

Company: Occidental Petroleum Corporation

Well: SHERWOOD L #30-30D

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Bond Log
Gamma Ray - CCL

County: Weld
Field: Wattenberg
Location: NWNW
Well: SHERWOOD L #30-30D
Company: Occidental Petroleum Corporation

Location:	NWNW	Elev.: K.B. 4835.00 ft G.L. 4820.00 ft D.F. 4835.00 ft
	717 FNL 763 FWL	
Permanent Datum:	Ground Level	Elev.: 4820.00 f
Log Measured From:	Kelly Bushing	15.00 ft above Perm.Datum
Drilling Measured From:	Kelly Bushing	
API Serial No.	Section: 30	Township: 3N
05-123-31127		Range: 66W

Logging Date	27-Oct-2022	
Run Number	one	
Depth Driller	8113.00 ft	
Schlumberger Depth	8113.00 ft	
Bottom Log Interval	6500.00 ft	
Top Log Interval	55.00 ft	
Casing Fluid Type	Water	
Salinity		
Density	8.3 lbm/gal	
Fluid Level	8.00 ft	
BIT/CASING/TUBING STRING		
Bit Size	7.88 in	
From	660.00 ft	
To	8113.00 ft	
Casing/Tubing Size	4.5 in	
Weight	11.6 lbm/ft	
Grade	N/A	
From	0.00 ft	
To	8113.00 ft	
Max Recorded Temperatures	189 degF	
Logger on Bottom	Time	28-Oct-2022 11:50:00
Unit Number	Location:	OSLC-HA9102 Fort Morgan
Recorded By	D. Al Hassan	
Witnessed By	Eric Wenzel	

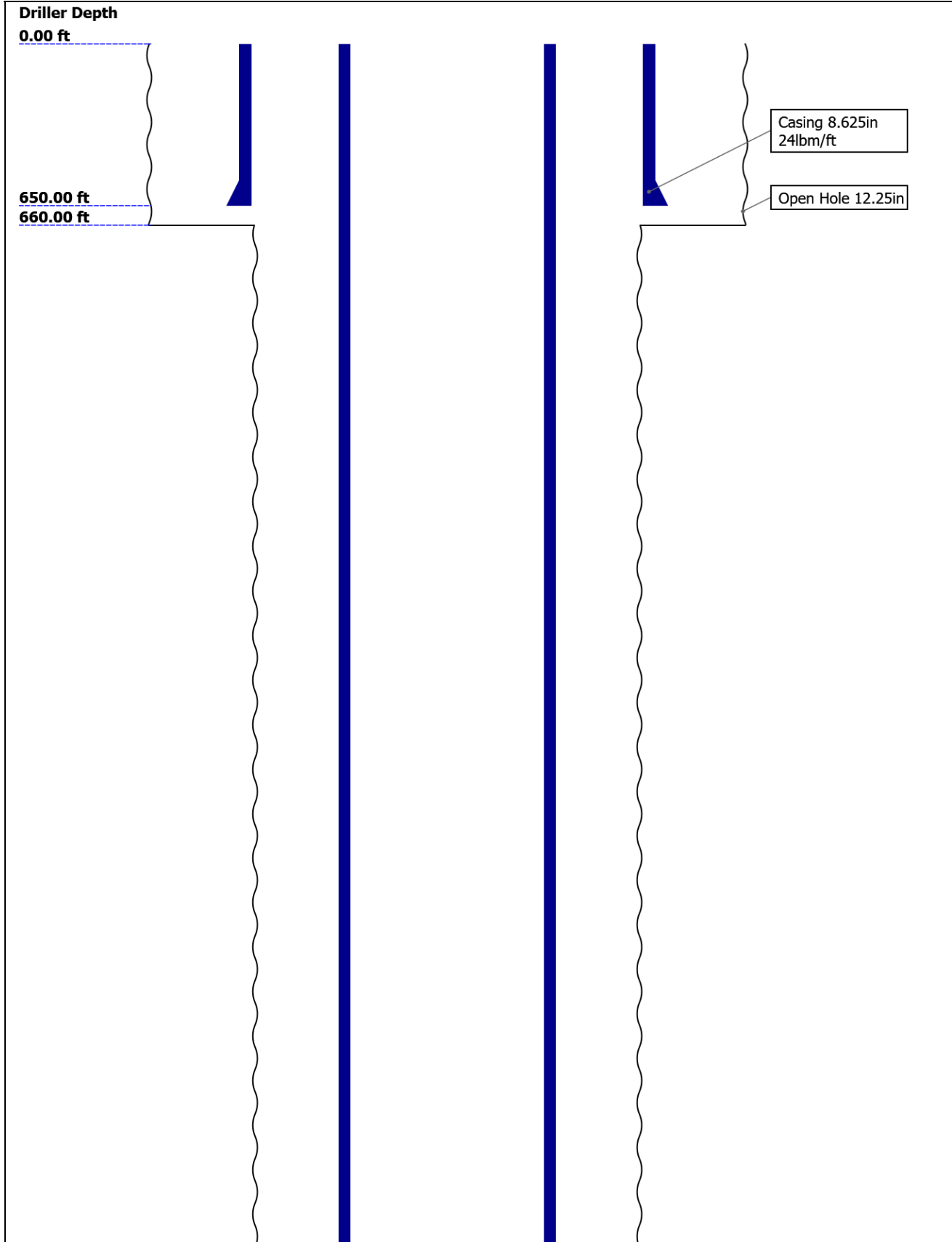
Disclaimer

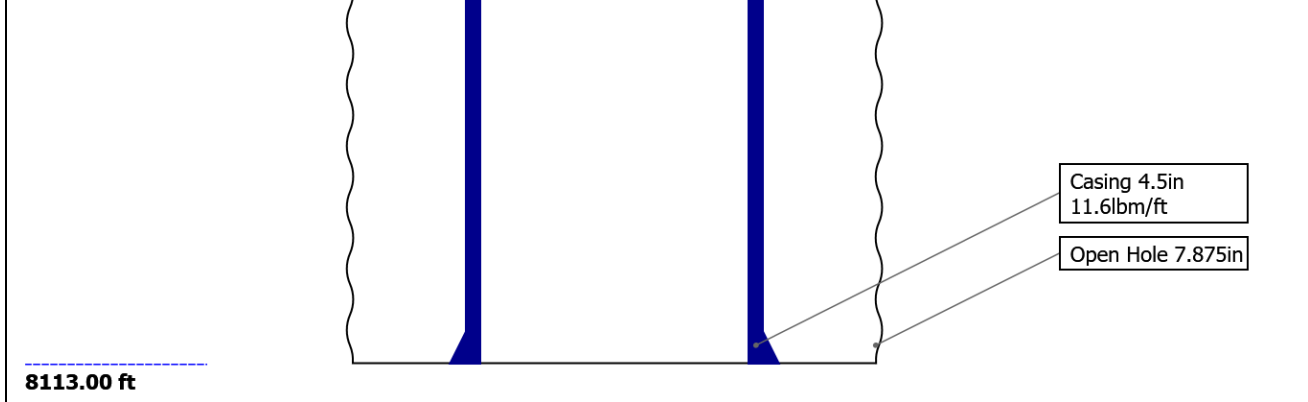
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Well Sketch



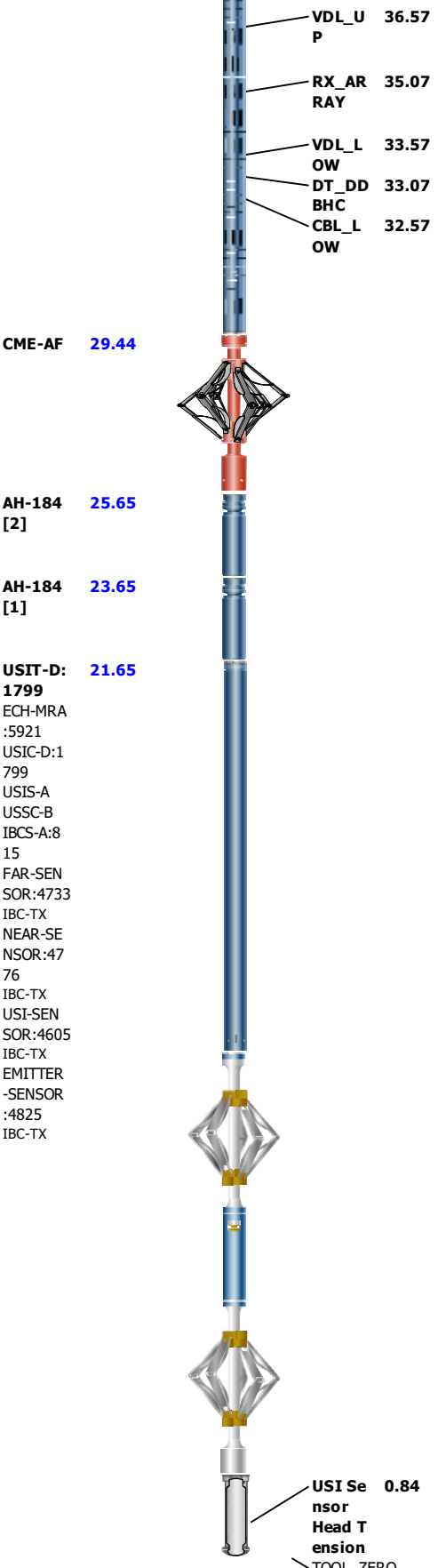


Borehole Size/Casing/Tubing Record

Bit					
Bit Size (in)	12.25	7.875			
Top Driller (ft)	0	660			
Top Logger (ft)	0	660			
Bottom Driller (ft)	660	8113			
Bottom Logger (ft)	660	8113			
Casing					
Size (in)	8.625	4.5			
Weight (lbm/ft)	24	11.6			
Inner Diameter (in)	8.097	4			
Grade	J55	N/A			
Top Driller (ft)	0	0			
Top Logger (ft)	0	0			
Bottom Driller (ft)	650	8113			
Bottom Logger (ft)	650	8113			

Remarks and Equipment Summary

one: Toolstring	one: Remarks
<p>Equip name&length</p> <p>LEH-QT 54.09 LEH-QT</p> <p>EDTC-B: 50.6 8624 EDTH-B: 9109 EDTG-B: 77789 EDTC-B: 8624</p> <p>ASLT-B: 44.1 8073 ASLT-BB :8073</p> <p>CBL_U 37.57 P</p> <p>CTEM 47.1 ACCZ 0.00 HV 0.00 Gamm 45.23 a Ray TelSta 44.1 tus</p>	Thank you for choosing Schlumberger
	Log run for cement and casing evaluation
	IBCS-A was used with IBC-TX
	Tool was run as per tool sketch
	Log run under 500 psi
	Crew: Kenneth Ellis, Jesse Medrano



Lengths are in ft
 Maximum Outer Diameter = 3.800 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO

Depth Summary

	one		
Depth Measuring Device			
Type	IDW-B		
Serial Number			

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	7-46A-XS		
Serial Number	F721083		
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Workover rig		

one: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 1	Log[2]:Down	2452.38	6496.23

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=1.11
DFD=0.99g/cm3(8.30lbm/gal)

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

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220972 Wireline_NPD-ThruBit-2022.1_12.1.220135

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
one	Log[7]:Up	Up	57.92 ft	6510.69 ft	28-Oct-2022	28-Oct-2022	ON	7.81 ft	Yes

