



Baker Atlas

RADIAL ANALYSIS  
BOND LOG

File No:	Company			WILLIAMS PRODUCTION COMPANY
1260	Well			RMF 31-17
API No:	Field			RULISON
08-046-156790000	County			GARFIELD
	State			COLORADO
Location		Other Services		
17. 6S. 94W RMF 31-17 PAD CYCLONE 14		SHL: 2230' FIL & 480' FEL BHL: 317' FIL & 2201' FEL SEC 17 TWP 9S RGE 94W RPM		
Permanent Datum	G.L.	Elevation	5817 ft	
Log Measured From	K.B.	22.5 ft	Above P. D.	
Drill Measured From	KELLY BUSHING		Elevations KB 5839.5 ft DF 5836.5 ft GL 5817 ft	

Date	27-AUG-2008	
Run	ONE	
Service Order	576483	
Depth Driller	9147 ft	
Depth Logger	9154 ft	
Bottom Logged Interval	9154 ft	
Top Logged Interval	20 ft	
Time Started	10:30	
Time Finished	14:00	
Operator Rig Time	3.5 HRS.	
Type of Fluid in Hole	WATER	
Fluid Density	N/A	
Salinity	N/A	
Fluid Level	FULL	
Logged Cement Top	N/A	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	N/A	
Nominal Logging Speed	45 fpm	
Maximum Recorded Temperature	241 degF	
Reference Log	N/A	
Reference Log Date	N/A	
Equipment No.	4214	VERNAL, UT
Recorded By	J. SOEKEN	
Witnessed By	MR. TED VONFELDT	

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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
7.875 in	SURFACE	9147 ft

Casing Record				
Size	Weight	Grade	From	To
4.5 in	11.6 lbm/ft	P-110	SURFACE	9147 ft

Remarks
THIS IS THE FIRST LOG OF THE WELL
WELL WAS LOGGED WITH 0 PSI
•SHORT JOINT LOCATED AT: 5580' - 5808'•
•BHT: 241•

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDI	142863	9999	CENTRALIZED

1	1	GR/CCL	2459KA	120	CENTRALIZED
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# *MAIN SECTION* *PRIMARY PRESENTATION*

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	21.406	9177.500
RAL	Amp Gate Start Near	200.391	usec	21.406	9177.500
RAL	Amp Gate Start Radial	200.391	usec	21.406	9177.500
RAL	Amp Gate Width Far	25.000	usec	21.406	9177.500
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RAL	casing od	4.500	inches	21.406	9177.500
RAL	casing wt	11.600	lbm/ft	21.406	9177.500
RAL	FB Start Far	291.900	usec	21.406	9177.500
RAL	FB Start Near	175.391	usec	21.406	9177.500
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RAL	FB Thresh Far	15.000	mv	21.406	9177.500
RAL	FB Thresh Near	10.000	mv	21.406	9177.500
RAL	FB Thresh Radial	10.000	mv	21.406	9177.500
RAL	Fluid Travel Time	200.000	usec/ft	21.406	9177.188

## DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-15.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	ARB	CHV	FPR2
		FPR3	FPRS	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-14.360	AFAR	SIG	TT5			
1426XA	-7.250	CCL					

1426XA  
1426XA

-5.390  
0.000

GR  
NEU

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

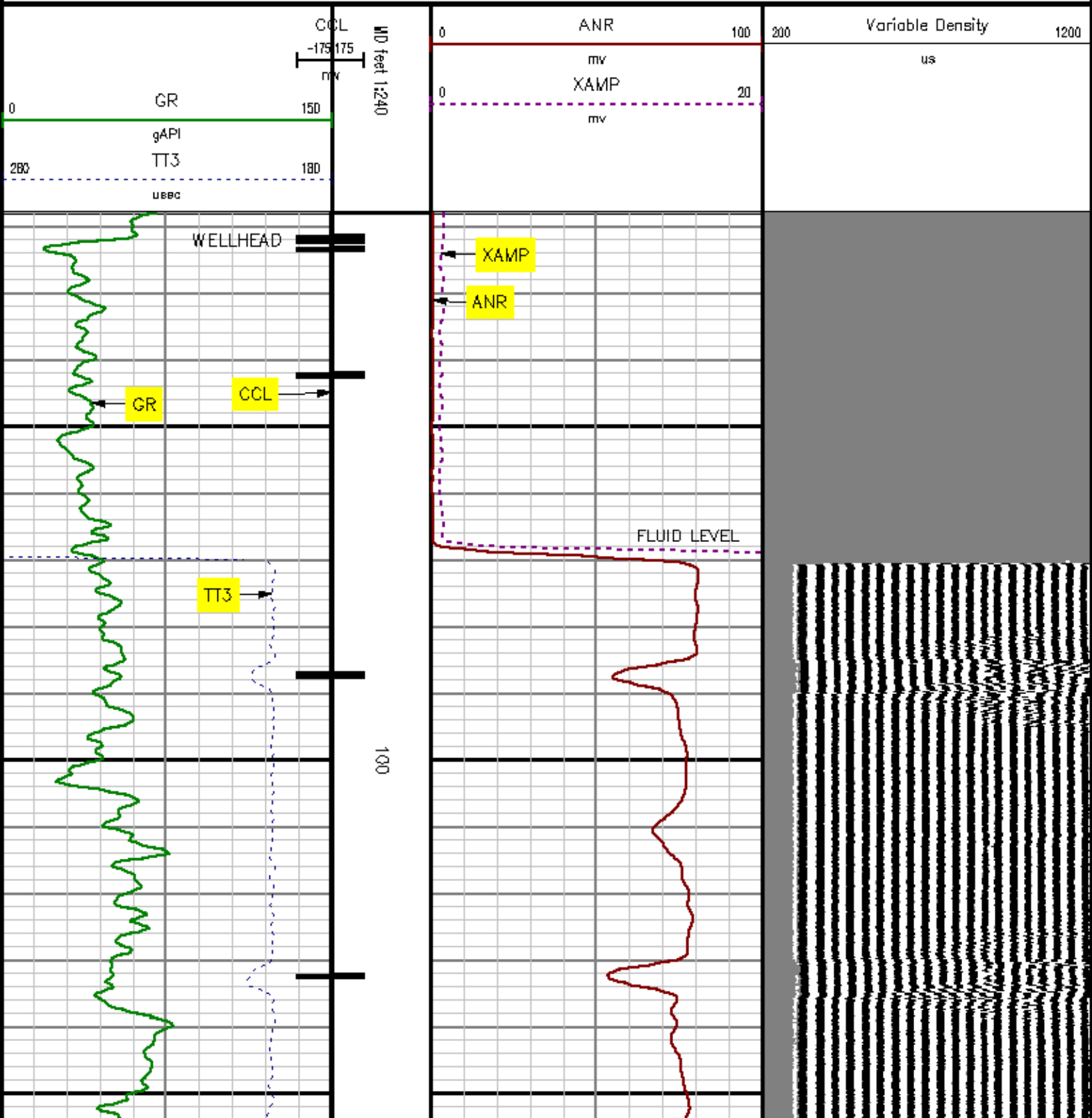
Well : RMF 31-17

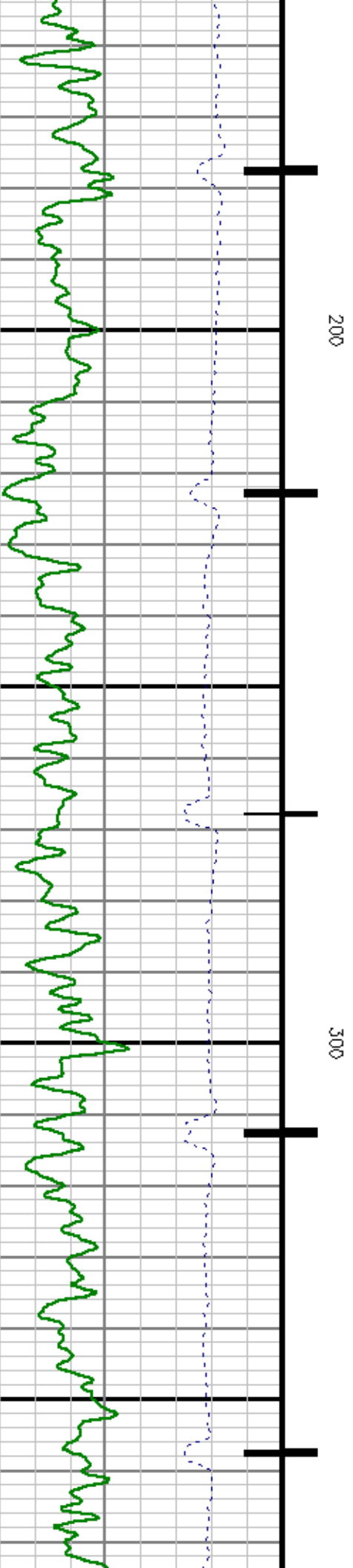
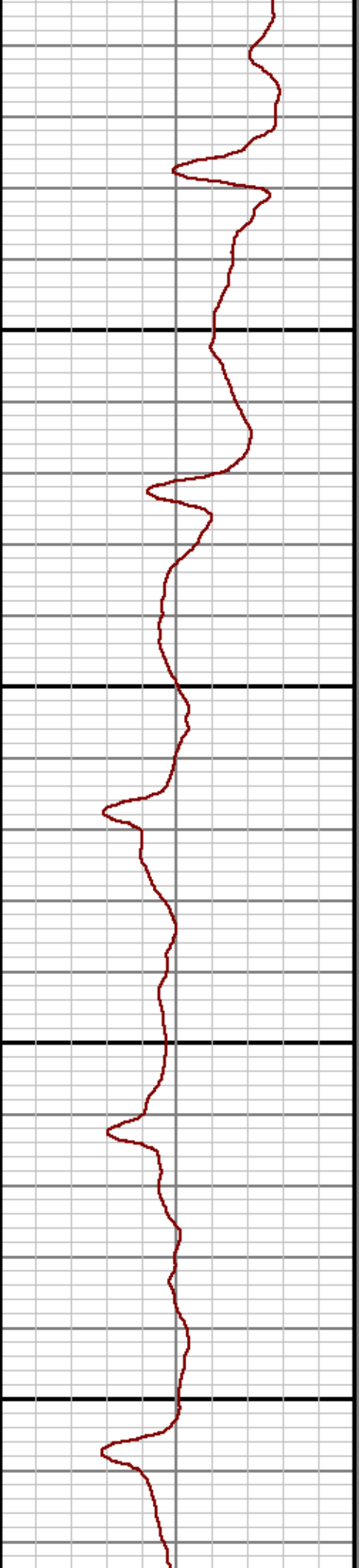
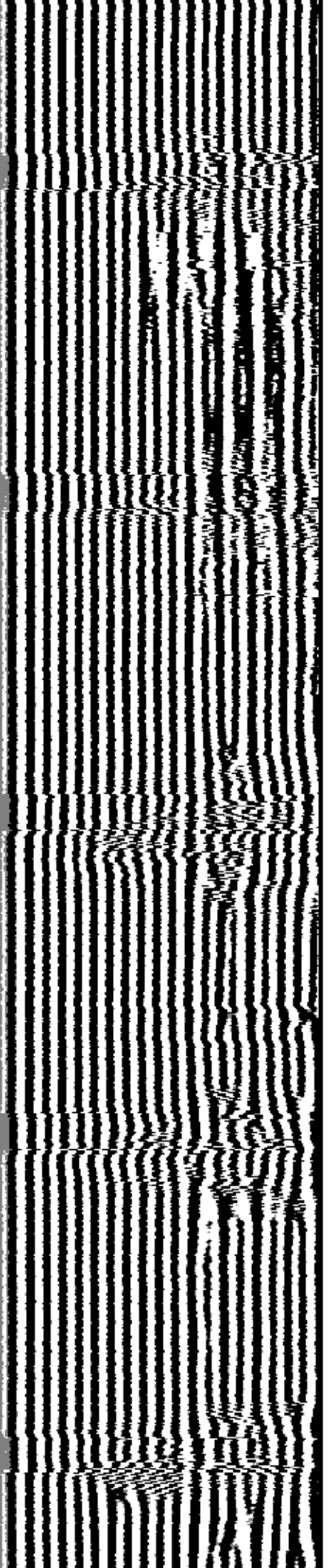
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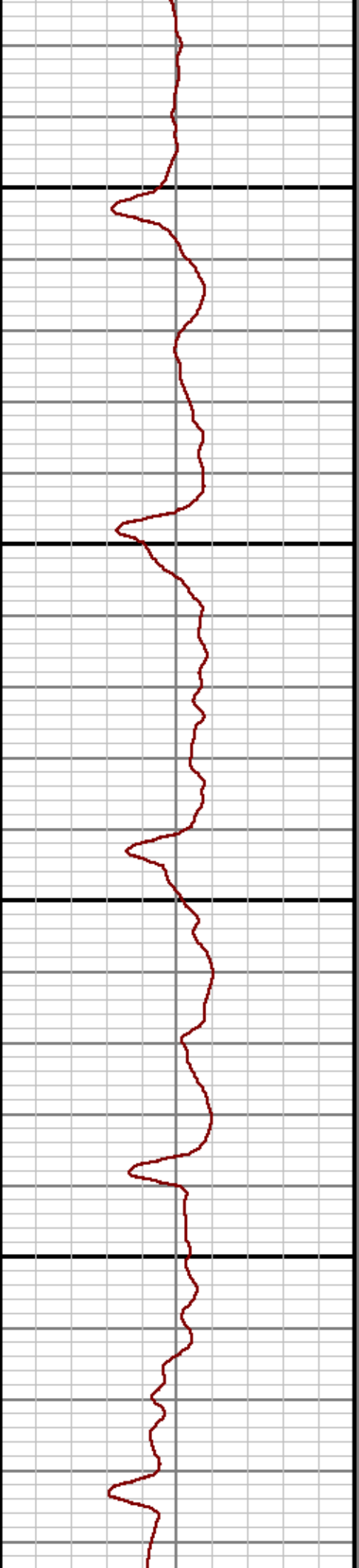
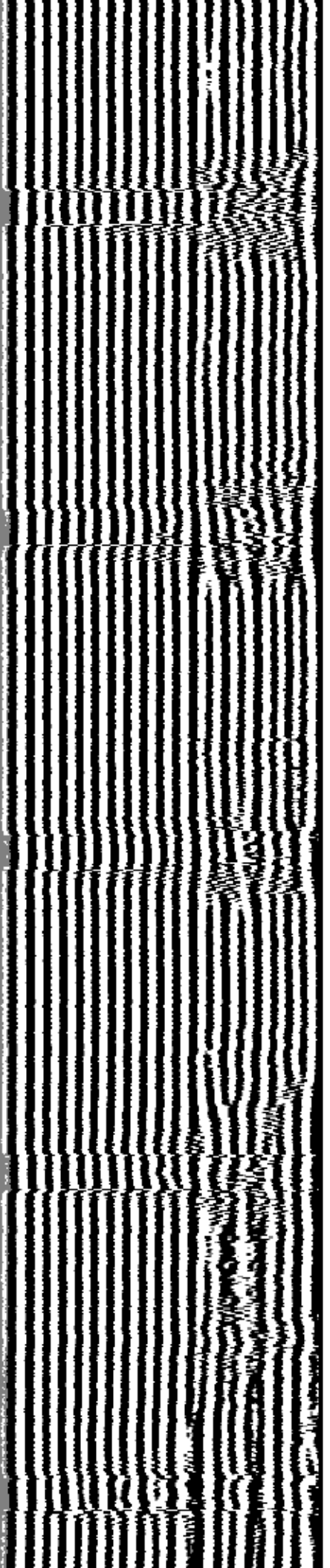
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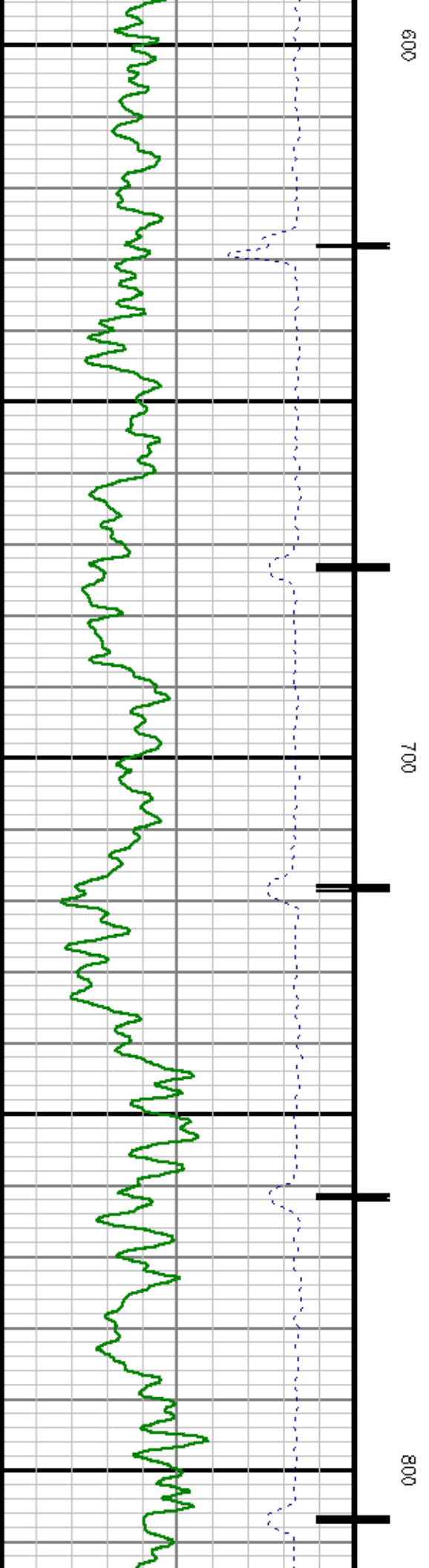
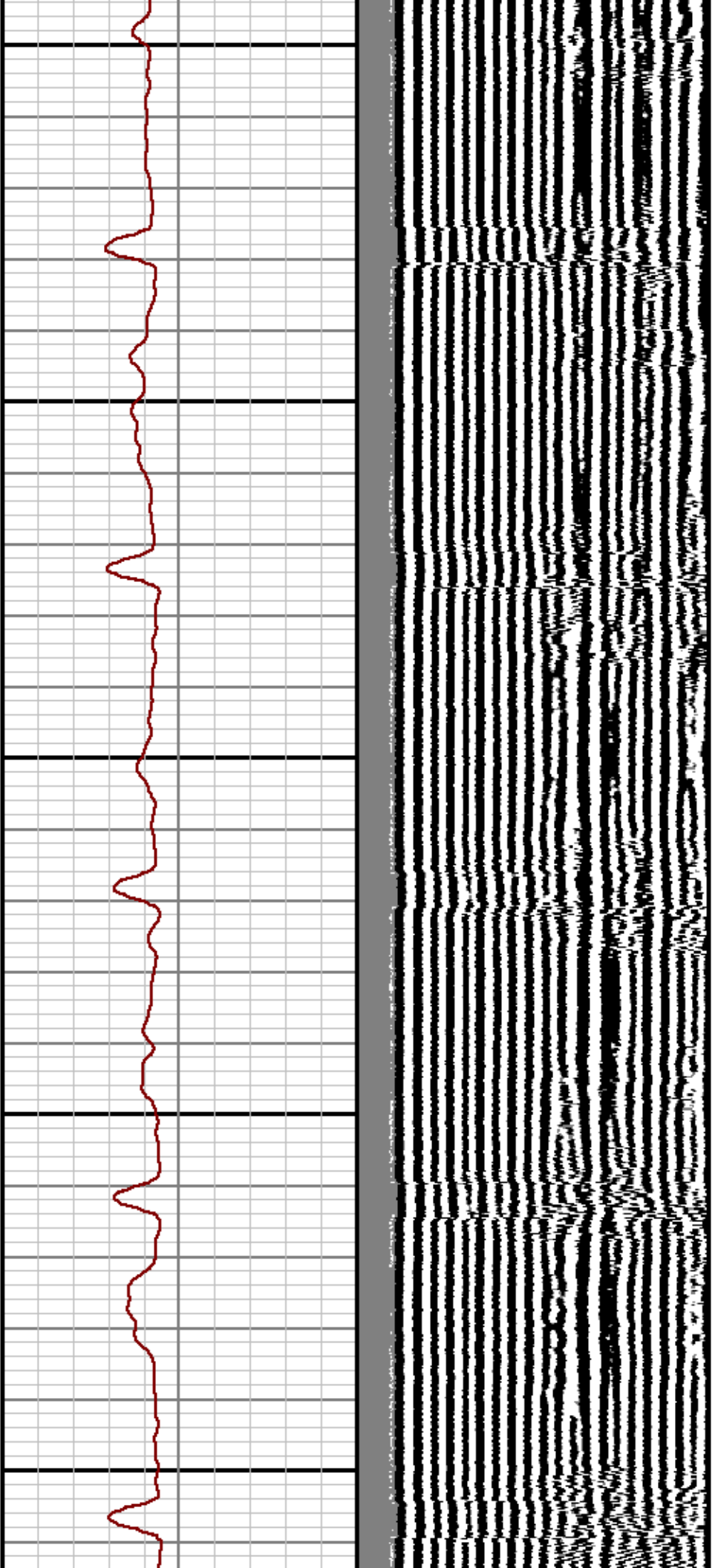
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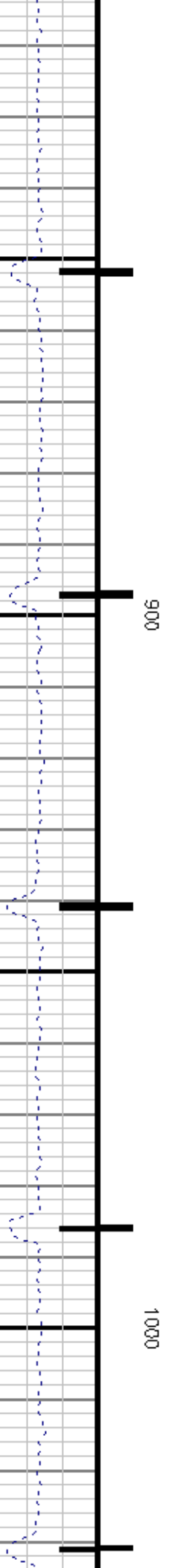
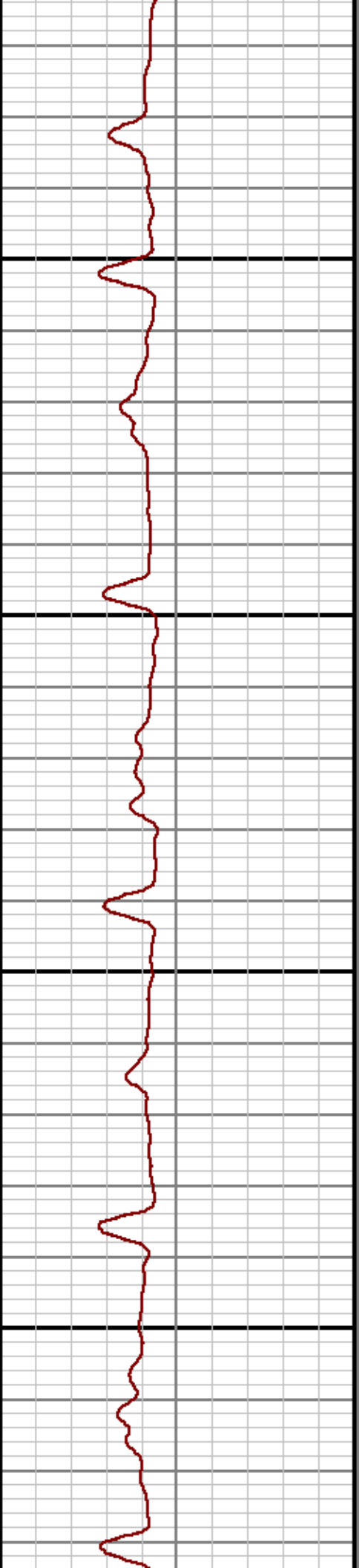
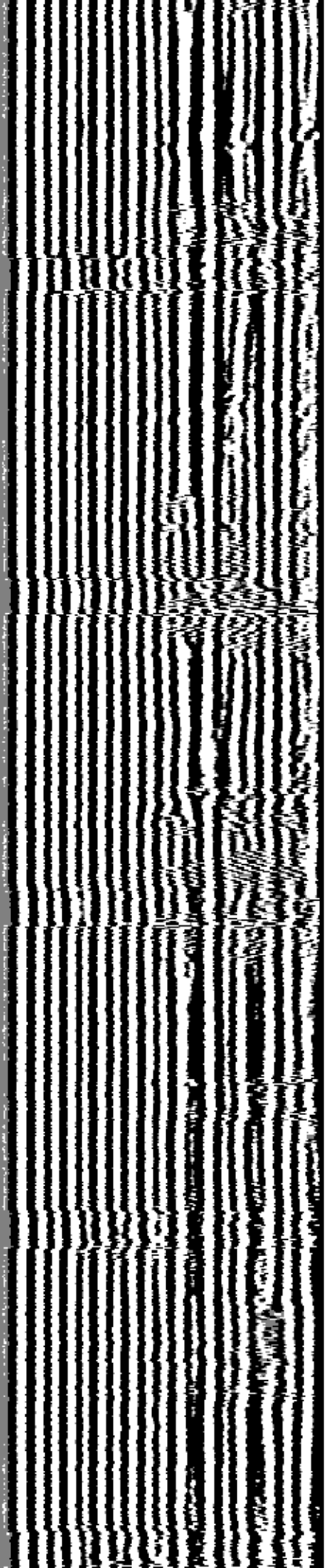


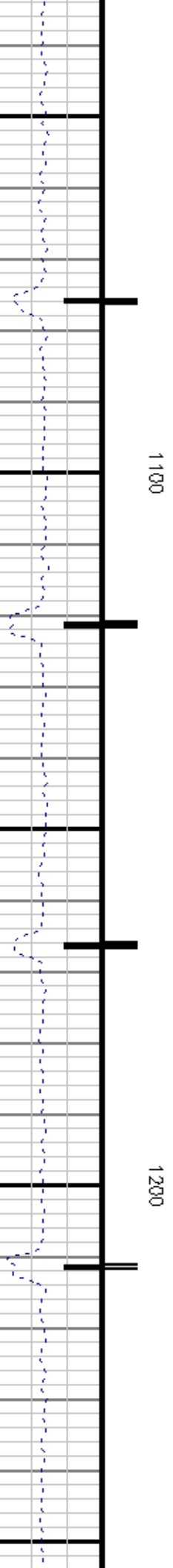
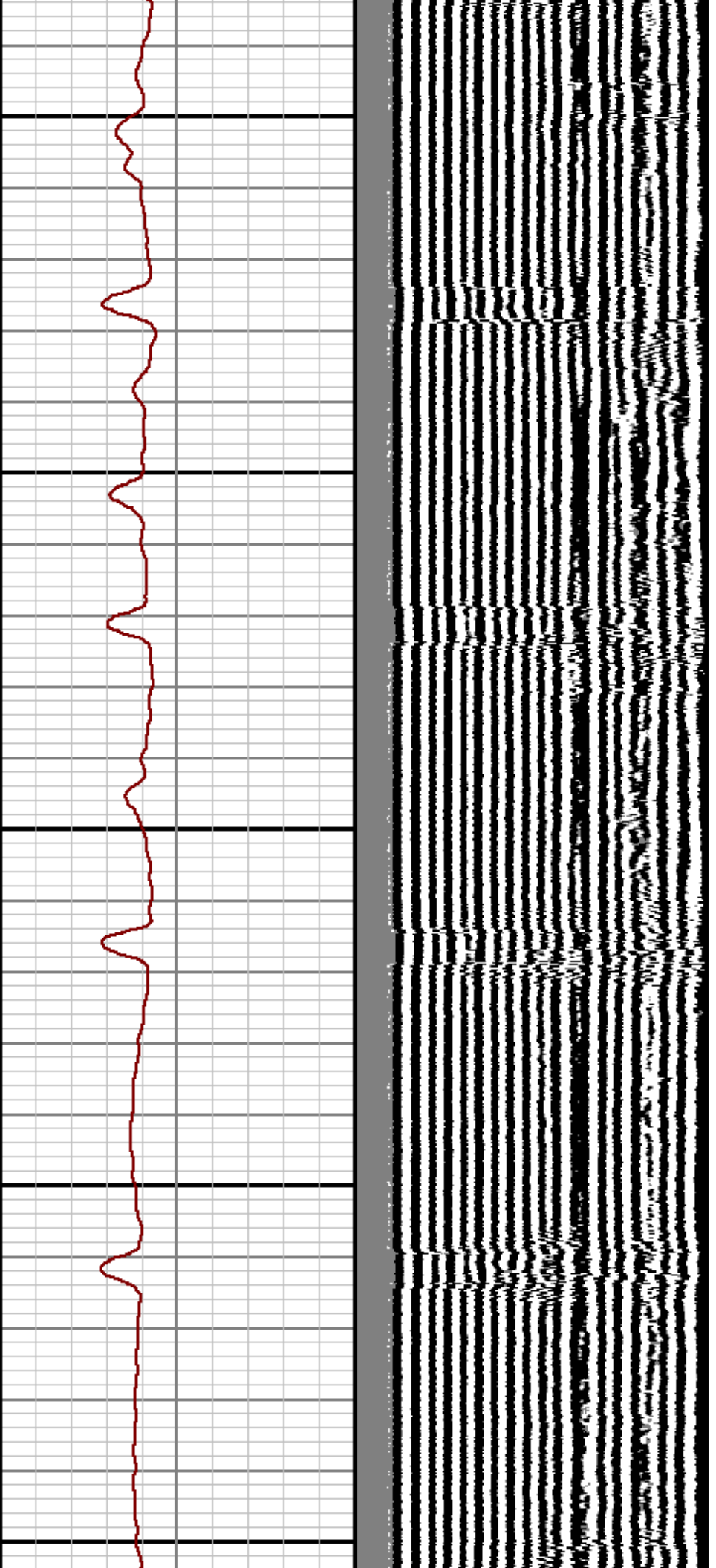




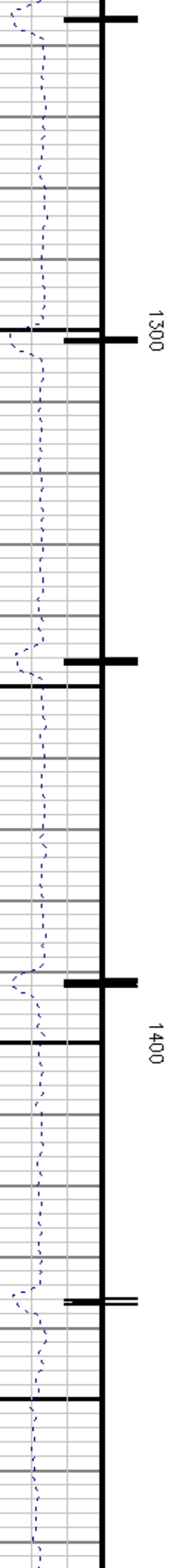
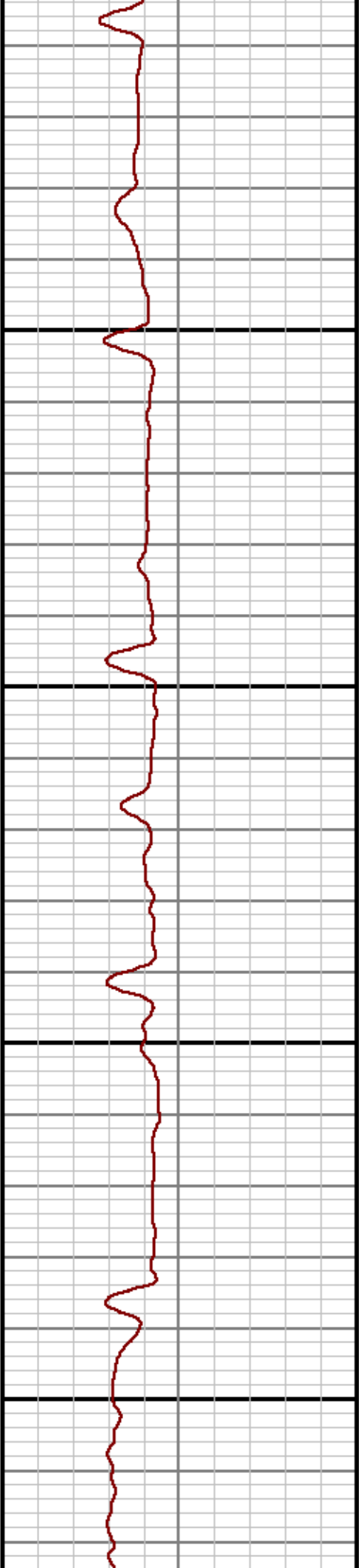
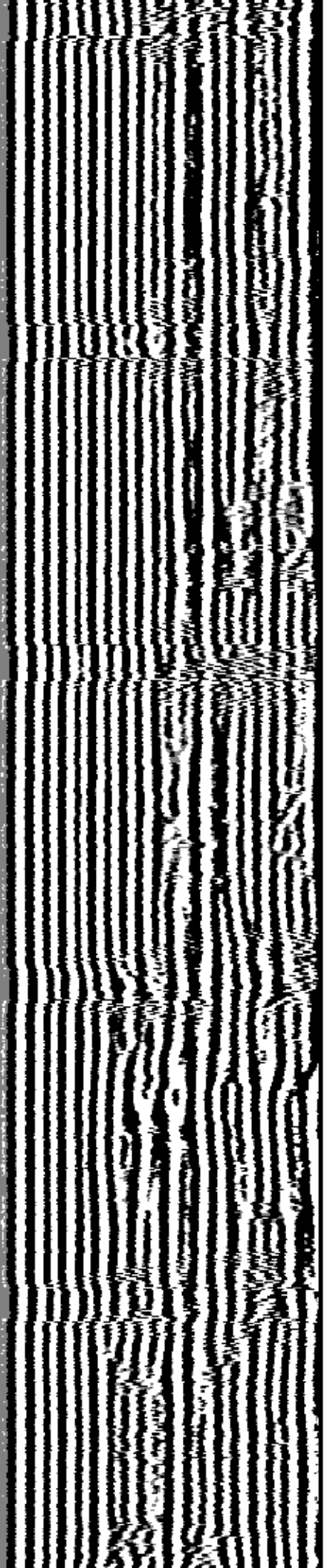


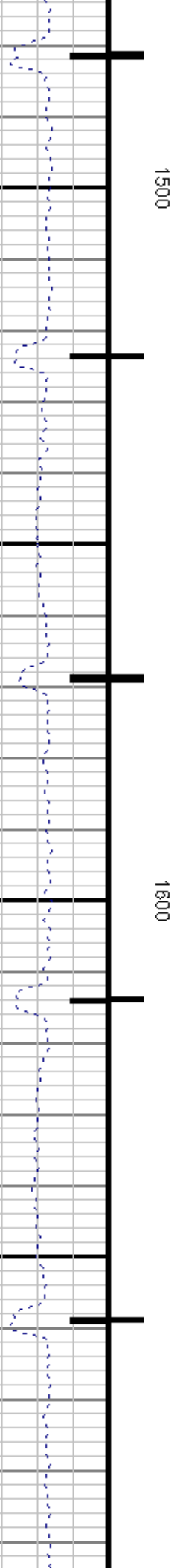
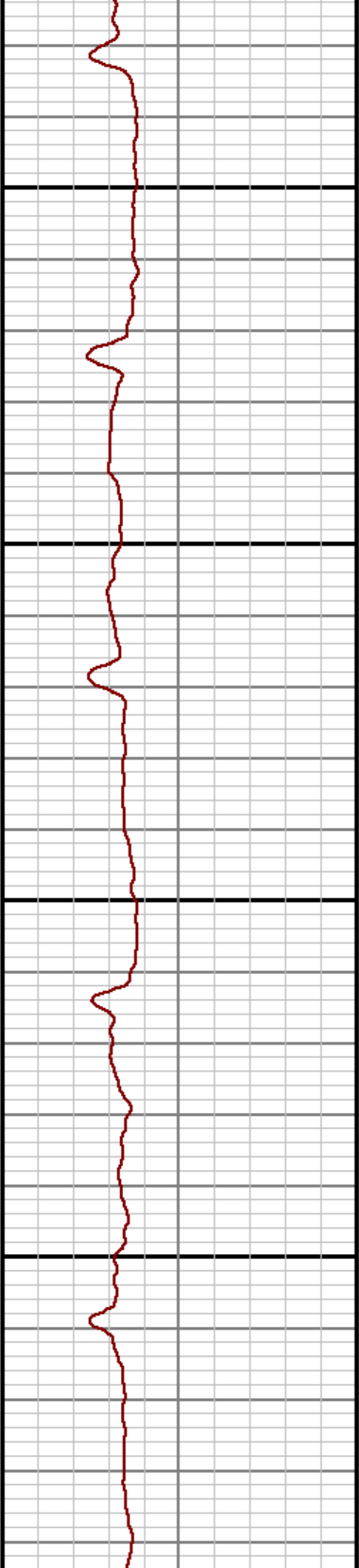
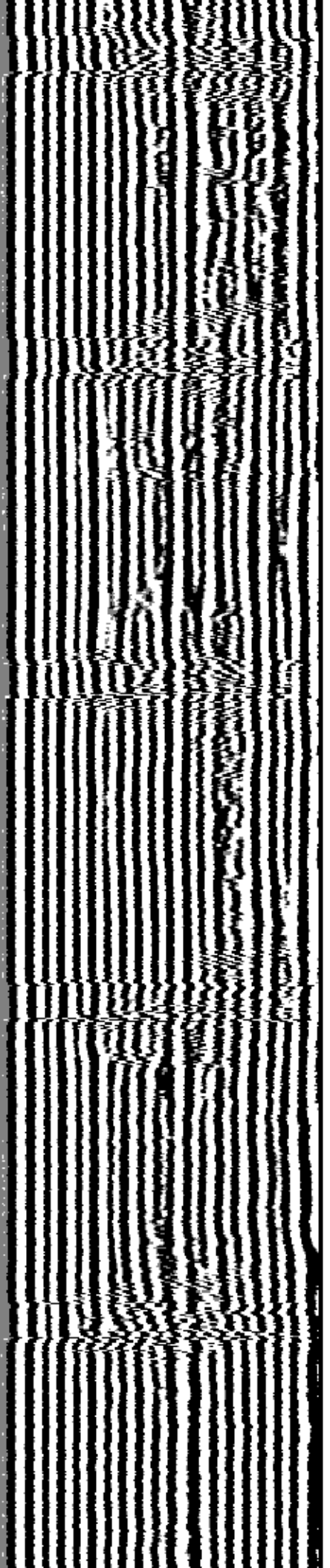


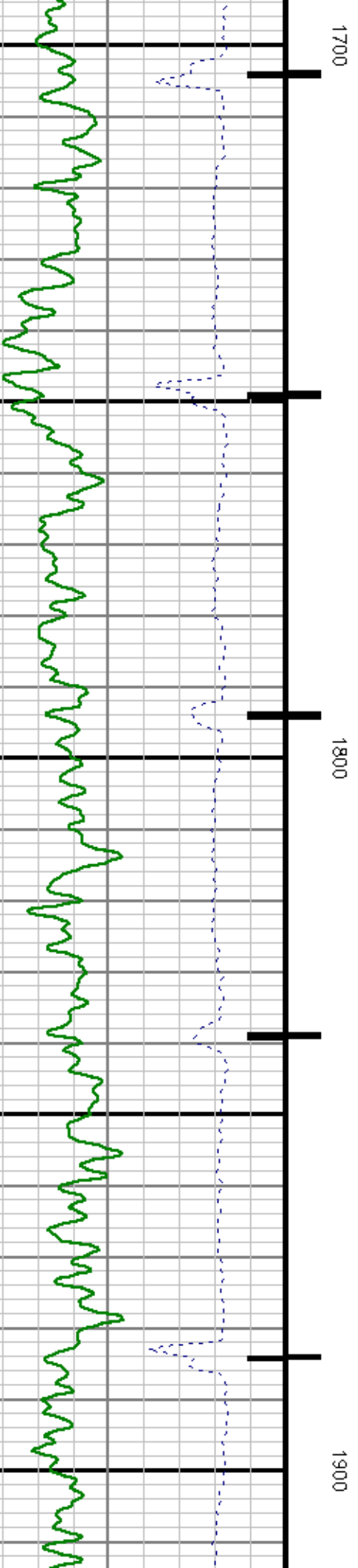
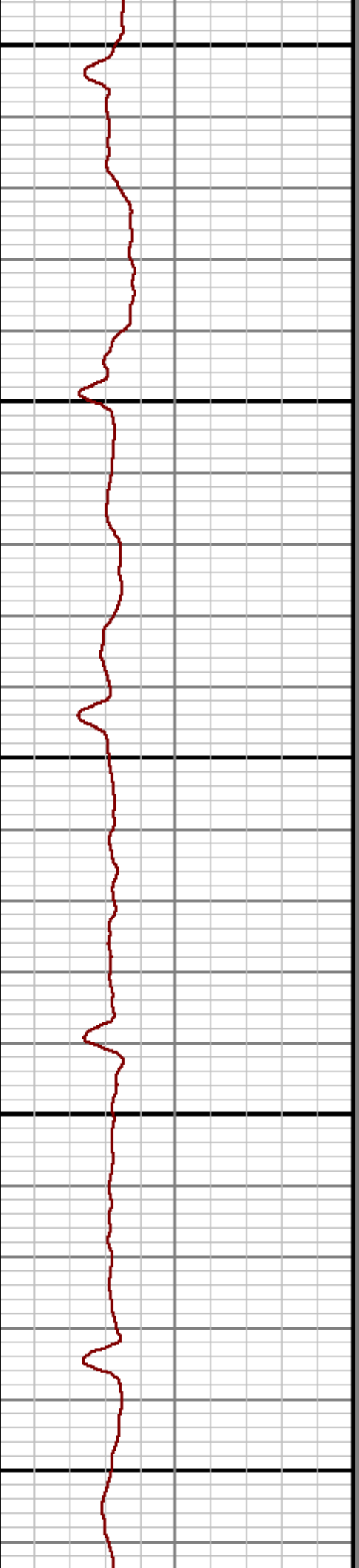
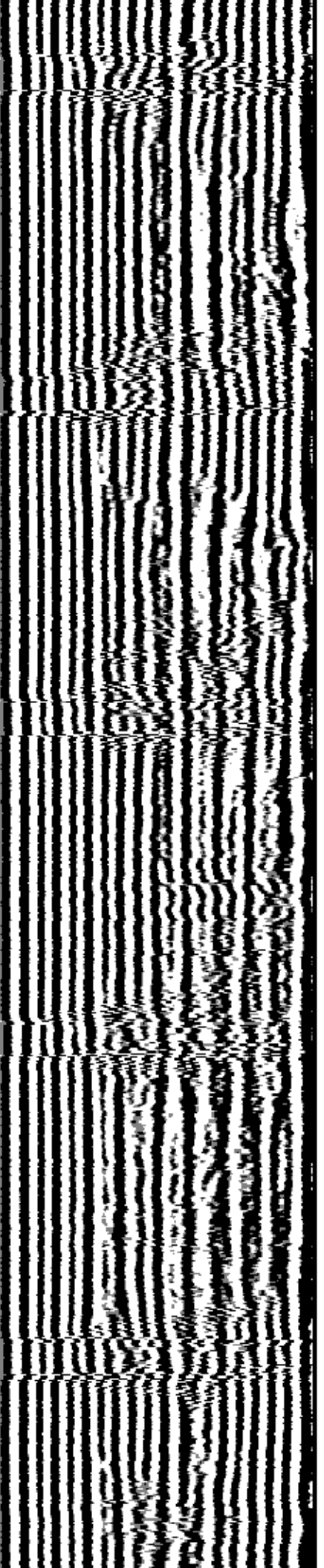


