

Company: Crestone Peak Resources Operating LLC

Well: Sam 3M-25H-M166

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Evaluation

| | | | | | |
|--------------|---------------------------------------|-----------------------------------|---------------|-----------|------------------|
| County: | Weld | | | | |
| Field: | Wattenberg | | | | |
| Location: | NWSW Sec. 25, T1N, R66W | | | | |
| Well: | Sam 3M-25H-M166 | | | | |
| Company: | Crestone Peak Resources Operating LLC | | | | |
| | | Location: | | | |
| | | NWSW Sec. 25, T1N, R66W | Elev.: | K.B. | 5103.00 ft |
| | | SHL: 1293' FSL & 310' FWL | | G.L. | 5080.00 ft |
| | | Lat/Long: 40.018565 / -104.733856 | | D.F. | 5103.00 ft |
| | | Permanent Datum: | Ground Level | Elev.: | 5080.00 f |
| | | Log Measured From: | Kelly Bushing | 23.00 ft | above Perm.Datum |
| | | Drilling Measured From: | Kelly Bushing | | |
| | | API Serial No. | Section: | Township: | Range: |
| | | 05-123-46130 | 25 | 1N | 66W |
| Logging Date | 19-Oct-2018 | | | | |

| | | |
|---------------------------|----------------|-----------------|
| Run Number | ONE | |
| Depth Driller | 11925.00 ft | |
| Schlumberger Depth | 11925.00 ft | |
| Bottom Log Interval | 6610.00 ft | |
| Top Log Interval | 60.00 ft | |
| Casing Fluid Type | Fresh Water | |
| Salinity | | |
| Density | 8.4 lbm/gal | |
| Fluid Level | 8.00 ft | |
| BIT/CASING/TUBING STRING | | |
| Bit Size | 8.50 in | |
| From | 2423.00 ft | |
| To | 11925.00 ft | |
| Casing/Tubing Size | 5.5 in | |
| Weight | 20 lbm/ft | |
| Grade | J55 | |
| From | 0.00 ft | |
| To | 11913.00 ft | |
| Max Recorded Temperatures | 176 degF | |
| Logger on Bottom | 19-Oct-2018 | 12:00:00 |
| Unit Number | 9108 | Fort Morgan, CO |
| Recorded By | Richard Woods | |
| Witnessed By | Keith Kershnik | |

Disclaimer

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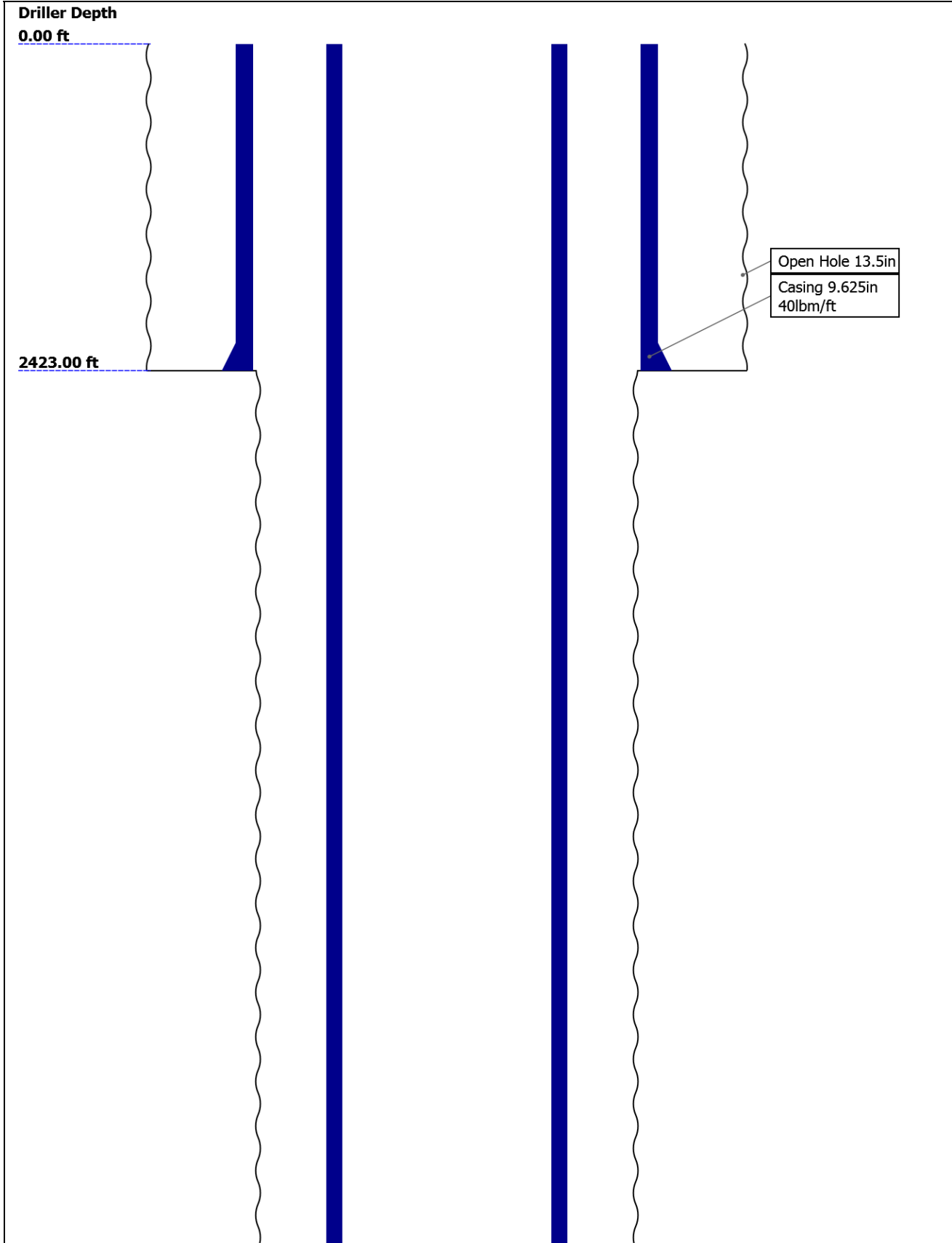
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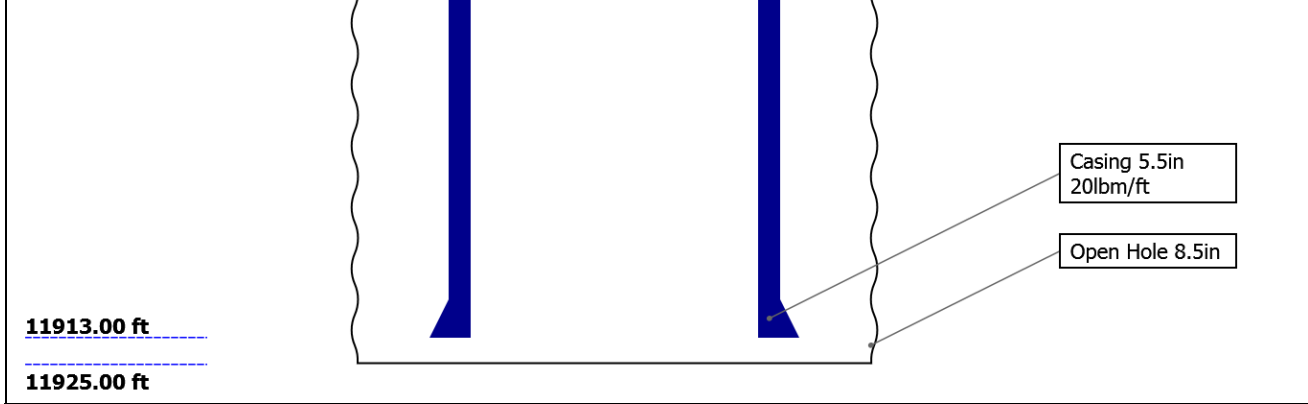
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Well Sketch





Borehole Size/Casing/Tubing Record

| | | | | | | |
|-----------------------|-------|-------|--|--|--|--|
| Bit | | | | | | |
| Bit Size (in) | 13.5 | 8.5 | | | | |
| Top Driller (ft) | 0 | 2423 | | | | |
| Top Logger (ft) | 0 | 2423 | | | | |
| Bottom Driller (ft) | 2423 | 11925 | | | | |
| Bottom Logger (ft) | 2423 | 11925 | | | | |
| Casing | | | | | | |
| Size (in) | 9.625 | 5.5 | | | | |
| Weight (lbm/ft) | 40 | 20 | | | | |
| Inner Diameter (in) | 8.835 | 4.778 | | | | |
| Grade | J55 | J55 | | | | |
| Top Driller (ft) | 0 | 0 | | | | |
| Top Logger (ft) | 0 | 0 | | | | |
| Bottom Driller (ft) | 2423 | 11913 | | | | |
| Bottom Logger (ft) | 2423 | 11913 | | | | |

Remarks and Equipment Summary

| ONE: Toolstring | | | ONE: Remarks | |
|---|---|--|--------------|--|
| <div><div><div>Equip nameLength</div><div>LEH-QT30.73</div><div>LEH-QT</div></div><div><div>EDTC-B27.24</div><div>EDTH-B</div><div>EDTG-A</div><div>EDTC-B</div></div><div><div>AH-184[2]20.74</div><div>AH-184[1]18.74</div><div>USIT-E16.74</div><div>ECH-MFA</div><div>USAC-A</div><div>USIS-A</div><div>USSC-B</div><div>IBCS-A</div><div>EAP-GENC</div></div></div> <div></div> <div><div>MP nameOffset</div><div>CTEM23.74</div><div>ACCZ0.00</div><div>HV0.00</div><div>Gamma21.87</div><div>Ray</div><div>TelStatu20.74</div><div>s</div></div> | Thank you for choosing Schlumberger! | | | |
| | Tool string run as per tool sketch and client logging program. | | | |
| | 5" Gemcos and in-line centralizers with small hole kit used for centralization. | | | |
| | All passes run under 0 PSI. | | | |
| | Lead: 12.5 ppg Tail: 13.5 ppg Spacer: 12 ppg | | | |

| | | |
|--|--|--|
| <div data-bbox="220 0 331 569"> </div> <div data-bbox="86 594 445 682"> <p>Lengths are in ft Maximum Outer Diameter = 3.625 in Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO</p> </div> | | |
|--|--|--|

| Depth Summary | | | |
|------------------------------------|-----------------------|--|--|
| | ONE | | |
| Depth Measuring Device | | | |
| Type | IDW-B | | |
| Serial Number | 6455 | | |
| Calibration Date | 27-Jul-2018 | | |
| Calibrator Serial Number | 57 | | |
| Calibration Cable Type | 7-32ASXS | | |
| Wheel Correction 1 | -1 | | |
| Wheel Correction 2 | 1 | | |
| Tension Device | | | |
| Type | CMTD-B/A | | |
| Serial Number | 1703 | | |
| Calibration Date | 29-Jul-2018 | | |
| Calibrator Serial Number | 88310A | | |
| Number of Calibration Points | 10 | | |
| Calibration Root Mean Square Error | 6 | | |
| Calibration Peak Error | 9 | | |
| Logging Cable | | | |
| Type | 7-32AS-XS | | |
| Serial Number | | | |
| Length | 21111.00 ft | | |
| Conveyance Type | Wireline | | |
| Rig Type | Crane USA | | |
| ONE:Depth Control Parameters | | Depth Control Remarks | |
| Log Sequence | First Log In the Well | All Schlumberger depth control policies followed. IDW used for primary depth control. Zchart used for secondary depth control. Logs correlated to down log. | |
| 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) |
|----------|-----------|-----------------|----------------|
| Run 1 | Log[3]:Up | 6613.96 | 44.9 |

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

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

Mud Impedance = "FreePipe Norm."
Free Pipe normalization zone is : 253.62m(832.09ft) to 260.61m(855.01ft)
MUD_N_FRP = 1.18
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.69 MRayl

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

ONE

IBC SLG 0 PSI

Software Version

| Acquisition System | Version |
|--------------------|-----------------|
| Maxwell 2018 SP2 | 8.2.102758.3100 |

Pass Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| ONE | Log[3]:Up | Up | 44.90 ft | 6613.96 ft | 19-Oct-2018 11:44:54 AM | 19-Oct-2018 1:26:23 PM | ON | 3.64 ft | Yes |

All depths are referenced to toolstring zero

| Log | Company:Crestone Peak Resources Operating LLC Well:Sam 3M-25H-M166 ONE: Log[3]:Up:S003 |
|-----|--|
|-----|--|

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 16:01:36

TIME_1900 - Time Marked every 60.00 (s)

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

1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Amplitude of Eccentering (ECCE) USIT-E

0 in 0.5

Motor Revolution Speed (RSAV) USIT-E

Absent 1.500 3.500

Explicit Normalization

USIT - USIT

Processing Flags (UFLG) USIT-E

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

1 5

Gamma Ray (ECGR_EDTC) EDTC-B

Absent 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Amplitude of Wave (AWBK) USIT-E

USIT - Acoustic Impedance (AIBK) USIT-E

Absent 0.500 1.500 2.500 3.500

Explicit Normalization

USIT - Solid Liquid Gas Sorted Color Map (USLP)

Acoustic Impedance Minimum (AIMN) USIT-E

-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E

-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E

0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E

0 dB/m 150

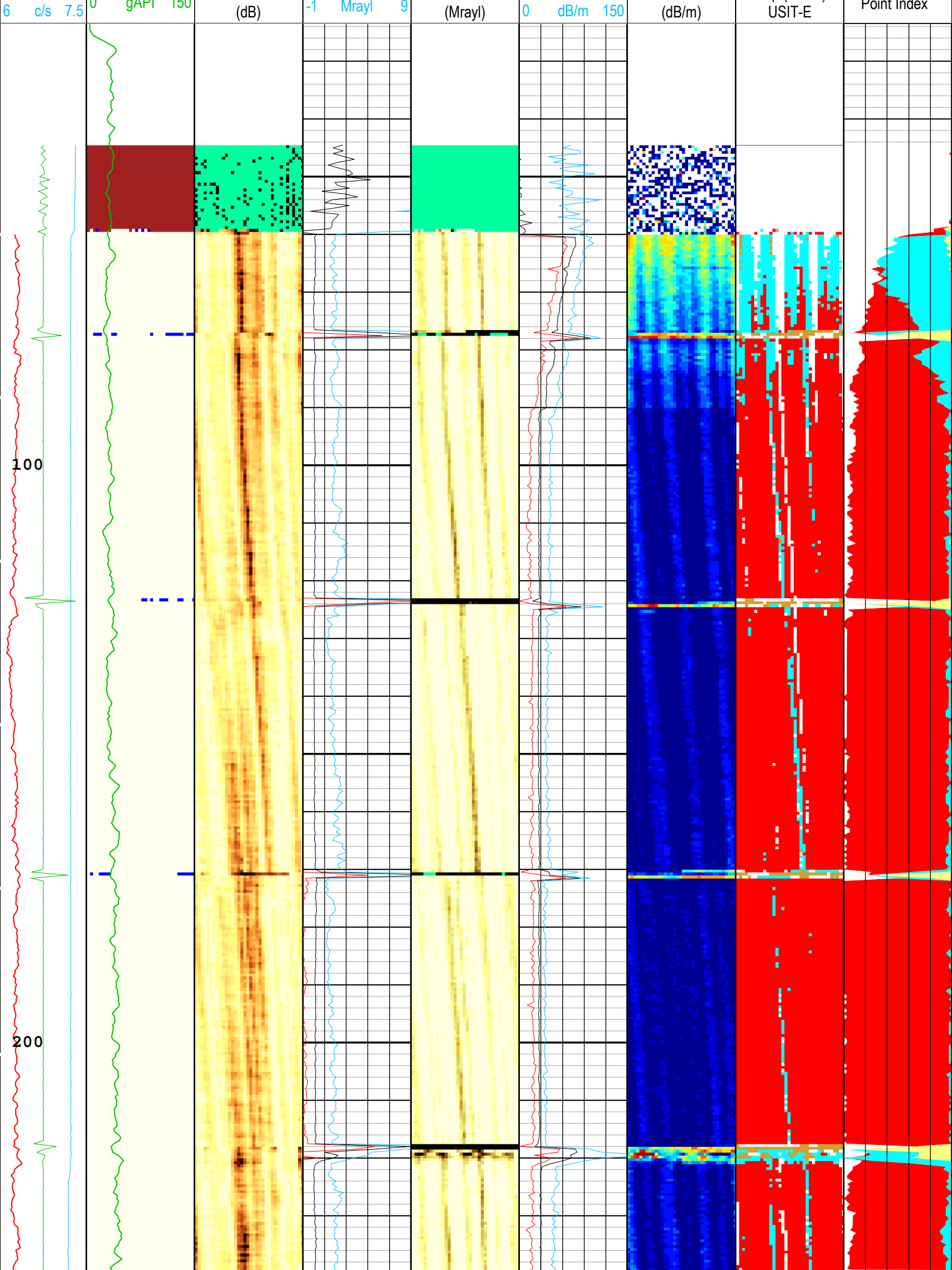
Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E

