

# RADIAL CEMENT BOND LOG

SCALE 5" = 100'

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Company SOUTHWESTERN ENERGY Well LINNEBUR FLYING SERVICE 3-61-1-30 Field WILDCAT County ADAMS State CO					Company SOUTHWESTERN ENERGY Well LINNEBUR FLYING SERVICE 3-61-1-30 Field WILDCAT County ADAMS State CO				
Permanent Datum GROUND LEVEL Elevation 5188' Log Measured From KB , 22 Ft. above perm. datum Drilling Measured From KB					Sec: 30 Twp: 3S Rge: 61W JUNK BASKET GAUGE RING 4.62"				
Date @ Time Logged 17 JULY 2014 @ 11:00 Type Fluid in Hole WATER Run No. ONE Density of Fluid UNKNOWN Depth - Driller 10773' Fluid Level SURFACE Depth - Logger 10188' Cement Top Est. Logged 2215' Bottom - Logged Interval 10180' Equipment / Location 11726117 / G.J. CO. Top - Log Interval 1964' Recorded by RICHARD MACKIE Max. Recorded Temp. 264' Witnessed by MARTIN / ALVARAZ CEMENTING DATA Surface Protection Production String String Liner Date / Time Cemented String					API No.: 05-001-09804-00 Serv #: 901516360 Other Services Location: SHL: 2417' FNL & 2362' FEL				
Primary / Squeeze Expected Compressive Strength psi@ hrs psi@ hrs psi@ hrs Cement Volume / Weight / Formulation / Mud Wgt. /					Borehole Record From To Size Weight From To Casing & Tubing Record				
Run Number Bit From To					Run Number Bit From To				

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

## Comments

LOG CORRELATED TO GAMMA ON "SCHLUMBERGER TRIPLE COMBO" DATED 1 JULY 2014

## INTERVALS RAN PER CUSTOMER REQUEST

TOP OF SHORT JOINT LOCATED @ 9806'

YOUR CREW TODAY: TRAVIS BOWN, NATHAN VOORHEES

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES!!

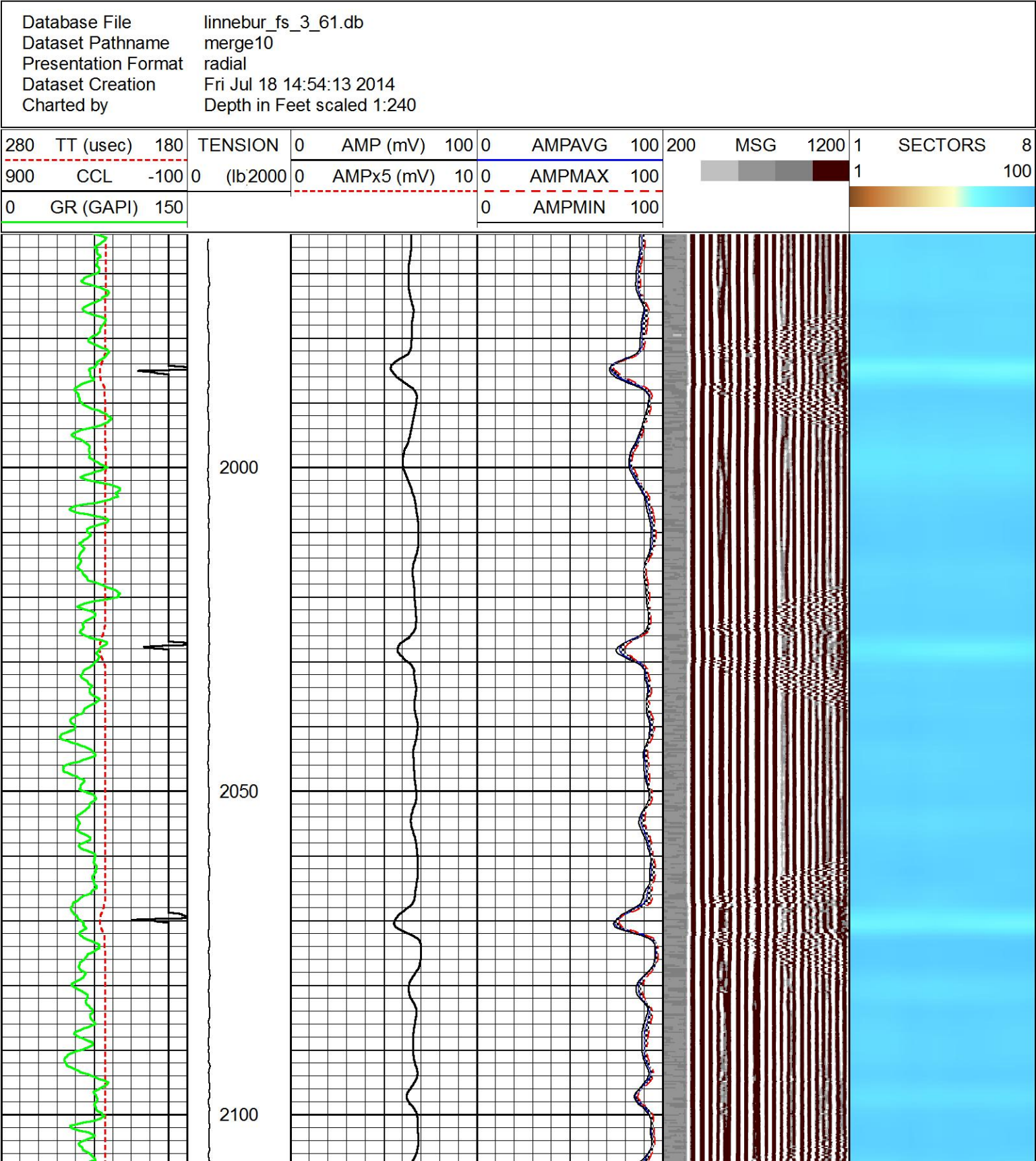
Service Ticket No.	901516360	API No.	05-001-09804-00	PGM Ver	WARRIOR 8
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
TELEMETRY		BOND LOG			
Run No.	ONE	Run No.	ONE	Run No.	
Serial No.	12105786	Serial No.	1133393	Serial No.	
Model No.	TTTCU-002	Model No.	RBT-004	Model No.	
Diameter	1 11/16"	Diameter	3 1/8"	Diameter	
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	10188'	SURFACE	0	80				
	GAMMA RAY		TRAVEL TIME		AMPLITUDE			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ALL PASSES	0	150	280	180	0	100		
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

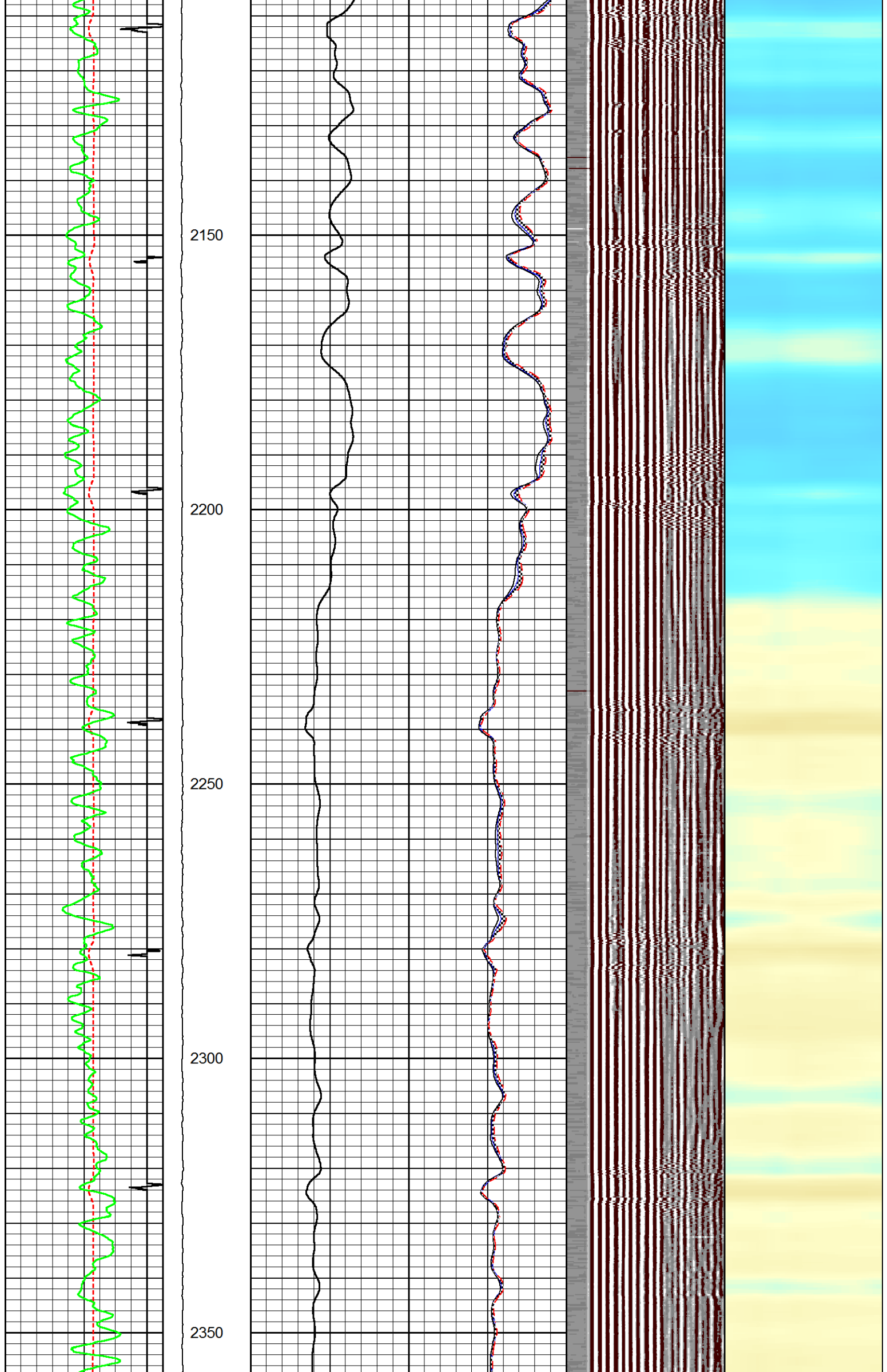
MAIN PASS

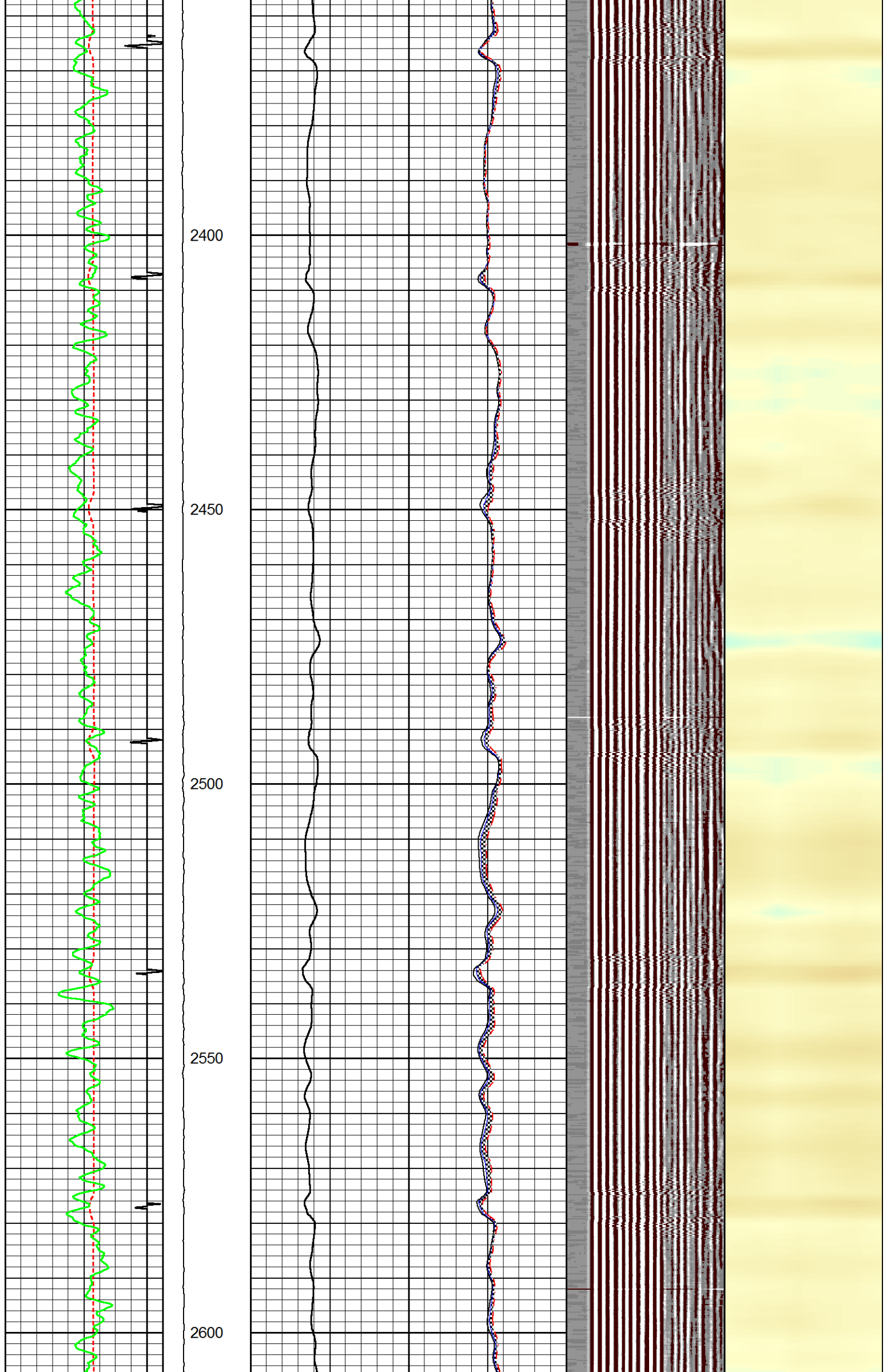
HALLIBURTON

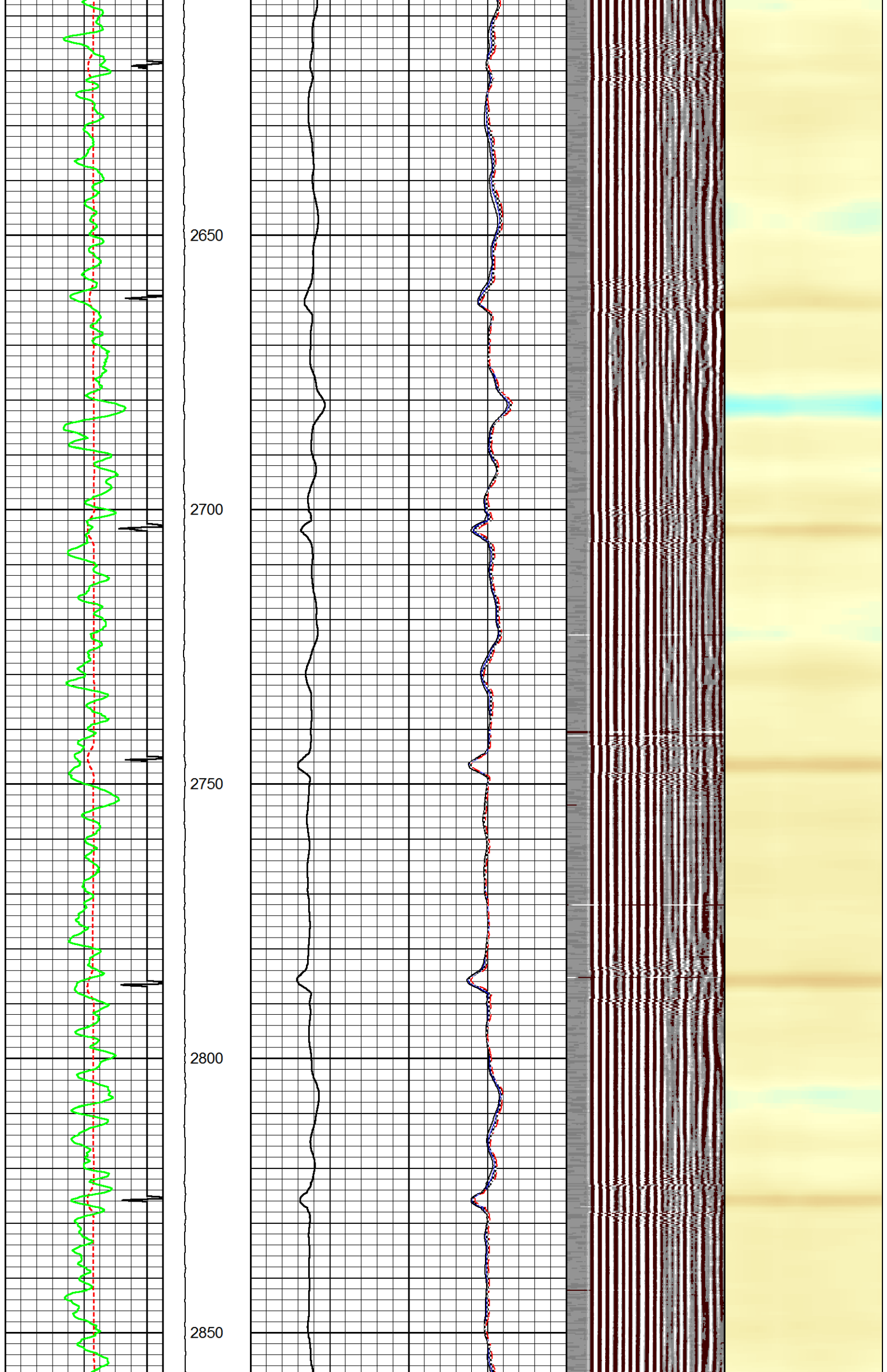
SCALE 5" = 100'

