



# Segmented Bond Log Gamma Ray

Baker Atlas

File No: EXXONMOBIL PRODUCTION COMPANY

Well FRU 187-3346

API No: PICEANCE CREEK

County RIO BLANCO State COLORADO

Location 616' FSL & 2369' FEL

Other Services NONE

SEC 35 TWP 1S RGE 97W

Permanent Datum 6399 ft

Log Measured From K.B. 28.1 ft Above P. D.

Drill Measured From KELLY BUSHING Elevations KB 6415.1 ft DF 6414.1 ft GL 6388 ft

Date 18-MAR-2010

Run ONE

Service Order 578781

Depth Driller 8451 ft

Depth Logger 8340 ft

Bottom Logged Interval 8340 ft

Top Logged Interval 3000 ft

Time Started 04:30

Time Finished 08:30

Operator Rig Time 5 hrs

Type of Fluid in Hole BWM

Fluid Density 10.2 lbm/gal

Salinity N/A

Fluid Level FULL

Logged Cement Top 4312 ft

Wellhead Pressure 0 psi

Maximum Hole Deviation N/A

Nominal Logging Speed 40 fpm

Maximum Recorded Temperature N/A

Reference Log Date N/A

Equipment No. 4271 Location VERMILUT

Recorded By TIM KAUFF

Witnessed By MR. ADAM RYAN

- FOLD HERE

In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

## Borehole Record

Bit Size	From	To
13.5 in		

## Casing Record

Size	Weight	Grade	From	To
7 in	26 lbm/ft	P-110	SURFACE	8451 ft

## Remarks

THE ESTIMATED TOC IS MARKED ON MAIN LOG  
THE CREW OF 4271 THANKS YOU.

## Equipment Data

Run	Trip	Tool	Series Number	Serial Number	Position
1	1	CENTRALIZER	4341XA	10354702	CENTRALIZED

1	1	VOL	1424XB	119033	CENTRALIZED
1	1	WANDREL	1424XB	121670	CENTRALIZED
1	1	CENTRALIZER	4341XA	119379	CENTRALIZED
1	1	PCN	1633EA	121635	CENTRALIZED
1	1	GAMMA RAY	1309XA	41737	CENTRALIZED
1	1	OCL	MM	81150	CENTRALIZED

# MAIN SECTION PRIMARY PRESENTATION

## SBT NORMALIZATION RESULTS

CURVE	PARAMETER	VALUE	UNITS	TOP	BOTTOM	COMMENT
ATC1	aeg1 onormf1	1.404	db/ft	2999.813	8351.000	
ATC2	aeg2 onormf2	-0.706	db/ft	2999.813	8351.000	
ATC3	aeg3 onormf3	-0.545	db/ft	2999.813	8351.000	
ATC4	aeg4 onormf4	-1.614	db/ft	2999.813	8351.000	
ATC5	aeg5 onormf5	0.042	db/ft	2999.813	8351.000	
ATC6	aeg6 onormf6	1.418	db/ft	2999.813	8351.000	
ATC1	seg1 dnormf1	0.492	db/ft	2999.813	8351.000	Good Confidence
ATC2	seg2 dnormf2	-0.561	db/ft	2999.813	8351.000	Good Confidence
ATC3	seg3 dnormf3	0.195	db/ft	2999.813	8351.000	Good Confidence
ATC4	seg4 dnormf4	-1.216	db/ft	2999.813	8351.000	Good Confidence
ATC5	seg5 dnormf5	0.328	db/ft	2999.813	8351.000	Good Confidence
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## SBT PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
amp	fpamp	69.513	mv	2988.813	8351.000
amp	fpattn	1.193	dB/ft	2988.813	8351.000
atc	dbspread	4.589	dB/ft	2988.813	8351.000
atc	spacing	0.654	feet	2988.813	8351.000
cenr	casing od	7.000	inches	2988.813	8351.000
cenr	casing wt	28.000	lbm/ft	2988.813	8351.000

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CN	Bit Size	7.875	inches	2999.813	8351.000
CN	Casing Thickness	0.381	inches	2988.813	8351.000
CN	Casing/Cement Correction	No		2999.813	8351.000
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CN	Matrix	Limestone		2999.813	8351.000
CN	Salinity	0.000	ppm	2999.813	8351.000

# DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
2346XA	-32.500	CCL					
2435XA	-30.250	LSN					
2435XA	-29.750	NEU	SSN				
1309XA	-27.750	GR					
1424XA	-11.000	ATC1	ATC2	ATC3	ATC4	ATC5	ATC6
		ATAV	ATMN	ATMX	AMAV	DEV	DTMN
		DTMX	RB	XATT	YATT		
1424PA	0.000	CHV	CYQ	SIG			

Created by : SBT, v5.0.003

Plotted by : PlatMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY

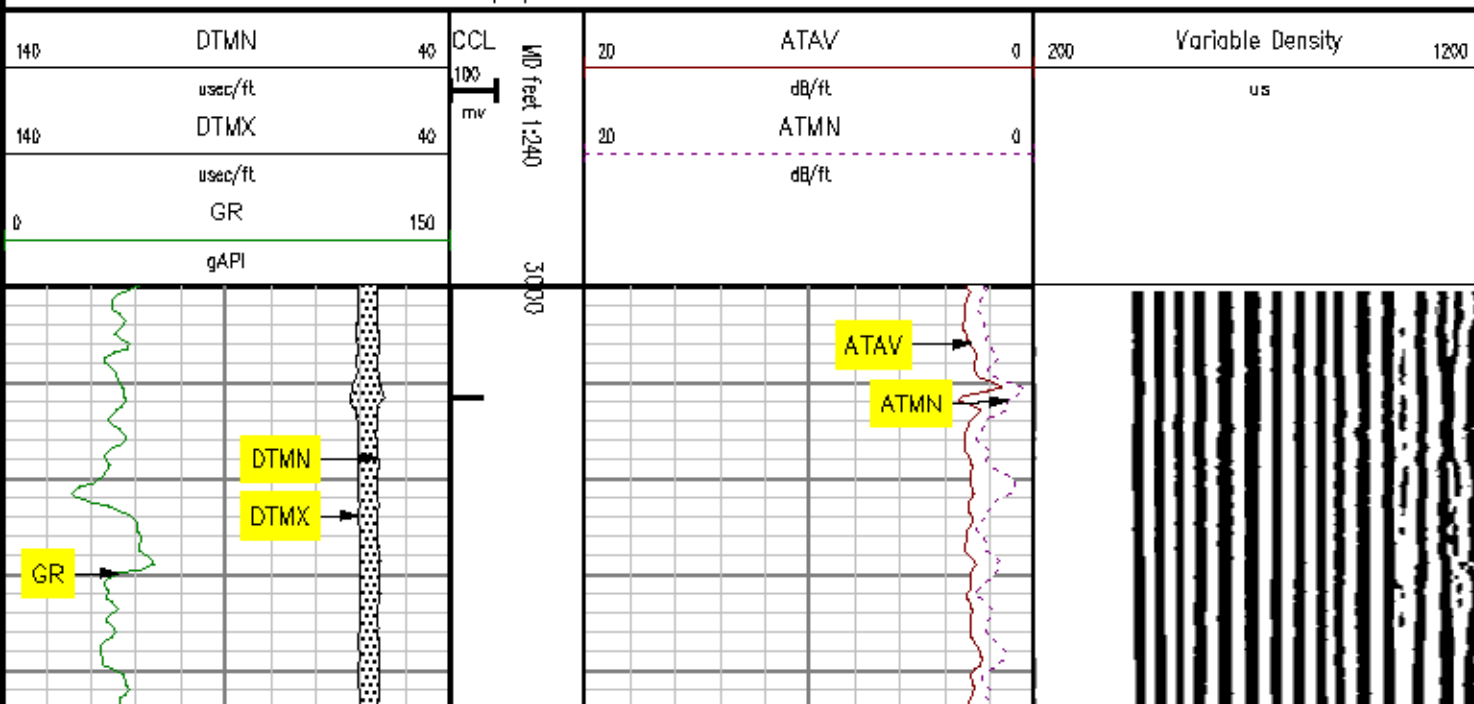
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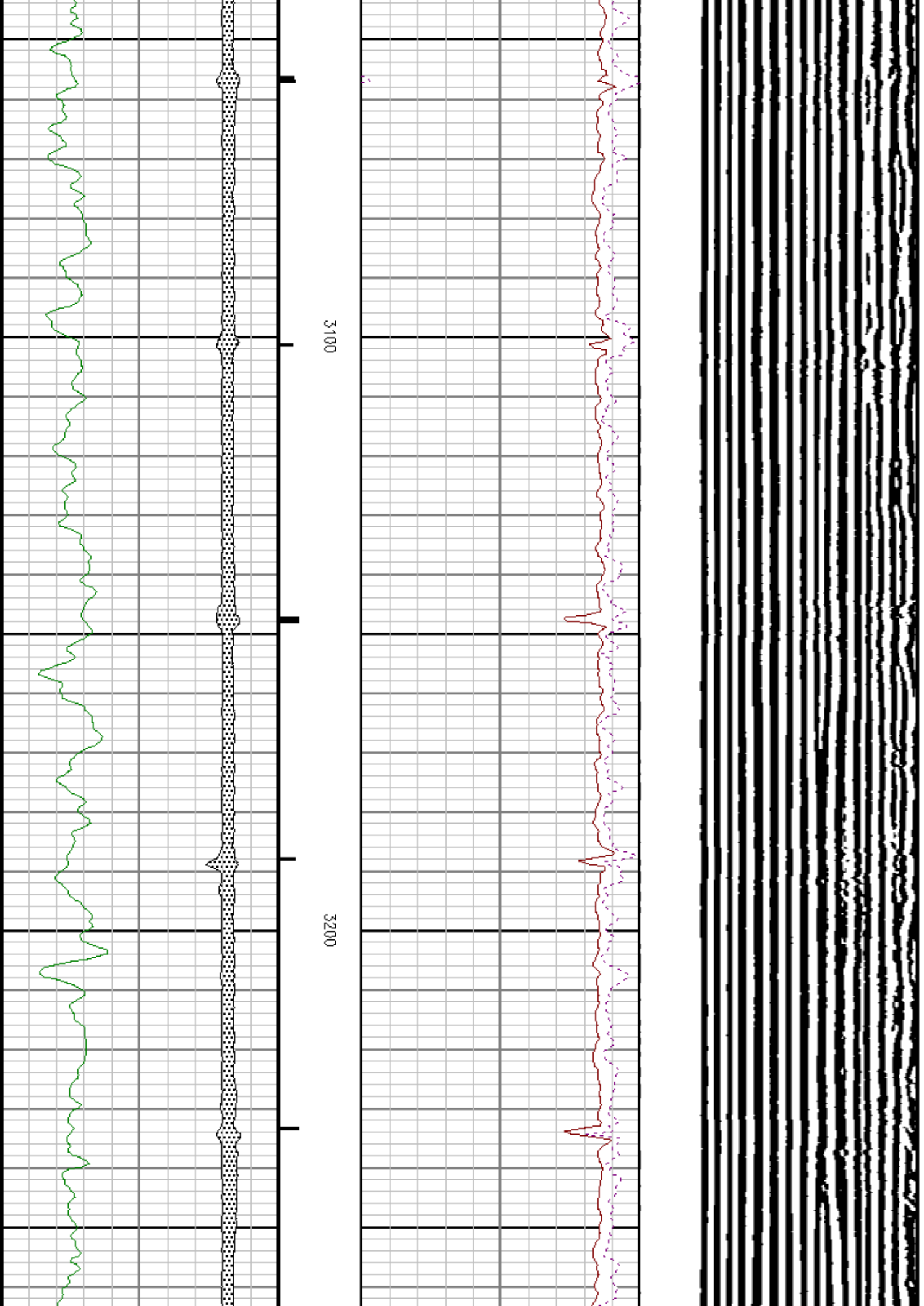
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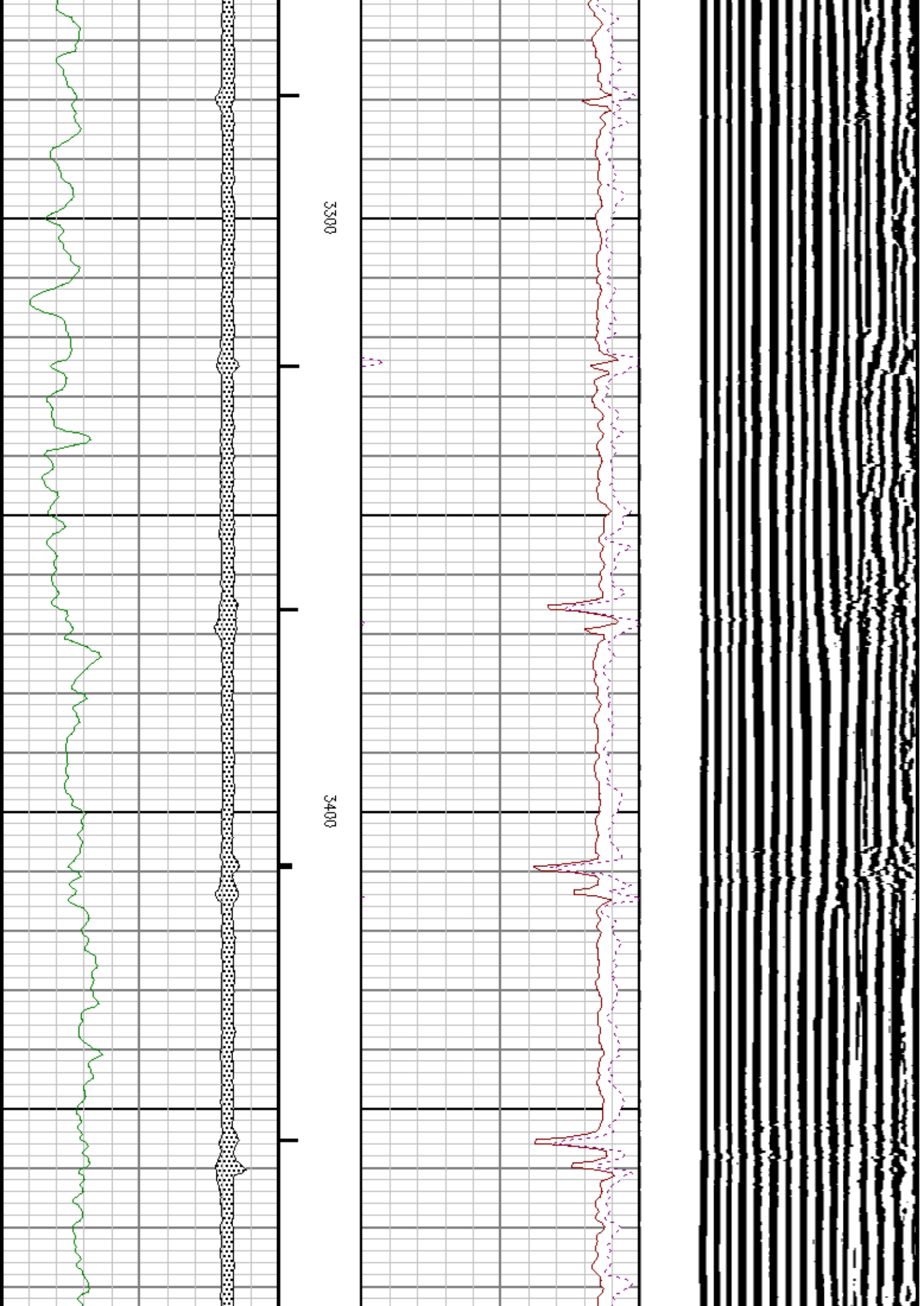
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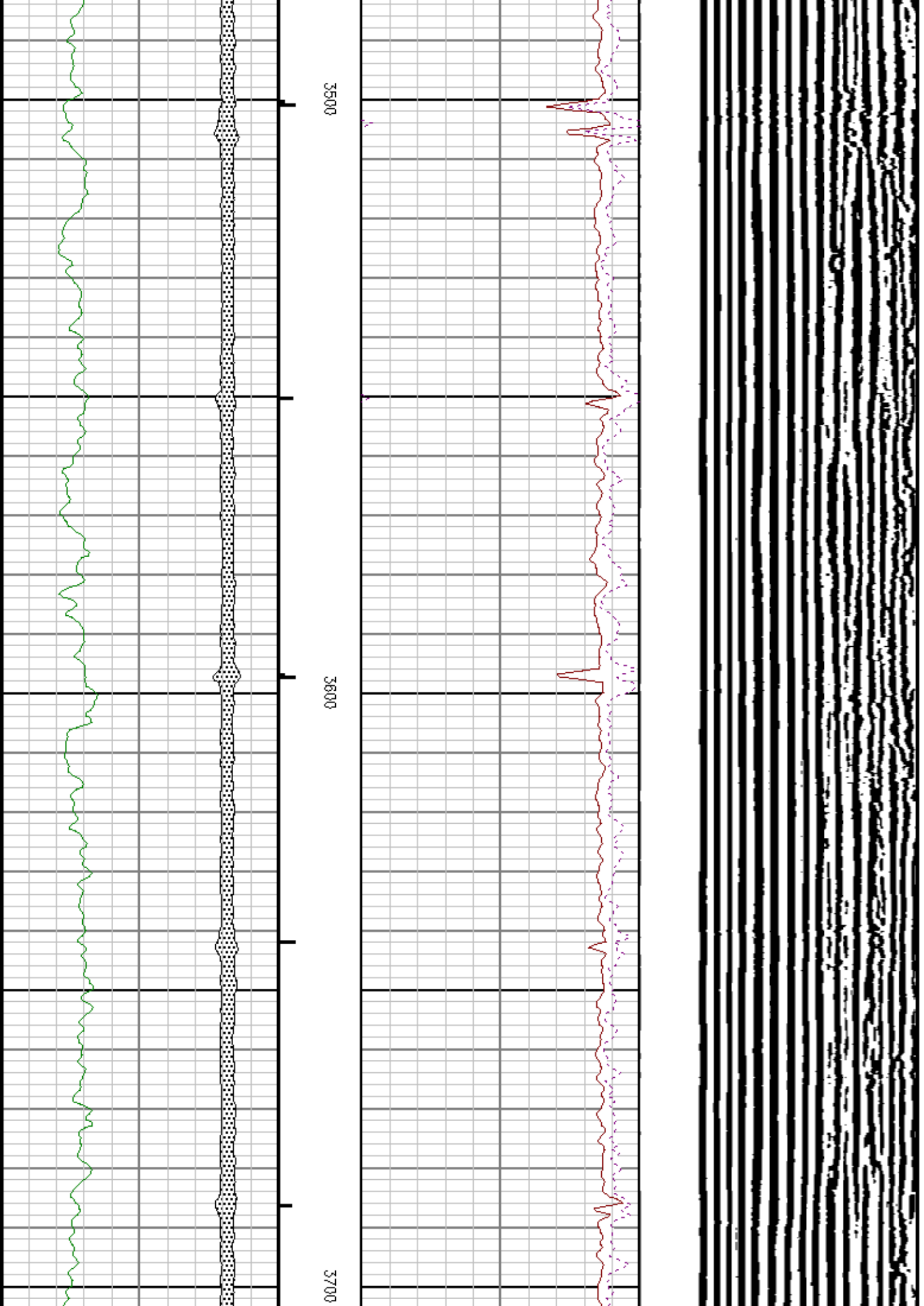
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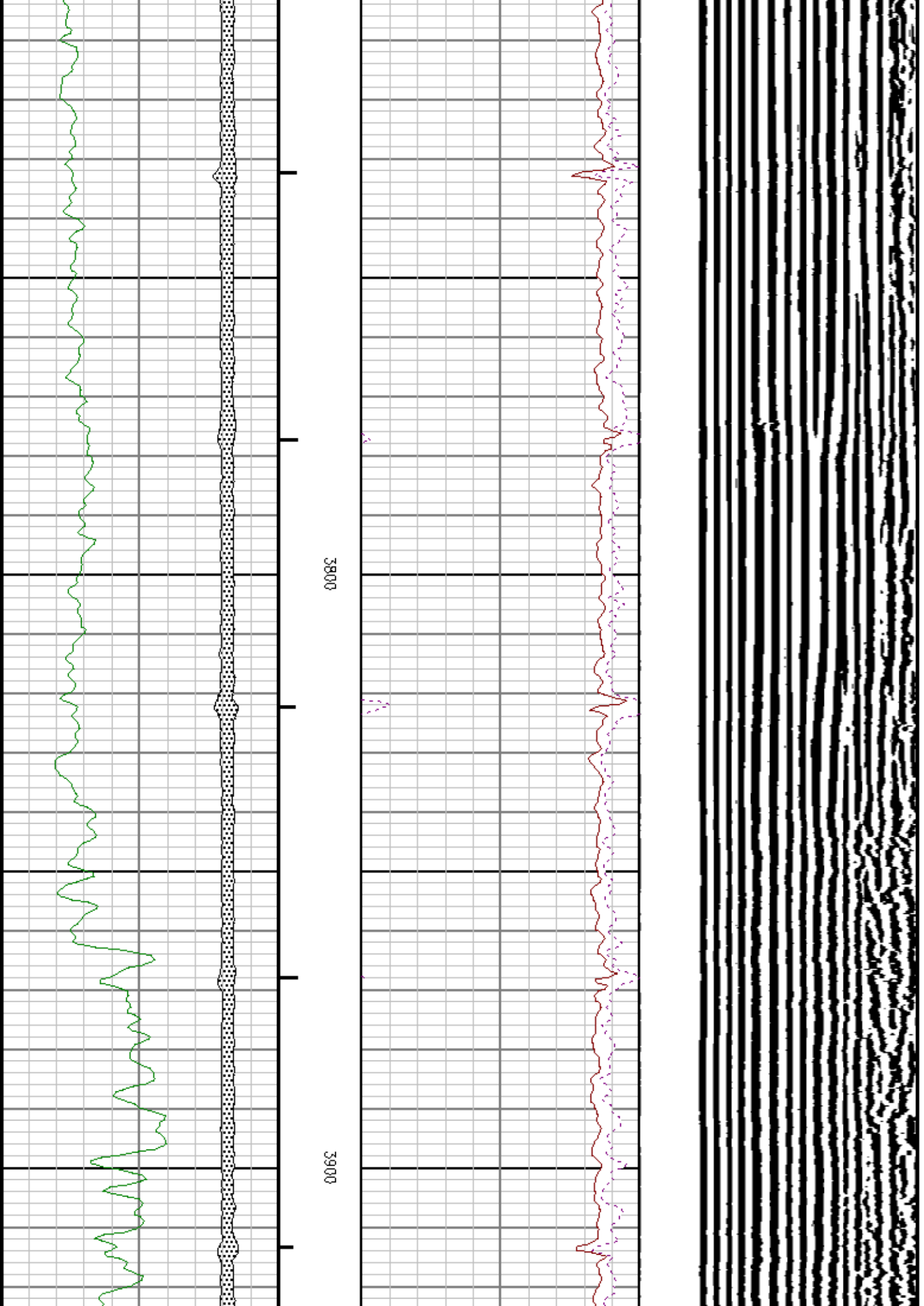
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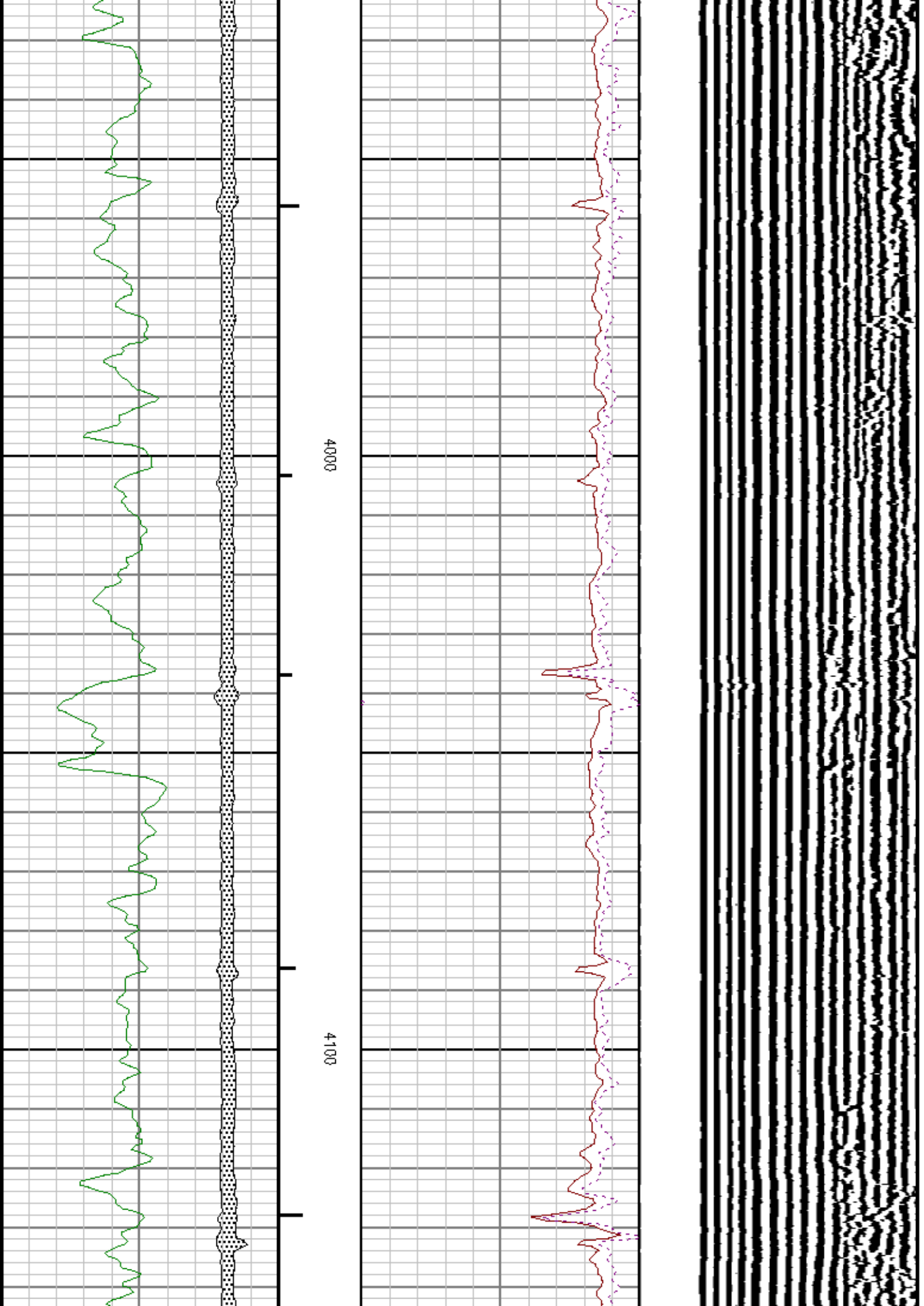




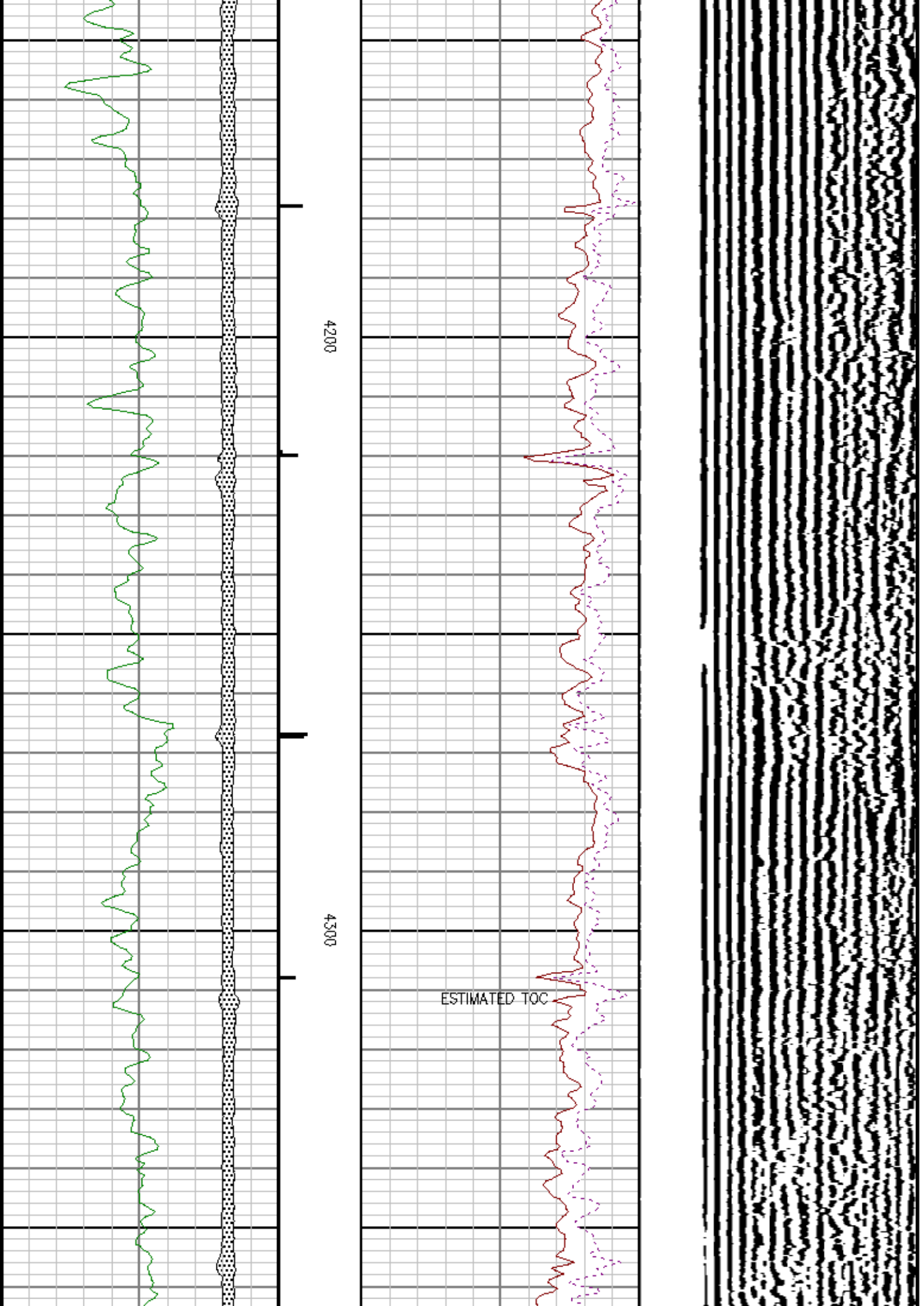


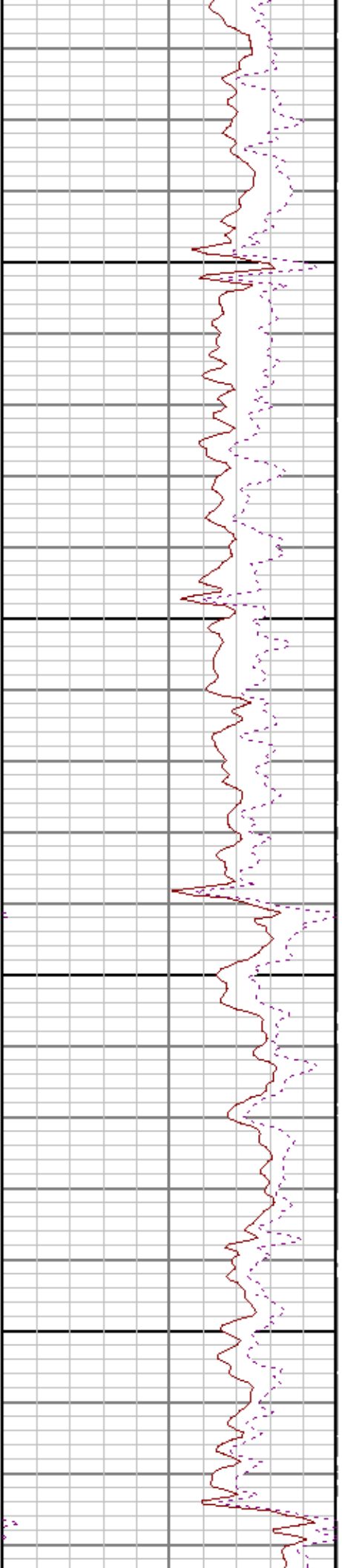
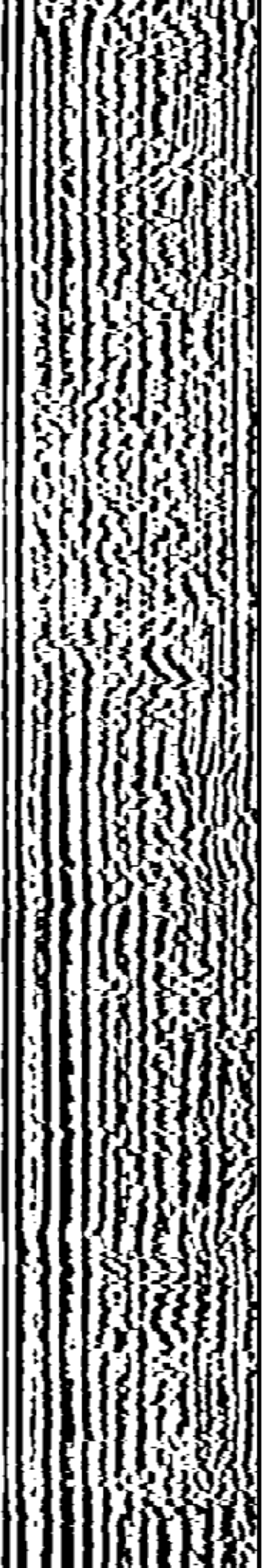






