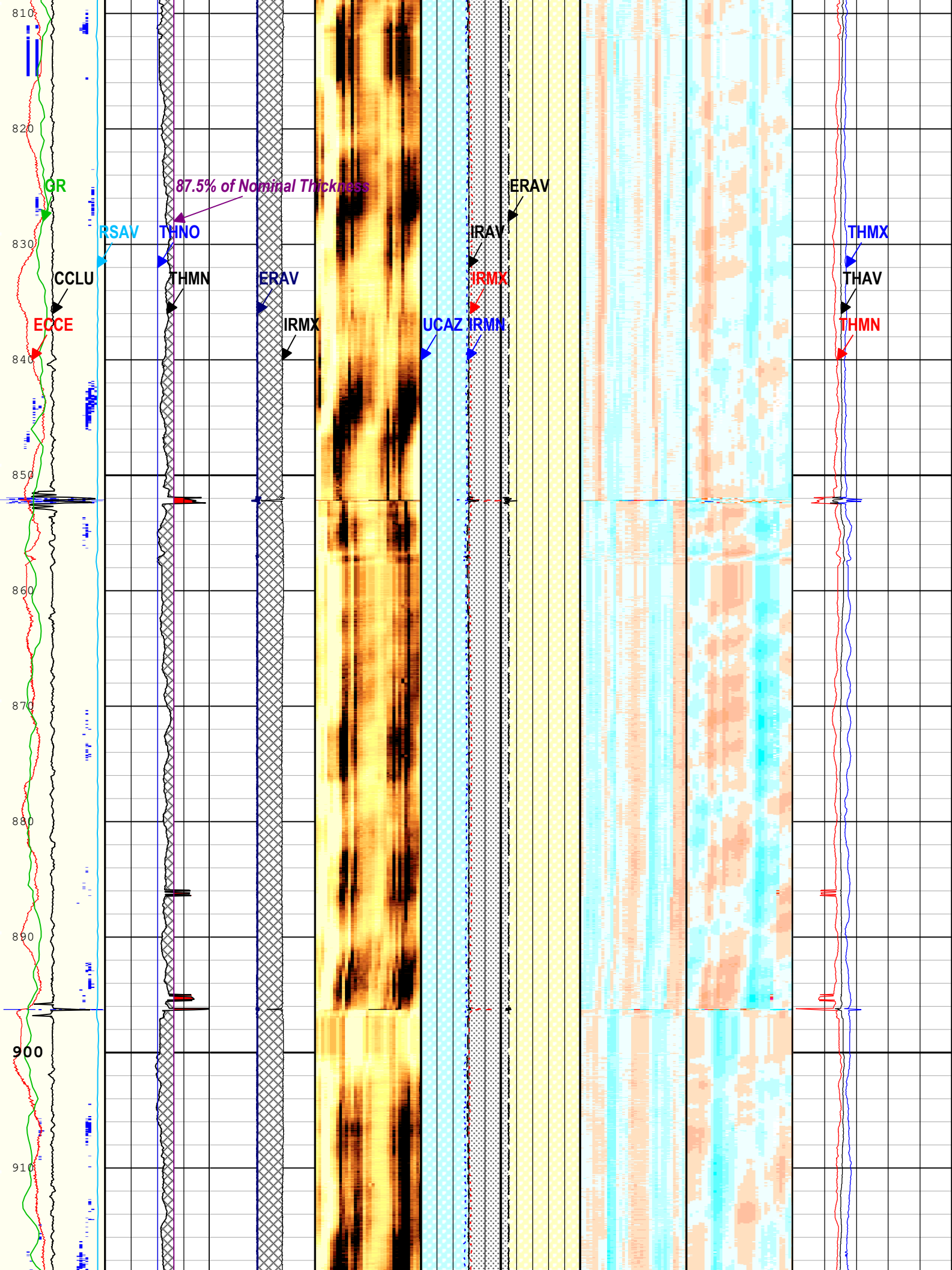
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RSAV
87.5% of Nominal Thickness
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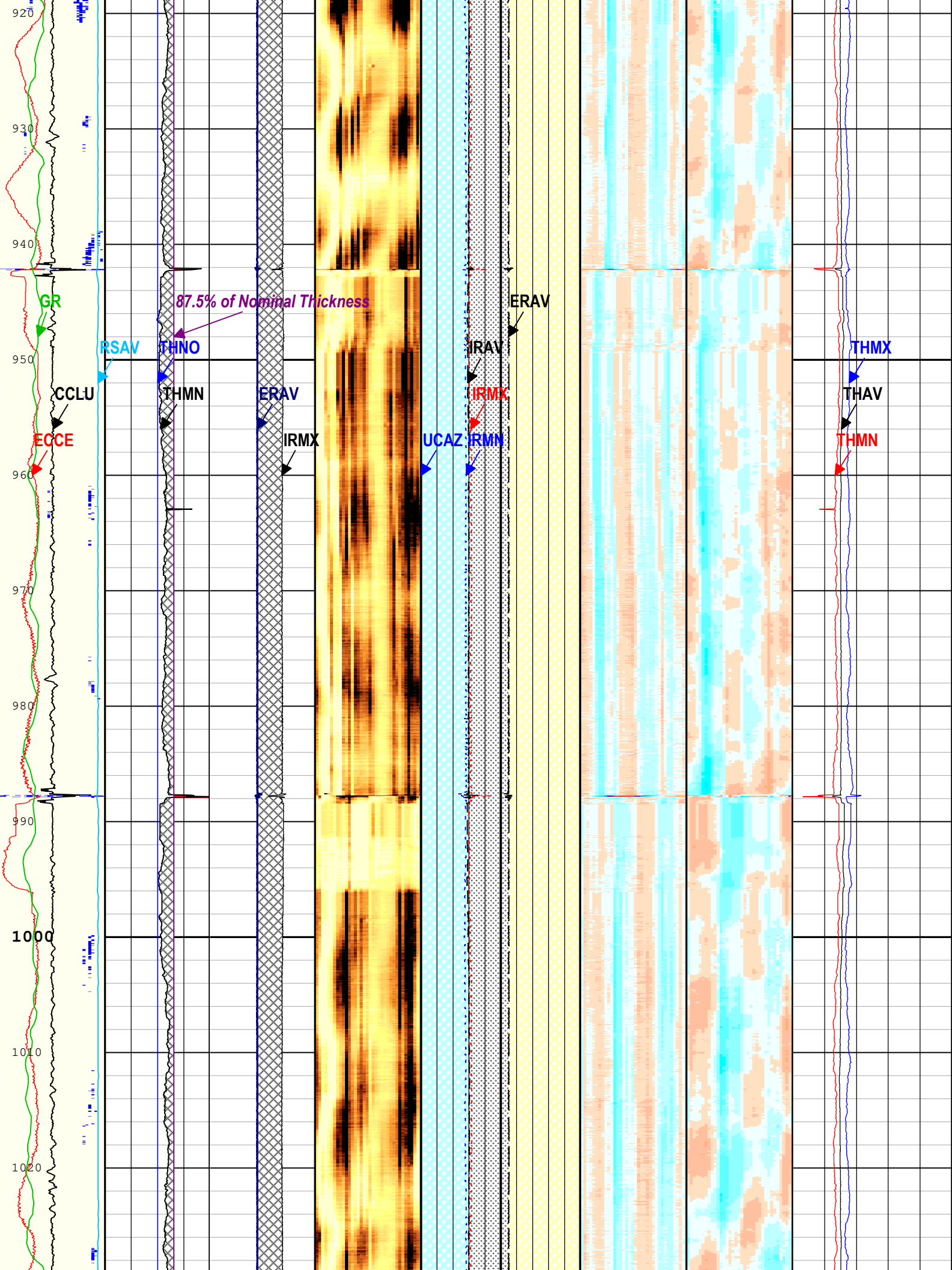
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RSAV
CCLU
ECCE
87.5% of Nominal Thickness
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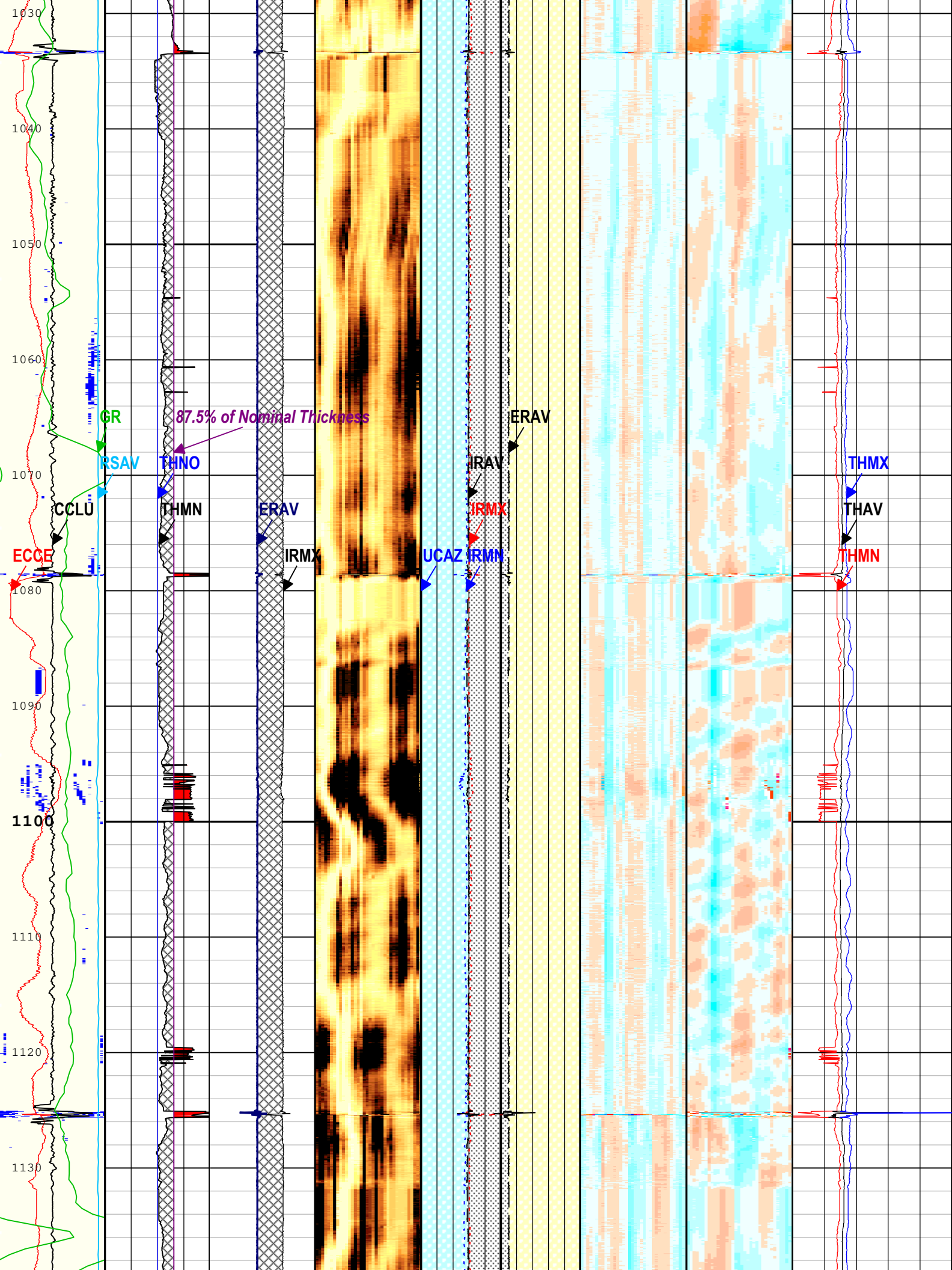
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1070
1080
1090
1100
1110
1120
1130
GR
87.5% of Nominal Thickness
ERAV
RSAV
THNO
IRAV
THMX
CCLU
THMN
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IRMX
