



**CEMENT BOND LOG  
WITH GAMMA RAY**

Pioneer Energy Services

Comp. ANADARKO PETROLEUM CORP.  
Well HERMAN 2-32  
Field WATTENBERG  
Co. WELD  
State COLORADO

Company **ANADARKO PETROLEUM CORP.**  
Well **HERMAN 2-32**  
Field **WATTENBERG**  
County **WELD** State **COLORADO**

Location: **SE NW** API #: 05-123-14459  
1980' FNL & 1875' FWL  
LAT: 40.18310 LONG: -104.80380  
SEC 32 TWP 3N RGE 66W  
Permanent Datum **GL** Elevation **4890'**  
Log Measured From **GL** 11' Above Perm. Datum  
Drilling Measured From **KB** SOZ GUNS  
Elevation **4901'**  
D.F.  
G.L. **4890'**

Date of Service	1/30/2019			
Run Number	ONE			
Depth Driller or P8TD	7985'			
Depth Logger	4150'			
Bottom Log Interval	4150'			
Top Log Interval	SURFACE			
Open Hole Size	7-7/8"			
Type Fluid	WATER			
Fluid Level	SURFACE			
Fluid Density	N/A			
Max. Recorded Temperature	N/A			
Max. Wellhead Pressure	ZERO			
Wellhead Connection	PACK OFF			
Estimated Cement Top	3838'			
Unit Number	P-133			
Wireline Size	9/32"			
Location	FORT MORGAN CO.			
Recorded By	P LOPEZ			
Witnessed By	JOSE CASTILLO			
Tubing Record	Size	W/Ft	Top	Bottom
Surface Casing	8.63	24	SURFACE	536'
Production Casing	5.50	15.50	SURFACE	7979'
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.  
TOOL ZEROED @ GROUND LEVEL  
  
RBT TANKED CALIBRATED ON 1-2-19

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: P LOPEZ	RBL-DC	140141
Operator: D MARSHALL	GR CCL	110246
Operator: E ESTRADA		
Operator: M GARCIA		

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\anadarko\_herman 2-32\_0512314459\_20190131\_scb.  
Dataset field/well/run1/pass1.12/\_vars\_

## Top - Bottom

BOREID in 7.875	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 15.5	MAXAMPL mV 71.9	MINAMPL mV 0.7
MINATTN db/ft 0.08	PERFS 0	PPT usec 264	SRFTEMP degF 50	TDEPTH ft 4150		


## Variable Description

BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
CASEWGHT : Casing Weight  
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude  
MINATTN : Minimum Attenuation  
PERFS : Perforation Flag  
PPT : Predicted Pipe Time  
SRFTEMP : Surface Temperature  
TDEPTH : Total Depth

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			Cable Head-Titan_144 1 7/16" Titan Cable Head	1.03	1.44	2.00	
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00	
			PROBE-RBT-DIGITAL-RBL-DC (FW1401-48.75 Probe 2 3/4" Radii Bond-Corrosion Package	48.75	2.75	100.00	
WVFS8	14.81						
WVFS7	14.81						
WVFS6	14.81						
WVFS5	14.81						
WVFS4	14.81						
WVFS3	14.81						
WVFS2	14.81						
WVFS1	14.81						
WVFCAL	14.81						
WV3FT	14.81						
WV5FT	13.81						
HEADVOLT	10.63						
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00	

CCL	6.84		PROBE-GR/CCL-ANALOG-GR/CCL-A (1104.54 2 3/4" Gamma with CCL-Analog	2.75	60.00
GR	4.10		Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	15.00
			Bullnose-PROBE Probe Go Pin Pressure Cap	0.33	1.00
Dataset: anadarko_herman 2-32_0512314459_20190131_scbl.db: field/well/run1/pass1.12 Total length: 23.28 ft Total weight: 208.00 lb O.D.: 2.75 in					



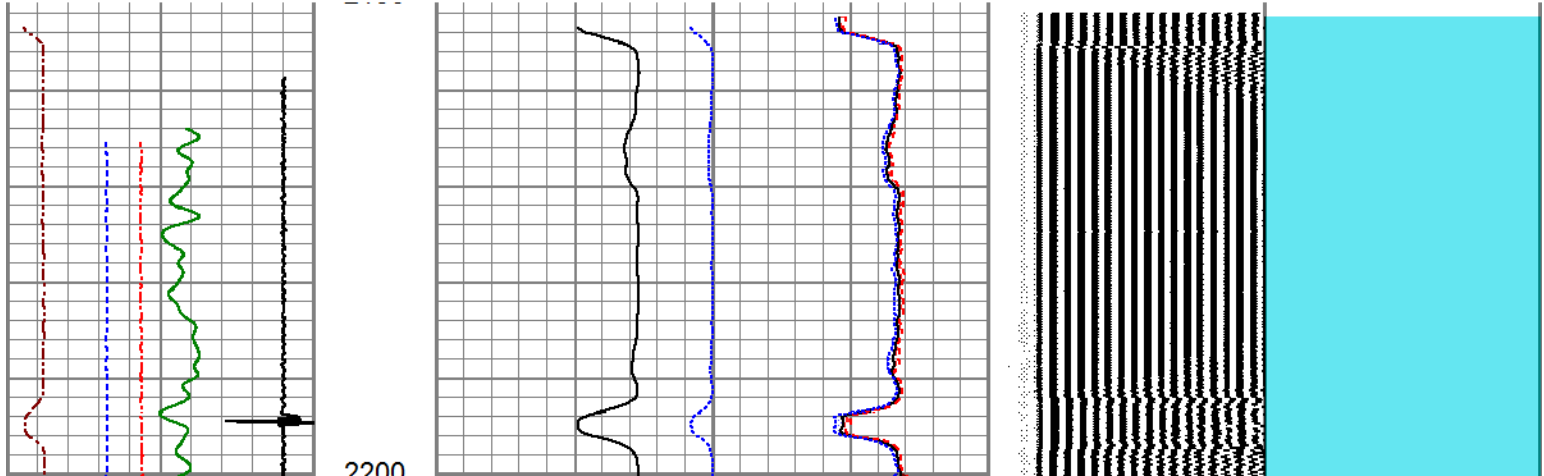
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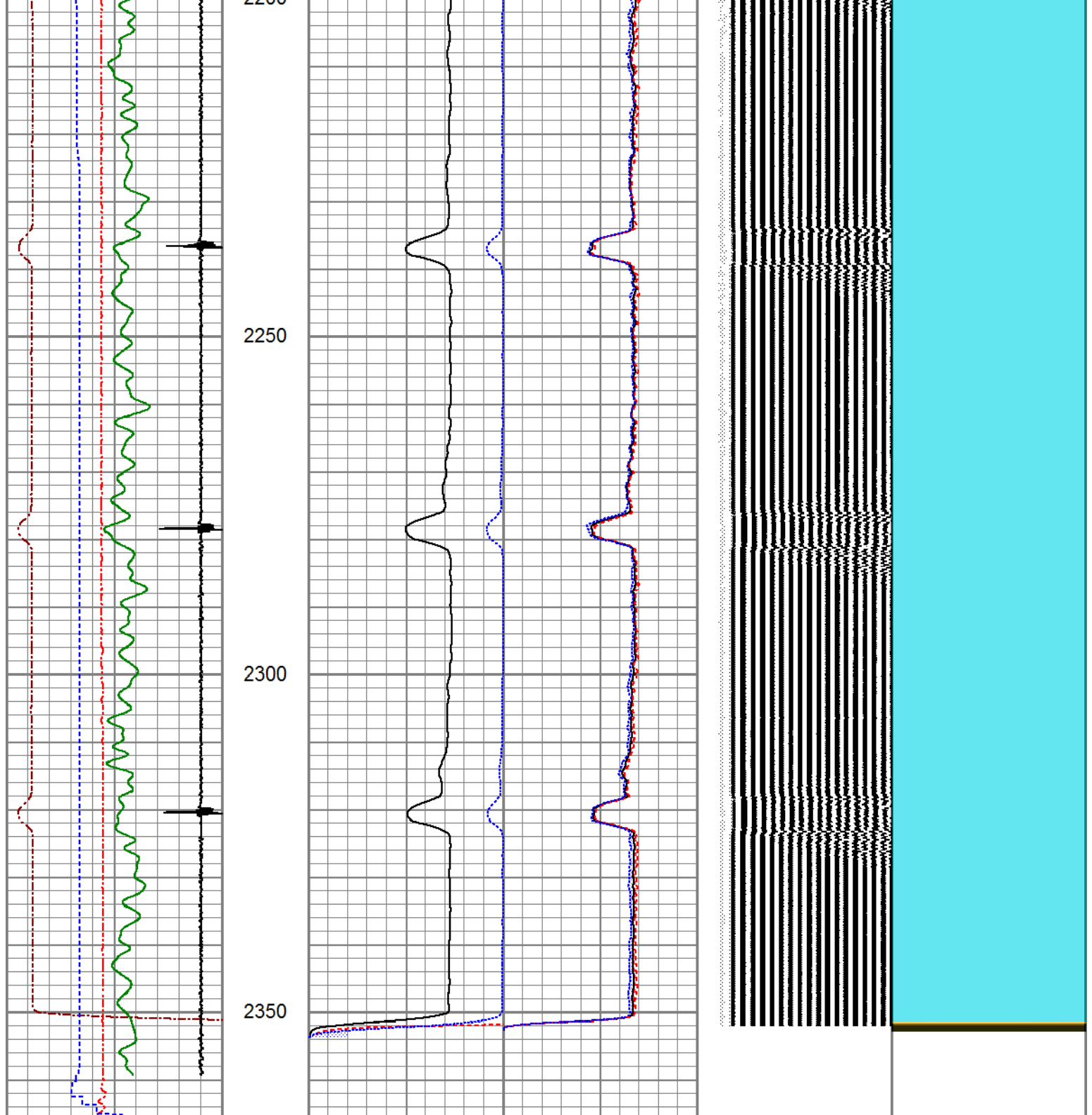
## FREE PIPE SECTION

### ZERO PSI APPLIED AT SURFACE

Database File	anadarko_herman 2-32_0512314459_20190131_scbl.db
Dataset Pathname	pass1.8
Presentation Format	pinr_scbl
Dataset Creation	Thu Jan 31 08:21:43 2019
Charted by	Depth in Feet scaled 1:240

3Ft Travel Time	3' Amplitude	Sector Amplitude Average	VDL	1	Sector Map	8
274 (usec) 174	0 (mV) 100	0 150	(usec) 1200			
-9 Collar Locator 1	3' Amplified Amplitude X 5	Sector Amplitude Maximum				
Gamma Ray	0 (mV) 20	0 150				
0 (GAPI) 150	1 Bond Index 0	Sector Amplitude Minimum				
LineTension		0 150				
0 (lb) 1000						
Line Speed						
-200 (ft/min) 200						





3Ft Travel Time		
274	(usec)	174
-----		
-9	Collar Locator	1
Gamma Ray		
0	(GAPI)	150
-----		
LineTension		
0	(lb)	1000
-----		
Line Speed		
-200	(ft/min)	200

3' Amplitude		
0	(mV)	100
-----		
3' Amplified Amplitude X 5		
0	(mV)	20
-----		
1	Bond Index	0

Sector Amplitude Average		200	1200
-----		0	150
Sector Amplitude Maximum		0	150
-----		0	150
Sector Amplitude Minimum		0	150

