

HALLIBURTON

ACOUSTIC CEMENT BOND LOG

Company URSA OPERATING CO, LLC
 Well WATSON RANCH B 34C-17-07-95
 Field PARACHUTE
 County GARFIELD State CO

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 County GARFIELD State CO

Sec: 17 Twp: 07S Rge: 95W

GROUND LEVEL Elevation 5585 ft
 KB , 17 ft. Ft. above perm. datum
 KB

Elevation
 K.B. 5602 ft
 D.F. 5601 ft
 G.L. 5585 ft

Other Services
 RMT
 JB/GR

Permanent Datum		03 JUNE 2015		Type Fluid in Hole		WATER	
Log Measured From		ONE		Density of Fluid		8.4 ppg	
Drilling Measured From		7002'		Fluid Level		FULL	
Date @ Time Logged		6722'		Cement Top Est. Logged		SEE LOG	
Depth - Driller		6722'		Equipment / Location		11698439 / GJ, CO	
Depth - Logger		1500'		Recorded by		P. DIMPFL	
Bottom - Logged Interval		175.0 degF		Witnessed by		R. TOLLE	
Top - Log Interval		Surface		Protection		Liner	
Max. Recorded Temp.		String		Production		String	
CEMENTING DATA							
Date / Time Cemented							
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	12.25"	SURFACE	1764'	8.625"	24#	SURFACE	1764'
TWO	7.875"	1764'	7002'	4.5"	11.6#	SURFACE	7002'

<<< 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: 03 JUNE 2015 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.

GR-RMT-CBL RAN IN COMBINATION

LOG INTERVALS PER CUSTOMER REQUEST

SHORT JOINTS @: 2984' - 2994', 5391' - 5401' AND 6289' - 6299',

****THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES****

Service Ticket No. 902453209 API No. 05-045-22805-0000 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.	10000028	Serial No.	12082235	Serial No.	11680606
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	

6722'	1500'	0	60	MAIN LOG SECTION			
GAMMA RAY		NEAR BORE SI (SGBN)		RATIO (RNF)		SGIN	
Scale		Scale		Scale		Scale	
Pass	L	R	L	R	L	R	L
No.	0	200	200	0	2	0.5	60
ONE							
DIRECTIONAL INFORMATION							
Maximum Deviation		deg. @		KOP			

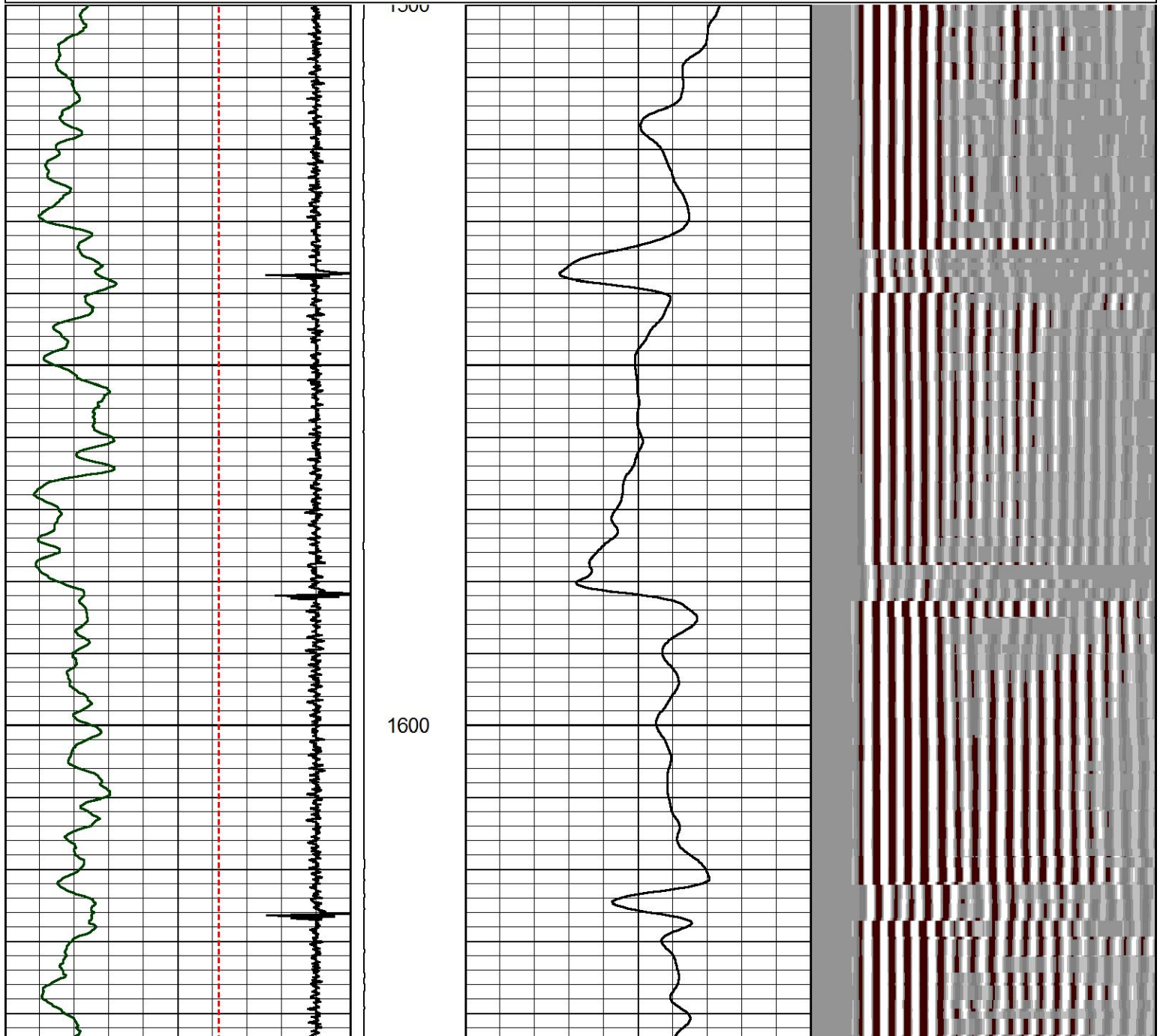
MAIN LOG SECTION

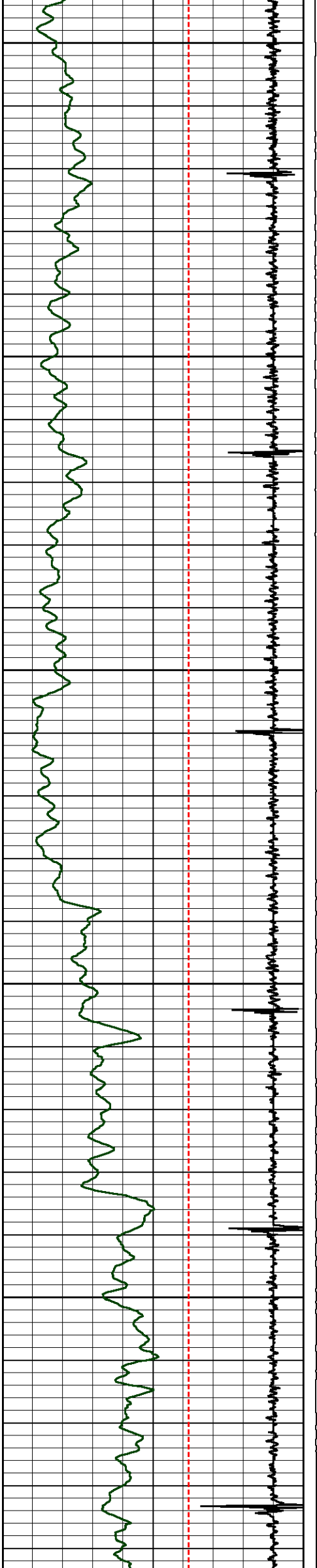
HALLIBURTON

5" = 100'

Database File watson_b_34c_combo.db
 Dataset Pathname RMT_MAIN
 Presentation Format hcbl
 Dataset Creation Wed Jun 03 11:17:34 2015
 Charted by Depth in Feet scaled 1:240

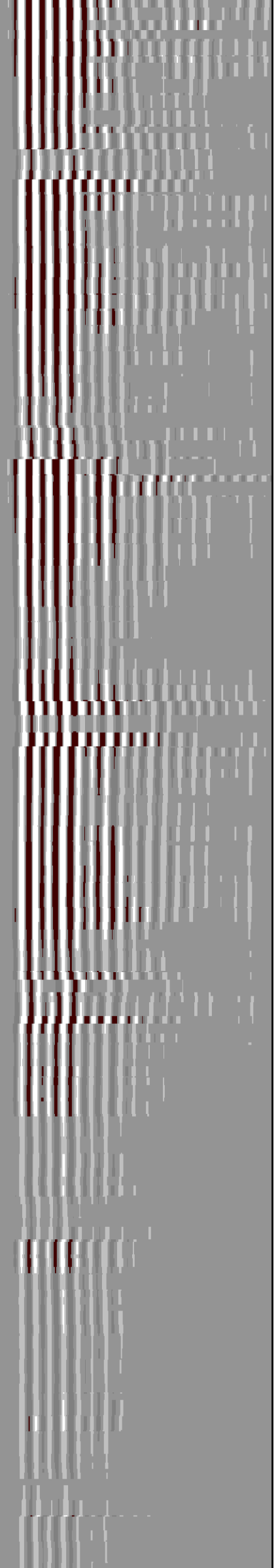
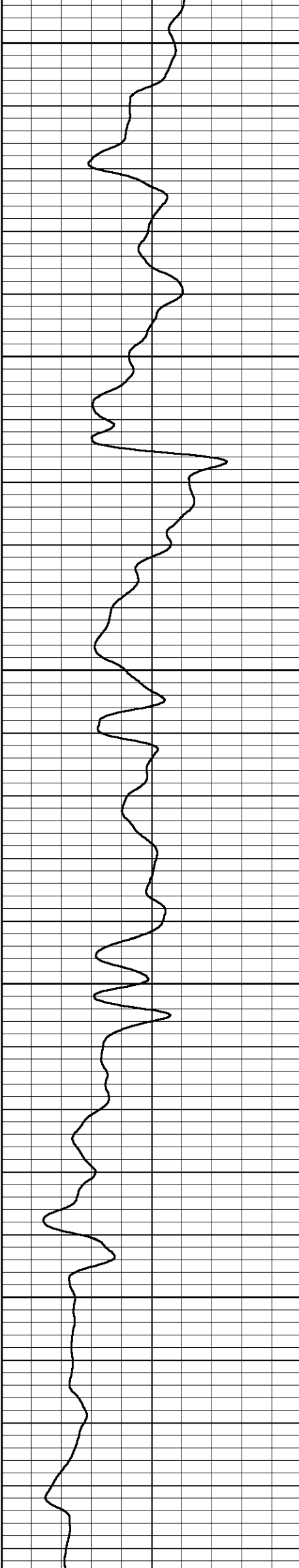
370	3' Travel Time (usec)	170	LTEN	0	AMPLITUDE (mV) (mV)	100	200	MSG	1200
-5400	CCL	600	0	(lb.4000	0	Amplified Amplitude (mV)	10		
0	Gamma Ray (GAPI)	200							

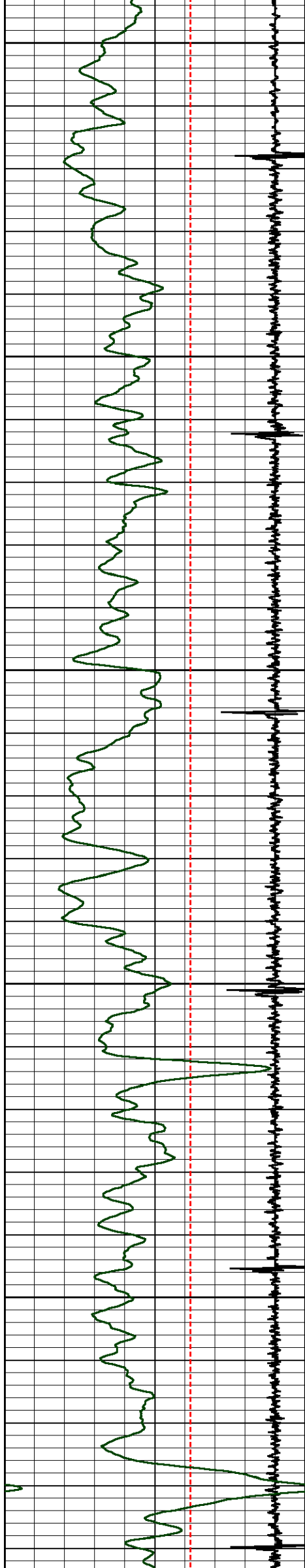




1700

1800

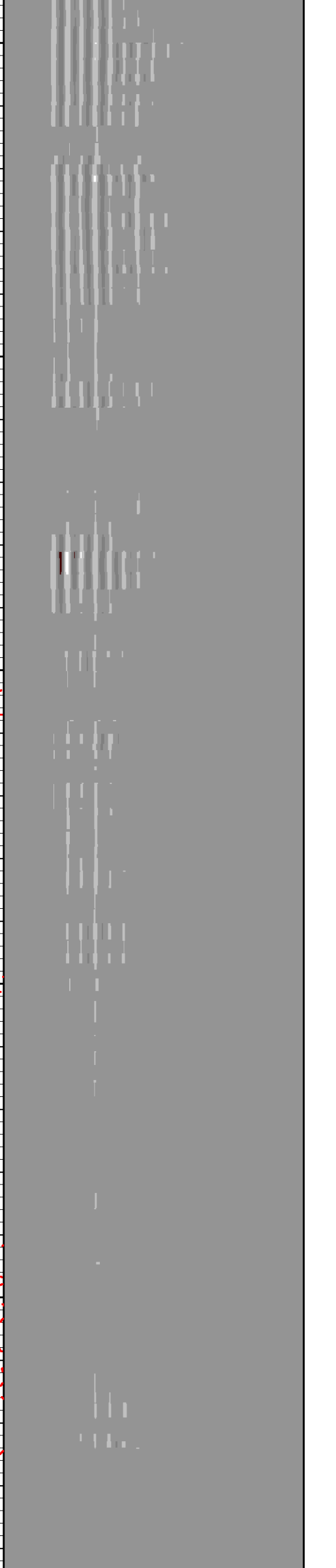
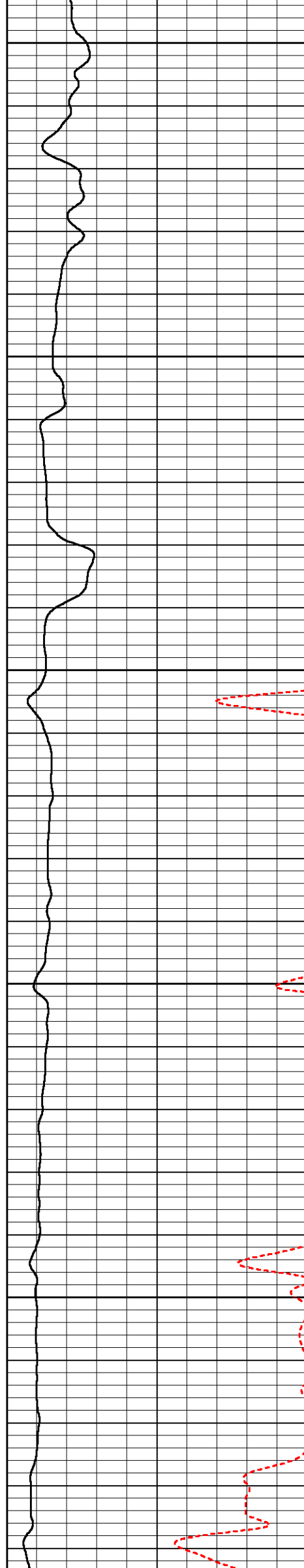