All depths are referenced to toolstring zero

Log

Company: Occidental Petroleum Corporation

Well: SHERWOOD L #30-30D

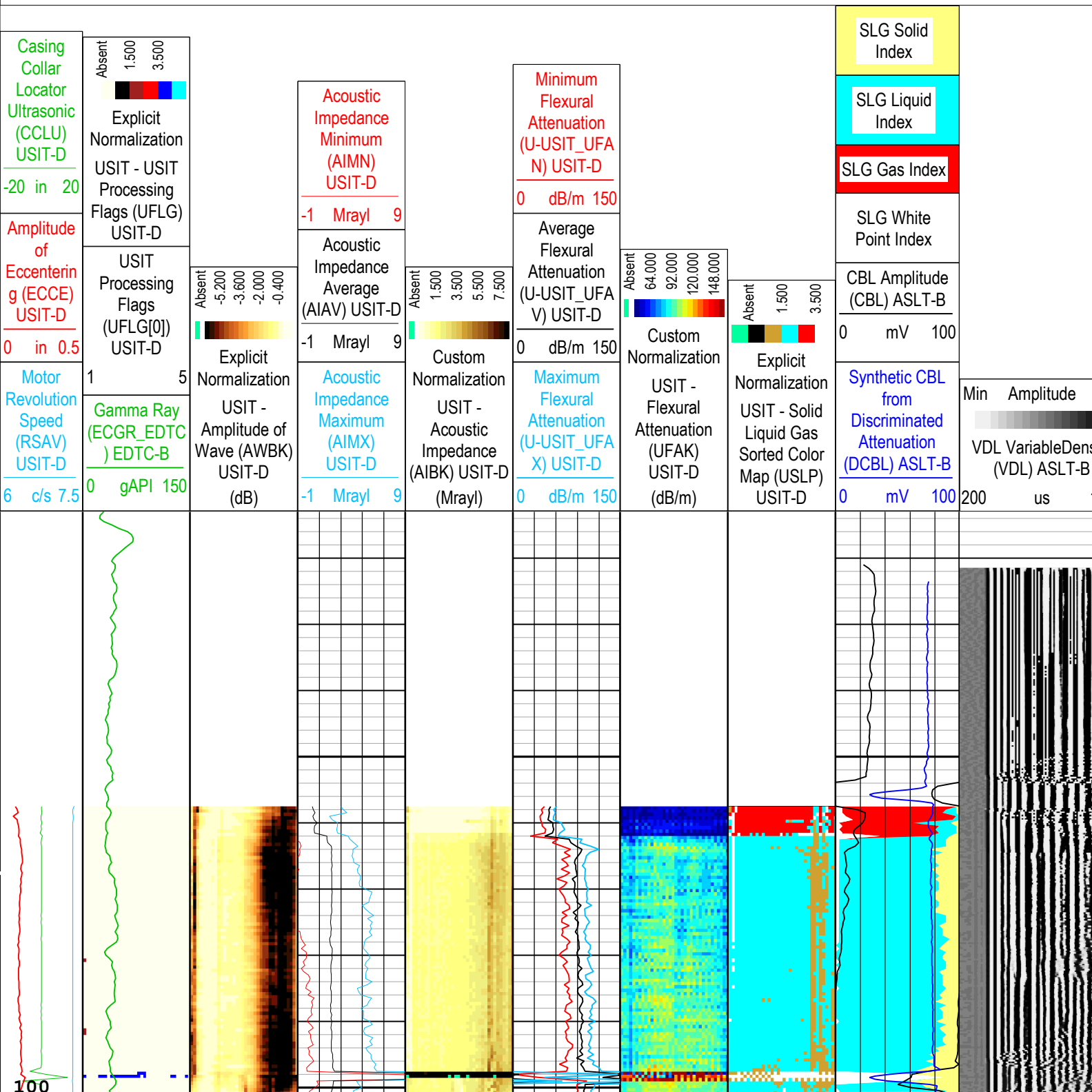
one: Log[7]:Up:S015

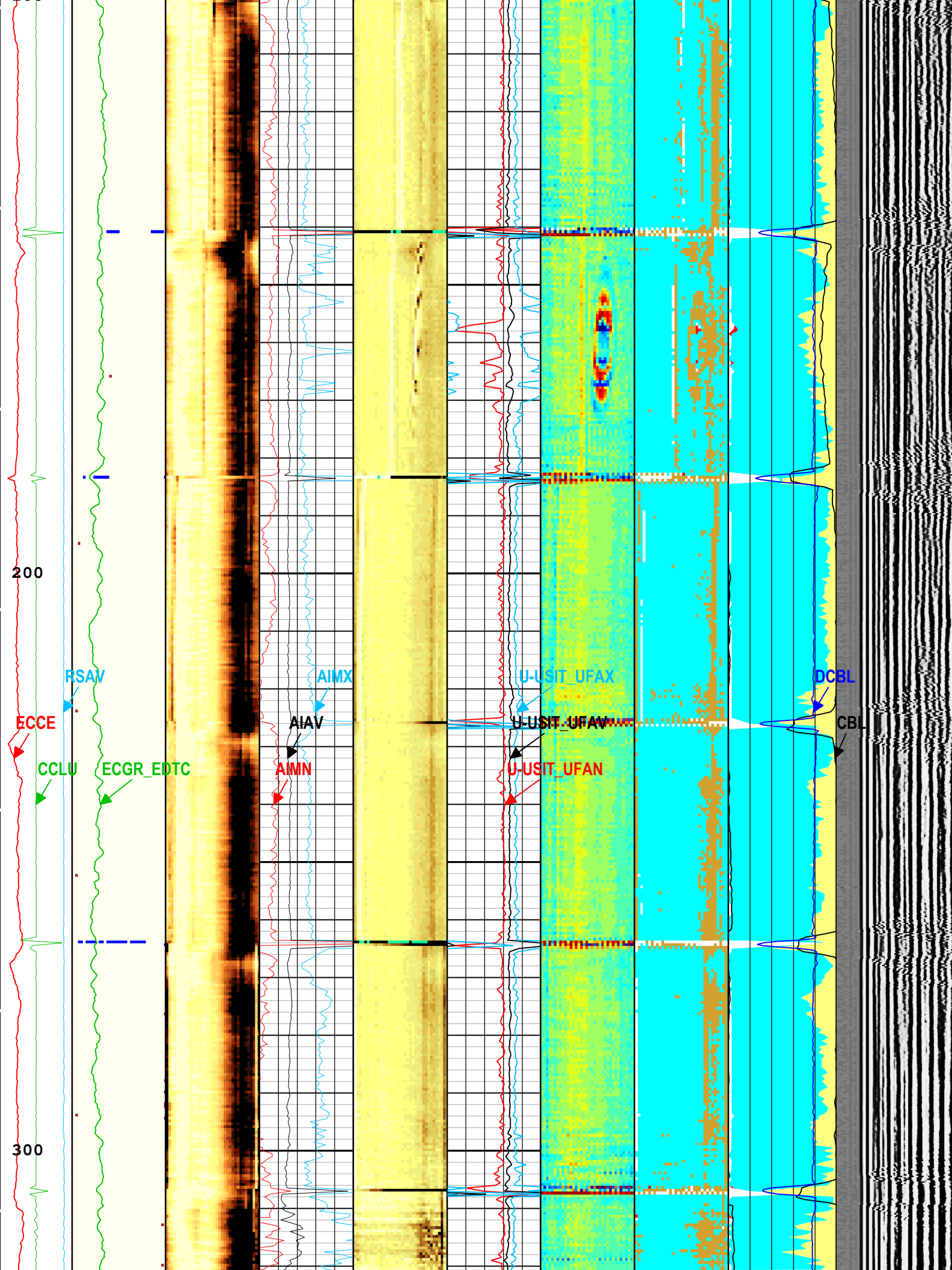
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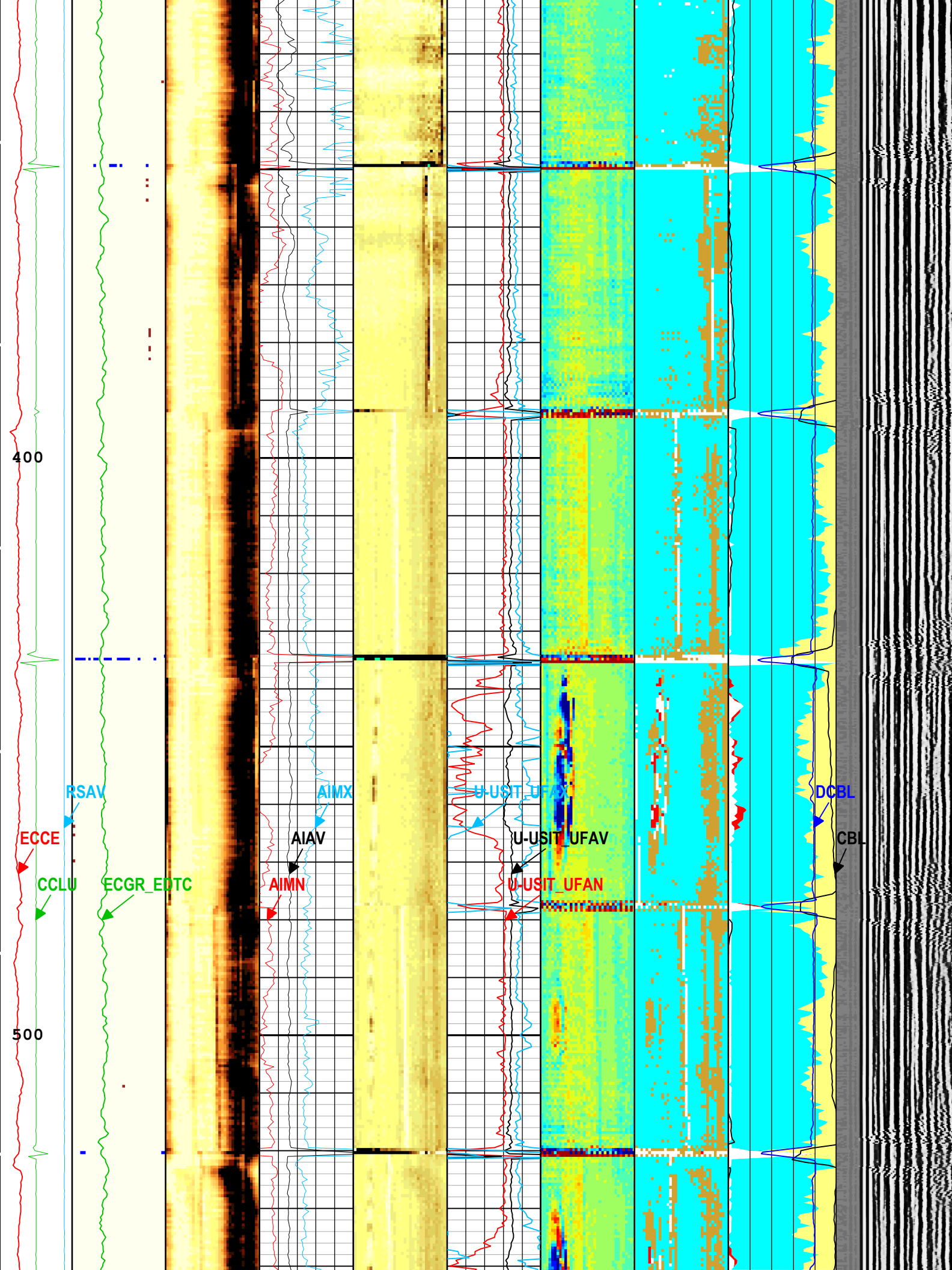
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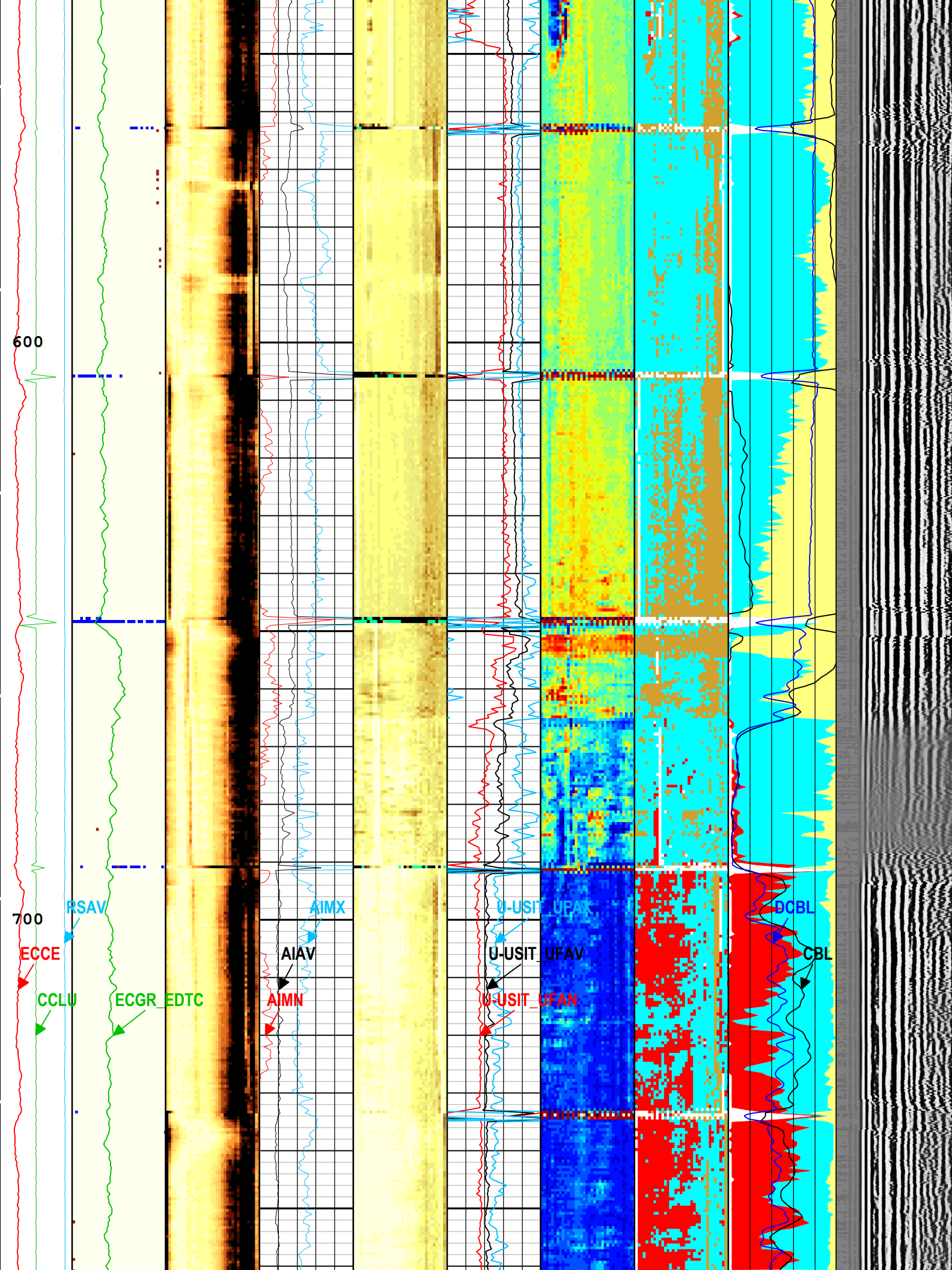
USIT Processing Flags (UFLG[0]) USIT-D

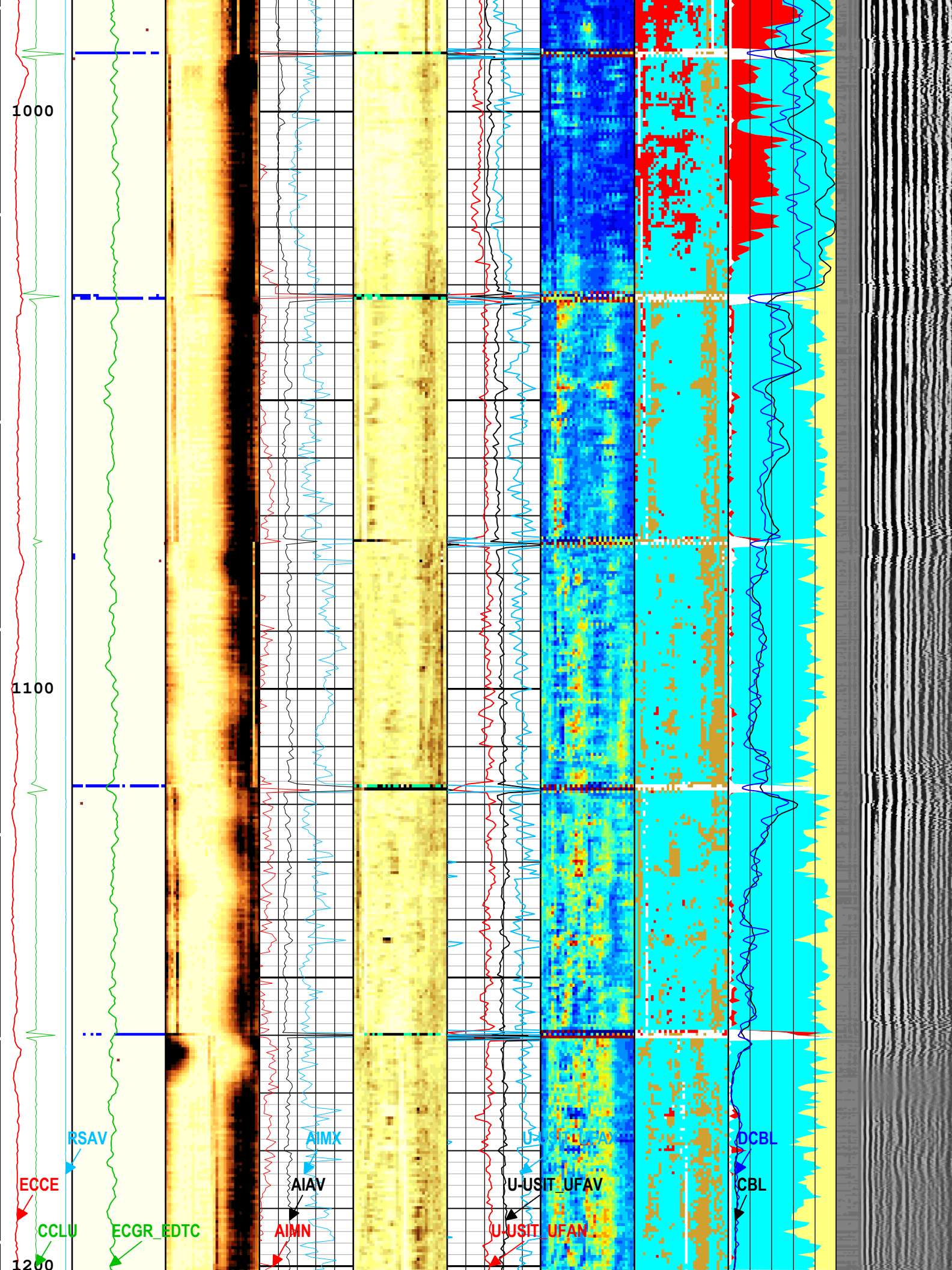
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- 2 - UFLG 2 Value within [1.5 - 2.5] - : Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - : WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 -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











