

# ACOUSTIC CEMENT BOND LOG

<<< 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 ACOUSTIC CEMENT BOND LOG DATED 31 MARCH 2012 IS CORRELATED TO WEATHERFORD COMPENSATED DUAL NEUTRON LOG DATED 14 FEB 2012
RMTI & RBT RAN IN COMBO
LOG INTERVAL PER CUSTOMER REQUEST
SHORT JOINT: 5406' - 5426' & 7360' - 7380'
***THANK FOR CHOOSING HALLIBURTON ENERGY SERVICES***

EQUIPMENT DATA	
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TELEMETRY		RESERVOIR MONITOR TOOL		RADIAL BOND TOOL			
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	
Serial No.	2718	Serial No.	605	Serial No.	2211	Serial No.	
Model No.	TTTC-U	Model No.	RMTI-A	Model No.	RBT-004	Model No.	
Diameter	1.69"	Diameter	2.13"	Diameter	3.13"	Diameter	
LOGGING DATA							
General Data							
Pass	Depths		Well Head	Speed	Logging Run Comments		
No.	From	To	Pressure	Ft/Min			
ONE	7917'	SURFACE	0	25/60	MAIN LOG SECTION		
	GR		CCL		AMP		MSG
Pass	Scale		Scale		Scale		Scale
No.	L	R	L	R	L	R	L
ONE	0	200	-3900	390	0	100	200
DIRECTIONAL INFORMATION							
Maximum Deviation		N/A	deg. @	N/A	KOP	N/A	

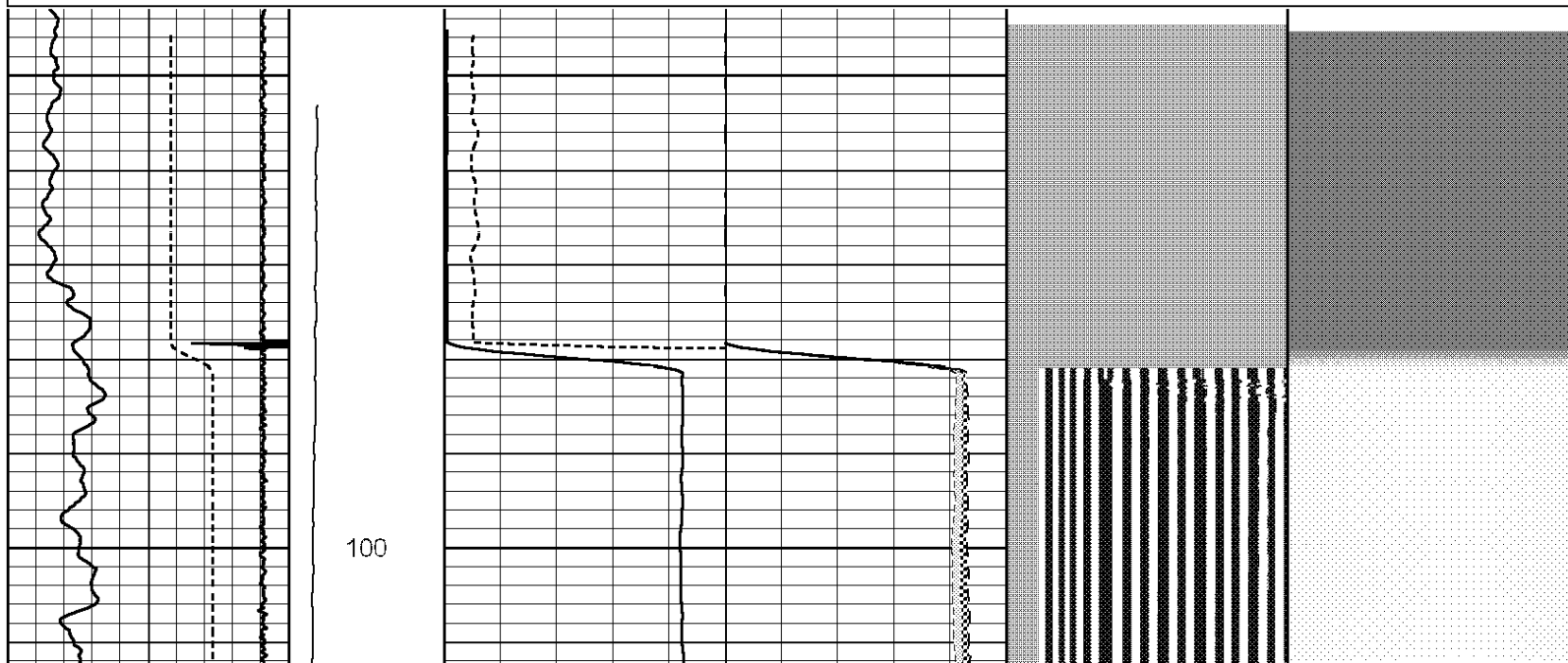
HALLIBURTON

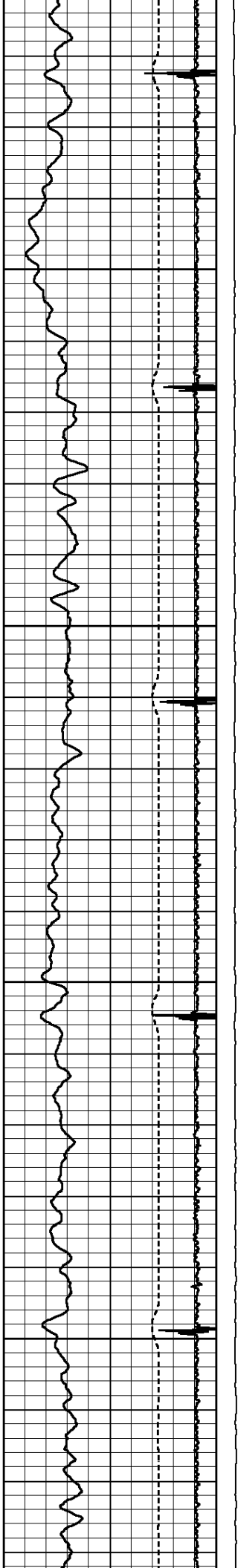
## MAIN LOG SECTION

5" = 100'

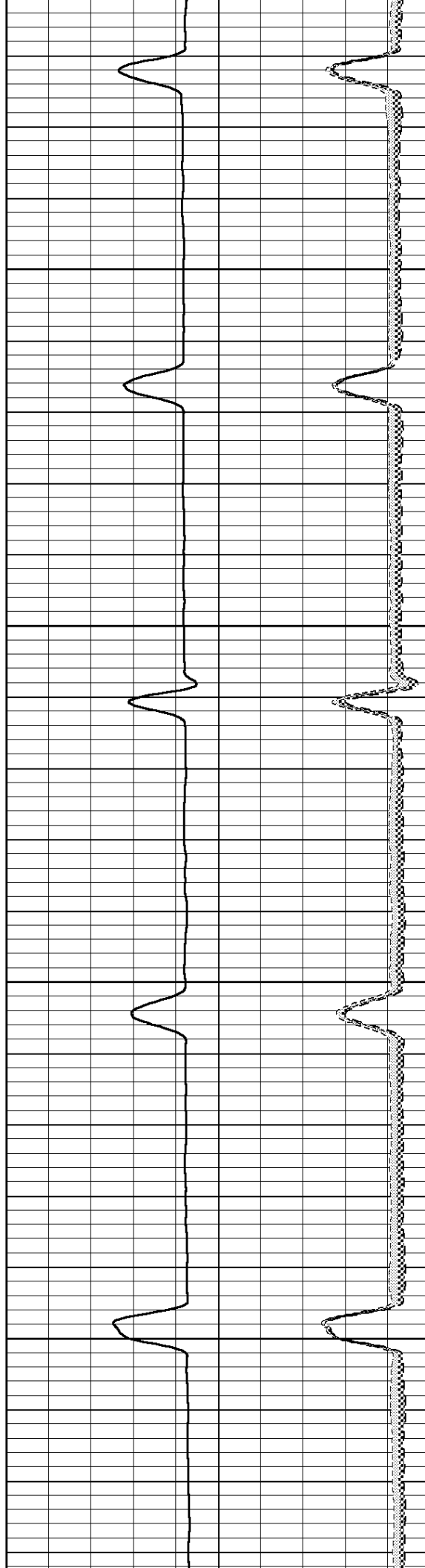
Database File: kaufman\_43d\_25\_692\_rbt.db  
Dataset Pathname: RBT\_RMT/merge1  
Presentation Format: radial  
Dataset Creation: Sat Mar 31 23:52:16 2012  
Charted by: Depth in Feet scaled 1:240

360	TT (usec)	160	TENSION	0	AMP (mV)	100	0	AMPAVG	100	200	MSG	1200	1	SECTORS	8
-3900	CCL	390	0 (lb)2500	0	AMPx5 (mV)	10	0	AMPMAX	100				1		100
0	GR (GAPI)	200					0	AMPMIN	100						

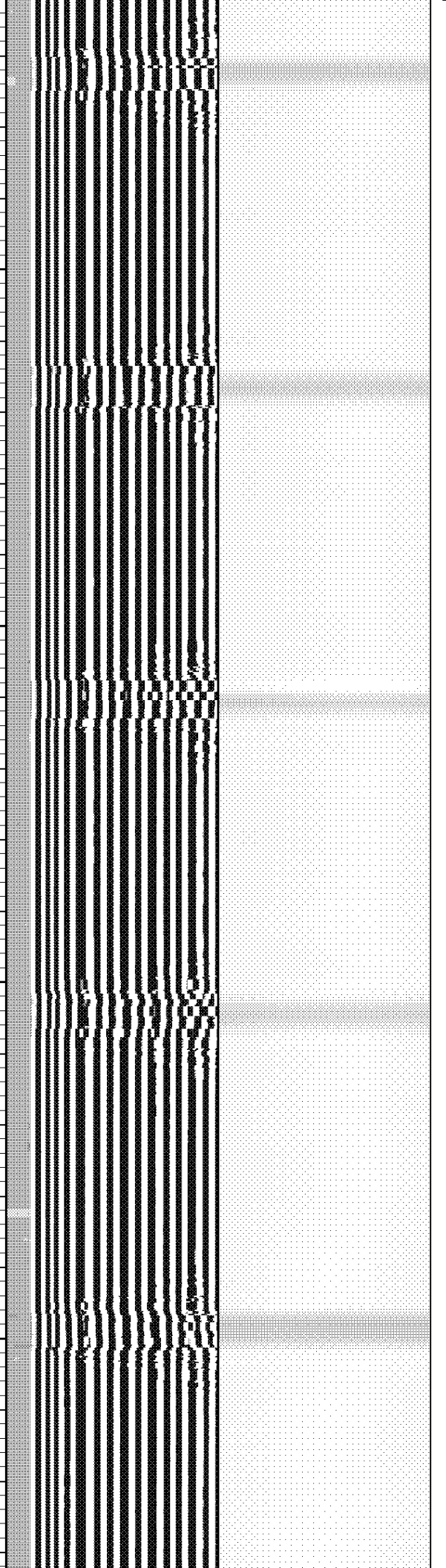


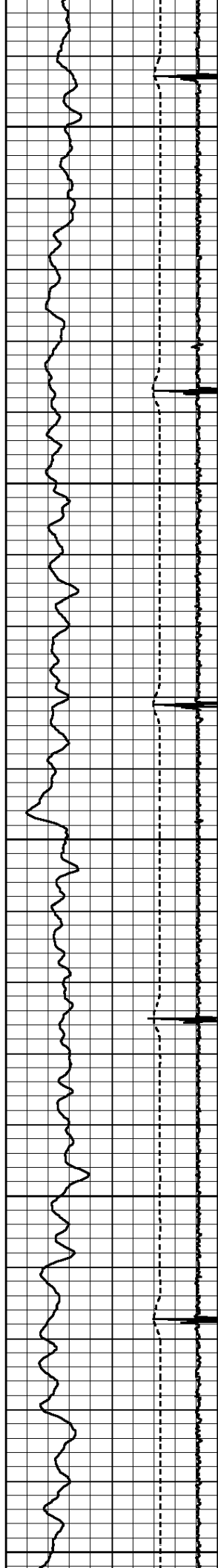


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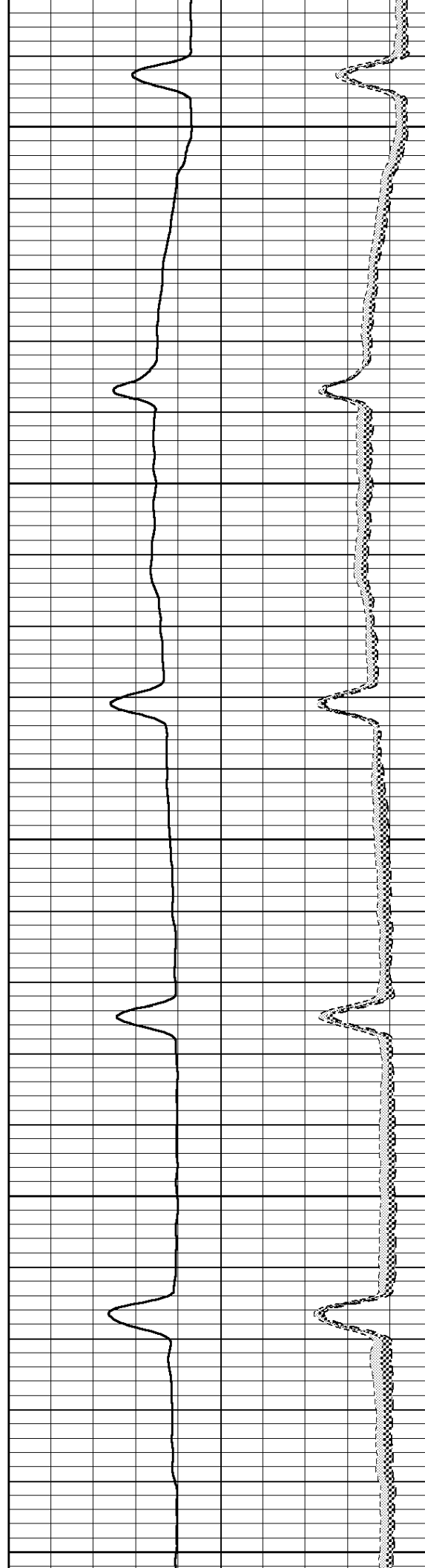


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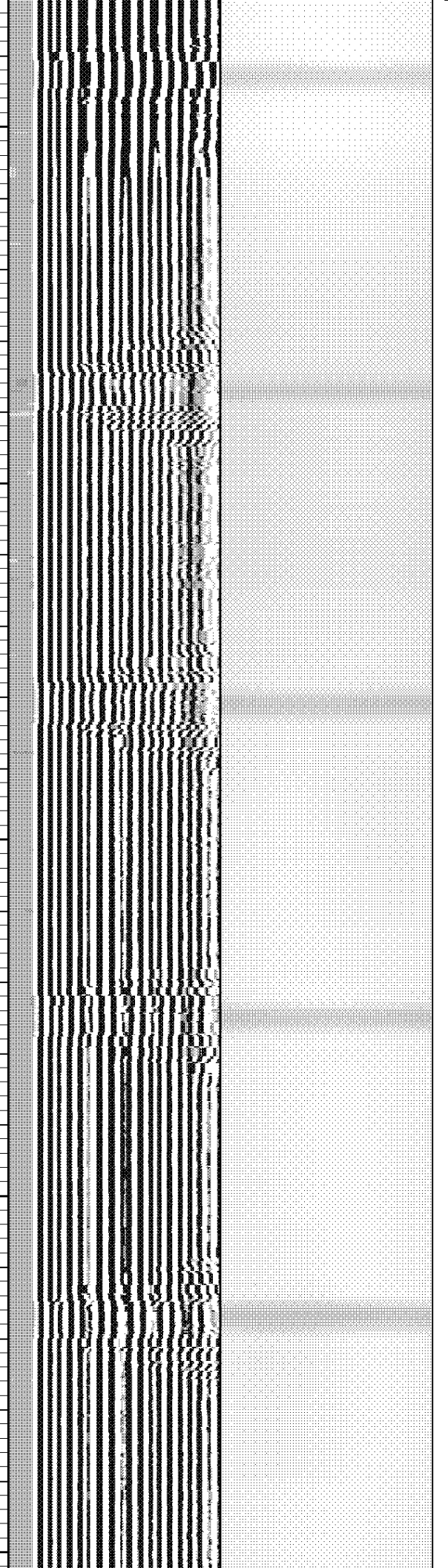


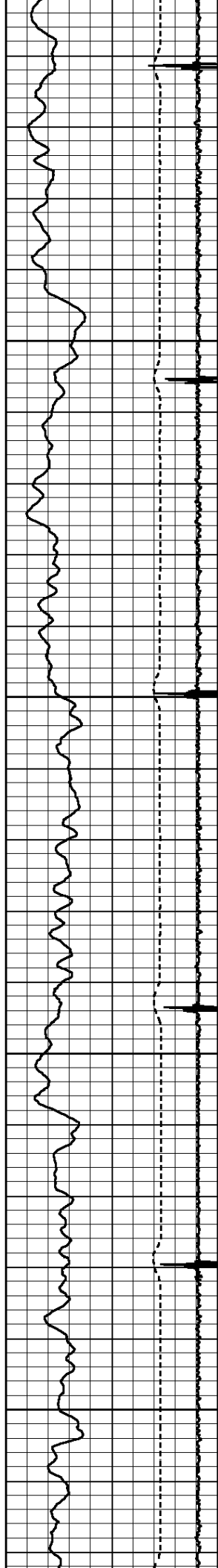


400



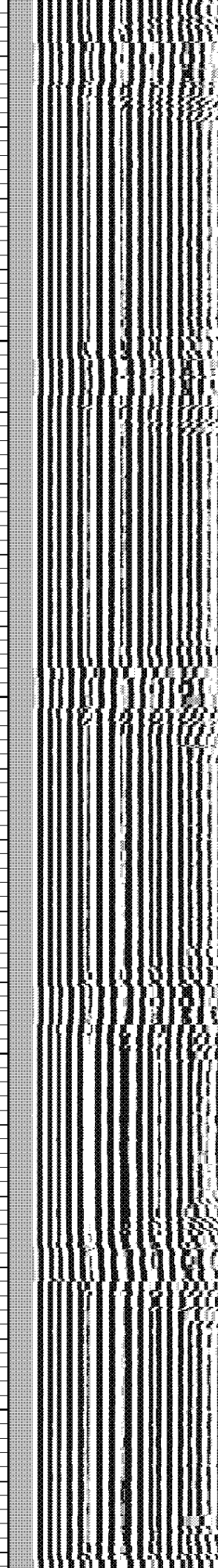
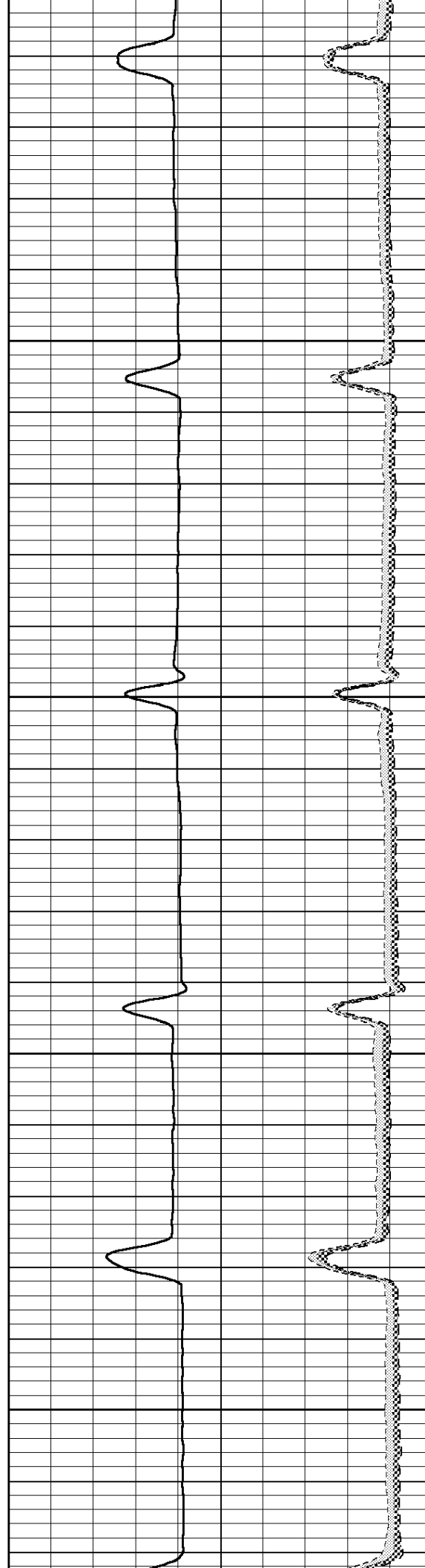
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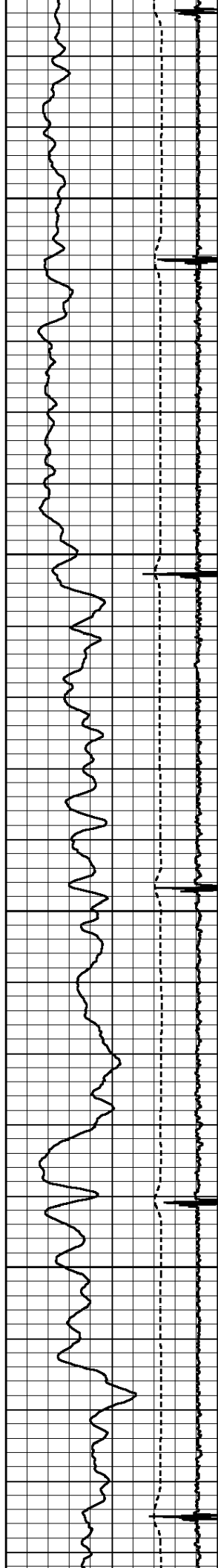




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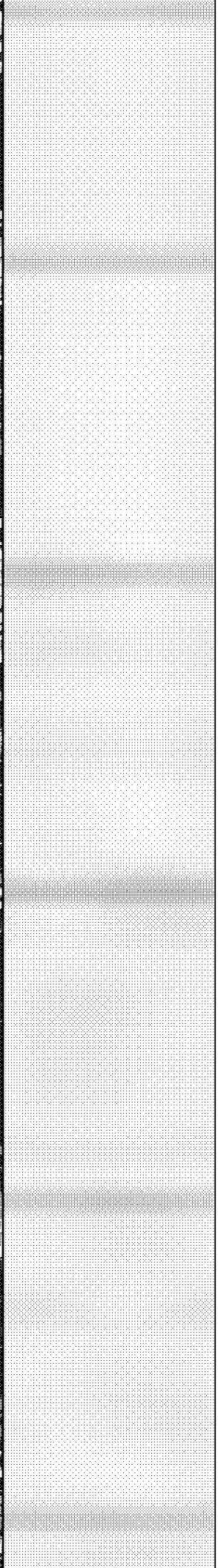
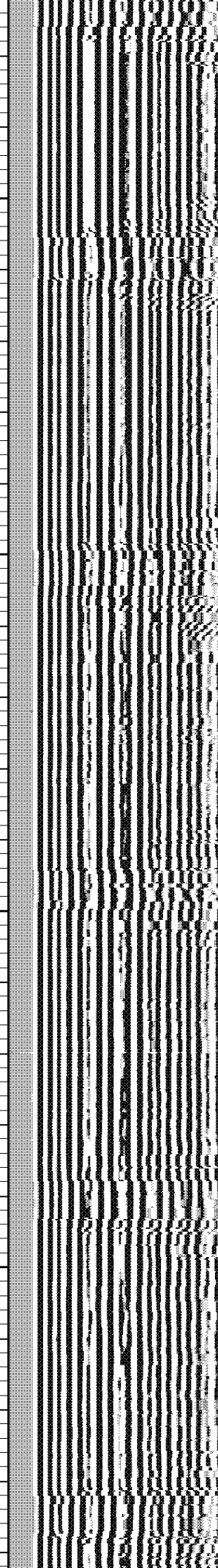
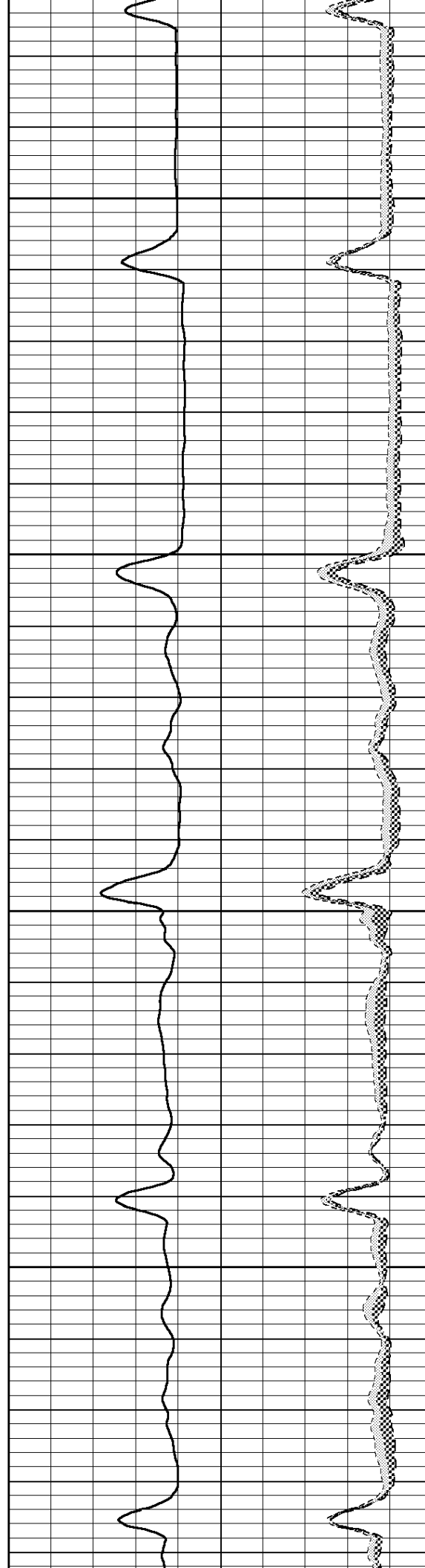
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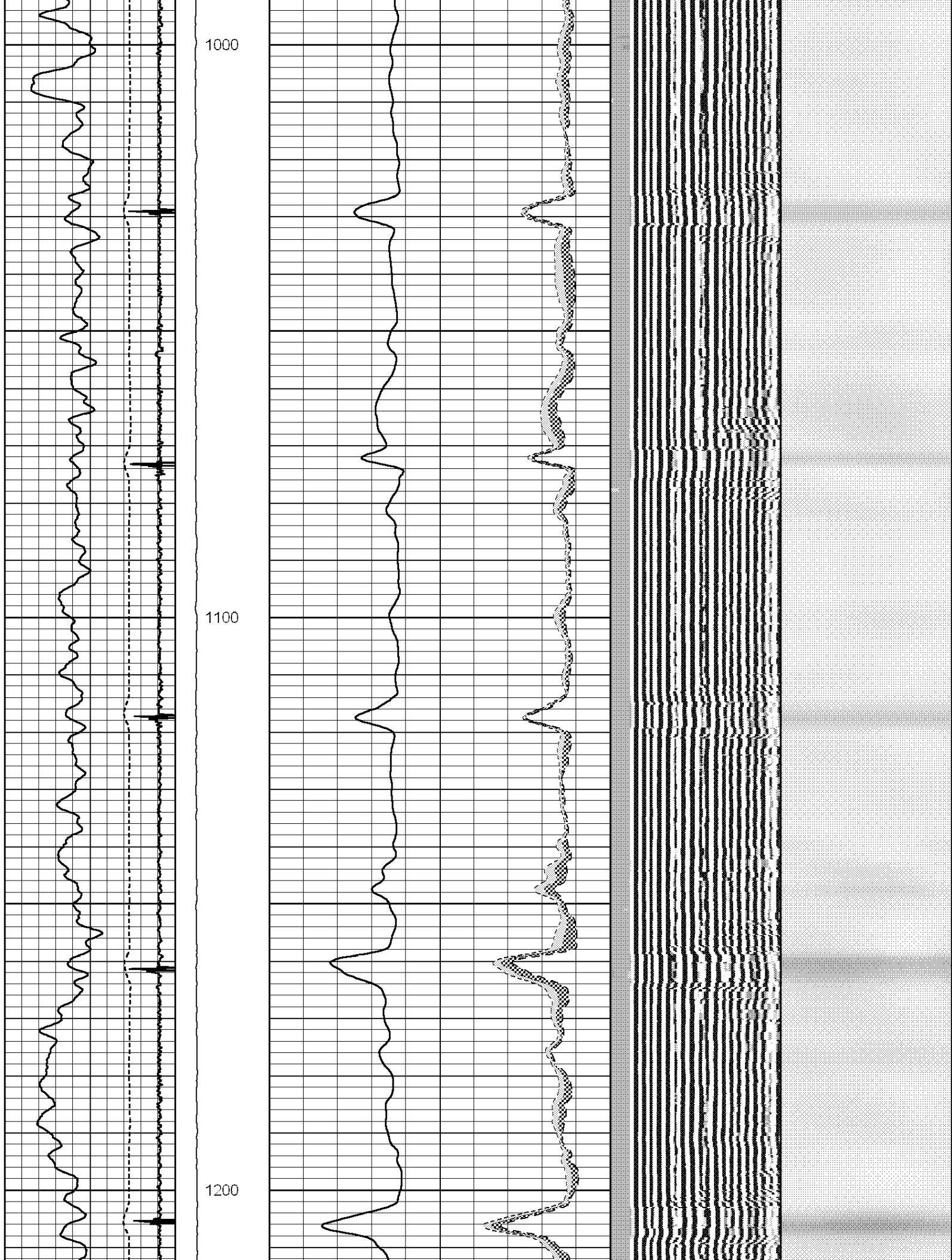


