HALLIBURTON

CEMENT BOND LOG

Company	URSA OPERATING COMPANY LLC
Well	MONUMENT RIDGE B 24D-08-7-95
Field	PARACHUTE
County	GARFIELD State CO

Company URSA OPERATING COMPANY LLC
Well MONUMENT RIDGE B 24D-08-7-95
Field PARACHUTE
County GARFIELD State CO

API No.: 05045229080000 Serv #: 903681332

Location: SHL: 960' FSL & 144' FEL
BHL: 187' FSL & 1986' FEL

Sec: 8 Twp: 7S Rge: 95W

Other Services

RMT-I

Permanent Datum	GROUND LEVEL	Elevation	5702'
Log Measured From	KB , 17' Ft. above perm. datum		
Drilling Measured From	KB		

Elevation
K.B. 5719'
D.F. 5719'
G.L. 5702'

Date @ Time Logged	29 NOV 2016 @ 06:45	Type Fluid in Hole	FRESH WATER
Run No.	ONE	Density of Fluid	8.4 PPG
Depth - Driller	8133'	Fluid Level	SURFACE
Depth - Logger	8018'	Cement Top Est. Logged	1620'
Bottom - Logged Interval	8010'	Equipment / Location	11808537 / RS, WY
Top - Log Interval	1827'	Recorded by	B. RIDDEL
Max. Recorded Temp.	218 degF	Witnessed by	R. TOLLE

CEMENTING DATA	Surface	Protection	Production	Liner
	String	String	String	
Date / Time Cemented	N/A	N/A	N/A	N/A
Primary / Squeeze	N/A	N/A	N/A	N/A
Expected Compressive Strength	N/A psi@ N/A hrs	N/A psi@ N/A hrs	N/A psi@ N/A hrs	N/A psi@ N/A hrs
Cement Volume	N/A	N/A	N/A	N/A
Cement Type / Weight	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A
Formulation	N/A	N/A	N/A	N/A
Mud Type / Mud Wgt.	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	24"	SURFACE	60'	16"	75.5 #	SURFACE	60'
TWO	12.25"	60'	1877'	8.625"	32.0 #	SURFACE	1877'
THREE	7.875"	1877'	8133'	4.5"	11.6 #	SURFACE	8133'

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

ESTIMATED TOP OF CEMENT : 1620'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 425'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.
YOUR CREW TODAY: B. RIDDEL, DANIEL FLINDERS, BRAD BURDERER

Service Ticket No. 903681332 API No. 05045229080000 PGM Ver 15.10.29001

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

	XHU	GAMMA	RMTI	CBL
Run No.	ONE	ONE	ONE	ONE
Serial No.	12146425	11224503	12095949	11836468
Model No.	XHU-3	TTTC-U2	RMTI	CBLM
Diameter	1 11/16"	1 11/16"	2.25"	2.75"

LOGGING DATA

General Data

Pass No.	Depths From	Depths To	Well Head Pressure	Speed Ft/Min	Logging Run Comments

ONE	4450'	4250'	0 PSI	20	REPEAT
TWO	8010'	1827'	0 PSI	20	MAIN

	GAMMA		SIGMA		AMPLITUDE			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	60	0	0	100		
TWO	0	200	60	0	0	100		

DIRECTIONAL INFORMATION

Maximum Deviation		deg. @		KOP		

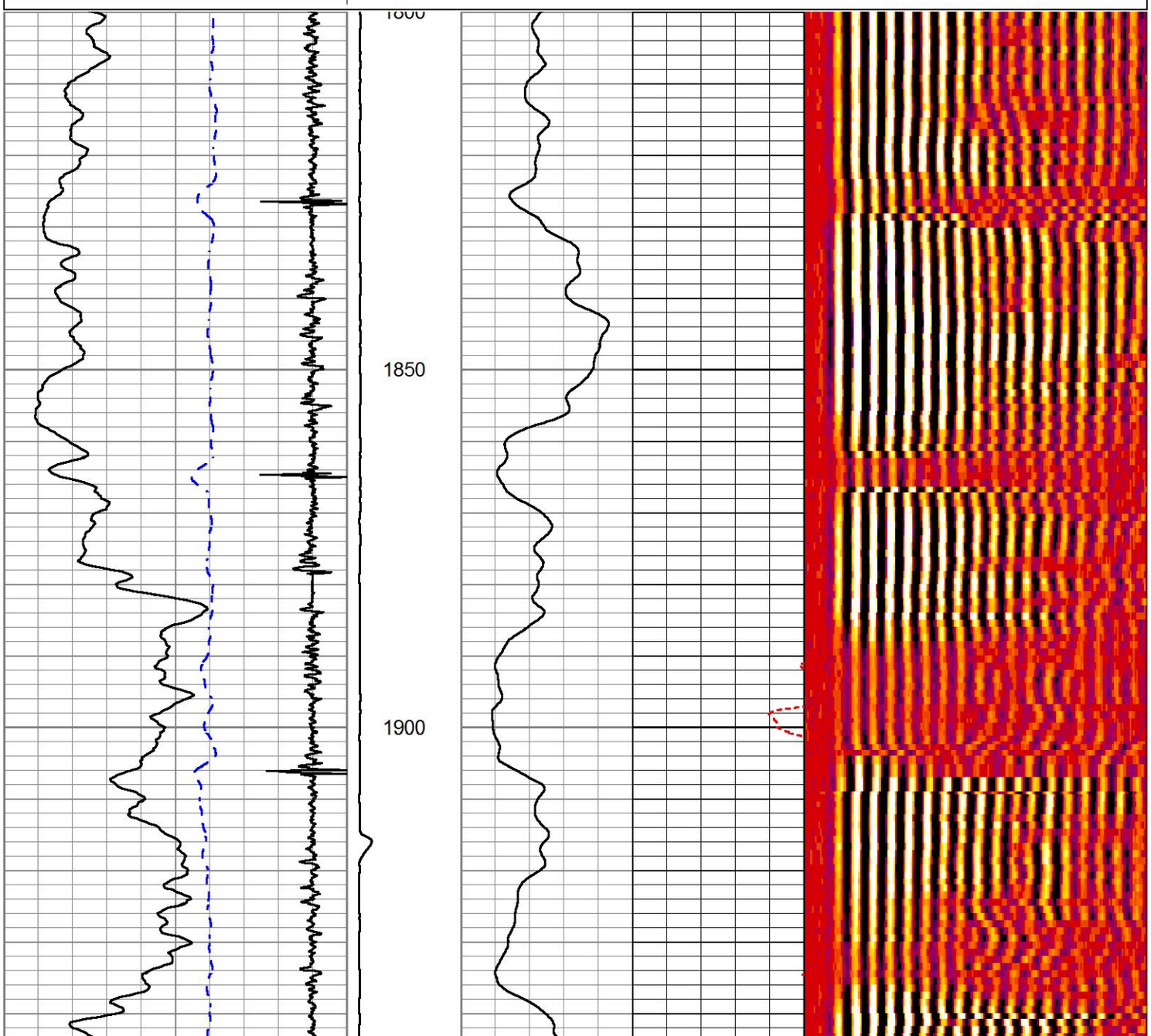
HALLIBURTON

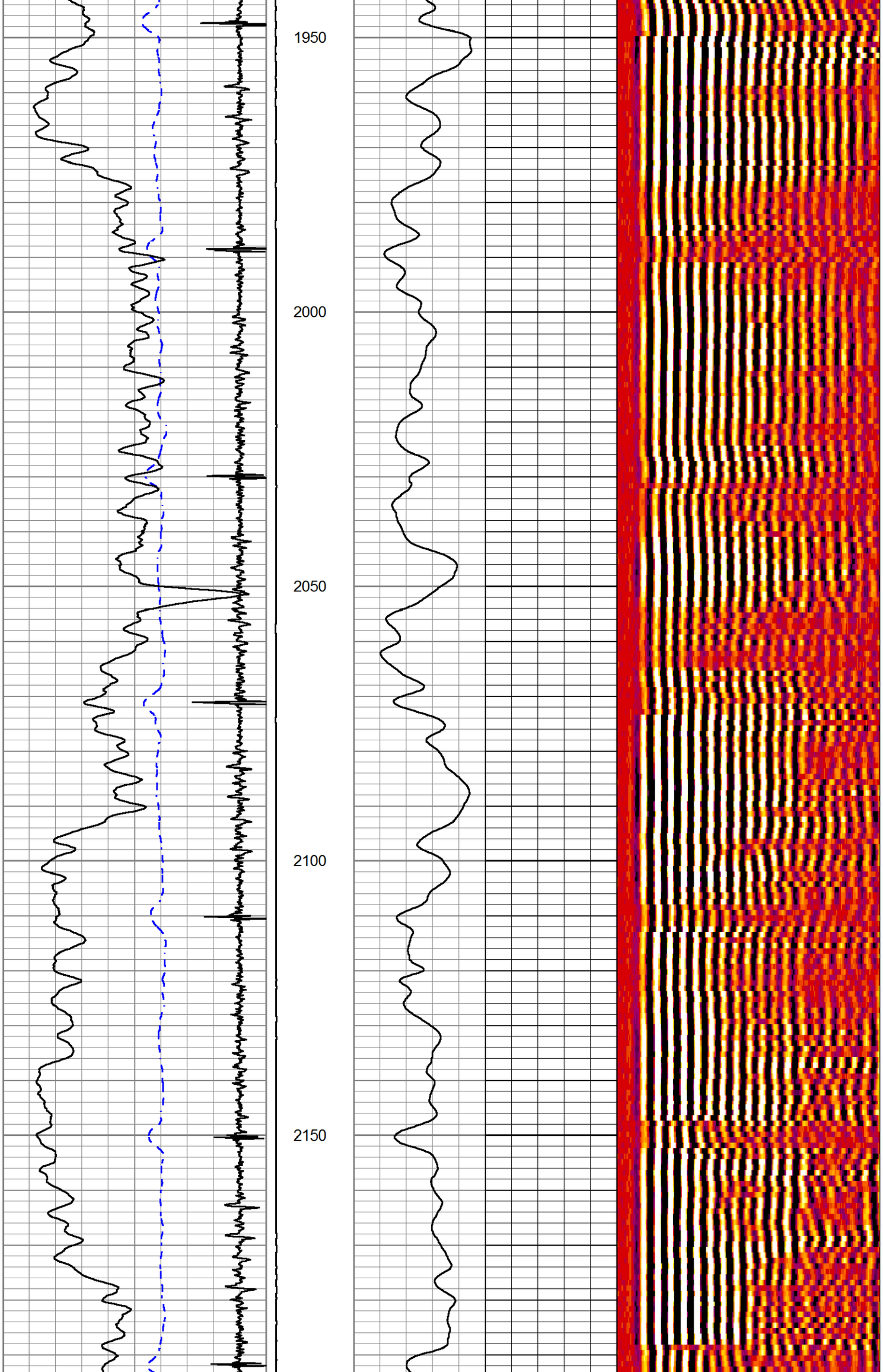
MAIN PASS

5" = 100'

Database File	mr_b_24d_08_7_95.db
Dataset Pathname	merge2
Presentation Format	!1!!CB~1
Dataset Creation	Wed Nov 30 02:24:10 2016
Charted by	Depth in Feet scaled 1:240

298	Travel Time (usec)	198	Line Tension	0	Amplitude (mV)	100	200	Variable Density	1060
3600	Collar Locator	-400	0 (lb)	5000	0 Amplified Amplitude (mV)	10			
0	GAMMA RAY	200							