VDL		1	Sector Map	8
200	(usec)	1200		

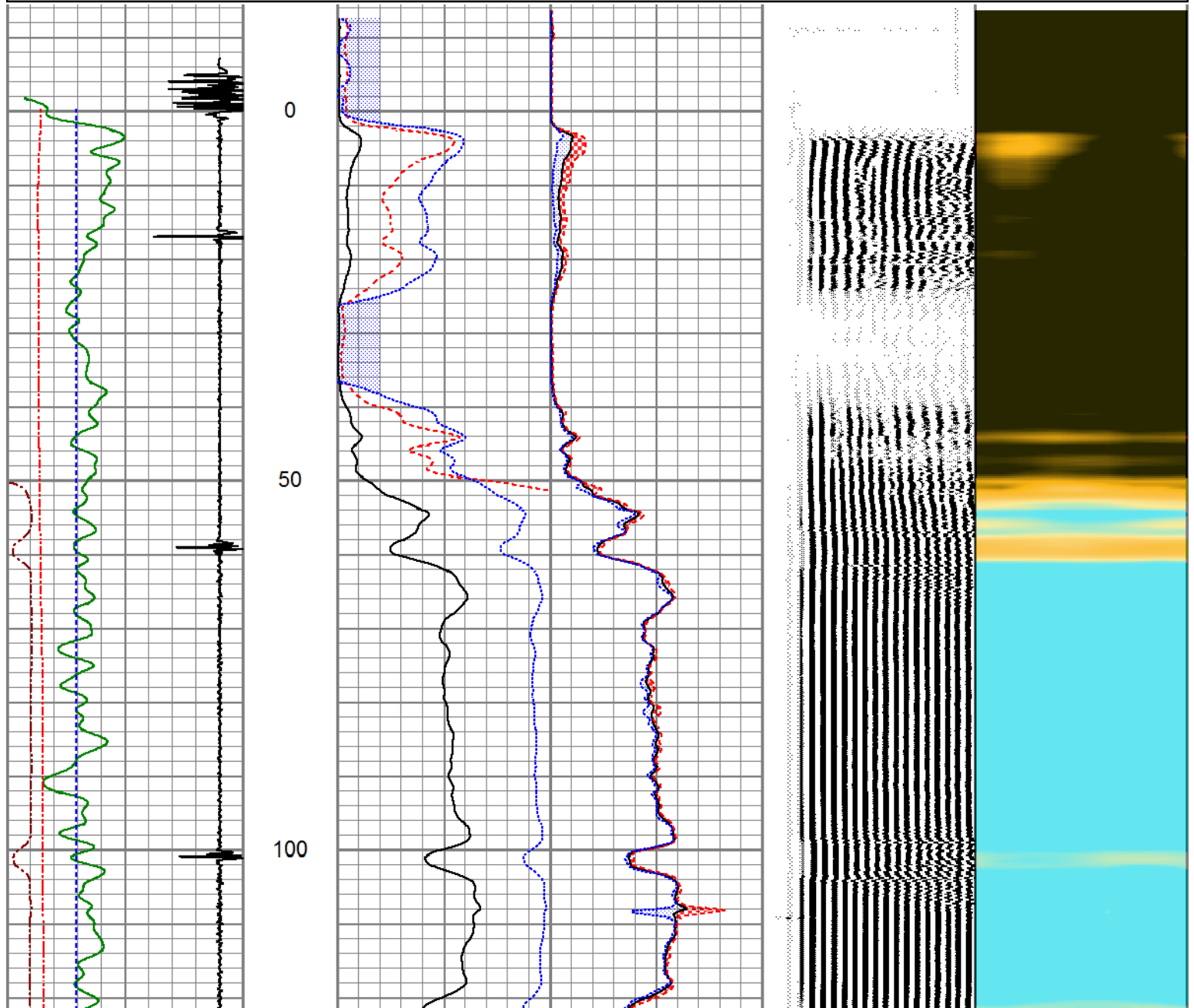
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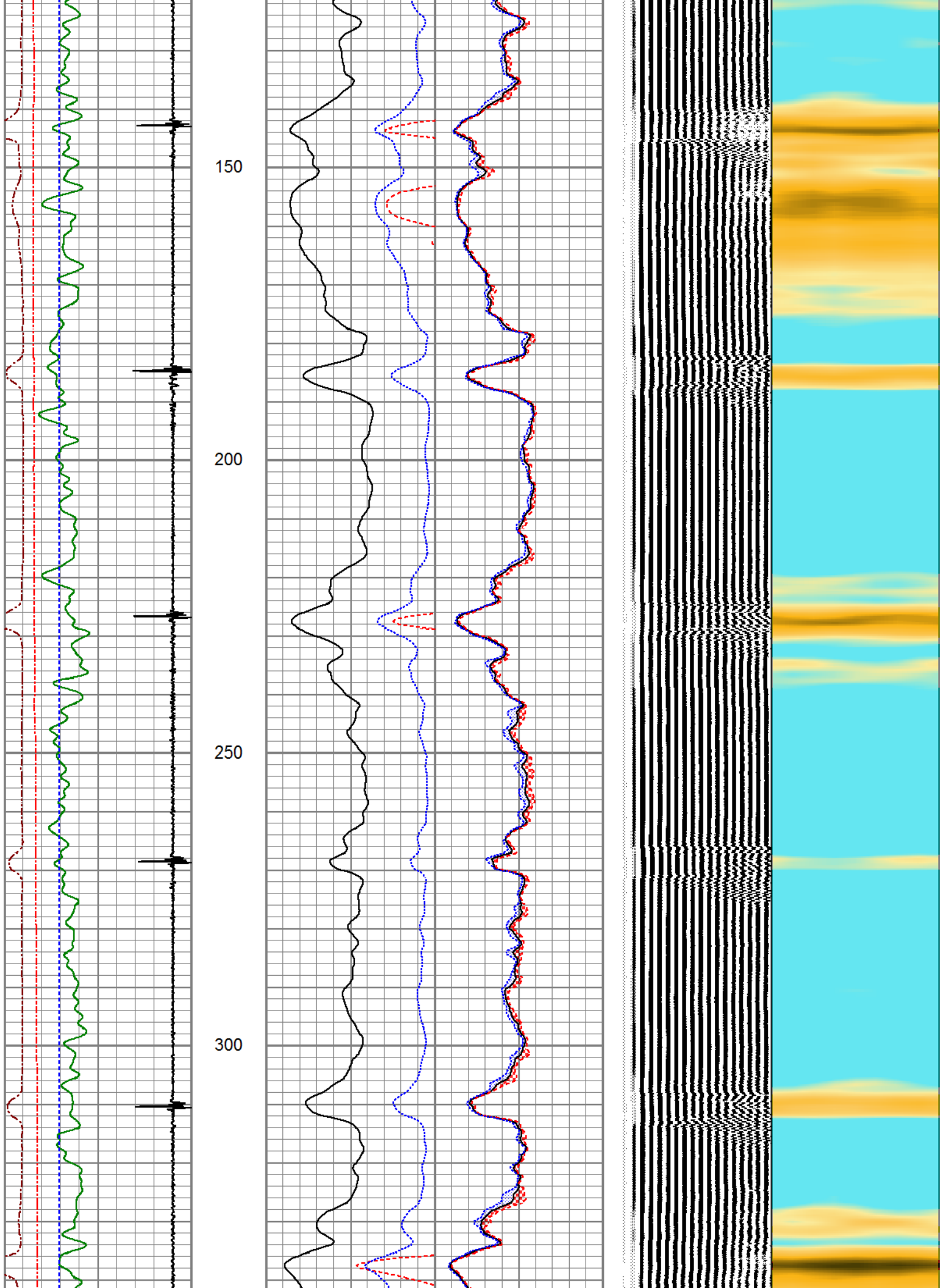


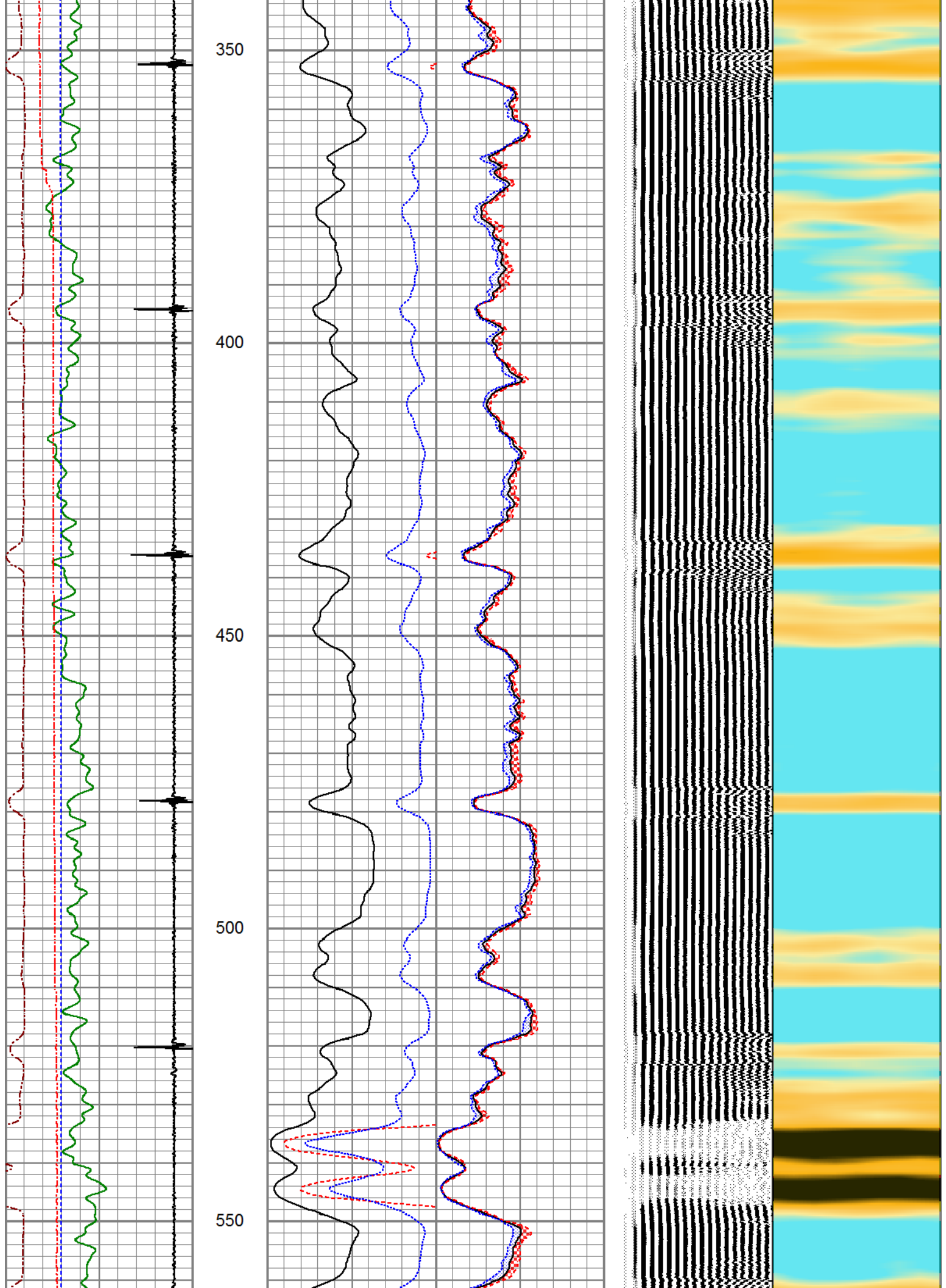
ZERO PSI APPLIED AT SURFACE

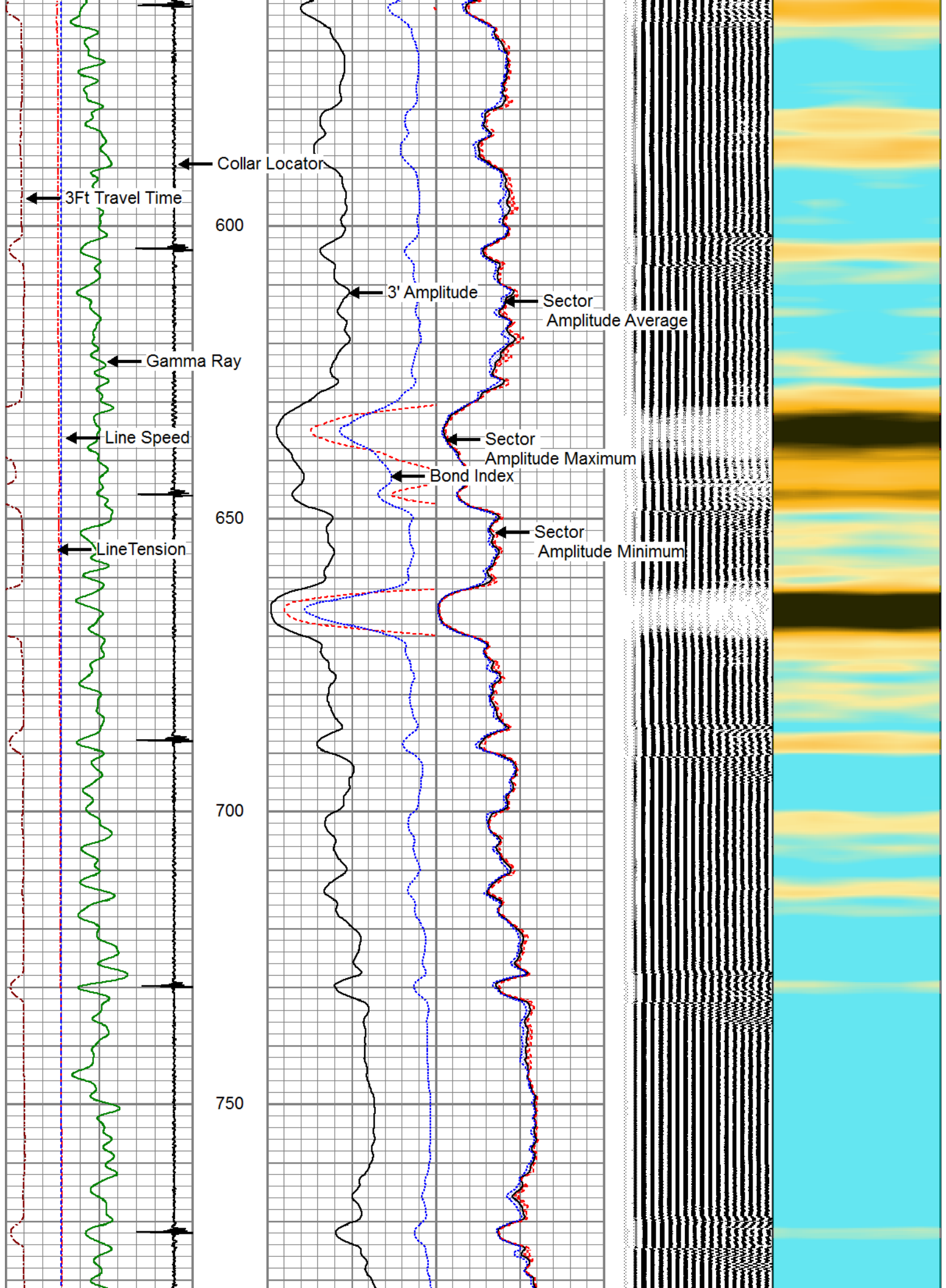
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 Dataset Pathname: pass1.12  
 Presentation Format: pinr\_scbl  
 Dataset Creation: Thu Jan 31 08:37:52 2019  
 Charted by: Depth in Feet scaled 1:240