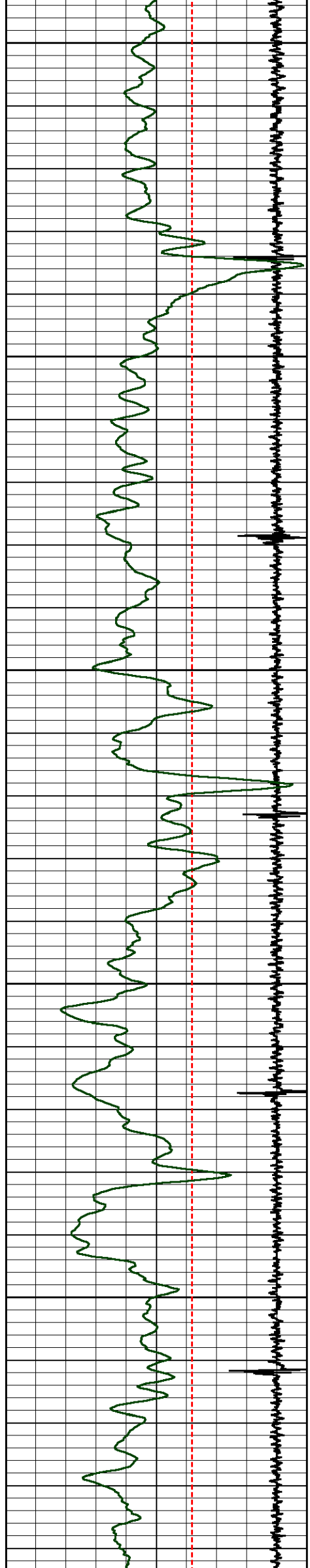


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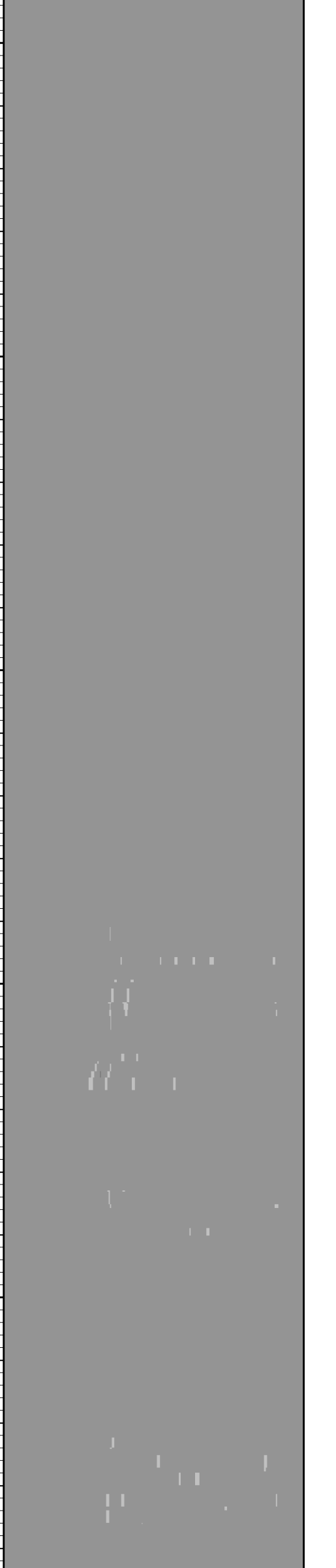
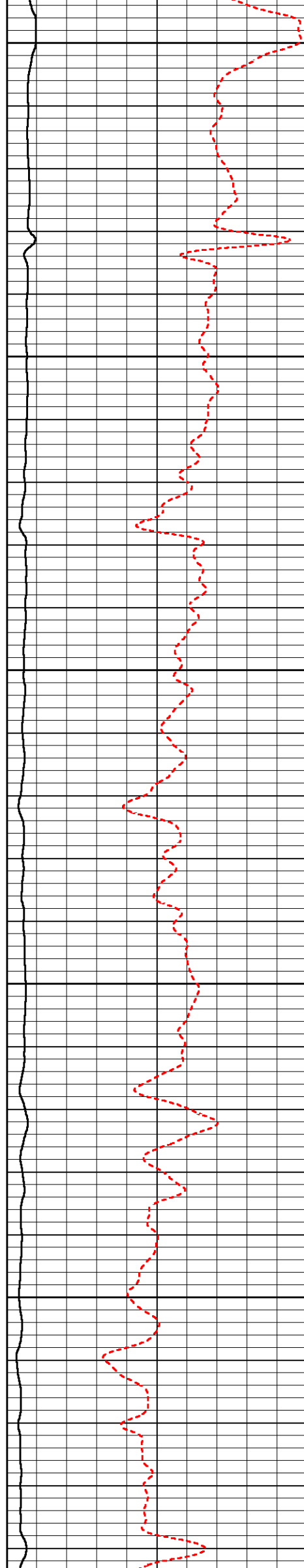
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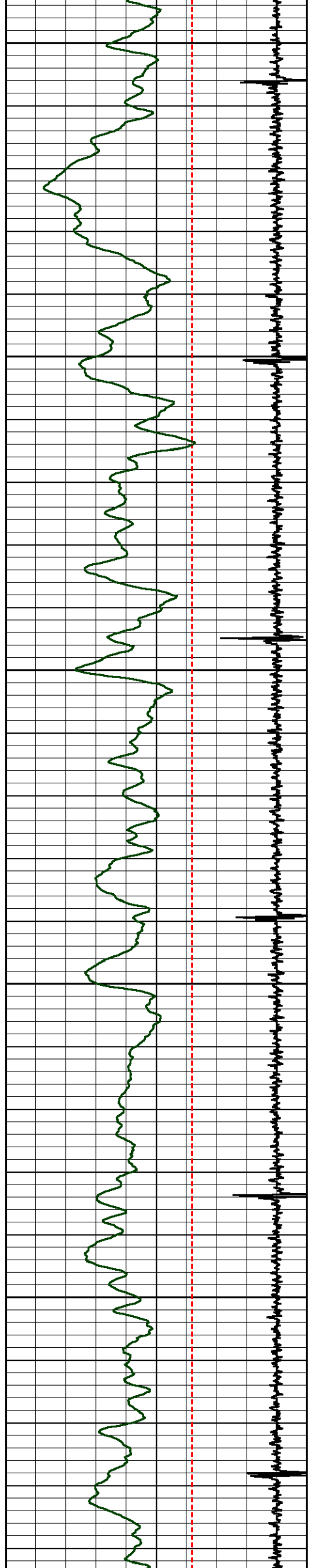




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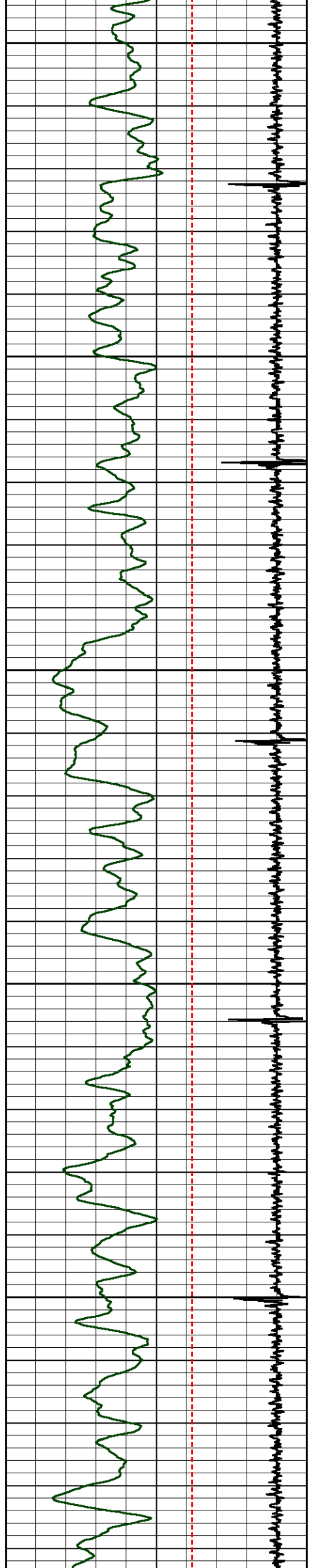


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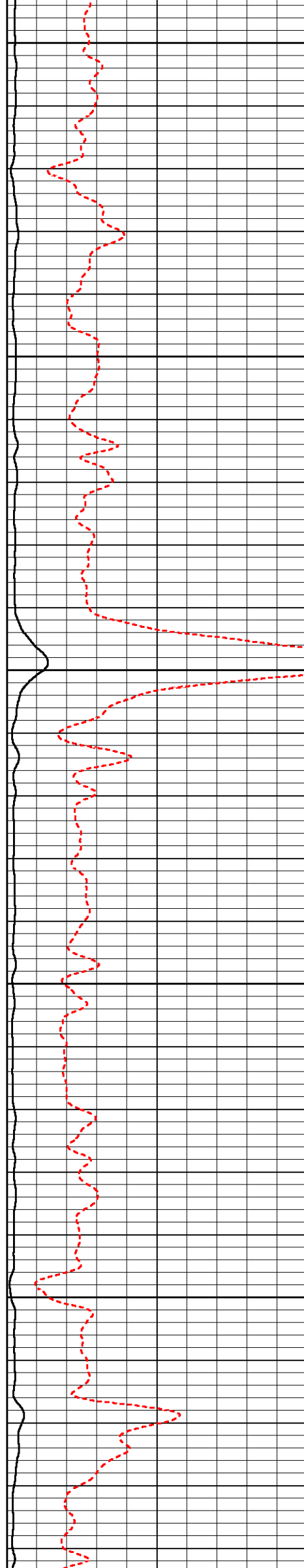
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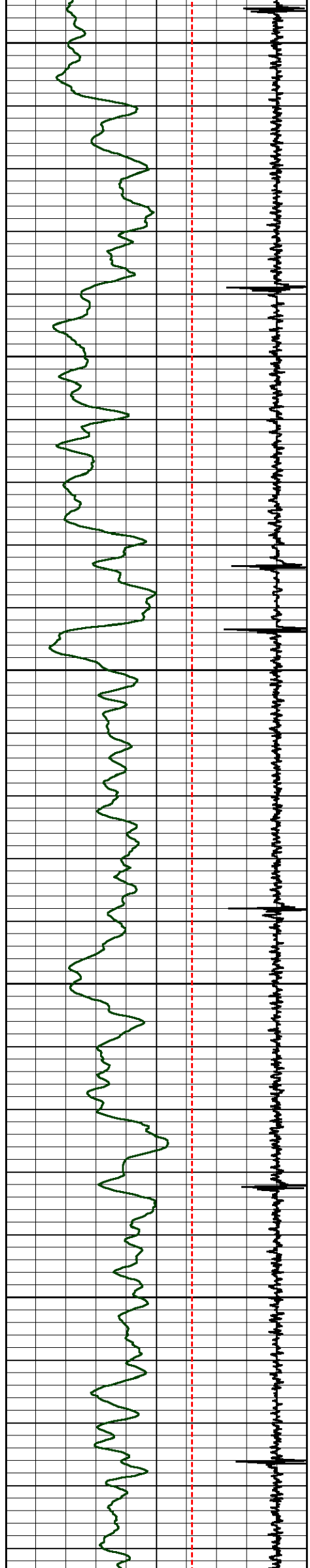




