Schlumberger

Company:

Japan Agency for Marine−Earth Science and Technology

Well: **C0001D**

Field: **Nankai−Kumano**

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

Company: JAMSTEC
Well: C0001D
Location: Philippines Sea
Field: Nankai−Kumano
Rig: Chikyu

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

Location

Total depth:	3202 m
Spud date:	02−Oct−07
Runs:	1 To 1

Elevation

K.B.	Top Drive
G.L.	−2197.5 mMSL
D.F.	28.5 m

Permanent datum:	Mean Sea Level	Elev.: 0 m m
Log measured from:	Drill Floor	28.5 m m above Perm. datum
Depth reference:	Driller's Depth	

Service Order no.		Longitude	Latitude
07CHS0064		E 136° 42.7040'	N 33° 14.3286'

Depth logged:	2226 m To 3202 m	Mag decl:	−6.47° deg.
Date logged:	02−Oct−07 To 06−Oct−07	Mag dip:	46.55° deg.

Other services:
D&I, Drilling Mechanics

Bore hole record

Hole size	from	to
8.5 in.	2226 m	3202 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	2226 m	3202 m

Borehole deviation record

Min	Max	from	to
0 deg.	3.49 deg.	2226 m	3202 m

Surface equipment

Unit	OLU_0504
Depth system	Geograph

Software record

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

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

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN1
Cont. DNI
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 Recorded 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.

Tight Spots were encountered during this run

GVR Image is True North oriented

POOH due to TD called @3202m.

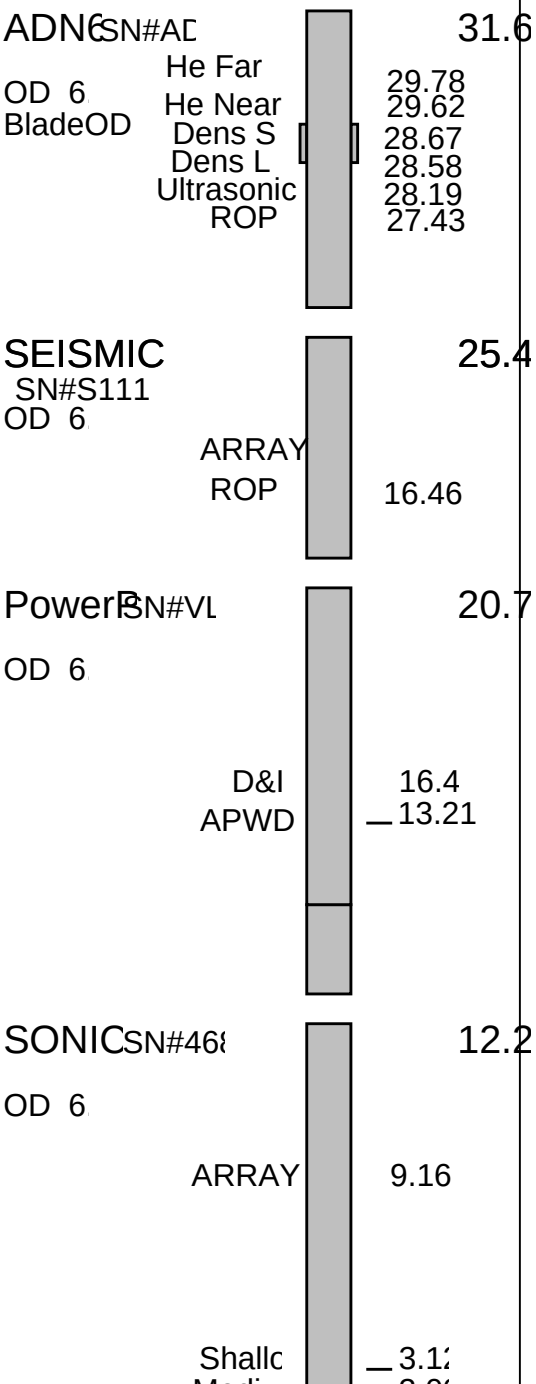
Pump time:90.25hrs

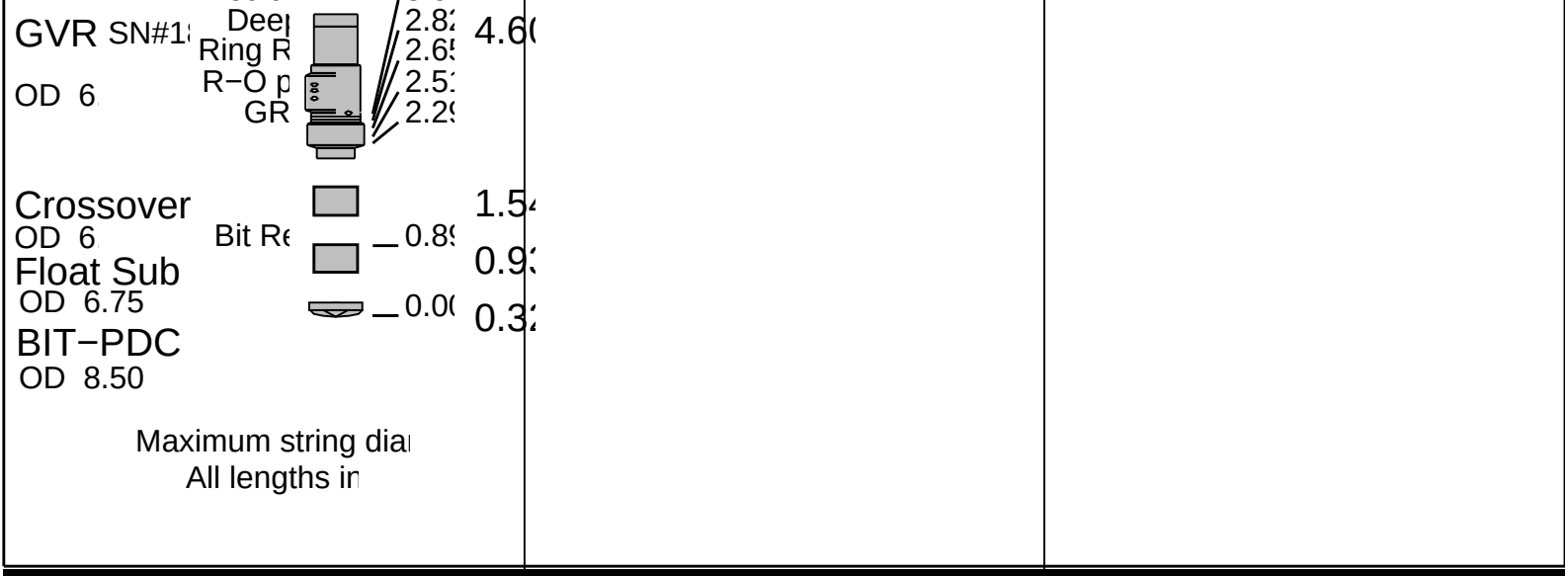
Drill time:54.09hrs

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE E





Bit Run Summary

Run number		1									
Bit size	in.	8.5									
Bit start depth	m	2226.0									
Bit end depth	m	**3202.0**									
Top interval logged	m	**2226.0**									
Bottom interval logged	m	3171.5									
Begin log: time		06:10									
Begin log: date		2−Oct−07									
End log: time		10:34									
End log: date		6−Oct−07									
Mud data											
Depth	m	3030									
Type		Seawater									
Mud weight	SG	1.05									
Solids		na									
Chlorides		na									
Rm	ohm.m@degC	0.080@20									
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	degC	14									
Mud salinity		na									
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	Kai−Chi Yang							

Variable Name	Variable Description	Run Name & Value
Run Number		**1**
General Information		
BHT_RM	Bottom Hole Temperature (RM)	57.199993
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)	
TD_RM	Total Measured Depth (RM)	7561.023438
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	8.250000
RAB/STAB_SIZE/PARAMETER	RAB: Stabilizer Diameter	8.125000
BDBHCA	RAB: Button Deep Borehole A Factor	0.004226
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	0.075935
BITBHCB	RAB: Bit B Borehole Factor	0.000000
BIT_K_FACT	RAB: Bit K Factor	3.610288
BMBHCA	RAB: Button Medium Borehole A Factor	0.023093
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000
BSBHCA	RAB: Button Shallow Borehole A Factor	0.022710
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	0.004846
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	YES
HI_DLIS_OU	RAB: Allow Hi−Resolution DLIS Image Data Output	YES
HI_RIVER_O	RAB: Allow Hi−Resolution River for Image Data Output	YES
IMAGE_MAX_	RAB: GR Image Maximum Scale Value	120.000000
IMAGE_MAX_	RAB: Image Maximum Resistivity Value	10.000000
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	−6.470011
MAG_INCL_R	RAB: Magnetic Dip	46.550014
MBUTTON_K_	RAB: Button Medium K Factor	0.005516
OBM	RAB: Oil base Mud	NO
ORIENTATIO	Rab Image Orientation	NORTH
RABBDA0	RAB: Button Deep A0 Coeff	−0.031120
RABBDA1	RAB: Button Deep A1 Coeff	0.016180
RABBDA2	RAB: Button Deep A2 Coeff	−0.004388
RABBDA3	RAB: Button Deep A3 Coeff	0.000515
RABBDA4	RAB: Button Deep A4 Coeff	−0.000021
RABBDA5	RAB: Button Deep A5 Coeff	0.000000
RABBDMIN	RAB: Button Deep Minimum Value	0.051343
RABBITA0	RAB: Bit A0 Coeff	0.520409
RABBITA1	RAB: Bit A1 Coeff	−0.401220
RABBITA2	RAB: Bit A2 Coeff	0.185568
RABBITA3	RAB: Bit A3 Coeff	−0.038059
RABBITA4	RAB: Bit A4 Coeff	0.002835
RABBITA5	RAB: Bit A5 Coeff	0.000000
RABBITMIN	RAB: Bit Minimum Value	18.909023
RABBMA0	RAB: Button Medium A0 Coeff	−0.041047
RABBMA1	RAB: Button Medium A1 Coeff	0.019863
RABBMA2	RAB: Button Medium A2 Coeff	−0.005074
RABBMA3	RAB: Button Medium A3 Coeff	0.000569
RABBMA4	RAB: Button Medium A4 Coeff	−0.000022
RABBMA5	RAB: Button Medium A5 Coeff	0.000000
RABBMMIN	RAB: Button Medium Minimum Value	0.059753
RABBSA0	RAB: Button Shallow A0 Coeff	−0.056621
RABBSA1	RAB: Button Shallow A1 Coeff	0.026331

RABBSA2	RAB: Button Shallow A2 Coeff	−0.006409
RABBSA3	RAB: Button Shallow A3 Coeff	0.000689
RABBSA4	RAB: Button Shallow A4 Coeff	−0.000026
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000
RABBSMIN	RAB: Button Shallow Minimum Value	0.086745
RABDHS	RAB Down Hole Software	4.000000
RABEC	RAB: Resistivity Env−Cor	YES
RABRNGA0	RAB: RING A0 Coeff	−0.024267
RABRNGA1	RAB: RING A1 Coeff	0.012219
RABRNGA2	RAB: RING A2 Coeff	−0.003297
RABRNGA3	RAB: RING A3 Coeff	0.000388
RABRNGA4	RAB: RING A4 Coeff	−0.000016
RABRNGA5	RAB: RING A5 Coeff	0.000000
RABRNGMIN	RAB: Ring Minimum Value	1.706779
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	NO
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]	0.000000
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?	NO
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]	0.000000
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?	NO
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	8.234908
RINGBHCA	RAB: Ring Borehole A Factor	0.160293
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	0.163039
SBUTTON_K_	RAB: Button Shallow K Factor	0.007432
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	0.200000
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ
DTMUD	Delta−T for Mud	196.000000
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	1.000000
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

