



RADIAL ANALYSIS BOND LOG

Baker Atlas

File No: 1748	Company Well	WILLIAMS PRODUCTION COMPANY SG 421-33	
API No: 04045183030000	Field County	GRAND VALLEY GARFIELD	
		State	COLORADO
S: 33 T: 7S R: 96W PAD: SG 22-33 RIG: MABORS 576	Location SHL: 1572' FNL & 950' FWL BHL: 922' FNL & 1914' FWL	Other Services NONE	
Permanent Datum Log Measured From Drill Measured From	GL KB KELLY BUSHING	Elevation 26 ft Above P. D.	Elevations KB 5087 ft DF 5086 ft GL 5061 ft

Date	27/APR/10	
Run	ONE	
Service Order	569773	
Depth Driller	5247 ft	
Depth Logger	5178 ft	
Bottom Logged Interval	5178 ft	
Top Logged Interval	SURFACE	
Time Started	20:30	
Time Finished	23:00	
Operator Rig Time	2.5 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	178 degF	
Reference Log	BAKER ATLAS OPEN HOLE LOG	
Reference Log Date	20/APR/10	
Equipment No.	4214	
Recorded By	J. WIESER	
Witnessed By	MR. GARY SHINABAKER	

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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
13.5 in	SURFACE	1171 ft
8.75 in	1171 ft	5247 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in	36 lbm/ft	N/A	SURFACE	1171 ft
4.5 in	11.6 lbm/ft	P-110	SURFACE	5247 ft

Remarks
LOG WAS TIED INTO BAKER ATLAS OPEN HOLE LOG.
WELL WAS LOGGED WITH 0 psi AT THE WELLHEAD.
SHORT JOINT @ 2748' - 2769'.
BHT = 178 degF.

Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1426XA	496	CENTRALIZED
1	1	GR/CCL/TEL	2459XA	544	CENTRALIZED

MAIN SECTION
PRIMARY PRESENTATION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	25.950	5208.000
RAL	Amp Gate Start Near	200.391	usec	25.950	5208.000
RAL	Amp Gate Start Radial	200.391	usec	25.950	5208.000
RAL	Amp Gate Width Far	30.000	usec	25.950	5208.000
RAL	Amp Gate Width Near	30.000	usec	25.950	5208.000
RAL	Amp Gate Width Radial	30.000	usec	25.950	5208.000
RAL	casing od	4.500	inches	25.950	5208.000
RAL	casing wt	11.600	lbm/ft	25.950	5208.000
RAL	FB Start Far	291.900	usec	25.950	5208.000
RAL	FB Start Near	175.391	usec	25.950	5208.000
RAL	FB Start Radial	175.391	usec	25.950	5208.000
RAL	FB Thresh Far	10.000	mv	25.950	5208.000
RAL	FB Thresh Near	4.000	mv	25.950	5208.000
RAL	FB Thresh Radial	4.000	mv	25.950	5208.000
RAL	Fluid Travel Time	200.000	usec/ft	25.950	5207.718

DEPTH OFFSETS
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
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	-5.700	CD					

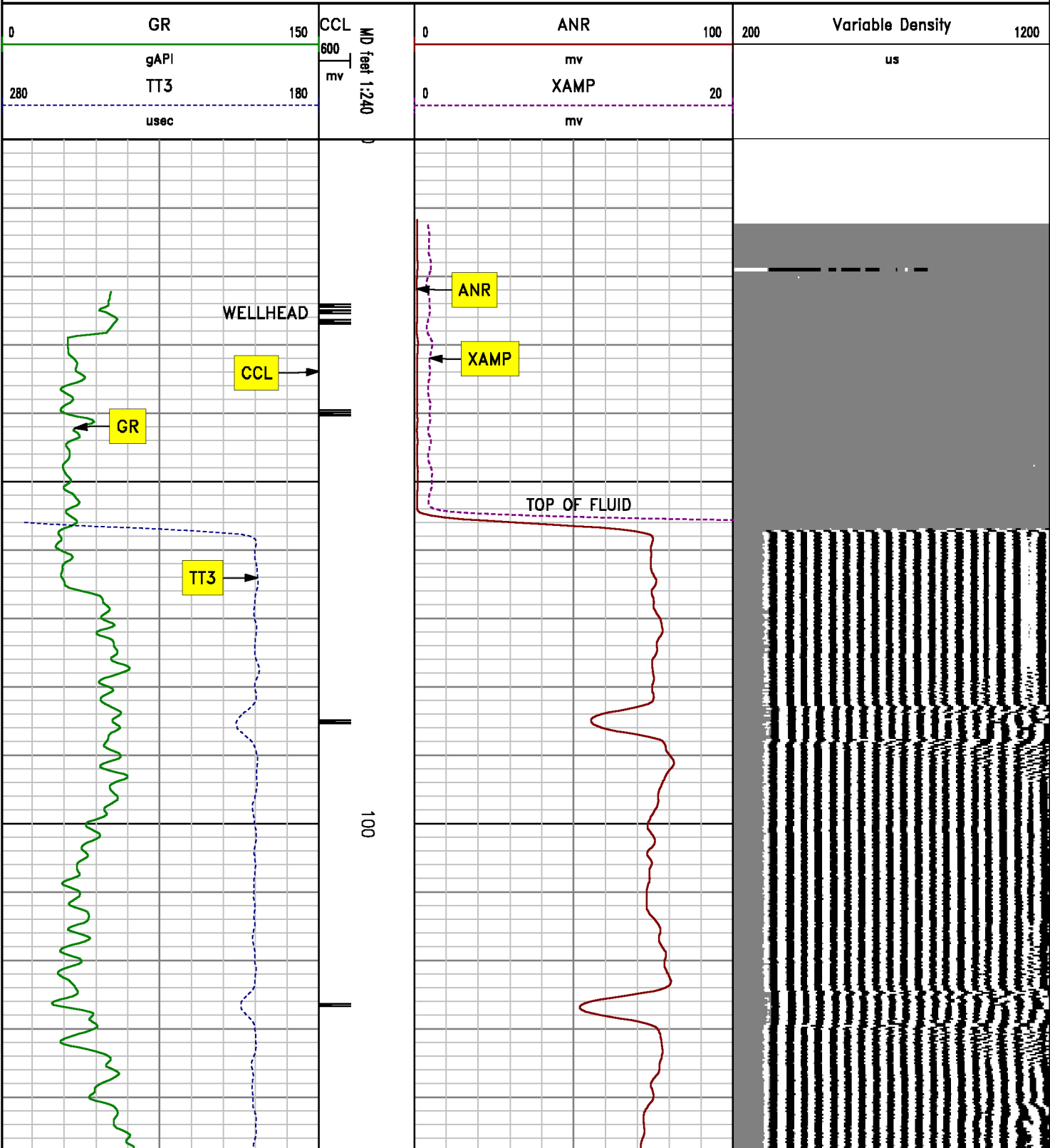
1426XA
1426XA

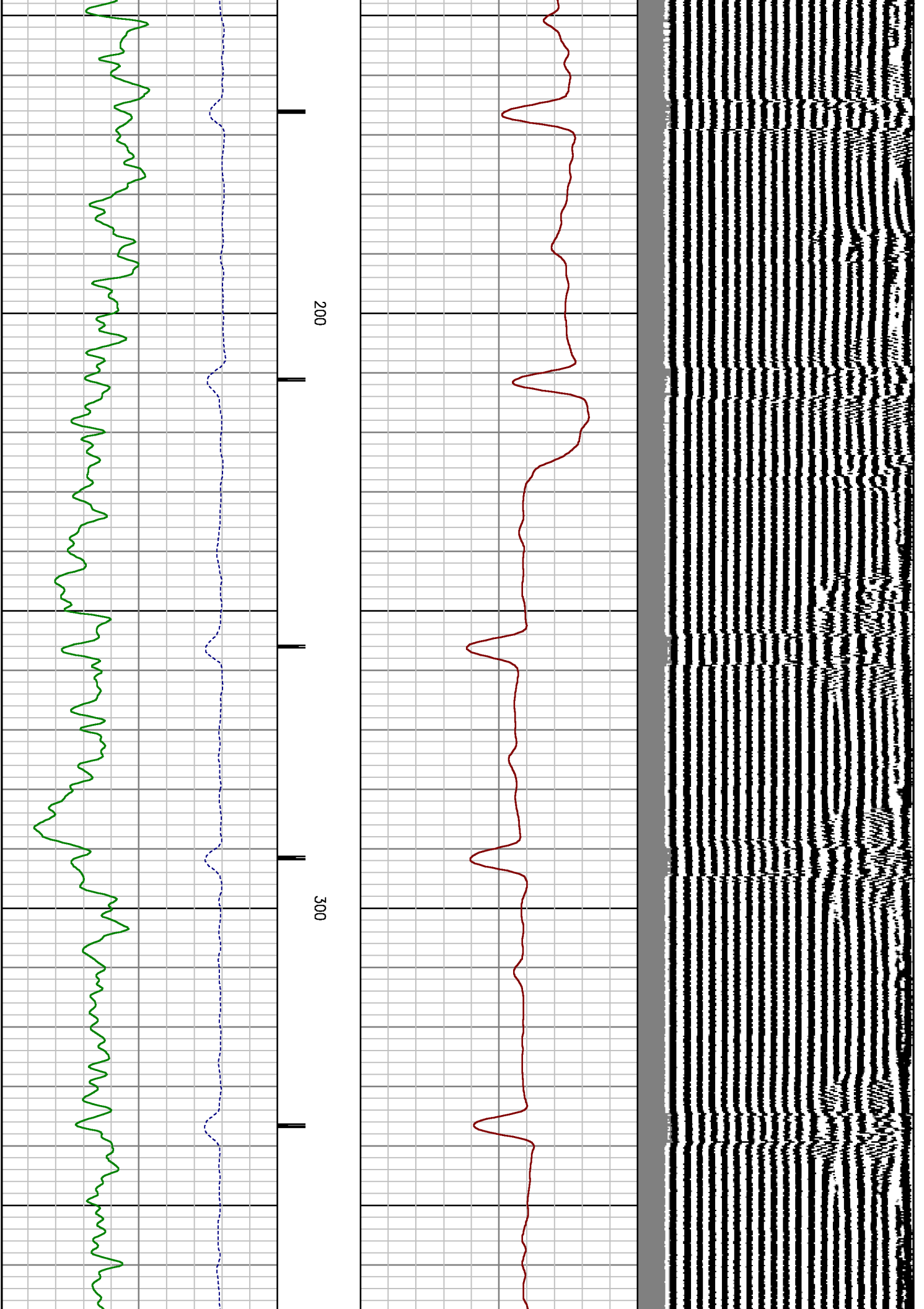
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0.000

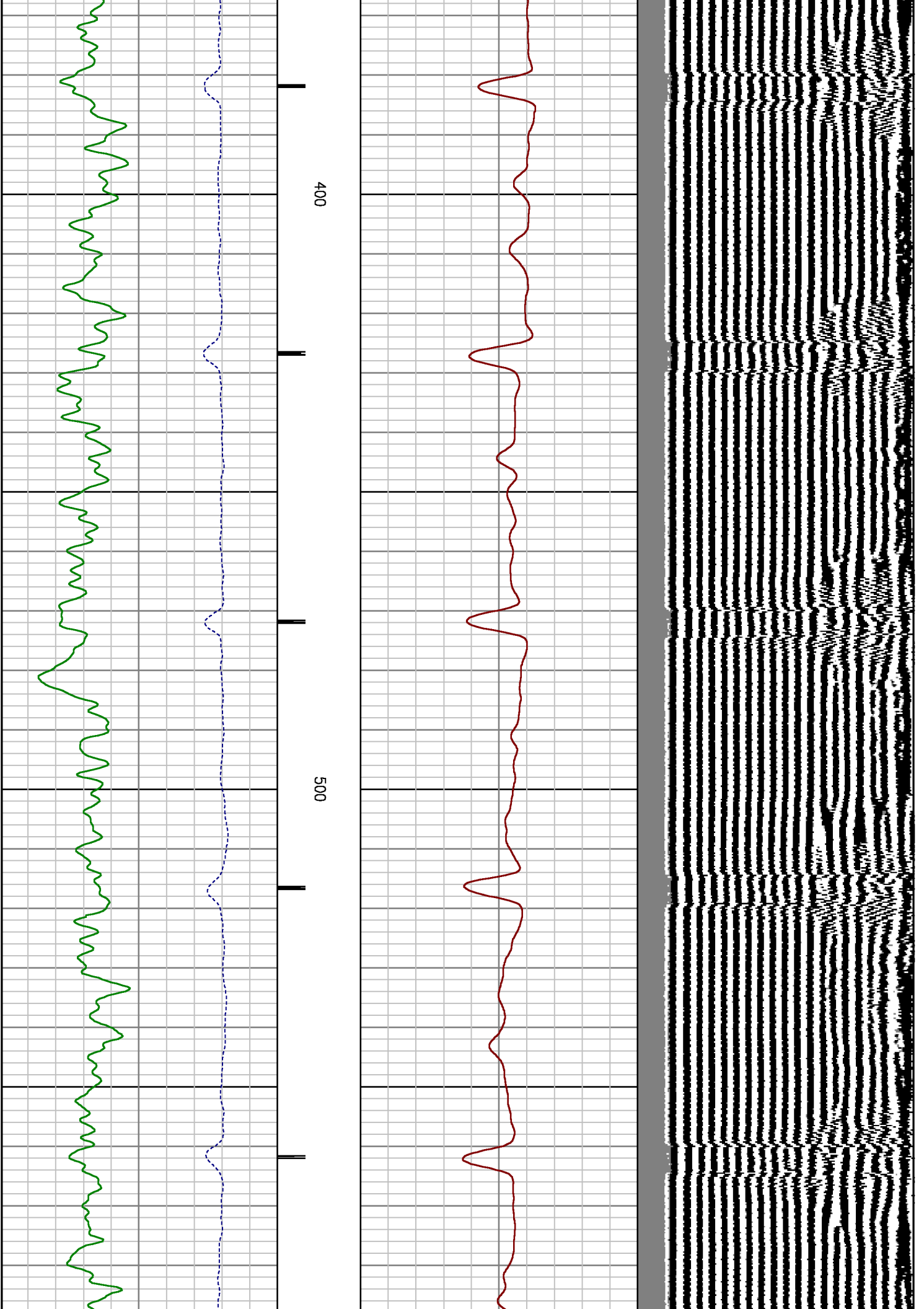
GR
NEU

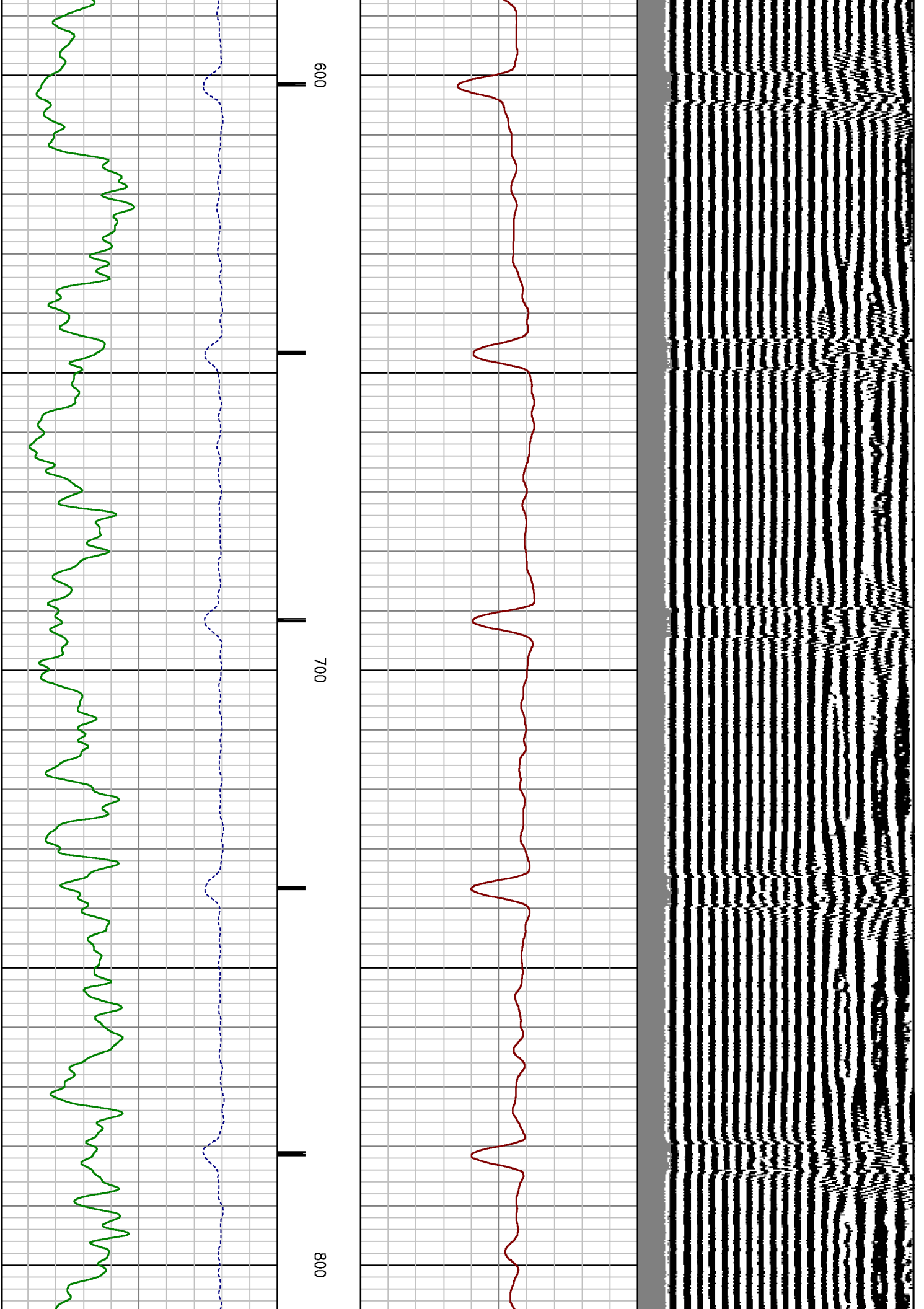
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Plotted by : PlotMgr, v5.4.504

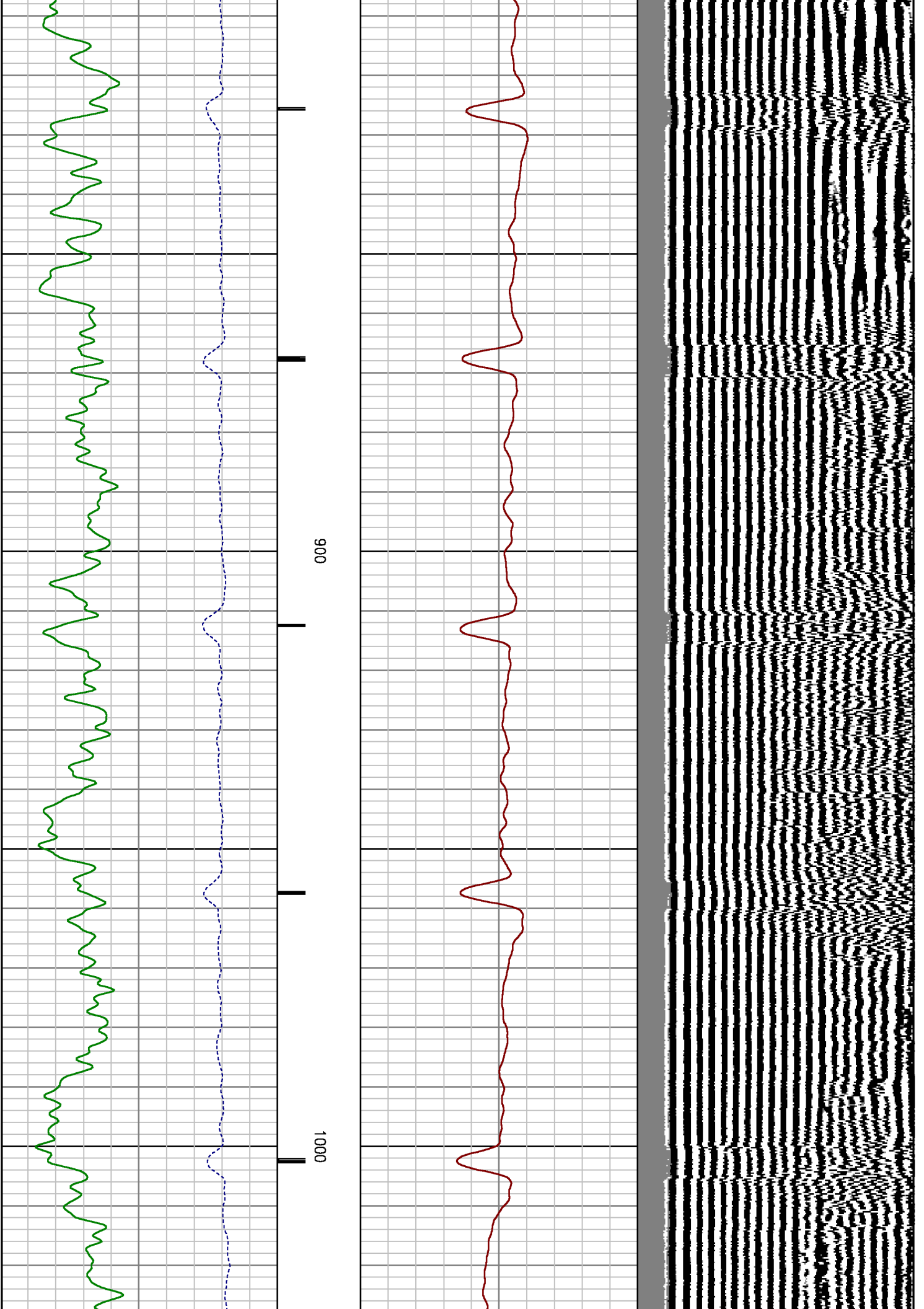
Company : WILLIAMS PRODUCTION COMPANY
Well : SG 421-33
File Name : D:\WELLDATA\RAD421\MAIN_CBL.xtf
Mode : PlotMgr 5.4.504
Interval : 0.00 - 5190.00 feet UP
Created : 4/27/2010 7:23:56 AM

