

HALLIBURTON				ACOUSTIC CEMENT BOND LOG			
Company CAERUS OIL & GAS, LLC. Well NOLTE 13A-13 Field GRAND VALLEY County GARFIELD State CO				Company CAERUS OIL & GAS, LLC. Well NOLTE 13A-13 Field GRAND VALLEY County GARFIELD State CO			
API No.: 05-045-22308-0000 Serv #: 901364847 Location: SURFACE HOLE LOCATION: 0817' FSL & 0345' FEL				Other Services			
Sec: 14 Twp:07S Rge: 96W GROUND LEVEL Elevation 5088' KB 24 Ft. above perm. datum KB BOTTOM HOLE LOCATION: 2435' FSL & 0660' FWL				GAUGE RING RMT			
Permanent Datum		GROUND LEVEL		Elevation		5088'	
Log Measured From		KB		K.B.		5112'	
Drilling Measured From		KB		D.F.		5111'	
				G.L.		5088'	
Date @ Time Logged		21 MAY 2014		Type Fluid in Hole		WATER	
Run No.		ONE		Density of Fluid		8.4#	
Depth - Driller		6525'		Fluid Level		64'	
Depth - Logger		6448'		Cement Top Est. Logged		SEE LOG	
Bottom - Logged Interval		6448'		Equipment / Location		10971668 / G.J.	
Top - Log Interval		SURFACE		Recorded by		D. SOLIS	
Max. Recorded Temp.		N/A		Witnessed by		B. STEWART	
CEMENTING DATA		Surface		Protection		Liner	
		String		String			
		N/A		N/A		N/A	
Date / Time Cemented		N/A					
Primary / Squeeze							
Expected Compressive Strength		psi@ hrs		psi@ hrs		psi@ hrs	
Cement Volume							
Cement Type / Weight		/		/		/	
Formulation							
Mud Type / Mud Wgt.		/		/		/	
Borehole Record				Casing & Tubing Record			
Run Number		Bit From To		Size Weight From To			
ONE		N/A SURFACE 999'		9.25" 36.0# SURFACE 999'			
TWO		8.75" 99' 6525'		4.5" 11.6# SURFACE 6525'			

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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

HES CBL LOG DATED: 21 MAY2014 IS TH PRIARY DEPTH REFERENCE FOR THIS WELL.

GR-RMT-CBL RAN IN COMBINATION.

SHORT JOINTS @: 3966' - 3976' AND 5588' - 5598'.

LOG INTERVALS PER CUSTOMER REQUEST.

TENSION PULLS WILL AFFECT TOOL RESPONSE.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

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Service Ticket No.	901364847	API No.	05-045-22308-0000	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.	11510512	Serial No.	11001119	Serial No.	U392
Model No.	TTTC-U-002	Model No.	RBT-004	Model No.	RMTE-U
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	6448'	SURFACE	0	15	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	450	150	0	100	200	1200
DIRECTIONAL INFORMATION								
Maximum Deviation		N/A	deg. @	N/A	KOP	N/A		

HALLIBURTON

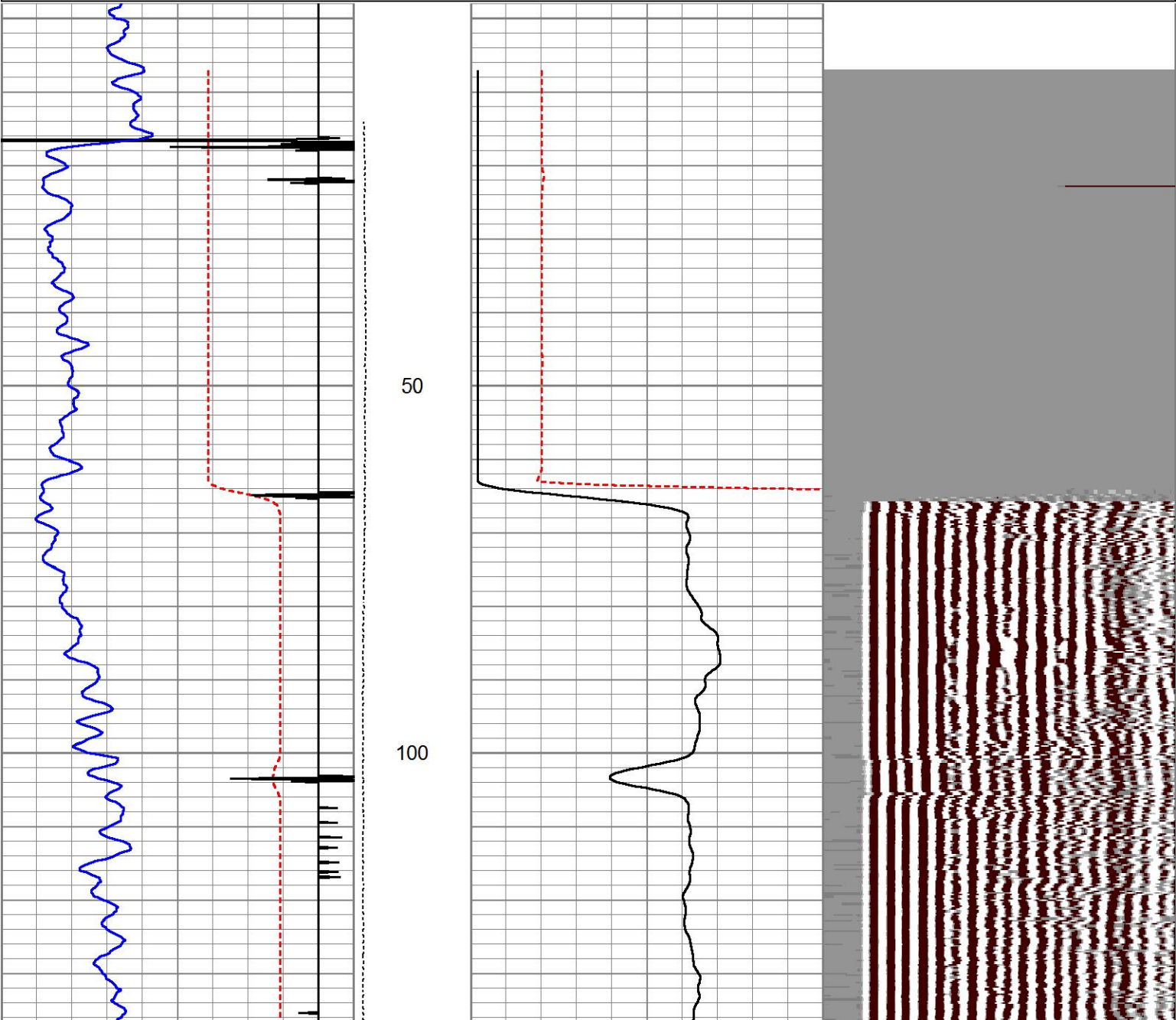
MAIN LOG SECTION

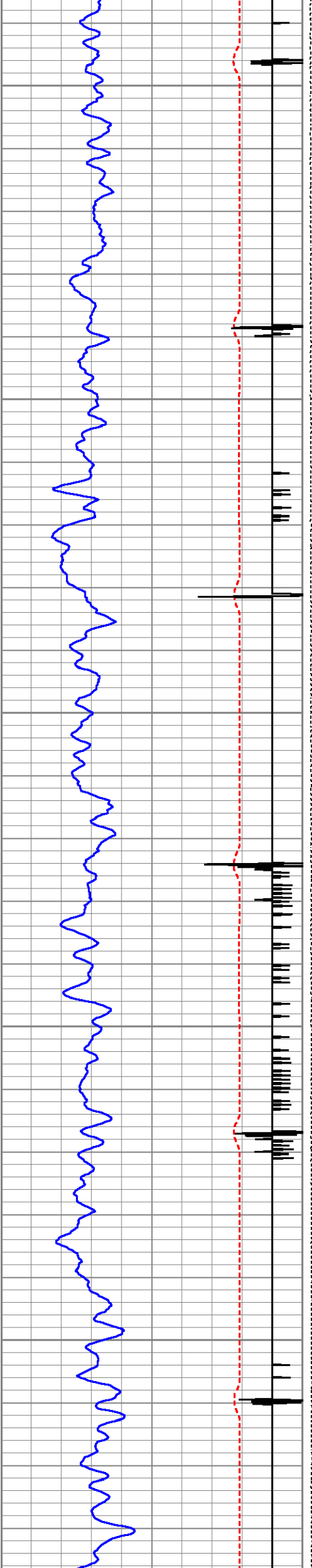
5" = 100'

Database File
Dataset Pathname
Presentation Format
Dataset Creation
Charted by

nolte_13a13_cmb.db
13A/run1/MAIN1
cbl-radi
Wed May 21 11:31:03 2014
Depth in Feet scaled 1:240

450	TT3FT (usec)	150	LTEN	0	AMP3FT (mV)	100	200	VDL	1200
-2700	COLLARS	300	0	(lb4000	0	AMPLIFIED AMPLITUDE (mV) 10	<div></div>		
0	GAMMA RAY (GAPI)	150							





