

HALLIBURTON										CEMENT BOND LOG									
Company URSA OPERATING COMPANY LLC Well MONUMENT RIDGE B 34C-08-7-95 Field PARACHUTE County GARFIELD State CO										Company URSA OPERATING COMPANY LLC Well MONUMENT RIDGE B 34C-08-7-95 Field PARACHUTE County GARFIELD State CO									
Permanent Datum GROUND LEVEL Elevation 5702' Log Measured From KB , 17' Ft. above perm. datum Drilling Measured From KB										Sec: 8 Twp: 7S Rge: 95W RMT-1									
Date @ Time Logged 28 NOV 2016 @ 11:30 Run No. ONE Depth - Driller 7530' Depth - Logger 7287' Bottom - Logged Interval 7280' Top - Log Interval 1764' Max. Recorded Temp. 220 degF										Type Fluid in Hole FRESH WATER Density of Fluid 8.4 PPG Fluid Level SURFACE Cement Top Est. Logged 1742' Equipment / Location 11808537 / RS. WY Recorded by B. RIDDEL Witnessed by R. TOLLE									
CEMENTING DATA										Protection String									

Service Ticket No.		903682720		API No.		05045229110000		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	Run No.	ONE	Run No.	ONE	Run No.	ONE				
Serial No.	12146425	Serial No.	11224503	Serial No.	12095949	Serial No.	11836468				
Model No.	XHU-3	Model No.	TTTC-U2	Model No.	RMTI	Model No.	CBLM				
Diameter	1 11/16"	Diameter	1 11/16"	Diameter	2.25"	Diameter	2.75"				
LOGGING DATA											
General Data											
Pass	Depths		Well Head	Speed	Logging Run Comments						
No	From	To	Pressure	Ft/Min							



ONE	4000'	3800'	0 PSI	20	REPEAT			
TWO	7280'	1764'	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			

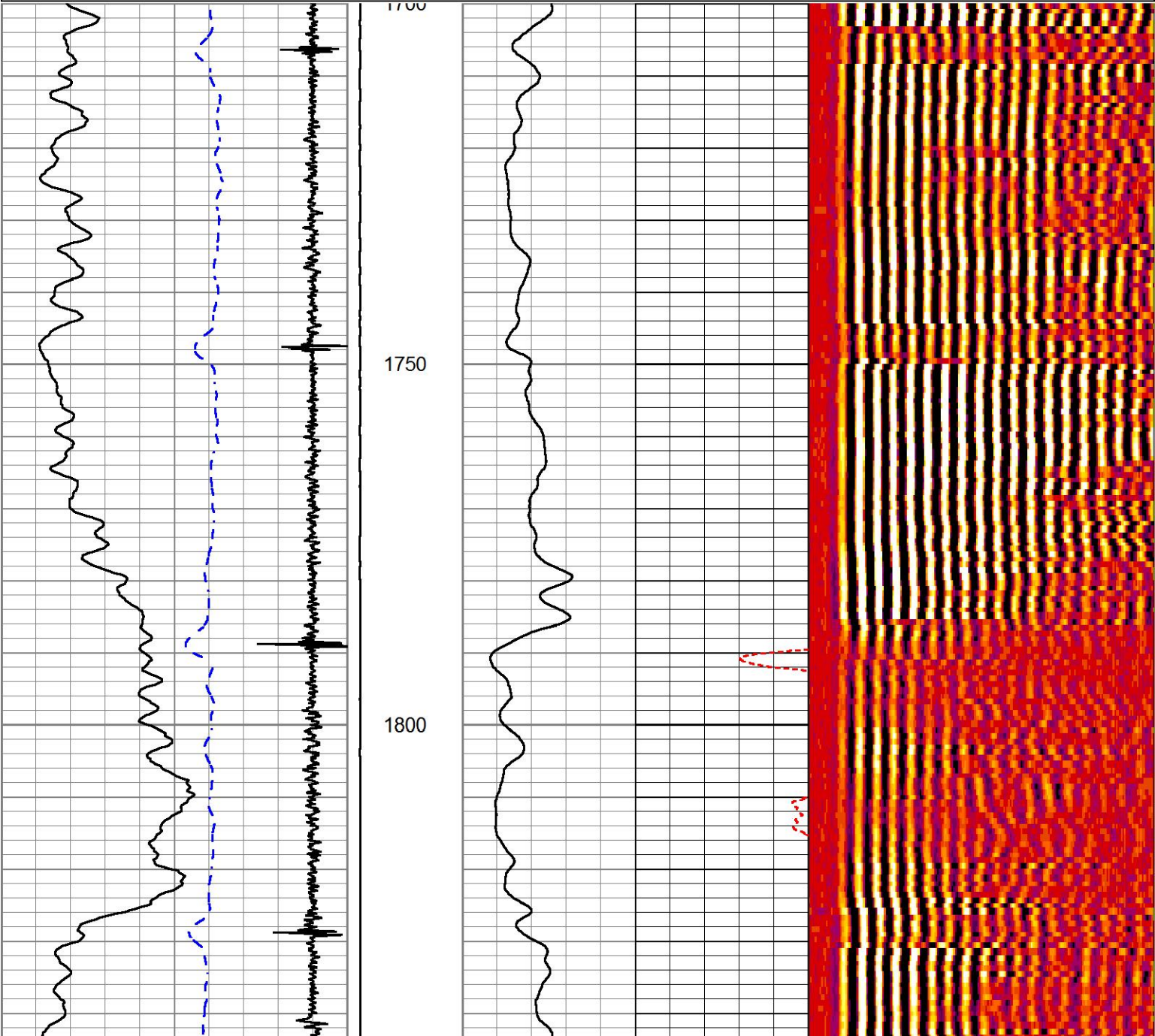
MAIN PASS

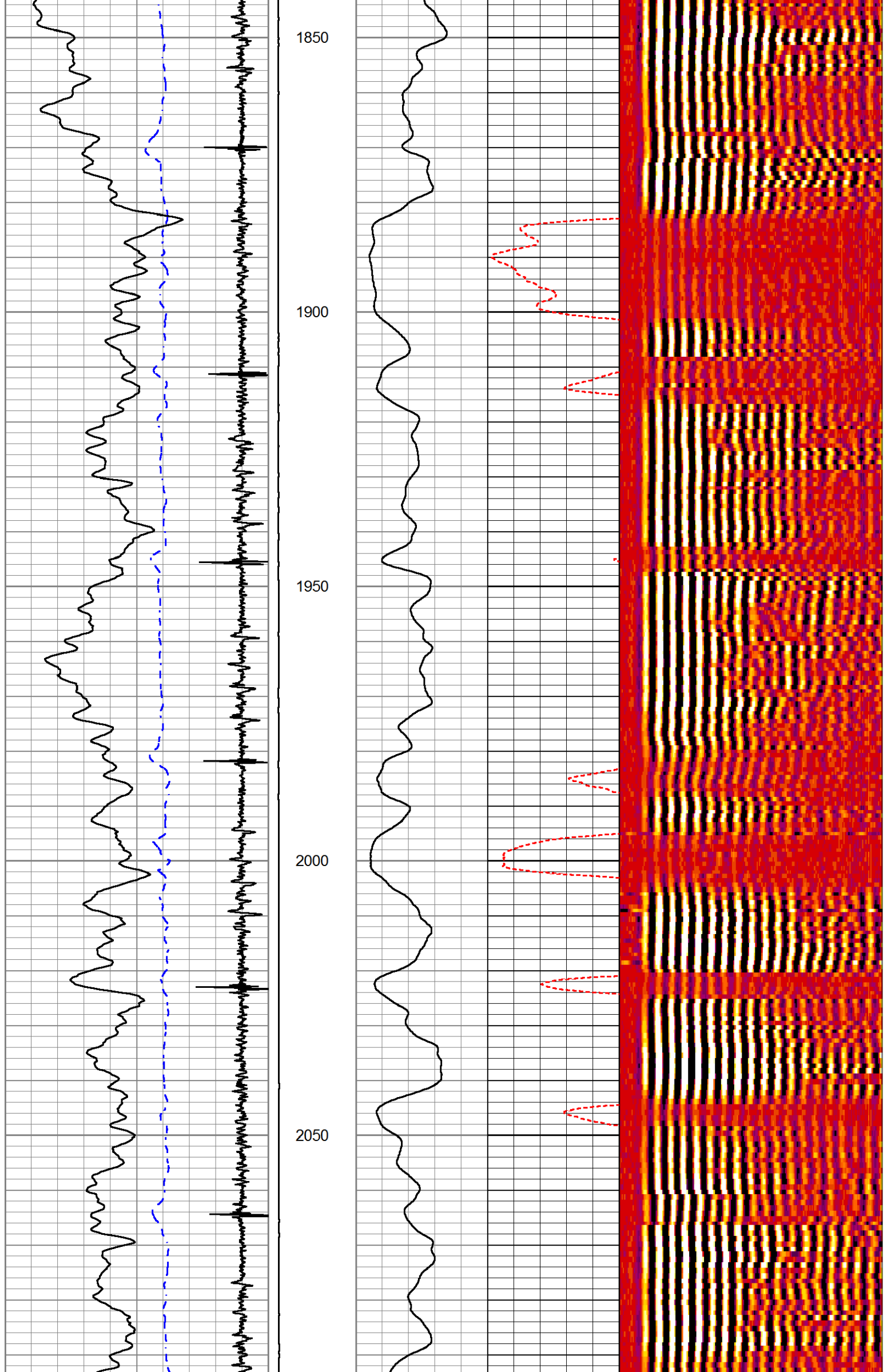
HALLIBURTON

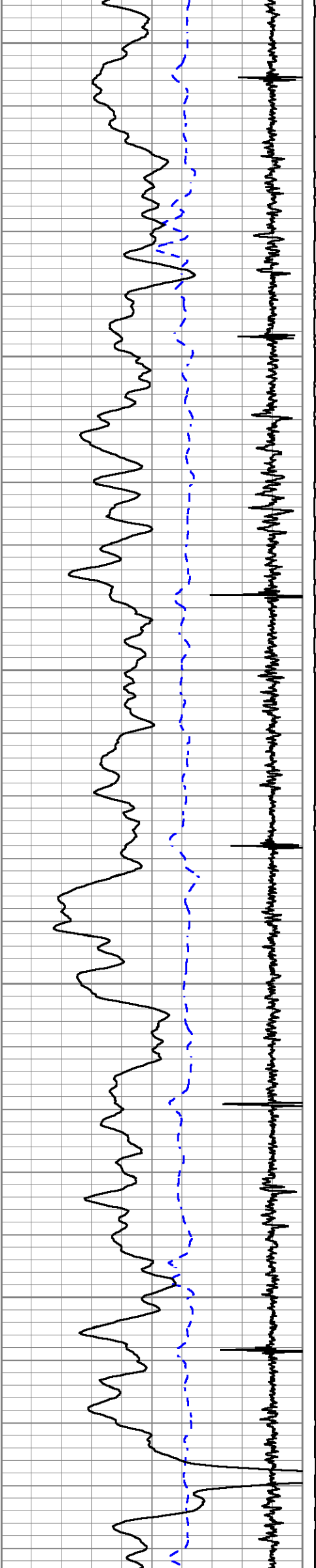
5" = 100'

Database File        mr\_b\_34c\_08\_7\_95.db  
Dataset Pathname    merge1  
Presentation Format   !1!!CB~1  
Dataset Creation      Tue Nov 29 00:39:54 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							