1000

1100

1200

ECCE

CCLU

ECGR_EDTC

RSAV

AIMN

AIMV

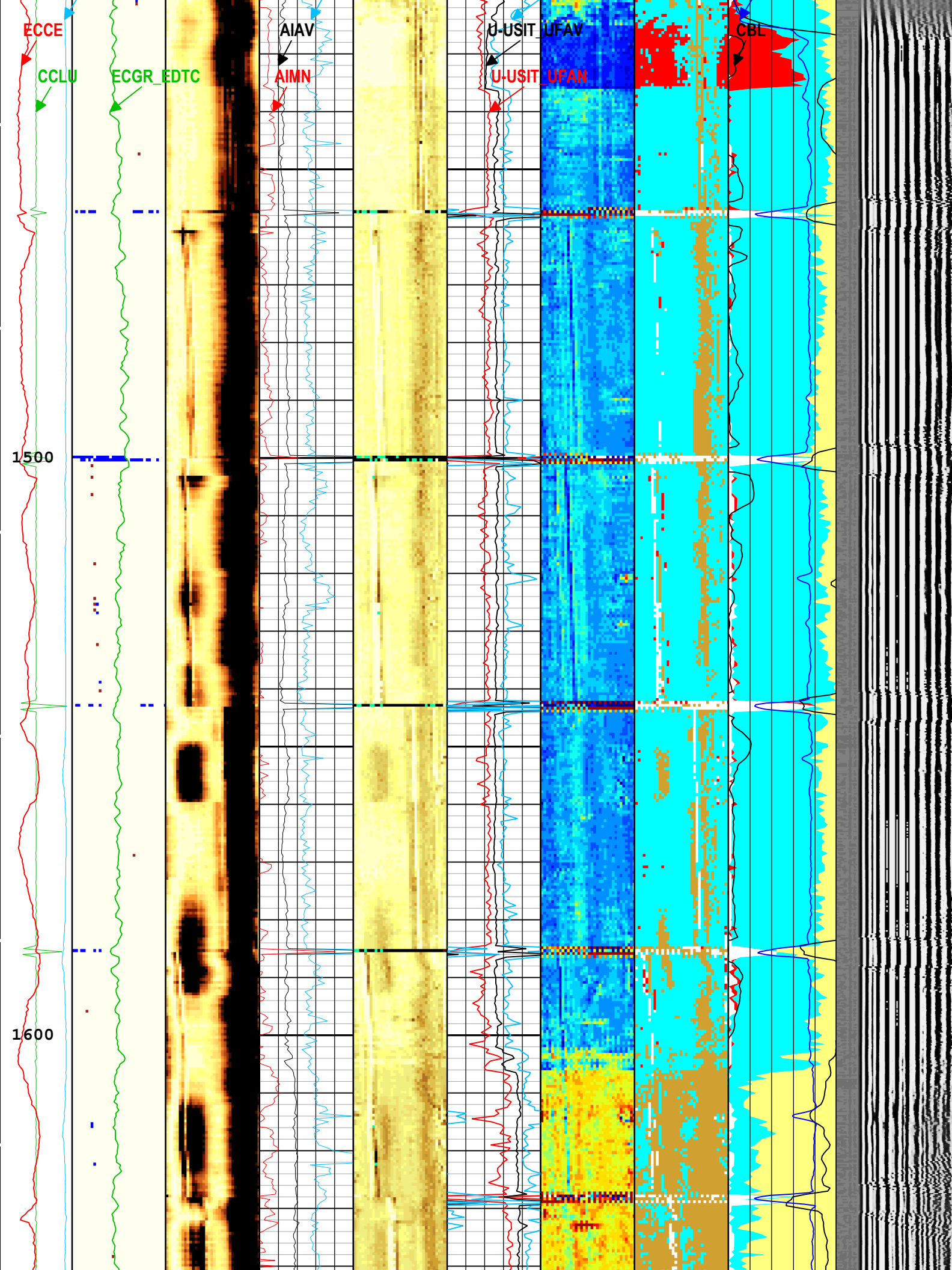
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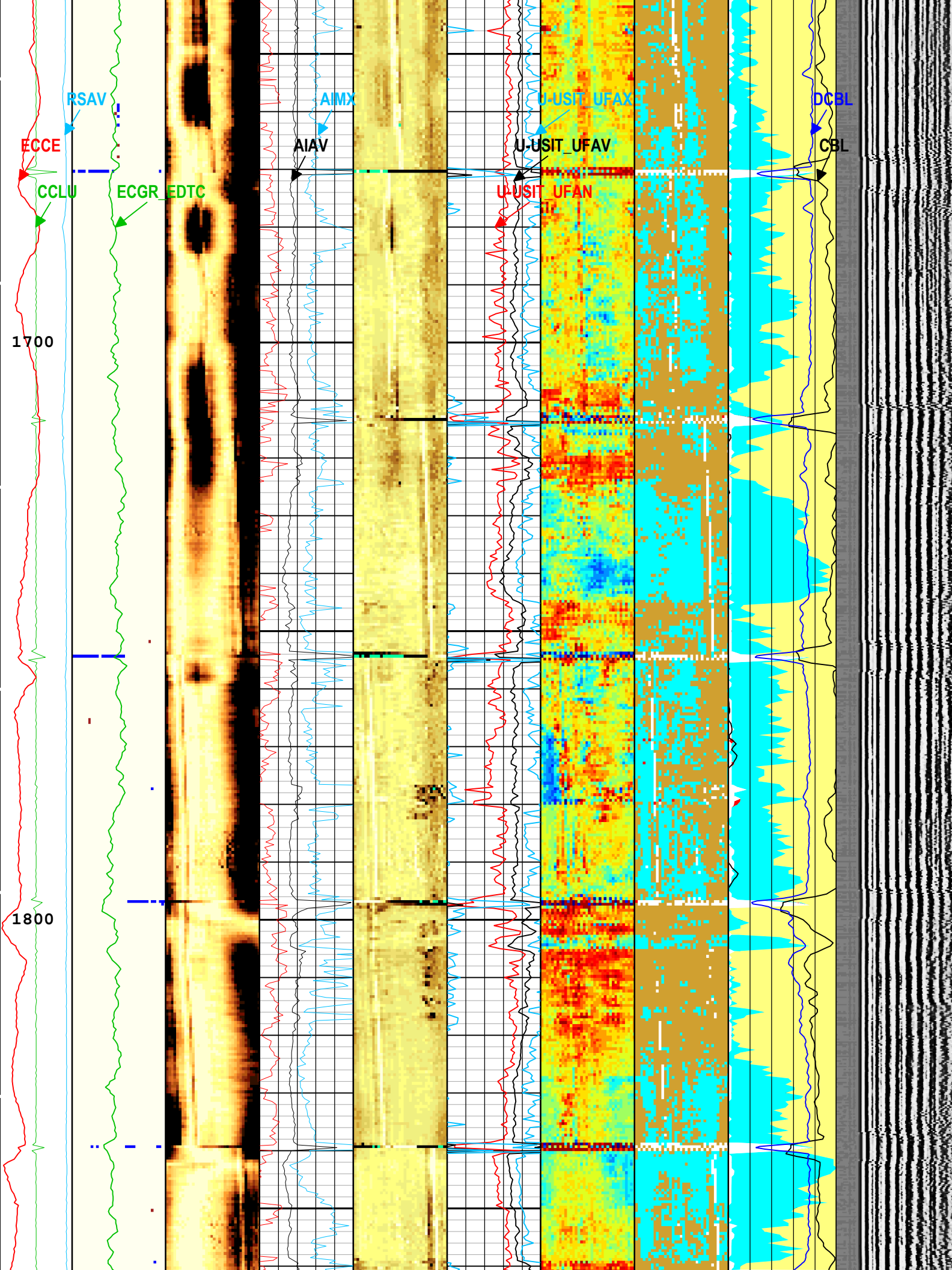
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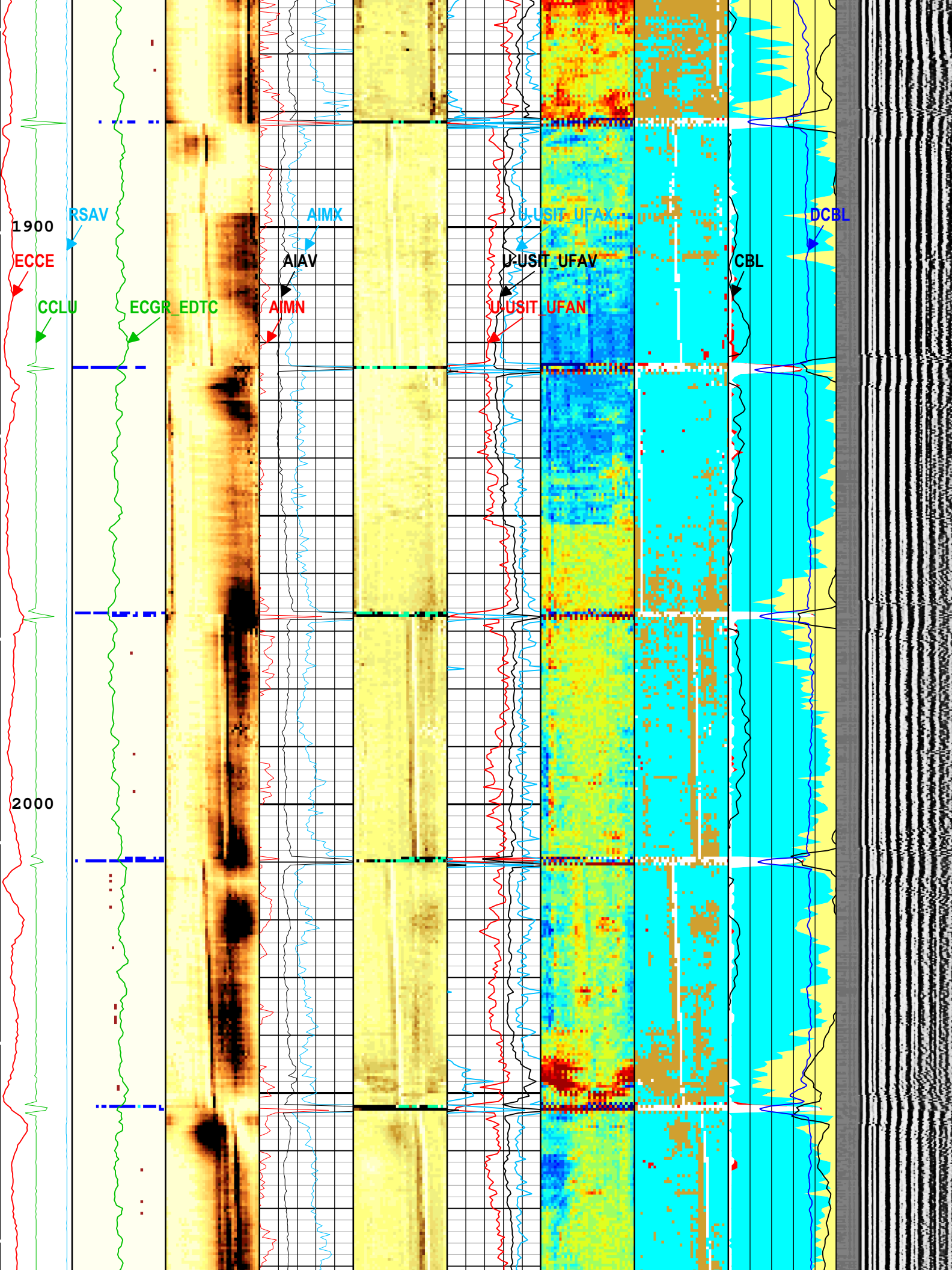
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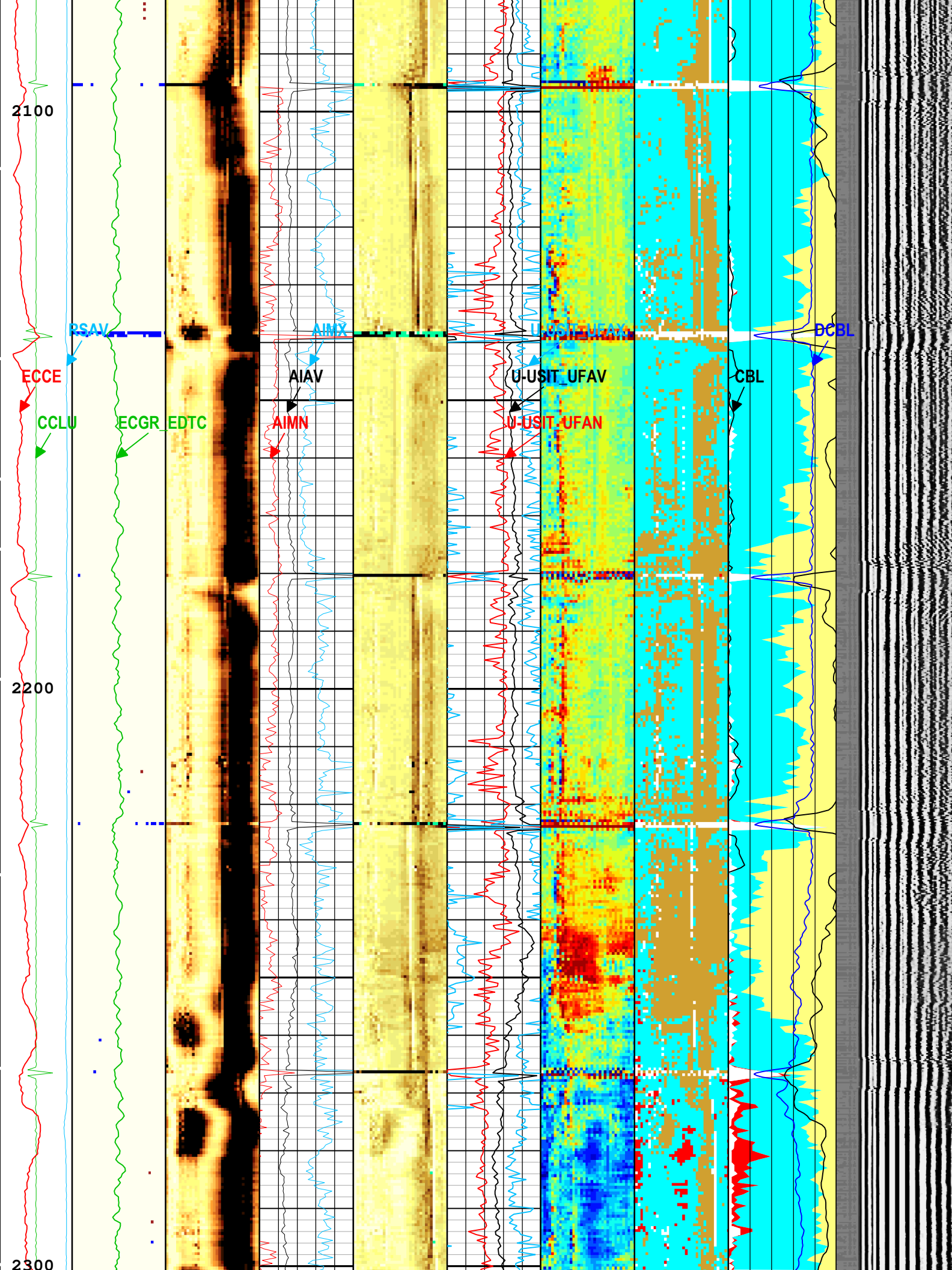
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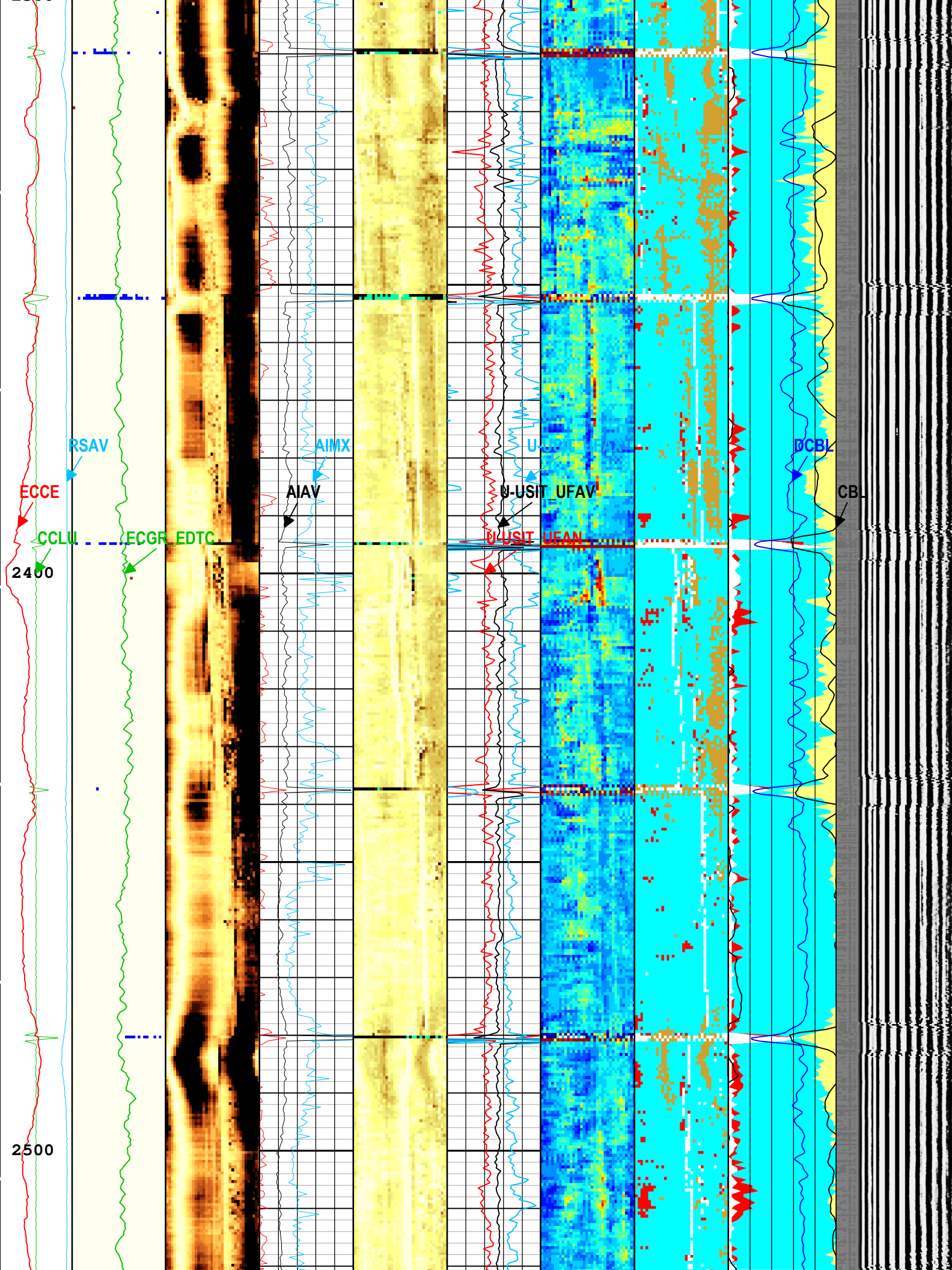
DCBL











