

HALLIBURTON				ACOUSTIC CEMENT BOND LOG			
Company URSA OPERATING CO., LLC. Well BAT 24C-18-07-95 Field PARACHUTE County GARFIELD State CO				Company URSA OPERATING CO., LLC. Well BAT 24C-18-07-95 Field PARACHUTE County GARFIELD State CO			
Permanent Datum GROUND LEVEL Elevation 5441'				Other Services			
Log Measured From KB 17 Ft. above perm. datum				Location: SURFACE HOLE LOCATION: 0246' FSL & 0824' FEL			
Drilling Measured From KB				Location: SURFACE HOLE LOCATION: 0246' FSL & 0824' FEL			
Date @ Time Logged 19 JUNE 2015				Sec: 18 Twp: 07S Rge: 95W			
Run No. ONE				Type Fluid in Hole WATER			
Depth - Driller 7127'				Density of Fluid 8.4#			
Depth - Logger 6860'				Fluid Level FULL			
Bottom - Logged Interval 6860'				Cement Top Est. Logged SEE LOG			
Top - Log Interval 1500'				Equipment / Location 10971668 / G.J.			
Max. Recorded Temp. 226 DEG F				Recorded by D. SOLIS			
CEMENTING DATA				Witnessed by UNATTENDED			
Date / Time Cemented N/A				Protection String N/A			
Primary / Squeeze N/A				Production String N/A			
Expected Compressive Strength psi@ hrs				Liner			
Cement Volume /				psi@ hrs psi@ hrs			
Cement Type / Weight /				psi@ hrs psi@ hrs			
Formulation /				psi@ hrs psi@ hrs			
Mud Type / Mud Wgt. /				psi@ hrs psi@ hrs			
Borehole Record				Casing & Tubing Record			
Run Number Bit From To Size Weight From To				Run Number Bit From To Size Weight From To			
ONE 12.25" SURFACE 1880' 8.625" 32.0# SURFACE 1880'				ONE 12.25" SURFACE 1880' 8.625" 32.0# SURFACE 1880'			
TWO 7.8758" 1880 7127' 4.5" 11.6# SURFACE 7127'				TWO 7.8758" 1880 7127' 4.5" 11.6# SURFACE 7127'			

Service Ticket No.	902507598	API No.	05-045-22837-0000	PGM Ver	14.11.12001
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.	11495480	Serial No.	11817843	Serial No.	12095949
Model No.	TTTC-U-002	Model No.	CBL-M	Model No.	RMTI-A
Diameter	1.688"	Diameter	2.75"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	TIME	DEPTH	PRESSURE	PARAM	MAIN LOG SECTION			
ONE	6860'	1500'	0	REC				
	GAMMA RAY		TRAVEL TIME		AMPLITUDE		MSG	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	405	205	0	100	200	1060
DIRECTIONAL INFORMATION								
Maximum Deviation		N/A	deg. @	N/A	KOP	N/A		

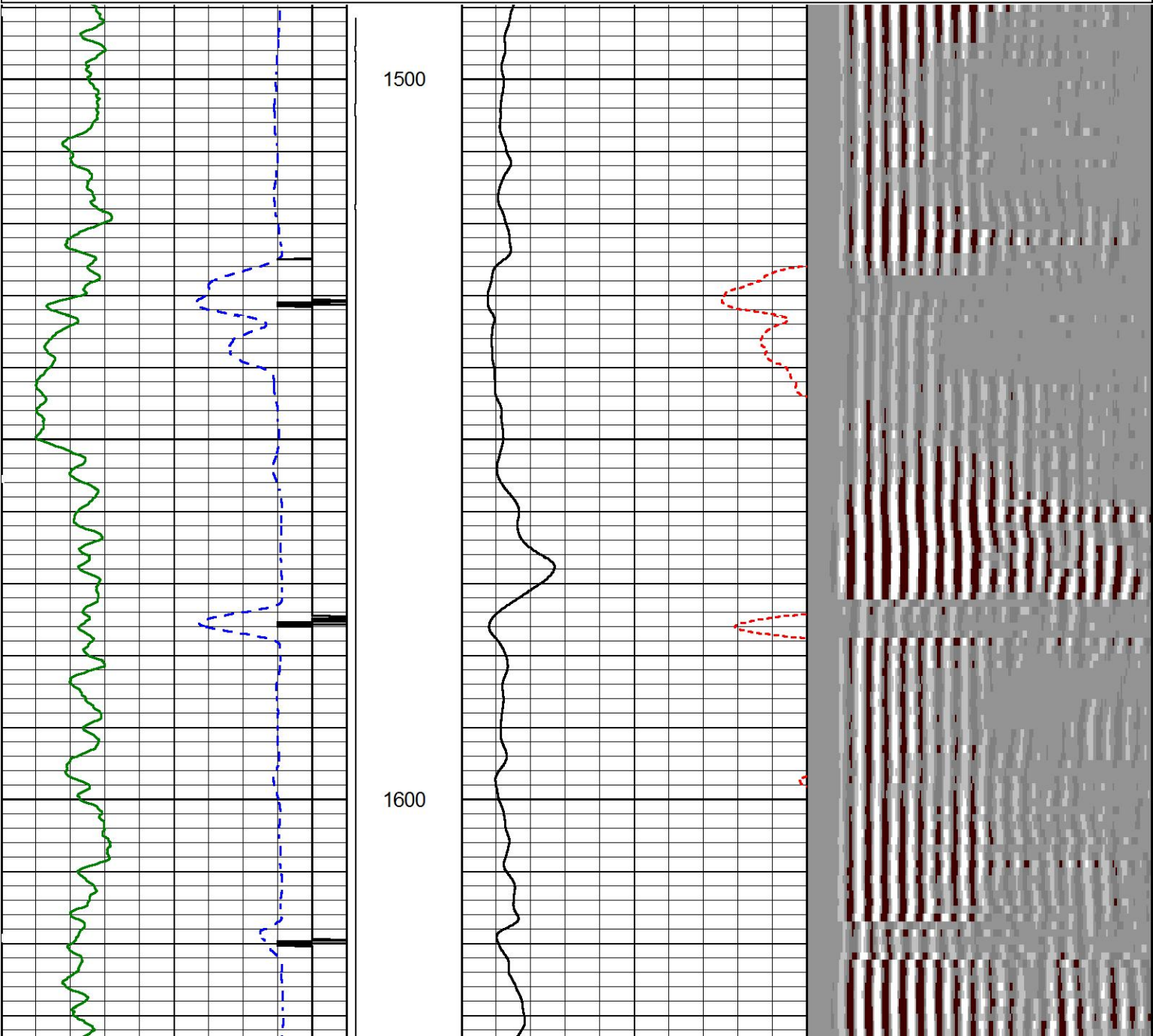
HALLIBURTON

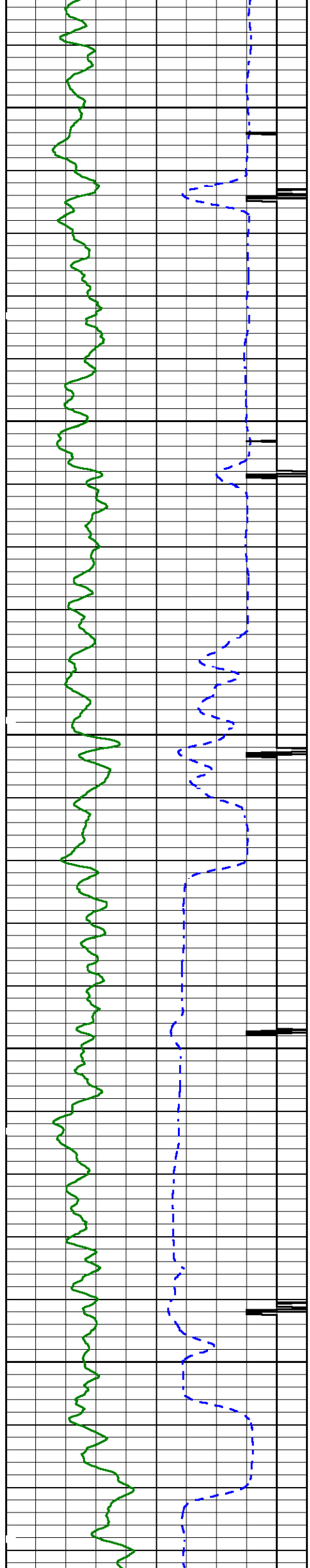
MAIN LOG SECTION

5" = 100'

Database File	bat_24c_cmb.db
Dataset Pathname	MAIN1
Presentation Format	hcbg
Dataset Creation	Fri Jun 19 14:36:45 2015
Charted by	Depth in Feet scaled 1:240

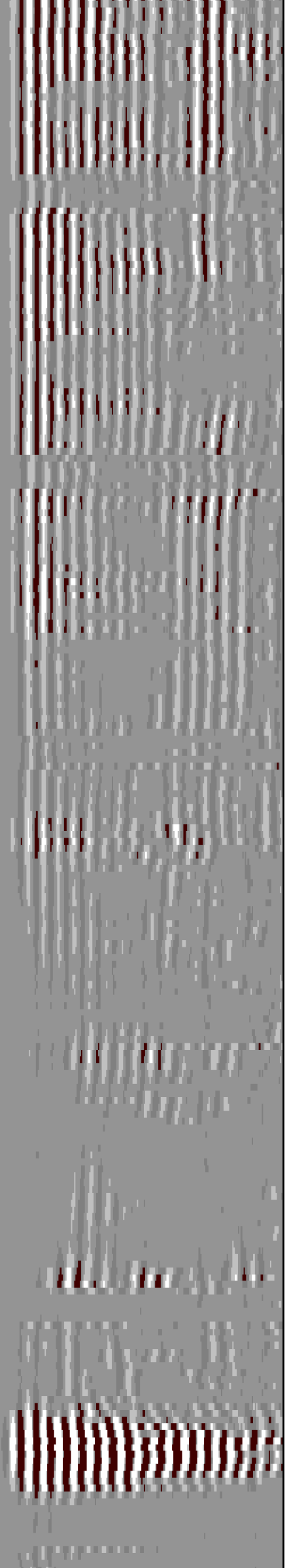
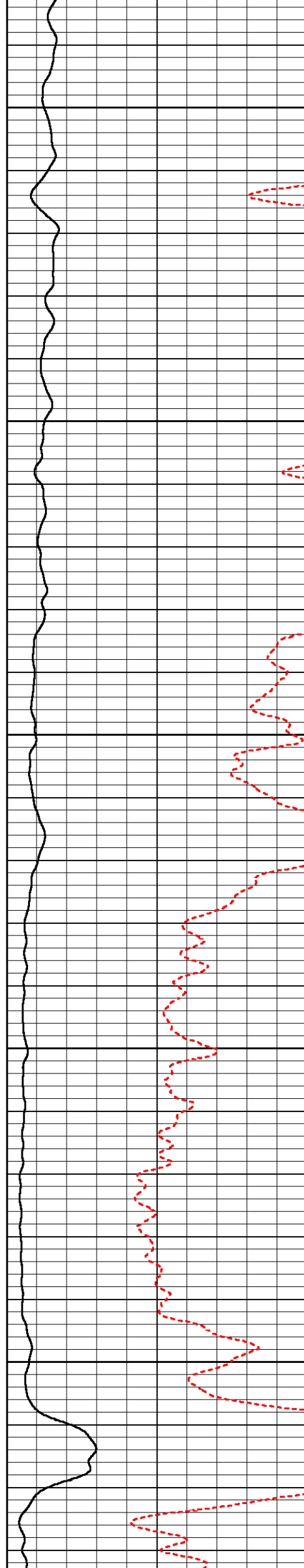
405	3' Travel Time (usec)	205	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	0	(lb)6000	0	3' Amplitude X5 (mV)	10		
0	GR (GAPI)	200							

