Schlumberger

Company: **Encana Oil & Gas (USA) Inc**

Well: **Davis 2B-9H**

Field: **Wattenberg**

County: **Weld** State: **Colorado**

Isolation Scanner
Cement Evaluation

County: Weld
Field: Wattenberg
Location: SWNW Sec. 9, T2N, R66W
Well: Davis 2B-9H
Company: Encana Oil & Gas (USA) Inc

LOCATION

SWNW Sec. 9, T2N, R66W
SHL: 1967' FNL X 554' FWL
Lat/Long: 40.15444 N / 104.7897 W

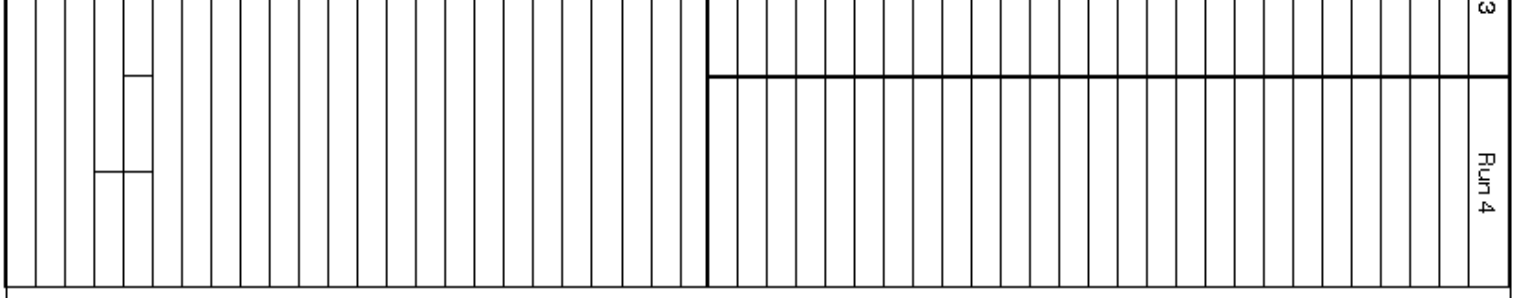
Elev.: K.B. 4925.00 ft
G.L. 4912.00 ft
D.F. 4924.00 ft

Permanent Datum: Ground Level — Elev.: 4912.00 ft
Log Measured From: Kelly Bushing — 13.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section	Township	Range
05-123-35460-0000	9	2N	66W

	Run 1	Run 2	Run
PVT DATA			
Oil Density			
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	90 deg		
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density			
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top			
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Fluid Type			
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size			
From			
To			
Casing/Tubing Size			
Weight			
Grade			
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			

Logging Date	2-Jun-2012
Run Number	1
Depth Driller	14476 ft
Schlumberger Depth	14476 ft
Bottom Log Interval	2000 ft
Top Log Interval	200 ft
Casing Fluid Type	Water Based Mud
Salinity	
Density	9.7 lbm/gal
Fluid Level	10 ft
BIT/CASING/TUBING STRING	
Bit Size	8.750 in
From	
To	
Casing/Tubing Size	7.000 in
Weight	26 lbm/ft
Grade	
From	
To	
Maximum Recorded Temperatures	210 degF
Logger On Bottom / Time	3-Jun-2012 7:00
Unit Number / Location	2153 Ft. Morgan, CO
Recorded By	Tim Hoffman
Witnessed By	Dennis Zarosky



DEPTH SUMMARY LISTING

Date Created: 3-JUN-2012 13:28:12

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46P XS
Serial Number:	1134	Serial Number:	1433	Serial Number:	
Calibration Date:	22-MAR-2012	Calibration Date:	27-MAY-2012	Length:	24000 FT
Calibrator Serial Number:		Calibrator Serial Number:	100513		
Calibration Cable Type:	7-46P XS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	-2	Calibration RMS:	15	Rig Type:	LAND
Wheel Correction 2:	-1	Calibration Peak Error:	32		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER
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OTHER SERVICES1	OTHER SERVICES2
OS1: None	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole	
Toolstring run as per tool sketch	
TD not tagged due to hole deviation. Logged up from 7200'	
Borehole deviation increased near TD towards horizontal, causing tool to become eccentered	
Cement design for well:	

13 ppg to 4710'	
12 ppg to 2918'	
10 ppg to 13'	
Cement was set 26-May-2012	
There was no pressure (0 psi) on the well	
Rig: Ensign 135	
Crew: Tyler Riter, Josh Strand	

RUN 1			RUN 2		
SERVICE ORDER #:		BFN8-00177	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		10 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

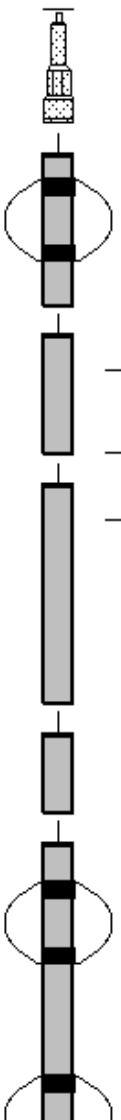
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

GSR-U/Y
WITM (DTS)-A

DOWNHOLE EQUIPMENT



LEH-QT 40.9
LEH-QT

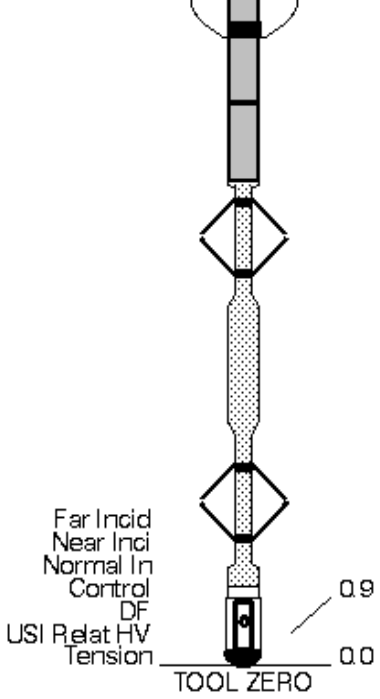
AH-CEN 38.0
AH-CEN

DTC-H 34.2
ECH-KC 10316
DTCH0-A
DTCH1-A
CTEM ___ 33.3
TelStatus
ToolStatu ___ 31.2

SGT-N 31.2
SGH-K 3039
SGC-TB 10249
SGD-TAB
Gamma Ray ___ 30.3

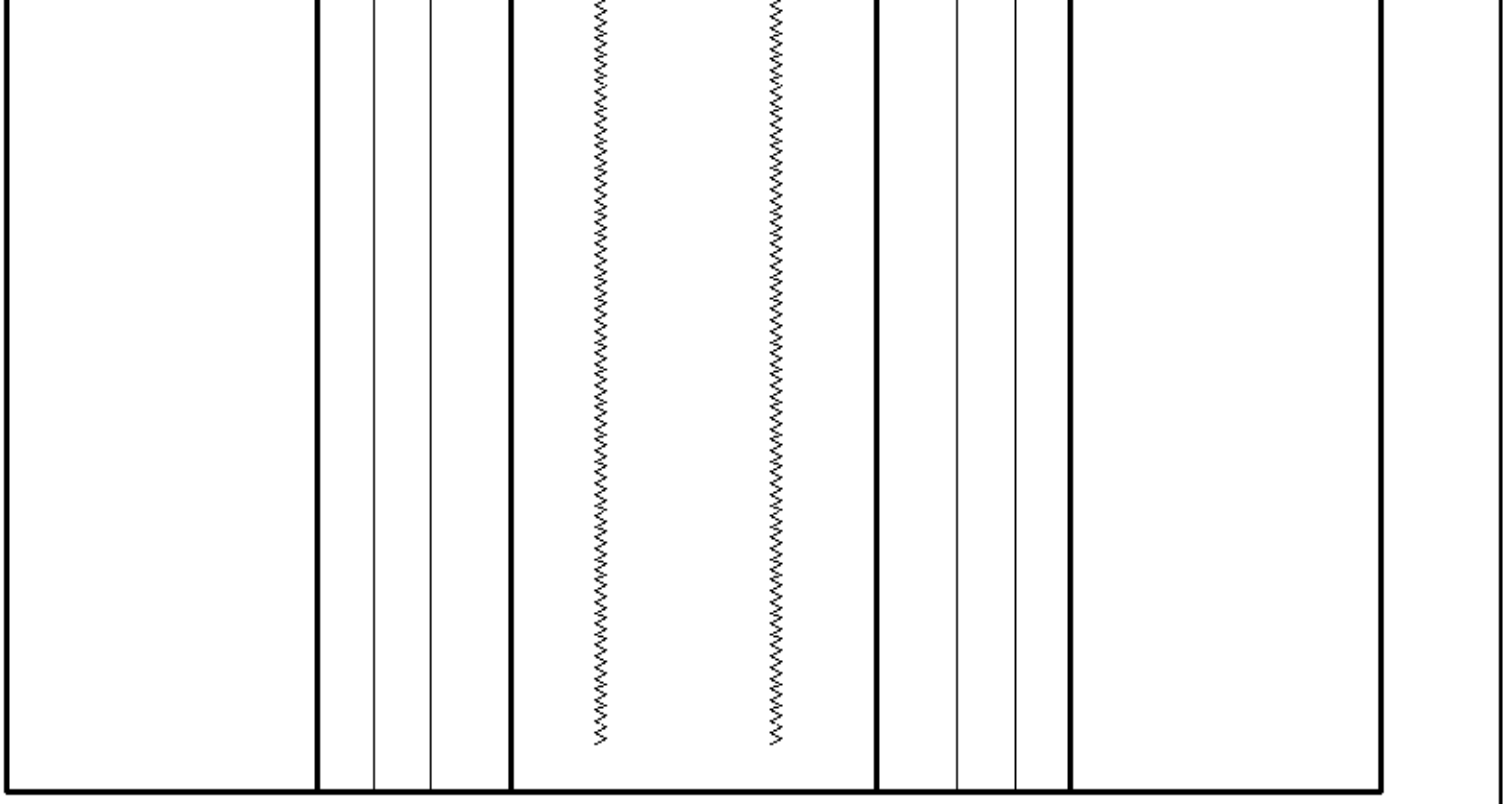
AH-107 25.7
AH-107 2829

USIT-D 23.7
ECH-MRA 4949
USIC-D 947
AH-107 909
USIS-A 1804
USSC-B 1804
IBCS_B-100158202 826
Top Transducer
Middle Top Transducer
Middle Bottom Transducer
Bottom Transducer



MAXIMUM STRING DIAMETER 7.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	9.625		Casing String
					869.0	9.625		Casing Shoe
					7492.0	7.000		Casing Shoe
					7492.0	6.125		Borehole Segment



All Depths are Driller's Depths

Company: Encana Oil & Gas (USA) Inc						Well: Davis 2B-9H

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08	7224.0 FT	203.0 FT

OP System Version: 19C0-187

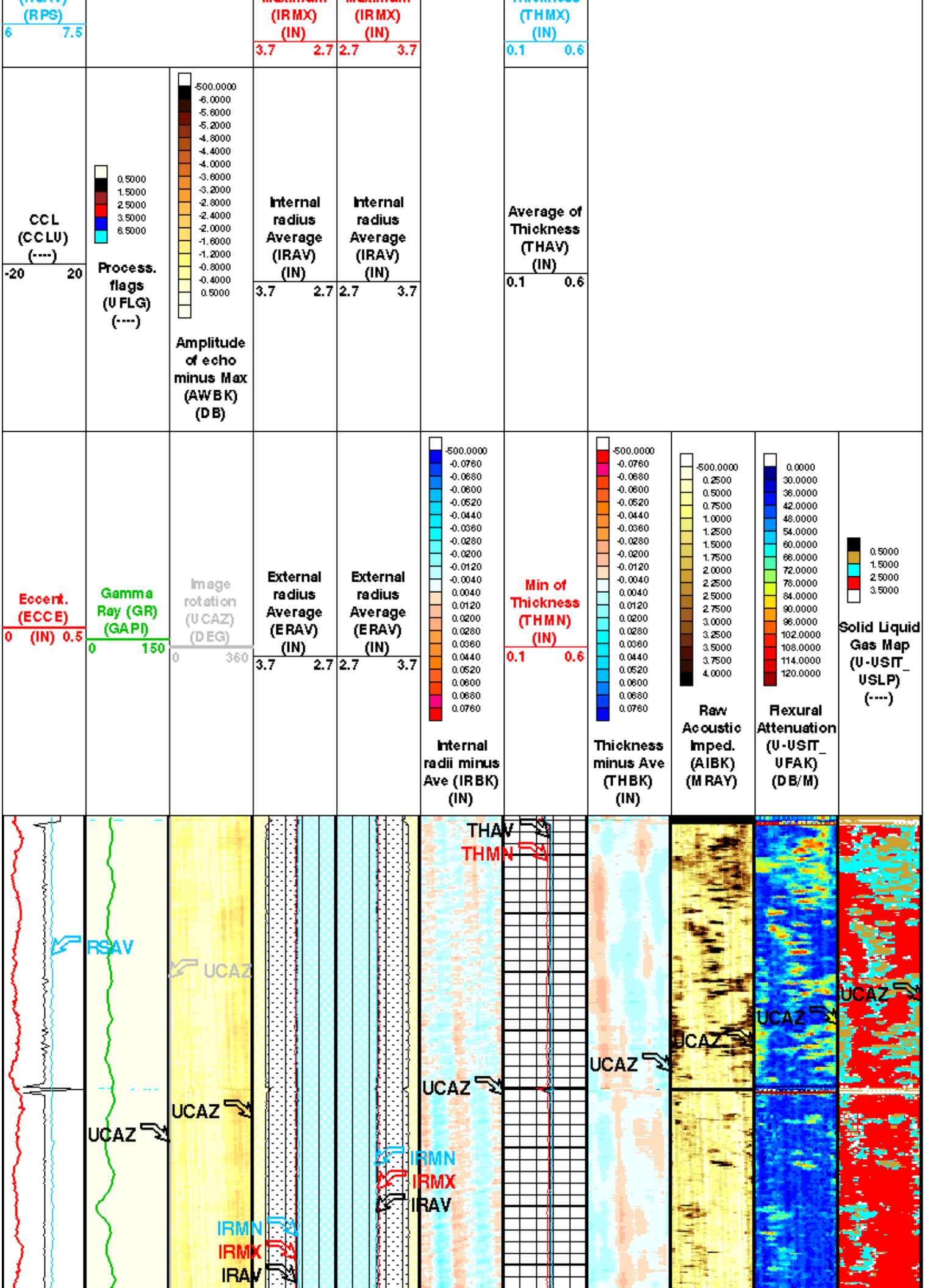
USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	2.05 MRAY	2.1 MRAY	7224.0 14:08:55
	2.1 MRAY	2.05 MRAY	2900.0 14:21:33

Min of Internal radius (IRMN) (IN)		Min of Internal radius (IRMN) (IN)	
3.7	2.7	2.7	3.7

RSAV (RSAV)	Internal radius Maximum (IRMX) (IN)	Internal radius Maximum (IRMX) (IN)	Maximum of Thickness