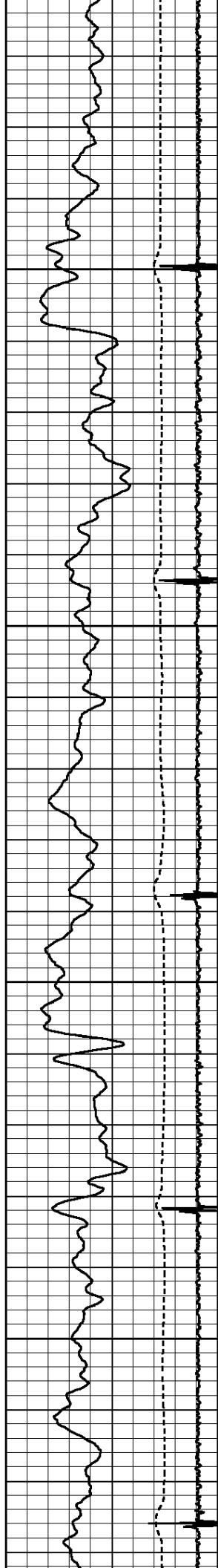
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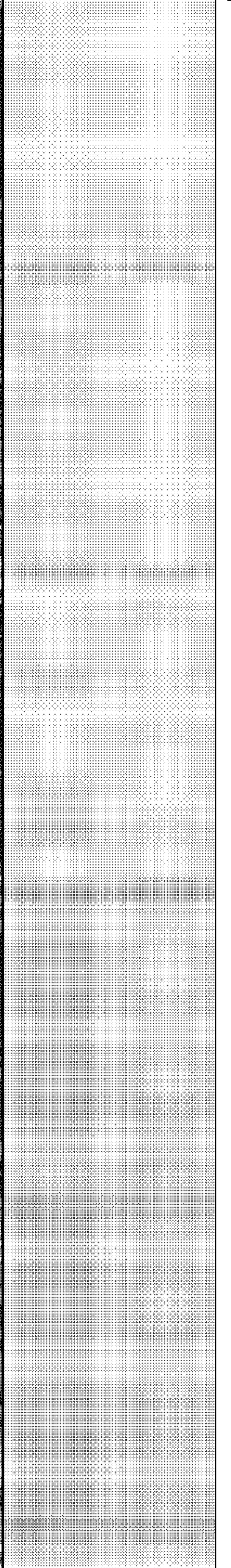
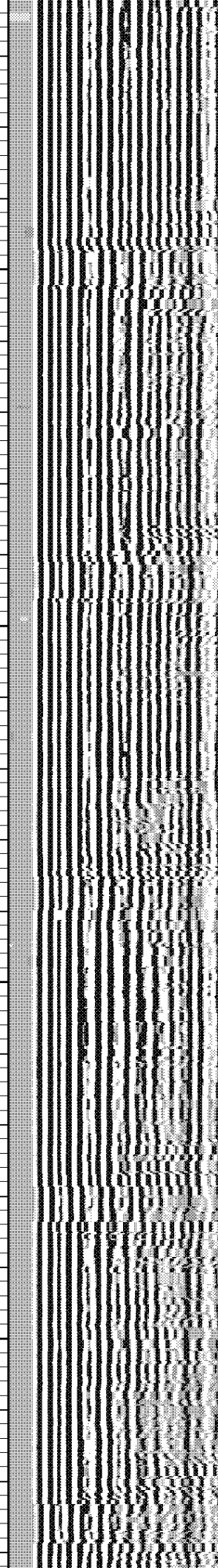
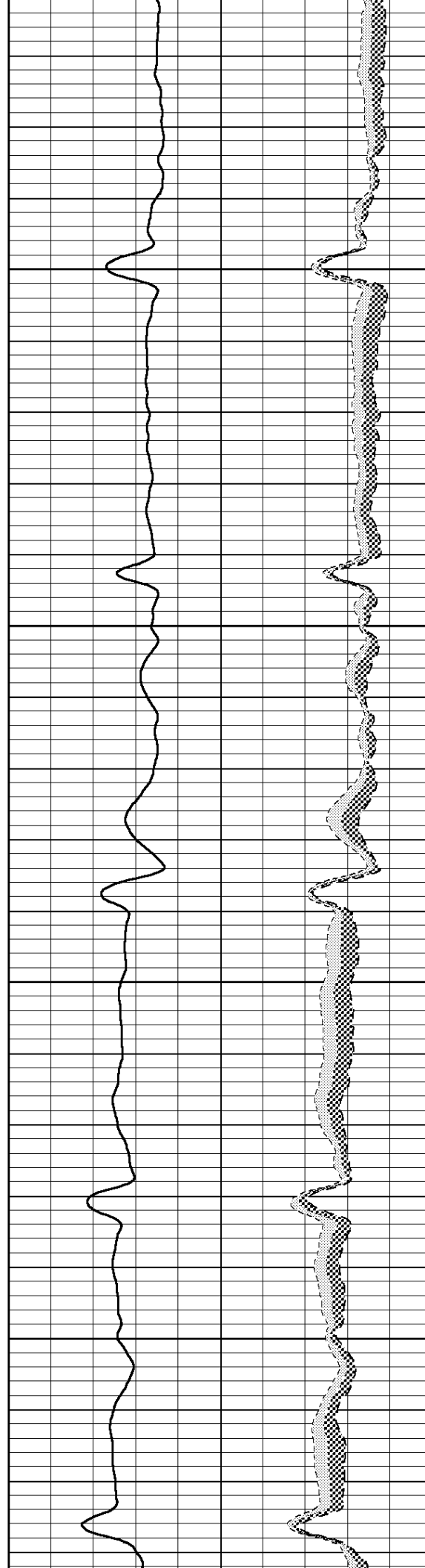




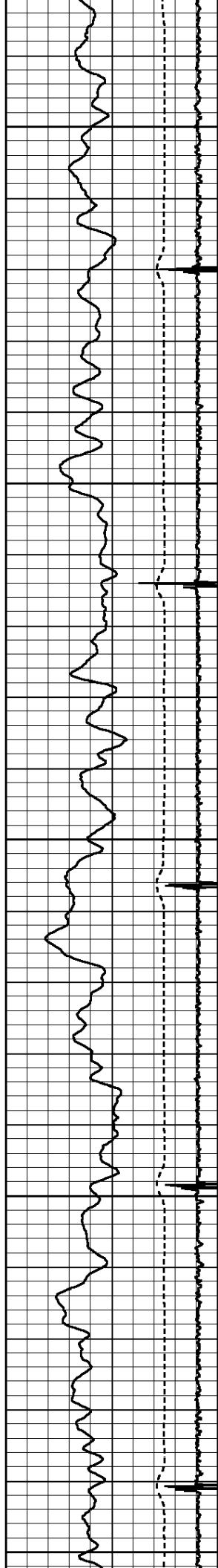


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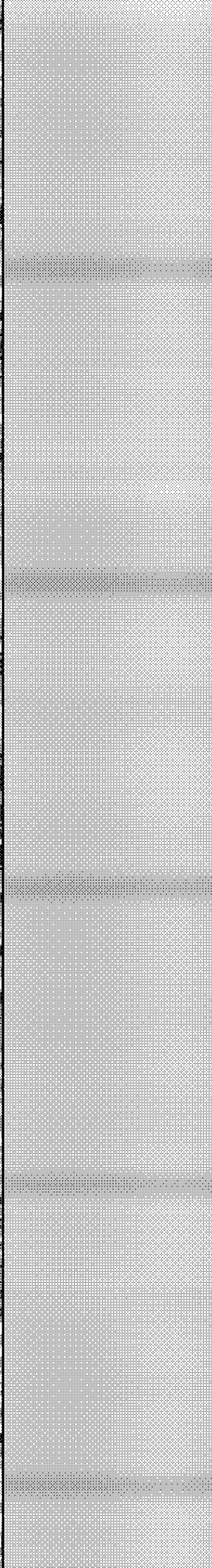
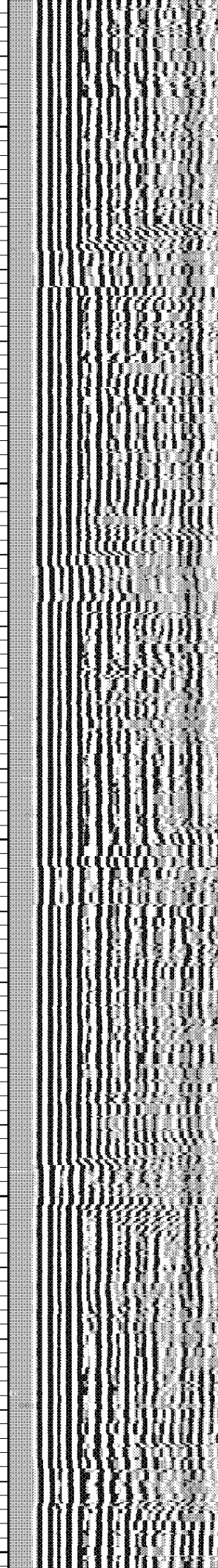
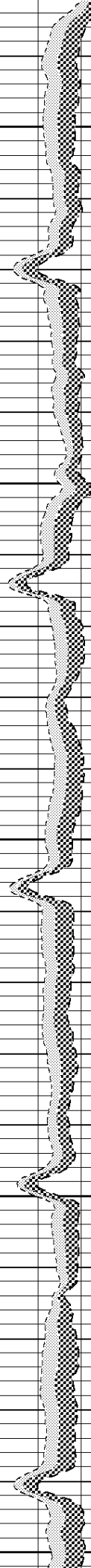
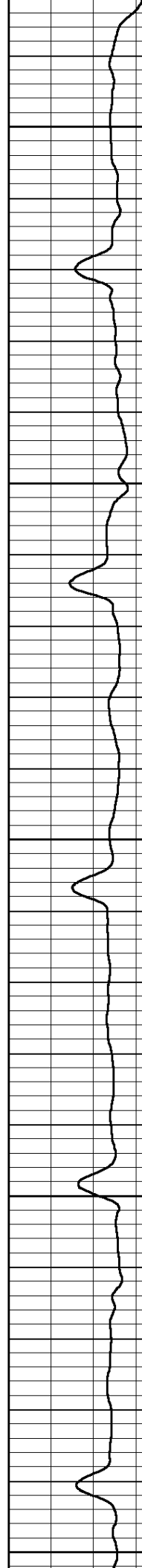


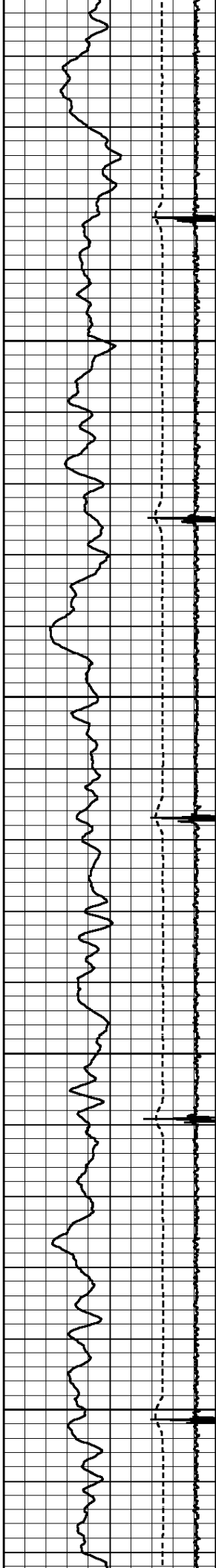




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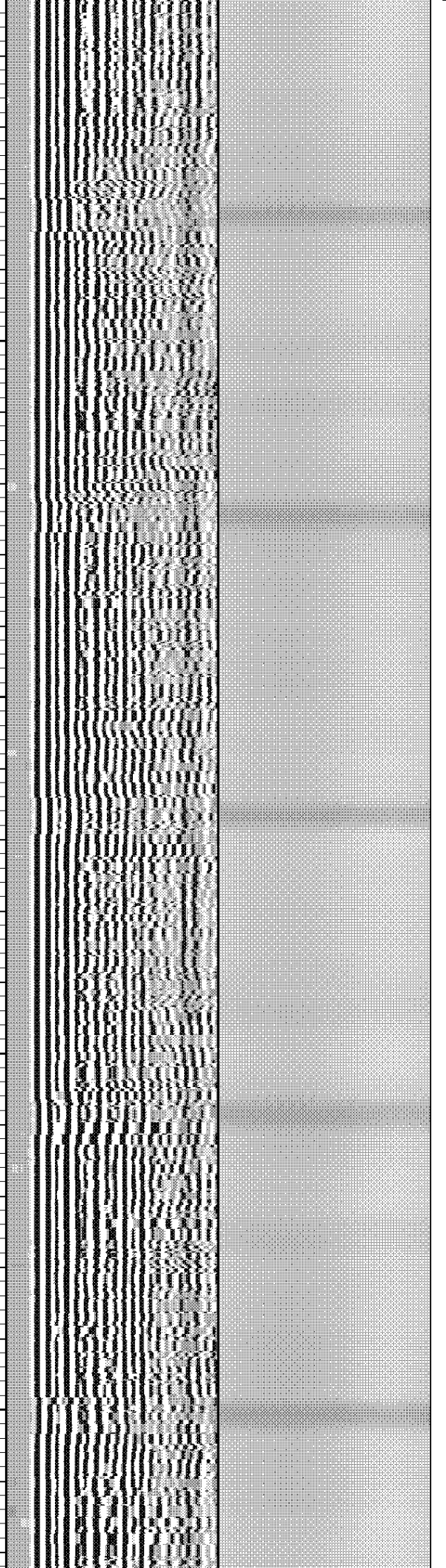
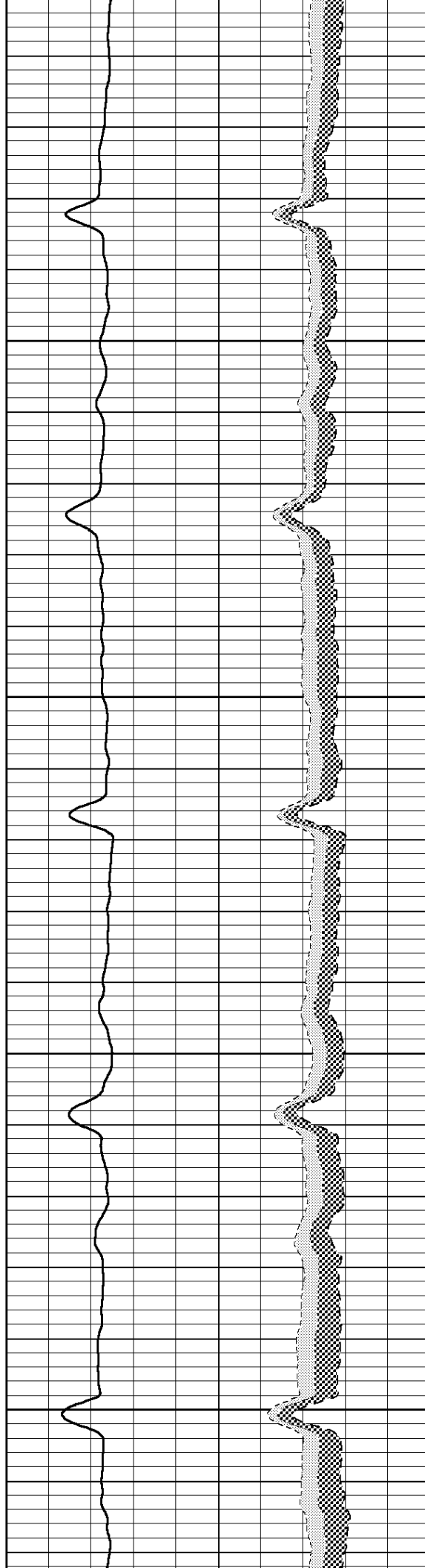
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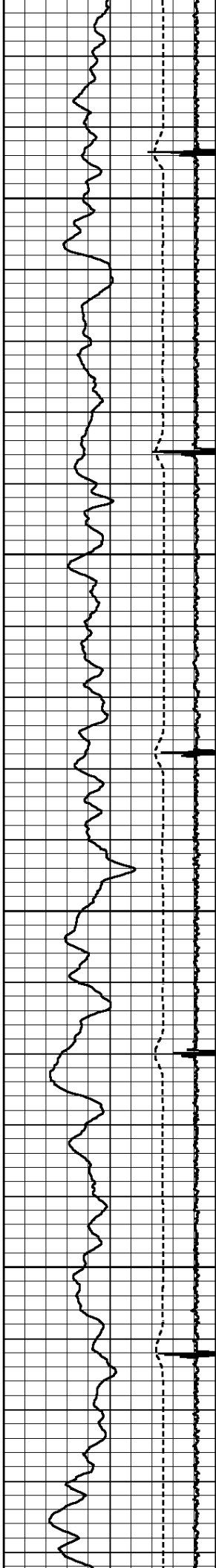




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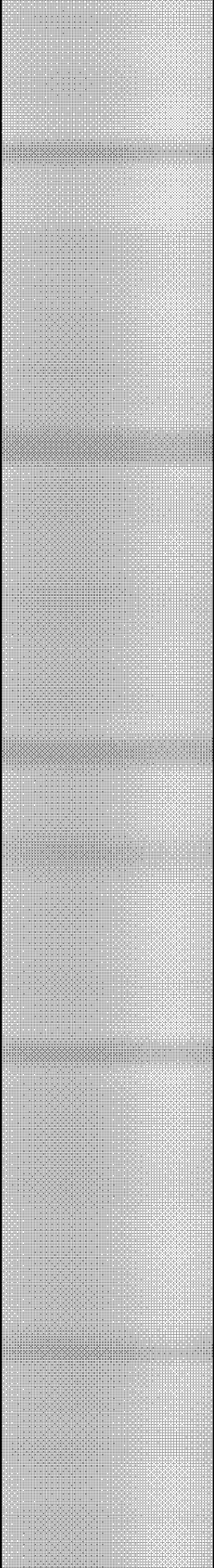
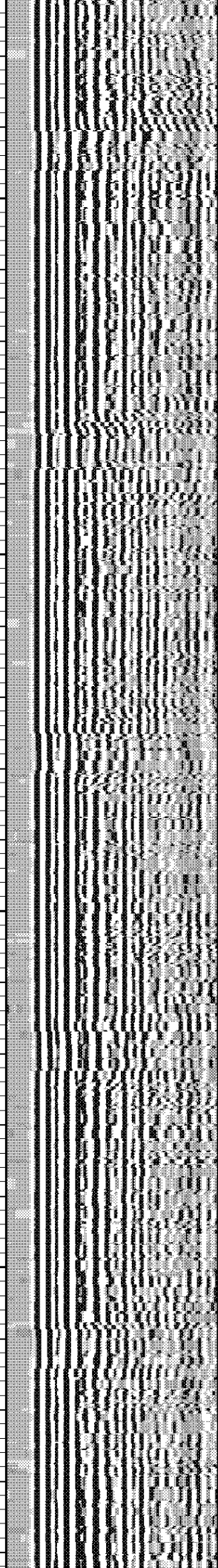
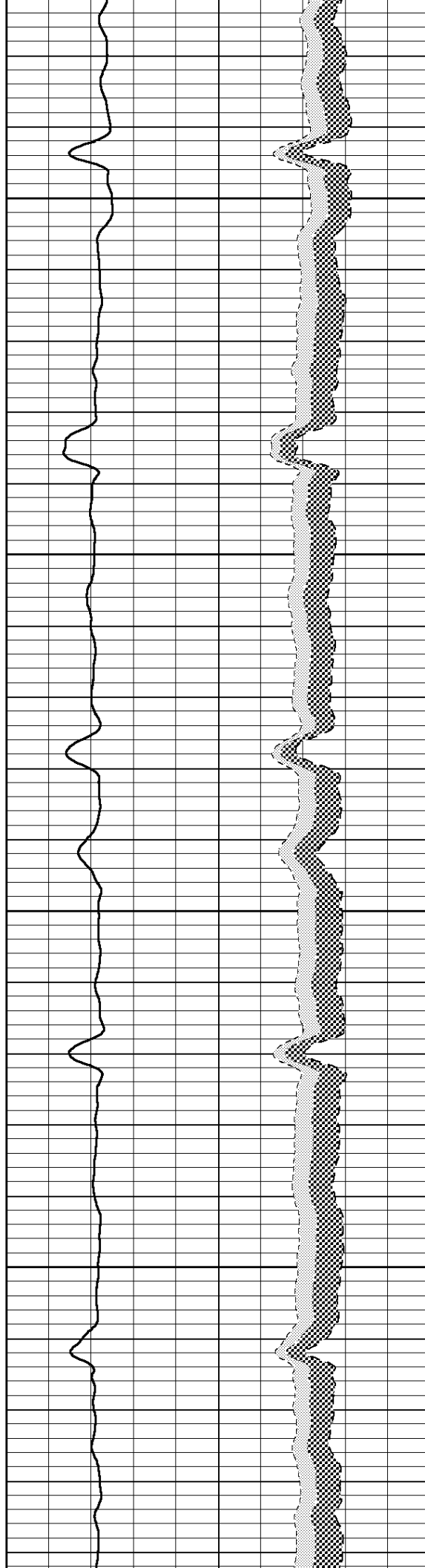
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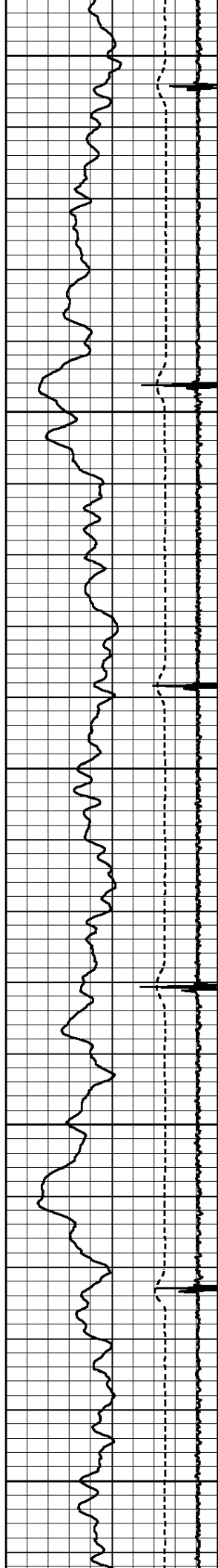