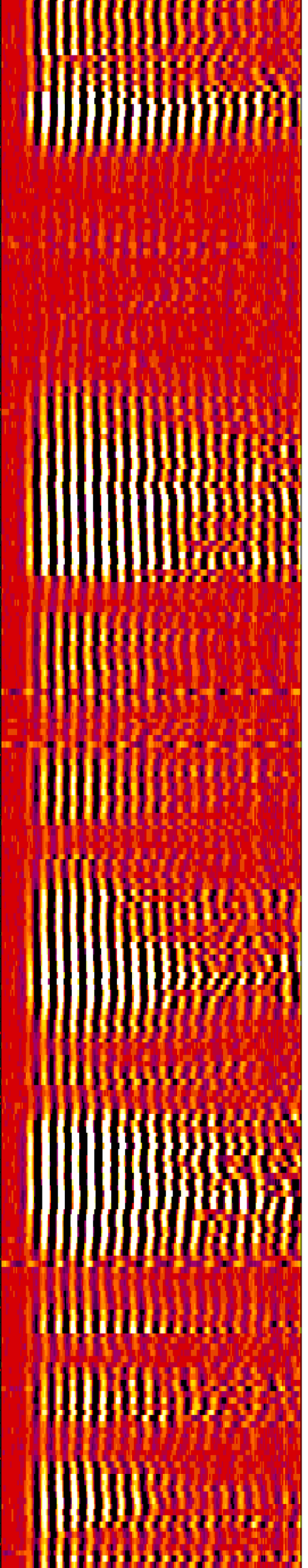
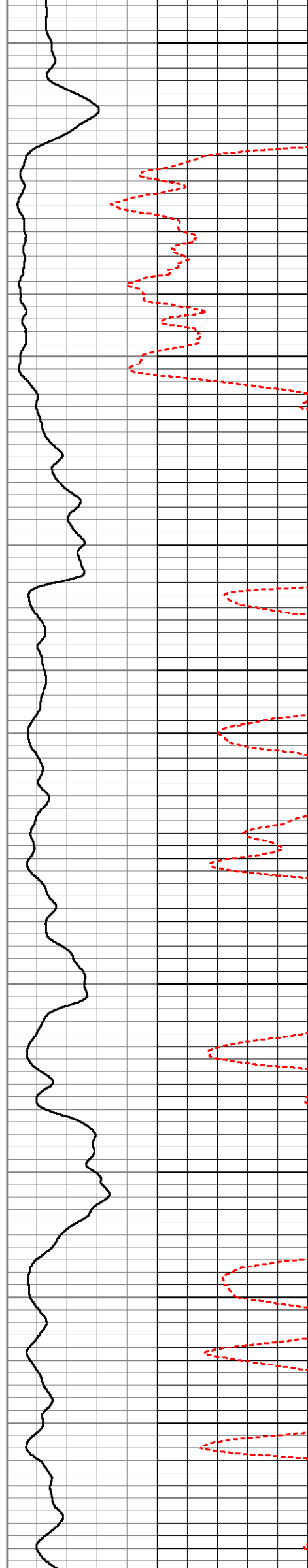
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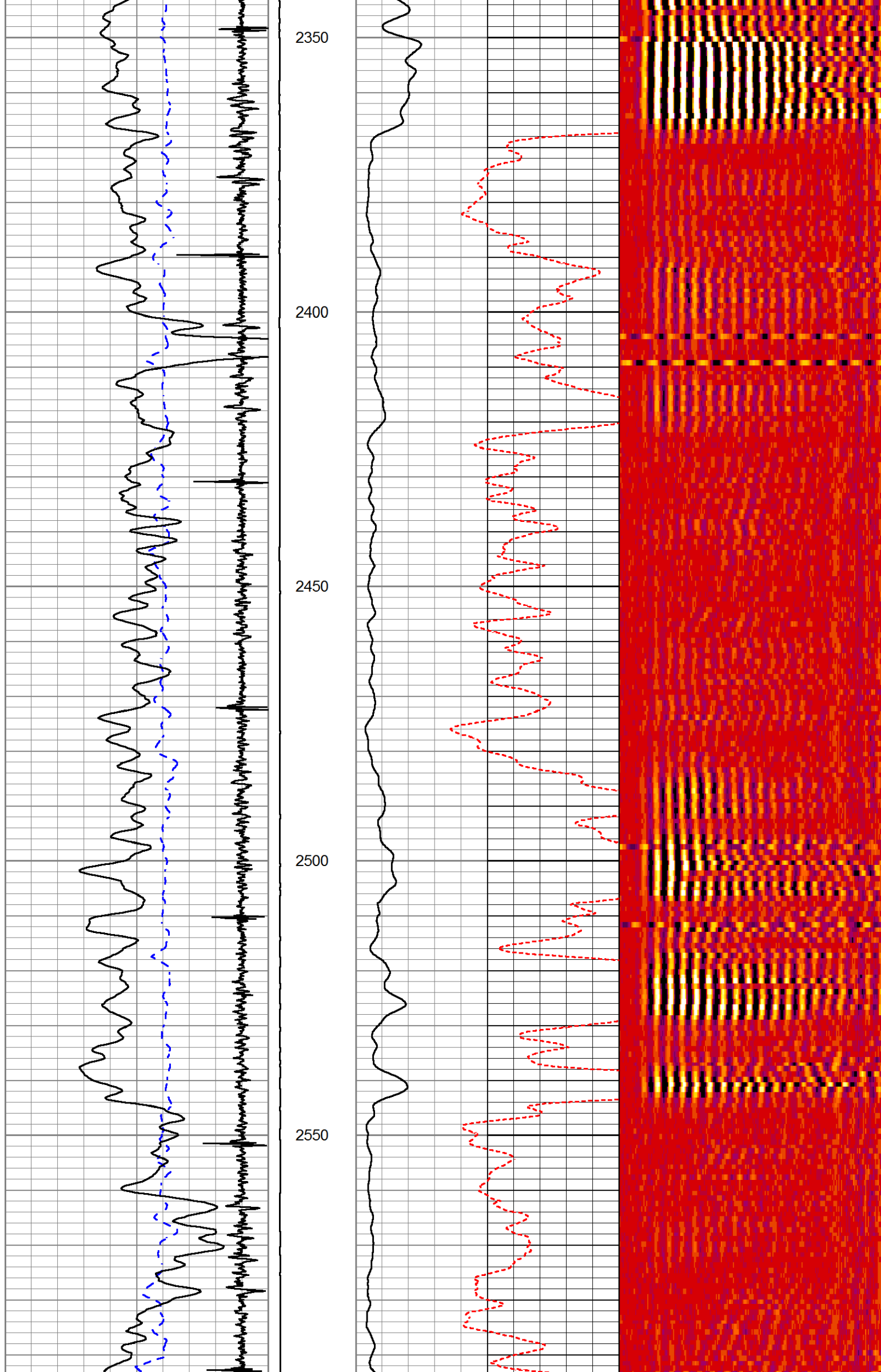
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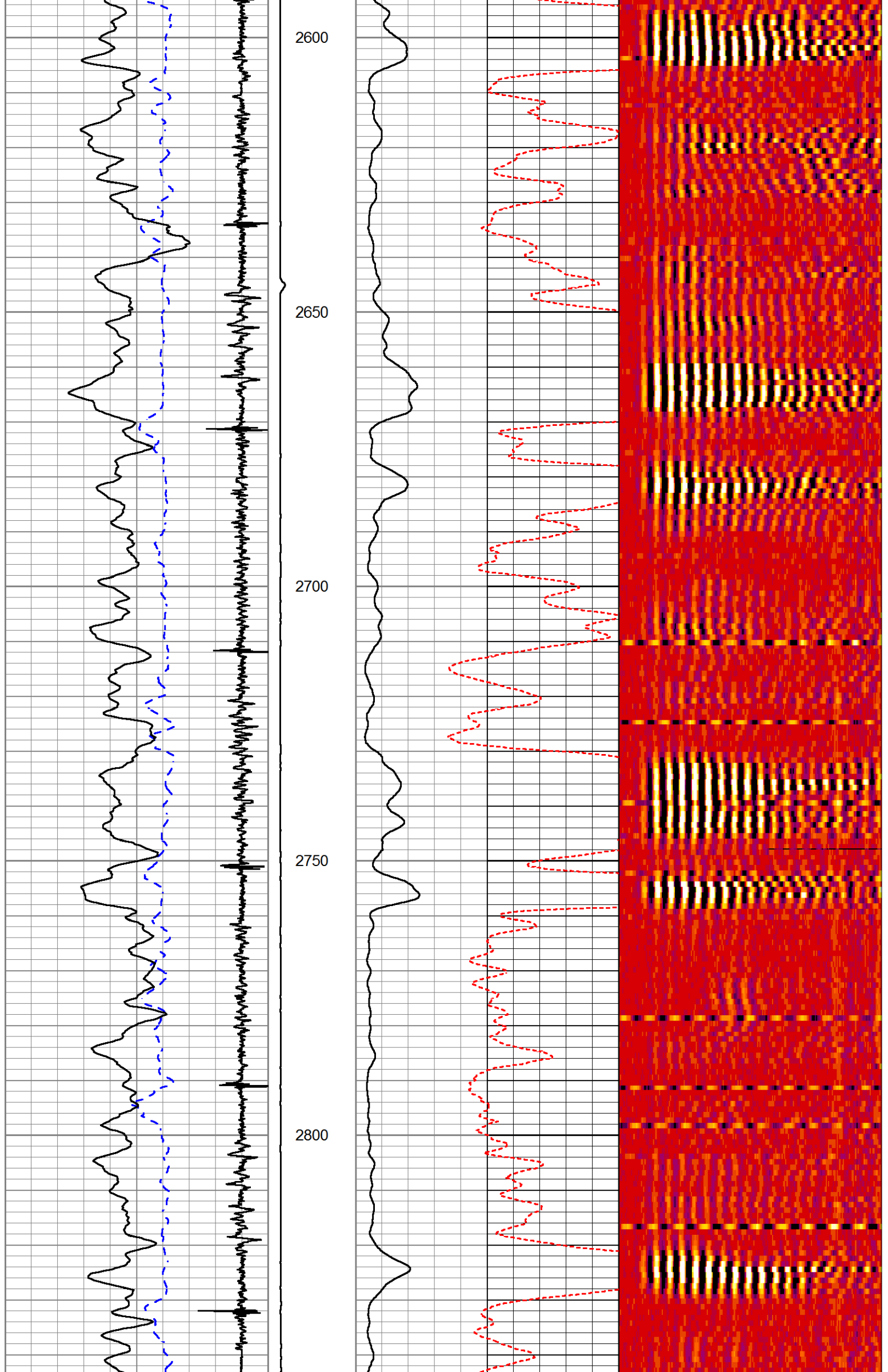
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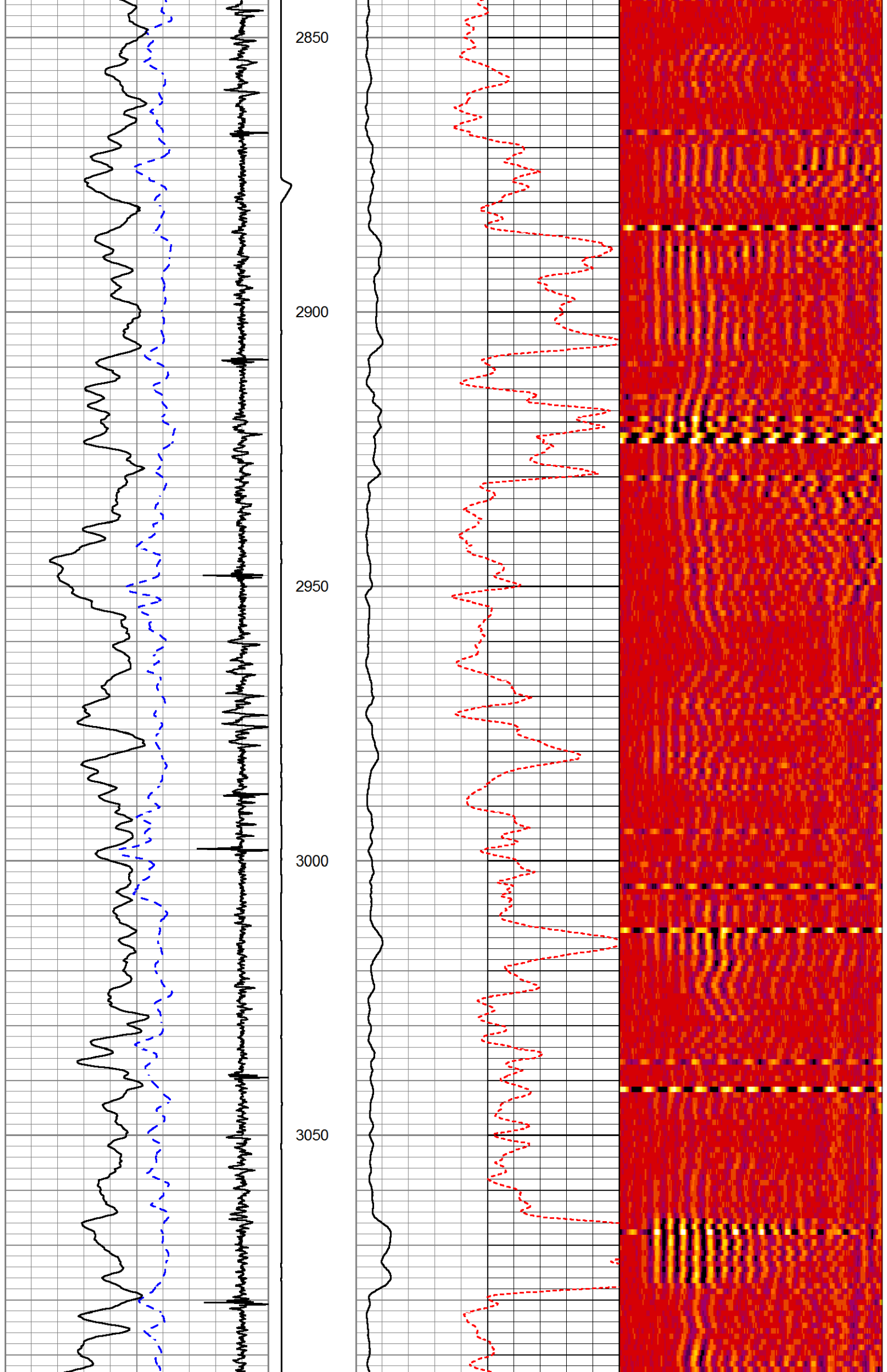
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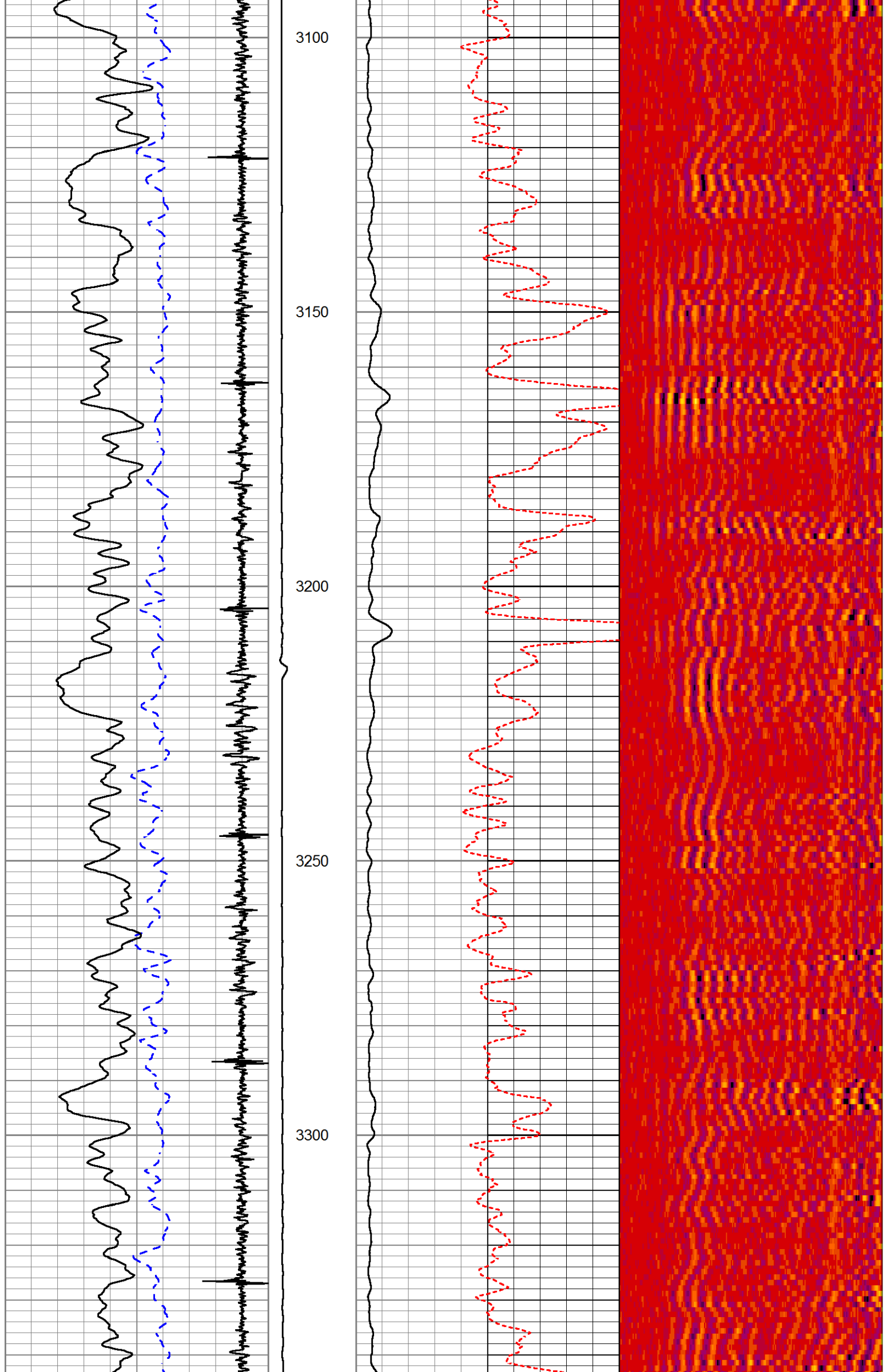




