



RADIAL BOND LOG WITH GAMMA RAY

Company **VERDAD RESOURCES**
Well **BRNAK 01-64-10-3H**
Field **WATTENBERG**
County **WELD** State **COLORADO**

Location: **SHL: 245' FNL & 1299' FWL**
NW NW
SEC 10 TWP 1N RGE 64W
Permanent Datum **GL** Elevation **5104'**
Log Measured From **MH -2'** Above Perm. Datum
Drilling Measured From **KB** Elevation **K.B. 5121'**
D.F. N/A
G.L. 5104'

Date of Service	16 NOV 2017		
Run Number	ONE		
Depth Driller or P8TD	17233'		
Depth Logger	7200'		
Bottom Log Interval	7200'		
Top Log Interval	SURFACE		
Open Hole Size	8.5"		
Type Fluid	WATER		
Fluid Level	FULL		
Fluid Density	N/A		
Max. Recorded Temperature	N/A		
Max. Wellhead Pressure	ZERO		
Wellhead Connection	OPEN		
Estimated Cement Top	SURFACE		
Unit Number	P138		
Wireline Size	9/32		
Location	FORT MORGAN CO		
Recorded By	SCHOENROGGE		
Witnessed By	MR. BEECHERL		
	Size	Wt/Ft	Top
Tubing Record			Bottom
Surface Casing	9.625"	36	SURFACE 1736'
Production Casing	5.5"	20	SURFACE 17366'
Liner Record			

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
LOG ZEROED AT MANDREL HANGER

K.O.P. 6590'

NO FREE PIPE. CALIBRATIONS ARE FROM SHOP.

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

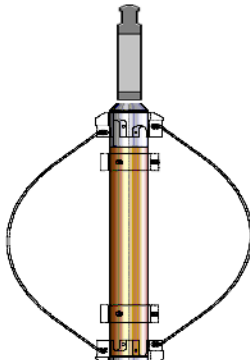

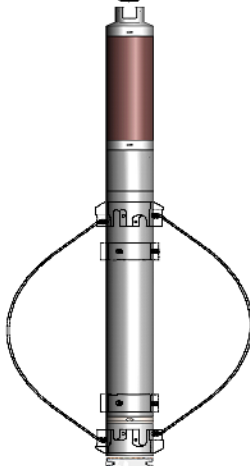
Tool Data - Services

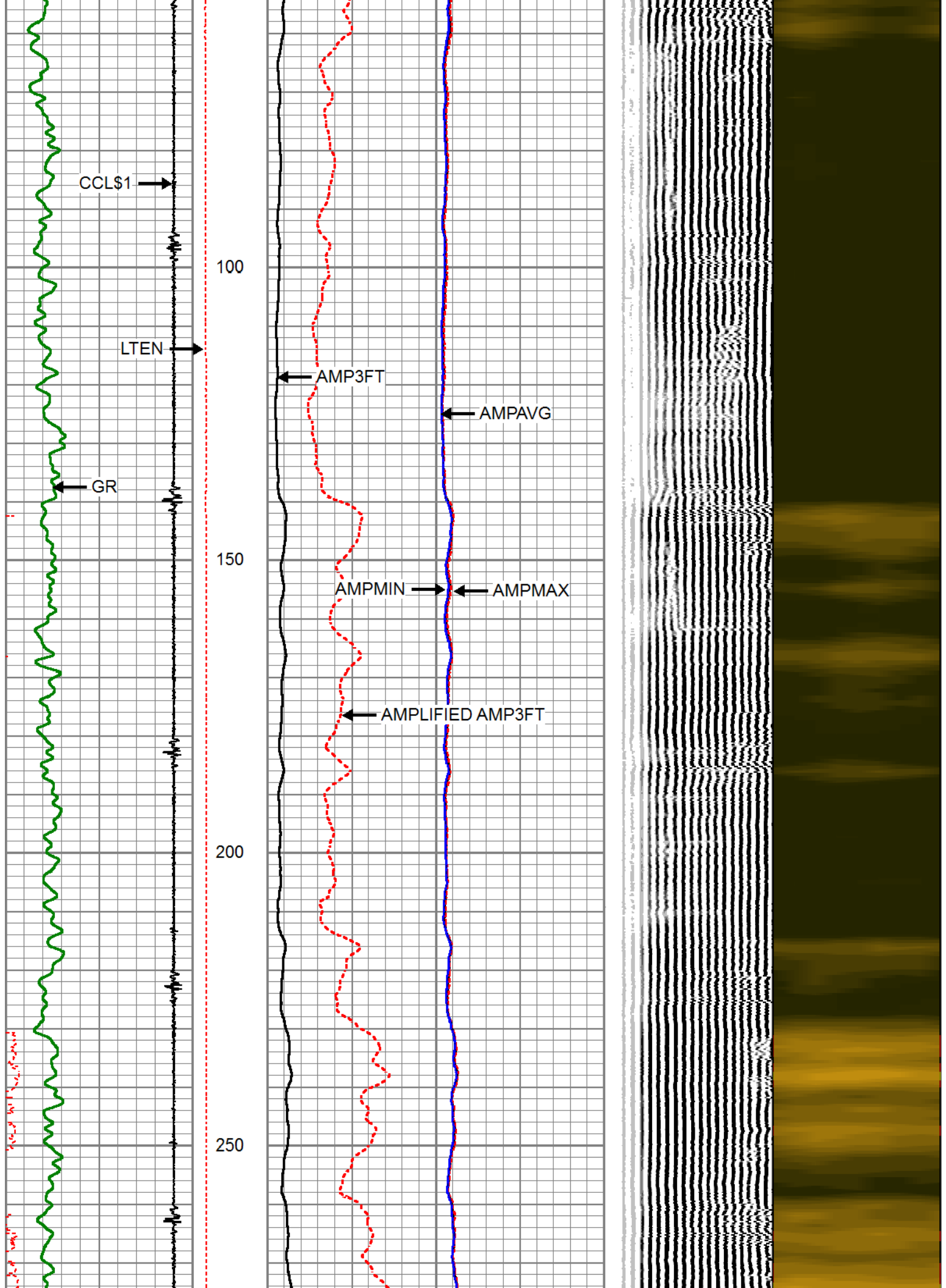
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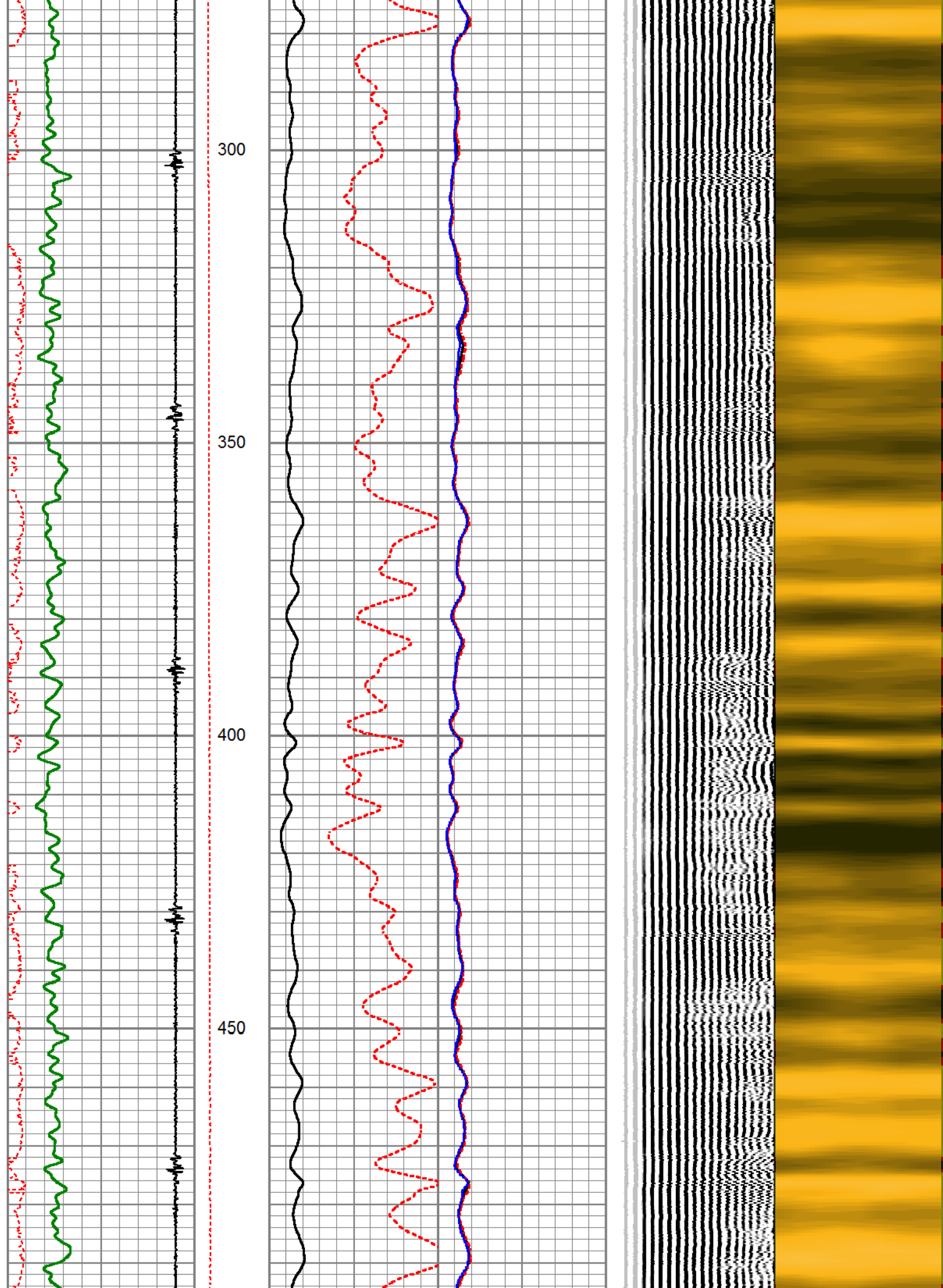
Engineer: SCHOENROGGE
Operator: DAVE HOLLIS
Operator: DUSTY SCOTT
Operator: JUSTIN RENFRO

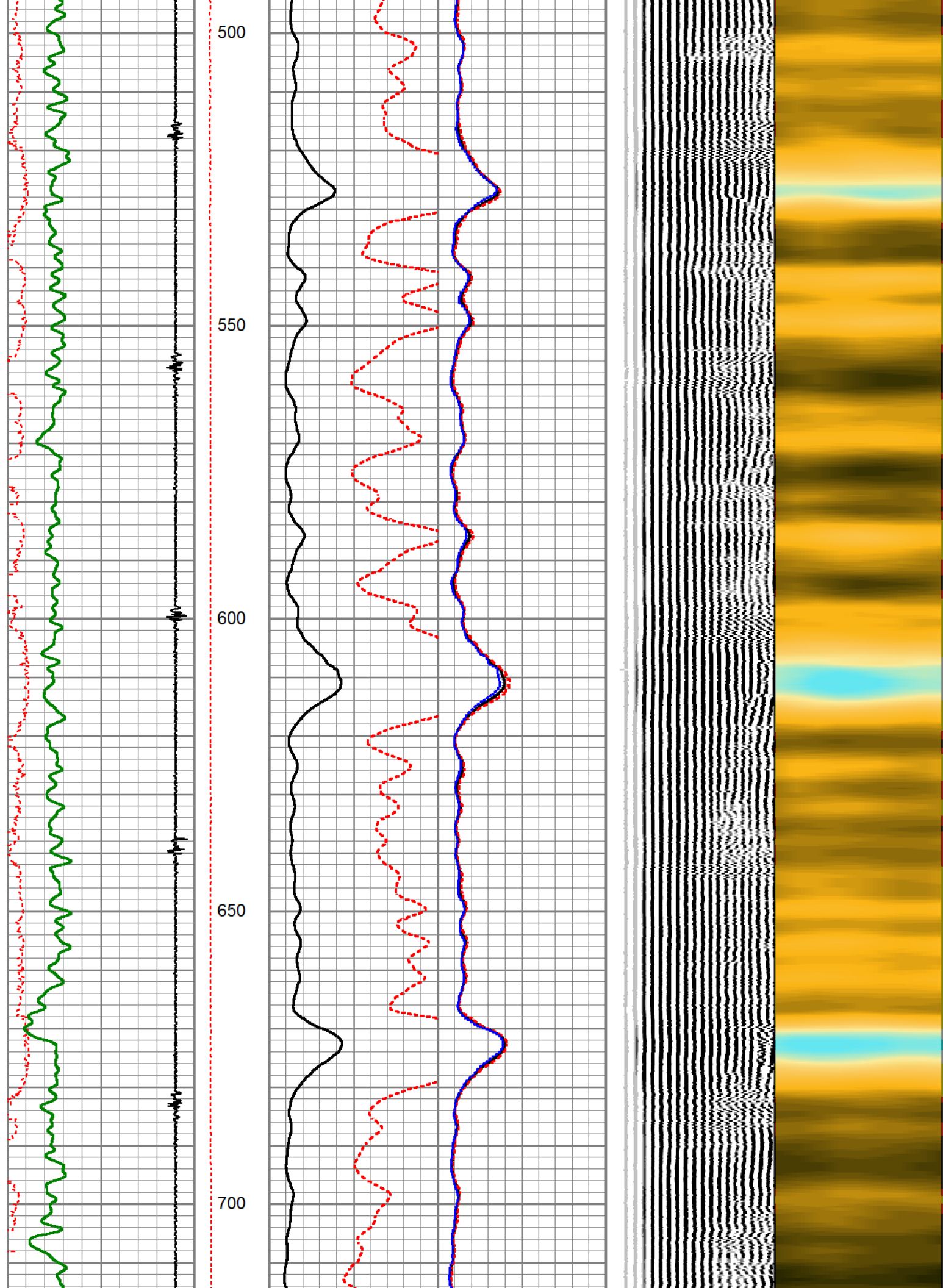
Top - Bottom

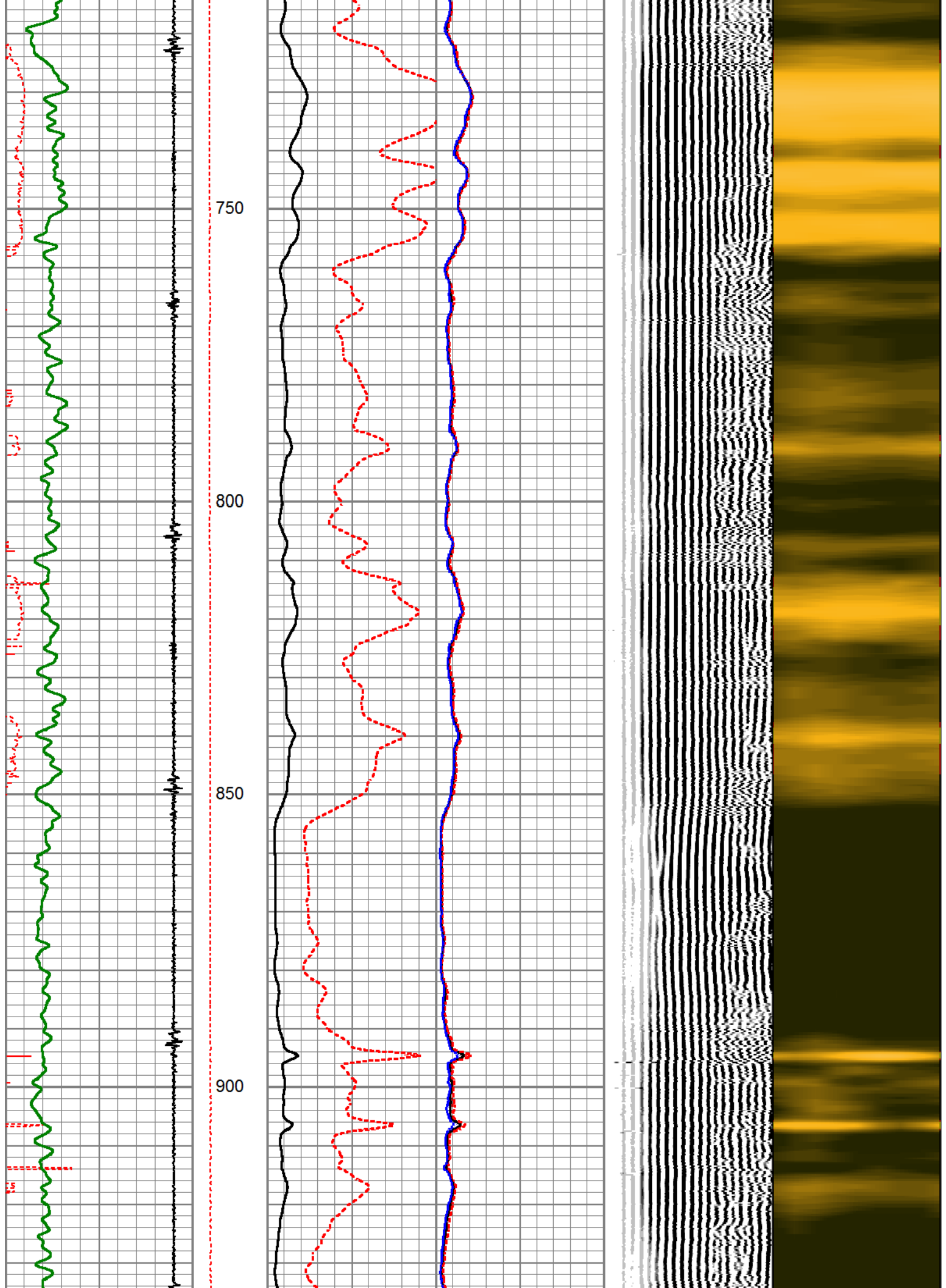
BHTEMP_Src	CMTTKCOR	CSTKCOR	SZCOR	CASED?	NPORSEL	CMNTTHCK in
TEMP	On	On	On	Yes	Limestone	1.5
PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASETHCK in
0	20	0	1	0.08	50	0.361
CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in		
5.5	0	0	210	8.5		

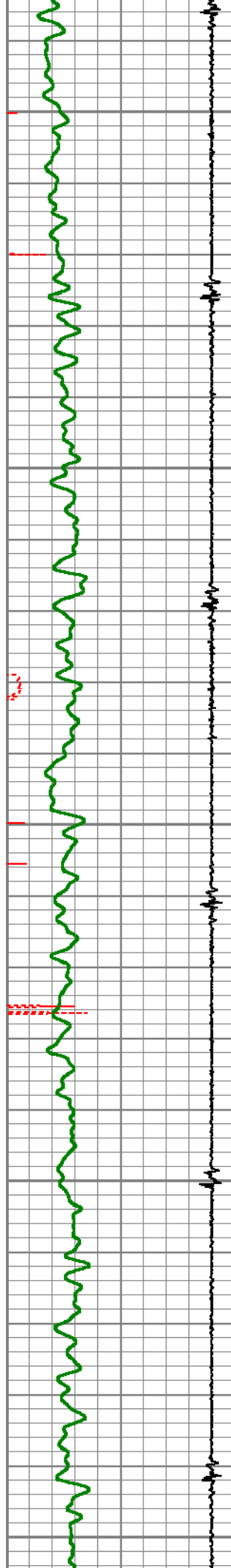
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	16.57		Cable Head-Titan 143 1 7/16" Titan Cable Head	1.03	1.43	2.00
			Centralizer-275 OverBody 2 3/4" Over Body Centralizer	2.73	3.75	20.00
WVFS8	14.34		SCBL-275 Probe w Temp (FW1403-68) Probe Radii Bond Tool with Temperature	9.17	2.75	95.00
WVFS7	14.34					
WVFS6	14.34					
WVFS5	14.34					
WVFS4	14.34					
WVFS3	14.34					
WVFS2	14.34					
WVFS1	14.34					
WVFCAL	14.34					
WVF3FT	14.34					
WVF5FT	13.34					
HEADVOLT	10.09					
CCL\$2	9.19					
CCL\$1	9.19					
GR	7.85		GR-GC_6PIN (FW1404-112) Probe 6 Pin GR275-0001 rev.1	4.82	2.75	
			Centralizer-275 OverBody 2 3/4" Over Body Centralizer	2.73	3.75	20.00