2400

2500

RSAV

ECCE

CCLU

ECGR EDTC

AIAV

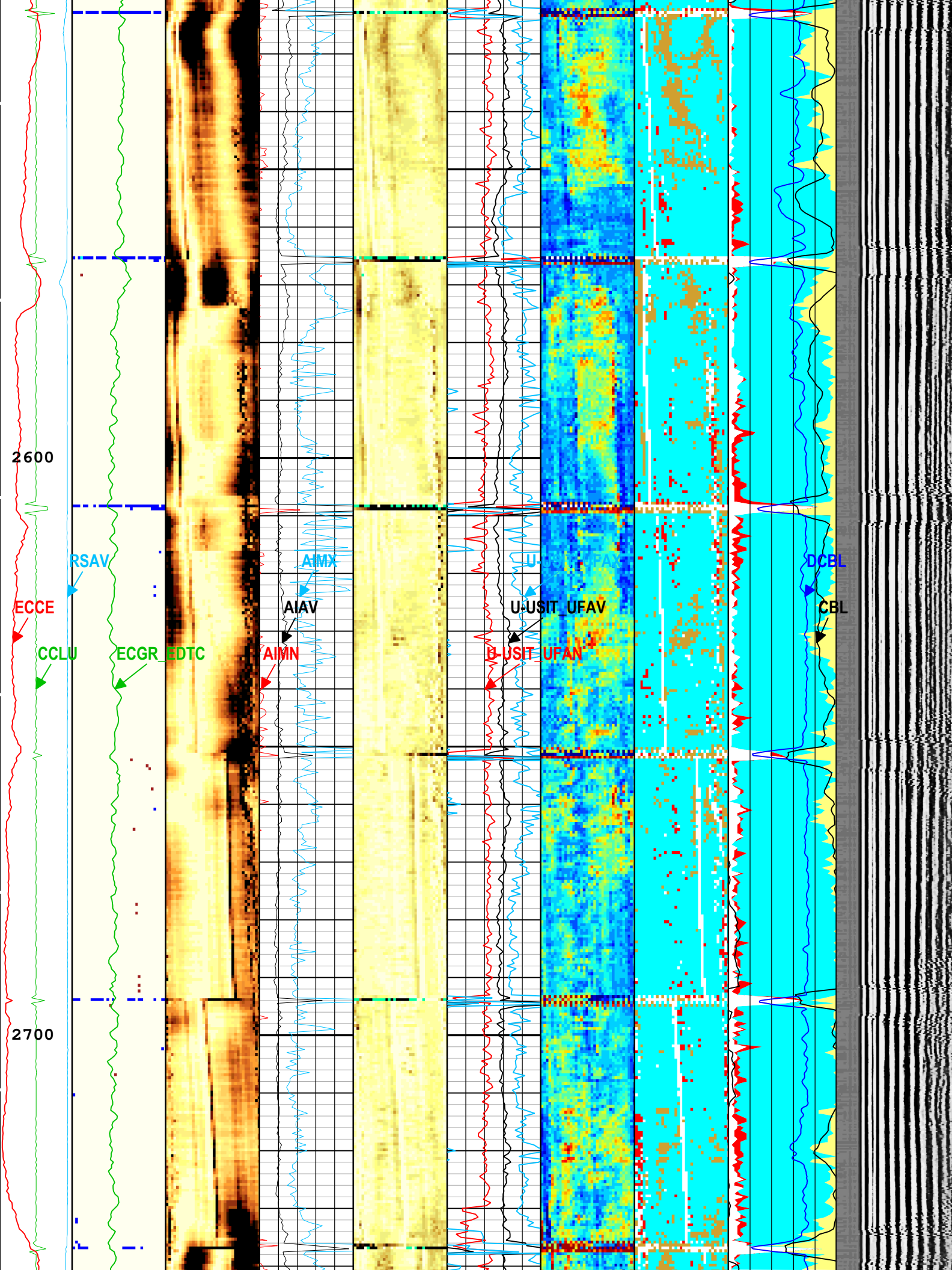
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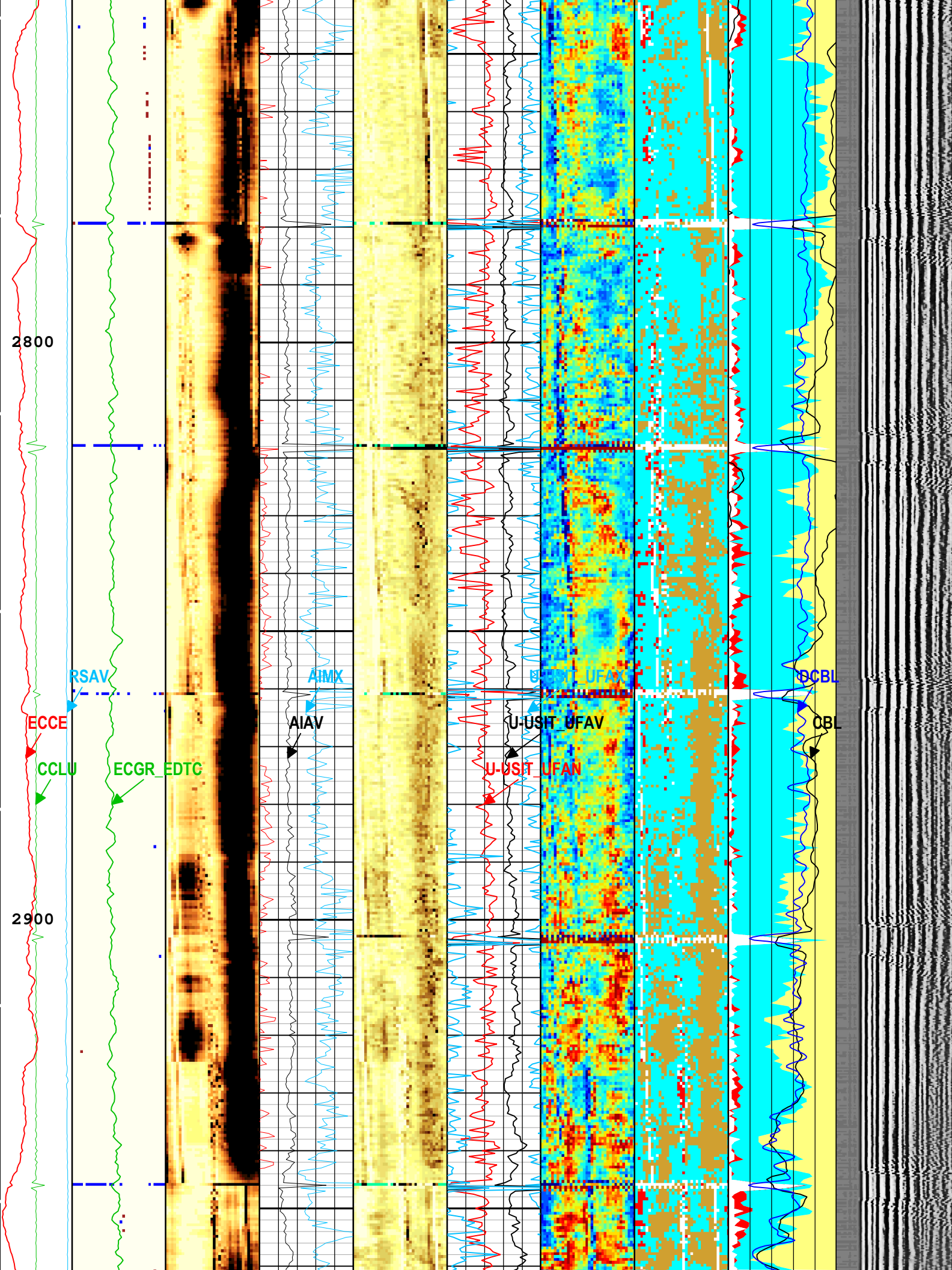
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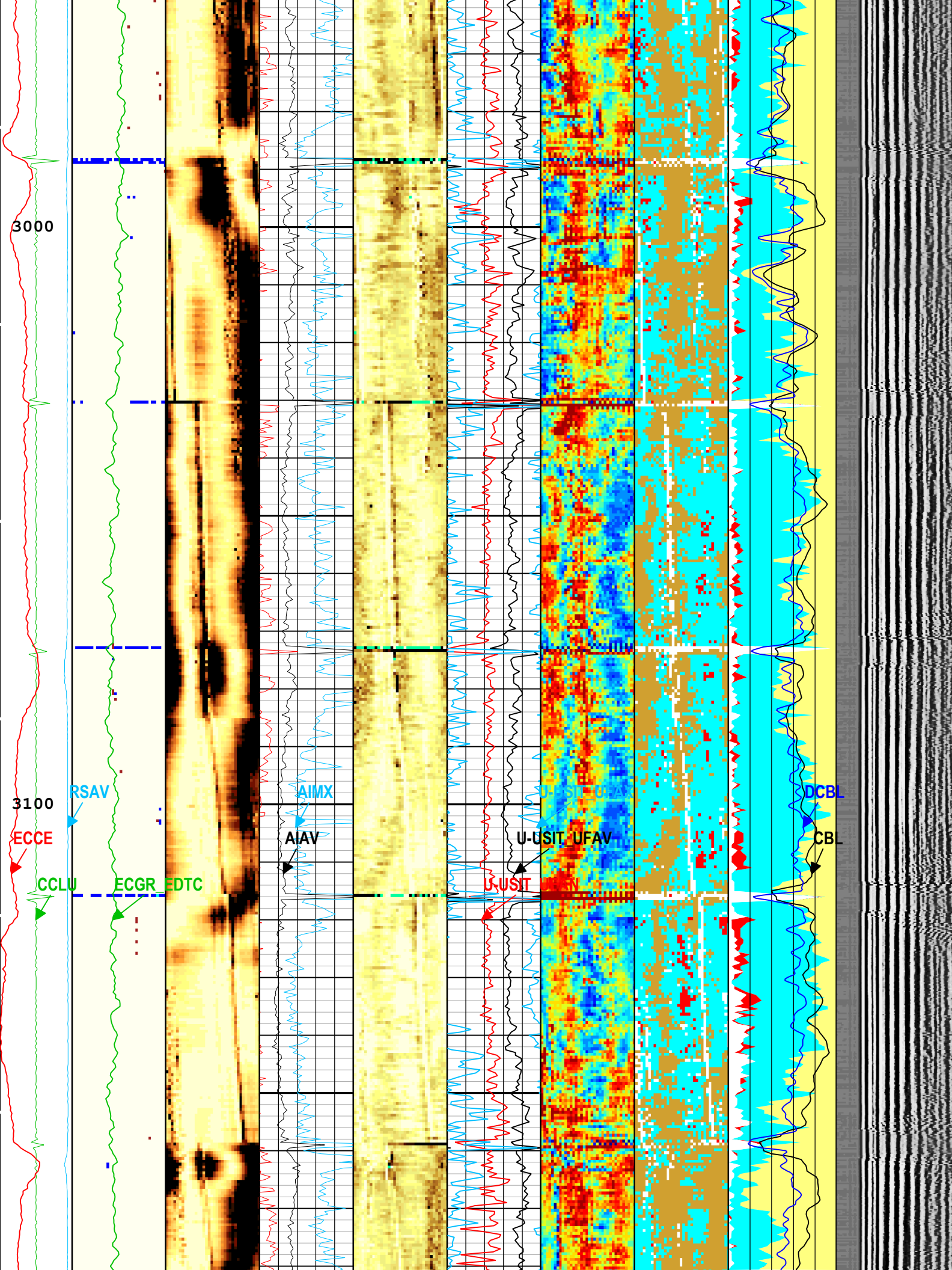
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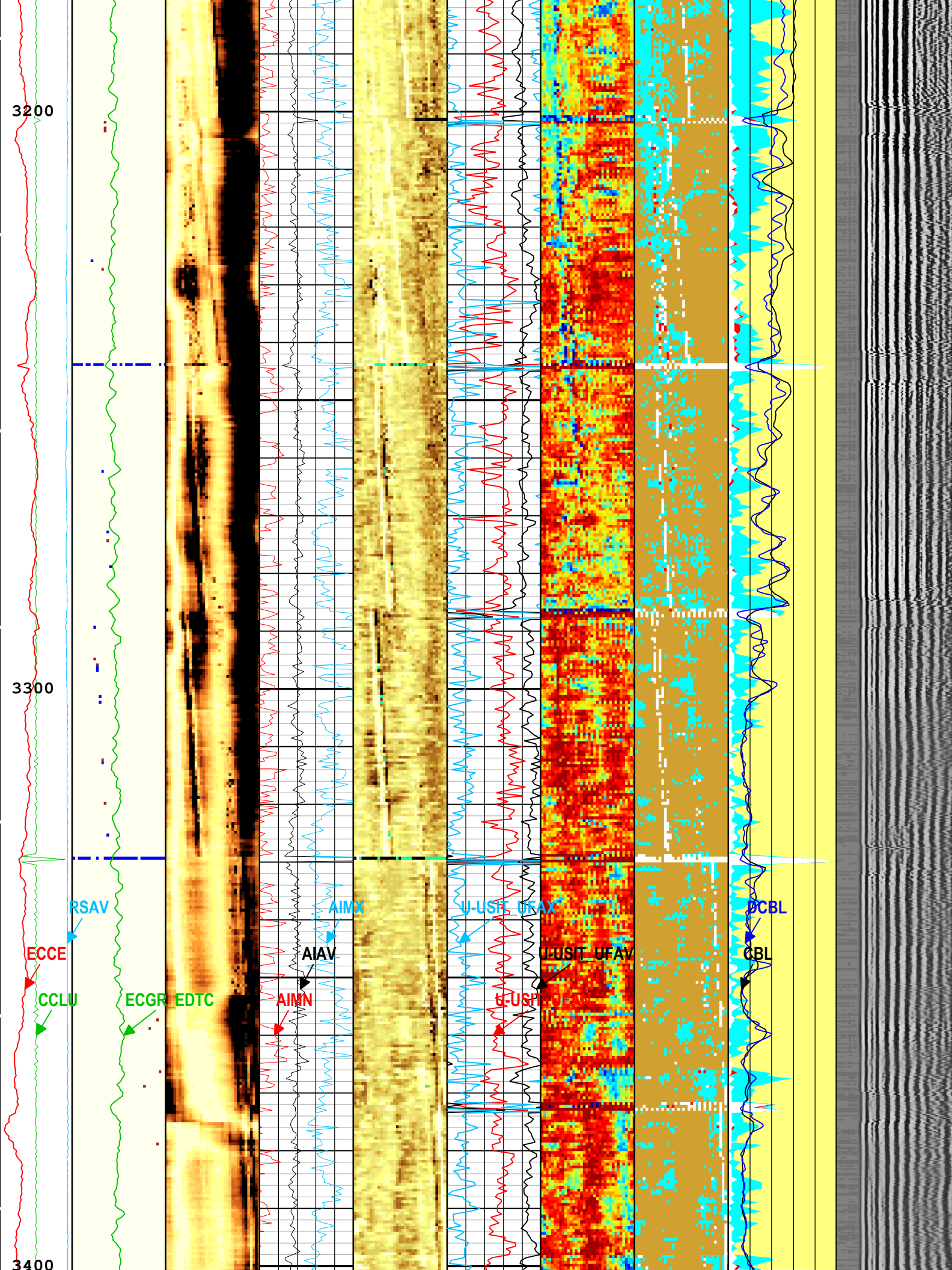
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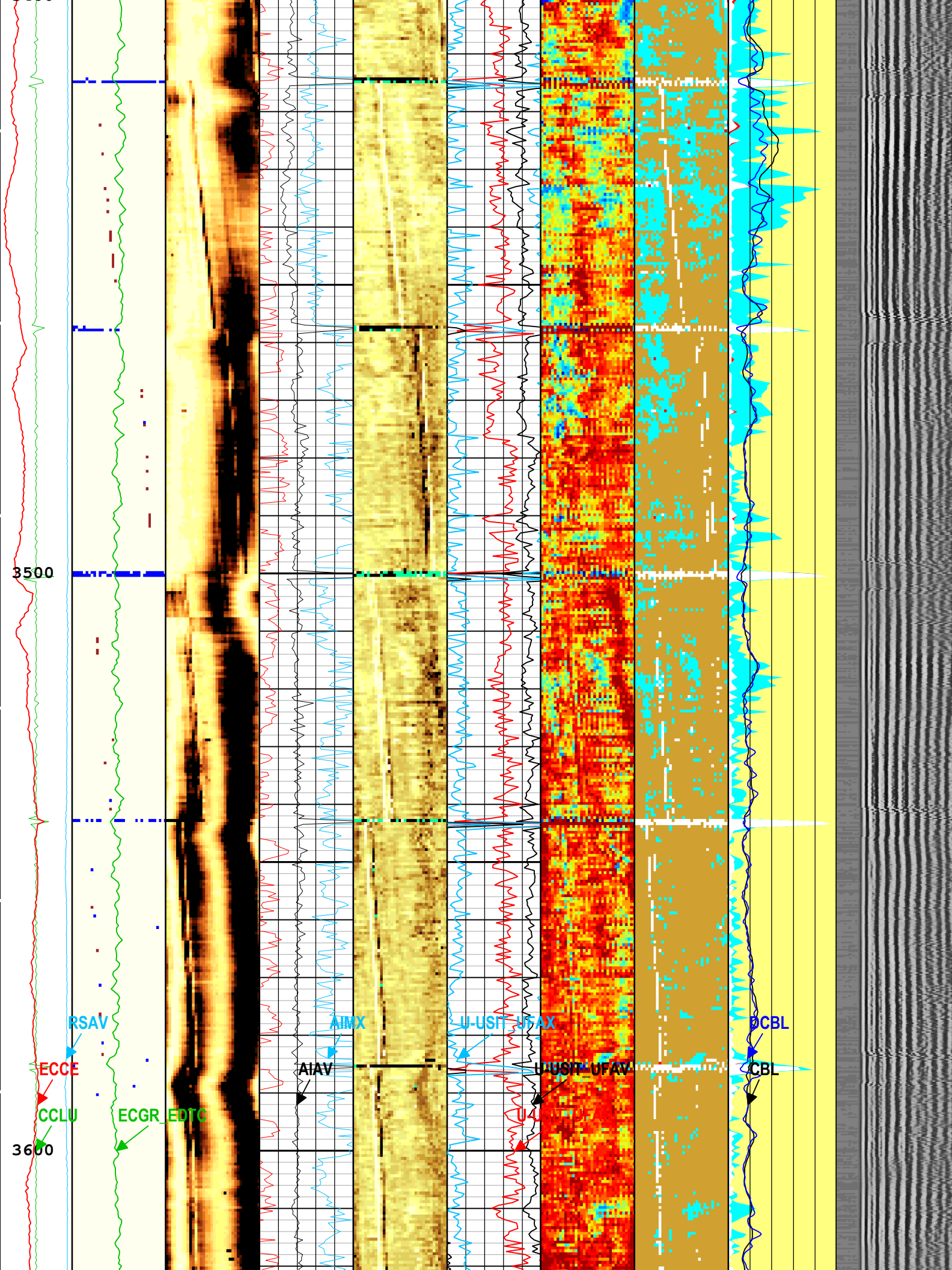
CB