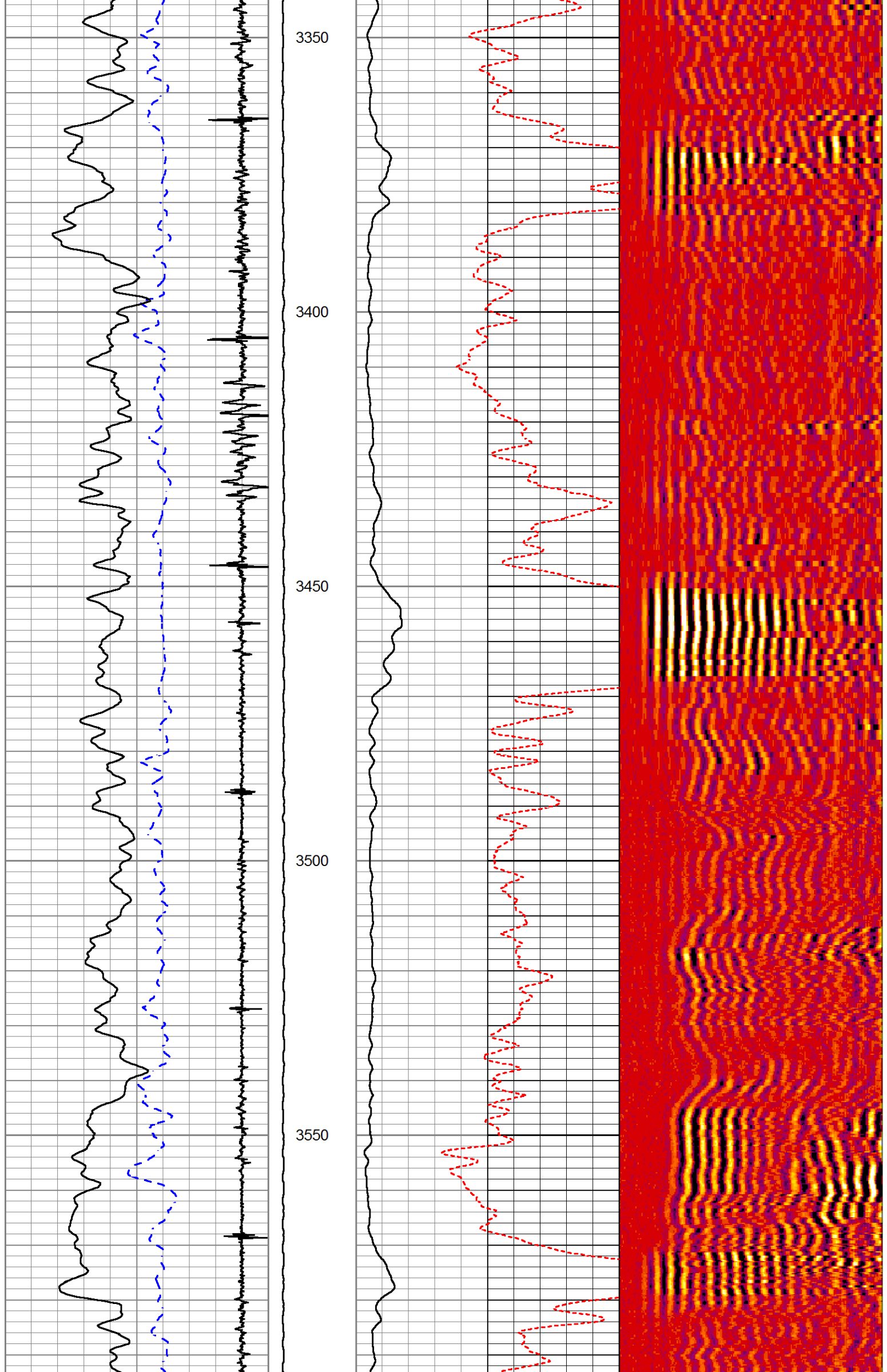


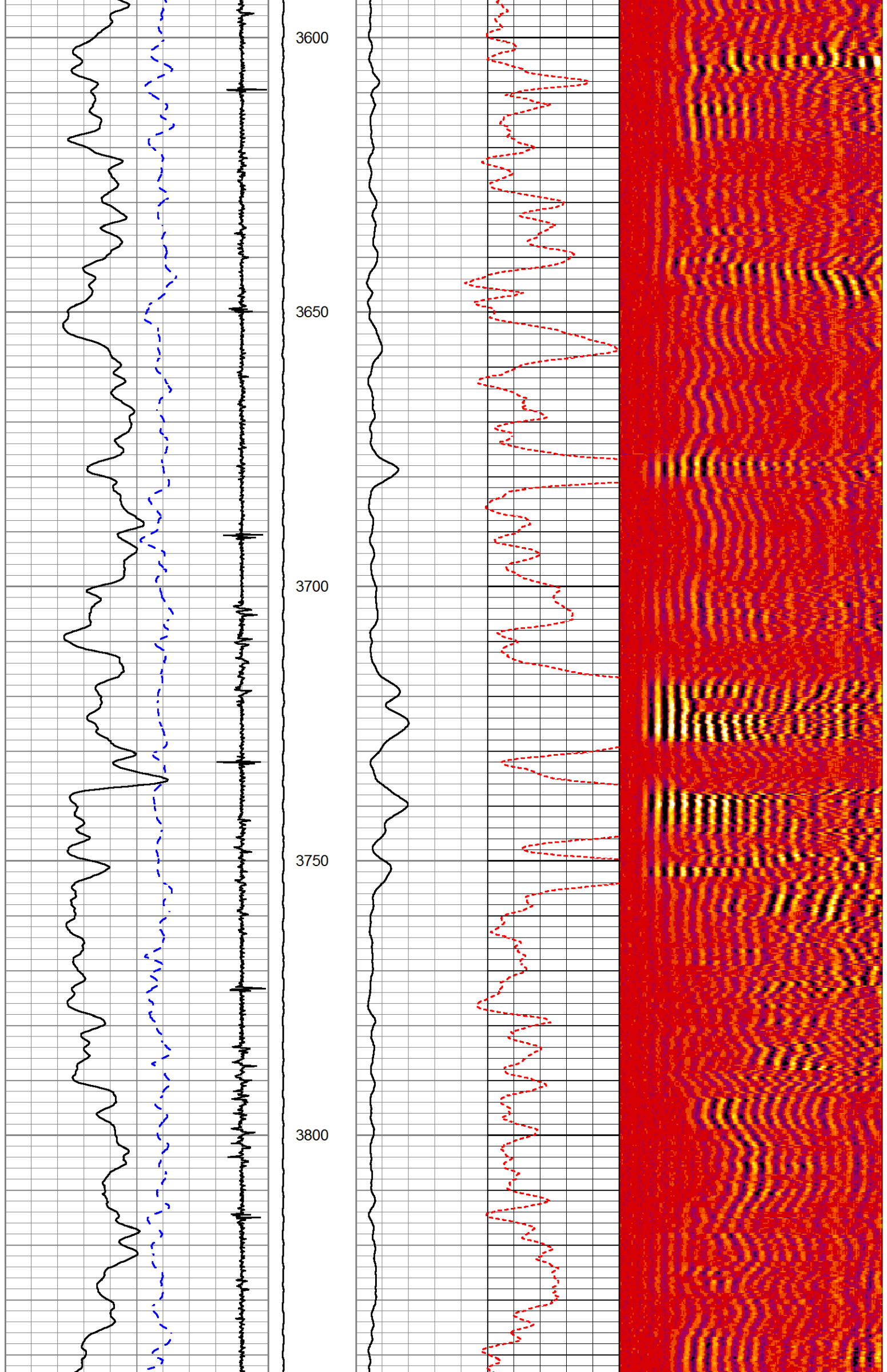


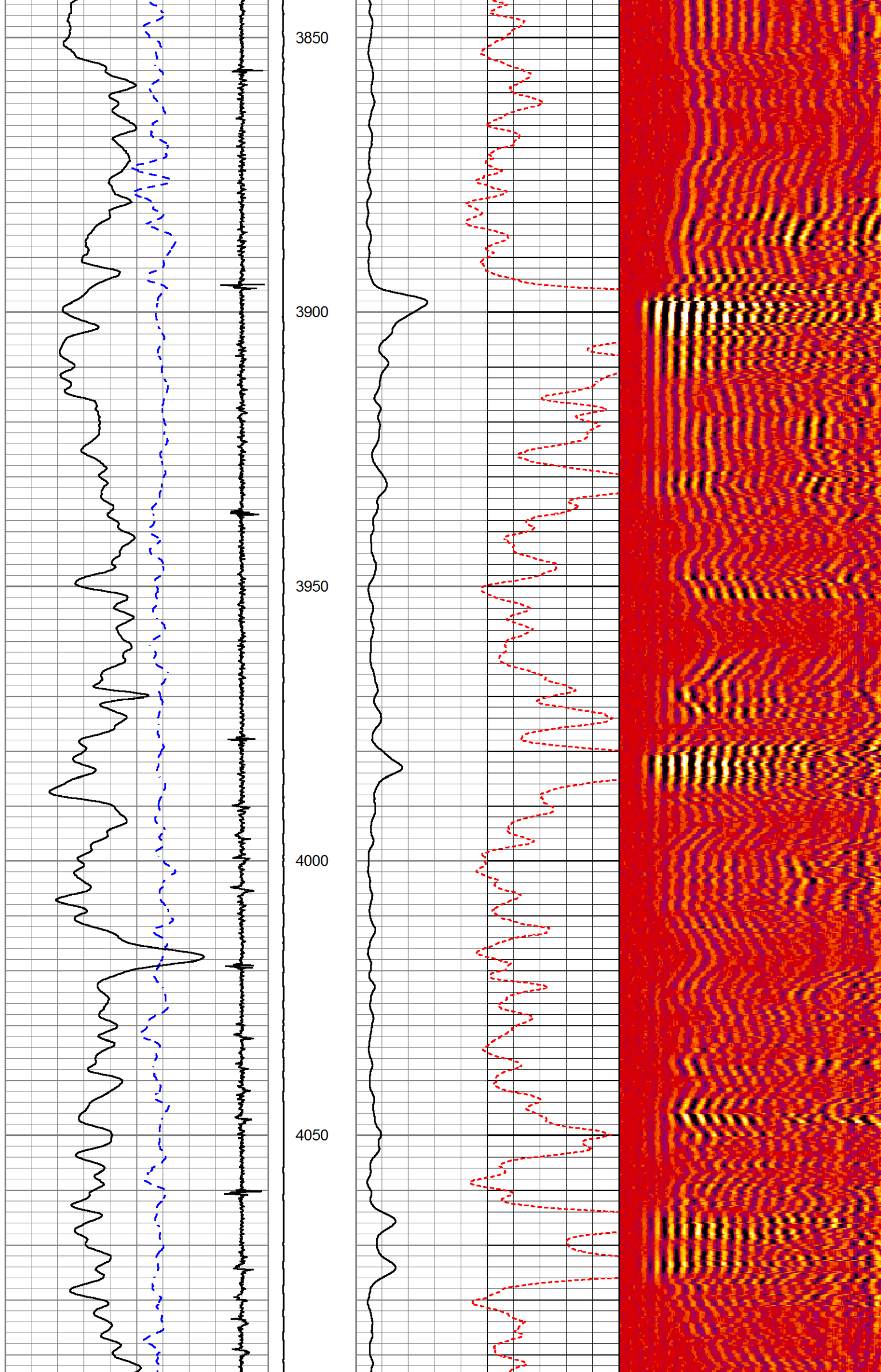




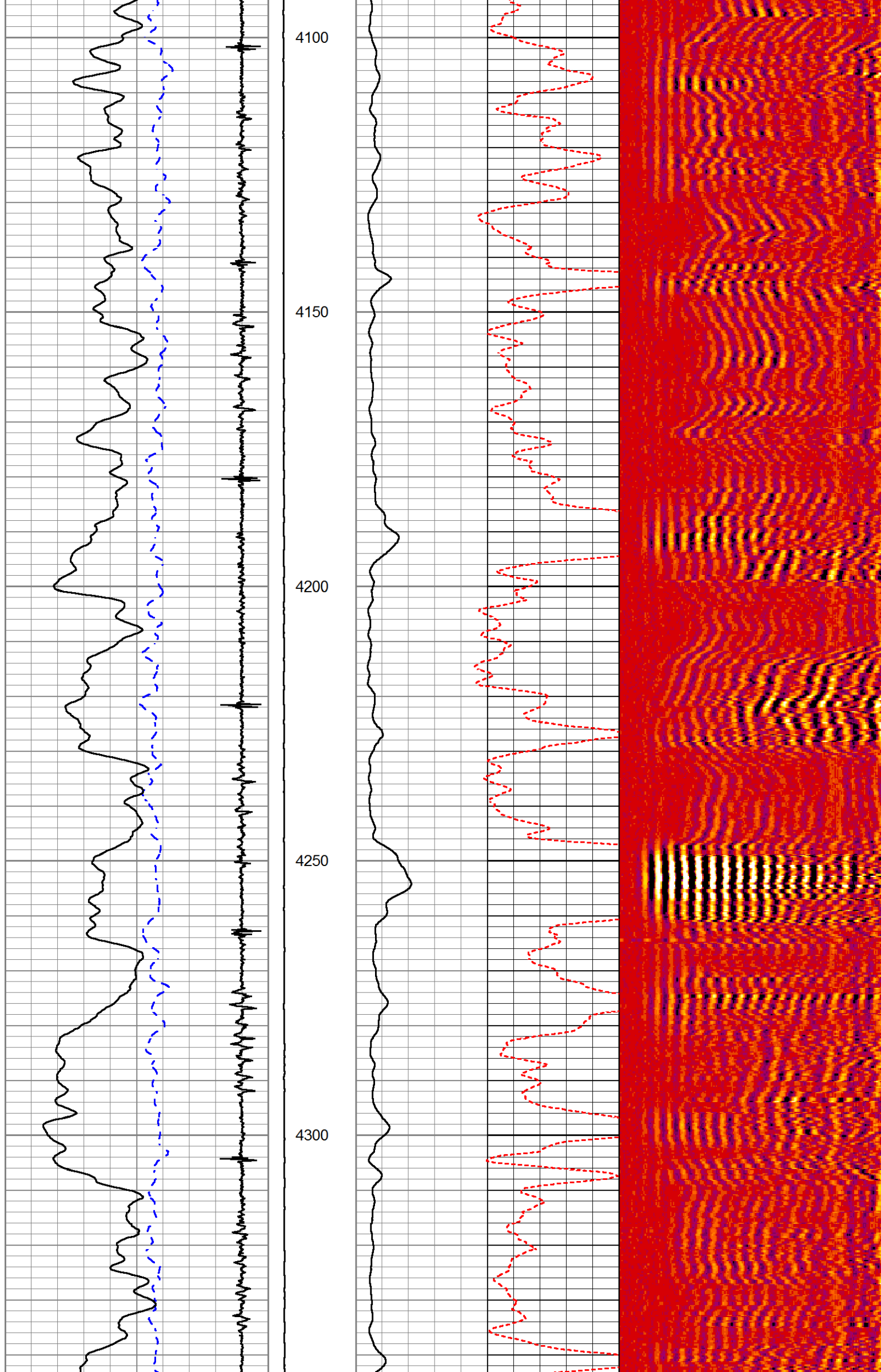