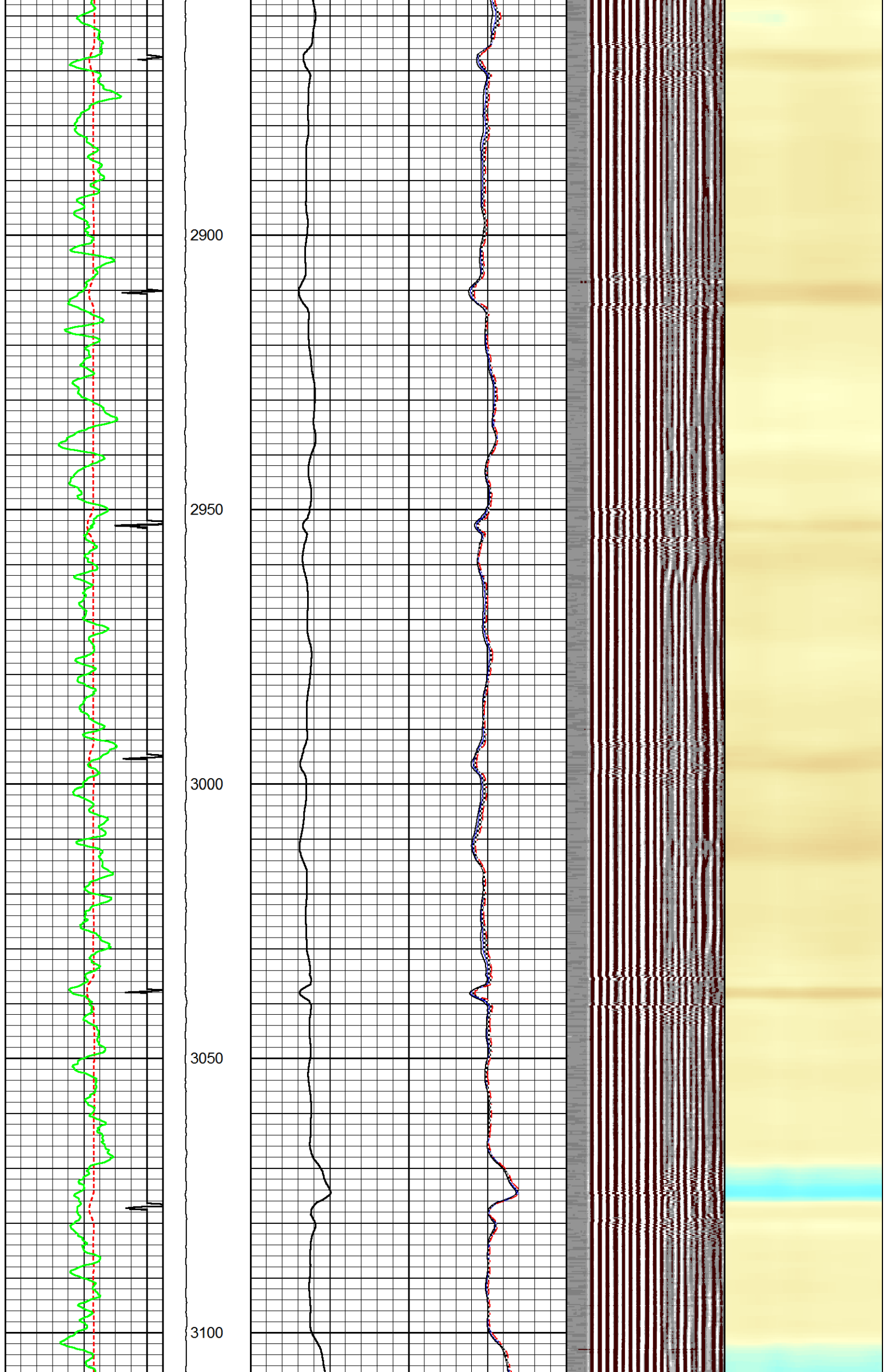


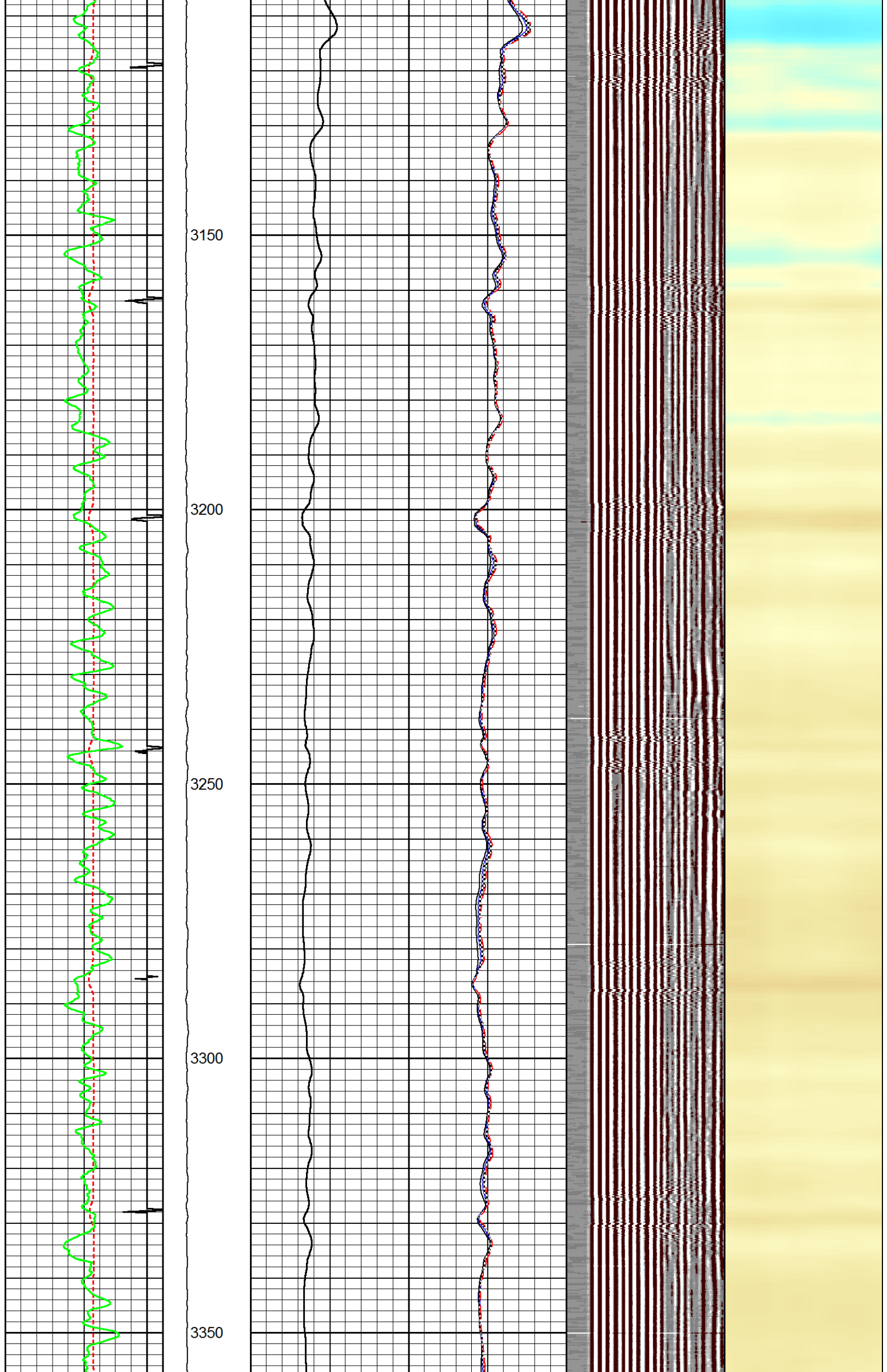




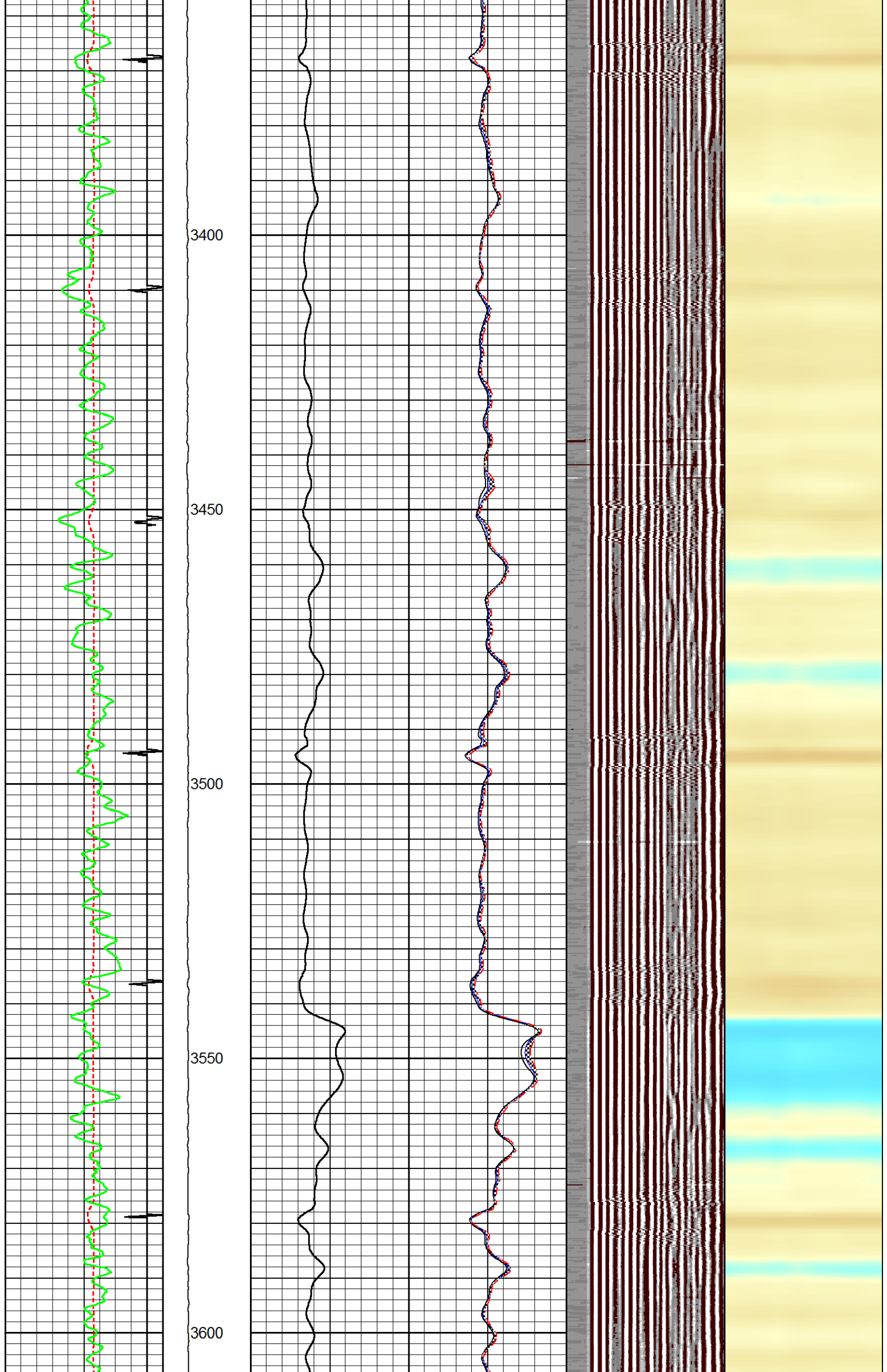




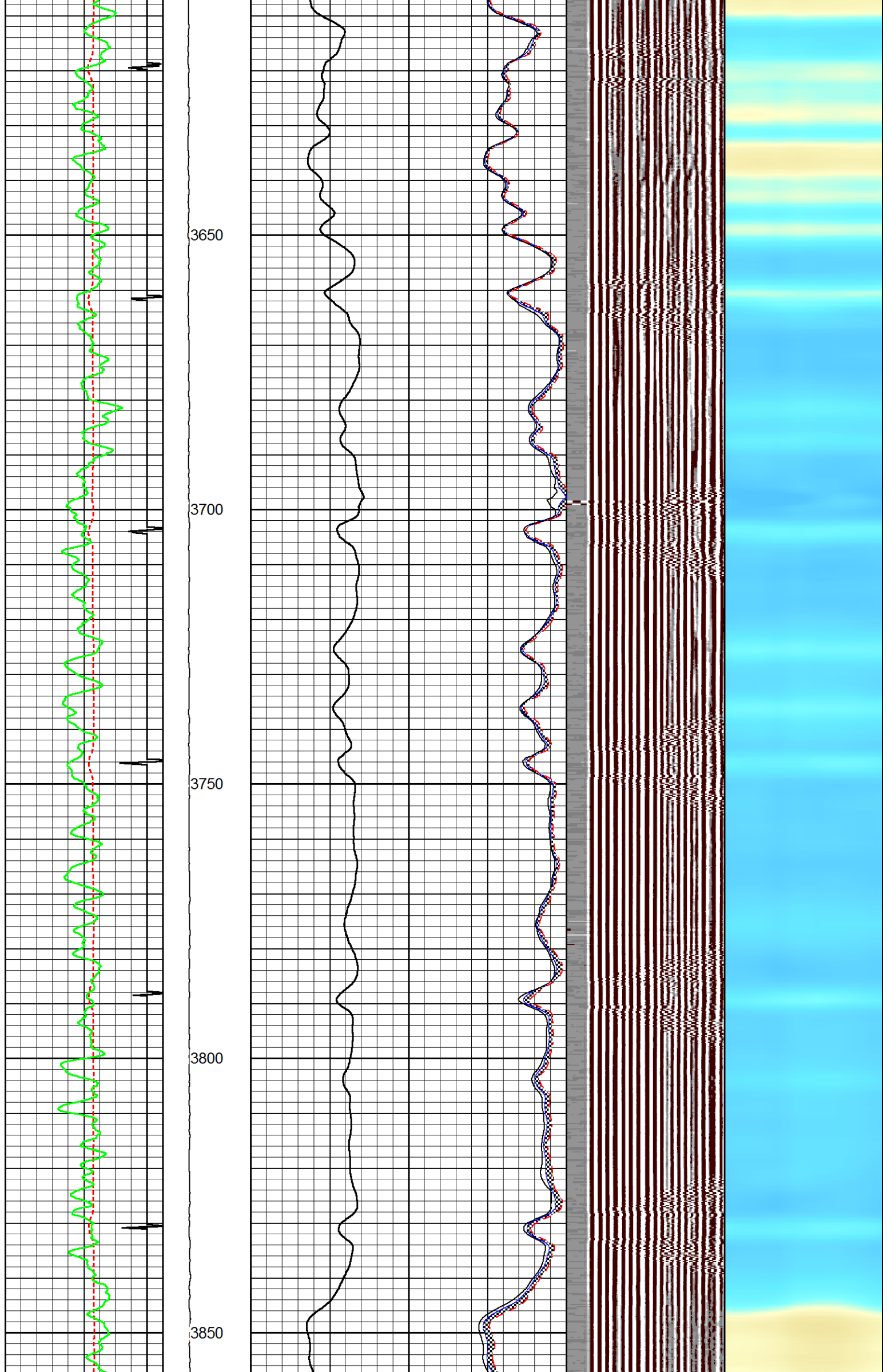


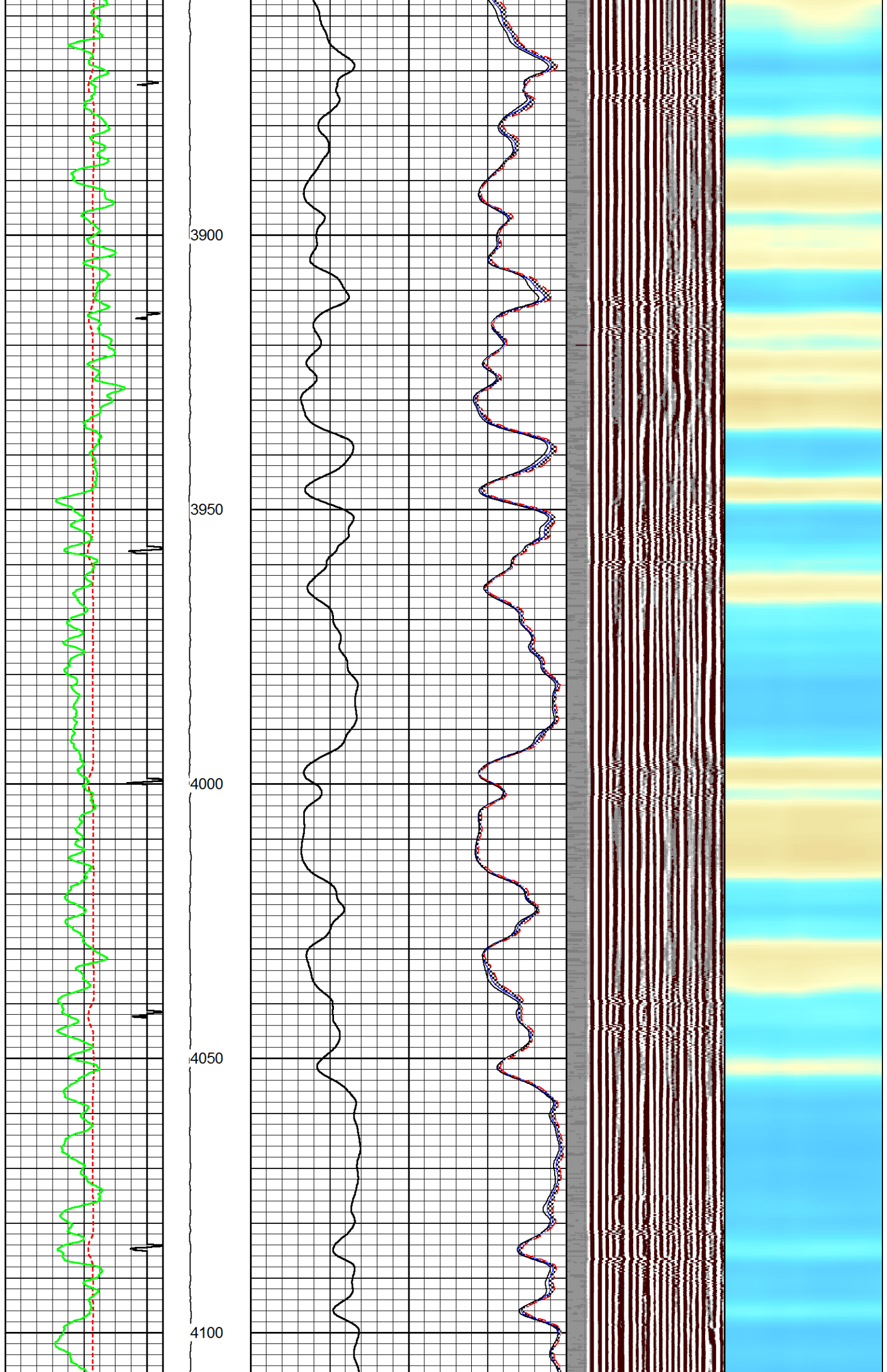


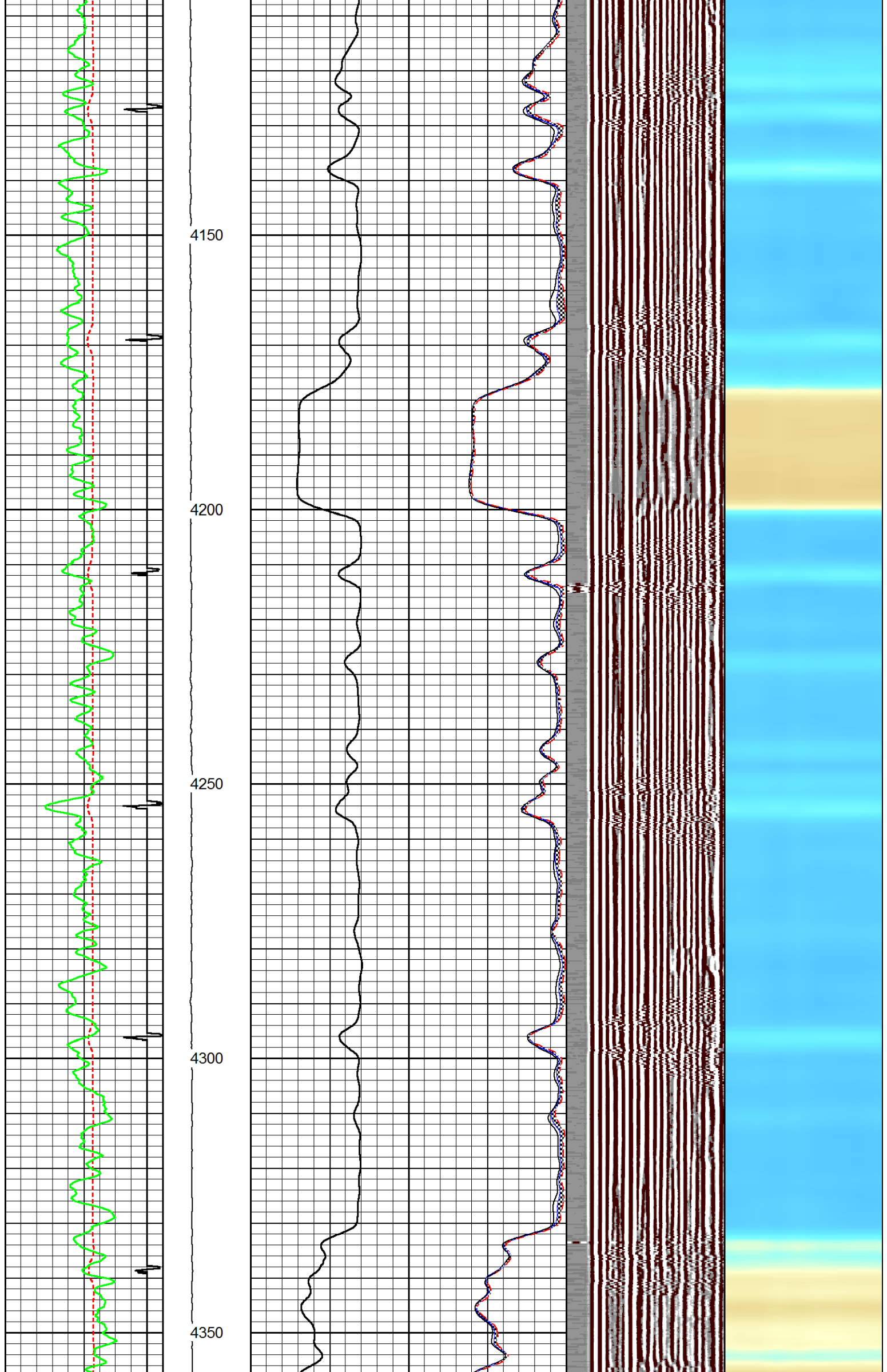




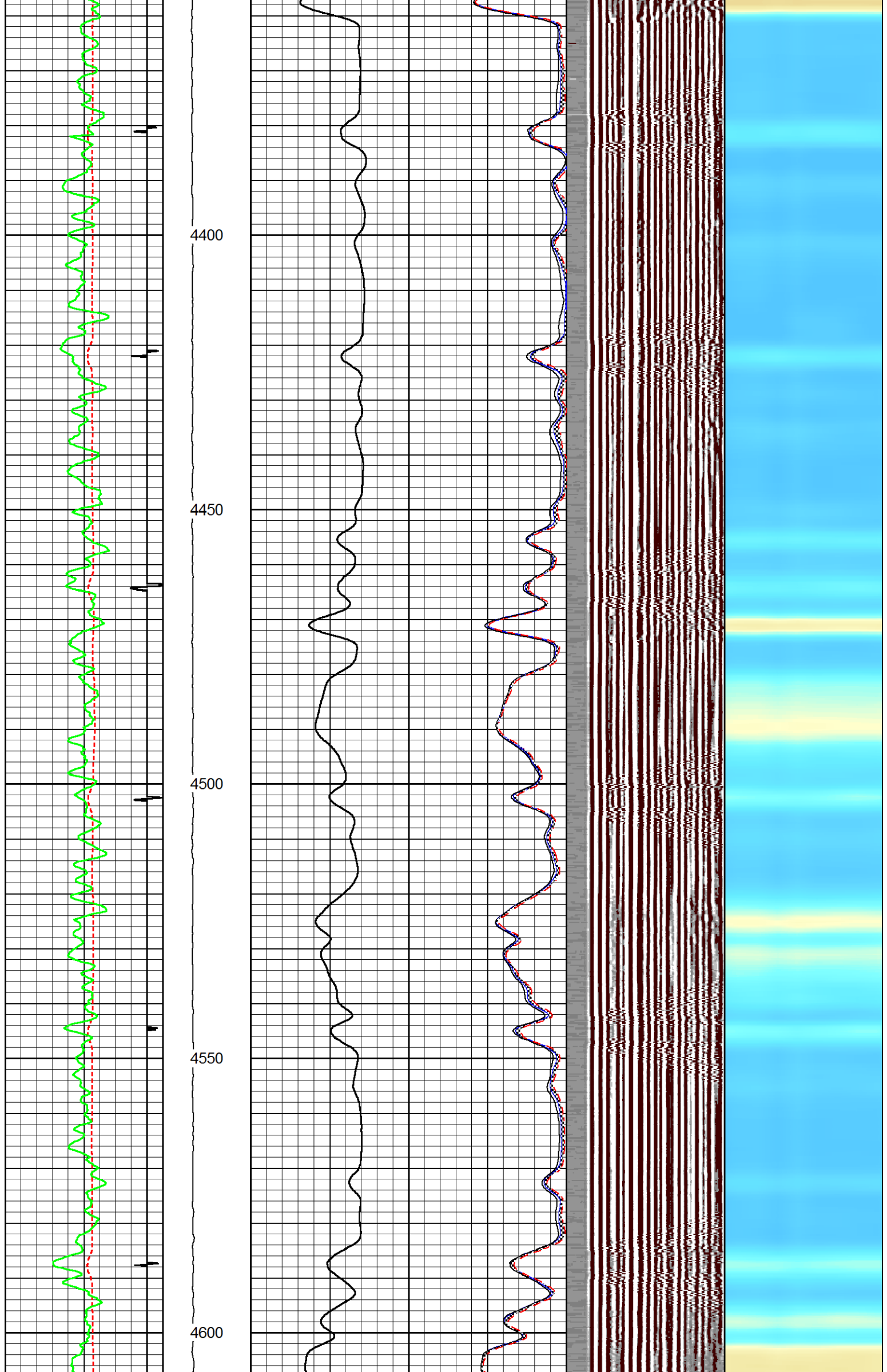