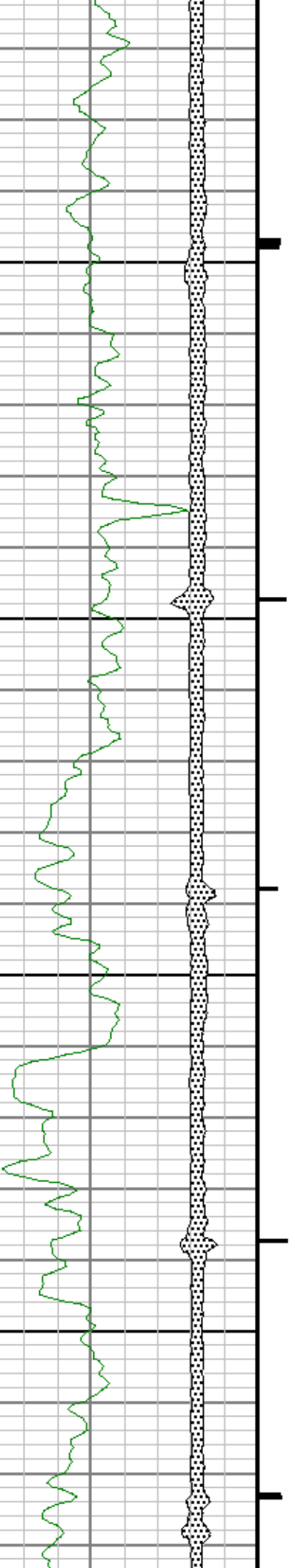


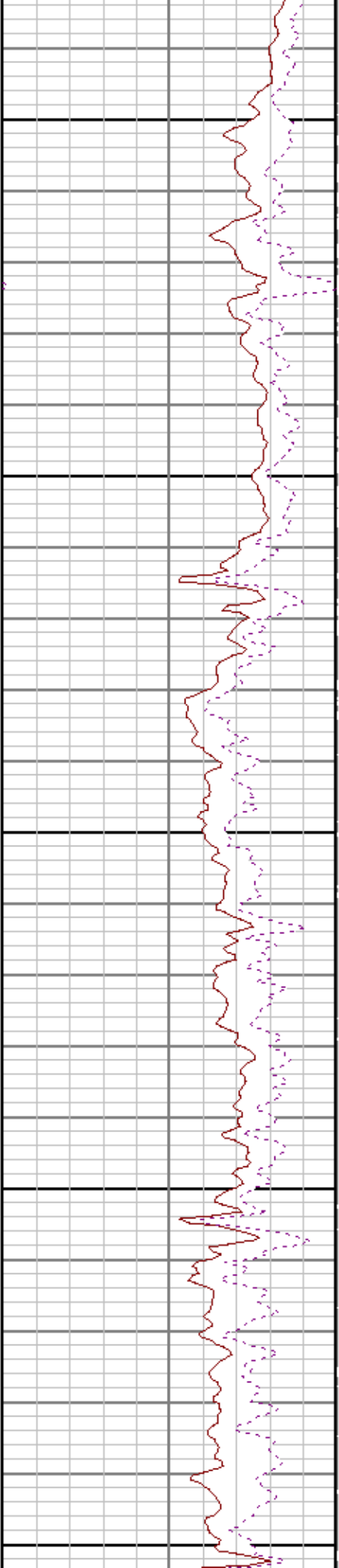
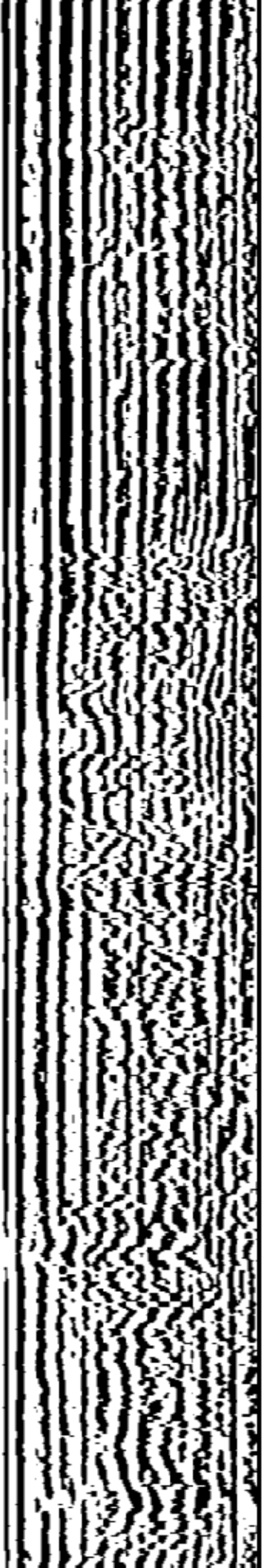




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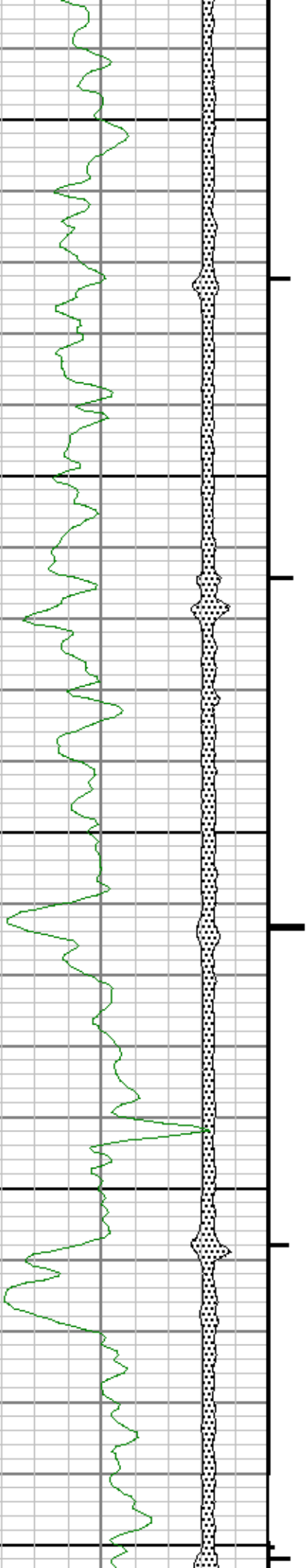


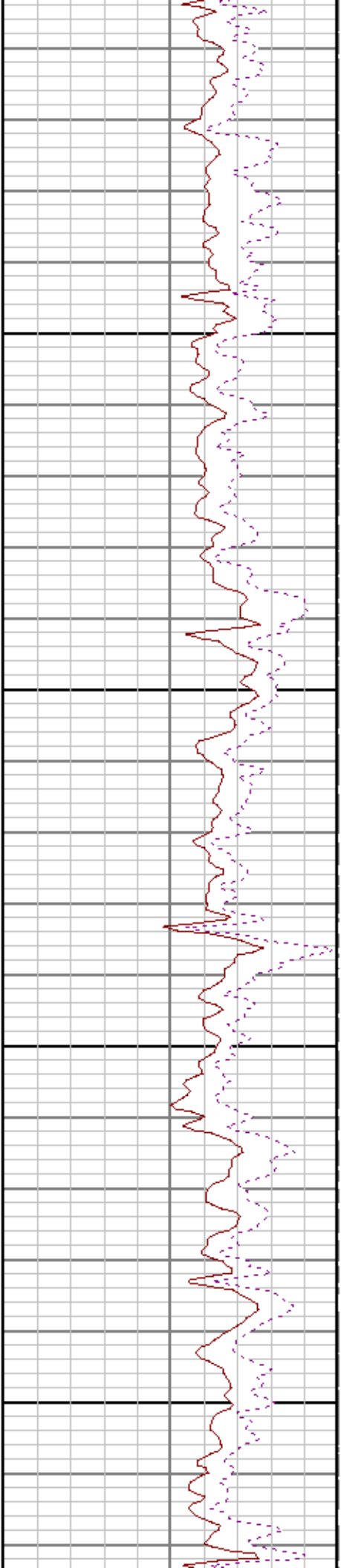
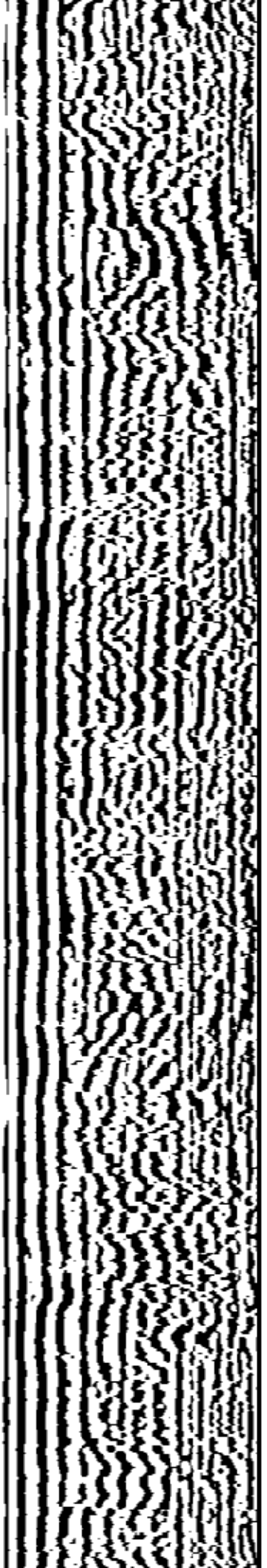


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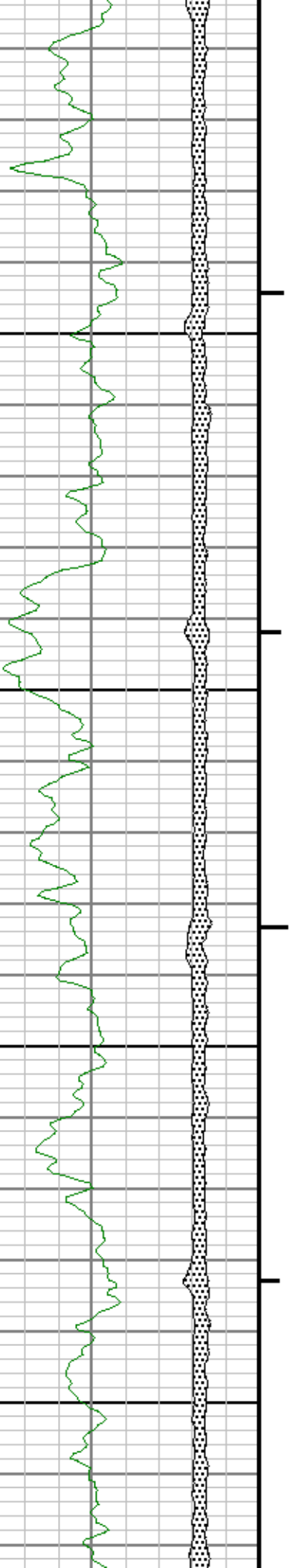
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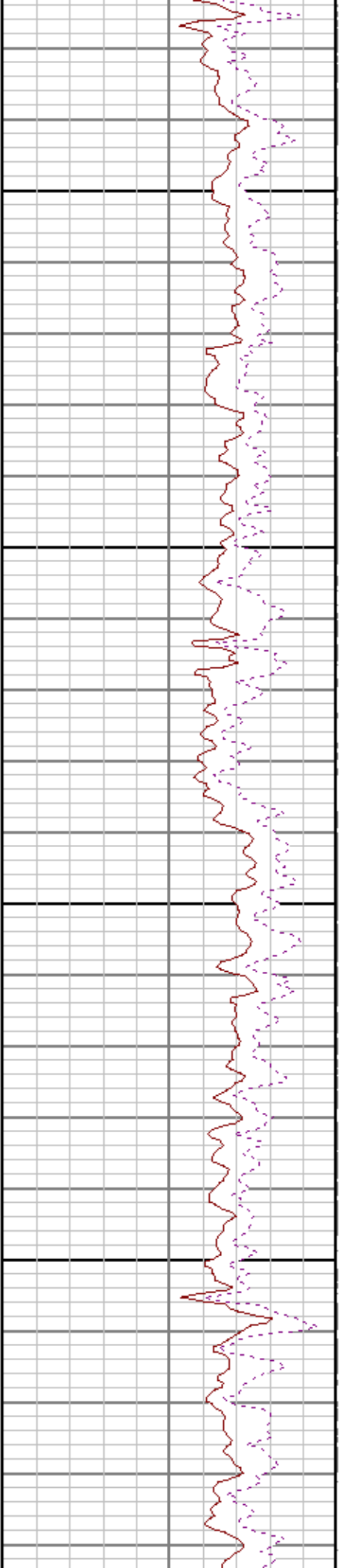
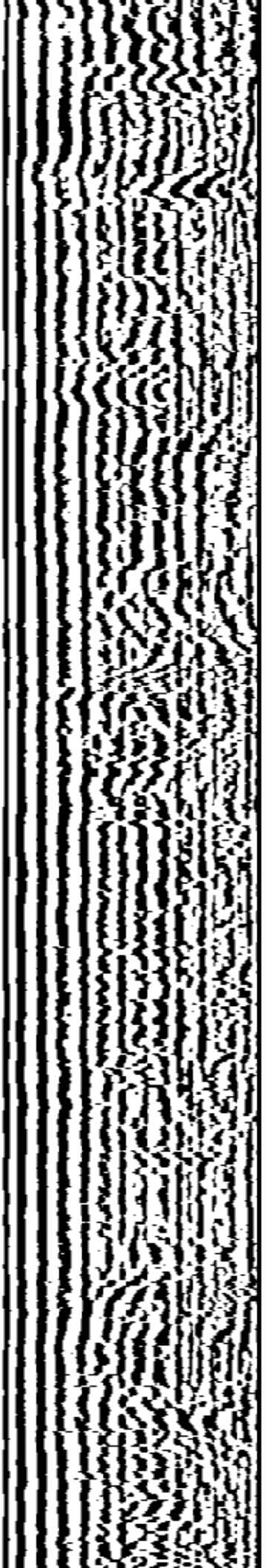




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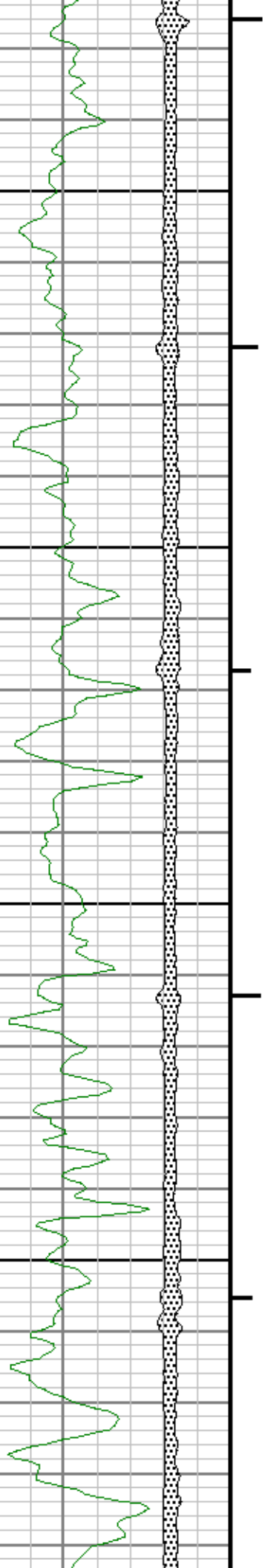
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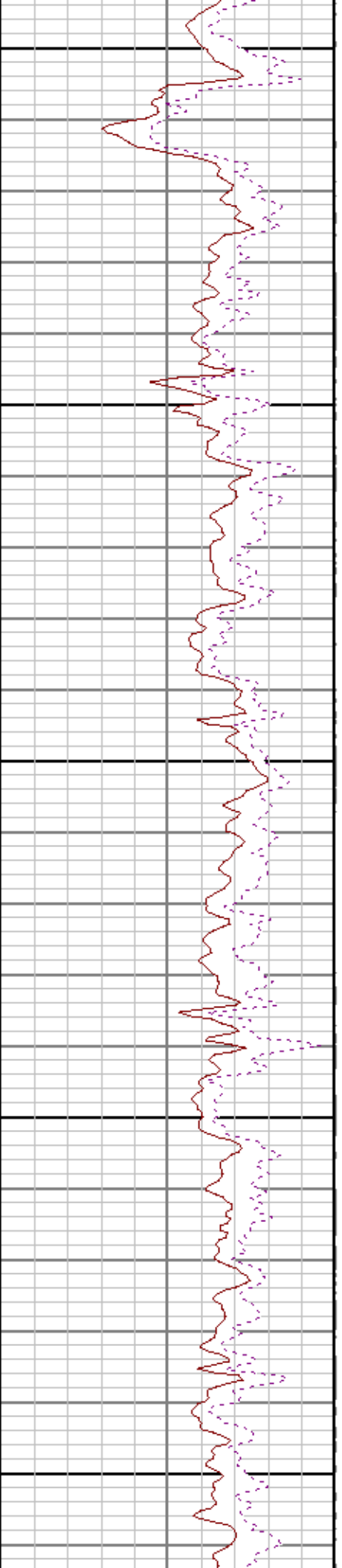
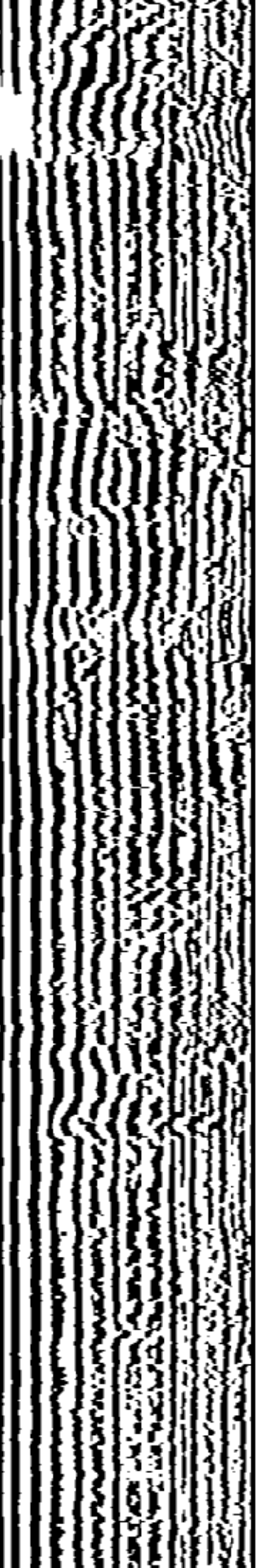


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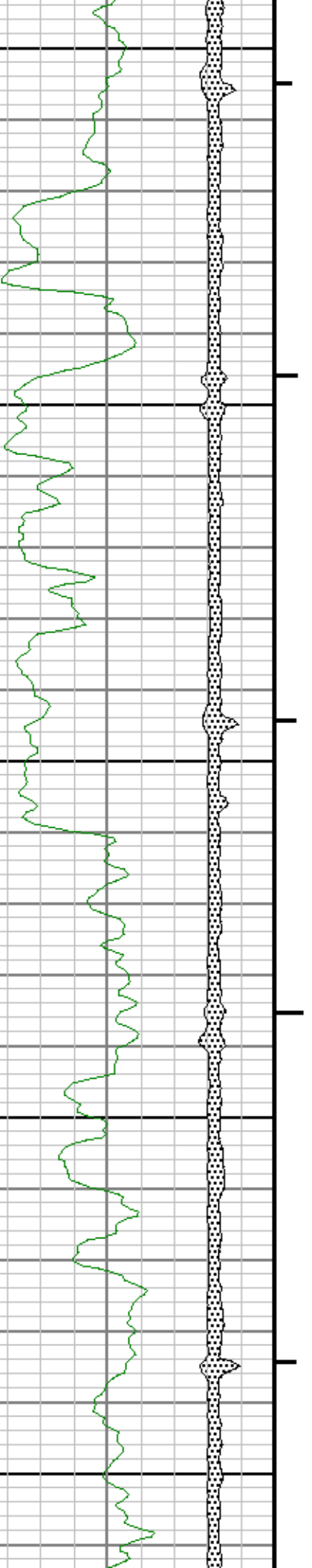


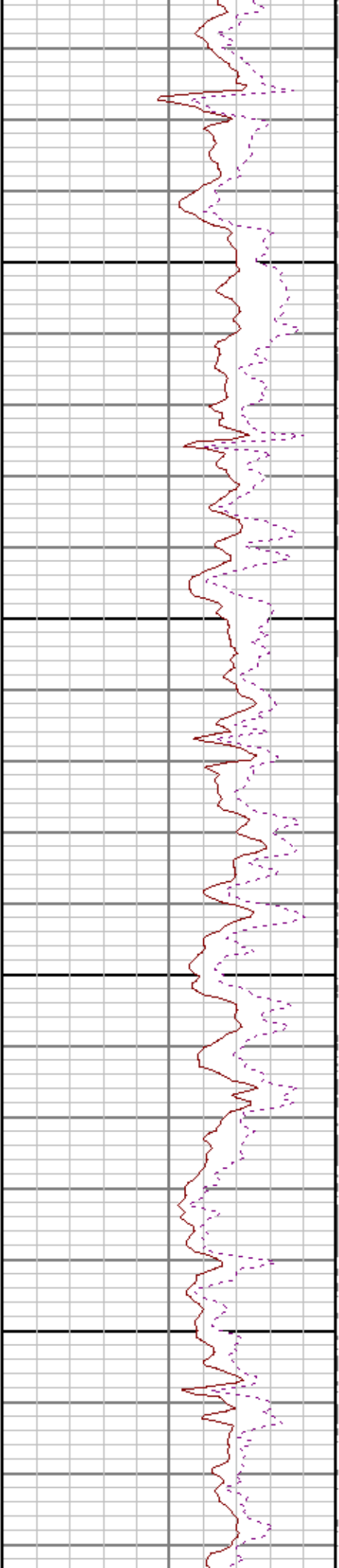
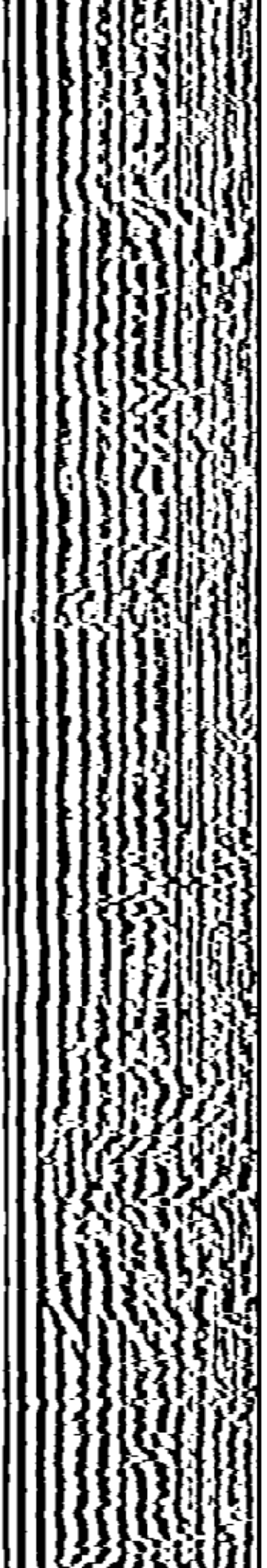




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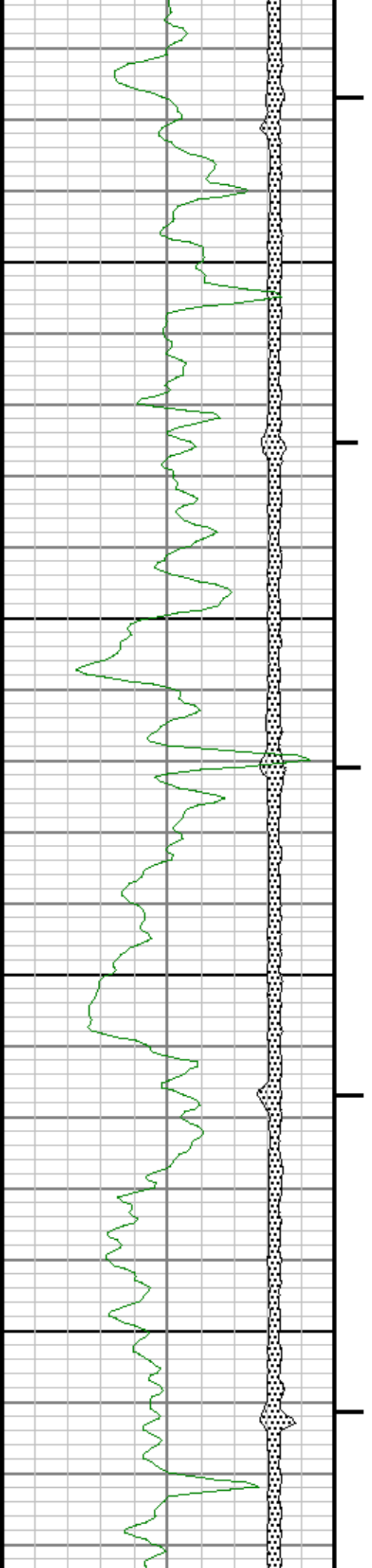
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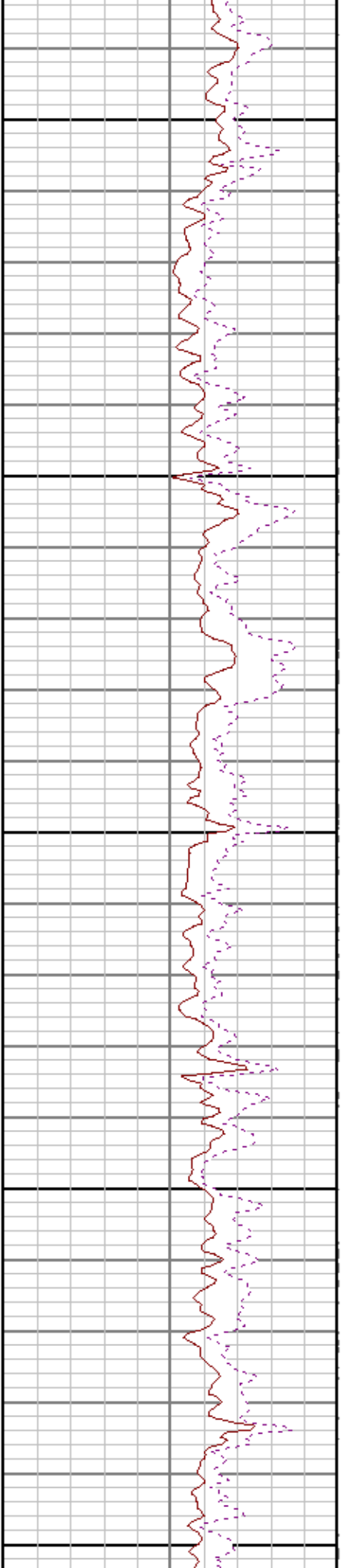
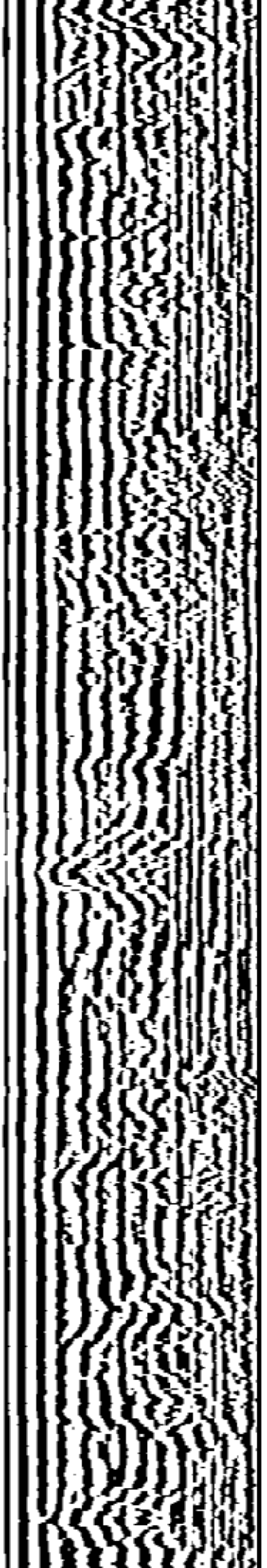