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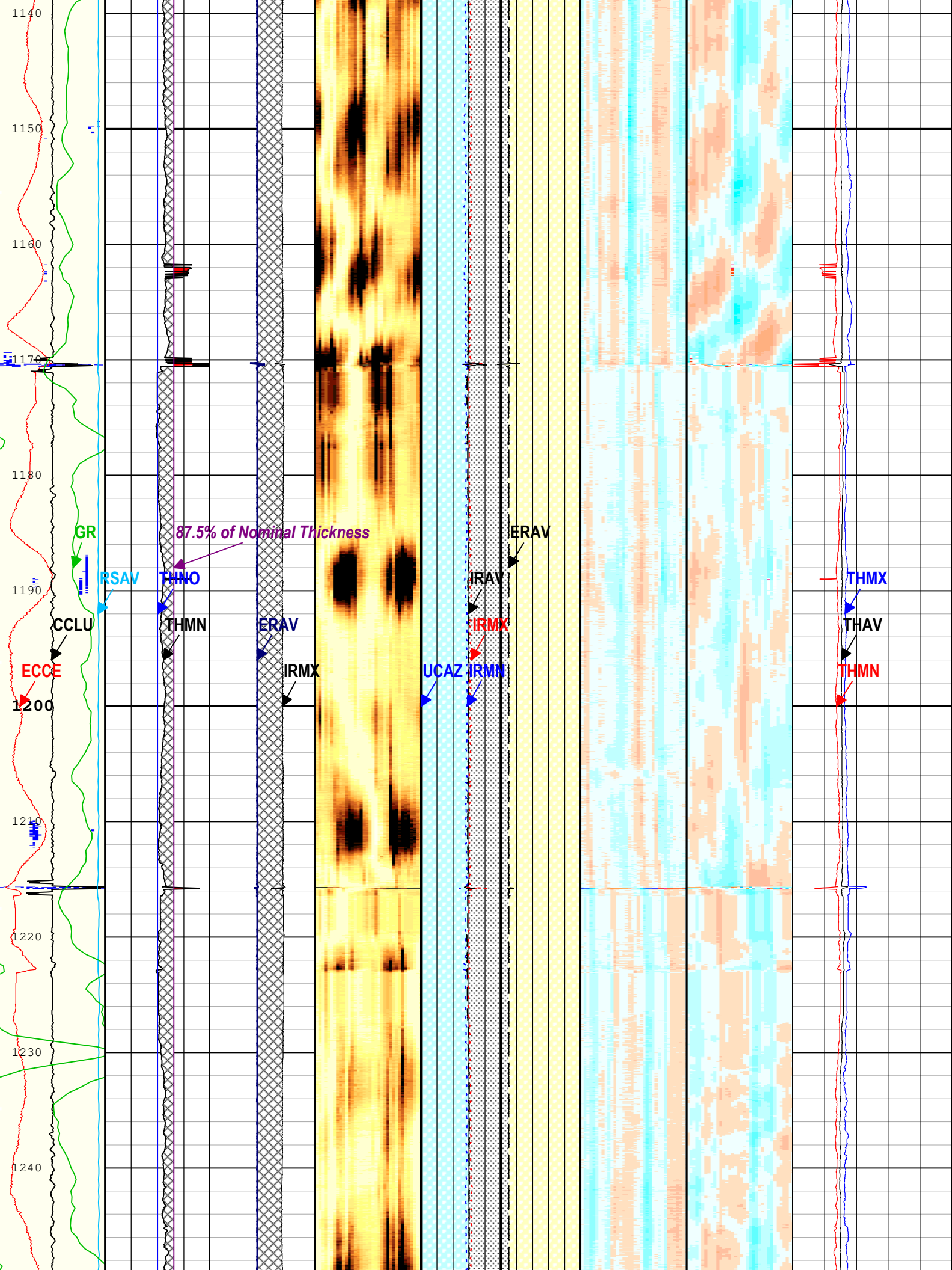
UCAZ
IRMN
THMN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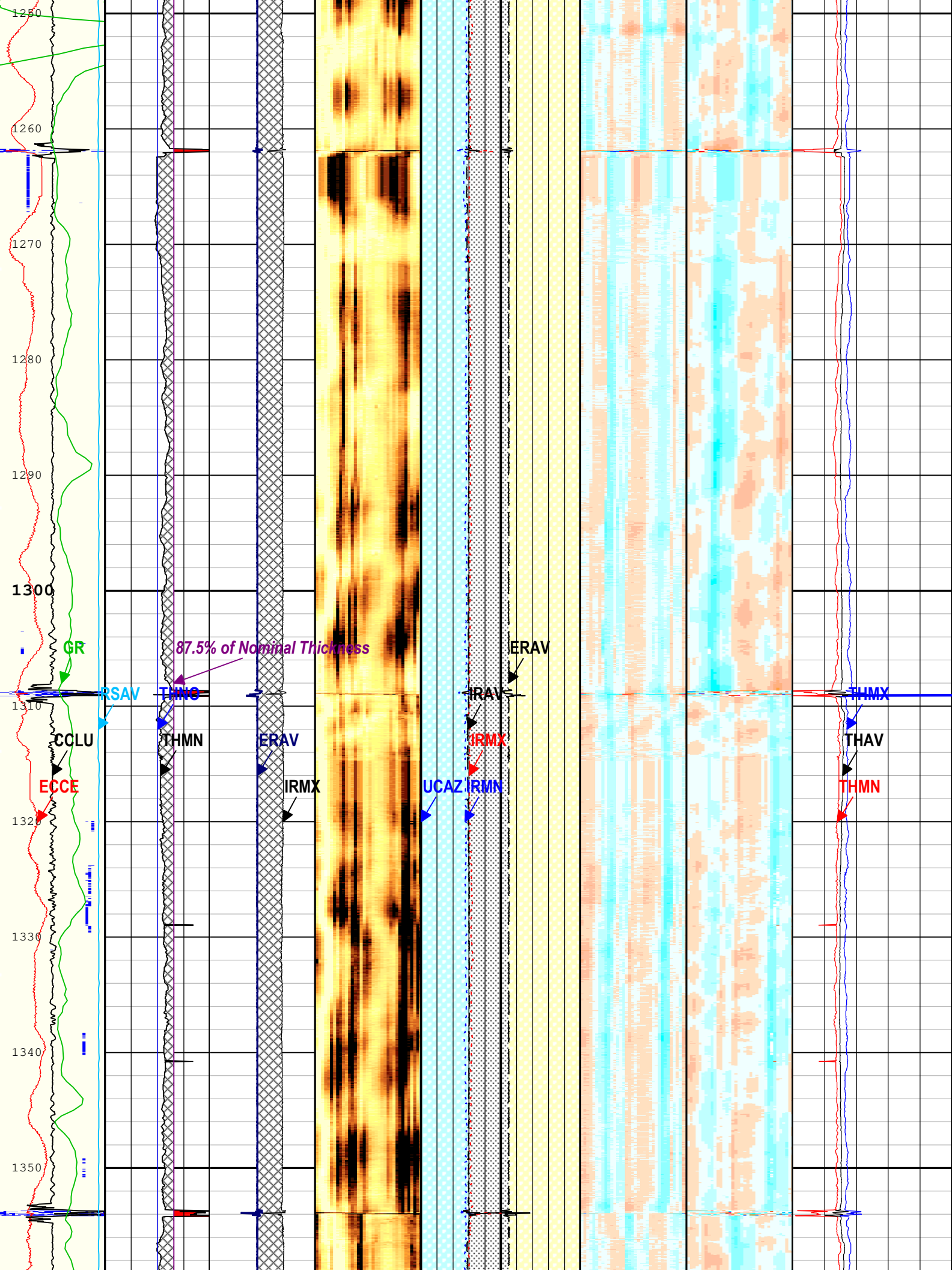
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87.5% of Nominal Thickness
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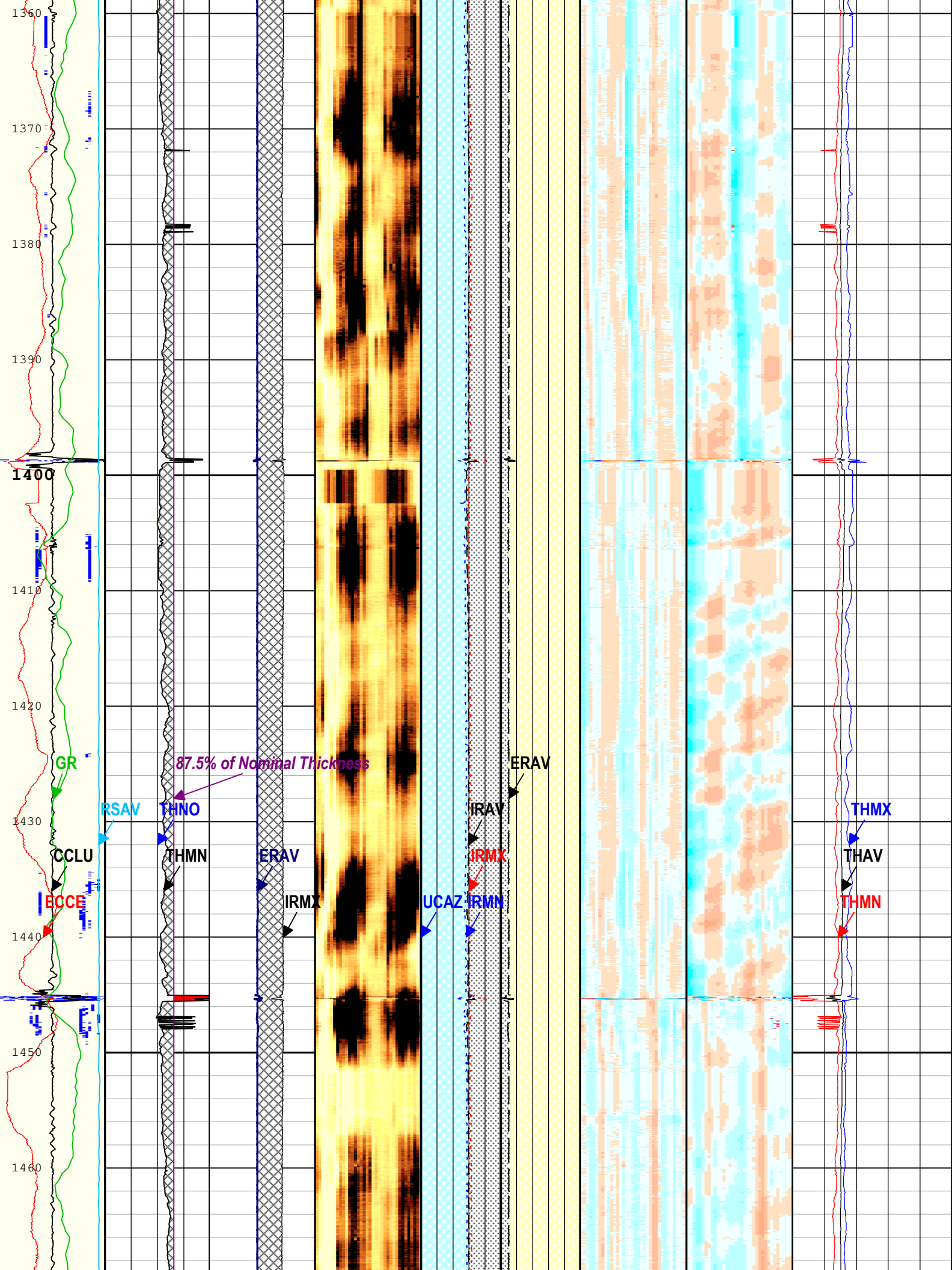
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87.5% of Nominal Thickness
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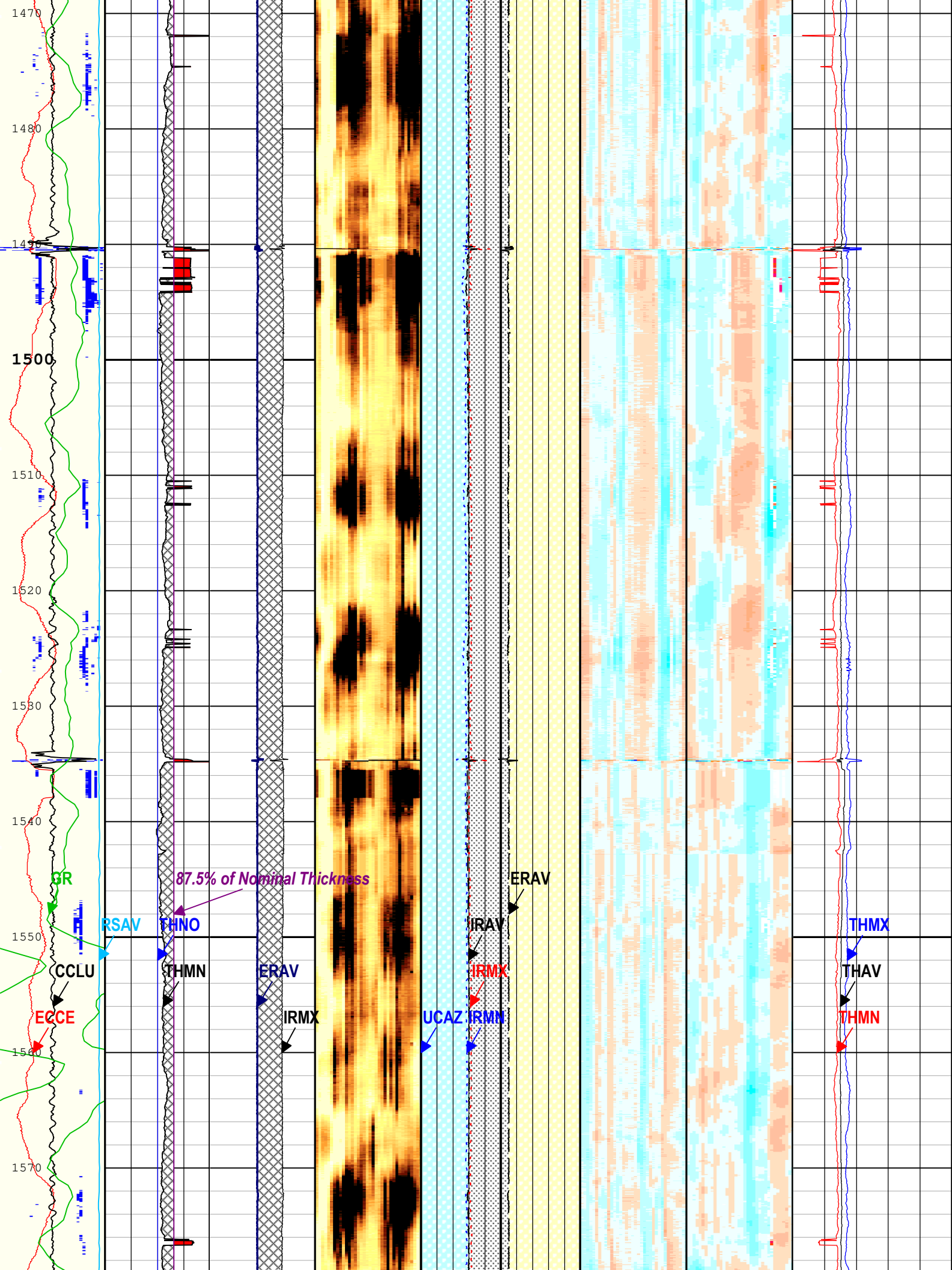
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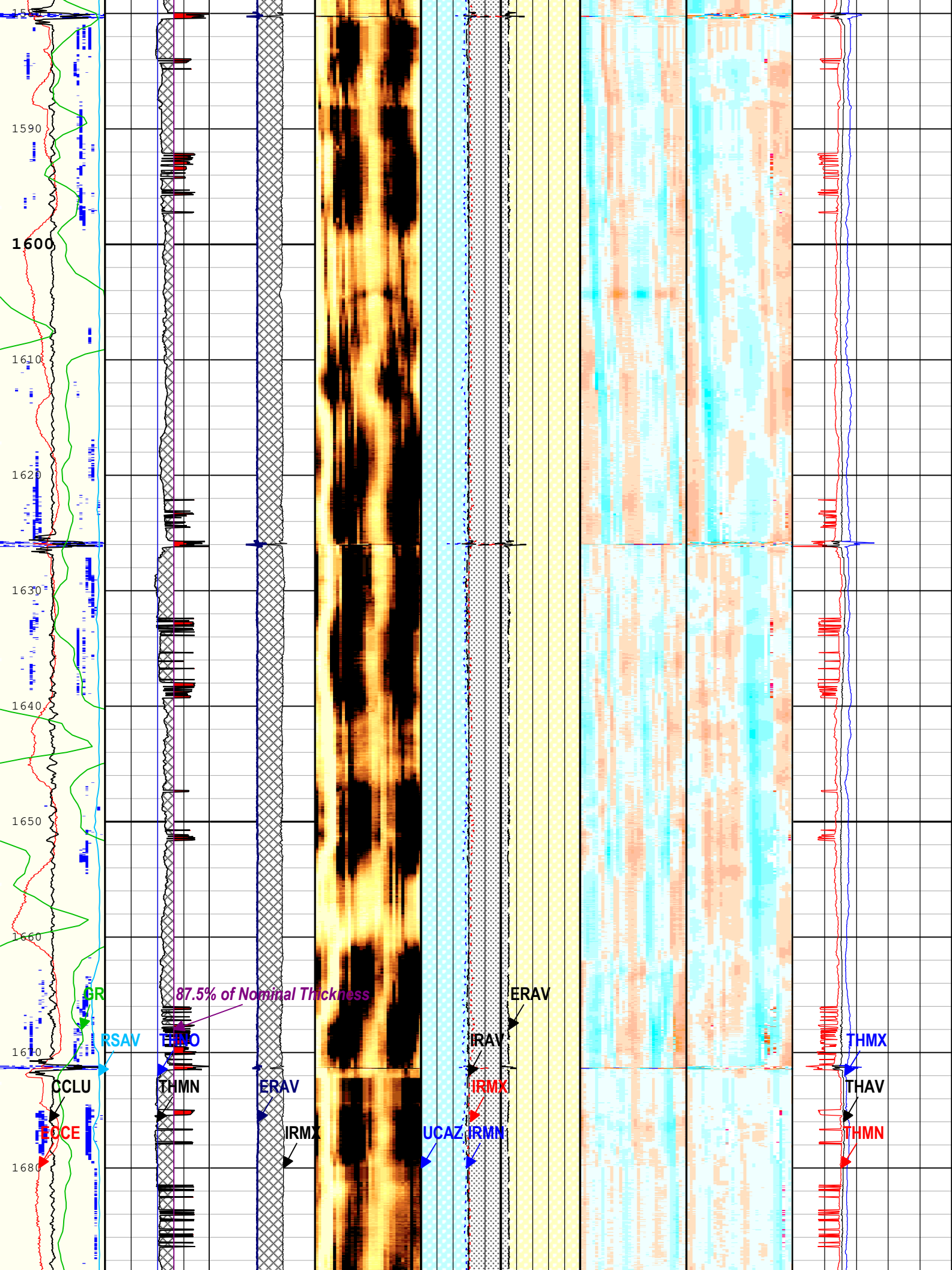