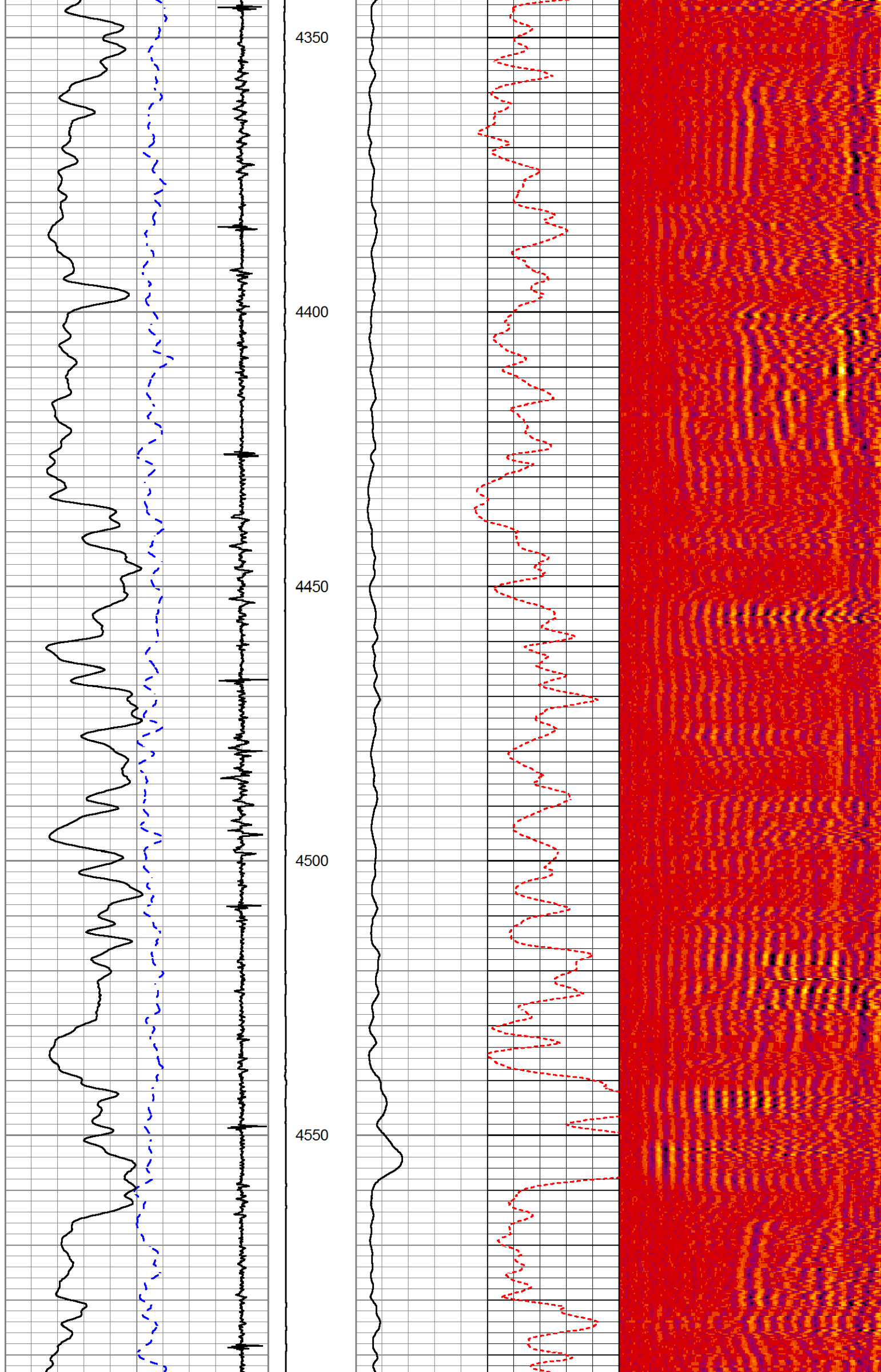


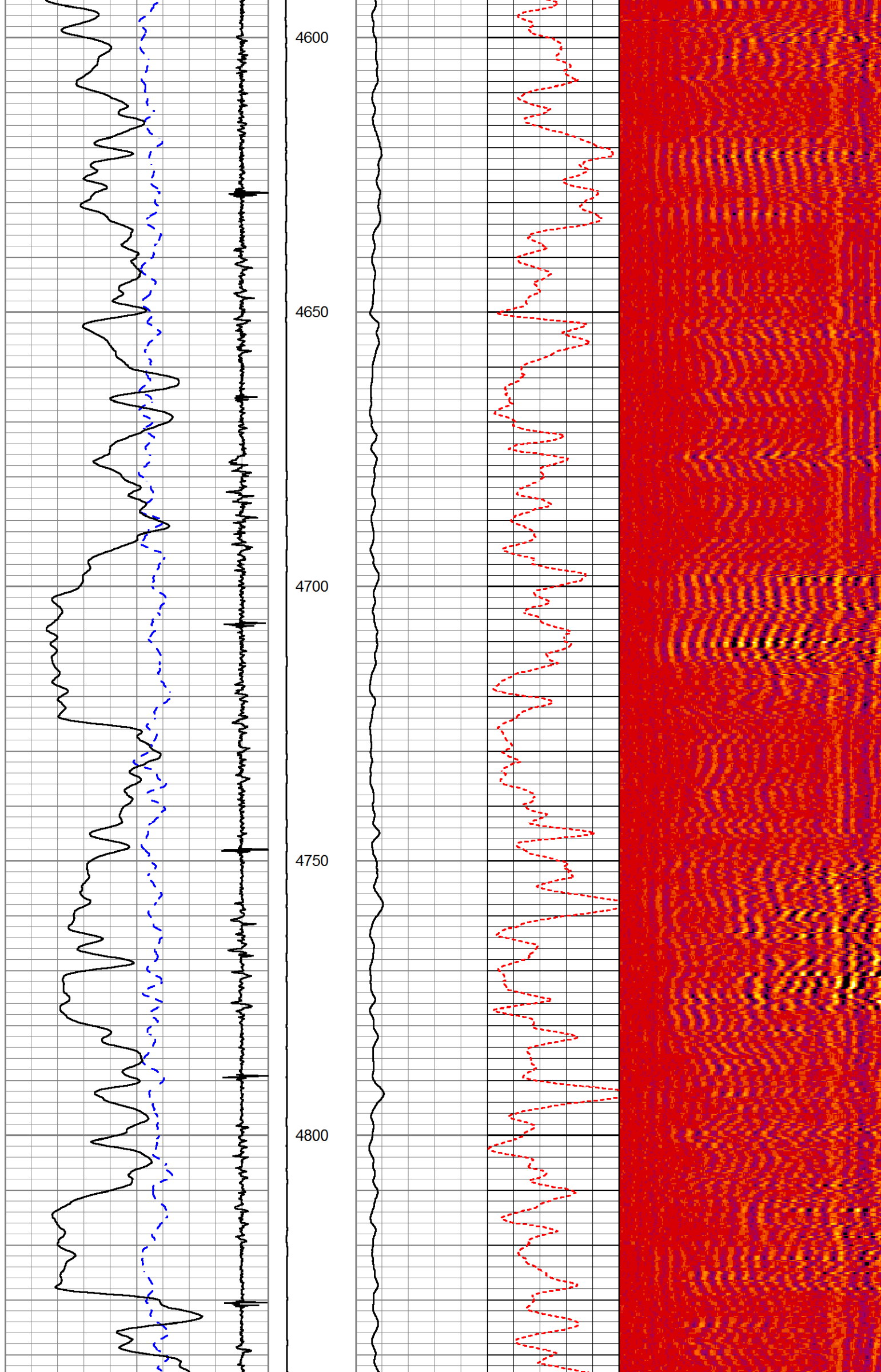


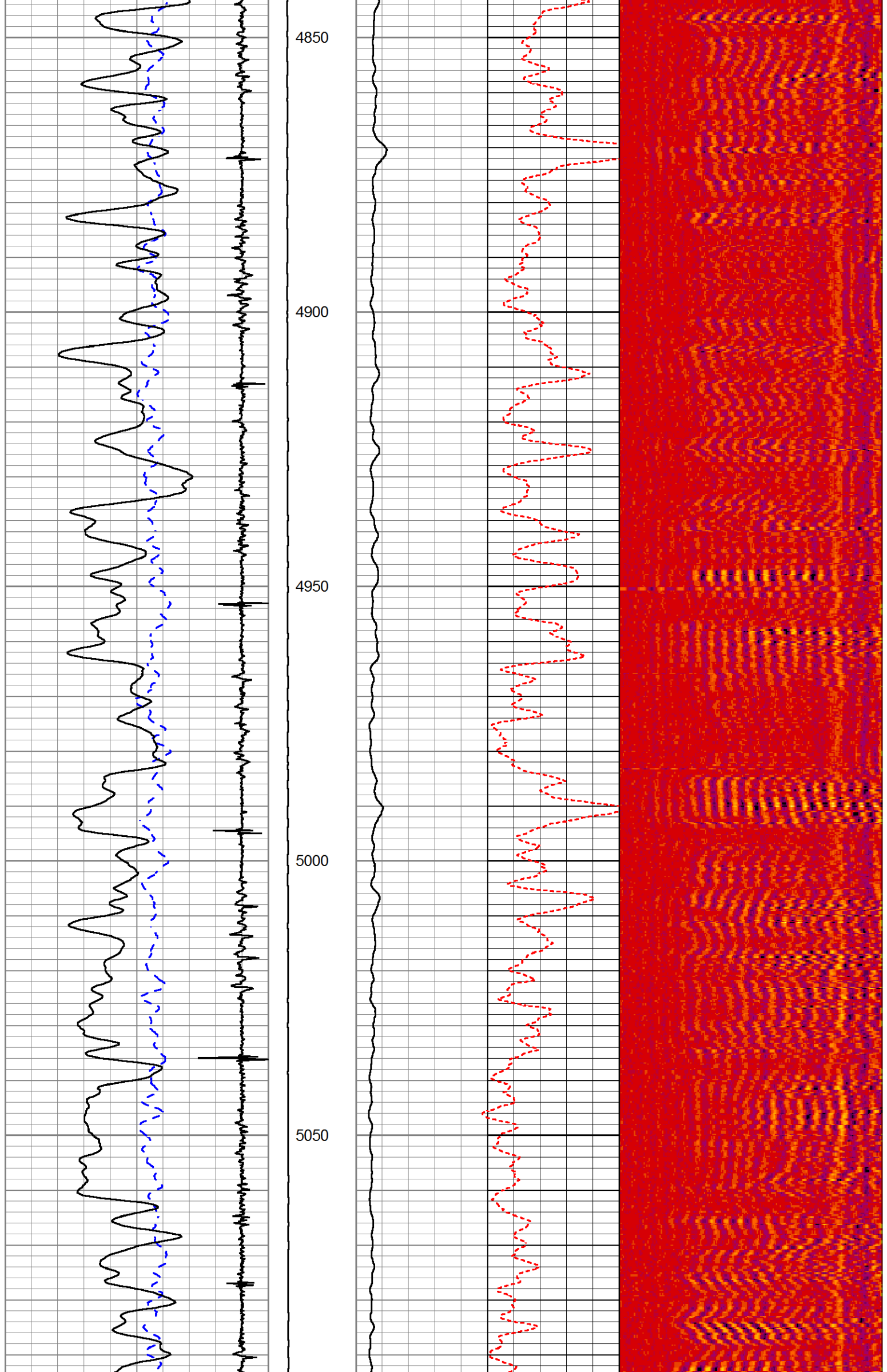




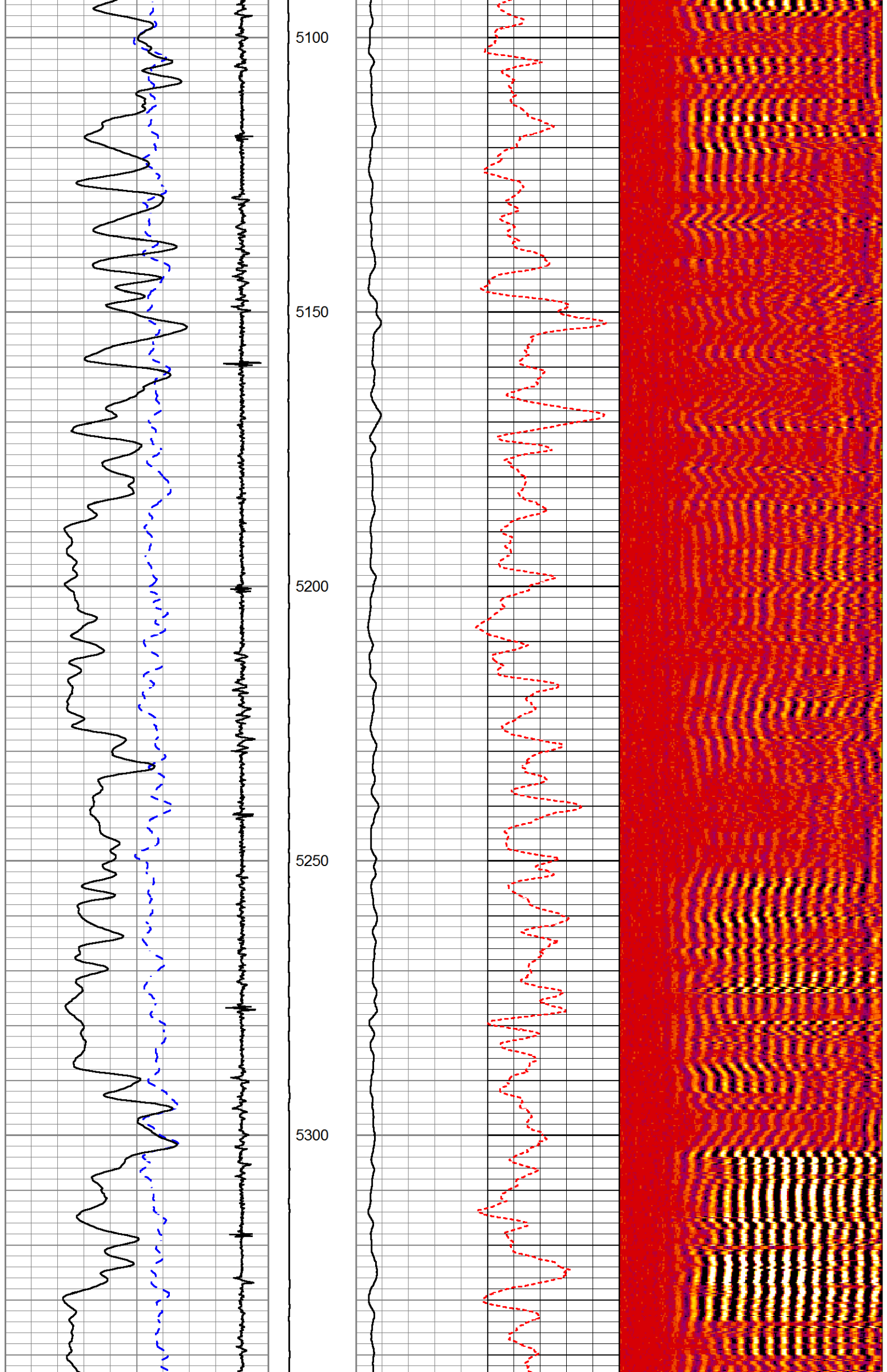




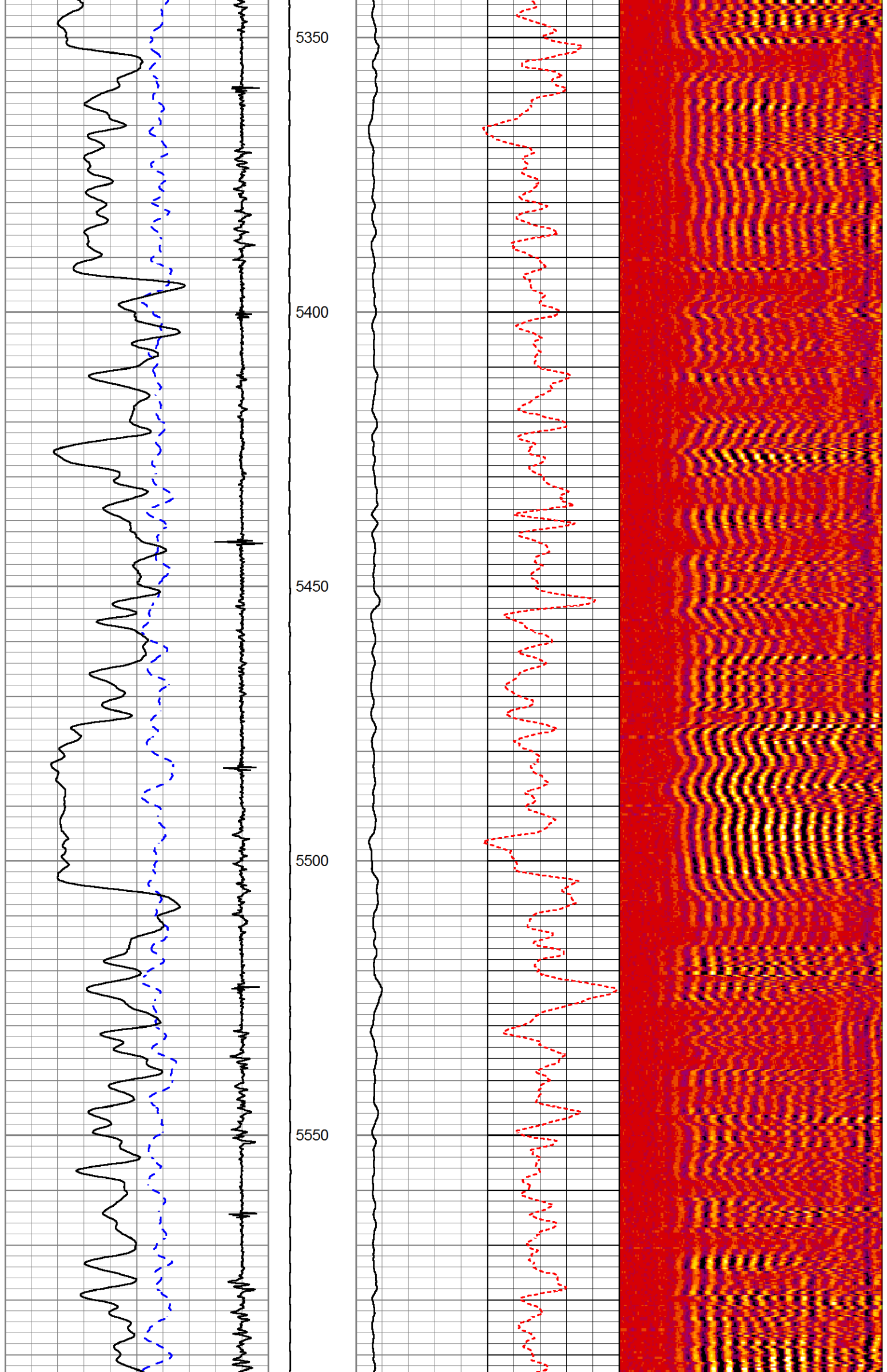