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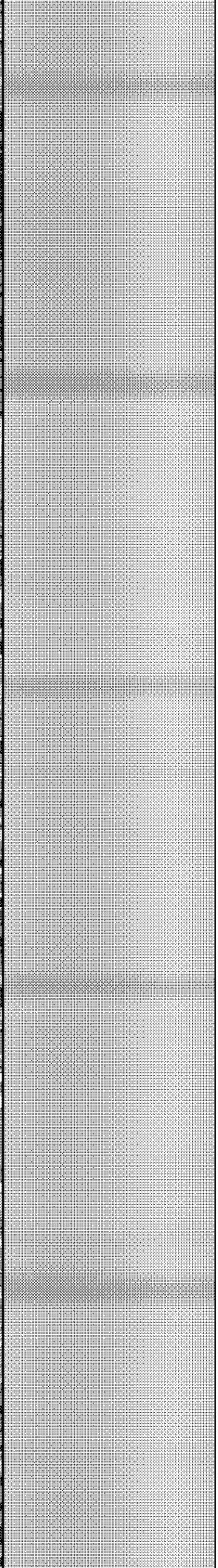
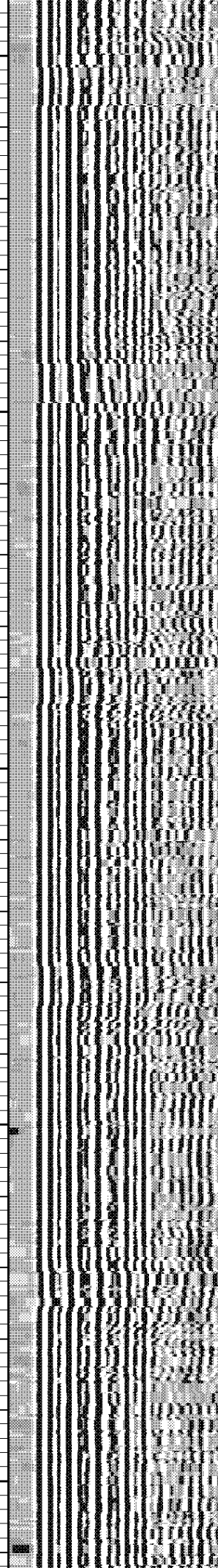
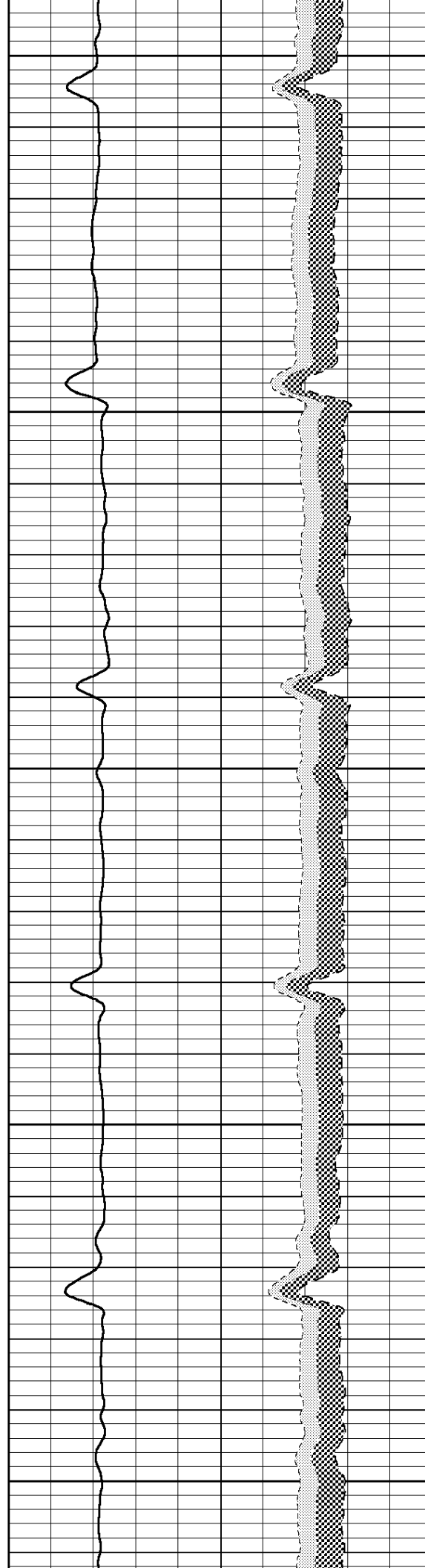


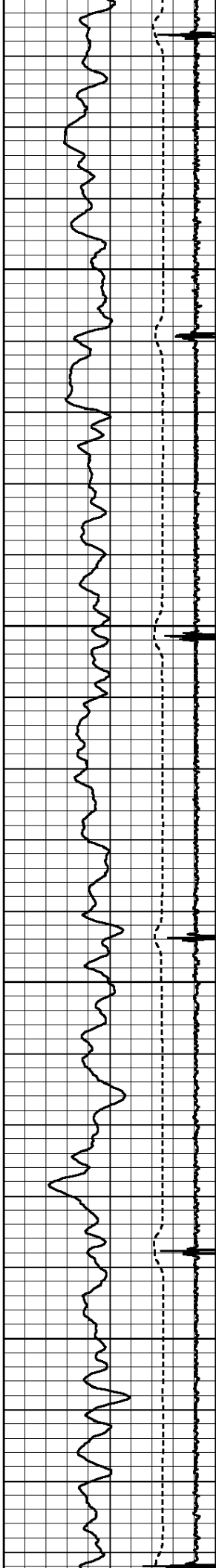


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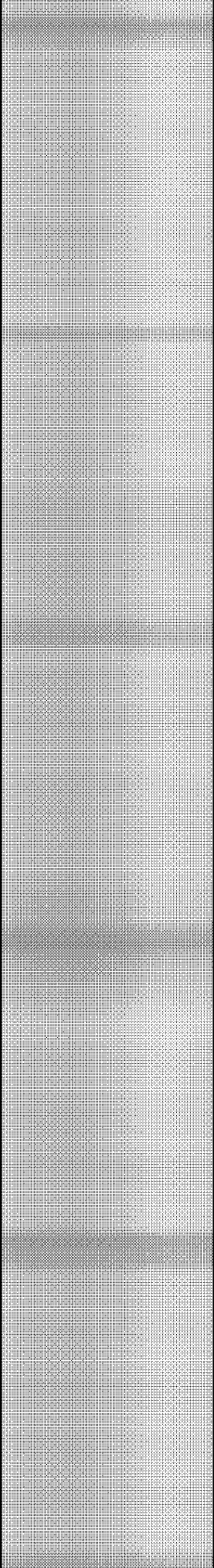
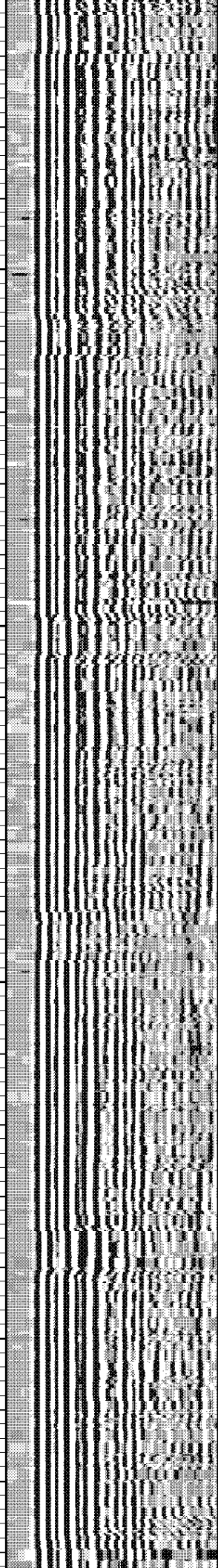
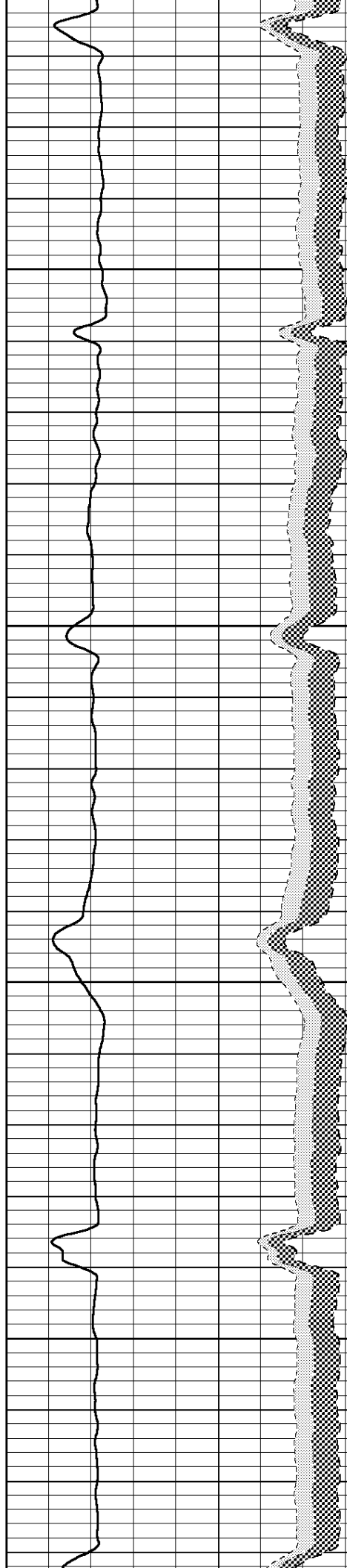
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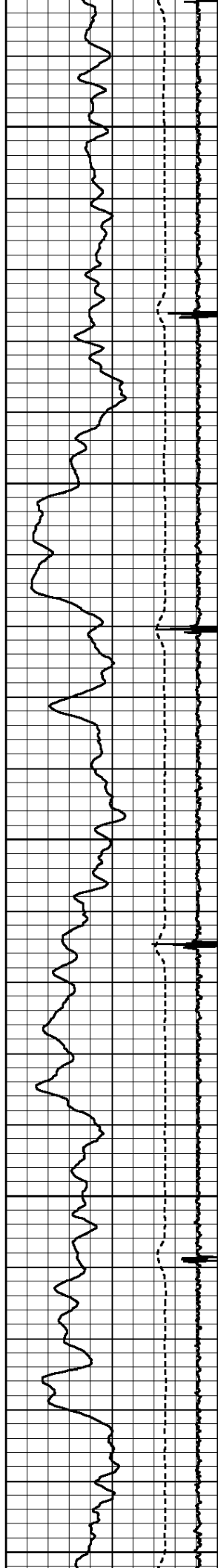




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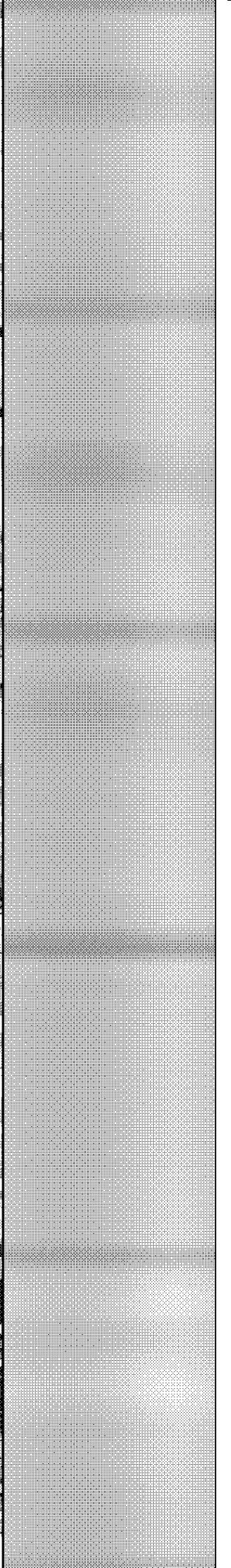
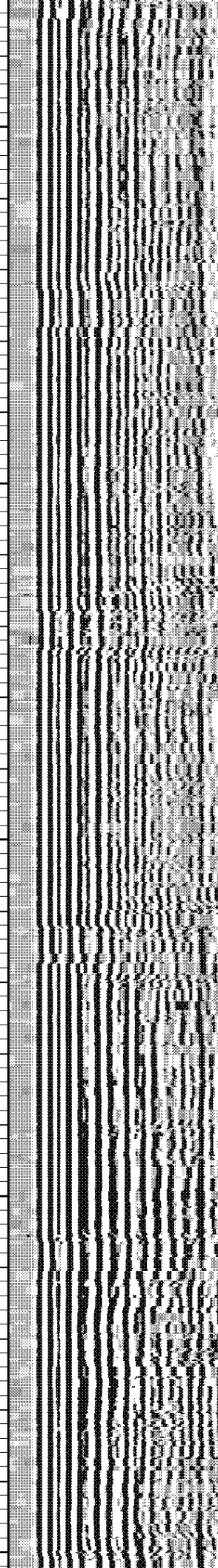
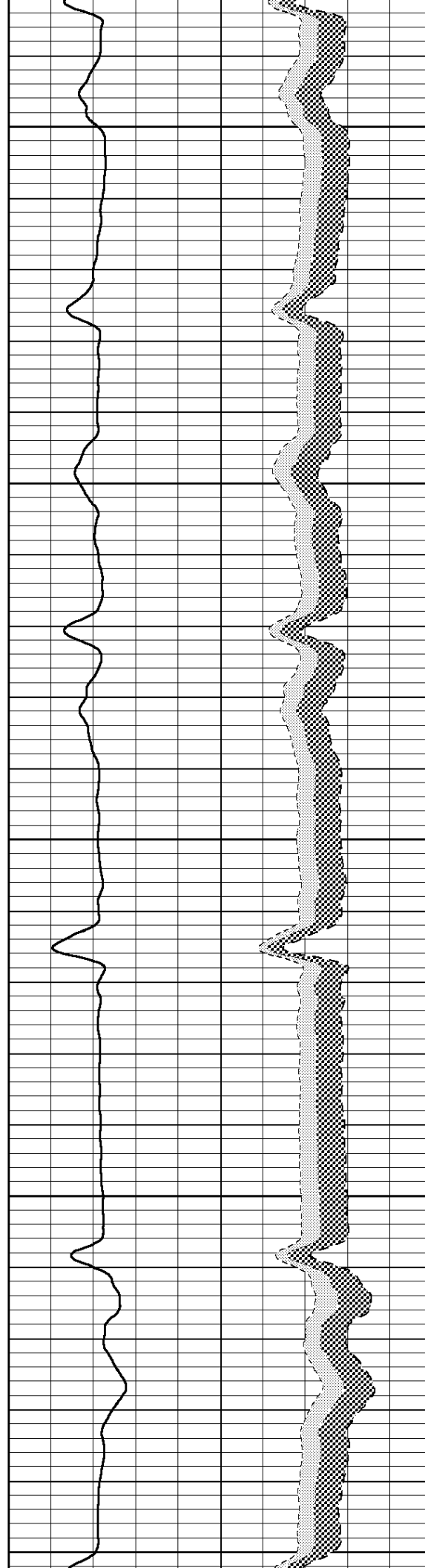
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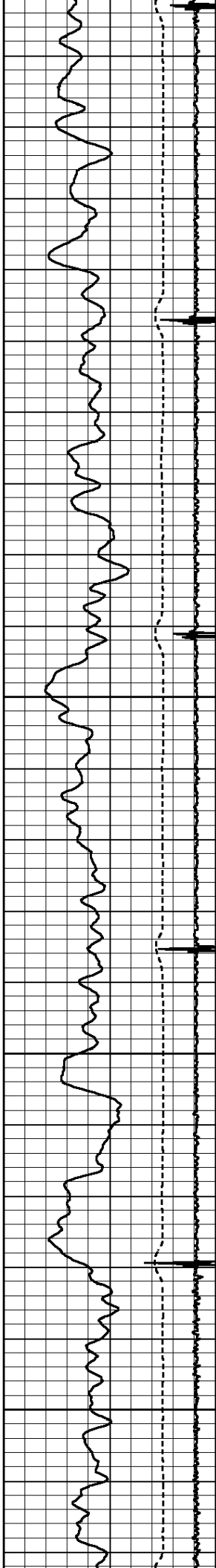


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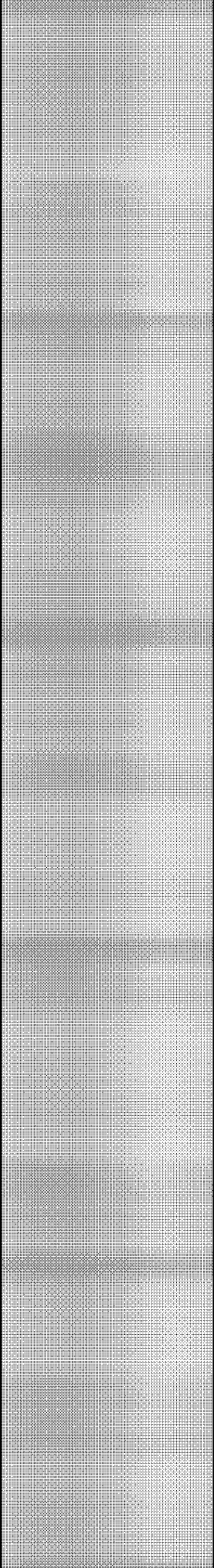
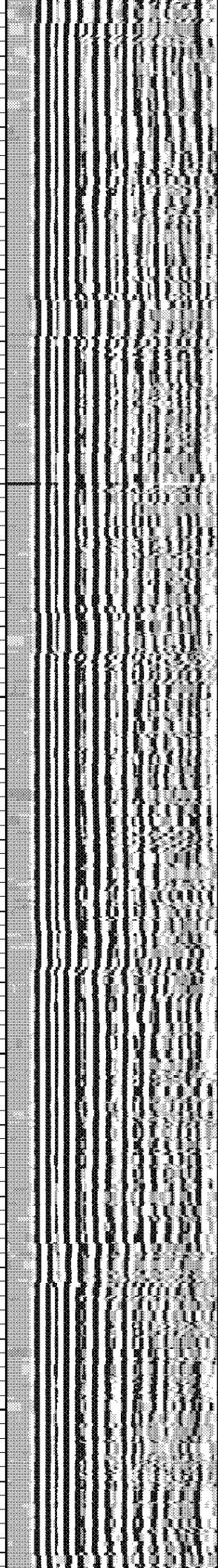
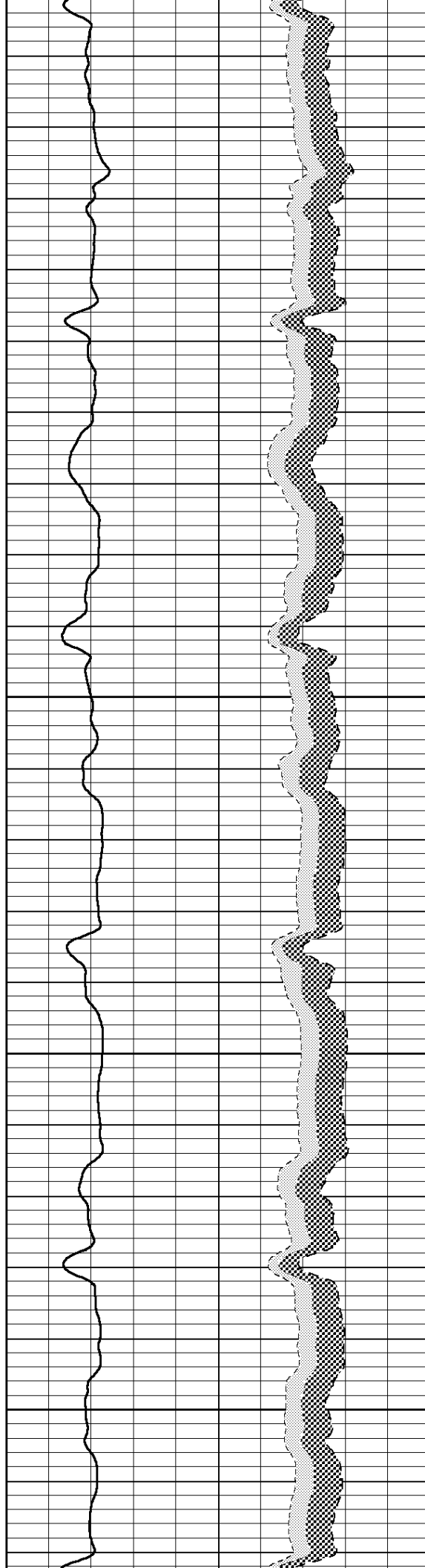


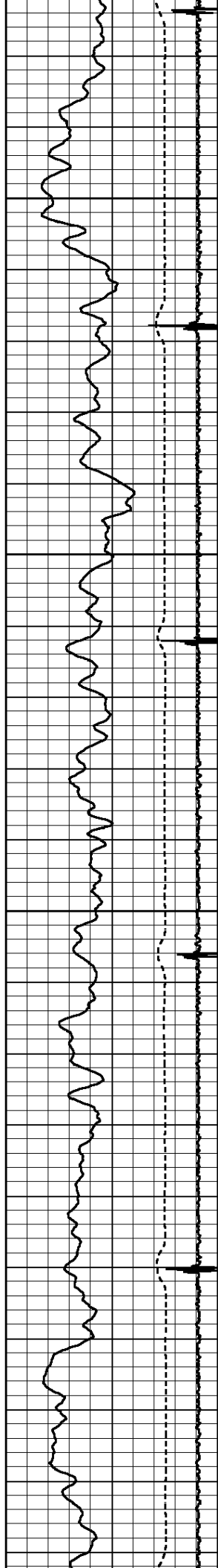




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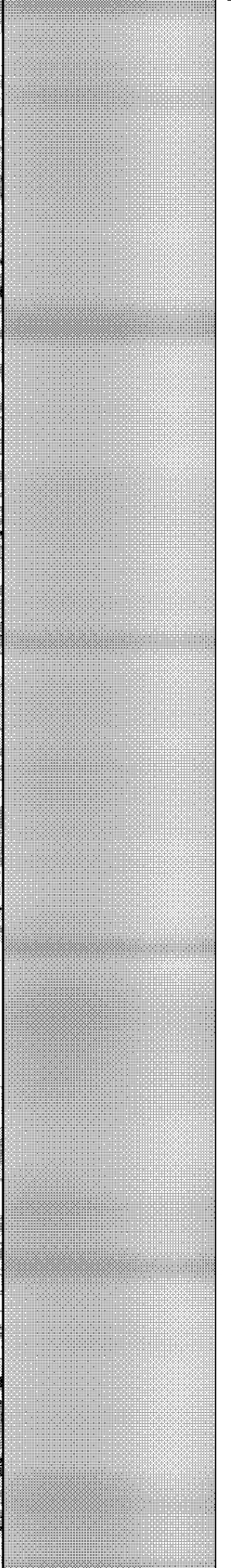
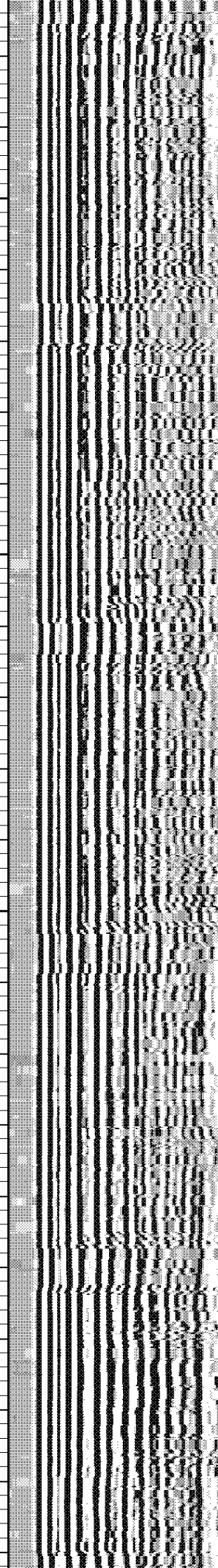
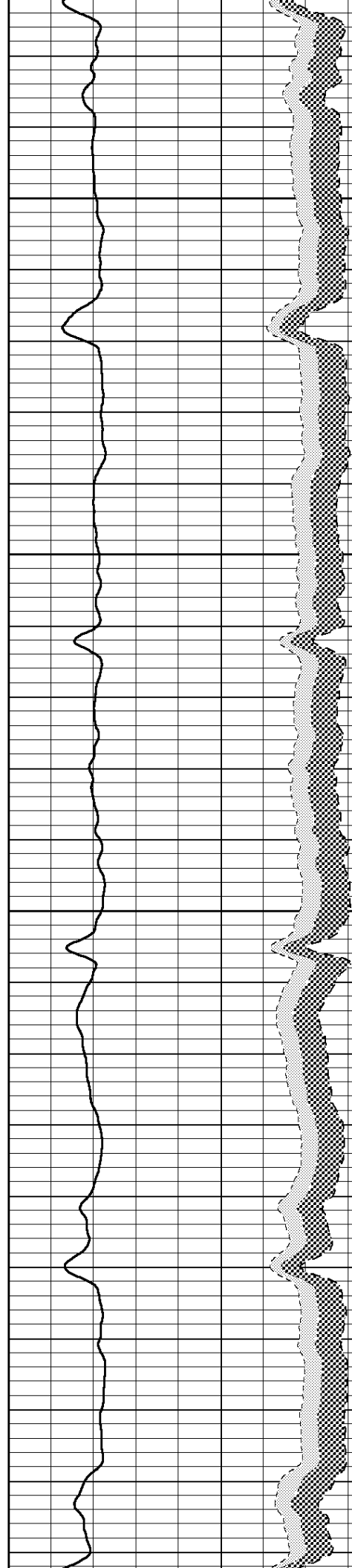
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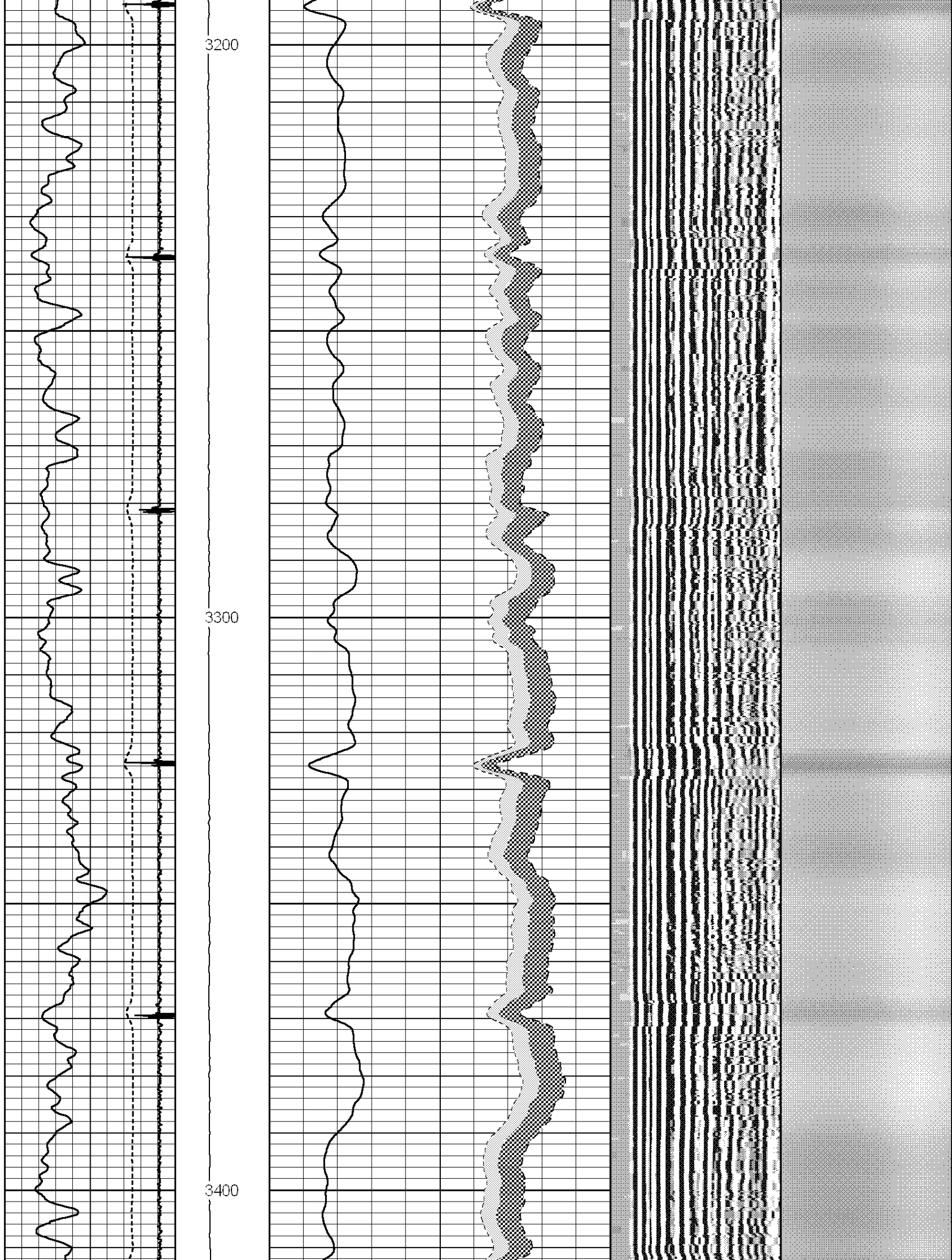