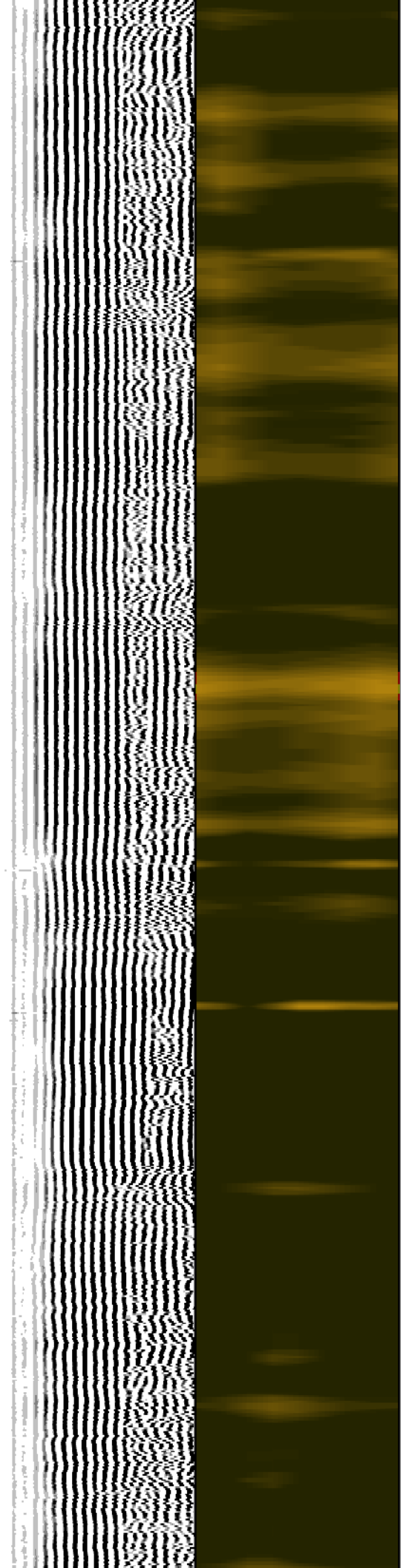
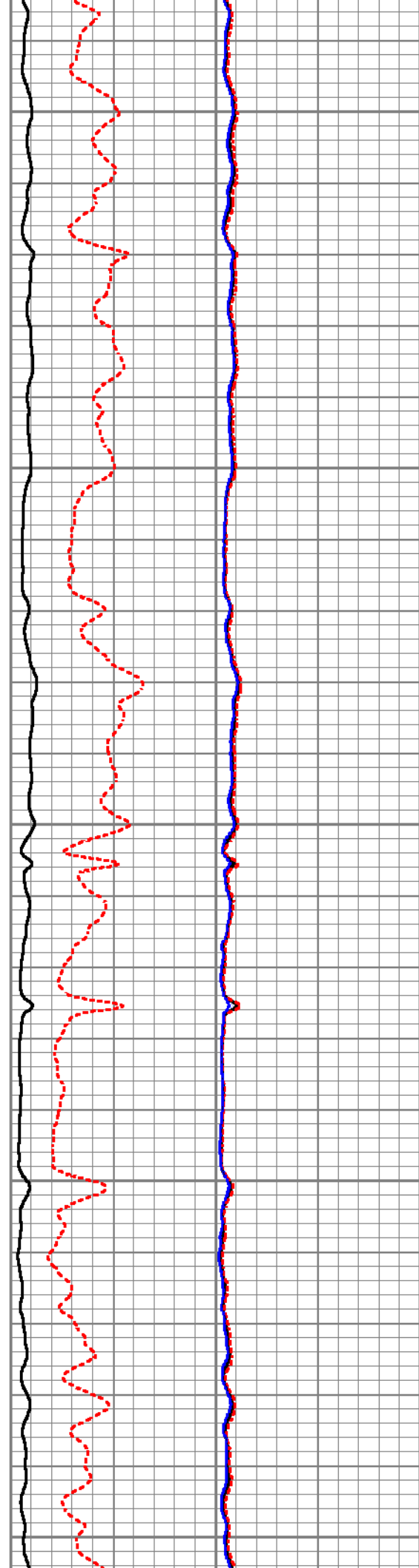
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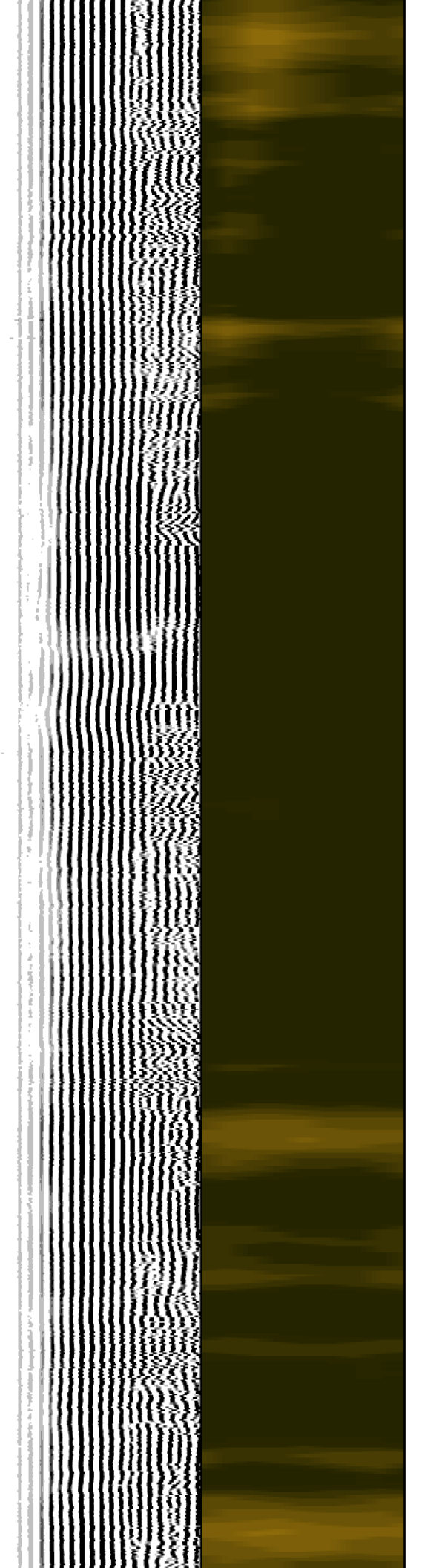
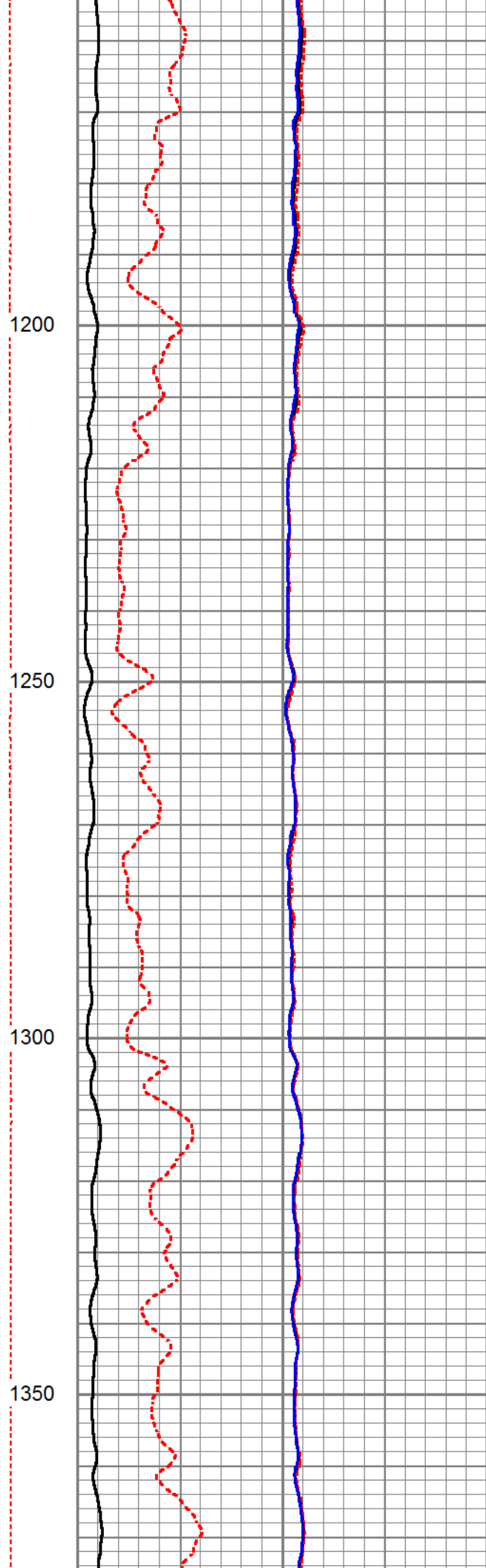
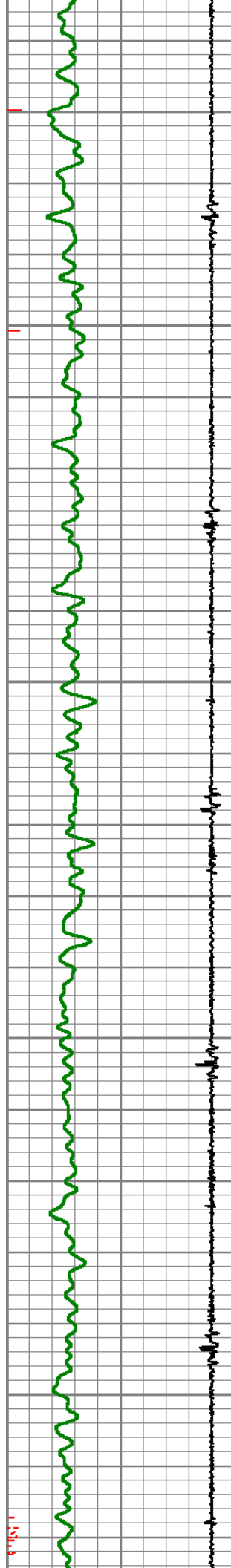
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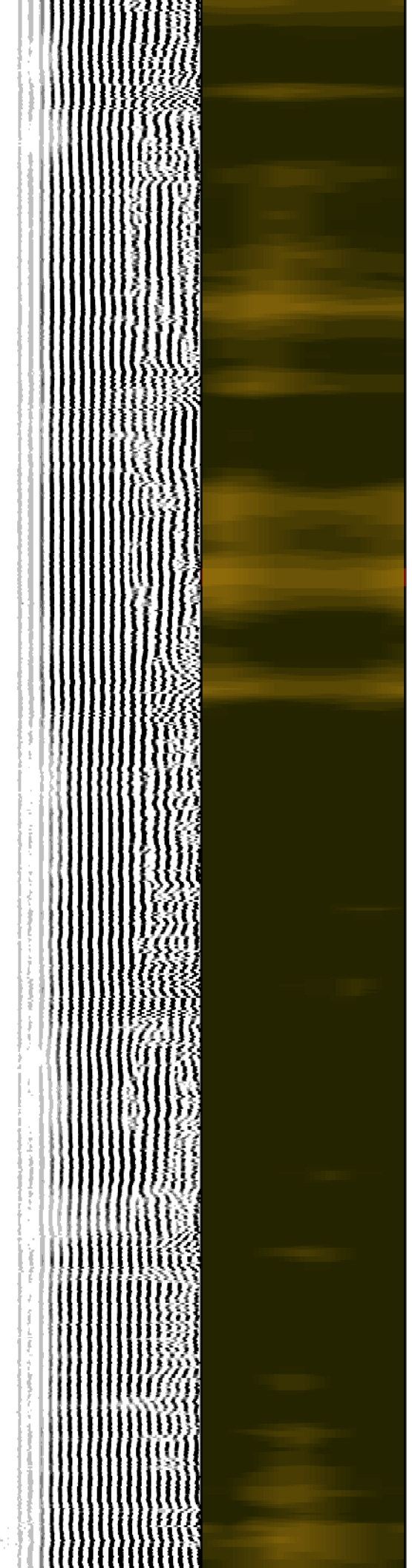
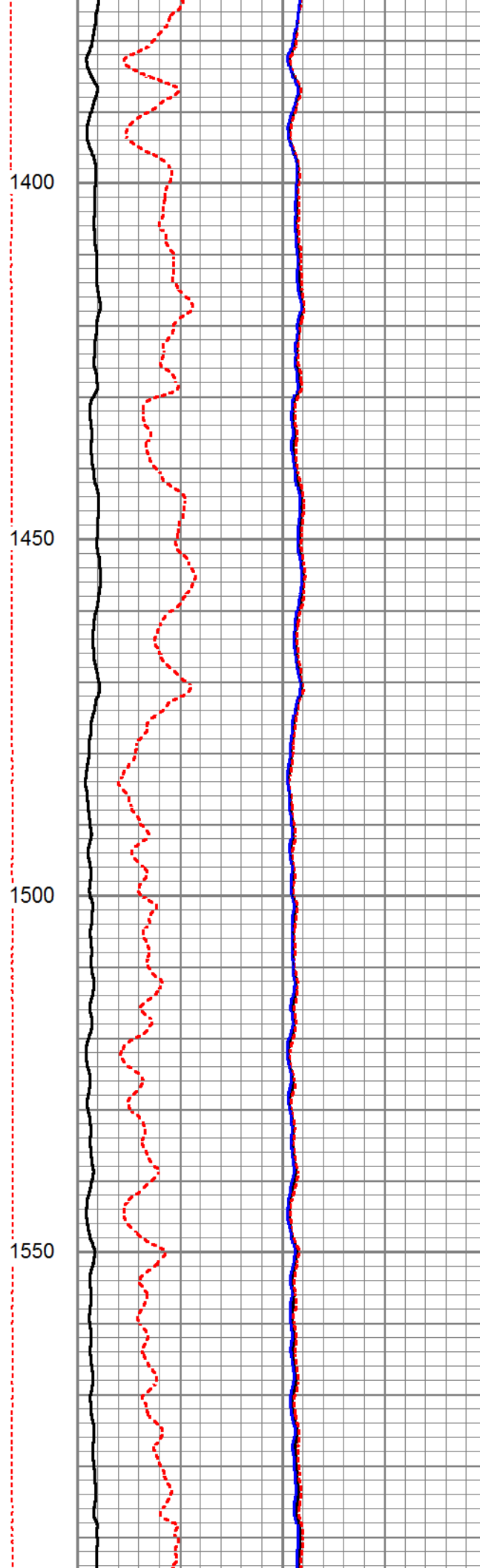
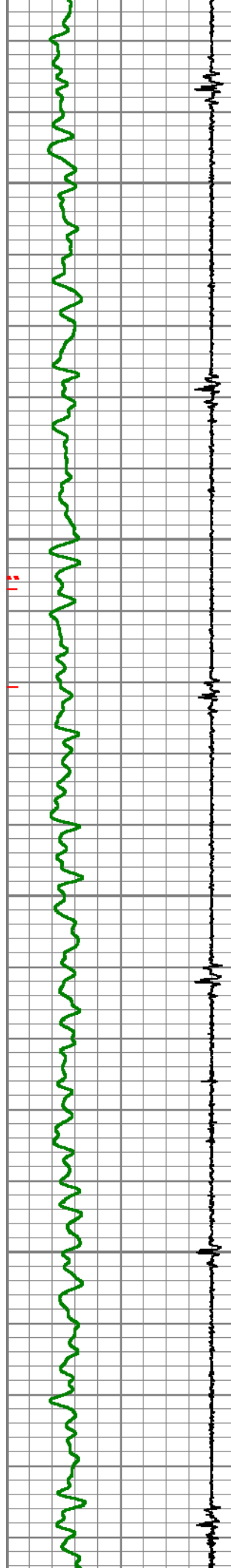
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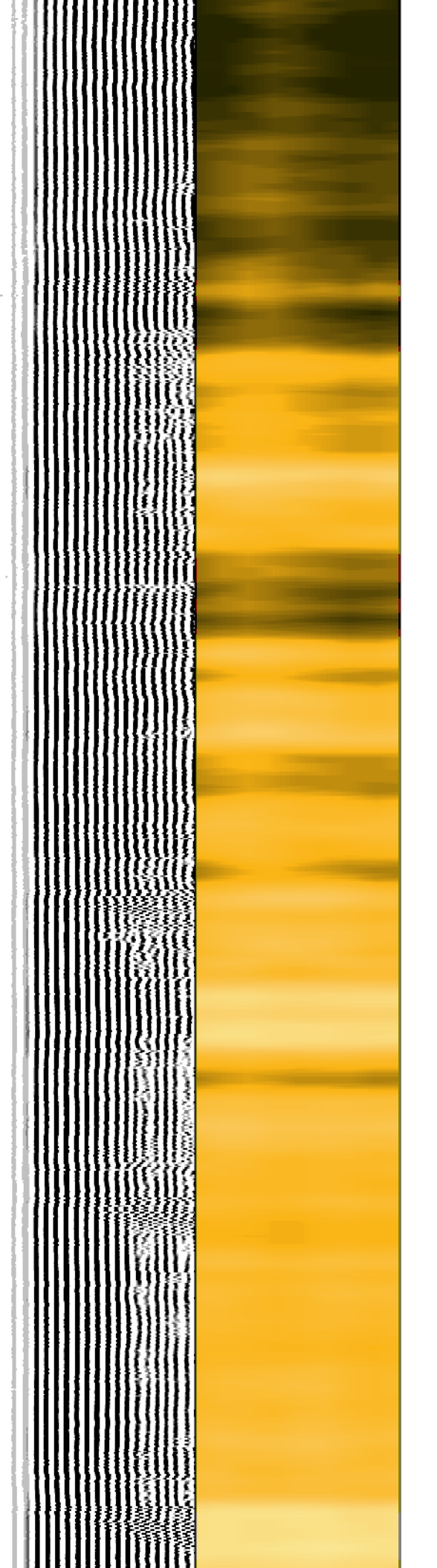
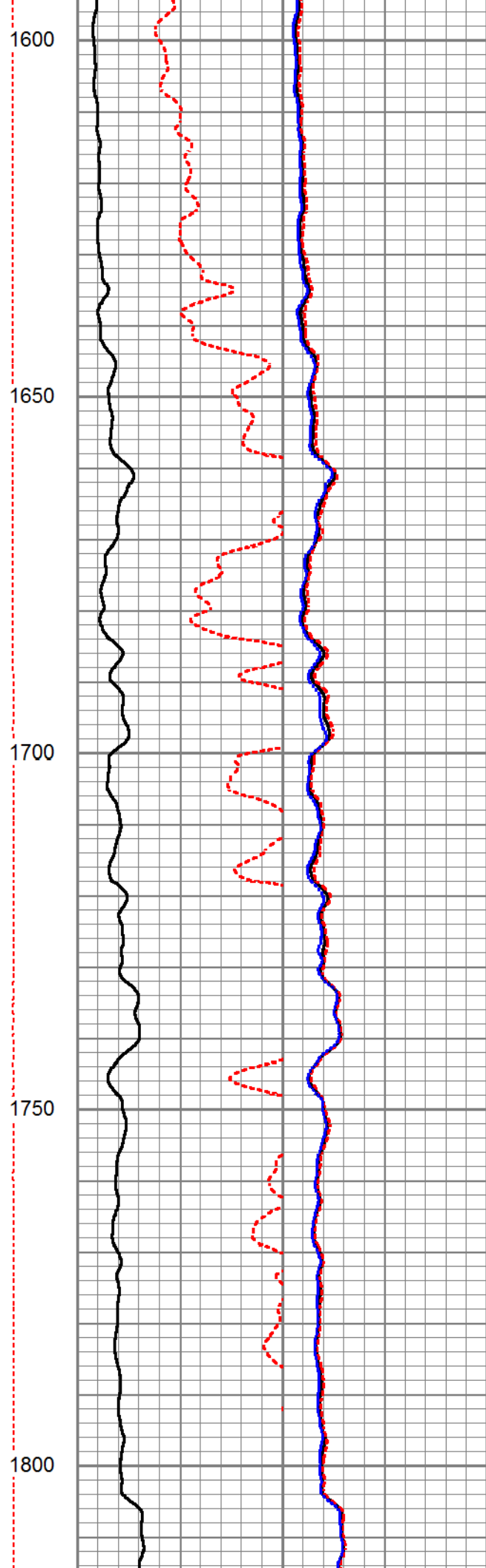
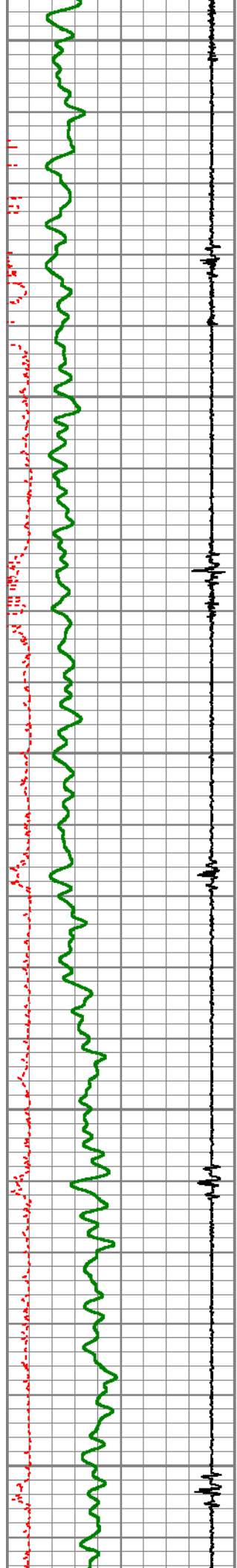
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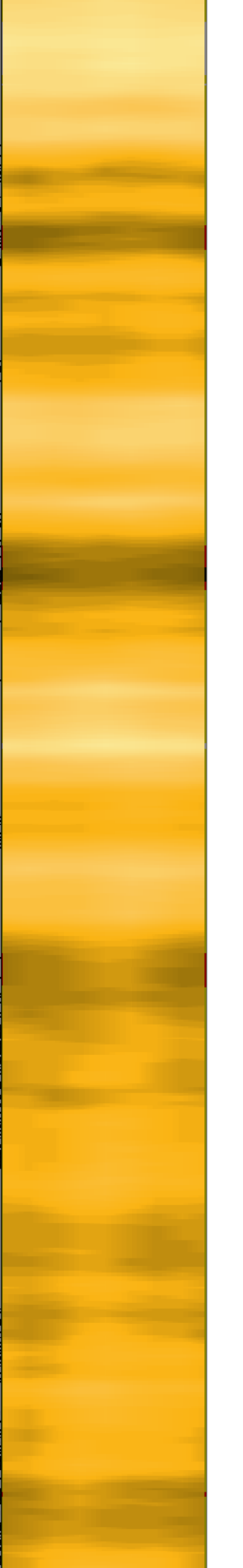
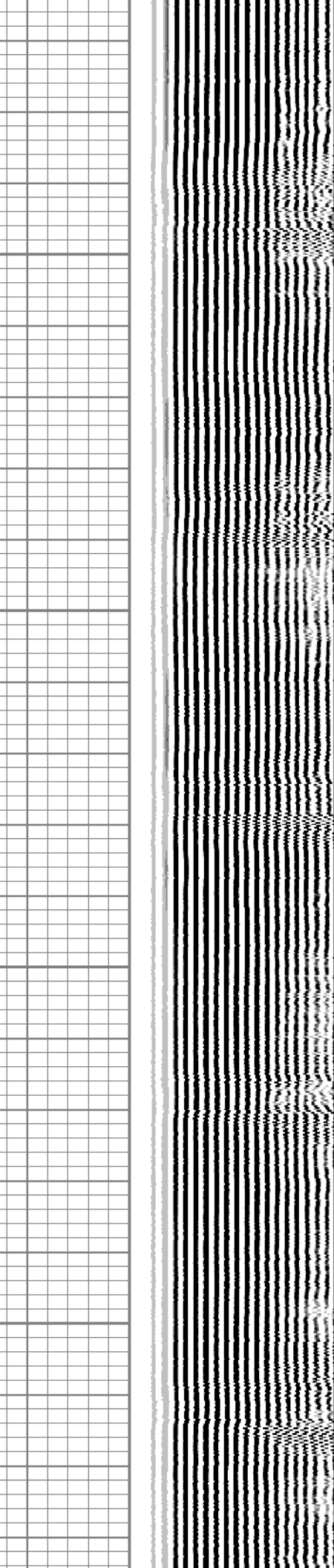
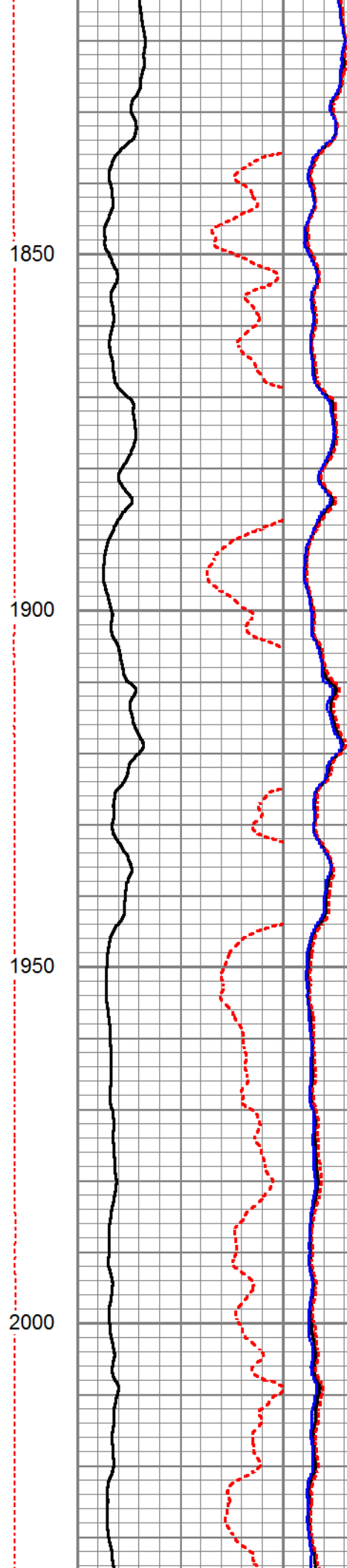
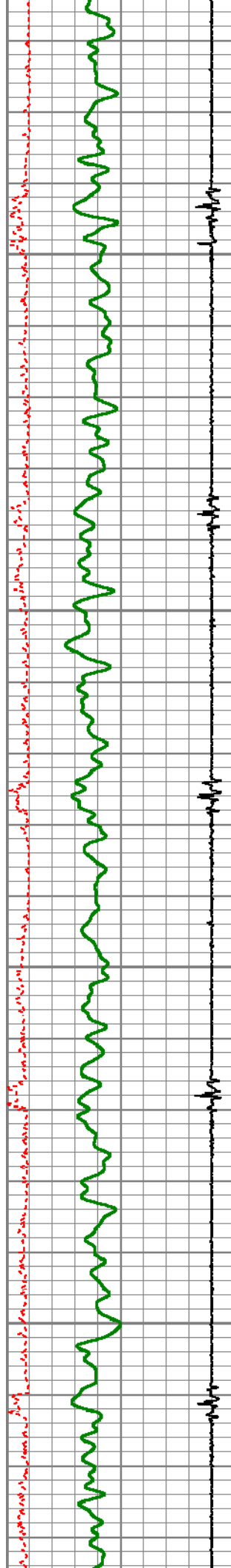
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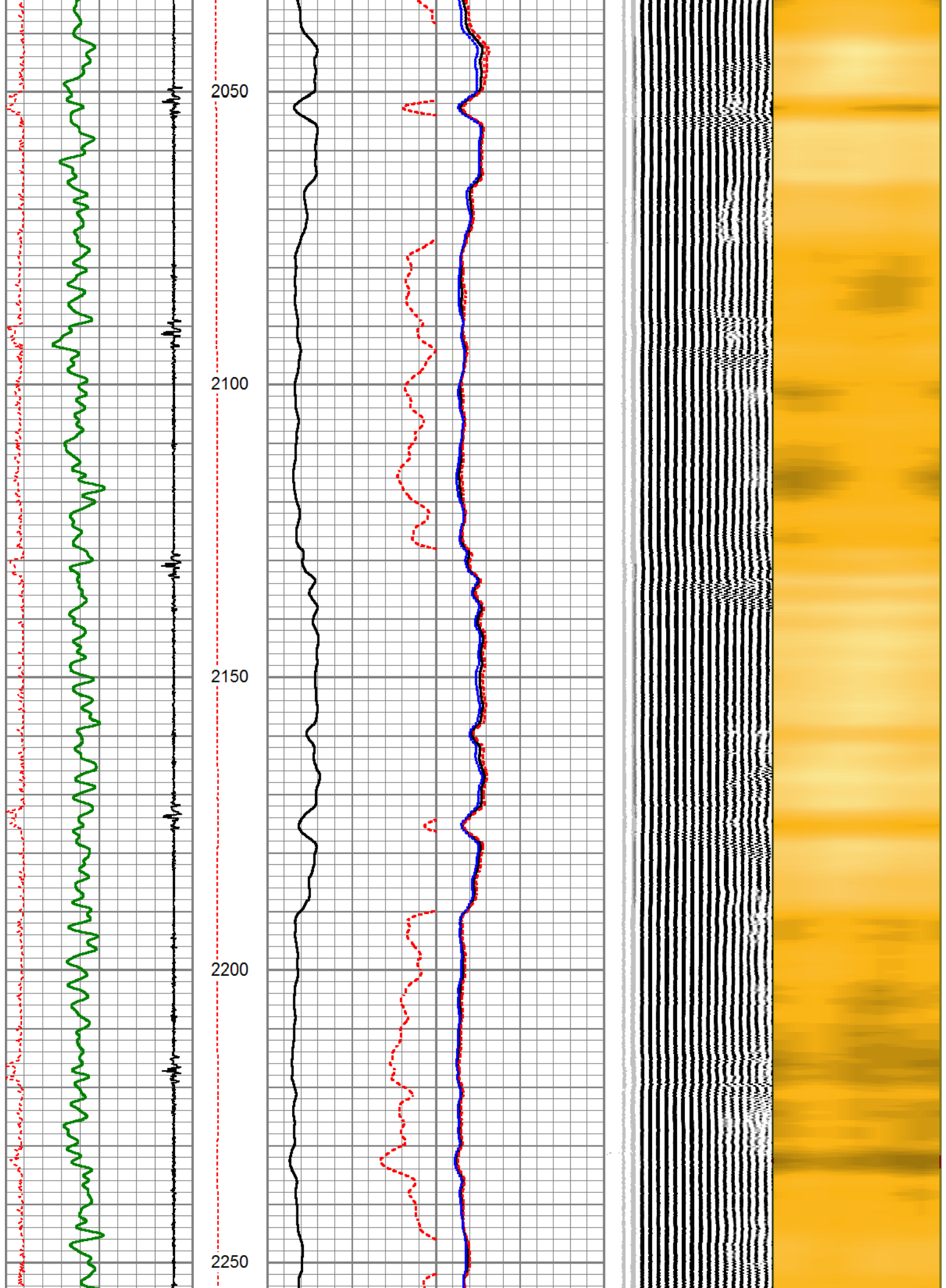