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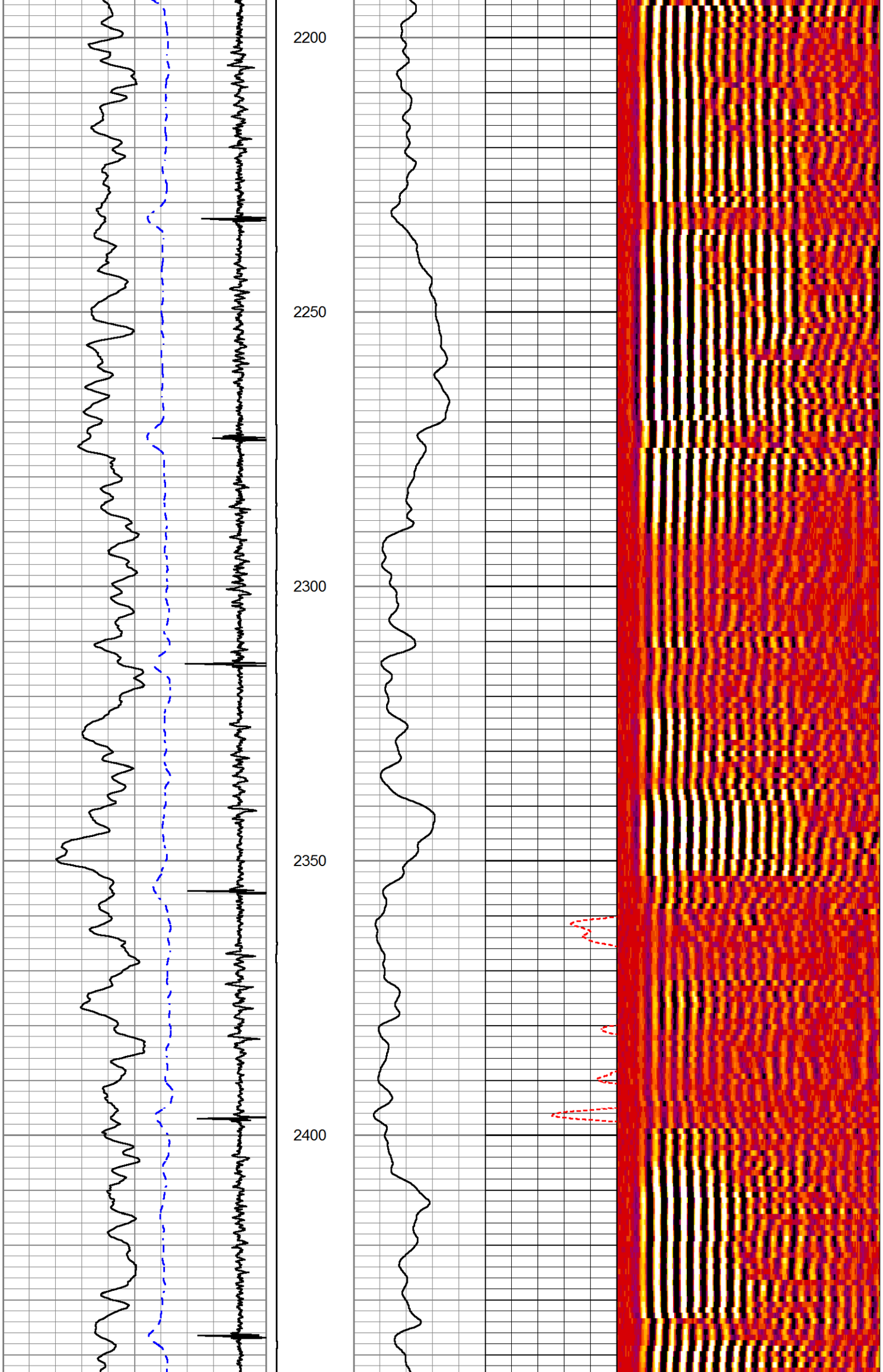
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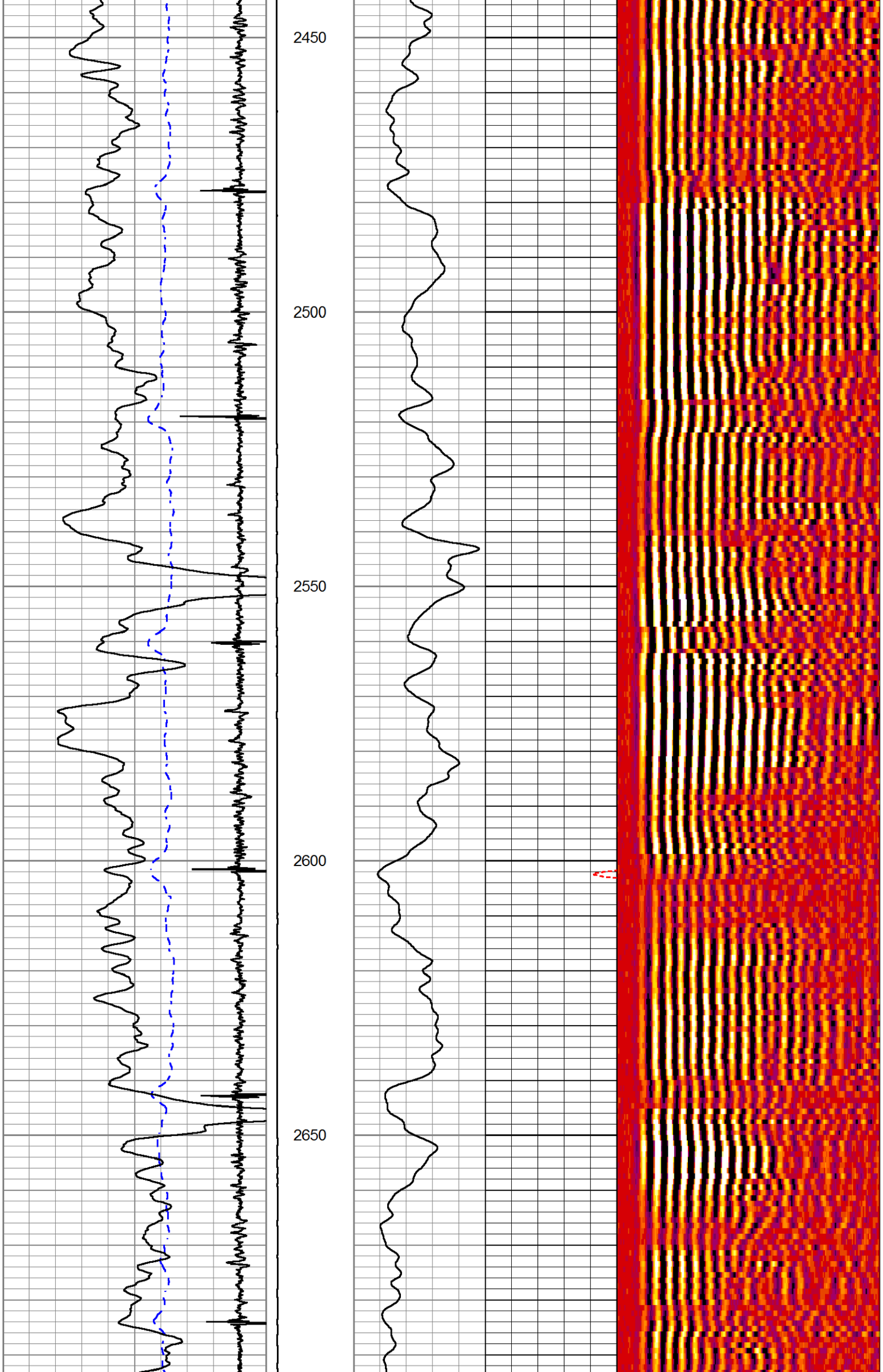
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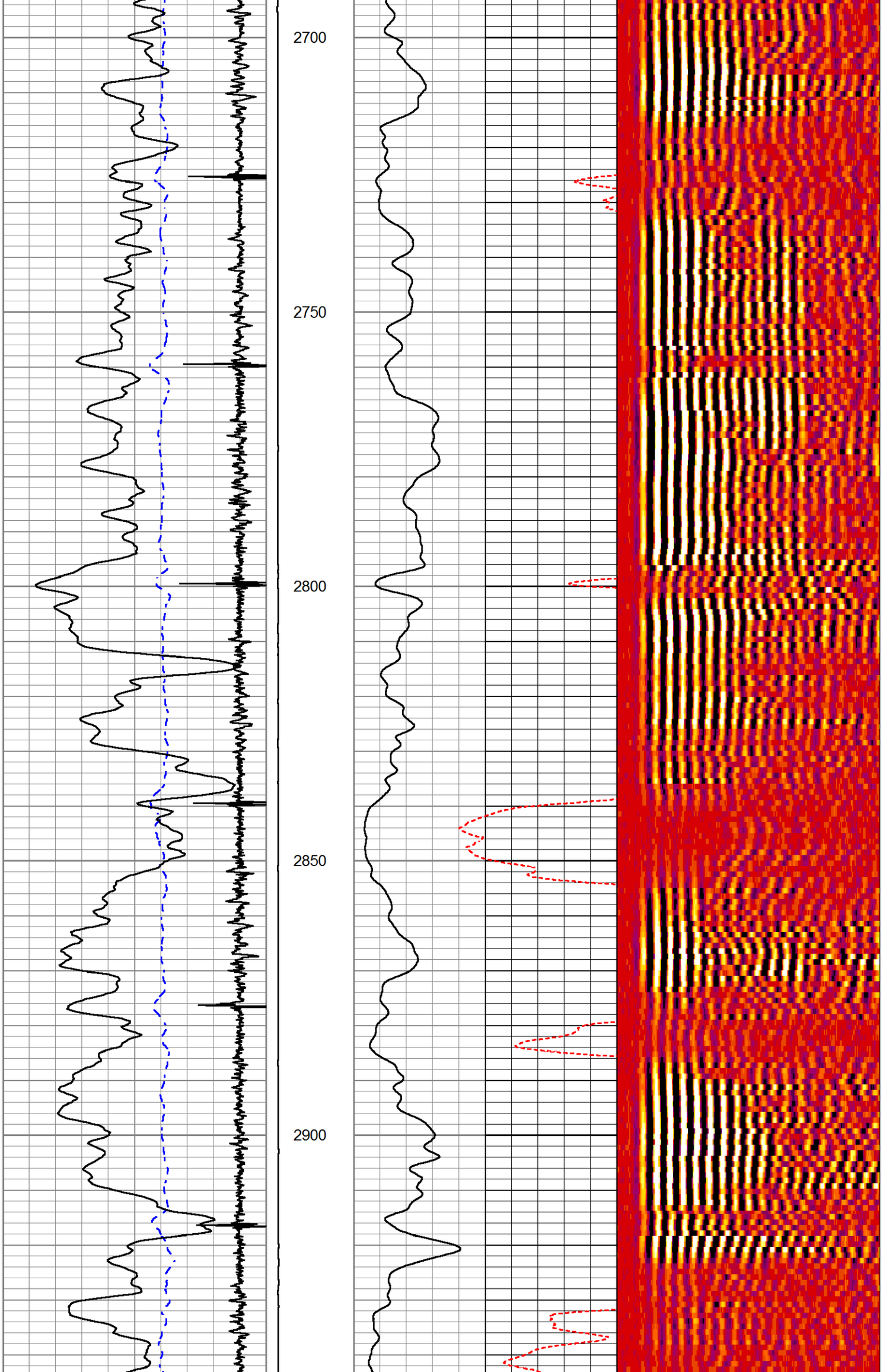
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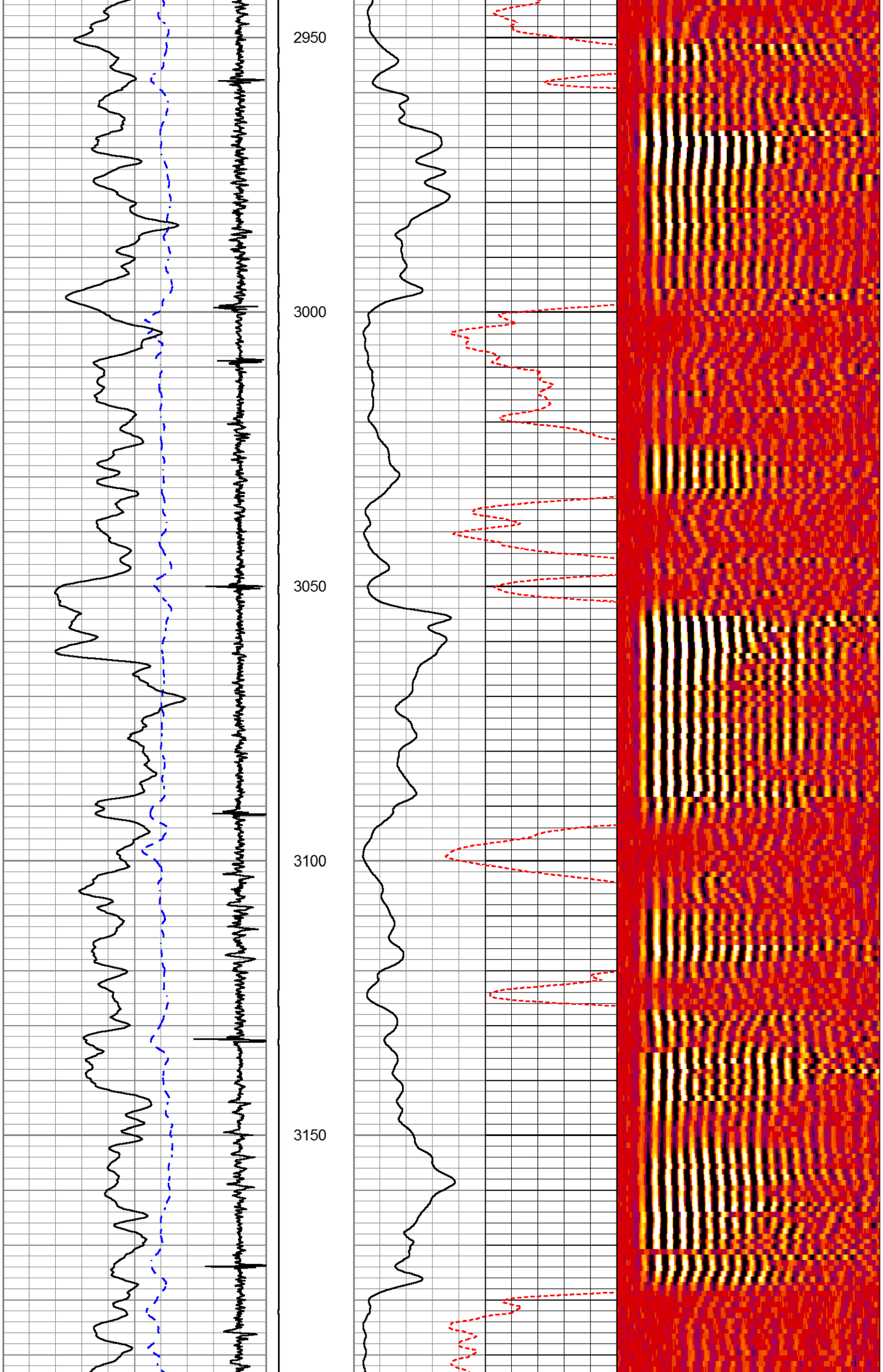