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CCLU
ECCE
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THMO
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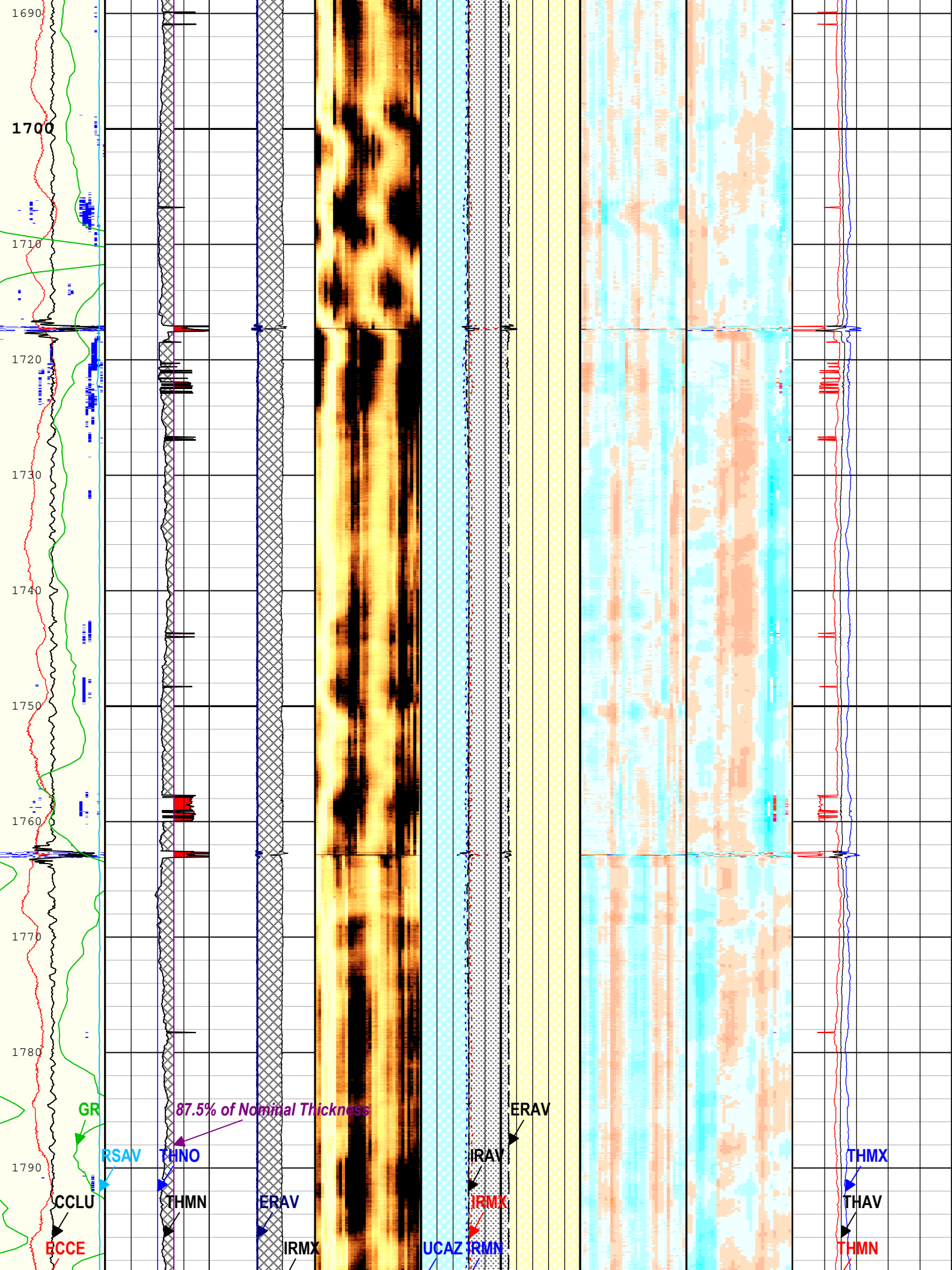
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87.5% of Nominal Thickness
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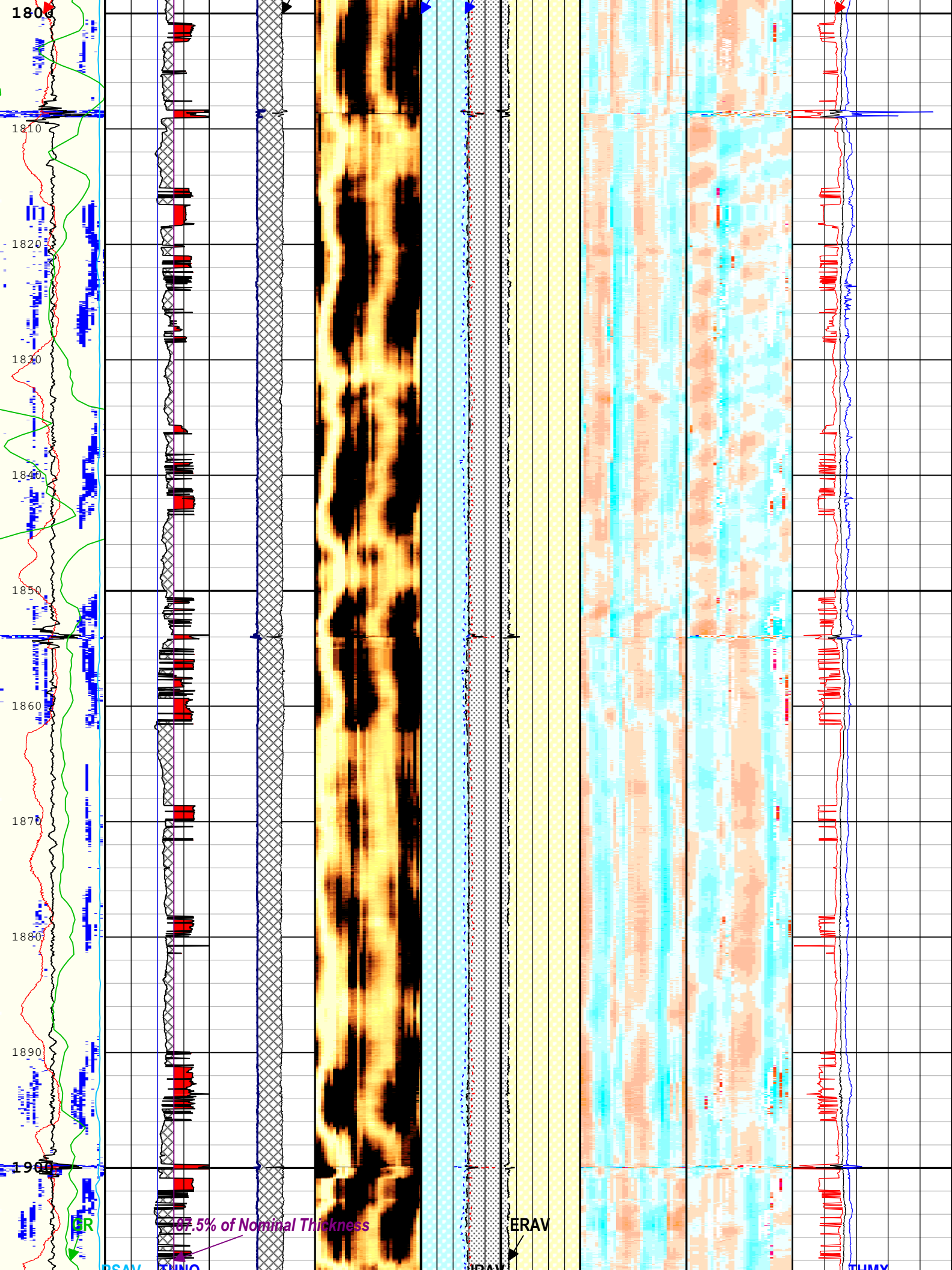
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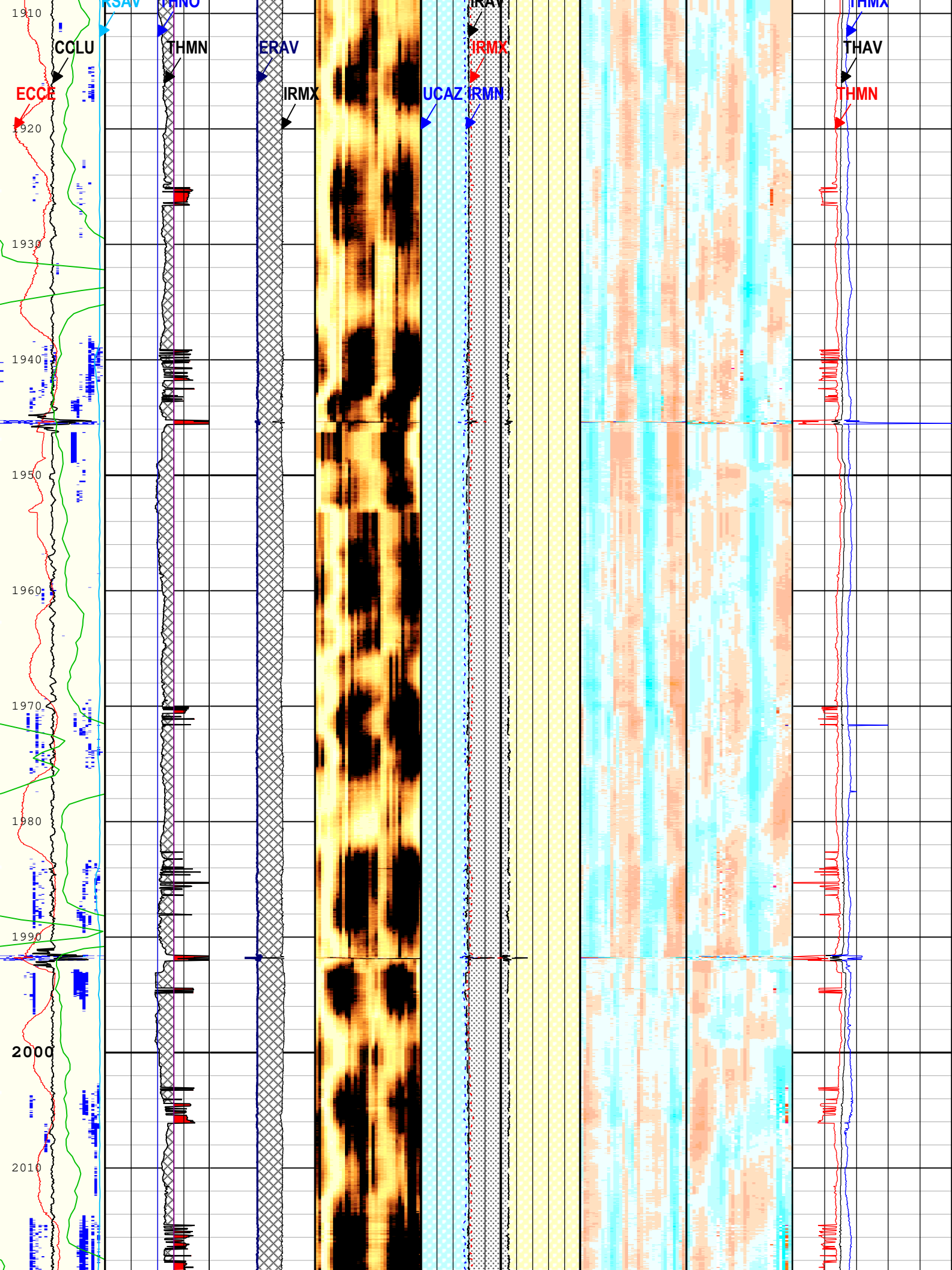
87.5% of Nominal Thickness
ERAV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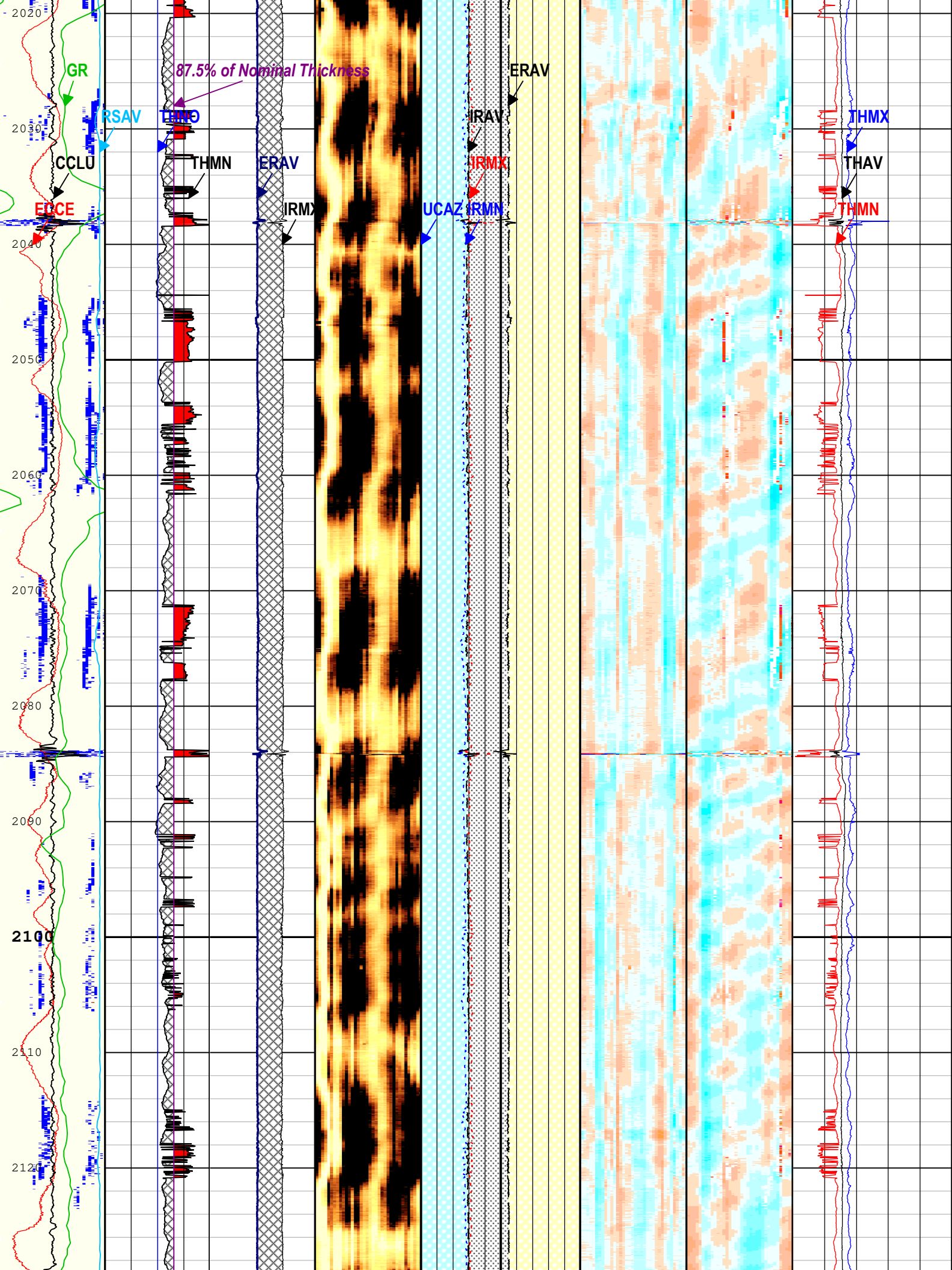