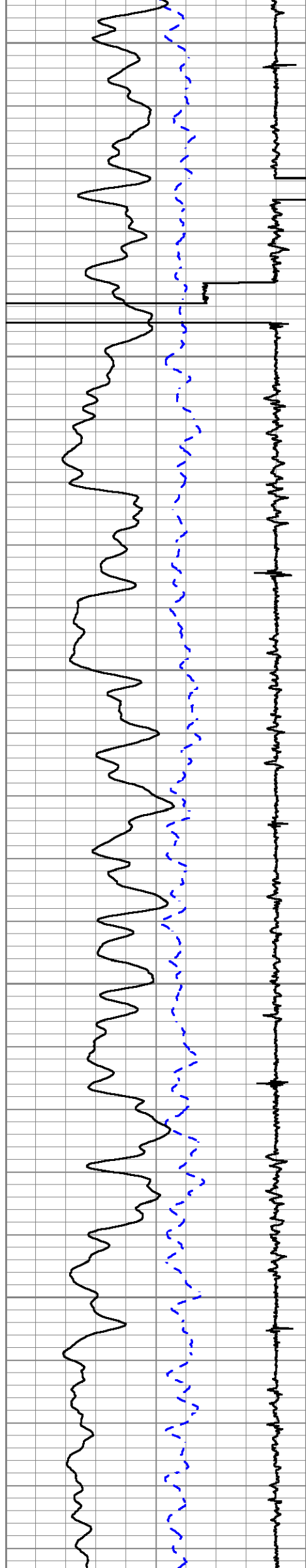












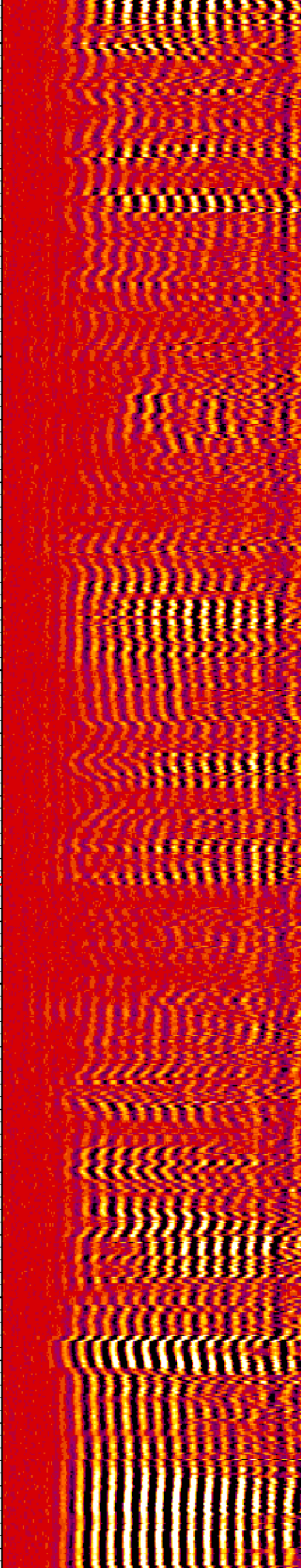
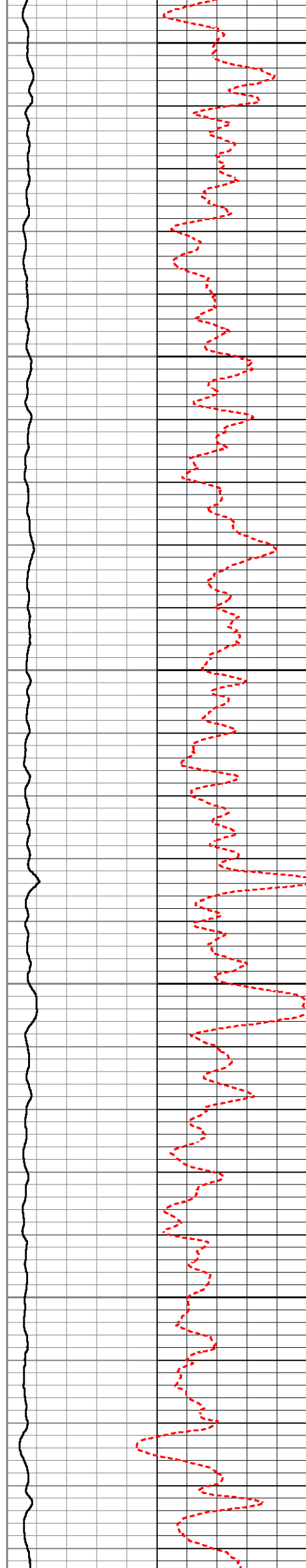
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