

Company: Noble Energy Inc

Well: Kona A19-636

Field: Wattenberg

County: Weld Country: USA

UltraSonic Summary Print

County: Weld				
Field: Wattenberg				
Location: SWSW Sec. 21 T6N R64W				
Well: Kona A19-636				
Company: Noble Energy Inc				
Location:	SWSW Sec. 21 T6N R64W	Elev.: K.B. 4753.00 ft		
	1685' FSL 1195' FWL	G.L. 4723.00 ft		
	Lat: 40.46678, Long: -104.56083	D.F. 4753.00 ft		
	Permanent Datum:	Ground Level	Elev.:	4723.00 f
	Log Measured From:	Kelly Bushing	30.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing			
	API Serial No. 05-123-44577	Max.Hole Deviation 0 deg	Longitude: -104.56083 degrees	Latitude: 40.466780 degrees
Logging Date	01-Jul-2017			

Logging Date	01-Jul-2017		
Run Number	ONE		
Depth Driller	18395.00 ft		
Schlumberger Depth	18395.00 ft		
Bottom Log Interval	6250.00 ft		
Top Log Interval	60.00 ft		
Casing Fluid Type	Salt Brine		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	0.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	1940.00 ft		
To	18395.00 ft		
Casing/Tubing Size	5.5 in		
Weight	20 lbm/ft		
Grade	P110		
From	30.00 ft		
To	18380.10 ft		
Max Recorded Temperatures	240 degF		
Logger on Bottom	Time	10:40:00	
Unit Number	Location:		
Recorded By	Camila Lang		
Witnessed By	Bill Mansfield		

Disclaimer

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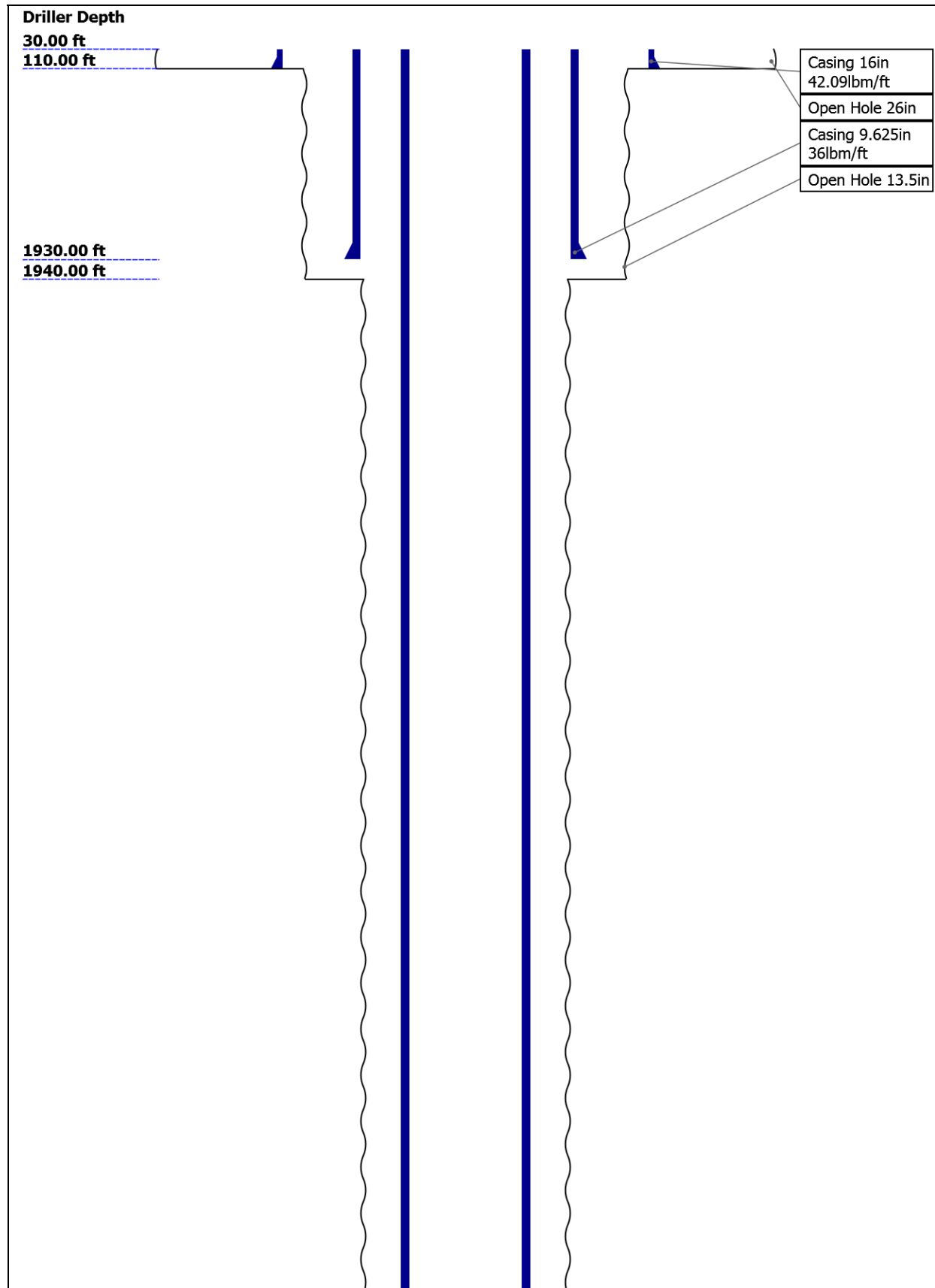
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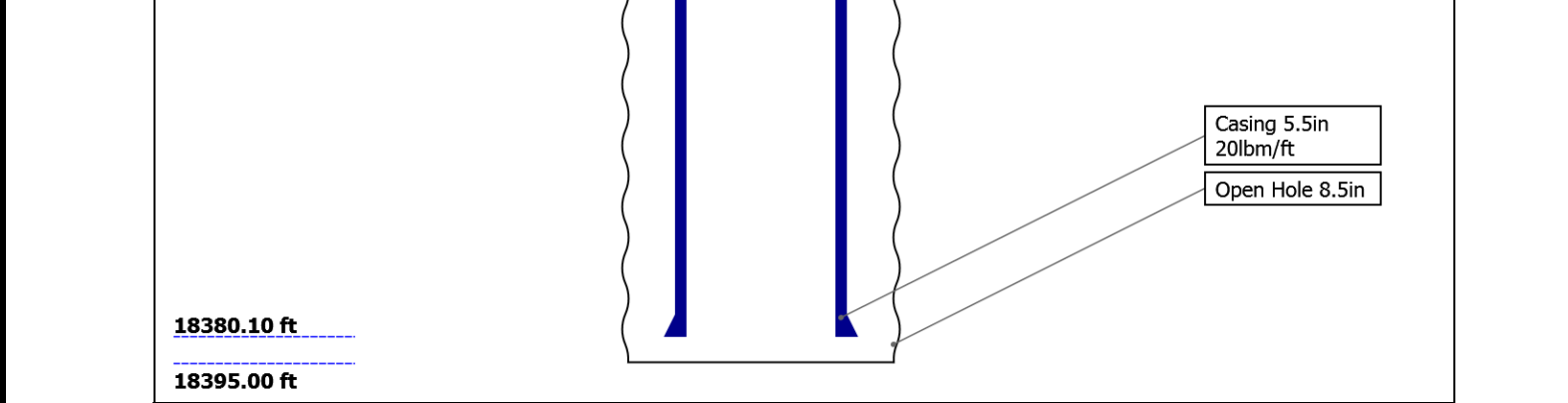
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Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26	13.5	8.5			
Top Driller (ft)	30	110	1940			
Top Logger (ft)	30	110	1940			
Bottom Driller (ft)	110	1940	18395			
Bottom Logger (ft)	110	1940	18395			
Casing						
Size (in)	16	9.625	5.5			
Weight (lbm/ft)	42.09	36	20			
Inner Diameter (in)	15.511	8.921	4.778			
Grade	N/A	N/A	P110			
Top Driller (ft)	30	30	30			
Top Logger (ft)	30	30	30			
Bottom Driller (ft)	110	1930	18380.1			
Bottom Logger (ft)	110	1930	18380.1			

Operational Run Summary

Parameter (unit)	ONE					
Date Log Started	01-Jul-2017					
Time Log Started	09:24:10					
Date Log Finished	01-Jul-2017					
Time Log Finished	13:35:53					
Top Log Interval (ft)	60.00					
Bottom Log Interval (ft)	6250.00					
Total Depth (ft)	18395.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.500					
Logging Unit Number	9115					
Logging Unit Location	Fort Morgan					
Recorded By	Camila Lang					

Witnessed By	Bill Mansfield					
Service Order Number	DS0R-00016					

Borehole Fluids

Parameter(unit)	ONE					
Fluid Type	Water					
Fluid Name	Salt Brine					
Max Recorded Temperatures (degF)	240					
Source of Sample	Active Tank					
Salinity (ppm)	0					
Density (lbm/gal)	8.4					
Funnel Viscosity (s)	26					
Fluid Loss (cm3)						
PH						
Date/Time Circulation Stopped	NaN					
Date Logger on Bottom	01-Jul-2017					
Time Logger on Bottom	10:40:00					
Source RMF						
RMC	Pressed					
RM @ Meas Temp (ohm.m@degF)	0.2 @ 68					
RMF @ Meas Temp (ohm.m@degF)	0.15 @ 68					
RMC @ Meas Temp (ohm.m@degF)						
RM @ BHT (ohm.m@degF)	0.06 @ 240					
RMF @ BHT (ohm.m@degF)	0.05 @ 240					
RMC @ BHT (ohm.m@degF)	NaN @ 240					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks	
Equip name	Length	MP name	Offset	This is the first log in the well.	
LEH-QT	34.88			Toolstring run as per toolsketch.	
DTC-H	31.97			Main pass recorded at 2500 psi. Repeat pass recorded at 0 psi.	
ECH-KC				Lead/Tail Cement 13.2#, Spacer 11.5#	
DTC-H				Bottom Hole Temperature- 240 degF.	
				Pass logged at 3600 ft/hr.	
HGNS-H:4	28.97	CTEM	31.07		
HGNH		HV	0.00		
NPV-N		TelStatu	28.97		
NSR-F:506		s			
8		ToolSta	28.97		
HMCA-H		tus			
HACCZ-H:		temper	28.94		
5736		ature			
HGNS-H:4		GR	28.23		
779					
		CNL Por	21.89		
		osity			
		HGNS	19.56		
		HMCA	19.56		
		Acceler	0.00		
		ometer			
AH-184[19.56				
2]					

AH-184[17.56
1]

USIT-E:93 15.56
0

ECH-MFA:
1924
USAC-A:9
30
USIS-A:18
26
USSC-B
USRS-A
USI-SENS
OR



USI Sen 0.37
TOOL_ZERO
Head Fe
nsion
Lengths are in ft
Maximum Outer Diameter = 4.700 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

ONE

Depth Measuring Device

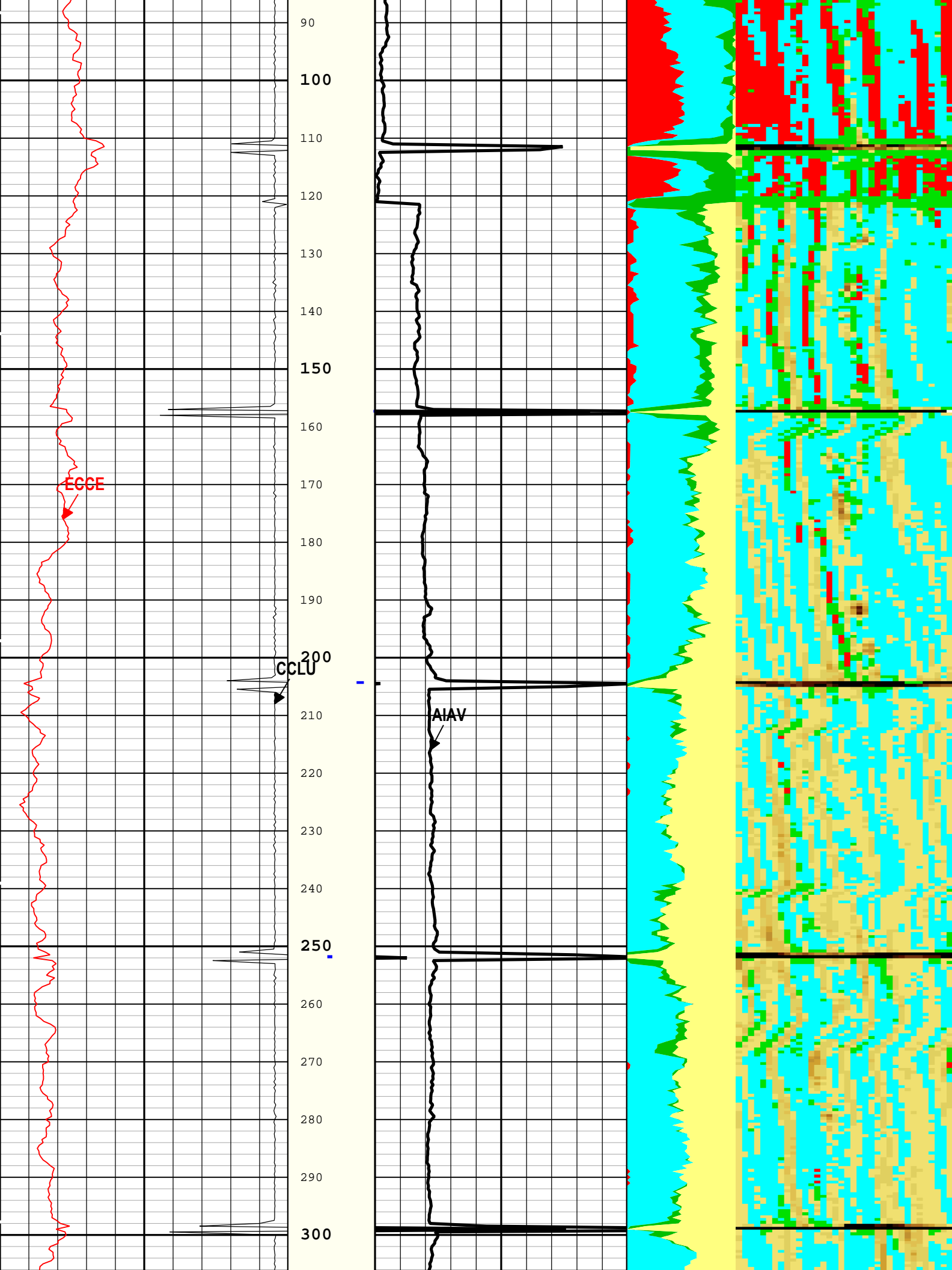
Type	IDW-B
Serial Number	1976
Calibration Date	26-Jan-2017
Calibrator Serial Number	16
Calibration Cable Type	7-46AXS
Wheel Correction 1	-1
Wheel Correction 2	0