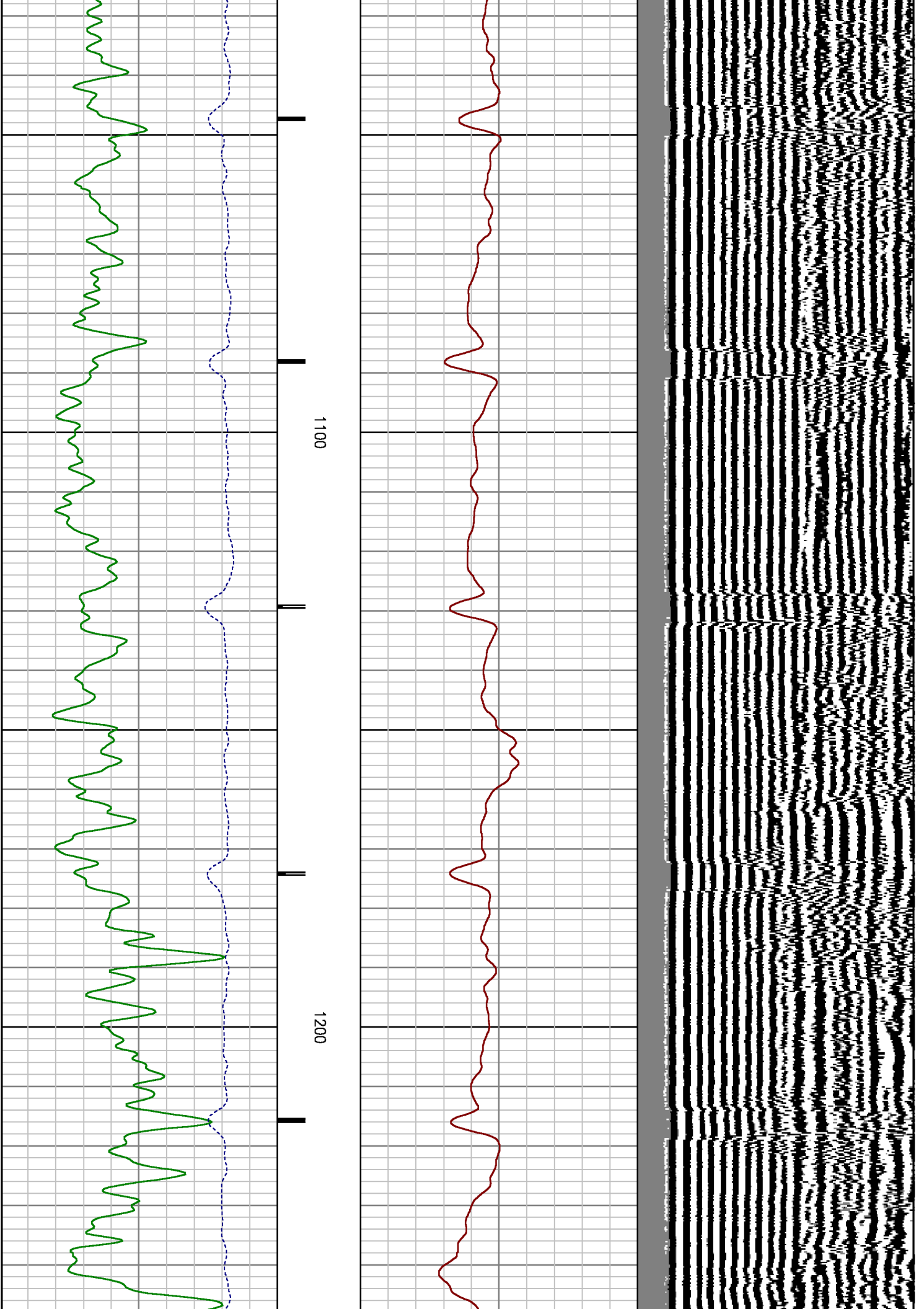


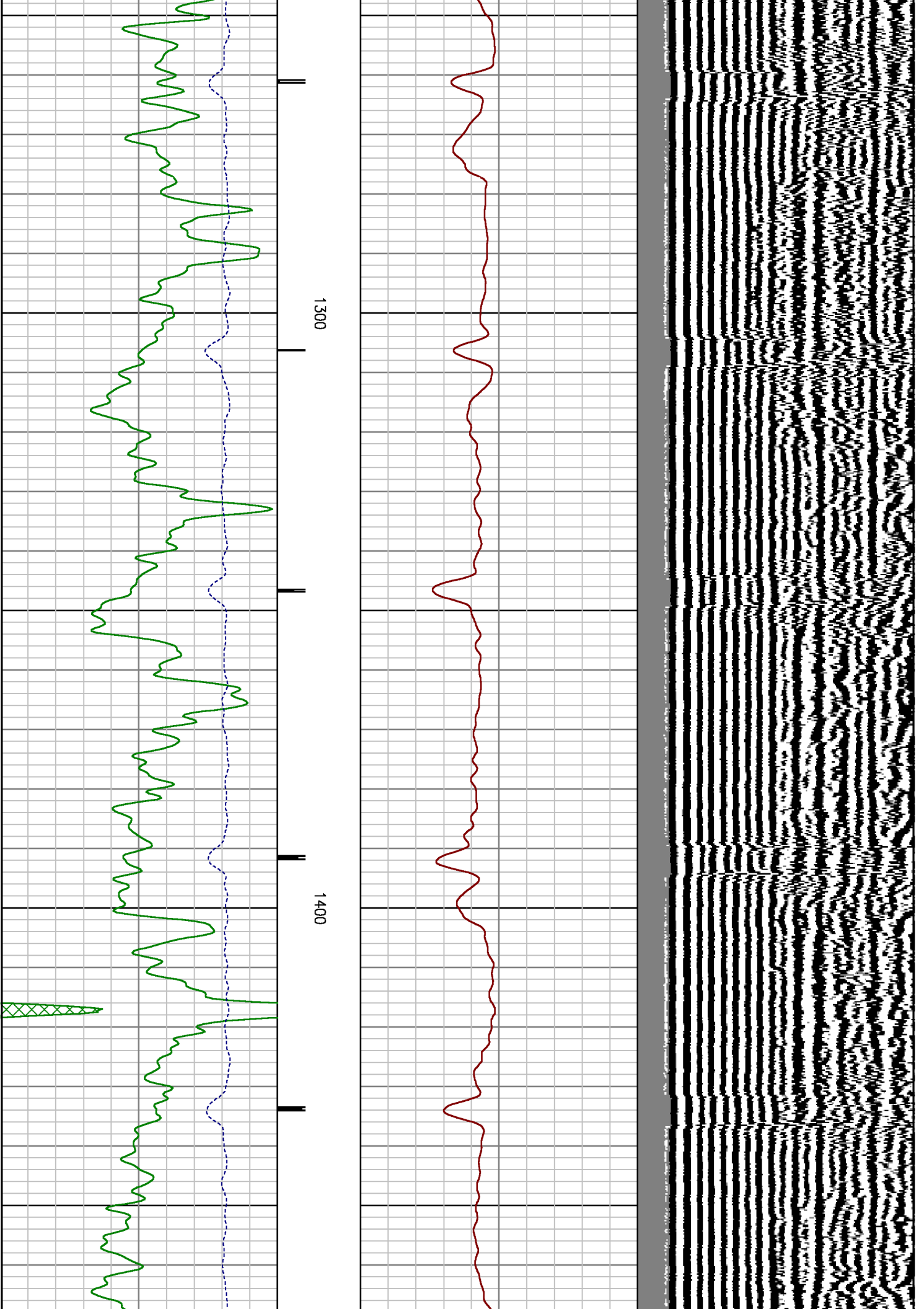


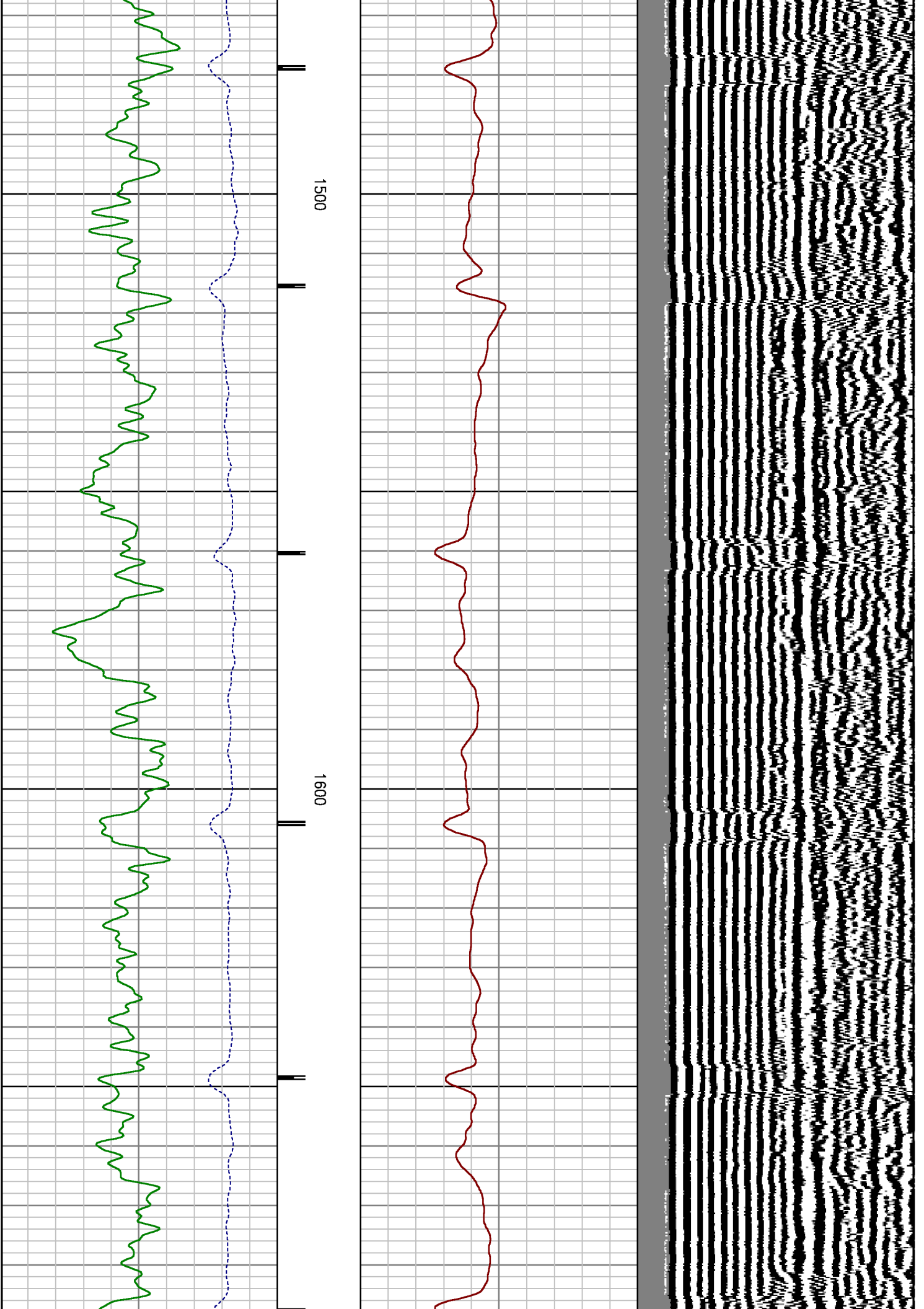


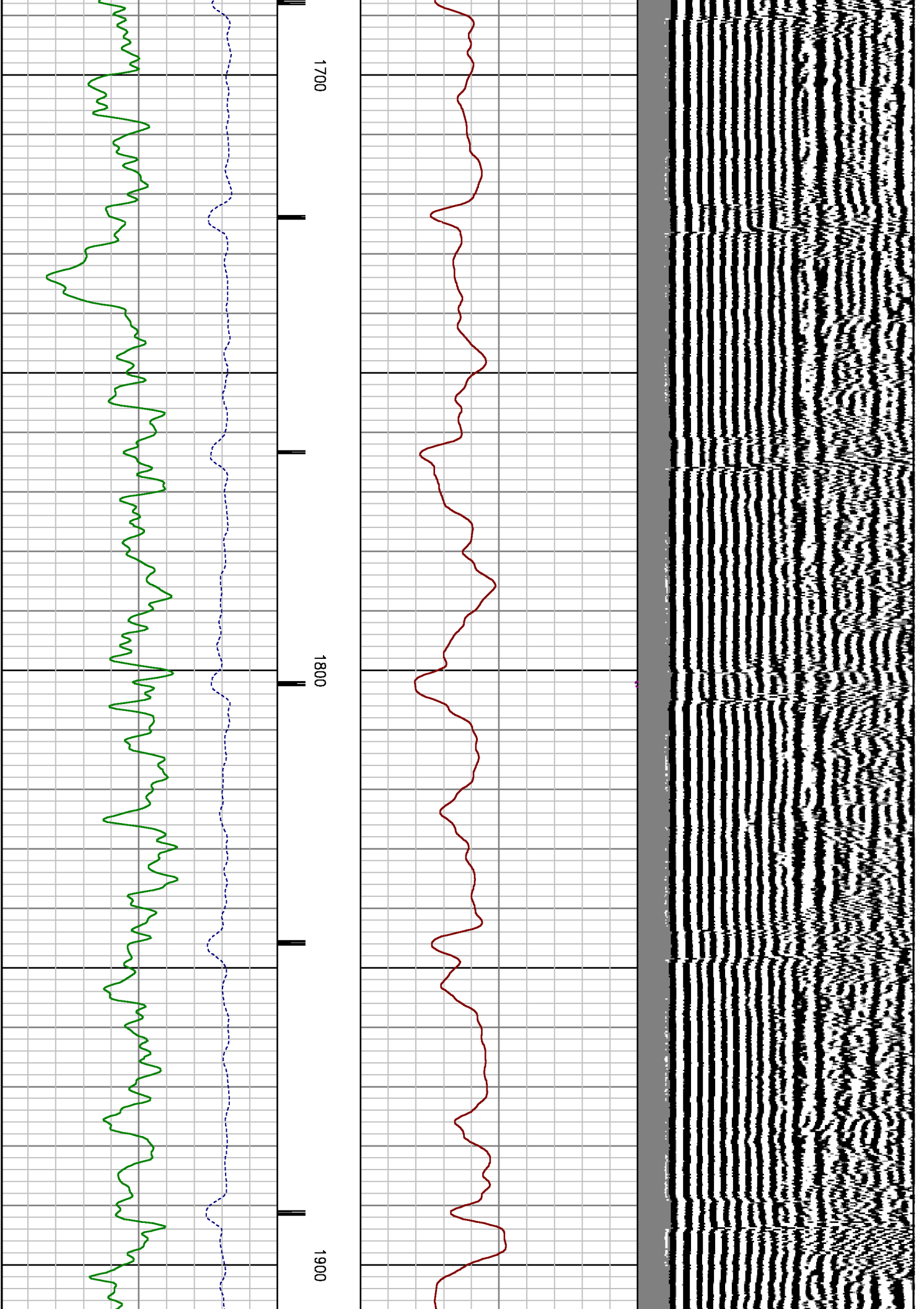


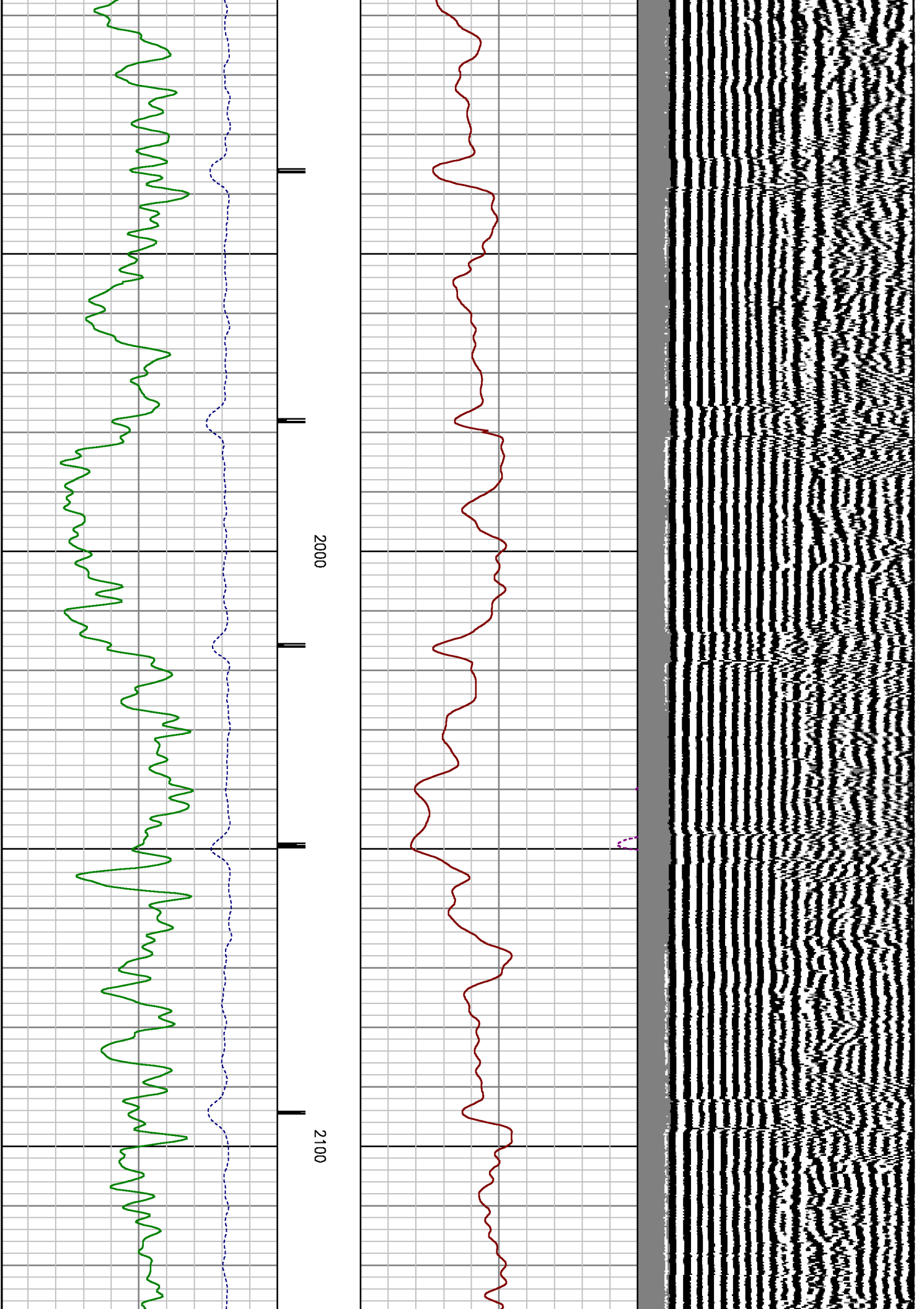


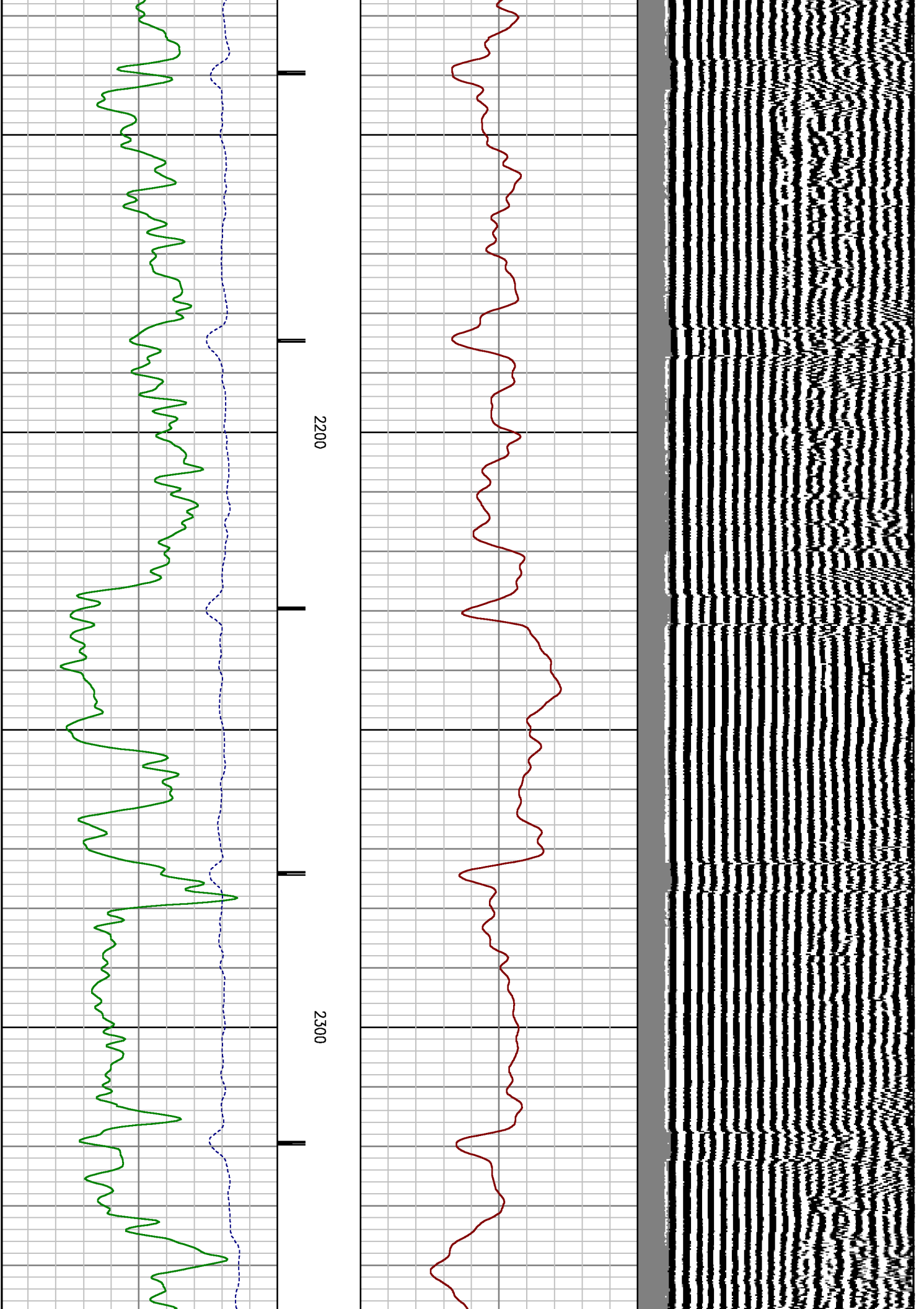


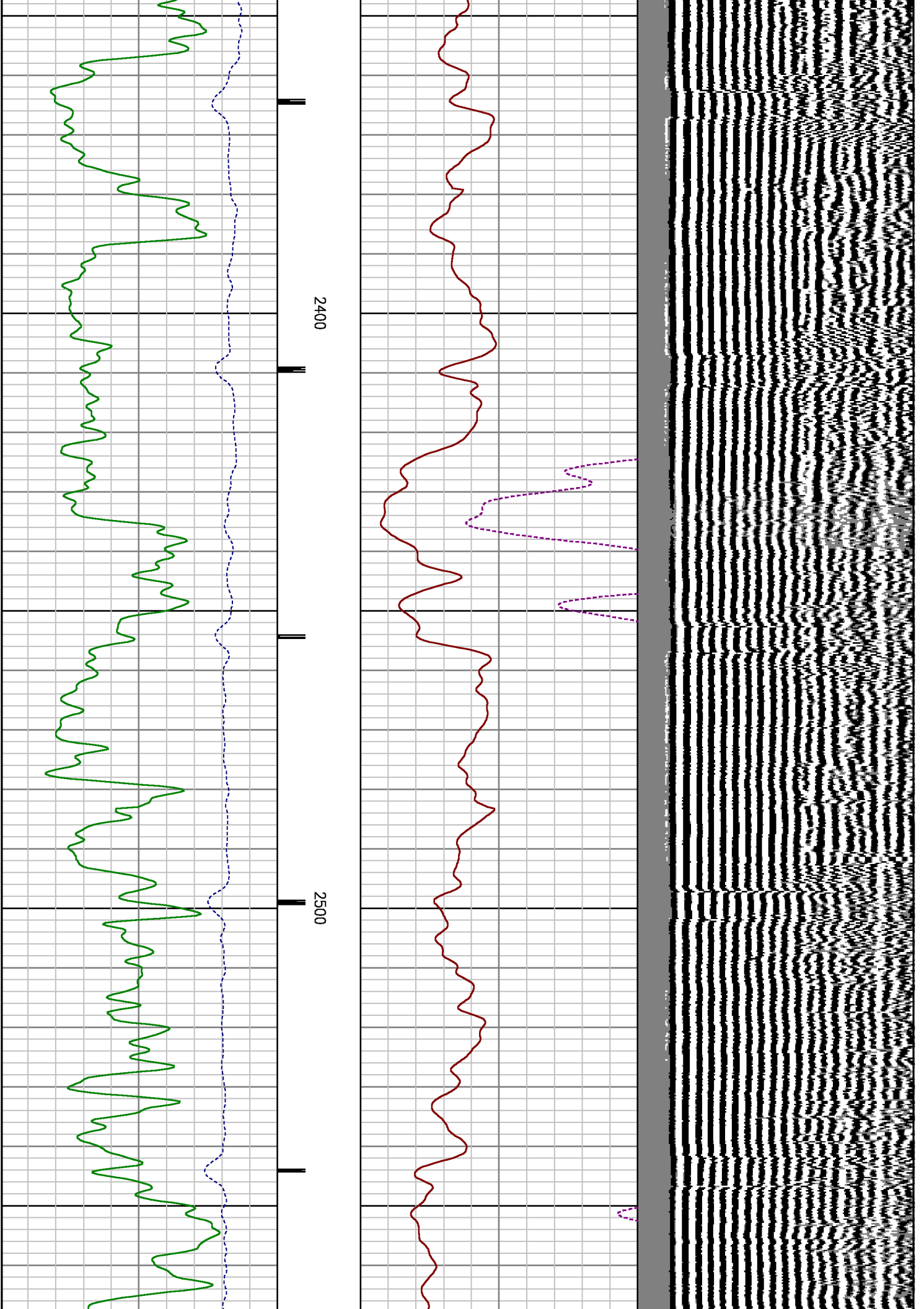


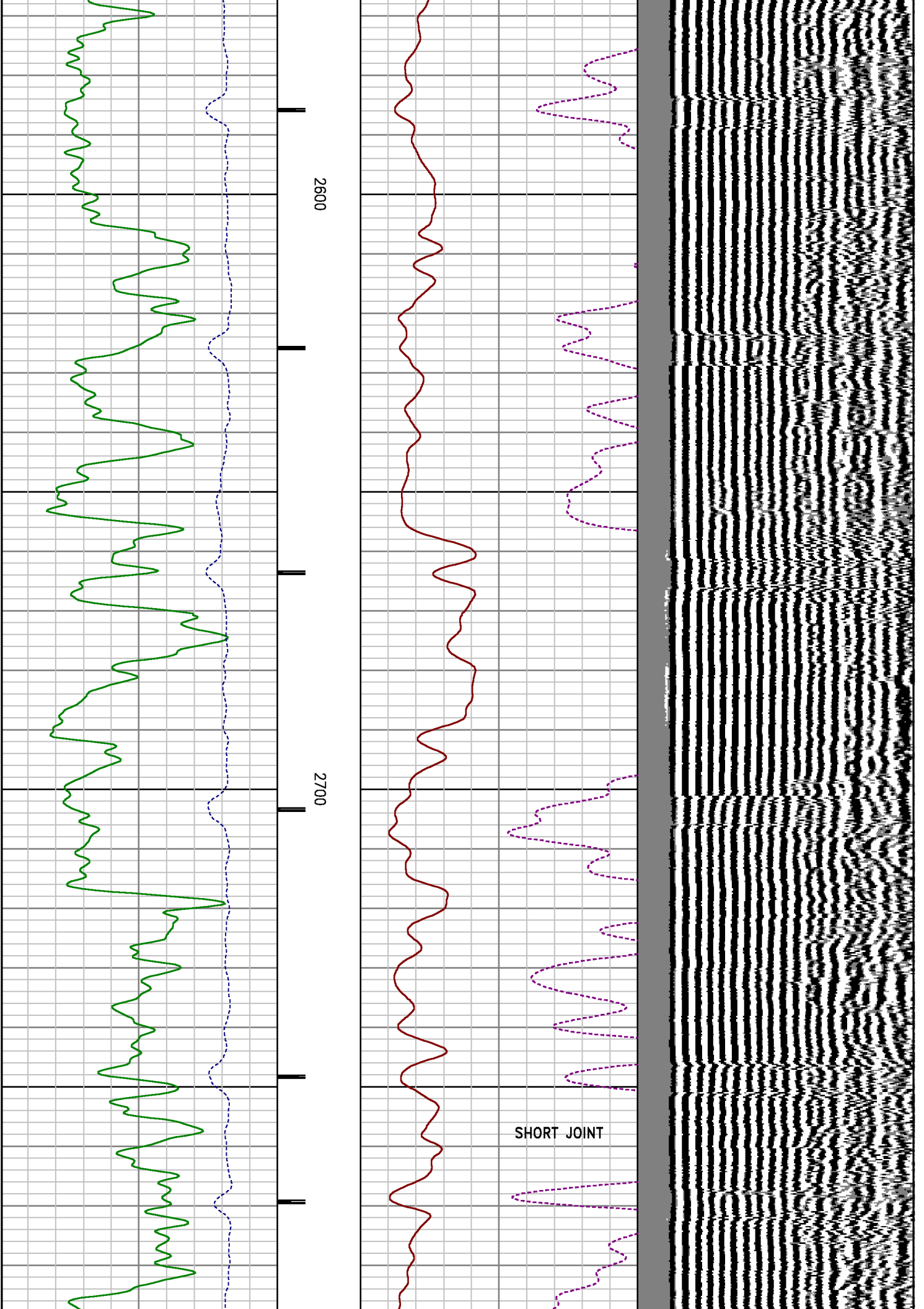