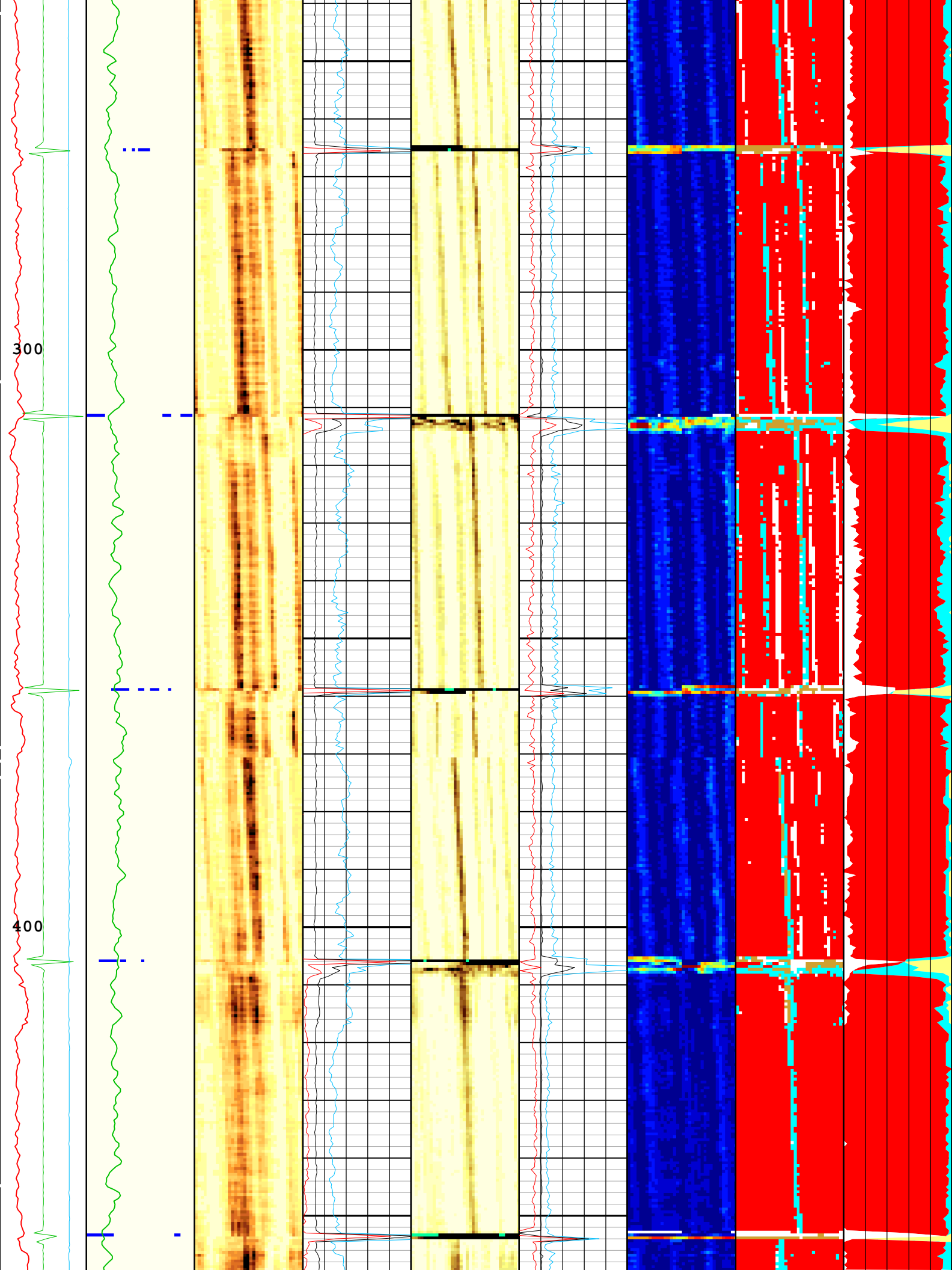
SLG Solid Index

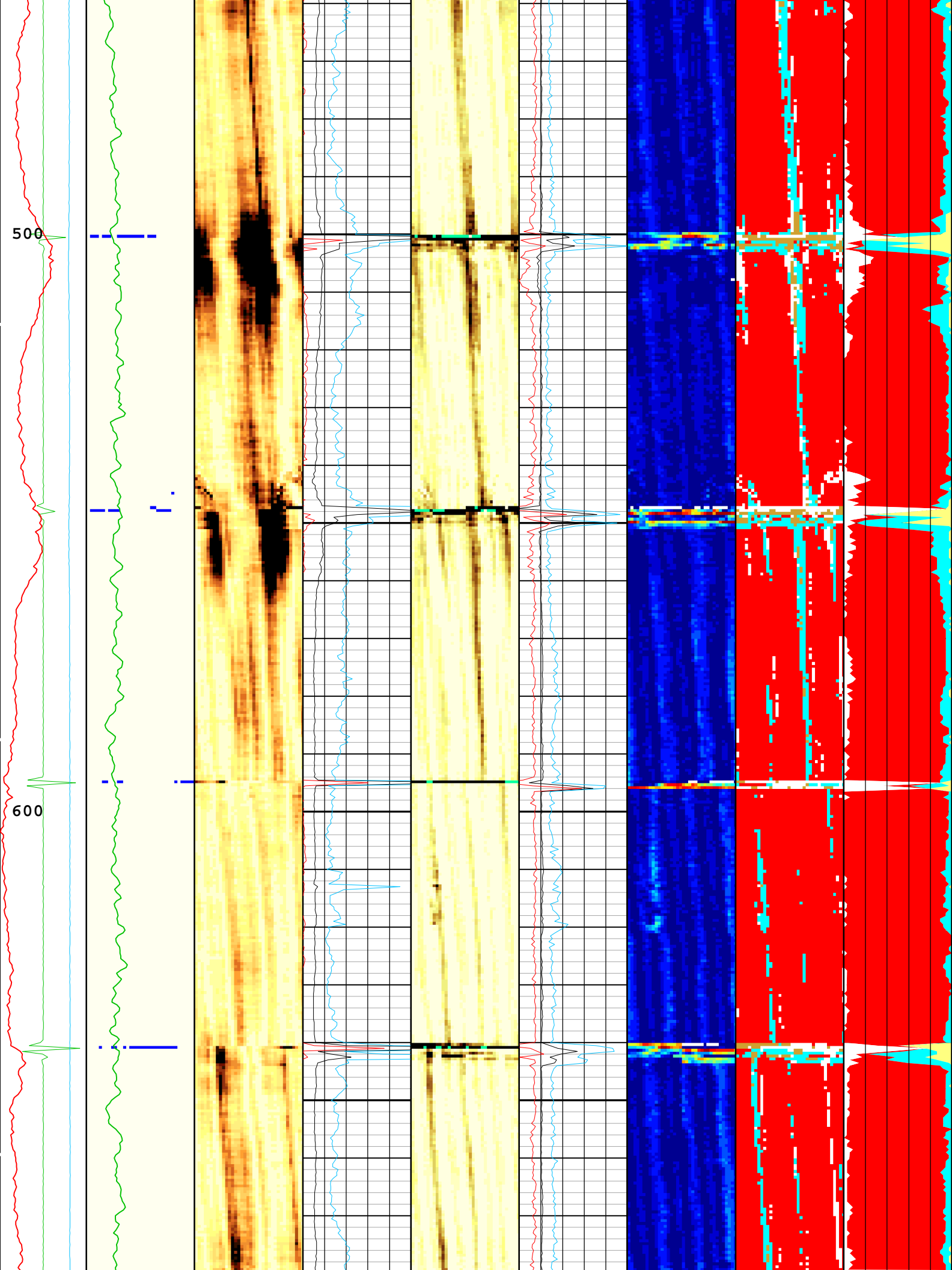
SLG Liquid Index

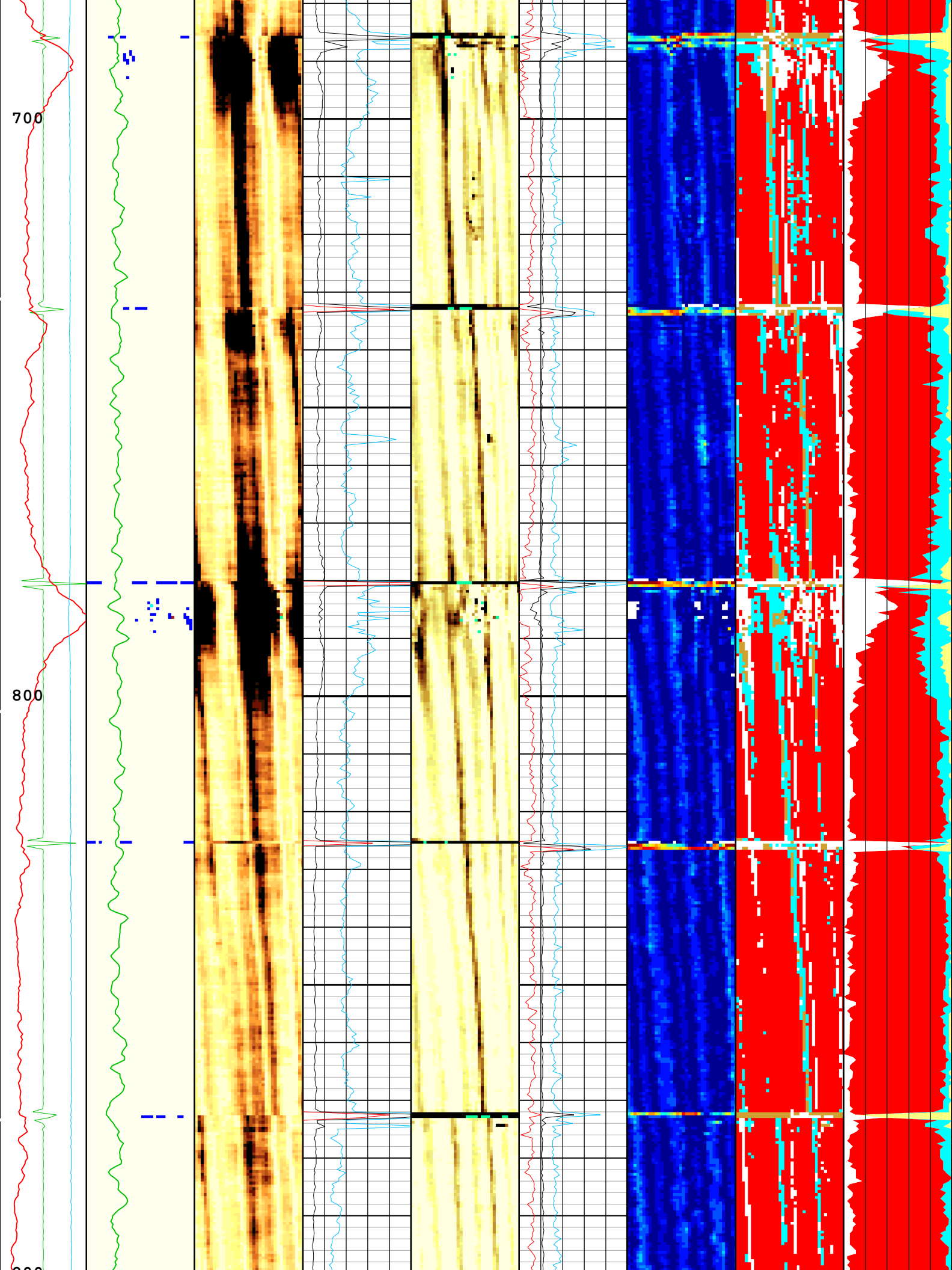
SLG Gas Index

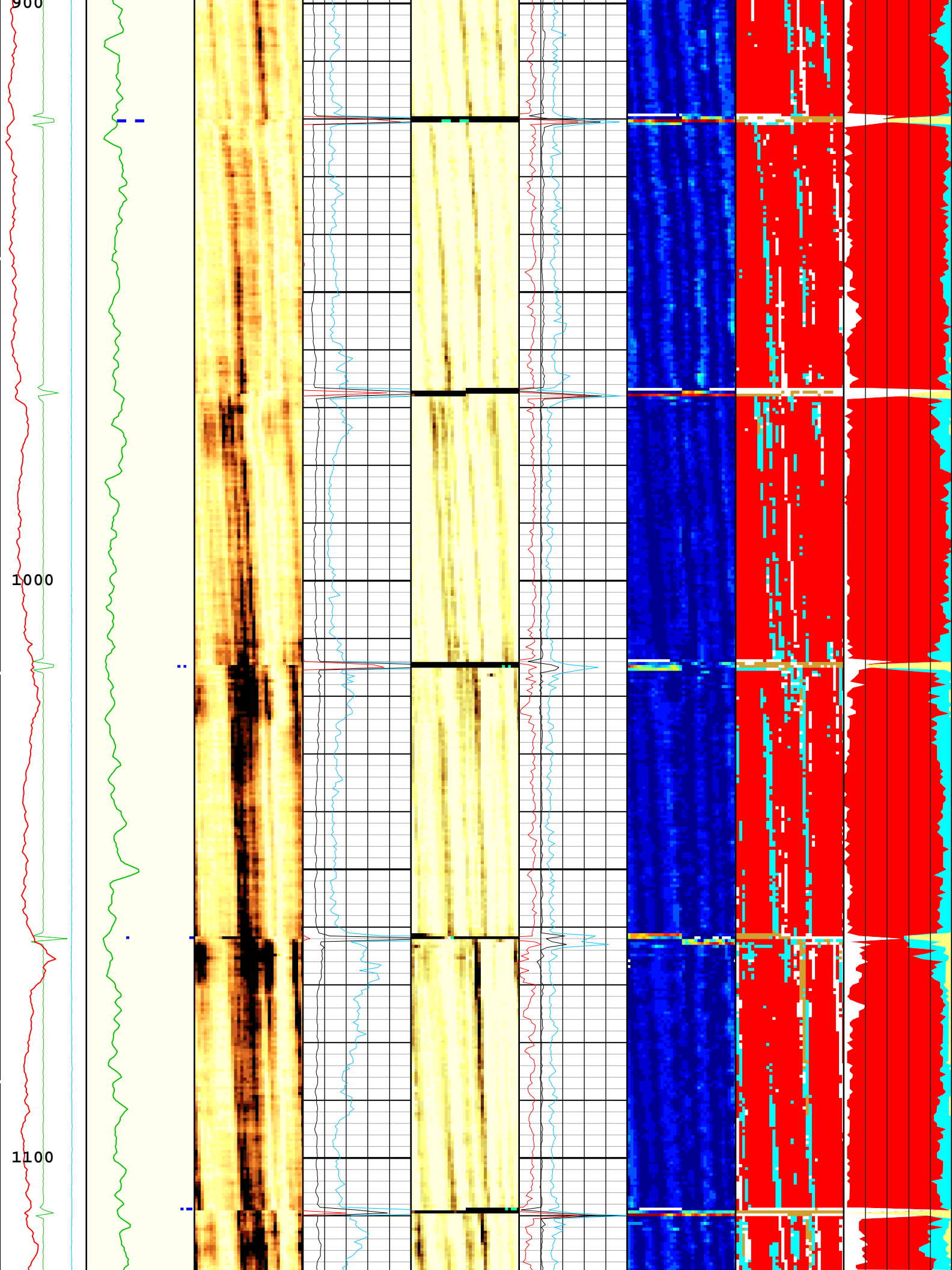
SLG White

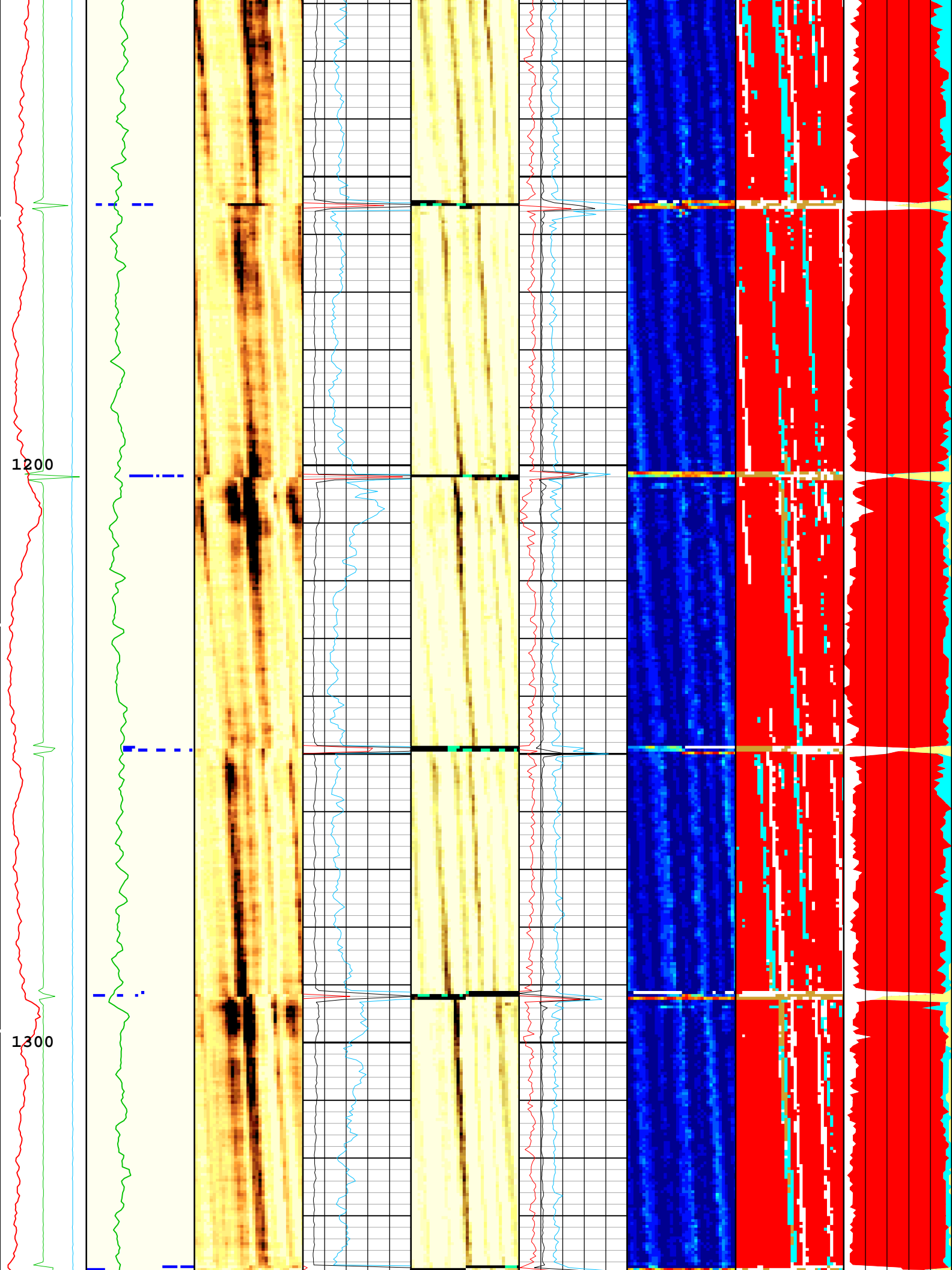


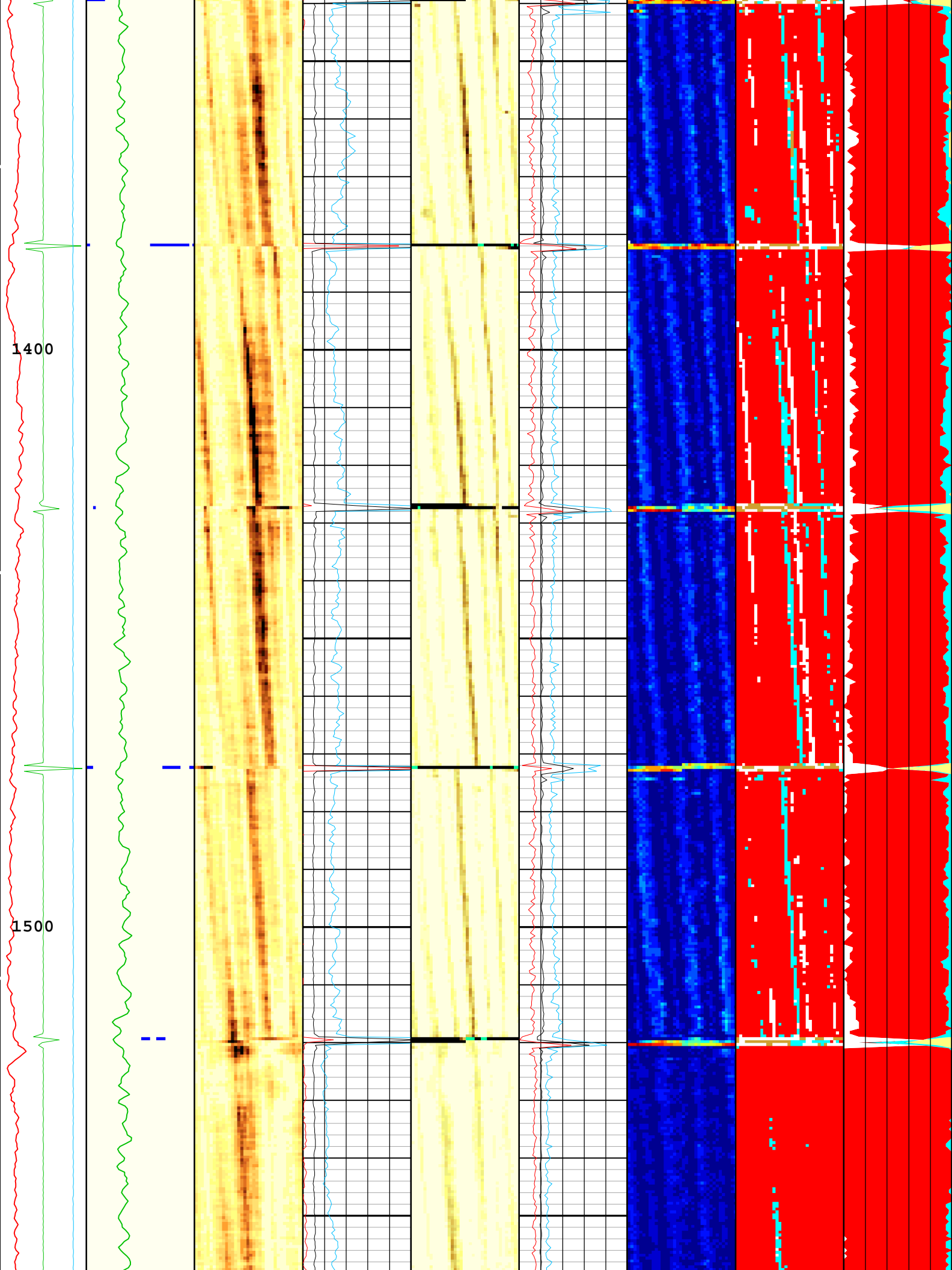


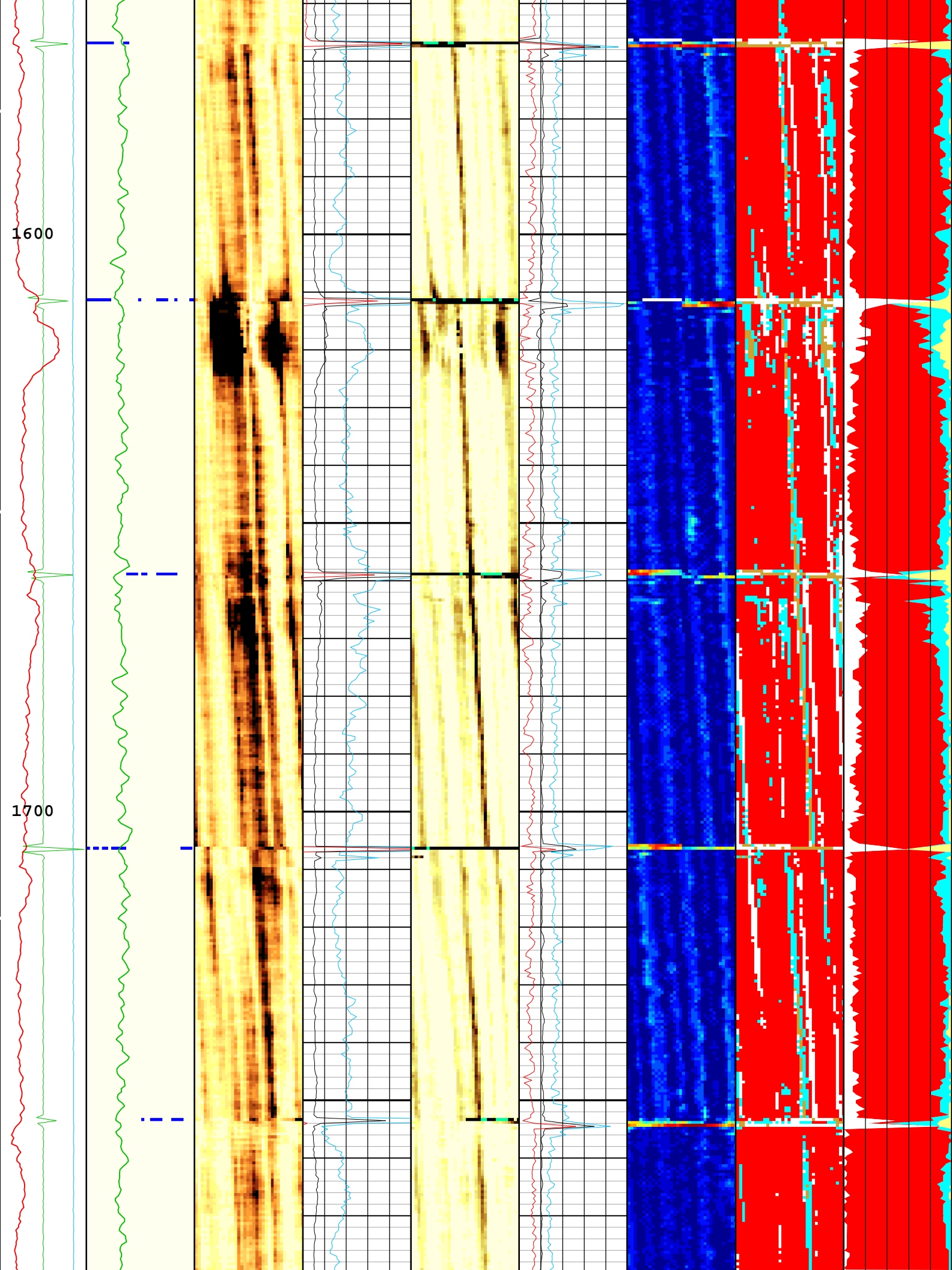


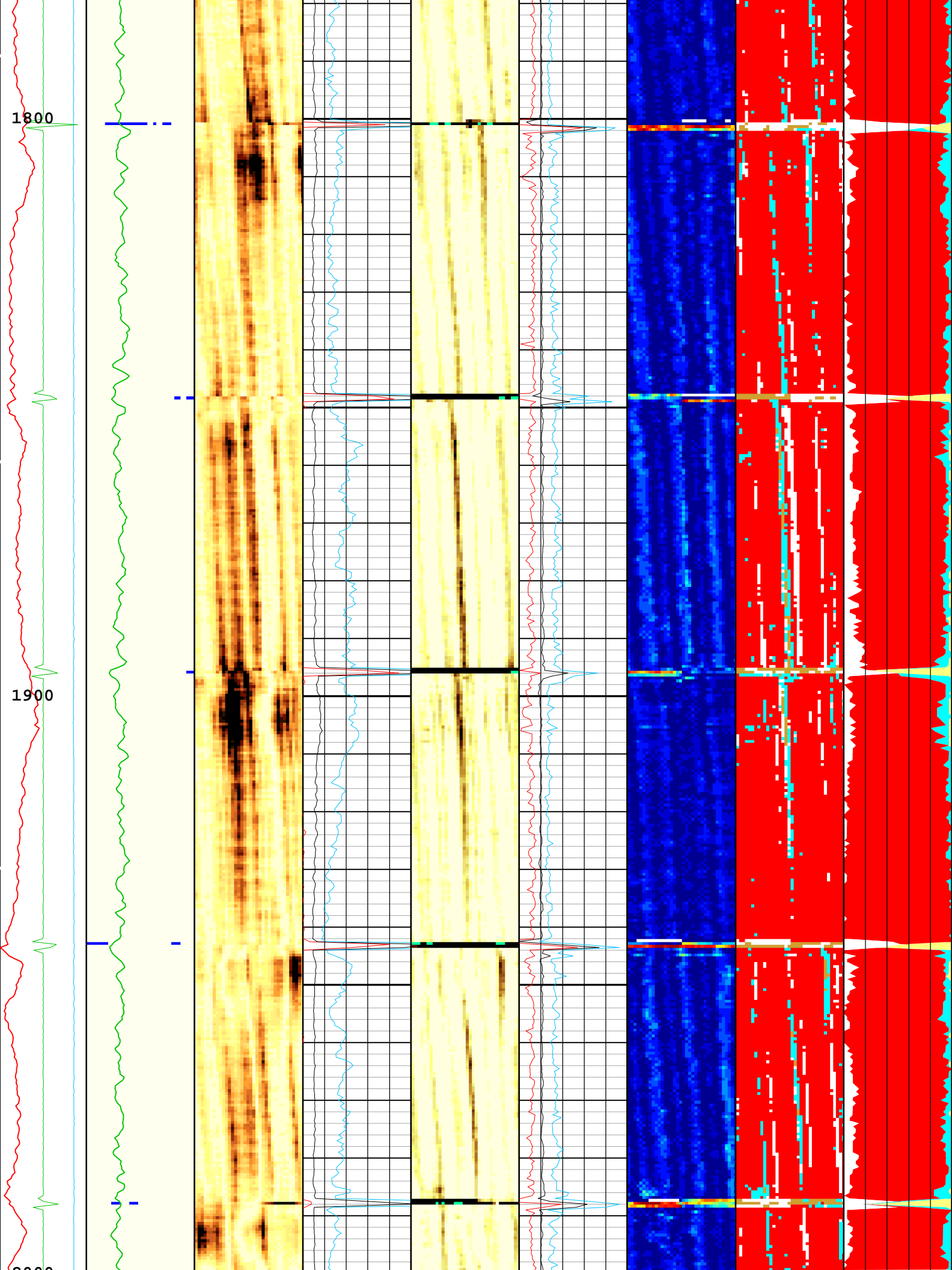


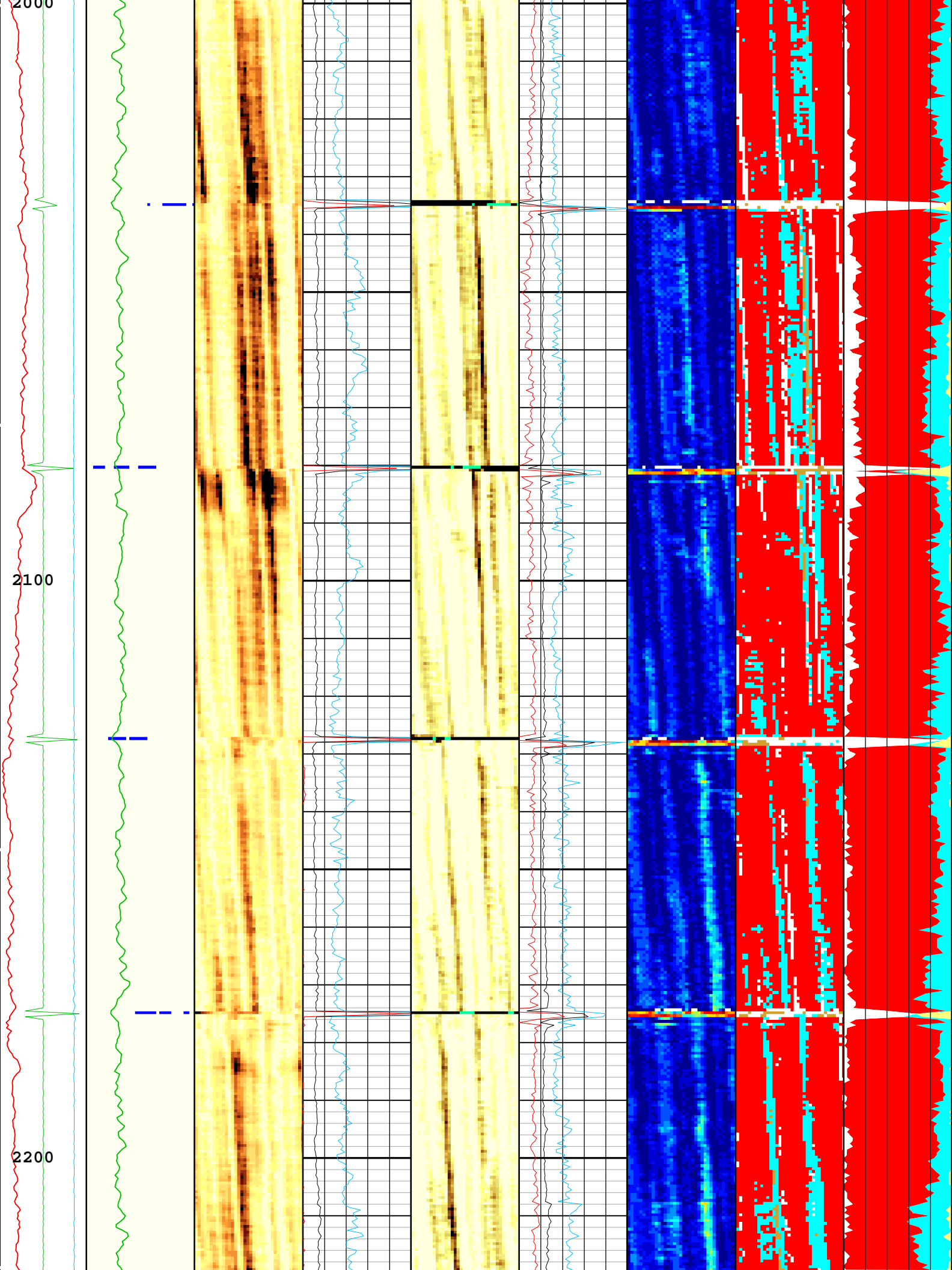


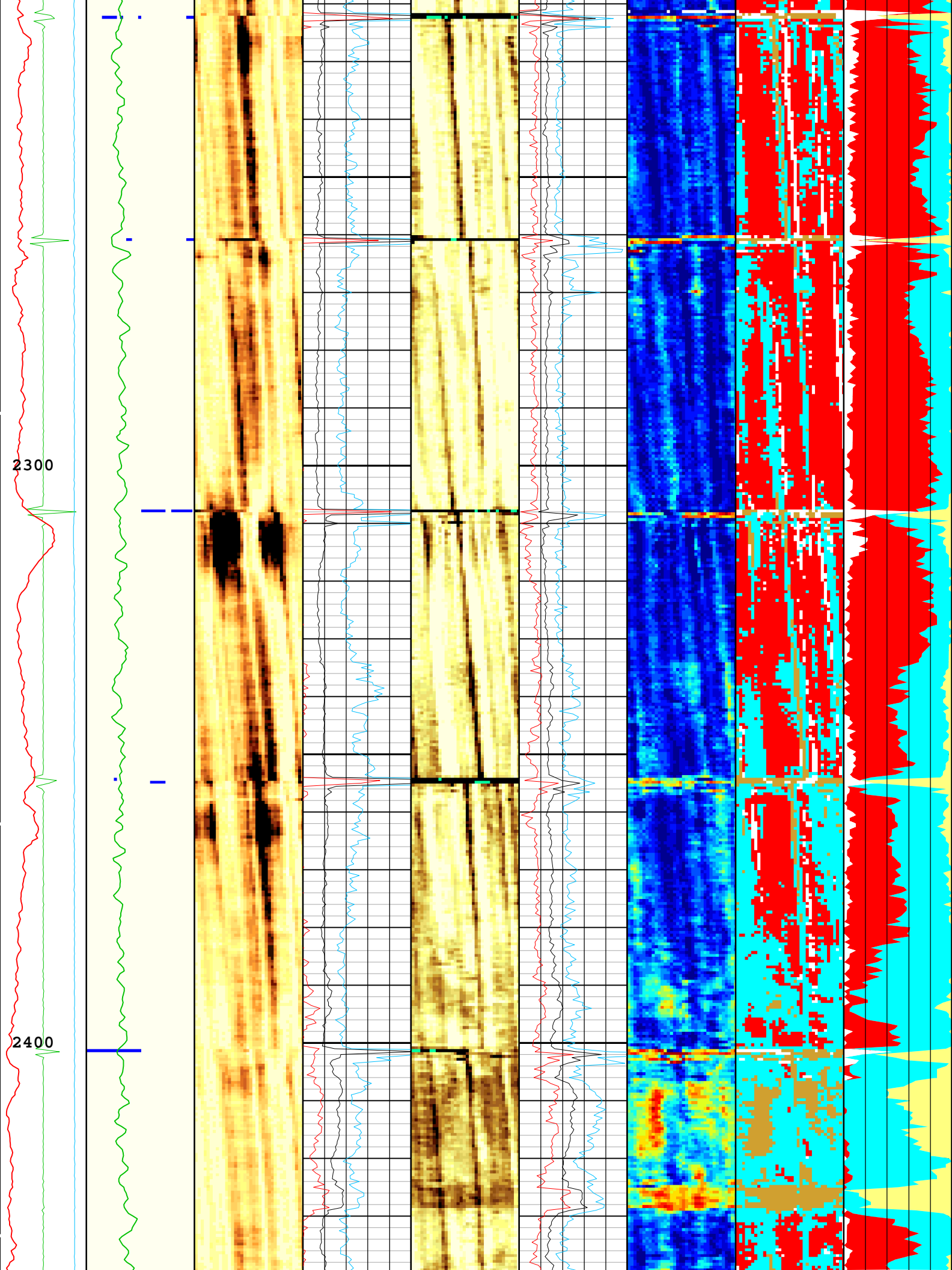


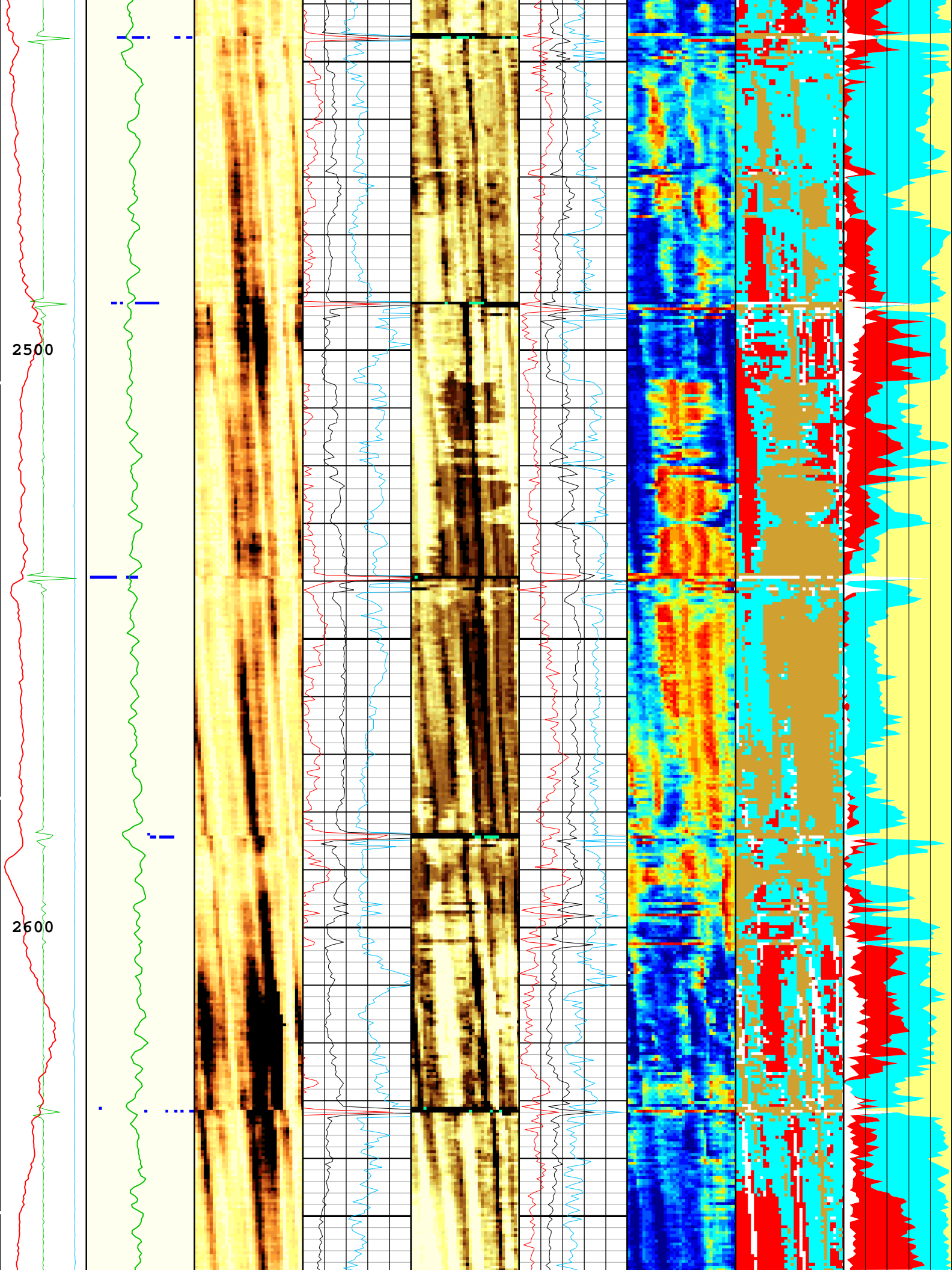


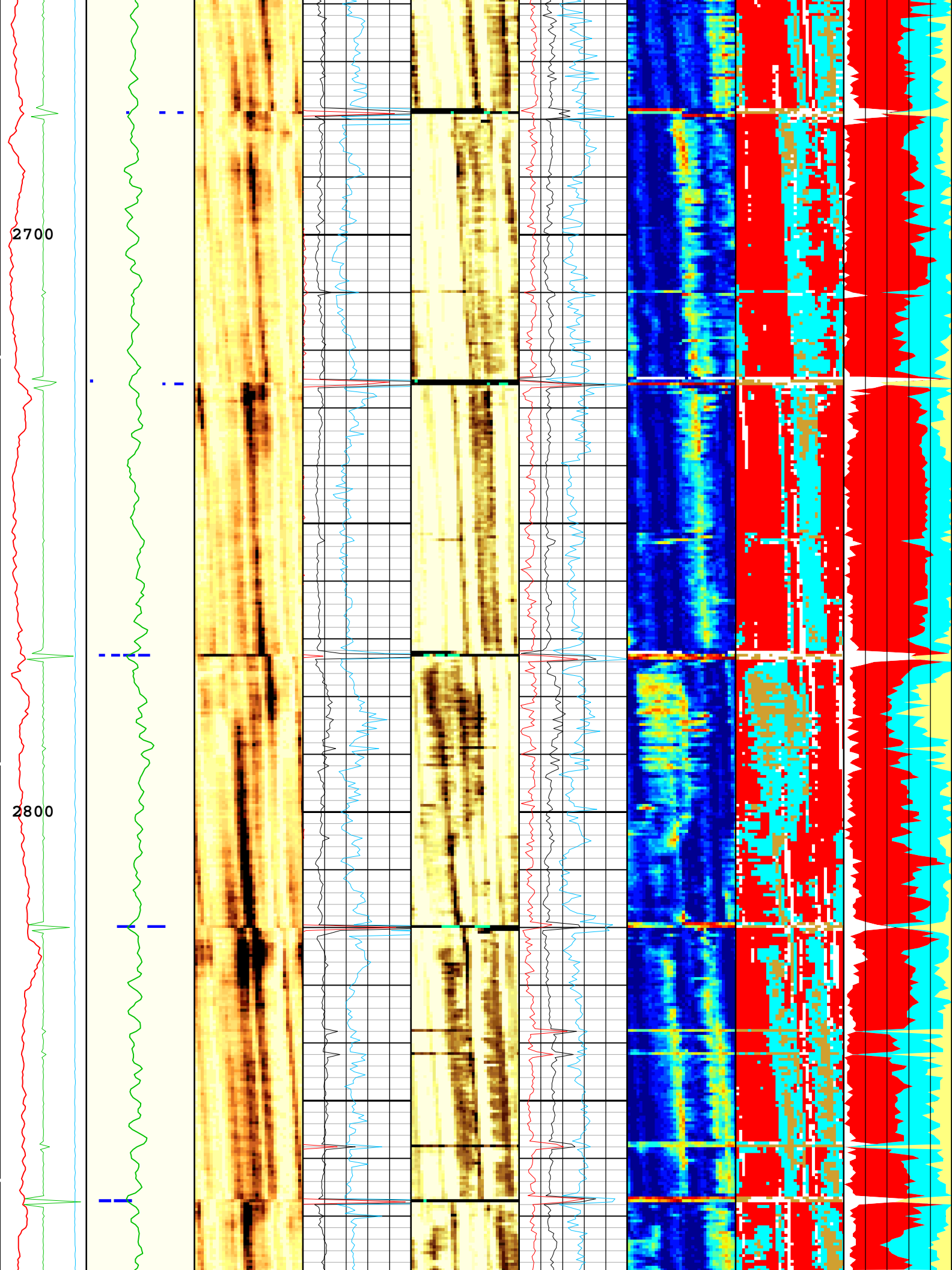


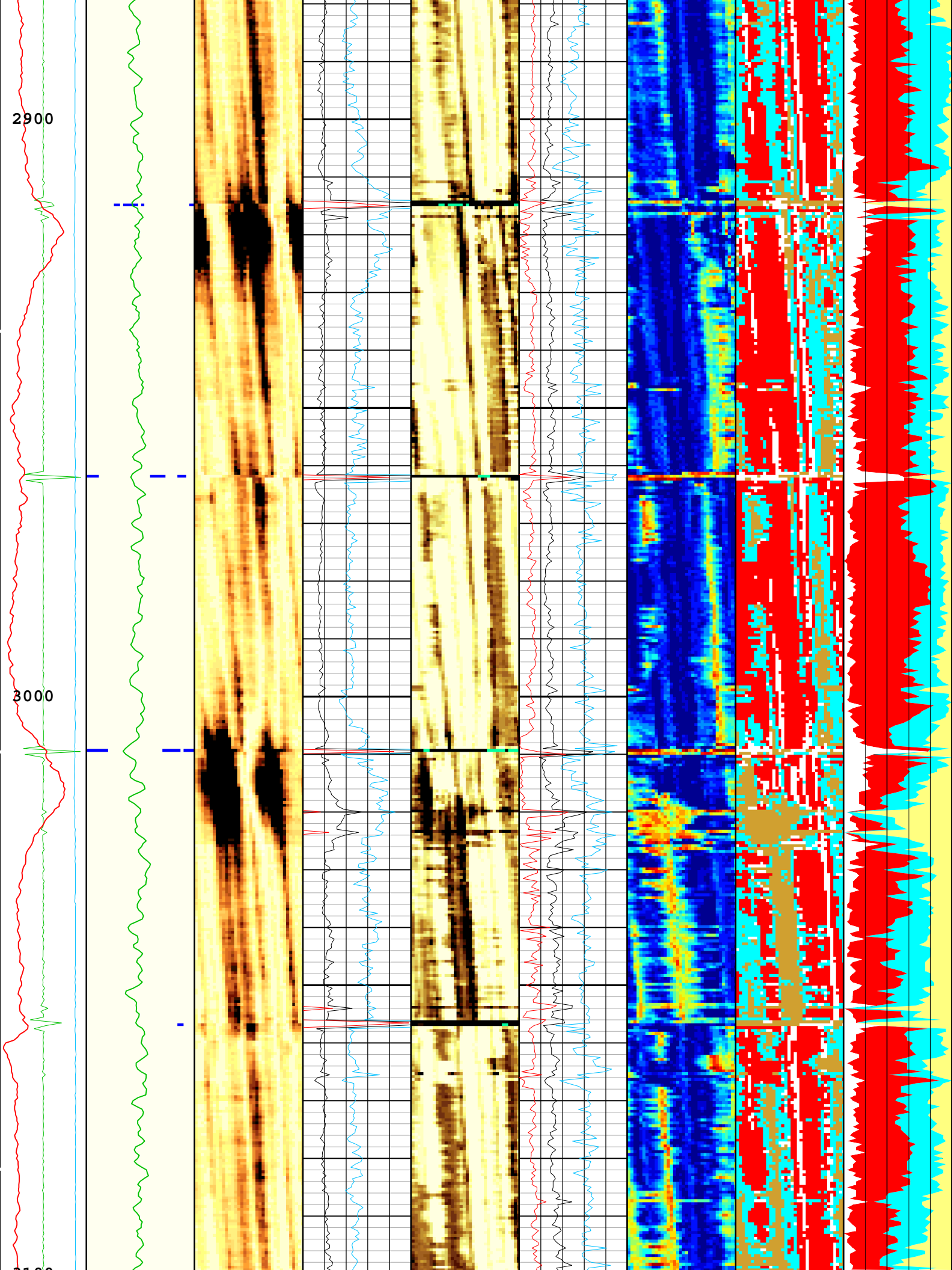


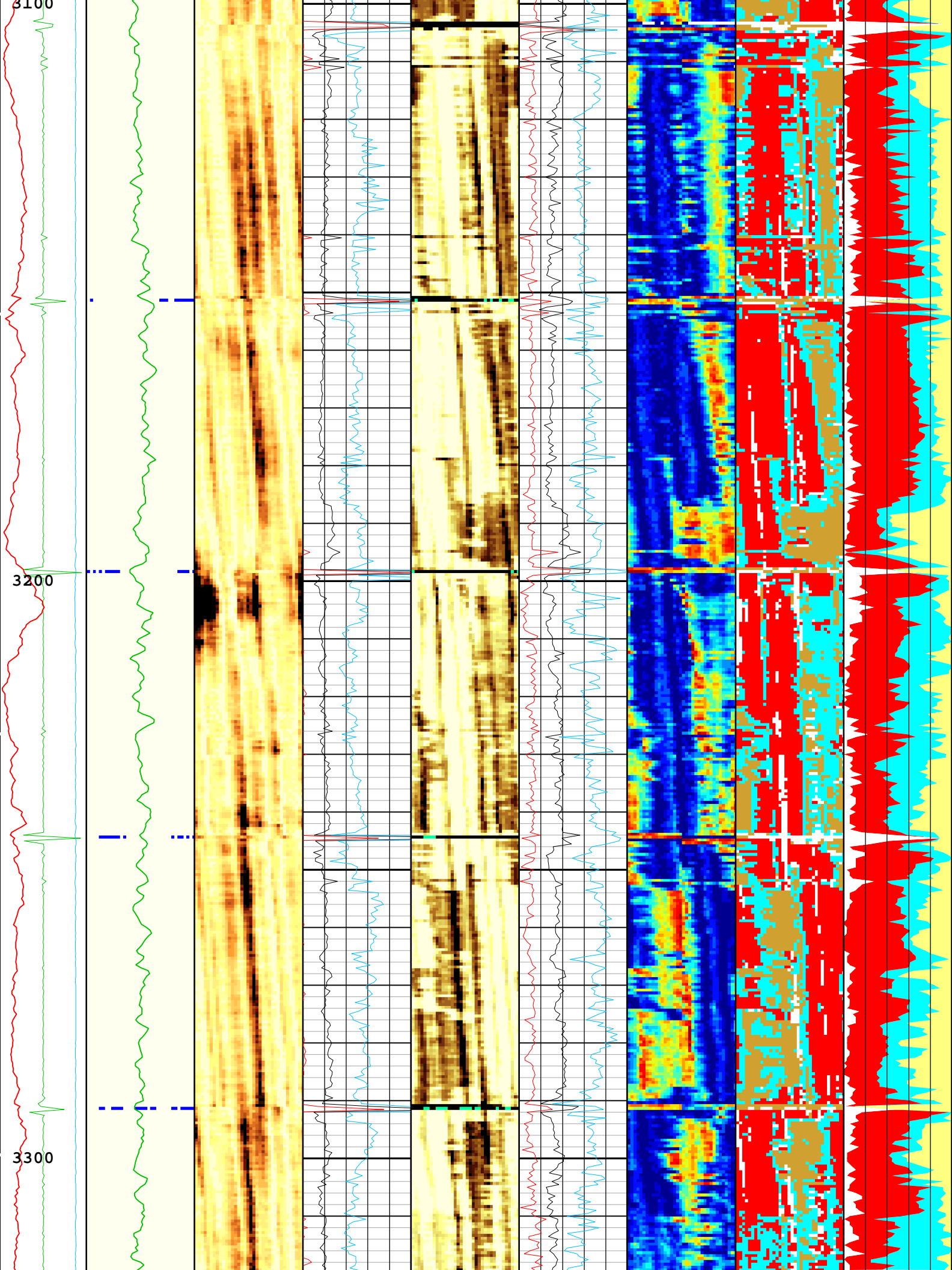


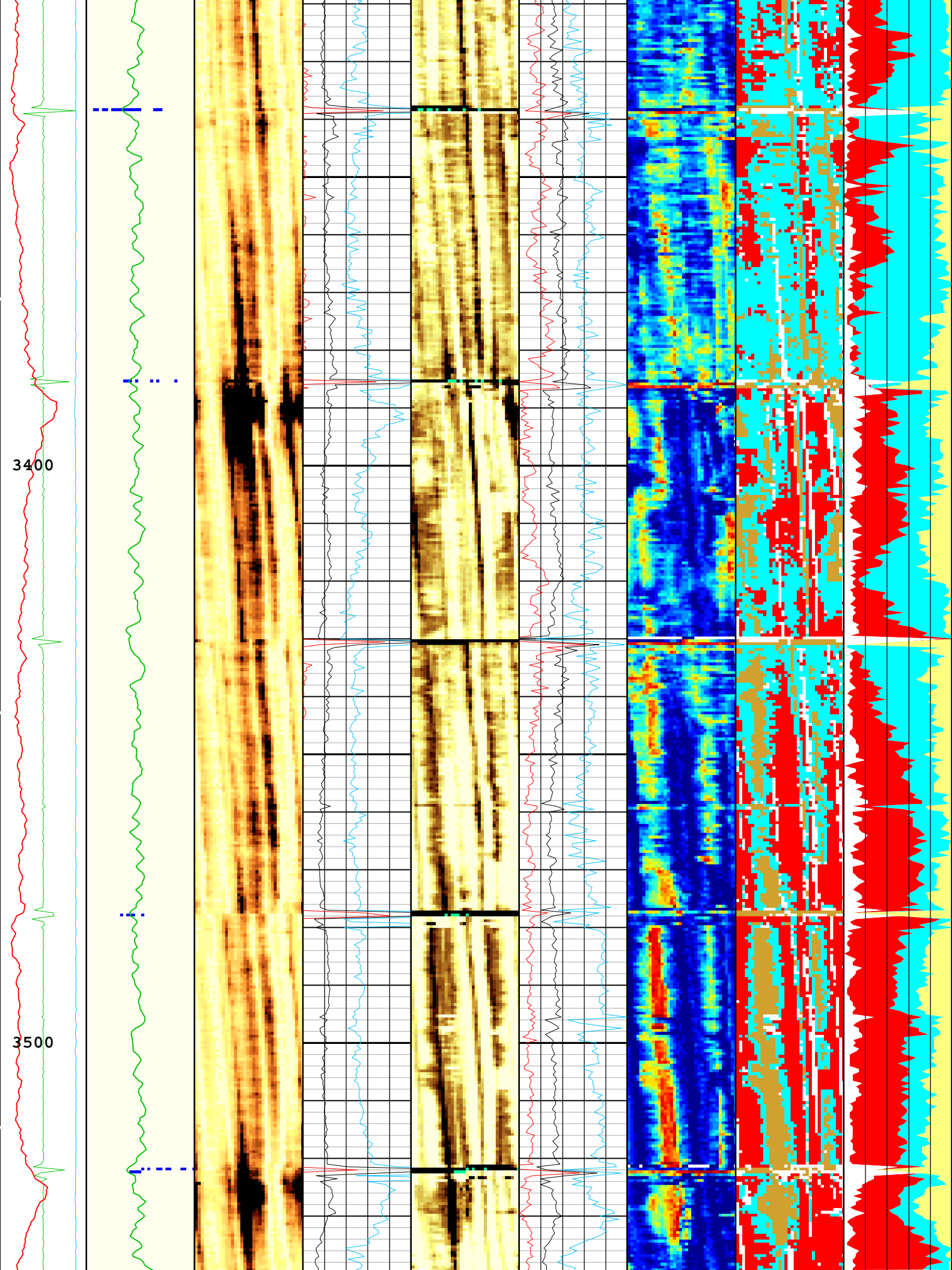


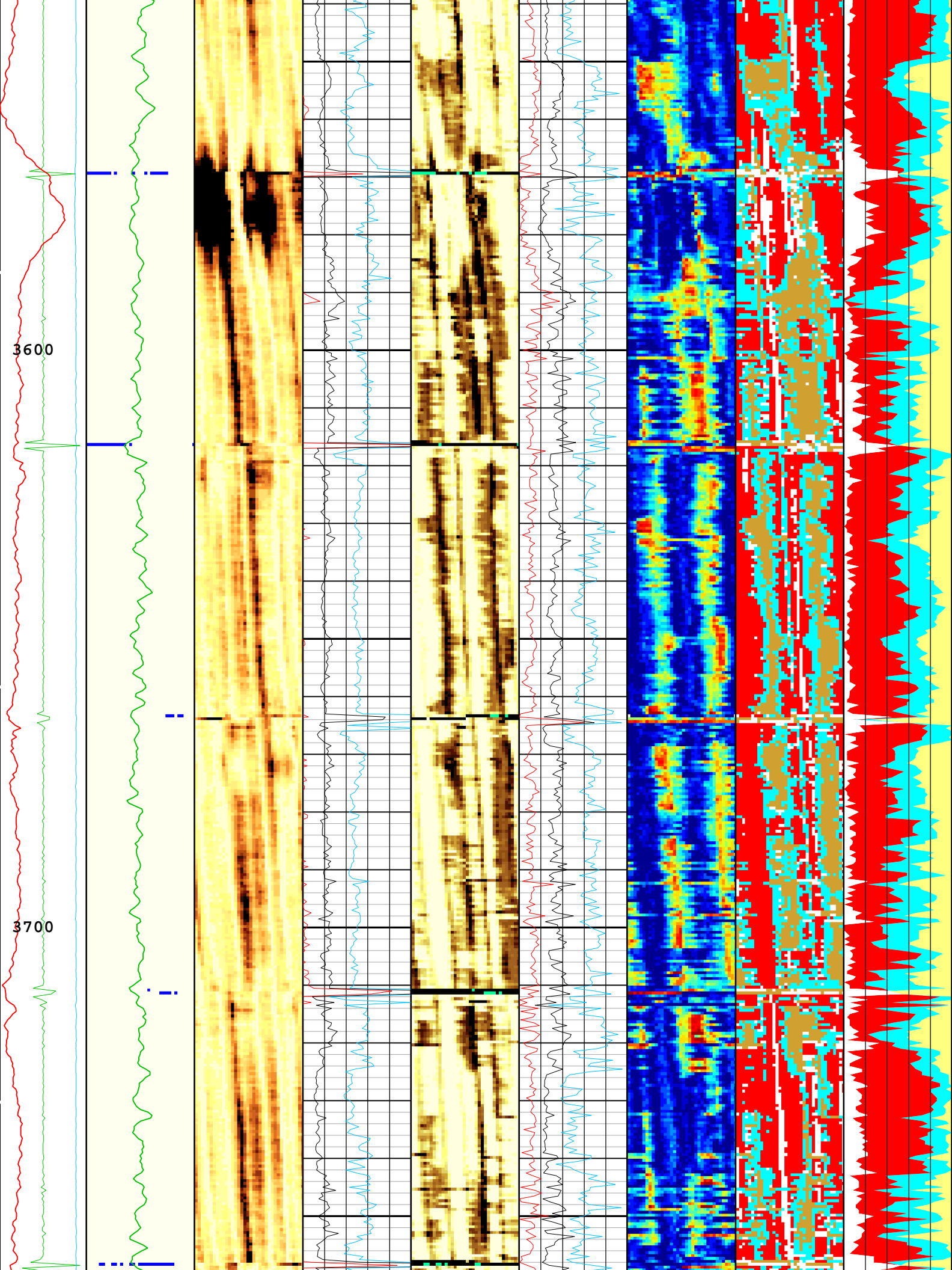


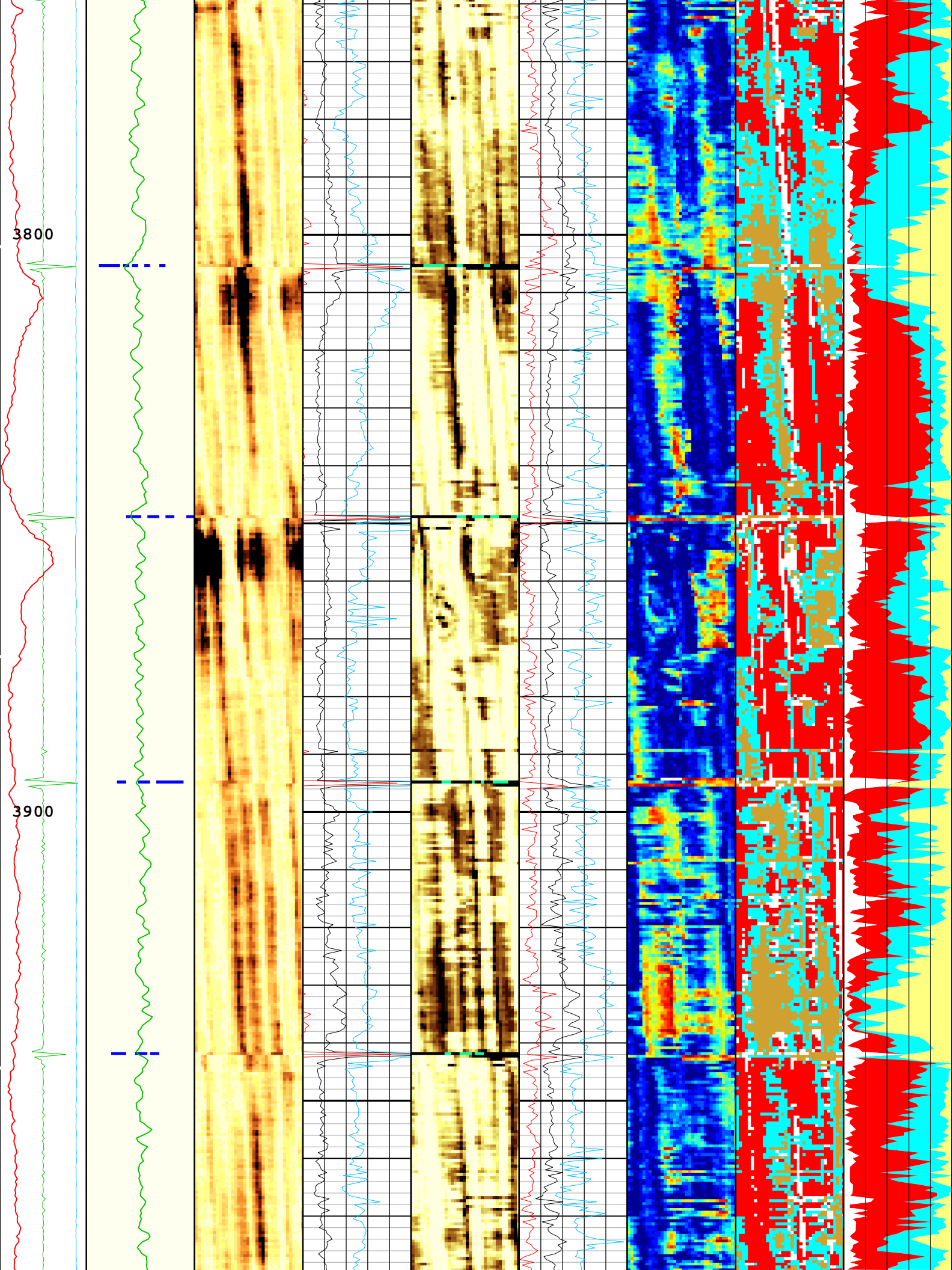


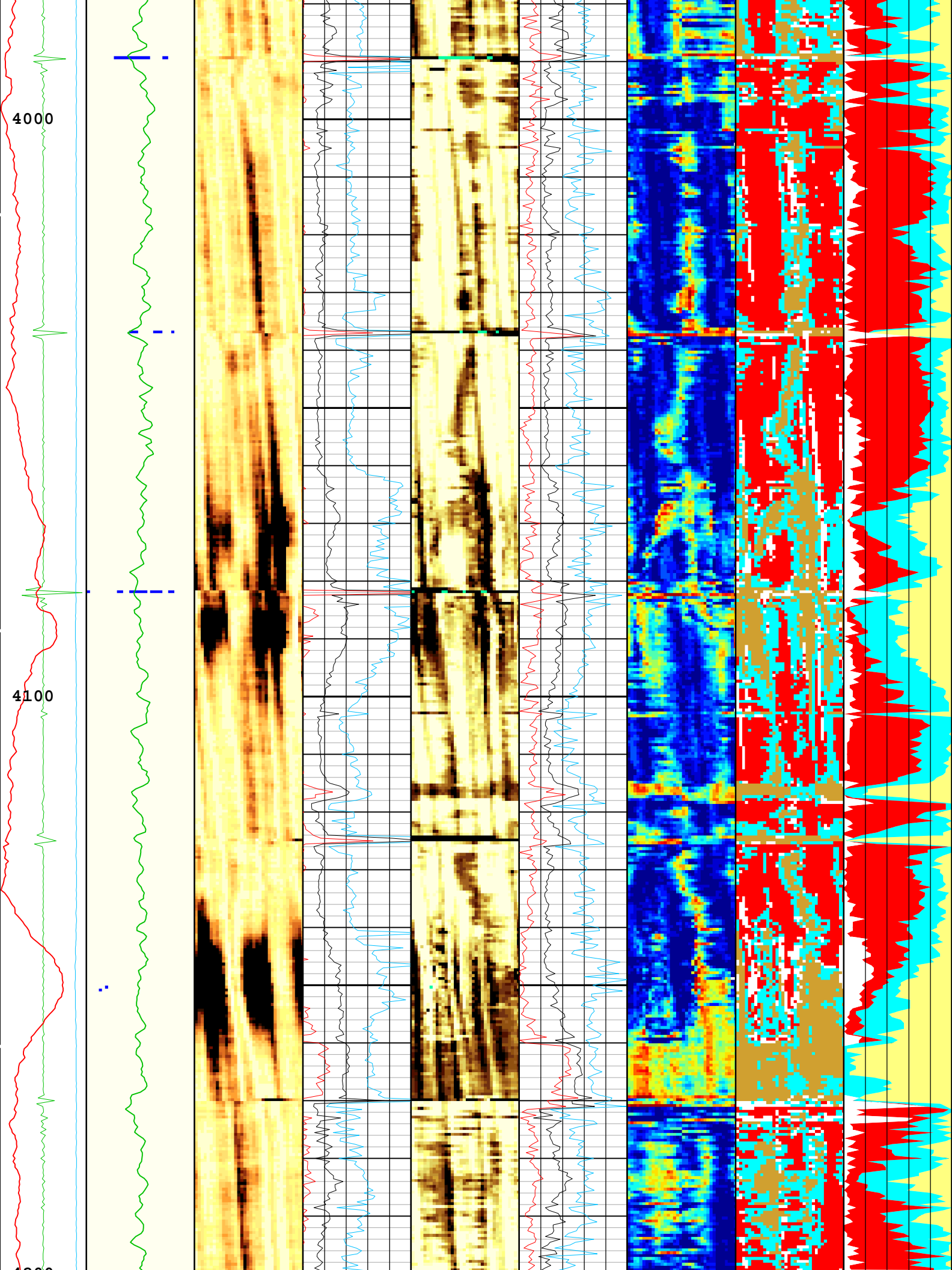


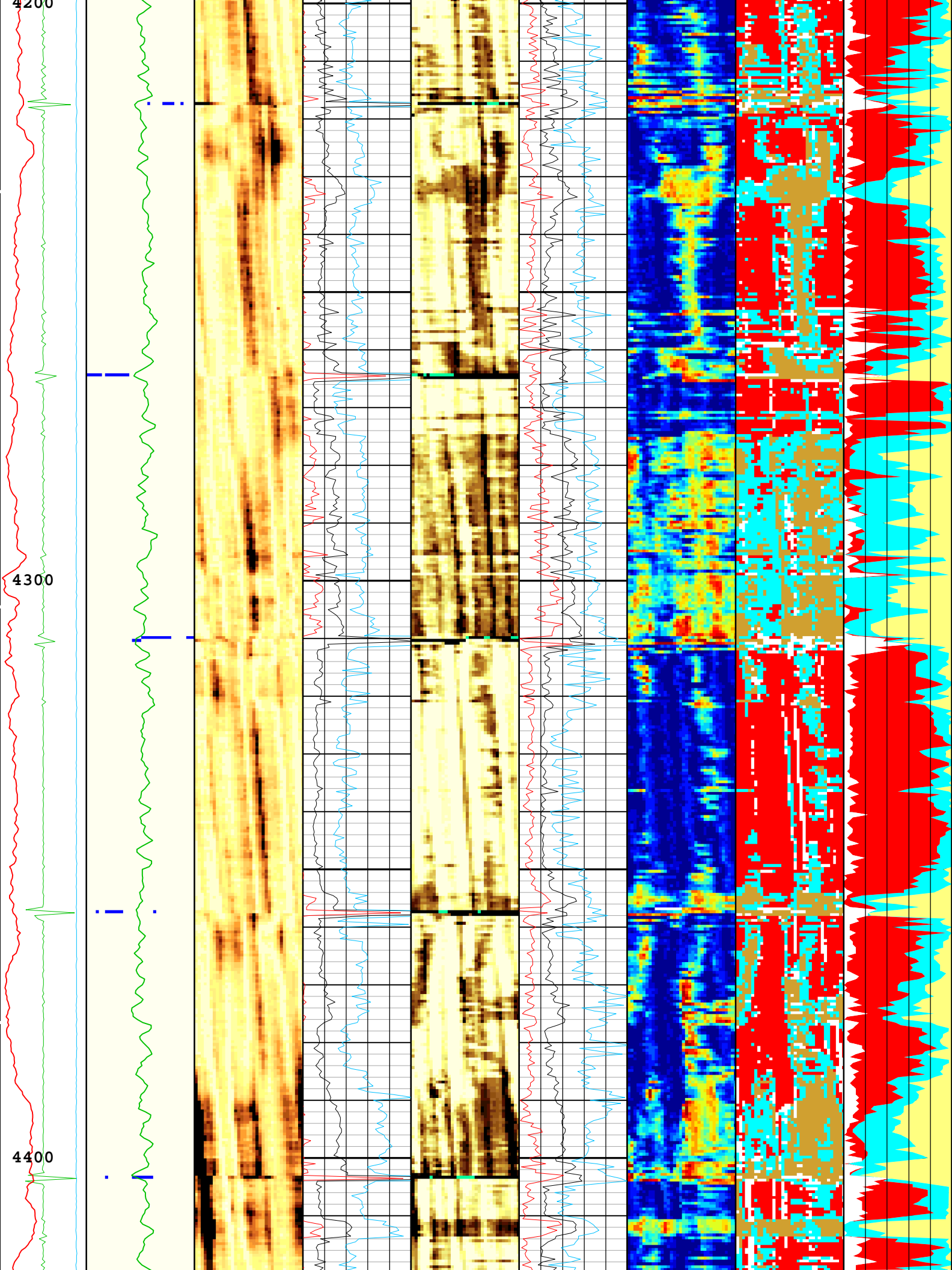


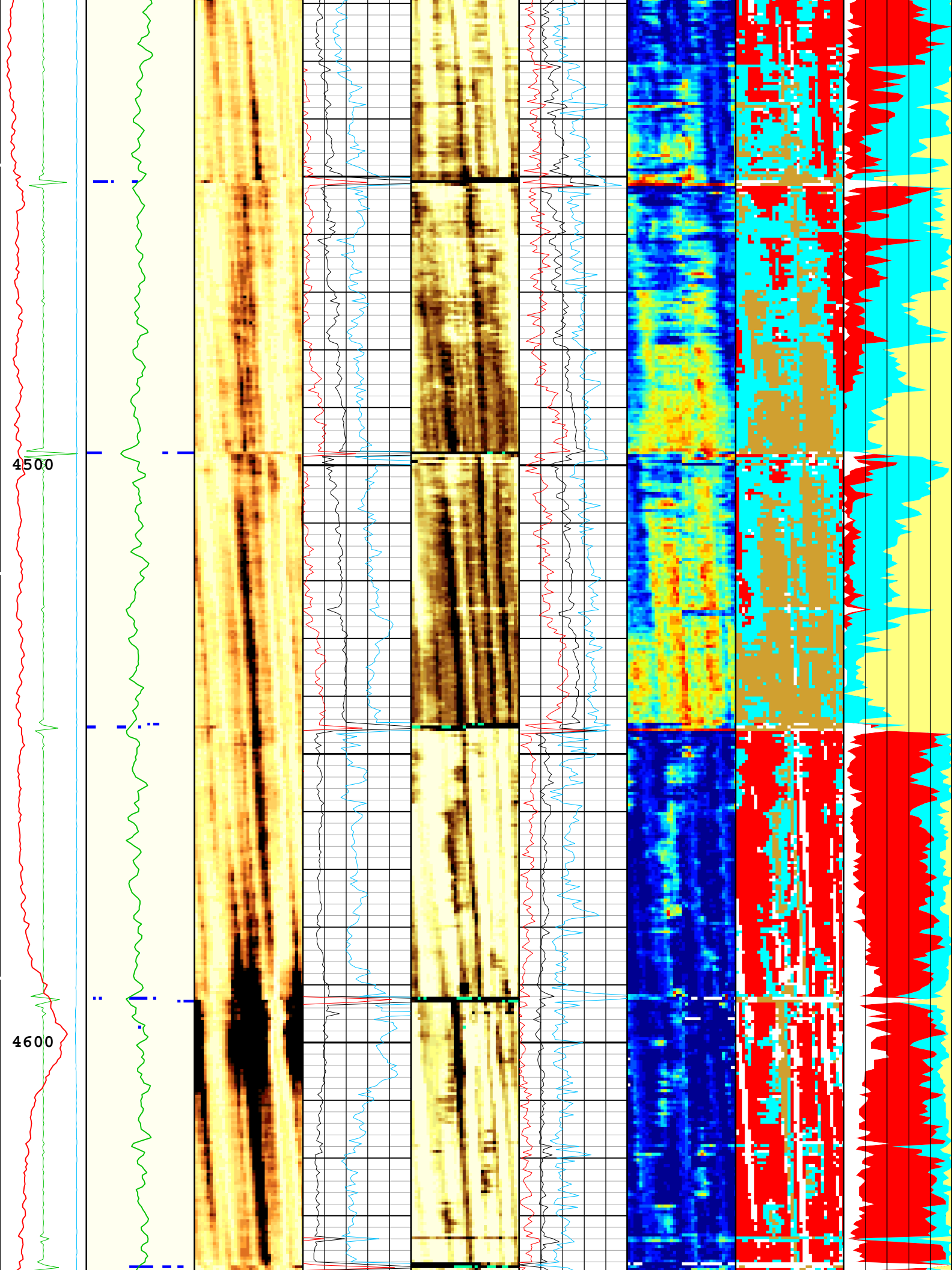


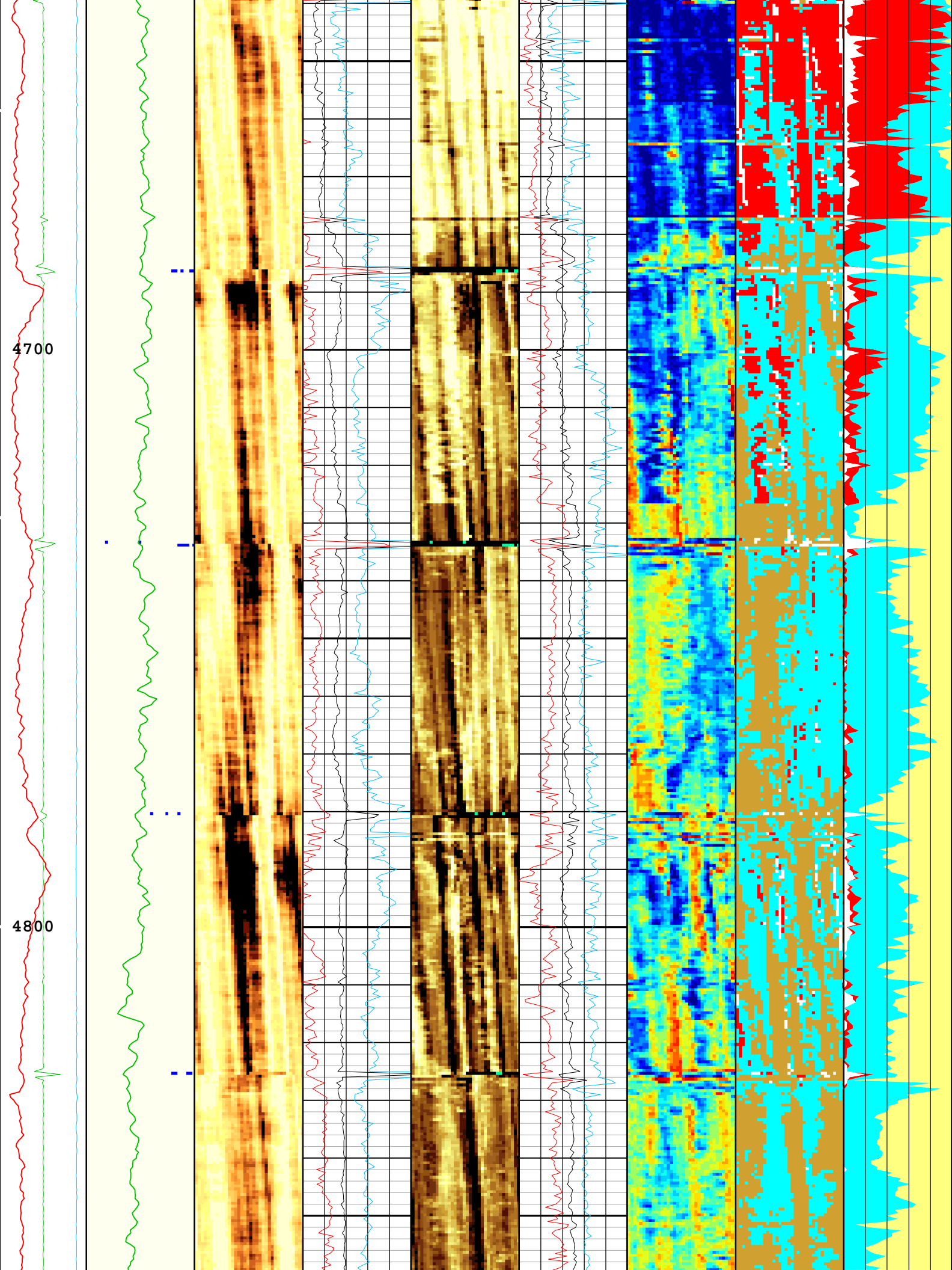


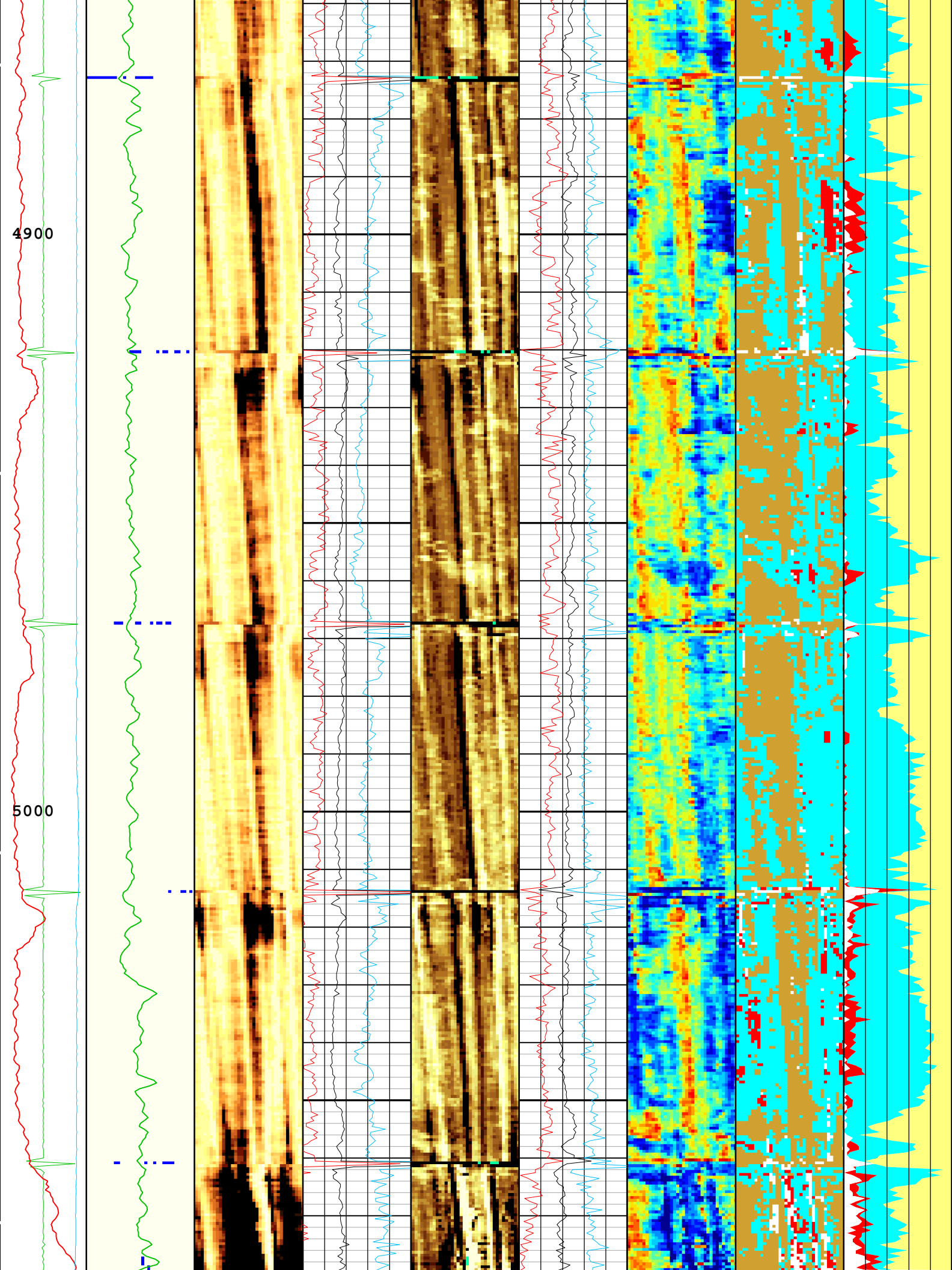


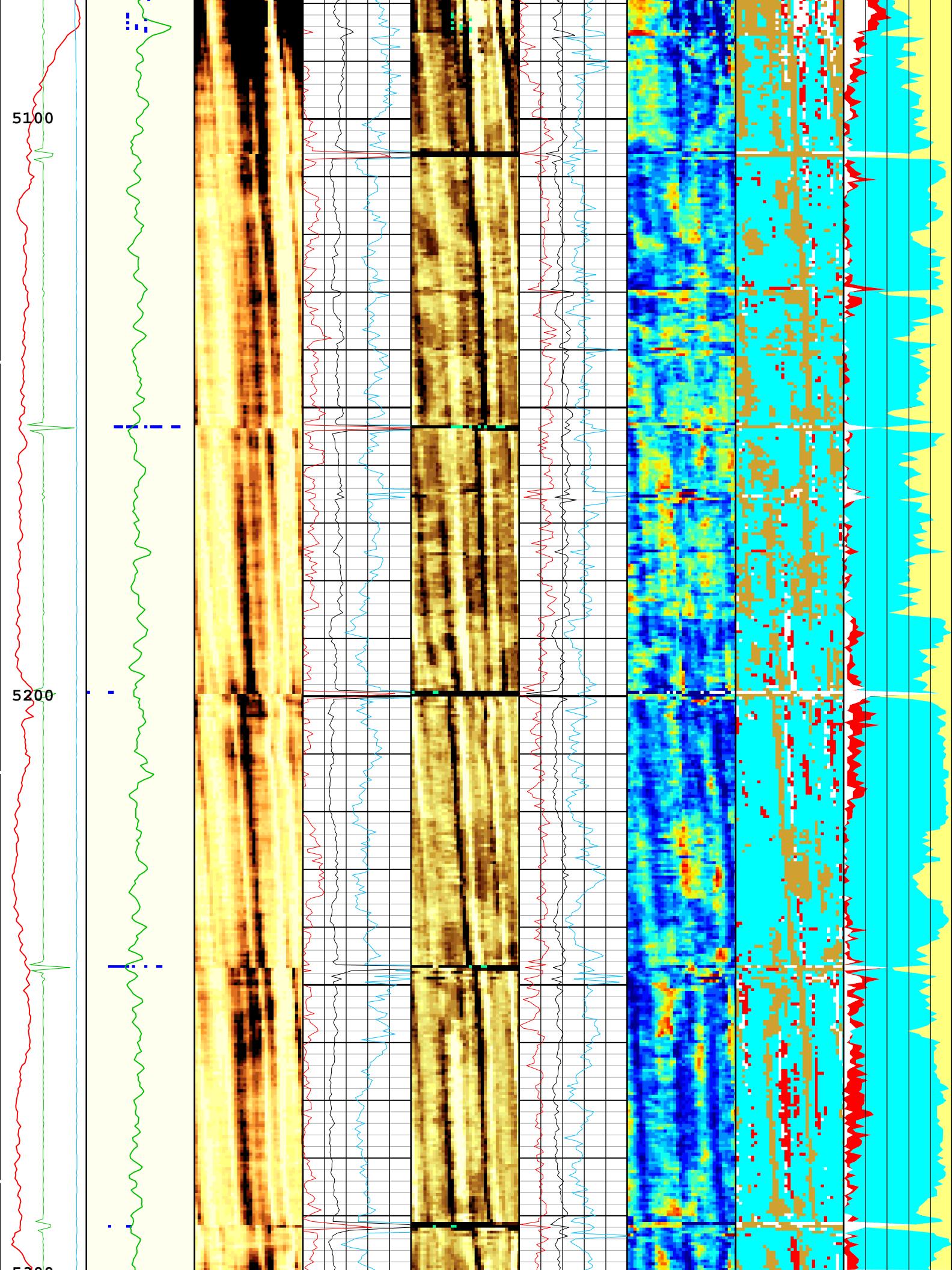


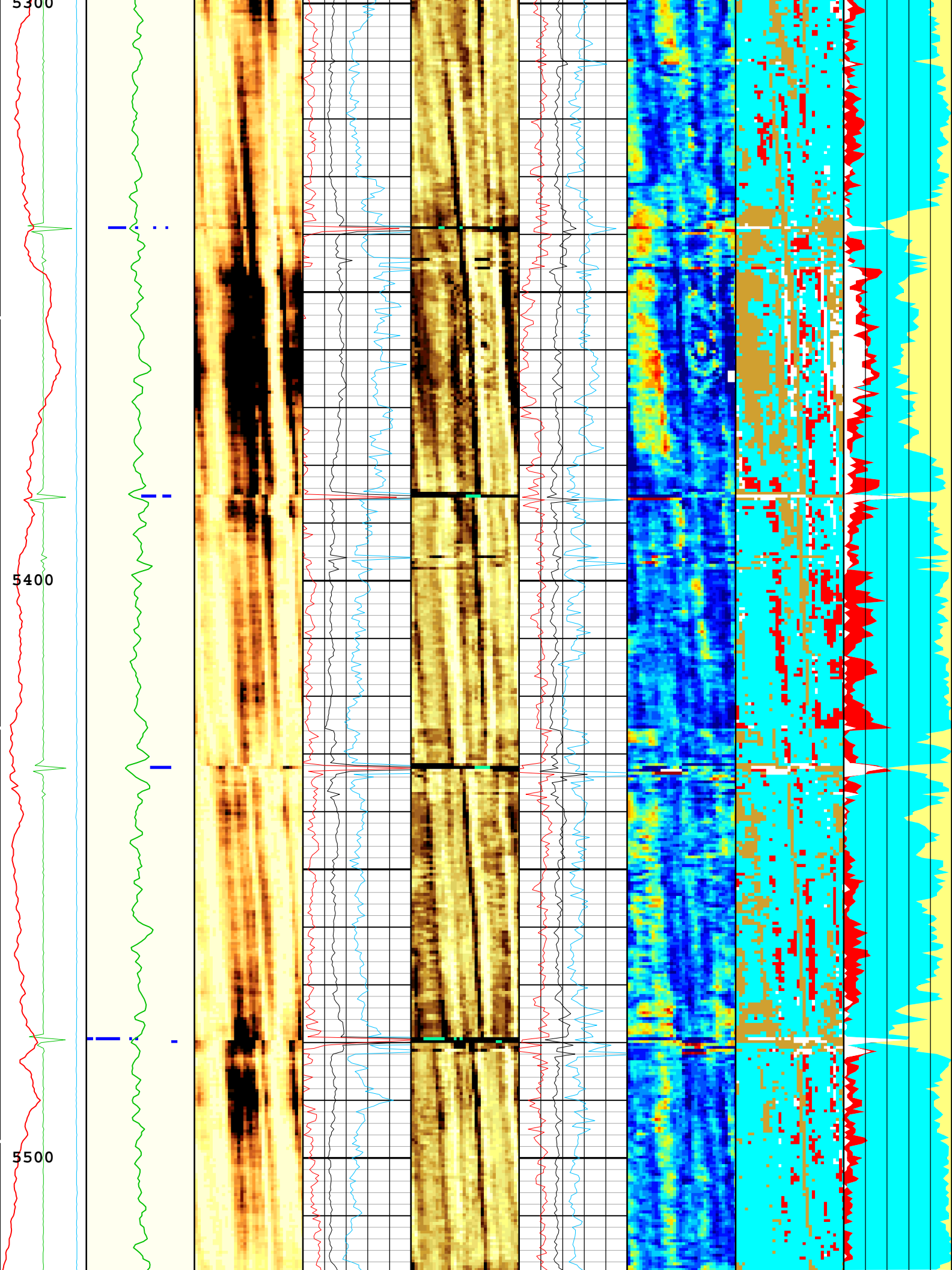


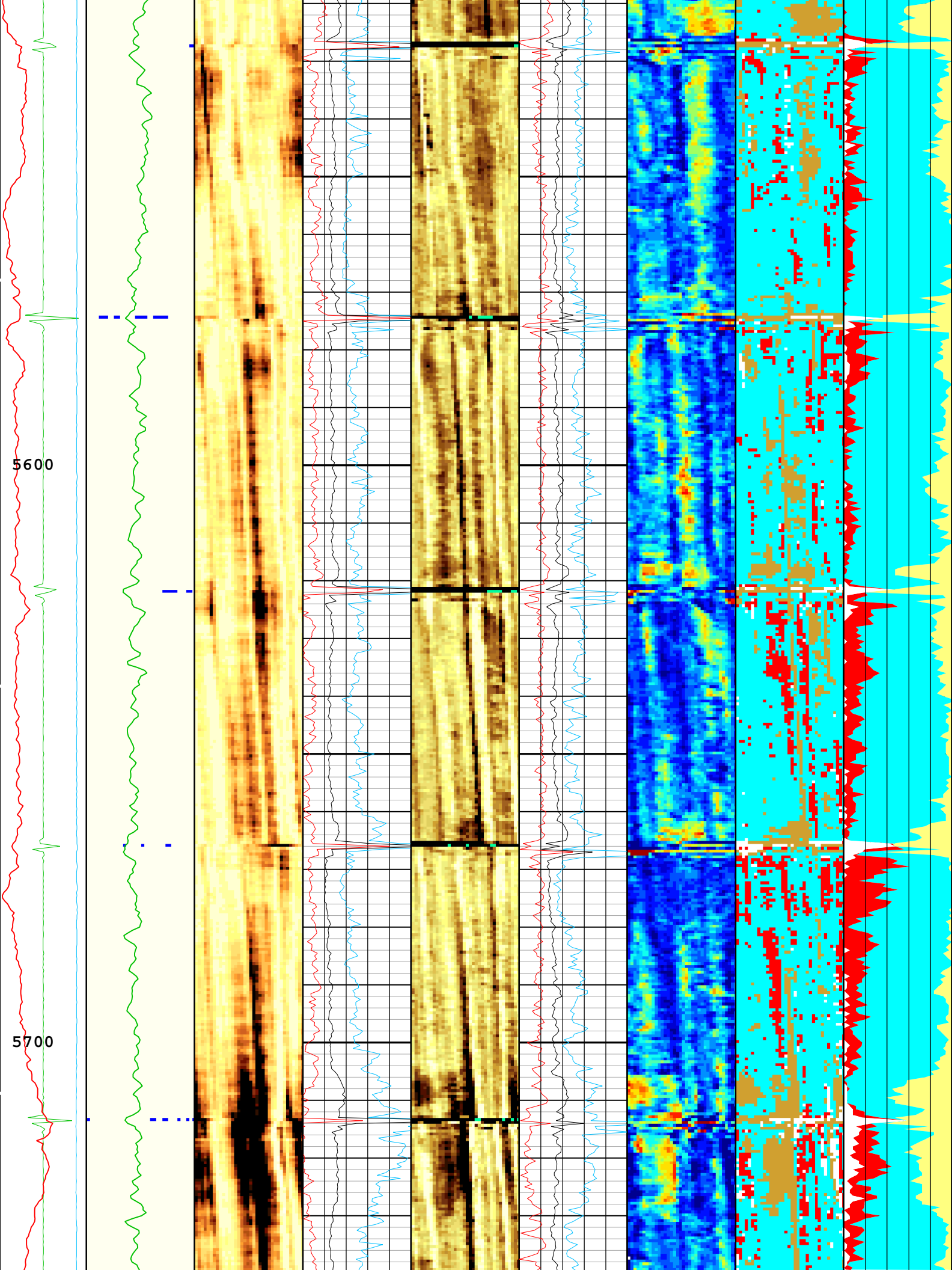


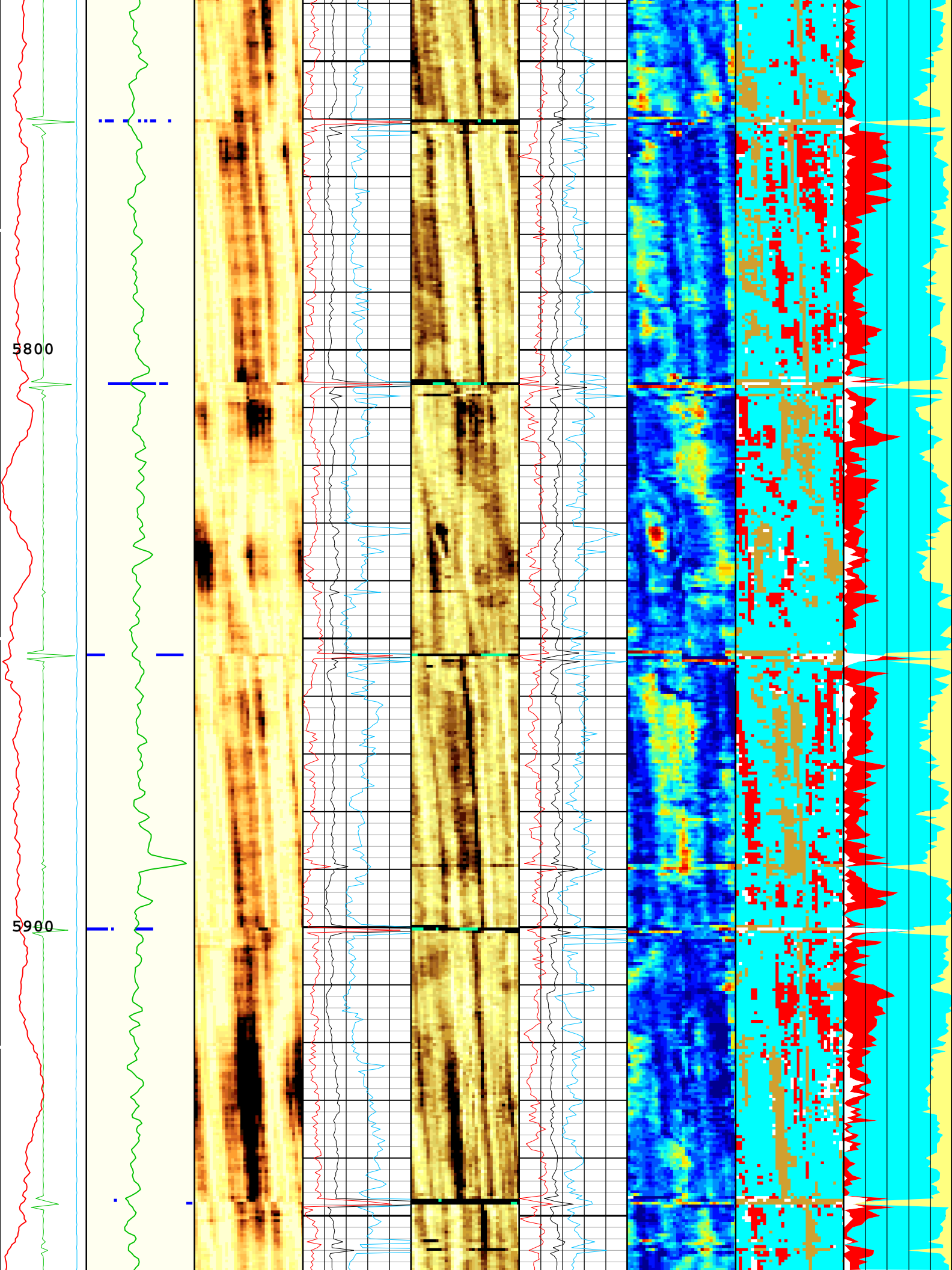


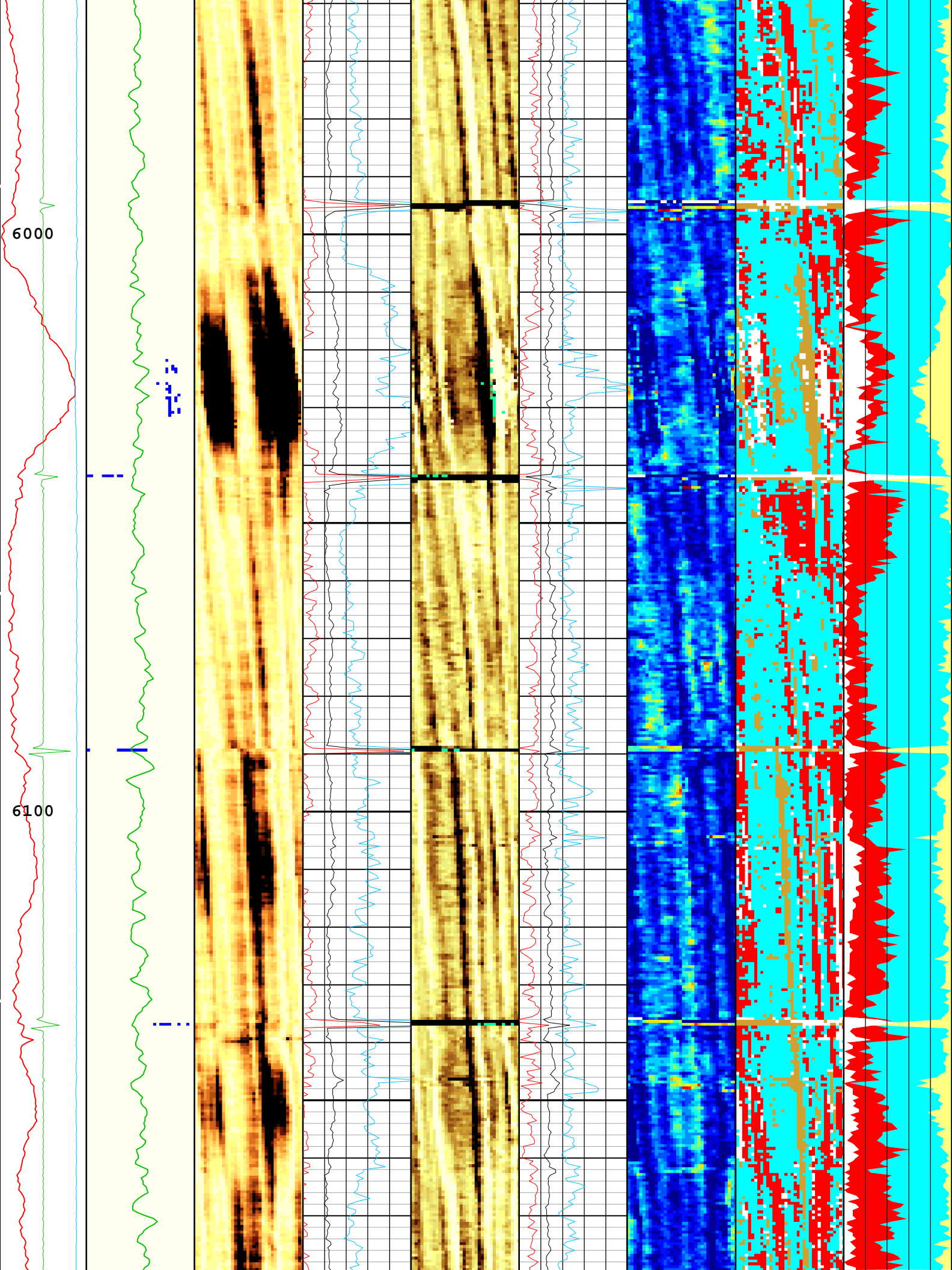


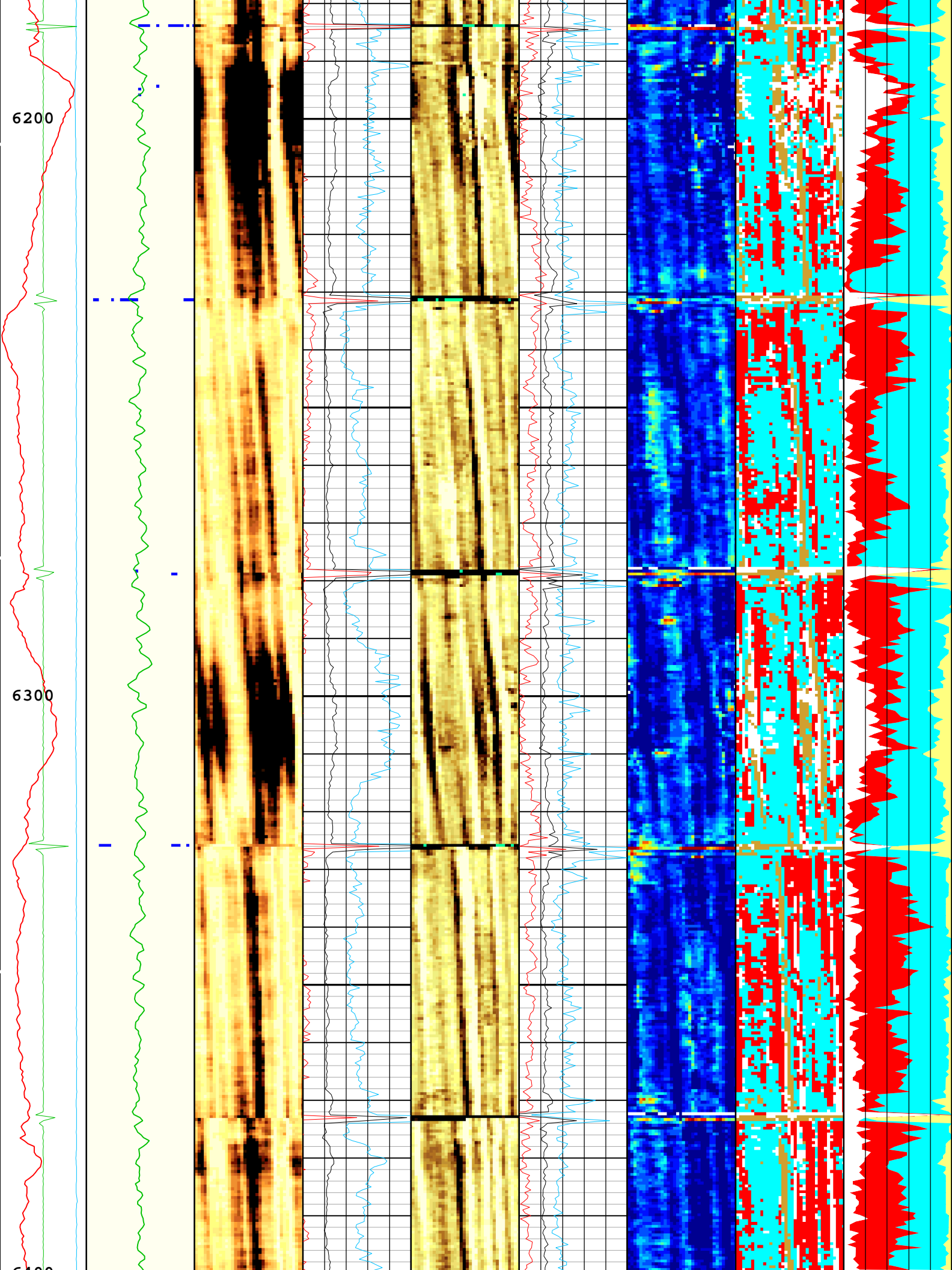


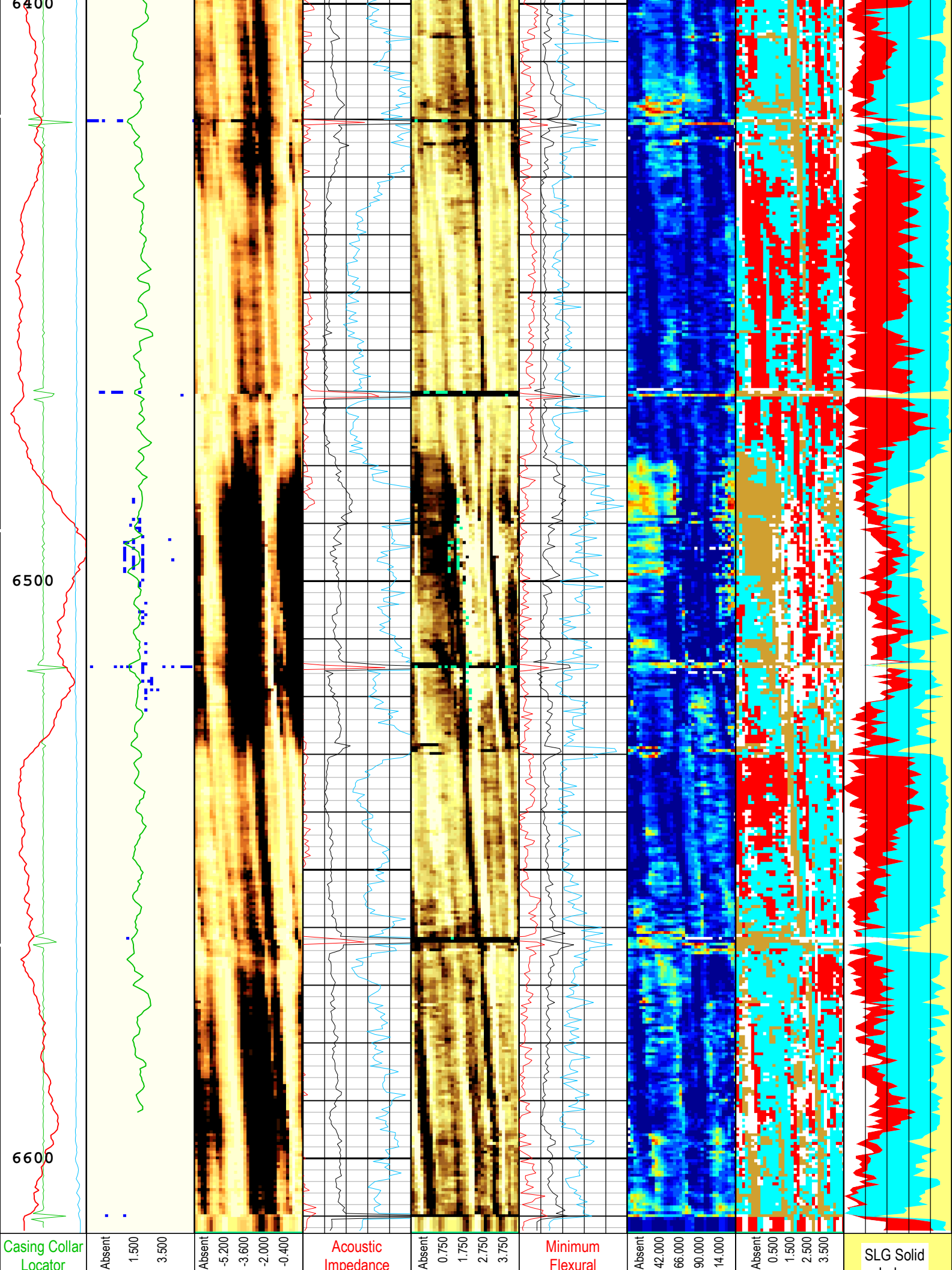












| | | | | | | | | |
|---|---|---|--|---|---|--|--|---|
| <div> </div> <div> Ultrasonic (CCLU) USIT-E -20 in 20 Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5 Motor Revolution Speed (RSAV) USIT-E 6 c/s 7.5 </div> | <div> </div> <div> Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E USIT Processing Flags (UFLG[0]) USIT-E 1 5 Gamma Ray (ECGR_EDTC) EDTC-B 0 gAPI 150 </div> | <div> </div> <div> Explicit Normalization USIT - Amplitude of Wave (AWBK) USIT-E (dB) </div> | <div> </div> <div> Minimum (AIMN) USIT-E -1 Mrayl 9 Acoustic Impedance Average (AIAV) USIT-E -1 Mrayl 9 Acoustic Impedance Maximum (AIMX) USIT-E -1 Mrayl 9 </div> | <div> </div> <div> Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) </div> | <div> </div> <div> Attenuation (U-USIT_UFAN) USIT-E 0 dB/m 150 Average Flexural Attenuation (U-USIT_UFAV) USIT-E 0 dB/m 150 Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E 0 dB/m 150 </div> | <div> </div> <div> Custom Normalization USIT - Flexural Attenuation (UFAK) USIT-E (dB/m) </div> | <div> </div> <div> Explicit Normalization USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E </div> | <div> </div> <div> Index SLG Liquid Index SLG Gas Index SLG White Point Index </div> |
|---|---|---|--|---|---|--|--|---|

| | |
|---|---------------------------|
| USIT Processing Flags (UFLG[0]) USIT-E | |
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | UTIM Error |
| 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 |

| |
|--|
| TIME_1900 - Time Marked every 60.00 (s) |
| Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 16:01:36 |

| Channel Processing Parameters | | | | |
|-------------------------------|--|-----------|------------------------|---------|
| ONE: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| BAR(ISSBAR) | Barite Mud Presence Flag | Borehole | No | |
| BERJ | Bad Echo Rejection | USIT-E | On | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Cased | |
| BS | Bit Size | WLSESSION | Depth Zoned | in |
| CASING_PRATIO | Casing Poisson Ratio | USIT-E | Standard Poisson Ratio | |
| CBLO | Casing Bottom (Logger) | WLSESSION | 11913 | ft |
| CDEN | Cement Density | USIT-E | 12.52 | lbm/gal |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light 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 |
| FD | Fluid Density | USIT-E | 10 | lbm/gal |
| FDII | FPM Data Interpolation Interval | USIT-E | 0 | 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) | |
| GR_MULTIPLIER | Gamma Ray Multiplier | EDTC-B | 1 | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| IBC_FRP_OFFSET | IBC Flexural Offset from Free Pipe | USIT-E | -7.36 | dB/m |
| IBC_FVEL_SEL | IBC Fluid Velocity Selection | USIT-E | Automatic | |
| IBC_OFFSET_SEL | IBC Flexural Offset Selector | USIT-E | IBC_FRP_OFFSET | |
