

HALLIBURTON

ACOUSTIC CEMENT
BOND LOG

Company		CAERUS OIL & GAS, LLC.	
Well		NOLTE 44A-14	
Field		GRAND VALLEY	
County		GARFIELD	State CO
Company		CAERUS OIL & GAS, LLC.	
Well		NOLTE 44A-14	
Field		GRAND VALLEY	
County		GARFIELD	State CO
API No.: 05-045-22301-0000		Serv #: 901365529	
Location: SURFACE HOLE LOCATION: 0781' FSL & 0364' FEL		Other Services	
BOTTOM HOLE LOCATION: 1300' FSL & 0660' FEL		GAUGE RING RMT	
Sec: 14 Twp: 07S Rge: 96W			
Permanent Datum		GROUND LEVEL Elevation 5088'	
Log Measured From		KB 24 Ft. above perm. datum	
Drilling Measured From		KB	
Date @ Time Logged		27 MAY 2014	
Run No.		ONE	
Depth - Driller		5900'	
Depth - Logger		5840'	
Bottom - Logged Interval		5840'	
Top - Log Interval		SURFACE	
Max. Recorded Temp.		N/A	
CEMENTING DATA		Witnessed by	
Date / Time Cemented		Surface	
Primary / Squeeze		String	
Expected Compressive Strength		psi@ hrs	
Cement Volume		psi@ hrs	
Cement Type / Weight		psi@ hrs	
Formulation		psi@ hrs	
Mud Type / Mud Wgt.		psi@ hrs	
Borehole Record		Casing & Tubing Record	
Run Number		Bit	
ONE		N/A	
TWO		8.75"	
		1015'	
		6060'	
		4.5"	
		11.6#	
		SURFACE	
		5900'	

<<< Fold Here >>>

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

HES CBL LOG DATED: 27 MAY 2014 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.

GR-RMT-CBL RAN IN COMBINATION.

LOG INTERVALS PER CUSTOMER REQUEST.

SHORT JOINTS @: 4012' - 4023' AND 5463' - 5473'.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	901365529	API No.	05-045-22301-0000	PGM Ver	14.02.28001
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
TELEMETRY		CEMENT BOND TOOL		RESERVOIR MONITOR TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12105786	Serial No.	11002214	Serial No.	12270693
Model No.	TTTC-U-002	Model No.	RBT-004	Model No.	RMTI-A
Diameter	1.688"	Diameter	3.125"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

ONE	5840'	SURFACE	0	25	MAIN LOG SECTION			
	GAMMA RAY		TRAVEL TIME		AMPLITUDE		MSG	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	370	170	0	100	200	1200
DIRECTIONAL INFORMATION								
Maximum Deviation		N/A	deg. @	N/A	KOP	N/A		

HALLIBURTON

MAIN LOG SECTION

5" = 100'

