

Company: Noble Energy Inc

Well: SLW Ranch State BB07-678

Field: Wattenberg

County: Weld State: Colorado

UltraSonic Summary Print

County: Weld				
Field: Wattenberg				
Location:				
Well: SLW Ranch State BB07-678				
Company: Noble Energy Inc				
Location:				
Permanent Datum:	Ground Level	Elev.:	K.B.	4662.00 ft
Log Measured From:	Kelly Bushing		G.L.	4632.00 ft
Drilling Measured From:	Kelly Bushing		D.F.	4661.00 ft
API Serial No.	Section:	Township:	Range:	
05-123-47108	7	5 N	63 W	

Logging Date	27-Aug-2019
Run Number	1A
Depth Driller	17010.00 ft
Schlumberger Depth	17010.00 ft
Bottom Log Interval	6500.00 ft
Top Log Interval	100.00 ft
Casing Driller Size @ Depth	5.5 in @ 16996.40 ft
Casing Schlumberger	16996.4 ft
Bit Size	8.5 in
Type Fluid In Hole	Water
Density	8.4 lbm/gal
Fluid Loss	PH
MUD	
Source of Sample	Active Tank
RM @ Meas Temp	0.2 ohm.m @ 68 degF
RMF @ Meas Temp	0.15 ohm.m @ 68 degF
RMC @ Meas Temp	
Source RMF	RMC
RM @ BHT	0.07 @ 212 0.05 @ 212
Max Recorded Temperatures	
Circulation Stopped	Time
Logger on Bottom	Time
Unit Number	Location:
Recorded By	
Witnessed By	

Disclaimer

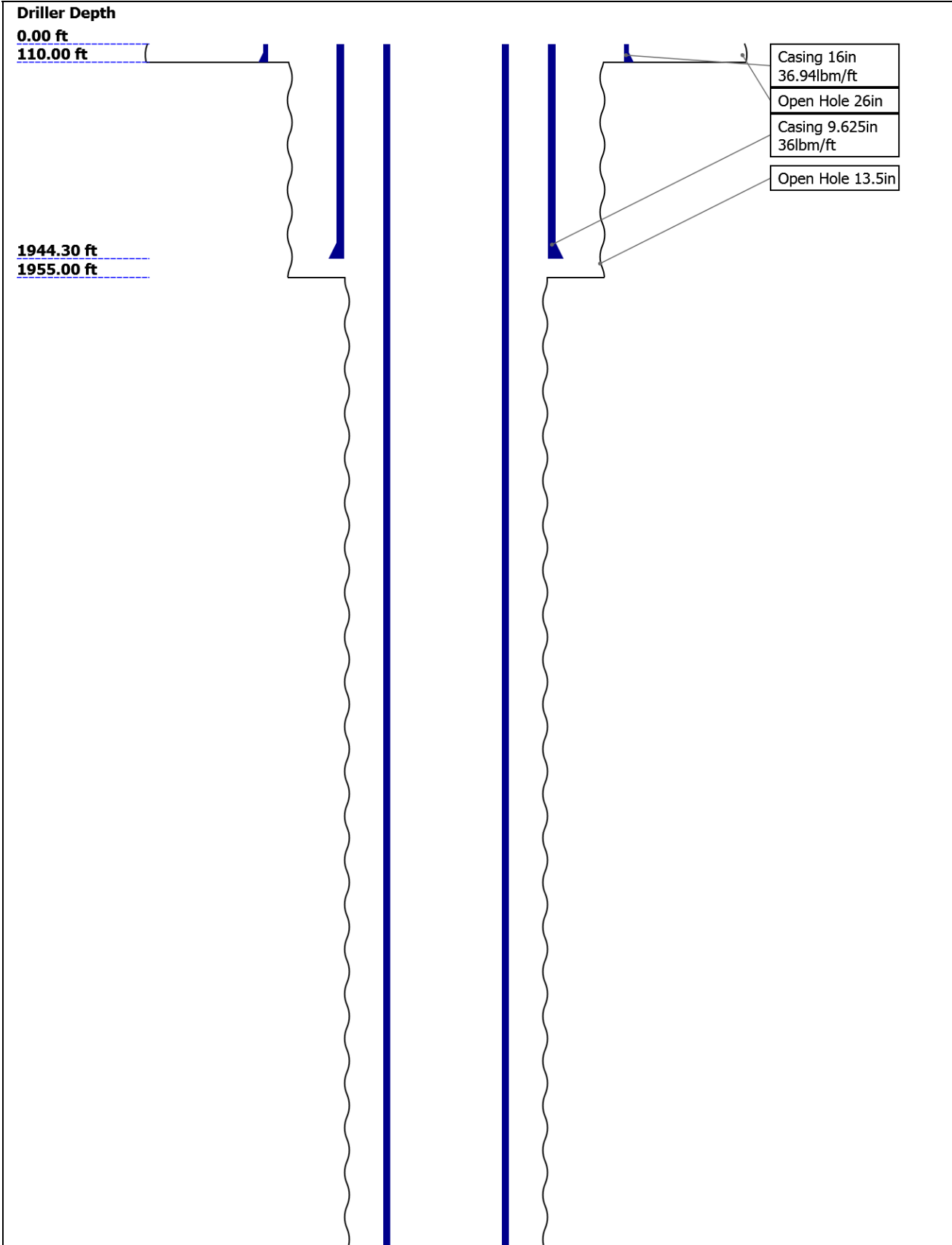
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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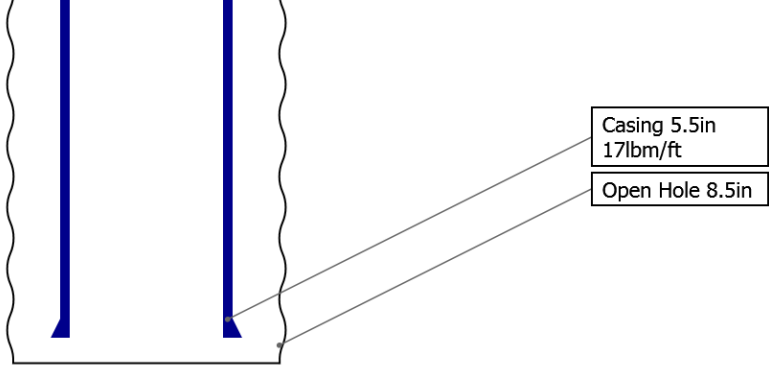
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Well Sketch



16996.40 ft  
17010.00 ft

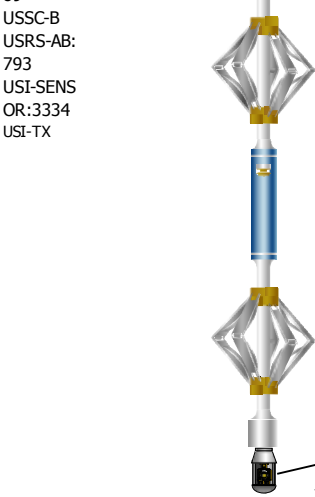


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	26	13.5	8.5			
Top Driller ( ft )	0	110	1955			
Top Logger ( ft )	0	110	1955			
Bottom Driller ( ft )	110	1955	17010			
Bottom Logger ( ft )	110	1955	17010			
Casing						
Size ( in )	16	9.625	5.5			
Weight ( lbm/ft )	36.94	36	17			
Inner Diameter ( in )	15.572	8.921	4.892			
Grade	N/A	N/A	N/A			
Top Driller ( ft )	0	0	0			
Top Logger ( ft )	0	0	0			
Bottom Driller ( ft )	110	1944.3	16996.4			
Bottom Logger ( ft )	110	1944.3	16996.4			

Remarks and Equipment Summary

1A: Toolstring			1A: Remarks	
Equip name	Length		MP name	Offset
LEH-QC	28.52			
EDTC-B	26.06			
EDTH-B				
EDTG-A				
EDTC-B				
			CTEM	22.56
			ACCZ	0.00
			HV	0.00
			Gamma Ray	20.69
			TelStatu s	19.56
AH-184[2]	19.56			
AH-184[1]	17.56			
USIT-E:914	15.56			
ECH-MFA:1781				
USAC-A:914				
USIS-A:1781				



Lengths are in ft  
Maximum Outer Diameter = 3.625 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

Depth Summary

	1A		
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Depth Measuring Device

Type	IDW-B		
Serial Number	6565		
Calibration Date	25-May-2019		
Calibrator Serial Number			
Calibration Cable Type	7-39PIXXS		
Wheel Correction 1	-2		
Wheel Correction 2	1		

Tension Device

Type	CMTD-B/A		
Serial Number	180		
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

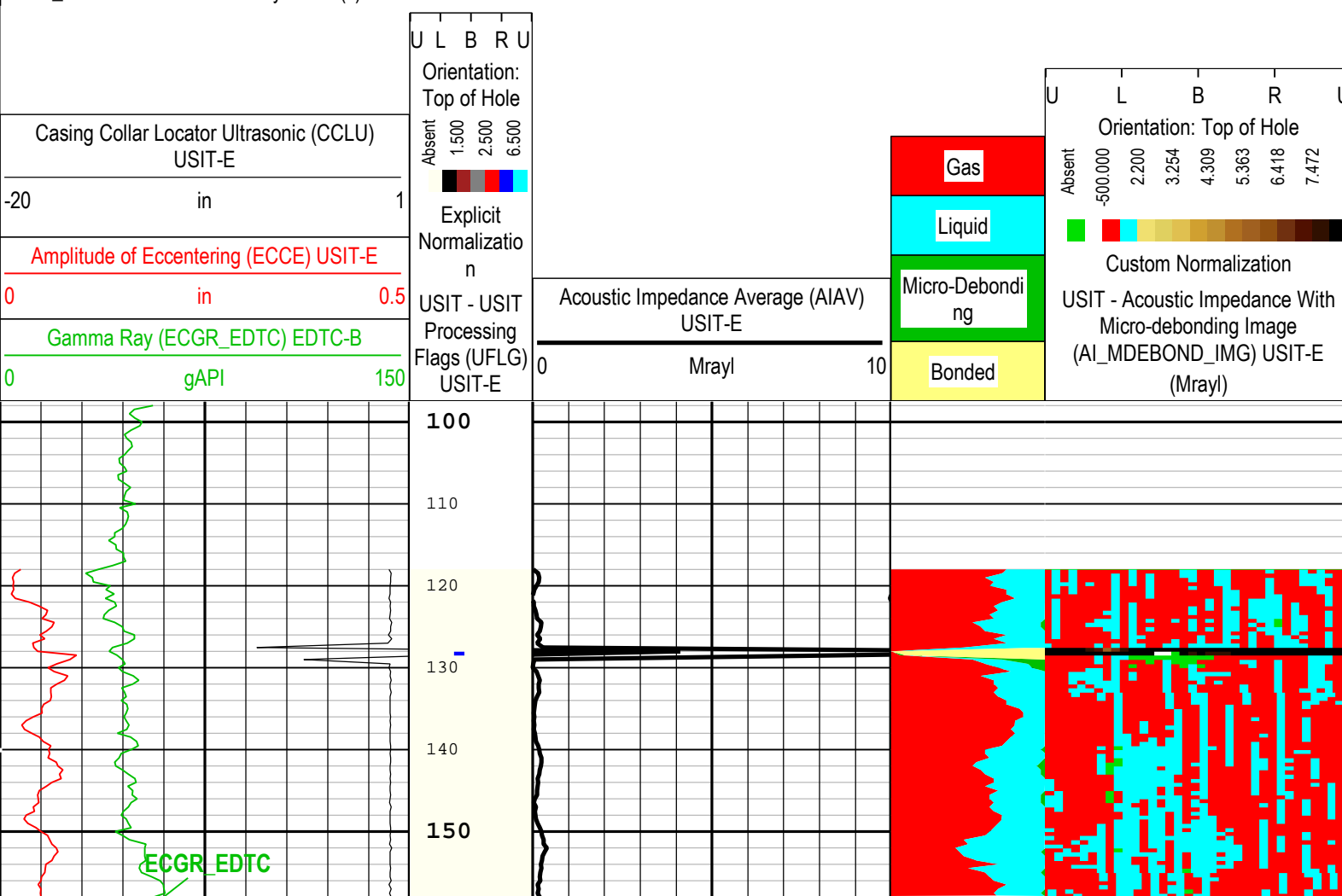
Logging Cable

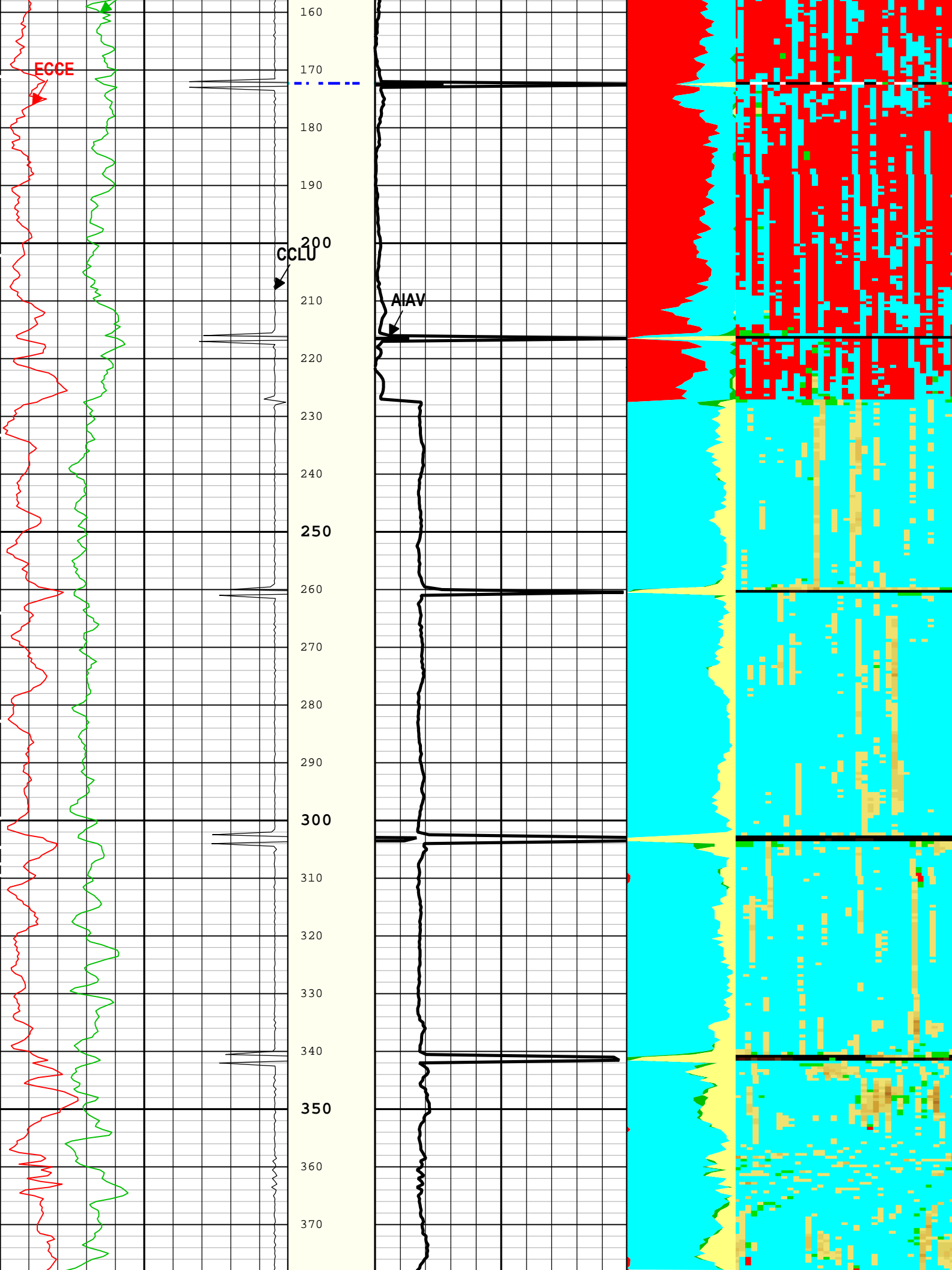
Type	7-39PI-XXS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type			