C0001D Record Mode Image MD200

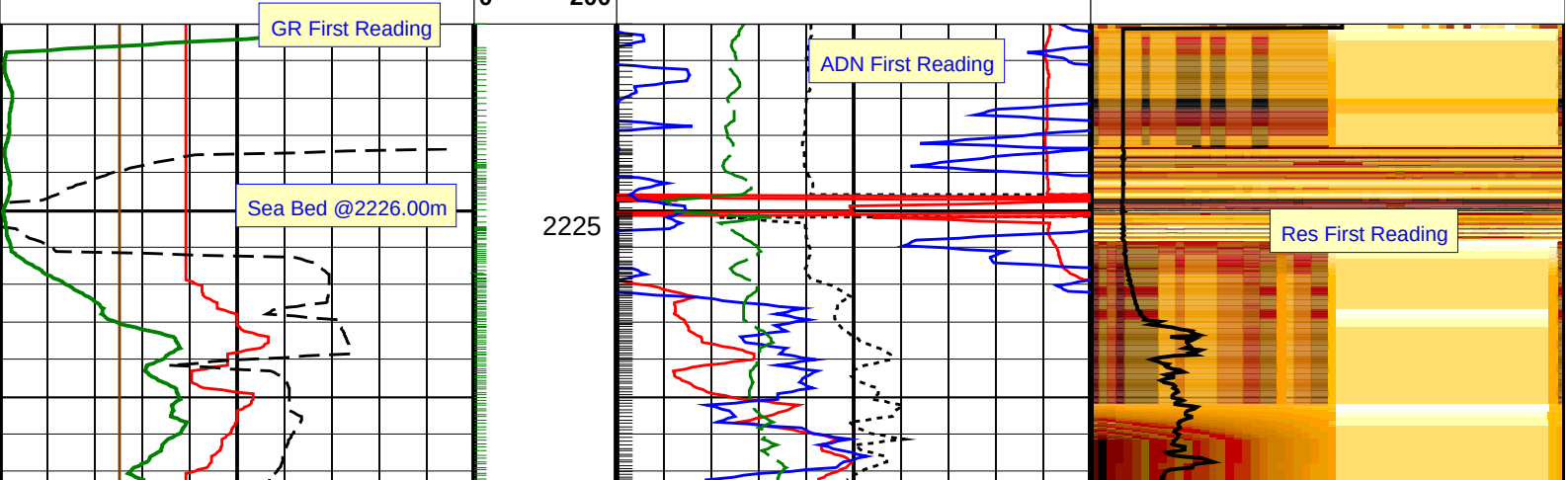
IDEAL Version: ID12_0C_12 <MD > Vertical Scale: 1:200 — **Graphics File Created: 24−Nov−2007 10:50**