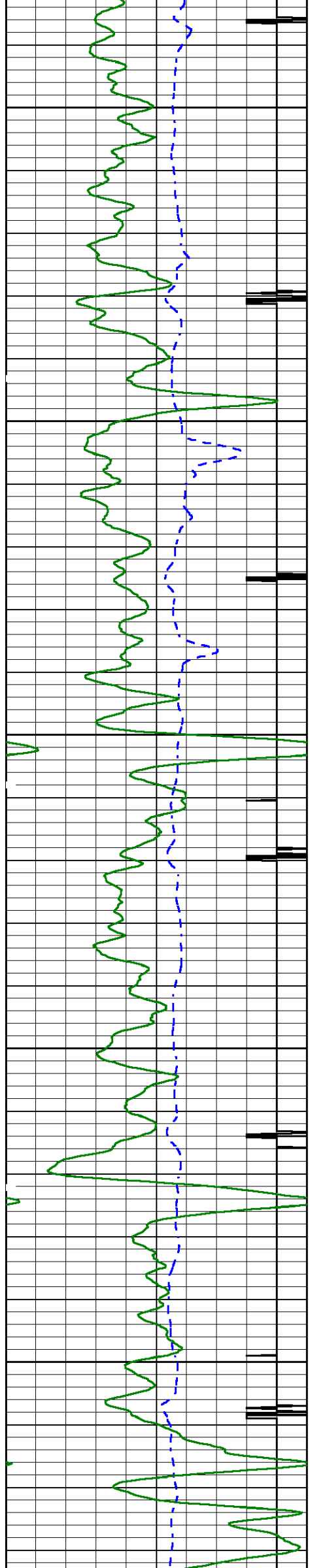




1700

1800

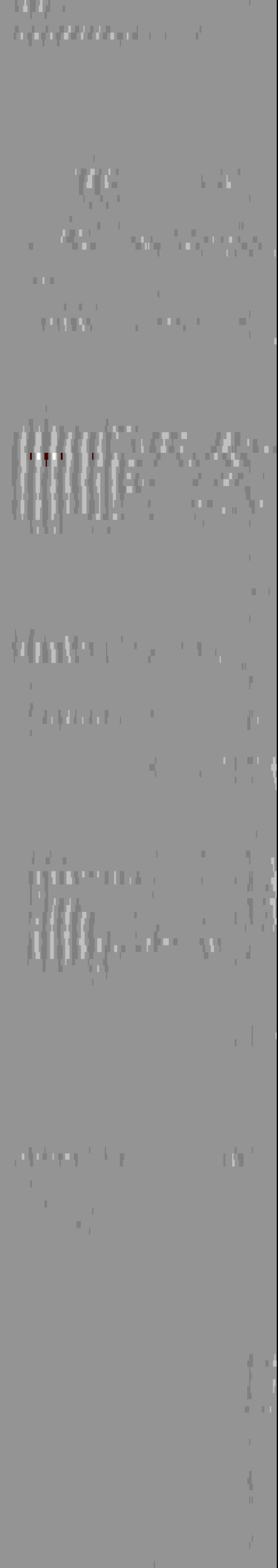
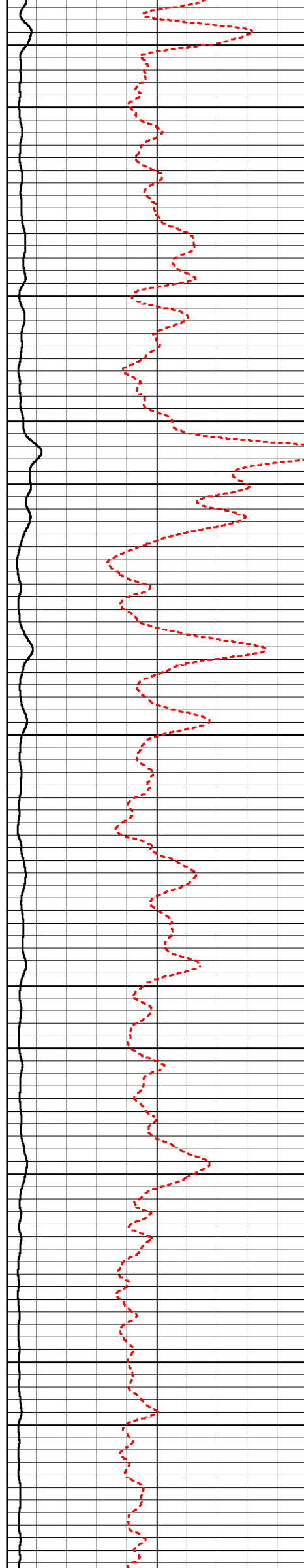


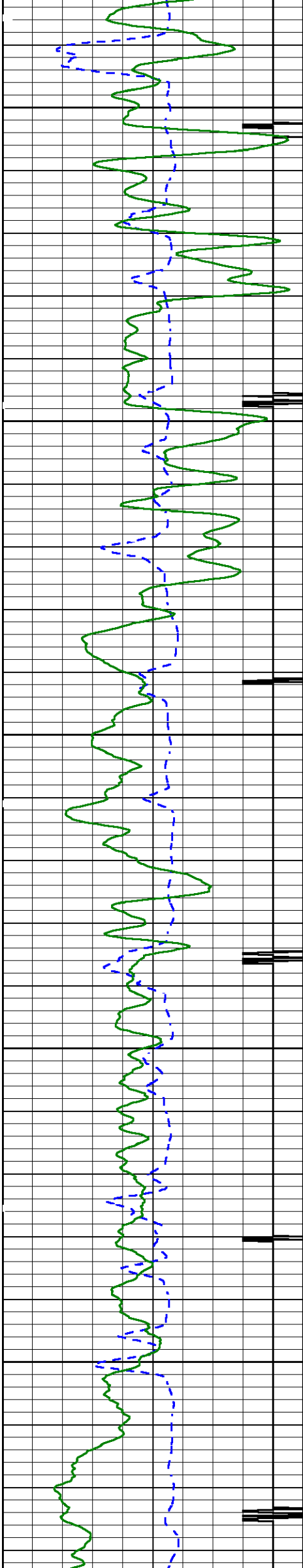


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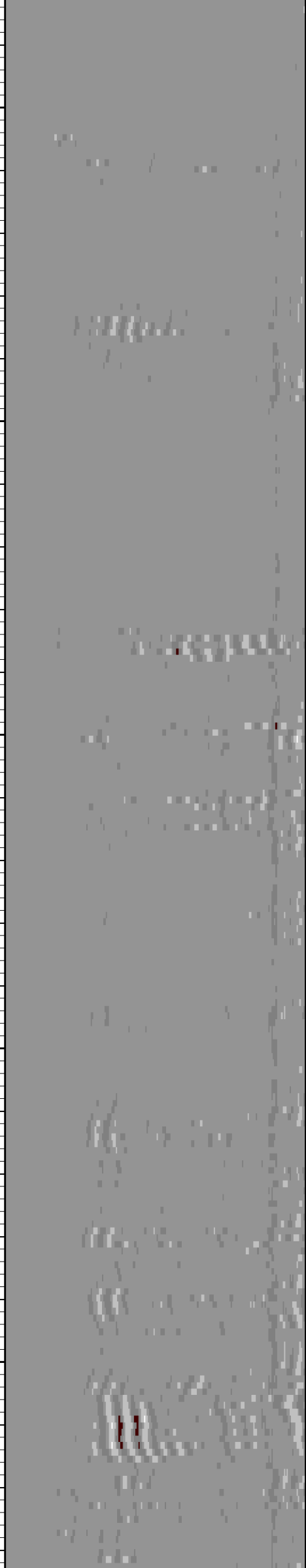
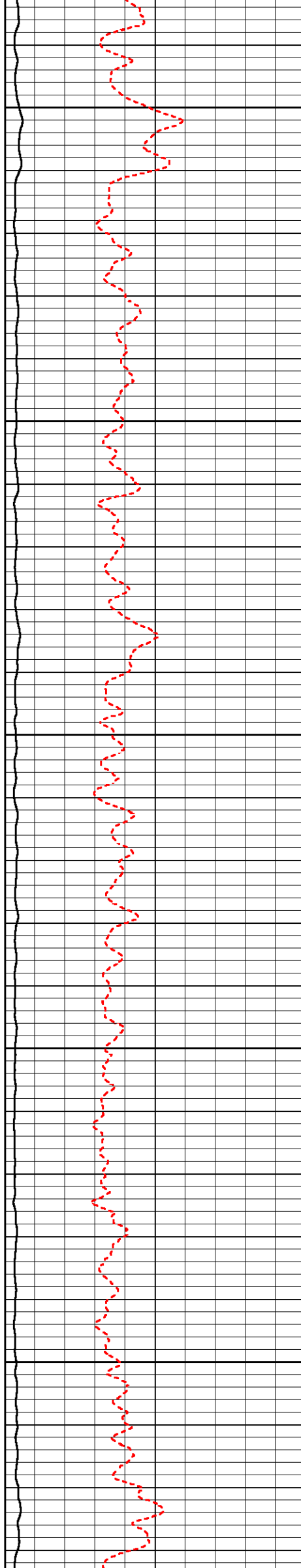
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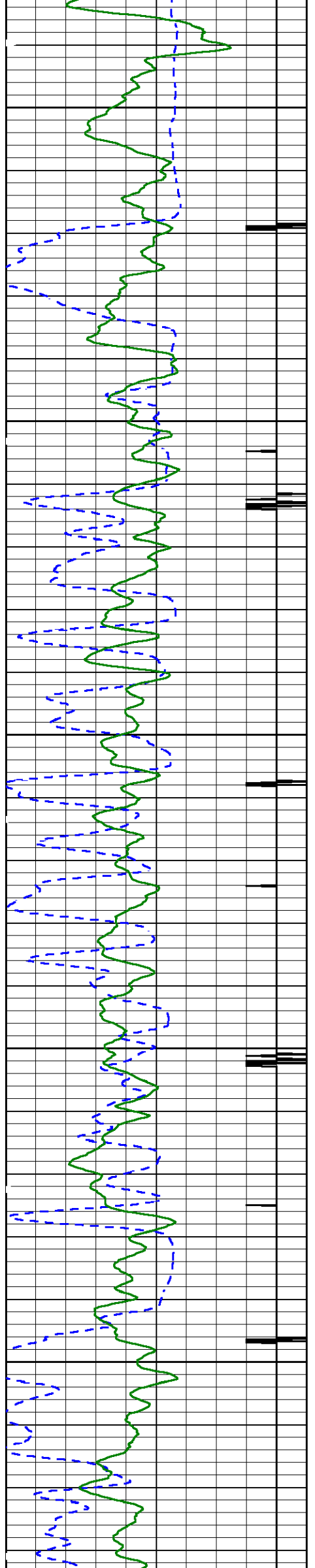




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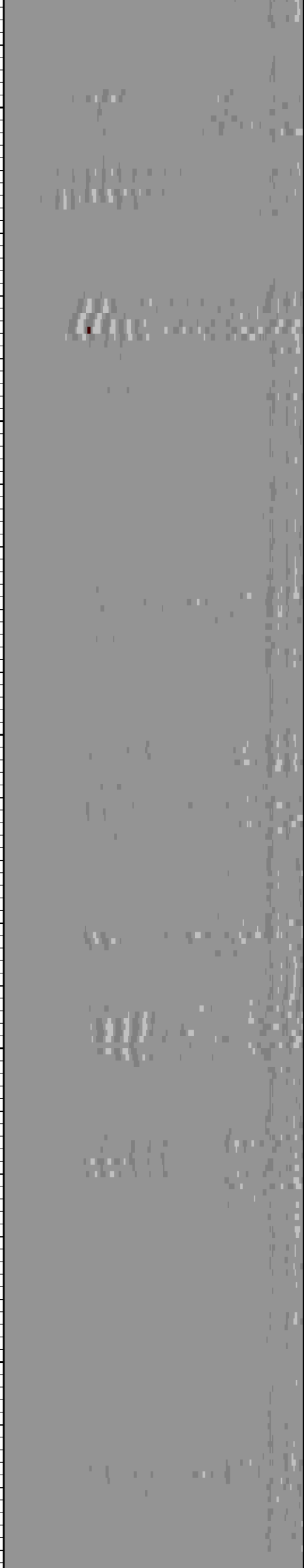
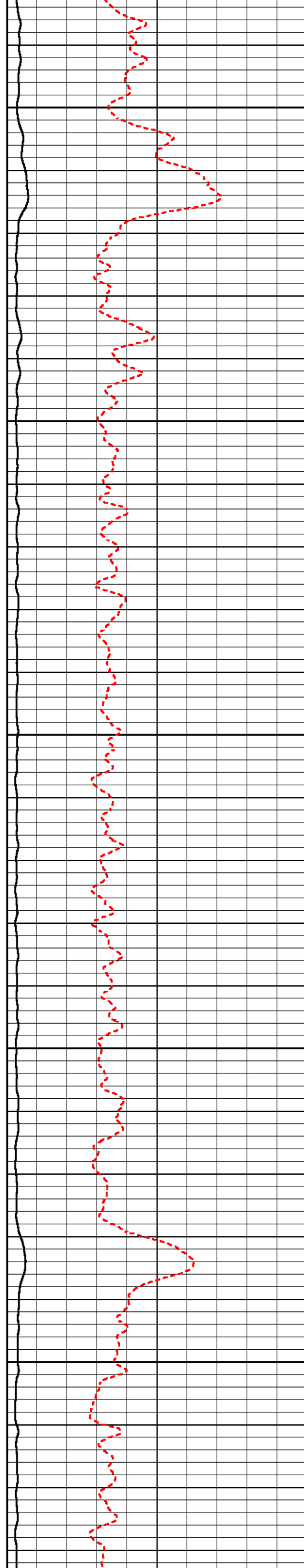