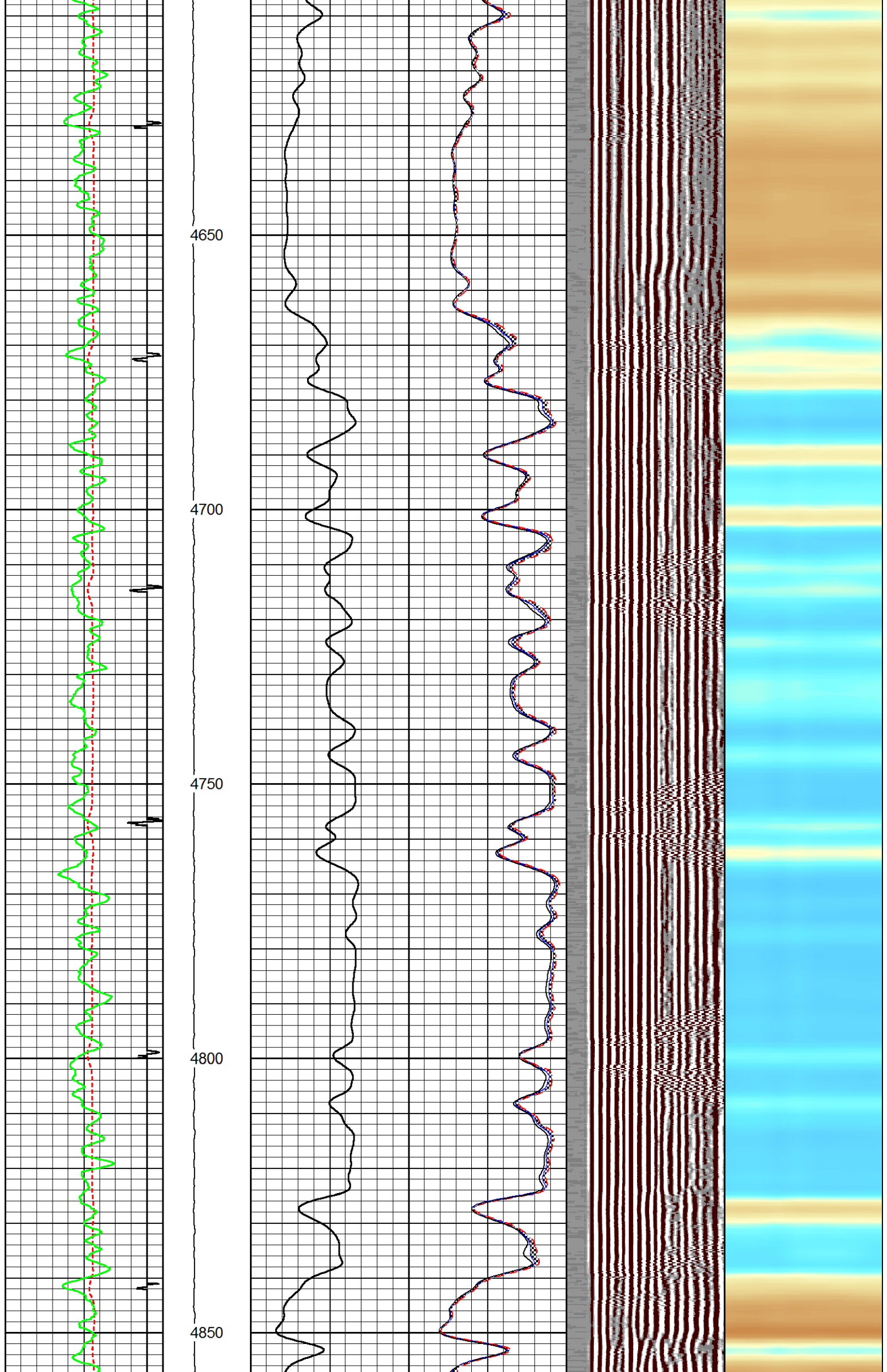


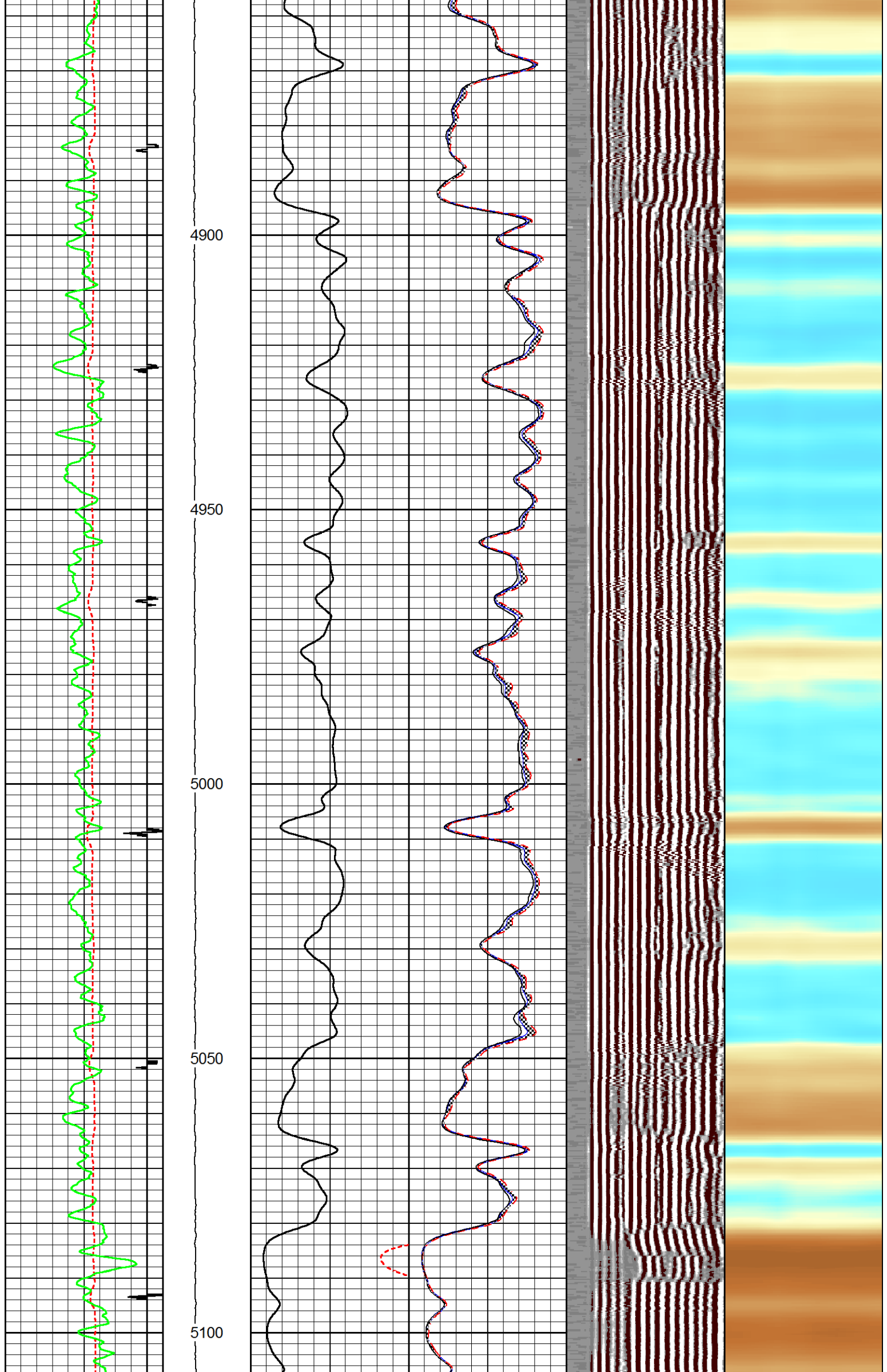




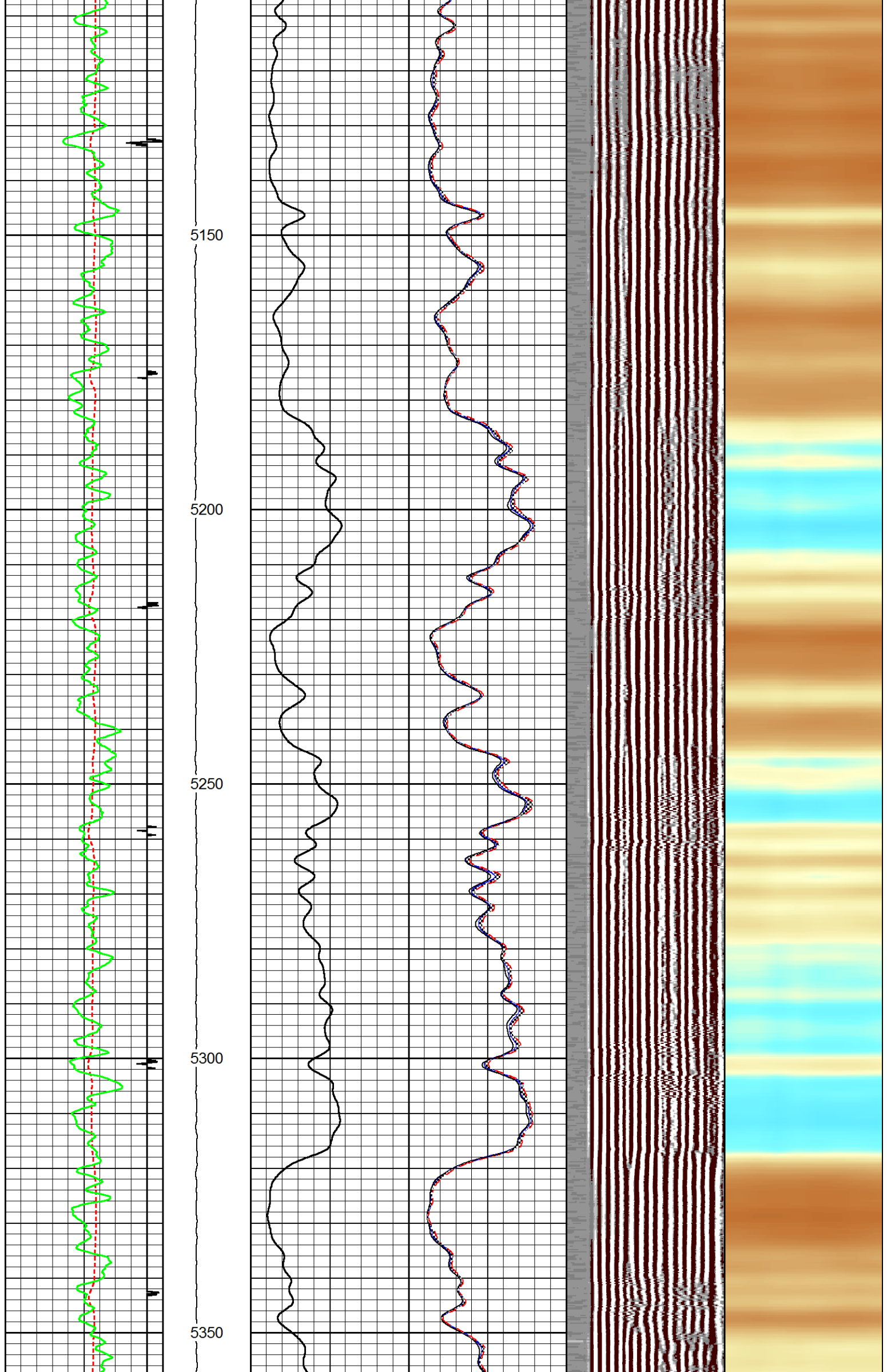


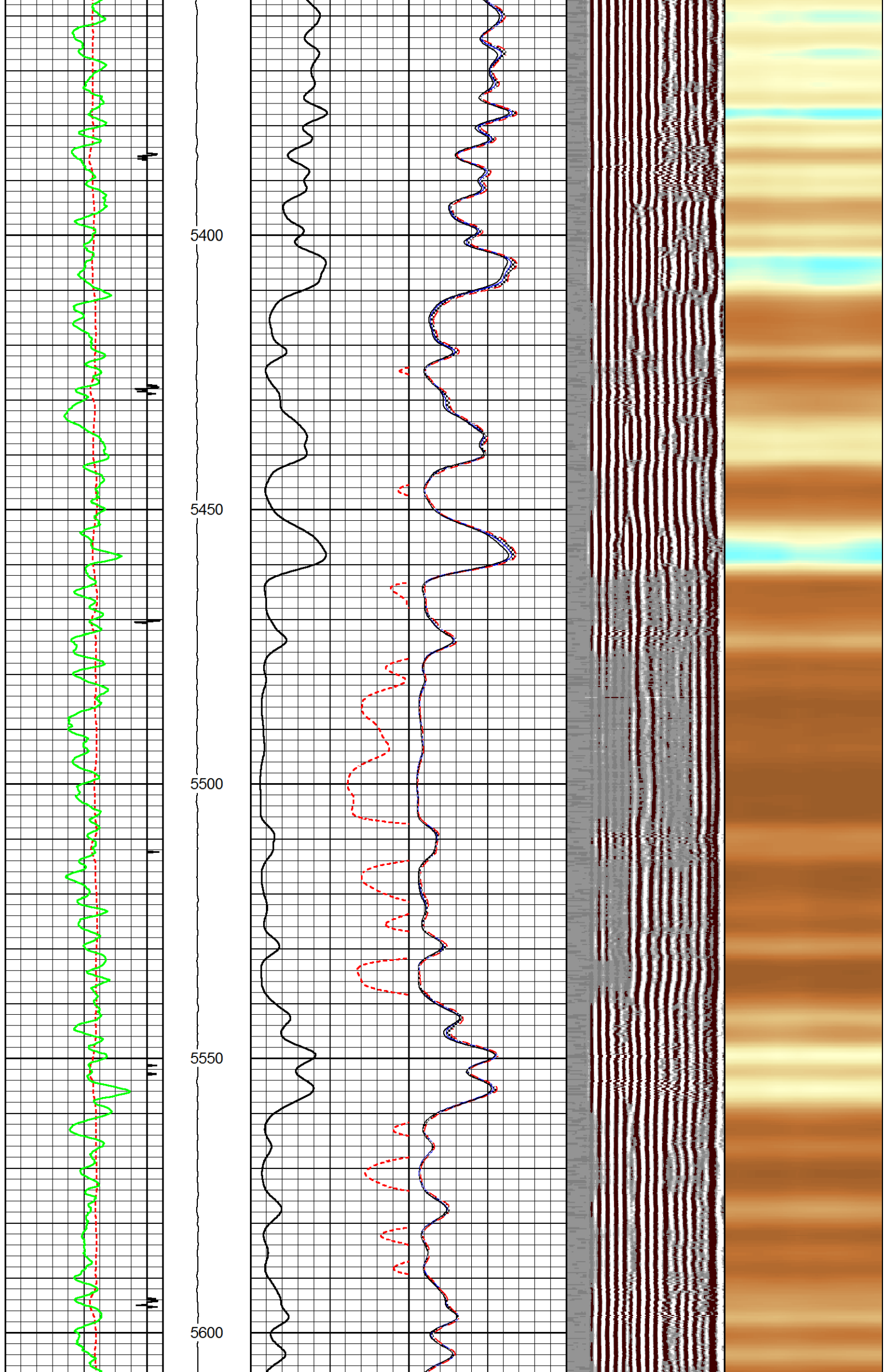


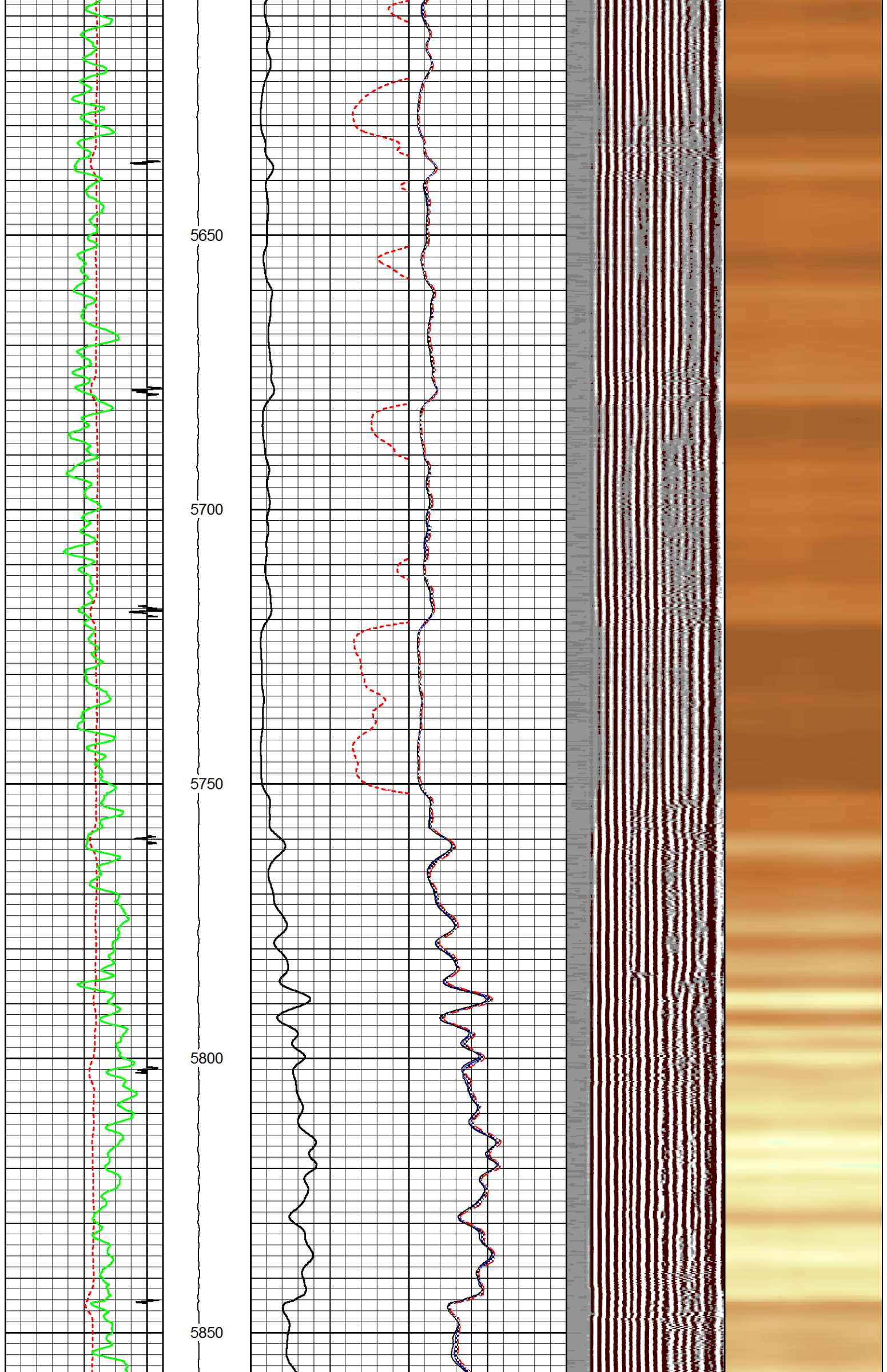




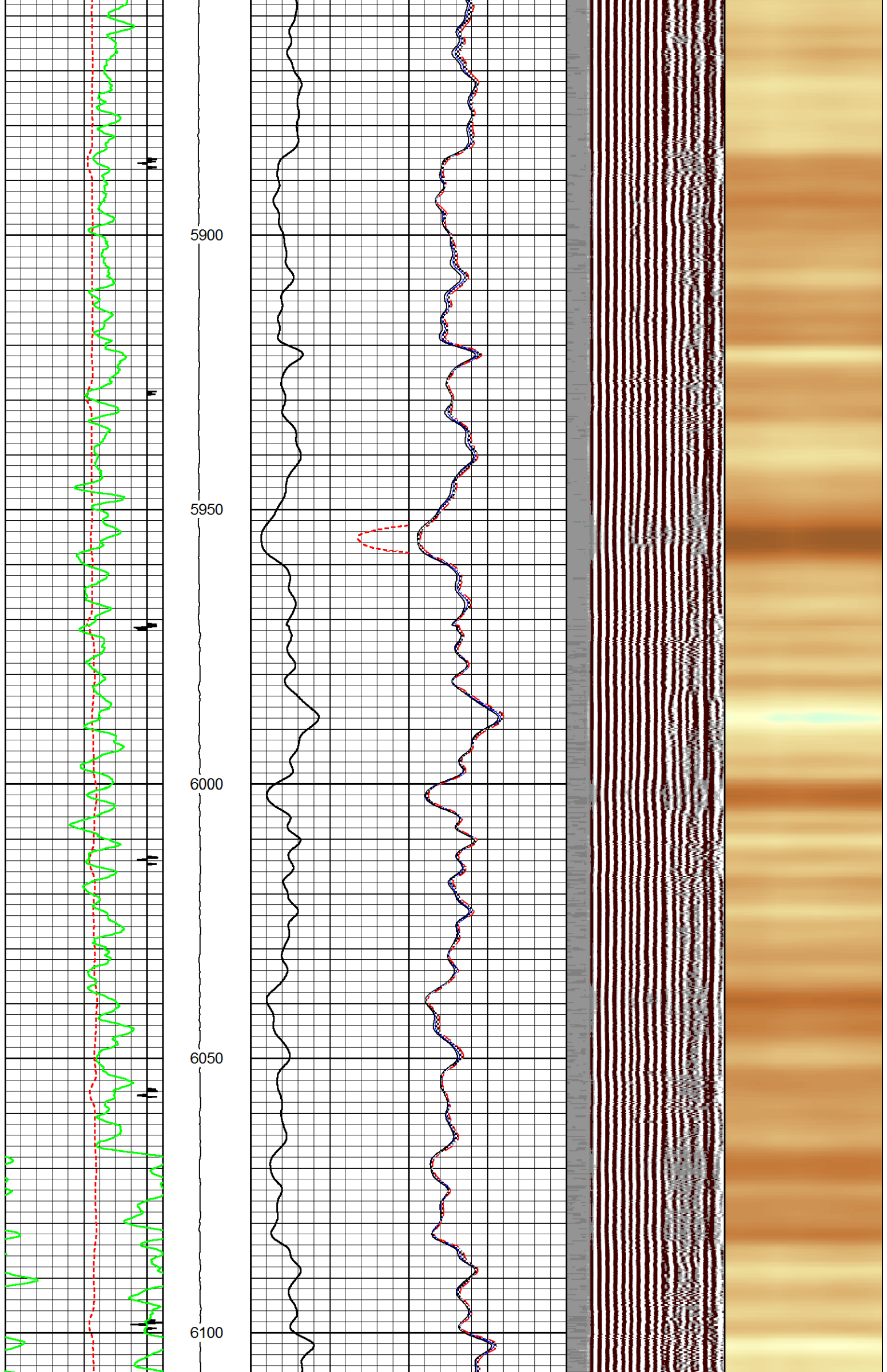


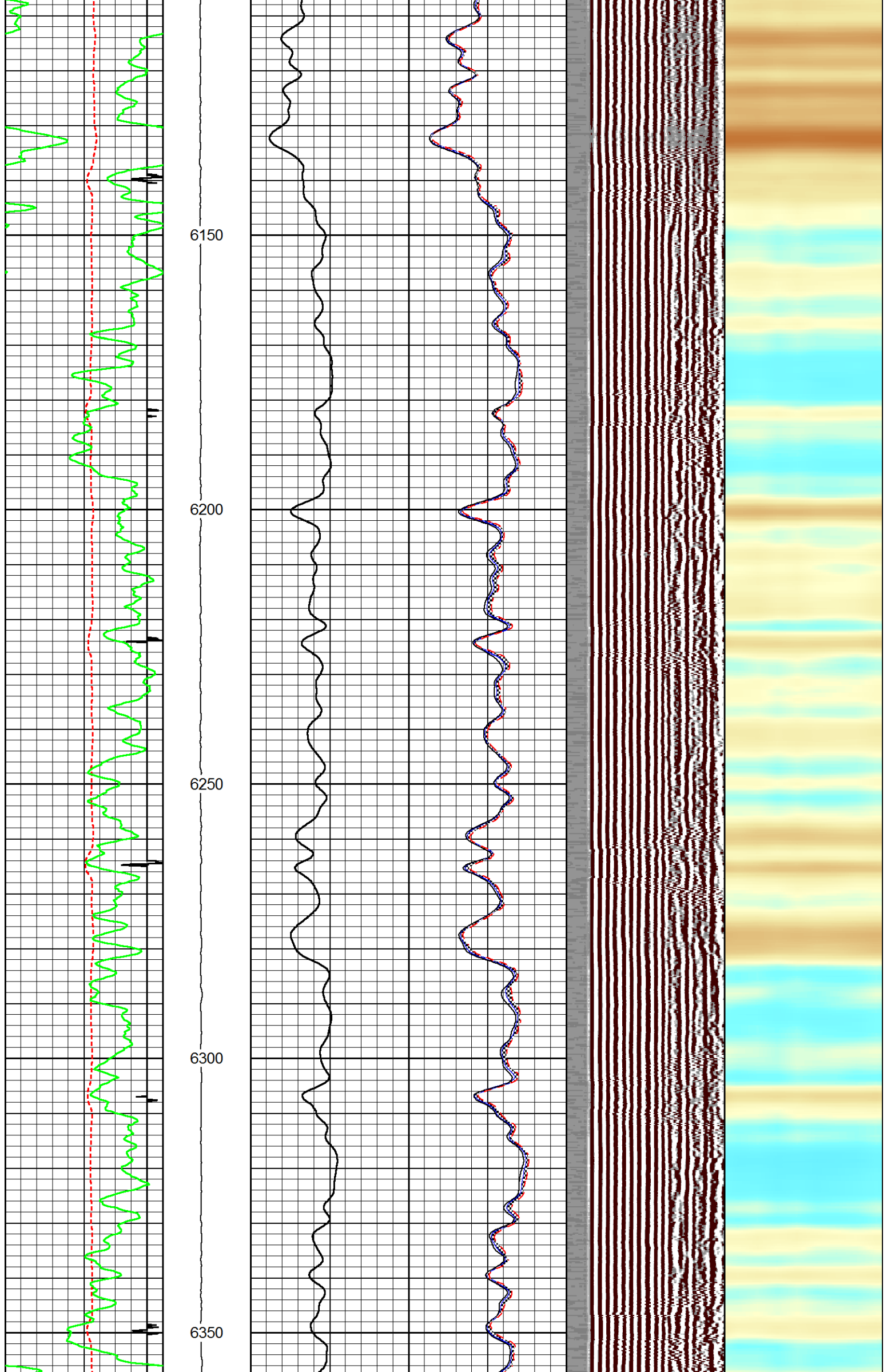


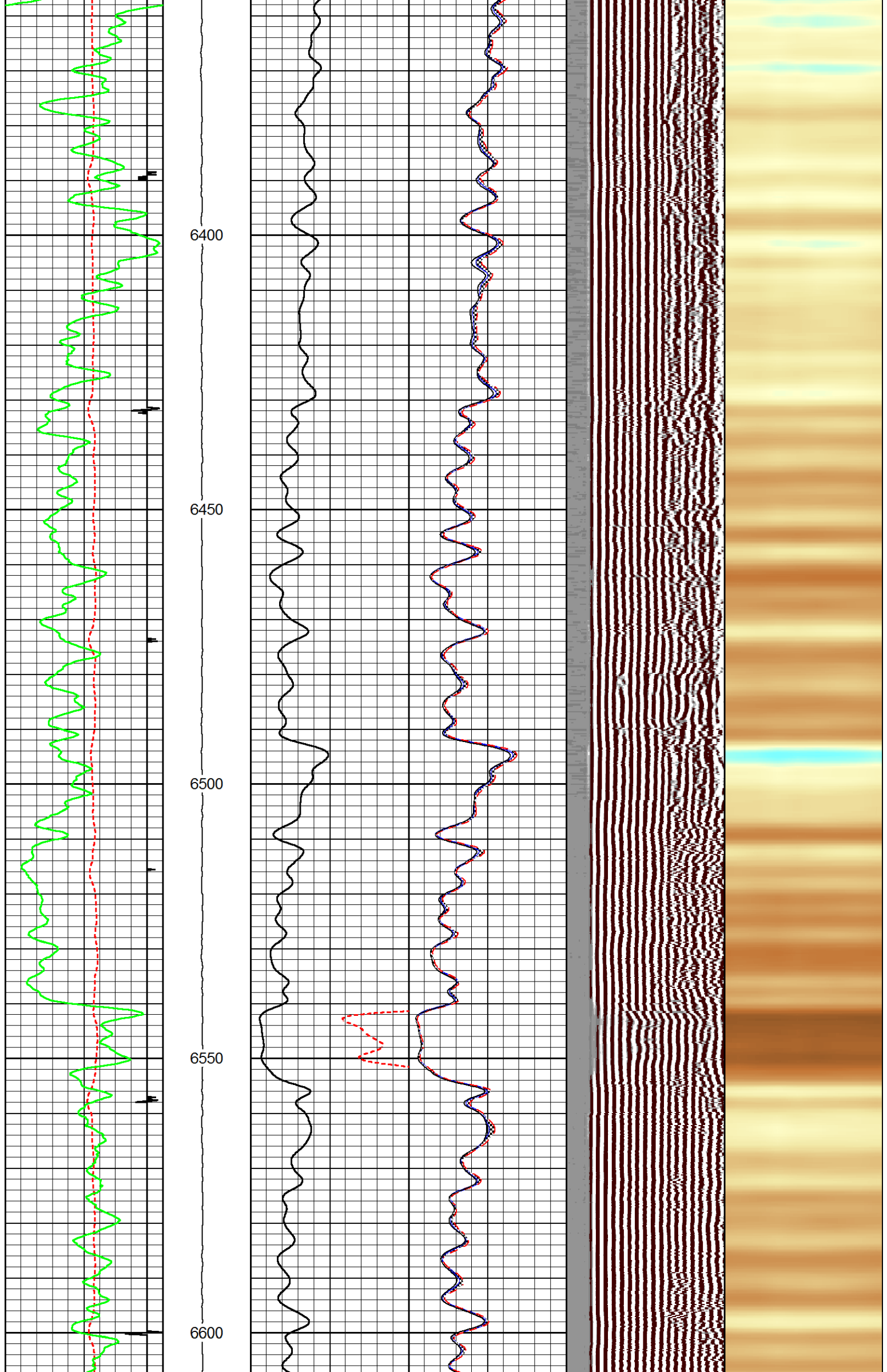