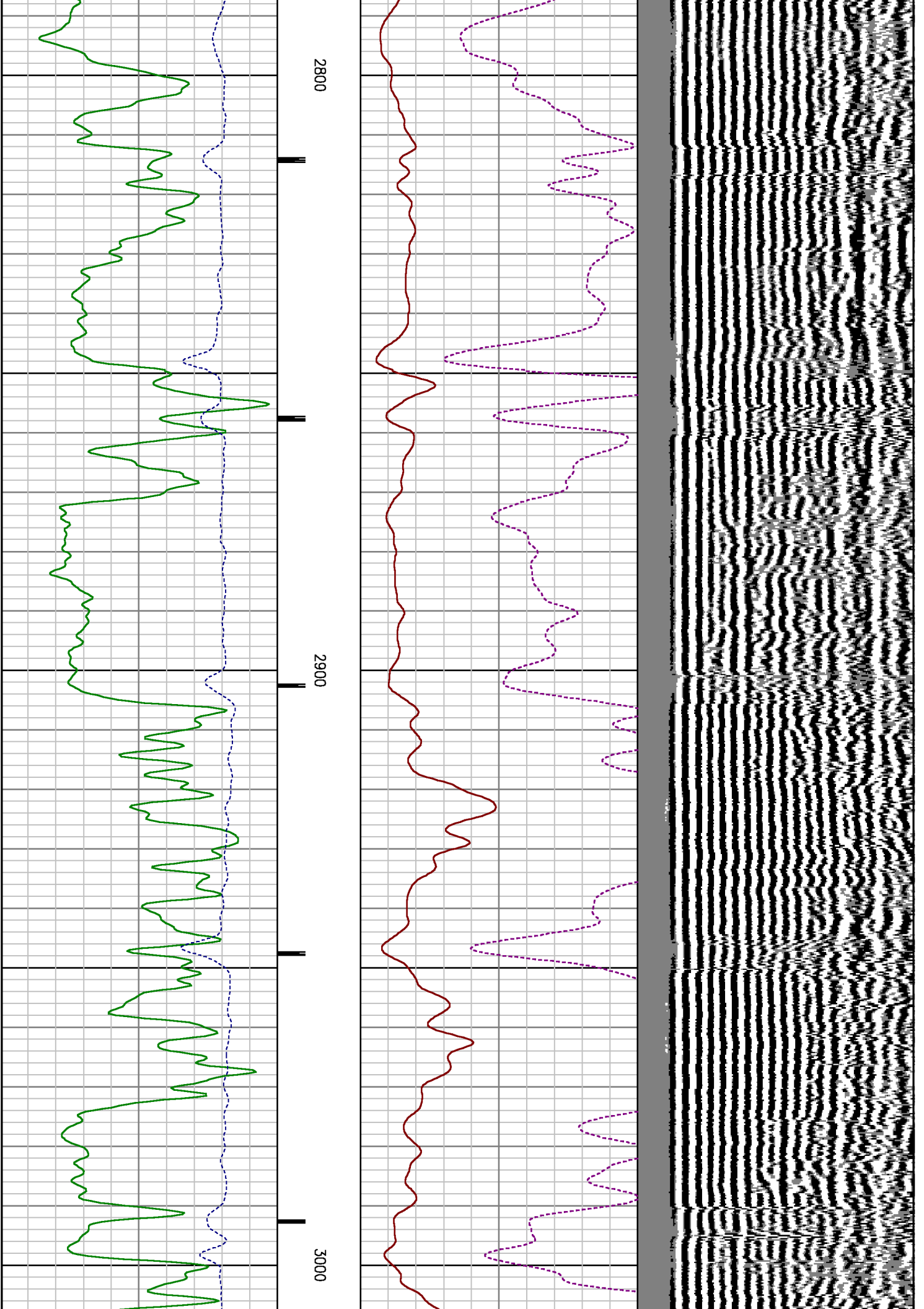


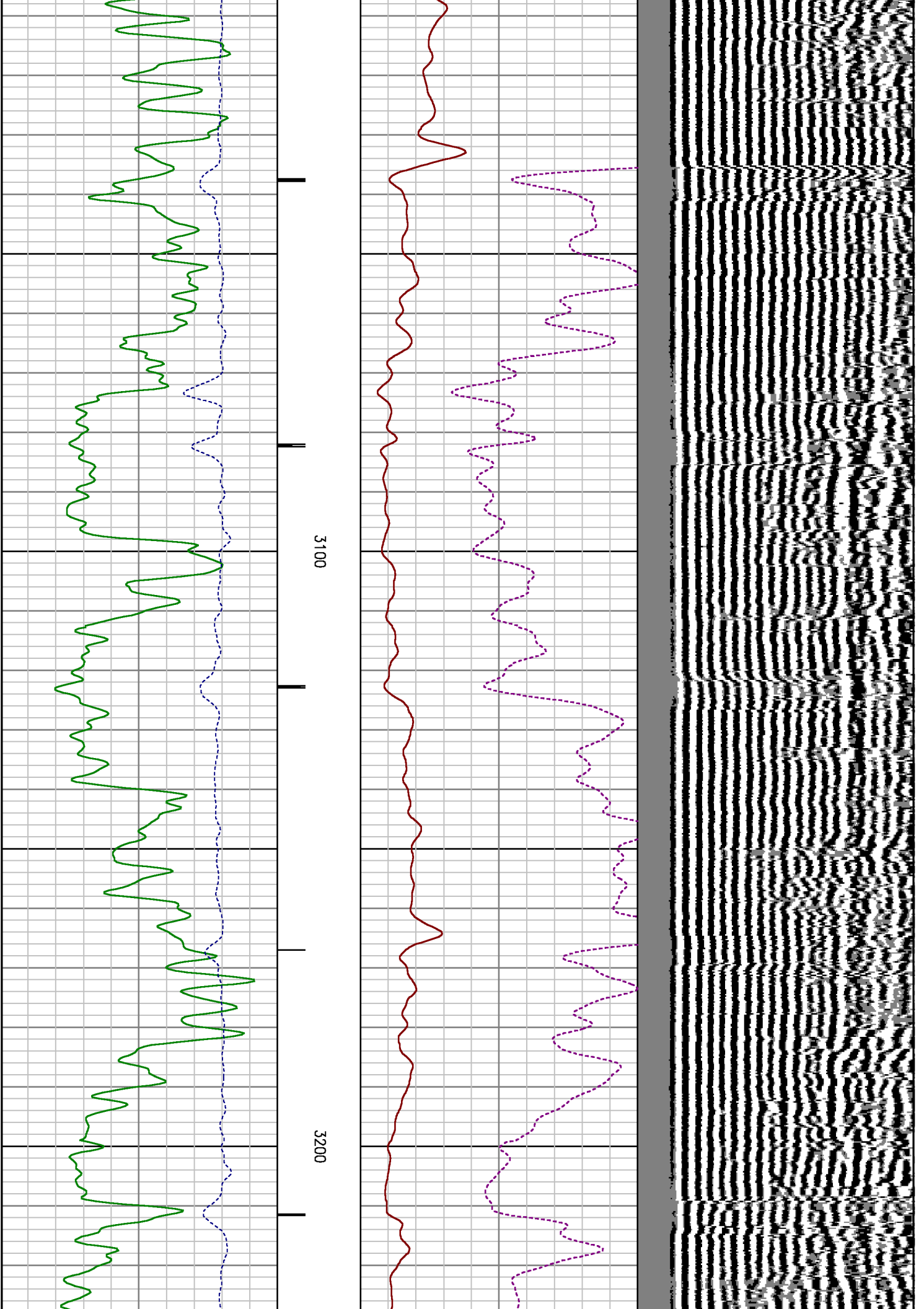


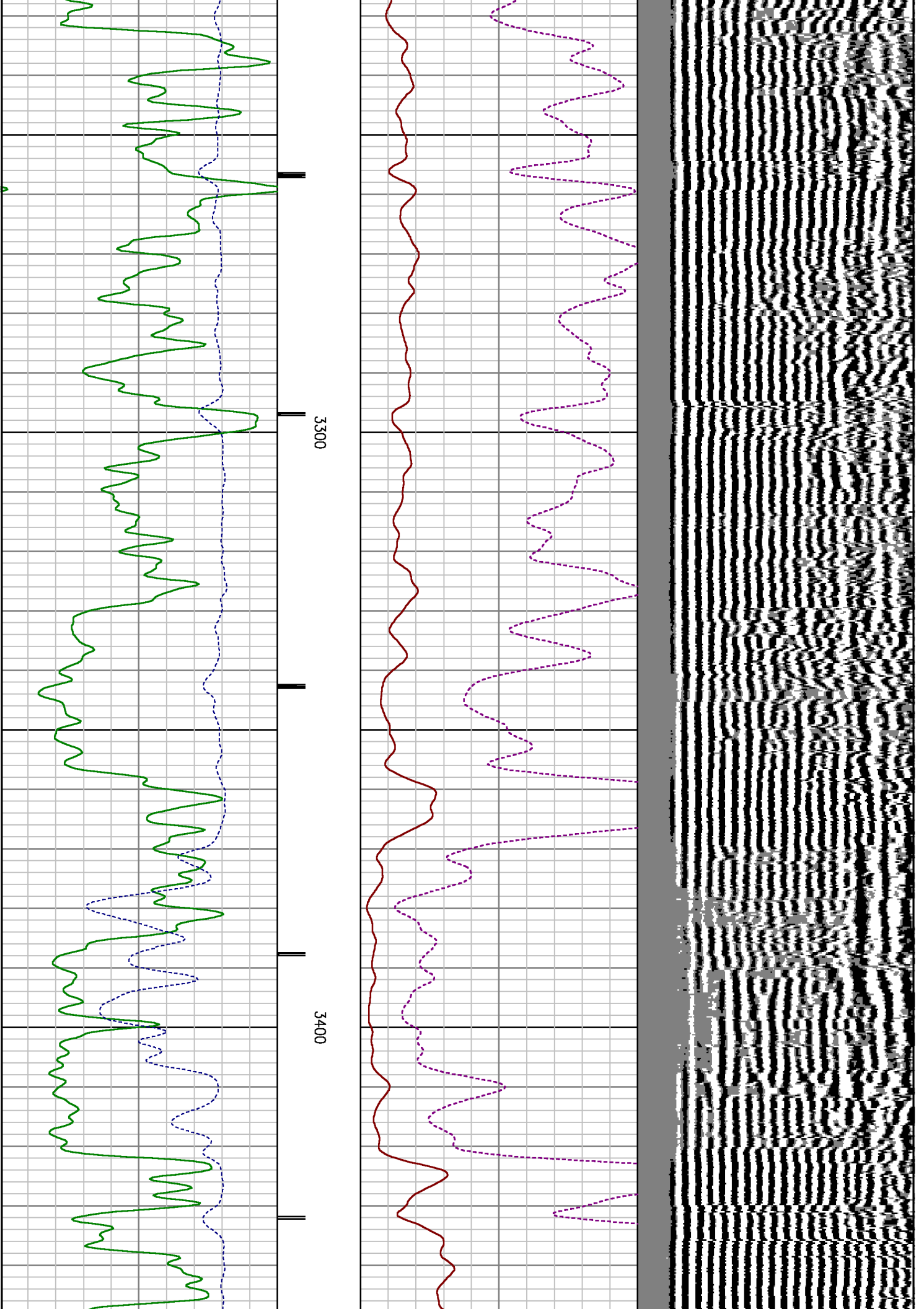


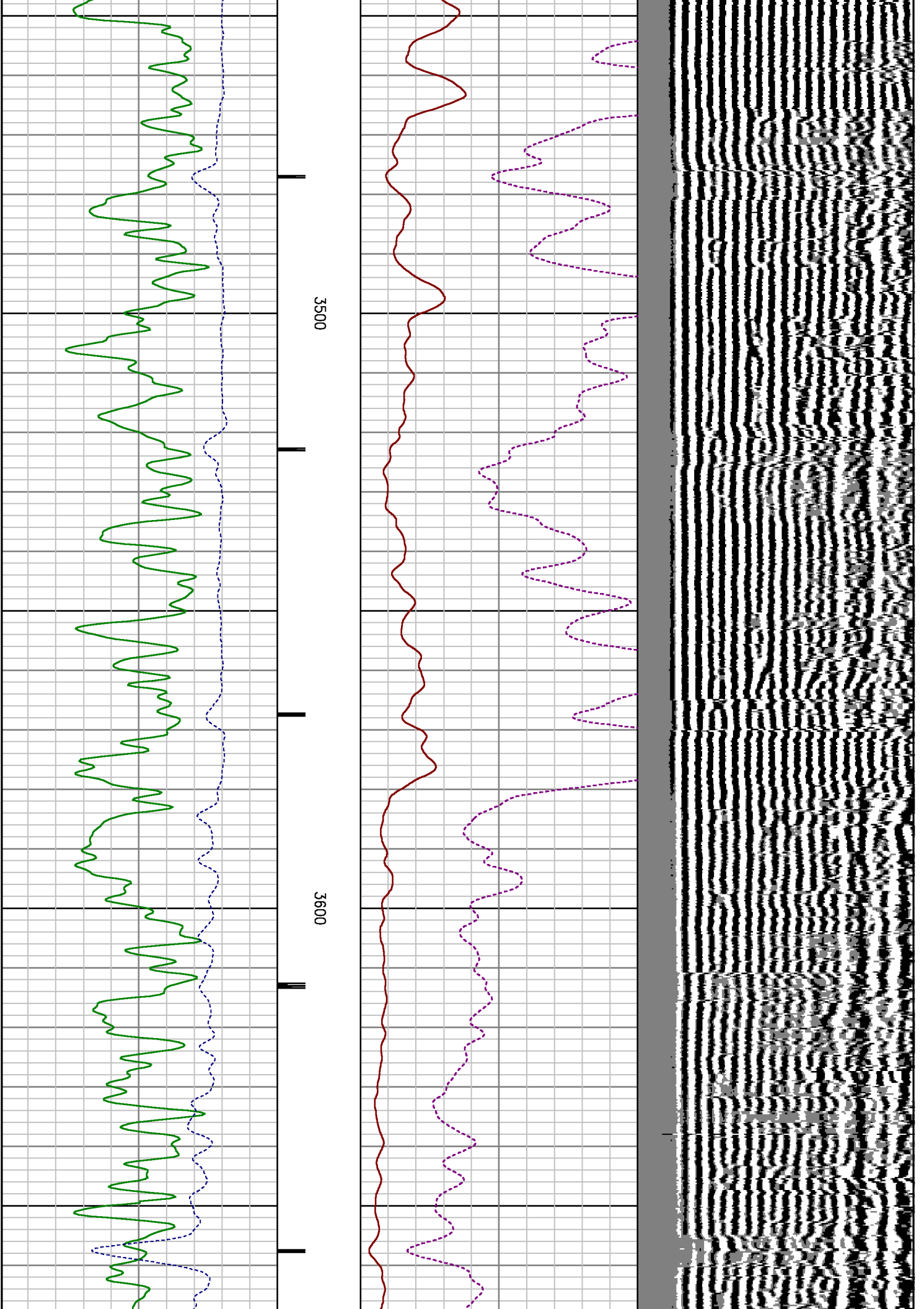


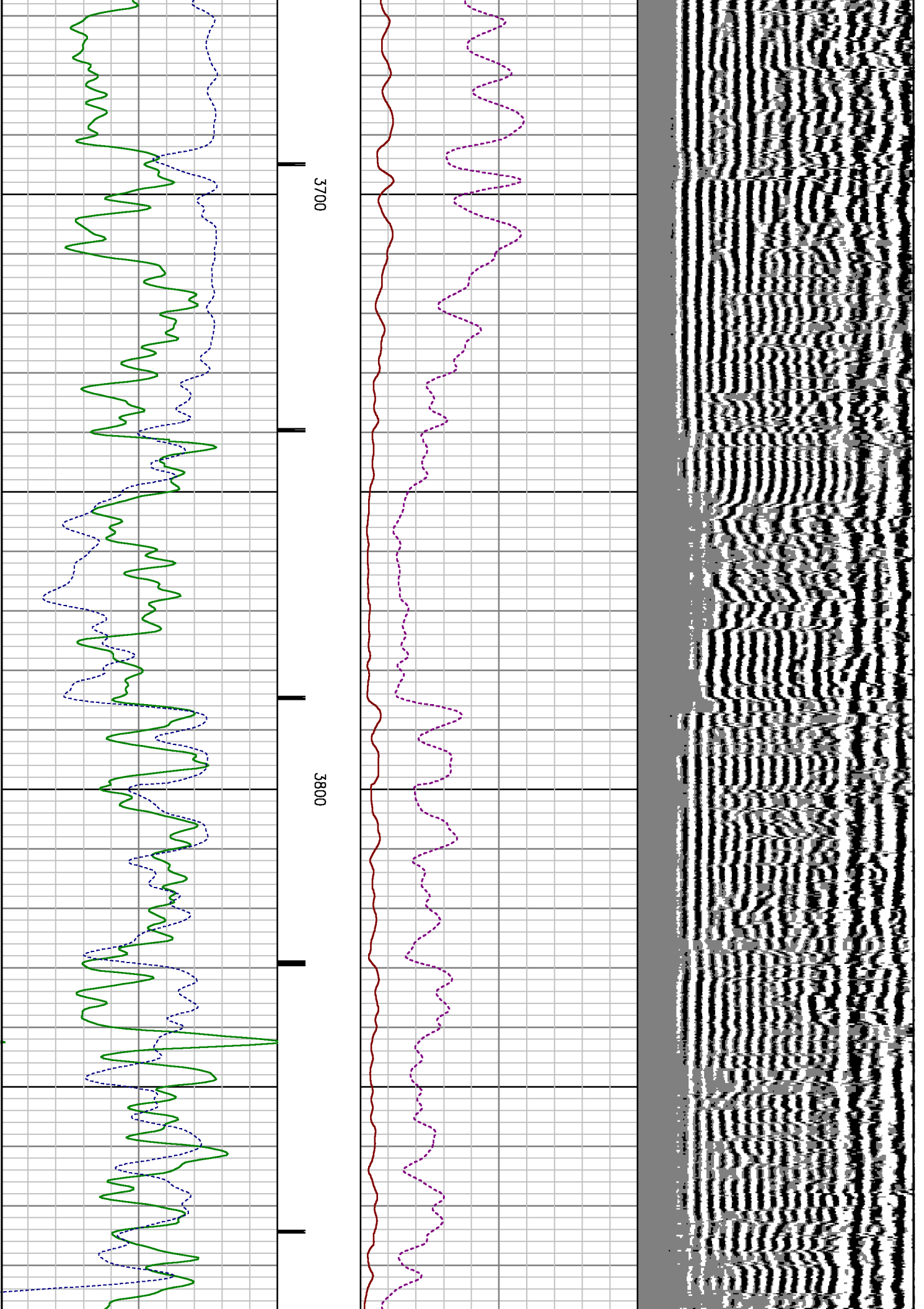


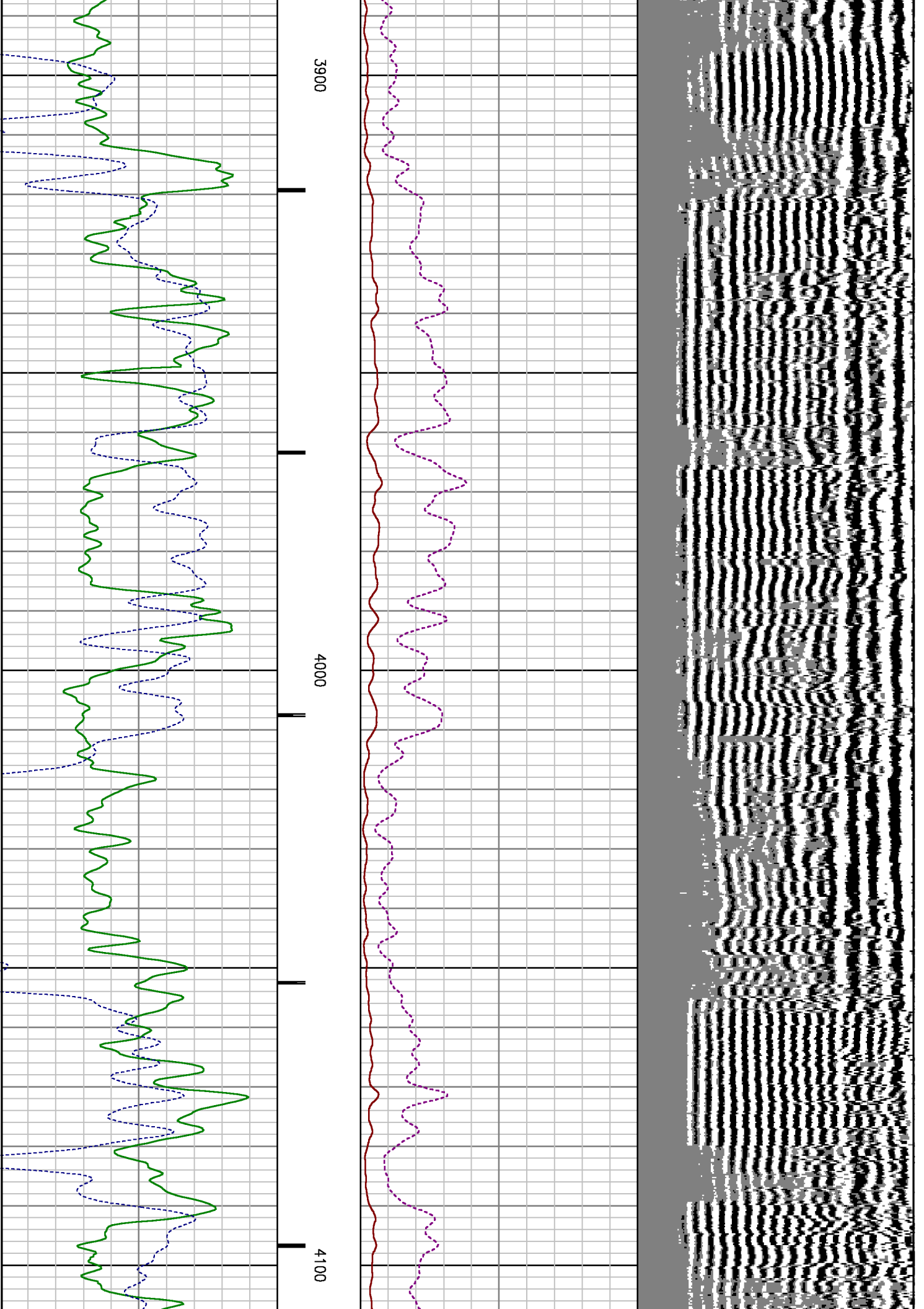


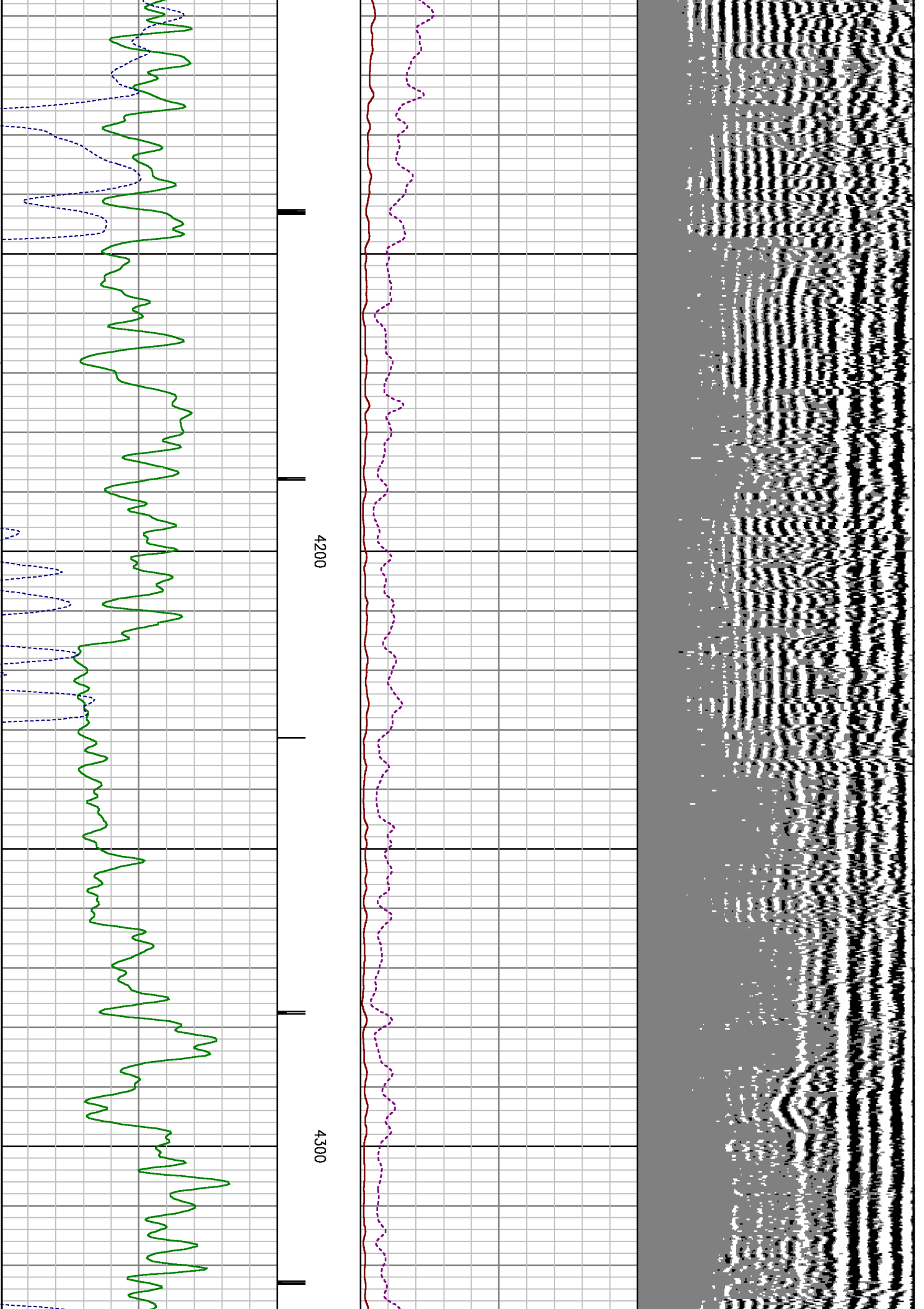


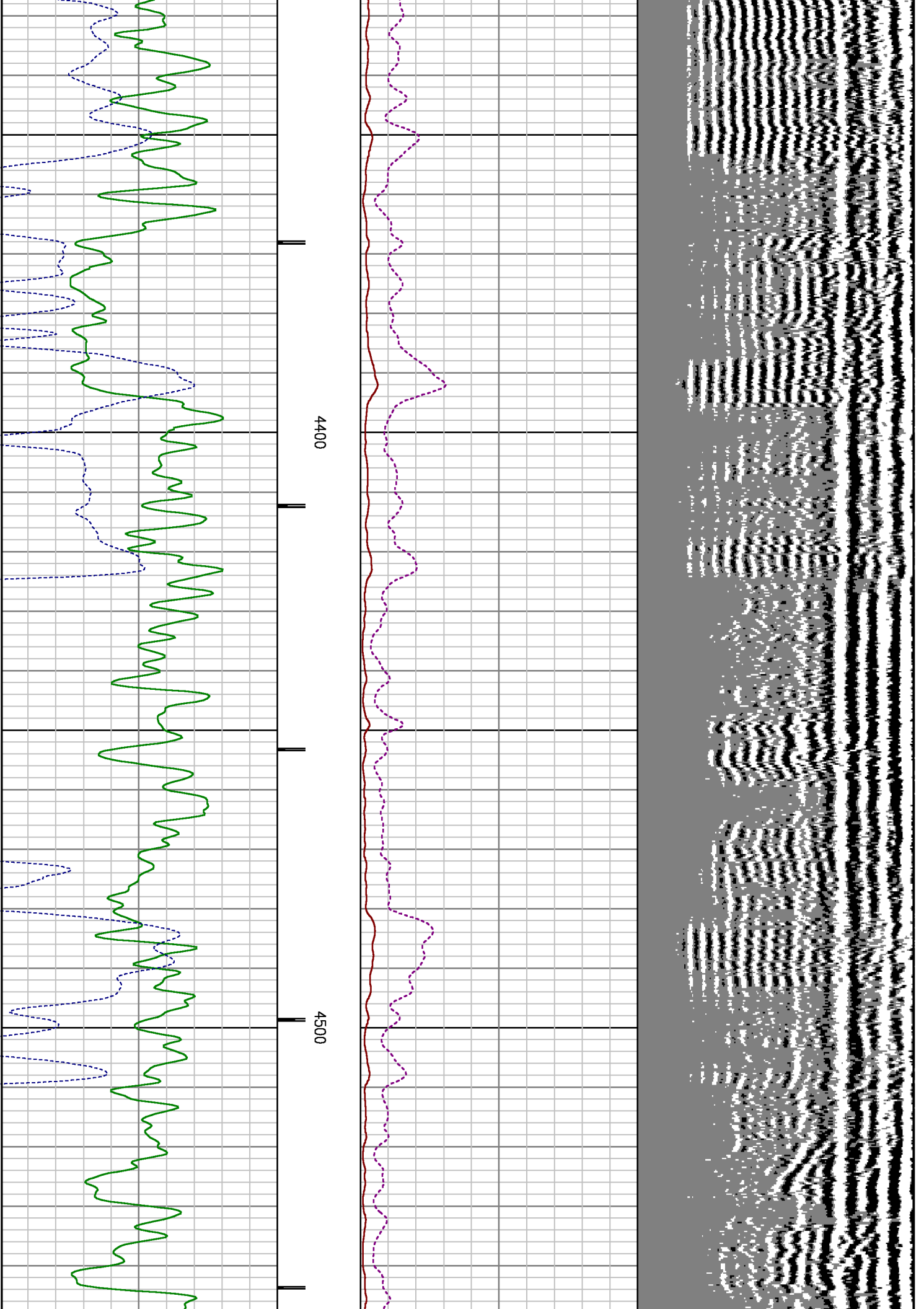


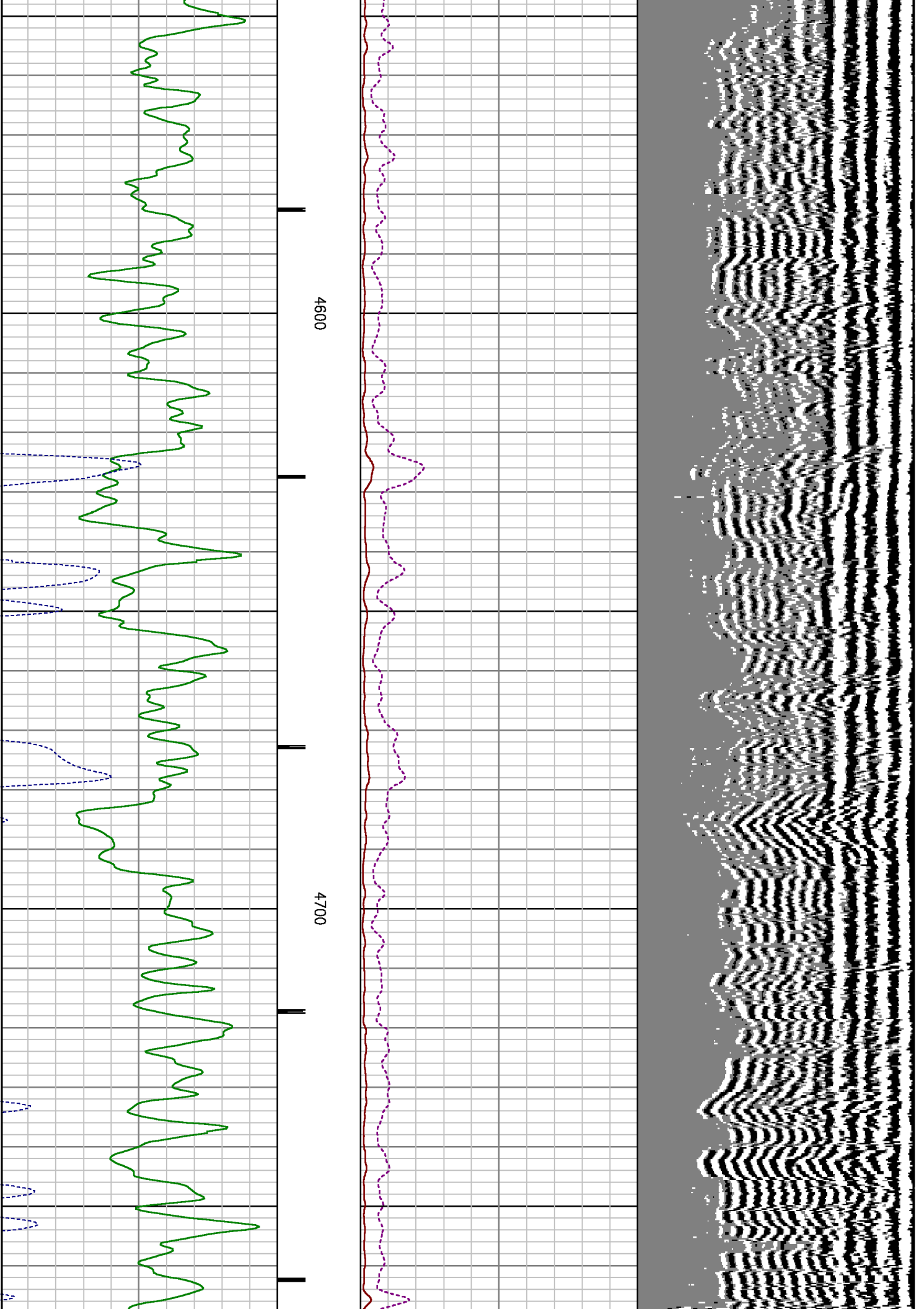