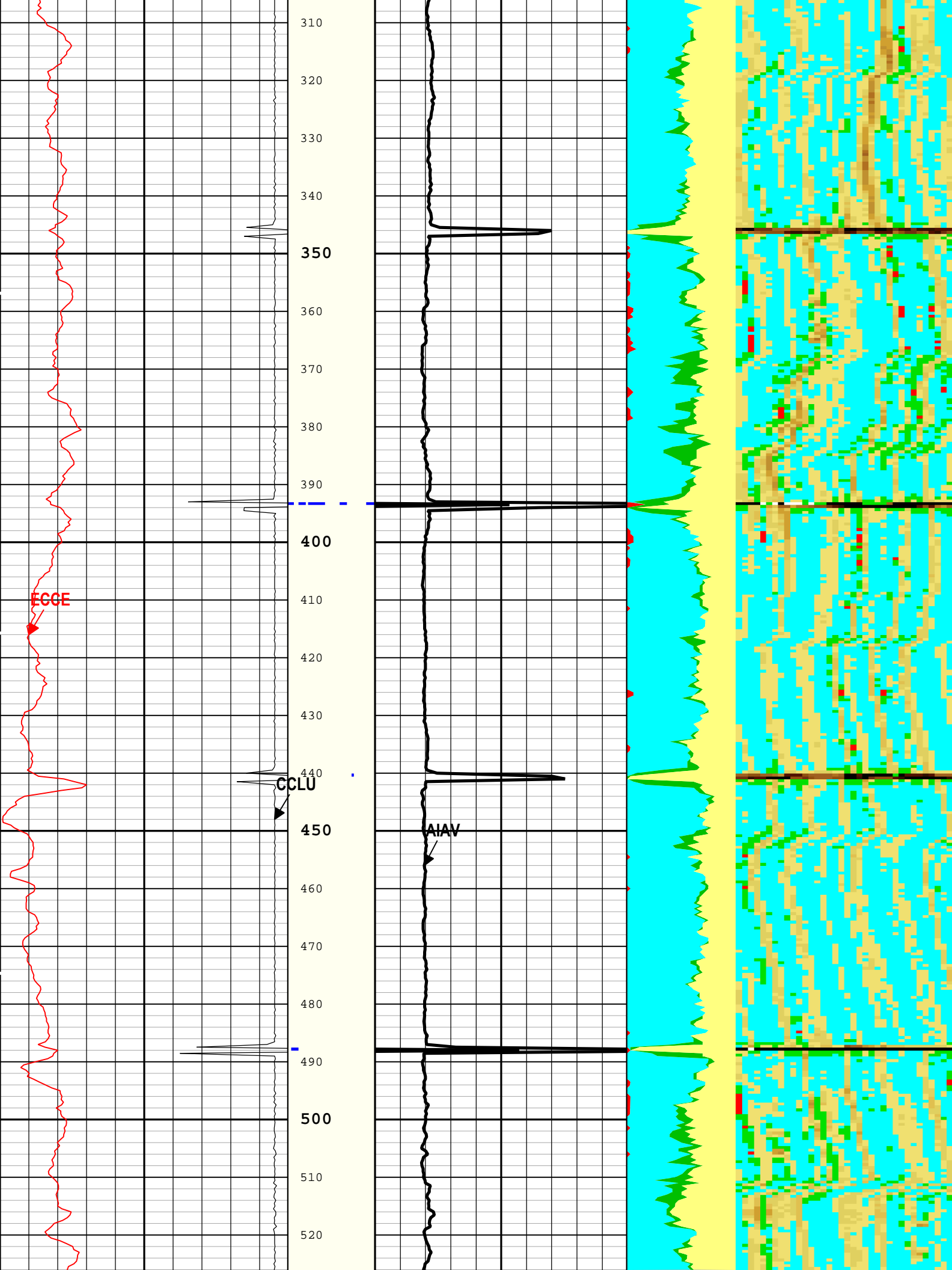
Tension Device

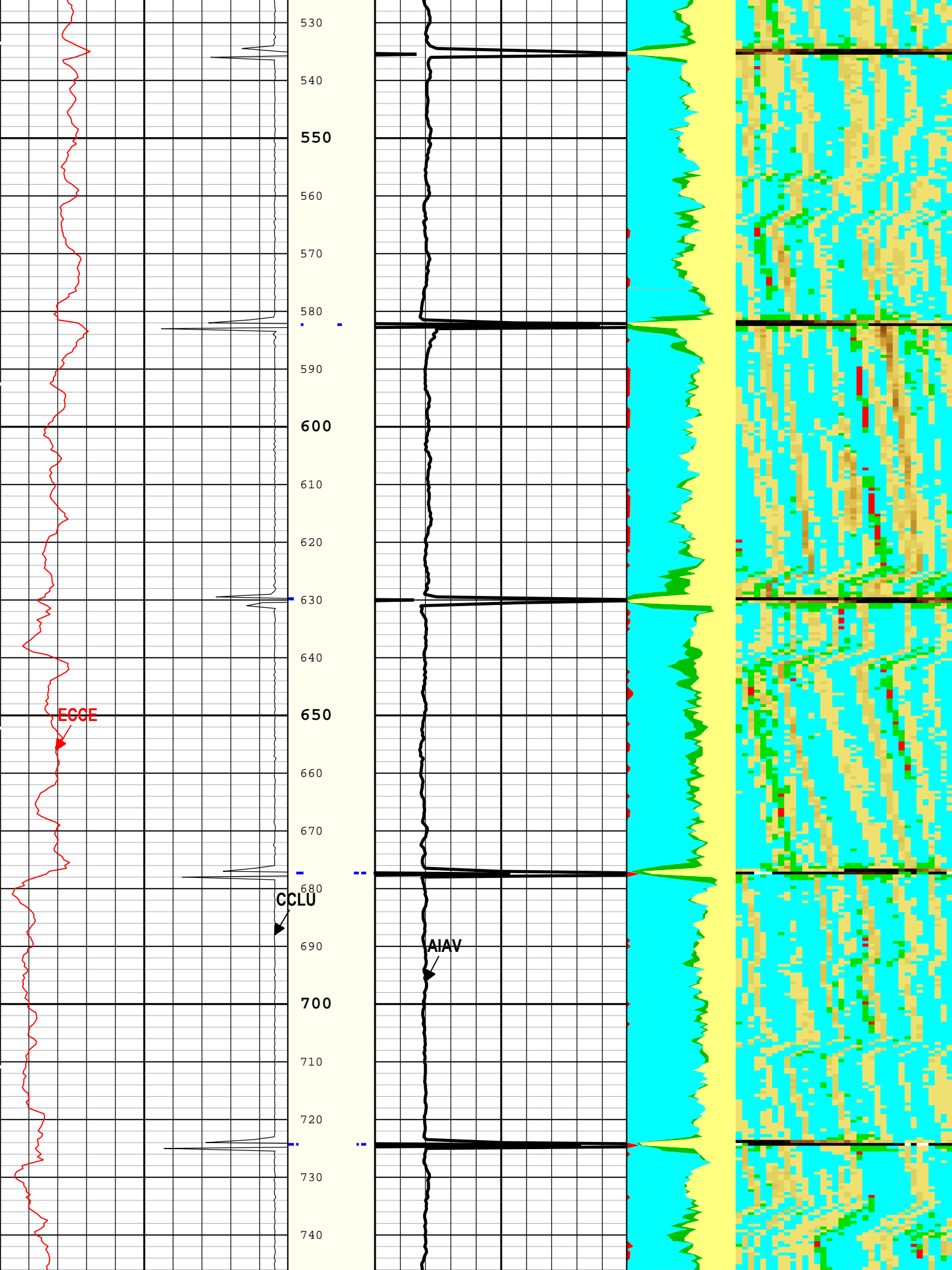
Type	CMTD-B/A
Serial Number	147
Calibration Date	04-Jun-2017
Calibrator Serial Number	441345a
Number of Calibration Points	10
Calibration Root Mean Square Error	19
Calibration Peak Error	36

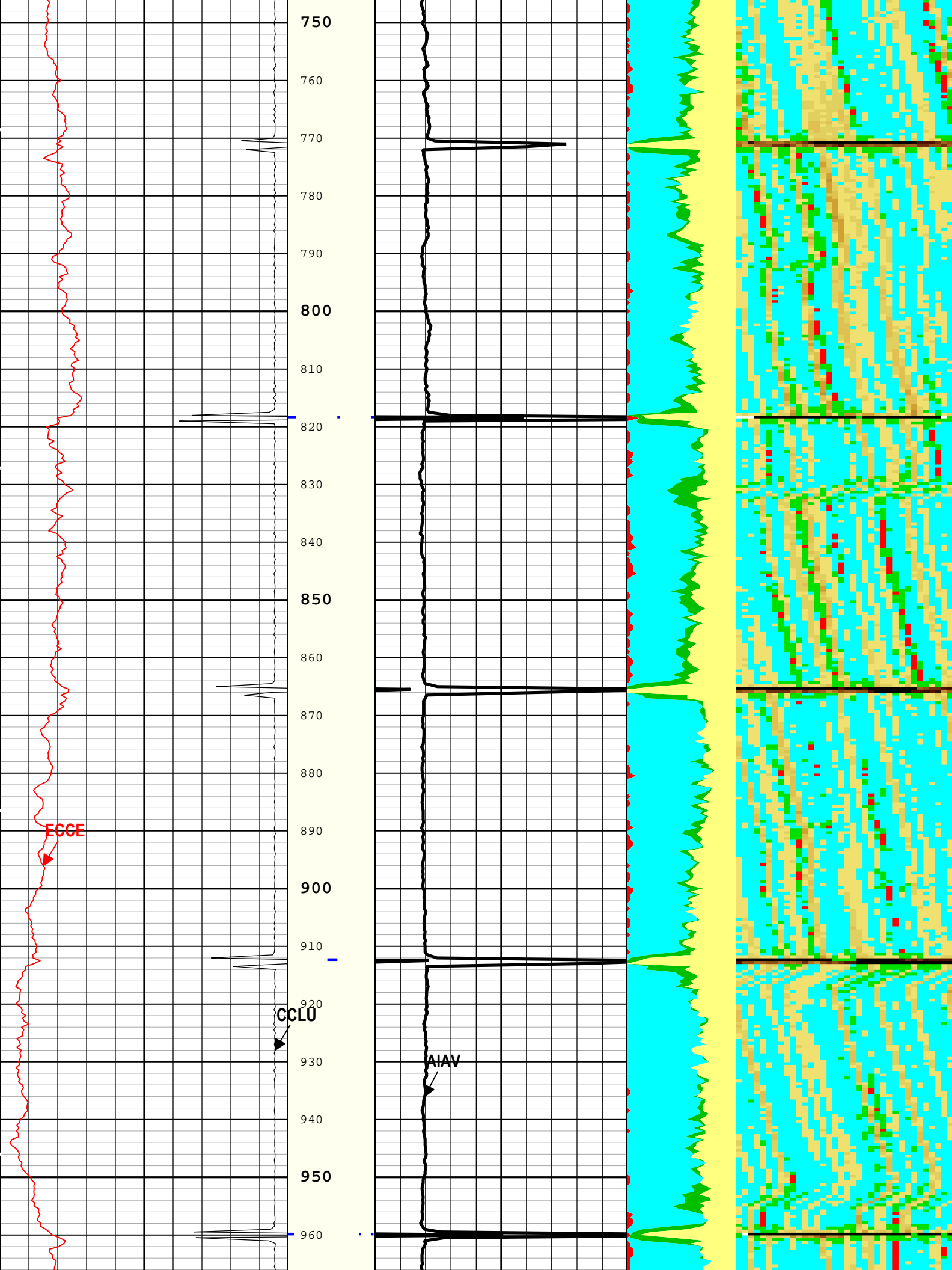
Logging Cable

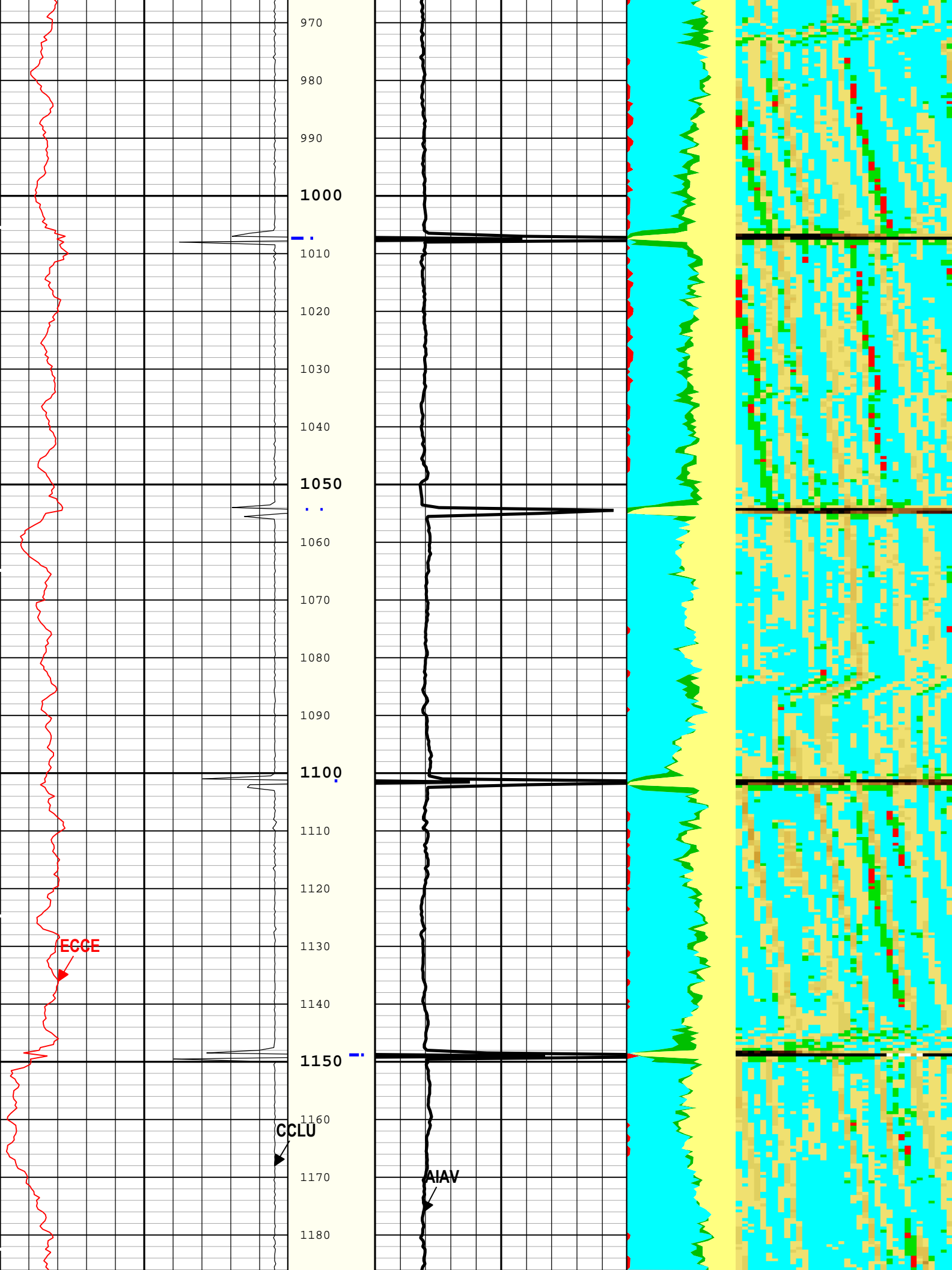
Type	7-46NT-XS
Serial Number	
Length	24000.00 ft
Conveyance Type	Wireline
Rig Type	Crane USA