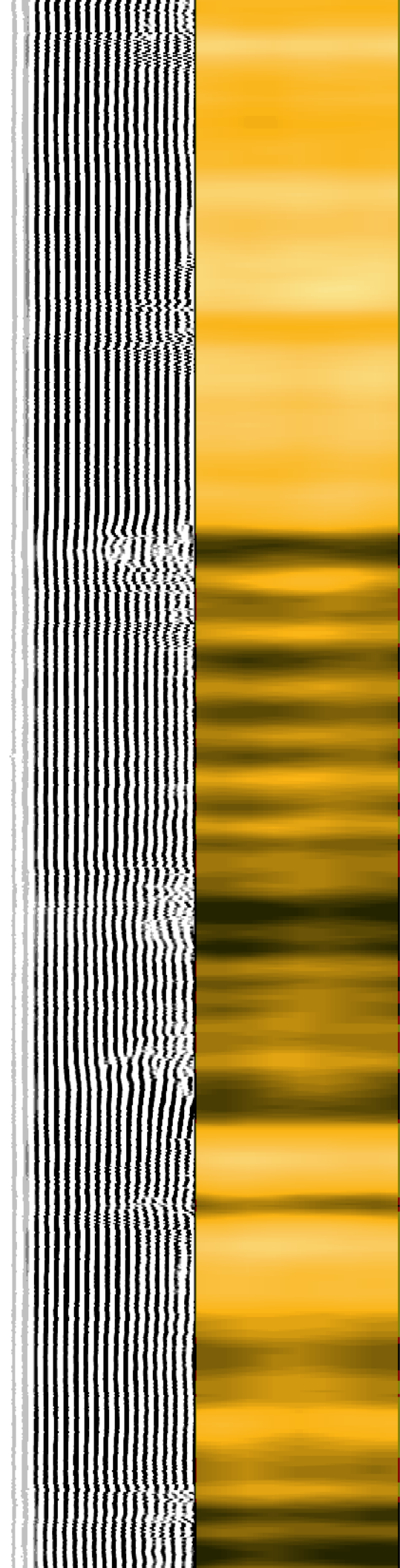
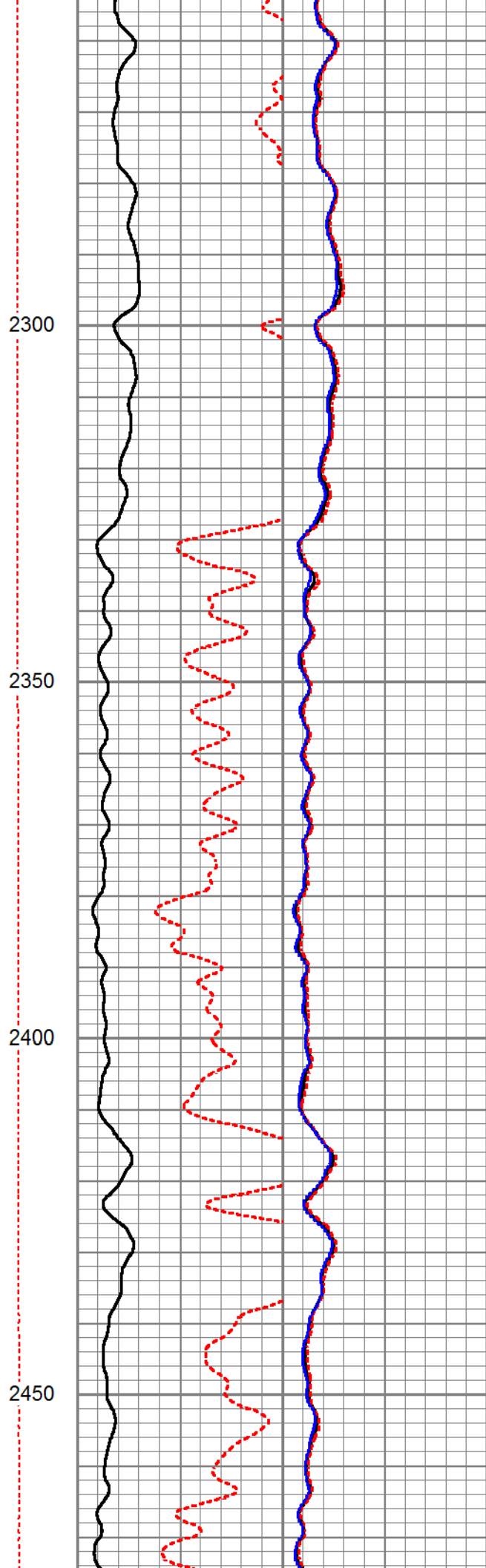
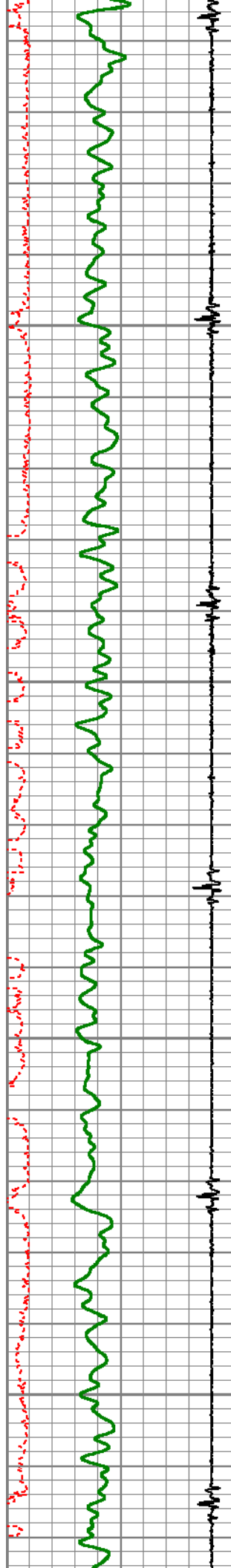


