Schlumberger

Company:

Japan Agency for Marine−Earth Science and Technology

Well: **C0002A**

Field: **Nankai−Kumano**

Rig: **Chikyu** Country: **Japan**

Rig: Chikyu
Field: Nankai−Kumano
Location: Philippines Sea
Well: C0002A
Company: JAMSTEC

8 1/2 in
GeoVISION Service − Image
Recorded Mode Log 1:200 Measured Depth

Location

Total depth:	3366.0 m
Spud date:	14−Oct−07
Runs:	1 To 1

Elevation

K.B.	Top Drive m
G.L.	−1936.0 m
D.F.	28.5 m

Permanent datum:	Mean Sea Level	Elev.:	0.0 m
Log measured from:	Drill Floor	28.5 m	above Perm. datum
Depth reference:	Driller's Depth		

Service Order no.		Longitude	Latitude
07CHS0064		E 136° 38' 10.86"	N 33° 18' 1.152"

Depth logged:	1946.5 m To 3334.6 m	Mag decl:	−6.50° deg.
Date logged:	14−Oct−07 To 17−Oct−07	Mag dip:	46.65° deg.

Other services:
D&I, Drilling Mechanics

Bore hole record

Hole size	from	to
8.5 in.	1964.5 m	3366.0 m

Casing record

Size	Density	from	to
n/a in.	n/a lbm/m	n/a m	n/a m

Mud record

Type	from	to
Sea Water	1964.5 m	3366 m

Borehole deviation record

Min	Max	from	to
0.34 deg.	4.25 deg.	1946.5 m	3366 m

Surface equipment

Unit	OLU_0504
Depth system	Geolograph

Software record

IDEAL Wis	ID12_0C_12		
SPM	12_0c_04		
LWD	ADN V8.3	GVR V6.2B	SON V6.4B
MWD	PP V80C04	SEI V72	

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN1
Direction and Inclination
MWD APWD

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN

REMARKS: RUN NUMBER

REMARKS: RUN NUMBER

REMARKS: RUN NUMBER 1
All data provided is from Tool Memory

GR Measurement is corrected for bit size, hole size and mud weight.

ADN was IBS with 8−1/4" OD.Neutron porosity is calculated with sandstone matrix and is corrected for bit size,borehole salinity, temperature and mud hydrogen index.

Sonic Configured @ 10s, 2s, 1s record rates
10s used for drilling, 1s used for trip out
Repeat section: 3360m − 3325m BRT
Fast record section: 3366m − 1964.5m BRT

POOH due to TD called @ 3366.0mBRT

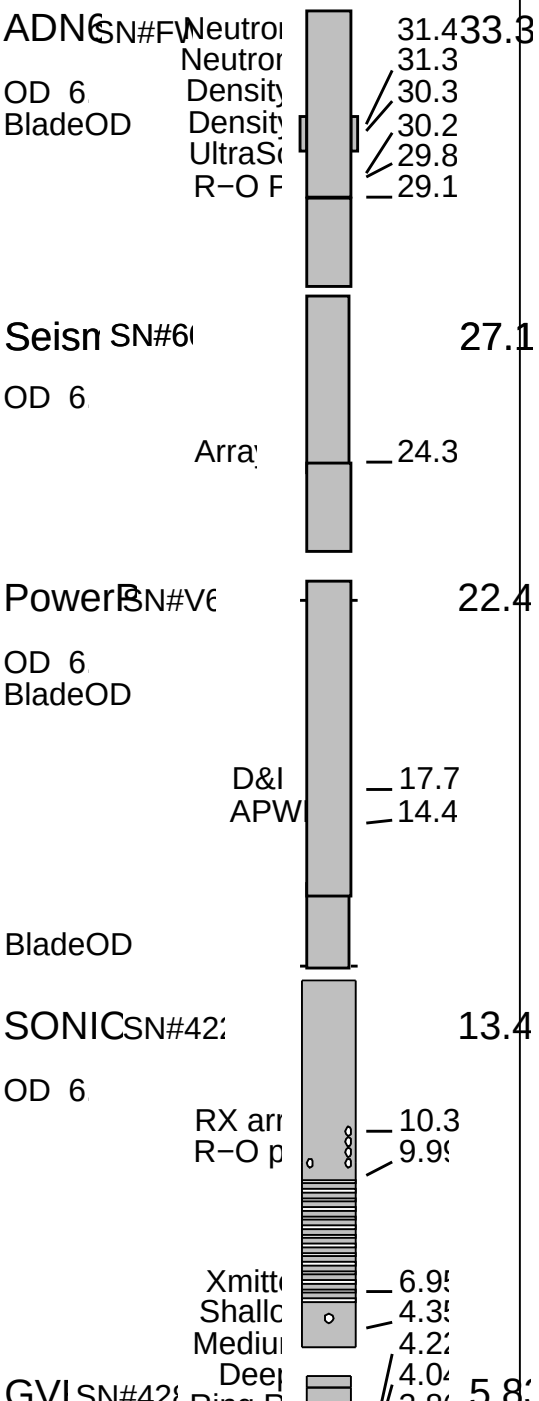
Pump time: 72.0 h

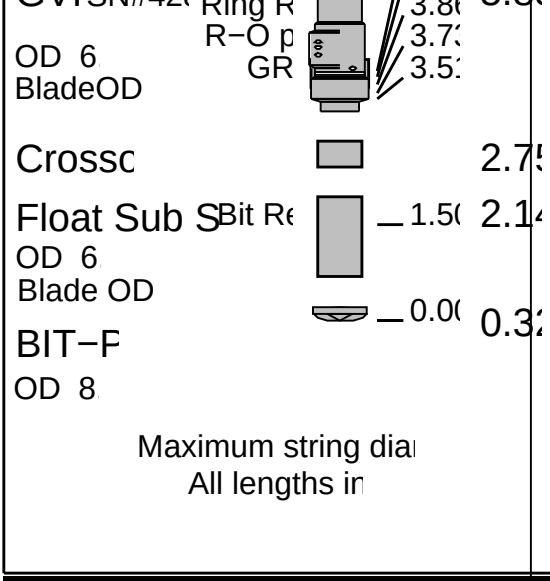
Drill time: 47.5 h

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE E





Bit Run Summary

Run number		1									
Bit size	in.	8.5									
Bit start depth	m	1964.5m									
Bit end depth	m	3366.0m									
Top interval logged	m	1993.0m									
Bottom interval logged	m	3334.5m									
Begin log: time		00:45									
Begin log: date		13−Oct−07									
End log: time		11:10									
End log: date											
Mud data											
Depth	m	2754.0m									
Type		Seawater									
Mud weight	SG	1.05									
Solids		na									
Chlorides		na									
Rm	Ohmm	0.08									
Rmf		na									
Rmc		na									
Potassium		na									
Environmental data											
GR											
Mud weight	SG	1.05									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size	in	8.5									
Mud weight	SG	1.05									
Temperature	ºC	23									
Mud salinity	ppg	18700									
Formation salinity		na									
Recording rate 1	SEC	5									
Recording rate 2	SEC	5									
Filtering GR		3									
Filtering density		3									
Filtering Neutron		3									
Company representative		T. Abe									
Schlumberger D&M Personnel		M. Jakulj	Chen Xi	Q G Ming							

Variable Name	Variable Description	Run Name & Value
Run Number		**1**
General Information		
BHT_RM	Bottom Hole Temperature (RM)	78.583977
BSAL_RM	Mud Salinity (RM)	0.000000
BS_RM	Bit Size (RM)	8.500000
COEF_M	User Defined FEXP in Clean Sand	1.650000
C_WS	Overpressure correction to Sw and M	1.000000
FEXP	Formation Factor Exponent(RM)	2.000000
FNUM	Formation Factor Enumerator(RM)	1.000000
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT
MST_RM	Mud Sample temperature (RM)	75.000000
MW_RM	Mud Weight (RM)	8.762706
OBMF_RM	Oil Based Mud (RM)	NO
RHOF_RM	Mud Filtrate Density (RM)	1.000000
RHOM_RM	Matrix density (RM)	2.650000
RMS_RM	Resistivity of Mud Sample (RM)	0.080000
RWA_COMP_M	Rwa computation model	BASIC
RWA_DEN_AD	Rwa Density Input ADN	RHOB
RWA_DEN_CD	Rwa Density Input CDN	RHOB
RWA_DEN_IN	Rwa Density Input	RHOB
RWA_FORM_M	Rwa computation formation model	CLASTIC
RWA_RES_IN	Rwa computation resistivity input	RT
RWS_RM	Resistivity of Connate Water (RM)	1.000000
SHT_RM	Surface Hole Temperature (RM)	4.000000
TD_RM	Total Measured Depth (RM)	3360.000000
TWS_RM	Temperature of Connate Water (RM)	75.000000
VF_ILLI	Fraction of illite in shales	0.500000
VF_KAOL	Fraction of kaolinite in shales	0.500000
VF_MONT	Fraction of montmorillonite in shales	0.000000
XPDM_RM	Cross plot density porosity multiplier	0.675000
XPNM_RM	Cross plot neutron porosity multiplier	0.325000
LWD_RM/STATION_FILE/PARAMETER	Station Time−frame file name	Station
SHT_RM	Ground Level Temperature (Mud−Line When Offshore) (RM)	39.200008
RAB		
RAB/BTN_SLV_SIZE/PARAMETER	RAB: Button Sleeve Diameter	8.125000
RAB/STAB_SIZE/PARAMETER	RAB: Stabilizer Diameter	8.250000
BDBHCA	RAB: Button Deep Borehole A Factor	0.005002
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000
BHA_COEF_V	RAB: BHA Coef Generator Version	62012.000000
BITBHCA	RAB: Bit A Borehole Factor	0.072212
BITBHCB	RAB: Bit B Borehole Factor	0.000000
BIT_K_FACT	RAB: Bit K Factor	5.312284
BMBHCA	RAB: Button Medium Borehole A Factor	0.023915
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000
BSBHCA	RAB: Button Shallow Borehole A Factor	0.023358
BSBHCB	RAB: Button Shallow Borehole B Factor	0.000000
BUT_KIMP_A	RAB: Button Impedance Coeff A	0.000000
BUT_KIMP_B	RAB: Button Impedance Coeff B	0.000000
DBUTTON_K_	RAB: Button Deep K factor	0.004755
DHS_VERSIO	RAB: DownHole Software Version	6.200100
GR_BHC_TOO	RAB: Gamma−Ray Borehole Coeff 1	6.750000
HI_CSDEPTH	RAB: Allow Hi−Resolution CS_DEPTH Image Data Output	NO
HI_DLIS_OU	RAB: Allow Hi−Resolution DLIS Image Data Output	NO
HI_RIVER_O	RAB: Allow Hi−Resolution River for Image Data Output	NO
IMAGE_MAX_	RAB: GR Image Maximum Scale Value	120.000000
IMAGE_MAX_	RAB: Image Maximum Resistivity Value	100.000000
IMAGE_MIN_	RAB: GR Image Minimum Scale Value	20.000000
IMAGE_MIN_	RAB: Image Minimum Resistivity Value	1.000000
JSD_RAB	RAB Acquisition start date	1.000000
KPER	Potassium Concentration (RM)	0.000000
MAG_DECL_R	RAB: Magnetic Declination	−6.499977
MAG_INCL_R	RAB: Magnetic Dip	46.649994
MBUTTON_K_	RAB: Button Medium K Factor	0.005426
OBM	RAB: Oil base Mud	NO
ORIENTATIO	Rab Image Orientation	NORTH
RABBDA0	RAB: Button Deep A0 Coeff	−0.030906
RABBDA1	RAB: Button Deep A1 Coeff	0.013059
RABBDA2	RAB: Button Deep A2 Coeff	−0.003060
RABBDA3	RAB: Button Deep A3 Coeff	0.000315
RABBDA4	RAB: Button Deep A4 Coeff	−0.000011
RABBDA5	RAB: Button Deep A5 Coeff	0.000000
RABBDMIN	RAB: Button Deep Minimum Value	0.051229
RABBITA0	RAB: Bit A0 Coeff	0.826979
RABBITA1	RAB: Bit A1 Coeff	−0.755479
RABBITA2	RAB: Bit A2 Coeff	0.451673
RABBITA3	RAB: Bit A3 Coeff	−0.118961
RABBITA4	RAB: Bit A4 Coeff	0.011456
RABBITA5	RAB: Bit A5 Coeff	0.000000
RABBITMIN	RAB: Bit Minimum Value	21.656054
RABBMA0	RAB: Button Medium A0 Coeff	−0.041924
RABBMA1	RAB: Button Medium A1 Coeff	0.018473
RABBMA2	RAB: Button Medium A2 Coeff	−0.004374
RABBMA3	RAB: Button Medium A3 Coeff	0.000455
RABBMA4	RAB: Button Medium A4 Coeff	−0.000017
RABBMA5	RAB: Button Medium A5 Coeff	0.000000
RABBMMIN	RAB: Button Medium Minimum Value	0.059671
RABBSA0	RAB: Button Shallow A0 Coeff	−0.057432
RABBSA1	RAB: Button Shallow A1 Coeff	0.025382

RABBSA2	RAB: Button Shallow A2 Coeff	−0.005889
RABBSA3	RAB: Button Shallow A3 Coeff	0.000601
RABBSA4	RAB: Button Shallow A4 Coeff	−0.000022
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000
RABBSMIN	RAB: Button Shallow Minimum Value	0.086659
RABDHS	RAB Down Hole Software	4.000000
RABEC	RAB: Resistivity Env−Cor	YES
RABRNGA0	RAB: RING A0 Coeff	−0.025901
RABRNGA1	RAB: RING A1 Coeff	0.011154
RABRNGA2	RAB: RING A2 Coeff	−0.002679
RABRNGA3	RAB: RING A3 Coeff	0.000280
RABRNGA4	RAB: RING A4 Coeff	−0.000010
RABRNGA5	RAB: RING A5 Coeff	0.000000
RABRNGMIN	RAB: Ring Minimum Value	1.701276
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	YES
RAB_CALIPE	Compute ECAL_RAB?	NO
RAB_DEEPBT	Deep Button Resistivity for ECAL_RAB?	YES
RAB_DEEPBT	Input Deep Button Resistivity for Inversion?	YES
RAB_INVERS	Perform Rt Inversion?	NO
RAB_INVERS	RAB Bit Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Ending Depth for GR Cutoff in Zone1 (default through the whole well)	100000.000000
RAB_INVERS	Continuity Multiplier[0,1]	0.500000
RAB_INVERS	RAB Deep Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	RAB inversion for Dh?	YES
RAB_INVERS	RAB inversion for Di?	YES
RAB_INVERS	GR Cutoff for Shale Formation	75.000000
RAB_INVERS	GR Cutoff for Shale Formation in Zone1(default through the whole well)	75.000000
RAB_INVERS	GR Cutoff in Zone10	75.000000
RAB_INVERS	GR Cutoff in Zone2	75.000000
RAB_INVERS	GR Cutoff in Zone3	75.000000
RAB_INVERS	GR Cutoff in Zone4	75.000000
RAB_INVERS	GR Cutoff in Zone5	75.000000
RAB_INVERS	GR Cutoff in Zone6	75.000000
RAB_INVERS	GR Cutoff in Zone7	75.000000
RAB_INVERS	GR Cutoff in Zone8	75.000000
RAB_INVERS	GR Cutoff in Zone9	75.000000
RAB_INVERS	RAB Medium Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Resistivity Cutoff for Shale Formation	2.000000
RAB_INVERS	Resistive Invasion Allowed	NO
RAB_INVERS	RAB Ring Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	RAB inversion for Rmud?	NO
RAB_INVERS	RAB inversion for Rt?	YES
RAB_INVERS	Rt to R−deepest separation penalty multiplier[0,1]	0.500000
RAB_INVERS	RAB inversion for Rxo?	YES
RAB_INVERS	RAB Shallow Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Inversion Threshold[0, 0.3]	0.010000
RAB_INVERS	Formation Water Resistivity	0.100000
RAB_INVERS	Formation Water Temperature	150.000000
RAB_MEDIUM	Medium Button Resistivity for ECAL_RAB?	YES
RAB_MEDIUM	Input Medium Button Resistivity for Inversion?	YES
RAB_QUAD	RAB: Process Quadrant data ?	YES
RAB_RIGMOD	Bit on Bottom?	YES
RAB_RING_E	Ring Resistivity for ECAL_RAB?	YES
RAB_RING_I	Imput RING Resistivity for Inversion?	YES
RAB_SHALLO	Shallow Button Resistivity for ECAL_RAB?	YES
RAB_SHALLO	Input Shallow Button Resistivity for Inversion?	YES
RAB_TAB	RAB: Compute TAB ?	YES
RAB_TECHLO	RAB: Generate Techlog ?	YES
RAB_TEMP_S	RAB Temperature Selection	MEASURED
RAB_TICKS	RAB: Generate Ticks ?	YES
READOUT_PO	RAB: ROP to Bit Face Distance	12.244095
RINGBHCA	RAB: Ring Borehole A Factor	0.161274
RINGBHCB	RAB: Ring Borehole B Factor	0.000000
RING_KIMP_	RAB: Ring Impedance Coeff A	0.000000
RING_KIMP_	RAB: Ring Impedance Coeff B	0.000000
RING_K_FAC	RAB: Ring K Factor	0.159584
SBUTTON_K_	RAB: Button Shallow K Factor	0.007327
SCALE_IMAG	RAB: Process Image Data	YES
STAB	RAB: Run with Stabilizer	YES
TFF_OFFSET	RAB Time−Frame File Time Offset	0.000000
TIMEFRAME_	RAB: Time Frame File Name	0.000000
TOOLTYPE	RAB: Azimuthal Tool	YES
TS_VERSION	RAB: ToolScope Software Version	0.000000
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C_SERIES
WIN_SIZE_D	RAB: Window Size for Scaling Dynamic Image	3.000000
WRK	Way to Report Potassium Concentration (RM)	K_by_Wgt_%