(RPS)
6 7.5
(IRMX) (IN)
3.7 2.7
(IRMX) (IN)
2.7 3.7
(THMX) (IN)
0.1 0.6
CCL (CCLU) (----)
-20 20
0.5000
1.5000
2.5000
3.5000
6.5000
Process. flags (UFLG) (----)
-500.0000
-6.0000
-5.6000
-5.2000
-4.8000
-4.4000
-4.0000
-3.6000
-3.2000
-2.8000
-2.4000
-2.0000
-1.6000
-1.2000
-0.8000
-0.4000
0.5000
Amplitude of echo minus Max (AWBK) (DB)
Internal radius Average (IRAV) (IN)
3.7 2.7
Internal radius Average (IRAV) (IN)
2.7 3.7
Average of Thickness (THAV) (IN)
0.1 0.6
Eccent. (ECCE)
0 (IN) 0.5
Gamma Ray (GR) (GAPI)
0 150
Image rotation (UCAZ) (DEG)
0 360
External radius Average (ERAV) (IN)
3.7 2.7
External radius Average (ERAV) (IN)
2.7 3.7
-500.0000
-0.0760
-0.0680
-0.0600
-0.0520
-0.0440
-0.0360
-0.0280
-0.0200
-0.0120
-0.0040
0.0040
0.0120
0.0200
0.0280
0.0360
0.0440
0.0520
0.0600
0.0680
0.0760
Internal radii minus Ave (IRBK) (IN)
Min of Thickness (THMN) (IN)
0.1 0.6
Thickness minus Ave (THBK) (IN)
-500.0000
0.2500
0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000
Raw Acoustic Imped. (AIBK) (MRAY)
0.0000
30.0000
36.0000
42.0000
48.0000
54.0000
60.0000
66.0000
72.0000
78.0000
84.0000
90.0000
96.0000
102.0000
108.0000
114.0000
120.0000
Flexural Attenuation (U-USIT_UFAK) (DB/M)
0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U-USIT_USLP) (----)
RSAV
UCAZ
UCAZ
UCAZ
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IRAV
IRMN
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IRAV
THAV
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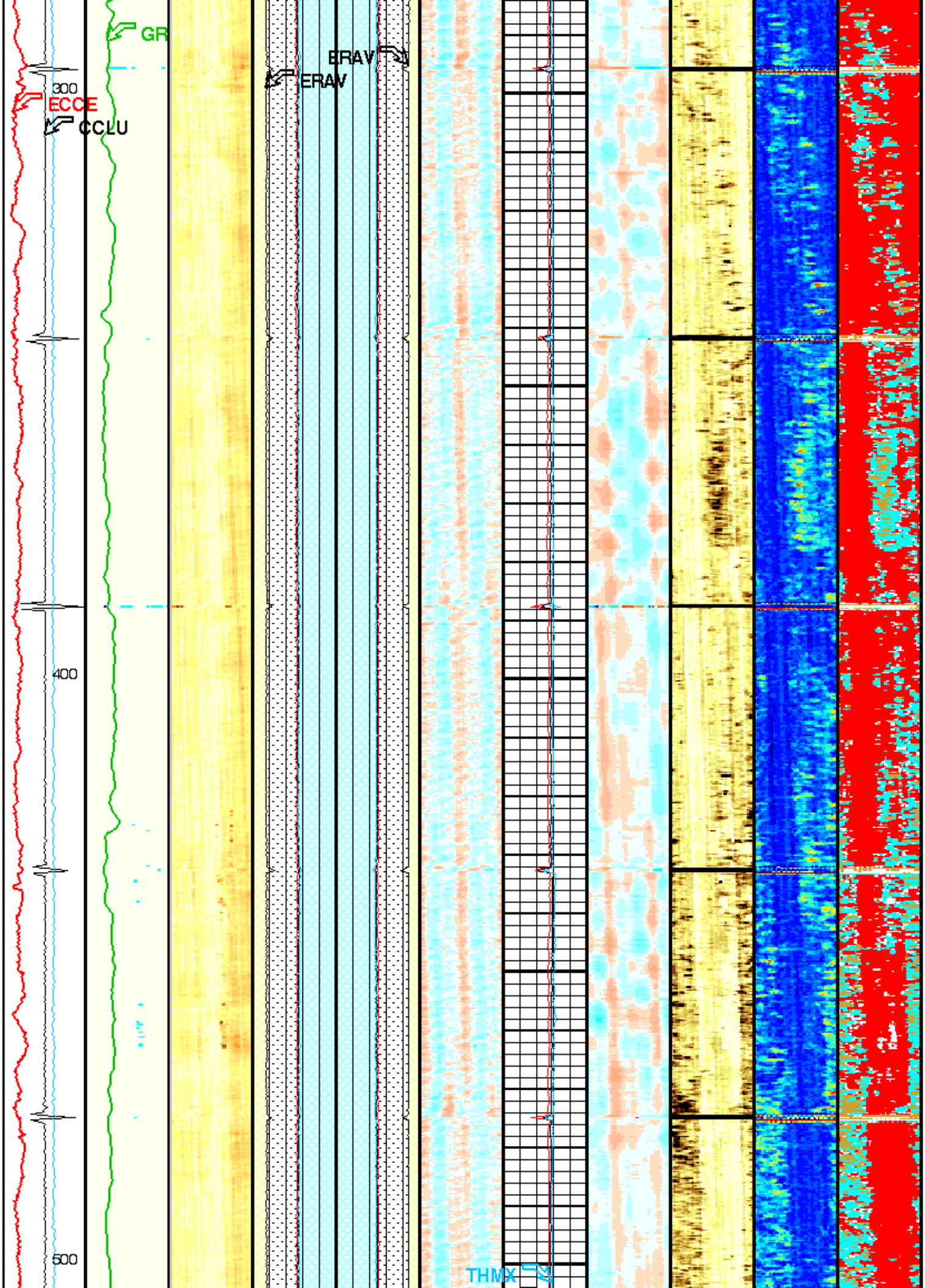