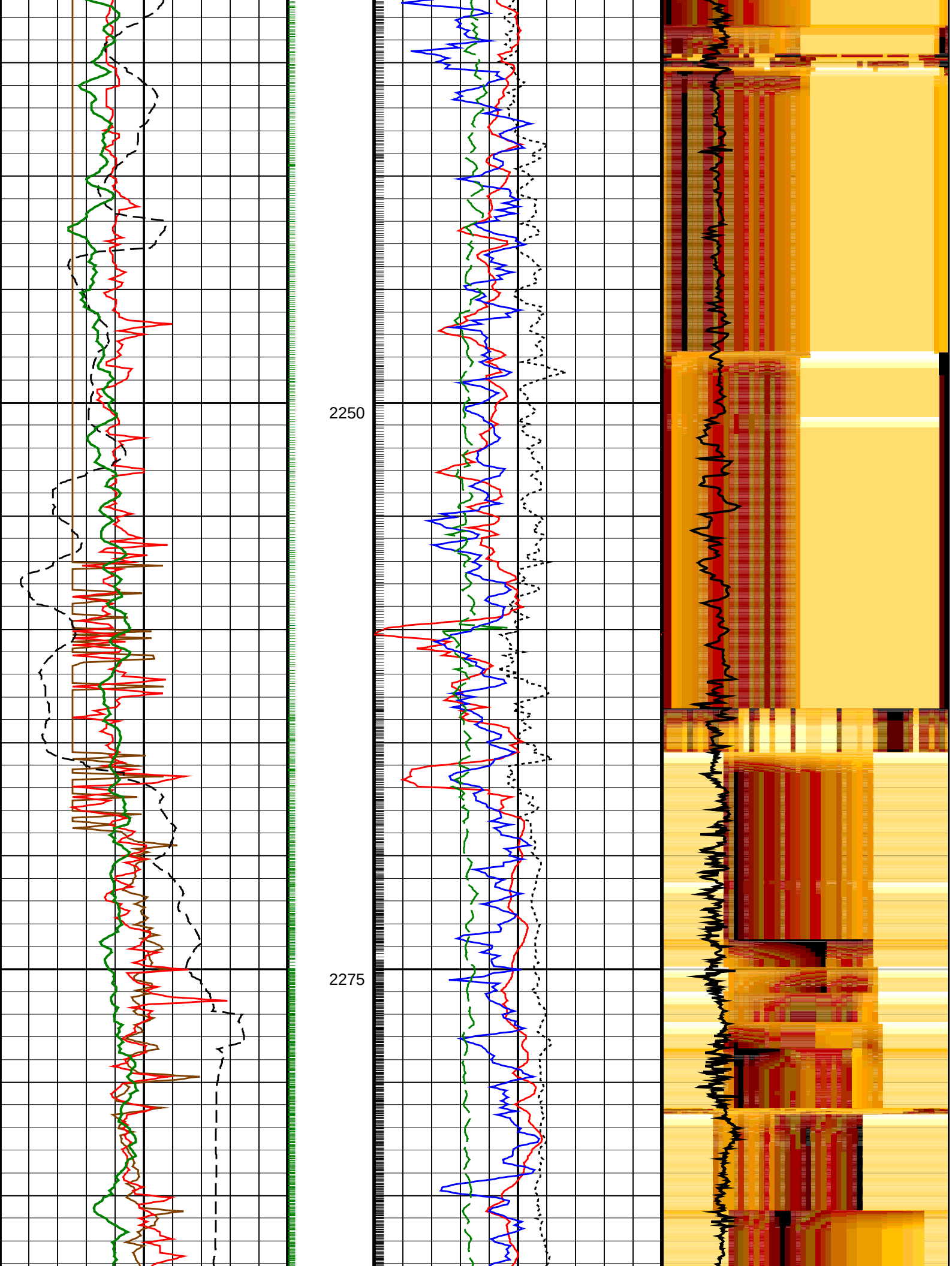
PIP SUMMARY

Gamma Ray Samples

RAB samples

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

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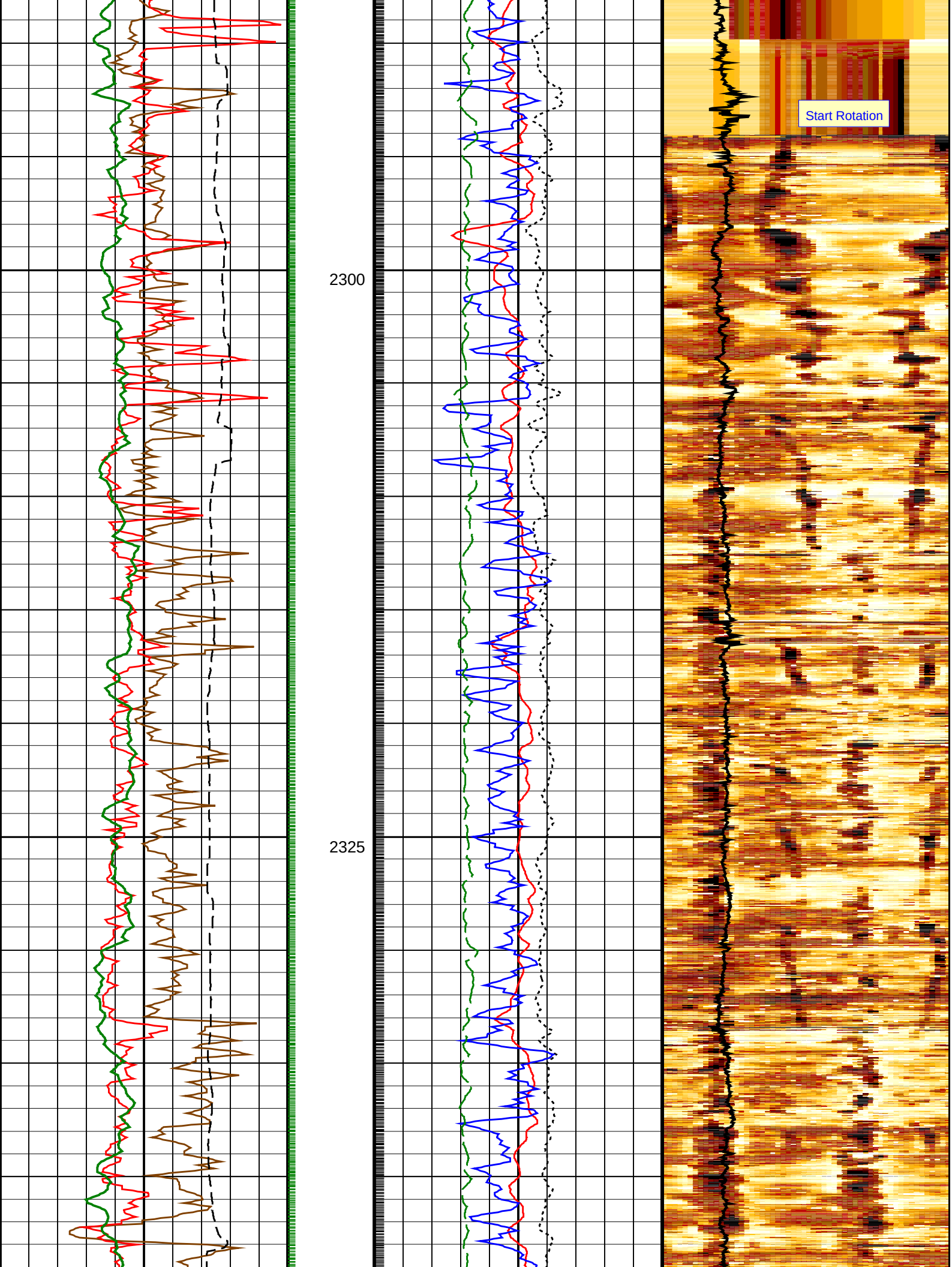
2275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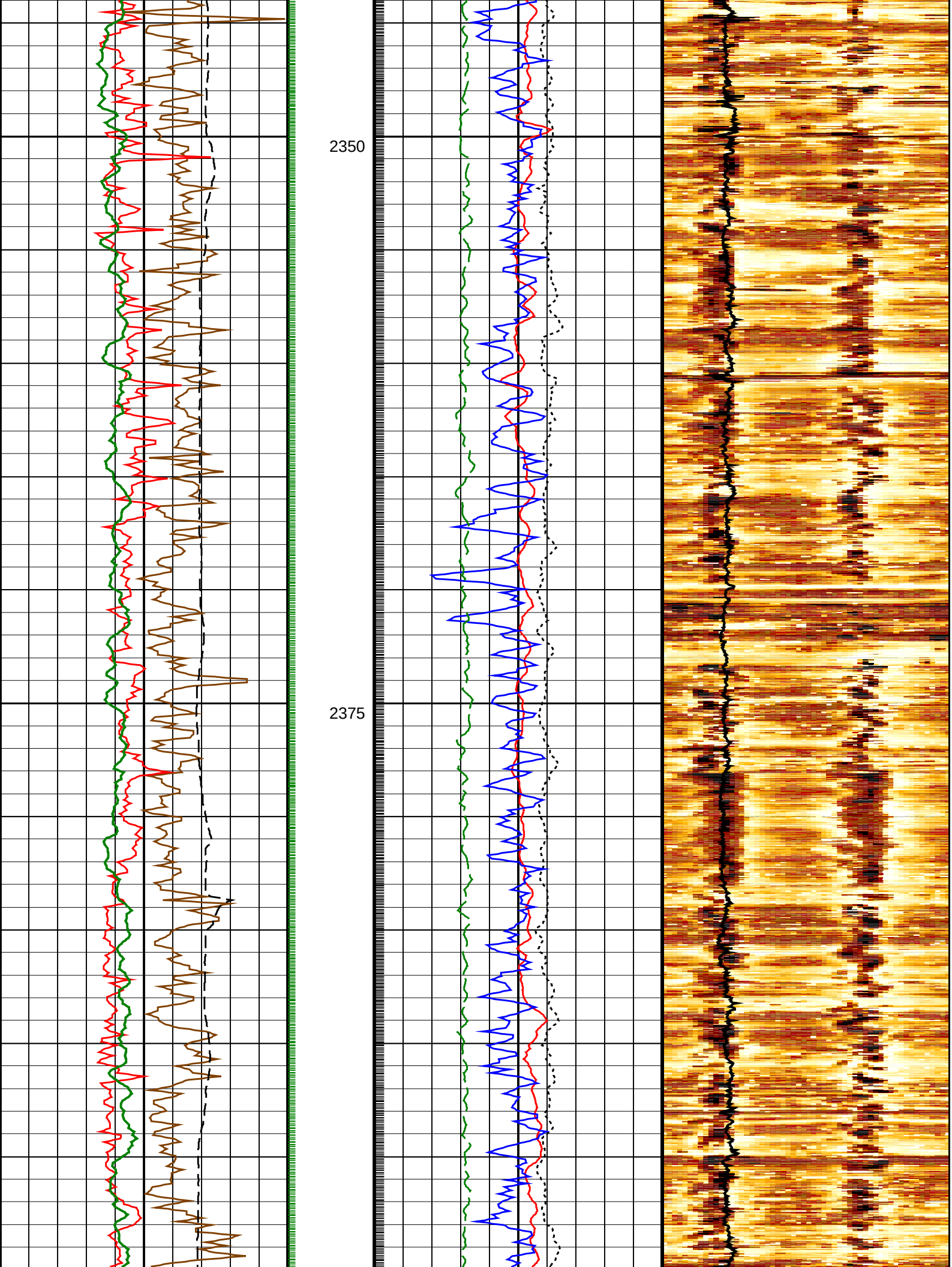