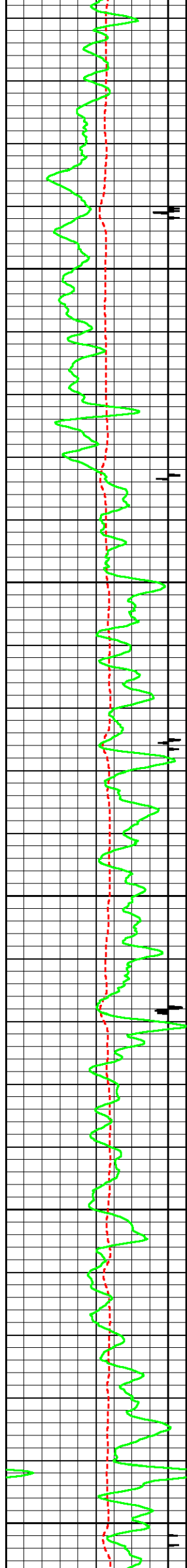












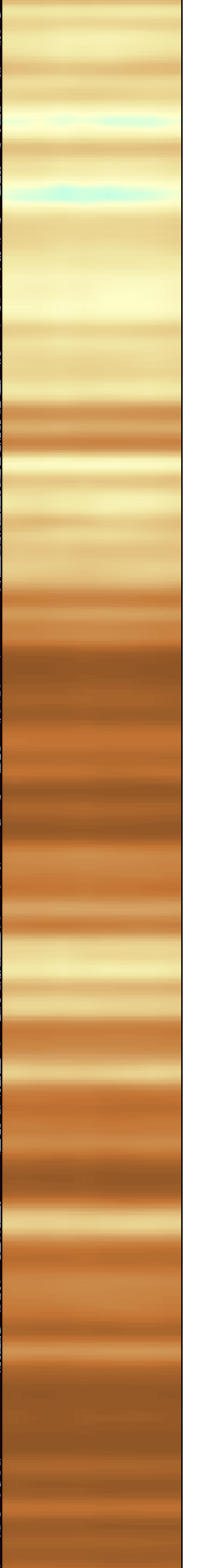
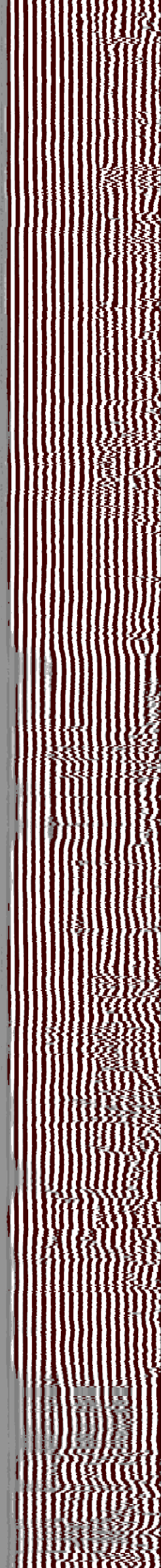
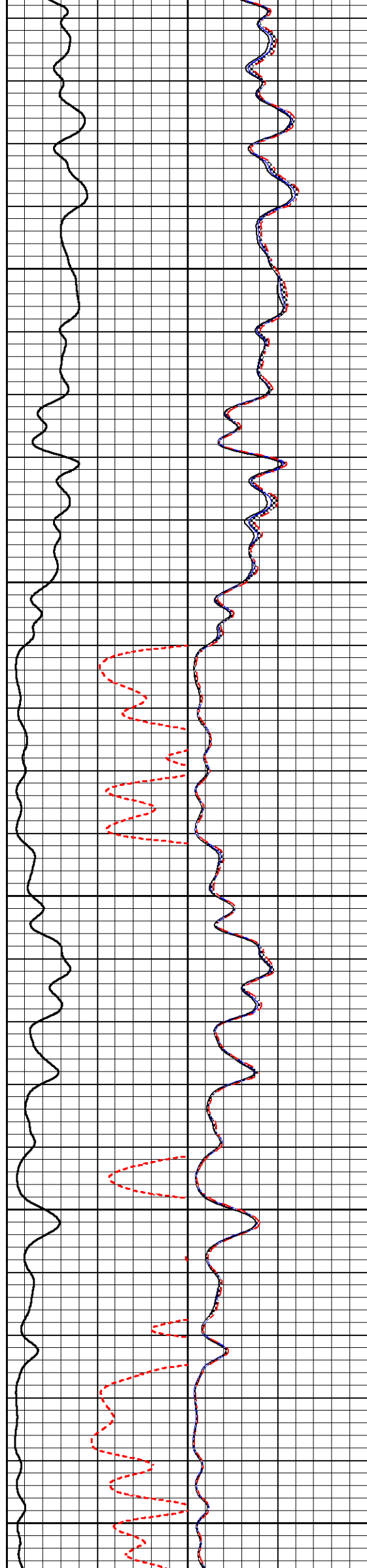
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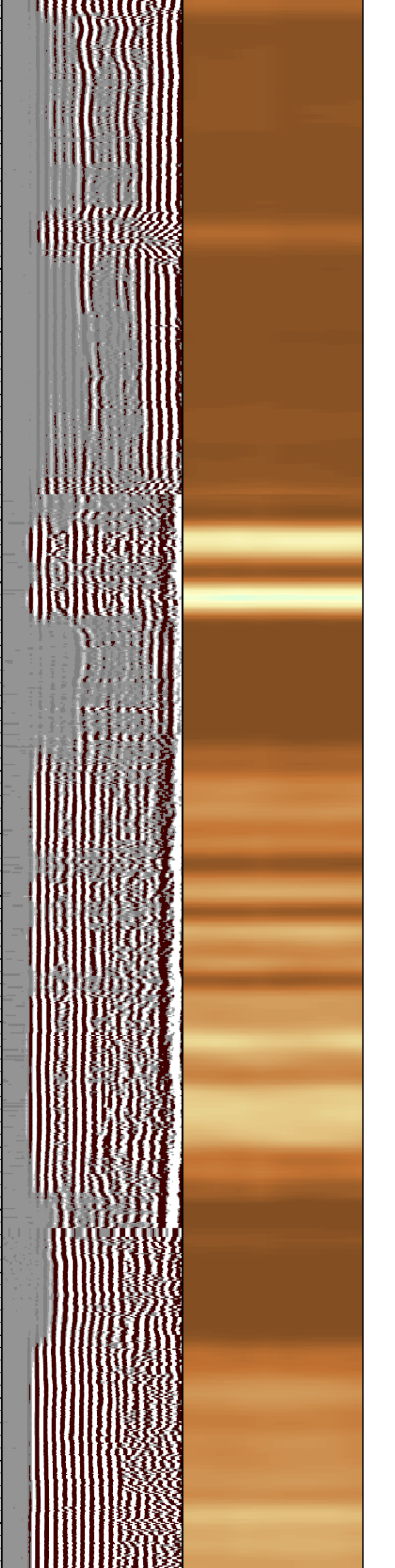
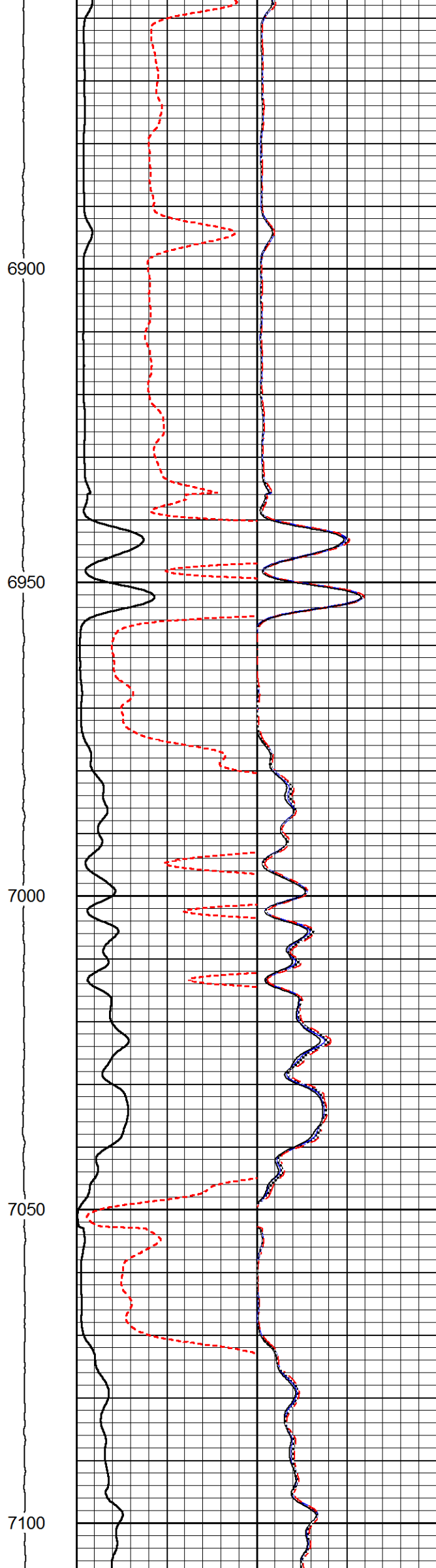