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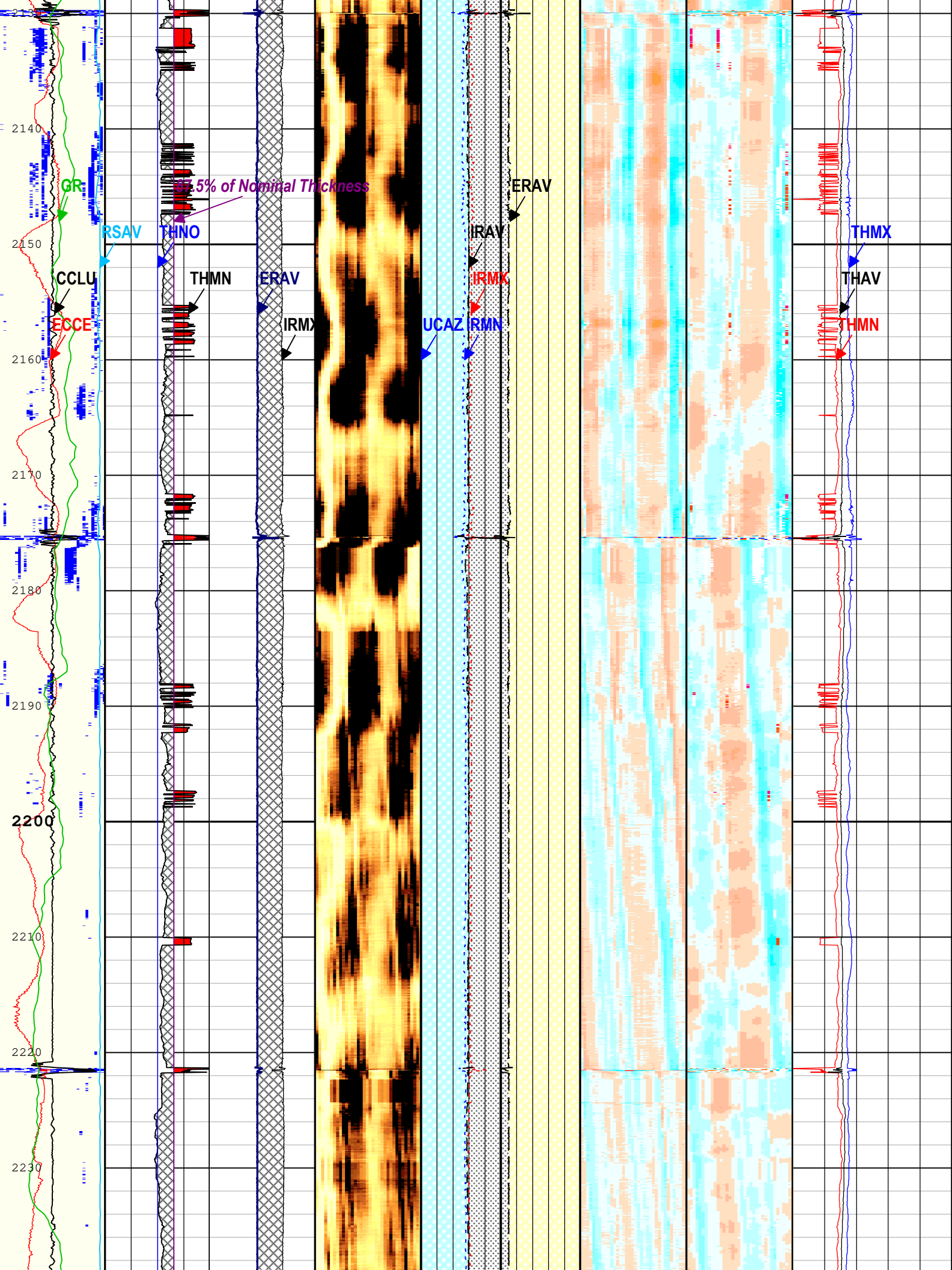
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87.5% of Nominal Thickness
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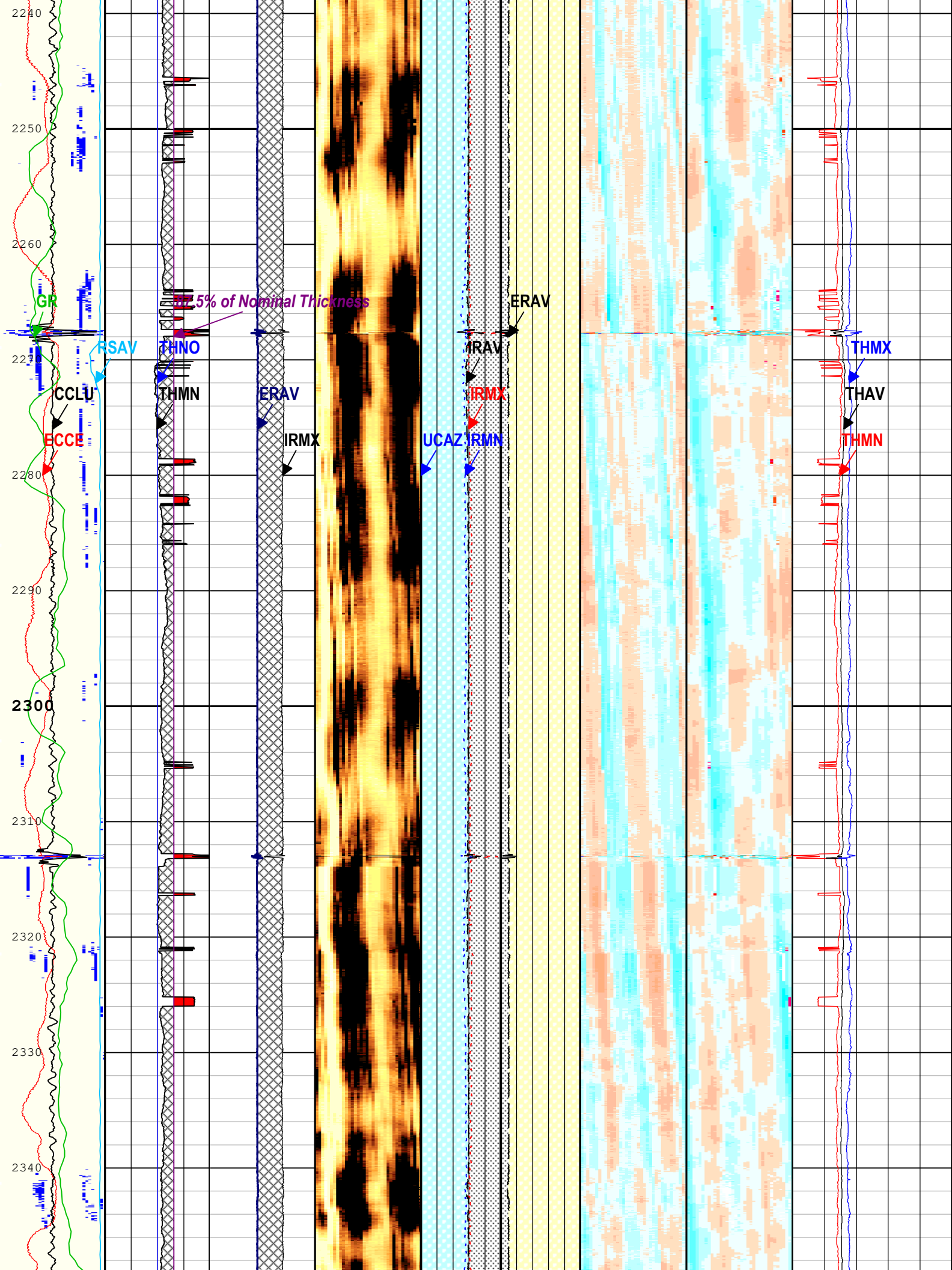
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87.5% of Nominal Thickness
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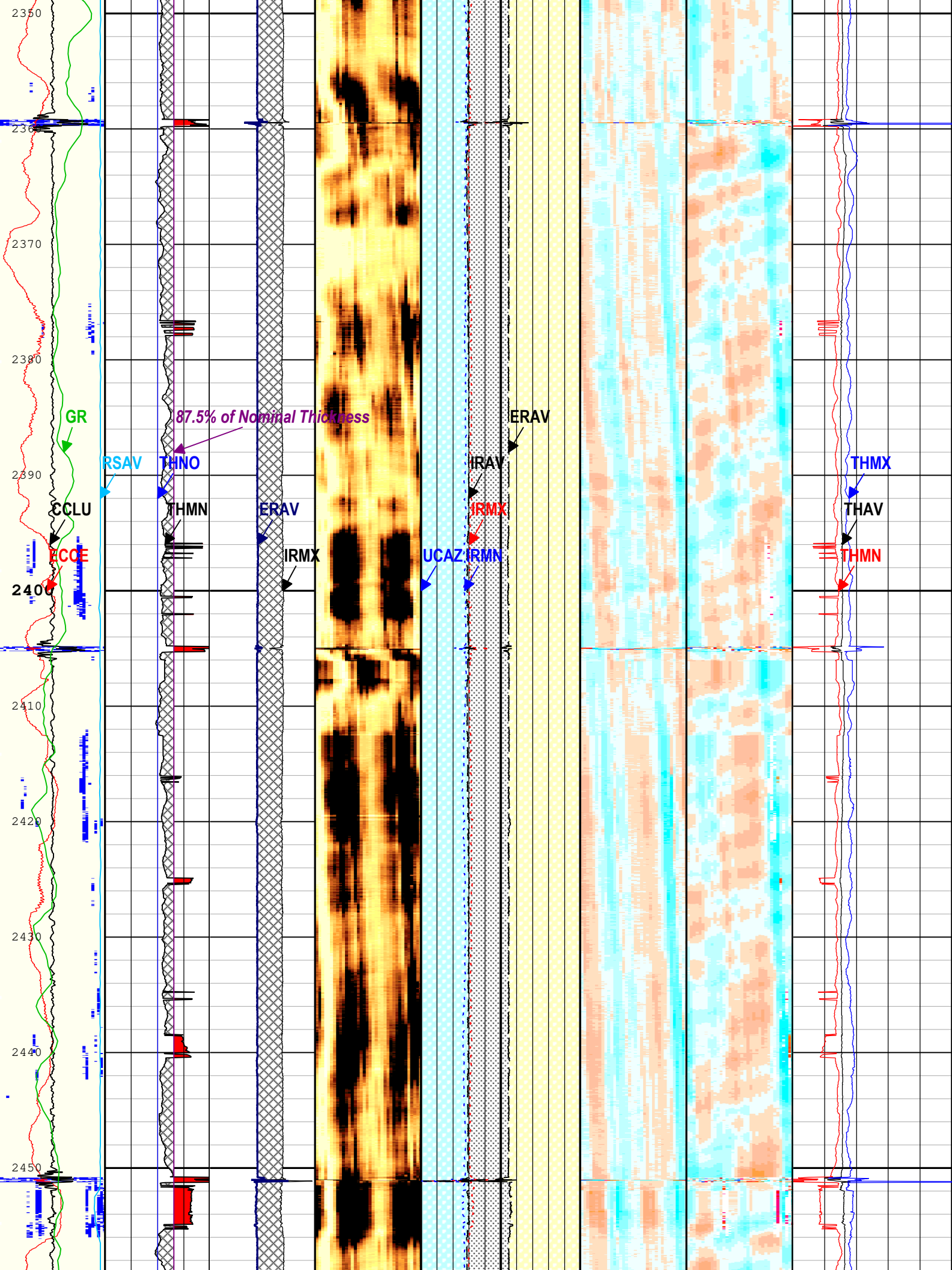
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87.5% of Nominal Thickness
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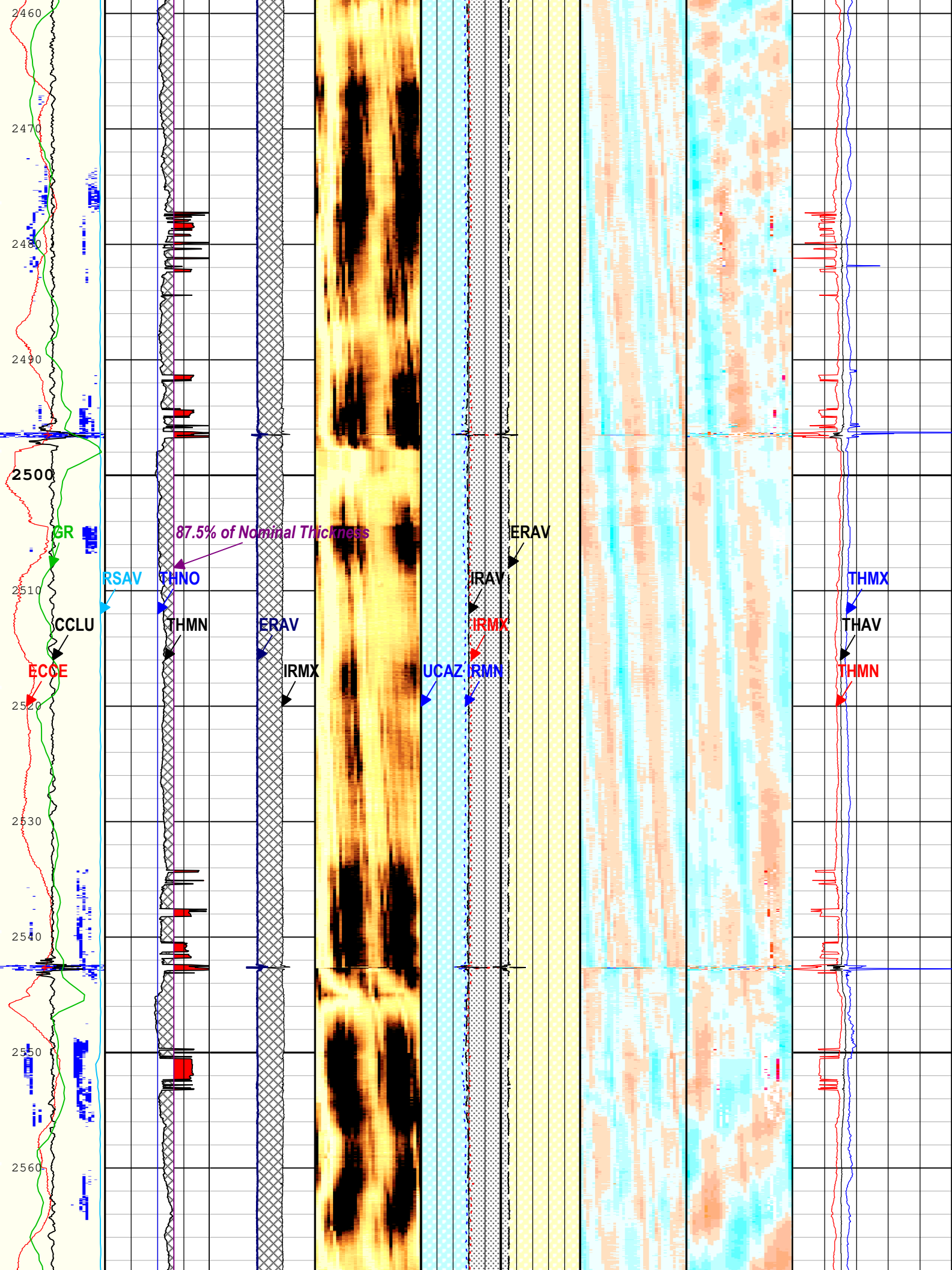
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87.5% of Nominal Thickness