3500

3600

ECCE

CCLU

ECGR_EDTC

RSAV

AIAX

AIMX

U-USIT

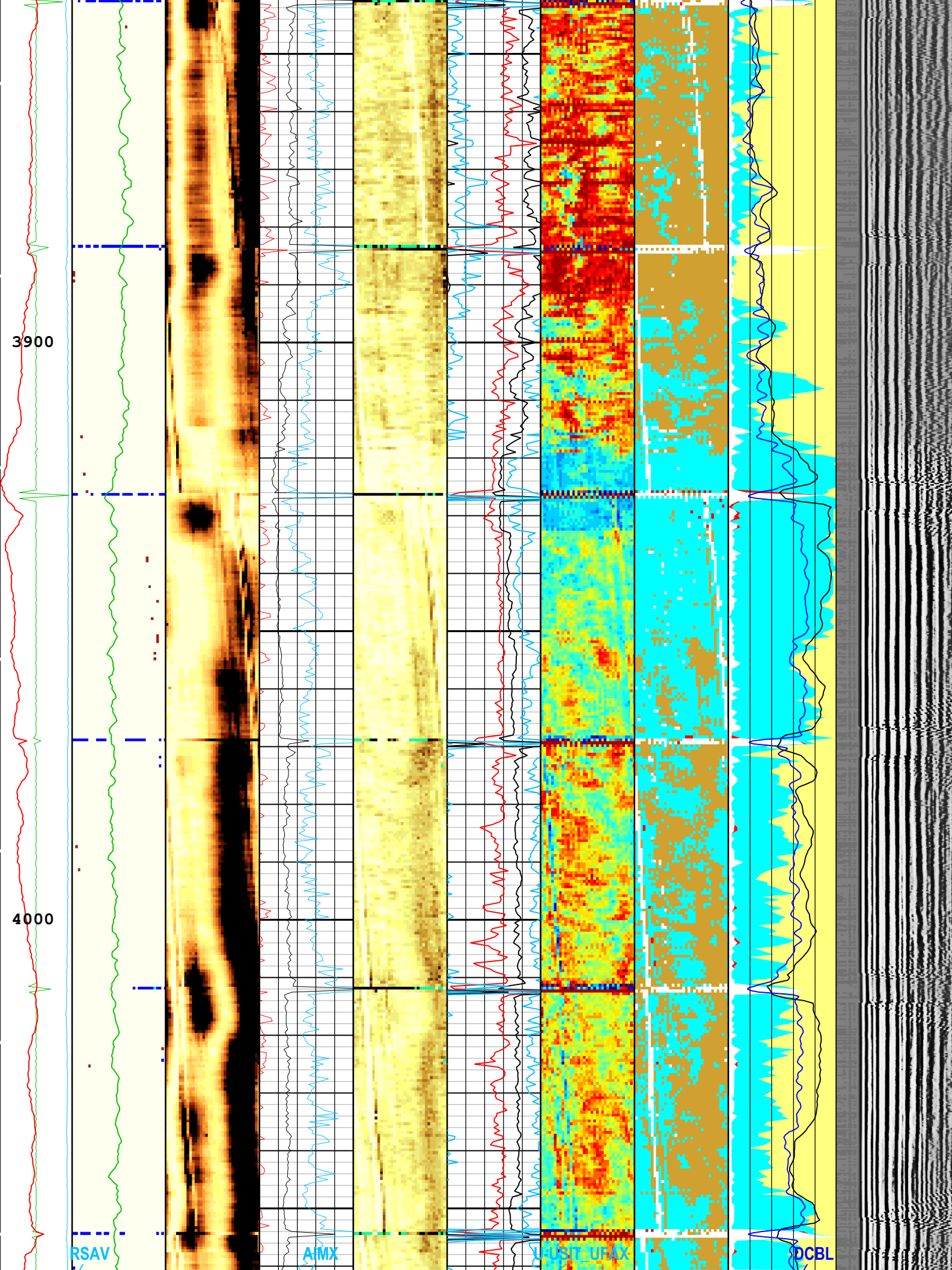
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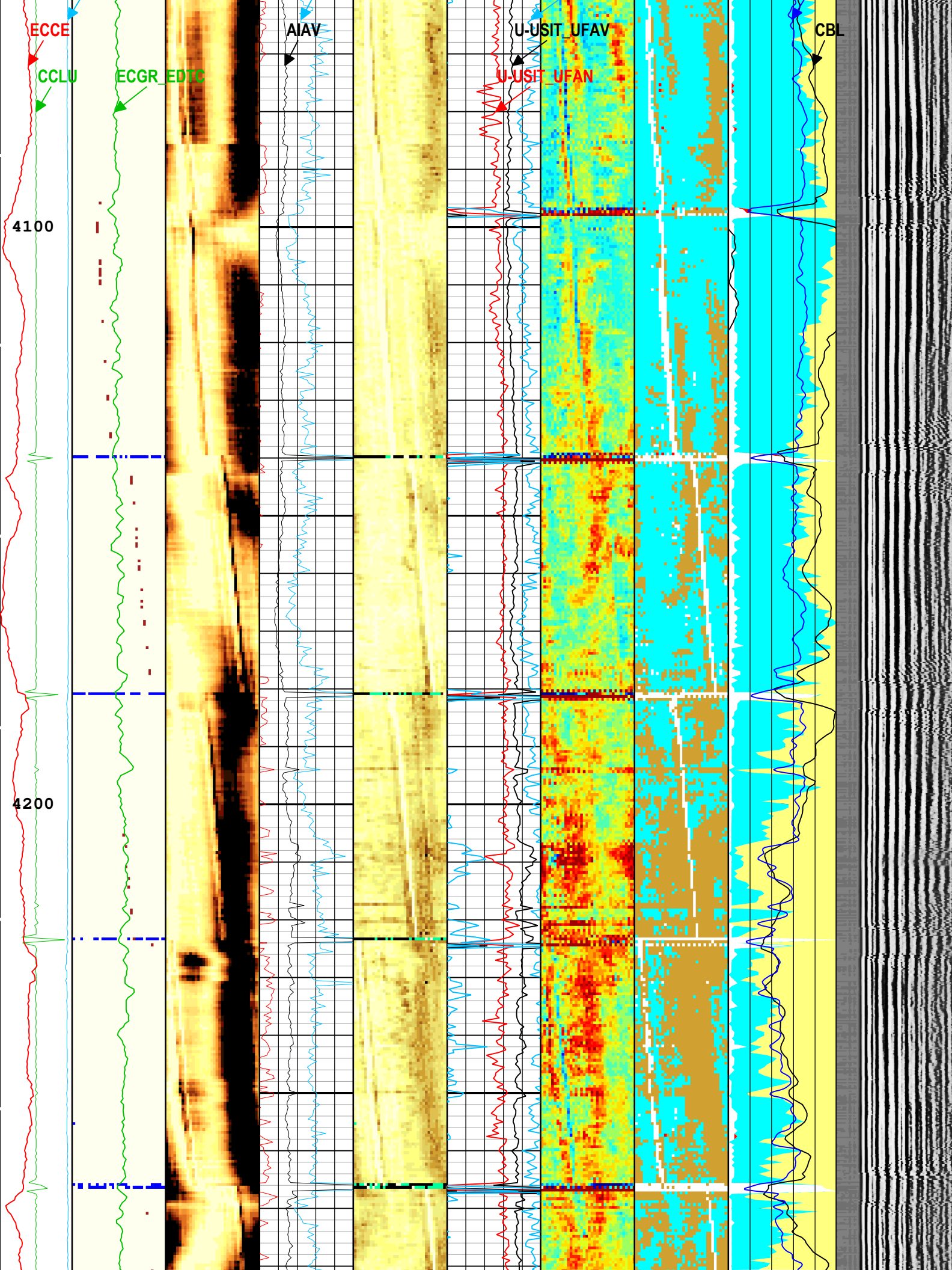
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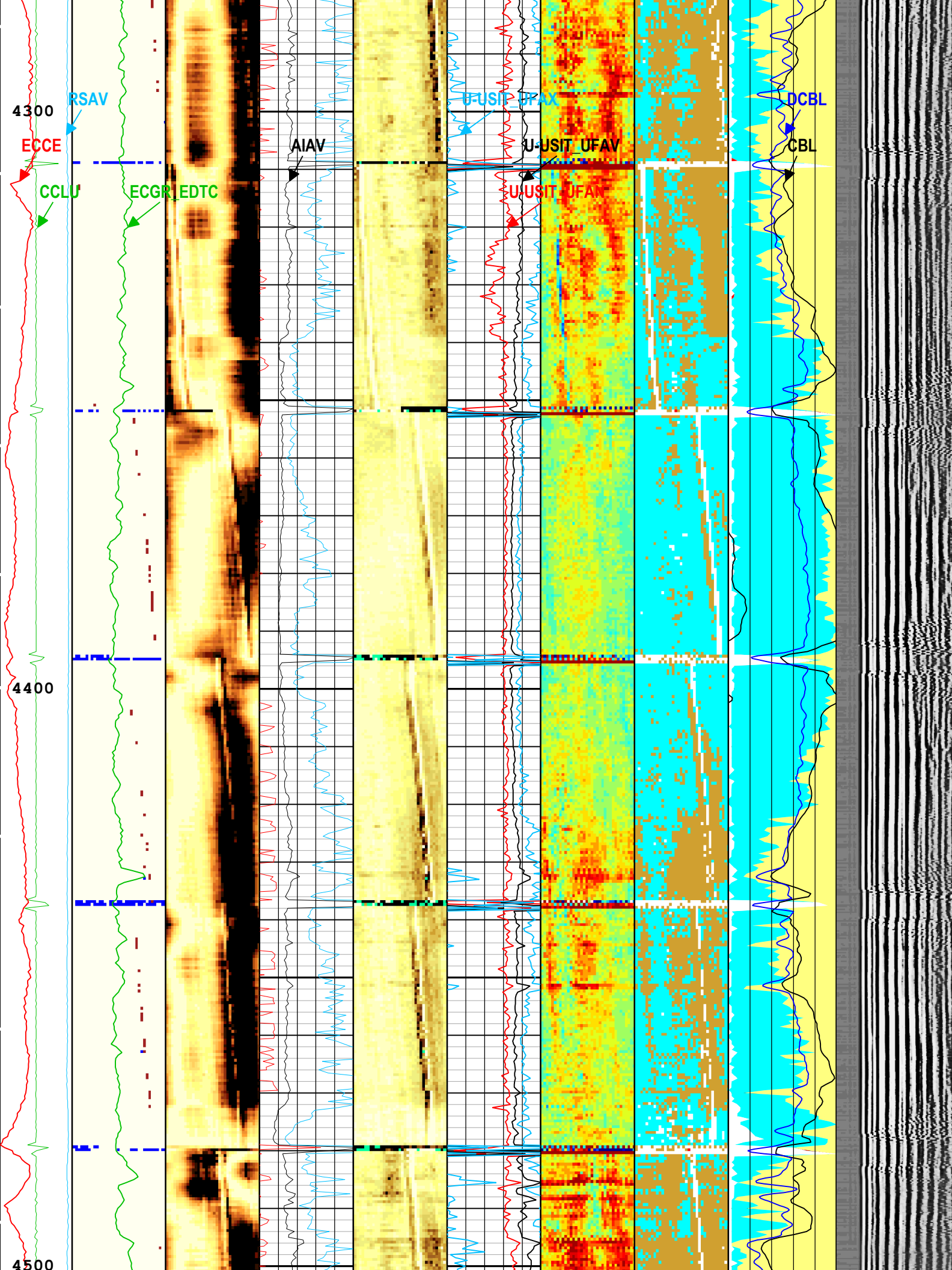
