

HALLIBURTON				CEMENT BOND LOG			
Company URSA OPERATING COMPANY LLC Well MONUMENT RIDGE B 31A-17-7-95 Field PARACHUTE County GARFIELD State CO				Company URSA OPERATING COMPANY LLC Well MONUMENT RIDGE B 31A-17-7-95 Field PARACHUTE County GARFIELD State CO			
API No.: 05045228980000 Serv. #: 903682891 Location: SHL: 920' FSL & 144' FEL BHL: 236' FNL & 1993' FEL				Other Services			
Sec: 8 Twp: 7S Rge: 95W				RMT-1			
Permanent Datum		GROUND LEVEL		Elevation		5702'	
Log Measured From		KB , 17' Ft. above perm. datum		K.B. 5719' D.F. 5719' G.L. 5702'			
Drilling Measured From		KB					
Date @ Time Logged		30 NOV 2016 @ 17:00		Type Fluid in Hole		FRESH WATER	
Run No.		ONE		Density of Fluid		8.4 PPG	
Depth - Driller		7611'		Fluid Level		SURFACE	
Depth - Logger		7441'		Cement Top Est. Logged		1220'	
Bottom - Logged Interval		7432'		Equipment / Location		11808537 / RS. WY	
Top - Log Interval		1774'		Recorded by		P. DIMPFL	
Max. Recorded Temp.		220 degF		Witnessed by		R. TOLLE	
CEMENTING DATA		Surface		Protection		Liner	
		String		String		N/A	
Date / Time Cemented		N/A		N/A		N/A	
Primary / Squeeze		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	
Cement Volume		N/A		N/A		N/A	
Cement Type / Weight		N/A / N/A		N/A / N/A		N/A / N/A	
Formulation		N/A		N/A		N/A	
Mud Type / Mud Wgt.		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' 1824'		8.625" 32.0 #		SURFACE 1824'	
THREE		7.875" 1824' 7623'		4.5" 11.6 #		SURFACE 7623'	

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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 : 1220'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 400'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.
YOUR CREW TODAY: P. DIMPFL, T. HOWELL, B. RICHARDSON

Service Ticket No.	903681994	API No.	05045228980000	PGM Ver	15.10.29001
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
XHU		GAMMA		RMTI	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12146425	Serial No.	11224503	Serial No.	12095949
Model No.	XHU-3	Model No.	TTTC-U2	Model No.	RMTI
Diameter	1 11/16"	Diameter	1 11/16"	Diameter	2.25"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

ONE	3950'	3750'	0 PSI	20	REPEAT			
TWO	7433'	1774'	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			

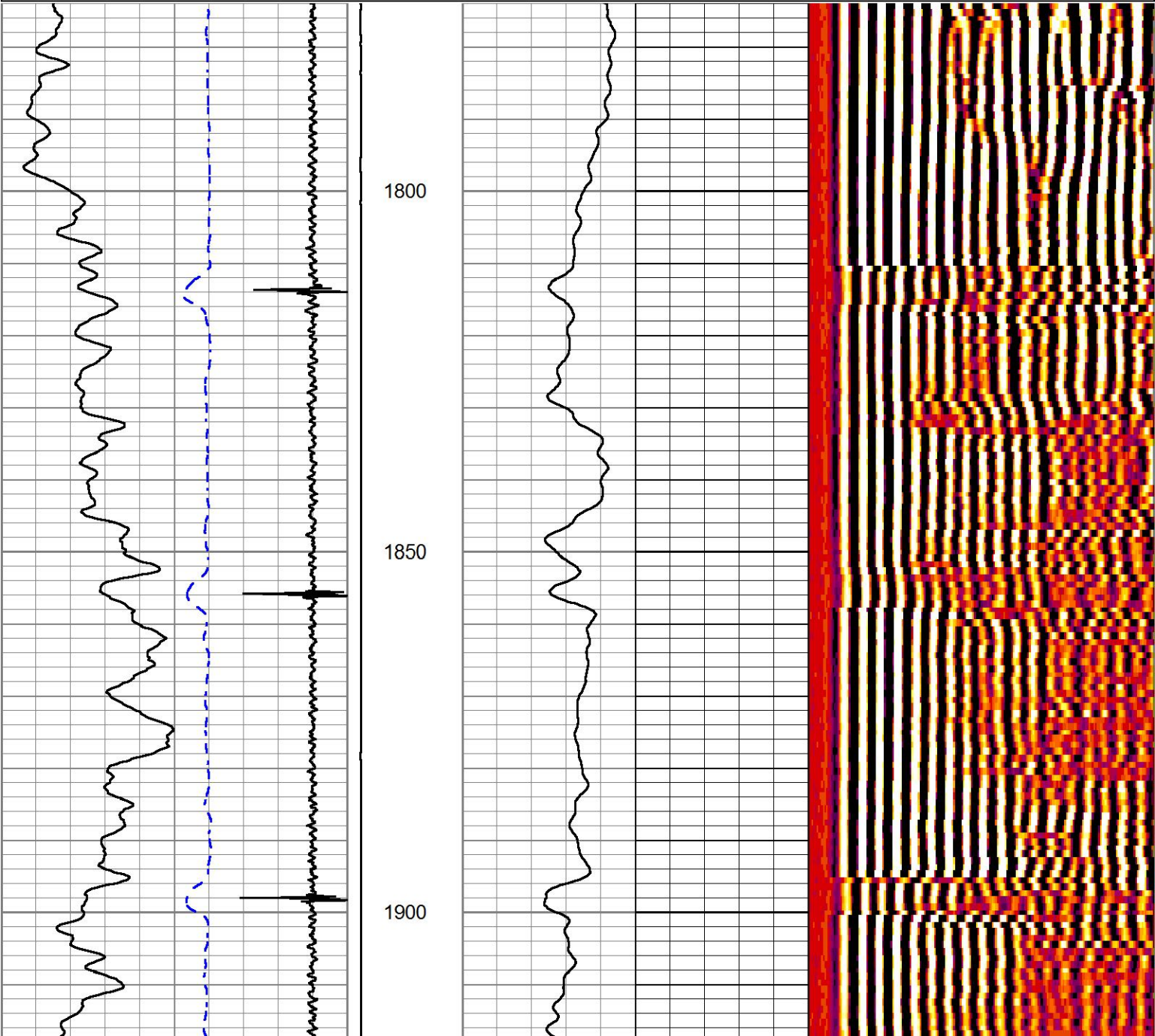
MAIN PASS

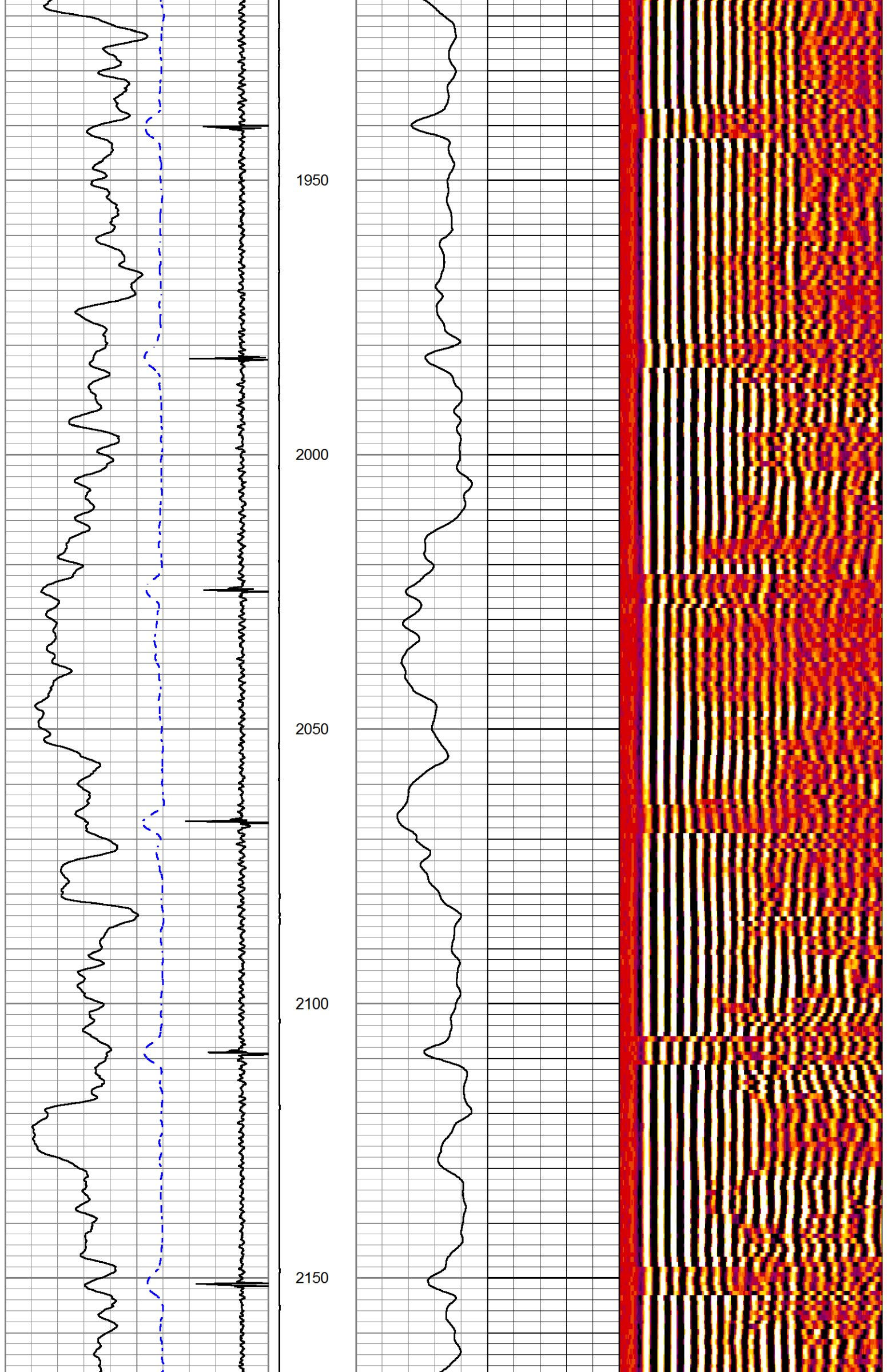
HALLIBURTON

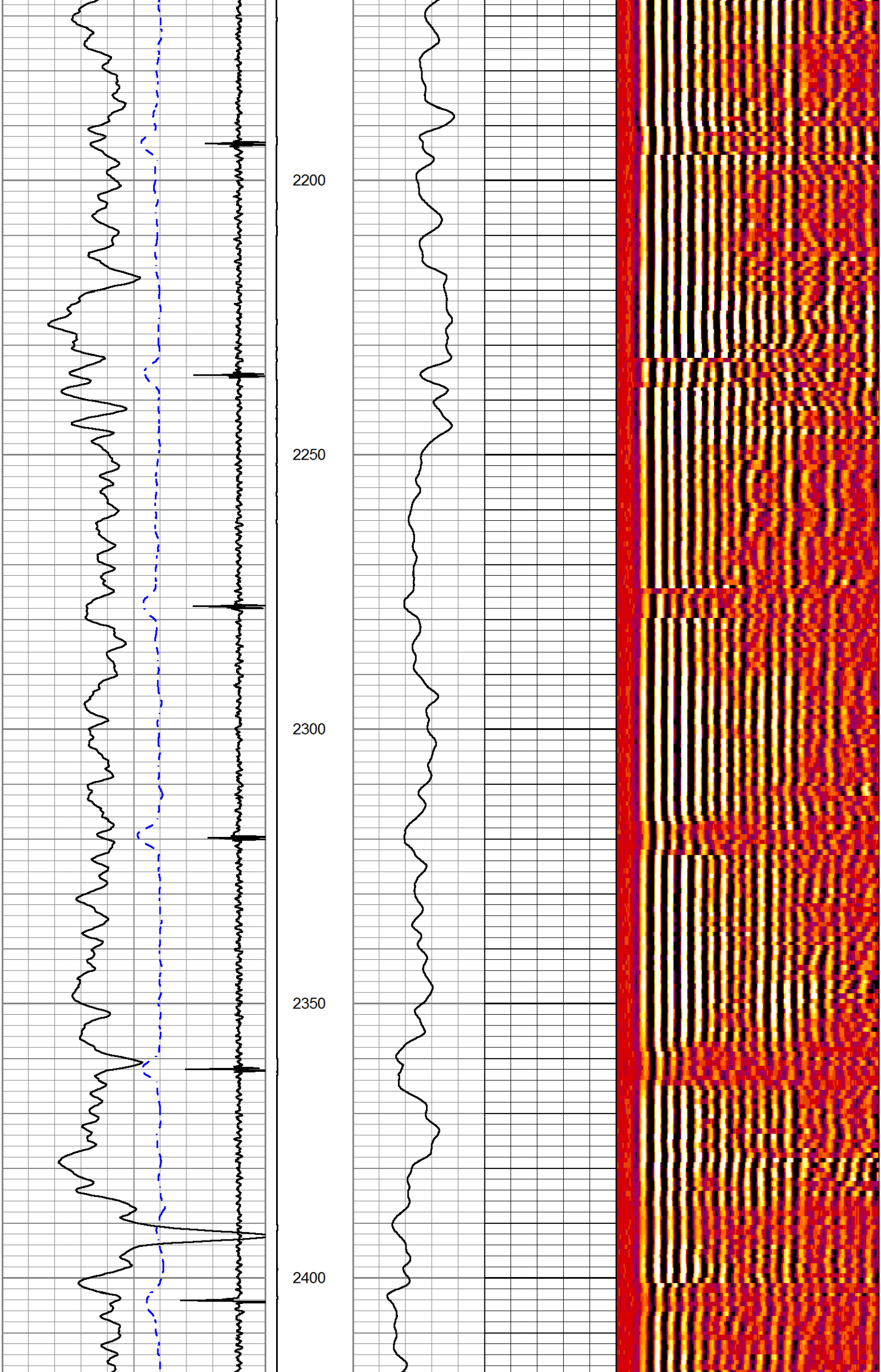
5" = 100'