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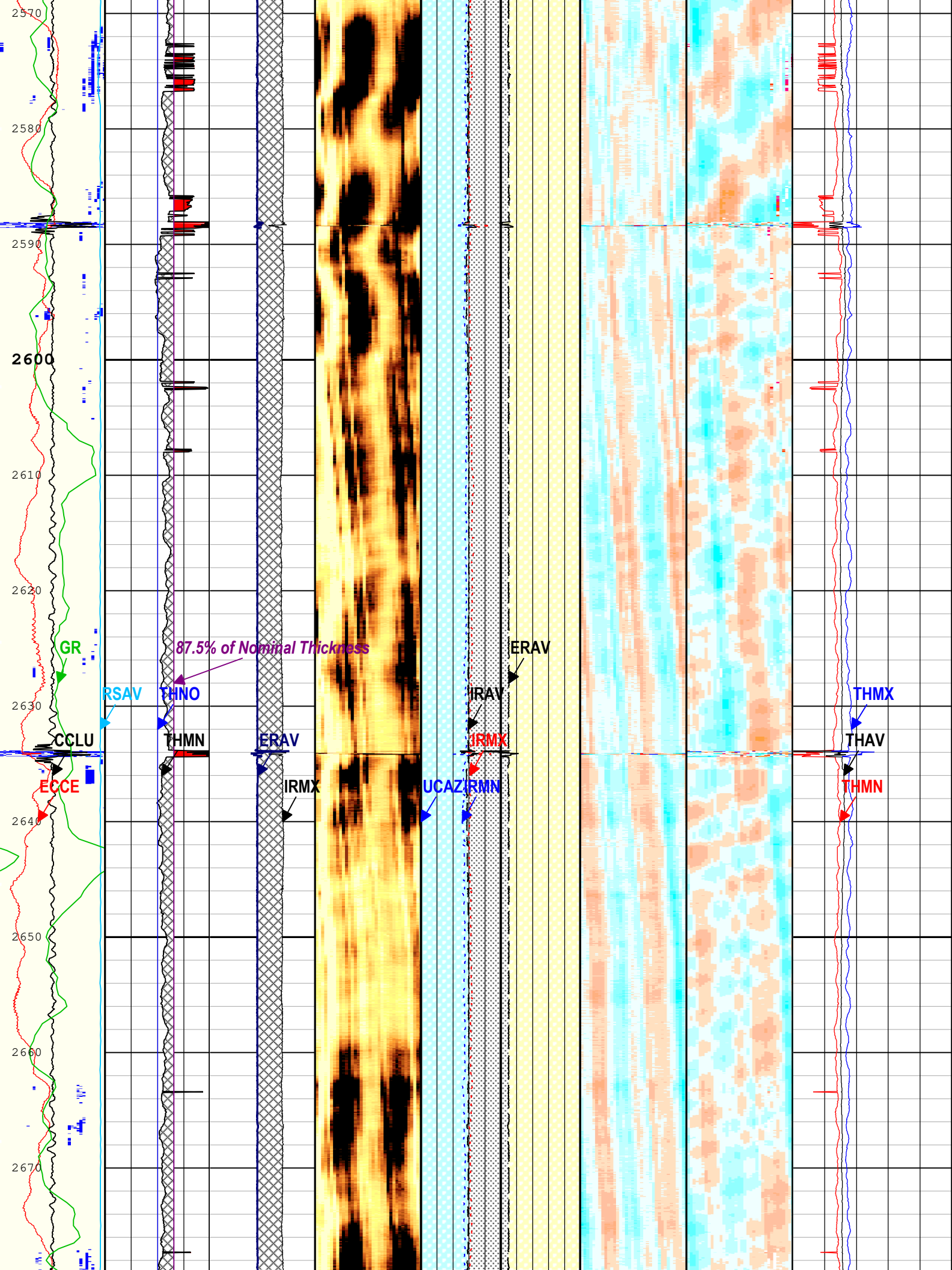
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87.5% of Nominal Thickness
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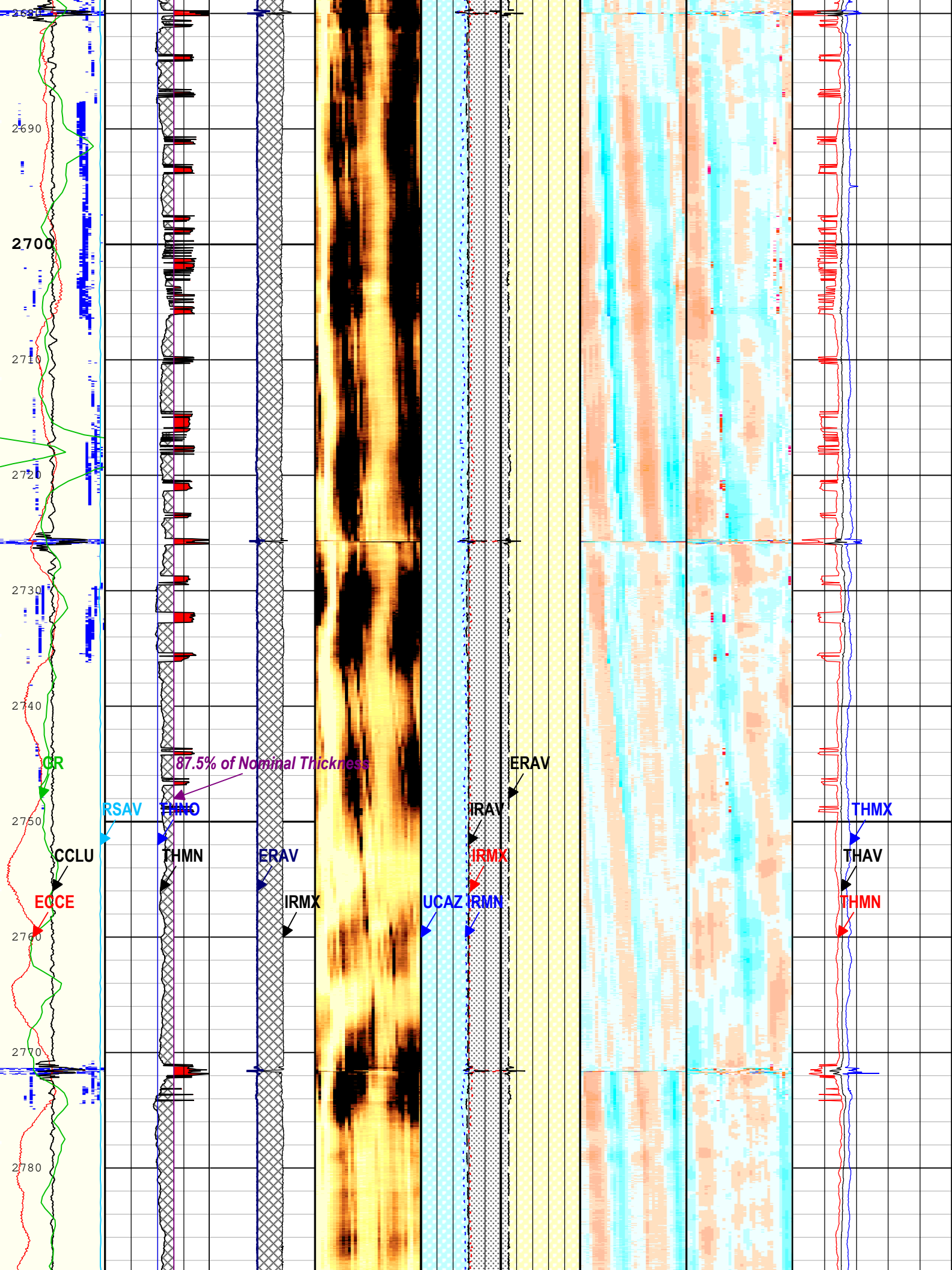
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87.5% of Nominal Thickness
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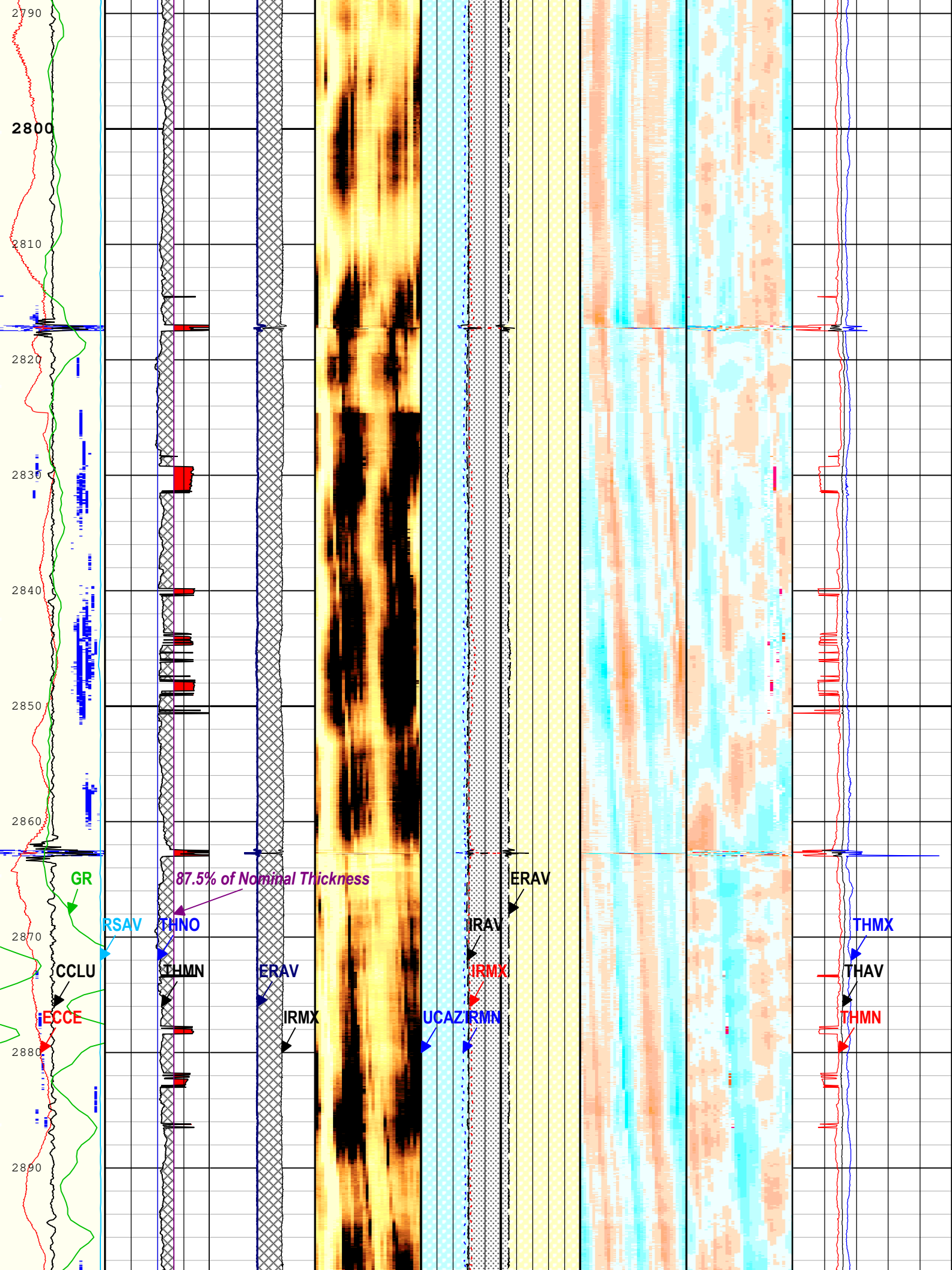
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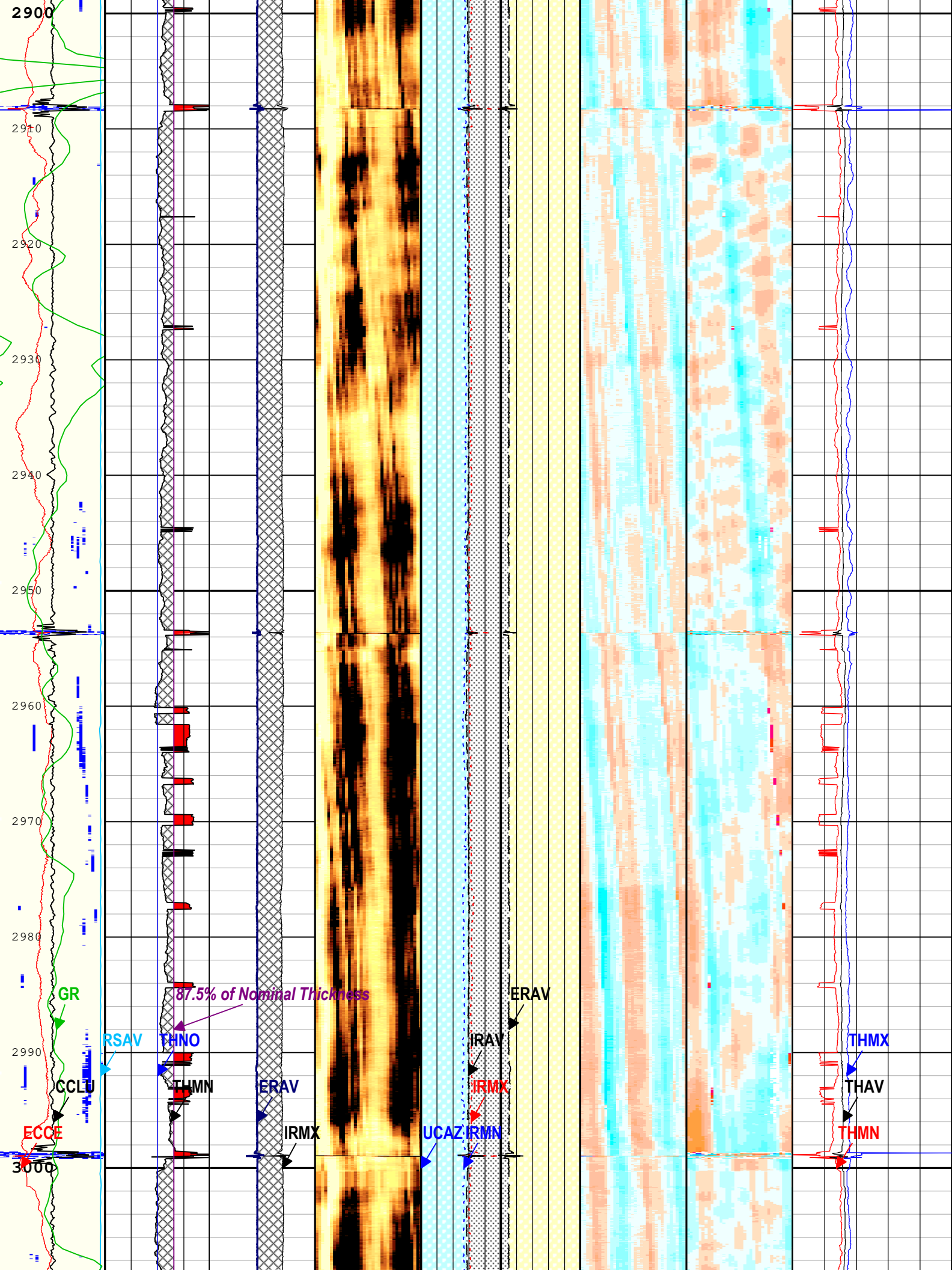
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87.5% of Nominal Thickness