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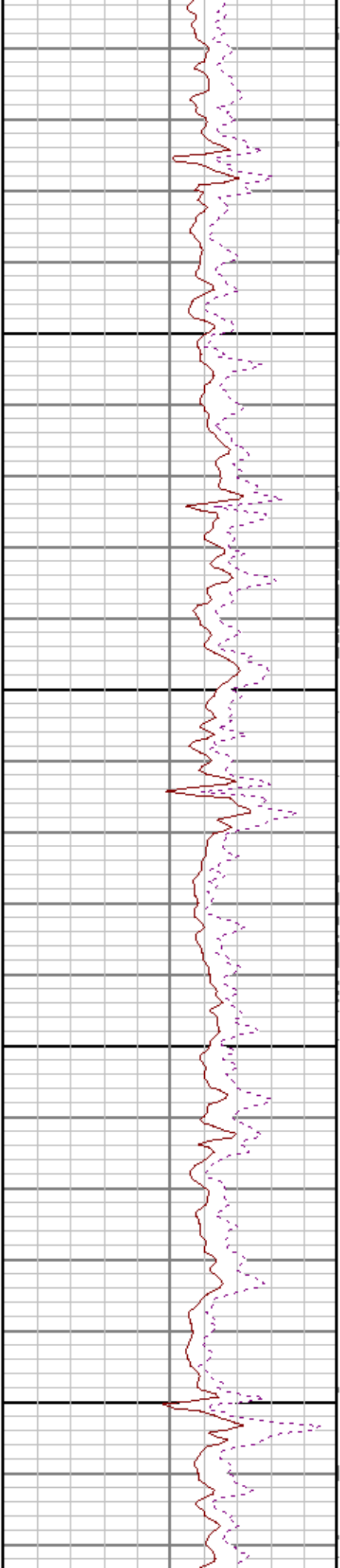
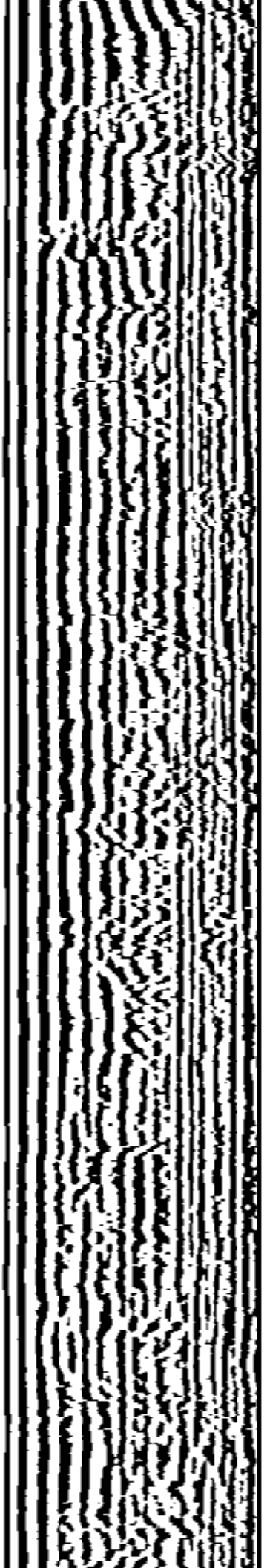
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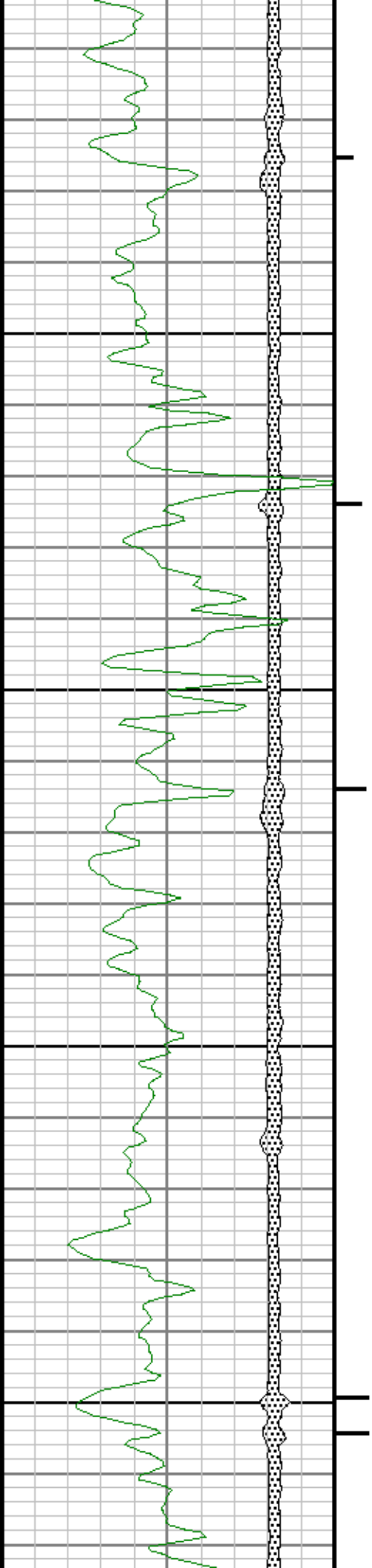


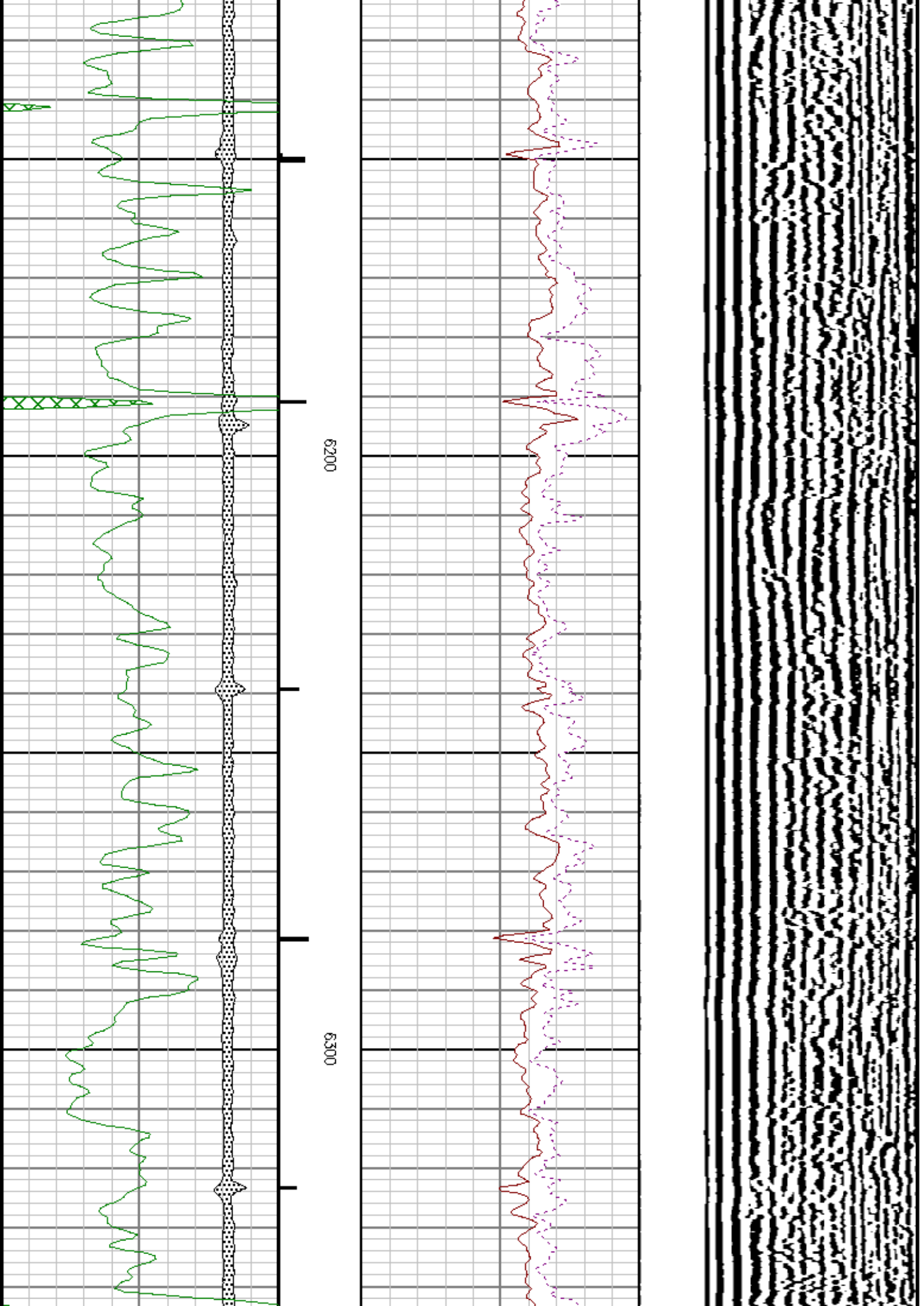


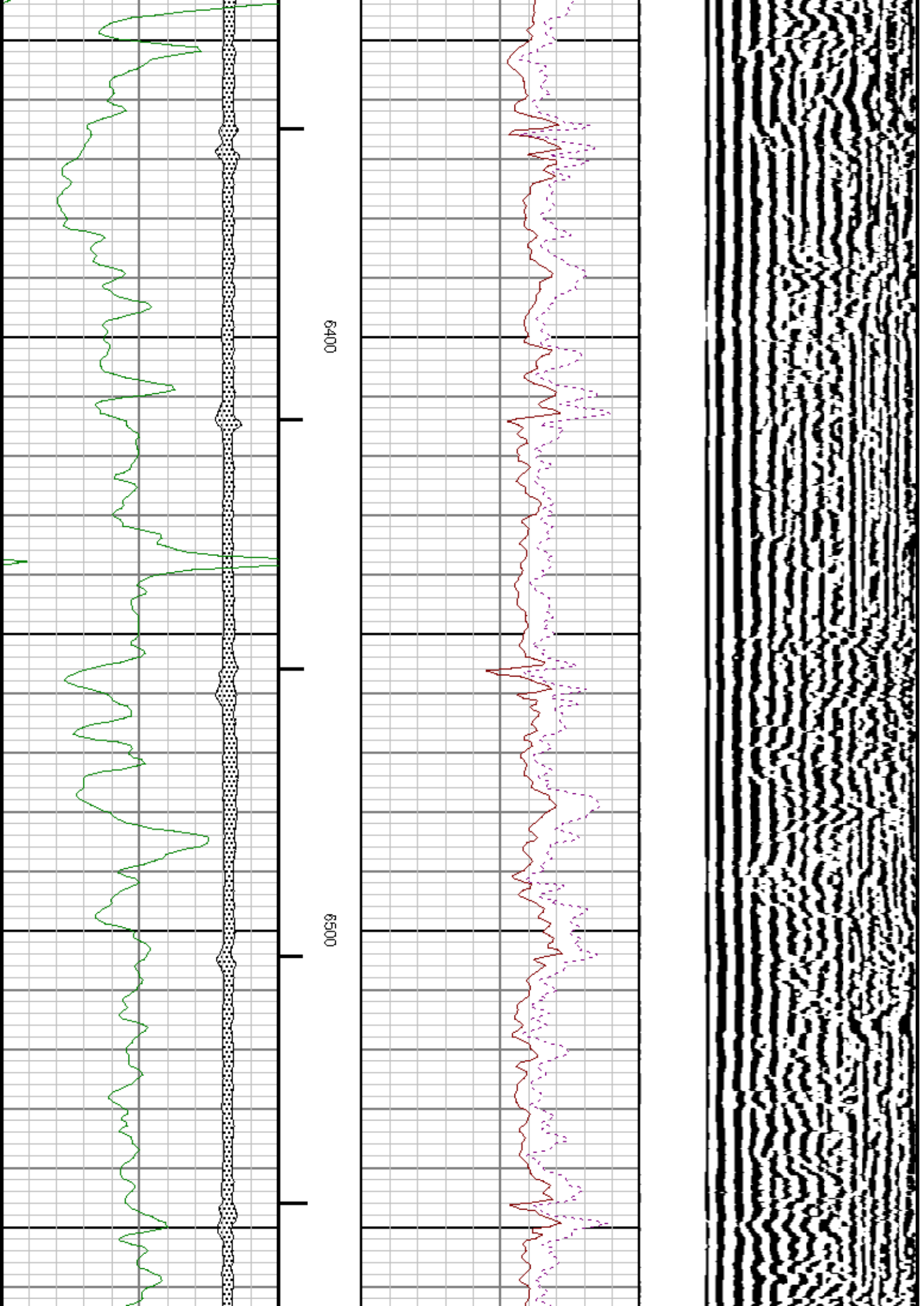


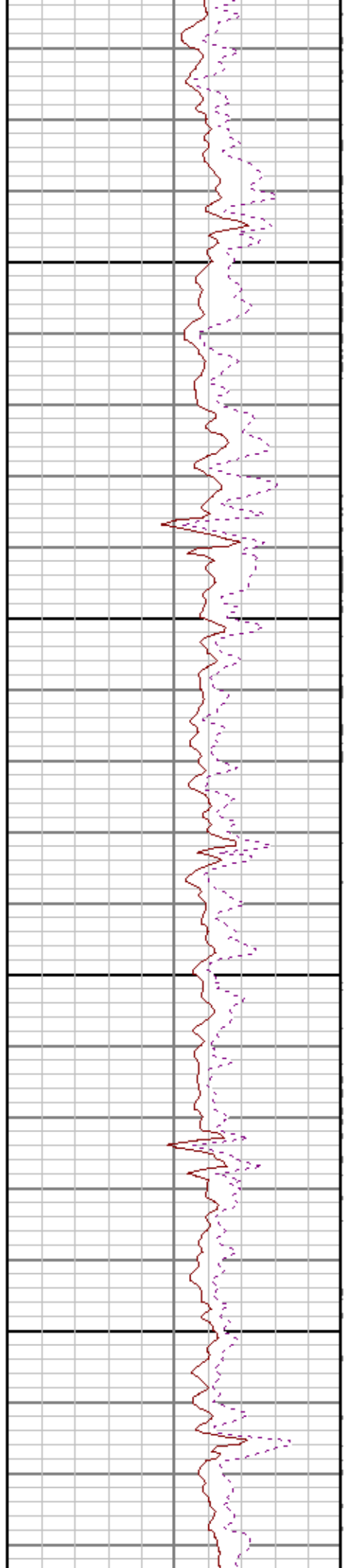
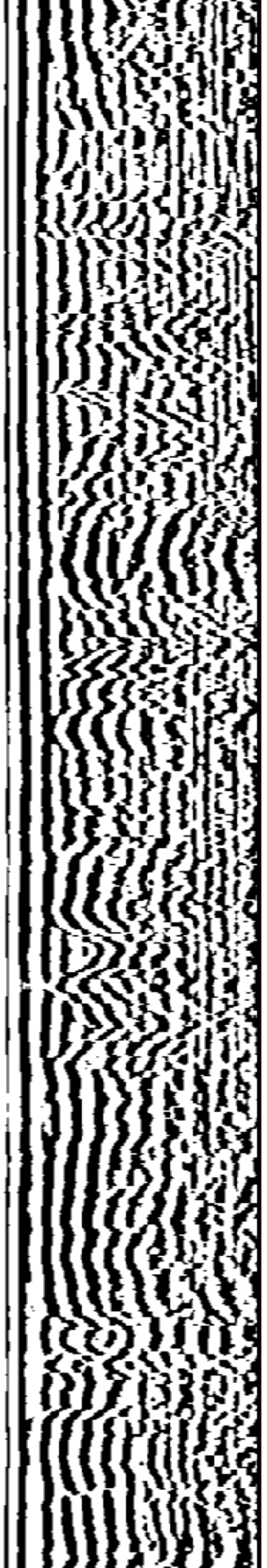
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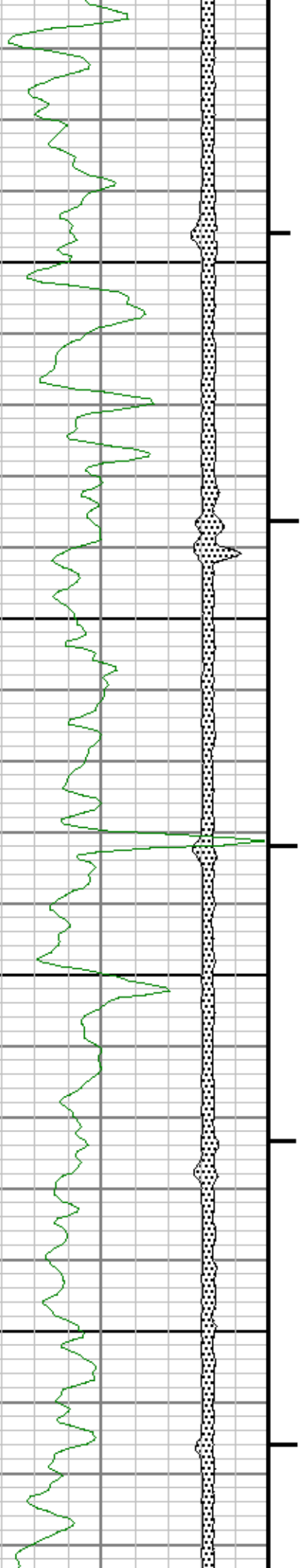


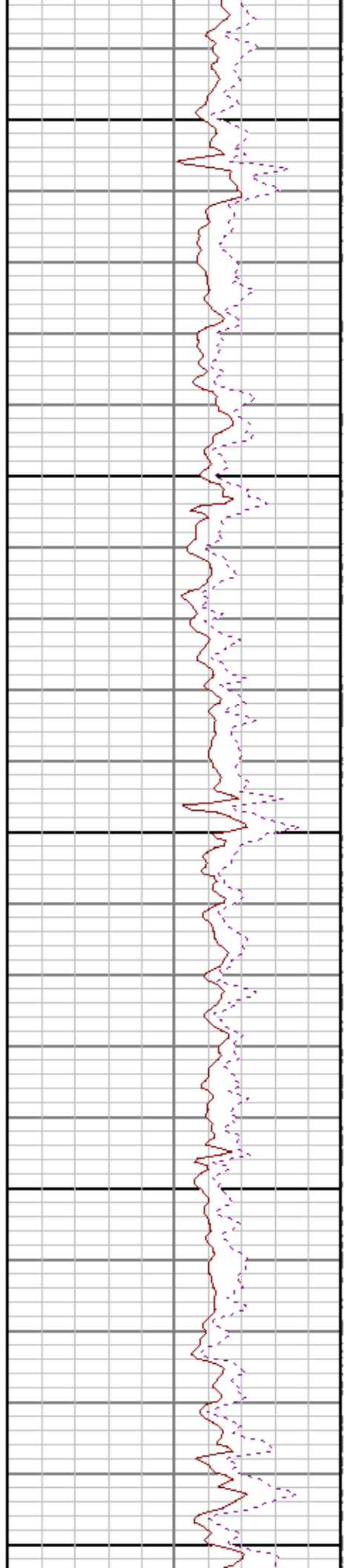
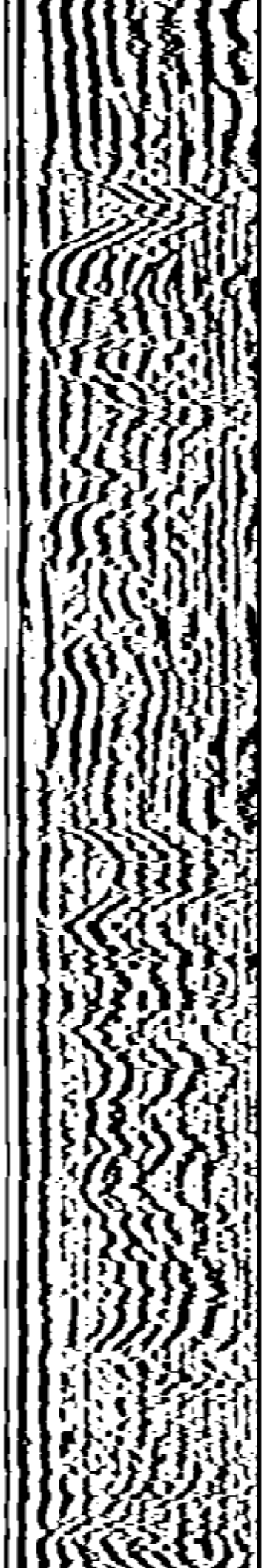




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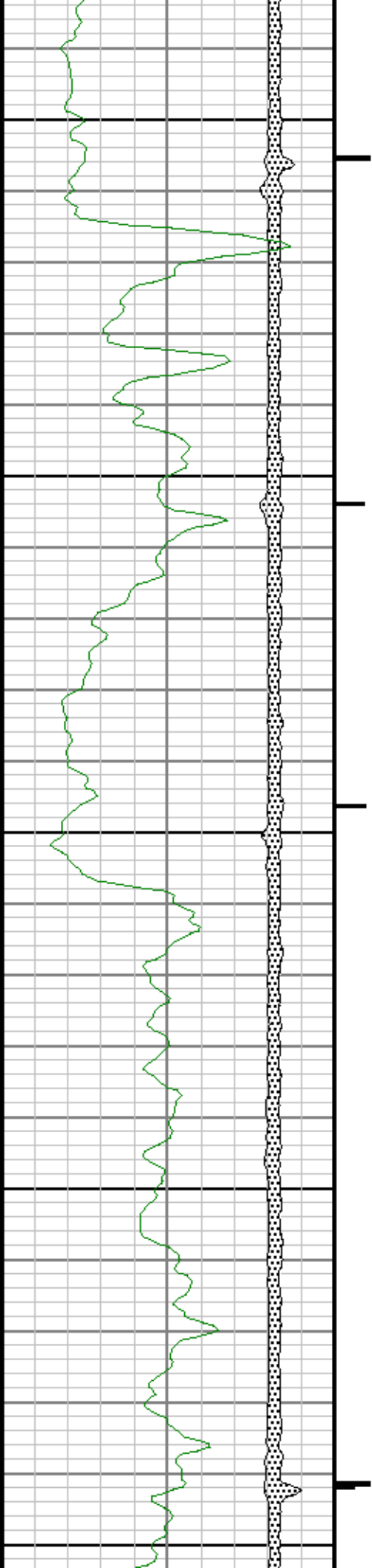




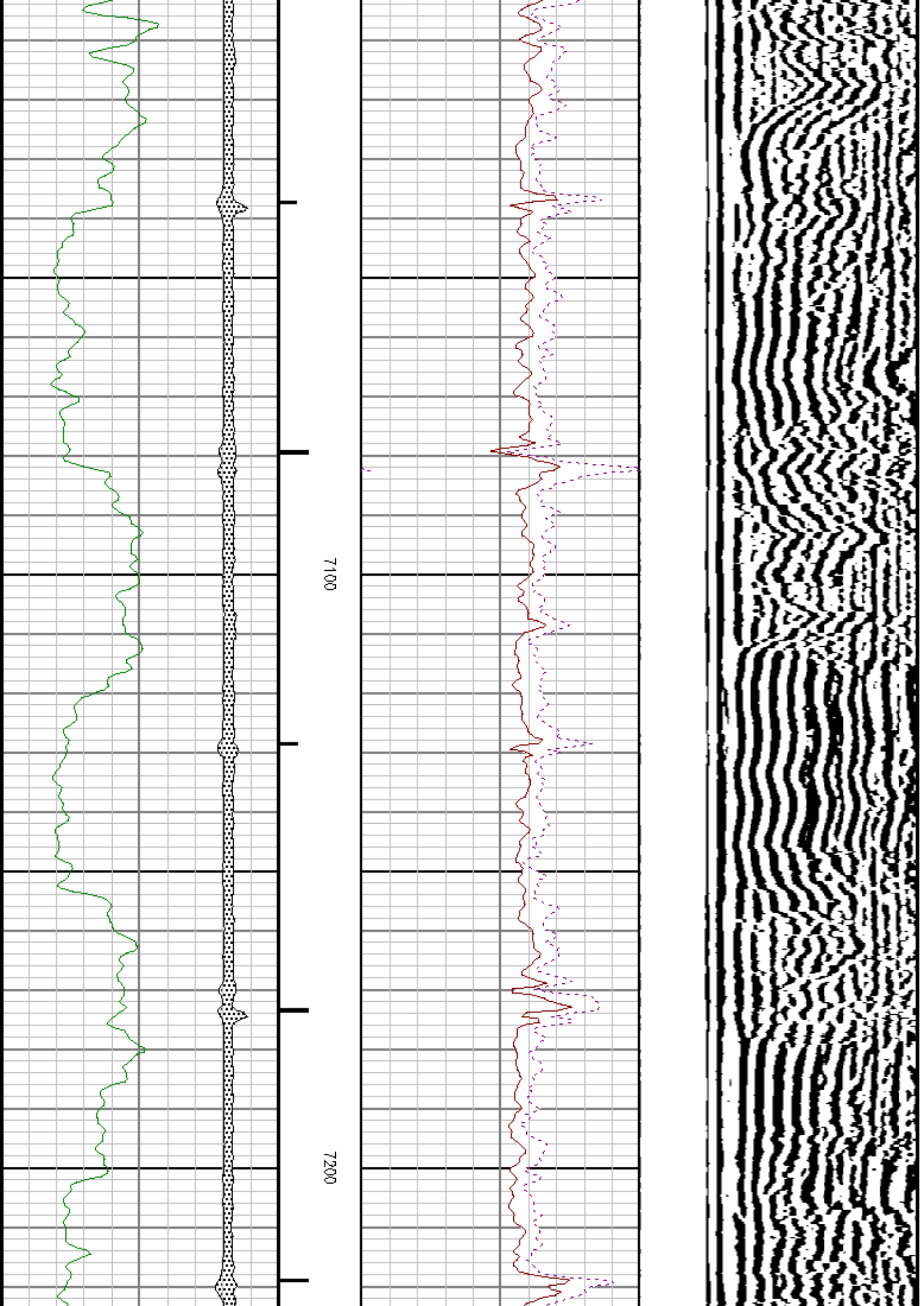
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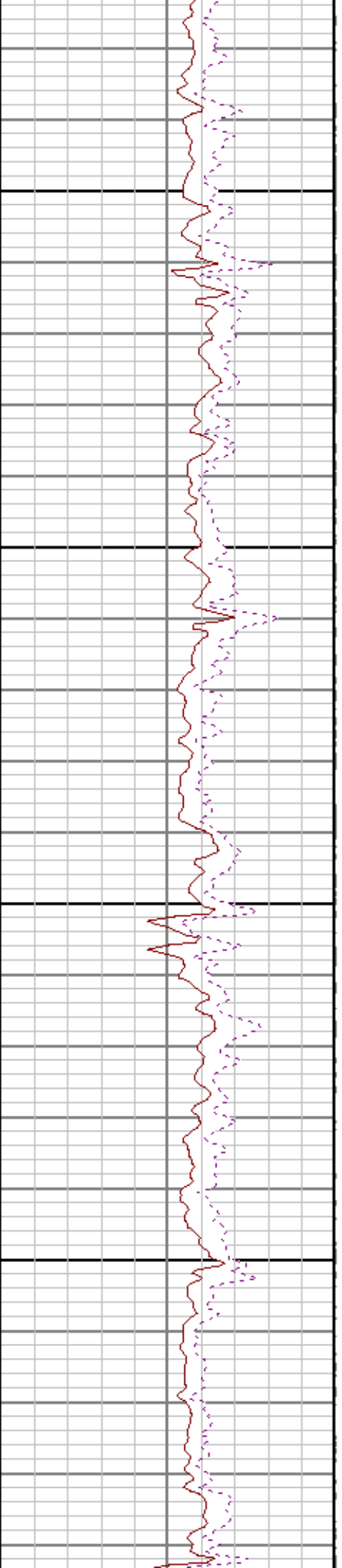
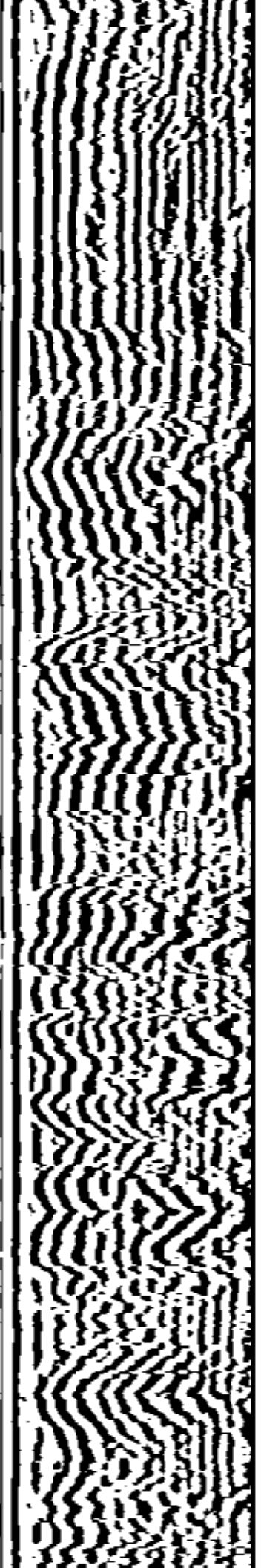
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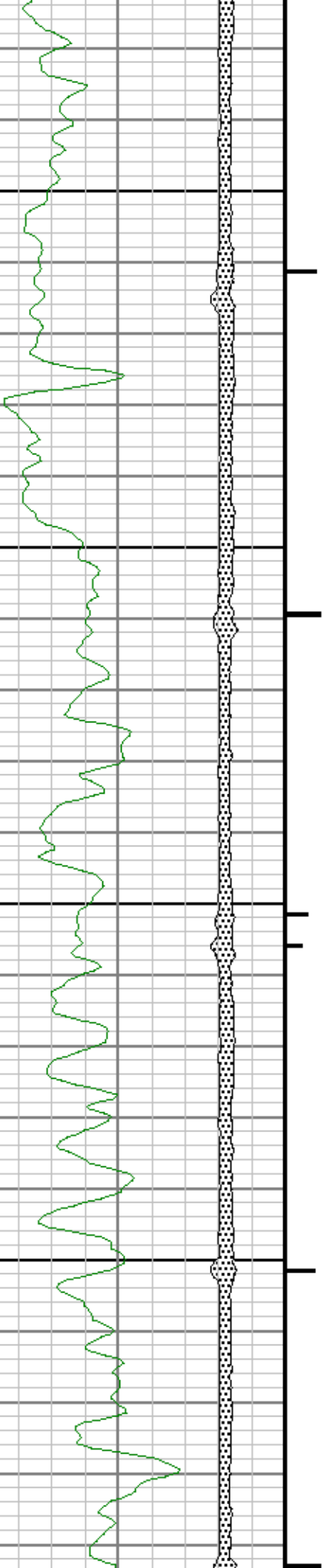