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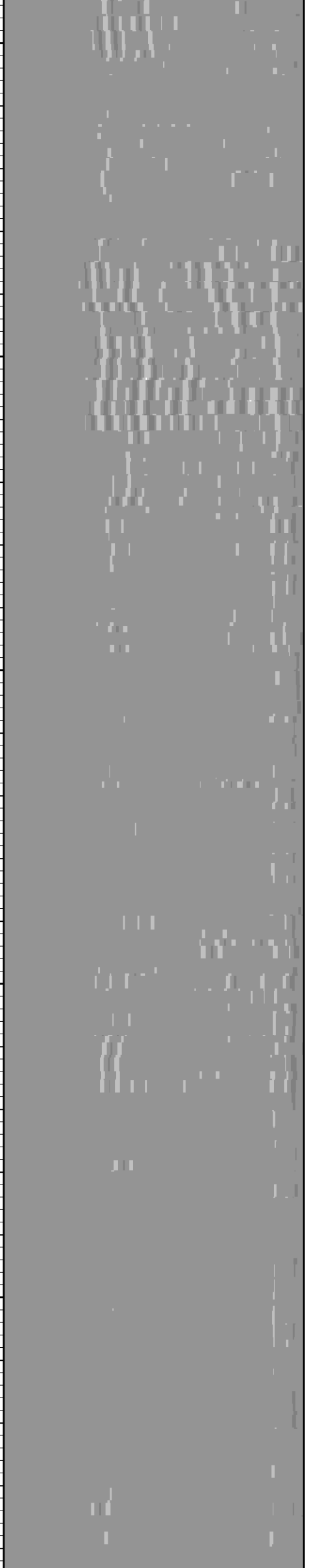
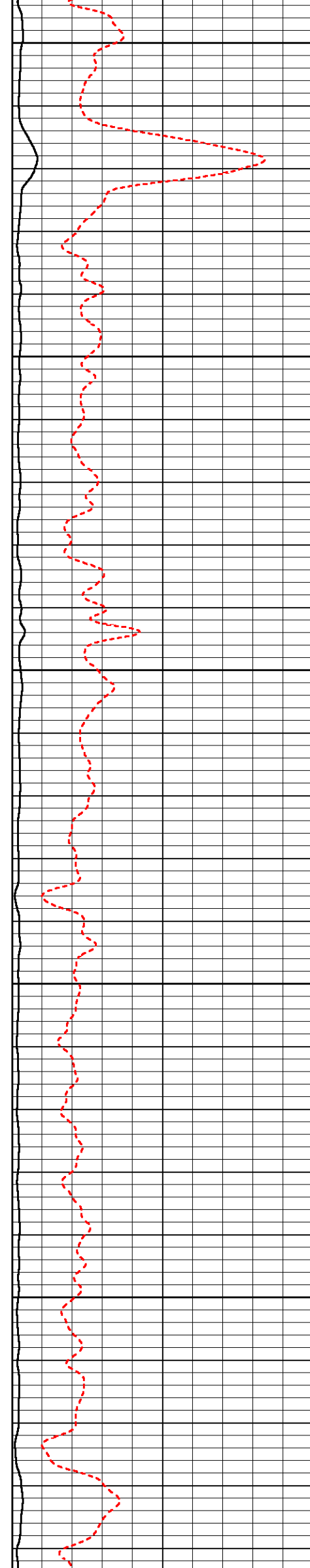


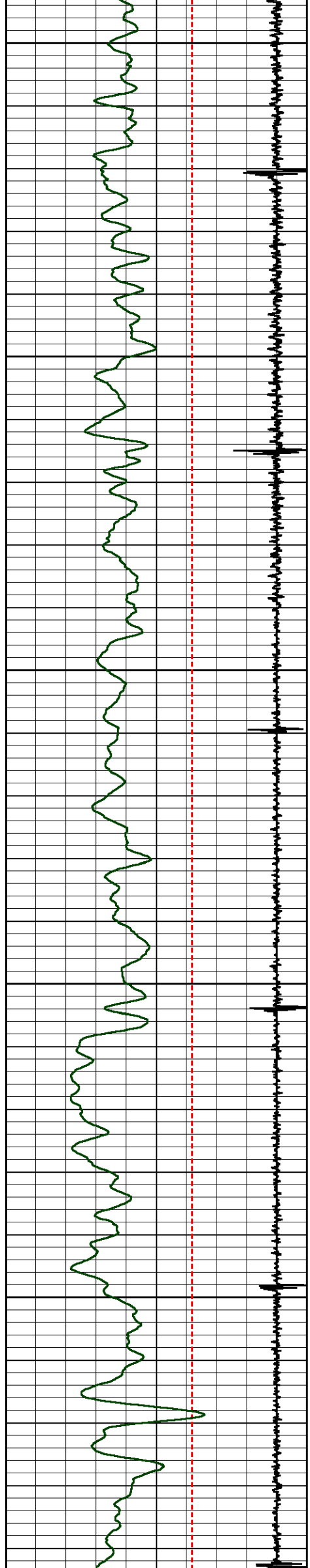


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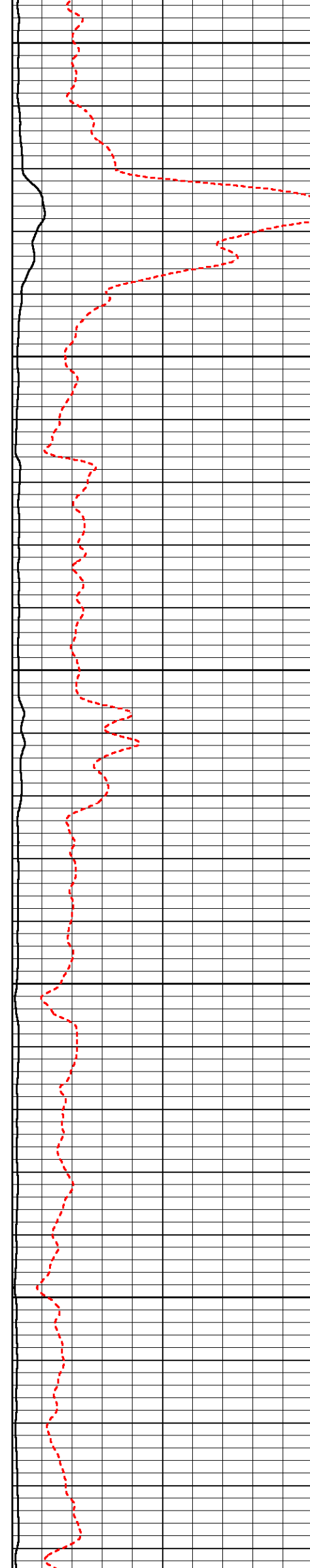
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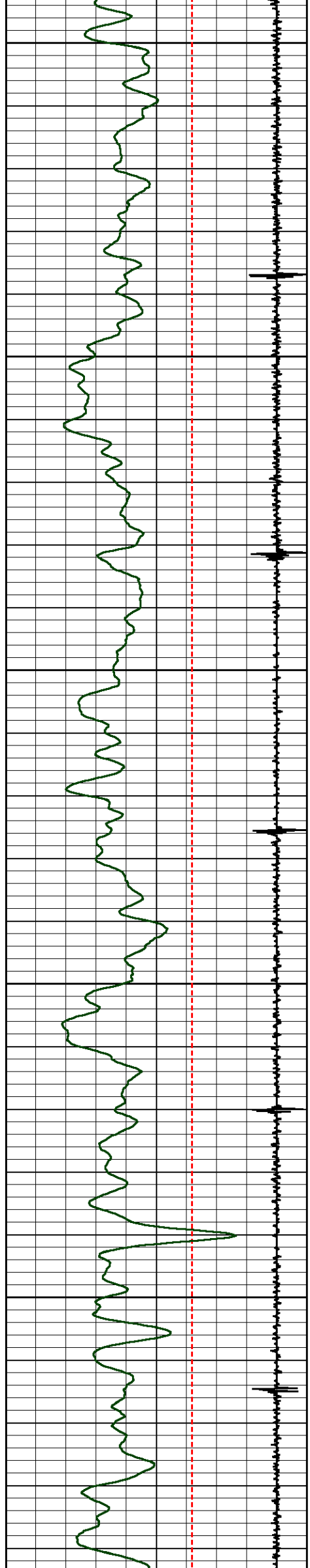




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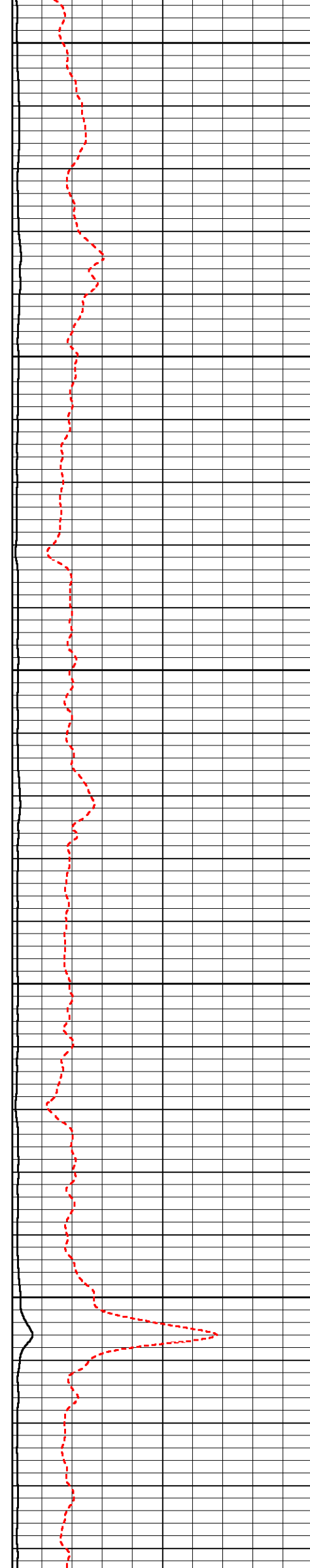


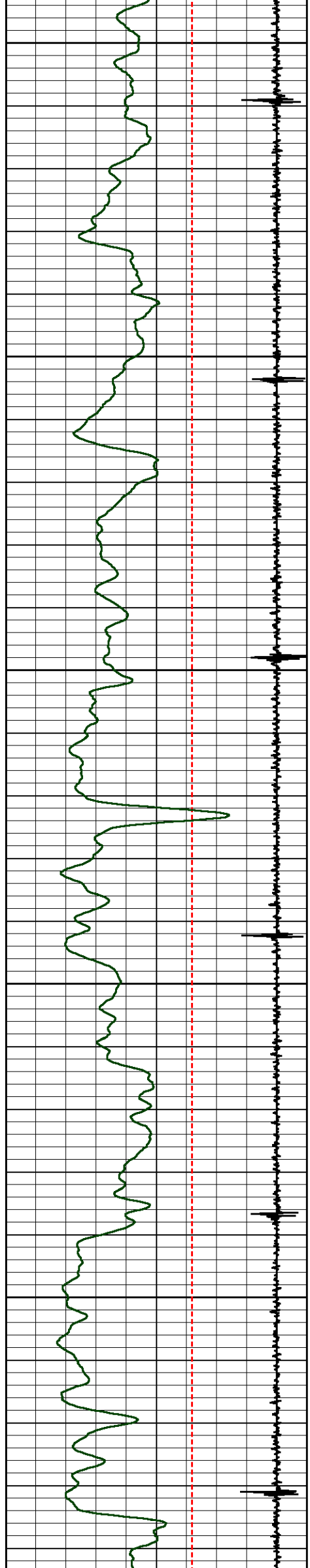


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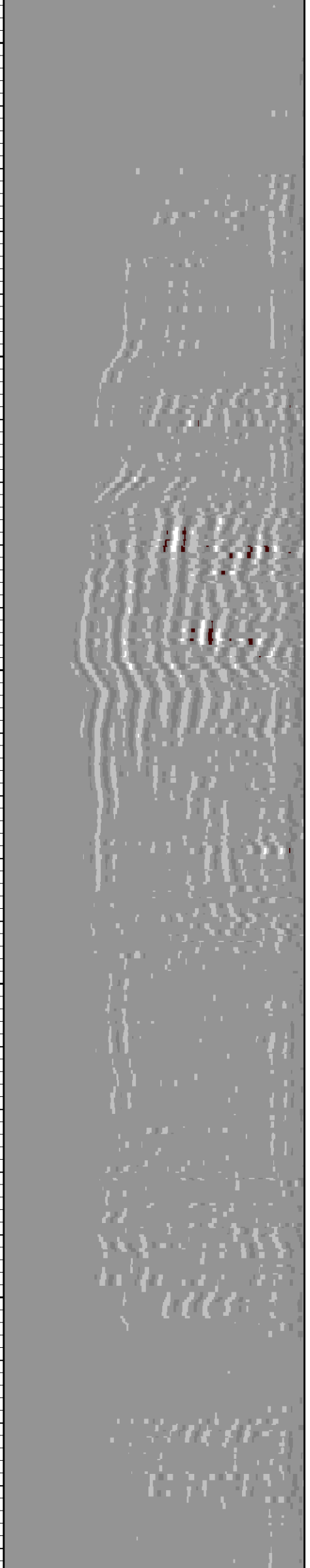
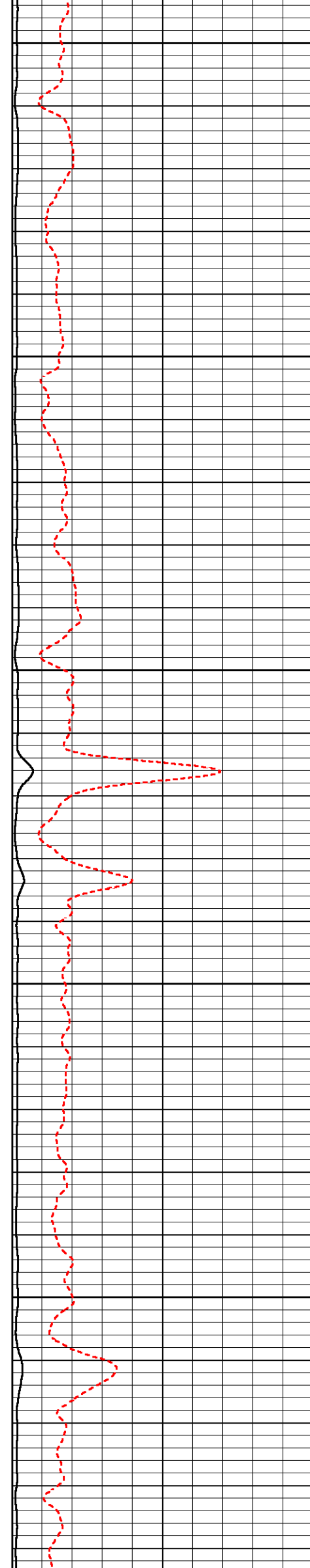
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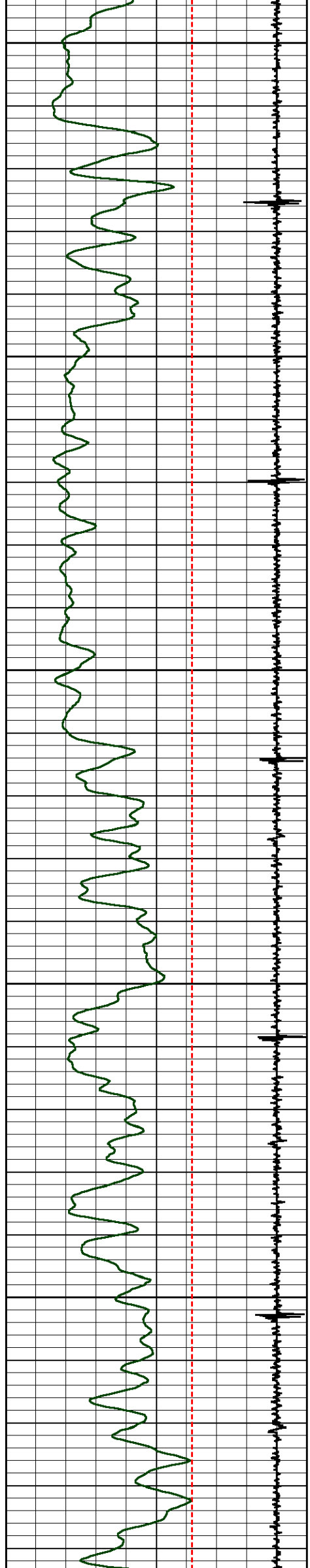