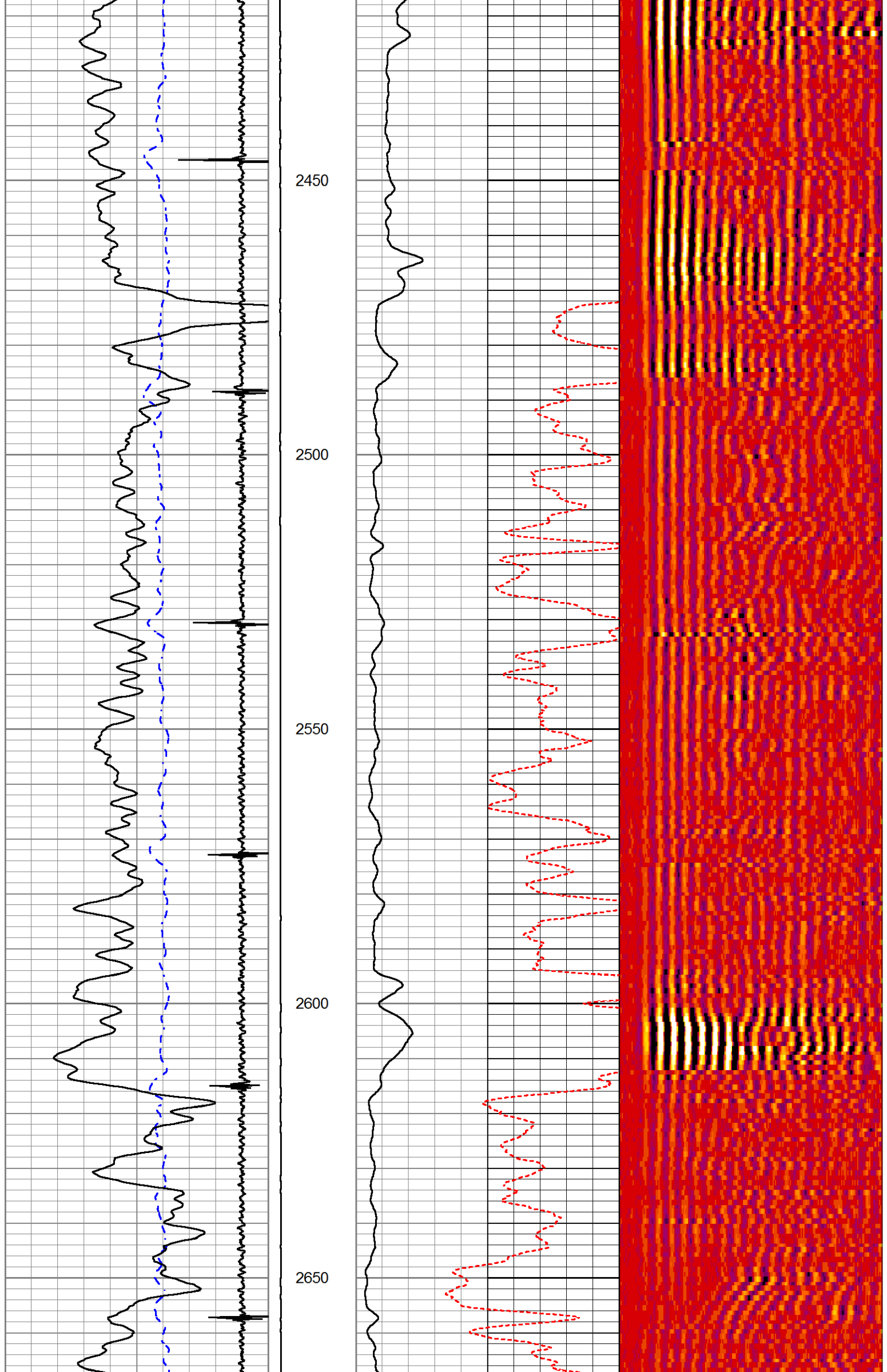
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Dataset Pathname MAIN1
Presentation Format I1!!CB~1
Dataset Creation Wed Nov 30 18:22:28 2016
Charted by Depth in Feet scaled 1:240

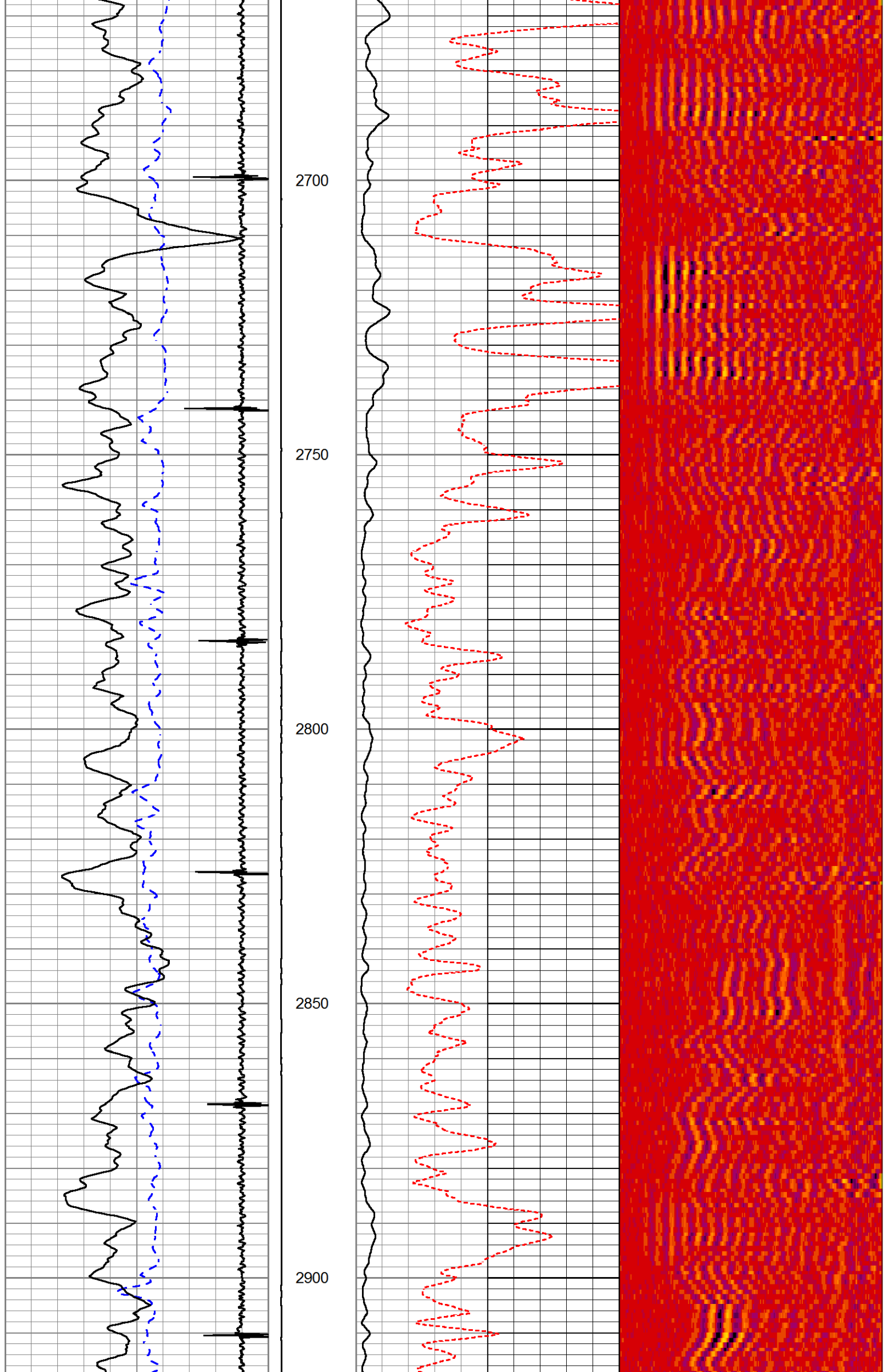
298	Travel Time (usec)	198	Line Tension	0	Amplitude (mV)	100	200	Variable Density	1060
3600	Collar Locator	-400	(lb/5000	0	Amplified Amplitude (mV)	10			
0	GAMMA RAY	200							