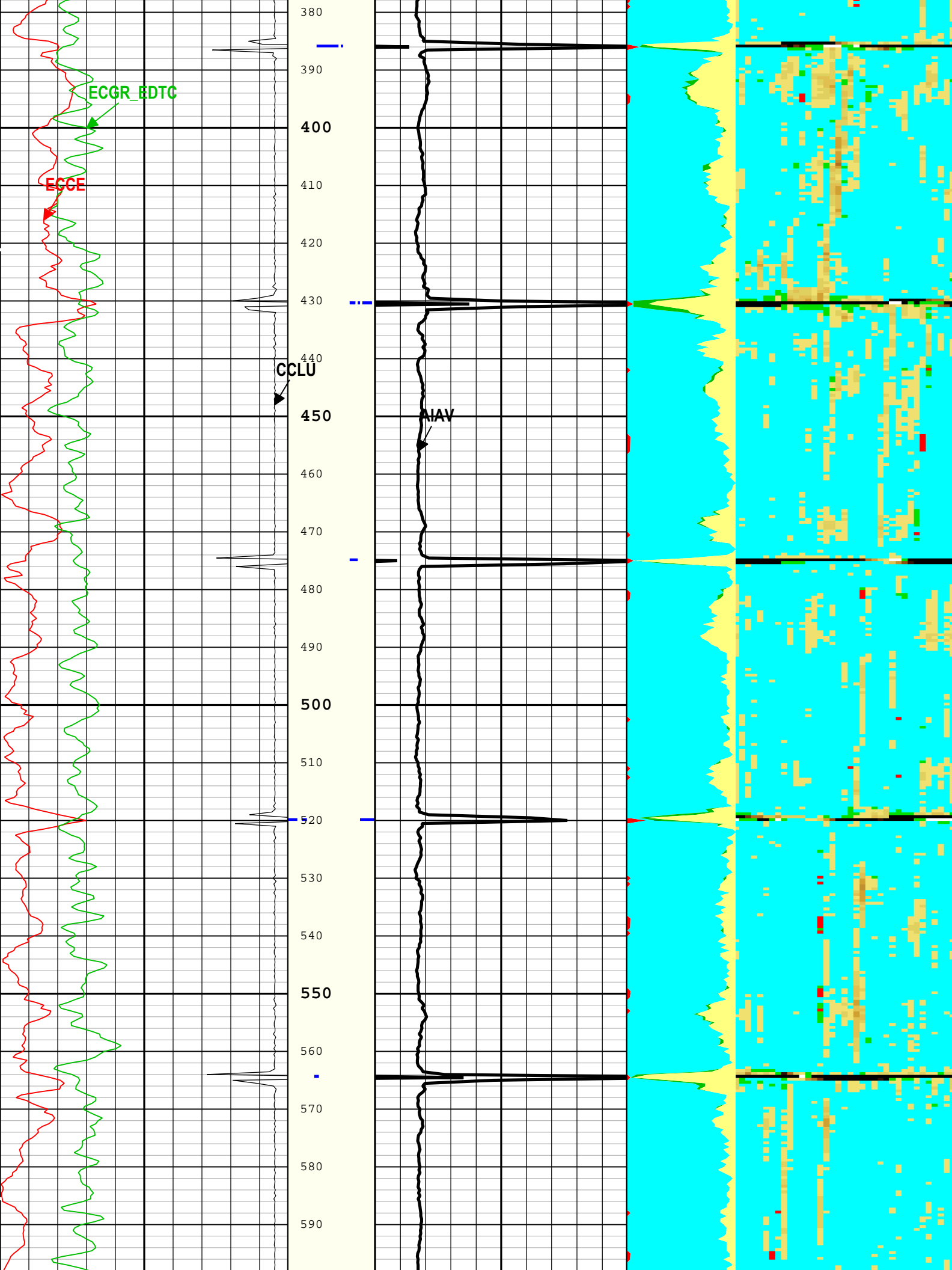
1A:Depth Control Parameters	Depth Control Remarks
Log Sequence First Log In the Well	
Rig Up Length At Surface	
Rig Up Length At Bottom	
Rig Up Length Correction	
Stretch Correction	
Tool Zero Check At Surface	

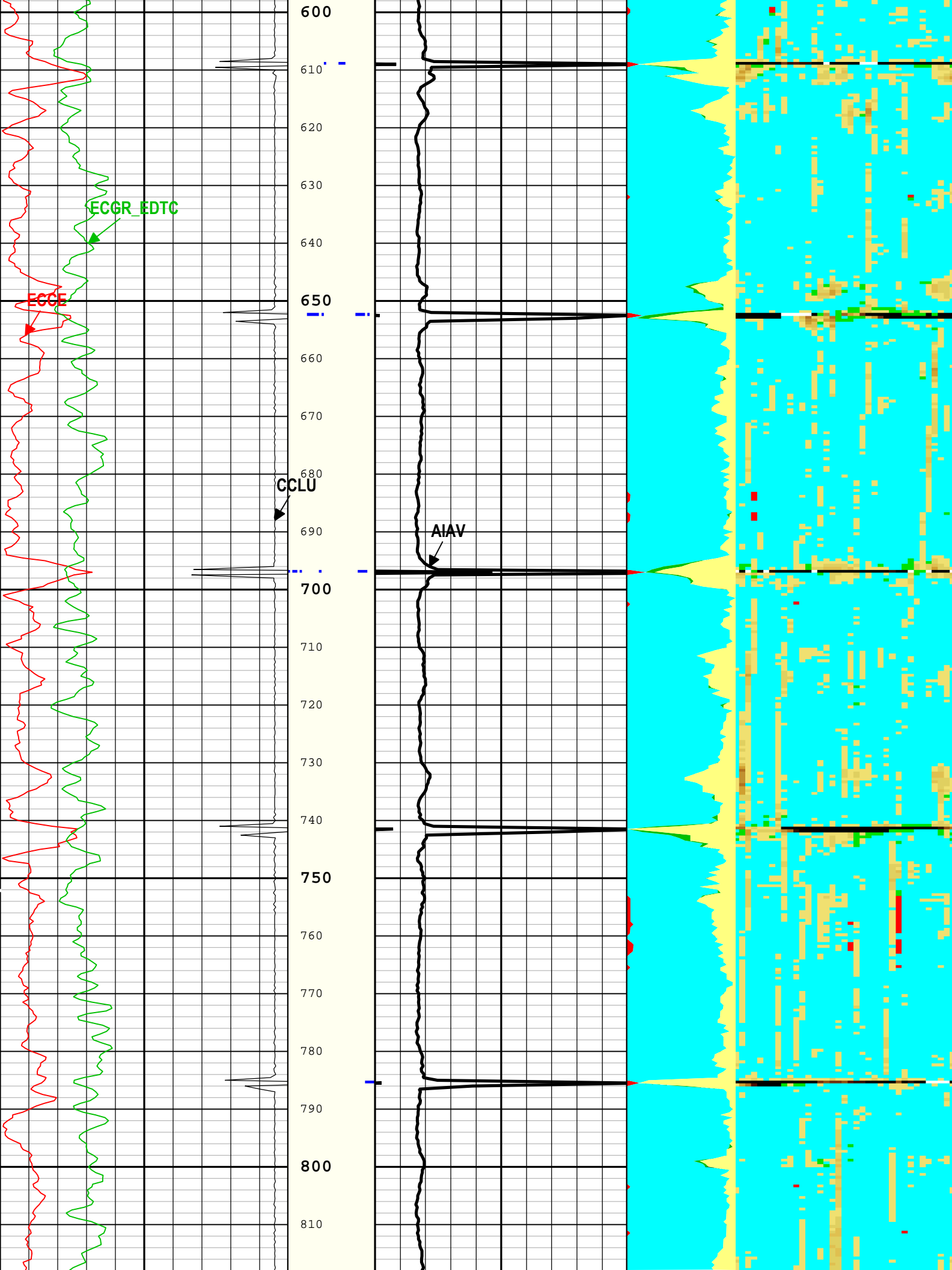
USIT - Fluid Properties Measurement

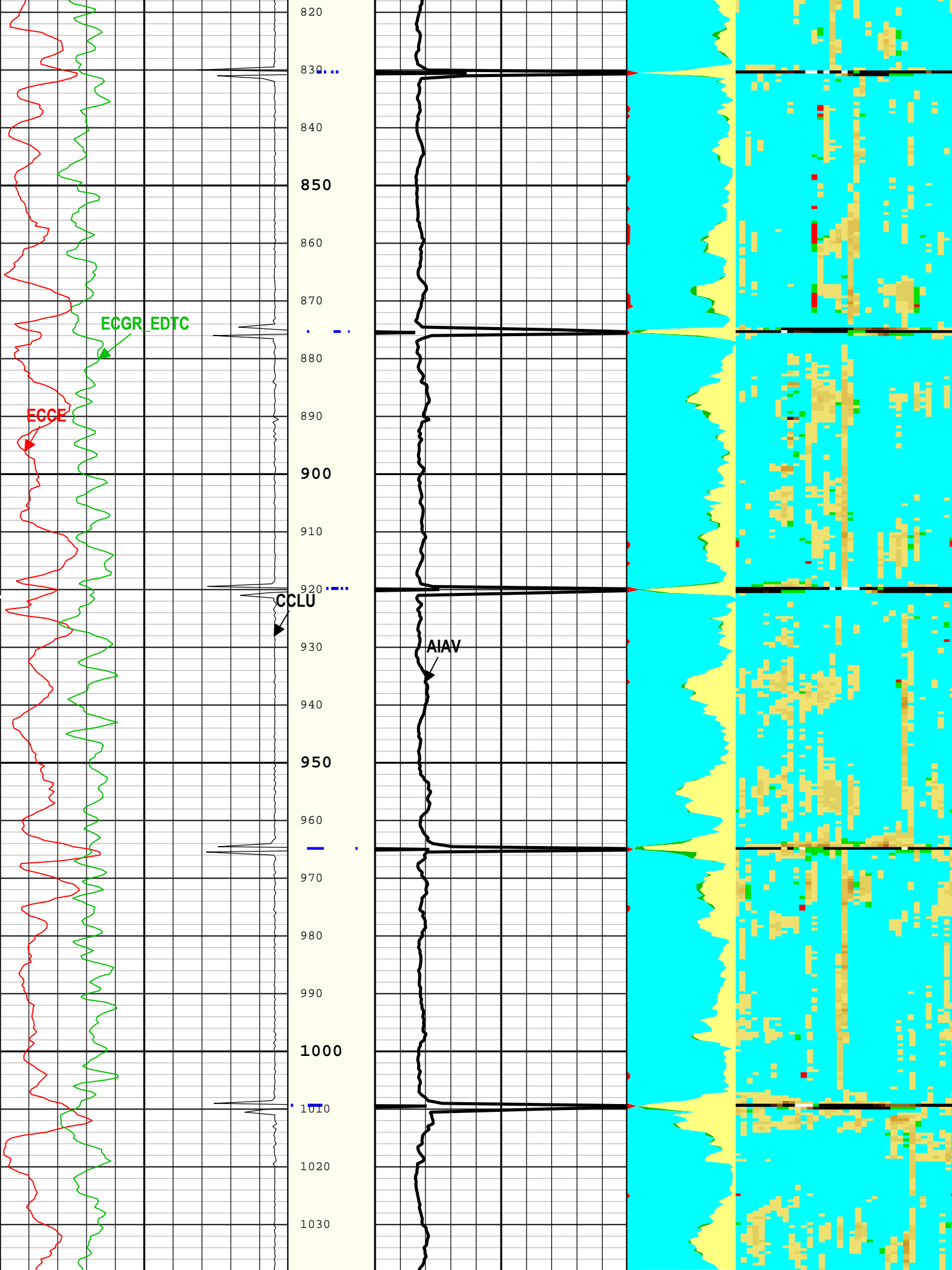
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
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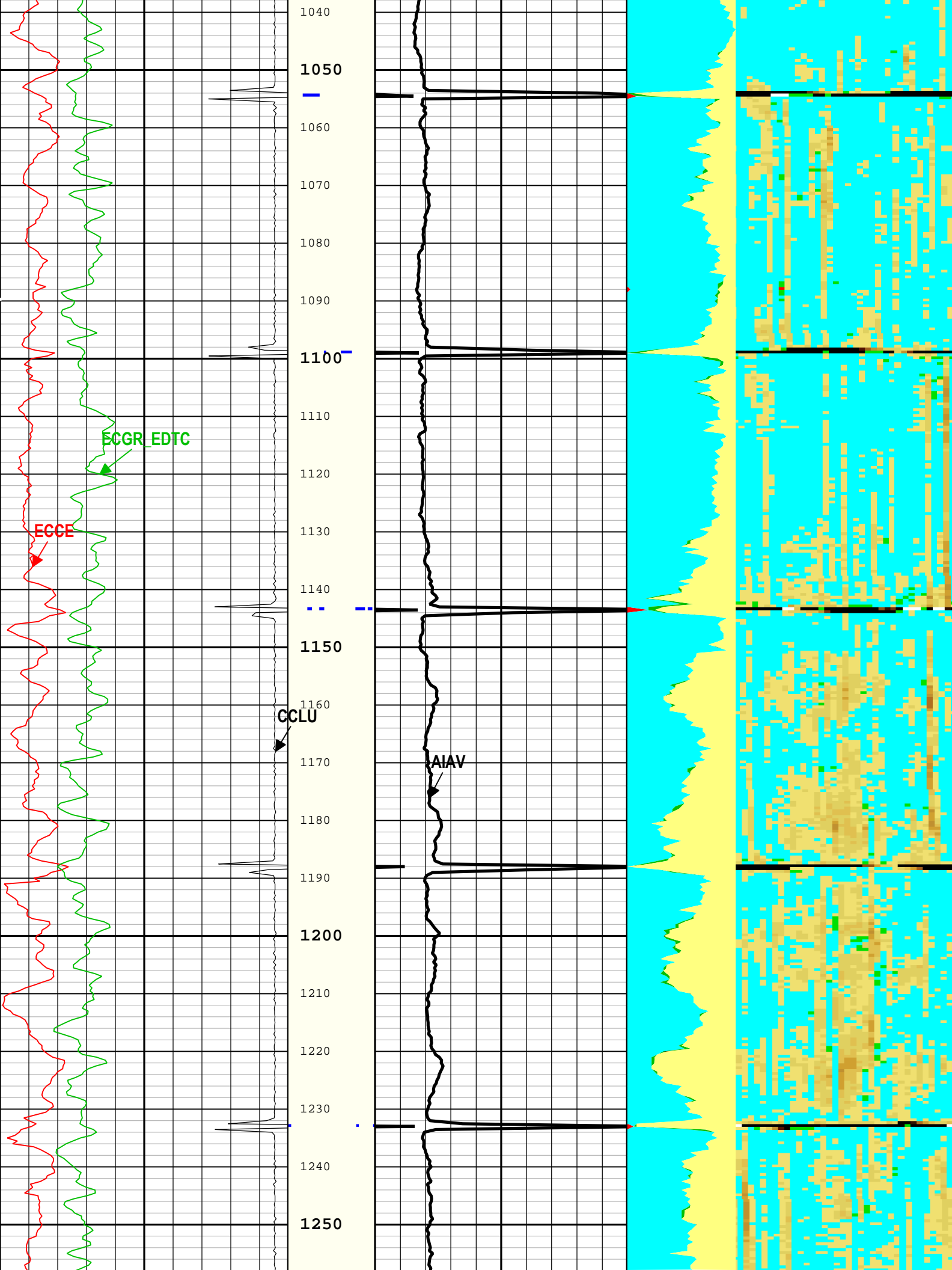