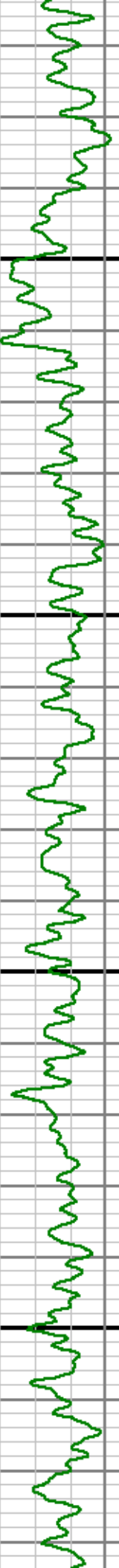
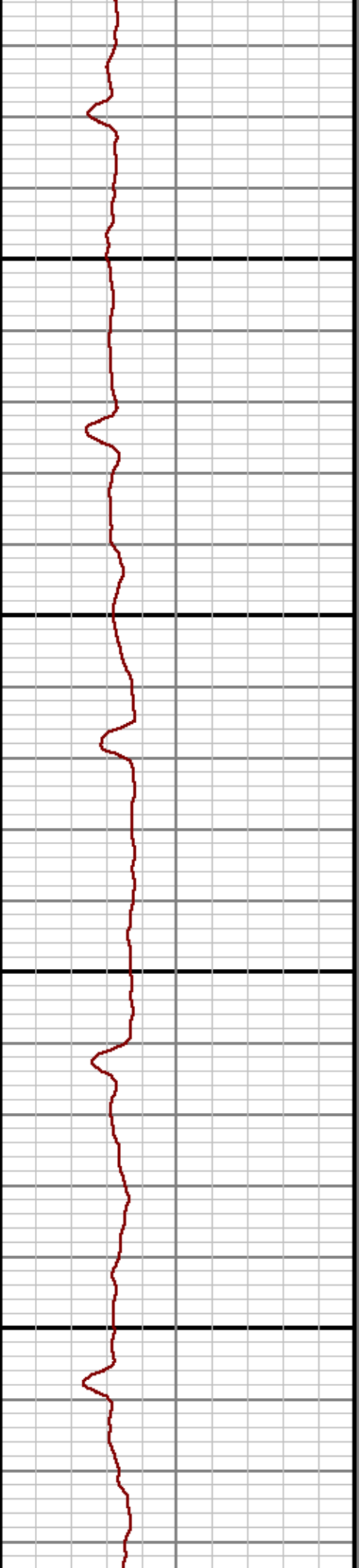
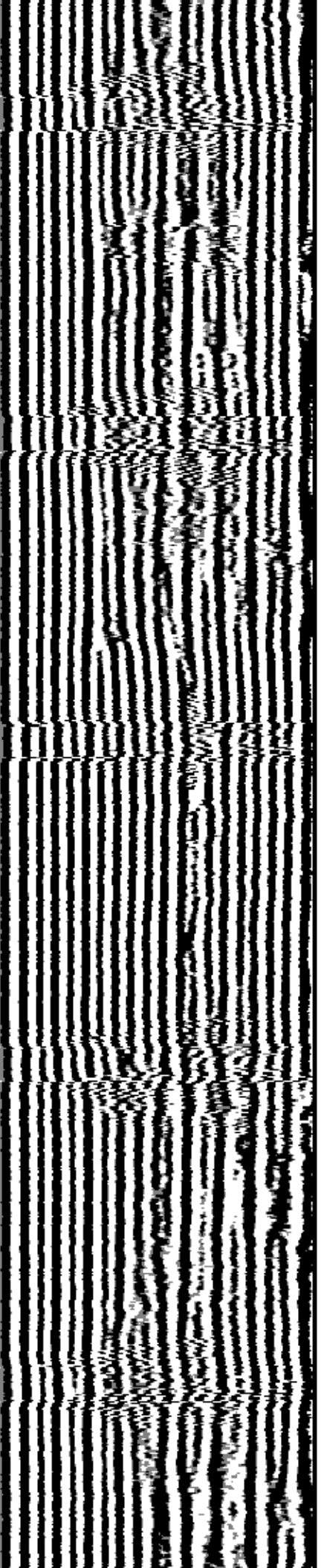




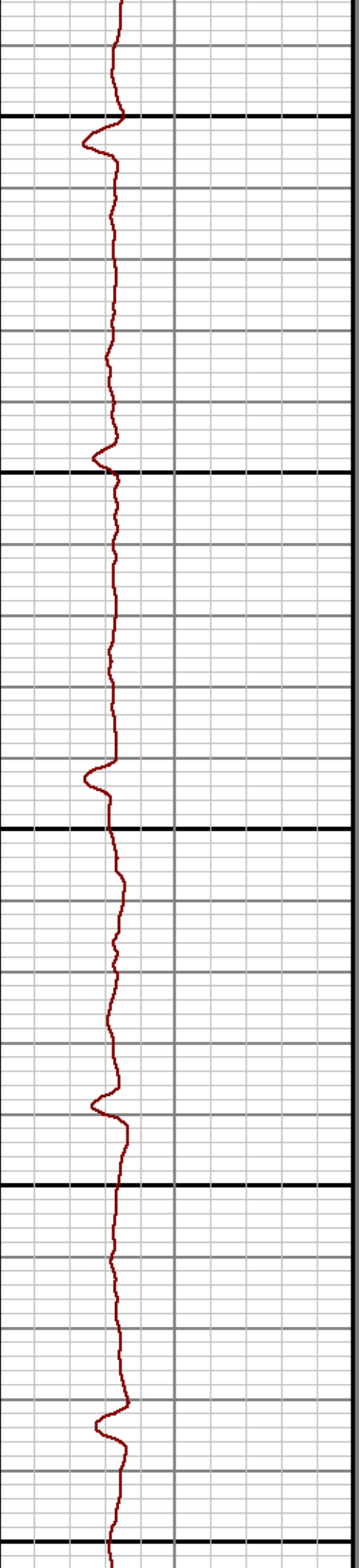
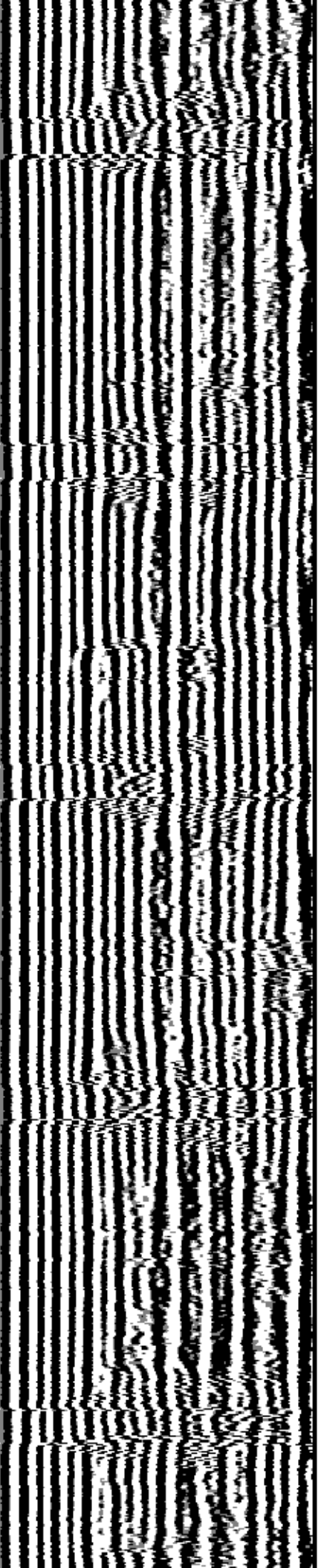




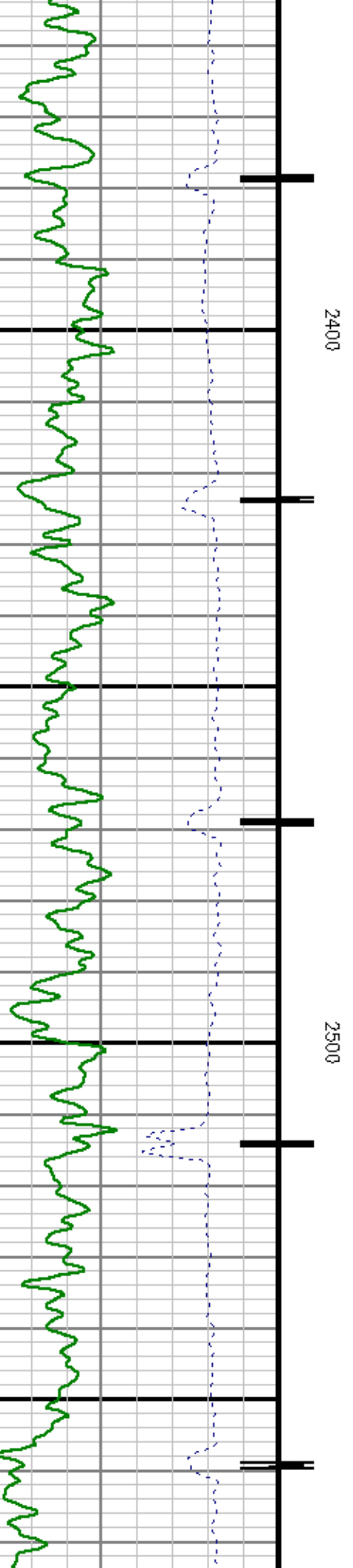
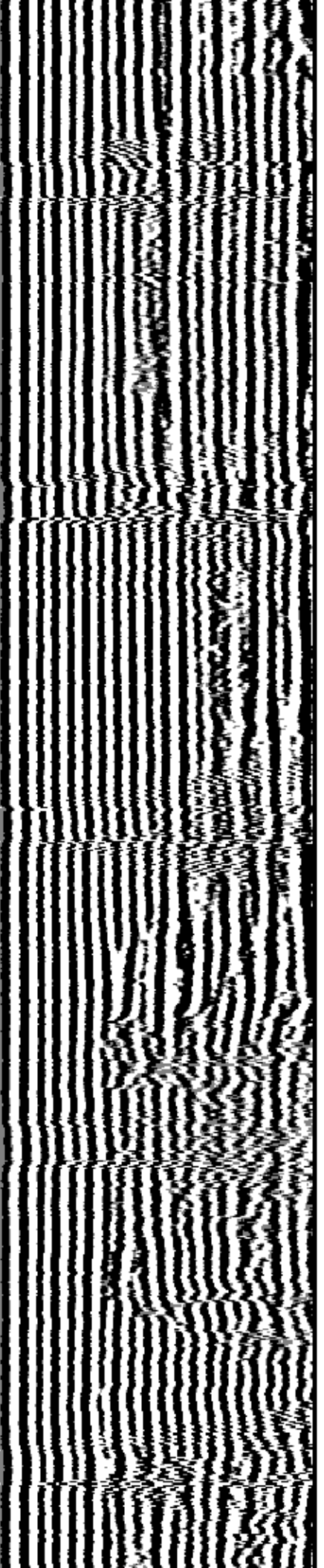


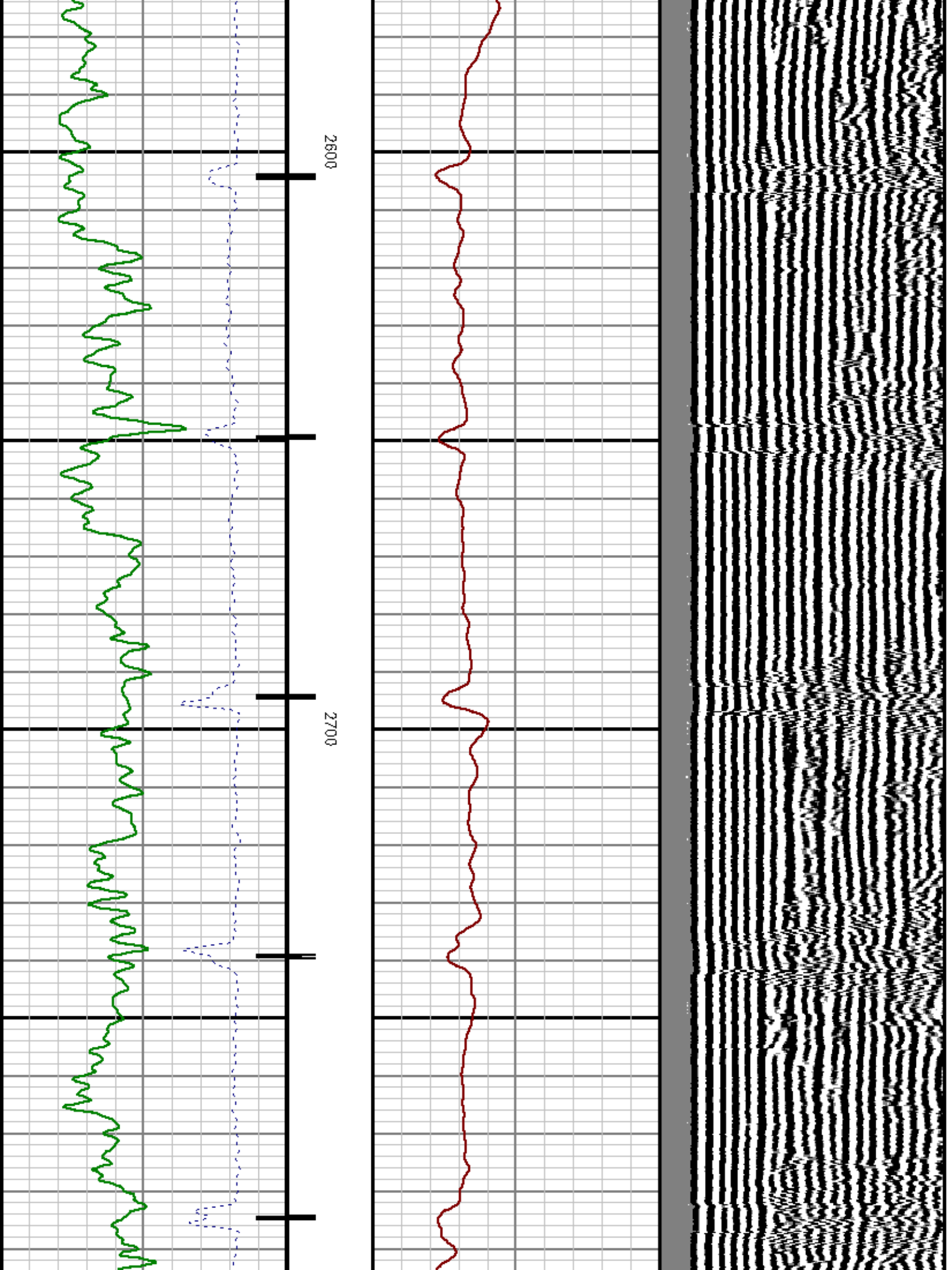


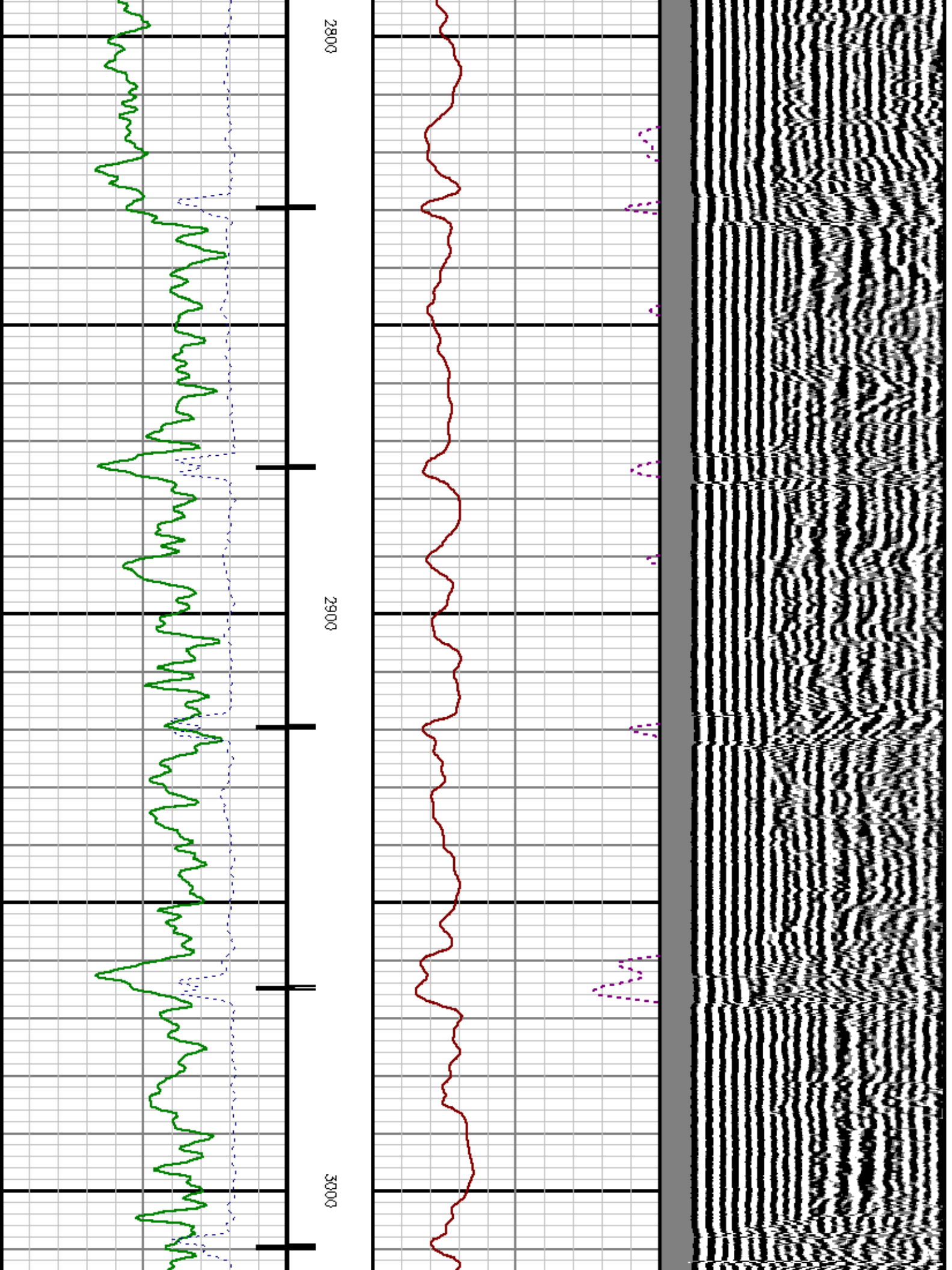


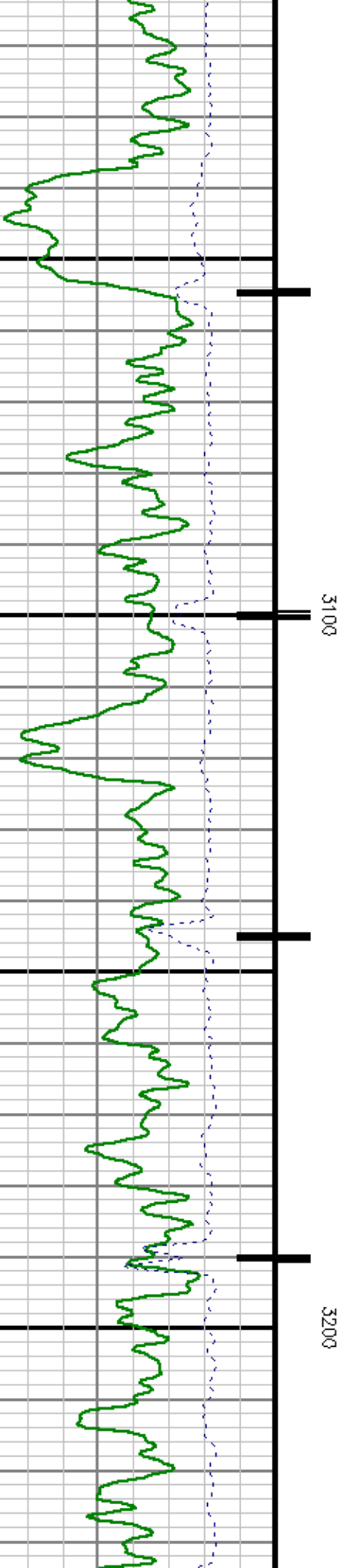
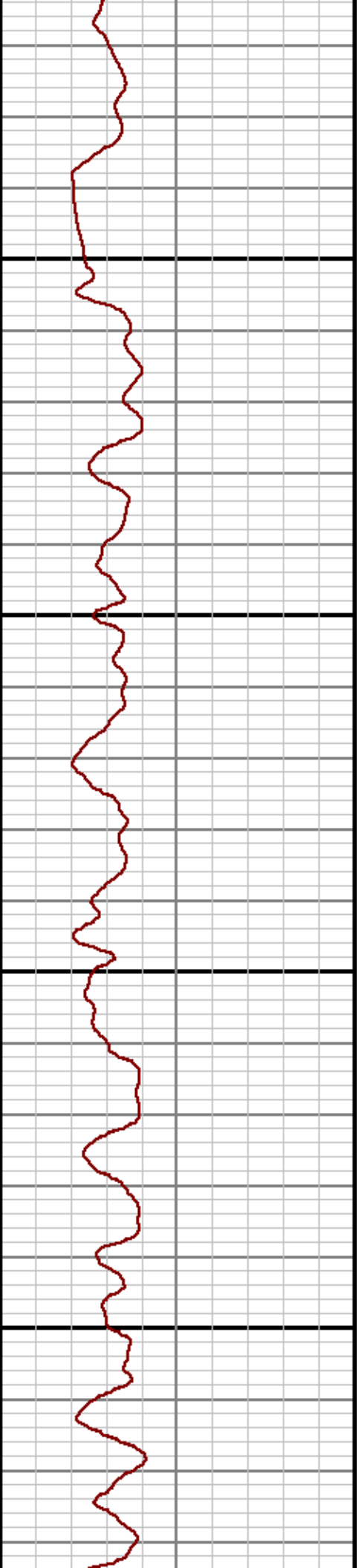
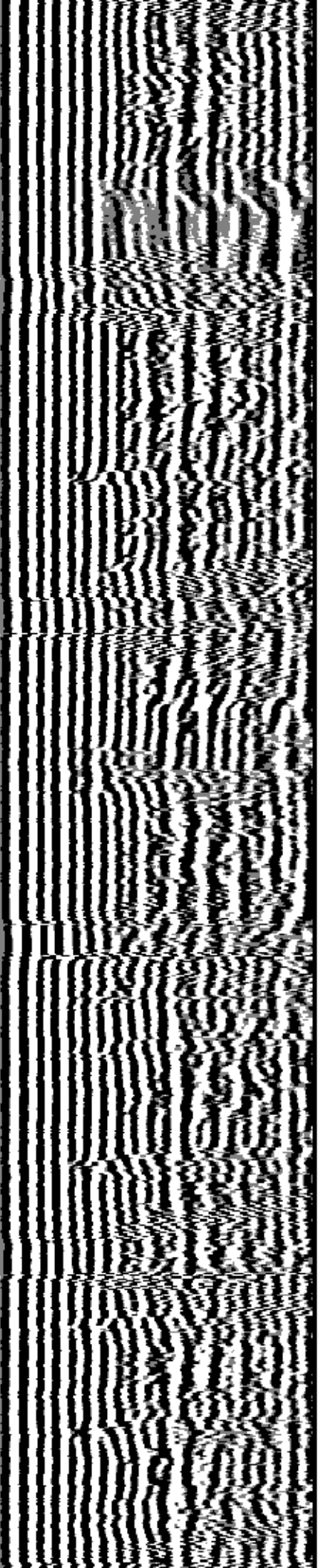