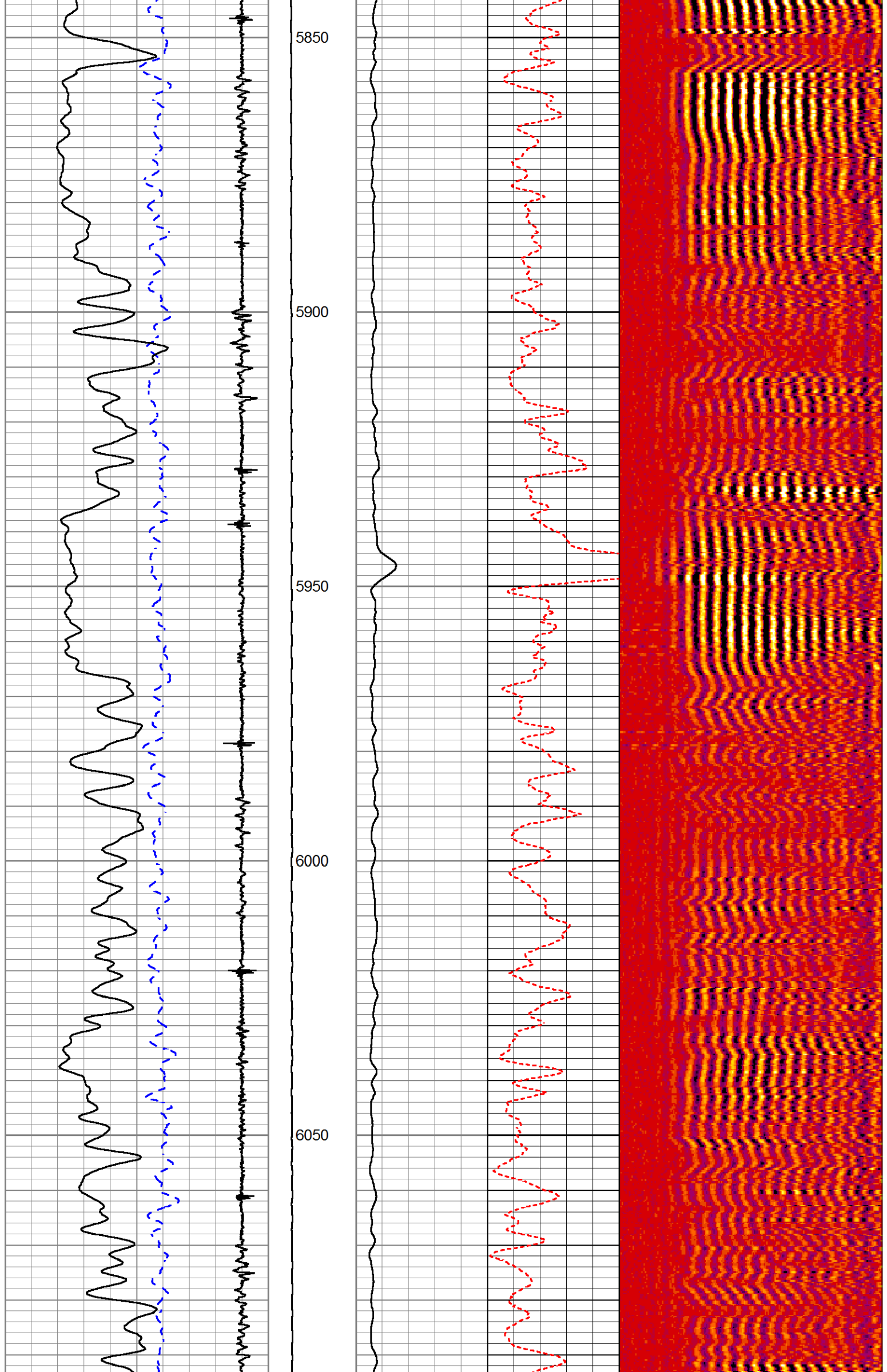
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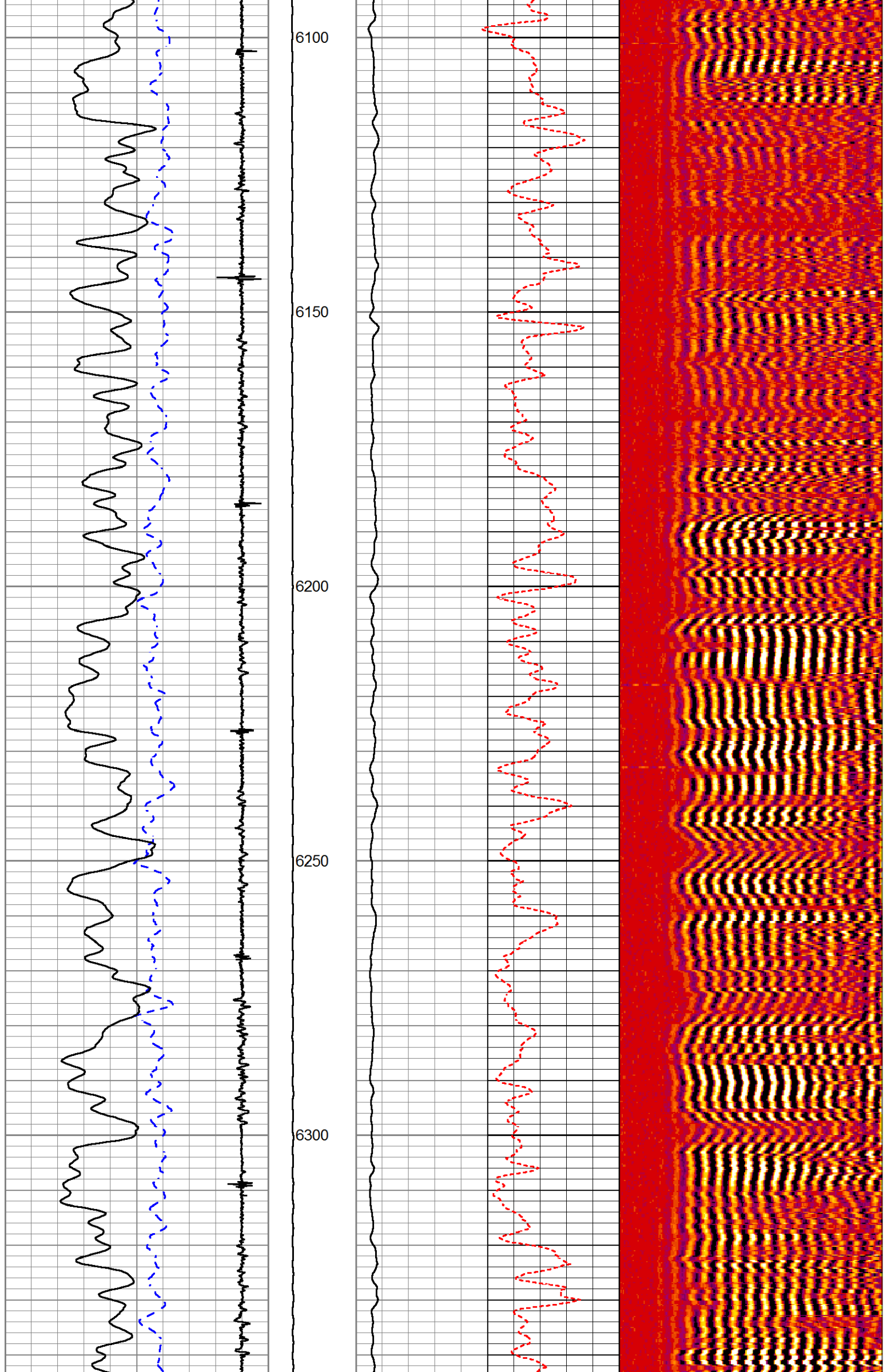
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5800