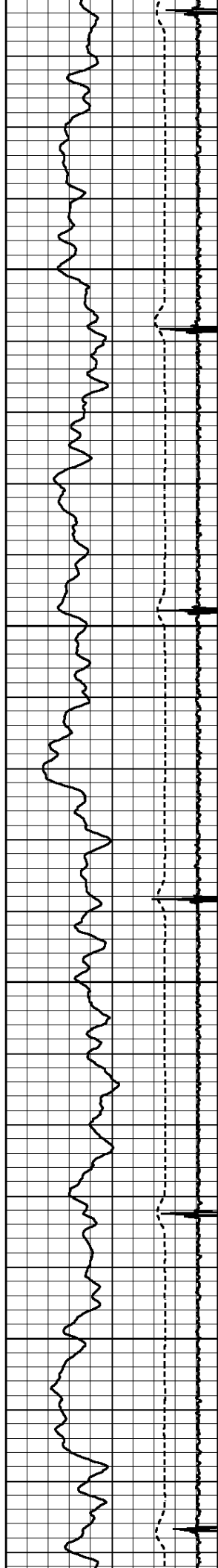
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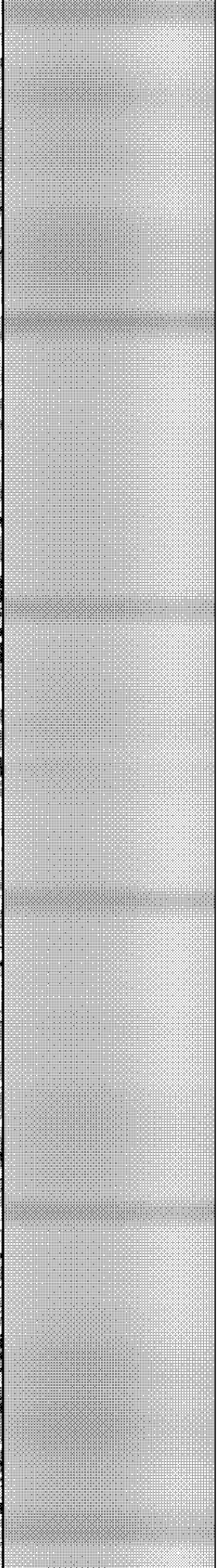
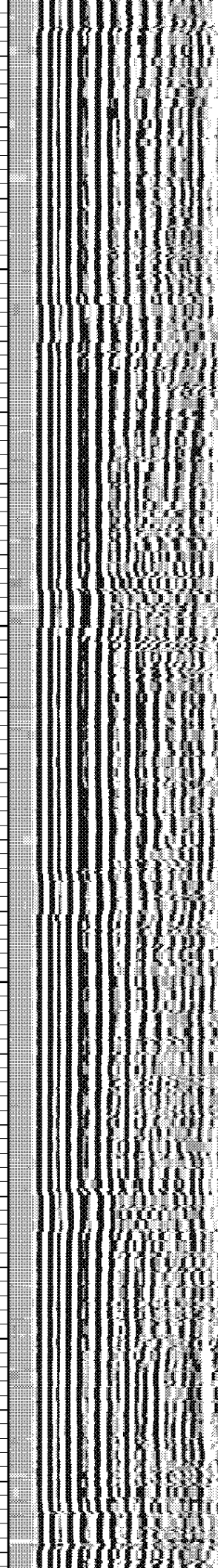
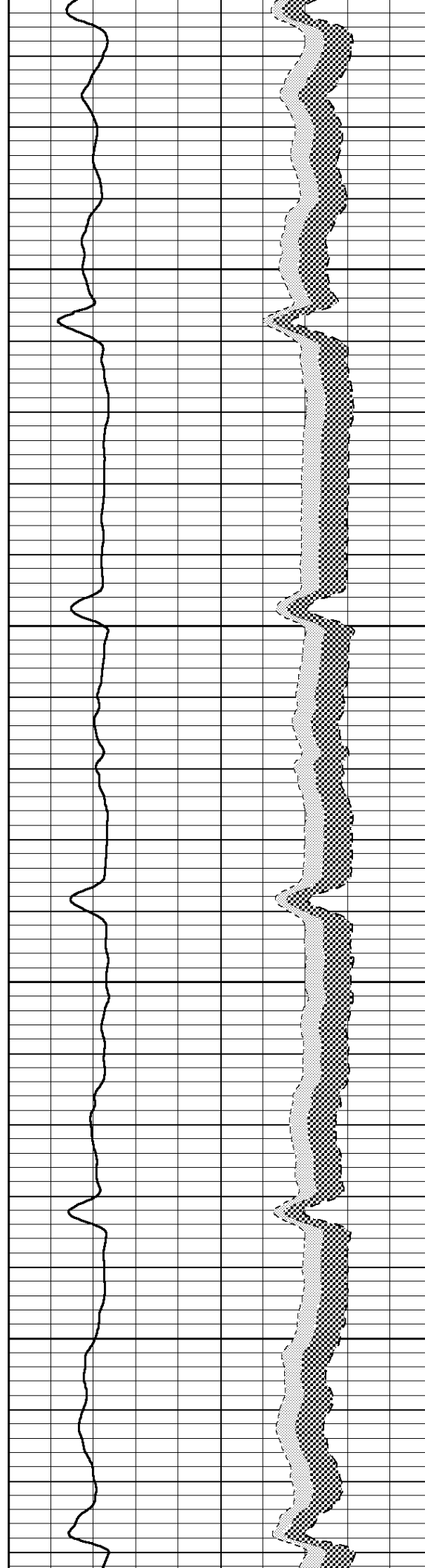


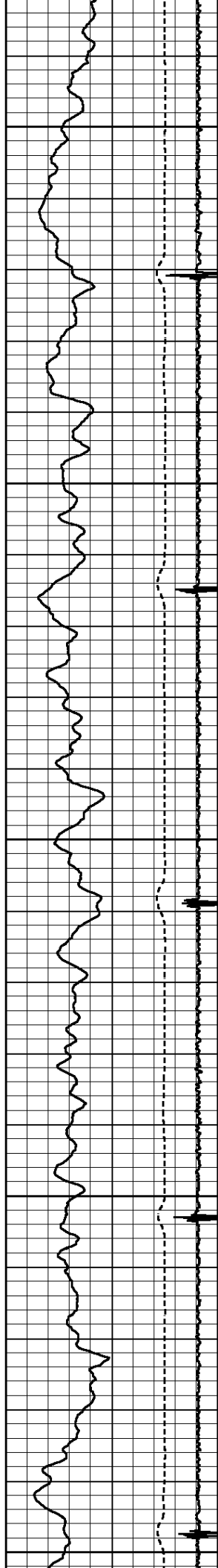




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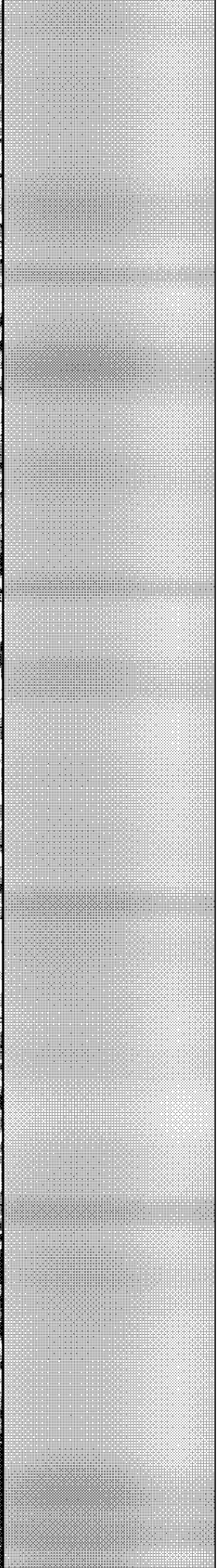
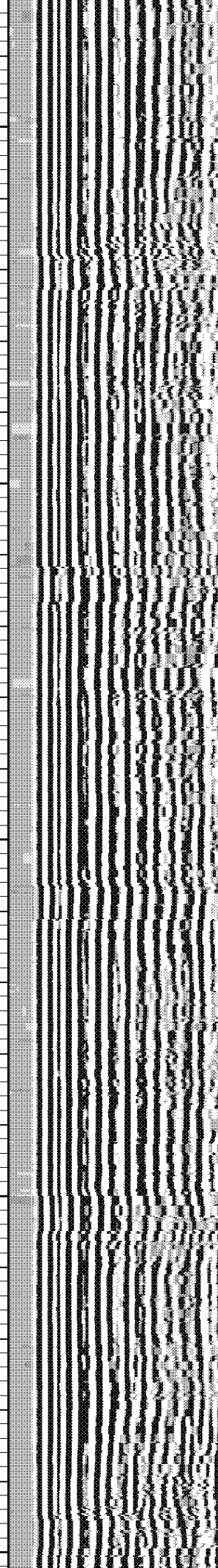
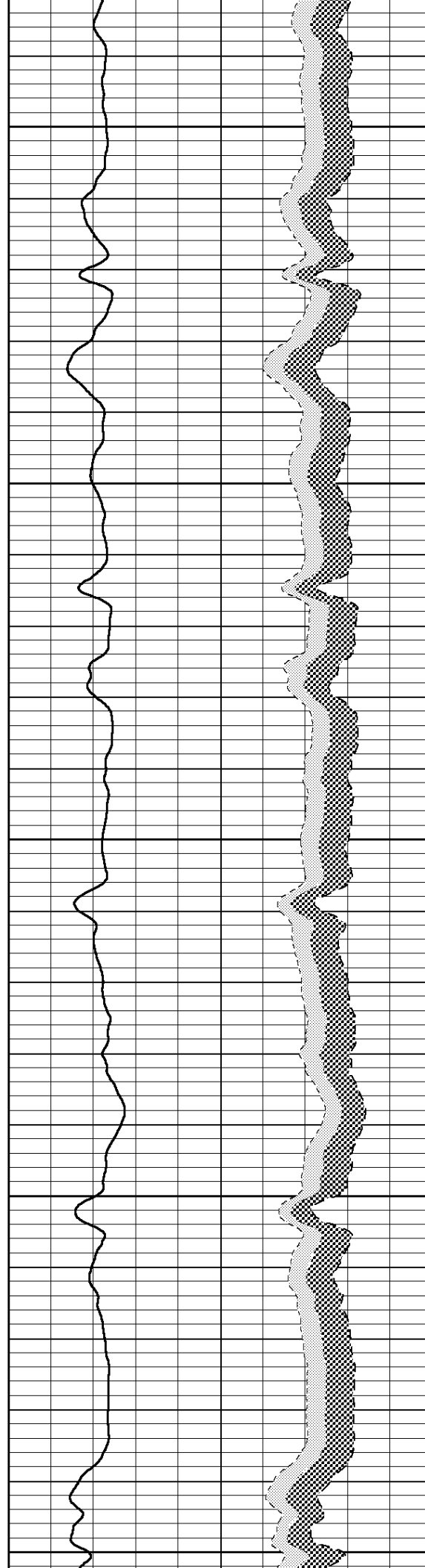
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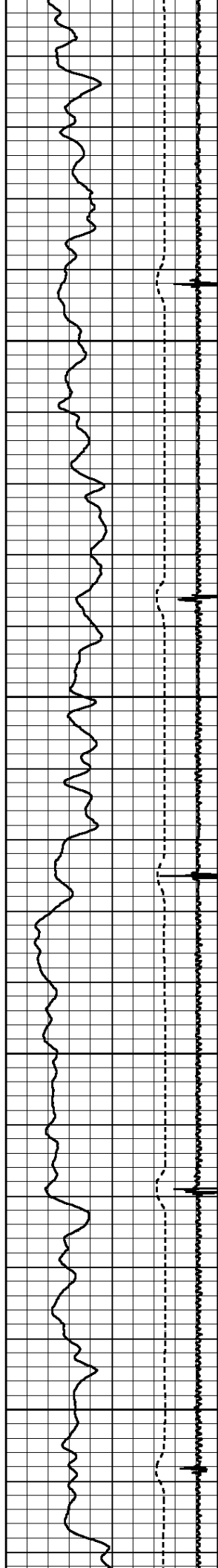




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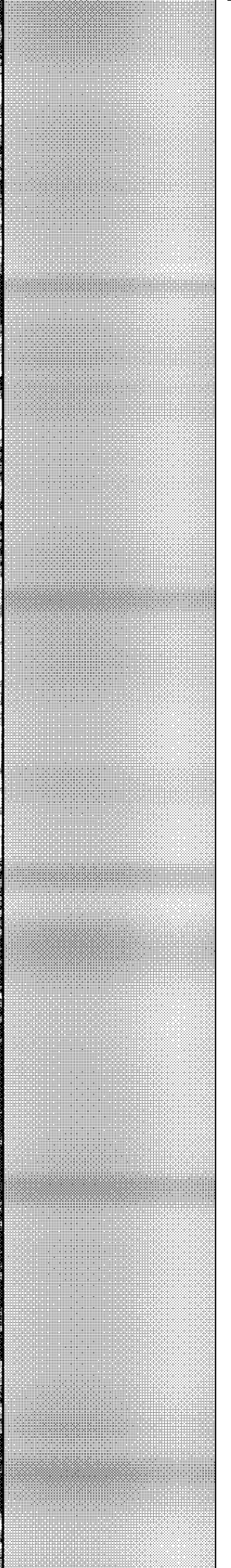
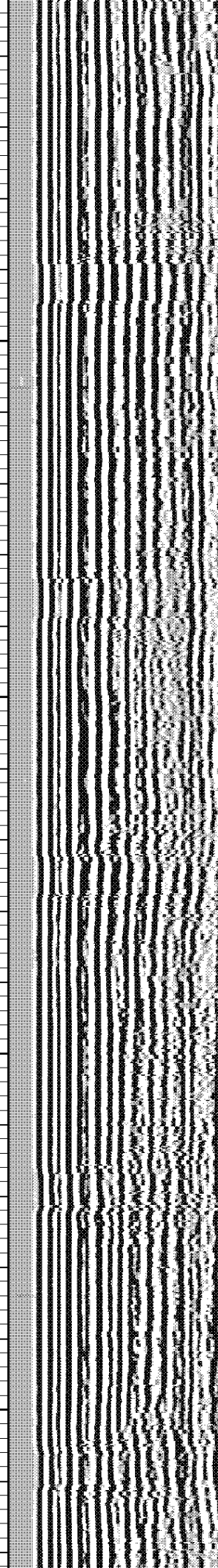
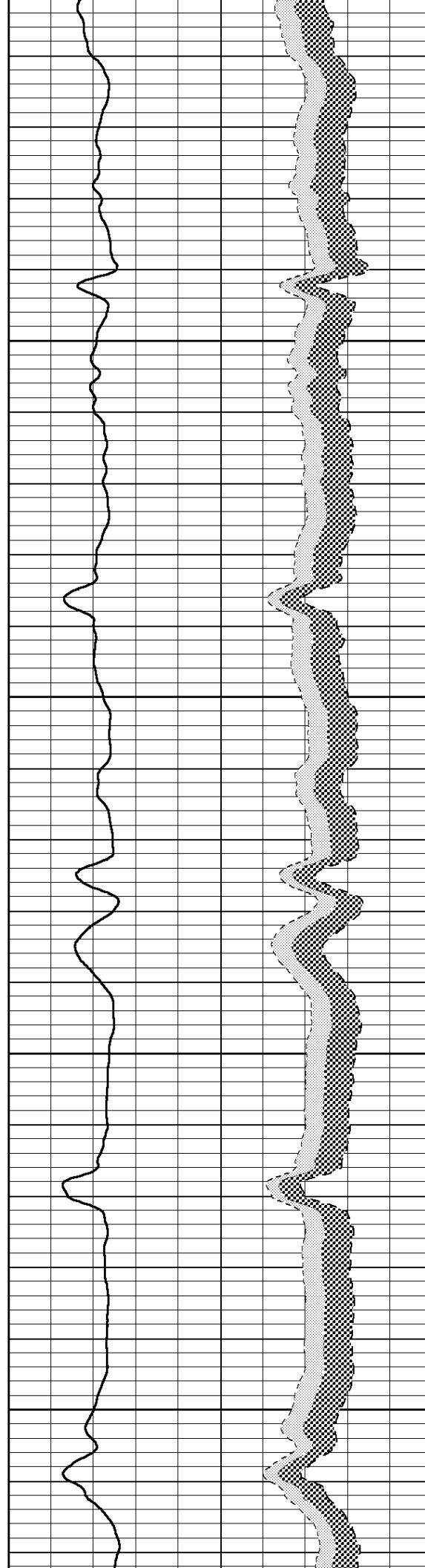
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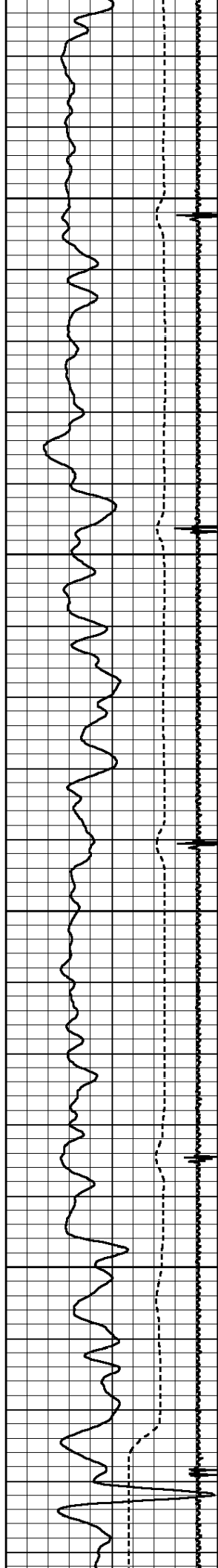


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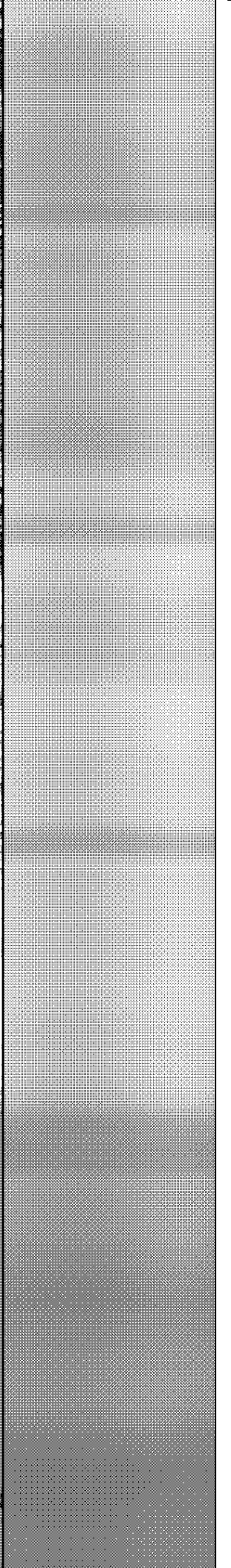
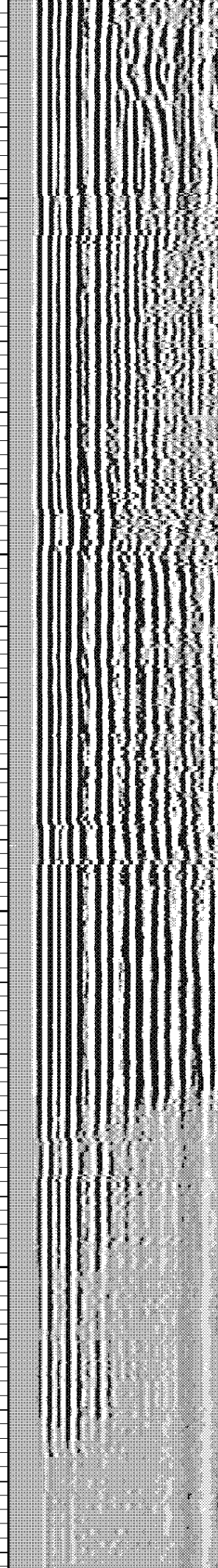
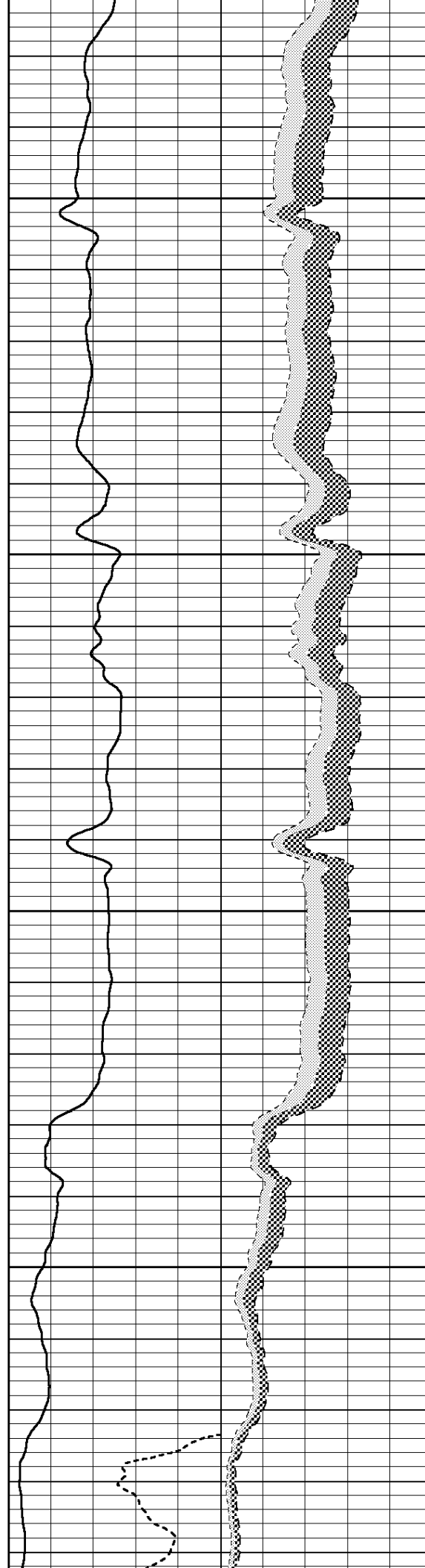