UCAZ
UCAZ
UCAZ
UCAZ
UCAZ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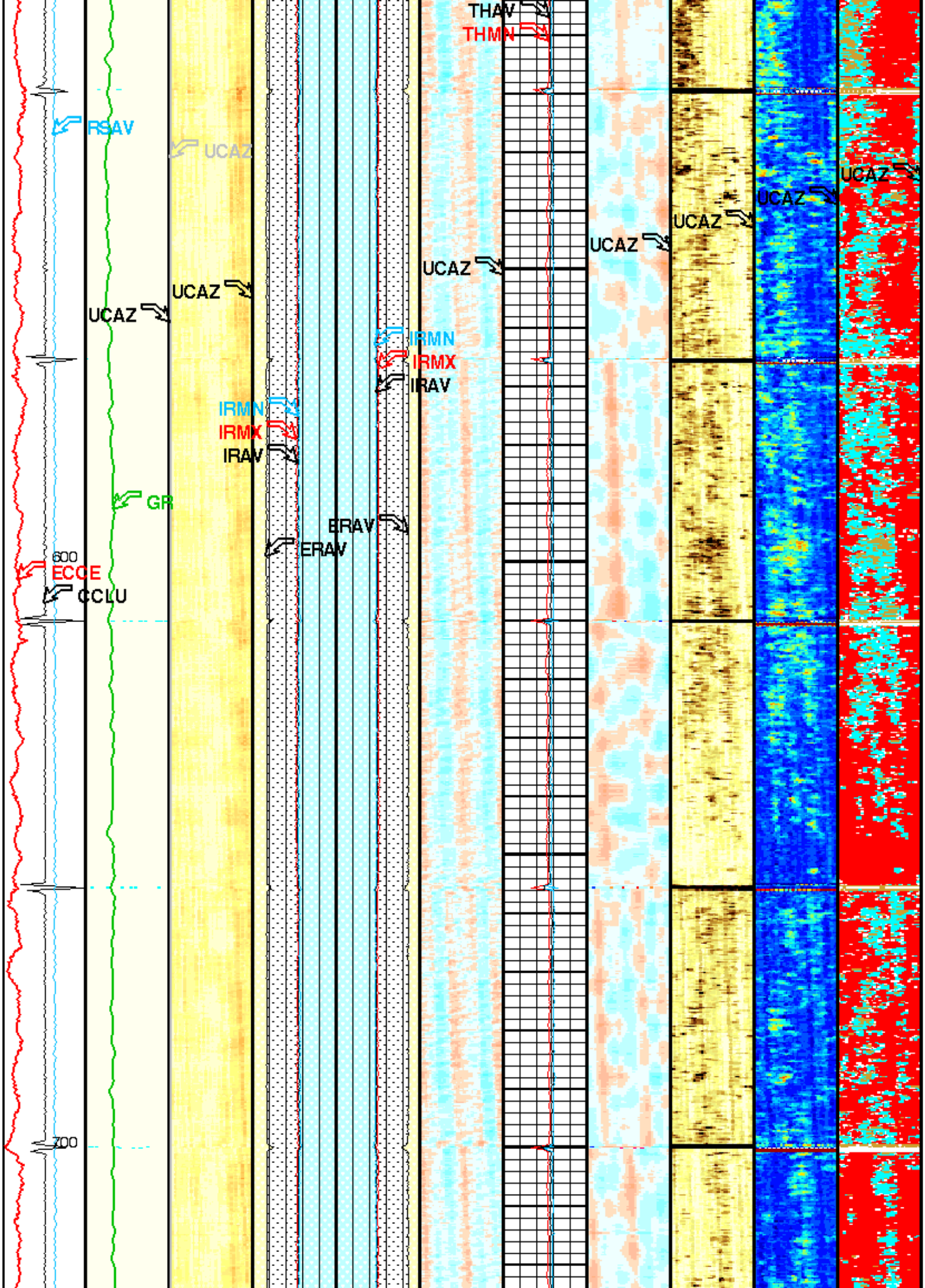
ERAV
300
ECCE
CCLU
400
500
THMX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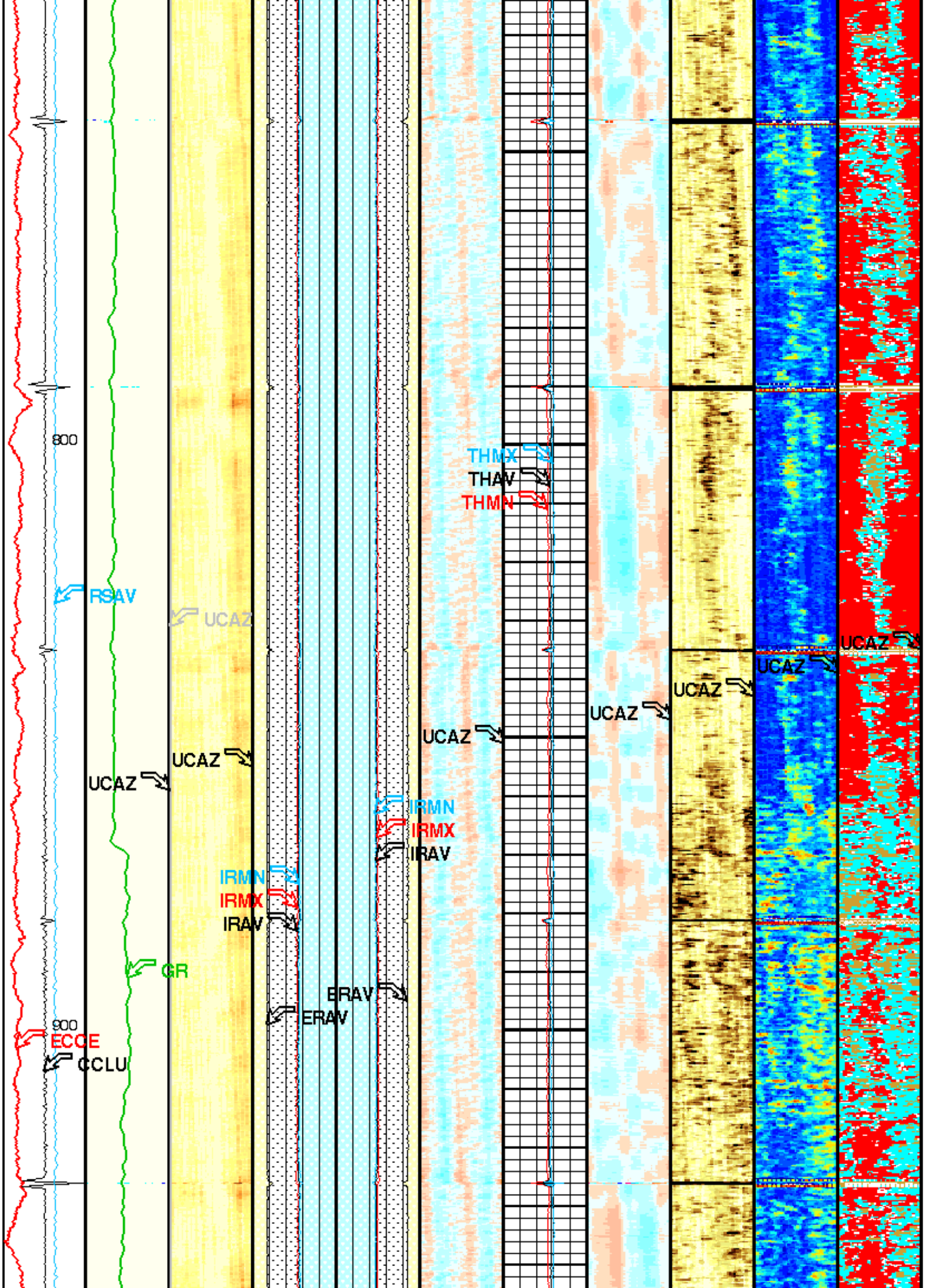
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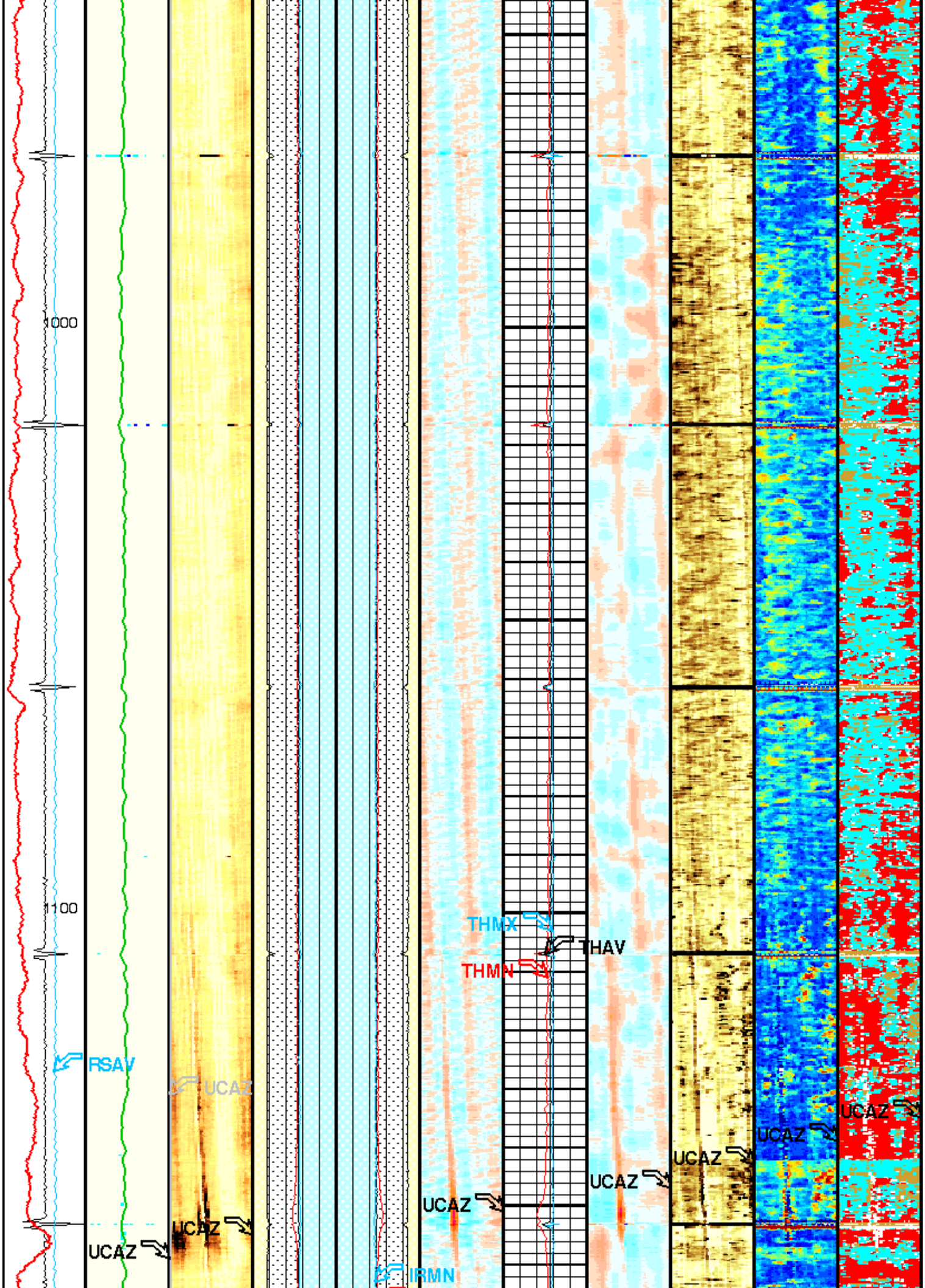
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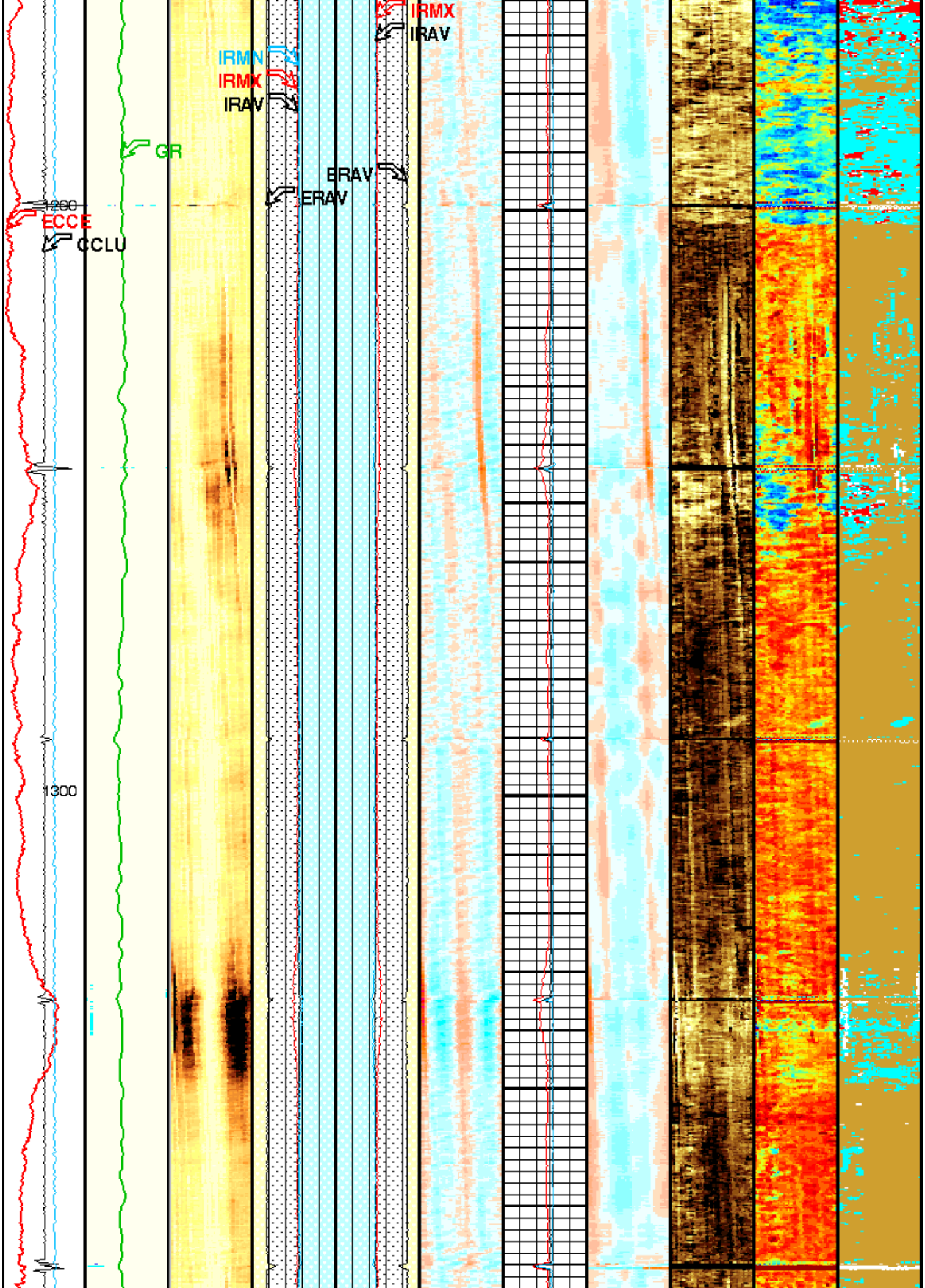
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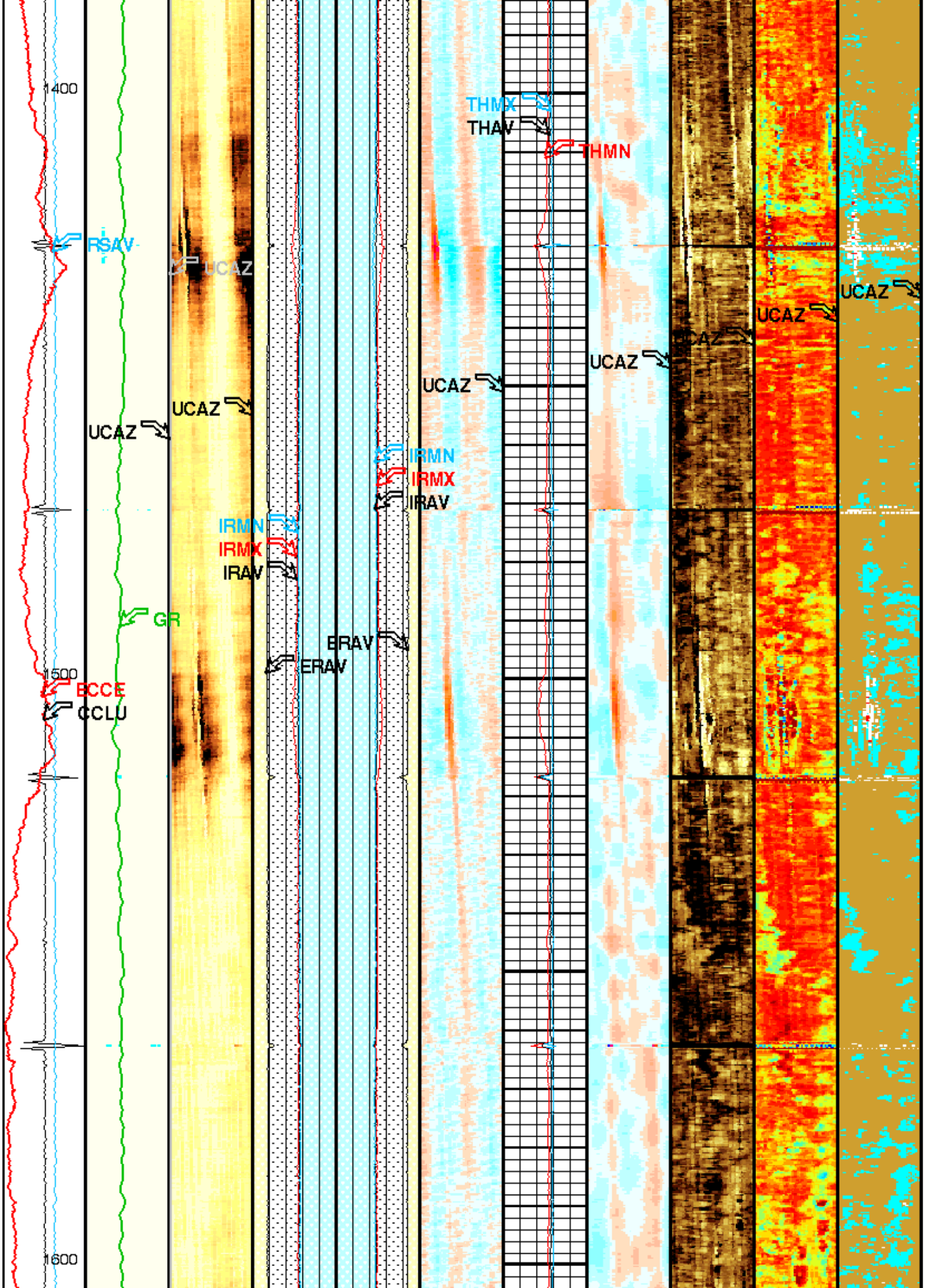
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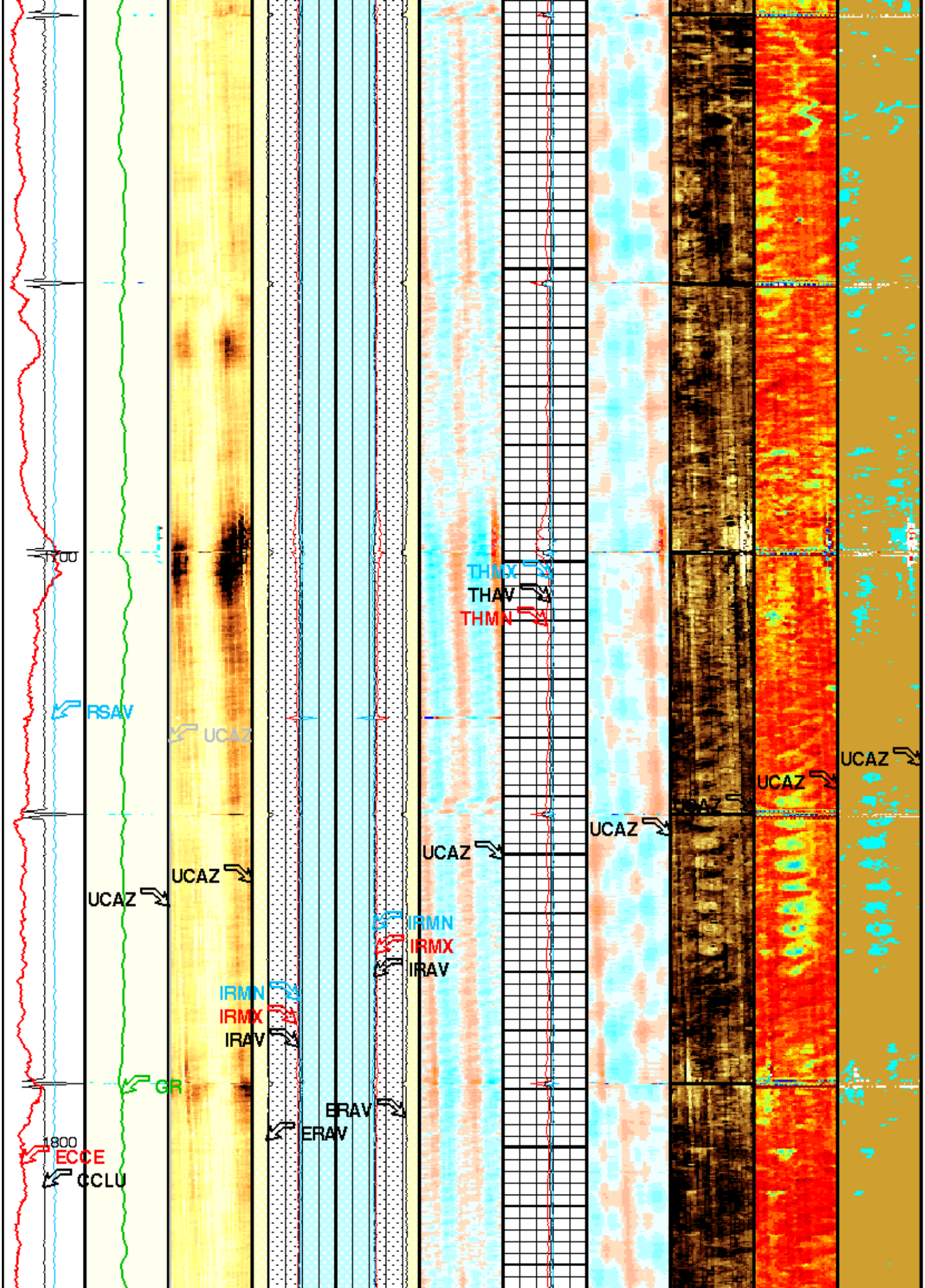
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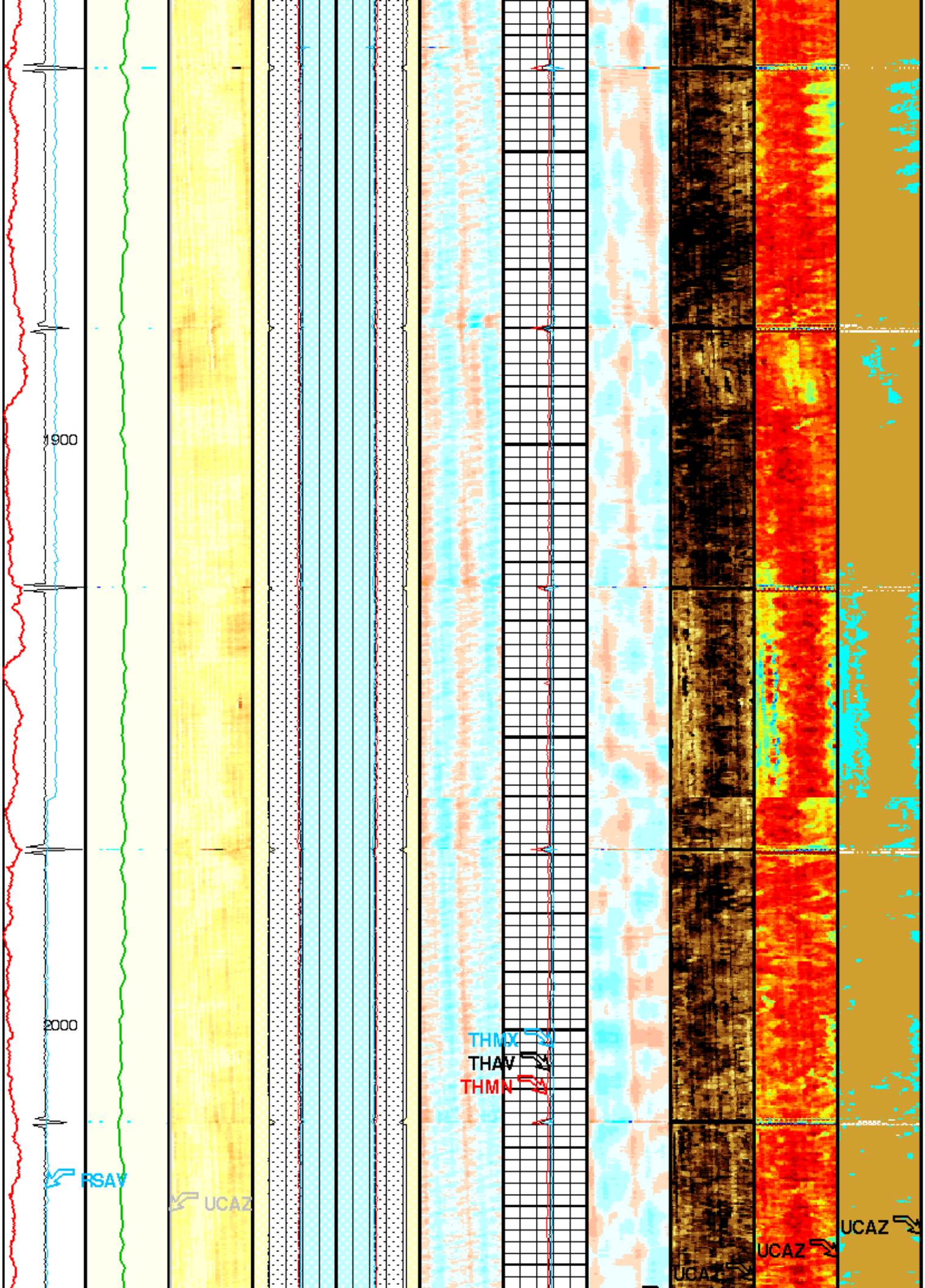
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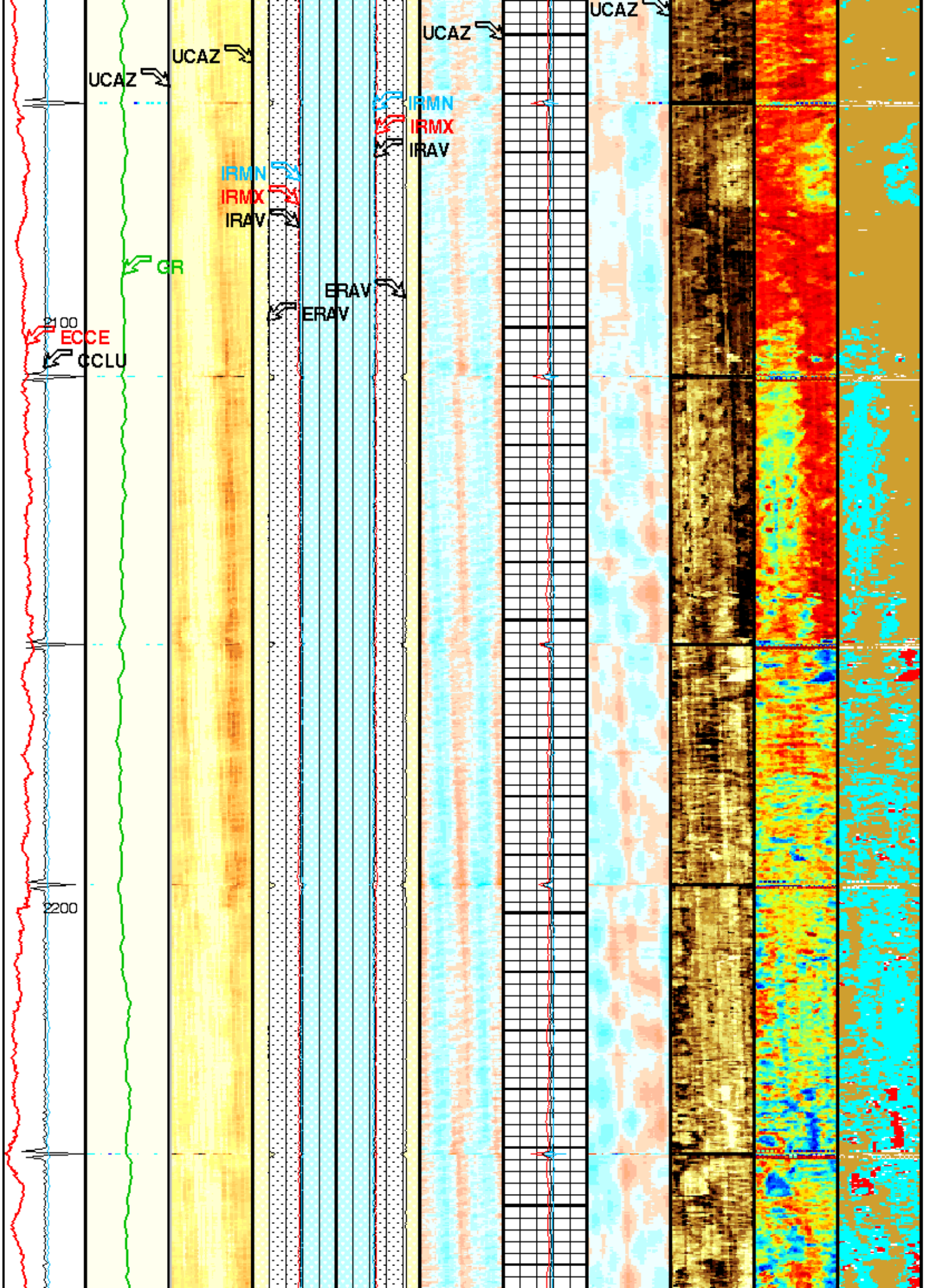
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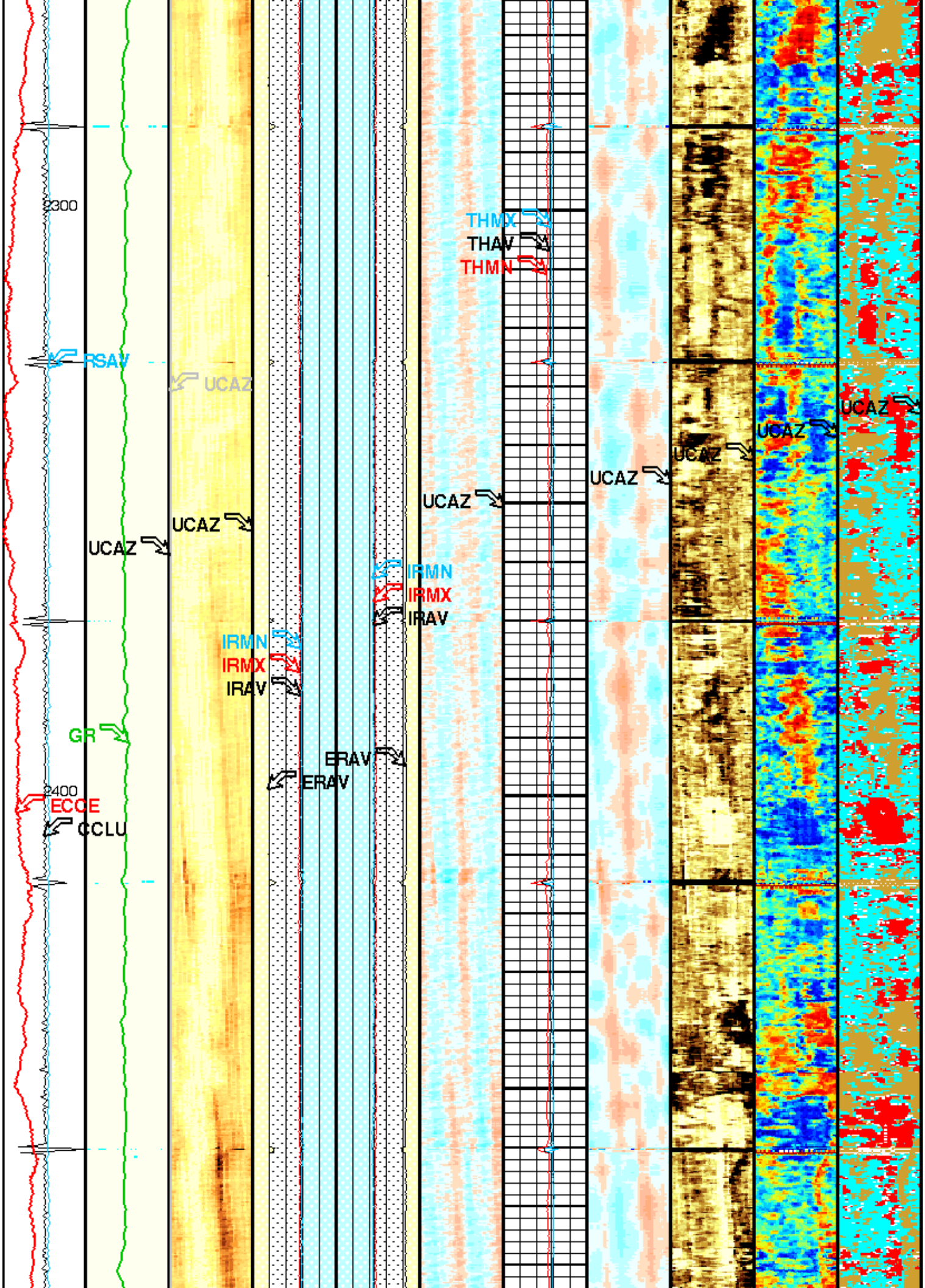
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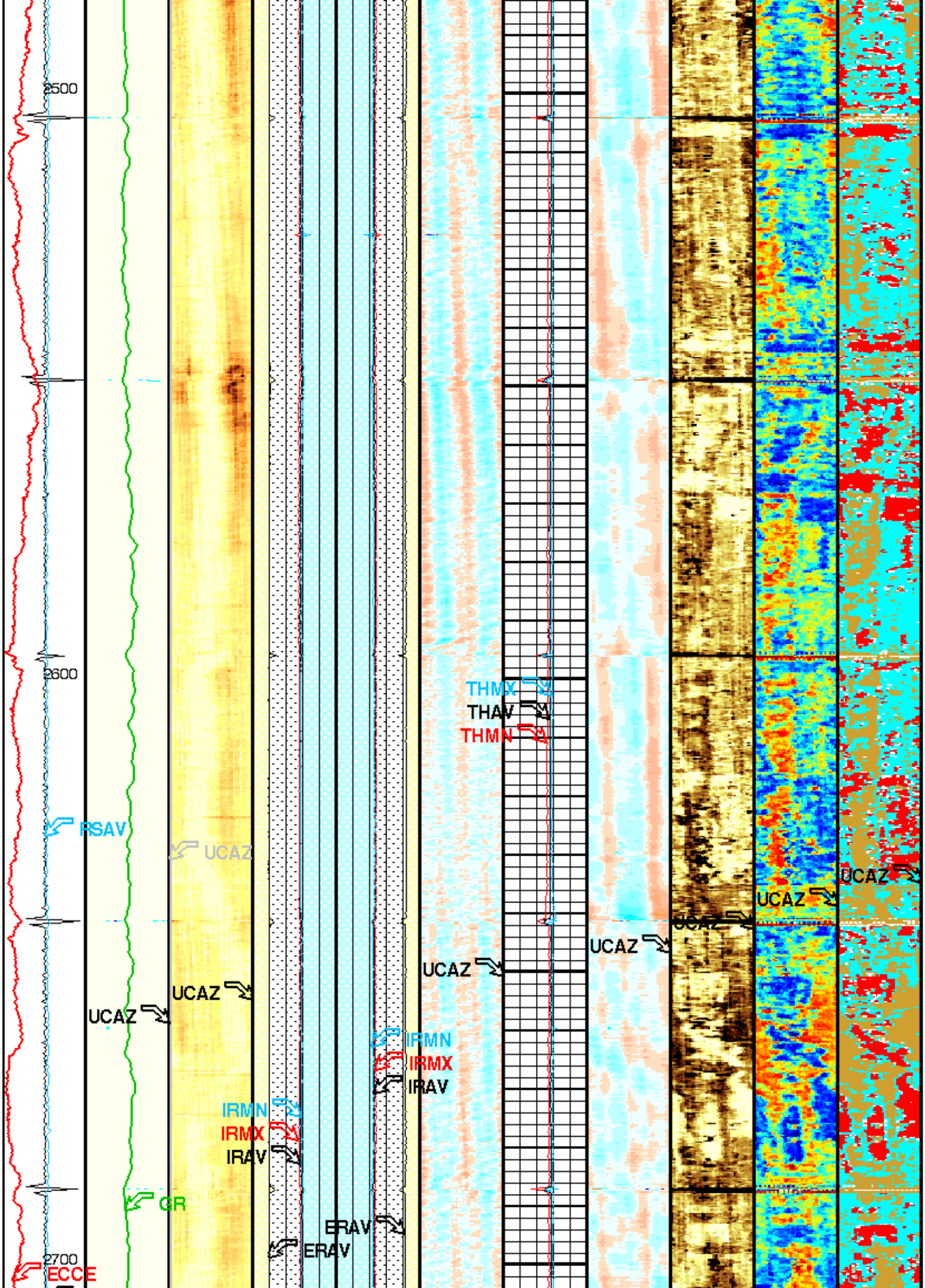
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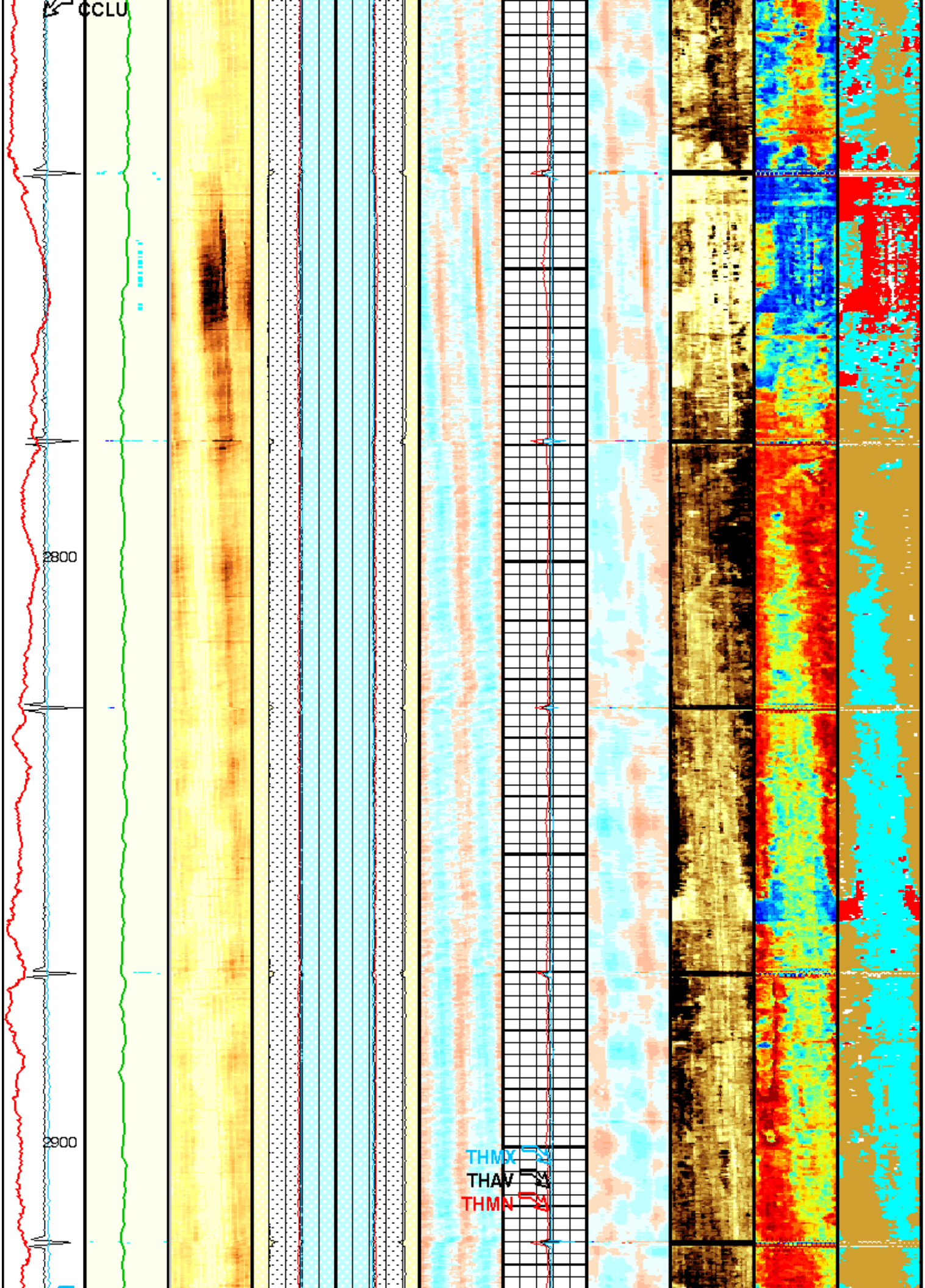
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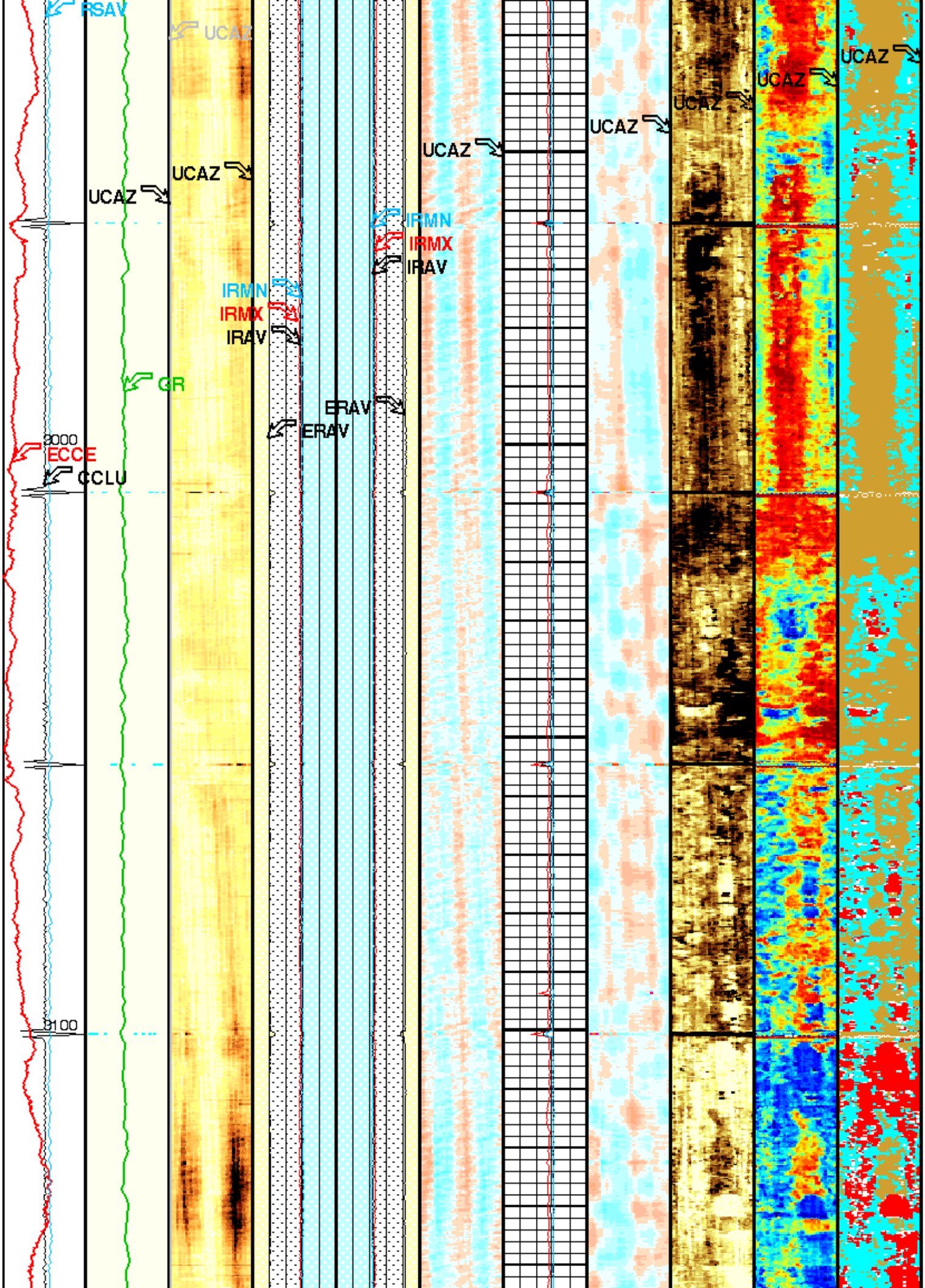
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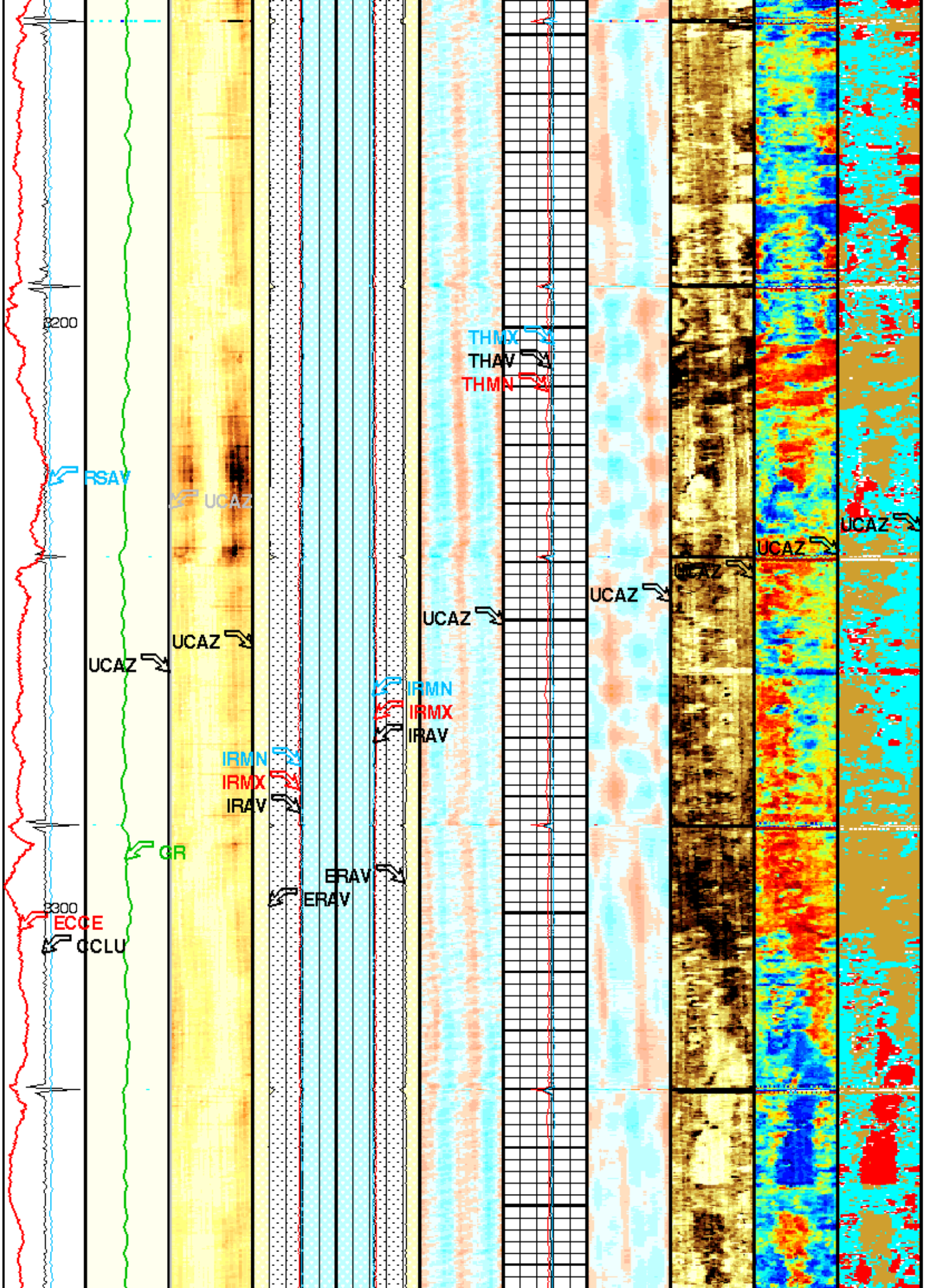
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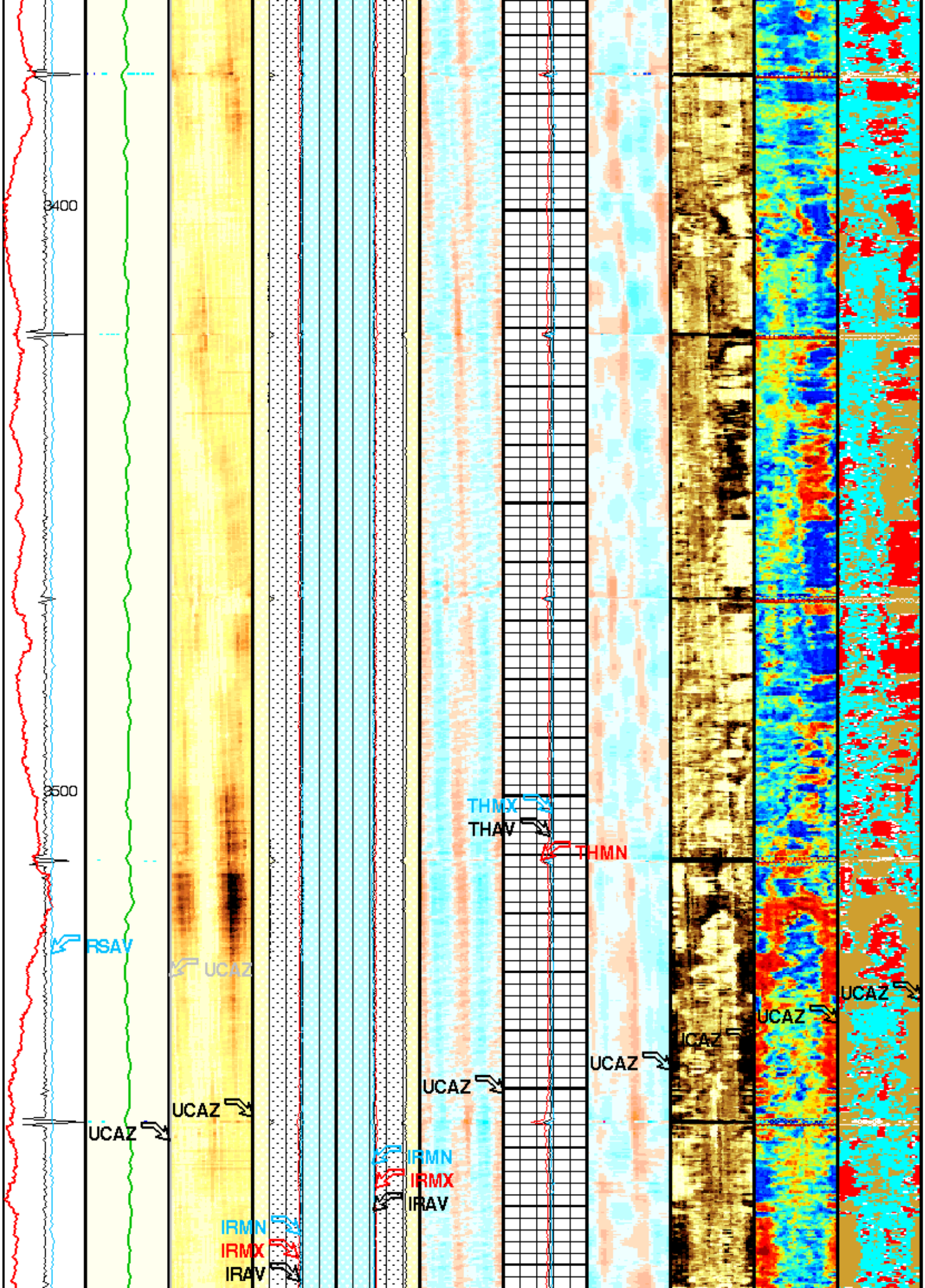
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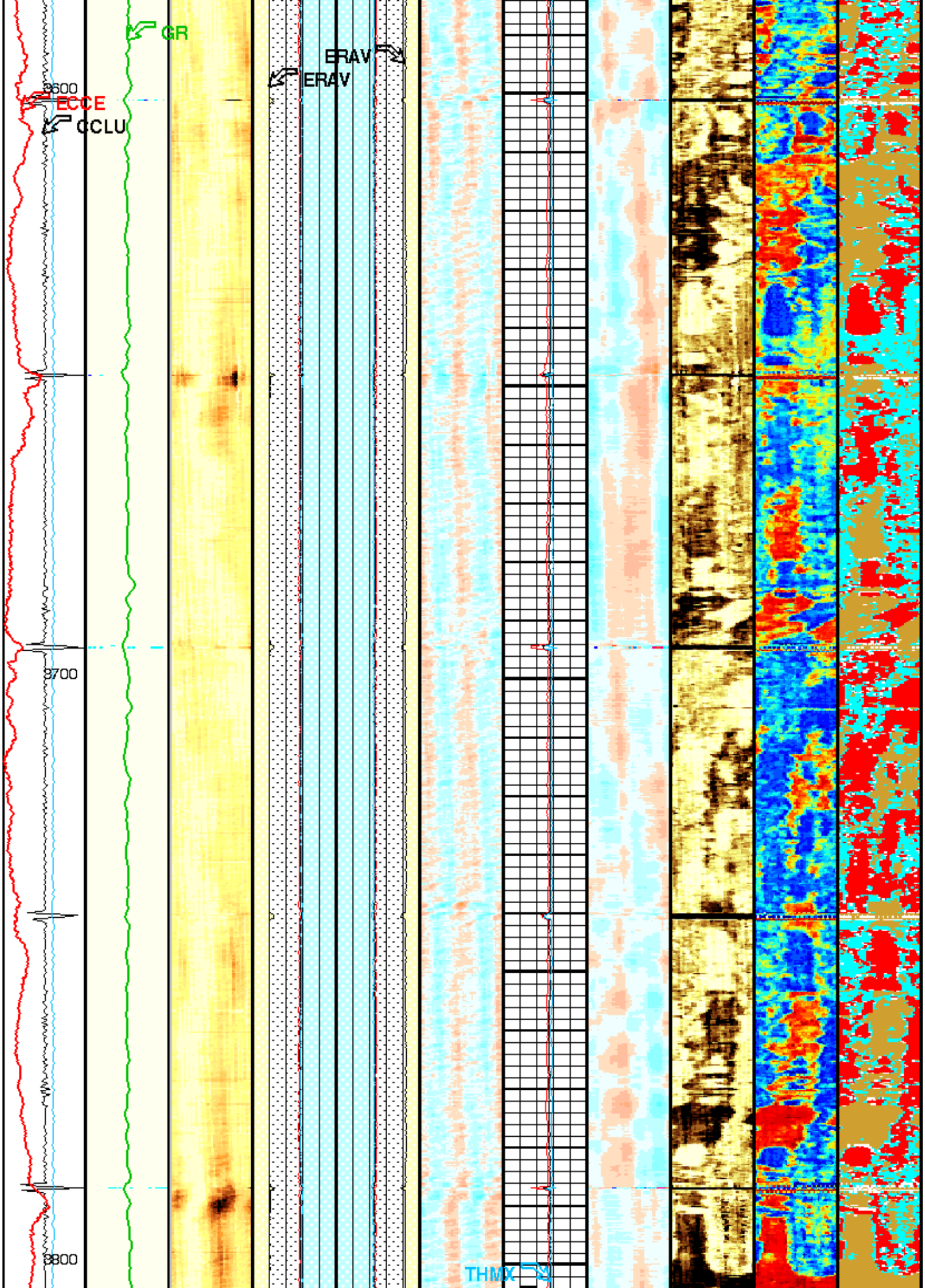