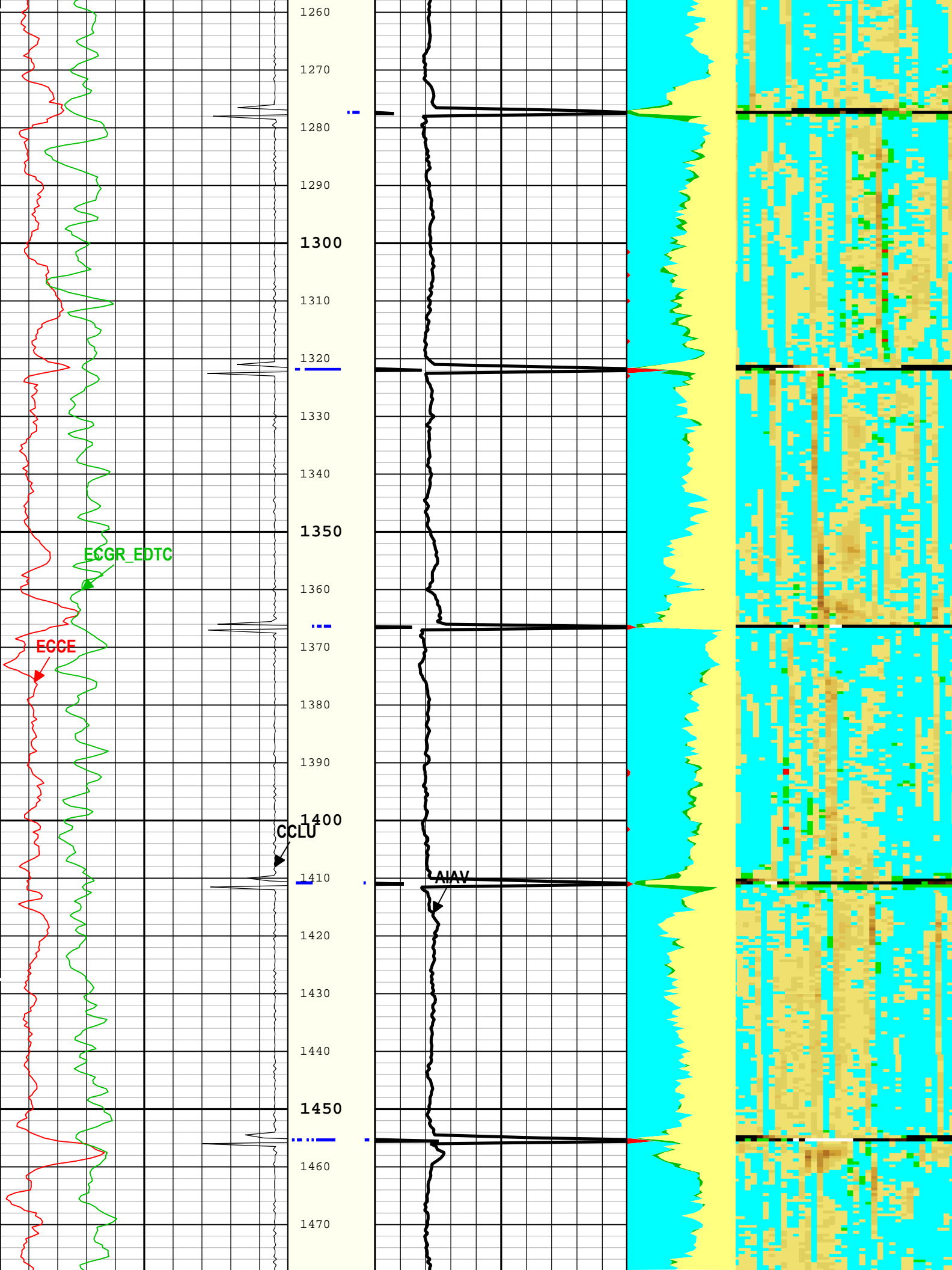


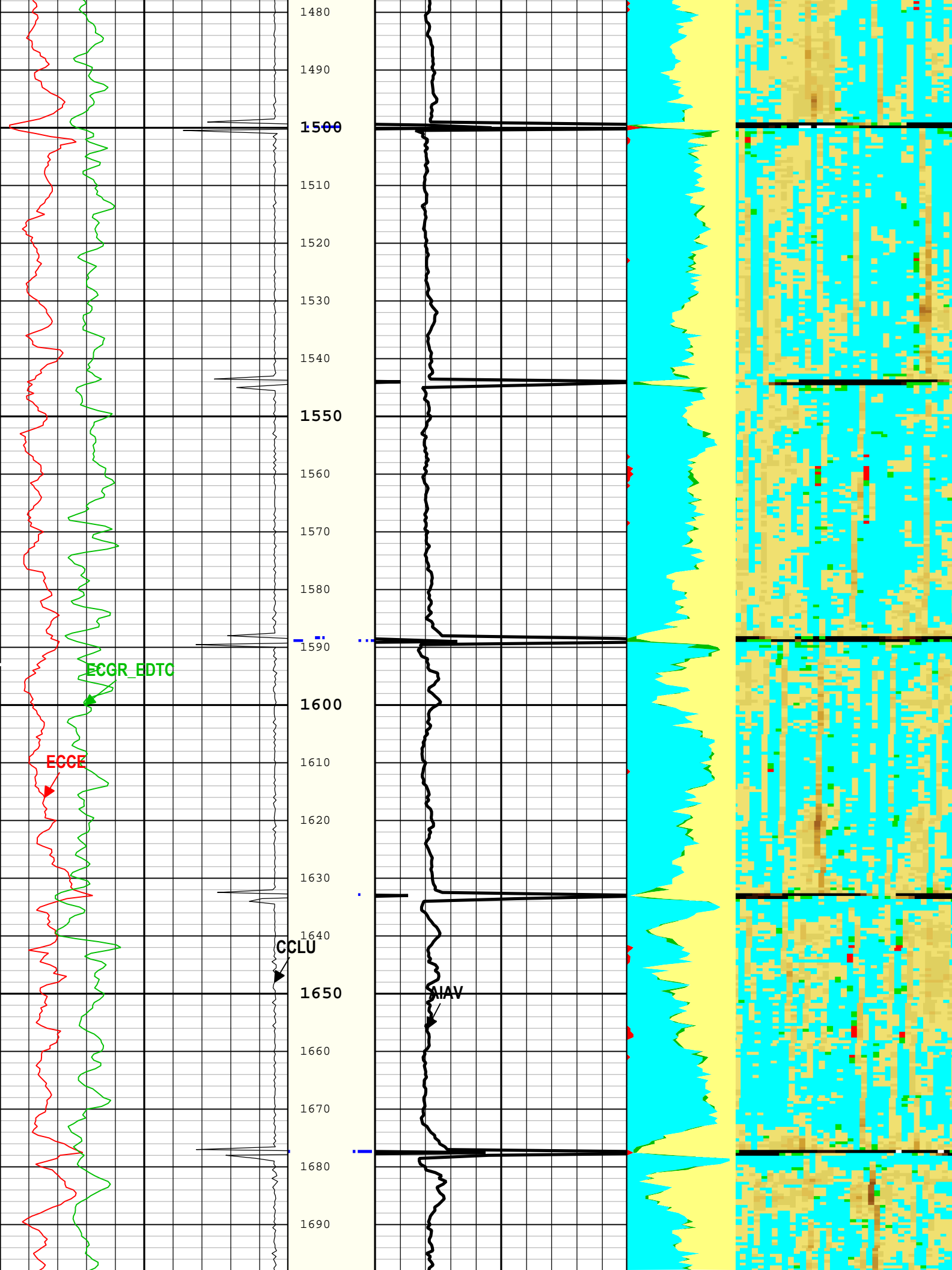


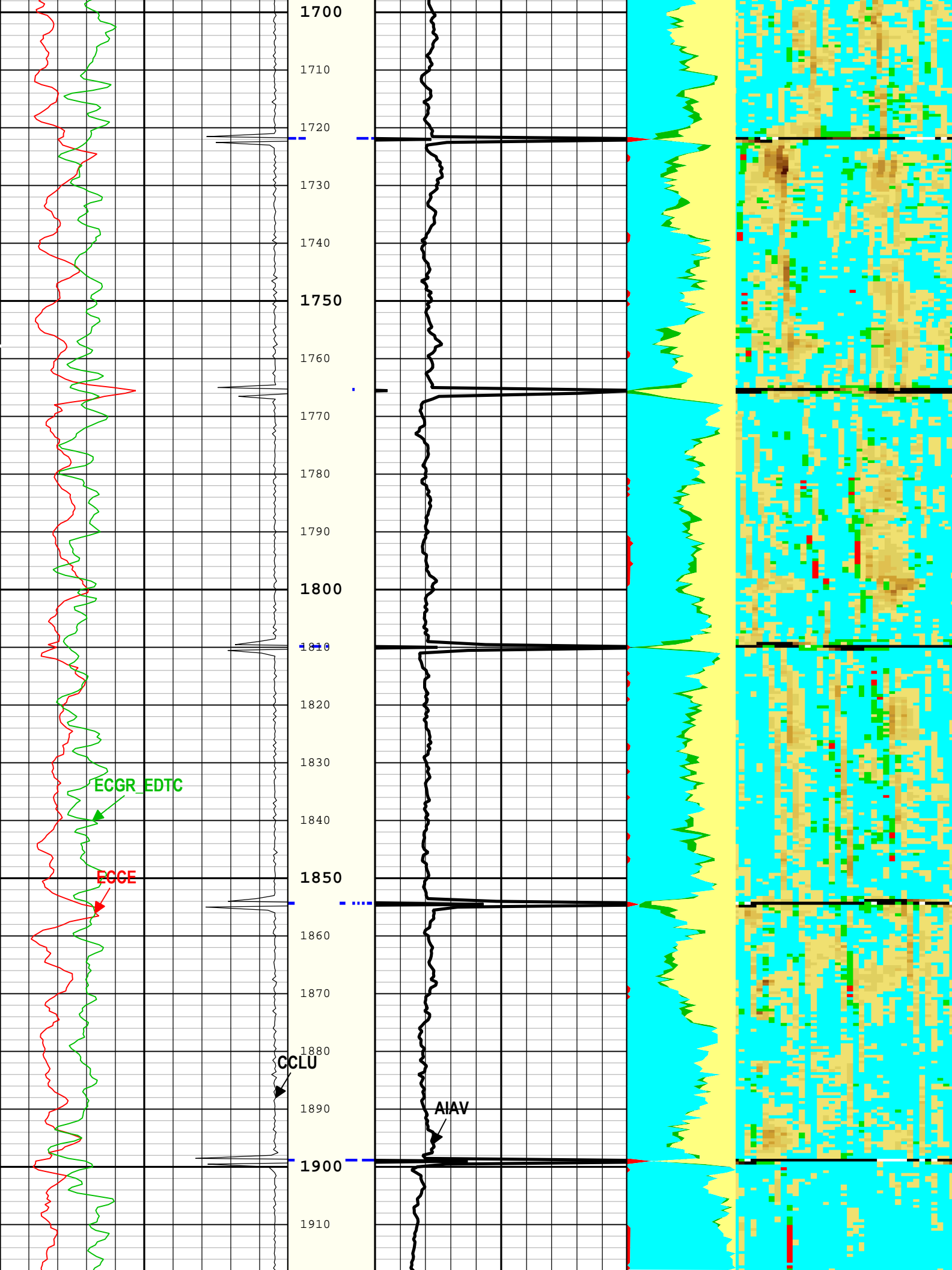


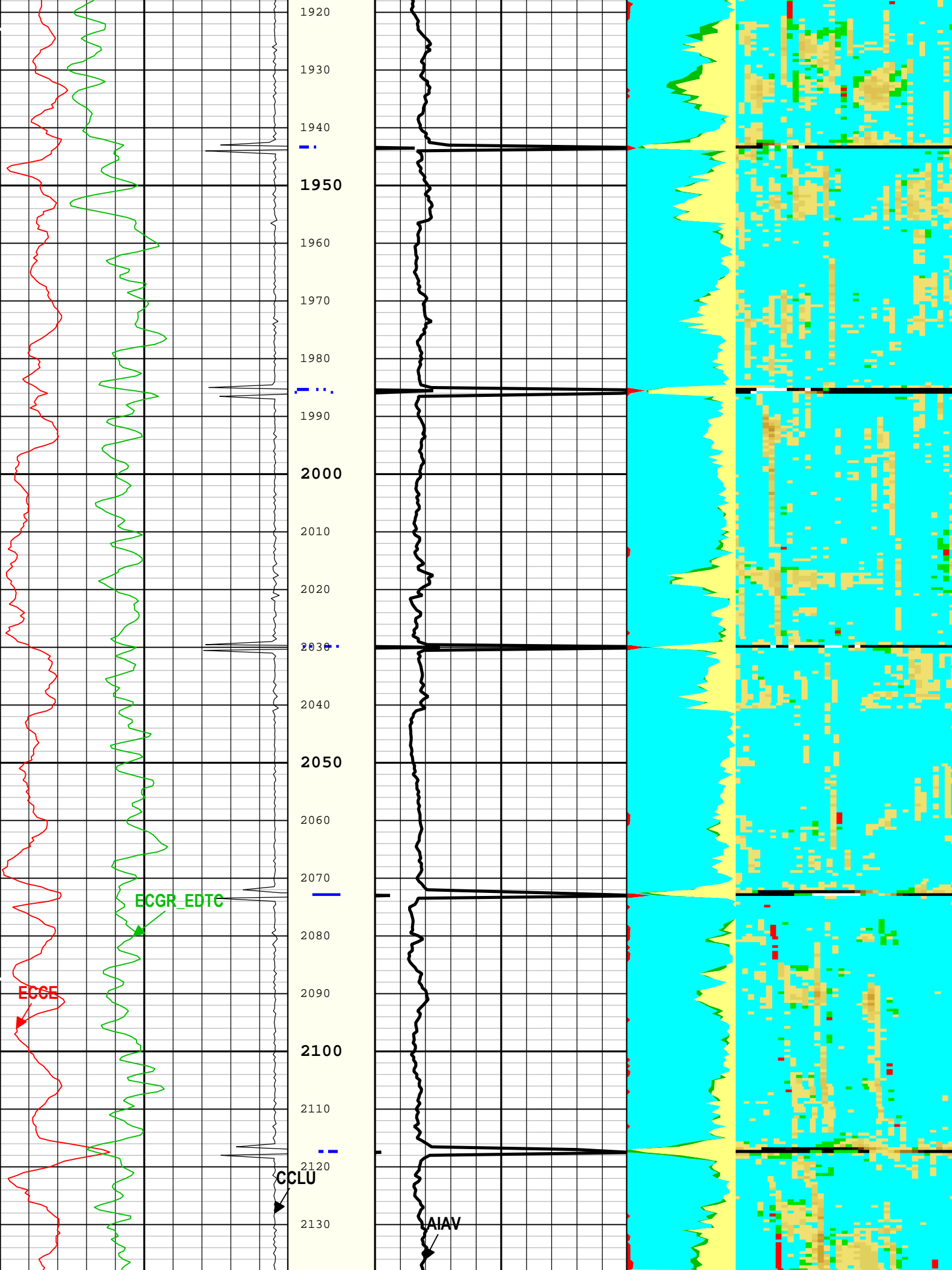


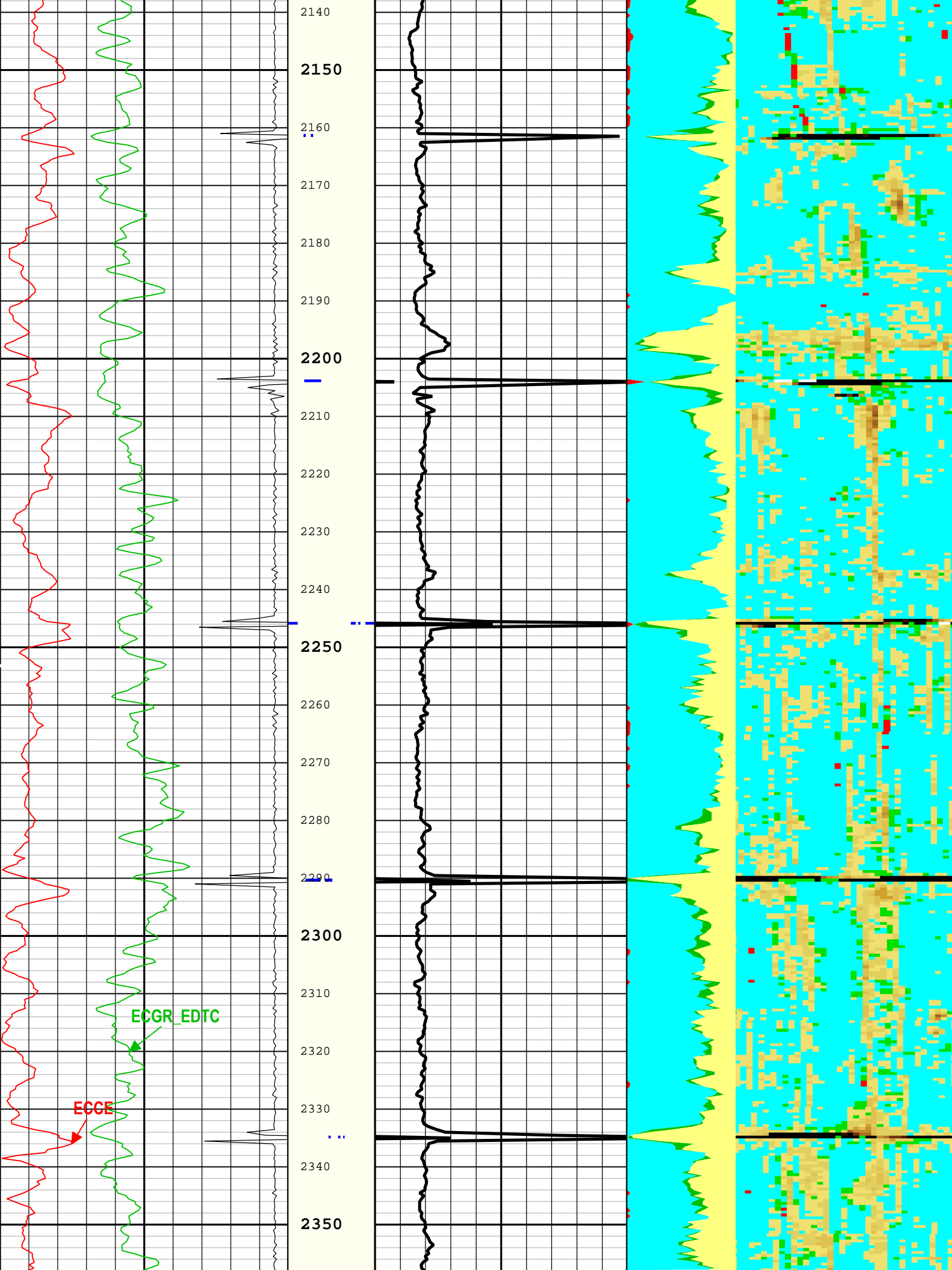


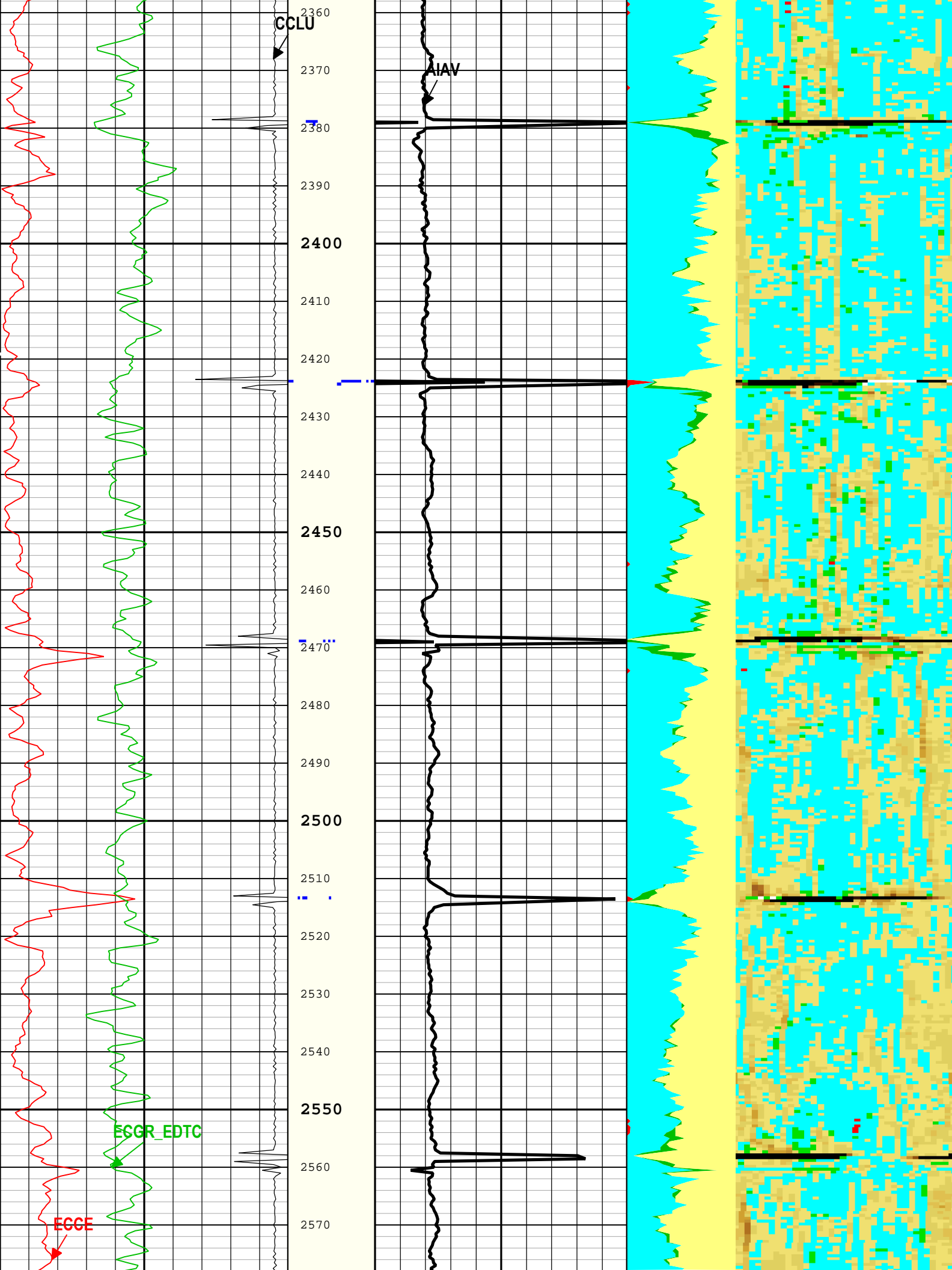


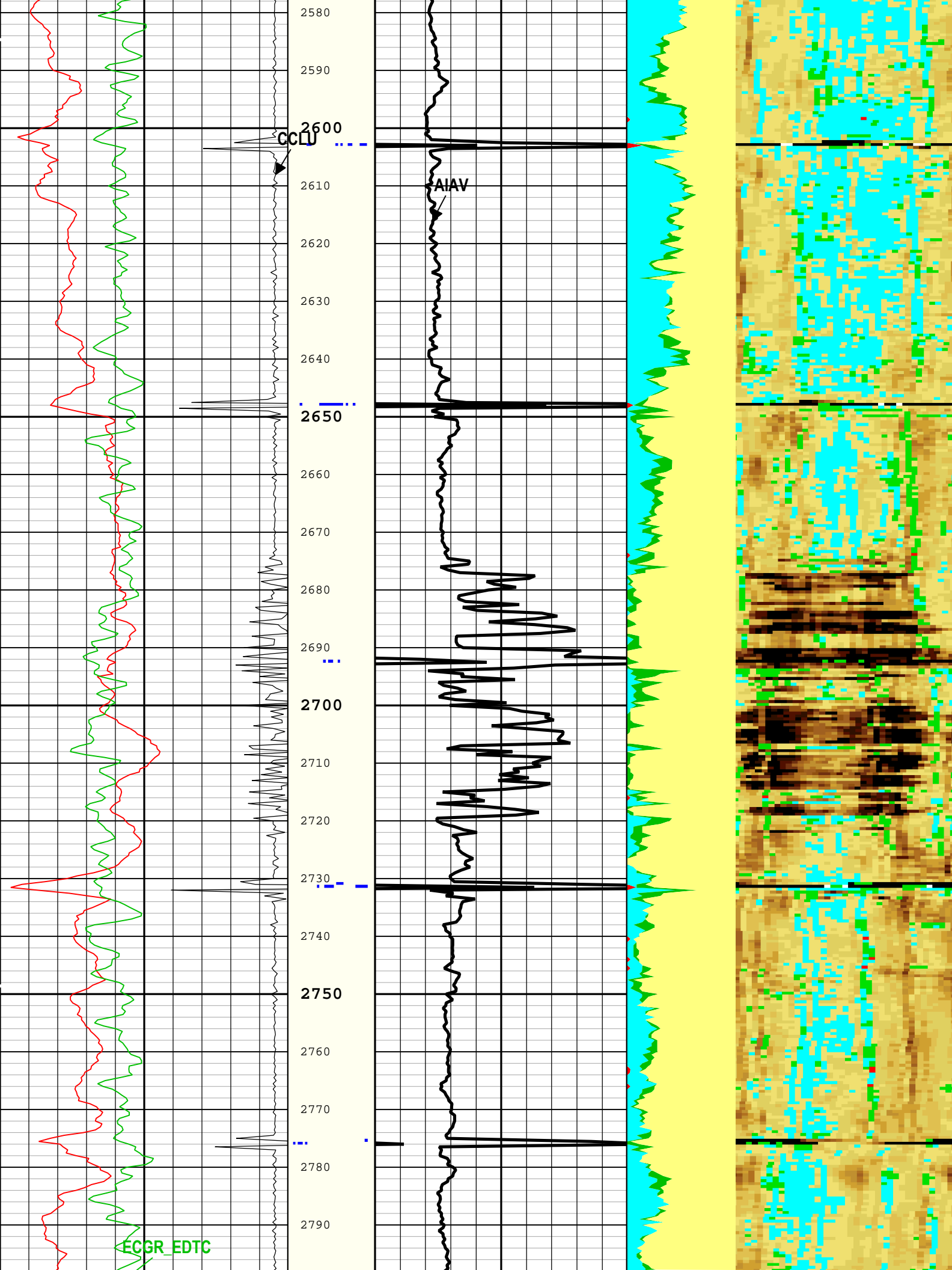


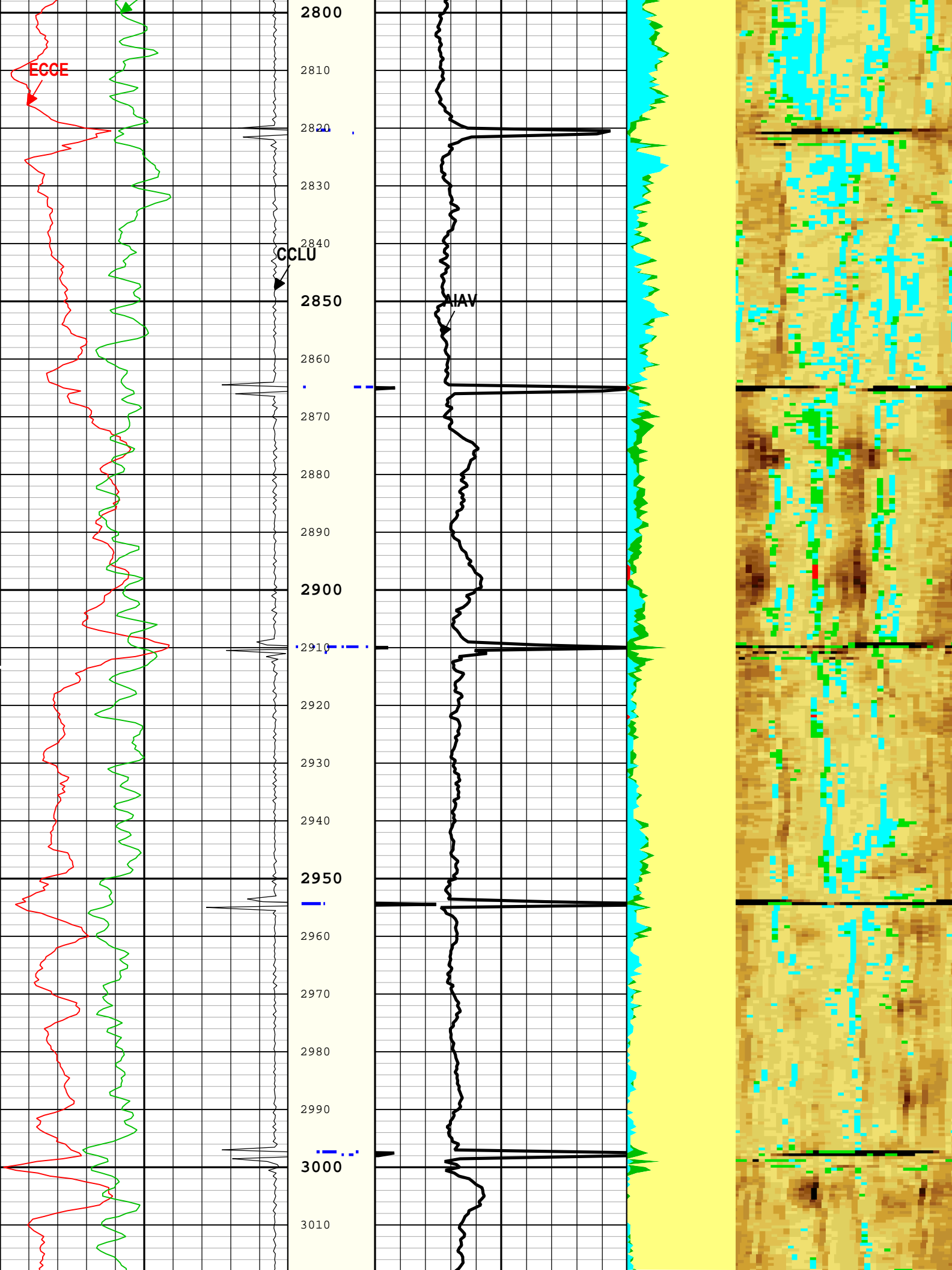


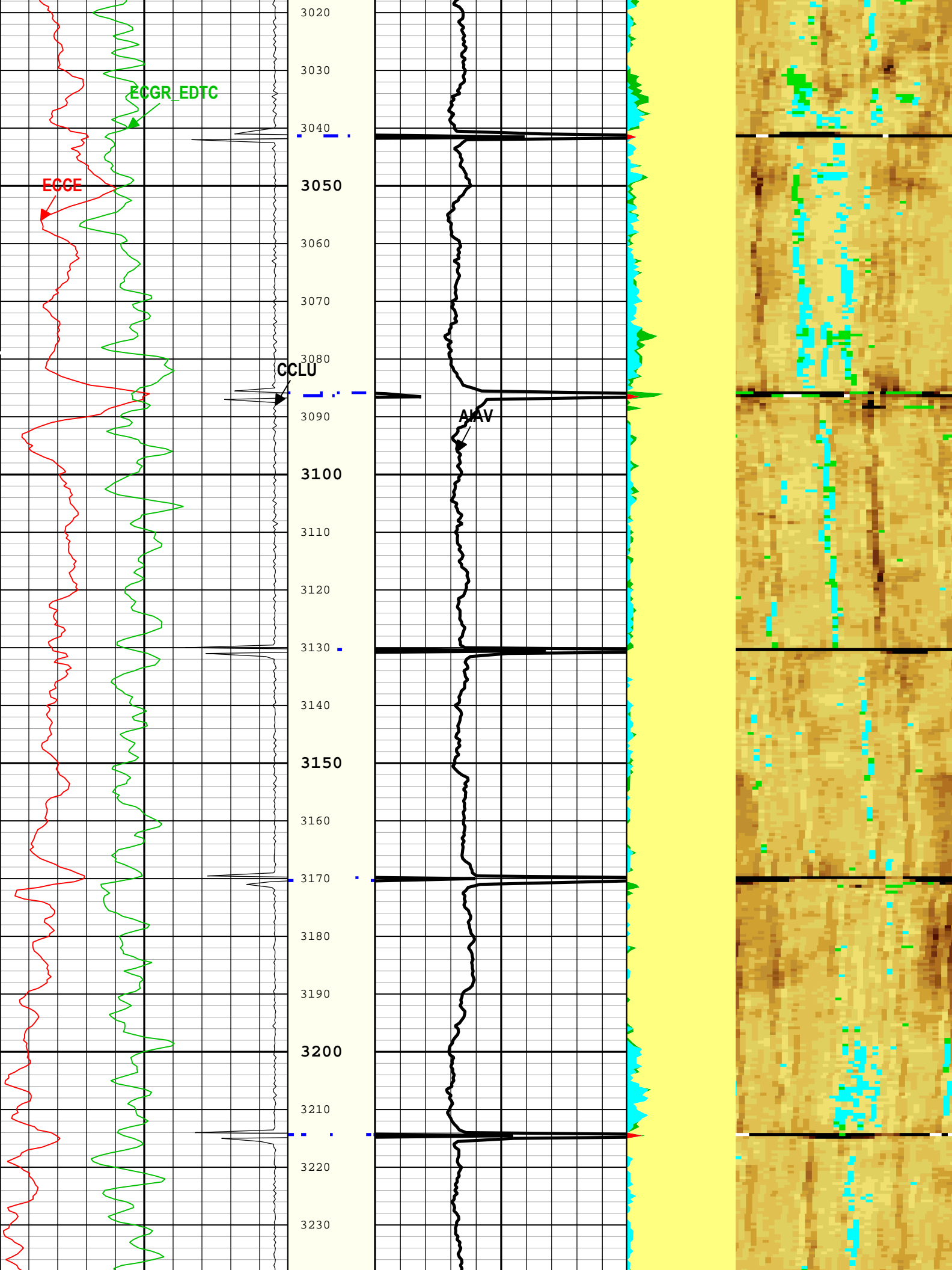