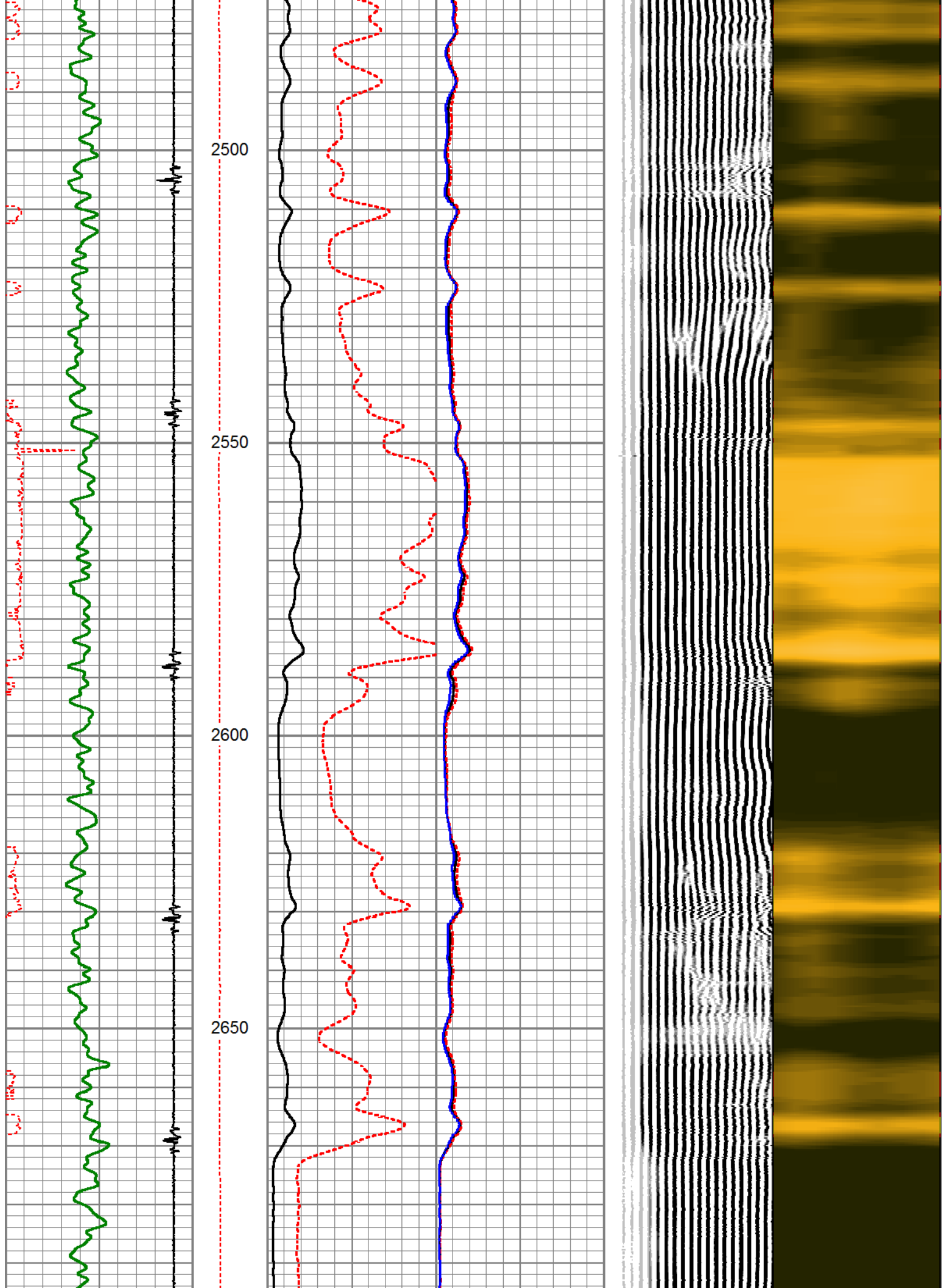


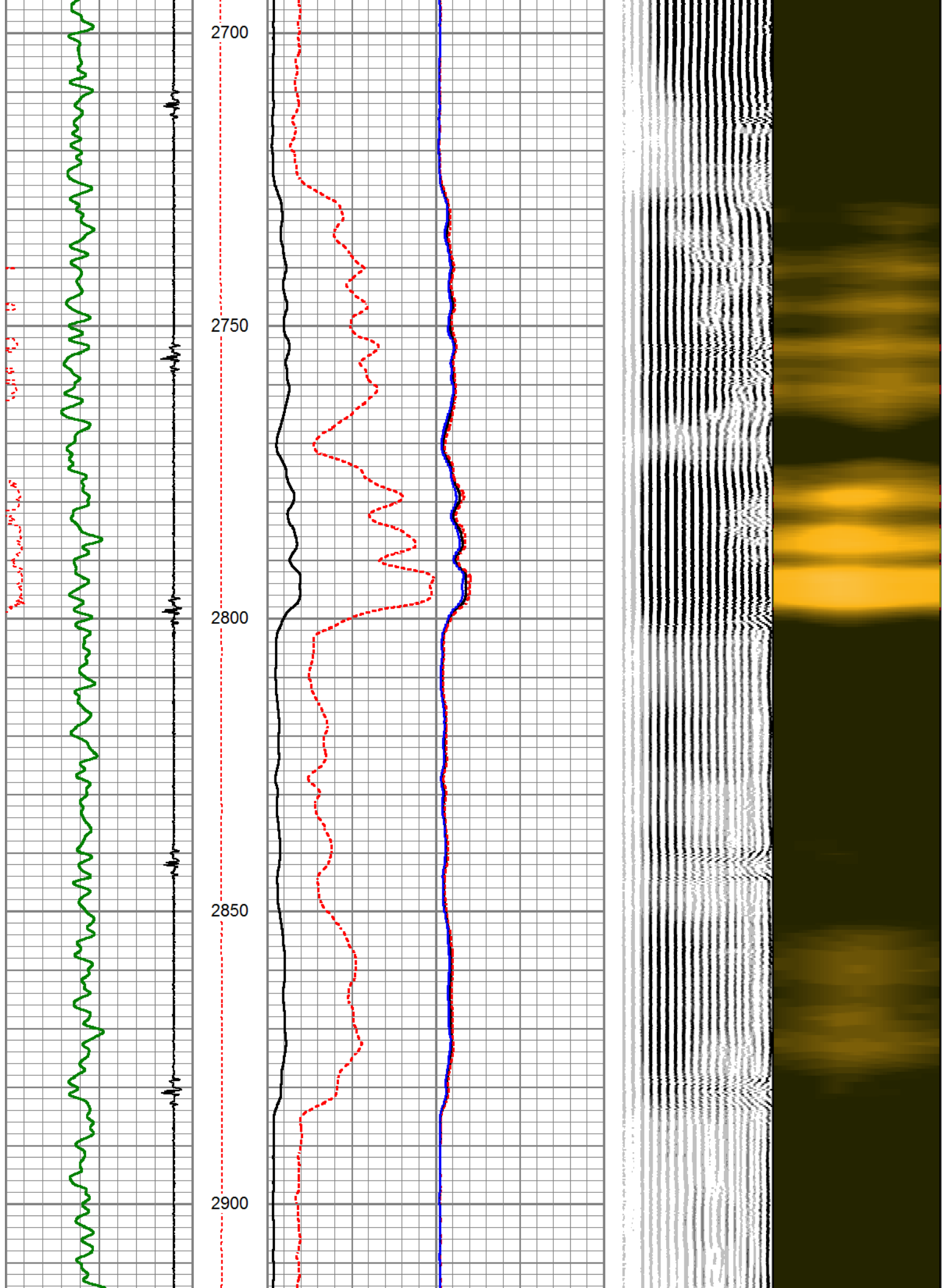


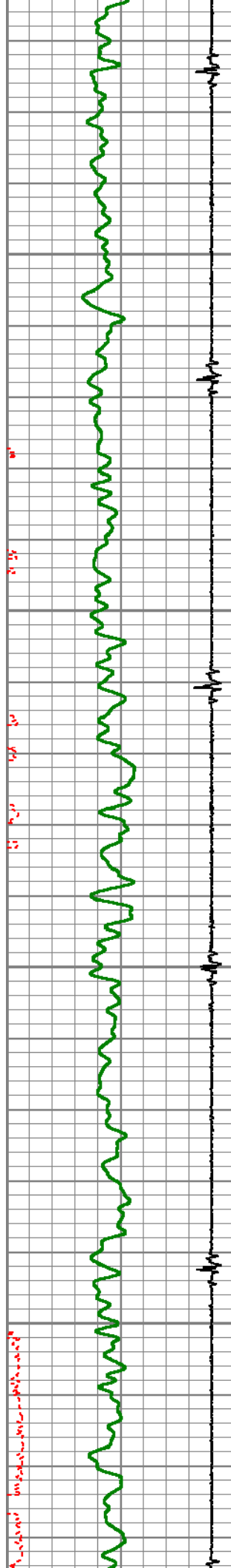










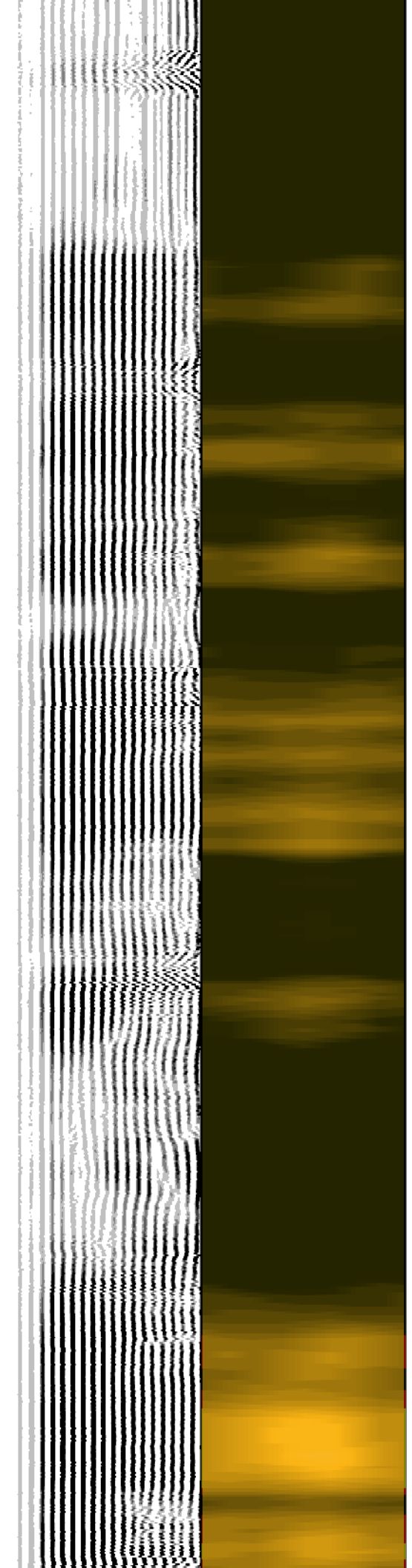
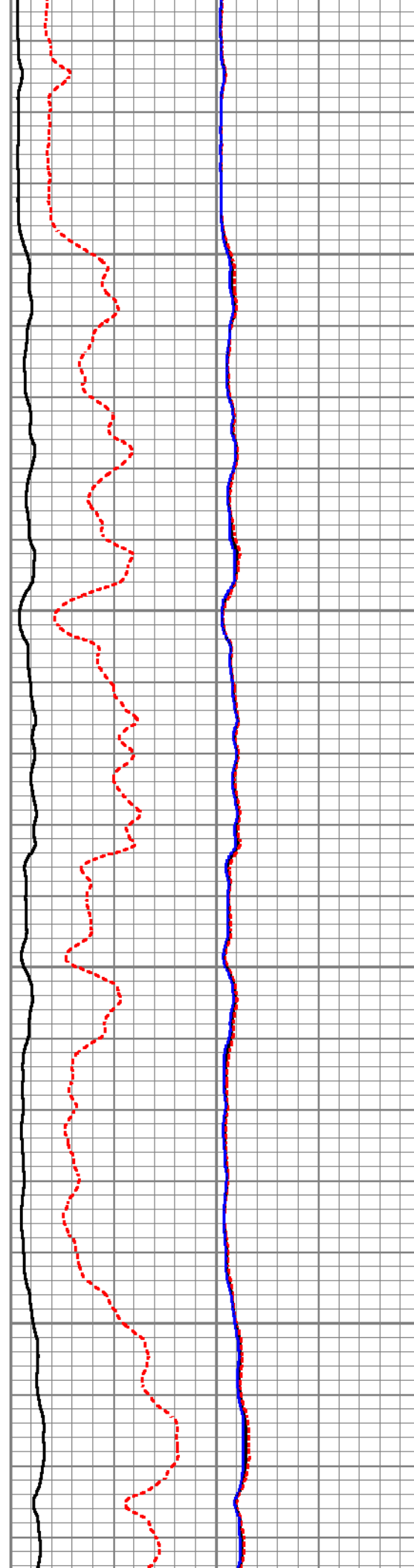


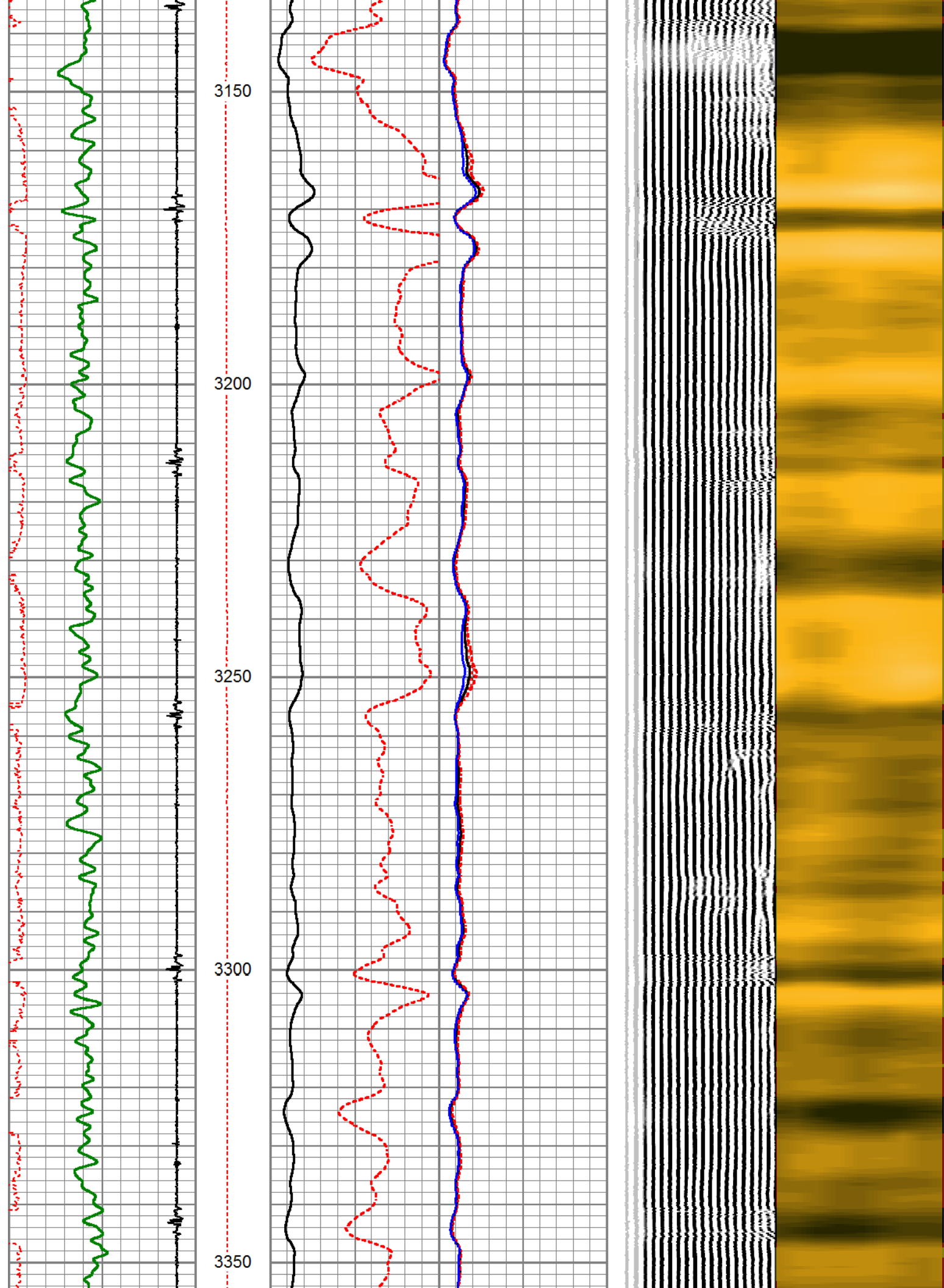
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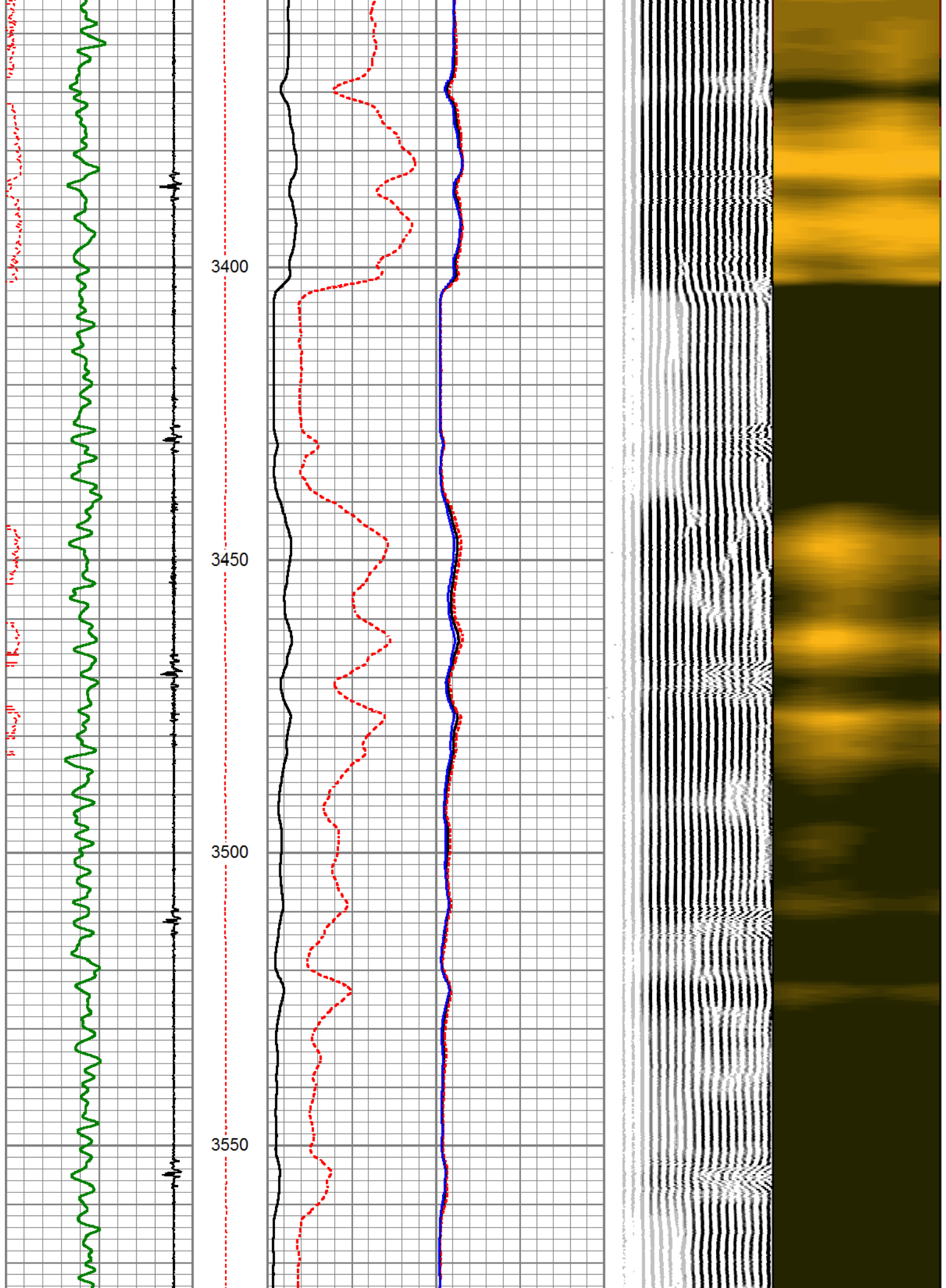
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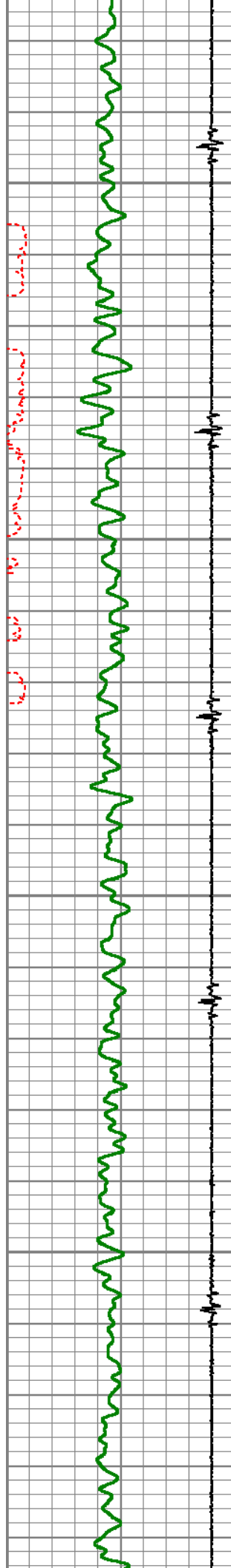
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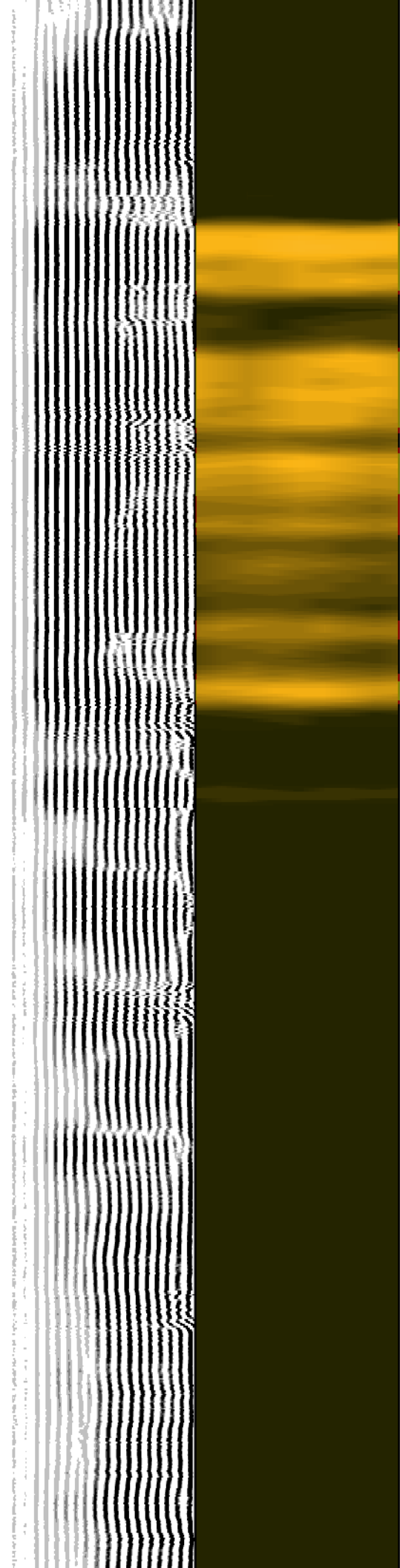
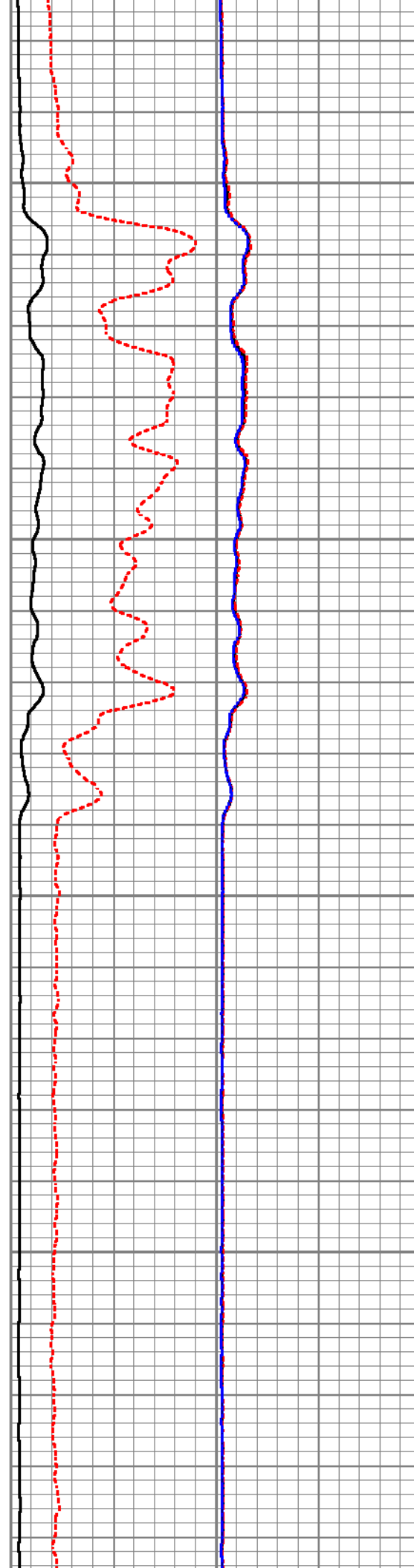