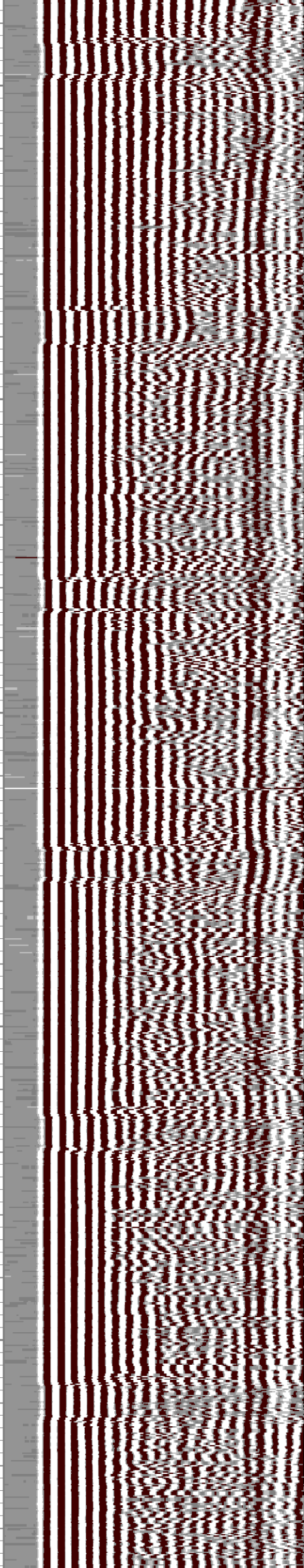
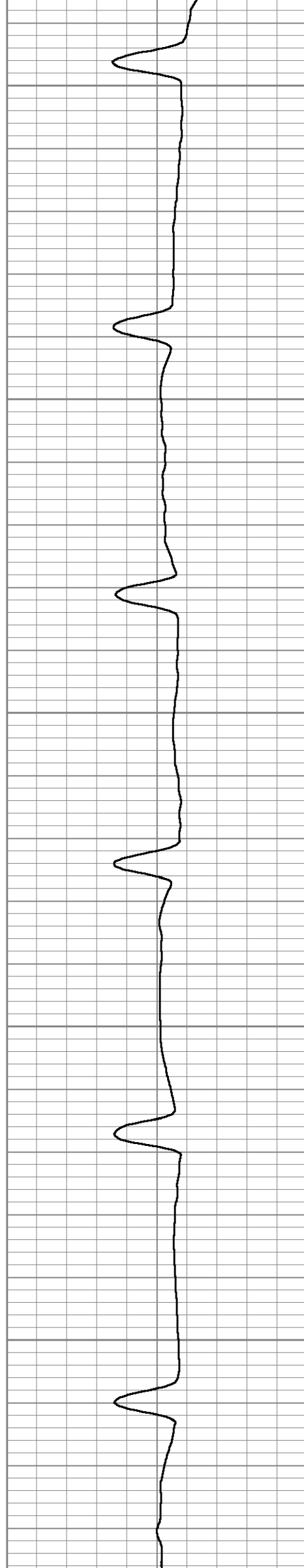
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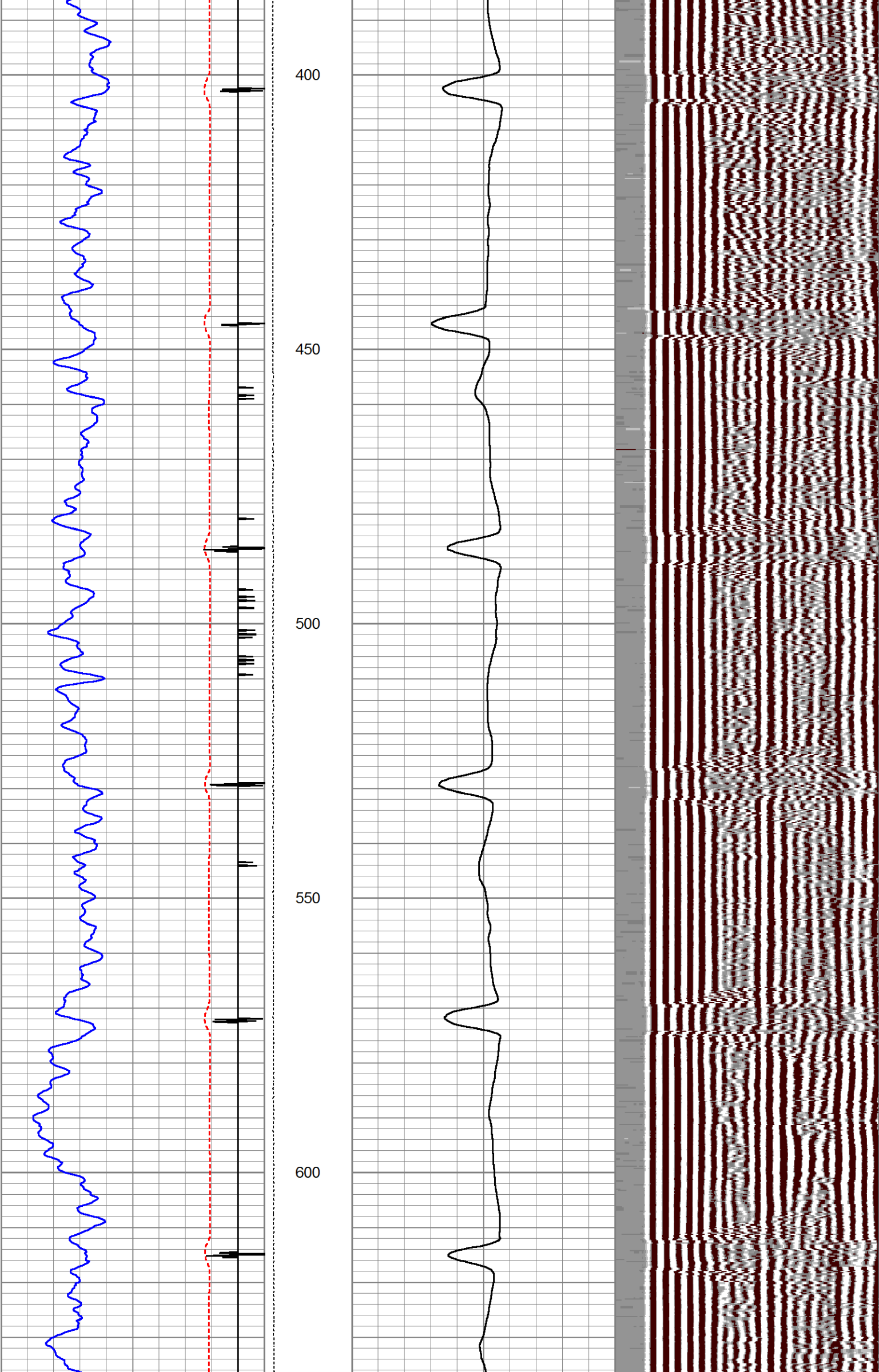
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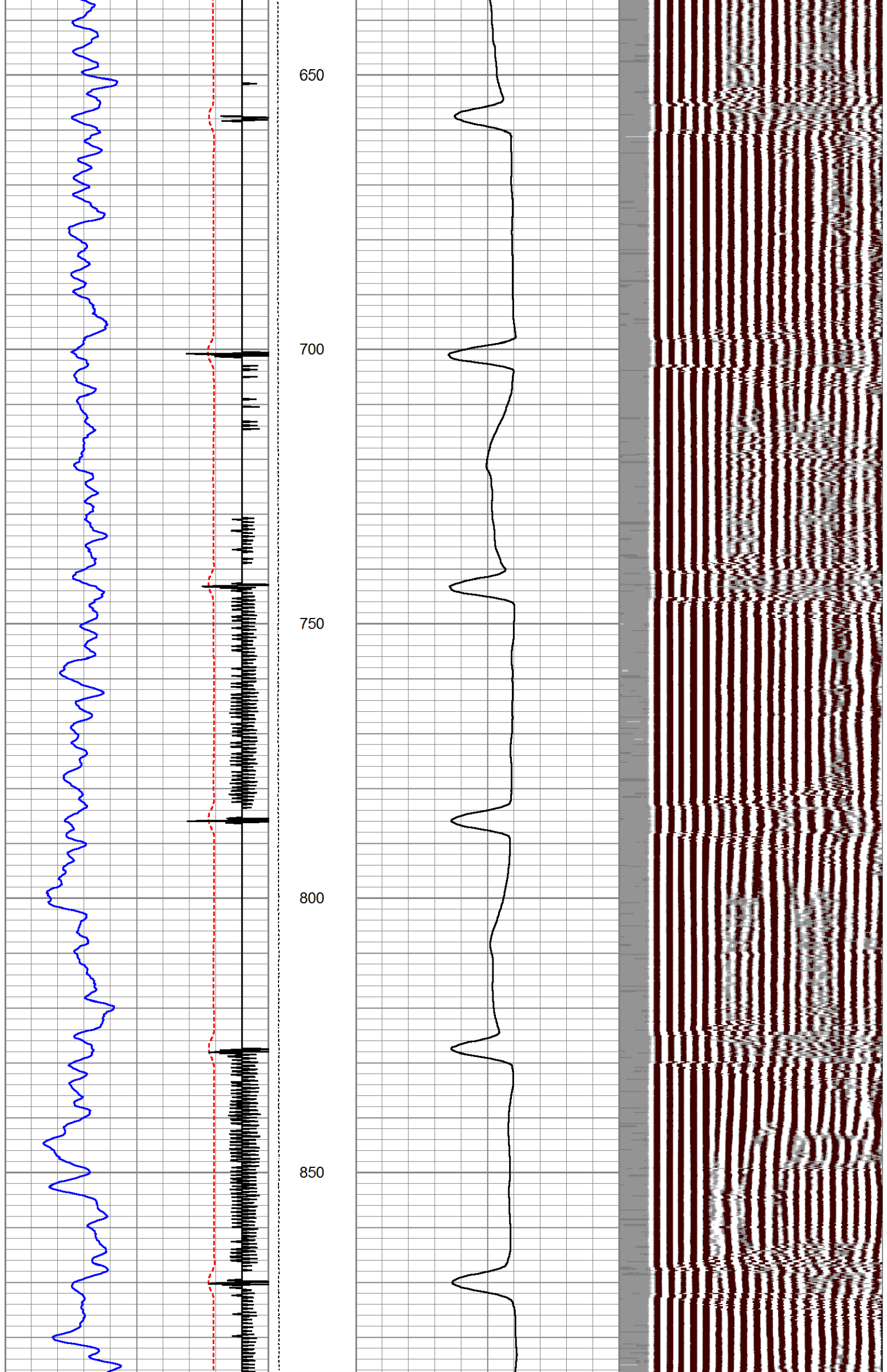
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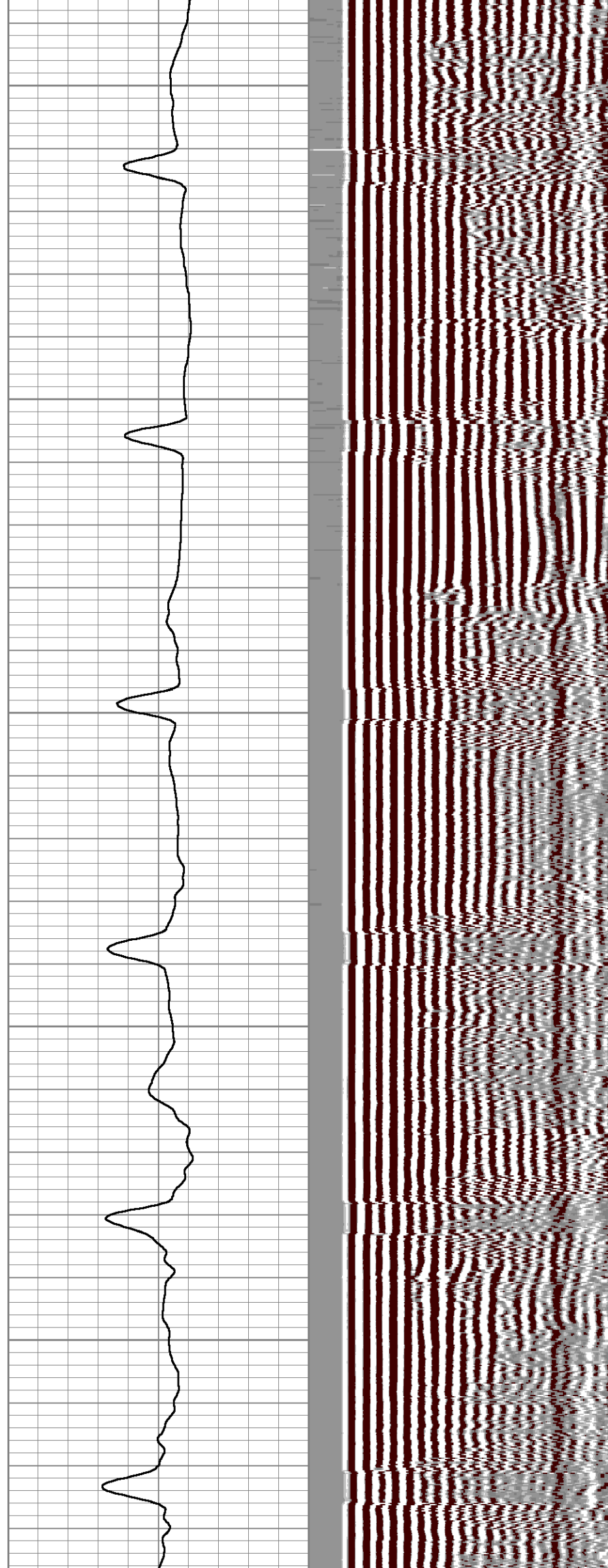
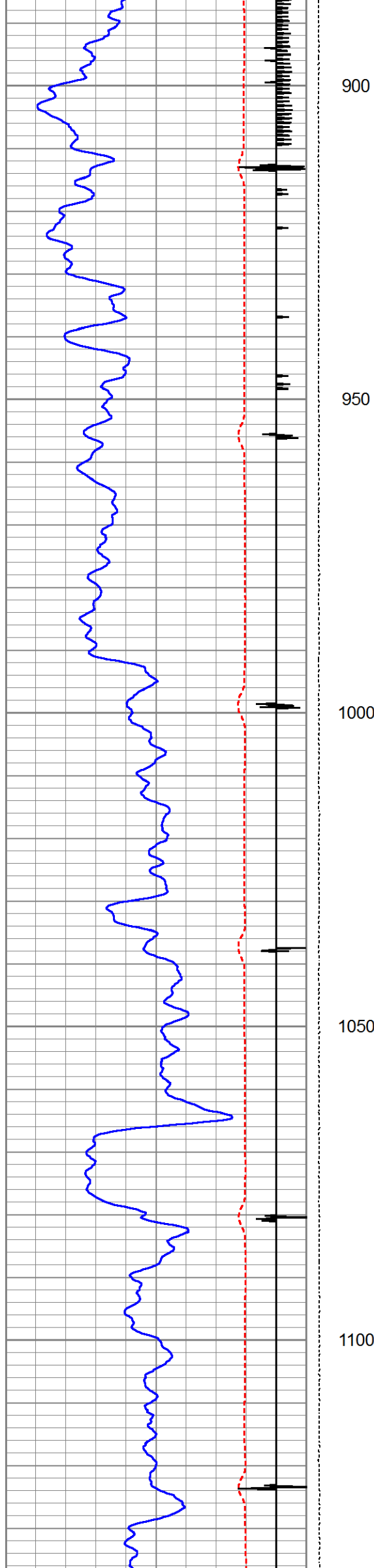
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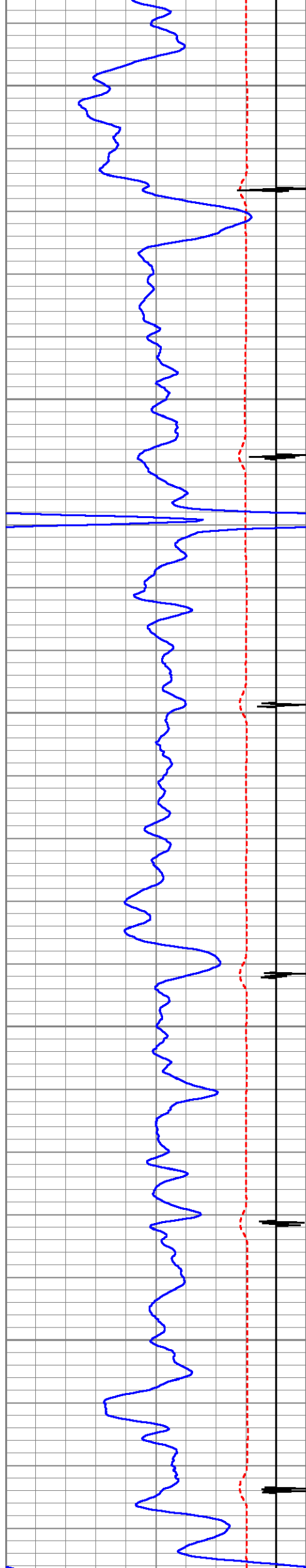
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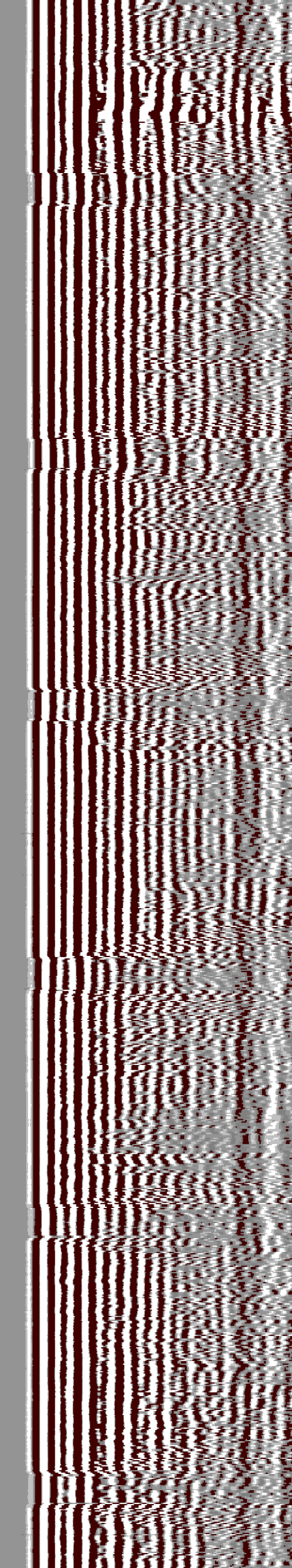
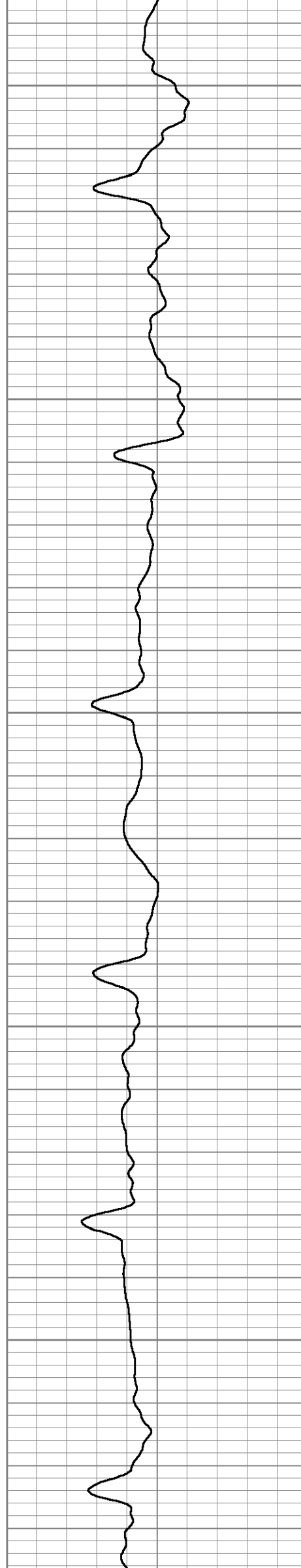
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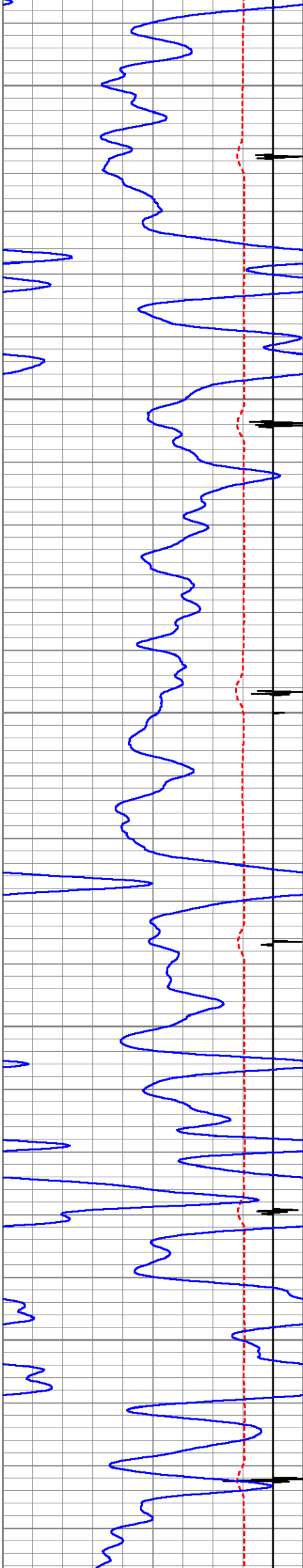
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1300