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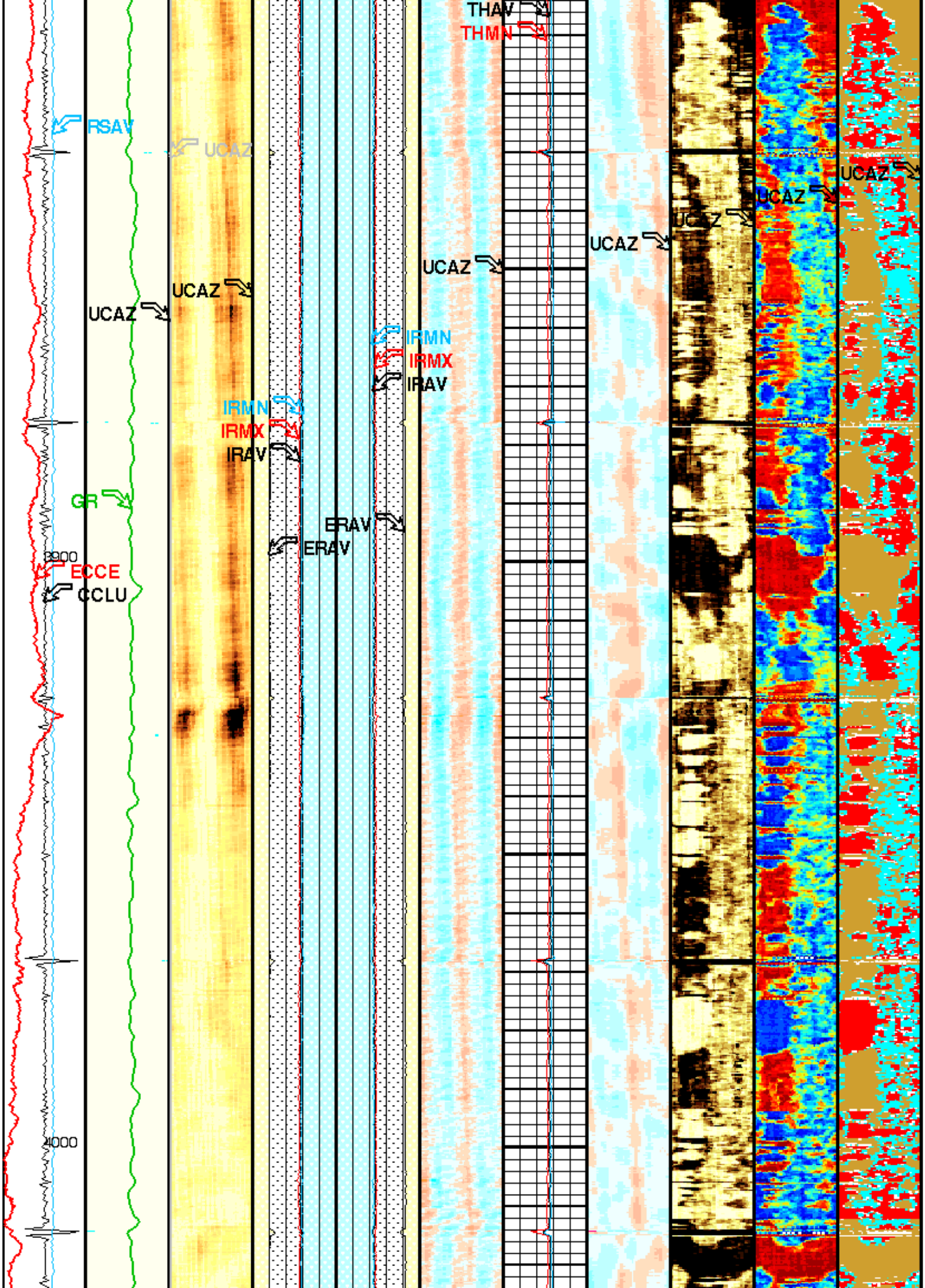
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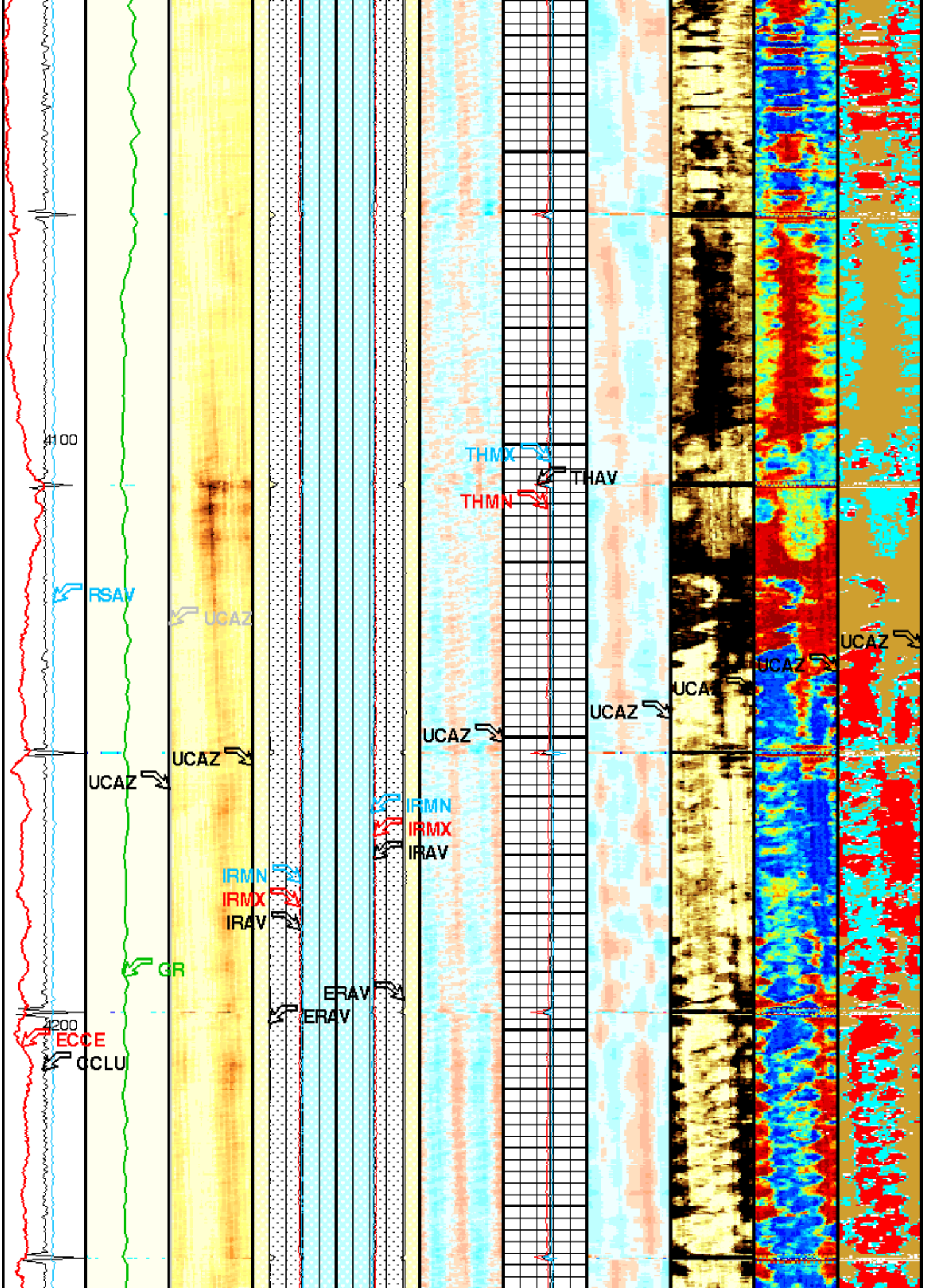
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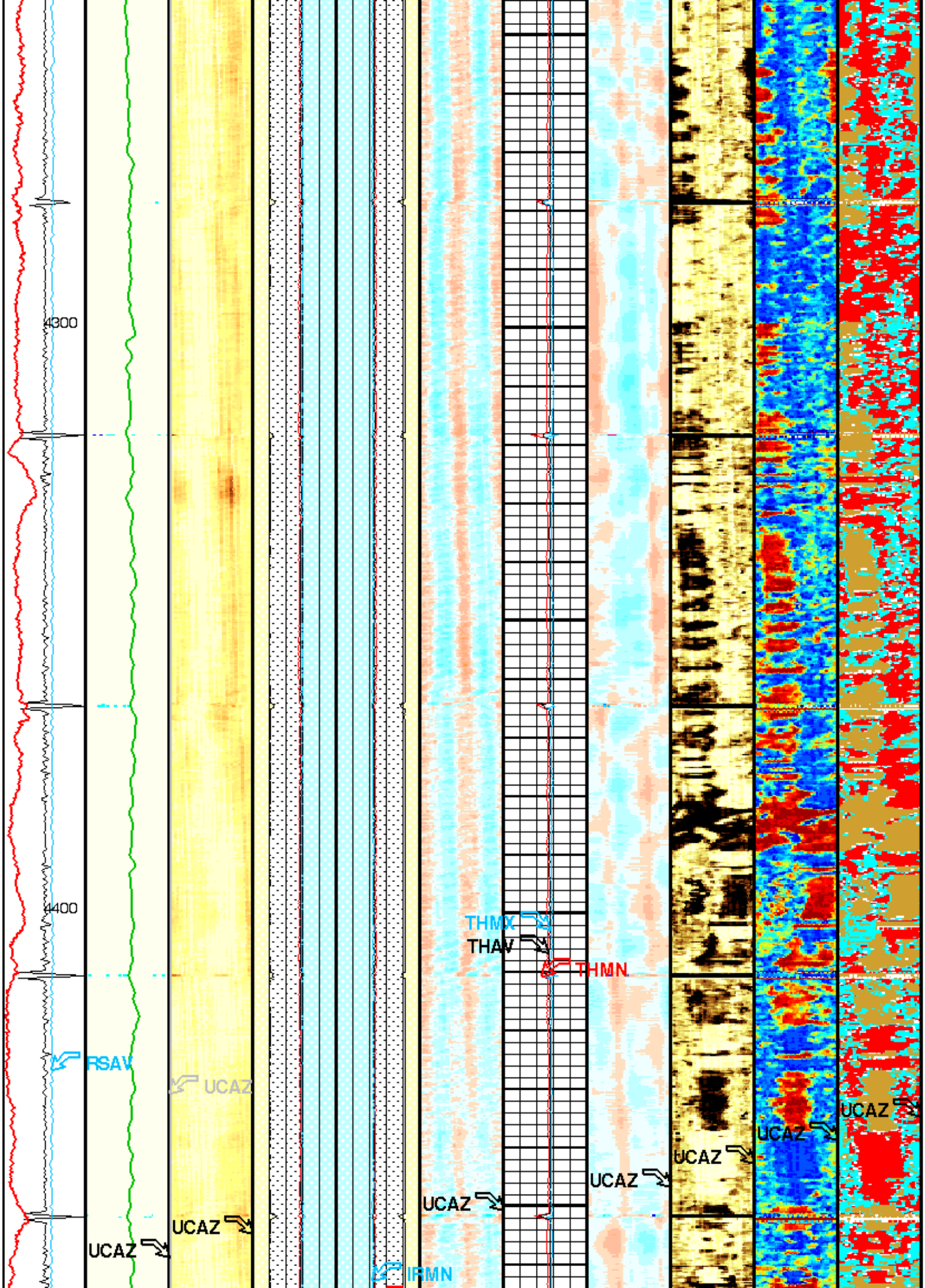
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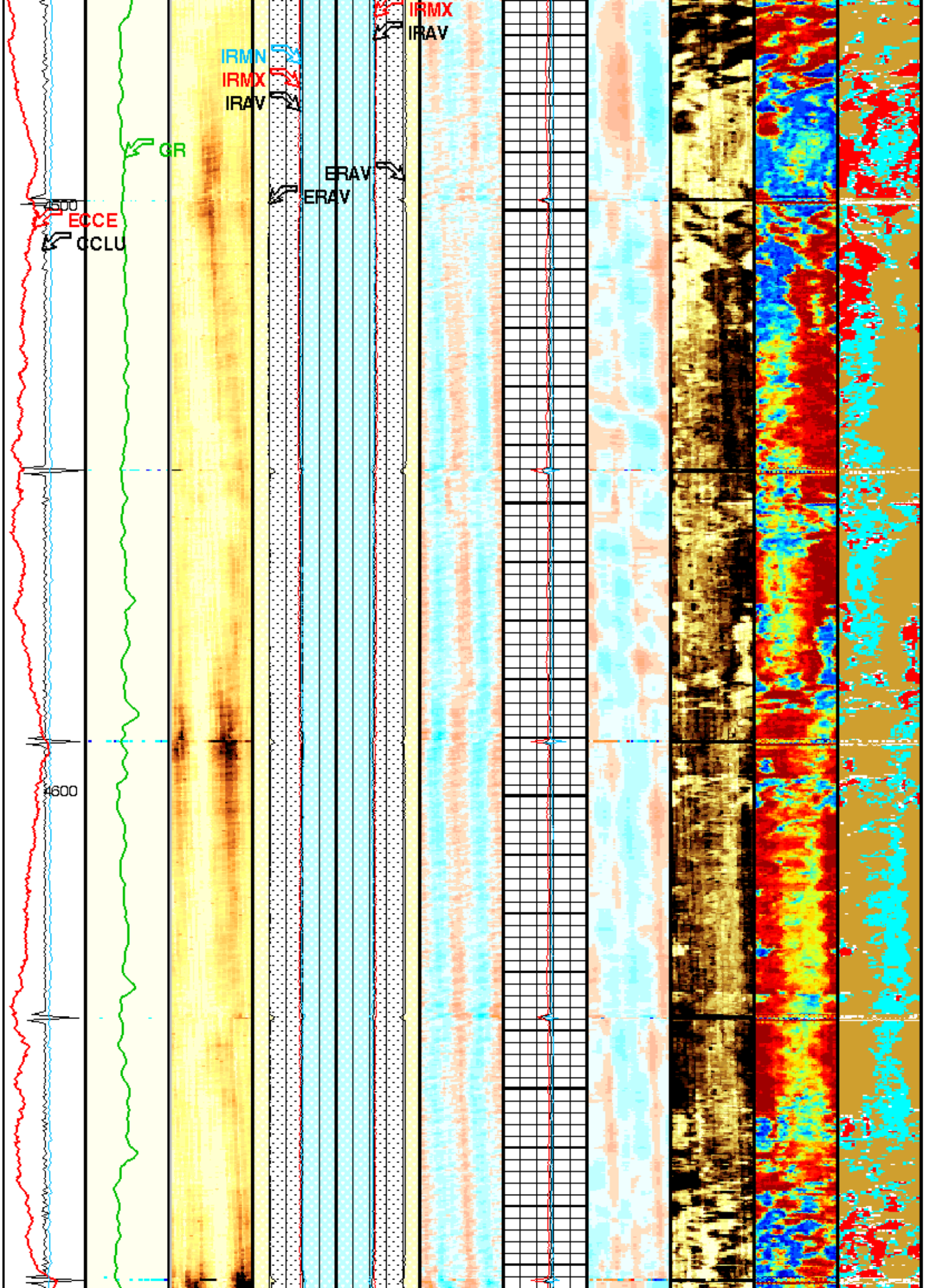
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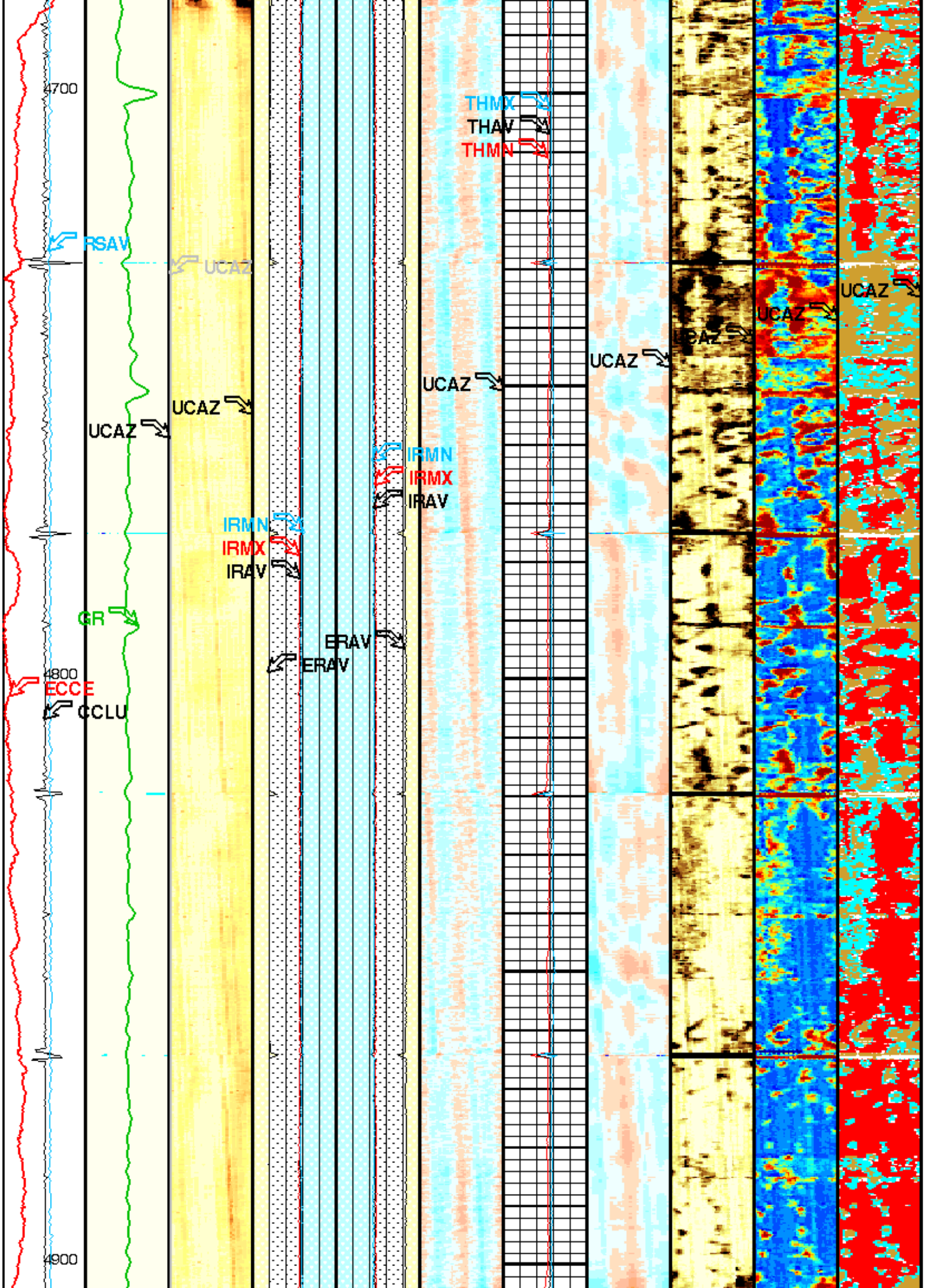
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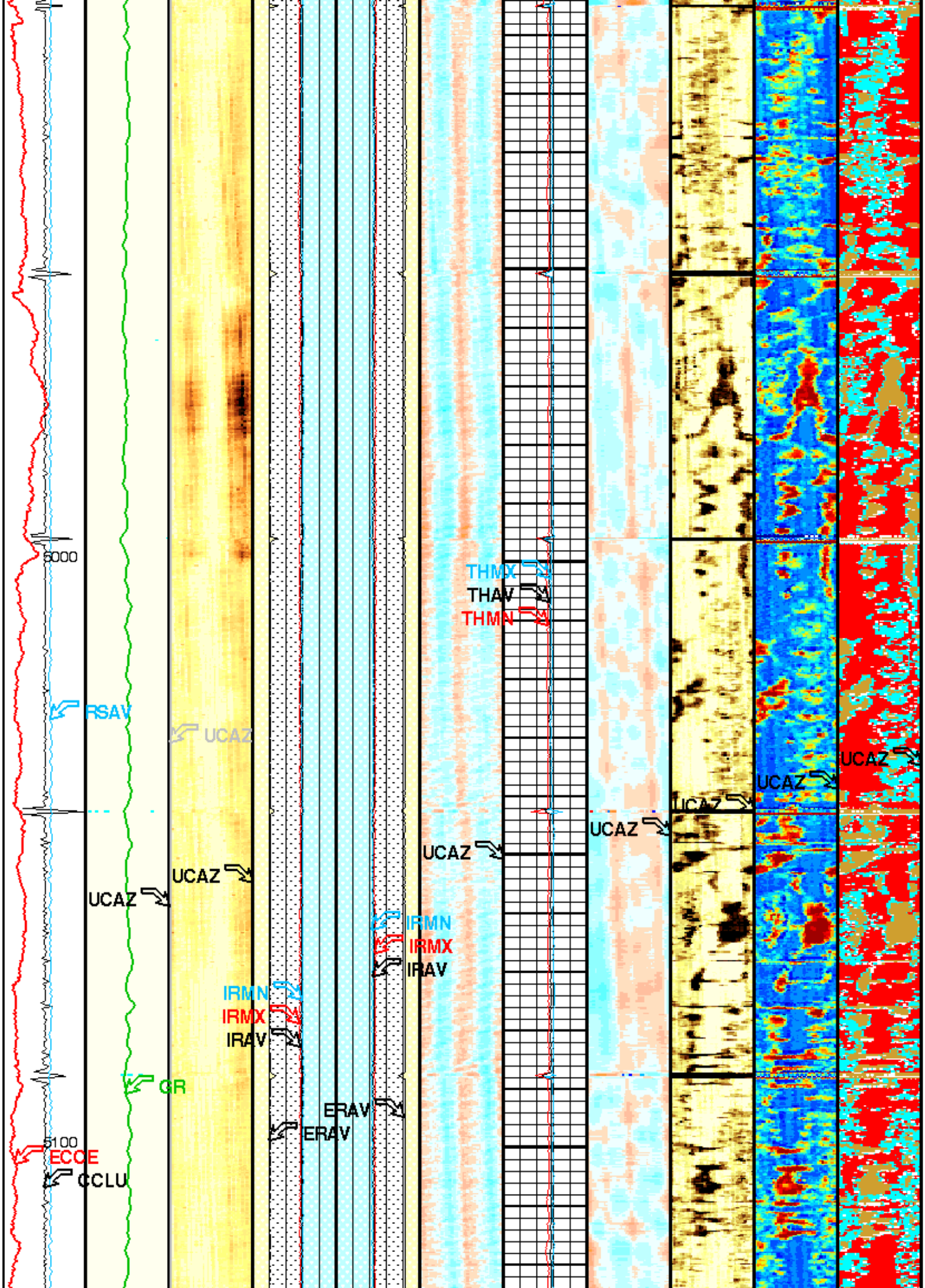
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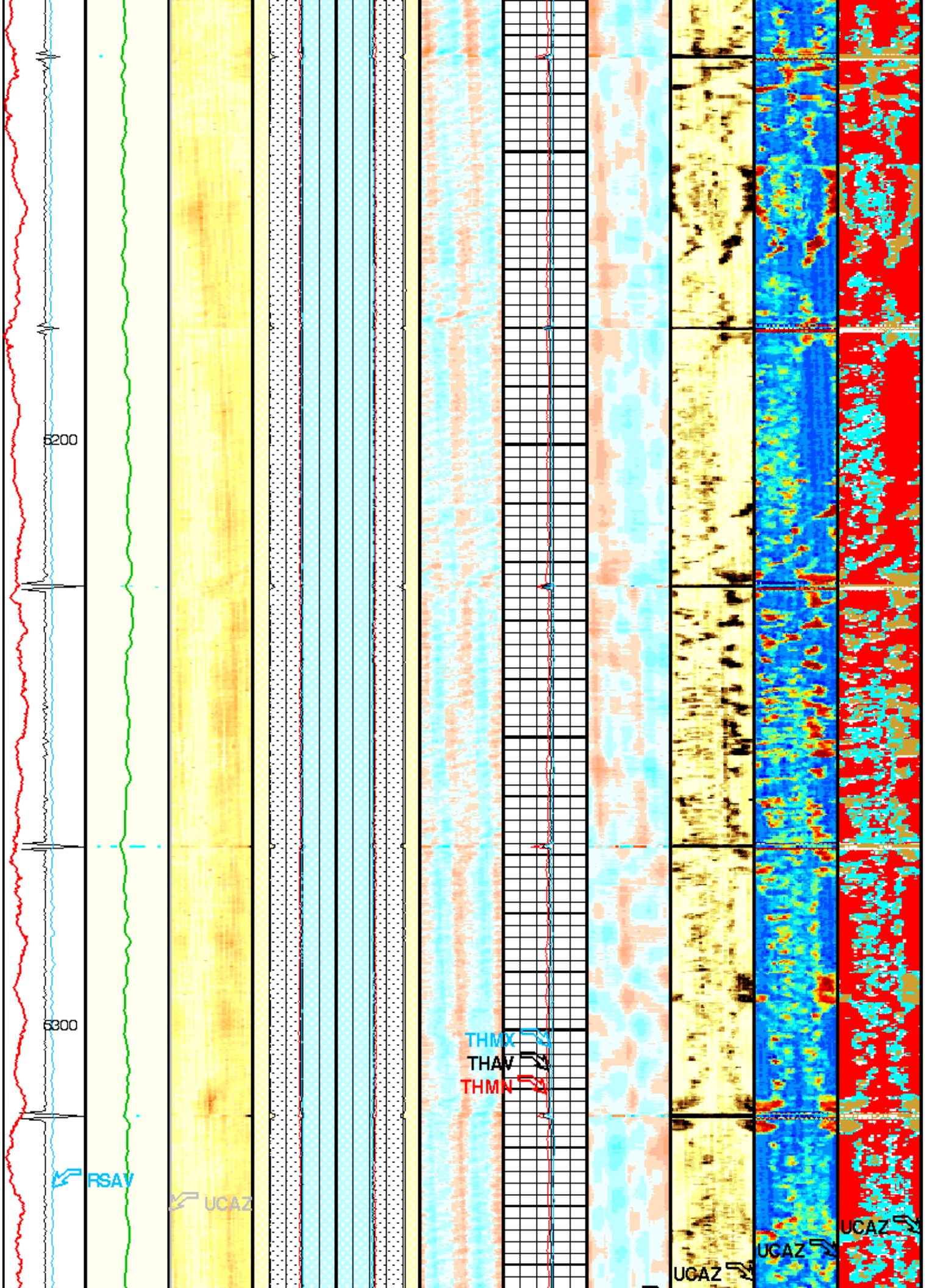
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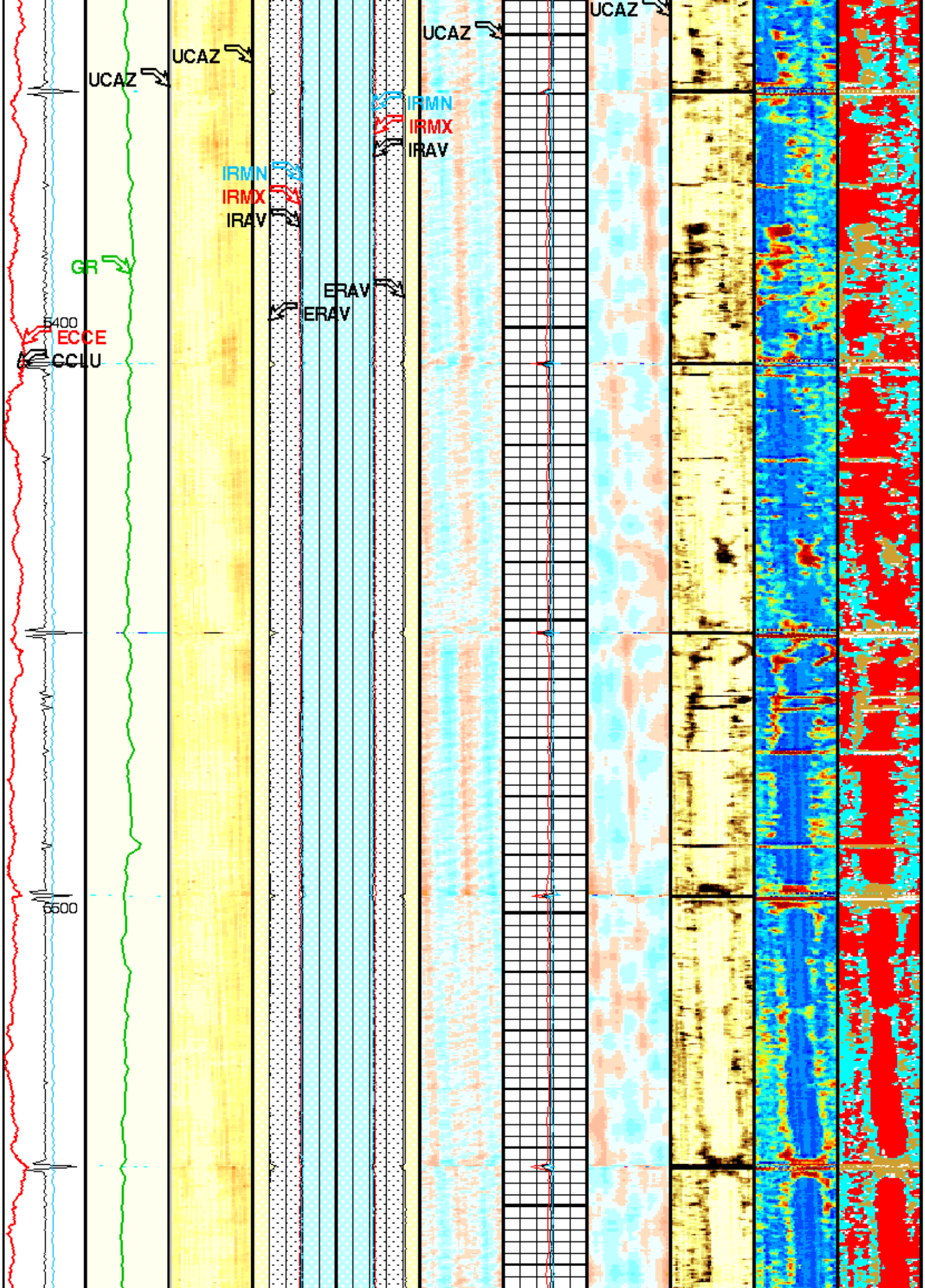
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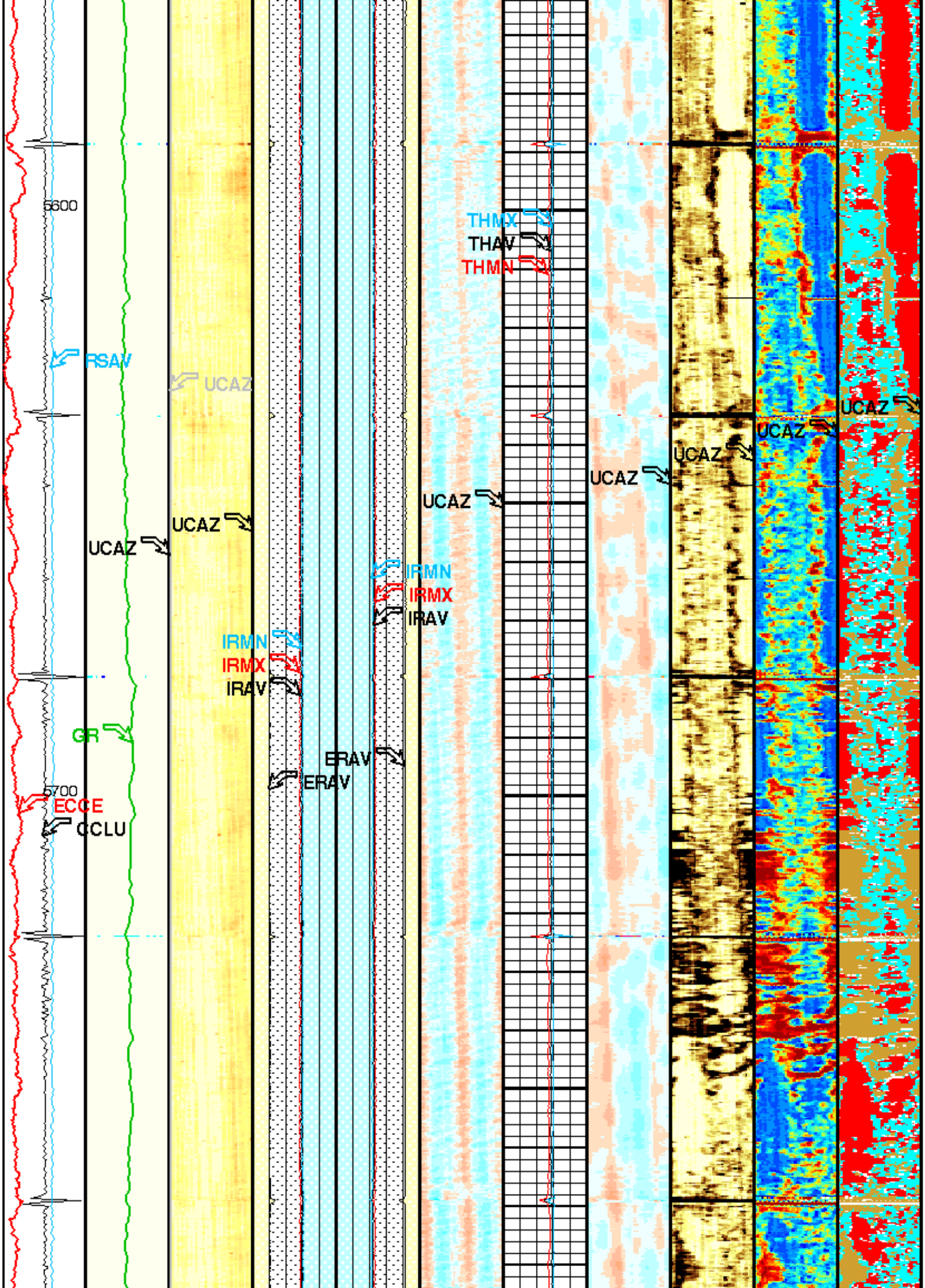
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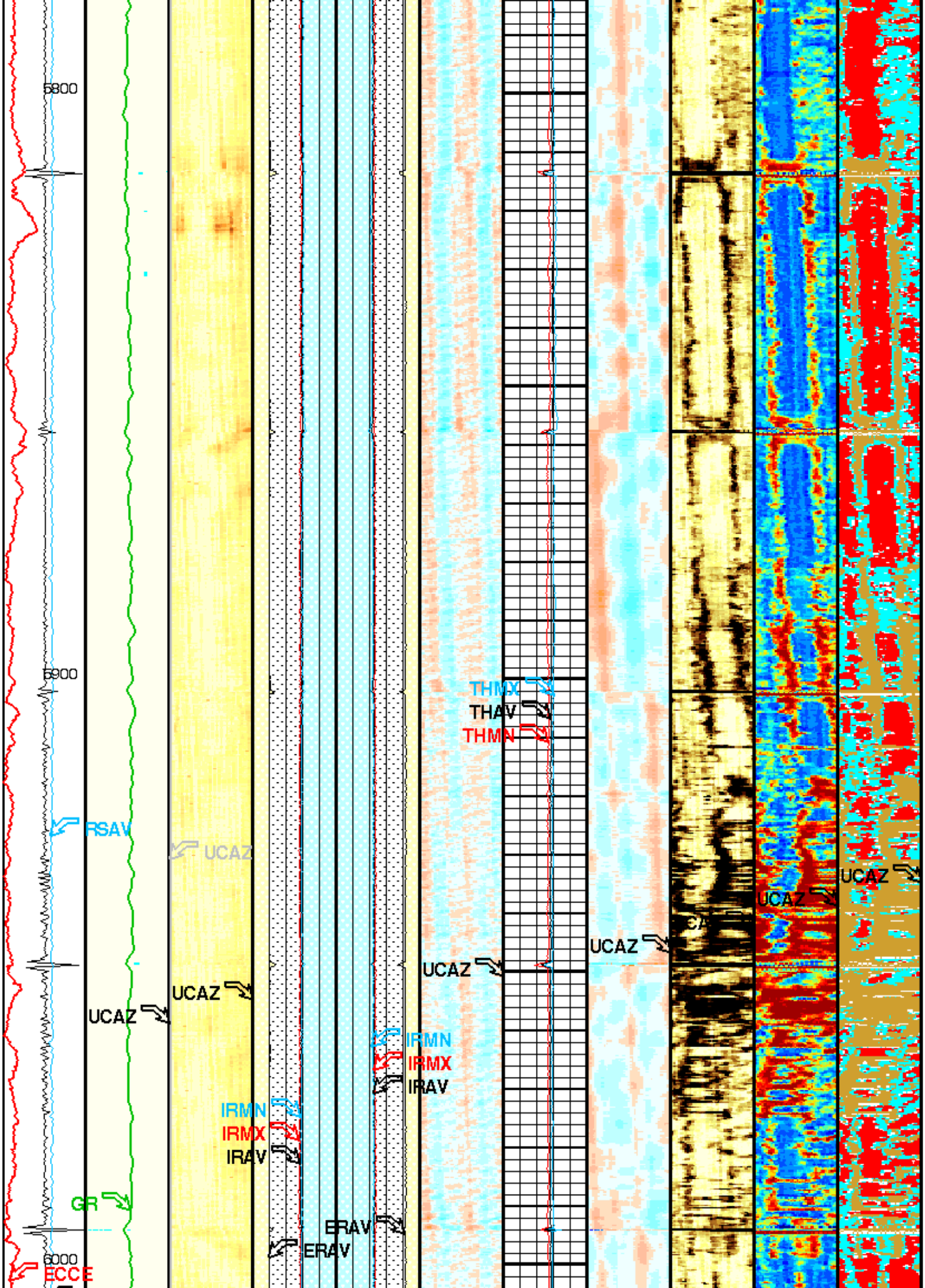
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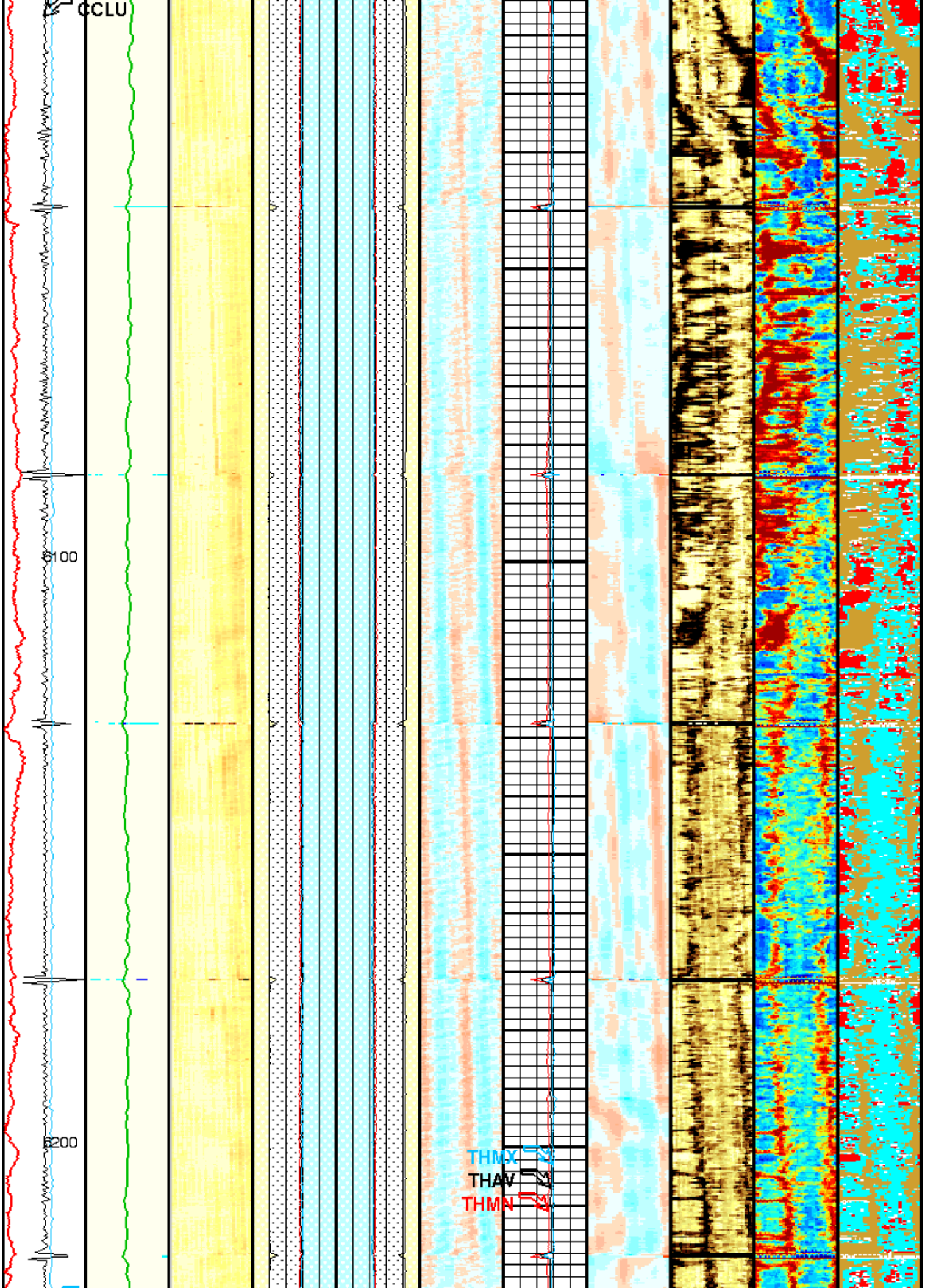
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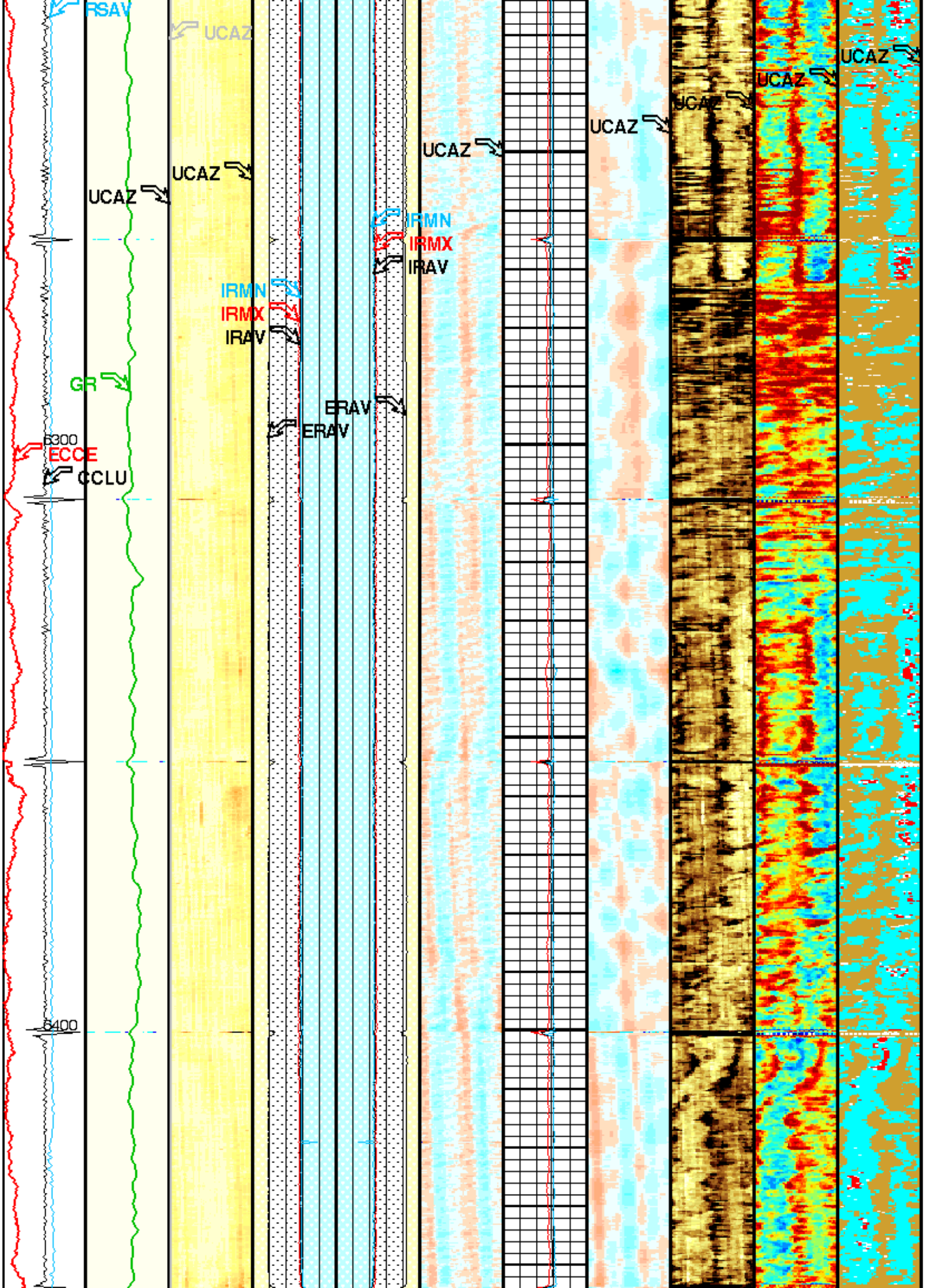
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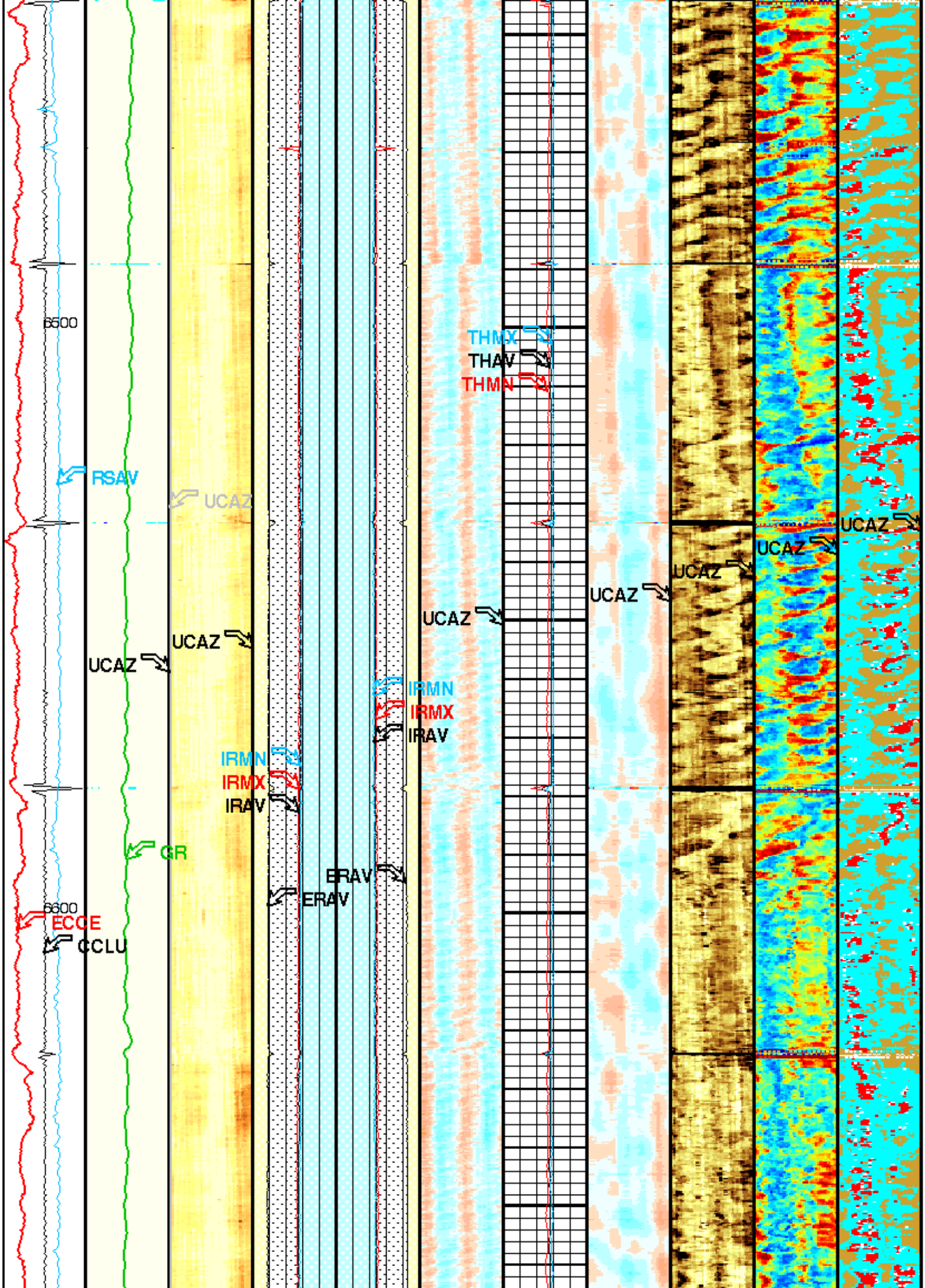
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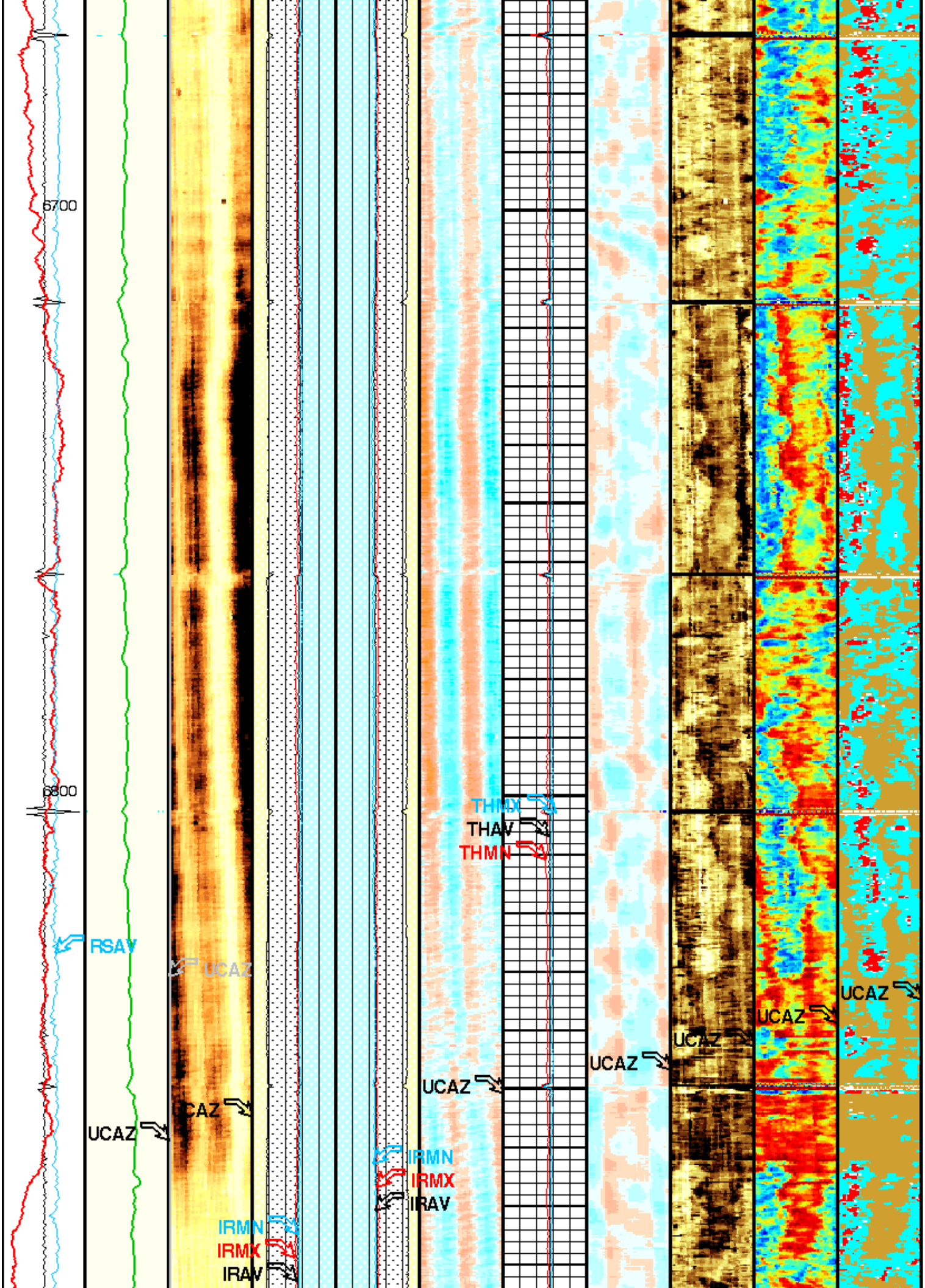
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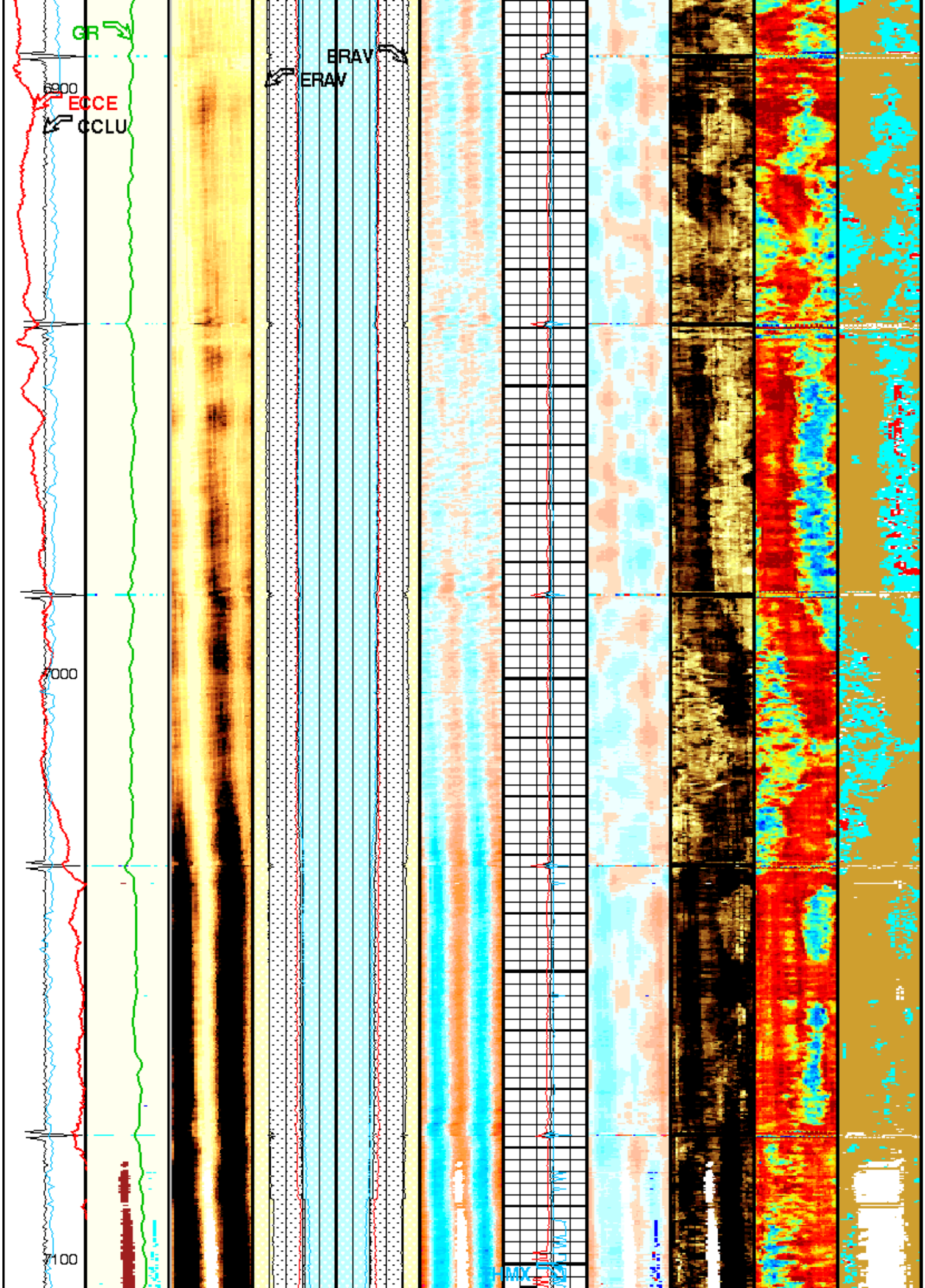
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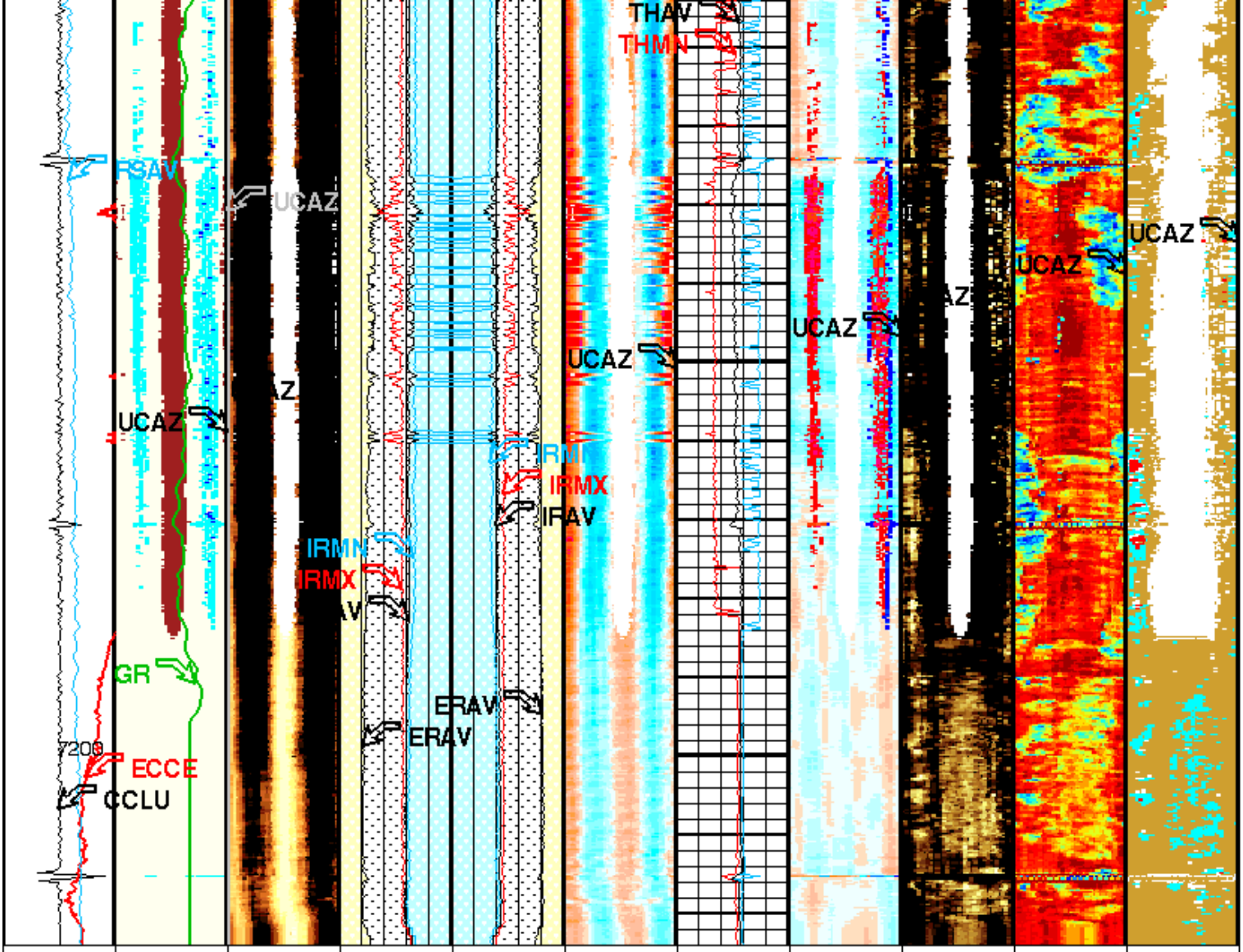