ADN

ADN_CHASSI	ADN Chassis Type String	ADN
ADN_COLLAR	ADN Collar Type String	ADN
ADN_STAB_S	ADN Stabilizer Type String	ADN
ALPHA_COMP	Perform Density Enhanced Vertical Resolution process ?	YES
ALPHA_COMP	Perform Neutron Enhanced Vertical Resolution process ?	YES
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES
A_DHS	ADN Down Hole Software Version String	YES
CHI_RM	Caliper High limit from BS (RM)	3.000000
CLO_RM	Caliper Low limit from BS (RM)	0.000000
DEVI	Well Section Deviation	1.500000
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ
DTMUD	Delta−T for Mud	192.149994
DYN_IMG_CO	Generate Dynamic Normalized Image?	YES
ECC_CORR_A	Perform Eccentering Correction for TNPH?	YES
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES
EVRL	EVR Process averaging number of samples (RM)	49
FCD	Future Casing (Outer) Diameter	0.000000

GCSE	Generalized Caliper Selection	UCAL
HPS	ADSE−EB (High Pressure Inconel Chassis)?	NO
IBS	Intergal Blade Stabilizer Collar?	YES
IDQT	Image Derived Quality Threshold	2.000000
IHVS	Integrated Hole Volume Start Value(RM)	0.000000
IMAGE_MAX_	Image SOA (Quadrant) Right Scale	2.500000
IMAGE_MAX_	Image PEF(Segment) Right Scale	6.000000
IMAGE_MAX_	Image RHOB(Segment) Right Scale	2.650000
IMAGE_MIN_	Image SOA (Quadrant) Left Scale	0.000000
IMAGE_MIN_	Image PEF(Segment) Left Scale	2.000000
IMAGE_MIN_	Image RHOB(Segment) Left Scale	2.050000
JSD_ADN	ADN Acquisition start date	2.050000
LITHO_TYPE	Lithology (RM)	SAND
N1FTU_6_RM	ADN: Neutron Bank 1 Far Tubes used :	1−2−3
N2FTU_6_RM	ADN: Neutron Bank 2 Far Tubes used :	1−2−3
NNTU_RM	ADN Neutron Near Banks Used	1−2
NTIK_SEL	ADN: Neutron Tick Channel Name	FR11
SOCNL	Standoff Distance of the CNL Tool	1.000000
SSIZ_ADN	ADN Stabilizer Size	8.250000
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0
TRPM_RM	Average Tool Rotational Speed	20.000000
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.180000
USWF_RM	ADN:Process Ultrasonic Waveform?	YES
VERS_ADN	ADN Downhole Software Version	8.300000
WSDI	Window Size of Dynamic Normalization Image	15.000000

Schlumberger Drilling & Measurements — Parameter Insert Header Software version 2.0c

314_C0002A_RM_IMAGE MD200

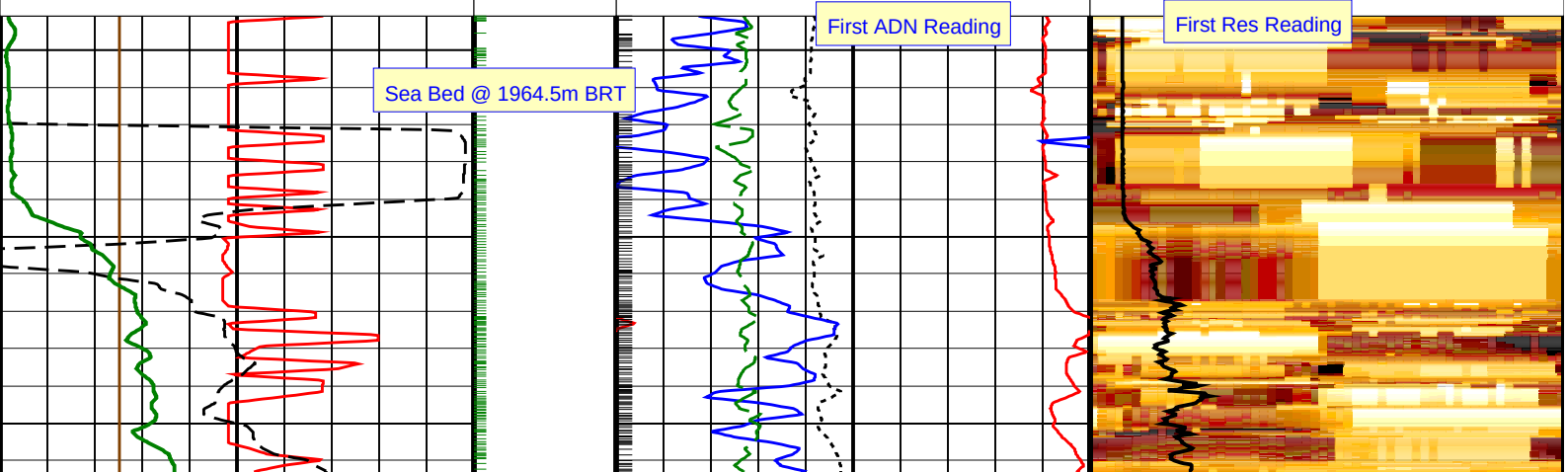
IDEAL Version: ID12_0C_12 <MD > Vertical Scale: 1:200 — **Graphics File Created: 20−Oct−2007 12:05**