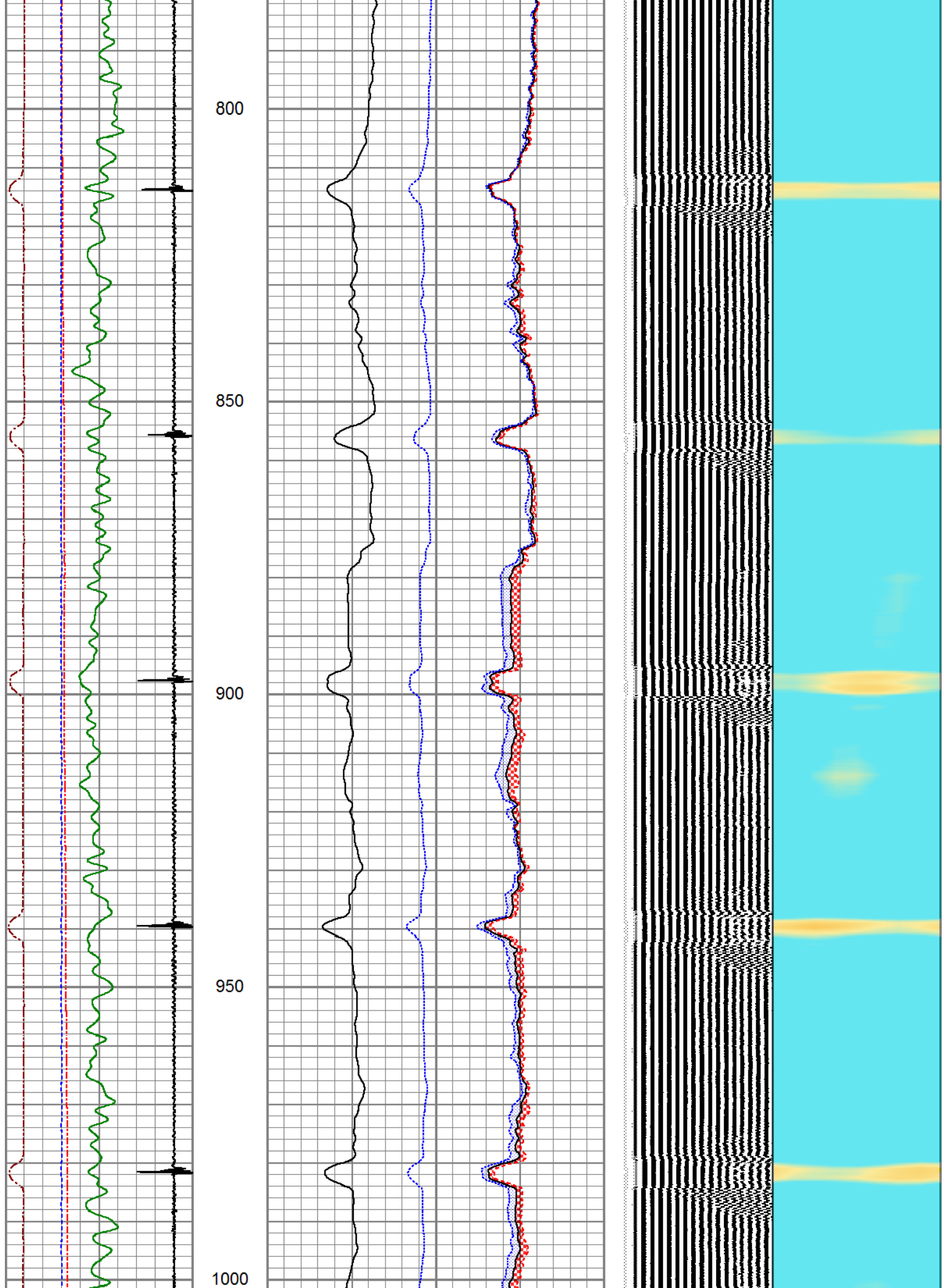
3Ft Travel Time 274 (usec) 174	3' Amplitude 0 (mV) 100	Sector Amplitude Average	200	VDL (usec) 1200	1 Sector Map 8
-9 Collar Locator 1		0 150			
Gamma Ray 0 (GAPI) 150	3' Amplified Amplitude X 5 0 (mV) 20	Sector Amplitude Maximum	0 150		
LineTension 0 (lb) 1000	1 Bond Index 0	Sector Amplitude Minimum	0 150		
Line Speed -200 (ft/min) 200					