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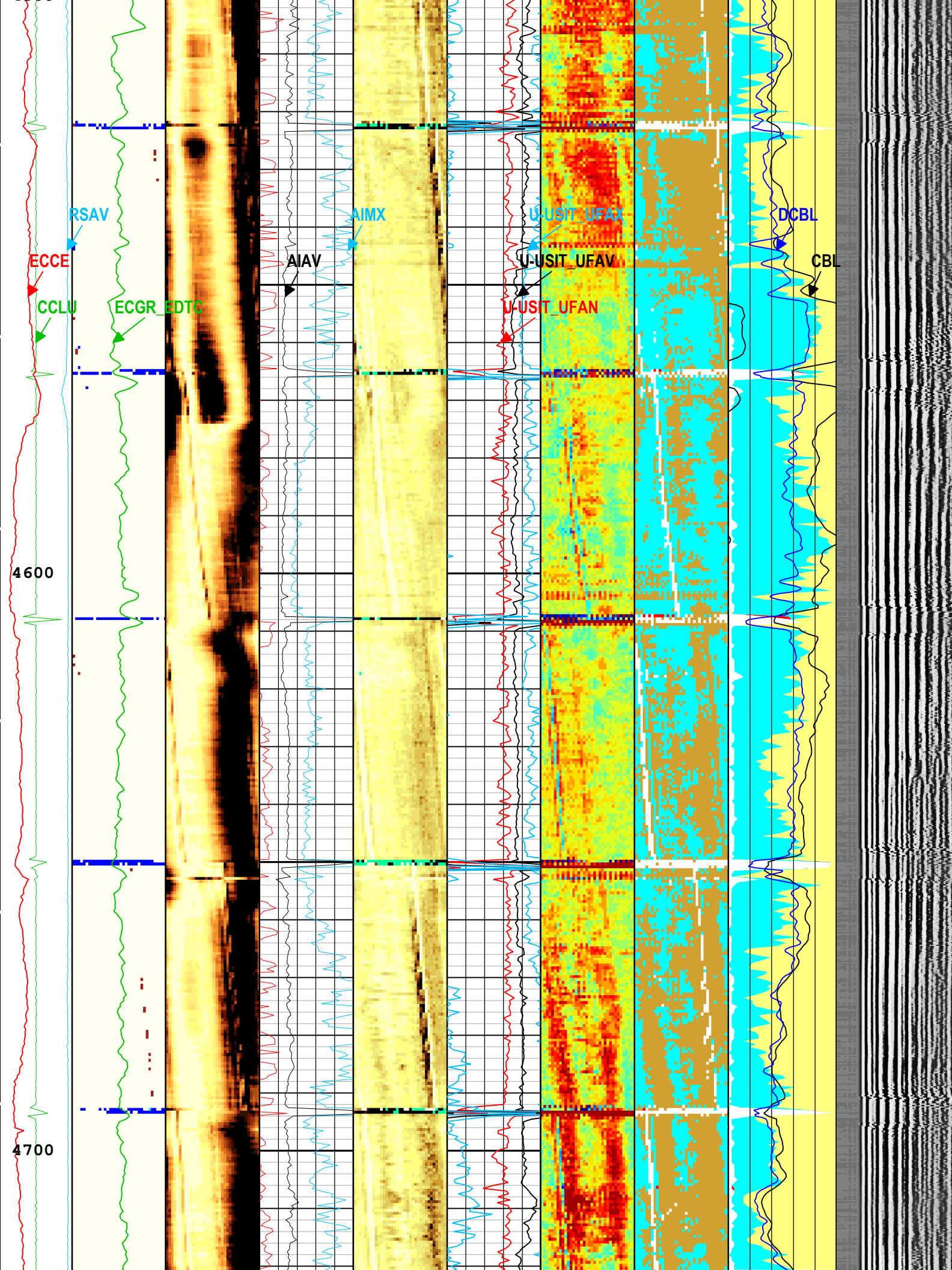
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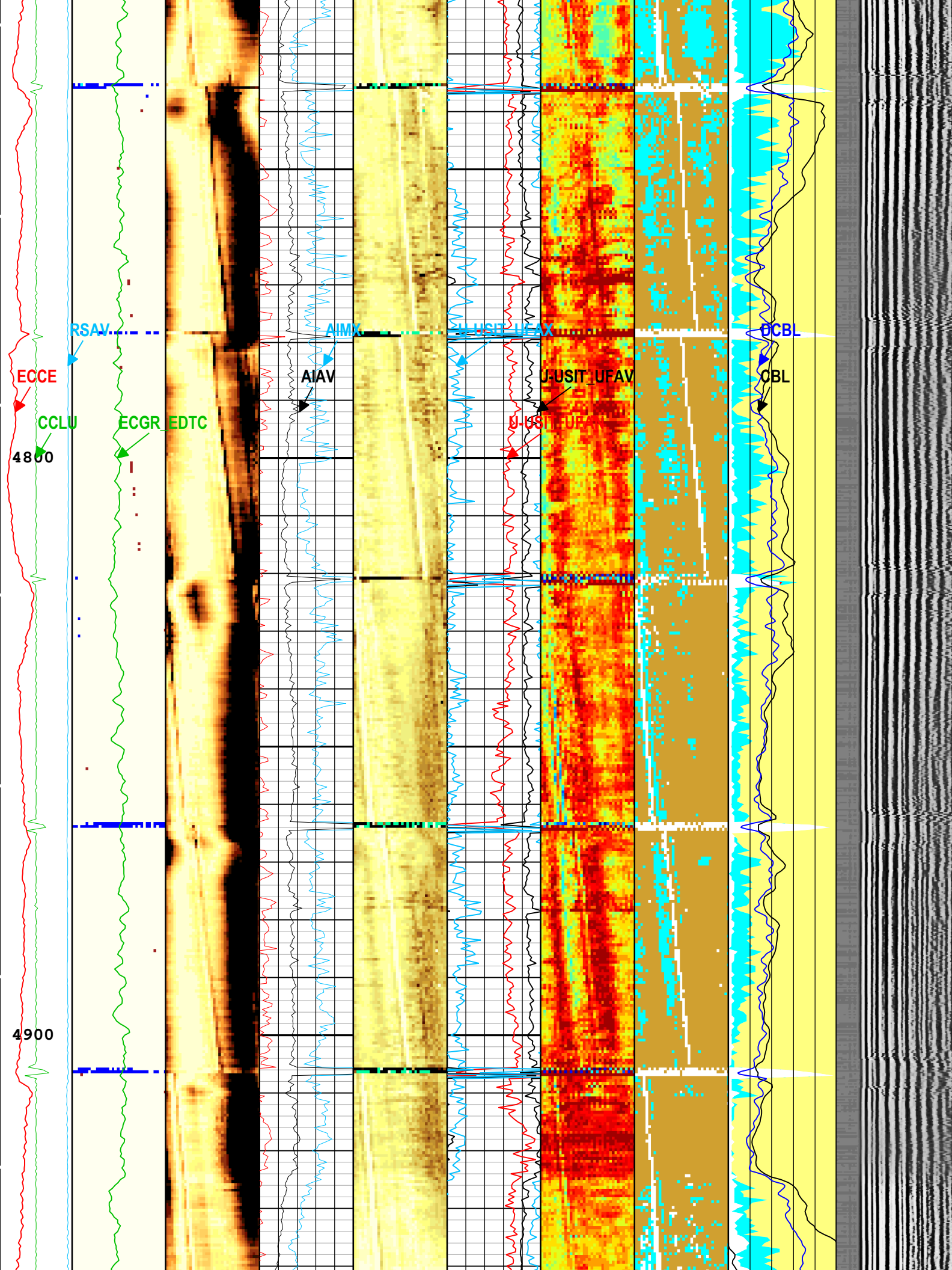
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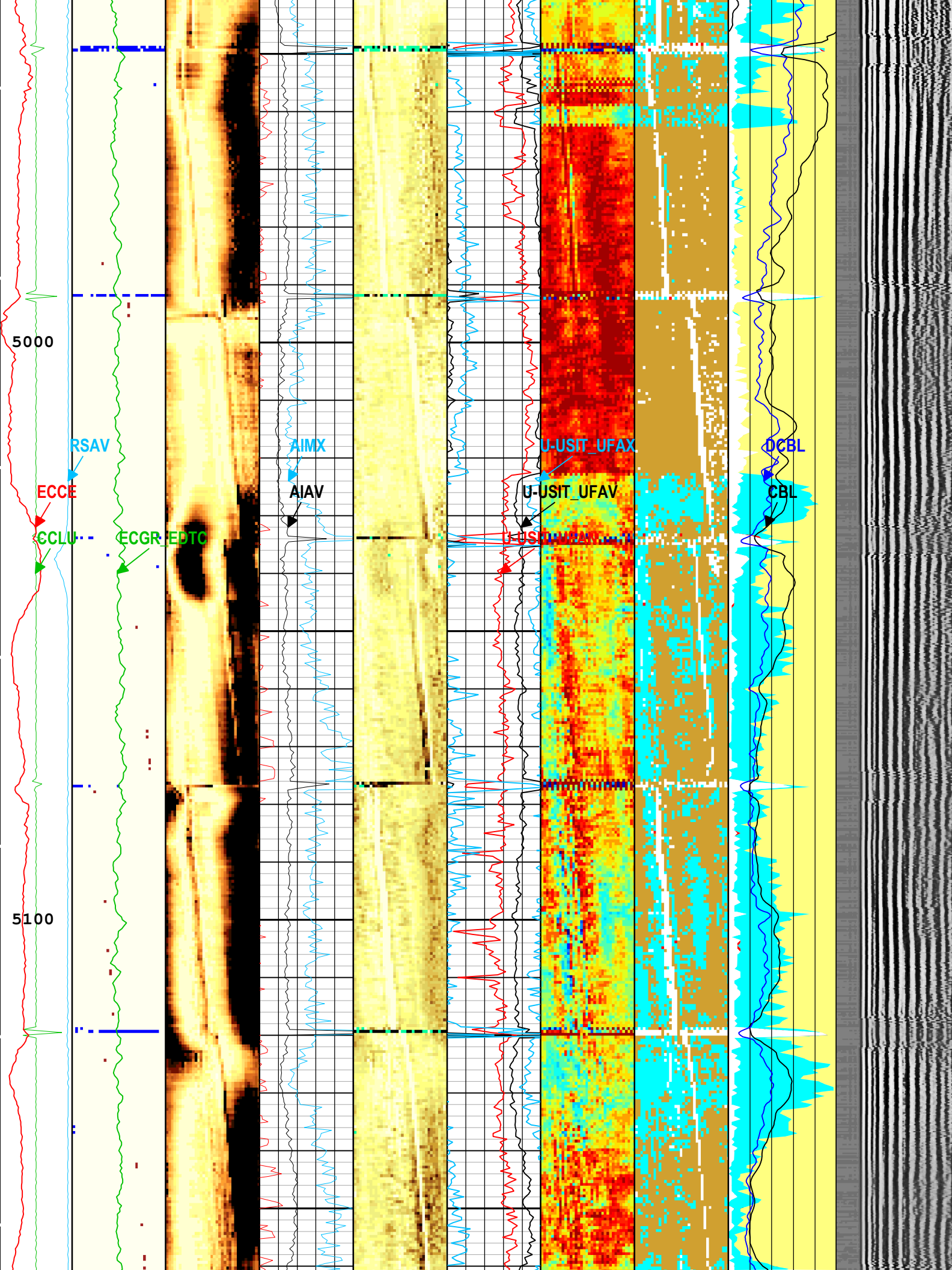