1350





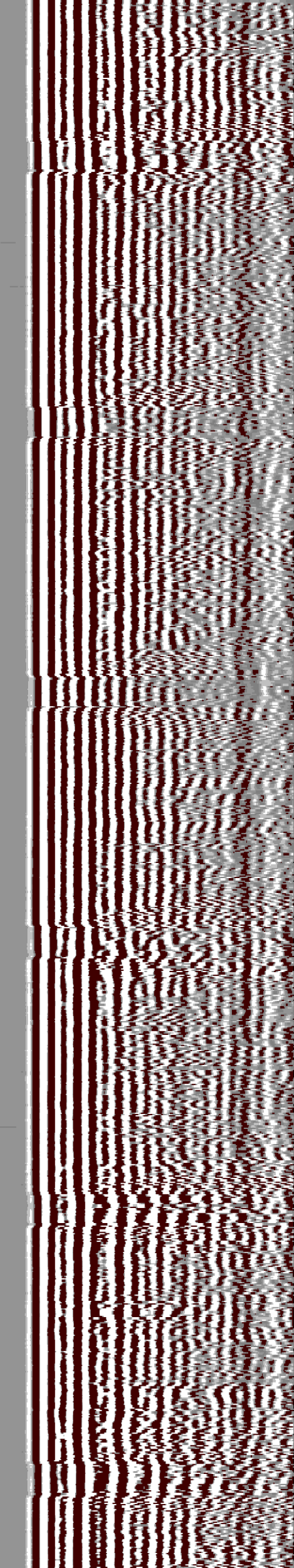
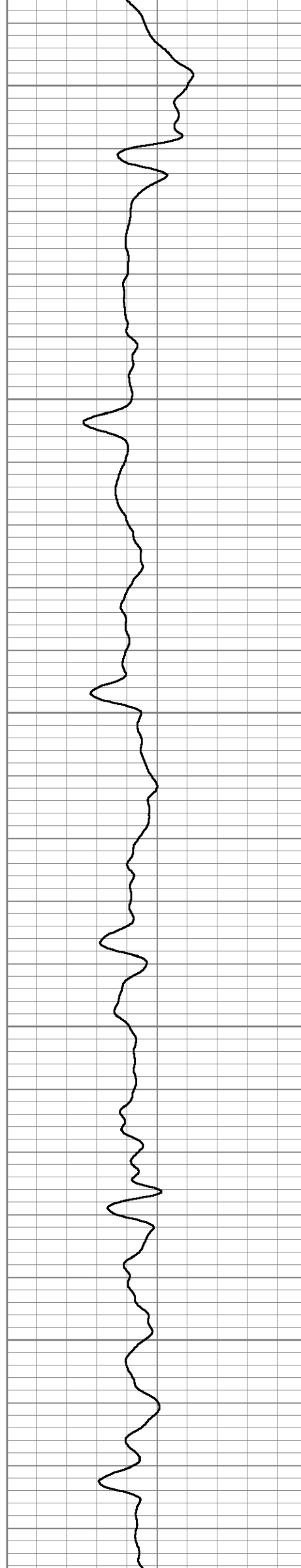
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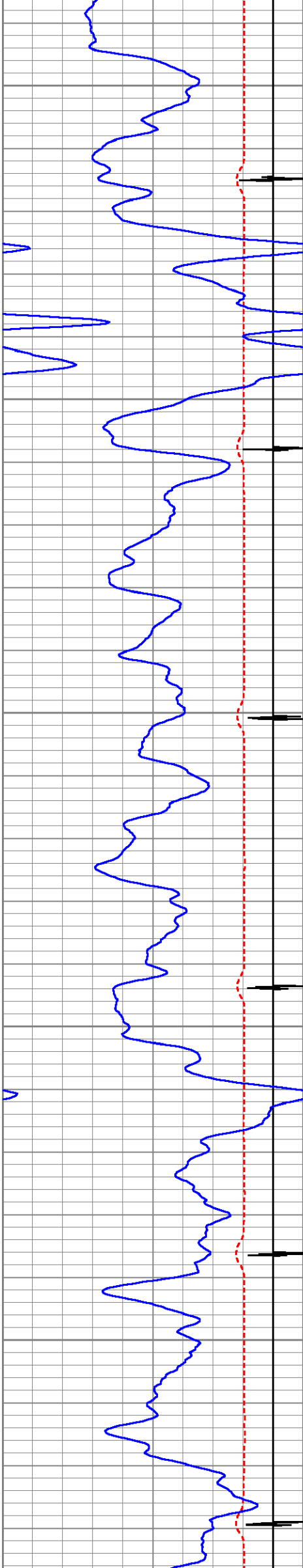
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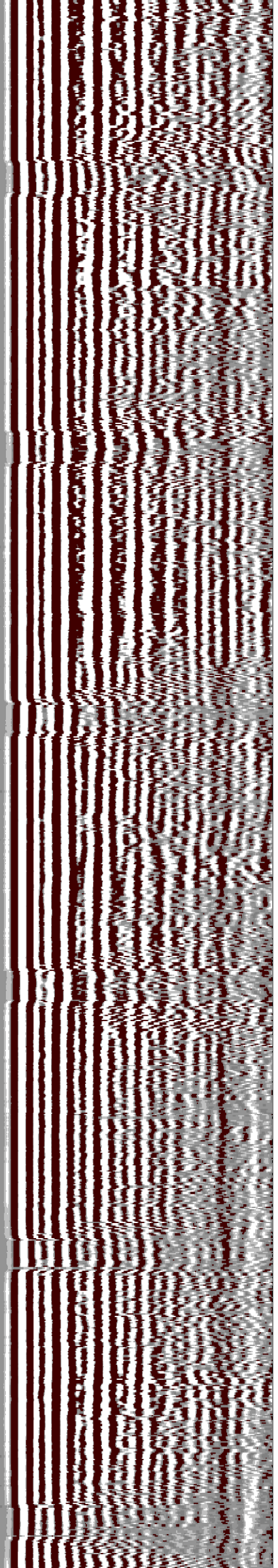
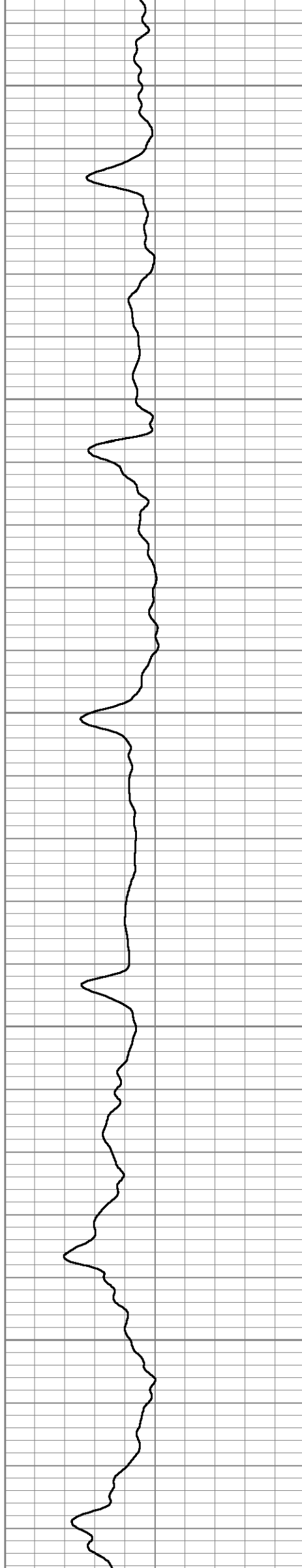
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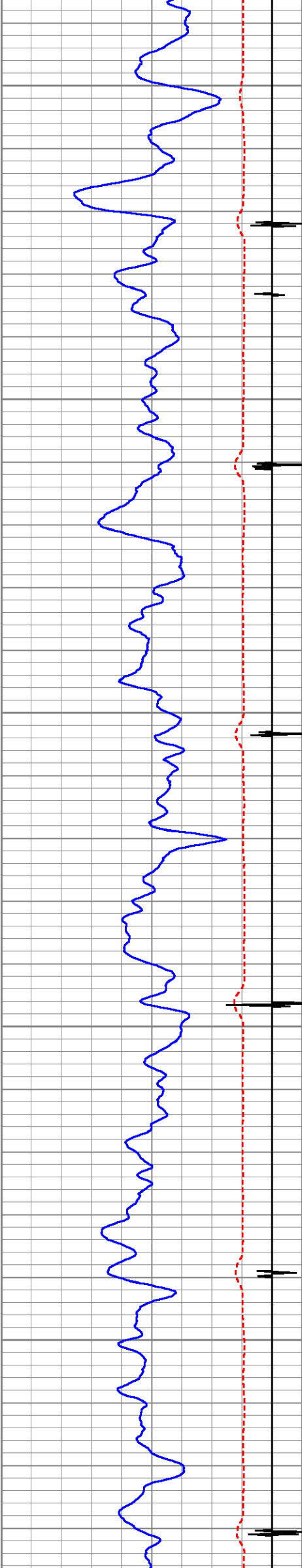
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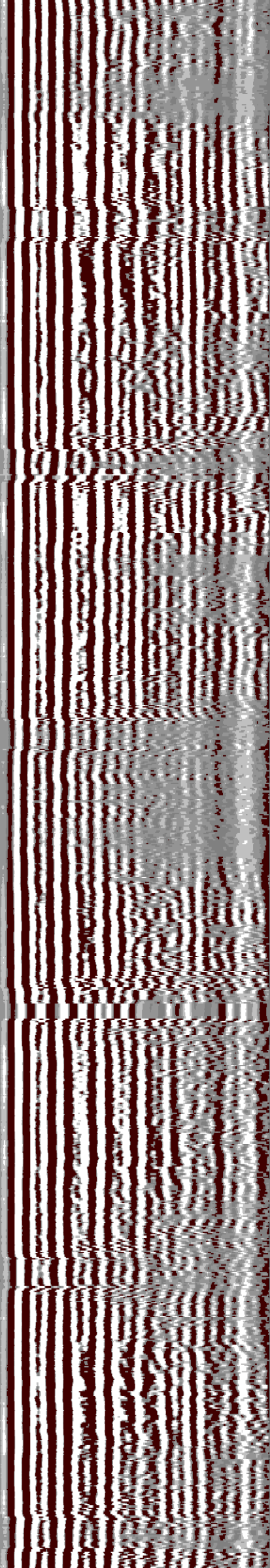
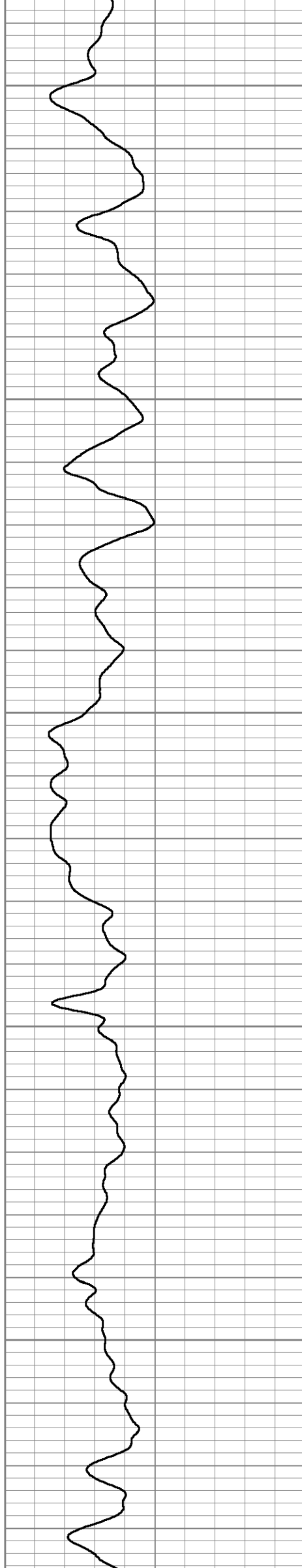
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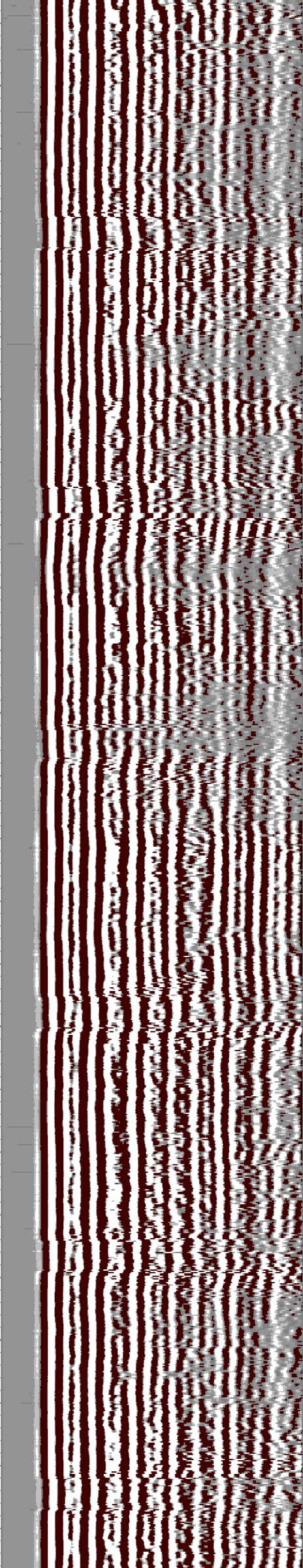
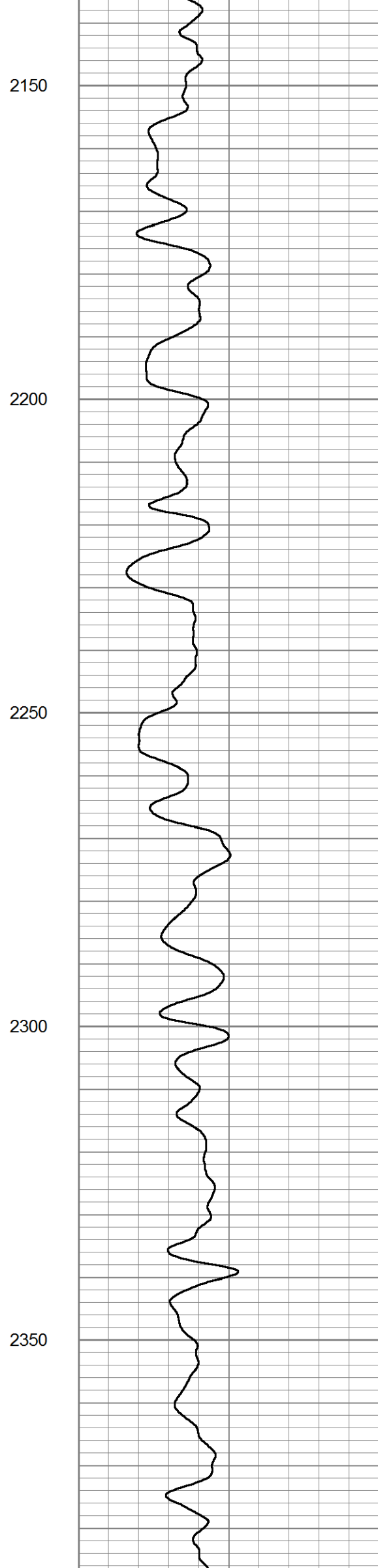
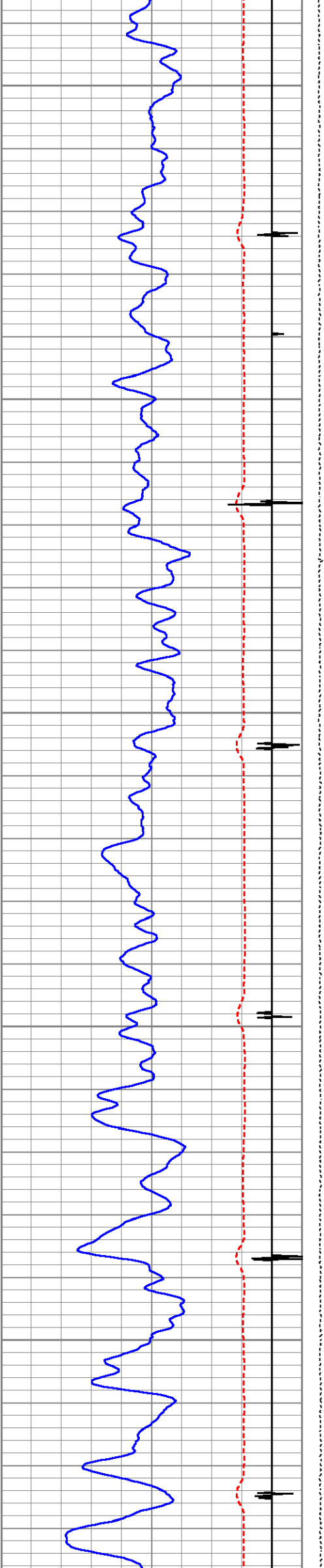
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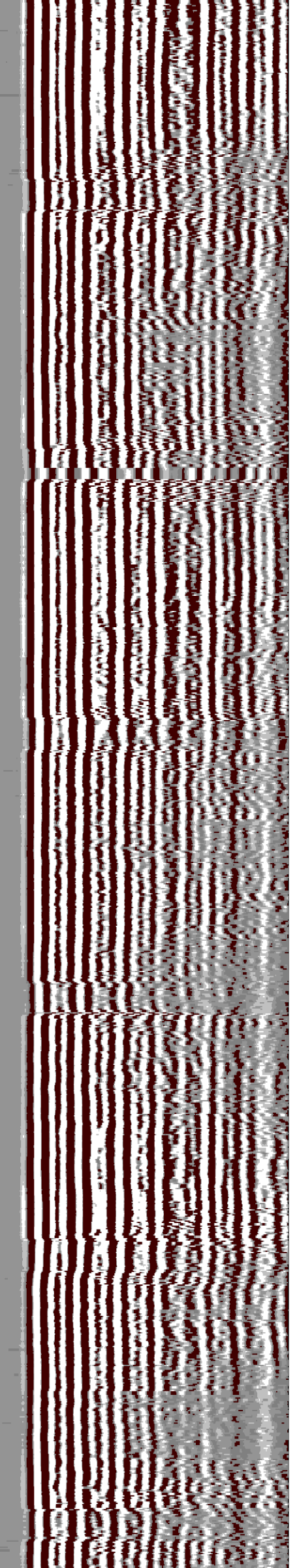
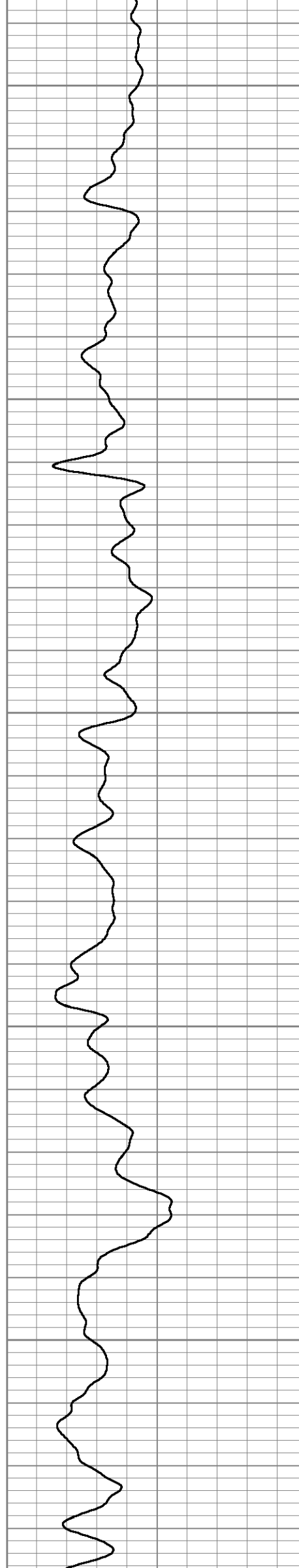
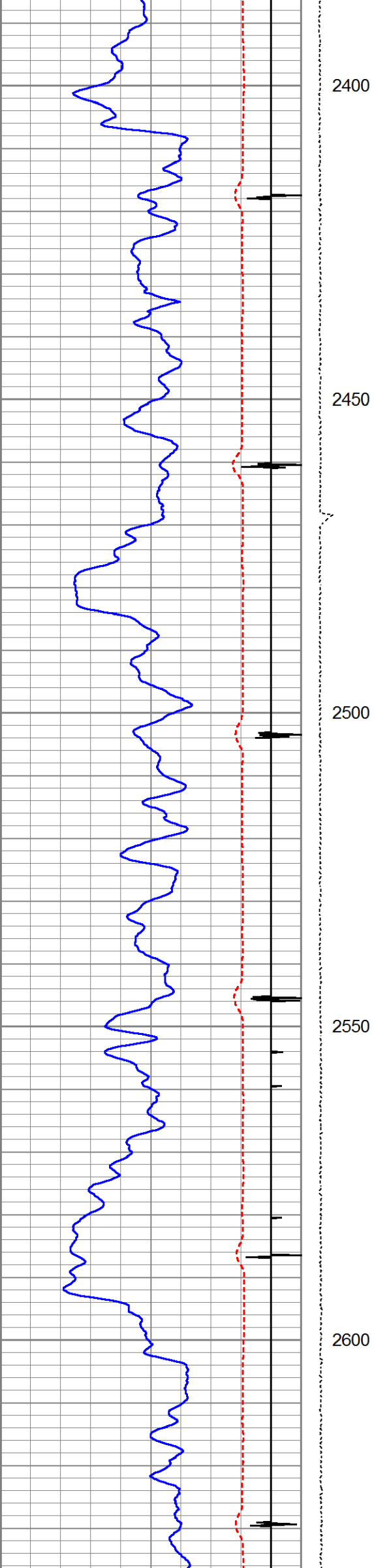
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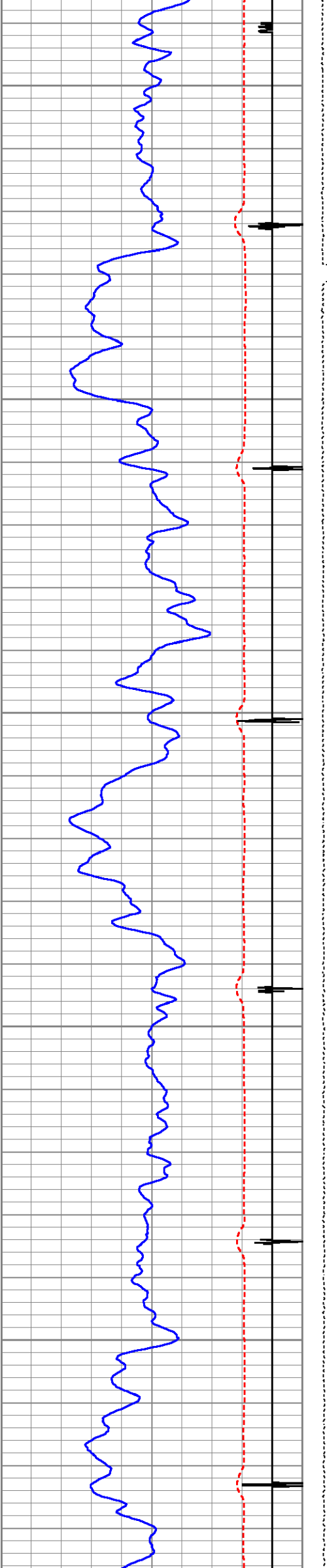