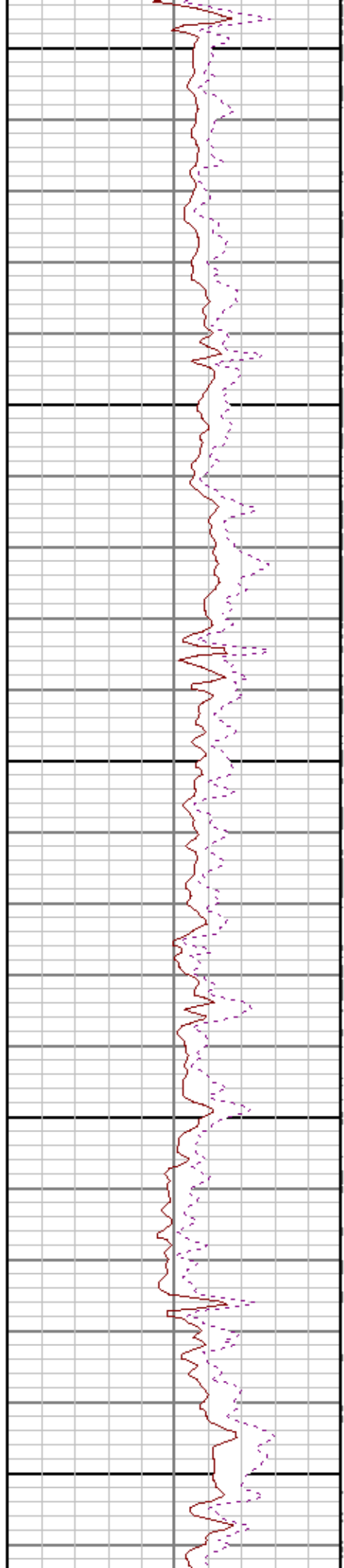
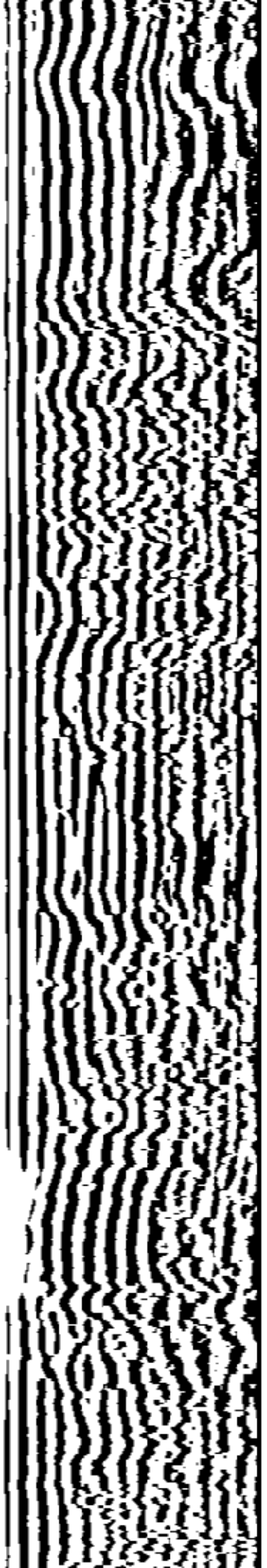




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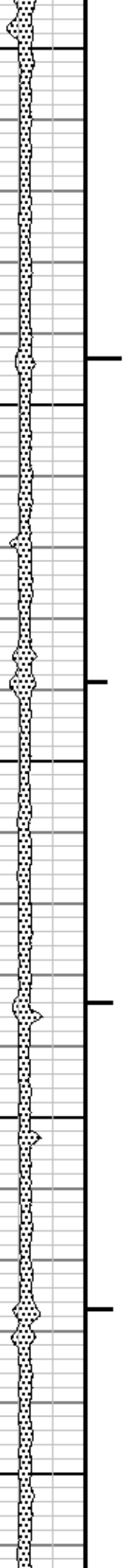
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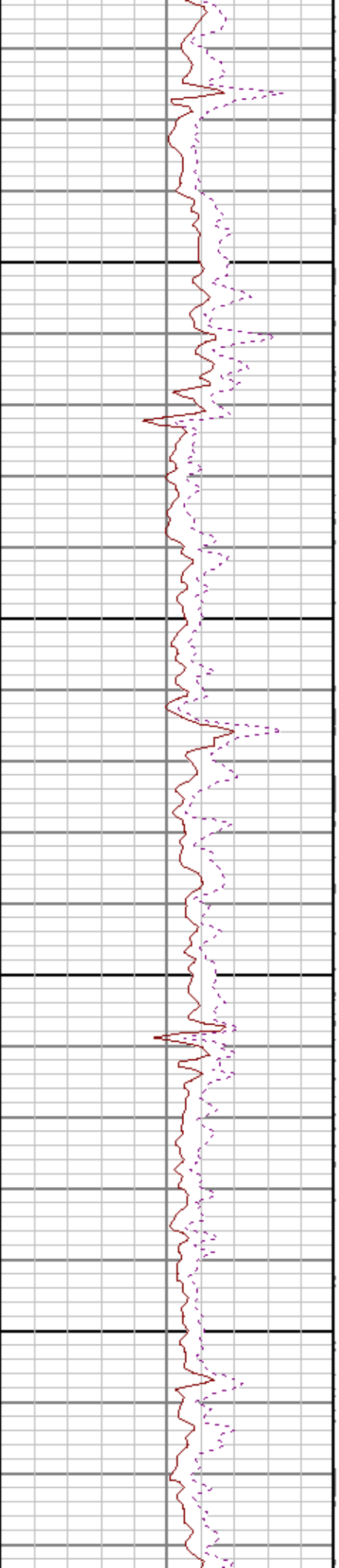
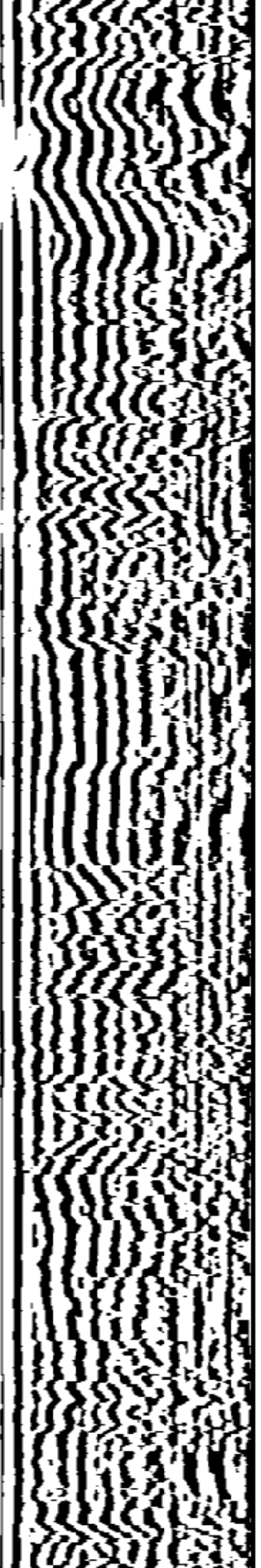


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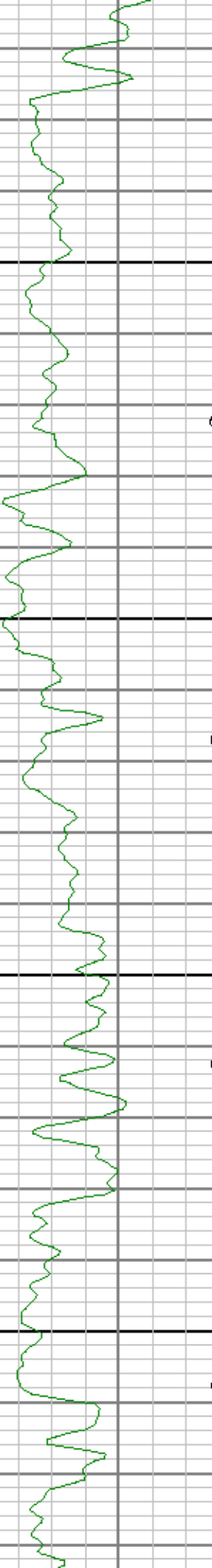
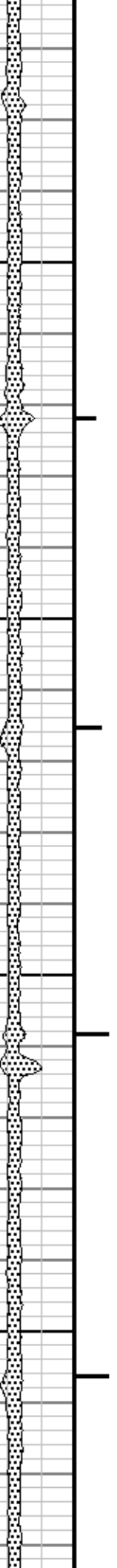


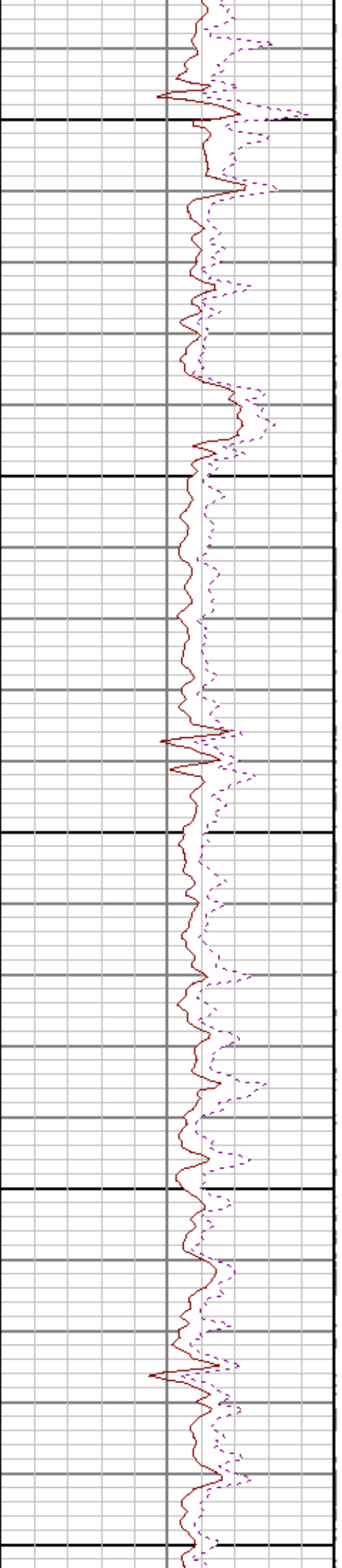
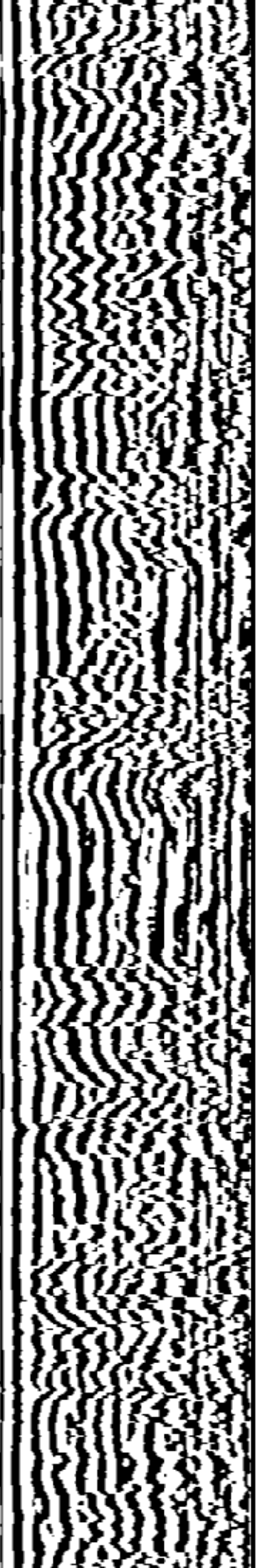




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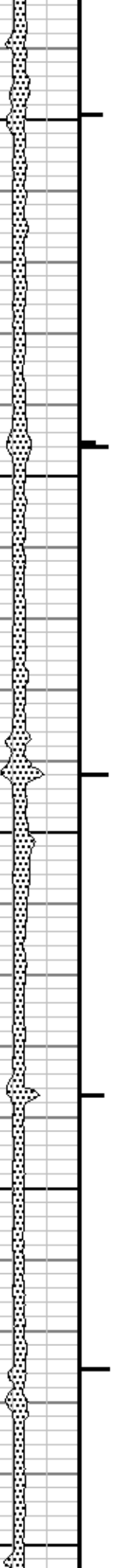


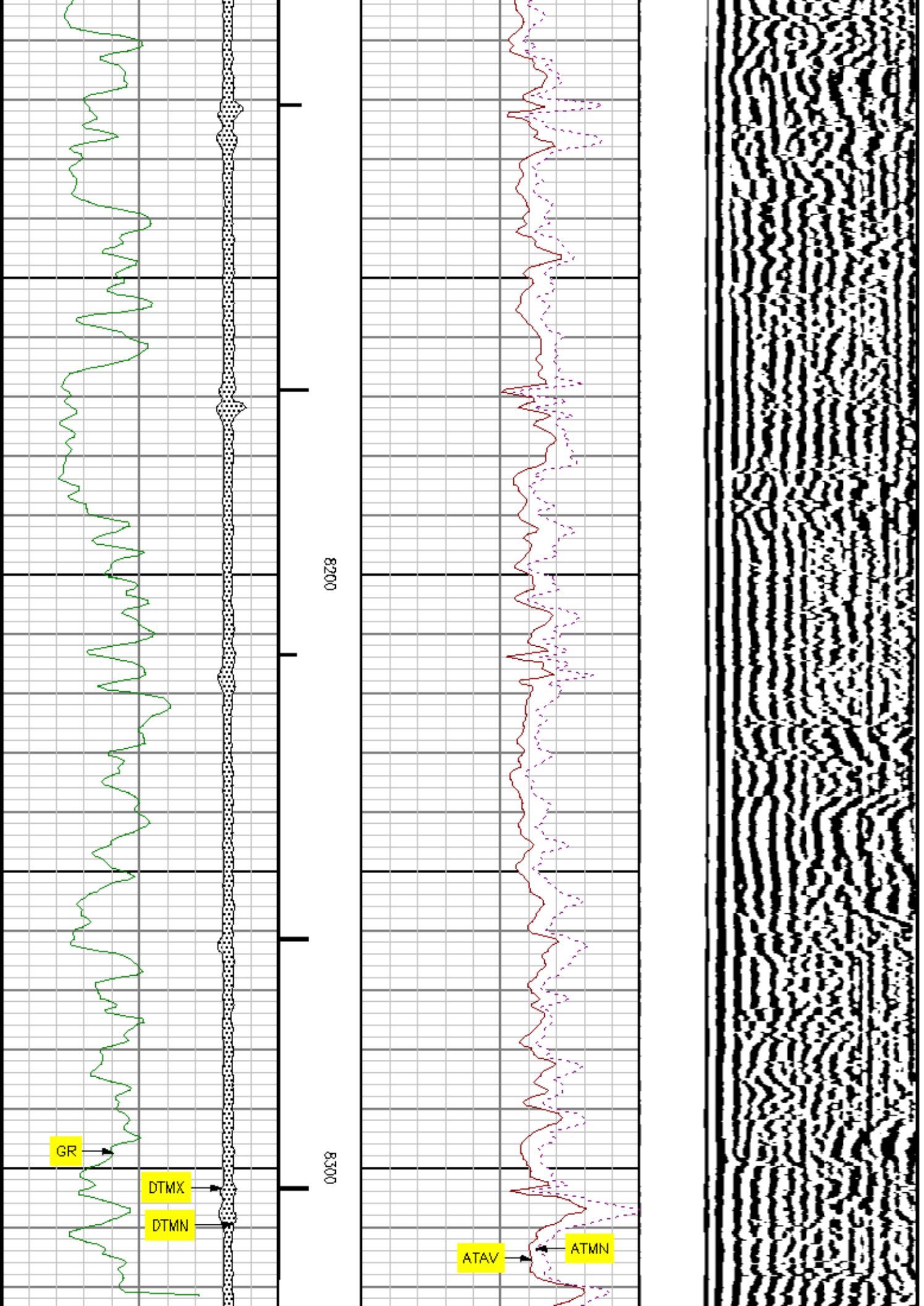


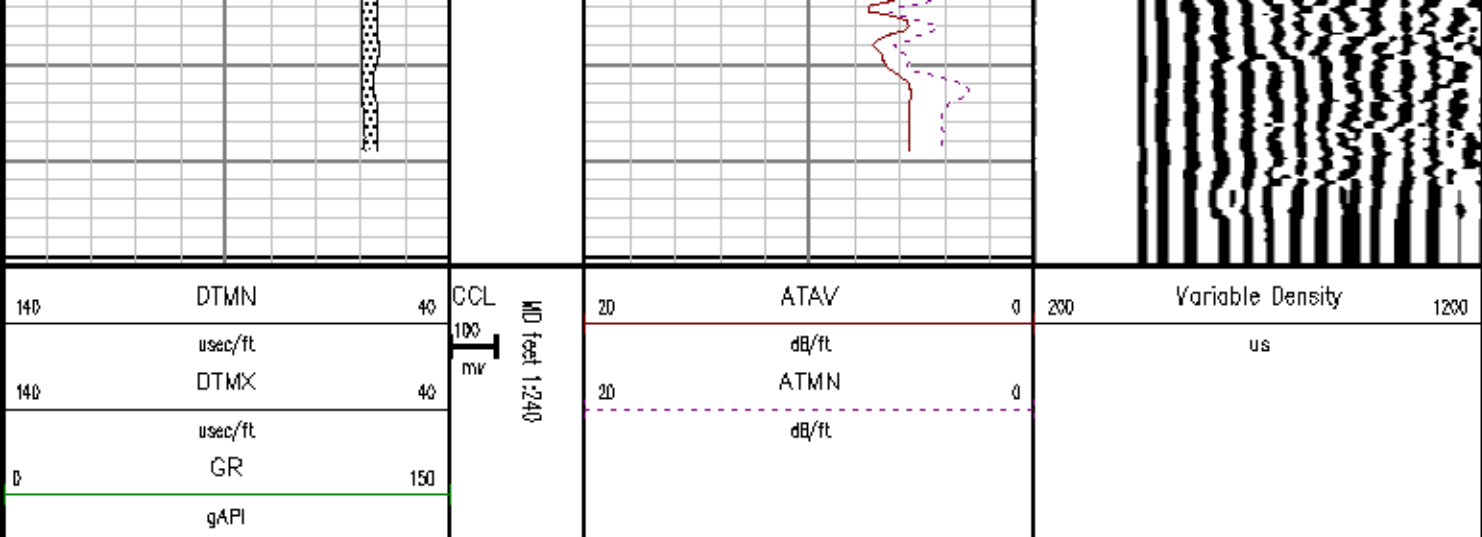
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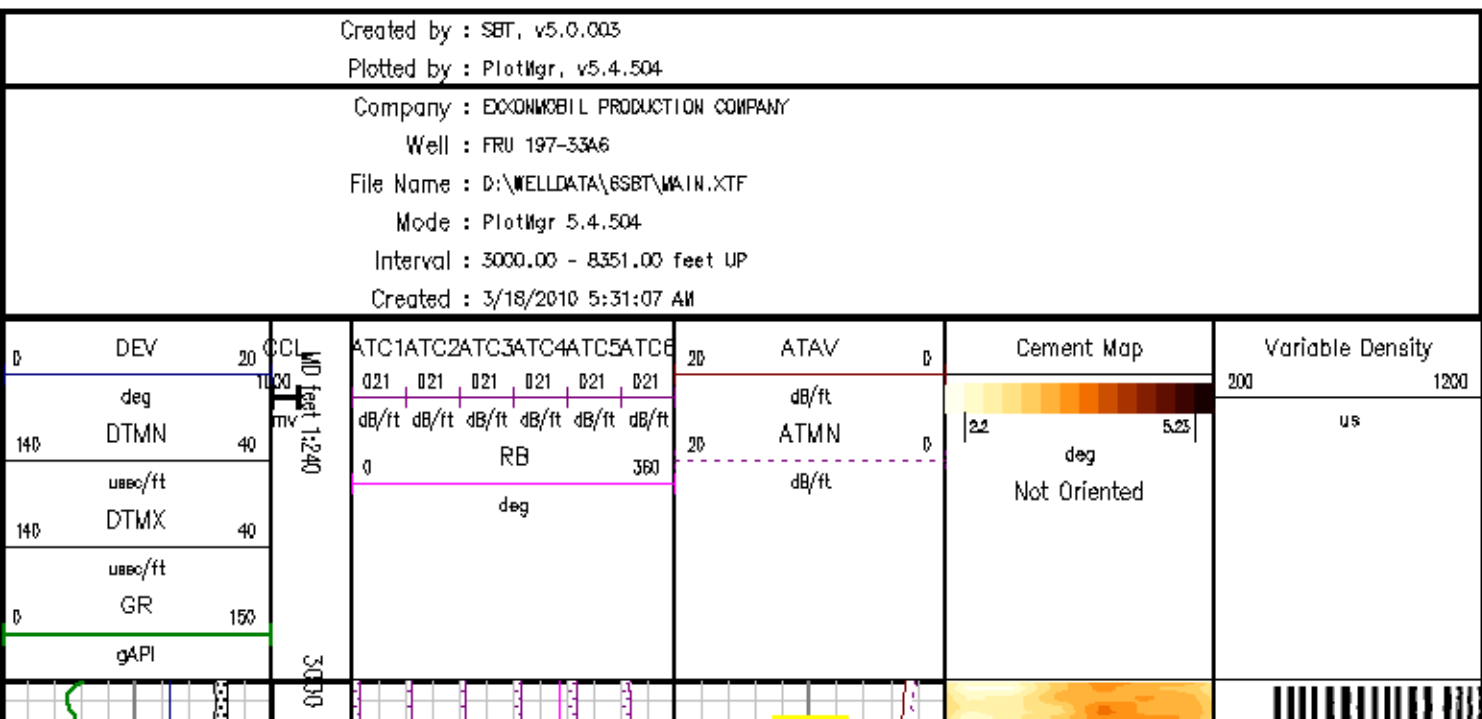
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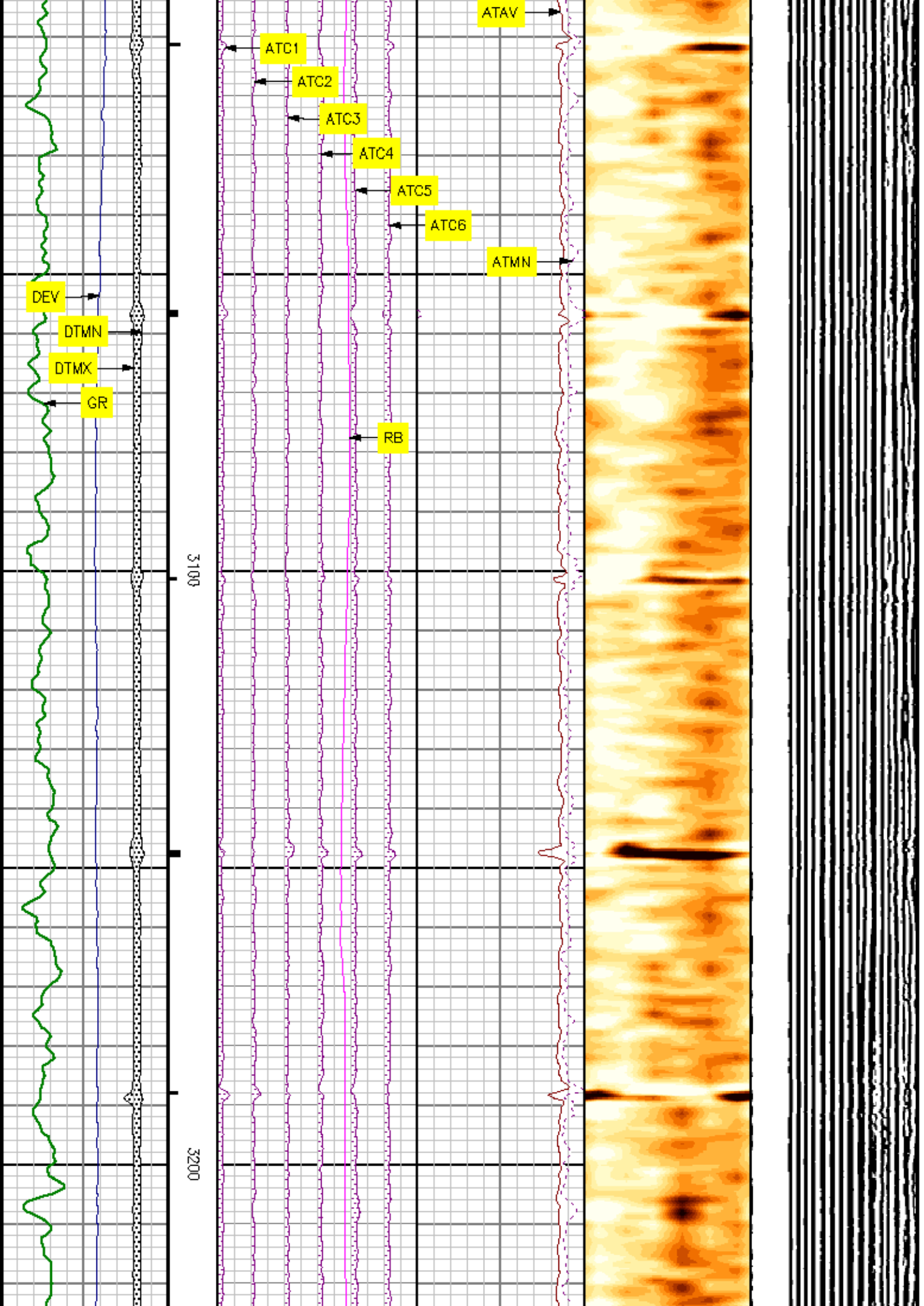
## SBT NORMALIZATION RESULTS

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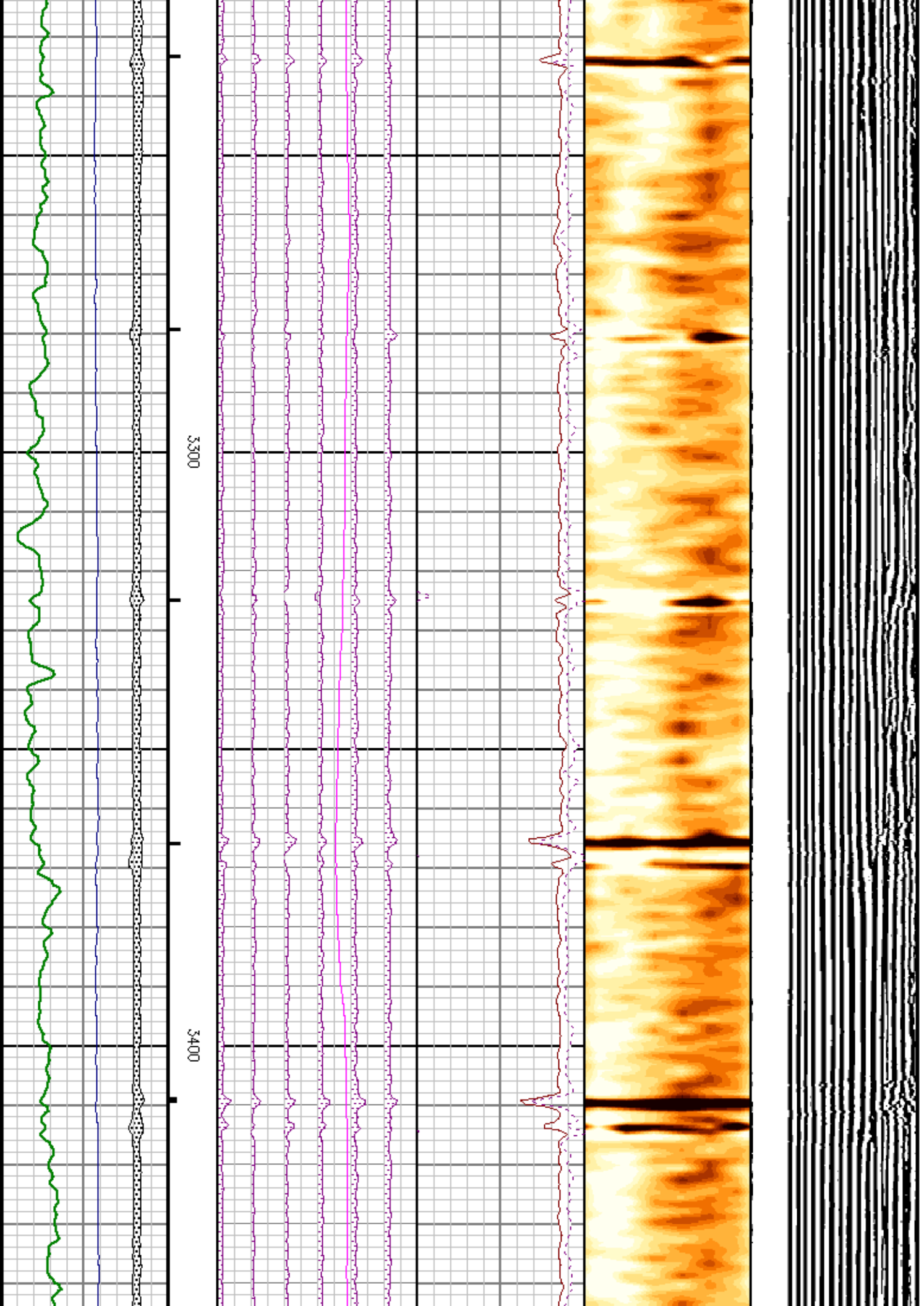
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CN	Bit Size	7.875	inches	2999.813	8351.000
CN	Casing Thickness	0.361	inches	2988.813	8351.000
CN	Casing/Cement Correction	No		2999.813	8351.000
CN	CN Chism	No		2999.813	8351.000
CN	Matrix	Limestone		2999.813	8351.000
CN	Salinity	0.000	ppm	2999.813	8351.000