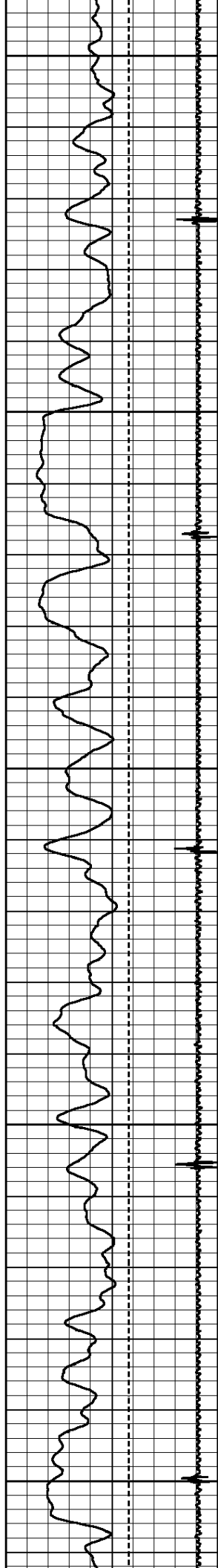




4100

4200

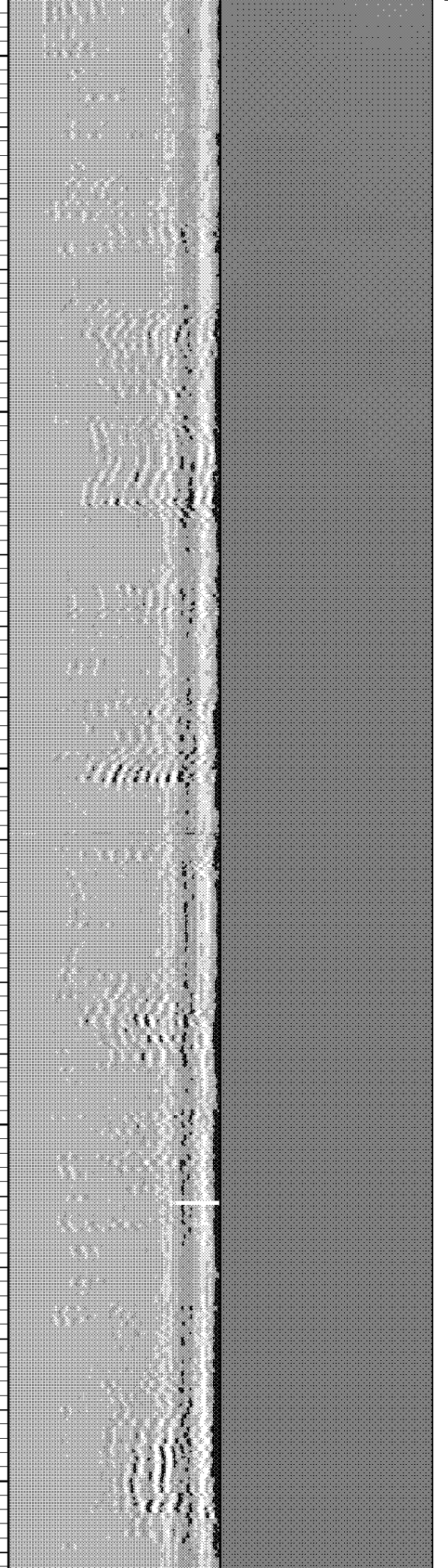
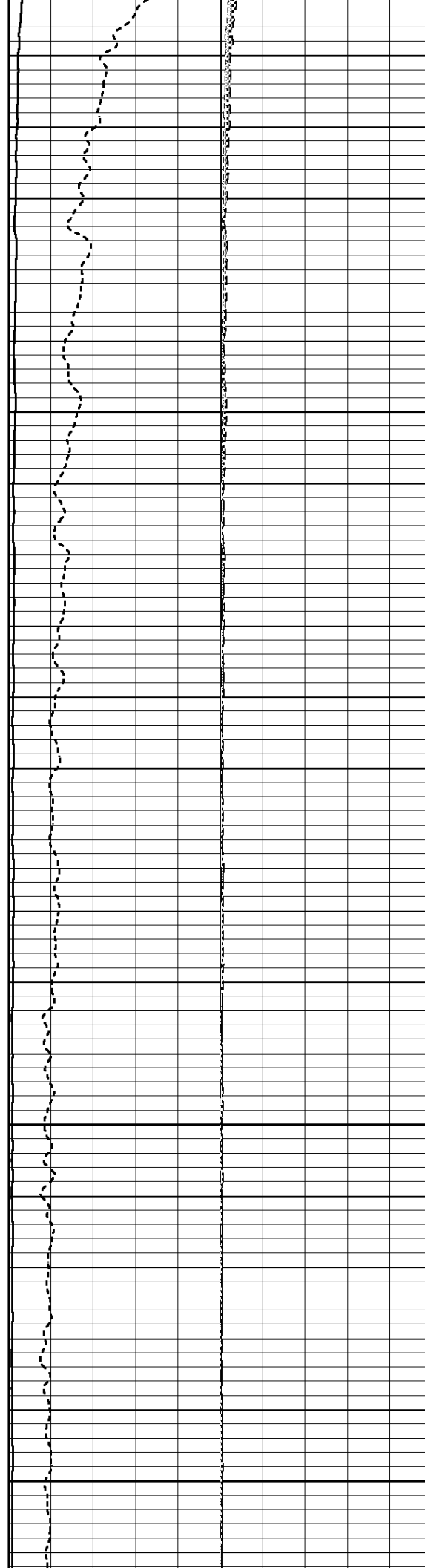


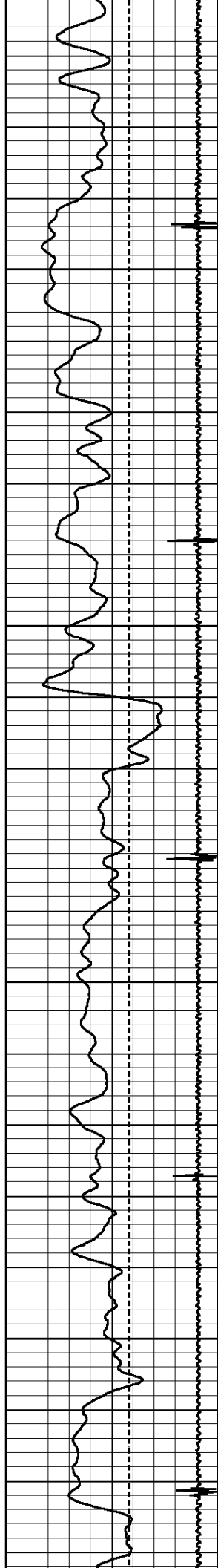


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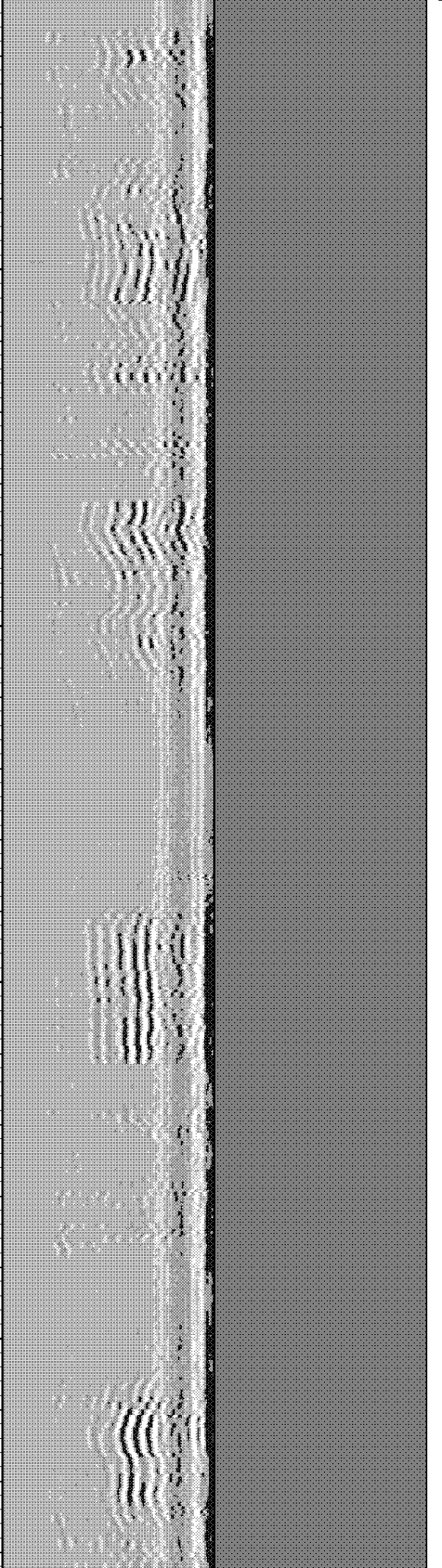
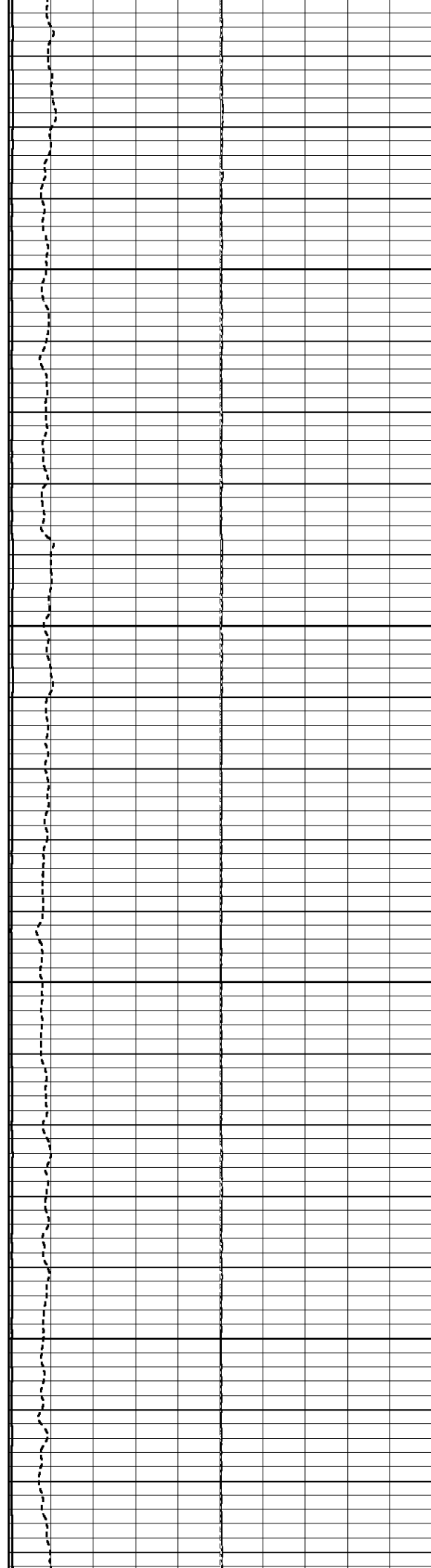
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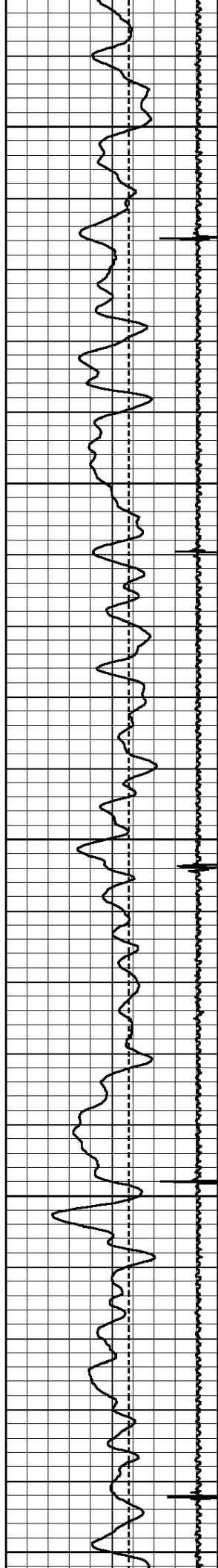


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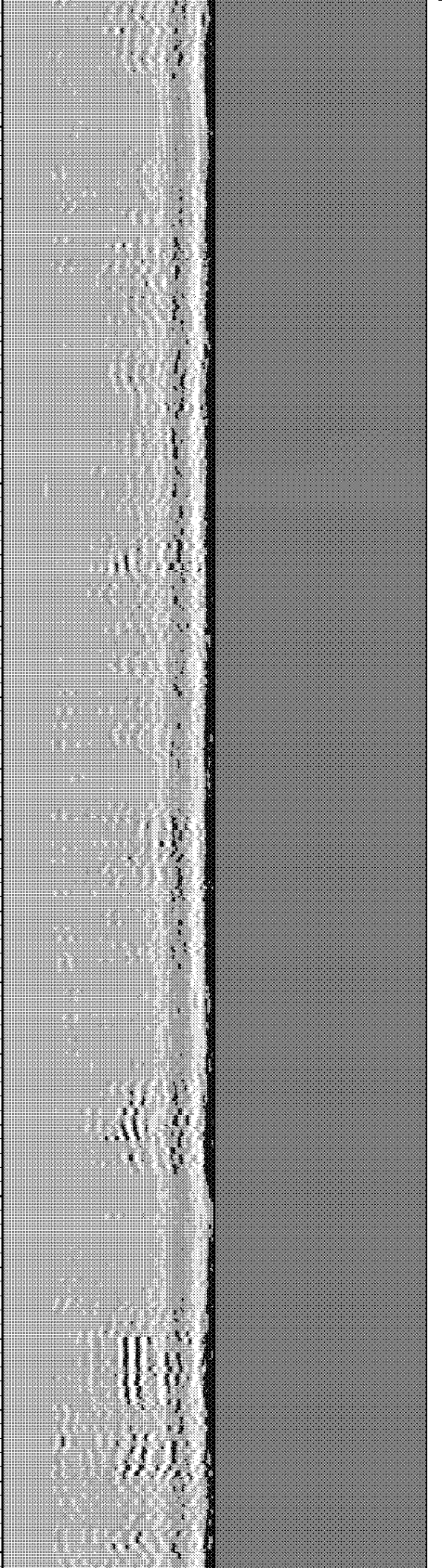
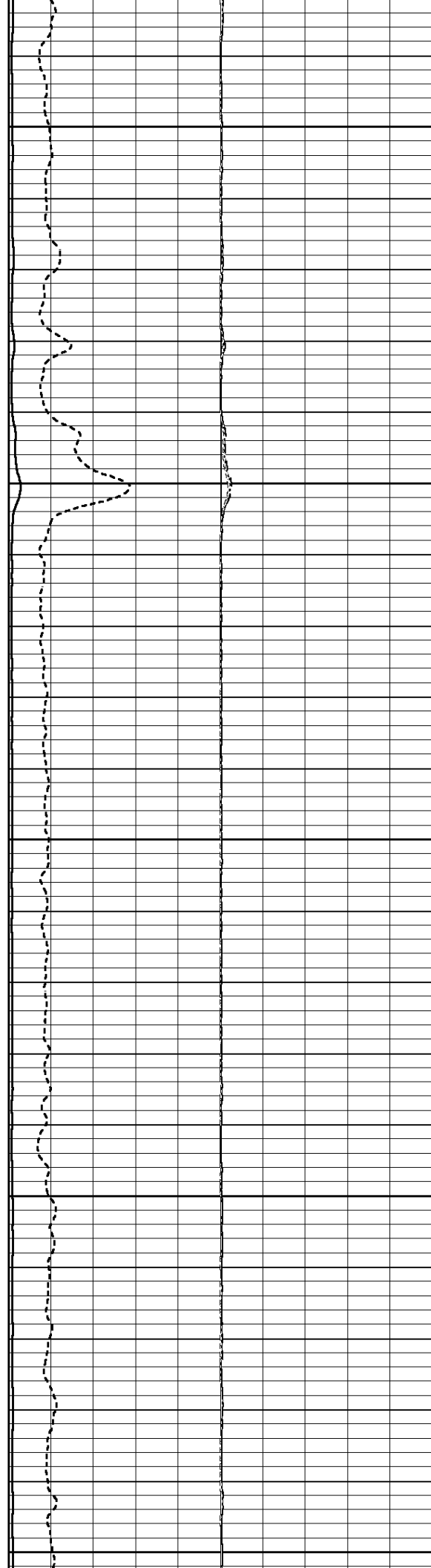


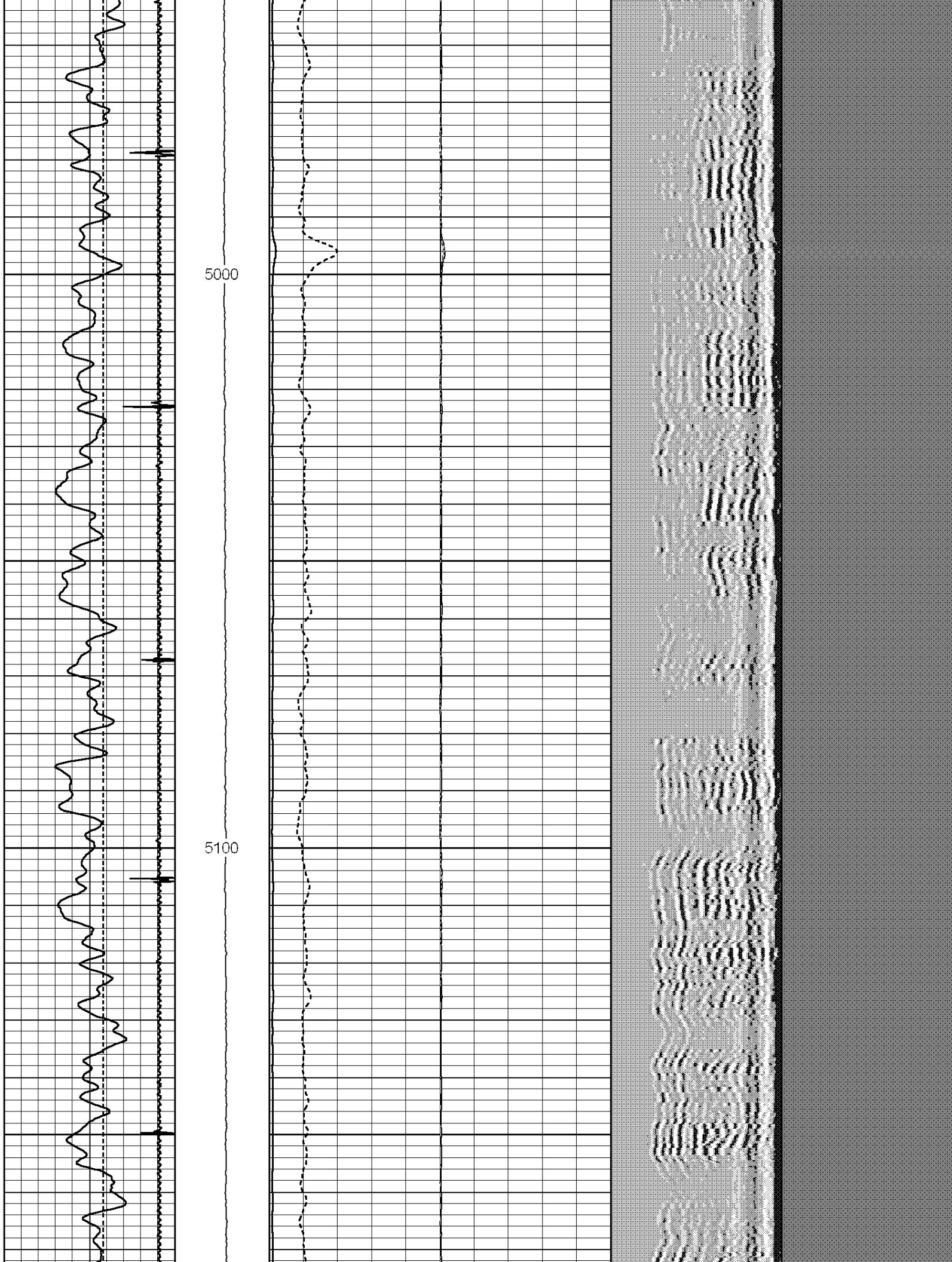


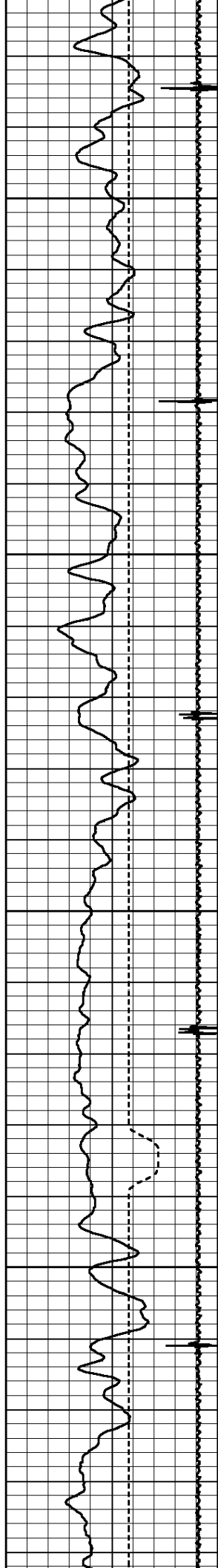


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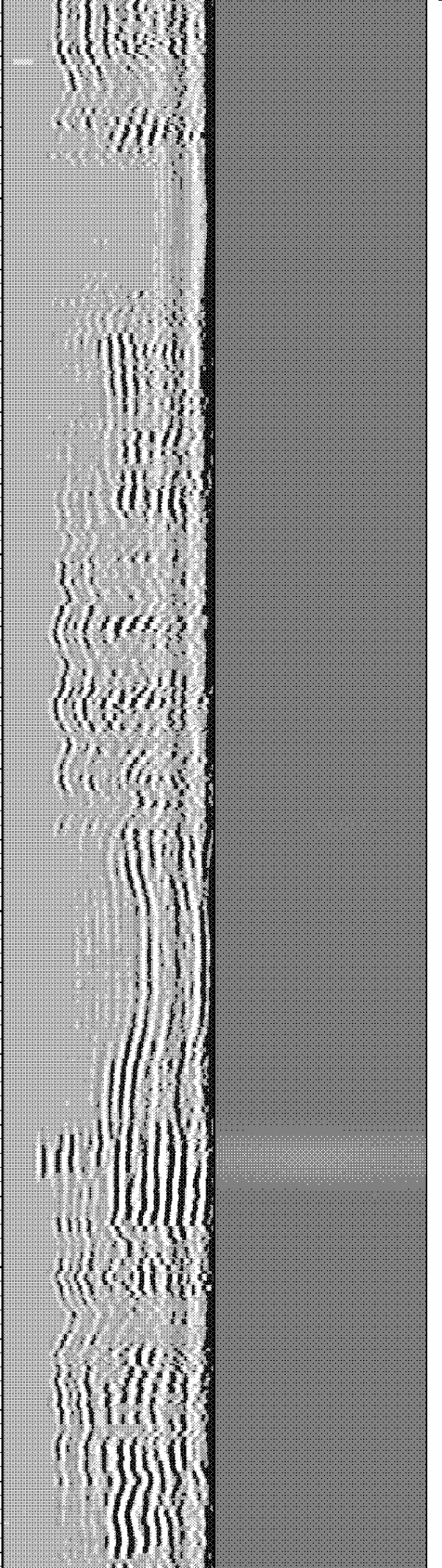
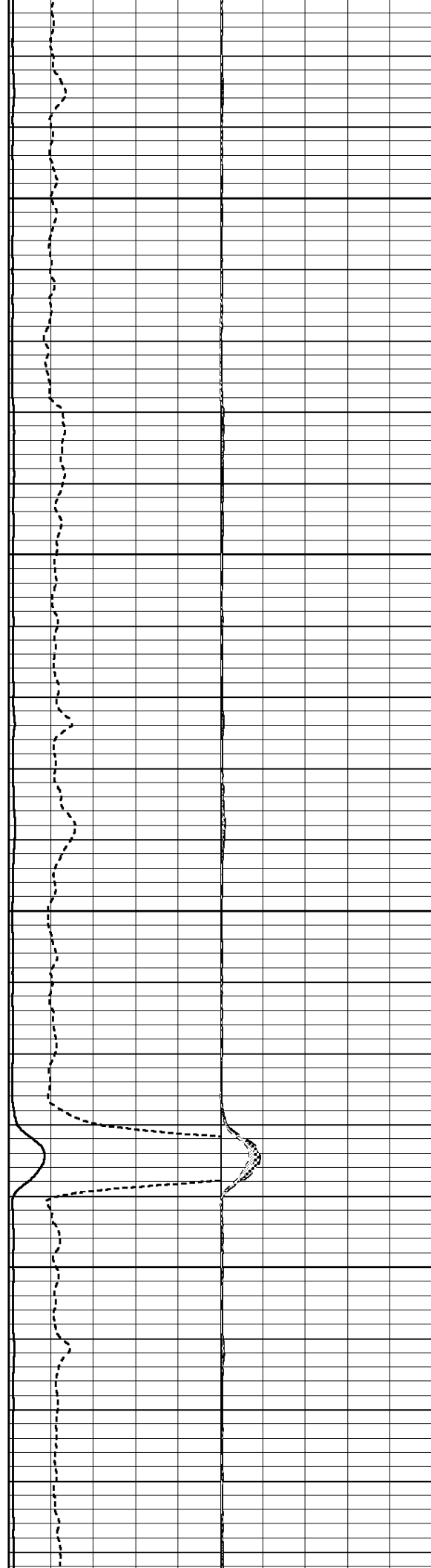