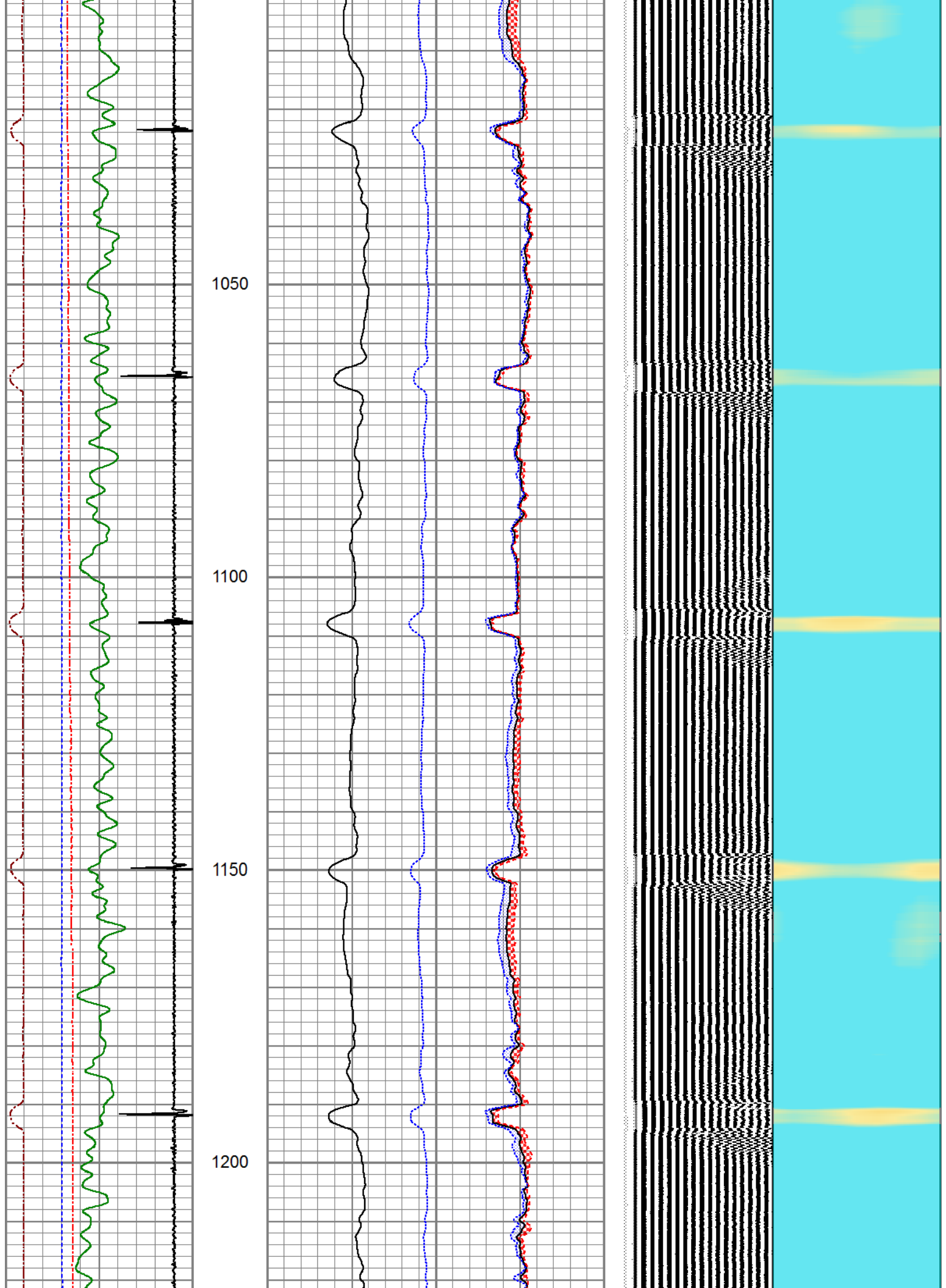


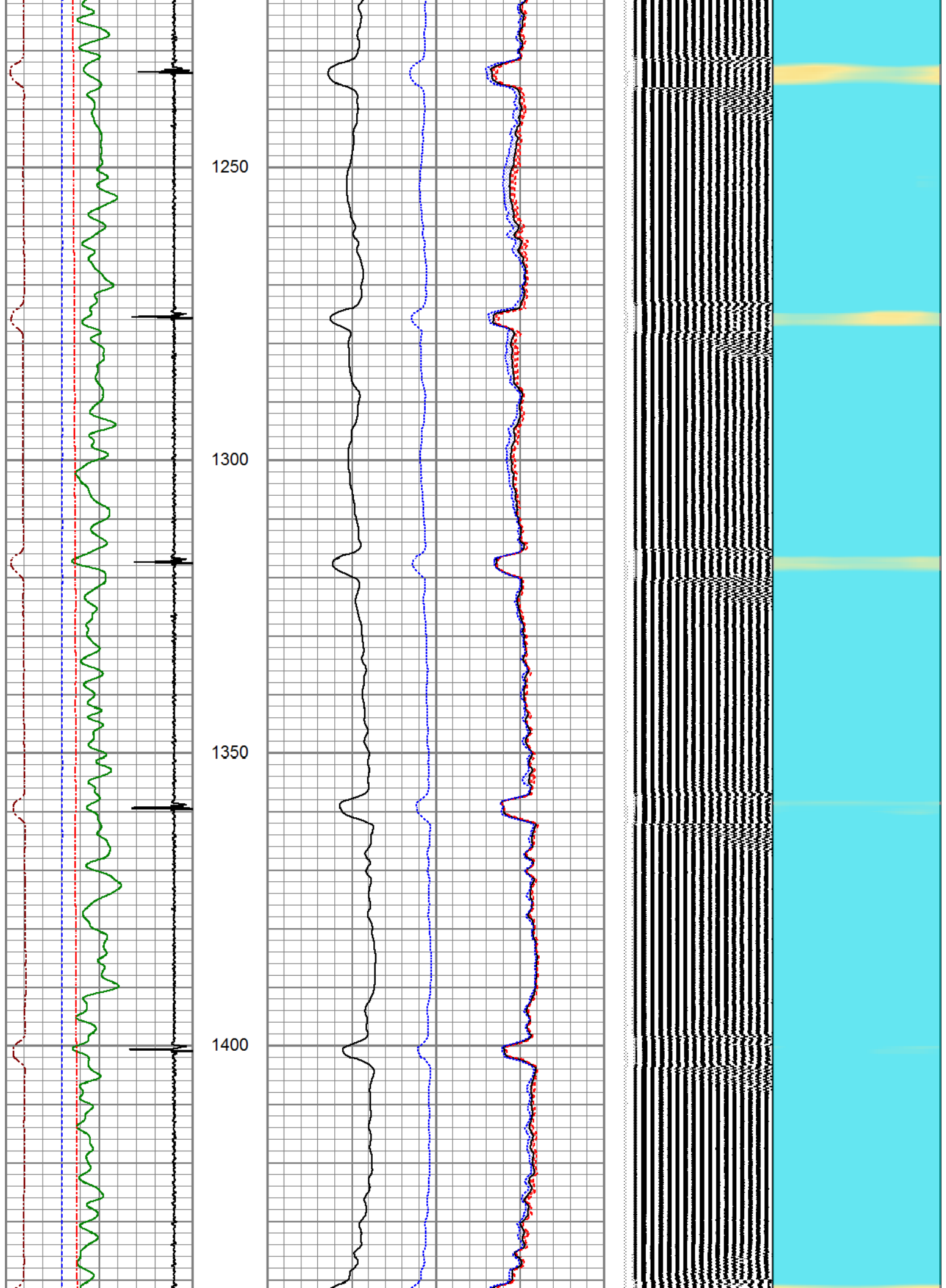


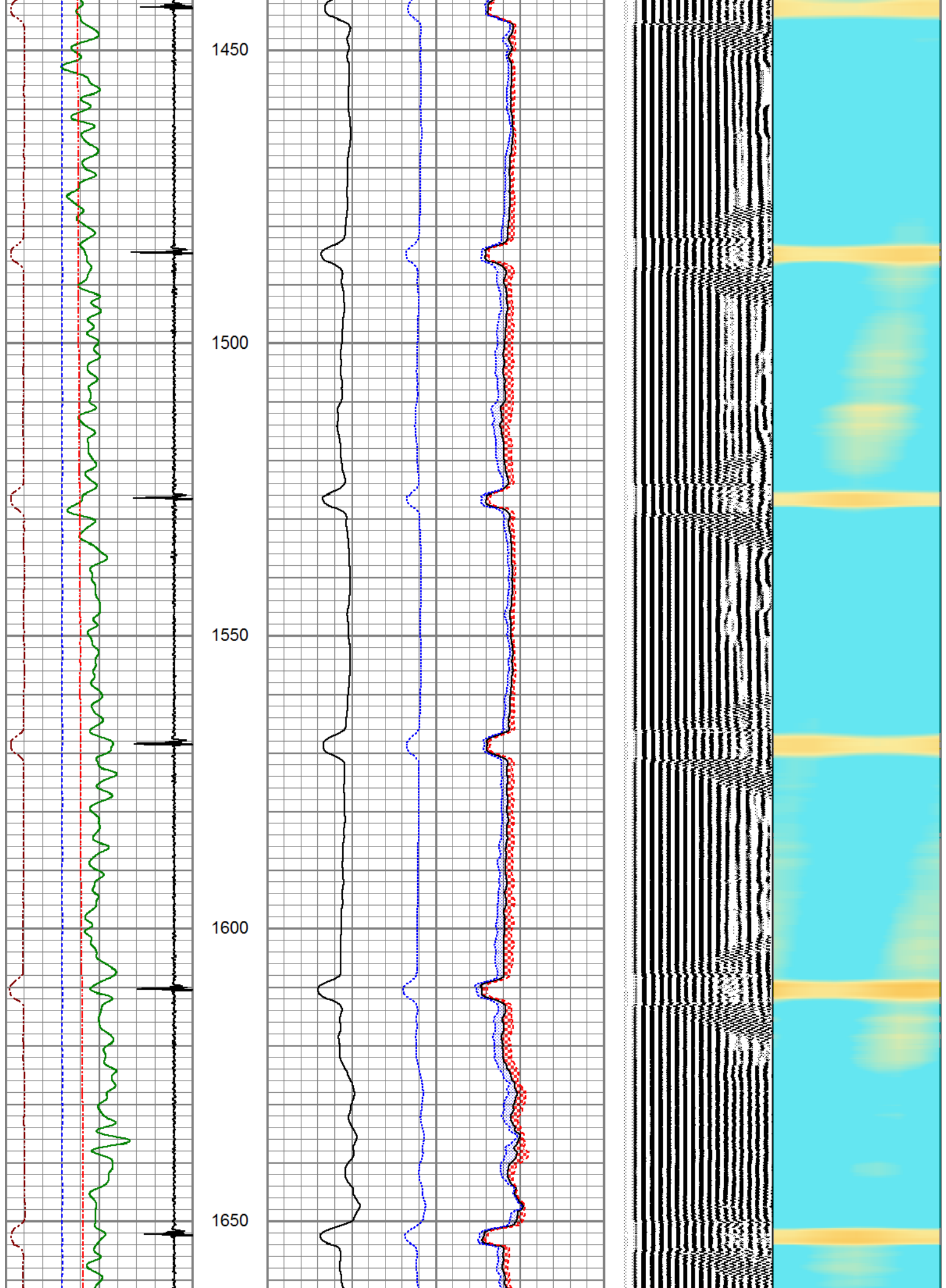


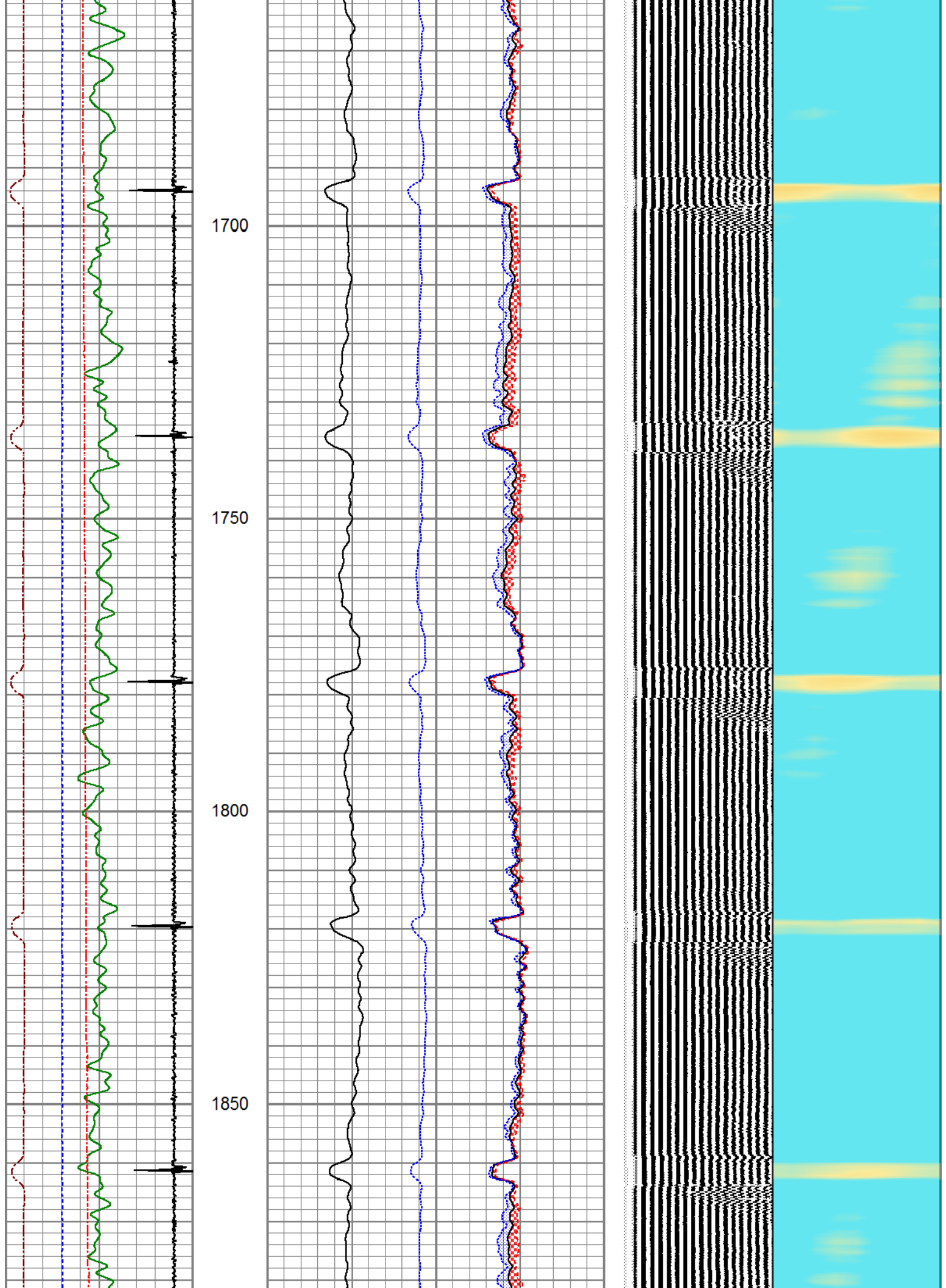


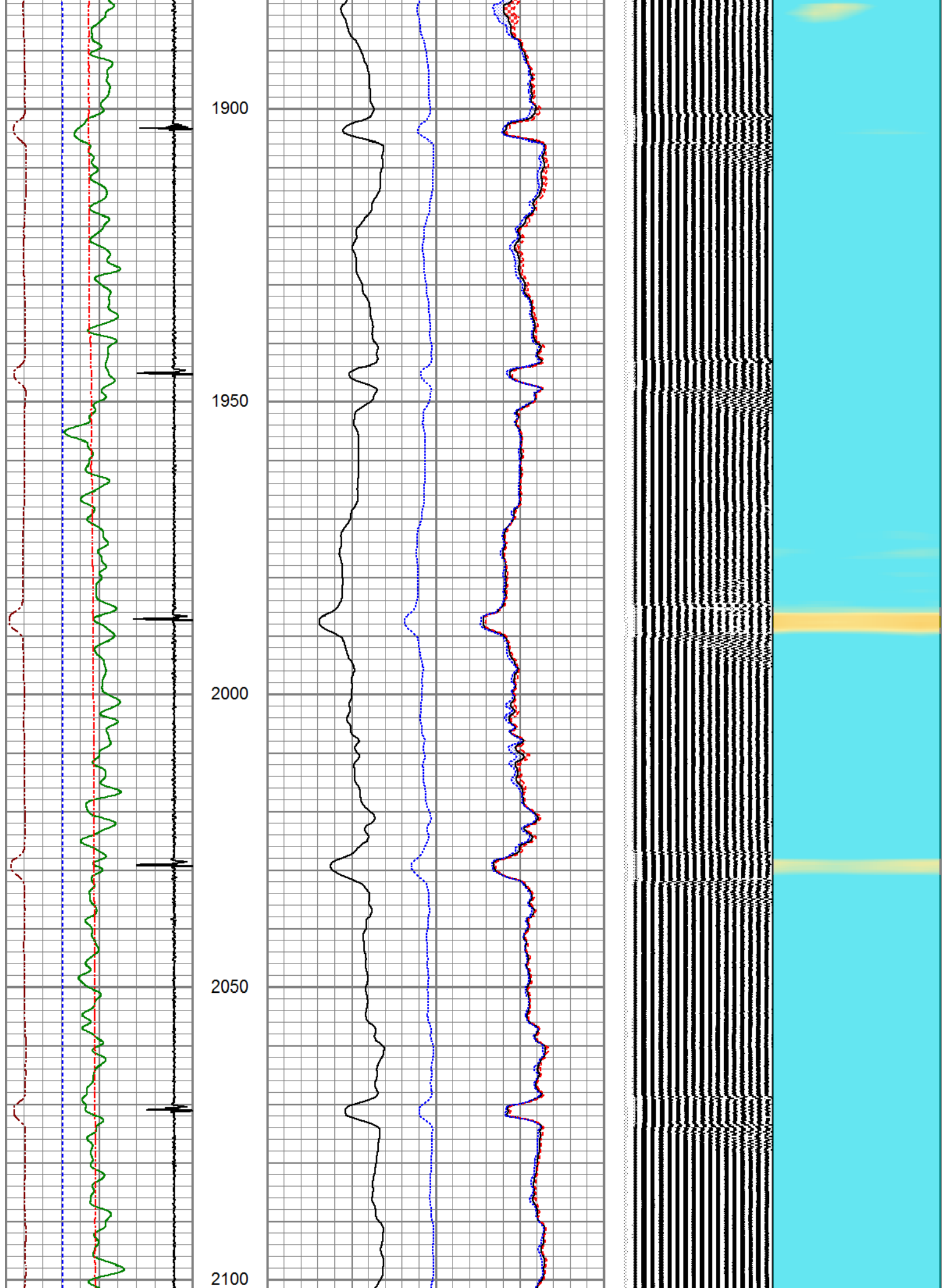