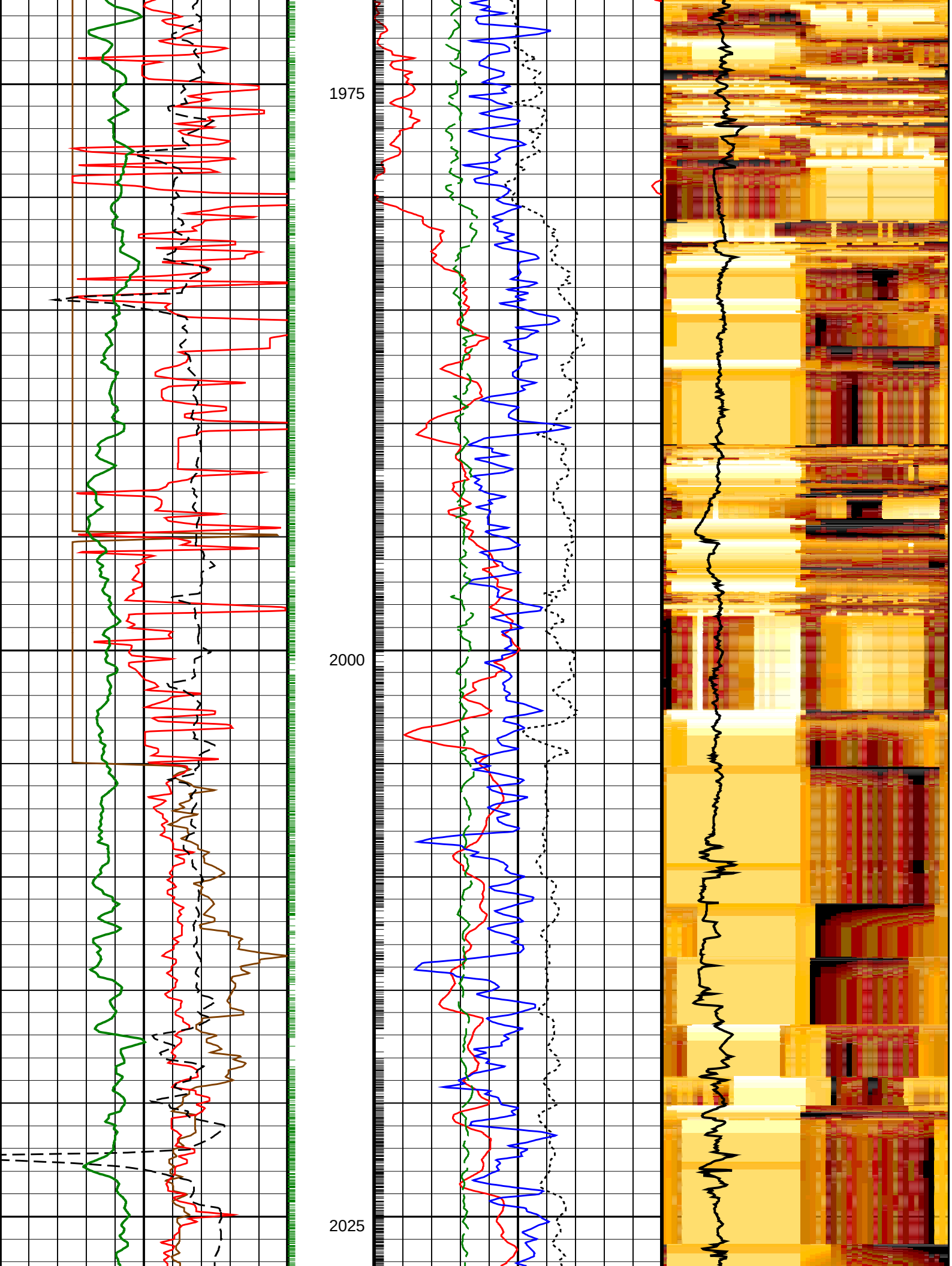
PIP SUMMARY

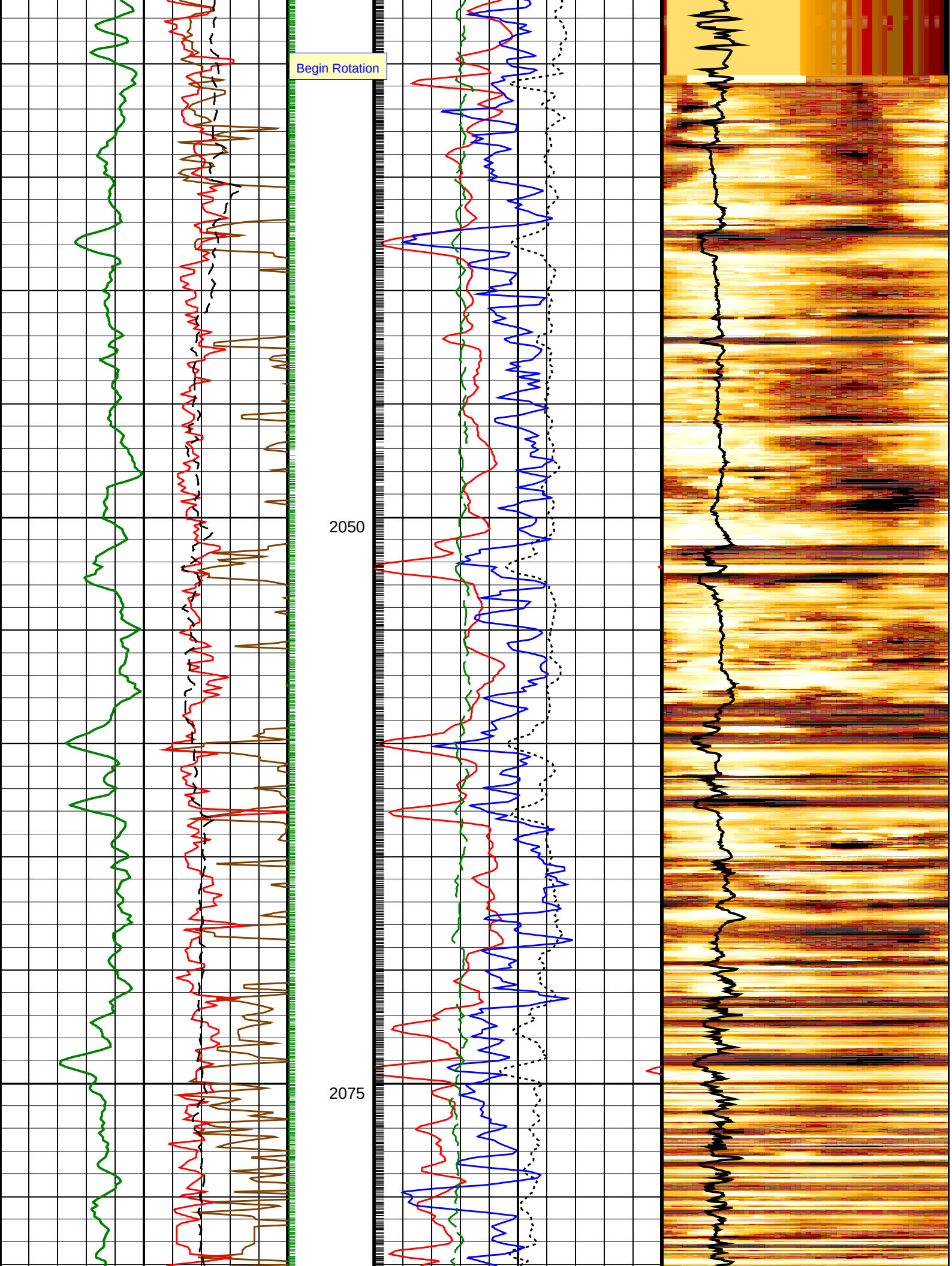
Gamma Ray Samples

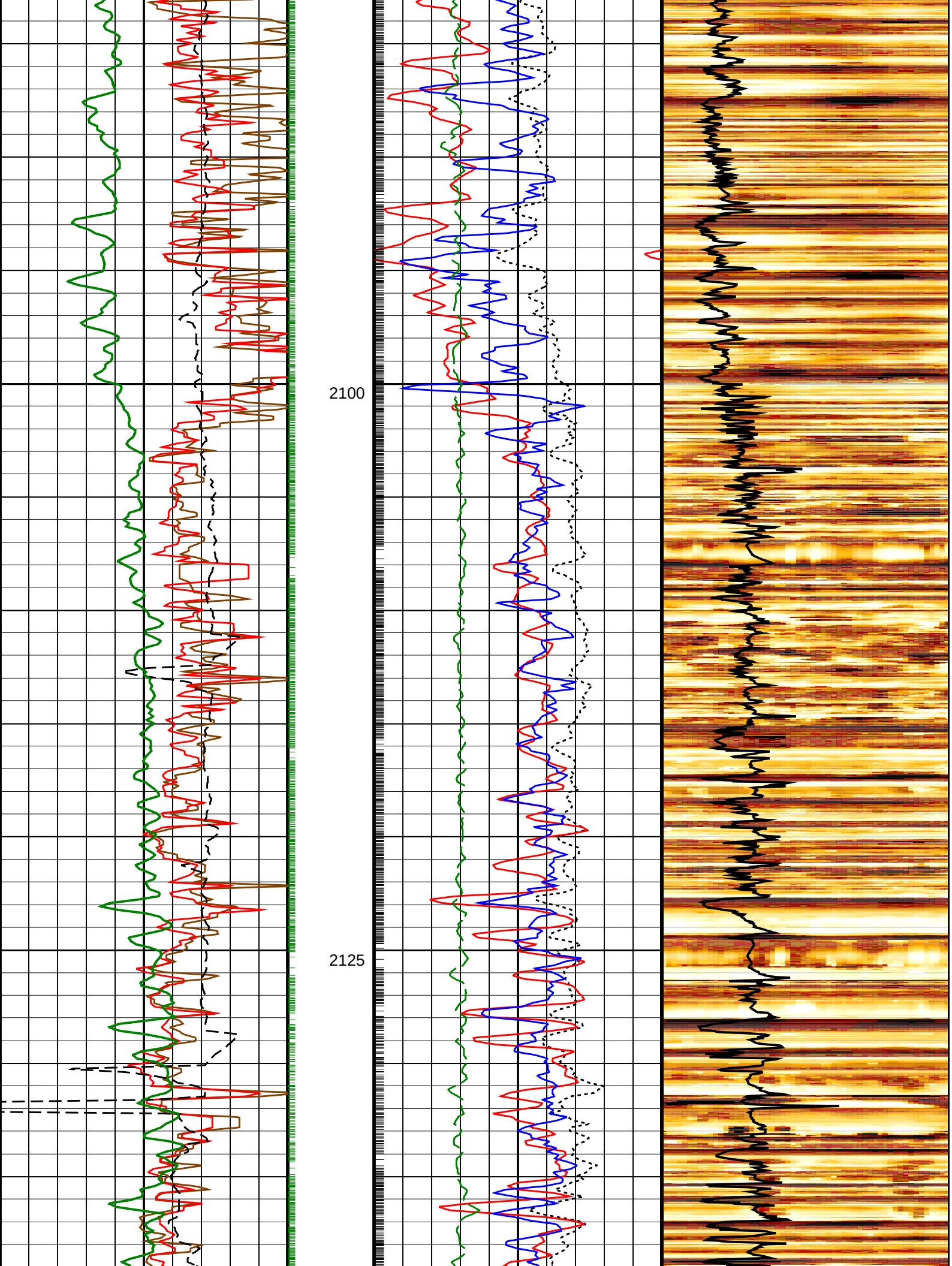
RAB samples

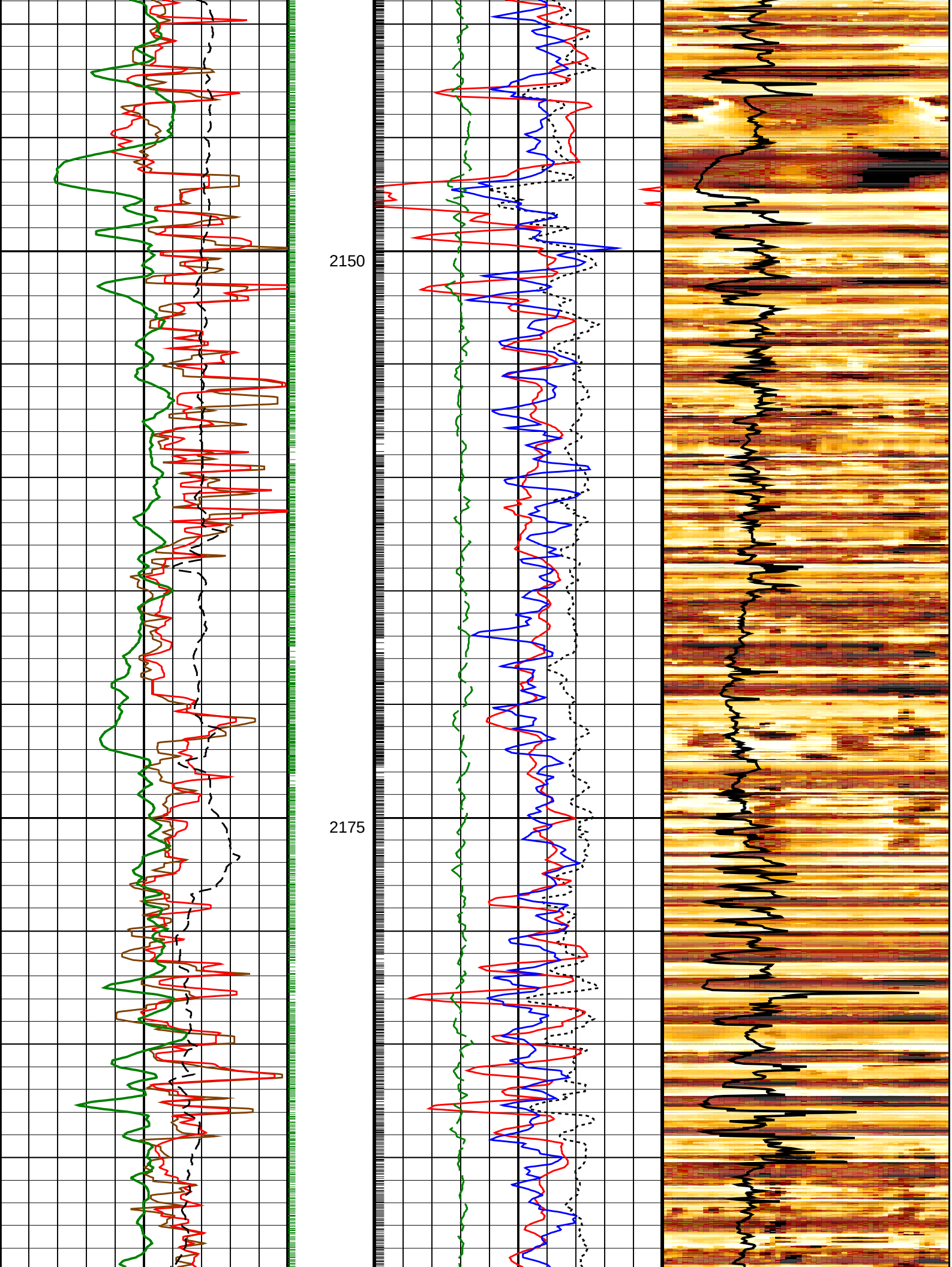
Rate of Penetration, Averaged over Last 5ft (ROP5_RM) 100 (M/HR) 0		**Photoelectric Factor (PEF)** 0 (−−−− 10
RAB Gamma Ray (GR_RAB) 0 (GAPI) 150		**Thermal Neutron Porosity (TNPH)** 90 (PU) 30
Vertical Hole Diameter (VERD) 7 (IN) 12		**Bulk Density (RHOB)** 1.15 (G/C3) 2.15
		Conductive **Resistive (R3IM_DYN)** (−−−−
Horizontal Hole Diameter (HORD) 7 (IN) 12	**RAB Rotational Speed (RPM_RAB) (RPM)** 0 200	**Bulk Density Correction (DRHO)** −0.25 (G/C3) 0.25
		Deep Button Resistivity (RES_BD) 0 (OHMM) 5