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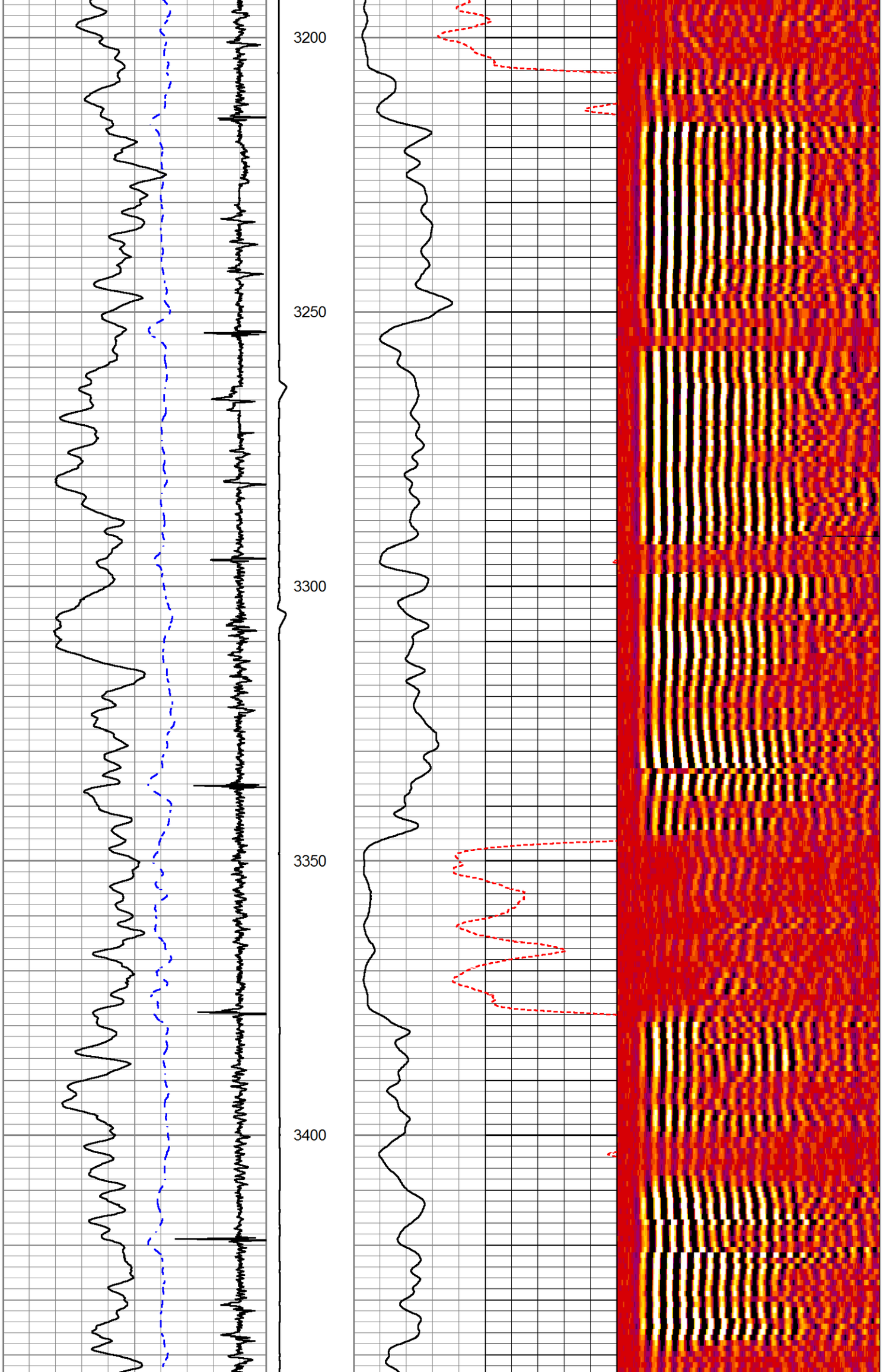
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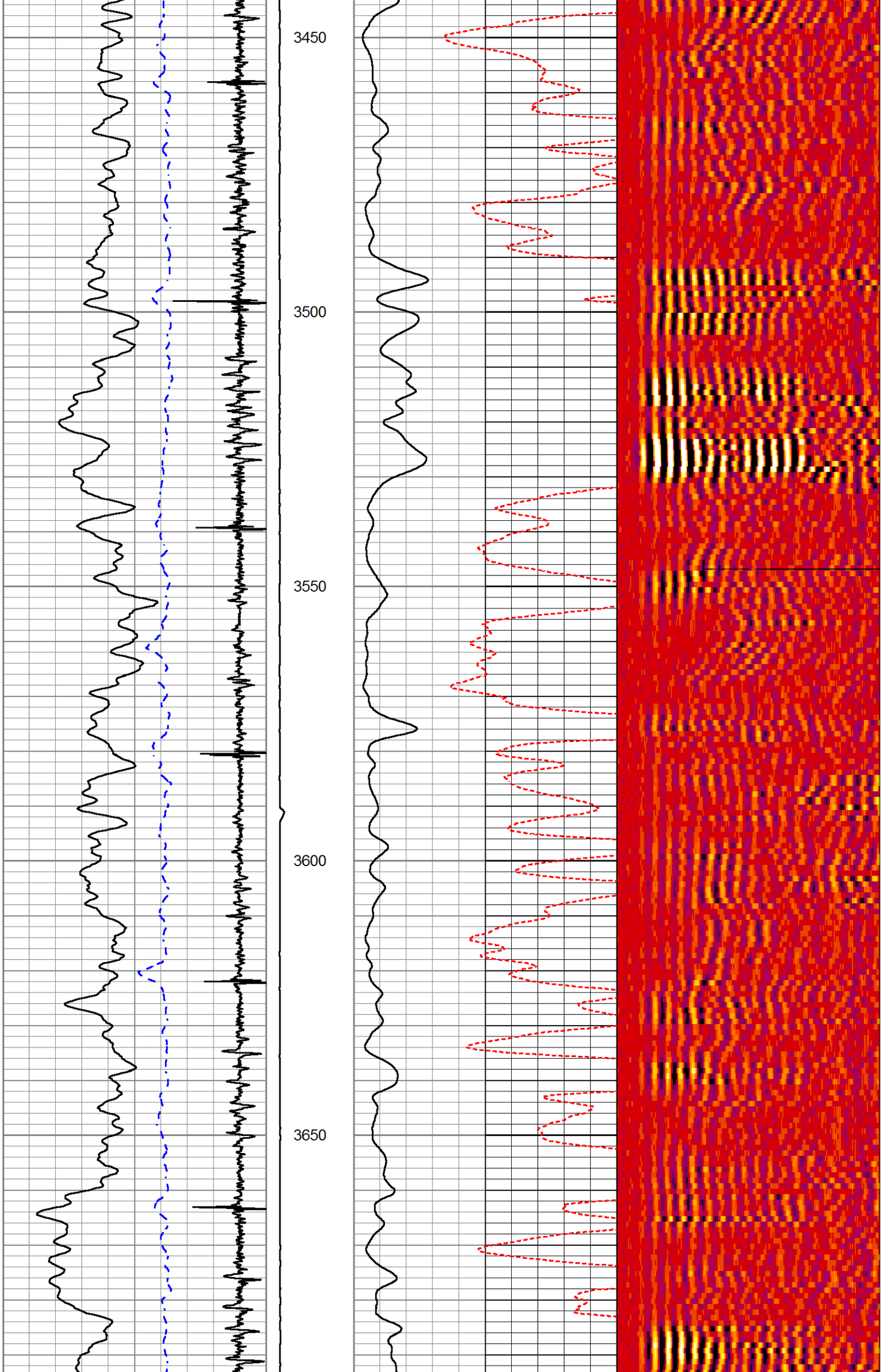
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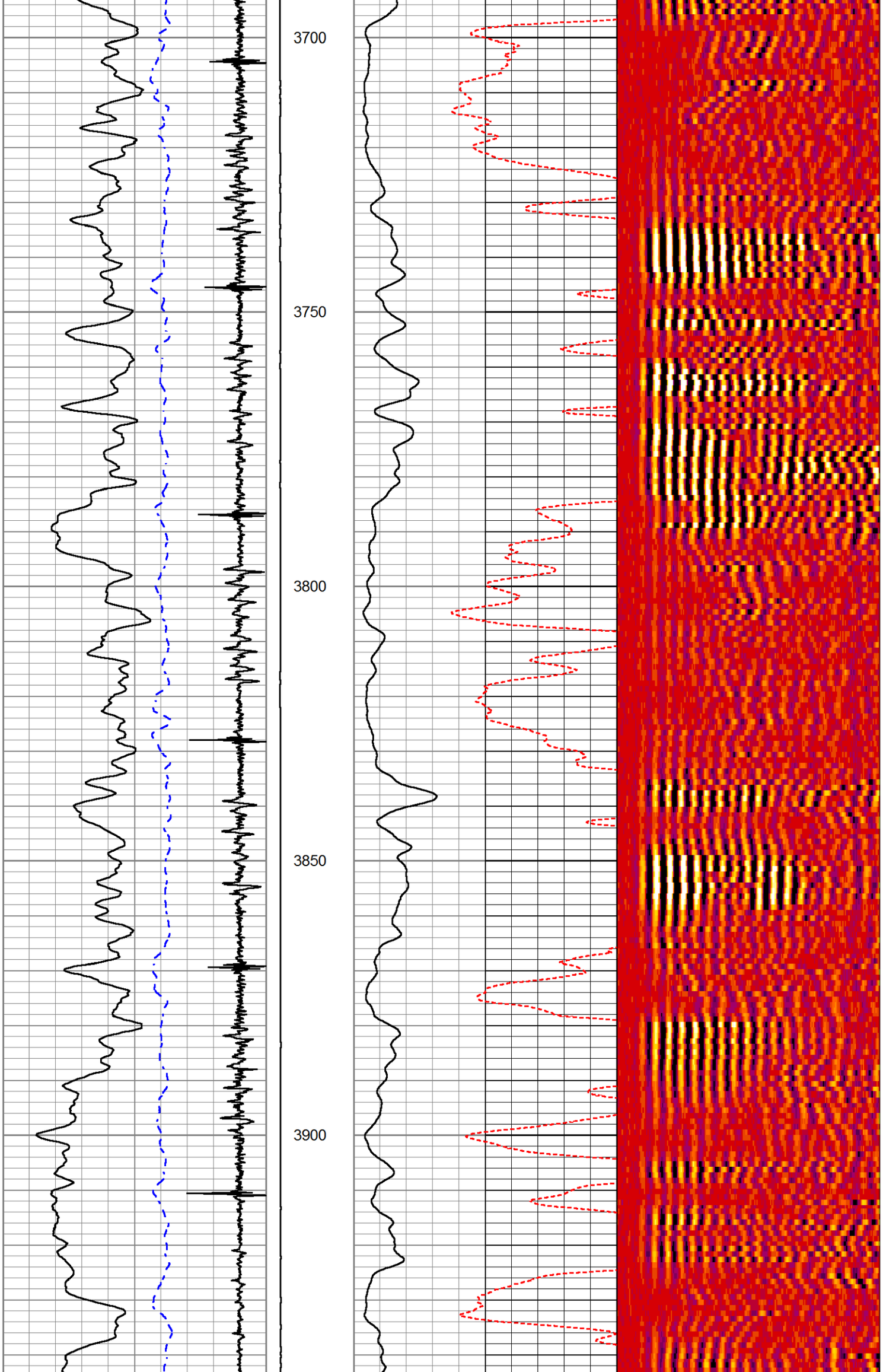
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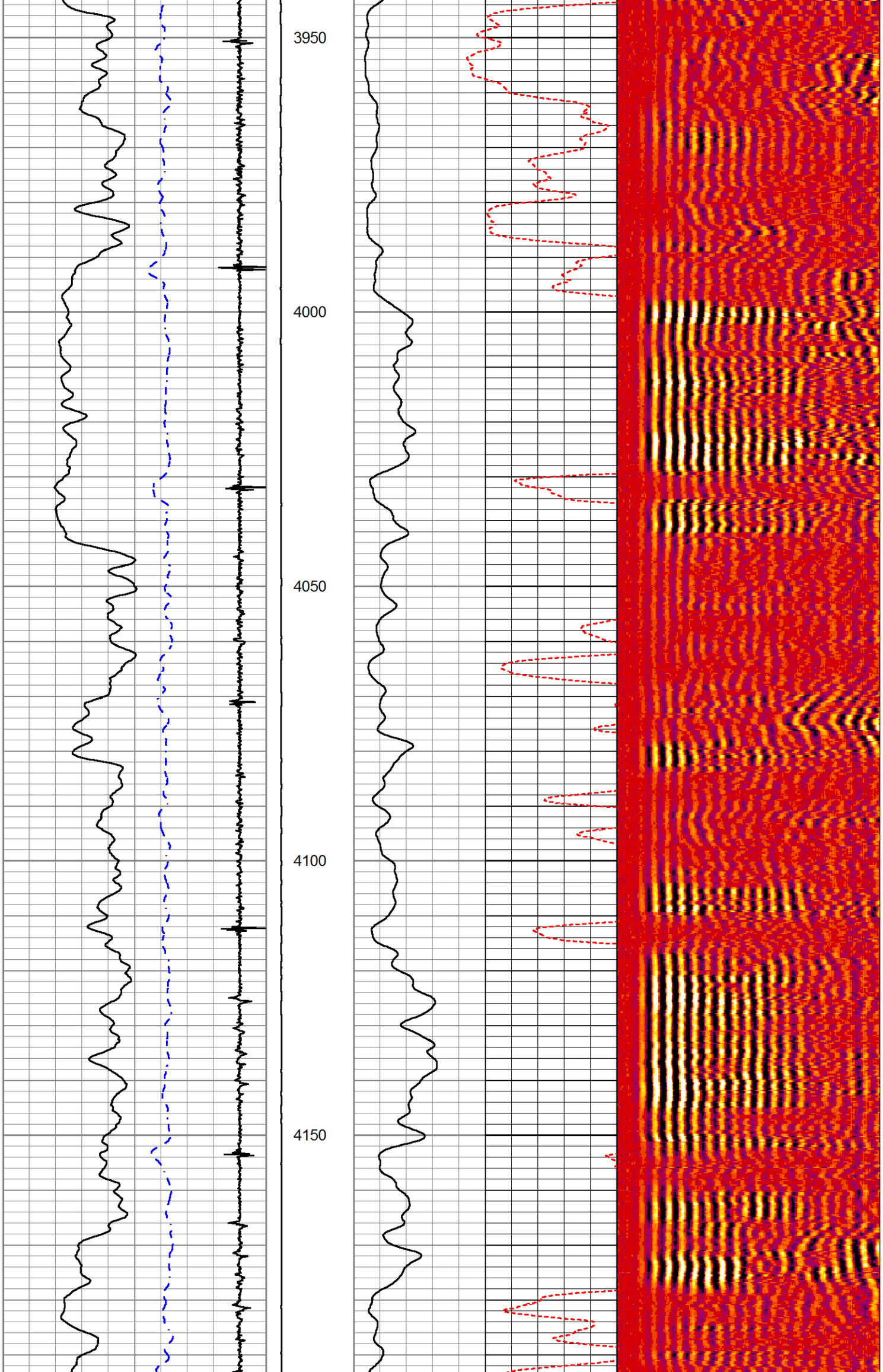