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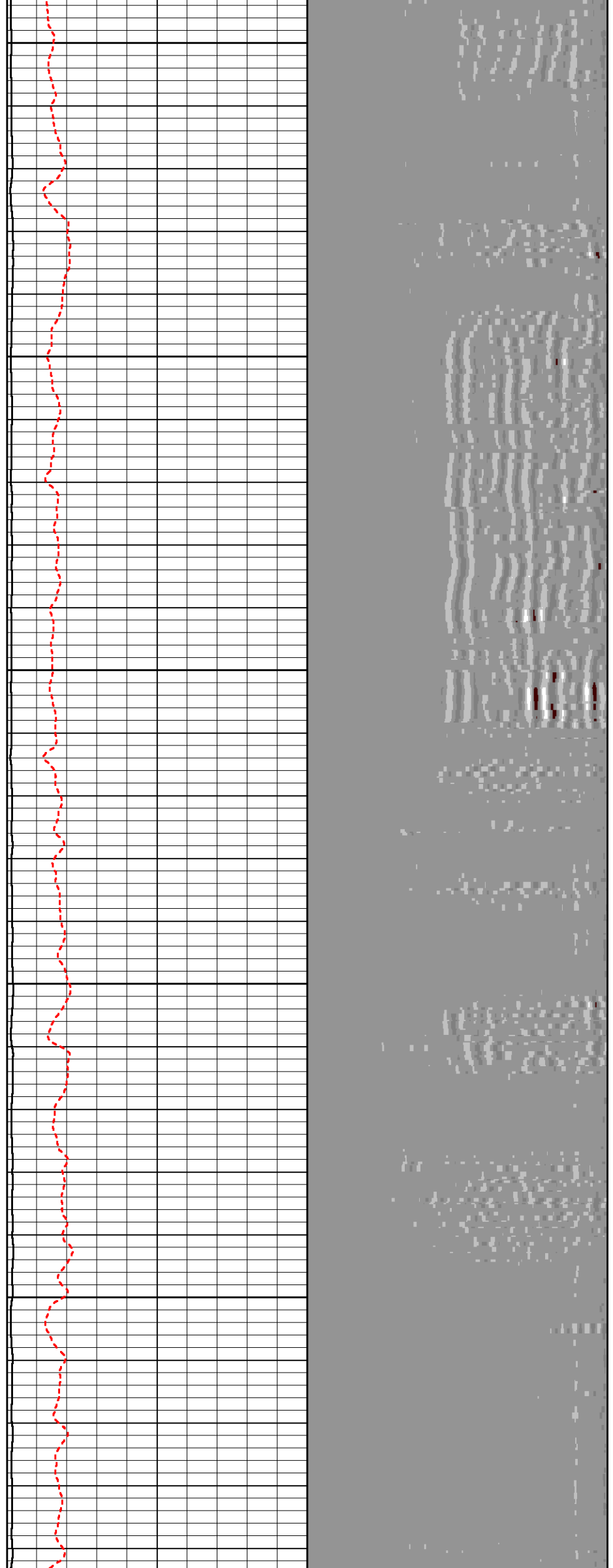


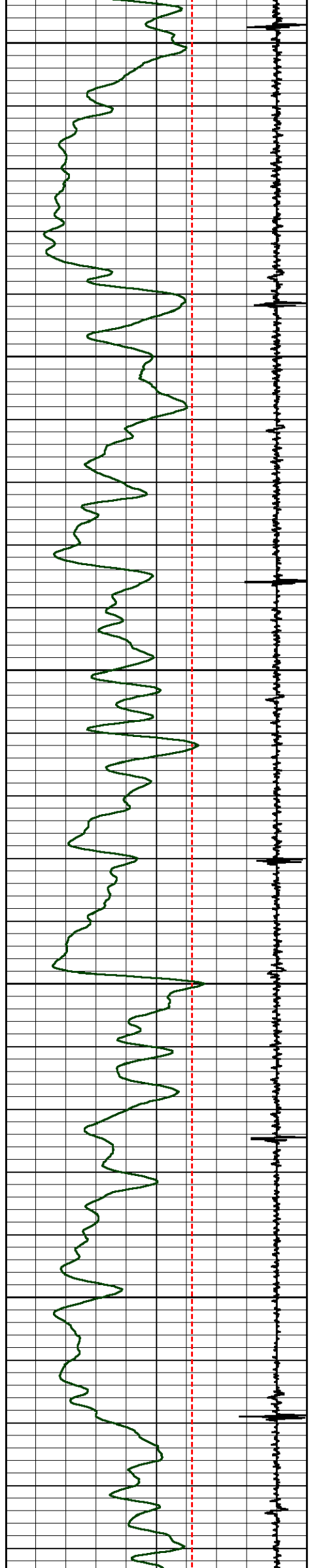


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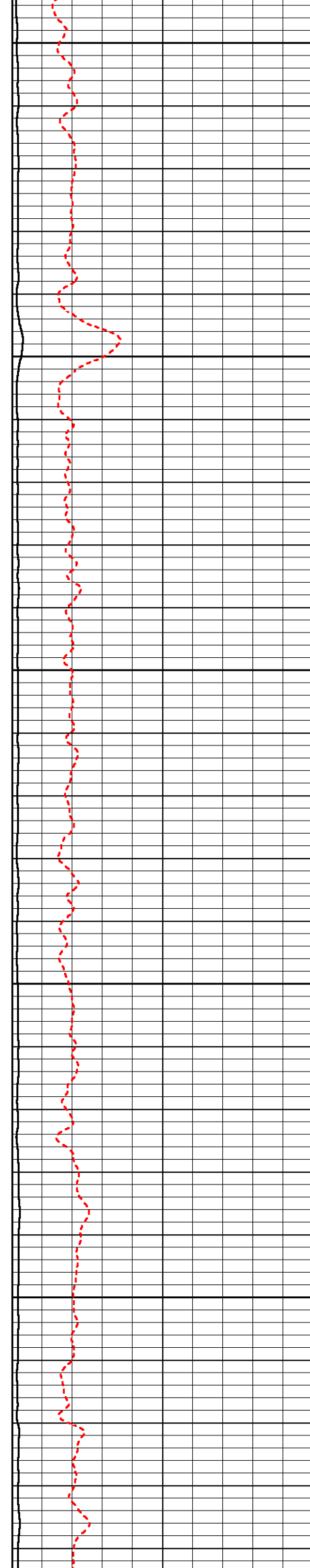
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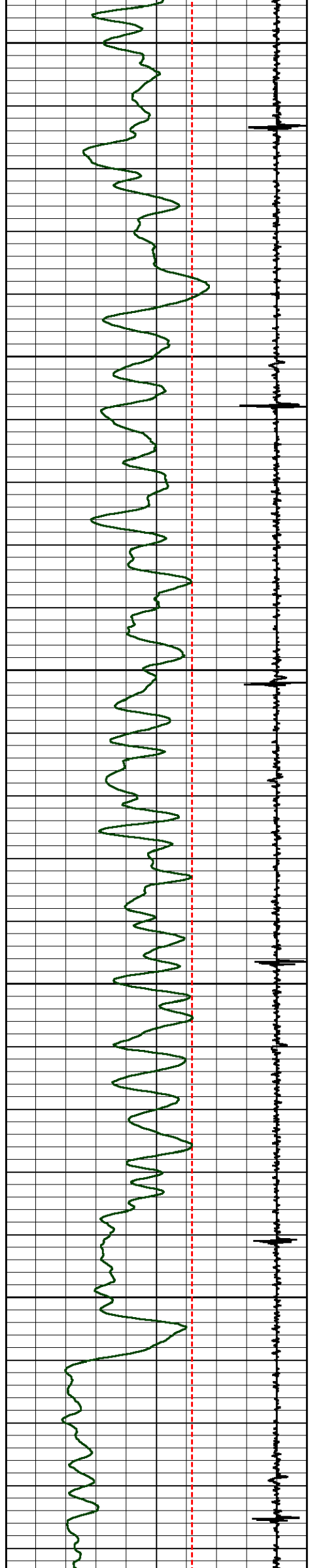




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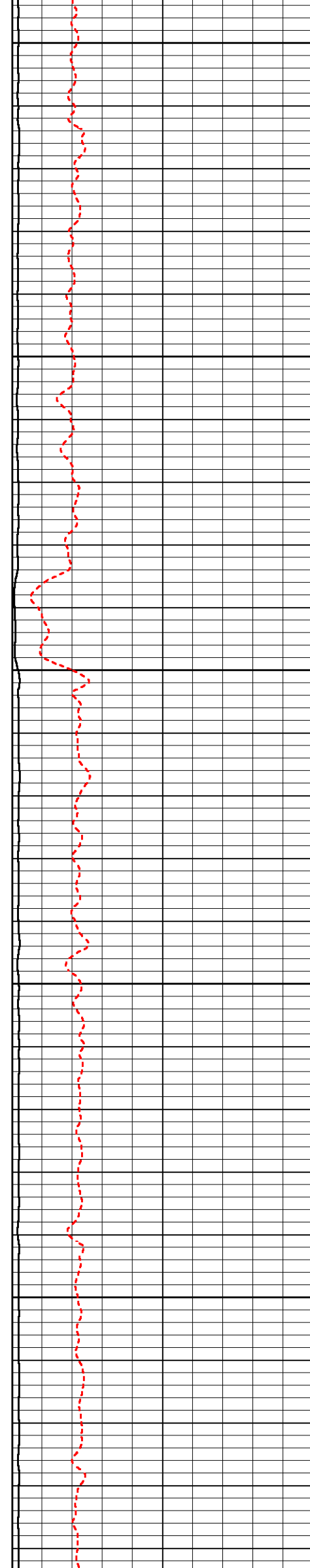


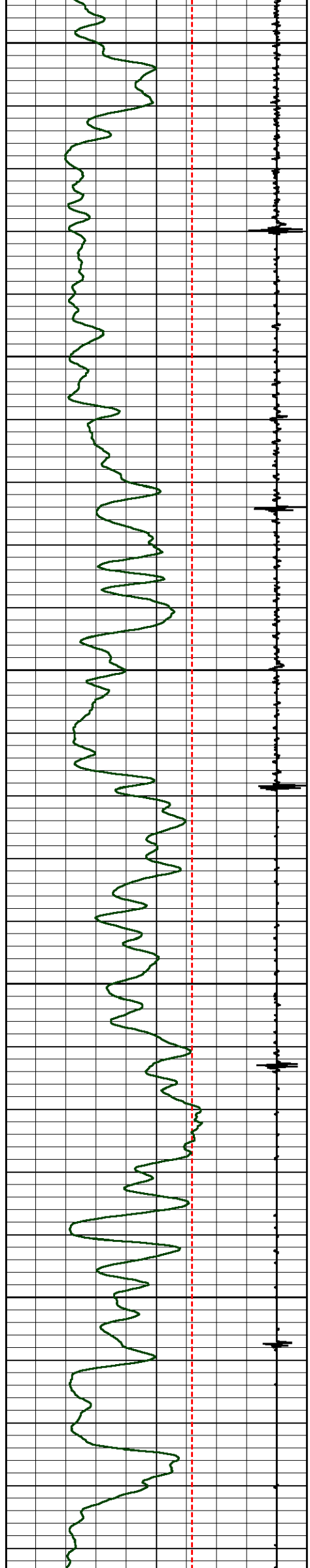


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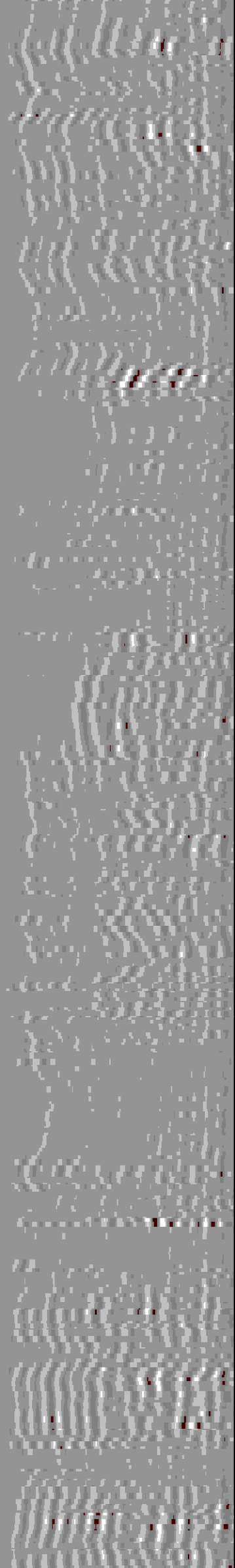
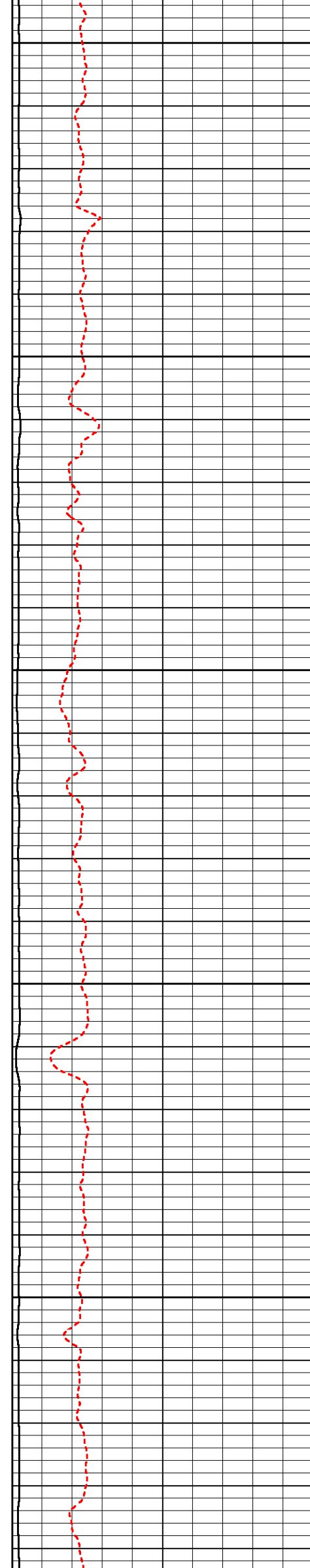
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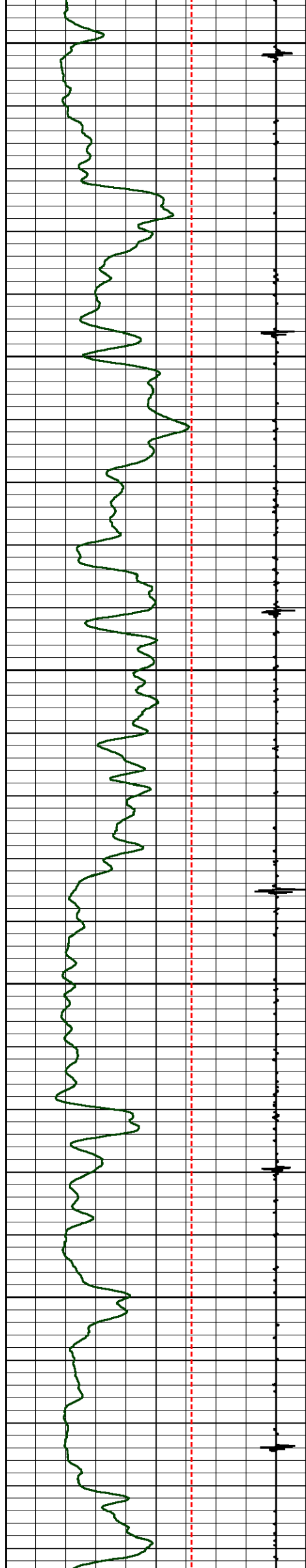