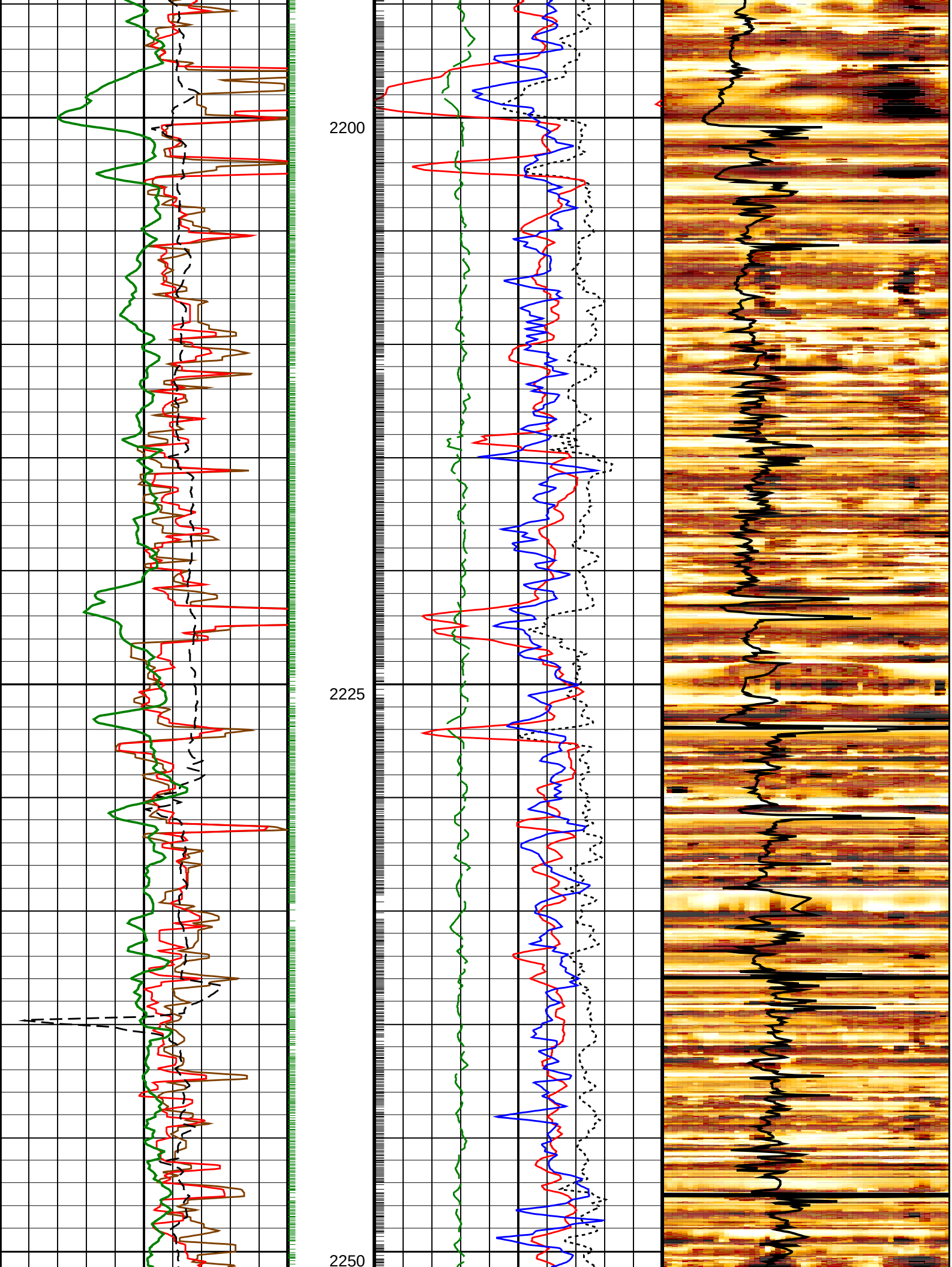


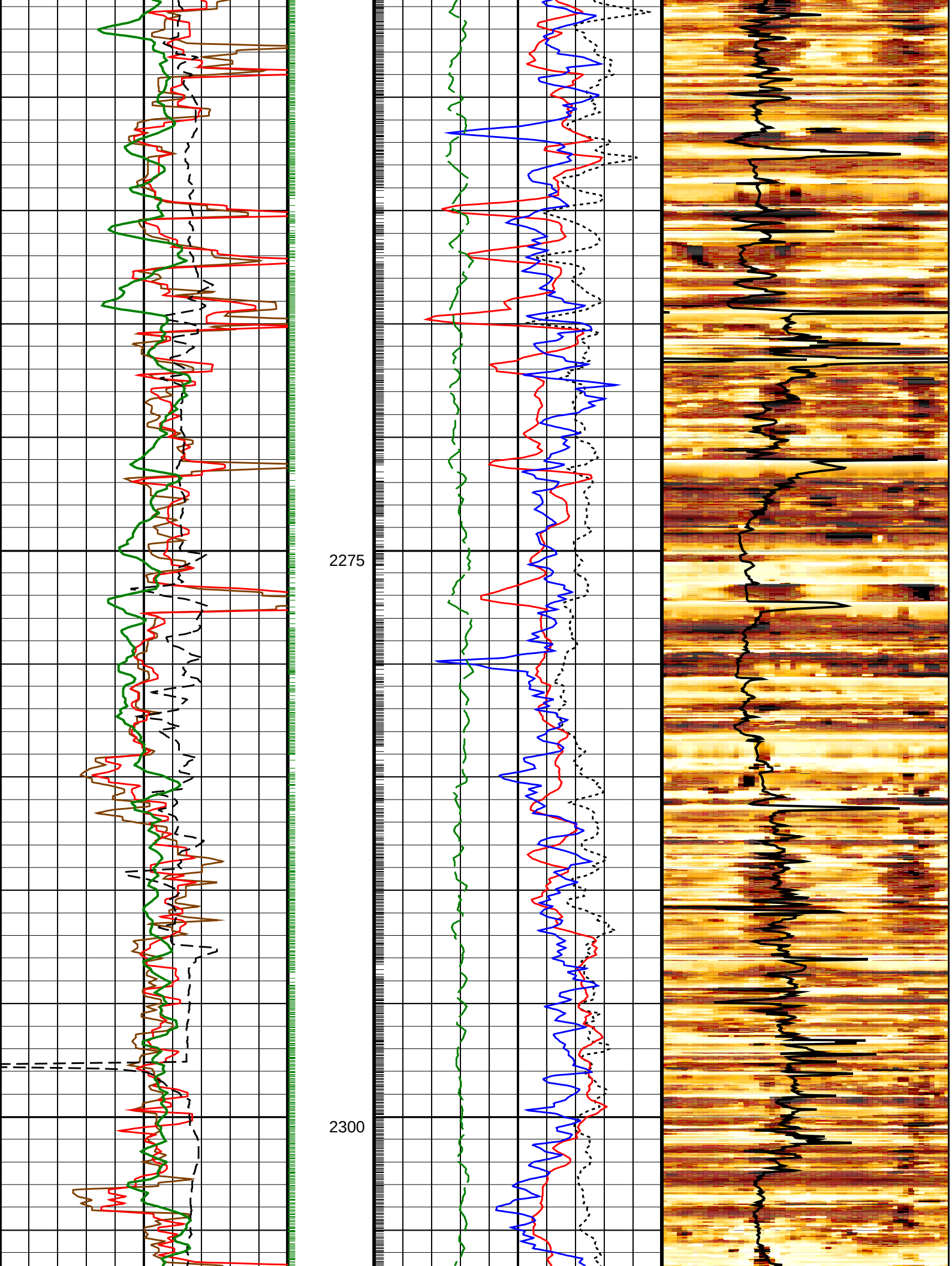

1975
2000
2025

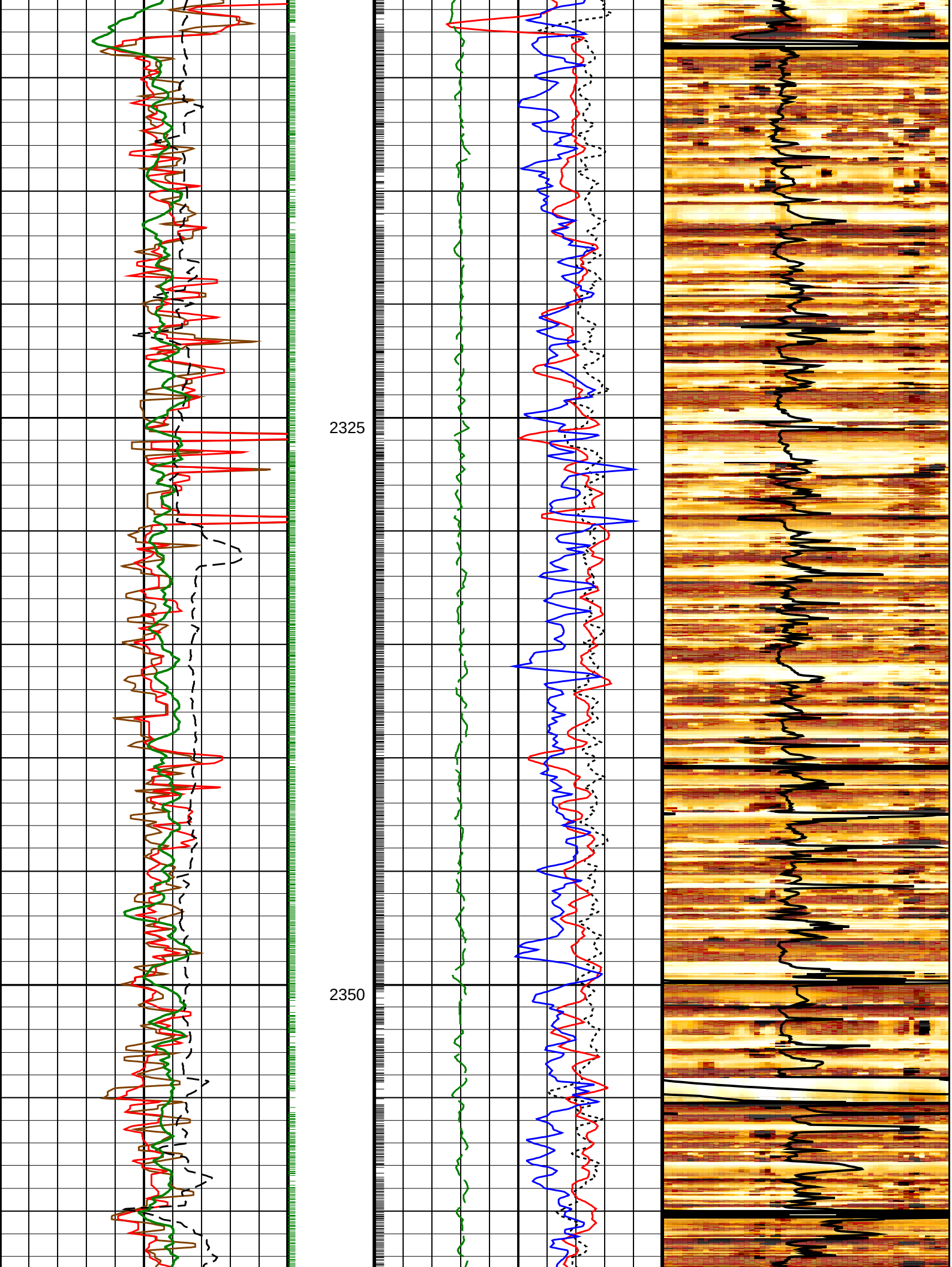

Begin Rotation
2050
2075

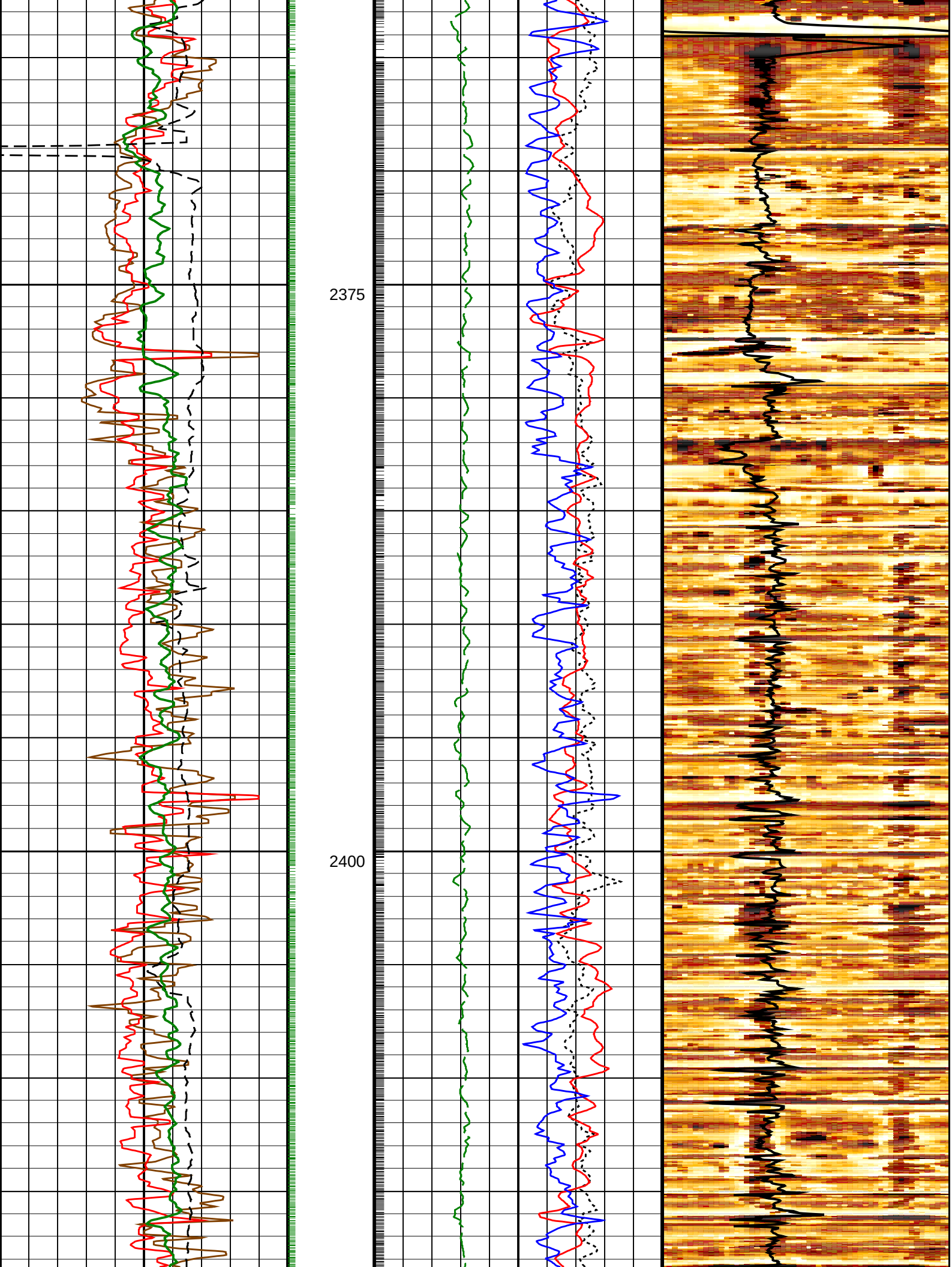

2100
2125

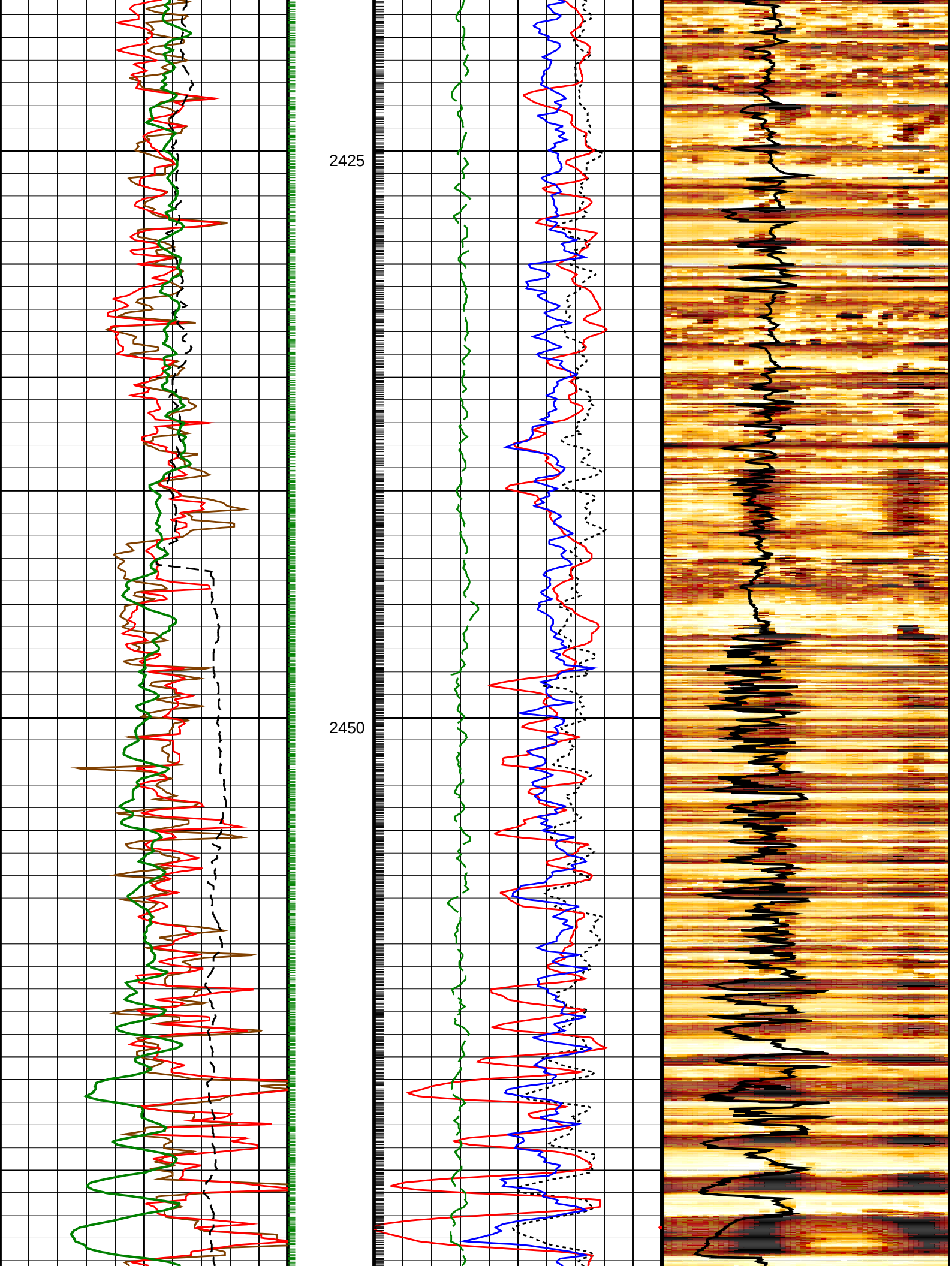

2150
2175

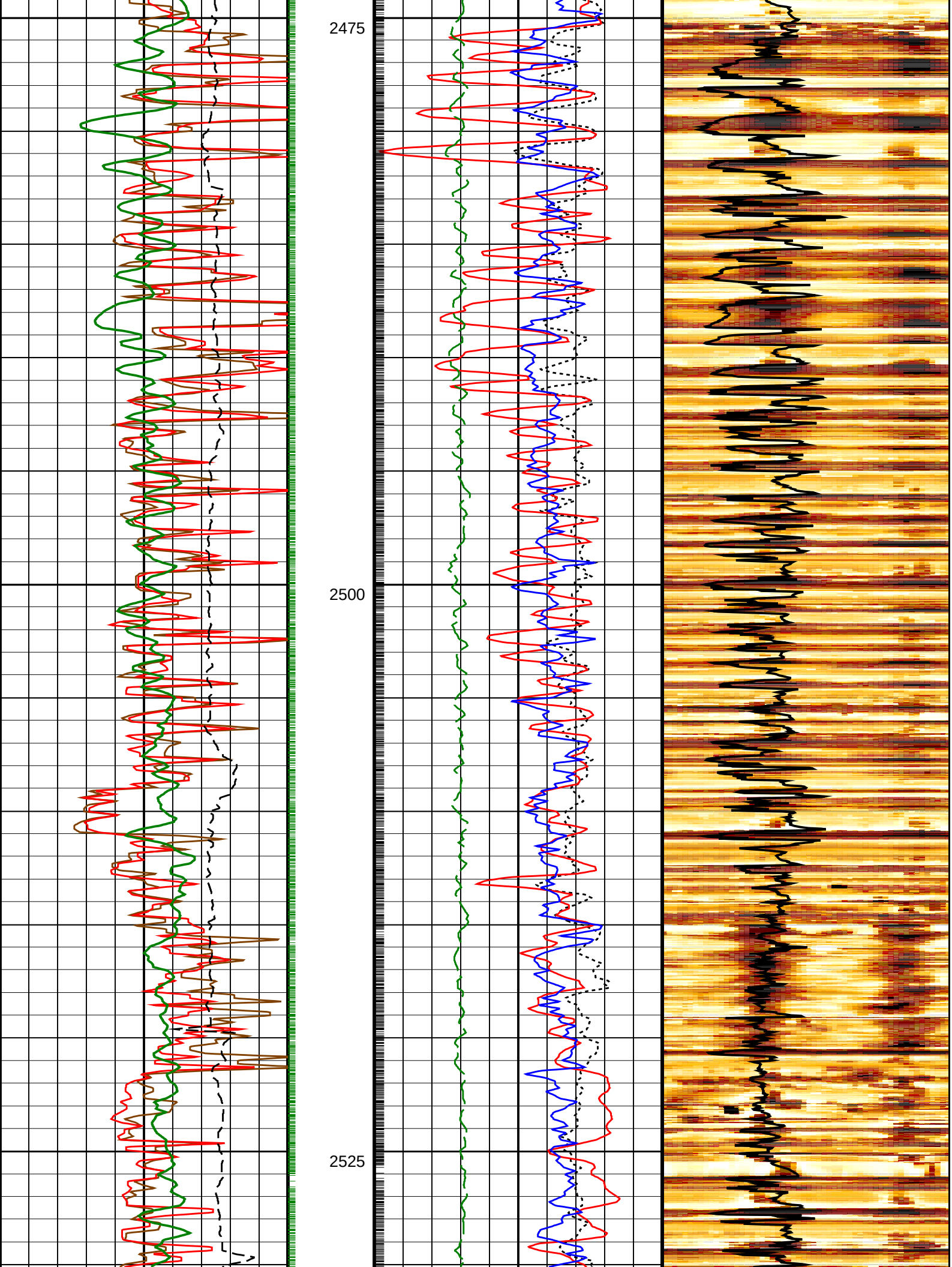

2200