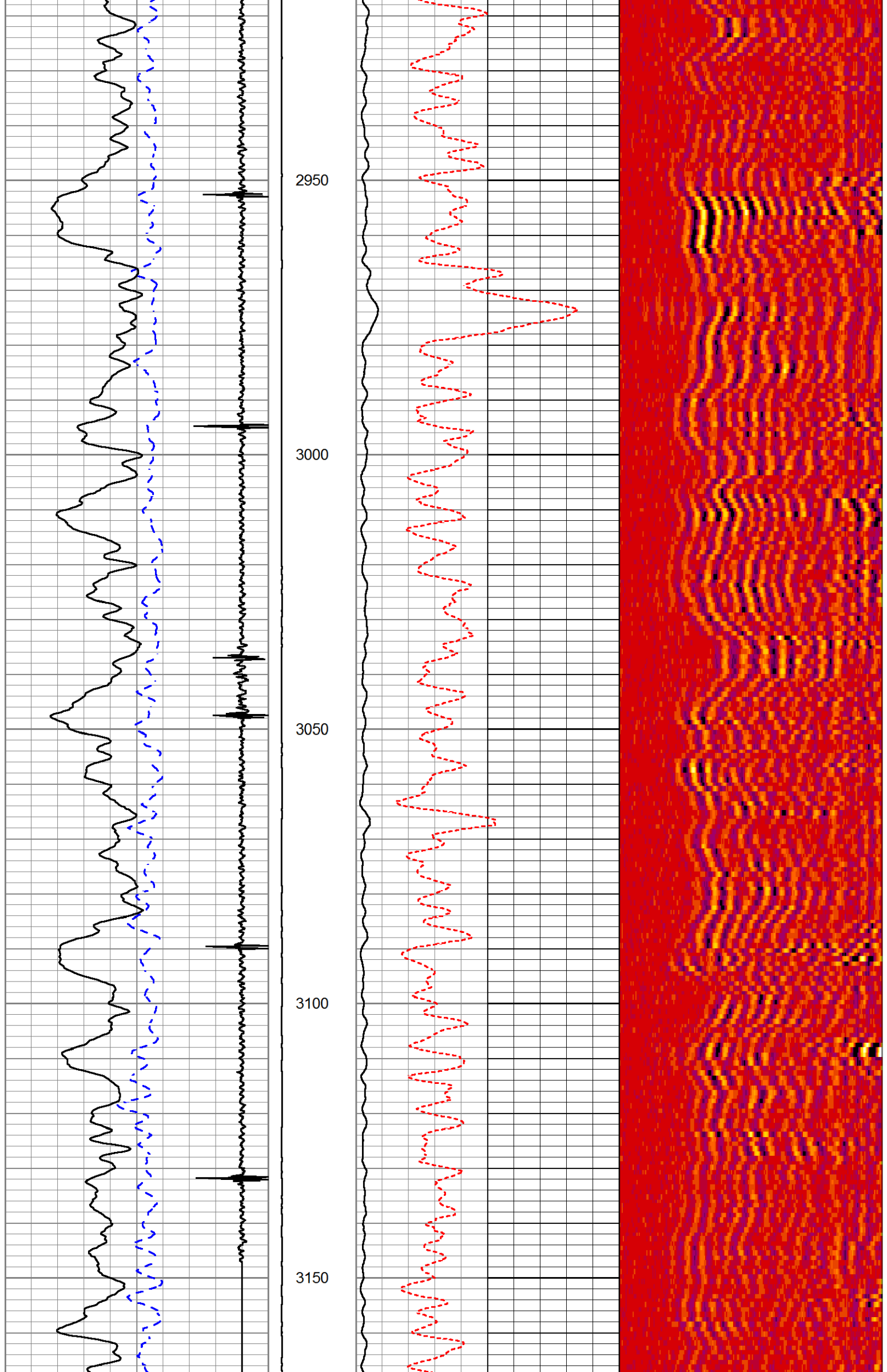


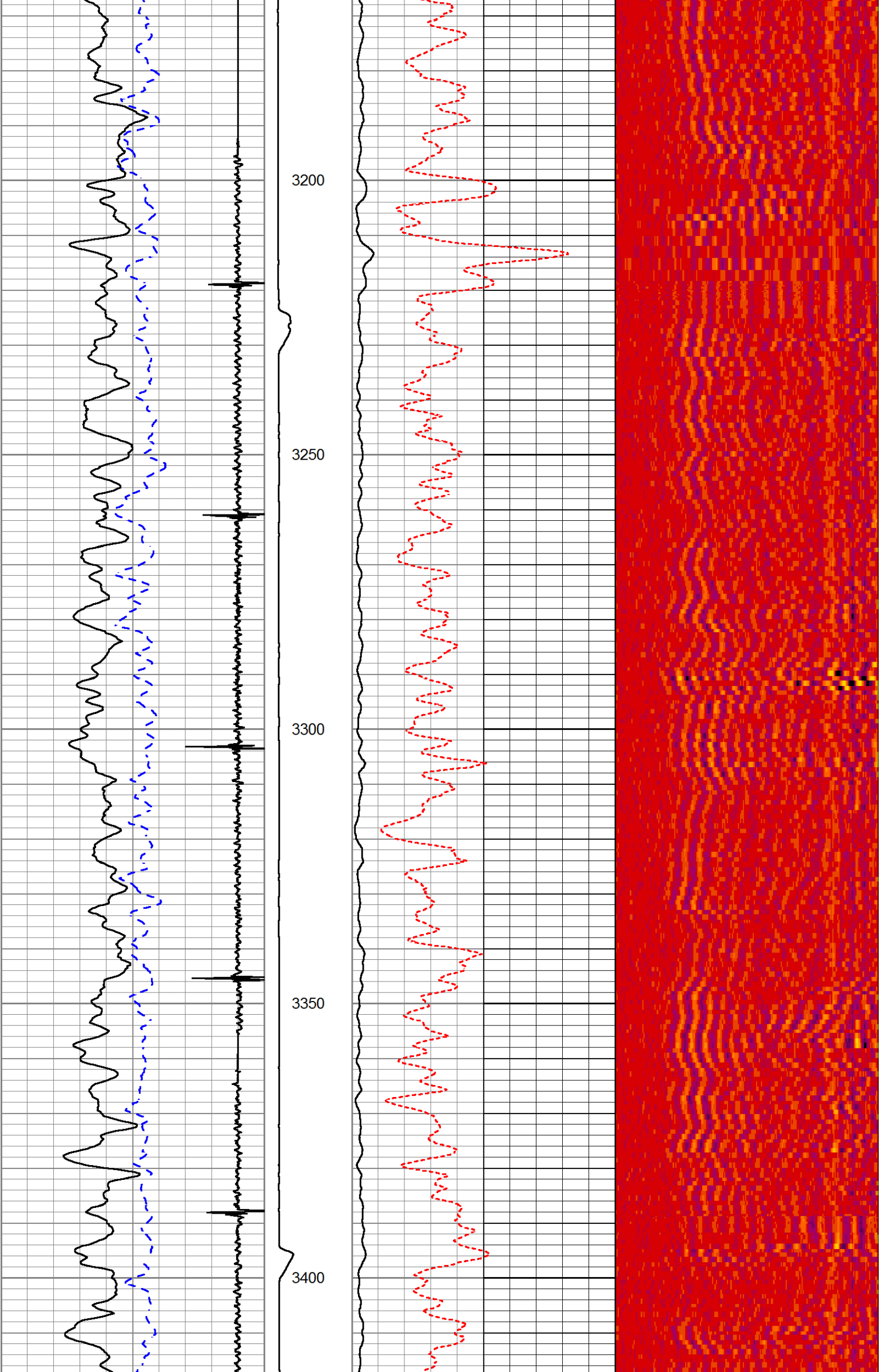


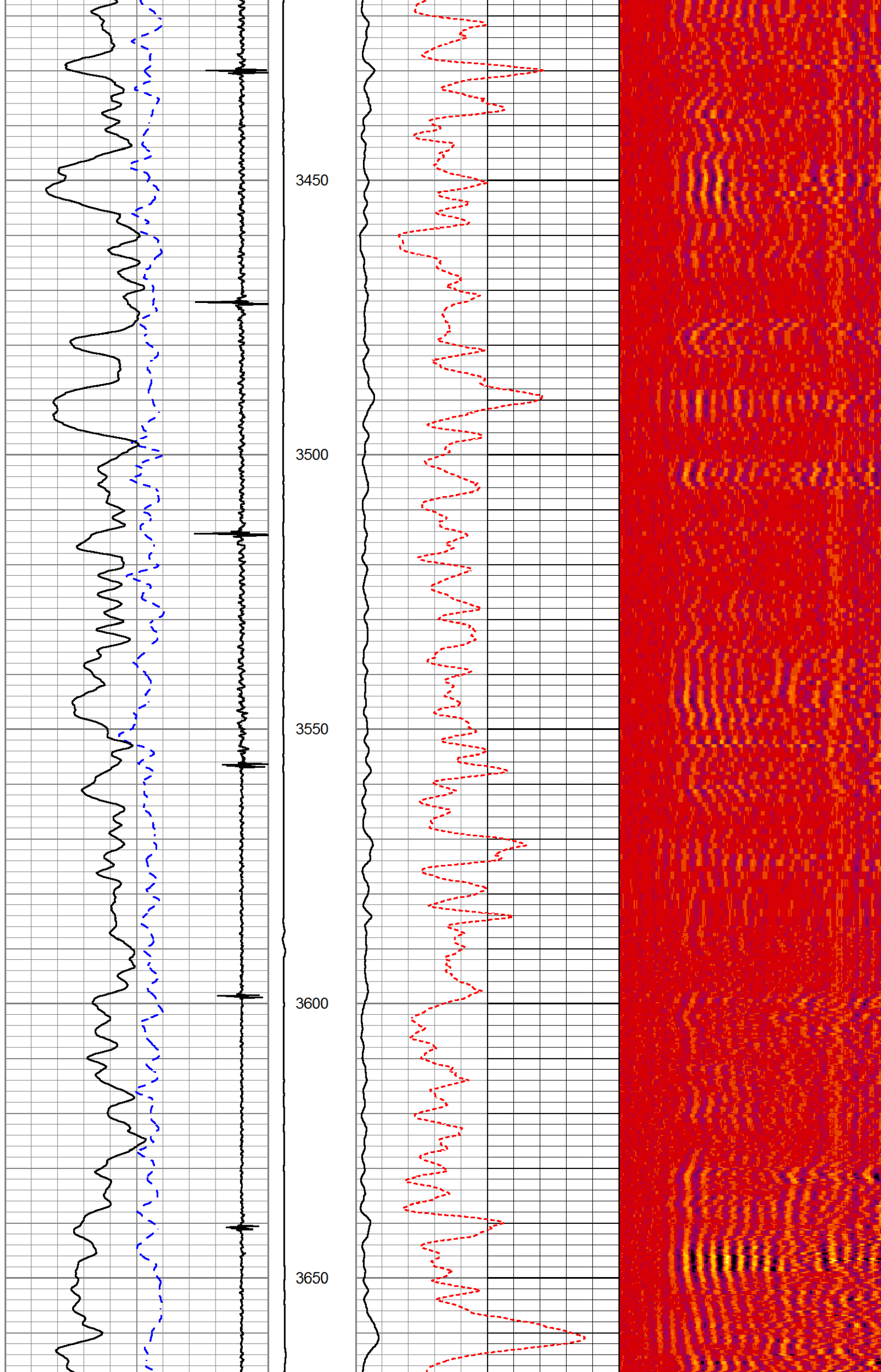


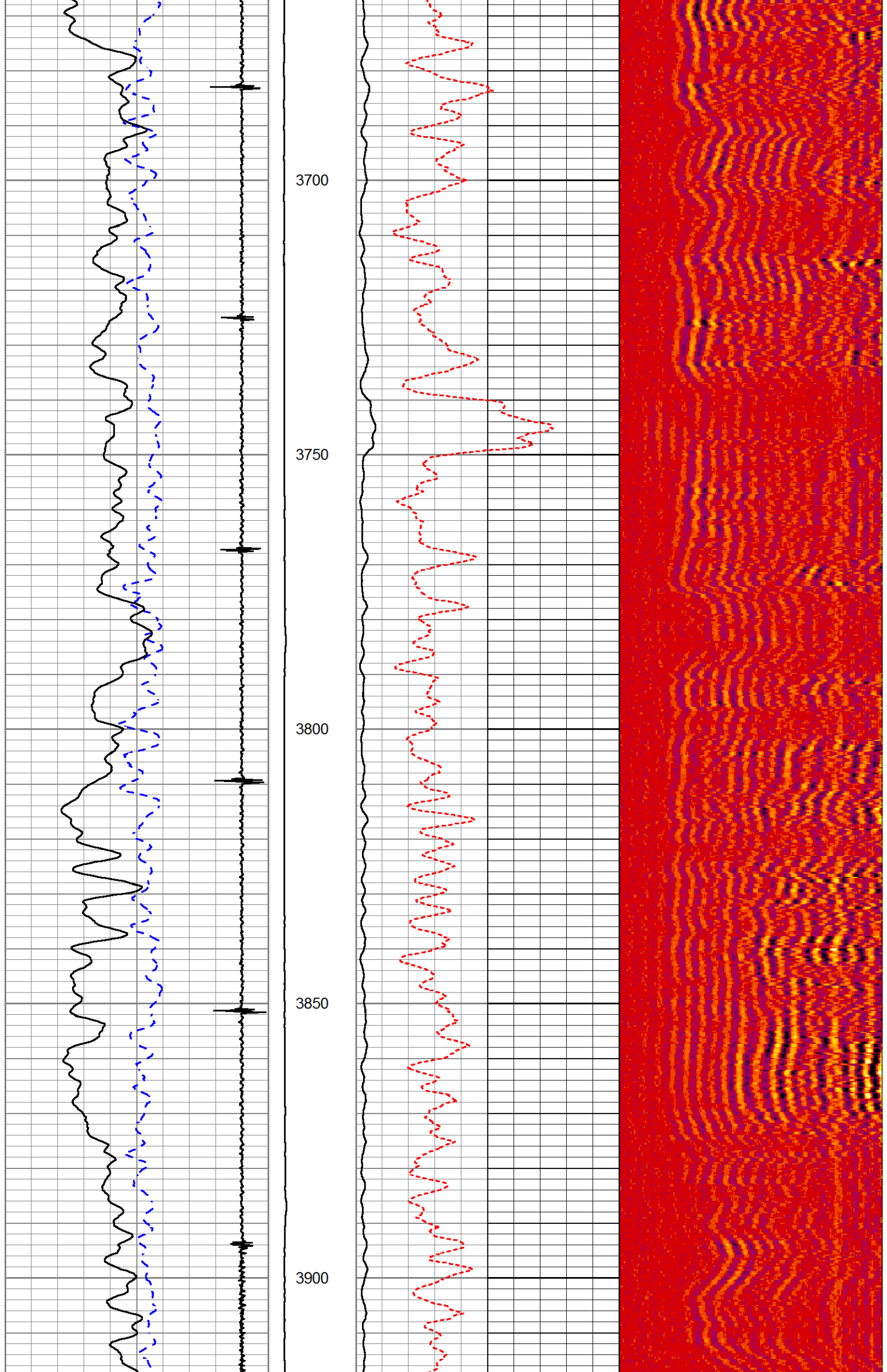