Eccent. (ECCE)
0 (IN) 0.5

Gamma Ray (GR) (GAPI)
0 150

Image rotation (UCAZ) (DEG)
0 360

External radius Average (ERAV) (IN)
3.7 2.7

External radius Average (ERAV) (IN)
2.7 3.7

-500.0000
-0.0760
-0.0680
-0.0600
-0.0520
-0.0440
-0.0360
-0.0280
-0.0200
-0.0120
-0.0040
0.0040
0.0120
0.0200
0.0280
0.0360
0.0440
0.0520
0.0600
0.0680
0.0760

Internal radii minus Ave (IRBK) (IN)

Min of Thickness (THMN) (IN)
0.1 0.6

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-0.0760
-0.0680
-0.0600
-0.0520
-0.0440
-0.0360
-0.0280
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0.0600
0.0680
0.0760

Thickness minus Ave (THBK) (IN)

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0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000

Raw Acoustic Imped. (AIBK) (MRAY)

0.0000
30.0000
36.0000
42.0000
48.0000
54.0000
60.0000
66.0000
72.0000
78.0000
84.0000
90.0000
96.0000
102.0000
108.0000
114.0000
120.0000

Flexural Attenuation (U-USIT_UFAK) (DB/M)

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U-USIT_USLP) (----)

CCL (CCLU) (----)

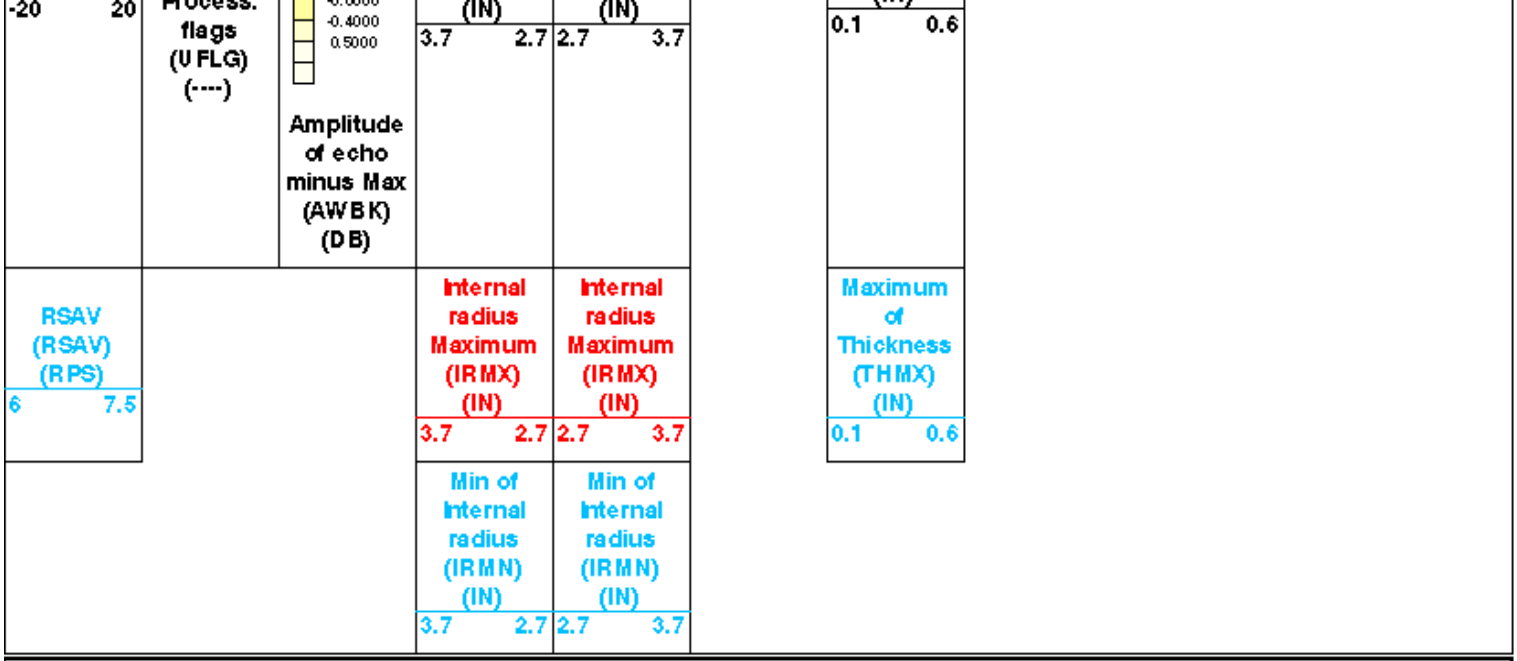
0.5000
1.5000
2.5000
3.5000
6.5000

-500.0000
-6.0000
-5.6000
-5.2000
-4.8000
-4.4000
-4.0000
-3.6000
-3.2000
-2.8000
-2.4000
-2.0000
-1.6000
-1.2000

Internal radius Average (IRAV) (IN)

Internal radius Average (IRAV) (IN)

Average of Thickness (THAV) (IN)



Format: 5 inch IBC CEMENT COMPOSITE Vertical Scale: 5" per 100' Graphics File Created: 03-Jun-2012 14:08

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
	USIT-D: Ultrasonic Imaging - D		
	T 3 Processing Length for FPM	26.648	US
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	-0.076	IN
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CDUN	Curves Unit Declared in Presentation Manager	IN	
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
CYST	Casing Yield Strength	0	PSI
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	100	V
FDII	FPM Data Interpolation Interval	0	FT
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.7	LB/G
OPLEV	USIT Remove Flagged Data Level	level2	
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro-debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro-debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro-debonding	0.3	
SUBT	Ultrasonic Subassembly Type	Sub_7_inch_S	
TCUB	T 3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	

THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
TMUC	Type of Mud	WBM	
U-USIT_CEMT	USIT Cement Type	ULTRA_LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_RFWB	USIT Remove Flagged Data Window Begin	0	US
U-USIT_RFWE	USIT Remove Flagged Data Window End	511	US
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UDFC	USIT Deflector for Casing	NONE	
U-USIT_UFAO	USIT Flexural Attenuation Offset	13	DB/M
U-USIT_UFGA	Far Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UFGI	Far Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_UHCI	USIT IBC Hydraulic Communication Interval	06FT_02M	
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_B	
U-USIT_UNGA	Near Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UNGI	Near Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_URTP	USIT Radial Transducer Position	UNKNOWN	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
UPAT	Emission Pattern	Pattern_375K	
USIT_USAC_TASK_ALLOW	USIT USAC Allow Task after Power Up	YES	
USIT_USAC_TASK_TIMEOUT	USIT USAC Task Timeout (in seconds) FOR TEST REPORT	600	
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_3IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	2.1	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
SGT-N: Scintillation Gamma Ray Tool - N			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	210	DEGF
DPPM	Density Porosity Processing Mode	STAN	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
SOGR	SGT Standoff Distance	0	IN
FEQL: Formation Evaluation Quick Look			
CSXO	Coefficient of Sxo	1	
DLLM	DPOR Lower Limit for Mineral Detection	0.35	CFCF
EDSE	EPT Data Selector	STANDARD	
FEPT	EPT Option Flag	NONE	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
GDCL	Grain Density Clean Reading	0	G/C3
GDSH	Grain Density Shale Reading	2.9	G/C3
GRCL	Gamma Ray Clean Reading	0	GAPI
GRSH	Gamma Ray Shale Reading	200	GAPI
GULM	Gamma Ray Upper Limit for Mineral Detection	999	GAPI
KGR	Kill GR Shale Index (USE, KILL)	USE	
KPN	Kill NPES Shale Index (USE, KILL)	USE	
KRH	Kill RHGA Shale Index (USE, KILL)	USE	
KSP	Kill SP Shale Index (USE, KILL)	USE	
LSWB	SWB Limit Selector (NO_LIMIT, LIMIT)	NO_LIMIT	
MDET	Mineral Flag (NONE, COAL, SALT)	NONE	
NLIM	Neutron Limit for Mineral Detection	0.01	CFCF
NPCL	NPES Clean Reading	0	CFCF
NPSH	NPES Shale Reading	0.5	CFCF
RWB	Bound Water Resistivity	0.1	OHMM
RXOF	RXO Presence Flag	ABSENT	
SDGC	Clean Grain Density Selector	GDCL	
SEXP	N in Water Saturation Equation	2	
SIS	Three Mineral Shale Index Selector	NOT_USED	
SPCL	SP Clean Reading	-200	MV

SPSB	SP Shale Baseline	0	MV
SPSH	SP Shale Reading	0	MV
SWMN	Sw Minimum	0.05	CFCF
TPCN	Time Propagation of non-shale	7.2	NS/M
TPM1	Time Propagation, Matrix-1 <Limestone>	9.8	NS/M
TPM2	Time Propagation, Matrix-2 <Sandstone>	7.2	NS/M
TPM3	Time Propagation, Matrix-3 <Dolomite>	8.7	NS/M
TPSH	Time Propagation of Shale	8.9	NS/M
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	210	DEGF
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
ARTS	AIT Rt Selection (for ALLRES computation)	AIT_TwoResA60	
BDPS	Bulk Density Processing Selector	Standard	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	210	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
FSON	Sonic Presence Flag	ABSENT	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	LIMESTONE	
RG21	RHO Grain (2-Mineral Model, Min-1)	2.71	G/C3
RG22	RHO Grain (2-Mineral Model, Min-2)	2.644	G/C3
RG23	RHO Grain (2-Mineral Model, Min-3)	2.877	G/C3
RG31	RHO Grain (3-Mineral Model, Min-1)	2.71	G/C3
RG32	RHO Grain (3-Mineral Model, Min-2)	2.644	G/C3
RG33	RHO Grain (3-Mineral Model, Min-3)	2.877	G/C3
RTCO	RTCO - Rt Invasion Correction	YES	
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2-Mineral Model, Min-1)	13.77	
UM22	U Matrix (2-Mineral Model, Min-2)	4.779	
UM23	U Matrix (2-Mineral Model, Min-3)	8.997	
UM31	U Matrix (3-Mineral Model, Min-1)	13.77	
UM32	U Matrix (3-Mineral Model, Min-2)	4.779	
UM33	U Matrix (3-Mineral Model, Min-3)	8.997	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	14476.00	FT
TDL	Total Depth - Logger	14476.00	FT
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	9.70	LB/G
DO	Depth Offset for Playback	0.0	FT
FLEV	Fluid Level	10.00	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	14476	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08		

Company: Encana Oil & Gas (USA) Inc — Well: Davis 2B-9H

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

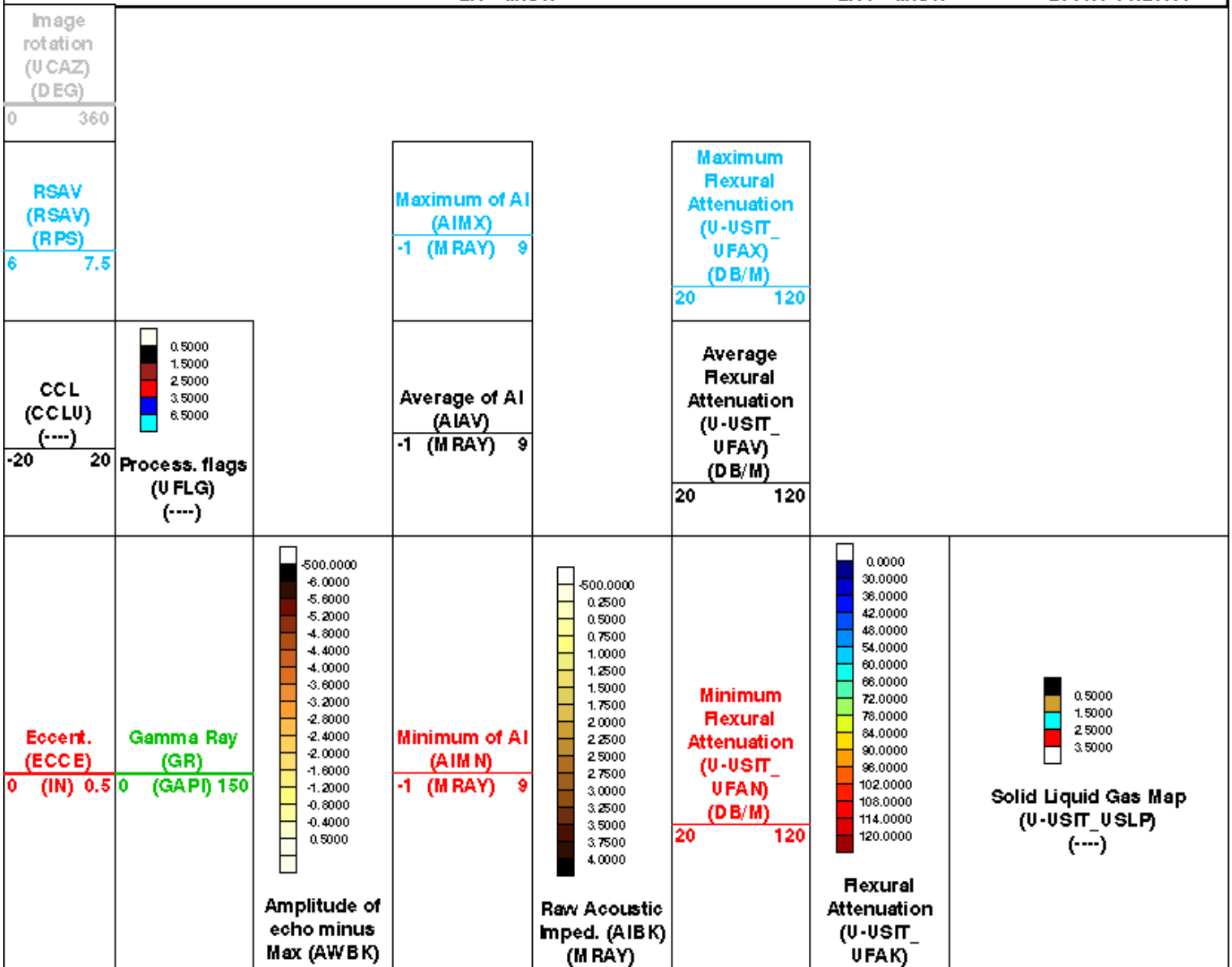
DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08	7224.0 FT	203.0 FT

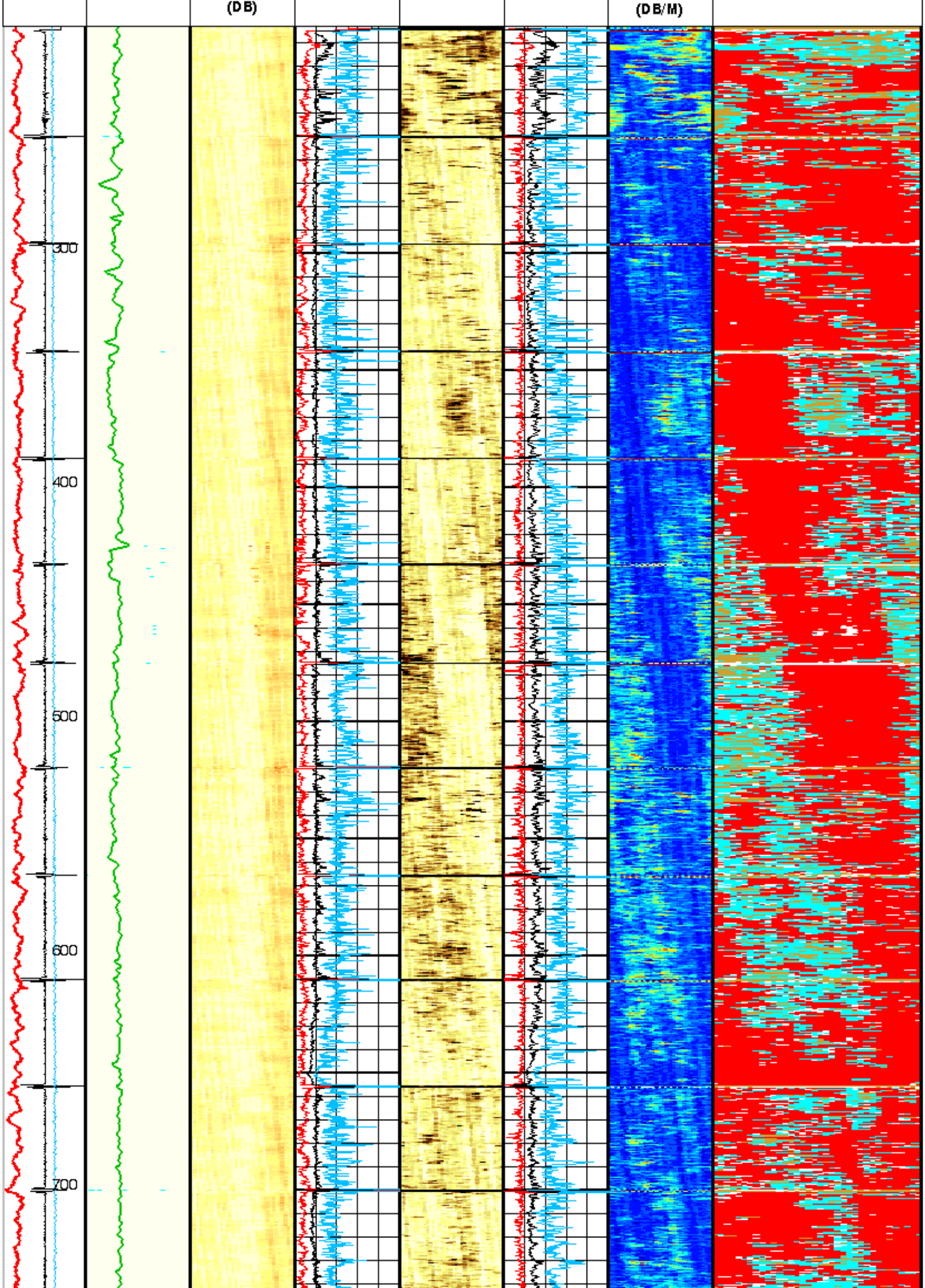
OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	2.05 MRAY	2.1 MRAY	7224.0 14:08:55
	2.1 MRAY	2.05 MRAY	2900.0 14:21:33