2225
2250

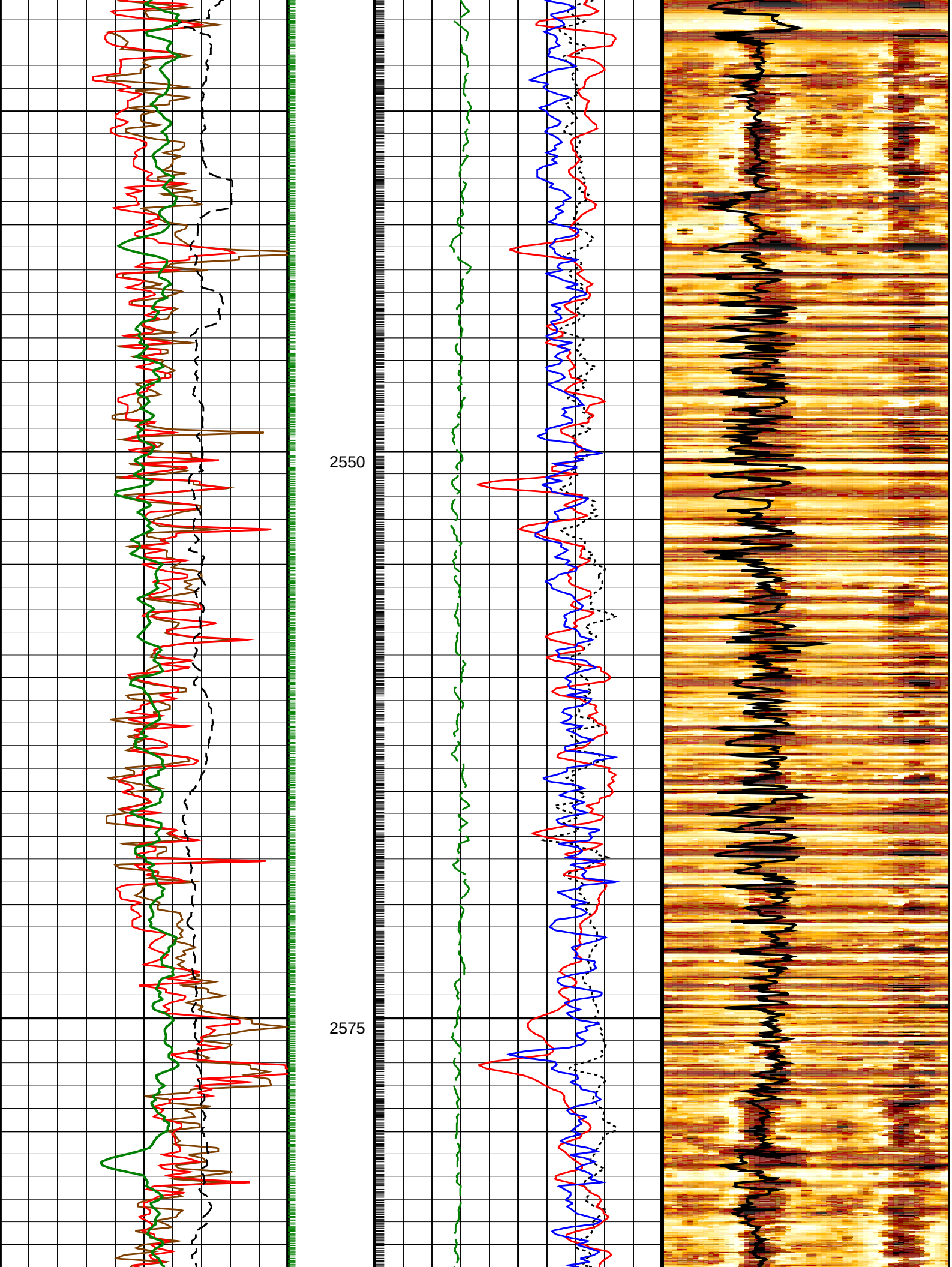

2275
2300

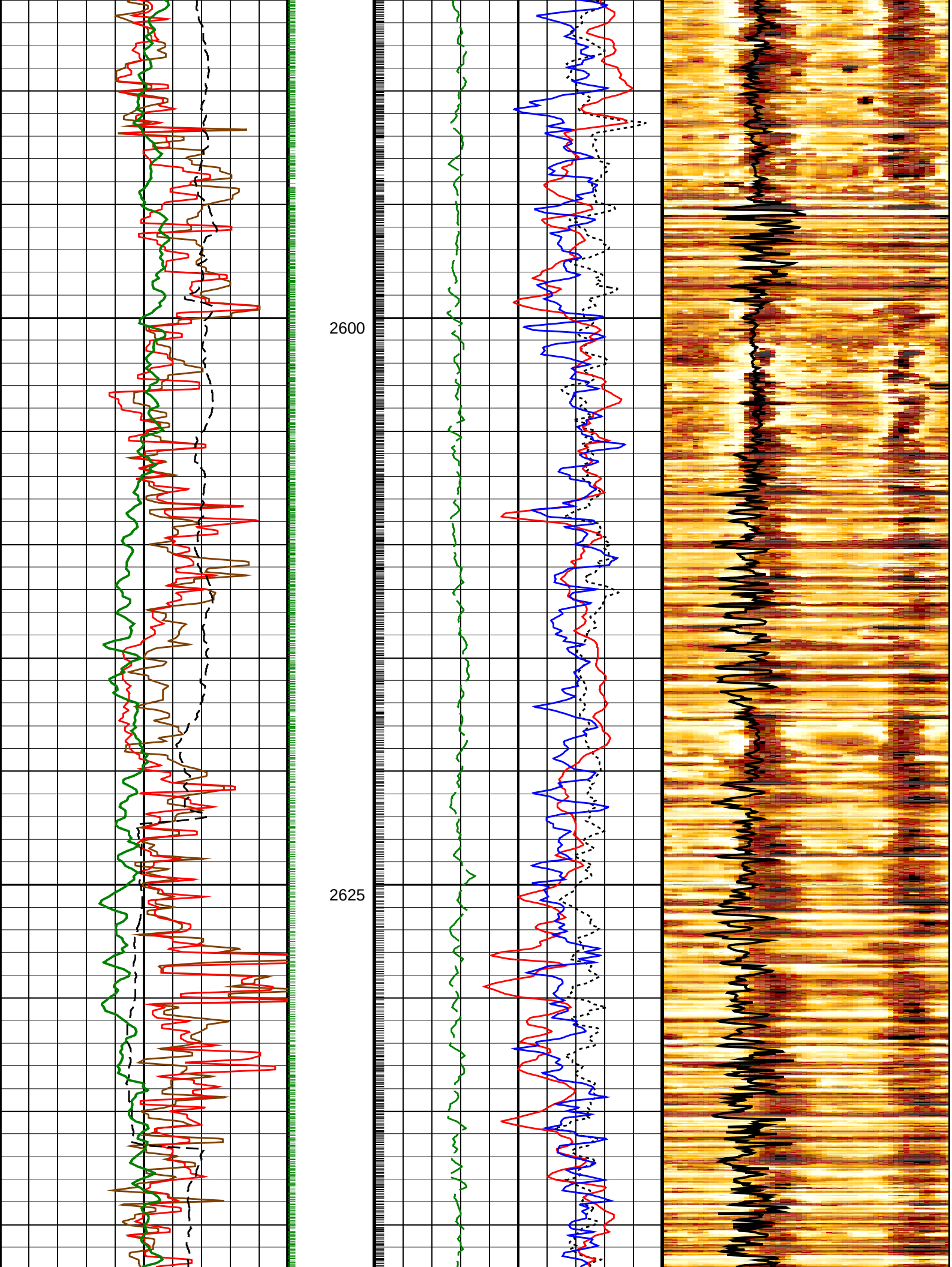

2325
2350

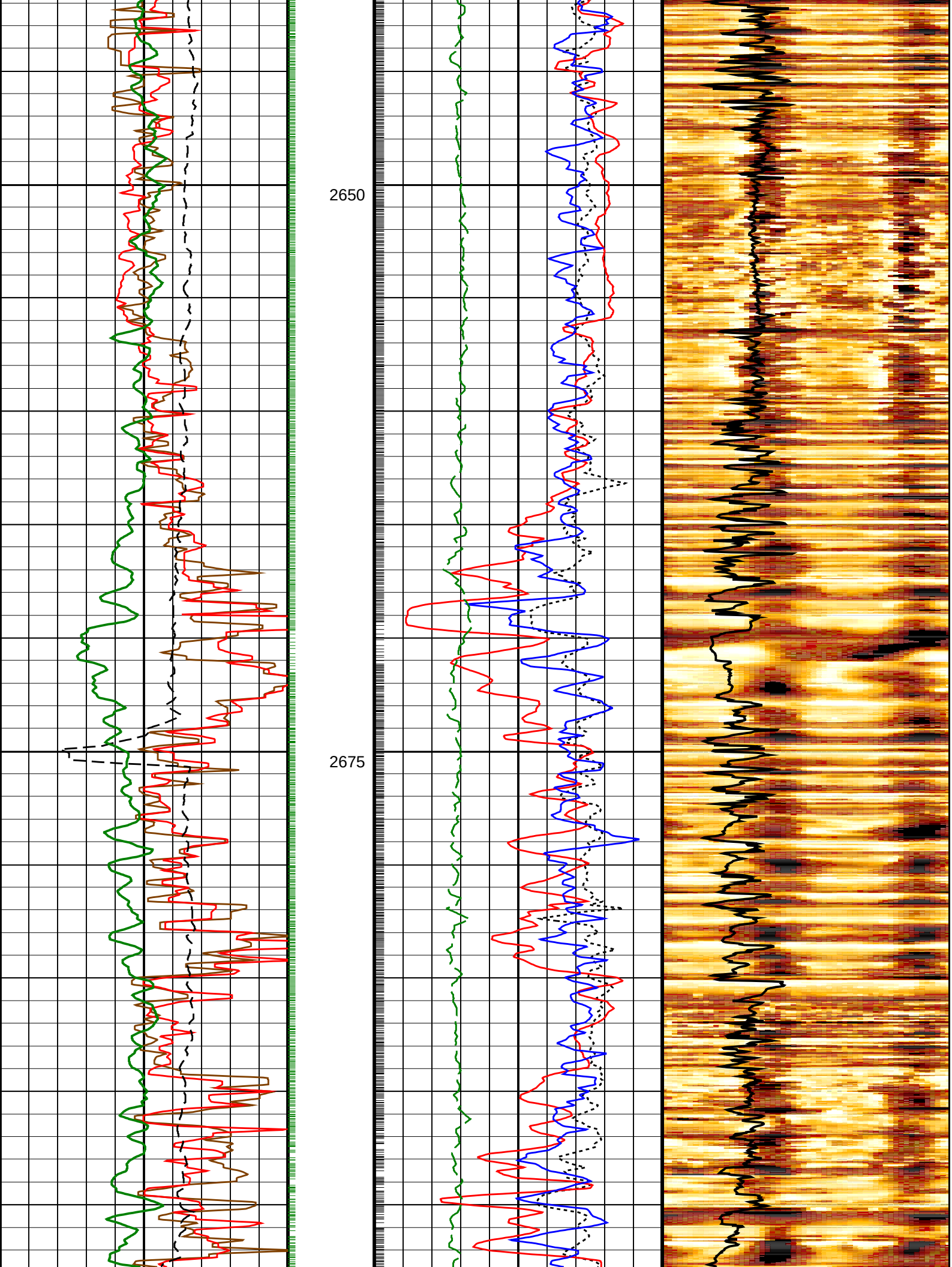

2375
2400

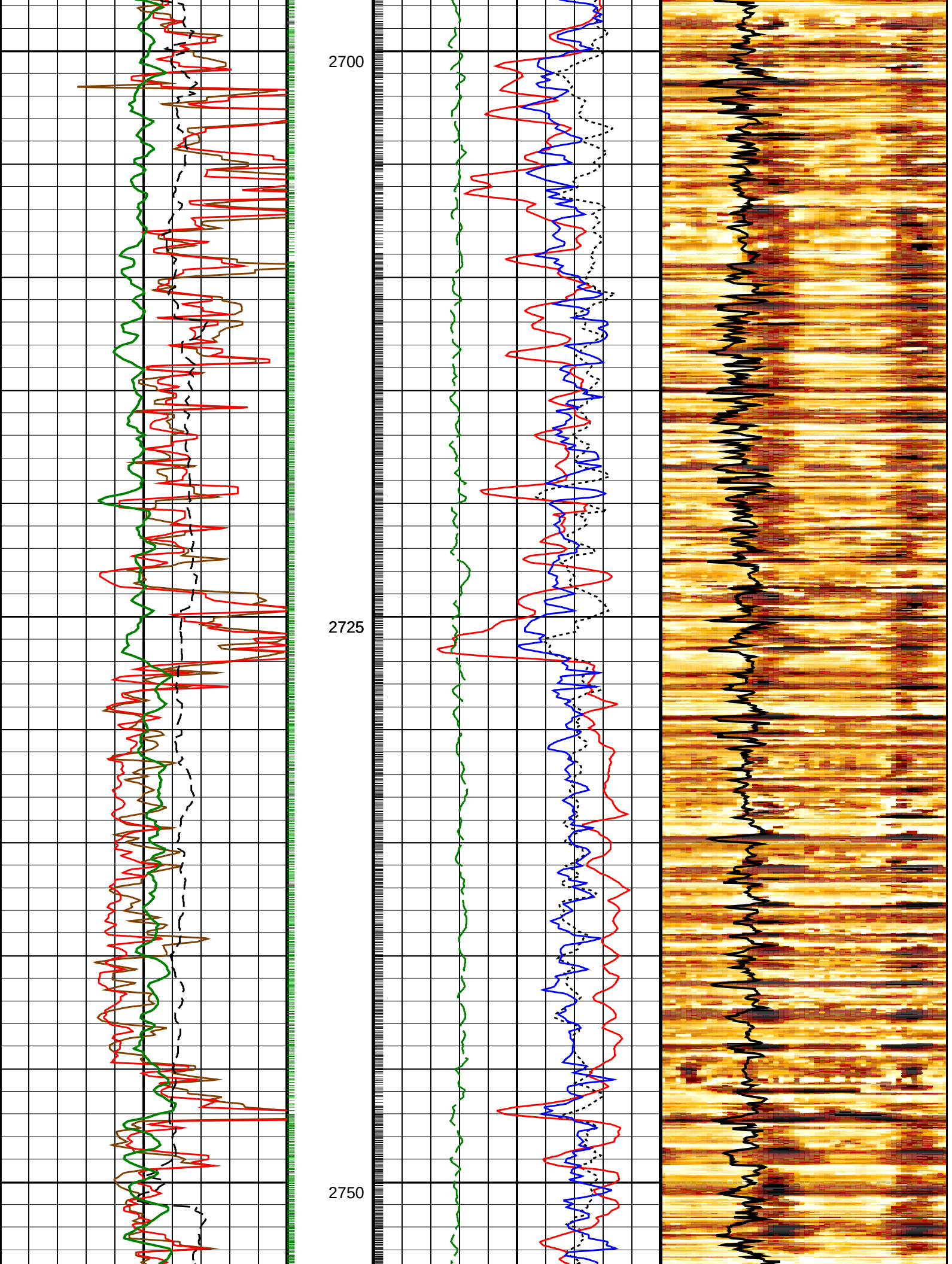

2425
2450

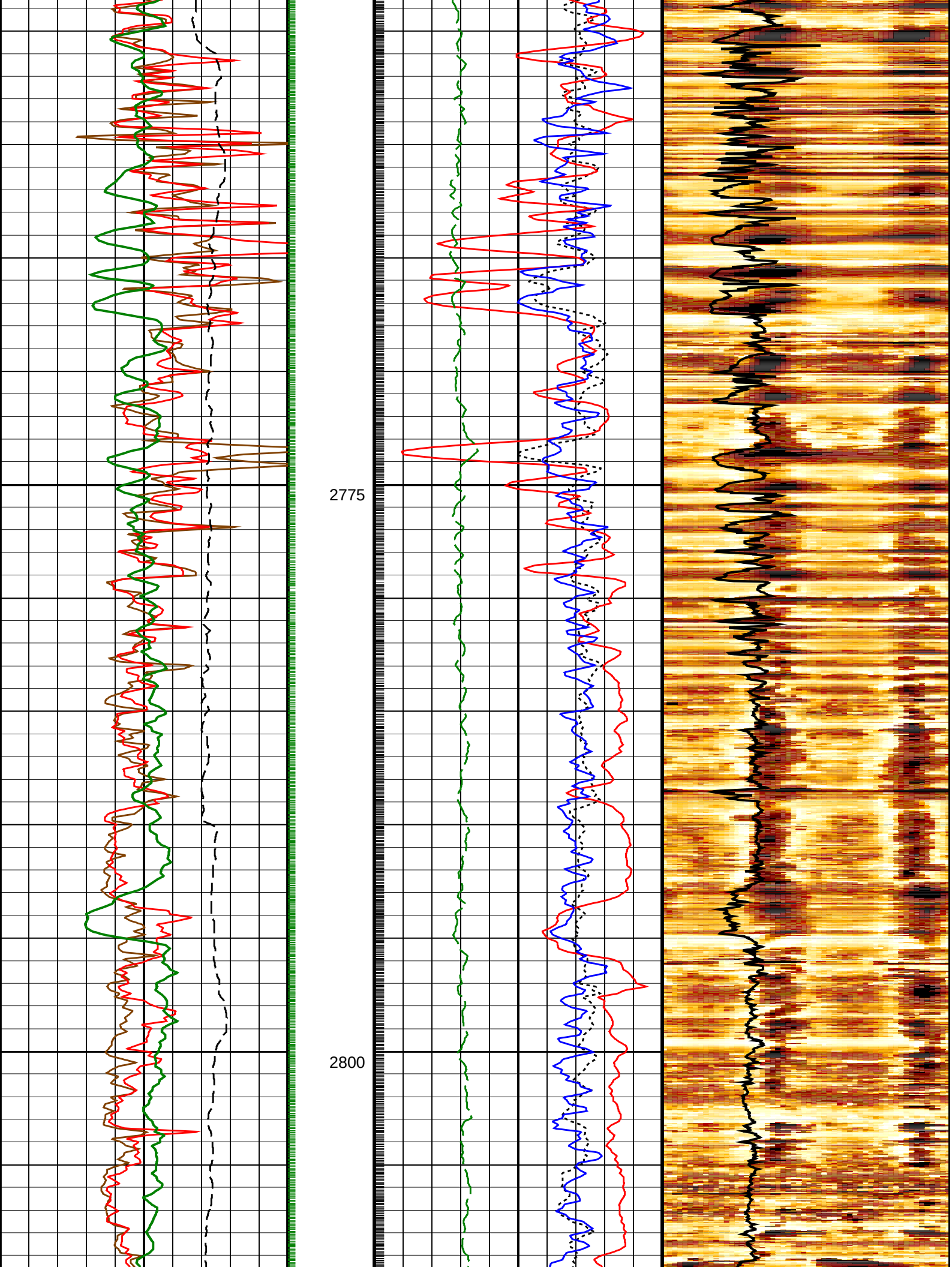

2475
2500
2525

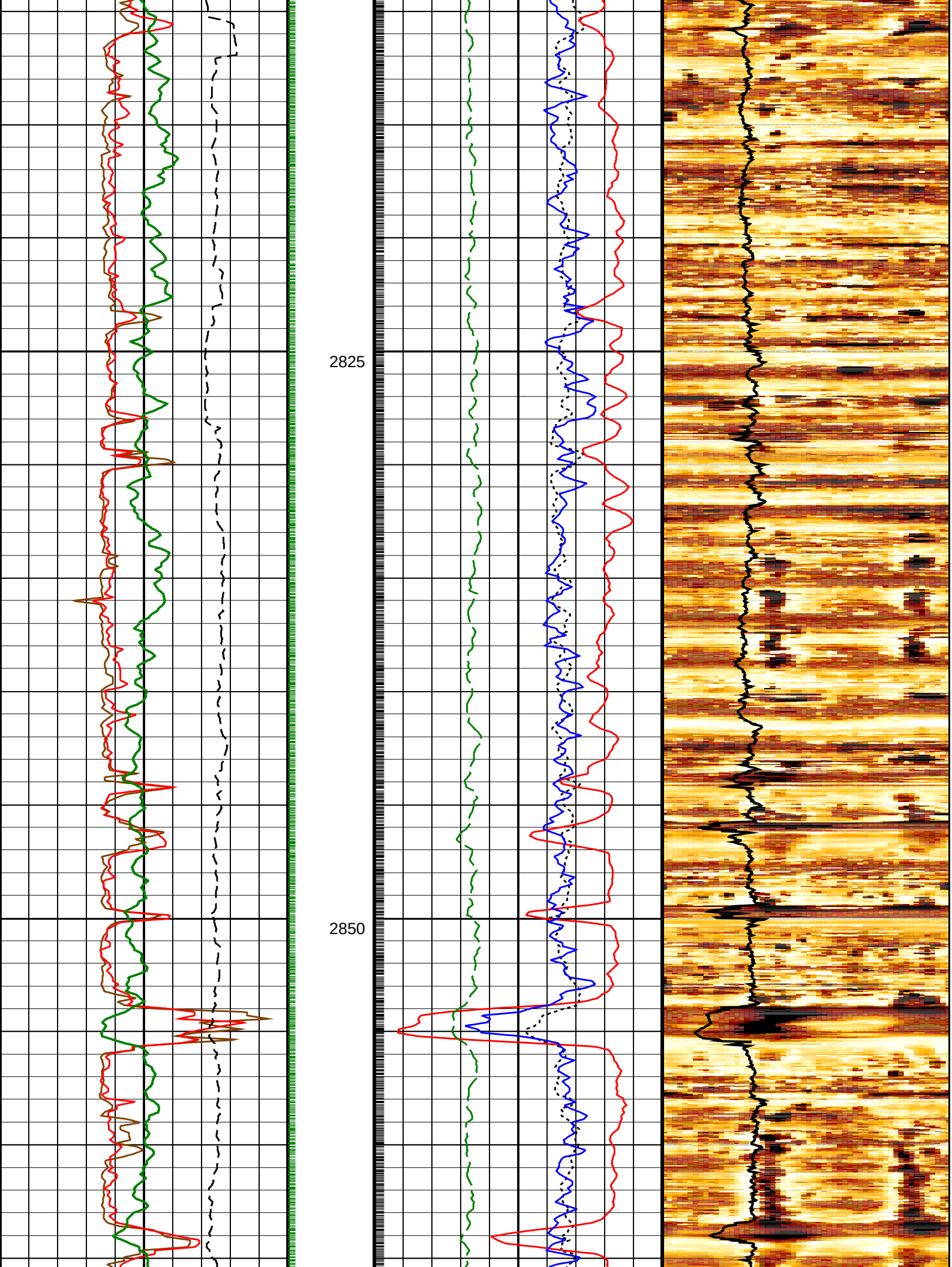