| IBC_ZMUD_SEL | IBC Mud Impedance Selection | USIT-E | FreePipe Norm. | |
| 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 | 1.18 | |
| MUD_N_THE | Theoretical Mud Normalization Factor | USIT-E | 1.15 | |
| RCOD | Reference Calibrator Outer Diameter | USIT-E | 4.5 | in |
| RCSO | Reference Calibrator Standoff | USIT-E | 0.842 | in |
| RCTH | Reference Calibrator Thickness | USIT-E | 0.216 | in |
| SOCN | Standoff Distance | EDTC-B | 0.125 | in |
| SOCO | Standoff Correction Option | EDTC-B | No | |
| THDH | Maximum Search Thickness (percentage of nominal) | USIT-E | 130 | % |
| THDL | Minimum Search Thickness (percentage of nominal) | USIT-E | 70 | % |
| TPOS_EDTC | Tool Position: Centered or Eccentered | EDTC-B | Eccentered | |
| U-USIT_DFSZ | Drilling Fluid Specific Acoustic Impedance | USIT-E | 1.75 | Mrayl |
| U-USIT_UFAO | SIT Flexural Attenuation Offset | USIT-E | -33 | dB/m |
| U-USIT_UIAP | IBC Answer Product Enabled | USIT-E | SolidLiquidGasMap | |
| USI_RPLUS | Ultrasonic R+ Processing | USIT-E | No | |
| THDP | Thickness Detection Policy | USIT-E | Fundamental | |
| VCAS | Ultrasonic Transversal Velocity in Casing | USIT-E | 51.4 | us/ft |
| ZCAS | Acoustic Impedance of Casing | USIT-E | 46.25 | Mrayl |
| ZINI | Initial Estimate of Cement Impedance | USIT-E | -1 | Mrayl |
| ZMUD | Acoustic Impedance of Mud | Borehole | 1.75 | 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 | 23.5 | 2423 |
| BS | 8.5 | 2423 | 6613 |
| All depth are actual. | | | |

| 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 | 48 | dB |
| U-USIT_DDT5 | USIC Downhole Decimation for T5 only | USIT-E | 0_NONE | |
| DOT(DOS) | Distance between Opposite Transducer Faces | USIT-E | 1.756 | in |
| EMXV | EMEX Voltage | USIT-E | Time Zoned | V |
| HRES | Horizontal Resolution | USIT-E | 10 deg | |
| IBC_ACQTYPE | IBC Acquisition type | USIT-E | 1 MHz | |
| IBC_FLEXDBP | IBC Flex Duration Before Peak | USIT-E | 30 | us |
| ICE2_ACQ | Ultrasonic ICE2 Acquisition | USIT-E | Yes | |
| MOTOR_PROTECT | Motor Protection | USIT-E | On | |