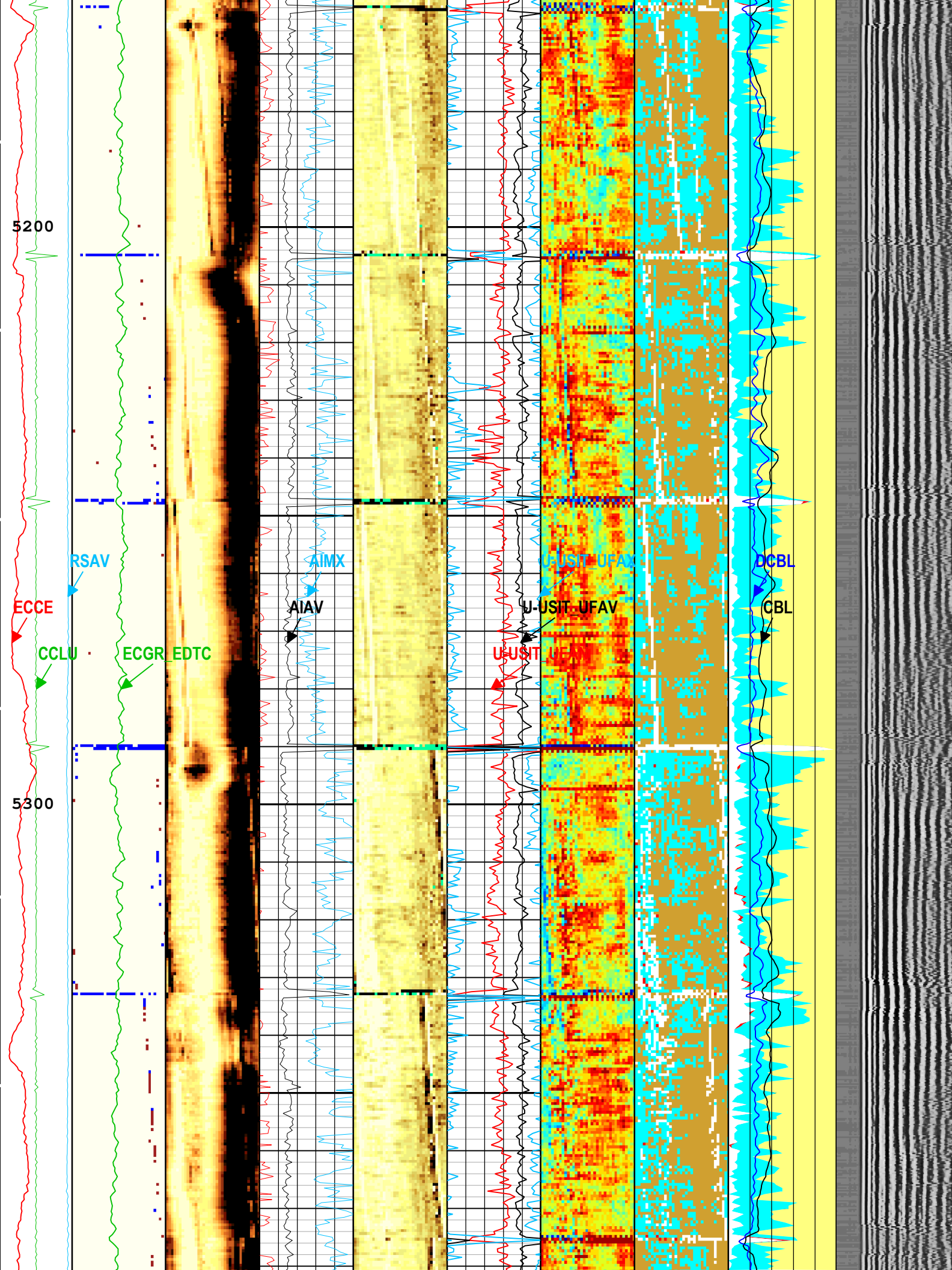


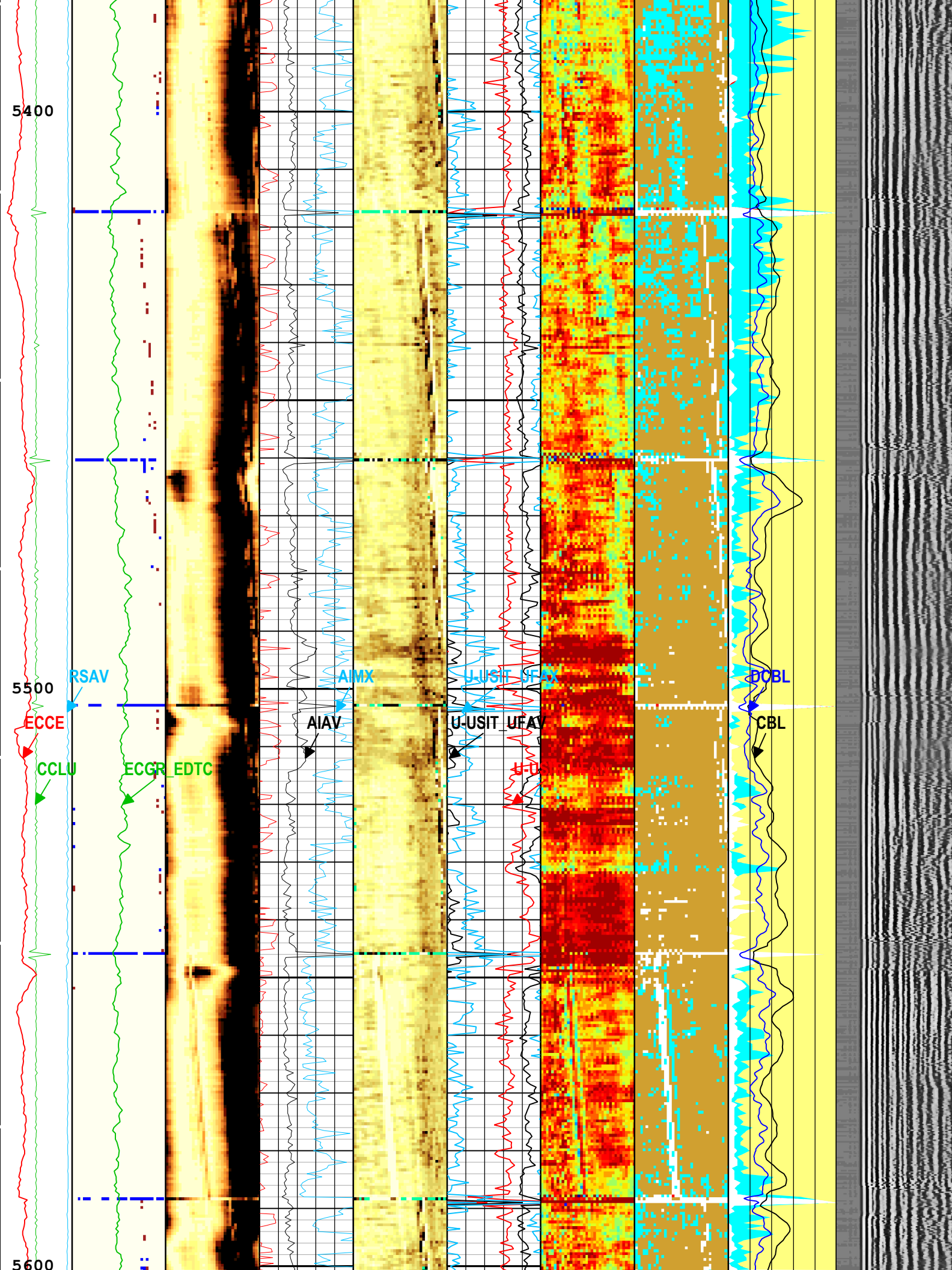


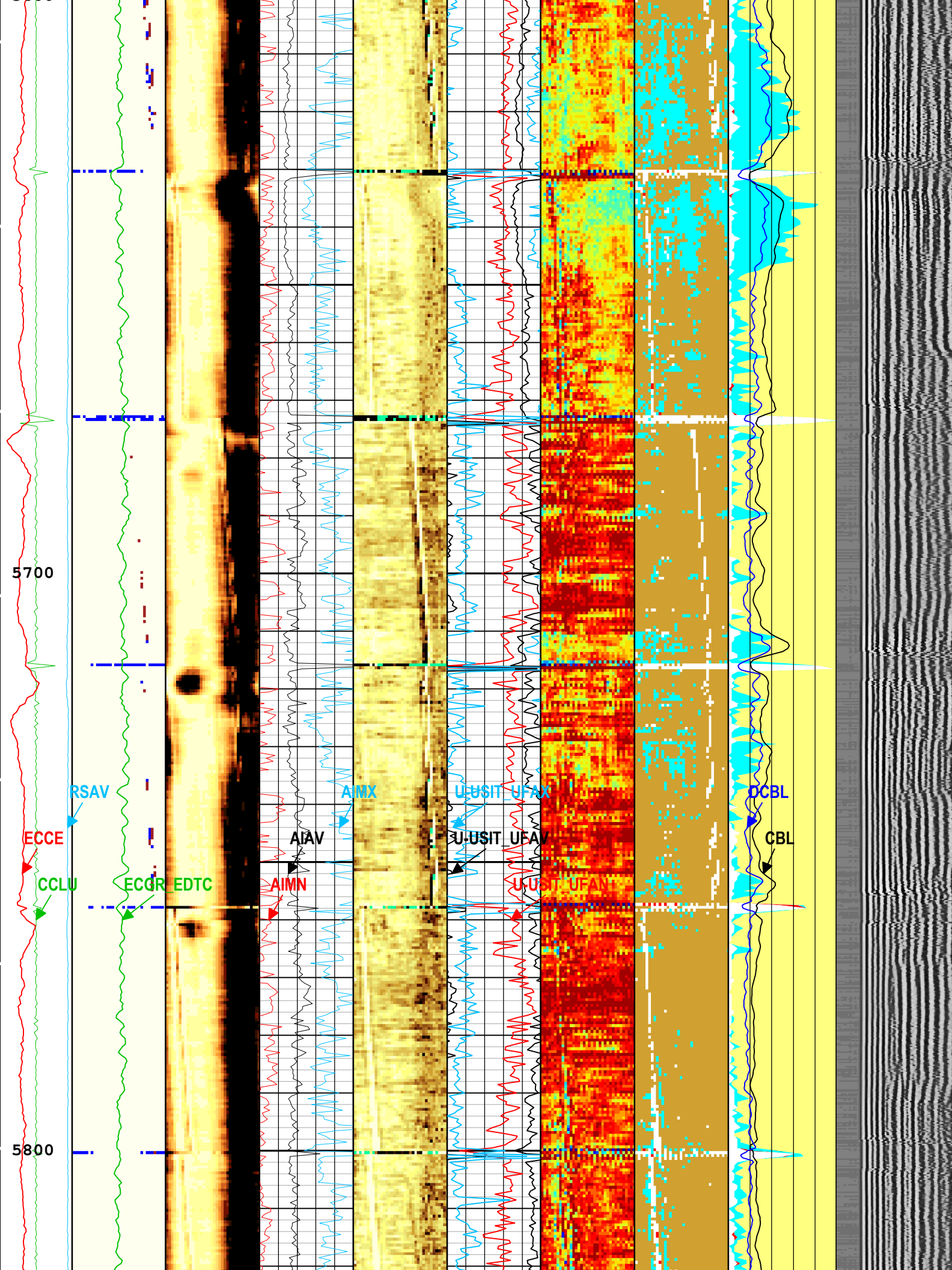


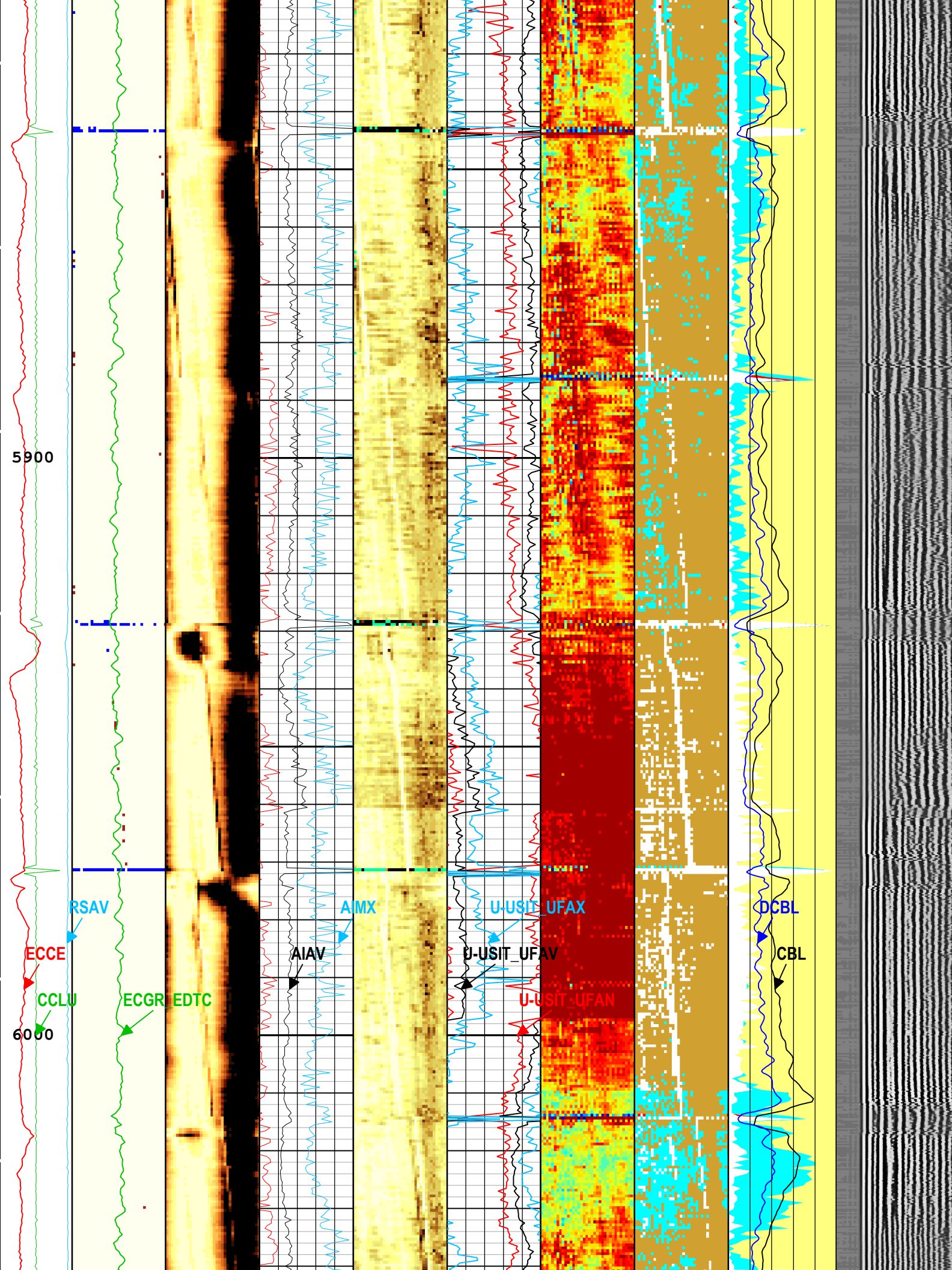


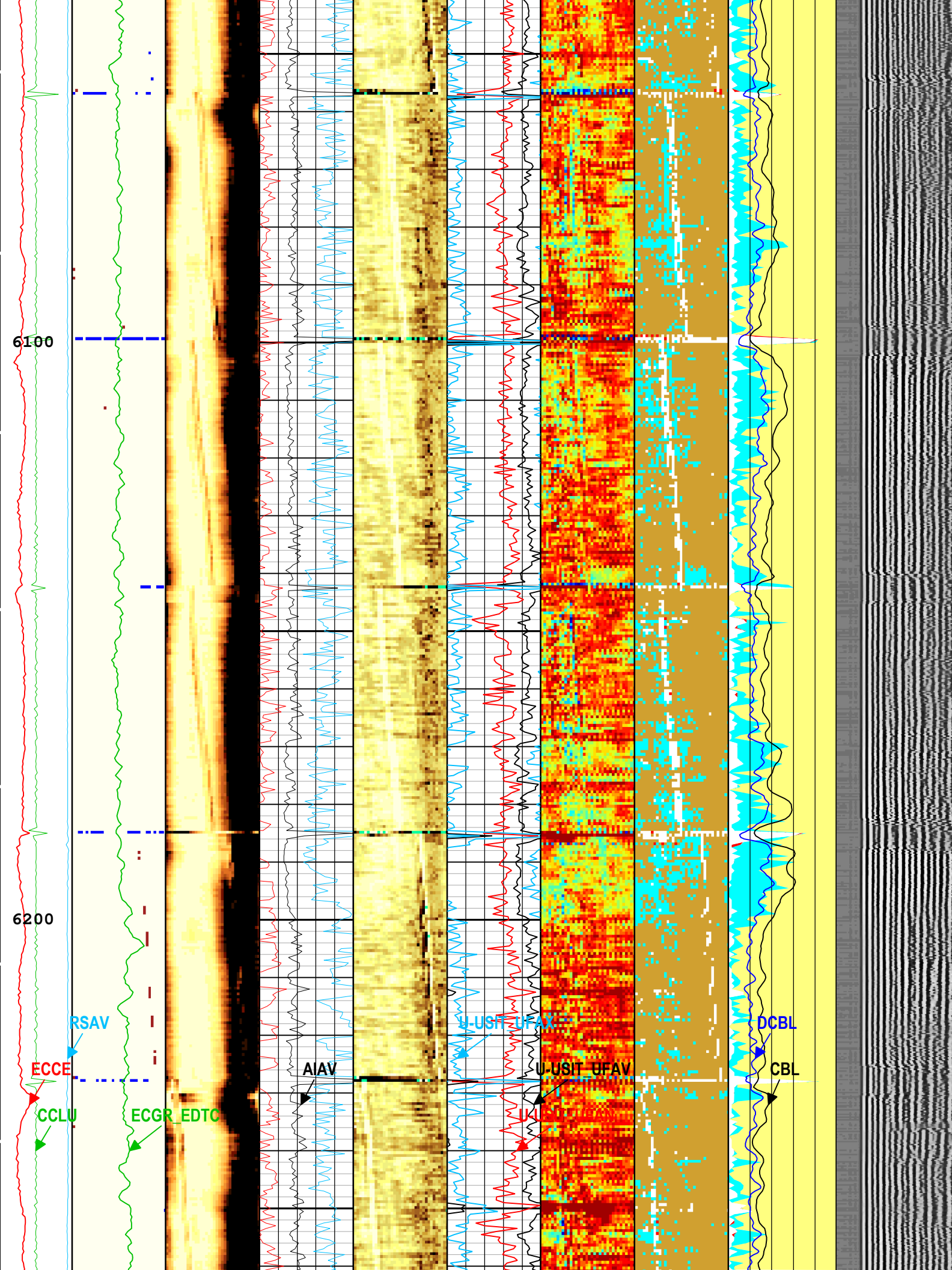


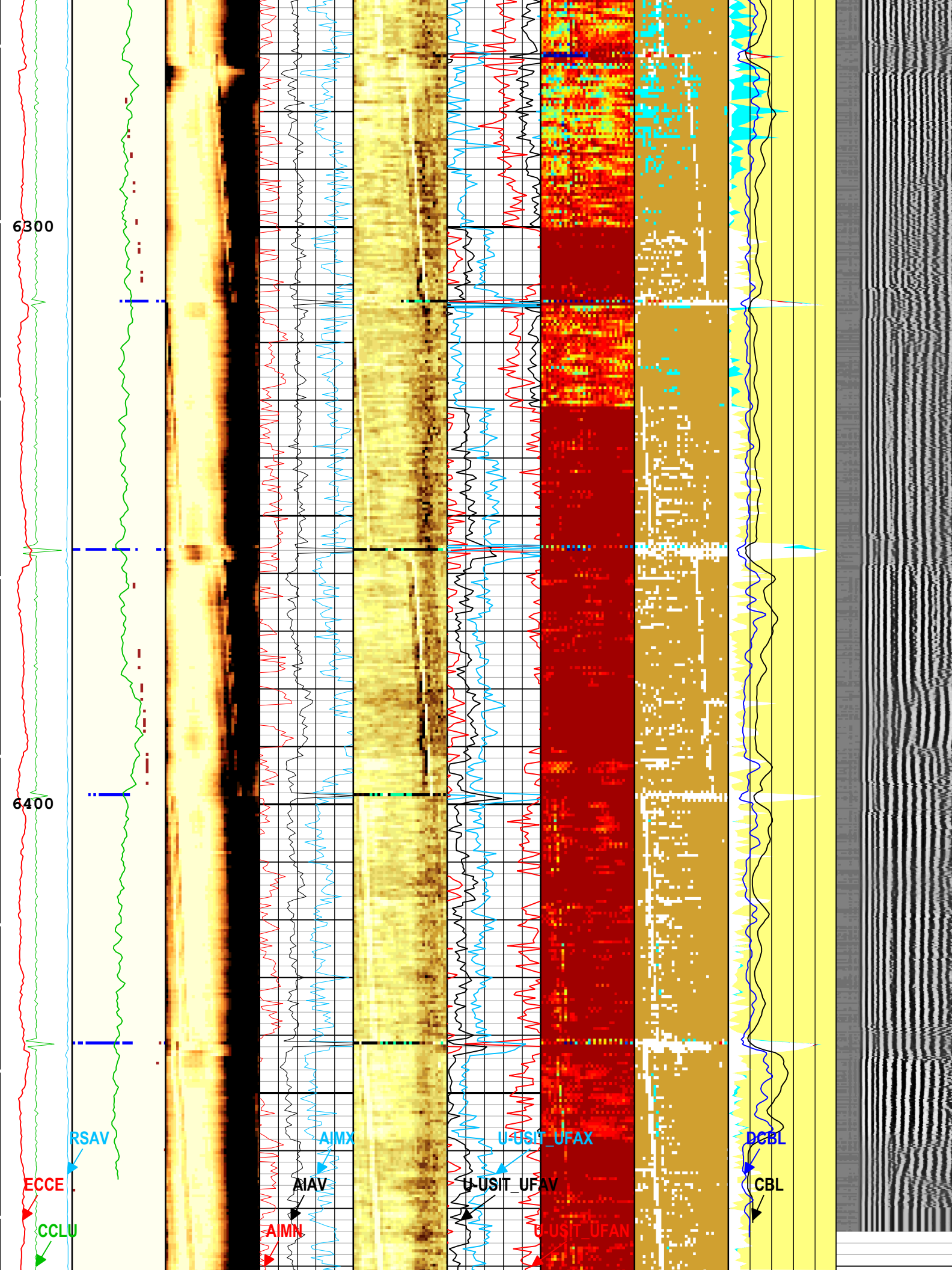


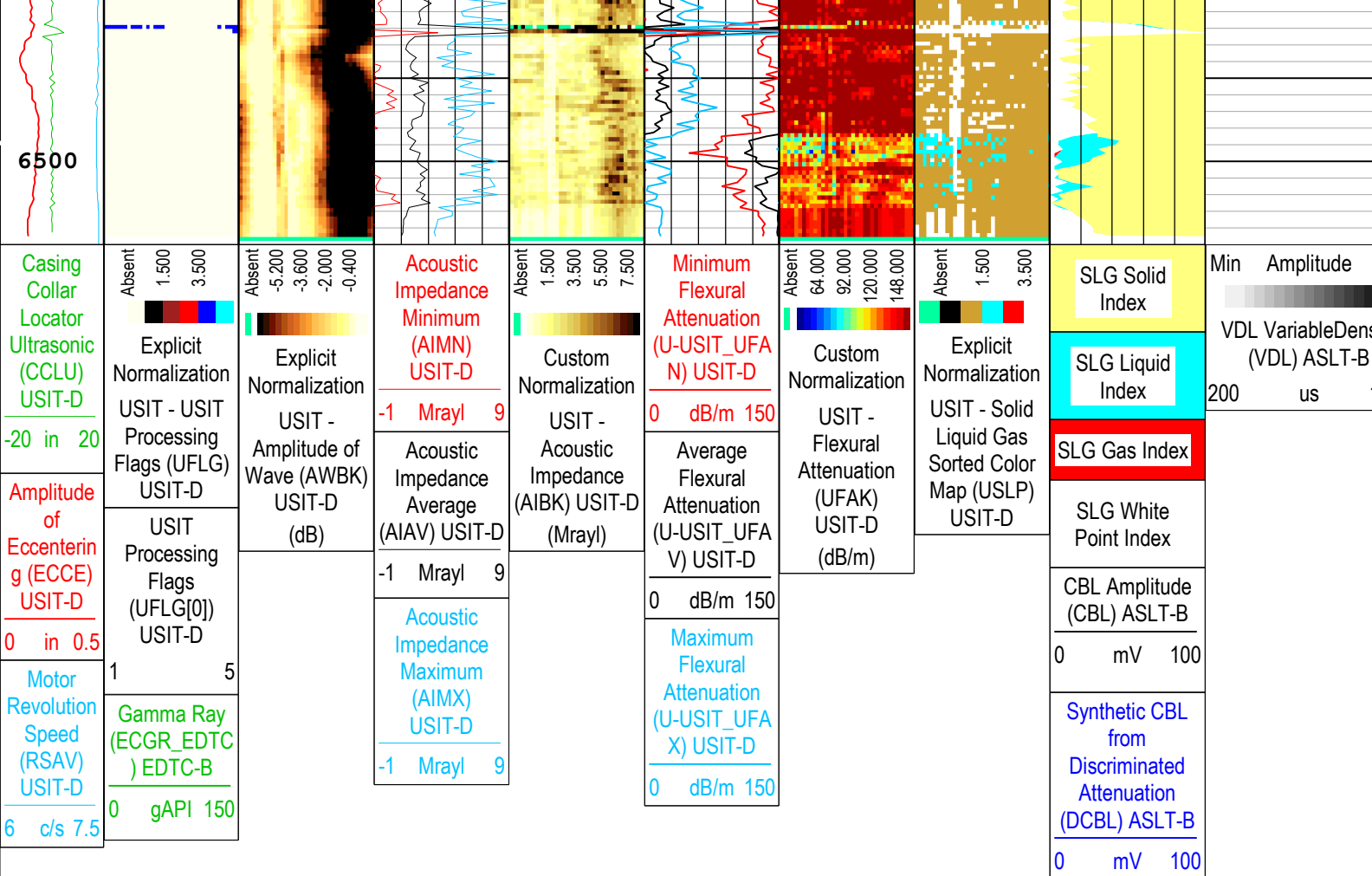












USIT Processing Flags (UFLG[0]) USIT-D

- 1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error
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- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (IBC SLG CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 28-Oct-2022 21:17:36

Channel Processing Parameters

one: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBAF_D	CBL Adjustment Factor	ASLT-B	1	
CBLO	Casing Bottom (Logger)	WLSESSION	8113	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	80	mV
CDEN	Cement Density	USIT-D	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-D	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.3	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	

DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	203	us/ft
FD	Fluid Density	USIT-D	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	1.35	mV
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-D	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-D	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-D	Theoretical	
IMAR	Image Rotation	USIT-D	Off	
MATT	Maximum Attenuation	ASLT-B	55.52	dB/m
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	55.52	dB/m
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-D	15.37	us
MSA	Minimum Sonic Amplitude	ASLT-B	0.49	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	0.49	mV
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-D	1.11	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-D	1.11	
NFPI_L5	Near Free Pipe Sonic Amplitude for Lower Transmitter - Receiver 5	ASLT-B	0	
NFPI_U1	Near Free Pipe Sonic Amplitude for Upper Transmitter - Receiver 1	ASLT-B	0	
R42R	R4 to R2 Sensitivity Ratio	ASLT-B	0	dB/m
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SFPI	Short Free Pipe Sonic Amplitude for Lower Transmitter - Receiver 6	ASLT-B	0	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-D	1.61	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-D	-14	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-D	SLG - TIE Picking	