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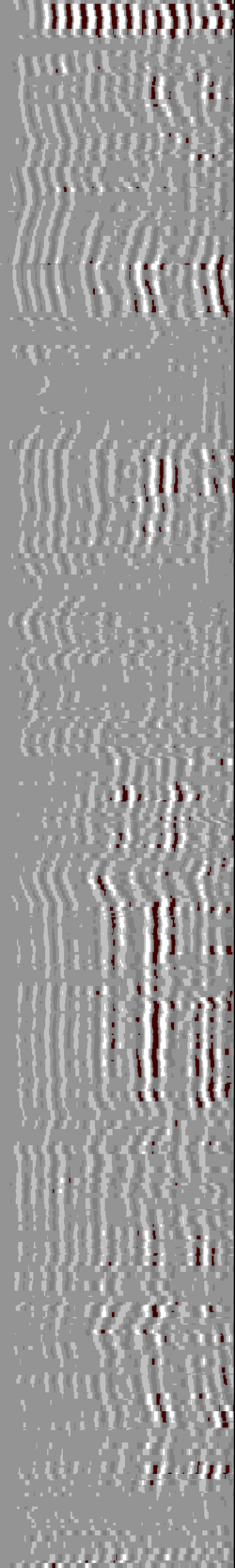
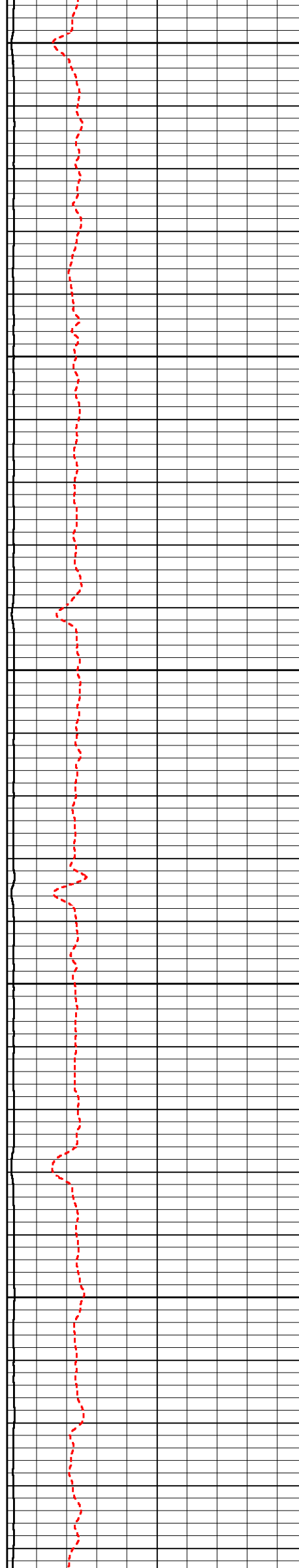


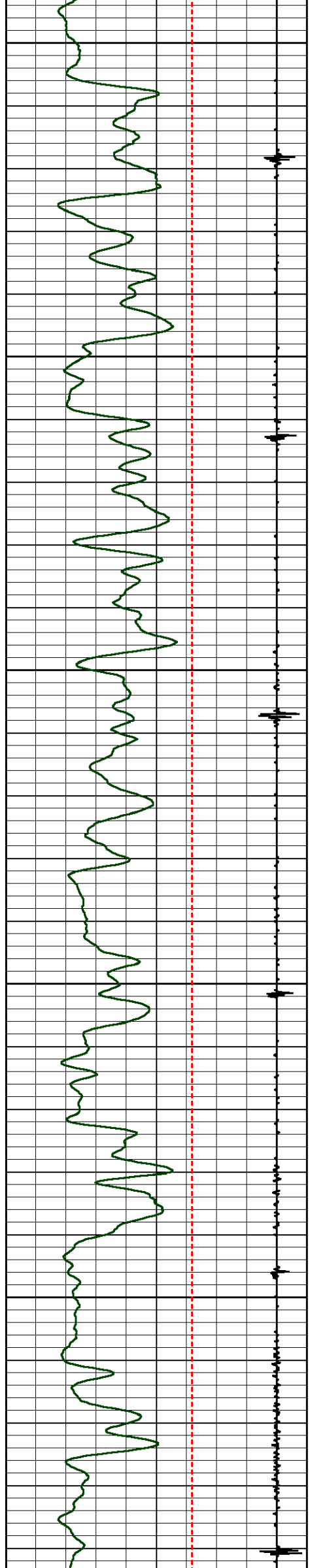


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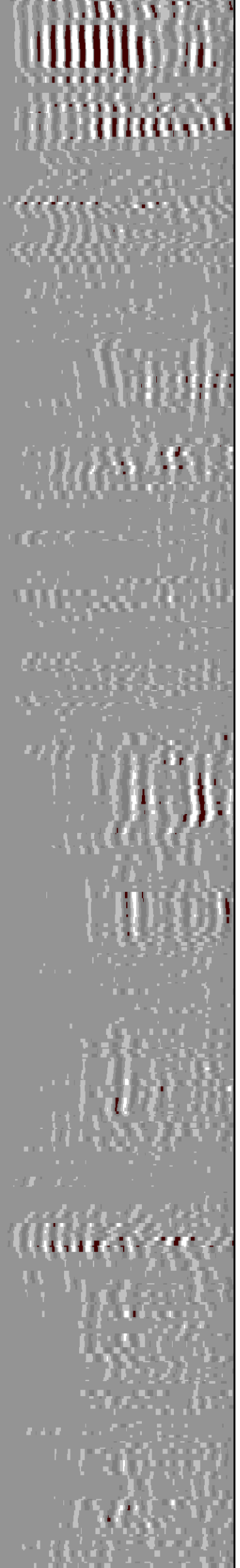
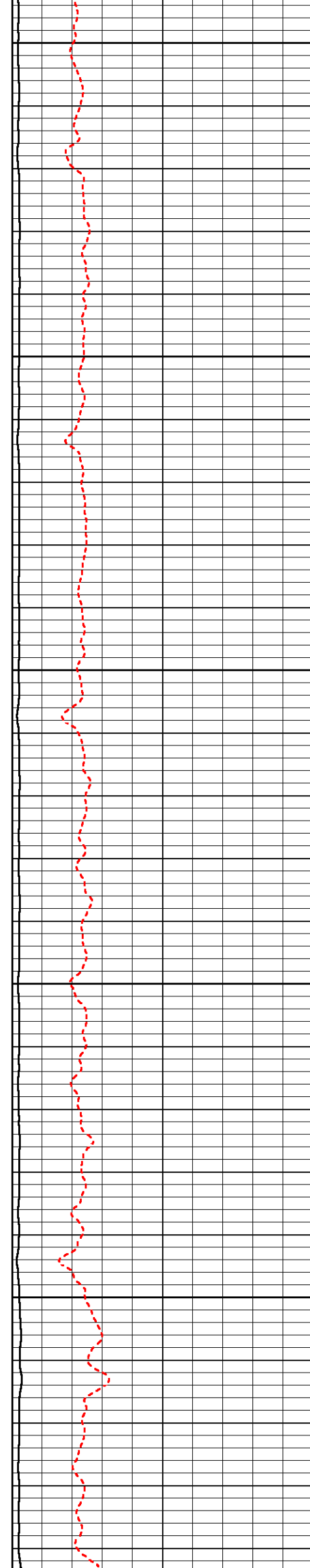
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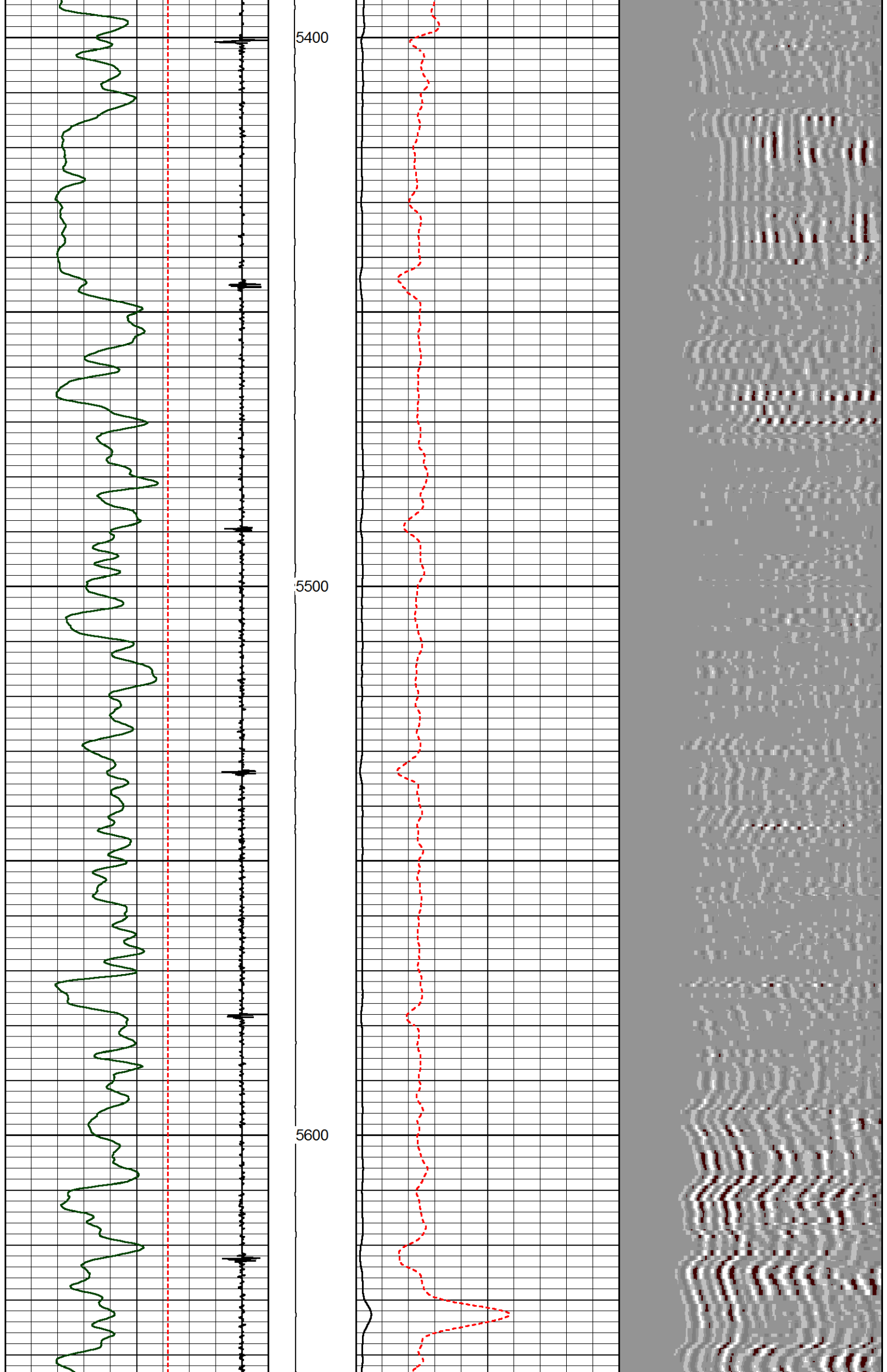