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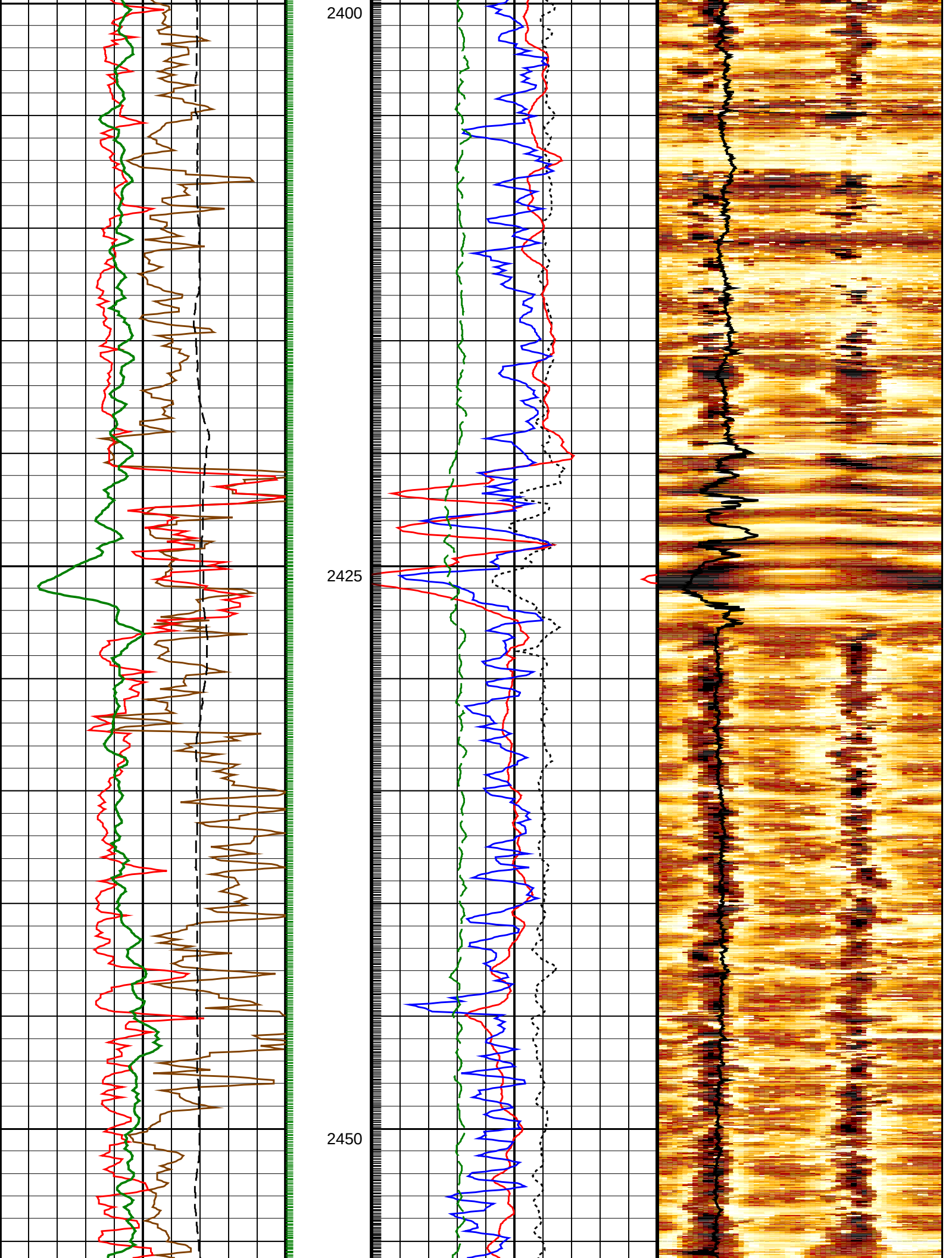
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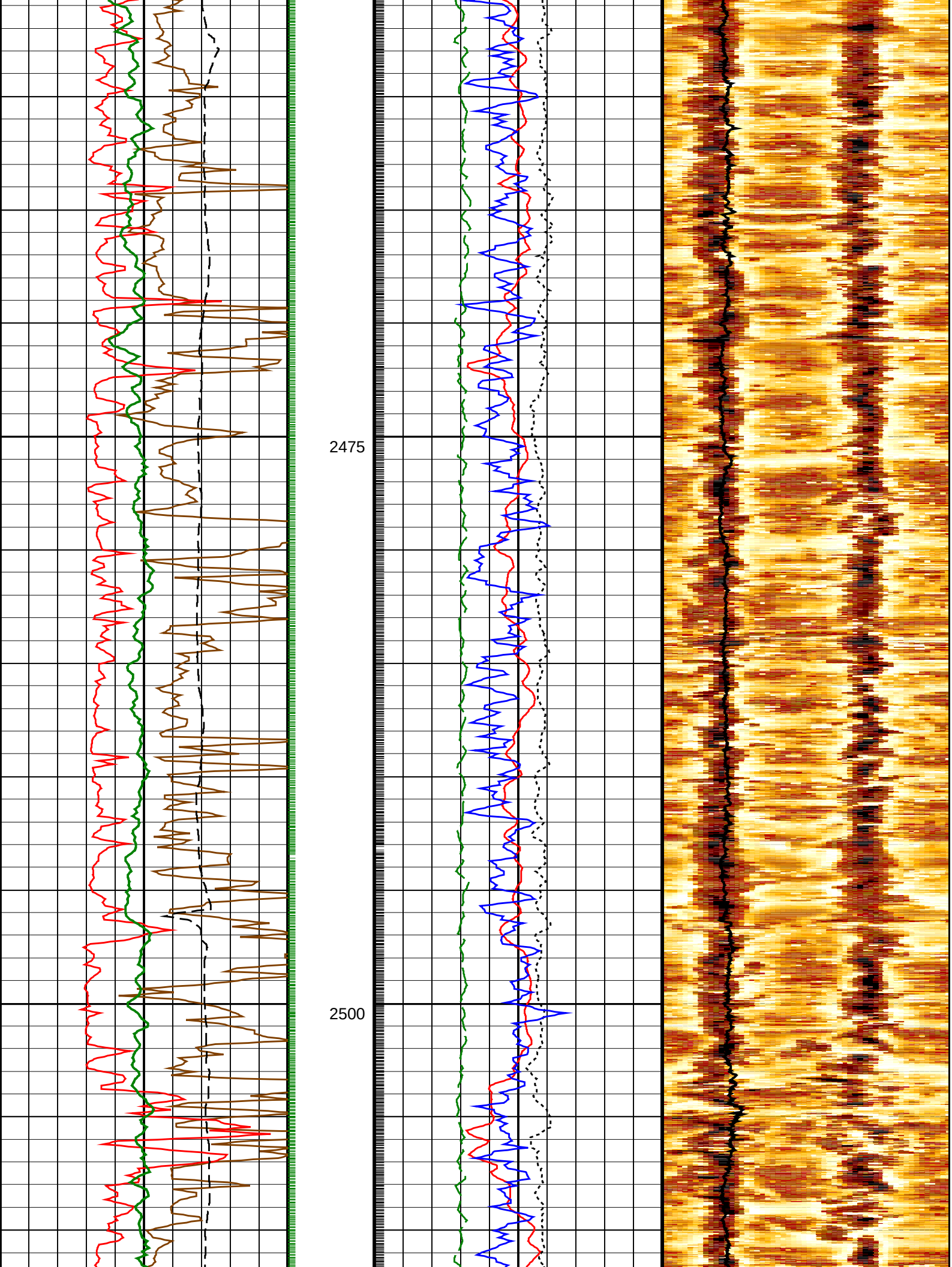
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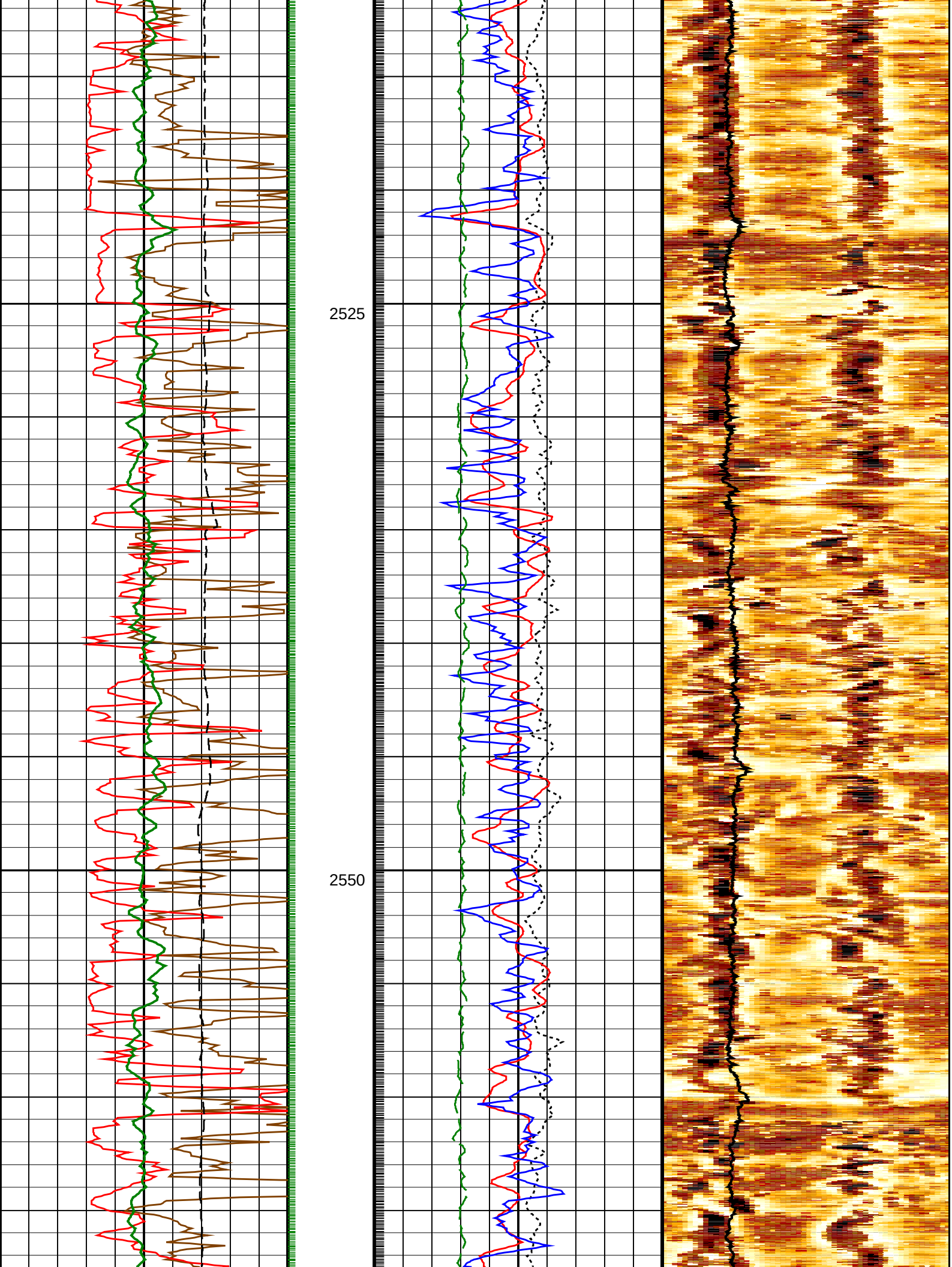
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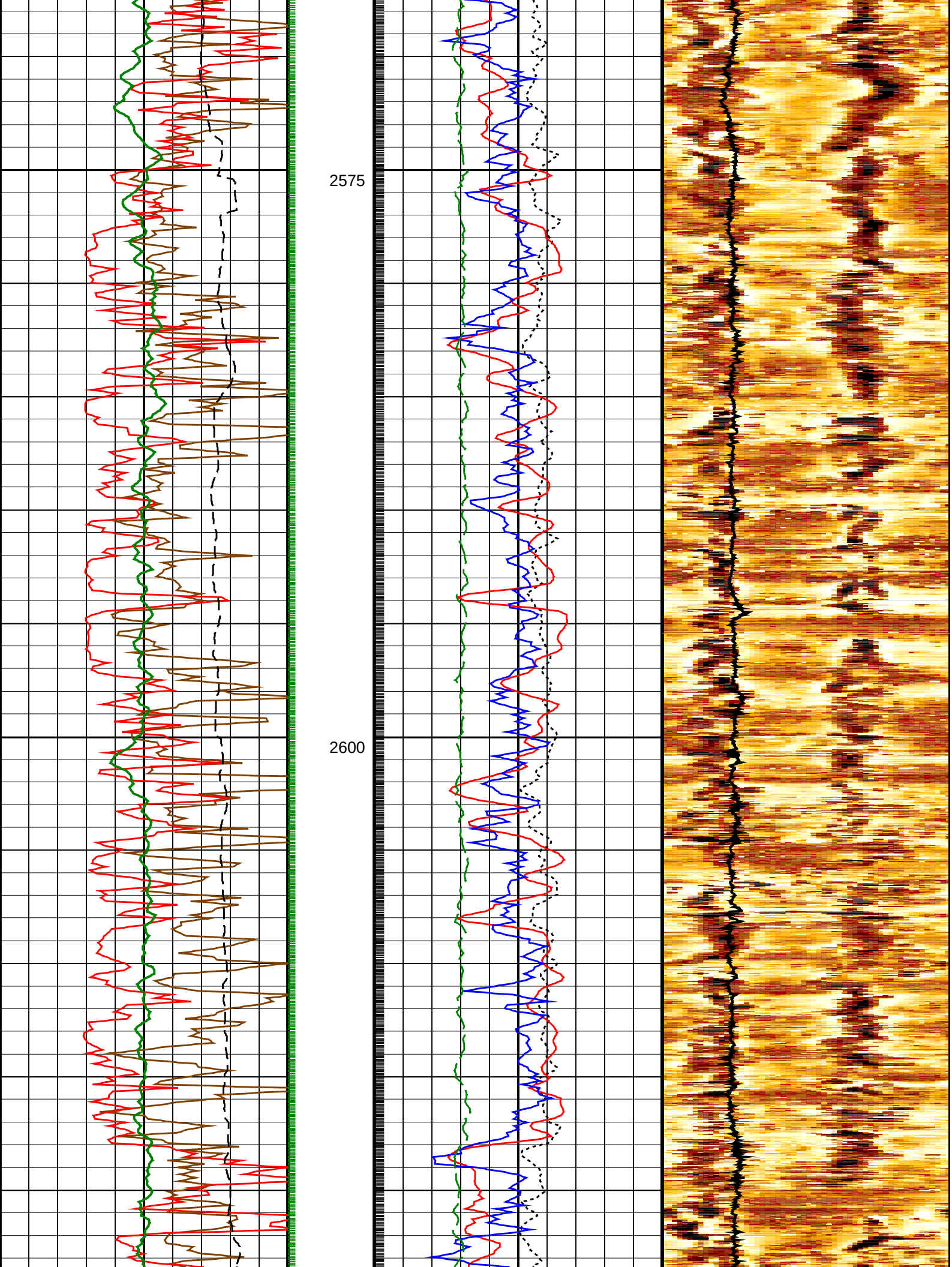