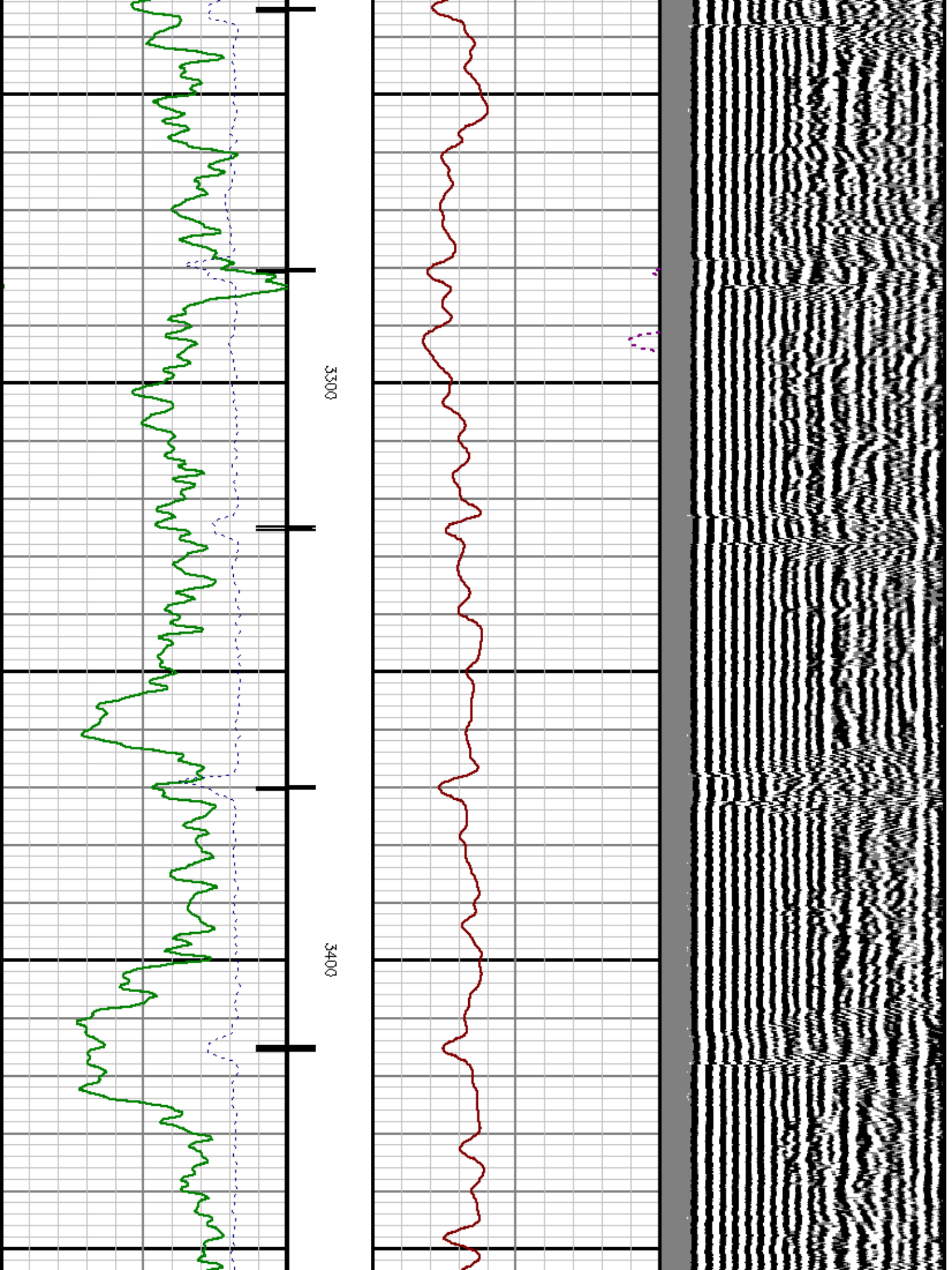




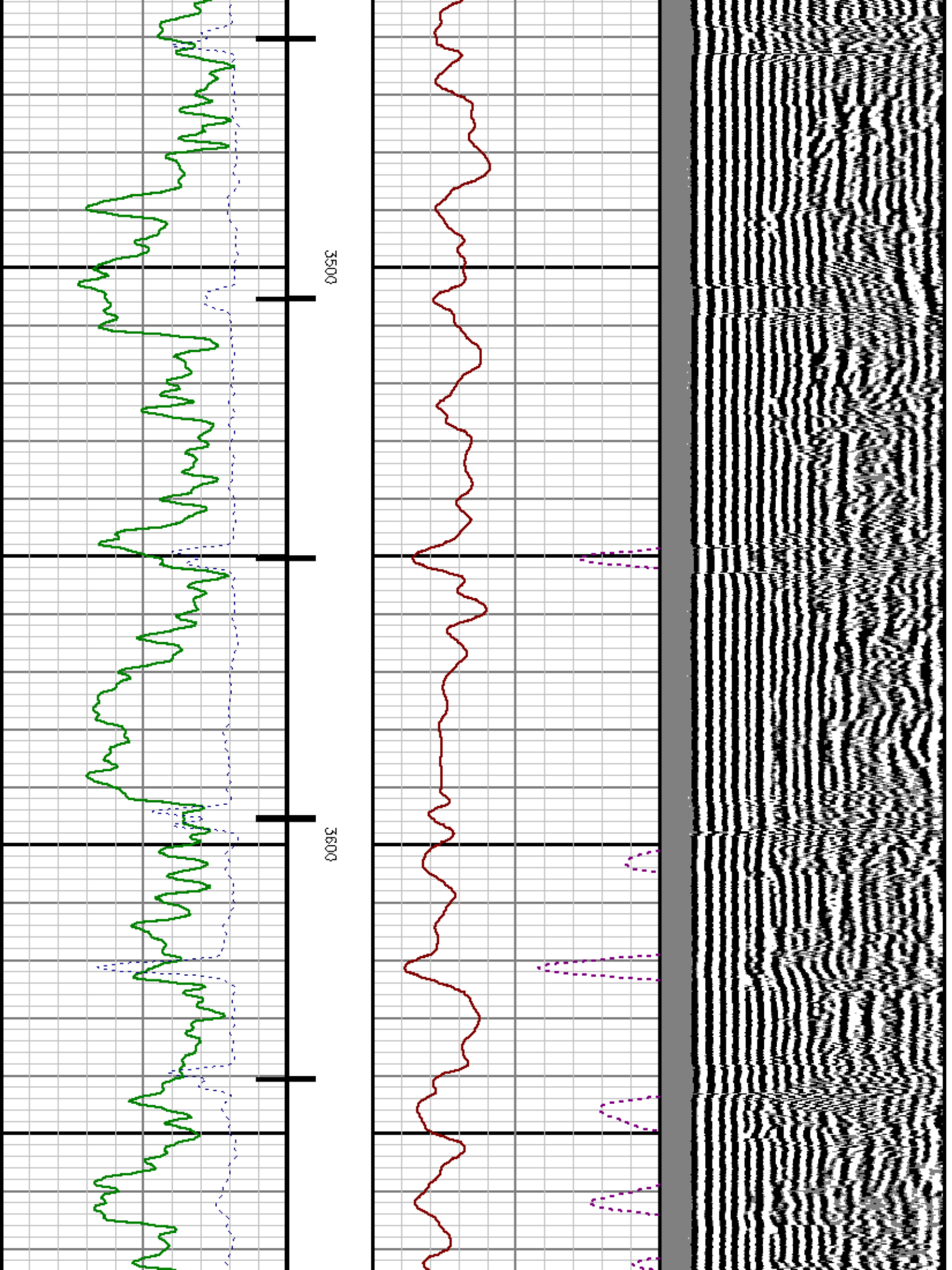


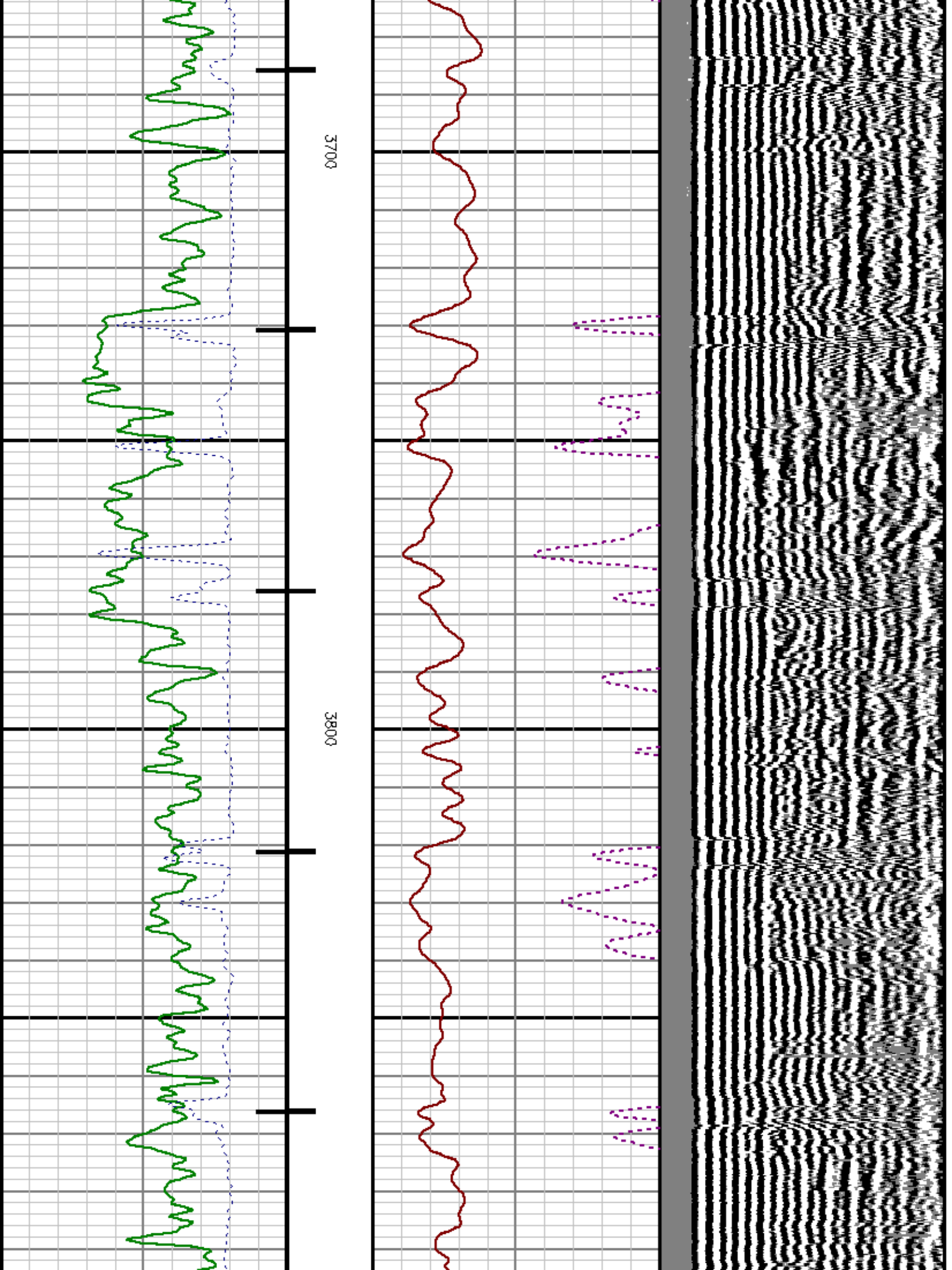


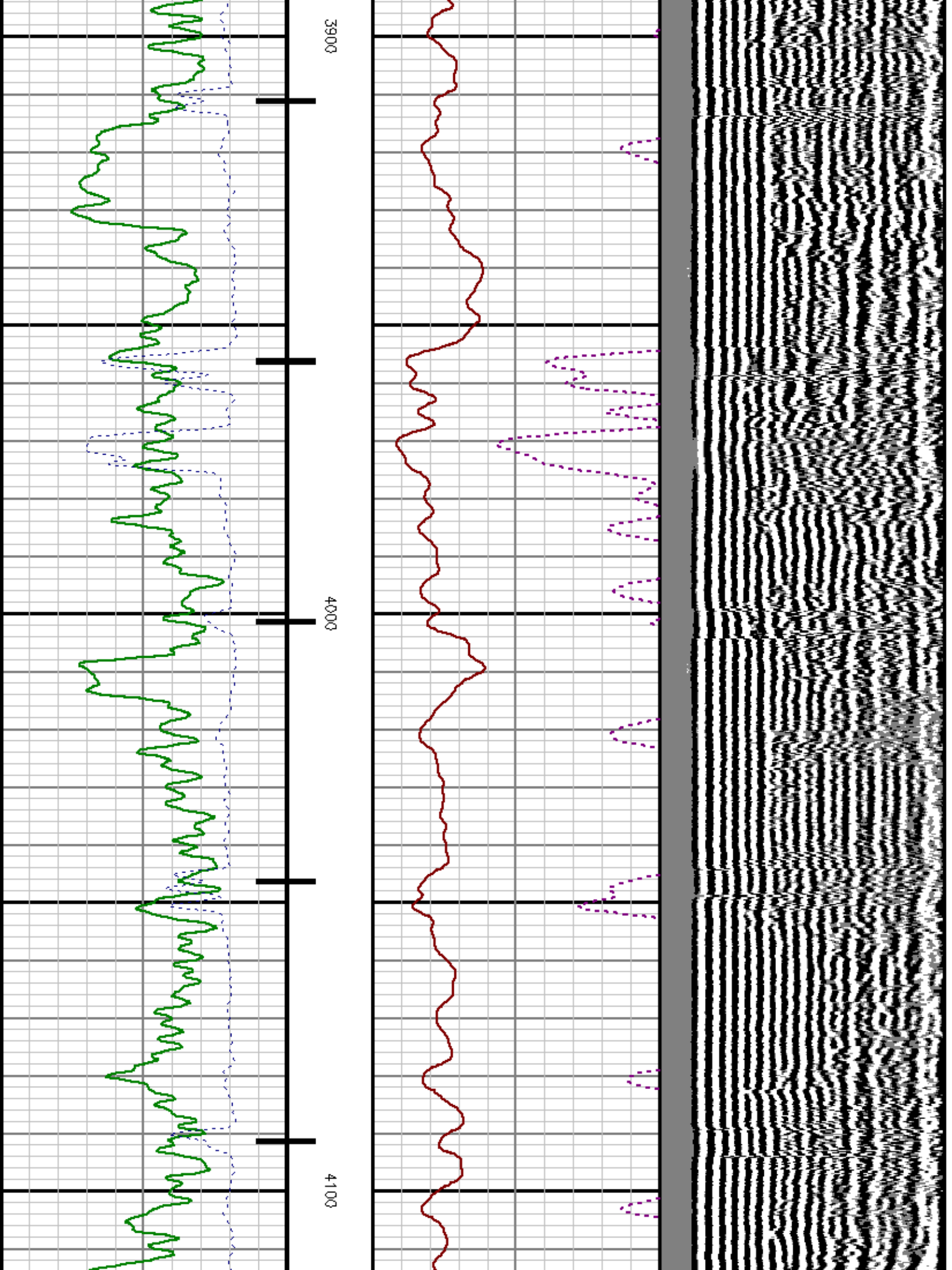




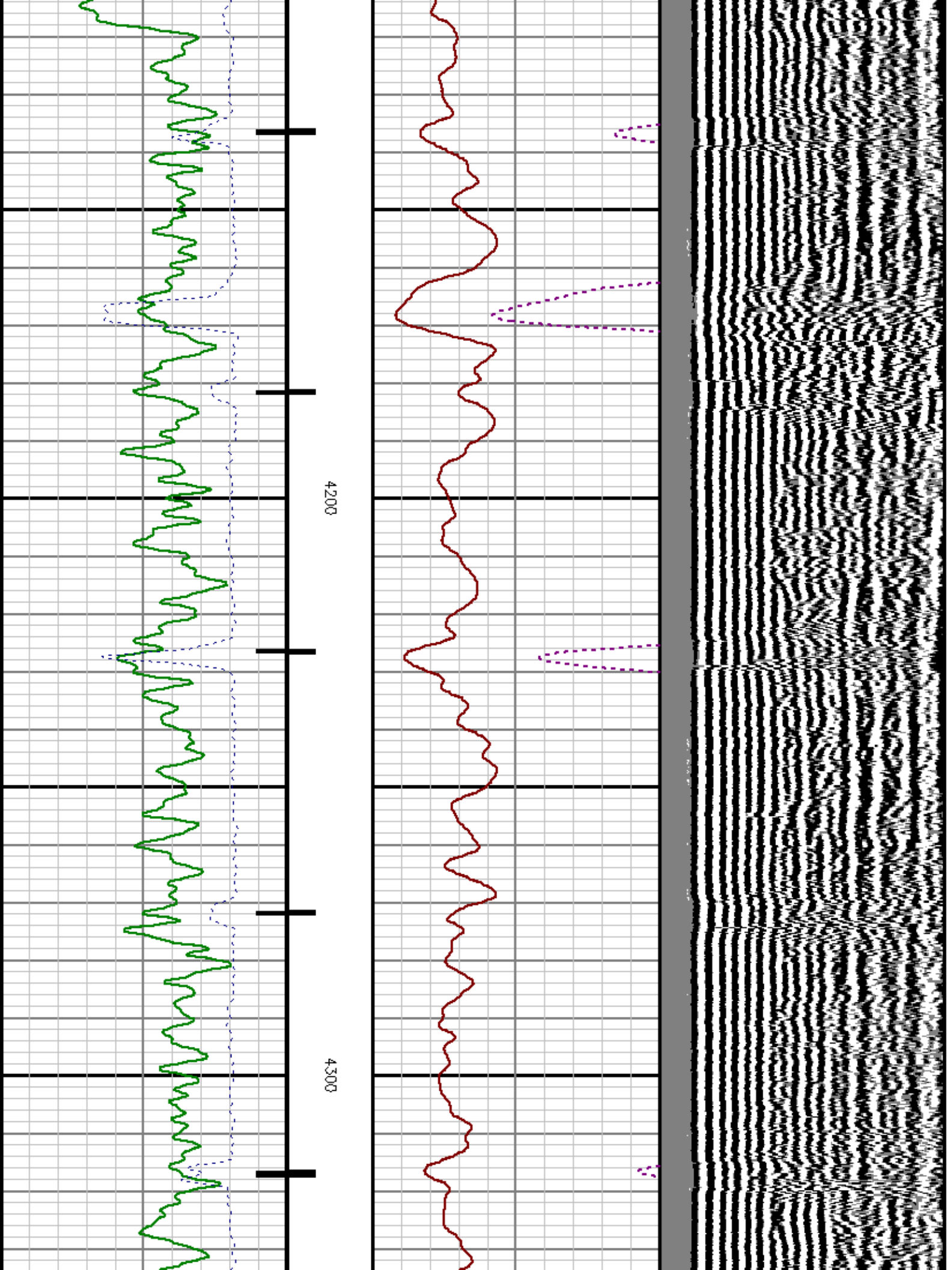


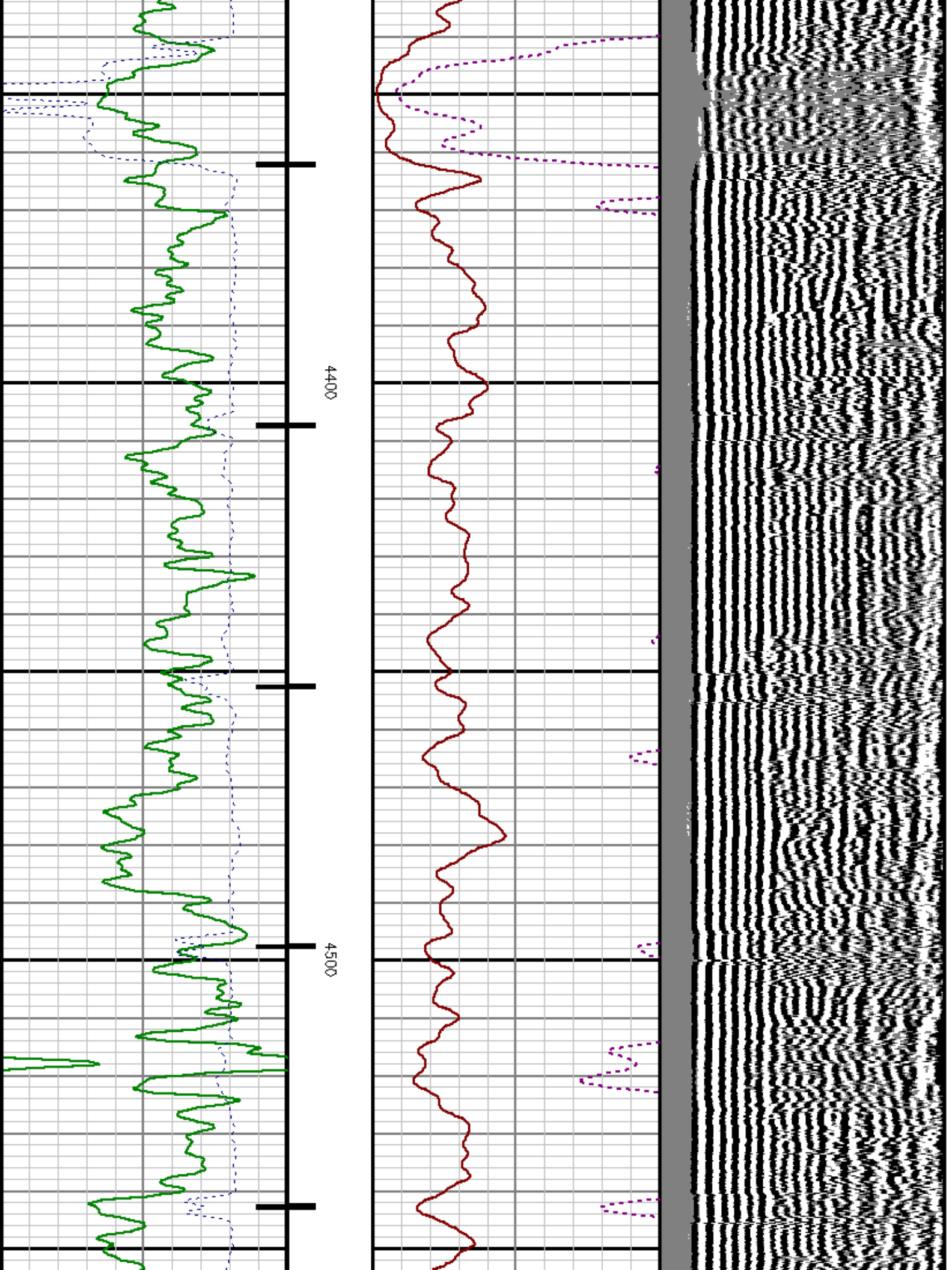




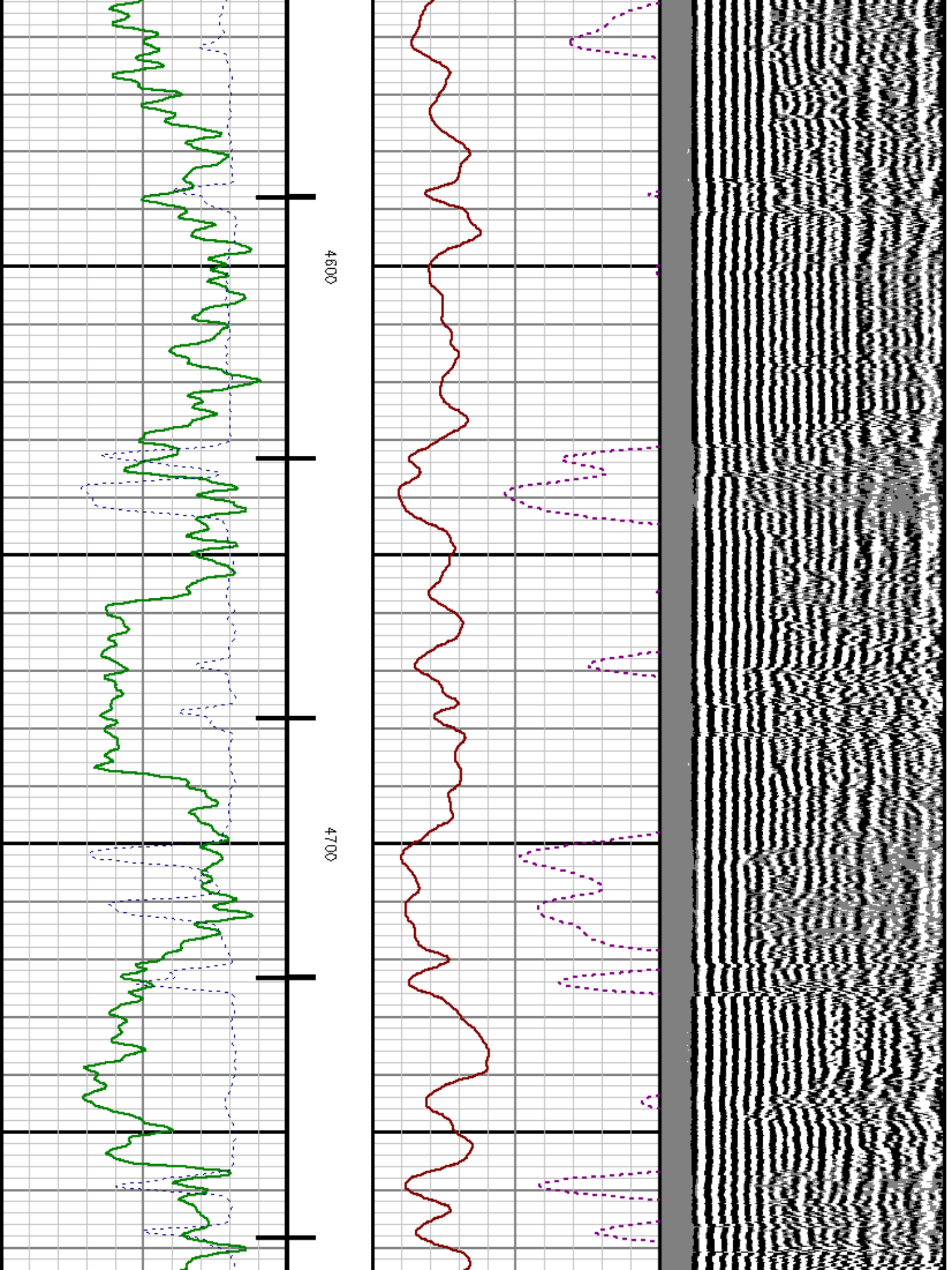


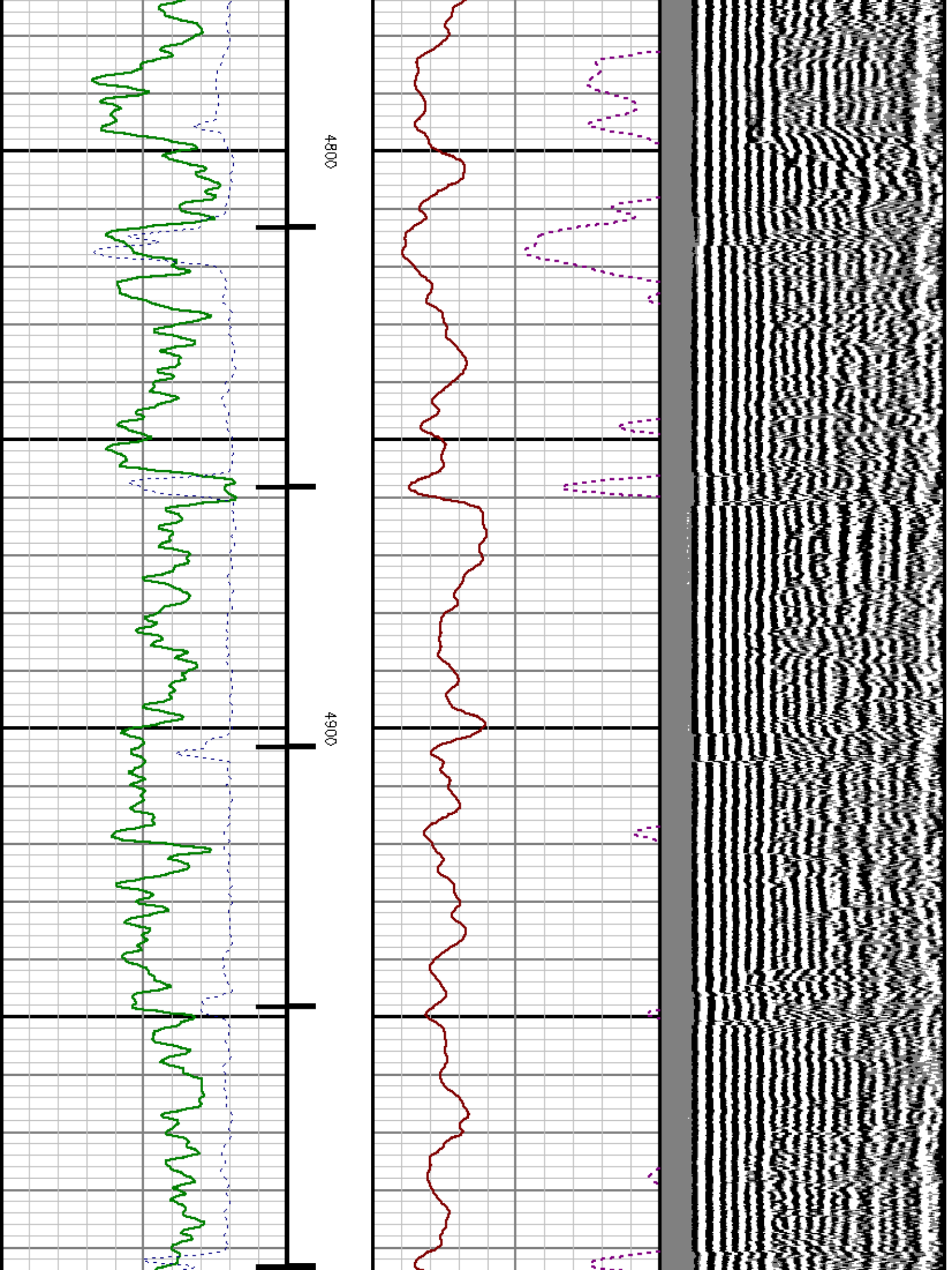


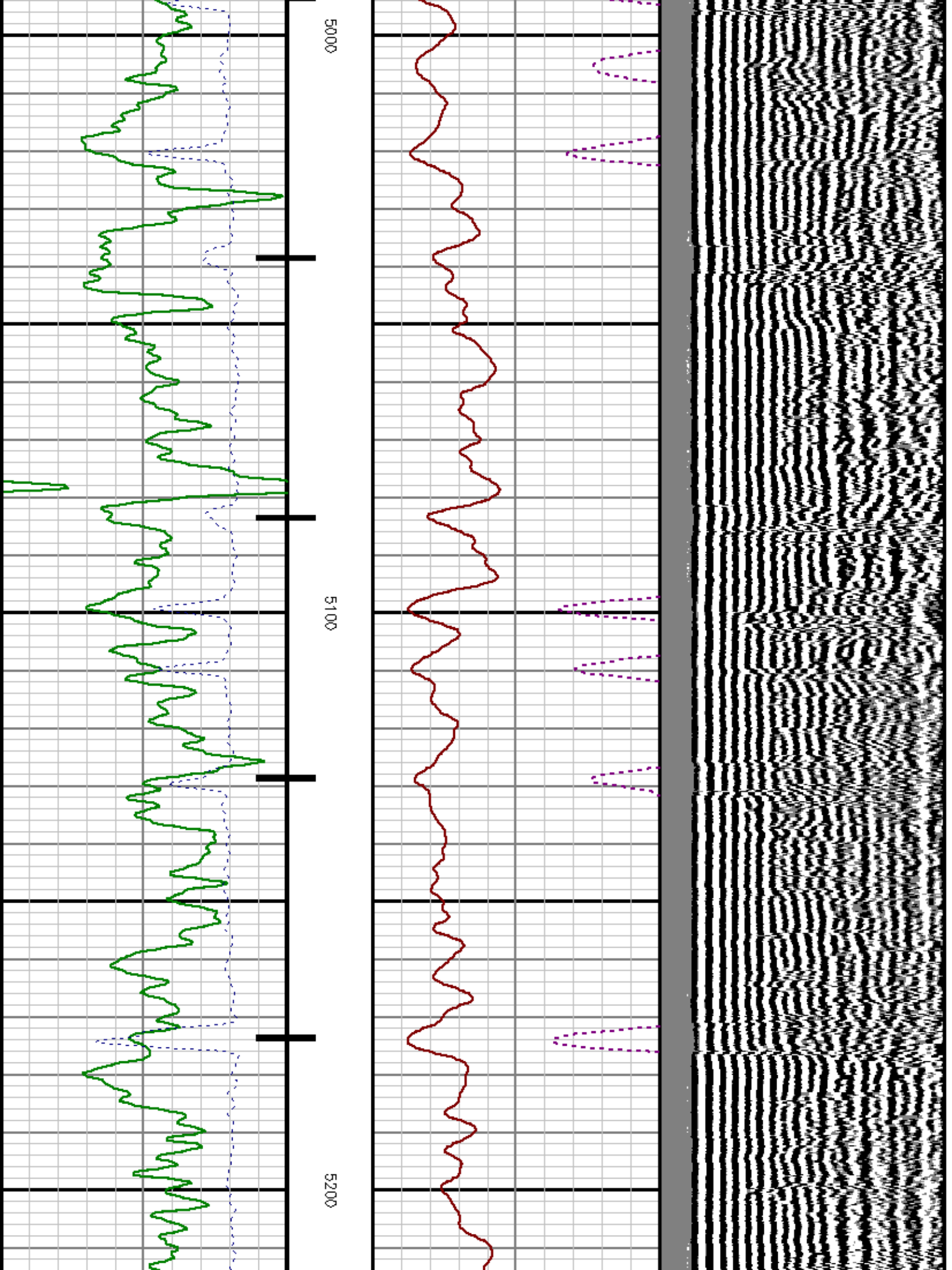




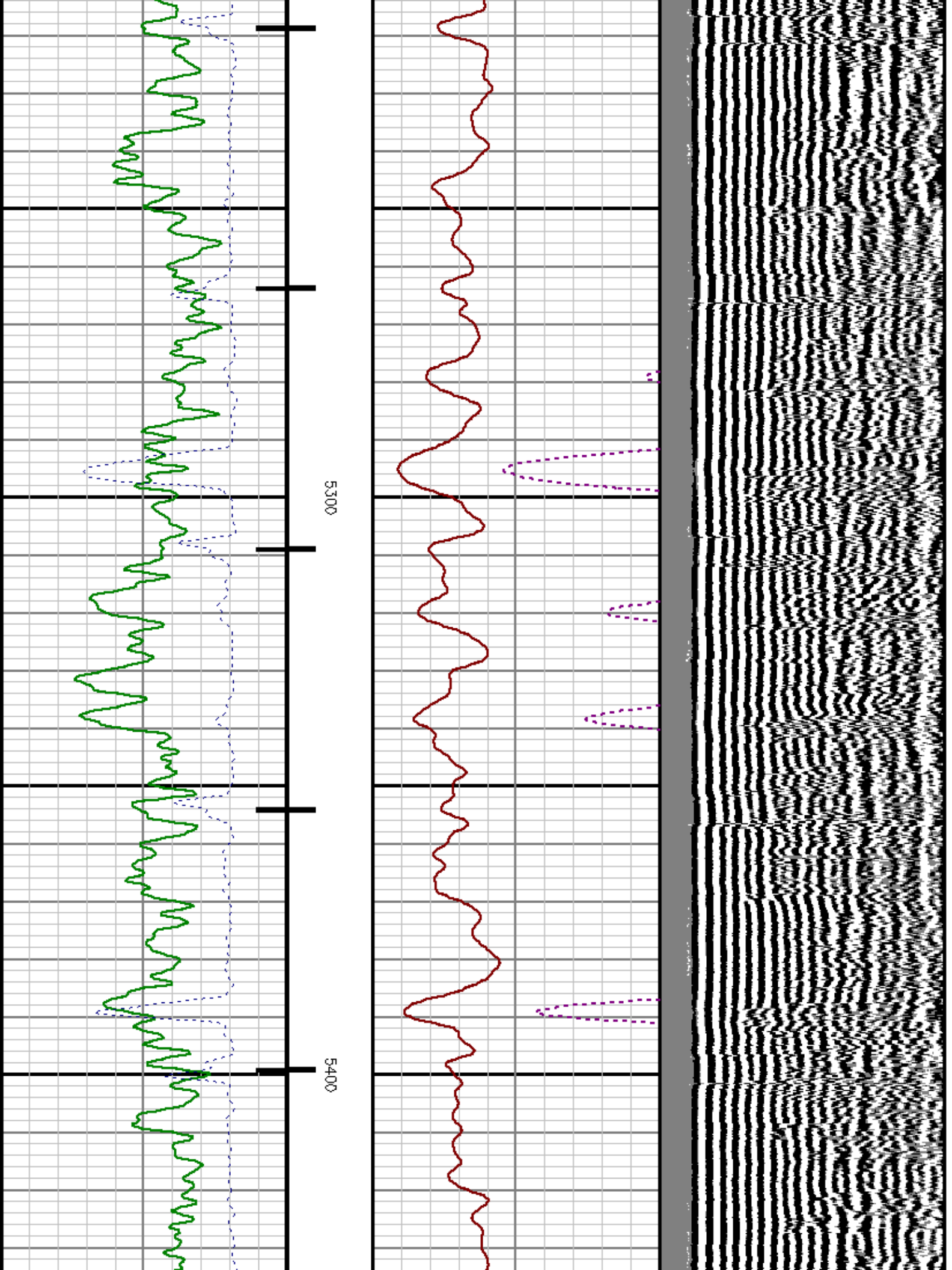


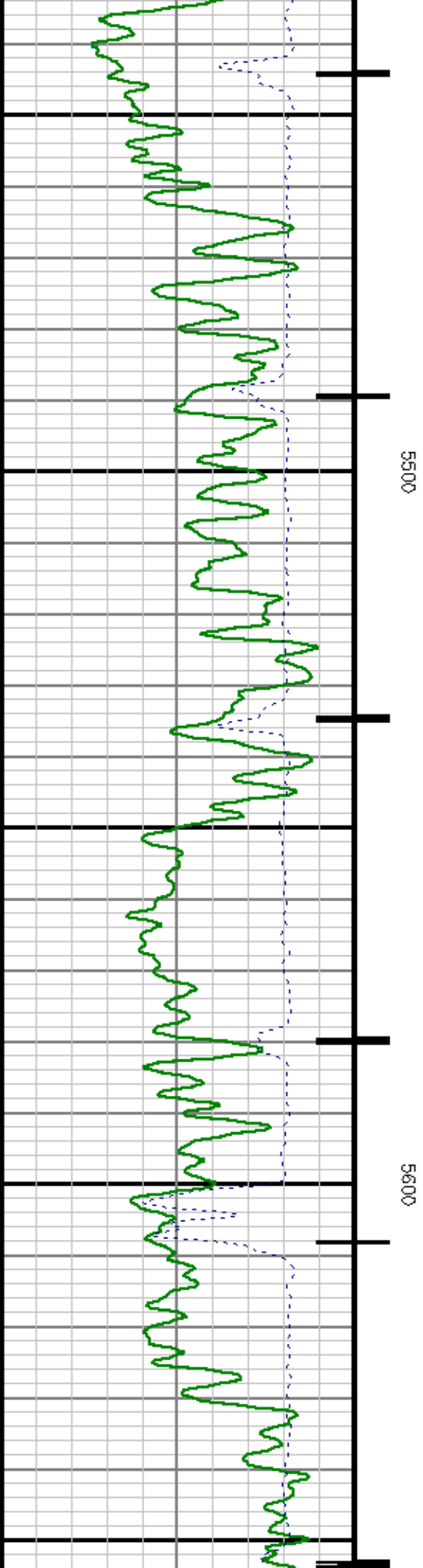
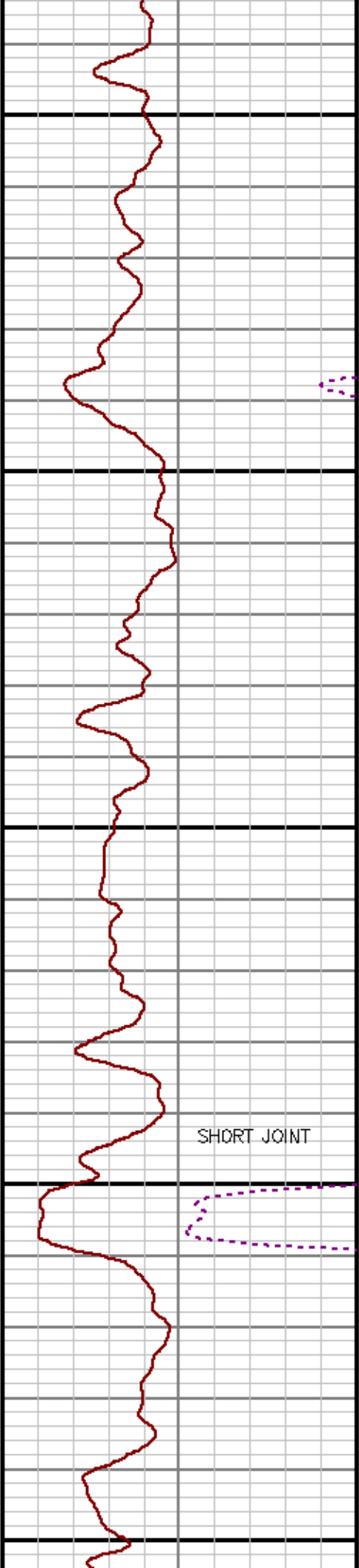
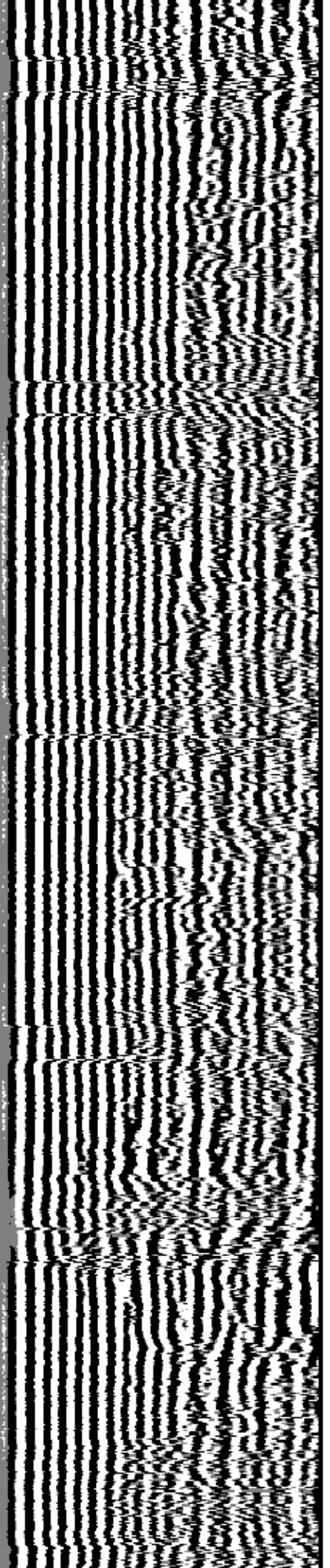




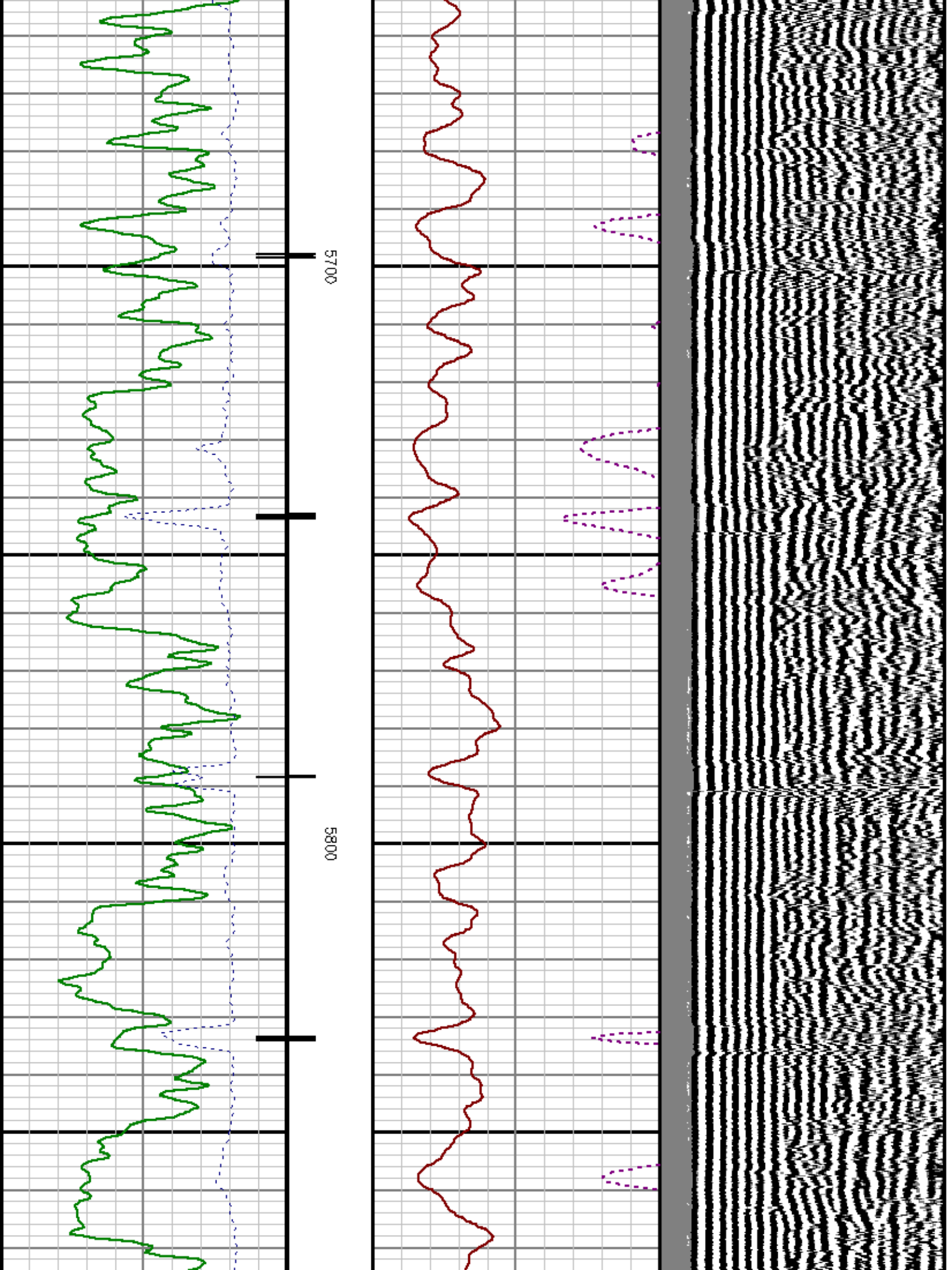


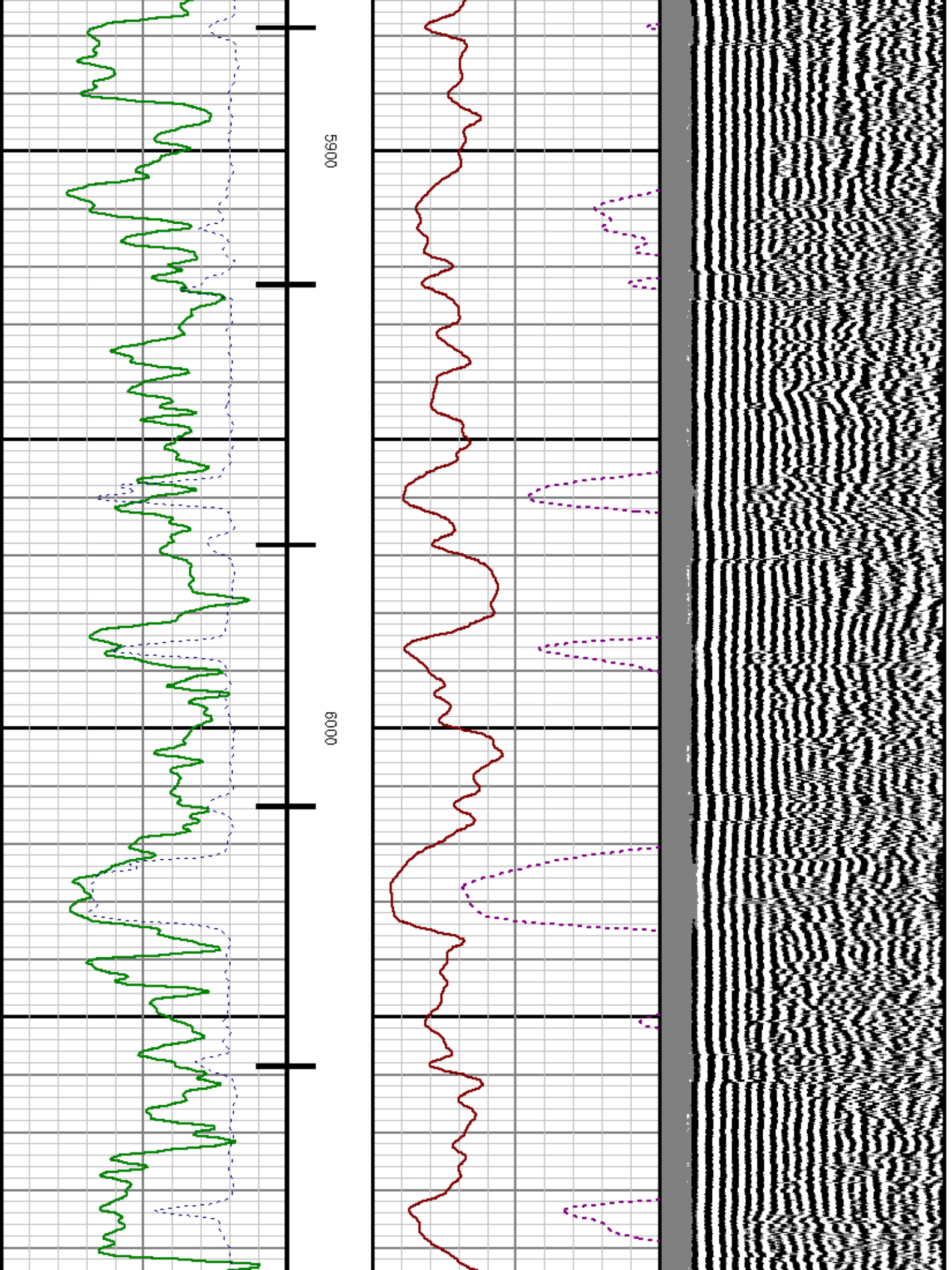


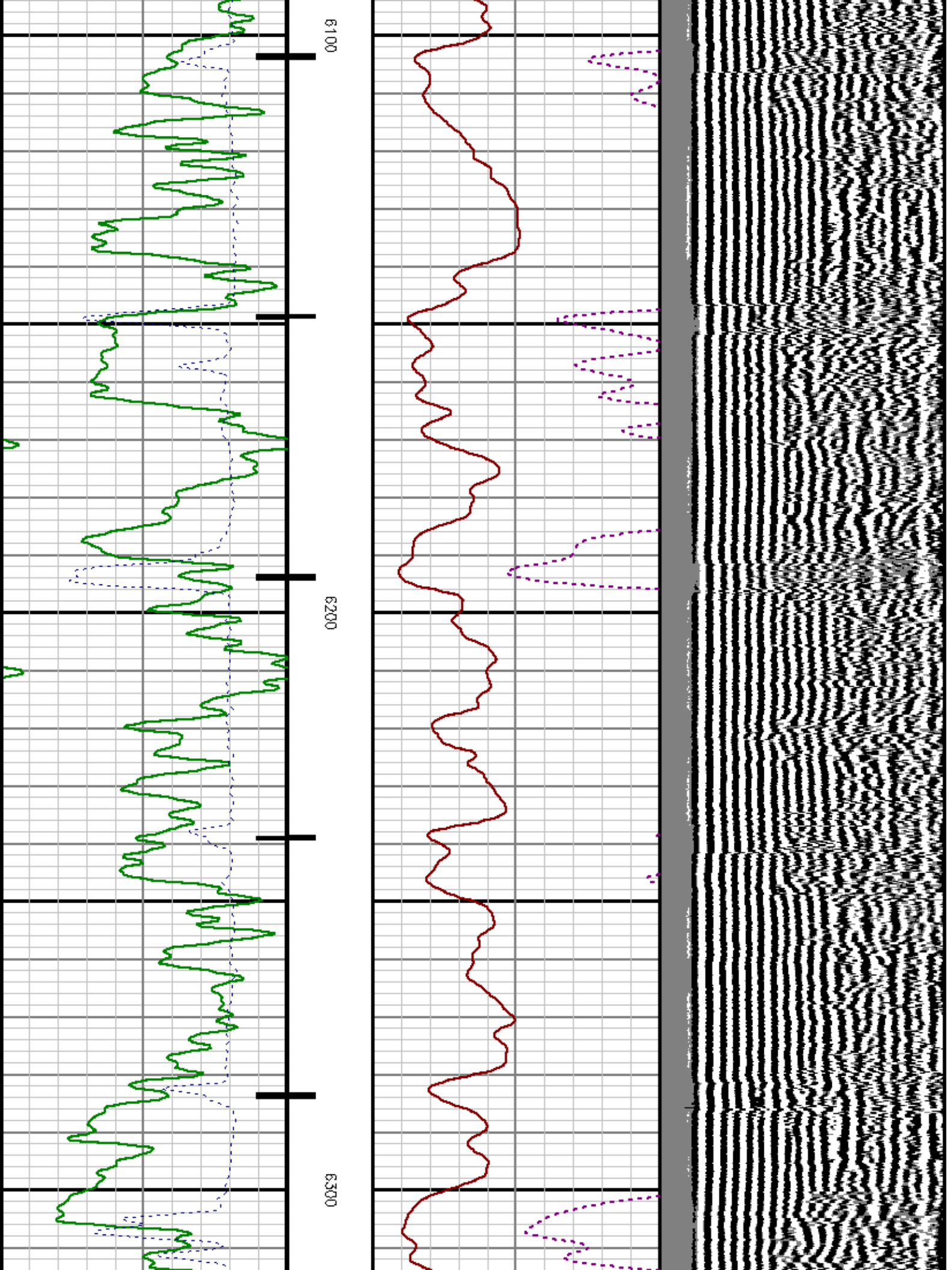




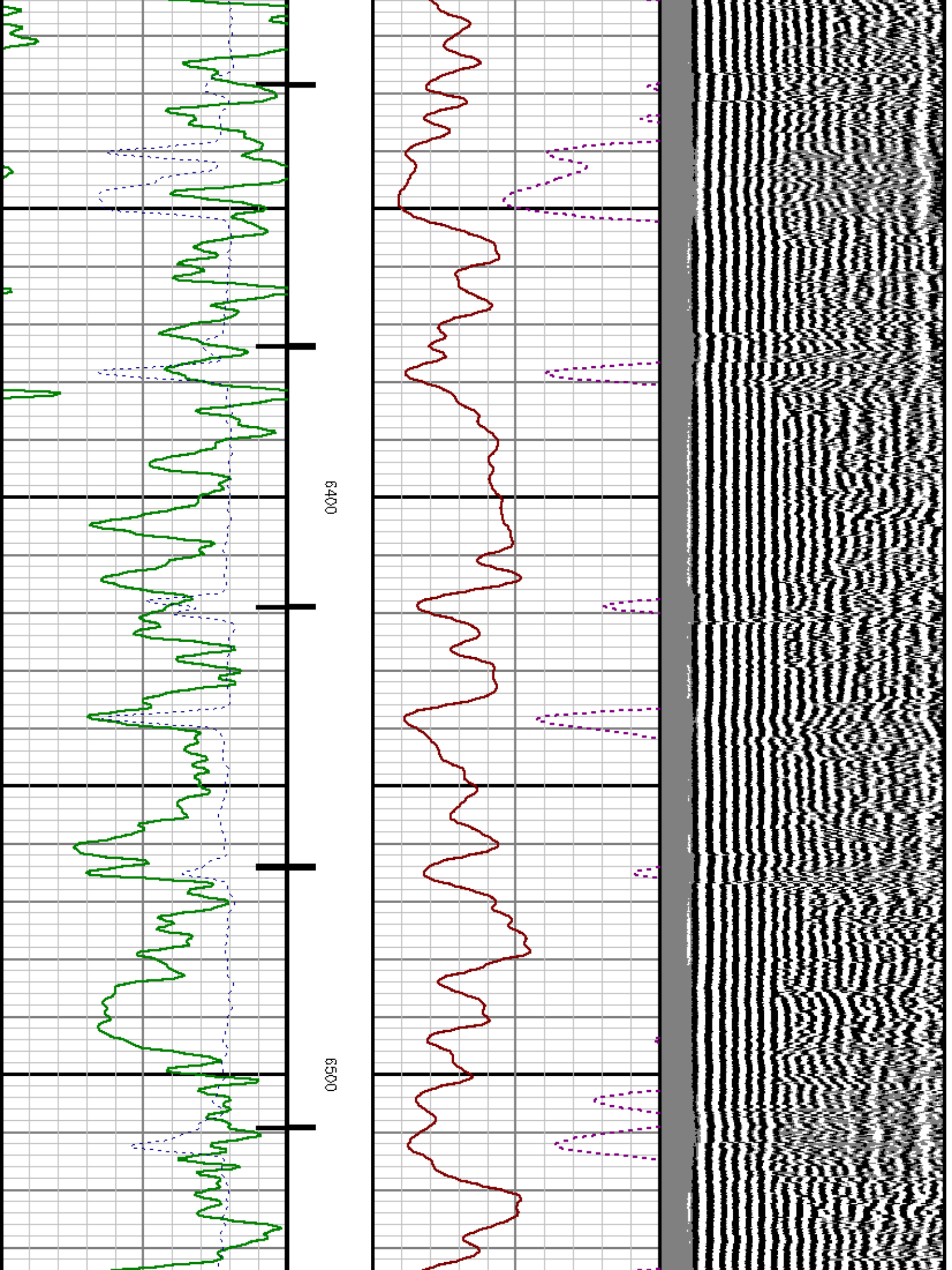




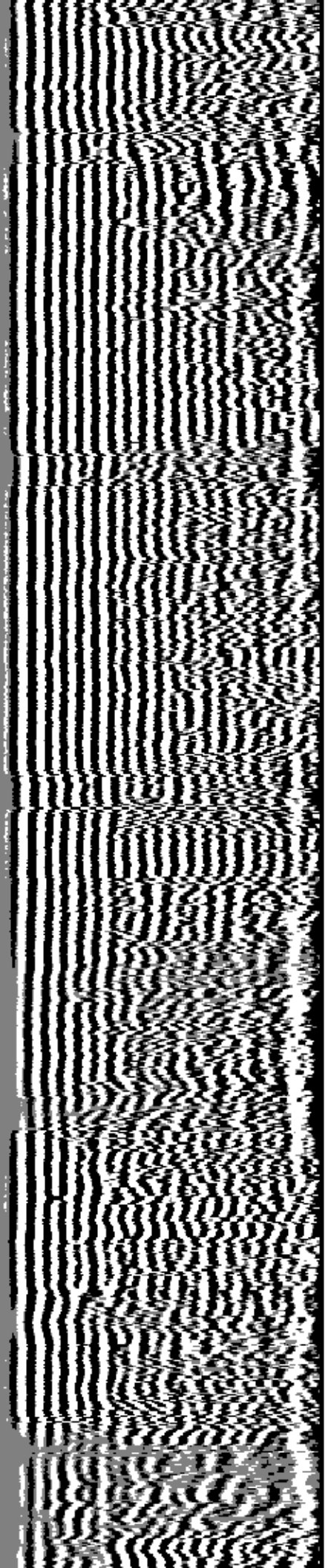
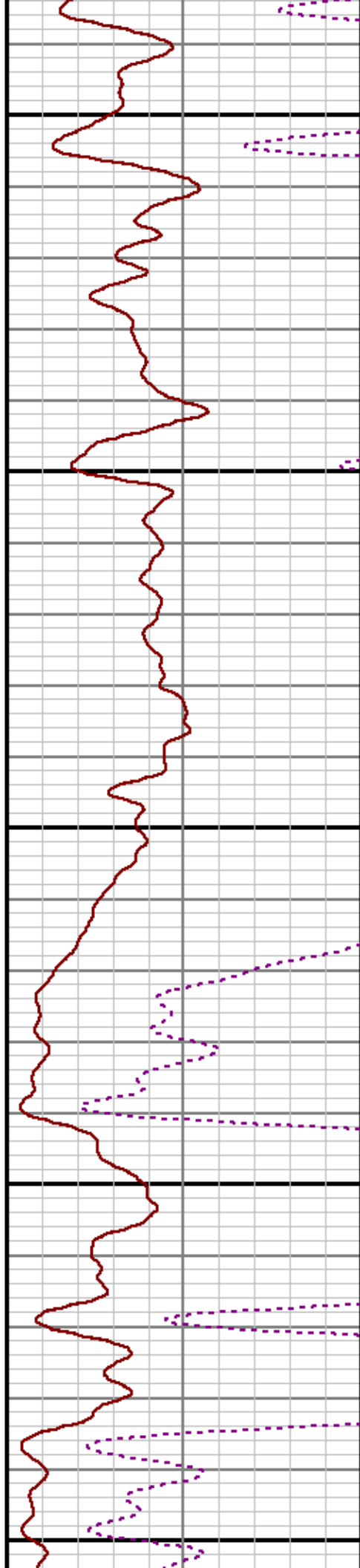
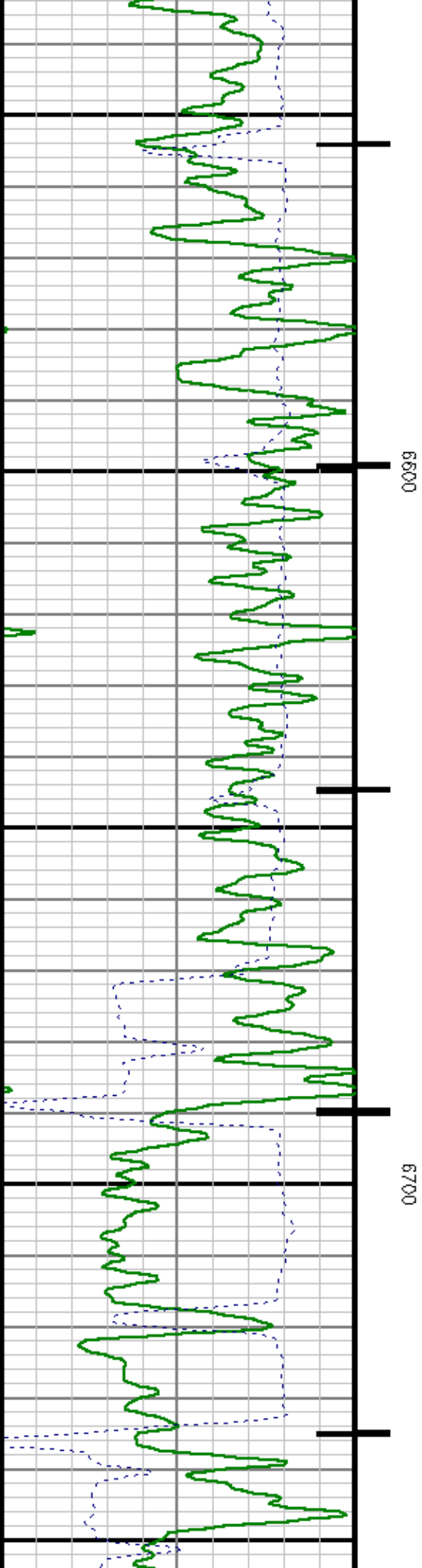


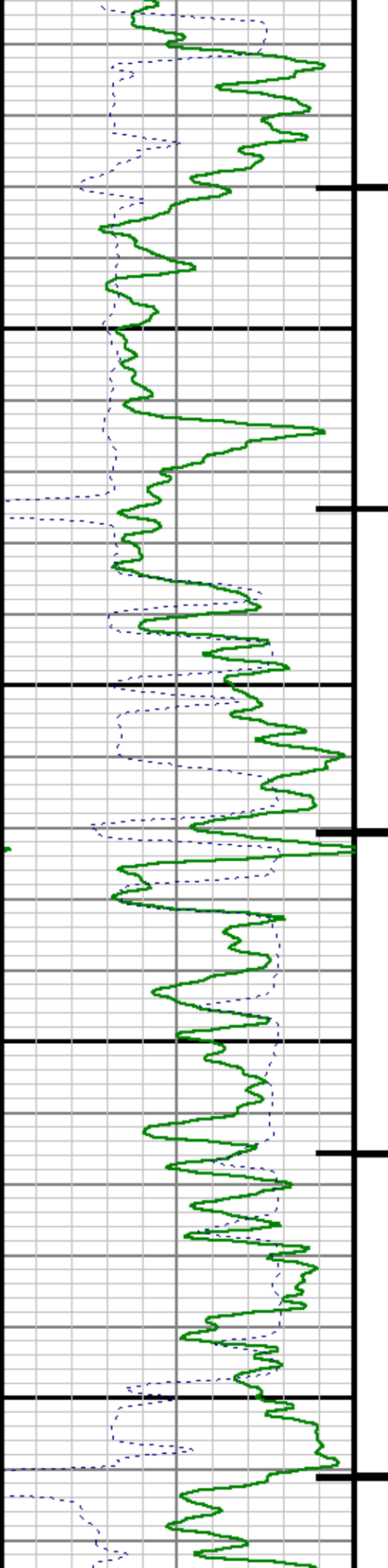






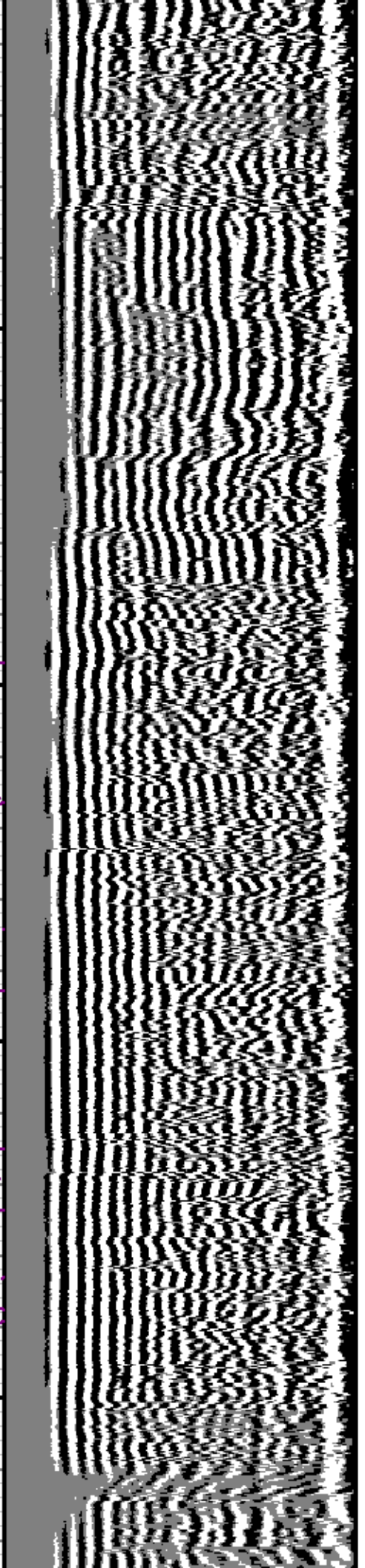
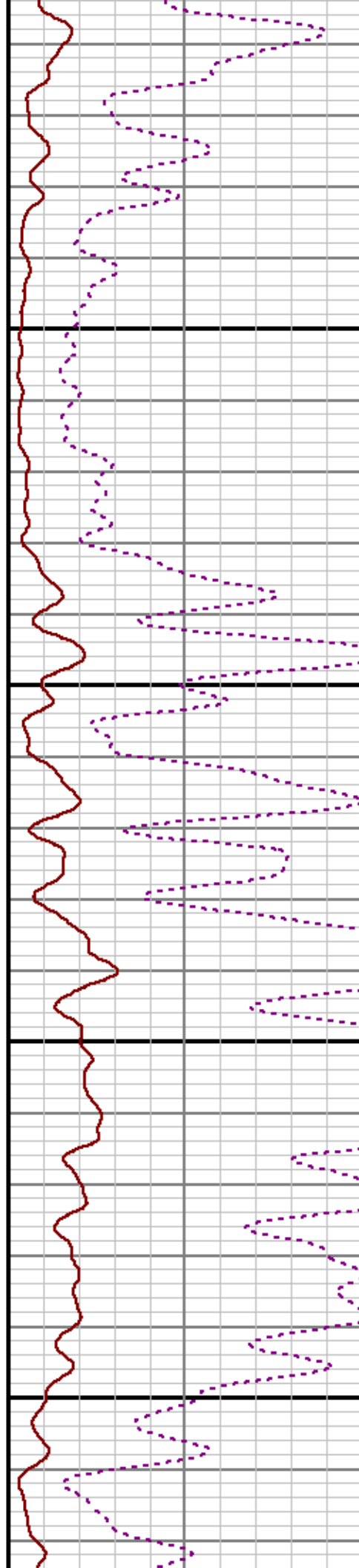