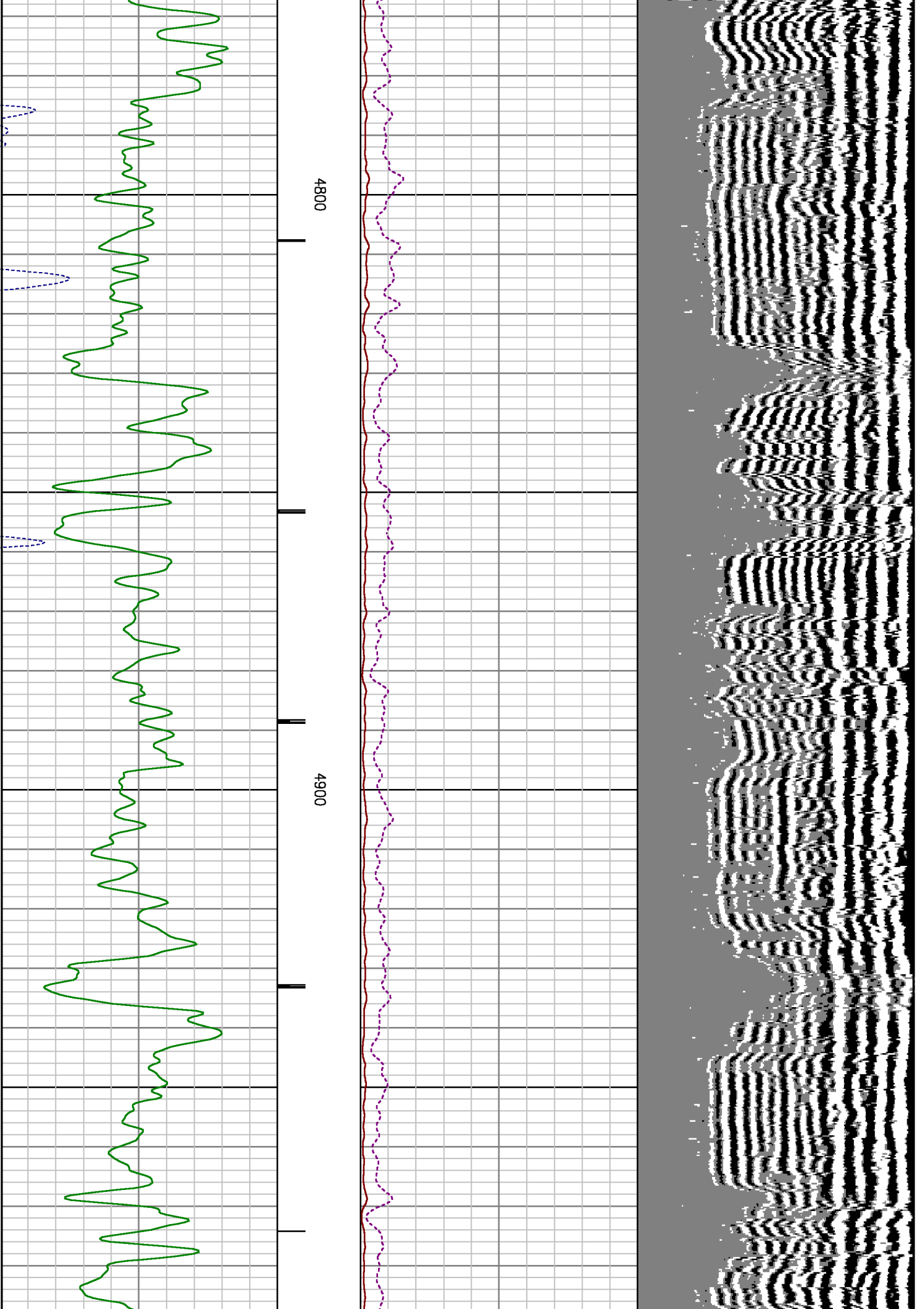


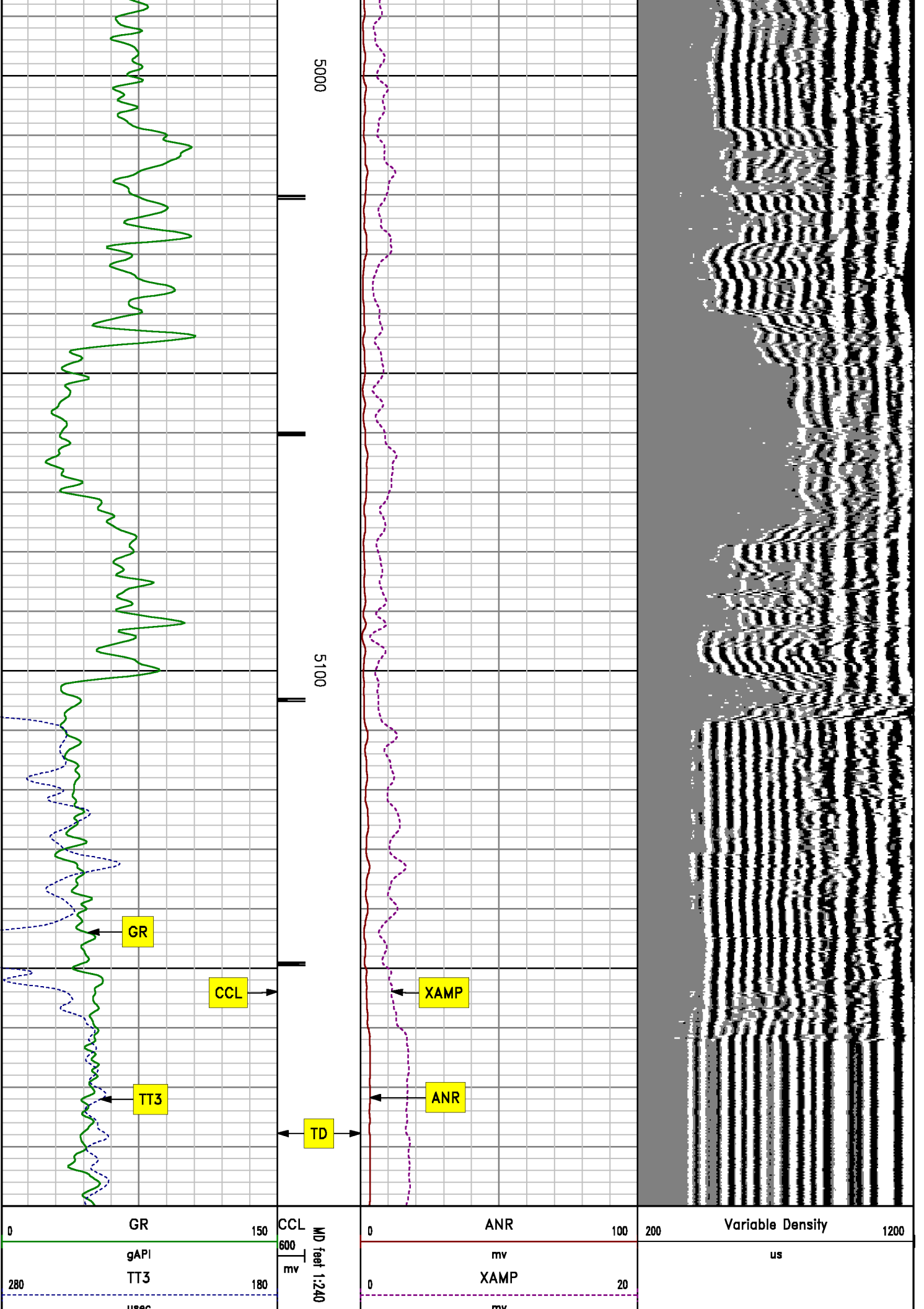












u sec

mv

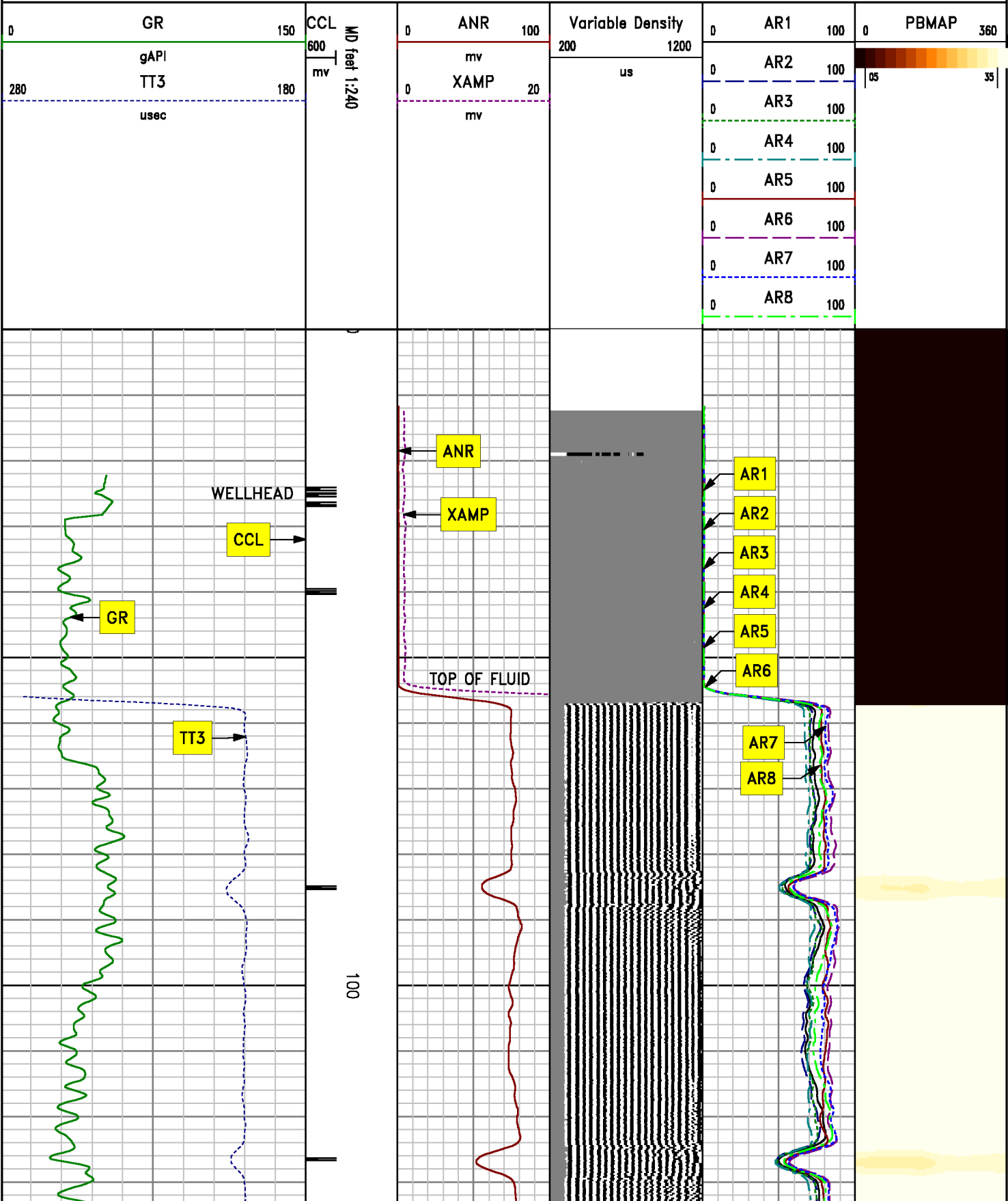
MAIN SECTION
SECONDARY PRESENTATION

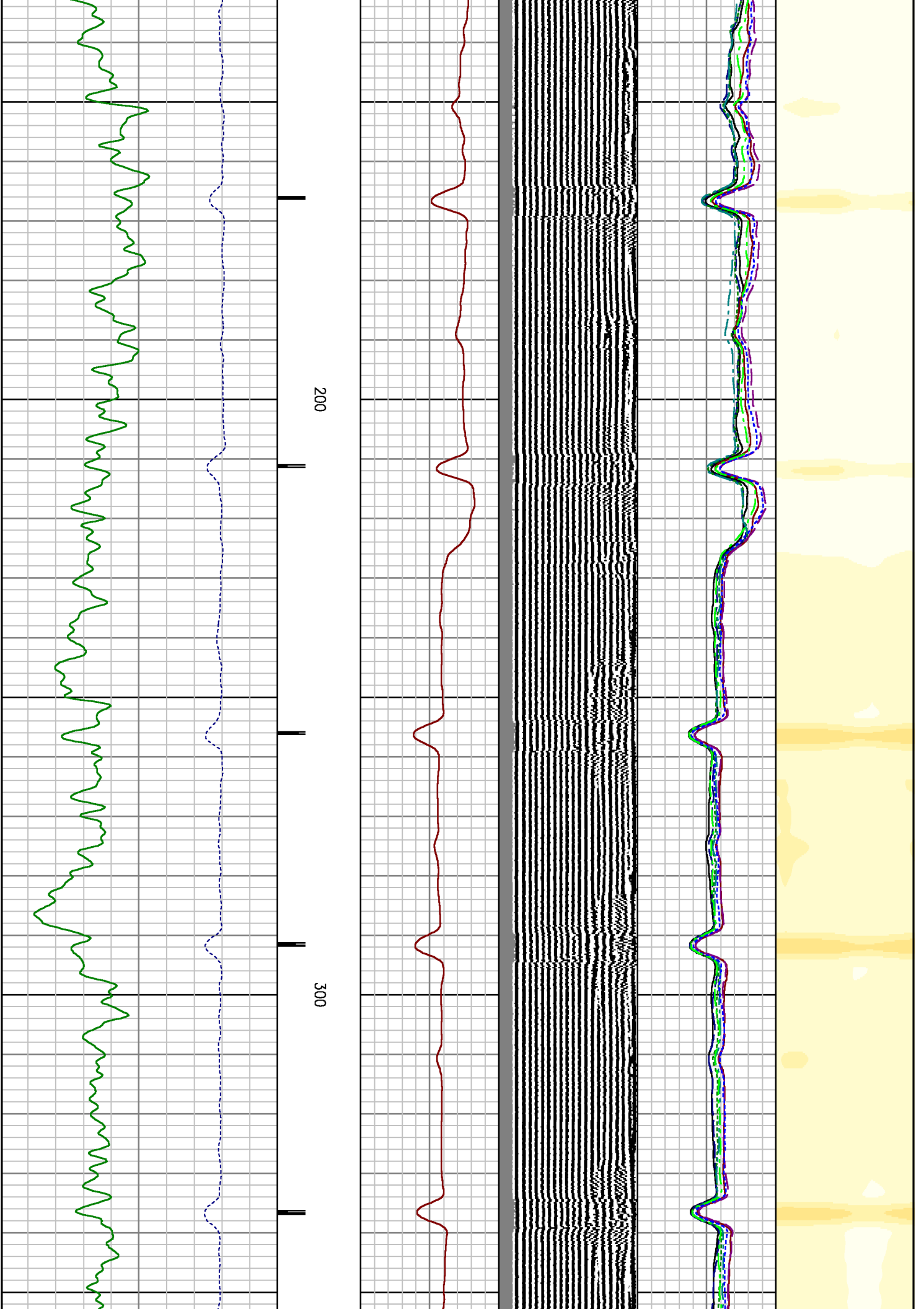
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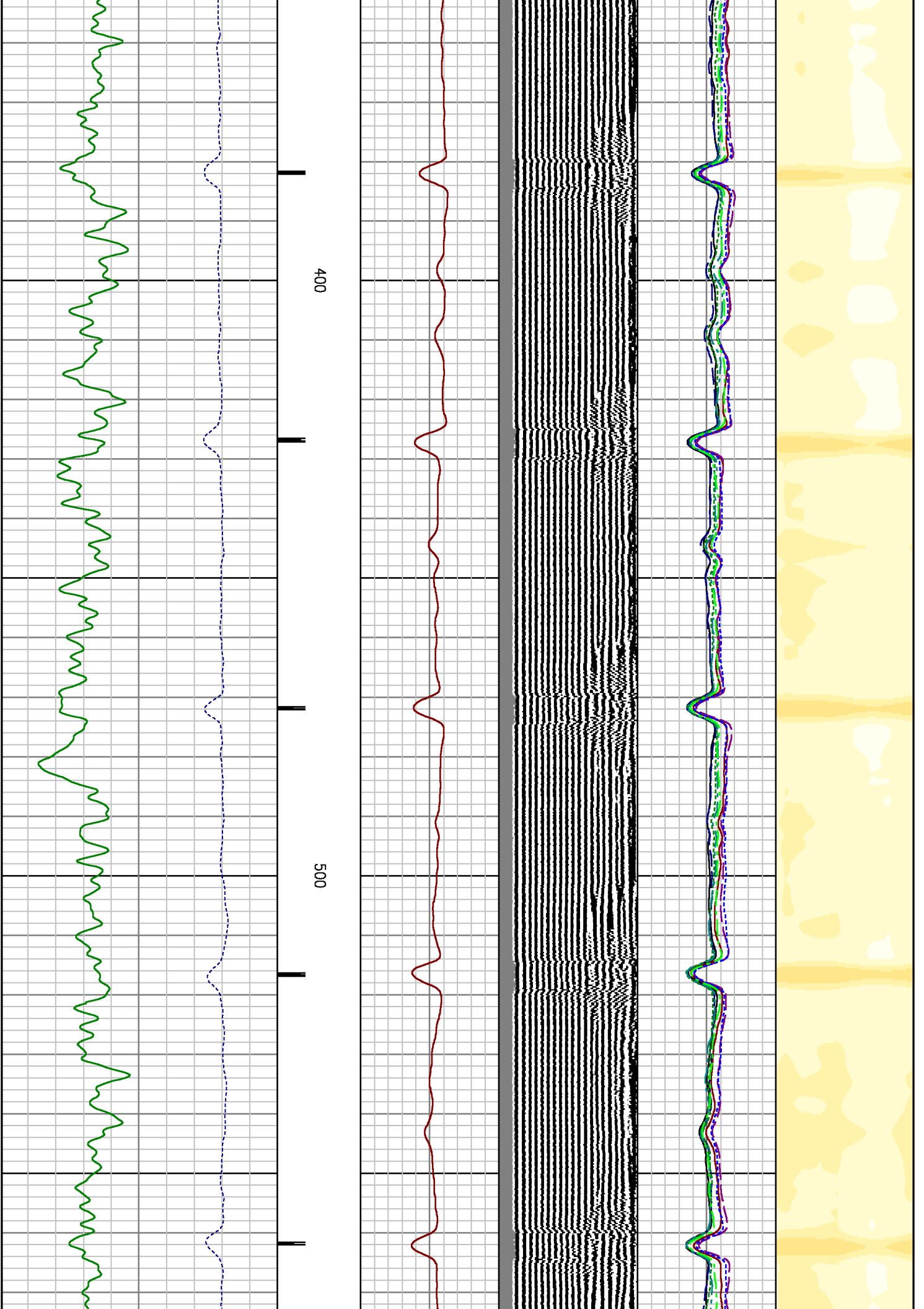
DEPTH OFFSETS
(for Acquired Curves)