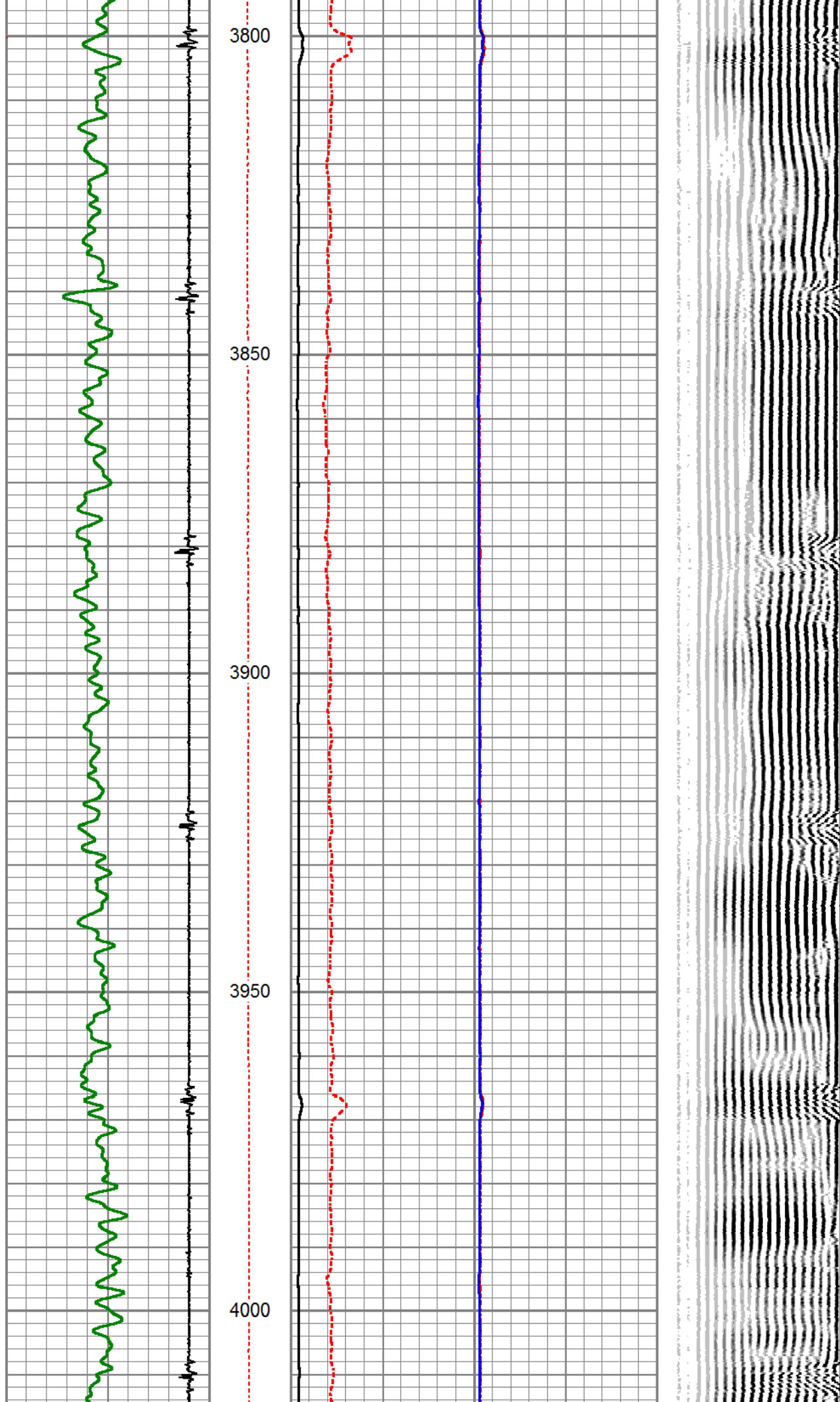
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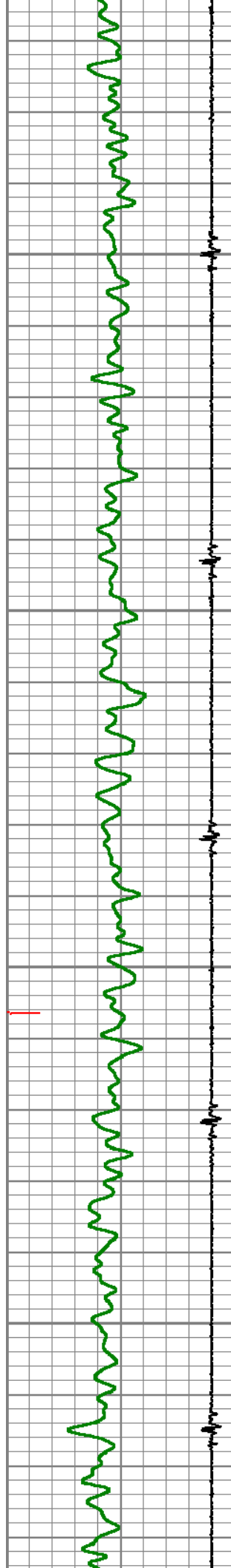
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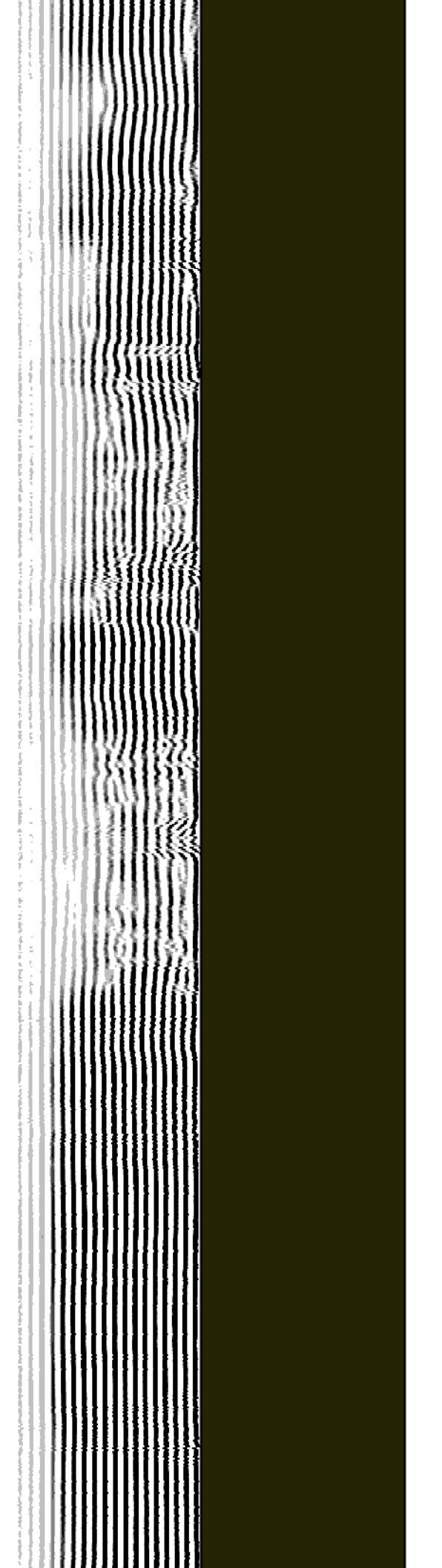
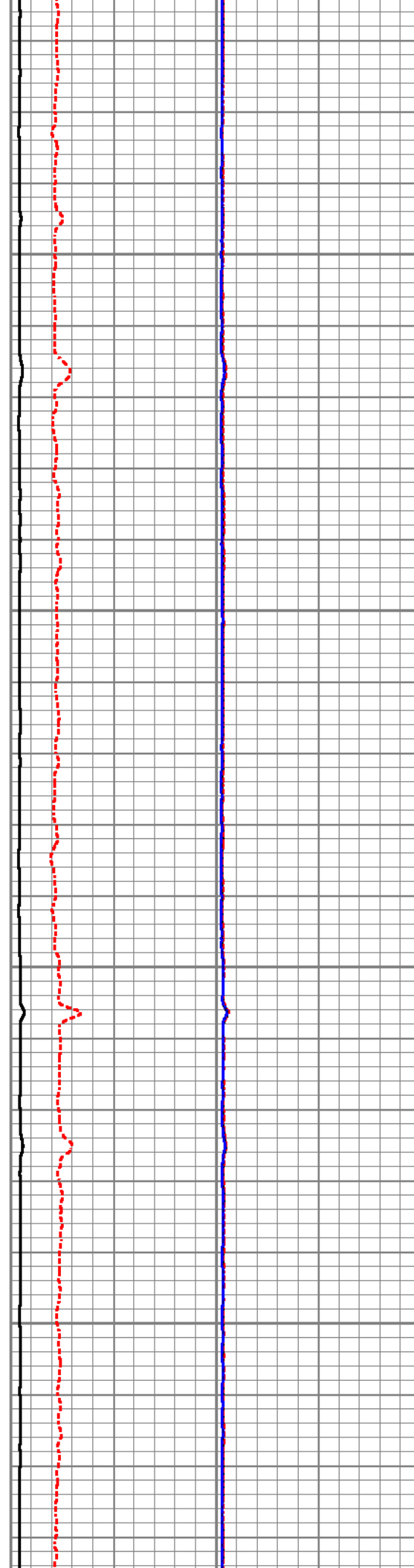