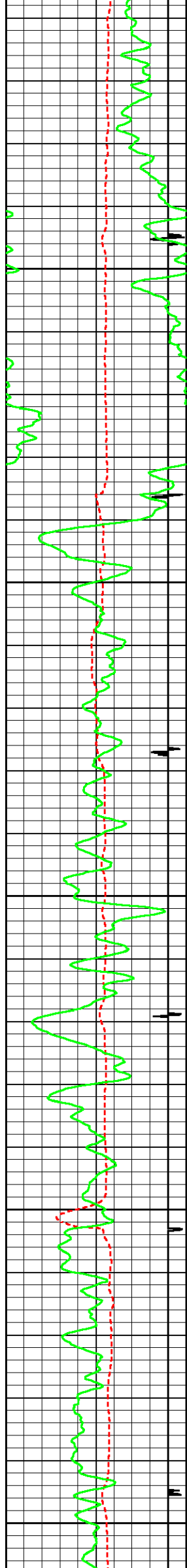
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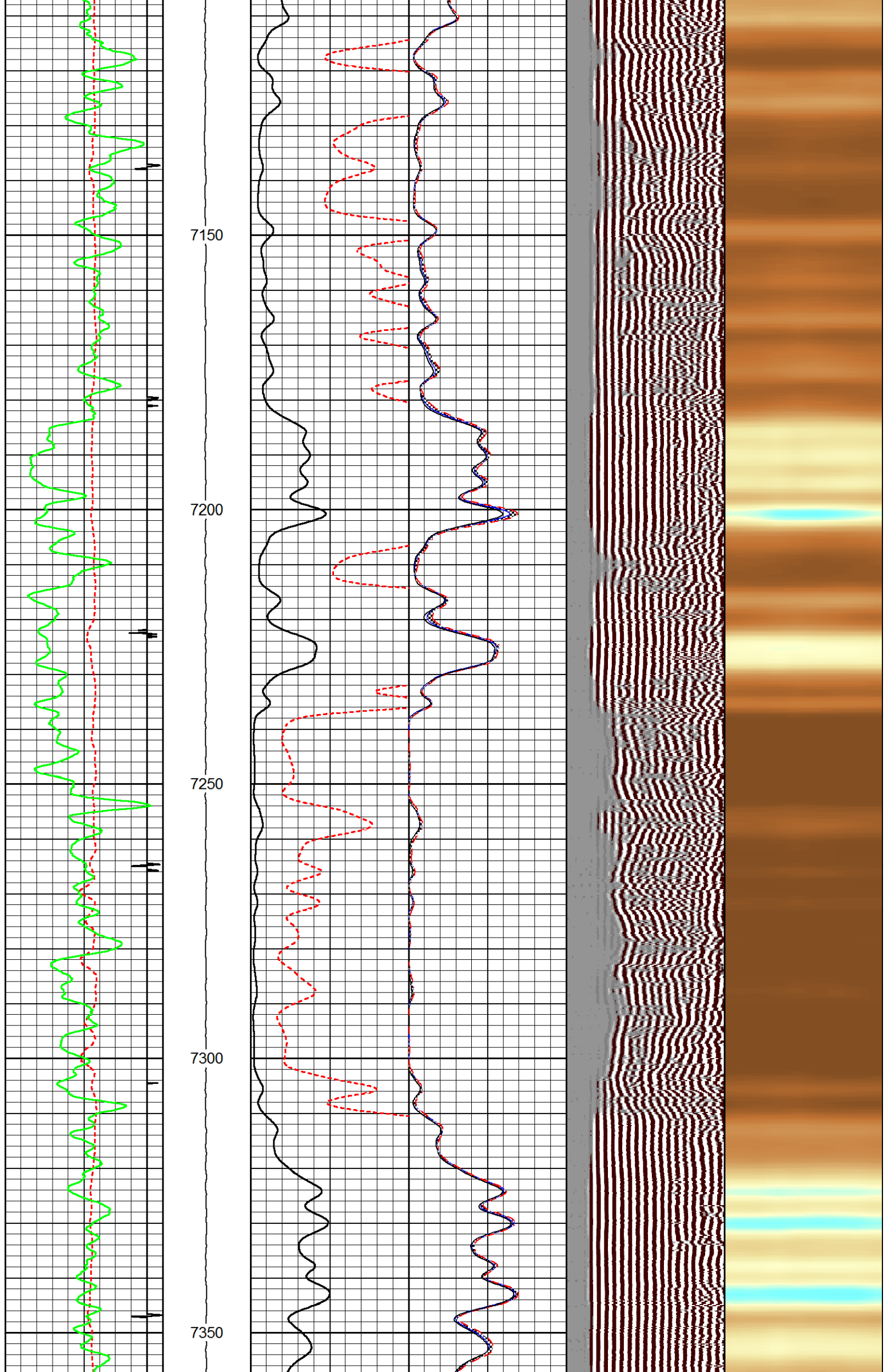
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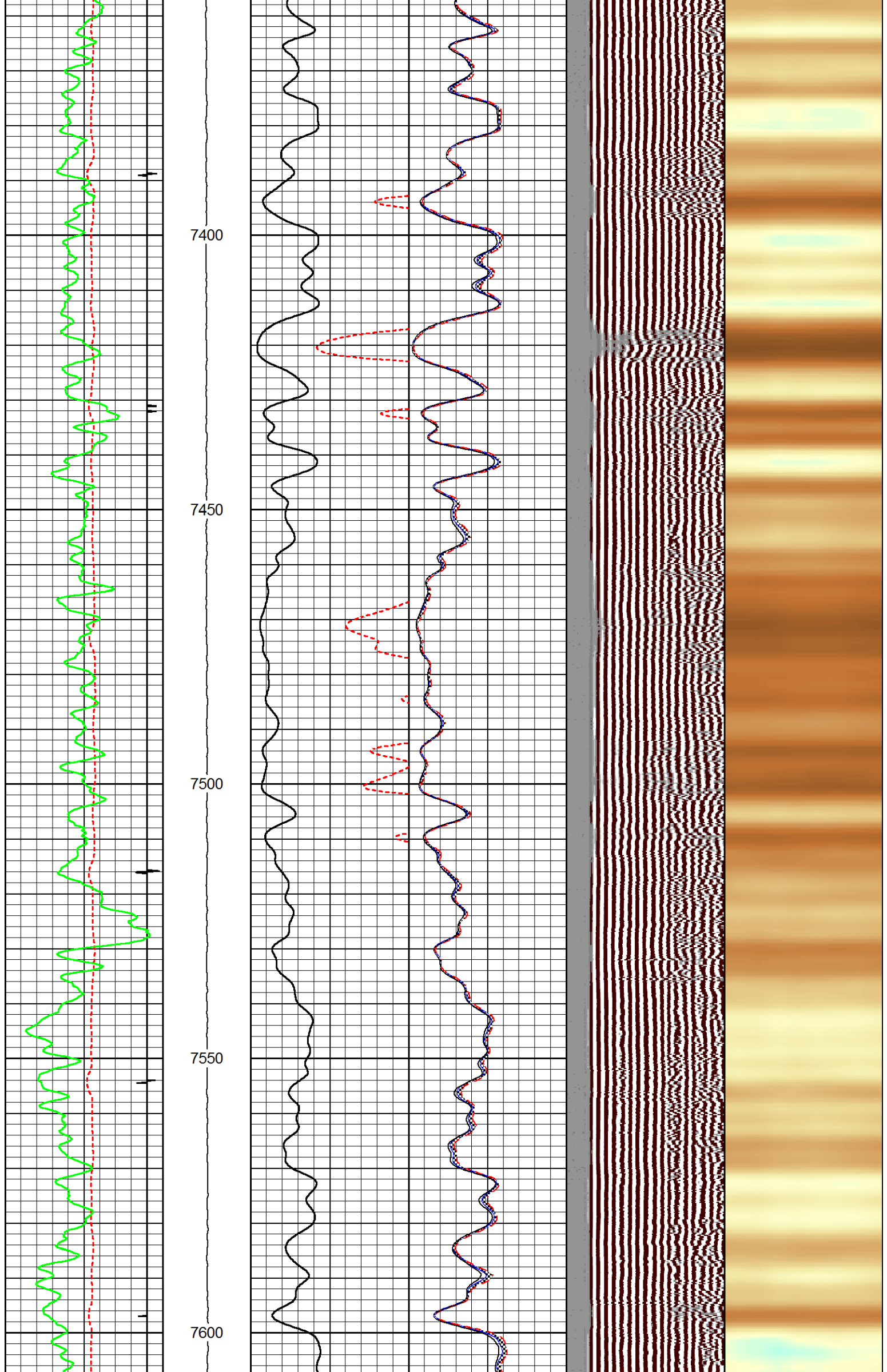
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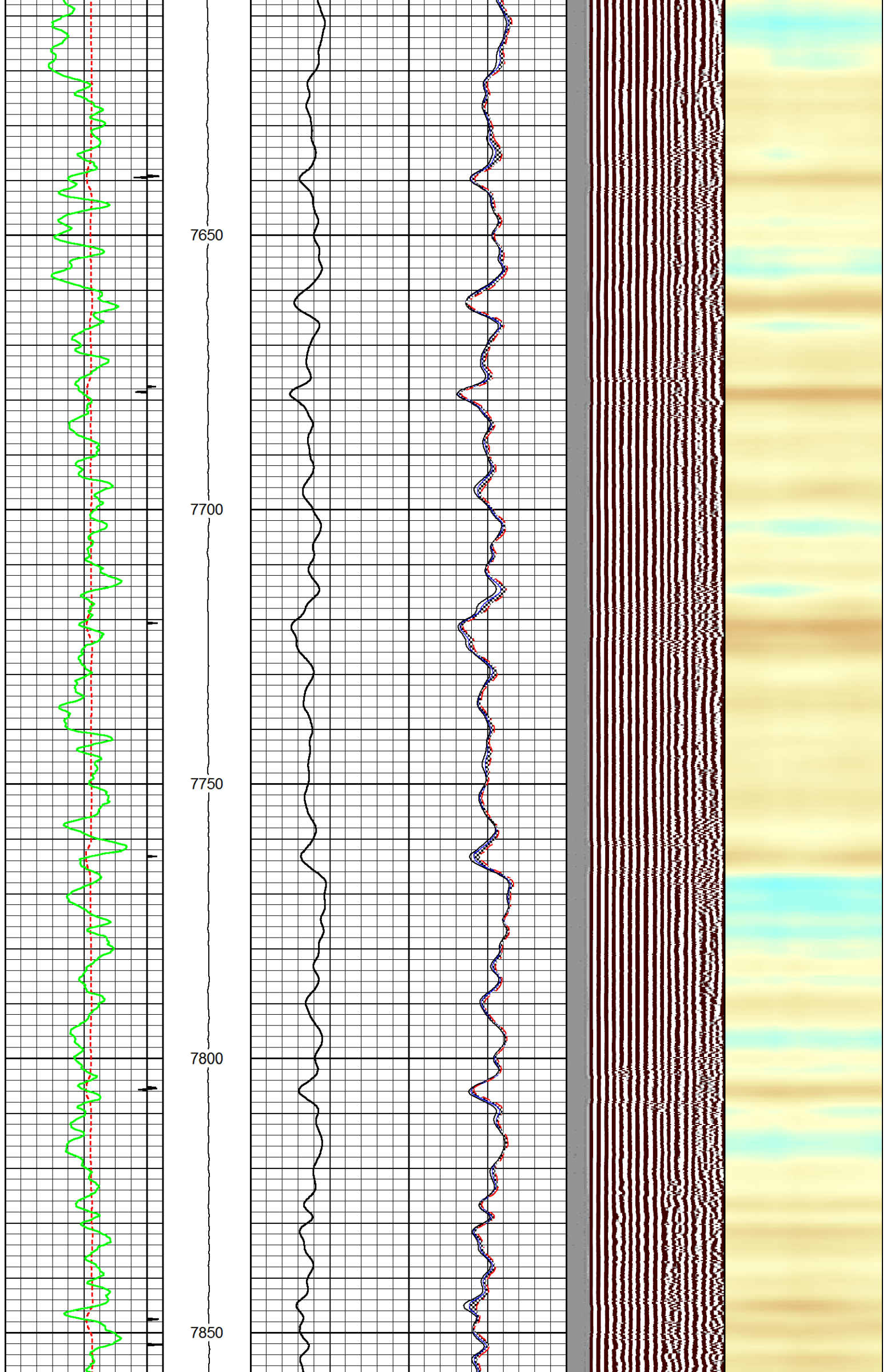