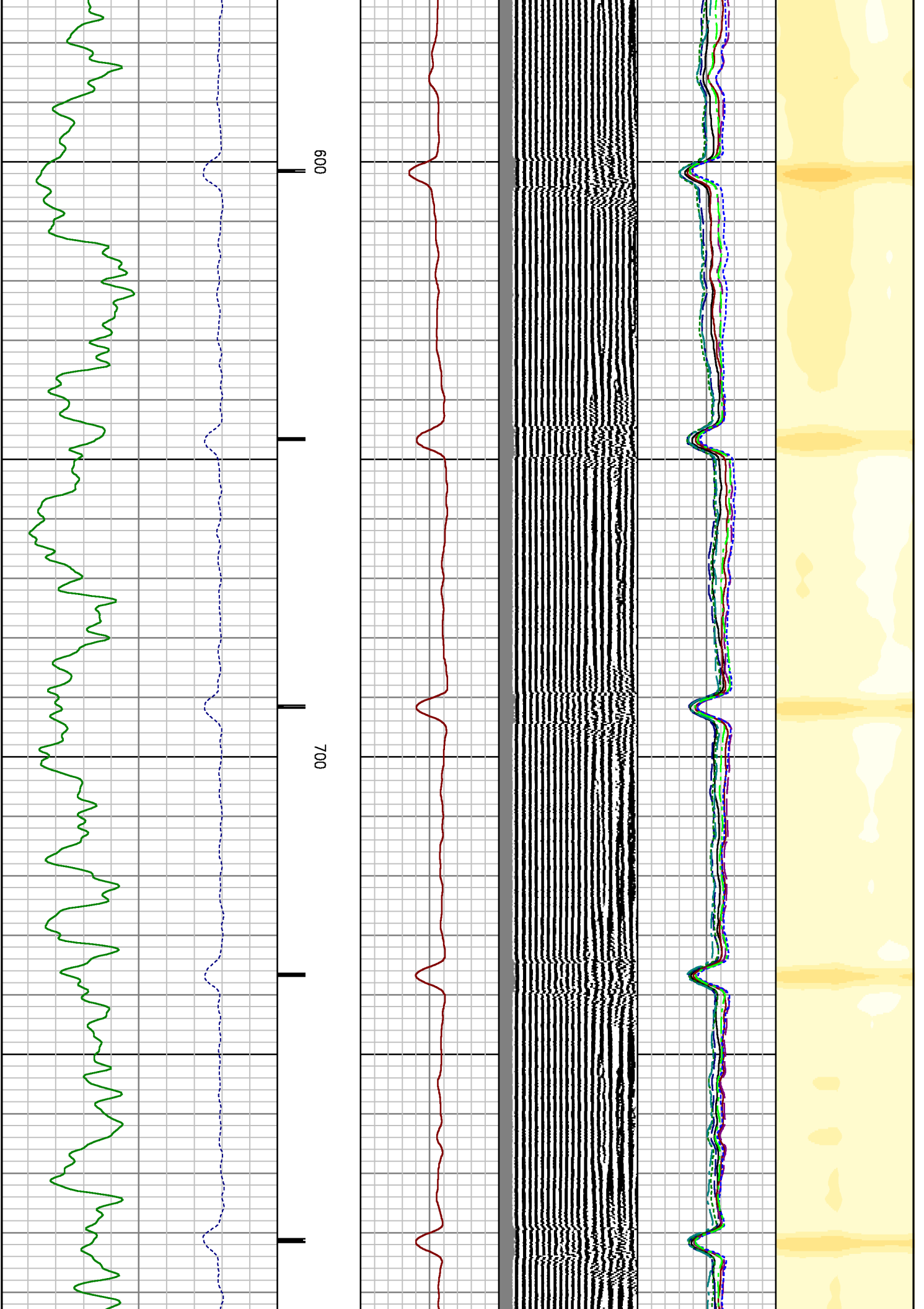
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1426XA	-14.360	AFAR	SIG	TT5			
1426XA	-7.250	CCL					
1426XA	-5.390	GR					
1426XA	0.000	NEU					

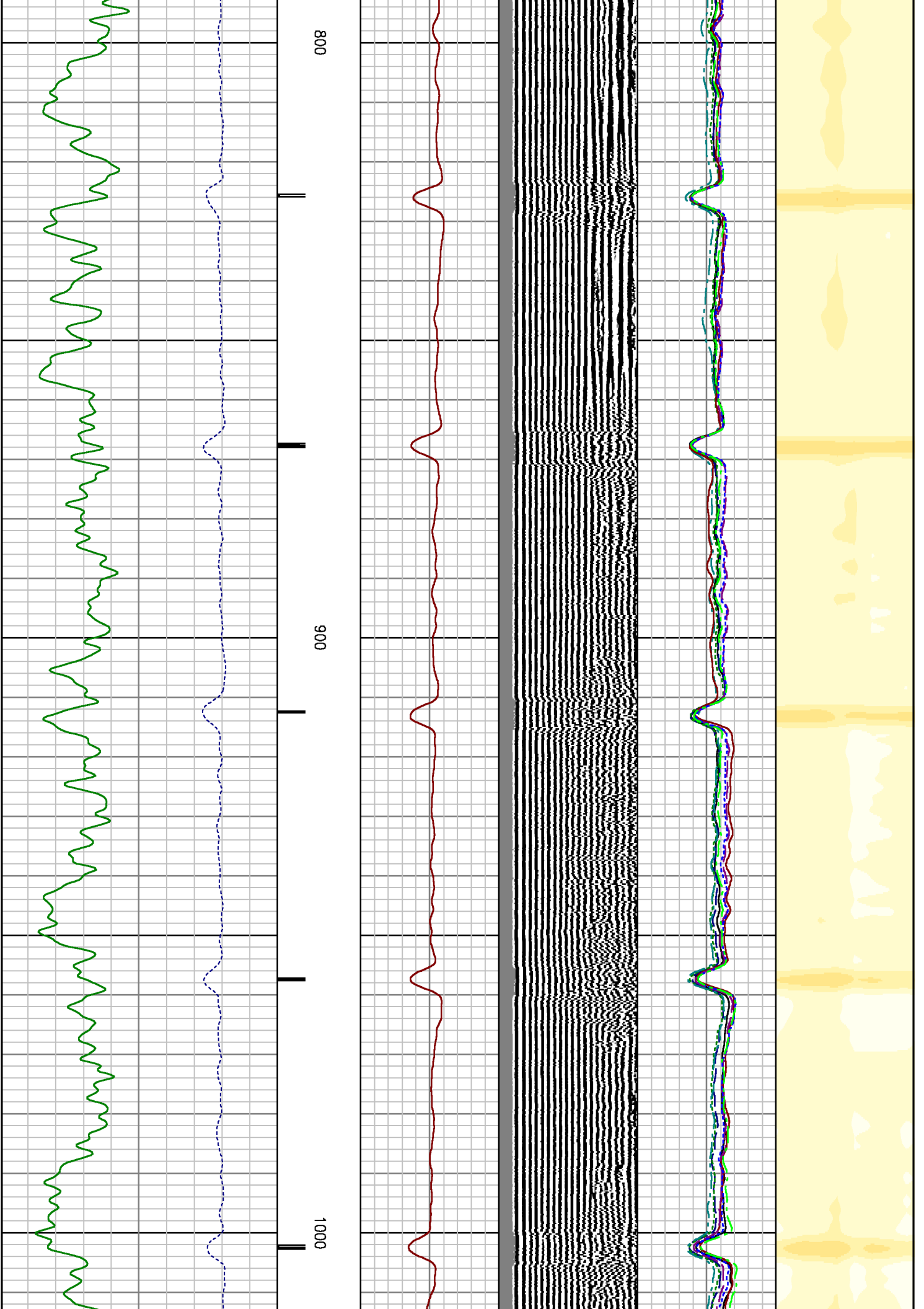
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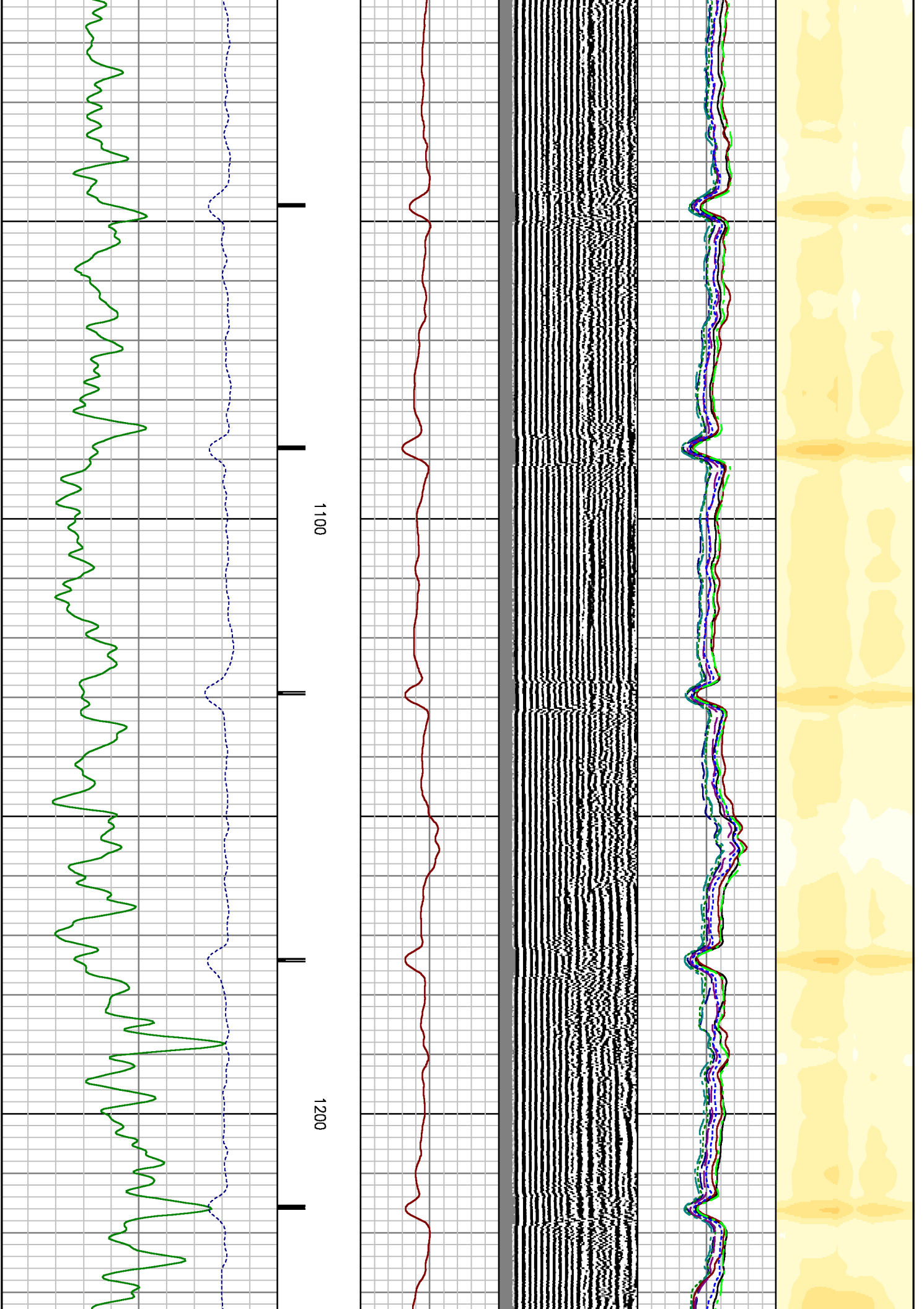