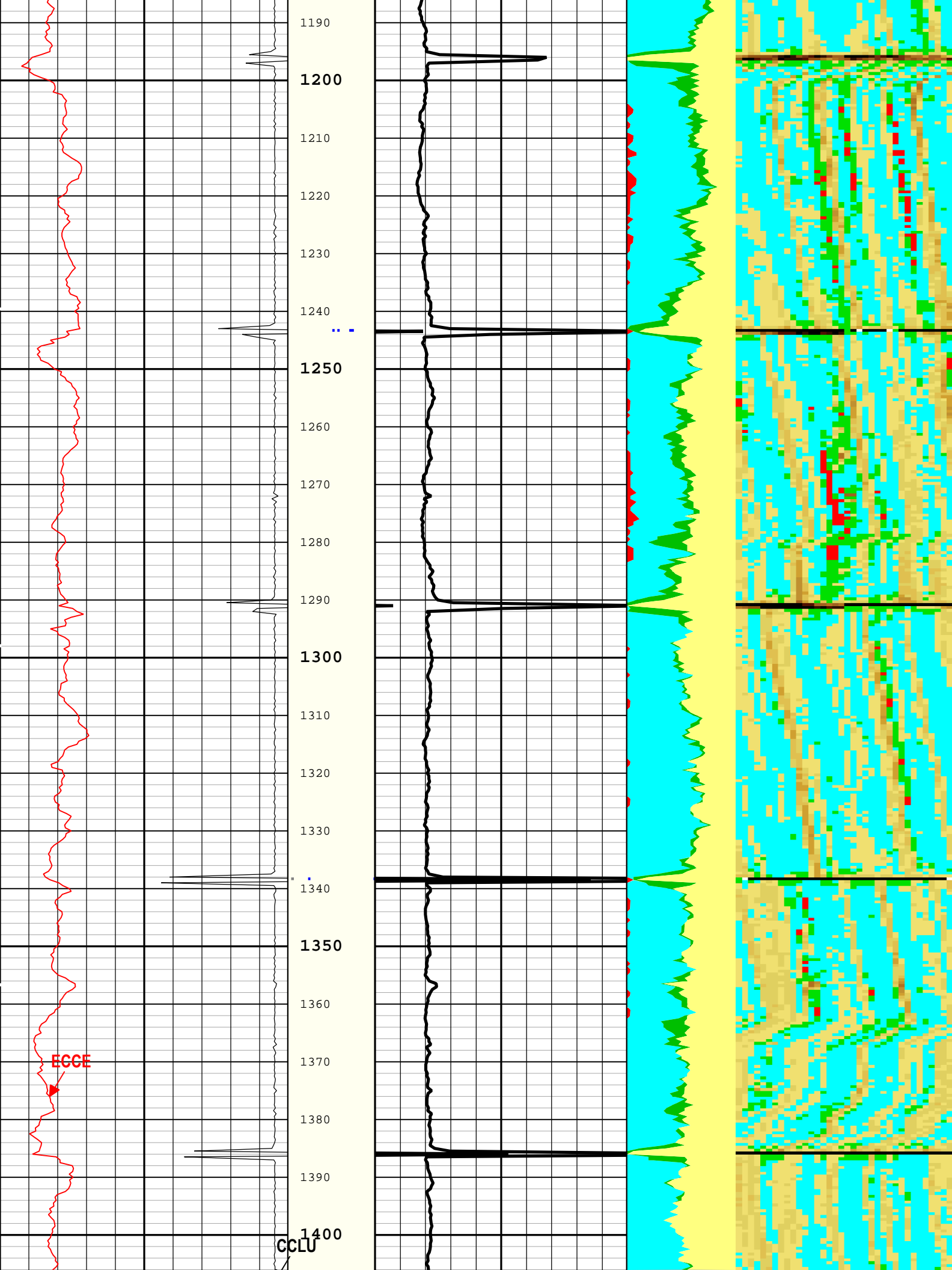


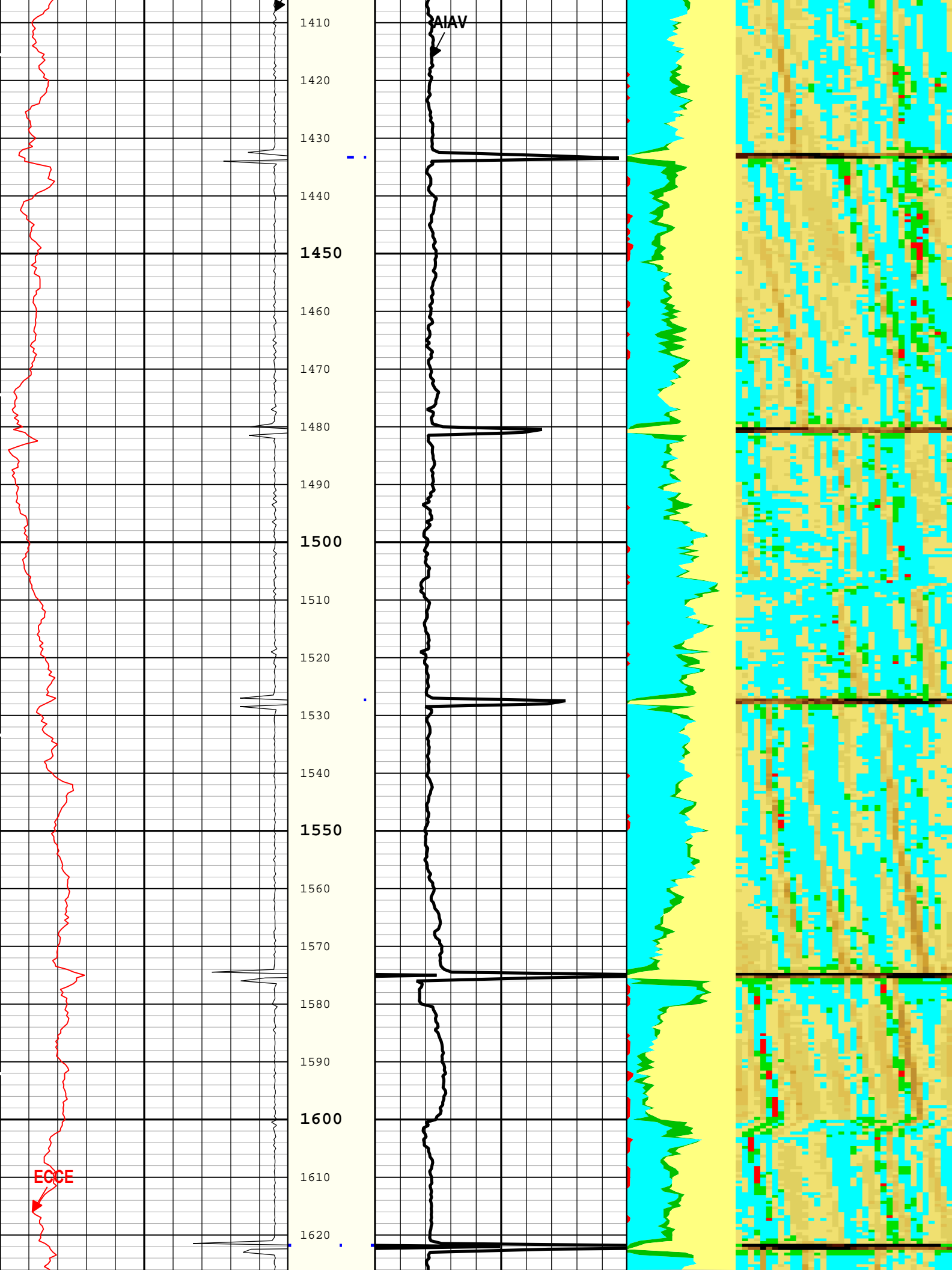


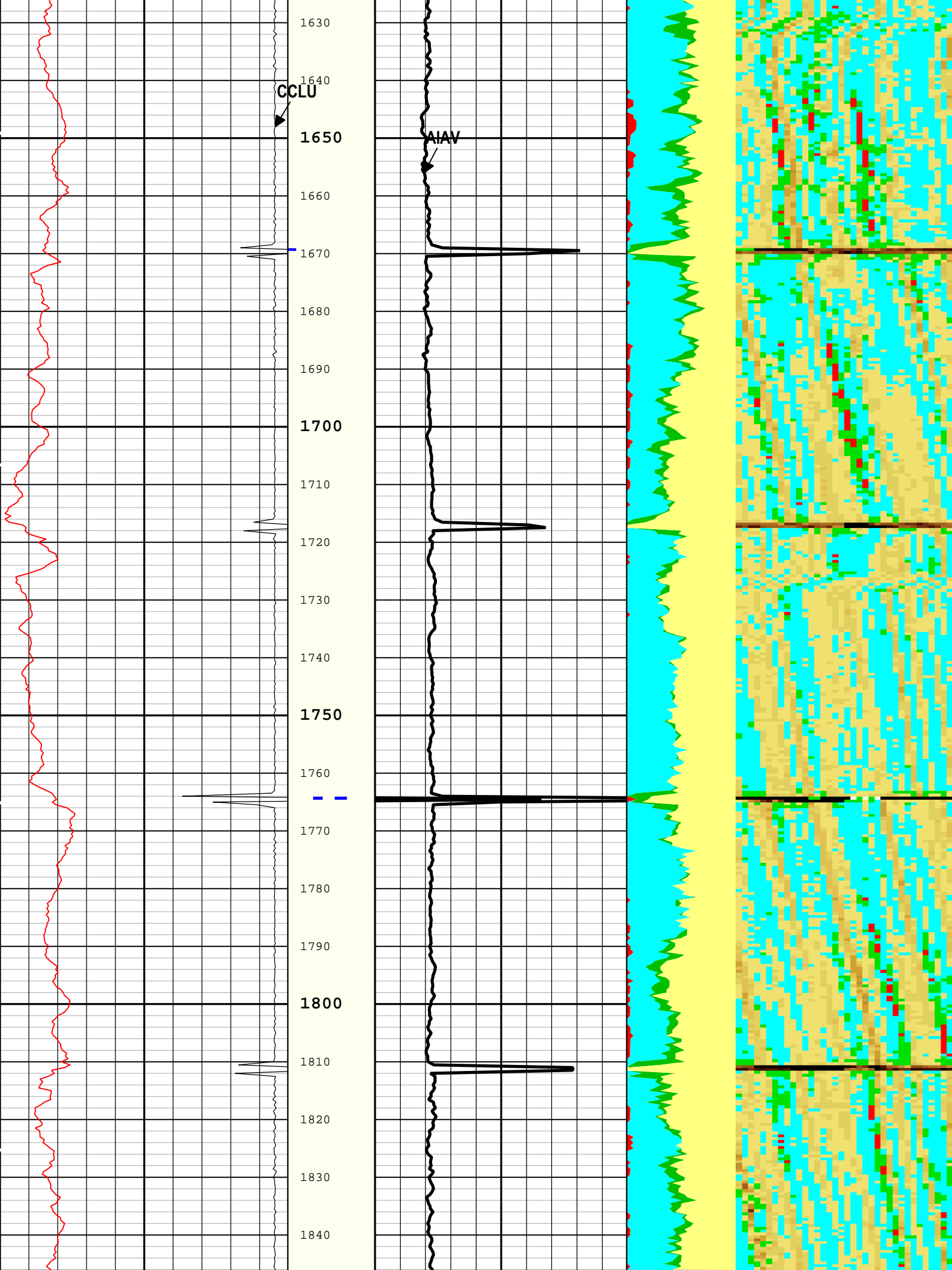


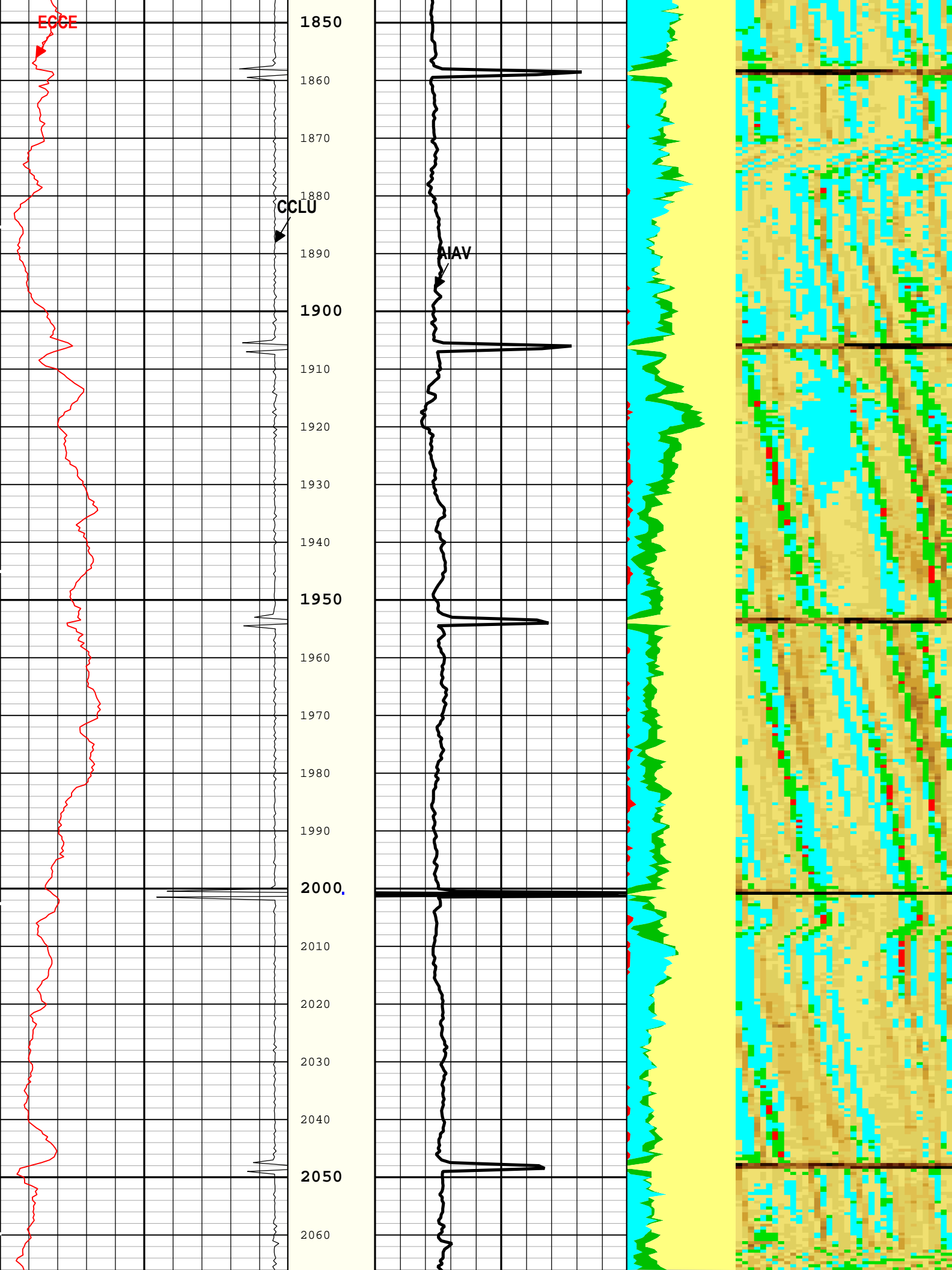


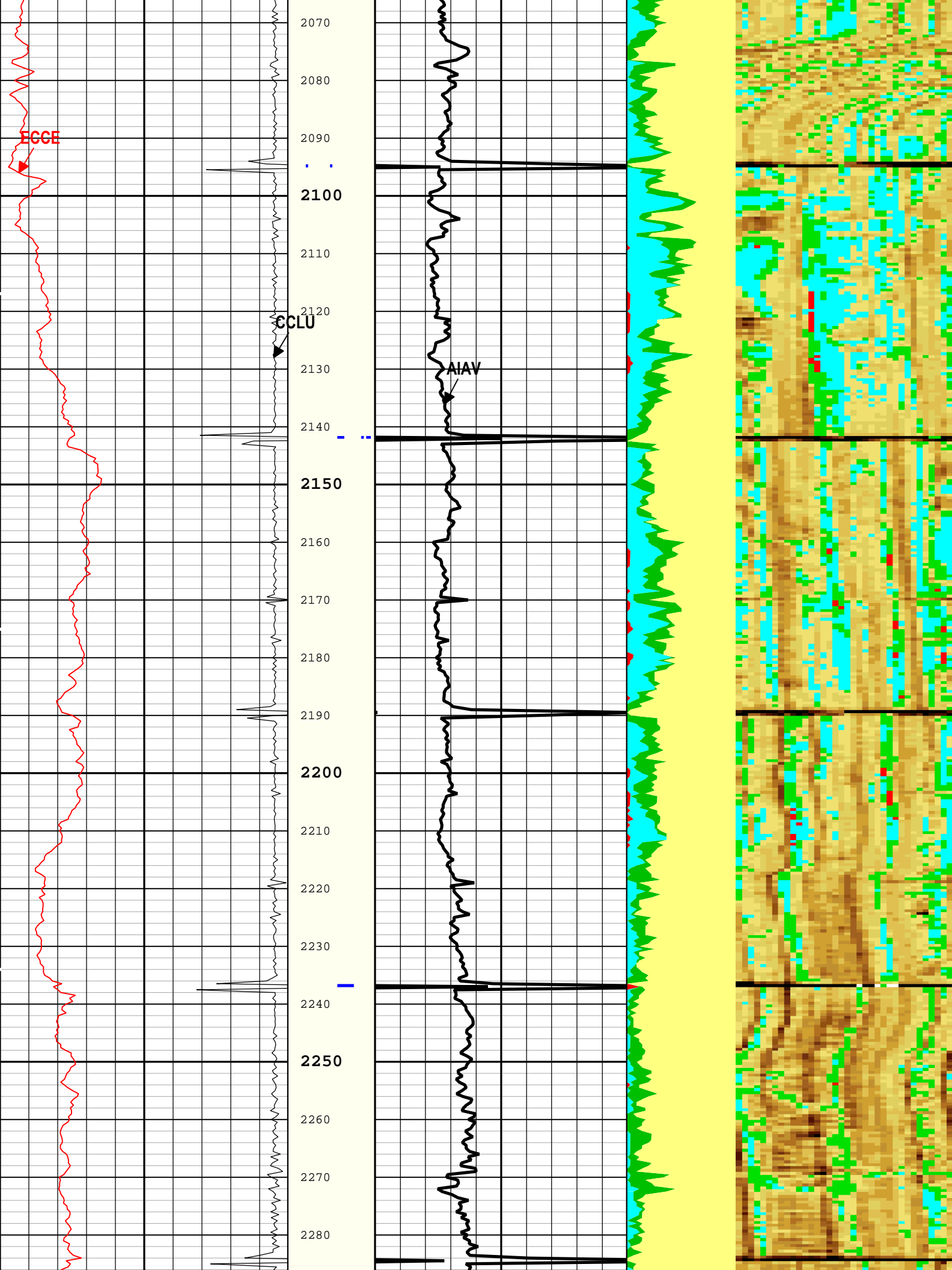


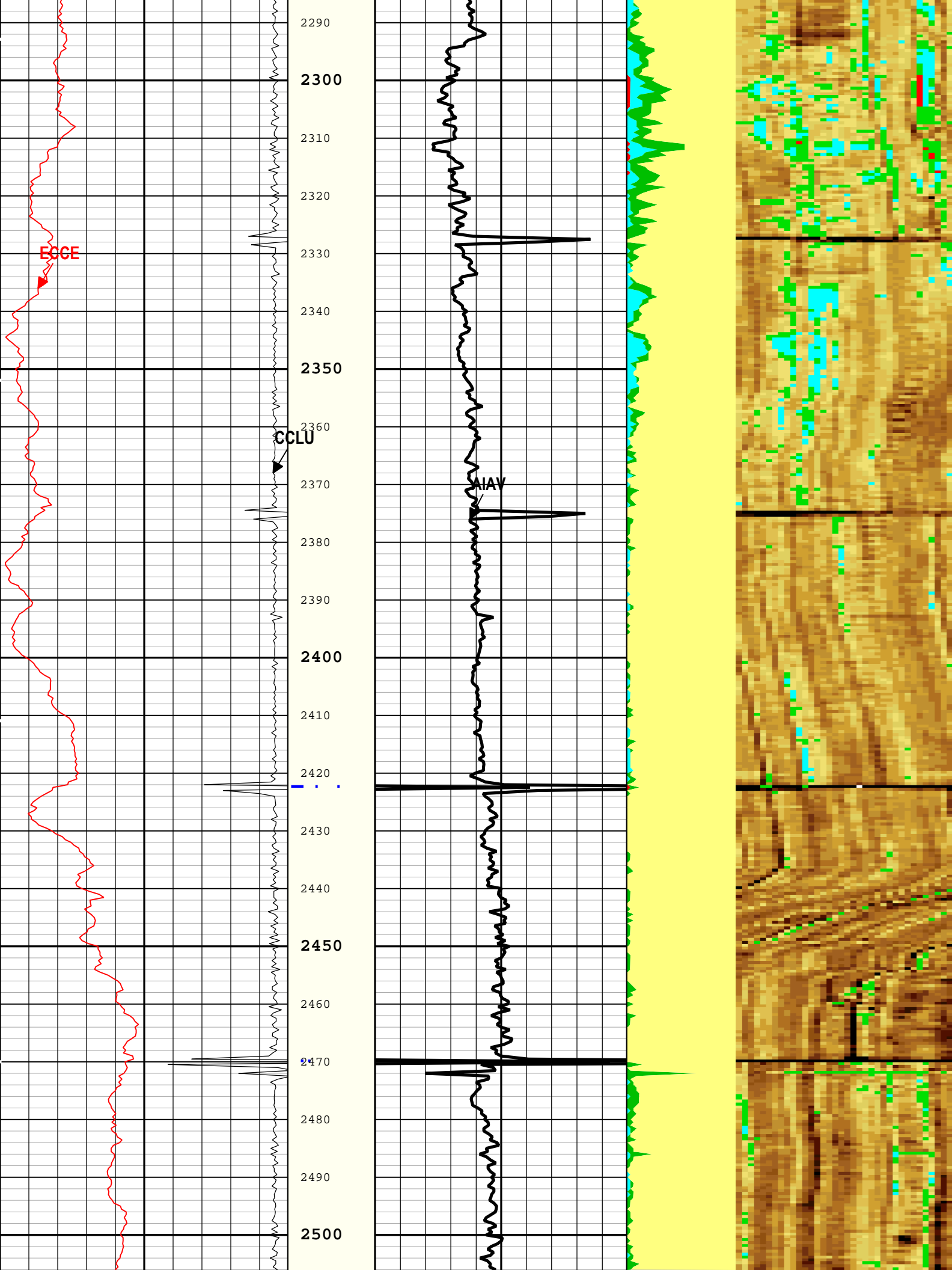


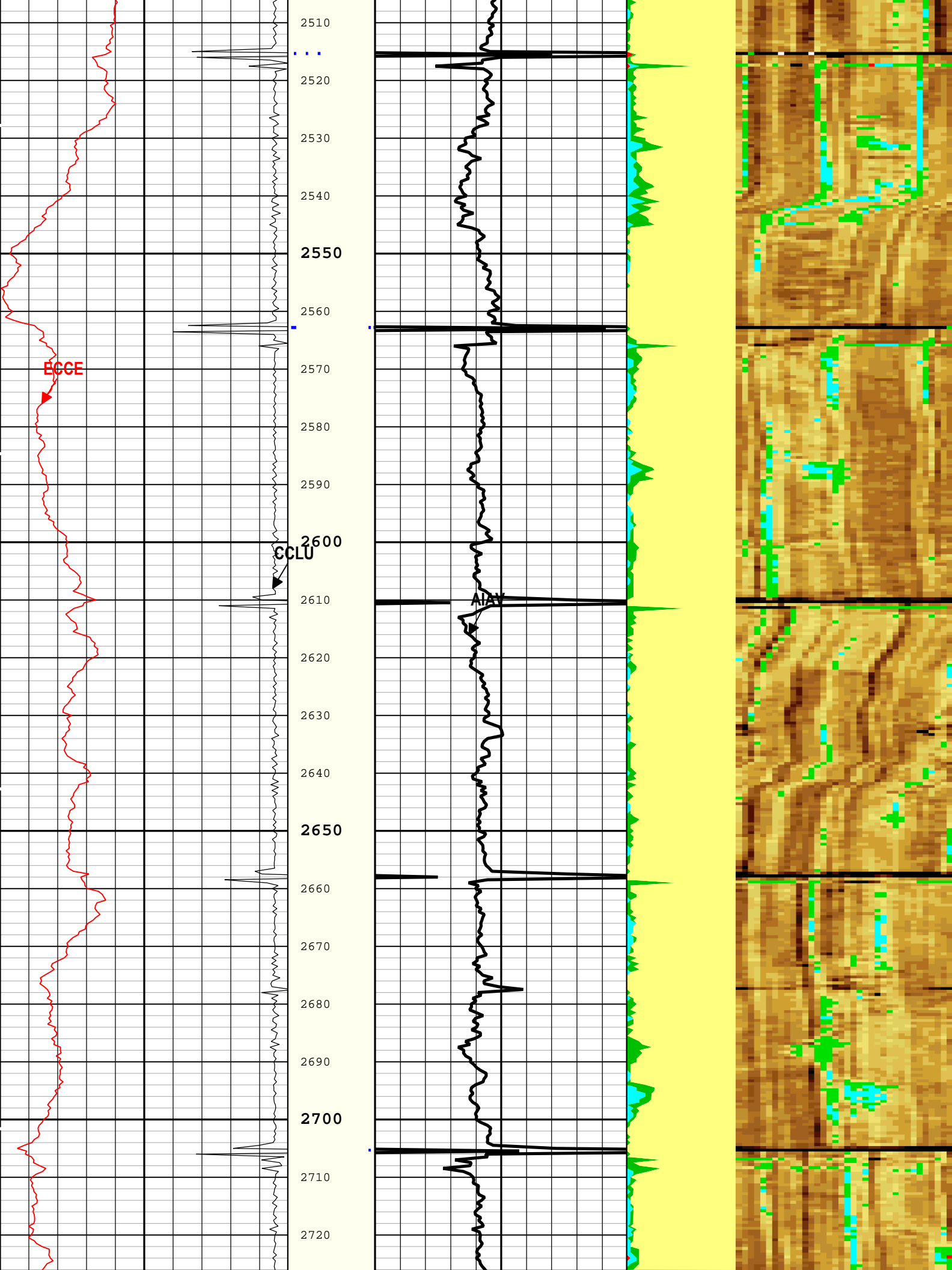


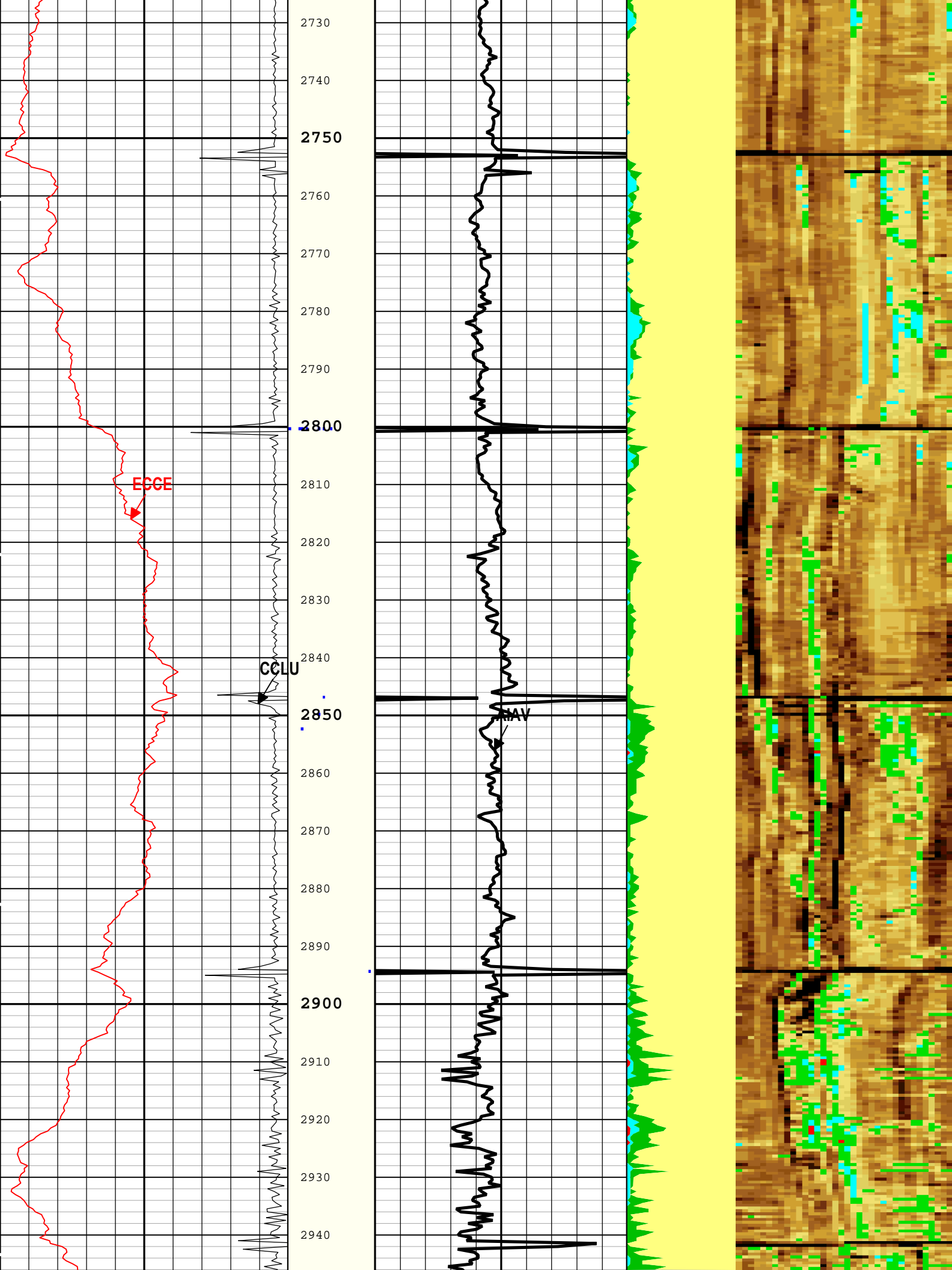


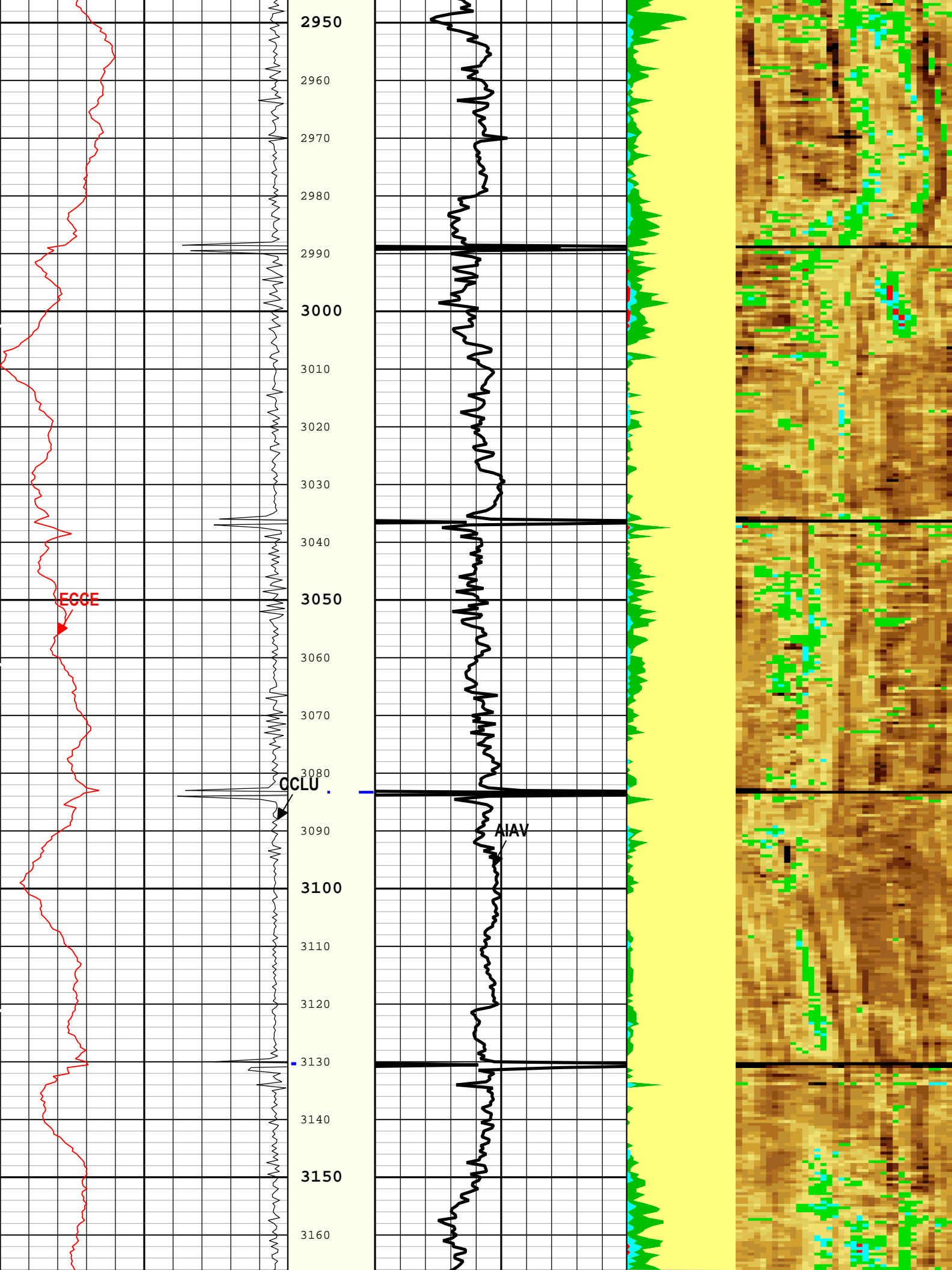


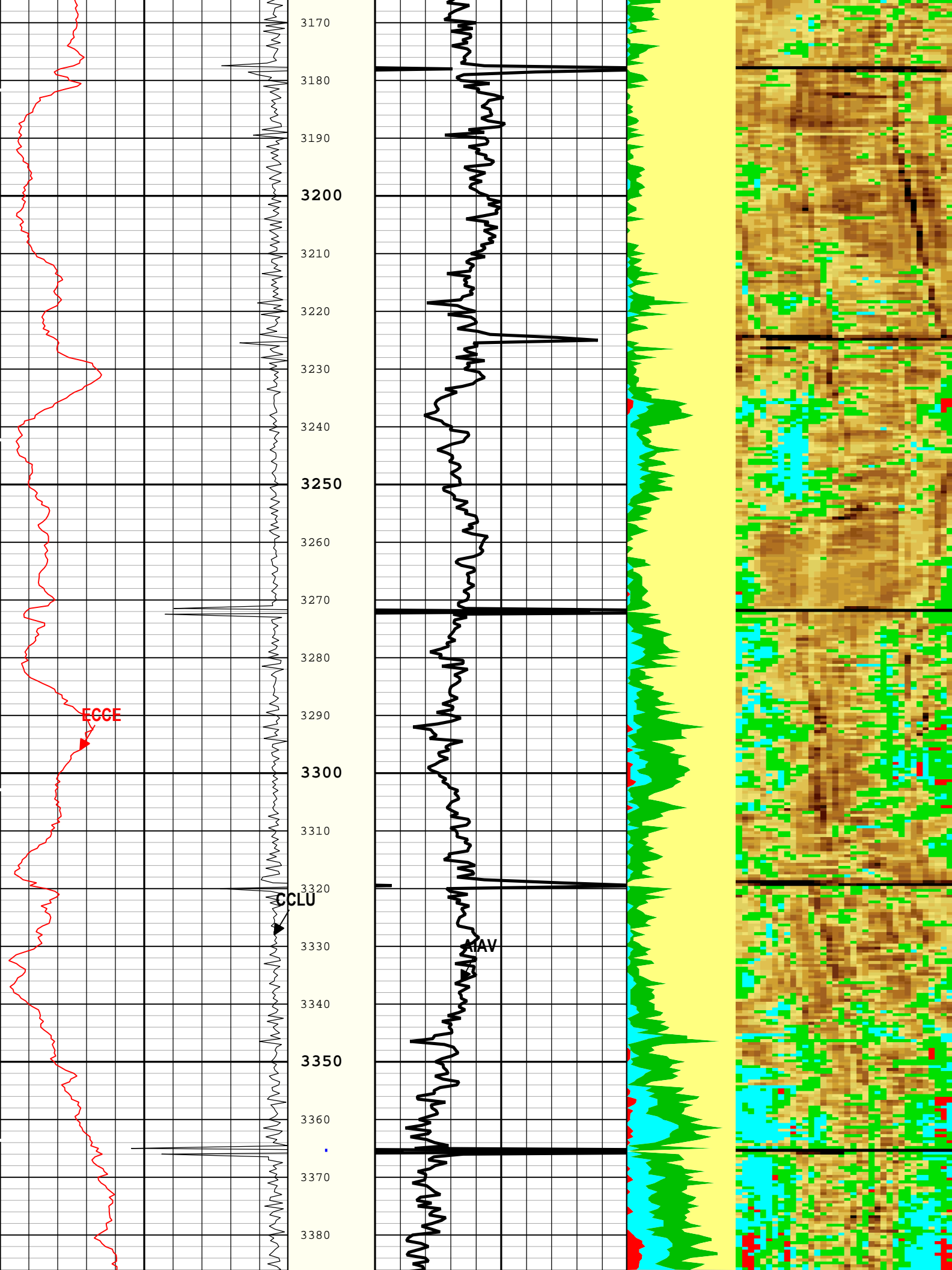


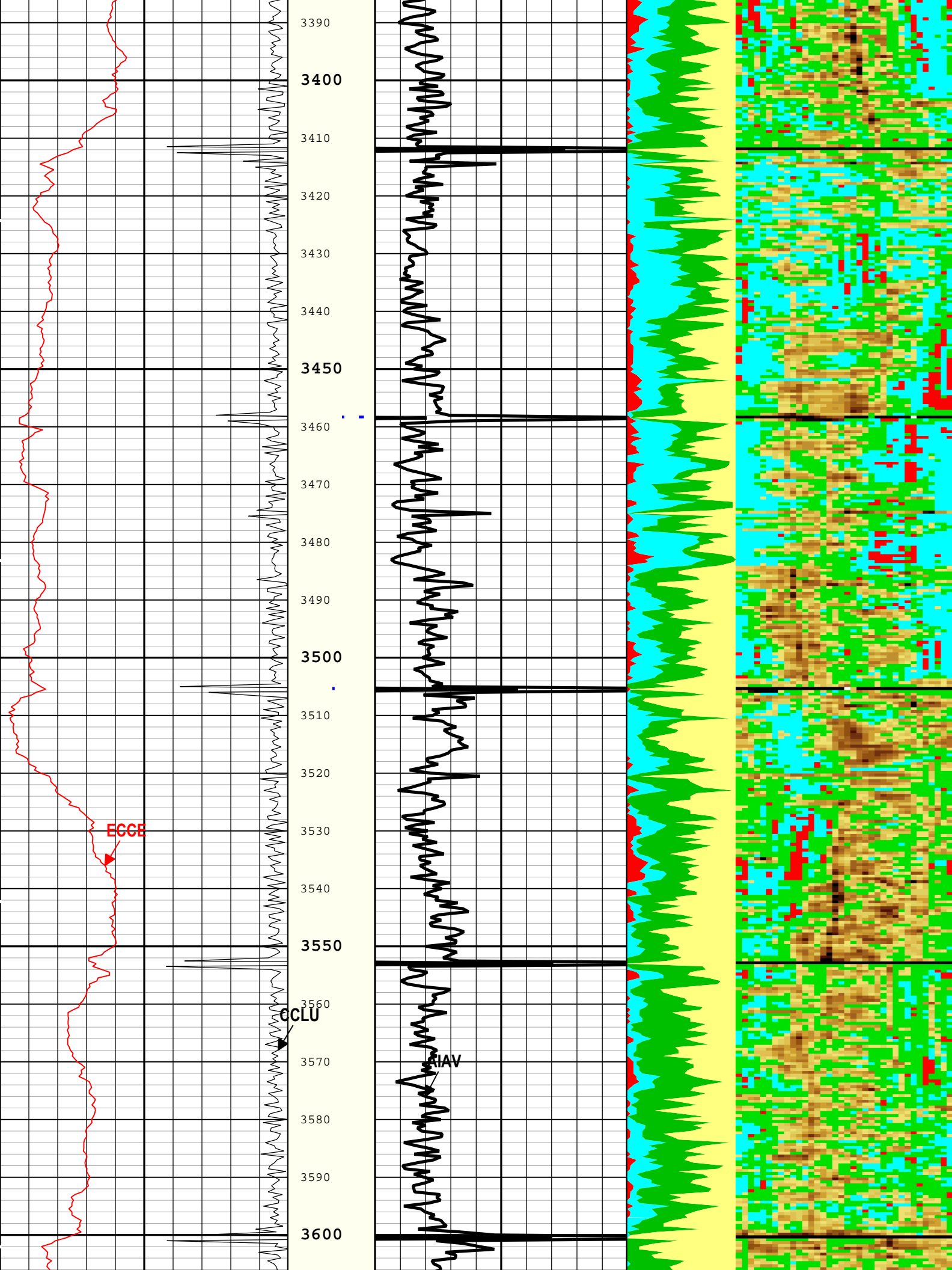


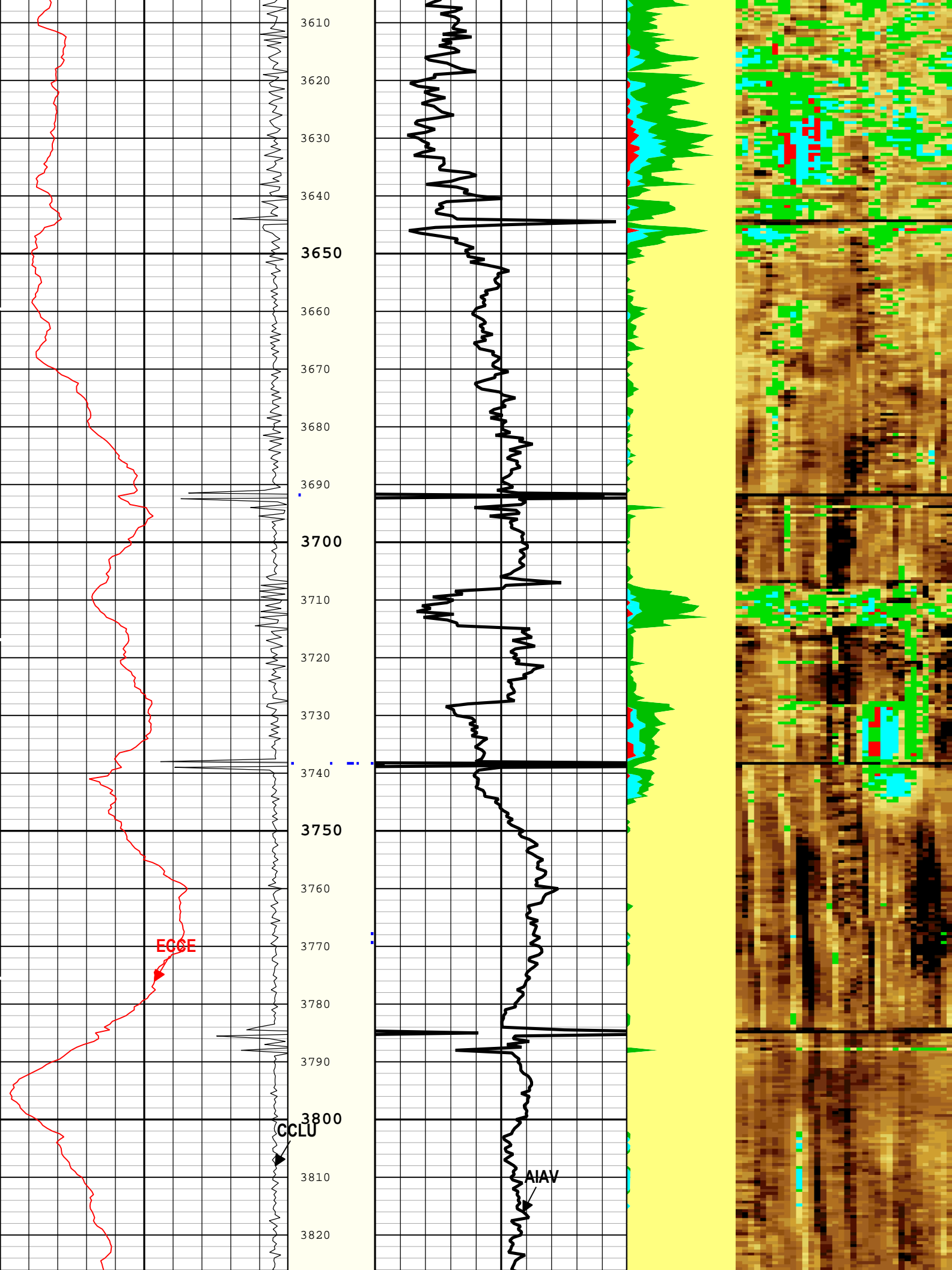


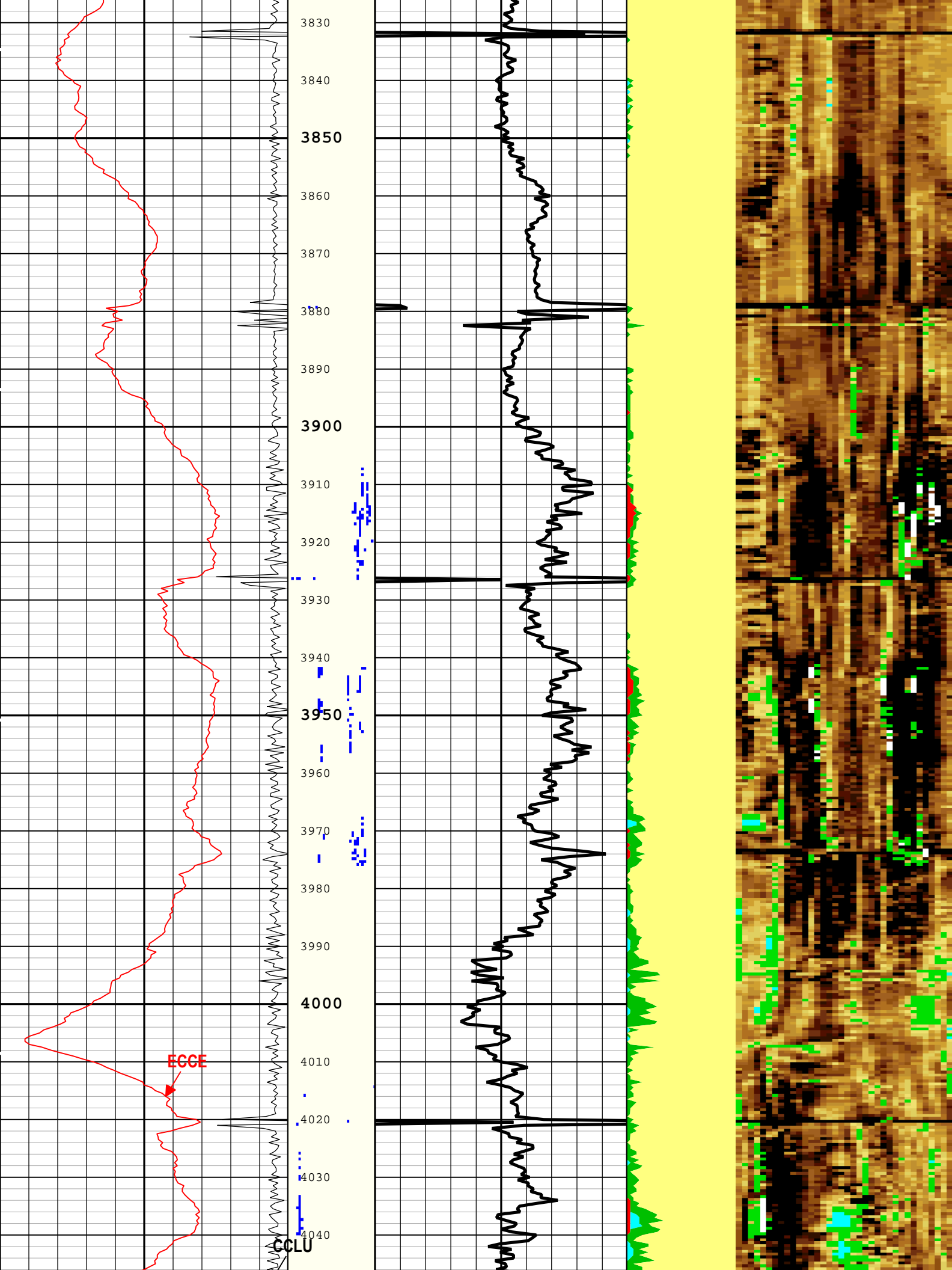