Database File

nolte_44a14_cmb - copy.db

Dataset Pathname

44A14/run1/MAIN1.1

Presentation Format

cbl-radi

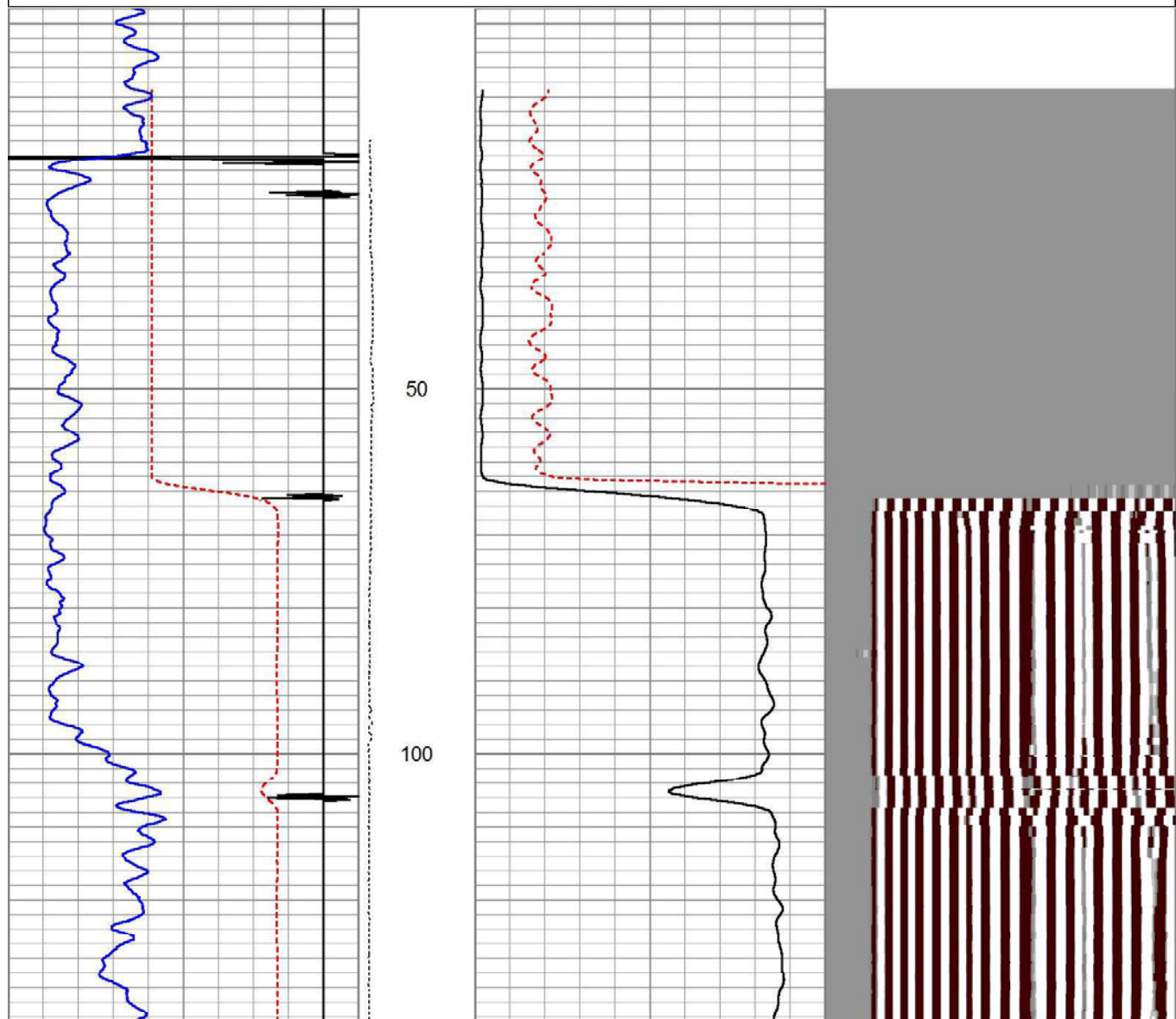
Dataset Creation

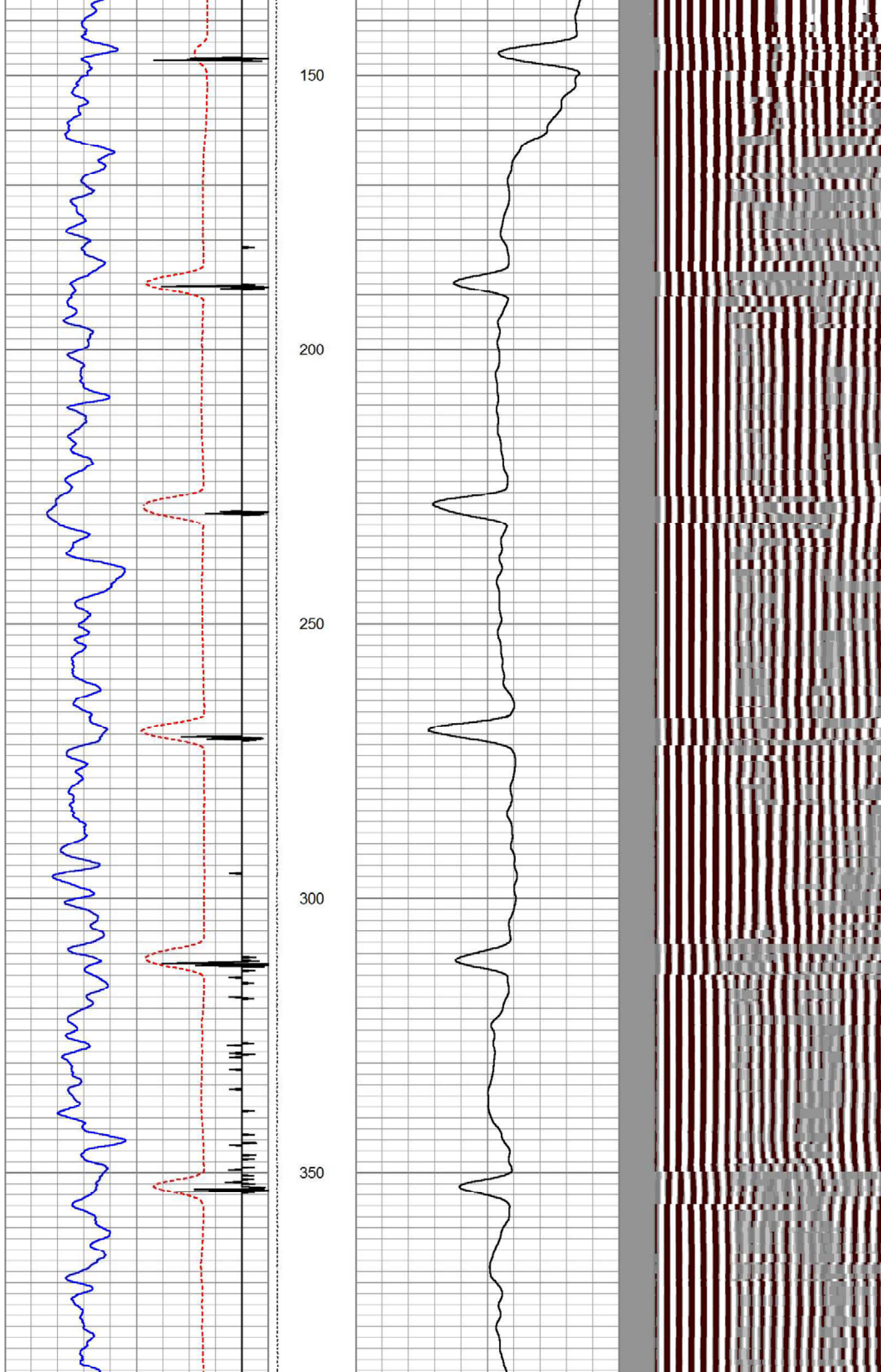
Tue May 27 19:12:59 2014

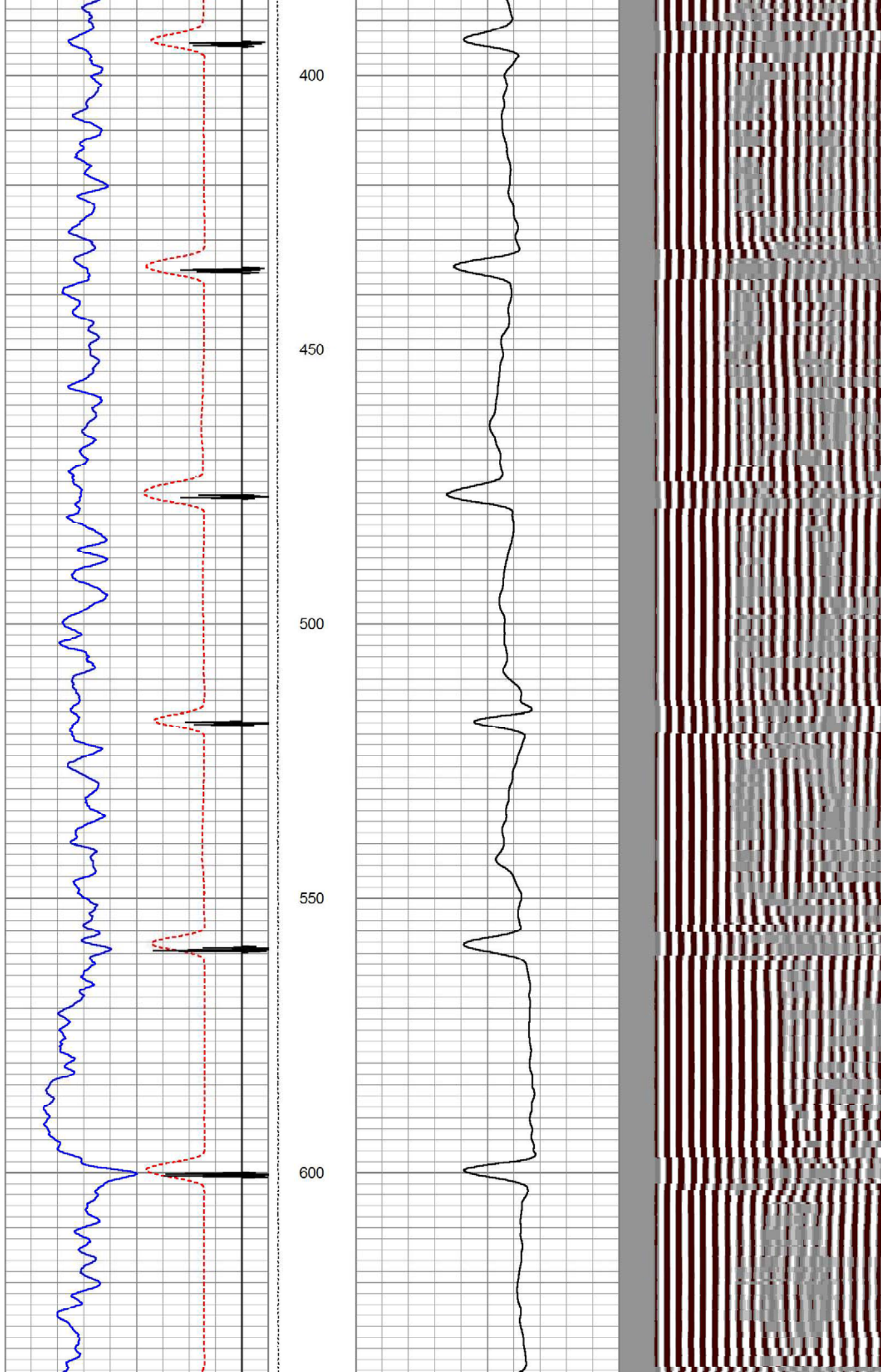
Charted by

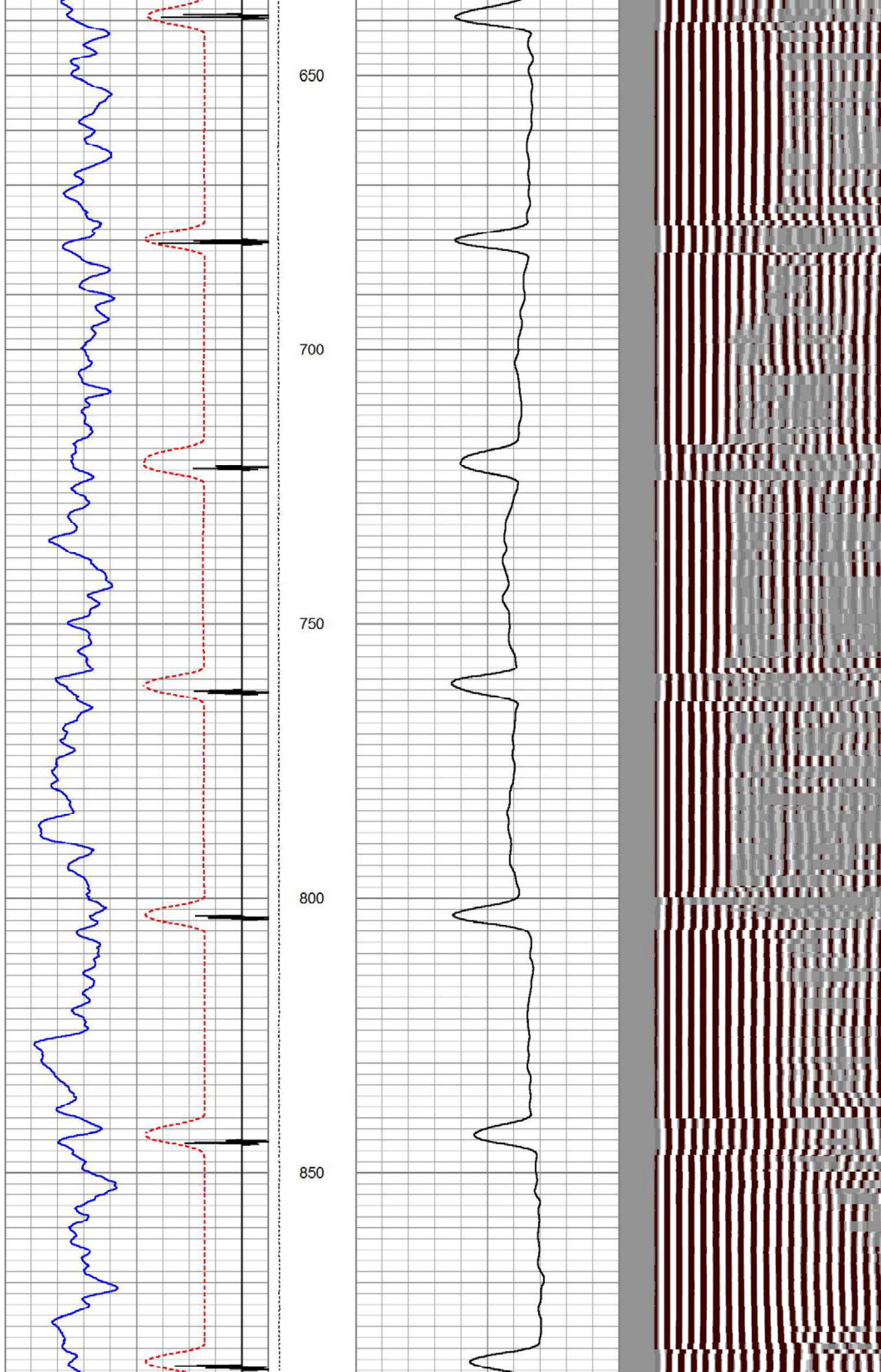
Depth in Feet scaled 1:240

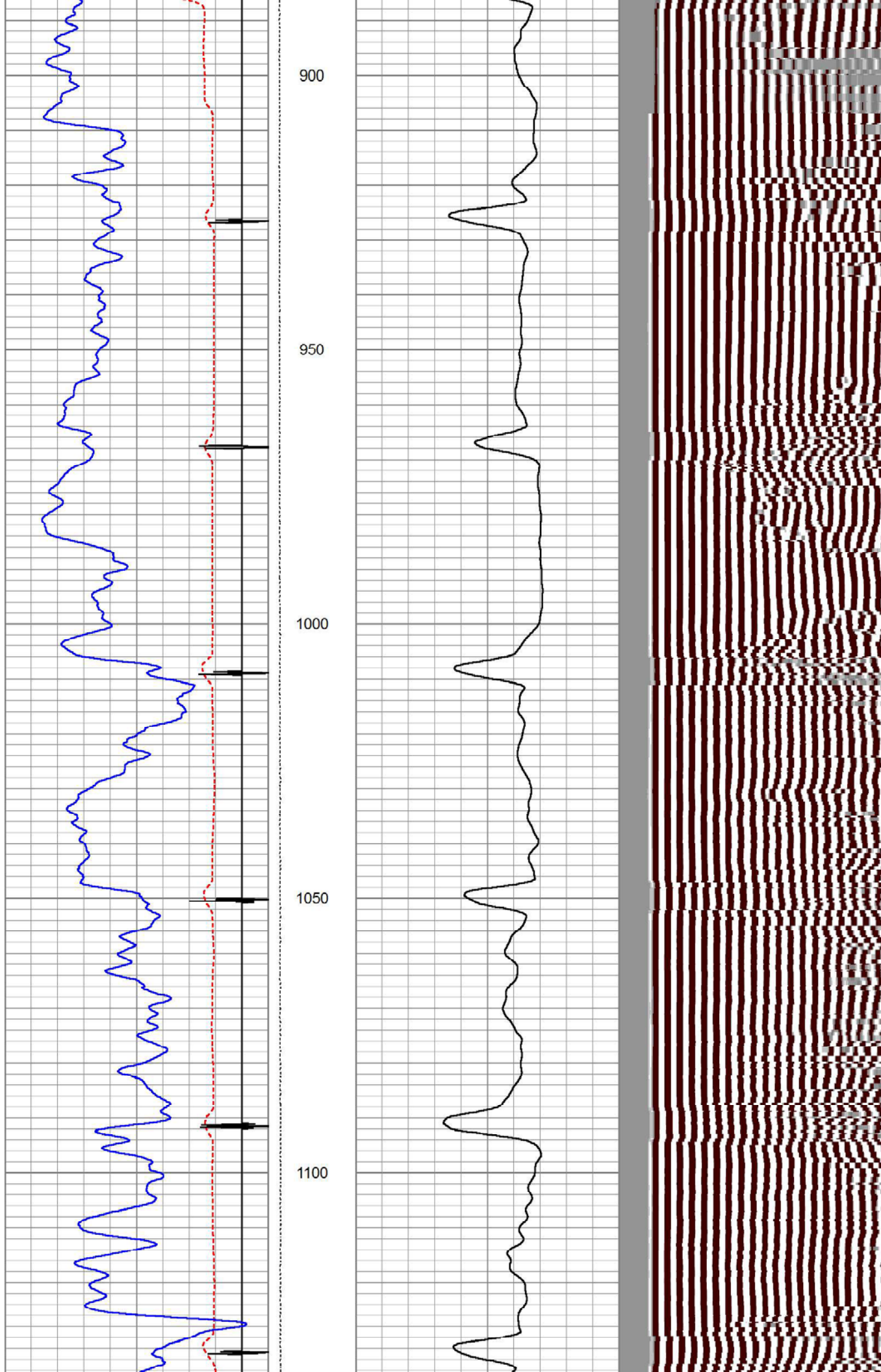
370	TT3FT (usec)	170	LTEN	0	AMP3FT (mV)	100	200	VDL	1200
-2700	COLLARS	300	0	(lb 4000	0	AMPLIFIED AMPLITUDE (mV) 10			
0	GAMMA RAY (GAPI)	150							

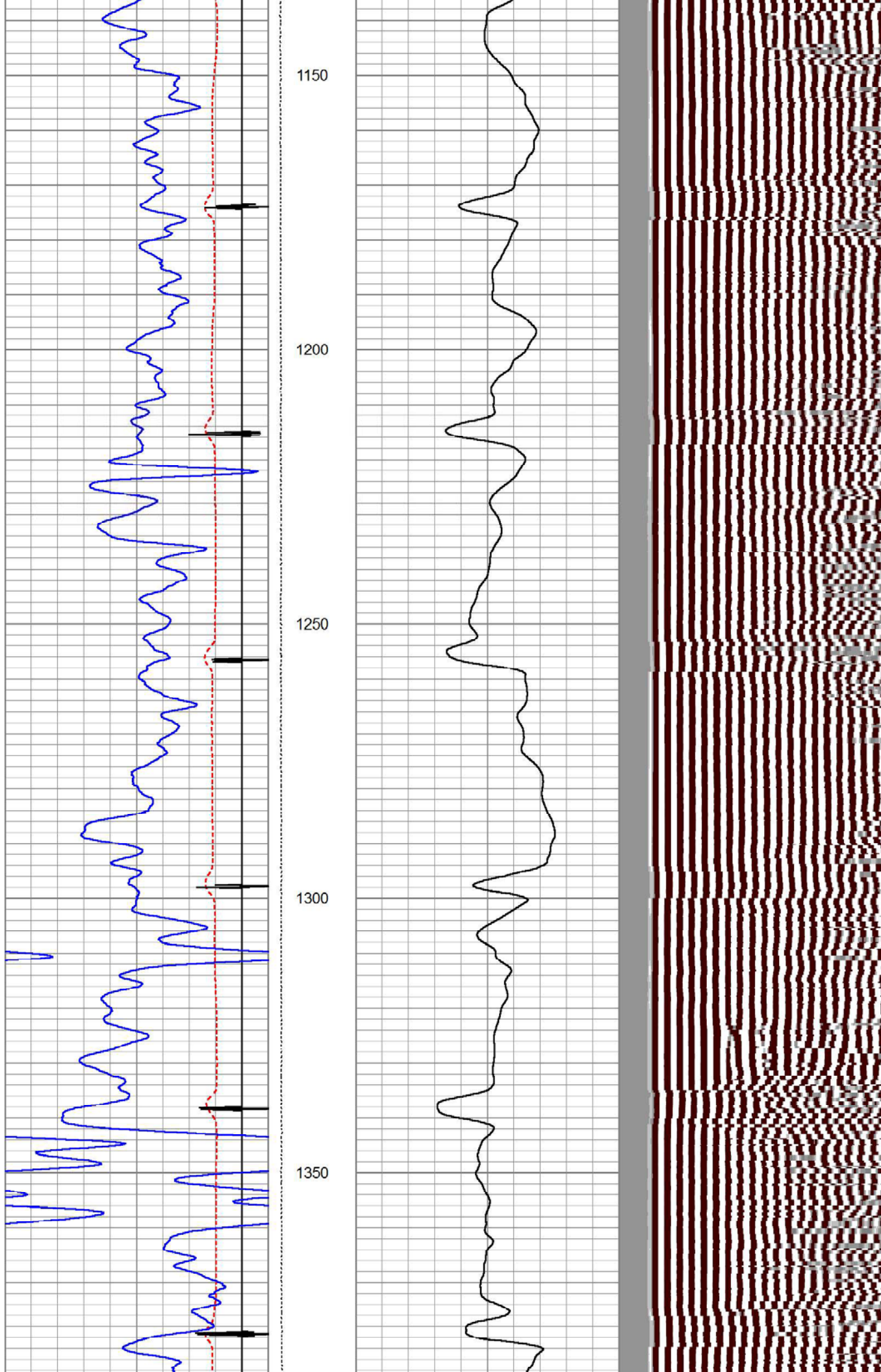


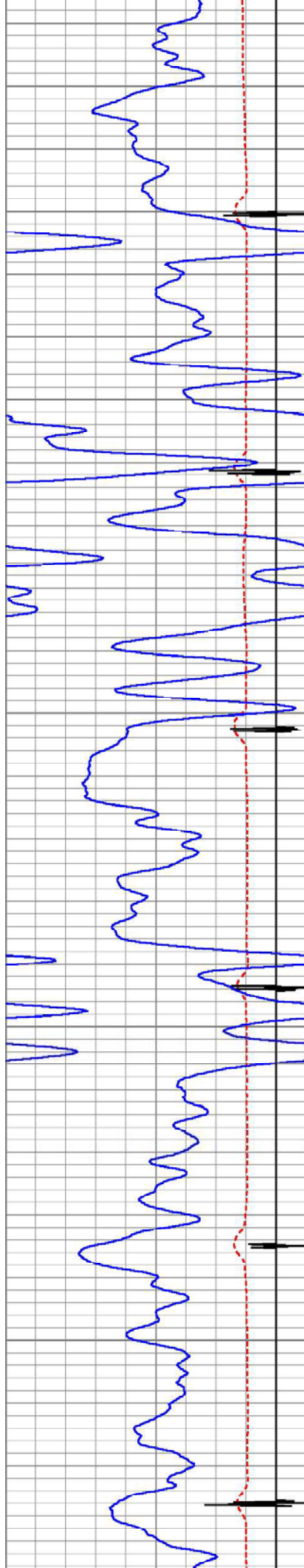












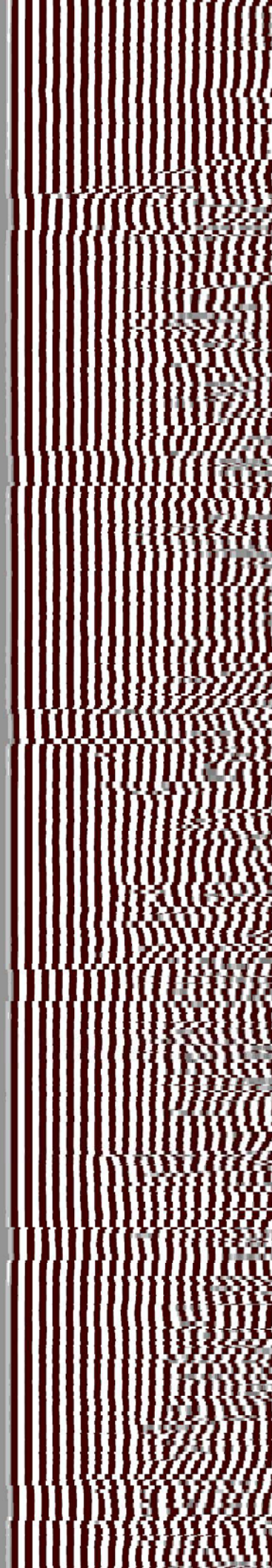
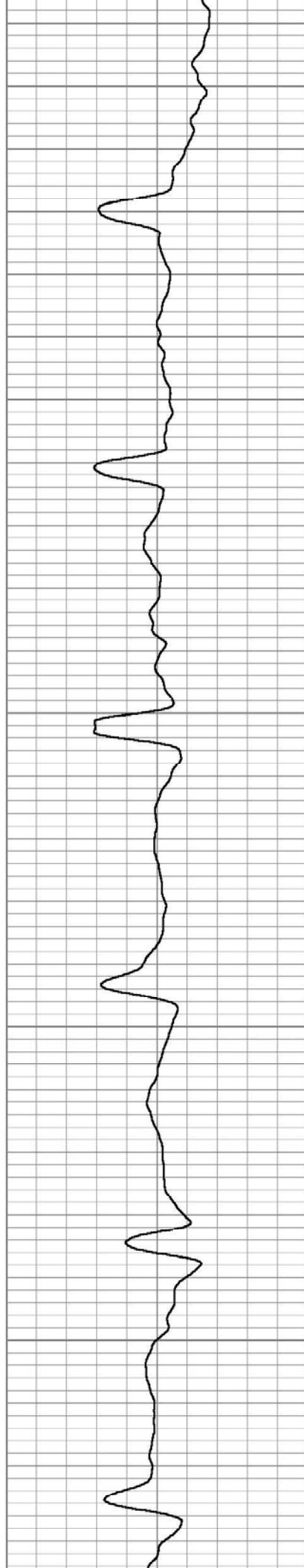
1400