| UACLV_PERM | Ultrasonic ACLV Permanent | USIT-E | Yes | |
| U-USIT_UFWB | Far Receiver Window Begin Time | USIT-E | 137 | us |
| U-USIT_UFWE | Far Receiver Window End Time | USIT-E | 177 | us |
| U-USIT_UNWB | Near Receiver Window Begin Time | USIT-E | 106 | us |
| U-USIT_UNWE | Near Receiver Window End Time | USIT-E | 146 | us |
| USFR | Ultrasonic Sampling Frequency | USIT-E | 666667 | Hz |
| UPAT | USIT Emission Pattern | USIT-E | Pattern 375 KHz | |
| UWKM | USIT Working Mode | USIT-E | 10 deg at 6.0 in | |
| USSP | Ultrasonic Service | USIT-E | IRC | |

| | | | | |
|-------------|---------------------|--------|--------|----|
| U-USIT_UTAN | Transducer Angles | USIT-E | 33_DEG | |
| VRES | Vertical Resolution | USIT-E | 6.0 in | |
| WINB | Window Begin Time | USIT-E | 31.88 | us |
| WINE | Window End Time | USIT-E | 71.88 | us |

Time Zone Parameters

| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
|-----------|-------|----------------------|----------------------|--------------------|-------------------|
| EMXV | 65 | 19-Oct-2018 11:44:54 | 19-Oct-2018 11:54:06 | 6613.96 | 5984.25 |
| EMXV | 70 | 19-Oct-2018 11:54:06 | 19-Oct-2018 12:05:43 | 5984.25 | 5161.54 |
| EMXV | 65 | 19-Oct-2018 12:05:43 | 19-Oct-2018 12:16:24 | 5161.54 | 4418.82 |
| EMXV | 55 | 19-Oct-2018 12:16:24 | 19-Oct-2018 13:26:23 | 4418.82 | 44.9 |

All depth are at tool zero.

ONE

IBC SLG Composite 0 PSI

Pass Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| ONE | Log[3]:Up | Up | 44.90 ft | 6613.96 ft | 19-Oct-2018 11:44:54 AM | 19-Oct-2018 1:26:23 PM | ON | 3.64 ft | Yes |






All depths are referenced to toolstring zero

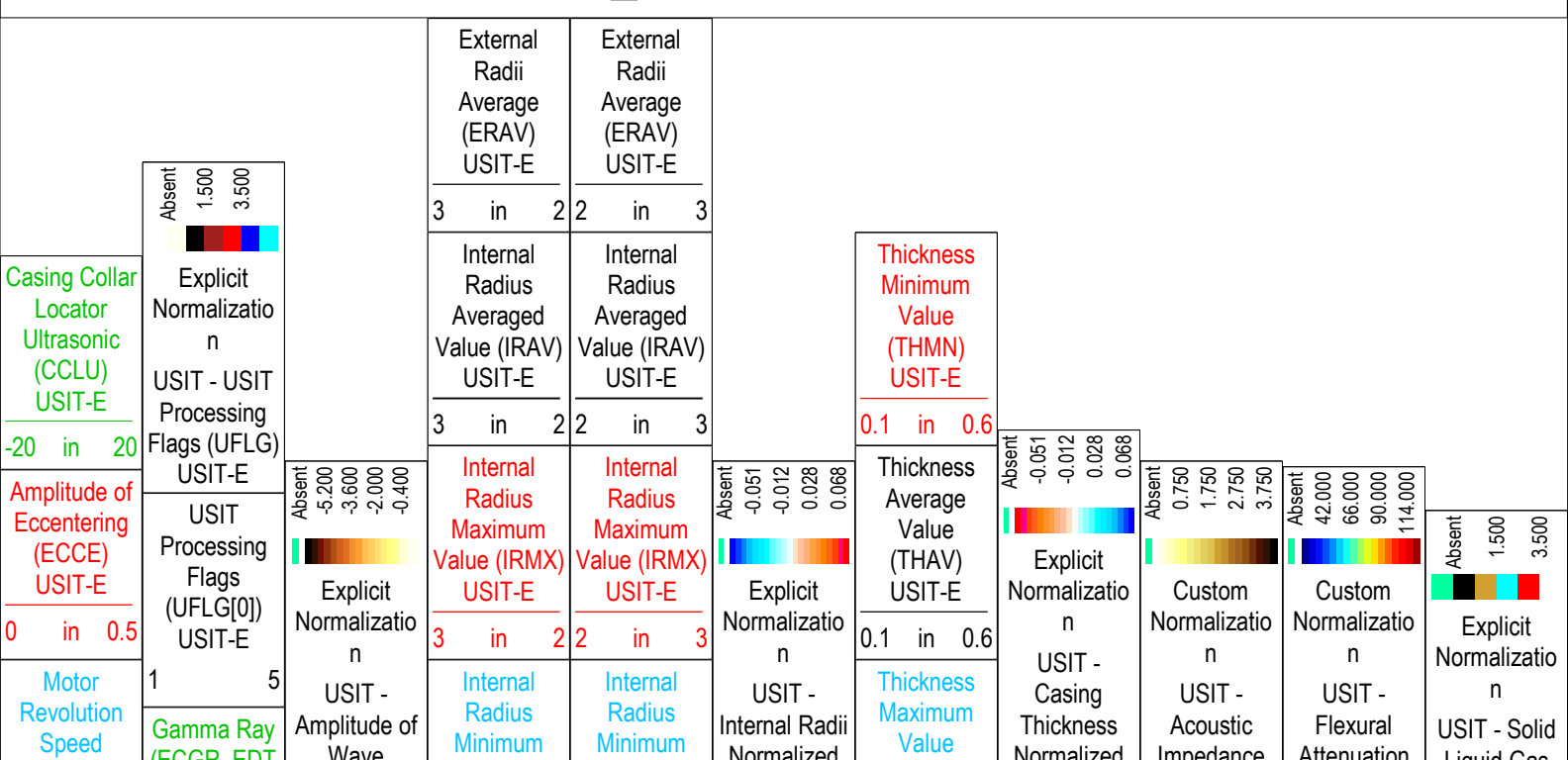
| | | |
|-----|---|----------------------|
| Log | Company:Crestone Peak Resources Operating LLC | Well:Sam 3M-25H-M166 |
| | | ONE: Log[3]:Up:S003 |

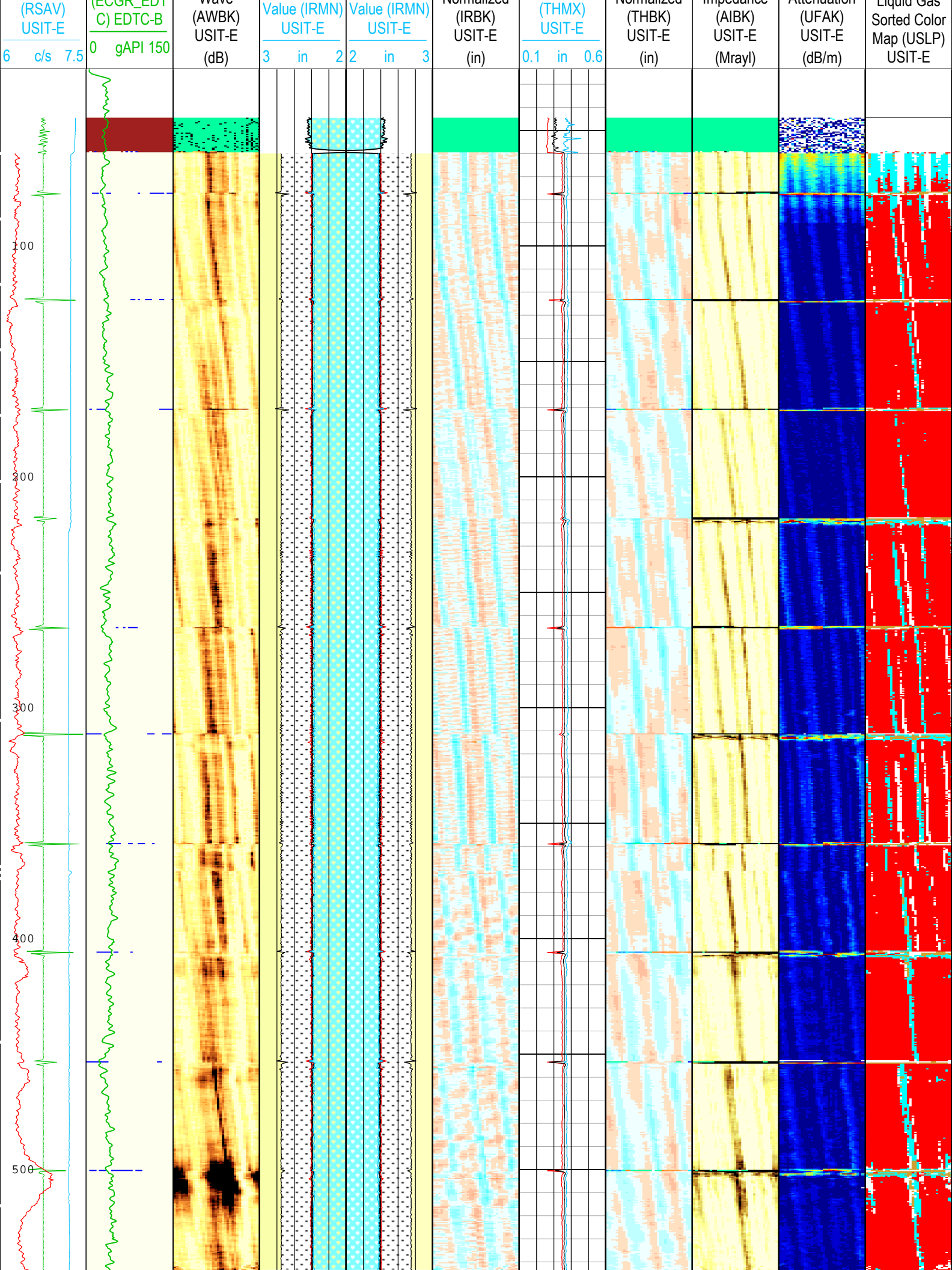
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-Oct-2018 16:02:10

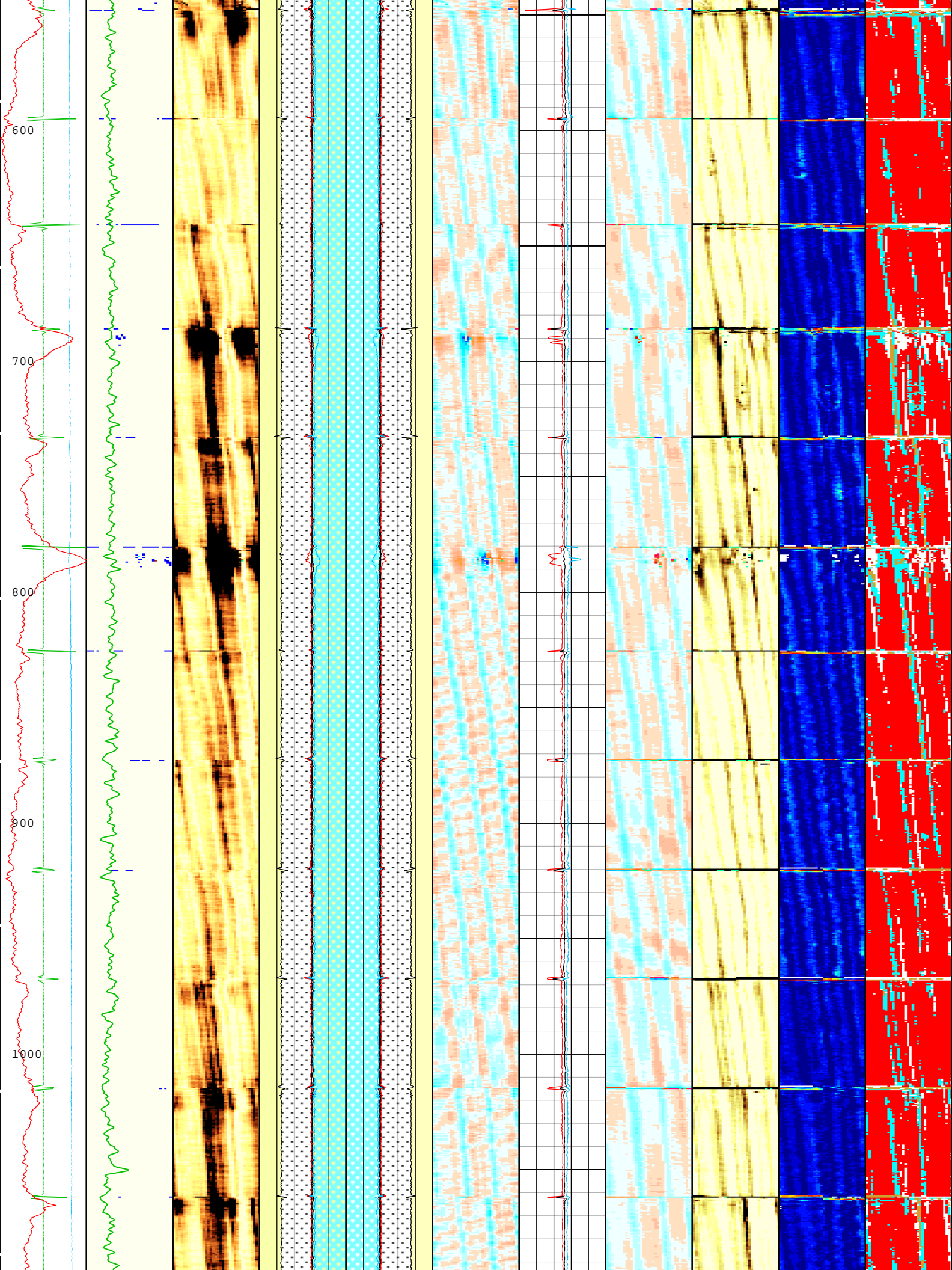
TIME_1900 - Time Marked every 60.00 (s)