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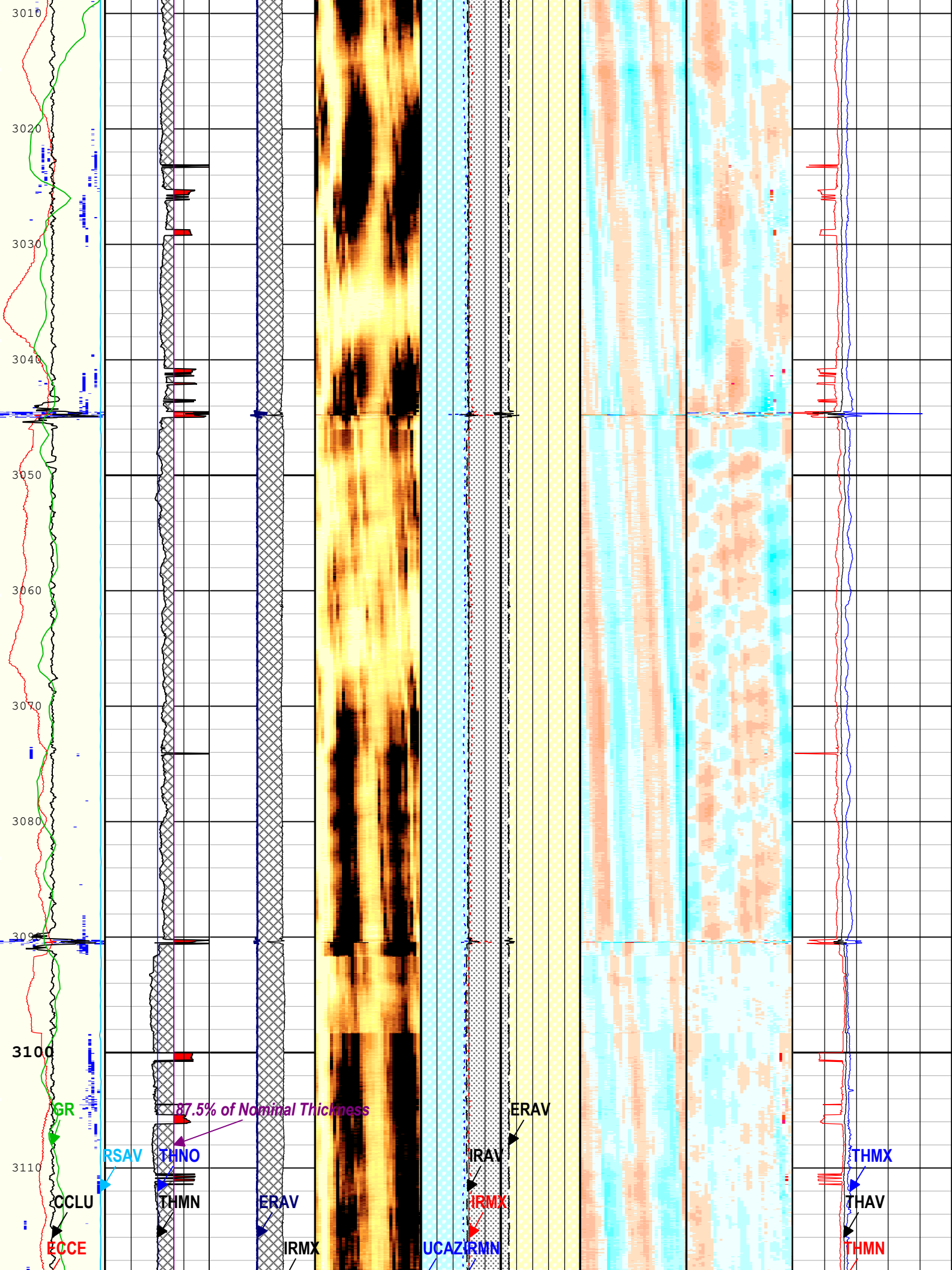
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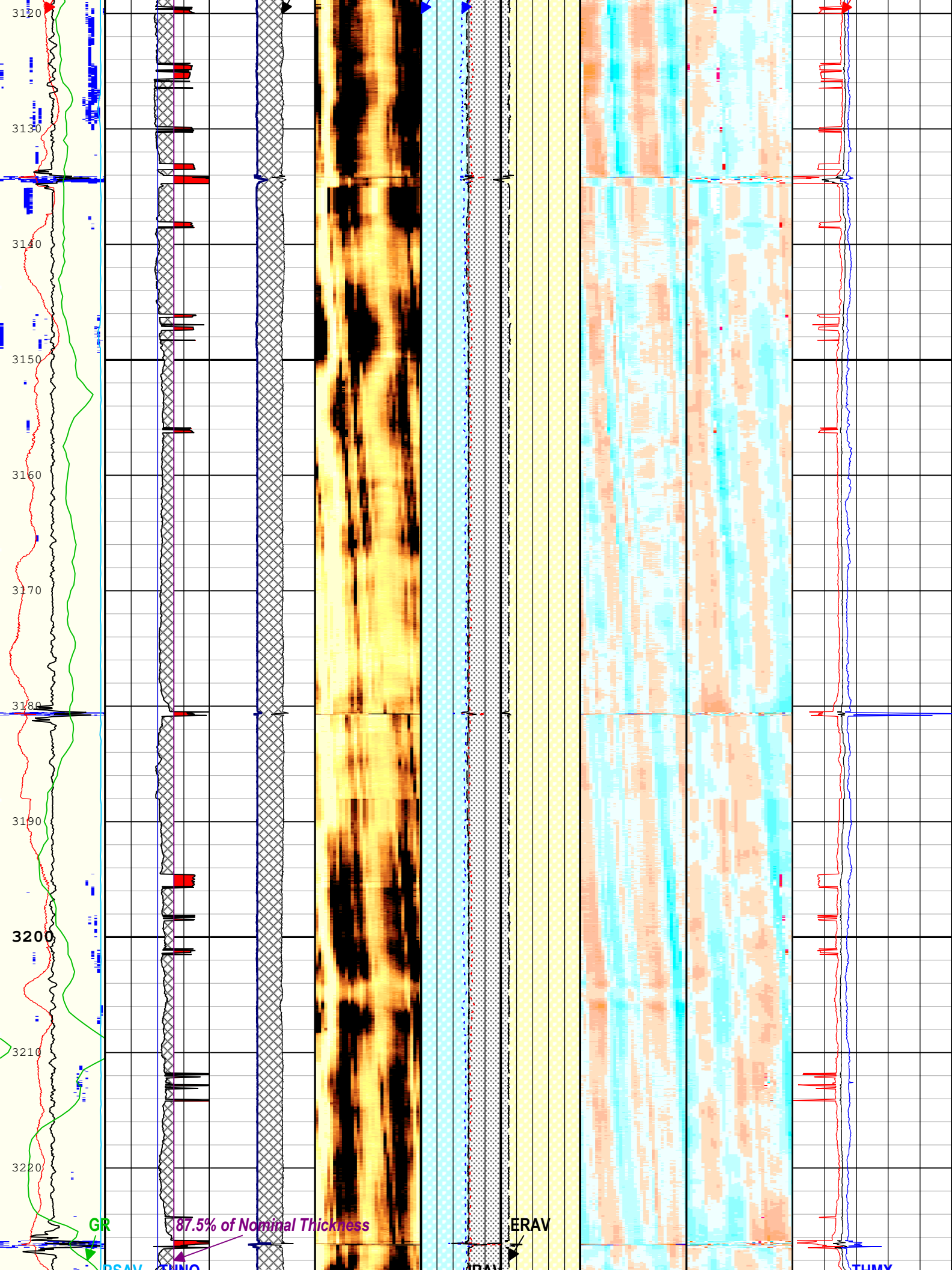
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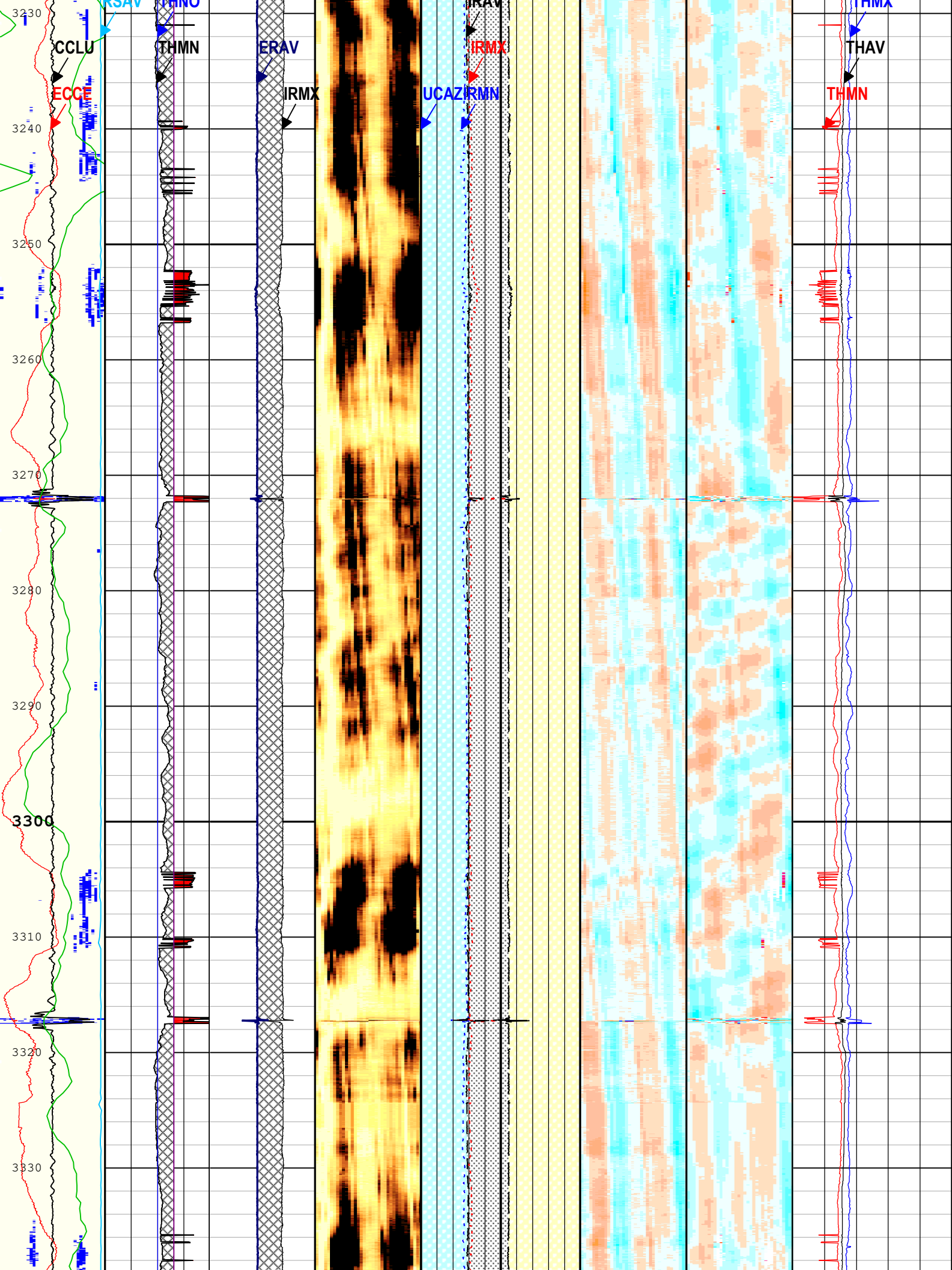
87.5% of Nominal Thickness
ERAV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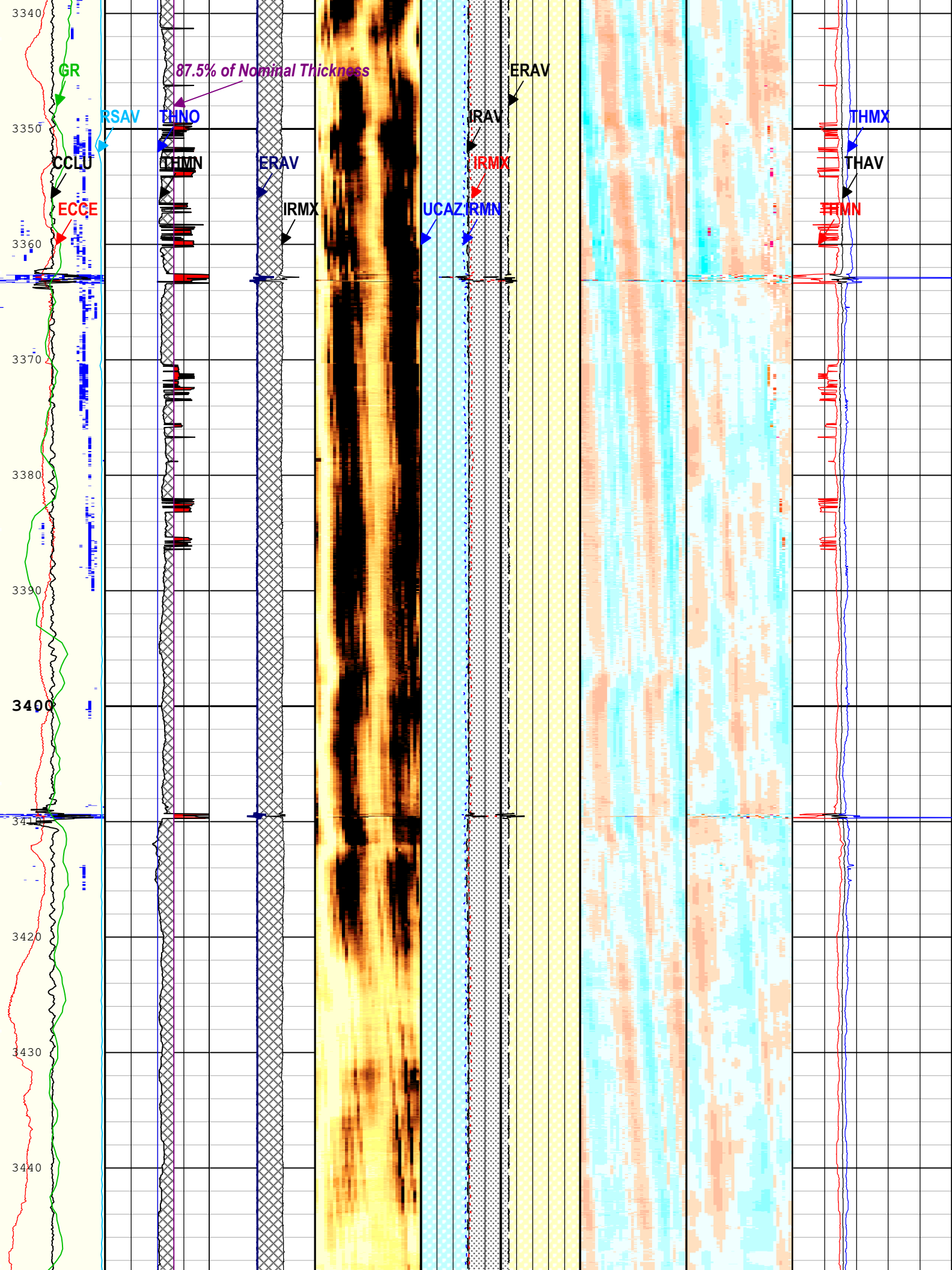
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87.5% of Nominal Thickness
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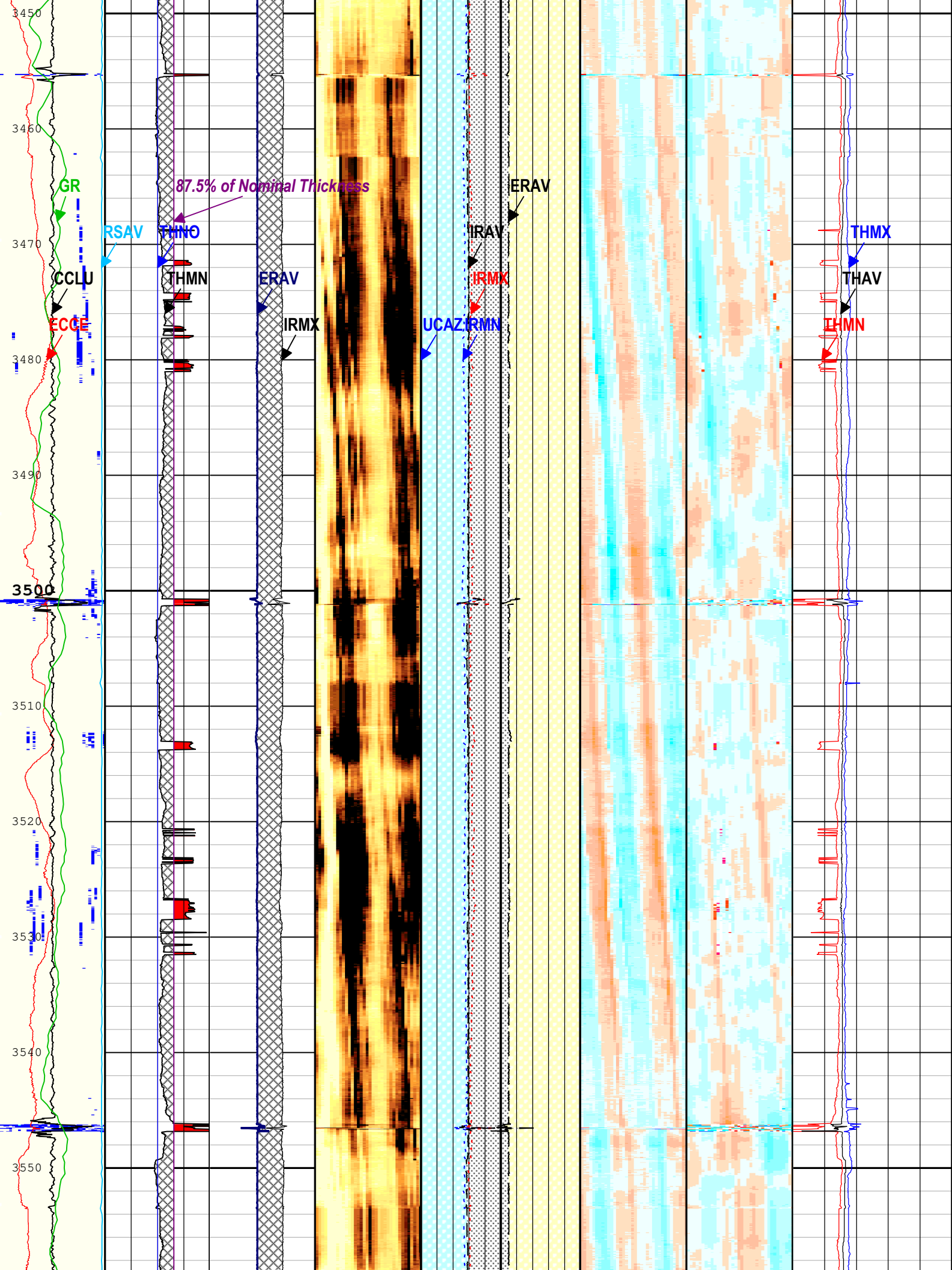
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87.5% of Nominal Thickness