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(DB/M)
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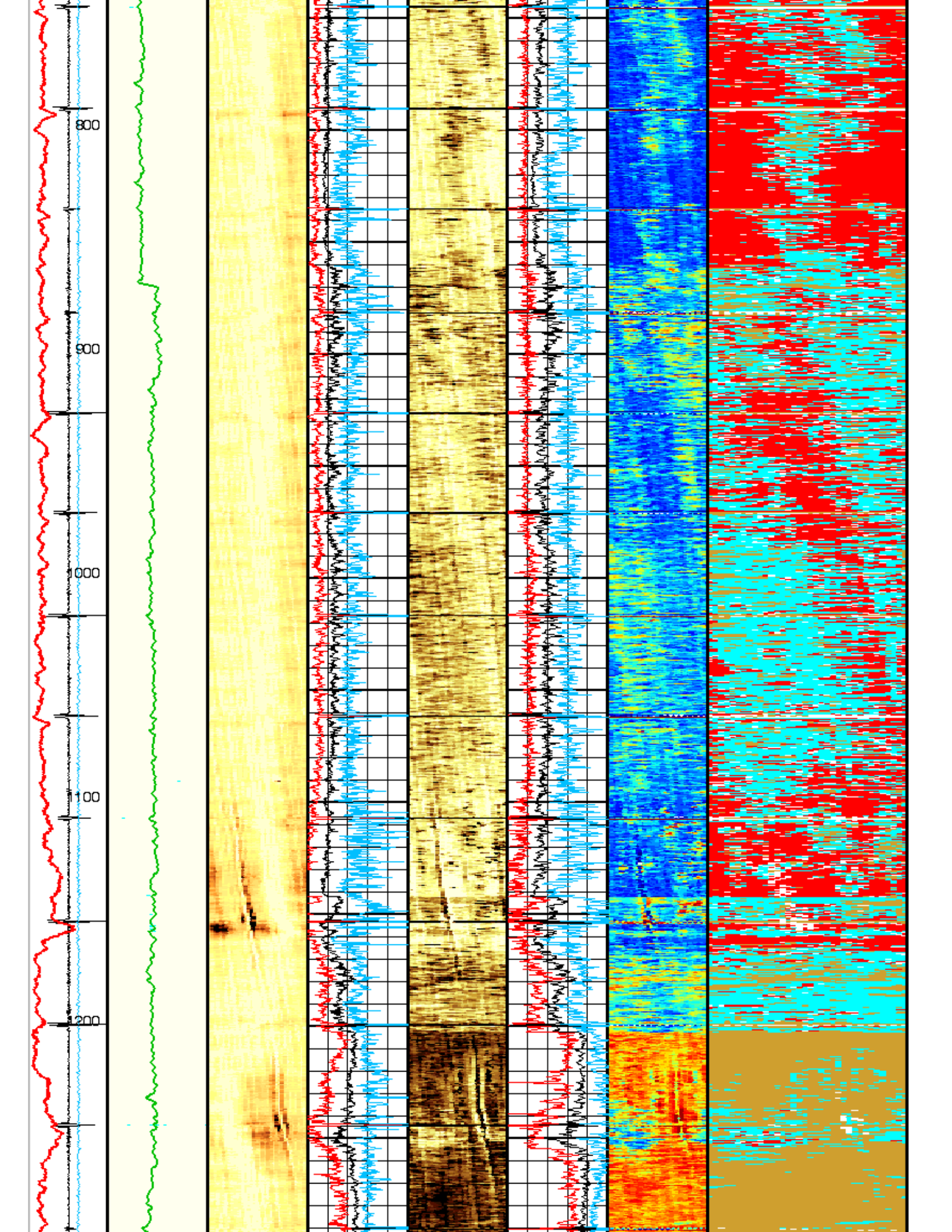
600
700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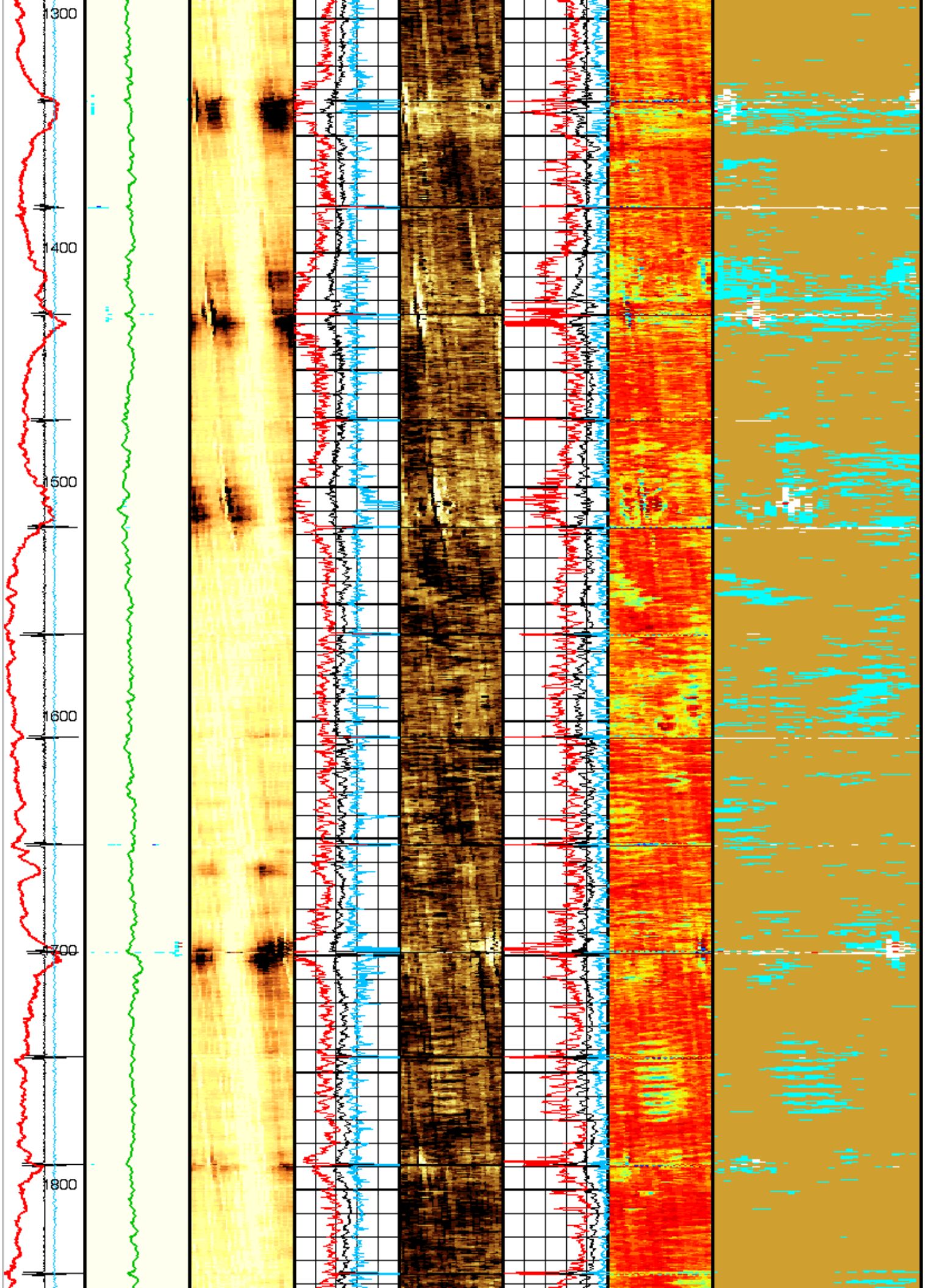
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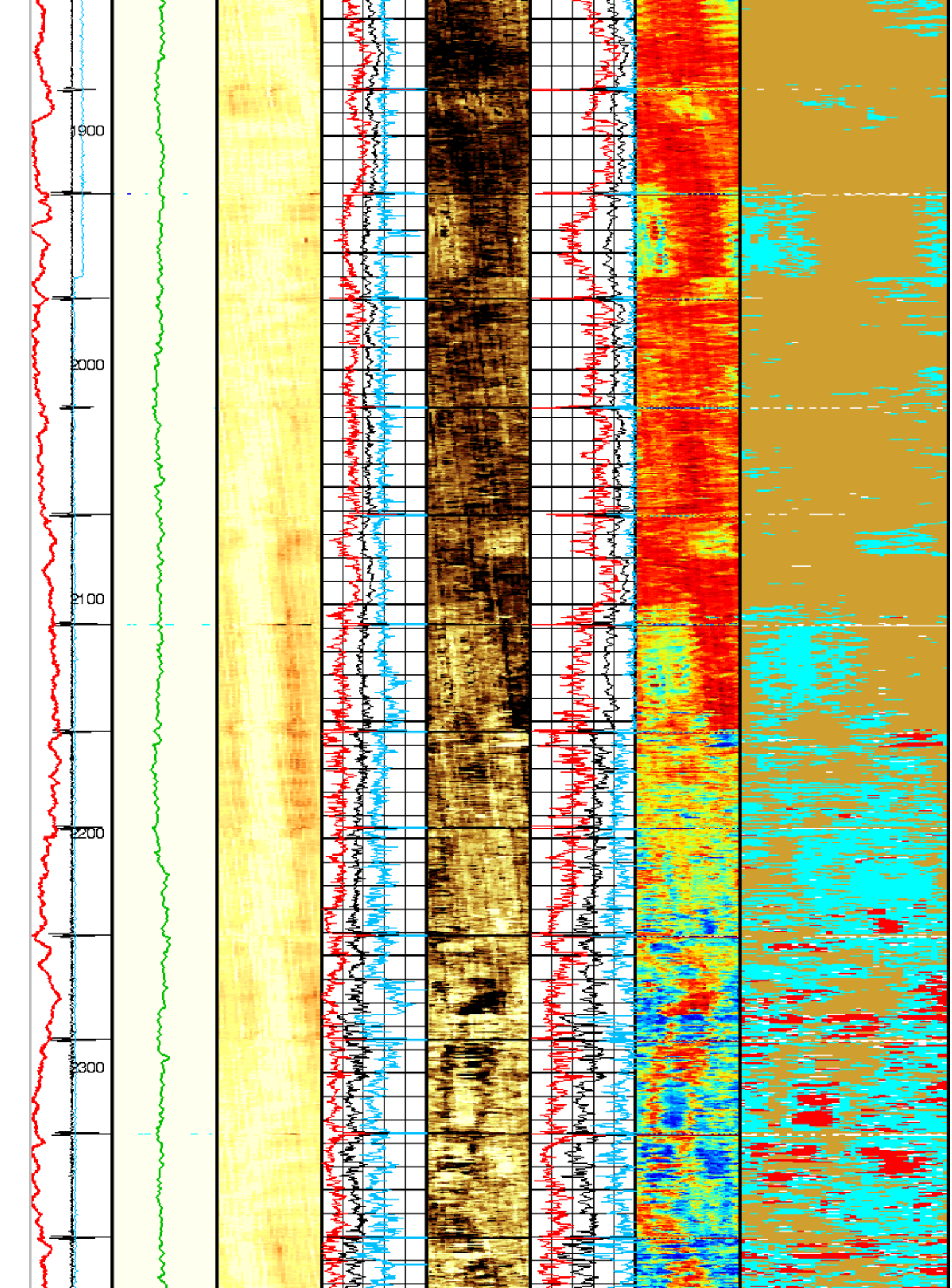
1800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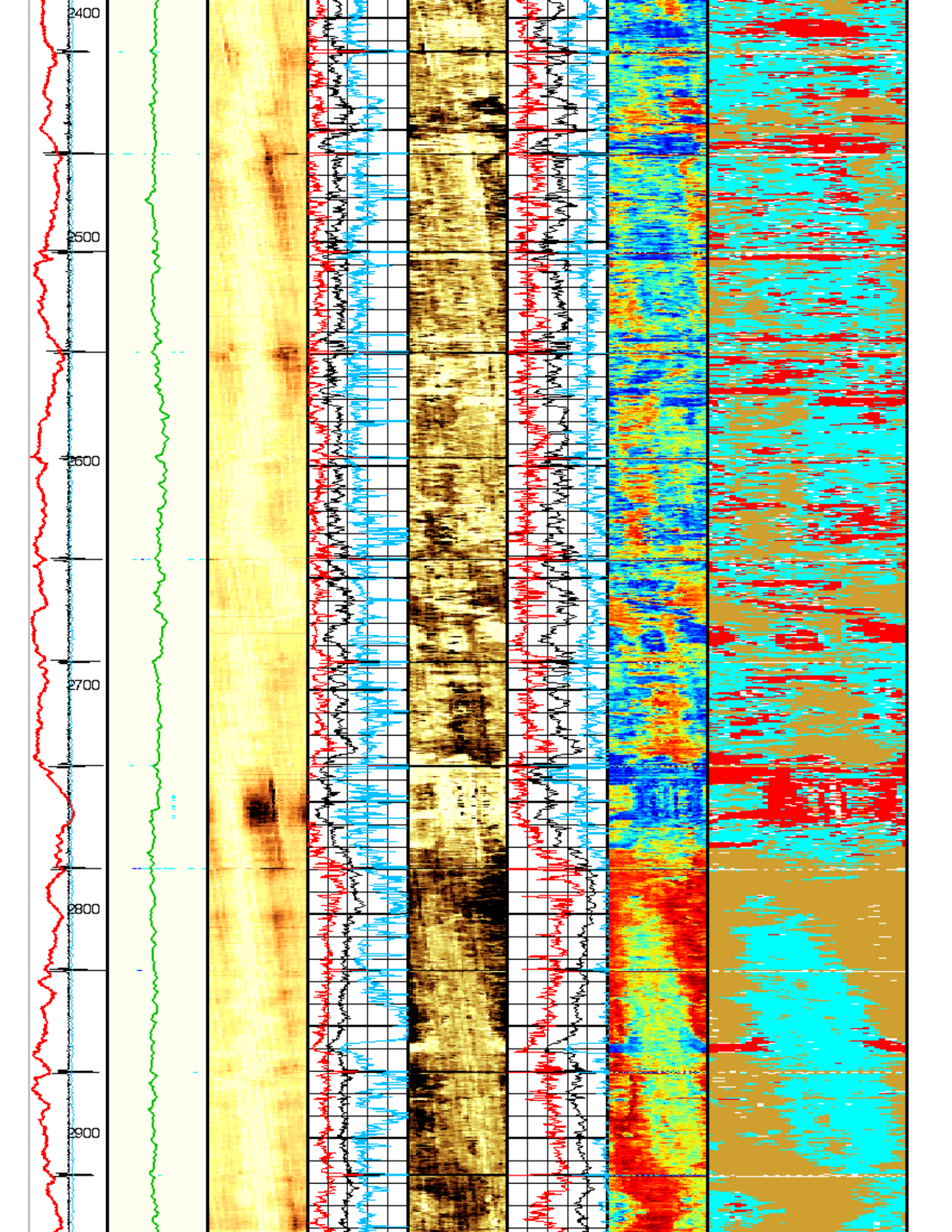
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2600
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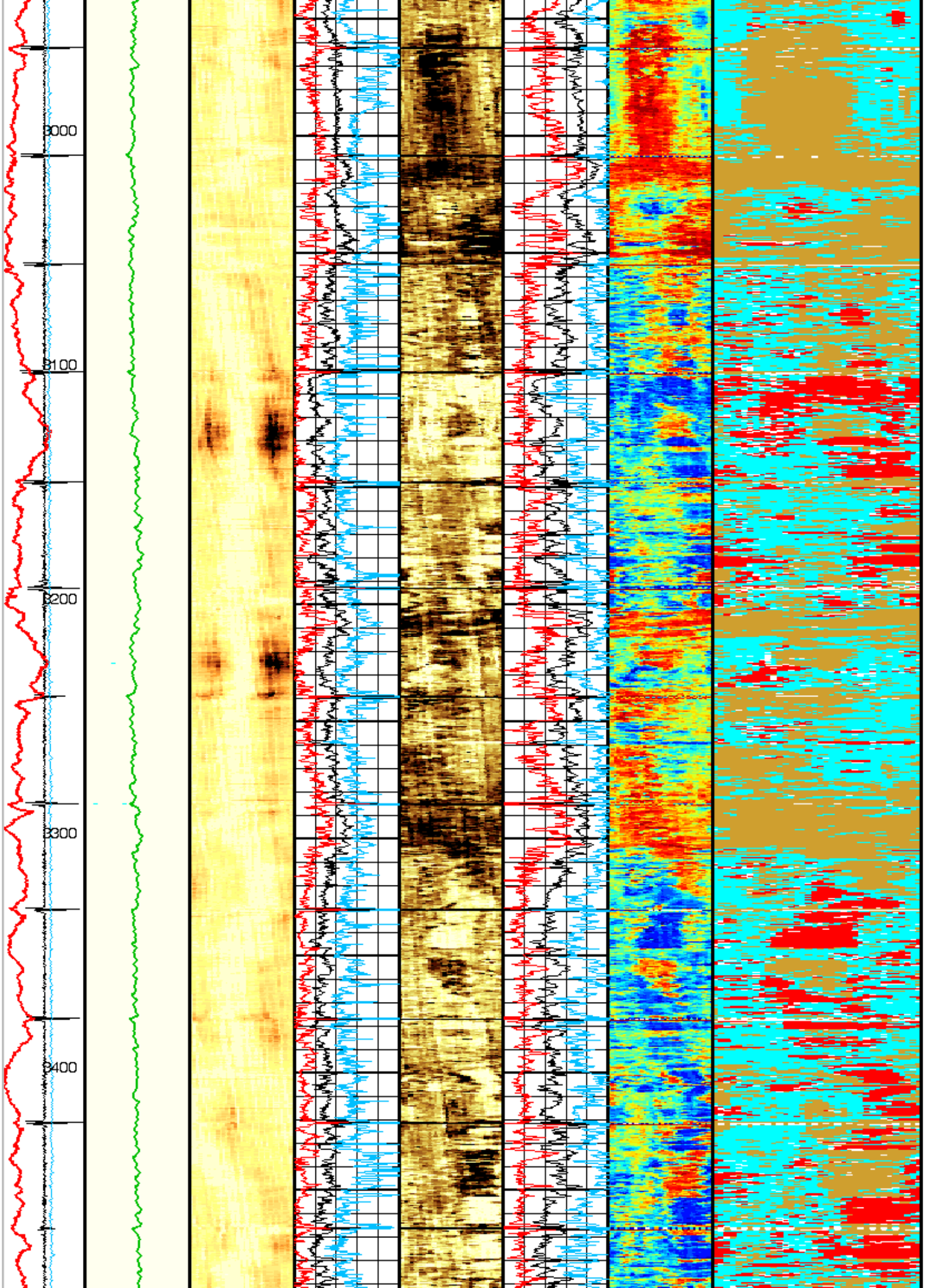
2900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3300
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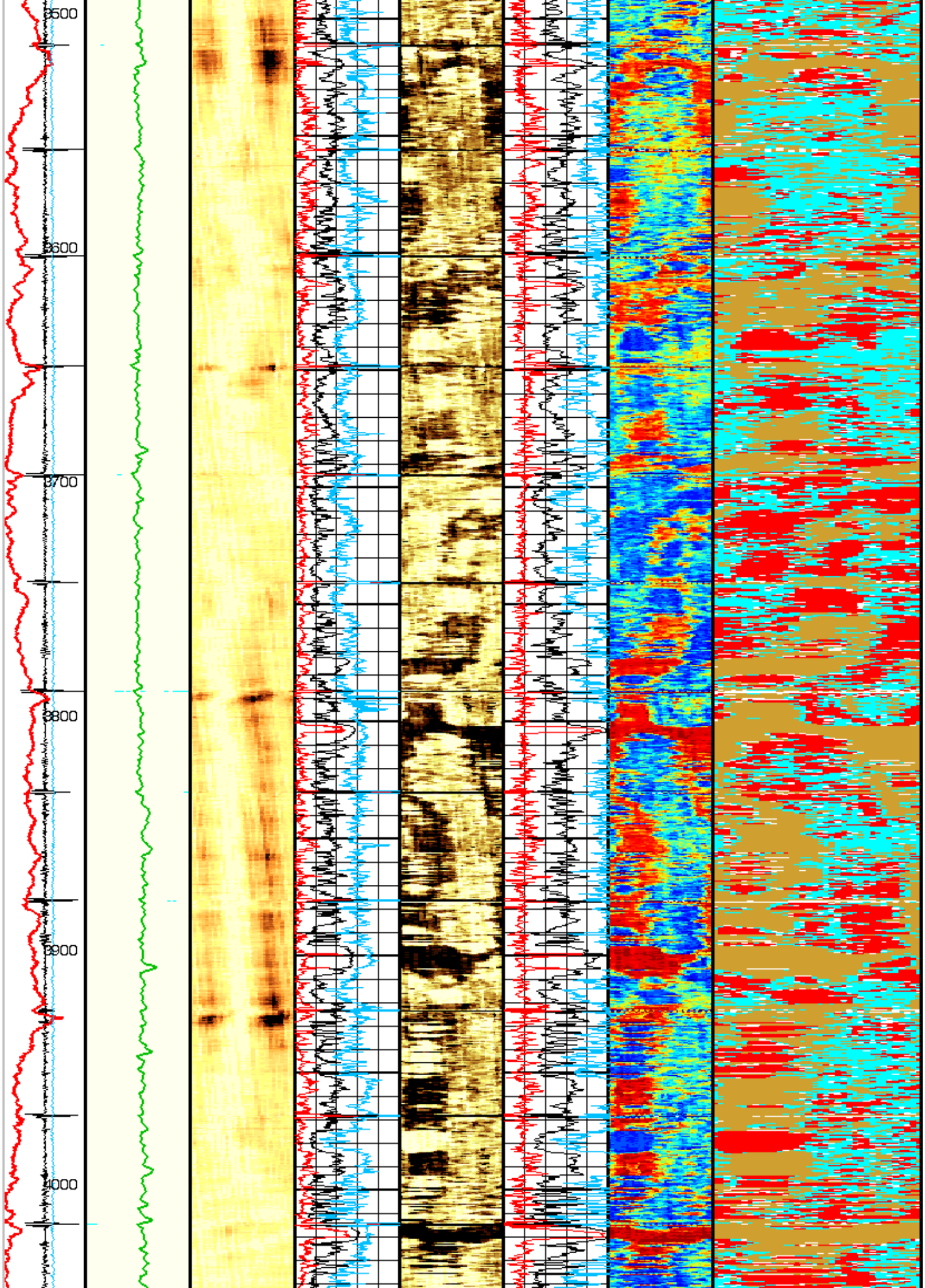
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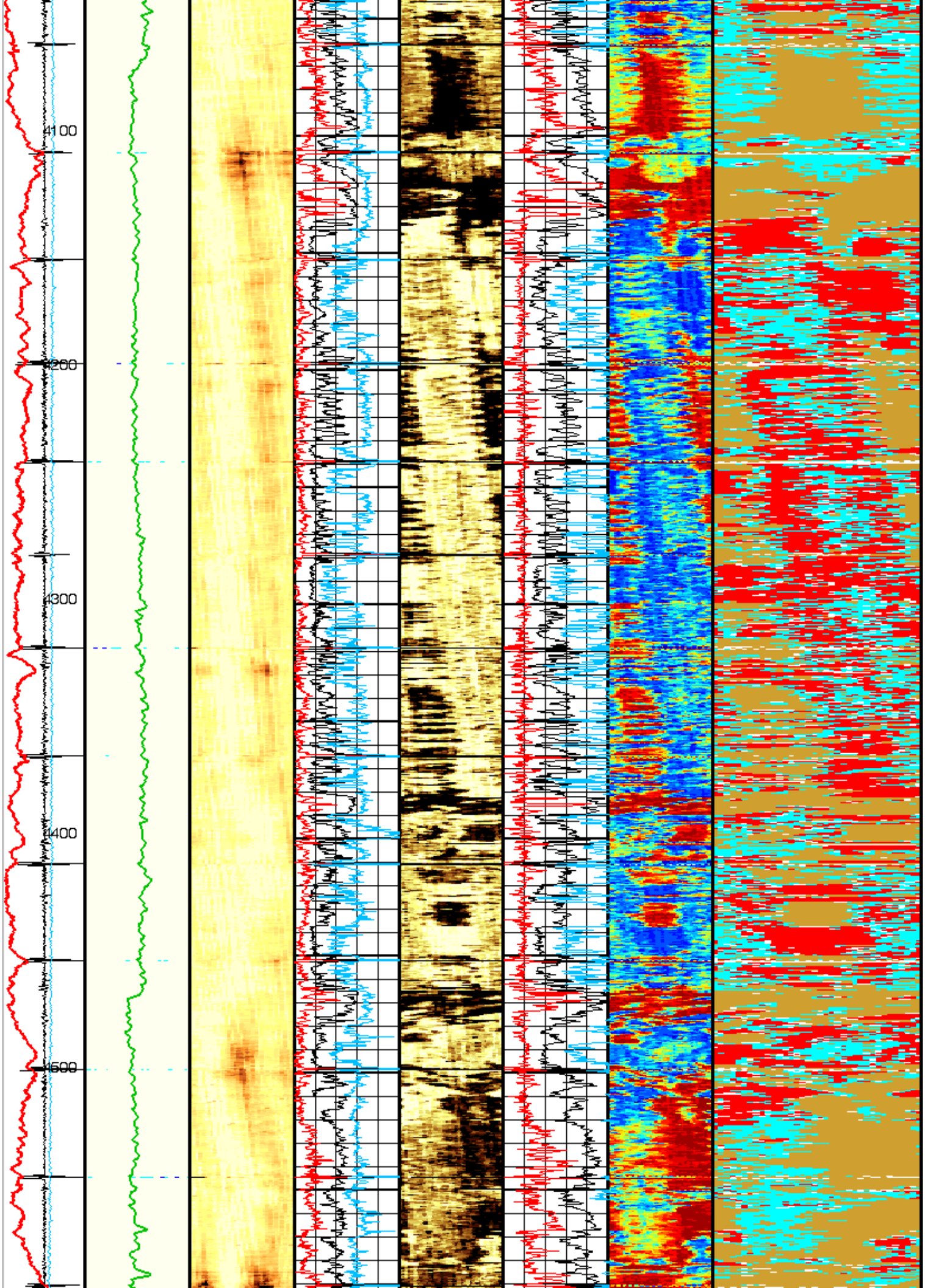
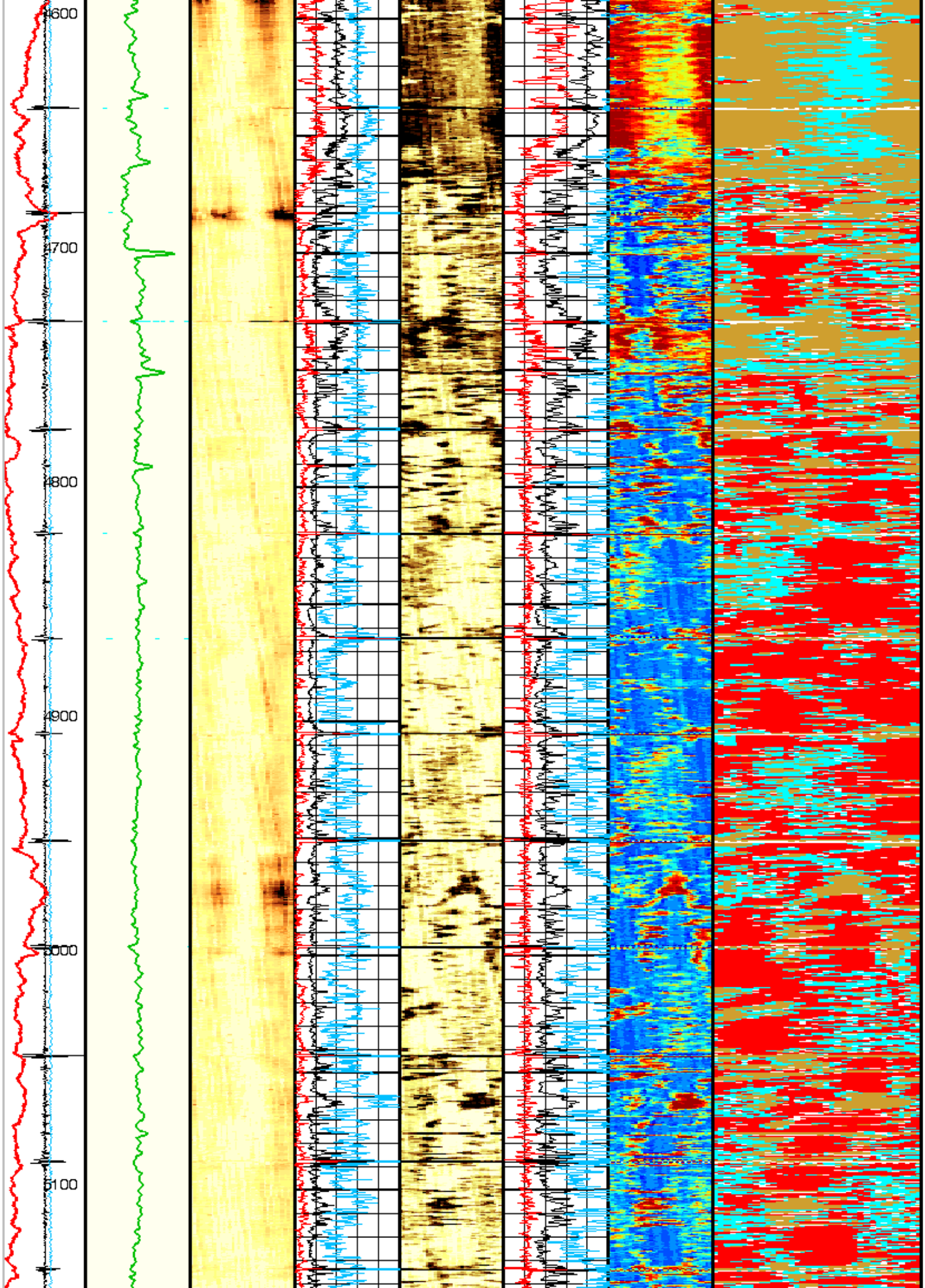
3600
3700
3800
3900
4000