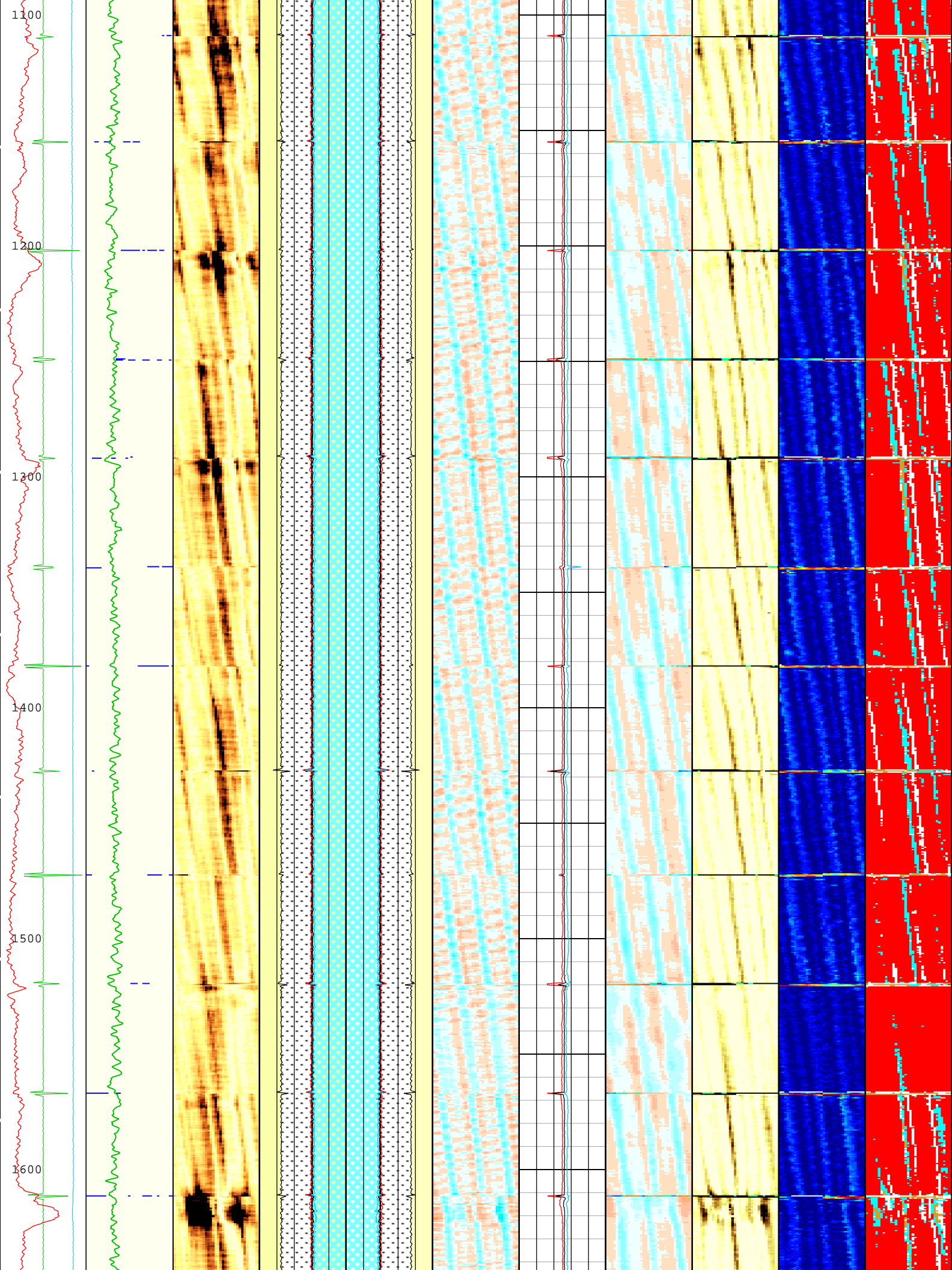
USIT Processing Flags (UFLG[0]) USIT-E

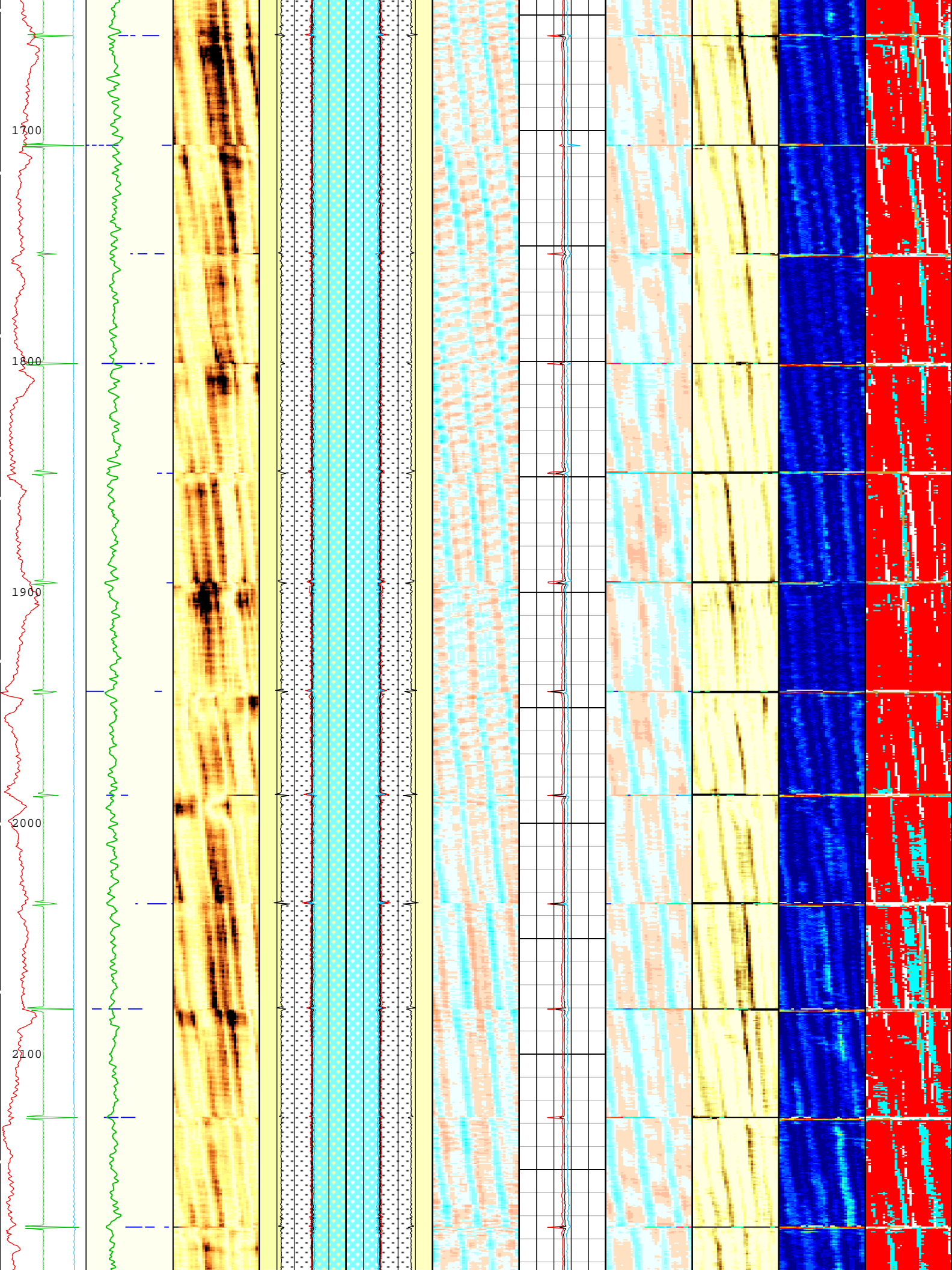
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error