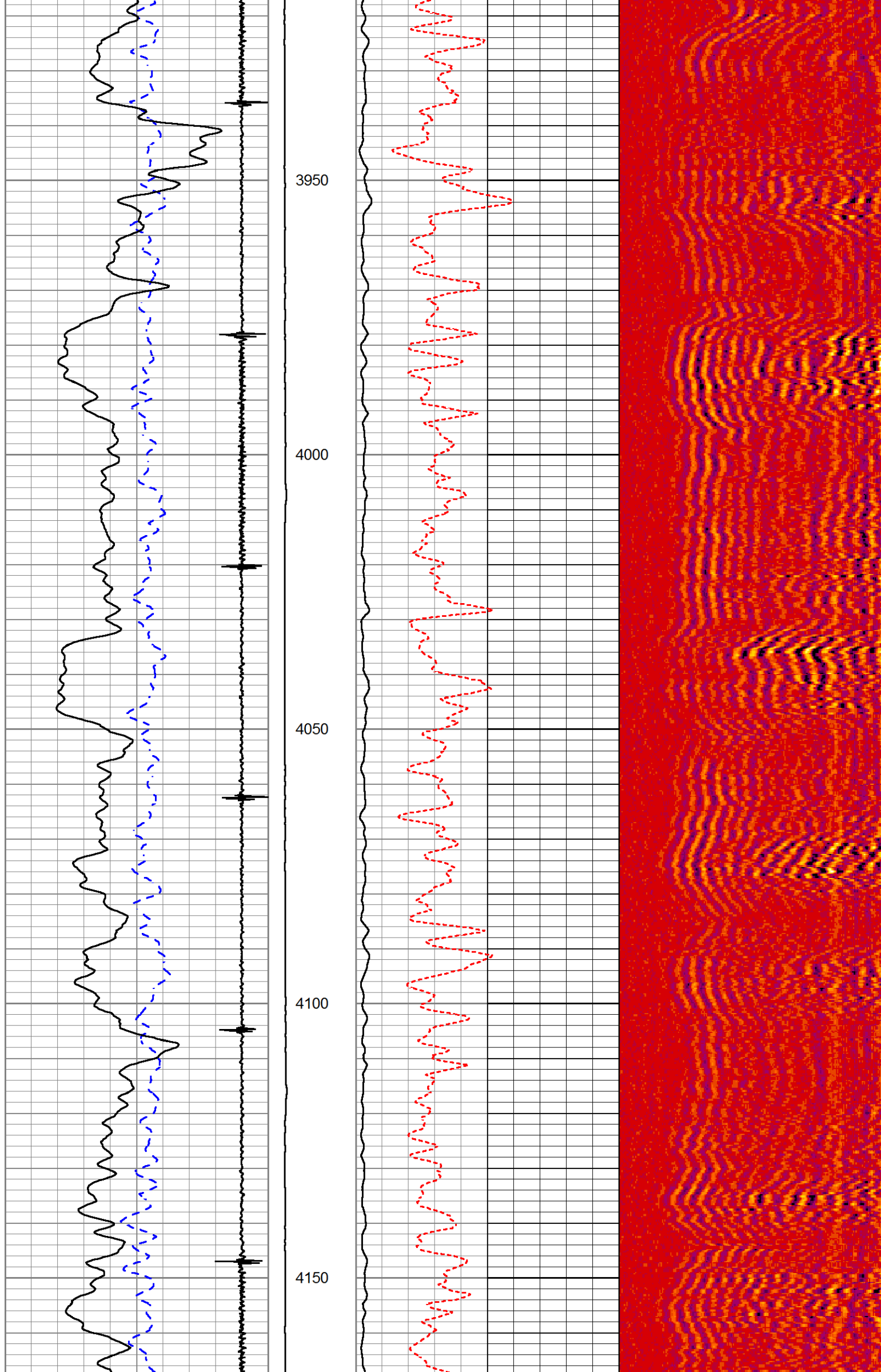


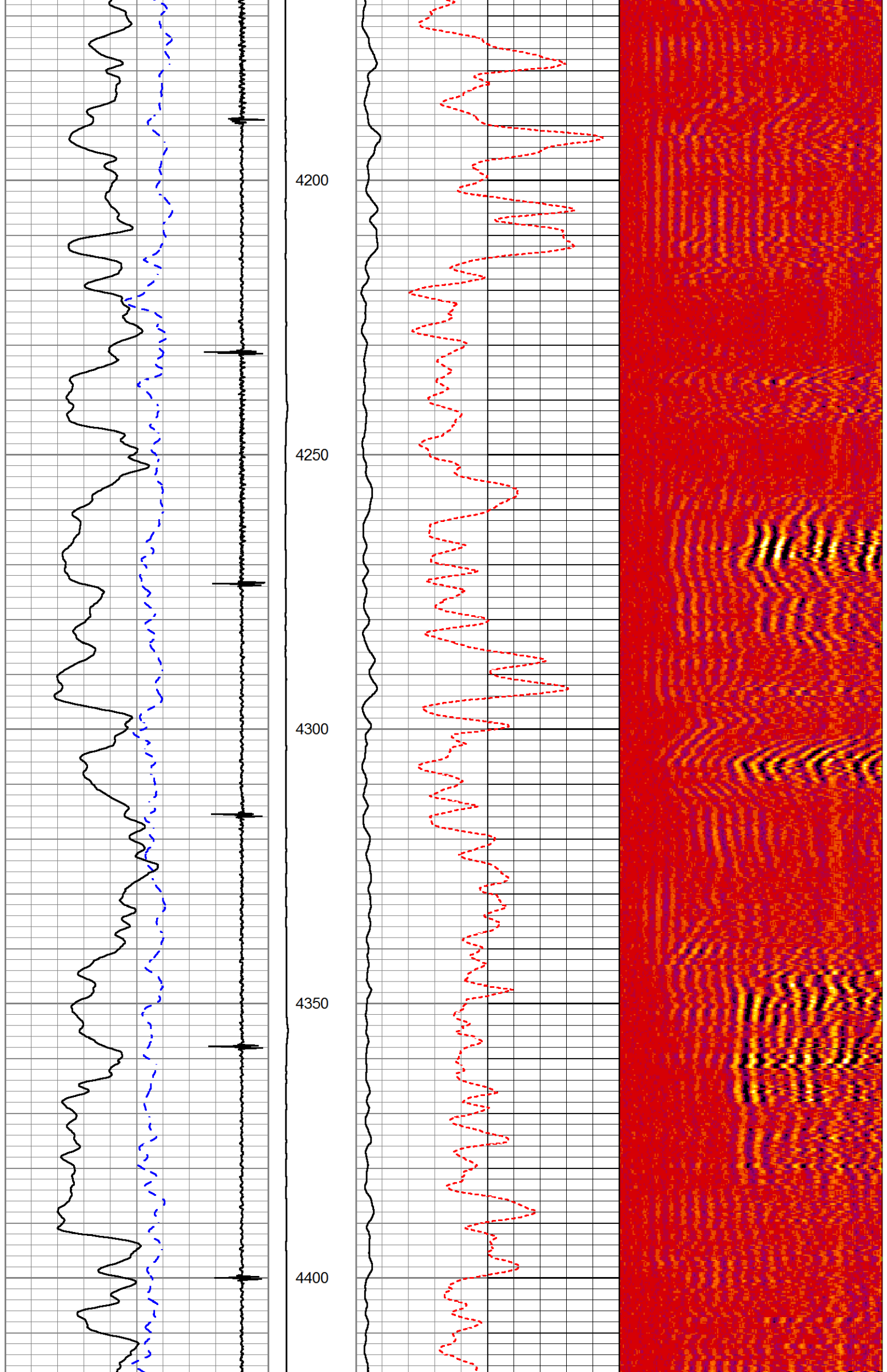


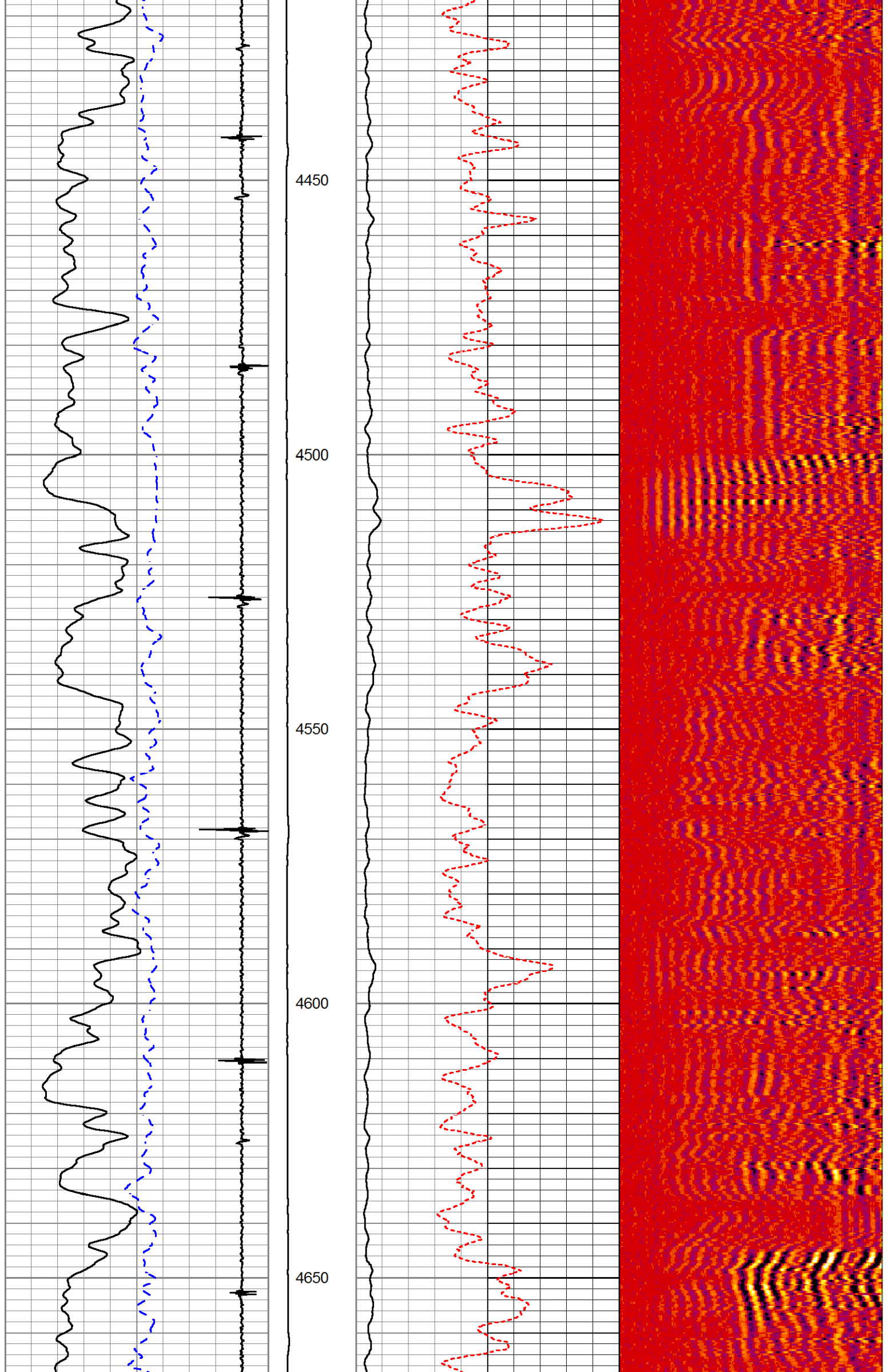


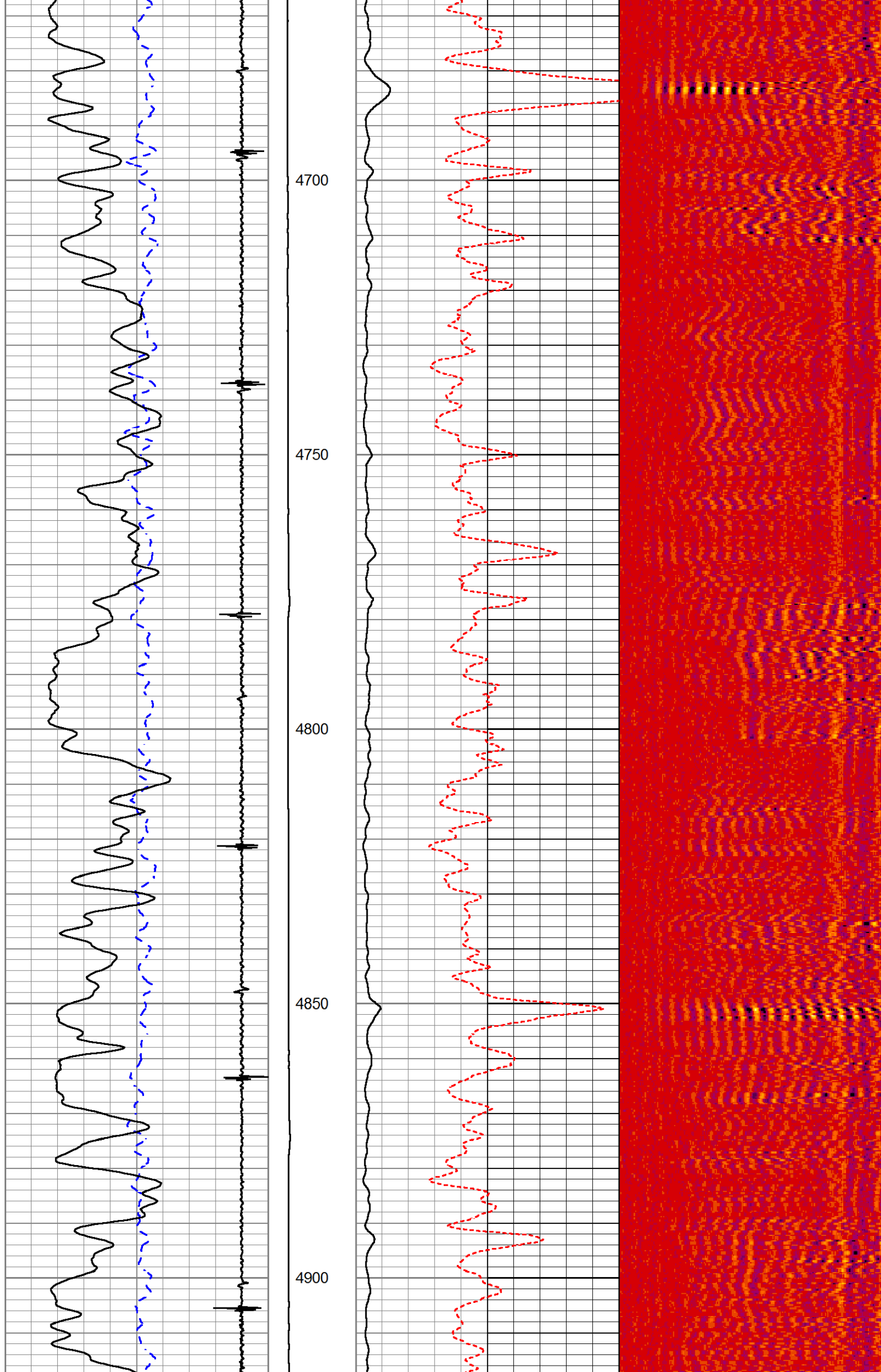


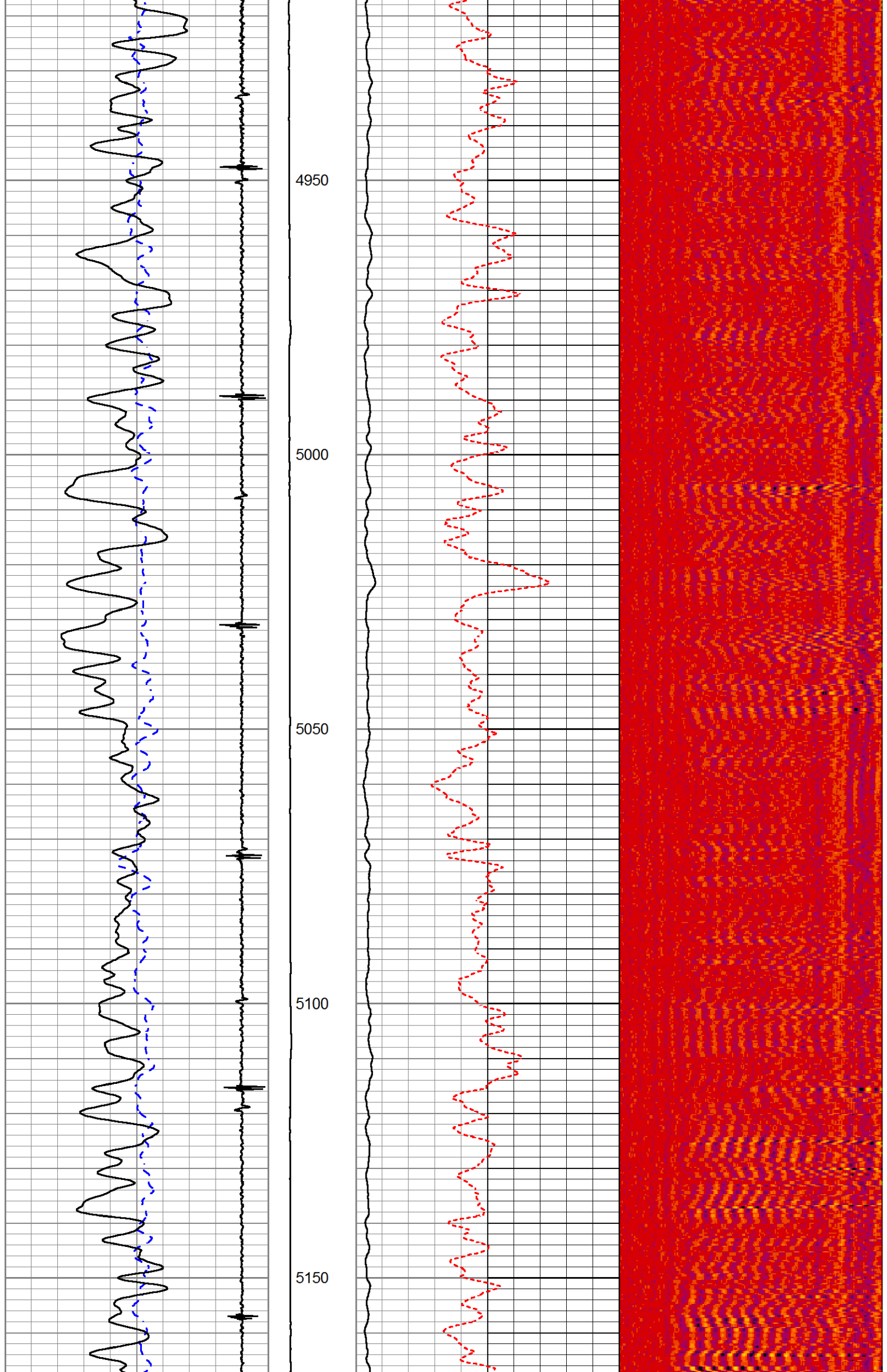