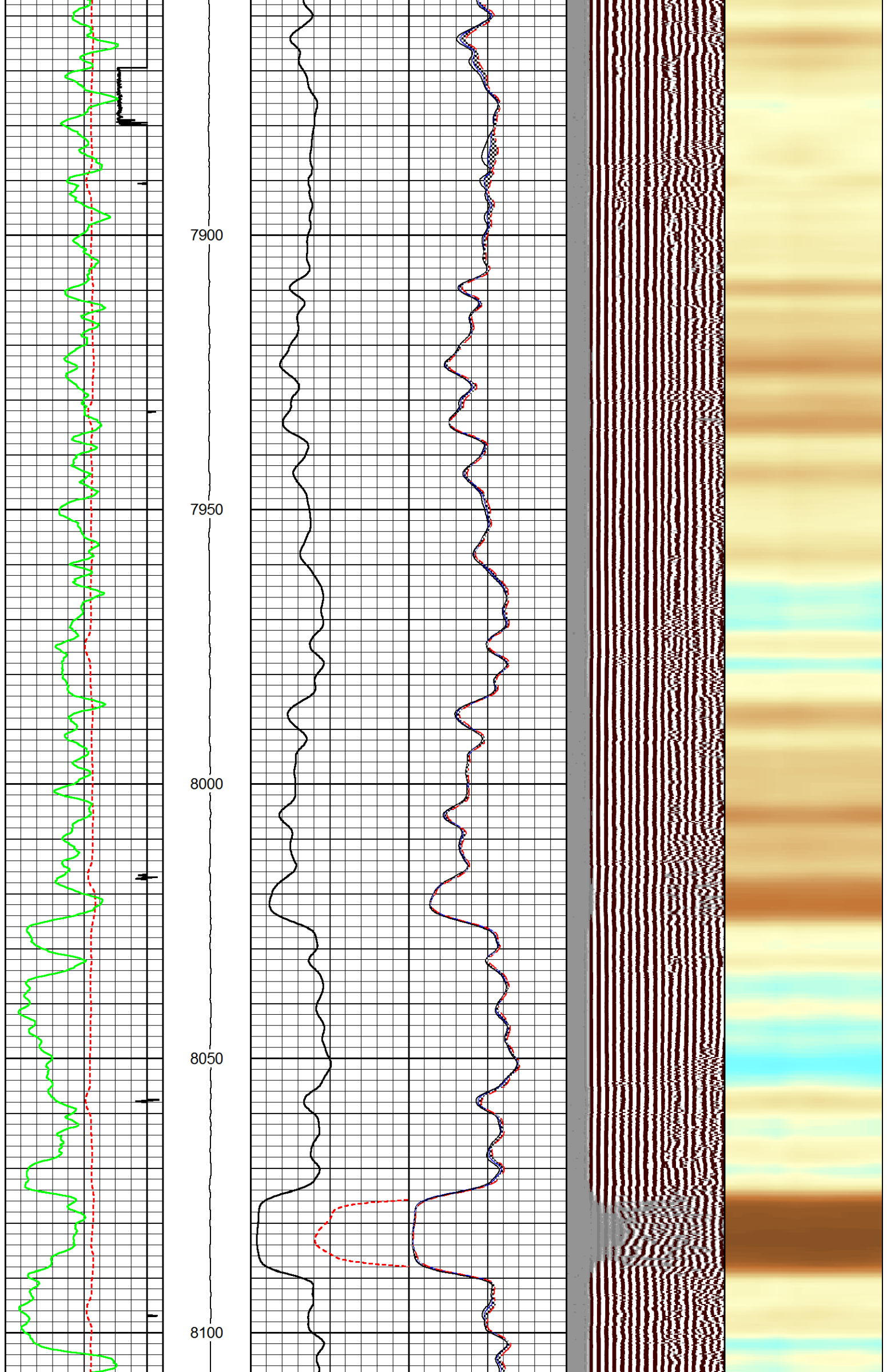


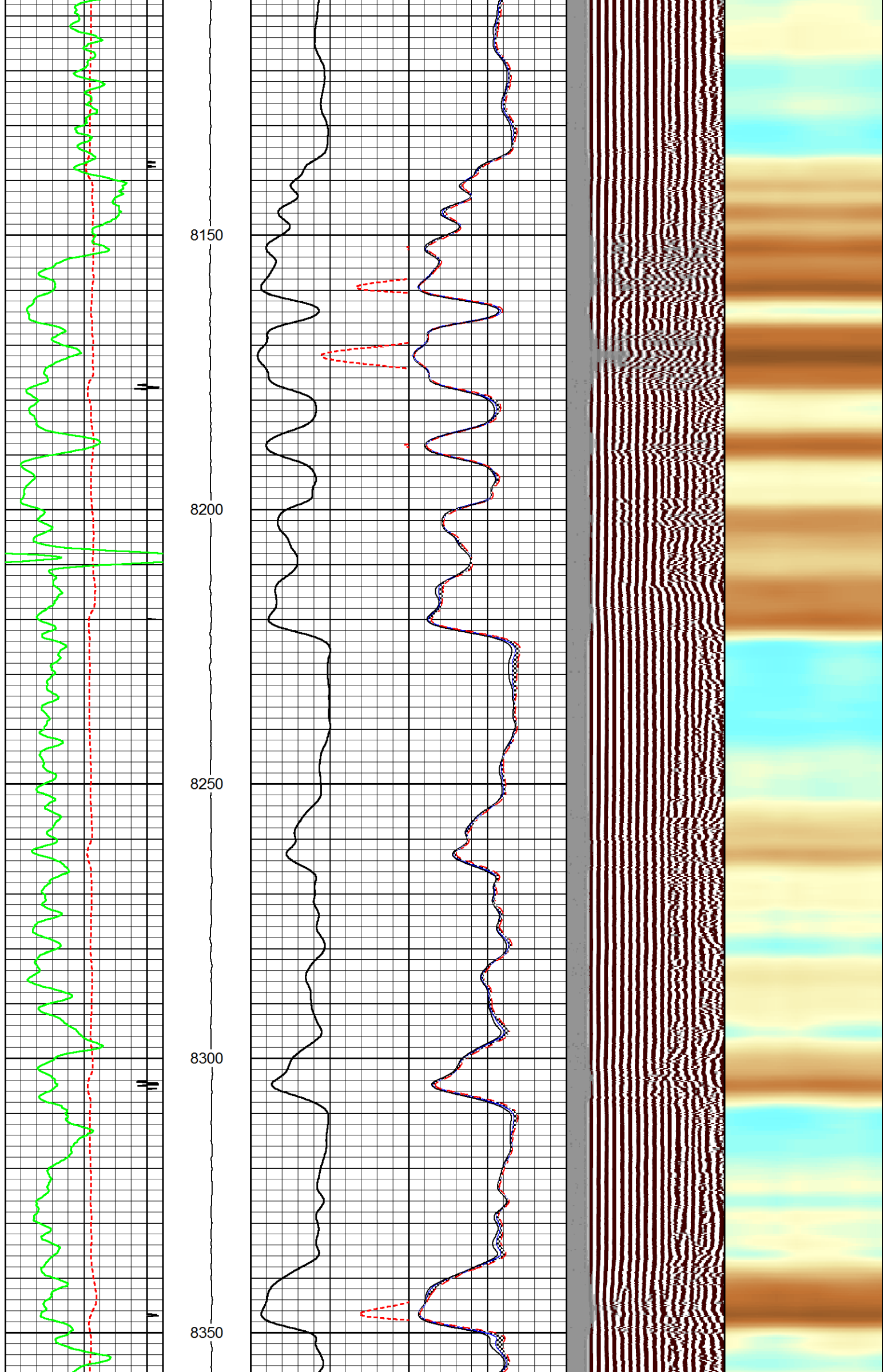


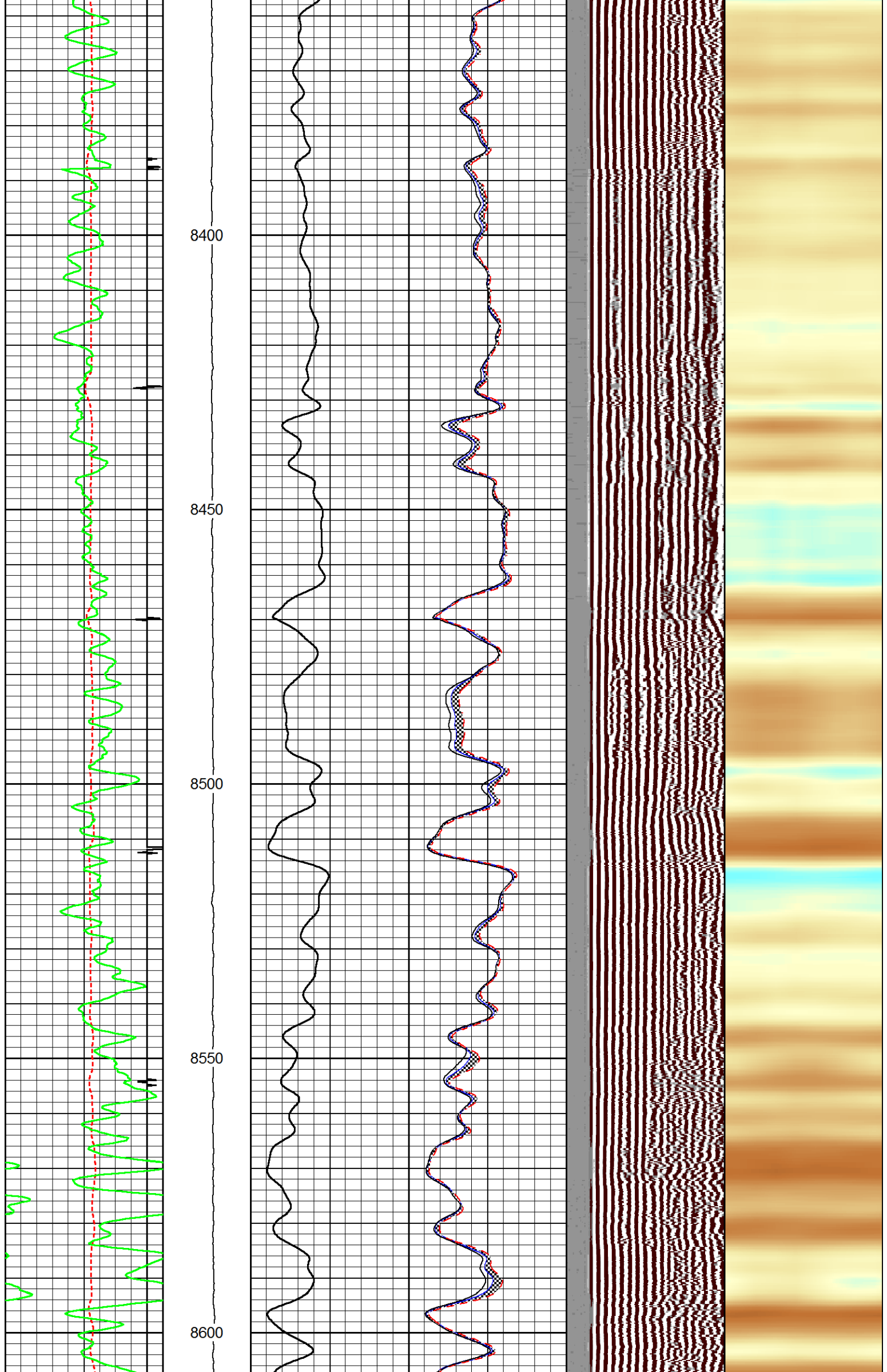




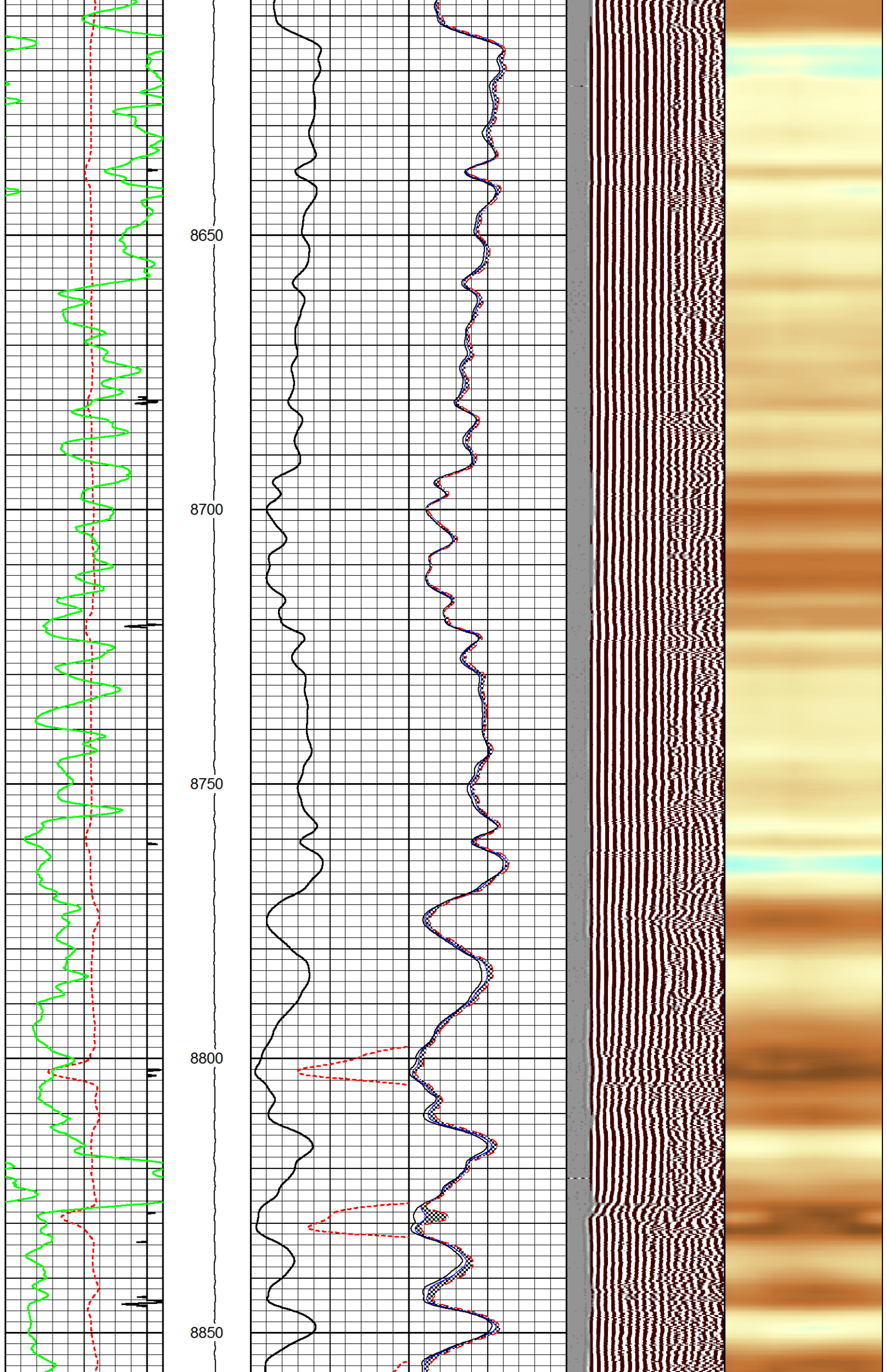


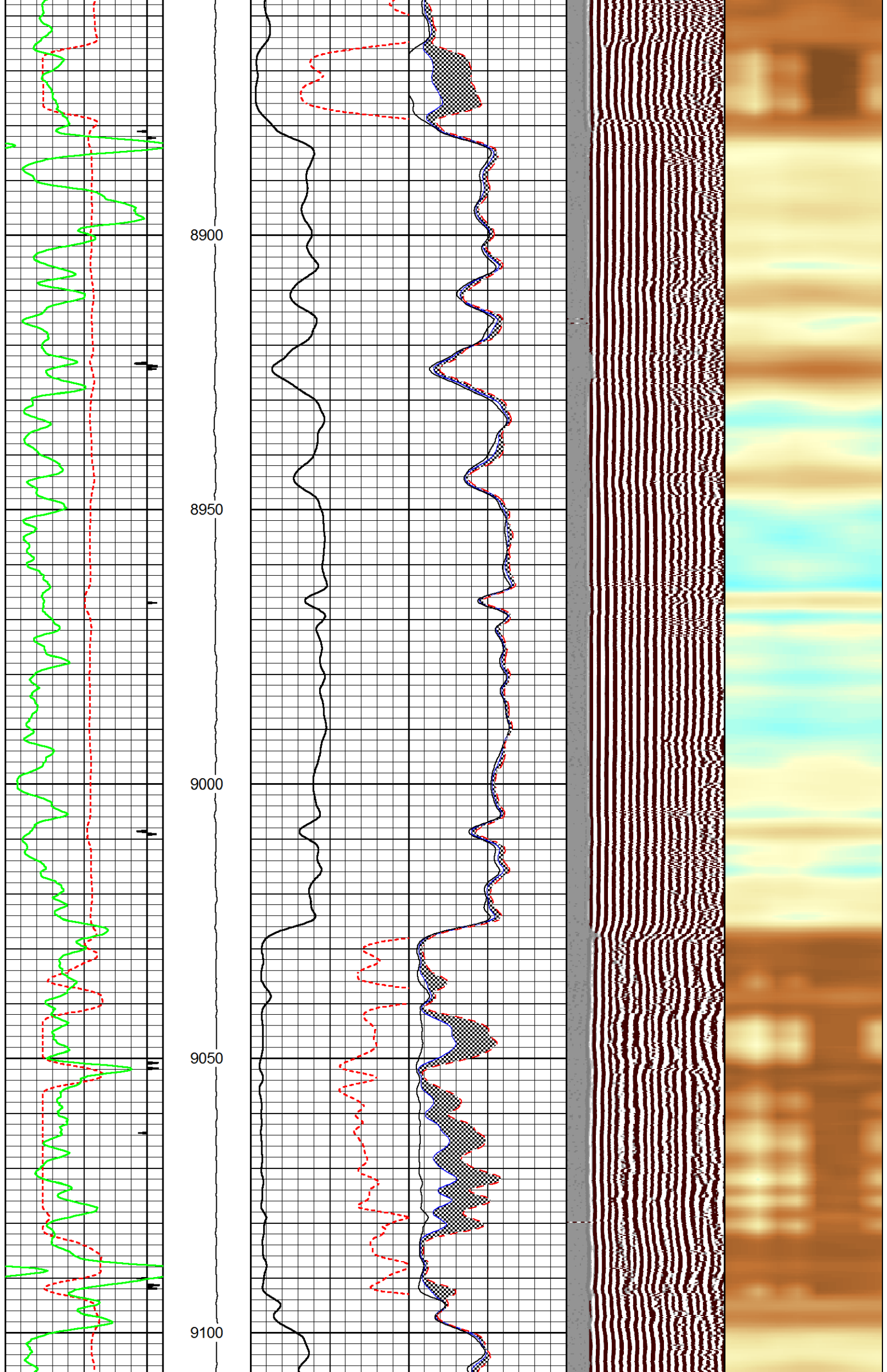


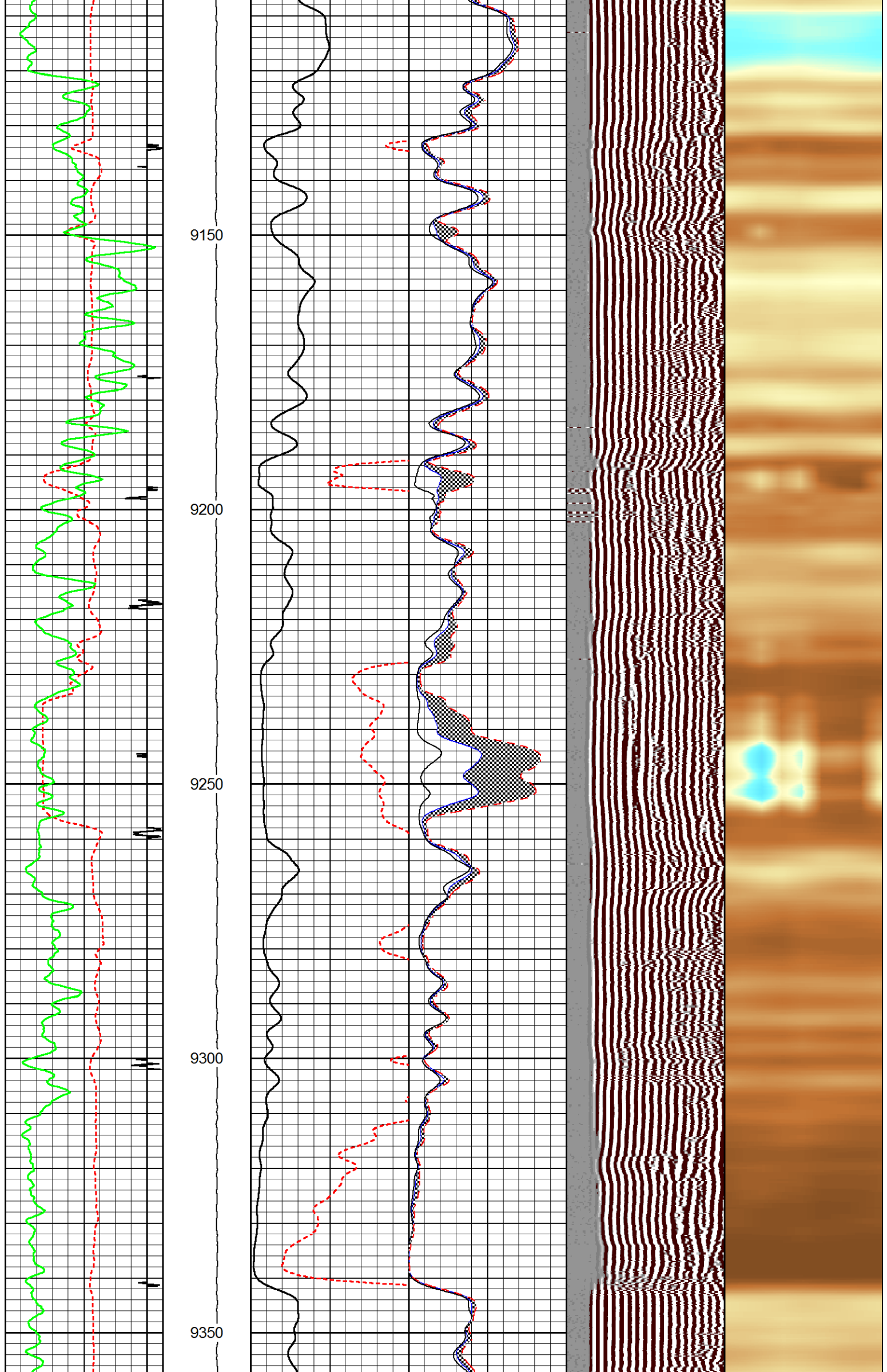




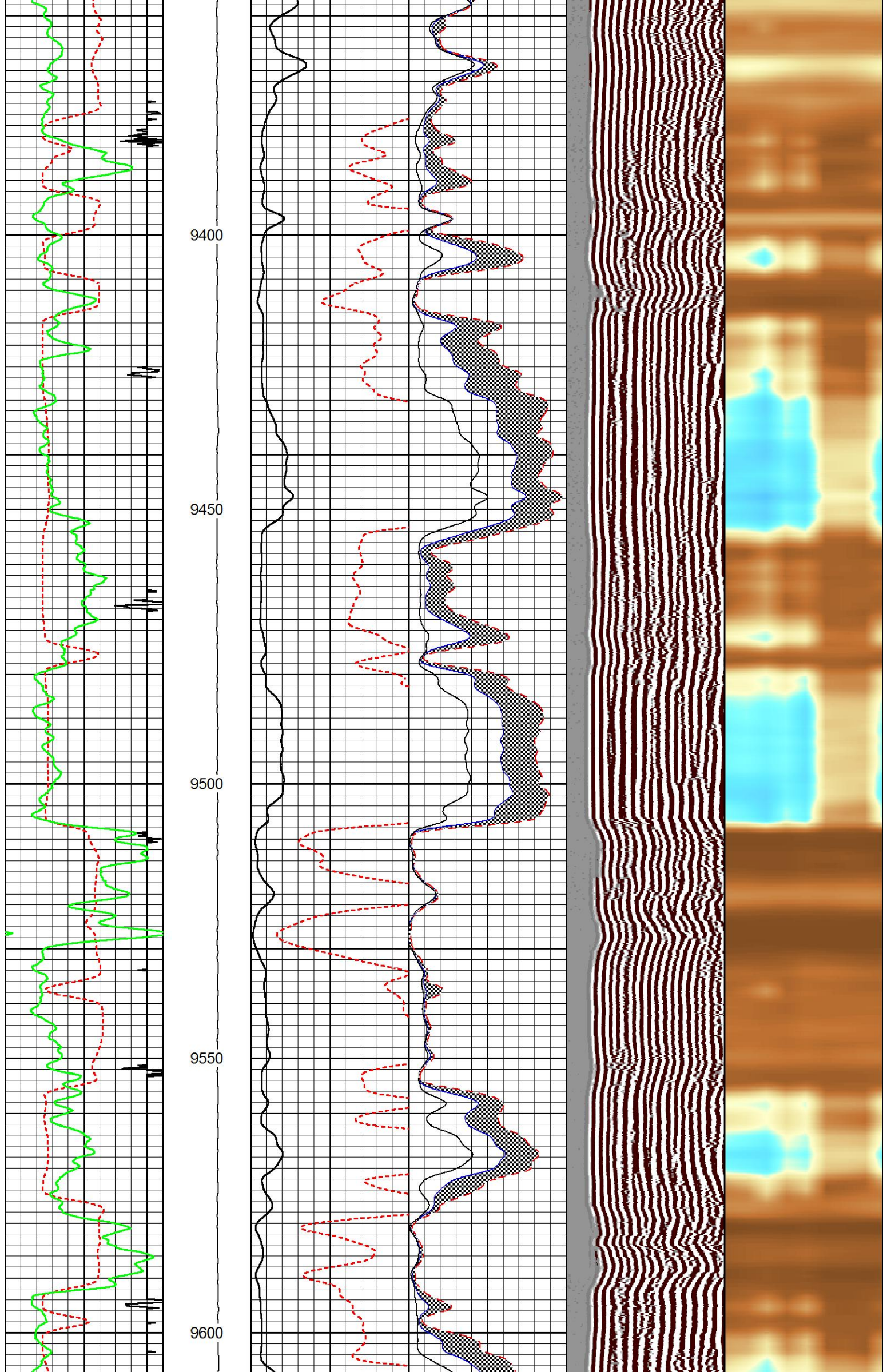




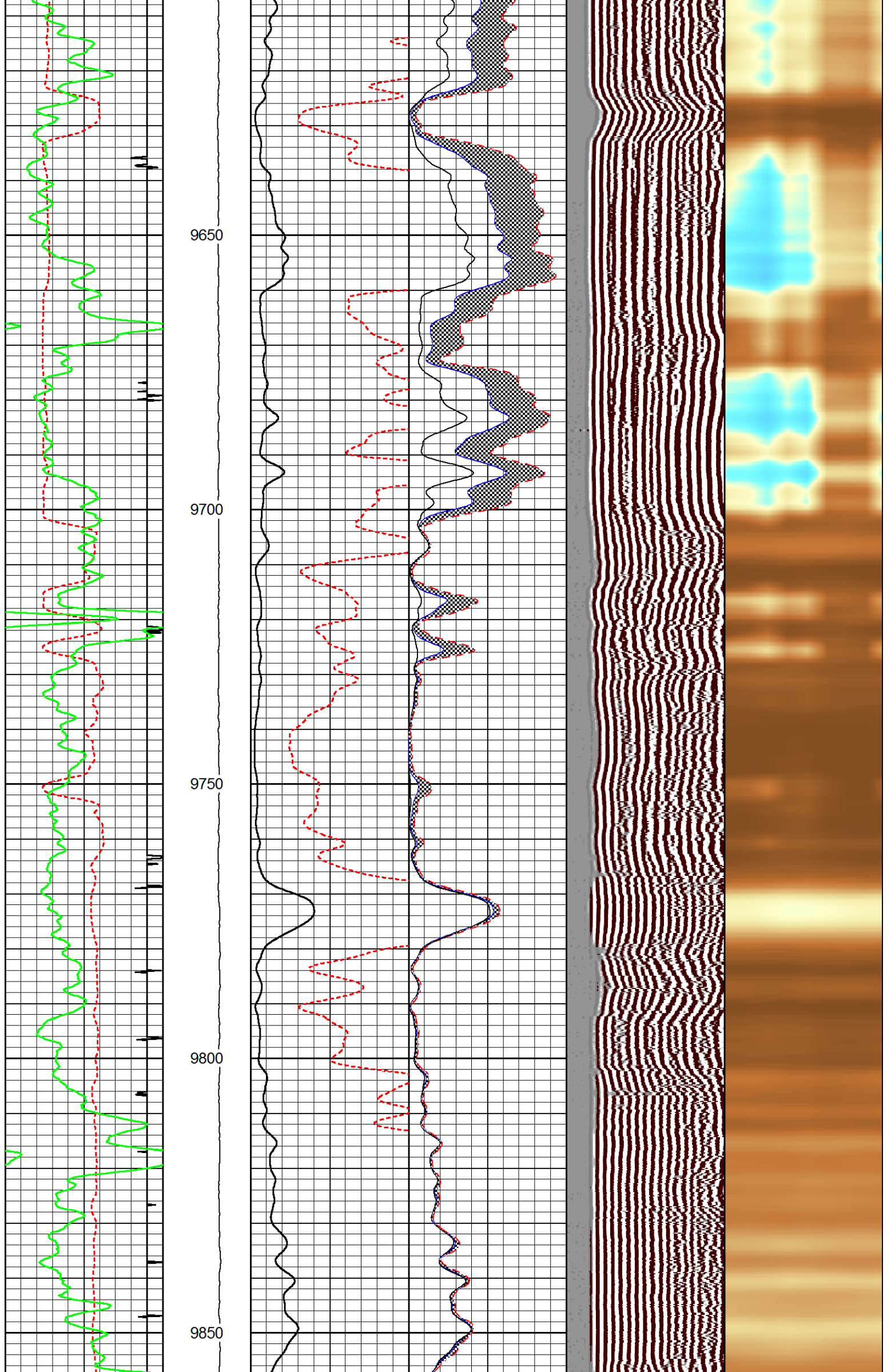


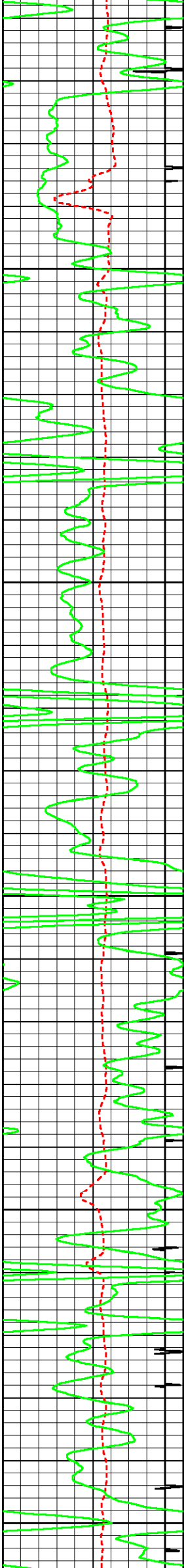












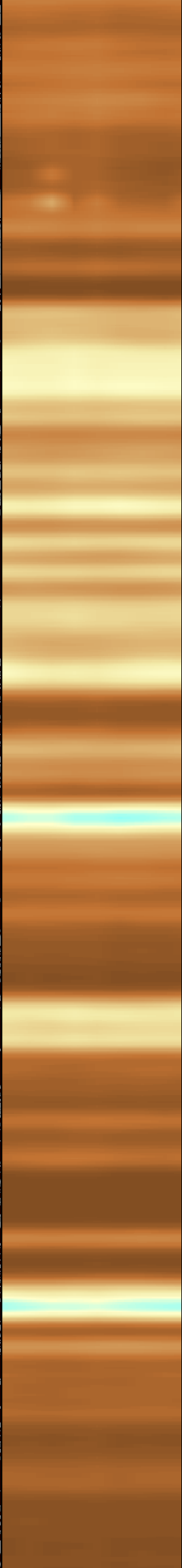
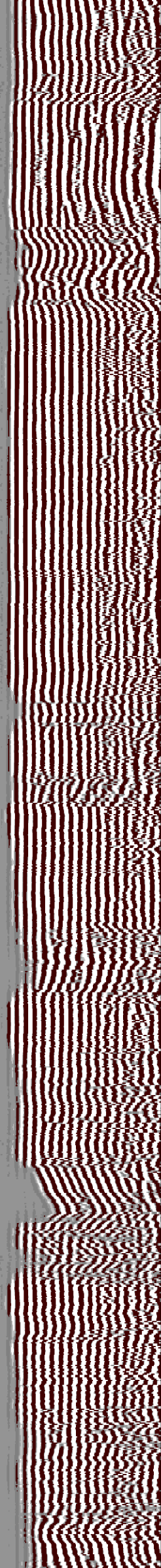
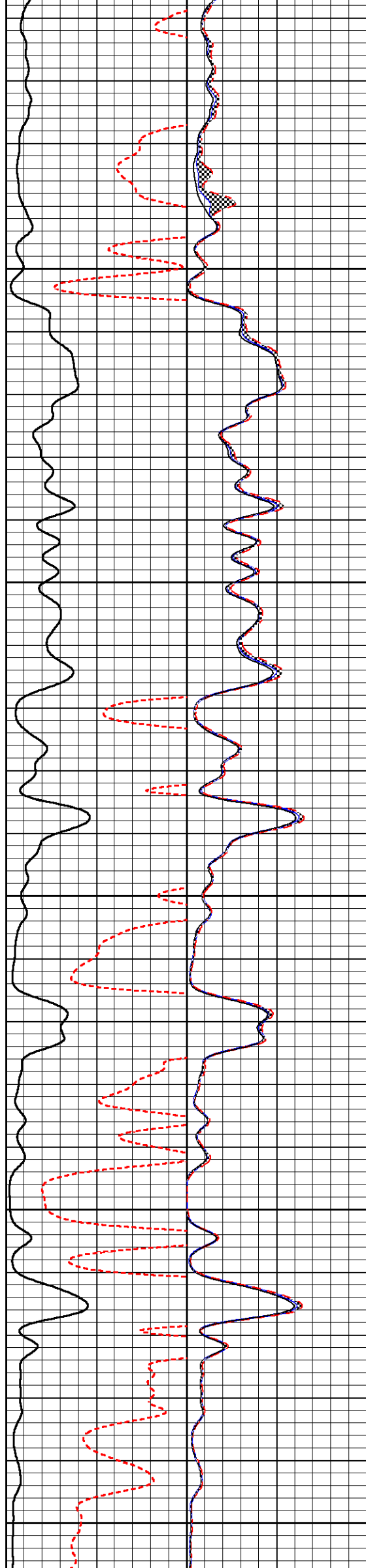
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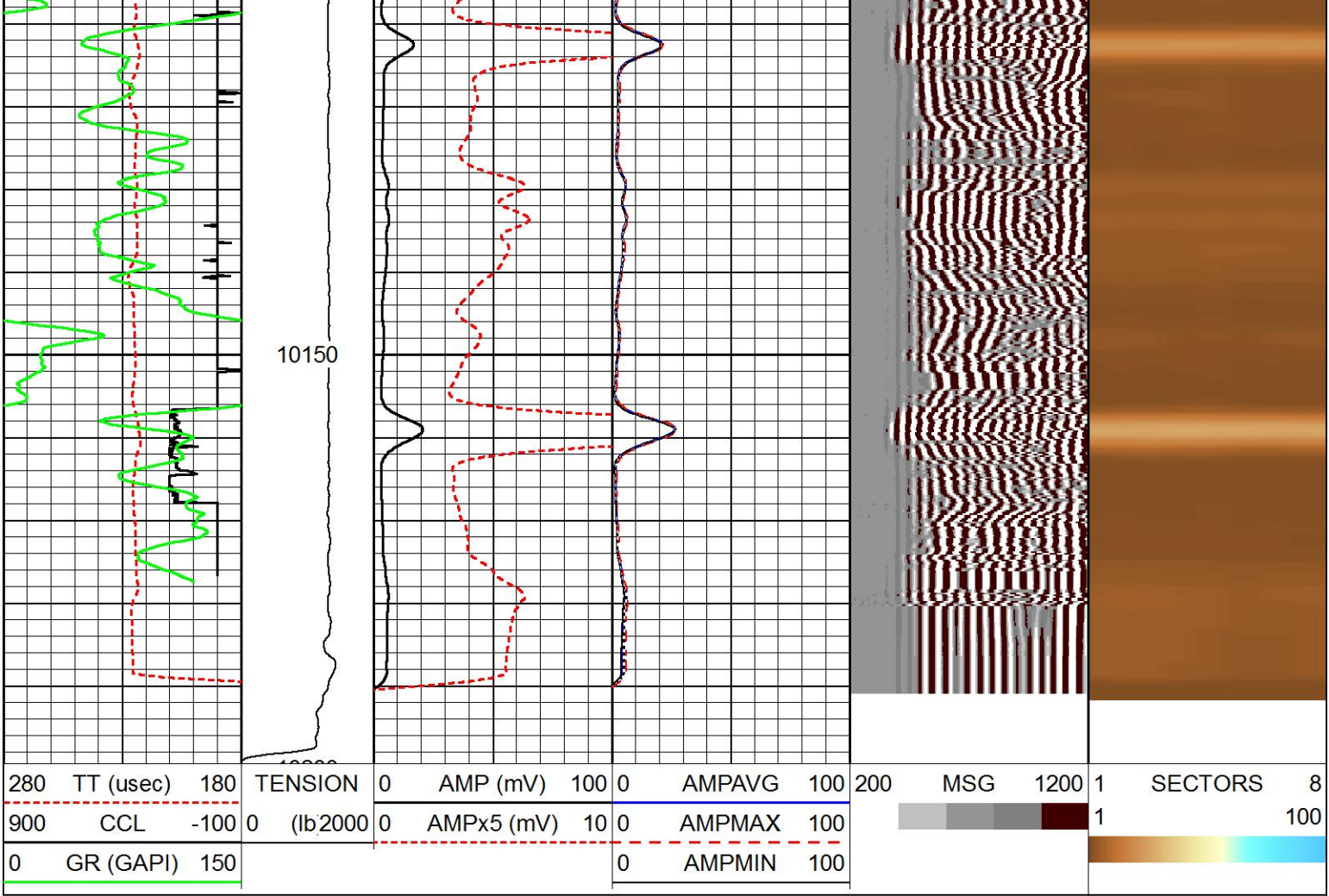
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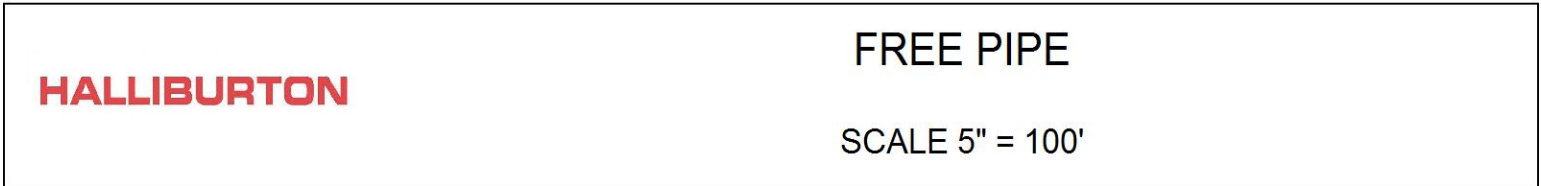




MAIN PASS

SCALE 5" = 100'

HALLIBURTON



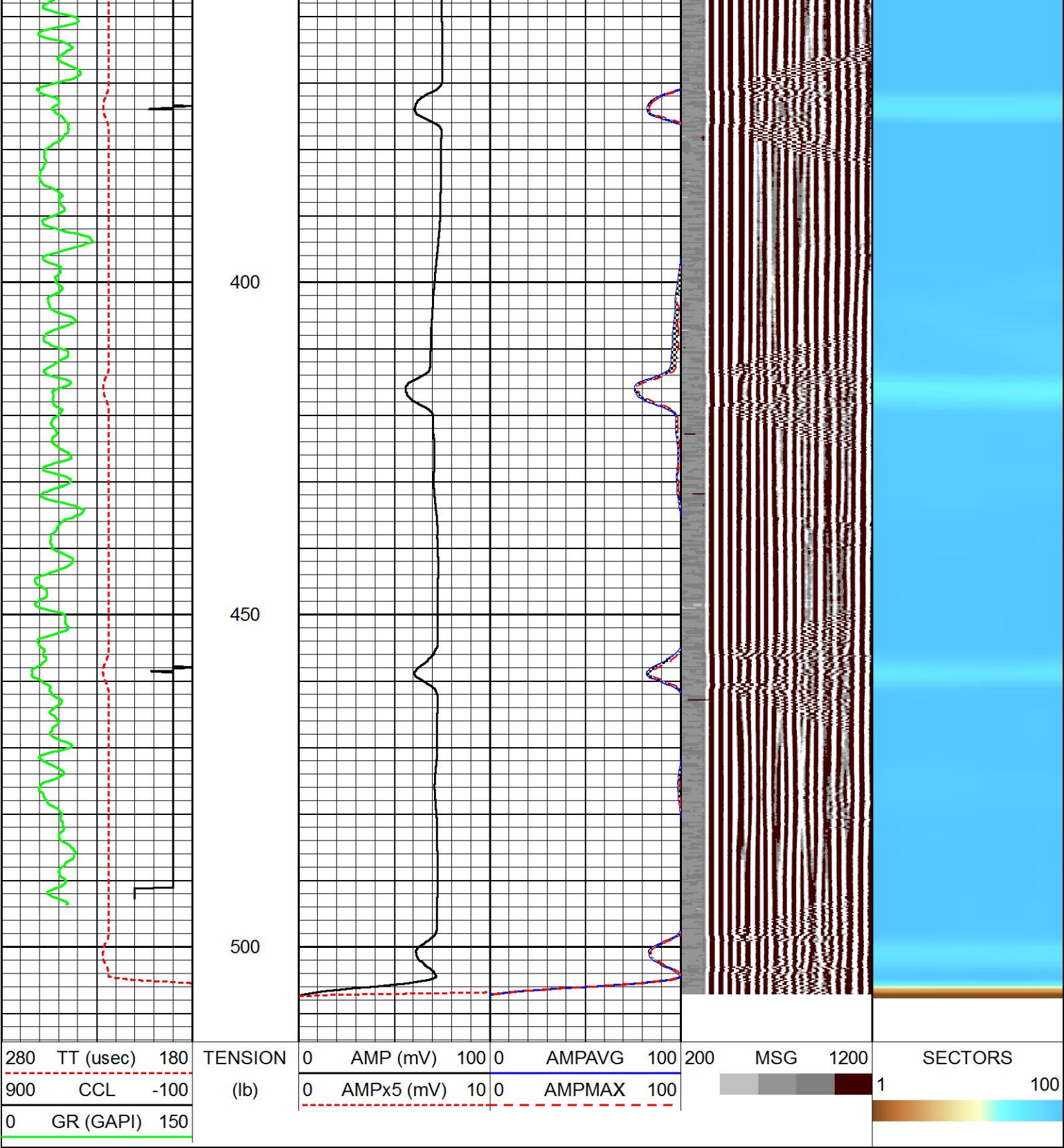
FREE PIPE

SCALE 5" = 100'

HALLIBURTON

Database File linnebur\_fs\_3\_61.db  
Dataset Pathname free1  
Presentation Format radial  
Dataset Creation Fri Jul 18 10:48:01 2014  
Charted by Depth in Feet scaled 1:240





HALLIBURTON

FREE PIPE

SCALE 5" = 100'

Calibration Report

Database File linnebur\_fs\_3\_61.db  
Dataset Pathname MAIN  
Dataset Creation Fri Jul 18 11:30:15 2014

Segmented Cement Bond Log Calibration Report

Serial Number: 11333931  
Tool Model: 004  
Calibration Casing Diameter: 5.500 in  
Calibration Depth: 514.233 ft

Master Calibration, performed Fri Jul 18 10:47:50 2014.