4100
4200
4300
4400
4600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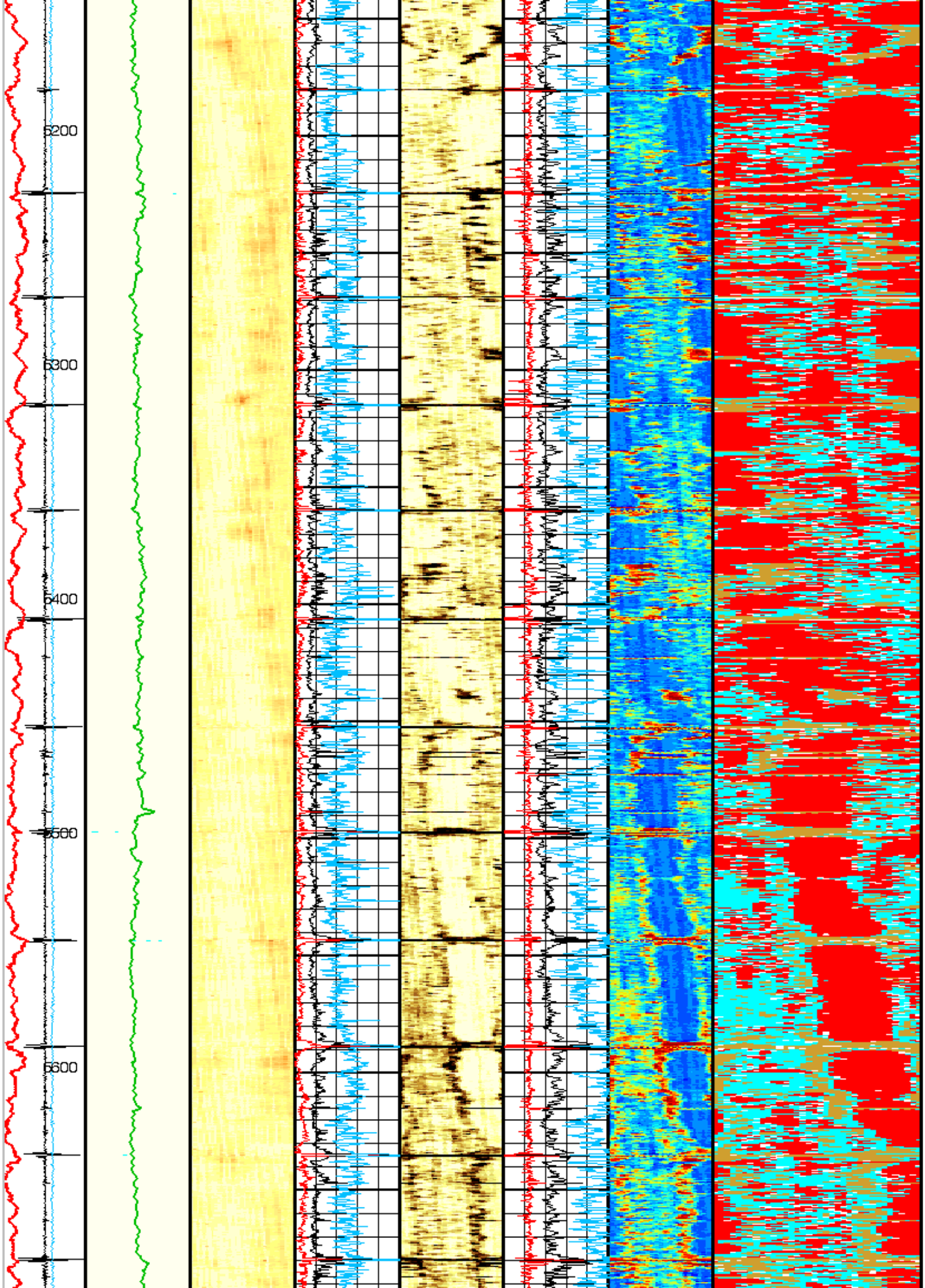
4700
4800
4900
5000
5100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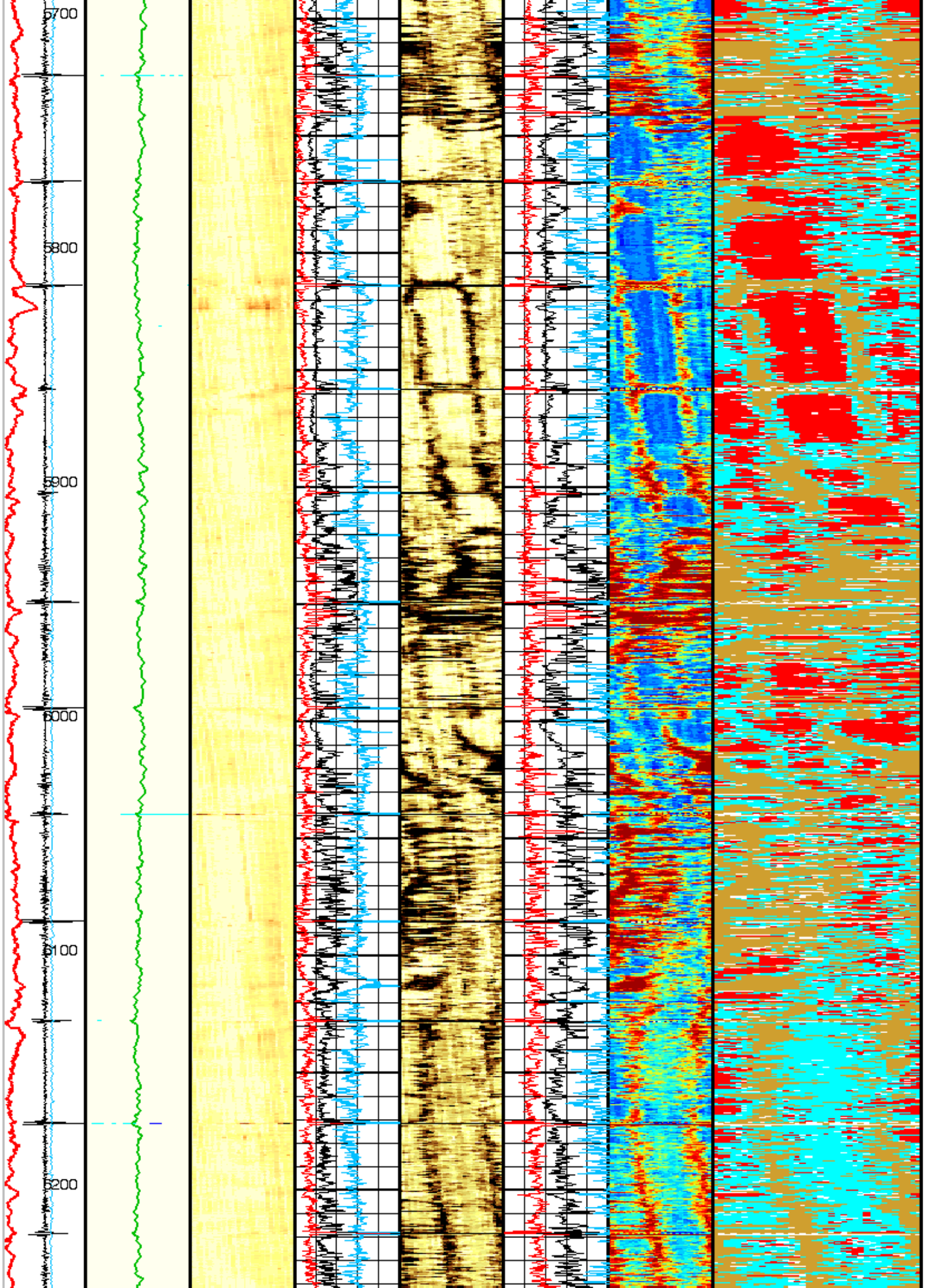
6300
6400
6500
6600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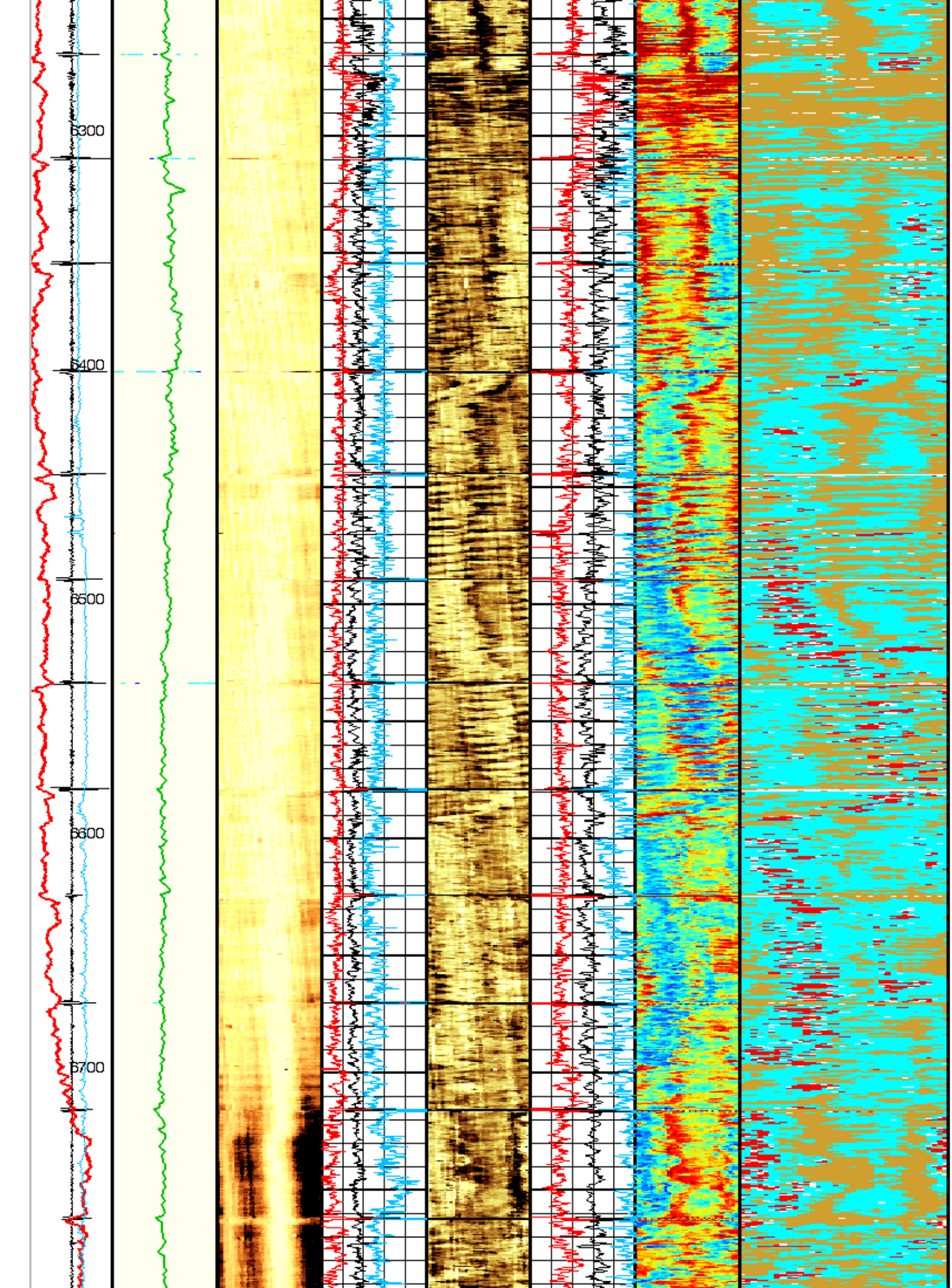
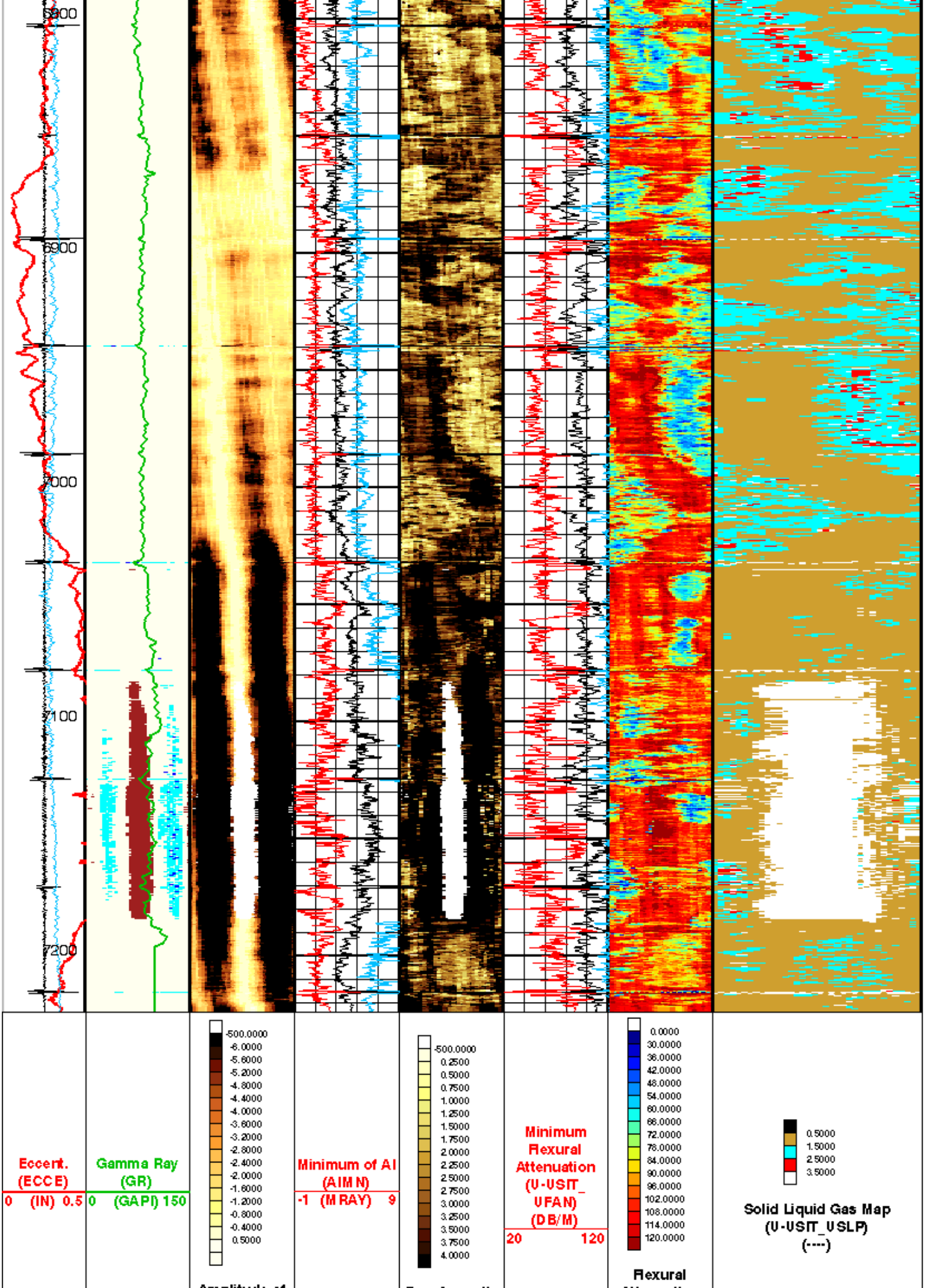
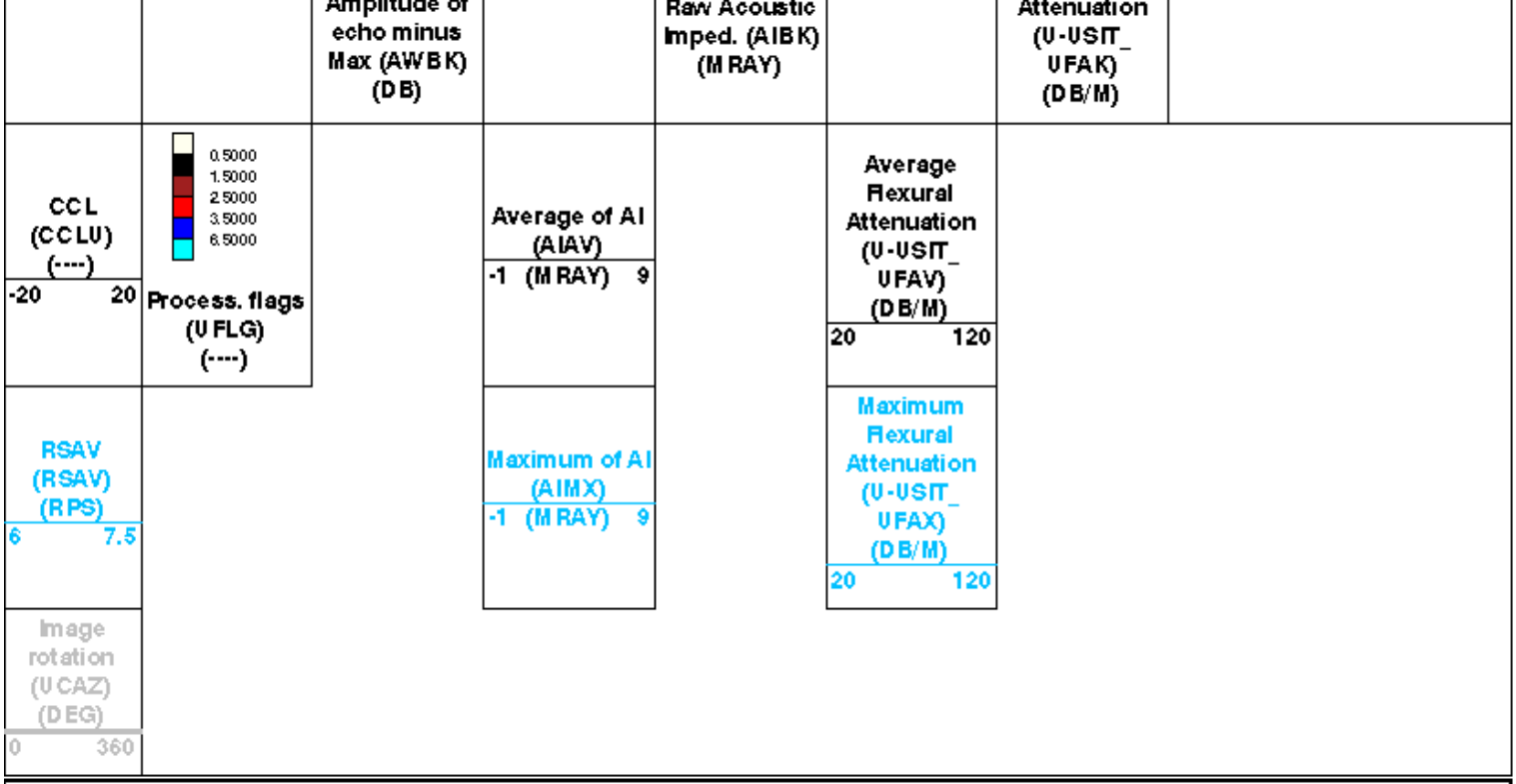
5800
5900
6000
6100
6200


6300
6400
6500
6600
6700


6900
7000
7100
7200
Eccent. (ECCE)
0 (IN) 0.5
Gamma Ray (GR)
0 (GAPI) 150
-500.0000
-6.0000
-5.6000
-5.2000
-4.8000
-4.4000
-4.0000
-3.6000
-3.2000
-2.8000
-2.4000
-2.0000
-1.6000
-1.2000
-0.8000
-0.4000
0.5000
Minimum of AI (AIMN)
-1 (MRAY) 9
-500.0000
0.2500
0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000
Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
20 120
0.0000
30.0000
36.0000
42.0000
48.0000
54.0000
60.0000
66.0000
72.0000
78.0000
84.0000
90.0000
96.0000
102.0000
108.0000
114.0000
120.0000
0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U-USIT_USLP) (----)



Format: 2 inch IBC SLG Vertical Scale: 2" per 100' Graphics File Created: 03-Jun-2012 14:08

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
	USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	100	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.7	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	

U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	13	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_B	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_3IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	2.1	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08		

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

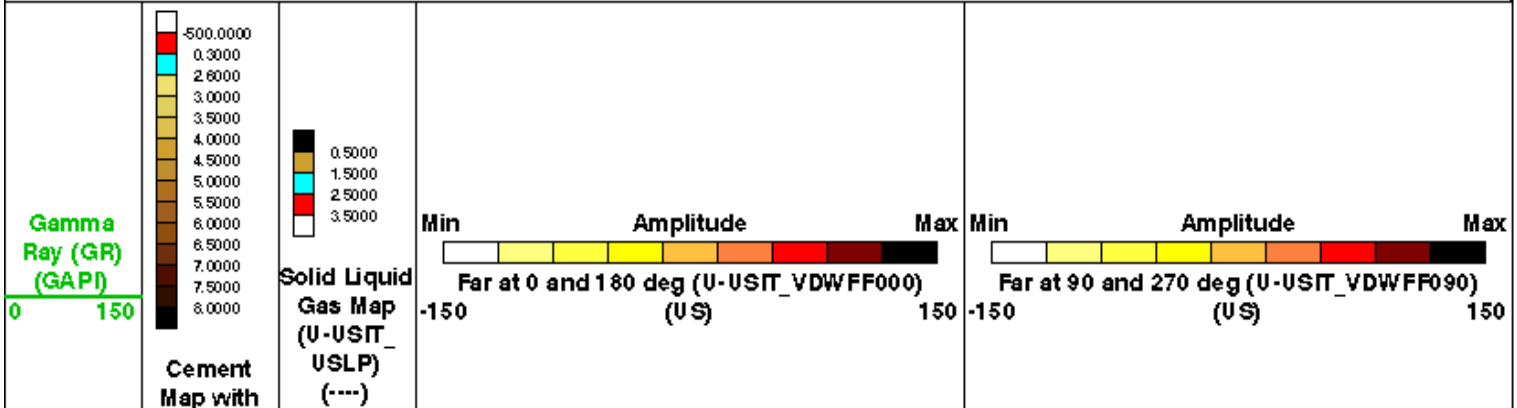
DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08	7224.0 FT	203.0 FT

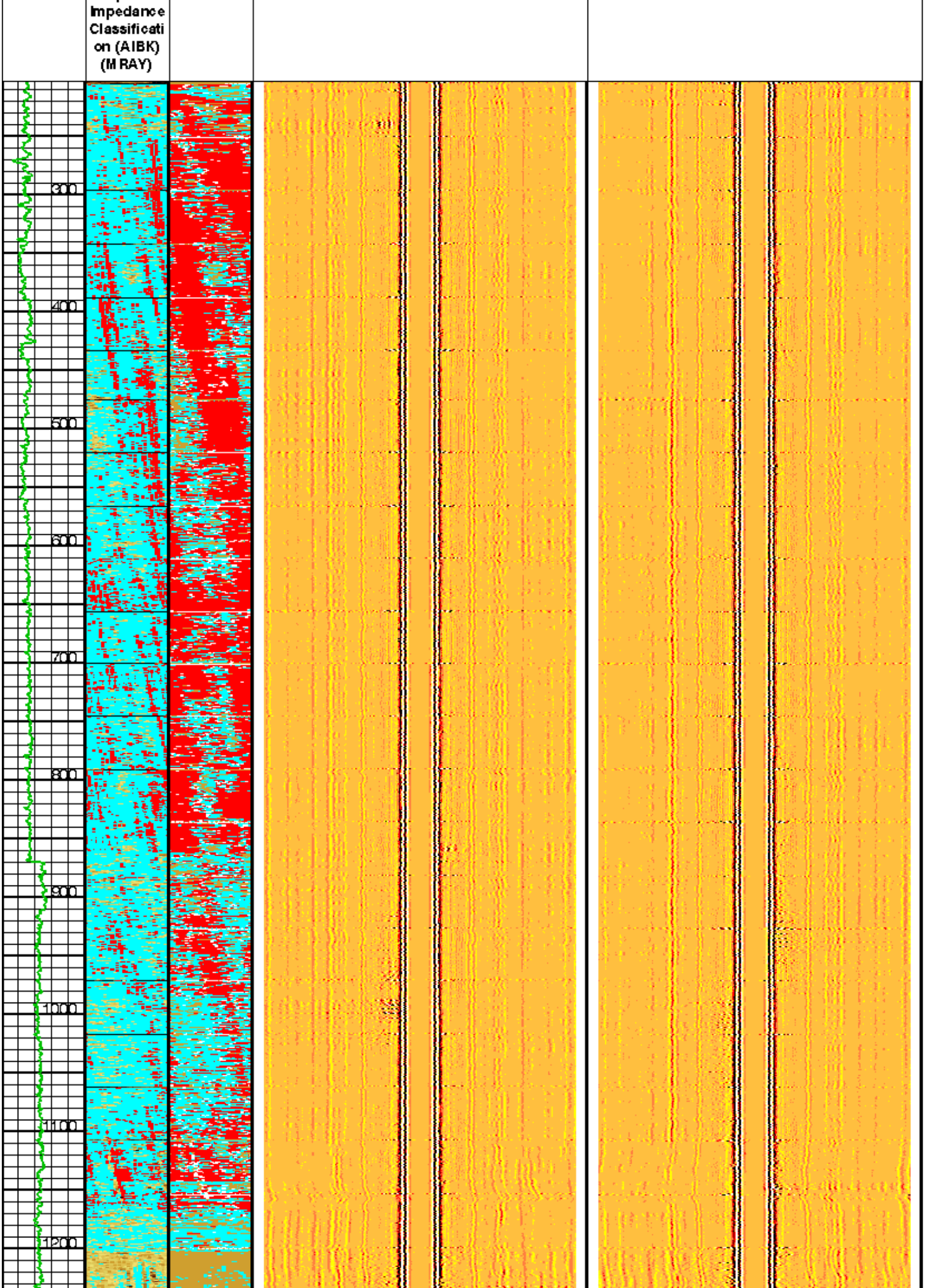
OP System Version: 19C0-187

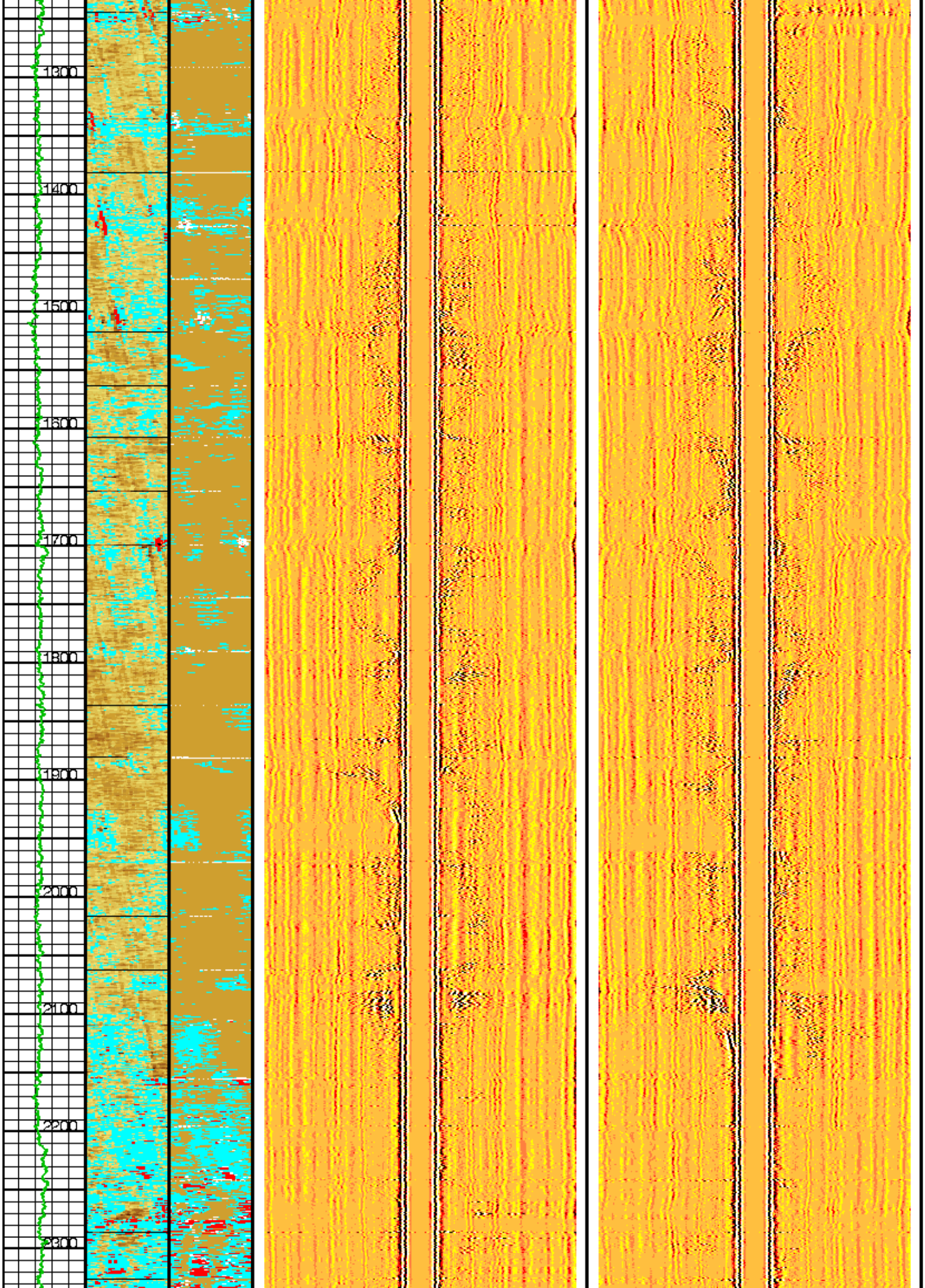
USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	2.05 MRAY	2.1 MRAY	7224.0 14:08:55
	2.1 MRAY	2.05 MRAY	2900.0 14:21:33




Impedance Classification (AIBK) (MRAY)
300
400
500
600
700
800
900
1000
1100
1200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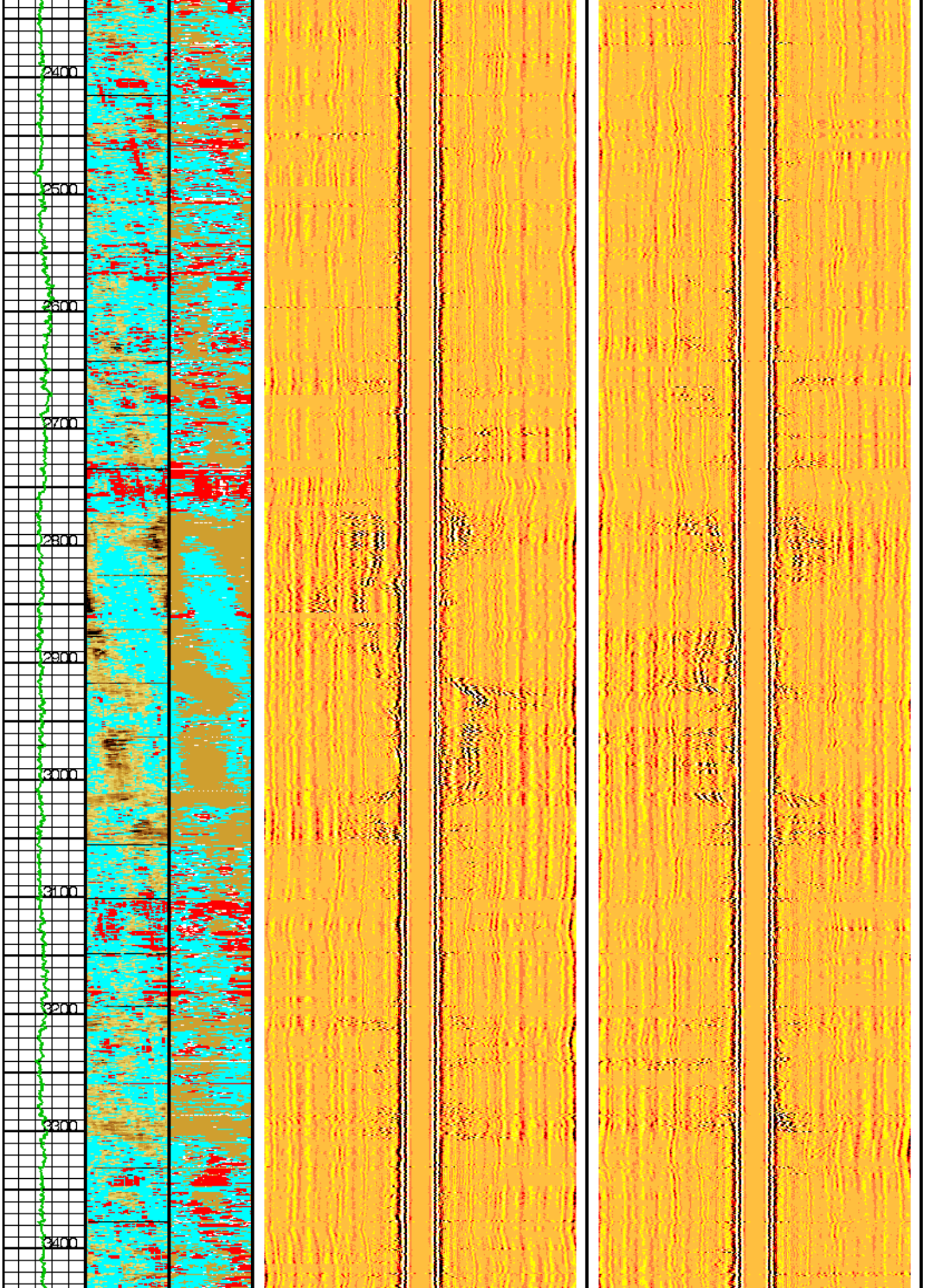
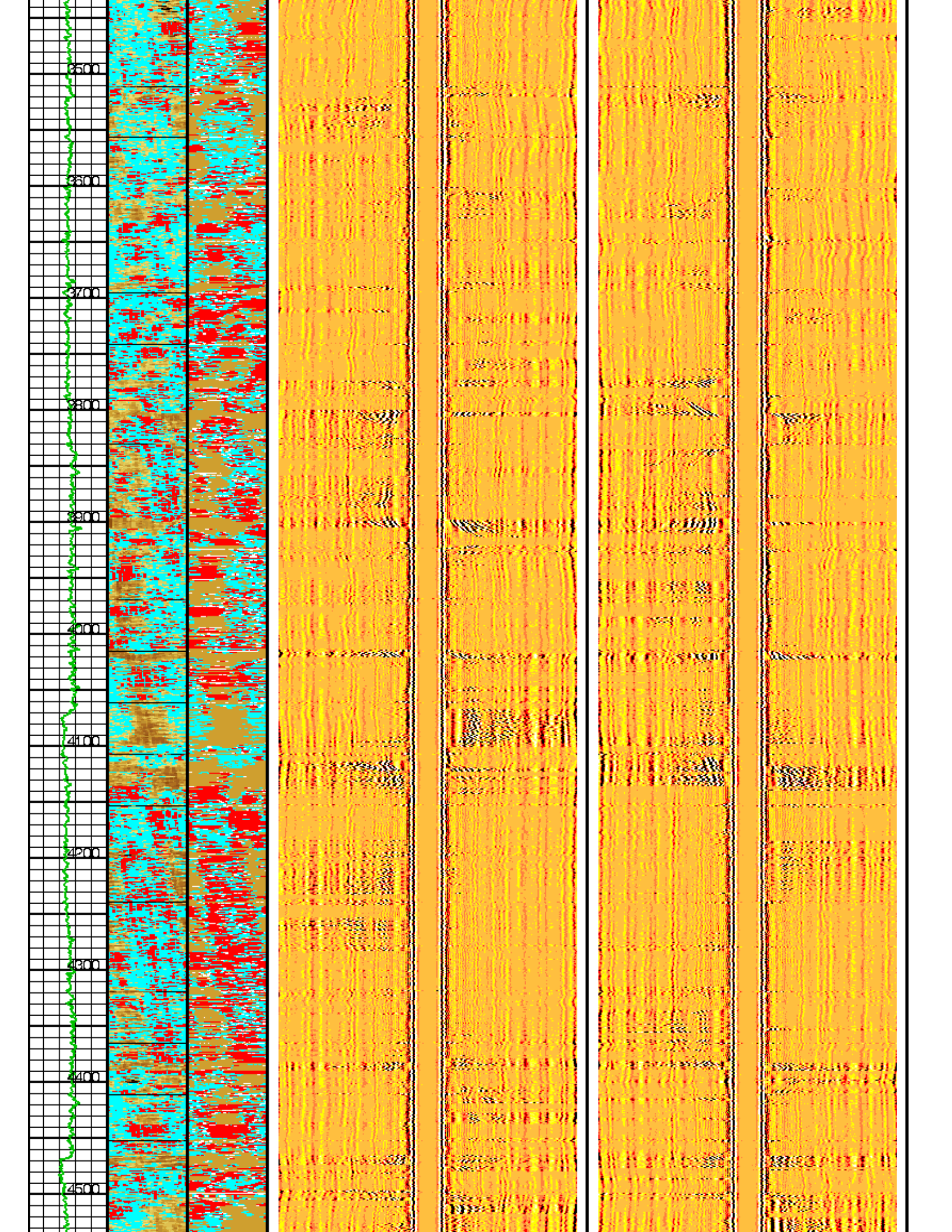
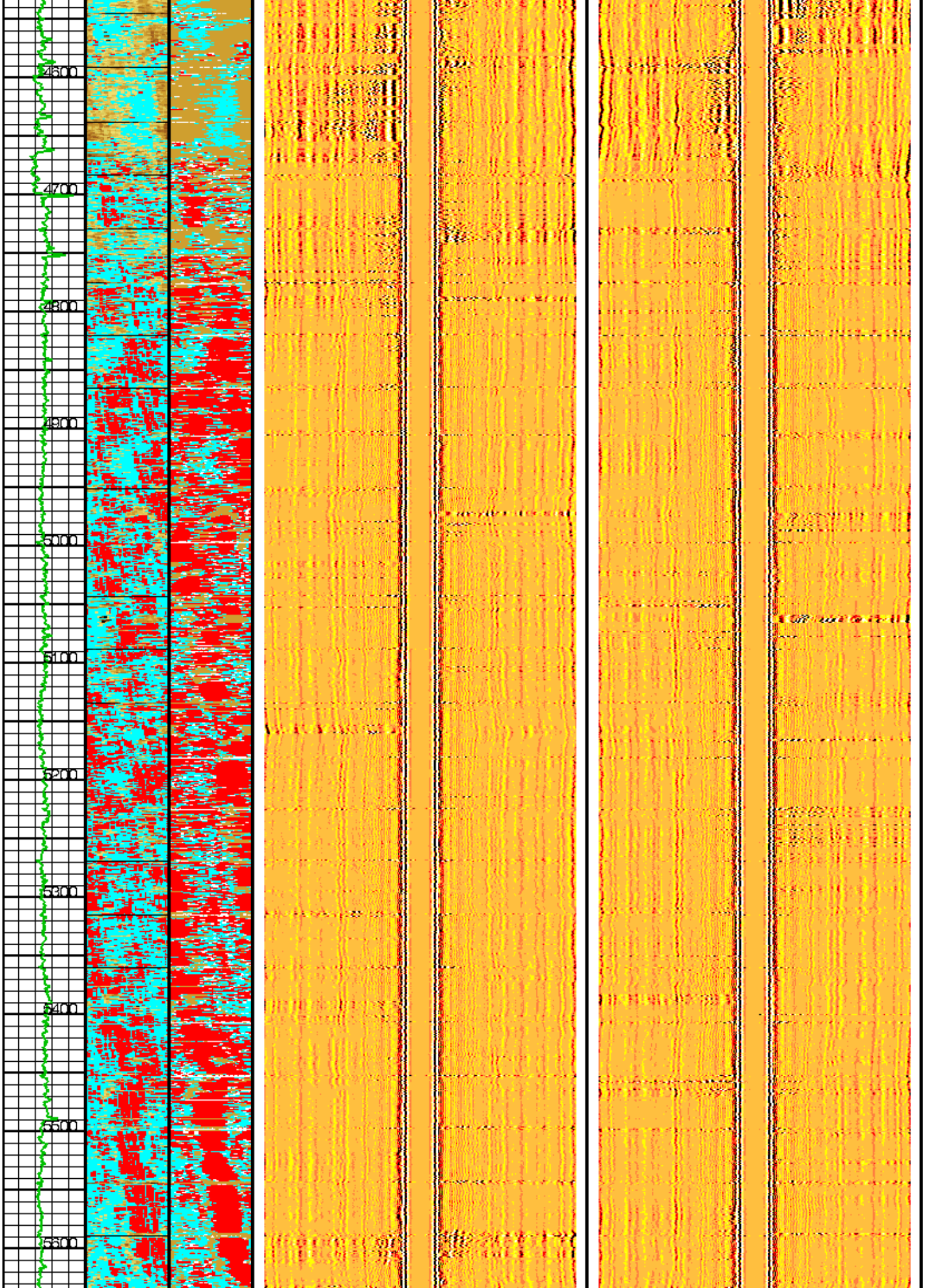
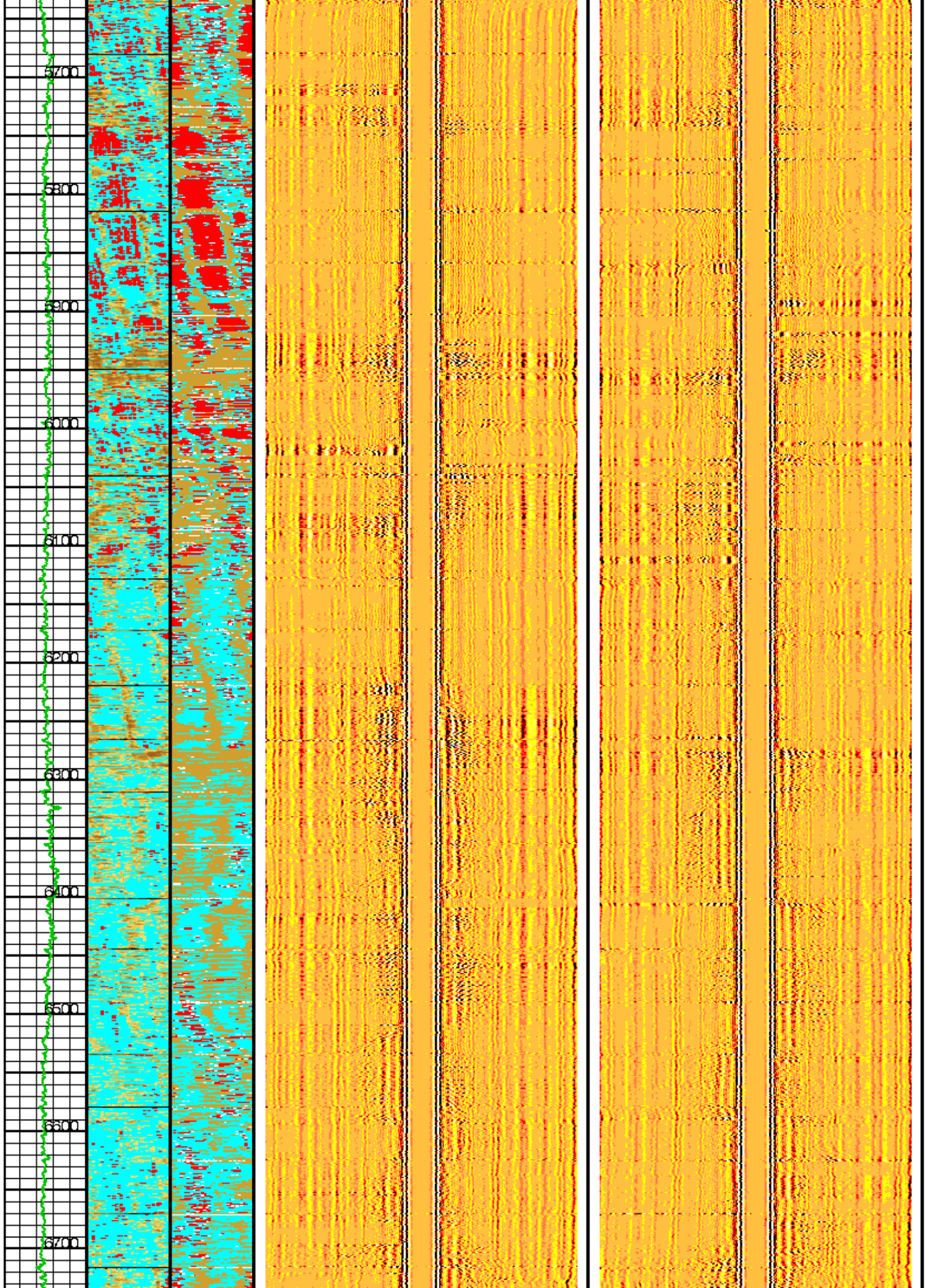
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300