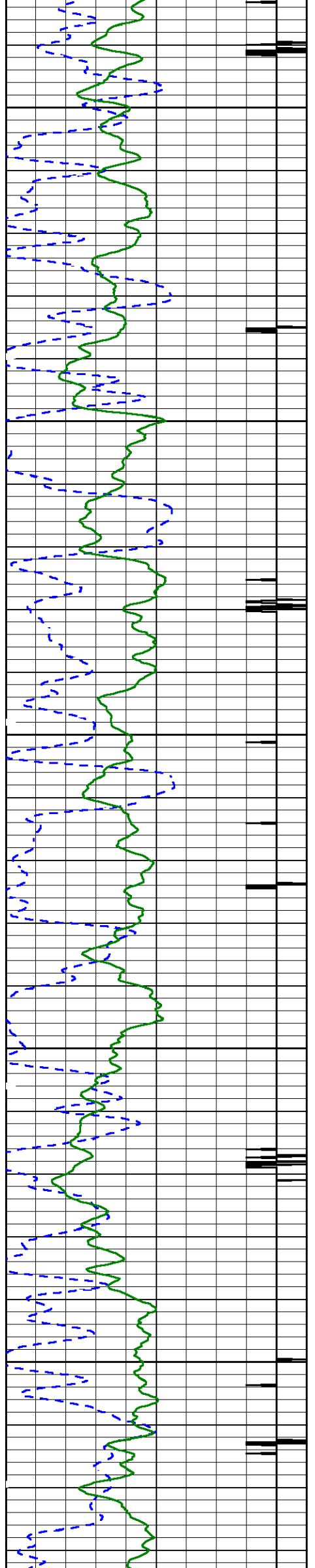


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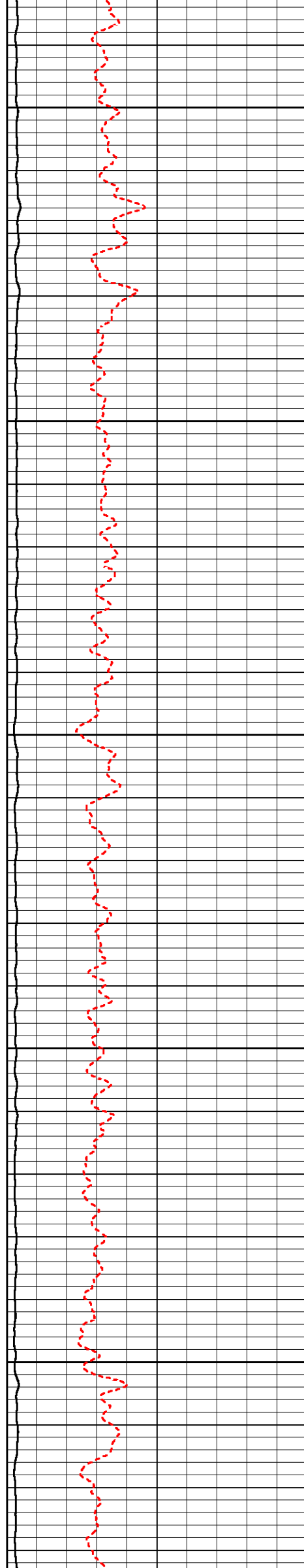
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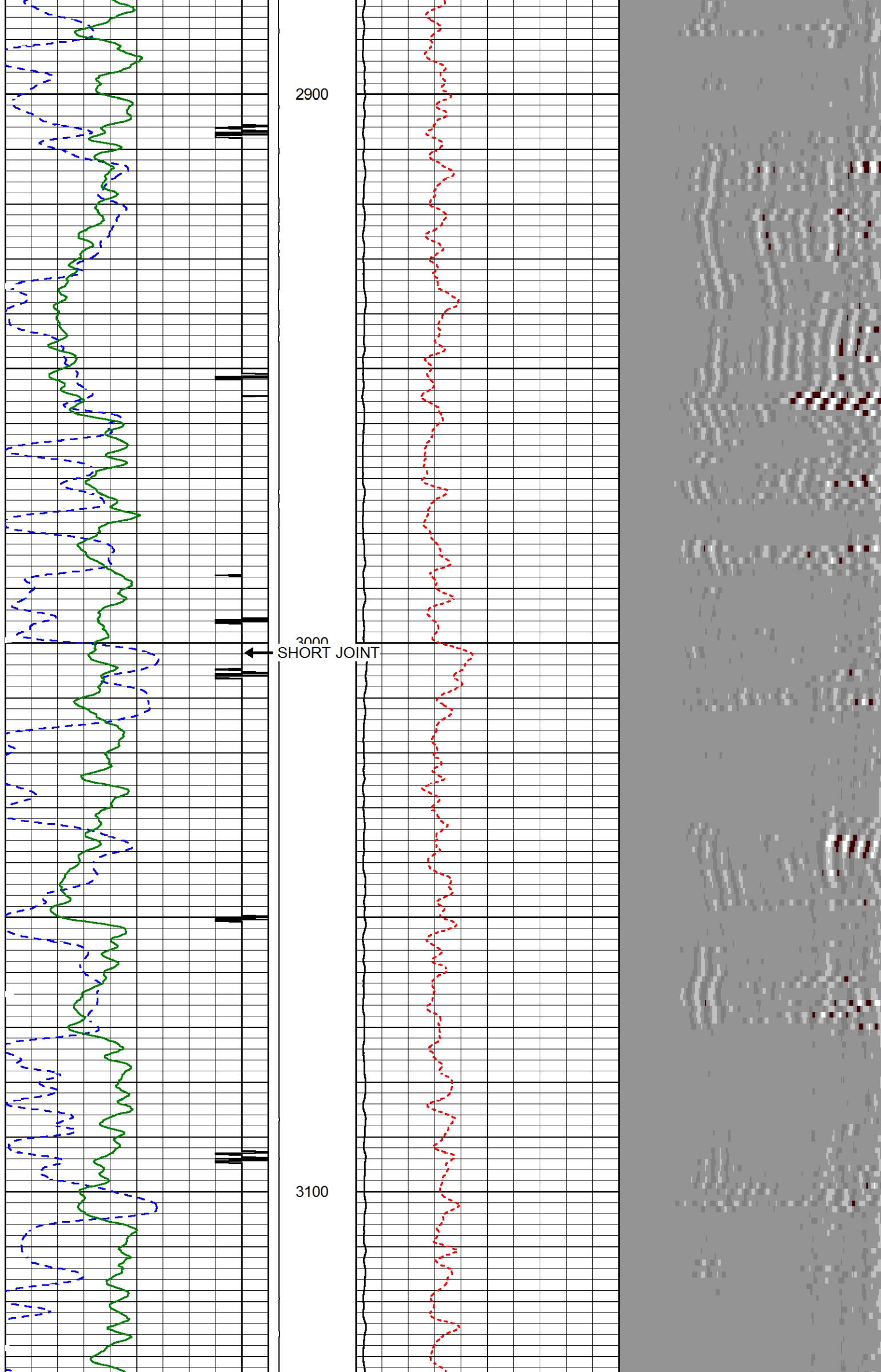


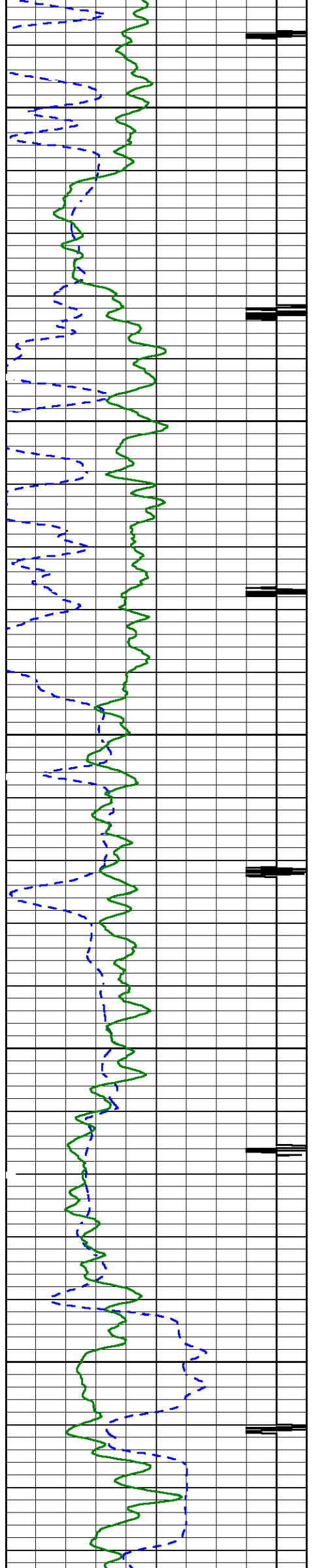


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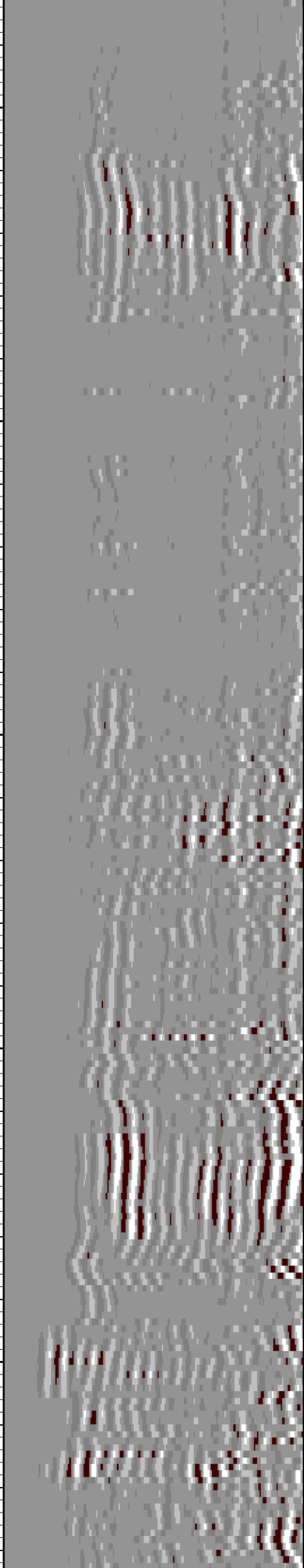
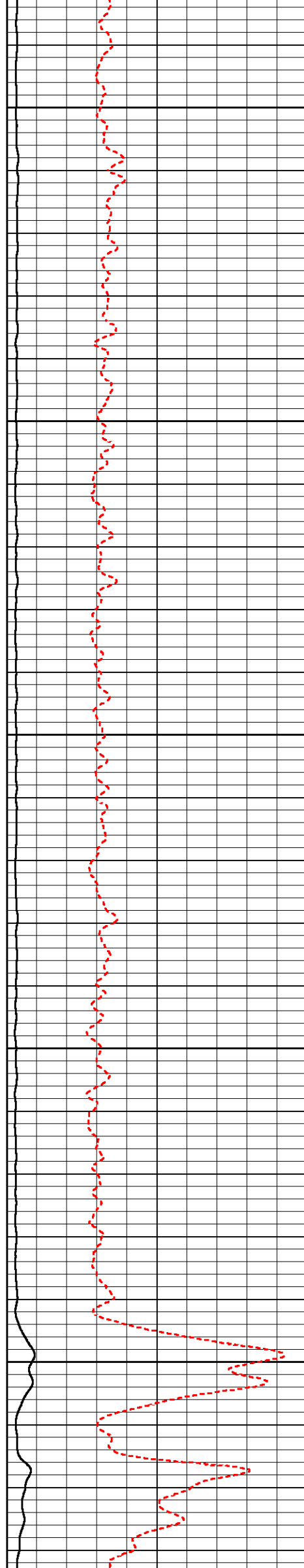


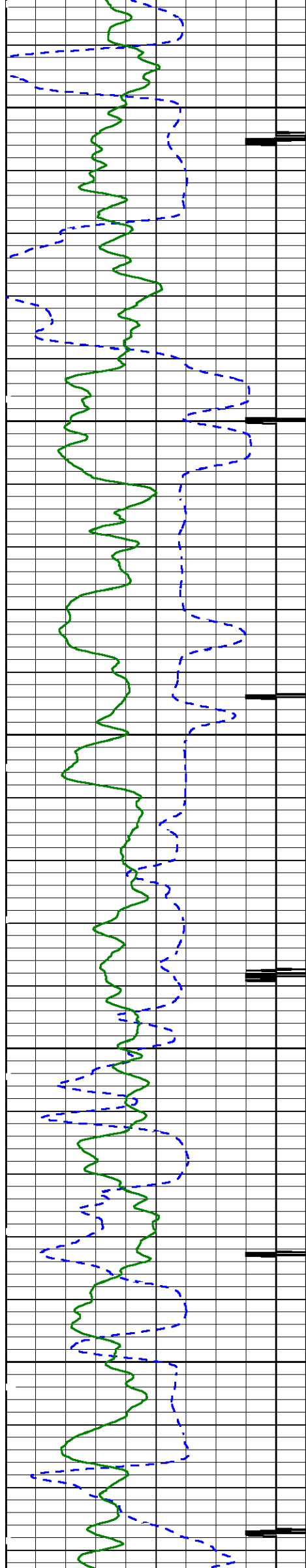




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3300

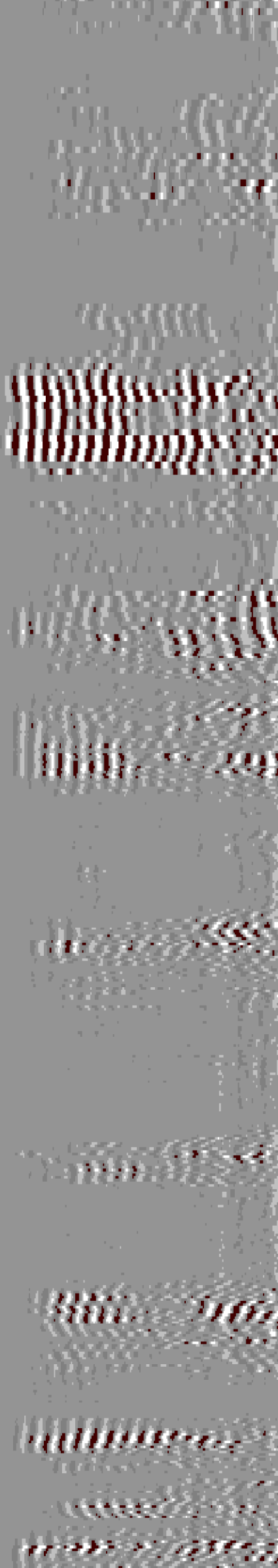
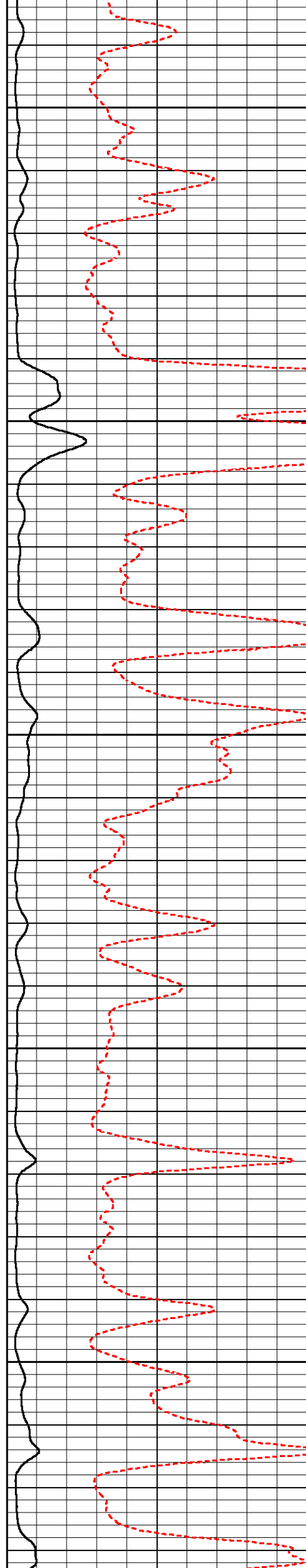