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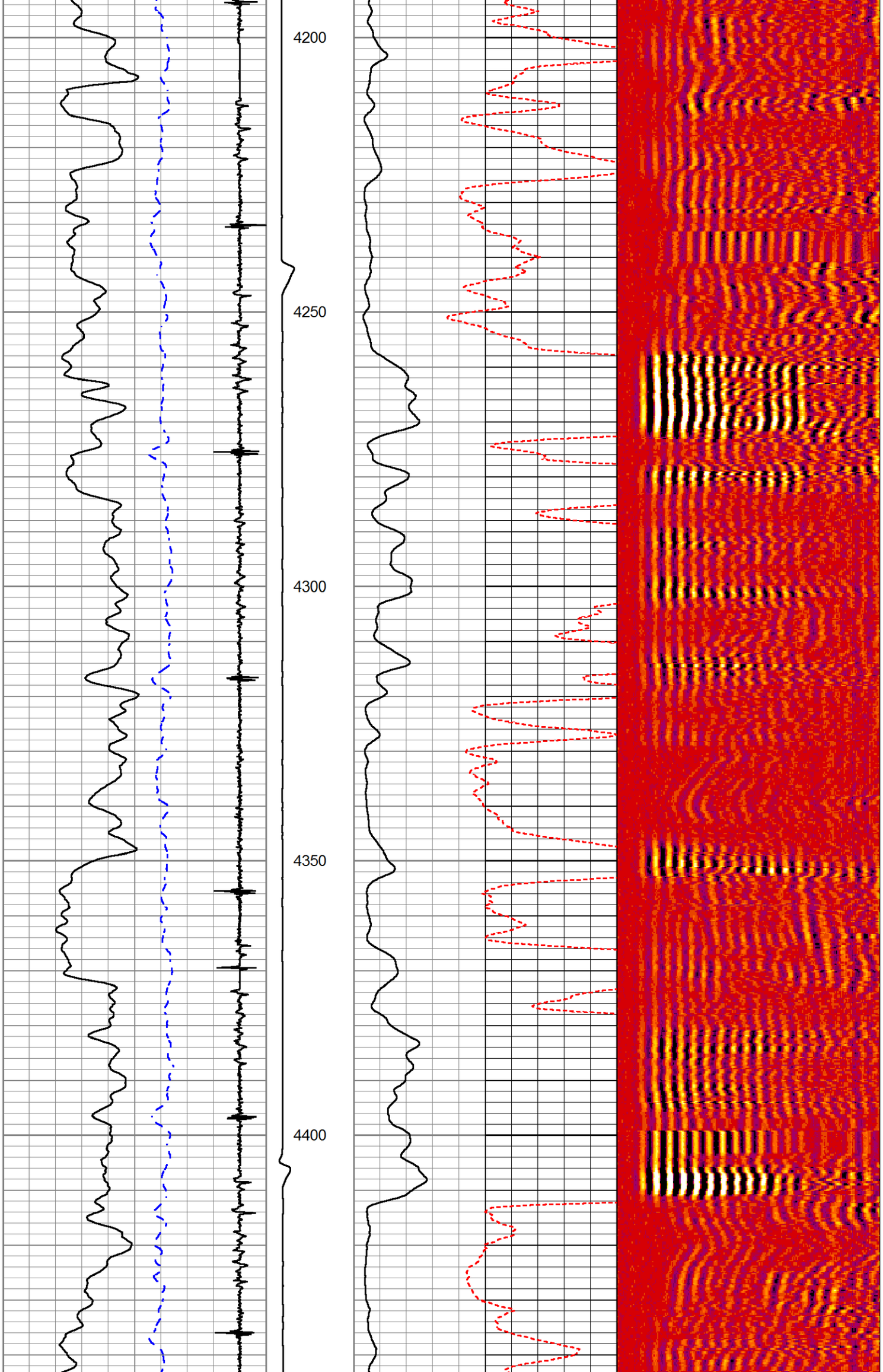
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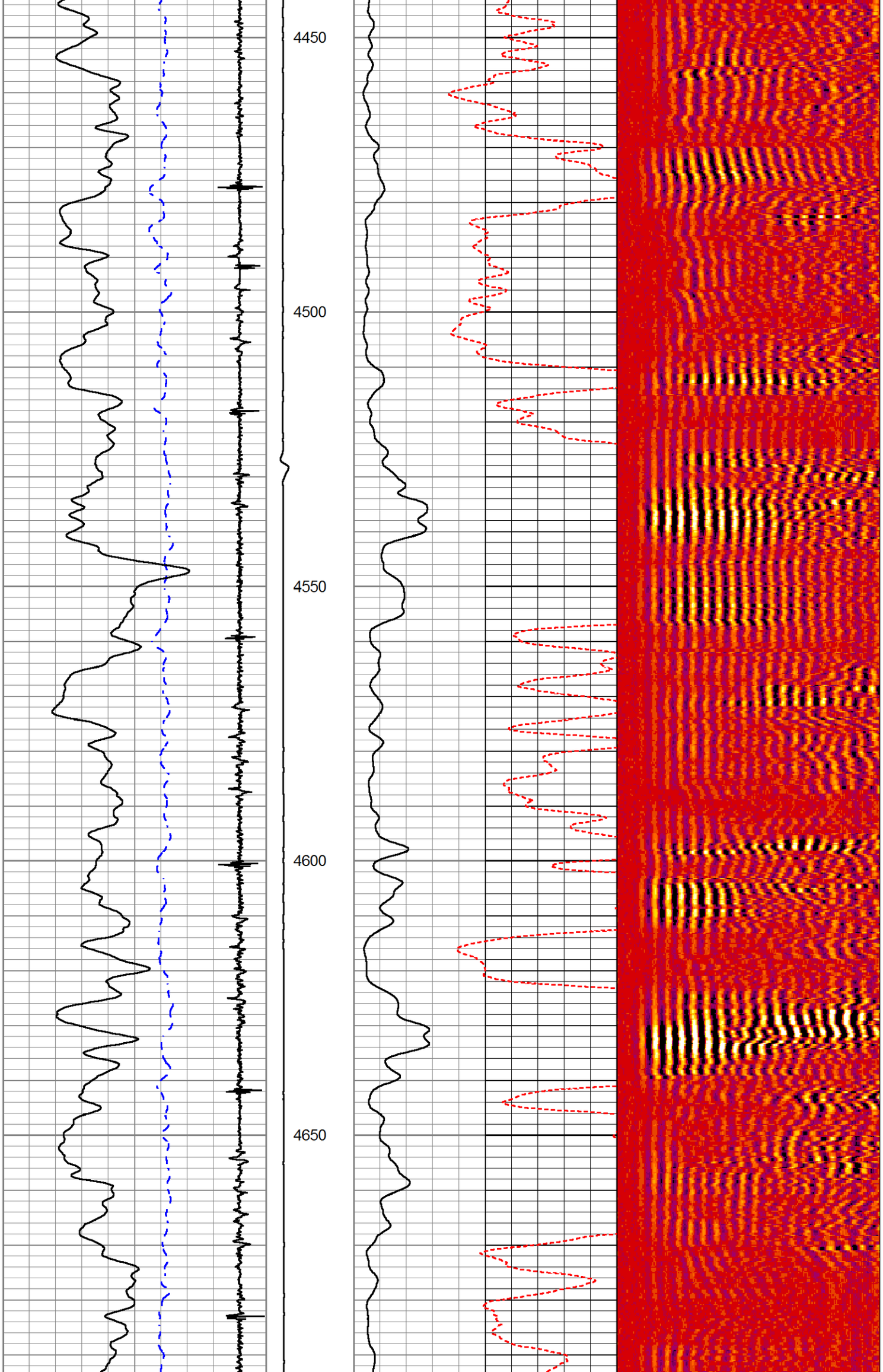
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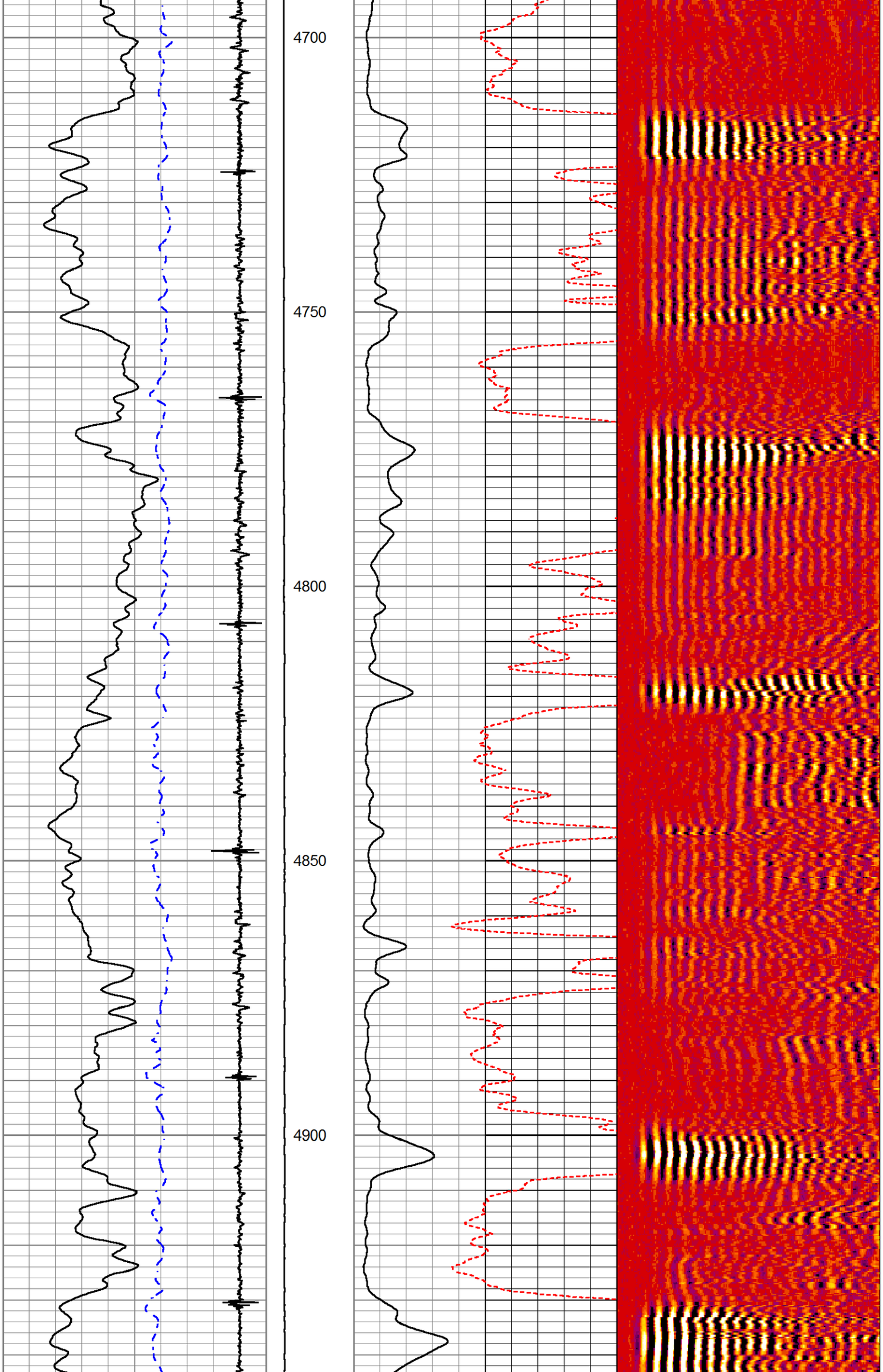
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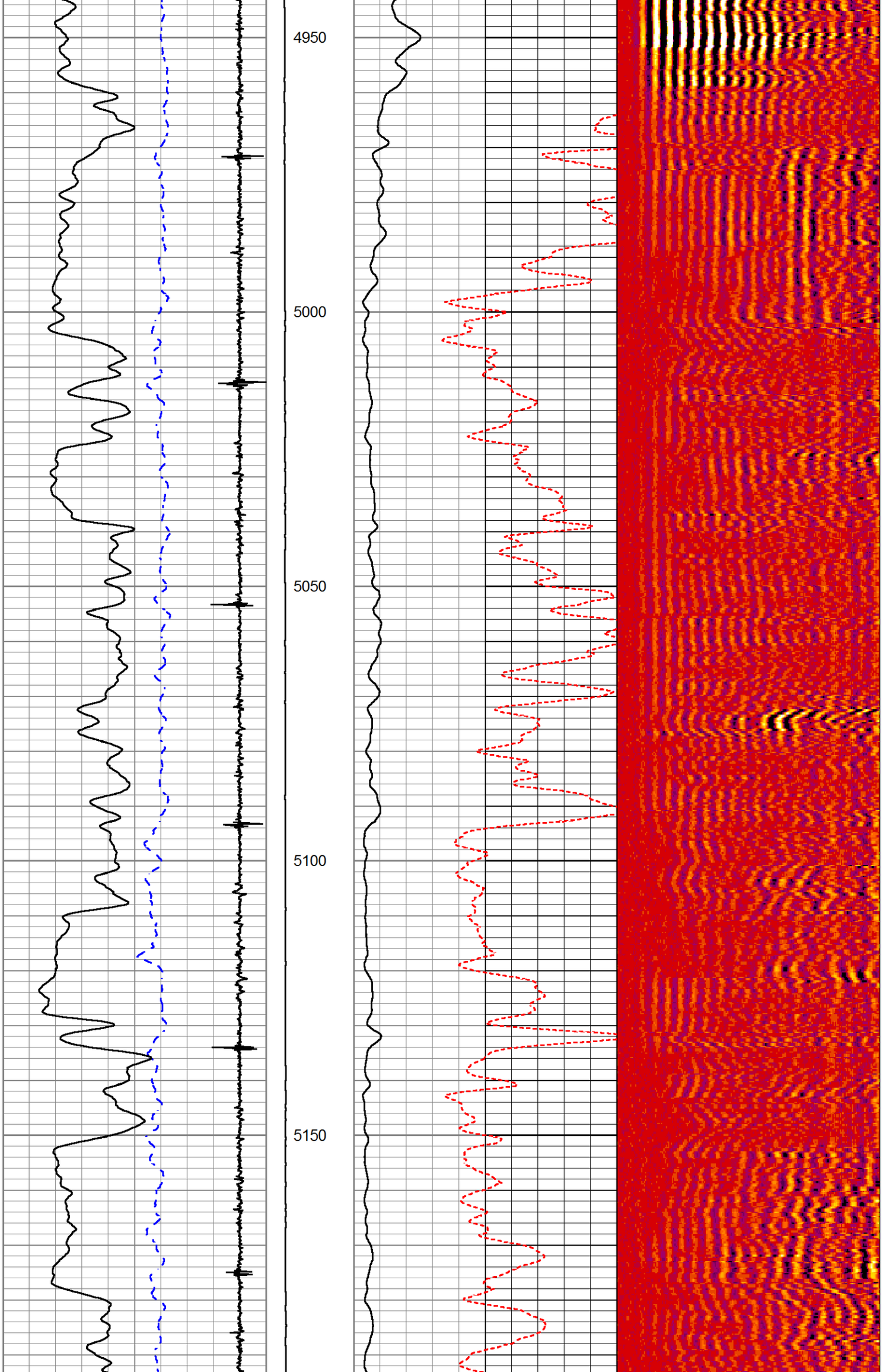