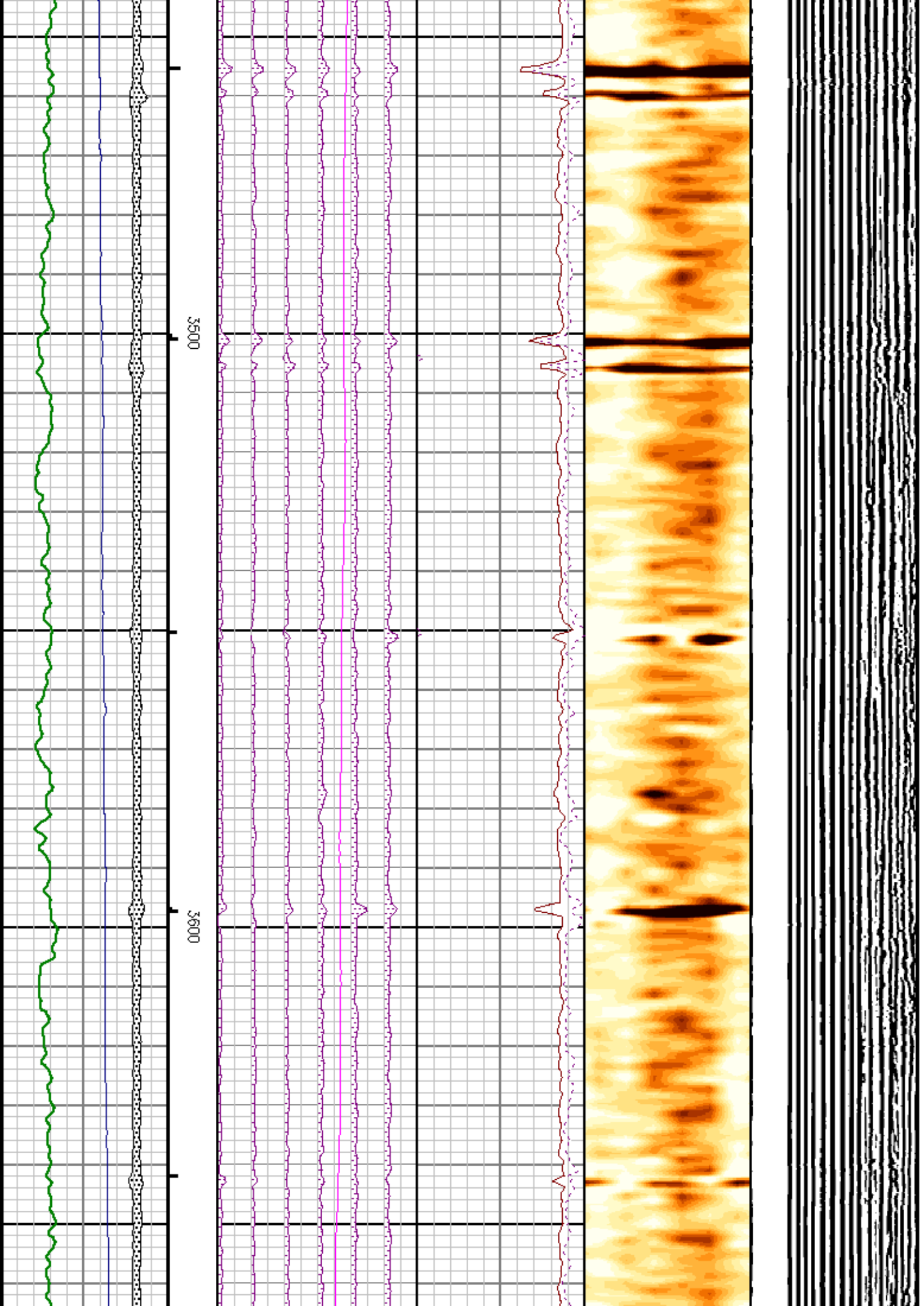
DEPTH OFFSETS (for Acquired Curves)							
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2435XA	-30.250	LSN					
2435XA	-29.750	NEU	SSN				
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1424XA	-11.000	ATC1	ATC2	ATC3	ATC4	ATC5	ATC6
		ATAV	ATMN	ATMX	AMAV	DEV	DTMN
		DTMX	RB	XATT	YATT		
1424PA	0.000	CHV	CYQ	SIG			



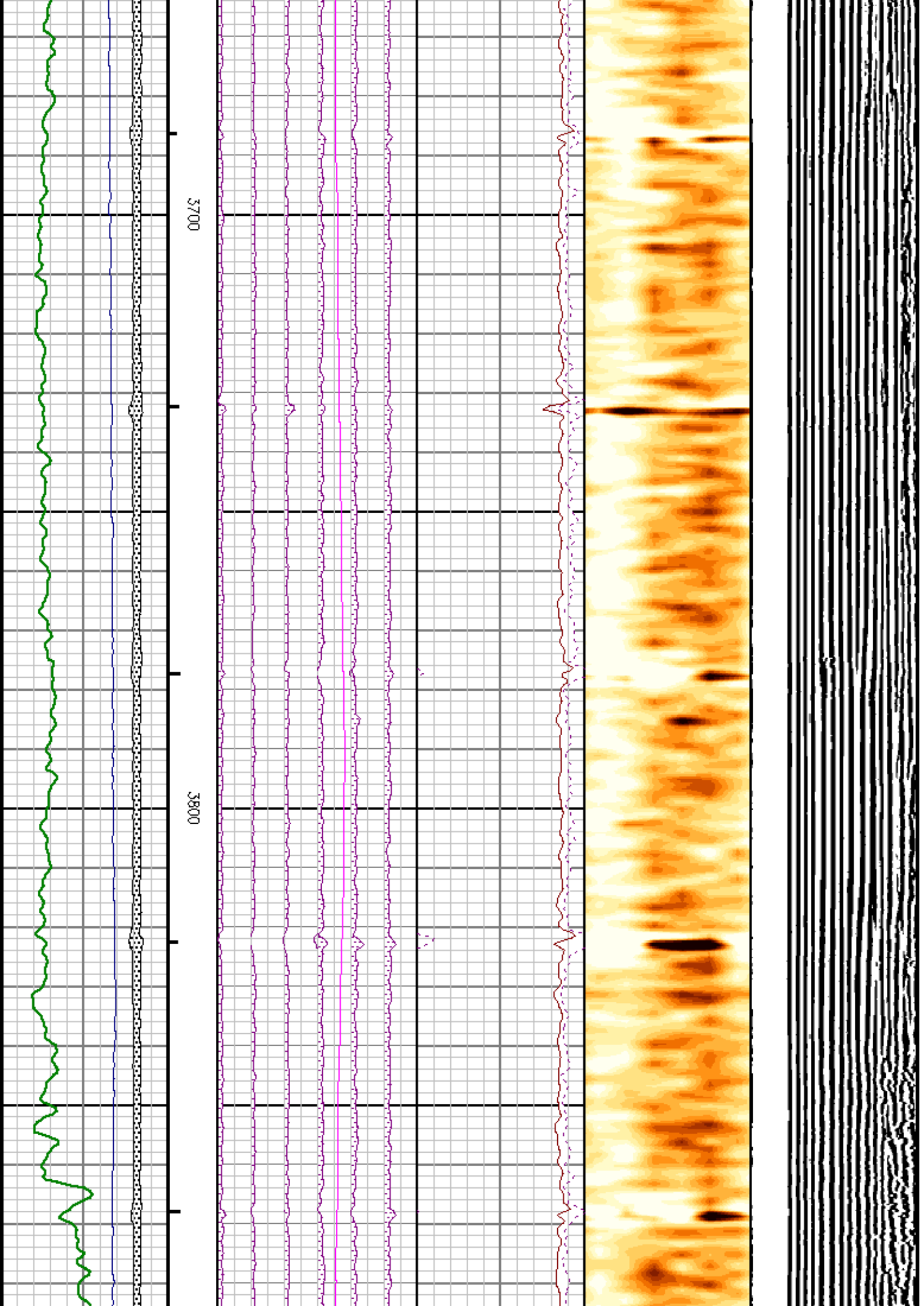


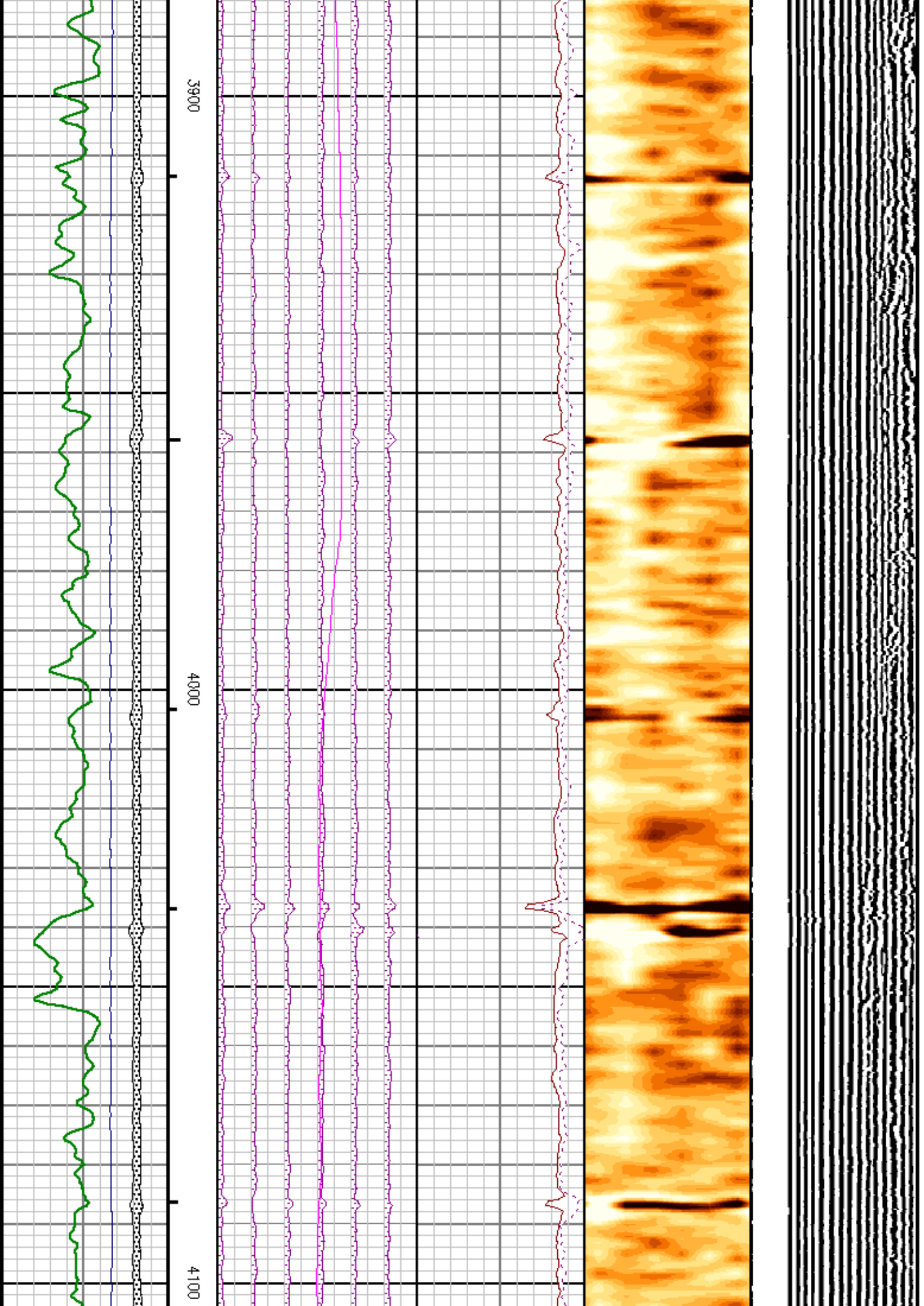


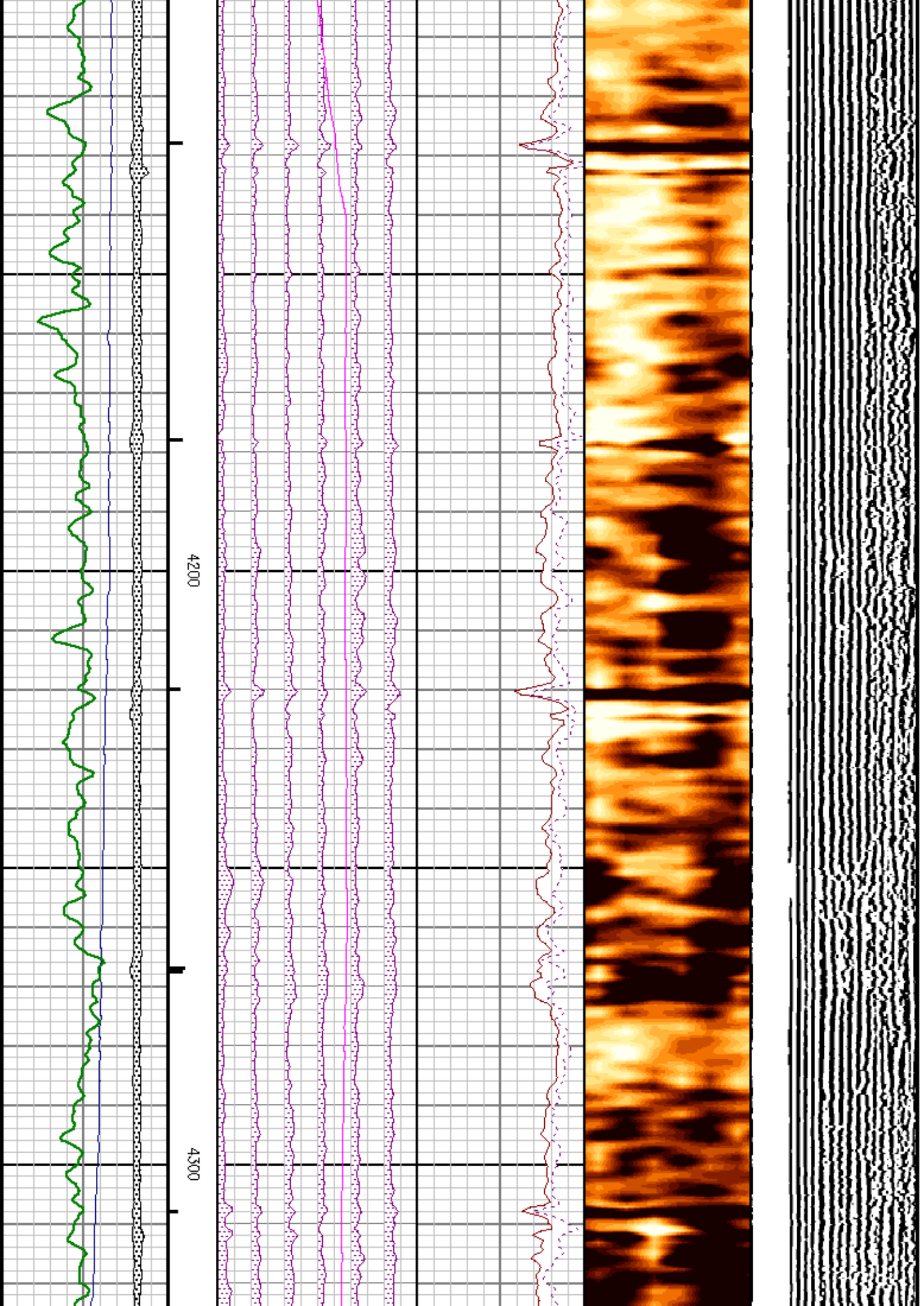




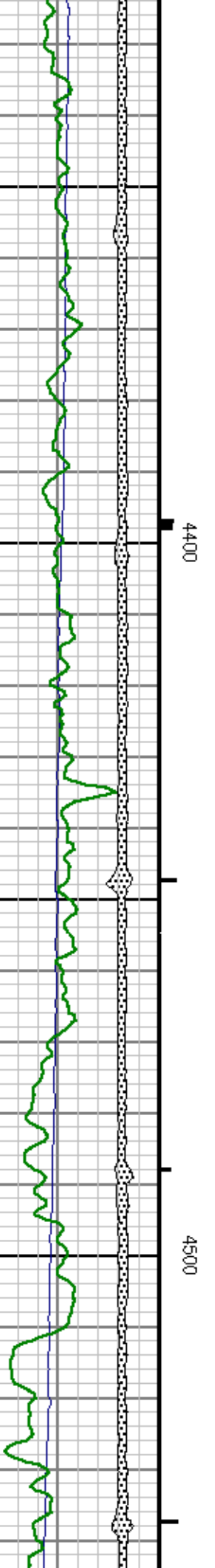
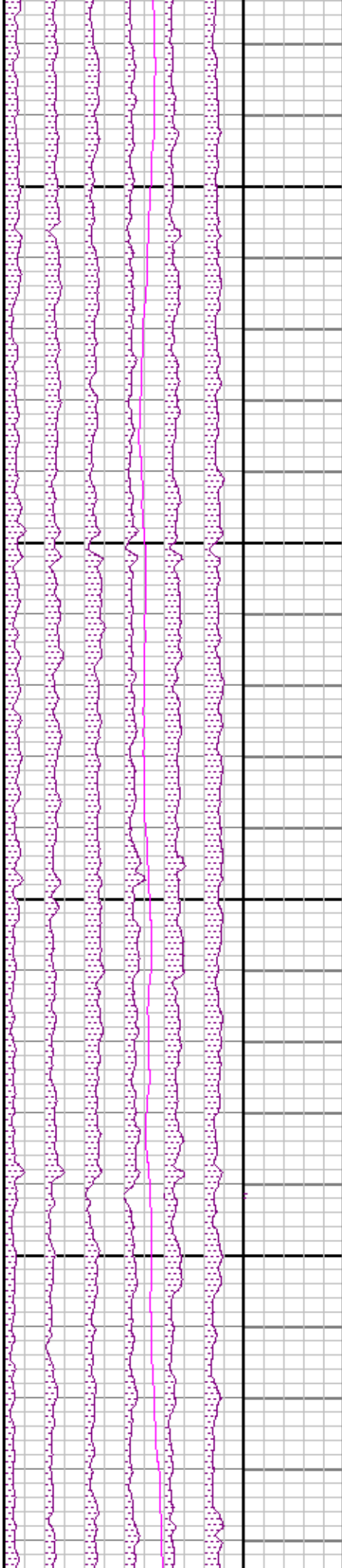
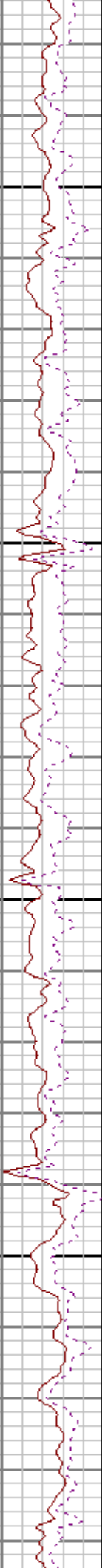
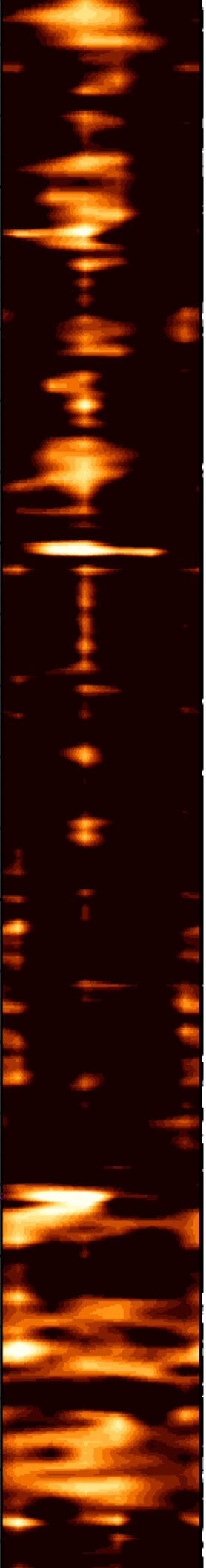
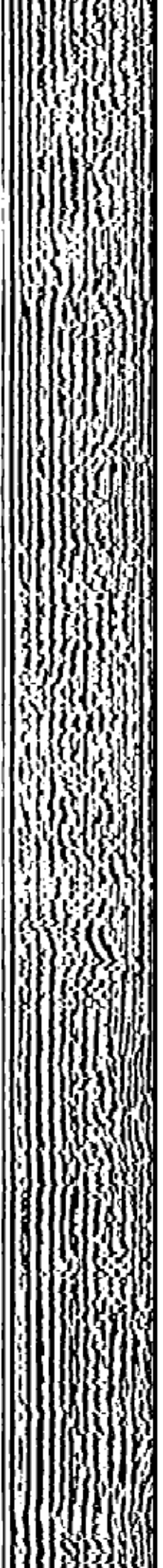


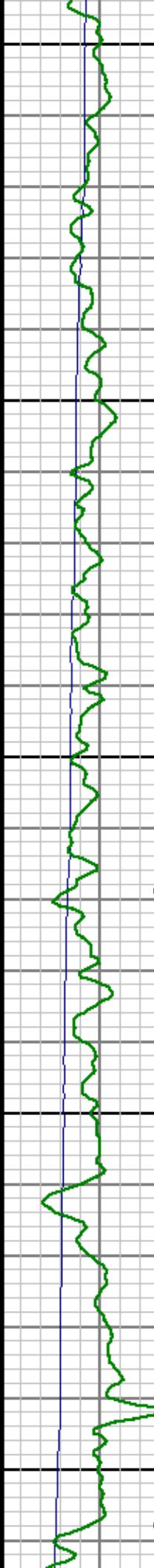
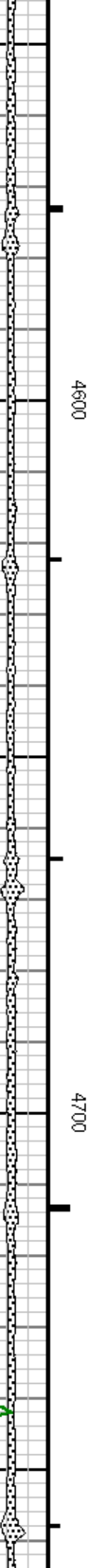
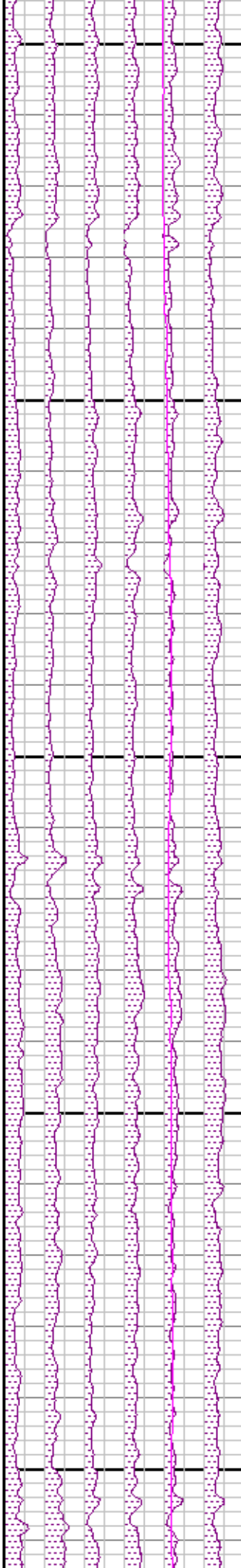
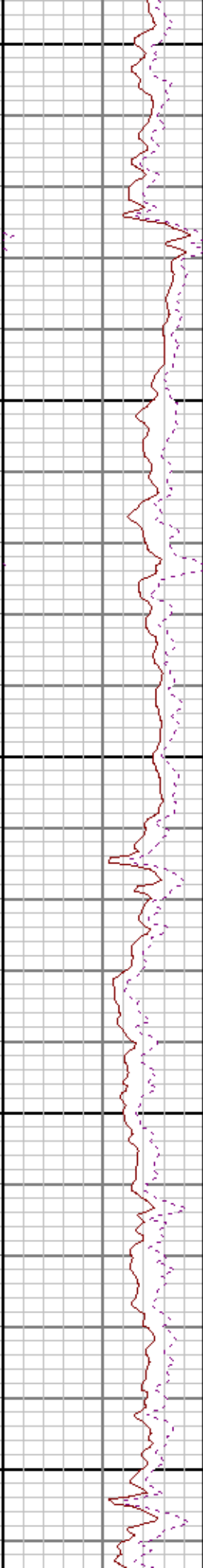
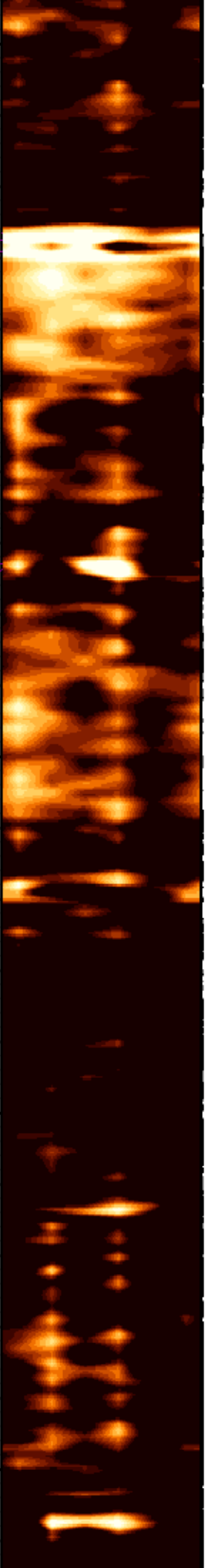




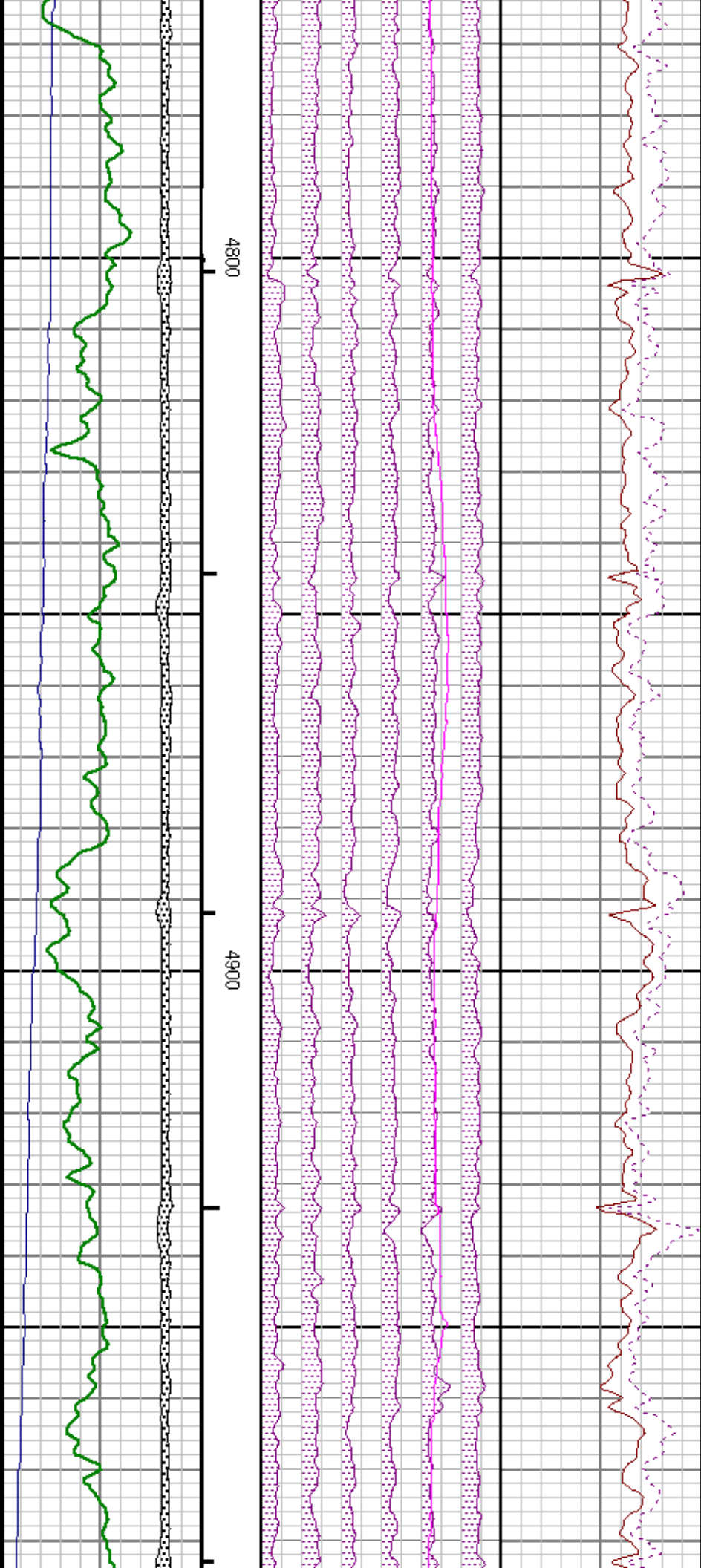
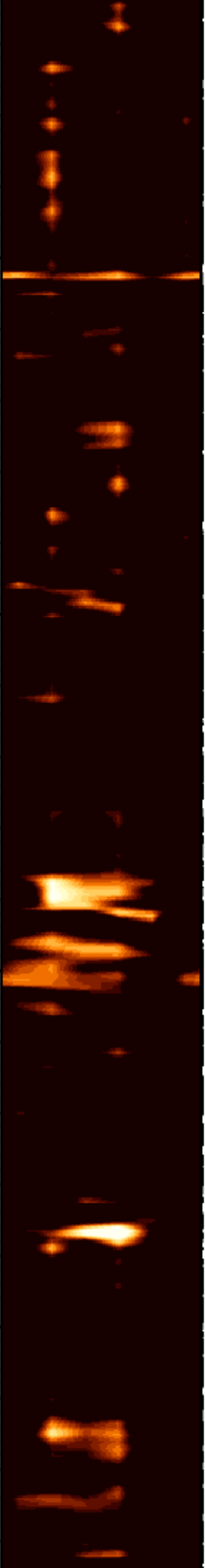
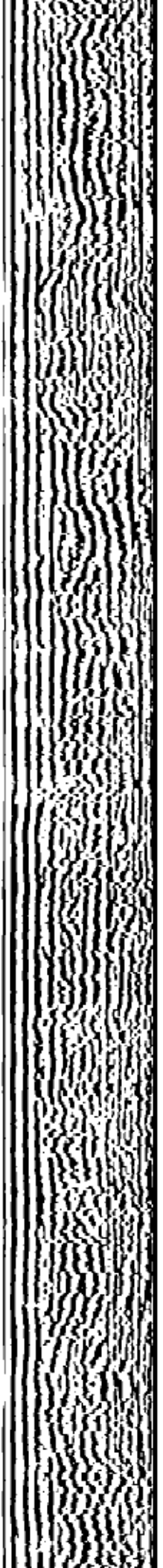