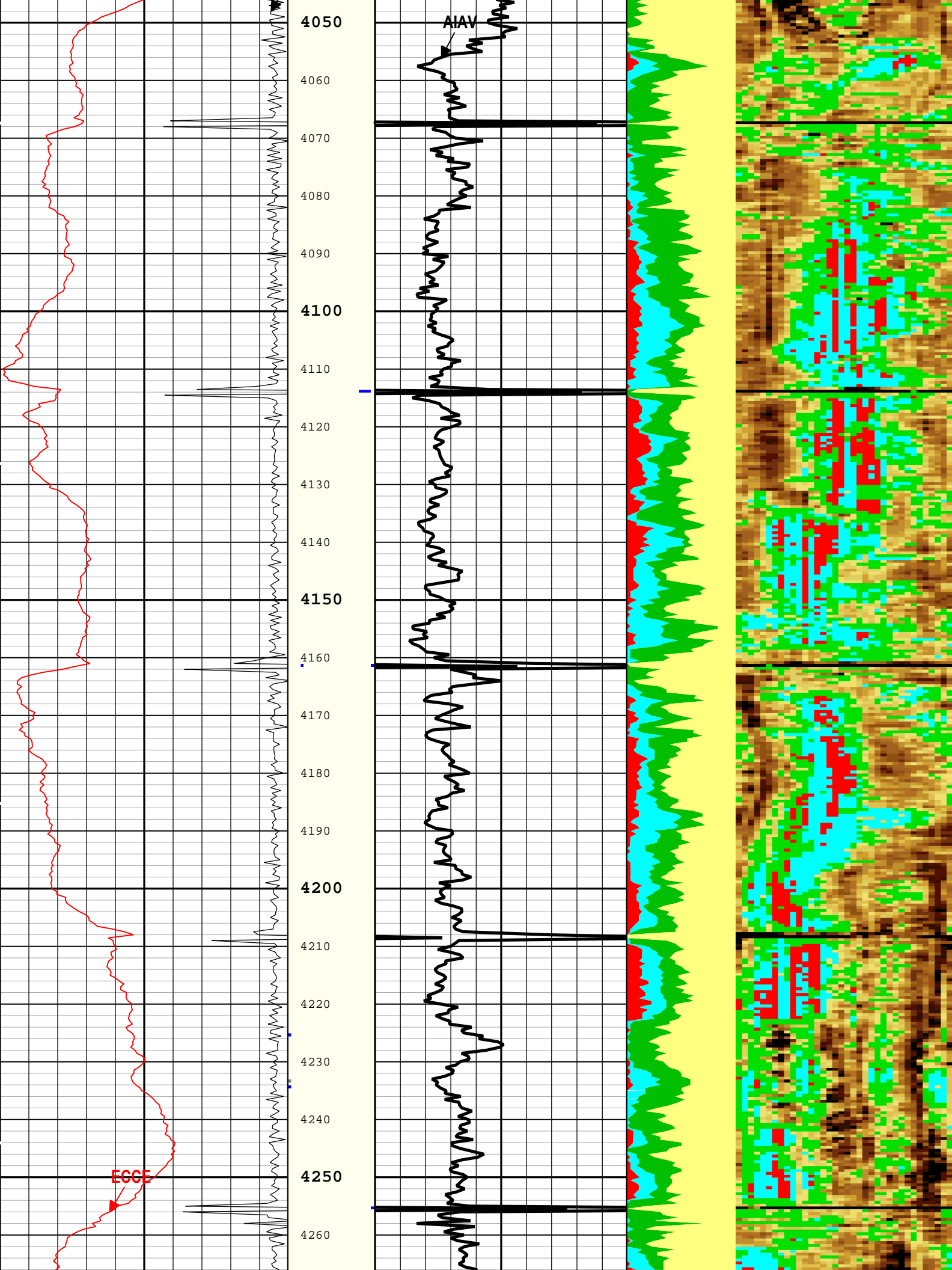


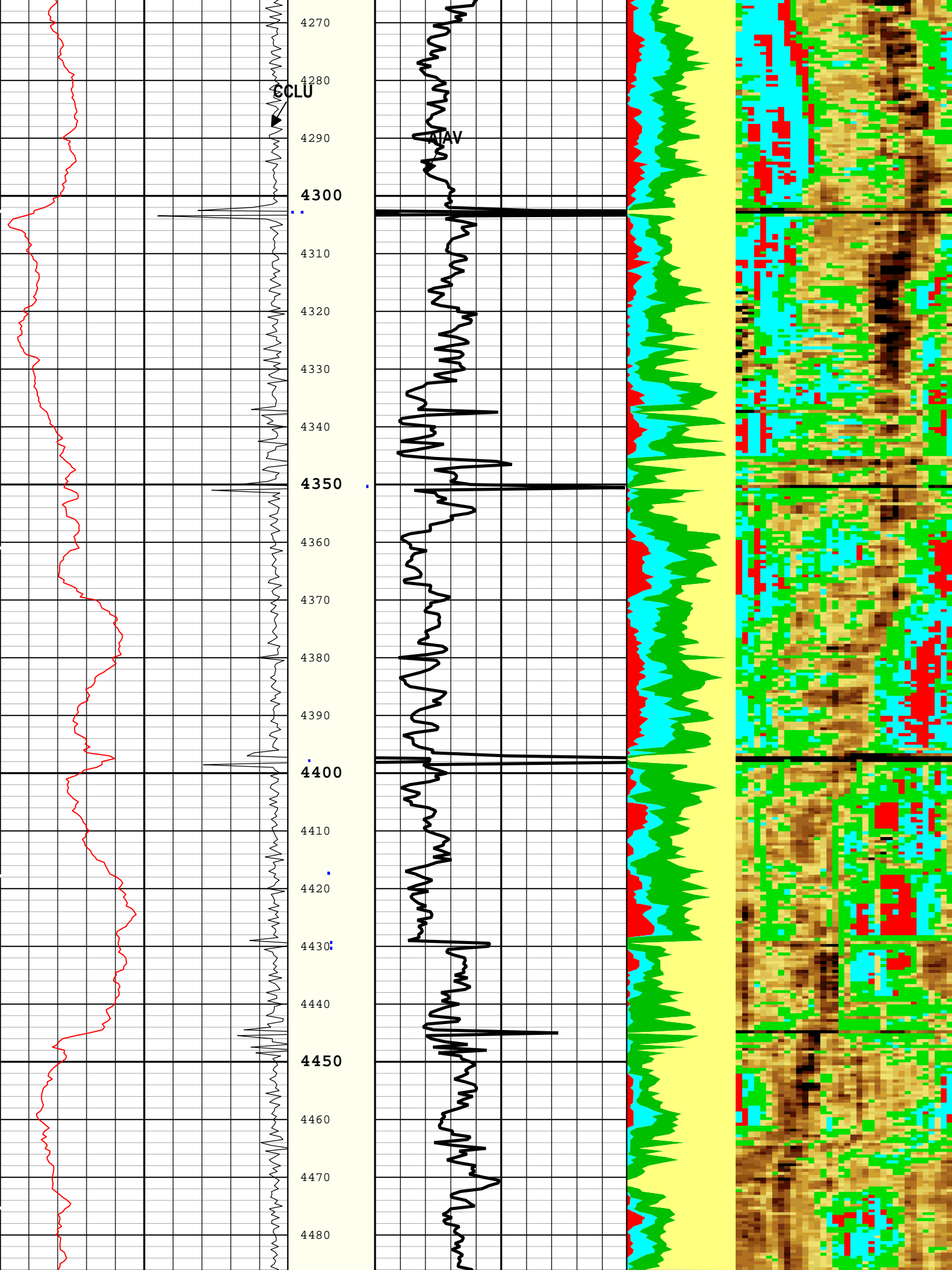


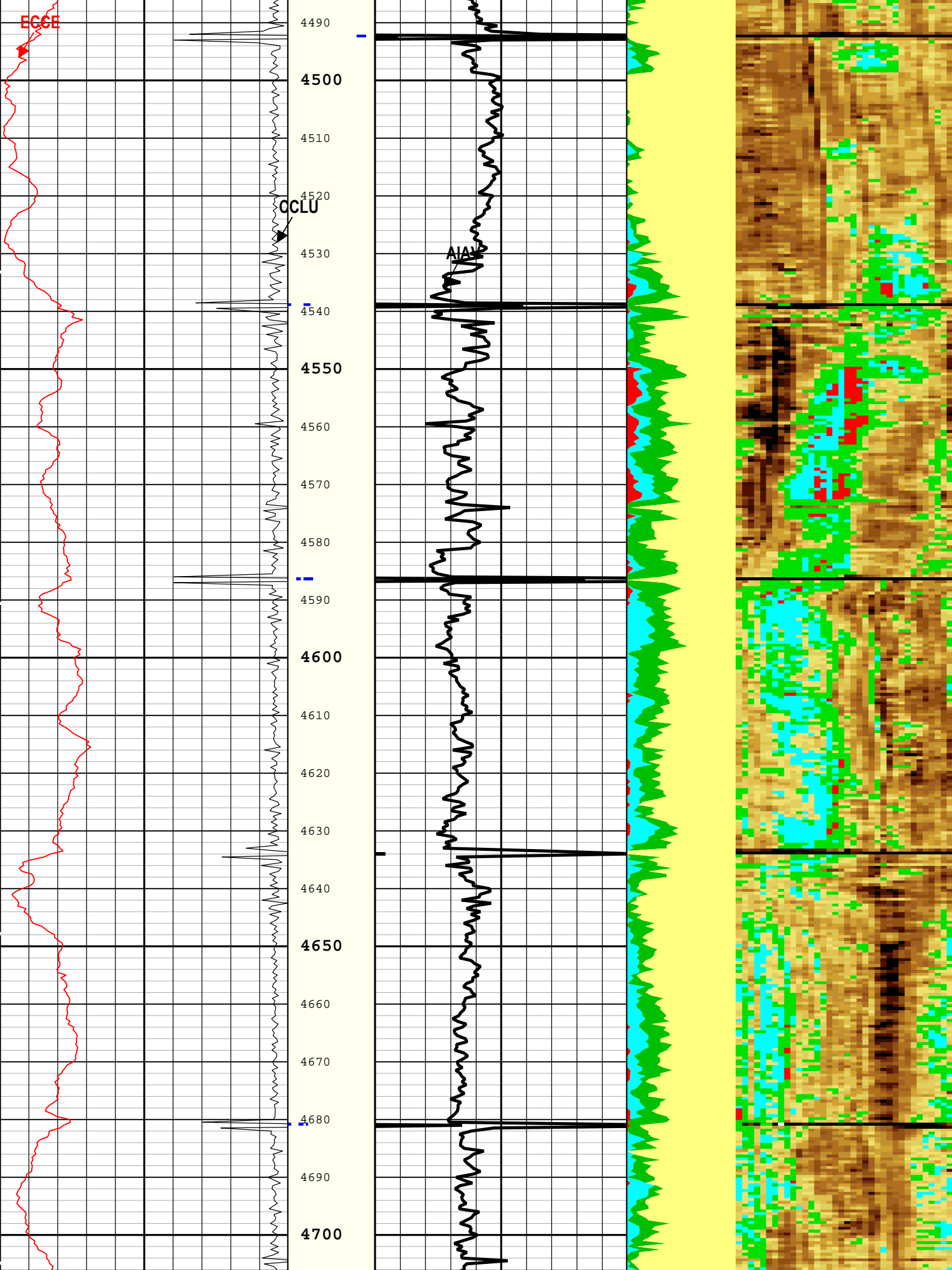


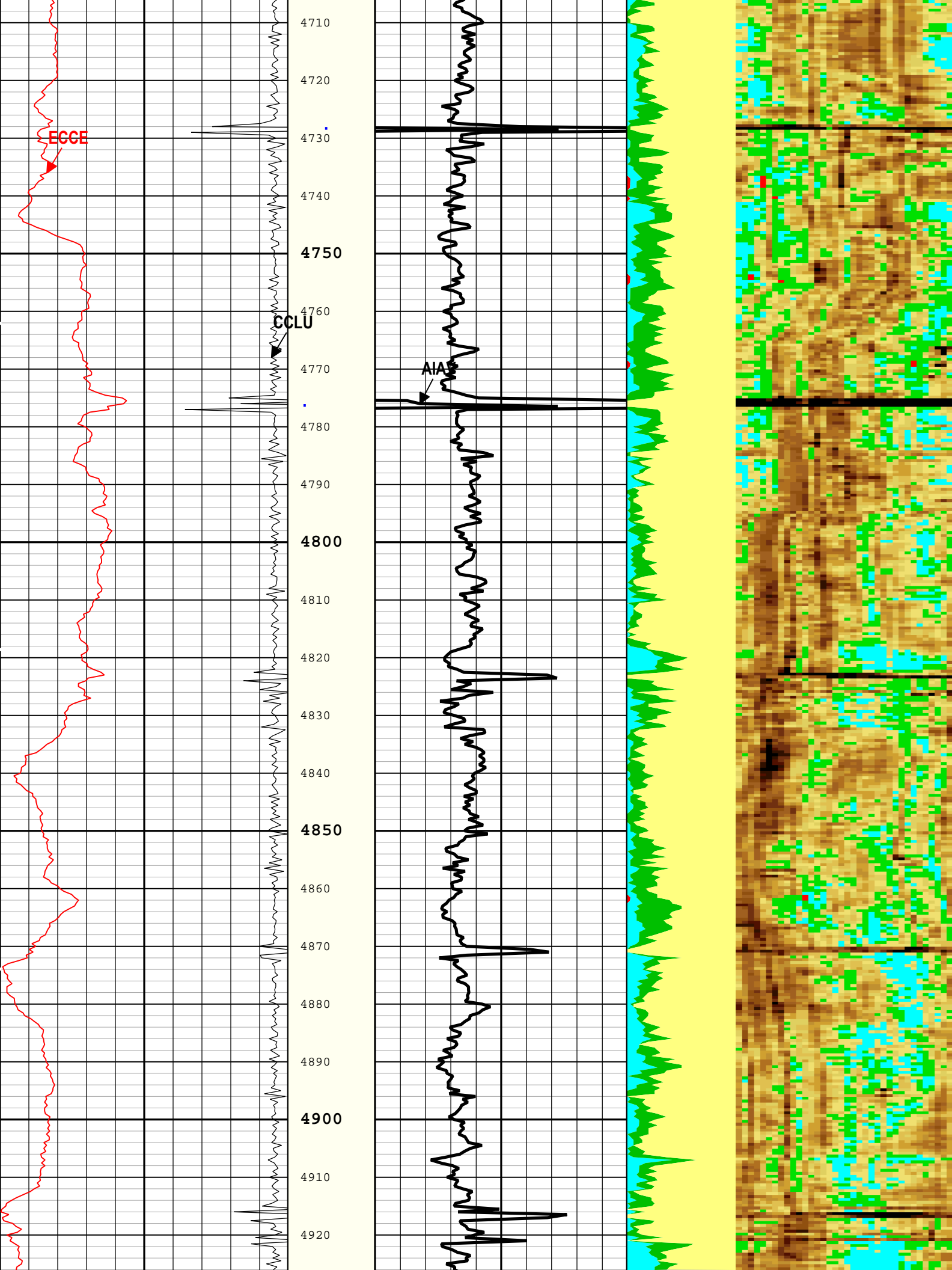


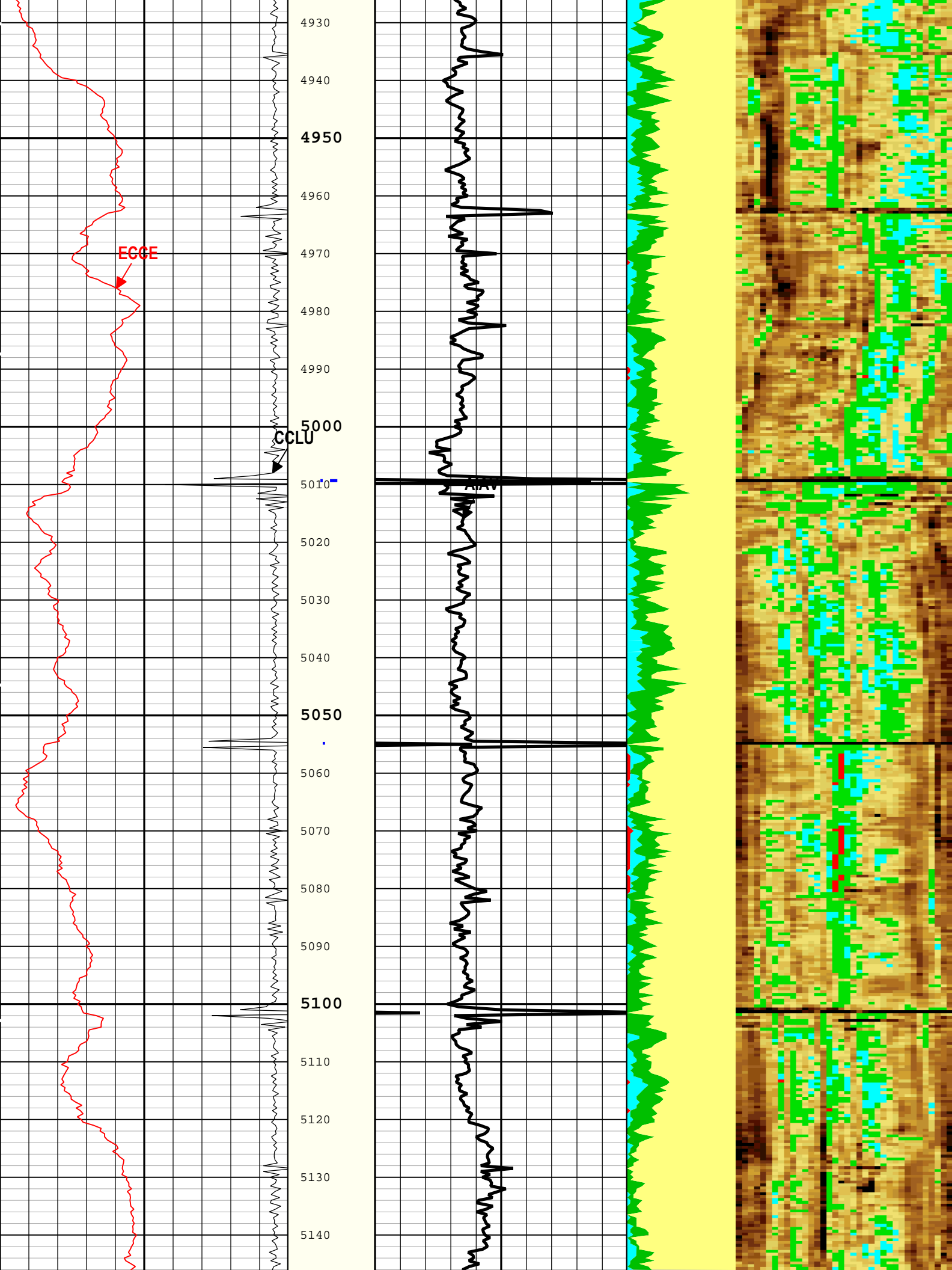


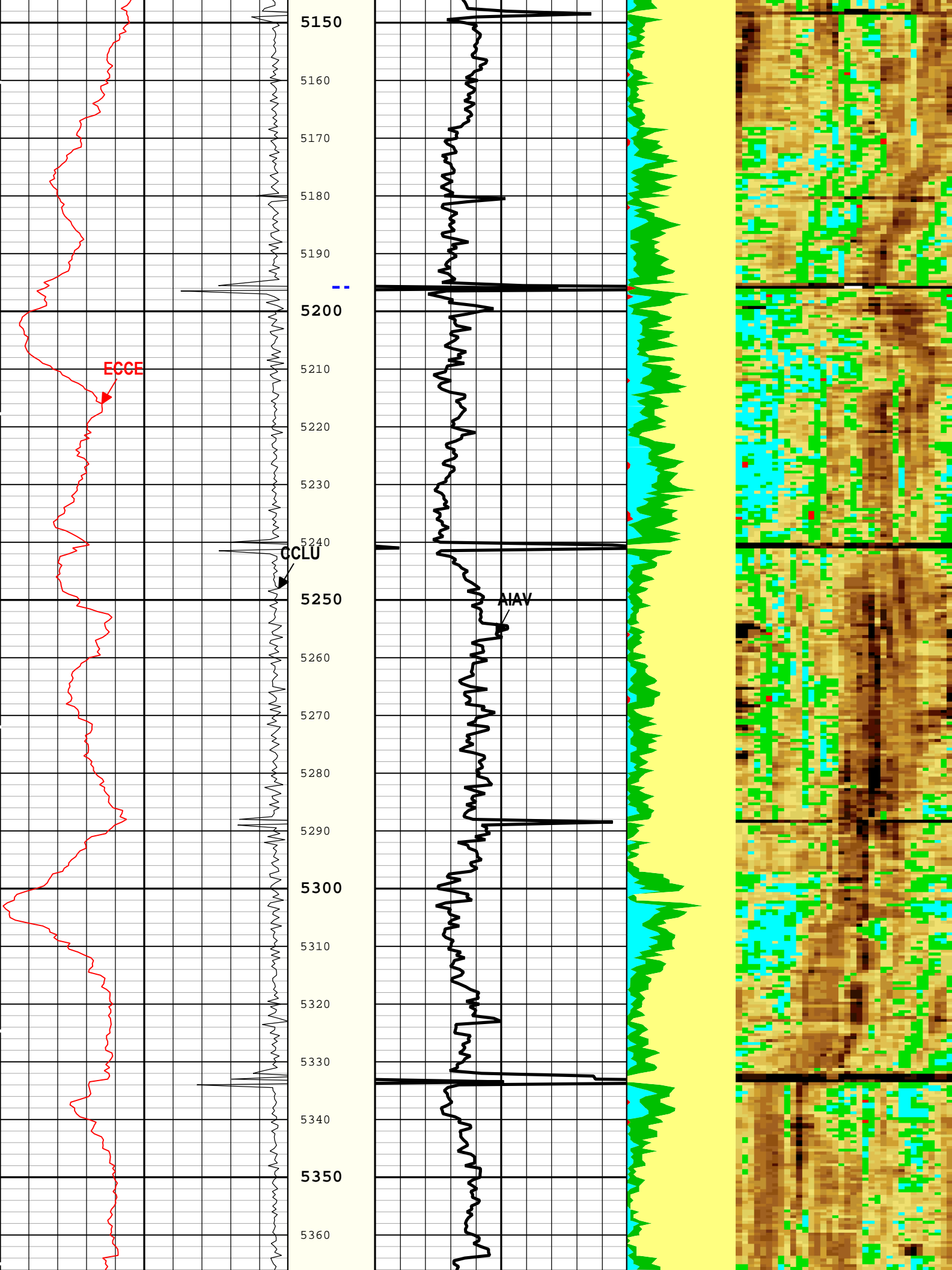


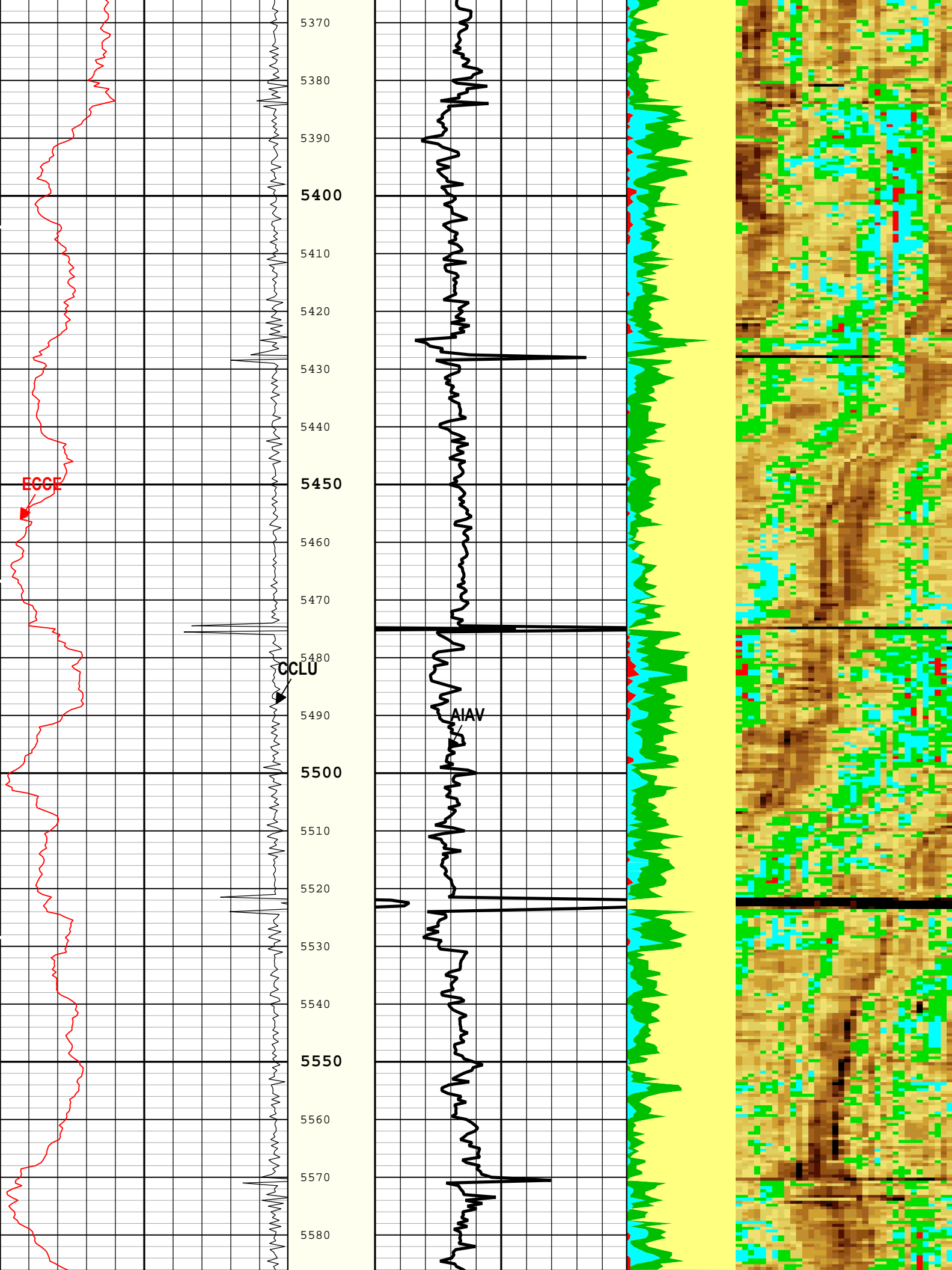


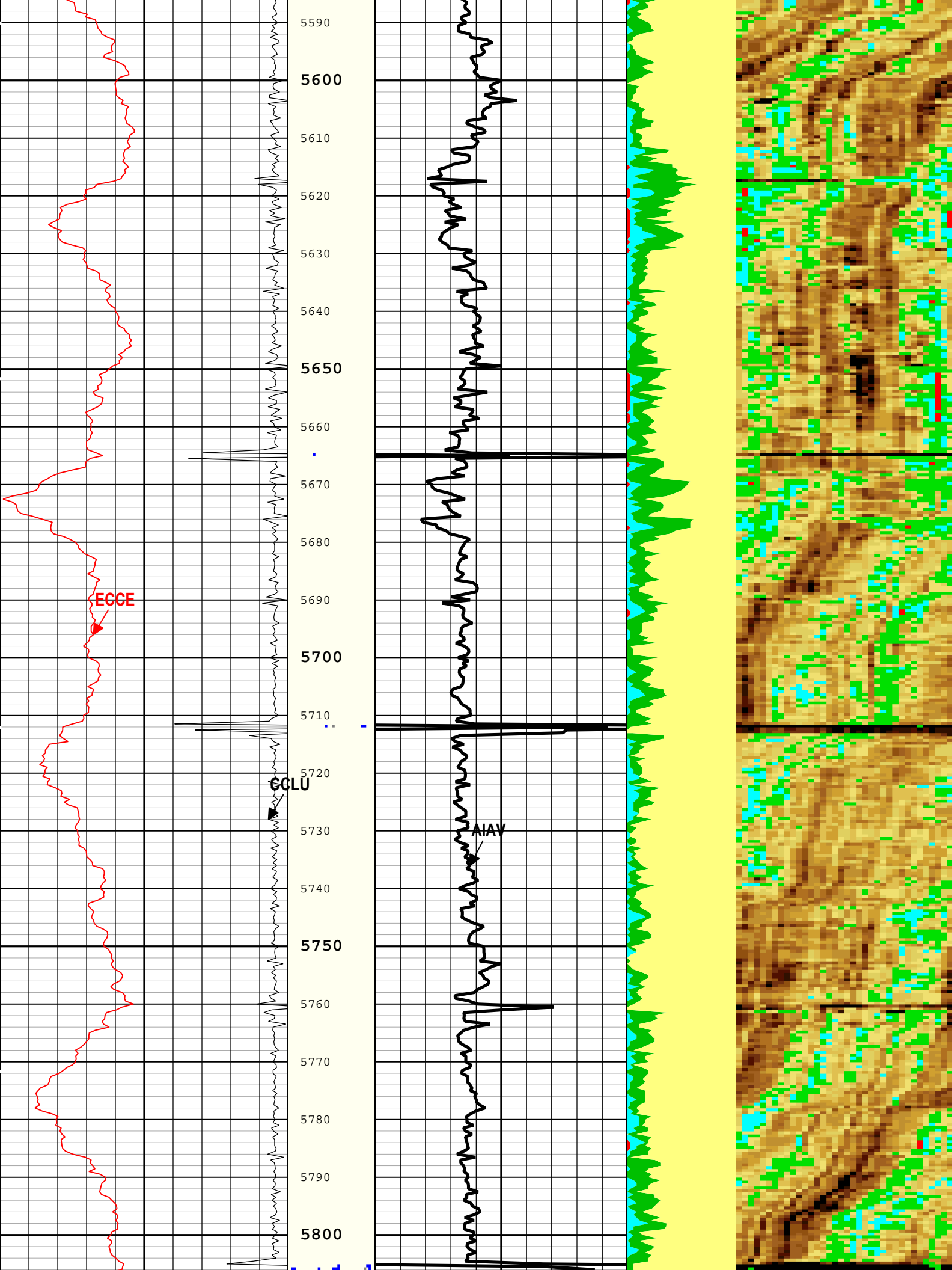


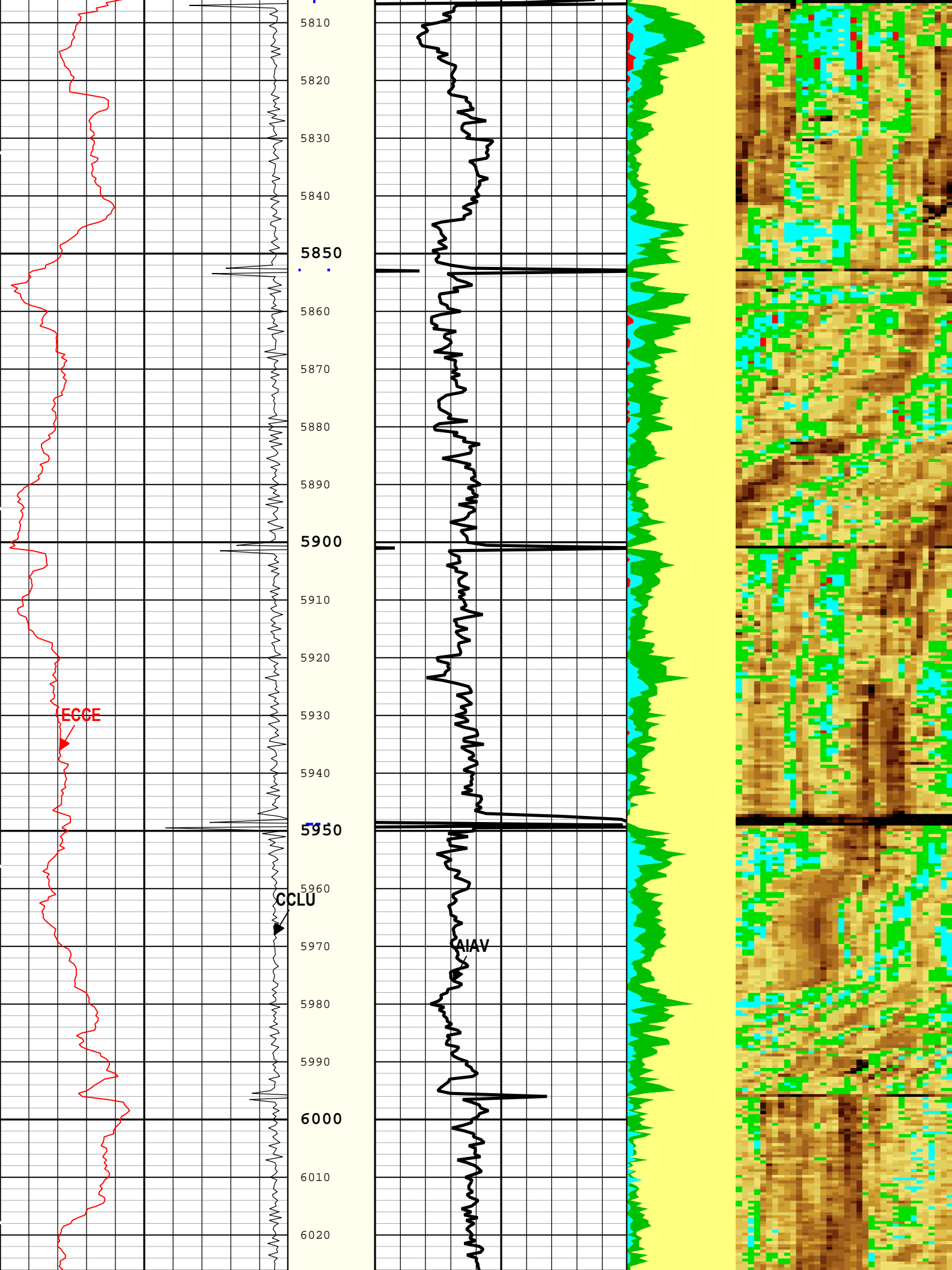


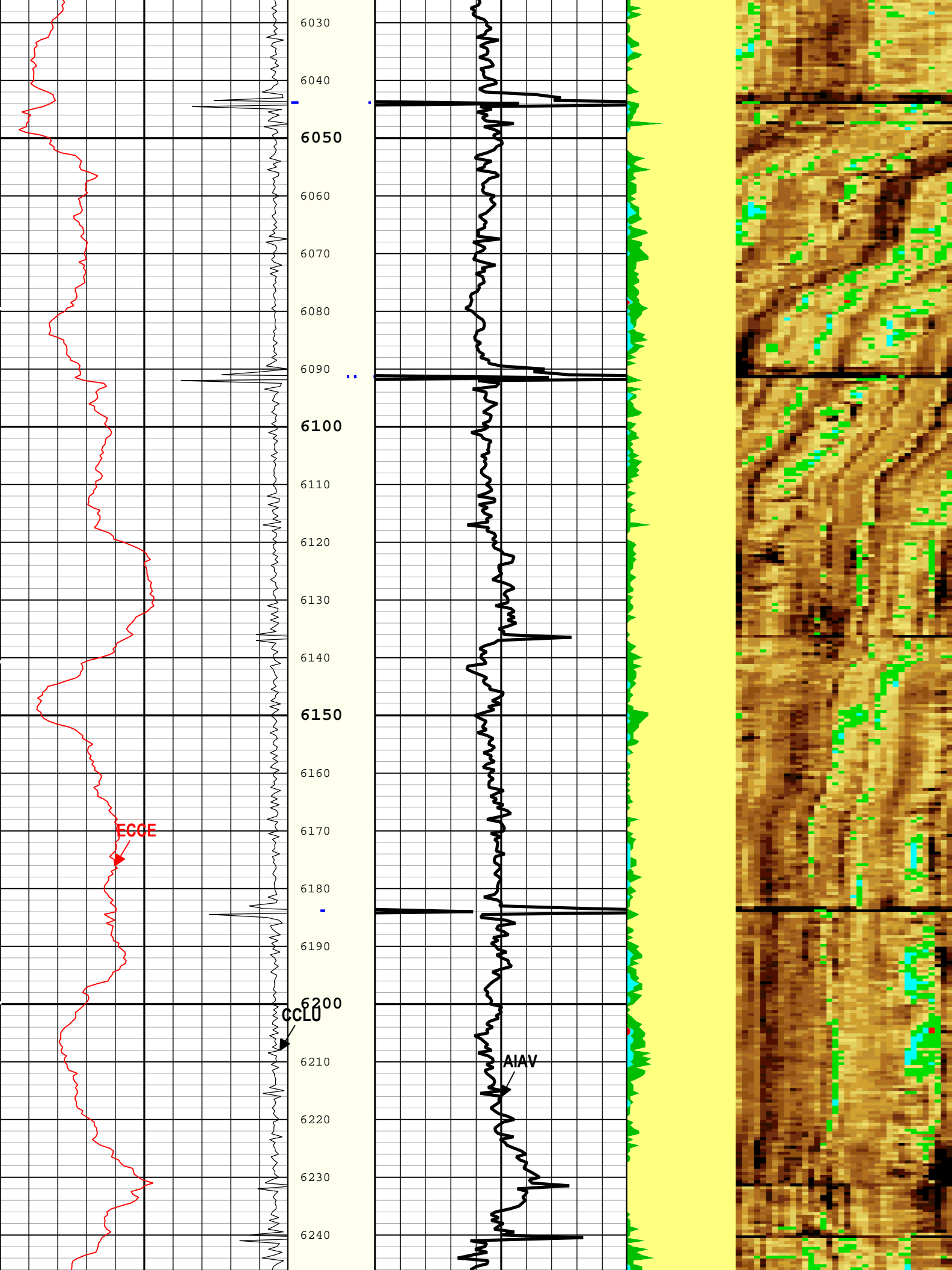












U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