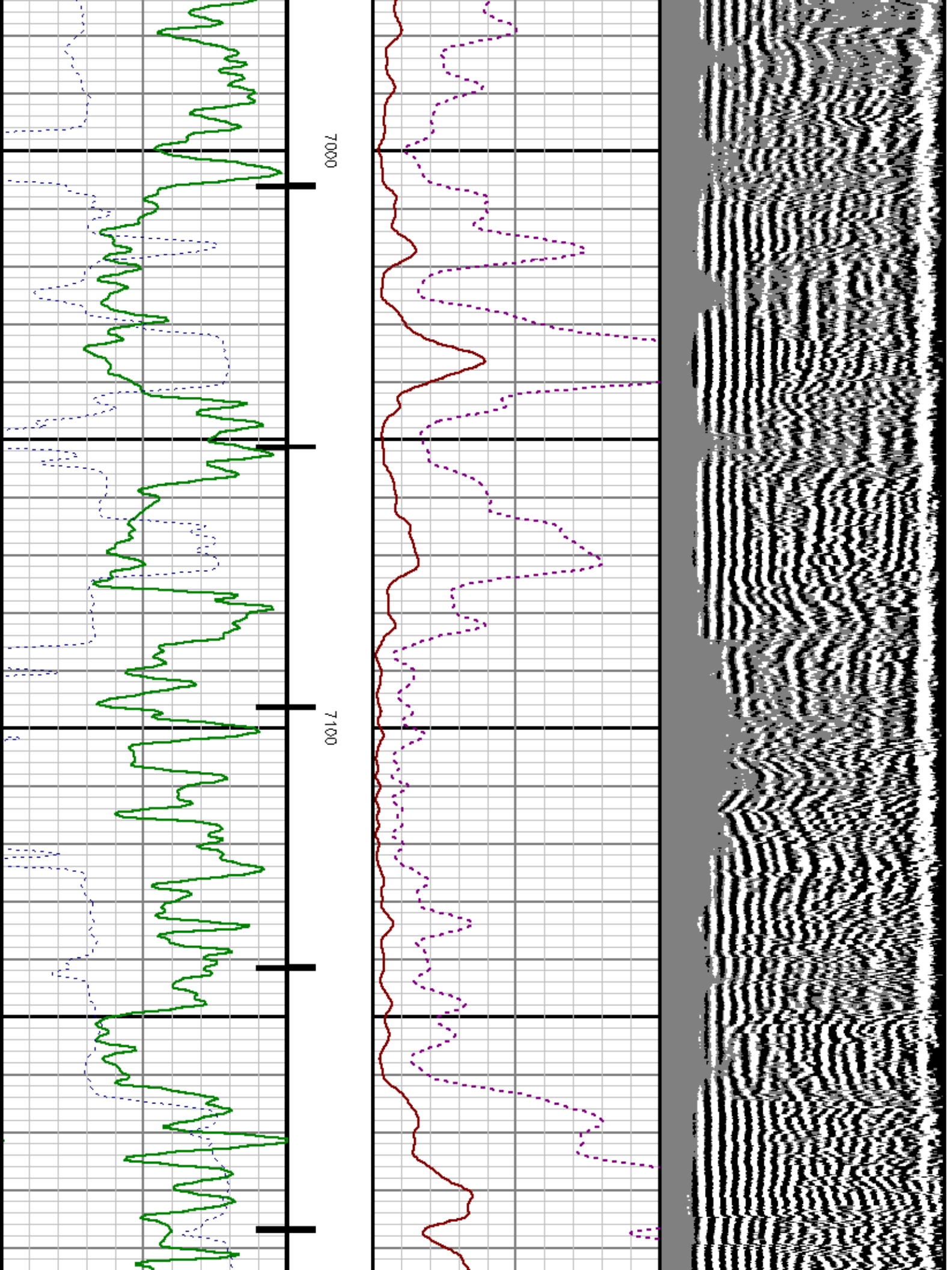




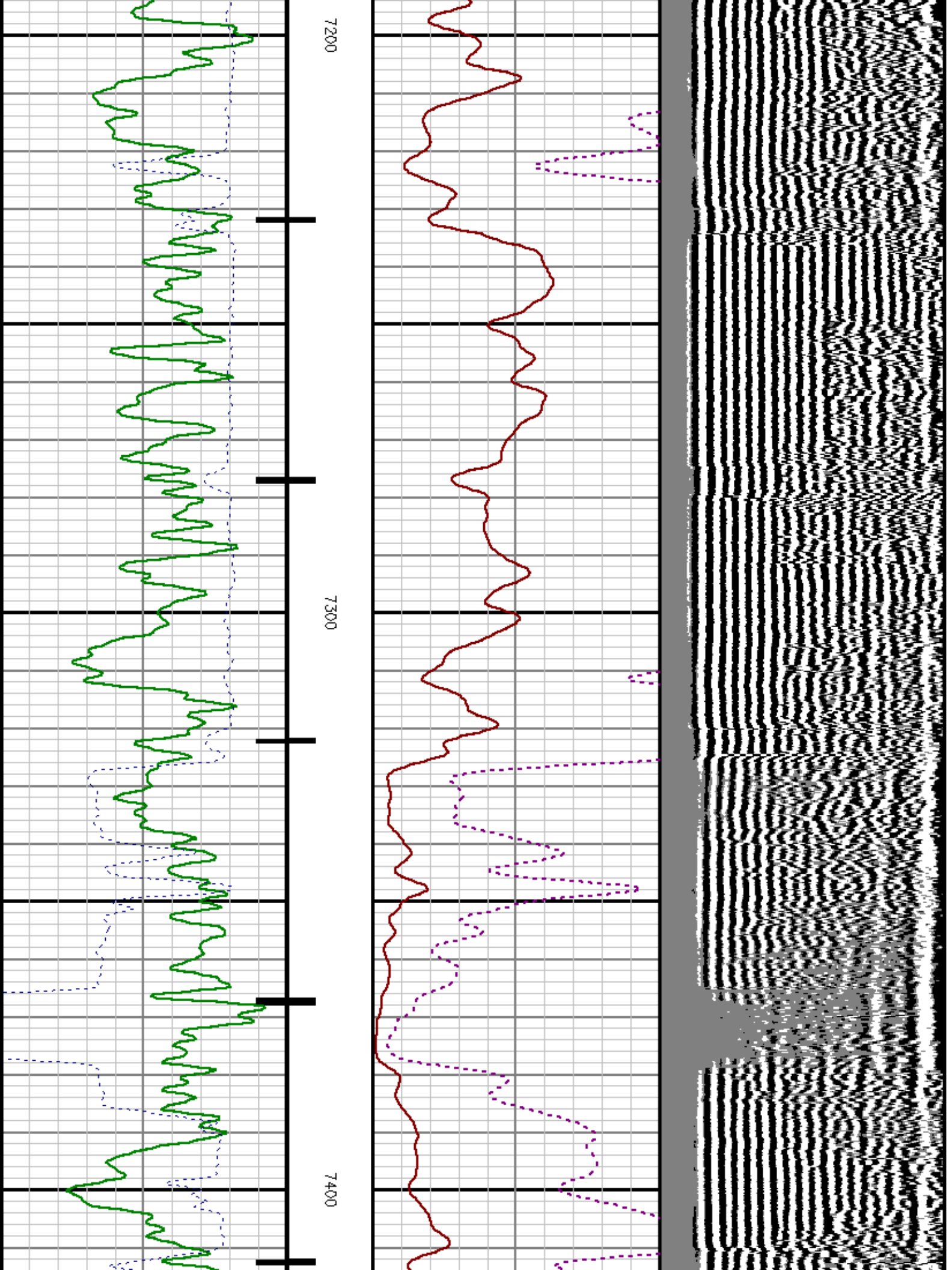
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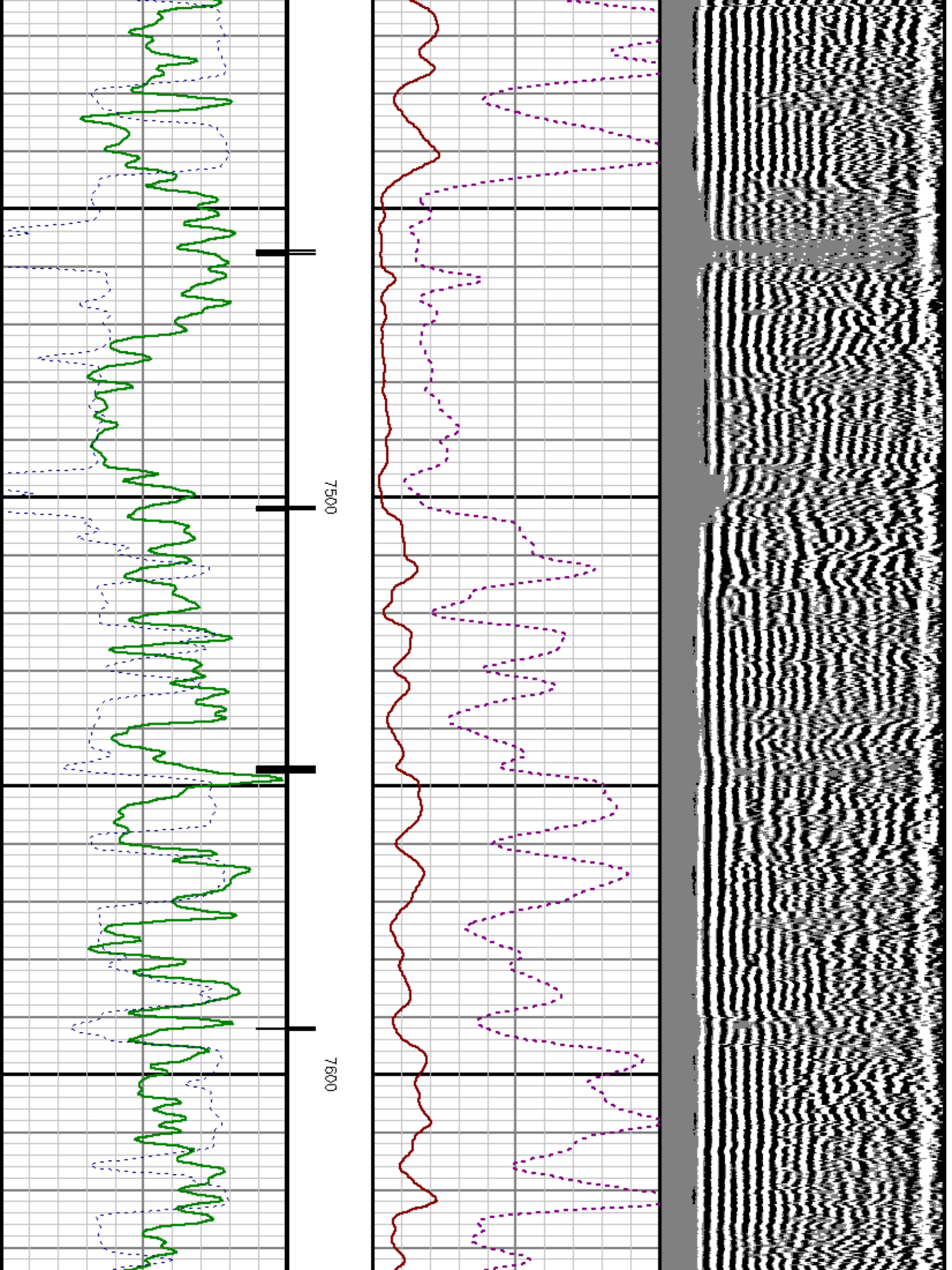


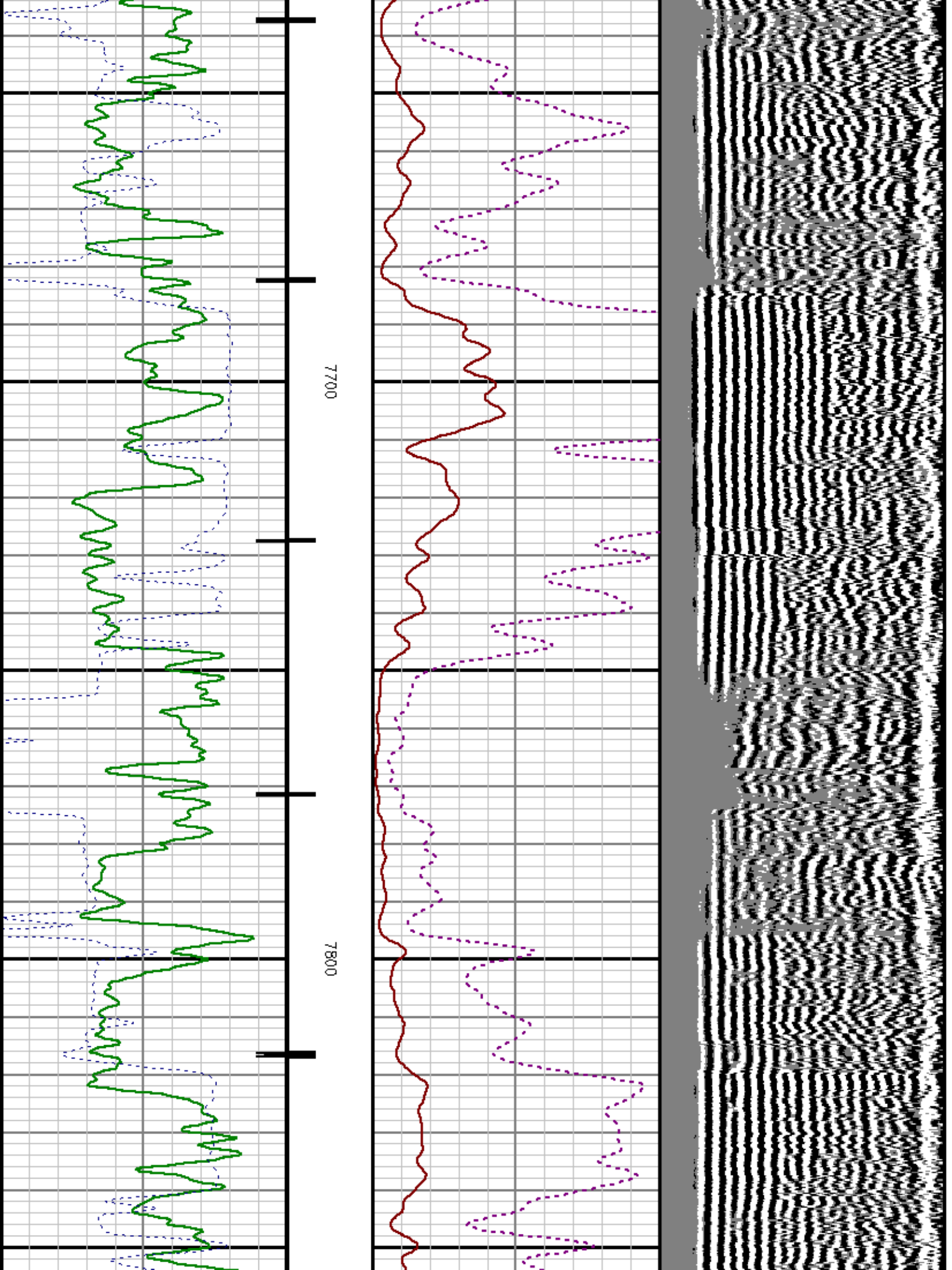


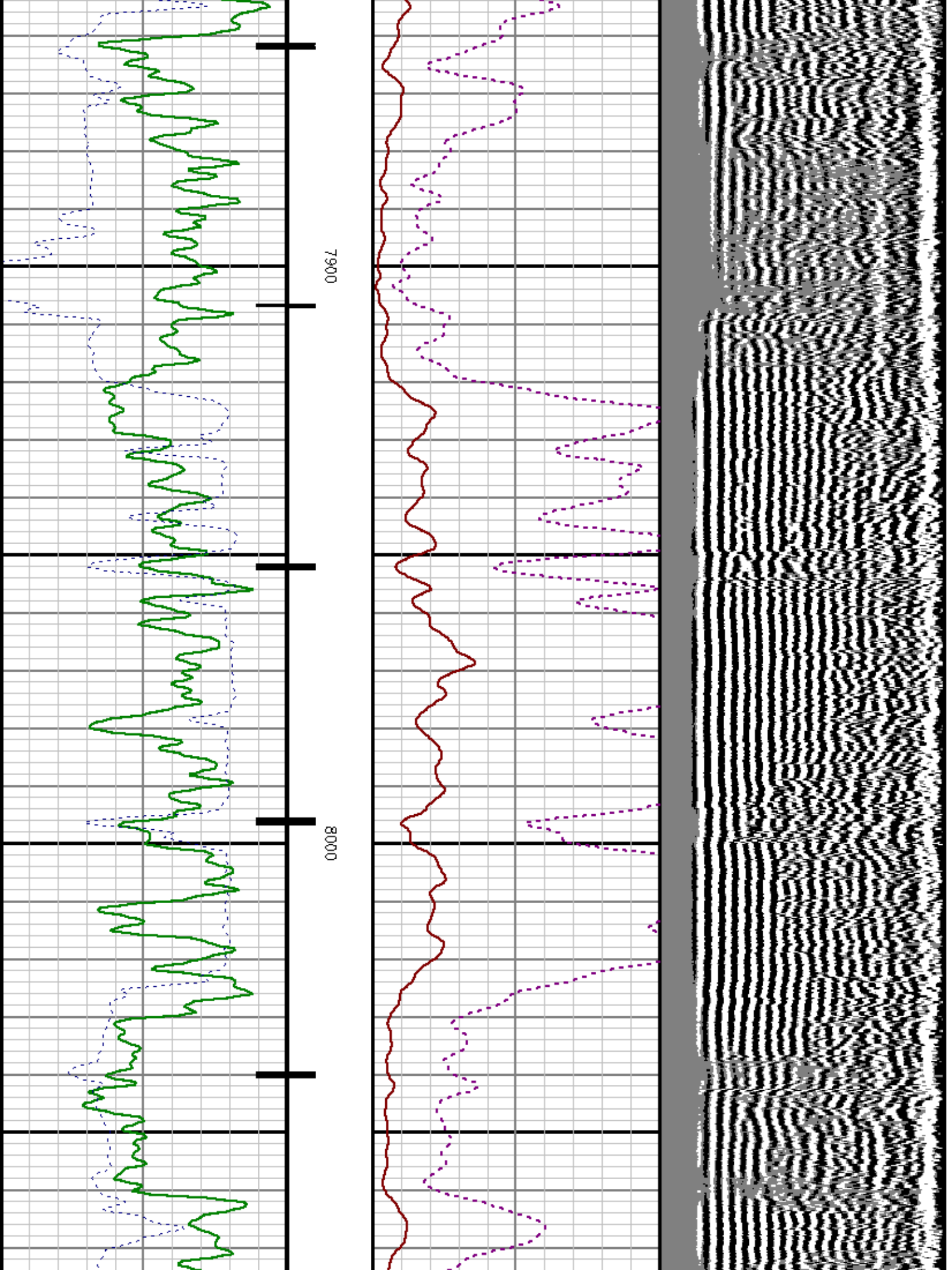




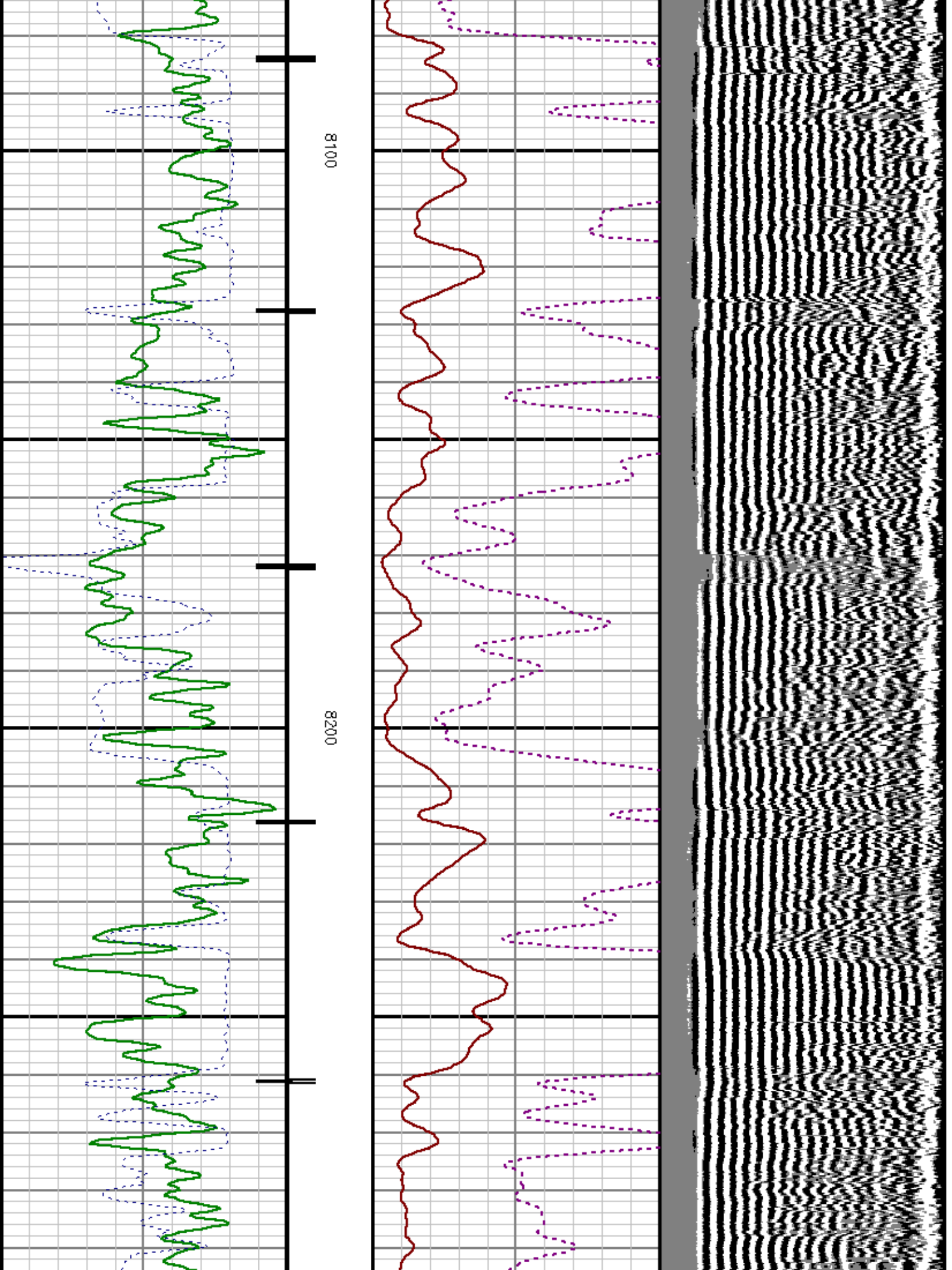




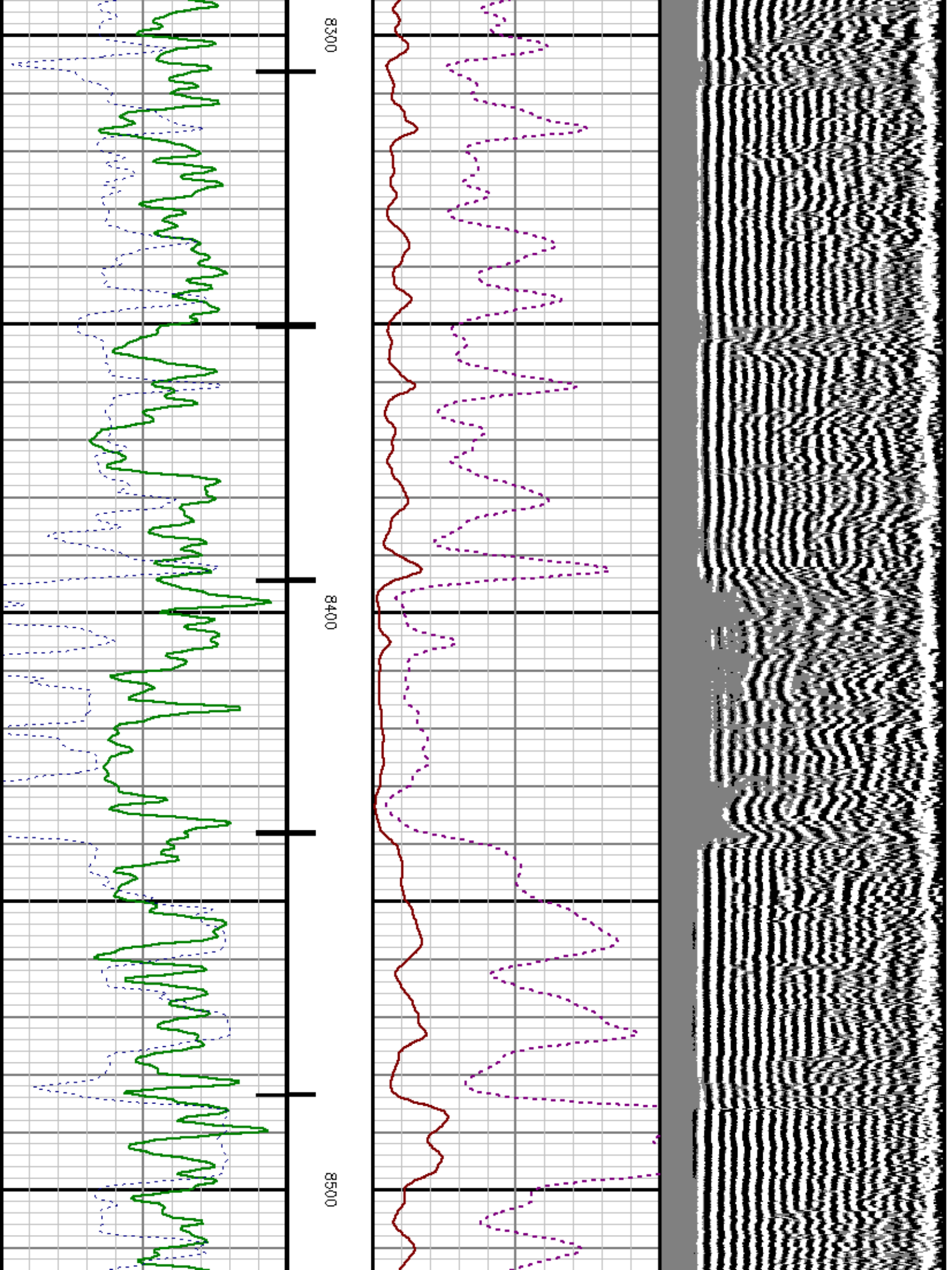


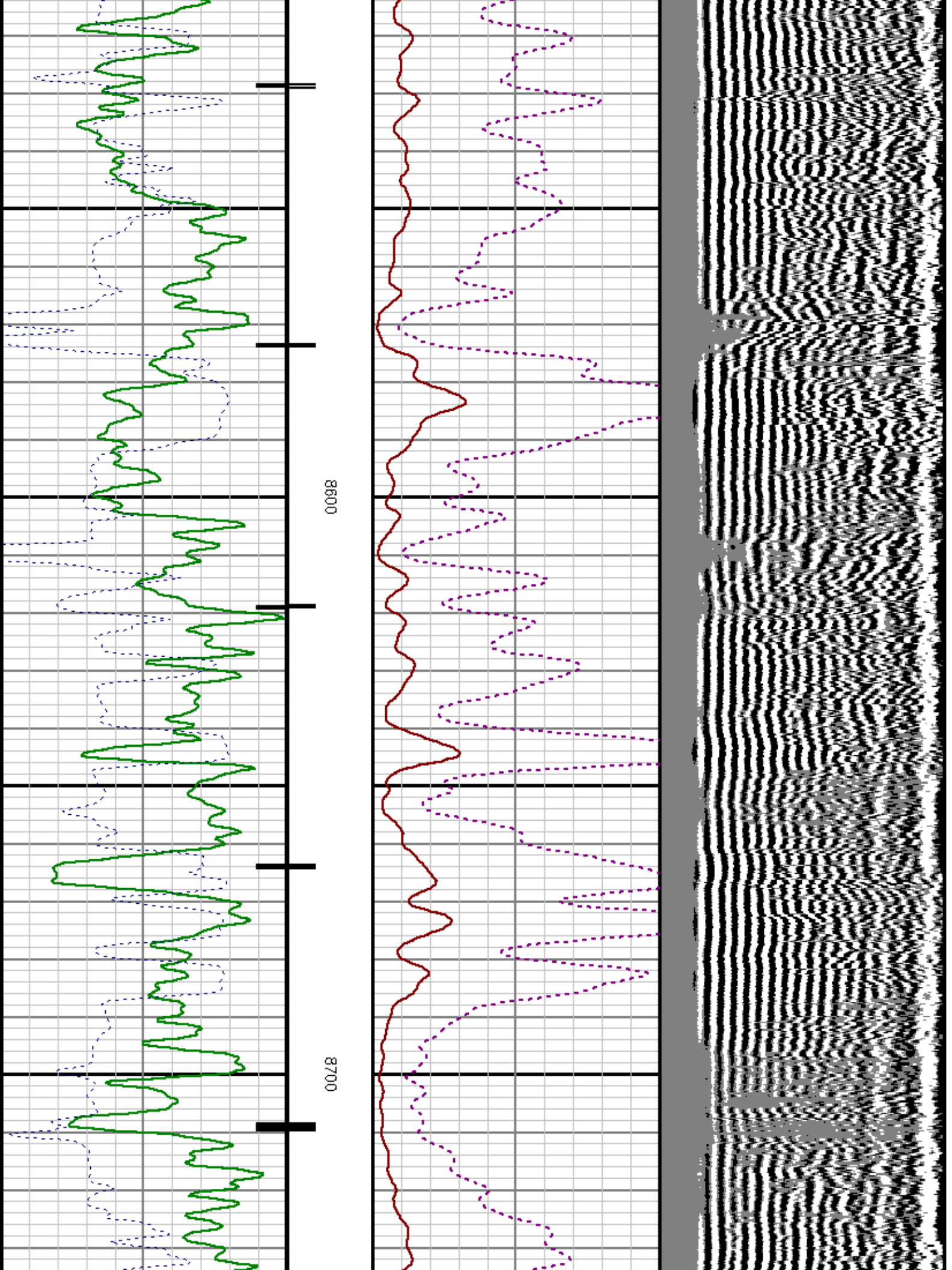


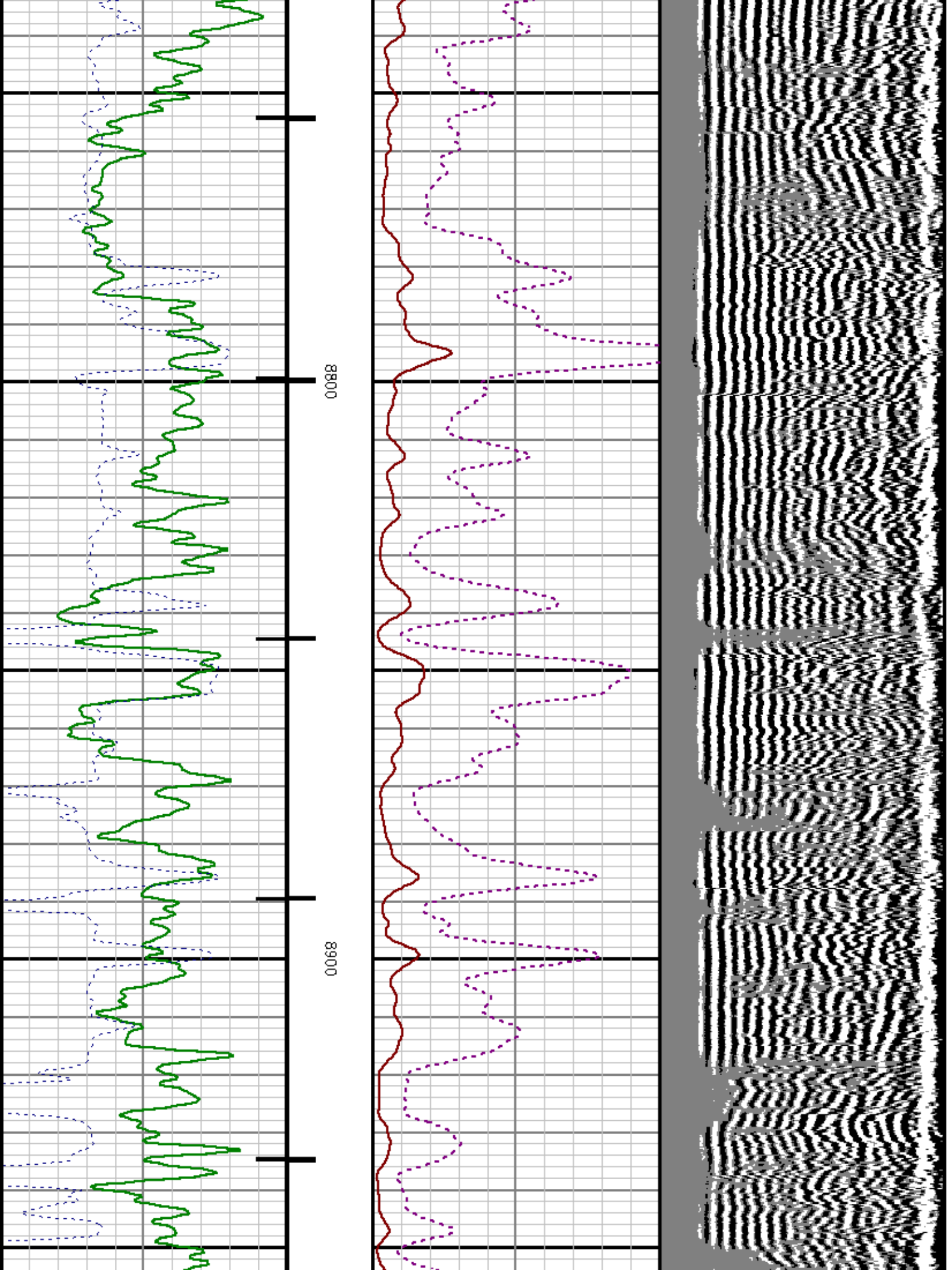




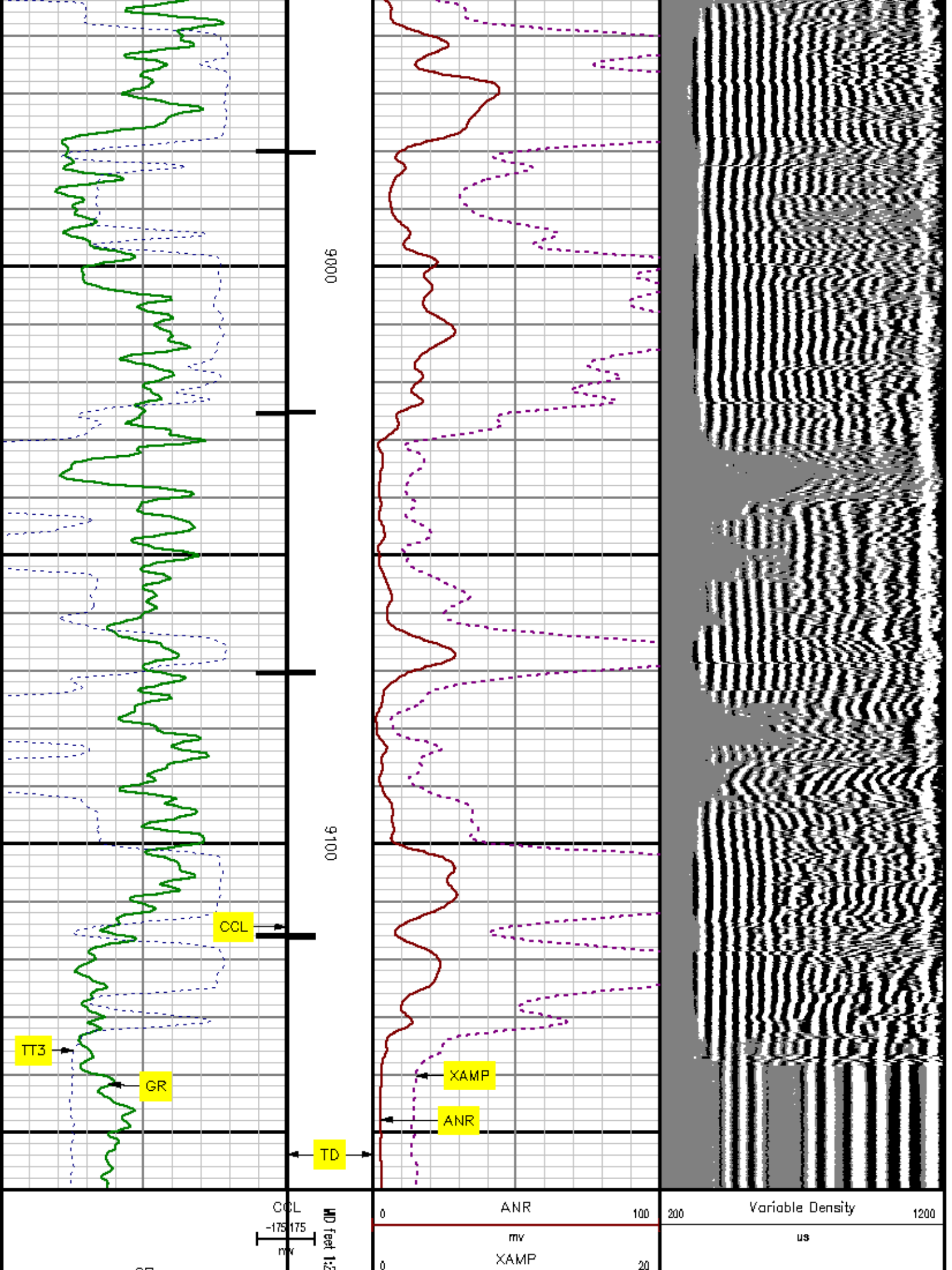














0	GR	150	GR	mv	
	gAPI				
280	TT3	180			
	UBBC				

## *MAIN SECTION* *SECONDARY PRESENTATION*

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	21.406	9177.500
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1426XA	-15.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	ARB	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-14.360	AFAR	SIG	TT5			
1426XA	-7.250	CCL					
1426XA	-5.380	GR					