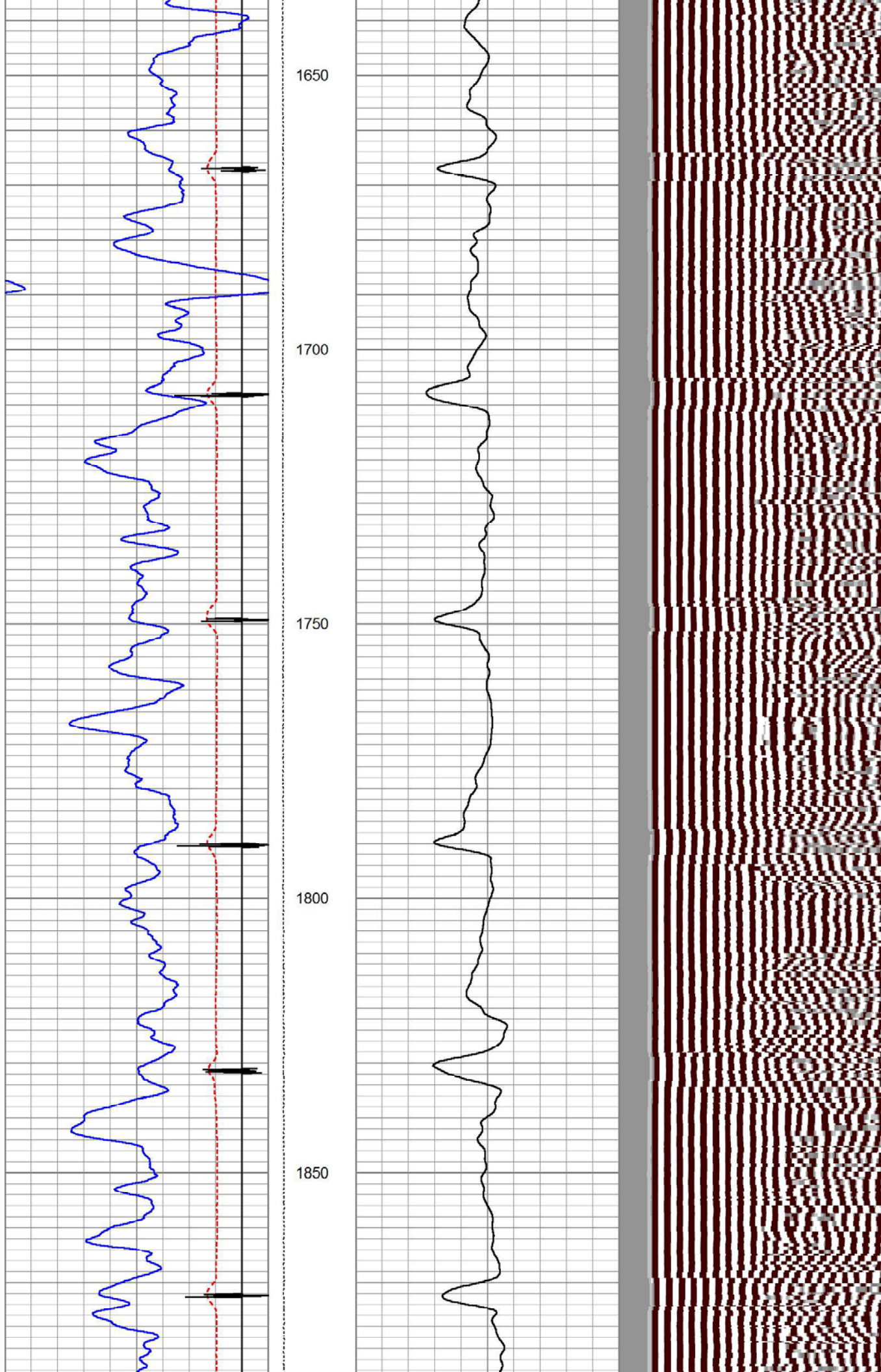
1450

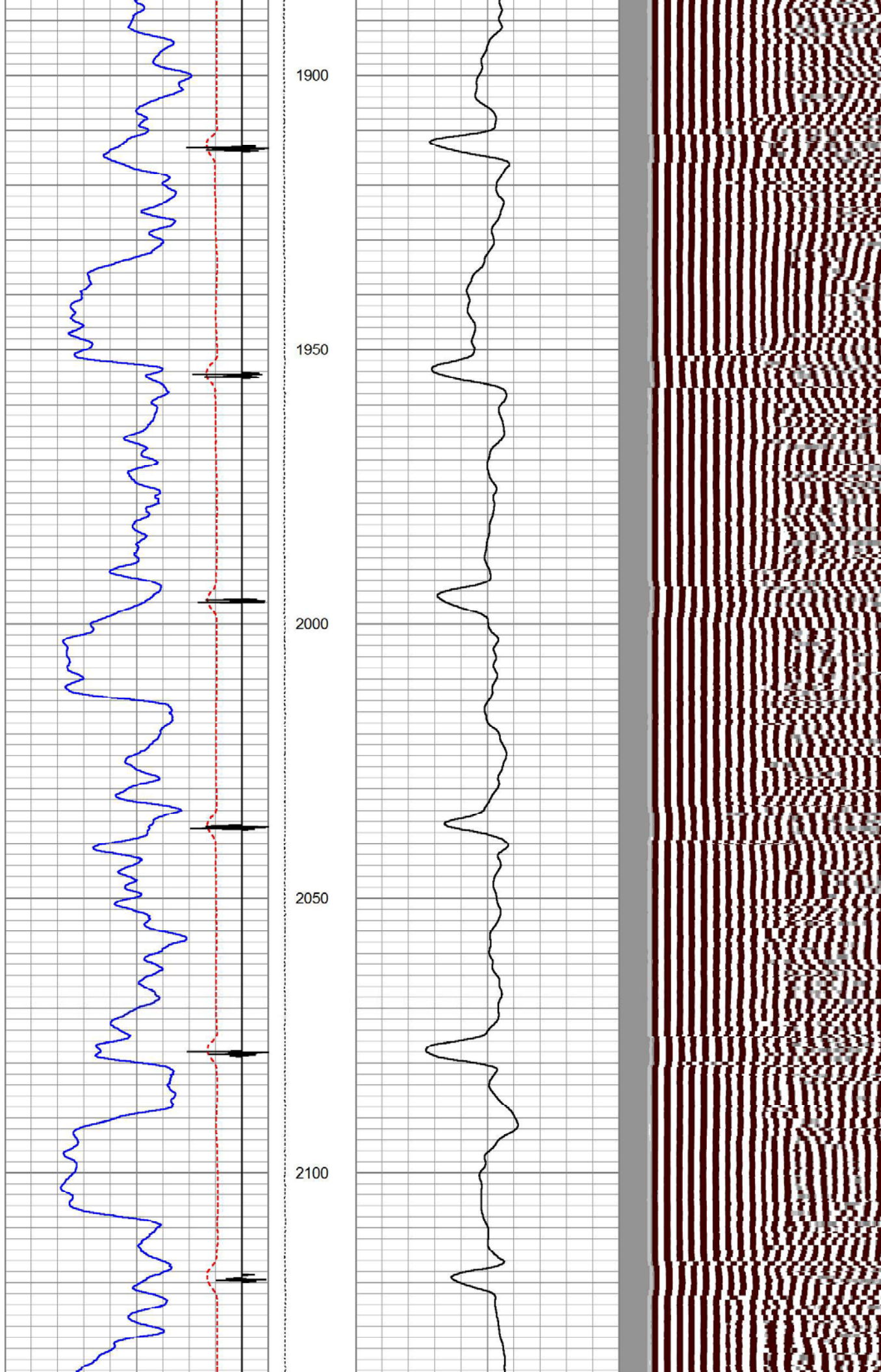
1500

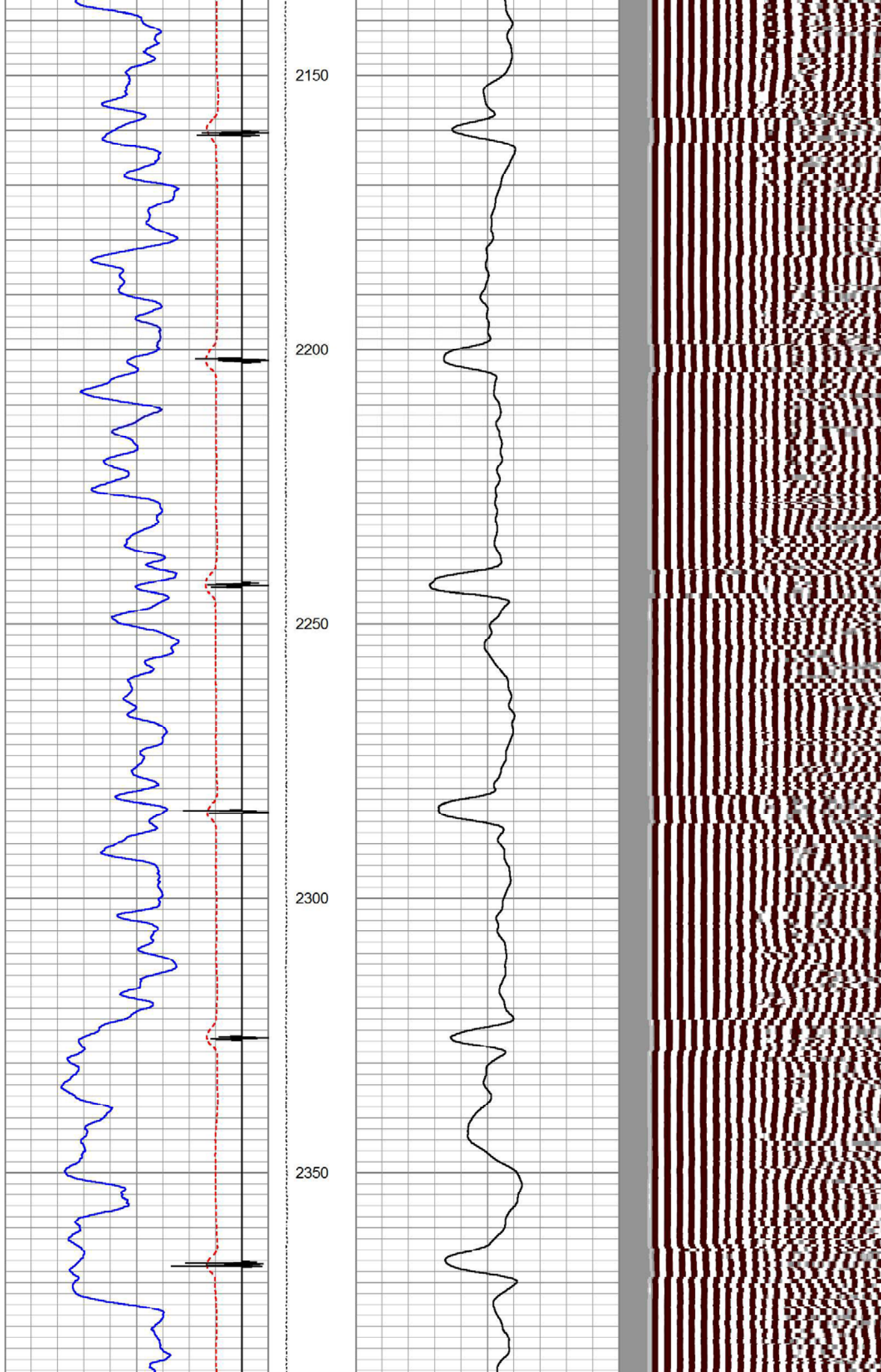
1550

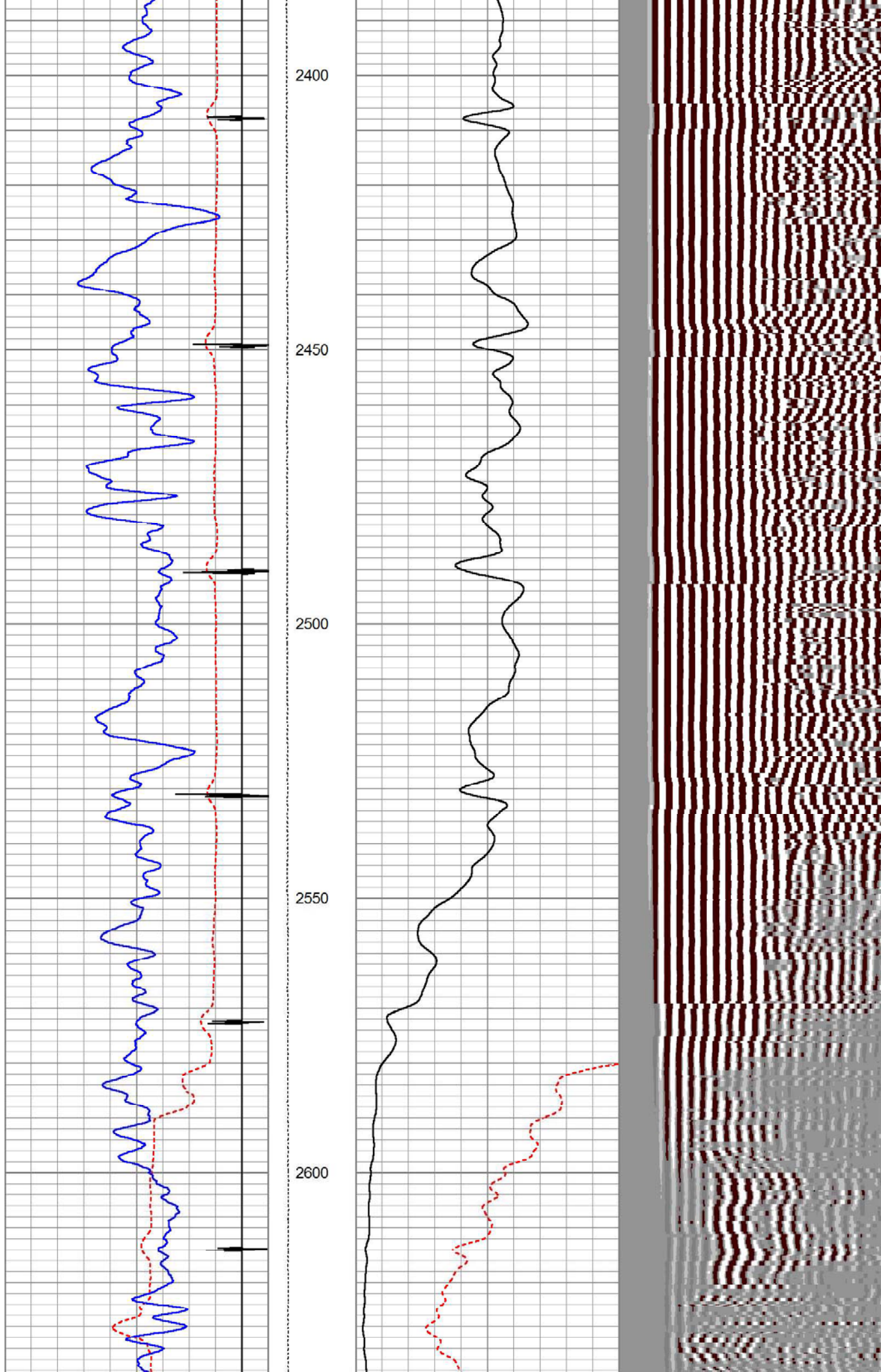
1600