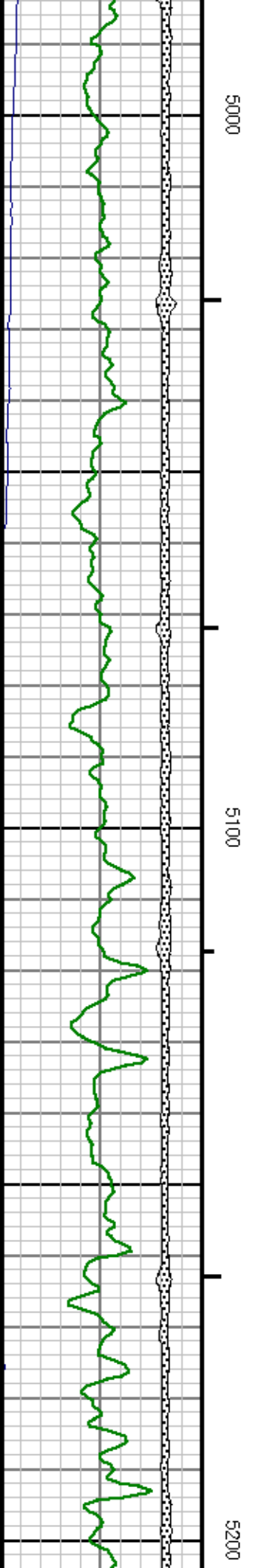
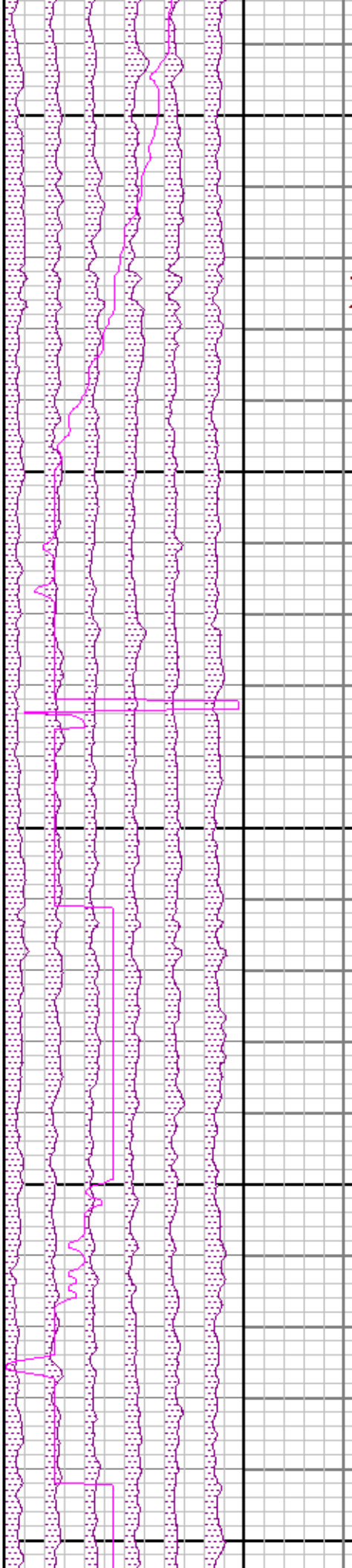
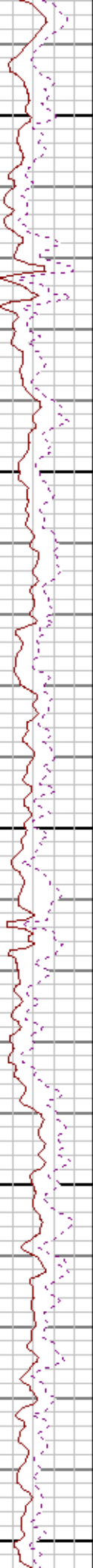
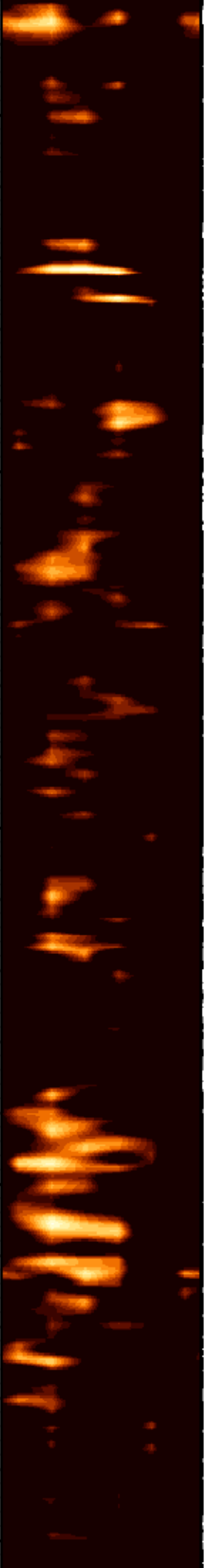
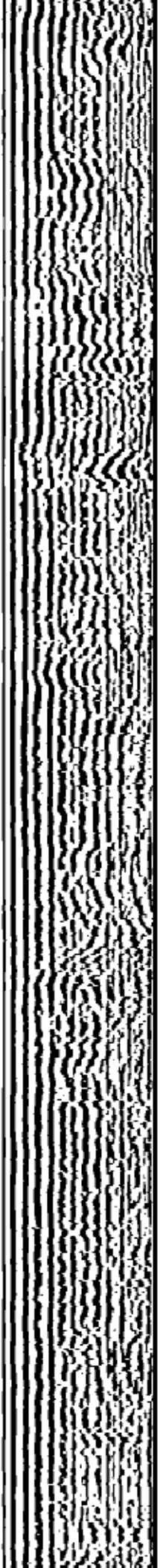


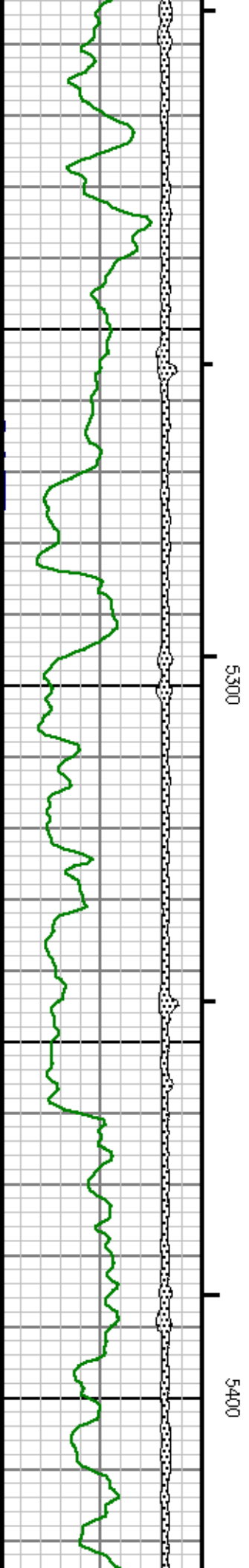
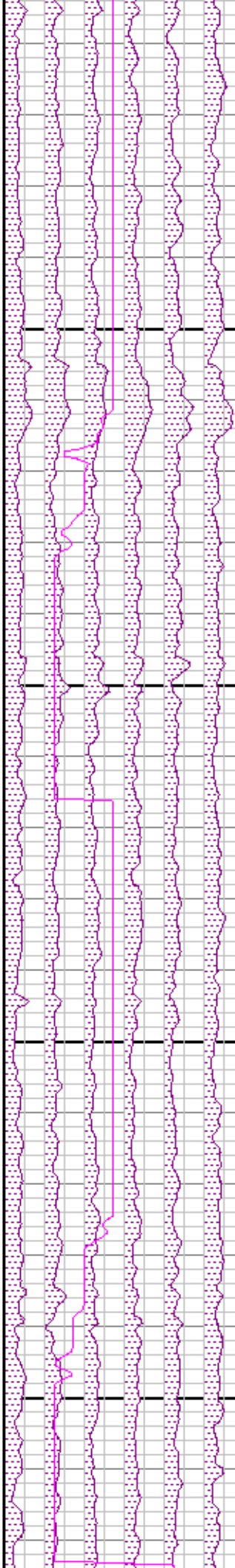
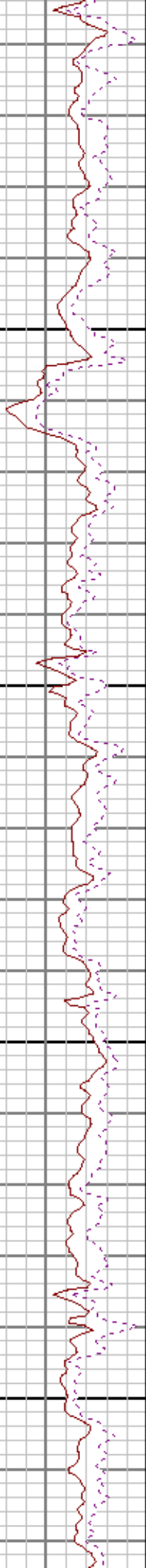
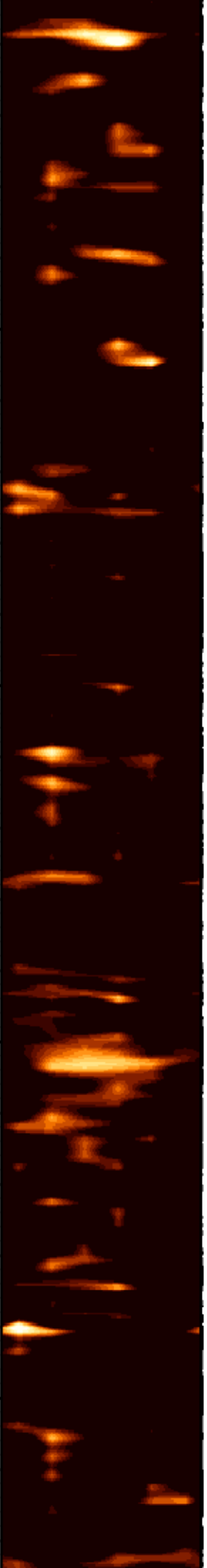
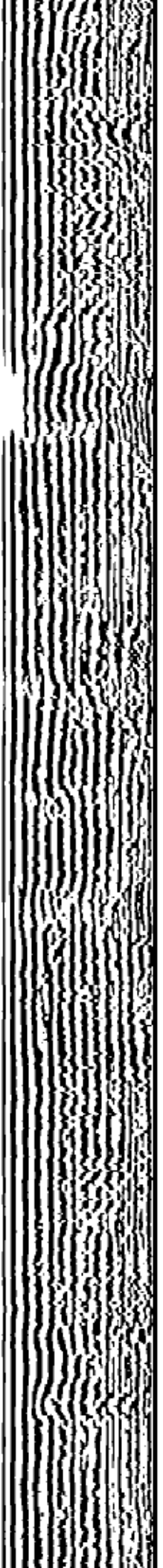




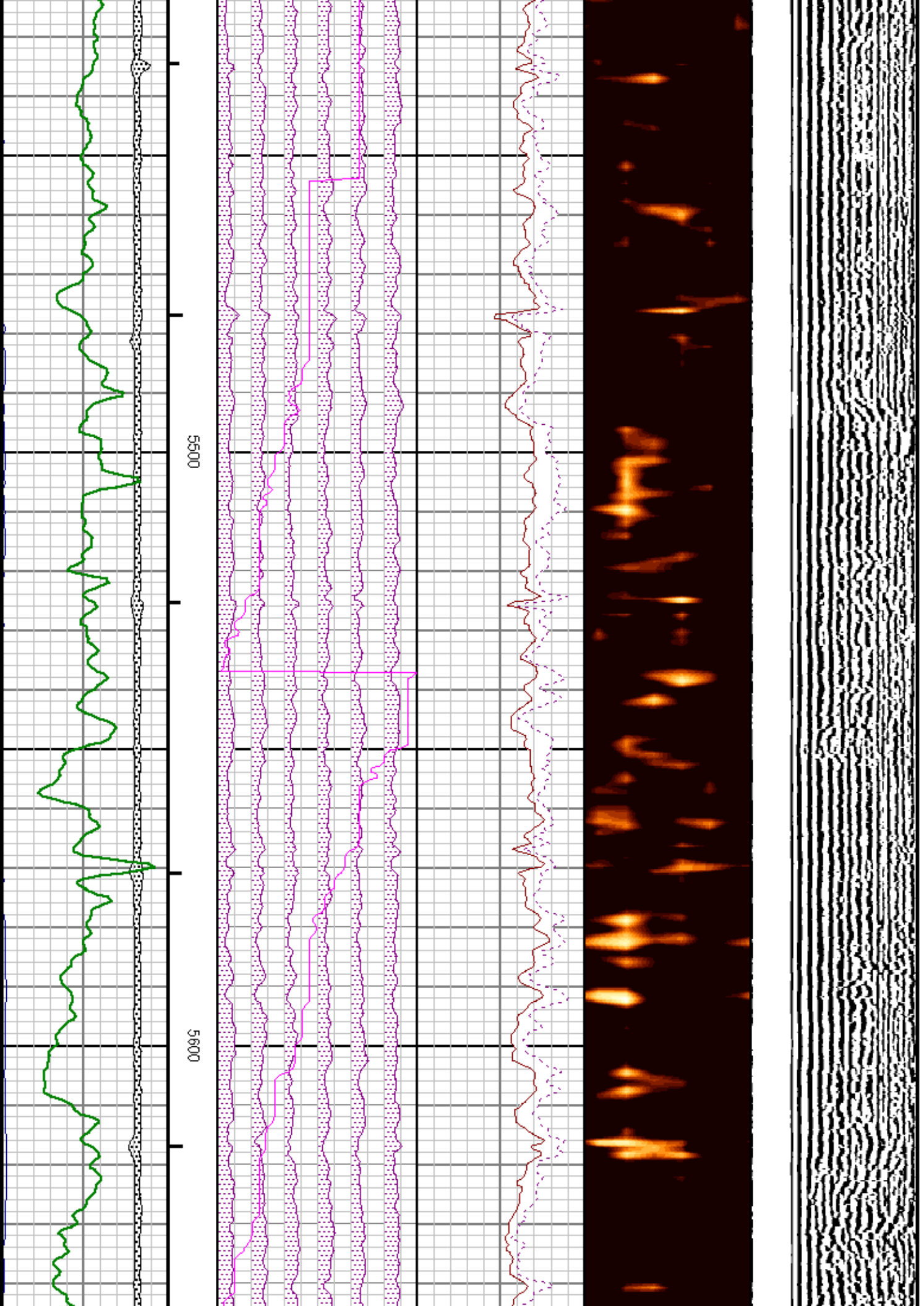


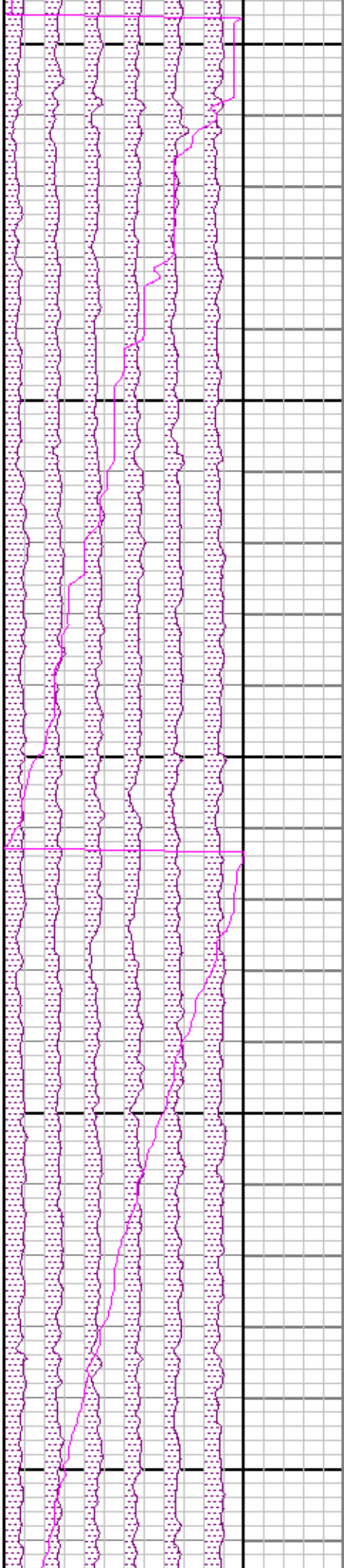
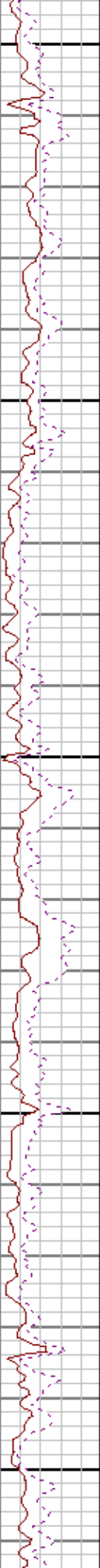
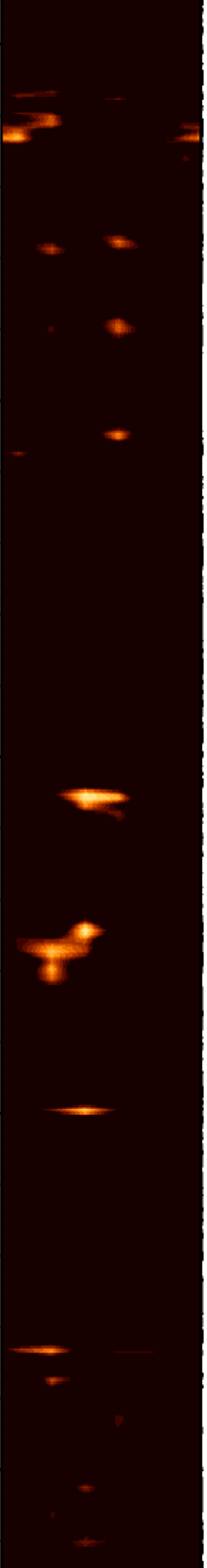
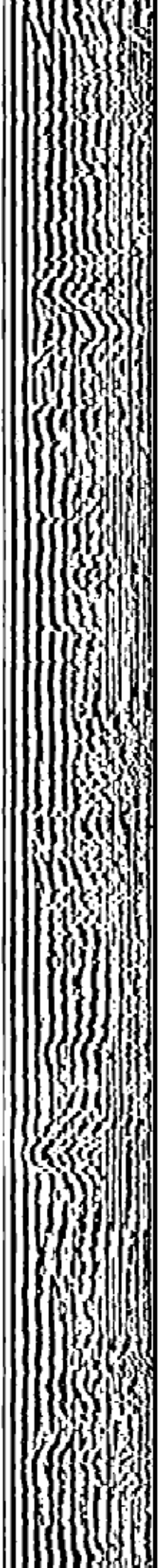