2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400


3500
3600
3700
3800
3900
4000
4100
4200
4300
4400
4500


4600
4700
4800
4900
5000
5100
5200
5300
5400
5500
5600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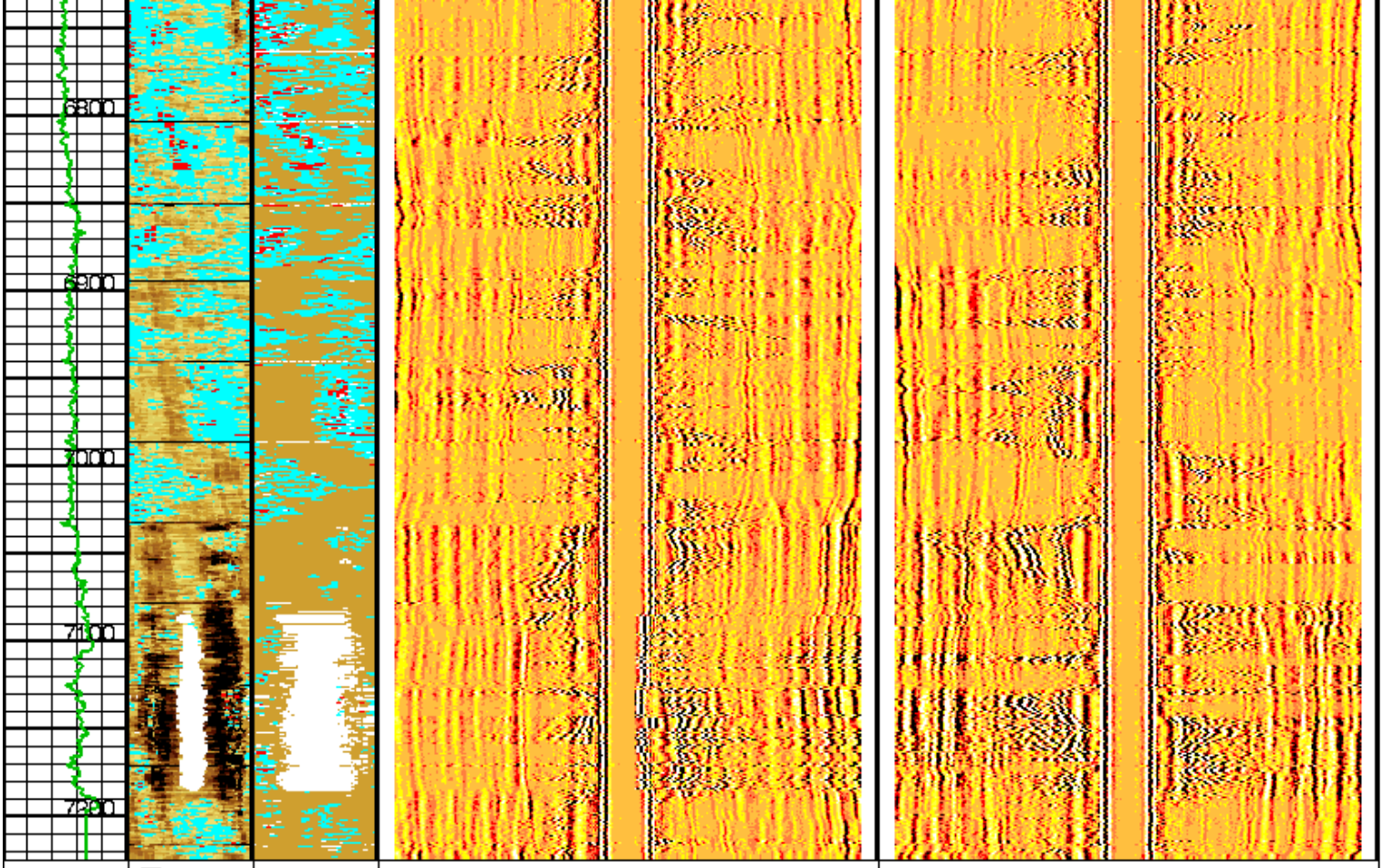
5800
5900
6000
6100
6200
6300
6400
6500
6600
6700



Gamma Ray (GR) (GAPI)
0 150

-500.0000
0.3000
2.6000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000

Cement Map with Impedance Classification (AIBK) (MRAY)

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U-USIT_USLP) (----)

Min Amplitude Max
Far at 0 and 180 deg (U-USIT_VDWFF000)
-150 (US) 150

Min Amplitude Max
Far at 90 and 270 deg (U-USIT_VDWFF090)
-150 (US) 150

Parameters

DLIS Name	Description	Value	
	USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	100	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.7	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUB	T 3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDR	Thickness Detection Policy	Fundamental	

THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	13	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_B	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_3IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	2.1	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
	System and Miscellaneous		
BS	Bit Size	8.750	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Format: 1 inch IBC VDL WIDE Vertical Scale: 1" per 100' Graphics File Created: 03-Jun-2012 14:08

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

Output DLIS Files

DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08		

Company: Encana Oil & Gas (USA) Inc Well: Davis 2B-9H

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

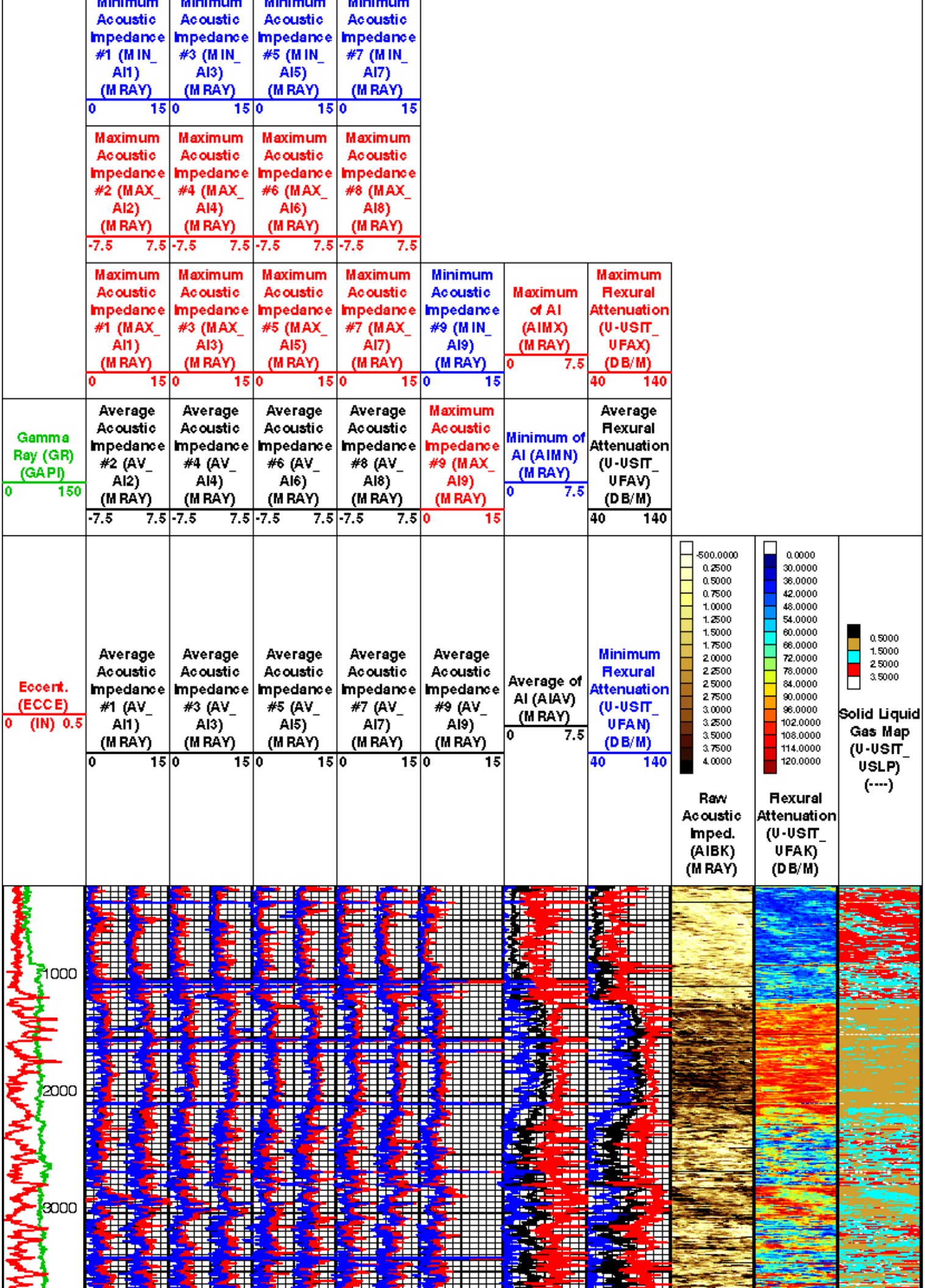
Output DLIS Files

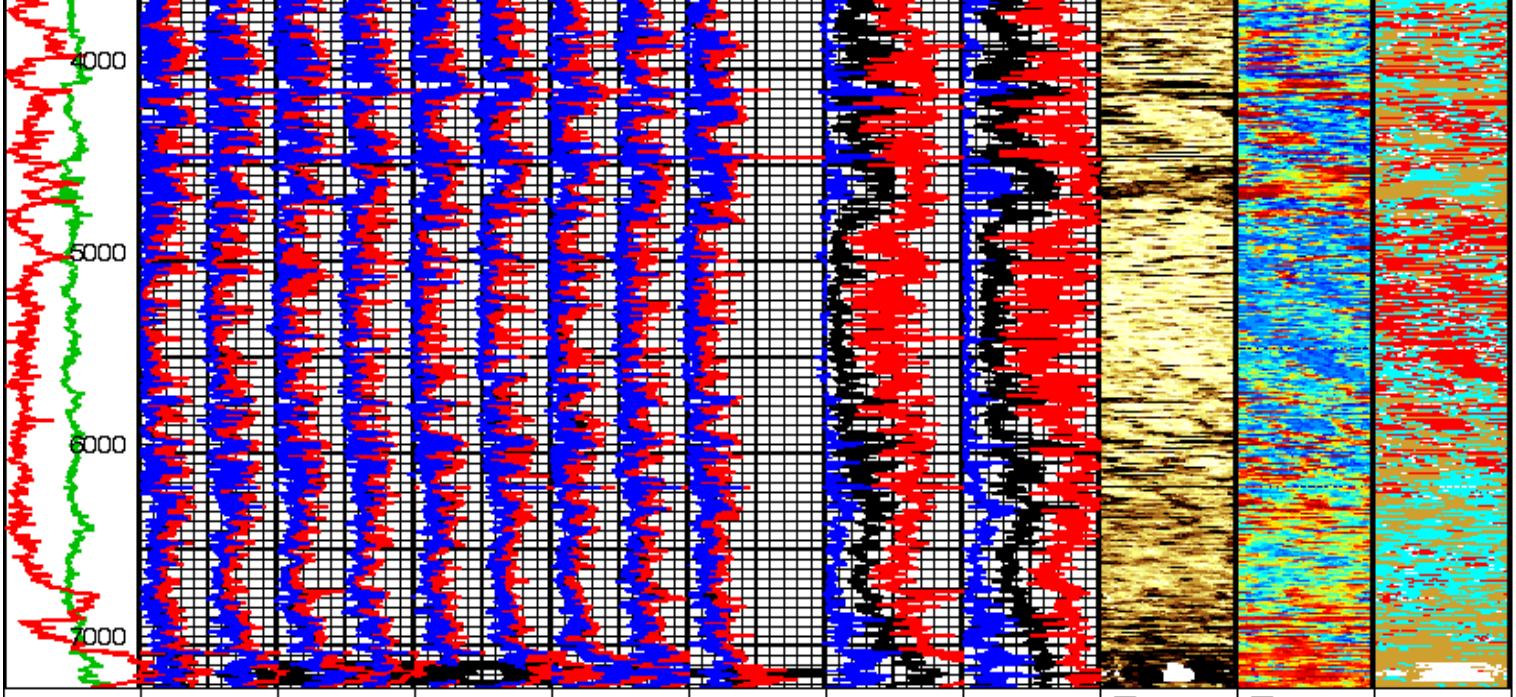
DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08	7224.0 FT	203.0 FT

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

Minimum Acoustic Impedance #2 (MIN_AI2) (MRAY)		Minimum Acoustic Impedance #4 (MIN_AI4) (MRAY)		Minimum Acoustic Impedance #6 (MIN_AI6) (MRAY)		Minimum Acoustic Impedance #8 (MIN_AI8) (MRAY)	
-7.5	7.5	-7.5	7.5	-7.5	7.5	-7.5	7.5


Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)
0 15
Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)
0 15
Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)
0 15
Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)
0 15
Maximum Acoustic Impedance #2 (MAX_AI2) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #4 (MAX_AI4) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)
0 15
Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)
0 15
Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)
0 15
Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)
0 15
Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)
0 15
Maximum of AI (AIMX) (MRAY)
0 7.5
Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
40 140
Gamma Ray (GR) (GAPI)
0 150
Average Acoustic Impedance #2 (AV_AI2) (MRAY)
-7.5 7.5
Average Acoustic Impedance #4 (AV_AI4) (MRAY)
-7.5 7.5
Average Acoustic Impedance #6 (AV_AI6) (MRAY)
-7.5 7.5
Average Acoustic Impedance #8 (AV_AI8) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)
0 15
Minimum of AI (AIMN) (MRAY)
0 7.5
Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
40 140
Eccent. (ECCE)
0 (IN) 0.5
Average Acoustic Impedance #1 (AV_AI1) (MRAY)
0 15
Average Acoustic Impedance #3 (AV_AI3) (MRAY)
0 15
Average Acoustic Impedance #5 (AV_AI5) (MRAY)
0 15
Average Acoustic Impedance #7 (AV_AI7) (MRAY)
0 15
Average Acoustic Impedance #9 (AV_AI9) (MRAY)
0 15
Average of AI (AIAV) (MRAY)
0 7.5
Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
40 140
-500.0000
0.2500
0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000
Raw Acoustic Imped. (AIBK) (MRAY)
0.0000
30.0000
36.0000
42.0000
48.0000
54.0000
60.0000
66.0000
72.0000
78.0000
84.0000
90.0000
96.0000
102.0000
108.0000
114.0000
120.0000
Flexural Attenuation (U-USIT_UFAK) (DB/M)
0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U-USIT_USLP) (----)
1000
2000
3000



Eccent. (ECCE)
0 (IN) 0.5

Average Acoustic Impedance #1 (AV_AI1) (MRAY)
0 15

Average Acoustic Impedance #3 (AV_AI3) (MRAY)
0 15

Average Acoustic Impedance #5 (AV_AI5) (MRAY)
0 15

Average Acoustic Impedance #7 (AV_AI7) (MRAY)
0 15

Average Acoustic Impedance #9 (AV_AI9) (MRAY)
0 15

Average of AI (AIAV) (MRAY)
0 7.5

Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
40 140

-500.0000
0.2500
0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000

Raw Acoustic Imped. (AIBK) (MRAY)

0.0000
30.0000
36.0000
42.0000
48.0000
54.0000
60.0000
66.0000
72.0000
78.0000
84.0000
90.0000
96.0000
102.0000
108.0000
114.0000
120.0000

Flexural Attenuation (U-USIT_UFAK) (DB/M)

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U-USIT_USLP) (----)

Gamma Ray (GR) (GAPI)
0 150

Average Acoustic Impedance #2 (AV_AI2) (MRAY)
-7.5 7.5

Average Acoustic Impedance #4 (AV_AI4) (MRAY)
-7.5 7.5

Average Acoustic Impedance #6 (AV_AI6) (MRAY)
-7.5 7.5

Average Acoustic Impedance #8 (AV_AI8) (MRAY)
-7.5 7.5

Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)
0 15

Minimum of AI (AIMN) (MRAY)
0 7.5

Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
40 140

Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)
0 15

Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)
0 15

Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)
0 15

Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)
0 15

Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)
0 15

Maximum of AI (AIMX) (MRAY)
0 7.5

Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
40 140

Maximum Acoustic Impedance #2 (MAX_AI2) (MRAY)
-7.5 7.5

Maximum Acoustic Impedance #4 (MAX_AI4) (MRAY)
-7.5 7.5

Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)
-7.5 7.5

Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)
-7.5 7.5

Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)

Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)

Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)

Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)

0 15	0 15	0 15	0 15
Minimum Acoustic Impedance #2 (MIN_AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_AI8) (MRAY)
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5

Format: IBC Goodwin Compressed Vertical Scale: 0.1" per 100' Graphics File Created: 03-Jun-2012 14:08

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Input DLIS Files

DEFAULT	Splice_USI_033CUP	FN:1	PRODUCER	03-Jun-2012 14:06	7224.5 FT	202.7 FT

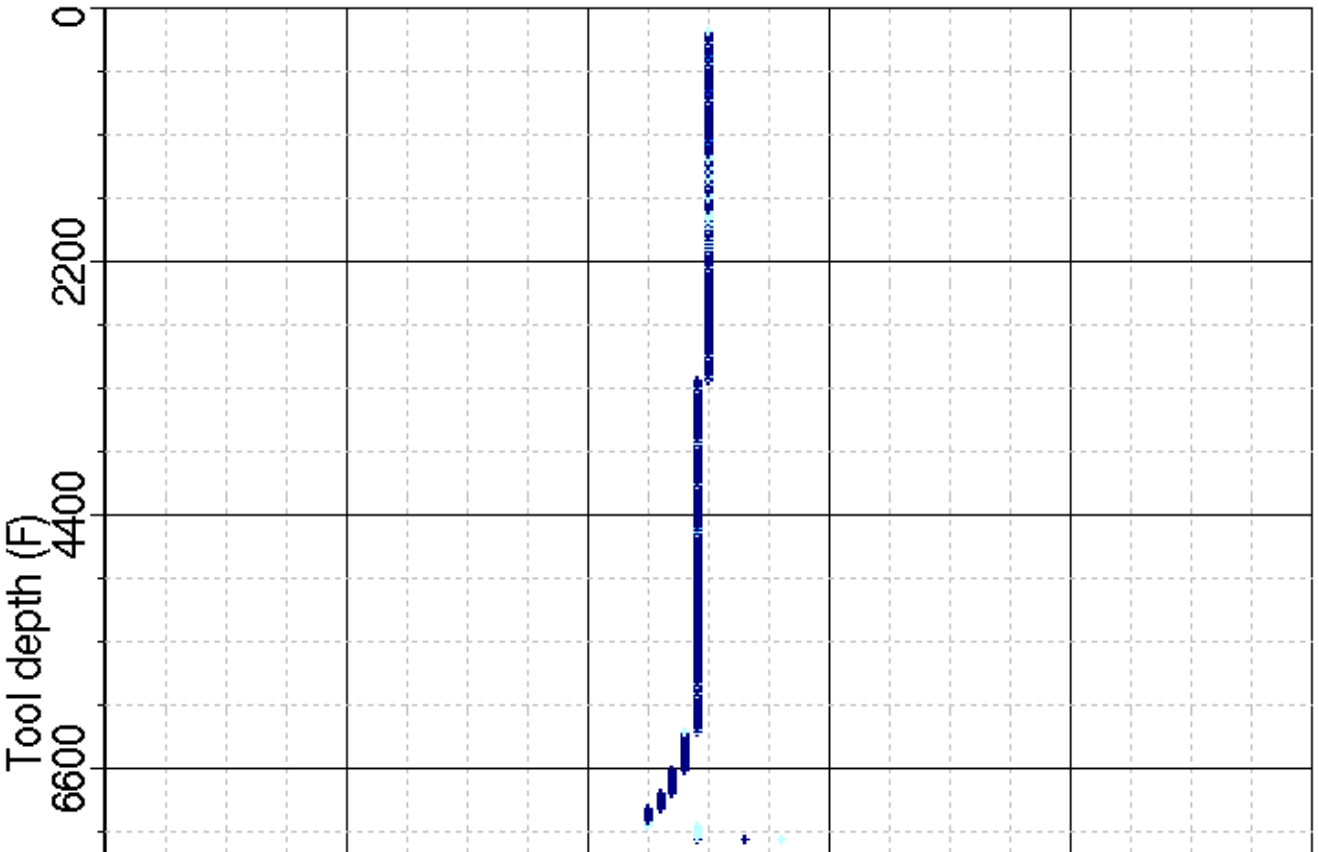
Output DLIS Files

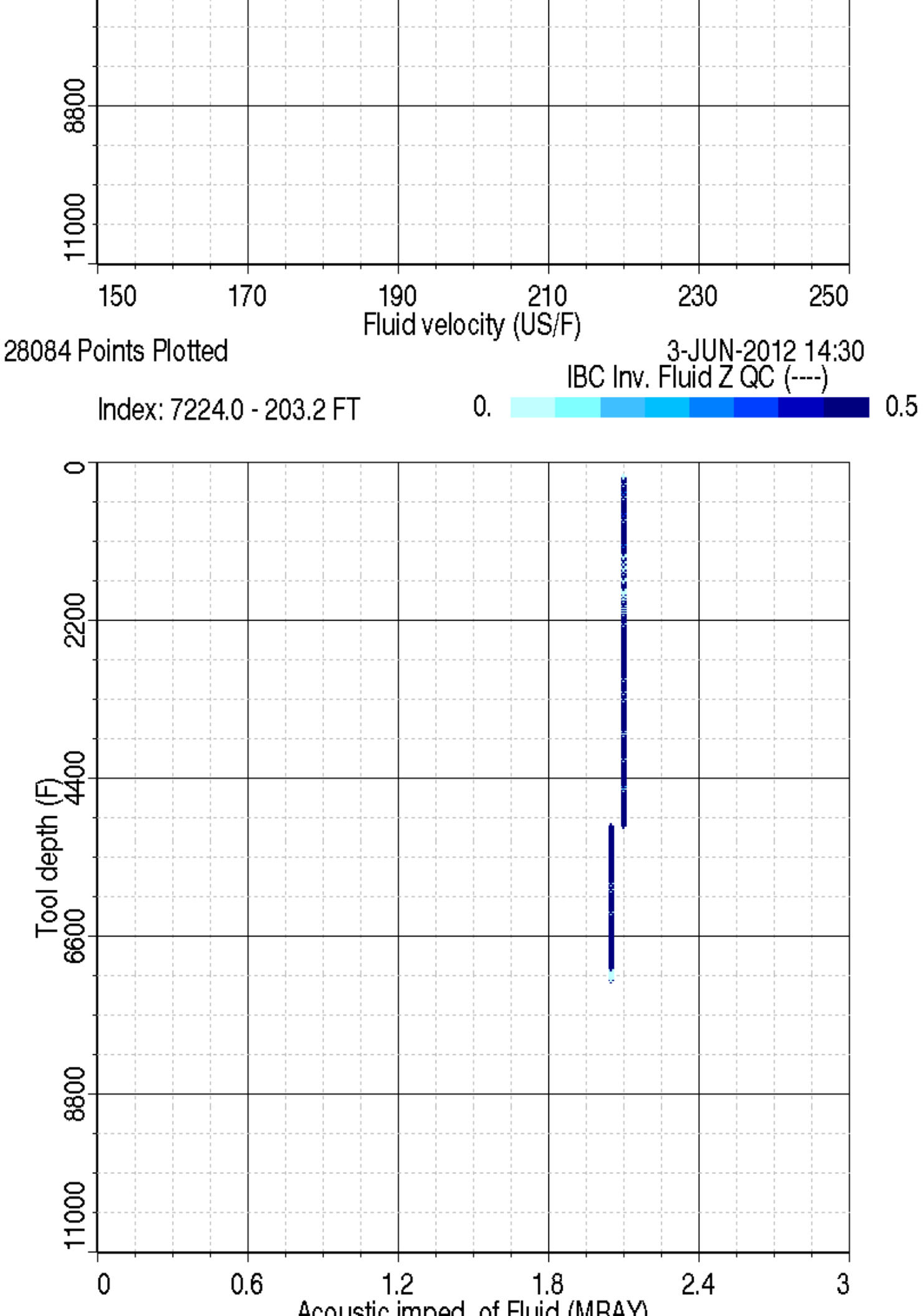
DEFAULT	USI_034PUP	FN:31	PRODUCER	03-Jun-2012 14:08

Index: 7224.0 - 203.2 FT

IBC Inv. Fluid Z QC (----)

0. 0.5




8800
11000
150
170
190
210
230
250
Fluid velocity (US/F)
28084 Points Plotted
3-JUN-2012 14:30
IBC Inv. Fluid Z QC (----)
Index: 7224.0 - 203.2 FT
0.
0.5
0
2200
4400
6600
8800
11000
Tool depth (F)
0
0.6
1.2
1.8
2.4
3
Acoustic imped. of Fluid (MRAY)

Acoustic Imped. of Fluid (MHA1)

28084 Points Plotted 3-JUN-2012 14:30

Company: **Encana Oil & Gas (USA) Inc**

Schlumberger

Well: **Davis 2B-9H**
Field: **Wattenberg**
County: **Weld**
State: **Colorado**

Isolation Scanner
Cement Evaluation