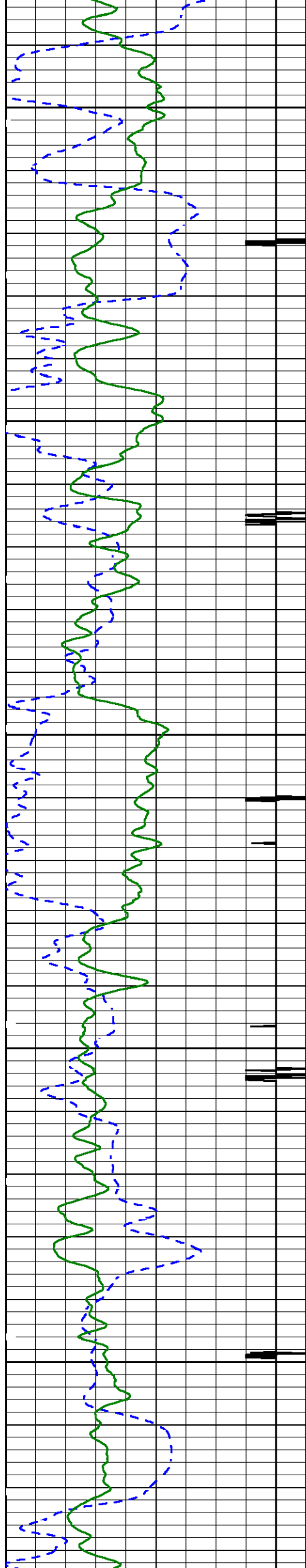


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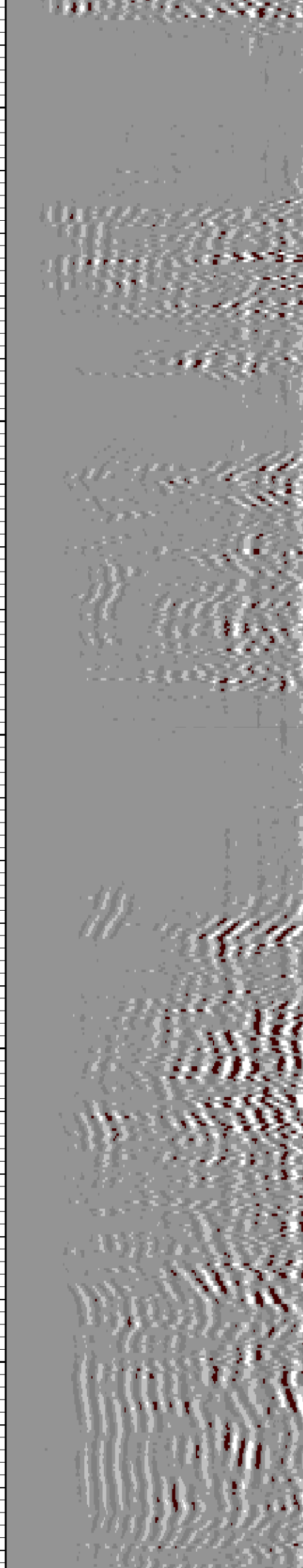
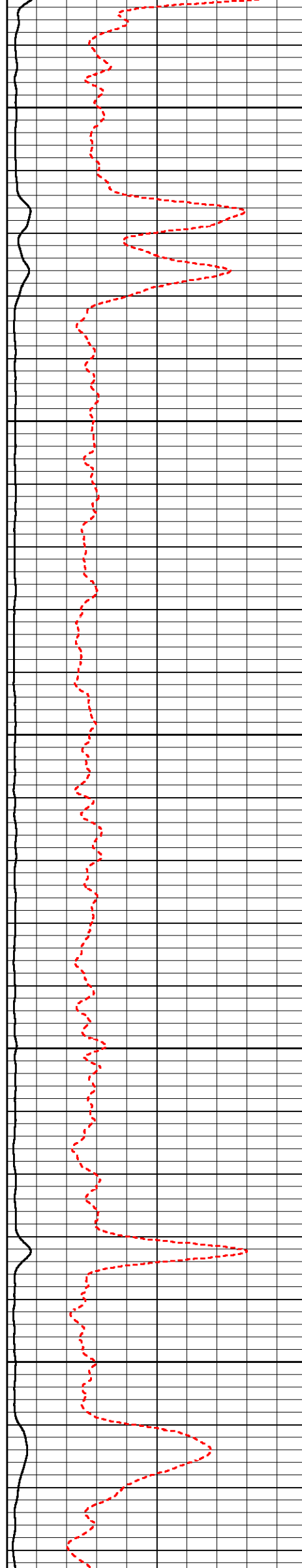
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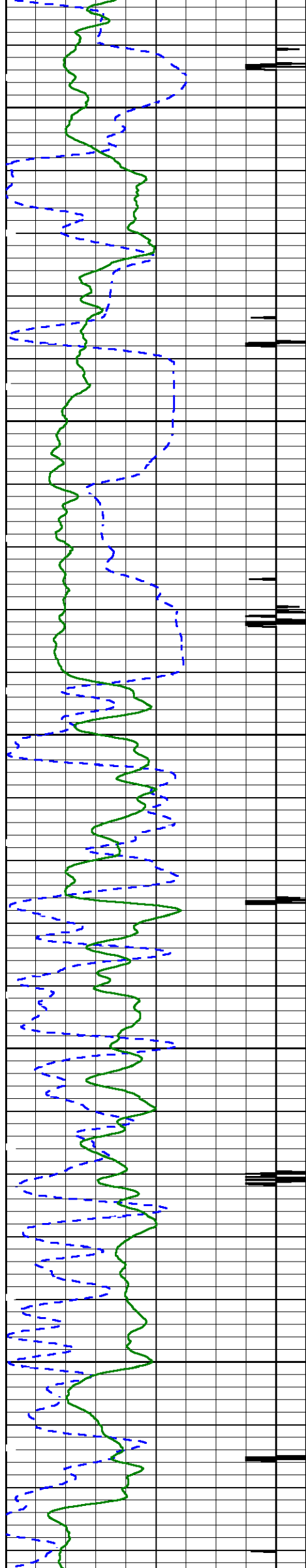




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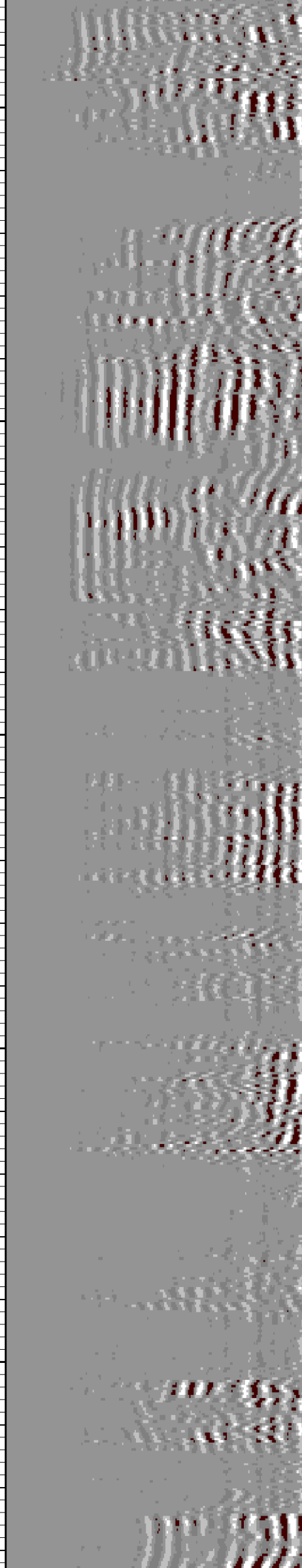
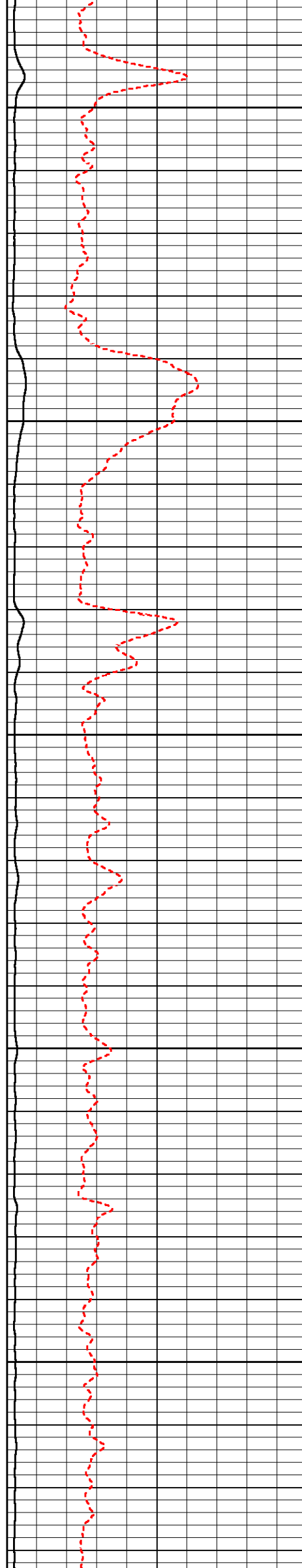