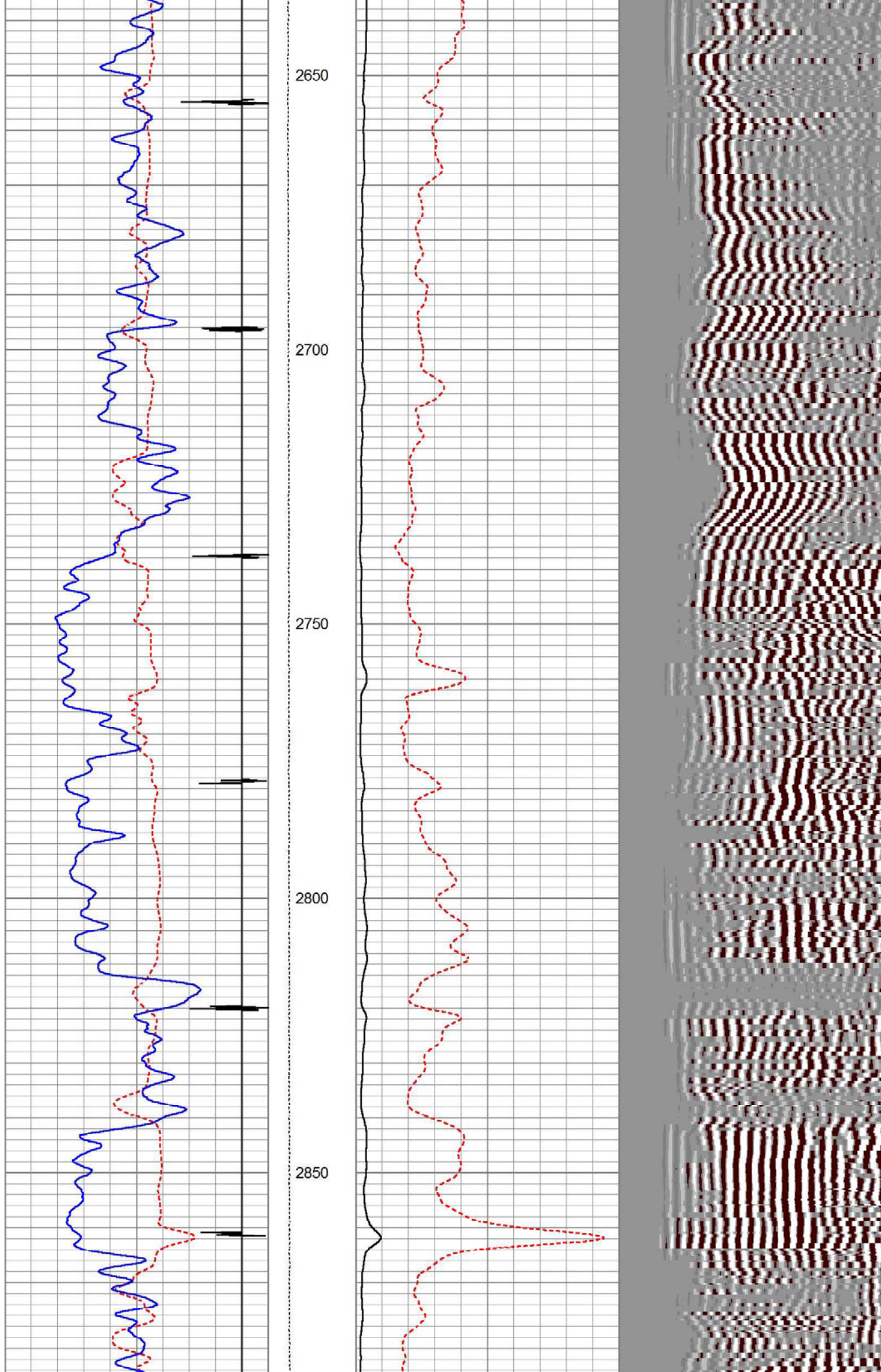


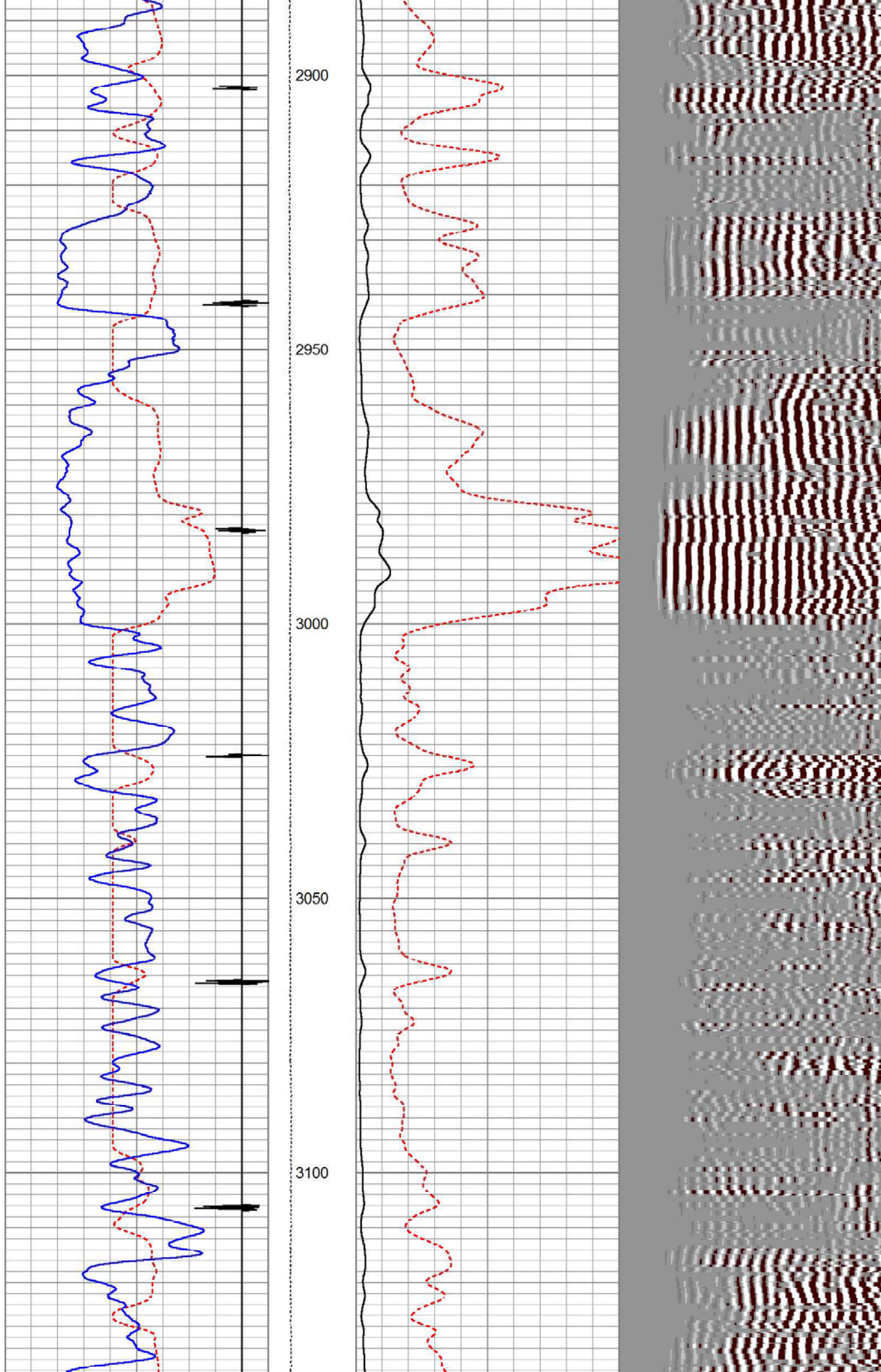


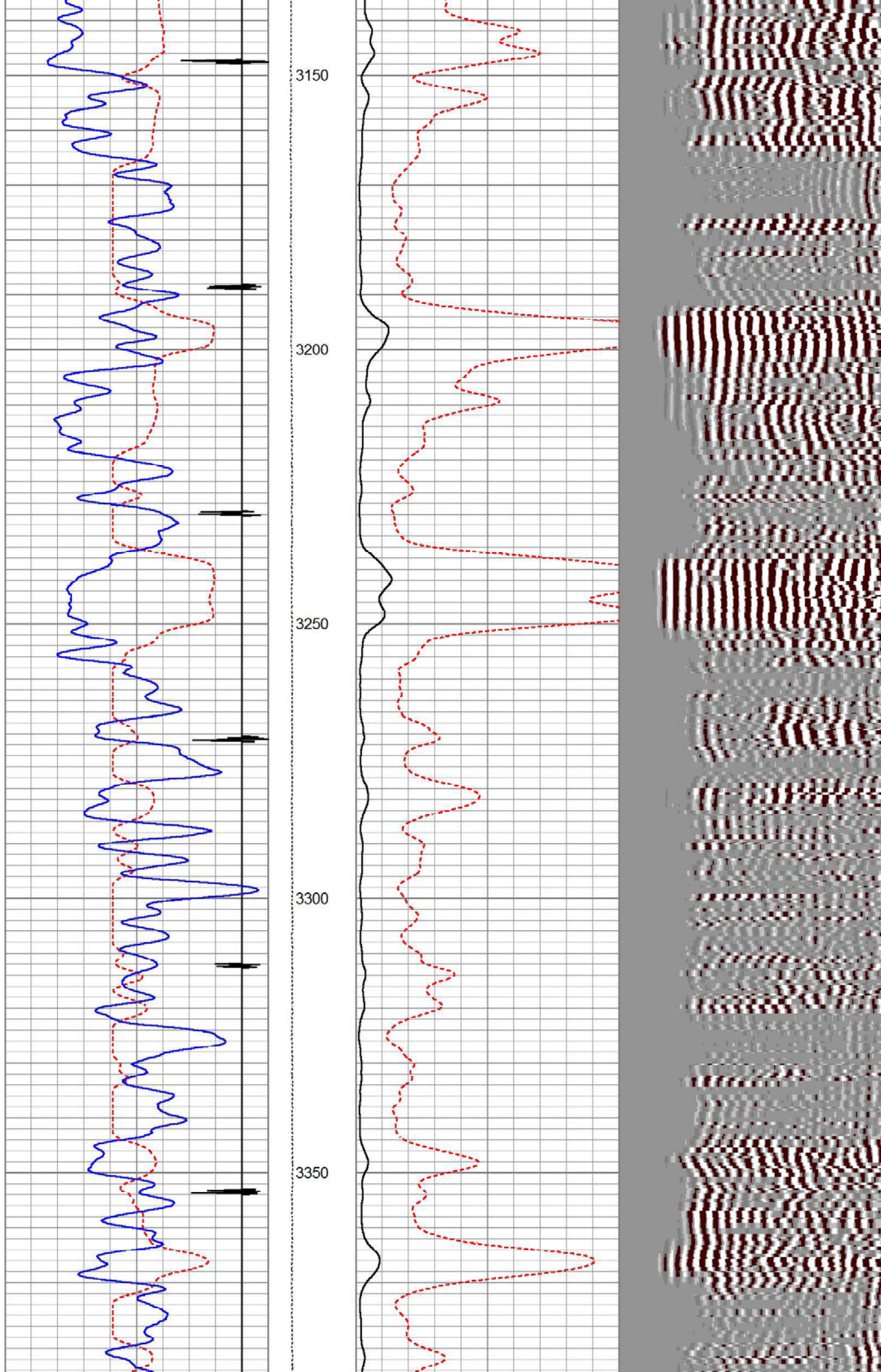


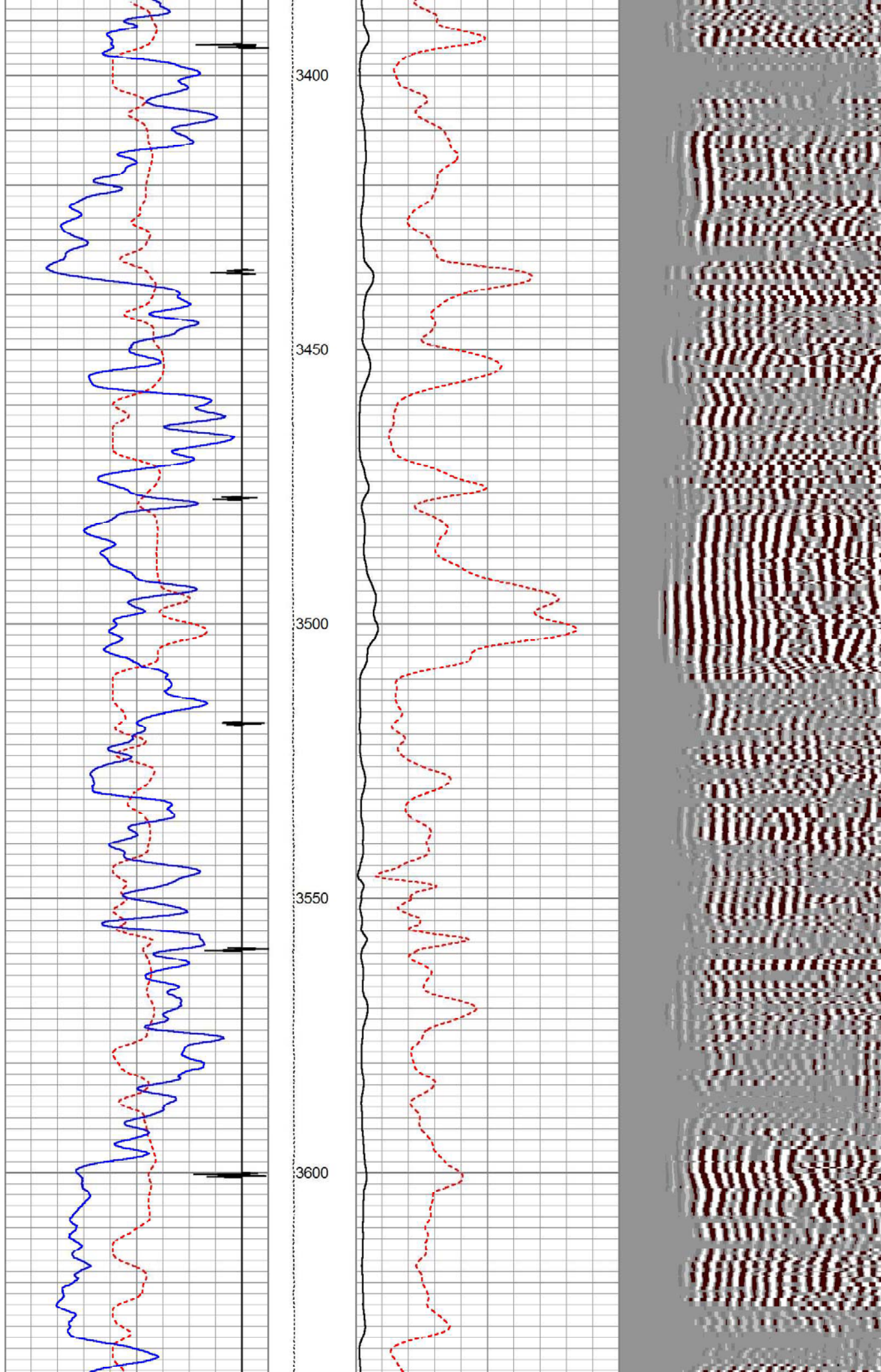


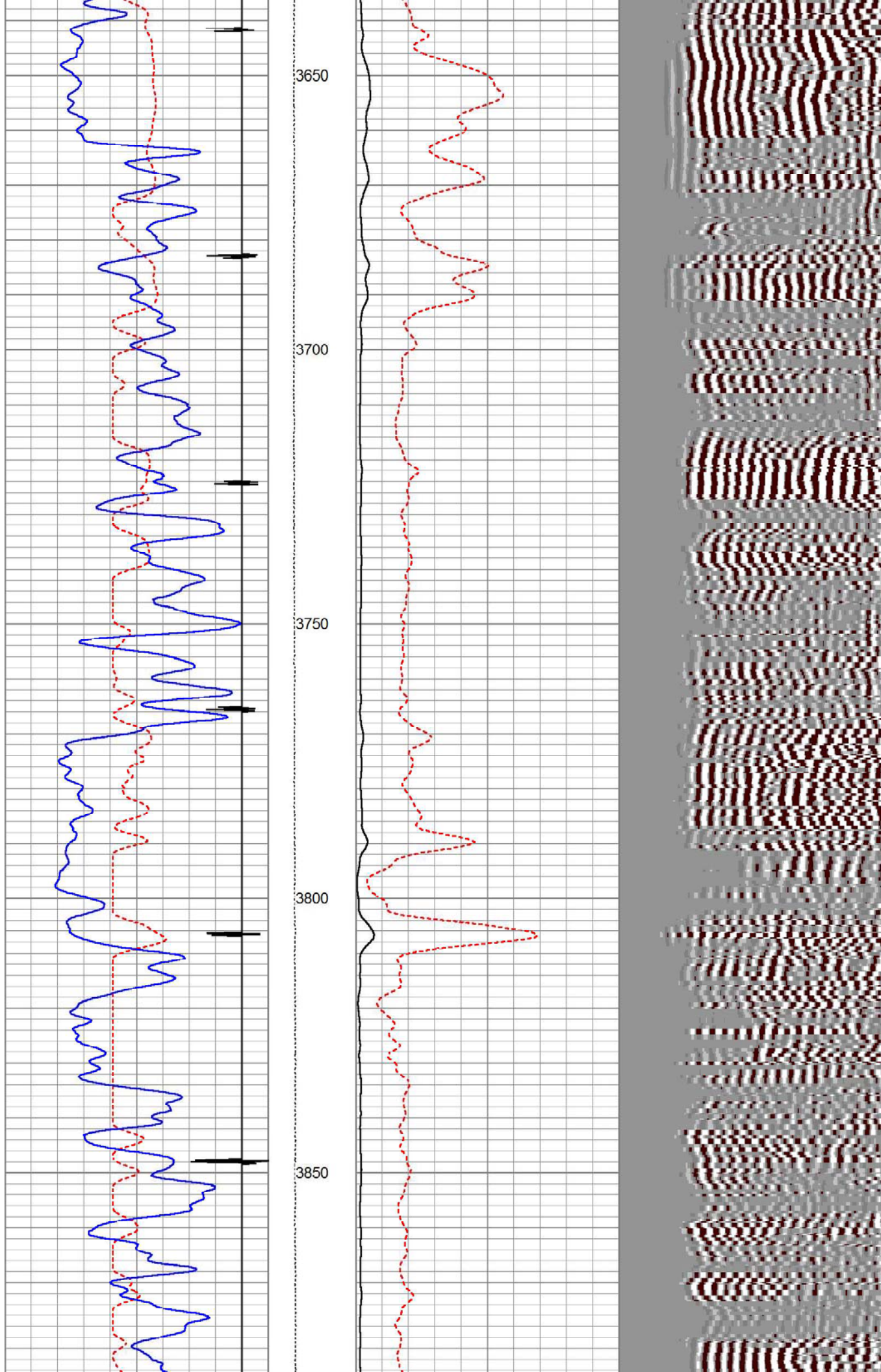