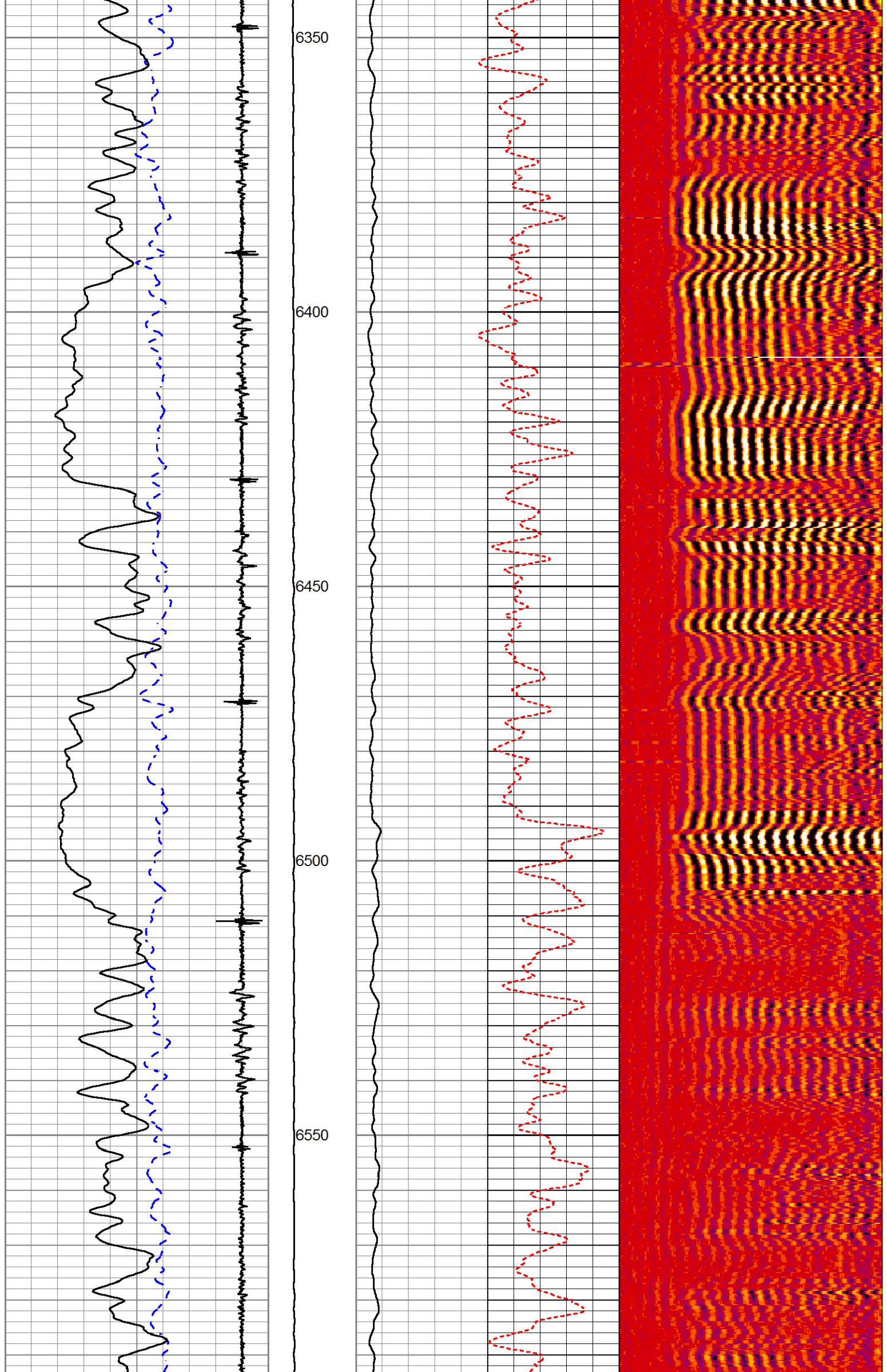


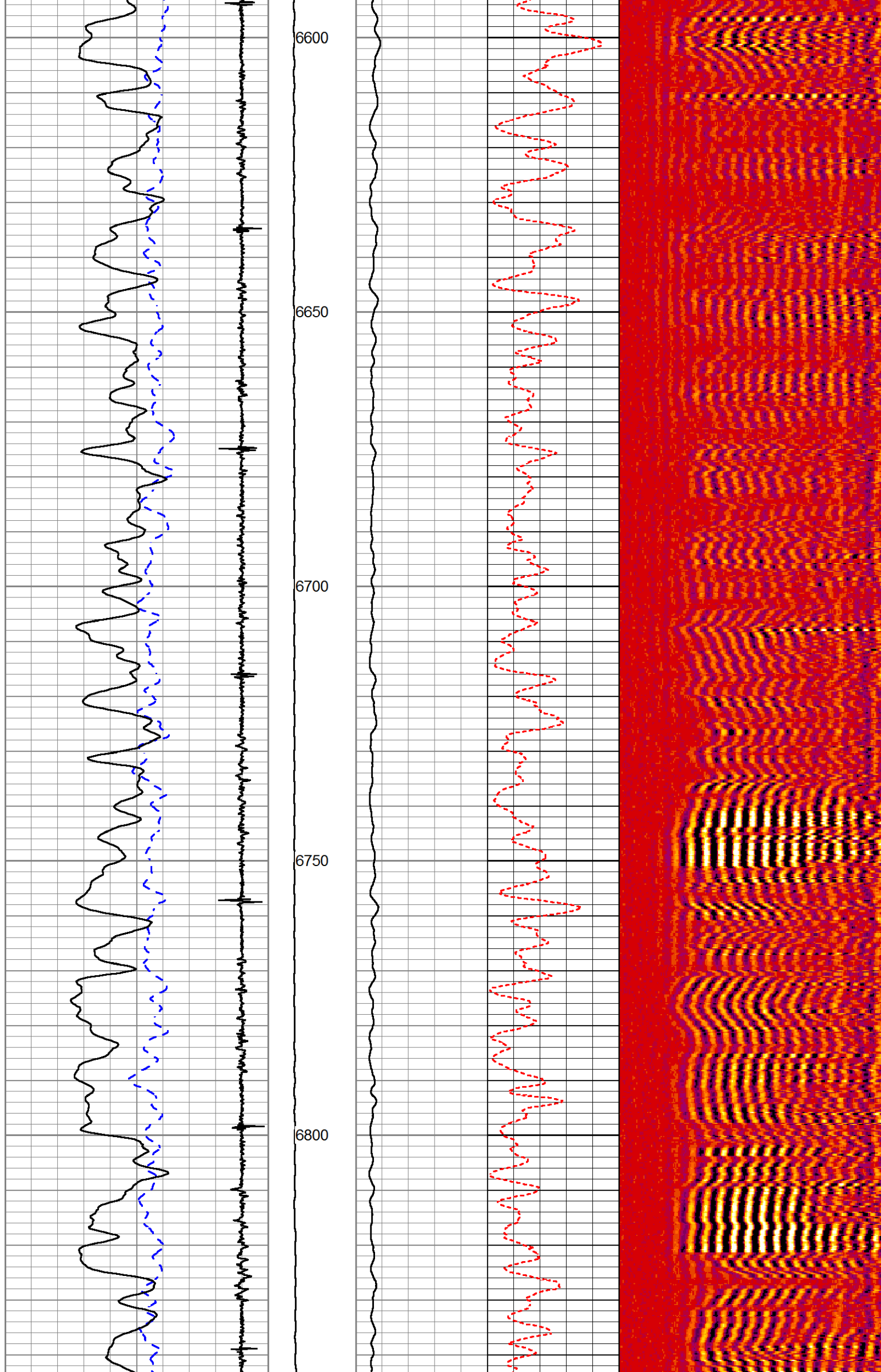


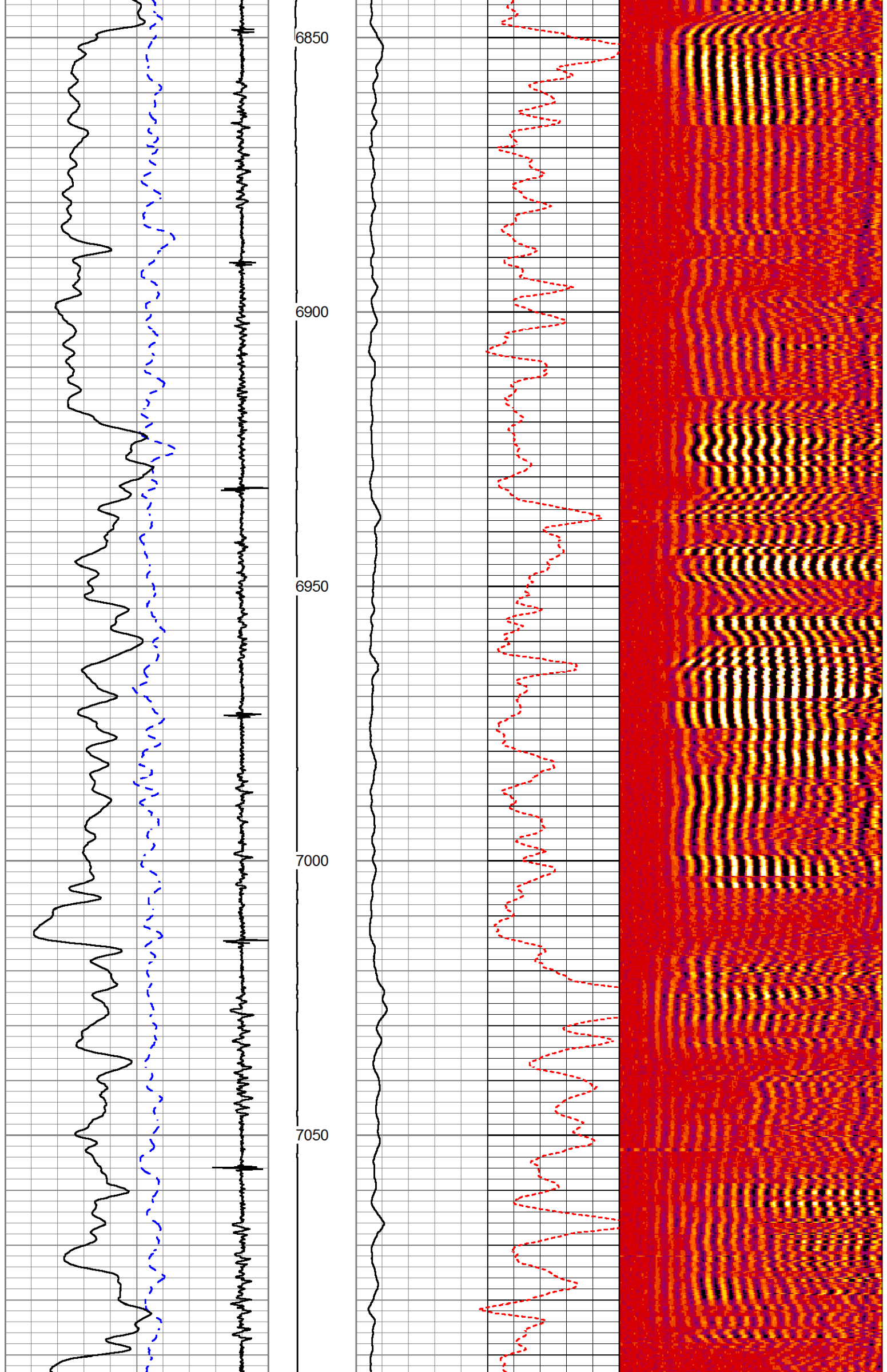




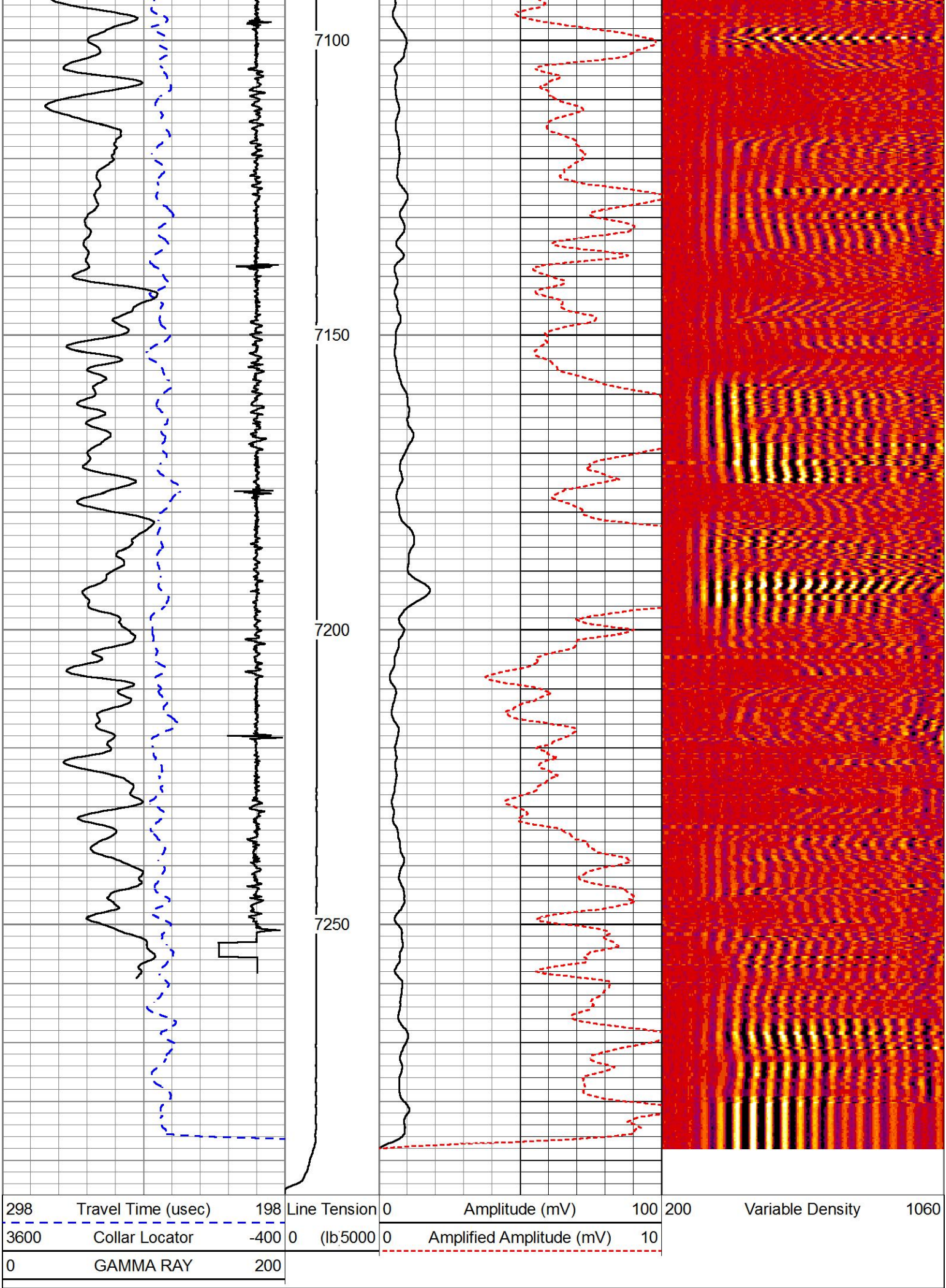












MAIN PASS

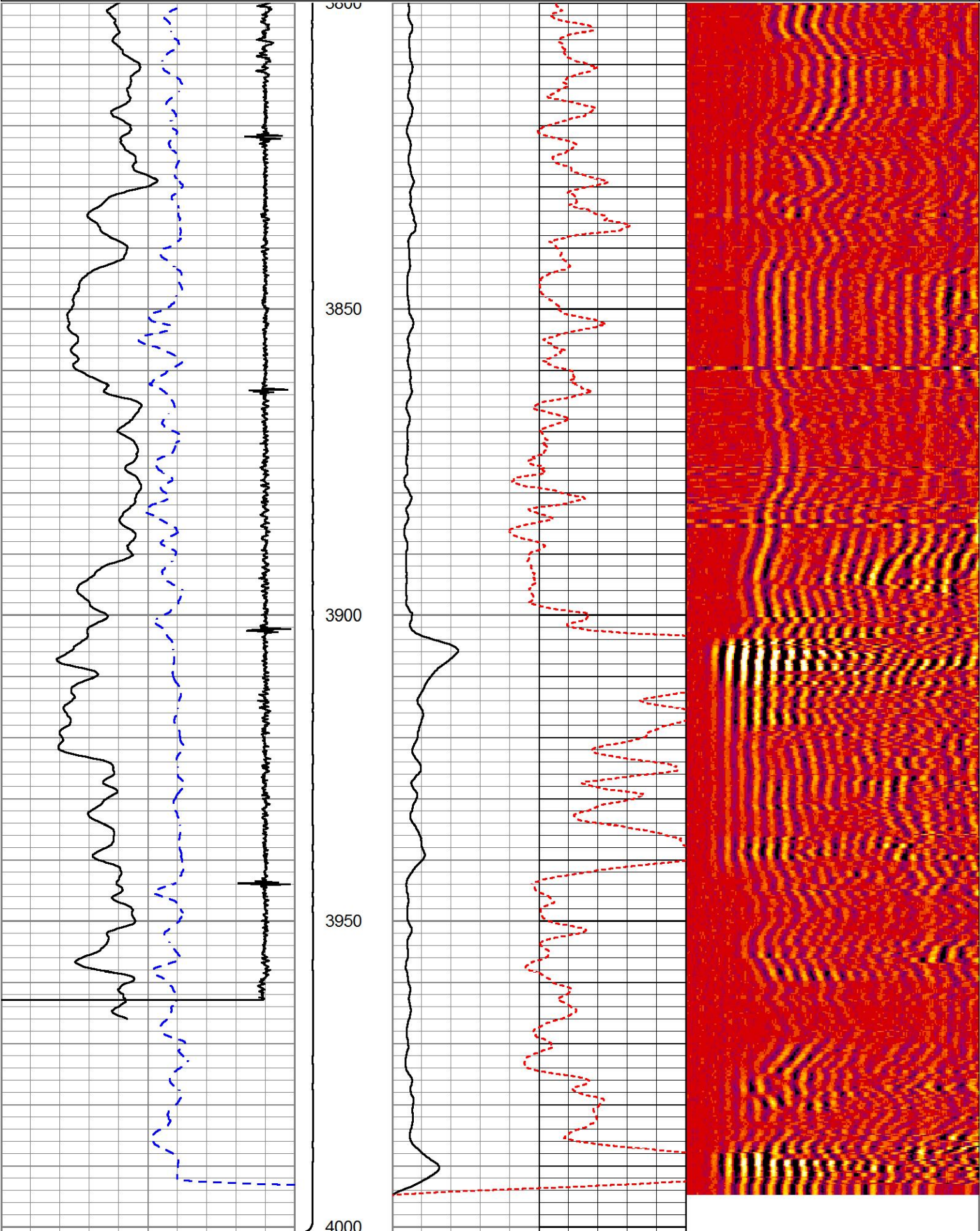
5" = 100'

REPEAT PASS



Database File      mr\_b\_34c\_08\_7\_95.db  
Dataset Pathname    pass4  
Presentation Format   !1!!cbl\_rmti  
Dataset Creation    Mon Nov 28 12:14:38 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							



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							

REPEAT PASS

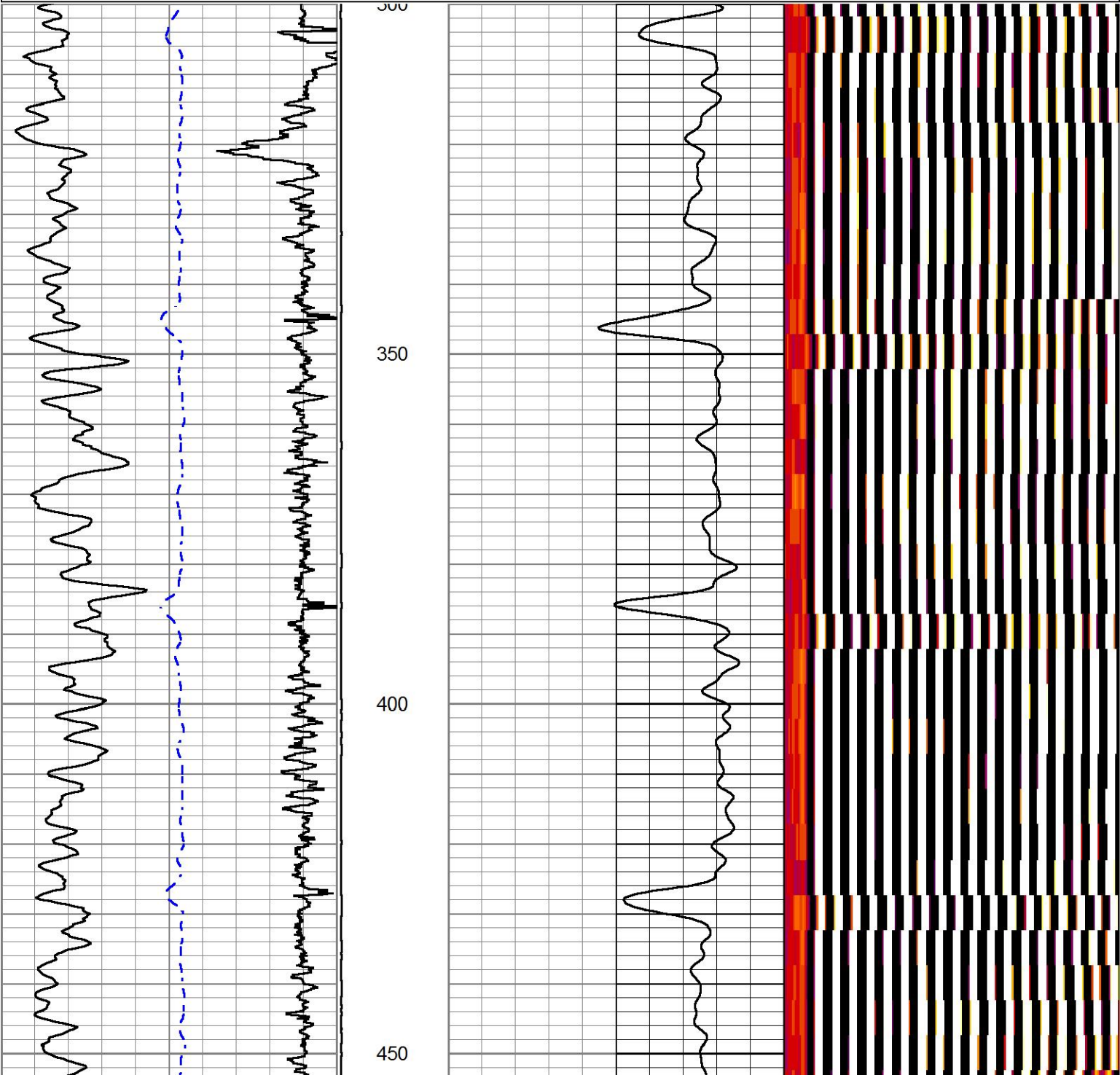
HALLIBURTON

5" = 100'

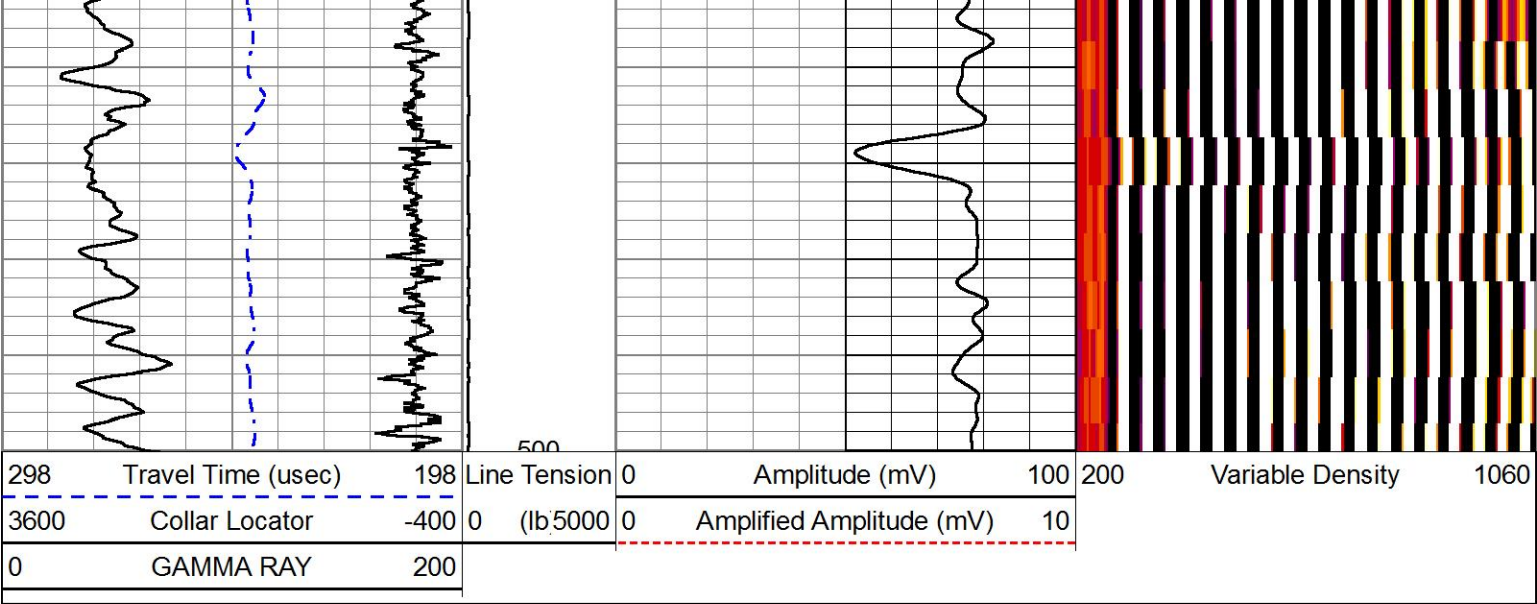
FREE PIPE PASS									
5" = 100'									

Database File mr\_b\_34c\_08\_7\_95.db  
Dataset Pathname pass3  
Presentation Format !1!!cbl\_rmti  
Dataset Creation Mon Nov 28 11:55:01 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							







FREE PIPE PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr\_b\_34c\_08\_7\_95.db  
Dataset field/well/run1/pass8/\_vars\_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	7.875	150	210	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0.5	11.6	Sandstone	1	8.4	0	1	0
RHOCF	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	40	7700	NONE	0	1.7	

Calibration Report

Database File mr\_b\_34c\_08\_7\_95.db  
Dataset Pathname pass8  
Dataset Creation Mon Nov 28 13:00:20 2016

Cement Bond Log Shop Calibration Report

Serial-Model: 12091451-A  
Calibration Performed: Mon Nov 28 11:51:11 2016

Free Pipe Calibration

	Measured	Units