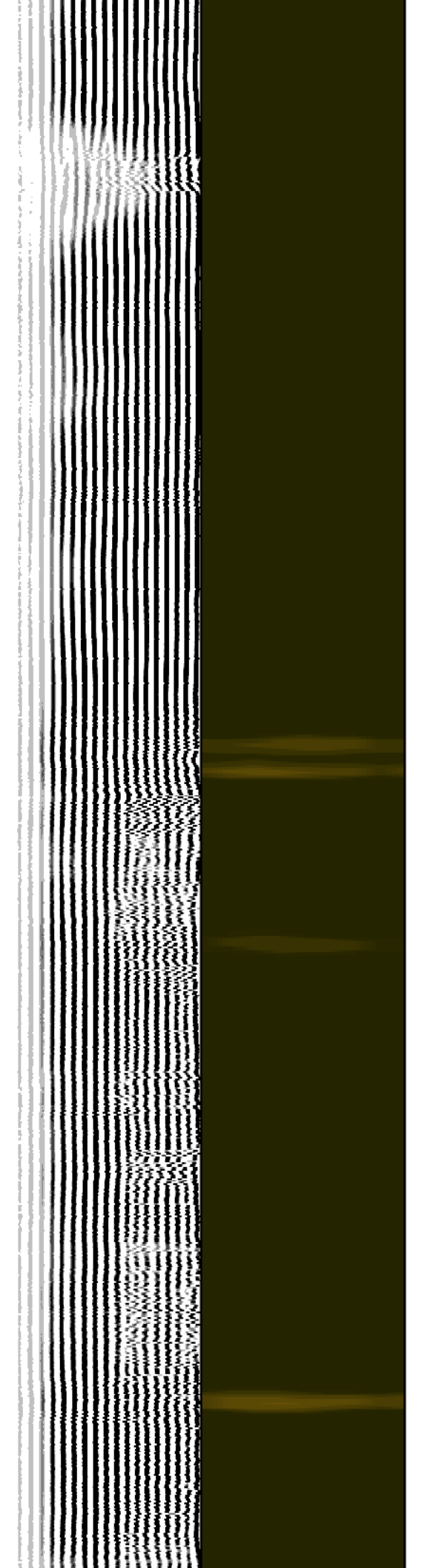
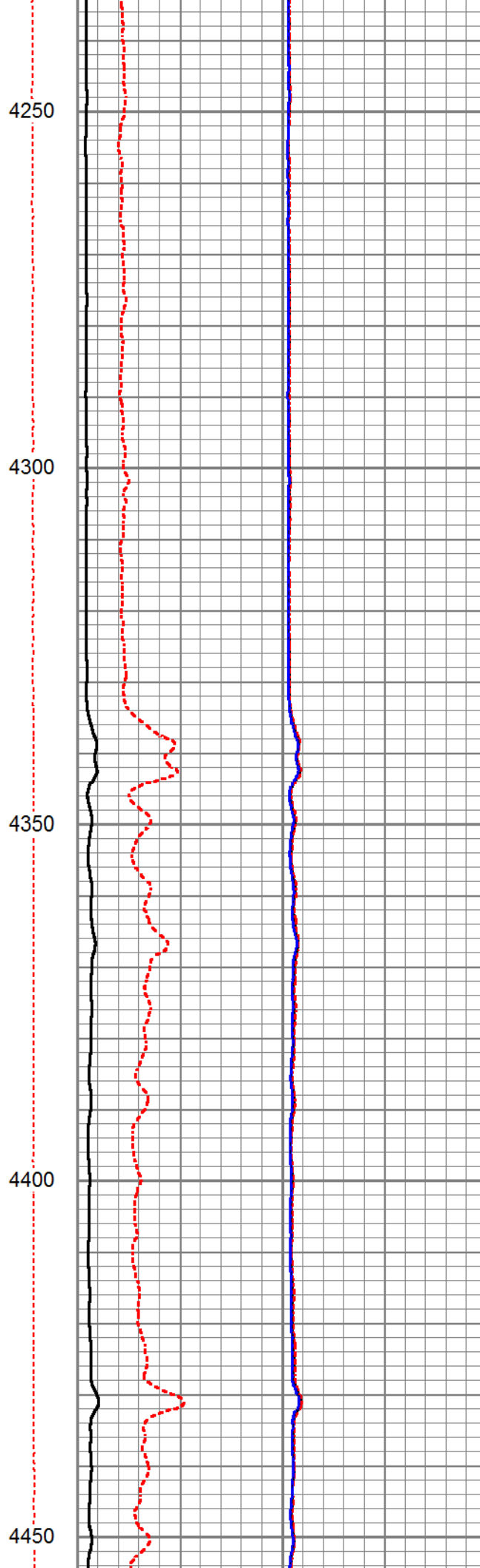
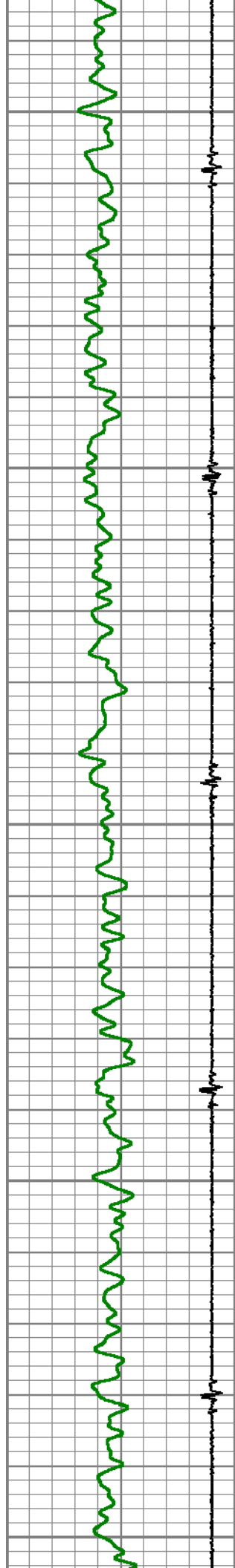
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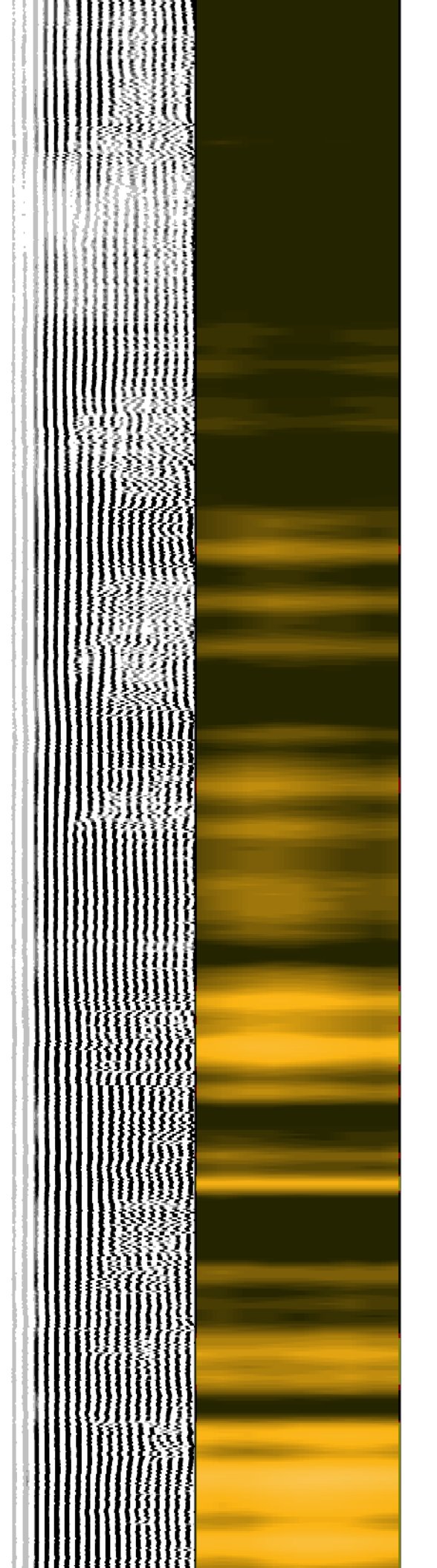
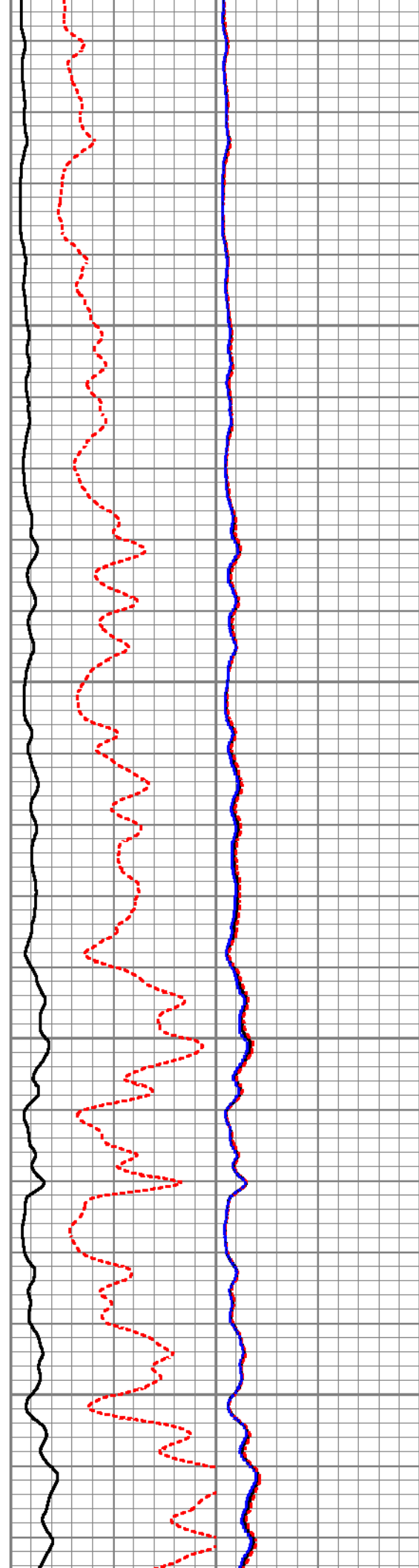
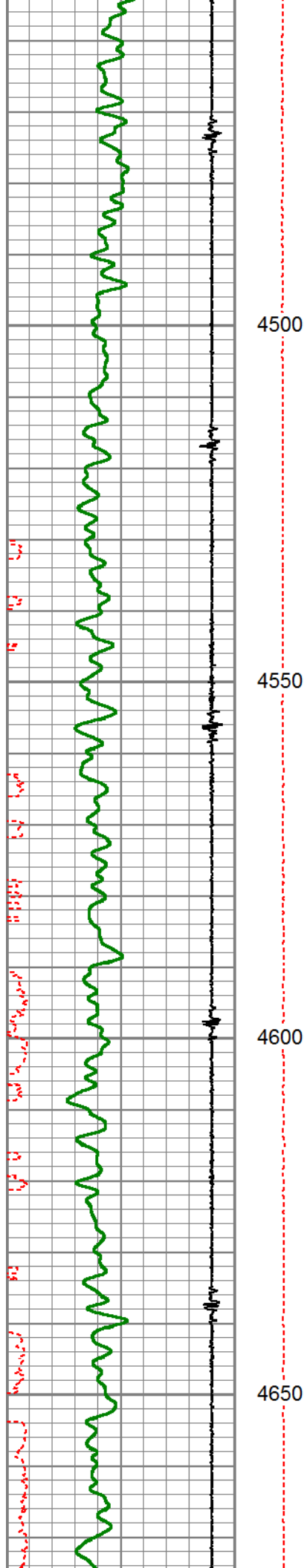
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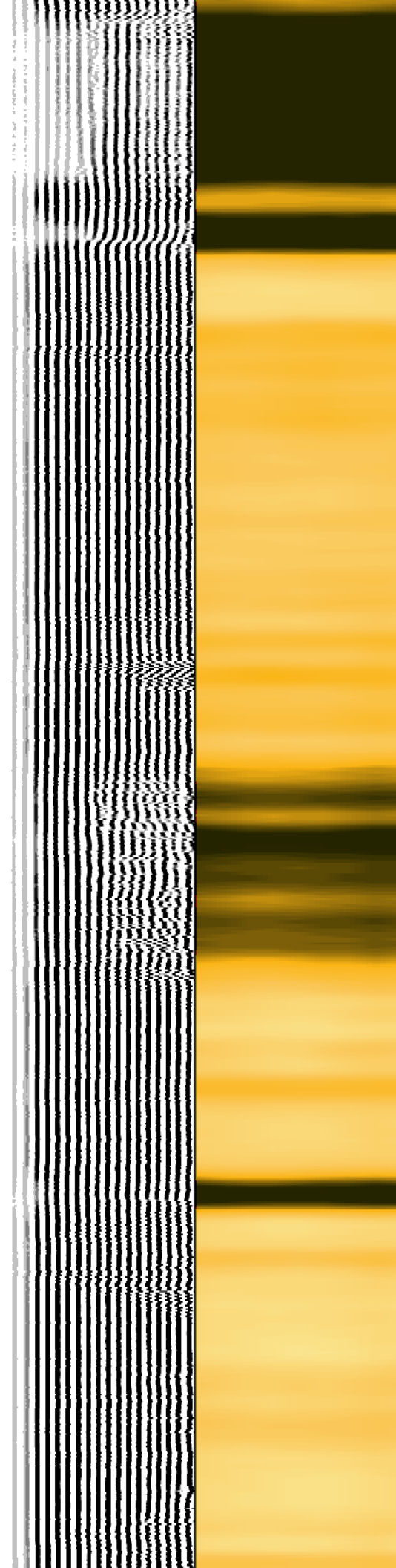
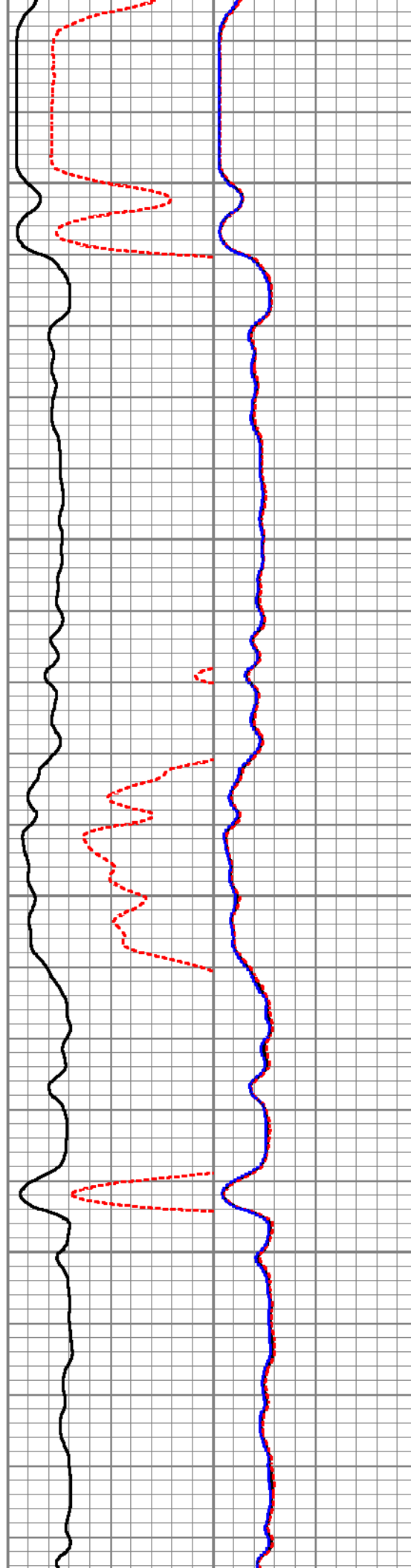
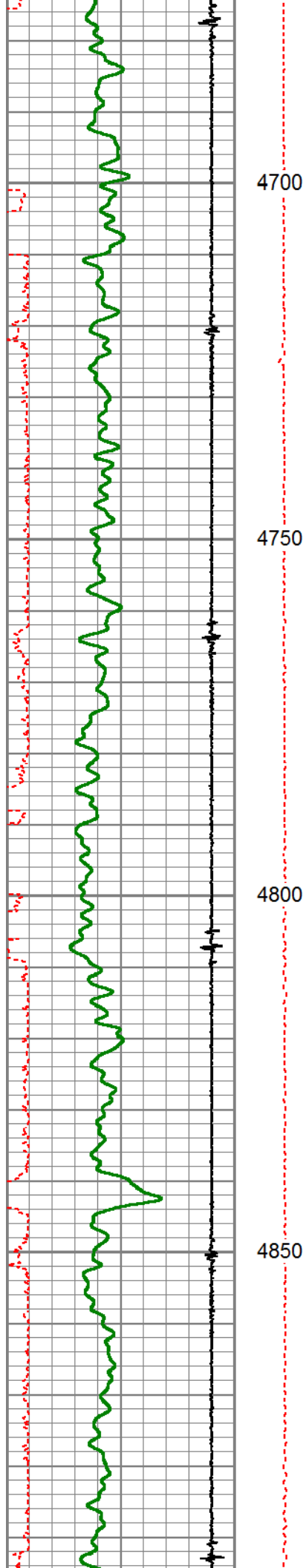
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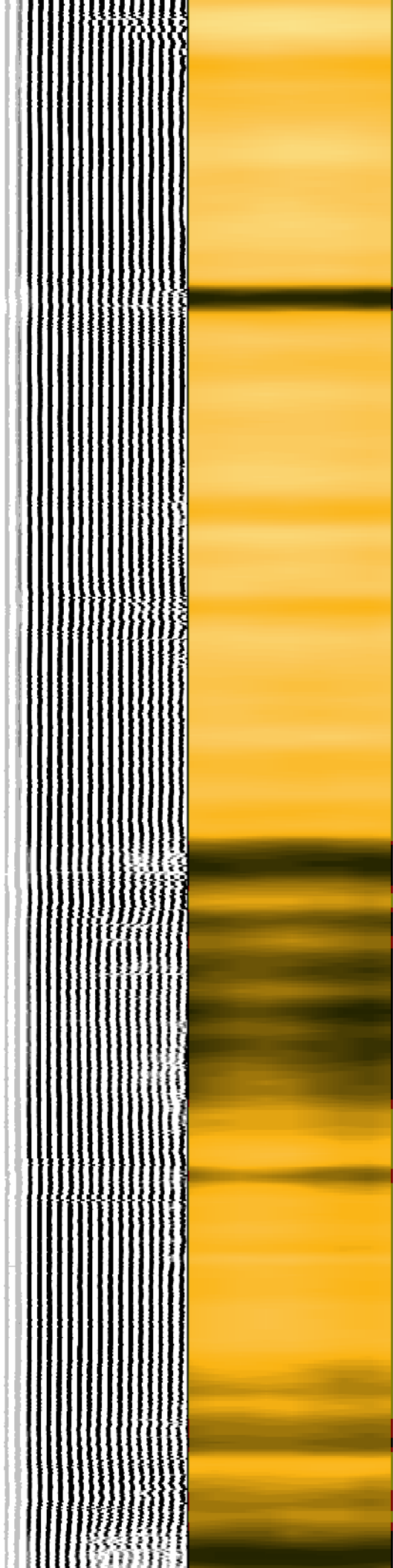
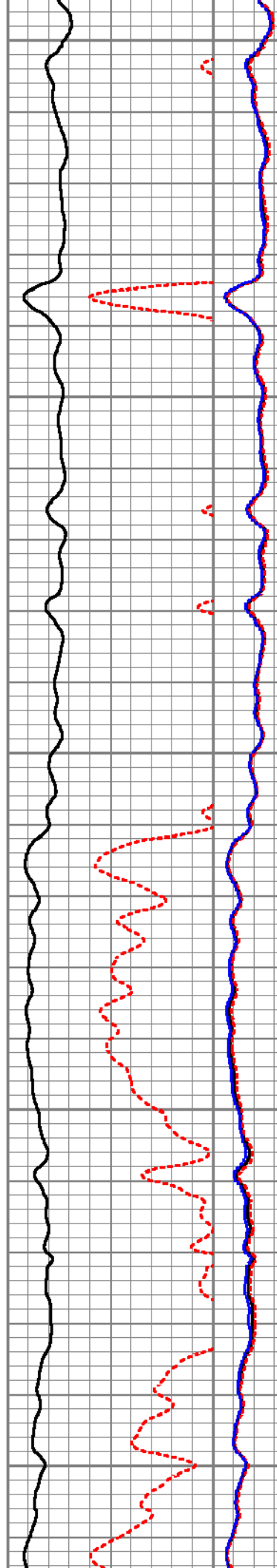
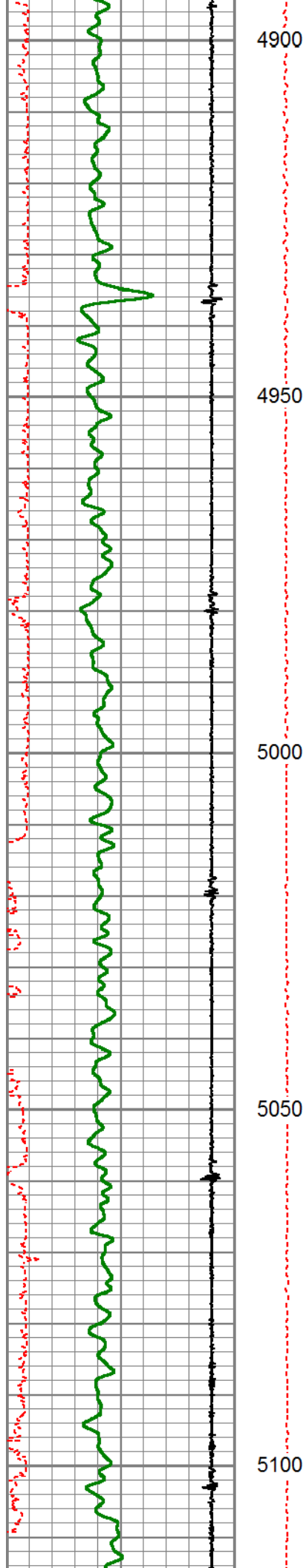
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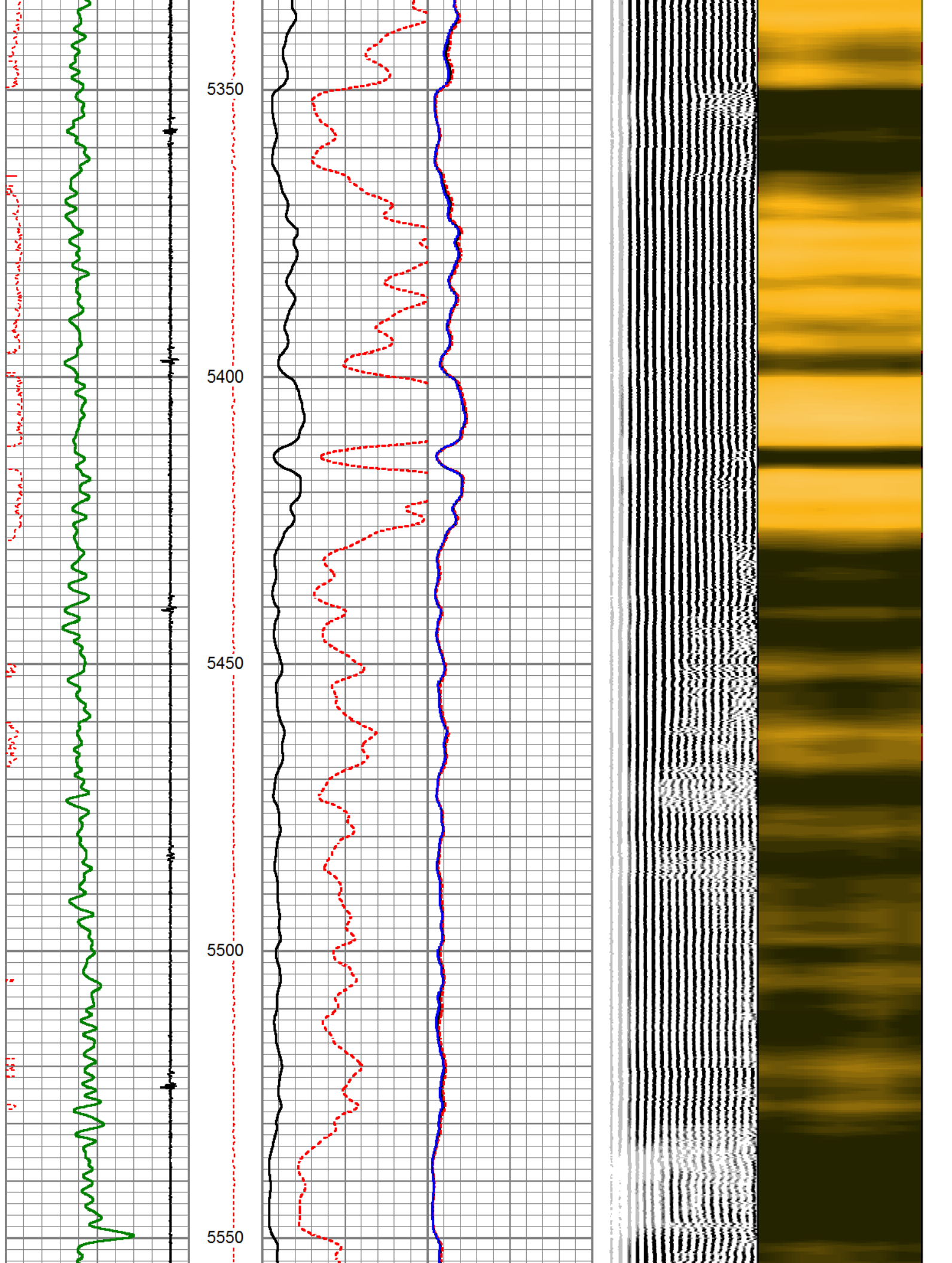