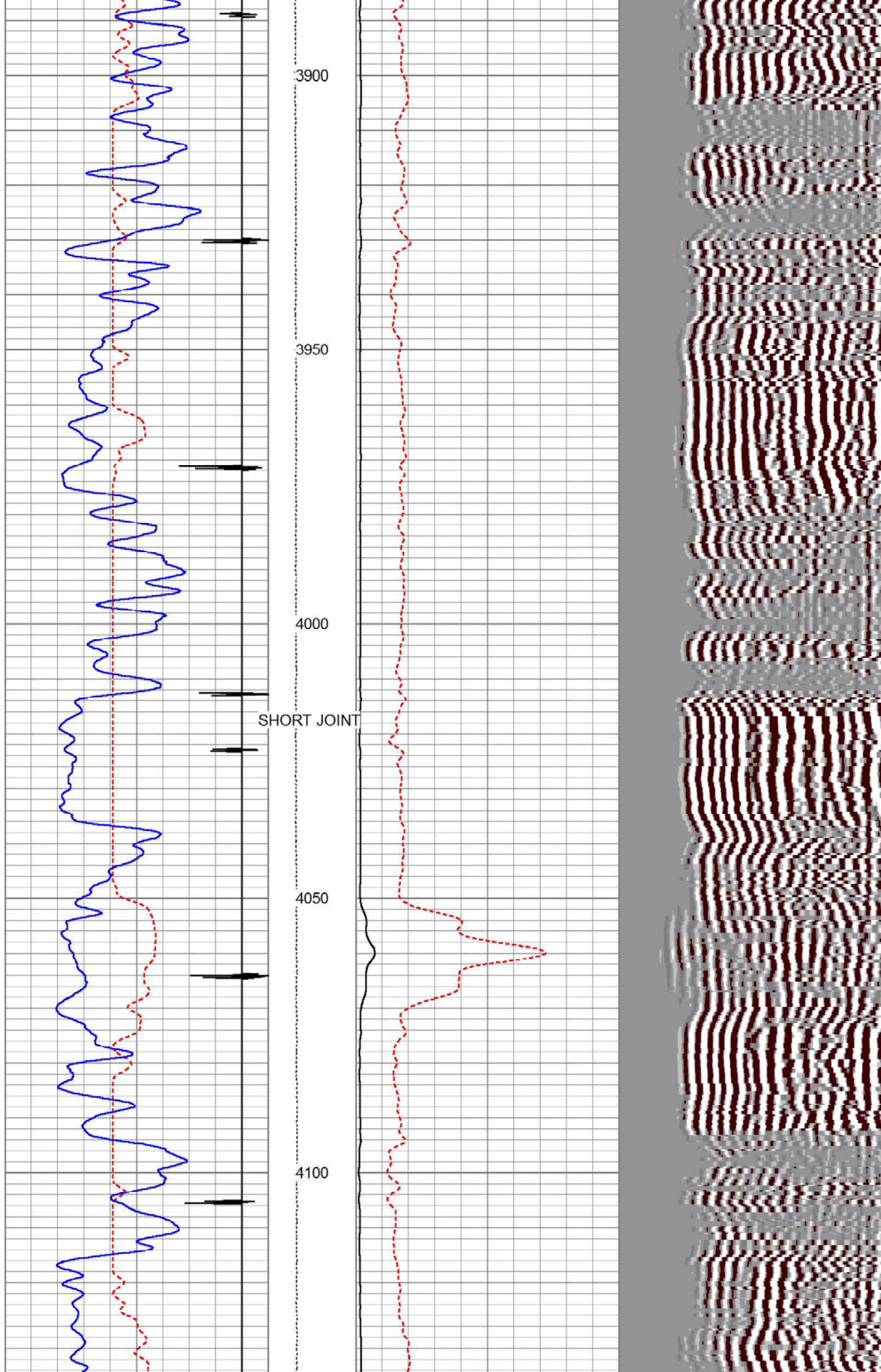


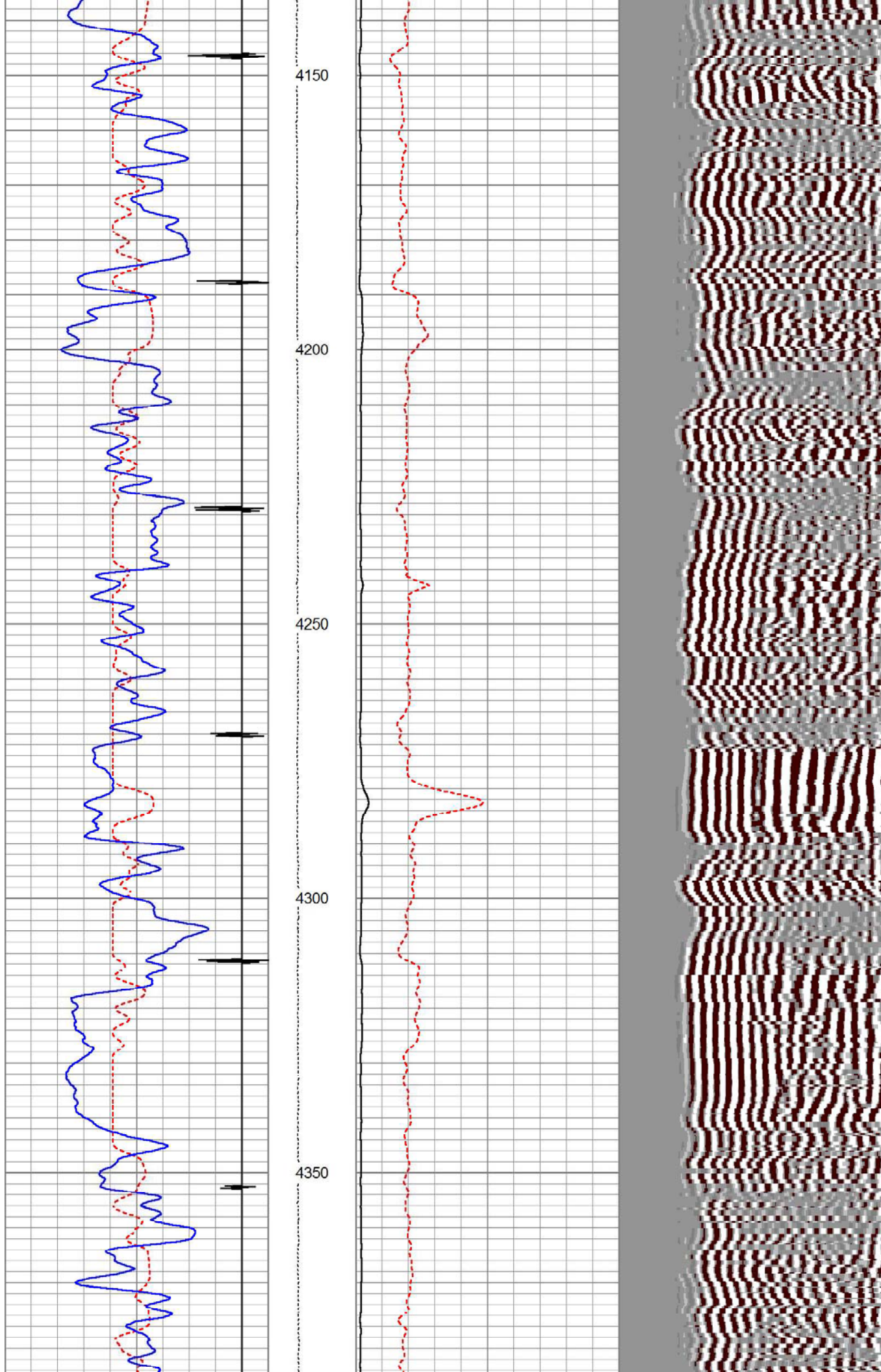


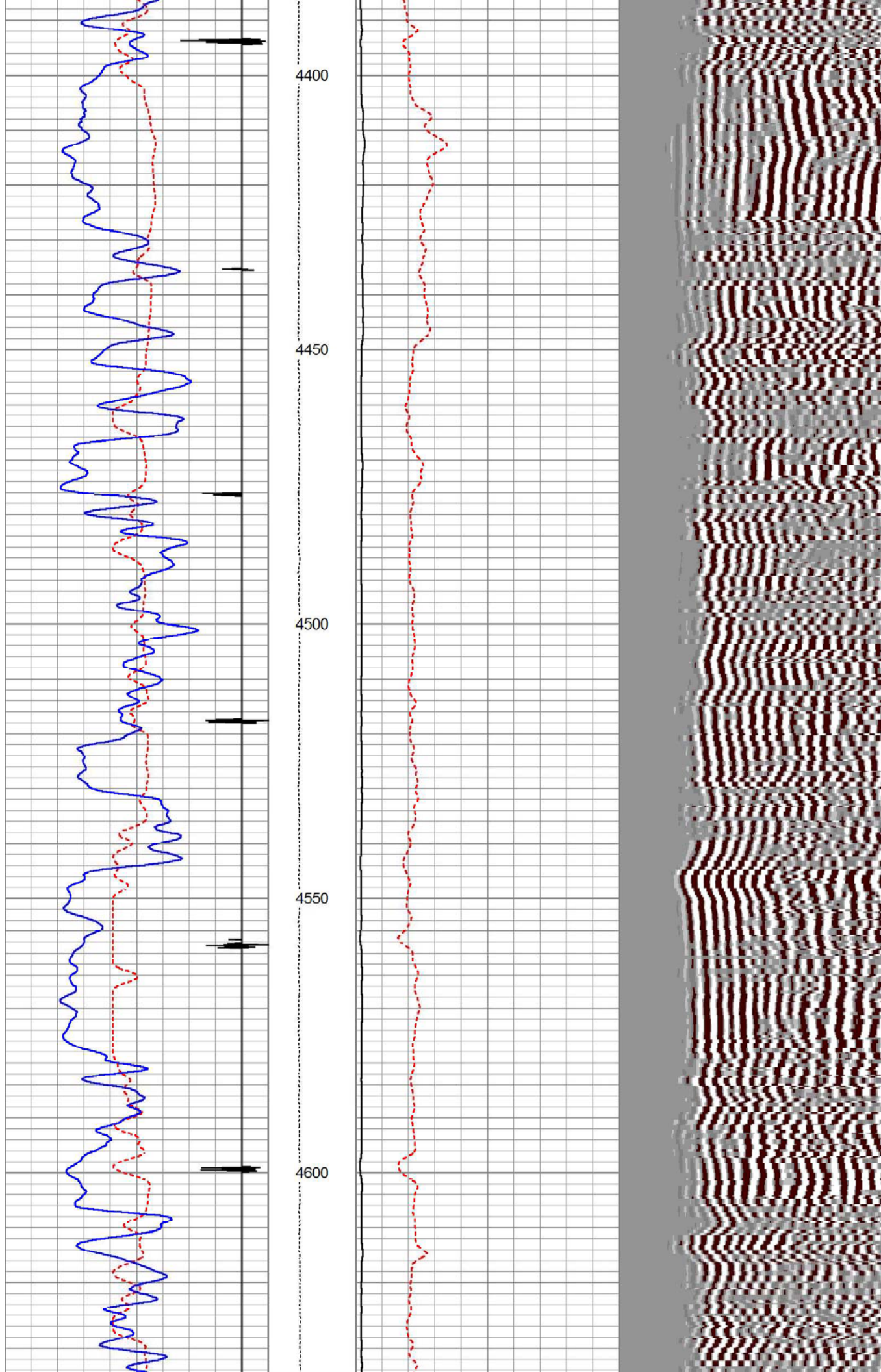


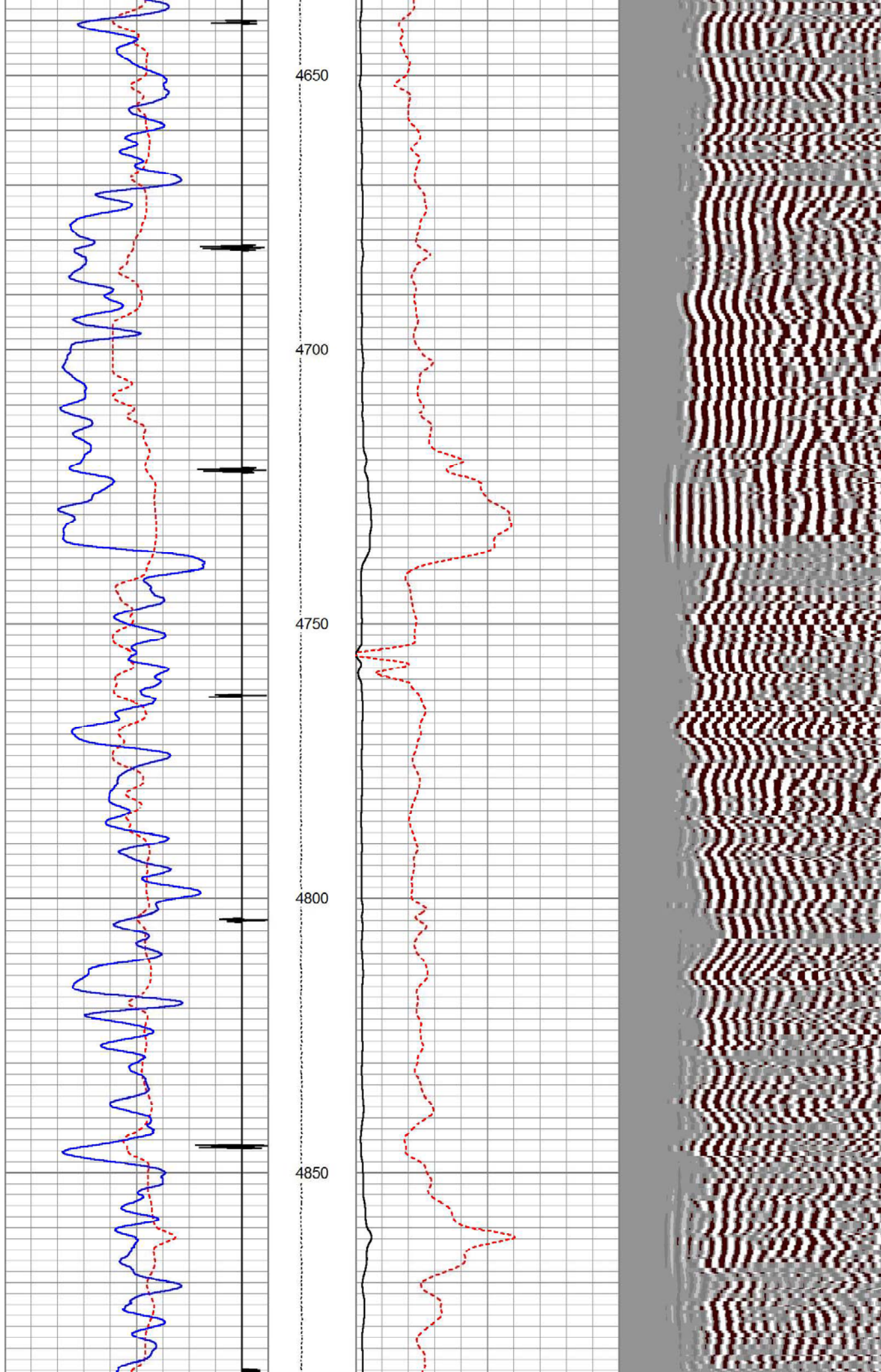


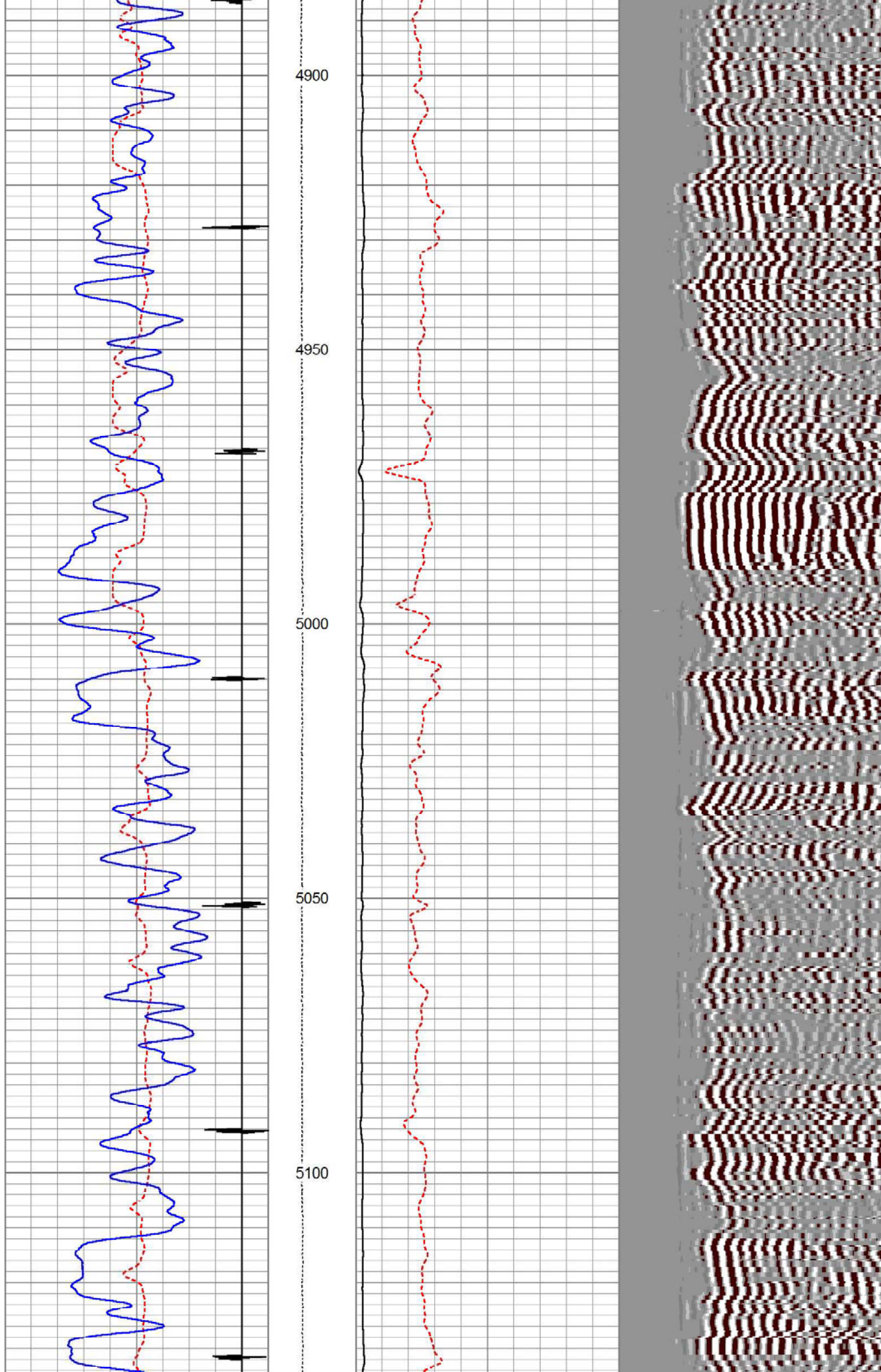