TT	244.4	usec
Amplitude	560.6	mV
Log Base Line	7.4	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	0.147	



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 Temperature50.0 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	
Background	Counts/Sec.
Calibrator	34.1
	297.9
	Gain
	Offset
	Jig
	Units
	cps
	cps
	GAPI/cps
PRIMARY VERIFICATION	
Background	42.3
Calibrator	413.8
Difference	
	371.5
BEFORE SURVEY VERIFICATION	
Background	0.0
Calibrator	0.0
Difference	
	0.0
AFTER SURVEY VERIFICATION	
Background	0.0
Calibrator	0.0
Difference	
	0.0

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	35.82		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	33.56		TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
RmtTFGT RmtTNGT	22.91 22.41		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
			RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00

RmtFP5V	14.66		X-OVER-GoxSondex	0.27	1.69	1.00
RmtNFwvMcsPI	14.66		Go Box x Sondex Pin CrossOver			
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)	9.38	2.75	116.00
AMP3FT	7.32		Halliburton HCBLM Tool			
WVF5FT	6.36					
WVF3FT	2.84		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
LLMTEN	0.00		AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
			BUL-001 (000001) Bullnose	0.30	1.69	1.50
Dataset: mr_b_34c_08_7_95.db: field/well/run1/pass8 Total length: 39.39 ft Total weight: 356.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY LLC		
Well	MONUMENT RIDGE B 34C-08-7-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
HALLIBURTON	CEMENT BOND LOG		