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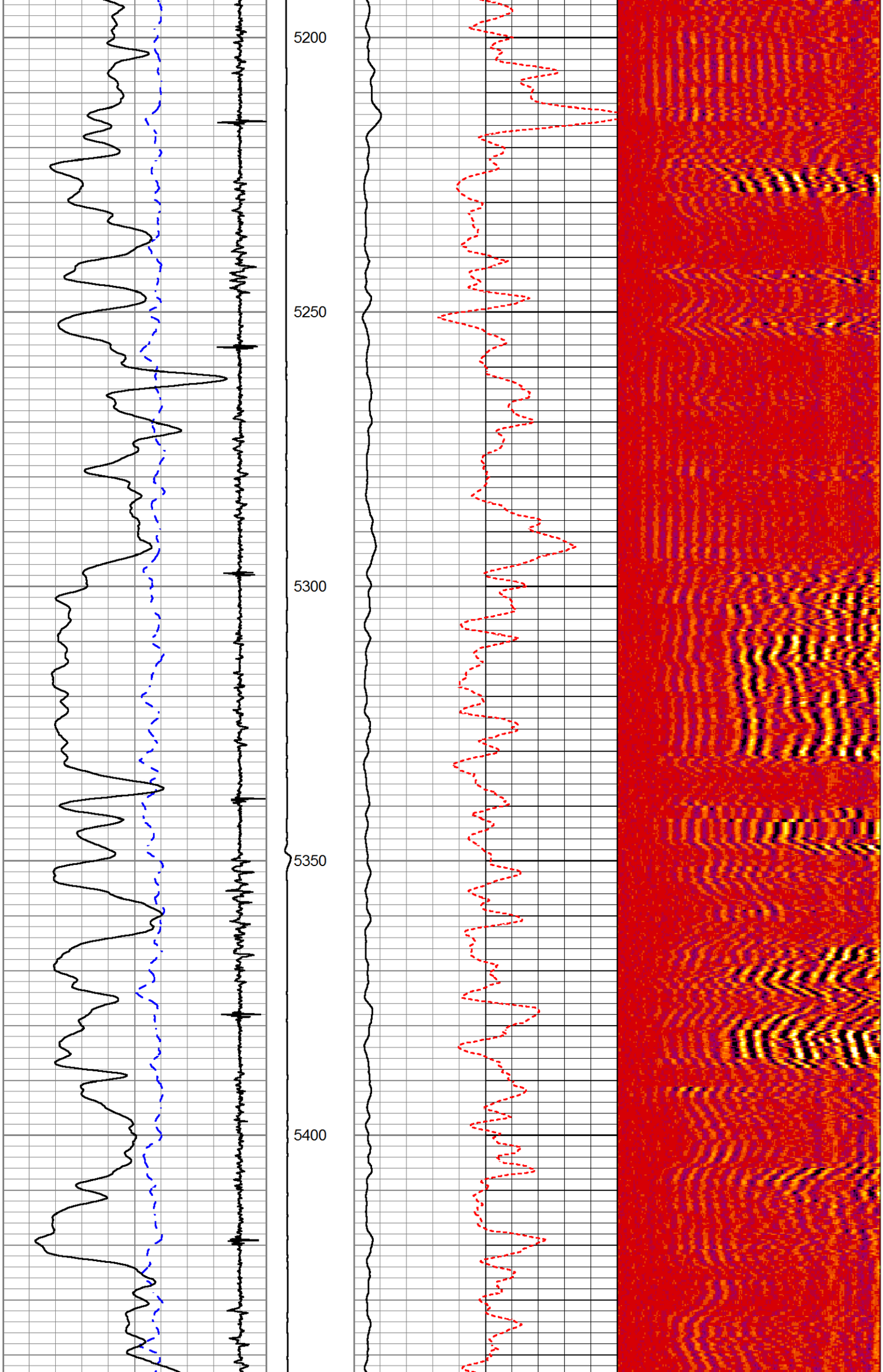
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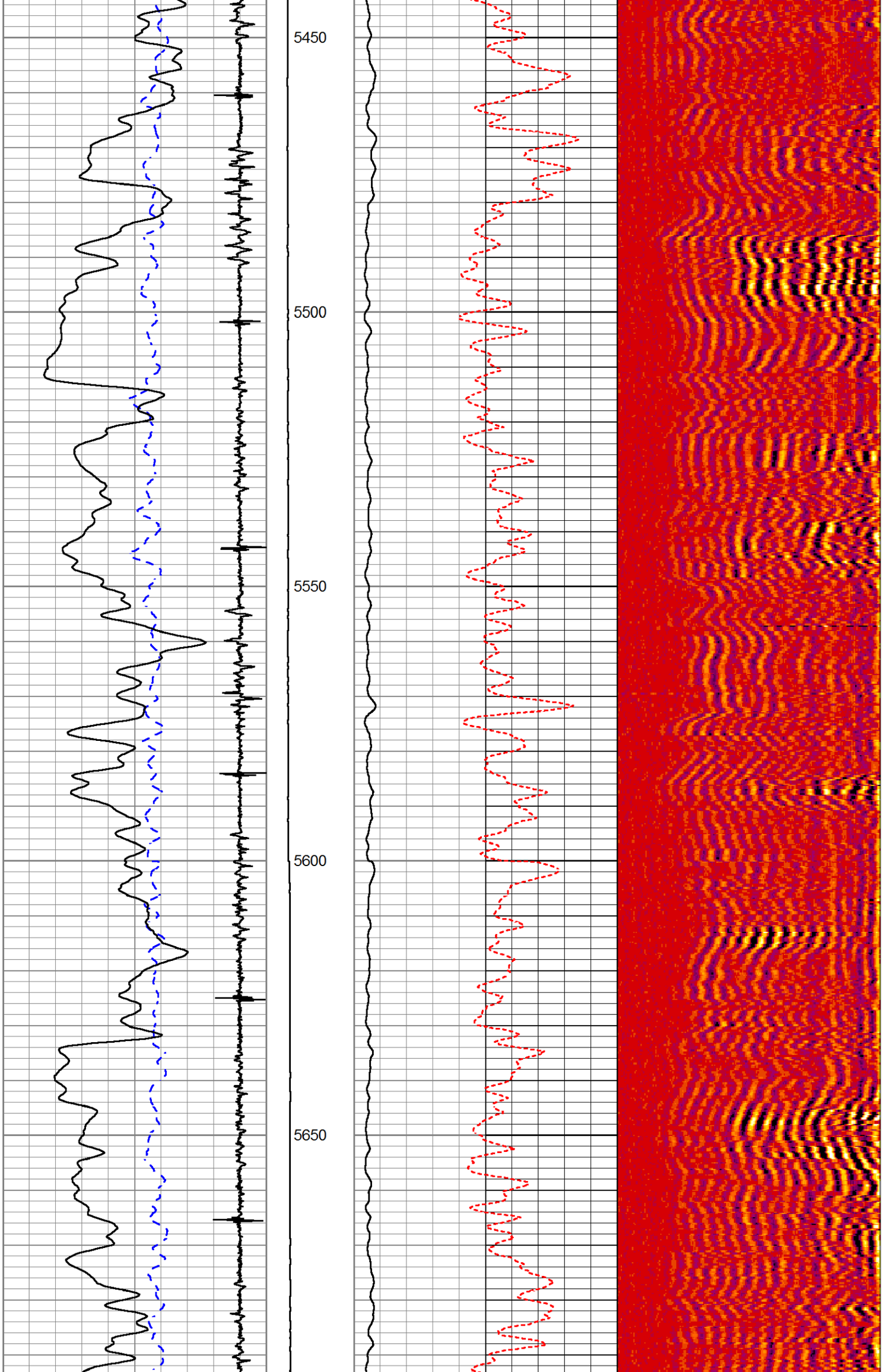
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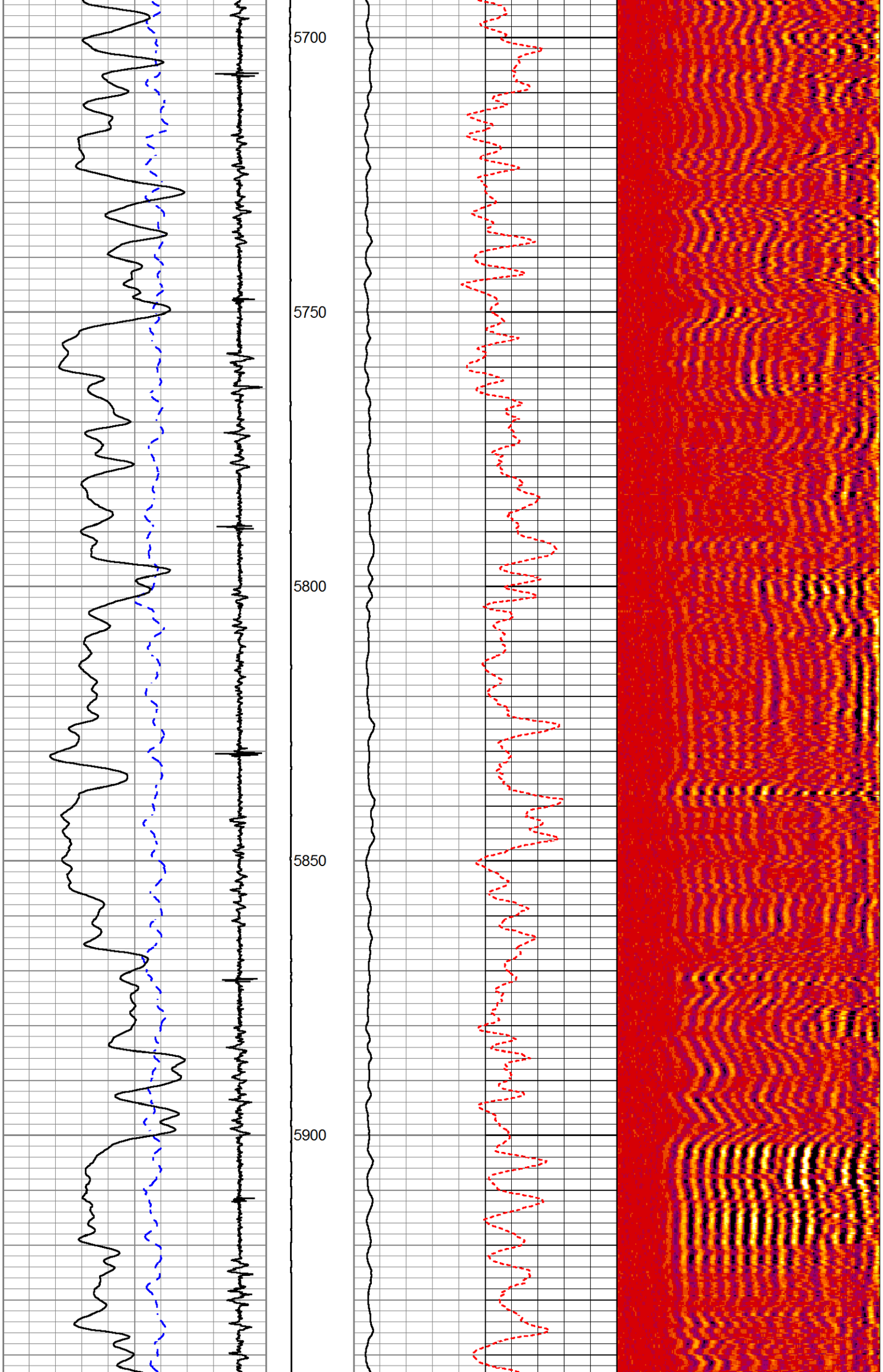
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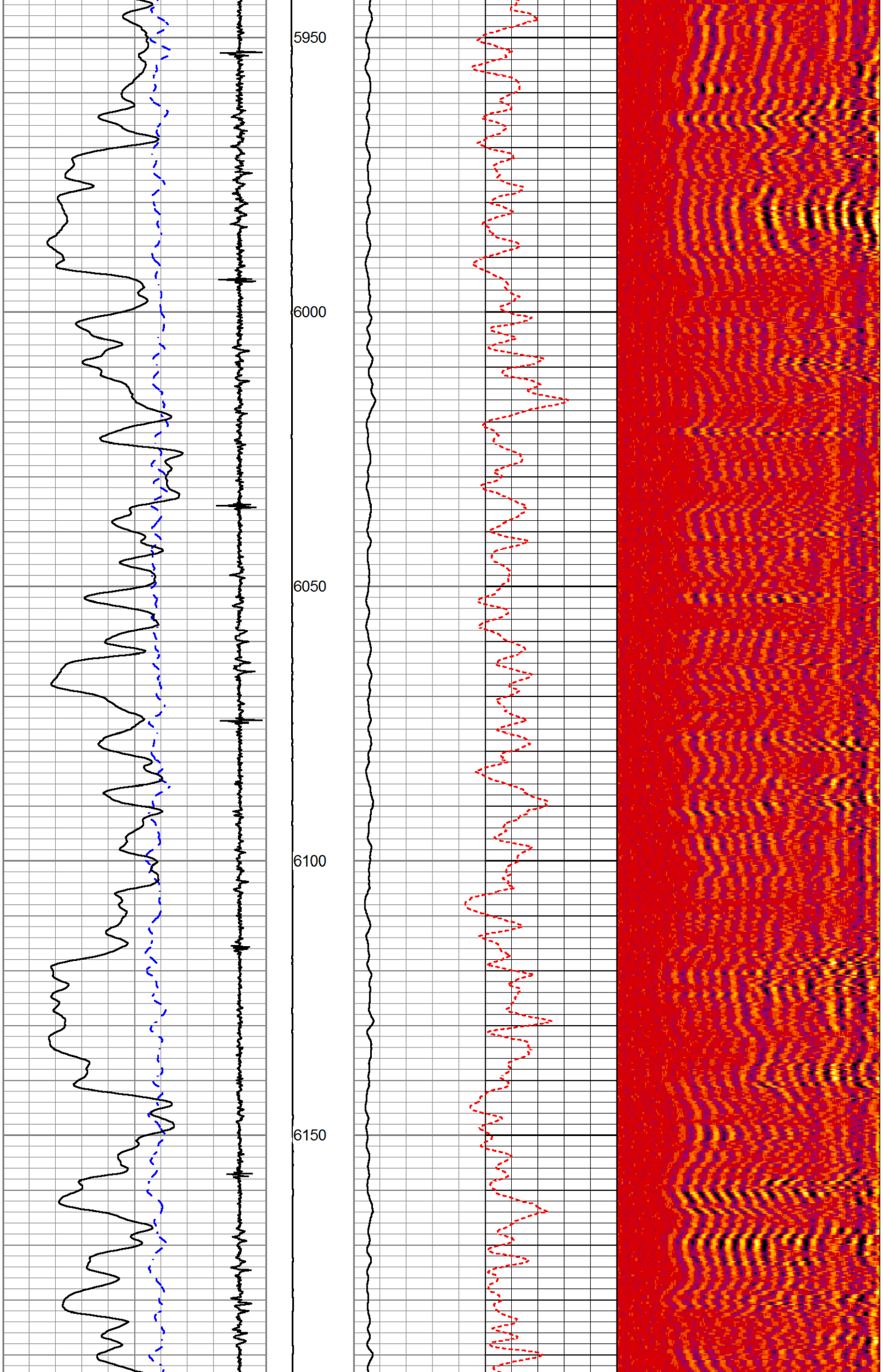