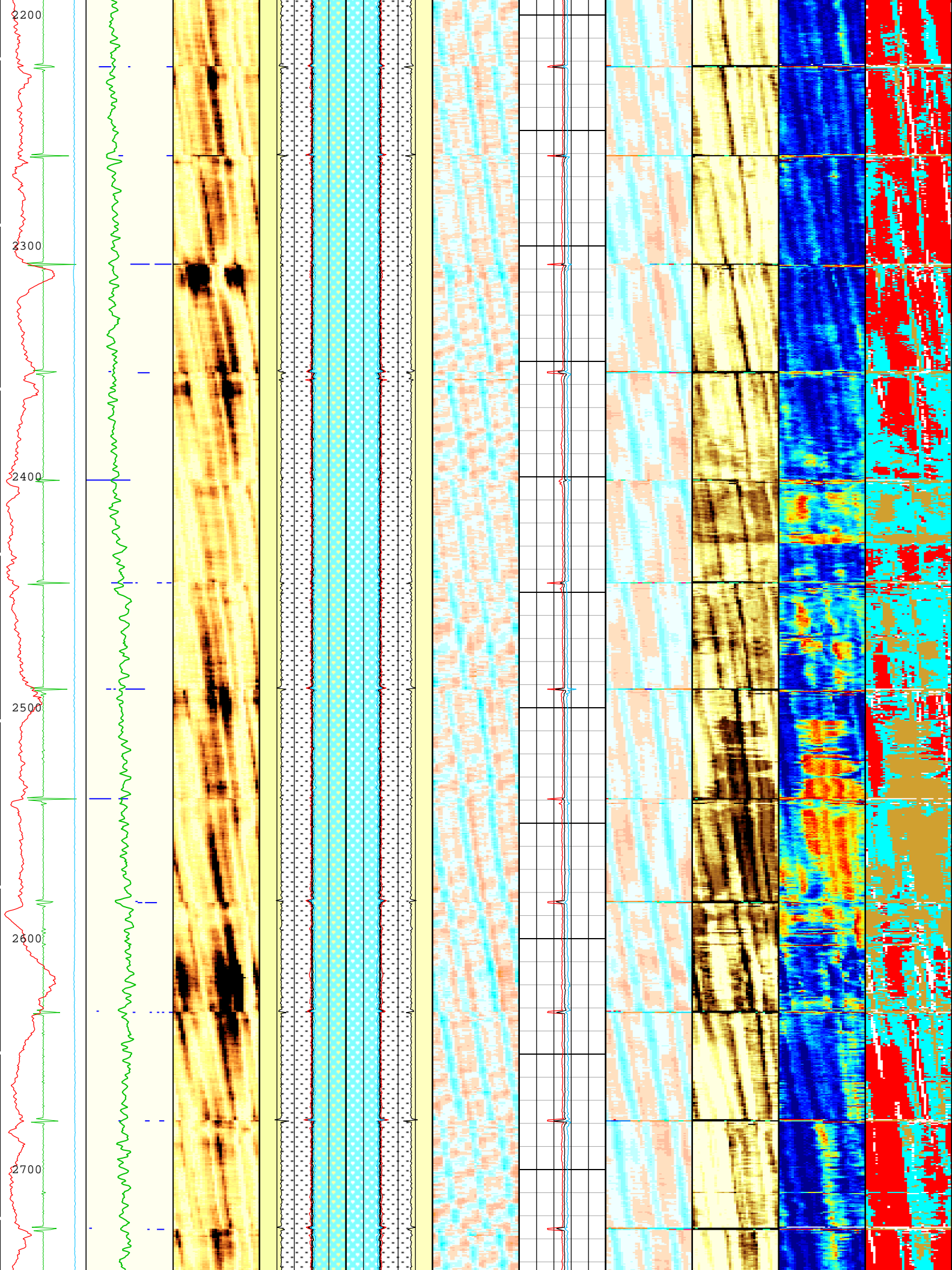


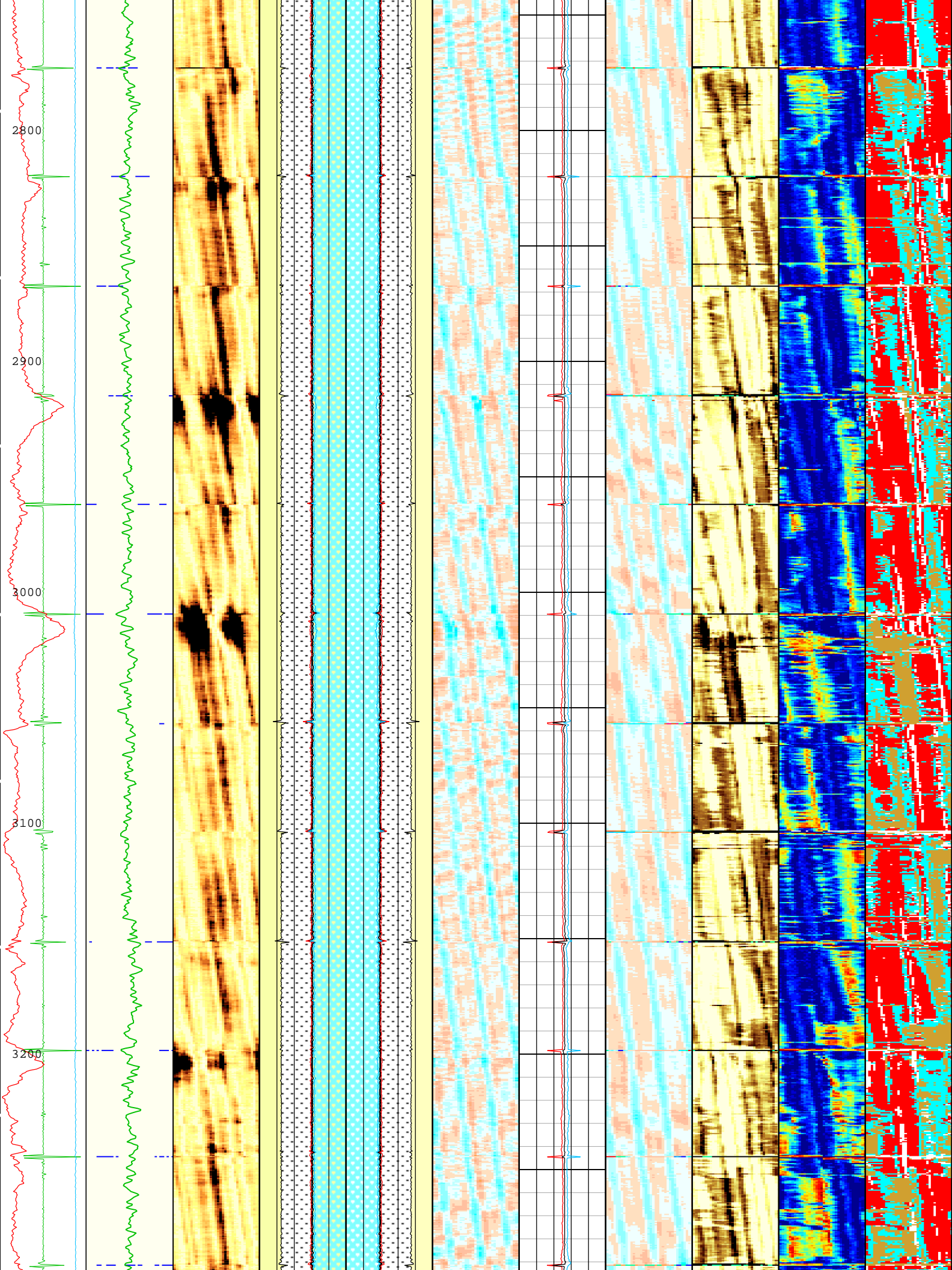


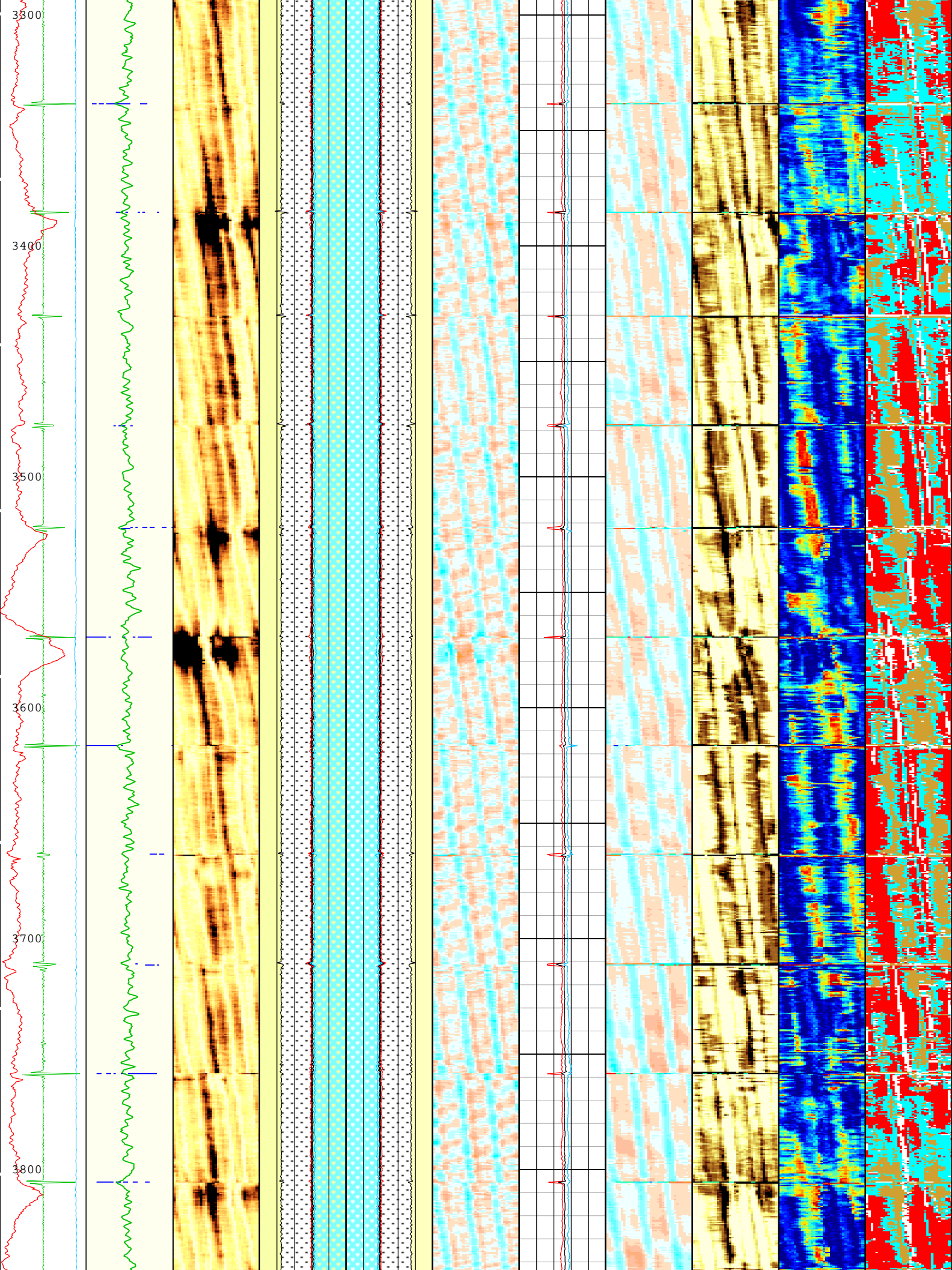


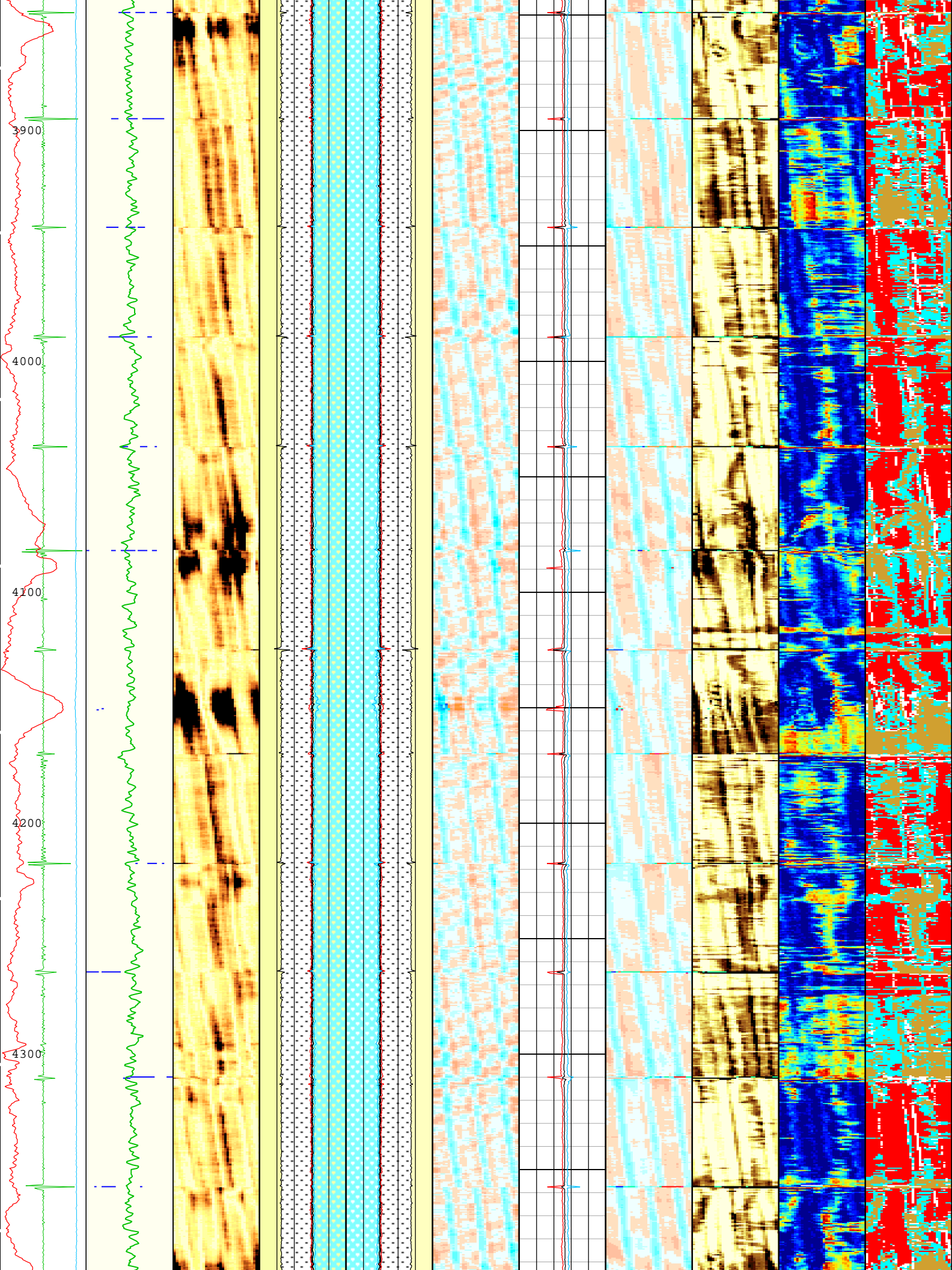


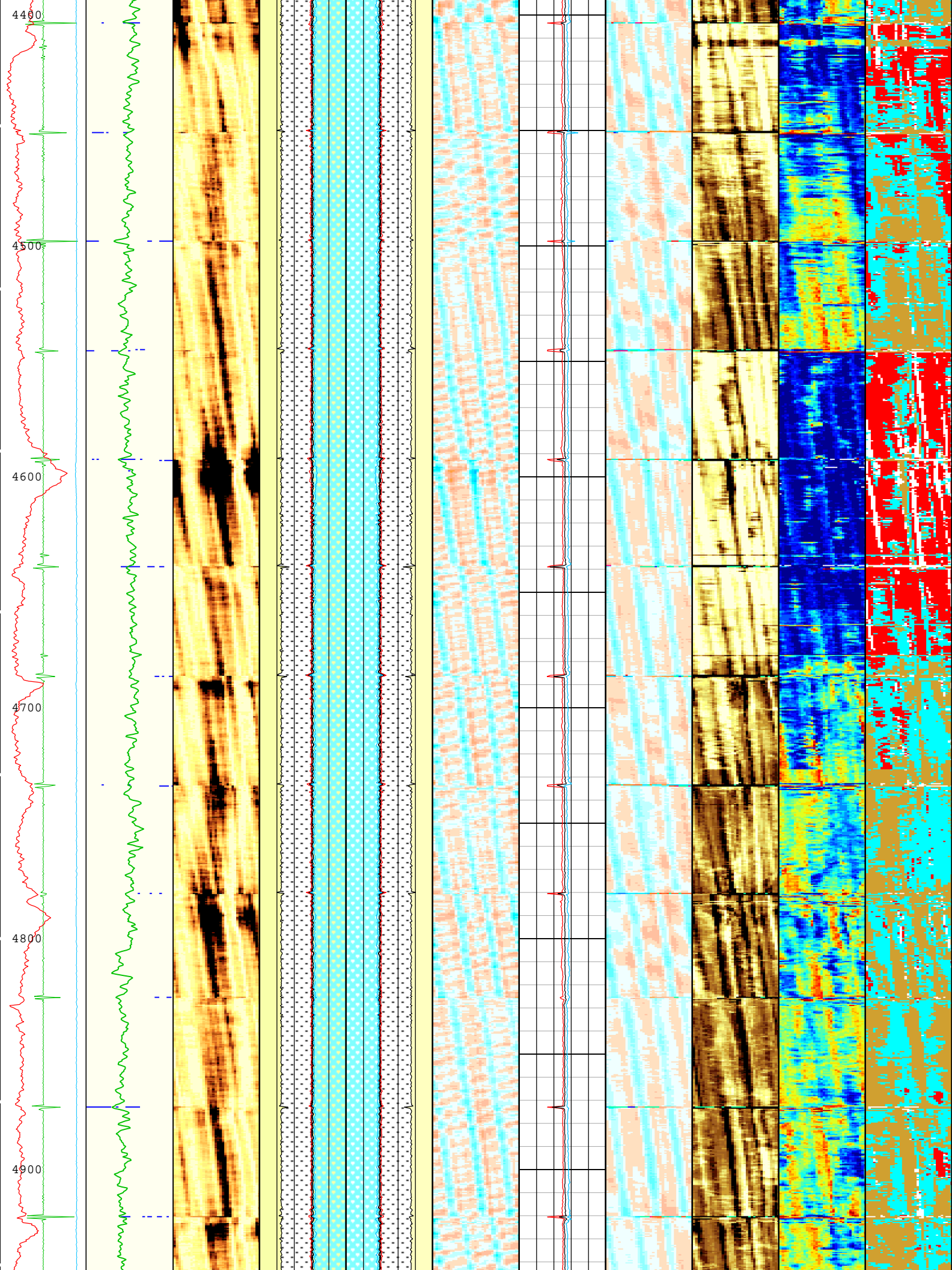


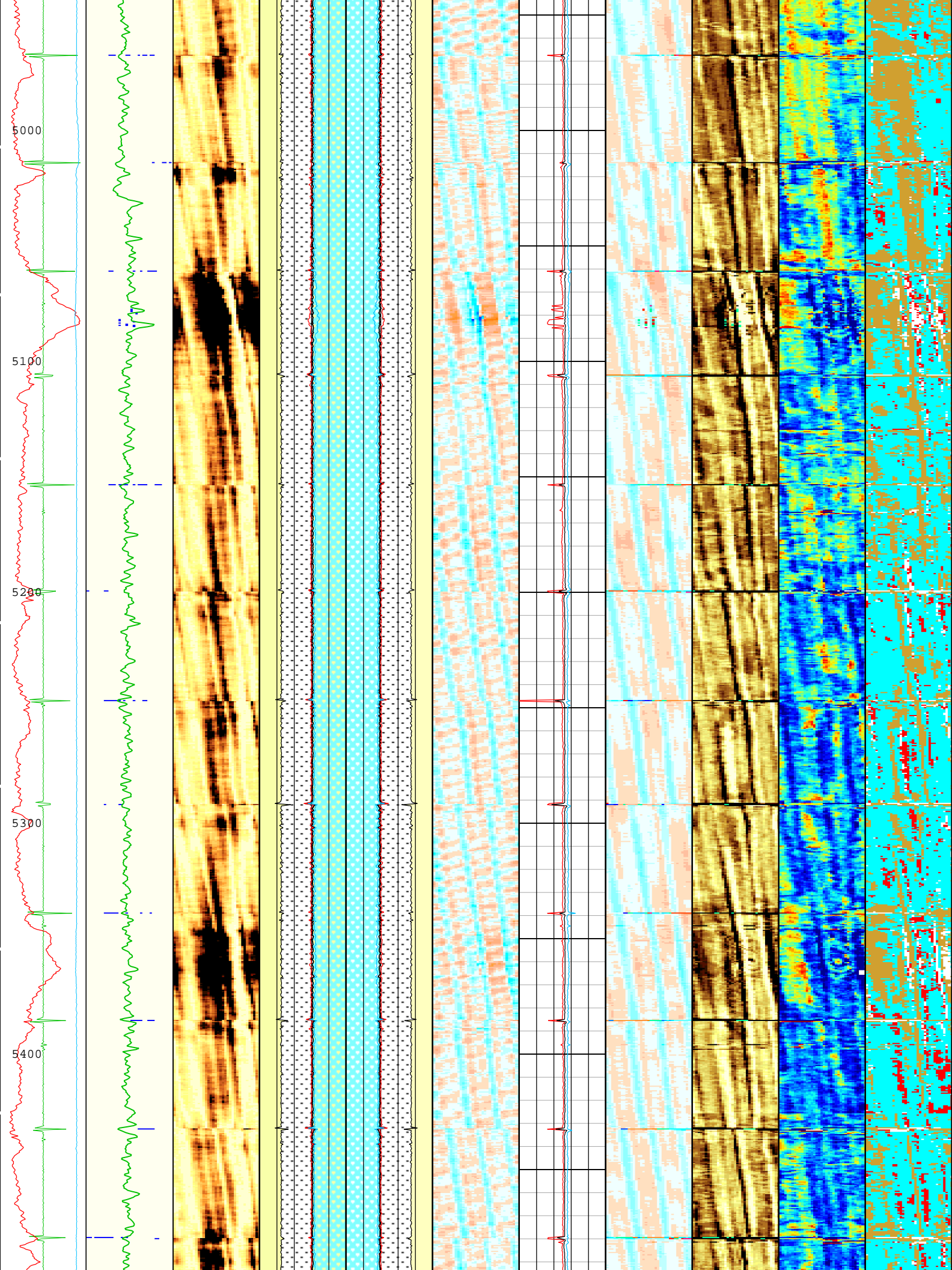


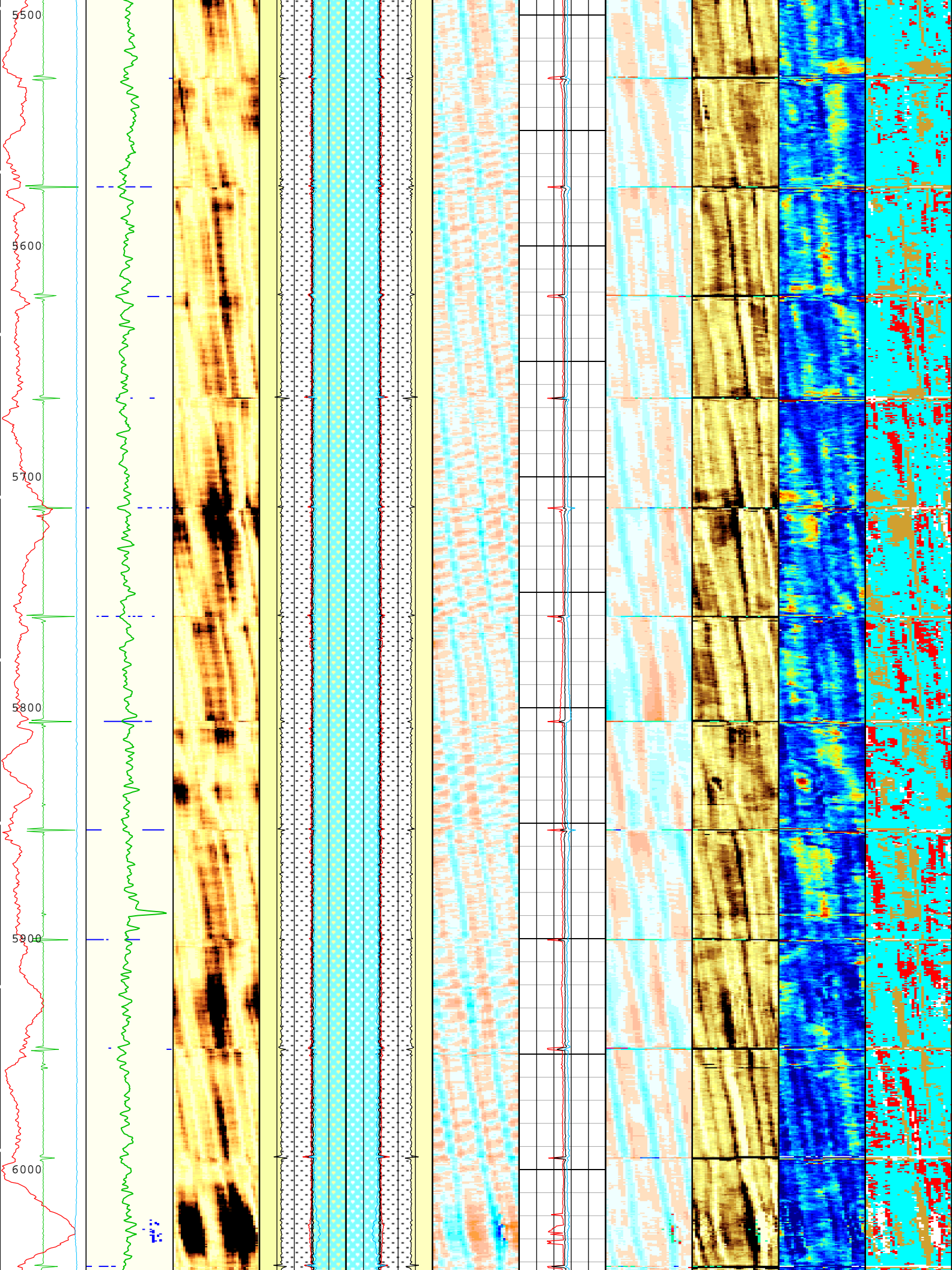


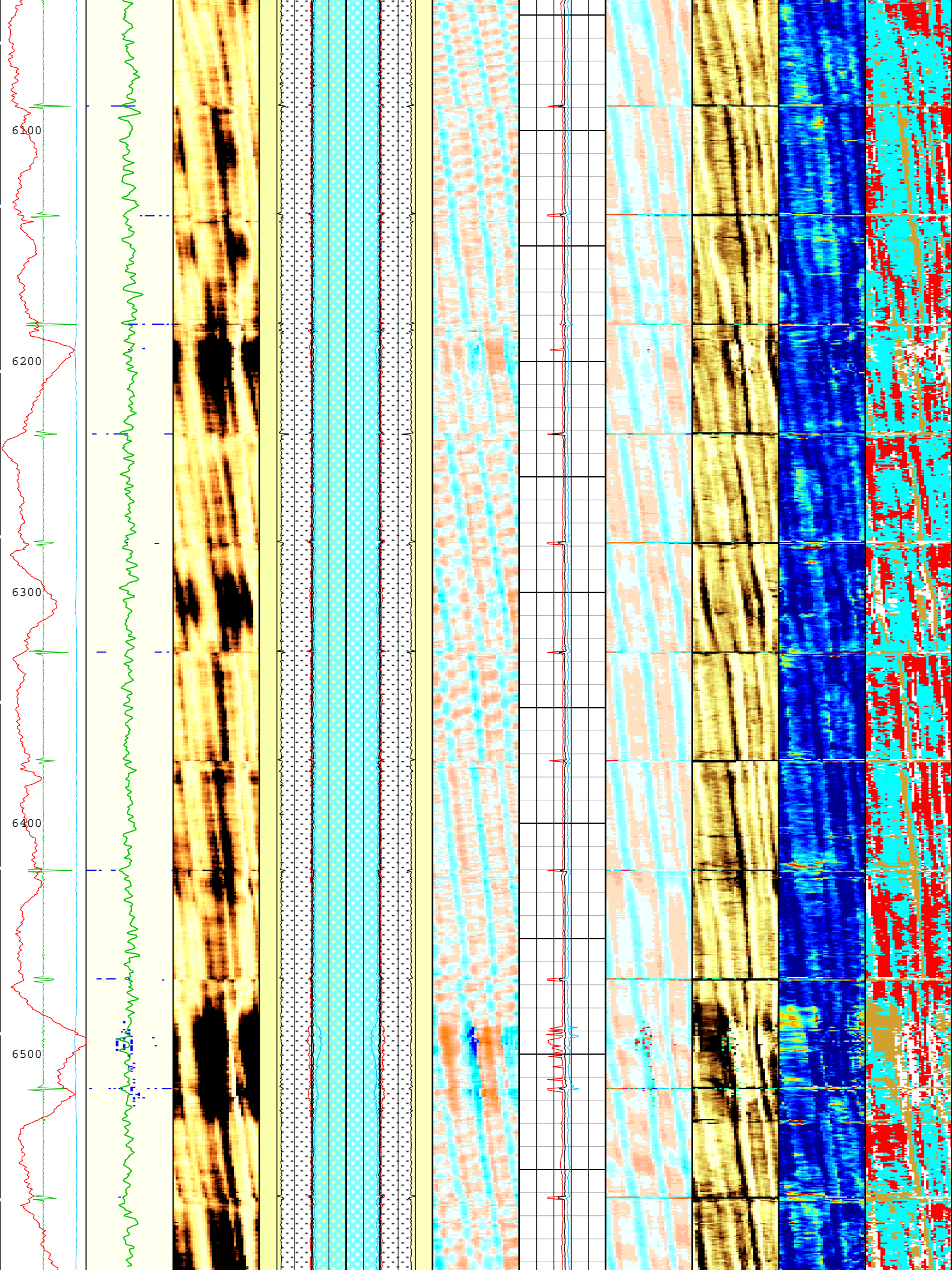


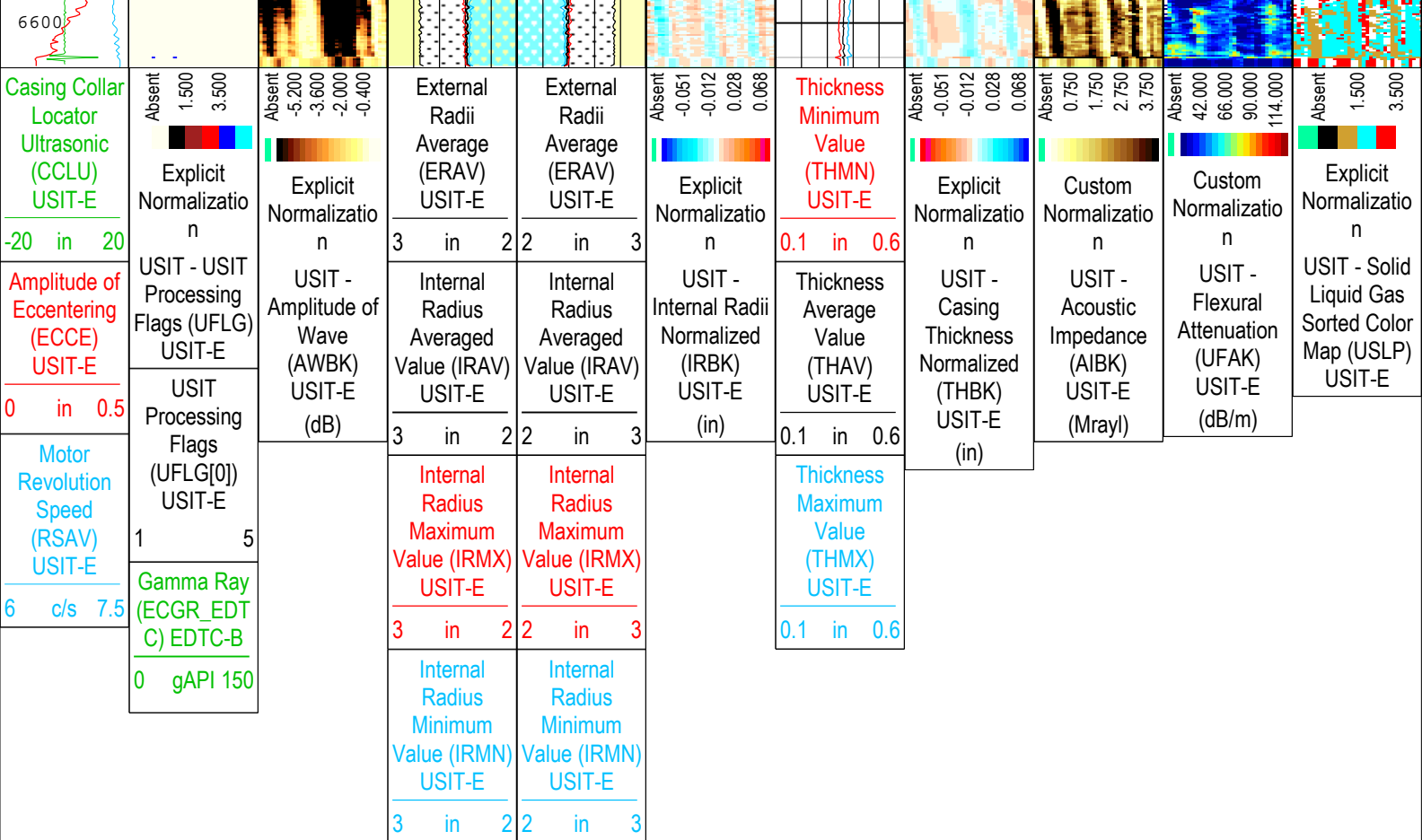

















USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-Oct-2018 16:02:10

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 |
| CBLO | Casing Bottom (Logger) | WLSESSION | 11913 | ft |
| CDEN | Cement Density | USIT-E | 12.52 | lbm/gal |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light 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 |
| FD | Fluid Density | USIT-E | 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) | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| IBC_FRP_OFFSET | IBC Flexural Offset from Free Pipe | USIT-E | -7.36 | dB/m |

| | | | | |
|----------------|--|----------|-------------------|-------|
| IBC_FVEL_SEL | IBC Fluid Velocity Selection | USIT-E | Automatic | |
| IBC_OFFSET_SEL | IBC Flexural Offset Selector | USIT-E | IBC_FRP_OFFSET | |
| IBC_ZMUD_SEL | IBC Mud Impedance Selection | USIT-E | FreePipe Norm. | |
| 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 | 1.18 | |
| MUD_N_THE | Theoretical Mud Normalization Factor | USIT-E | 1.15 | |
| U-USIT_DFSZ | Drilling Fluid Specific Acoustic Impedance | USIT-E | 1.75 | Mrayl |
| U-USIT_UFAO | SIT Flexural Attenuation Offset | USIT-E | -33 | dB/m |
| U-USIT_UIAP | IBC Answer Product Enabled | USIT-E | SolidLiquidGasMap | |
| ZMUD | Acoustic Impedance of Mud | Borehole | 1.75 | 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 | 23.5 | 2423 |
| BS | 8.5 | 2423 | 6613 |

All depth are actual.

Tool Control Parameters

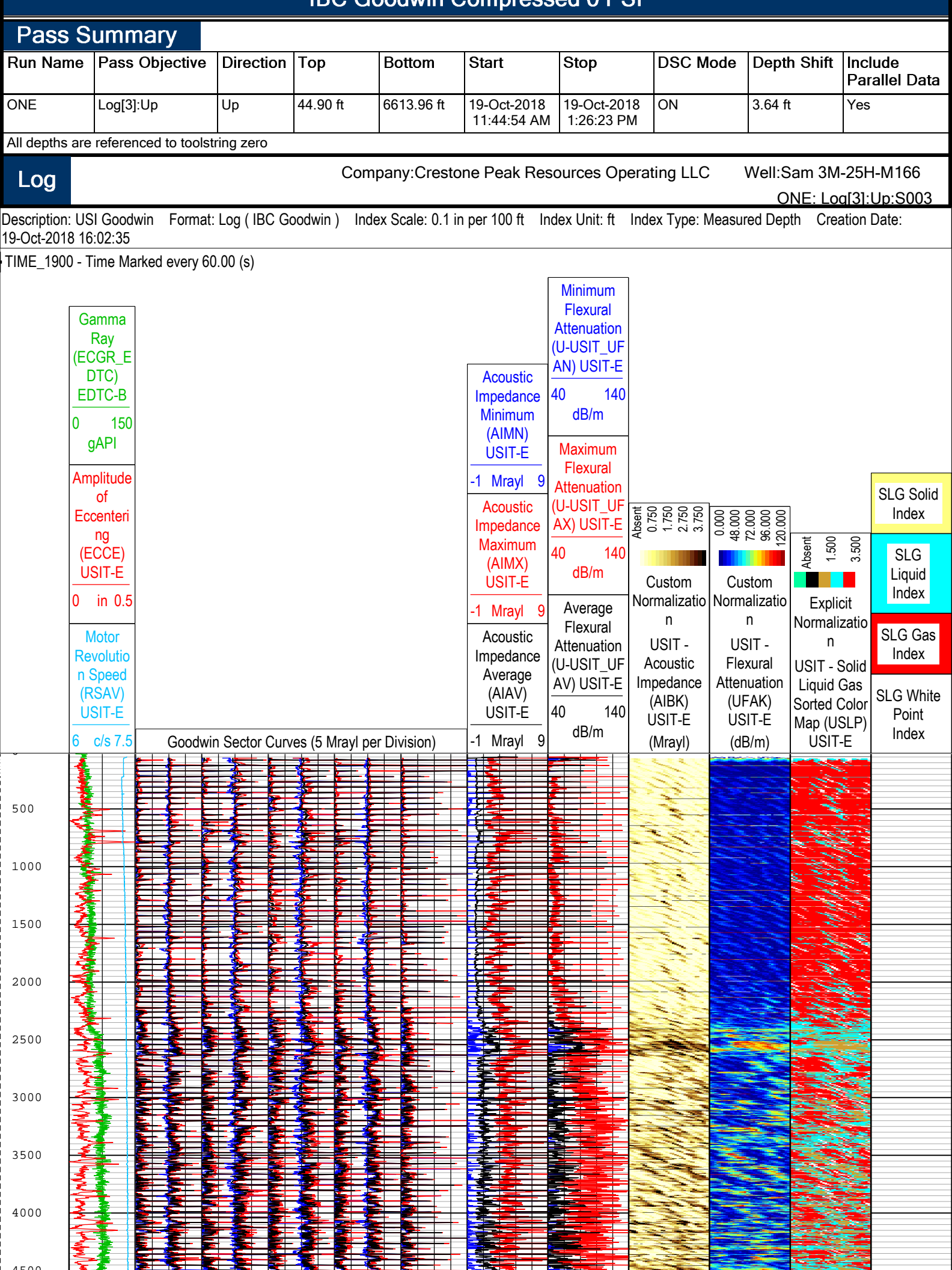
ONE: Parameters

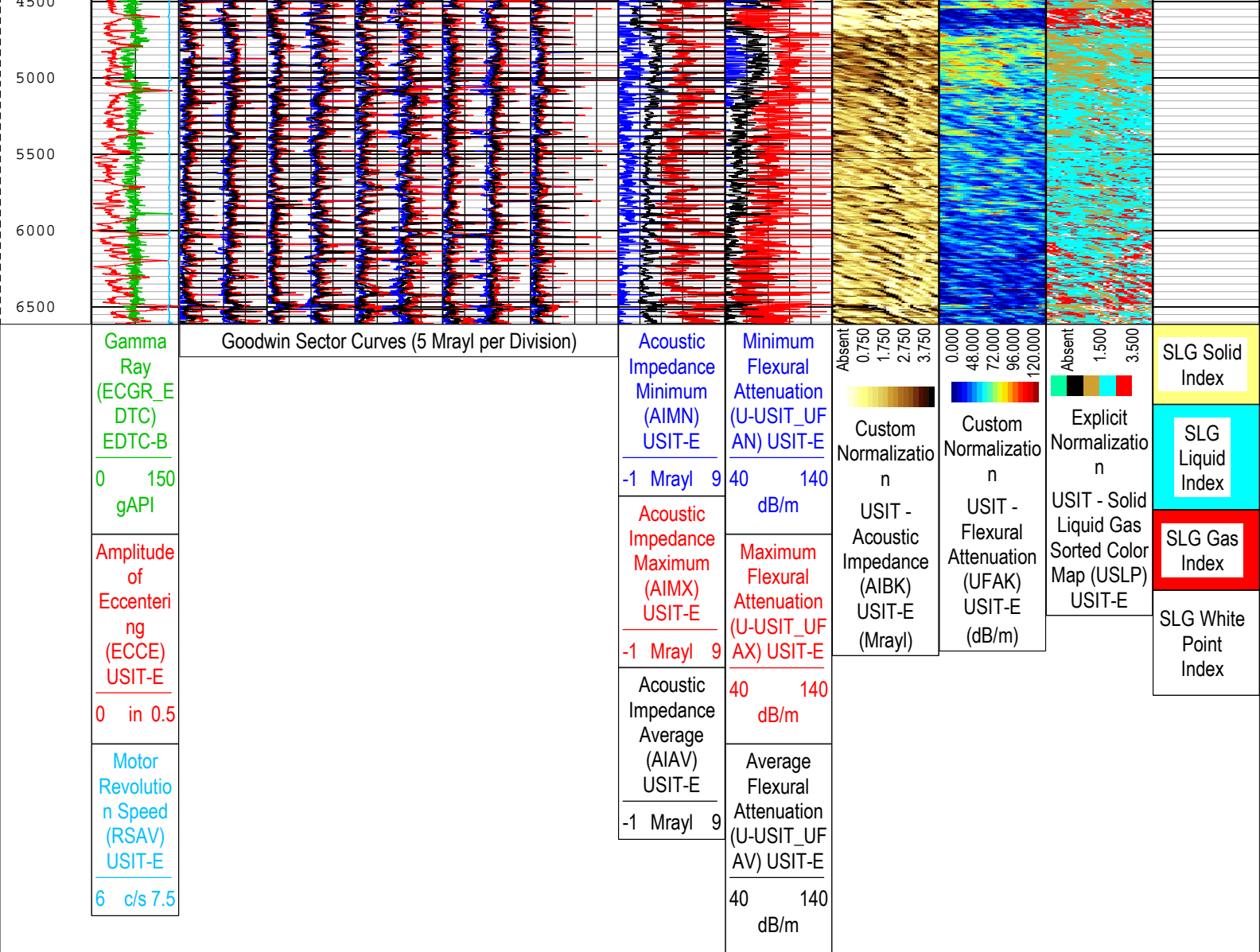
| Parameter | Description | Tool | Value | Unit |
|-------------|---------------------------------|--------|------------------|------|
| AGMN | Minimum Gain of Cartridge | USIT-E | -12 | dB |
| AGMX | Maximum Gain of Cartridge | USIT-E | 48 | dB |
| EMXV | EMEX Voltage | USIT-E | Time Zoned | V |
| IBC_ACQTYPE | IBC Acquisition type | USIT-E | 1 MHz | |
| IBC_FLEXDBP | IBC Flex Duration Before Peak | USIT-E | 30 | us |
| ICE2_ACQ | Ultrasonic ICE2 Acquisition | USIT-E | Yes | |
| U-USIT_UFWB | Far Receiver Window Begin Time | USIT-E | 137 | us |
| U-USIT_UFWE | Far Receiver Window End Time | USIT-E | 177 | us |
| U-USIT_UNWB | Near Receiver Window Begin Time | USIT-E | 106 | us |
| U-USIT_UNWE | Near Receiver Window End Time | USIT-E | 146 | us |
| UPAT | USIT Emission Pattern | USIT-E | Pattern 375 KHz | |
| UWKM | USIT Working Mode | USIT-E | 10 deg at 6.0 in | |
| U-USIT_UTAN | Transducer Angles | USIT-E | 33_DEG | |
| VRES | Vertical Resolution | USIT-E | 6.0 in | |
| WINB | Window Begin Time | USIT-E | 31.88 | us |
| WINE | Window End Time | USIT-E | 71.88 | us |

Time Zone Parameters

| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
|-----------|-------|----------------------|----------------------|--------------------|-------------------|
| EMXV | 65 | 19-Oct-2018 11:44:54 | 19-Oct-2018 11:54:06 | 6613.96 | 5984.25 |
| EMXV | 70 | 19-Oct-2018 11:54:06 | 19-Oct-2018 12:05:43 | 5984.25 | 5161.54 |
| EMXV | 65 | 19-Oct-2018 12:05:43 | 19-Oct-2018 12:16:24 | 5161.54 | 4418.82 |
| EMXV | 55 | 19-Oct-2018 12:16:24 | 19-Oct-2018 13:26:23 | 4418.82 | 44.9 |

All depth are at tool zero.





TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 16:02:35

| ONE | | | | | | | | | |
|--|---|-----------|------------|------------|-------------------------|-------------------------|----------------------|-------------|-----------------------|
| IBC SLG Repeat 0 PSI | | | | | | | | | |
| Software Version | | | | | | | | | |
| Acquisition System | | | | | | Version | | | |
| Maxwell 2018 SP2 | | | | | | 8.2.102758.3100 | | | |
| Pass Summary | | | | | | | | | |
| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
| ONE | Log[1]:Up | Up | 1962.46 ft | 2504.84 ft | 19-Oct-2018 11:09:55 AM | 19-Oct-2018 11:18:58 AM | ON | 0.17 ft | Yes |
| All depths are referenced to toolstring zero | | | | | | | | | |
| Log | Company:Crestone Peak Resources Operating LLC | | | | | | Well:Sam 3M-25H-M166 | | |
| | | | | | | | ONE: Log[1]:Up:S003 | | |





Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 16:02:46

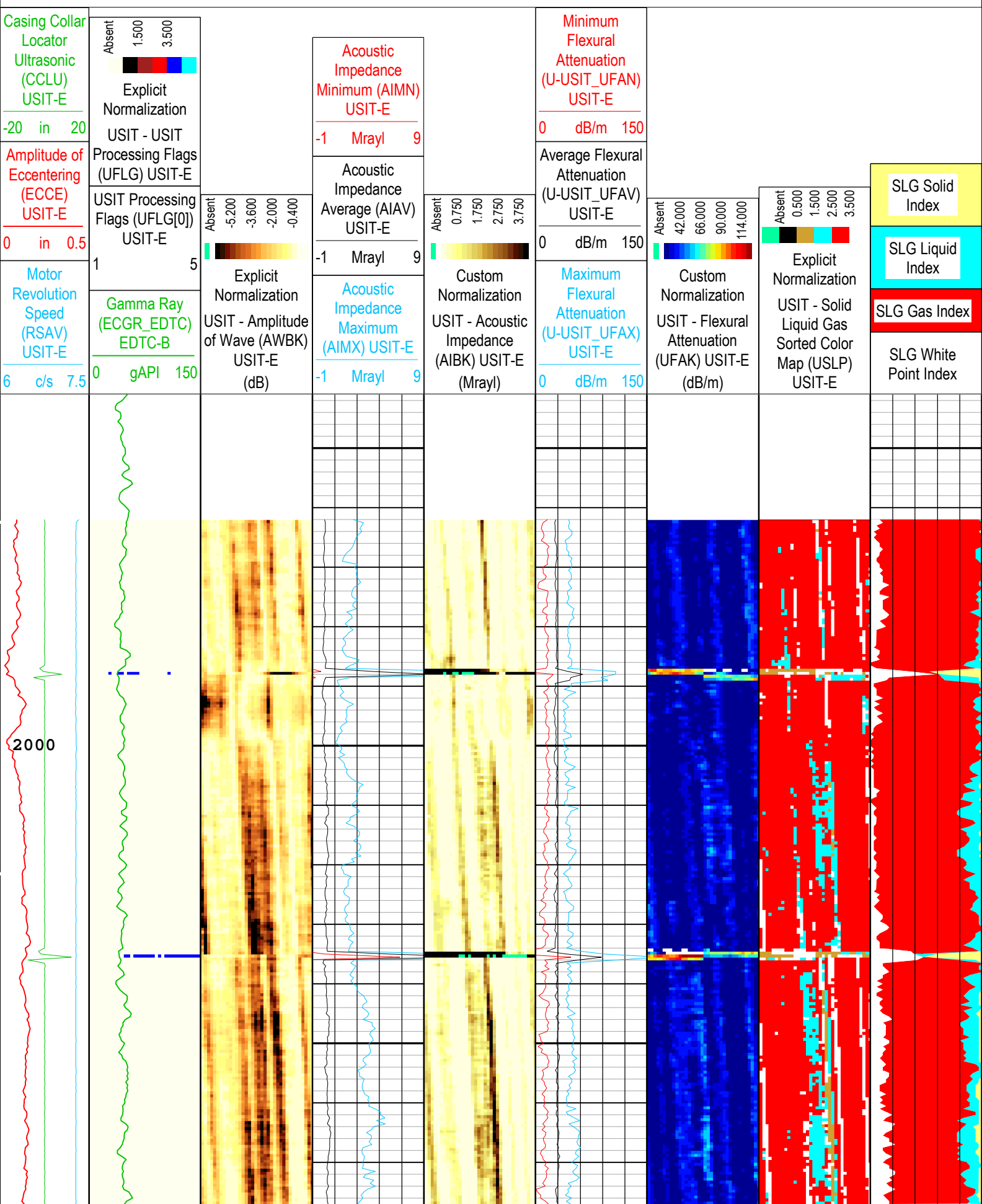
TIME_1900 - Time Marked every 60.00 (s)

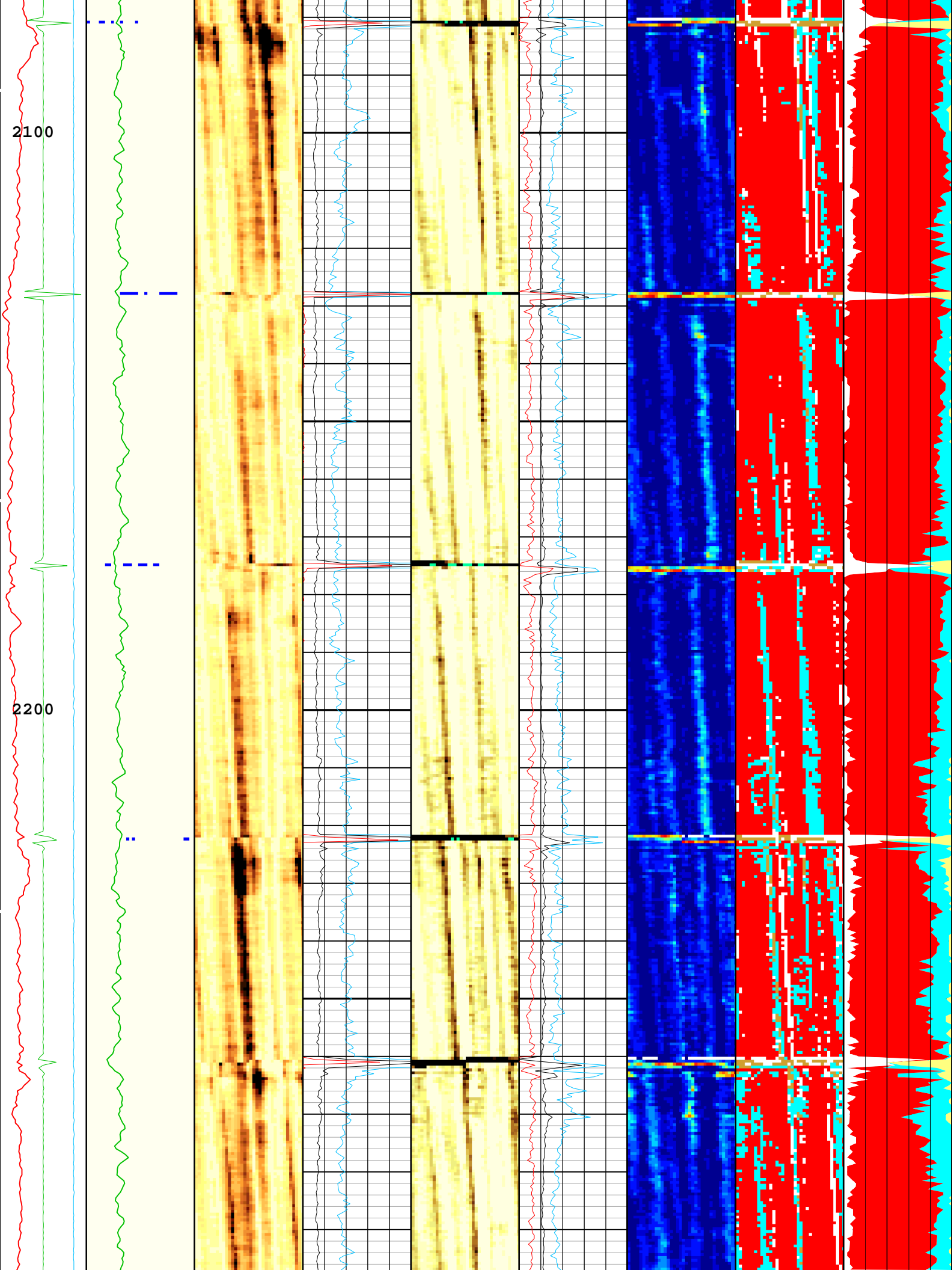
USIT Processing Flags (UFLG[0]) USIT-E

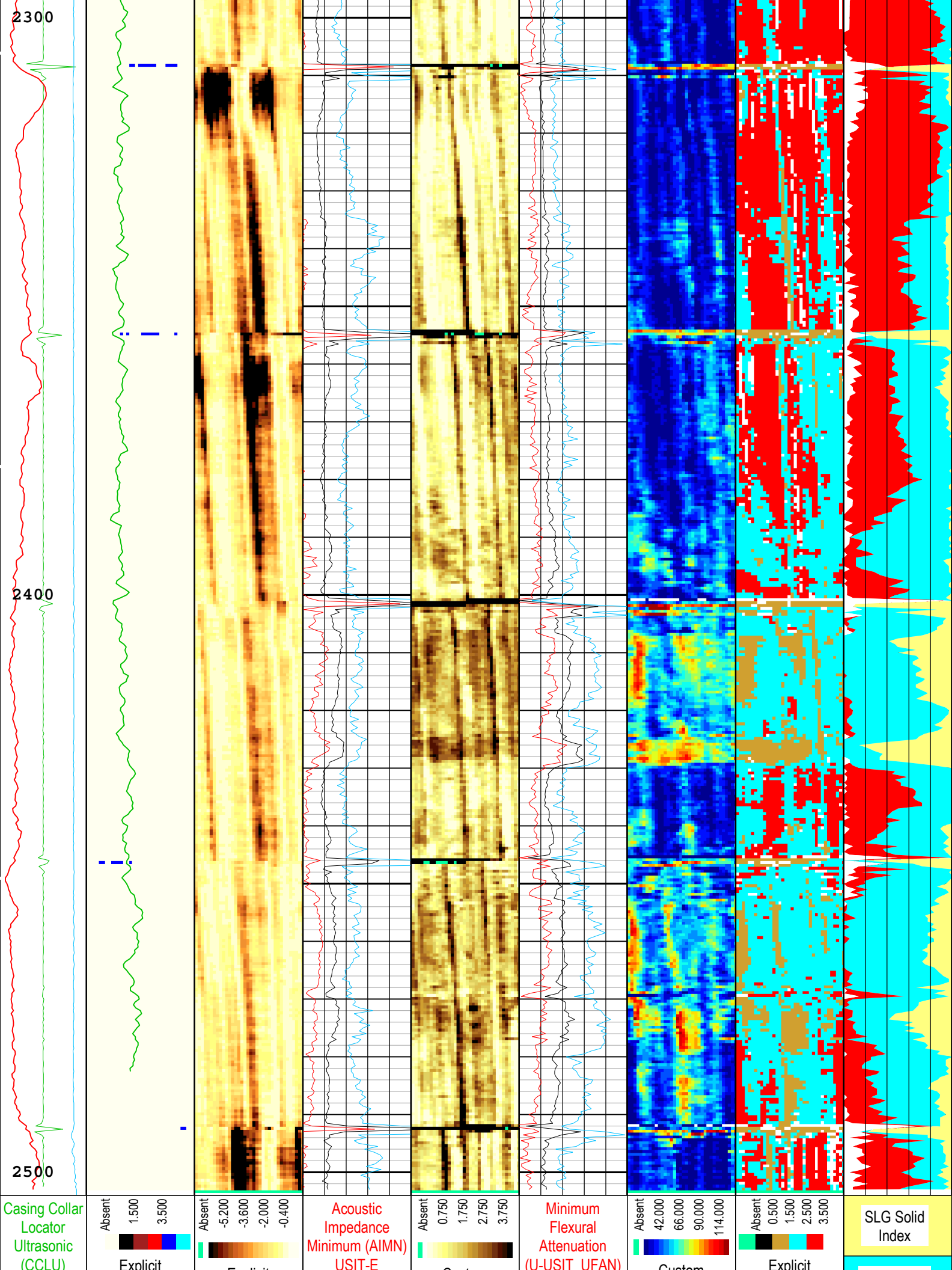
1 - UFLG 1 Value within [0.0 - 1.5] - :