TMUC	Type of Mud	USIT-E	BRI	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	10000	ft
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	50	01-Jul-2017 11:24:01	01-Jul-2017 11:24:35	6674.92	6646.27
EMXV	70	01-Jul-2017 11:24:35	01-Jul-2017 11:25:07	6646.27	6612.87
EMXV	20	01-Jul-2017 11:25:07	01-Jul-2017 11:26:24	6612.87	6534.7
EMXV	100	01-Jul-2017 11:26:24	01-Jul-2017 11:27:02	6534.7	6495.86
EMXV	75	01-Jul-2017 11:27:02	01-Jul-2017 11:36:05	6495.86	5950.71
EMXV	50	01-Jul-2017 11:36:05	01-Jul-2017 13:17:38	5950.71	57.36
WINE	71.88	01-Jul-2017 11:24:01	01-Jul-2017 11:25:31	6674.92	6588.16
WINE	85.99	01-Jul-2017 11:25:31	01-Jul-2017 11:25:46	6588.16	6572.95
WINE	76.75	01-Jul-2017 11:25:46	01-Jul-2017 11:30:38	6572.95	6279.68
WINE	73.67	01-Jul-2017 11:30:38	01-Jul-2017 11:30:44	6279.68	6273.66
WINE	70.59	01-Jul-2017 11:30:44	01-Jul-2017 11:30:52	6273.66	6265.44
WINE	65.97	01-Jul-2017 11:30:52	01-Jul-2017 11:30:58	6265.44	6259.74
WINE	62.12	01-Jul-2017 11:30:58	01-Jul-2017 11:37:45	6259.74	5847.22
WINE	62.89	01-Jul-2017 11:37:45	01-Jul-2017 11:38:12	5847.22	5819.98
WINE	68.36	01-Jul-2017 11:38:12	01-Jul-2017 11:38:44	5819.98	5787.26