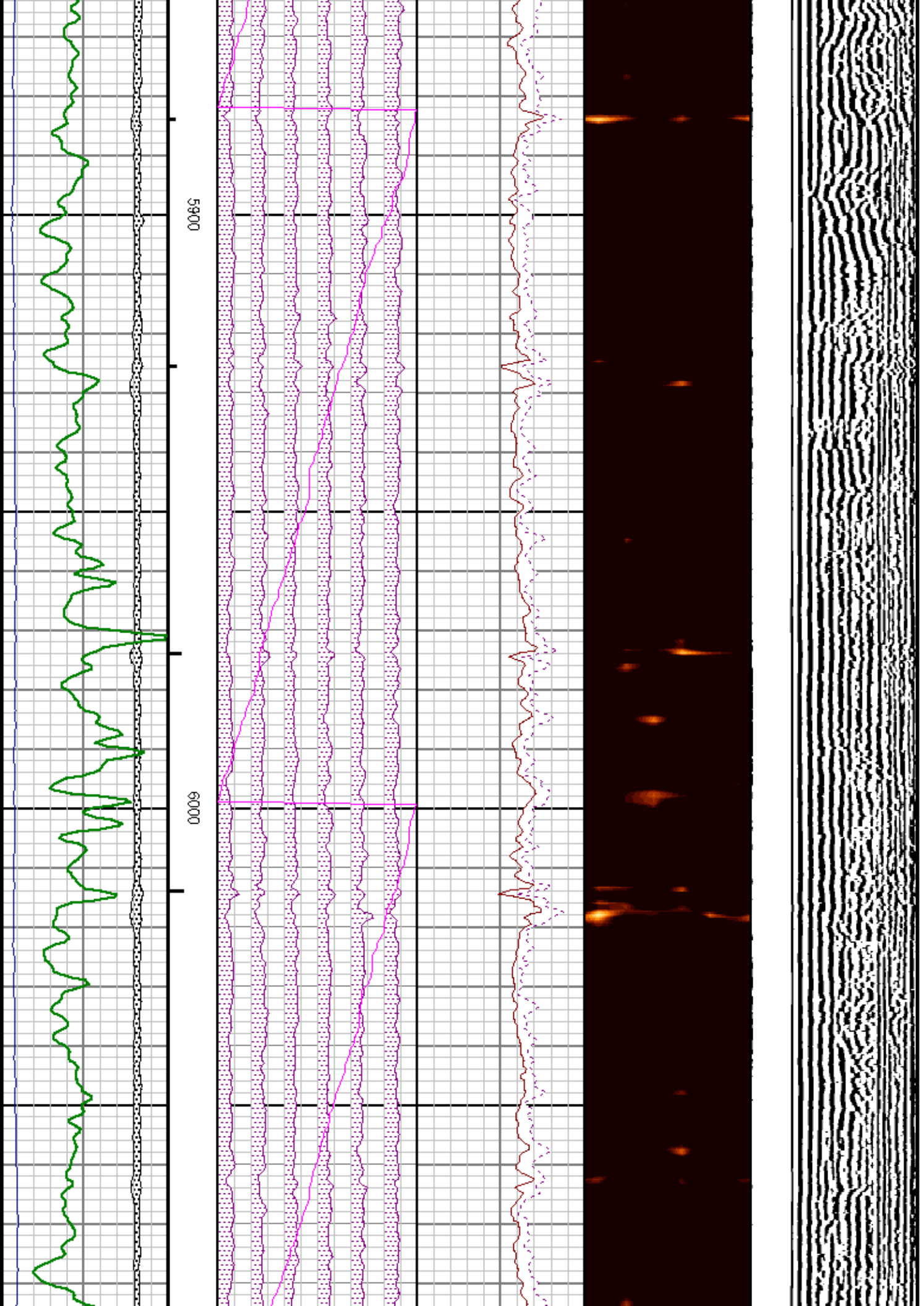


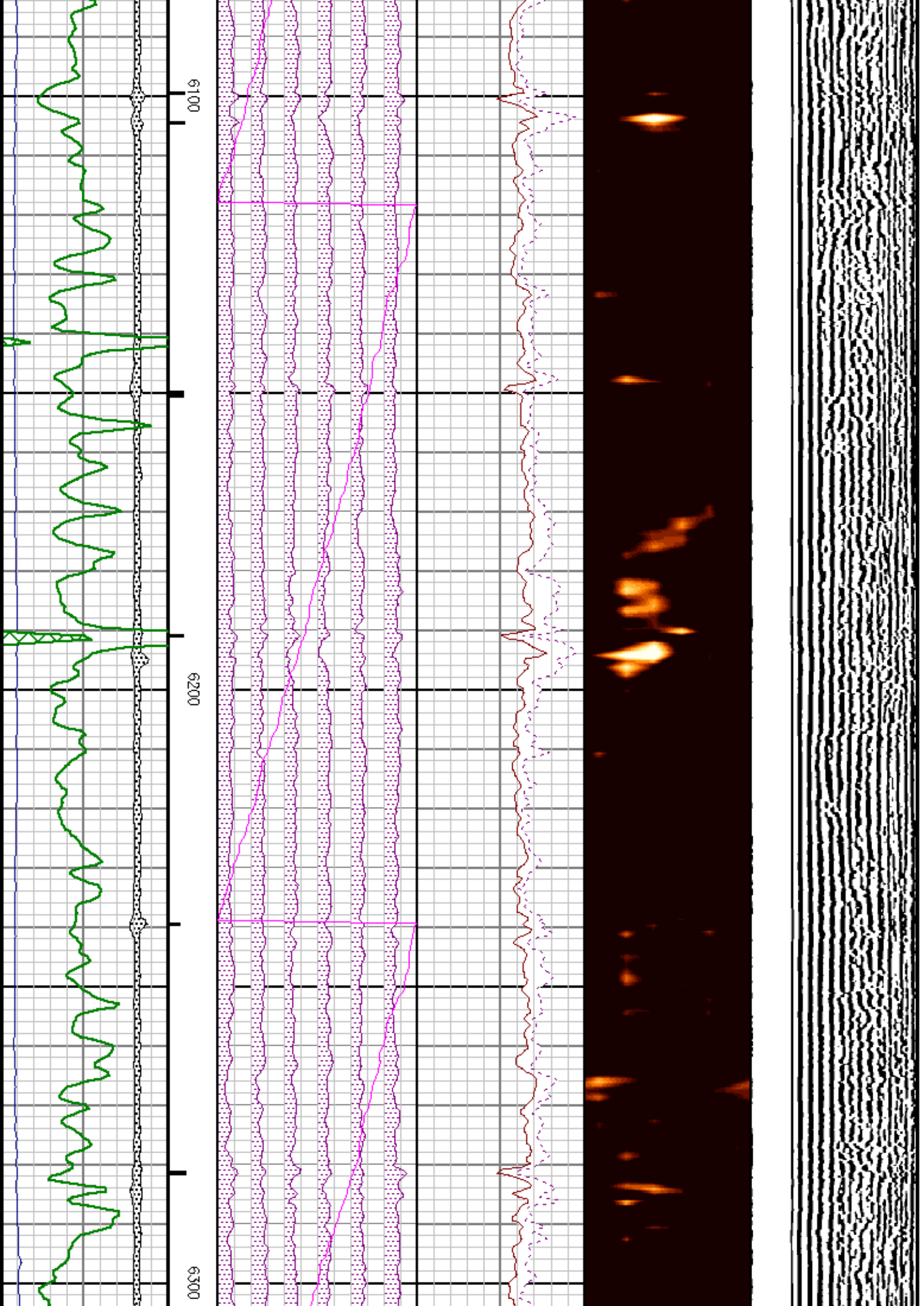


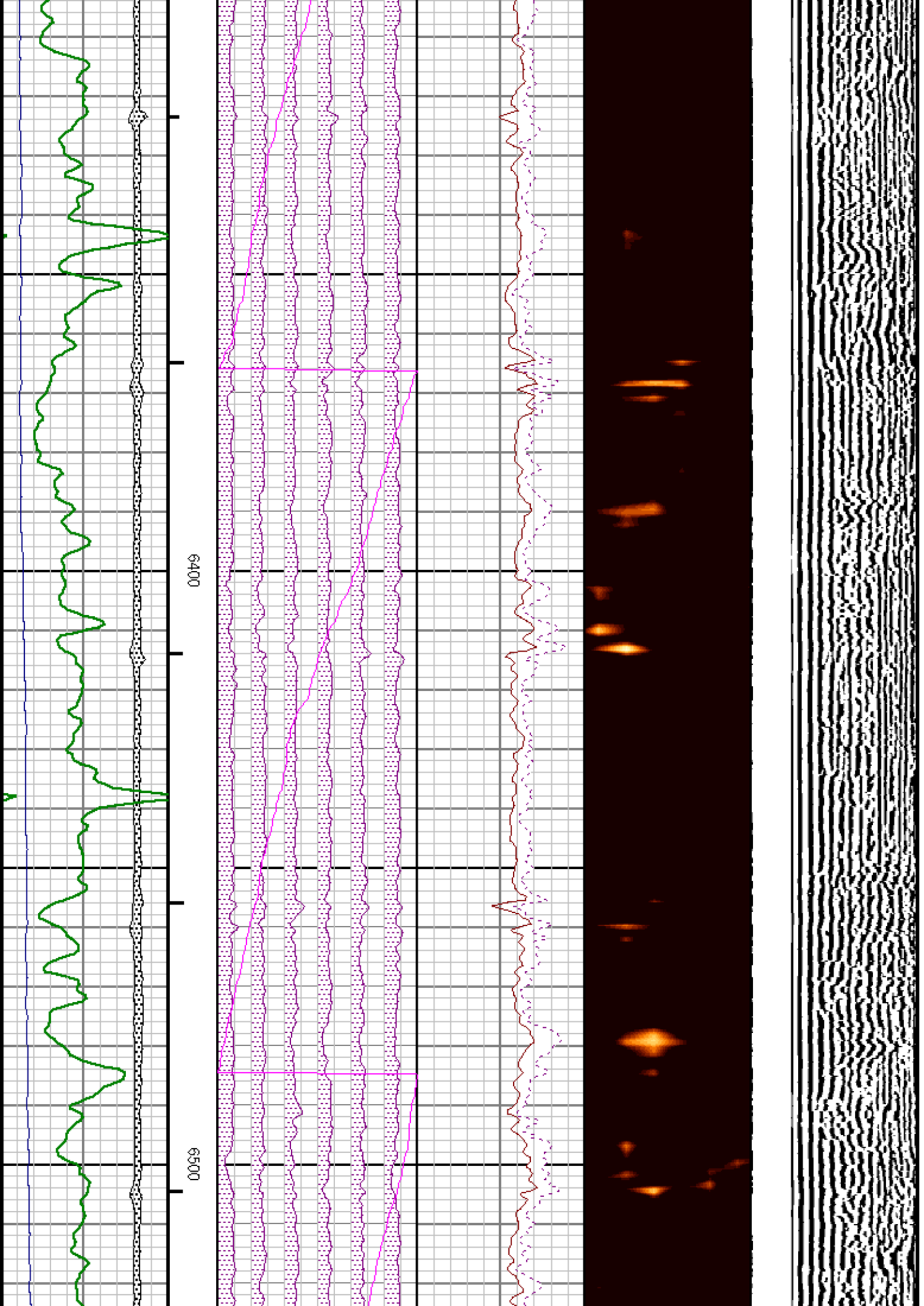




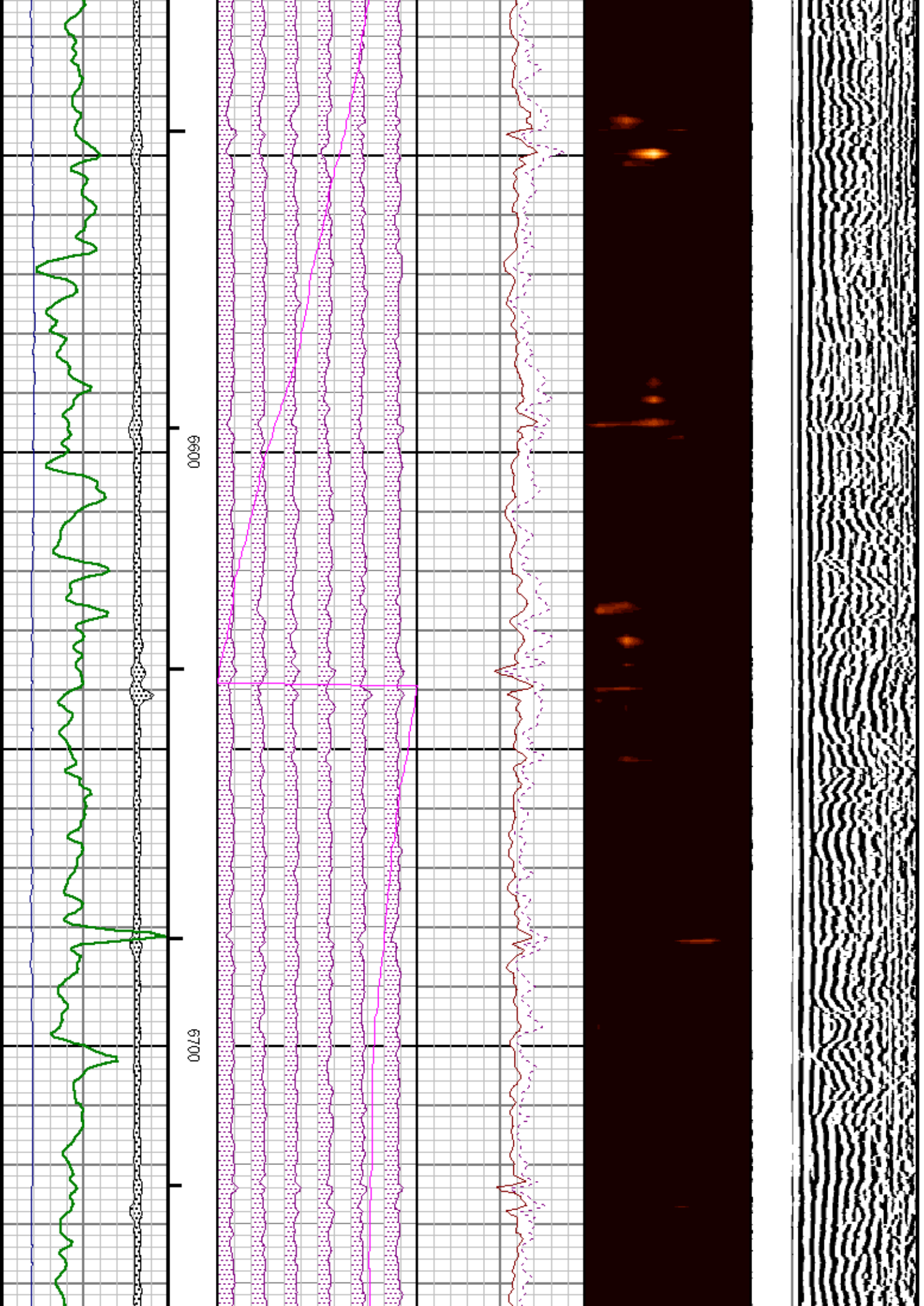


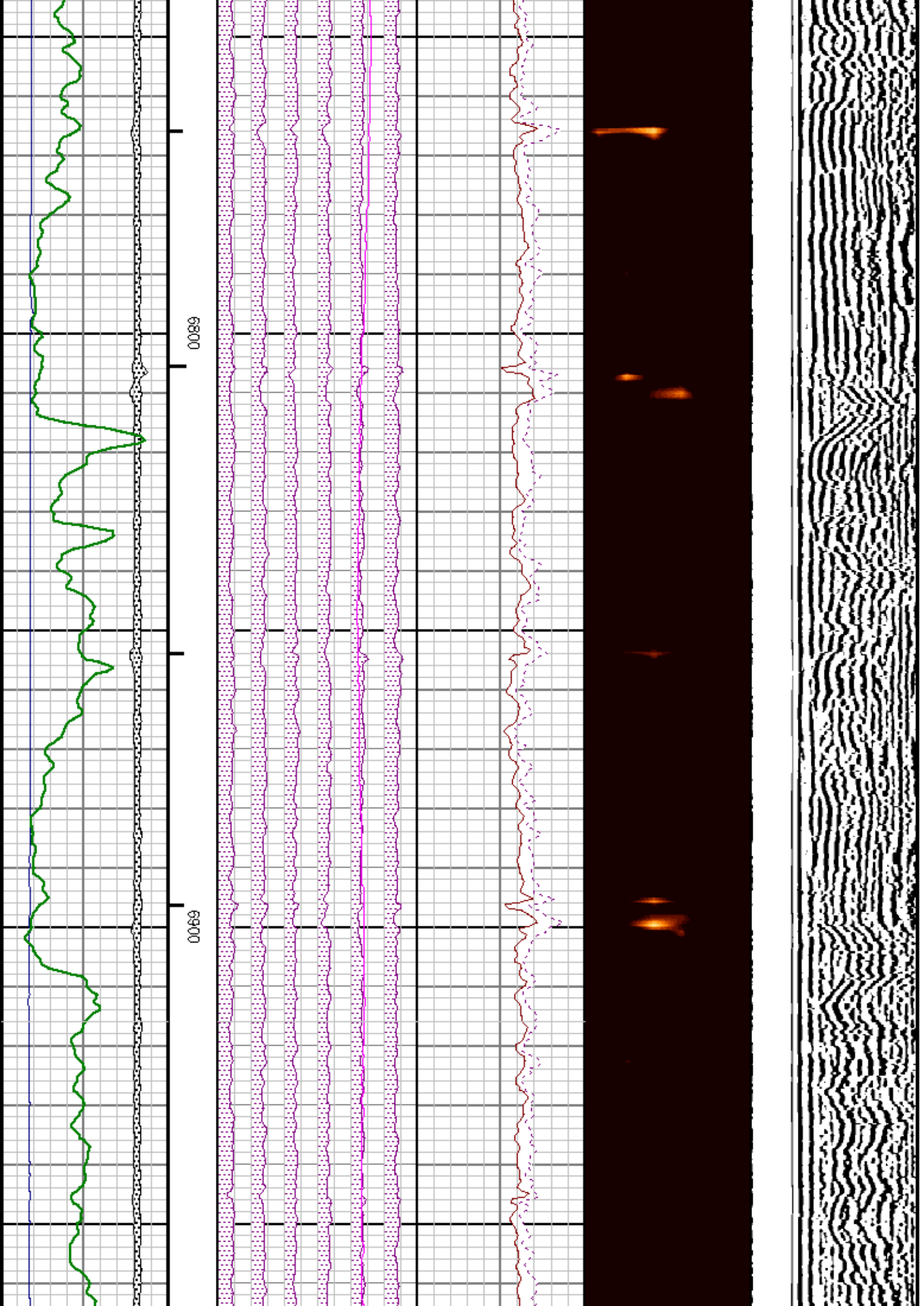




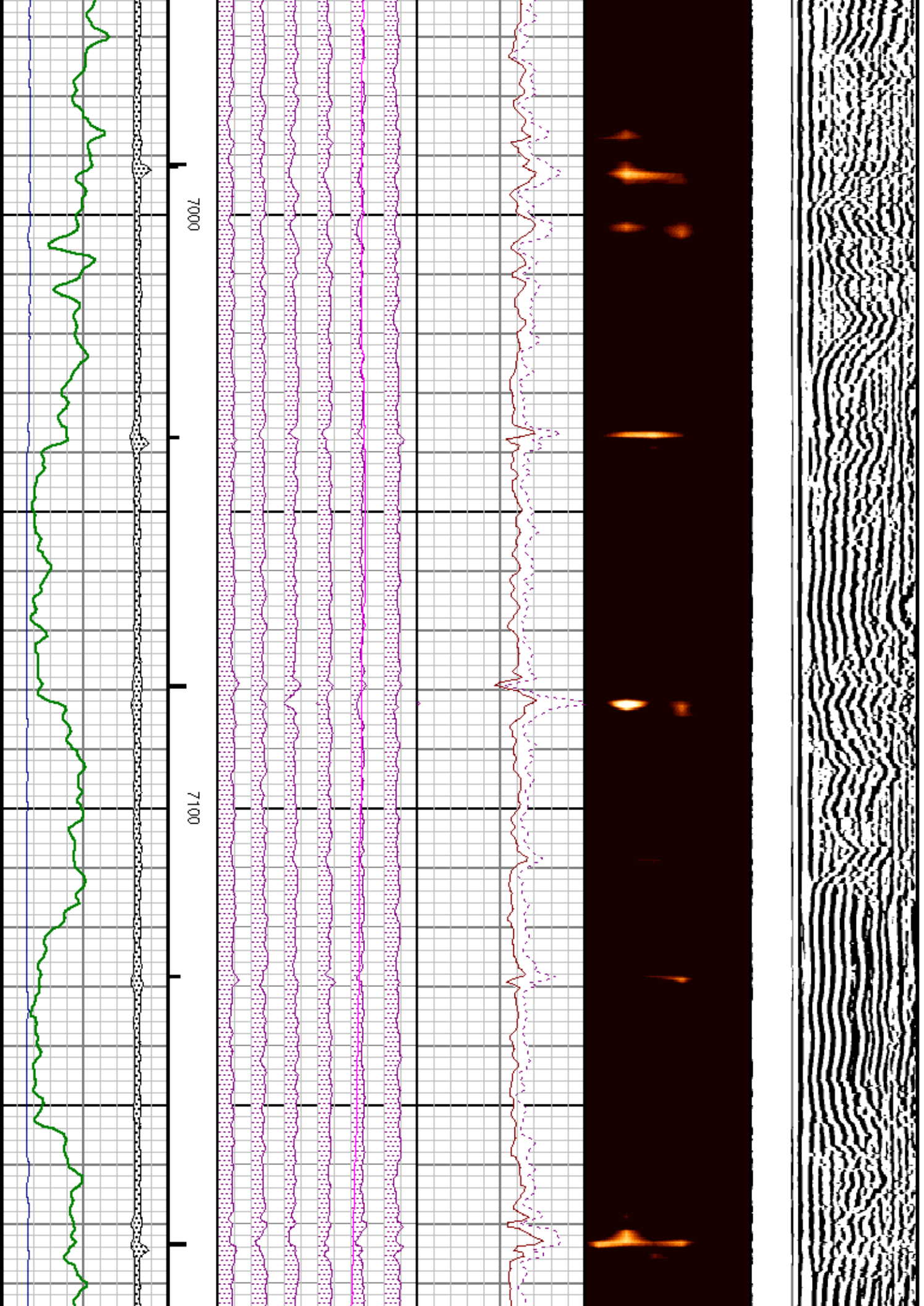


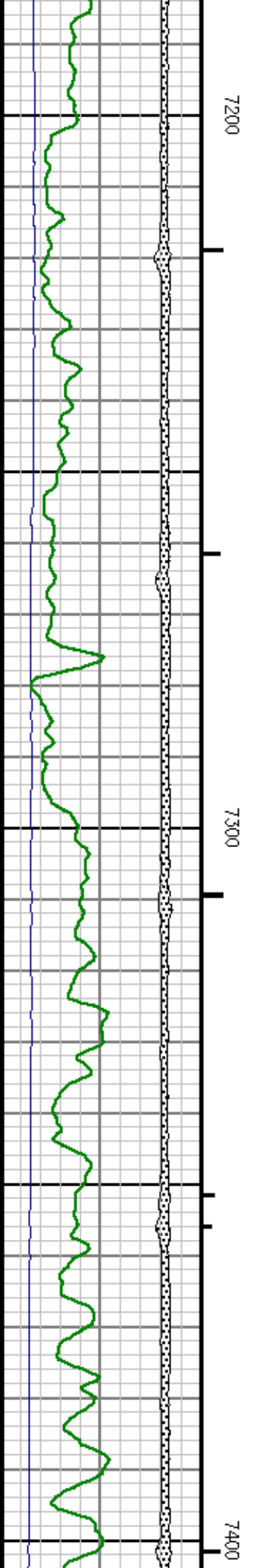
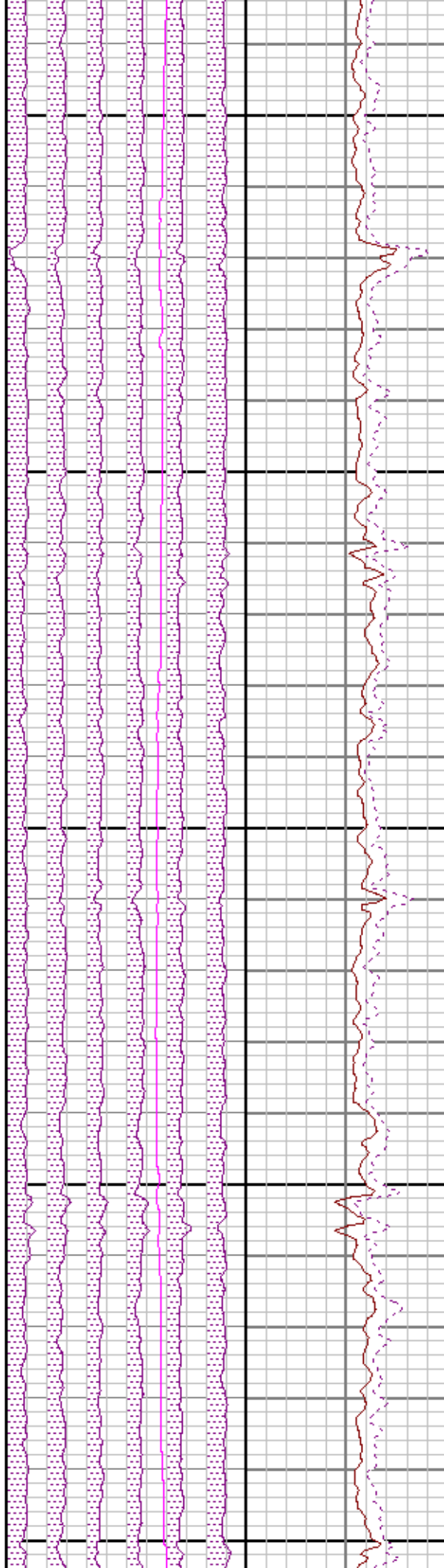
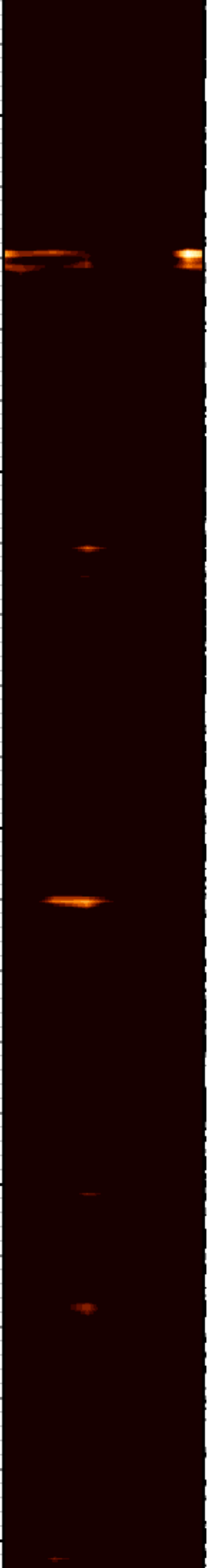
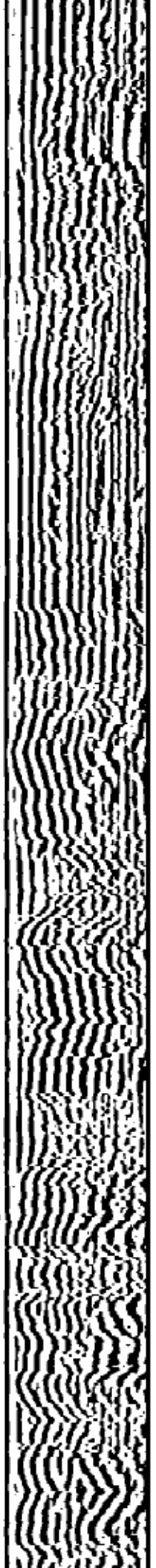


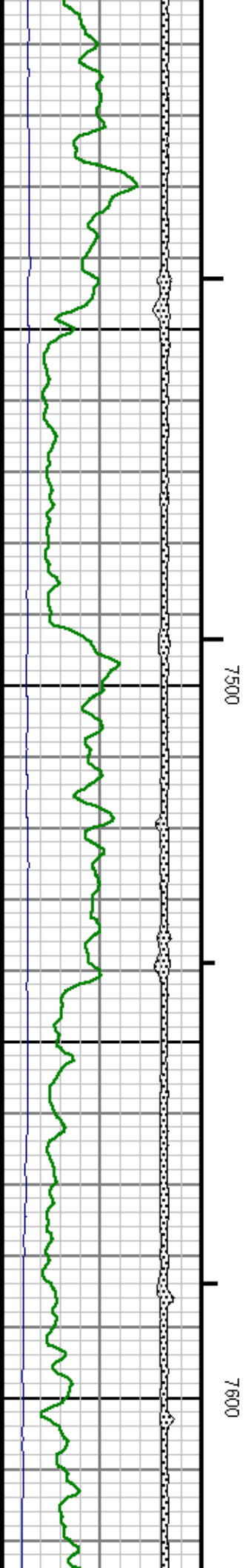
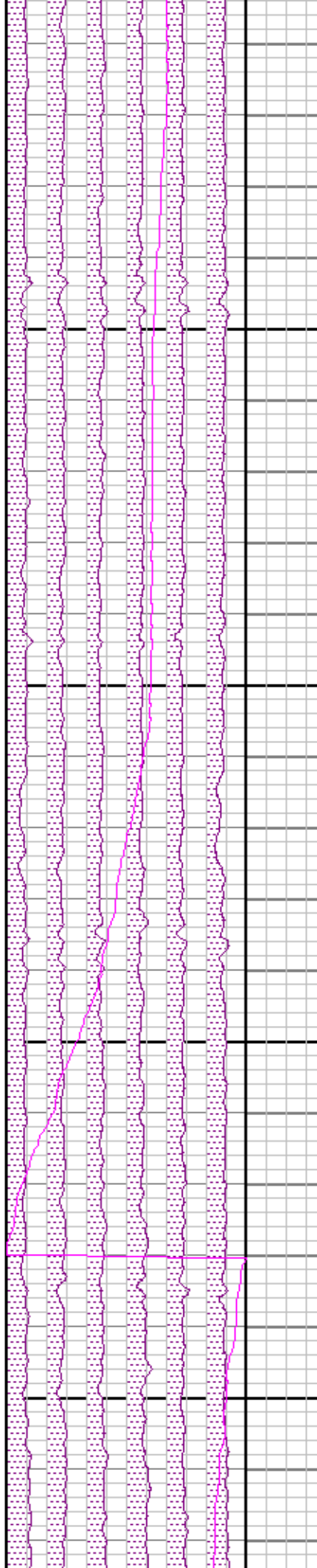
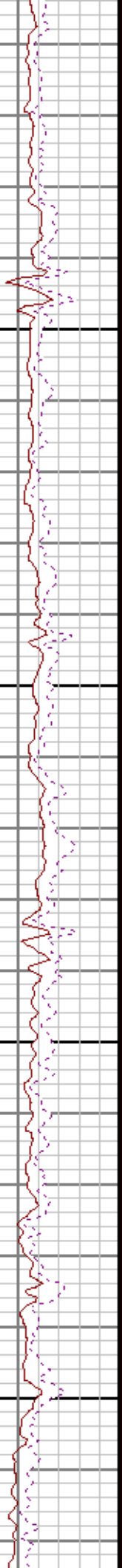
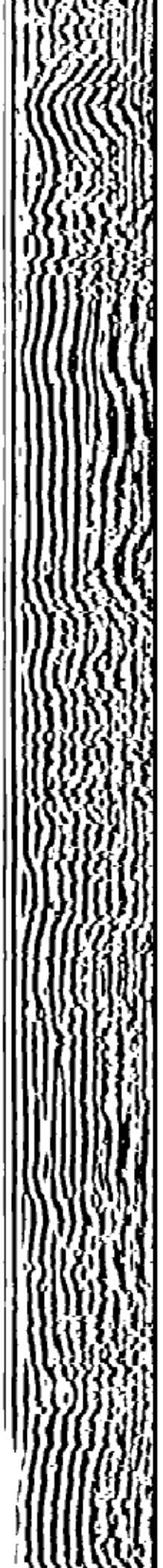




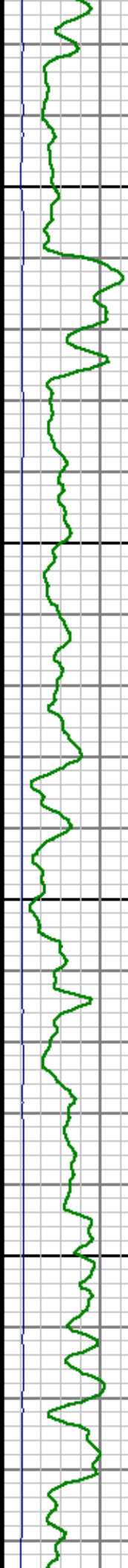
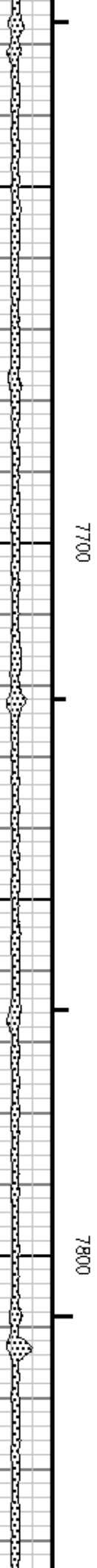
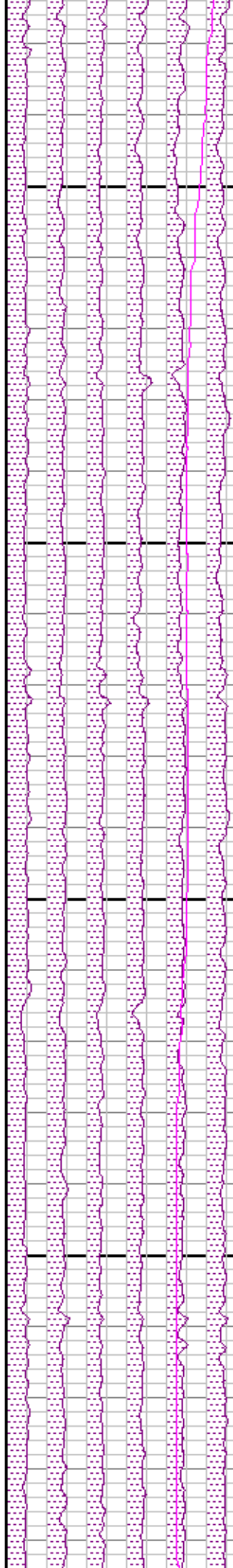
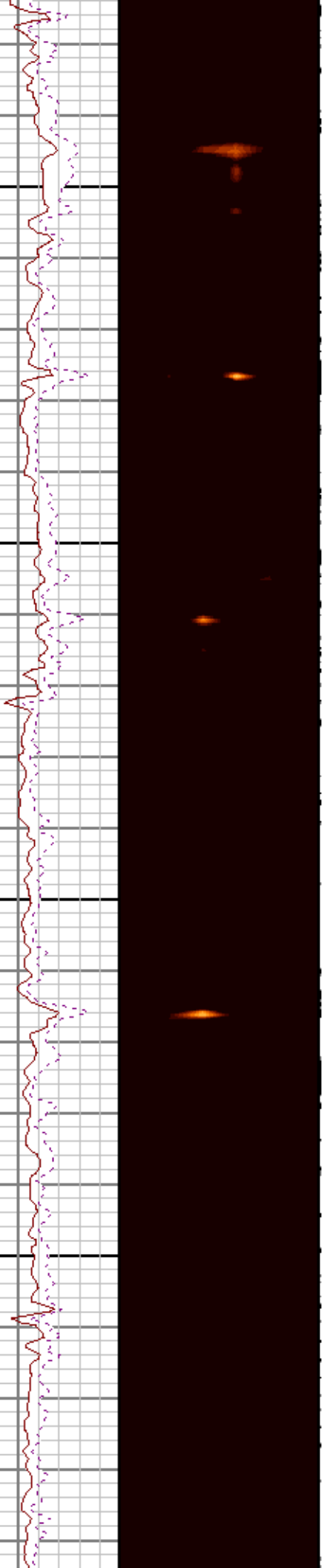
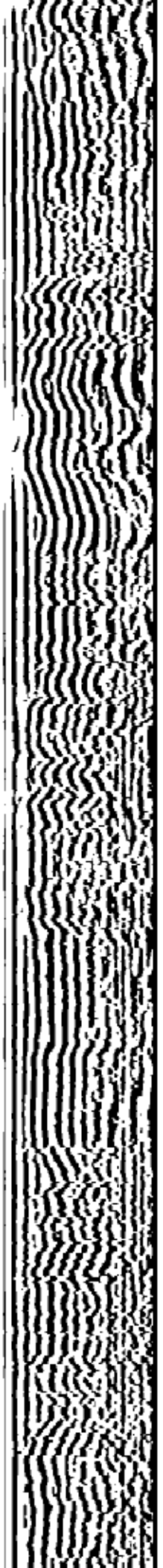