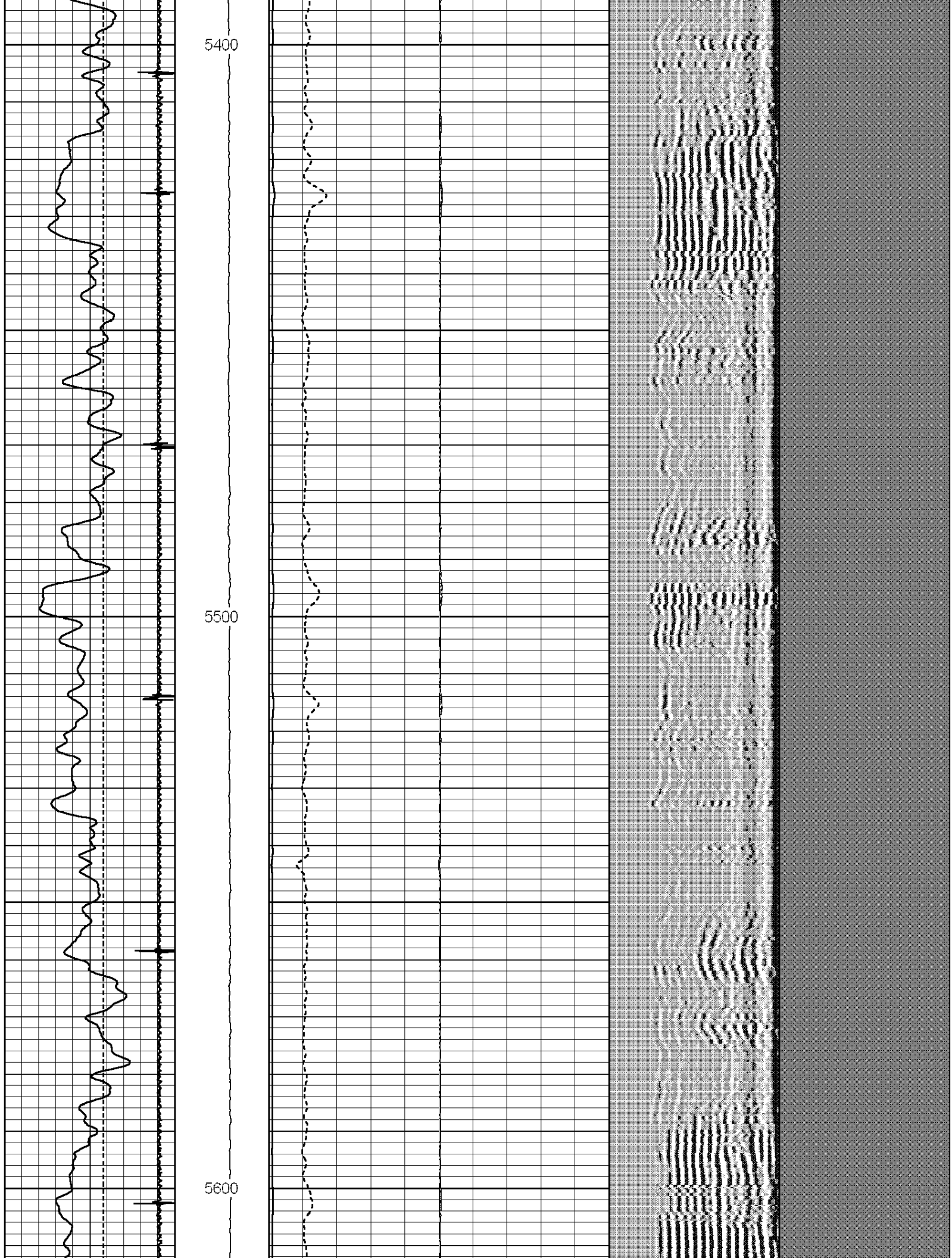


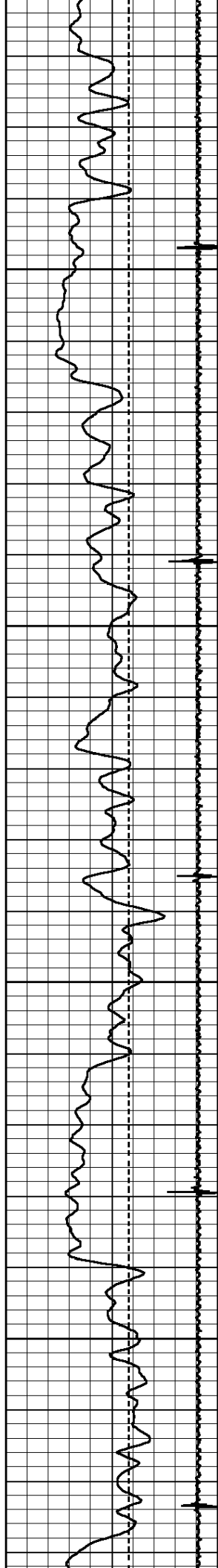
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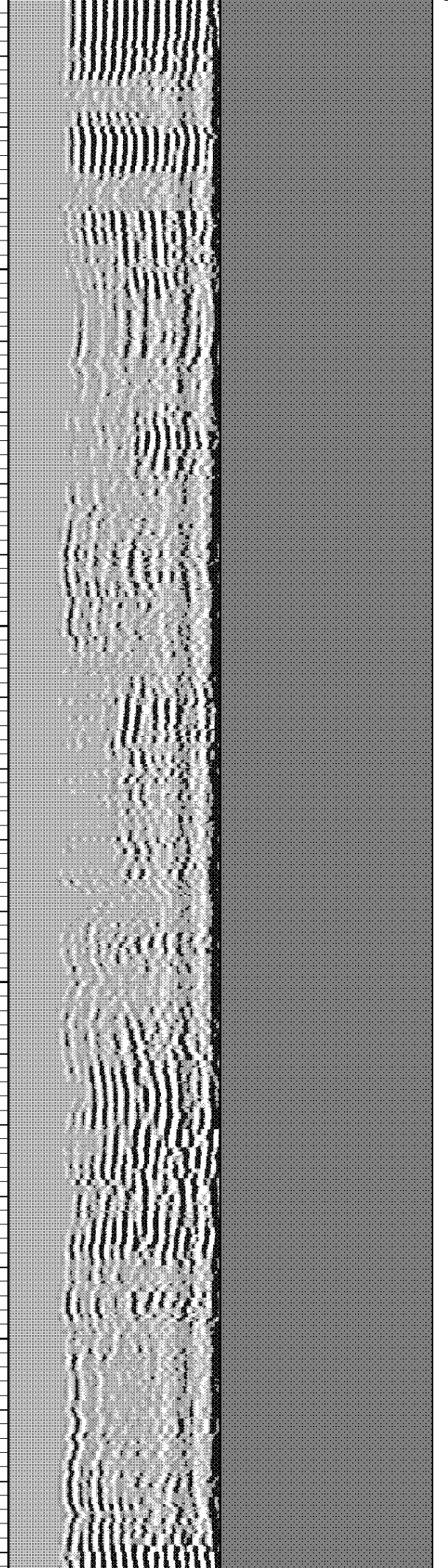
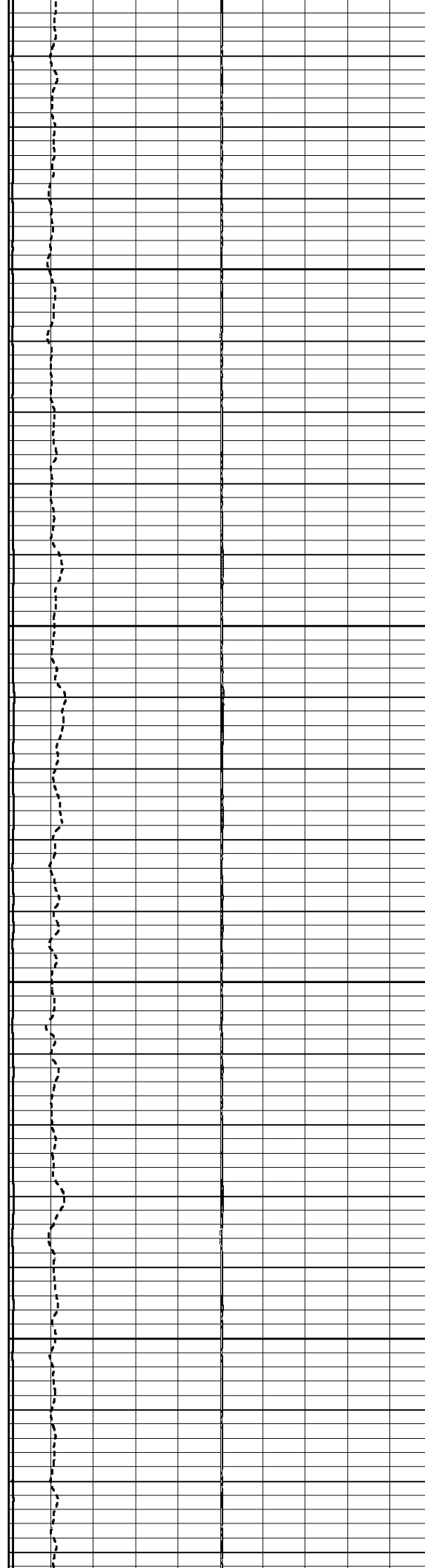


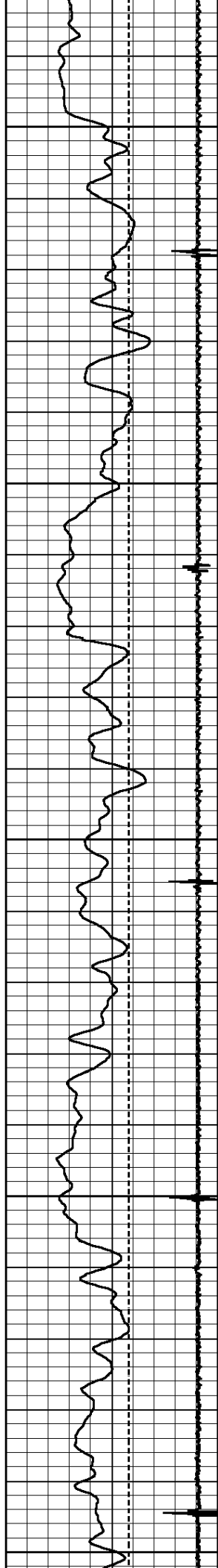




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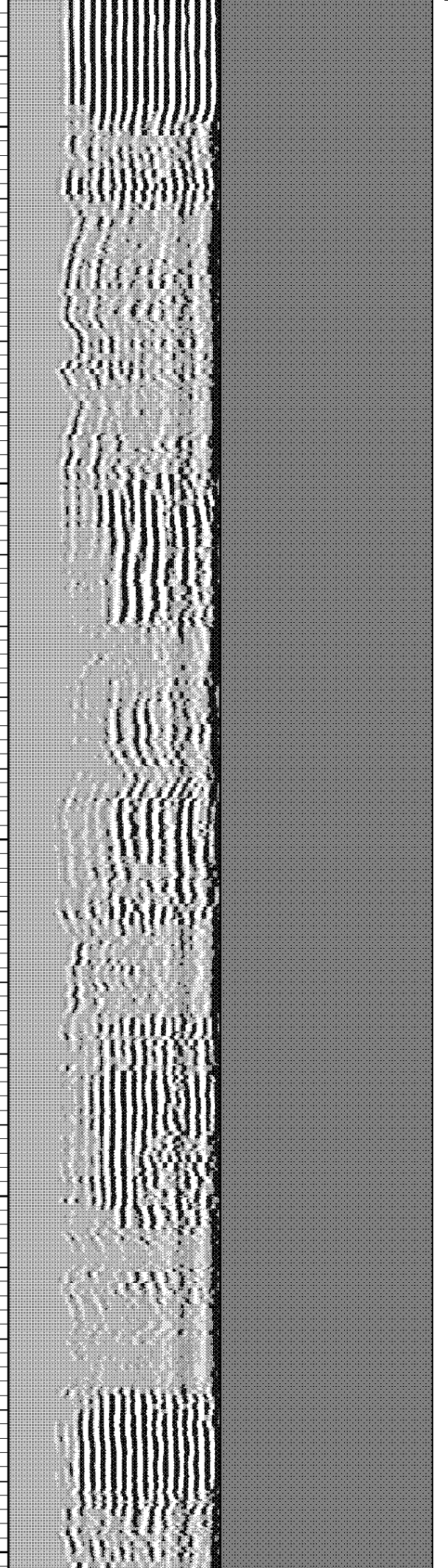
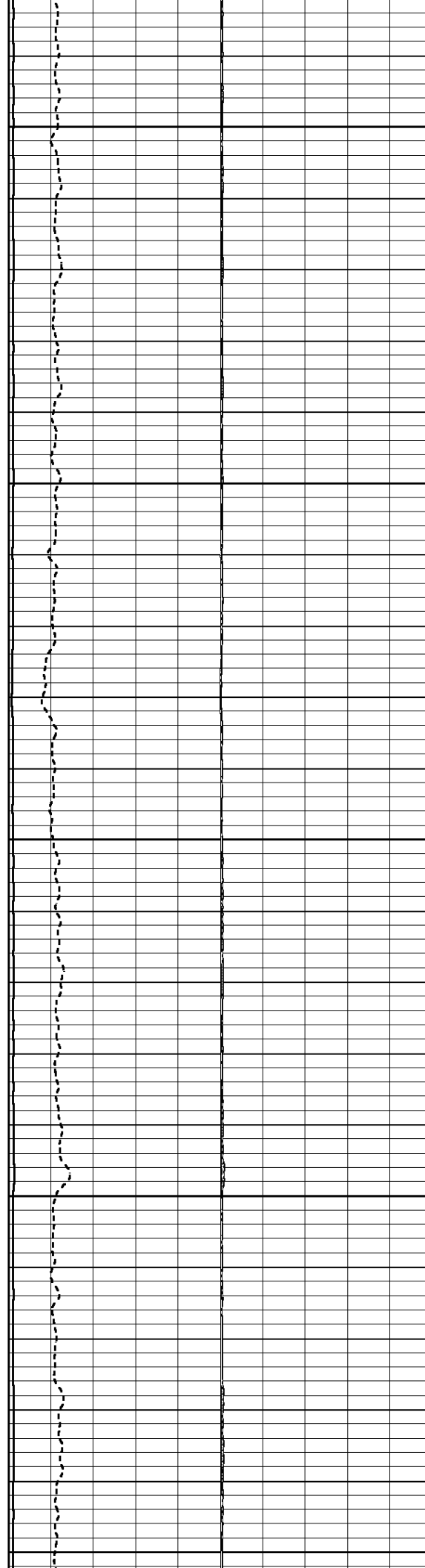
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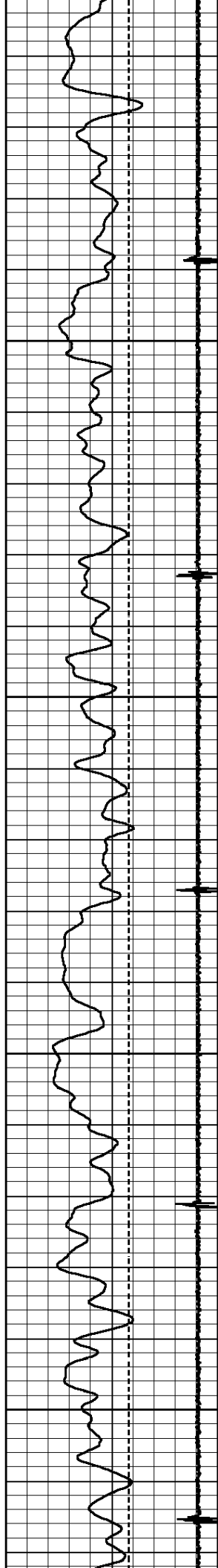


5900

6000

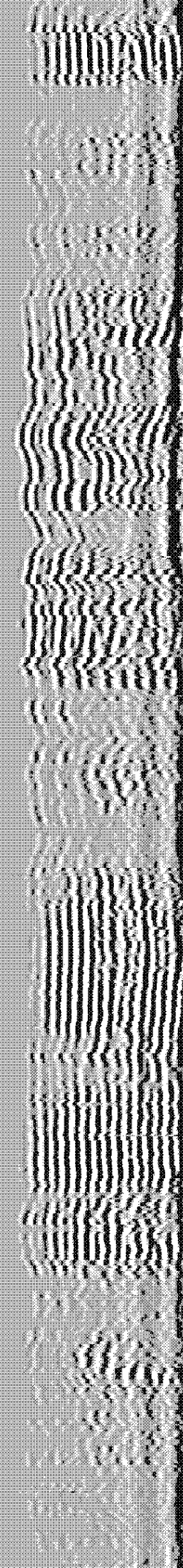
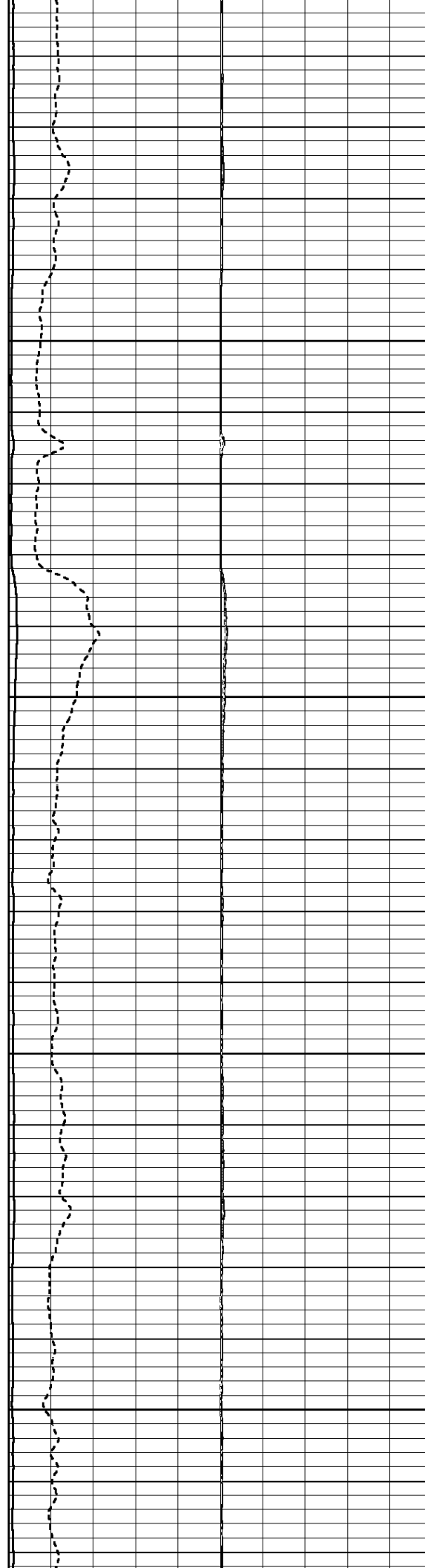


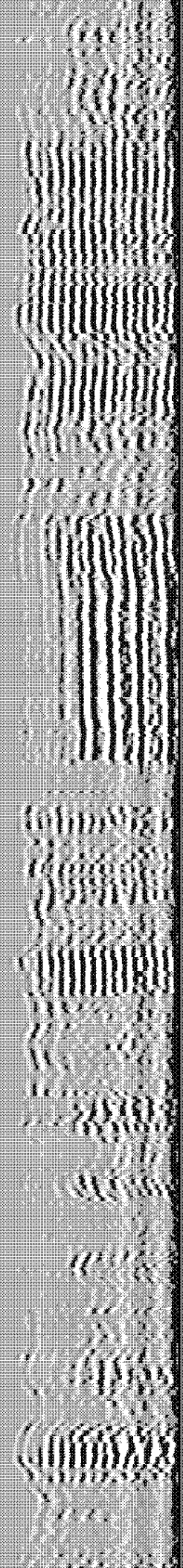
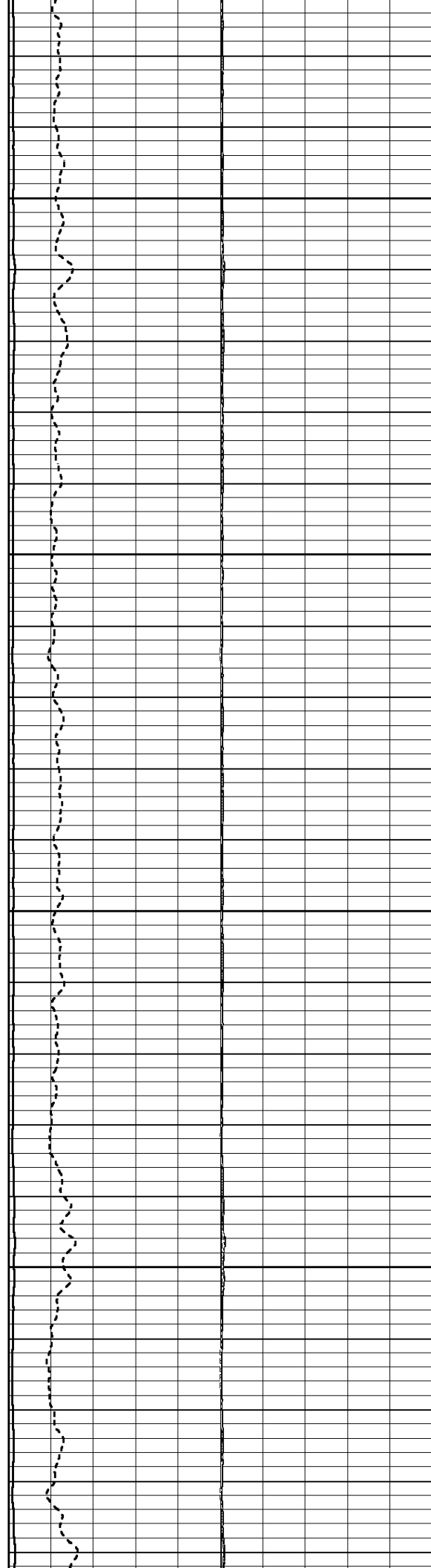
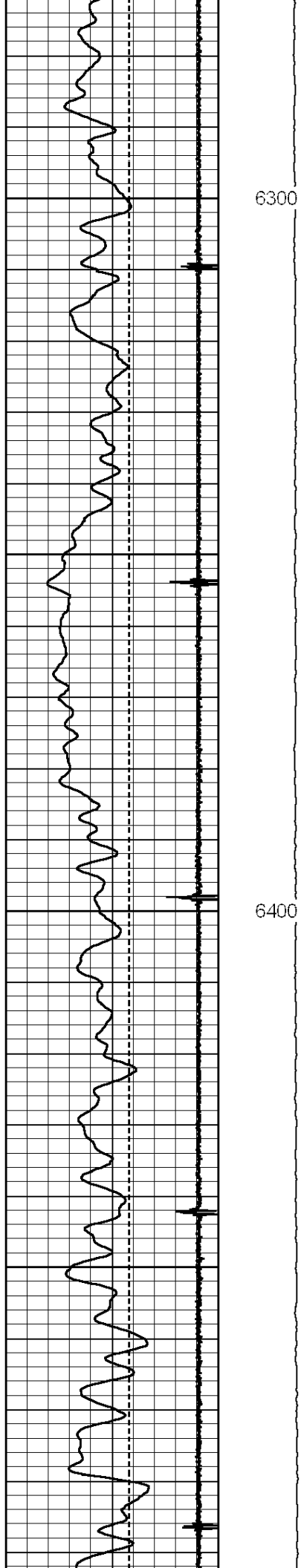