1426XA

0.000

NEU

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

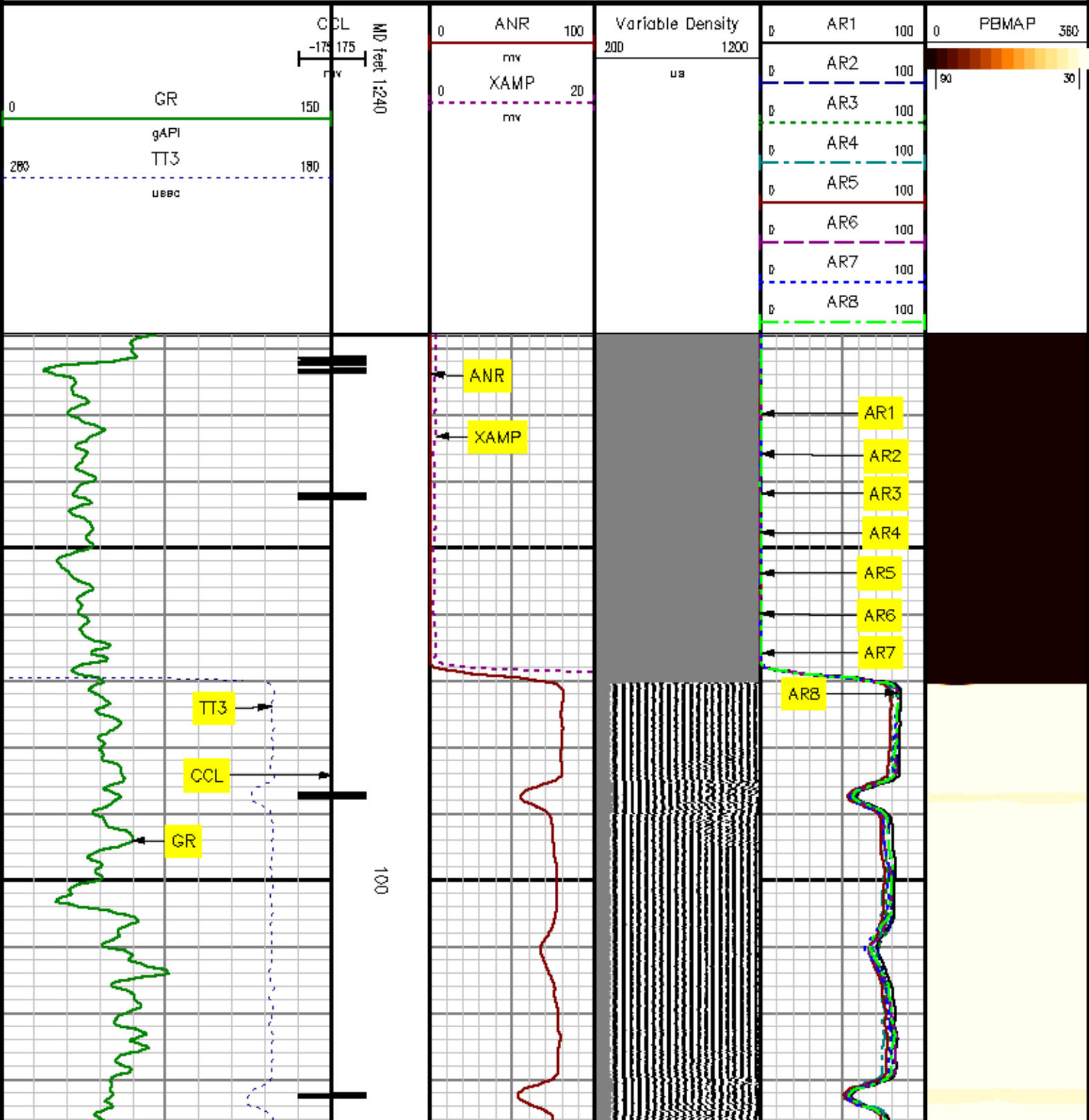
Well : RMF 31-17

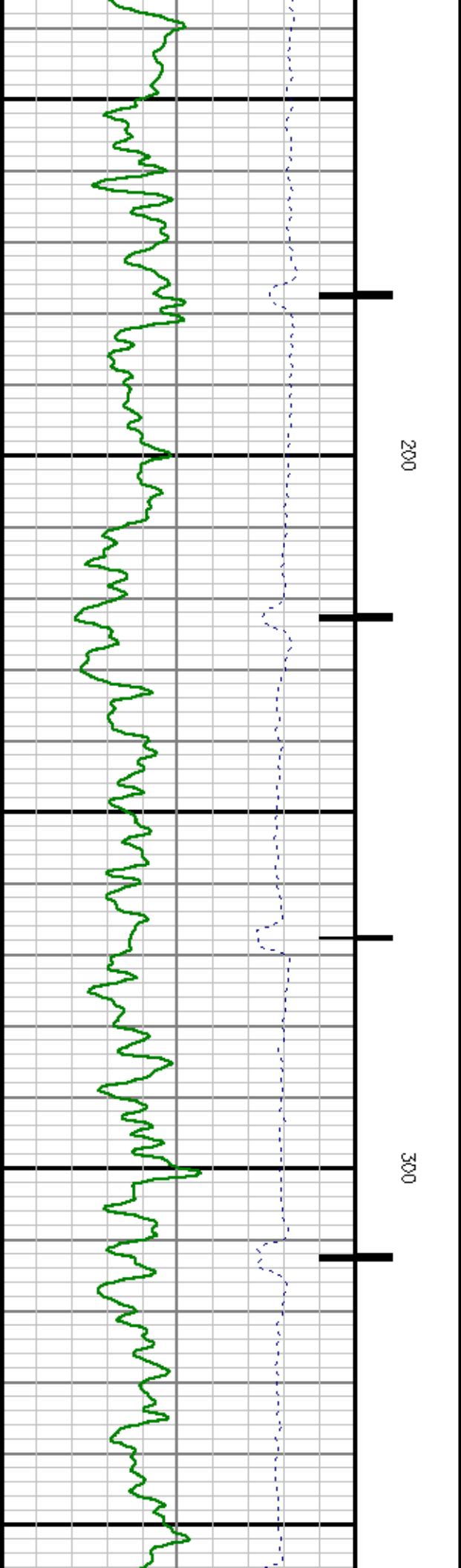
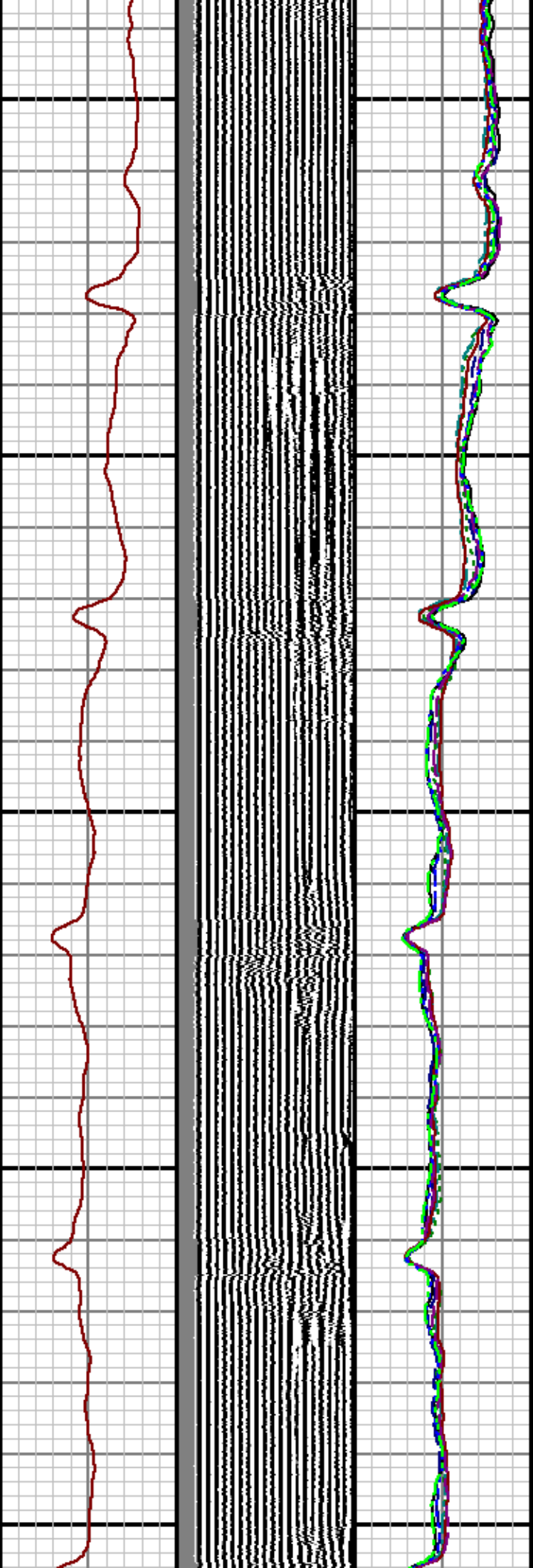
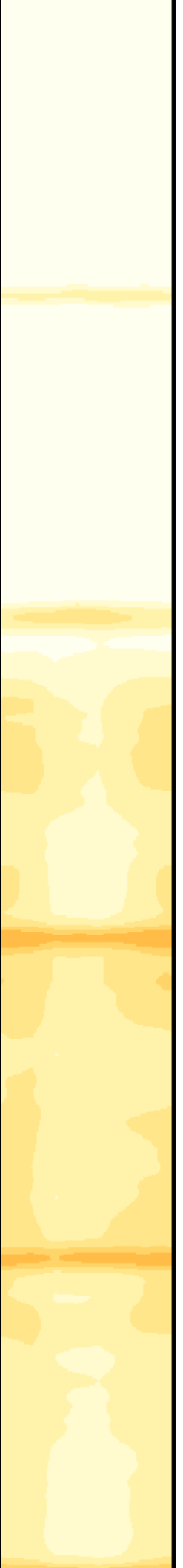
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Mode : PlotMgr 5.4.504

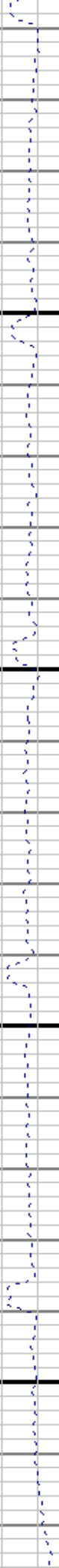
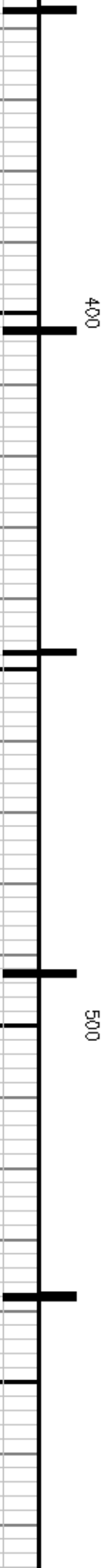
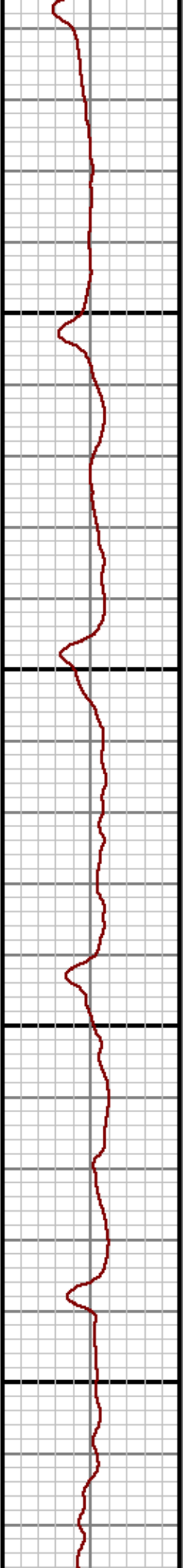
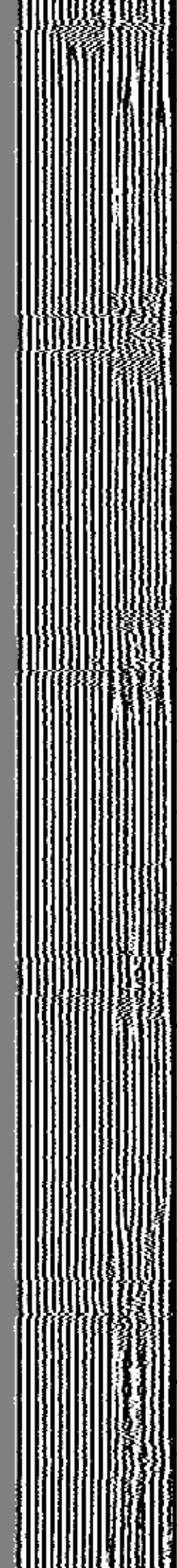
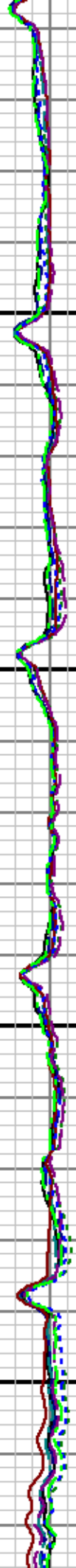
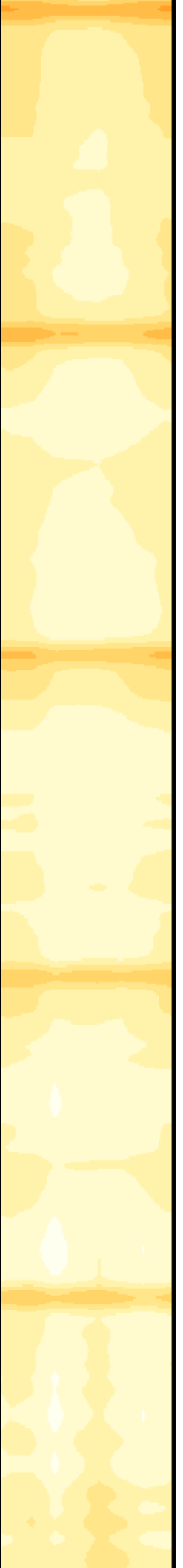
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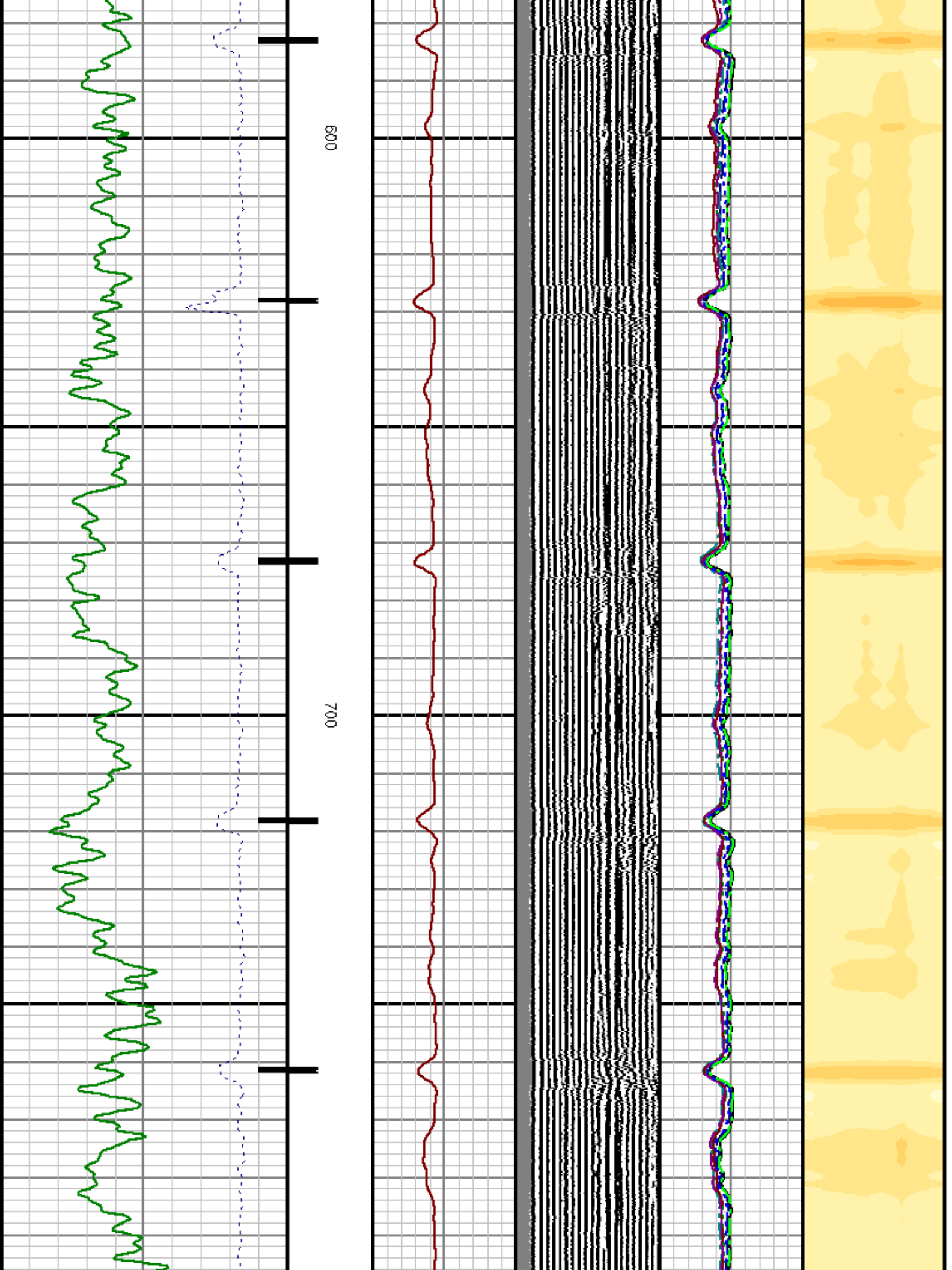
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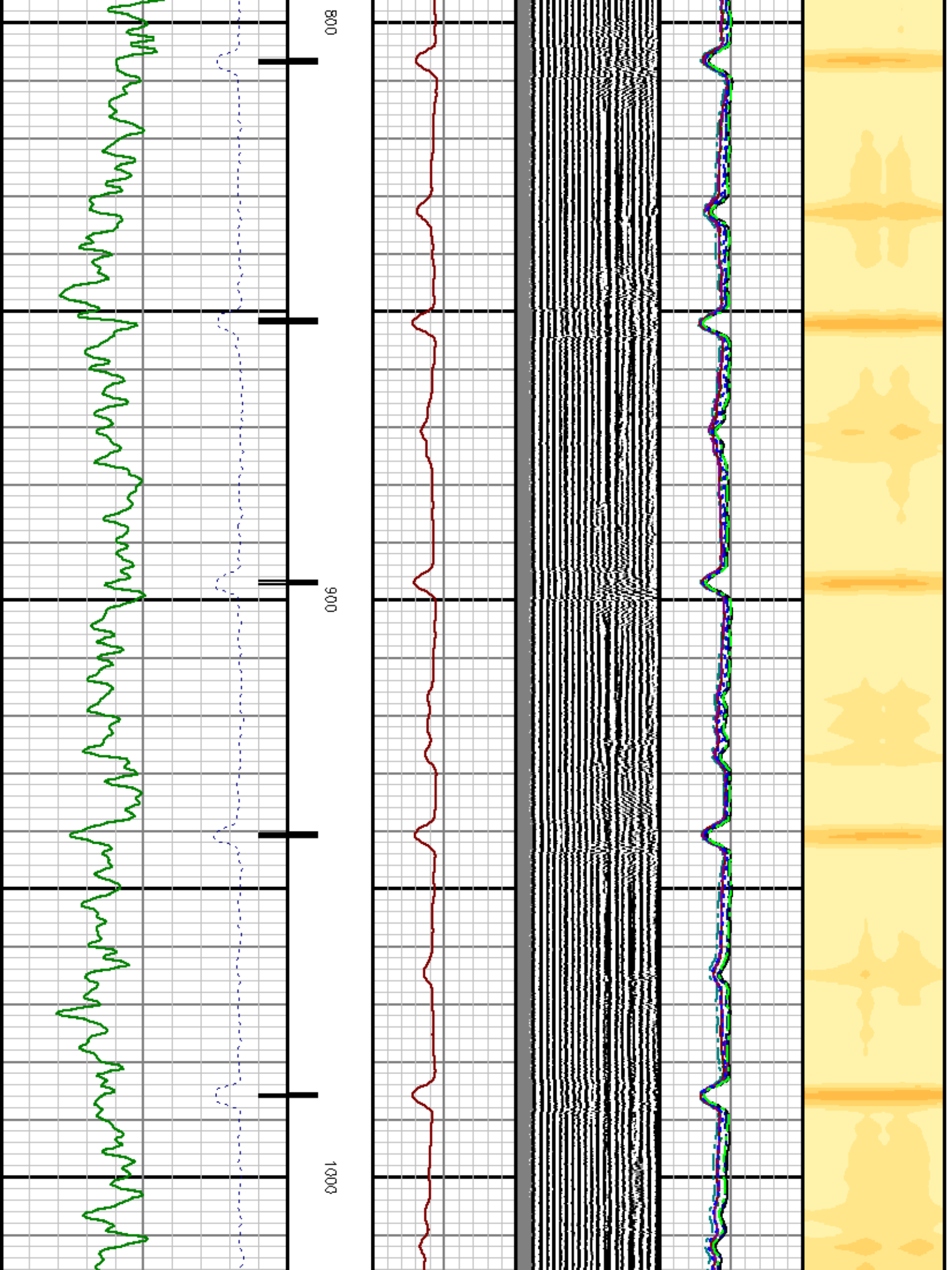




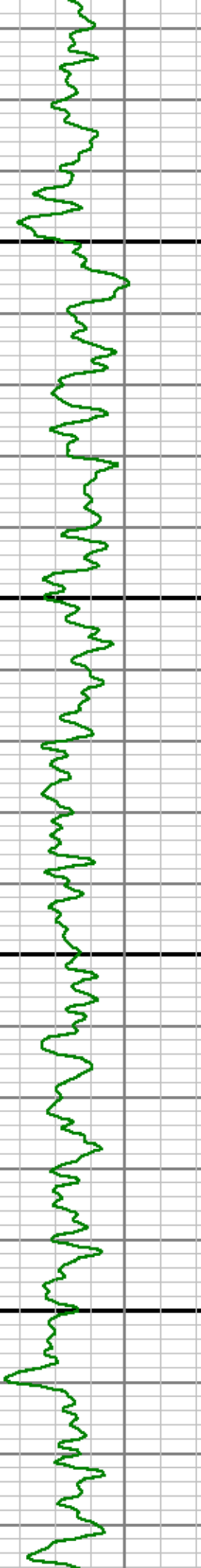
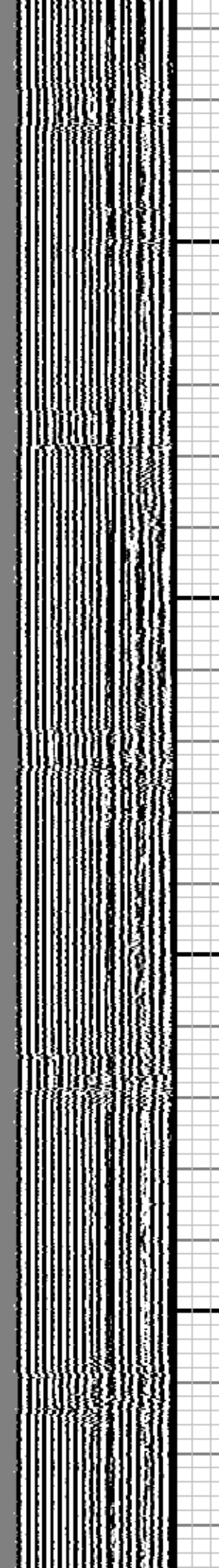
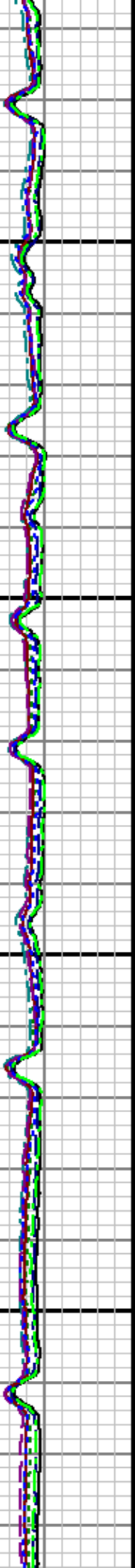
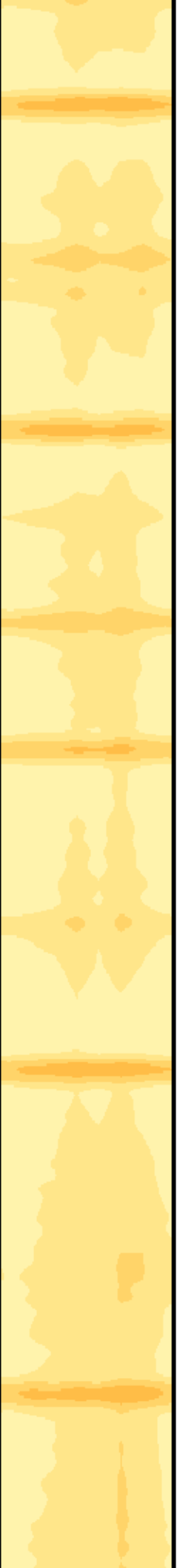


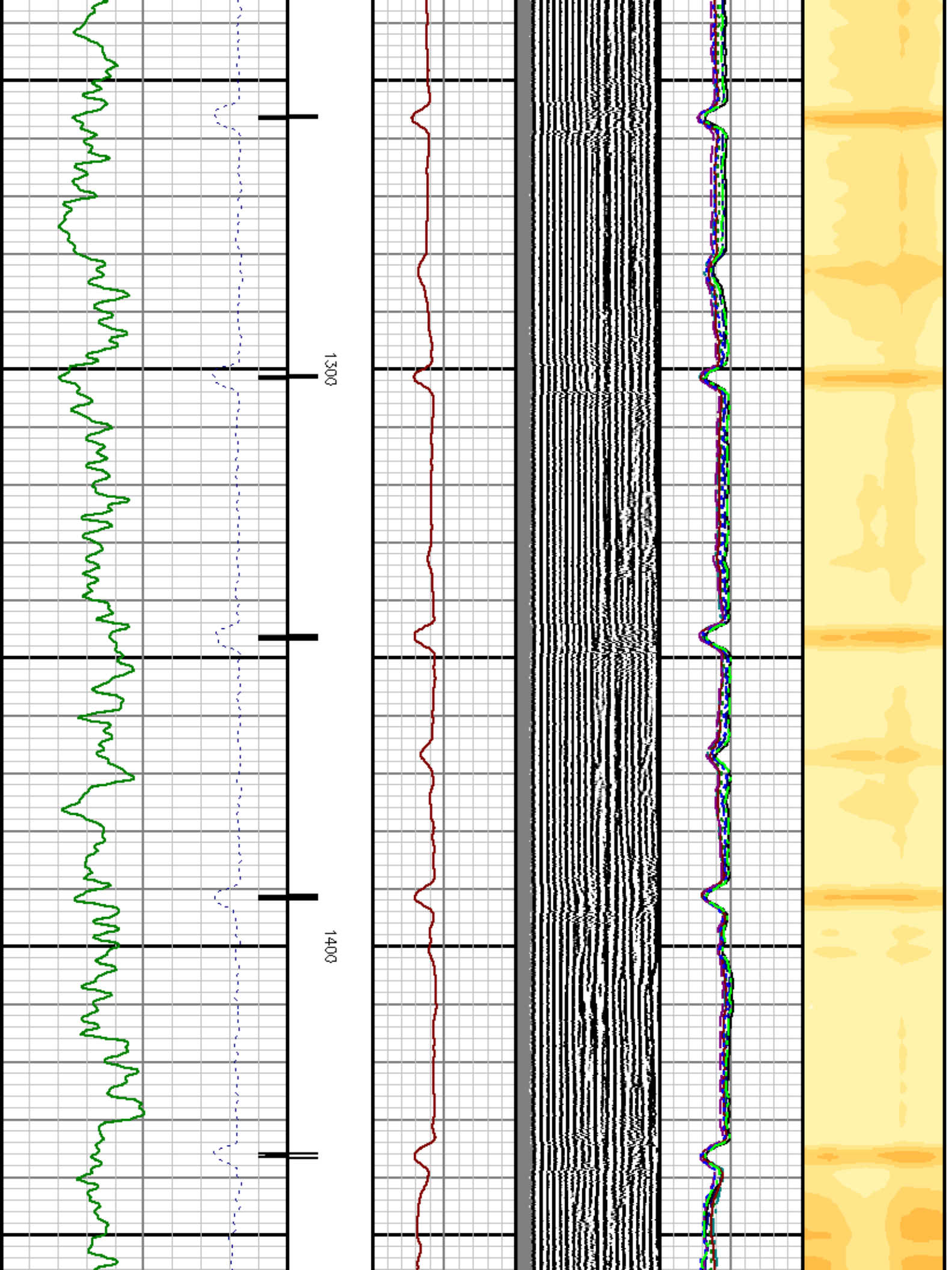


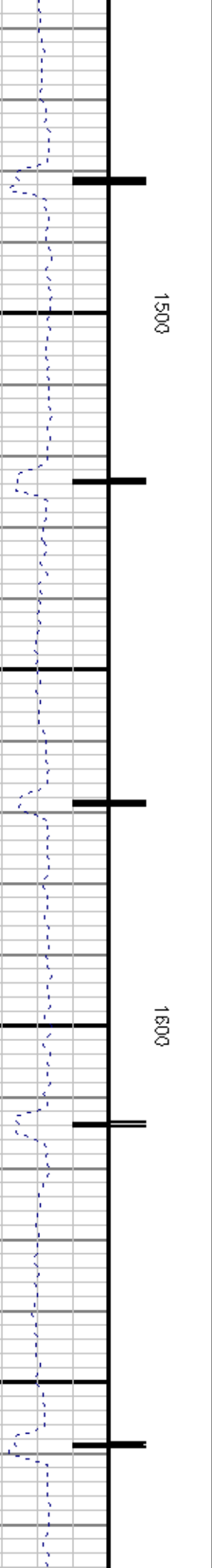
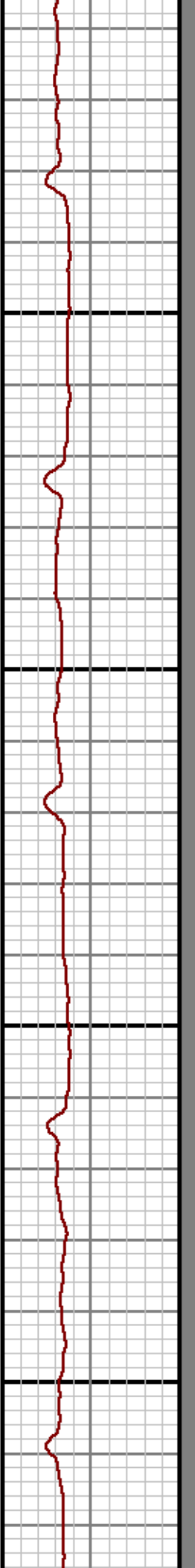
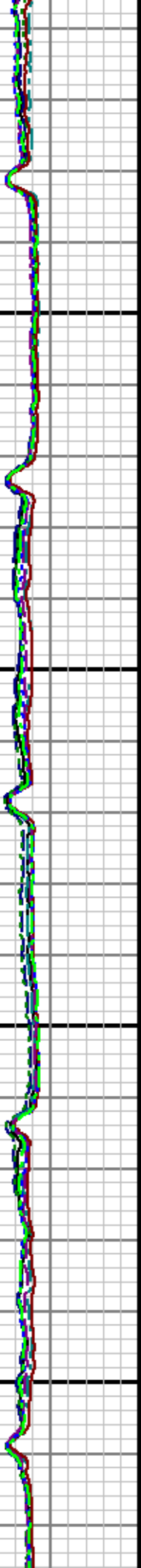




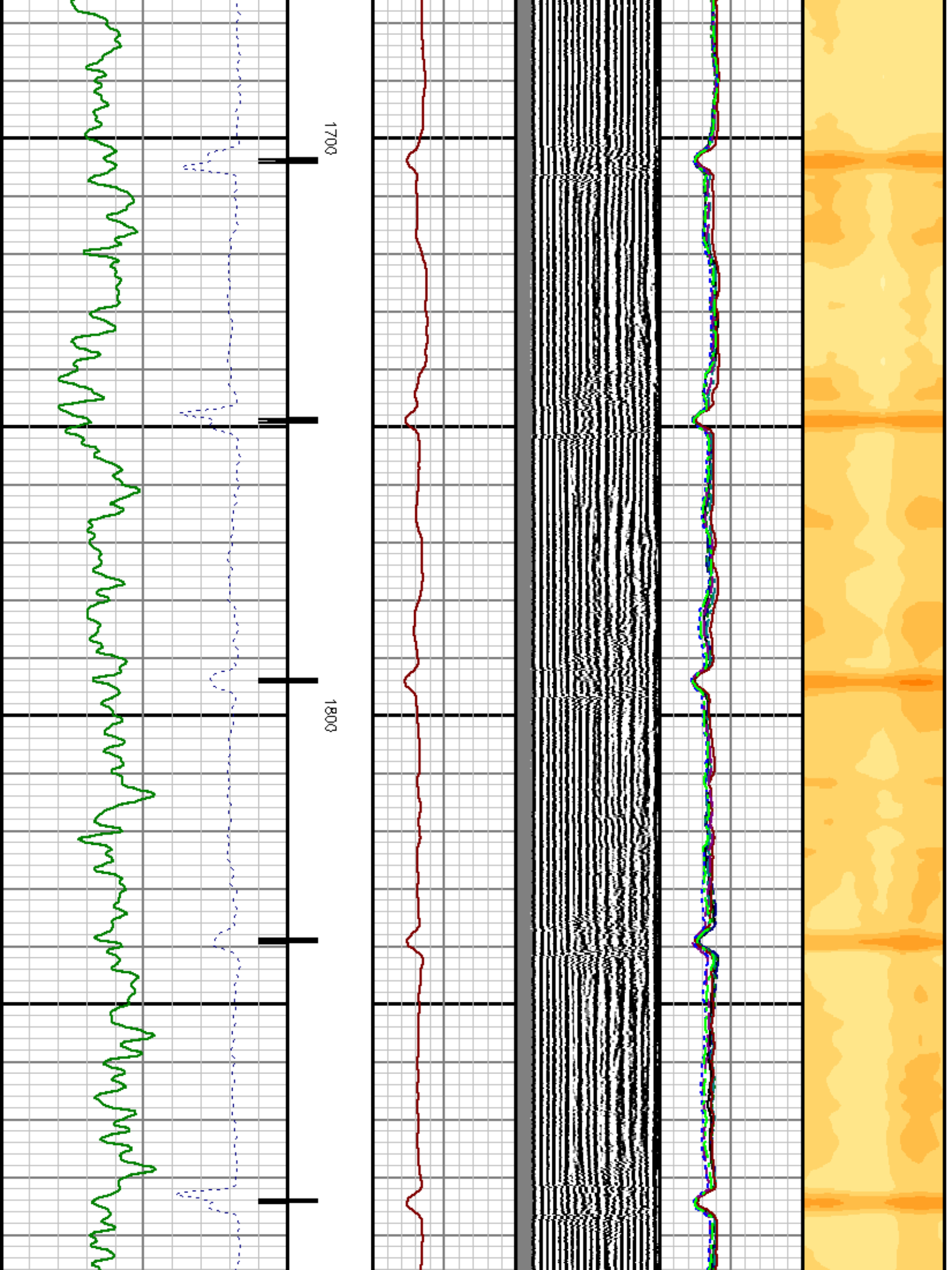


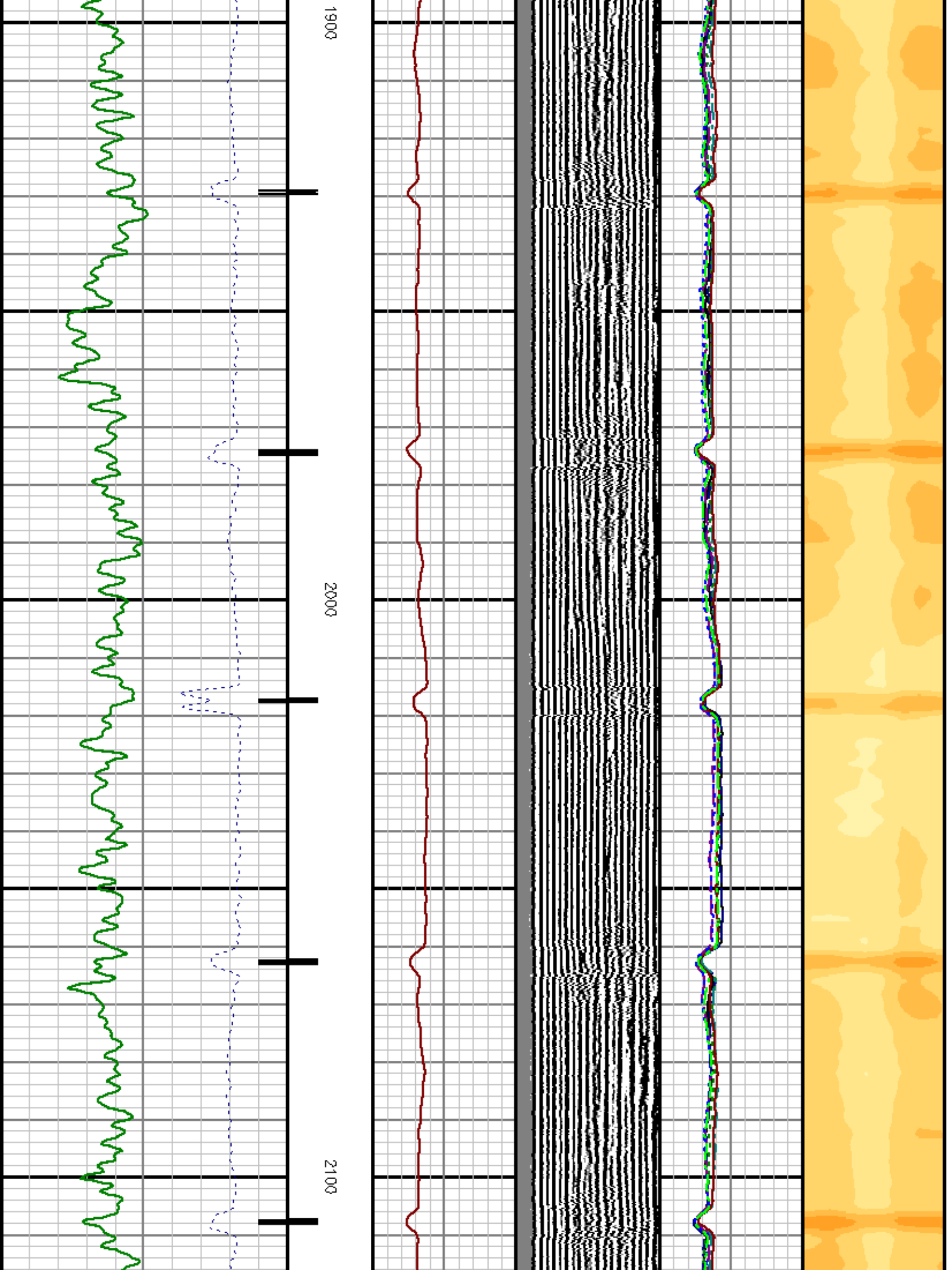


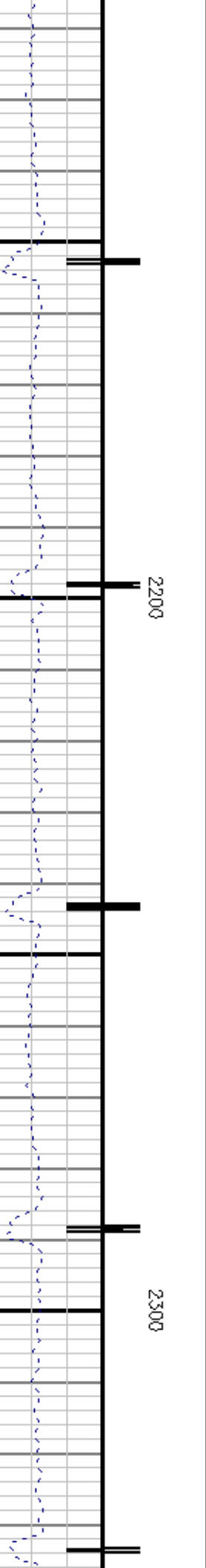
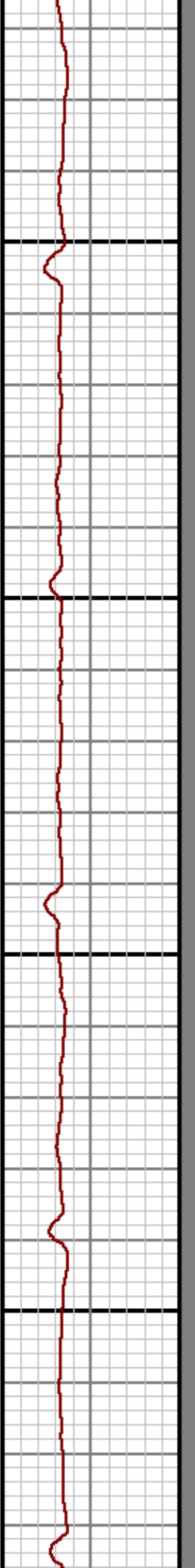
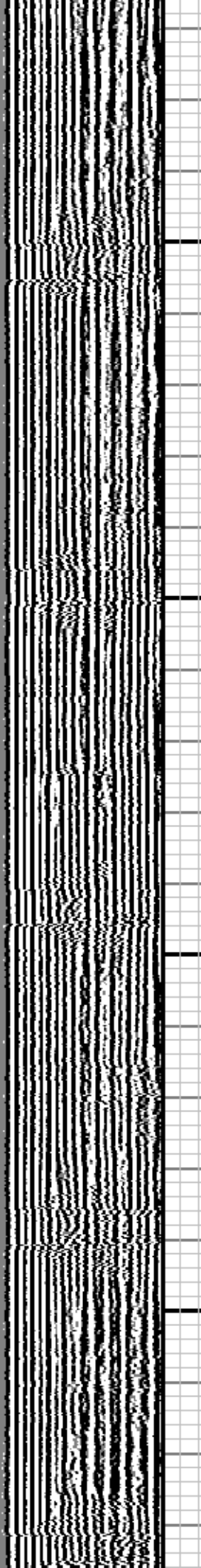
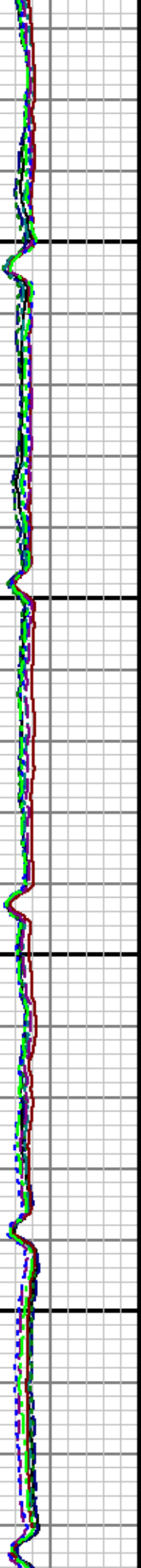
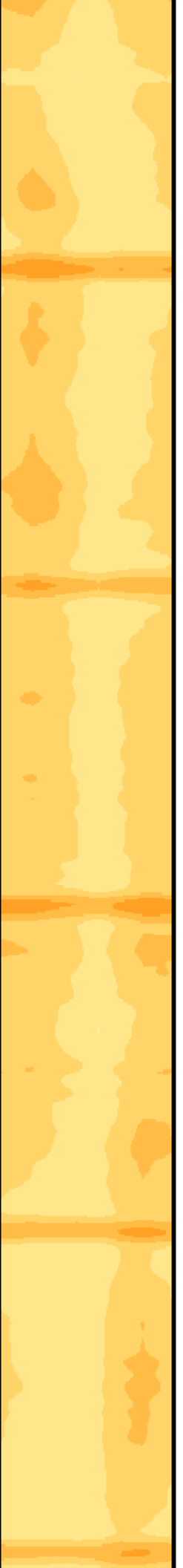