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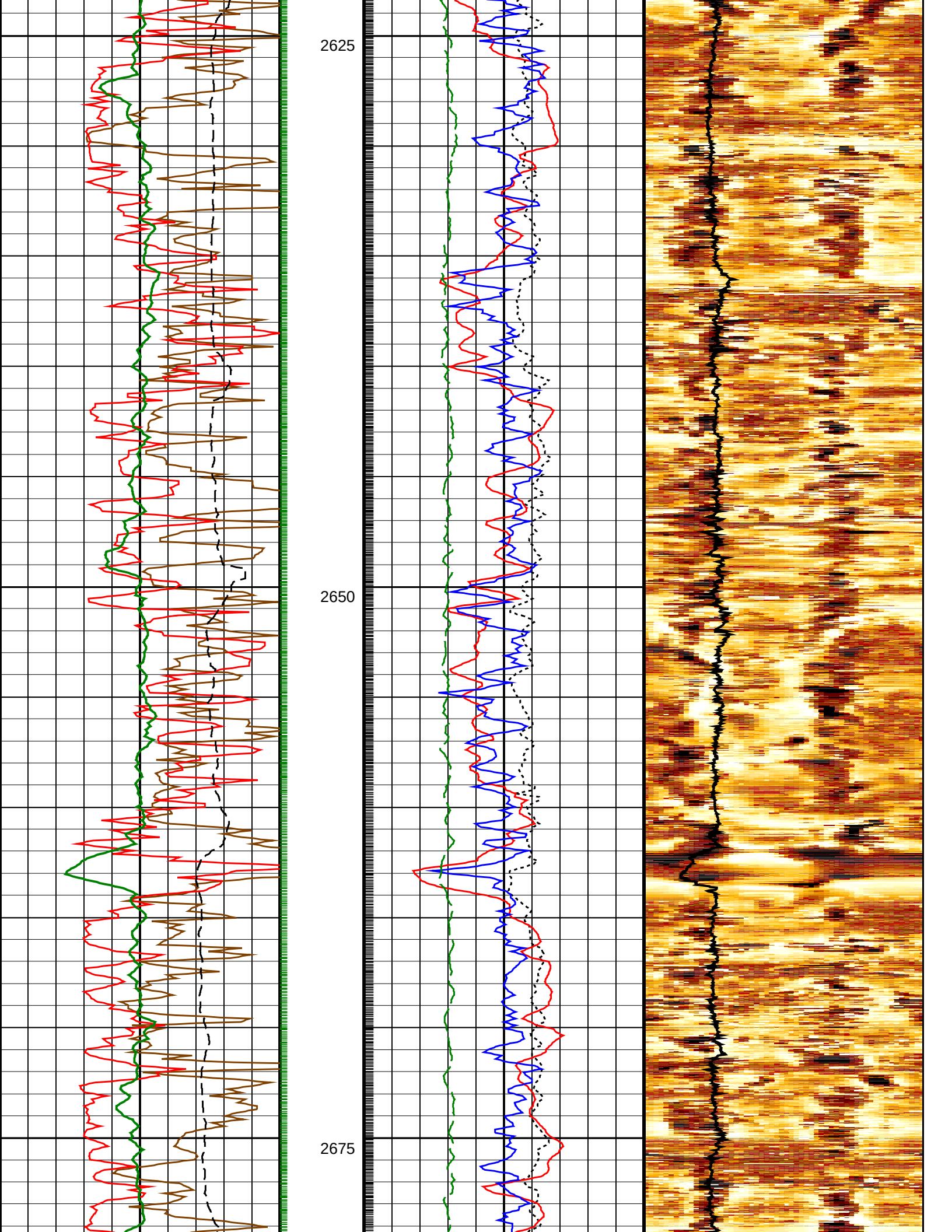
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2650
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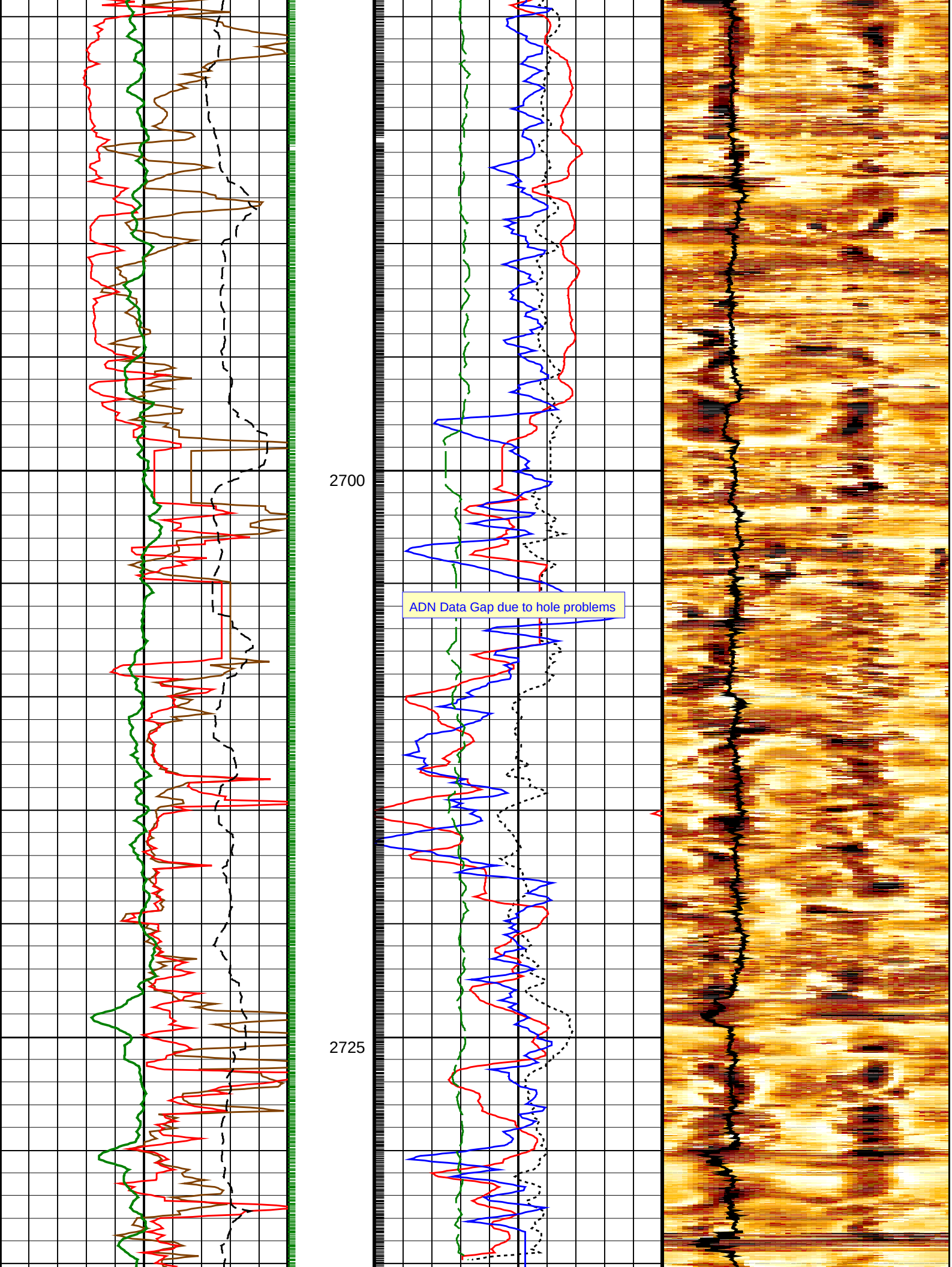
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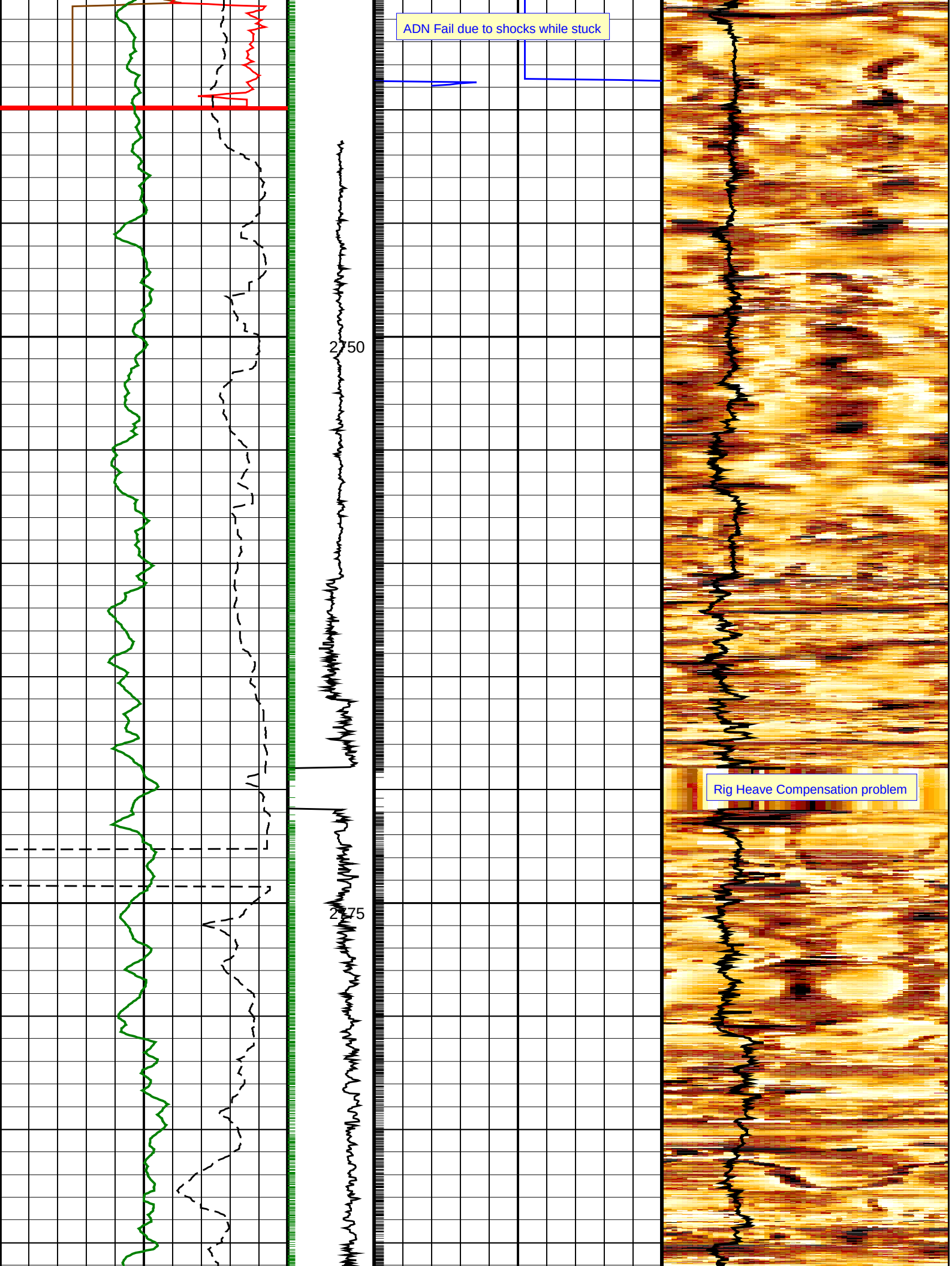
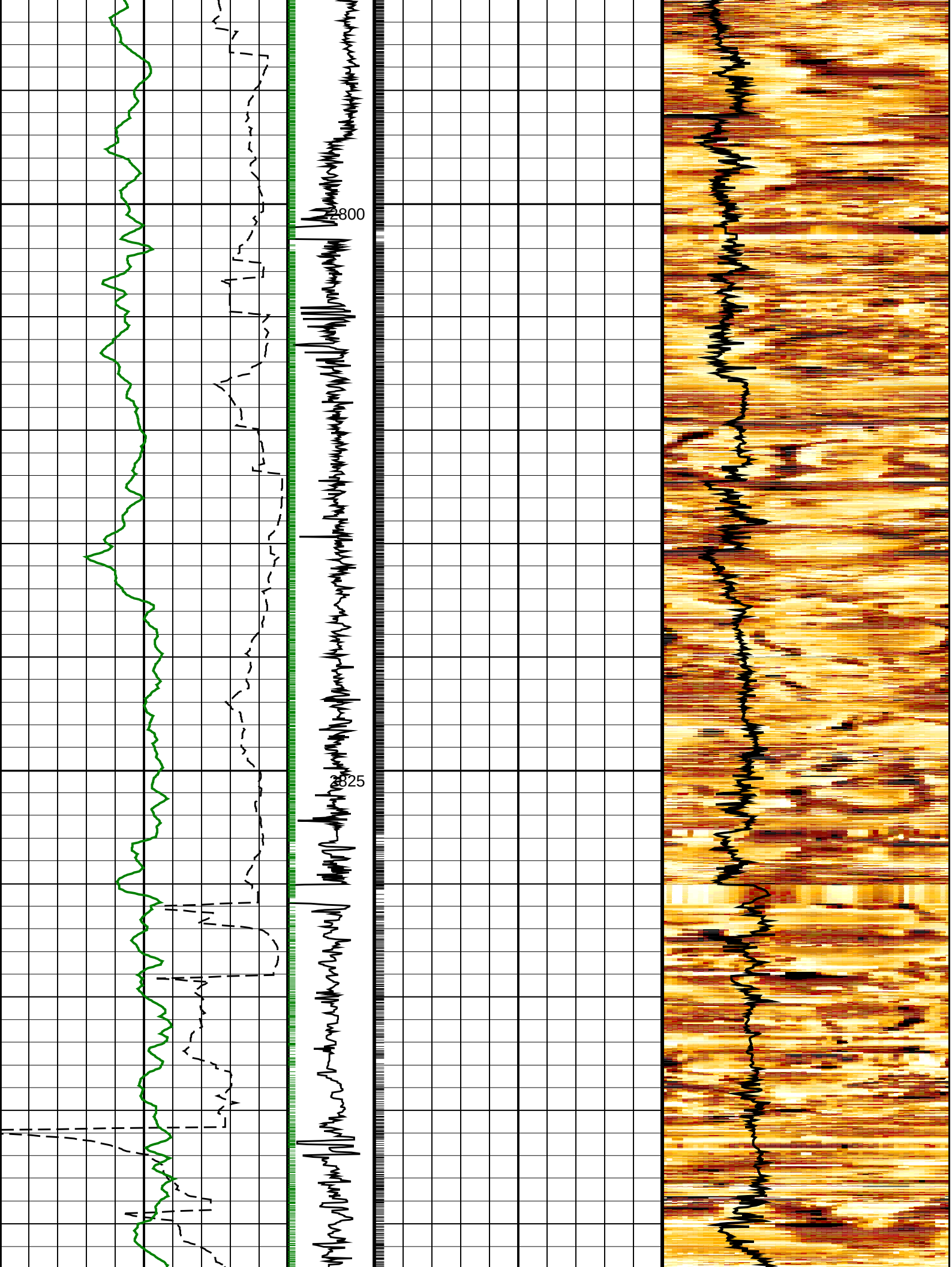
2725
ADN Data Gap due to hole problems