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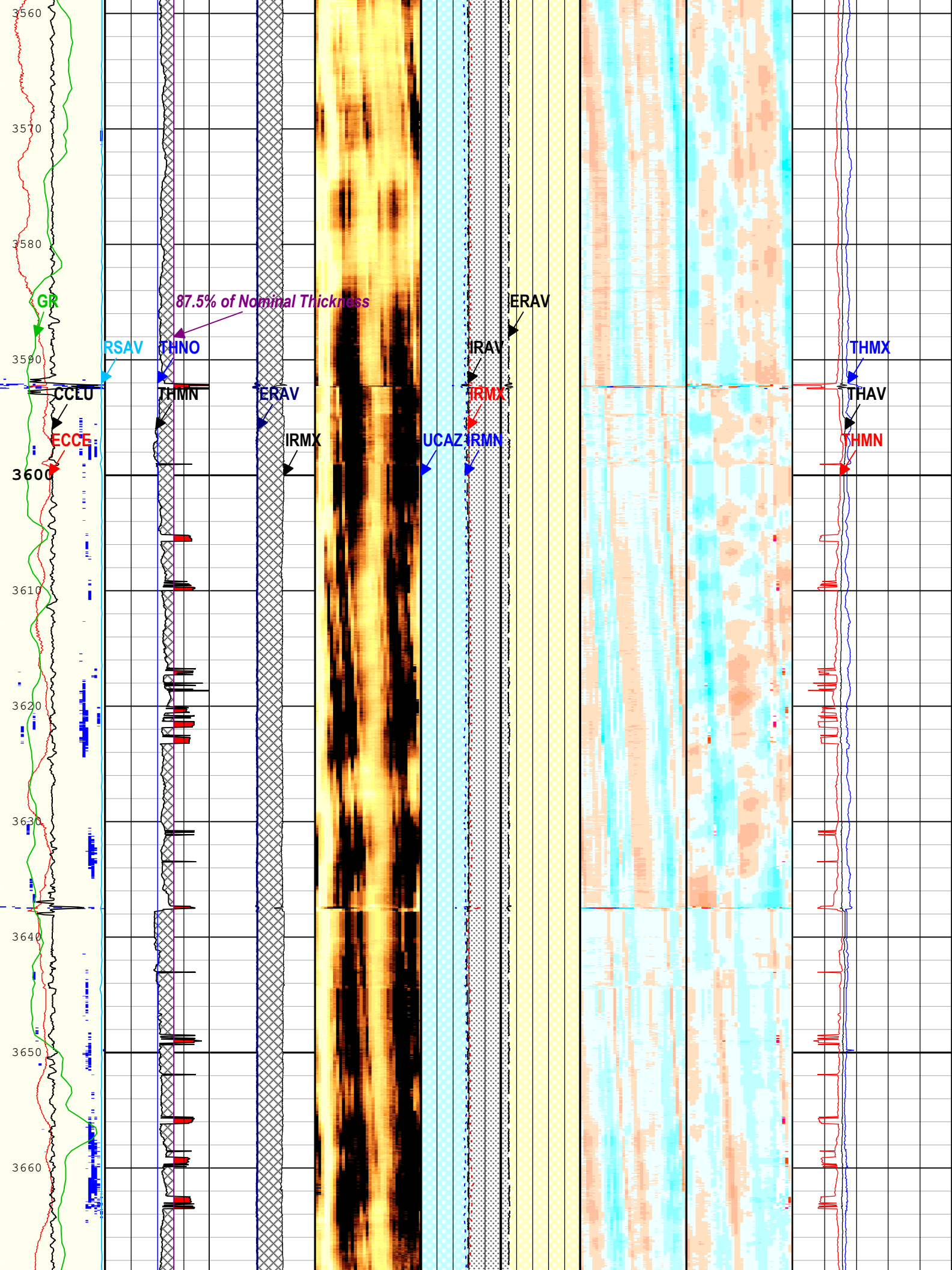
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GR
87.5% of Nominal Thickness
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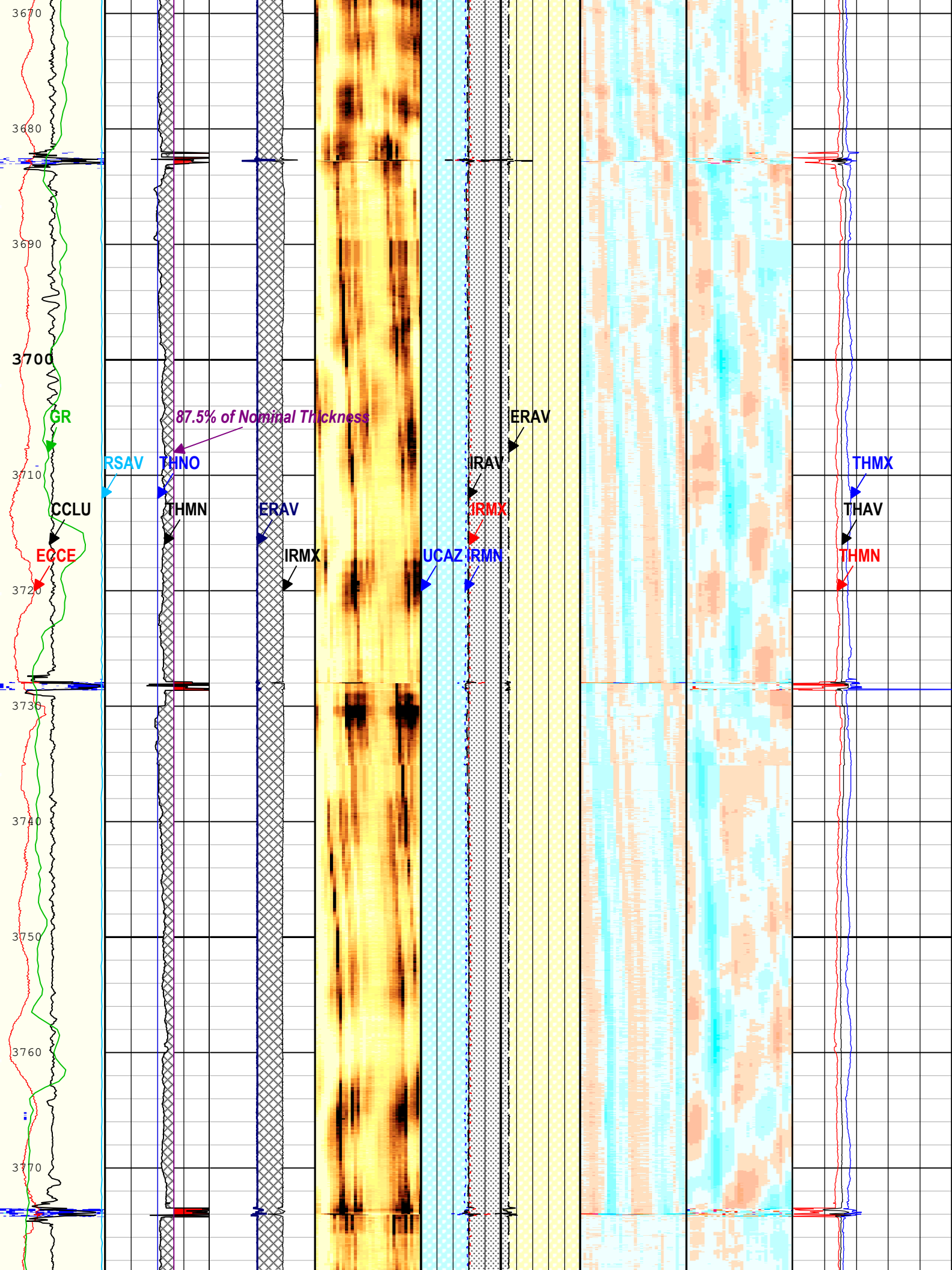
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87.5% of Nominal Thickness
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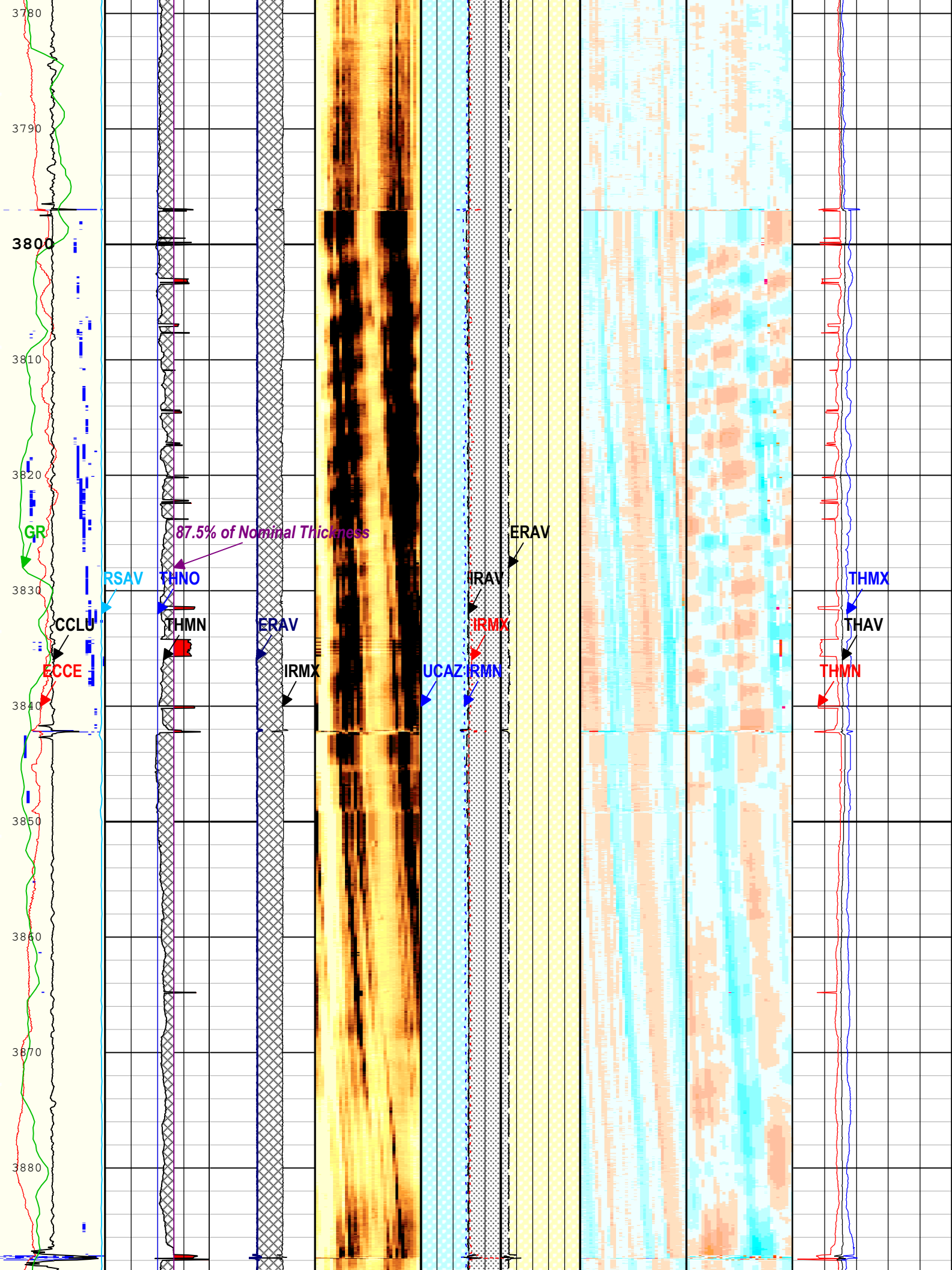
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87.5% of Nominal Thickness
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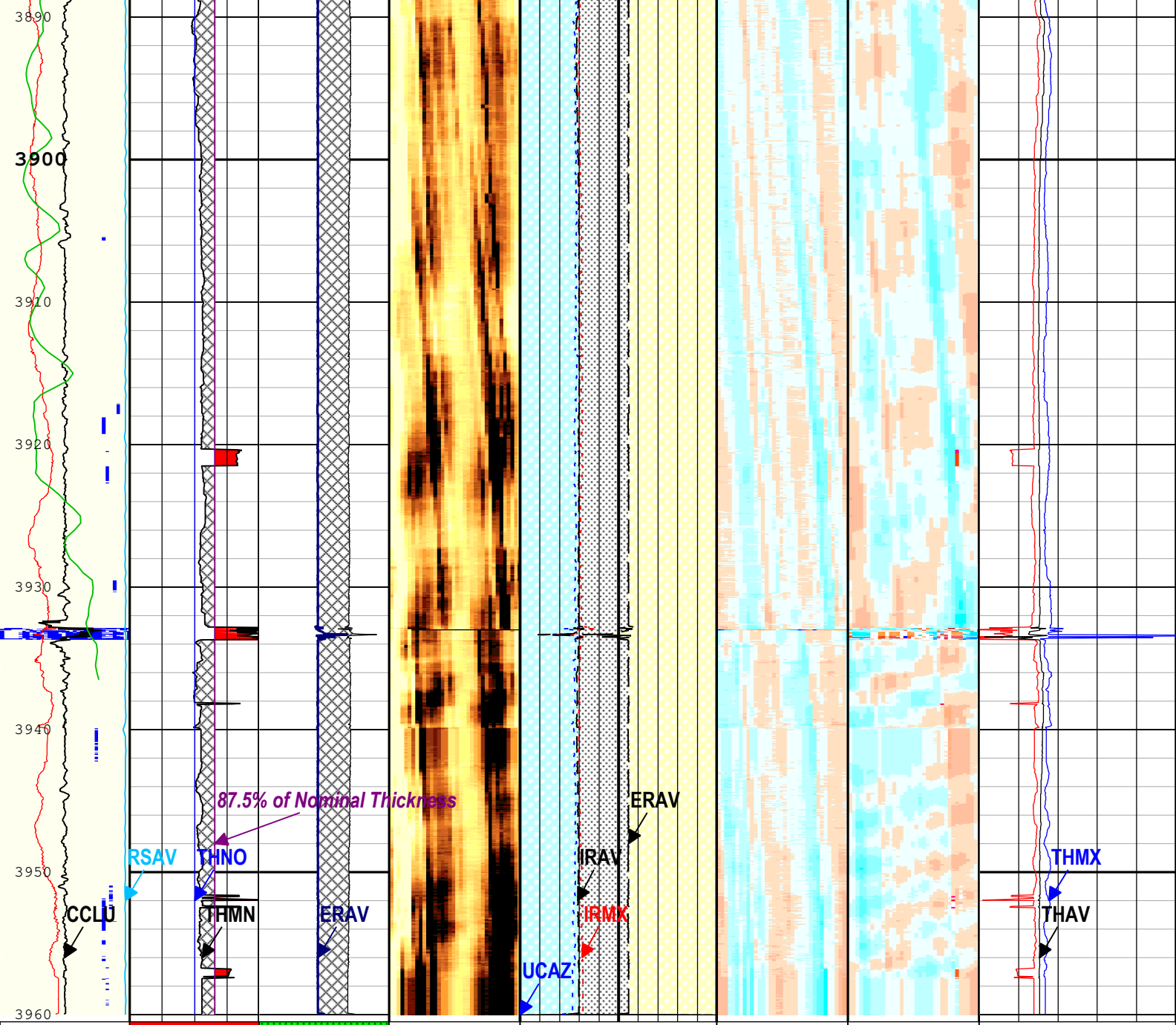