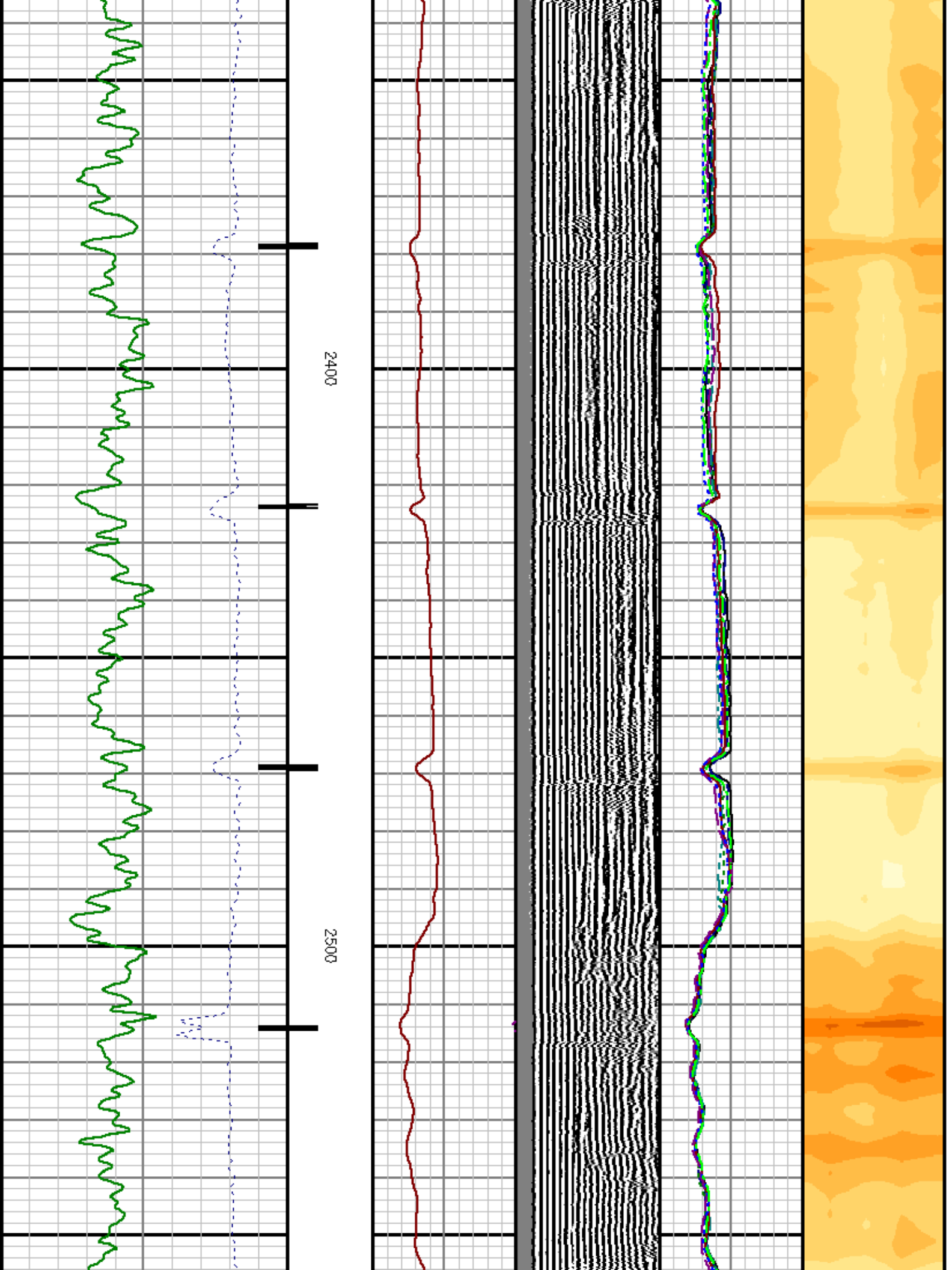


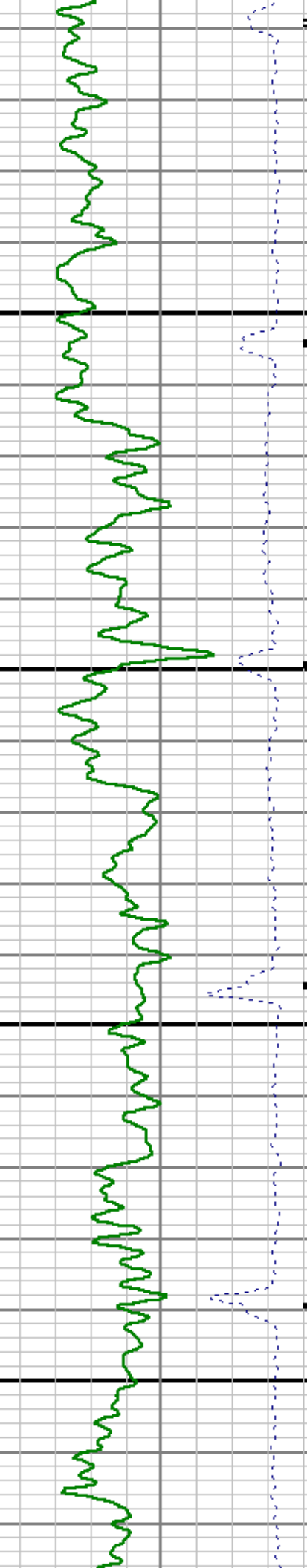
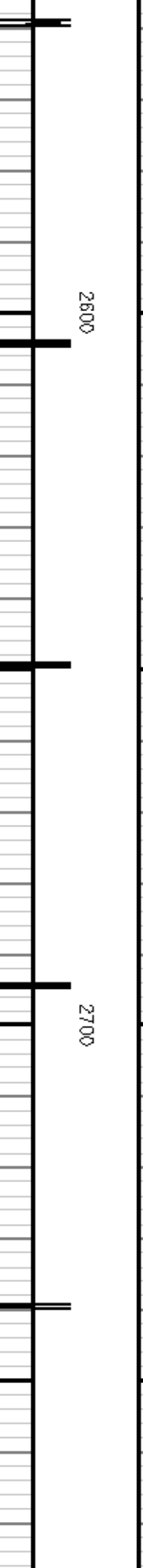
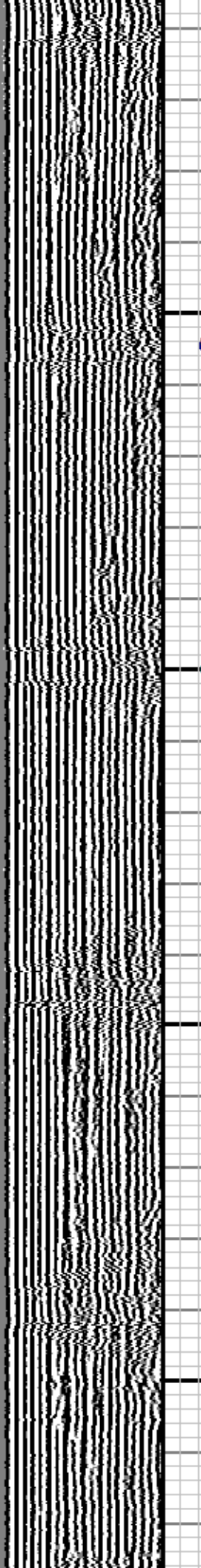
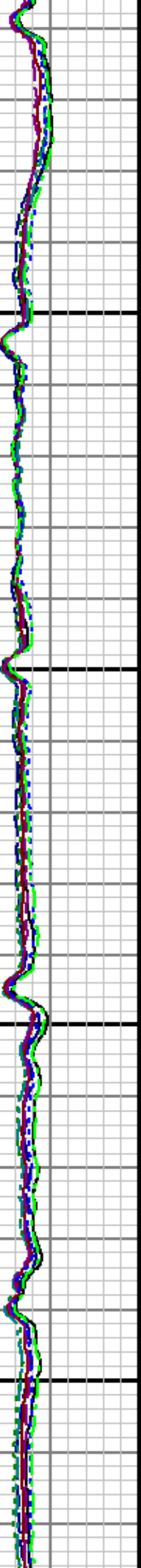
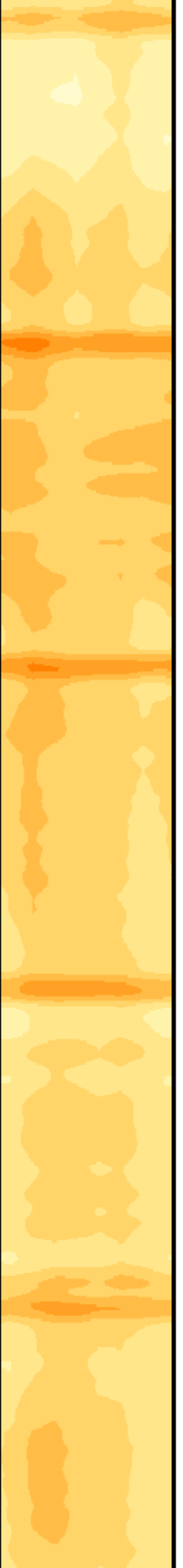






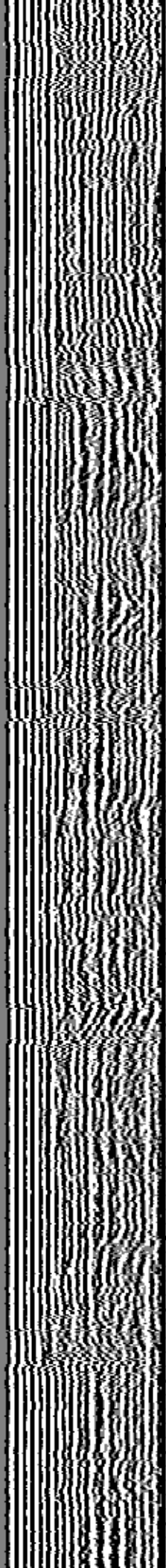
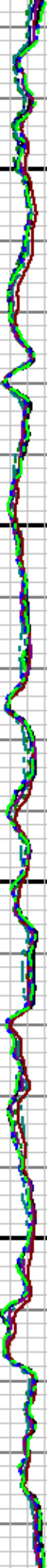
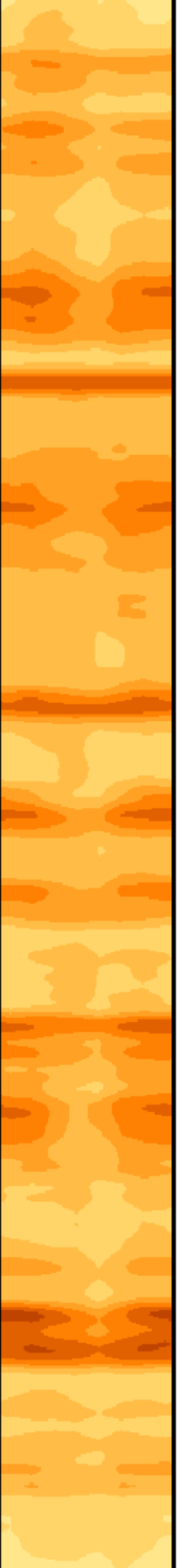






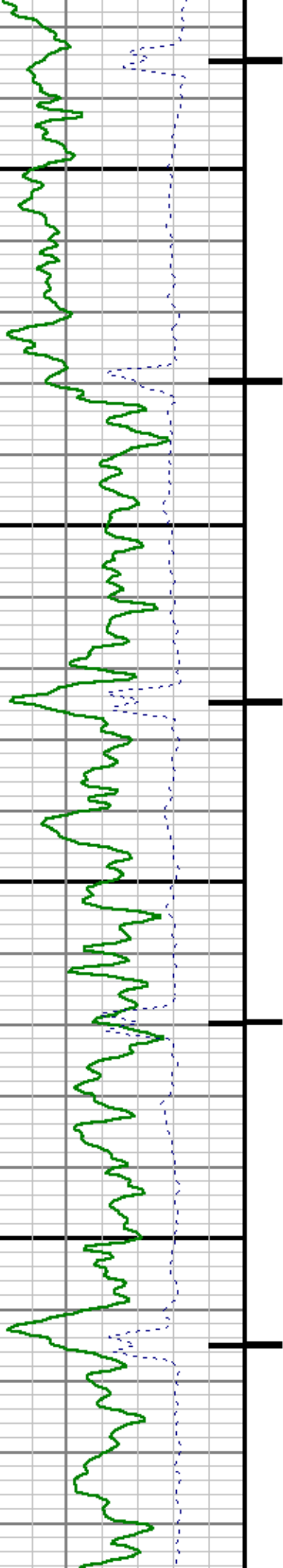
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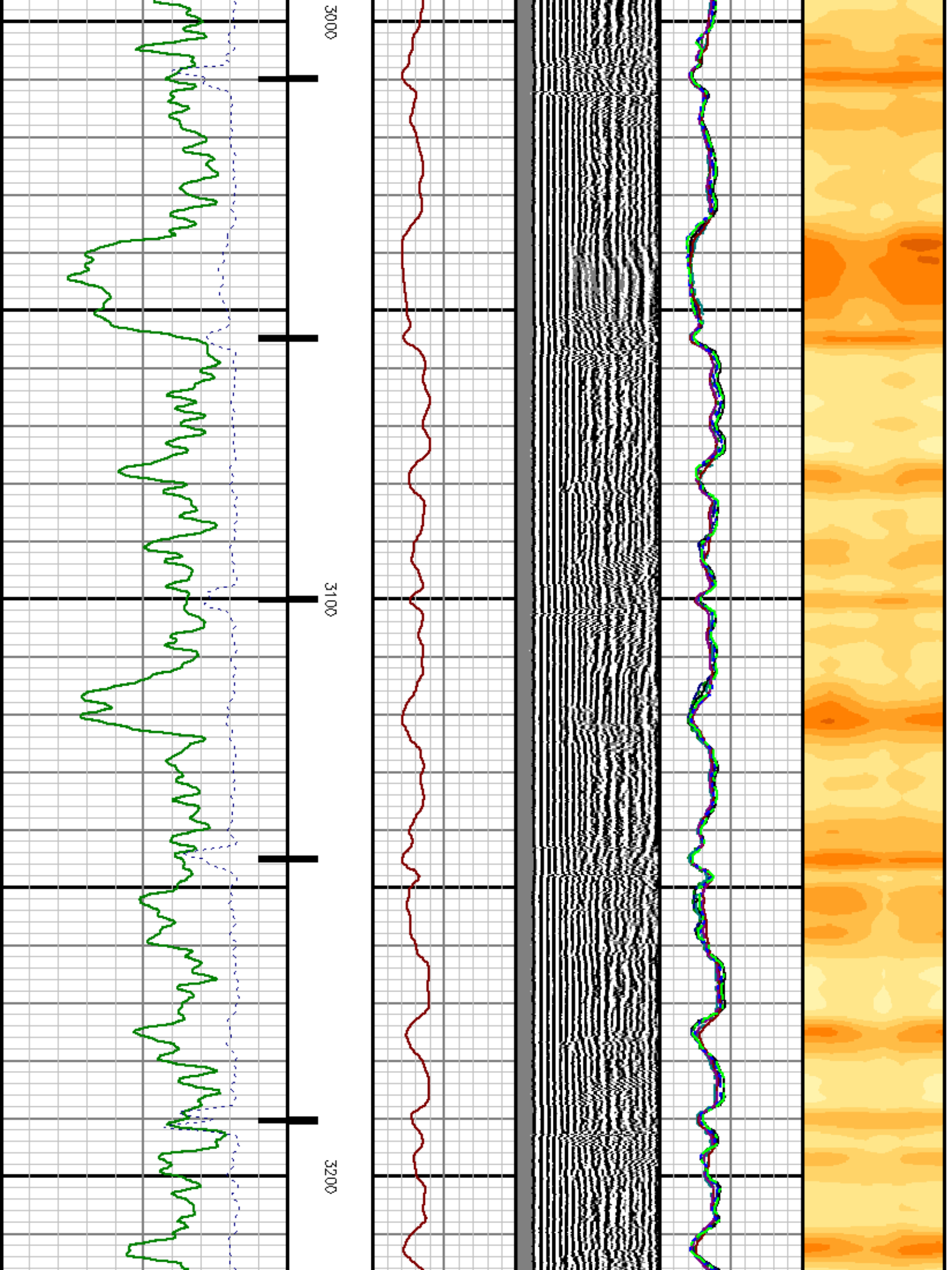
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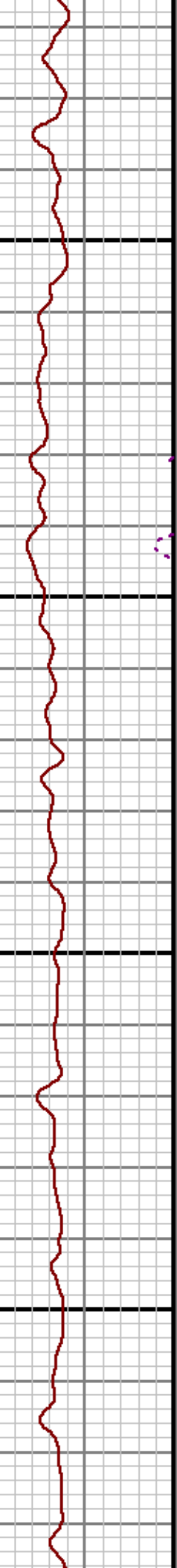
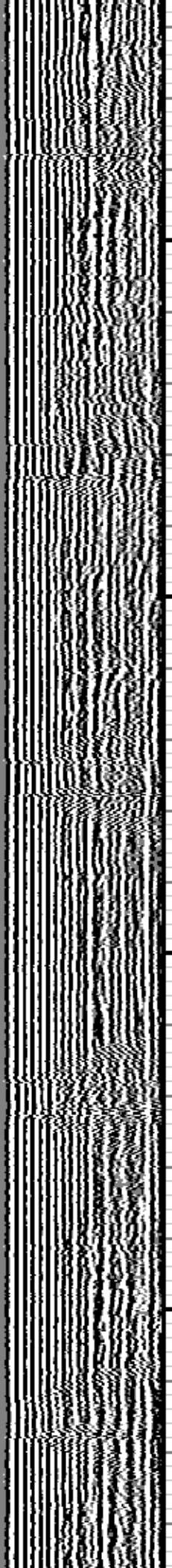
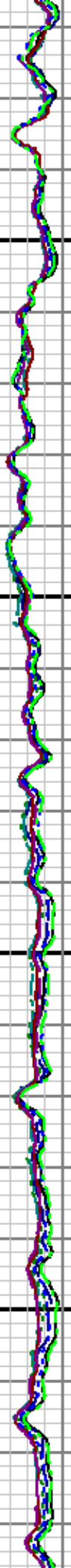
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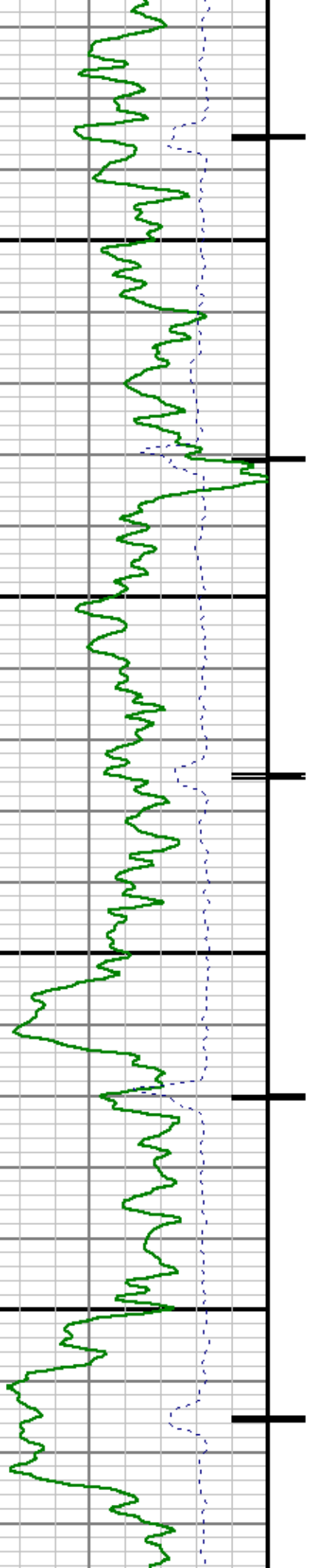


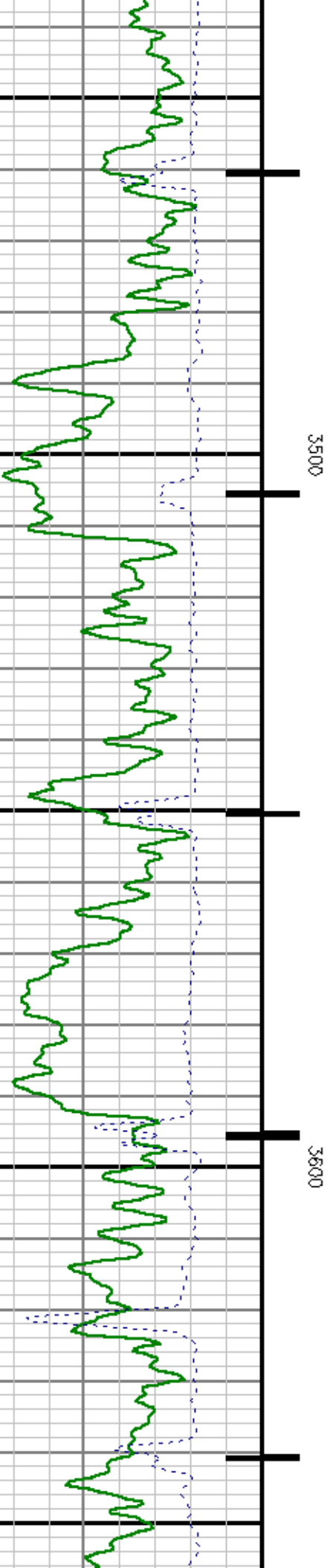
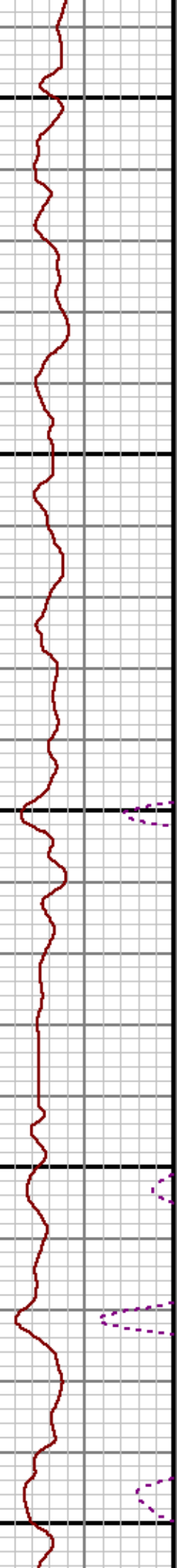
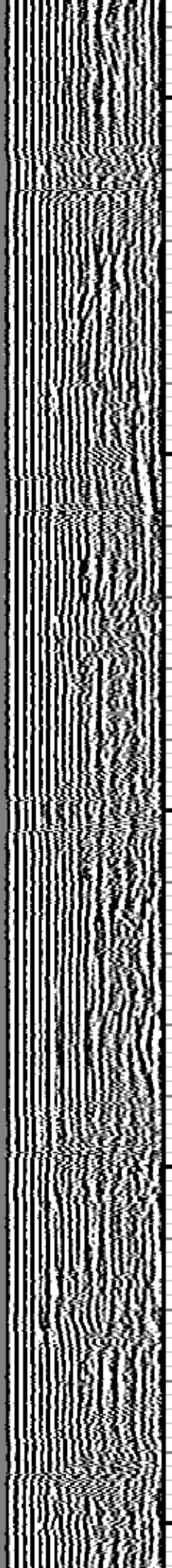
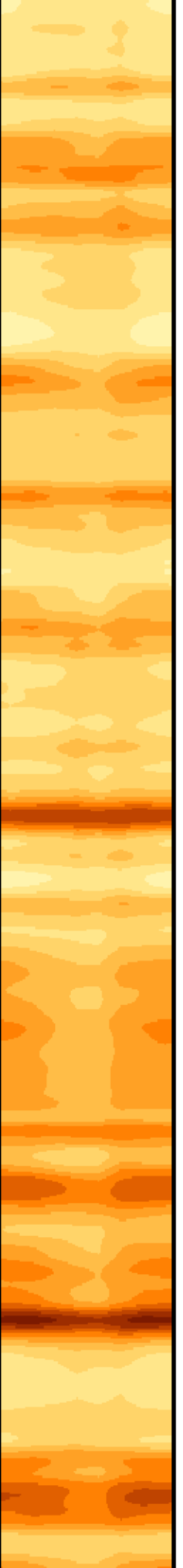


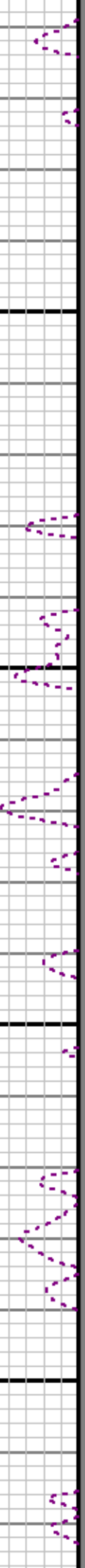
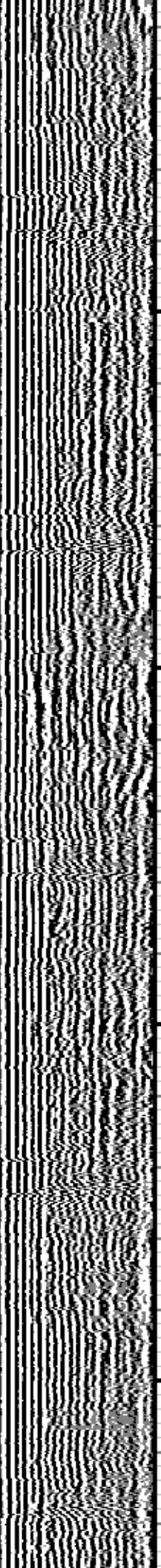
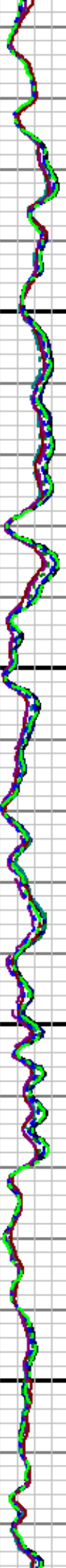
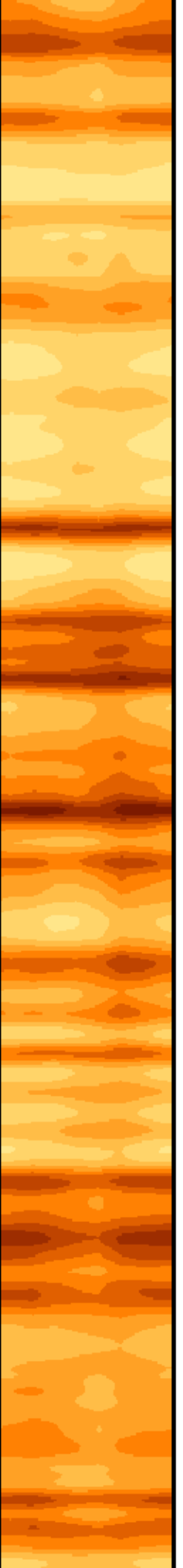


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3400

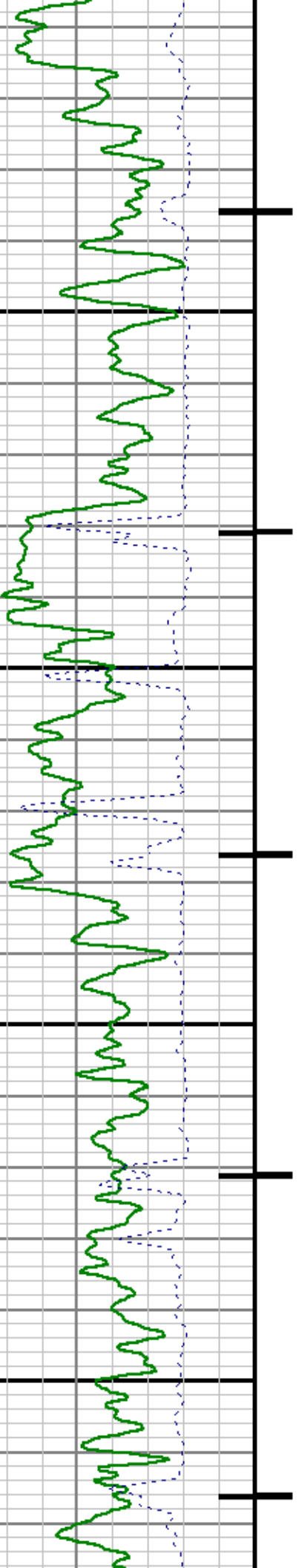


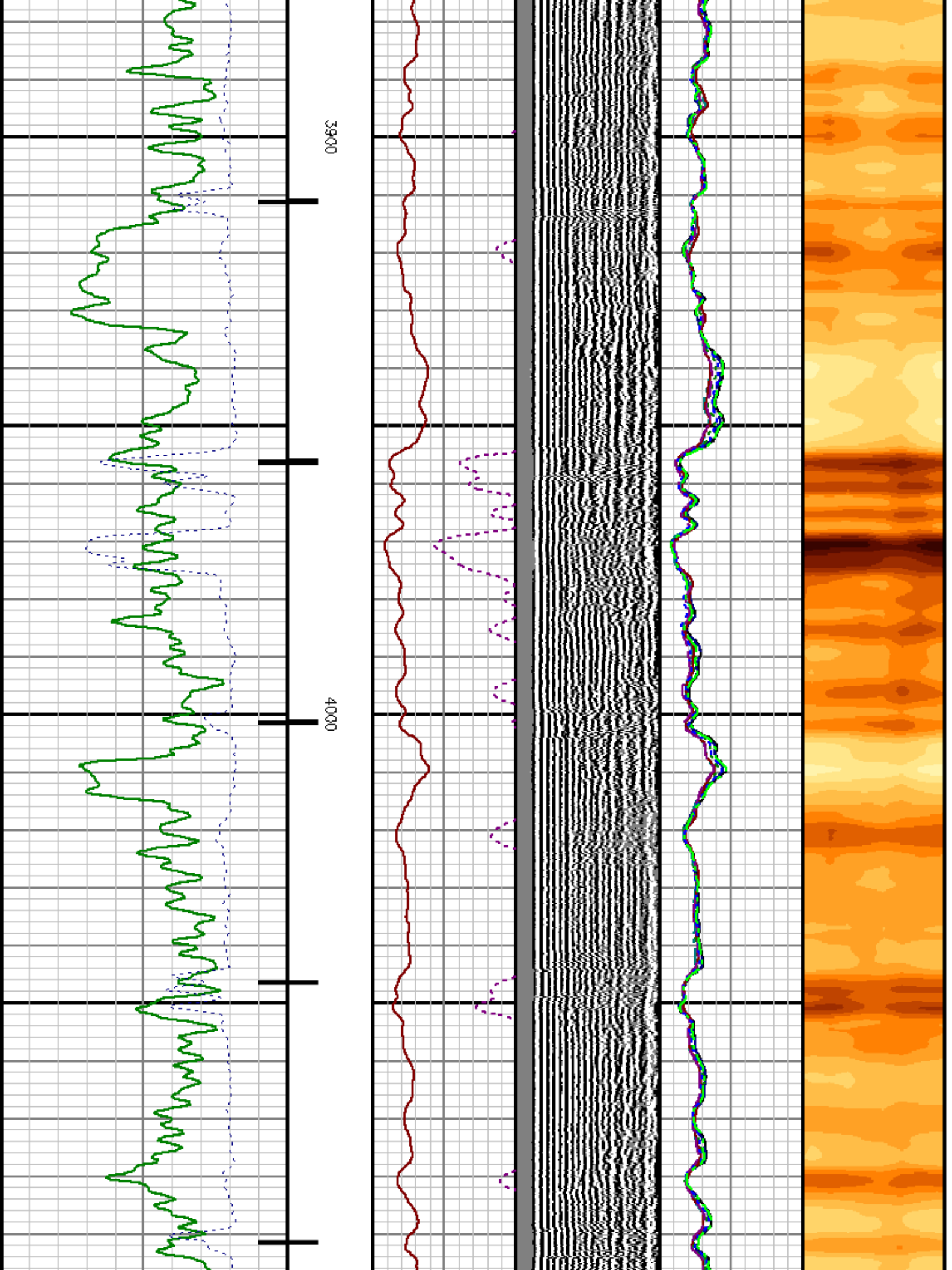




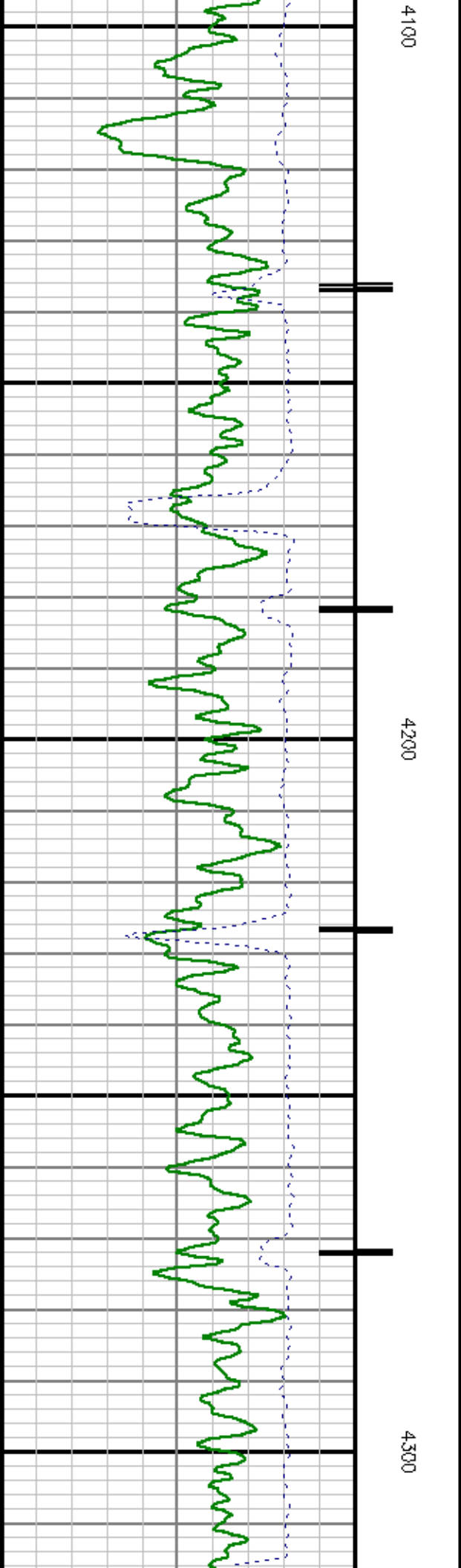
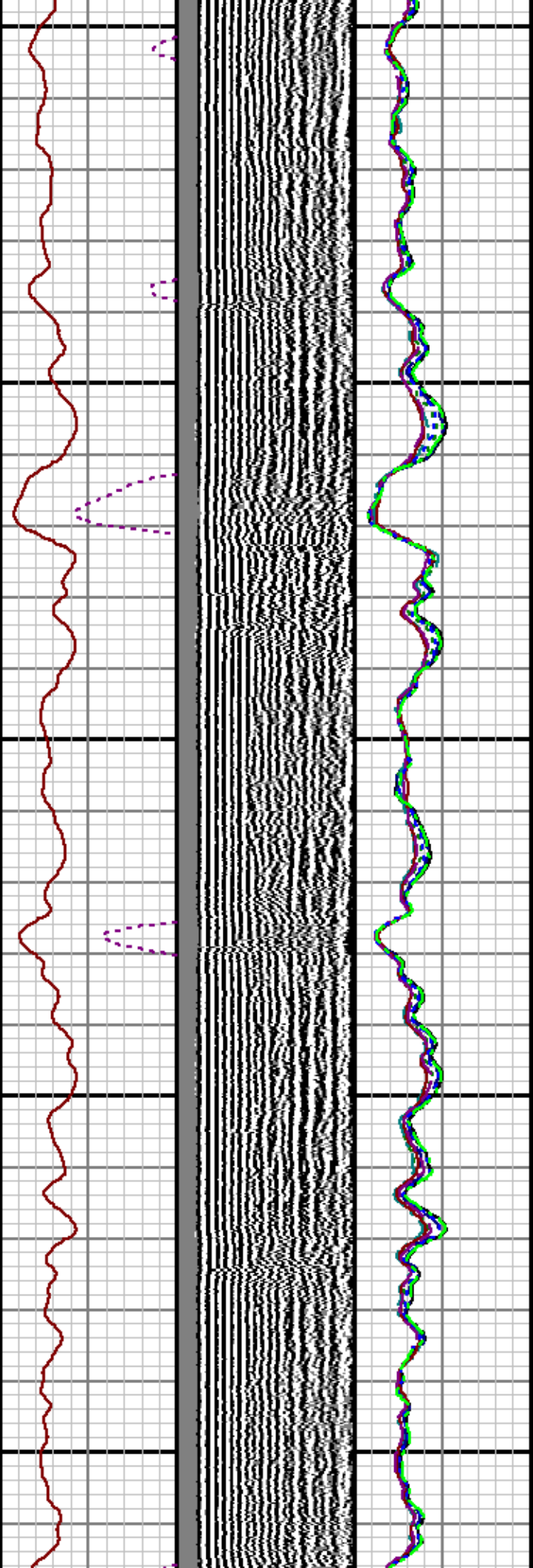
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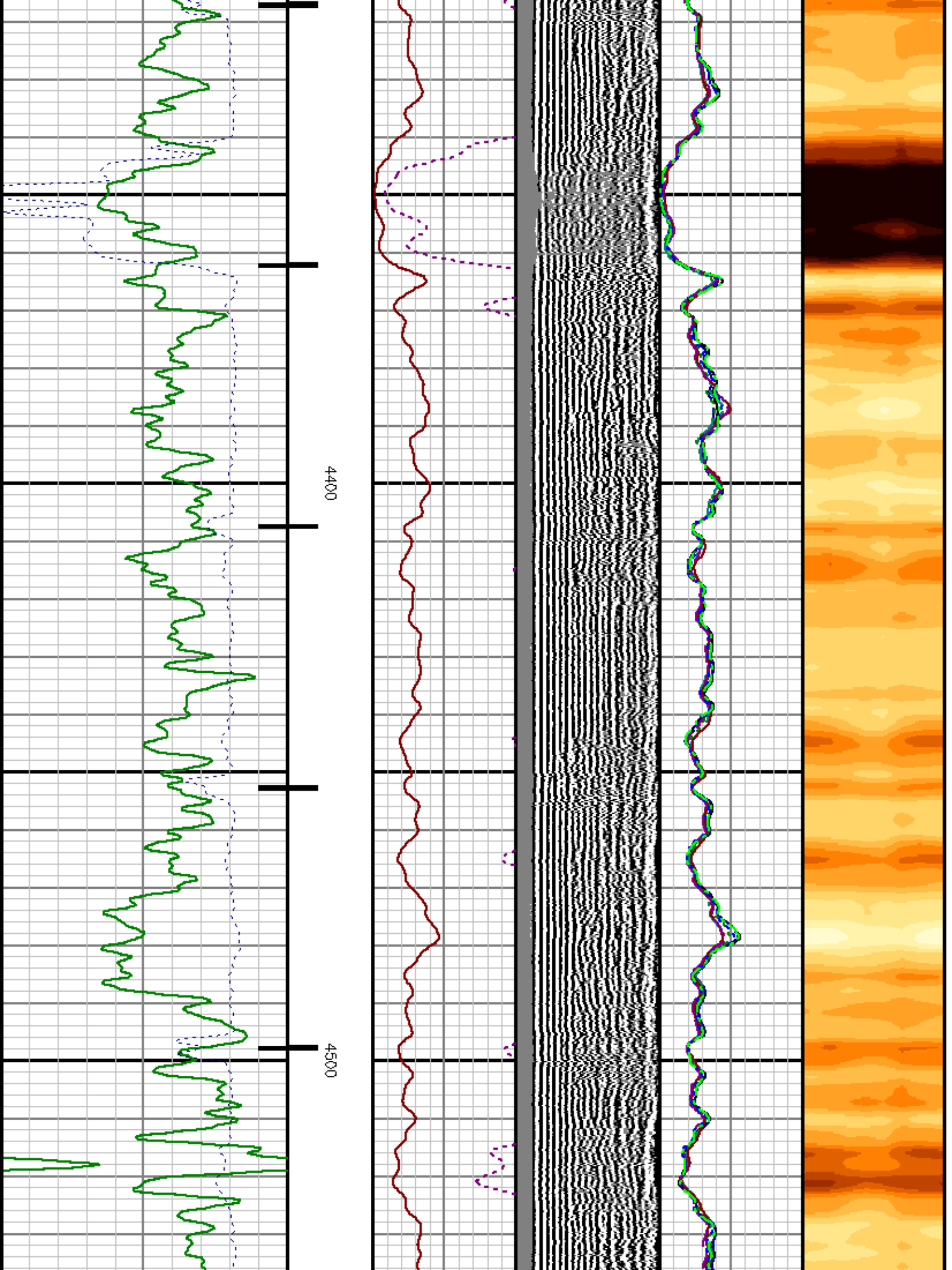
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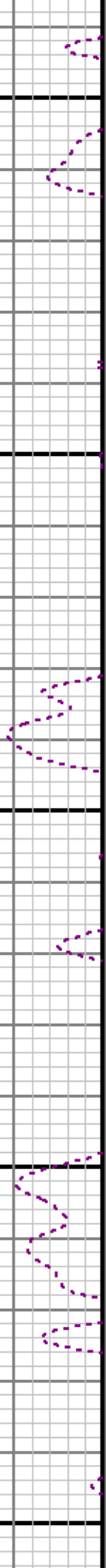
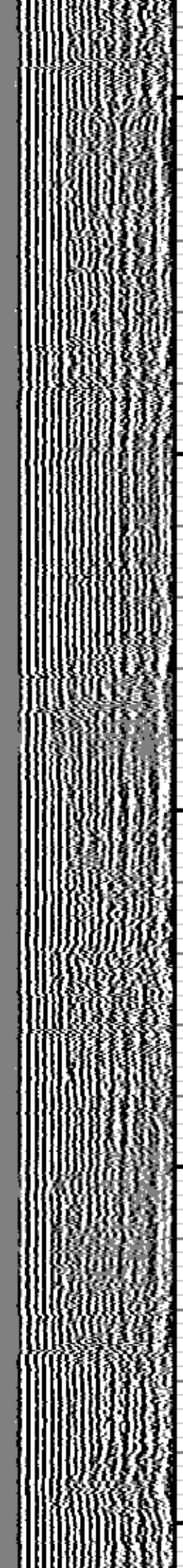
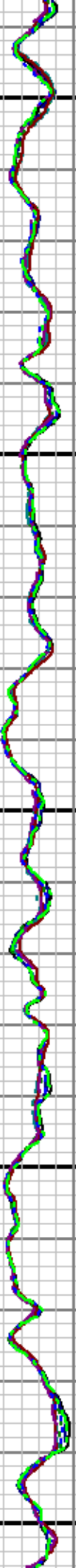






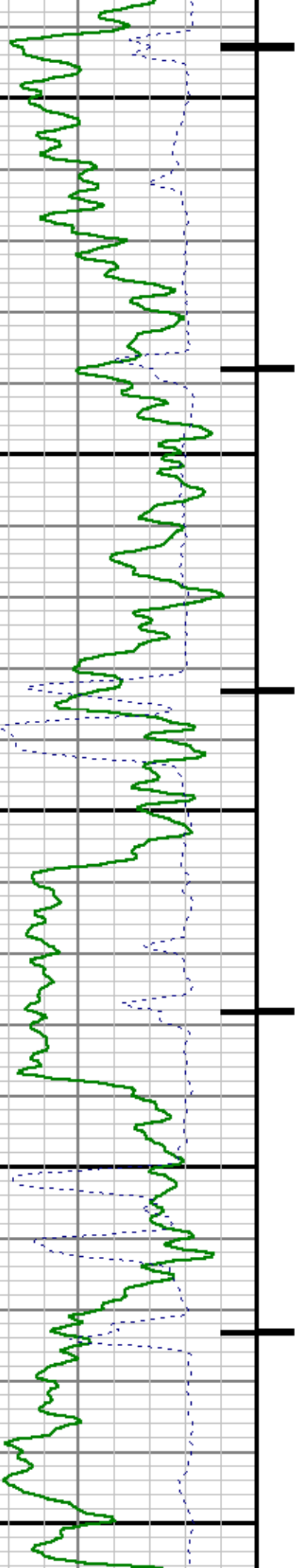




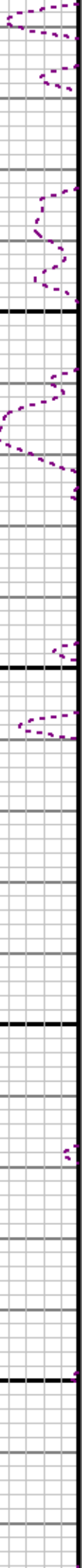
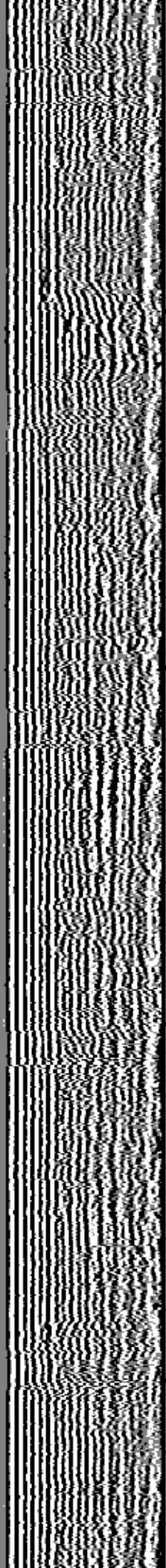
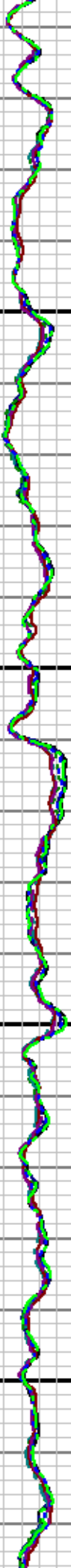