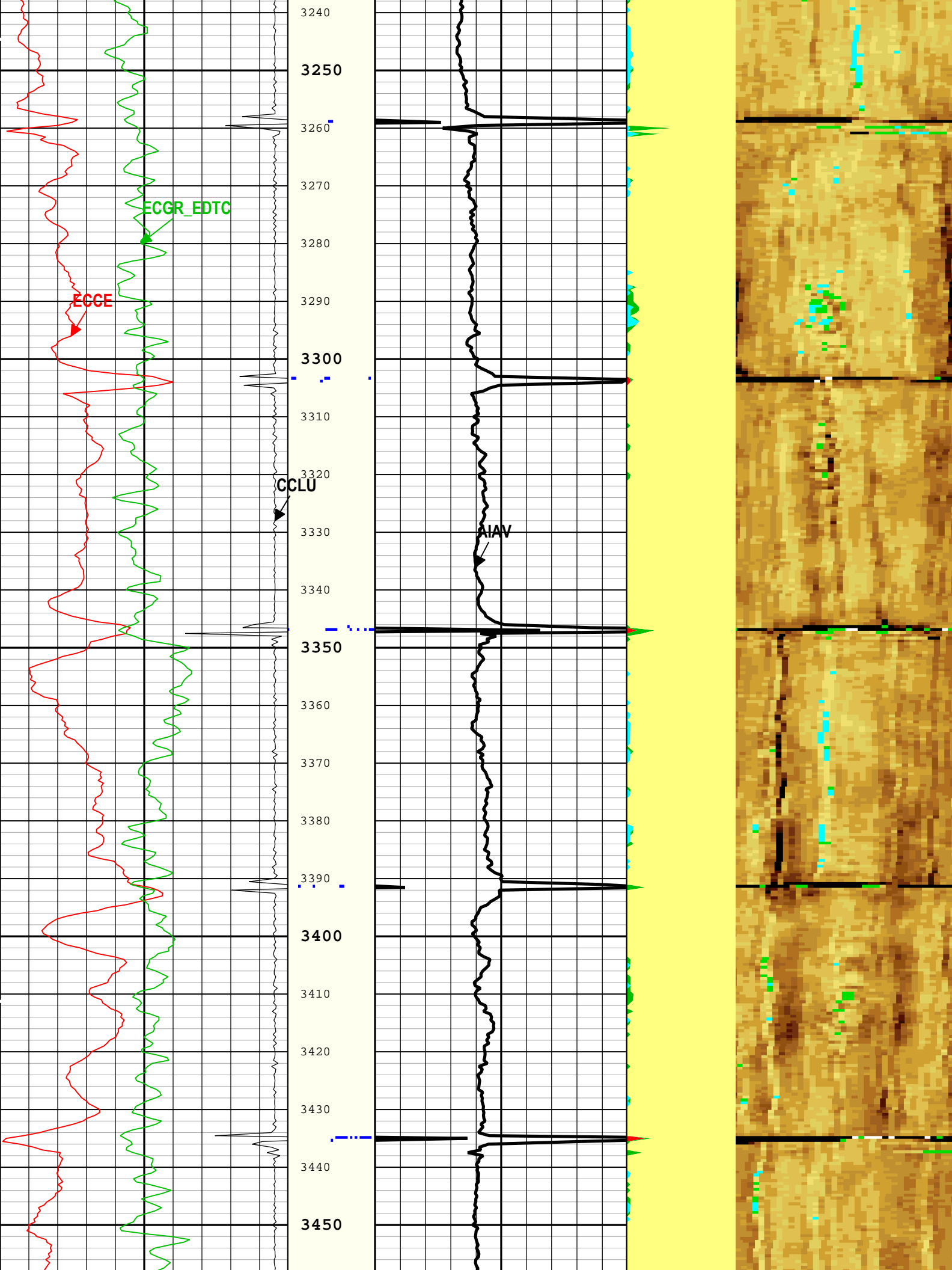


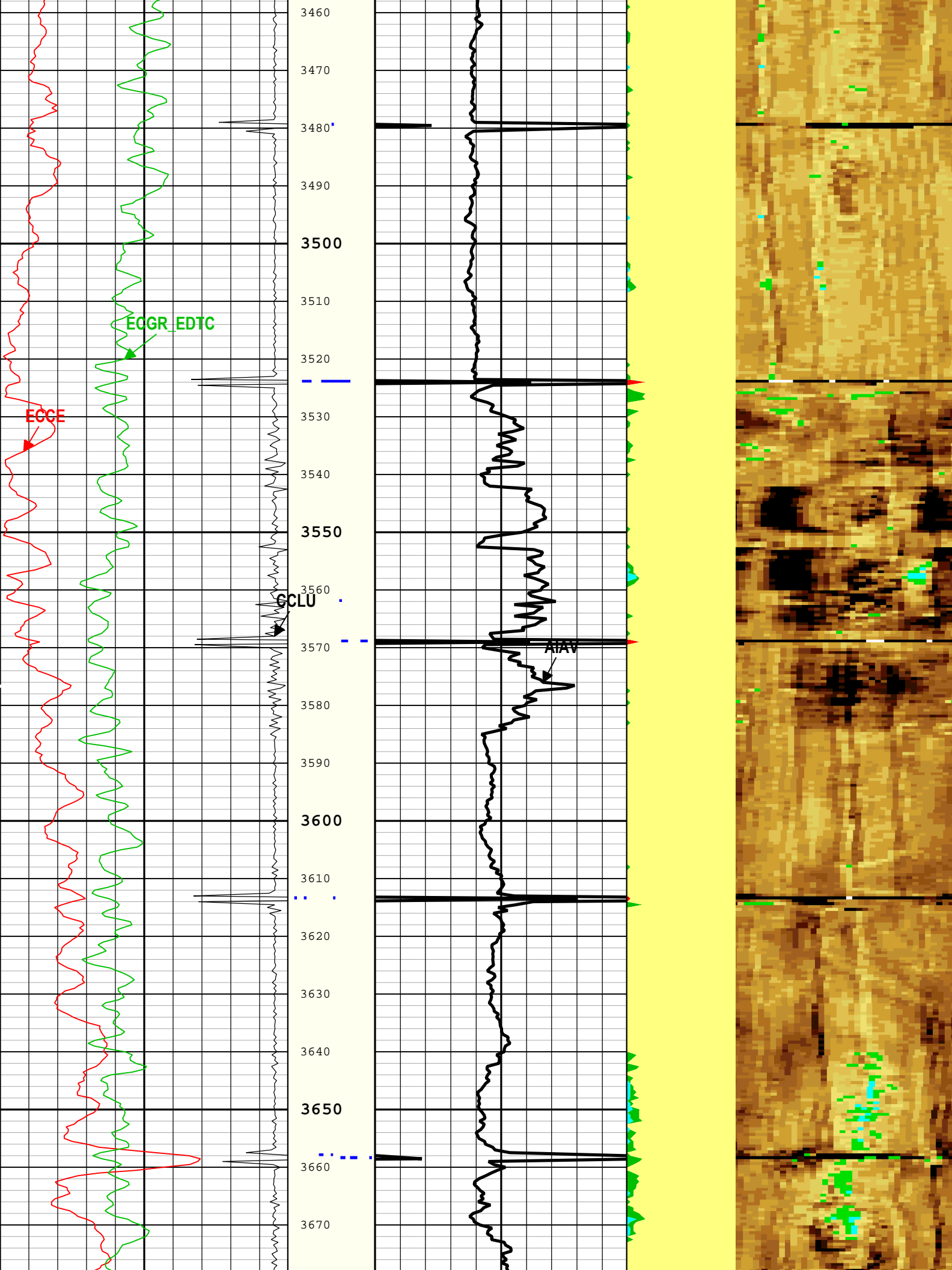


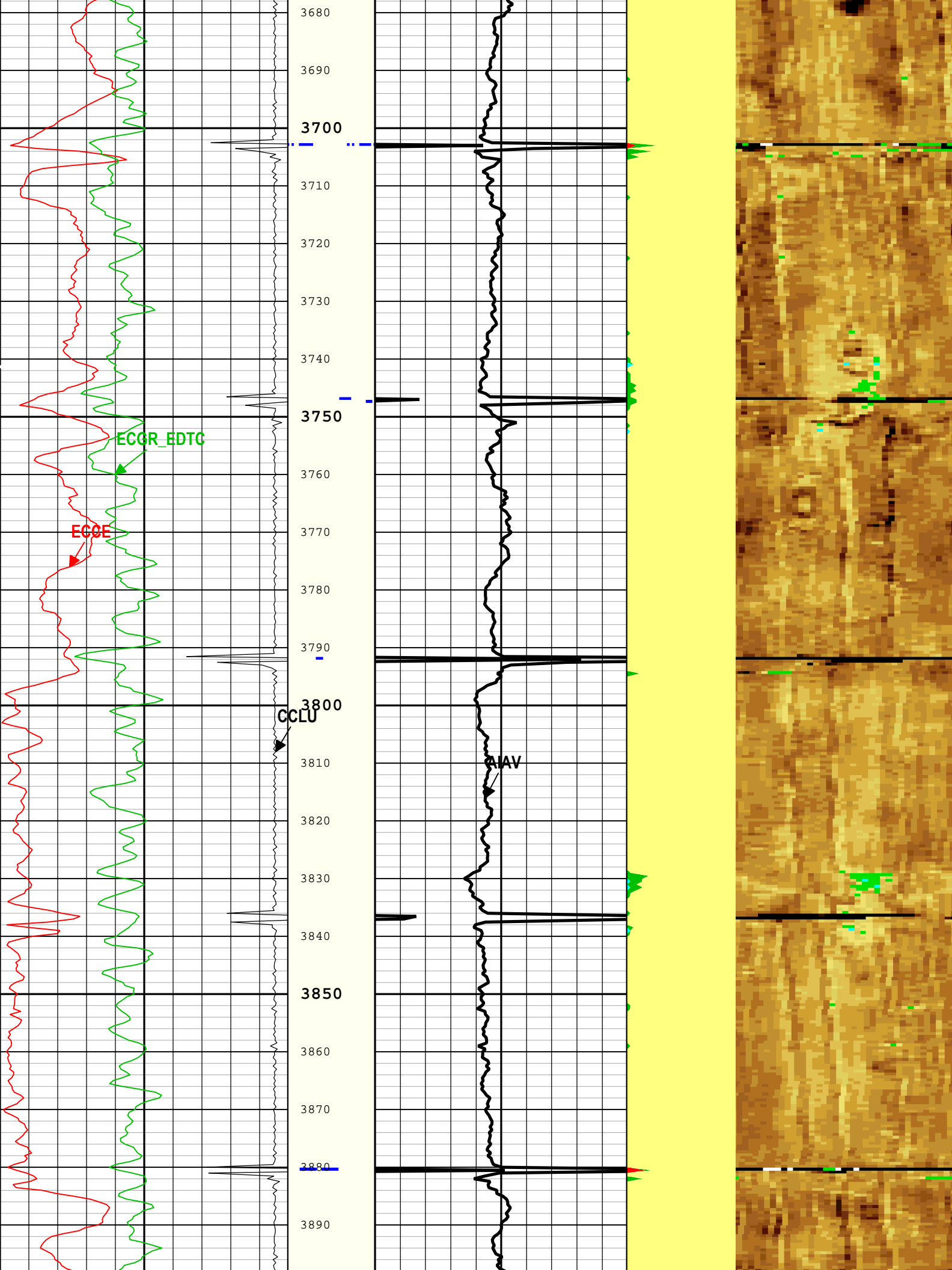


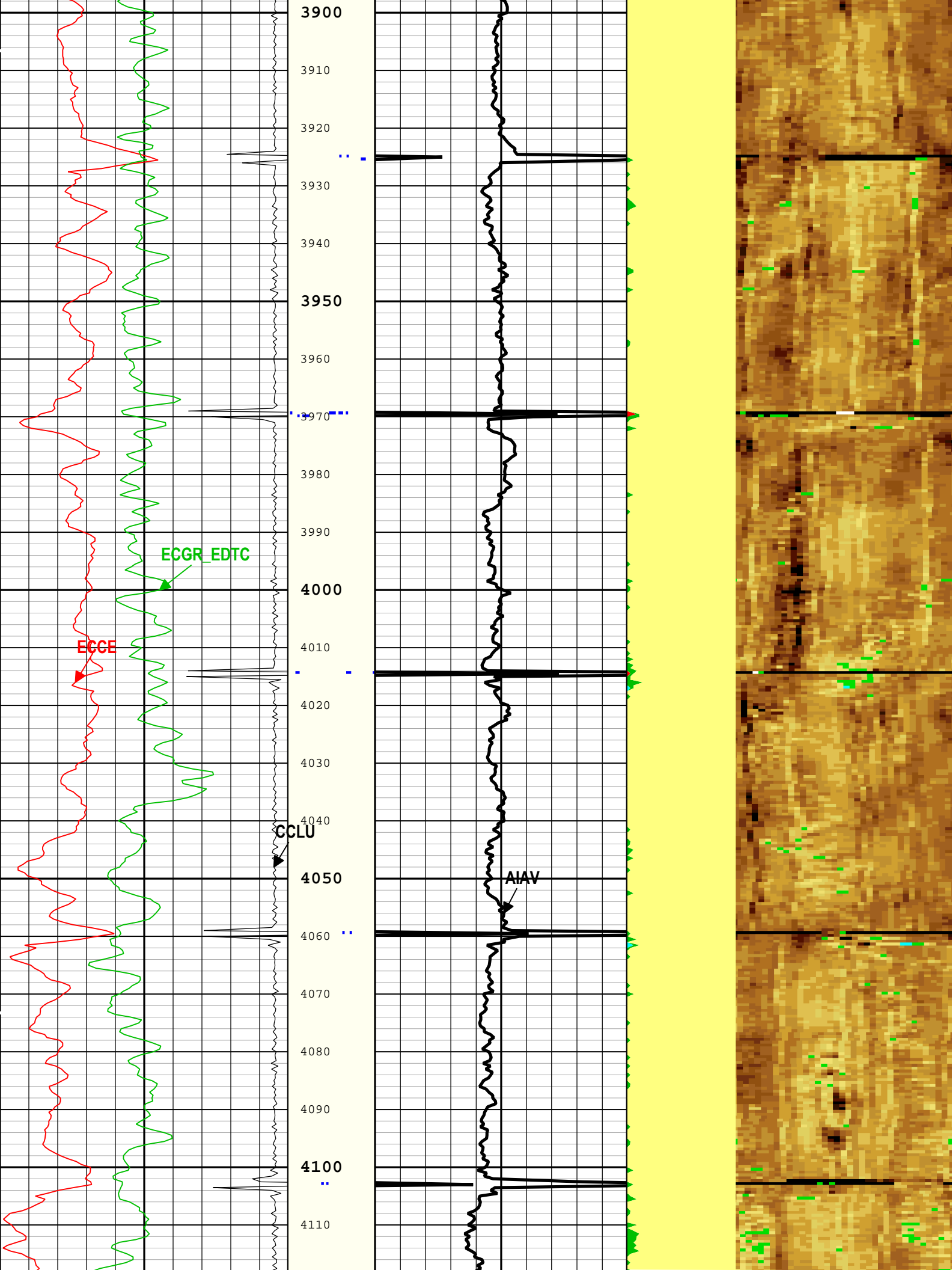


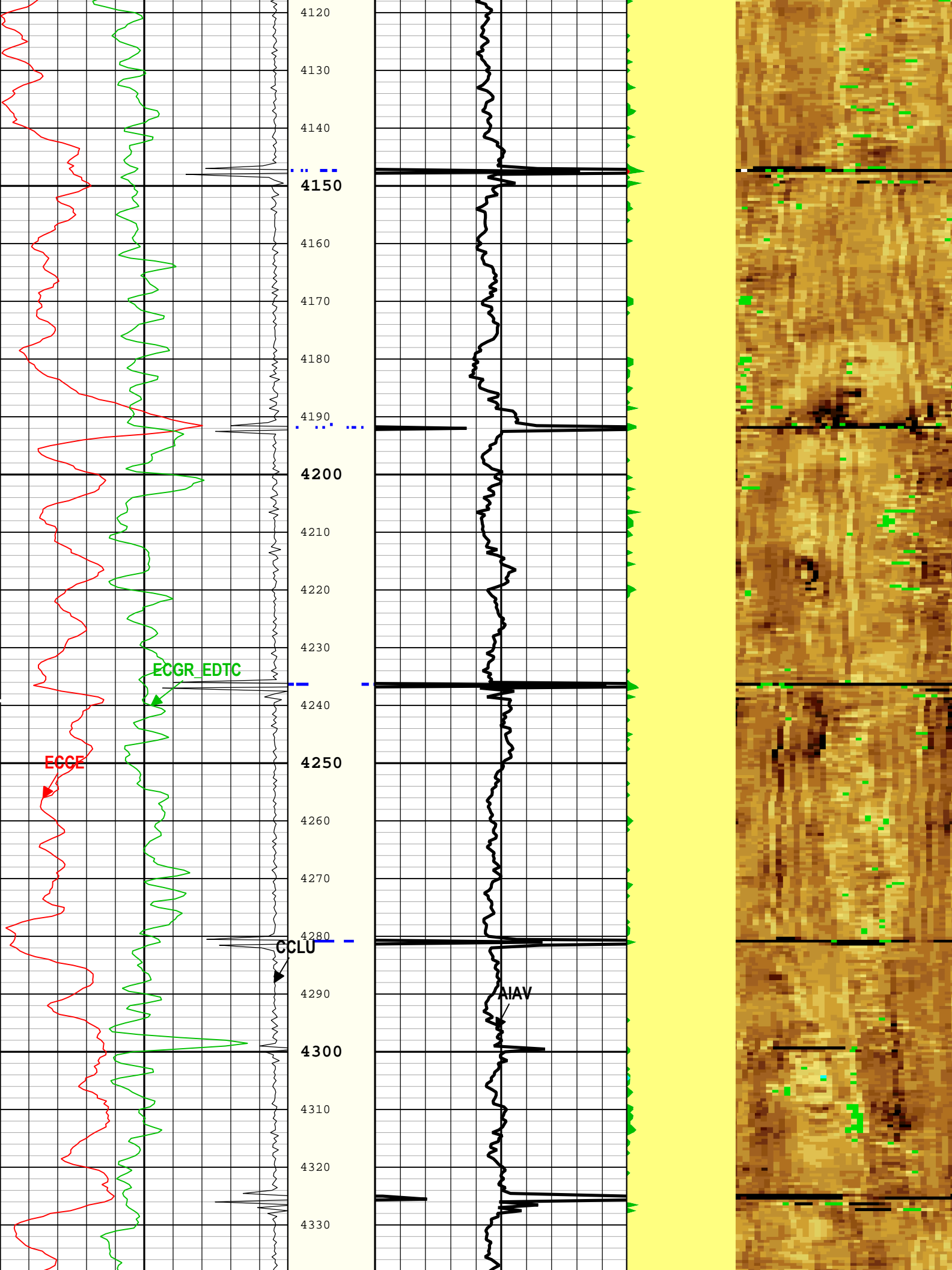


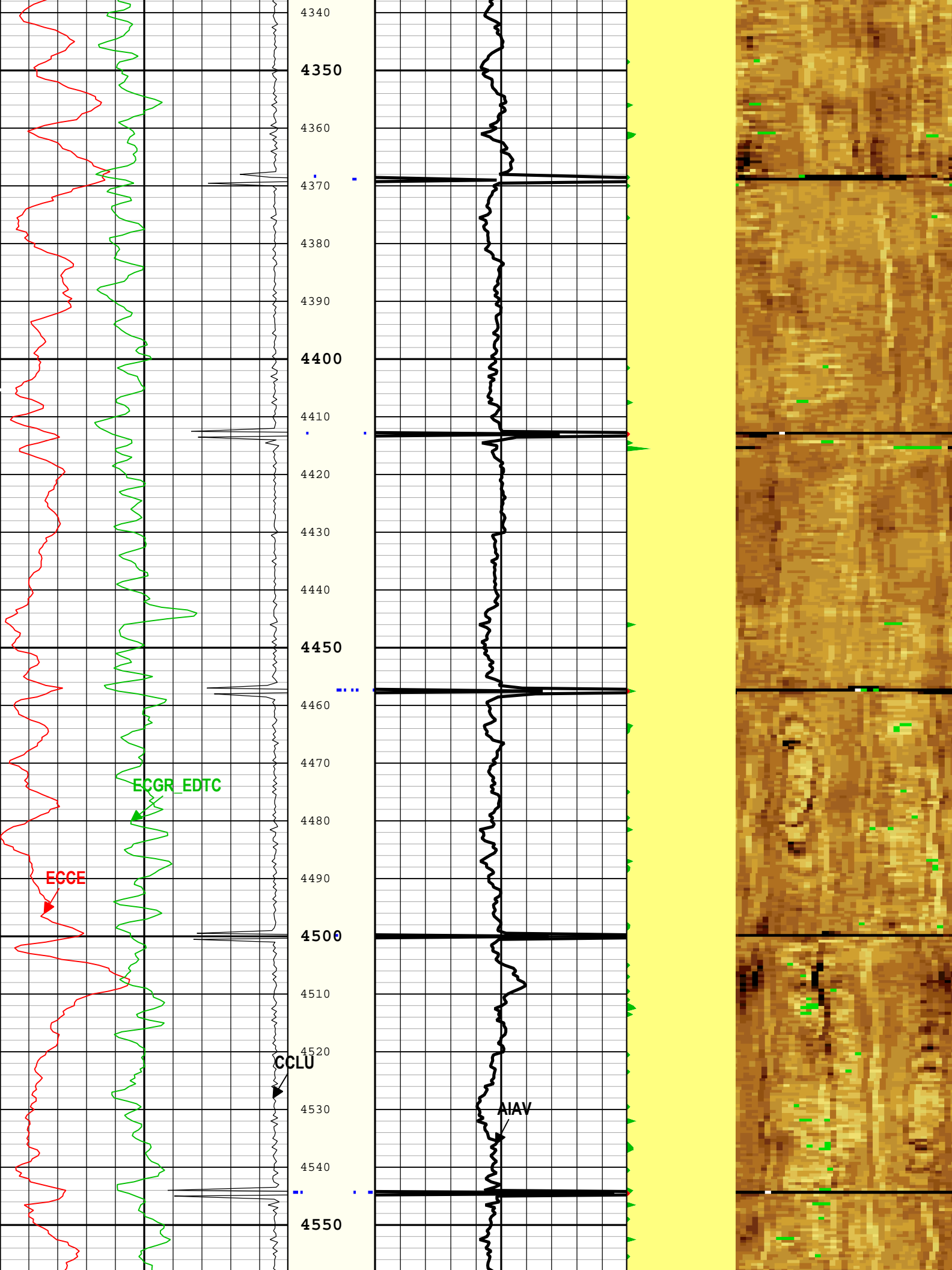


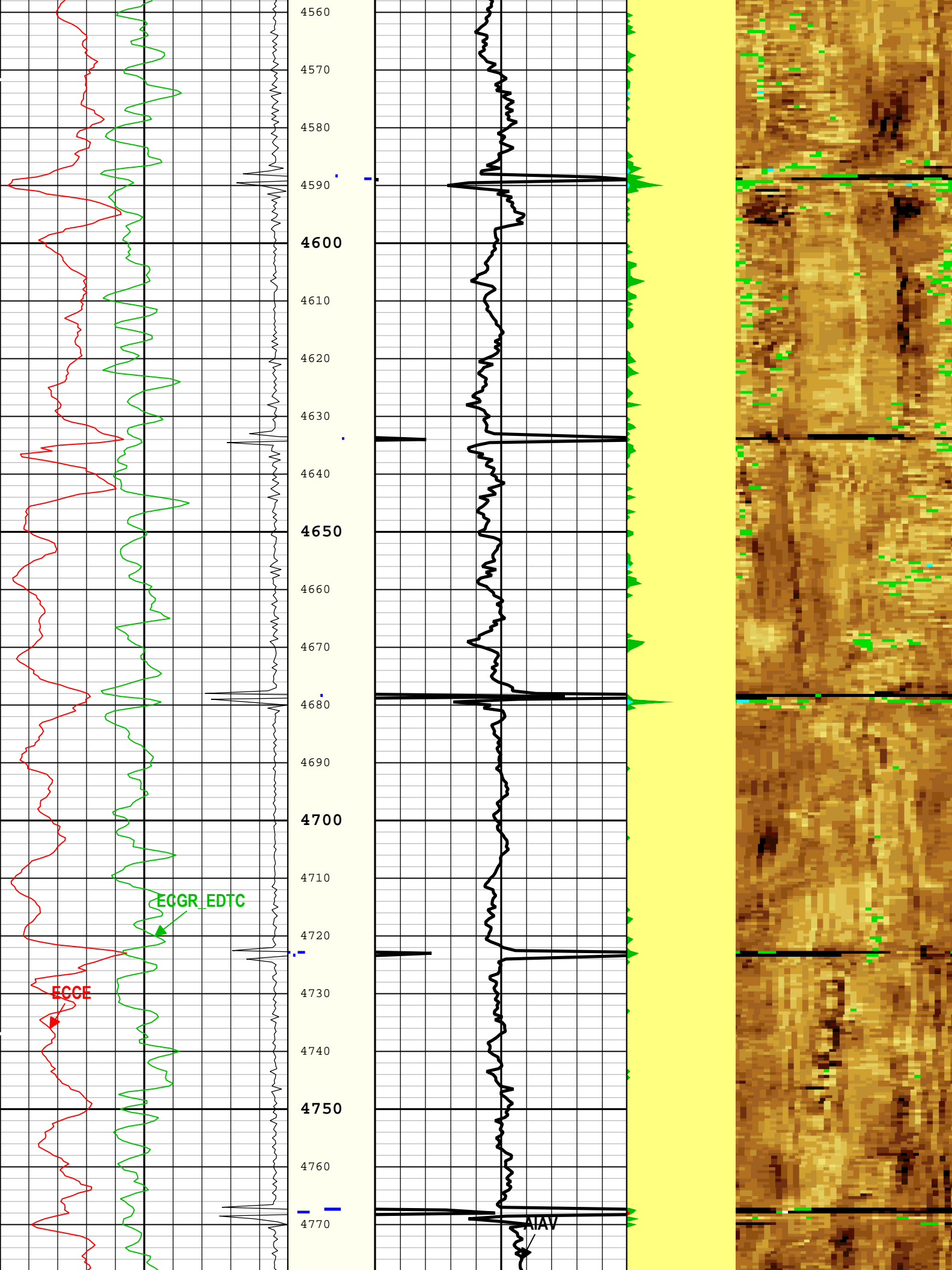


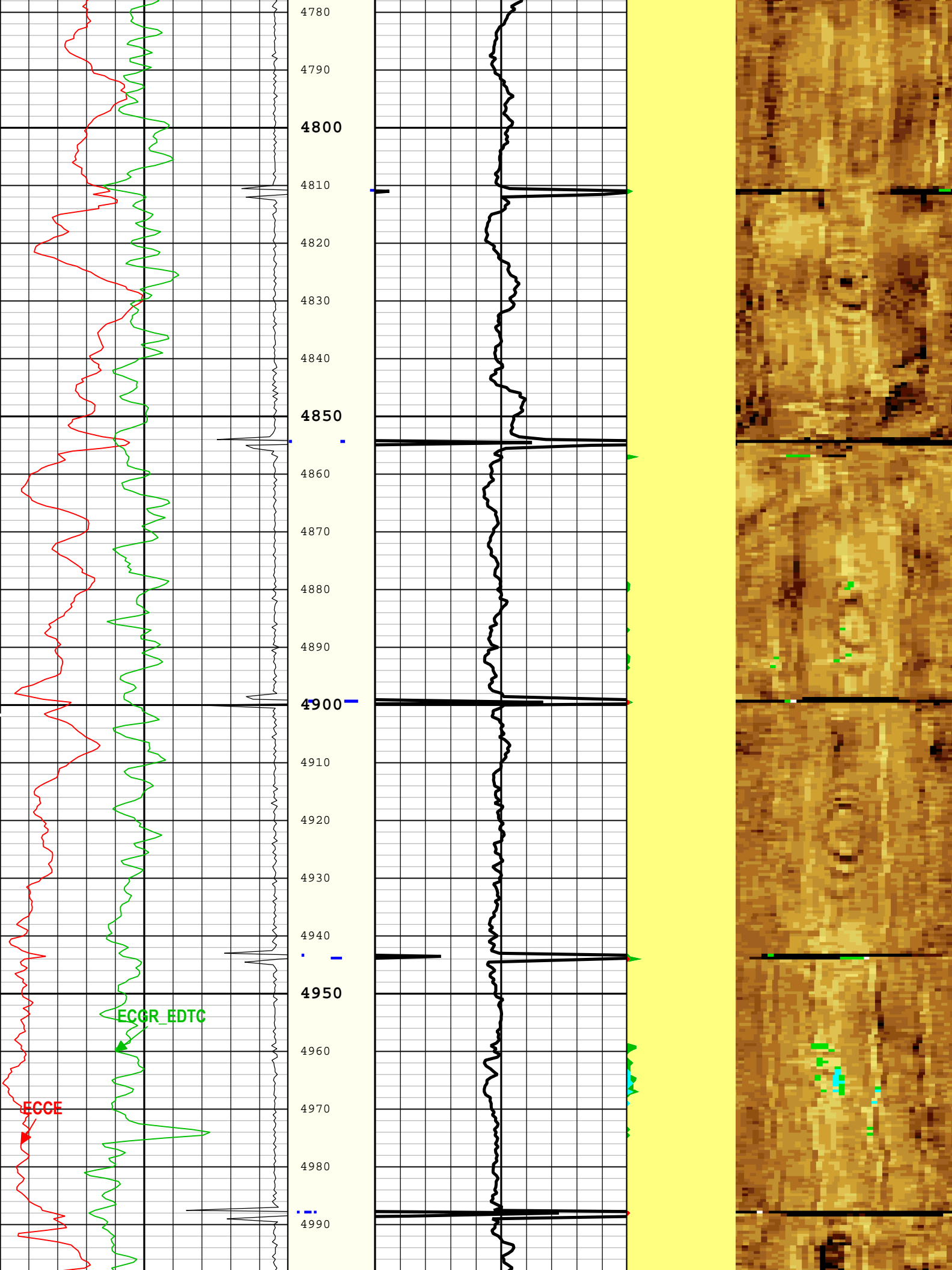


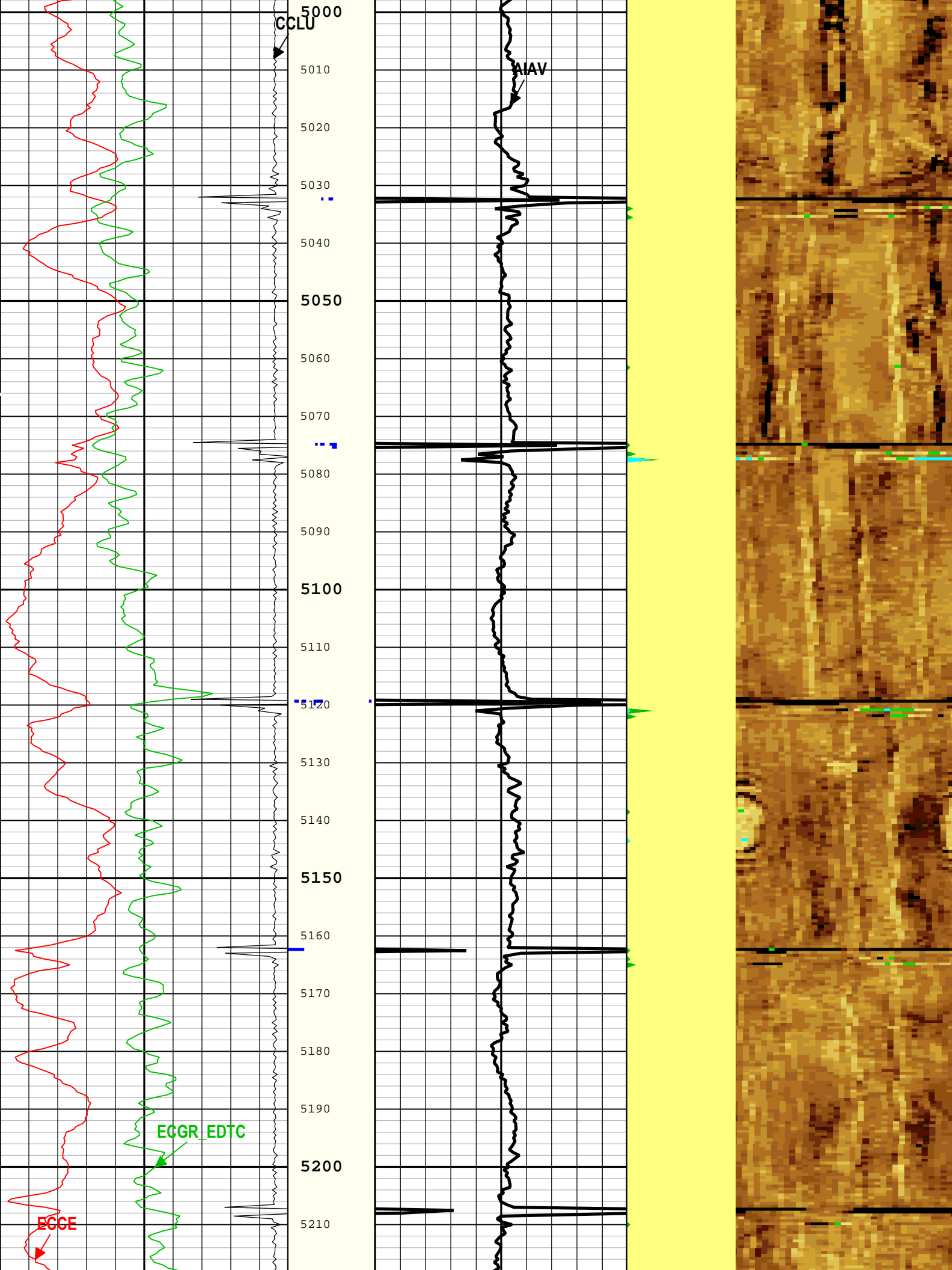