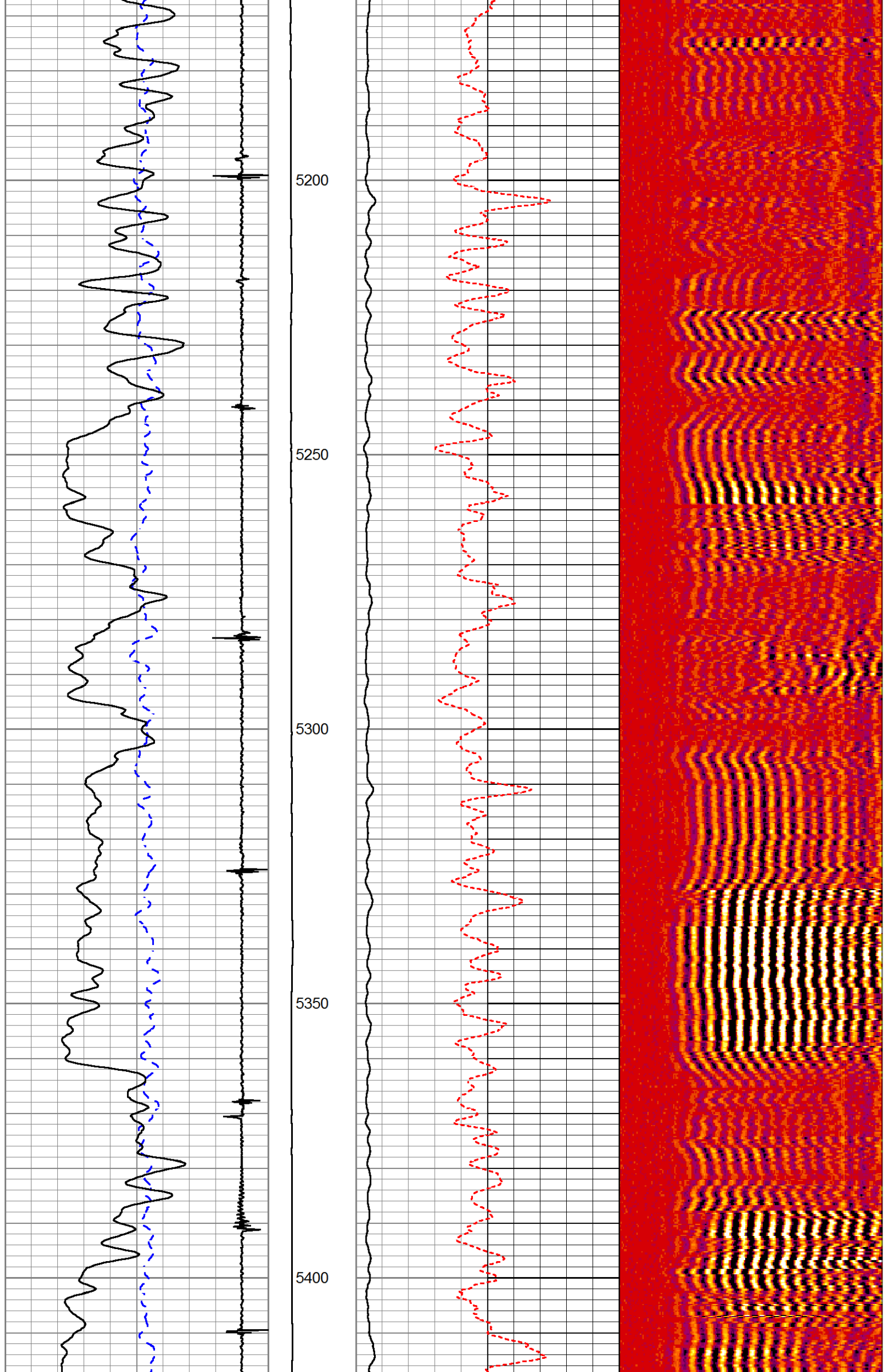


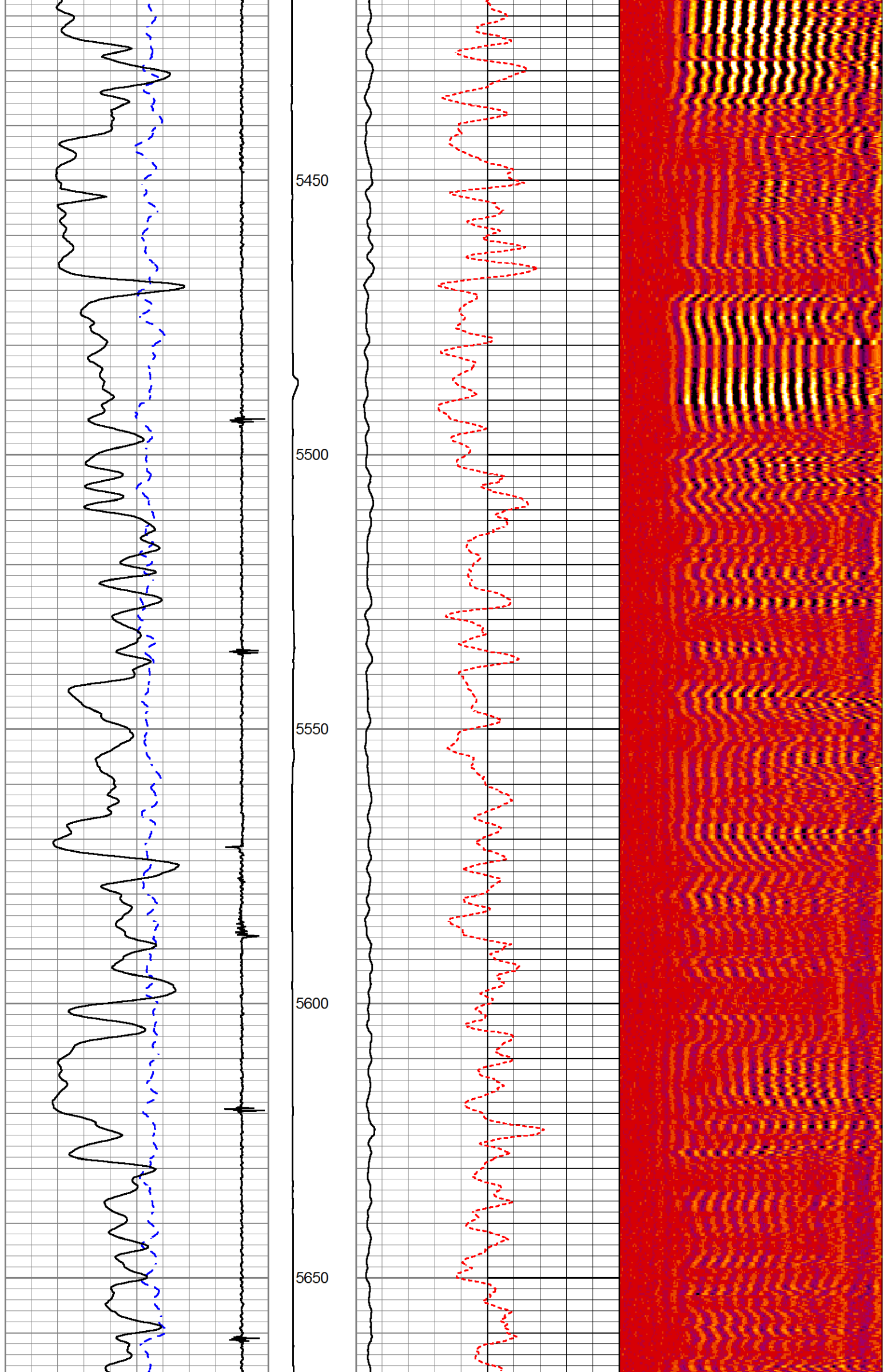


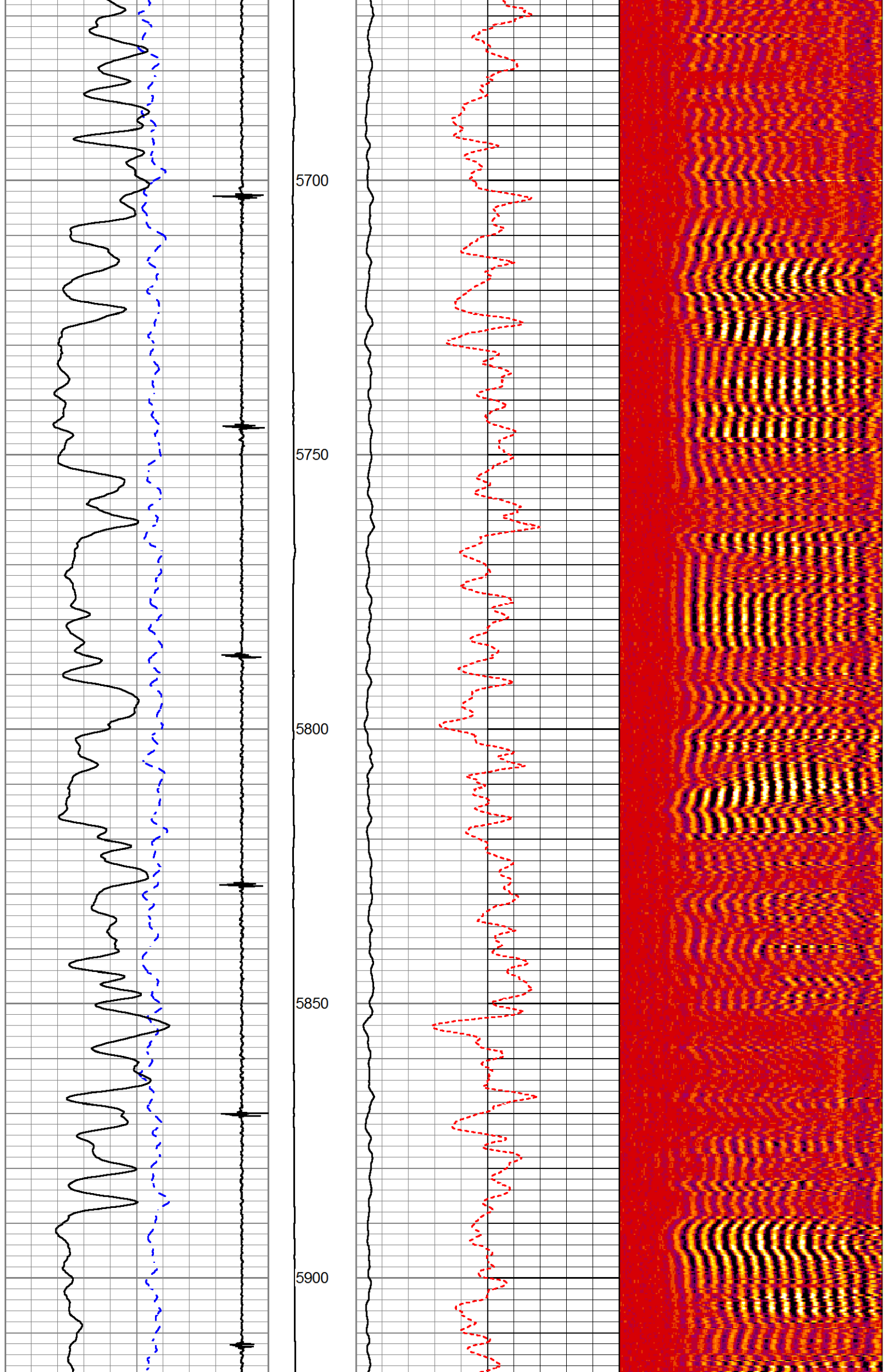


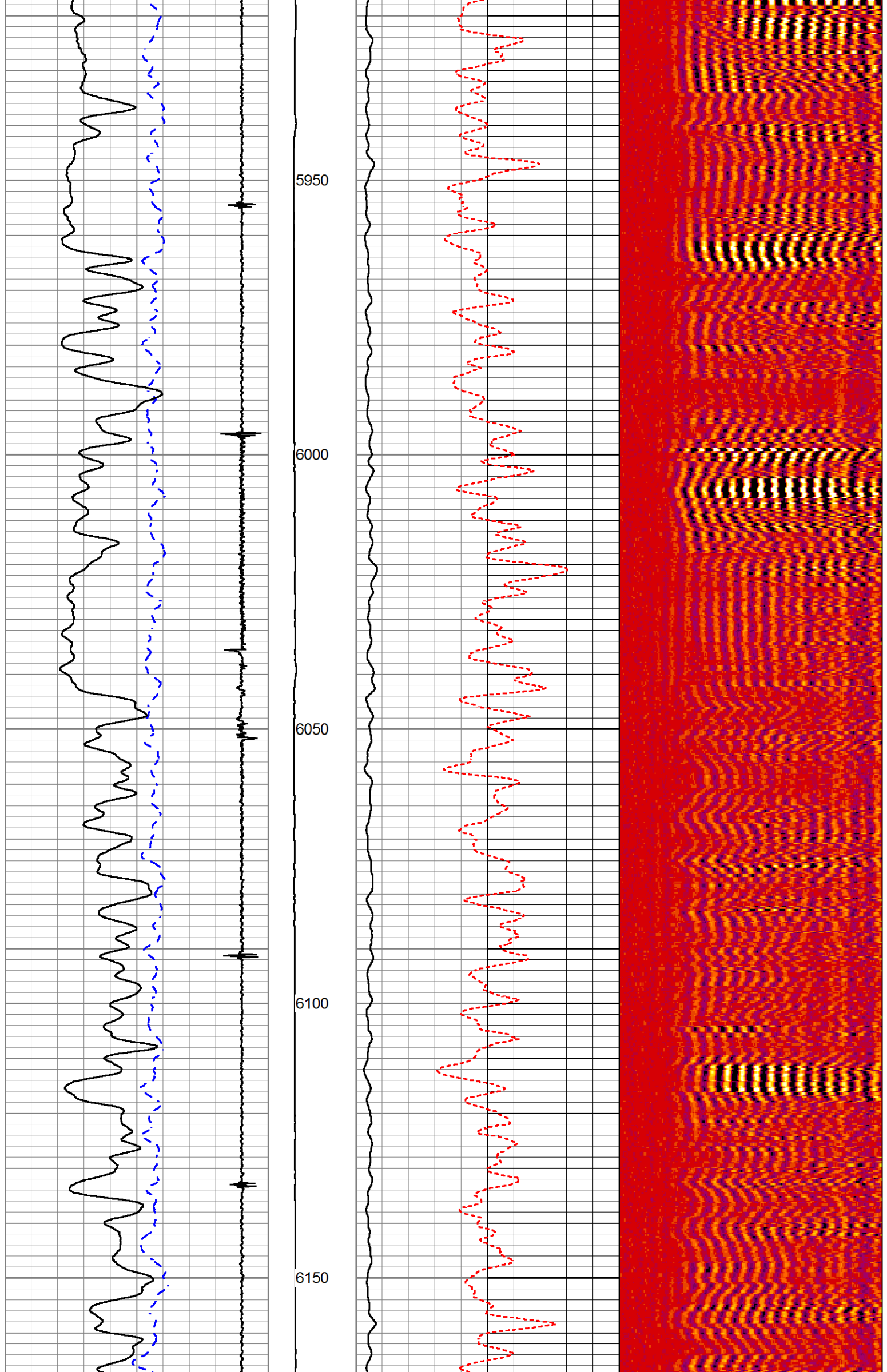