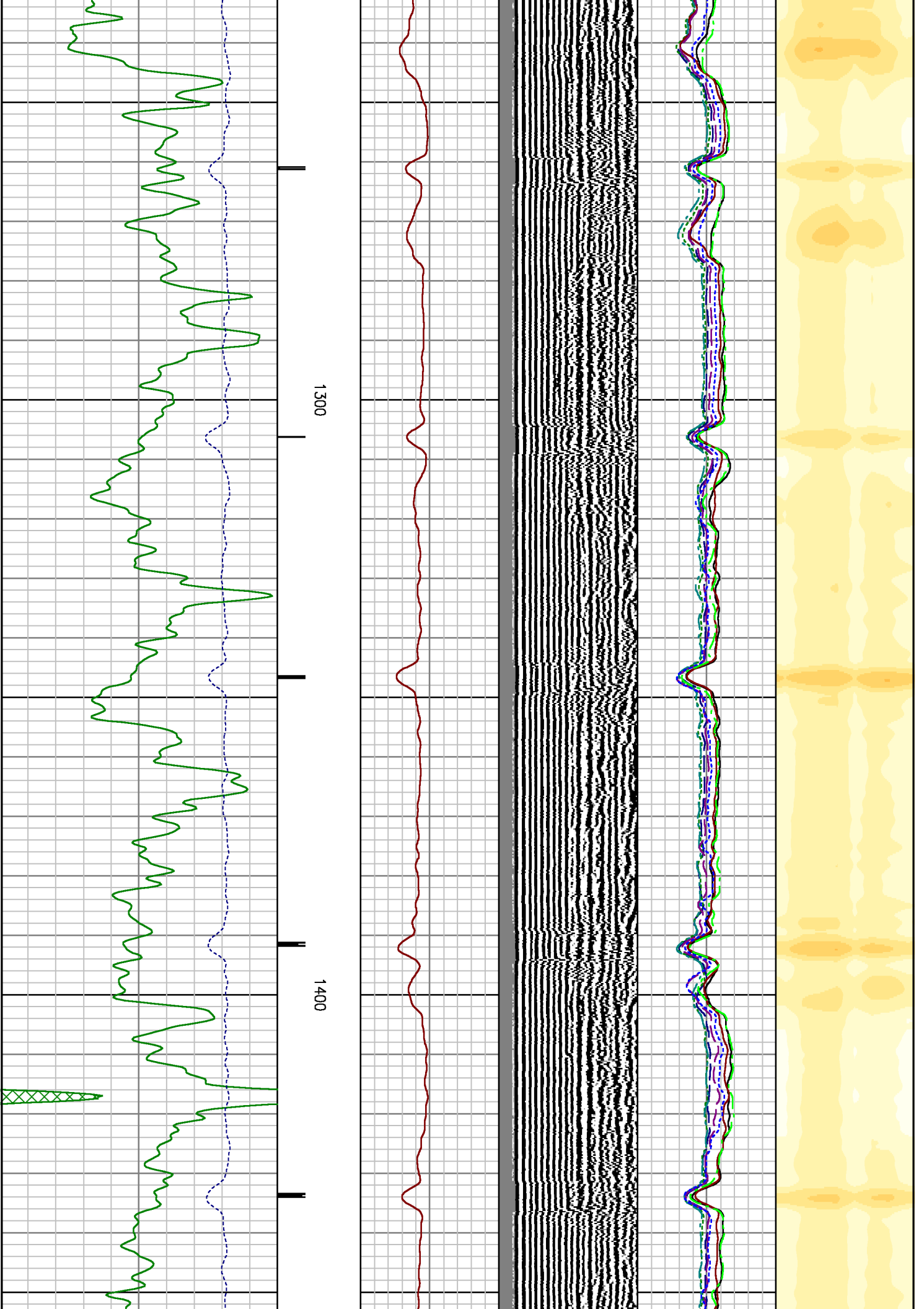


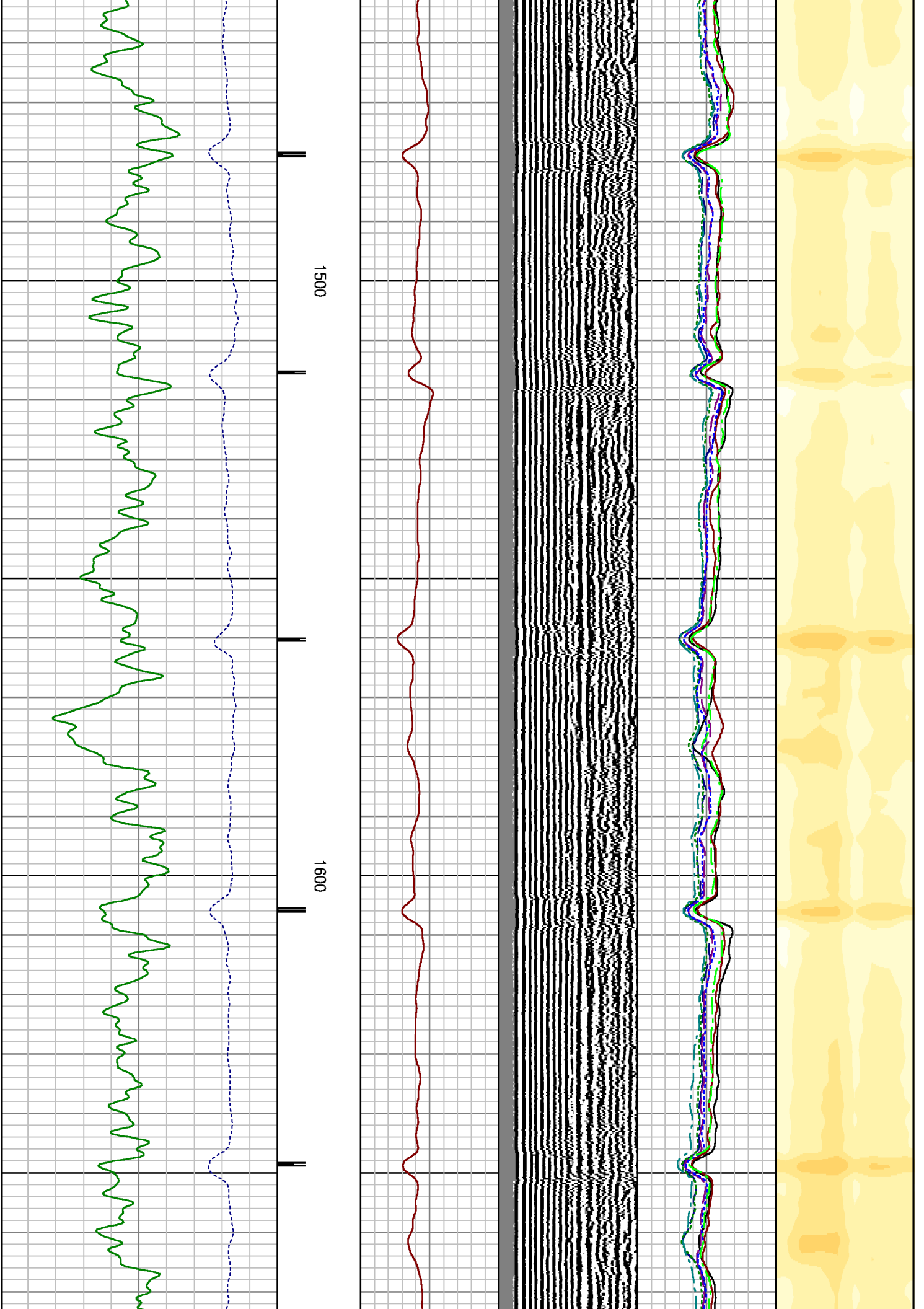


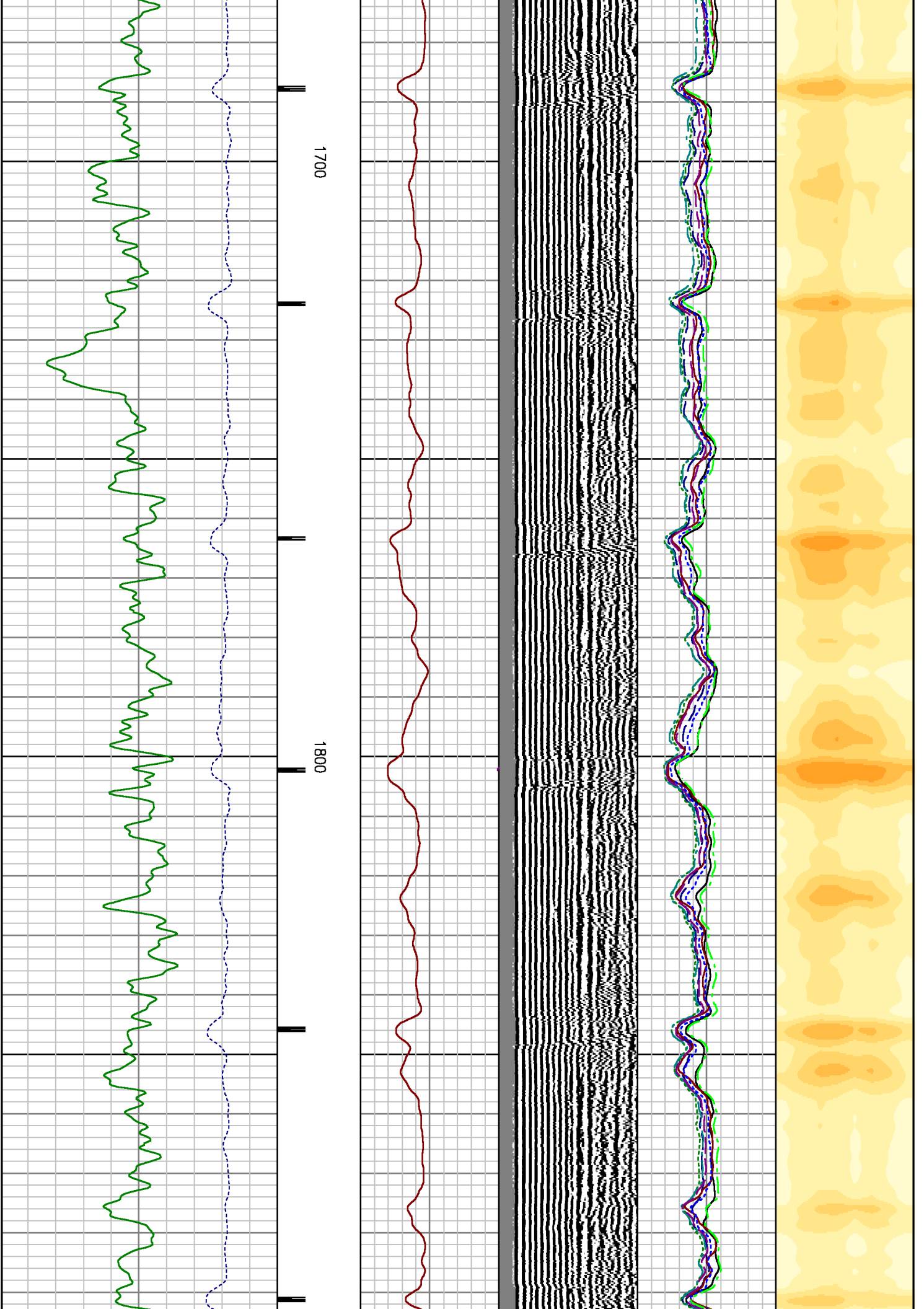


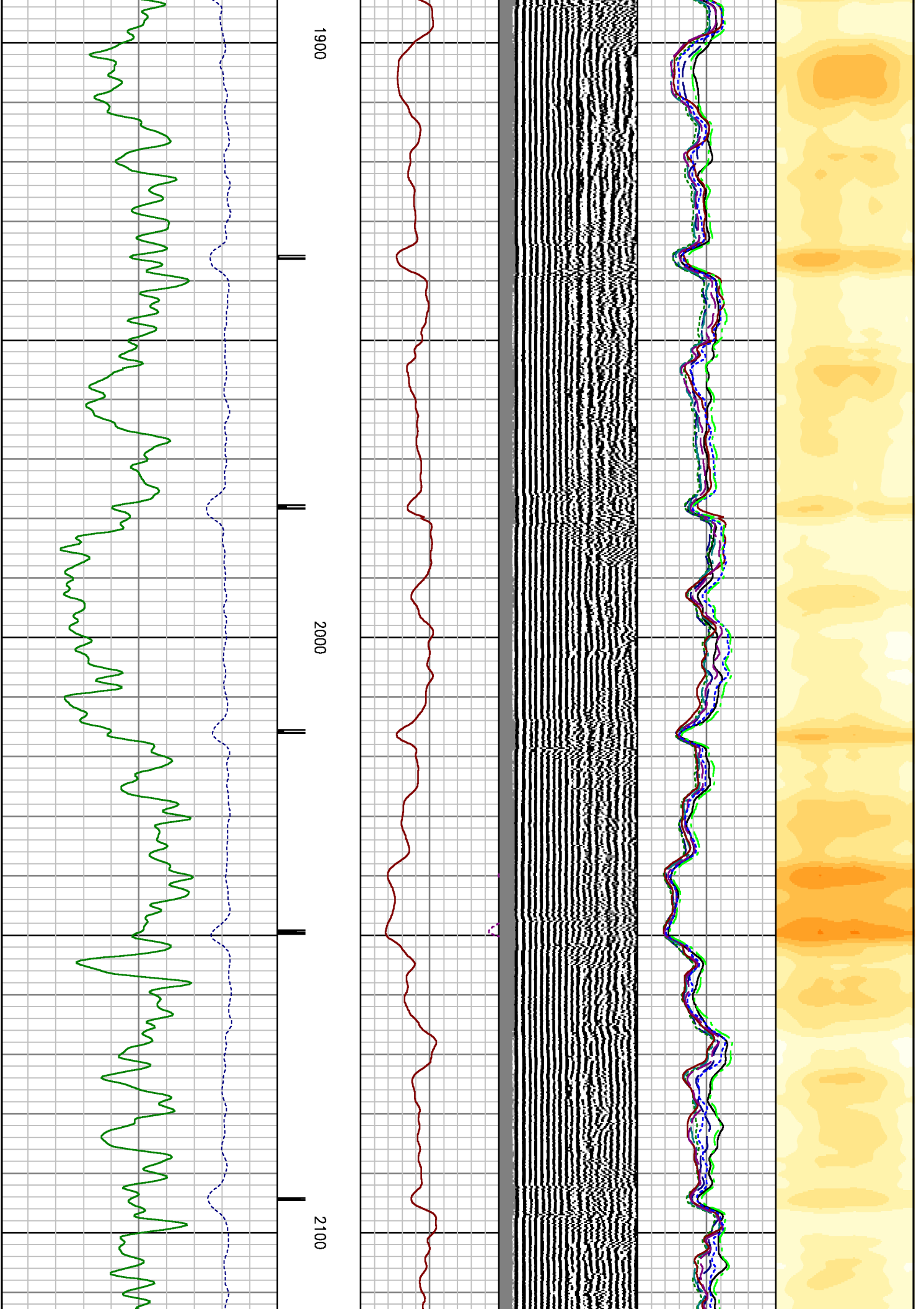


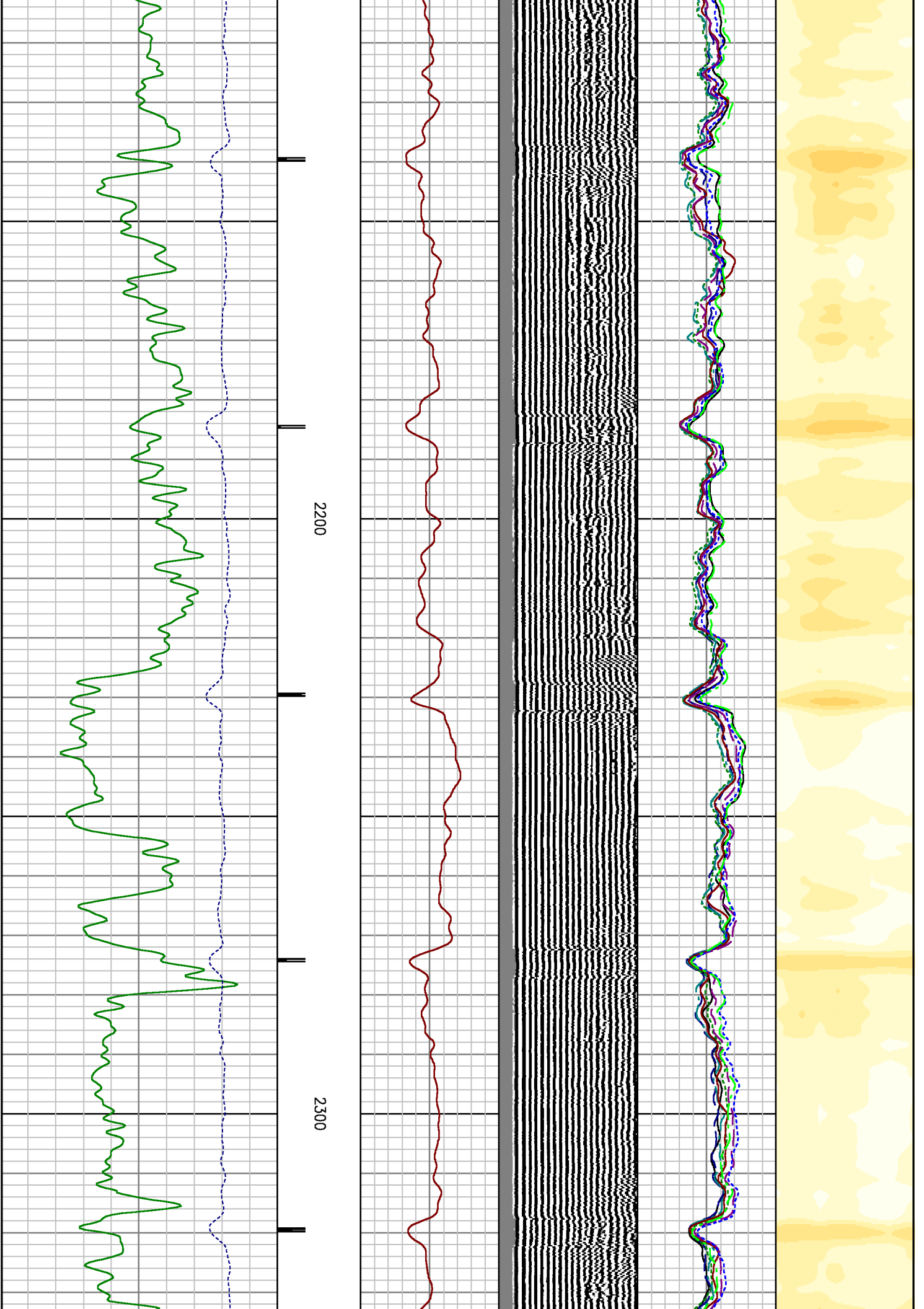


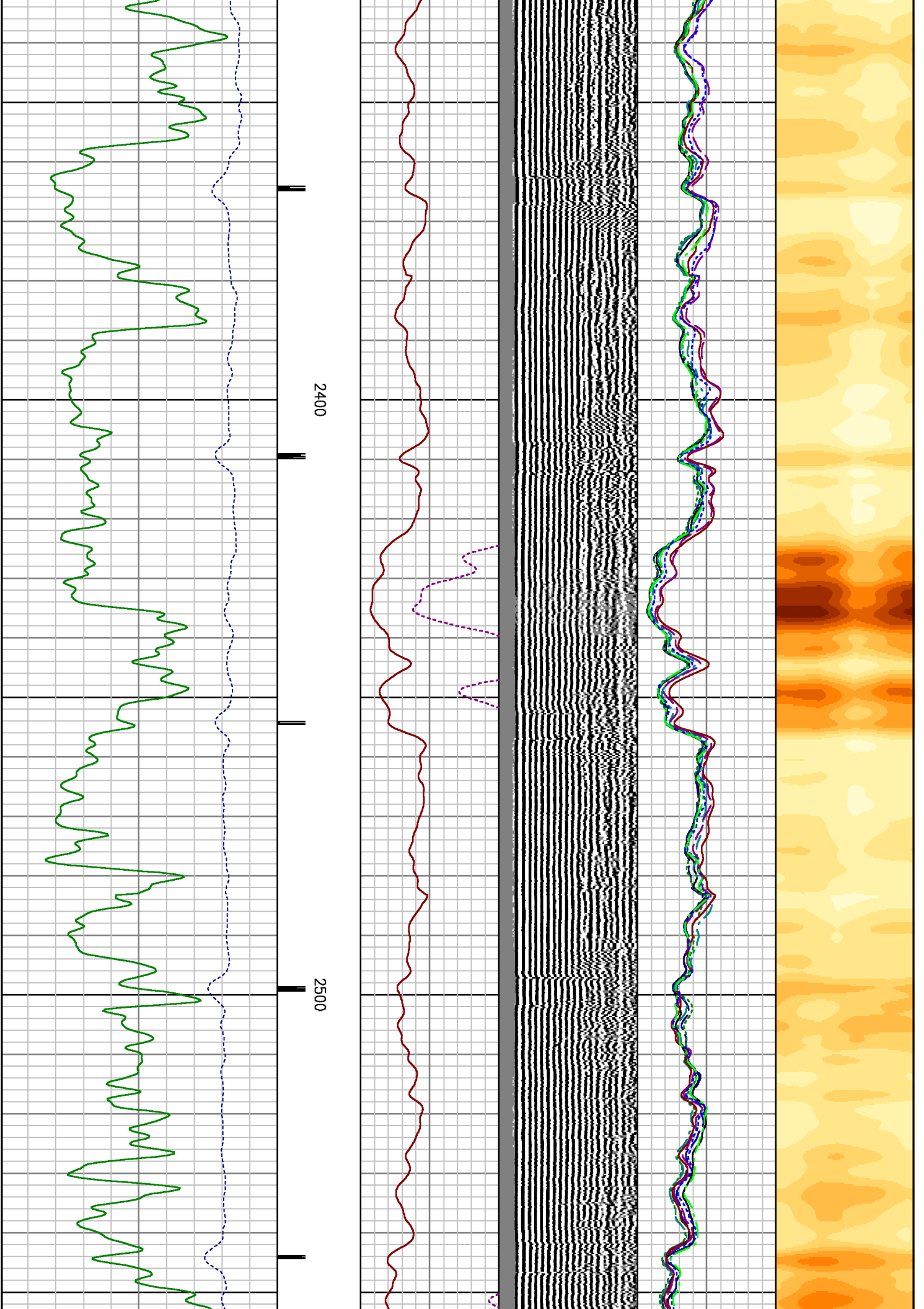


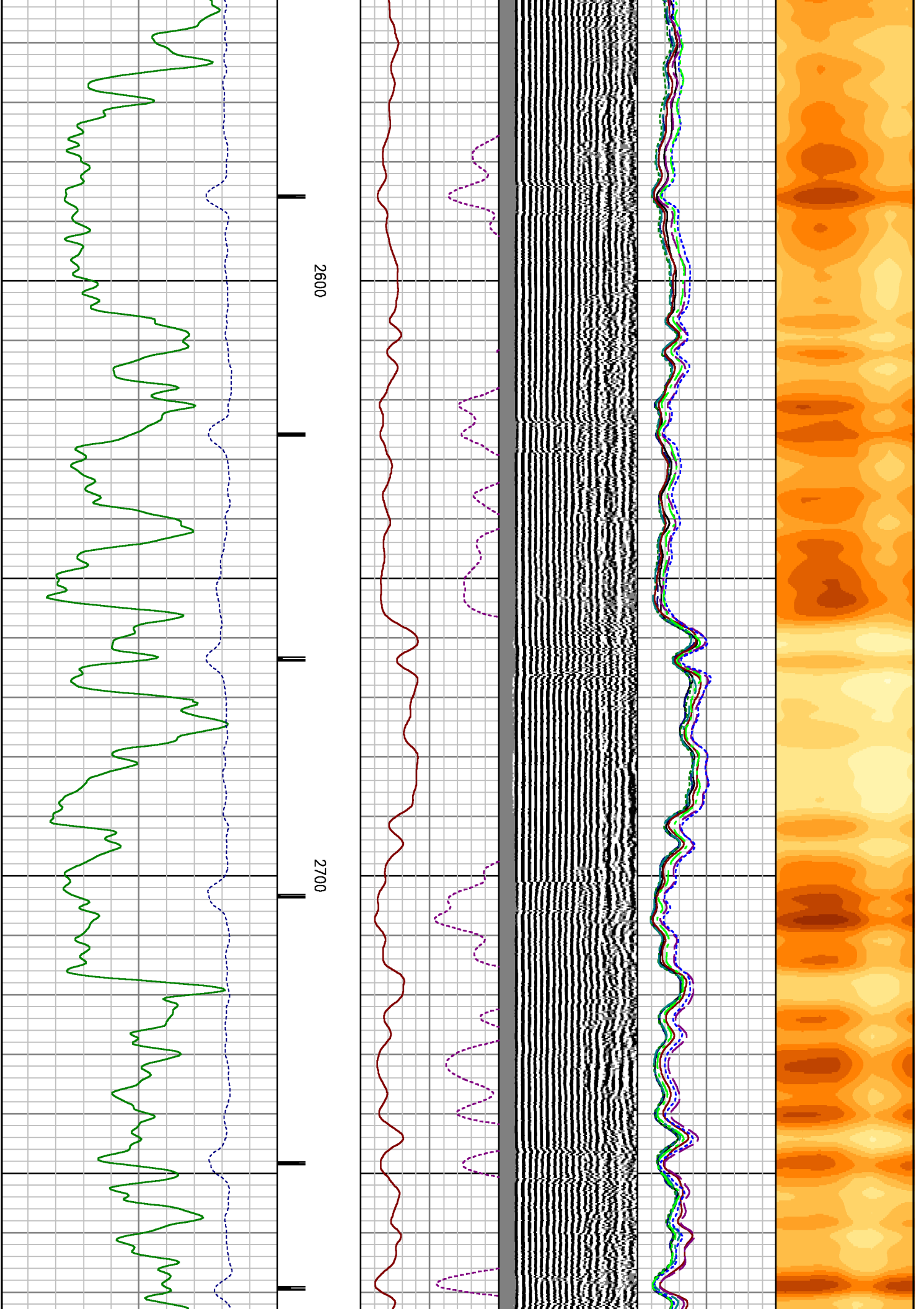


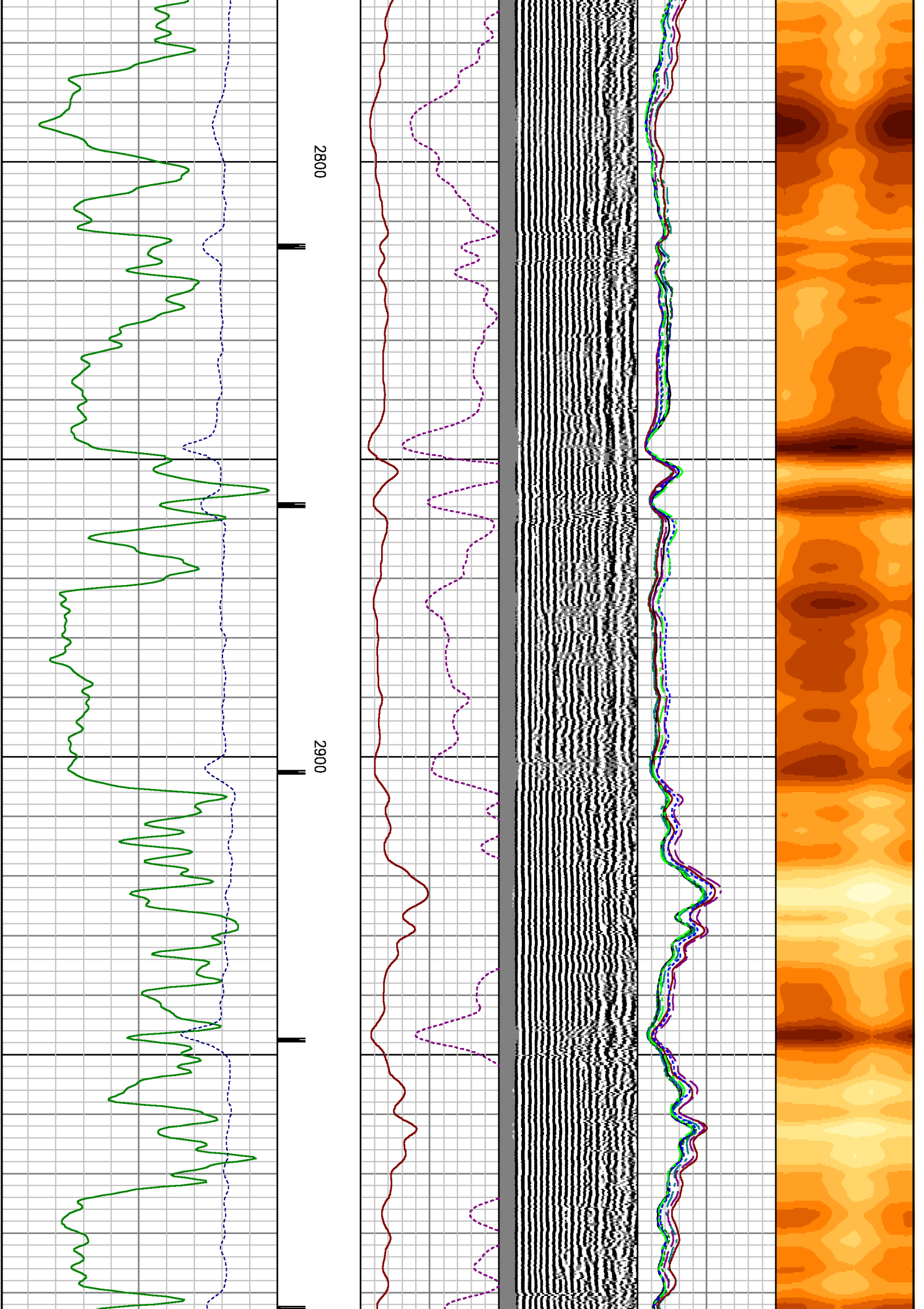


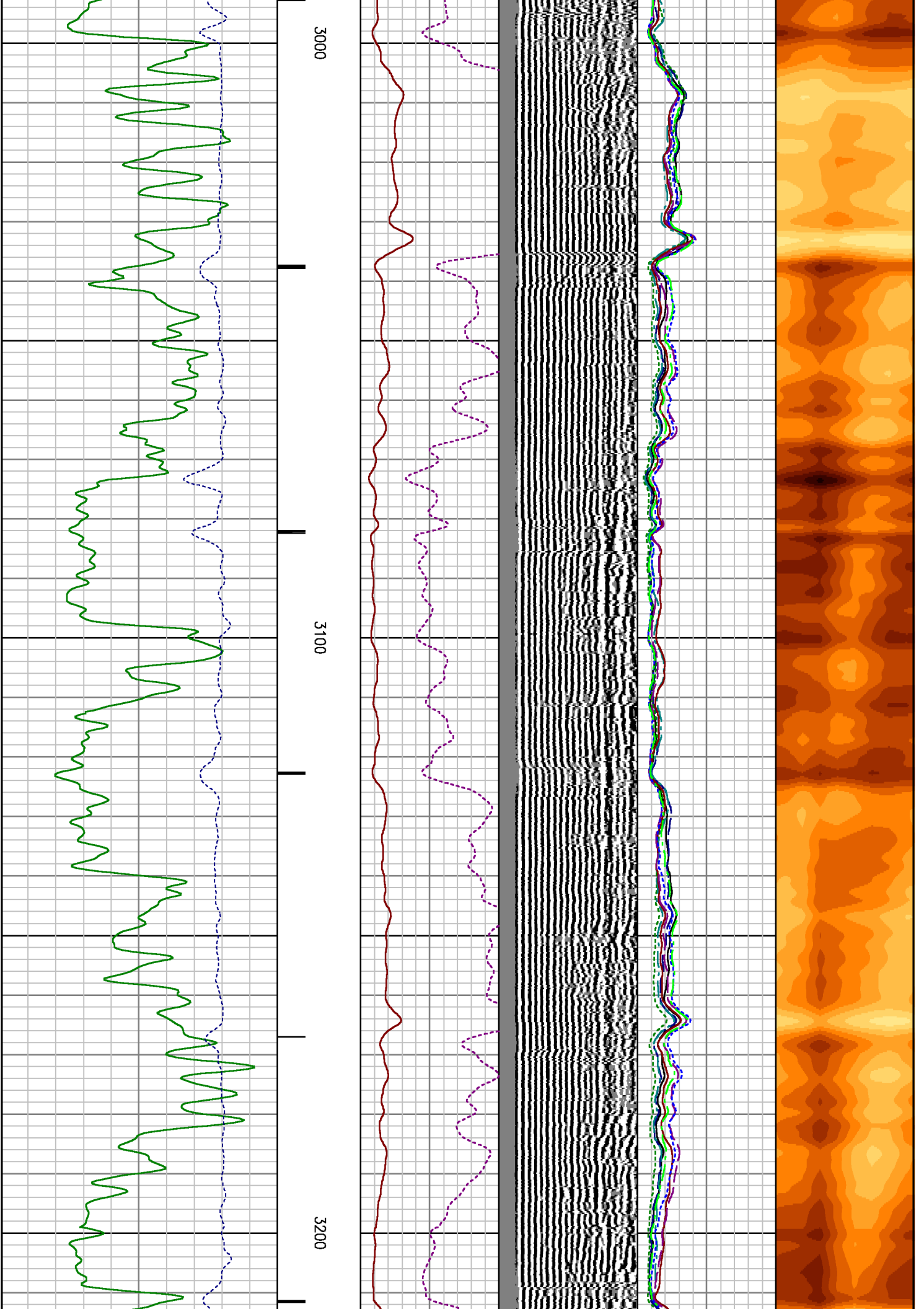


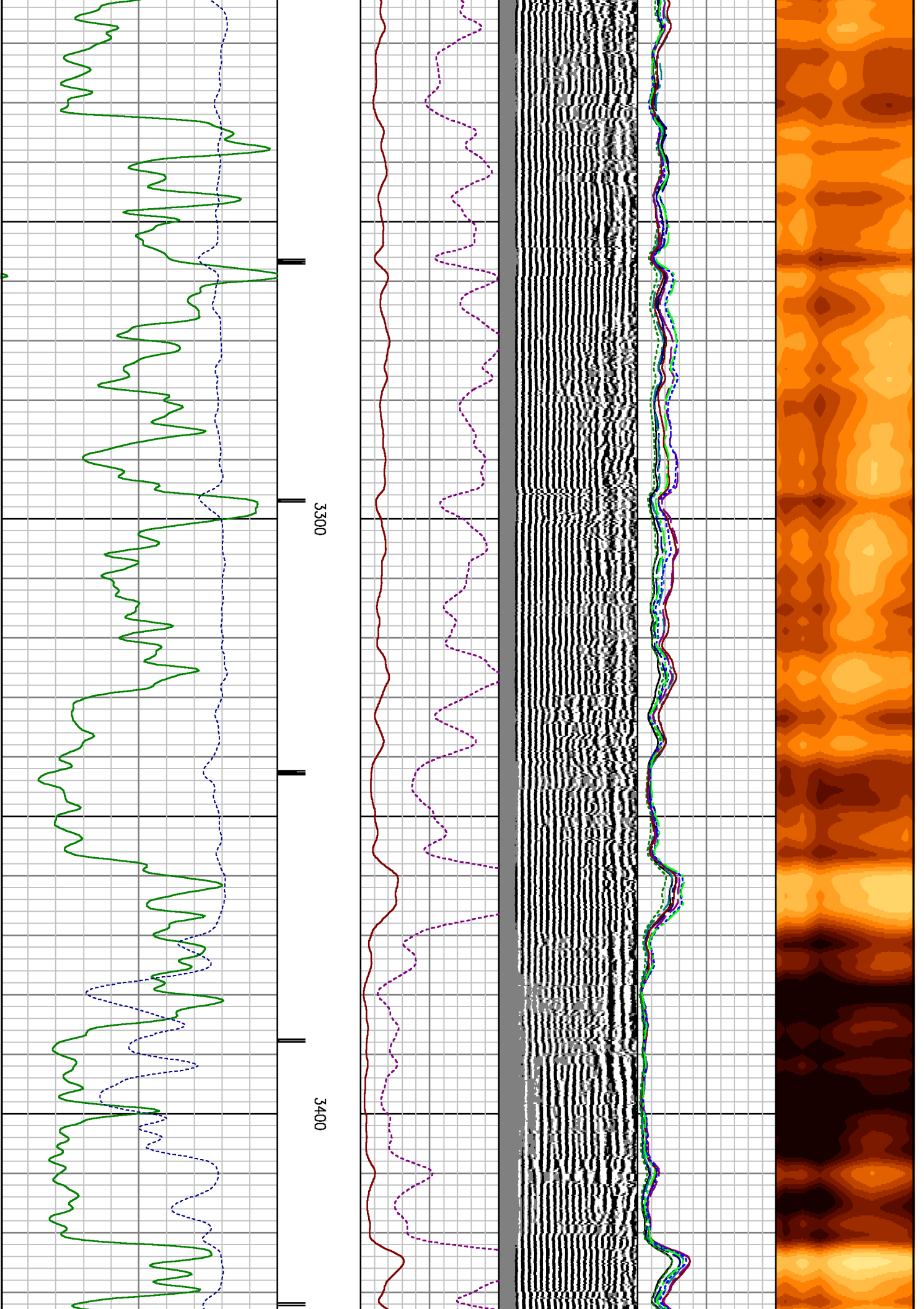


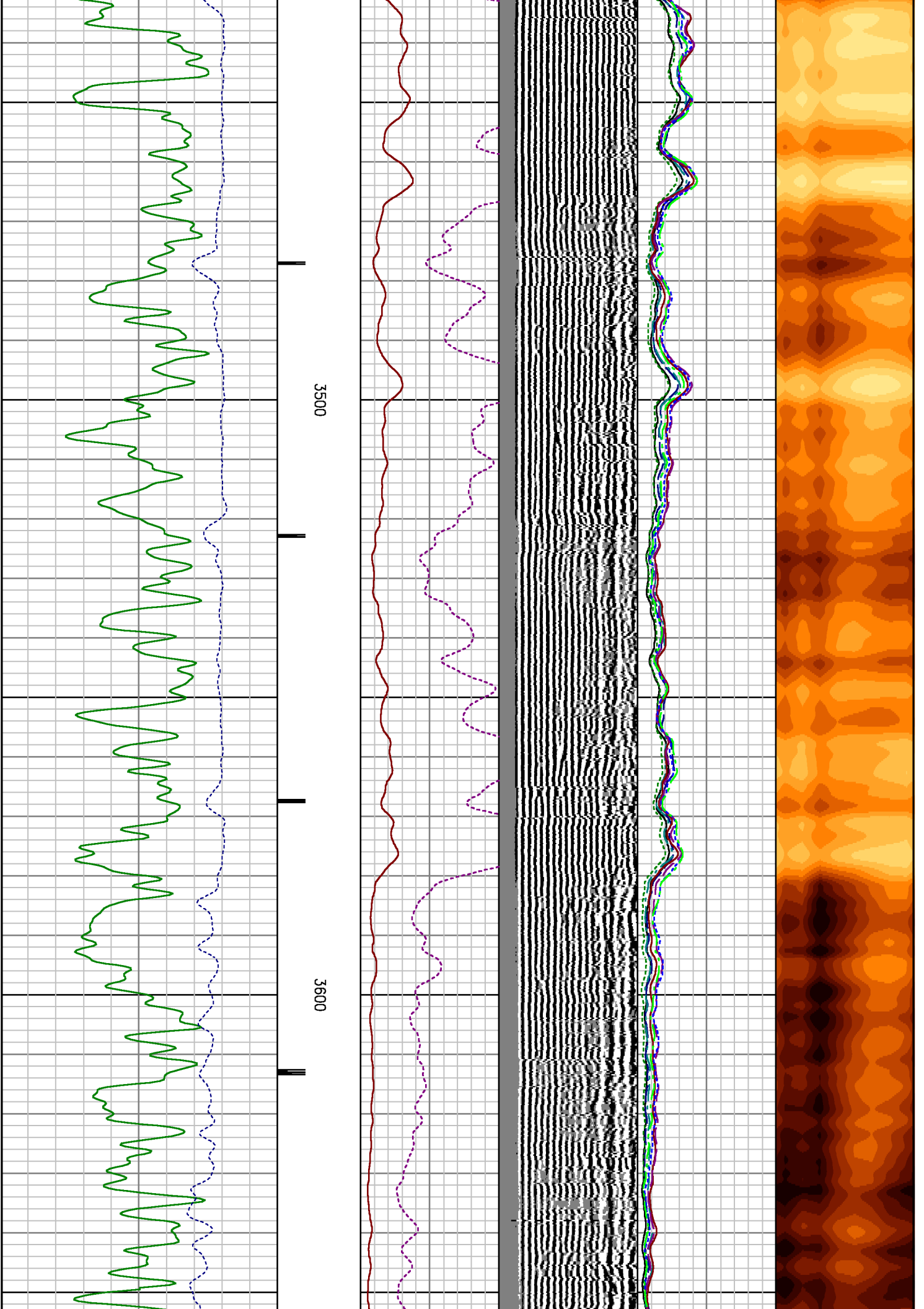


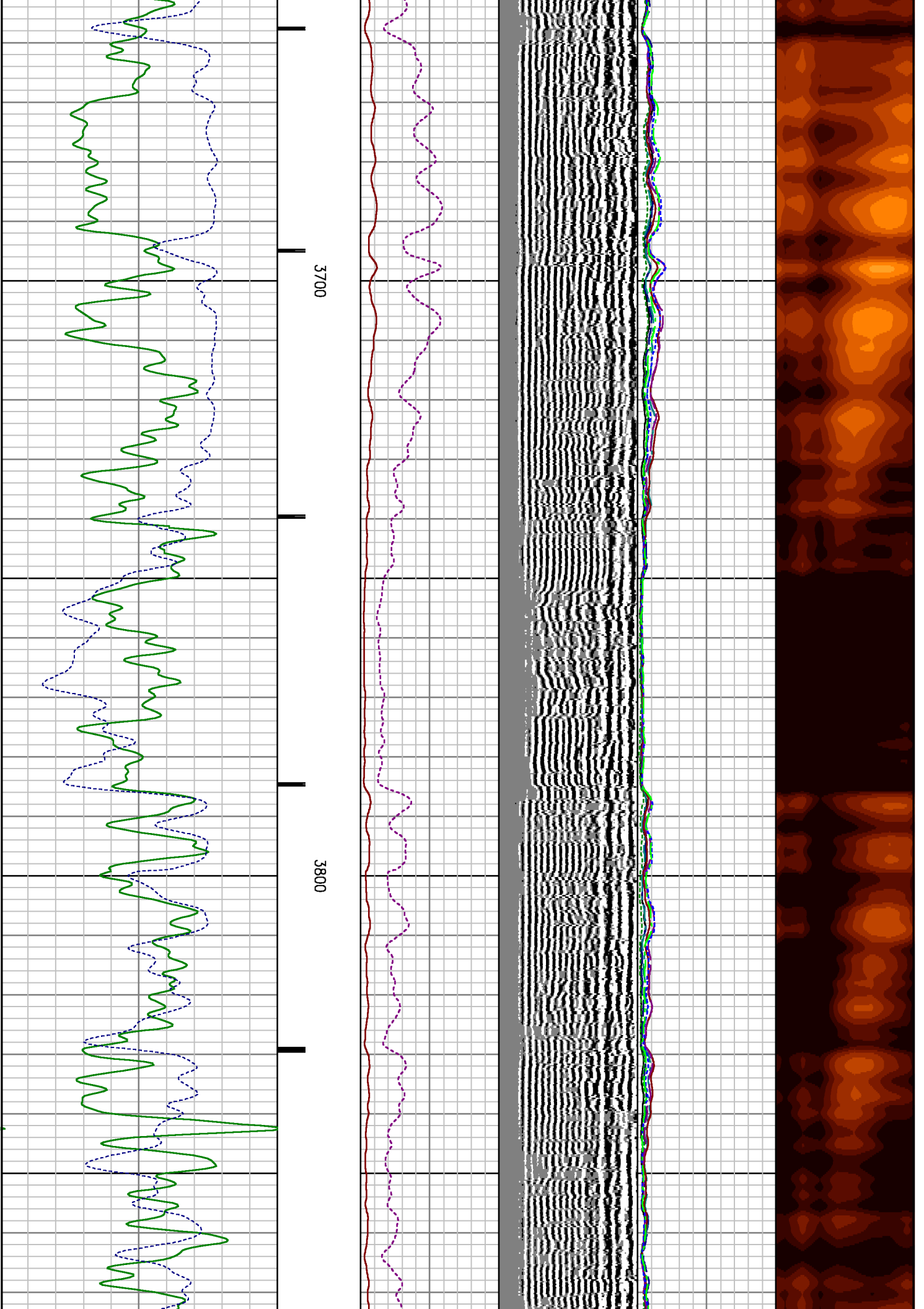


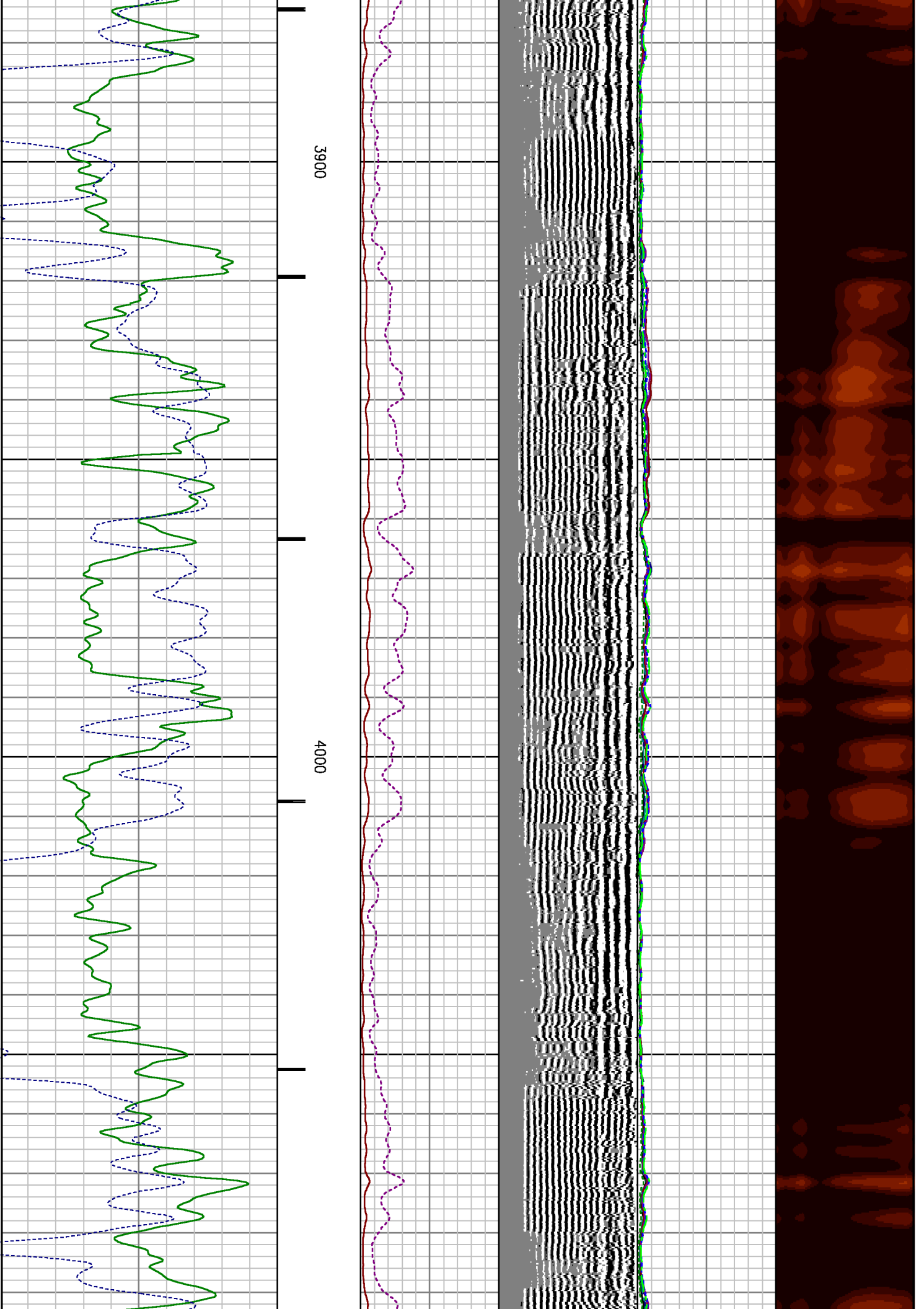


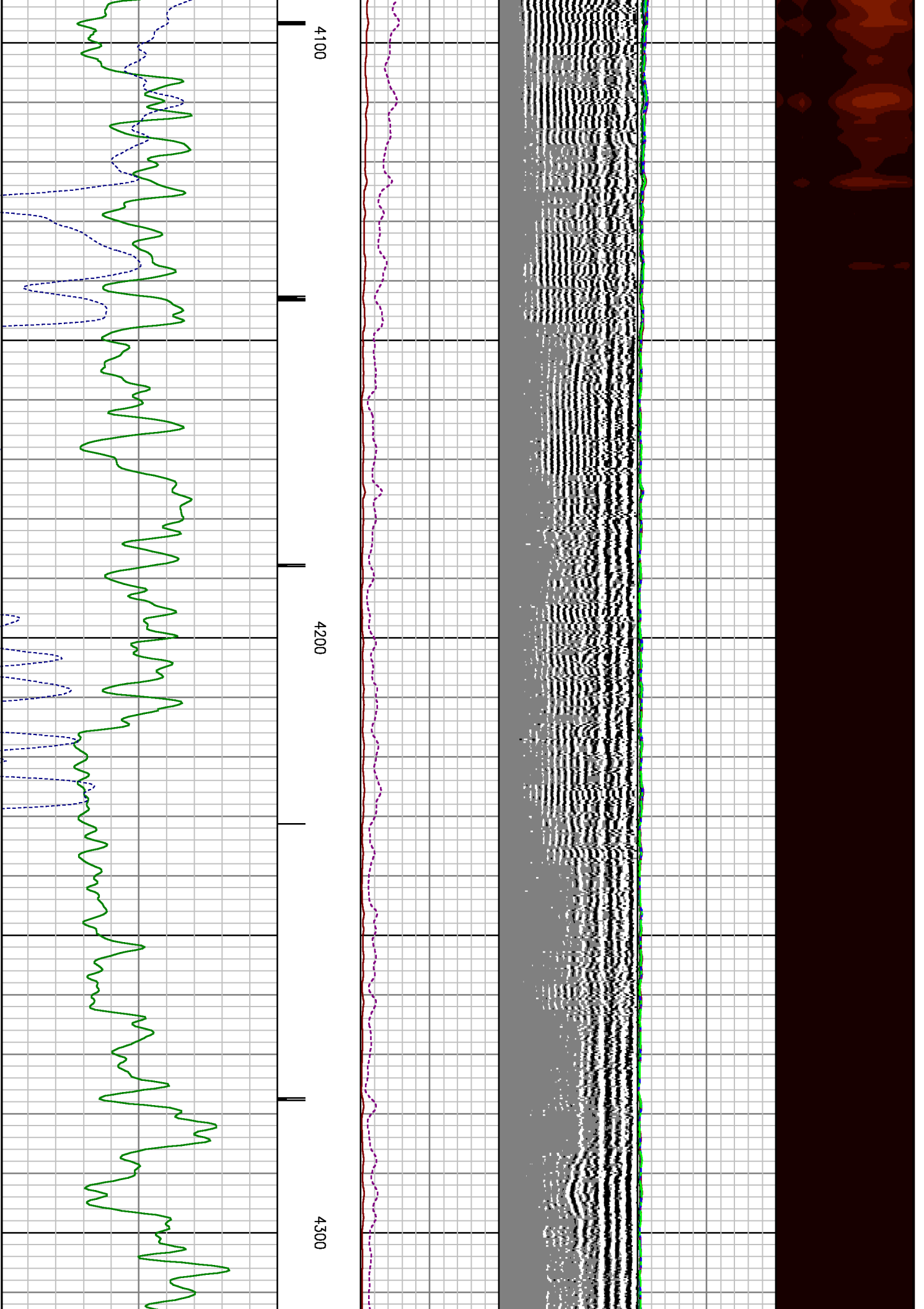


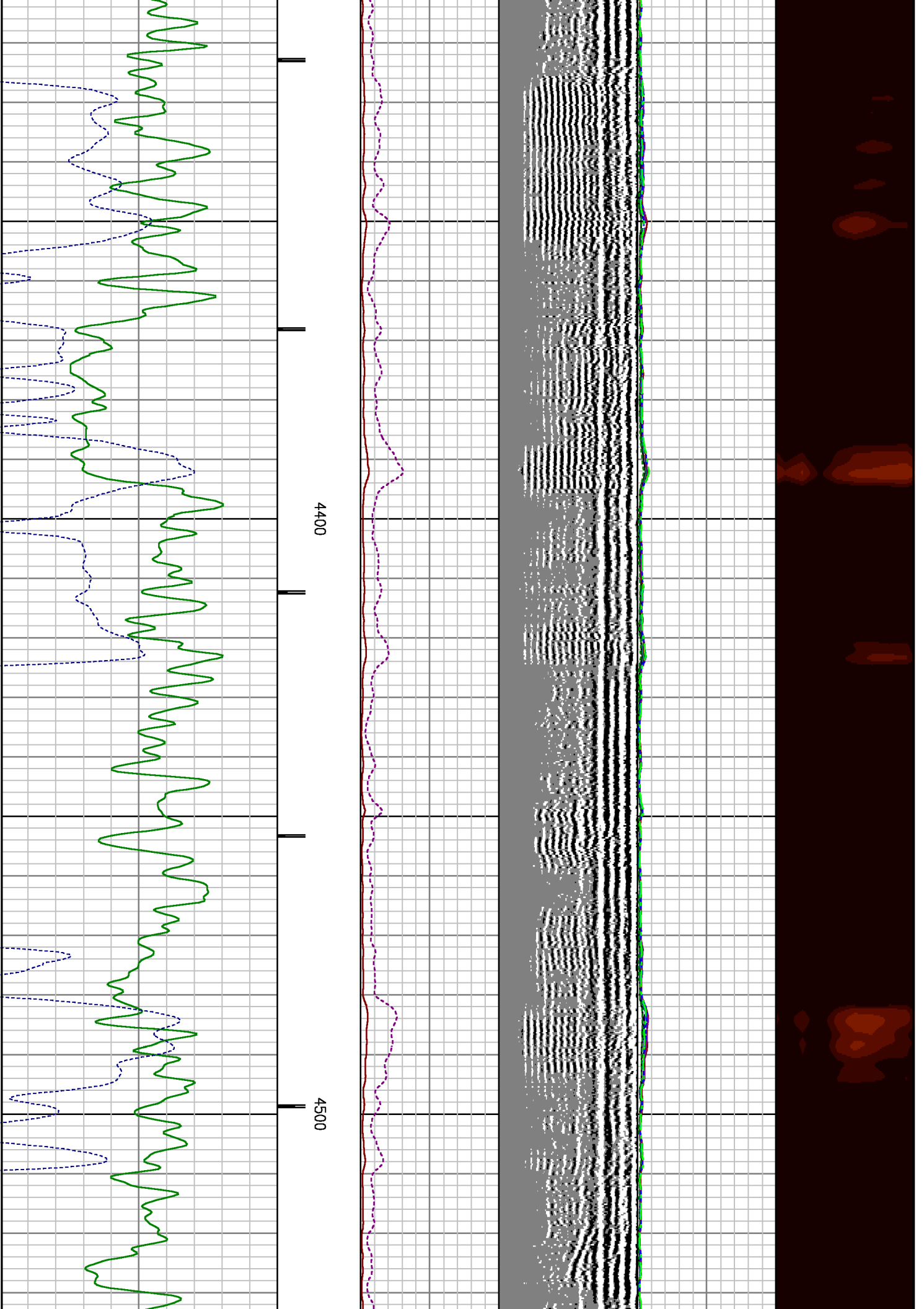


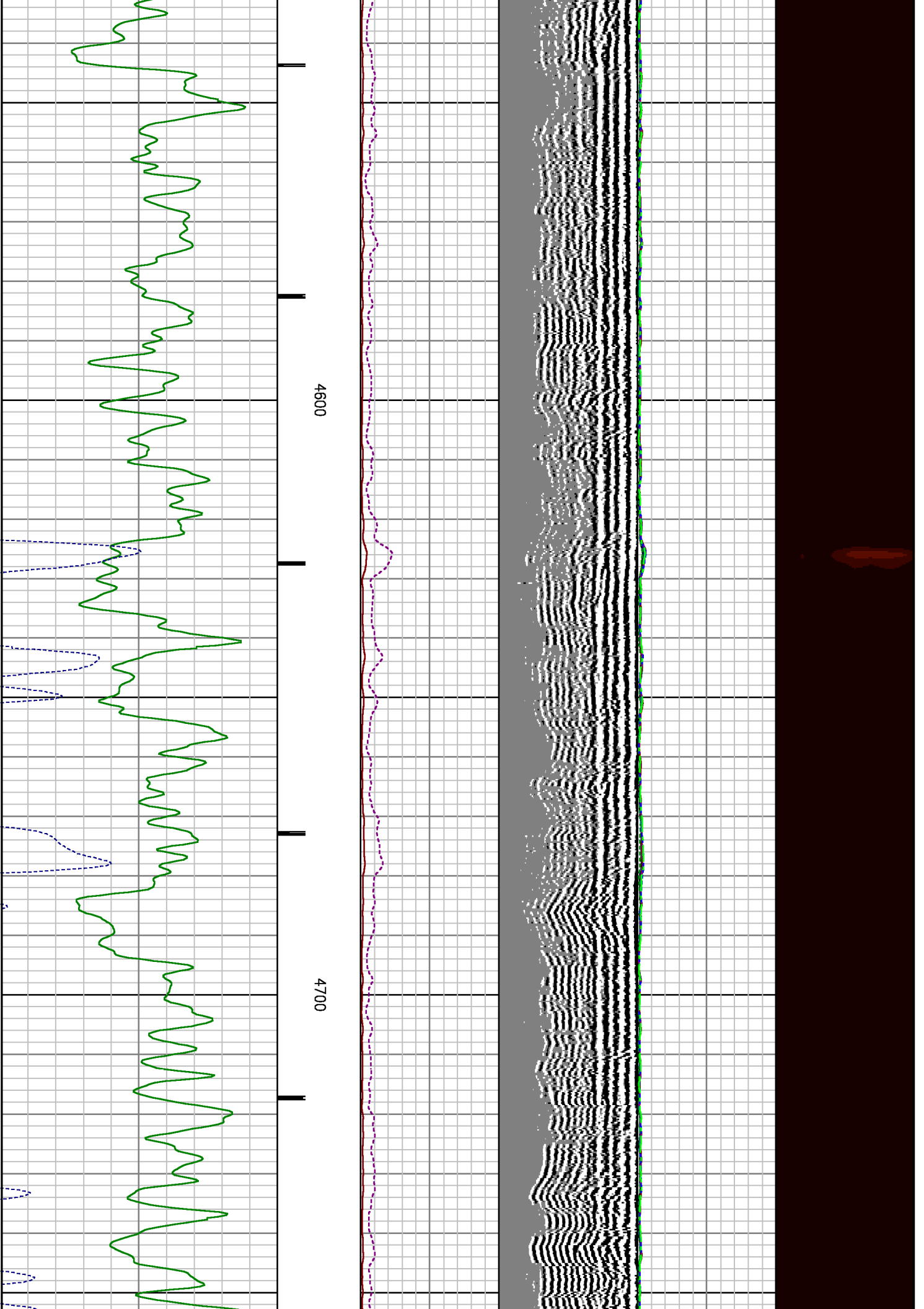


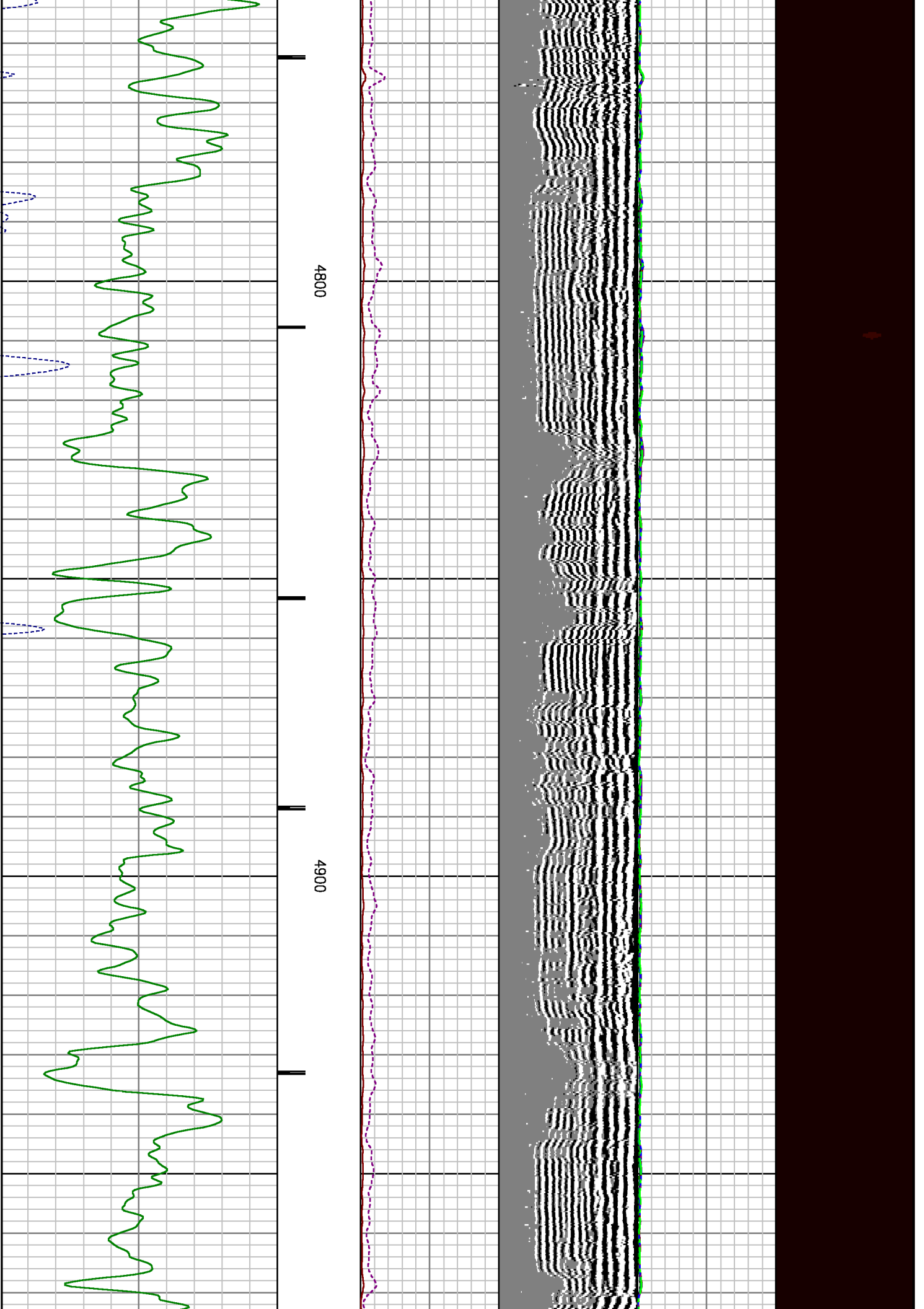


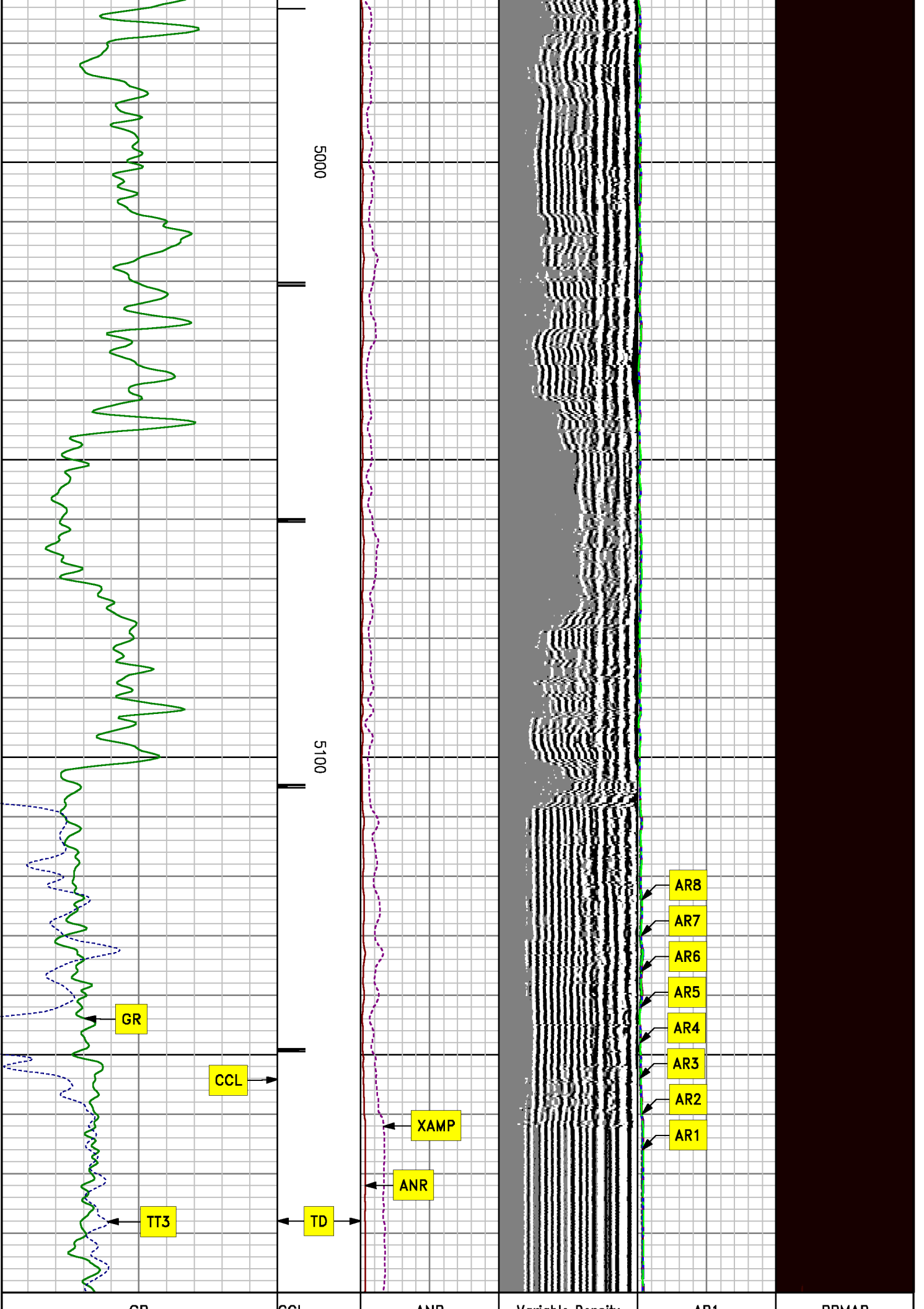


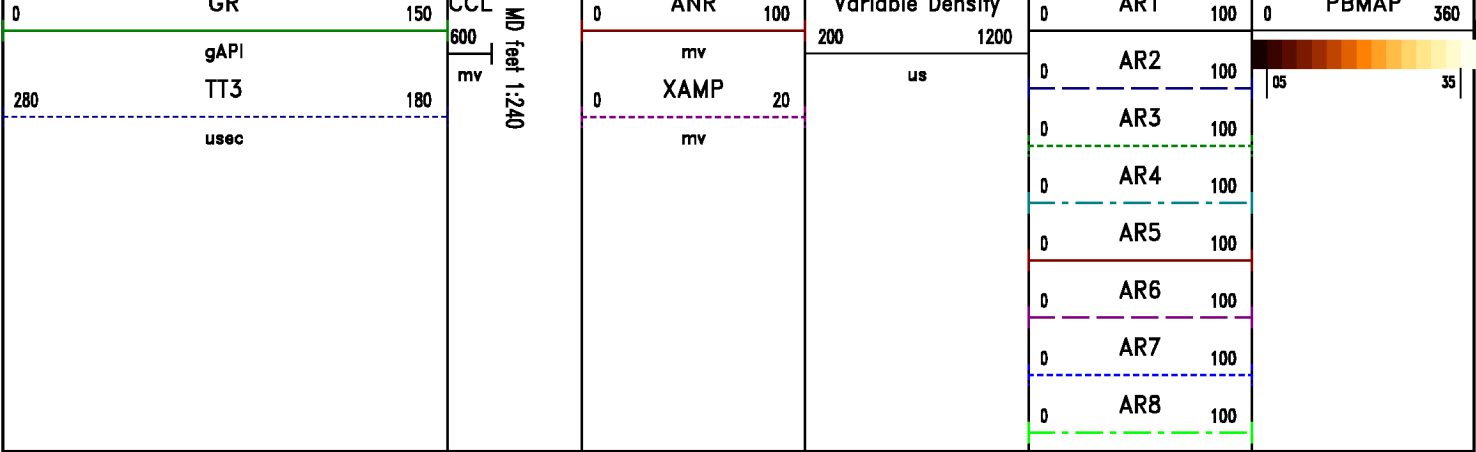












REPEAT SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	u sec	4712.781	5204.000
RAL	Amp Gate Start Near	200.391	u sec	4712.781	5204.000
RAL	Amp Gate Start Radial	200.391	u sec	4712.781	5204.000
RAL	Amp Gate Width Far	30.000	u sec	4712.781	5204.000
RAL	Amp Gate Width Near	30.000	u sec	4712.781	5204.000
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RAL	casing wt	11.600	lbm/ft	4712.781	5204.000
RAL	FB Start Far	291.900	u sec	4712.781	5204.000
RAL	FB Start Near	175.391	u sec	4712.781	5204.000
RAL	FB Start Radial	175.391	u sec	4712.781	5204.000
RAL	FB Thresh Far	10.000	mv	4712.781	5204.000
RAL	FB Thresh Near	4.000	mv	4712.781	5204.000
RAL	FB Thresh Radial	4.000	mv	4712.781	5204.000
RAL	Fluid Travel Time	200.000	u sec/ft	4712.781	5203.843

DEPTH OFFSETS
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES							
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, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

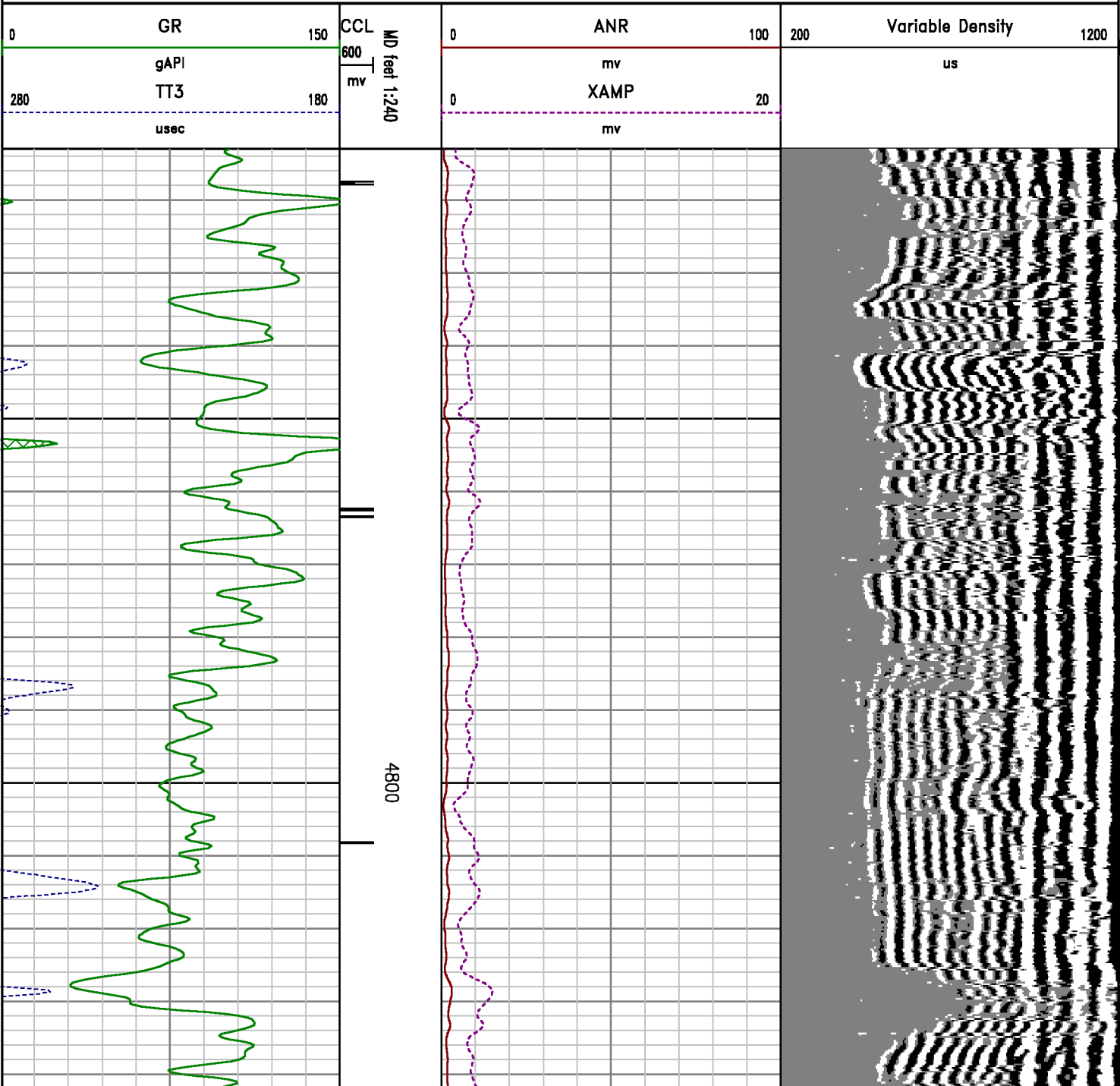
Well : SG 421-33

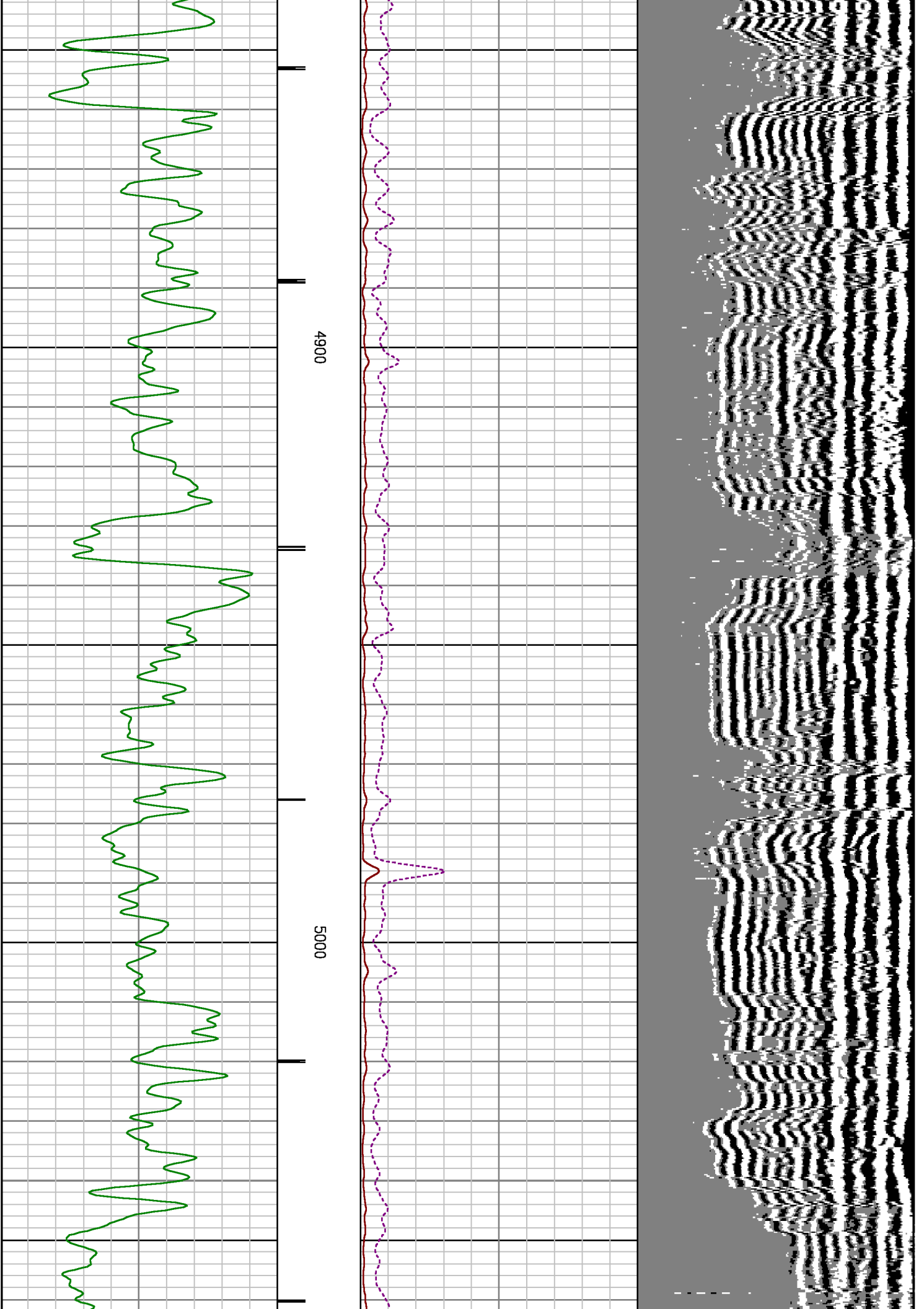
File Name : d:\welldata\rad421\repeat.xtf

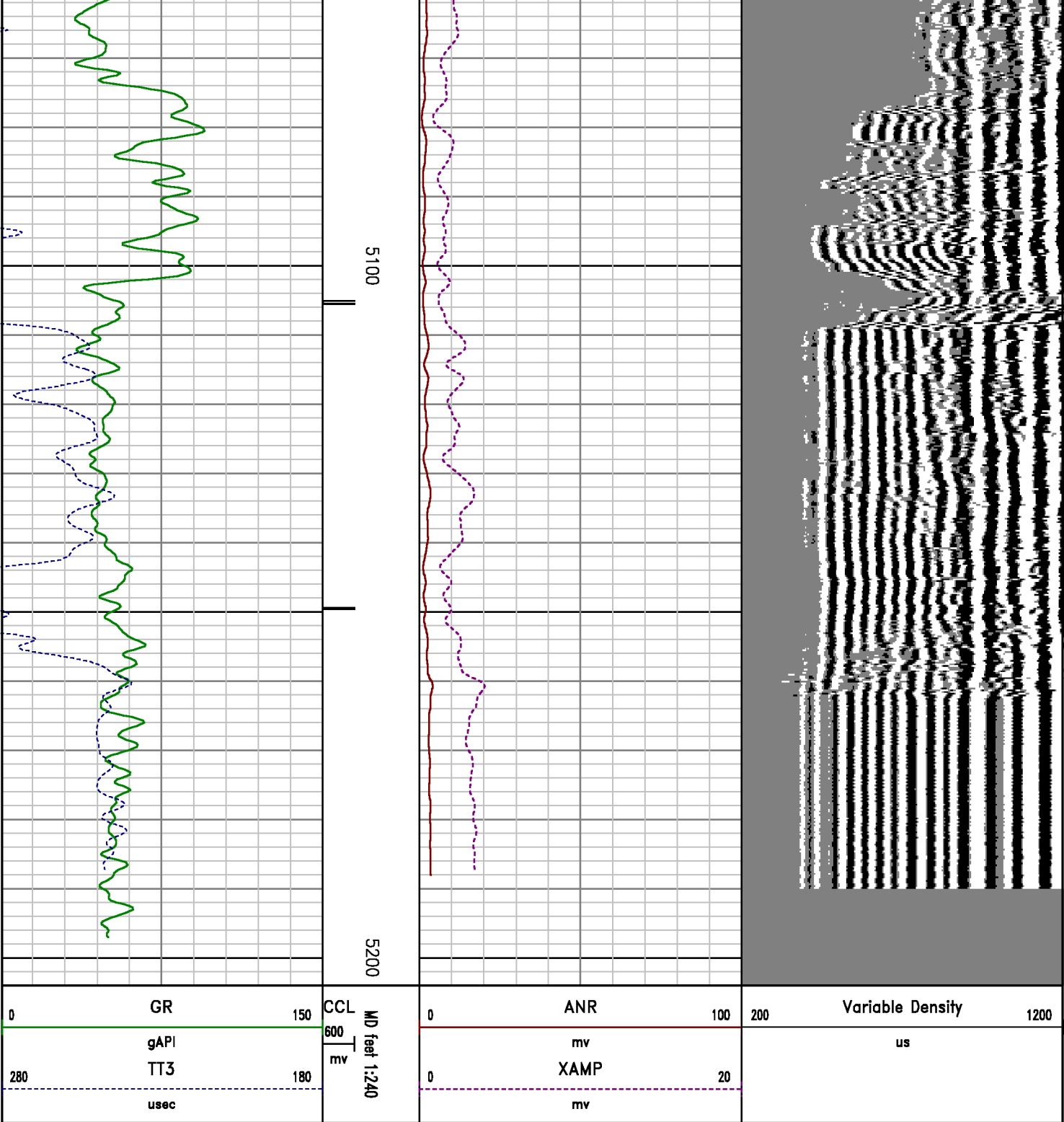
Mode : PlotMgr 5.4.504

Interval : 4713.00 - 5204.00 feet UP

Created : 4/27/2010 7:29:52 AM







CALIBRATION SUMMARY

GAMMA RAY

Calibration File: C:\case\calver\GR\544A2.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sat Apr 24 00:31:49 2010 TOOL SERIES: 1426XA ASSET: 544 SEQ: A2

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K SHOP	37.73	243.64	0.898	33.90	218.90	185.00