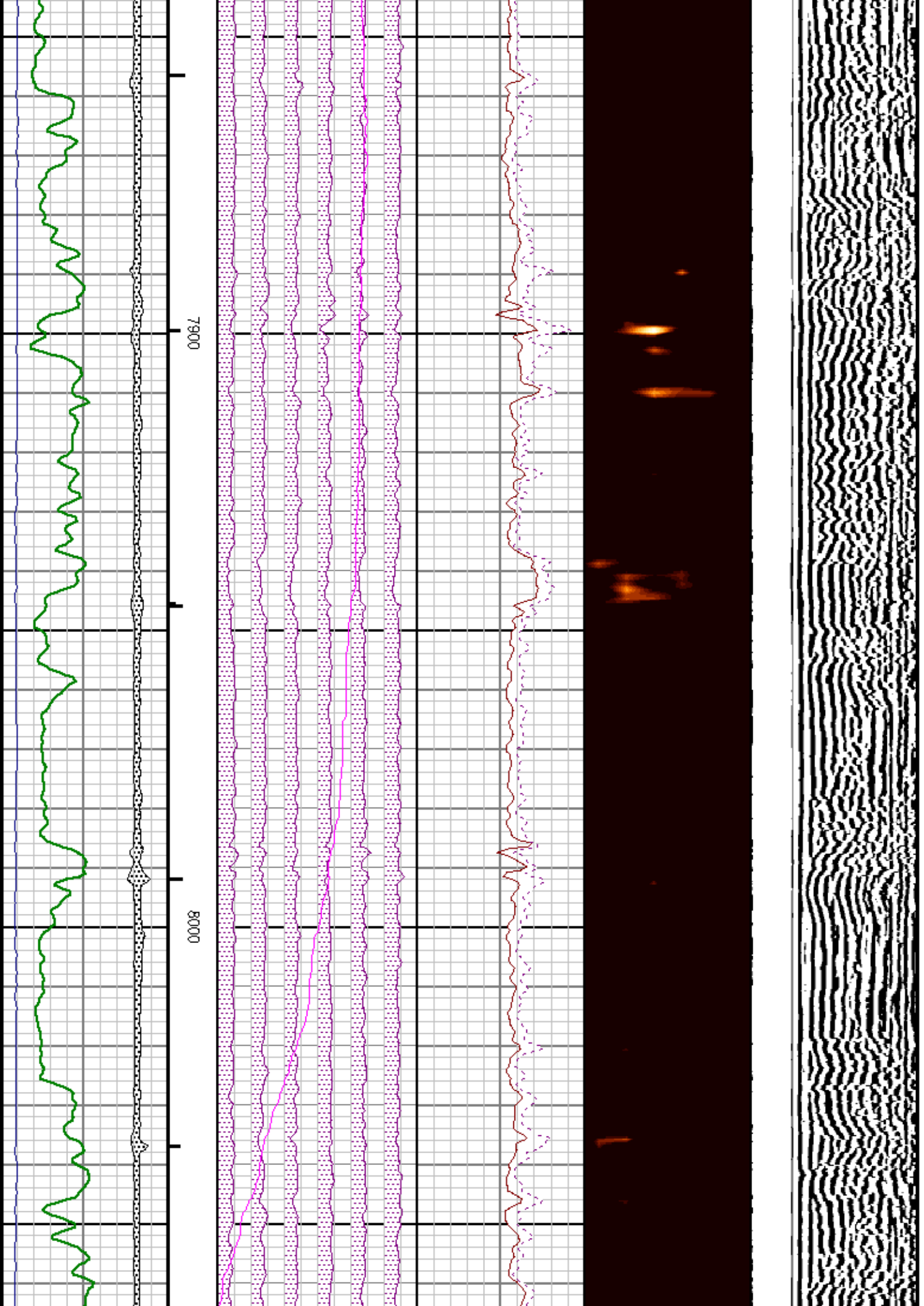




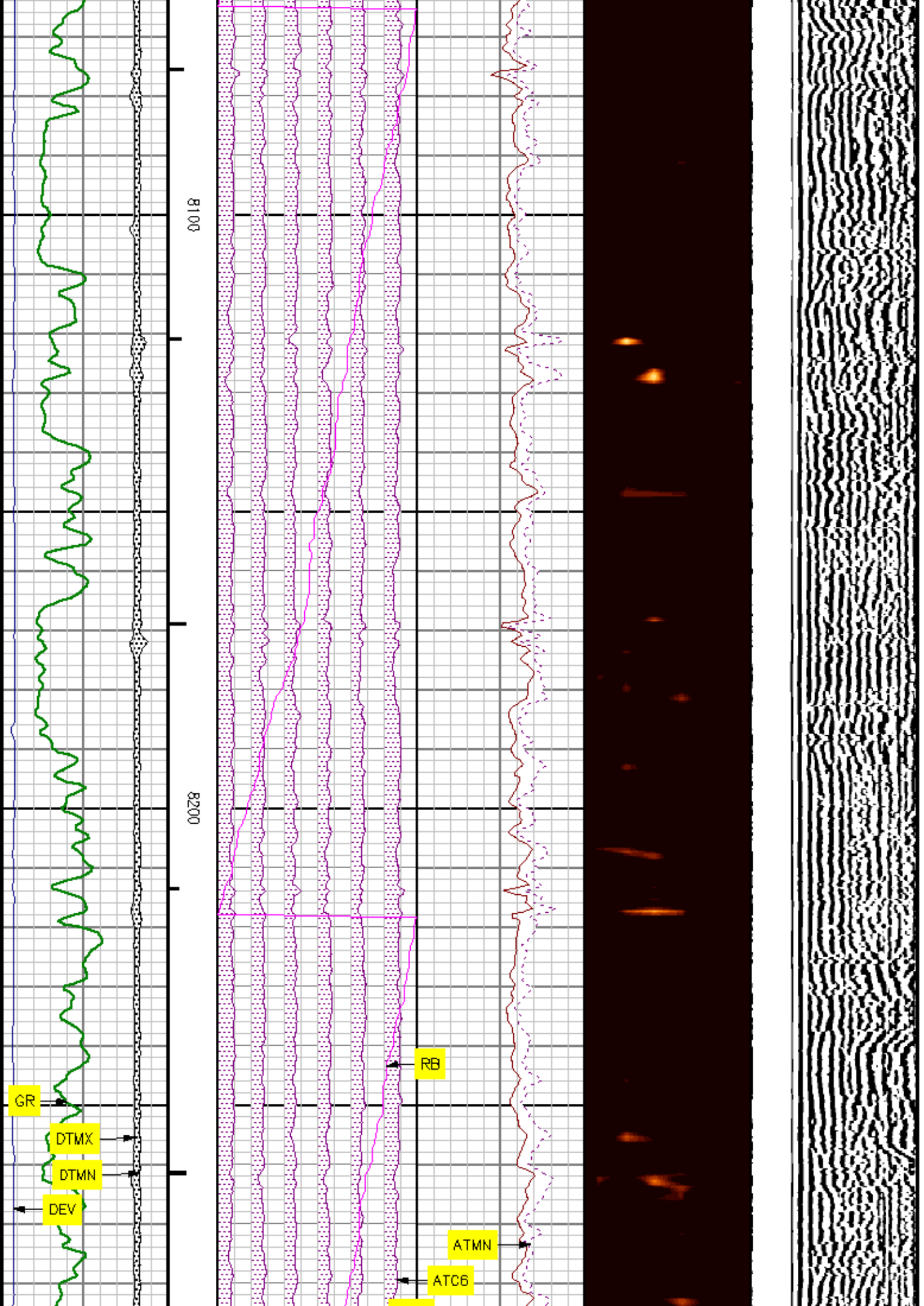


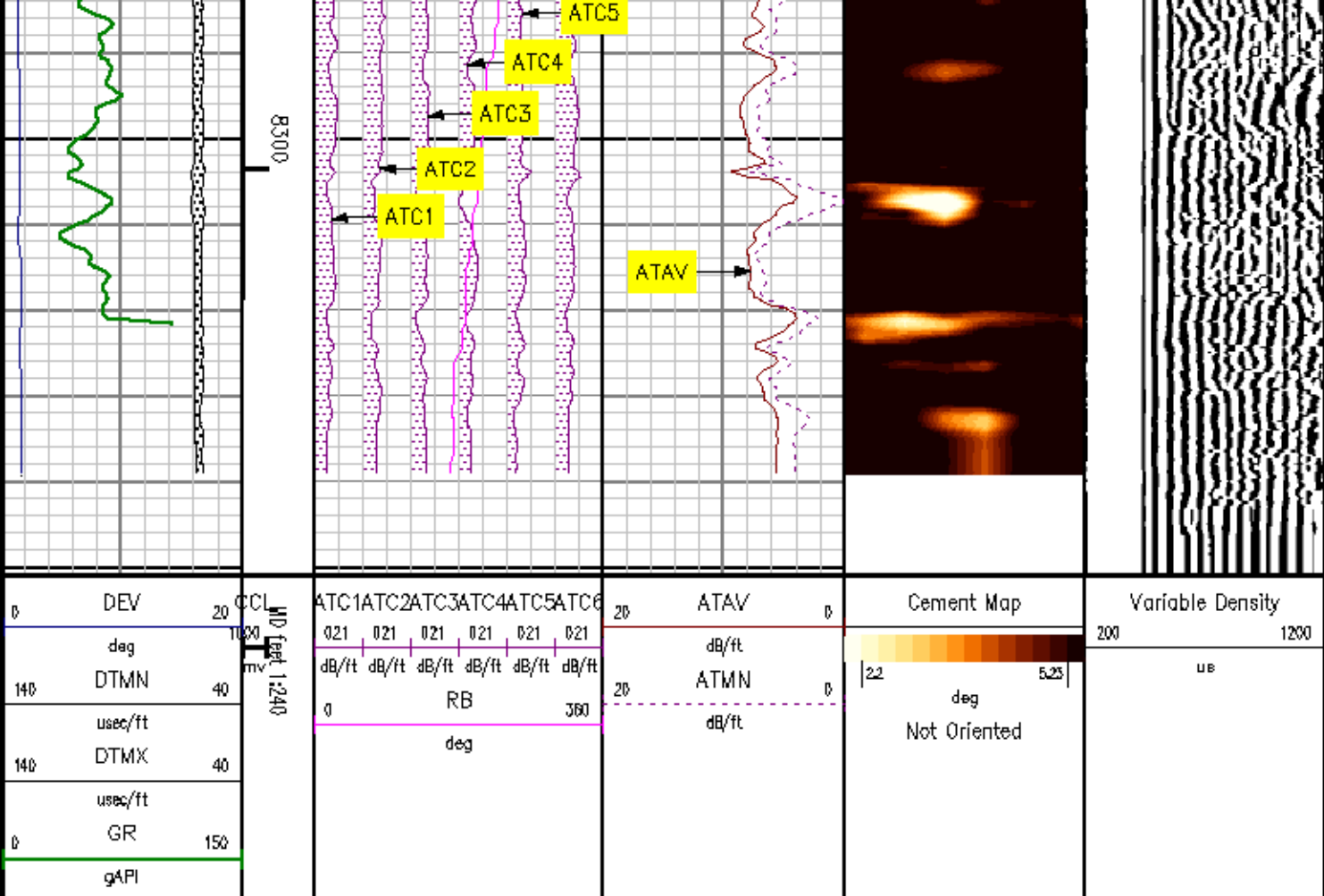












REPEAT SECTION

### SBT NORMALIZATION RESULTS

CURVE	PARAMETER	VALUE	UNITS	TOP	BOTTOM	COMMENT
ATC1	seg1 cnormf1	1.404	db/ft	8109.156	8349.219	
ATC2	seg2 cnormf2	-0.706	db/ft	8109.156	8349.219	
ATC3	seg3 cnormf3	-0.546	db/ft	8109.156	8349.219	
ATC4	seg4 cnormf4	-1.614	db/ft	8109.156	8349.219	
ATC5	seg5 cnormf5	0.042	db/ft	8109.156	8349.219	
ATC6	seg6 cnormf6	1.418	db/ft	8109.156	8349.219	
ATC1	seg1 dnormf1	0.568	db/ft	8109.156	8349.219	Good Confidence
ATC2	seg2 dnormf2	-0.444	db/ft	8109.156	8349.219	Good Confidence
ATC3	seg3 dnormf3	0.154	db/ft	8109.156	8349.219	Good Confidence
ATC4	seg4 dnormf4	-1.501	db/ft	8109.156	8349.219	Good Confidence

ATC5	seg5 dnormf5	-0.000	db/ft	8109.158	8349.219	Good Confidence
ATC6	seg6 dnormf6	1.224	db/ft	8109.156	8349.219	Good Confidence

SBT PROCESSING

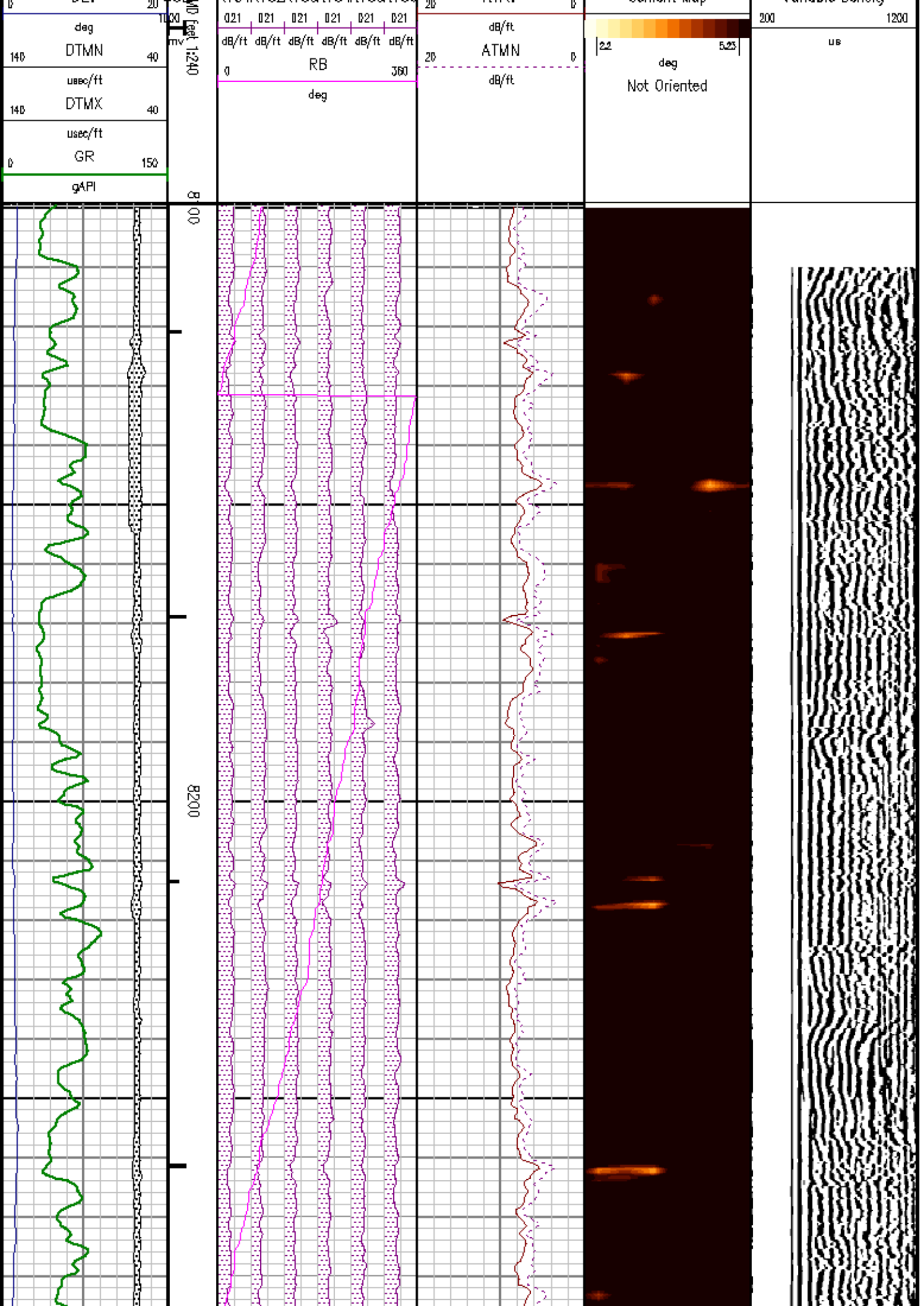
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
amp	fpamp	69.513	mv	8098.156	8349.250
amp	fpattn	1.193	dB/ft	8098.156	8349.250
atc	dbspread	4.589	dB/ft	8098.156	8349.250
atc	spacing	0.654	feet	8098.156	8349.250
cenr	casing od	7.000	inches	8098.156	8349.250
cenr	casing wt	26.000	lbm/ft	8098.156	8349.250
cenr	compress	400.000	psi	8098.156	8349.250
CN	Bit Size	7.875	inches	8109.156	8349.219
CN	Casing Thickness	0.361	inches	8098.156	8349.250
CN	Casing/Cement Correction	No		8109.156	8349.219
CN	CN Chism	No		8109.156	8349.219
CN	Matrix	Limestone		8109.156	8349.219
CN	Salinity	0.000	ppm	8109.156	8349.219

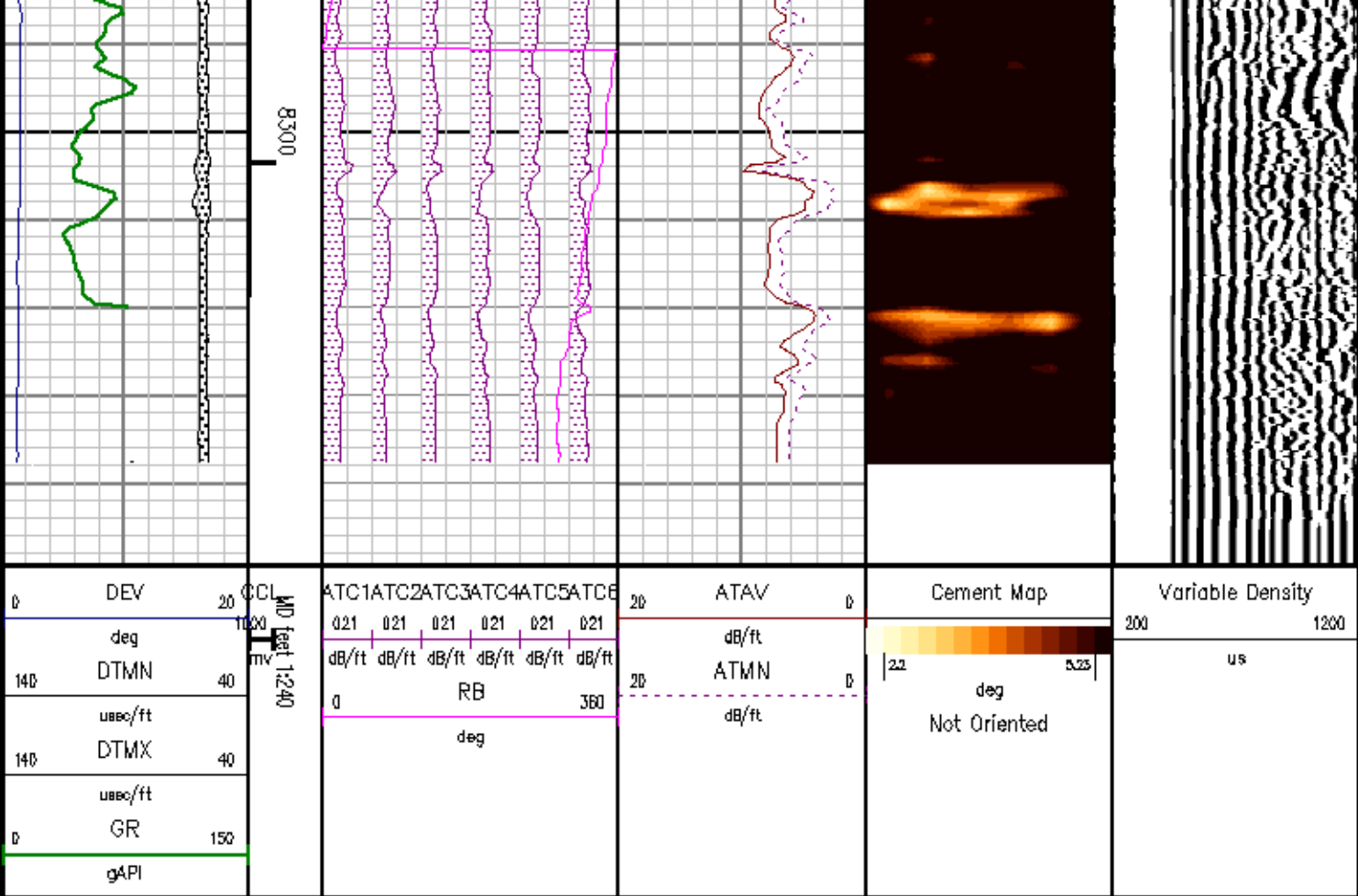
DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
2346XA	-32.500	GCL					
2435XA	-30.250	LSN					
2435XA	-29.750	NEU	SSN				
1309XA	-27.750	GR					
1424XA	-11.000	ATC1	ATC2	ATC3	ATC4	ATC5	ATC6
		ATAV	ATMN	ATMX	AMAV	DEV	DTMN
		DTMX	RB	XATT	YATT		
1424PA	0.000	CHV	CYQ	SIG			

Created by : SBT, v5.0.003  
Plotted by : PlotMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY  
Well : FRU 197-33A6  
File Name : d:\welldata\6sbt\repeat.txt  
Mode : PlotMgr 5.4.504  
Interval : 8099.25 - 8349.25 feet UP  
Created : 3/18/2010 5:20:36 AM





## NORMALIZATION PASS

### SBT NORMALIZATION RESULTS

CURVE	PARAMETER	VALUE	UNITS	TOP	BOTTOM	COMMENT
ATC1	seg1 cnormf1	0.000	db/ft	2439.750	2888.906	
ATC2	seg2 cnormf2	0.000	db/ft	2439.750	2888.906	
ATC3	seg3 cnormf3	0.000	db/ft	2439.750	2888.906	
ATC4	seg4 cnormf4	0.000	db/ft	2439.750	2888.906	
ATC5	seg5 cnormf5	0.000	db/ft	2439.750	2888.906	
ATC6	seg6 cnormf6	0.000	db/ft	2439.750	2888.906	
ATC1	seg1 dnormf1	1.404	db/ft	2439.750	2888.906	Good Confidence
ATC2	seg2 dnormf2	-0.706	db/ft	2439.750	2888.906	Good Confidence
ATC3	seg3 dnormf3	-0.546	db/ft	2439.750	2888.906	Good Confidence
ATC4	seg4 dnormf4	-1.614	db/ft	2439.750	2888.906	Good Confidence



ATC5	seg5 dnormf5	0.042	db/ft	2439.750	2888.906	Good Confidence
ATC6	seg6 dnormf6	1.418	db/ft	2439.750	2888.906	Good Confidence

## SBT PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
amp	fpamp	69.513	mv	2425.750	2889.000
amp	fpattn	1.193	dB/ft	2425.750	2889.000
atc	dbspread	4.589	dB/ft	2425.750	2889.000
atc	spacing	0.654	feet	2425.750	2889.000
cemr	casing od	7.000	inches	2425.750	2889.000
cemr	casing wt	26.000	lbm/ft	2425.750	2889.000
cemr	compress	400.000	psi	2425.750	2889.000
CN	Bit Size	7.875	inches	2439.750	2888.906
CN	Casing Thickness	0.361	inches	2425.750	2889.000
CN	Casing/Cement Correction	No		2439.750	2888.906
CN	CN Chism	No		2439.750	2888.906
CN	Matrix	Limestone		2439.750	2888.906
CN	Salinity	0.000	ppm	2439.750	2888.906

## DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
2346XA	-35.500	CCL					
1309XA	-30.750	GR					
2435XA	-30.250	LSN					
2435XA	-29.750	NEU SSN					
1424XA	-14.000	ATC1	ATC2	ATC3	ATC4	ATC5	ATC6
		ATAV	ATMN	ATMX	AMAV	DEV	DTMN
		DTMX	RB	XATT	YATT		
1424PA	3.000	CHV	CYQ	SIG			

Created by : SBT, v5.0.003

Plotted by : PlotMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY

Well : FRU 197-33A6

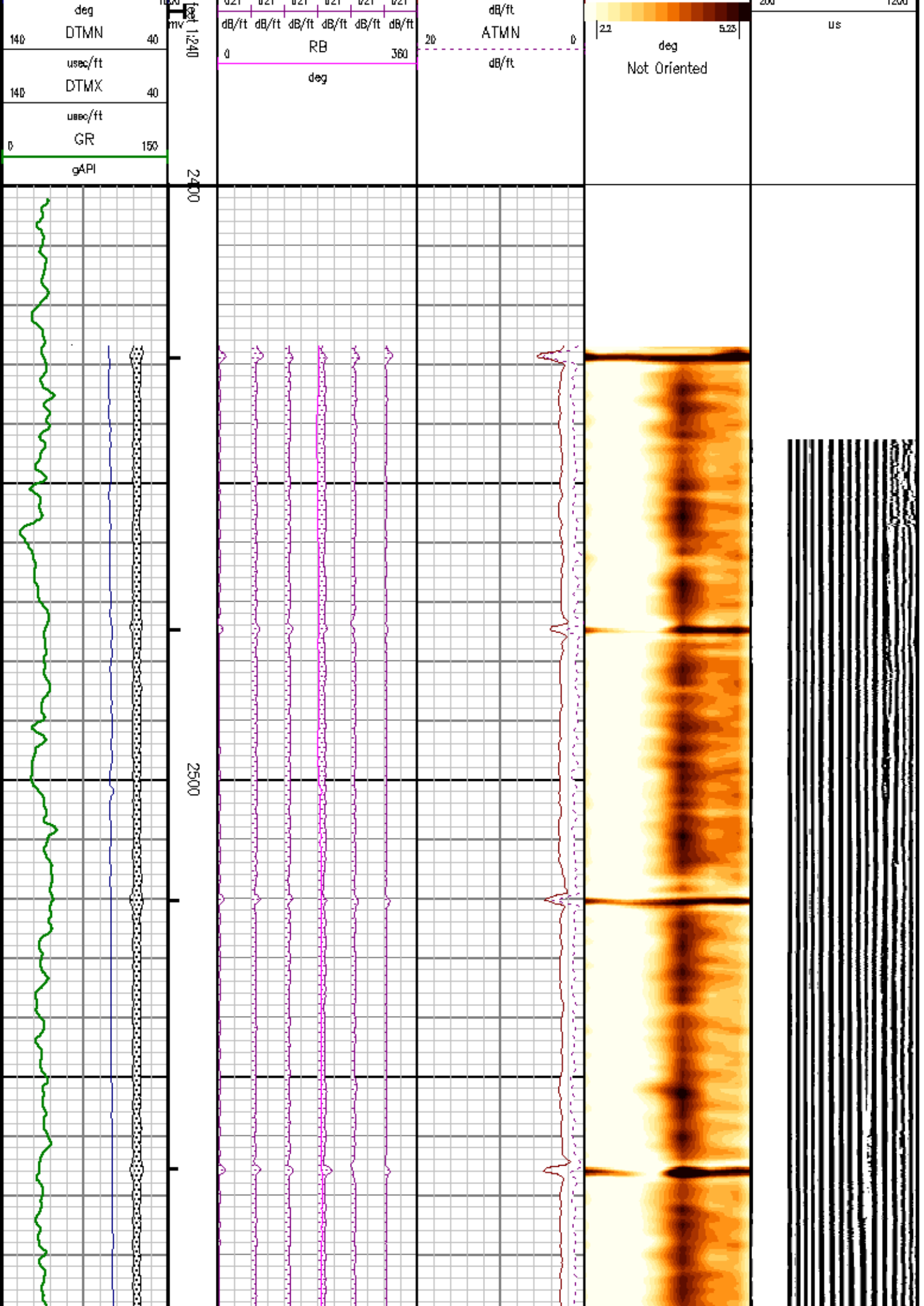
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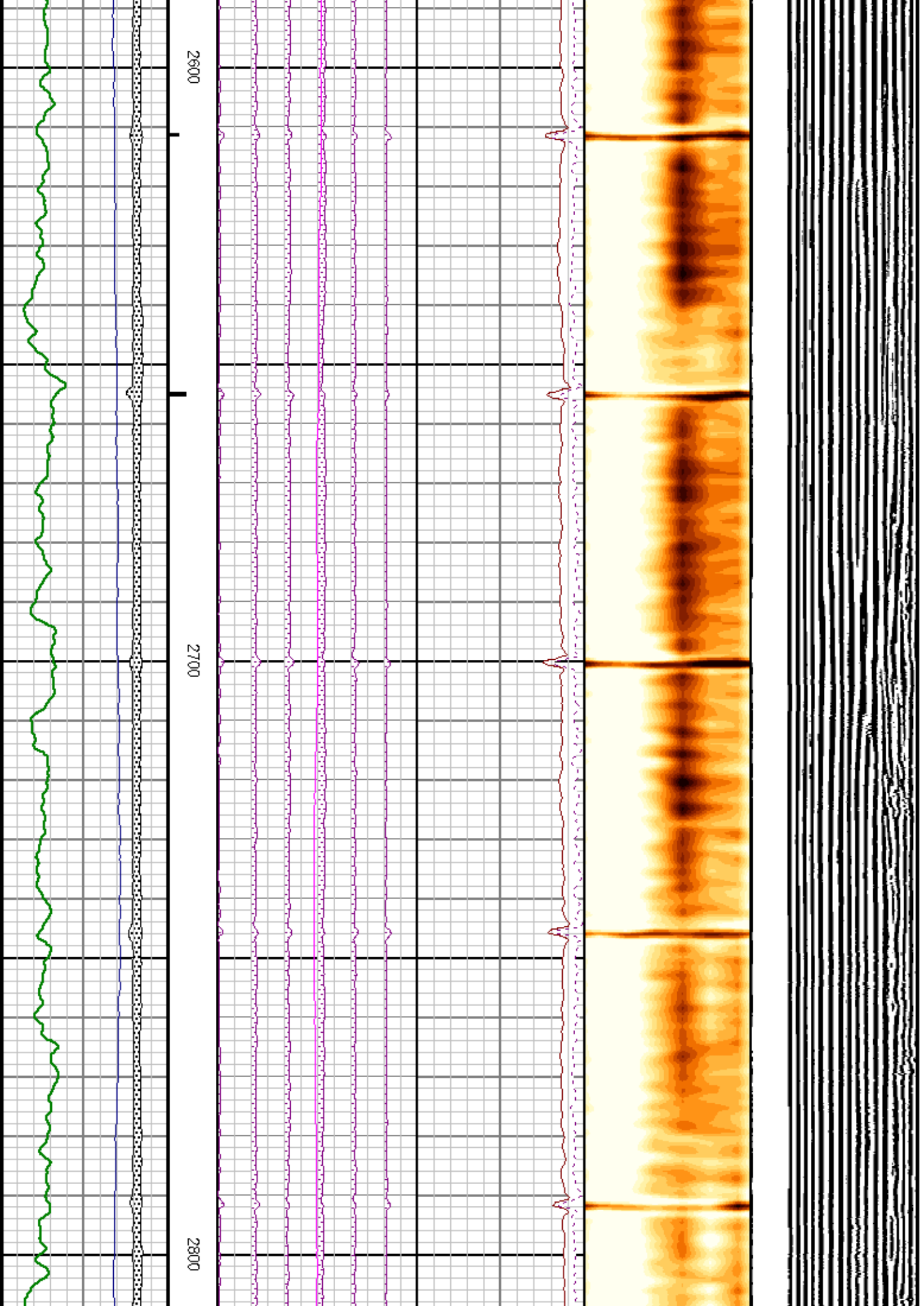
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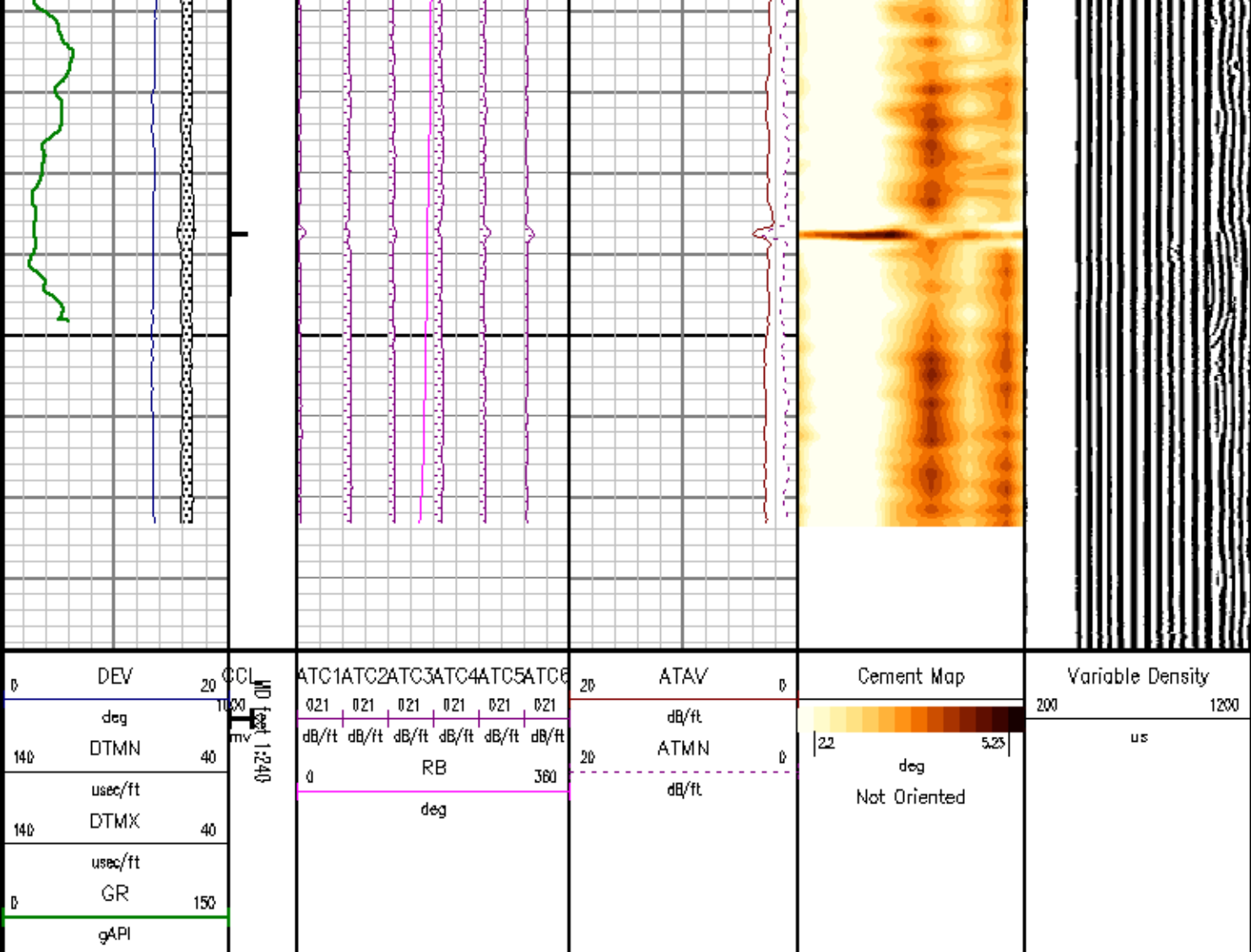
Interval : 2400.00 - 2889.00 feet UP

Created : 3/18/2010 4:27:56 AM

DEV	20	CCL	ATC1	ATC2	ATC3	ATC4	ATC5	ATC6	20	ATAV	0	Cement Map	Variable Density
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## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\pass\calver\GR\41737M1.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Mar 16 13:43:49 2010 TOOL SERIES: 1309XA ASSET: 41737 SEQ: M1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA856	51.42	245.29	0.774	39.79	189.79	150.00

Verification File: C:\pass\calver\GR\41737M1.vp



## PRIMARY VERIFICATION

DATE/TIME PERFORMED: Tue Mar 16 13:52:18 2010 TOOL SERIES: 1309XA ASSET: 41737 SEQ: M1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA856	50.89	245.27	0.774	39.37	189.77	150.40

*RB*

Calibration File: C:\case\calver\RB\870M1.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Mar 16 14:11:05 2010 TOOL SERIES: 1424XA ASSET: 870 SEQ: M1

	X-Att [row]	Y-Att [row]	RB [deg]	X-Max [deg]	Y-Max [deg]	OFFSET [deg]
PAD 2	-113.00	-441.30	0.00			
PAD 3	-439.60	-127.70	59.44	-456.57	456.47	-75.67

Verification File: C:\case\calver\RB\870M1.vp

## PRIMARY VERIFICATION

DATE/TIME PERFORMED: Tue Mar 16 14:11:52 2010 TOOL SERIES: 1424XA ASSET: 870 SEQ: M1

	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6
RB [deg]	296.61	0.58	59.44	118.02	176.76	235.73

*PAD*

Verification File: C:\case\calver\PAD\870M1.VK

DATE/TIME PERFORMED: Tue Mar 16 14:13:08 2010 TOOL SERIES: 1424XA ASSET: 870 SEQ: M1

	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6
Noise Level	3.22	4.20	4.72	2.55	4.93	6.46
PAD Sensitivity	432.60	389.00	444.00	278.80	322.00	392.00

*TOOL DIAGRAM*

<i>OTA SHORT CABLE HEAD</i>		
<i>CCL</i>		
Series	2330NA	
Mnemonic	CCL	
Diameter	3.38"	

*GAMMA RAY (1309XA)*

*ACOUSTIC DIGITIZER (1633EA)*

<i>4 ARM BOW SPRING CENTRALIZER</i>		
Series	4341XA	
Mnemonic	CENT	
Diameter	3.38"	
Weight	84.00 lb	
Length	4.12'	

*SEGMENTED BOND TOOL (1424XB)*

<i>SEGMENTED BOND TOOL VDL SUB</i>		
Series	1424PA	
Mnemonic	SBT	