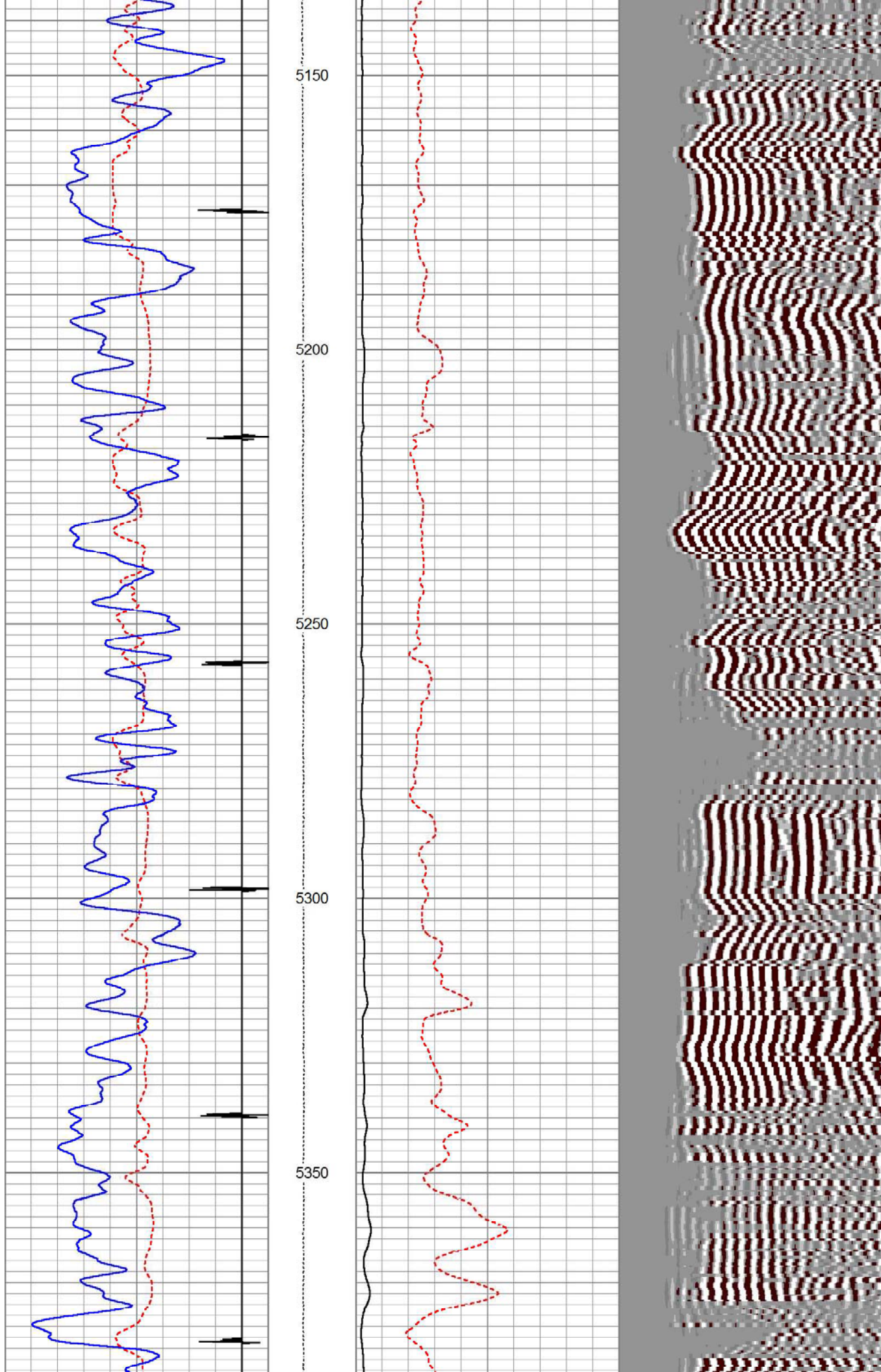


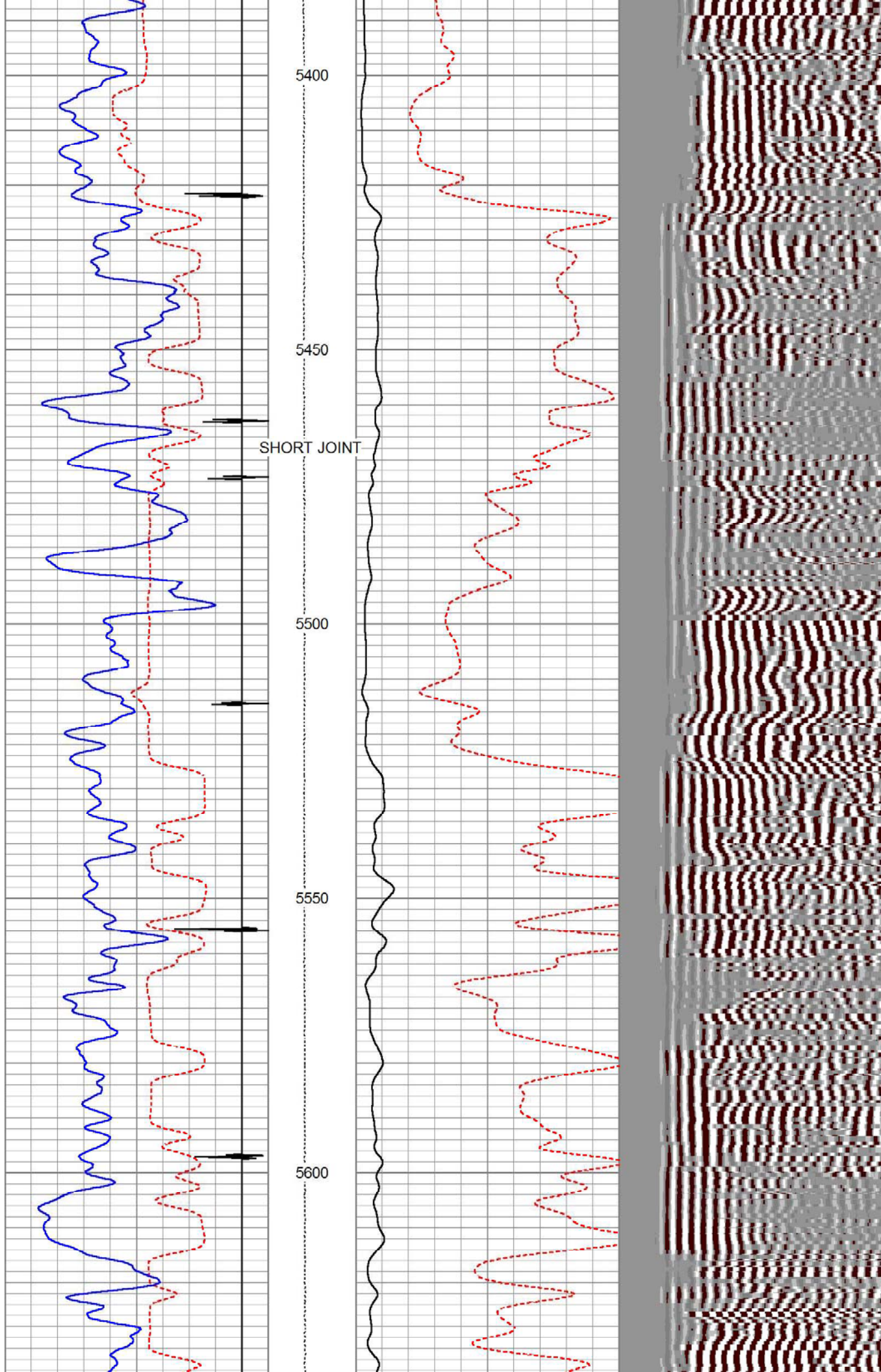


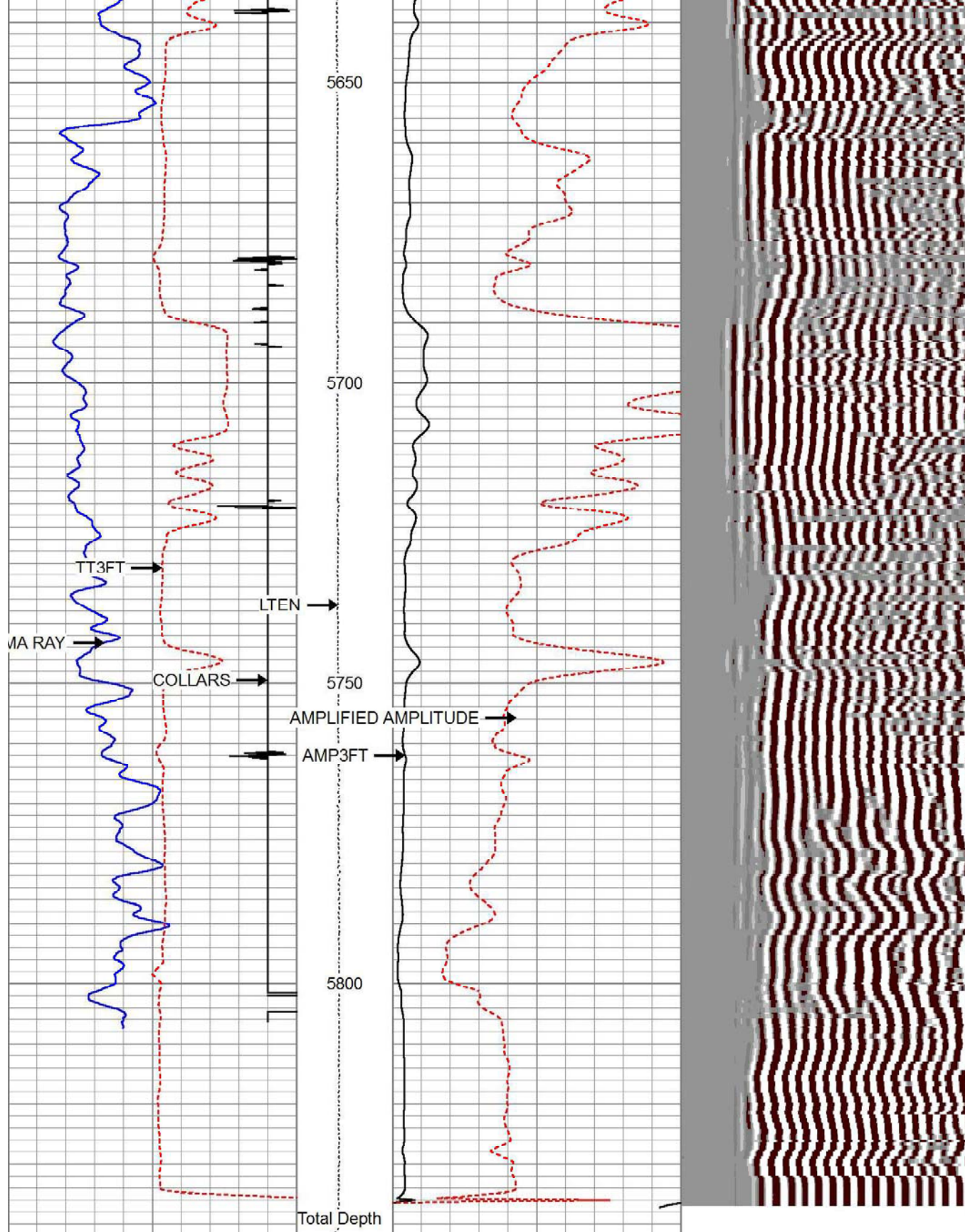












370	TT3FT (usec)	170	LTEN	0	AMP3FT (mV)	100	200	VDL	1200