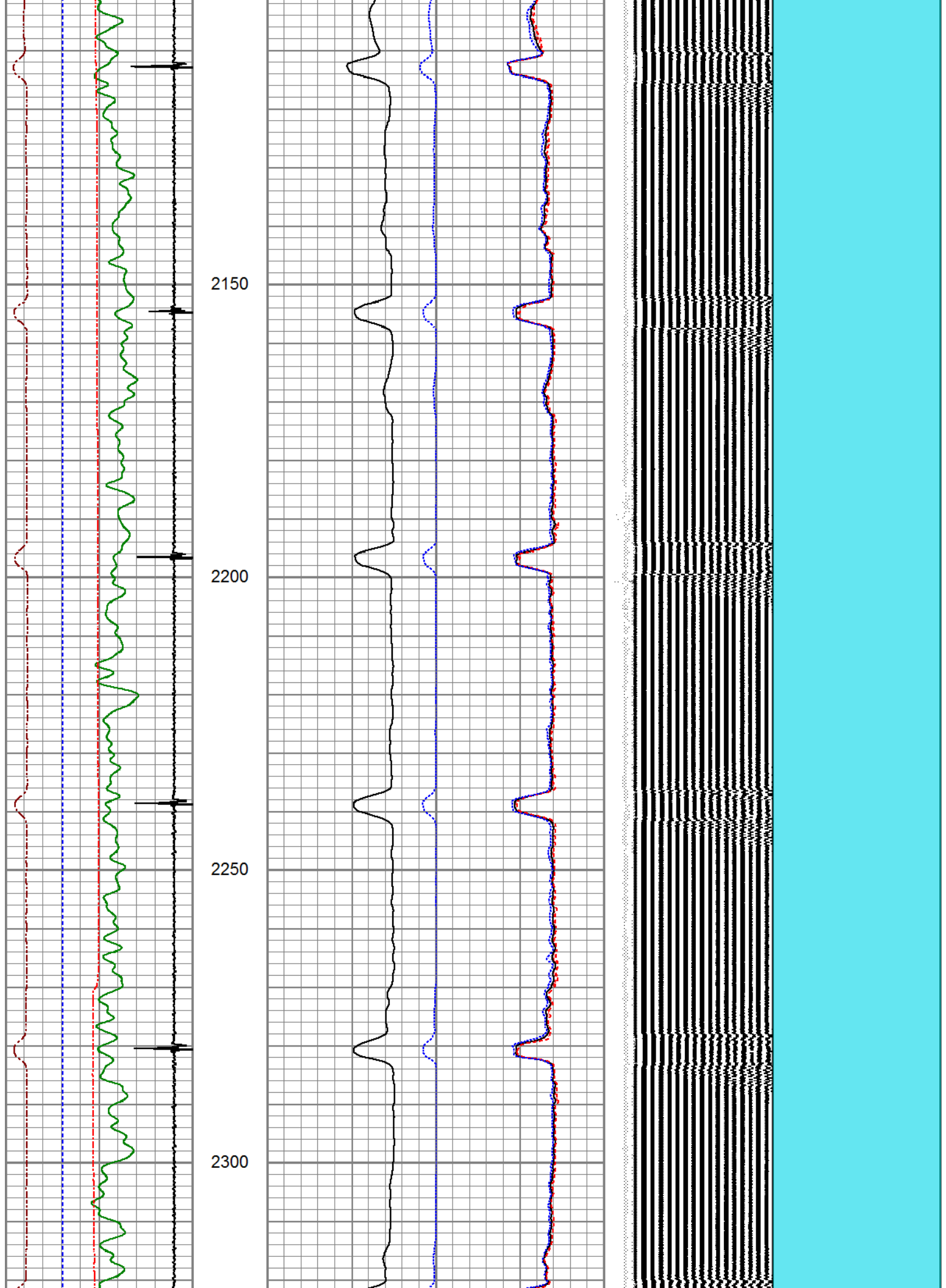


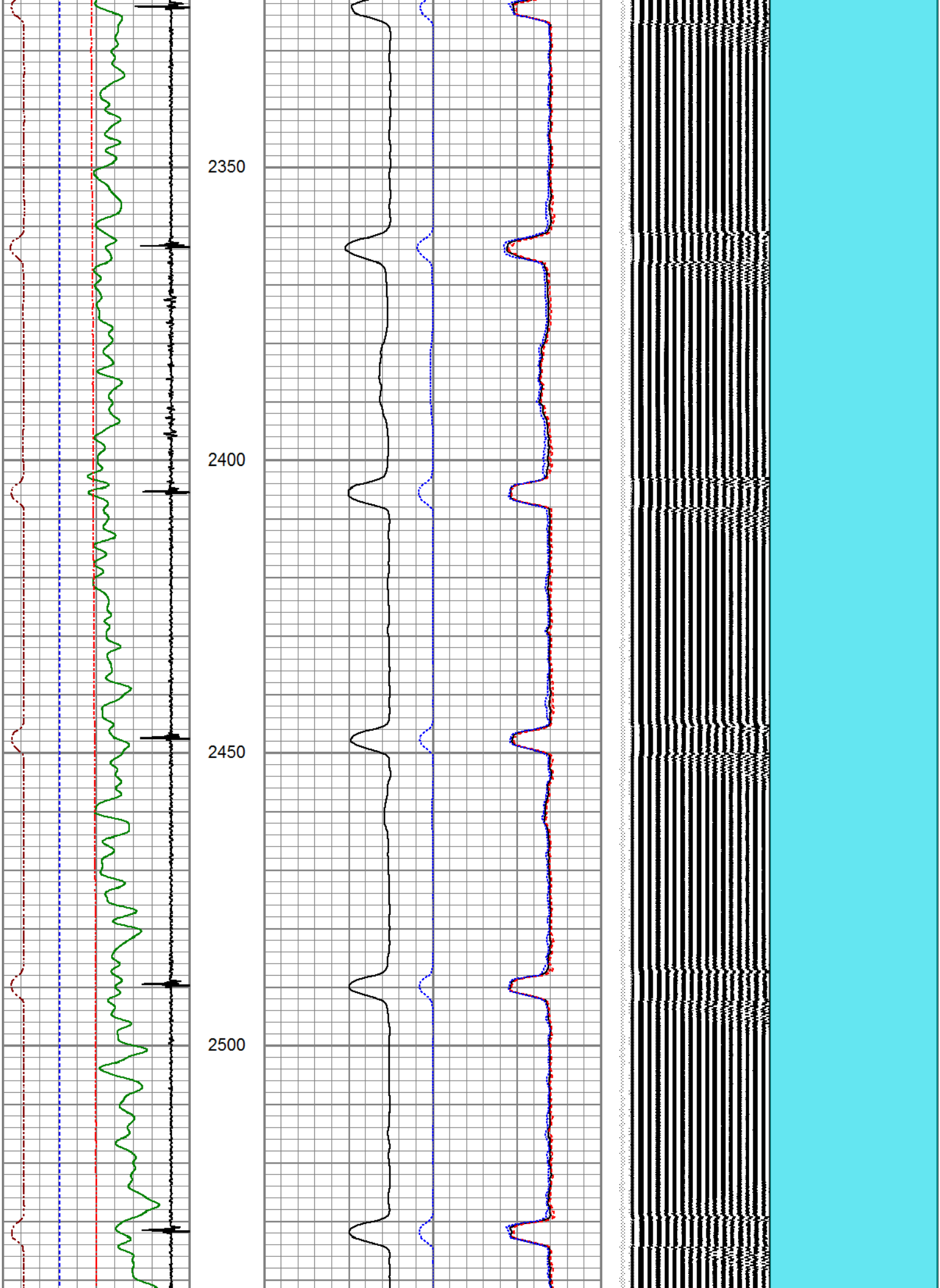




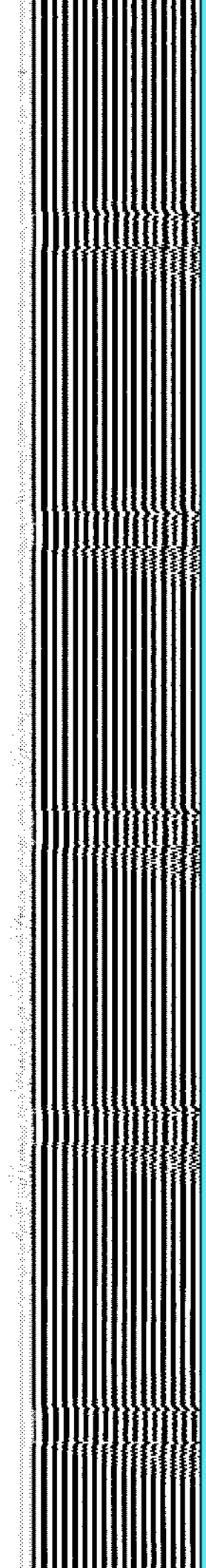
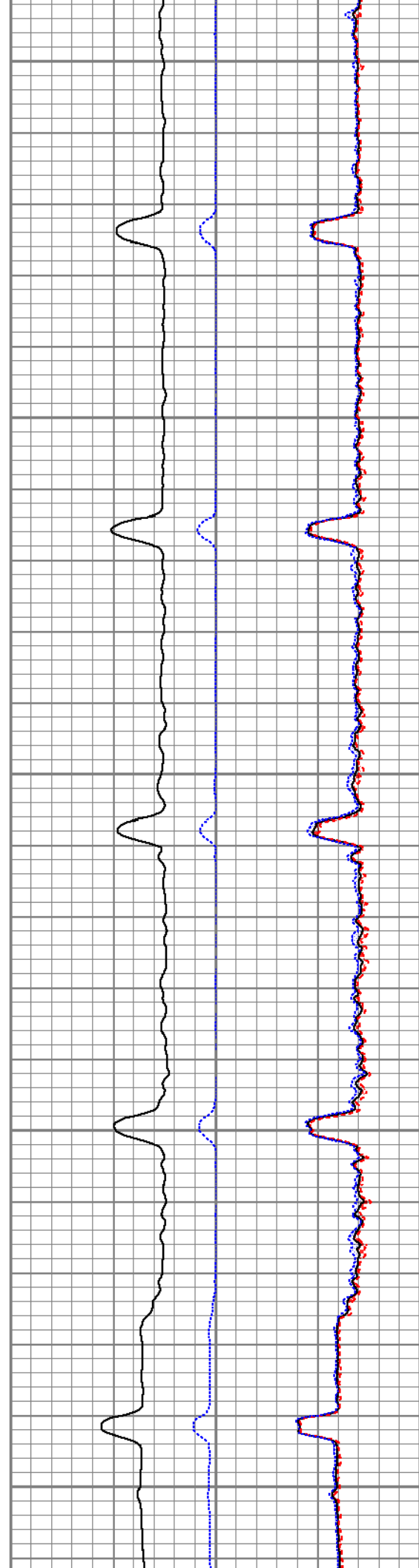
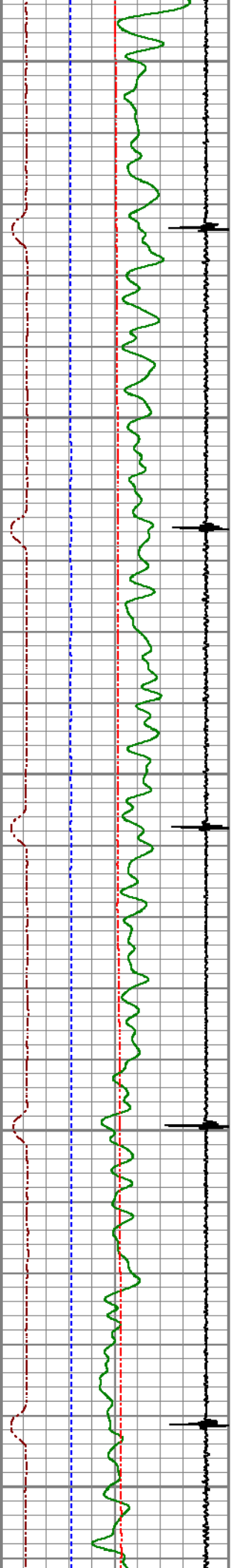