Absent 1.500 3.500

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

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

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)

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

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

Thickness
0.35 in 0.15

GR
0 gAPI 150

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (USI Casing Integrity HiRes 4.5IN) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Aug-2022 02:06:21

Channel Processing Parameters

1B: 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	80000	psi
DFD	Drilling Fluid Density	Borehole	8.43	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
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.07	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.5	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	1.54	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	26	0	83
BS	12.25	83	1092
BS	7.875	1092	3960.5

All depth are actual.

Tool Control Parameters

1B: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	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	

Time Zone Parameters

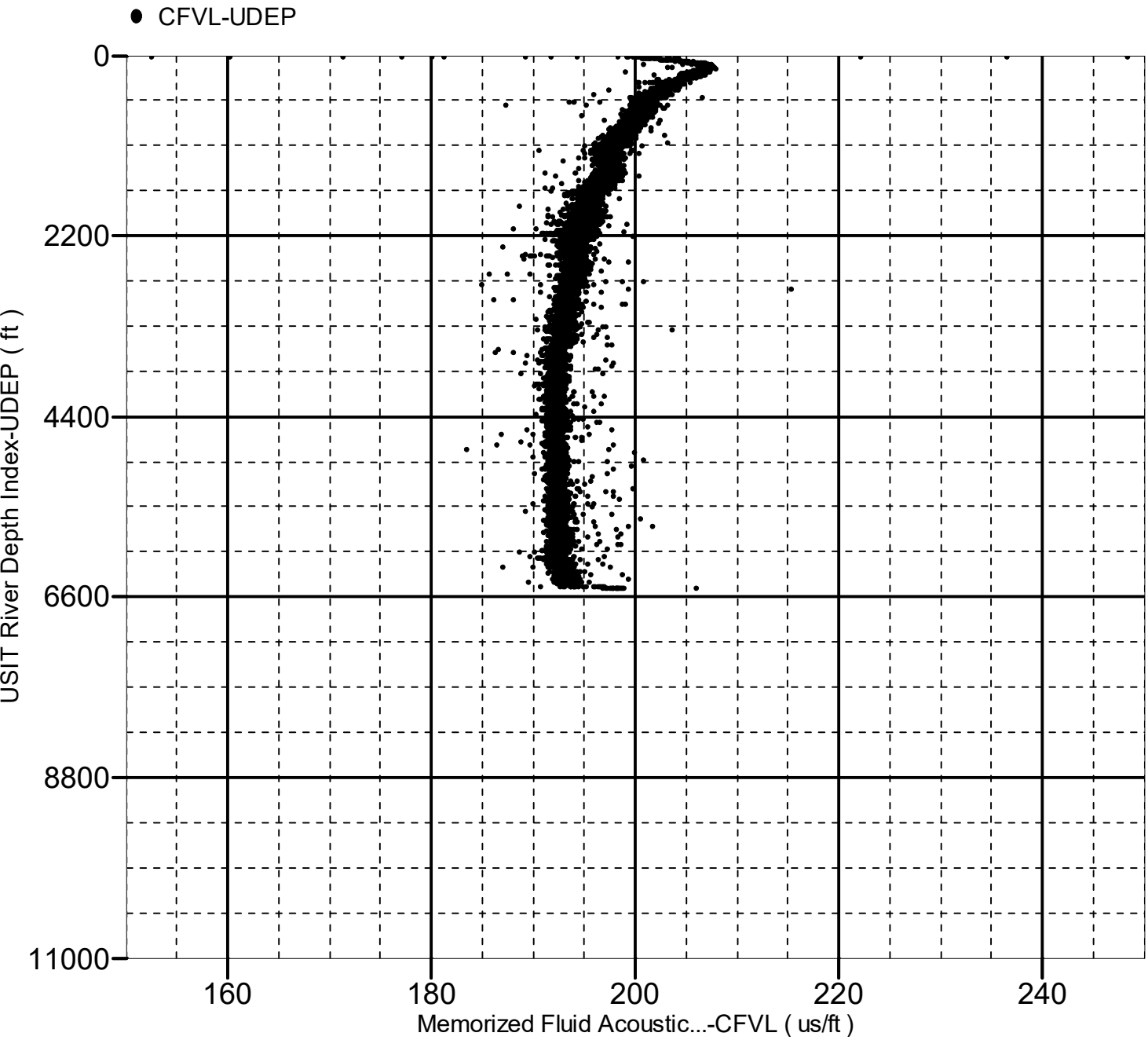
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	60	11-Aug-2022 14:27:29	11-Aug-2022 15:26:54	3960.58	2713.64
EMXV	70	11-Aug-2022 15:26:54	11-Aug-2022 17:43:06	2713.64	20.27

All depth are at tool zero.

Fluid Acoustic Slowness vs Depth

2D Cross Plot

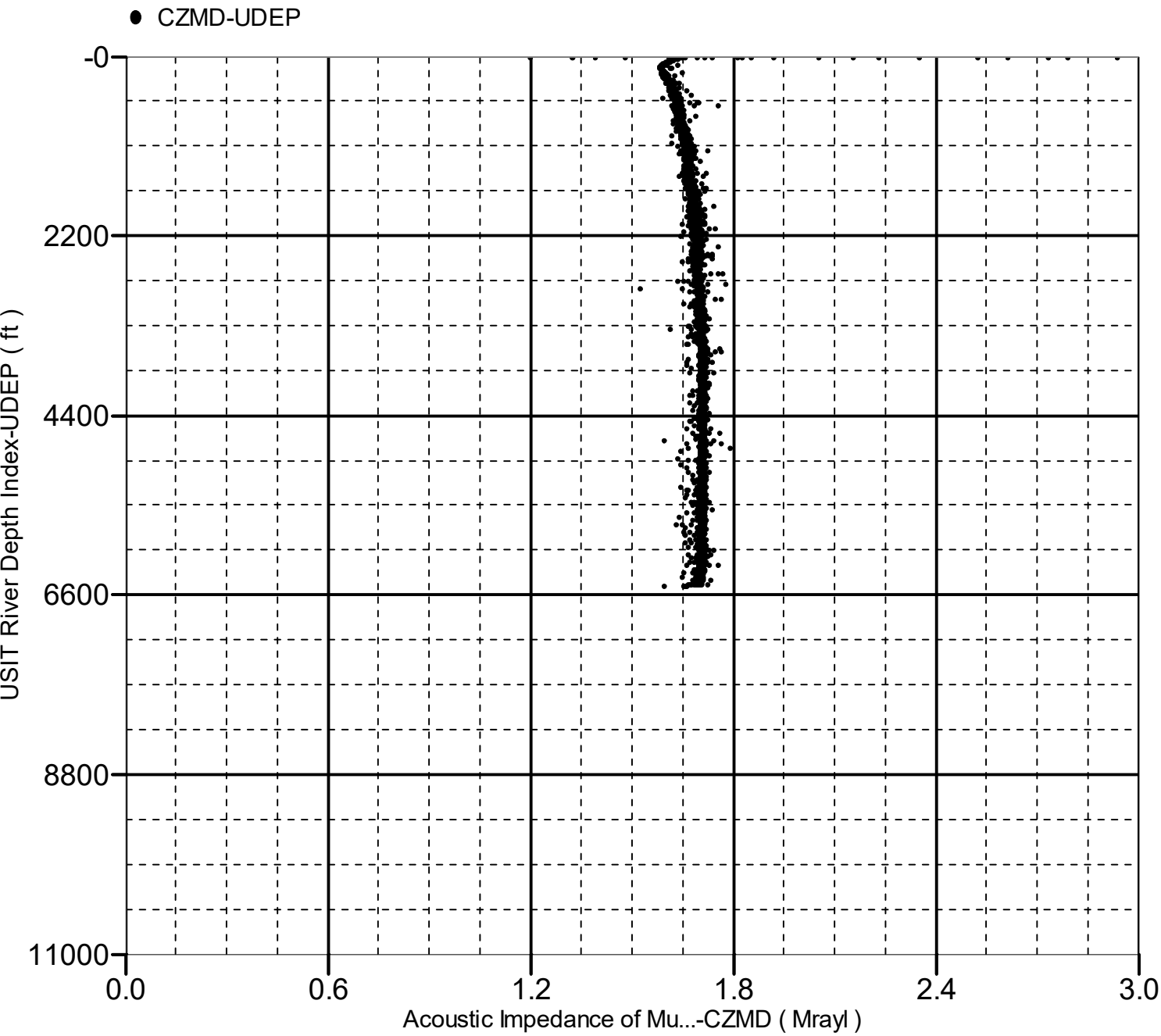
Index Range: From 10.25 to 6500.00 ft



Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 10.25 to 6500.00 ft



Company:	Chevron USA Inc.
Well:	SKR 598-36-BV-21
Field:	Skinner Ridge
County:	Garfield

Schlumberger

State:	Colorado
Ultrasonic Imager	
Casing Evaluation	
Gamma Ray - CCL Log	