	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.044	0.971	1.000	71.921	76.543	-2.390
5FT	0.042	0.955	1.000	71.921	77.615	-2.221
S1	0.063	0.910	0.000	100.000	118.020	-7.392
S2	0.059	1.016	0.000	100.000	104.405	-6.116
S3	0.063	0.887	0.000	100.000	121.406	-7.693
S4	0.061	0.810	0.000	100.000	133.447	-8.075
S5	0.065	0.894	0.000	100.000	120.728	-7.890
S6	0.063	0.877	0.000	100.000	122.848	-7.748
S7	0.057	0.881	0.000	100.000	121.417	-6.935
S8	0.057	0.959	0.000	100.000	110.862	-6.328

Calibration Report						
			Serial Number:		11333931	
			Tool Model:		004	
			Performed:			
			Reference (degF)		Reading ( )	
Low:			0.000		0.000	
High:			1.000		1.000	
			Gain = 1.000		Offset = 0.000	

Gamma Ray Calibration Report						
Type / Serial:			002 / 10105786			
SHOP CALIBRATION		Fri Jul 18 10:23:12 2014				
	Counts/Sec.	Gain	Offset	Jig	Units	
Background	40.3				cps	
Calibrator	269.0				cps	
		1.8929			GAPI/cps	
PRIMARY VERIFICATION		Fri Jul 18 10:25:47 2014				
Background	77.9				cps	
Calibrator	507.3				cps	
Difference				429.4	GAPI	
BEFORE SURVEY VERIFICATION						
Background	0.0				cps	
Calibrator	0.0				cps	
Difference				0.0	GAPI	
AFTER SURVEY VERIFICATION						
Background	0.0				cps	
Calibrator	0.0				cps	
Difference				0.0	GAPI	


Log Variables

DatabaseD:\Warrior\_data\linnebur\_fs\_3\_61.db


Dataset field/well/run1/MAIN

Top - Bottom