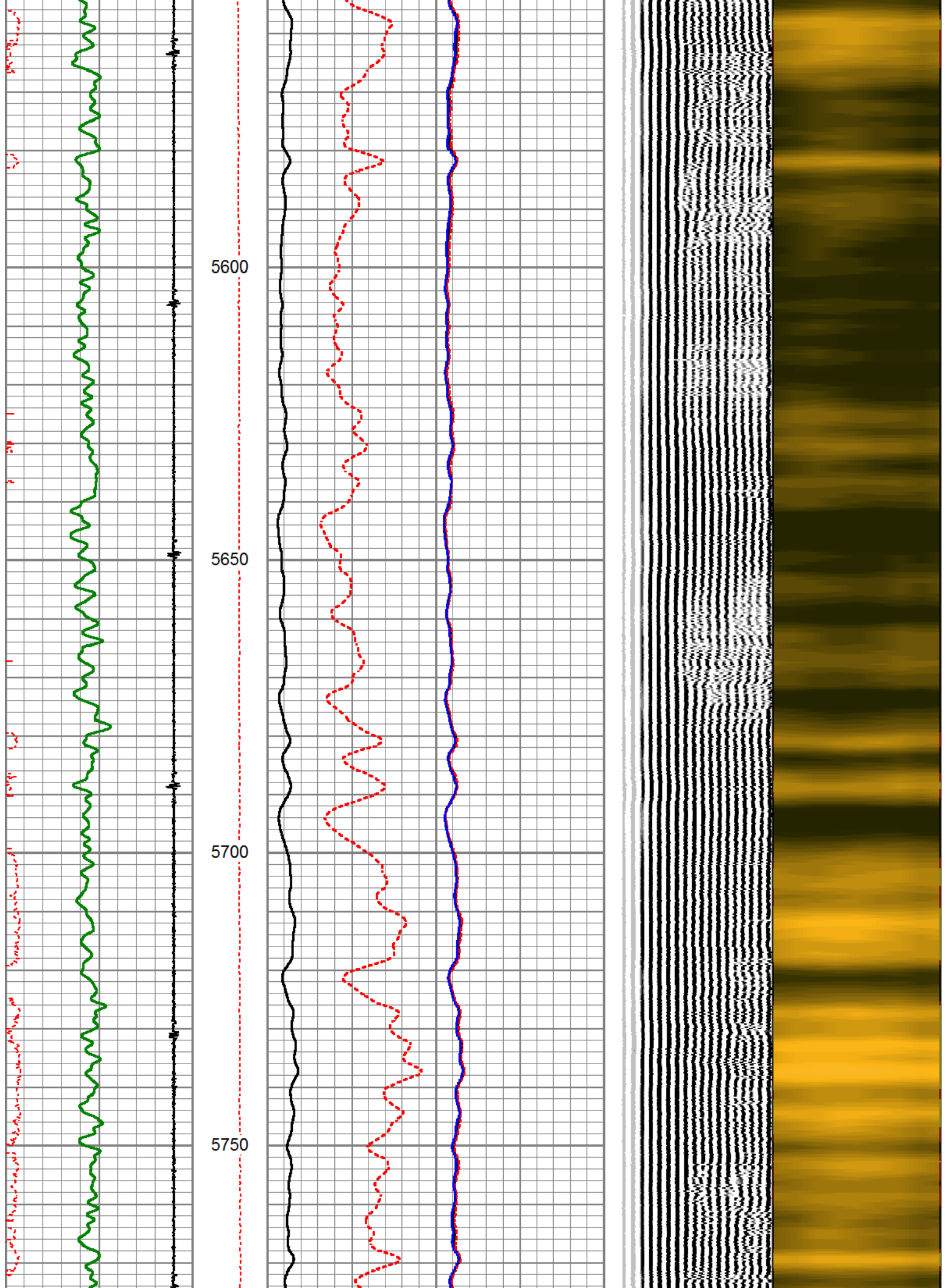


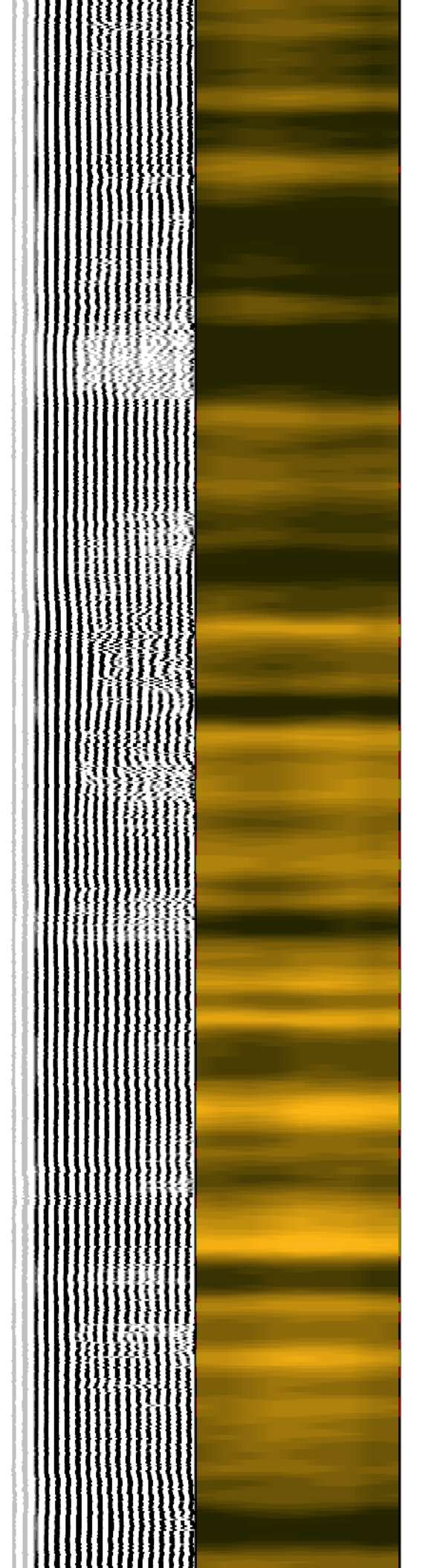
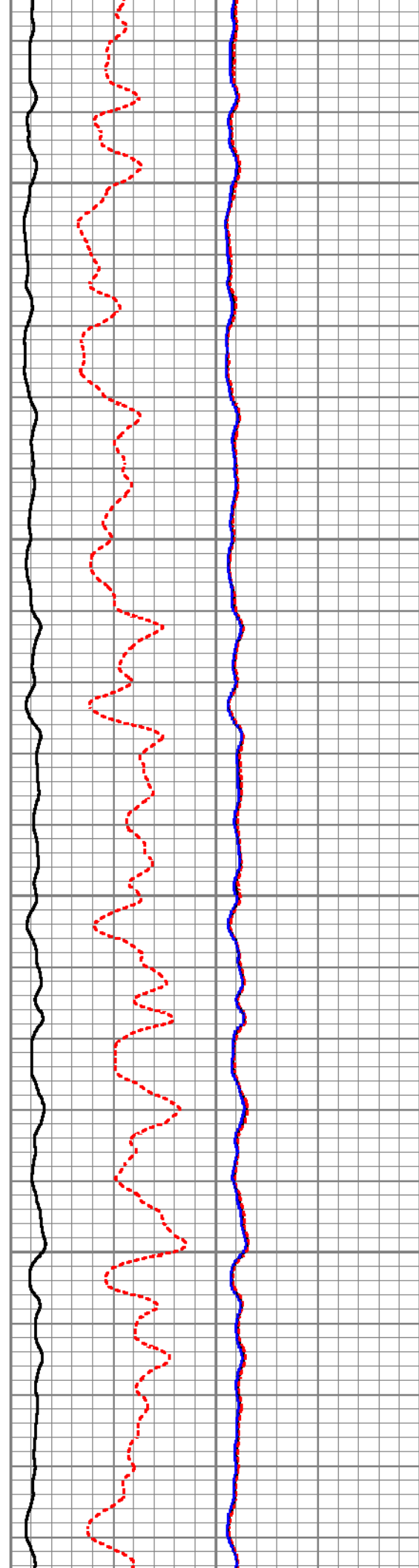
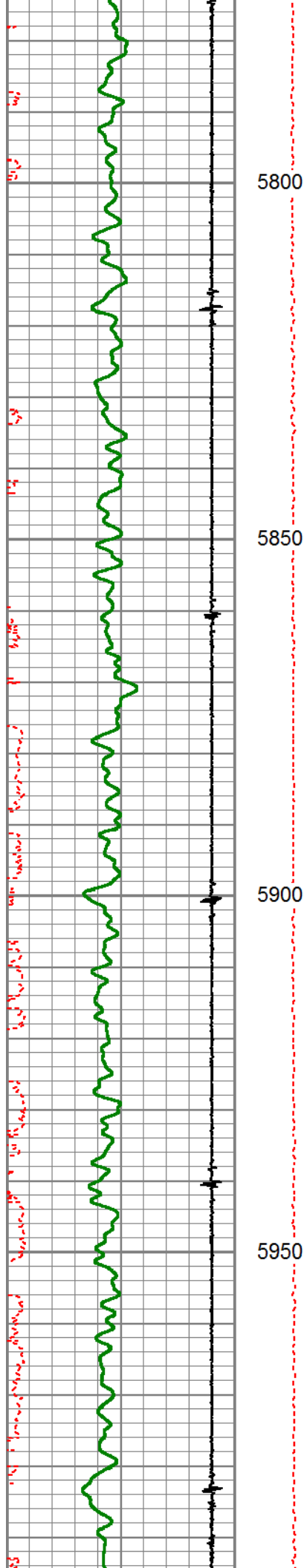


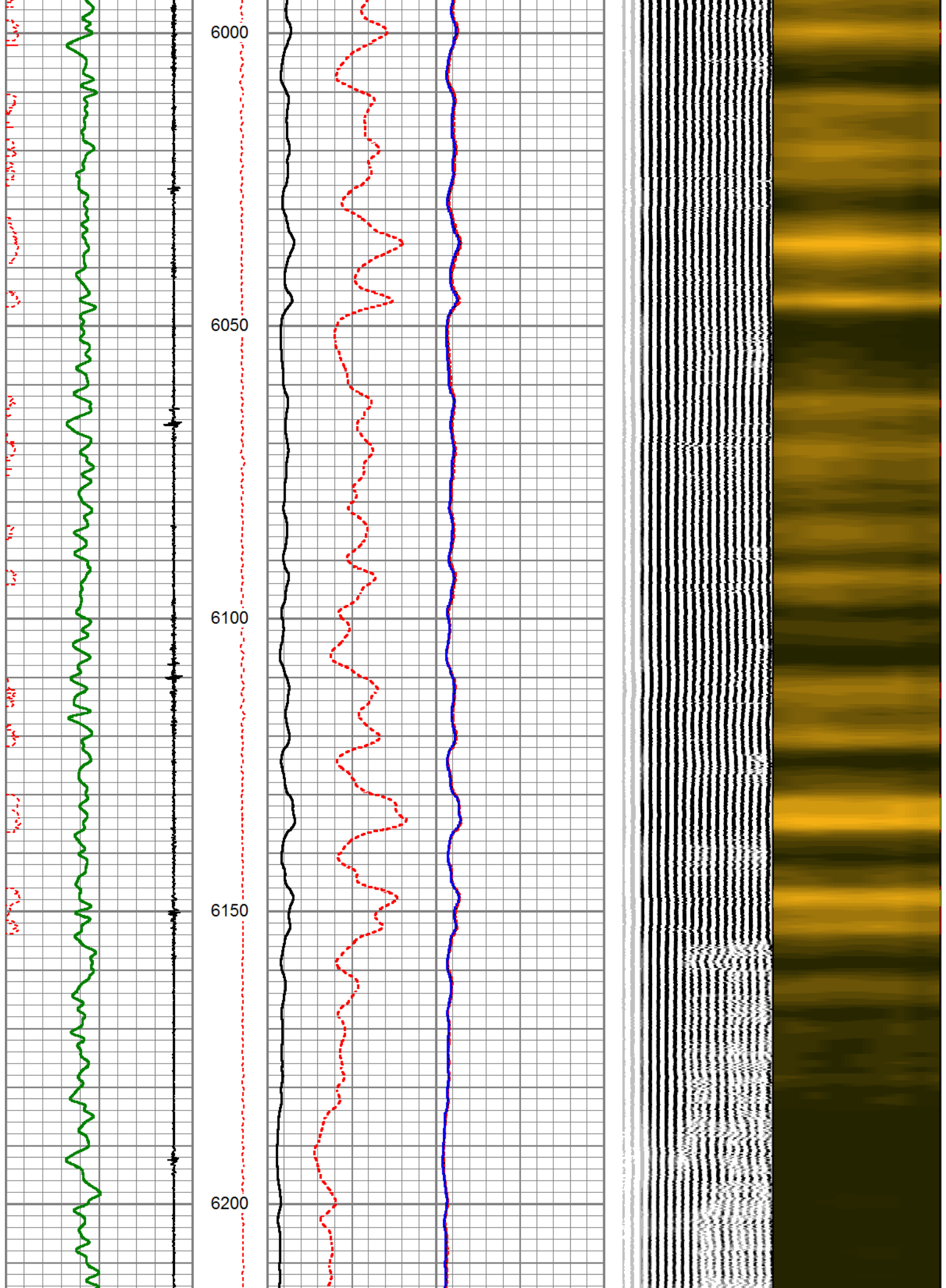


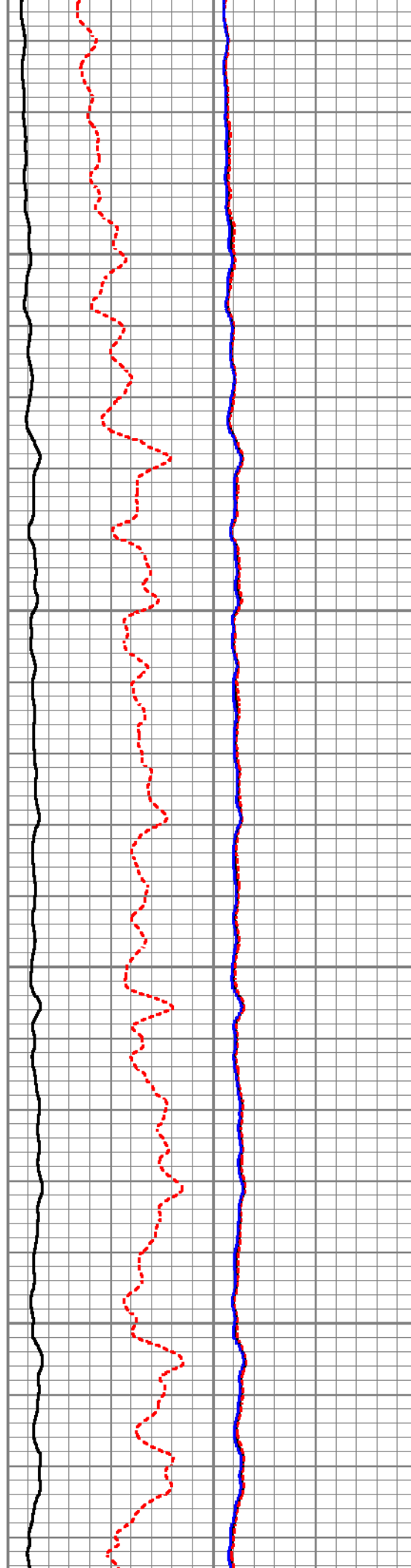
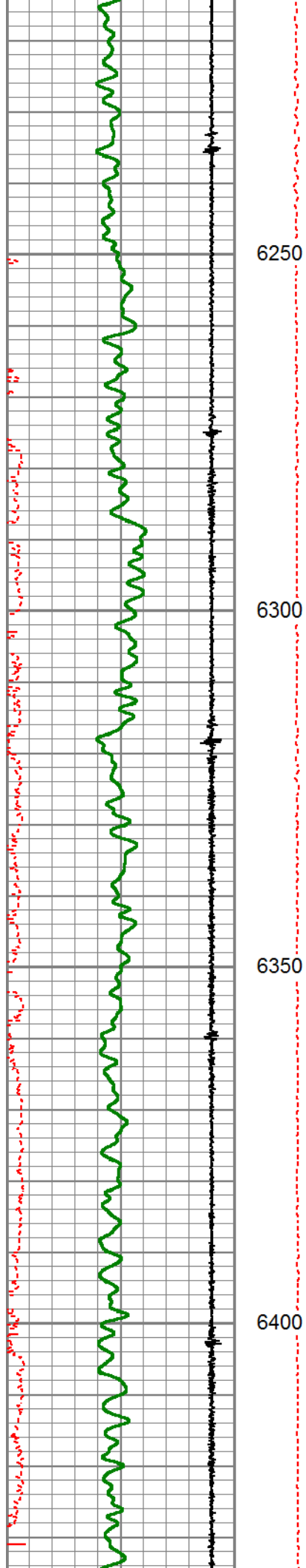


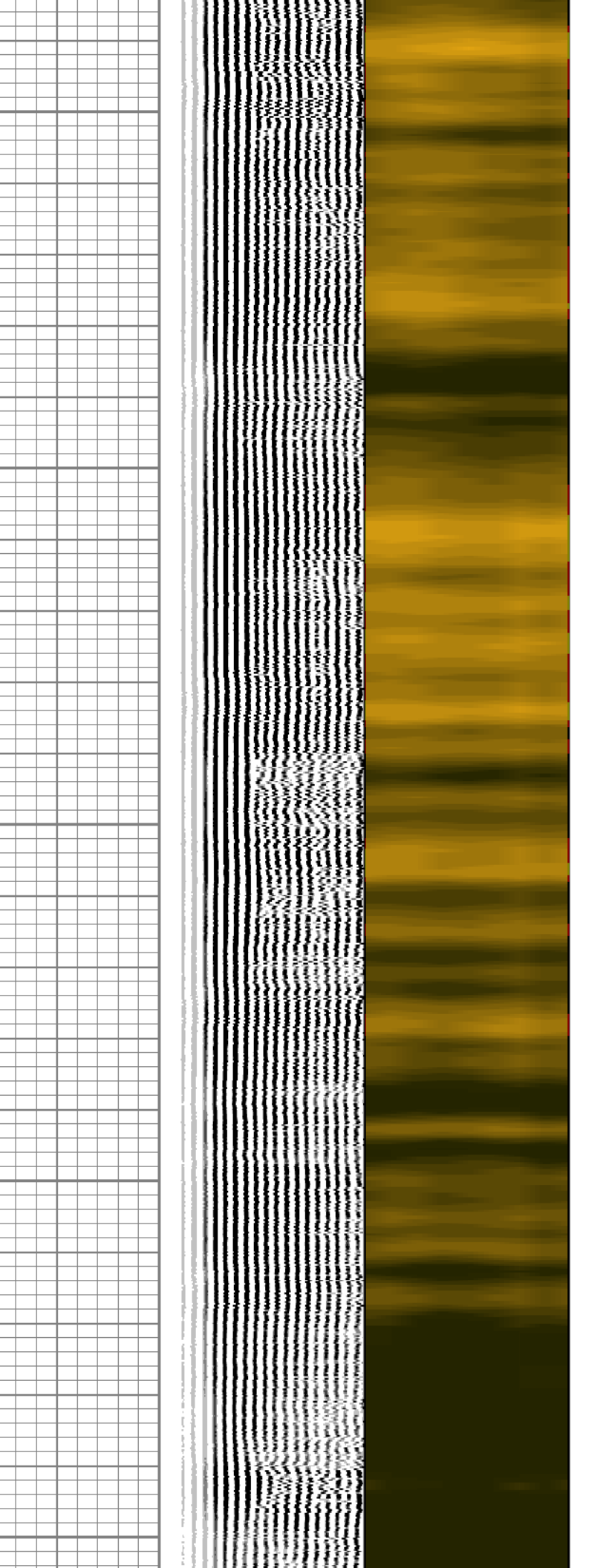
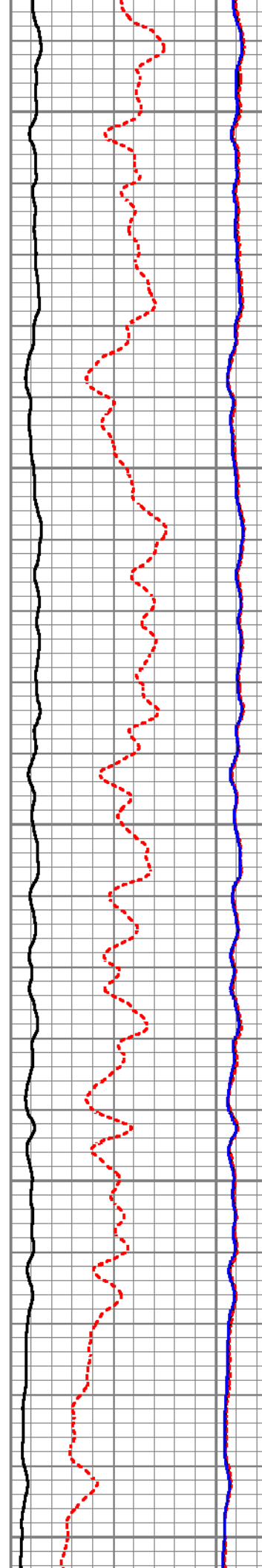
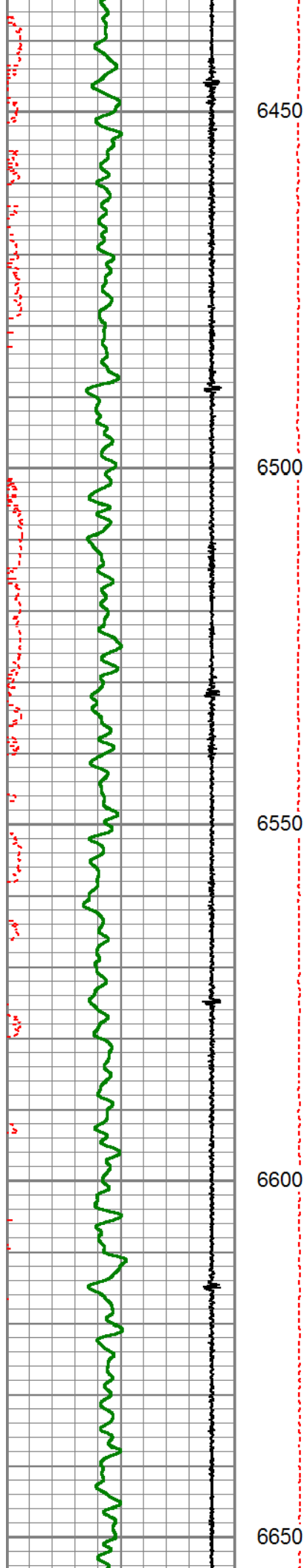