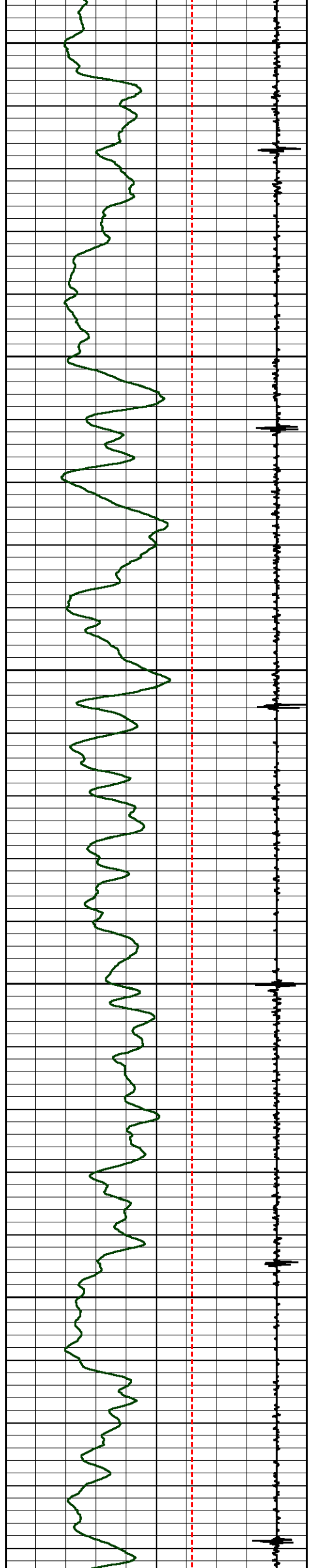


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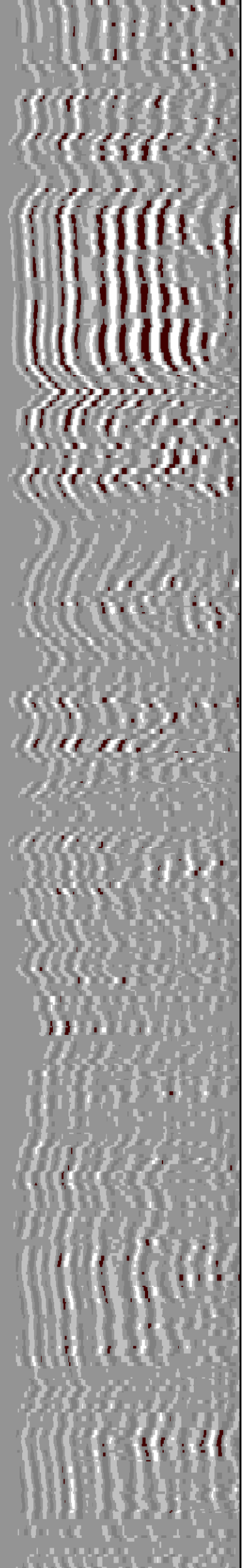
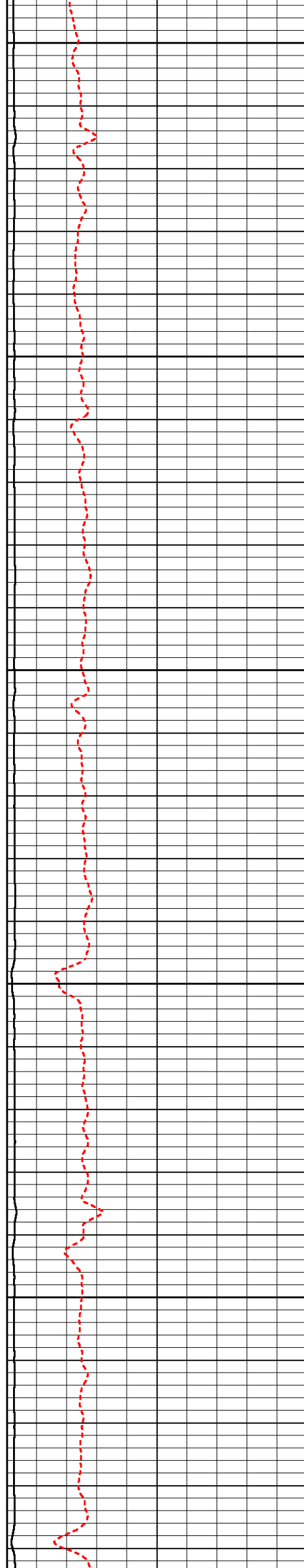


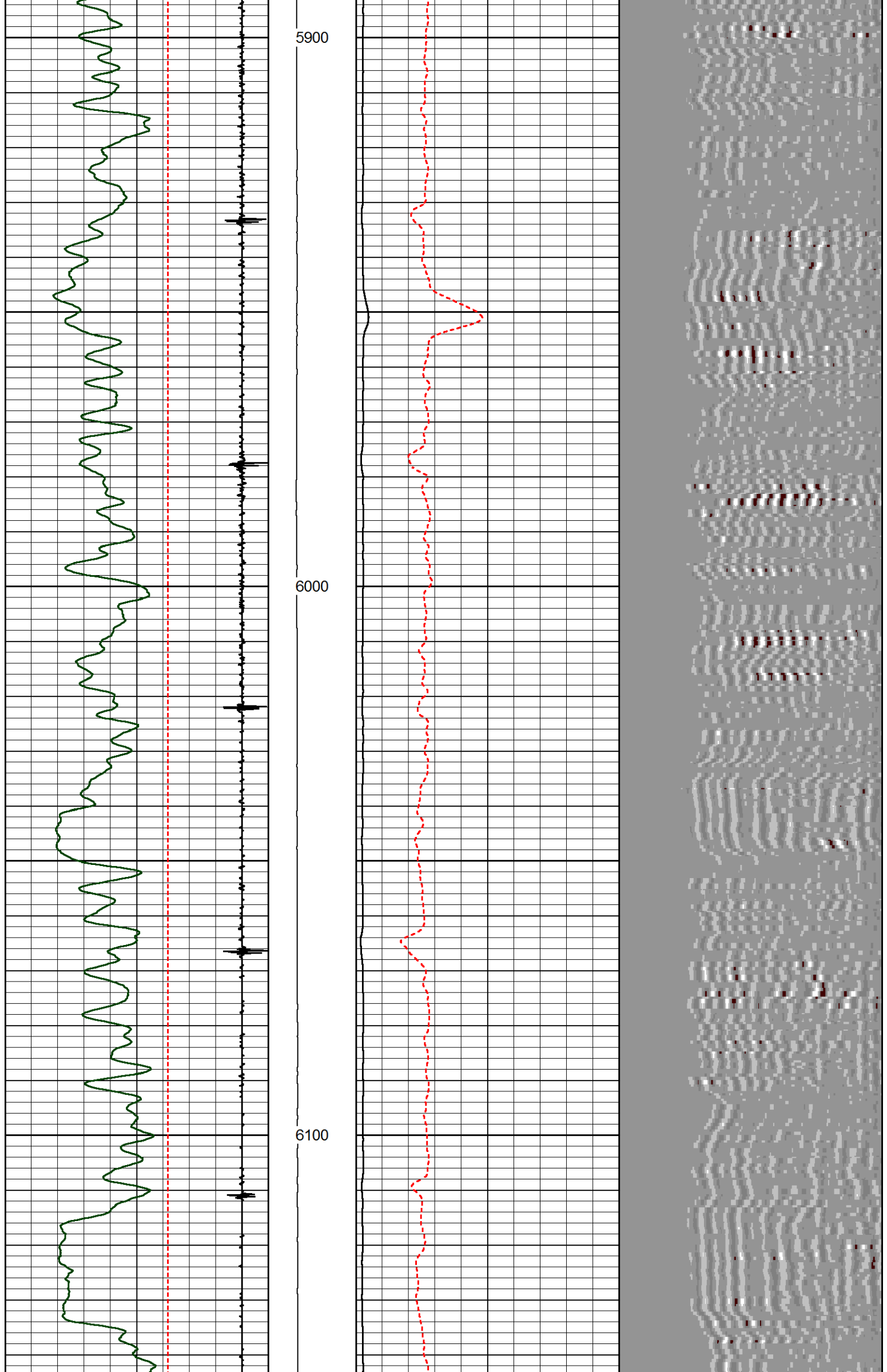


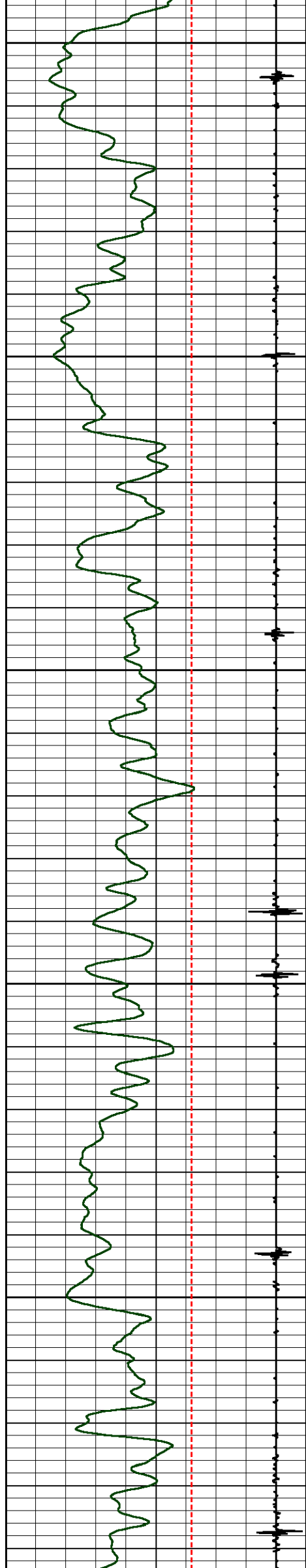


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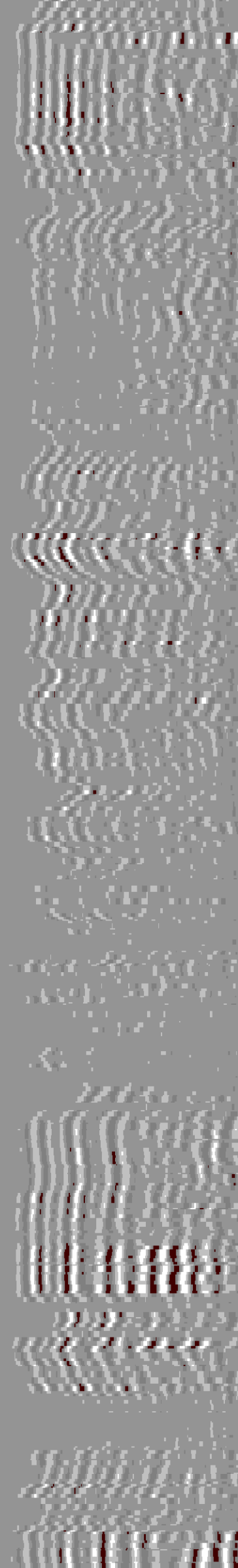
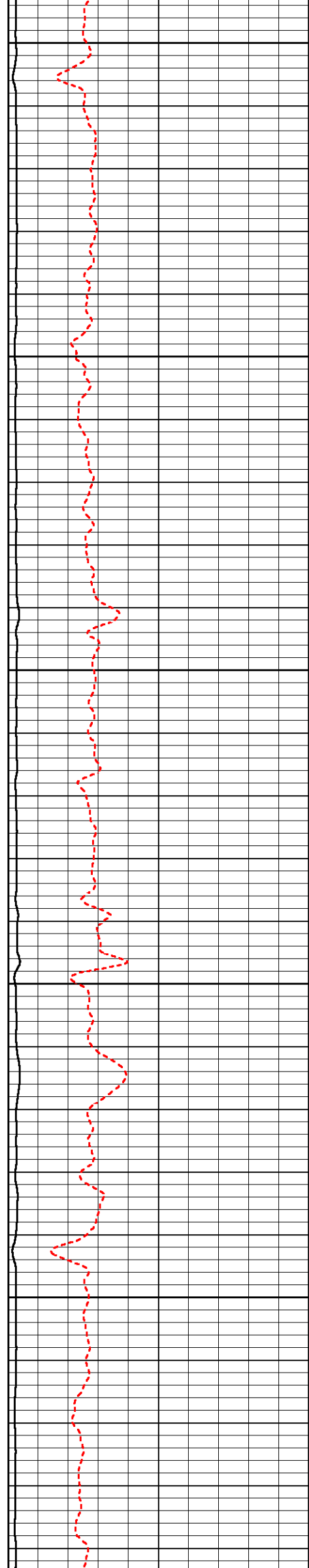