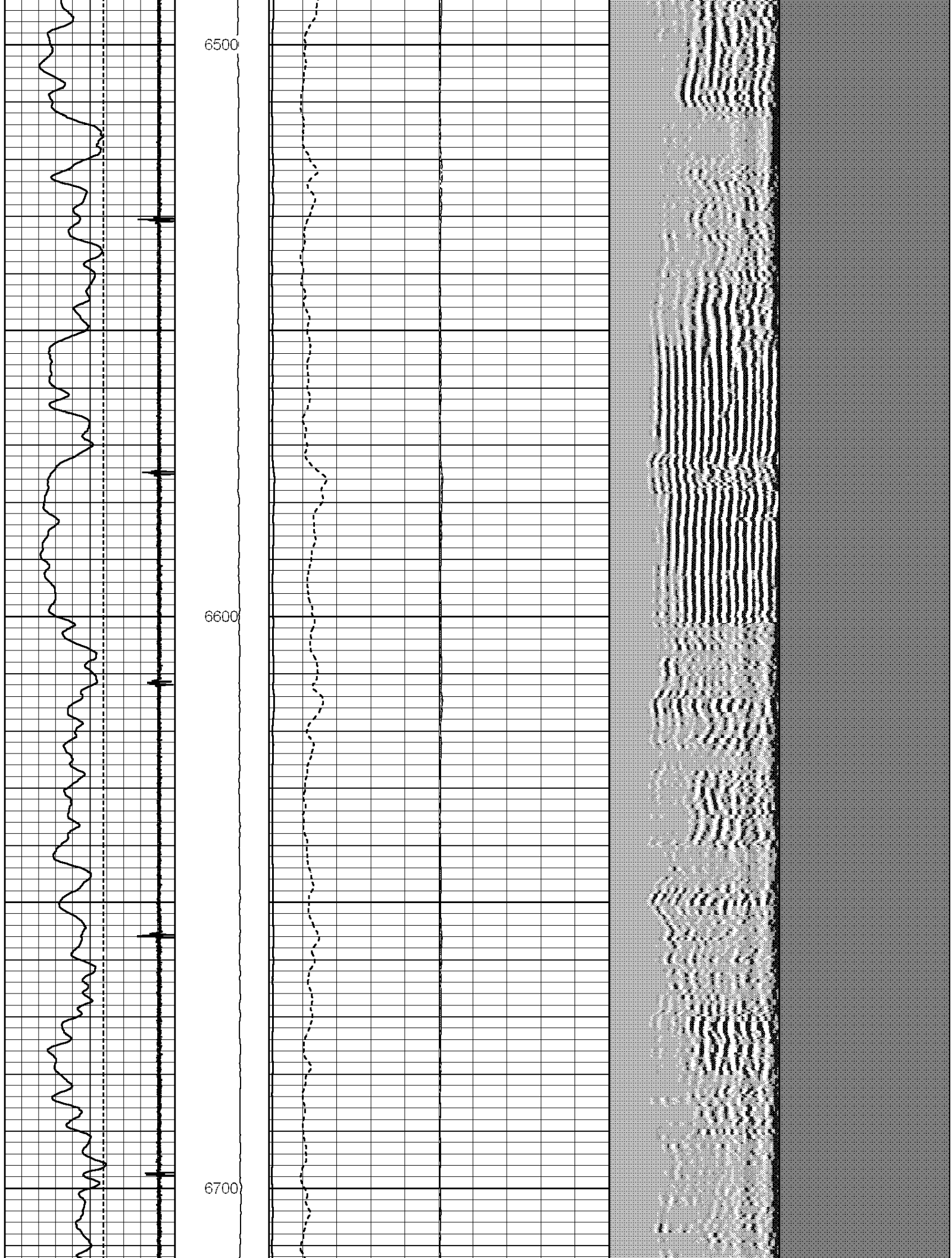


6100

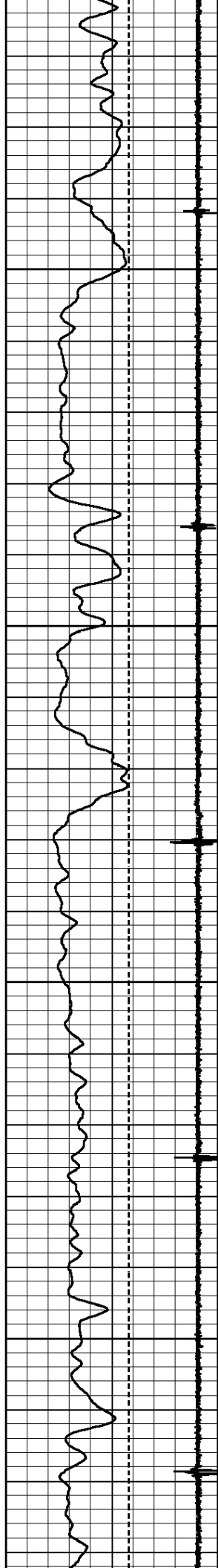
6200





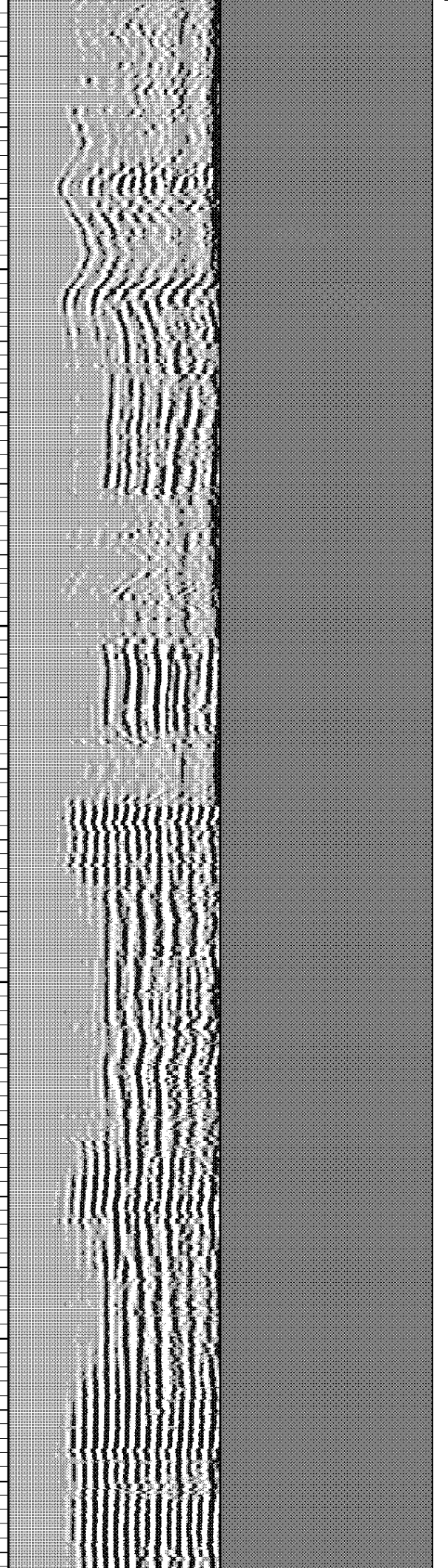
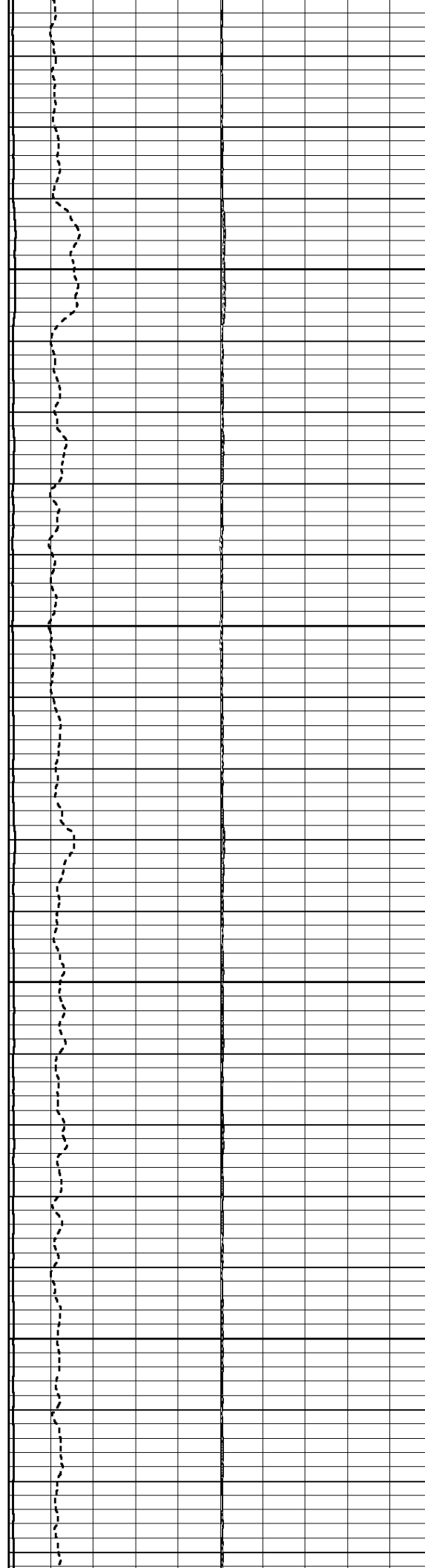


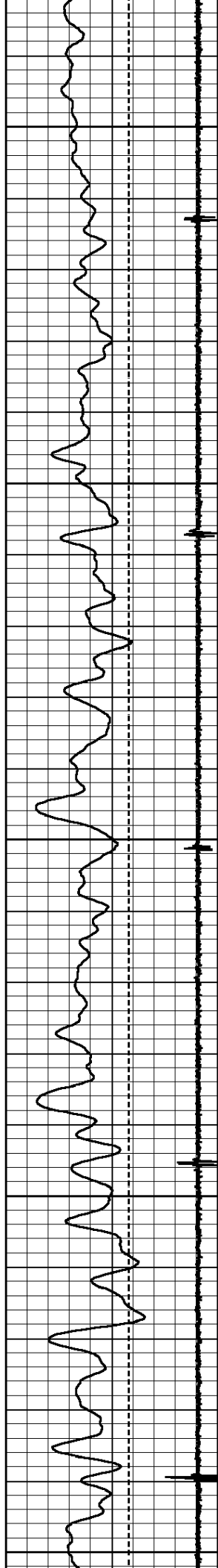




6800

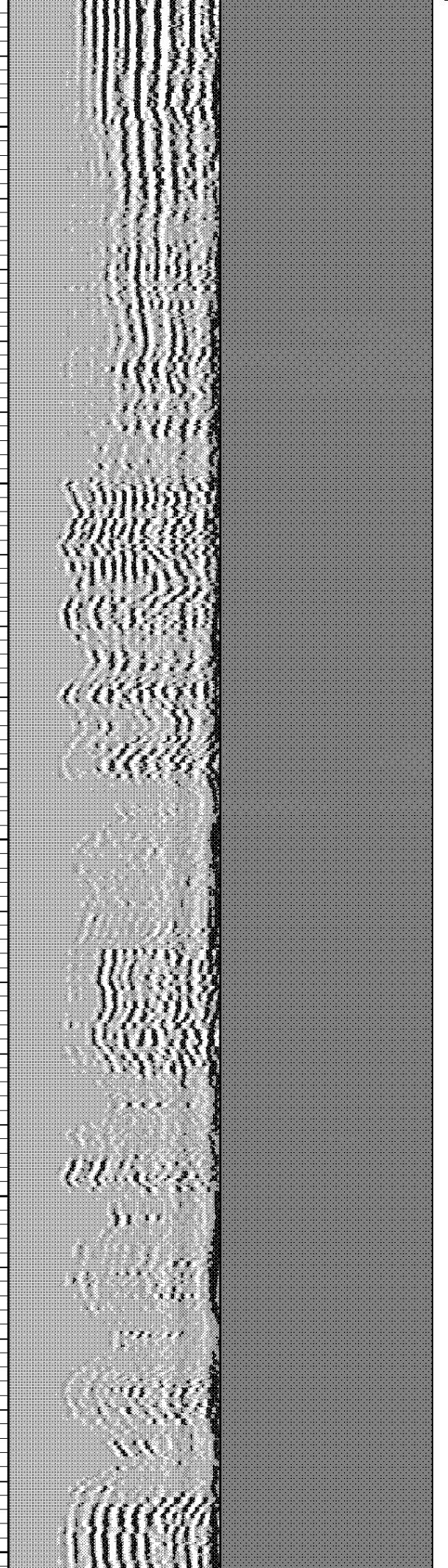
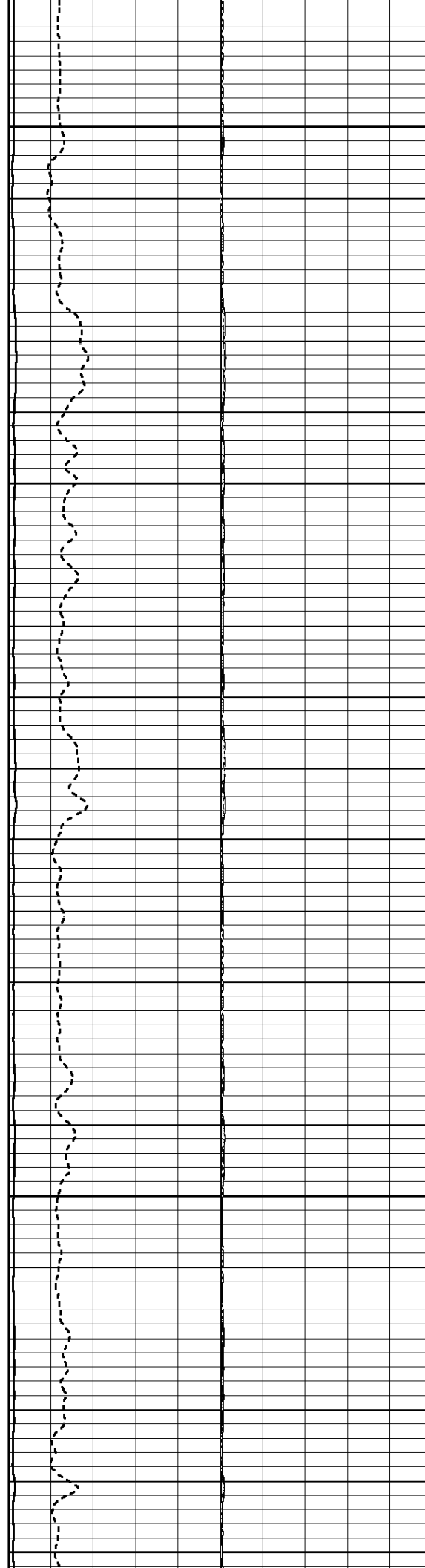
6900

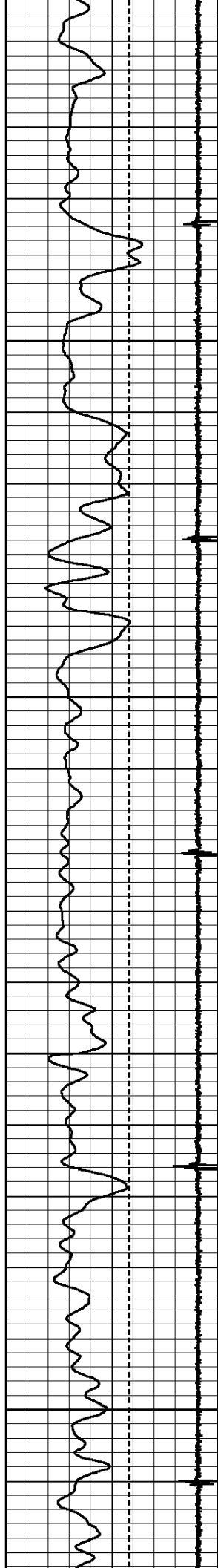




7000

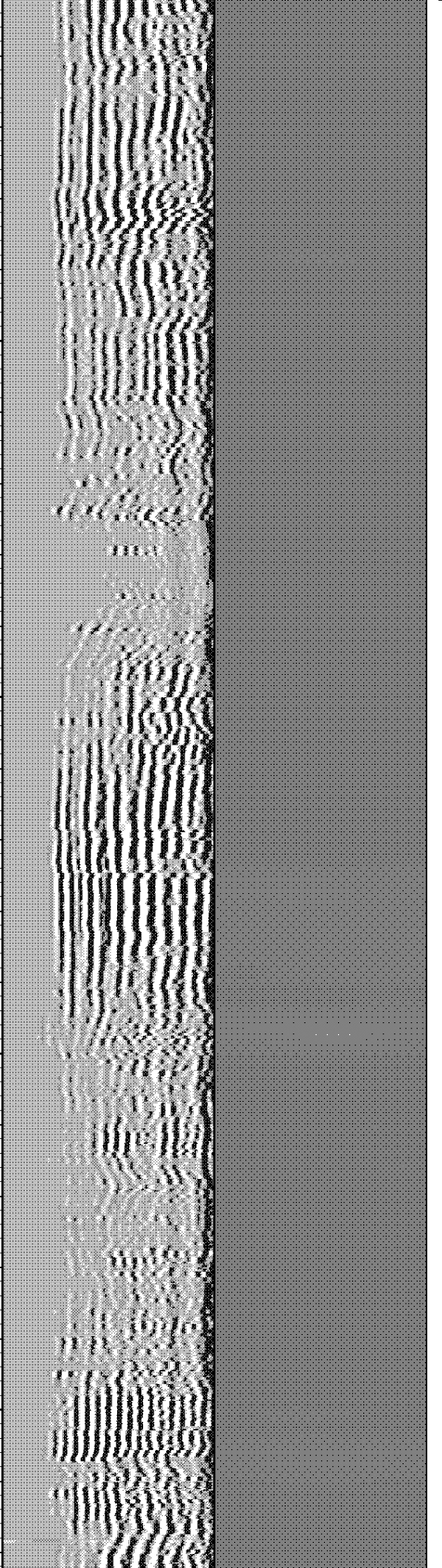
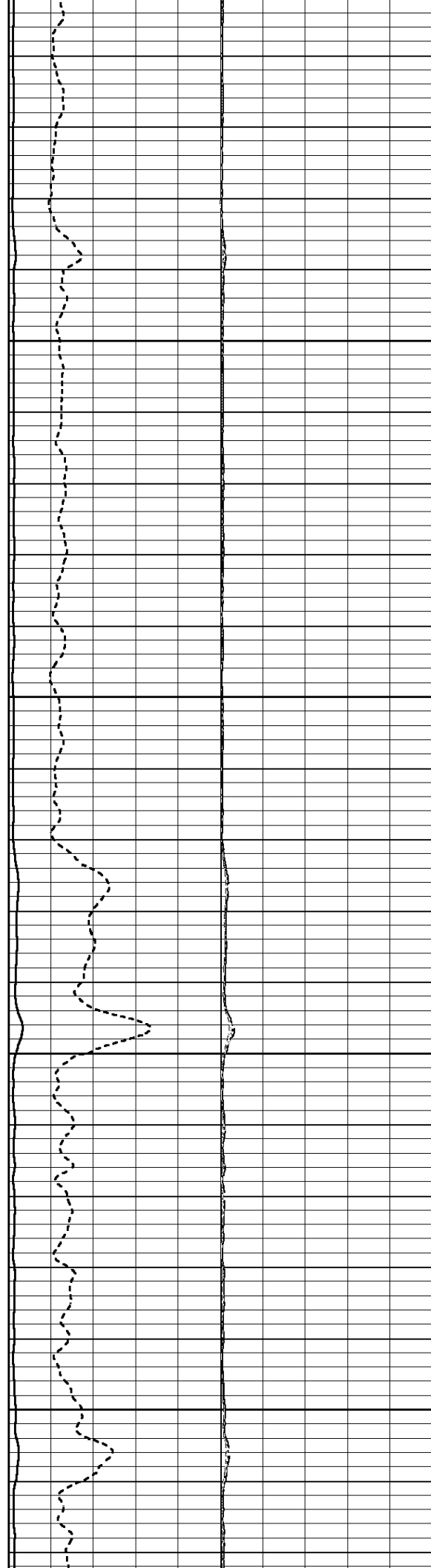
7100



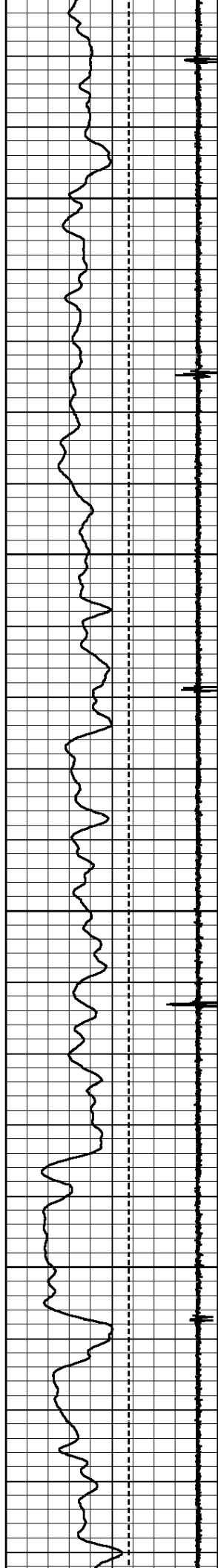


7200

7300

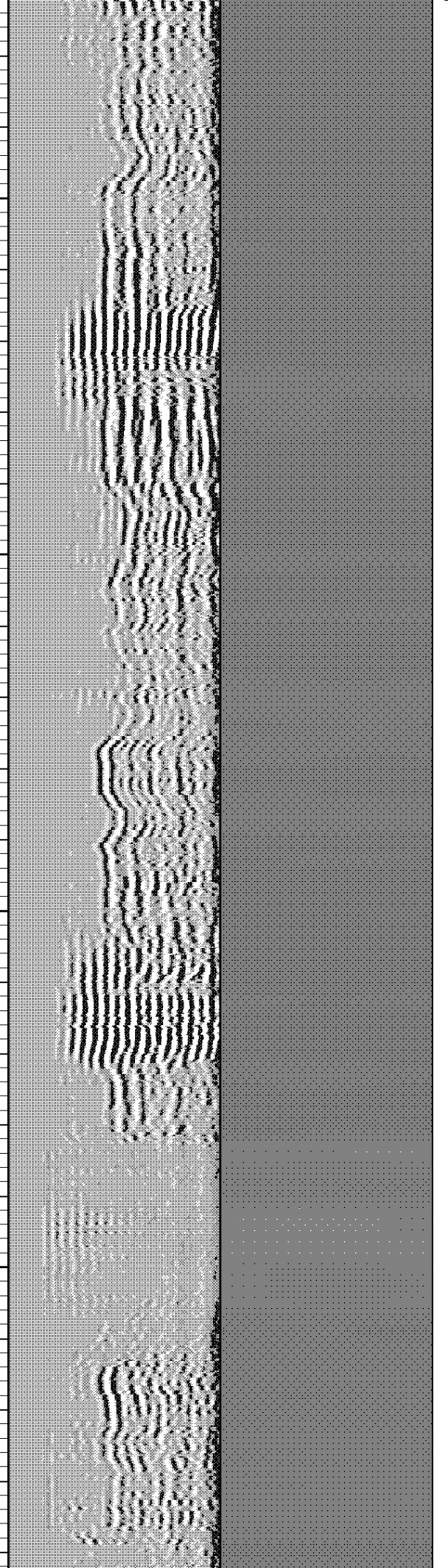
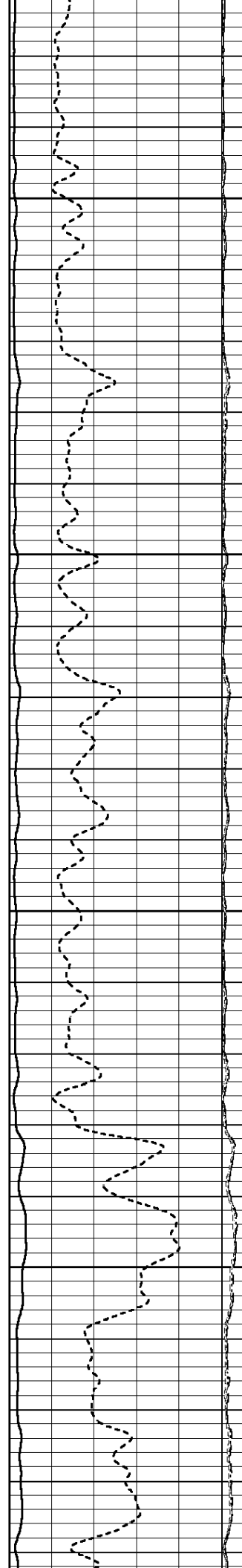




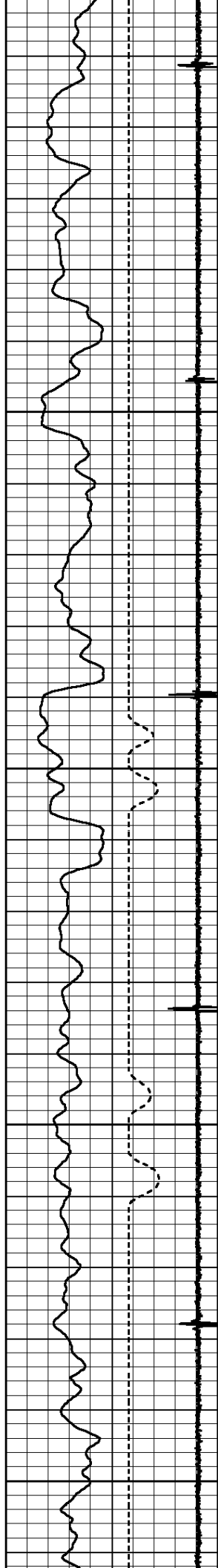


7400

7500



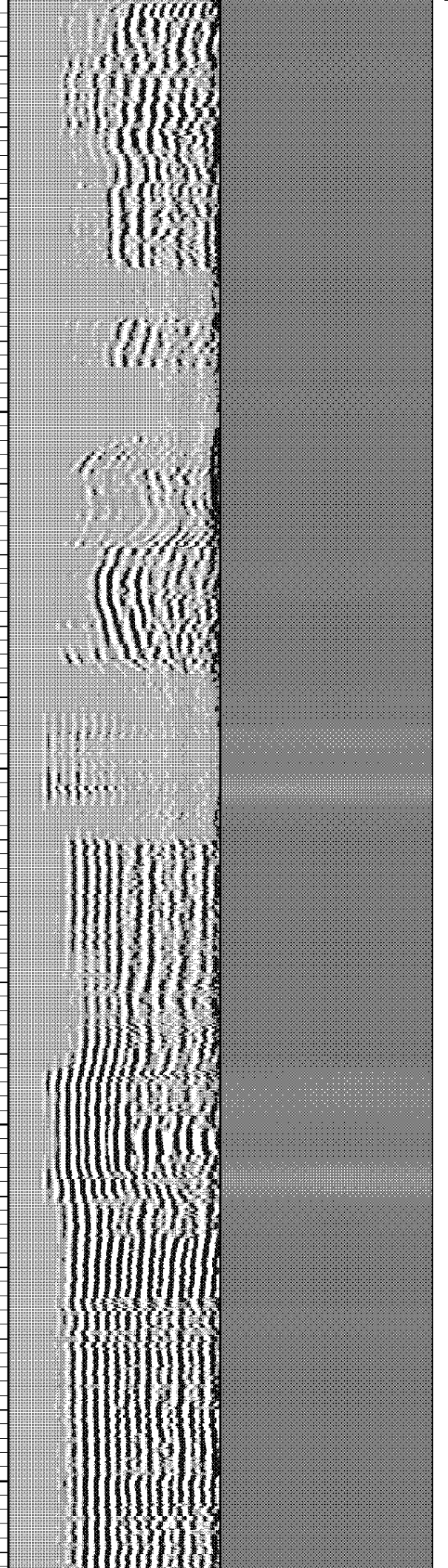


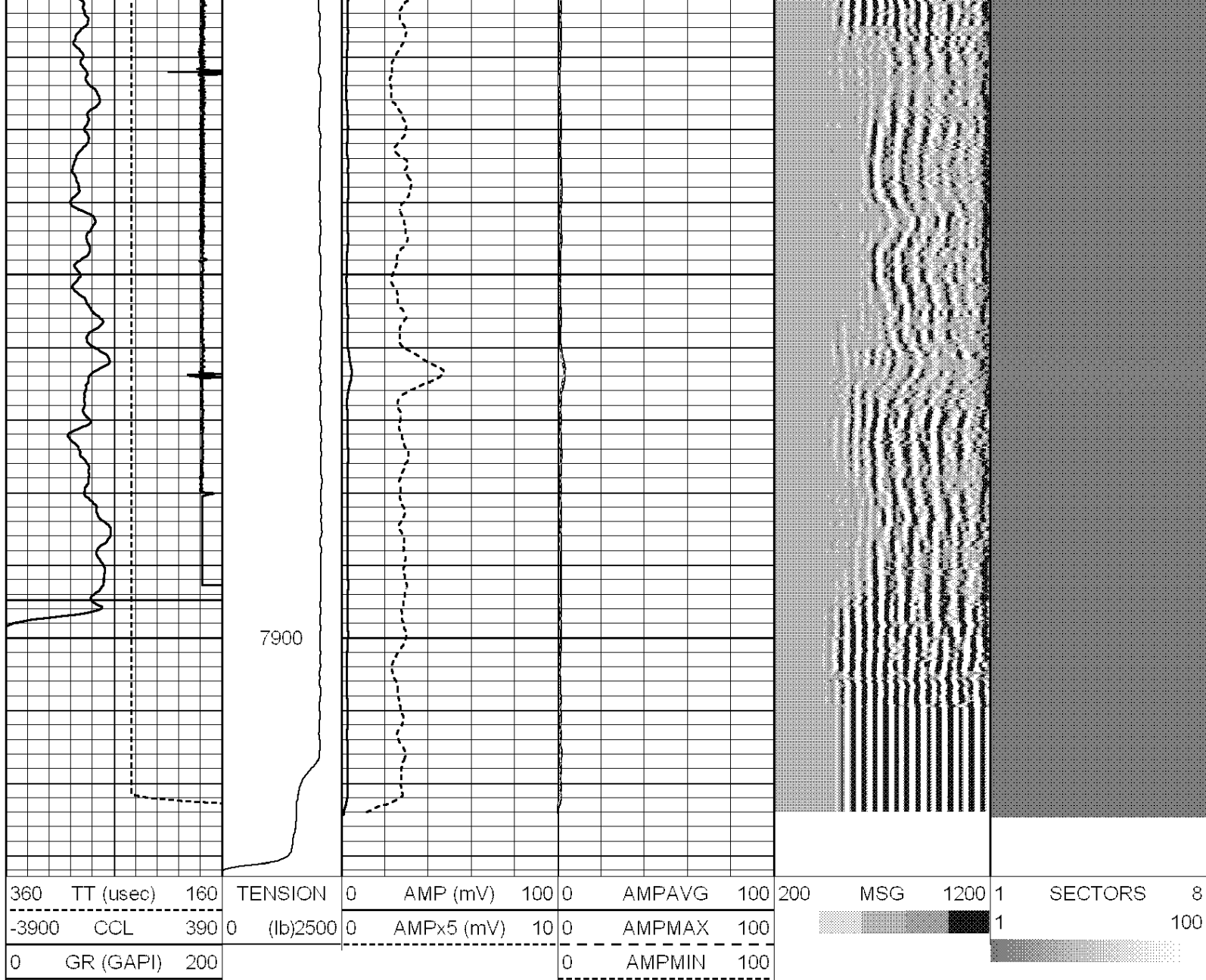


7600

7700

7800





HALLIBURTON

## MAIN LOG SECTION

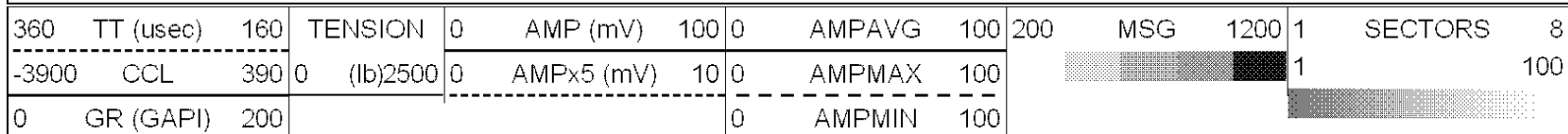
5" = 100'