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4700

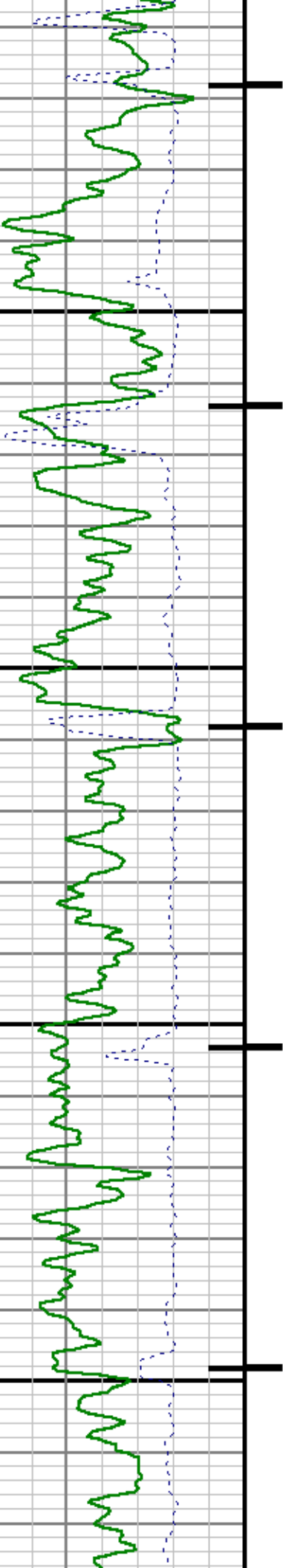




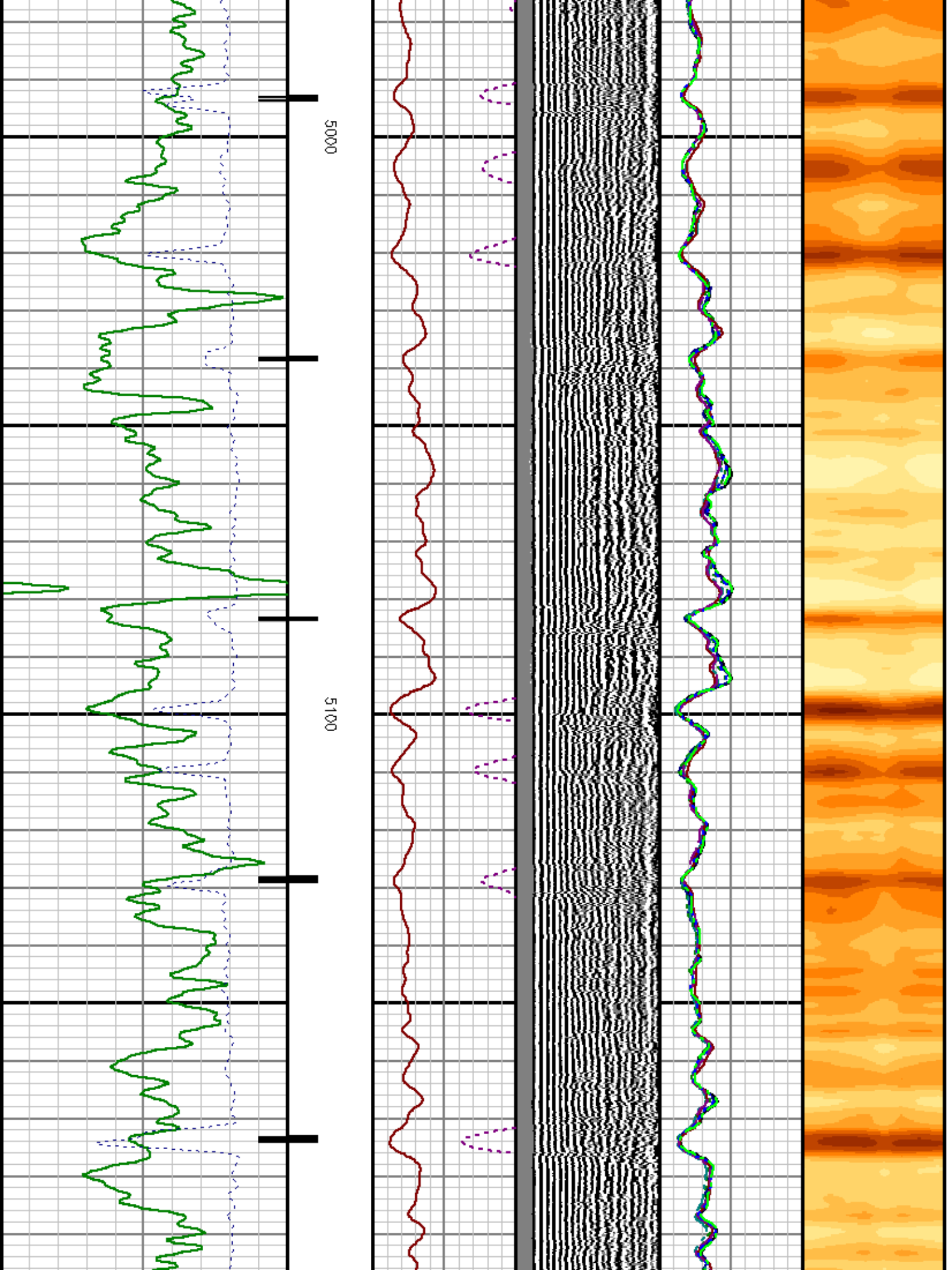


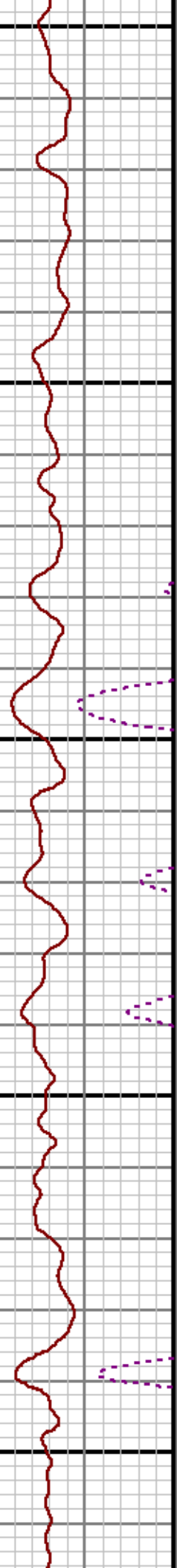
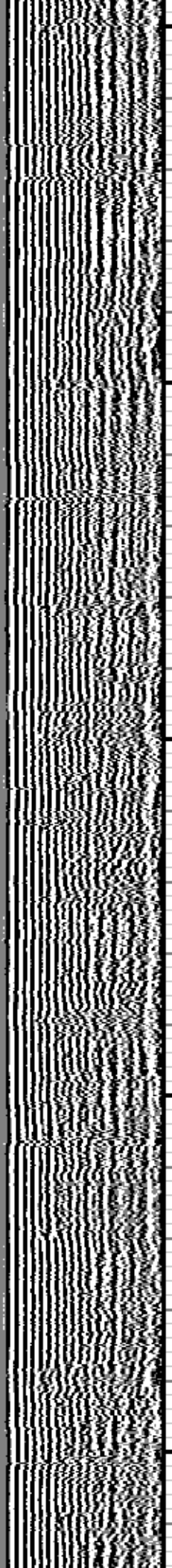
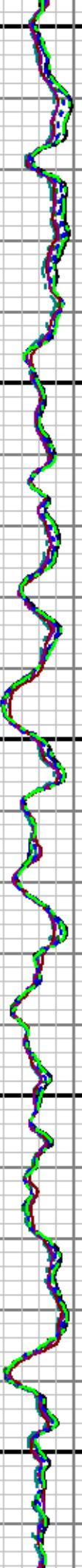
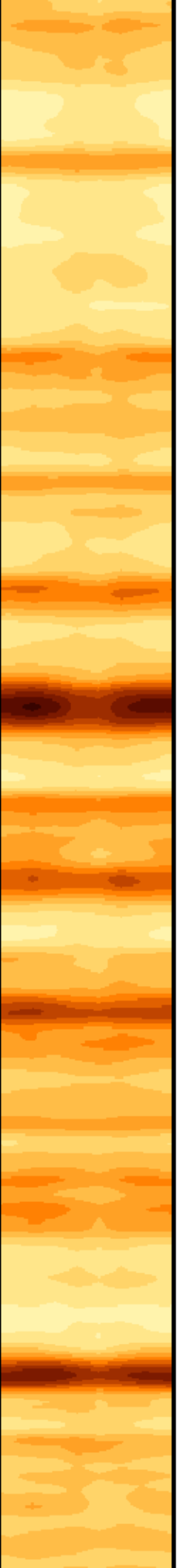
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4900





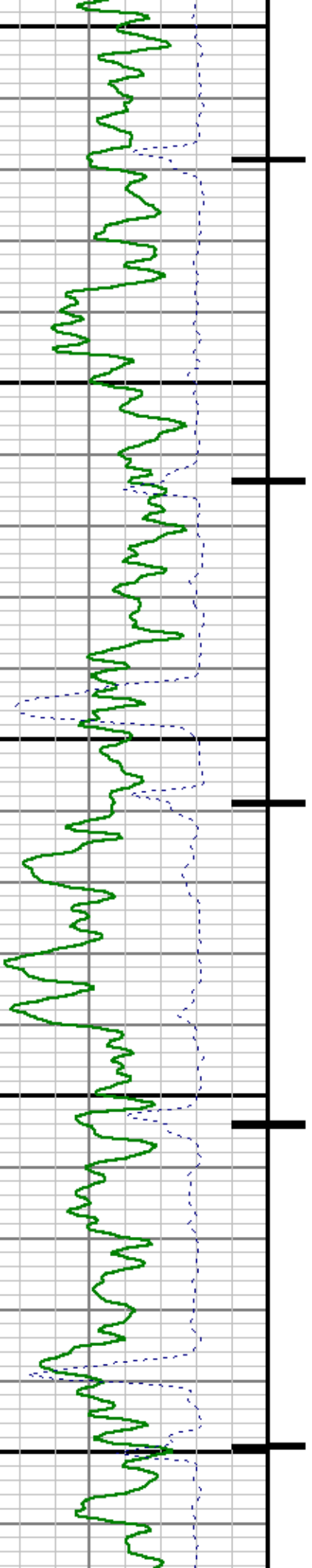


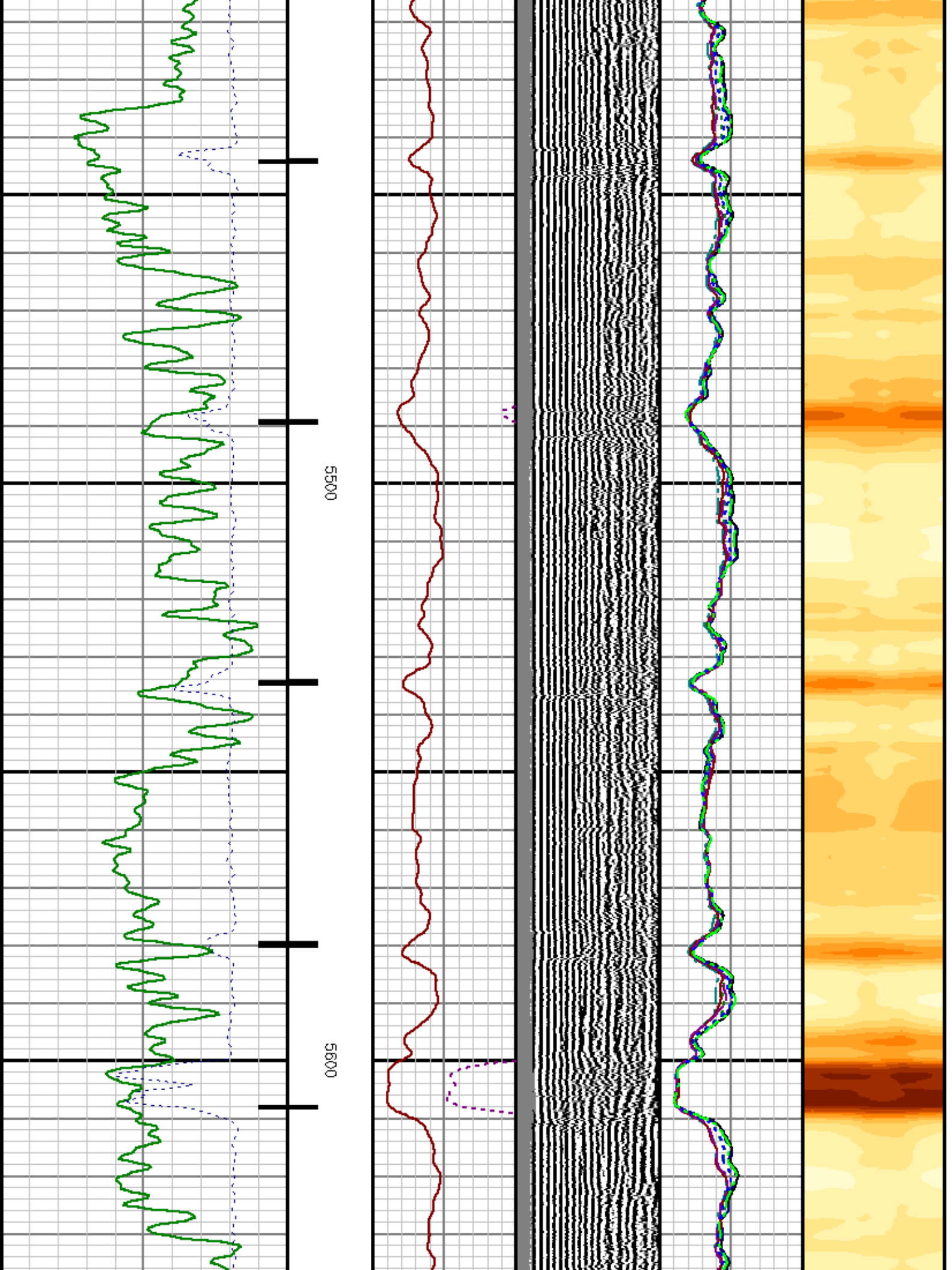


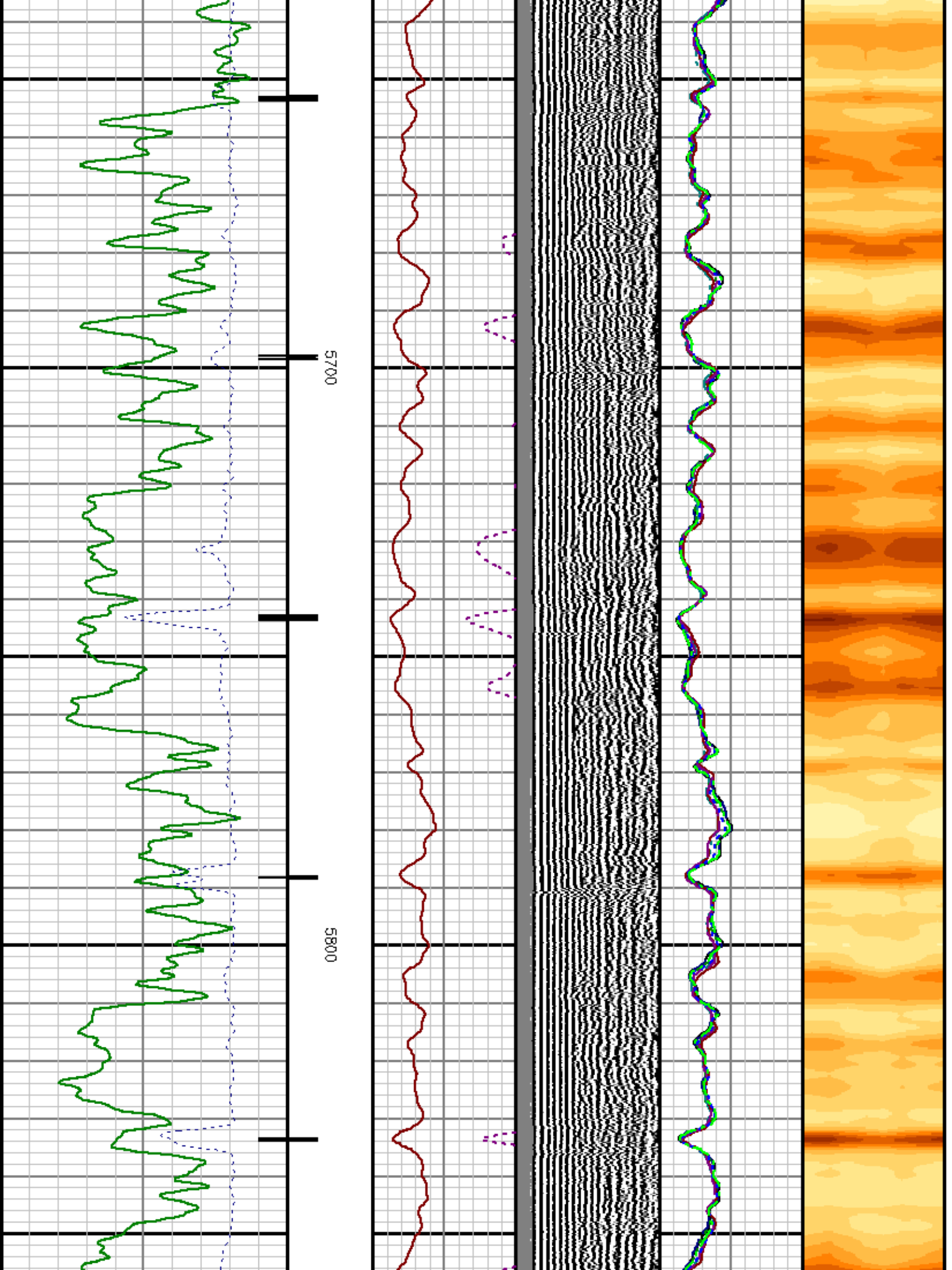
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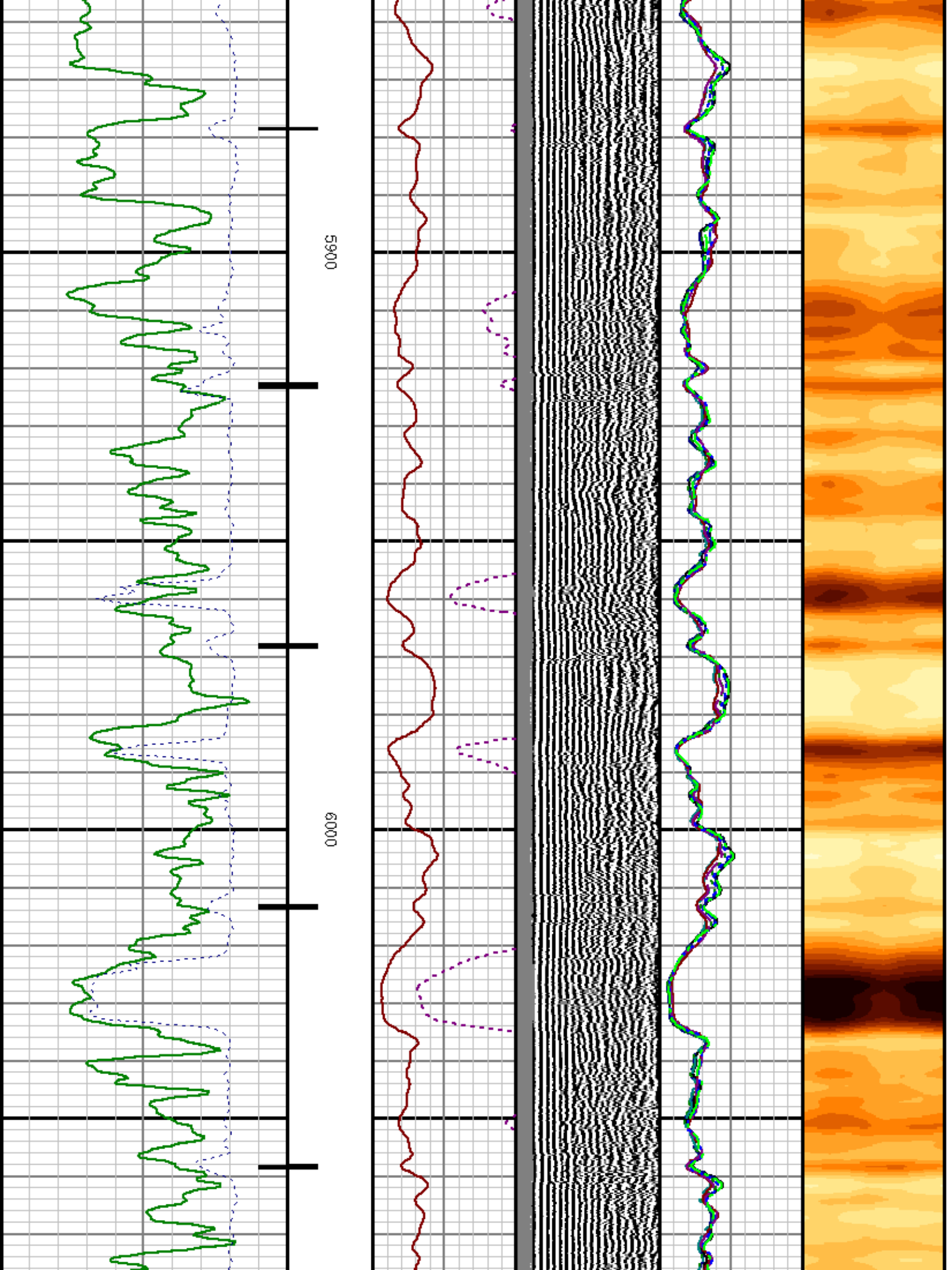
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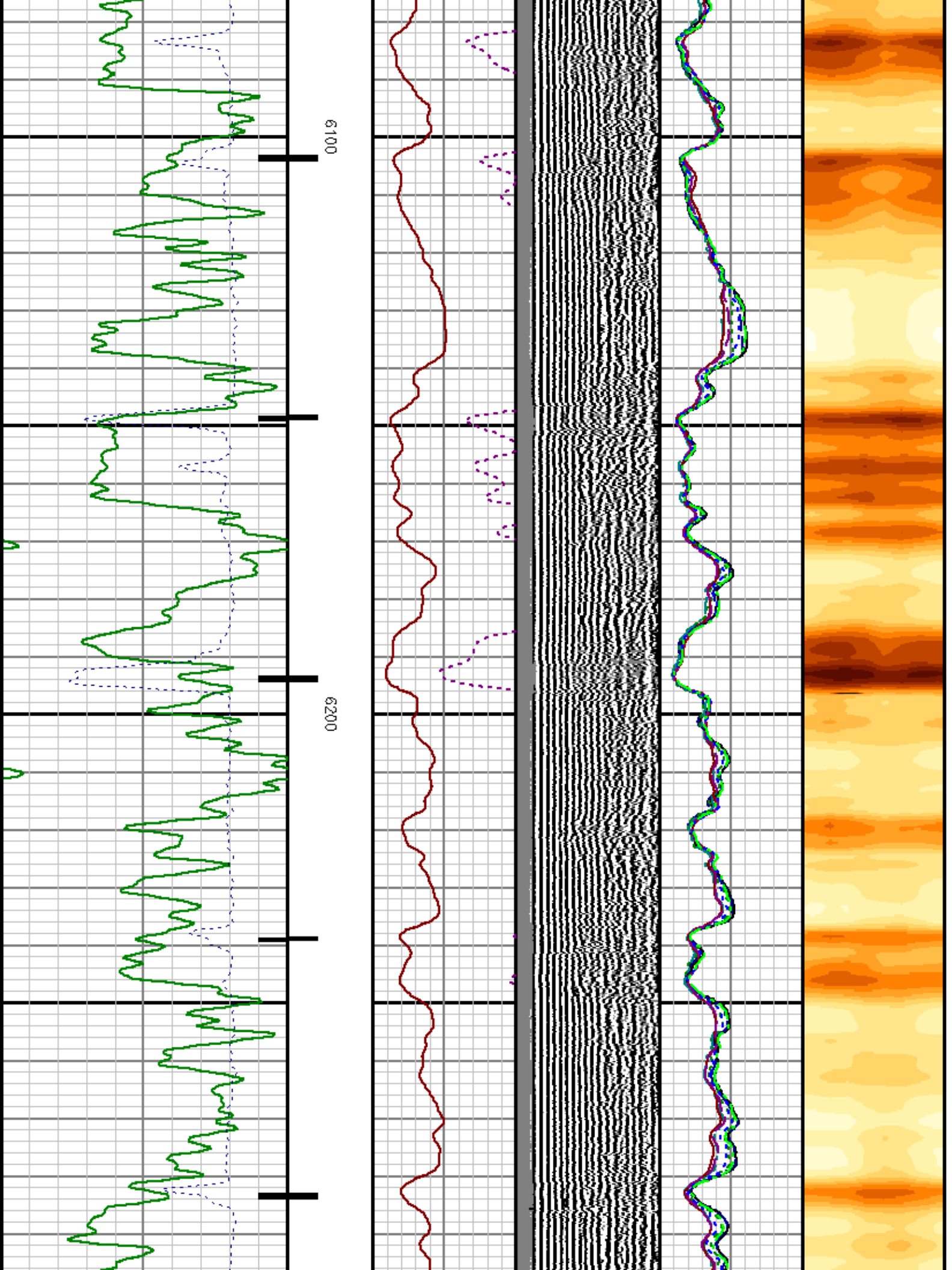