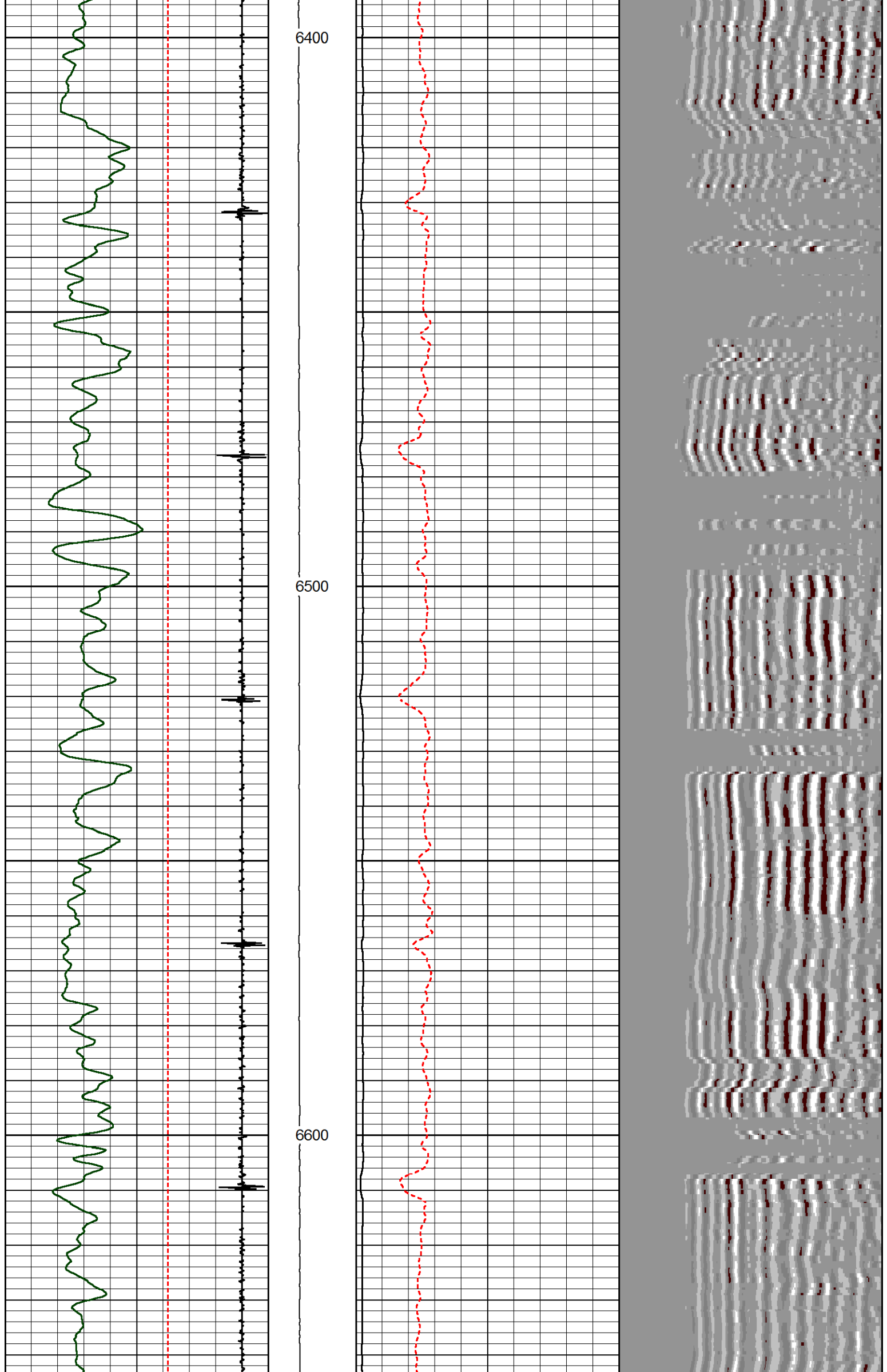


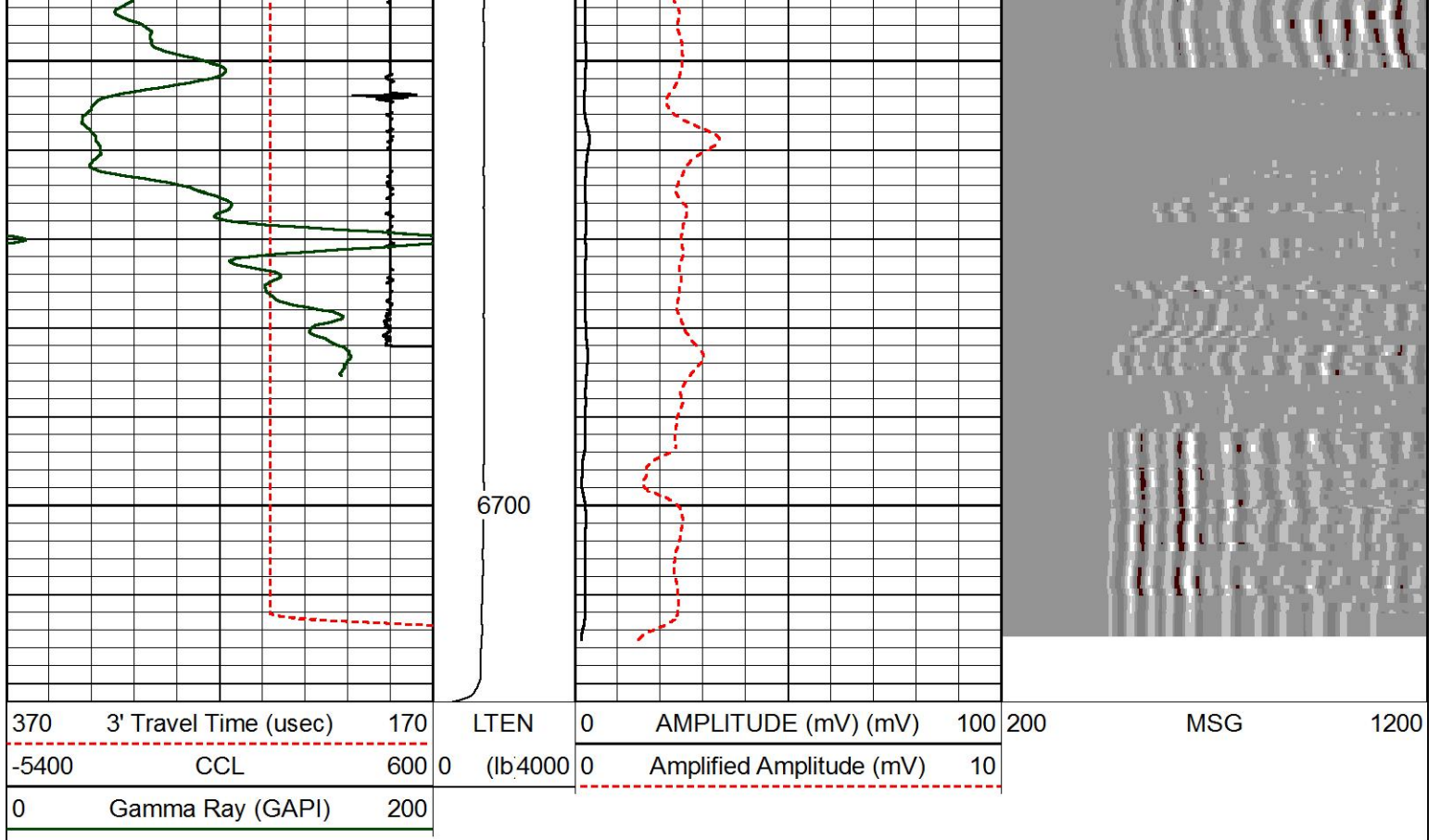


6200

6300







MAIN LOG SECTION

HALLIBURTON

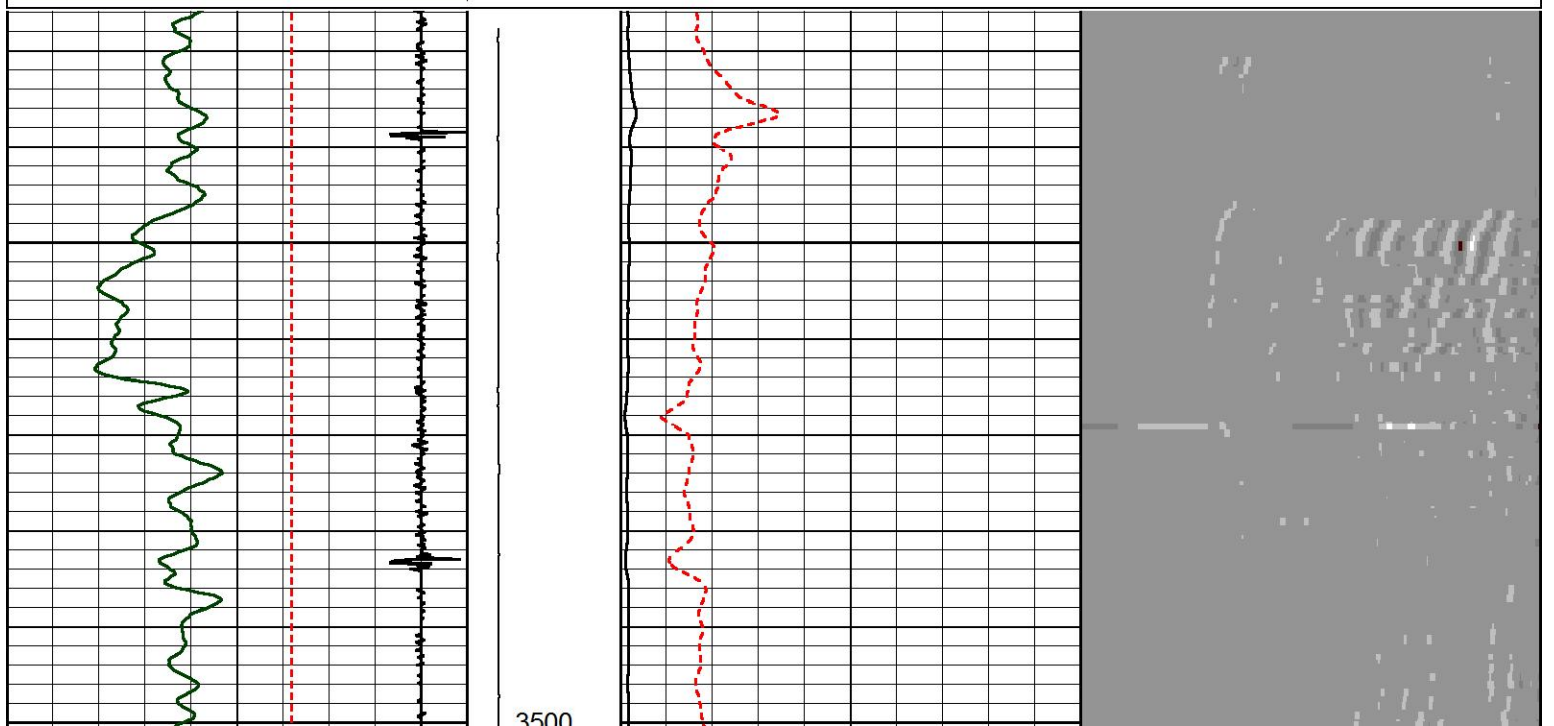
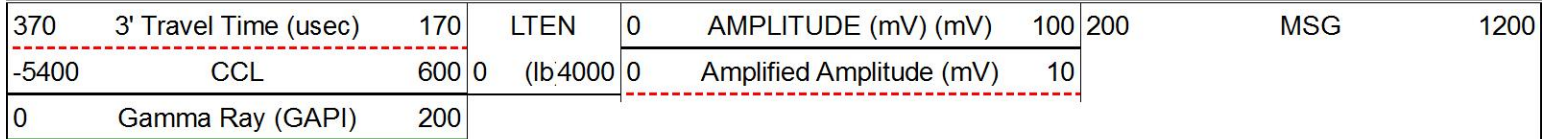
5" = 100'

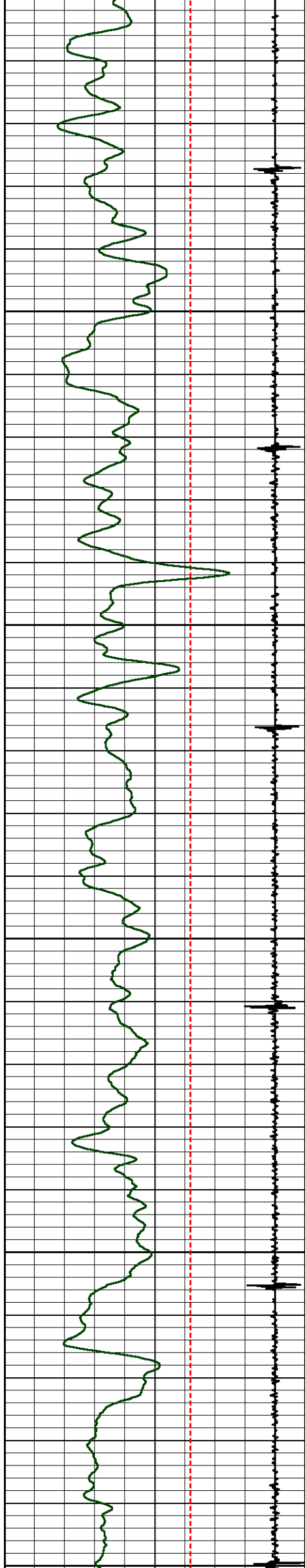
REPEAT LOG SECTION

HALLIBURTON

5" = 100'

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 Dataset Pathname RMT_RPT1
 Presentation Format hcb1
 Dataset Creation Wed Jun 03 10:48:36 2015
 Charted by Depth in Feet scaled 1:240