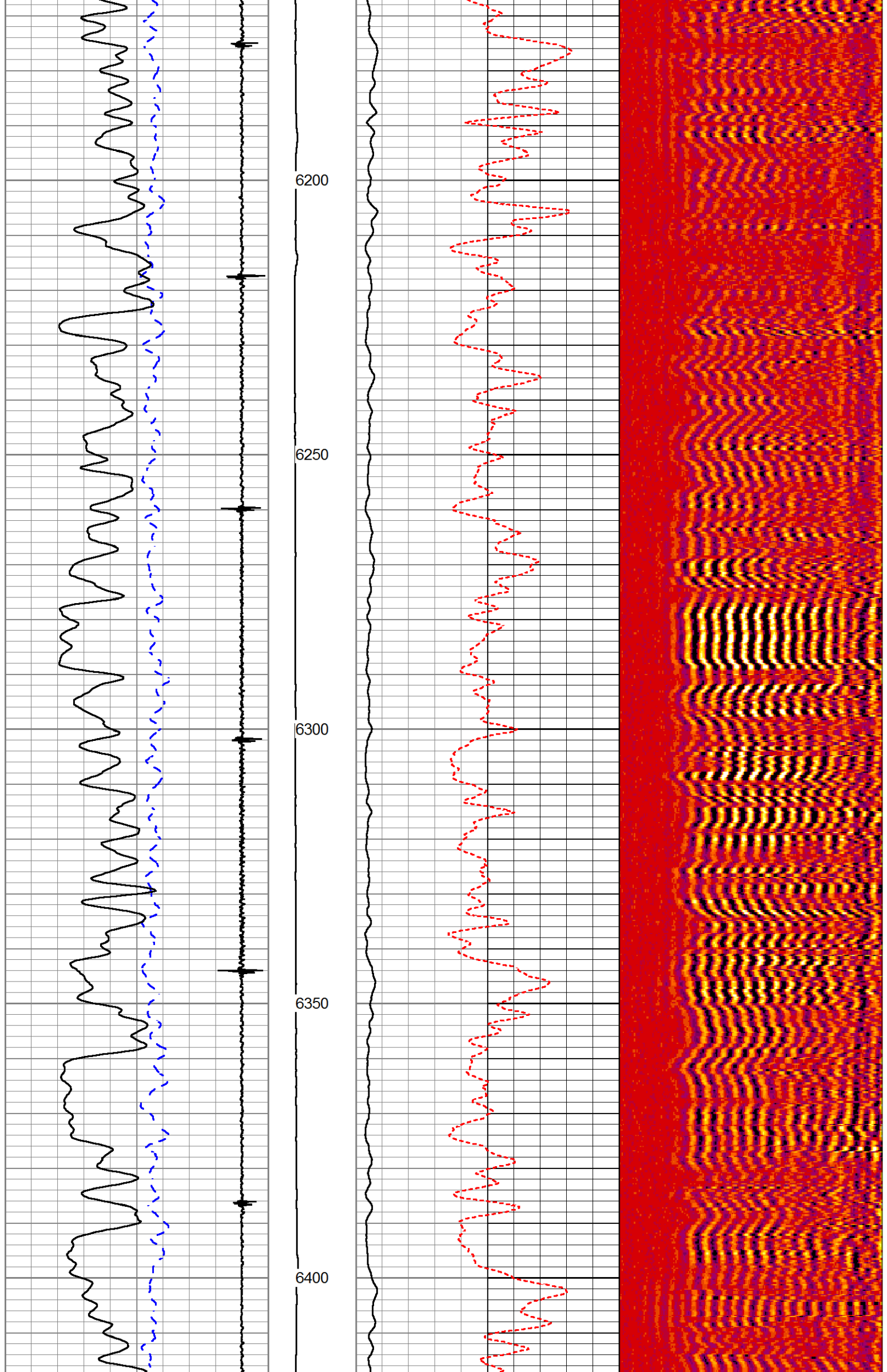


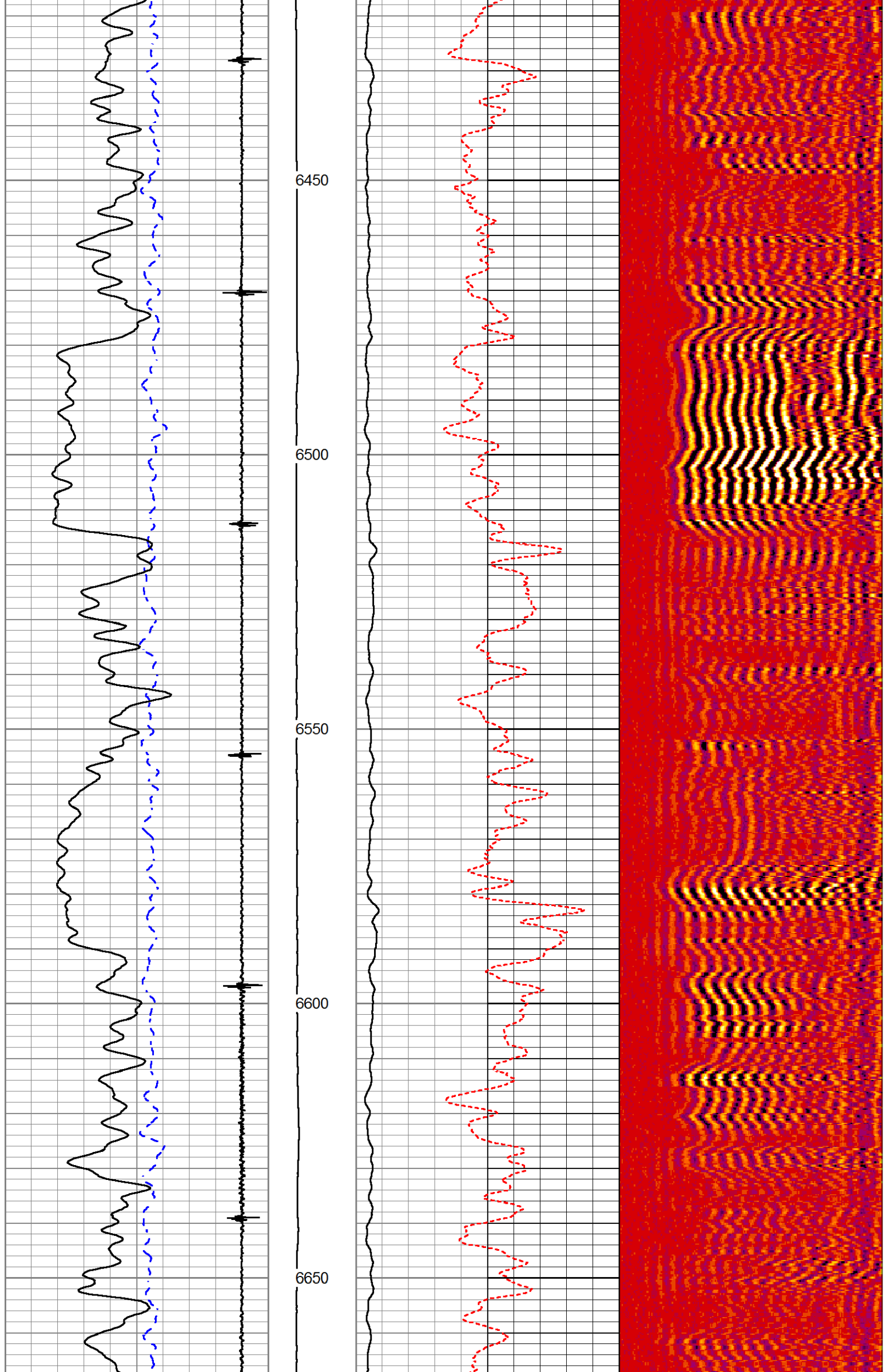


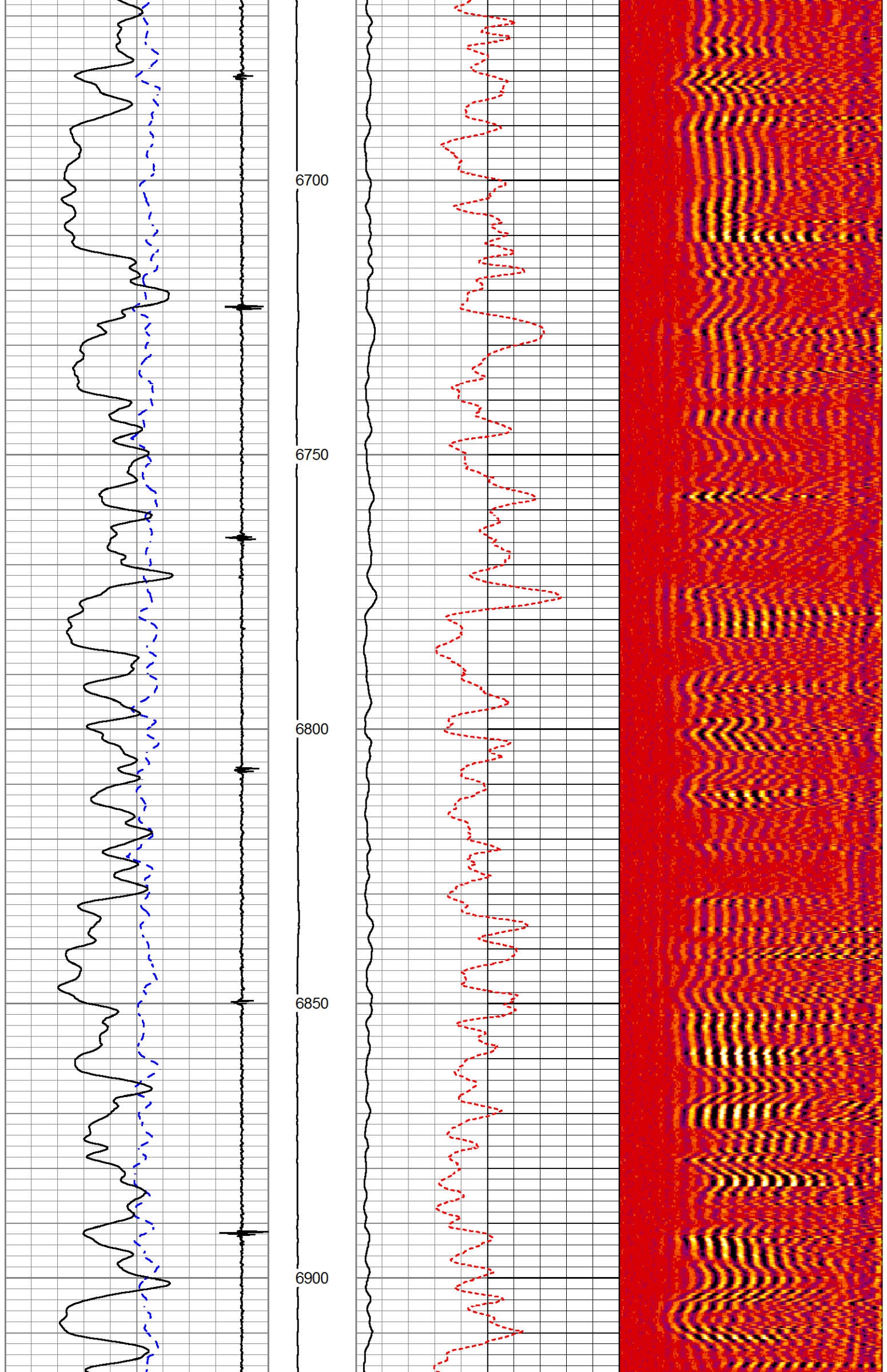


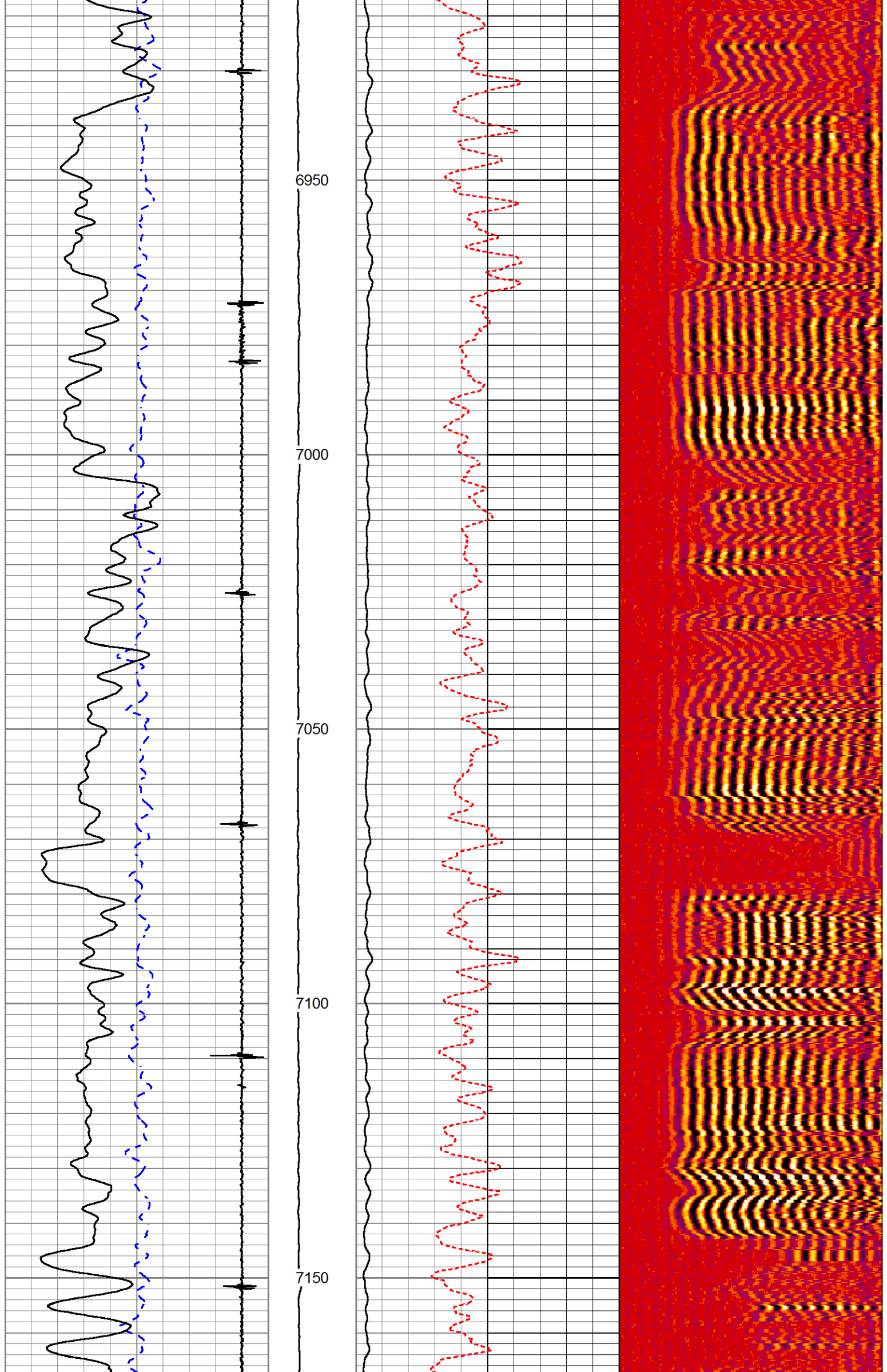


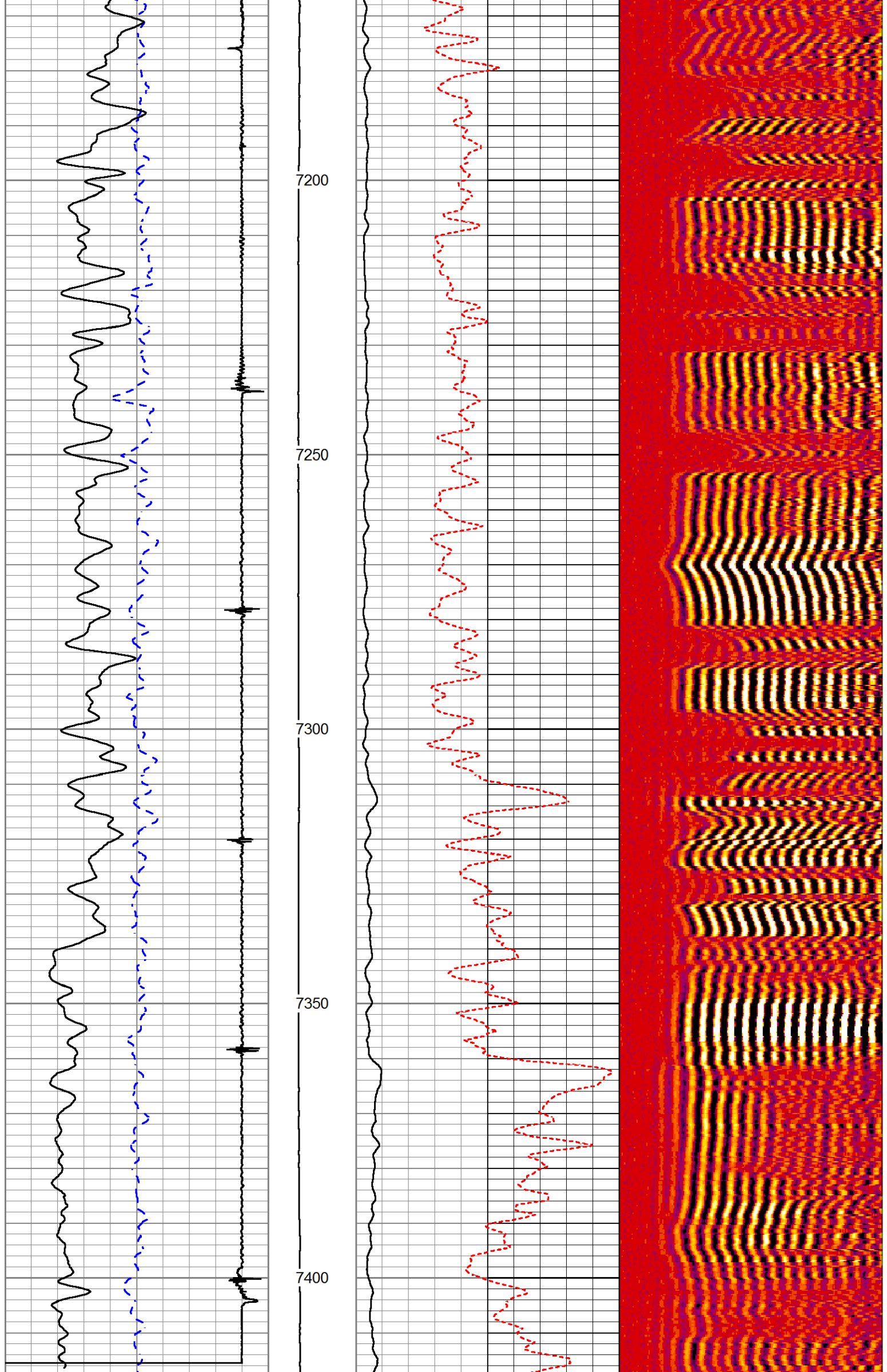