ADN Fail due to shocks while stuck
2750
2775
Rig Heave Compensation problem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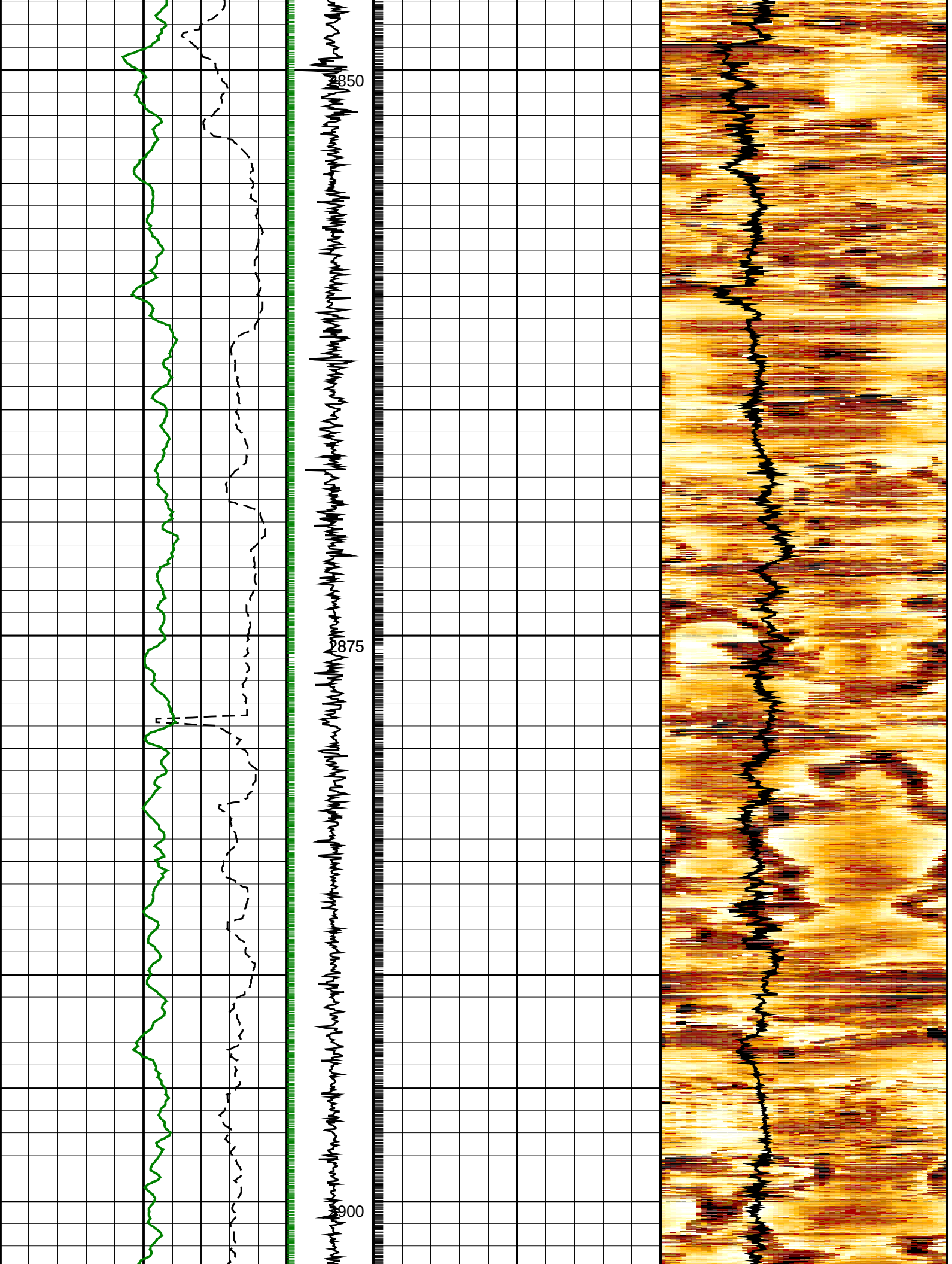
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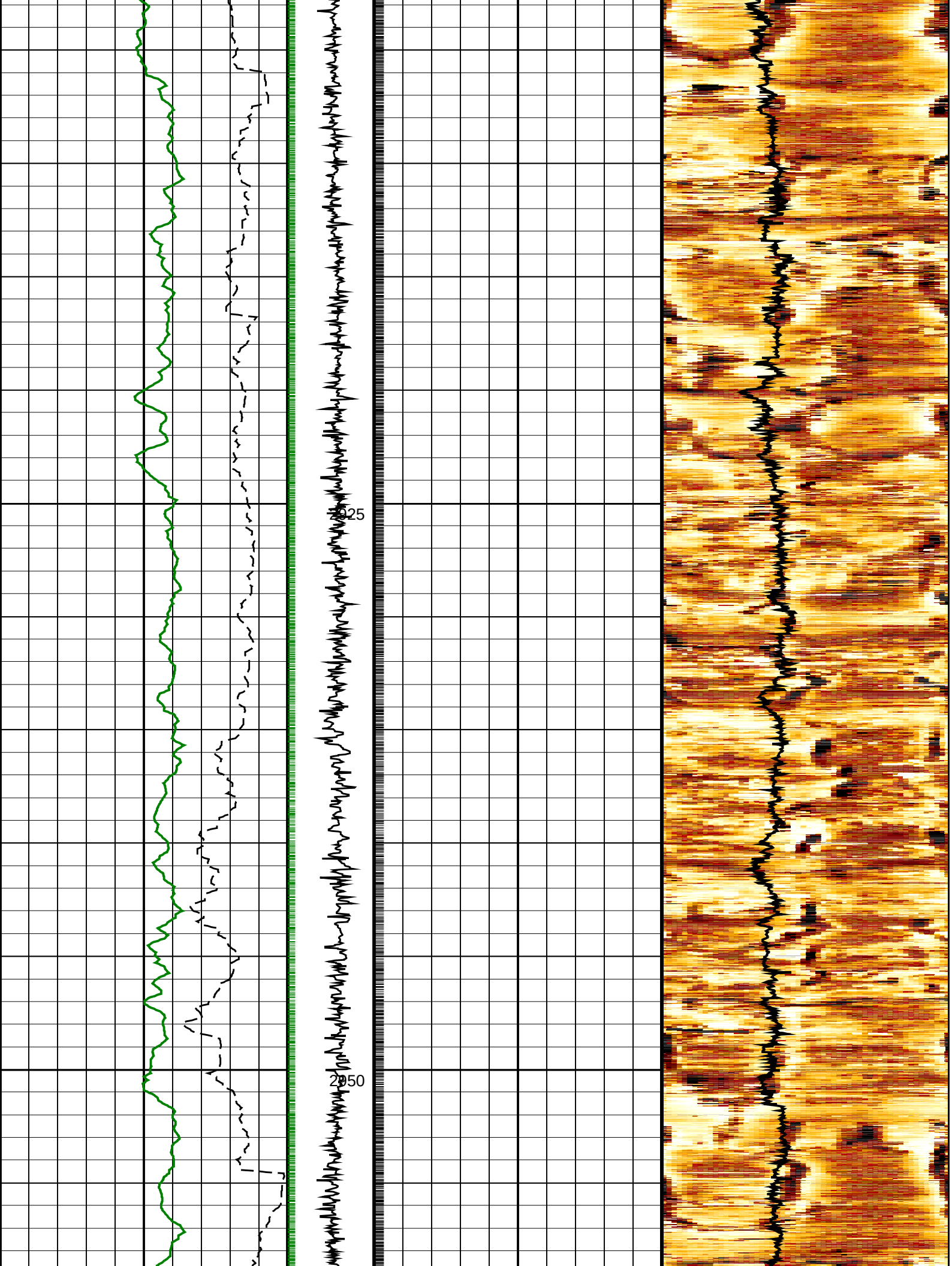
2900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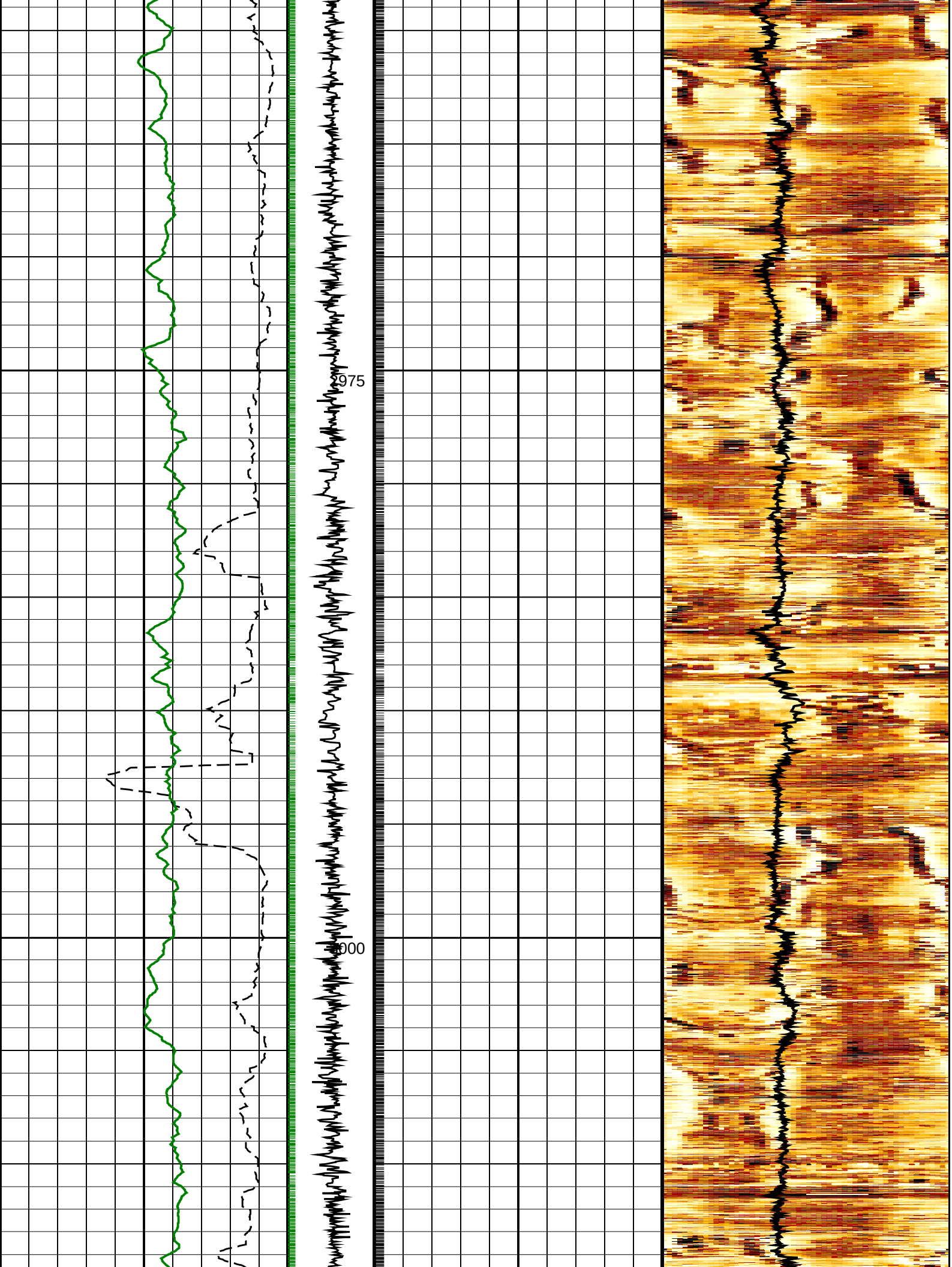