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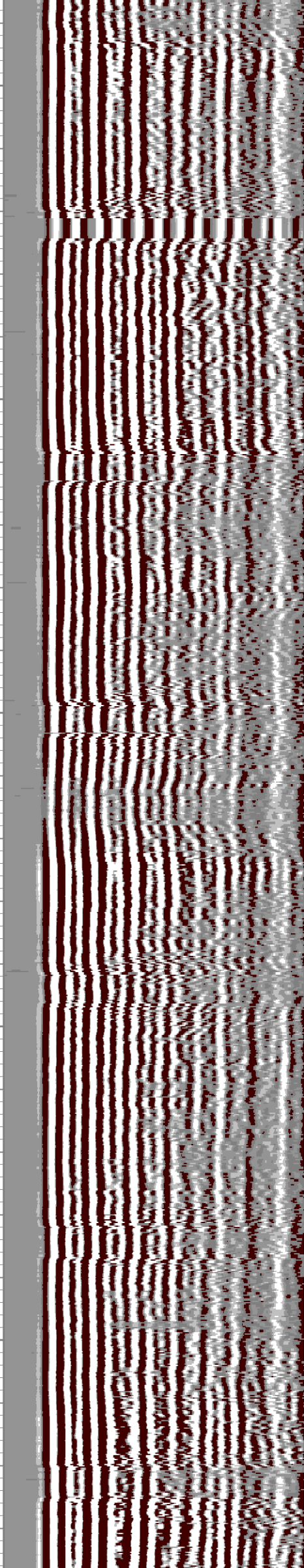
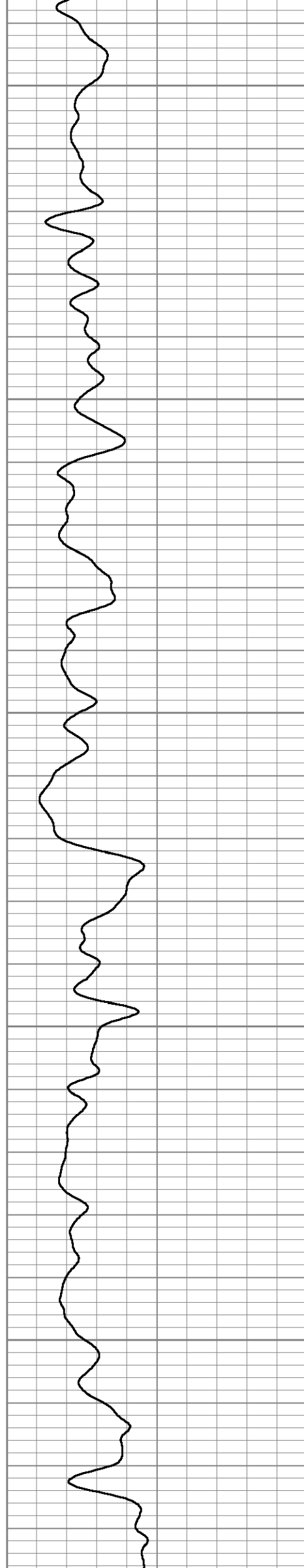
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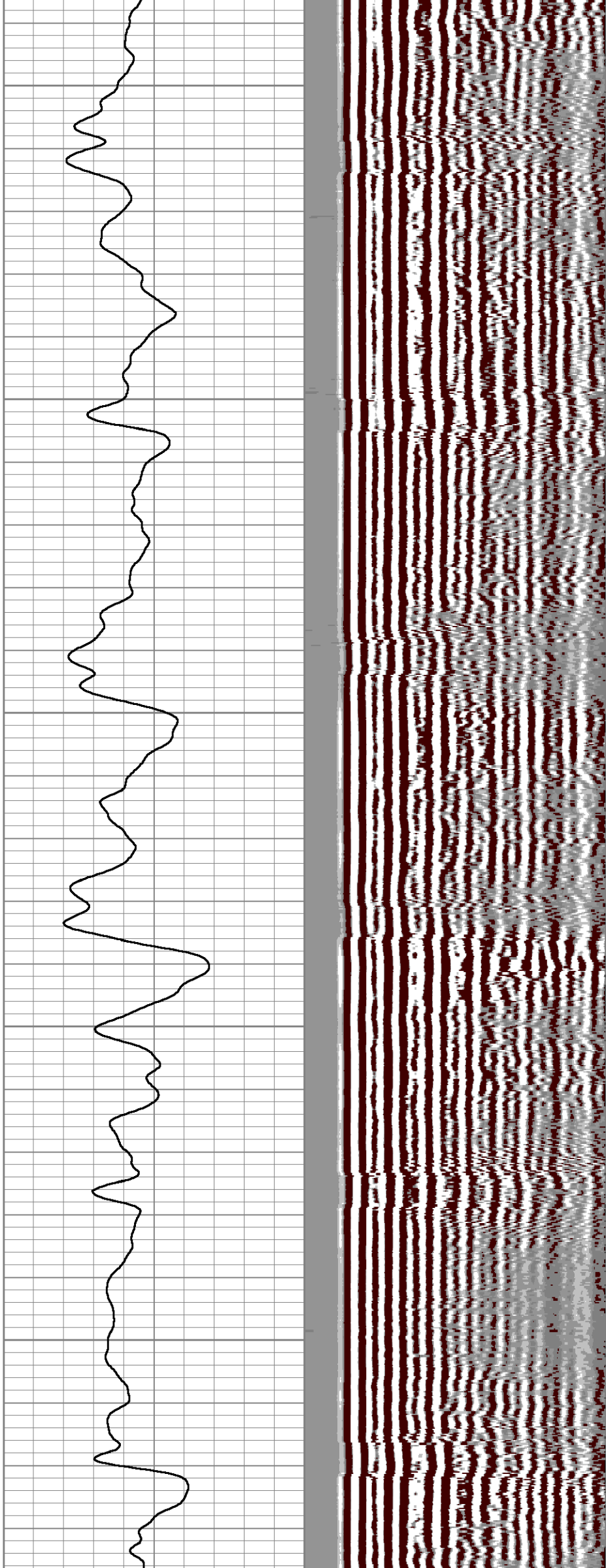
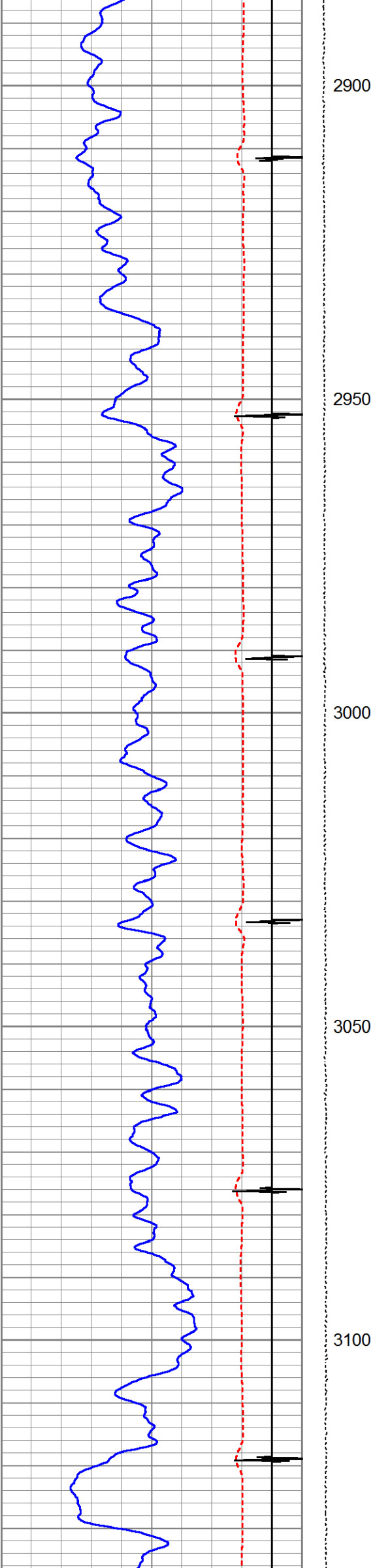
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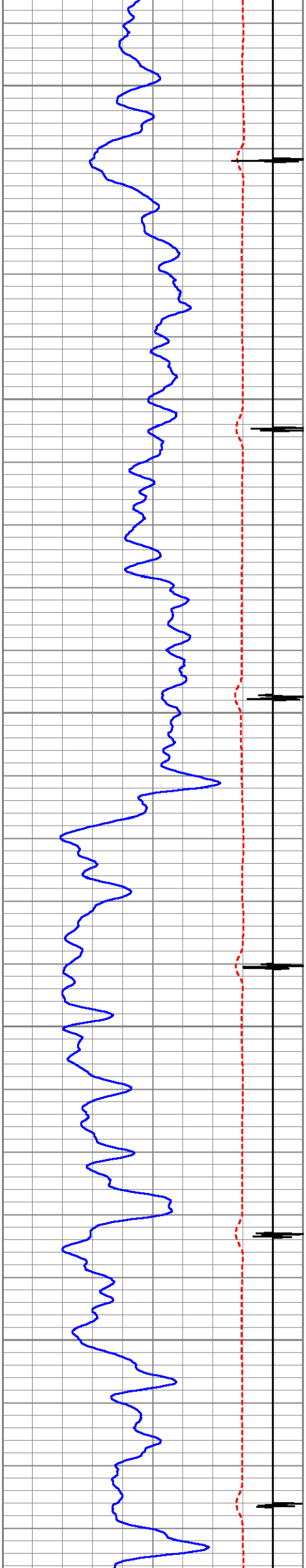
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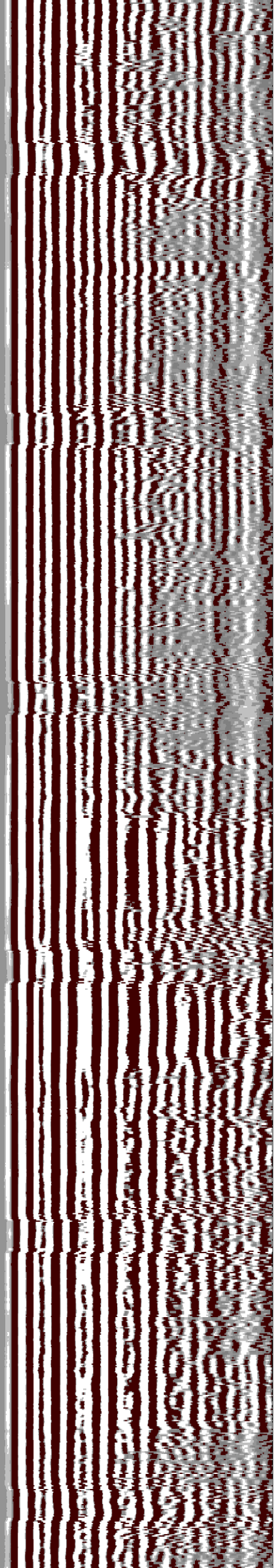
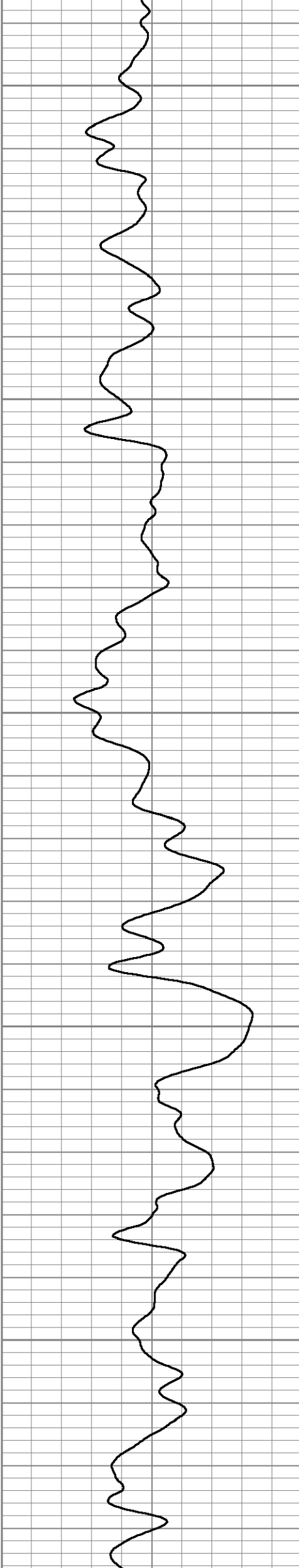
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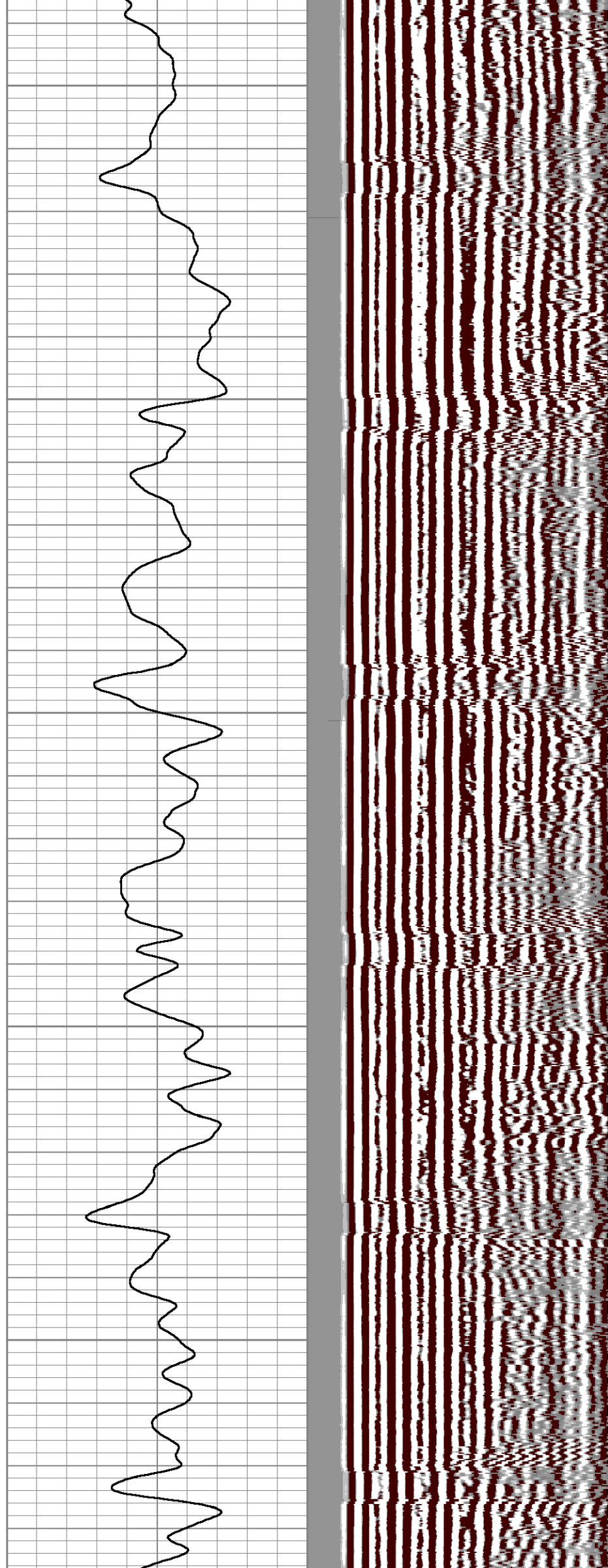
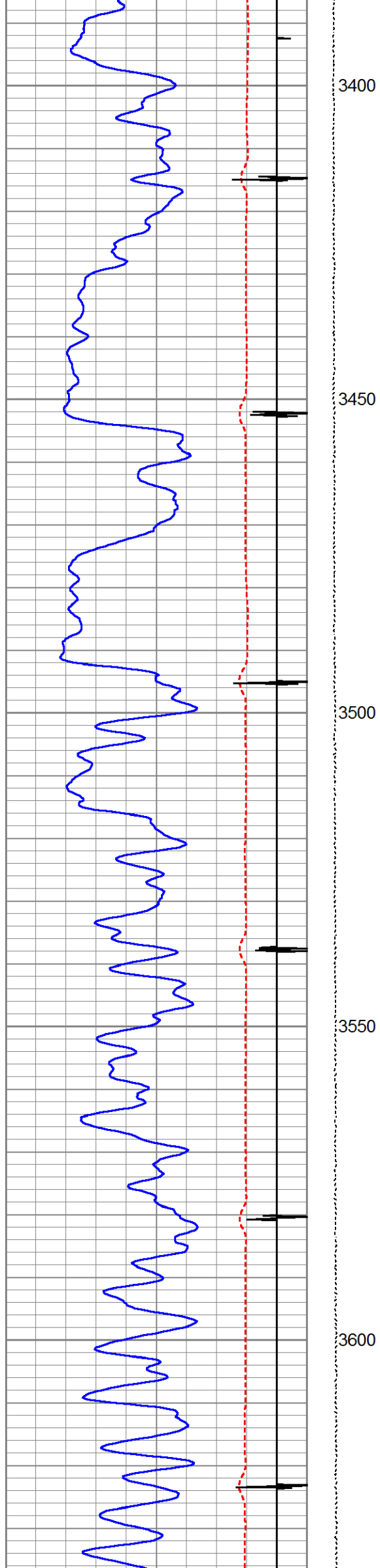
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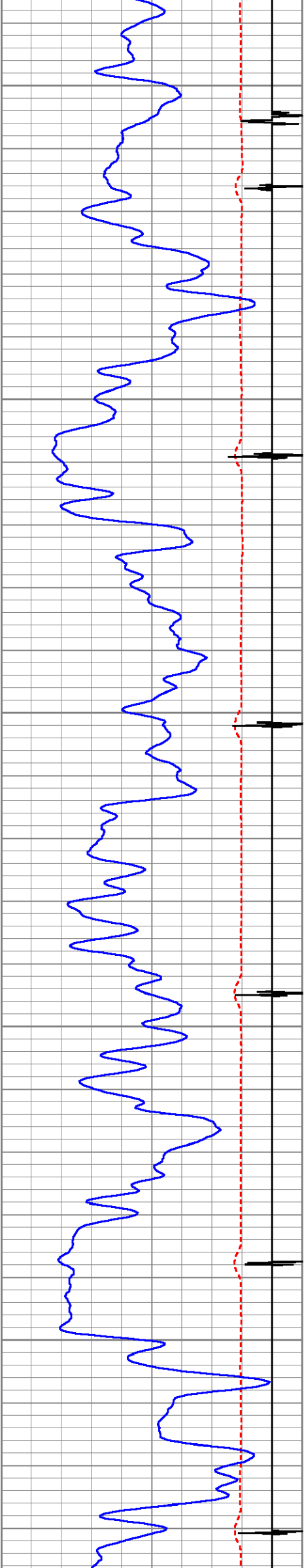
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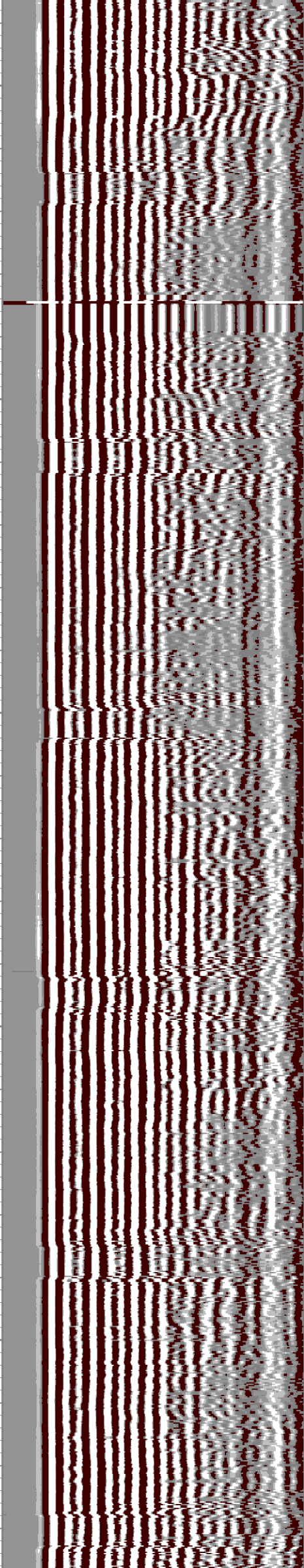
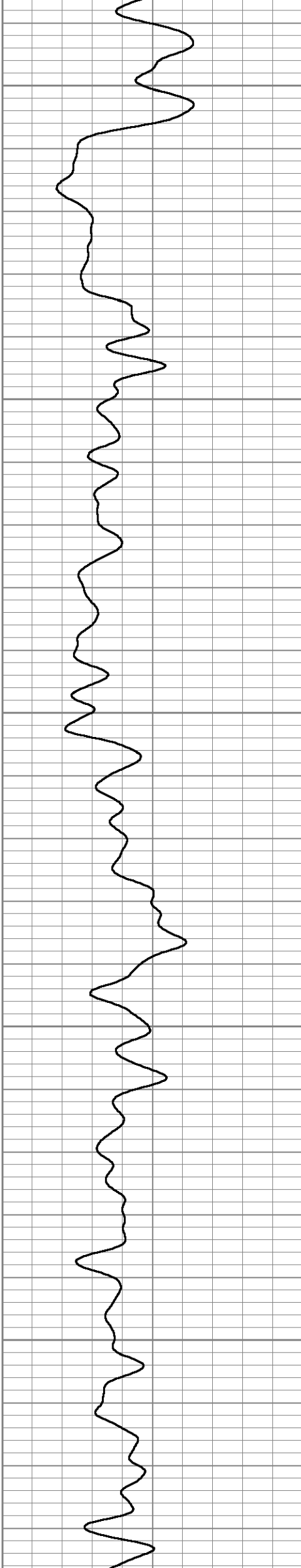
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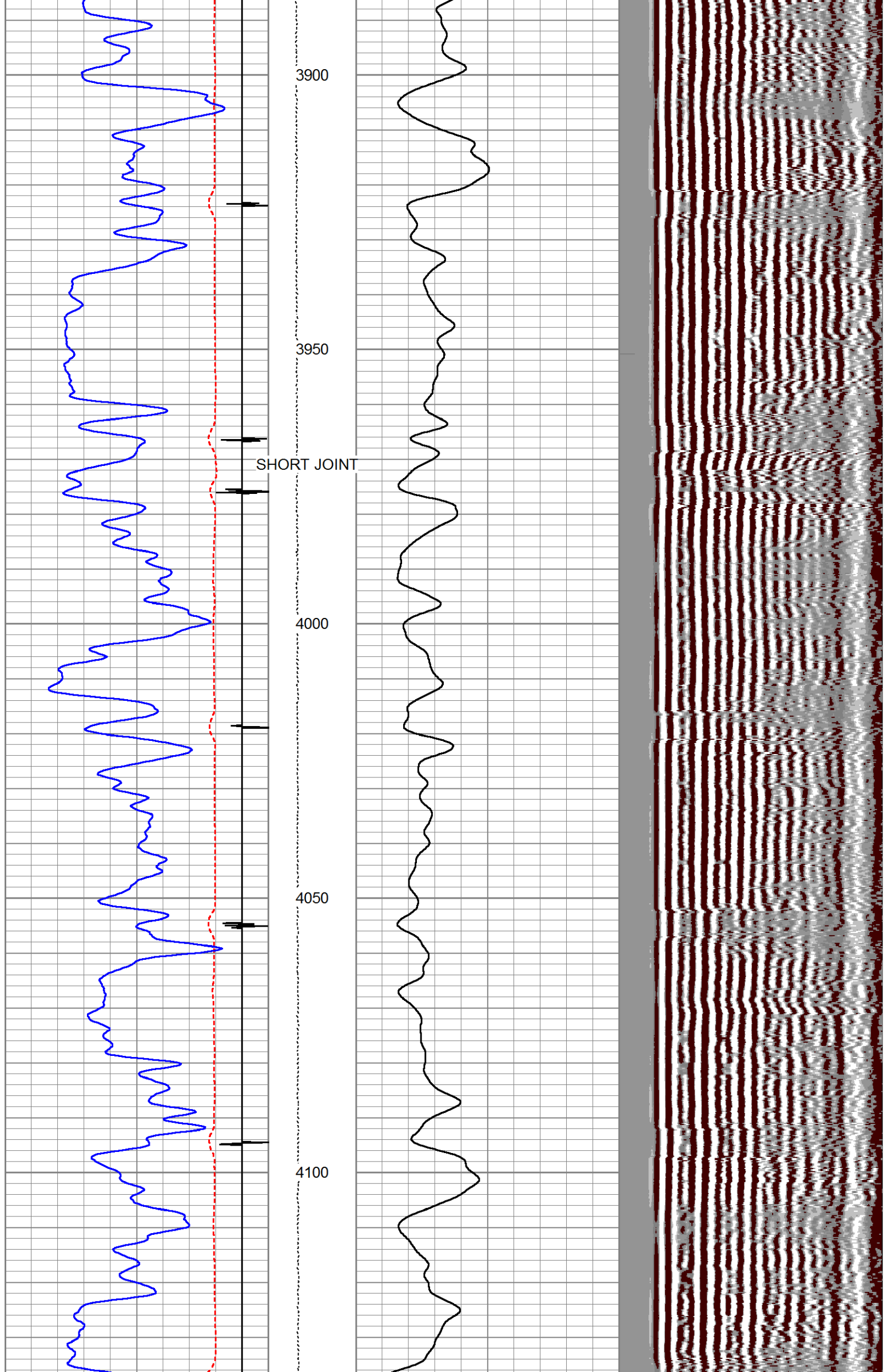