WINE	65.57	01-Jul-2017 11:38:44	01-Jul-2017 13:16:51	5787.26	95.69
WINE	72.9	01-Jul-2017 13:16:51	01-Jul-2017 13:17:38	95.69	57.36

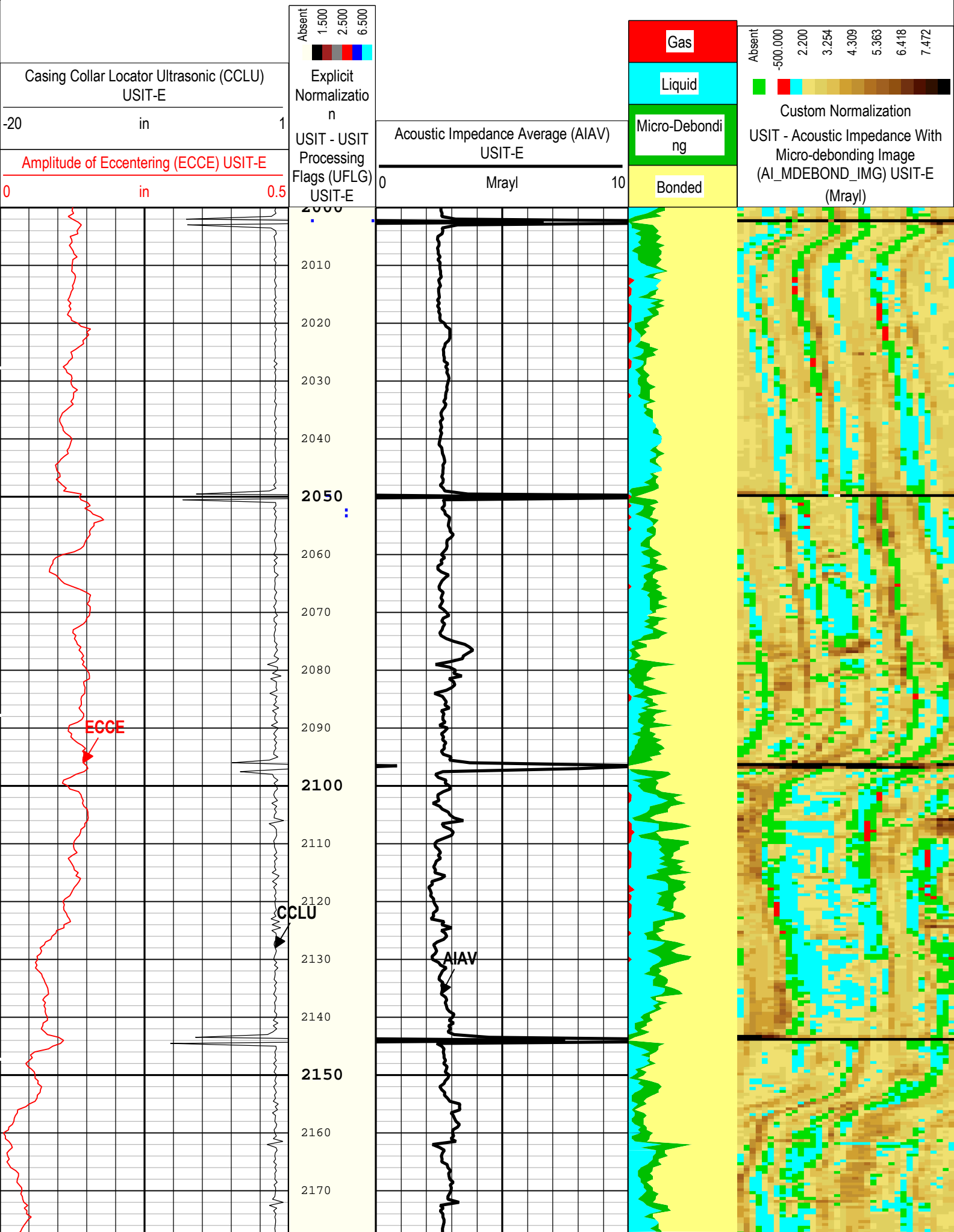
All depth are at tool zero.					
ONE					
0 PSI Repeat Pass					

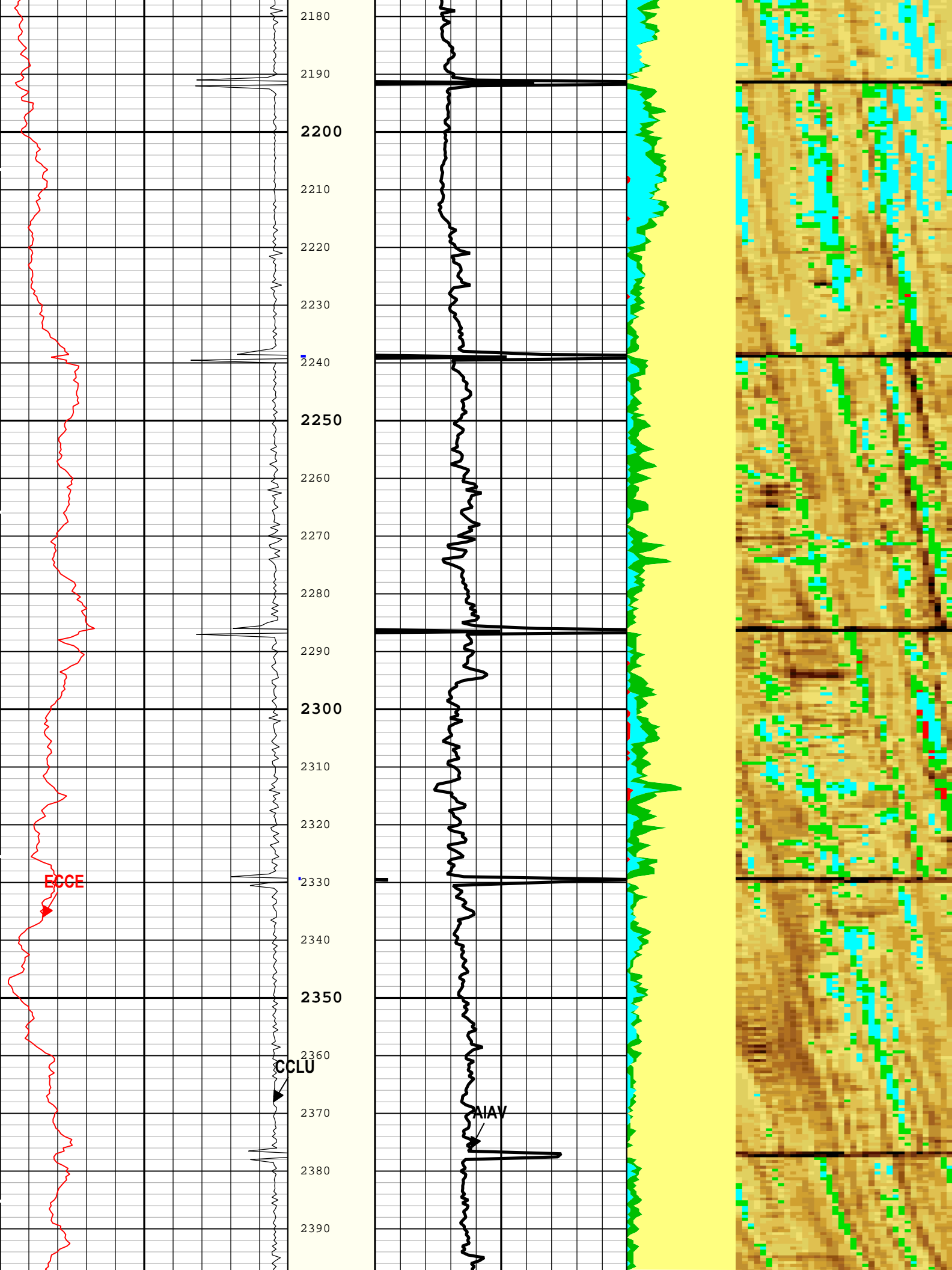
Software Version									
Acquisition System						Version			
Maxwell 2017 SP2						7.2.87778.3100			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	1931.25 ft	2506.10 ft	01-Jul-2017 9:46:42 AM	01-Jul-2017 9:56:40 AM	ON	4.19 ft	No