2950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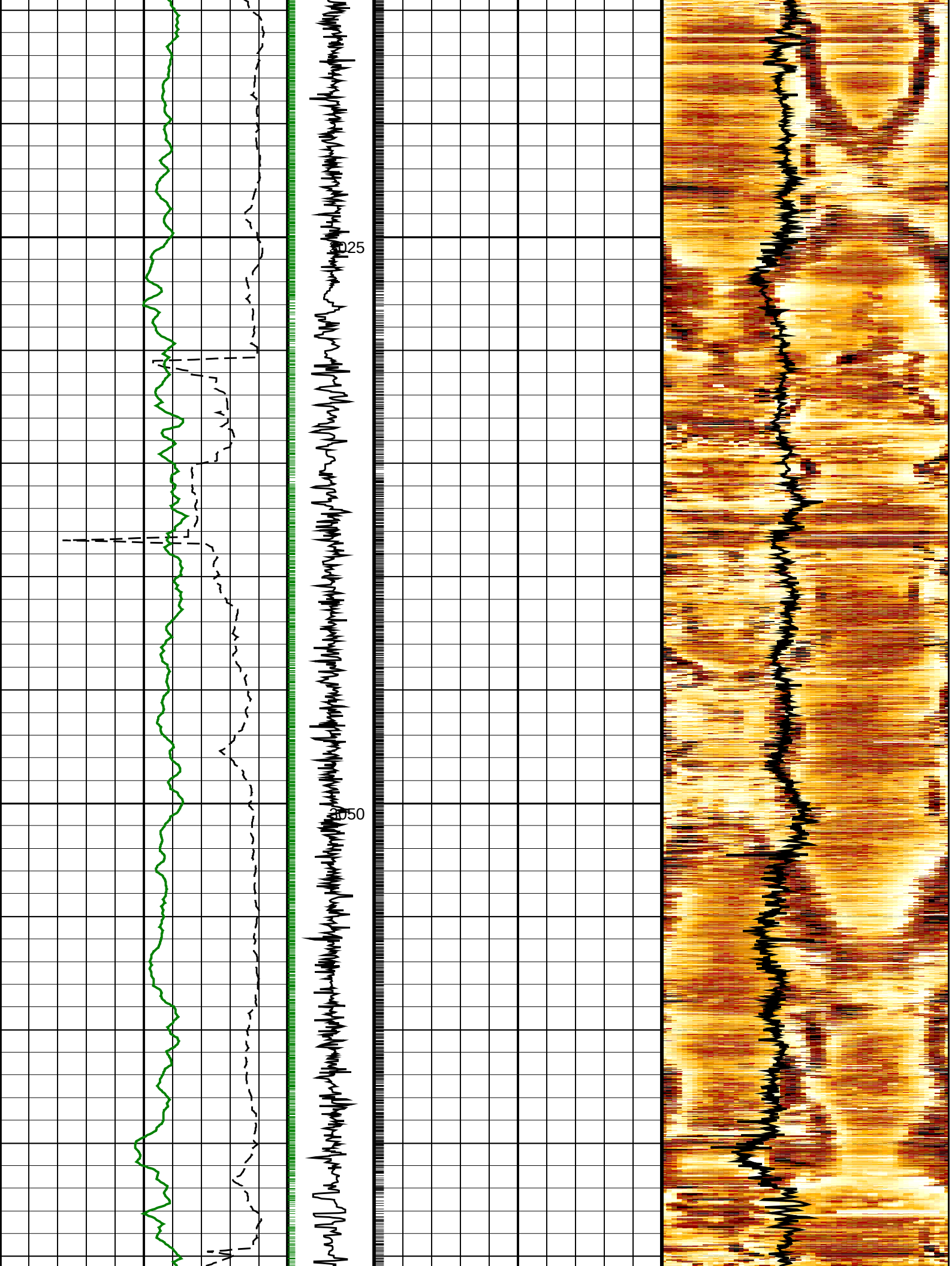
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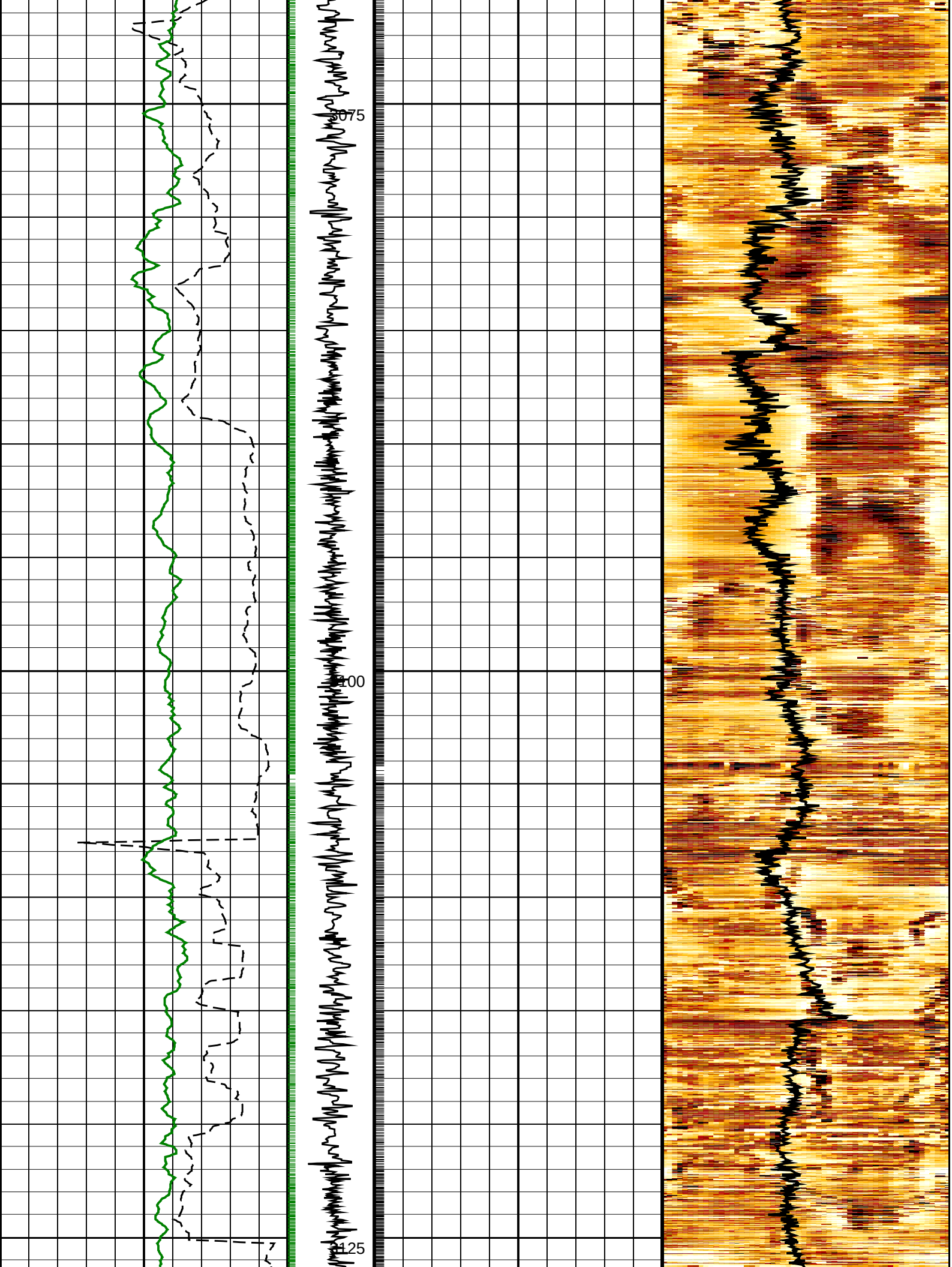
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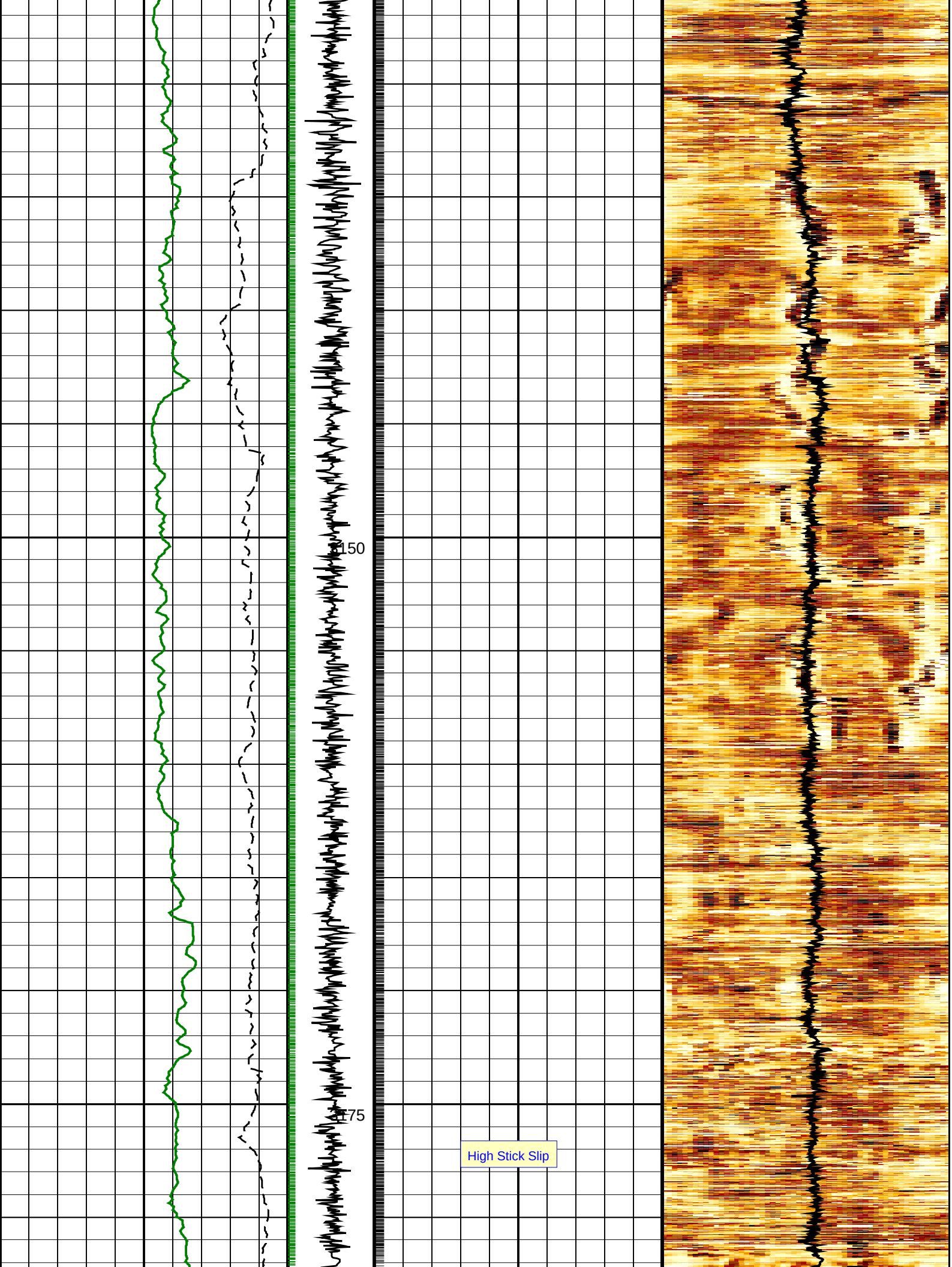
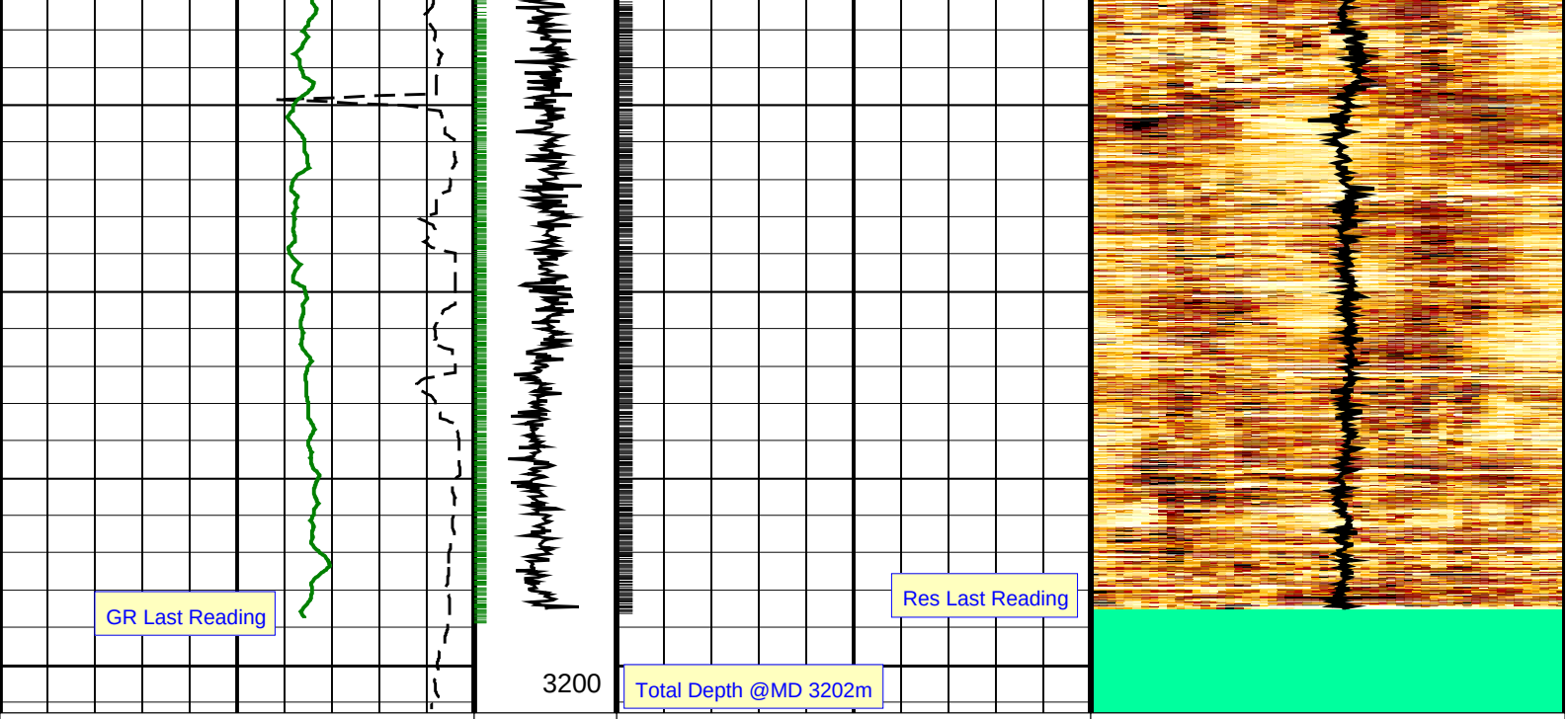