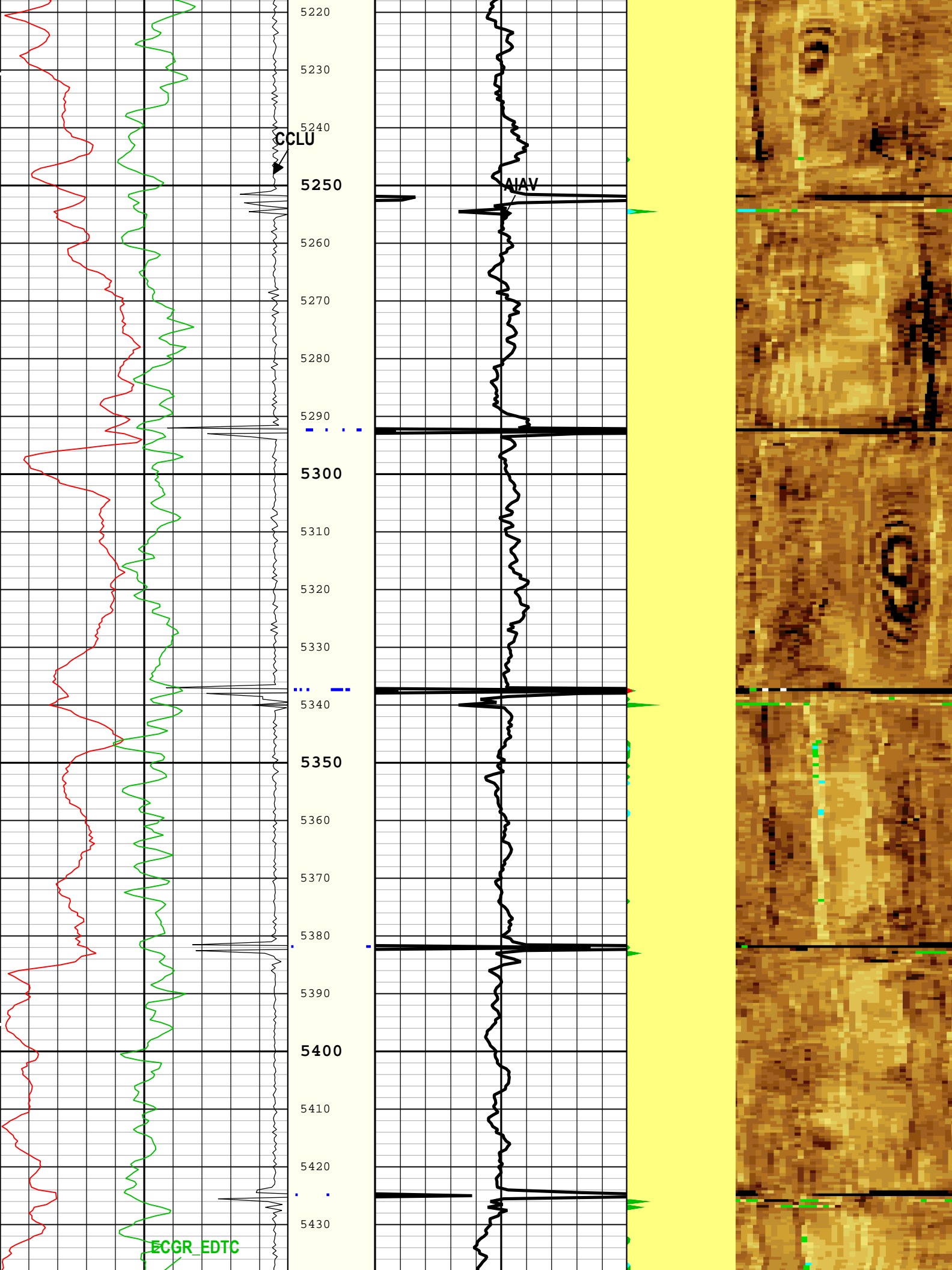


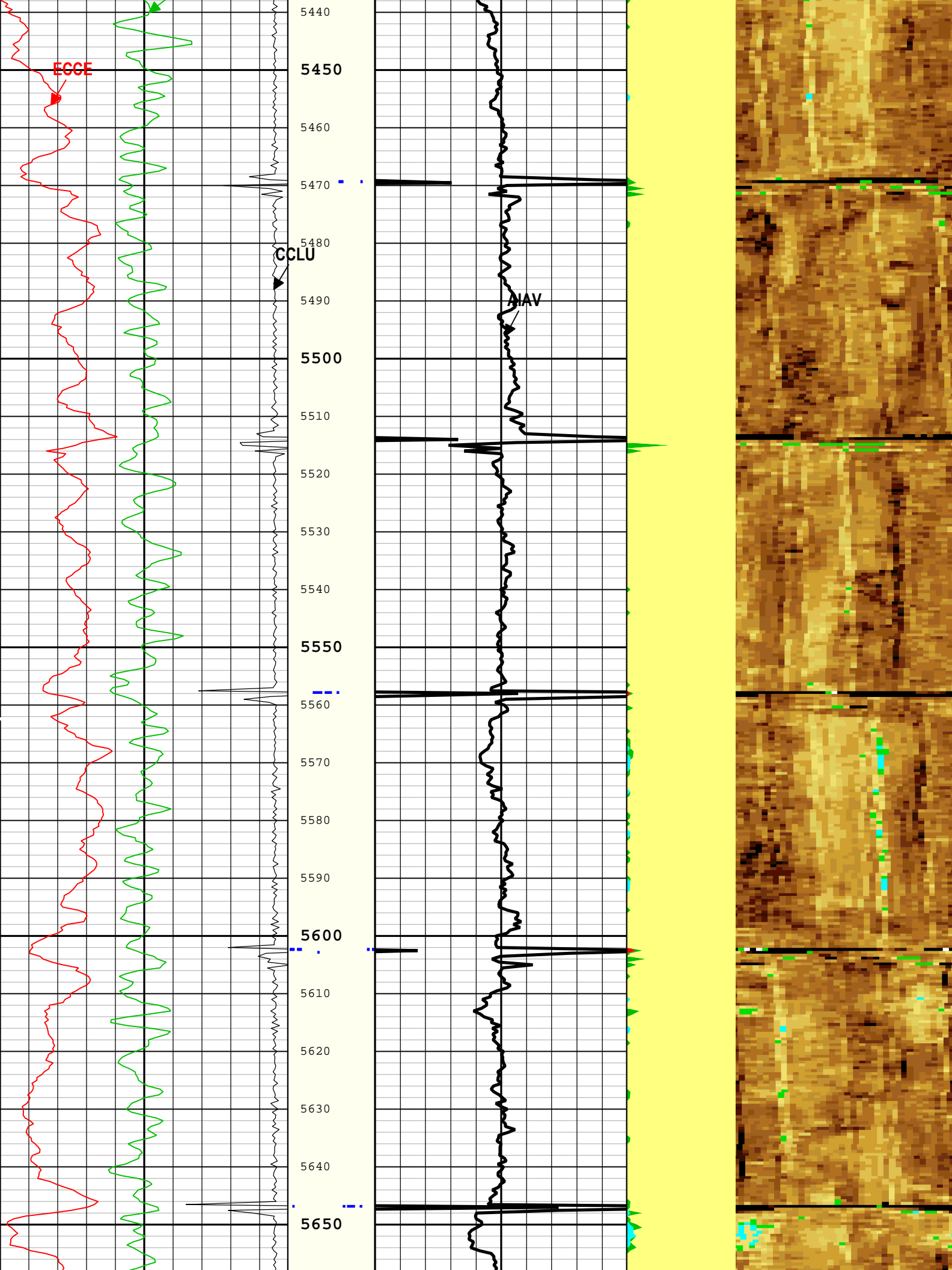


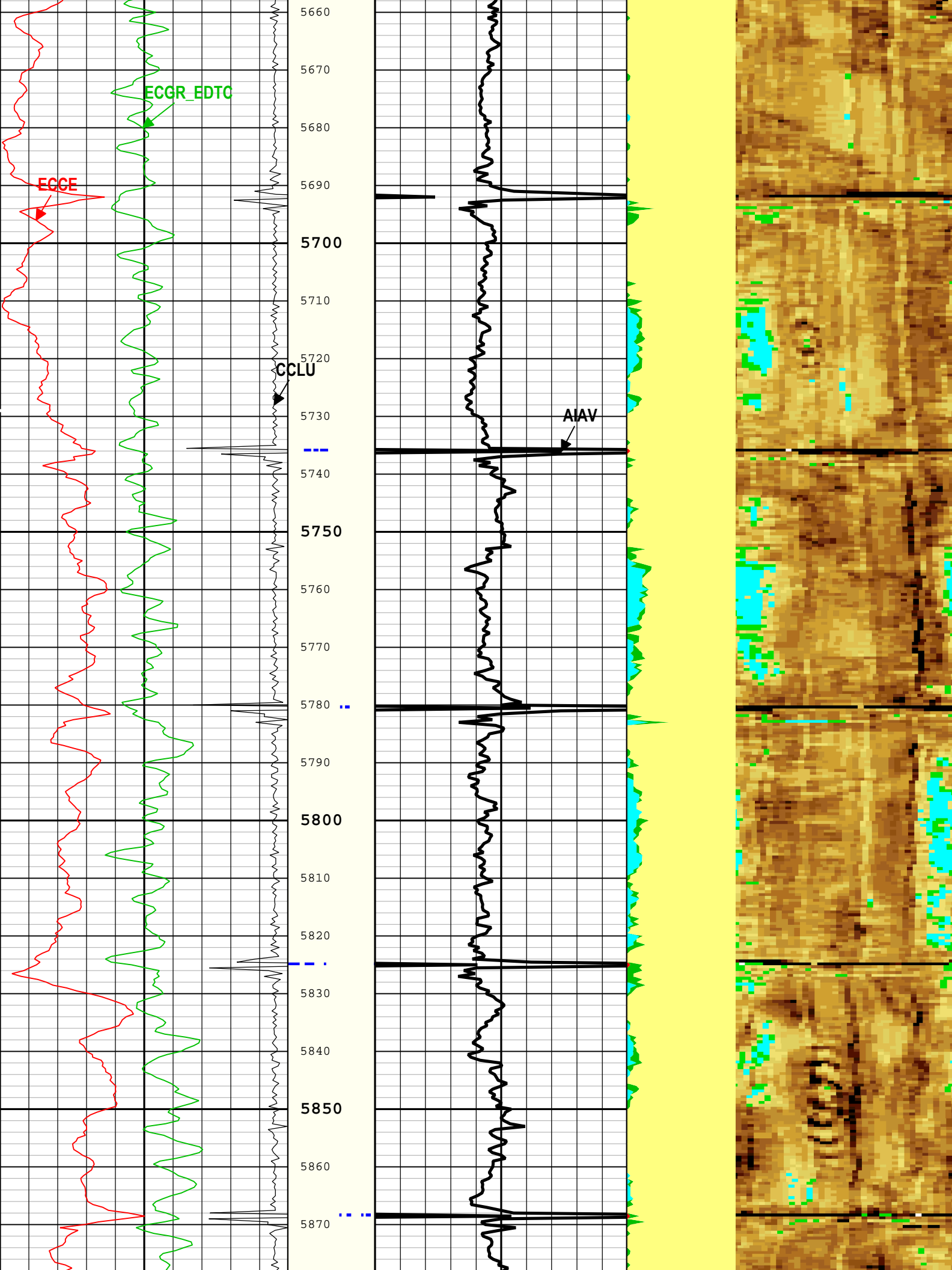


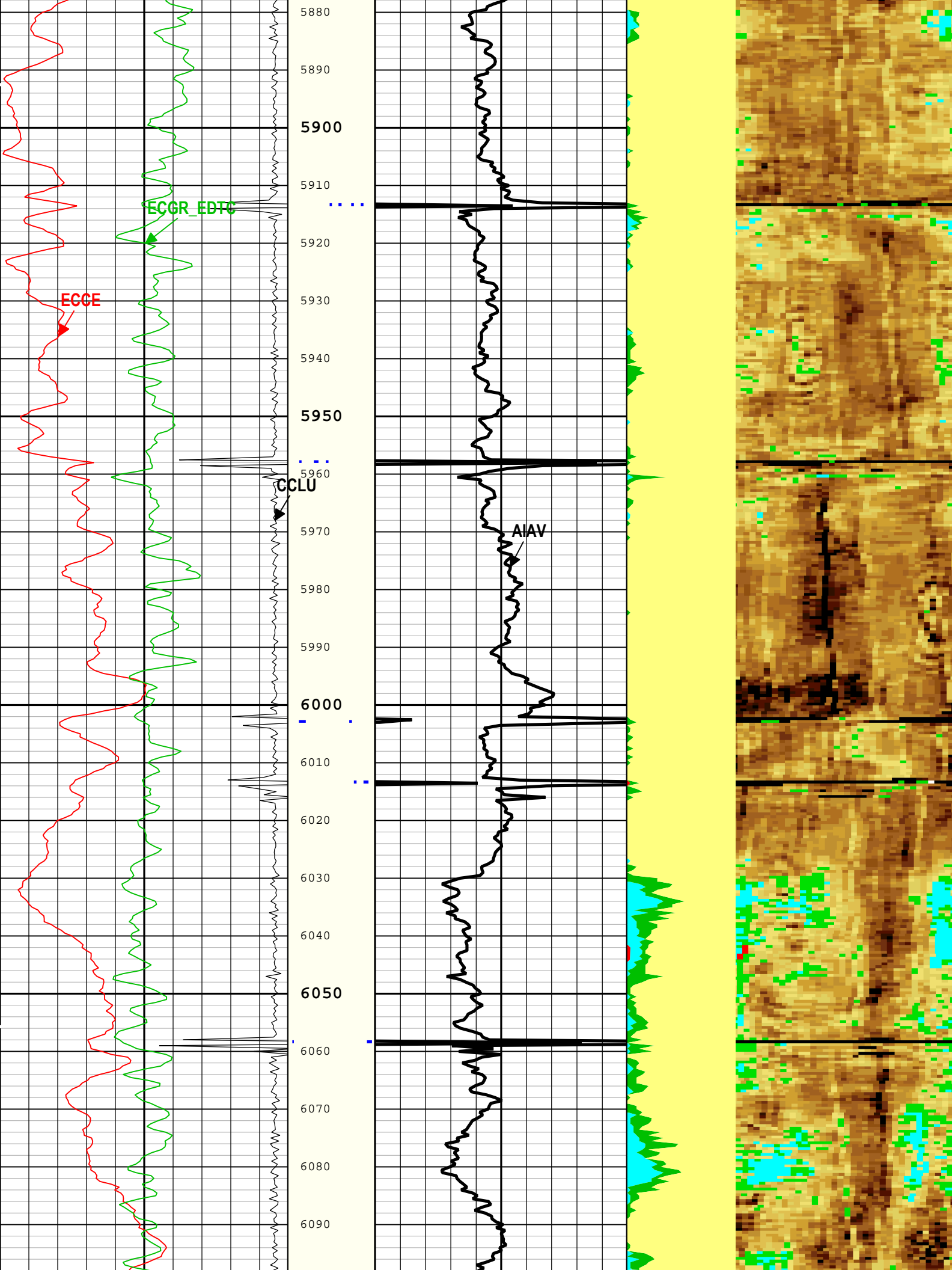


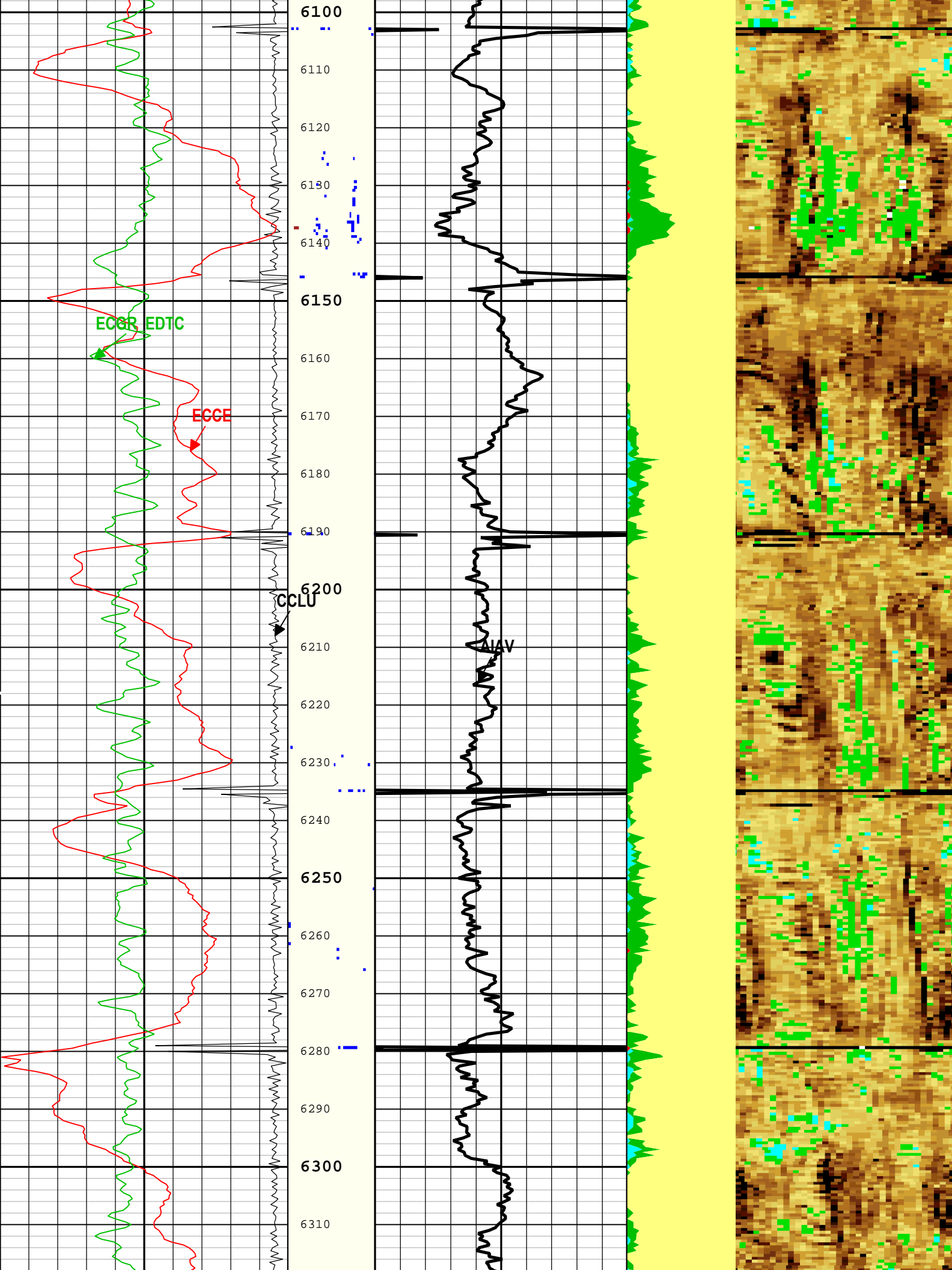


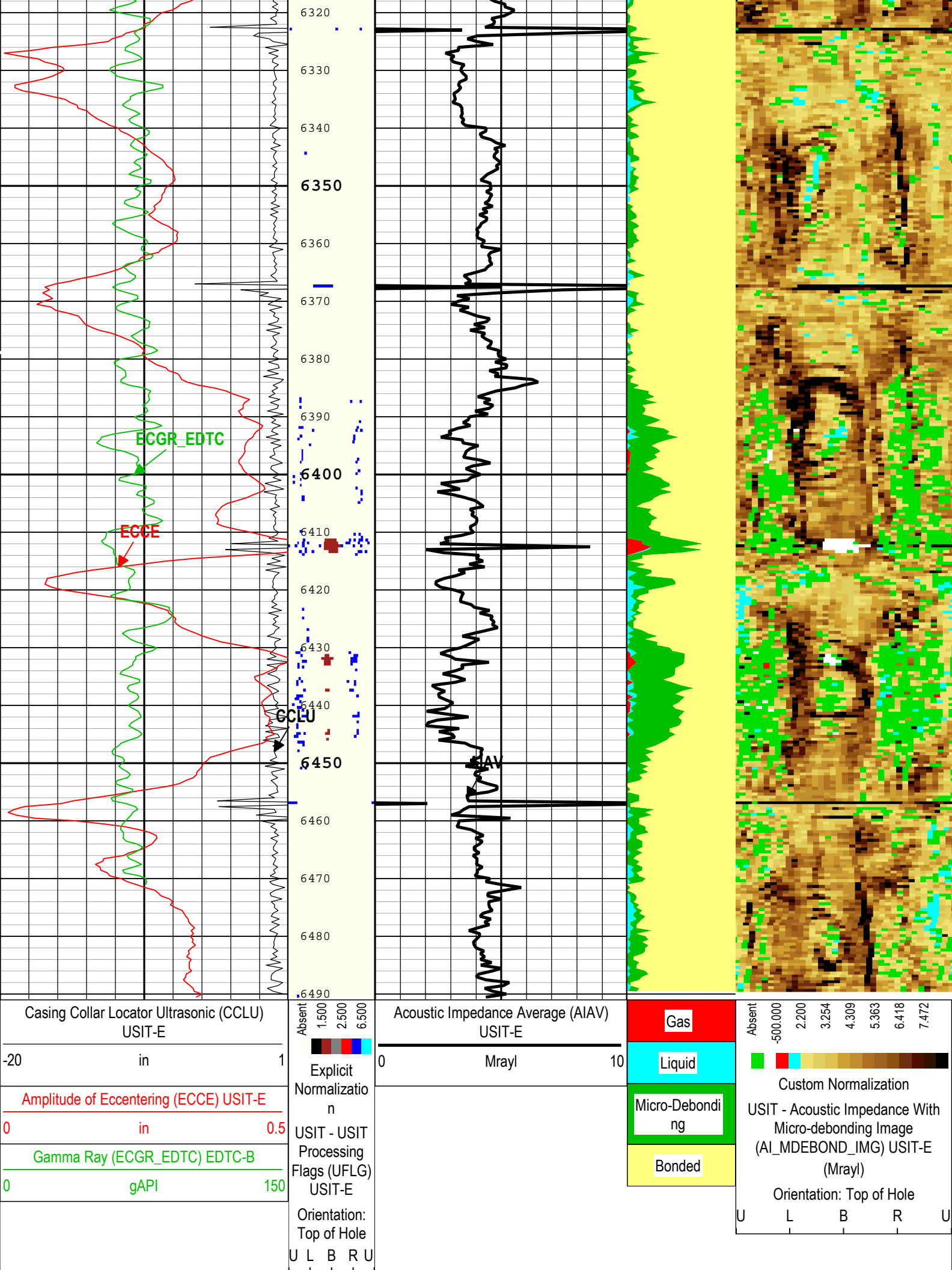












Channel Processing Parameters

1A: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	16996.4	ft
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
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)	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.6	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	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	97.5	110
BS	13.5	110	1955
BS	8.5	1955	6491

All depth are actual.

Tool Control Parameters

1A: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	No	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in LF	
WINB	Window Begin Time	USIT-E	33.83	us
WINE	Window End Time	USIT-E	73.83	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	35	27-Aug-2019 14:28:27	27-Aug-2019 14:37:55	6491.73	6391.18
EMXV	40	27-Aug-2019 14:37:55	27-Aug-2019 14:43:55	6391.18	5408.98
EMXV	35	27-Aug-2019 14:43:55	27-Aug-2019 15:41:55	5408.98	118.18

All depth are at tool zero.