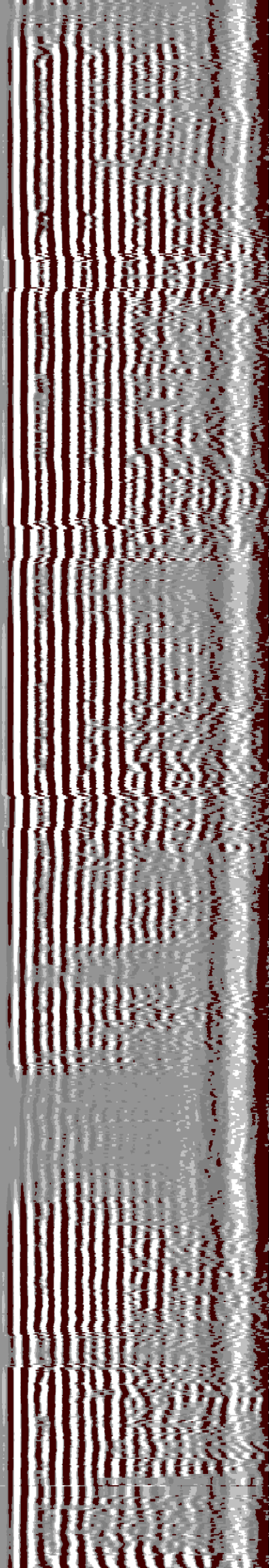
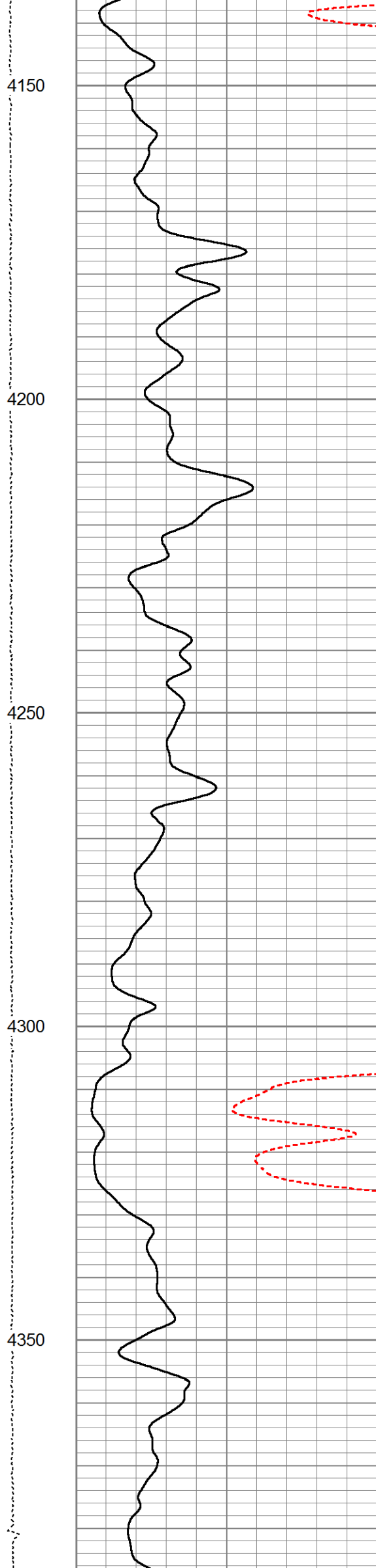
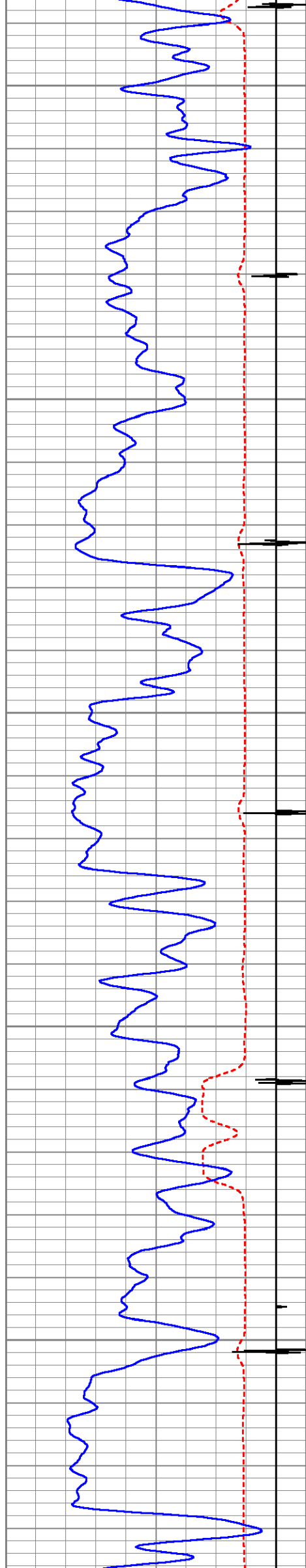