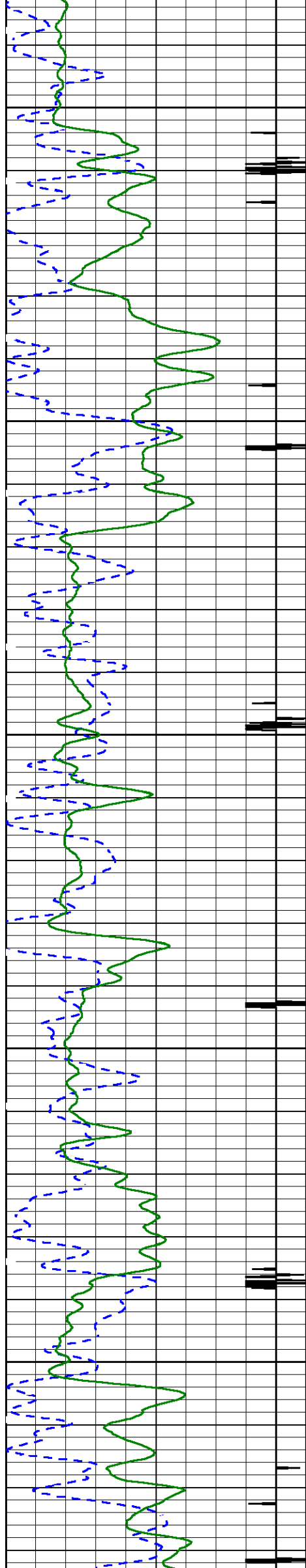


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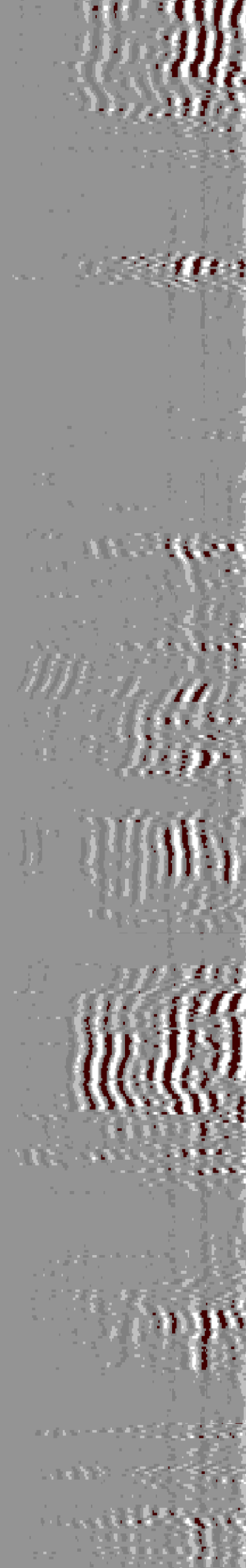
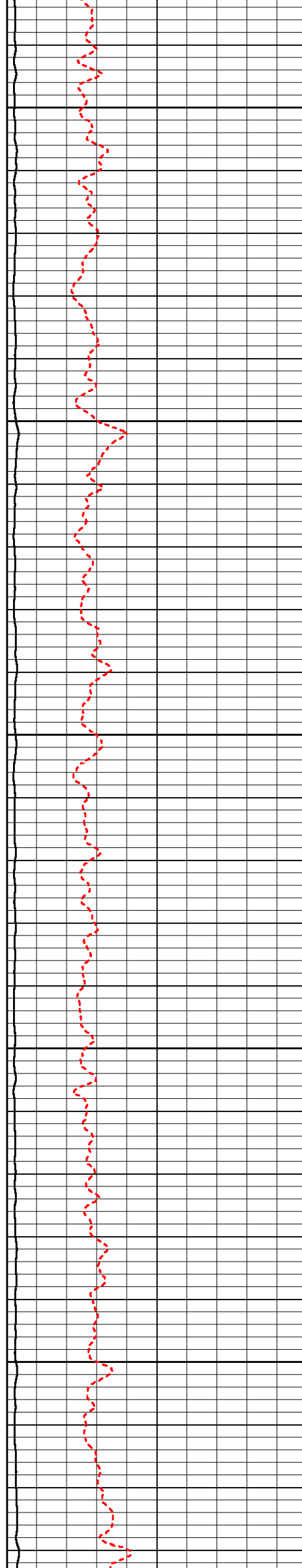
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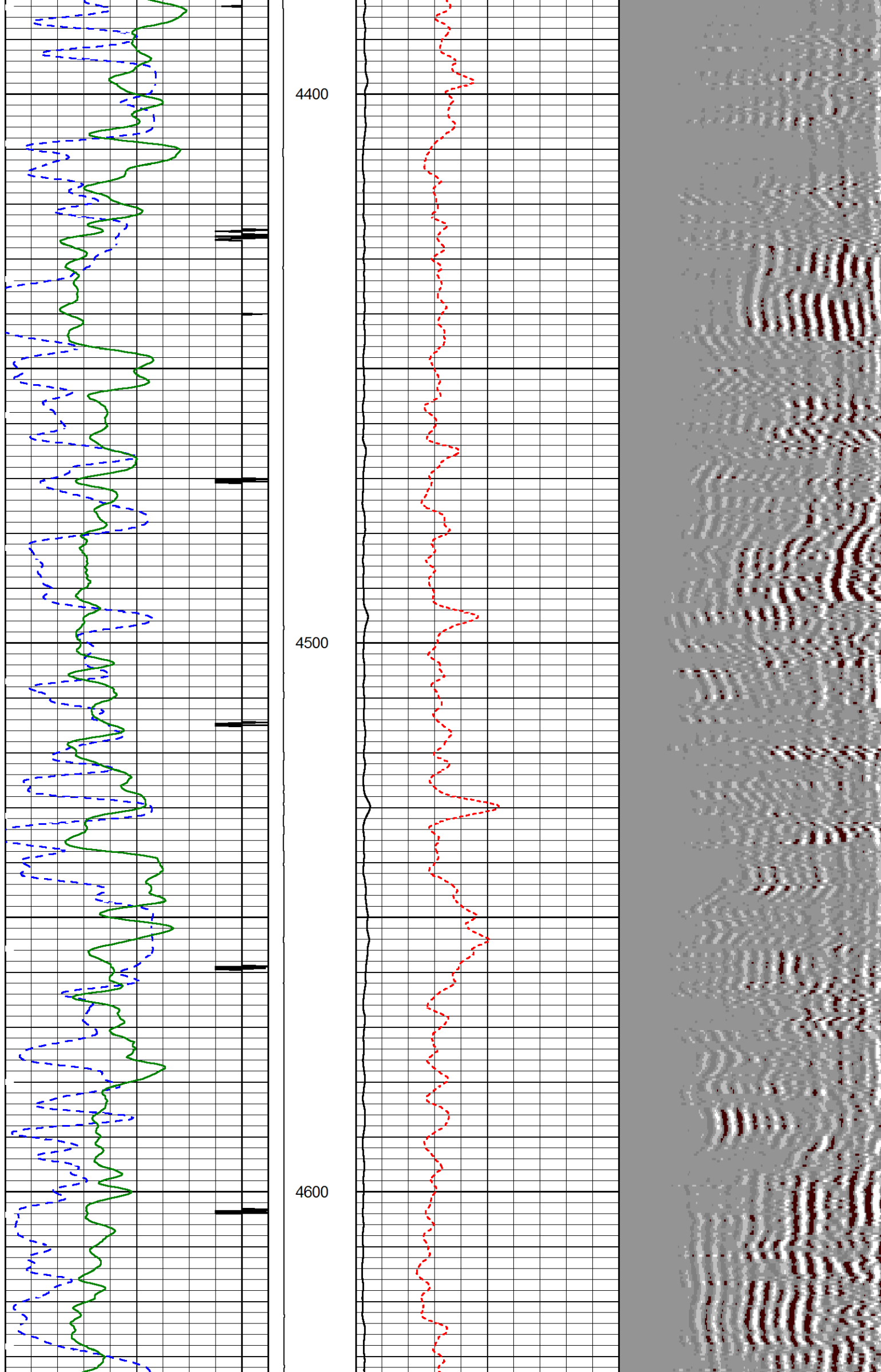


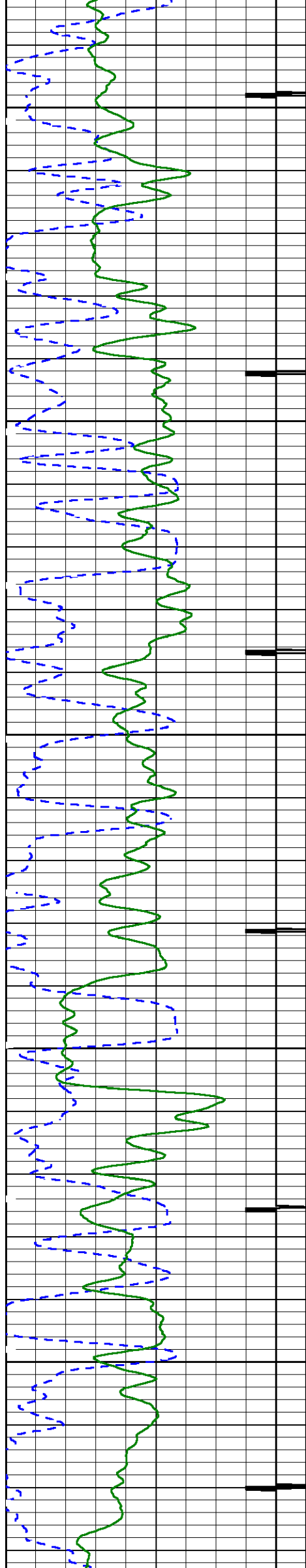


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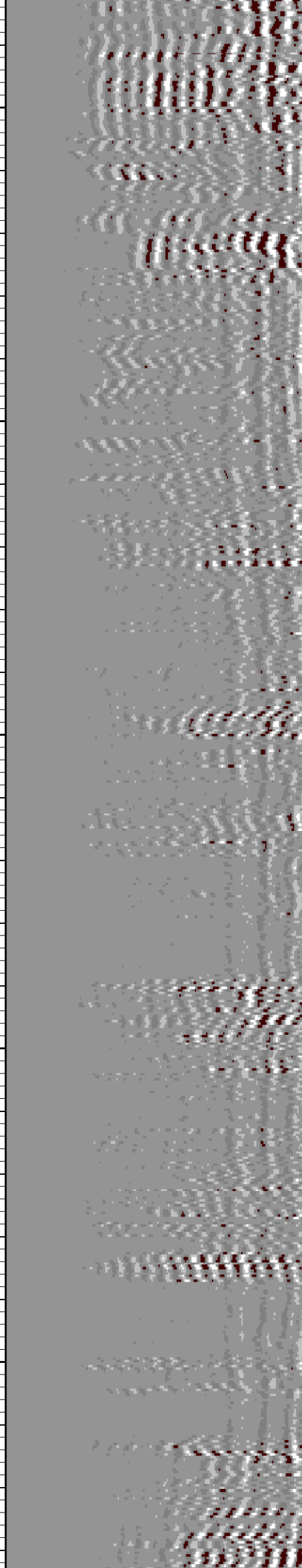
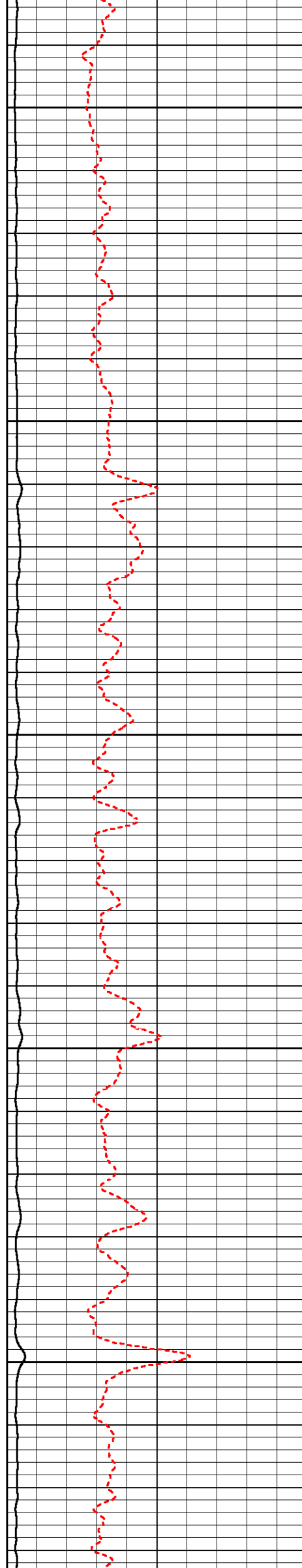


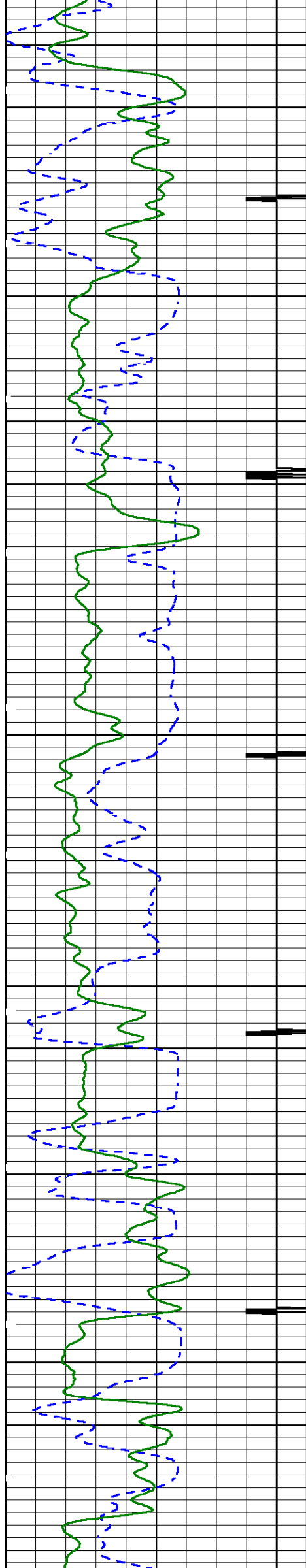




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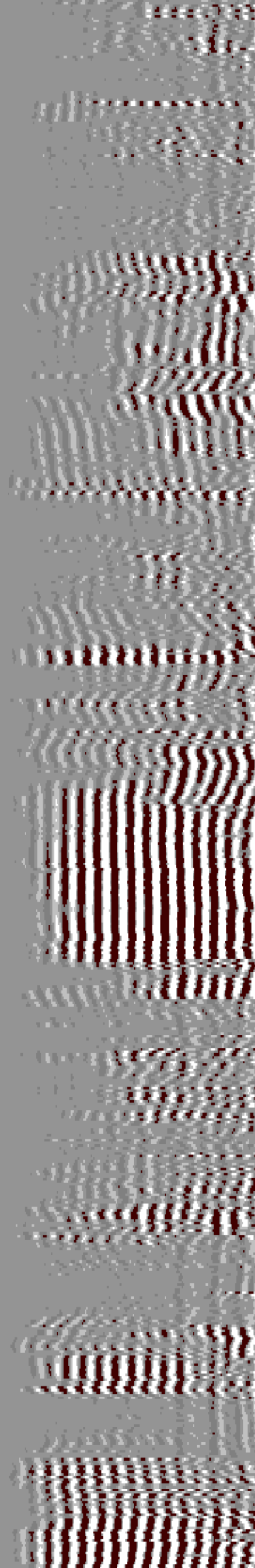
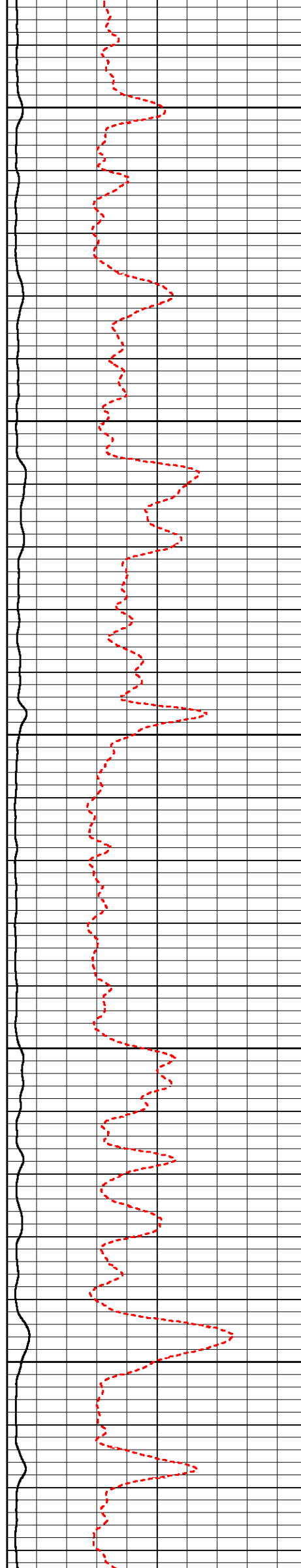