BHTEMP_Src	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	MudWgt lb/gal
1	0	20	72	2	0.8	0	9.5
CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BITSIZE in		
0	5.5	0	0	180	7.875		

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			STNDCH-1_11_16_CH 1.6875 IN CABLE HEAD	1.50	1.44	1.00

CCL	21.33								
GR	19.07			TTTCU-002 (10105786) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00		
				AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00		
				CENT-Probe_275 Probe 2 3/4 Centralizer	2.83	2.75	20.00		
CBLROT	8.19								
CBLTEMP	8.19								
WVFS8	8.19								
WVFS7	8.19								
WVFS6	8.19			RBT-004 (11333931) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00		
WVFS5	8.19								
WVFS4	8.19								
WVFS3	8.19								
WVFS2	8.19								
WVFS1	8.19								
WVF3FT	8.19								
WVF5FT	7.19								
HVOLTX	0.00								
ITEMPX	0.00								
TSTAMP	0.00								
XHUCUR4	0.00								
XHUCUR3	0.00								
XHUCUR2	0.00			CENT-Probe_275 Probe 2 3/4 Centralizer	2.83	2.75	20.00		
XHUCUR1	0.00								
XHUSTAT	0.00								
XHUTEMP	0.00								
LLMTEN	0.00			BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20		
Dataset: linnebur_fs_3_61.db: field/well/run1/MAIN Total length: 24.90 ft Total weight: 285.20 lb O.D.: 3.13 in									

Well	LINNEDORF LIFTING SERVICE 0001100		
Field	WILDCAT		
County	ADAMS	State	CO
	RADIAL CEMENT BOND LOG		
	SCALE 5" = 100'		