Verification File: C:\case\calver\GR\544A2.VP

PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Sat Apr 24 00:33:19 2010 TOOL SERIES: 1426XA ASSET: 544 SEQ: A2

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K SHOP	38.53	248.53	0.898	34.62	223.29	188.67

RALSHP

Shop Calibration: C:\case\calver\RALSHP\106A23_shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sat Apr 24 00:27:18 2010 TOOL SERIES: 1426XA ASSET: 106 SEQ: A23

Tool Delay [usec]	-52.00	Tank OD In	5.50	Tank Wt lbm/ft	15.50	Tank ID In	4.95	
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	220	218	30	150	25	-0.454	100.00	0.22
3 Ft. Receiver	220	216	30	155	25	0.295	100.00	0.22
5 Ft. Receiver	328	326	30	257	25	0.349	150.00	0.25
Radial #1	220	216	30	157	25	0.438	100.00	0.22
Radial #2	221	216	30	157	25	0.324	100.00	0.22
Radial #3	222	216	30	157	25	-0.414	100.00	0.22
Radial #4	220	216	30	157	25	-0.741	100.00	0.22
Radial #5	220	216	30	157	25	0.049	100.00	0.22
Radial #6	218	216	30	157	25	-0.103	100.00	0.22
Radial #7	218	216	30	157	25	-0.346	100.00	0.22
Radial #8	220	216	30	157	25	-0.210	100.00	0.22

RALFLD

Wellsite Calibration: C:\case\calver\RALFLD\106A25 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sun Apr 25 23:14:24 2010 TOOL SERIES: 1426XA ASSET: 106 SEQ: A25

Tool Delay
[usec]

-52.00

Casing OD
in

4.50

Casing Wt
lbm/ft

11.60

Casing ID
in

4.00

RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	150	25	-0.056	0.000	0.99	100.000
3 Ft. Receiver	200	30	-1.377			
5 Ft. Receiver	317	30	-0.041			
Radial #1	200	30	-0.769			
Radial #2	200	30	-1.013			
Radial #3	200	30	-0.853			
Radial #4	200	30	-0.891			
Radial #5	200	30	-0.519			
Radial #6	200	30	-0.703			
Radial #7	200	30	-0.521			
Radial #8	200	30	-0.735			

RALSHP #2

Shop Calibration: C:\case\calver\RALSHP\49626A_shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Apr 27 06:50:11 2010 TOOL SERIES: 1426XA ASSET: 496 SEQ: 26A

Tool Delay
[usec]

-52.00

Tank OD
in

5.50

Tank Wt
lbm/ft

15.50

Tank ID
in

4.95

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	219	216	30	152	25	0.115	100.00	0.31
3 Ft. Receiver	219	216	30	161	25	0.243	100.00	0.30
5 Ft. Receiver	327	324	30	253	25	0.141	150.00	0.33
Radial #1	220	216	30	160	25	-0.053	100.00	0.30
Radial #2	220	216	30	160	25	-0.203	100.00	0.30