2550
2575

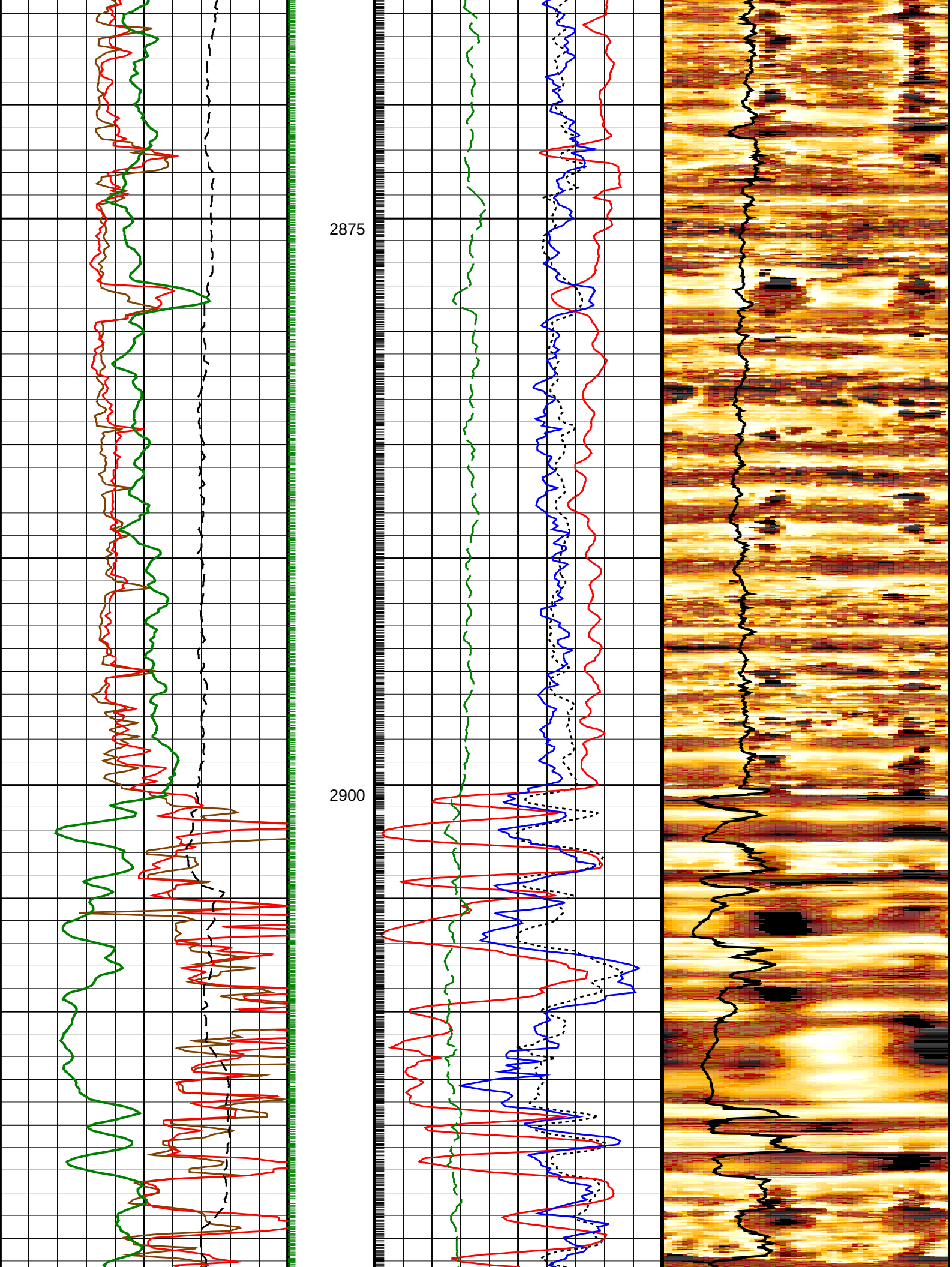

2600
2625

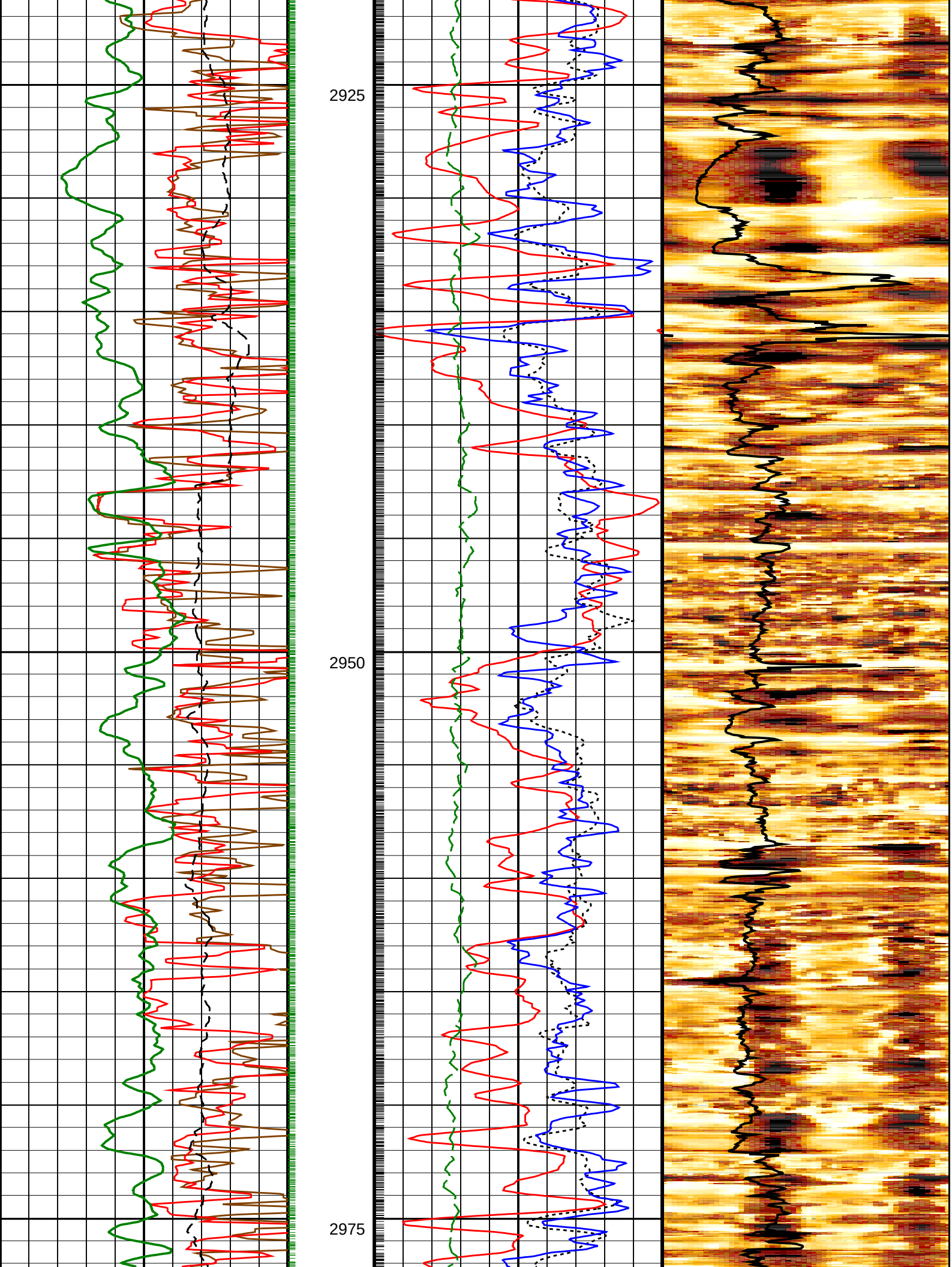

2650
2675

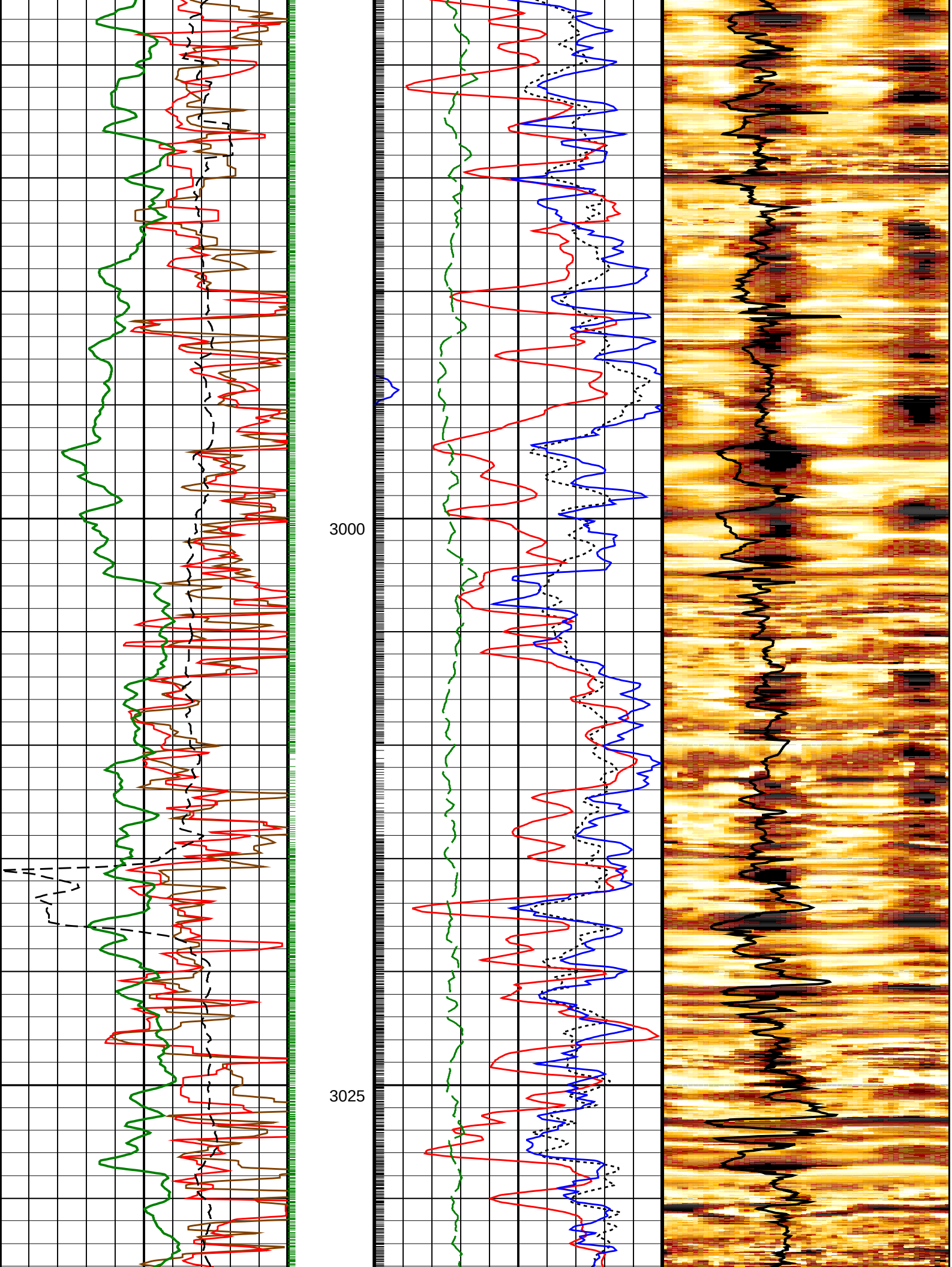

2700
2725
2750

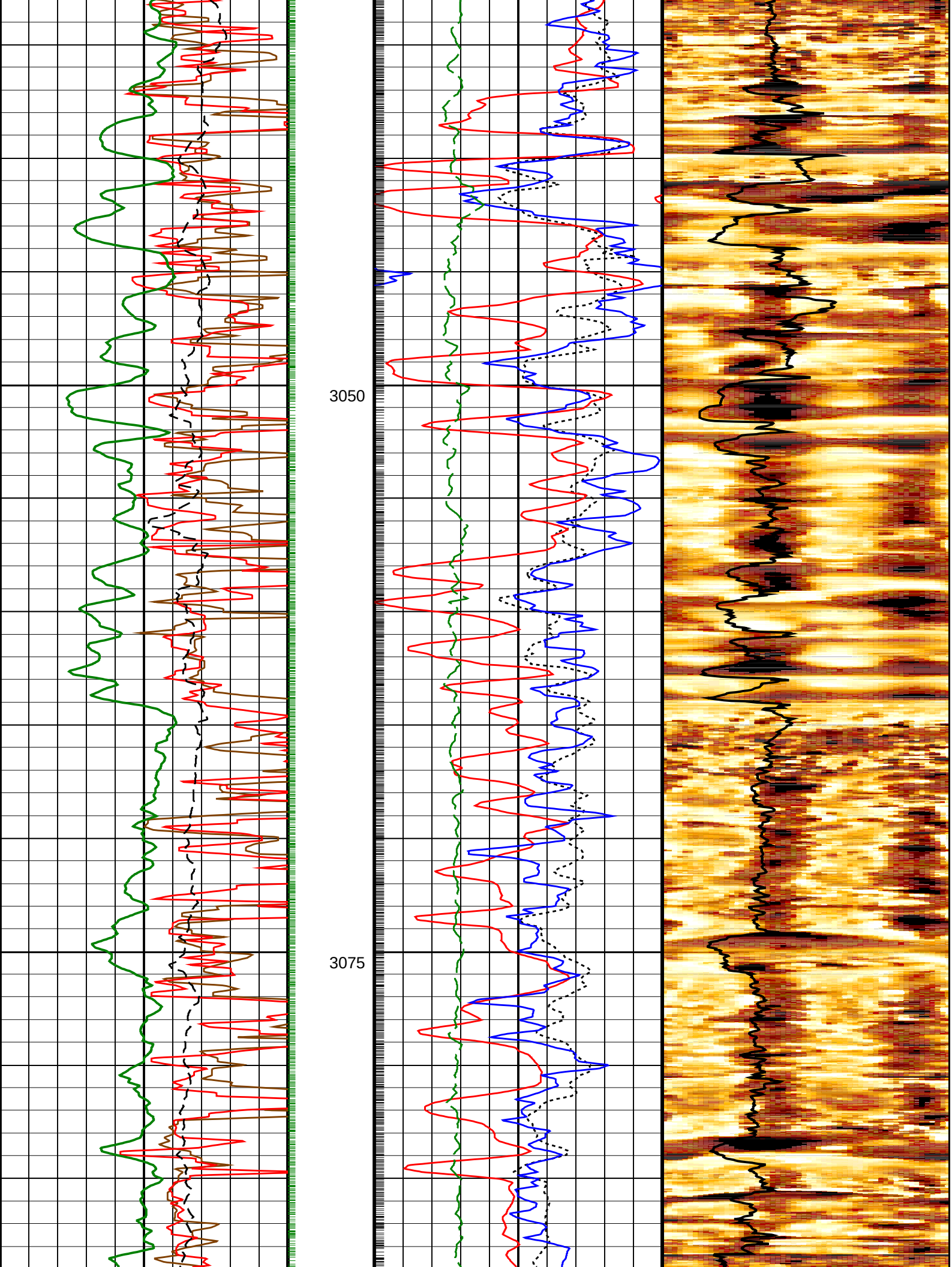

2775
2800

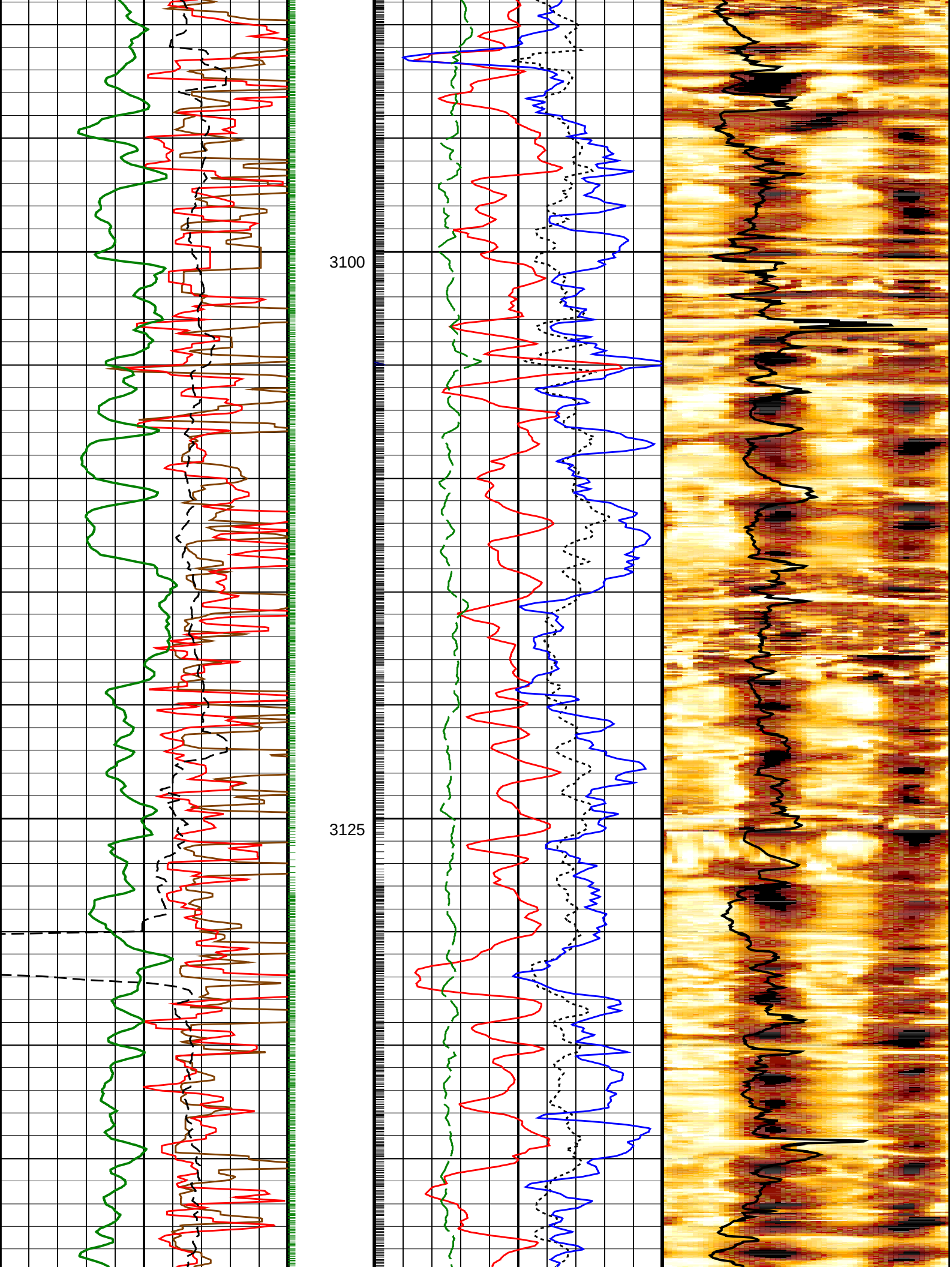

2825
2850

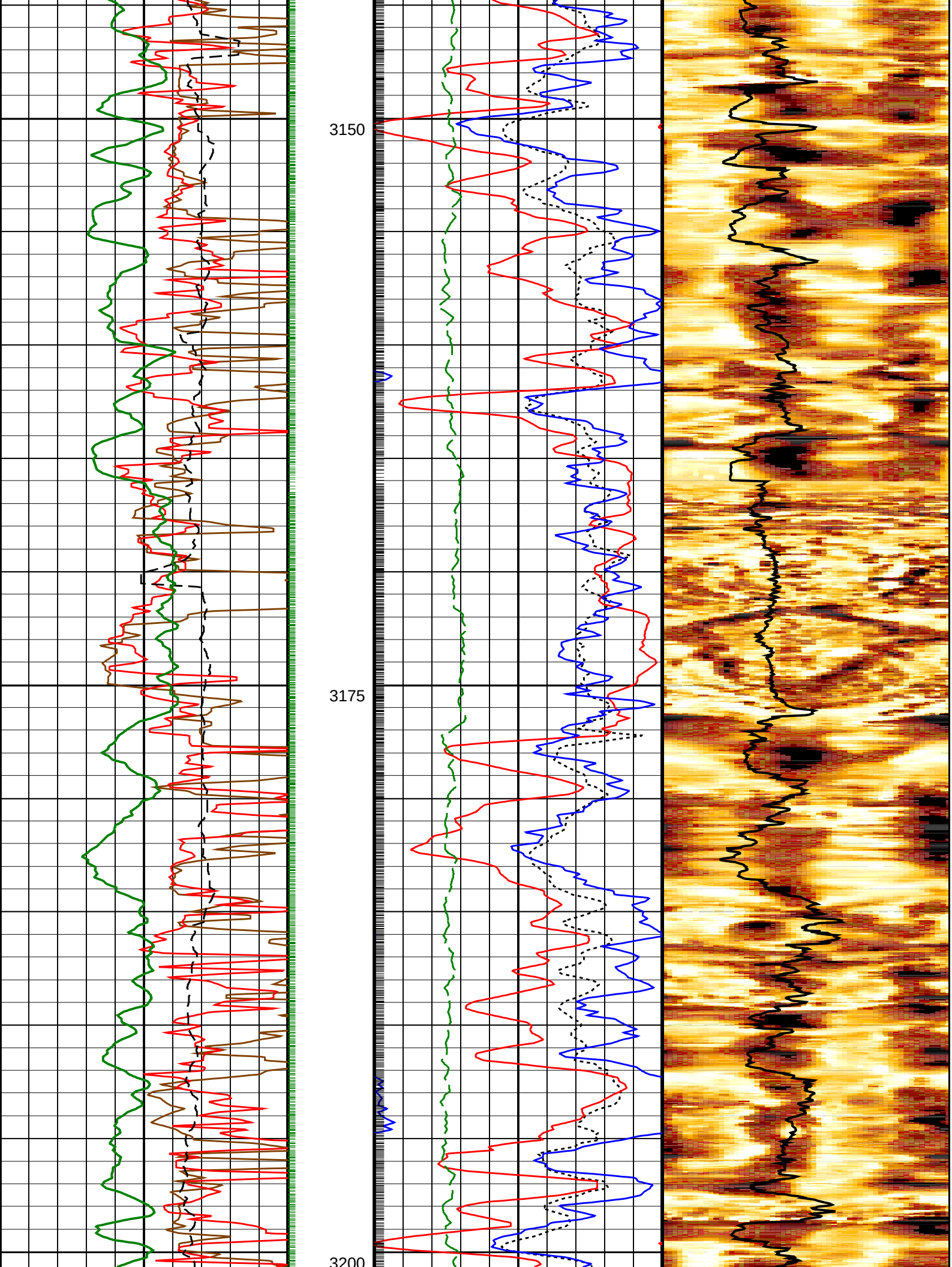