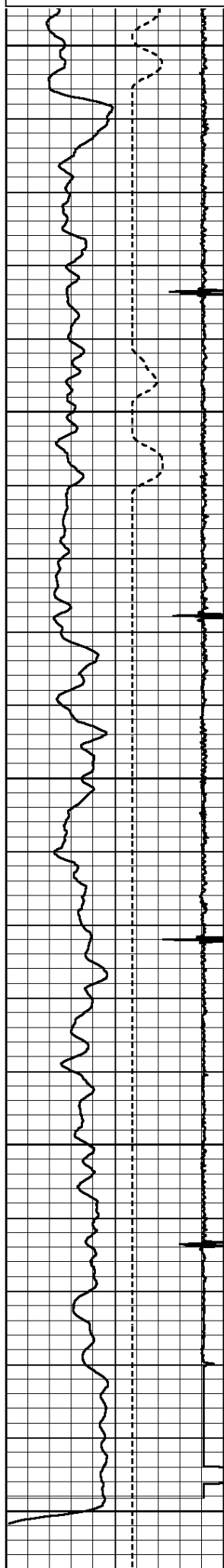
HALLIBURTON

## REPEAT LOG SECTION

5" = 100'

Database File: kaufman\_43d\_25\_692\_rbt.db  
Dataset Pathname: RBT\_RMT/REPEAT2  
Presentation Format: radial  
Dataset Creation: Sat Mar 31 23:44:47 2012  
Charted by: Depth in Feet scaled 1:240

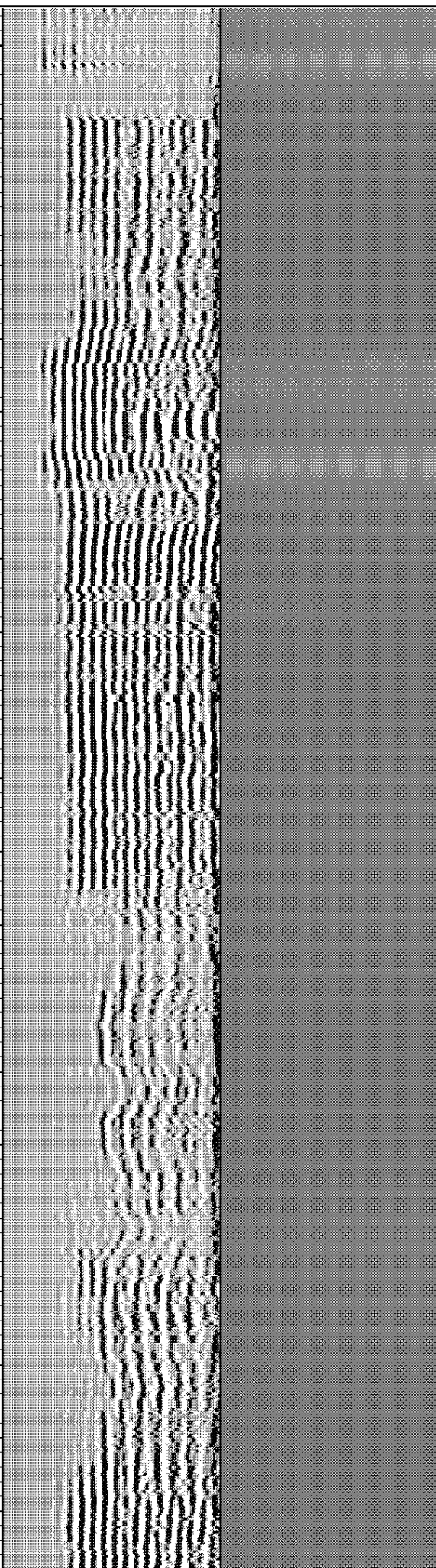
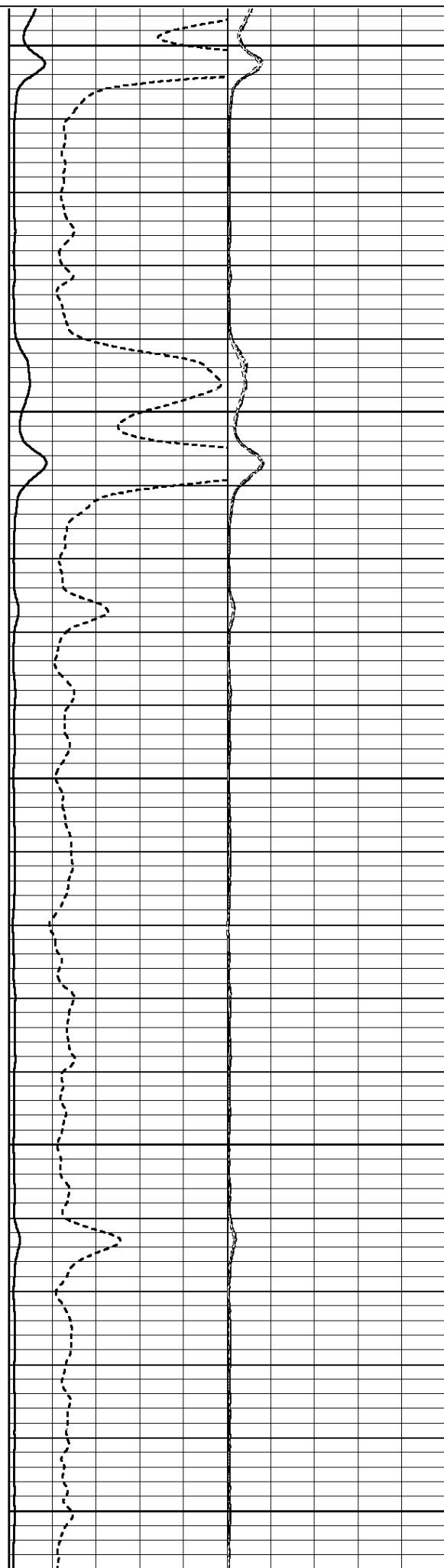




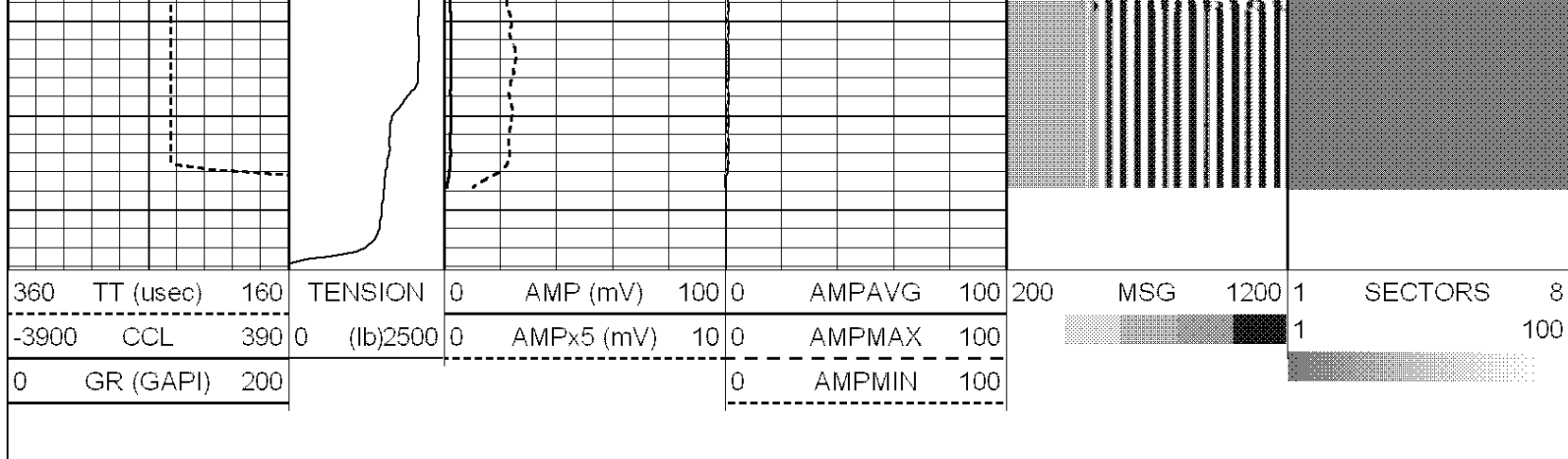
7700

7800

7900







## REPEAT LOG SECTION

HALLIBURTON

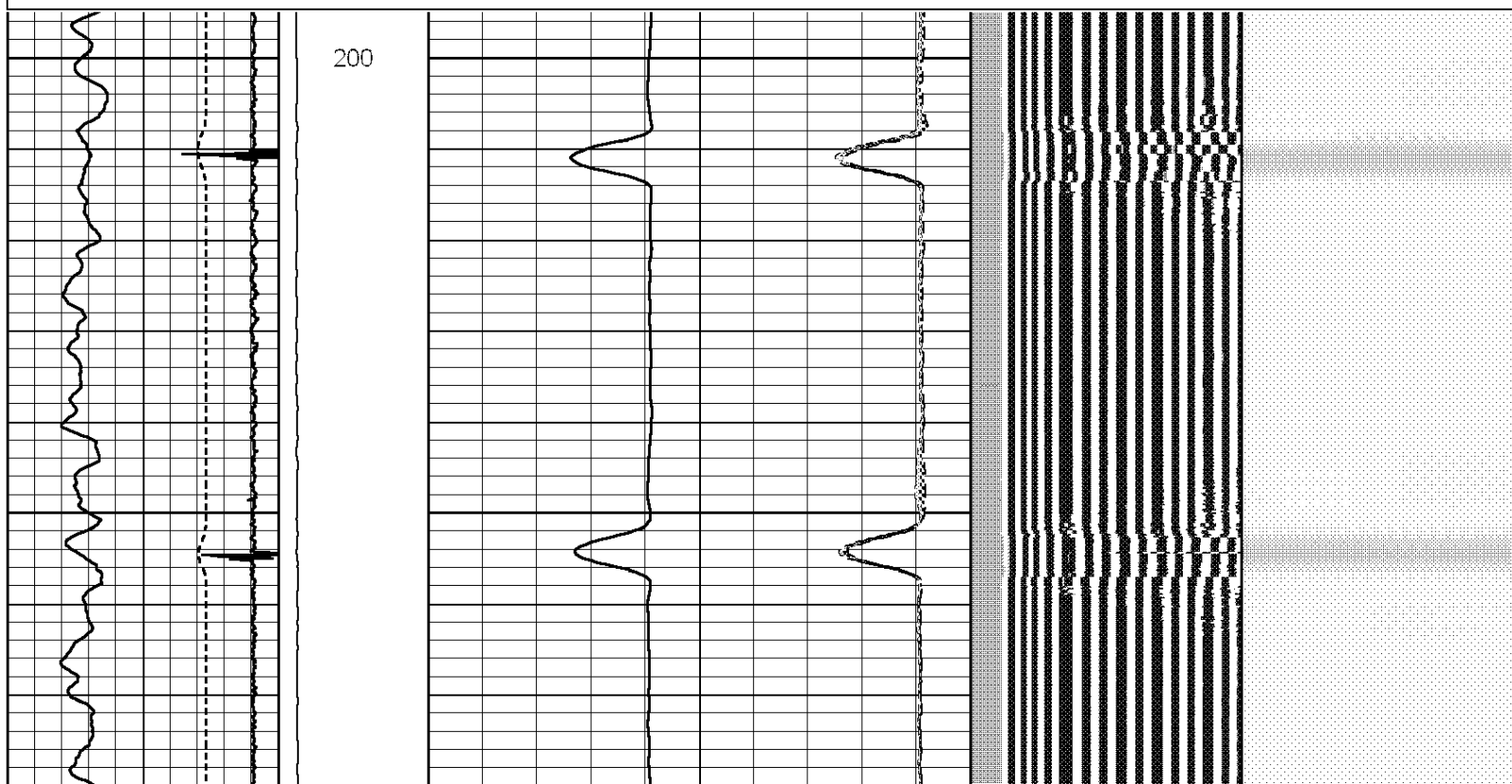
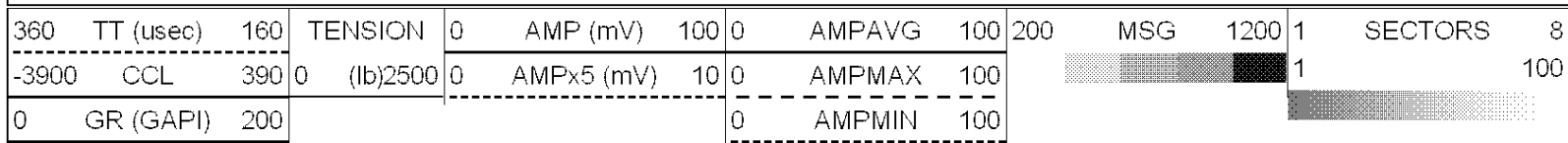
5" = 100'

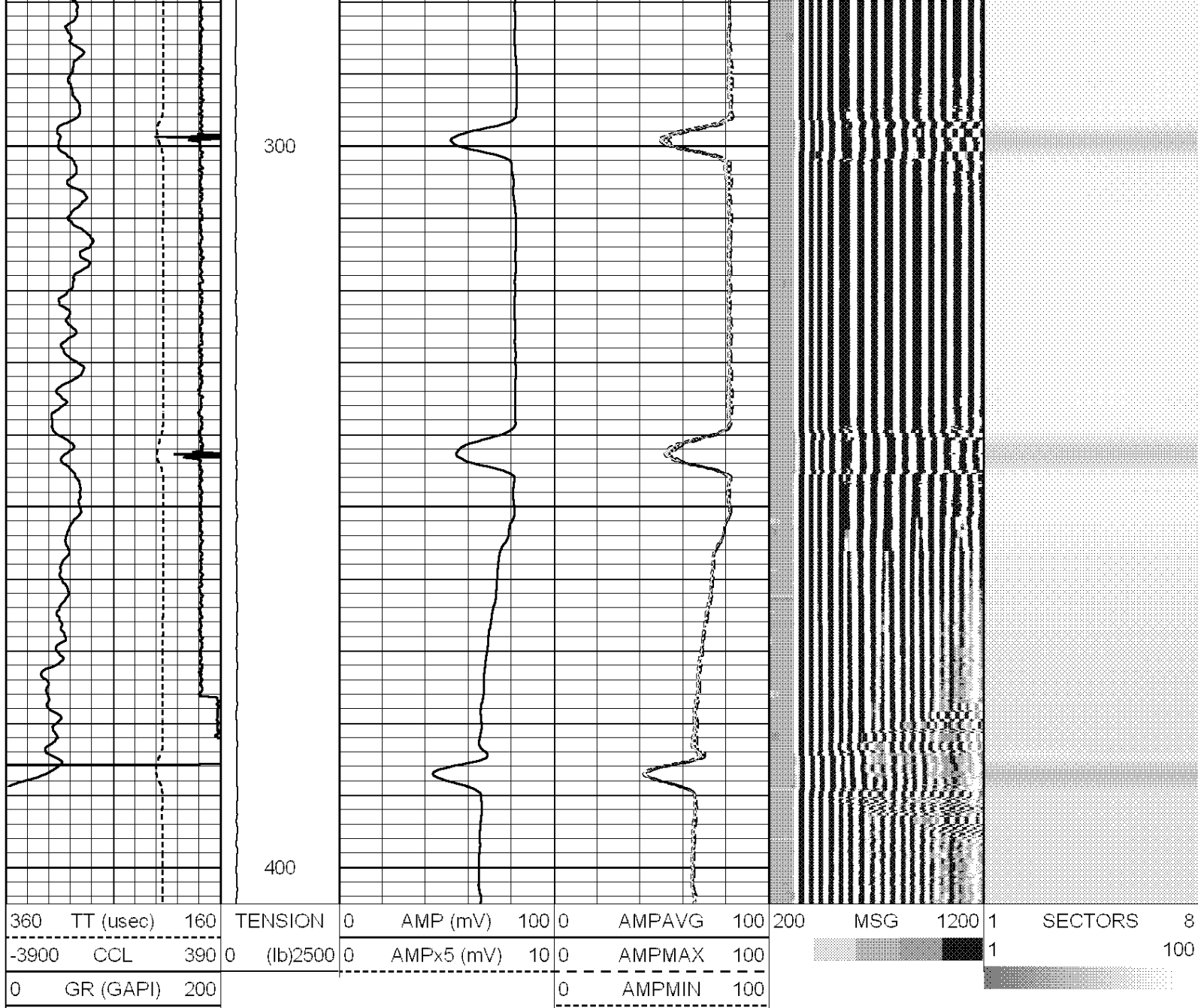
## FREE PIPE SECTION

HALLIBURTON

5" = 100'

Database File: kaufman\_43d\_25\_692\_rbt.db  
Dataset Pathname: RBT\_RMT/FREE4  
Presentation Format: radial  
Dataset Creation: Sat Mar 31 23:49:53 2012  
Charted by: Depth in Feet scaled 1:240





## FREE PIPE SECTION

**HALLIBURTON**

5" = 100'

### Calibration Report

Database File: kaufman\_43d\_25\_692\_rbt.db  
 Dataset Pathname: RBT\_RMT/merge1  
 Dataset Creation: Sat Mar 31 23:52:16 2012

### Reservoir Monitor Tool I Calibration Report

Serial-Model: 11680605-A  
 Shop Calibration Performed: Tue Mar 13 11:40:28 2012

## Carbon/Oxygen Mode

## Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
ITCR2	3245	3250	-5	+/-250	cps

## Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0256	5.30	<6.00
Fe	207	206 +/-2	0.0933	-----	-----
NGAIN = 0.997	NZOFF = -0.1				

## Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0357	5.56	<6.50
Fe	209	208 +/-2	0.0912	-----	-----
FGAIN = 0.992	FZOFF = 0.3				

Flask Temperature 76.0 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.44	0.01	+/-0.03	
LIRI2	1.64	1.64	-0.00	+/-0.20	
TCCR2	5737	5200	537	+/-1000	cps
ITCR2	3282	3250	32	+/-250	cps

## Sigma Mode

## Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	78.00	80.00	-2.00	+/-15.00	V
FCAP	10118	10000	118	+/-500	cps

## Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.99	0.95	0.04	+/-0.10	
N/F Inel Norm	0.64	0.61	0.03	+/-0.06	
RNF	1.01	1.05	-0.04	+/-0.10	
RINC	1.57	1.65	-0.08	+/-0.15	
SGFN	24.04	24.00	0.04	+/-1.00	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	24451	24000	451	+/-2000	
FCAP	10304	10000	304	+/-1000	cps
NFTR	0.83			<5.00	
FFTR	0.85			<5.00	
NBKG	123			<500	cps
FBKG	102			<500	cps
RTN	0.51	0.40	0.11	+/-0.10	usec
RTF	0.46	0.40	0.06	+/-0.10	usec

## Calibration Software Modules

HRMTI Module	2011.10.18.0
RMTI Module	2011.10.25.1



HRMTI Module 2011.10.18.0  
RMTI Module 2011.10.25.1

## Gamma Ray Calibration Report

Type / Serial: 001 / 2718

## SHOP CALIBRATION

Sat Mar 31 11:40:45 2012

	Counts/Sec.	Gain	Offset	Jig	Units
Background	37.5				cps
Calibrator	319.6				cps
		1.5347			GAPI/cps

## PRIMARY VERIFICATION

Sat Mar 31 11:46:12 2012


Background	58.0				cps
Calibrator	497.7				cps
Difference				439.7	GAPI

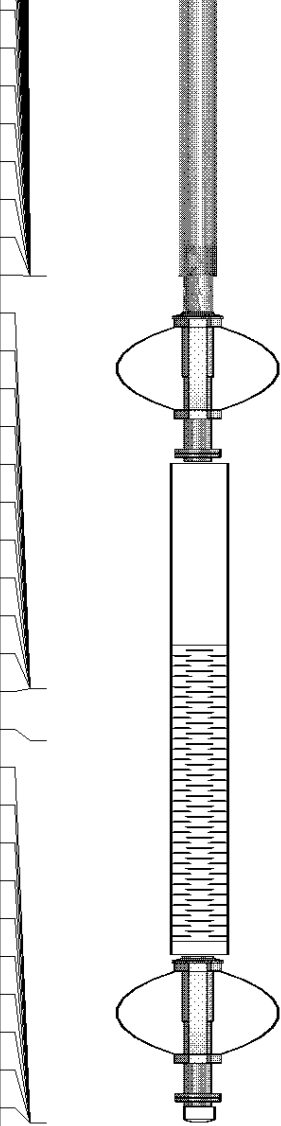
## BEFORE SURVEY VERIFICATION

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 (m)	Schematic	Description	Len (m)	OD (in)	Wt (lb)
RmtGen15BusV	4.95		STND_CH 1.4375 IN CABLE HEAD	0.46	1.44	1.00
RmtGenIonI	4.95					
RmtGenContSta	4.95					
RmtGenRepSv	4.95					
RmtGenRepV	4.95					
RmtGenRepPv	4.95					
RmtGenIspCmd	4.95					
RmtGenIspPv	4.95		TTTCU-001 (2718) Through Tubing Telemetry Cartridge - Ultrawire	2.00	1.69	33.00
RmtGenIspI	4.95					
RmtGenCmd	4.95					
RmtGenPv	4.95					
RmtGenI	4.95					
RmtGenP5VI	4.95		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	0.48	1.69	6.60
RmtGenTemp	4.95					
RmtGenP15VI	4.95					
RmtGen200V	4.95					
RmtGenP33V	4.95					
RmtGenP5V	4.95					
RmtGenClampV	4.95					
RmtGenSyncV	4.95					
RmtGenLvdsV	4.95					
RmtGen15BusV	4.95					
RmtGenIonI	4.95					
RmtNDetStat	4.95		RMTI-A (11680605) Halliburton RMTI Tool	4.28	2.13	77.00
RmtNPrgSt1	4.95					
RmtNPMI	4.95					

Tool Joint	Length (m)	Weight (lb)	O.D. (in)
RmtNPMHV	4.95		
RmtNTemp	4.95		
RmtFDetStat	4.95		
RmtFPrgSt1	4.95		
RmtFPMI	4.95		
RmtFPMHV	4.95		
RmtFTemp	4.95		
RmtGenClampV	4.95		
WVF3FT	2.54		
WVFS1	2.54		
WVFS2	2.54		
WVFS3	2.54		
WVFS4	2.54		
WVFS5	2.54		
WVFS6	2.54		
WVFS7	2.54		
WVFS8	2.54		
CBLTEMP	2.54		
CBLROT	2.54		
WVF5FT	2.23		
LLMTEN	0.00		
XHUERR1	0.00		
XHUERR2	0.00		
XHUTEMP	0.00		
XHUCURR	0.00		
XHUVOLT	0.00		
XHUSTAT	0.00		
TSTAMP	0.00		
ITEMPX	0.00		
HVOLT_X	0.00		
			
AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.12	1.69	3.00
SondexxGo Sondex Box x Go Pin Cross Over	0.10	1.69	1.00
CENT-Probe (PT_MONO2) Probe 2 3/4 Centralizer	0.88	2.75	35.00
RBT-004 (2211) Radial Bond Tool (UW 3 1/8) 20K Rated	2.89	3.13	140.00
CENT-Probe (PT_MONO2) Probe 2 3/4 Centralizer	0.88	2.75	35.00
BUL-001 (000001) Bullnose	0.09	1.69	1.50
Dataset: kaufman_43d_25_692_rbt.db: field/well/RBT_RMT/merge1 Total Length: 12.17 m Total Weight: 333.10 lb O.D. 3.13 in			