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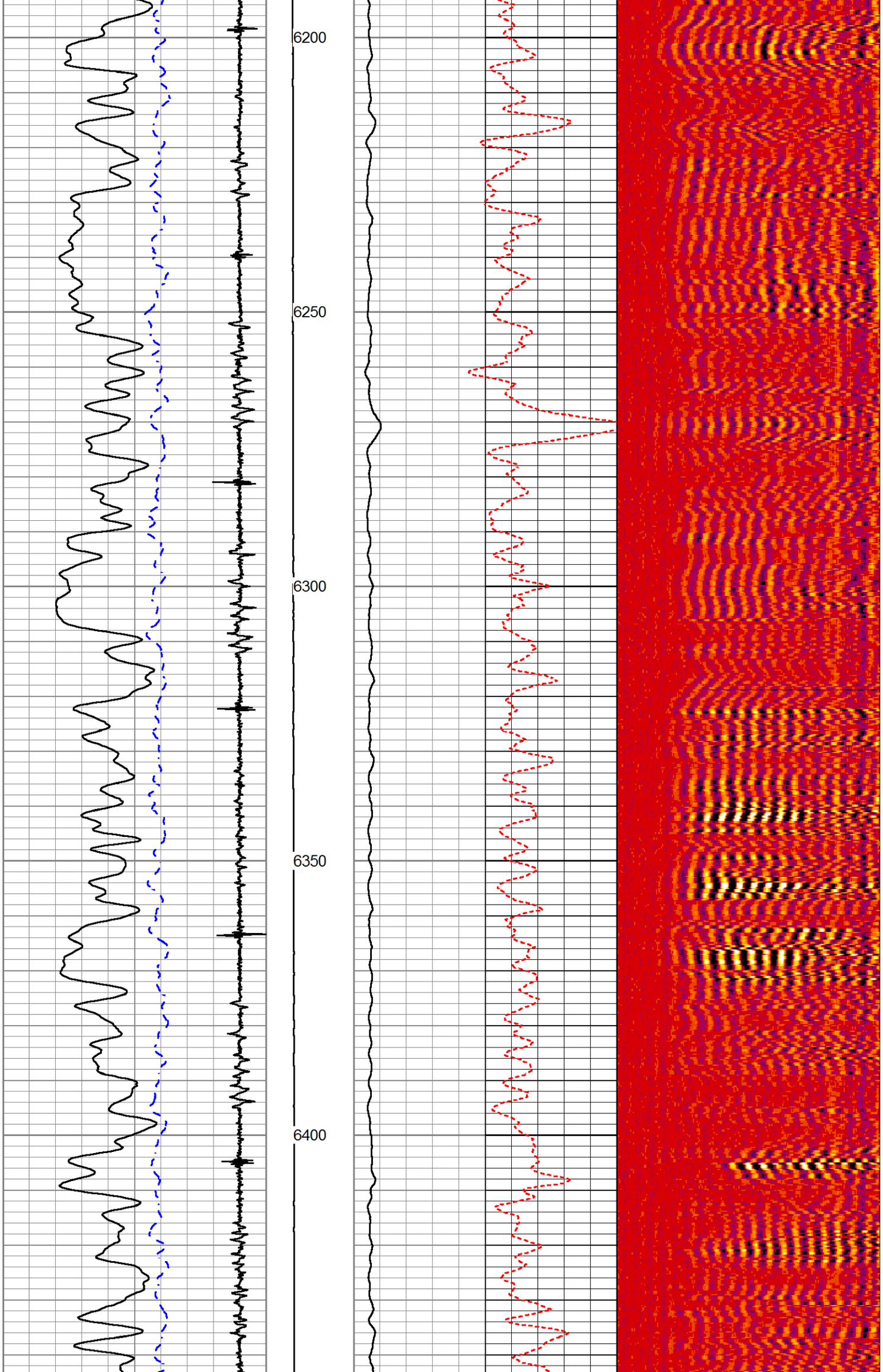
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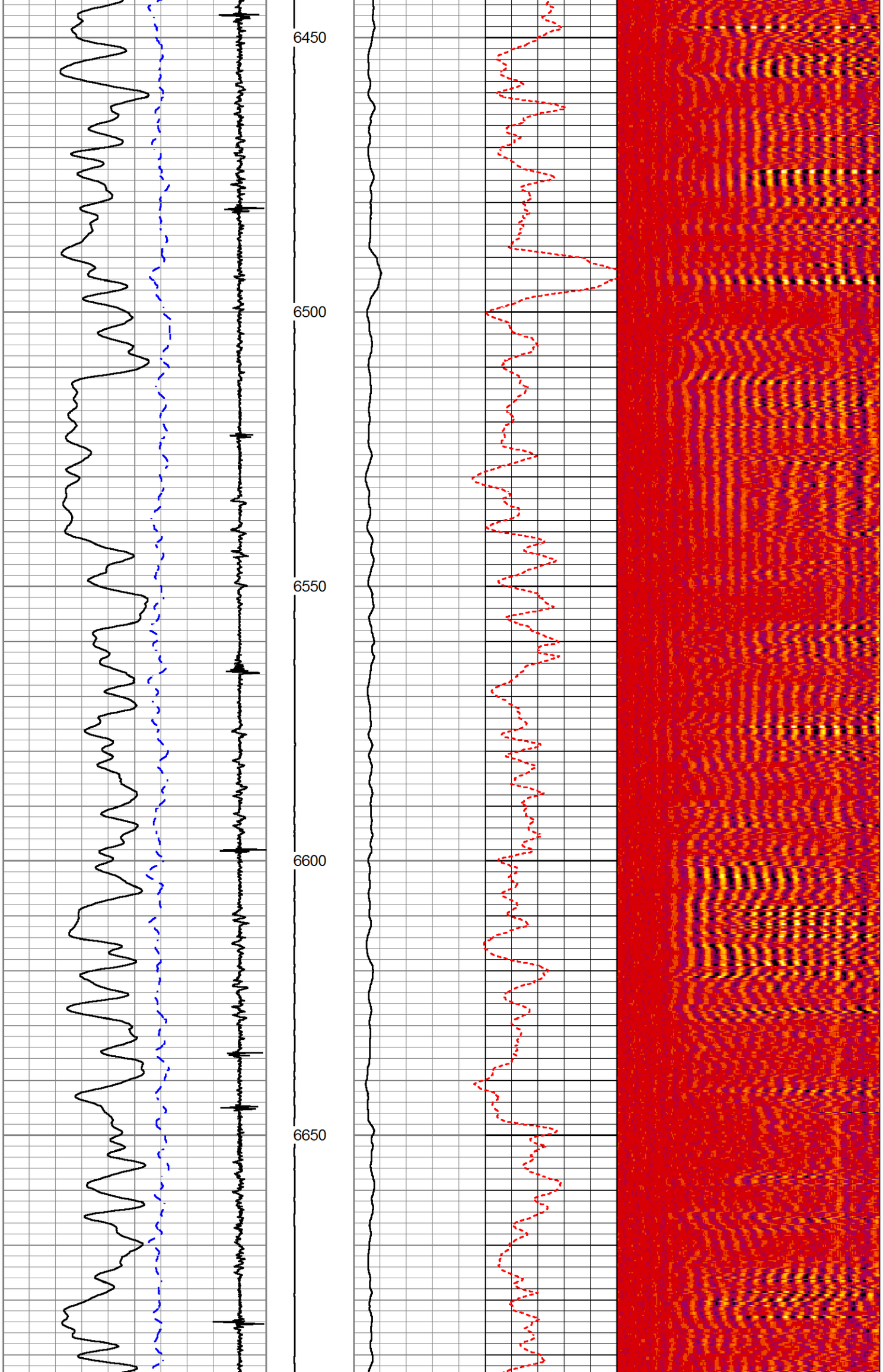
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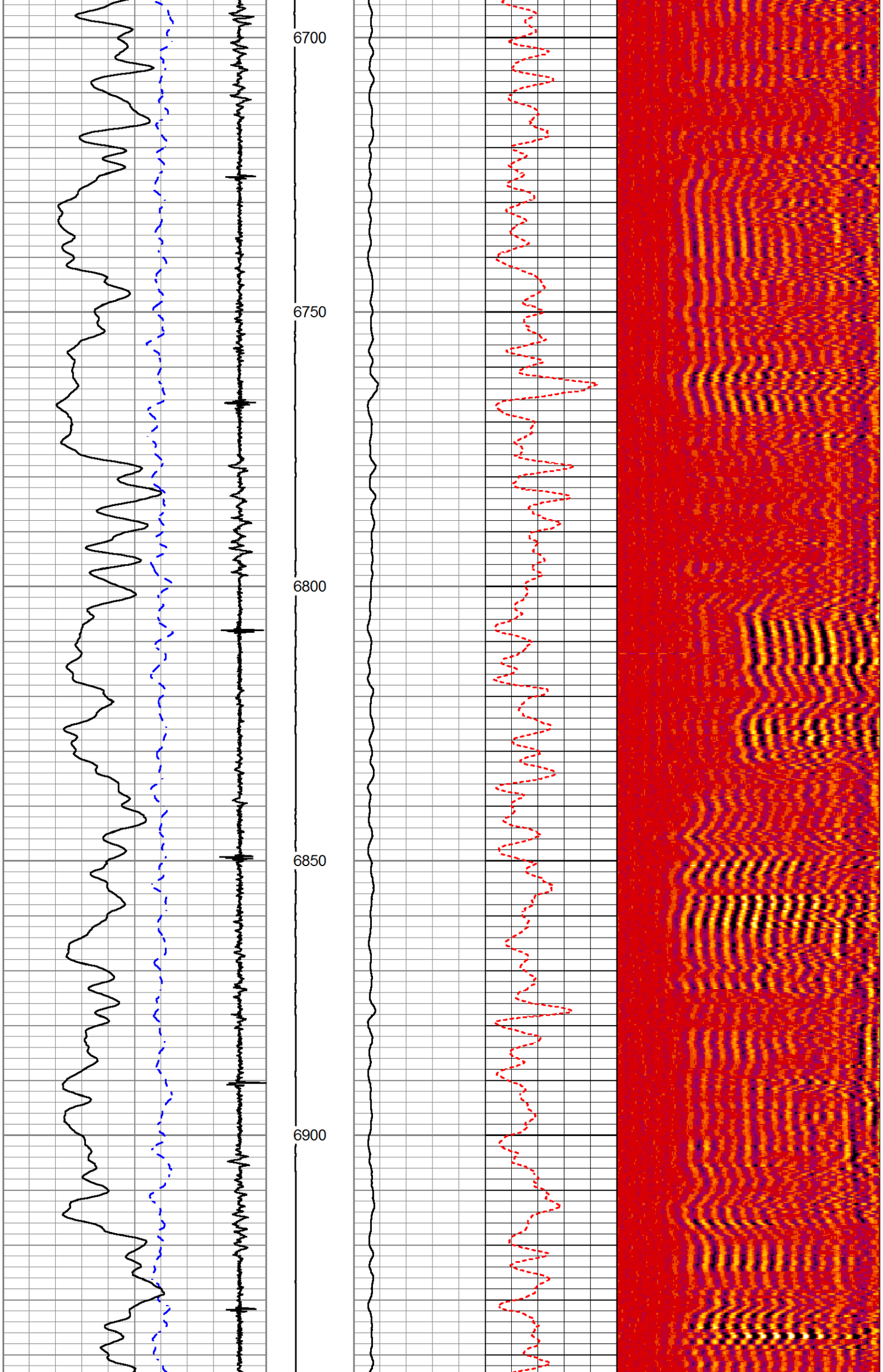
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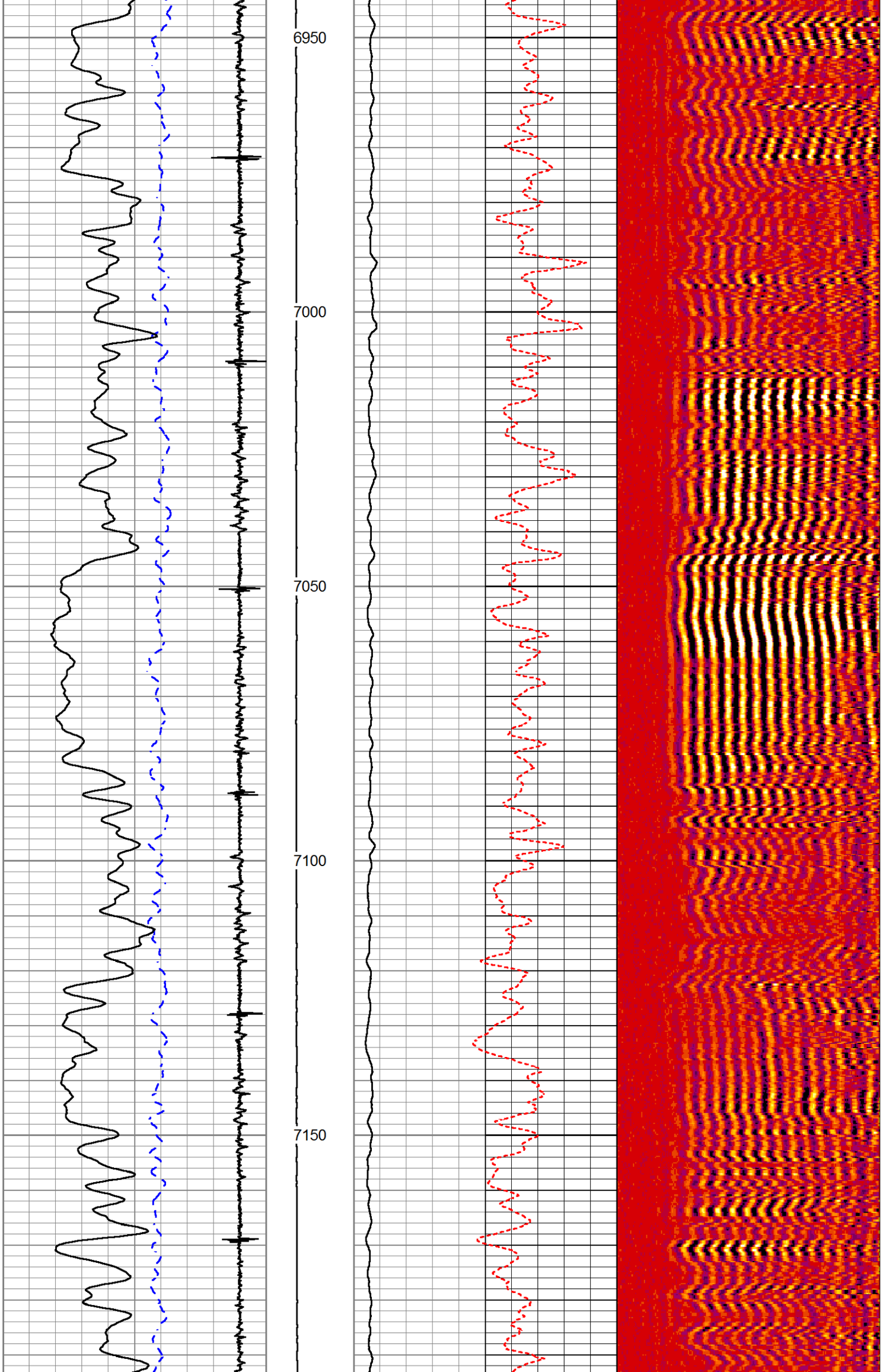