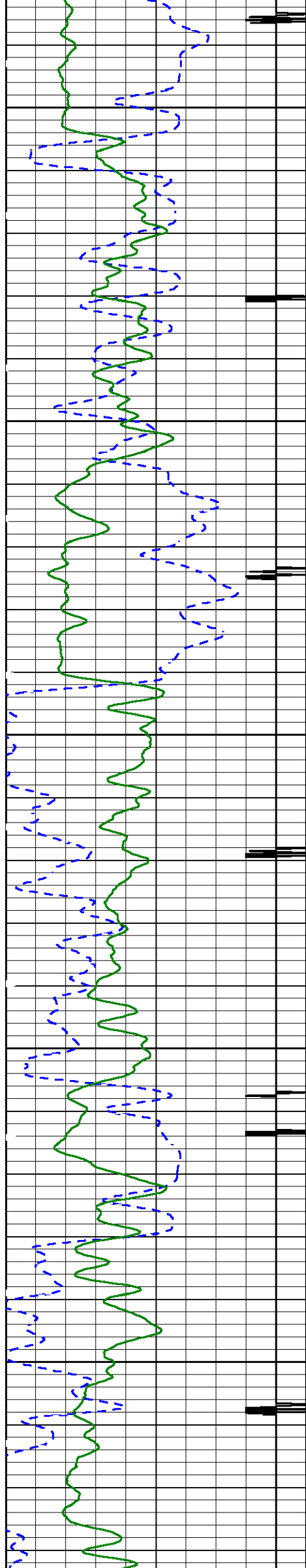


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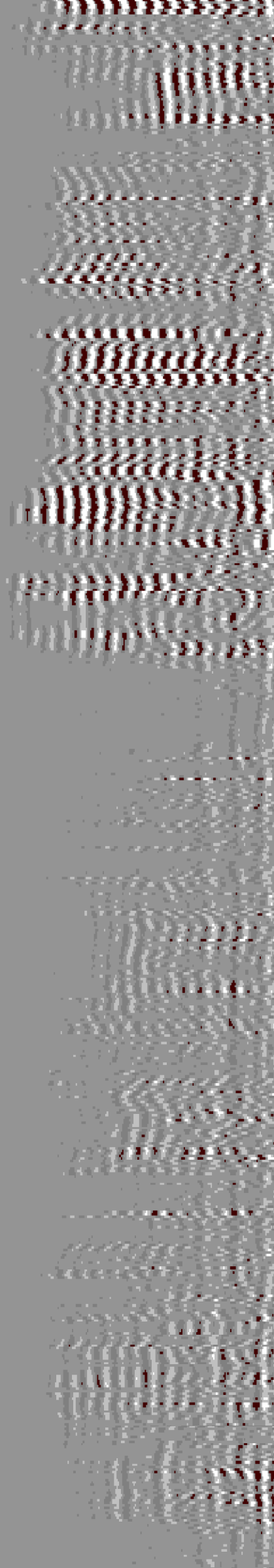
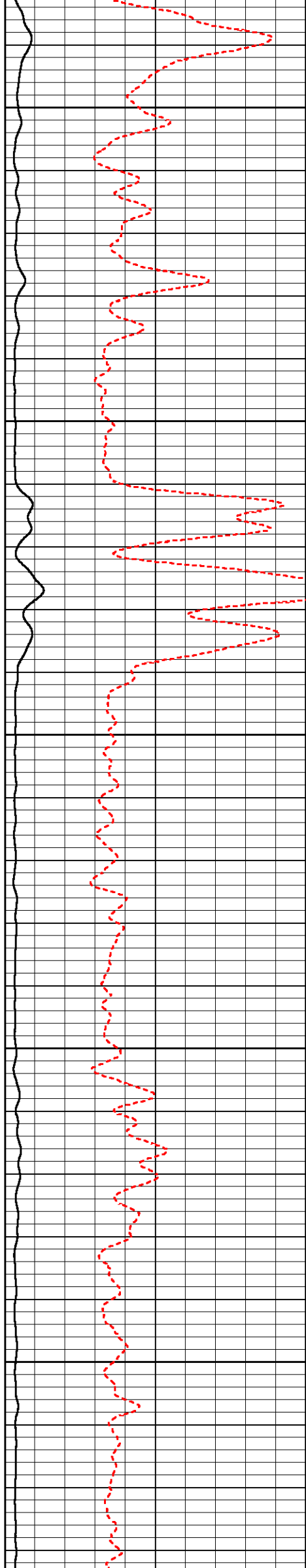
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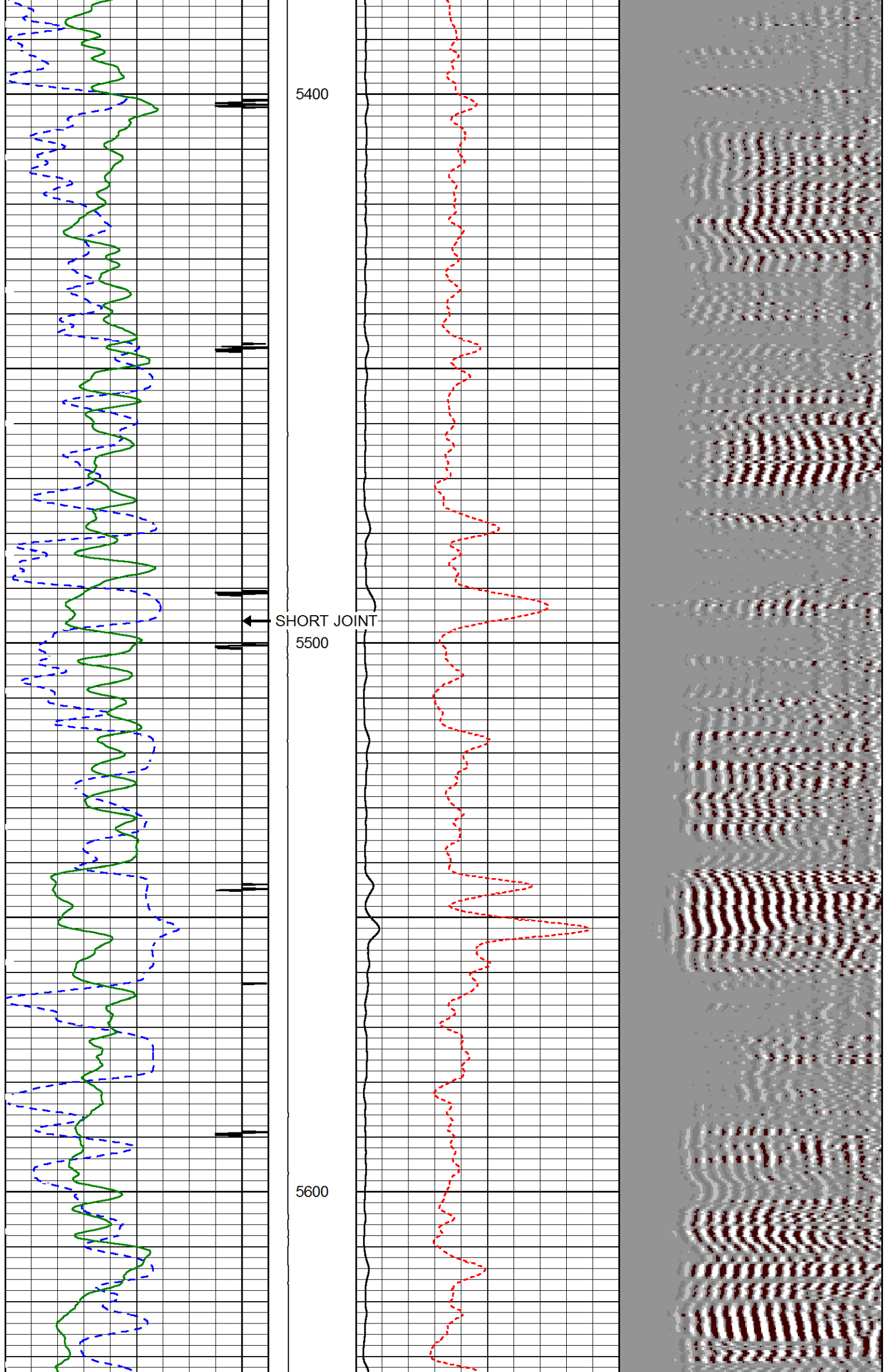


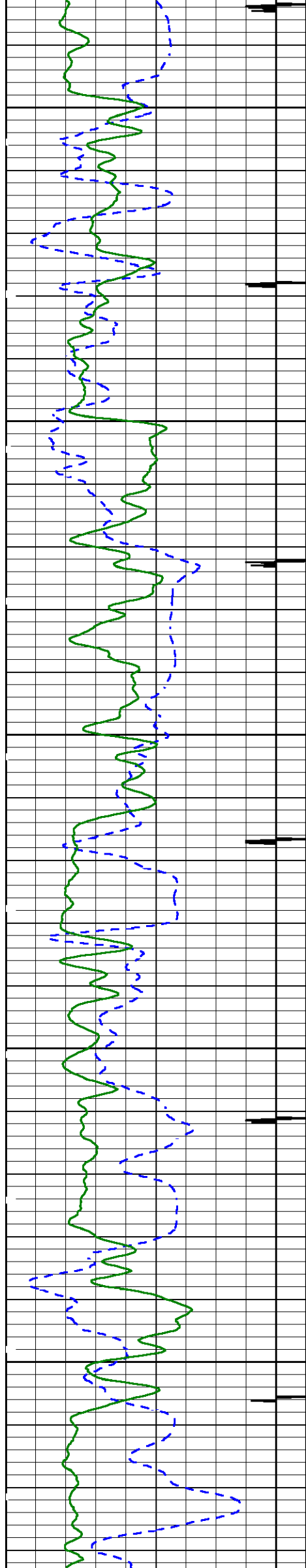


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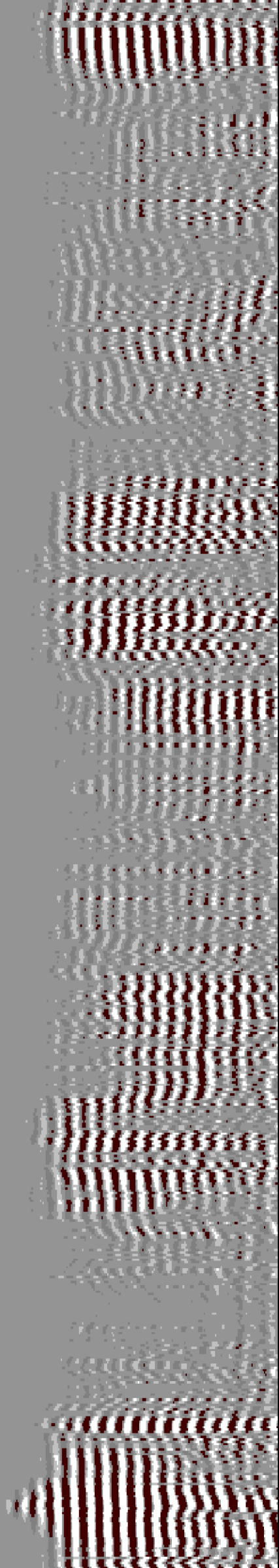
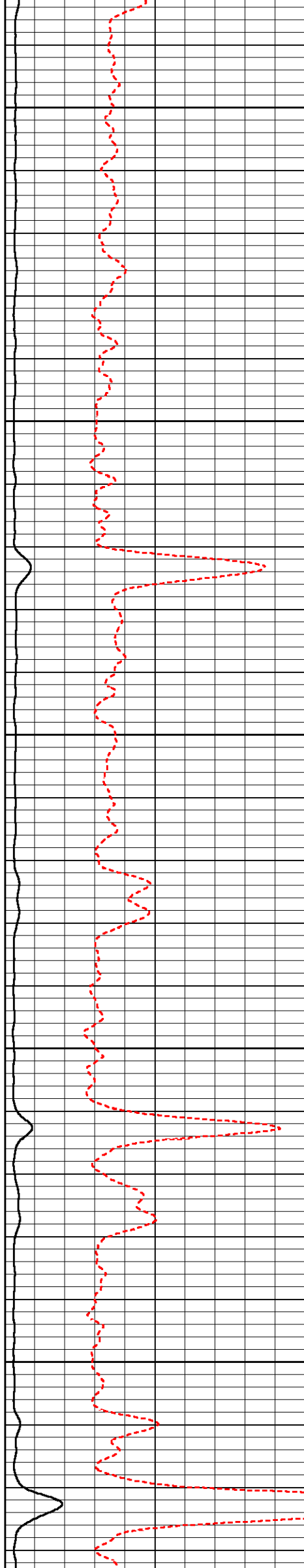