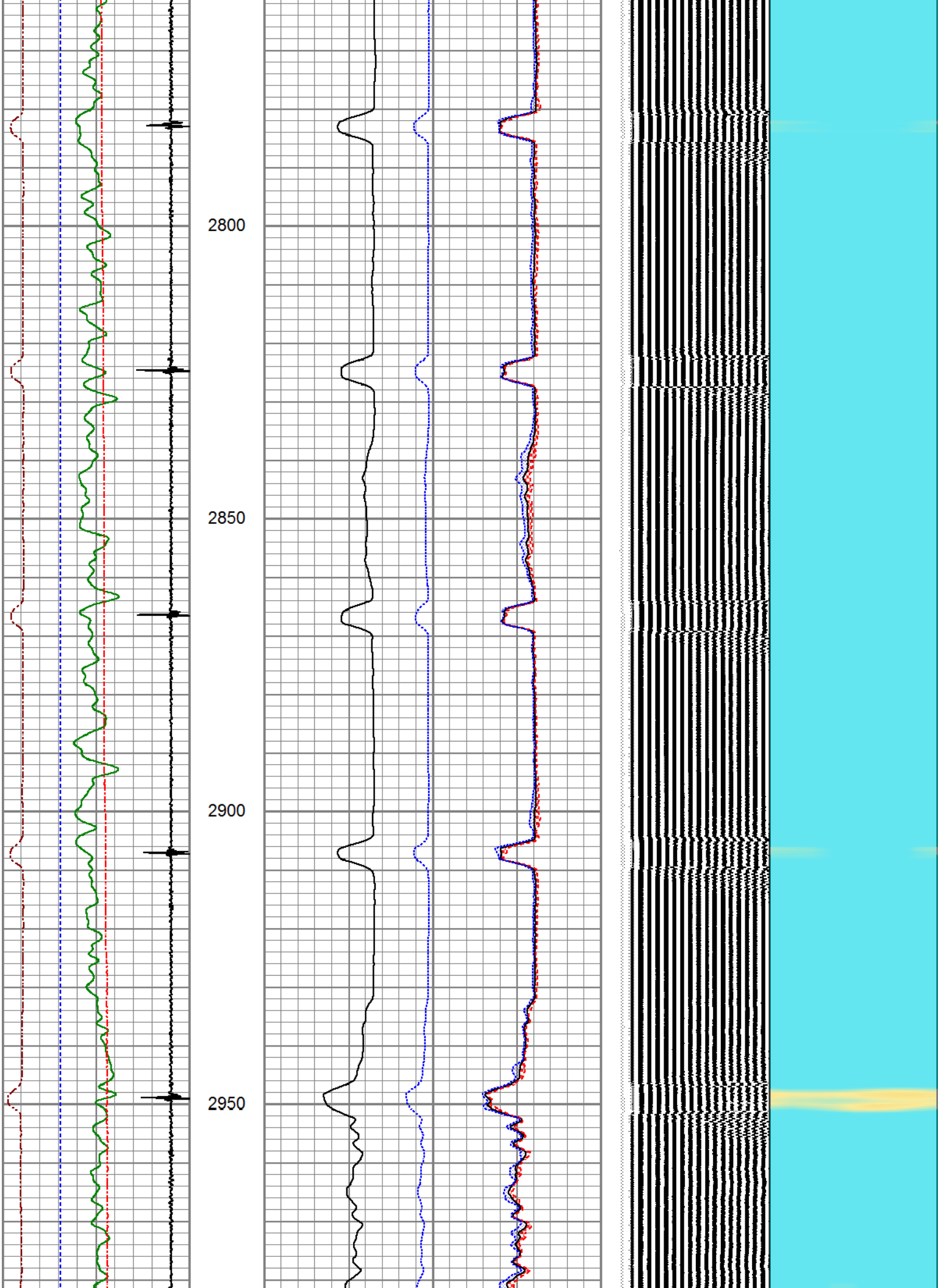


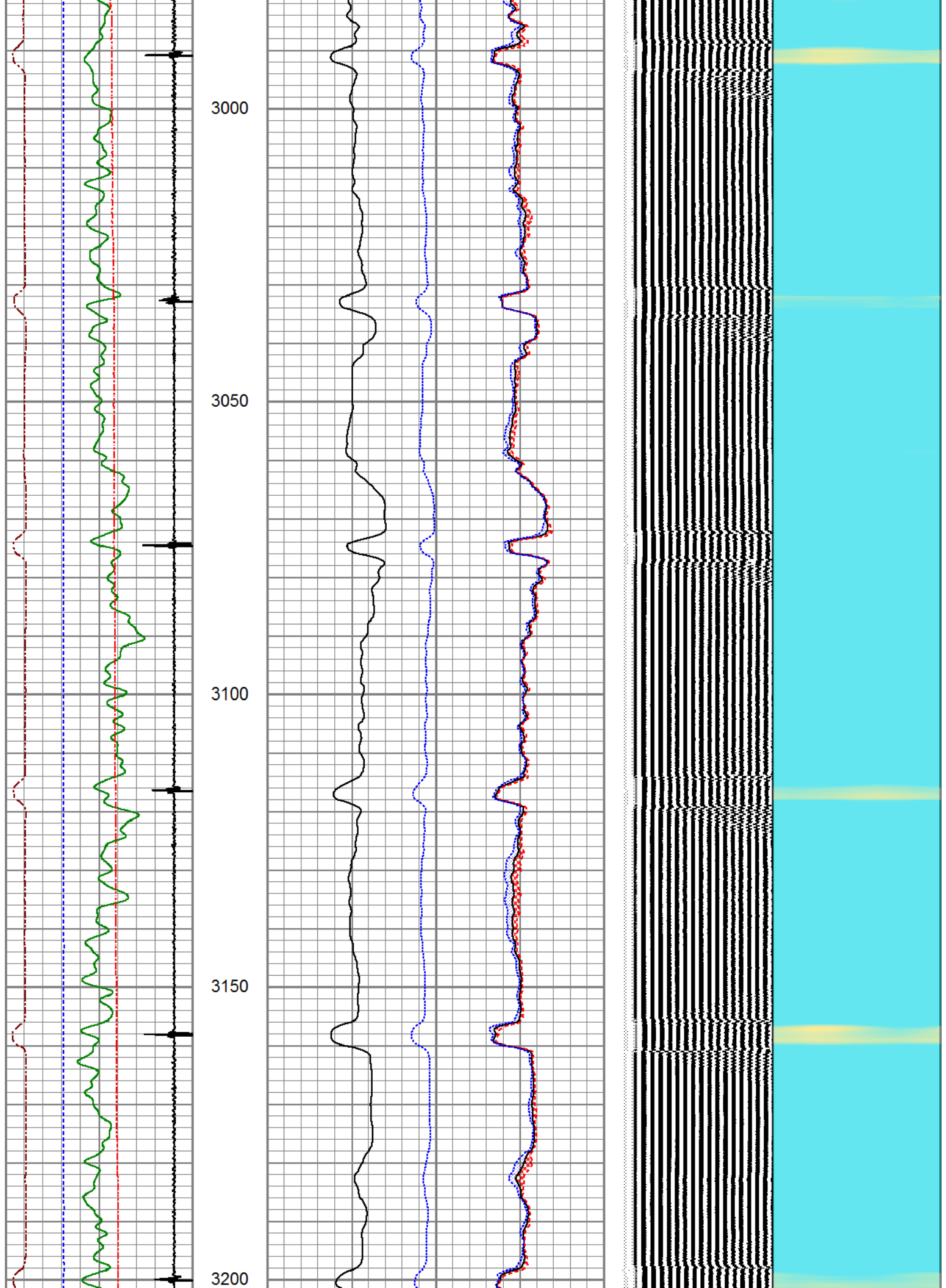


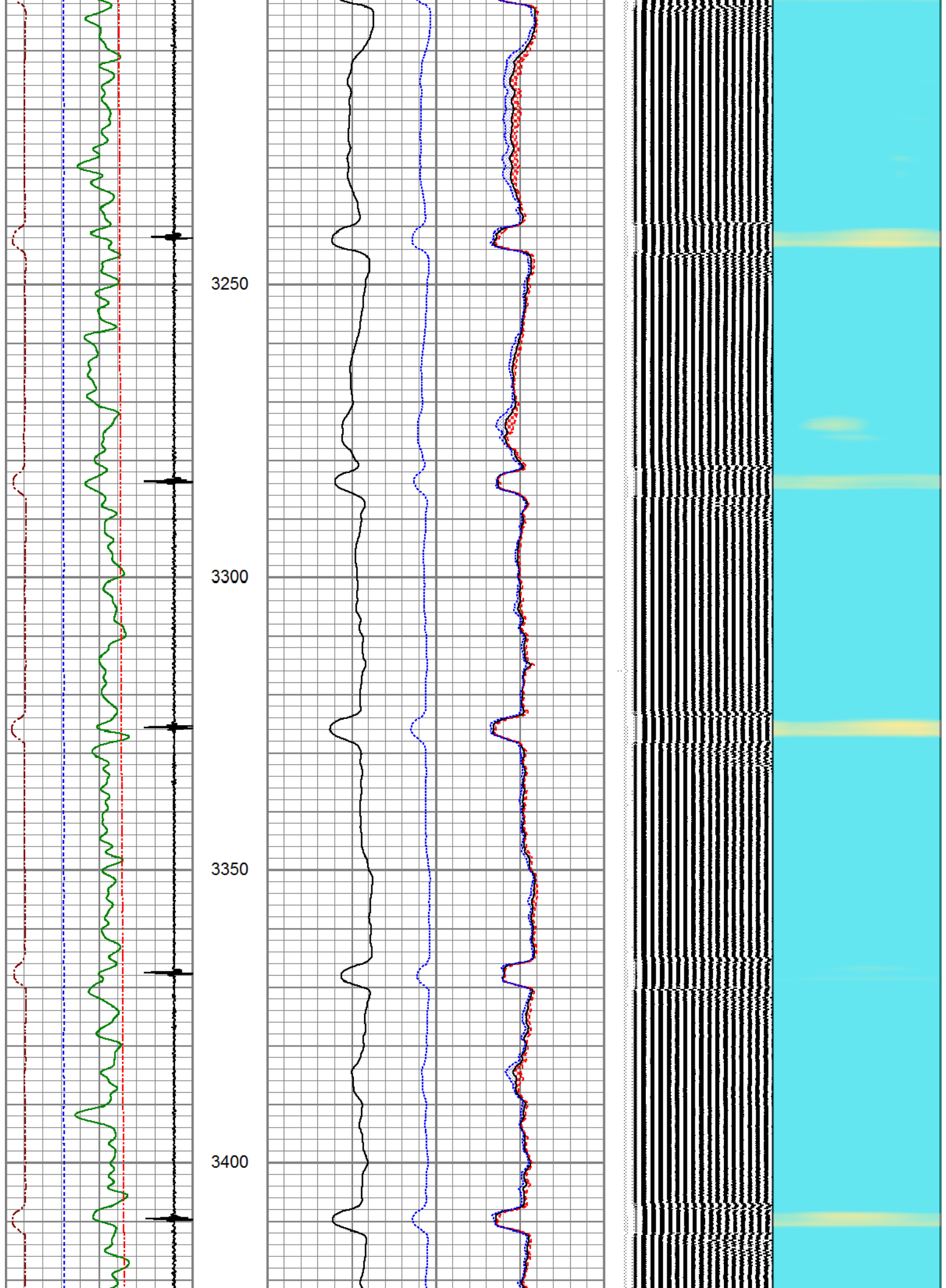


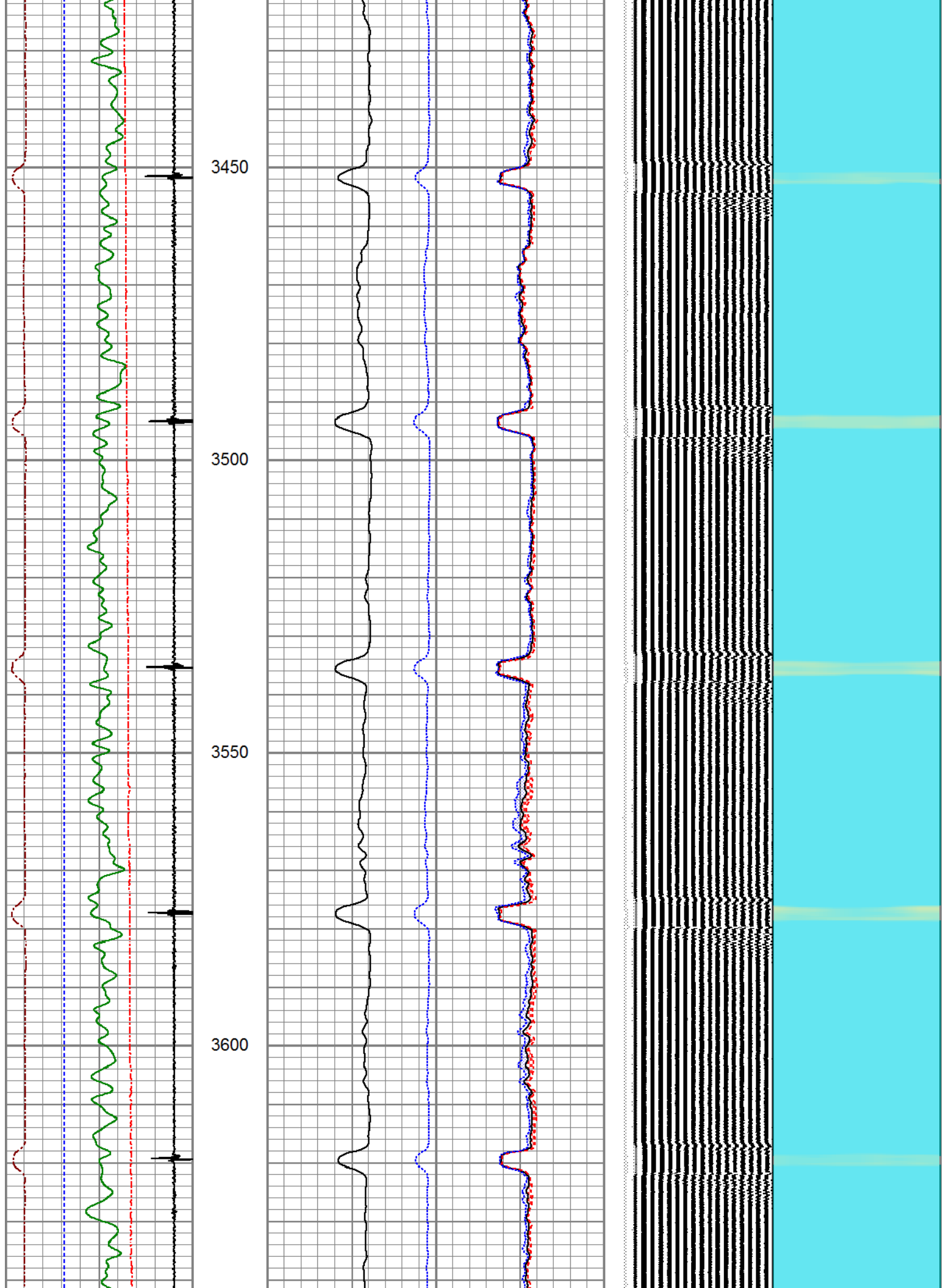
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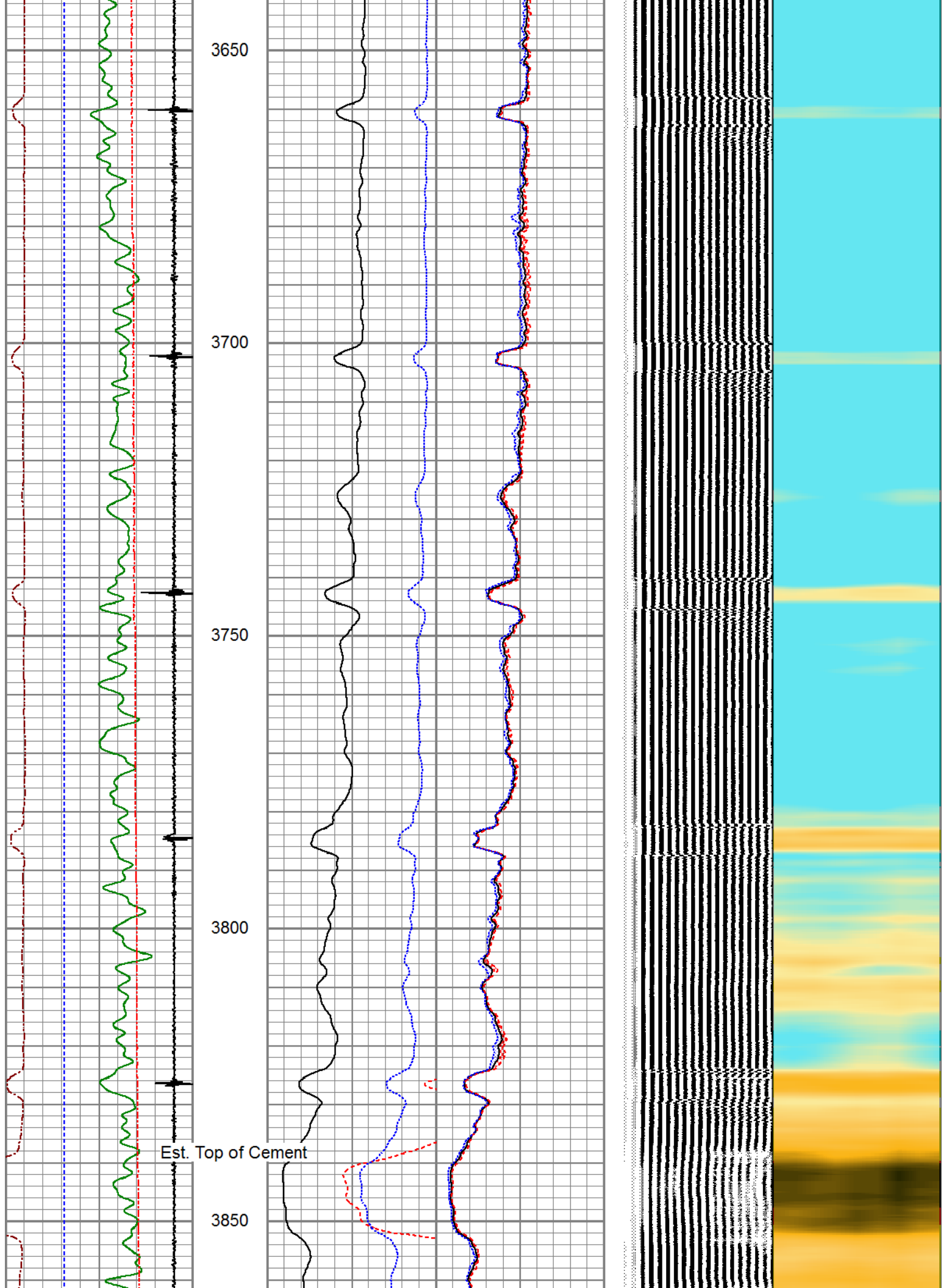