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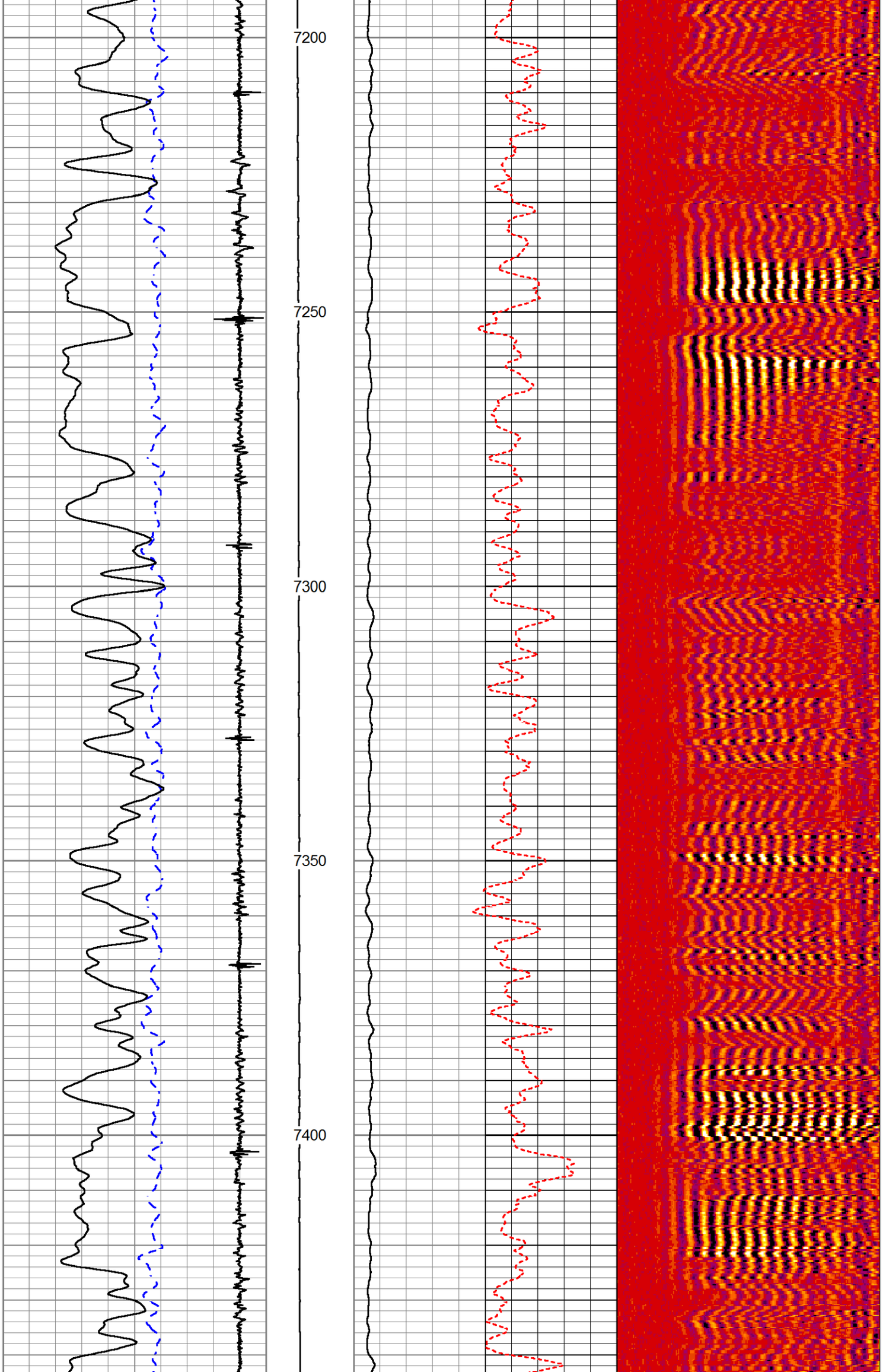
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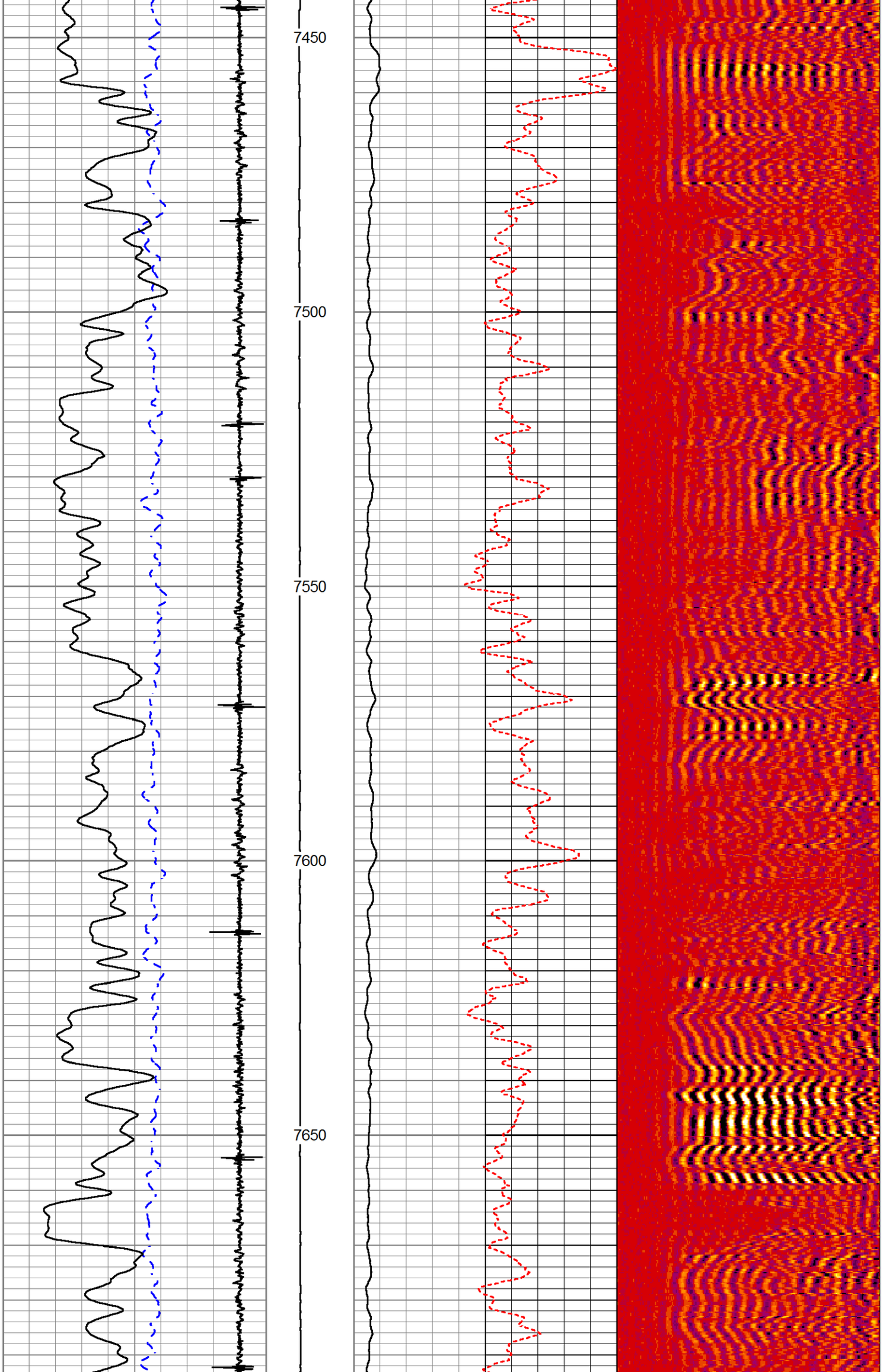
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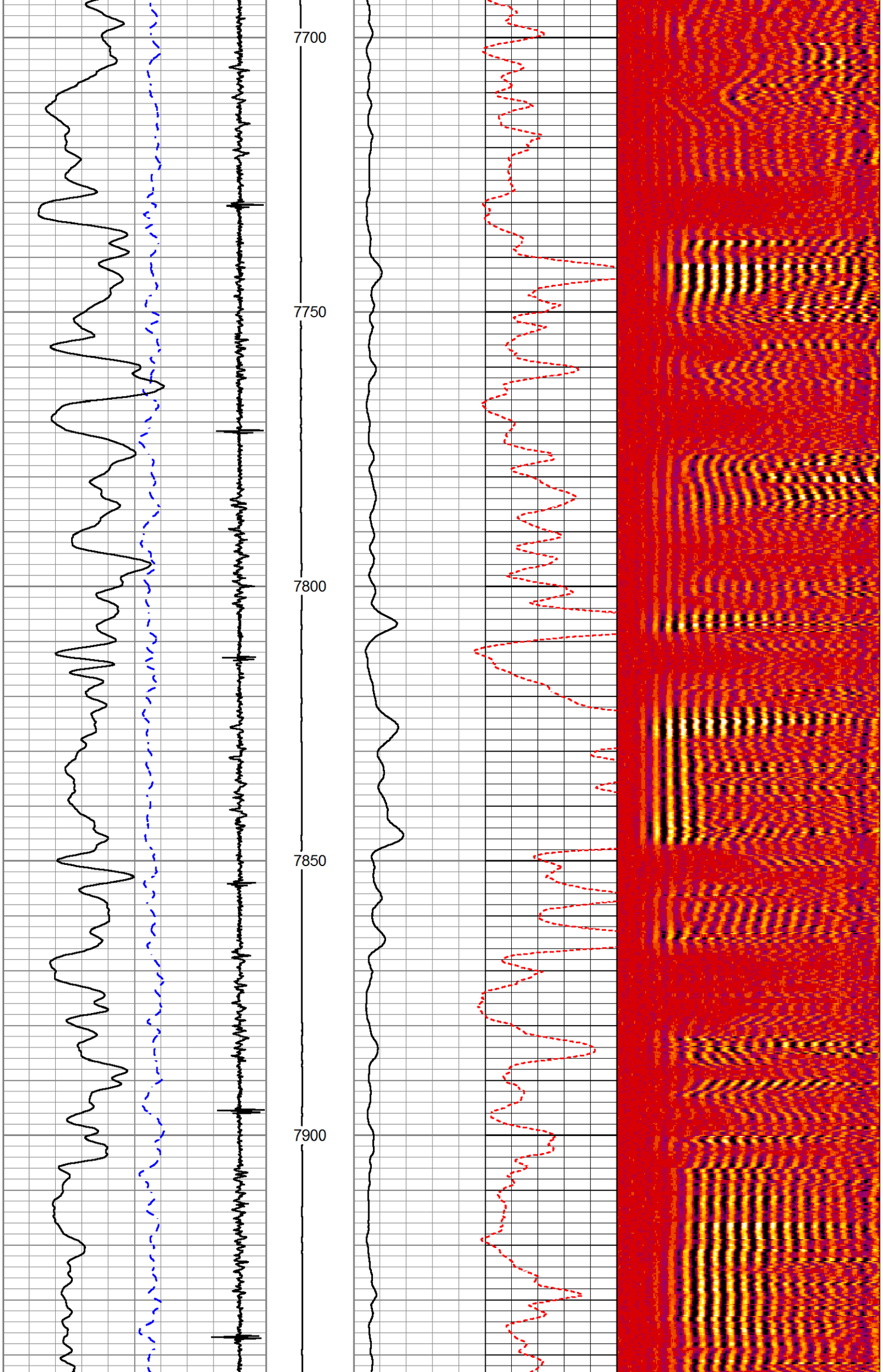
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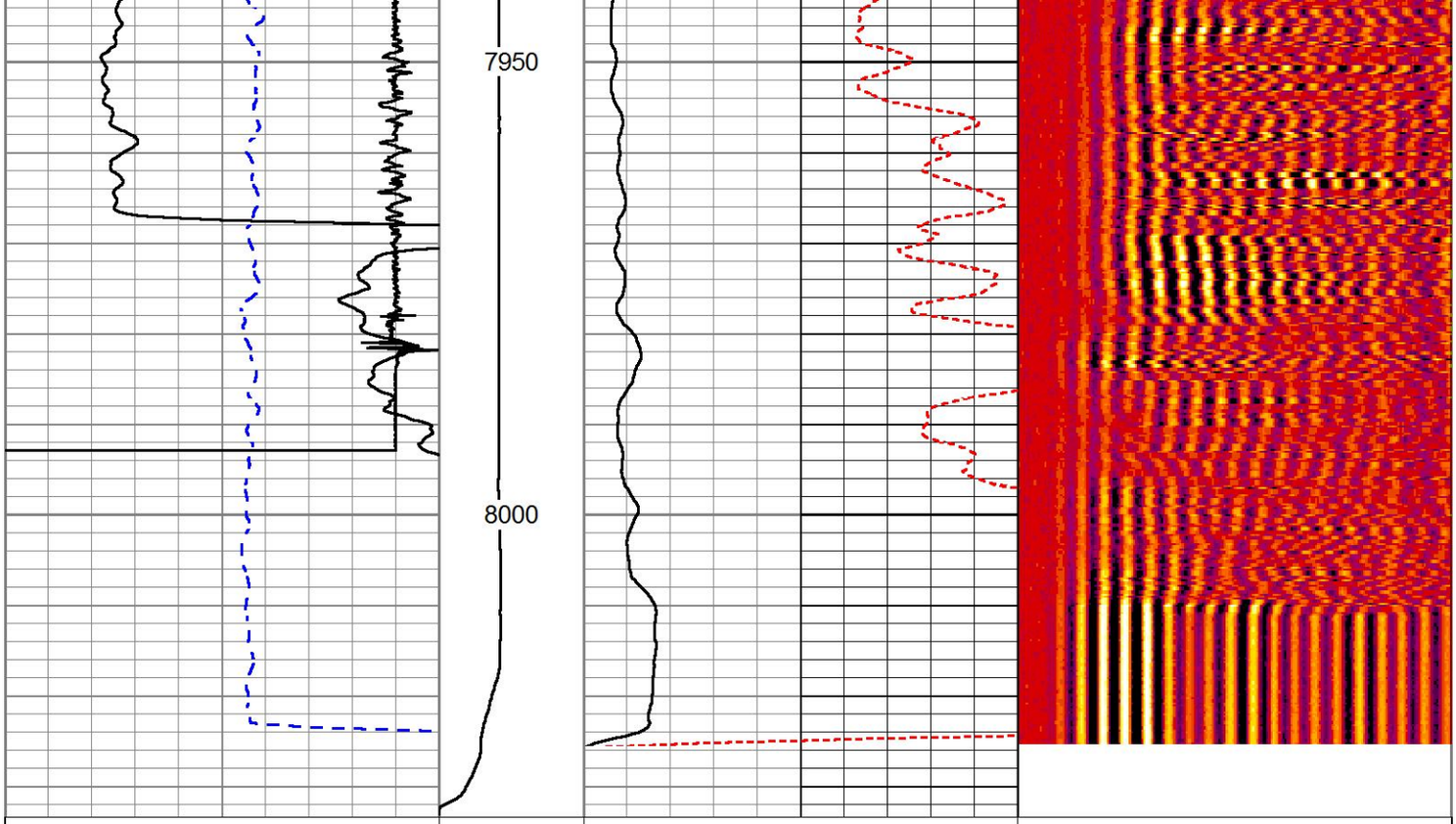