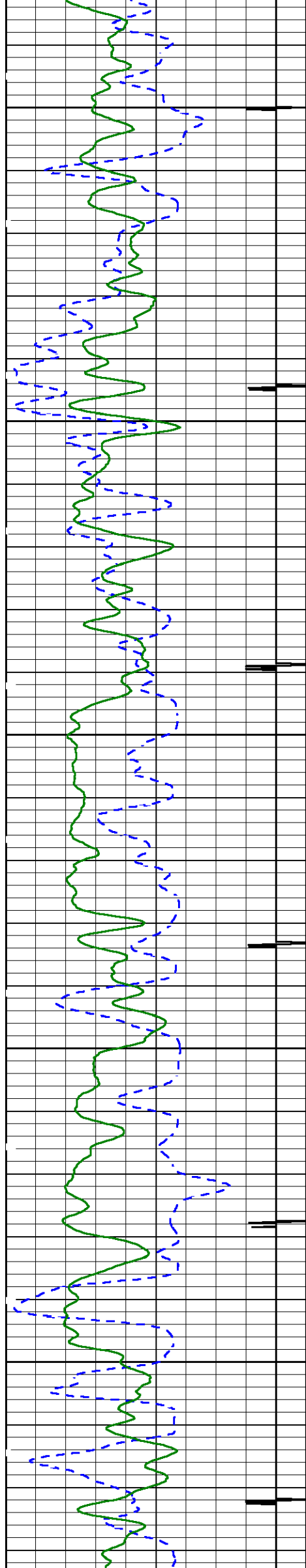




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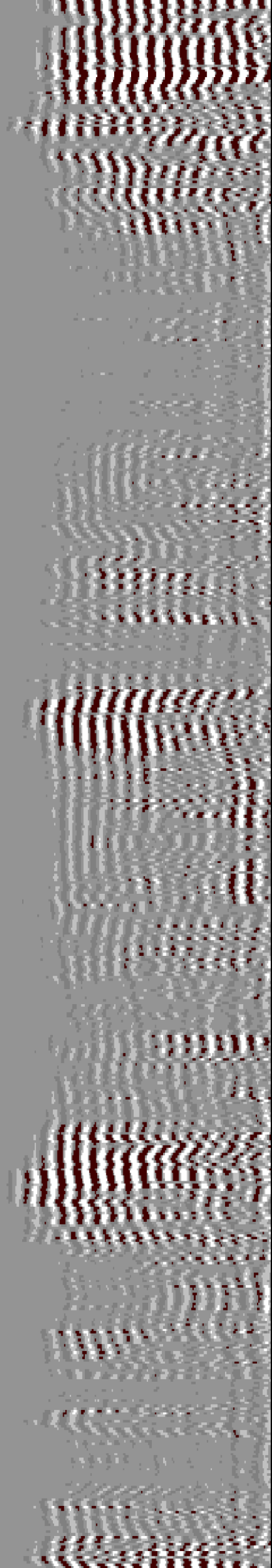
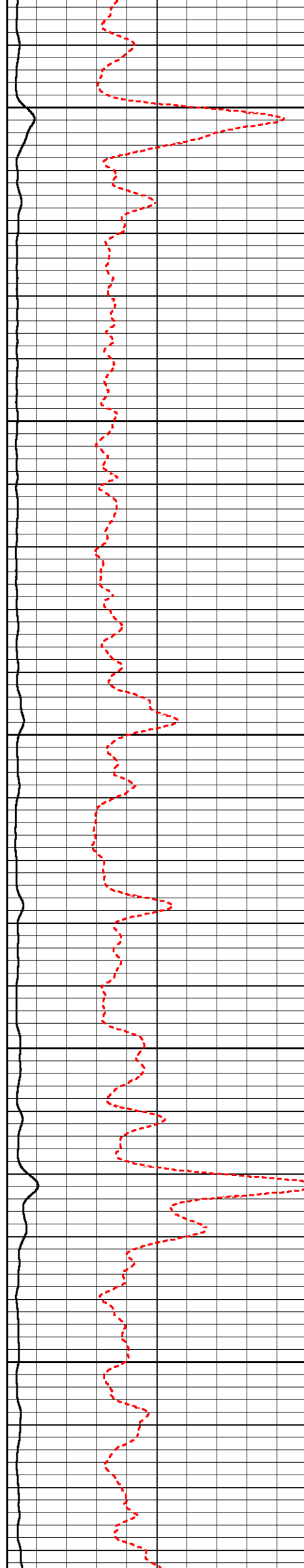


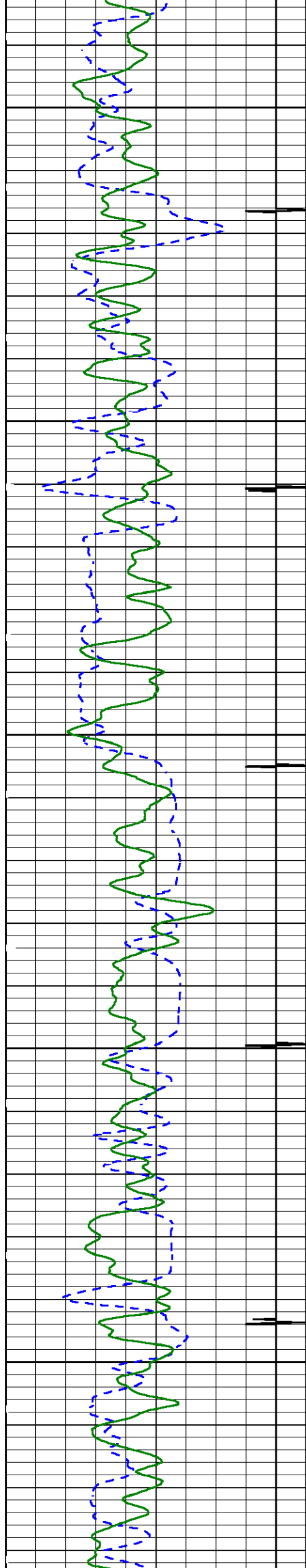


5900

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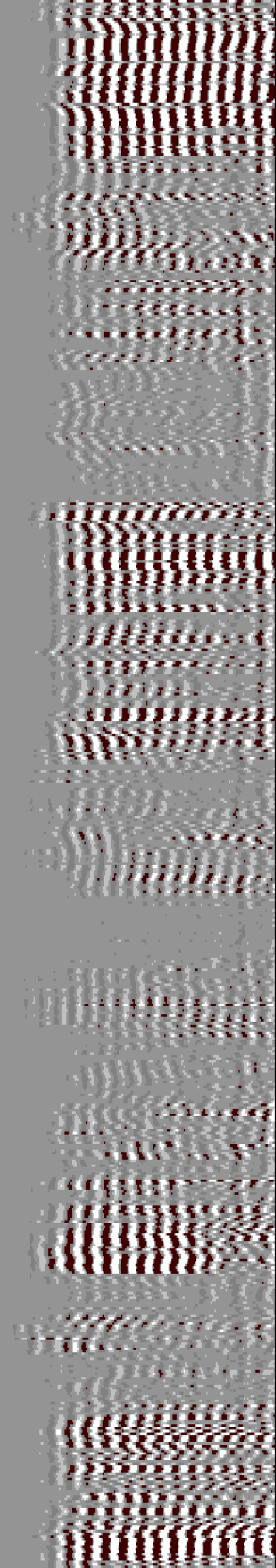
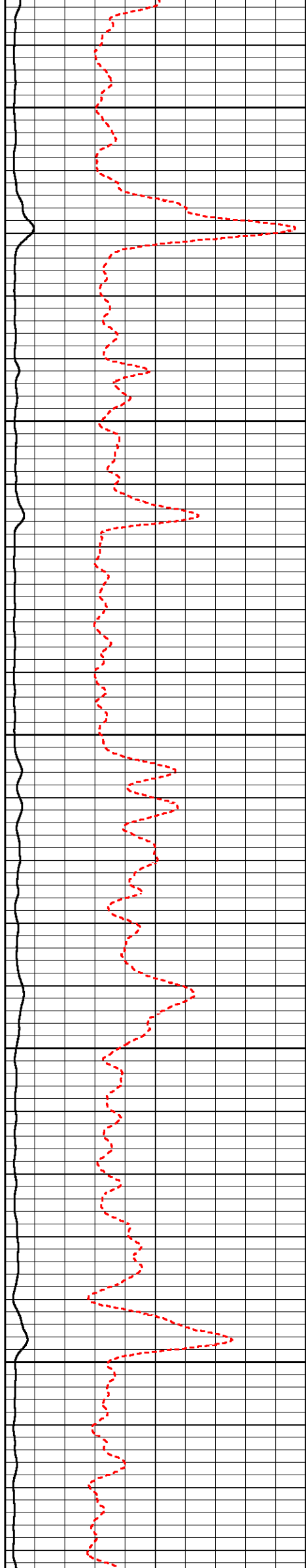
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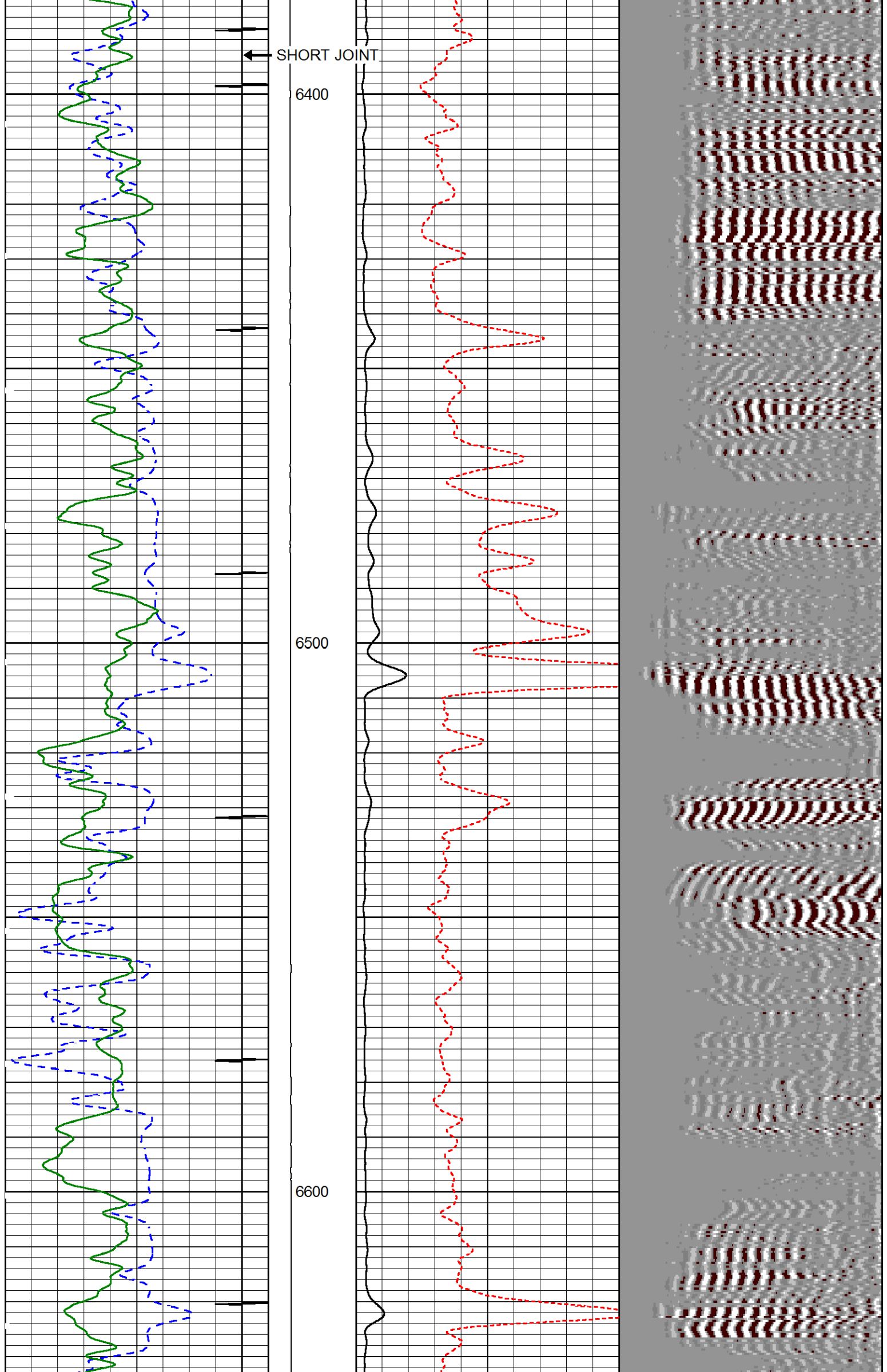