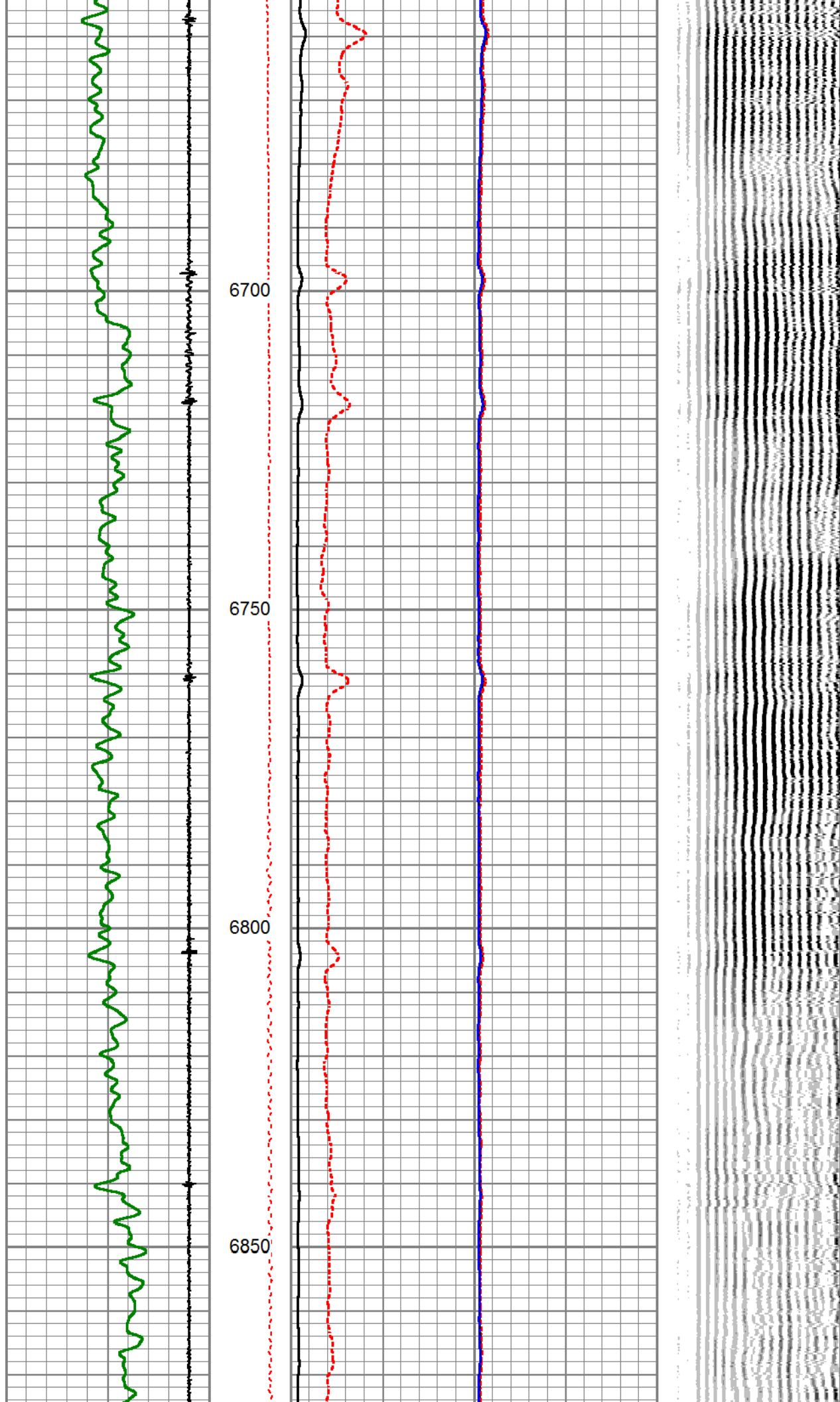


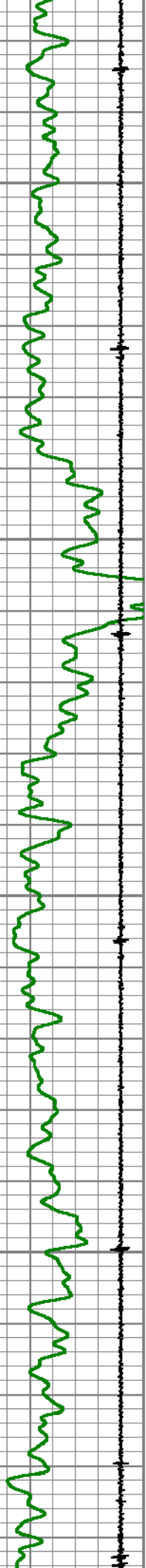










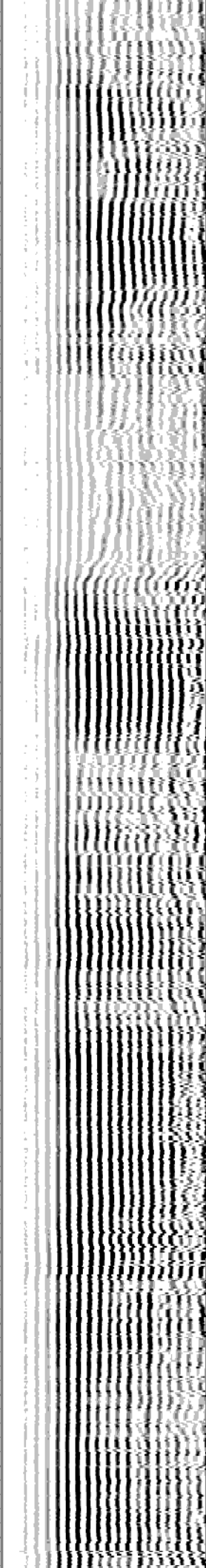
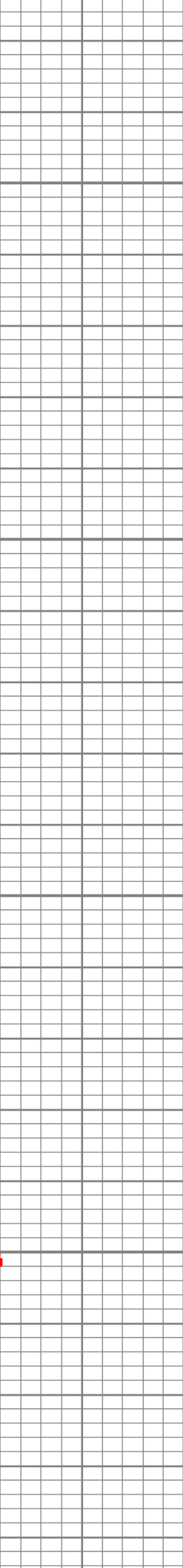
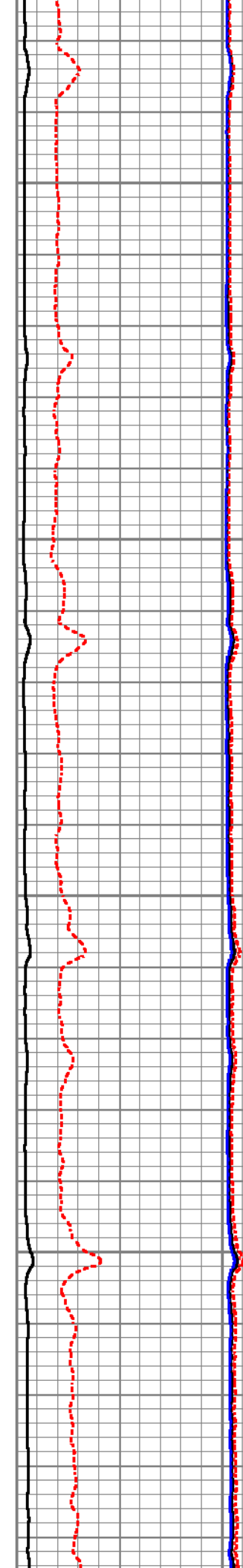


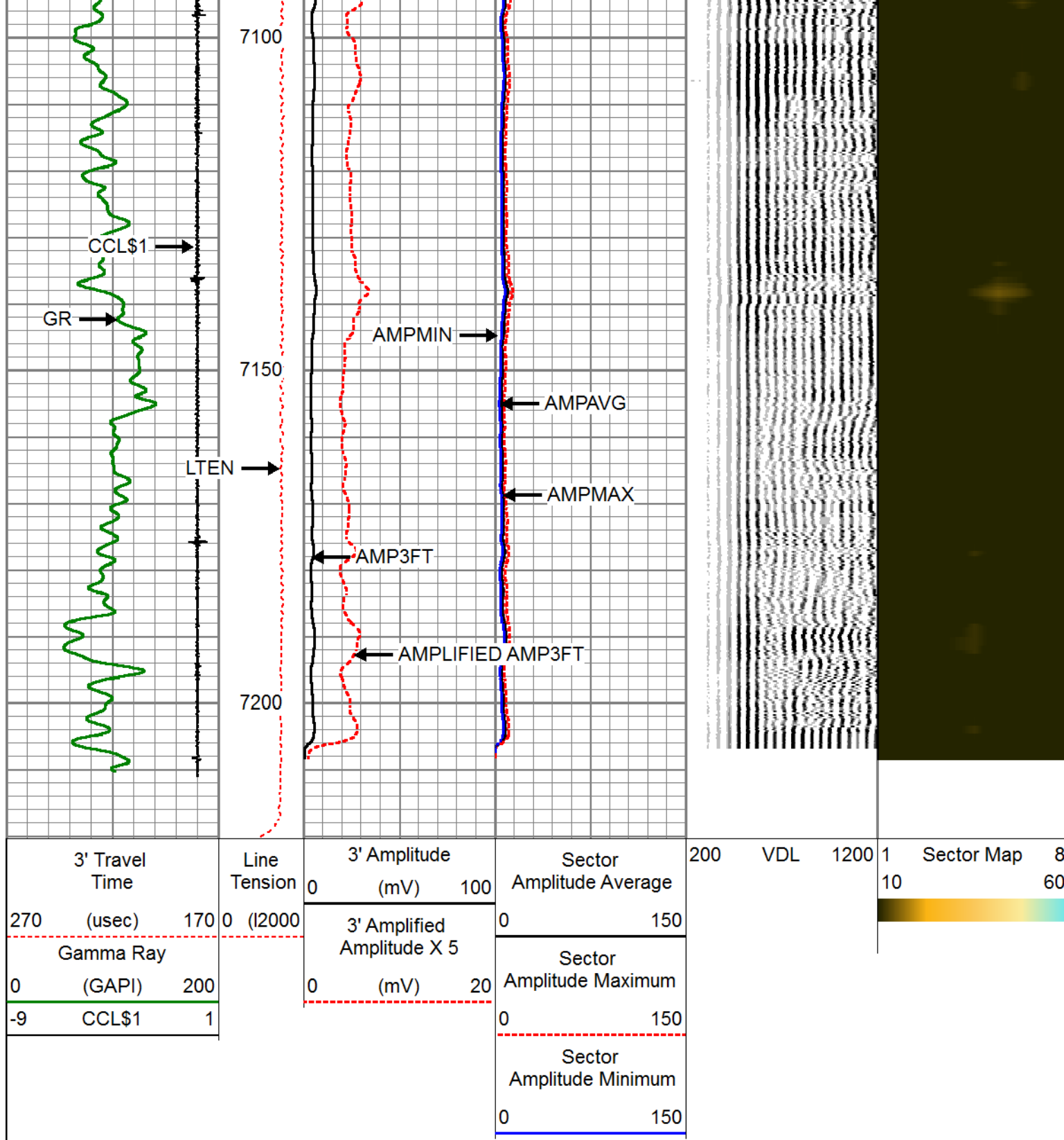
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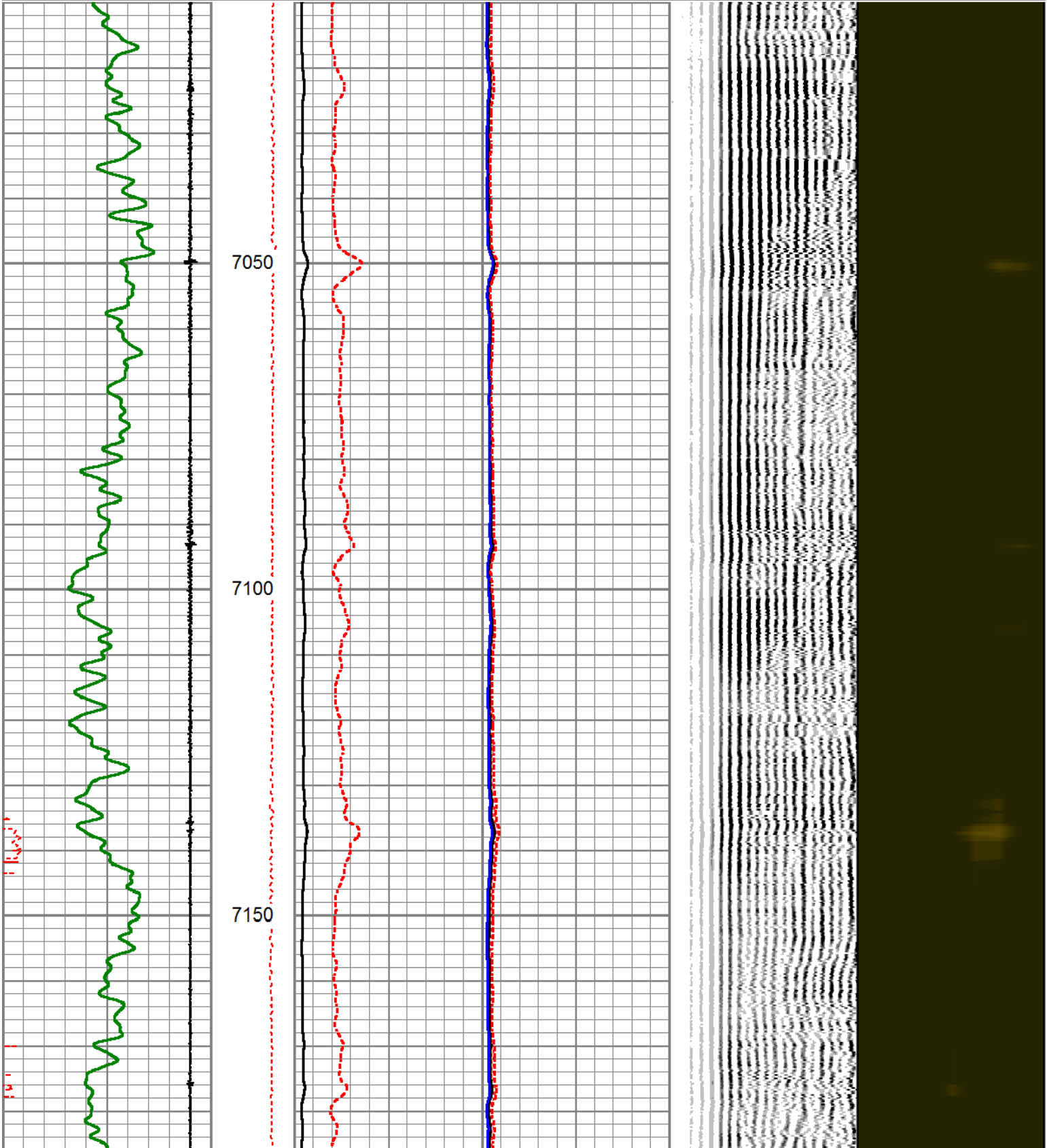
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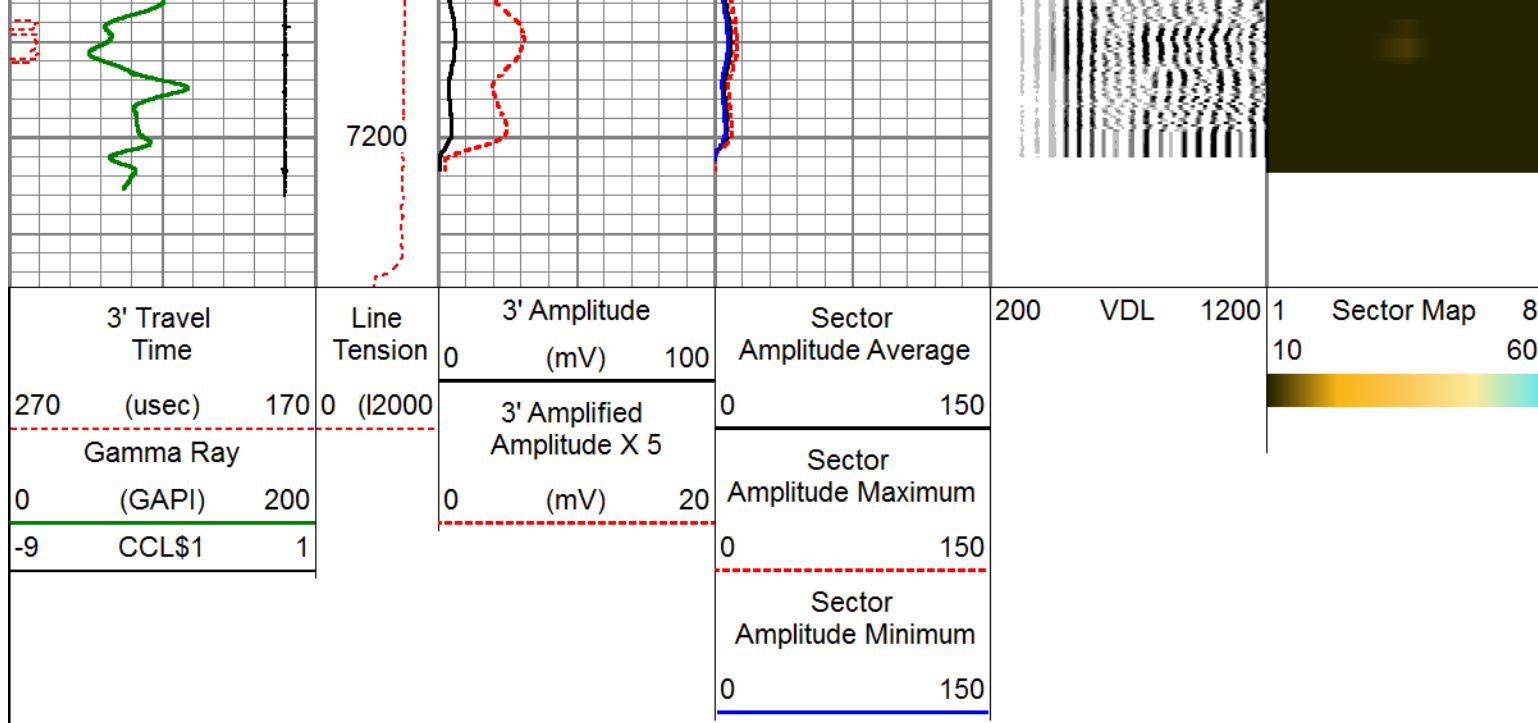




		REPEAT SECTION ZERO PSI APPLIED AT SURFACE	
Database File	verdad_bernak_01-64-10-3h_0512344997_20171116_scbl-cn1.db		
Dataset Pathname	pass3		
Presentation Format	pinr_scbl_cs		
Dataset Creation	Thu Nov 16 09:00:19 2017		
Charted by	Depth in Feet scaled 1:240		

3' Travel Time	Line Tension	0	3' Amplitude (mV)	100	Sector Amplitude Average	200	VDL	1200	Sector Map	8
270 (usec)	170	0 (I2000)	0	150					10	60
Gamma Ray			3' Amplified Amplitude X 5							
0 (GAPI)	200		0 (mV)	20	Sector Amplitude Maximum					
-9 CCL\$1	1				0	150				
					Sector Amplitude Minimum					
					0	150				





Calibration Report						
Database File	verdad_bernak_01-64-10-3h_0512344997_20171116_scbl-cn1.db					
Dataset Pathname	pass4					
Dataset Creation	Thu Nov 16 09:11:13 2017					
Compensated Neutron Calibration Report						
		Serial Number:		120509		
		Tool Model:		275BL		
CALIBRATION		Thu May 03 14:25:11 2012				
	Detector	Readings		Target		Normalization
	Short Space	4496.49	cps	0.00	cps	1.0000
	Long Space	780.48	cps	0.00	cps	1.0800
PRE-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		
3)	Short Space		cps			
	Long Space		cps	pu		
POST-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		pu
3)	Short Space		cps			

Gamma Ray Calibration Report

Serial Number: FW1404-112
 Tool Model: GC_6PIN
 Performed: Thu Nov 16 08:03:38 2017

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.7400 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1403-68
 Tool Model: 275 Probe w Temp

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 43.383 ft

Master Calibration, performed Thu Nov 09 09:57:21 2017:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.011	1.511	1.000	71.921	47.288	0.491
CAL	0.010	1.499				
5'	0.010	1.455	1.000	71.921	49.087	0.515
SUM						
S1	0.012	1.480	0.000	100.000	68.117	-0.786
S2	0.011	1.486	0.000	100.000	67.799	-0.761
S3	0.011	1.506	0.000	100.000	66.887	-0.707
S4	0.011	1.505	0.000	100.000	66.934	-0.734
S5	0.010	1.499	0.000	100.000	67.147	-0.675
S6	0.011	1.512	0.000	100.000	66.641	-0.732
S7	0.011	1.510	0.000	100.000	66.744	-0.767
S8	0.011	1.490	0.000	100.000	67.611	-0.712

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.010	1.499	1.000	0.000

Air Zero Calibration, performed Thu Nov 09 09:17:07 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000			0.000
5'	0.000		0.000			0.000
SUM						
S1	0.000		0.000			0.000
S2	0.000		0.000			0.000
S3	0.000		0.000			0.000
S4	0.000		0.000			0.000

S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Temperature Calibration Report

Serial Number: FW1403-68
 Tool Model: 275 Probe w Temp
 Performed: Tue Jul 14 06:38:22 2015

	Reference	Reading
Low Reference:	0.00 degF	0.00 degF
High Reference:	1.00 degF	1.00 degF
Gain:	1.00	
Offset:	0.00	
Delta Spacing	1	



Company VERDAD RESOURCES
 Well BRNAK 01-64-10-3H
 Field WATTENBERG
 County WELD
 State COLORADO