298	Travel Time (usec)	198	Line Tension	0	Amplitude (mV)	100	200	Variable Density	1060
3600	Collar Locator	-400	0 (lb)	5000	0 Amplified Amplitude (mV)	10			
0	GAMMA RAY	200							

HALLIBURTON

MAIN PASS

5" = 100'

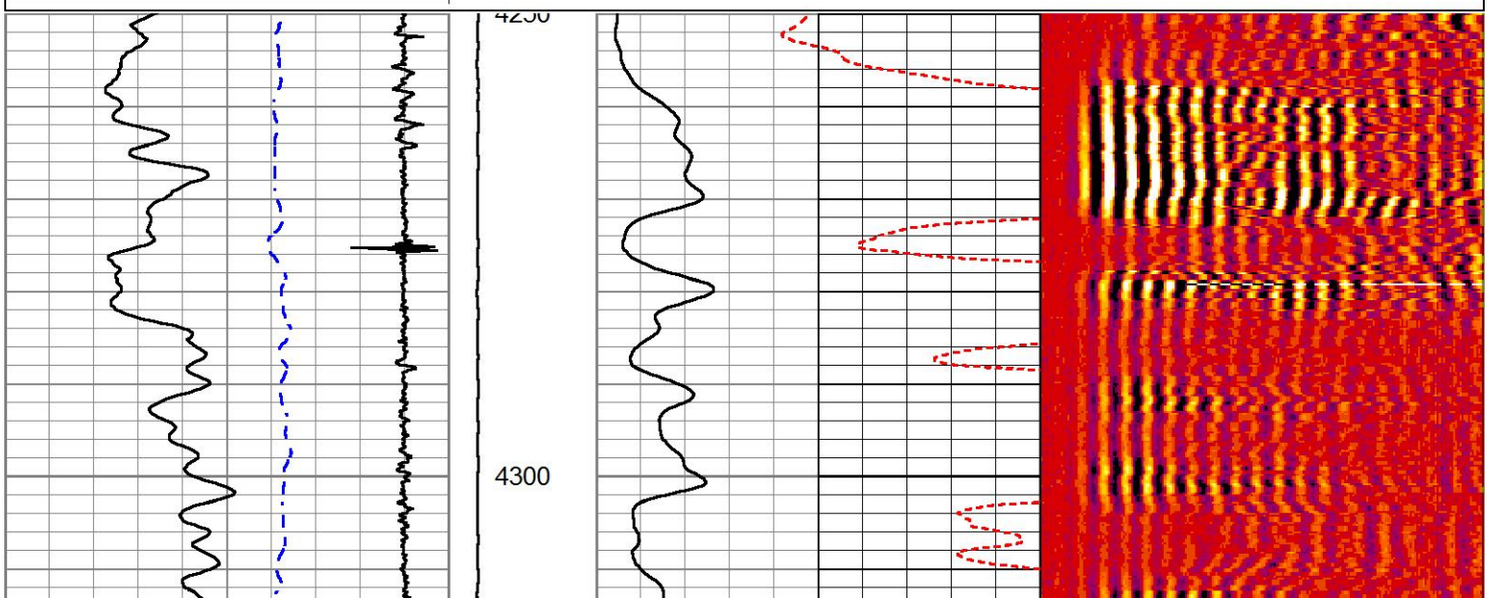
HALLIBURTON

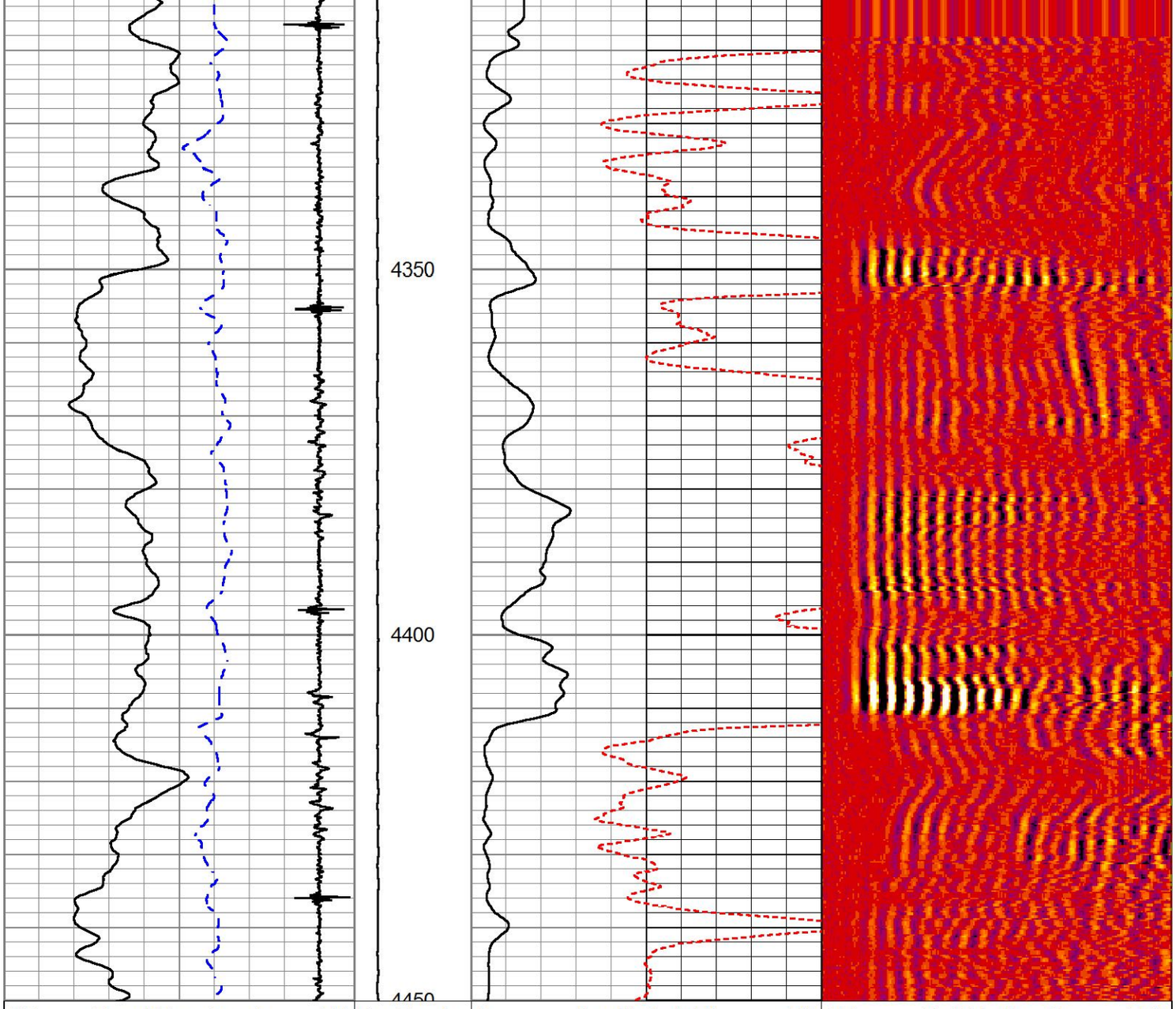
REPEAT PASS

5" = 100'

Database File	mr_b_24d_08_7_95.db
Dataset Pathname	REPEAT
Presentation Format	!1!!CB~1
Dataset Creation	Tue Nov 29 06:26:35 2016
Charted by	Depth in Feet scaled 1:240

298	Travel Time (usec)	198	Line Tension	0	Amplitude (mV)	100	200	Variable Density	1060
3600	Collar Locator	-400	0 (lb)	5000	0 Amplified Amplitude (mV)	10			
0	GAMMA RAY	200							





HALLIBURTON

REPEAT PASS

5" = 100'

HALLIBURTON

FREE PIPE PASS

5" = 100'

Database File	mr_b_24d_08_7_95.db
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Presentation Format	!1!!cbl_rmti
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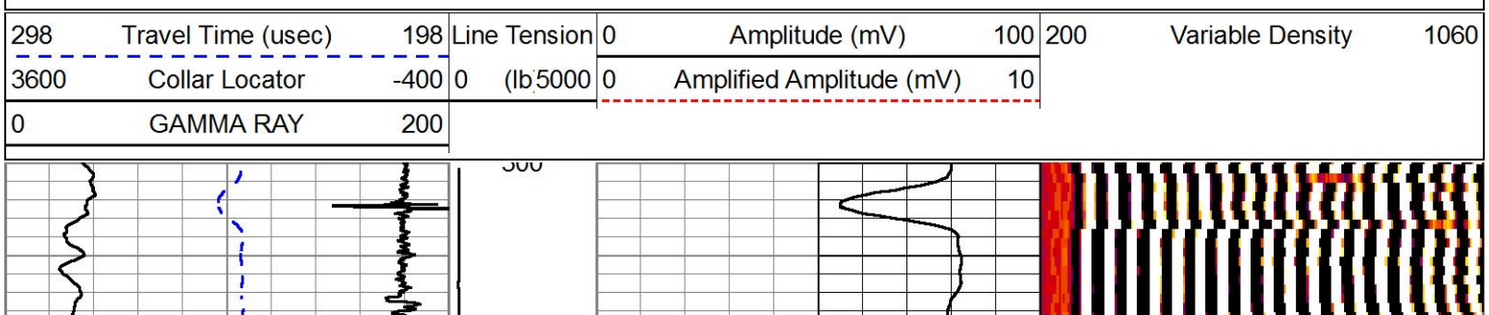
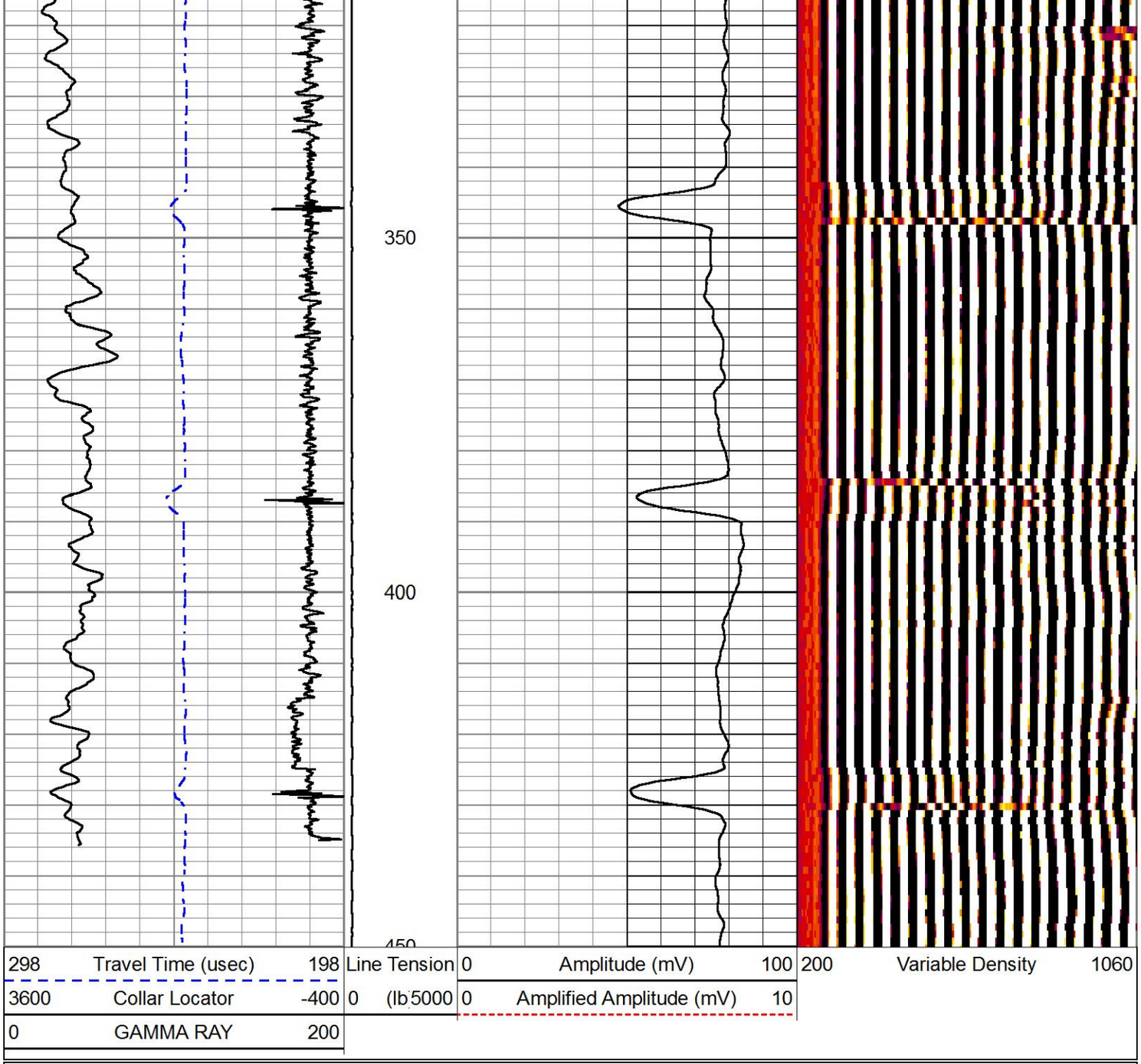
Charted by	Depth in Feet scaled 1:240





HALLIBURTON

FREE PIPE PASS

5" = 100'

Log Variables

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Dataset field/well/run1/R2_main2/_vars_

Top - Bottom

BHSAL1 1	BHSAL2 0	BHTEMP_Src TEMP	BITSIZE in 7.875	BORSAL kppm 150	BOTTEMP degF 220	CASED? Yes	CASEOD in 4.5
CASETHCK in 0.25	CASEWGHT lb/ft 11.6	LTH Sandstone	MSGGN 1	MudWgt lb/gal 8.4	PERFS 0	POROS1 1	POROS2 0
RHOCF 0.25	SO in 0	SRFTEMP degF 30	TDEPTH ft 8020	UHSGC NONE	USERFTT usec/ft 0	ZREF MRayl 1.7	

Calibration Report

Database File mr_b_24d_08_7_95.db
Dataset Pathname MAIN5

Dataset Creation Tue Nov 29 10:31:16 2016

Cement Bond Log Shop Calibration Report

Serial-Model:	12091451-A
Calibration Performed:	Tue Nov 29 06:05:42 2016

Free Pipe Calibration

	Measured	Units
TT	244.4	usec
Amplitude	520.6	mV
Log Base Line	8.6	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.159	

Reservoir Monitor Tool I Calibration Report

Serial-Model:	12095949-A
Shop Calibration Performed:	Thu Nov 24 11:32:44 2016

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
ITCR2	3153	3250	-97	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0259	5.51	<6.00
Fe	206	206 +/-2	0.0966	-----	-----
NGAIN = 0.996	NZOFF = 0.5				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0356	5.76	<6.50
Fe	210	208 +/-2	0.0903	-----	-----
FGAIN = 0.990	FZOFF = 0.5				

Flask Temperature 50.0 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.36	1.36	0.00	+/-0.05	
TCCR2	5059	5000	59	+/-1000	cps
ITCR2	3123	3200	-77	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
FCAP	9856	10000	-144	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.96	0.95	0.01		
N/F Inel Norm	0.62	0.61	0.01		
RNF	1.04	1.07	-0.03	+/-0.12	
RINC	1.61	1.64	-0.03	+/-0.18	
SGFN	24.07	24.00	0.07	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	23621	24000	-379	+/-2000	cps
FCAP	9956	10000	-44	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.92			<5.00	
NBKG	190			<500	cps
FBKG	97			<500	cps
RTN	0.40	0.40	-0.00	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec

Calibration Software Modules

HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1

Log Data Acquisition Software Modules

HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1

Gamma Ray Calibration Report

Type / Serial: 002 / 11214503

SHOP CALIBRATION Wed Nov 09 16:25:32 2016

	Counts/Sec.	Gain	Offset	Jig	Units
Background	34.1				cps
Calibrator	297.9				cps
		1.3950			GAPI/cps

PRIMARY VERIFICATION

Background	42.3				cps
Calibrator	413.8				cps
Difference				371.5	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
CCL	35.82					
GR	33.56		TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00

		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT	22.91				
RmtTNGT	22.41	RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFP5V	14.66	X-OVER-GoxSondex Go Box x Sondex Pin CrossOver	0.27	1.69	1.00
RmtNFwvMcsP	14.66				
RmtCommFWa	14.66	CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Temp	9.57				
TT3FT	7.32	HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.32				
WVF5FT	6.36				
		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
WVF3FT	2.84				
		AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
		BUL-001 (000001) Bullnose	0.30	1.69	1.50
LLMTEN	0.00				

Dataset: mr_b_24d_08_7_95.db: field/well/run1/MAIN5
Total length: 39.39 ft
Total weight: 356.50 lb
O.D.: 3.13 in

Company	URSA OPERATING COMPANY LLC
Well	MONUMENT RIDGE B 24D-08-7-95
Field	PARACHUTE
County	GARFIELD State CO

HALLIBURTON

CEMENT BOND LOG