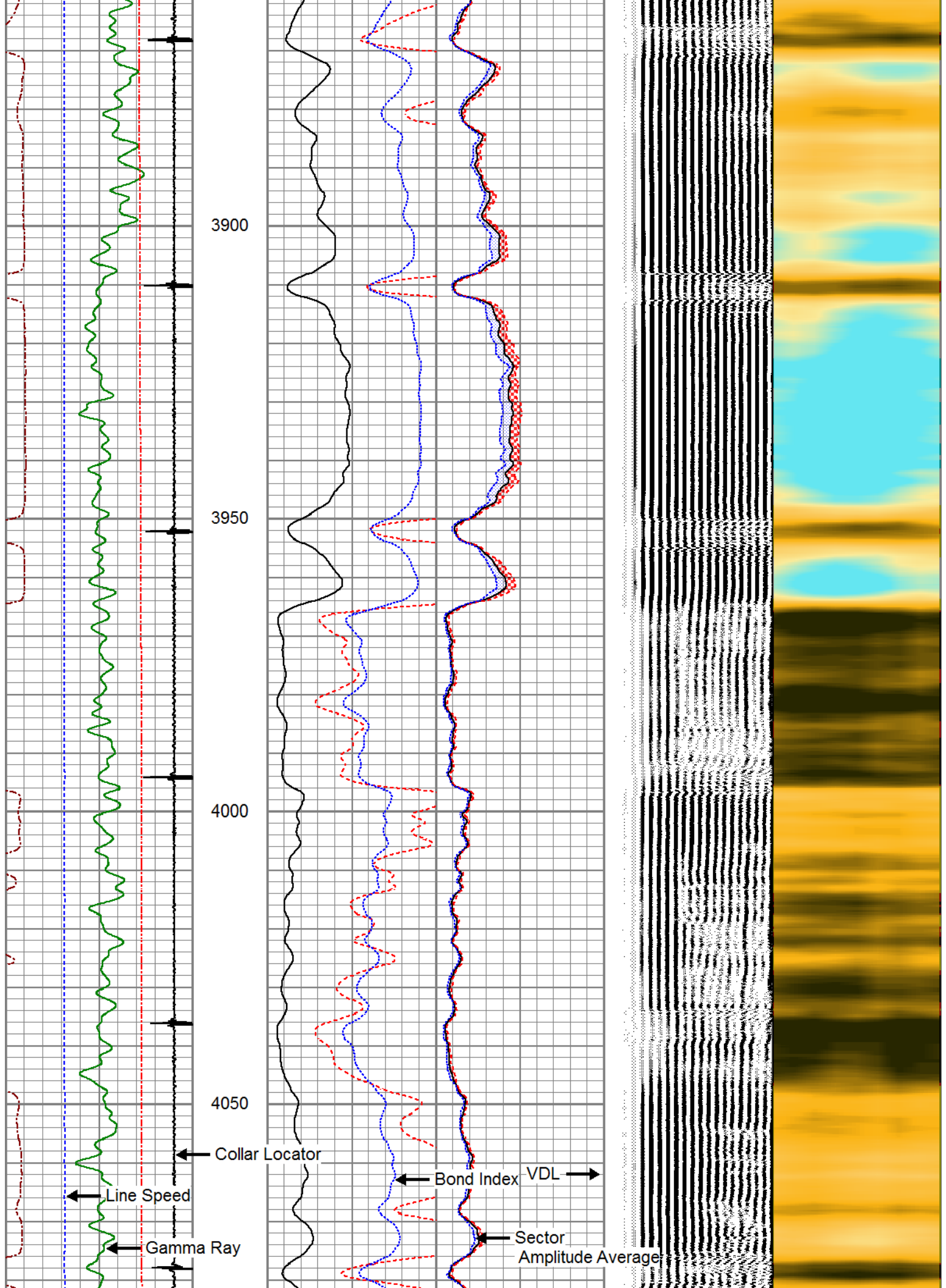


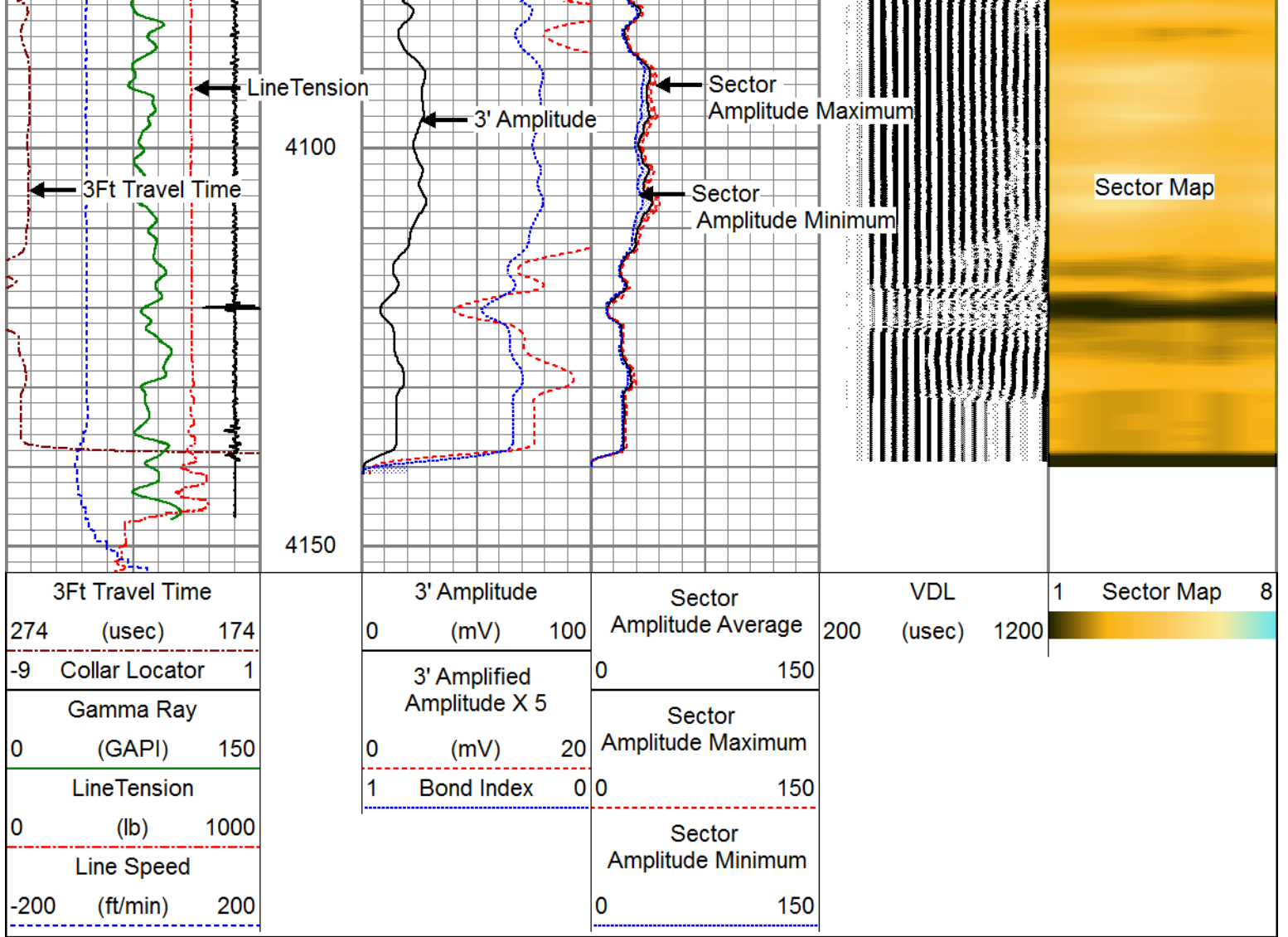








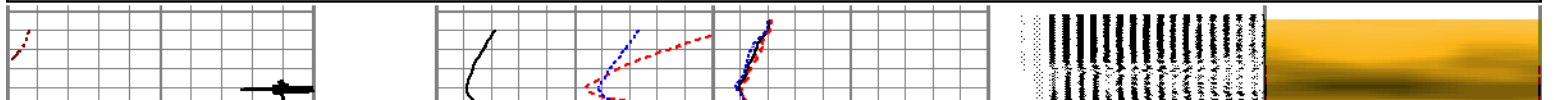
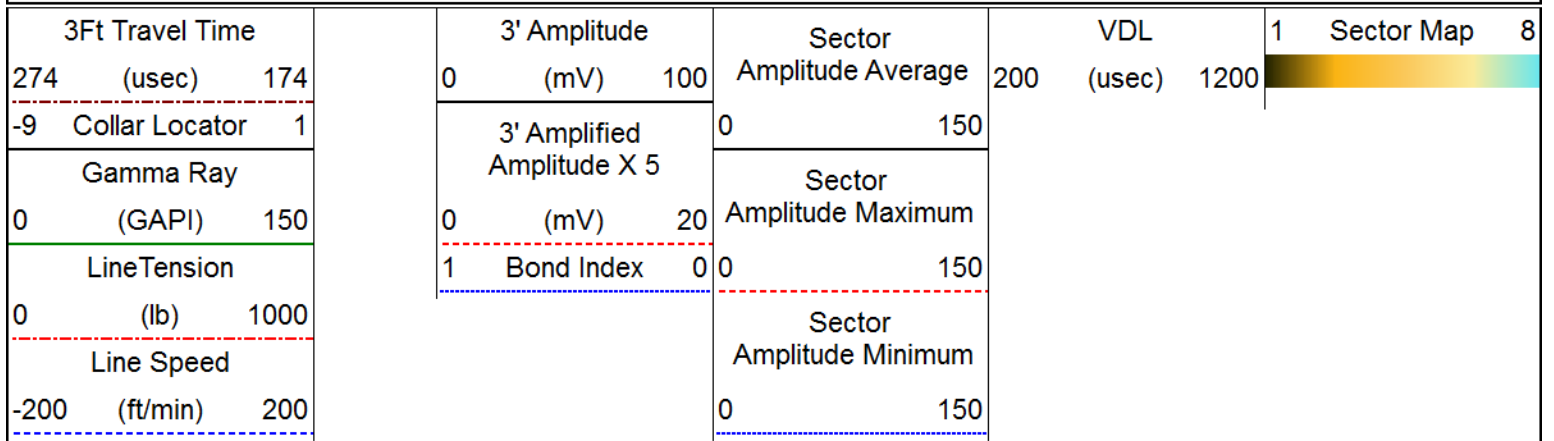


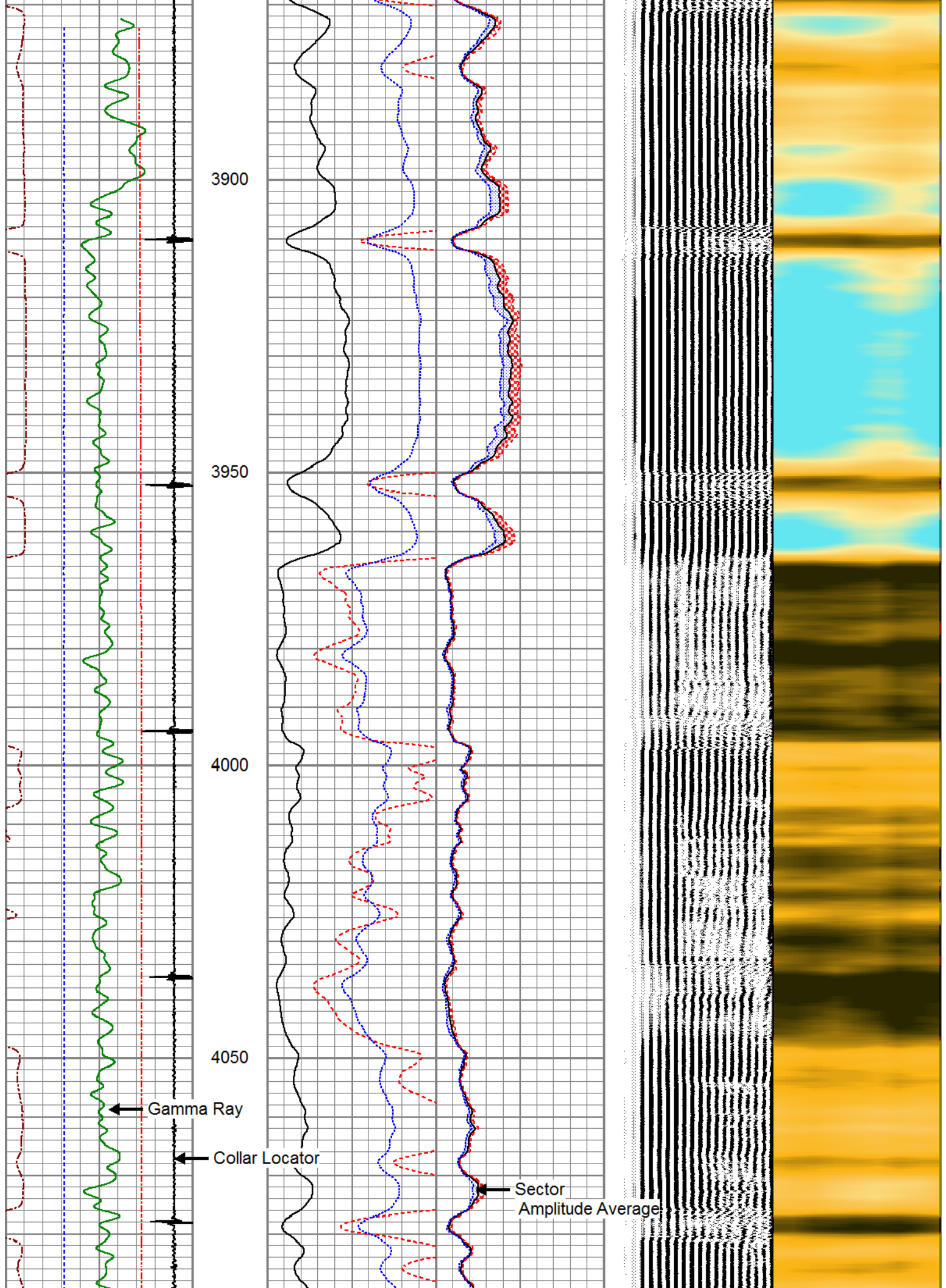


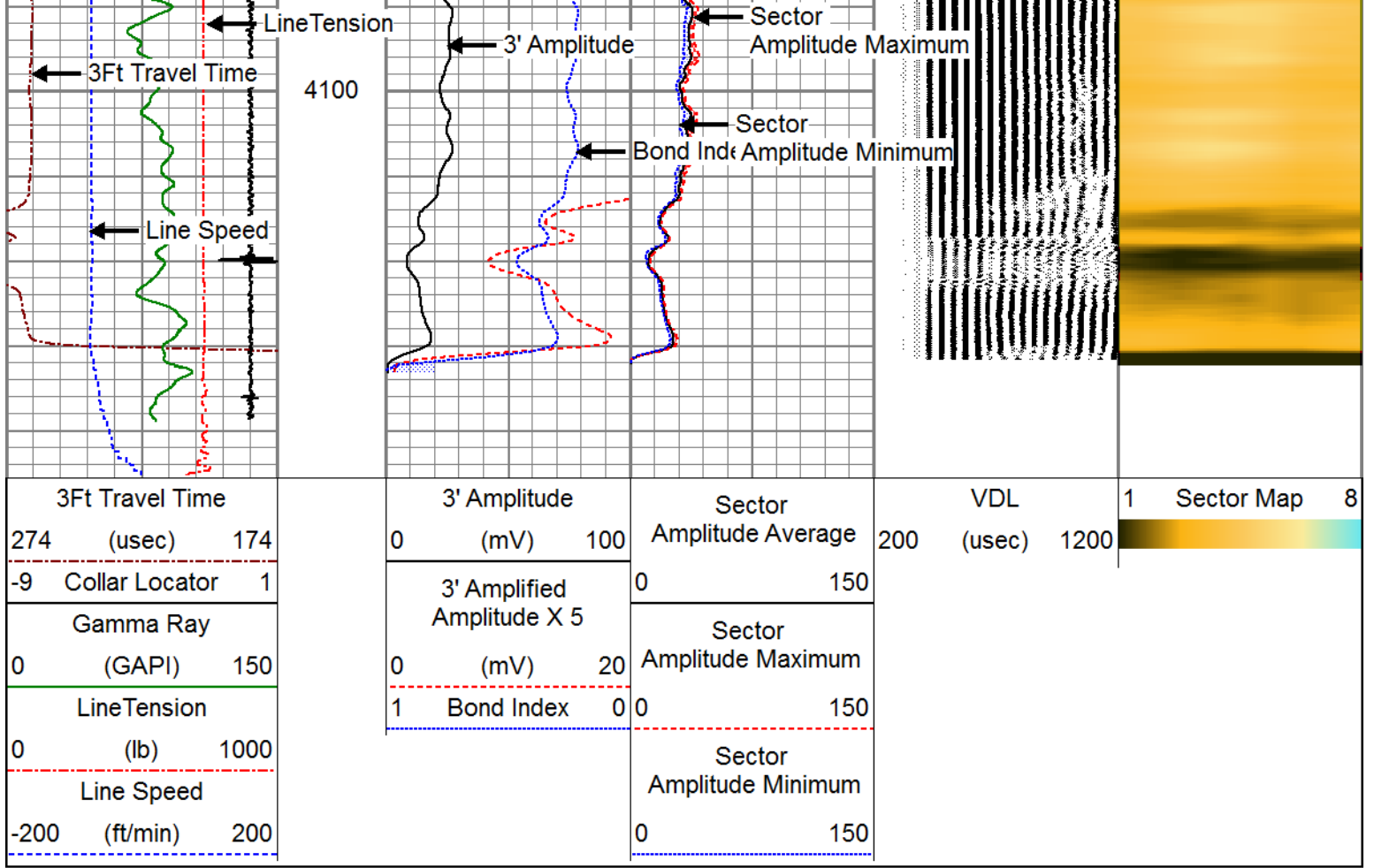
## REPEAT SECTION

ZERO PSI APPLIED AT SURFACE

Database File anadarko\_herman 2-32\_0512314459\_20190131\_scbl.db  
 Dataset Pathname pass1.10  
 Presentation Format pinr\_scbl  
 Dataset Creation Thu Jan 31 08:32:57 2019  
 Charted by Depth in Feet scaled 1:240







### Calibration Report

Database File anadarko\_herman 2-32\_0512314459\_20190131\_scbl.db  
 Dataset Pathname pass1.12  
 Dataset Creation Thu Jan 31 08:37:52 2019

### Gamma Ray Calibration Report

Serial Number: 110246  
 Tool Model: GR/CCL-A  
 Performed: Tue Jan 15 15:53:31 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6700 GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number: FW1401-41-T  
 Tool Model: RBL-DC

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 2224.346 ft

Master Calibration, performed Thu Jan 31 08:20:41 2019:

Raw (v)		Calibrated (mv)		Results	
Zero	Cal	Zero	Cal	Gain	Offset

3'	0.000	1.412	0.700	71.921	50.429	0.700
CAL	0.000	1.499				
5'	0.000	1.330	0.700	71.921	53.540	0.700
SUM						
S1	0.000	1.420	0.000	100.000	70.431	0.000
S2	0.000	1.384	0.000	100.000	72.246	0.000
S3	0.000	1.371	0.000	100.000	72.923	0.000
S4	0.000	1.370	0.000	100.000	72.973	0.000
S5	0.000	1.389	0.000	100.000	71.975	0.000
S6	0.000	1.423	0.000	100.000	70.265	0.000
S7	0.000	1.434	0.000	100.000	69.729	0.000
S8	0.000	1.464	0.000	100.000	68.298	0.000

Air Zero Calibration, performed Thu Nov 29 15:24:07 2018:

	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	



**PIONEER**

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