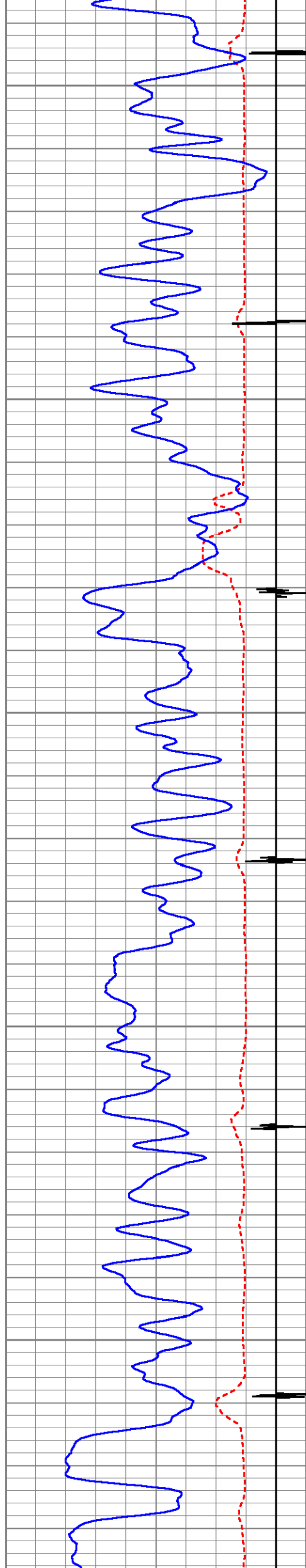


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3700
3750
3800
3850









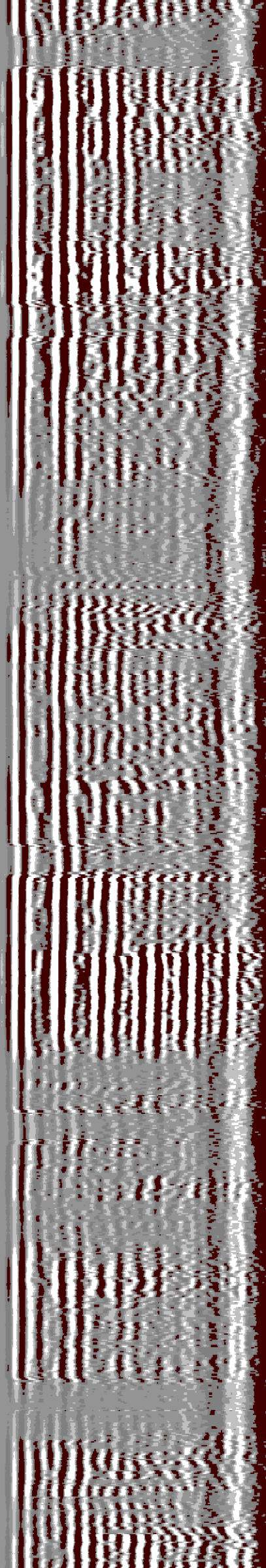
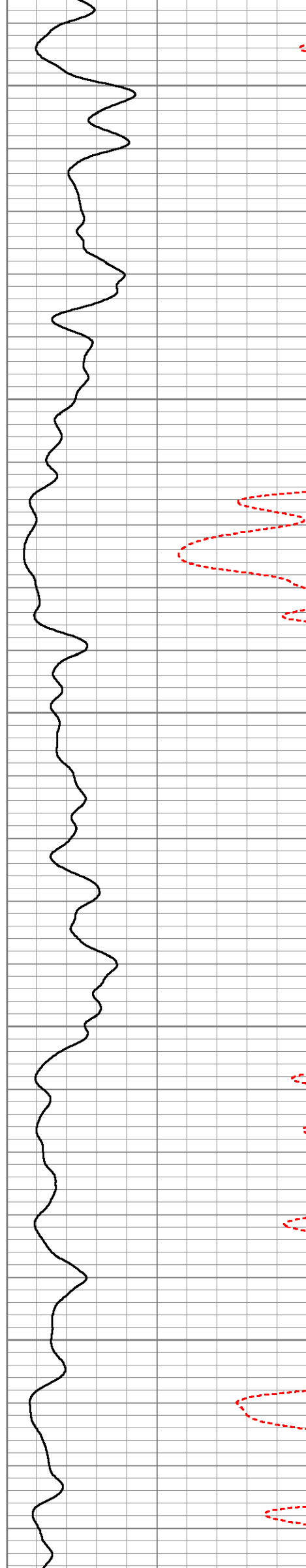
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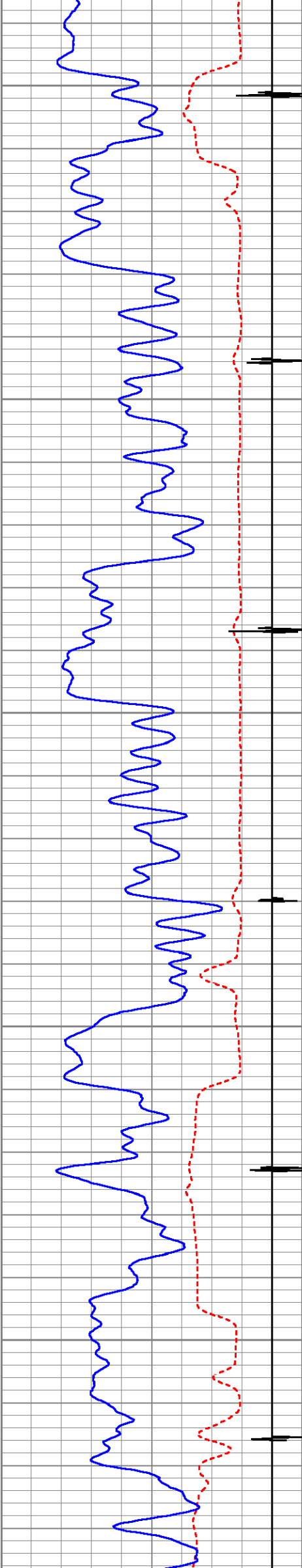
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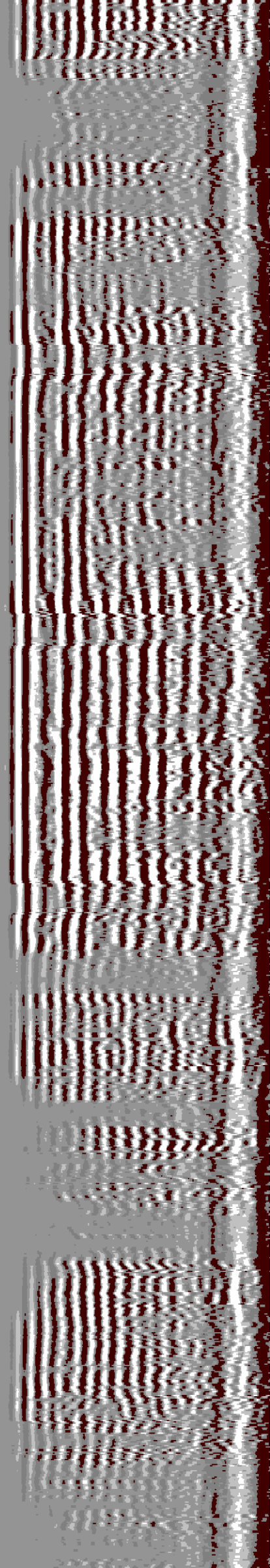
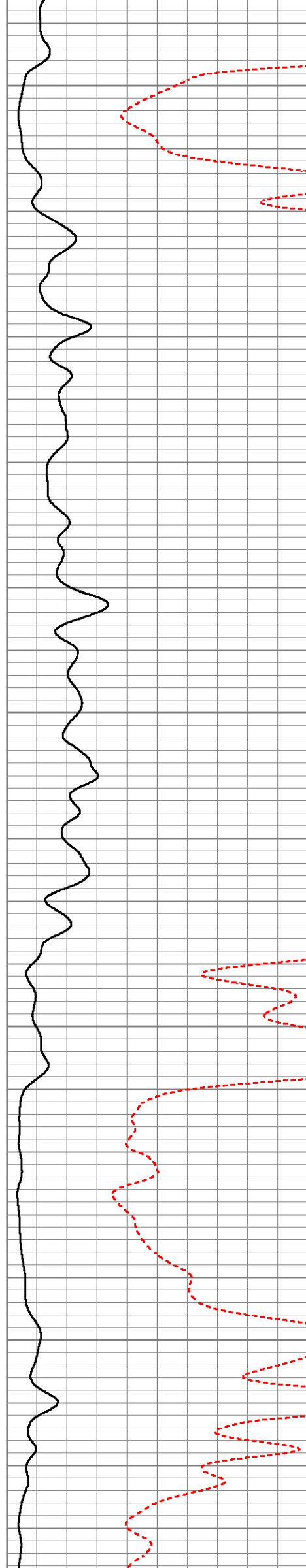
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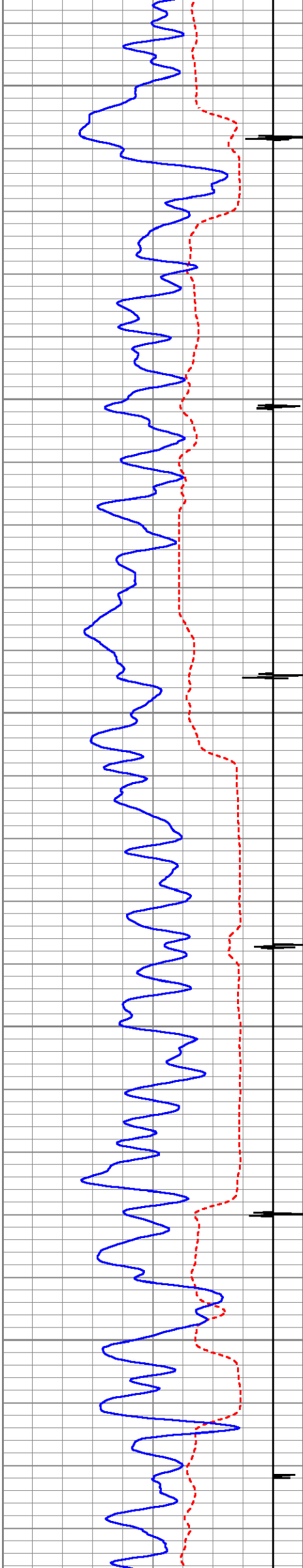
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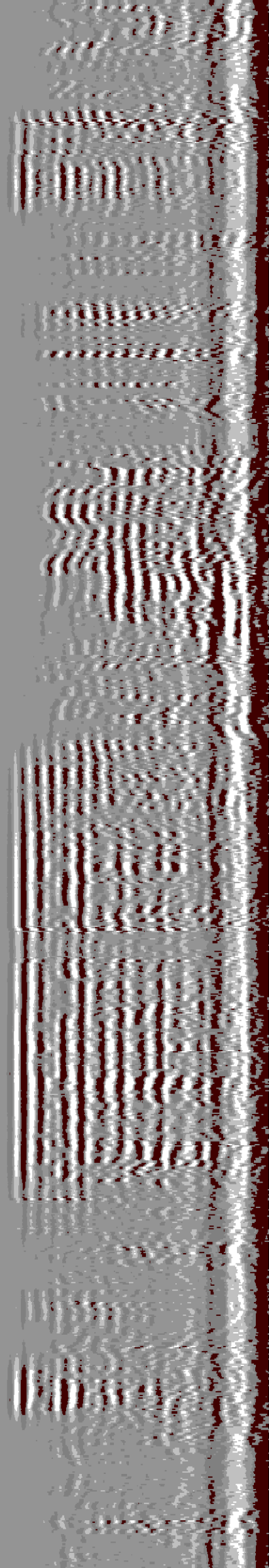
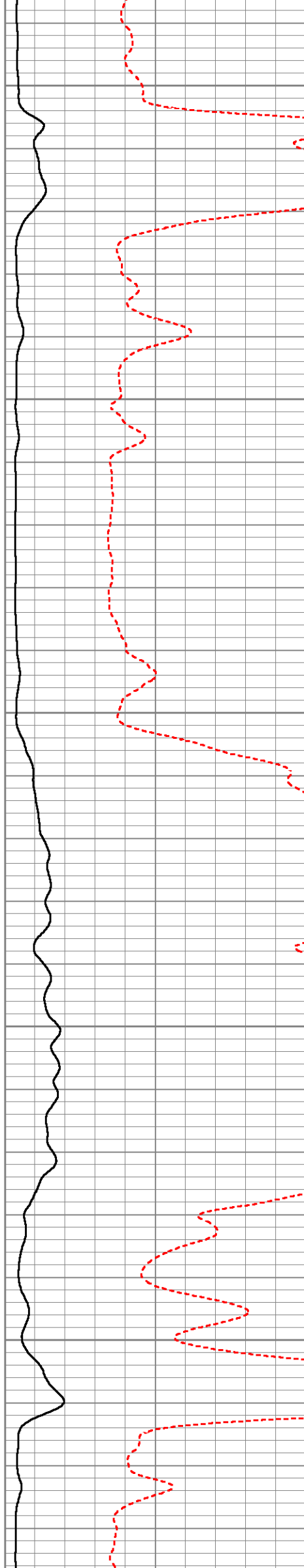
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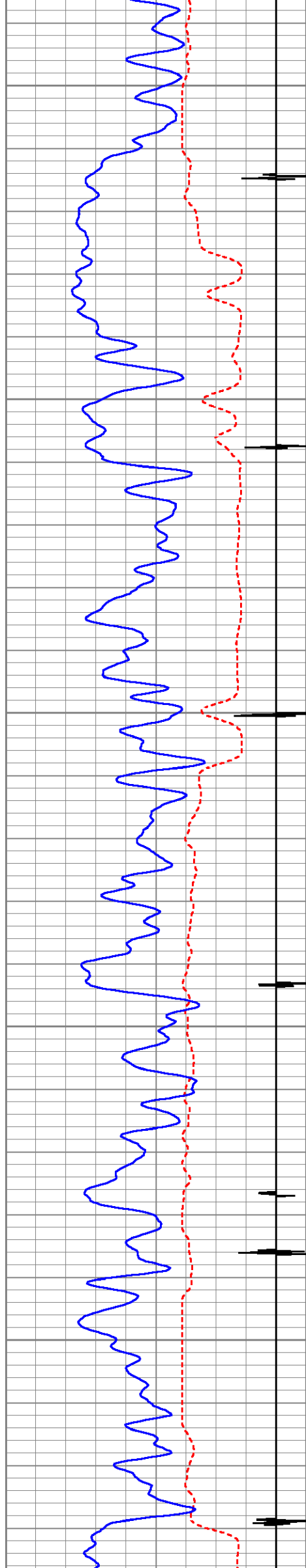
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5100