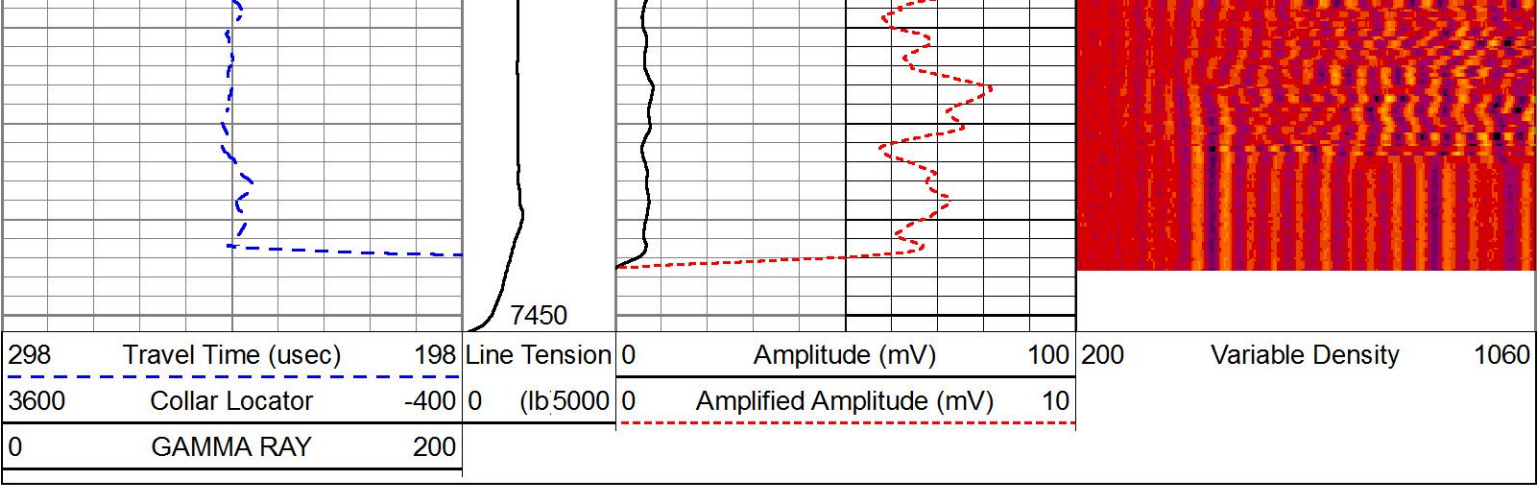












MAIN PASS

5" = 100'

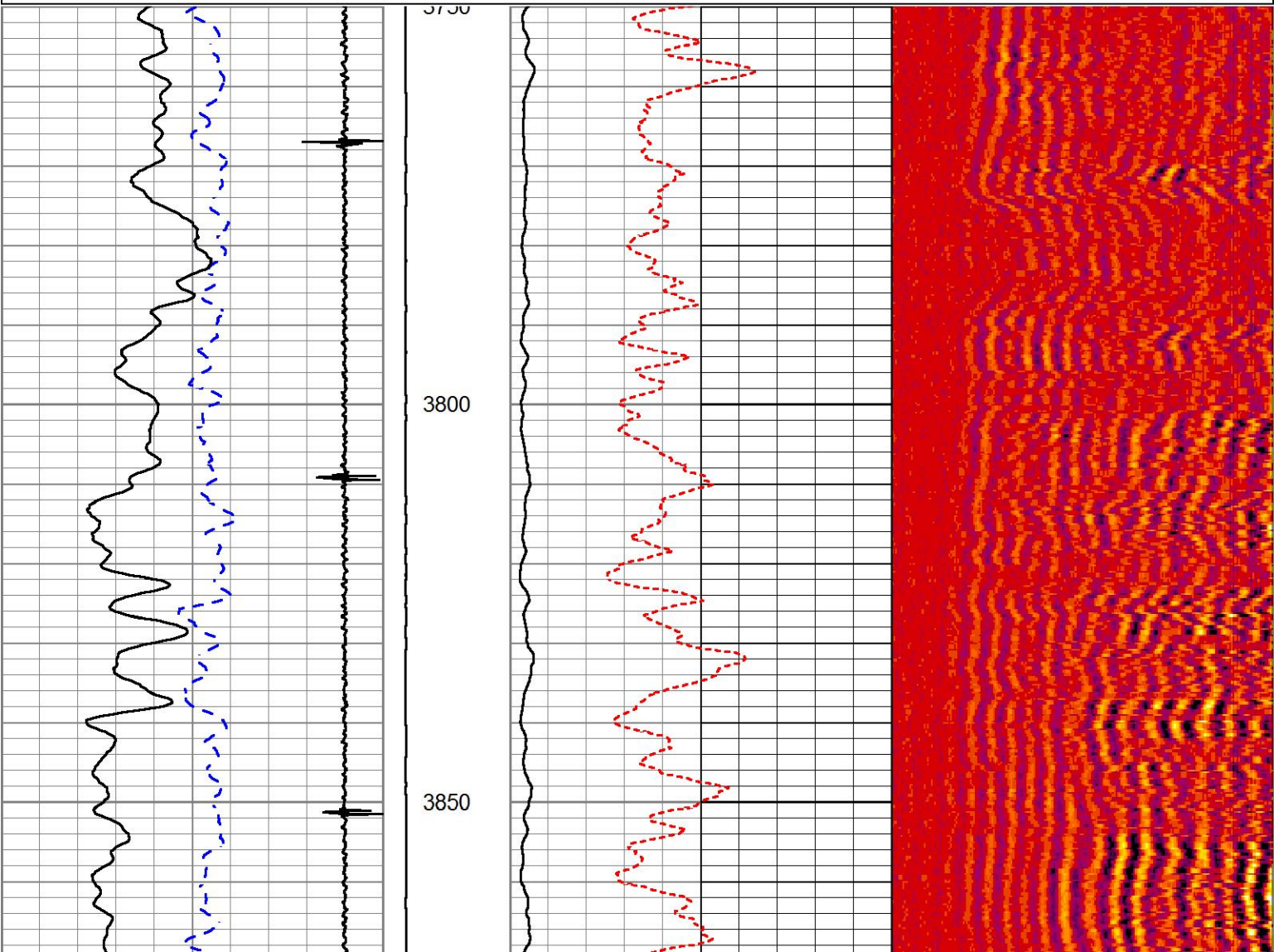
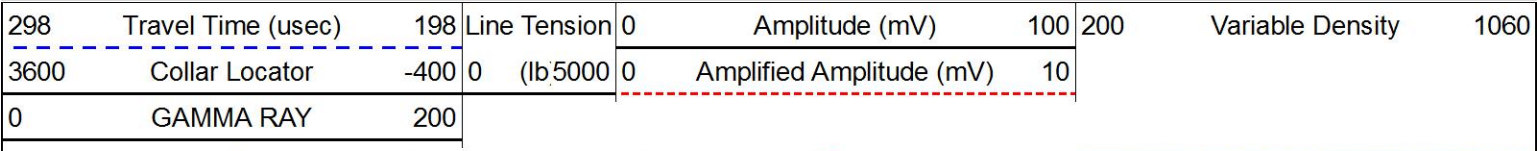
HALLIBURTON