-2700	COLLARS	300	0	(lb 4000)	0	AMPLIFIED AMPLITUDE (mV)	10		
0	GAMMA RAY (GAPI)	150							

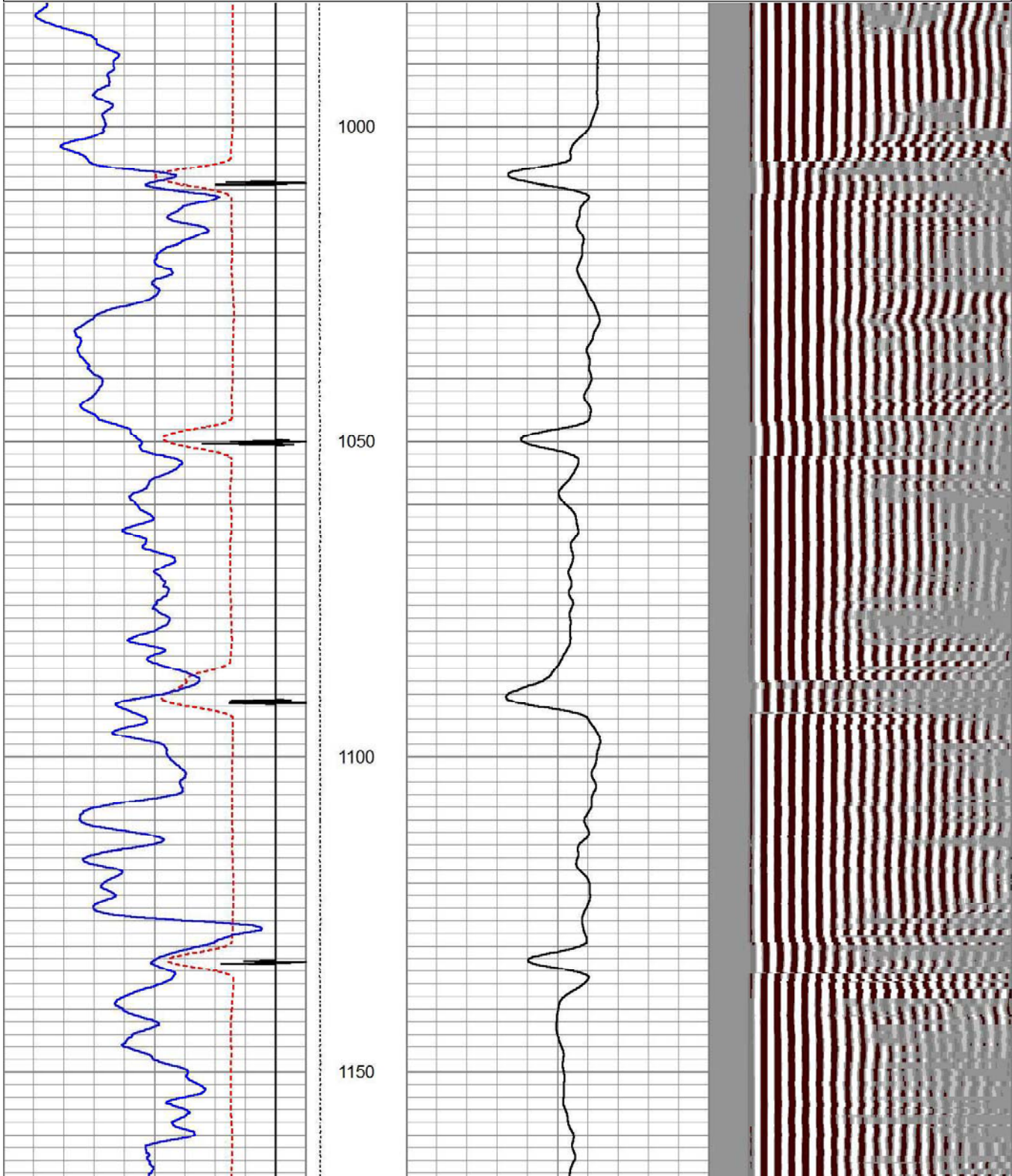
MAIN LOG SECTION

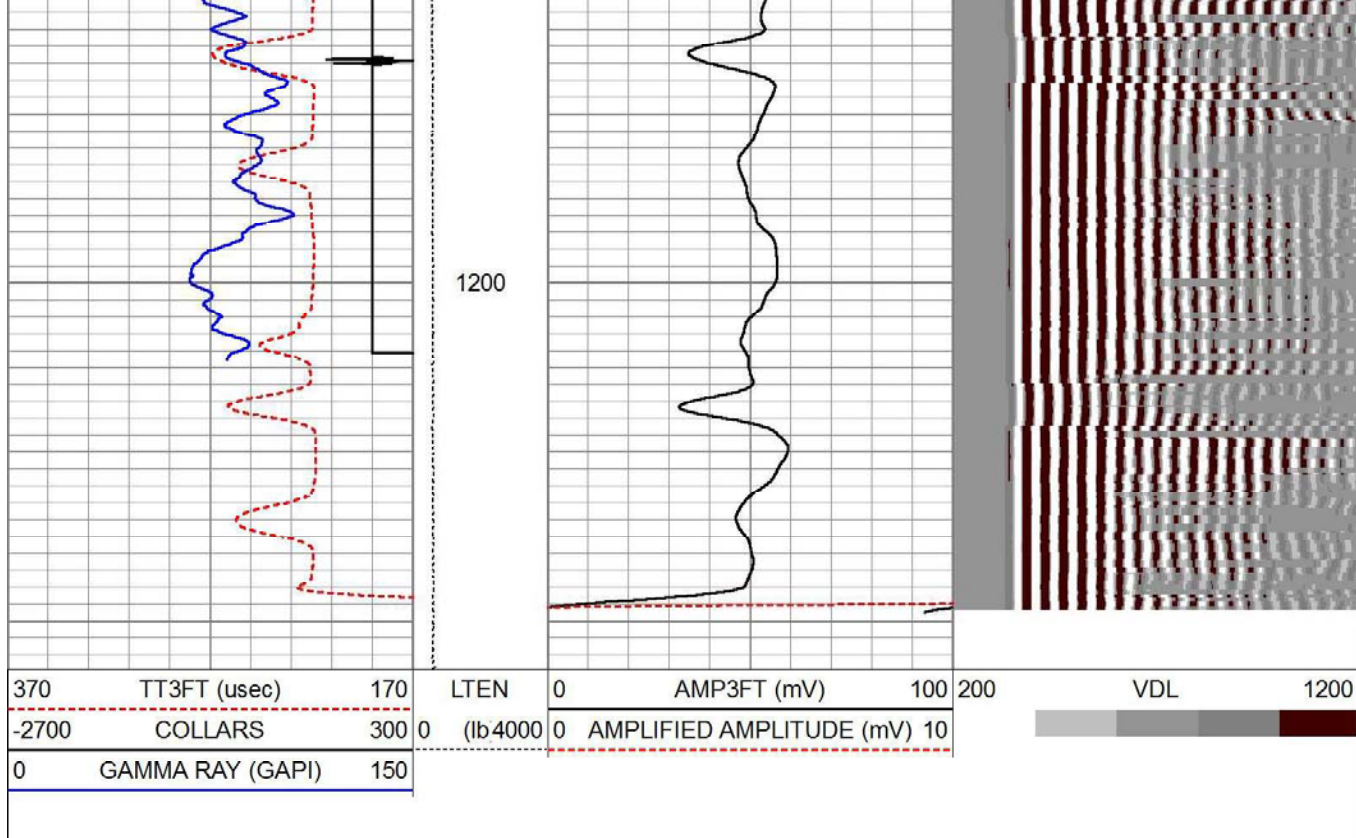
HALLIBURTON

5" = 100'