Radial #3	219	216	30	160	25	0.033	100.00	0.30
Radial #4	219	216	30	160	25	0.347	100.00	0.30
Radial #5	217	216	30	160	25	0.368	100.00	0.30
Radial #6	217	216	30	160	25	0.104	100.00	0.30
Radial #7	217	216	30	160	25	0.246	100.00	0.30
Radial #8	220	216	30	160	25	0.069	100.00	0.30

RALFLD #2

Wellsite Calibration: C:\case\calver\RALFLD\49626A fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Apr 27 06:51:20 2010 TOOL SERIES: 1426XA ASSET: 496 SEQ: 26A

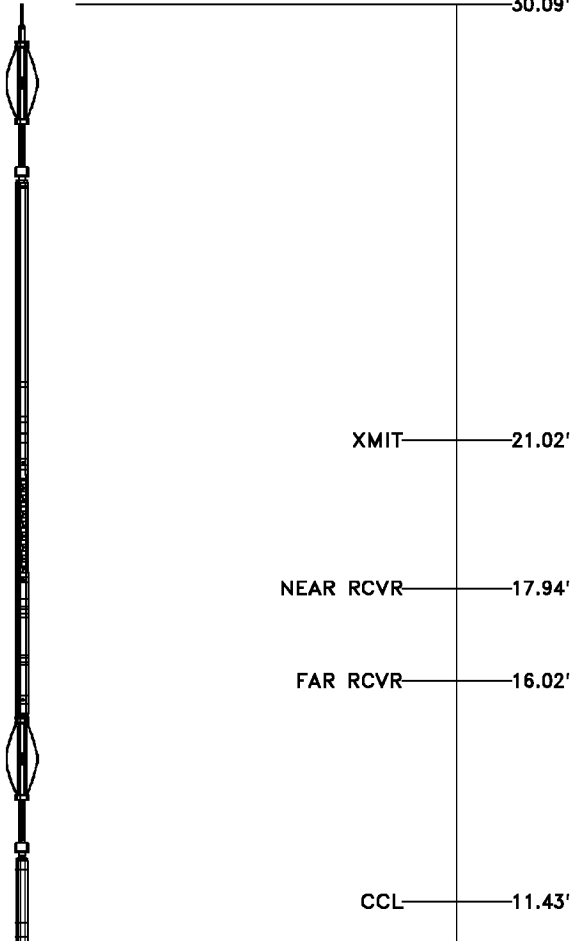
RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	152	25	-0.006	0.000	1.00	100.000
3 Ft. Receiver	200	30	1.732			
5 Ft. Receiver	317	30	2.126			
Radial #1	200	30	1.797			
Radial #2	200	30	1.756			
Radial #3	200	30	1.744			
Radial #4	200	30	1.765			
Radial #5	200	30	1.491			
Radial #6	200	30	1.489			
Radial #7	200	30	1.292			
Radial #8	200	30	1.122			

TOOL DIAGRAM

OTA SHORT CABLE HEAD	
CENTRALIZER	
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

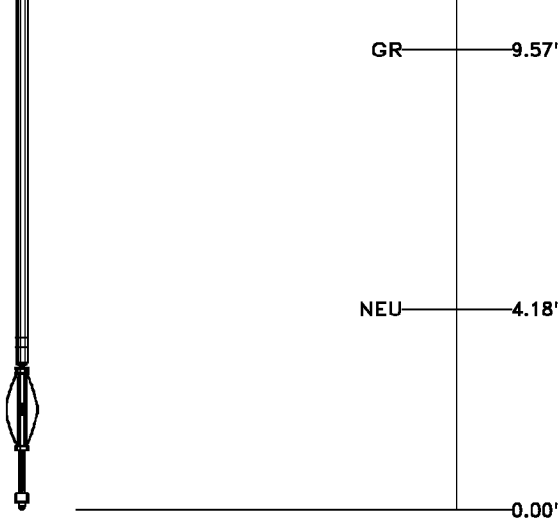
PROBE 2 3/4 DUAL RECEIVER RADII	
Series	1426XA
Mnemonic	PROB
Diameter	2.75"
Length	11.17'
Measure Point	0.75' FAR RCVR
Measure Point	2.67' NEAR RCVR
Measure Point	5.75' XMIT
Temp Rating	350.00 °F
Press Rating	18000.00 PSI

CENTRALIZER	
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb





Probe GR/CCL/NEU	
Series	2459XA
Mnemonic	PROB
Diameter	2.75"
Length	9.42'
Measure Point	1.21' NEU
Measure Point	6.60' GR
Measure Point	8.46' CCL

CENTRALIZER	
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb



Total Length: 30.09'
Total Weight: Not Available
Max Diameter: 0' 3.12"

<div>  </div> <div> Baker Atlas </div> <div>  </div>	<div> Company </div> <div> WILLIAMS PRODUCTION COMPANY </div>		<div> File No: </div> <div> 1748 </div>
	<div> Well </div> <div> SG 421-33 </div>		<div> API No: </div> <div> 04045183030000 </div>
	<div> Field </div> <div> GRAND VALLEY </div>		
	<div> County </div> <div> GARFIELD </div>	<div> State </div> <div> COLORADO </div>	
<div> Location </div> <div> SHL: 1572' FNL & 950' FWL </div> <div> BHL:922' FNL & 1914' FWL </div>		<div> Elevations </div> <div> KB 5087 ft </div> <div> DF 5086 ft </div> <div> GL 5061 ft </div>	<div> S: 33 T: 7S R: 96W </div> <div> PAD: SG 22-33 </div> <div> RIG: NABORS 576 </div>
<div> SEC 33 </div> <div> TWP 7S </div> <div> RGE 96W </div>			