150
175
High Stick Slip



Horizontal Hole Diameter (HORD)	RAB Rotational 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	345
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	EDIT −	

Master: 16−Sep−2007 19:11

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		1151	Master		2754	Master		7018
250.0 (Minimum)	4125 (Nominal)	8000 (Maximum)	700.0 (Minimum)	9350 (Nominal)	18000 (Maximum)	2500 (Minimum)	23750 (Nominal)	45000 (Maximum)

Master: 16−Sep−2007 19:11

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		173.7	Master		1414	Master		4416
50.00	725.0	1400	500.0	4250	8000	1500	15750	30000

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Master: 16−Sep−2007 19:11

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		52.75	Master		101.4	Master		443.1
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: 16−Sep−2007 19:11

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		1.025	Master		1.116
1.024 (Minimum)	1.039 (Nominal)	1.054 (Maximum)	1.096 (Minimum)	1.126 (Nominal)	1.156 (Maximum)

Master: 16−Sep−2007 19:11

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		16.83	Master		3.975	Master		1.973
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 1 tube 2 Air Point Measure CPS	Value	Phase	Far 1 tube 2 Rod Point Measure CPS	Value	Phase	Far 1 tube 2 H2O Point Measure CPS	Value
Master		17.69	Master		4.304	Master		2.095
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 1 tube 3 Air Point Measure CPS	Value	Phase	Far 1 tube 3 Rod Point Measure CPS	Value	Phase	Far 1 tube 3 H2O Point Measure CPS	Value
Master		17.61	Master		4.570	Master		2.189
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 1 Air Point Measure CPS	Value	Phase	Far 2 tube 1 Rod Point Measure CPS	Value	Phase	Far 2 tube 1 H2O Point Measure CPS	Value
Master		17.78	Master		4.507	Master		2.138
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 2 Air Point Measure CPS	Value	Phase	Far 2 tube 2 Rod Point Measure CPS	Value	Phase	Far 2 tube 2 H2O Point Measure CPS	Value
Master		18.58	Master		4.670	Master		2.293
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 3 Air Point Measure CPS	Value	Phase	Far 2 tube 3 Rod Point Measure CPS	Value	Phase	Far 2 tube 3 H2O Point Measure CPS	Value
Master		17.31	Master		4.357	Master		2.158
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Near 1 tube 1 Air Point Measure CPS	Value	Phase	Near 1 tube 1 Rod Point Measure CPS	Value	Phase	Near 1 tube 1 H2O Point Measure CPS	Value
Master		445.8	Master		715.7	Master		315.0
345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)	535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)	230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)
Phase	Near 2 tube 1 Air Point Measure CPS	Value	Phase	Near 2 tube 1 Rod Point Measure CPS	Value	Phase	Near 2 tube 1 H2O Point Measure CPS	Value
Master		438.2	Master		719.8	Master		317.4
345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)	535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)	230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)

Master: 16−Sep−2007 19:11

6.75−in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		96.16
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	129
Calibration Status	−	

Master: Calibration out of date 20−Aug−2007 10:00

6.75−in. Resistivity At−the−Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value	Phase	Ring/T2 factor	Value	Phase	M0/T1 factor	Value
Master		0.9959	Master		0.9974	Master		1.002
	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	M0/T2 factor	Value	Phase	M2/T1 factor	Value	Phase	M2/T2 factor	Value
Master		1.003	Master		0.9986	Master		0.9993
	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 shallow/T1 factor	Value	Phase	BTN shallow/T2 factor	Value	Phase	BTN medium/T1 factor	Value
Master		1.005	Master		1.006	Master		1.001
	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		1.002	Master		1.011	Master		1.012
	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: Calibration out of date 20−Aug−2007 10:00

6.75−in. Resistivity At−the−Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		1.006
	0.7500 (Minimum) 1.000 (Nominal) 1.250 (Maximum)	

SCHLUMBERGER

Survey report 8-Oct-2007 00:56:55 Page 1 of 2

Client.....: Japan Agency for Marine-Eartgu Science and Technology
Field.....: Nankai-Kumano

Well.....: C0001D
API number.....: 07JAP0002
Engineer.....: Mario Jakulj / Chen Xi

Rig:.....: Chikyu
Country:.....: Japan

Spud date.....: 02-Oct-07
Last survey date.....: 08-Oct-07
Total accepted surveys...: 23
MD of first survey.....: 2226.00 m
MD of last survey.....: 3202.00 m

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

----- Depth reference -----
Permanent datum.....: Mean Sea Level
Depth reference.....: Driller's Depth
GL above permanent.....: -2197.50 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.....: 01-Oct-2007
Magnetic field strength..: 915.64 HCNT
Magnetic dec (+E/W-).....: -6.47 degrees
Magnetic dip.....: 46.55 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 999.59 mGal
Reference H.....: 915.64 HCNT
Reference Dip.....: 46.55 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: -6.47 degrees
Grid convergence (+E/W-).: 0.00 degrees
Total az corr (+E/W-).....: -6.47 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]

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	2226.00	0.00	0.00	0.00	2226.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	None
2	2244.17	0.55	137.90	18.17	2244.17	-0.06	-0.06	0.06	0.09	137.90	0.30	MWD	None
3	2320.41	1.10	92.52	76.24	2320.40	-0.37	-0.37	1.03	1.10	109.59	0.11	MWD	None
4	2359.08	1.02	76.33	38.67	2359.07	-0.30	-0.30	1.74	1.77	99.89	0.08	MWD	None
5	2435.59	0.93	79.77	76.51	2435.56	-0.03	-0.03	3.01	3.01	90.61	0.01	MWD	None
6	2474.71	0.77	80.82	39.12	2474.68	0.07	0.07	3.58	3.59	88.94	0.04	MWD	None
7	2512.92	0.81	76.21	38.21	2512.89	0.17	0.17	4.10	4.10	87.61	0.02	MWD	None
8	2550.54	0.71	86.87	37.62	2550.50	0.25	0.25	4.59	4.60	86.91	0.05	MWD	None
9	2589.40	0.73	86.74	38.86	2589.36	0.27	0.27	5.08	5.09	86.90	0.01	MWD	None
10	2628.16	0.71	93.11	38.76	2628.12	0.28	0.28	5.57	5.57	87.16	0.02	MWD	None
11	2666.46	0.70	81.39	38.30	2666.41	0.30	0.30	6.03	6.04	87.17	0.04	MWD	None
12	2742.40	0.39	276.13	75.94	2742.35	0.40	0.40	6.24	6.25	86.37	0.14	MWD	None
13	2780.03	2.59	164.25	37.63	2779.97	-0.41	-0.41	6.34	6.35	93.70	0.73	MWD	None
14	2818.14	1.76	184.41	38.11	2818.05	-1.82	-1.82	6.53	6.78	105.60	0.29	MWD	None
15	2857.04	3.49	201.98	38.90	2856.91	-3.52	-3.52	6.04	6.99	120.21	0.49	MWD	None
16	2895.39	3.27	196.33	38.35	2895.19	-5.65	-5.65	5.29	7.74	136.85	0.10	MWD	None
17	2933.50	3.28	191.55	38.11	2933.24	-7.76	-7.76	4.77	9.11	148.42	0.07	MWD	None
18	2969.21	3.33	184.75	35.71	2968.89	-9.79	-9.79	4.48	10.77	155.42	0.11	MWD	None
19	3047.34	2.72	194.54	78.13	3046.91	-13.85	-13.85	3.83	14.37	164.56	0.10	MWD	None
20	3085.70	3.10	189.97	38.36	3085.23	-15.75	-15.75	3.42	16.12	167.76	0.12	MWD	None
21	3125.02	3.20	203.24	39.32	3124.49	-17.81	-17.81	2.80	18.03	171.06	0.19	MWD	None
22	3162.66	3.13	201.91	37.64	3162.07	-19.73	-19.73	2.00	19.83	174.20	0.03	MWD	None
23	3202.00	3.13	201.91	39.34	3201.35	-21.72	-21.72	1.20	21.75	176.83	0.00	Bit	Proj

[(c)2007 IDEAL ID12_0C_12]

Company:
Japan Agency for Marine−Earth Science and Technology

Schlumberger

Well: **C0001D**
Field: **Nankai−Kumano**
Rig: **Chikyu**
Country: **Japan**

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

Data Quality Report

Geomarket	CHG	Location	Philippines Sea
Job Date	02−Oct−07	Customer	JAMSTEC
Rig	Chikyu	Field/Well	Nankai−Kumano/C0001D
Engineer	Mario/Chen Xi/K.C. Yang	Job Number	07JAP0002

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.

Operation	Type of Measurement: Res	GR	Den	Neu	DTCO	Remarks
Presentation						
Description of Well − Names, Geometry, Services, Location and References; General Content Header, user of trademarks, directional data, well plot, order of components, spelling and style, units sensor to toolface angle recorded						
Equiment and Software Description Tool sketch, equipment numbers, software versions, data rates, filtering weights						
Processing Traceability and Environment Description Acquisition environment, parameters and key constants for each run or zone, complete and relavant remarks						
Annotations, Presented Formats, QC Curves, Print Quality Documented splice points; data gap explanations, mud changes, movement indicator, color selection						
Calibration and Verifications						
Calibration / Before survey verification / After survey verification Validity, completeness (includes equipment number), timeliness, unedited, descrepency explained						
Operating Procedures						
Depth Control Comparison with driller's depth, other logs, other bit runs, between RT and RM. Depth summary listing						
Logging speed and sampling rates As recommended in reference manual or job planner. No loss of data or spatial resolution						
Data Comparison Between runs and passes, with data from nearby wells, other conveyance, mud log and markers						
Operating Anomalies/Failure/Missing Data/Sensor Orientation/Transmission Losses Absence of noise and spurious variations, anomaly repeated, corrected, reported or explained.						
Digital Delivery						
Digital Products Labeled, verification listing with complete digital record, backup for archival; record matches hard copy.						
Job Quality Rating (JQR) Number of boxes without number X 10	100	100	100	100	100	
Environmental effects						
Irregular Operation Excessive ROP or speed, high deviation, shocks, vibrations, sticking conditions						
Borehole Geometry Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions						
Borehole Fluid Barite, KCl, salinity, additives, gas cut, unstable						
Interferences External noise, nearby casing or drillpipe, debris, unusual formation composition						
Operation Outside Tool Specifications GeomarketTemperature, pressure, hole size, hole deviation, dog−leg severity, flow rate, rpm, solids value of parameter						
Environmental Quality Rating (EQR) Number of boxes without number X 20	100	100	100	100	100	

Cell Manager: Mario Jakulj FSM: ND Maduemezia

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002