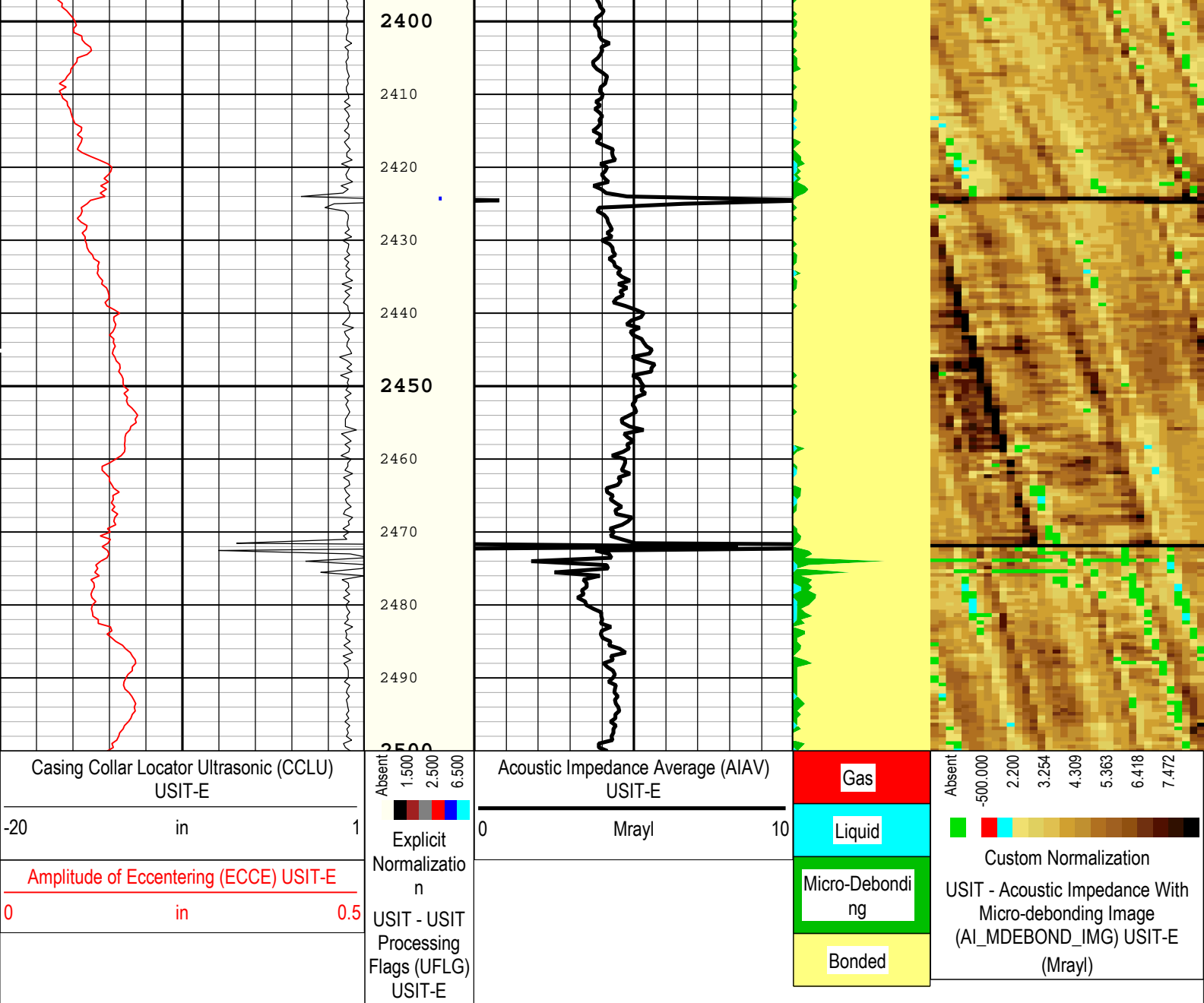
All depths are referenced to toolstring zero									
Log	<div> <div>Company:Noble Energy Inc</div> <div>Well:Kona A19-636</div> <div>ONE: Log[2]:Up:S006</div> </div>								

Description:
 Format: Log (DJ Basin Ultrasonic Cement Summary Report)
 Index Scale: 5 in per 100 ft
 Index Unit: ft
 Index Type: Measured Depth

TIME_1900 - Time Marked every 60.00 (s)







Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BS	Bit Size	WLSESSION	8.5	in
CMTY(U-USIT_CENT)	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
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.21	

U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0.1	Mrayl
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
USI_FSOD	USIT USI Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	45	V
HRES	Horizontal Resolution	USIT-E	10 deg	
TMUC	Type of Mud	USIT-E	BRI	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	10000	ft
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

XYZ

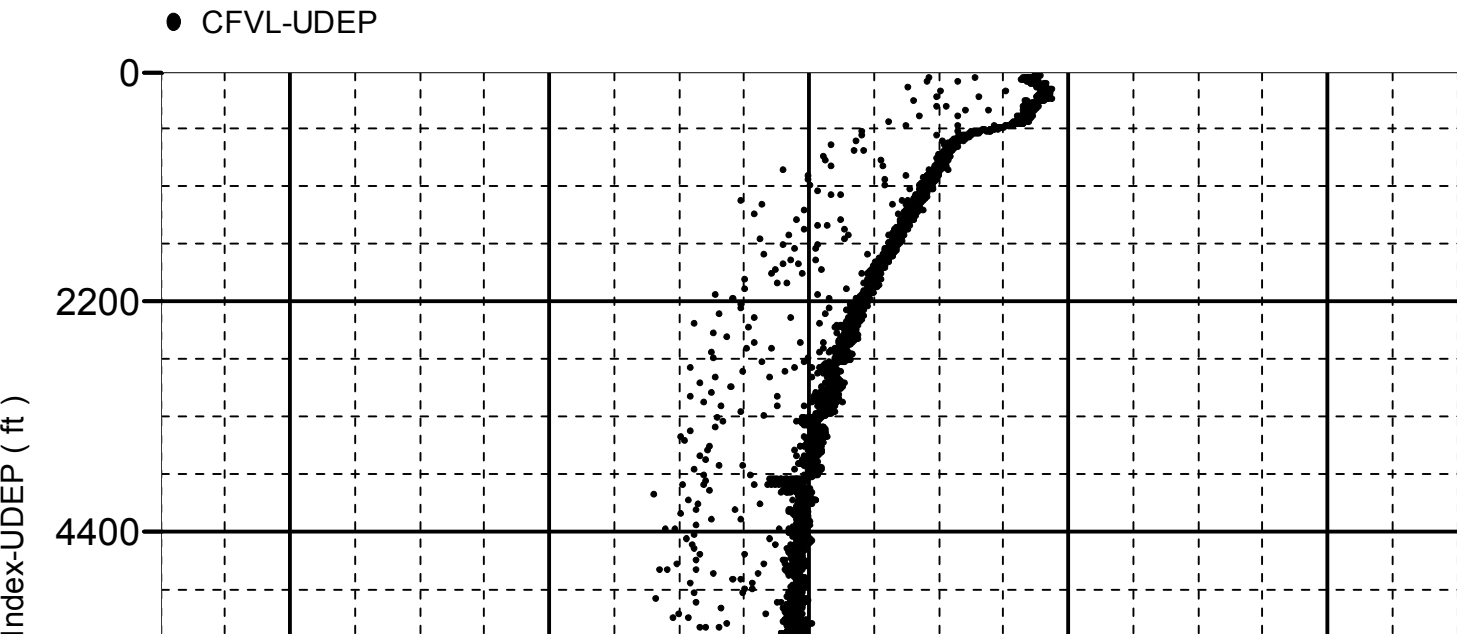
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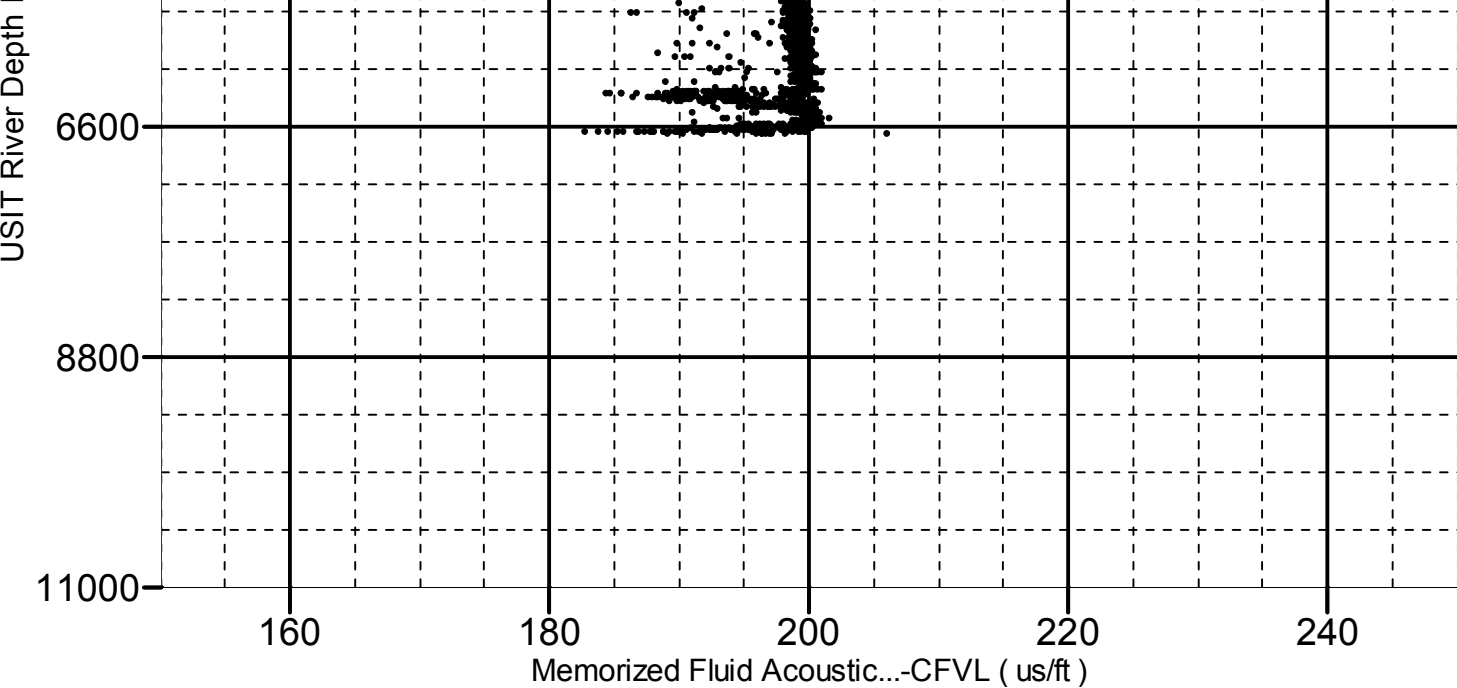
ONE: Log[8]:Up:S006

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6250.00 to 57.00 ft





XYZ

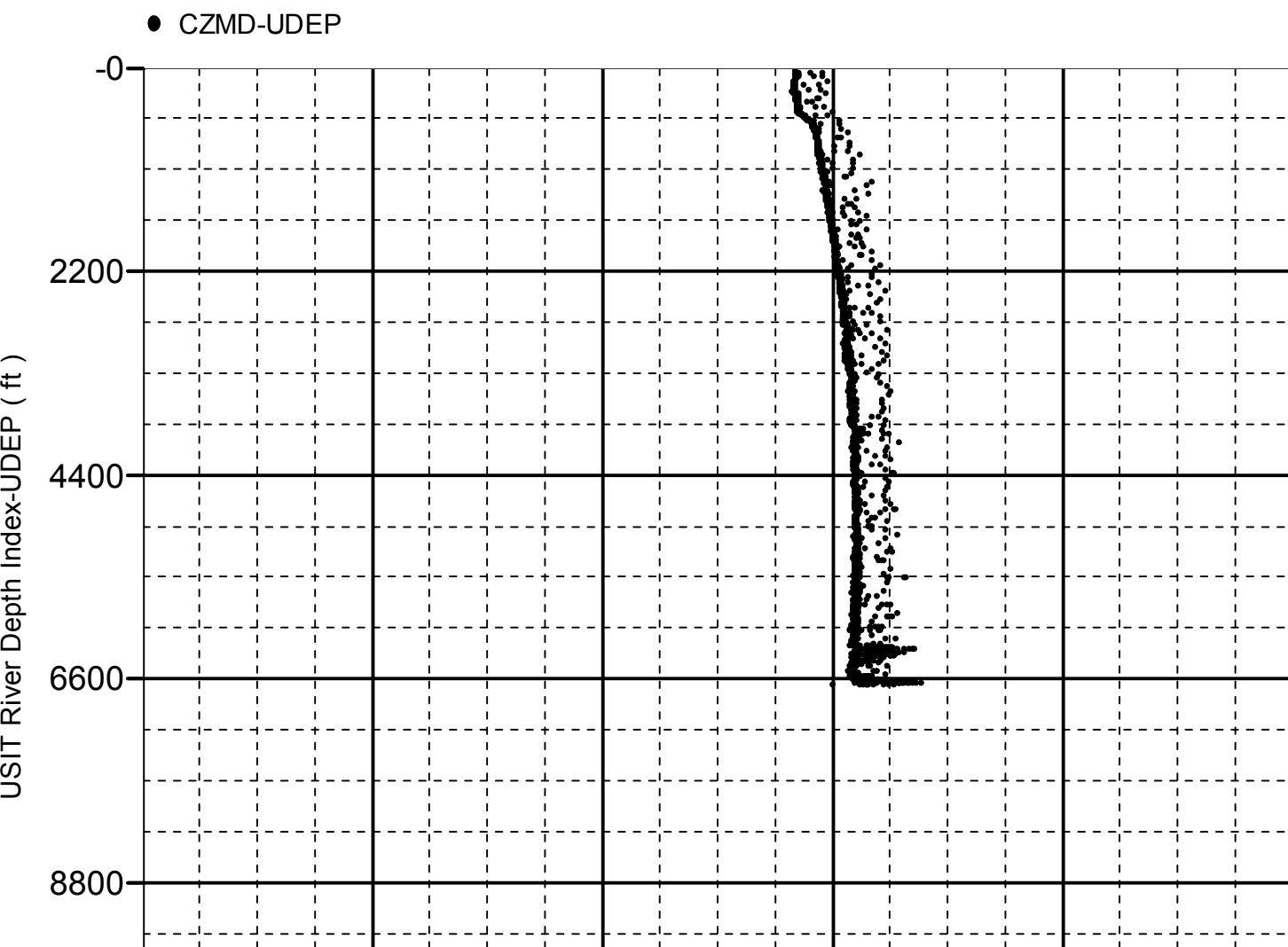
Company:Noble Energy Inc Well:Kona A19-636

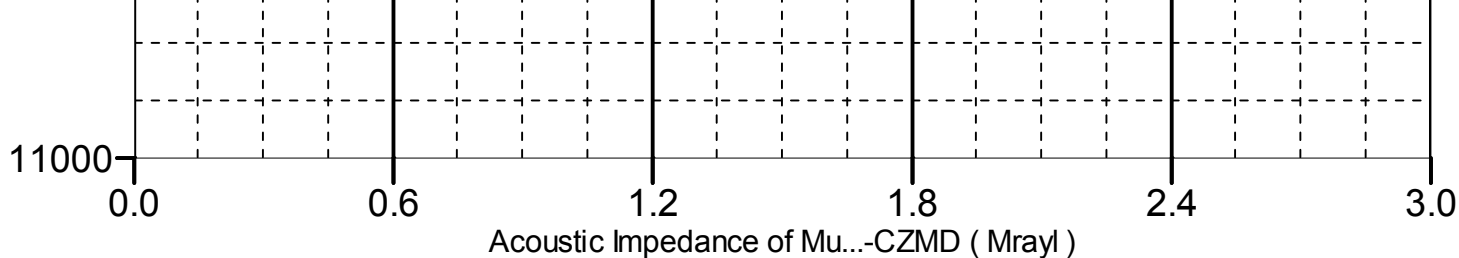
ONE: Log[8]:Up:S006

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6250.00 to 57.00 ft





Company:	Noble Energy Inc	Schlumberger
Well:	Kona A19-636	
Field:	Wattenberg	
County:	Weld	
Country:	USA	

UltraSonic Summary Print