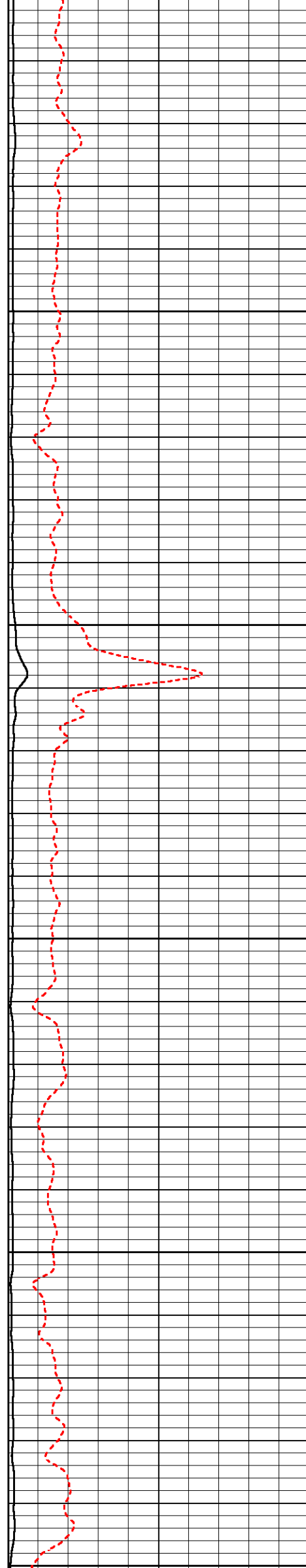


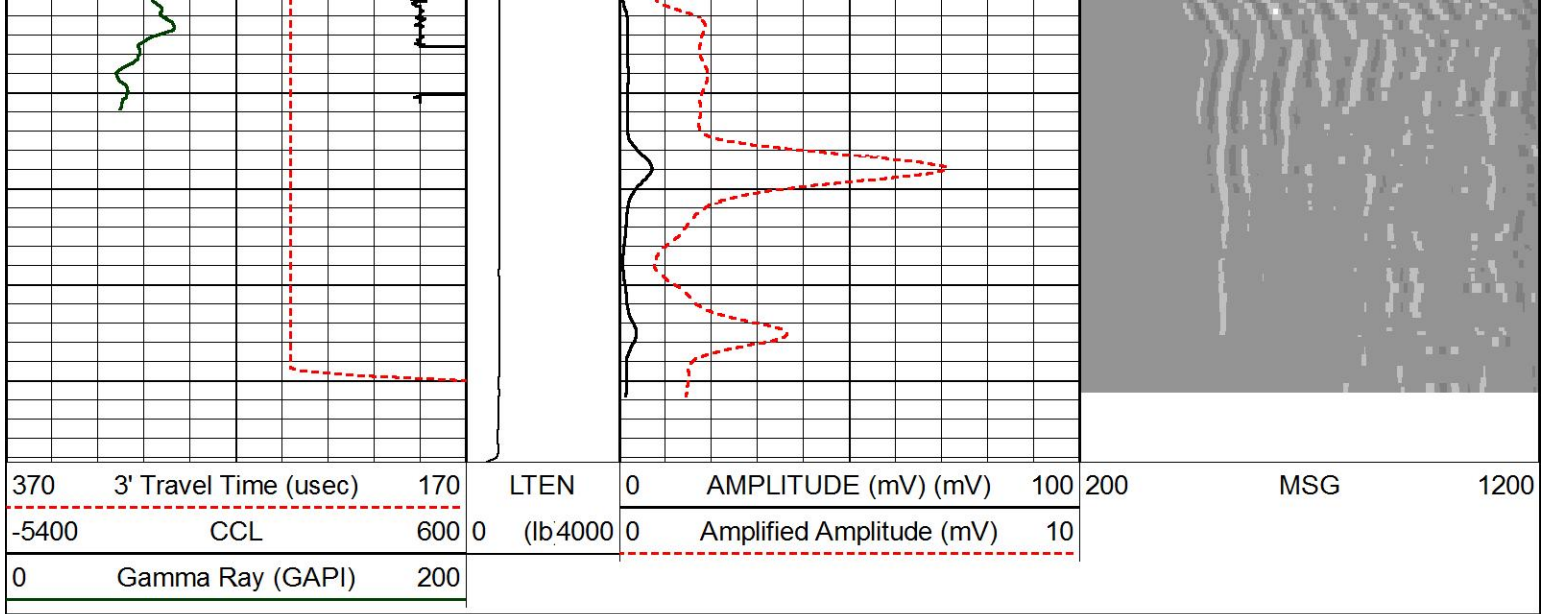


3500

3600

3700





REPEAT LOG SECTION

HALLIBURTON

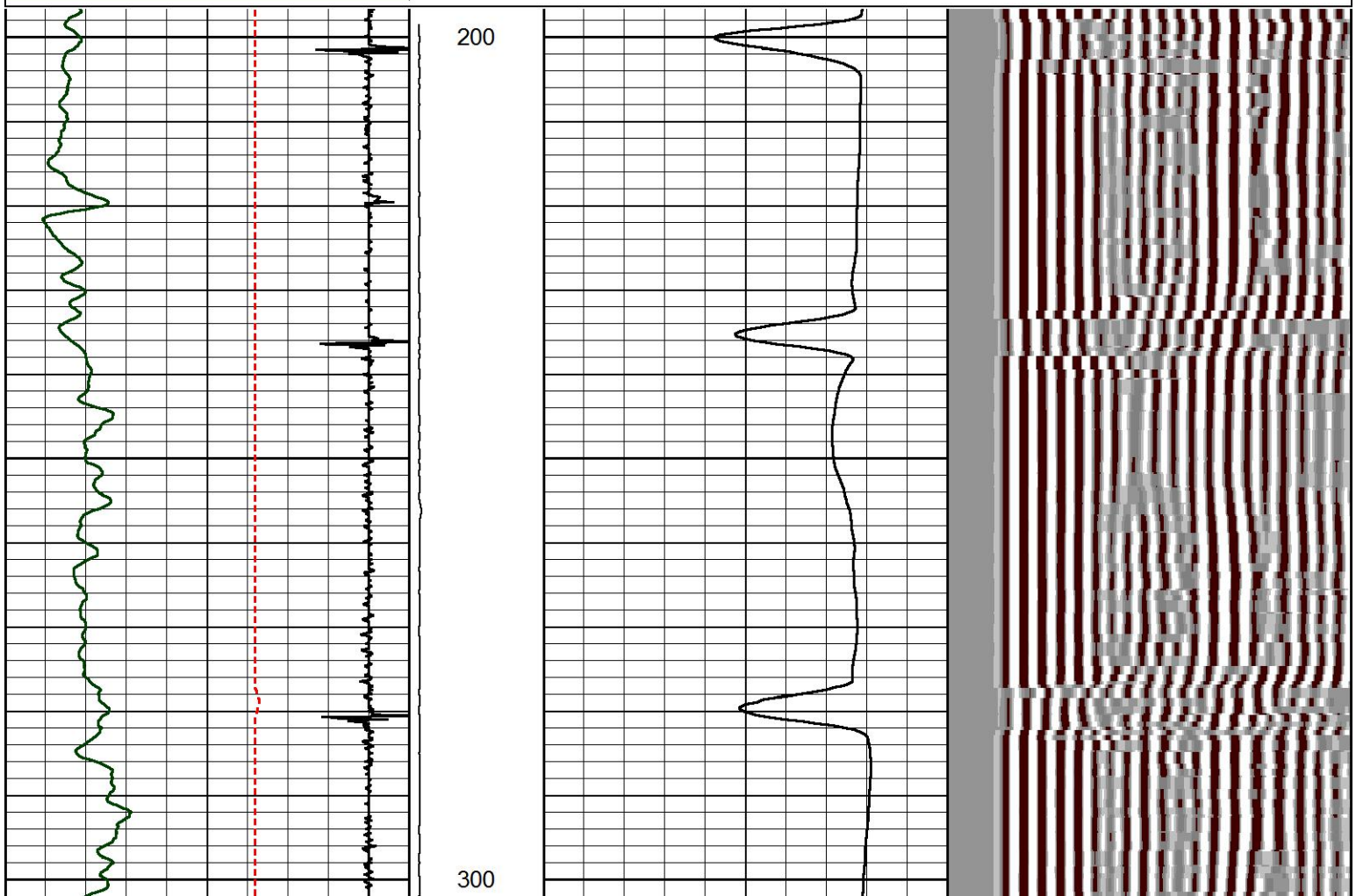
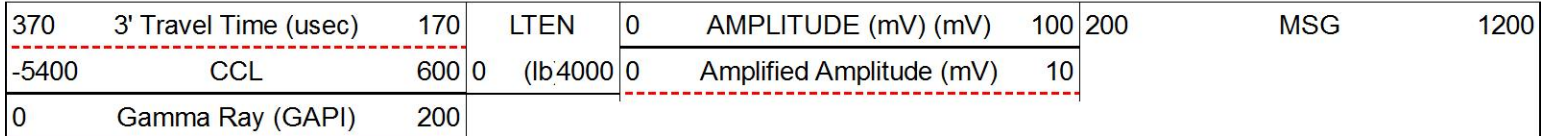
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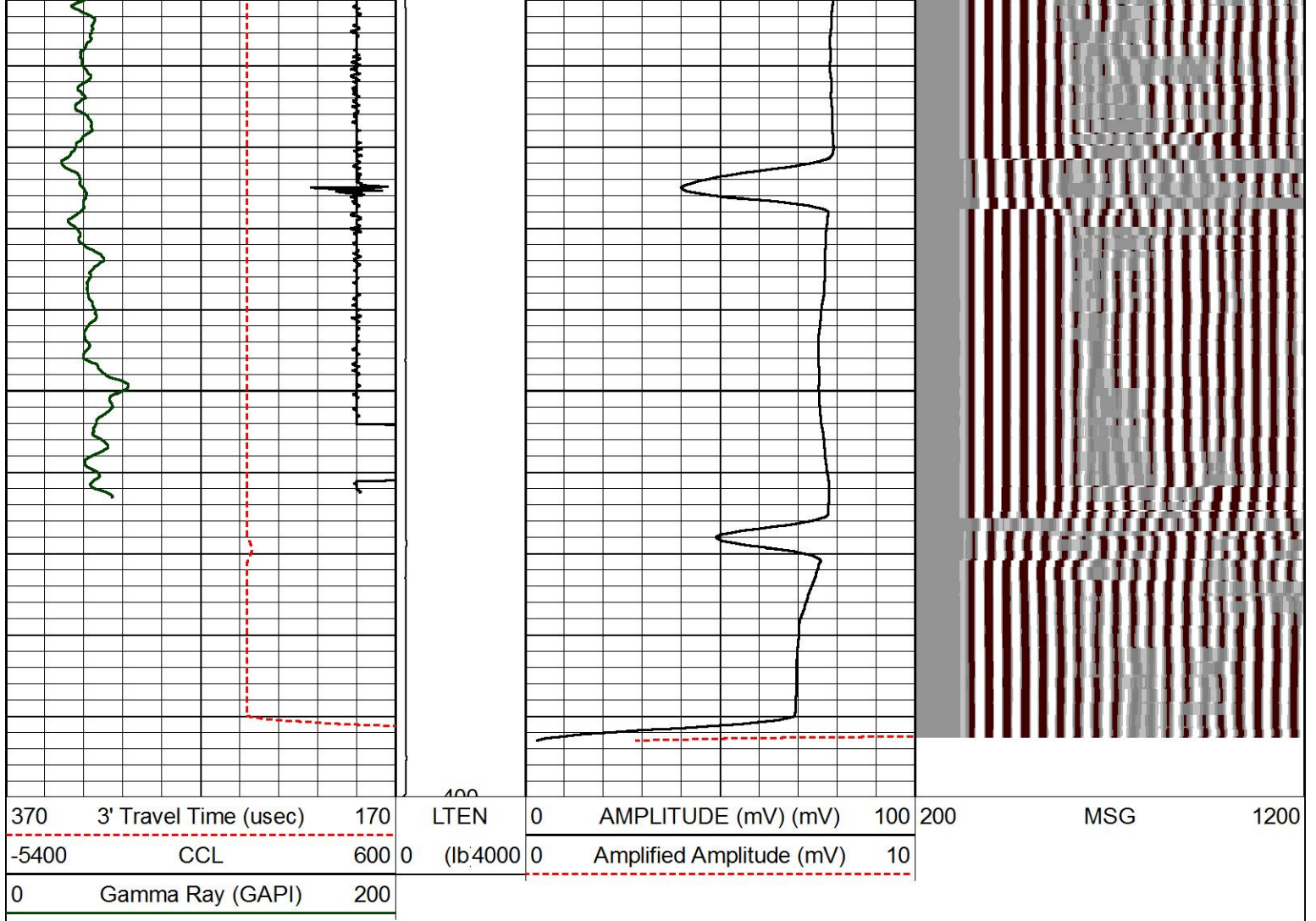
FREE PIPE LOG SECTION

HALLIBURTON

5" = 100'

Database File watson_b_34c_combo.db
 Dataset Pathname pass1
 Presentation Format hcbl
 Dataset Creation Wed Jun 03 10:24:46 2015
 Charted by Depth in Feet scaled 1:240





FREE PIPE LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

DatabaseD:\Warrior_data\watson_b_34c_combo.db
Dataset field/well/run1/RMT_MAIN/_vars_

Top - Bottom

PPT usec 0	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	BHTEMP_Src ITEMPX	BHSAL2 0	BHSAL1 1	POROS2 0
POROS1 1	LTH Sandstone	UHSGC NONE	RHOFCF 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 8.4	CASETHCK in 0.25	CASEOD in 4.5	PERFS 0
TDEPTH ft 0	BOTTEMP degF 180	BITSIZE in 7.875					

Calibration Report

Database File watson_b_34c_combo.db
Dataset Pathname RMT_MAIN
Dataset Creation Wed Jun 03 11:17:34 2015

Segmented Cement Bond Log Calibration Report

Serial Number: 12082235
Tool Model: 004

Calibration Casing Diameter: 4.500 in
 Calibration Depth: 136.007 ft

Master Calibration, performed Wed Jun 03 10:22:21 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.013	0.728	0.000	82.000	110.637	1.453
5FT	-0.013	0.678	0.000	82.000	118.543	1.592
S1	-0.007	0.758	0.000	100.000	130.644	0.957
S2	-0.008	0.742	0.000	100.000	133.232	1.116
S3	-0.005	0.716	0.000	100.000	138.718	0.677
S4	-0.008	0.687	0.000	100.000	143.987	1.135
S5	-0.005	0.708	0.000	100.000	140.298	0.685
S6	-0.005	0.720	0.000	100.000	137.883	0.673
S7	-0.004	0.746	0.000	100.000	133.453	0.479
S8	-0.004	0.749	0.000	100.000	132.787	0.533

Calibration Report

Serial Number: 12082235
 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: 11680606-A
 Shop Calibration Performed: Mon Jun 01 14:01:58 2015

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	75.00	80.00	-5.00	+/-15.00	V
ITCR2	3230	3250	-20	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0244	5.81	<6.00
Fe	206	206 +/-2	0.0944	----	----
NGAIN = 0.998		NZOFF = 0.2			

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0365	5.60	<6.50
Fe	209	208 +/-2	0.0910	----	----
FGAIN = 0.994		FZOFF = 0.2			

Flask Temperature 65.6 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	5062	5000	62	+/-1000	cps
ITCR2	3213	3200	13	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	76.00	80.00	-4.00	+/-15.00	V
FCAP	10334	10000	334	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.94	0.95	-0.01		
N/F Inel Norm	0.61	0.61	0.00		
RNF	1.07	1.07	-0.00	+/-0.12	
RINC	1.63	1.64	-0.01	+/-0.18	
SGFN	24.06	24.00	0.06	+/-0.50	cu
SGFF	22.87	22.85	0.02	+/-0.50	cu
FSIN	25058	24000	1058	+/-2000	cps
FCAP	10528	10000	528	+/-1000	cps
NFTR	0.86			<5.00	
FFTR	0.91			<5.00	
NBKG	133			<500	cps
FBKG	102			<500	cps
RTN	0.44	0.40	0.04	+/-0.10	usec
RTF	0.47	0.40	0.07	+/-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	2013.11.14.0
RMTI Module	2014.8.28.1

Gamma Ray Calibration Report

Type / Serial: 002 / 10000028

SHOP CALIBRATION

Wed Jun 03 00:21:49 2015

	Counts/Sec.	Gain	Offset	Jig	Units
Background	39.9				cps
Calibrator	330.3	1.4048			cps GAPI/cps

PRIMARY VERIFICATION

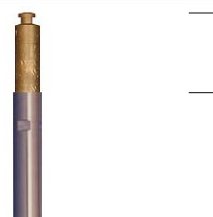
Background	55.8				cps
Calibrator	458.8				cps
Difference				403.0	GAPI

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	37.26		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00

GR	35.00		TTTCU-002 (1000028) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
			XHU-003 (12218041) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT	24.35		RMTI-A (11680606) Halliburton RMTI Tool	14.00	2.13	77.00
RmtTNGT	23.85					
RmtFP5V	16.10		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RmtCommFWa	16.10		AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
			CENT-CSSMid3.00Roller CSS 3.00" MIDDLE ROLLER CENTRALIZER	2.75	3.00	36.00
CBLTEMP	8.31		RBT-004 (12082235) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00
			CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
LLMTEN	0.00		BUL-001 (000001) Bullnose	0.30	1.69	1.50
		Dataset:	watson_b_34c_combo.db: field/well/run1/RMT_MAIN			
		Total length:	40.83 ft			
		Total weight:	386.50 lb			
		O.D.:	3.13 in			

Company URSA OPERATING CO, LLC
 Well WATSON RANCH B 34C-17-07-95
 Field PARACHUTE
 County GARFIELD
 State CO

County

GARFIELD

State

CO

HALLIBURTON

ACOUSTIC CEMENT
BOND LOG