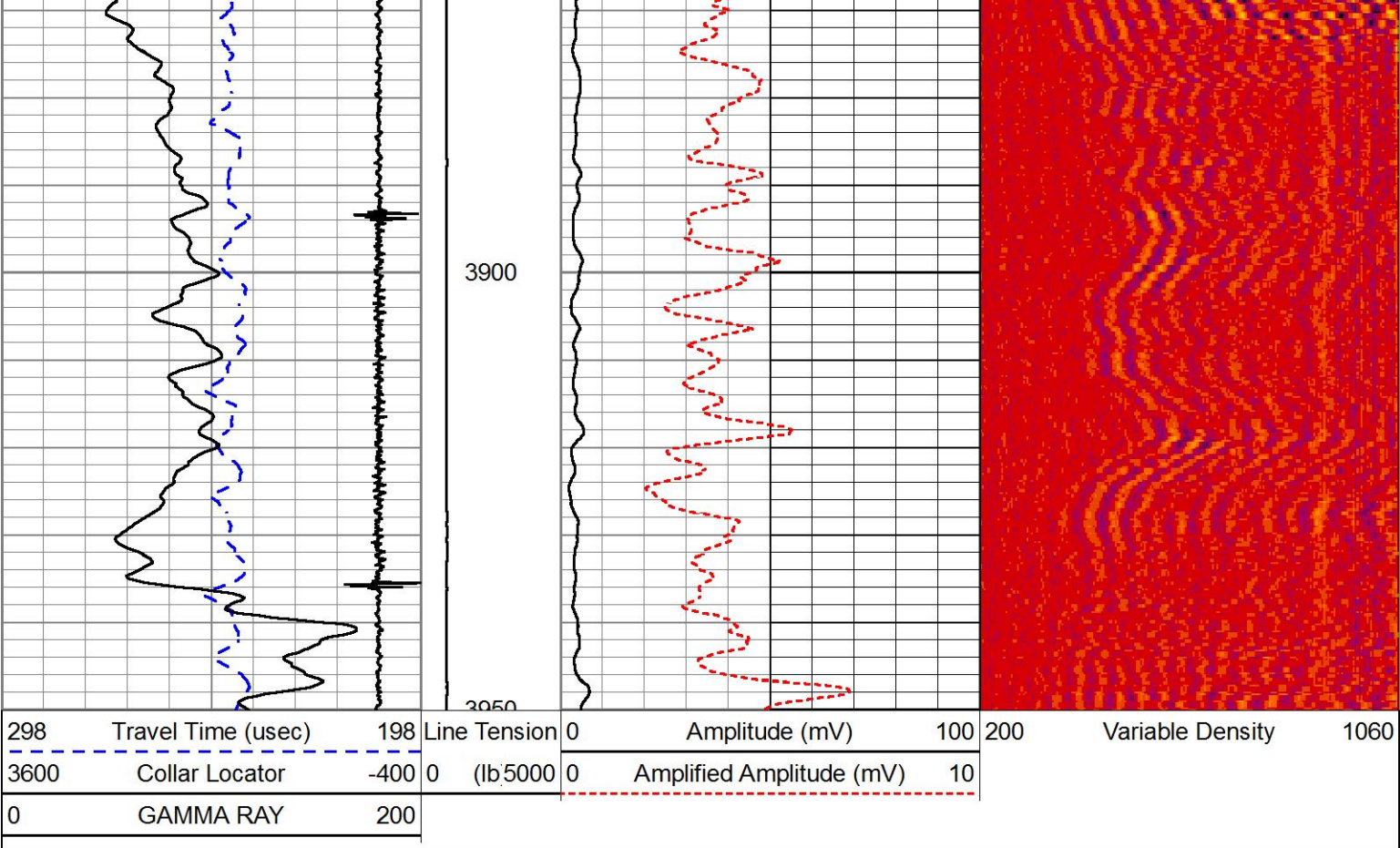
REPEAT PASS

5" = 100'

HALLIBURTON

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Charted by Depth in Feet scaled 1:240

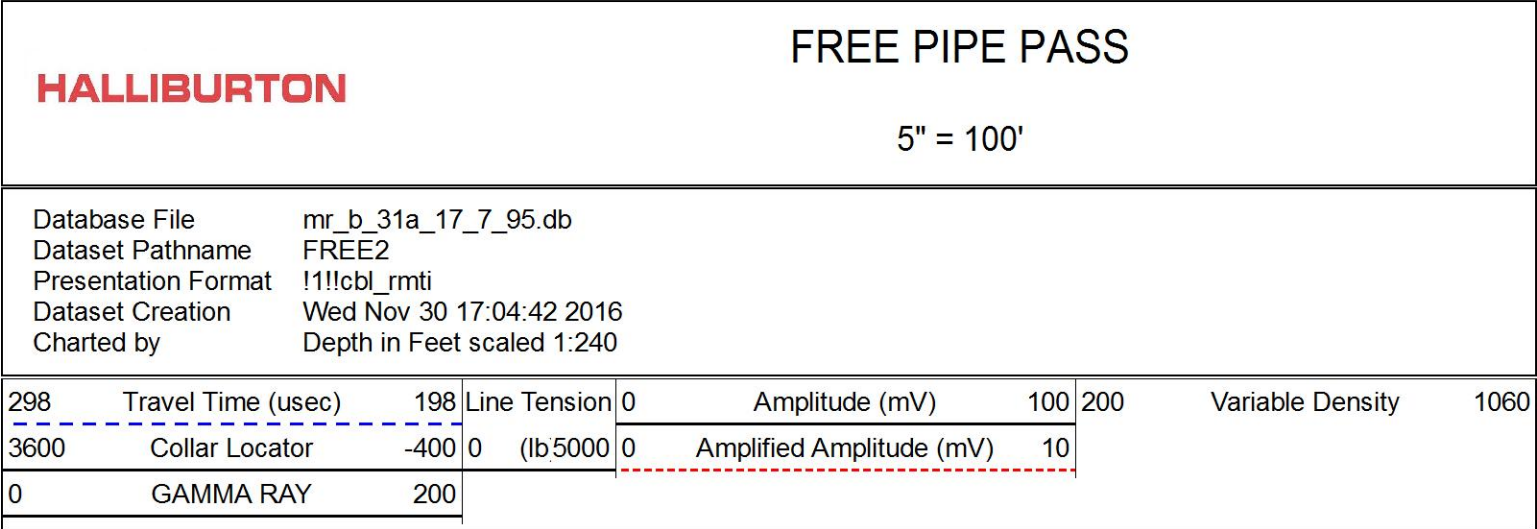




REPEAT PASS

HALLIBURTON

5" = 100'

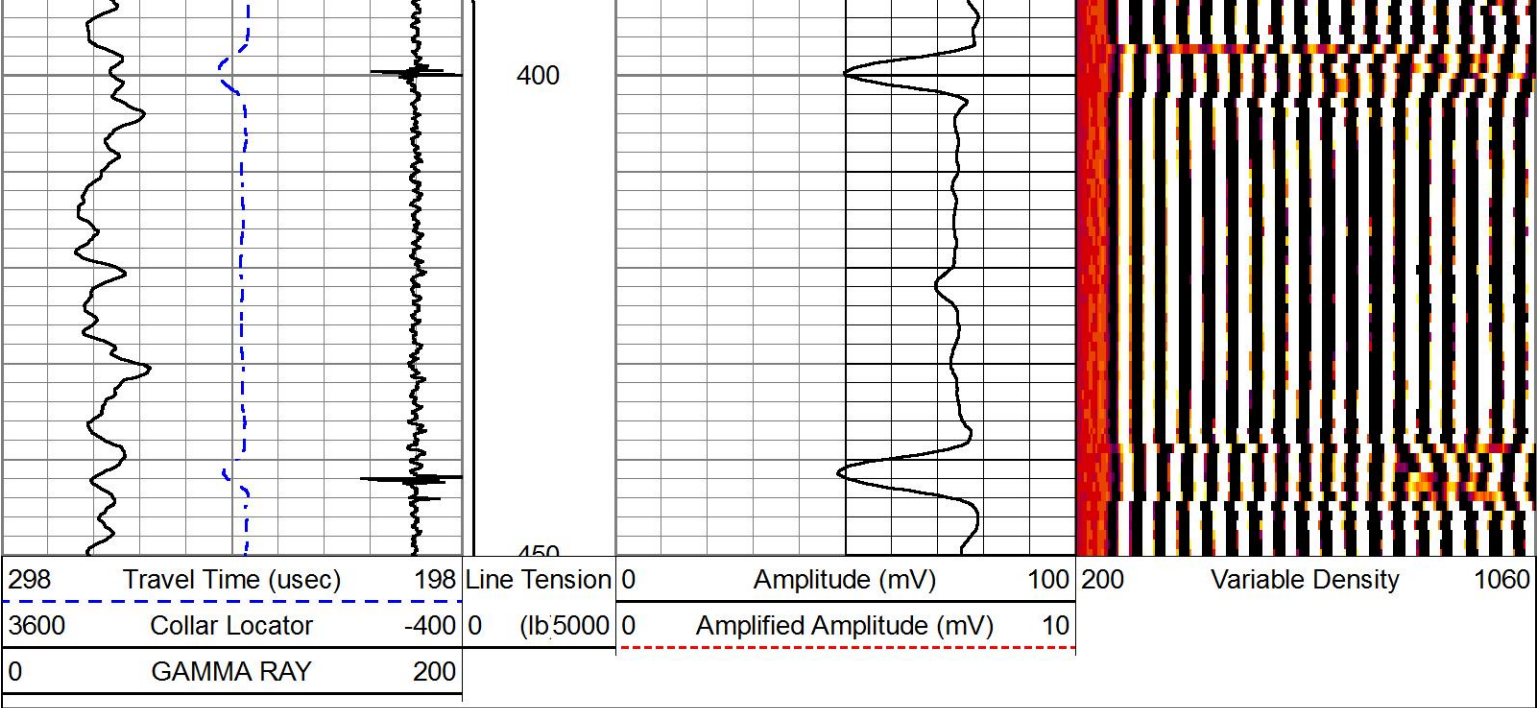


FREE PIPE PASS

HALLIBURTON

5" = 100'

Database File mr_b_31a_17_7_95.db
Dataset Pathname FREE2
Presentation Format !1!!cbl_rmti
Dataset Creation Wed Nov 30 17:04:42 2016
Charted by Depth in Feet scaled 1:240



FREE PIPE PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr_b_31a_17_7_95.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	7.875	150	220	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0.25	11.6	Sandstone	1	8.4	0	1	0
RHO�F	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	20	7400	NONE	0	1.7	

Calibration Report

Database File mr_b_31a_17_7_95.db
Dataset Pathname MAIN1
Dataset Creation Wed Nov 30 18:22:28 2016

Cement Bond Log Shop Calibration Report

Serial-Model: 12091451-A
Calibration Performed: Wed Nov 30 17:01:50 2016

Free Pipe Calibration


TT	Measured	Units
Amplitude	245.0	usec
Log Base Line	514.0	mV
	12.1	mV


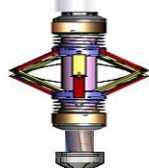
Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.162	

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				
RMTH Module	2015.10.16.1				

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)
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		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
	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		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.66					
Temp	9.57					
TT3FT	7.32		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.32					
WVF5FT	6.36					
WVF3FT	2.84		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
			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_31a_17_7_95.db: field/well/run1/MAIN1 Total length: 39.39 ft Total weight: 356.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY LLC				
Well	MONUMENT RIDGE B 31A-17-7-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	CEMENT BOND LOG				