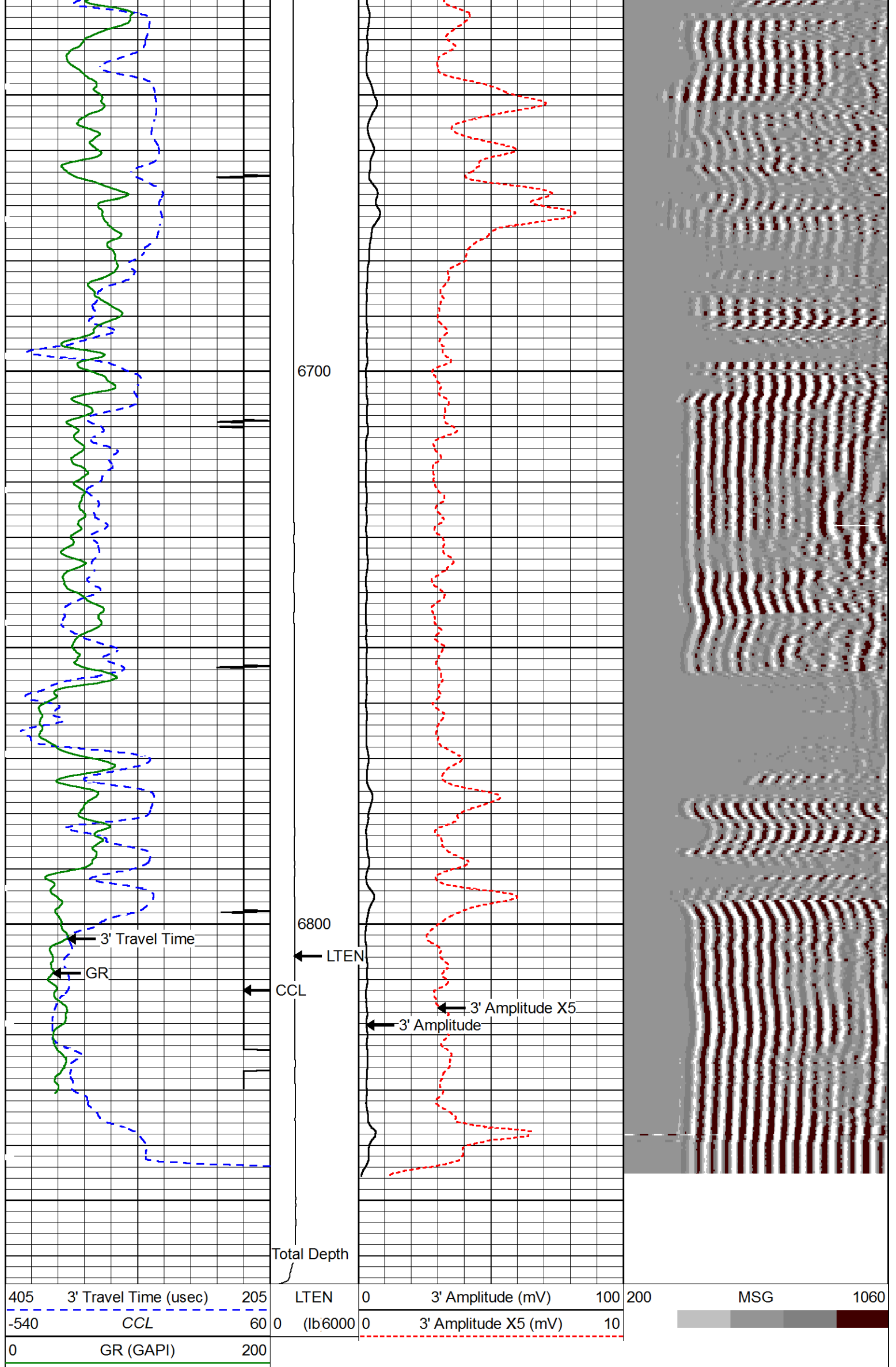


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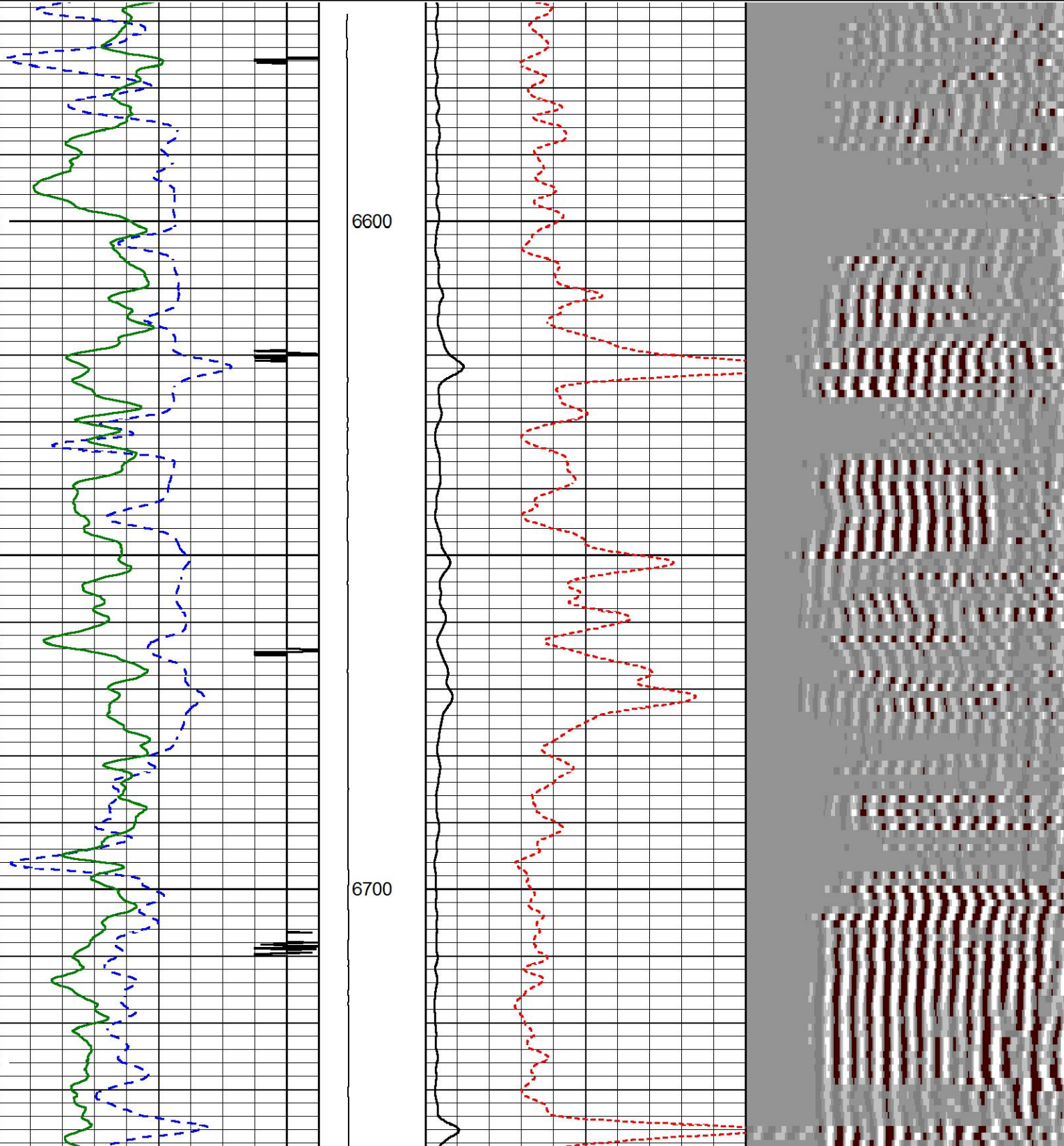


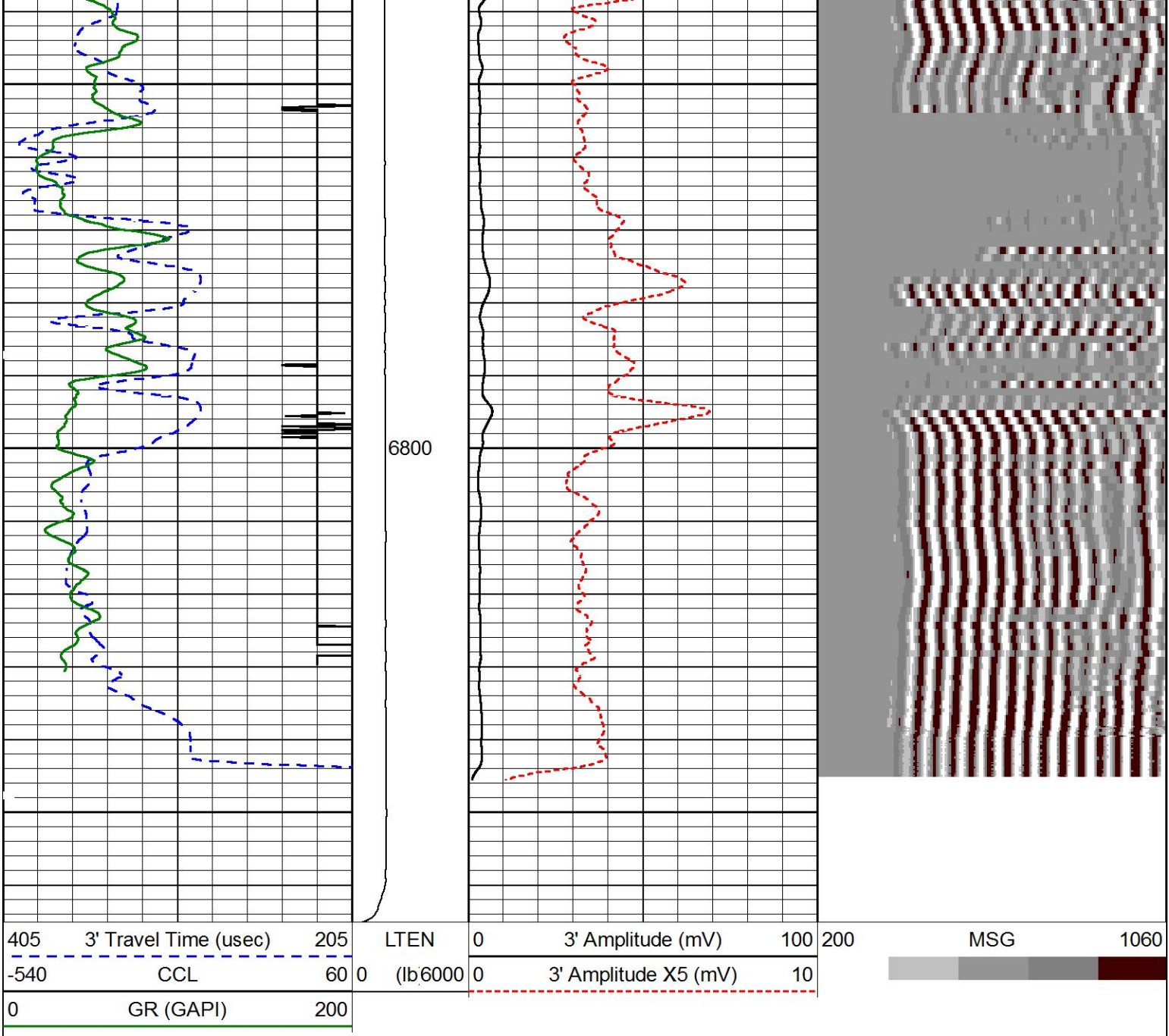




Database File bat_24c_cmb.db
Dataset Pathname CBLRPT1
Presentation Format hcbtg
Dataset Creation Fri Jun 19 14:24:25 2015
Charted by Depth in Feet scaled 1:240

405	3' Travel Time (usec)	205	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	0	(lb 6000)	0	3' Amplitude X5 (mV)	10		
0	GR (GAPI)	200							





REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

DatabaseD:\Warrior_data\bat_24c_cmb.db

Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	POROS2	POROS1	LTH	UHSGC	RHO�F
TEMP	0	1	0	1	Sandstone	NONE	0.25
SO in 0	BORSAL kppm 150	CASED? Yes	MSGGN 1	USERFTT uSec/ft 0	ZREF MRayl 1.7	CASEWGHT lb/ft 11.6	SRFTEMP degF 0
MudWgt lb/gal 804	CASETHCK in 0.25	CASEOD in 4.5	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BITSIZE in 7.875	

Calibration Report

Database File bat_24c_cmb.db
Dataset Pathname MAIN1
Dataset Creation Fri Jun 19 14:36:45 2015

Serial-Model:

12095949-A

Shop Calibration Performed:

Wed May 27 10:12:02 2015

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
ITCR2	3281	3250	31	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0270	5.32	<6.00
Fe	207	206 +/-2	0.0961	-----	-----
NGAIN = 0.993	NZOFF = 0.7				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0360	5.72	<6.50
Fe	209	208 +/-2	0.0918	-----	-----
FGAIN = 0.991	FZOFF = 0.5				

Flask Temperature 63.5 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.65	1.64	0.01	+/-0.05	
TCCR2	5061	5000	61	+/-1000	cps
ITCR2	3240	3200	40	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
FCAP	10080	10000	80	+/-500	cps


Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.91	0.95	-0.04		
N/F Inel Norm	0.58	0.61	-0.03		
RNF	1.10	1.07	0.03	+/-0.12	
RINC	1.71	1.64	0.07	+/-0.18	
SGFN	24.09	24.00	0.09	+/-0.50	cu
SGFF	22.90	22.85	0.05	+/-0.50	cu
FSIN	24192	24000	192	+/-2000	cps
FCAP	10177	10000	177	+/-1000	cps
NFTR	0.84			<5.00	
FFTR	0.88			<5.00	
NBKG	179			<500	cps
FBKG	93			<500	cps
RTN	0.40	0.40	0.00	+/-0.10	usec
RTF	0.43	0.40	0.03	+/-0.10	usec

Calibration Software Modules

HRMTI Module	2013.11.14.0
RMTI Module	2014.8.28.1

Log Data Acquisition Software Modules	
HRMTI Module RMTI Module	2013.11.14.0 2014.8.28.1
Cement Bond Log Shop Calibration Report	
Serial-Model:	11817843-A
Calibration Performed:	Wed Jun 17 01:49:39 2015
Free Pipe Calibration	
TT	Measured 246.9 Units usec
Amplitude	574.2 mV
Log Base Line	-7.6 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	0.140
Gamma Ray Calibration Report	
Type / Serial:	002 / 11495480
SHOP CALIBRATION	Fri Jun 19 09:22:14 2015
Background	Counts/Sec. 38.3
Calibrator	331.7
	Gain 1.3904
	Offset
	Jig
	Units cps
	cps
	GAPI/cps
PRIMARY VERIFICATION	Fri Jun 19 09:24:24 2015
Background	51.8
Calibrator	462.0
Difference	
	410.2
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	35.09		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
			TTTCU-002 (11495480) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
GR	32.83					

			XHU-003 (12461939) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Temp	23.11					
TT3FT	20.86		HCBLM-A (11817843) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	20.86					
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtTFGT	8.47					
RmtTNGT	7.97		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFP5V	0.22					
RmtCommFWar	0.22					
LOCTIM	0.00					
UTCTIM	0.00					
LLMTEN	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: bat_24c_cmb.db: field/well/run1/MAIN1 Total length: 38.66 ft Total weight: 352.20 lb O.D.: 3.13 in						

Company	URSA OPERATING CO., LLC.				
Well	BAT 24C-18-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	ACOUSTIC CEMENT BOND LOG				