2875
2900

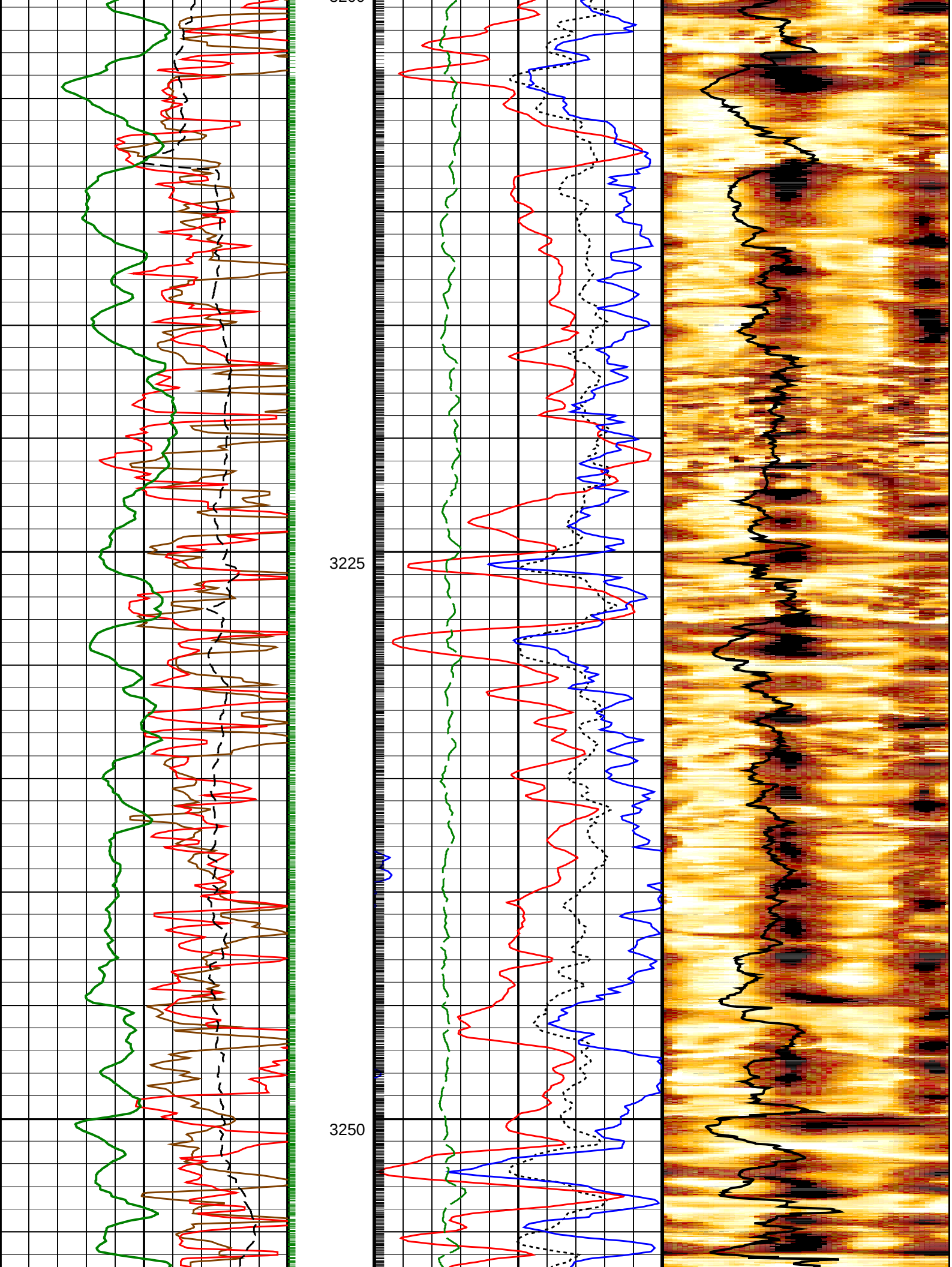

2925
2950
2975

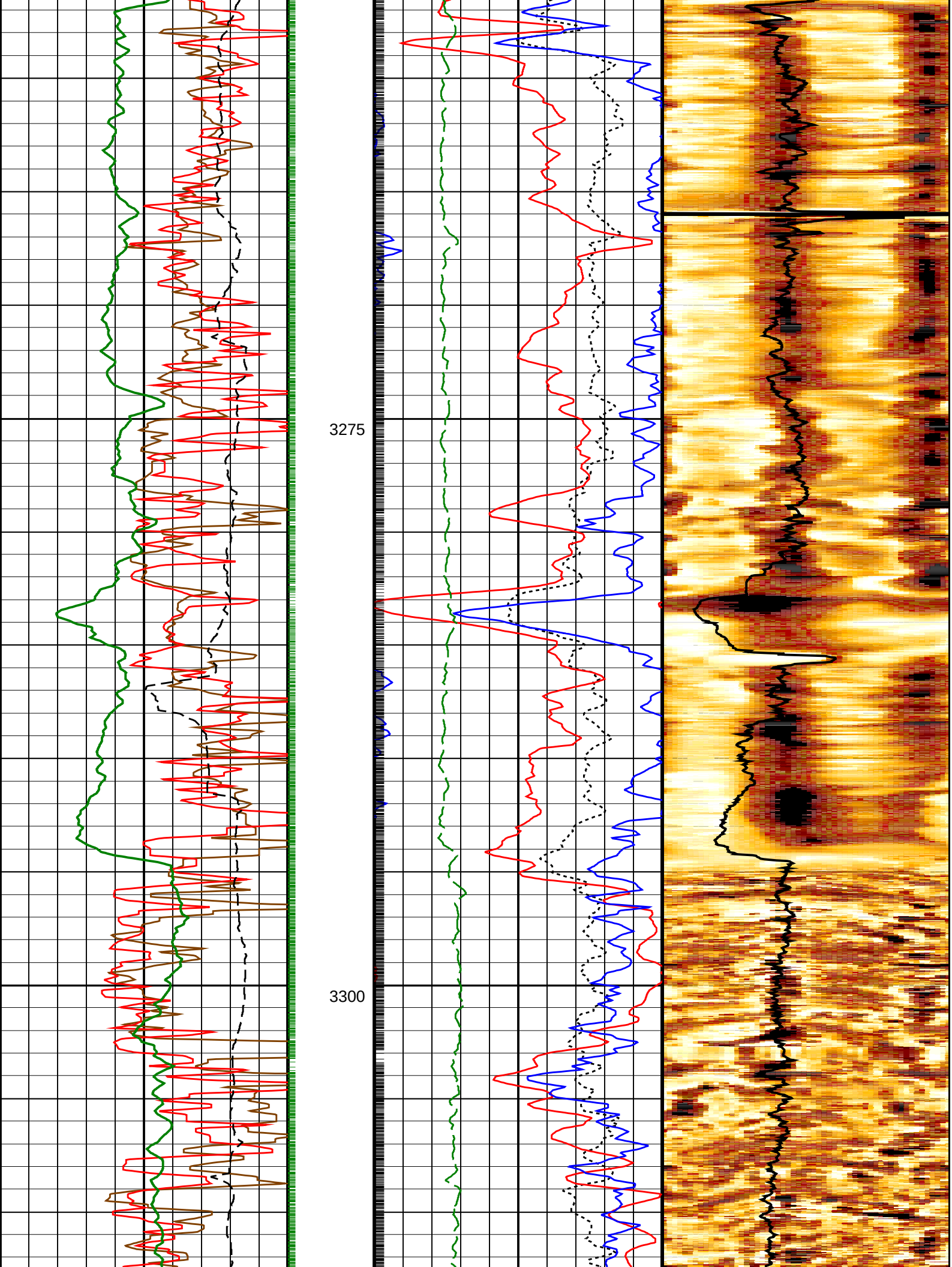

3000
3025

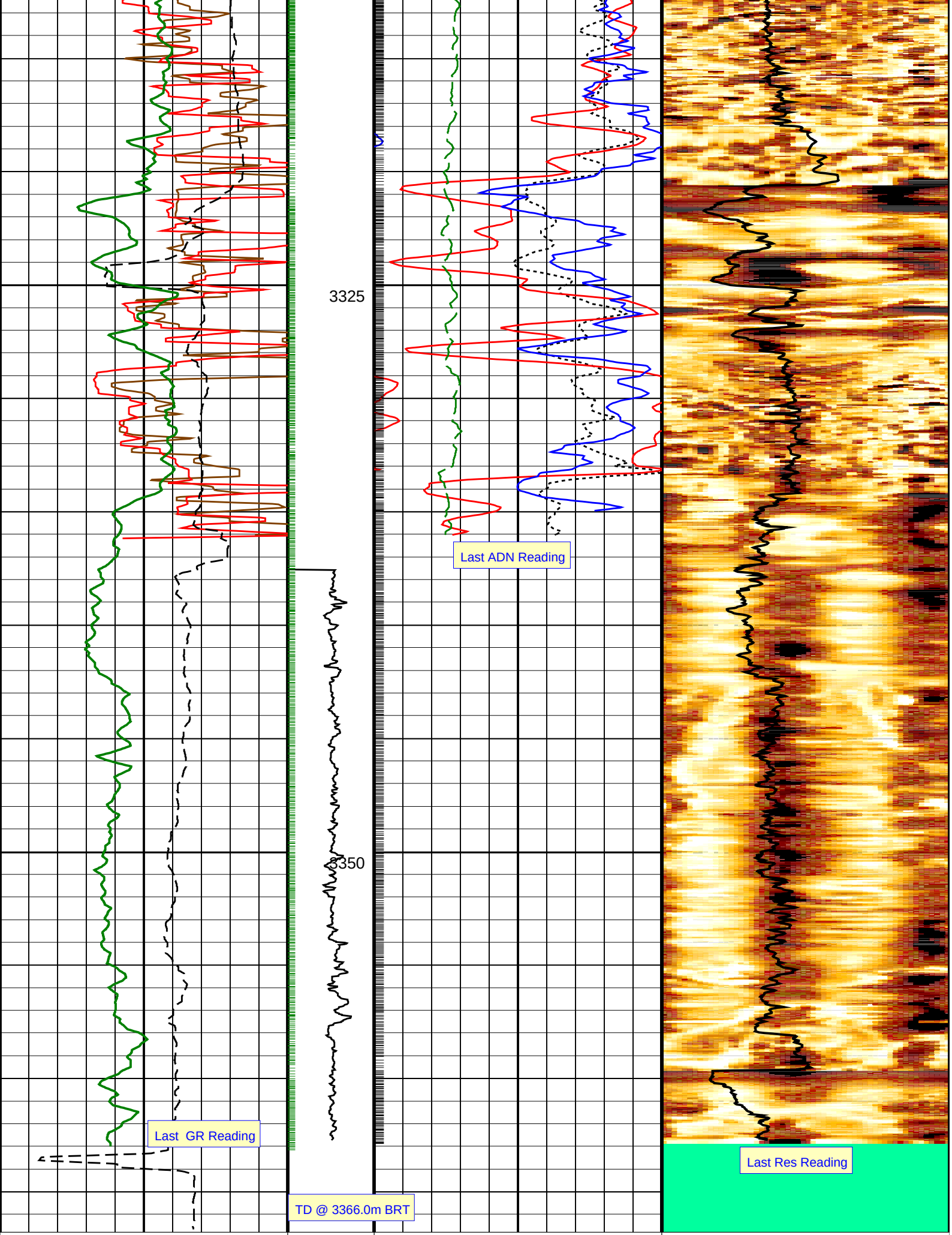

3050
3075


3100
3125


3150
3175
3200


3225
3250


3275
3300


3325
3350
Last ADN Reading
Last GR Reading
Last Res Reading
TD @ 3366.0m BRT
RAB
Rotational