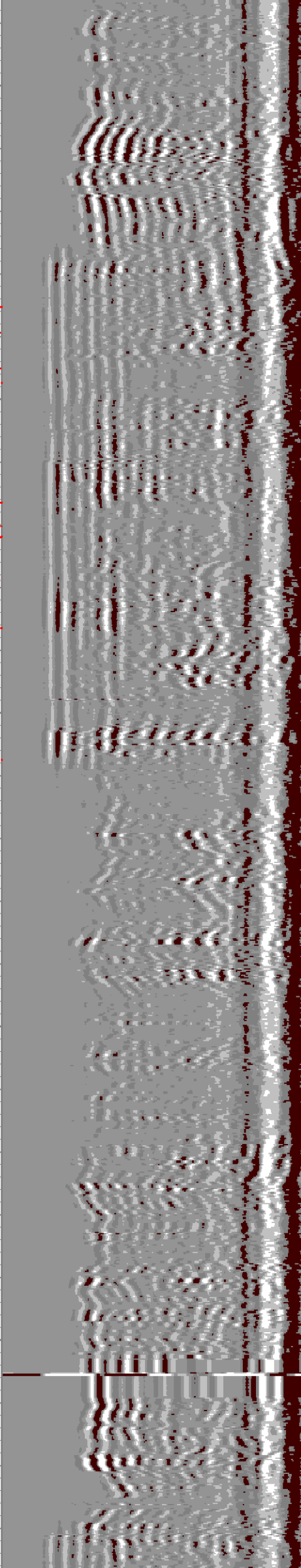
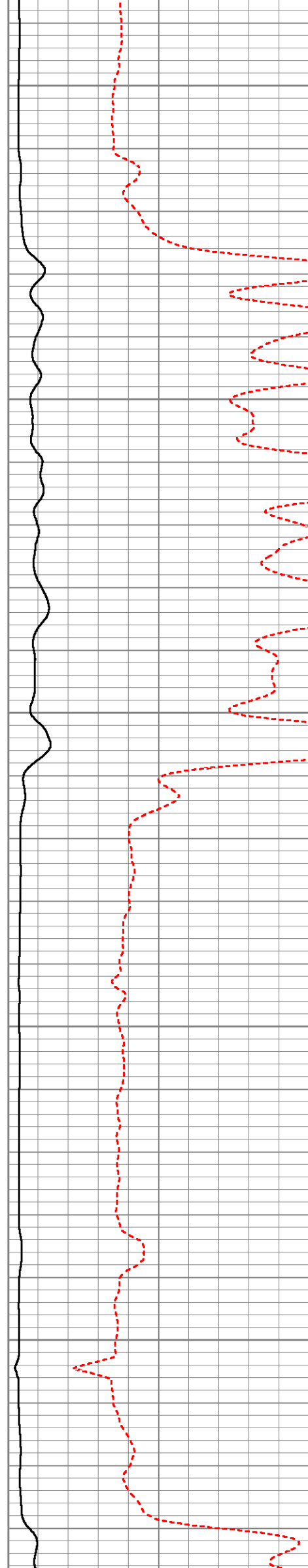
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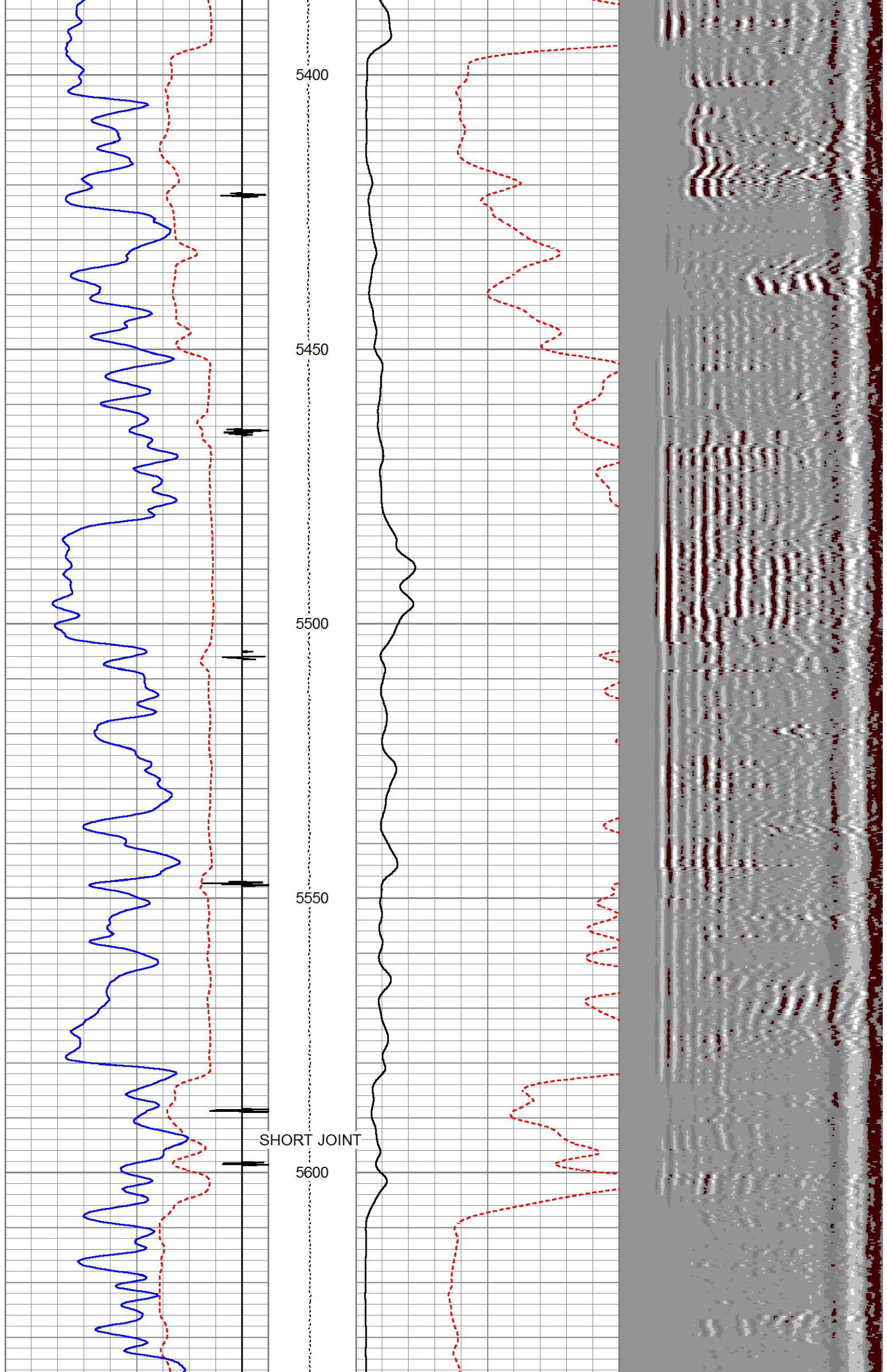
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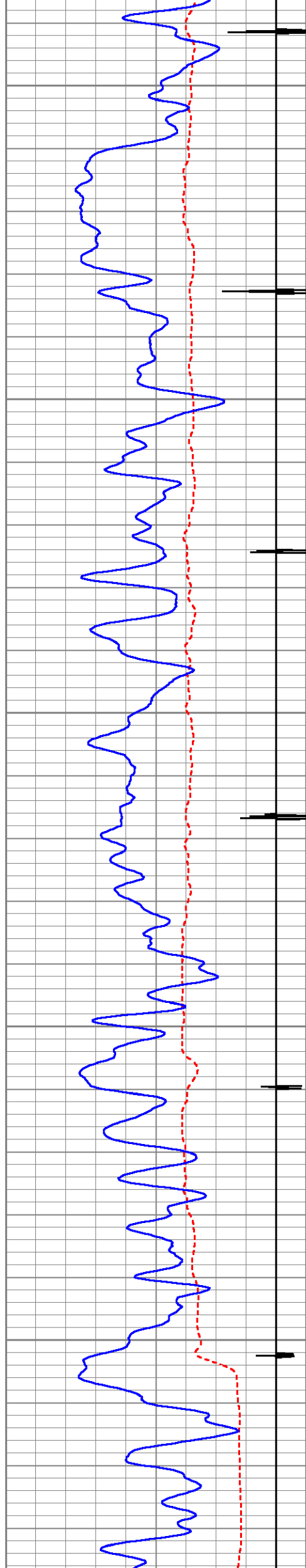
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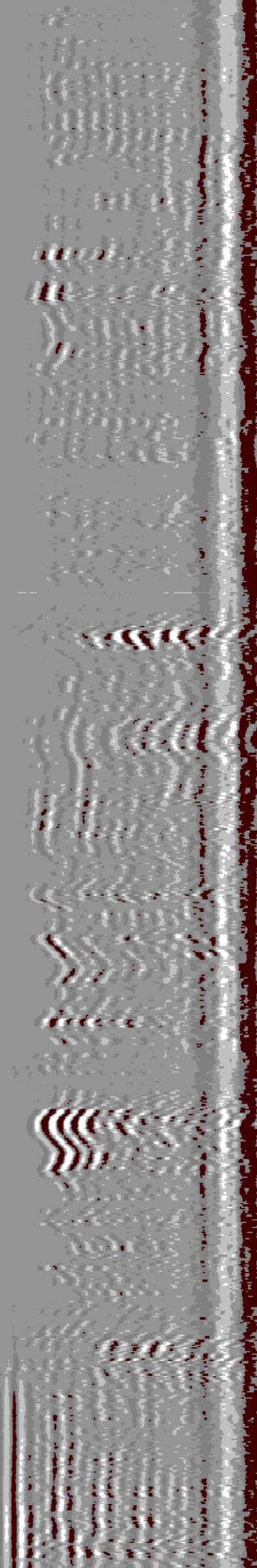
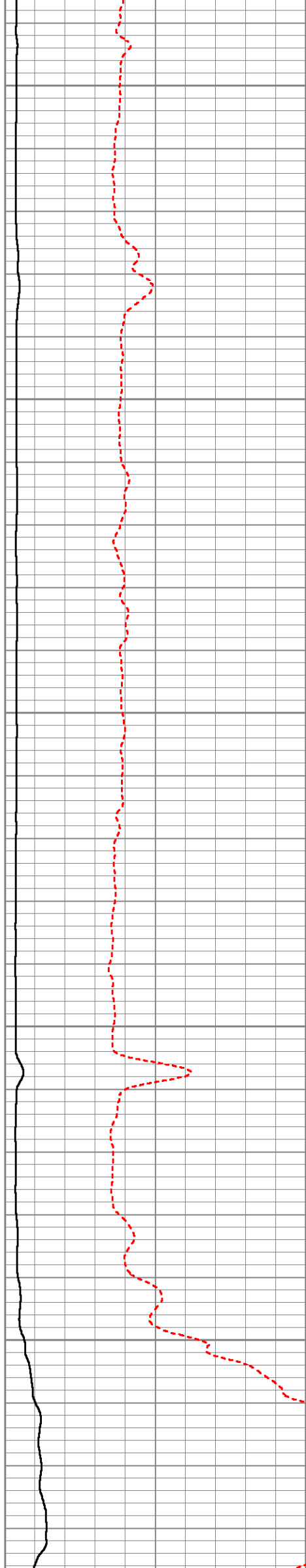
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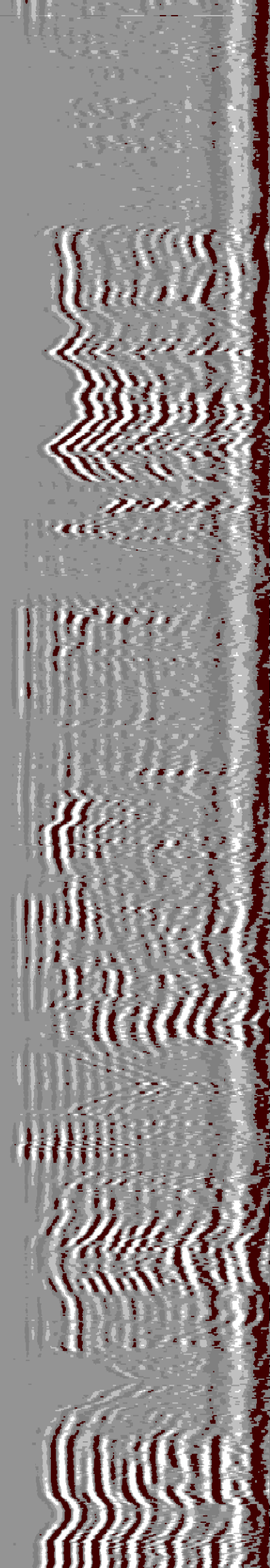
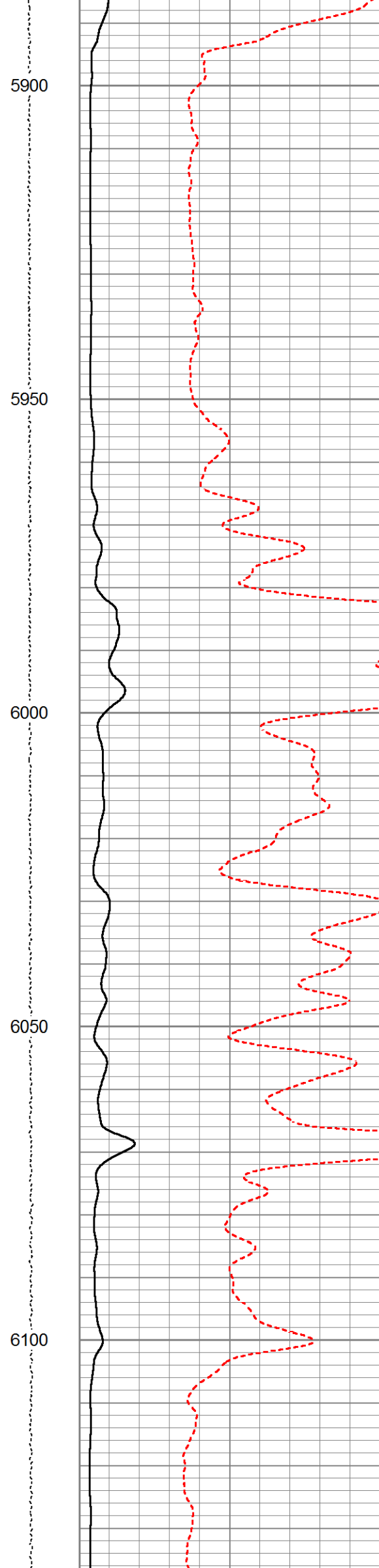
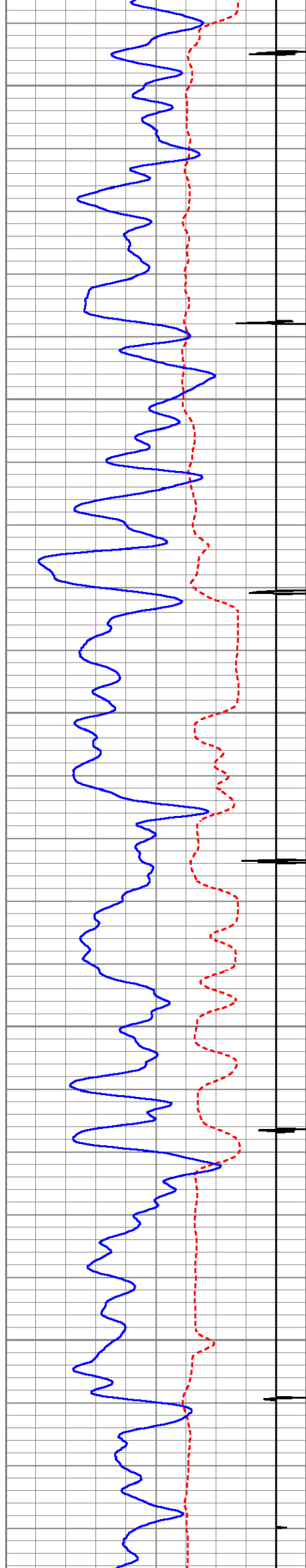
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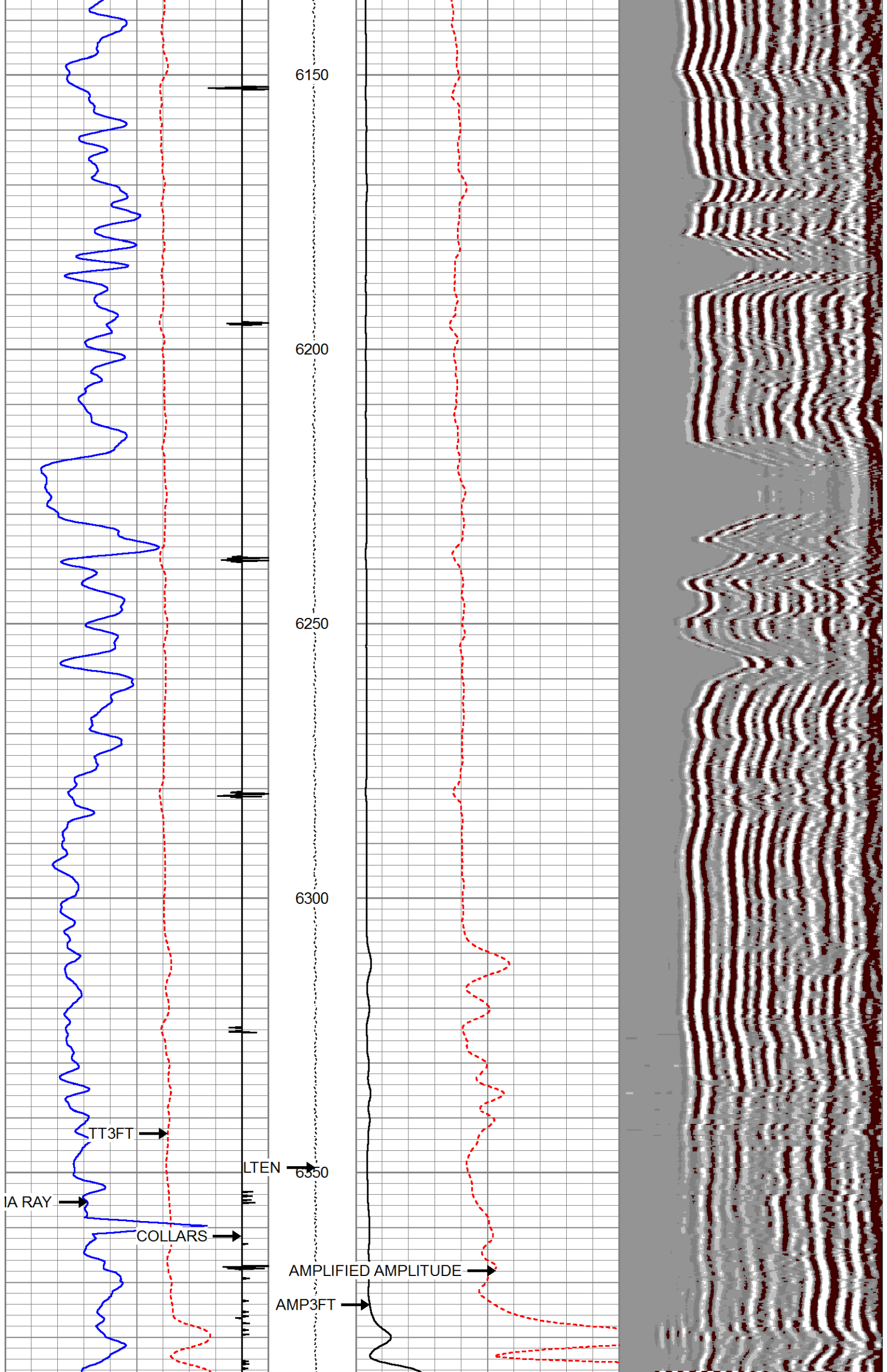
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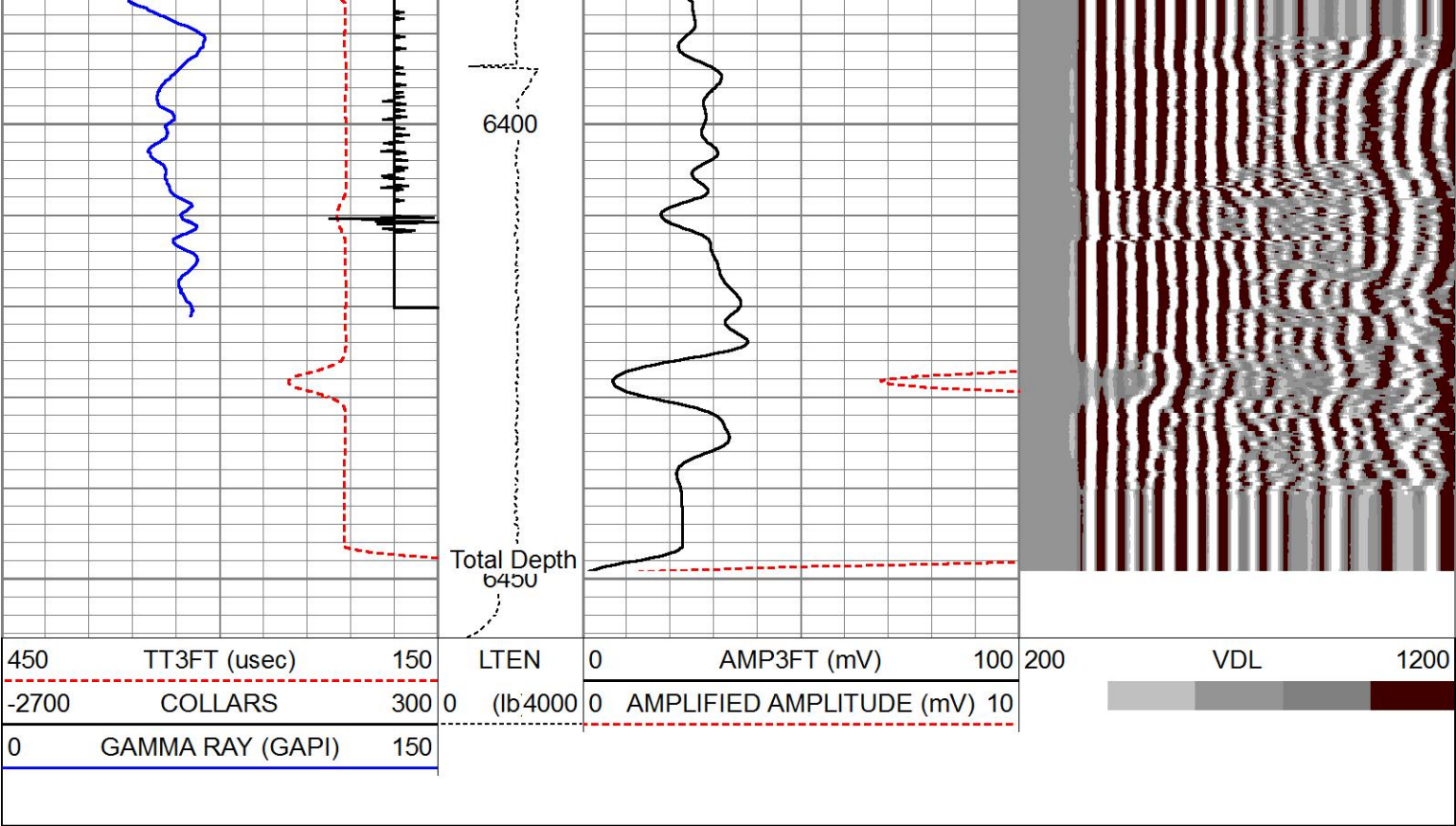
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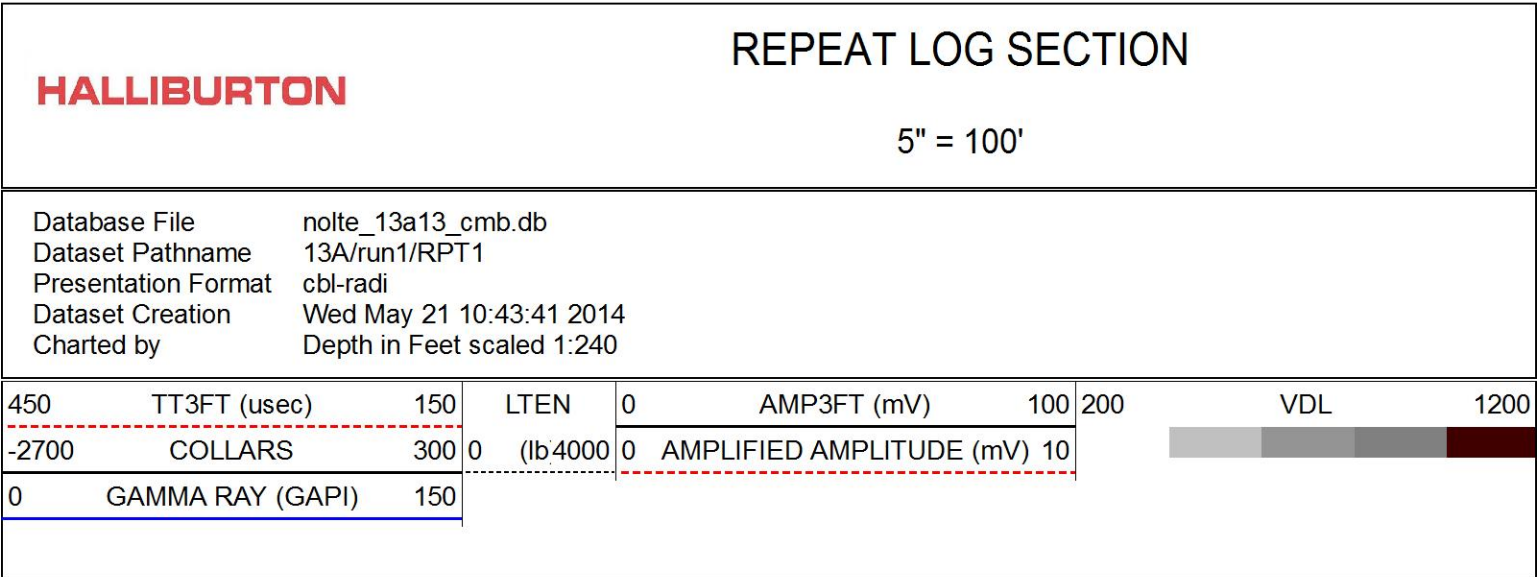