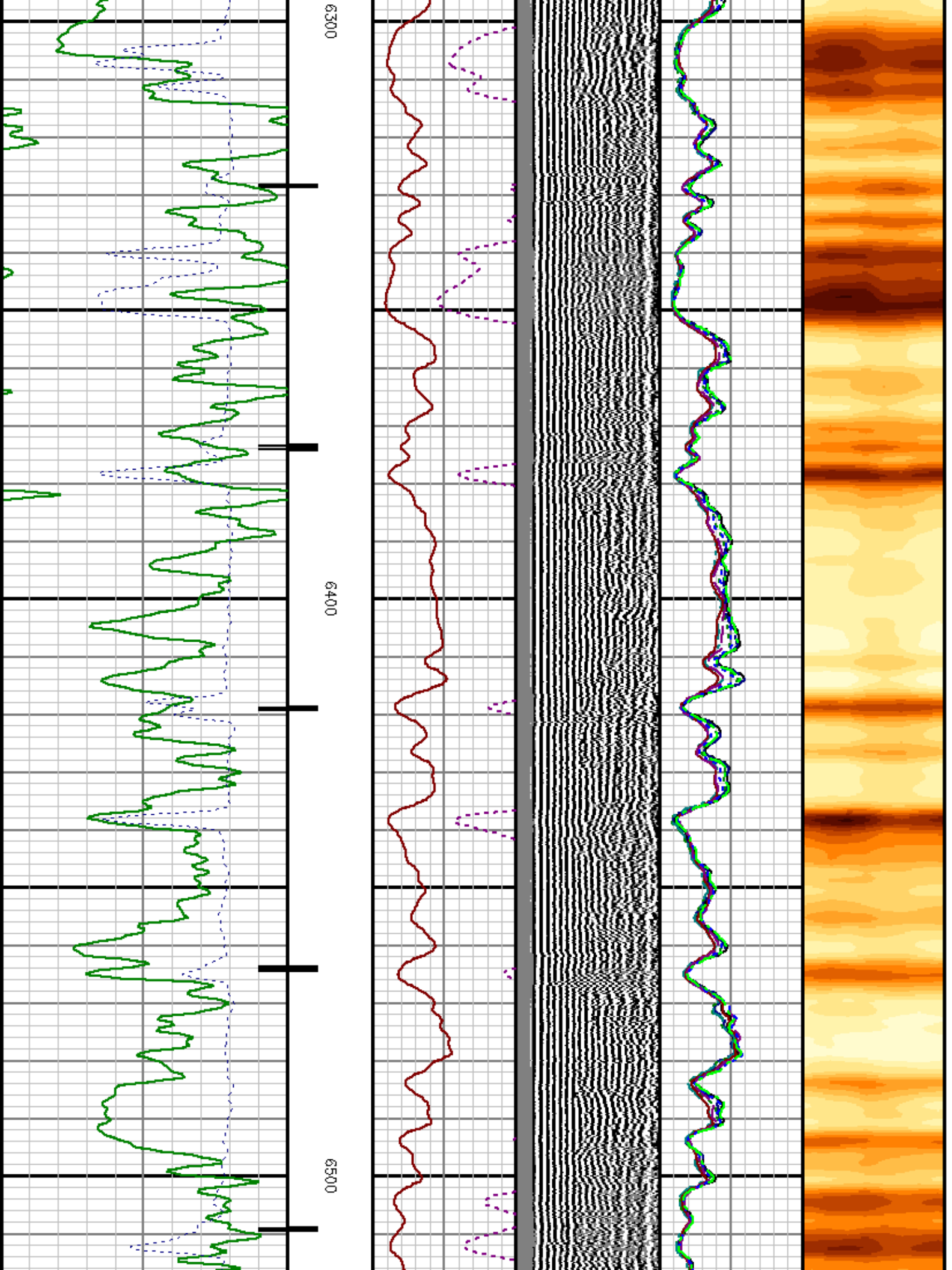




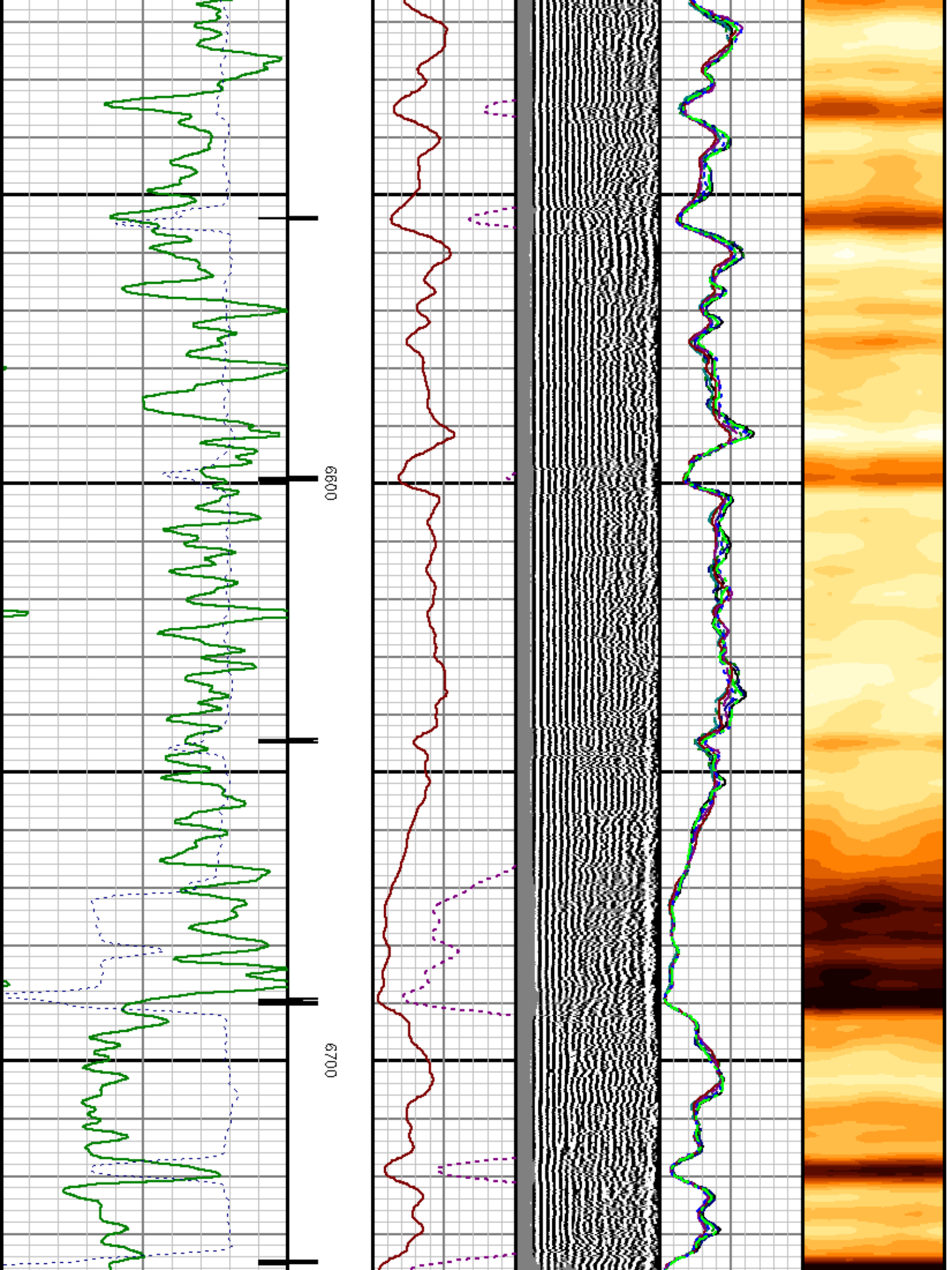




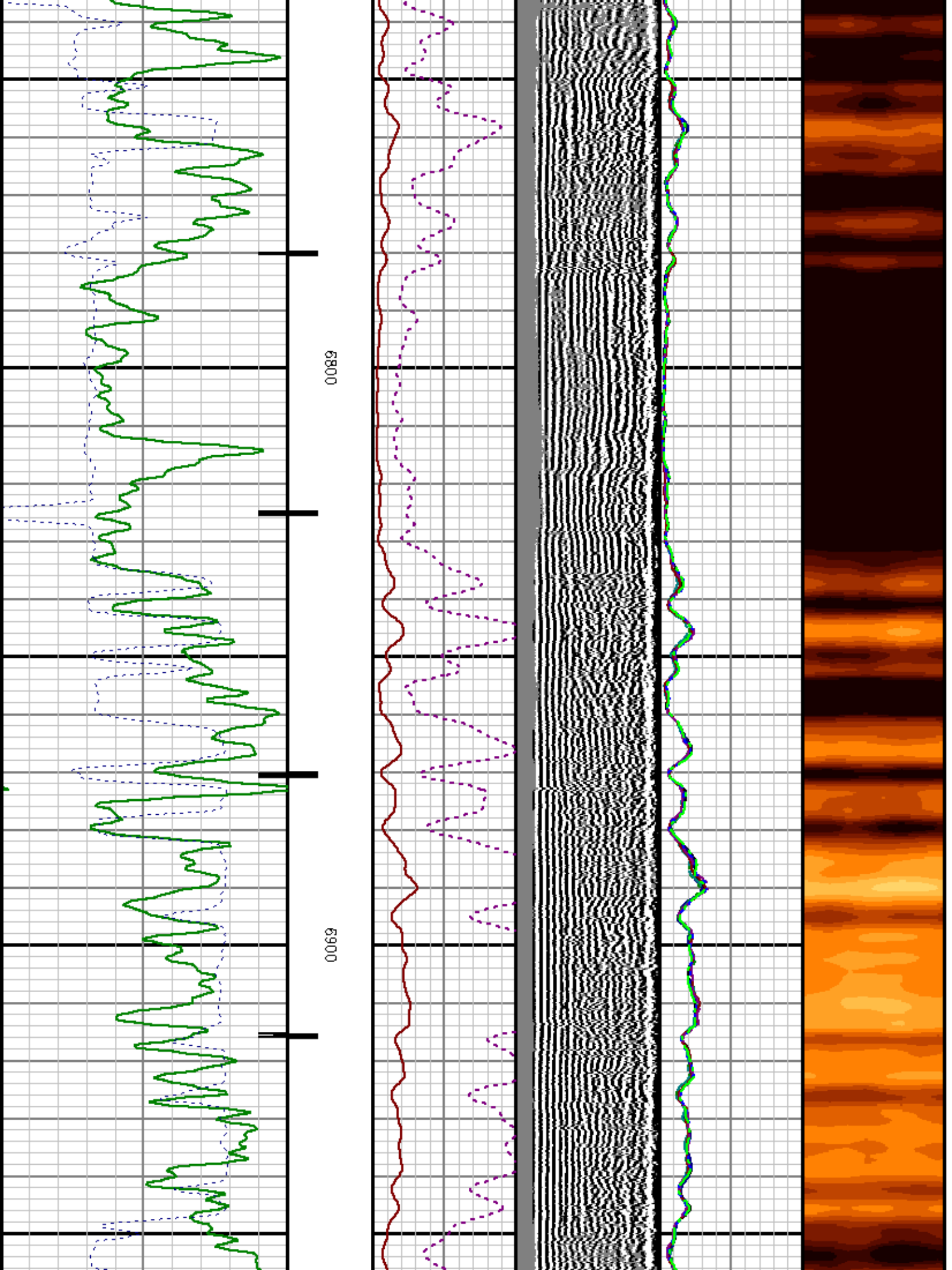


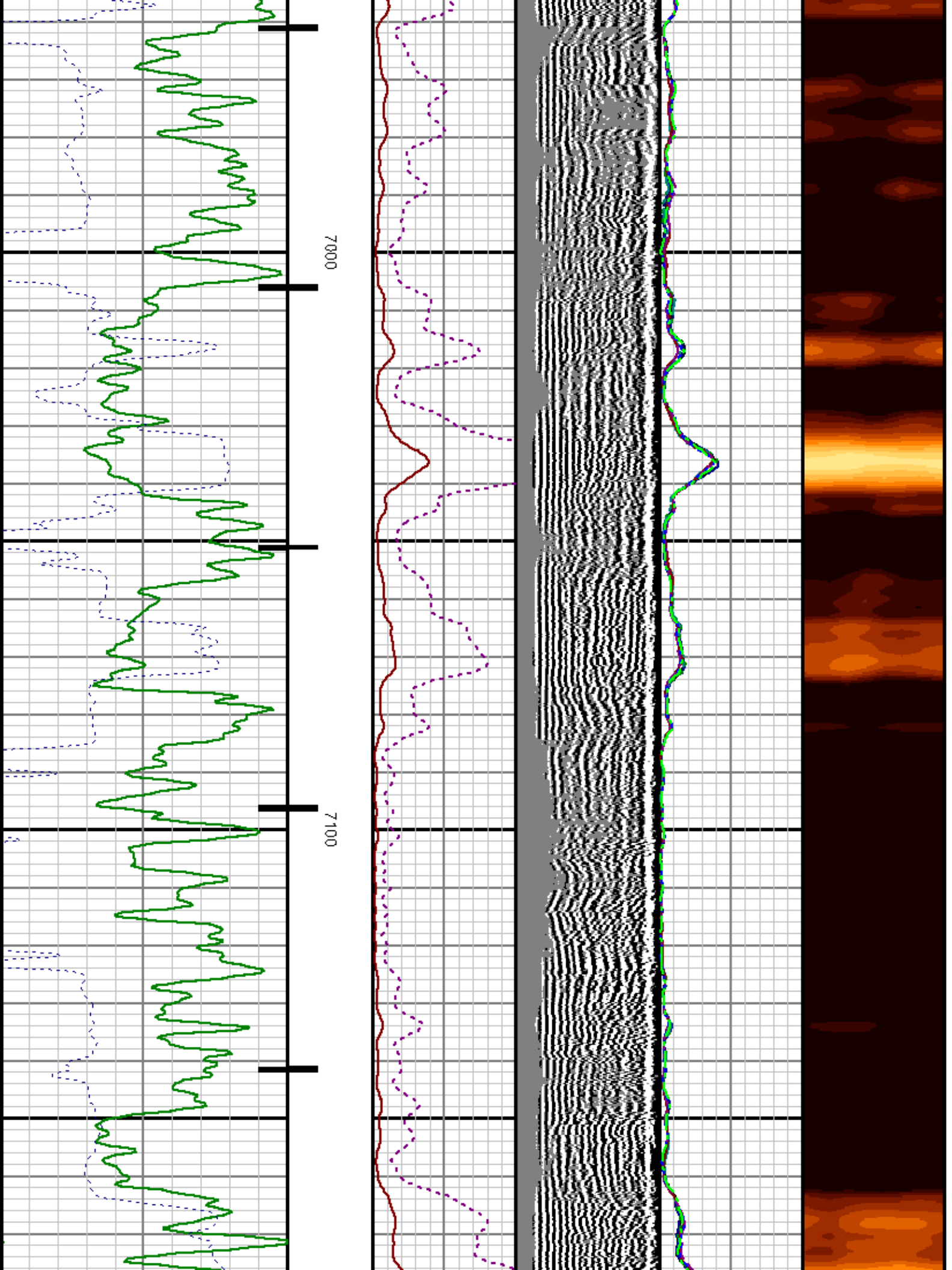


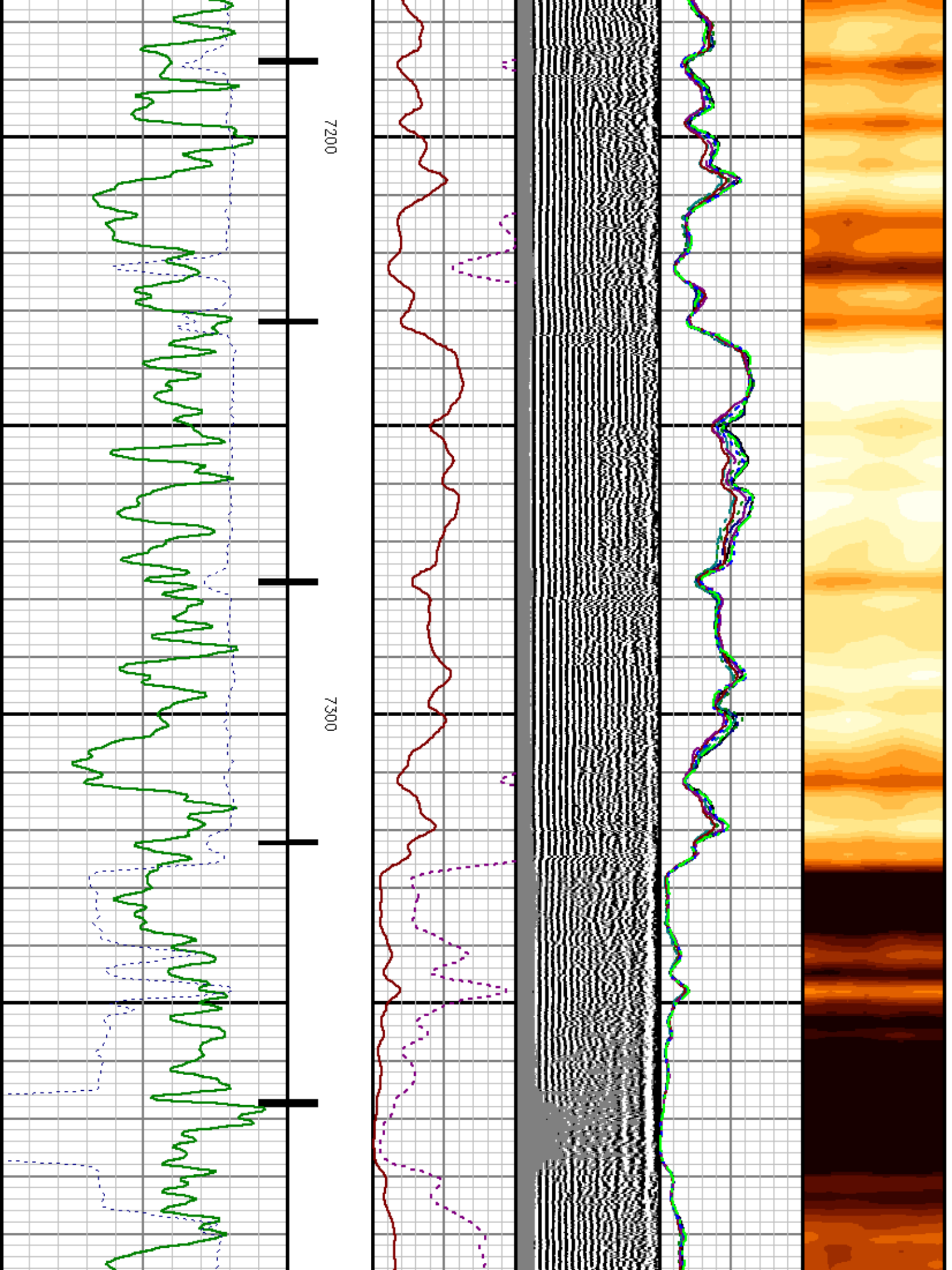


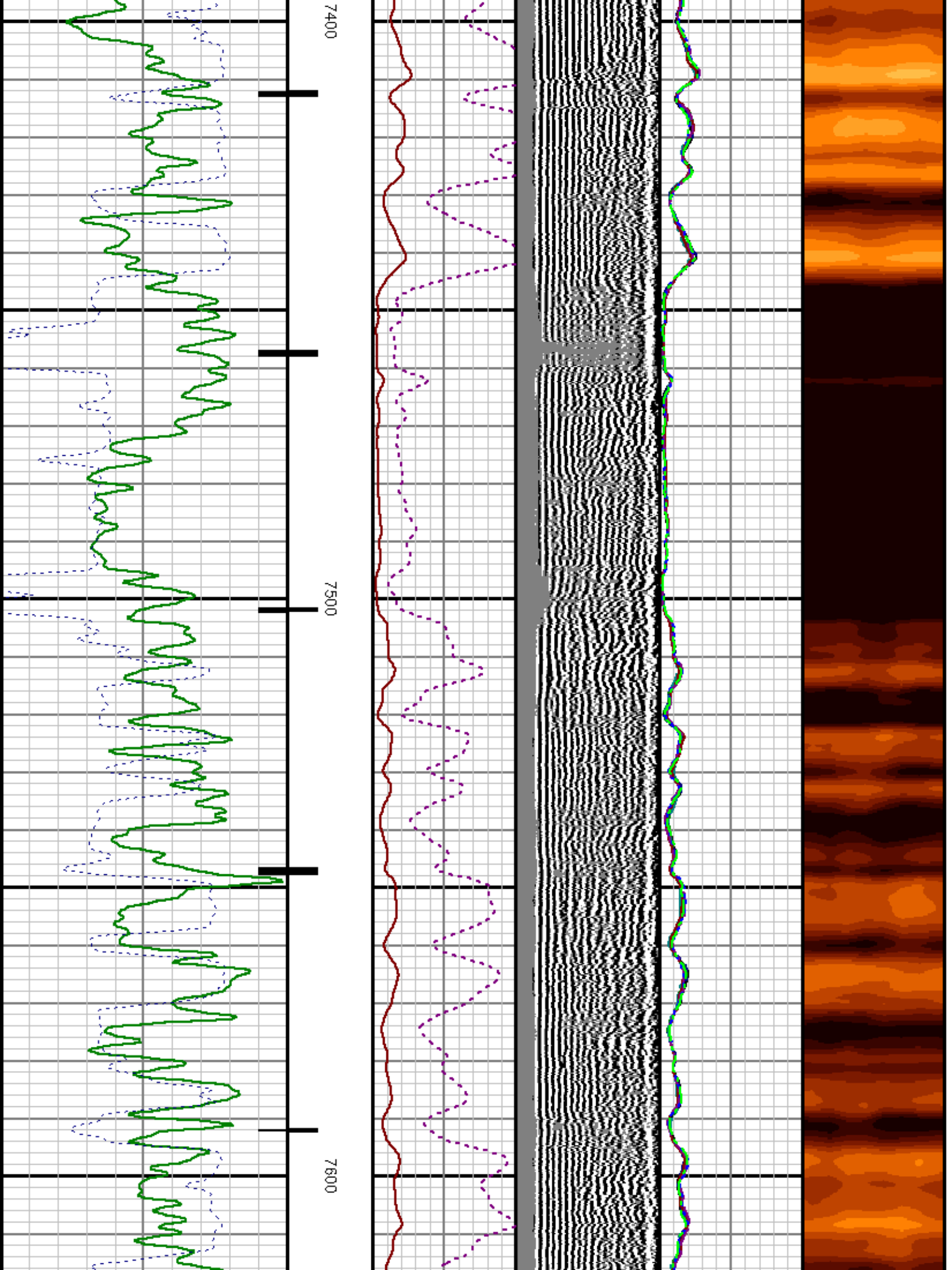




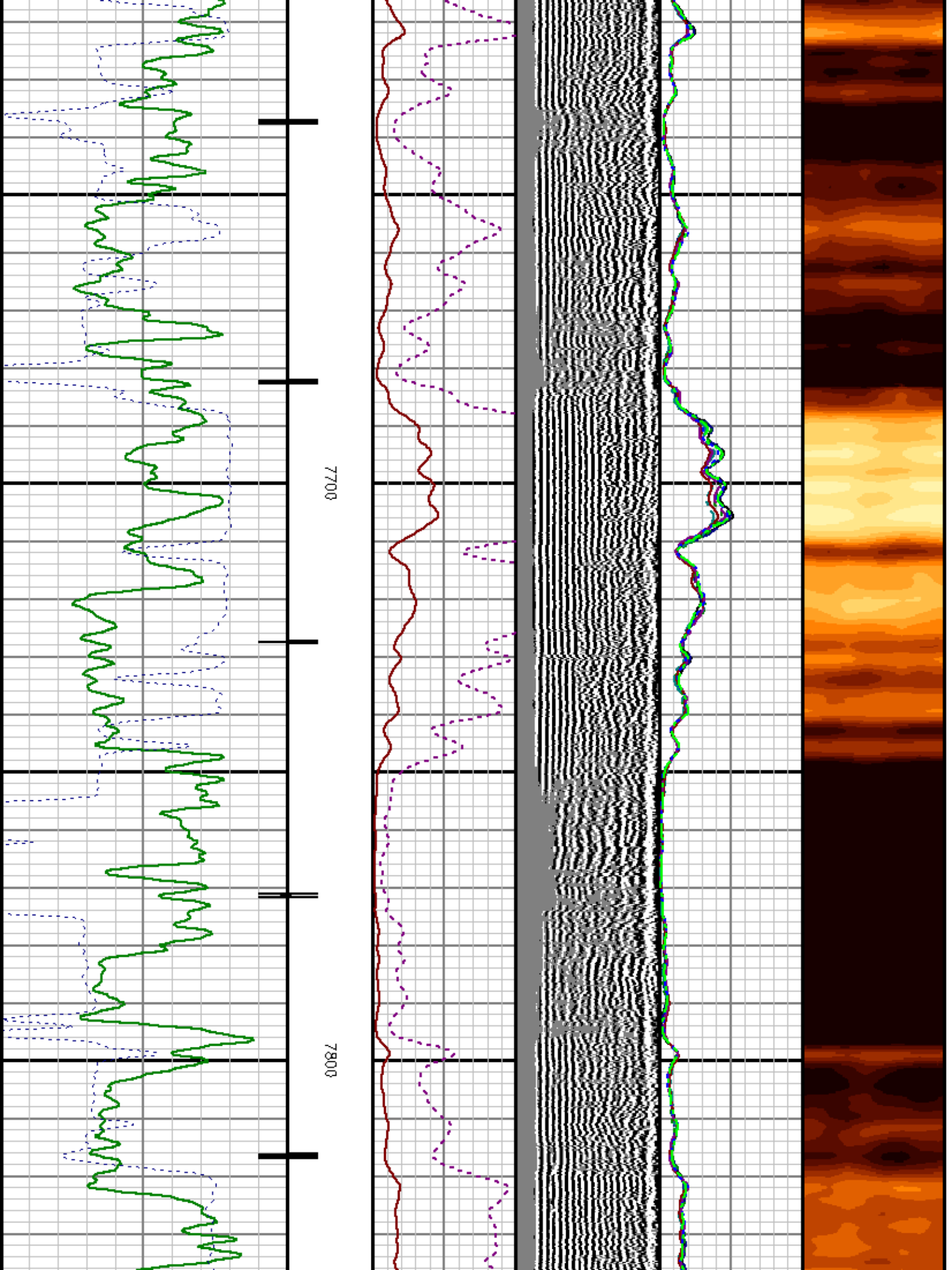


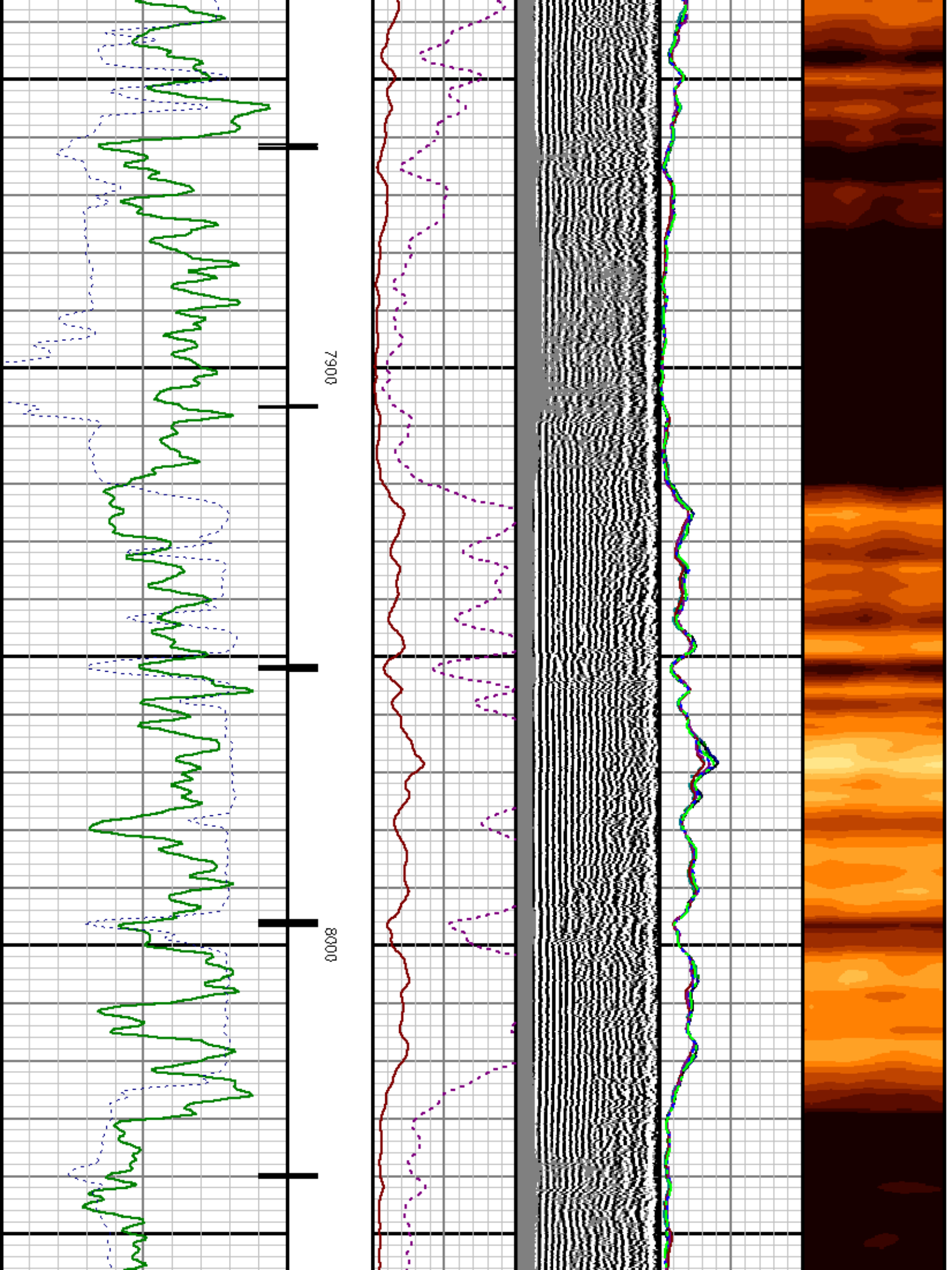


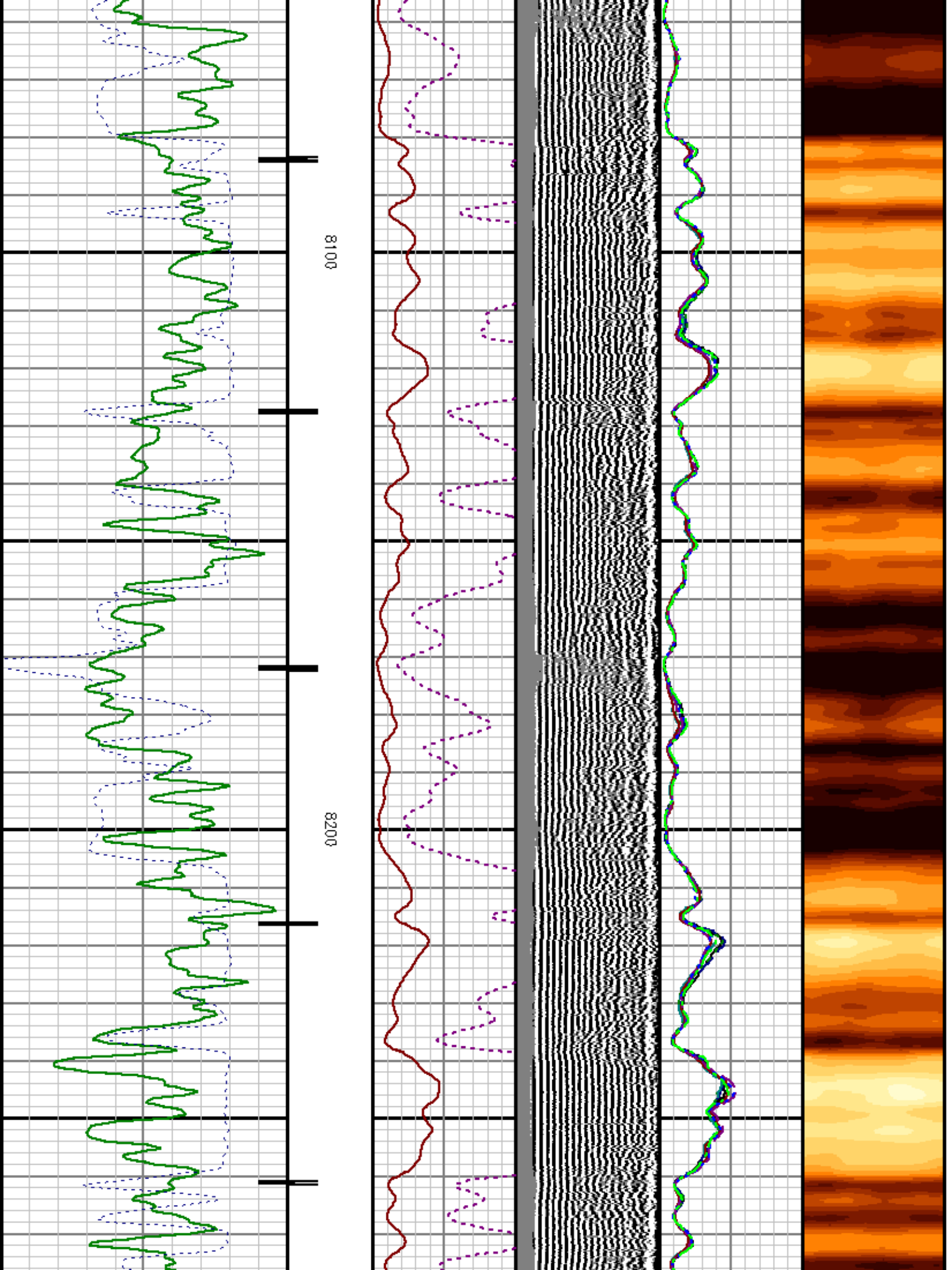




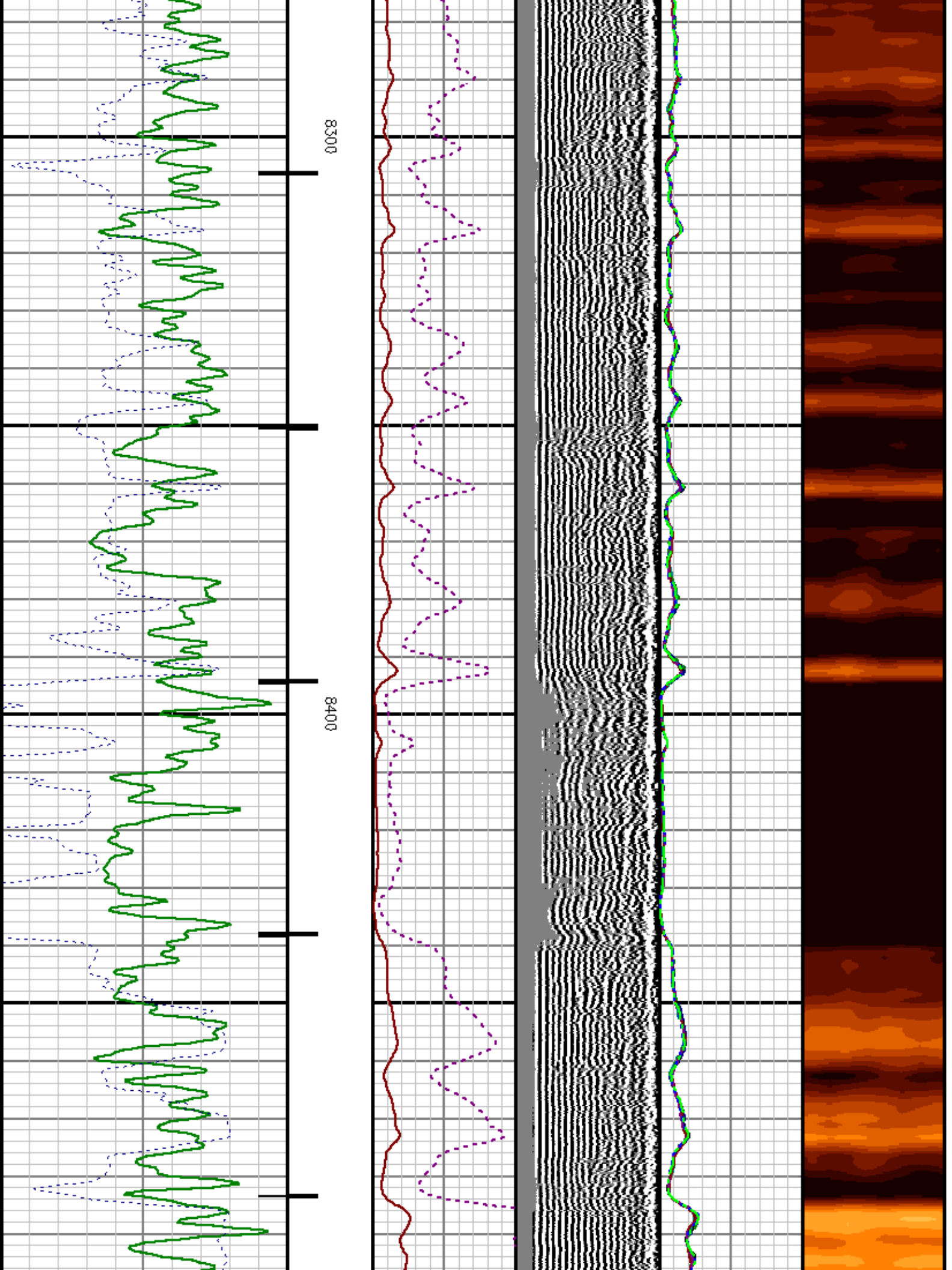




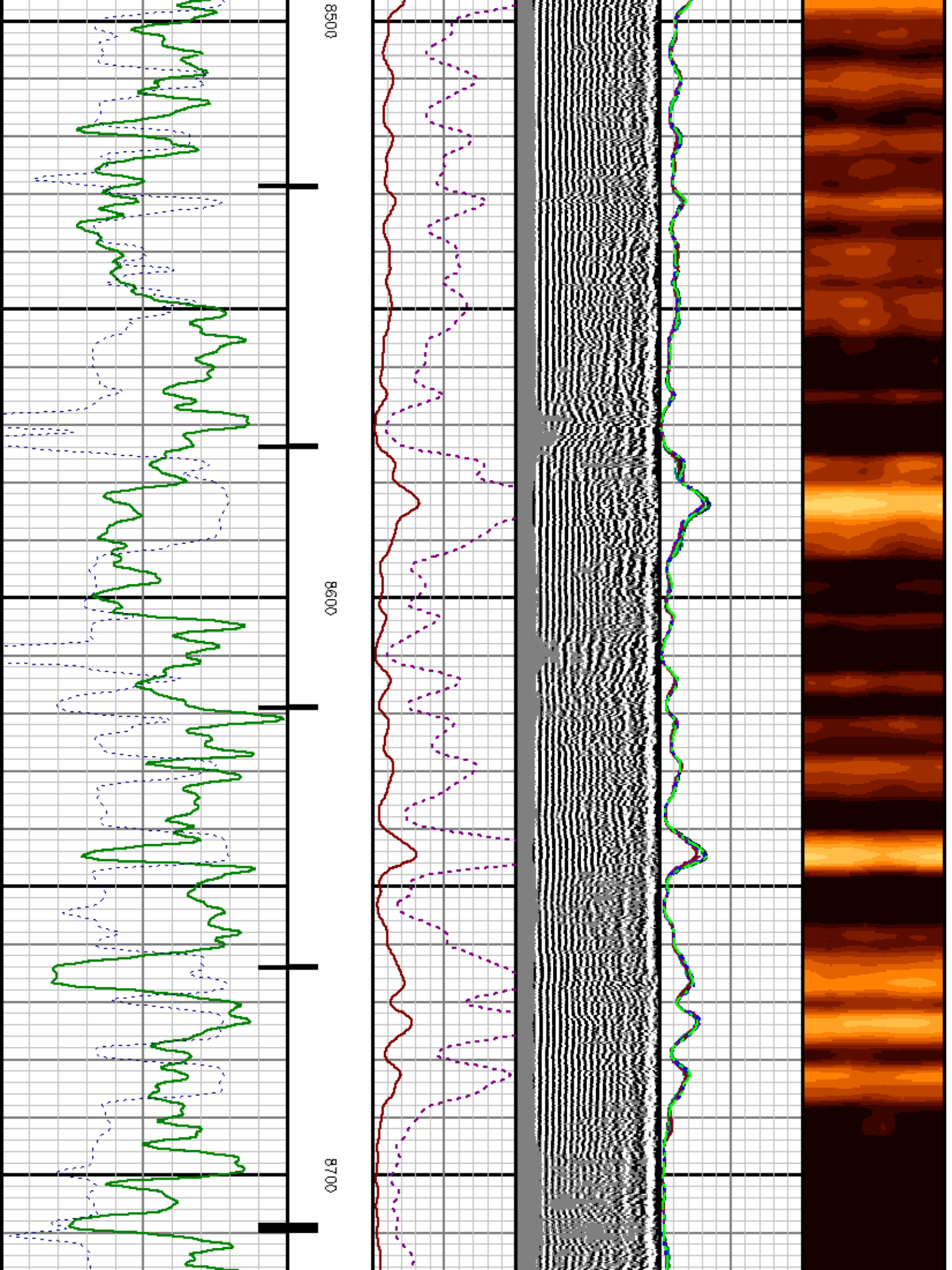


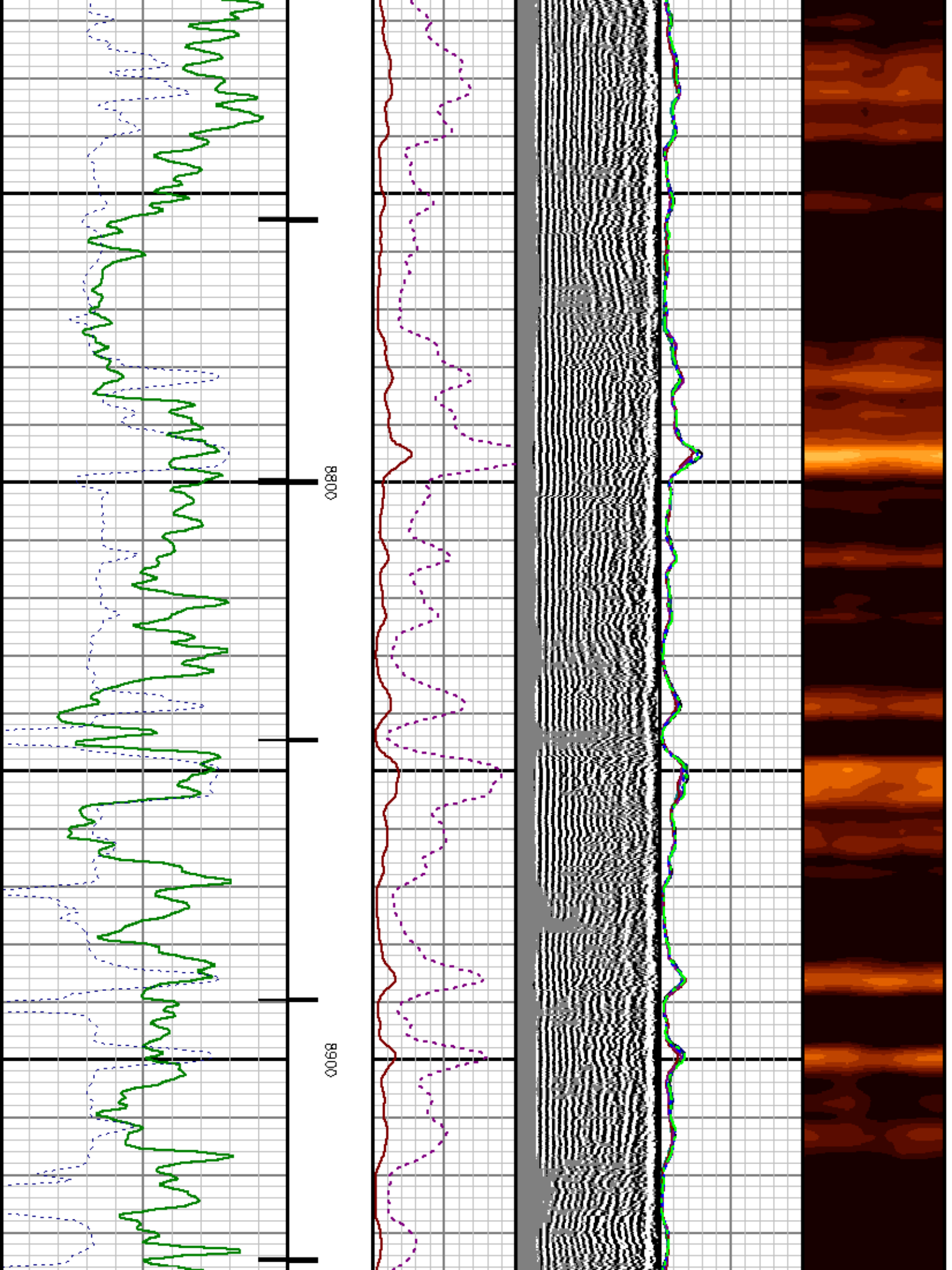


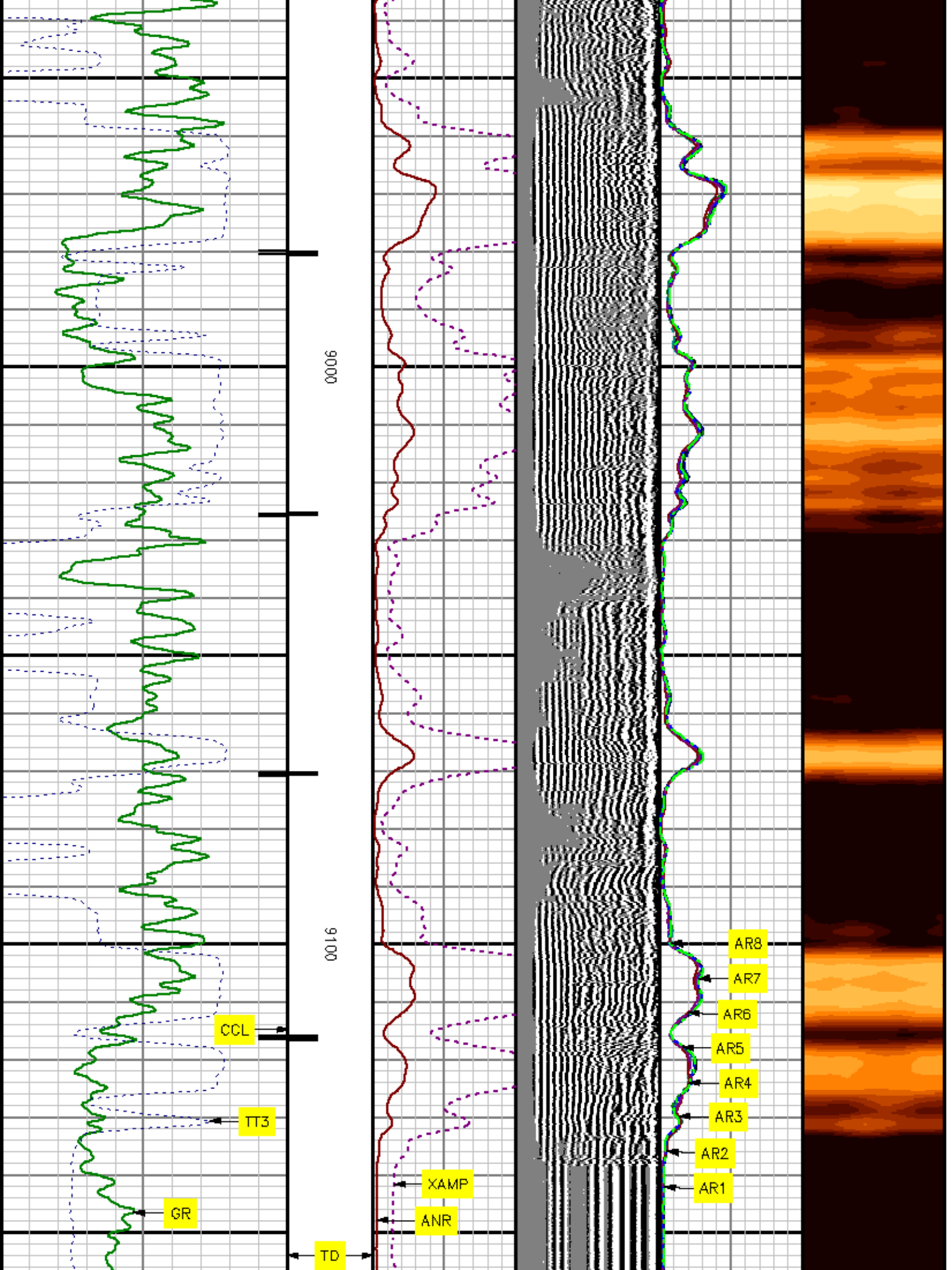


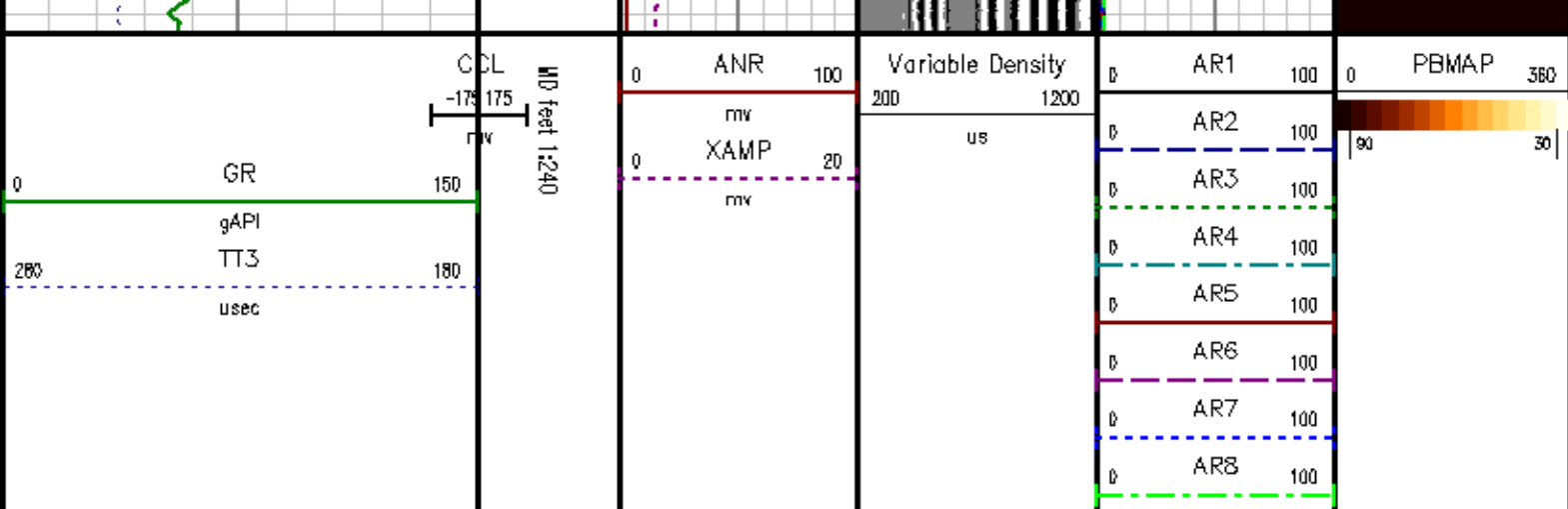












## REPEAT SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	8946.050	9175.300
RAL	Amp Gate Start Near	200.391	usec	8946.050	9175.300
RAL	Amp Gate Start Radial	200.391	usec	8946.050	9175.300
RAL	Amp Gate Width Far	25.000	usec	8946.050	9175.300
RAL	Amp Gate Width Near	25.000	usec	8946.050	9175.300
RAL	Amp Gate Width Radial	25.000	usec	8946.050	9175.300
RAL	casing od	4.500	inches	8946.050	9175.300
RAL	casing wt	11.600	lbm/ft	8946.050	9175.300
RAL	FB Start Far	291.900	usec	8946.050	9175.300
RAL	FB Start Near	175.391	usec	8946.050	9175.300
RAL	FB Start Radial	175.391	usec	8946.050	9175.300
RAL	FB Thresh Far	15.000	mv	8946.050	9175.300
RAL	FB Thresh Near	10.000	mv	8946.050	9175.300
RAL	FB Thresh Radial	10.000	mv	8946.050	9175.300
RAL	Fluid Travel Time	200.000	usec/ft	8946.050	9175.175

## DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
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1426XA -15.360

ACAL ANR AR1 AR2 AR3 AR4

AR5 AR6 AR7 AR8 CHV FPR2

FPR3 FPR5 TT3 TTR1 TTR2 TTR3

TTR4 TTR5 TTR6 TTR7 TTR8 XAMP

1426XA -14.360

AFAR SIG TT5

1426XA -7.250

CCL

1426XA -5.390

GR

1426XA 0.000

NEU

Created by : RAL, v4.6.007

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

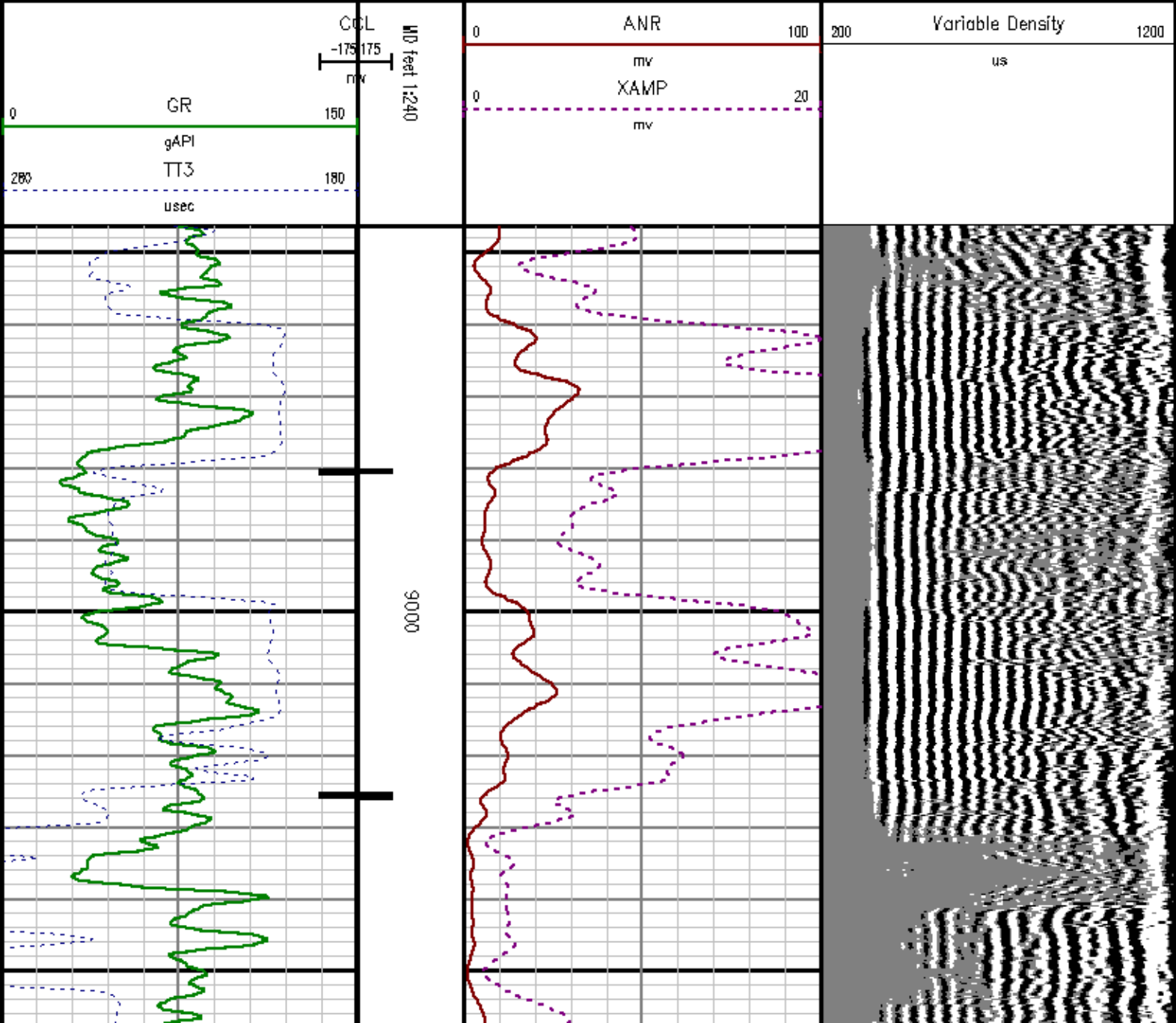
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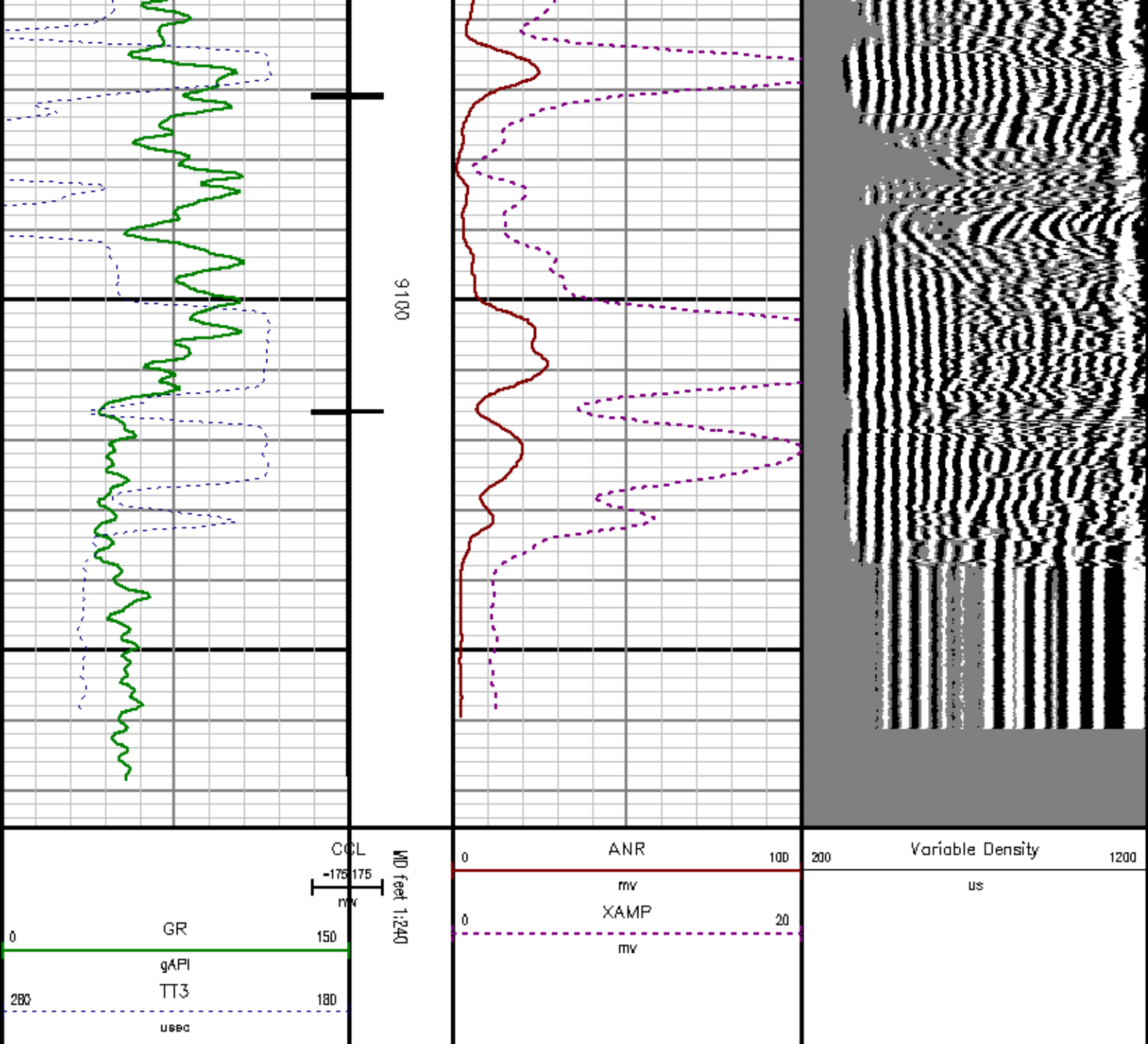
File Name : D:\WELLDATA\RAD31\REPEAT.XTF

Mode : PlotMgr 5.4.504

Interval : 8946.30 - 9175.30 feet UP

Created : 8/27/2009 11:07:15 AM





## CALIBRATION SUMMARY

*RALSHP*

DATE/TIME PERFORMED: Wed Aug 26 17:50:05 2009 TOOL SERIES: 1426XA ASSET: 9999 SEQ: AU1

Tool Delay [usec]	-53.00	Tank OD in	5.50	Tank Wt lbm/ft	15.50	Tank ID in	4.95
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RECEIVER	Travel Time [usec]	Amp. Gate Start [usec]	Amp. Gate Width [usec]	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Amp Ref. [mV]	Shop Factor
CAL Pulse	218	216	30	166	25	-0.300	100.00	0.14
3 Ft. Receiver	219	216	30	162	25	-0.303	100.00	0.13
5 Ft. Receiver	328	327	30	225	25	0.372	150.00	0.15
Radial #1	218	216	30	163	25	-0.228	100.00	0.13
Radial #2	218	216	30	163	25	0.172	100.00	0.13
Radial #3	219	216	30	163	25	0.606	100.00	0.13
Radial #4	220	216	30	163	25	-0.014	100.00	0.13
Radial #5	220	216	30	163	25	-1.000	100.00	0.13
Radial #6	219	216	30	163	25	-0.425	100.00	0.13
Radial #7	218	216	30	163	25	0.108	100.00	0.13
Radial #8	219	216	30	163	25	-0.081	100.00	0.13

***RALFLD***

Wellsite Calibration: C:\case\calver\RALFLD\9999AU1 fld.cal

## WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Aug 27 07:09:14 2009 TOOL SERIES: 1426XA ASSET: 9999 SEQ: AU1

Tool Delay [usec]	-53.00	Casing OD in	4.50	Casing Wt lbm/ft	11.60	Casing ID in	4.00
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RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	166	25	-0.048	0.000	0.99	100.000
3 Ft. Receiver	200	25	-0.194			
5 Ft. Receiver	317	25	0.547			
Radial #1	200	25	-0.376			
Radial #2	200	25	-0.366			
Radial #3	200	25	-0.307			
Radial #4	200	25	-0.440			
Radial #5	200	25	-0.512			
Radial #6	200	25	-0.361			
Radial #7	200	25	-0.528			
Radial #8	200	25	-0.496			

***GAMMA RAY***

Calibration File: C:\case\calver\GR\120AU.cal

DATE/TIME PERFORMED: Wed Aug 19 15:34:30 2009

TOOL SERIES: 1426XA ASSET: 120 SEQ: AU

Calibrator #	Background [cps]	Calibrator On [cps]
BA 857	46.09	255.11

Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
0.885	40.79	225.79	185.00

Verification File: C:\case\calver\GR\120AU.VP

## PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Wed Aug 19 15:35:58 2009

TOOL SERIES: 1426XA ASSET: 120 SEQ: AU

Calibrator #	Background [cps]	Calibrator On [cps]
BA 857	46.16	254.98

Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
0.885	39.97	225.67	185.71

# *TOOL DIAGRAM*

## OTA SHORT CABLE HEAD

## CENTRALIZER

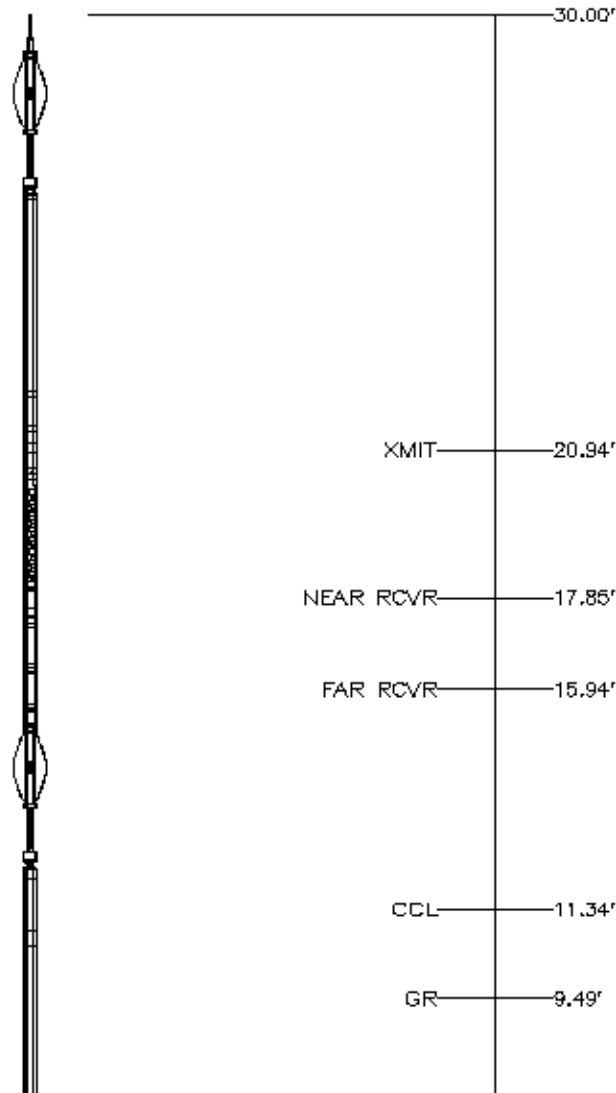
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

## PROBE 2 3/4 DUAL RECEIVER RADII (1426XA)

## CENTRALIZER

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

## Probe GR/CCL/NFL (2459YA)





11400 G/L COL NEU (210000)

NEU 4.09'

**CENTRALIZER**

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

Total Length: 30.00'  
Total Weight: Not Available  
Max Diameter: 0' 3.12"



Company	WILLIAMS PRODUCTION COMPANY		
Well	RWF 31-17		
Field	RULISON		
County	GARFIELD	State	COLORADO

File No:	1380
API No:	05-045-156790000

**Location**

SHL: 2230' FNL & 480' FEL  
BHL: 317' FNL & 2201' FEL

**Elevations**

KB 5838.5 ft  
DF 5838.5 ft  
GL 5817 ft

17, 6S, 94W  
RWF 31-17 PAD  
CYCLONE 14

SEC 17 TWP 6S RGE 94W

Baker Atlas