Horizontal Hole Diameter (HORD)			Speed (RPM_RAB) (RPM)	Bulk Density Correction (DRHO)			Deep Button Resistivity (RES_BD)		
7	(IN)	12	0 200	−0.25	(G/C3)	0.25	0	(OHMM)	5
Vertical Hole Diameter (VERD)				Bulk Density (RHOB)			Conductive		Resistive (R3IM_DYN) (−−−−
7	(IN)	12		1.15	(G/C3)	2.15			
RAB Gamma Ray (GR_RAB)				Thermal Neutron Porosity (TNPH)					
0	(GAPI)	150		90	(PU)	30			
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)				Photoelectric Factor (PEF)					
100	(M/HR)	0		0	(−−−−	10			

PIP SUMMARY

Gamma Ray Samples

RAB samples

6.75−in. Azimuthal Density Neutron / Equipment Identification

Primary Equipment:		
Tool Name and Serial Number	ADN6 − CA	446
Collar Type and Serial Number	ADDC − AA	
Chassis Type and Serial Number	ADSE − EA	
Stabilizer Type and Serial Number	−	1
Neutron Logging Source	NSR − M	245
Density Logging Source	GSR − J/Z	2299
Stabilizer Size	8.25 − in.	
Calibration Status	AUTO −	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Density: Magnesium Block

Phase	LS window 3 − Mg CPS	Value	Phase	SS window 1 − Mg CPS	Value	Phase	SS window 3 − Mg CPS	Value
Master		1313	Master		3048	Master		7529
250.0 (Minimum)	4125 (Nominal) 8000 (Maximum)		700.0 (Minimum)	9350 (Nominal) 18000 (Maximum)		2500 (Minimum)	23750 (Nominal) 45000 (Maximum)	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Density: Aluminum Block

Phase	LS window 3 − Al CPS	Value	Phase	SS window 1 − Al CPS	Value	Phase	SS window 3 − Al CPS	Value
Master		200.5	Master		1574	Master		4775
50.00 (Minimum)	725.0 (Nominal) 1400 (Maximum)		500.0 (Minimum)	4250 (Nominal) 8000 (Maximum)		1500 (Minimum)	15750 (Nominal) 30000 (Maximum)	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Density: Background

Phase	LS window 3 − Background CPS	Value	Phase	SS window 1 − Background CPS	Value	Phase	SS window 3 − Background CPS	Value
Master		46.42	Master		127.9	Master		556.0
15.00 (Minimum)	82.50 (Nominal) 150.0 (Maximum)		40.00 (Minimum)	220.0 (Nominal) 400.0 (Maximum)		150.0 (Minimum)	825.0 (Nominal) 1500 (Maximum)	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Density: Water Block Check

Phase	Long spacing water density G/C3	Value	Phase	Short spacing water density G/C3	Value
Master		1.031	Master		1.126
1.024 (Minimum)	1.039 (Nominal) 1.054 (Maximum)		1.096 (Minimum)	1.126 (Nominal) 1.156 (Maximum)	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Neutron: 3−Point Calibration

Phase	Far 1 tube 1 Air Point Measure CPS	Value	Phase	Far 1 tube 1 Rod Point Measure CPS	Value	Phase	Far 1 tube 1 H2O Point Measure CPS	Value
Master		20.61	Master		5.202	Master		2.552
13.30	19.05 24.70		3.400	4.857 6.200		1.600	2.363 3.100	

Phase	Far 1 tube 2 Air Point Measure CPS	Value
Master		20.78
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 1 tube 2 Rod Point Measure CPS	Value
Master		5.118
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 1 tube 2 H2O Point Measure CPS	Value
Master		2.542
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 1 tube 3 Air Point Measure CPS	Value
Master		21.00
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 1 tube 3 Rod Point Measure CPS	Value
Master		5.380
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 1 tube 3 H2O Point Measure CPS	Value
Master		2.540
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 1 Air Point Measure CPS	Value
Master		20.42
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 1 Rod Point Measure CPS	Value
Master		5.234
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 1 H2O Point Measure CPS	Value
Master		2.483
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 2 Air Point Measure CPS	Value
Master		21.65
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 2 Rod Point Measure CPS	Value
Master		5.392
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 2 H2O Point Measure CPS	Value
Master		2.611
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 3 Air Point Measure CPS	Value
Master		19.60
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 3 Rod Point Measure CPS	Value
Master		5.074
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 3 H2O Point Measure CPS	Value
Master		2.430
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Near 1 tube 1 Air Point Measure CPS	Value
Master		499.0
	345.0 (Minimum) 487.5 (Nominal) 595.0 (Maximum)	

Phase	Near 1 tube 1 Rod Point Measure CPS	Value
Master		793.5
	535.0 (Minimum) 768.8 (Nominal) 925.0 (Maximum)	

Phase	Near 1 tube 1 H2O Point Measure CPS	Value
Master		354.9
	230.0 (Minimum) 343.7 (Nominal) 430.0 (Maximum)	

Phase	Near 2 tube 1 Air Point Measure CPS	Value
Master		533.9
	345.0 (Minimum) 487.5 (Nominal) 595.0 (Maximum)	

Phase	Near 2 tube 1 Rod Point Measure CPS	Value
Master		833.5
	535.0 (Minimum) 768.8 (Nominal) 925.0 (Maximum)	

Phase	Near 2 tube 1 H2O Point Measure CPS	Value
Master		377.9
	230.0 (Minimum) 343.7 (Nominal) 430.0 (Maximum)	

Master: 15−Sep−2007 14:09

6.75−in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		99.82
	90.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum)	

6.75−in. Resistivity At−the−Bit / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	RAB6 − CA	273
Calibration Status	−	

Master: 4−Sep−2007 17:50

6.75−in. Resistivity At−the−Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value
Master		0.9900
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	Ring/T2 factor	Value
Master		0.9969
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	M0/T1 factor	Value
Master		0.9964
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	M0/T2 factor	Value
Master		1.003
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	M2/T1 factor	Value
Master		0.9892
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	M2/T2 factor	Value
Master		0.9961
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	BTN shallow/T1 factor	Value
Master		0.9922
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	BTN shallow/T2 factor	Value
Master		0.9987
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	BTN medium/T1 factor	Value
Master		0.9973
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	BTN medium/T2 factor	Value	Phase	BTN deep/T1 factor	Value	Phase	BTN deep/T2 factor	Value
Master		1.004	Master		0.9892	Master		0.9956

0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Master: 4−Sep−2007 17:50

6.75−in. Resistivity At−the−Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		1.075

0.7500 (Minimum)	1.000 (Nominal)	1.250 (Maximum)

SCHLUMBERGER

Survey report 17-Oct-2007 15:00:08 Page 1 of 2

Client.....: Japan Agency for Marine-Earth Science and Tech
Field.....: Nankai-Kumano

Well.....: C0002A
API number.....: 07CHS0064
Engineer.....: M. Jakulj/C. Xi/Q.G. Ming

Rig:.....: Chikyu
STATE:.....: Japan

Spud date.....: 13-Oct-07
Last survey date.....: 17-Oct-07
Total accepted surveys...: 30
MD of first survey.....: 1993.00 m
MD of last survey.....: 3339.09 m

----- Survey calculation methods----------
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor

----- Depth reference -----------
Permanent datum.....: Mean Sea Level
Depth reference.....: Drill Floor
GL above permanent.....: -1964.50 m
KB above permanent.....: 28.50 m
DF above permanent.....: 28.50 m

----- Vertical section origin----------
Latitude (+N/S-).....: 0.00 m
Departure (+E/W-).....: 0.00 m

----- Platform reference point----------
Latitude (+N/S-).....: 0.00 m
Departure (+E/W-).....: 0.00 m

Azimuth from Vsect Origin to target: 0.00 degrees

----- Geomagnetic data ----------
Magnetic model.....: BGGM version 2007
Magnetic date.....: 06-Oct-2007
Magnetic field strength..: 916.75 HCNT
Magnetic dec (+E/W-).....: -6.50 degrees
Magnetic dip.....: 46.65 degrees

----- MWD survey Reference Criteria ---------
Reference G.....: 999.59 mGal
Reference H.....: 916.75 HCNT
Reference Dip.....: 46.65 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections ----------
Magnetic dec (+E/W-).....: -6.50 degrees
Grid convergence (+E/W-).: 0.00 degrees
Total az corr (+E/W-)....: -6.50 degrees
(Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

[(c)2007 IDEAL ID12_0C_12]
SCHLUMBERGER Survey Report 17-Oct-2007 15:00:08 Page 2 of 2

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
1	1993.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	None
2	2000.77	0.34	313.18	7.77	7.77	0.02	0.02	-0.02	0.02	313.18	0.44	MWD	None
3	2115.82	0.75	277.77	115.05	122.81	0.35	0.35	-1.01	1.07	289.14	0.04	MWD	None
4	2231.12	0.95	278.99	115.30	238.10	0.60	0.60	-2.70	2.77	282.56	0.02	MWD	None
5	2271.98	0.93	280.92	40.86	278.96	0.72	0.72	-3.36	3.44	282.05	0.01	MWD	None
6	2348.80	0.95	271.40	76.82	355.77	0.85	0.85	-4.61	4.69	280.46	0.02	MWD	None
7	2383.17	1.09	267.46	34.37	390.13	0.84	0.84	-5.22	5.29	279.18	0.05	MWD	None
8	2420.17	1.05	264.57	37.00	427.12	0.80	0.80	-5.91	5.97	277.67	0.02	MWD	None
9	2458.22	1.09	262.91	38.05	465.17	0.72	0.72	-6.62	6.66	276.20	0.01	MWD	None
10	2499.11	1.23	266.27	40.89	506.05	0.64	0.64	-7.44	7.47	274.93	0.04	MWD	None
11	2536.07	1.20	266.85	36.96	543.00	0.60	0.60	-8.23	8.25	274.14	0.01	MWD	None
12	2559.83	1.21	264.21	23.76	566.76	0.56	0.56	-8.72	8.74	273.65	0.02	MWD	None
13	2615.89	1.34	266.60	56.06	622.80	0.46	0.46	-9.97	9.98	272.63	0.03	MWD	None
14	2652.28	1.33	264.85	36.39	659.18	0.39	0.39	-10.81	10.82	272.09	0.01	MWD	None
15	2727.25	1.55	265.28	74.97	734.13	0.23	0.23	-12.69	12.69	271.05	0.03	MWD	None
16	2765.75	1.67	265.81	38.50	772.61	0.15	0.15	-13.77	13.77	270.62	0.03	MWD	None
17	2842.01	1.75	268.78	76.26	848.84	0.04	0.04	-16.04	16.04	270.16	0.02	MWD	None
18	2880.16	1.76	269.22	38.15	886.97	0.02	0.02	-17.21	17.21	270.08	0.00	MWD	None
19	2918.36	2.06	251.55	38.20	925.15	-0.20	-0.20	-18.45	18.45	269.37	0.17	MWD	None
20	2957.11	2.50	231.03	38.75	963.87	-0.95	-0.95	-19.76	19.79	267.24	0.24	MWD	None
21	2996.34	2.87	228.70	39.23	1003.06	-2.14	-2.14	-21.17	21.27	264.23	0.10	MWD	None
22	3033.69	3.24	223.89	37.35	1040.35	-3.52	-3.52	-22.60	22.87	261.15	0.12	MWD	None
23	3071.10	4.01	215.60	37.41	1077.69	-5.34	-5.34	-24.10	24.68	257.50	0.25	MWD	None

24	3107.78	4.13	214.75	36.68	1114.28	-7.47	-7.47	-25.59	26.66	253.73	0.04	MWD	None
25	3145.52	4.05	228.85	37.74	1151.92	-9.47	-9.47	-27.37	28.96	250.92	0.27	MWD	None
26	3182.24	4.69	225.98	36.72	1188.53	-11.36	-11.36	-29.43	31.55	248.89	0.18	MWD	None
27	3223.37	4.67	227.41	41.13	1229.53	-13.66	-13.66	-31.87	34.68	246.79	0.03	MWD	None
28	3262.38	4.21	232.90	39.01	1268.42	-15.60	-15.60	-34.18	37.57	245.47	0.16	MWD	None
29	3301.01	4.01	252.09	38.63	1306.95	-16.87	-16.87	-36.60	40.30	245.25	0.36	MWD	None
30	3339.09	4.25	250.24	38.08	1344.93	-17.76	-17.76	-39.19	43.03	245.62	0.07	MWD	None

Company:
Japan Agency for Marine−Earth Science and Technology

Schlumberger

Well: **C0002A**
Field: **Nankai−Kumano**
Rig: **Chikyu**
Country: **Japan**

8 1/2 in. LWD Hole
GeoVISION Service − Image
Recorded Mode Log 1:200 Measured Depth

Geomarket	CHG	Location	CHS
Job Date	12−Oct−2007	Customer	JAMSTEC
Rig	Chikyu	Field/Well	Nankai−Kur
Engineer	Mario Jakulj/Chen Xi/QG Ming	Job Number	07CHS006

Operation

Presentation

Description of Well – Names, Geometry, Services, Location and Ref
Header, user of trademarks, directional data, well plot, order of compone
sensor to toolface angle recorded

Equiment and Software Description
Tool sketch, equipment numbers, software versions, data rates, filtering

Processing Traceability and Environment Description
Acquisition environment, parameters and key constants for each run or z
remarks

Annotations, Presented Formats, QC Curves, Print Quality
Documented splice points; data gap explanations, mud changes, movem
selection

Calibration and Verifications

Calibration / Before survey verification / After survey verification
Validity, completeness (includes equipment number), timeliness, unedite

Operating Procedures

Depth Control
Comparison with driller's depth, other logs, other bit runs, between RT ar
listing

Logging speed and sampling rates
As recommended in reference manual or job planner. No loss of data or

Data Comparison
Between runs and passes, with data from nearby wells, other conveyanc

Operating Anomalies/Failure/Missing Data/Sensor Orientation/Trans
Absence of noise and spurious variations, anomaly repeated, corrected,

Digital Delivery

Digital Products
Labeled, verification listing with complete digital record, backup for archi
hard copy.

Job Quality Rating (JQR)
Number of boxes without number X 10

Environmental effects

Irregular Operation
Excessive ROP or speed, high deviation, shocks, vibrations, sticking con

Borehole Geometry
Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Cas

Borehole Fluid
Barite, KCl, salinity, additives, gas cut, unstable

Interferences
External noise, nearby casing or drillpipe, debris, unusual formation com

Operation Outside Tool Specifications
Geomarket Temperature, pressure, hole size, hole deviation, dog−leg sev
value of parameter

Environmental Quality Rating (EQR)
Number of boxes without number X 20

Data Quality Report

mano/C0002A

4

Type of Measurement

When data does not meet standards, put a number in the colum corresponding to the measurement with a corresponding number and remark below. Use additional pages for remarks
Positive remarks are welcome; do not append them with a number.

	Res	GR	APWD	Neu	Den
erences; General Content nts, spelling and style, units					
weights					
one, complete and relavant					
ent indicator, color					
d, descrepency explained					
nd RM. Depth summary					
spatial resolution					
ce, mud log and markers					
smission Losses reported or explained.					
val; record matches					
	100	100	100	100	100
ditions					
ing, tubing conditions					
position					
verity, flow rate, rpm, solids					
	100	100	100	100	100

Remarks

Cell Manager: Mario Jakulj FSM: ND Maduemezia

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002