Database File	nolte_44a14_cmb - copy.db
Dataset Pathname	44A14/run1/RPT1
Presentation Format	cbl-radi
Dataset Creation	Tue May 27 14:26:41 2014
Charted by	Depth in Feet scaled 1:240

370	TT3FT (usec)	170	LTEN	0	AMP3FT (mV)	100	200	VDL	1200
-2700	COLLARS	300	0 (lb4000	0	AMPLIFIED AMPLITUDE (mV)	10			
0	GAMMA RAY (GAPI)	150							





REPEAT LOG SECTION

HALLIBURTON

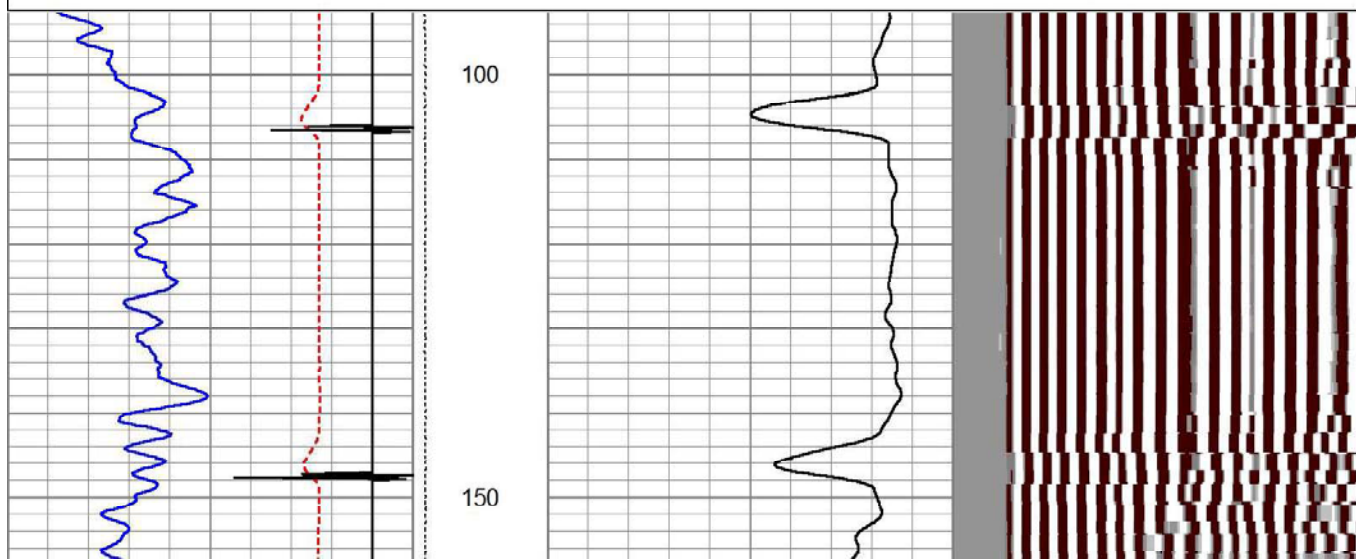
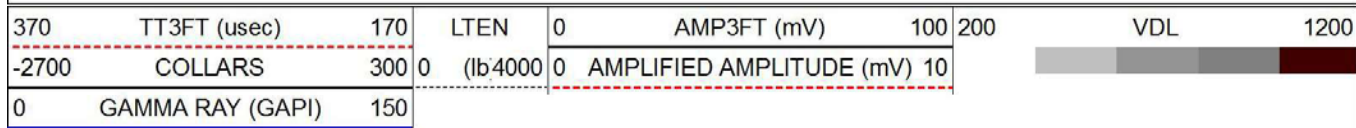
5" = 100'

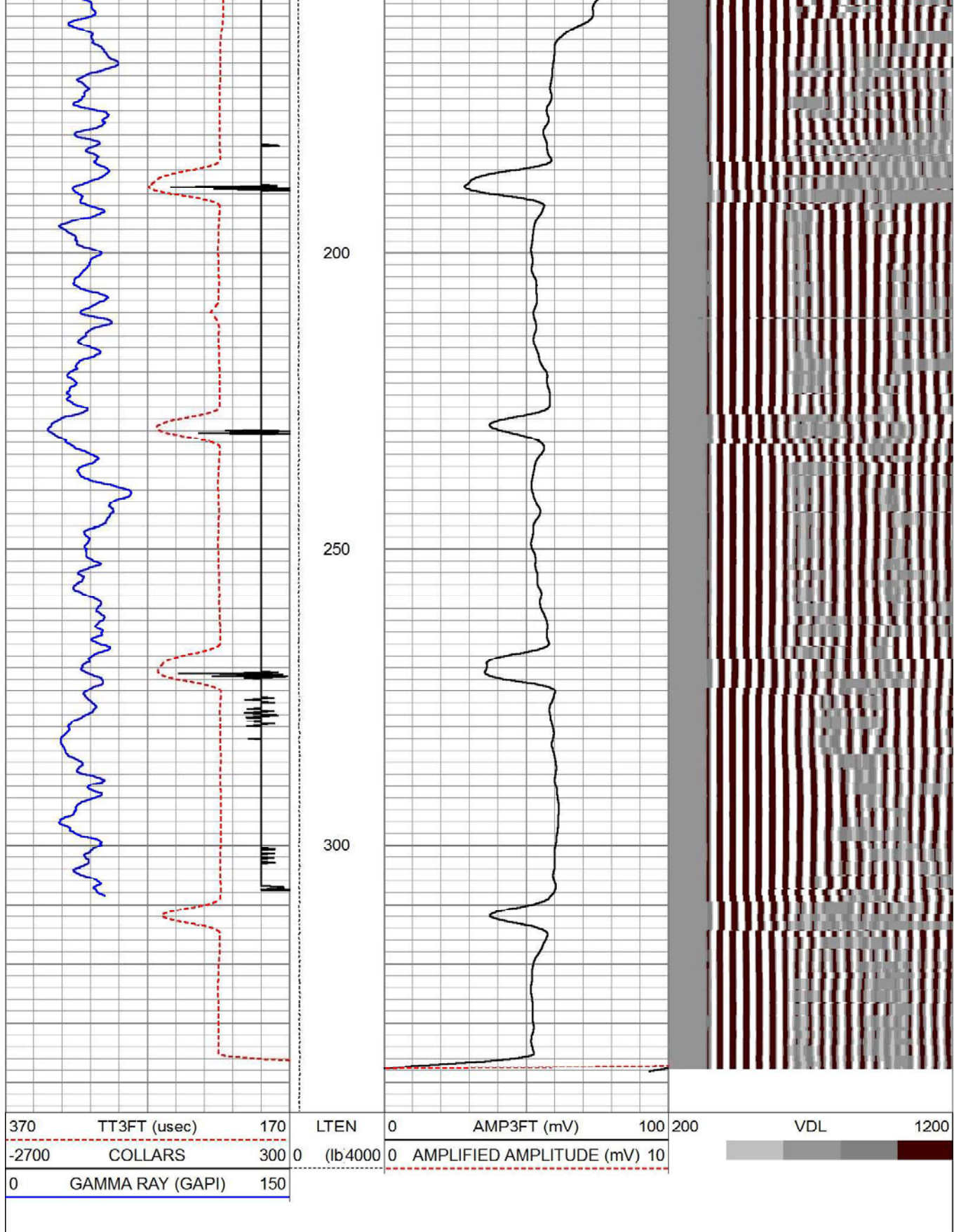
FREE PIPE LOG SECTION

HALLIBURTON

5" = 100'

Database File: nolte_44a14_cmb - copy.db
 Dataset Pathname: 44A14/run1/FREE1
 Presentation Format: cbl-radi
 Dataset Creation: Tue May 27 13:53:28 2014
 Charted by: Depth in Feet scaled 1:240





HALLIBURTON

FREE PIPE LOG SECTION

5" = 100'

Log Variables DatabaseD:\Warrior_data\nolte_44a14_cmb - copy.db
Dataset field\44A14/run1/MAIN1

Top - Bottom

GAINCO	DINCR	DTF	DTN	DNCR	DU3A10	DU3A11	DO3000
--------	-------	-----	-----	------	--------	--------	--------

GAINCO 0	RINOR 0.971547	RTF 0.916631	RTN 0.93876	RNOR 4.66536	BHSALZ 0	BHSALT 1	POROSZ 0
POROS1 1	LTH Sandstone	UHSGC 1	RHO CF 0.33	SO in 0	BORSAL kppm 100	CASED? Yes	PPT usec 0
CASEWGHT lb/ft 11.6	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	SRFTEMP degF 0	MudWgt lb/gal 8.4	CASETHCK in 0.25	CASEOD in 4.5
PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BITSIZE in 8.75				

		Calibration Report
Database File	nolte_44a14_cmb - copy.db	
Dataset Pathname	44A14/run1/MAIN1	
Dataset Creation	Tue May 27 15:05:31 2014	

Segmented Cement Bond Log Calibration Report			
Serial Number:		11002212	
Tool Model:		004	
Calibration Casing Diameter:		4.500	in
Calibration Depth:		150.145	ft

Master Calibration, performed Tue May 27 13:50:41 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.016	0.144	1.500	81.196	621.605	-8.364
5FT	0.009	0.224	1.500	81.196	369.815	-1.687
S1	0.018	0.151	0.000	100.000	747.447	-13.139
S2	0.017	0.156	0.000	100.000	717.654	-12.291
S3	0.018	0.154	0.000	100.000	733.592	-12.859
S4	0.017	0.158	0.000	100.000	711.175	-12.154
S5	0.017	0.155	0.000	100.000	726.307	-12.696
S6	0.017	0.145	0.000	100.000	779.450	-13.254
S7	0.017	0.130	0.000	100.000	887.062	-15.019
S8	0.017	0.132	0.000	100.000	865.324	-14.651

Calibration Report			
Serial Number:		11002212	
Tool Model:		004	
Performed:			
Reference (degF)		Reading ()	
Low:	0.000	0.000	
High:	1.000	1.000	
Gain = 1.000		Offset = 0.000	

Reservoir Monitor Tool I Calibration Report	
Serial-Model:	12270693-A
Shop Calibration Performed:	Thu May 22 09:21:35 2014

Carbon/Oxygen Mode						
Stabilization						
Result	Logged	Expected Value	Diff.	Tol.	Units	

GENV ITCR2	83.00 3146	80.00 3250	3.00 -104	+/-15.00 +/-250	V cps
Near Detector					
H Fe NGAIN = 0.998	Channel 60 206 NZOFF = 0.1	Expected Value 60 +/-2 206 +/-2	Amplitude 0.0275 0.0955	FWHM 5.23 -----	Tol. <6.00 -----
Far Detector					
H Fe FGAIN = 0.990	Channel 60 210 FZOFF = 0.5	Expected Value 60 +/-2 208 +/-2	Amplitude 0.0352 0.0904	FWHM 5.81 -----	Tol. <6.50 -----
Flask Temperature	56.9 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.64	1.64	-0.00	+/-0.05	
TCCR2	5149	5000	149	+/-1000	cps
ITCR2	3213	3200	13	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	83.00	80.00	3.00	+/-15.00	V
FCAP	10276	10000	276	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	1.00	0.95	0.05	+/-0.10	
N/F Inel Norm	0.65	0.61	0.04	+/-0.06	
RNF	1.00	1.07	-0.07	+/-0.12	
RINC	1.55	1.64	-0.09	+/-0.18	
SGFN	24.07	24.00	0.07	+/-0.50	cu
SGFF	22.93	22.85	0.08	+/-0.50	cu
FSIN	24745	24000	745	+/-2000	cps
FCAP	10432	10000	432	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.95			<5.00	
NBKG	191			<500	cps
FBKG	98			<500	cps
RTN	0.41	0.40	0.01	+/-0.10	usec
RTF	0.43	0.40	0.03	+/-0.10	usec

Calibration Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.4.24.99
Log Data Acquisition Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.4.24.99

Gamma Ray Calibration Report

Type / Serial: 002 / 12105786

SHOP CALIBRATION		Tue May 27 08:49:16 2014			
Background	Counts/Sec.	Gain	Offset	Jig	Units
Calibrator	43.4				cps
	329.9				cps

1.4238

GAPI/cps

PRIMARY VERIFICATION

Tue May 27 08:51:43 2014

Background	60.6		cps
Calibrator	468.3		cps
Difference		407.7	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	37.31		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.10	1.44	1.00
GR	35.05					
RmtTFGT	24.39					
RmtFBACK	24.39					
RmtFCAPT	24.39					
RmtFINEL	24.39					
RmtTNGT	23.89		TTTCU-002 (12105786) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
RmtNBACK	23.89					
RmtNCAPT	23.89					
RmtNINEL	23.89					
TLINICNT	16.14					
RImpBTEST	16.14					
RImpBCYC	16.14					
RImpBRGW	16.14		XHU-003 (12218041) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RImpBRGO	16.14					
RImpState	16.14					
RImpPhase	16.14					
RImpCyc	16.14					
RmtGenClamp	16.14					
RmtFTemp	16.14					
RmtFP5V	16.14					
RmtFPMHV	16.14					
RmtFPMI	16.14					
RmtFPrgSt1	16.14		RMTI-A (12270693) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFDetStat	16.14					
RmtNTemp	16.14					
RmtNPMHV	16.14					
RmtNPMI	16.14					
RmtNPrgSt1	16.14					
RmtNDetStat	16.14					
RmtGenIonI	16.14					
RmtGen15BusV	16.14					
RmtGenLvdsV	16.14					
RmtGenSyncV	16.14					
RmtGenClamp	16.14		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RmtGenP5V	16.14					
RmtGenP33V	16.14		AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
RmtGen200V	16.14					
RmtGenP15VI	16.14		CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
RmtGenTemp	16.14					
RmtGenP5VI	16.14					
RmtGenI	16.14					
RmtGenPv	16.14					
RmtGenCmd	16.14					

RmtGenIspl	16.14		RBT-004 (11002212) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00
RmtGenIsppv	16.14					
RmtGenIsppcm	16.14					
RmtGenRepPv	16.14					
RmtGenRepV	16.14					
RmtGenRepSv	16.14					
RmtGenContSt	16.14					
RmtCommFWa	16.14					
RmtCommFlas	16.14		CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
CBLROT	8.23					
CBLTEMP	8.23					
WVFS8	8.23					
WVFS7	8.23		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
WVFS6	8.23					
WVFS5	8.23					
WVFS4	8.23					
WVFS3	8.23		Dataset: nolte_44a14_cmb - copy.db: field/44A14/run1/MAIN1 Total length: 40.48 ft Total weight: 370.20 lb O.D.: 3.13 in			

Company	CAERUS OIL & GAS, LLC.				
Well	NOLTE 44A-14				
Field	GRAND VALLEY				
County	GARFIELD		State	CO	
HALLIBURTON		ACOUSTIC CEMENT BOND LOG			