MAIN LOG SECTION

HALLIBURTON

5" = 100'

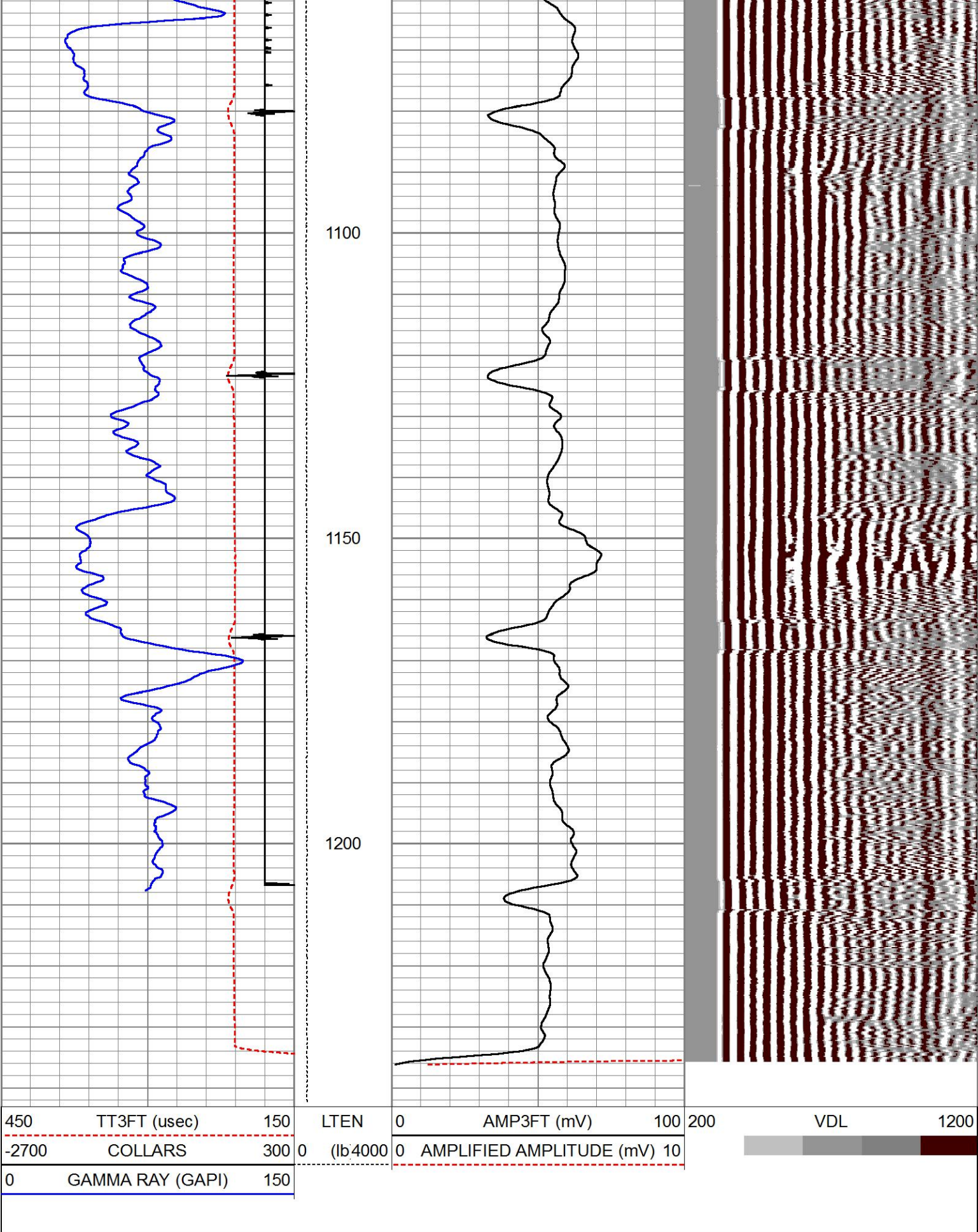


REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Database File nolte_13a13_cmb.db
Dataset Pathname 13A/run1/RPT1
Presentation Format cbl-radi
Dataset Creation Wed May 21 10:43:41 2014
Charted by Depth in Feet scaled 1:240



HALLIBURTON

REPEAT LOG SECTION

5" = 100'

Log Variables DatabaseD:\Warrior_data\nolte_13a13_cmb.db
Dataset field/13A/run1/MAIN1

Top - Bottom

POROS2	POROS1	SO in	BORSAL kppm	LTH	GAINCO	RHO CF	RINOR
--------	--------	----------	----------------	-----	--------	--------	-------

0	1	0	100	Sandstone	0	0.33	0.971547
RTF 0.916631	RTN 0.93876	RNOR 4.66536	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	CASEOD in 4.5	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100
BITSIZE in 8.75							

Calibration Report						
Database File	nolte_13a13_cmb.db					
Dataset Pathname	13A/run1/MAIN1					
Dataset Creation	Wed May 21 11:31:03 2014					
Segmented Cement Bond Log Calibration Report						
Serial Number:		11001119				
Tool Model:		004				
Calibration Casing Diameter:		4.500	in			
Calibration Depth:		95.712	ft			
Master Calibration, performed Tue May 20 11:08:13 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.028	1.075	2.000	81.196	75.648	-0.137
5FT	0.017	0.955	2.000	81.196	84.435	0.578
S1	0.032	1.068	0.000	100.000	96.516	-3.053
S2	0.030	1.052	0.000	100.000	97.808	-2.937
S3	0.030	1.077	0.000	100.000	95.483	-2.854
S4	0.029	1.077	0.000	100.000	95.454	-2.773
S5	0.029	1.074	0.000	100.000	95.725	-2.796
S6	0.028	1.063	0.000	100.000	96.606	-2.724
S7	0.028	1.061	0.000	100.000	96.802	-2.726
S8	0.029	1.052	0.000	100.000	97.739	-2.792
Calibration Report						
Serial Number:		11001119				
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 Elite Calibration Report			
Serial-Model:		U392-ULTRALINK	
Shop Calibration Performed:		Mon May 19 19:00:59 2014	
Linearity Results (Generator Off)			
INITIAL GAIN/OFFSET ADJUSTMENTS NEAR			
Fe edge	198.00	Hy peak	45.98
Gain	0.96	Offset	7.84
Near Detector 5 Peaks Found			
Channel	Amplitude	FWHM	Tol.
52.46	0.00682	6.31	< 6.00
96.28	0.00293	6.35	

108.86	0.00566	9.11	< 9.00
138.06	0.00018	8.44	
186.18	0.00027	9.41	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
Near Detector			
H Position 52.46 C Position 108.86 FE Position 186.18			
Linearity Correction 3.93			

INITIAL GAIN/OFFSET ADJUSTMENTS FAR			
Fe edge	200.83	Hy peak	48.20
Gain	0.97	Offset	5.26
Far Detector 7 Peaks Found			
Channel	Amplitude	FWHM	Tol.
52.45	0.01642	5.36	< 6.50
96.42	0.00139	4.43	
109.18	0.00526	8.00	< 9.00
138.18	0.00016	4.71	
151.38	0.00051	8.49	
184.65	0.00074	7.54	
197.73	0.00105	10.38	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
0.00	0.00000	0.00	
Far Detector			
H Position 52.45 C Position 109.18 FE Position 184.65			
Linearity Correction 2.93			

Carbon/Oxygen Mode					
Stabilization					
	Reading	Range			
GENV	78.73	70 - 100 Volts			
RAW ITCR2	3132	3000 - 3500 CPS			
Near Detector					
	Channel	Expected	Amplitude	FWHM	Tol
H	45	52	0.0278	5.98	<6.00
FE	1	198	3382.5061	----	----
NGAIN = 0.000 NZOFF = 0.000					
Far Detector					
	Channel	Expected	Amplitude	FWHM	Tol
H	48	52	0.0429	5.51	<6.50
FE	200	198	0.0939	----	----
FGAIN = 0.976 FZOFF = 5.309					
	Result	Expected			
COIR2	0.438	0.41 - 0.47			
LIRI2	1.412	1.20 - 1.60			
TCCR2	3697	3000 - 5000 CPS			
ITCR2	2997	3000 - 3500 CPS			

Capture Mode			
Stabilization			
	Reading	Range	
GENV	89.68	70 - 100 Volts	
FCAP	10235	9500 - 10500 CPS	

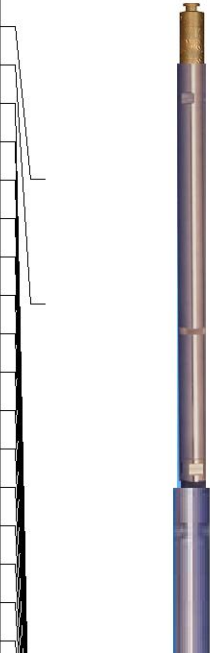
Result	Logged	Expected Value	Diff.	Tol.	Units
Ratio Normalizer	4.67	4.90	-0.23	+/- 0.40	
Ratio Inel Norm	0.97	1.00	-0.03	+/- 0.15	
Near Spaced Count	11072	8100 - 13000			CPS
Far Spaced Count	10030	9000 - 11000			CPS
Sigma Form Near	23.58	23.50	0.08	+/- 1.00	C.U.
Sigma Bore Near	77.18	77.00	0.18	+/- 5.00	C.U.
Sigma Form Far	22.27	22.40	-0.13	+/- 0.50	C.U.
Ratio Near/Far	1.10	1.05	0.05	+/- 0.15	
Ratio N/F Inel	1.90	1.81	0.09	+/- 0.25	
Near Error	0.75	<5.00			
Far Error	1.37	<5.00			
Near Background	113	<500			
Far Background	88	<200			
Near Resolving Time	0.939	0.00 - 2.00			
Far Resolving Time	0.917	0.00 - 2.00			



Calibration Software Modules	
PNLS Module	2013.11.19.0
RMTE Module	2014.2.27.1

Gamma Ray Calibration Report

Type / Serial:	002 / 11510512
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SHOP CALIBRATION		Wed May 21 09:26:50 2014			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	40.9				cps
Calibrator	329.4				cps
		1.4140			GAPI/cps
PRIMARY VERIFICATION					
Background	60.7				cps
Calibrator	466.1				cps
Difference				405.4	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	36.03		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.10	1.44	1.00
GR	33.77					
TFGT	24.39					
TNGT	24.39					
FBACK	24.39					
FCAP	24.39					
FINEL	24.39		TTTCU-002 (11510512) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
TFGT	24.39					
TNGT	24.39					
FBACK	24.39					
FCAP	24.39					
FINEL	24.39					
NBACK	23.89					
NCAP	23.89					
NINEL	23.89					
NBACK	23.89					
NCAP	23.89					

NINEL	23.89		RMTE_U-ULTRALINK (U392) RMTE ULTRA_LINK	14.06	2.13	77.00							
FSTAT	16.39												
SPECSTAT	16.39												
GNCTL	16.39												
CNTL	16.39												
FLASKTEMP	16.39												
ROMTEMP	16.39												
SSHV	16.39												
LSHV	16.39												
IONI	16.39												
ISI	16.39												
ISV	16.39												
GENI	16.39												
GENV	16.39												
REPI	16.39												
REPV	16.39												
FSTAT	16.39		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over										
SPECSTAT	16.39												
GNCTL	16.39		AUH-001 (000001) Adaptor Ultrawire/Halliburton										
CNTL	16.39		PRC #3 -022 (01) Production Roller Centralizer (6 arm)										
FLASKTEMP	16.39		RBT-004 (11001119) Radial Bond Tool (UW 3 1/8) 20K Rated										
ROMTEMP	16.39												
SSHV	16.39												
LSHV	16.39												
IONI	16.39												
ISI	16.39												
ISV	16.39												
GENI	16.39												
GENV	16.39												
REPI	16.39												
REPV	16.39												
CBLROT	8.35												
CBLTEMP	8.35												
WVFS8	8.35												
WVFS7	8.35												
WVFS6	8.35												
WVFS5	8.35												
WVFS4	8.35	PRC #4 -022 (02) Production Roller Centralizer (6 arm)											
WVFS3	8.35	BUL-006 (000002) Bullnose Terminator											
WVFS2	8.35												
WVFS1	8.35	Dataset: Total length: Total weight: O.D.:	nolte_13a13_cmb.db: field/13A/run1/MAIN1 39.20 ft 393.20 lb 3.13 in										
WVF3FT	8.35												
WVF5FT	7.36												
HVOLTX	0.00												

Company	CAERUS OIL & GAS, LLC.				
Well	NOLTE 13A-13				
Field	GRAND VALLEY				
County	GARFIELD		State	CO	
HALLIBURTON	ACOUSTIC CEMENT BOND LOG				