1A

0 PSI Repeat Pass

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100

Pass Summary

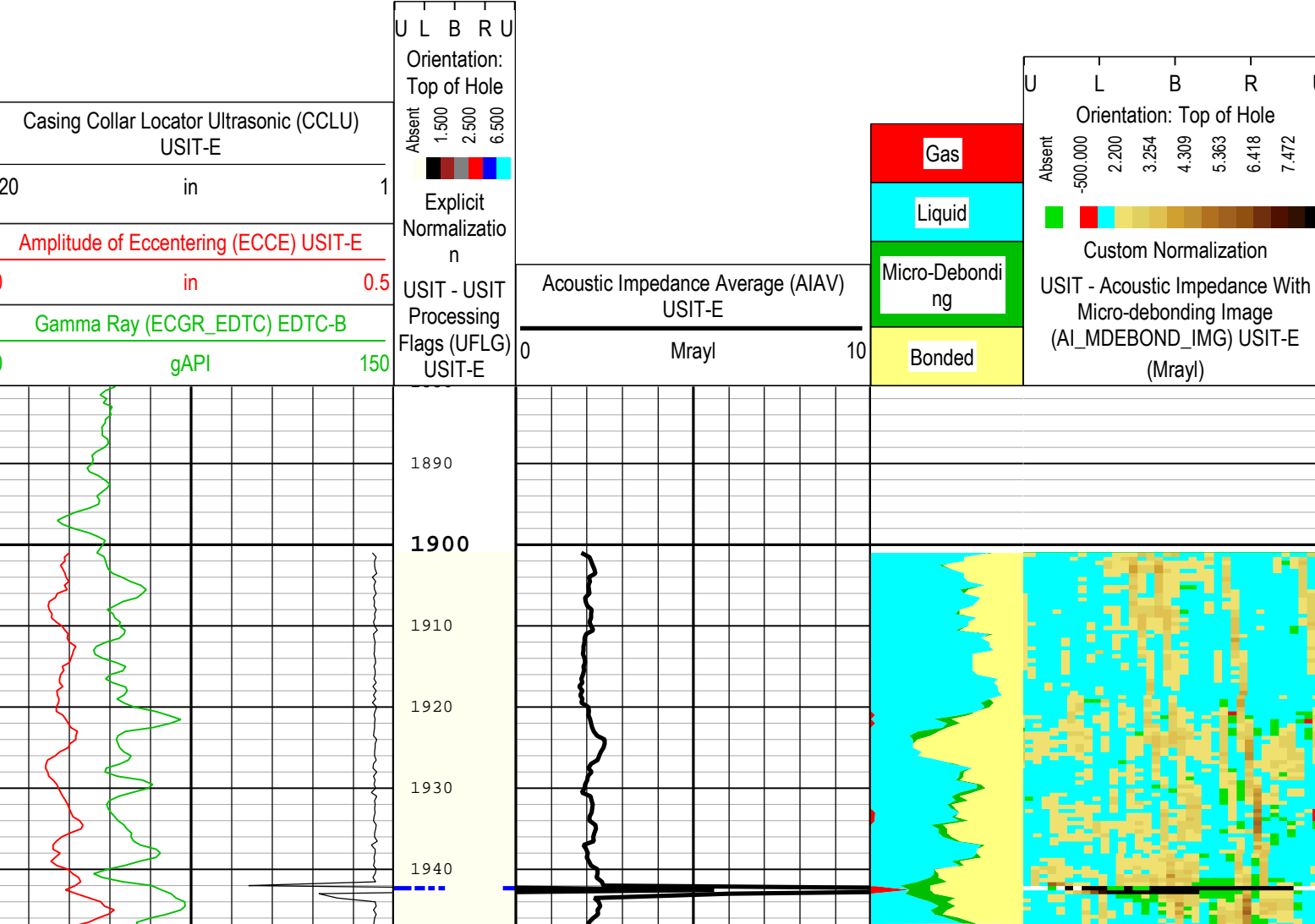
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Log[2]:Up	Up	1901.08 ft	2763.85 ft	27-Aug-2019 1:50:26 PM	27-Aug-2019 1:56:31 PM	ON	0.65 ft	Yes

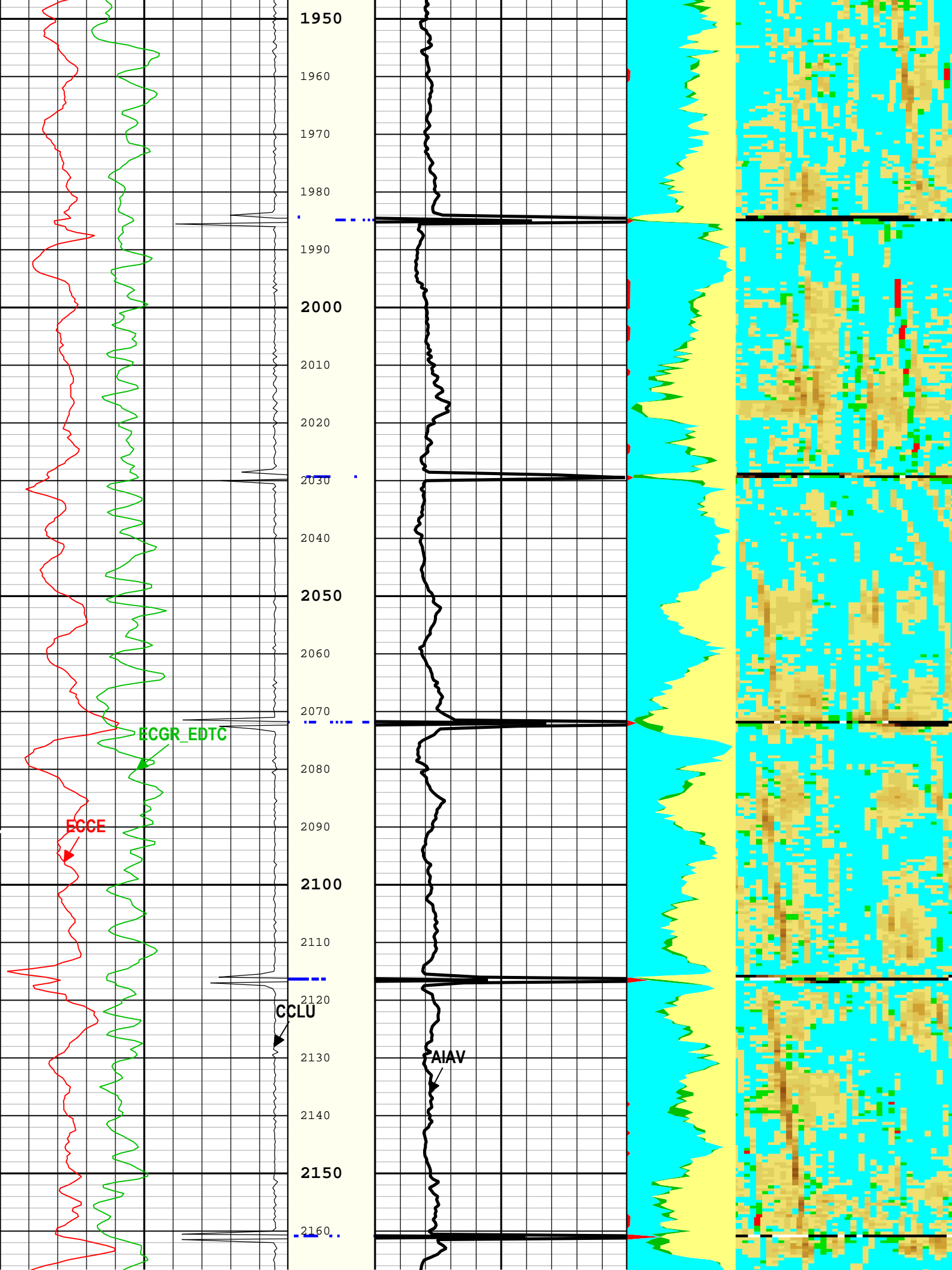
All depths are referenced to toolstring zero

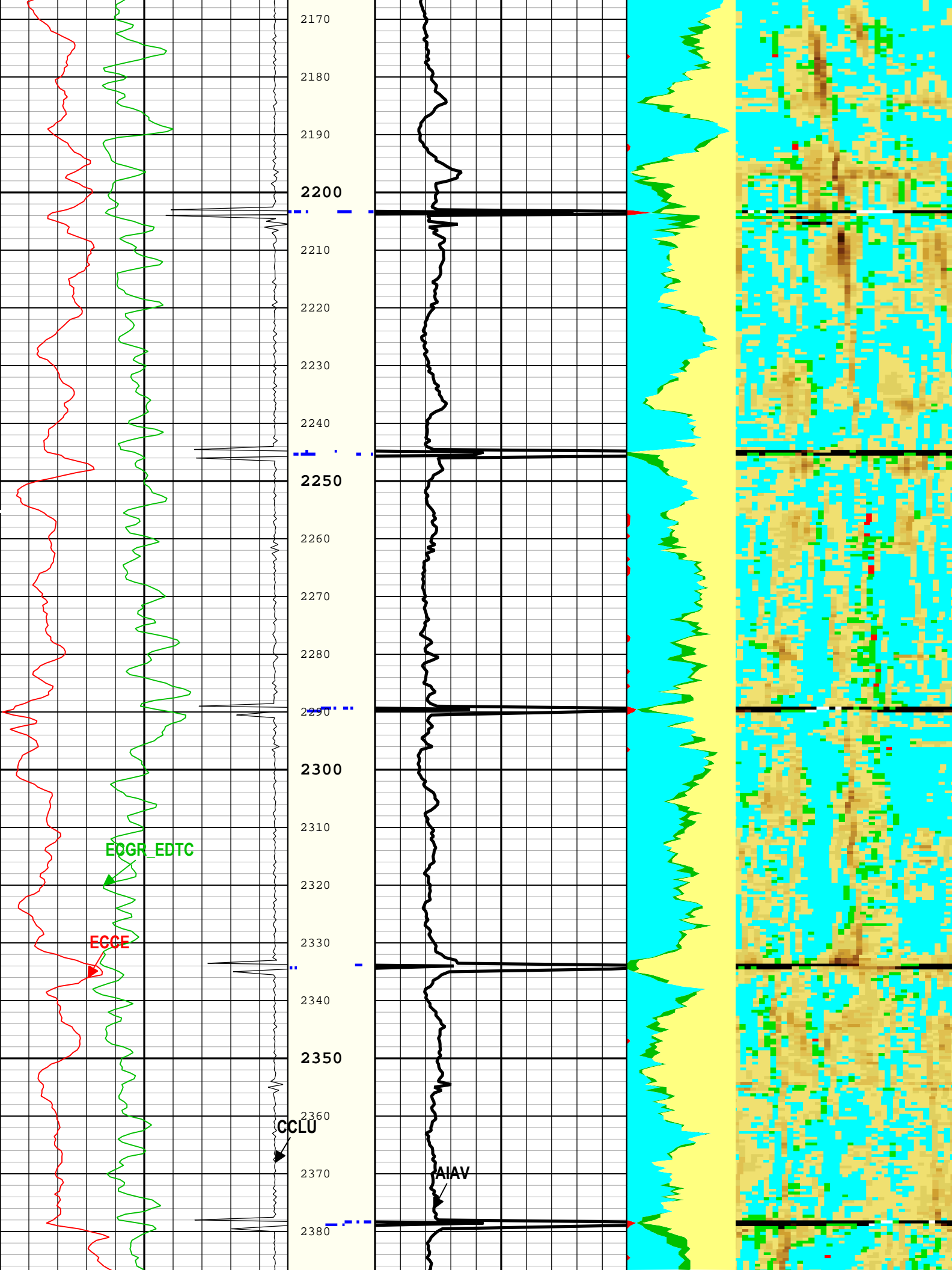
Log	Company:Noble Energy Inc      Well:SLW Ranch State BB07-678 1A: Log[2]:Up:S005
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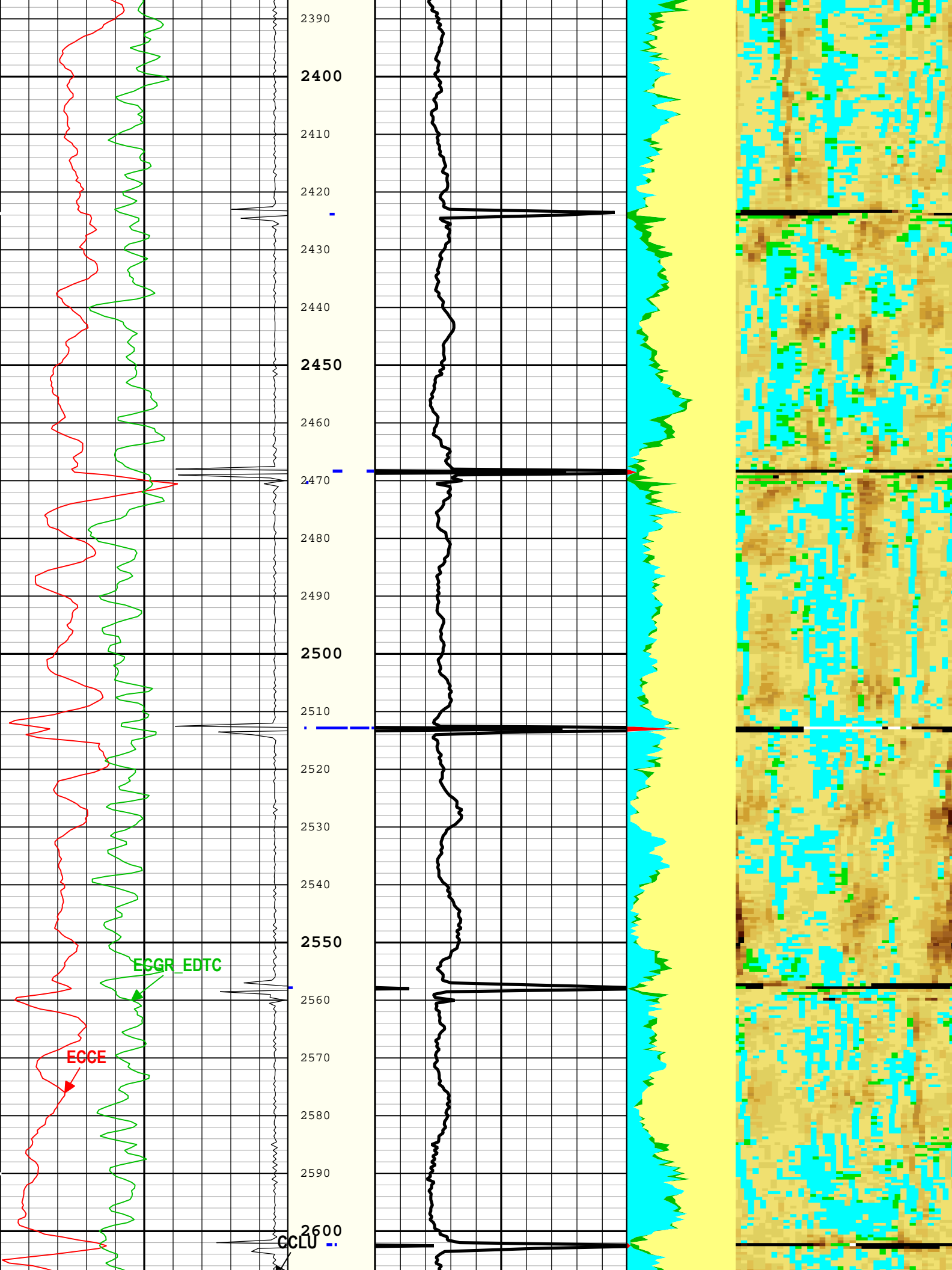
Description:    Format: Log ( DJ Basin Ultrasonic Cement Summary Report )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 27-Aug-2019 16:23:17

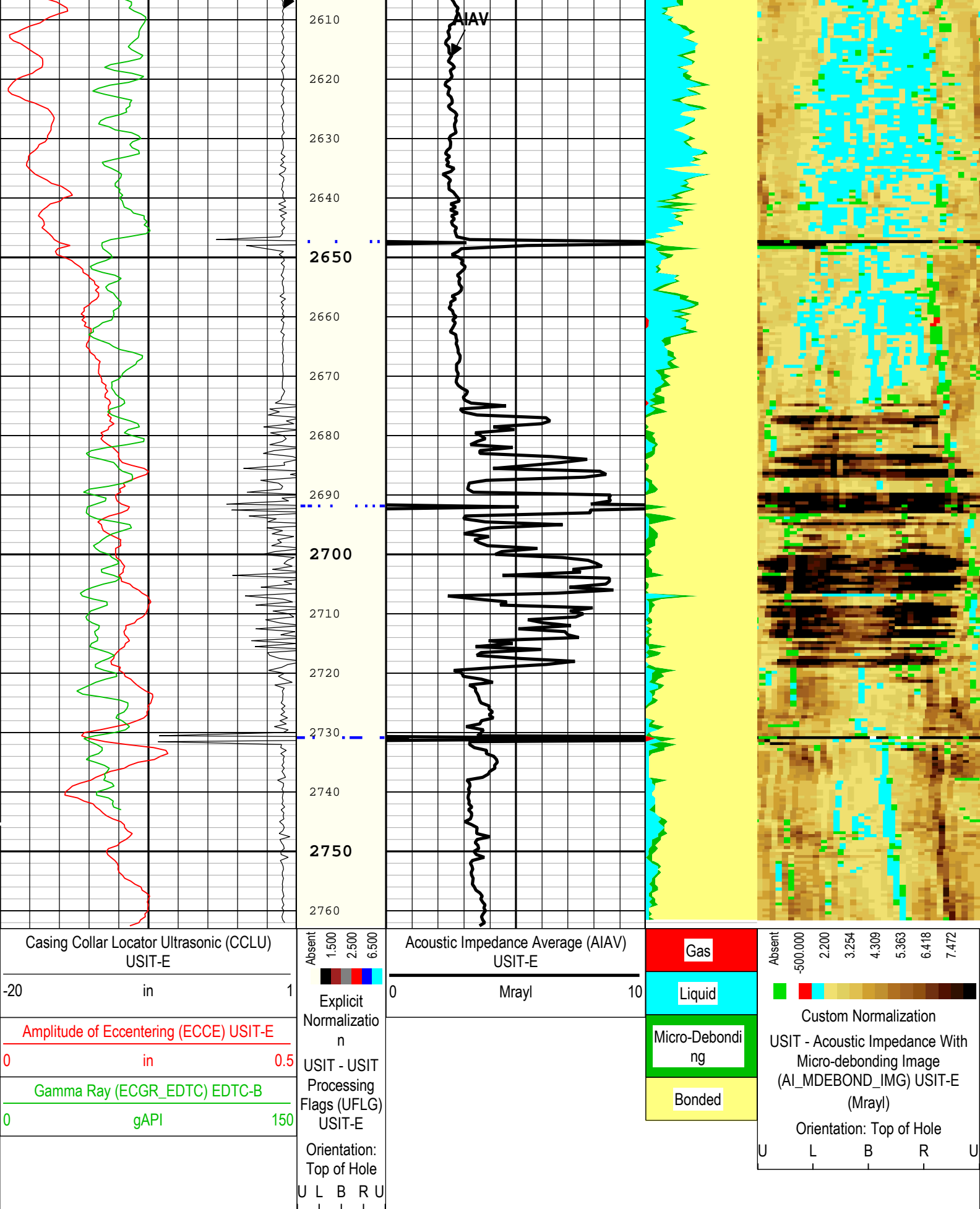
TIME\_1900 - Time Marked every 60.00 (s)











TIME\_1900 - Time Marked every 60.00 (s)

Description: Format: Log ( DJ Basin Ultrasonic Cement Summary Report ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth  
Creation Date: 27-Aug-2019 16:23:17

## Channel Processing Parameters

**1A: Parameters**

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	16996.4	ft
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
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ICE_PROCESS	ICE Processing	USIT-E	Yes	
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USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	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	13.5	1880.5	1955
BS	8.5	1955	2763

All depth are actual.

**Tool Control Parameters****1A: Parameters**

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
EMXV	EMEX Voltage	USIT-E	35	V
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	No	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in LF	
WINB	Window Begin Time	USIT-E	33.83	us
WINE	Window End Time	USIT-E	73.83	us

Company:	Noble Energy Inc	<b>Schlumberger</b>
Well:	SLW Ranch State BB07-678	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	

UltraSonic Summary Print