ZMUD	Acoustic Impedance of Mud	Borehole	1.51	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-D	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-D	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	13	660
BS	7.875	660	6510

All depth are actual.

Tool Control Parameters

one: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-D	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-D	20	dB
DDE1	Digitizing Delay 1	ASLT-B	40	us
DDE2	Digitizing Delay 2	ASLT-B	40	us
EMXV	EMEX Voltage	USIT-D	Time Zoned	V
GAI1	SSLT Manual Gain 1	ASLT-B	High	
GAI2	SSLT Manual Gain 2	ASLT-B	High	
IBC_ACQTYPE	IBC Acquisition type	USIT-D	Standard	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-D	10	us
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MODE	SSLT Firing Mode	ASLT-B	Attenuation	

RATE	Firing Rate	ASLT-B	8.93	Hz
UPAT	USIT Emission Pattern	USIT-D	Pattern 600 KHz	
UWKM	USIT Working Mode	USIT-D	10 deg at 6.0 in HF	
U-USIT_UTAN	Transducer Angles	USIT-D	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-D	6.0 in	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	67	28-Oct-2022 12:43:20	28-Oct-2022 13:11:38	6510.69	5651.16
EMXV	74	28-Oct-2022 13:11:38	28-Oct-2022 13:12:02	5651.16	5638.53
EMXV	79	28-Oct-2022 13:12:02	28-Oct-2022 13:14:37	5638.53	5556.12
EMXV	82	28-Oct-2022 13:14:37	28-Oct-2022 13:18:27	5556.12	5431.55
EMXV	85	28-Oct-2022 13:18:27	28-Oct-2022 16:01:08	5431.55	57.92

All depth are at tool zero.

XYZ

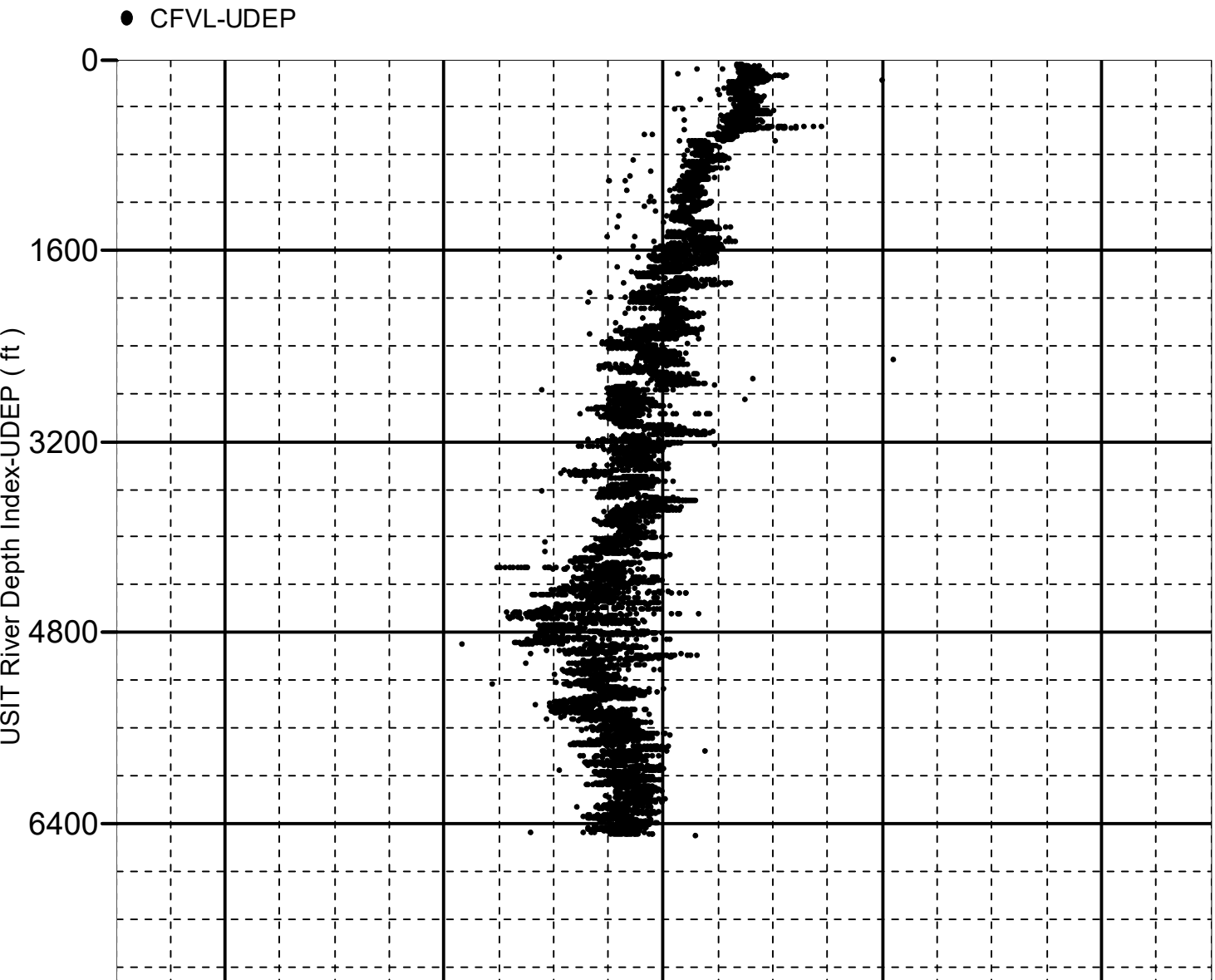
Company:Occidental Petroleum Corporation Well:SHERWOOD L #30-30D

one: Log[7]:Up:S015

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6510.00 to 57.50 ft



8000
160 180 200 220 240
Memorized Fluid Acoustic...-CFVL (us/ft)

XYZ

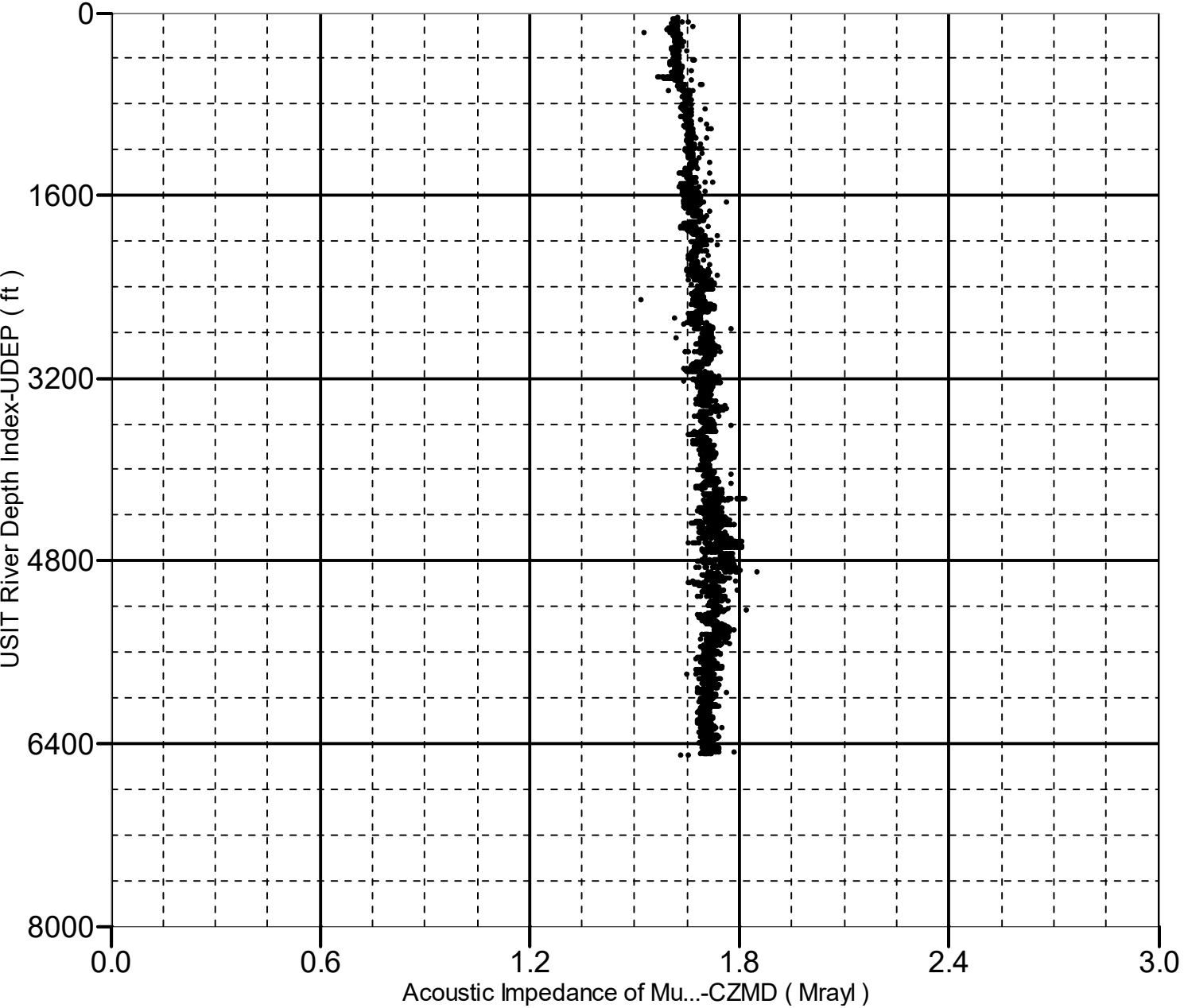
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one: Log[7]:Up:S015

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6510.00 to 57.50 ft

● CZMD-UDEP



Company: Occidental Petroleum Corporation

Schlumberger

Well: SHERWOOD L #30-30D

Field: Wattenberg

County: Weld

State: Colorado

Isolation Scanner

Cement Bond Log

Gamma Ray - CCL