UTIM Error

| | |
|---|---|
| 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 |







| | | | | | | | | |
|--|--|---|--|---|---|--|--|-----------------------|
| USIT-E -20 in 20 | Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E | Explicit Normalization USIT - Amplitude of Wave (AWBK) USIT-E (dB) | USIT-E -1 Mrayl 9 | Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) | USIT-E 0 dB/m 150 | Custom Normalization USIT - Flexural Attenuation (UFAK) USIT-E (dB/m) | Explicit Normalization USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E | SLG Liquid Index |
| Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5 | USIT Processing Flags (UFLG[0]) USIT-E 1 5 | | Acoustic Impedance Average (AIAV) USIT-E -1 Mrayl 9 | | Average Flexural Attenuation (U-USIT_UFAV) USIT-E 0 dB/m 150 | | | SLG Gas Index |
| Motor Revolution Speed (RSAV) USIT-E 6 c/s 7.5 | Gamma Ray (ECGR_EDTC) EDTC-B 0 gAPI 150 | | Acoustic Impedance Maximum (AIMX) USIT-E -1 Mrayl 9 | | Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E 0 dB/m 150 | | | SLG White Point Index |

| | | | | | | | | |
|---|--|--|---|---------------------------|--|--|--|--|
| USIT Processing Flags (UFLG[0]) USIT-E | | | | | | | | |
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | | | ■ | UTIM Error | | | | |
| 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 | | | | |

| | | | | | | | | |
|--|--|--|--|--|--|--|--|--|
| TIME_1900 - Time Marked every 60.00 (s) | | | | | | | | |
| Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 16:02:46 | | | | | | | | |

| Channel Processing Parameters | | | | |
|-------------------------------|--|-----------|------------------------|---------|
| ONE: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| BARI(ISSBAR) | Barite Mud Presence Flag | Borehole | No | |
| BERJ | Bad Echo Rejection | USIT-E | On | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Cased | |
| BS | Bit Size | WLSESSION | Depth Zoned | in |
| CASING_PRATIO | Casing Poisson Ratio | USIT-E | Standard Poisson Ratio | |
| CBLO | Casing Bottom (Logger) | WLSESSION | 11913 | ft |
| CDEN | Cement Density | USIT-E | 12.52 | lbm/gal |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light 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 |
| FD | Fluid Density | USIT-E | 10 | lbm/gal |
| FDII | FPM Data Interpolation Interval | USIT-E | 0 | 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) | |
| GR_MULTIPLIER | Gamma Ray Multiplier | EDTC-B | 1 | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| IBC_FRP_OFFSET | IBC Flexural Offset from Free Pipe | USIT-E | -7.36 | dB/m |
| IBC_FVEL_SEL | IBC Fluid Velocity Selection | USIT-E | Automatic | |
| IBC_OFFSET_SEL | IBC Flexural Offset Selector | USIT-E | IBC_FRP_OFFSET | |
| IBC_ZMUD_SEL | IBC Mud Impedance Selection | USIT-E | FreePipe Norm. | |
| 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 | 1.18 | |

| | | | | |
|-------------|--|----------|-------------------|-------|
| MUD_N_FRP | Free Pipe Mud Normalization Factor | USIT-E | 1.18 | |
| MUD_N_THE | Theoretical Mud Normalization Factor | USIT-E | 1.15 | |
| RCOD | Reference Calibrator Outer Diameter | USIT-E | 4.5 | in |
| RCSO | Reference Calibrator Standoff | USIT-E | 0.842 | in |
| RCTH | Reference Calibrator Thickness | USIT-E | 0.216 | in |
| SOCN | Standoff Distance | EDTC-B | 0.125 | in |
| SOCO | Standoff Correction Option | EDTC-B | No | |
| THDH | Maximum Search Thickness (percentage of nominal) | USIT-E | 130 | % |
| THDL | Minimum Search Thickness (percentage of nominal) | USIT-E | 70 | % |
| TPOS_EDTC | Tool Position: Centered or Eccentered | EDTC-B | Eccentered | |
| U-USIT_DFSZ | Drilling Fluid Specific Acoustic Impedance | USIT-E | 1.75 | Mrayl |
| U-USIT_UFAO | SIT Flexural Attenuation Offset | USIT-E | -33 | dB/m |
| U-USIT_UIAP | IBC Answer Product Enabled | USIT-E | SolidLiquidGasMap | |
| USI_RPLUS | Ultrasonic R+ Processing | USIT-E | No | |
| THDP | Thickness Detection Policy | USIT-E | Fundamental | |
| VCAS | Ultrasonic Transversal Velocity in Casing | USIT-E | 51.4 | us/ft |
| ZCAS | Acoustic Impedance of Casing | USIT-E | 46.25 | Mrayl |
| ZINI | Initial Estimate of Cement Impedance | USIT-E | -1 | Mrayl |
| ZMUD | Acoustic Impedance of Mud | Borehole | 1.75 | 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 | 1941 | 2423 |
| BS | 8.5 | 2423 | 2504 |
| All depth are actual. | | | |

| 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 | 48 | dB |
| U-USIT_DDT5 | USIC Downhole Decimation for T5 only | USIT-E | 0_NONE | |
| DOT(DOS) | Distance between Opposite Transducer Faces | USIT-E | 1.756 | in |
| EMXV | EMEX Voltage | USIT-E | 60 | V |
| HRES | Horizontal Resolution | USIT-E | 10 deg | |
| IBC_ACQTYPE | IBC Acquisition type | USIT-E | 1 MHz | |
| IBC_FLEXDBP | IBC Flex Duration Before Peak | USIT-E | 30 | us |
| ICE2_ACQ | Ultrasonic ICE2 Acquisition | USIT-E | Yes | |
| MOTOR_PROTECT | Motor Protection | USIT-E | On | |
| UACLV_PERM | Ultrasonic ACLV Permanent | USIT-E | Yes | |
| U-USIT_UFWB | Far Receiver Window Begin Time | USIT-E | 137 | us |
| U-USIT_UFWE | Far Receiver Window End Time | USIT-E | 177 | us |
| U-USIT_UNWB | Near Receiver Window Begin Time | USIT-E | 106 | us |
| U-USIT_UNWE | Near Receiver Window End Time | USIT-E | 146 | us |
| USFR | Ultrasonic Sampling Frequency | USIT-E | 666667 | Hz |
| UPAT | USIT Emission Pattern | USIT-E | Pattern 375 KHz | |
| UWKM | USIT Working Mode | USIT-E | 10 deg at 6.0 in | |
| USSP | Ultrasonic Service | USIT-E | IBC | |
| U-USIT_UTAN | Transducer Angles | USIT-E | 33_DEG | |

| | | | | |
|------|---------------------|--------|--------|----|
| VRES | Vertical Resolution | USIT-E | 6.0 in | |
| WINB | Window Begin Time | USIT-E | 31.88 | us |
| WINE | Window End Time | USIT-E | 71.88 | us |

ONE

IBC SLG Composite Repeat 0 PSI

Pass Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|------------|------------|-------------------------|-------------------------|----------|-------------|-----------------------|
| ONE | Log[1]:Up | Up | 1962.46 ft | 2504.84 ft | 19-Oct-2018 11:09:55 AM | 19-Oct-2018 11:18:58 AM | ON | 0.17 ft | Yes |

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC






Well:Sam 3M-25H-M166

ONE: Log[1]:Up:S003

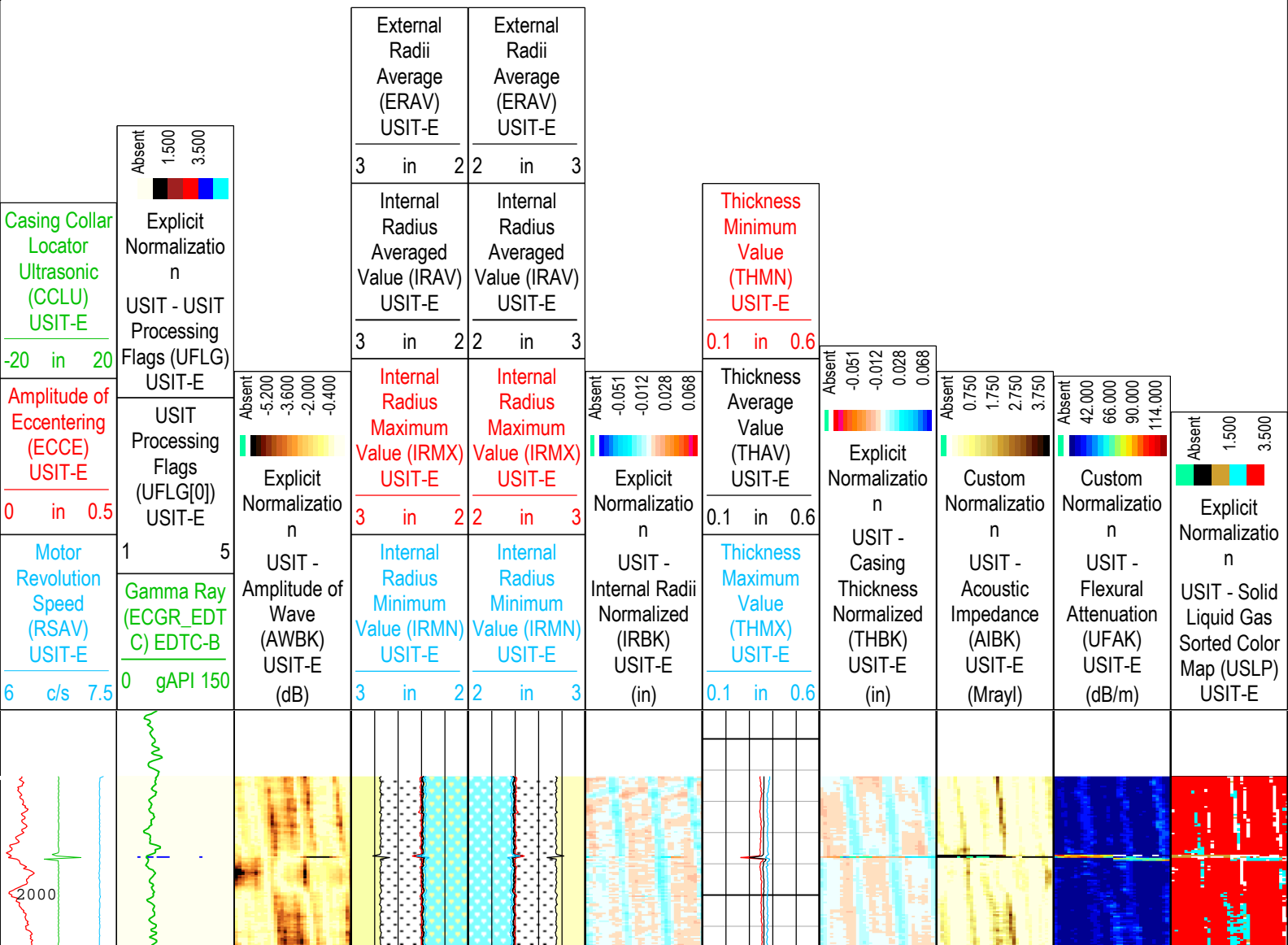
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth

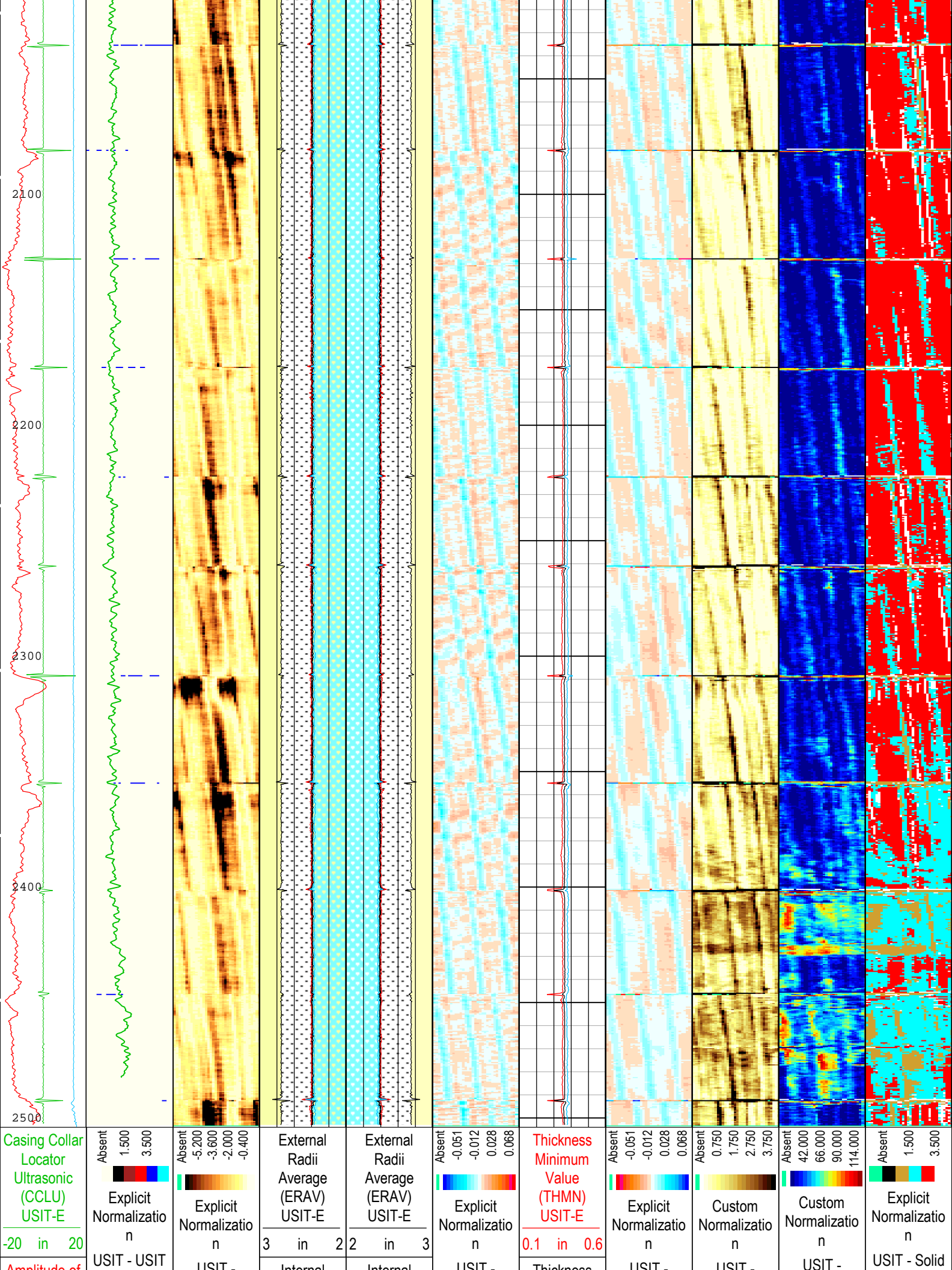
Creation Date: 19-Oct-2018 16:02:57

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

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 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

TIME_1900 - Time Marked every 60.00 (s)





| | | | | | | | | | | |
|--|--|---|--|--|---|---------------------------------------|---|---|--|---|
| Amplitude of Eccentering (ECCE) USIT-E | Processing Flags (UFLG) USIT-E | USIT - Amplitude of Wave (AWBK) USIT-E (dB) | Internal Radius Averaged Value (IRAV) USIT-E | Internal Radius Averaged Value (IRAV) USIT-E | USIT - Internal Radii Normalized (IRBK) USIT-E (in) | Thickness Average Value (THAV) USIT-E | USIT - Casing Thickness Normalized (THBK) USIT-E (in) | USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) | USIT - Flexural Attenuation (UFAK) USIT-E (dB/m) | Liquid Gas Sorted Color Map (USLP) USIT-E |
| 0 in 0.5 | USIT Processing Flags (UFLG[0]) USIT-E | | 3 in 2 | 2 in 3 | | 0.1 in 0.6 | | | | |
| Motor Revolution Speed (RSAV) USIT-E | 1 5 | | Internal Radius Maximum Value (IRMX) USIT-E | Internal Radius Maximum Value (IRMX) USIT-E | | Thickness Maximum Value (THMX) USIT-E | | | | |
| 6 c/s 7.5 | Gamma Ray (ECGR_EDT C) EDTC-B | | 3 in 2 | 2 in 3 | | 0.1 in 0.6 | | | | |
| | 0 gAPI 150 | | Internal Radius Minimum Value (IRMN) USIT-E | Internal Radius Minimum Value (IRMN) USIT-E | | | | | | |
| | | | 3 in 2 | 2 in 3 | | | | | | |

TIME_1900 - Time Marked every 60.00 (s)

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

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :
- UTIM Error

Pulse Origin Not Detected

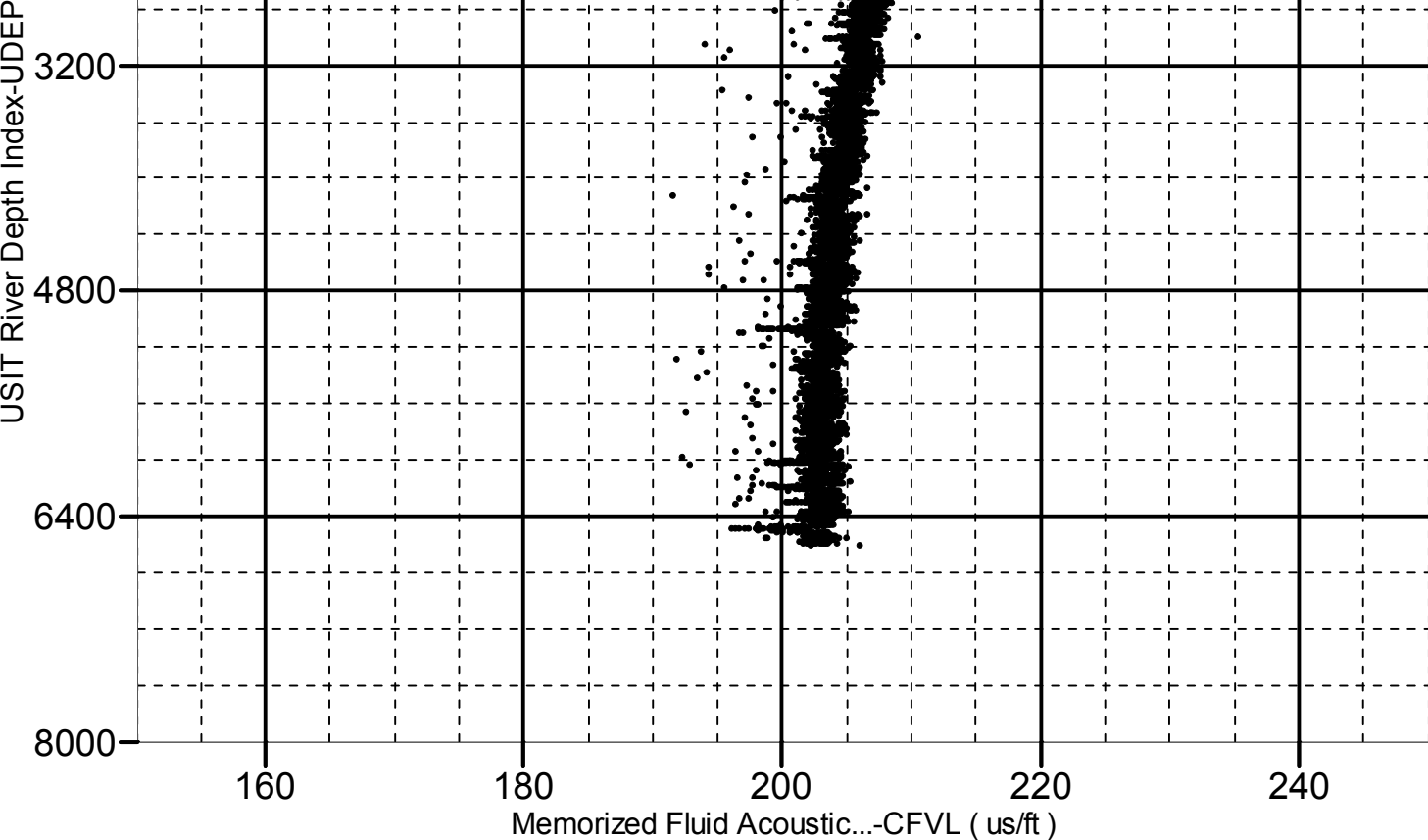
WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-Oct-2018 16:02:57

| Channel Processing Parameters | | | | |
|-------------------------------|--|-----------|----------------|---------|
| ONE: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| BAR(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 | 11913 | ft |
| CDEN | Cement Density | USIT-E | 12.52 | lbm/gal |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light 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 |
| FD | Fluid Density | USIT-E | 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) | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| IBC_FRP_OFFSET | IBC Flexural Offset from Free Pipe | USIT-E | -7.36 | dB/m |
| IBC_FVEL_SEL | IBC Fluid Velocity Selection | USIT-E | Automatic | |
| IBC_OFFSET_SEL | IBC Flexural Offset Selector | USIT-E | IBC_FRP_OFFSET | |
| IBC_ZMUD_SEL | IBC Mud Impedance Selection | USIT-E | FreePipe Norm. | |
| 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 | 1.18 | |
| MUD_N_THF | Theoretical Mud Normalization Factor | USIT-E | 1.15 | |

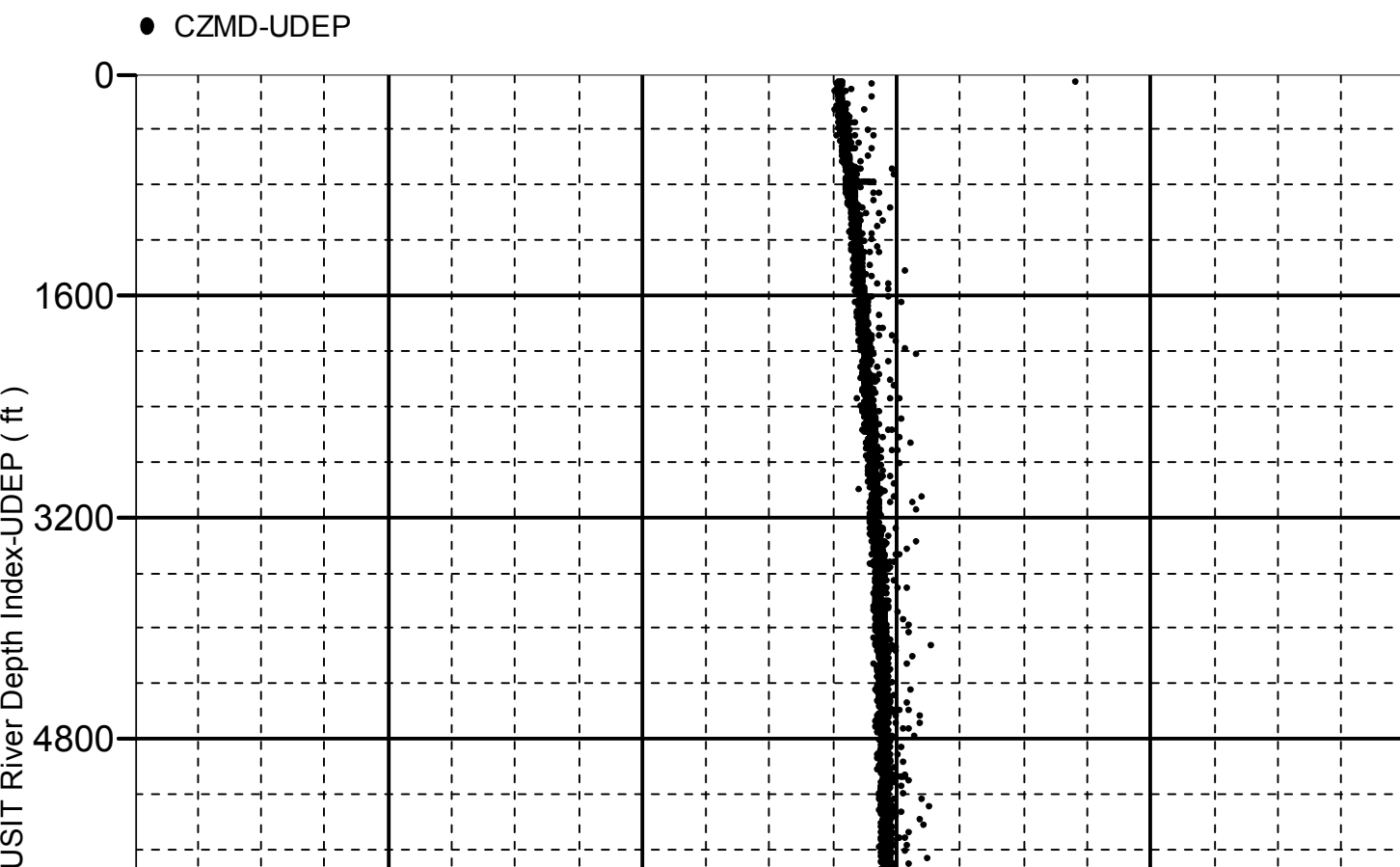


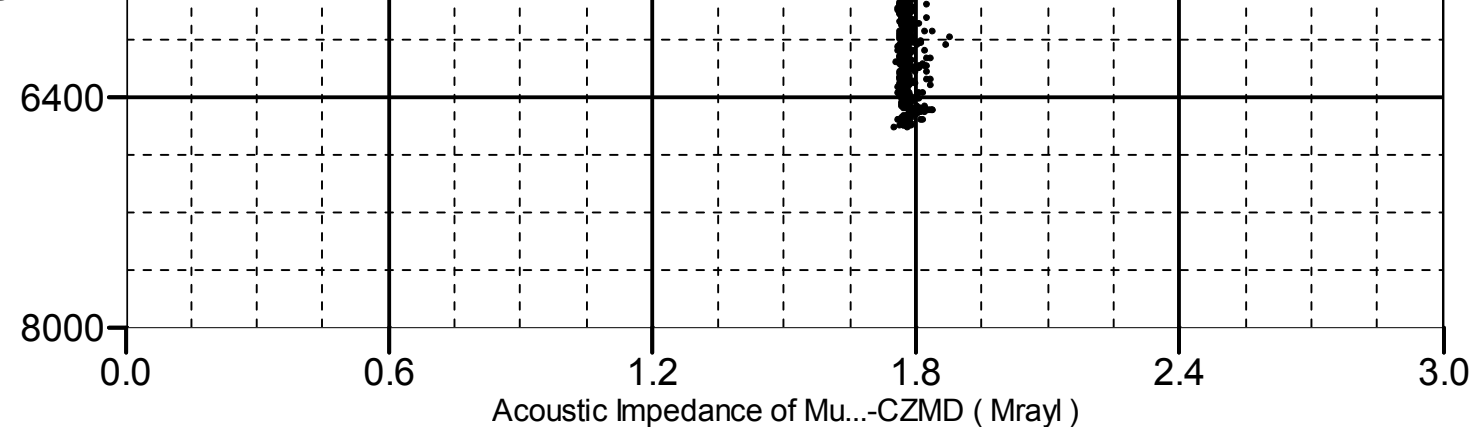
XYZ Company:Crestone Peak Resources Operating LLC Well:Sam 3M-25H-M166 ONE: Log[3]:Up:S003

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6613.00 to 44.50 ft





| | | |
|----------|---------------------------------------|--|
| Company: | Crestone Peak Resources Operating LLC | |
| Well: | Sam 3M-25H-M166 | |
| Field: | Wattenberg | |
| County: | Weld | |
| State: | Colorado | |

Isolation Scanner

Cement Evaluation